



# WORLD-RADIO

## DOMINION & FOREIGN PROGRAMMES

The Official Foreign & Technical  
Journal of the B.B.C.

Vol. XIV No. 358 Registered at the G.P.O.  
as a Newspaper.

FRIDAY, JUNE 3, 1932

Three Pence

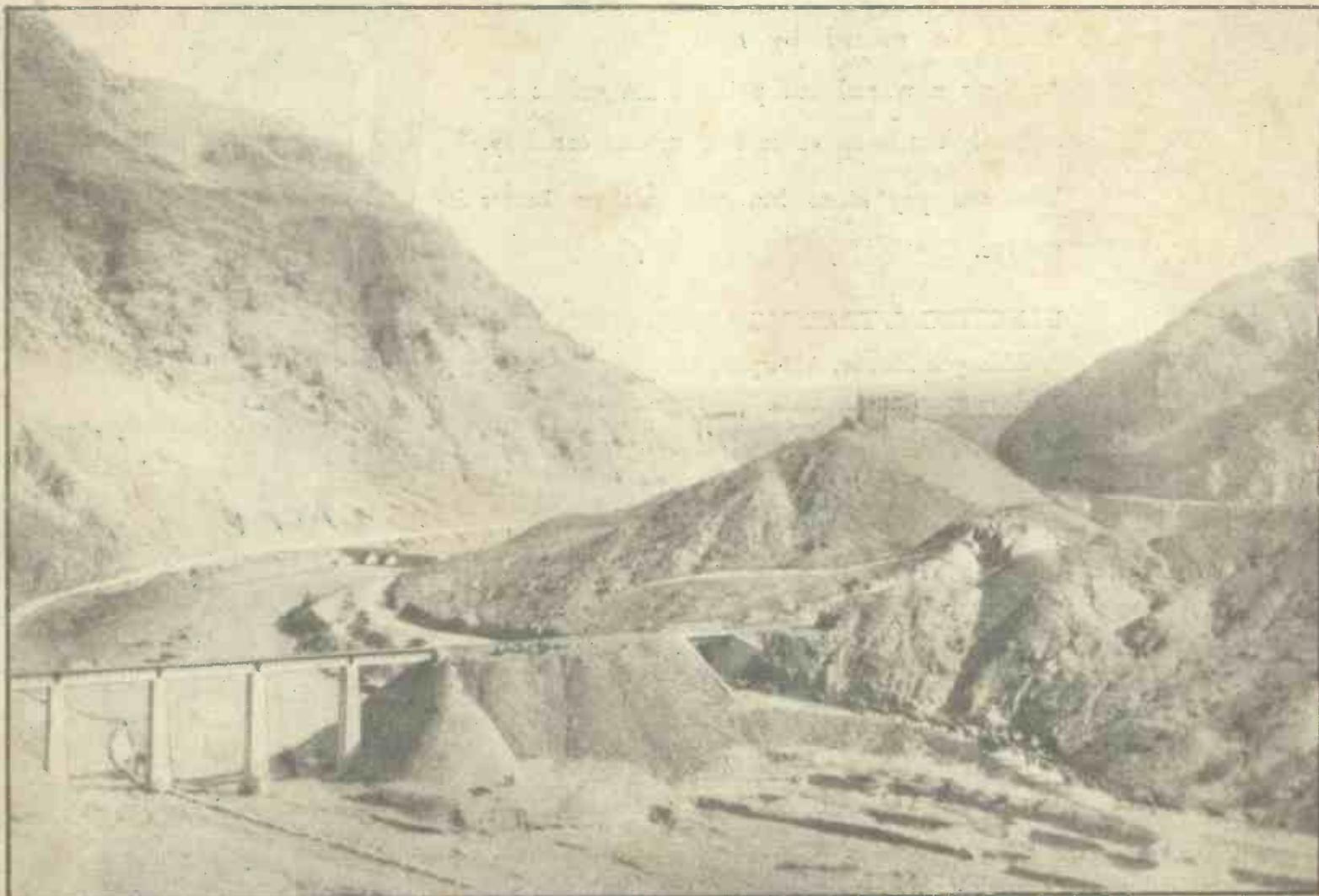
AFGHANISTAN'S ATTITUDE TO BROADCASTING

CARTOON: ARTHUR RUBINSTEIN

"RADIATIONS AND REACTIONS"

THE PERFORMANCE OF ULTRA SHORT-WAVE RECEIVERS

DEMODULATION BY THE DETECTOR



The Khyber Pass, showing one of the block-houses which guard the pass and in which wireless is now installed

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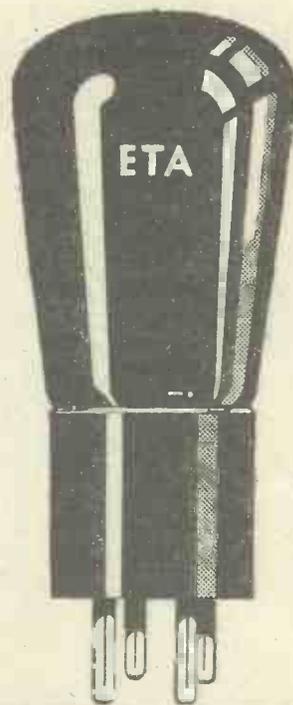
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THREE PENCE



Letters should be addressed to the Editor,  
"WORLD-RADIO," Broadcasting House, London,  
W.1.

RATES OF SUBSCRIPTION to "World-Radio" (including postage). Twelve months: Inland, 17s. 4d.; Canadian, 17s. 4d.; Foreign, 19s. 6d. Six months: Inland, 8s. 8d.; Canadian, 8s. 8d.; Foreign, 9s. 9d. Address: "World-Radio," 8-11, Southampton Street, Strand, London, W.C.2.

## Varieties of Reception

FOR a long time this journal has published regular reports of the reception of European stations by contributors who are listening, respectively, in the northern and southern parts of Europe and in the east-central part of the Continent. The object, of course, is to enable readers of *World-Radio*, both in different parts of this country and on the Continent, to compare their results of reception with those recorded in the several "logs." It will have been observed that while "Northern" and "The Searcher" frequently agree in their reports of the reception of certain stations, there are many instances when an identical transmission is satisfactorily received in the North of England and, for one reason or another, barely audible in the South. To a still greater extent, as might be expected, the remark holds good in respect to reception in this country on the one hand and that by "Central European" on the other. The reports which appear in this issue are particularly striking instances of this variation. Thus, reception of Budapest, which "Northern" tells us has been admirable in his district late in the evening, is negligible in "The Searcher's" region and "could not be recognised" by "Central European." Florence is another instance. The last-named contributor's experience is that it is heard well every evening; in the North of England its signals remain far below expectation. As we should expect, the Norwegian stations appear to be better received in the North of England than in the South or in Central Europe, and this week Oslo is reported by "Central European" as being comparatively the weakest signal in the long-wave band, while in the North of England it was a very reliable station. These striking differences in reception amply justify, in our opinion, the inclusion of the different logs as standards of comparison.

In this connexion our Northern correspondent makes a remark which gives food for thought. He says that "it is well known that the amount of interference which spoils reception will vary with different listeners. Some there are who cannot enjoy a programme with even the slightest noise, while others can ignore quite a lot when tuned to the desired programme." This interference toleration on

the part of listeners forms an interesting subject. We have all had experience of the type of listener whose loud-speaker is emitting music with a constant background of speech, or the reverse, and he is quite content, not to say pleased, with the result. Or he appears thoroughly to enjoy a concert punctuated with minor atmospheric, crashes, oscillating whistles, or other sounds extraneous to the business in hand. While at the other end of the scale there are those super-sensitive souls who cannot bear a whispered word in a room or the turning of a page of a book. Here we have a condition which, while it is ideal for listening, yet must form in the normal household a tyranny that leads to the unpopularity of listening, if not of the listener. As with other forms of annoyance, interference must first be reduced to the absolute minimum and then a reasonable amount of toleration brought to bear.

## Via Ether

Opera—German and Italian

AN instance of international give-and-take in broadcasting is furnished by Germany and Italy each transmitting an exceptional amount of the other's Opera. A new version of Verdi's opera *The Sicilian Vespers* is to be performed at the Berlin State Opera House at 8 p.m. on SUNDAY. Königs Wusterhausen is to relay this performance, which will be conducted by Erich Kleiber. The same evening another Italian opera, Wolf-Ferrari's *The Roguish Widow*, is being presented at the National Theatre, Weimar; this will be relayed by Leipzig. Finally, at 9 p.m. the North Italian group of stations are broadcasting a studio performance of Wagner's *Tannhäuser*. MONDAY's outstanding transmission is announced from Vienna. Weingartner is conducting the Vienna Philharmonic Orchestra in a very attractive programme. The same station should, if possible, be tuned in again on THURSDAY, when it is to relay Beethoven's *Missa Solennis* from St. Stephen's Cathedral. Paisiello's *Barber of Seville*, an opera of rollicking humour, is to be broadcast from Rome at 8.45 p.m. on WEDNESDAY. No less than three opera transmissions are announced for THURSDAY. Dvorák's *Dimitrij*, Puccini's *Tosca*, and Nicolai's *The Merry Wives of Windsor* are to be heard from Prague, Radio-Paris, and Langenberg respectively. Of FRIDAY's broadcasts I would mention the two from Budapest and Heilsberg respectively. Liszt's oratorio *The Legend of St. Elizabeth* is to be relayed by the former station. An operatic concert will be broadcast from Heilsberg in which Frau Elsa Koch, a singer whose splendid voice I have mentioned before, will be the soloist.

Two International Relays

THE series of European concerts, which should contribute much to better international understanding through the greater appreciation of

the culture of other lands, is to have two notable additions in next week's broadcasting programmes, one coming from France and the other from Austria. The former, which takes the form of a concert in the Champs Elysées Theatre, Paris, has been organised by the Fédération Nationale de Radiodiffusion, and is being relayed by the French PTT and many European stations. Indeed, the number of transmitters participating in this broadcast is greater than has ever taken part in a similar event. An attractive programme of French music has been arranged—Berlioz, Lalo, Dukas, d'Indy, Saint-Saëns are all represented! The Paris Symphony Orchestra will be conducted by Pierre Monteux, and three eminent Paris artists are the soloists. Austria's international broadcast, which takes place at 8 p.m. on SATURDAY, is an open-air concert on one of Vienna's famous squares, the Heldenplatz. "Soldiers' Songs and Military Music of Three Centuries" is the heading of this concert in the programmes. It will be rendered by four military bands and a soldiers' chorus of 500 voices. This should prove an interesting and entertaining relay.

Copyright Troubles in U.S.A.

In this country copyright difficulties in broadcast music have been happily solved by an amicable arrangement between the B.B.C. and the interests concerned, but in various parts of the Empire, and even more so in the United States, it is becoming increasingly difficult to assess the exact value of the contribution which the owners of music copyright undoubtedly make to the success of the broadcast programmes. Therefore the whole world of radio will watch with interest the battle royal which is being waged between the American Society of Composers, Authors, and Publishers and the various broadcasting companies. Last year the members of this Society derived a revenue of £186,000 from broadcast music, but they allege that the broadcasters' gross income was more than £10,000,000, and, considering the fact that the sale of sheet music has most seriously declined, and that the average life of a popular song is now three months instead of eighteen months, the Society now demands a 5 per cent. royalty on the gross income of each station. The companies reply that the proposed increase, 300 per cent., is much too high in these hard times. They regret any injury caused to the music trade by the spread of broadcasting, but that is inevitable in the march of science, just as the horse and buggy had to give way to the motor-car. The composers reject the horse and buggy analogy with scorn. These latter became effete because of the immeasurable superiority of the motor-car, but music, according to the broadcasters themselves, is the backbone of radio, the raw material of the whole structure. In some stations 80 per cent. of the programmes is devoted to music, much of it copyright, and a new agreement is imperative.

ETHERVIATOR

# Afghanistan's Attitude to Broadcasting

By SHIEKH AHMED ABDULLAH

IT was the ex-King Amanullah who introduced broadcasting to the Pathans of Afghanistan. He did so largely at the behest of his consort, the ex-Queen Souriya, who, during the period of their European tour a few years ago, became intrigued with the magic of wireless. Amanullah was not so deeply impressed at first, but it will perhaps be remembered that his arrival in London coincided with one of the thickest fogs on record. To one accustomed to the great open spaces, this visitation was intolerable. Except to attend the public functions arranged in his honour, he refused to go out into the murky atmosphere, believing that in his apartments, diffused, as it was, by the rays of electric light, the air was considerably purer. Those with him sought the aid of wireless to while away the King's tedium. Such was the composition of the wireless programme of that day that Amanullah became converted. He saw in broadcasting a great ally in the introduction of those reforms in Afghanistan which he had conceived during his European travels. Amanullah consequently ordered broadcasting plant and gave instructions that it should be erected as quickly as possible in Kabul.

## A Satanic Influence

When he returned to his capital he found the apparatus—of comparatively low



H.M. Mohamed Nadir Shah broadcasting to his people at an open-air meeting

power—already installed (by Russian and British engineers) and ready for service, and the country dotted with various receiving units. These had been placed in the schools and in the major towns and villages.

It was not long before an amazed and slightly horrified countryside began to listen to the words of the ruler coming mysteriously out of space. He, and his principal lieutenants, made considerable use of the microphone, and it was this, as much as anything else, which went to convince the Pathans that their King had been visited by Satan during his pilgrimage to the lands of the infidels.

Afghanistan, accustomed to the ways which were there when Alexander marched through the country on his way to the Indus, saw in the reforms initiated by Amanullah only that which was revolutionary and subversive of their interests. They observed, goggle-eyed, the inauguration of a Legislative Council at Kabul. The Afghan chiefs, who had been wont to squat on the ground, rifle ready to hand, and thus to discuss such mundane matters as the state of the crops and the collection of revenues,

were required to attend the Council as legislators, garbed in regulation morning coats—and trousers. These were manufactured in the bazaars of Kabul with effects which would have given heart-failure to the editor of *The Tailor and Cutter*, but the Afghans did not mind this so much as the trousers. They had to sit for hours in these abominations of the West while Amanullah's voice came to them through loud speakers. It was perhaps only natural that they should pay scant attention to the royal words and concentrate their thoughts upon the bodily relief which would come when striped trousers could be discarded for the voluminous Pathan pyjamas.

## Transmitting Installation Smashed

Afghanistan's early initiation to wireless, as can be seen, was not a particularly happy one, and the Pathan breathed a sigh of relief when the forces turned against Amanullah. One of the first acts of Bachha Saque, the water-carrier who became king for seven months after Amanullah had fled the country, was to smash the broadcasting apparatus. He declared it to be an invention of the Devil and the Pathans were inclined to agree with him. After seven months of the water-carrier's rule, however, they were not quite so sure, and by the time the present ruler, King Nadir Shah, came to the throne

there were those who said that they preferred Amanullah's broadcast voice, and his trousers, to Bachha Saque's conception of kingliness.

King Nadir Shah found Afghanistan ready for orderly government at any price—even at the price of wireless, but his exactions in this respect were not heavy. With apparatus garnered from France, Italy, and England, he had the broadcasting plant repaired, but the microphone has only been used for the dissemination of religious teachings. In this manner Nadir Shah enlisted the support of the powerful mullahs who were so largely instrumental in bringing about Amanullah's downfall.

## Only Religious Broadcasts Now

The Kabul programmes on matters pertaining to Islam are broadcast daily between the sundown prayer and the last prayer of the evening—that is, roughly, between 7 p.m. and 9 p.m. These devout Sirdars listen to the holy words of the Imam—words which are received in silence and with the deepest respect in Jelalabad, in Kandahar, in Herat, and in the passes along the Persian border.

Later on in the evening these listeners hear a louder note. This is from the great Russian station at Tashkent, which, however, is careful to broadcast nothing that is discordant. Its programmes are, indeed, remarkable, and, in the evenings, consist largely of the recitation of old Persian fables, which are told sometimes in Persian—which is the court language of Afghanistan—and sometimes in Pushtu, which is the language of the Pathan.

## The Fable of Lenin

I once listened to a wonderfully modulated

voice speaking from Tashkent. It told how one Uzbek (a native of Turkestan) was wandering about the hills, distracted and worried unto death because his crops were parched and dying for the want of water. While so disconsolately perambulating, he espied a man of enormous stature. He salaamed, and the being inquired the cause of his distress. Uzbek replied that



The Independence Column at Kabul, the Afghan capital. Note the microphone on the base of the column

his crops had withered because the streams had dried up. The being commanded Uzbek to proceed to a huge rock which, at his touch, fell aside and disclosed a rushing stream which flowed direct to the waterless crops and brought them to life.

Amazed at this manifestation, Uzbek inquired the man's name, but the being would not immediately respond. "Come to this spot in a week's time," he said, "and I will tell you." Uzbek returned at the appointed time, and there was his benefactor awaiting him.

"Oh, great one," said Uzbek, "what is thy name?"

"Lenin!" came the austere reply.

When Tashkent fades out and with it its allegorical fables, much fainter voices are heard by Afghan listeners.

"Bombay calling," says a far-off announcer. "We are now about to broadcast a programme of Indian records. The first is that of that celebrated Hindu singer, Mira Bel, who will . . ."

On another wavelength Calcutta chimes in. "We are now about to broadcast a programme of Indian records," says the announcer. "Our first number will be by that celebrated Hindu singer, Mira Bel . . ."

And the Pathan listener, now quite sleepy and not in the least interested in Hindu renditions, switches off until the next sundown prayer, when his own Imam will afford him spiritual comfort.

## Canada and Empire Day Relay

AN official telegram from Canada states that reception there of the Empire Day programme broadcast from the Daventry National transmitter at 9.25 p.m. B.S.T., on May 24, was very good—in fact, the best that Canada has ever experienced in the case of such relays. The transmission was re-broadcast over twenty-five stations. The message concludes: "Every word of the Prime Minister was clearly heard and 'The Common Wealth' programme broadcast from Broadcasting House was most impressive."

## Radiations and Reactions

**W**HAT is sacred music? Some hold that it is Church music, others claim the term for all good music even if it has not an exclusively religious significance. The first General Booth, it will be remembered, objected to the "Devil having all the good tunes," so many of his hymns were set to the popular catchy melodies of the day, and in his opinion became sacred music in the process. Whatever may be the ultimate definition of the term, we are inclined to demur to the interpretation of an announcer in one of the "Class B" Australian stations, who, in the midst of a programme advertised as sacred music, switched on the record "I've Got a Date with an Angel."

A film company in search of wild-life scenes in an African jungle found radio of immense utility in keeping in touch with their headquarters. But there was one unexpected problem. The native women used to look with envy on the wireless installation—they were accustomed to wearing ten or twelve pounds of copper wire as arm and ankle ornaments. The film operators had to keep a constant guard on their precious aerial wire against the depredations of the women. What an opportunity was missed for a new setting for Barrie's play *The Twelve Pound Look!*

The imagination was vividly stirred by the story in a newspaper of lions in the African bush following the covered wagon containing the receiving apparatus and listening to the recent Celebrity Concert broadcast from the Albert Hall. Instinctively one's thoughts turned to Orpheus and his lute, but disillusionment followed further enlightenment. It was not Kreisler who was responsible, but zebra bait on the end of the wagon.

When the good old, vigorous, blood-warming name of "pirate" was given to the unlicensed listener it was undoubtedly an infelicitous exercise in nomenclature. "Pirate" suggests the spirit of the corsairs, thrilling and dangerous adventures calling at least for intrepid and daring qualities. But the only resemblance the wireless "pirate" has to this figure of romance lies in his deplorably low moral standards. The wireless "pirate" is rather akin to the hero who steals pennies from a blind man's tin. I associate myself heartily with the *Indian Radio Times*, which has some naïve remarks on "these sneaks," who "do not at all help broadcasting, and it is a shame that there are many in British India who should clandestinely rob the service of its legitimate dues."

"We warn these 'sneaks', for the last time," continues that journal, "that it is the intention of the Government to adopt more effective measures than those hitherto in force to bring to book persons who continue to use receiving sets without being in possession of the necessary licence." If a warning couched in such eloquent and awe-inspiring terms has not the desired effect, the Indian Postal Department should have recourse to detector vans, which not once or twice in our rough island story have proved that wireless piracy is not the path to glory.



### Arthur Rubinstein

ALTHOUGH he bears a name already made illustrious by two giants of an older day, Arthur Rubinstein claims no other kinship with them than the one which unites all true artists in a common bond; he is not even a fellow-countryman of theirs. Of Polish birth and parentage, he studied first in his own country and then went for a time to Berlin, where he enlisted the interest of Joachim. When he was fourteen he spent a summer in Switzerland with Paderewski, and embarked only two years later on his career as a concert pianist, winning immediate success throughout Europe and America. It was in the United States that the famous phrase about him

was coined that "he has qualities enough to equip half a dozen pianists." He has enjoyed the friendship of nearly all the great musicians of his time, and many of the foremost composers, like Falla and Stravinsky, have written music specially for him. He has had a big share in introducing the outstanding modern music of our time, with such distinction as to silence much of the severe criticism which ultra-modern tendencies are wont to provoke. But hand-in-hand with his interpretation of the newest art there goes a splendid understanding of the older masters, and he is recognised everywhere as one of the great exponents of Bach, Brahms, Chopin, and, indeed, of the pianoforte music of every school and age.

For raciness, the following from an address delivered by the Calcutta Station Director would be difficult to beat. "It is a great pleasure to me, as one of the pioneers of this enterprise in India, and as the jockey in charge of that doughty old horse 'Broadcasting in Calcutta,' to speak to you this evening with a full assurance that the Government have decided to continue the service and that another hurdle in our race for existence has been safely cleared. Although our greatest rival 'Closing Down' fell heavily at the last ditch we must

not forget that we are still riding in company with those other horses 'Retrenchment,' 'Piracy,' 'Destructive Criticism,' and a few others of that same ilk; but I have every hope that, with an occasional bran mash in the shape of co-operation, and a liberal application of the whip, to eventually outstrip our rivals." The combination of bran mash and the whip in one meal is calculated to put even a doughty old horse like "Broadcasting" off its oats.

REAGENT.

# Wireless and the War-Game

By B. K. COOPER

IT took some time to convince the Major that wireless would be an asset to our field-day. Major Blazes was a warrior of the old school. When he wanted to establish contact between two armed forces he sent a runner. Years of disillusionment were beginning to teach him the failings of this system, but he could think of no other. So when Second-Lieutenant Butterworth dug two ancient wireless sets out of the Signallers' Hut and succeeded in sending messages across the school cricket-field, he was not as impressed with this practical demonstration of the wonders of science as Second-Lieutenant Butterworth and his minions, of whom I was one, could have wished.

The Major mistrusted the signalling unit of our O.T.C. He guessed that its personnel was composed of people who preferred wagging a flag to wielding a rifle, and who thought it better to watch a battle from a hill-top than to take a personal part in the strife. But the latest child of Major Blazes' brain was one that depended for its success almost entirely on the maintenance of communication between two sections of the combatants. B Company was to defend a house in which the Government of Redland had chosen to secrete a quantity of bullion. Blueland, rightly incensed at this attempt to bring stagnation to the world's money markets, was to declare war and launch an attack with all the superior military knowledge at the command of A Company. Two platoons would fall upon the left flank of the defenders. When the carnage was at its height and the scales of victory seemed evenly weighted, two more platoons would fall upon their right flank. Overwhelmed by the tactical superiority of their opponents, B Company would then yield, a bugler would blow the "Cease Fire" to prevent a general massacre, and Major Blazes would deliver a lecture to his breathless contingent, in which he would explain to them exactly what they had been doing.

Such were the scenes of warfare Major Blazes wished to enact in the peaceful countryside surrounding our school. When Second-Lieutenant Butterworth heard of it he at once offered to lend his signallers to stand aloof from the fray and direct the timing of the two attacks. At first the Major demurred. But he was forced to admit that a cadet runner is an uncertain creature. Not only is his memory short, but he has the habit of disappearing altogether for a period of time best measured by that required for the consumption of a cigarette. To win him over we clamped a pair of headphones about his ears and, from a distance of at least a hundred yards, tapped out very slowly, for his Morse was not strong, "Good luck to our Major." Then he gave his consent.

There was a thick fog on the day of battle. A less obstinate war lord than Major Blazes would have called a truce, but he would hear none of it. Arrived at the scene of action, A Company repaired to an adjacent ditch for lunch. It was a pity that in a moment of horse-play following the meal Cadet Timms should have sat heavily on the transmitting valve of radio station No. 1. It was a pity, too, that terror, or laziness, should have prevented him from reporting the matter to Second-Lieutenant Butterworth (C.O. Signallers) and being sent back to the school for a spare. As it was, it was left to Second-Lieutenant Butterworth himself to make the discovery. He took it like a man. Calling the staff of station No. 1 around him, he bade us stand by him. We had promised the Major to provide communication between his forces, and who should blame us if we used deceit in doing it. Station No. 2 was sound in transmitter and receiver. We could receive only. Therefore, if we had occasion to communicate

with station No. 2, one of us, which one was to be decided by lot, was to steal through the mist and deliver the message personally. If Major Blazes thought that the time elapsing between the feigned transmission of the message from station No. 1 and the receipt of an answer from station No. 2 was unduly long, Second-Lieutenant Butterworth was to explain that conditions were bad. The Major's state of mind after a morning of exposure to the fog was such that he would not be likely to deny this.

It fell to me to deliver the first message. I wrung the hands of my comrades and vanished into the gloom, feeling my way along a hedge that would, I had been assured, lead me at length to my destination. It was depressing work, but caution forbade me to buoy my spirits up with song.

Then I fancied I heard somebody coming to meet me. I stood still and waited. Somebody certainly was approaching. At last I saw him. It was Cadet Green of No. 2 station. He was creeping along the hedge in a furtive manner. Suddenly he saw me and stopped too.

"Where are you going?" I hissed.

"Never you mind," was his evasive reply.

"You needn't try to hide anything," I told him. "We've broken down too."

Then the whole story came out. Having no superior officer with them, station No. 2 had been playing a primitive form of roulette with the tuning dial of their receiver. Stakes had run high, and in the consequent excitement their installation had suffered severely, so severely that any idea of picking up our signals was out of the question. Therefore Cadet Green had volunteered, so he alleged, to carry the first message.

We sat down in the ditch together to decide our future policy.

Suddenly we heard the thudding of feet, and, with a variety of warlike cries, a platoon of B Company materialised from the mist.

It appeared that they had suffered so severely from cold and damp in their defensive position that their commanding officer had ordered them to make a sally to restore circulation. They were looking for our main body, but when they saw us they decided to stop on the way and make us prisoners. We might even have suffered violence at their hands had it not been for the timely arrival of an umpire, who ordered us to take no further part in the action.

So Cadet Green went back to station No. 2 and I to station No. 1. There I was greeted with another tale of disaster. Second-Lieutenant Butterworth had rashly risen to his feet to indulge in a little cabby flapping and drawn the fire of a Lewis-gun section, which had, in defiance of all the rules of the Major's game, given up guarding the bullion in favour of a little skirmishing. I gathered from the Lieutenant that he and his comrades had perished in the resultant hail of lead.

Major Blazes was furious. This unlooked-for aggressiveness on the part of the defenders had upset his plans. The only thing to do was to go home and blame the weather, which we did. So the honour of the Signallers remained unsmirched.

## Ereslau Announcers' Identity Restored

The Breslau station is the first German station definitely to have abandoned anonymity in its announcers. At the beginning of each day's programme the names [of the acting announcers] are stated, with the exact hours when they are on duty. It is understood that all German stations may adopt this procedure, which has lately given announcers more freedom to develop "personality."

## Swiss Programme Plebiscite

DURING April the number of Swiss wireless licences increased by 6,528, the total number for the country on May 1 being 181,790. This is an increase from May 1 last of 68,345. In this connexion it is interesting to study the results just published in the *Schweizer Radio-Illustrierte*, of a plebiscite which the Swiss broadcasting authorities organised. The purpose of this plebiscite was to gauge the listeners' satisfaction or otherwise with the programmes transmitted by the Swiss stations, and in particular the order of preference. The questions asked may perhaps be condensed into an inquiry as to what is the listener's ideal programme.

The voting papers—which were attached to the back of the licence renewals—were sent out at the end of December last, when there were 150,000 licensed listeners in Switzerland. Of these 50,000 were returned. It may thus be claimed that a fairly representative expression of opinion has been obtained. It was generally believed that folk-songs and yodelling would outdistance all other items in popularity. It transpires, however, that accordion and *Ländler* (Swiss national dances) music headed the list, receiving a little less than 25 per cent. (12,115) of the total votes. This was followed closely by the supporters of operettas and light music (11,848 votes). The figures for folk-song (and yodelling) and classical music were very close (8,739 and 7,460 respectively). Modern dance music and radio plays followed. It is curious to note that only fifty-six listeners considered Stock Exchange and Market reports as the most important programme item.

## Letters to the Editor

### "Men, Women, and Wireless"

To the Editor of WORLD-RADIO

SIR,—Seeing that no other woman has criticised R. A. S.'s absurd article on "Men, Women, and Wireless" in your issue of May 20, I feel that I must take up the challenge.

I am rather a nuisance in my own home because I am always searching for fresh foreign stations, and am contemplating making a short-wave set to give me access to fresh fields and pastures new. I have bought both the B.B.C. Stations Panel Book and Calibration Charts, and spend my time listening to faint, unintelligible murmurs in foreign languages. Incidentally, my sister and I made our own charts until we discovered that the B.B.C. published them. I read *World-Radio* with avidity, and my father has to ask me to get foreign stations for him!

Yours, etc.,

A WOMAN WIRELESS "FAN."

Bayswater, May 27, 1932.

### Daylight Reception in East Anglia

To the Editor of WORLD-RADIO

SIR,—My best daylight stations are Brussels No. 1, Brussels No. 2, Paris, Fécamp, Hilversum, Huizen, Kalundborg, and Lille. Of course, I include all the British stations, excepting Cardiff and Cork and Dublin. I notice "Northerner" receives Königs Wusterhausen always in daylight. That is absolutely impossible here in this locality; even though he came over with sufficient pep, Daventry would blot him out; Warsaw also it is impossible to get here in daylight. Radio-Paris is a loud signal, but quality is bad, as is also that of his neighbour, Eiffel Tower. I put the best English stations in order of reception merit thus: London Regional, North Regional, Midland Regional, Daventry, North National, London National. The London National always fades here rather quickly. My set is a three-valve straight circuit Det., and two L.F. stages.

Heckington, May 12, 1932.

NIMROD.

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# Dominion and Foreign Broadcasting Intelligence

## AUSTRIA

(From our Vienna Correspondent)

### The New Vienna Transmitter

The entire cost of the great new station on the Bisamberg, inclusive of the land and all the buildings, will be about £150,000, and the contract term is next Christmas. Last September it was stipulated that all the materials should be on the spot within nine months, and the construction work is to take another six months, so that Ravag may perhaps be using the station for its Christmas programmes. The bulk of the materials is to be of Austrian production and the remainder German. Besides its own roads, the station will need a special water-conduit.

### Vienna's Festival Fortnight

Among the many interesting relays of the Vienna Festival Fortnight in June will be the relay of historical music from Kreuzenstein Castle courtyard. The castle, which is only a few miles from Vienna, has been restored by the present Count Wilczek and his father, so that it presents the appearance of the mediæval castle it once was. This concert will take place on Monday, June 13. The Serenade of the Vienna Philharmonic on the Joseph Square in Vienna will be relayed on the evening of Saturday, June 18. The Monster Military Concert of the united bands of the garrison of Vienna, on the Heroes Square, in which 200 musicians and a choir of 500 soldiers will take part, will be broadcast on Saturday, June 11.

## CZECHOSLOVAKIA

(From a Correspondent)

### Censorship of Comedians

Because a comedian whose witticisms were being relayed from a Prague cabaret this week by the Prague station frequently lapsed into political allusions to the affairs of foreign countries, the "watcher" at the radio station as frequently disconnected him from the public transmission. In future comedians in cabarets, like lecturers and other speakers before microphones, are to submit the text of their wit and humour for censorship before the date of the relayed performance.

### Prague's New Opening Signal

Prague now opens its daily programmes, very early in the morning, with a most realistic cock-crowing, from a record obtained after scores of cocks had been tested as to their capabilities. Those who have listened to it abroad are astonished by its remarkable fidelity. It is timed regularly for 6.15 a.m.

## DENMARK

Licence Statistics

(From our Copenhagen Correspondent)

At the end of the last licence year (March 19, 1932) the number of licensed listeners in Denmark reached a total of 489,411, of which 17,011 are issued free to the blind, to cripples, and to chronic invalids. Denmark has thus reached a percentage of 13.8 licences per hundred inhabitants. The corresponding figures for the year April, 1930—March, 1931, were 449,929, or 12.7 per hundred inhabitants. The indications are that the 'crystal set will disappear. The first licence year in Denmark, April, 1925—March, 1926, disclosed that crystal-set listeners represented about 31 per cent. of the total number of licensed listeners, and these amounted in the following year to about 50 per cent.; but for the years 1928-29, 1929-30, 1930-31, and 1931-32, the figures were, respectively, 31, 21, 14, and 9 per cent.; in the actual total, also, there is a considerable decline. The opinion here is that the majority of listeners begin with

a crystal receiver and later come to prefer a valve-set with a loud speaker.

## FRANCE

"Rallyes Radios"

(From our Paris Correspondent)

The season of Rallyes Radios has just begun. These competitions generally consist in following in a motor-car an itinerary indicated by one of the well-known wireless stations and in correctly noting short passages or titles of gramophone records read through the microphone. There are several control stations where each competitor must present himself within a given time, in addition to arriving at the winning post as quickly as possible. They have achieved a certain amount of popularity, and prizes are frequently given by prominent politicians or by the councils of the various towns on the route. The first important Rallye of this year took place on Sunday, May 29. This was organised by Lille PTT station.

## GERMANY

Cologne-Frankfurt-Stuttgart-Munich Co-operation  
(From our Munich Correspondent)

Just as Berlin, Königsberg, Breslau, and Leipzig have arranged to interchange a number of programmes, and as Stuttgart and Frankfurt have been co-operating for some years, so Munich, Stuttgart, Frankfurt, and Cologne have decided to take regularly morning, noon, afternoon, and late night concerts from one station, the others relaying them. Thus, on one day Munich will supply the concerts for all four stations, on other days Frankfurt or Cologne will originate the broadcast. By this means a great saving has been effected and all stations benefit by the ability to devote more time to the important programme items. In this manner gradually three groups of broadcasters are crystallising in Germany: Berlin with East and Central Germany; West and South; and North (Hamburg).

New Conductor for Berlin Funkstunde

(From a Correspondent)

The Berlin Funkstunde have appointed Generalmusikdirektor Eugen Jochum, hitherto conductor of the Municipal Orchestra, Duisburg, Rhineland, Director of Music for the Berlin Funkstunde. The Funkstunde came to this decision as they found that the practice of inviting important conductors for their big symphony concerts was becoming too expensive, but, on the other hand, they wanted the permanent conductor to be a well-known man.

Famous conductors will be invited from time to time as hitherto, but less frequently. Herr Jochum is a young man who found success very early in his career. He belongs to the Furtwängler school, and recently conducted a big symphony concert in Berlin. Herr Jochum starts work in Berlin on August 1 next.

## U.S.A.

(From our Chicago Correspondent)

### Church Broadcast Record

The People's Church of Chicago is celebrating its eighth year "on the air." Only one other church in the United States has been "on the air" as long a time.

### Daily Baseball Relays

Now that the baseball season is in full swing, nine out of sixteen stations in Chicago broadcast the games each afternoon. When either of the two Chicago teams plays at its home park the game is broadcast direct from the playing field. In the event of both teams being engaged out of town, the games are relayed over a special wire.

### Stricter Frequency Requirements

Two-thirds of the broadcasting stations have now installed frequency control equipment that is capable of maintaining the operating frequency within 50 cycles of the frequency assigned, in conformity with a new ruling, which will come into effect on June 22. Hitherto stations have been allowed a latitude of 500 cycles. This has caused numerous common-wave stations to be troubled with whistles and heterodynes. The new regulation is designed to eliminate such trouble, and to increase the service area of stations which have heretofore suffered from interference.

(From our Washington Correspondent)

### Novel Sounds Broadcast

The sounds produced by scientific experiment on common objects are now being broadcast for the first time in the Saturday night programmes of the Columbia Broadcasting System. The series is conducted by Dr. E. E. Free and Professor Albert Sheppard, of New York University. Freak "music" is made as tiny specks crash, flying neutrons splutter, and radium "talks." One experiment consisted of broadcasting the "sound" of Venus, shining 60,000,000 miles away. It was done by pointing a telescope at the planet. Near the eye-piece a photo-electric cell caught the light rays and transformed them into electricity. This was converted into sound and sent through the microphone. The light impulses from Venus became a high-pitched moan, almost like a violin tone. Another transmission was of sounds caused by light reflected from various colours. On yet another occasion Professor Sheppard broadcast sounds made by freezing such objects as a rose-bud, a feather, an ink bottle, a pound of raw beef, and rubber bands, in temperatures from 200 to 300 degrees below zero Fahrenheit. Dipping the objects one by one into a flask of liquid air, Professor Sheppard then crushed them with his gloved hands or struck them with a hammer.

### Columbia Broadcasting System and WJSV

Announcement has just been made of important changes in the arrangements of Washington's broadcasting stations. These are important, as Washington is the centre of many nation-wide broadcasts of a national and political character. As from June 1 the Columbia Broadcasting System takes over station WJSV, now at Mount Vernon Hills, Va., a 10 kW. station which is one of the most powerful in the East. The Columbia Broadcasting System has applied to the Federal Radio Commission for permission to move the station to a site much nearer Washington. WJSV will now become an important outlet for Columbia network programmes. Its present station in Washington, WMAL, may be taken over in the near future by the National Broadcasting Company. In this event the NBC will operate two broadcasting stations in this city, and Washington will receive all NBC network programmes coming over both their "Red" and "Blue" network systems. The NBC at present owns and operates station WRC in Washington.

### New WGY Transmitter

(From a Correspondent)

A new 50 kW. transmitter, just installed at WGY Station, Schenectady, New York, was brought into operation on May 19 last, and was officially inaugurated in a novel manner. A beam of light from an airship, high over the town of Schenectady, was used to actuate apparatus which turned off the old transmitter and switched on the new. The ceremony was broadcast, and relayed over a coast-to-coast network.

# TECHNICAL SECTION

## Demodulation by the Detector

THE phenomenon of demodulation of interfering signals by a detector is now well known, but misconceptions concerning this effect are still prevalent.

It has been observed experimentally that if two signals, one of which is much stronger than the other, are applied simultaneously to a linear detector, the rectified output from the weaker signal is very much reduced by the presence of the stronger signal, so that if the source of the latter signal is removed, the rectified output from the former is immediately increased very considerably. This effect is not observed when using a square-law detector. In this case the rectified output from each signal is independent of the presence of the other signal and is unaffected by its value.

It has been generally concluded, therefore, that a receiver embodying a diode or a power-grid detector arranged to give straightline rectification will, in addition to providing better quality, be considerably less subject to interference from the local station than a receiver using anode-bend rectification with its square-law characteristics. As a matter of fact, there is usually little to choose between them.

The damping transferred by a grid-leak detector on to the preceding tuned circuit will in itself reduce selectivity, and the fact that greater difficulty exists in obtaining smooth reaction with a power-grid detector than with the anode-bend arrangement also tends to throw the bias in favour of the latter circuit. Apart from these two facts, however, there are further effects linked up with the process of detection which when thoroughly understood explain why the power-grid detector is not the aid to selectivity that one might suppose it to be.

One aspect of the case has recently been outlined in this journal by F. M. Colebrook, and the reason for the similarity of the results obtained by either mode of detection is made clear. There has also been published in the *Wireless Engineer* the results of some experiments by E. V. Appleton and D. Boohariwalla which confirm in a very satisfactory manner a part of the theoretical analysis which is given below. Both of the above publications, however, ignore the effect which may occur in the detector due to the frequency separation of two interfering transmissions; an effect which may considerably reduce that due to demodulation.

### Diode Detection

Consider, for example, a diode detector which receives simultaneously two modulated signals of small frequency difference, one of which is considerably stronger than the other. The weaker signal, acting alone, may be sufficiently strong to operate the rectifier on the straight portion of the characteristic. In the presence of the stronger signal, however, the demodulation effect produces conditions which, to the weaker signal, resemble anode-bend rectification. If the strength of the weaker signal is halved, the percentage modulation remaining the same, the rectified output from this signal is reduced to one quarter in the case of either the linear or the square-law detector. If the intensity of the stronger signal is doubled, then the rectified output of the stronger signal in the diode detector is doubled and the output due to the weaker signal is halved. In the case of the anode-bend detector a doubling of the stronger input signal results in a four-

fold increase in the rectified output due to this signal, leaving that due to the weaker signal unchanged. In both cases, therefore, a doubling of the stronger signal results in a four-fold decrease in the relative interference, the only difference being that with the anode-bend detector a two-fold increase in sensitivity results.

### Grid-leak Detection

These are the conditions holding when the grid-leak detector is exhibiting the demodulation effect. This phenomenon is, however, by no means universal. It only occurs when conditions are such that the output load of the rectifier is high at the beat frequency of the two interfering stations; i.e., if, in a grid-leak detector the grid coupling condenser has a high impedance at the beat frequency as com-

structive, and gives an insight into the true value of the demodulation effect.

Let us assume that two transmissions, with a frequency difference  $\frac{\omega}{2\pi}$ , produce on the grid of the detector signals the amplitudes of which are  $V_1$  and  $V_2$ , respectively, of which  $V_1$  is the greater and  $V_2$  is regarded as unwanted interference. Assume also for the moment that neither signal is modulated.

The combination of the two signals will produce a result equivalent to a modulated wave of frequency intermediate between the two transmissions whose envelope (i.e., modulation) is given by the expression

$$(V_1^2 + V_2^2 + 2V_1V_2 \cos \omega t)^{1/2} = V_0$$

Let the rectified current produced by the signal  $V_0$  be  $I_0$  and let us equate all proportionality factors to unity so that we may write simply, in the case of a linear detector,  $I_0 = V_0$ , and for a square-law detector,  $I_0 = V_0^2$ .

In order to determine the ratio of wanted to unwanted signals existing in the detector output  $I_0$ , we must investigate the manner in which  $I_0$  varies with change of  $V_1$  and  $V_2$ , i.e., with modulation. Moreover, it is obvious from the type of expression for  $V_0$  in terms of  $V_1$  and  $V_2$  that true linear rectification will not be produced from either transmission. Distortion will exist and harmonics be produced for high values of modulation, so that to avoid confusion or errors we must consider the change of  $I_0$  due to very small changes of  $V_1$  or  $V_2$ . Mathematically this becomes a matter of partial differentiation.

The rate of change of  $I_0$  with variation of  $V_1$  will in effect measure the sensitivity of the rectifier to the wanted signal under the actual working conditions. The actual rectified low-frequency output due to the modulation of  $V_1$  will be proportional to the sensitivity of the rectifier, and to the maximum change of  $V_1$  during the modulation cycle (i.e., to  $kV_1$  where  $k$  is the fractional modulation). If  $I_1$  is the low-frequency output of the rectifier due to modulation of the signal  $V_1$ , then

$$I_1 = kV_1 \frac{\partial I_0}{\partial V_1} \quad (V_2 \text{ constant})$$

and similarly if  $I_2$  is the low frequency output of the rectifier due to modulation of the signal  $V_2$ , then

$$I_2 = kV_2 \frac{\partial I_0}{\partial V_2} \quad (V_1 \text{ constant})$$

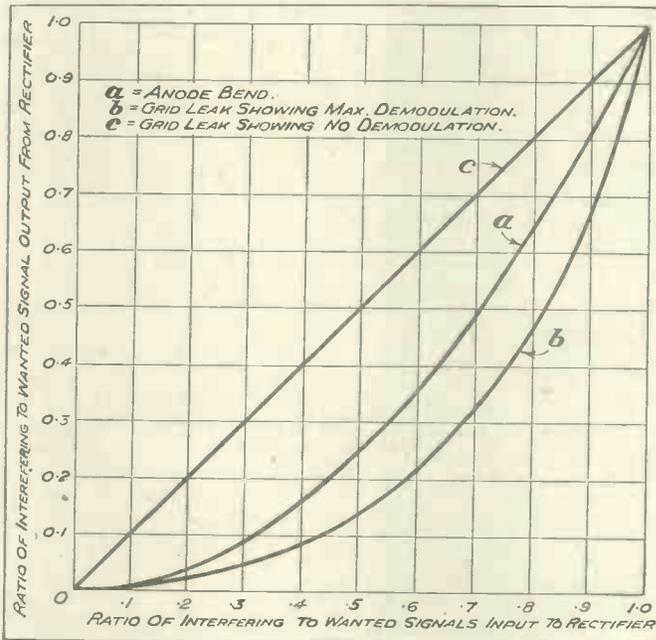
The ratio of unwanted to wanted signal is therefore given by the expression

$$V_2 \frac{\partial I_0}{\partial V_2} / V_1 \frac{\partial I_0}{\partial V_1}$$

and we will denote this quantity by  $S$  to represent the selectivity coefficient of the detector.

The value of  $S$  will obviously depend on the type of detector used, and we will consider the results obtained for the three cases of square law, rectification, and linear rectification with a

(Continued on page 1105)



Graph illustrating relative interference with various types of detector

pared with the grid-leak so that it does not tend to by-pass the beat frequency produced by rectification. It is common practice to find that the grid-leak and condenser values of the detector are so chosen that appreciable loss of the very high audio frequencies occurs, giving some freedom from the 9 kc/s. heterodyne note. It will be shown, however, that any tendency to reduced output by the detector of this frequency is inevitably accompanied by a decrease in the demodulation effect and an increase in the general interference level.

When the frequency difference between the two interfering stations is supersonic the demodulation effect will disappear entirely, and the power-grid detector will be much inferior to the anode-bend method from the interference point of view.

An interfering signal with an intensity of 1/10th that of the wanted signal will produce modulation, the intensity of which is also 1/10th that of the desired station, whereas with an anode-bend detector the interference will only have an amplitude equal to 1/100th of the wanted programme.

A mathematical analysis of the effects of detection in the two types of rectifiers is in-

# Broadcasting House

## 8.—The Studios

(Continued from page 1053, May 27)

REFERENCE has already been made to the desirability of employing, for the erection of broadcasting studios, methods of construction which ensure absolutely rigid floors, walls and ceilings. Unfortunately, practical limitations occur. Although modern building construction renders the erection of a building such as Broadcasting House possible, it is not of such a nature as to make practicable the provision of such ideally rigid partitions as have been described, owing to their excessive weight and cost.

In Broadcasting House, whilst the outer walls

floors are comparatively rigid, but the ceilings of the studios, as well as of the listening and silence rooms, are of the suspended type, the space between the ceiling and the floor above being largely occupied by ventilating ducts, etc.

Prior to the decoration of any of the studios, certain studios were subjected to experimental temporary acoustic treatment with building board equivalent to the proposed final treatment, and frequency-reverberation curves were taken. A typical result is shown in Fig. 4 (a). At intermediate frequencies the reverberation time was of the optimum value for which the treatment had been calculated. As will be seen from the curve, however, at the lower frequencies a very considerable increase of reverberation time occurred, resulting in an unpleasant "boom." It was immediately realised that partition resonance in the walls, ceilings, or both, was responsible. Experiments were conducted to find the exact cause, and it was found that the trouble was very largely due to the ceilings, the mechanical damping associated with the wall resonance being of such a nature as to decrease rather than increase the reverberation time of a fairly large studio.

The method finally adopted to improve the characteristics of the studios is interesting. The provision of completely rigid suspended ceilings was impossible, but clearly an improvement could be attained by introducing, by some means, mechanical damping into the system forming the ceiling. This was accomplished by cutting a slot about two inches wide round the ceiling at the point of its junction with the walls and, in addition, dividing it into approximately rectangular portions of the order of six to eight feet in dimensions by cutting cross slots in a similar way.

The actual dimensions of the individual sections varied, of course, in accordance with the size and shape of the different studios, and each section was still supported by

board and felt. The result of this treatment is shown in Fig. 4 (b), which is a typical frequency-reverberation curve for a treated studio after the special ceiling treatment.

It will be seen that the resulting curve is of a nature to satisfy the requirements laid down earlier in this article. Actually, resonance is still present to a limited degree, but sufficiently damped to render its undesirable properties negligible. In order that the decorative properties of the studio should not suffer, the procedure was adopted of sticking tightly-stretched canvas over the packed slots, over which the normal ceiling decoration has been carried out.

Studios 8A and 8B and the Concert Hall were not structurally complete when the investigation just described was carried out, and the nature of the substance of the ceilings of these studios was modified so as to possess



(Architect for the interior—Serge Ohermayeff.)

Studio 8A—Military Band and orchestra

of the studio tower have been constructed of thick brickwork of almost ideal rigidity, the internal partitions, forming many of the actual studio walls, are composed of a double layer of Aerocrete blocks tied together at intervals, the air space between being packed with eel-grass to reduce sound transmission. These walls have been found to vibrate to a small extent, particularly at the lower audible frequencies. The

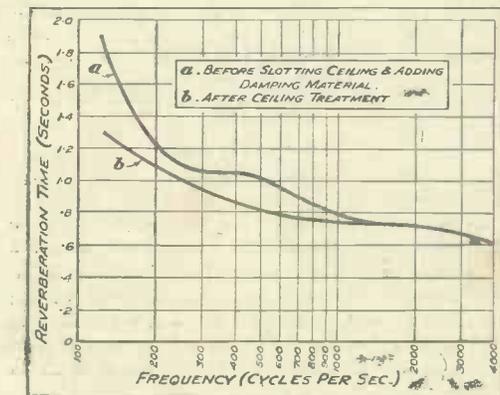


Fig. 4.—Frequency-reverberation curves

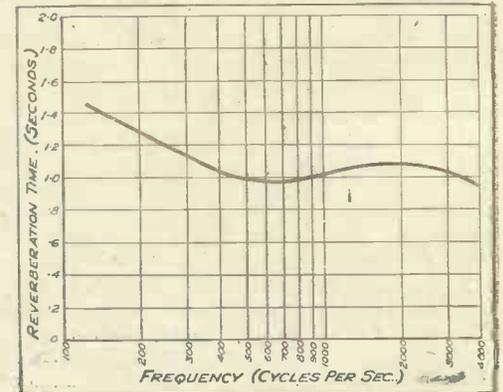


Fig. 5.—Frequency-reverberation curve for studio 8A

sufficient mechanical damping in itself. Here again the final result is satisfactory, and the resulting reverberation curves are similar to those to which reference has just been made. The reverberation-frequency characteristic of Studio 8A in its completed form is shown in Fig. 5.

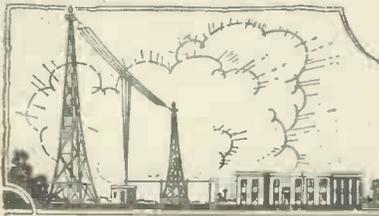
This section would not be complete without some statement as to the reverberation times at an intermediate frequency, say between 500 and 1,000 cycles per second, of the various studios in Broadcasting House. These are shown in the table below, the principal use of each studio being also indicated:

The acoustical treatment and general properties of the various studios having now been described, the reader will probably ask what improvement will be attained in the general effect compared with that associated with the older studios at Savoy Hill. The complete answer to such a question can only be given in the light of future experience, but the anticipated

Studio	Principal Use	Reverberation Time.	Approx. Dimensions			Volume
			Length	Width	Height	
BA .. ..	Vaudeville, Light Musical programmes	1.1 secs.	44	36	19	30,000
BB .. ..	Octets, Chamber Music, Recitals ..	0.85 secs.	29	18	19	10,000
Concert Hall	Orchestral and Band Performances ..	1.75 secs.	106	42	31	125,000
3A .. ..	Children's Hour and Dance Band ..	0.6 secs.	35	15	19	10,000
3B .. ..	Talks .. .. .	0.35 secs.	15	11	9	1,500
3C .. ..	Talks .. .. .	Dead	15	11	9	1,500
3D .. ..	Talks .. .. .	0.35 secs.	15	11	9	1,500
3E .. ..	Religious broadcasts .. .. .	0.8 secs.	21	18	19	7,000
4A and 4B ..	News .. .. .	Dead	12	7	8	670
6A .. ..	Large productions studio .. .. .	0.85 secs.	36	16	18	10,000
6B and 7B ..	Speech in plays and piano music ..	0.6 secs.	19	19	9	3,200
6C and 7C ..	Speech in plays .. .. .	Dead	19	19	9	3,200
6D .. ..	Effects .. .. .	Dead.	23	19	19	8,300
7D .. ..	.. .. .	—	13	12	9	1,400
6E and 7E ..	Gramophone effects .. .. .	Untreated	12	8	9	860
7A .. ..	Speech in plays .. .. .	Dead	13	13	9	1,500
8A .. ..	Orchestral and Band music .. .. .	1.1 secs.	51	33	16	27,000
8B .. ..	Debates and discussions .. .. .	0.45 secs.	16	13	10	2,100

the teak hangers connecting it with the floor above. The damping was then introduced by packing the slots tightly with strips of building

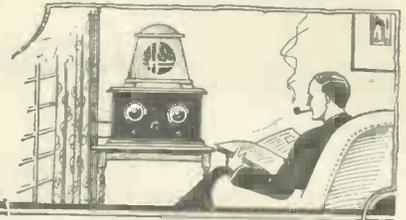
results on the basis of experience gained elsewhere than in Broadcasting House are as follows: (Continued at foot of column 2, page 1105)



# The Elements of Wireless

(Part 17)

By RALPH STRANGER and E. REDPATH



## ALGEBRA (continued)

In algebra, multiplication and division of equal quantities has a special notation. Thus:—

$$\begin{aligned} a \times a &\text{ is denoted as } a^2 \\ a \times a \times a &\text{ ,, ,, ,, } a^3 \\ a \times a \times a \times a &\text{ ,, ,, ,, } a^4 \\ a \times a \times a \times a \times a &\text{ ,, ,, ,, } a^5 \text{ etc.} \end{aligned}$$

The small figure on the right is called the *power index* of the number.

$\frac{1}{a \times a}$  can be denoted as  $\frac{1}{a^2}$  and is usually denoted as  $a^{-2}$ , the - showing that a is in the denominator. Similarly:—

$$\begin{aligned} \frac{1}{a^3} &= a^{-3} \\ \frac{1}{a^4} &= a^{-4} \\ \frac{1}{a^5} &= a^{-5} \end{aligned}$$

Thus if you come across an equation  $x=10^{-3}$  it merely means that  $x = \frac{1}{10 \times 10 \times 10}$  or  $\frac{1}{1000}$ . You will notice that it is much quicker to put down  $10^{-6}$  than  $\frac{1}{1,000,000}$ .

Please note that:—

$$\begin{aligned} a^2 + a^2 &= 2a^2 \text{ and} \\ a^2 \times a^2 &= a \times a \times a \times a = a^4 \end{aligned}$$

You can arrive at this latter result simply by adding the indices:—

$$a^7 \times a^5 = a^{12}$$

$$a^{15} \times a^{21} = a^{36}; \quad a^n \times a^m = a^{n+m}$$

Therefore, in multiplication we add the indices.

In the case of

$$\frac{a^7}{a^5} = \frac{a \times a \times a \times a \times a \times a \times a}{a \times a \times a \times a \times a}$$

$$= \frac{a}{a} \times \frac{a}{a} \times \frac{a}{a} \times \frac{a}{a} \times \frac{a}{a} \times a = a^2,$$

$$\text{as } \frac{a}{a} = 1 \text{ and } 1 \times 1 = 1.$$

For this reason, in division we subtract indices:—

$$\frac{a^{12}}{a^5} = a^7; \quad \frac{a^{15}}{a^7} = a^8; \quad \frac{a^n}{a^m} = a^{n-m}$$

### Positive and Negative Quantities

When multiplying two positive quantities we obtain a positive result:  $a \times a = a^2$  (the plus sign is usually omitted before a single positive quantity).

In multiplying two negative quantities we obtain a positive result:  $(-a)(-a) = a^2$

In multiplying a positive quantity by a negative quantity we obtain a negative result:  $a(-a) = -a^2$ . Please remember this.

There is nothing very mysterious in positive and negative quantities: they mean merely opposite things. If you move to the right two yards and then move to the left one yard you should express this as  $2-1=1$ . The actual result of your movement is certainly one yard to the right, but if you simply put down 1 you fail to describe the entire performance of your movement.

A few useful algebraical formulæ:—

$$\begin{aligned} (a+b)^2 &= (a+b)(a+b) = a \times a + b \times a + a \times b \\ &+ b \times b = a^2 + ab + ab + b^2 = a^2 + 2ab + b^2. \end{aligned}$$

The 2 in front of  $ab$  is called the co-efficient of  $ab$ . Thus we can remember that  $(a+b)^2 = a^2 + 2ab + b^2$ .

Similarly:—

$$\begin{aligned} (a-b)^2 &= (a-b)(a-b) = a \times a - a \times b - a \times b \\ &+ b \times b = a^2 - ab - ab + b^2 = a^2 - 2ab + b^2, \\ \text{or } (a-b)^2 &= a^2 - 2ab + b^2. \end{aligned}$$

Again:—

$$\begin{aligned} (a-b)(a+b) &= a \times a - b \times a + b \times a - b \times b = \\ &a^2 - ab + ab - b^2. \end{aligned}$$

If we take  $ab$  from  $ab$  the result is zero just as  $2-2=0$ , therefore:—

$$(a-b)(a+b) = a^2 - b^2.$$

Another symbol that is often met with in algebra is the so-called "root":  $\sqrt{\quad}$ . Very often you have to find out how a number is made up. Thus, we may say to ourselves what number has to be multiplied by itself in order to obtain 9? This is expressed as follows:—

$$\sqrt{9} = x.$$

(We use the letters  $x, y$  and  $z$  for unknown quantities, i.e. the quantities we wish to determine).

In this case,  $x$  is obviously 3.

In other words:—

$$\sqrt{9} = \sqrt{3 \times 3} = \sqrt{3^2} = 3^{2/2} = 3.$$

This shows that in order to determine the root of a number we have to divide the power index of the number under the root by the index of the root.

$$\sqrt[3]{a^9} = a^{9/3} = a^3$$

$$\sqrt[5]{a^{25}} = a^{25/5} = a^5$$

$\sqrt{\quad}$  is usually written without the 2, i.e., simply as  $\sqrt{\quad}$ , while other root indices are always shown. If we extract a root from both sides of an equation the equation is not altered:—

If  $a^6 = c^8$  we can write:  $\sqrt{a^6} = \sqrt{c^8}$  or  $a^{6/2} = c^{8/2}$  or  $a^3 = c^4$ .

This is useful in such expressions as:—

$$a^2 = 6$$

We want to find the value of  $a$ .

Knowing that  $\sqrt{a^2} = \sqrt{6}$ , we can write  $a^{2/2} = \sqrt{6}$  or,  $a = \sqrt{6}$ , and then find the value of  $\sqrt{6}$  from mathematical tables.

Similarly, if we have  $a^3 = 27$  we can write:—

$$\sqrt[3]{a^3} = \sqrt[3]{27}$$

$$a^{3/3} = \sqrt[3]{27}$$

$$a = \sqrt[3]{27} = \sqrt[3]{3 \times 3 \times 3} = \sqrt[3]{3^3} = 3^{3/3} = 3, \text{ or } a = 3.$$

As you see, algebra, as far as we have gone, is not very complicated. You will often come across the equations discussed in this article while reading technical books. It is well worth while, therefore, to study the subject, and if you have not done any algebra before, the purchase of an elementary text-book on the subject is indicated.

### INDUCTANCE COILS (continued)

When an alternating current flows in an inductance coil which is electro-magnetically coupled to a second coil, the magnitude of the effect produced in the latter depends upon the degree of *coupling* between the coils. Therefore, by the provision of suitable mechanical means of varying the coupling, it is possible to control the transfer of energy from one coil (the primary) to the other (the secondary).

The accompanying diagram (Fig. 51) illus-

trates several methods of varying the coupling between two inductance coils; the essential being that the number of linkages is varied by mechanical movement of one coil (either coil may be moved) relative to the other.

### Variable Couplings

In Fig. 51a, the primary coil P may be moved along its axis to the position indicated at  $P_1$ , or it may be moved laterally to either of the two positions indicated at  $P_2$ . In Fig. 51b an arrangement is shown in which the primary coil P is fixed, and the secondary coil (carried upon an arm or bracket pivoted below P) may occupy a position immediately behind it (tight coupling); or may be swung to the right or left into either of the positions marked S or  $S_1$  (loose coupling). Still another alternative is illustrated at Fig. 51c, in which the secondary coil is fixed and the primary coil P is capable of rotation about a vertical axis. A rotation through 90 degrees varies the coupling from a maximum at P to a minimum at  $P_1$ .

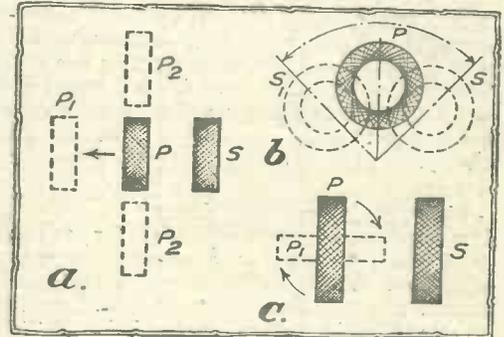


Fig. 51

As mentioned in the previous article, mutual induction between any two coils connected in series affects their total effective inductance. Similarly any variation of coupling between two coils varies the effective inductance of each of them, whether they are connected in series or not, and it is this unavoidable effect which causes quite an appreciable alteration in the tuning of many valve receiving sets when the coupling of the reaction coil is varied—a point which may have puzzled some listeners.

The effect in question, most noticeable in receiving sets in which the reaction coil is actually moved mechanically with regard to the particular tuning coil with which it is associated, may sometimes necessitate a considerable alteration of the tuning adjustment (condenser dial), which is due entirely to the change in inductance value of the tuning coil caused by alteration in the mutual induction between it and the reaction coil. Any change in inductance value causes a change in the wavelength to which the circuit comprising the tuning coil and condenser is tuned—as will be explained later.

### Iron-core Inductances

So far, the types of inductance coils dealt with have had no "cores" other than air. The introduction of a core of magnetic material (say of soft iron) will, by reason of its much greater permeability, result in a concentration of the lines of force set up about the coil when a current flows through it. In addition, the iron will become magnetised and will set up a magnetic field of its own, the net result being a

(Continued at foot of column 3, page 1104)

# Traders' Bulletin

No. 41.—Broadcasting House—Scottish Regional Transmitter

**T**HE change over from Savoy Hill to Broadcasting House has been completed, and practically all the new studios have now been used for transmission. It is thought, therefore, that some brief review of the Broadcasting House studios might be of interest to traders.

## The Concert Hall

Some misapprehension appears to exist in certain quarters concerning the Concert Hall at Broadcasting House. It was never anticipated that the Concert Hall would be large enough to take the full B.B.C. Orchestra (117 performers) in addition to an audience of 700 persons, but the floor area, with a certain amount of the removable seating taken out, is sufficient even for an orchestra of this size. Tests have been carried out with Section B of the Orchestra (80 performers) playing in the Concert Hall, and extremely satisfactory reproduction was obtained.

There is, of course, plenty of room on the stage and in the well of the Concert Hall for large combinations of this size. There will be practically no variation in the reverberation time of the Concert Hall when an audience is present, as compared with the reverberation when no audience is present, as the seats have been designed to have approximately the same absorption when empty as they will have when occupied. No organ has yet been installed in the Concert Hall, but one will be installed shortly.

## Military Band Studio

The studio primarily designed for military band transmissions has a volume of 27,000 cubic feet. Traders will probably already have noticed the pleasing effect of the acoustics in recent military band transmissions. This studio has also been used for medium-size orchestras, and for certain types of musical comedy programme.

## Vaudeville Studios

The principal vaudeville studio is in the sub-basement, and has been in general use for two or three weeks. Photographs of this studio have appeared in this and other journals, and these show that it has been designed in the form of a small theatre with a stage. The effect of vaudeville transmissions from this studio is very satisfactory, and although they give somewhat the impression of an outside broadcast from a theatre, the general atmosphere is pleasing.

It will be realised that the acoustics of such studios have to be a compromise between a relatively long reverberation time for the satisfactory reproduction of the musical items in a vaudeville programme, and a fairly short reverberation time for cross-talk or patter comedians. Suitable microphone technique, however, enables this difficulty to be overcome.

## Talks and Dramatic Studios

There are numerous talks studios in Broadcasting House, some of which are primarily intended for plays, some for general talks, and one for discussions and debates. Two types of acoustic treatment have been adopted for these studios: some have a low reverberation period, while the others have been treated with sound-absorbing wool, and are dead—i.e., there is no reverberation. The object of a dead studio for talks is to provide the intimate impression of the speaker being present in the listener's own room, which, it must be remembered, has a reverbera-

tion period of its own that becomes added to any reverberation that there may be in the studio. Having two types of studios, therefore, a different effect can be given to different types of talks.

\* \* \*

The Broadcasting House studios have definitely been designed to have considerably longer reverberation times than was possible in the old studios at Savoy Hill. Reproduction from Broadcasting House, therefore, is noticeably more "lively" than it was from Savoy Hill, and the results which are obtained have even been better than was anticipated.

The equipment in the control room is now all installed and is working well. This will be described in some considerable detail in the series of articles entitled "Broadcasting House," which are appearing in this journal, and need not, therefore, be repeated here.

## The Scottish Regional Transmitter

Except for requests for the pamphlet entitled "Receiving the Scottish Regional Transmitter," only a few hundred letters were received resulting from the radiation of public reception test transmissions outside programme hours. The following is a rough analysis of the correspondence so far received on a percentage basis:—

Receiving the Scottish Regional transmitter satisfactorily ..	46.0 per cent.
Unable to obtain satisfactory reception .. .. .	6.4 " "
Experiencing difficulty in receiving other stations ..	5.7 " "
Concerning the quality of reception .. .. .	0.2 " "
Requests to visit the station ..	1.0 " "
Enquiries about the future of Aberdeen .. .. .	1.0 " "
Reports from outside the service area .. .. .	35.7 " "
Miscellaneous .. .. .	4.0 " "
	100.0 per cent.

It will be noticed that a high percentage of this correspondence is from listeners who are obtaining perfectly satisfactory reception of the new transmitter. The letters from outside the service area, i.e., from listeners resident more than eighty miles from Falkirk, are reception reports, some of which are satisfactory and some are unsatisfactory. It is, of course, anticipated that some serious fading will occur after night-fall outside this range, although the average level of signal strength will be very much higher than was obtainable from any of the old transmitters which are now being replaced.

As there was no indication from the correspondence received that listeners within range were having any difficulty in receiving the new station, the tests were extended on May 23. The whole of the morning transmissions up to the end of the lunch-time programme, and the late dance music, is now radiated by the new transmitter instead of by Edinburgh, Glasgow and Dundee. These tests will be continued for about another fortnight or three weeks, and if the correspondence from listeners generally remains favourable, the full service will be transferred to the new station and the Edinburgh, Glasgow and Dundee transmitters will be withdrawn. The service supplied by the Scottish Regional transmitter will at first be of a composite nature, consisting partly of items of Scottish origin and partly of items from the National programme.

In the course of two or three months the Scottish National transmitter will be introduced, and the same fade-in principle will be

adopted as was used for the Scottish Regional transmitter. Before this is done, however, a change will be made in the wavelengths of Newcastle and Aberdeen, so that they will have more programme flexibility, and will not have their service areas reduced by the strong signals from the Scottish National transmitter on 288.5 metres.

In approximately a fortnight, therefore, a low-power transmitter, situated in Aberdeen and working on 214.3 metres, will commence to relay the same programme as the present Aberdeen transmitter, while about a week later a similar low-power transmitter in Newcastle, working on 211.3 metres, will commence to radiate the same programme as the present Newcastle transmitter. This is to enable listeners to ascertain whether their receivers will tune on to the shorter wavelengths.

The Aberdeen and Newcastle transmitters will shortly after this be temporarily withdrawn from service so that they may be adjusted to give the most satisfactory performance on the new and shorter wavelengths. They will then be placed back into service on their new wavelengths, and the low-power transmitters will be shut down. The object of using these temporary low-power transmitters is to provide continuity of the service in Aberdeen and Newcastle while the two main transmitters are being modified to transmit on their new wavelengths.

Listeners in Aberdeen and Newcastle are reminded that while the low-power transmitters will maintain an unbroken service during the alterations to the main transmitters, the strength of the transmission during this short period will be definitely less due to the lower power, and, therefore, listeners are asked to reserve any criticisms concerning strength of reception until they have received the transmissions from the main transmitters after alteration to the lower wavelengths.

It is hoped that it will be possible to make arrangements for Scottish traders, who wish to do so, to see over the Scottish Regional station when it is entirely completed and radiating a full dual programme service.

## THE ELEMENTS OF WIRELESS

(Continued from page 1103)

much more intense total magnetic field and, consequently, the inductance of the coil will be greatly increased. The primary windings of low-frequency transformers, and what are known as *low-frequency iron-core chokes*, are typical examples, the particular functions of which will be made clear in subsequent articles.

Coils intended for use in circuits through which high-frequency currents will flow are of relatively low inductance values and have only air cores. They will, therefore, offer little opposition to the flow of alternating currents of either high or low frequencies. Air-core coils consisting of a large number of turns—usually of fine wire—designed to pass low-frequency currents but to prevent the flow of high-frequency currents, are used in certain cases and are known as *high-frequency chokes*. Iron-core inductance coils, on the other hand, usually possess such high inductive values that they prevent completely the flow of high-frequency currents, and may offer very considerable opposition to low-frequency currents, or to rapid changes in strength (amplitude) of direct currents. This choking effect gives rise to the name *choke coils*, and, in the case of a highly inductive iron-core choke connected in a direct-current power supply as a means of smoothing or filtering out fluctuations or "ripples" in the supply, the names *smoothing choke*, and *filter choke* are frequently applied.

(To be continued)

DEMODULATION BY THE DETECTOR

(Continued from page 1101)

rectifier load which may be either a high or a low value at the interference frequency:—

(1) *Anode bend detection.* The rectification characteristic of this type of rectifier is  $I_o = V_o^2$

$$i.e., I_o = V_1^2 + V_2^2 + 2V_1 V_2 \cos \omega t$$

Omitting the last term, which represents carrier wave and sideband heterodyning, we obtain the expressions

$$I_1 = 2k V_1^2 \text{ and}$$

$$I_2 = 2k V_2^2$$

$$\therefore S = \frac{I_2}{I_1} = \frac{V_2^2}{V_1^2}$$

This relation is drawn as curve (a) in the figure.

(2) *Power grid rectification.* With a high value of rectifier load in the grid circuit at the beat frequency, i.e., with small values of grid leak and coupling condenser, the relative characteristic for this type of detector is

$$I_o = V_o = (V_1^2 + V_2^2 + 2V_1 V_2 \cos \omega t)^{1/2}$$

Now in this expression, owing to the presence of the square root sign, we cannot simply omit the term  $\cos \omega t$ . To remove the heterodyne term from our analysis, we must average the value of  $V_o$  over a complete cycle of the heterodyne note, i.e., for a time  $t = \frac{2\pi}{\omega} = T$ ,

$$\text{and write } I_o = V_o = \frac{1}{T} \int_0^T (V_1^2 + V_2^2 + 2V_1 V_2 \cos \omega t)^{1/2} dt$$

This expression is a difficult one to handle mathematically, but for the present case approximations may be made which will be sufficiently accurate.

When  $V_2$  is small compared with  $V_1$ , the expression is very nearly

$$I_o = V_1 + \frac{V_2^2}{4V_1}$$

tending, however, when  $V_2 = V_1$ , to the actual value  $V_1 \times 1.27$  instead of  $V_1 \times 1.25$ , as given by the approximate formula. From this equation we obtain the results

$$I_1 = kV_1 \times \left( I - \frac{V_2^2}{4V_1^2} \right)$$

$$\text{and } I_2 = kV_2 \times \frac{V_2}{2V_1}$$

showing that the demodulation is mutual.

The interference ratio is given by

$$S = \frac{I_2}{I_1} = \frac{\frac{2V_2^2}{V_1^2}}{4 - \frac{V_2^2}{V_1^2}}$$

for small values of  $\frac{V_2}{V_1}$ .

When  $V_1 = V_2$  the detector is, of course, unable to discriminate between the wanted and the interfering system and the interference ratio is

unity. For other values of the ratio  $\frac{V_2}{V_1}$  the

author has evaluated S by somewhat laborious means, and the result is shown in curve (b) of the graph on page 1101.

(3) *Linear rectification* with supersonic heterodyne, so that the rectifier load is low at the heterodyne frequency. In this case the effective signal applied to the detector is still modulated by the term

$$V_o = (V_1^2 + V_2^2 + 2V_1 V_2 \cos \omega t)^{1/2}$$

The modulation frequency  $\frac{\omega}{2\pi}$  is now, however, supersonic, so that the charge on the grid condenser, if grid leak or diode rectification is used, is unable to follow the modulation, and becomes permanently charged to the maximum value of the input signal so long as  $V_1$  and  $V_2$  are constant. There is no heterodyne output, and the expression for the rectifier output becomes

$$I_o = \sqrt{V_1^2 + V_2^2 + 2V_1 V_2} = V_1 + V_2$$

which is true linear rectification.

We obtain  $I_1 = kV_1$

$$I_2 = kV_2$$

$$\text{and } S = \frac{V_2}{V_1}$$

This relationship is shown on curve (c) of the accompanying graph.

From an examination of the curves we can see at a glance that a linear detector may give us somewhat less interference than the square law type, but that it is also capable of giving considerably more.

In the case of reception of the local station which is interfered with by a foreign transmission on an adjacent channel, the power grid detector arranged for linear rectification, or better still, the diode, will probably give a lower interference level than the anode bend detector. Full demodulation, however, will not be obtained unless the grid leak and the grid condenser of the detector are made sufficiently small.

When another type of interference is experienced and the local station persists in jamming other transmissions separated by some tens of kilocycles, or when, with an inefficient receiver, the National and Regional programmes mutually interfere, then the supposed demodulation effect of the power grid detector is non-existent and less interference should be experienced when using the anode-bend type of rectifier.

No consideration has been given to quality of reproduction of the various rectifiers. It is undeniably true that a linear rectifier gives the best quality, even in the presence of interference. It does not, however, provide any appreciable help towards the reduction of interference.

C. H. S.

BROADCASTING HOUSE

(Continued from page 1102)

1. Increased liveliness and brightness of musical transmissions, with freedom from confusion, without the use of artificial reverberation.
2. Improved reproduction of the characteristic tone of the various musical instruments.
3. Acoustical conditions more suited to the individual requirements of different items, owing to decreased use of the "general purpose" studio.
4. Better acoustic conditions in the studios from the point of view of the artists themselves.
5. For speech, whether in the form of talks, etc., or in dramatic productions, greater naturalness and freedom from the muddling effect of audible studio acoustics.
6. In dramatic productions, complete flexibility and control of acoustical conditions in accordance with requirements.

To generalise somewhat, a considerable improvement is expected in the general atmosphere associated with the various types of programme, and a better reproduction through the medium of broadcasting of the best conditions experienced elsewhere. If this is attained, in addition to the simplification of the actual mechanism of programme production, the Broadcasting House studios will have completely justified the expenditure of time and money which has been necessary for their completion.

(To be continued)

BOOK REVIEW

*First Principles of Television.* By A. DINSDALE. (Chapman and Hall, 12s. 6d. net.)

THE author has dealt in detail with the various systems and explained them accurately and thoroughly, so that it is rather surprising that he should have allowed himself to be drawn into the controversy still surrounding the principles underlying the Stenode Radiostat. Although he is careful to say that the explanation given on pp. 144-149 is due to Dr. Robinson, nevertheless, the statement on page 149 that "The Stenode Radiostat has provided a solution to this problem" (the required wide frequency spectrum) is likely to mislead those who have not had the opportunity of studying the problem for themselves and of forming their own opinions.

The author appears to favour piezo-electric controlled valve oscillators instead of tuning-fork oscillators, and on page 110 he states that "the piezo-electric crystal... is more accurate and constant in operation than the tuning fork." This statement is erroneous, for the British broadcasting stations working on a common frequency maintain their accuracy over prolonged periods within closer limits than have ever been achieved with piezo-electric crystals in actual service conditions. The author is, however, on safer ground when he states that the piezo-electric crystal is simpler than the tuning-fork.

This is an admirable book, and Mr. Dinsdale is to be congratulated not only upon the manner in which he has dealt with his subject, but upon the excellent and convincing explanations he has given to describe certain phenomena. It is a book which can be recommended not only to the more advanced student of radio, but also to the average intelligent person desirous of accurate knowledge concerning this most interesting development of radio art.

Correspondence

Wavelength and Service Area

To the Editor of WORLD-RADIO

SIR,—In paragraph two of his article in the current number of *World-Radio*, the Chief Engineer, talking about the wavelength of the Westerglen transmitter, states that it is well known that the longer the wavelength the better the service. It would be instructive if he could account for the fact that as far as results are concerned in many parts of Scotland, listeners find that the reverse is the case. The results obtained by me apply principally to three localities, and I find that other listeners in these districts have had similar results. The districts are the Shetland Islands, among the Peeblesshire Hills, and where I live, here among the Argyllshire Hills.

My experience is, as regards the medium wave, no stations of a higher wavelength than Stuttgart have any strength. Here, at this time of year, during the day Glasgow and Belfast are just obtainable, but no others on the medium band are received, except Westerglen, which gives only rather weak signals, although only sixty miles away. Towards evening Westerglen improves very little, Glasgow does not improve, but London Regional, North National and London National come in, the first two at good loud-speaker strength, the last (London National) tremendously strong. North Regional does not come in.

Yours faithfully,

Kilchrenan, Argyll.

A. B. T.

In the article referred to in the above letter the Chief Engineer was referring to reception during conditions of full daylight, that is to say, direct ray reception. In these circumstances for the same amount of power radiated a long wave will penetrate farther than a short wave. Our correspondent obviously refers to indirect ray reception during darkness or twilight. In these conditions the shorter wave stations will usually give stronger reception, which is due to the indirect ray; such reception, however, is subject to fading to a varying extent.—ED.]

## SHORT-WAVE SECTION

## Ultra Short-Wave Communication

By R. L. SMITH-ROSE, D.Sc., Ph.D., A.M.I.E.E.

## 6—The Performance of Ultra Short-Wave Receivers

IN considering the reception of transmissions on the ultra-short band of wavelengths a description was given in a previous article of two types of receiver which are of interest to the present-day listener. The first receiver employed a detector stage with capacity retroaction followed by a single-stage of audio-frequency amplification. This receiver has been found to give satisfactory reception in head-telephones at distances up to twenty miles from a low-power transmitter, over which range experiments on the propagation of waves and in direction-finding have been carried out. Where increased sensitivity is required, it is not at present practicable to employ radio-frequency amplification at the very high frequency corresponding to the ultra-short wavelength, and recourse may be made to the use of the superonic heterodyne principle.

The second receiver referred to was of this type and, by using a simple preliminary stage as a frequency-changing unit, the ordinary broadcasting receiver may be employed as the intermediate and audio-frequency amplifiers. This arrangement possesses the advantage of giving ample loud-speaker output for the case of the reception of broadcast programmes relayed on ultra-short wavelengths.

A third type of receiver which has been used with considerable success by some investigators makes use of the super-regenerative or "quench" principle. In this receiver an ordinary retroactive detector stage is employed, with the addition of a circuit arrangement which provides continuous oscillations at a super-audible frequency. This addition makes it possible to use an increased amount of retroaction without the danger of the set oscillating at the carrier or signal frequency.

With a view to obtaining some quantitative idea of the relative advantages of these three types of receiver a series of comprehensive performance tests was carried out on a representative of each class, and the results obtained

reception of radiation from a distant transmitter was measured under carefully-controlled conditions.

## Laboratory Tests

The general method of carrying out the laboratory tests was to apply to the input end of the receiver a known modulated radio-frequency voltage, and measure the resulting audio-frequency voltage obtained in the output circuit of the receiver. In order to obtain a comparative measure of performance of the receivers, it was necessary to standardise both the input and output circuit arrangements, and this was done as follows. It was decided to take as the standard aerial for the purpose of these tests a vertical straight rod of length 1.5 metres, while for the earth connexion a maximum length of 0.25 metre was used. At wavelengths above 7 metres a longer aerial would be used in practice, but there are obvious reasons for taking constant aerial conditions in these tests. The above aerial dimensions are convenient also, since the effective height will be about 1 metre, so that it is easy to transfer input e.m.f.'s directly into field strengths.

For the laboratory tests, therefore, a dummy circuit was made up, to represent the above aerial, and this consisted of an air condenser having a capacity of 20 micro-microfarads in series with a non-reactive resistance of 25 ohms, these two components being built up in a screened box and connected in series with the lead to the aerial terminal of the receiver. For the output circuit a non-reactive resistance of 10,000 ohms connected in the anode circuit of the last stage was employed. This value was chosen as being representative of the impedance of a pair of high resistance head-telephones at the modulation frequency of 1,000 cycles per second used throughout the tests. It should be mentioned that all the receivers tested were intended for use with head-telephones only; an additional audio-frequency stage would be employed where a loud-speaker output was required.

The sensitivity of the receivers tested has been expressed in terms of the reciprocal milli-volts input required at the various radio-frequencies to give an output of one volt across a non-inductive resistance of 10,000 ohms in the anode circuit of the last stage; this corresponds to an output power of 0.1 milliwatt.

A value of 10 per cent. modulation at a frequency of 1,000 cycles per second was used throughout the tests. It was considered preferable to use the reciprocal milli-volt scale of input, since by so doing an increase in amplification is represented by an increase in the ordinate on the curve, which is easier to interpret than if a direct milli-volt scale had been used.

The measured overall performance characteristics of the three receivers tested are shown in Figs. 1, 2, and 3. From Fig. 1 it is seen that the simple two-valve receiver gives the standard output specified above with an input varying from about  $30\left(\frac{1}{0.033}\right)$  milli-volts at a frequency of 25 megacycles per second (wavelengths 12 metres) to  $1.4\left(\frac{1}{0.7}\right)$  milli-volt at 43 megacycles per second (wavelength 7 metres). Since the

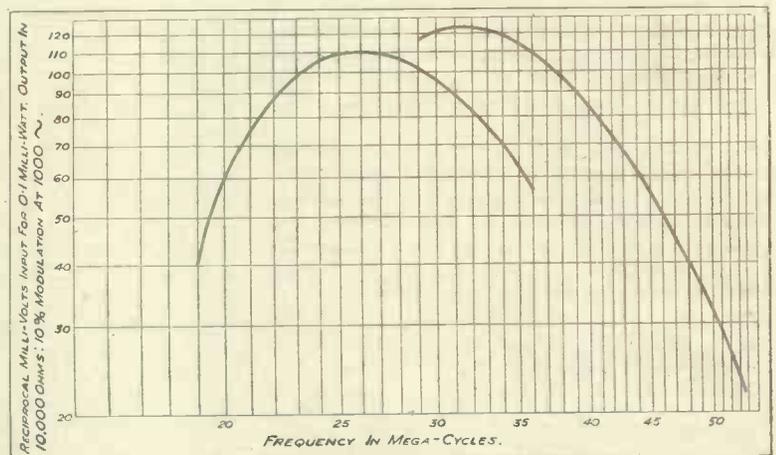


Fig. 2.—Sensitivity of three-valve "quench" receiver

effective height of the dummy aerial used was 1 metre, the corresponding field strengths required to operate this receiver are 30 milli-volts per metre at  $\lambda = 12\text{m.}$  and decreasing to 1.4 mv./m. at  $\lambda = 7\text{m.}$ , in accordance with the curve in Fig. 1.

Turning to the quench receiver characteristics in Fig. 2, it is seen that each of the two coils used to cover the necessary wavelength range has a point of optimum sensitivity. Thus at 25 megacycles ( $\lambda = 12\text{m.}$ ) an input field strength of 9 micro-volts per metre is required to produce the standard output, while at a frequency of 43 megacycles ( $\lambda = 7\text{m.}$ ) the input required is about 15 micro-volts per metre.

The results illustrated by the graph in Fig. 3 show that the superonic heterodyne receiver is much more sensitive than either of the former types. At the two frequencies above the input field strength will have approximately the same value of 0.4 micro-volts per metre.

For this last receiver a selectivity characteristic of the intermediate-frequency amplifier was obtained, and this is reproduced in Fig. 4. Selectivity characteristics at the ultra-short wavelengths were not taken owing to the difficulties of obtaining the very small frequency changes required with the testing apparatus.

## Field Tests

In order to ascertain whether the relative sensitivities of the various receivers as given by the laboratory measuring apparatus was borne out in practice when receiving signals, a field test was arranged in which each receiver was connected in turn to an aerial and the signal output due to a distant transmitter was measured. The receiving aerial consisted of a straight vertical rod 1.5 metres long, and was connected to the appropriate input terminal of the receiver. The earth terminal of the receiver was connected by a short lead to a copper screen about

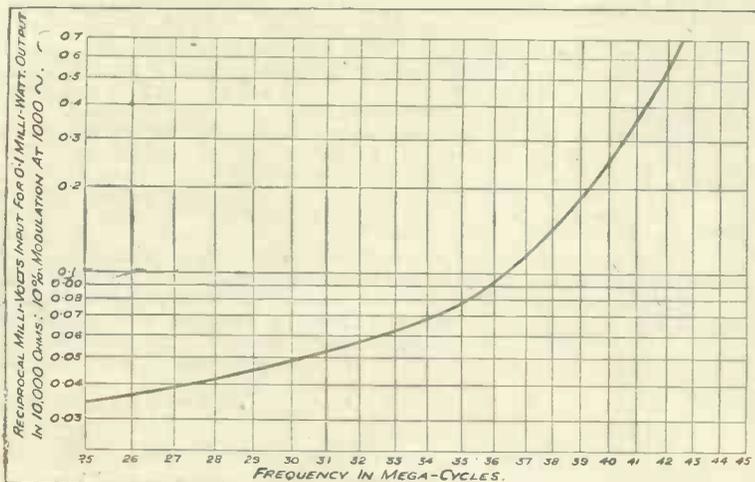


Fig. 1.—Overall sensitivity characteristic of two-valve receiver

in these tests will now be discussed briefly. The tests were of two types, first a laboratory test carried out with the aid of the equipment previously described for the study of receiver performance,\* and secondly a field test, in which the output given by the receiver in the

\*See "Testing Wireless Receivers"—*World-Radio*, May 6 and 13.

1 metre square. A rotatable loop was used as the transmitting aerial and this was supplied from a two-valve generator modulated by the output from a beat tone oscillator.

The field intensity at the receiver due to this transmitter could be varied by (a) altering the distance of transmission over the range of 30 to 150 metres employed, (b) by rotating the loop, (c) by varying the modulation percentage. In each case a calibration was carried out to ascertain the law of variation. By this means the relative input was measured to the various receivers to enable them to give the standard output of 1 volt through the 10,000 ohm resistance.

These field tests were carried out at a frequency of 28 megacycles per second and the results obtained were found to be substantially in agreement with the results of the laboratory test at the same frequency, within the limits of accuracy claimed for either measurement.

General Discussion of Results

Although it is probable that small variations in the design, construction, and even manipulation of individual receivers might produce relatively large changes in the overall performance, there are a few very definite general conclusions which may be drawn from the results of the tests described above.

In the first place, it is seen that the simple receiver comprising a retroactive detector and one stage of audio-frequency amplification is easily surpassed in sensitivity by either the super-regenerative or the supersonic heterodyne type, both of which can be made to operate well on the frequency band under consideration, viz., 23 to 43 megacycles per second. Over this range of frequencies, however, the sensitivity of the simple two-valve receiver tested rose very rapidly with increasing frequency, so that at 44 megacycles per second the sensitivity was 36 times as great as at 28 megacycles per second (see Fig. 1). Moreover, the proportionality of output to input over a considerable range for this receiver has been found to be useful in the carrying out of field intensity measurements in connexion with the study of the attenuation of ultra-short waves transmitted along the ground.

Next, the results obtained on the "quench" receiver show that it is possible to construct a receiver operating on the super-regenerative principle which will be very sensitive at the very high radio-frequencies employed (Fig. 2). This set has the disadvantage of possessing a rather unpleasant background noise except when a signal is being received, a defect which is apparently inherent in receivers of this type.

Finally, the tests show that where high sensitivity is required in conjunction with flexibility and ease of manipulation, the supersonic heterodyne receiver is the type to use. The results given in Fig. 3 show that the supersonic heterodyne receiver employed in this test was several thousand times as sensitive as the

simple detector, and this advantage was only decreased to a small extent by the comparatively loud background noise experienced with the model tested. It is probable that the performance of these supersonic heterodyne receivers would be considerably improved by fitting a control for the amplitude of the oscillator so that the set may be operated under the conditions of optimum heterodyne. The modern highly-developed broadcast receiver would also provide a better and quieter intermediate frequency amplifier than the particular amplifier used in these tests.

So far no tests have been carried out of

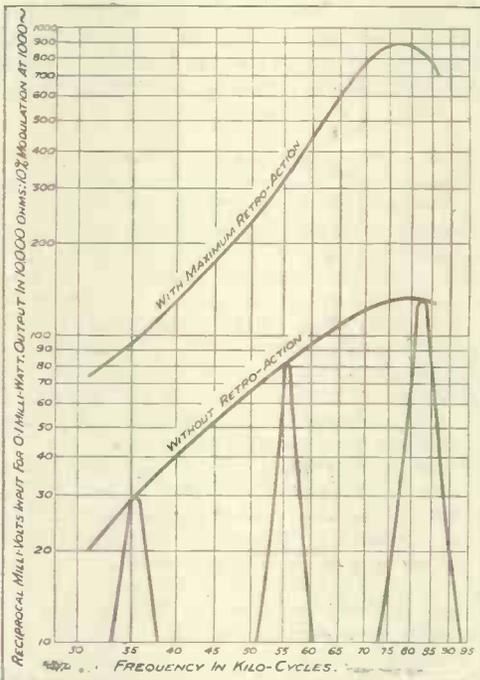


Fig. 4.—Characteristics of intermediate-frequency amplifier of five-valve super. het. receiver

practical reception from a transmitter at relatively large distances on account of the great variations in effective signalling range which are produced by natural and artificial obstacles on the ground itself. Some idea of the possibilities of the use of these receivers for communication purposes may, however, be obtained from the following experience which has been gained with the simple two-valve type of receiver which was shown to be the least sensitive of the receivers tested.

This receiver has been found to be very useful in making relative signal strength measurements at distances up to 600 metres from a low-power transmitter feeding a half-wave aerial with a maximum current of about half an ampere. The same receiver is capable of giving adequate reception of signals from this type of transmitter, both for communication and for direction-finding purposes, at ranges up to 20 miles when there is a clear optical path between transmitter and receiver. For transmissions directly along the ground, under similar conditions, this range may be reduced to 3 or 4 miles. It is therefore clear that the supersonic heterodyne receiver with its greatly increased sensitivity, should be fairly satisfactory for the reception of broadcast programmes relayed on wave lengths between 5 and 10 metres.

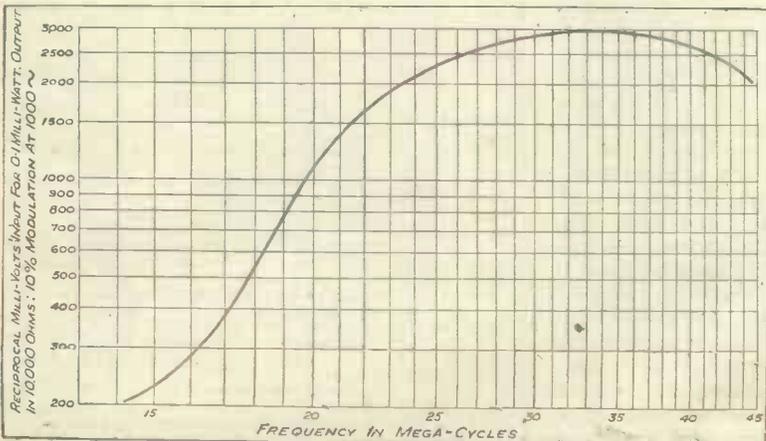


Fig. 3.—Sensitivity curve of five-valve super. het. receiver

# Lightning Strikes through your WIRELESS AERIAL

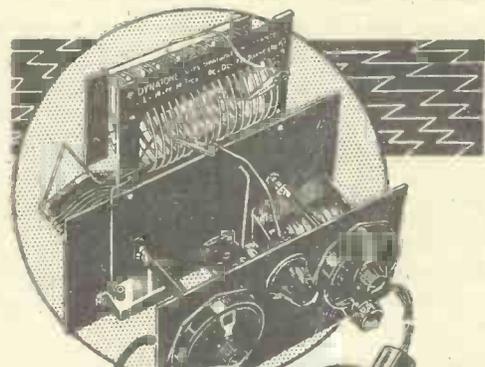
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A week ago the "Wireless World" said: "... the exceptionally good results we obtained, may be attributed to the thoughtful design and careful layout... the construction is quite simple... This is one of the most sensitive adaptors... we have tested so far." Now, by the simple use of the "SCIENTIFIC SHORT-WAVE ADAPTOR" and without altering your set in any way, you can tune into the principal short wave stations throughout the world—even on an indoor aerial. This adaptor transforms any battery or eliminator driven set into a short-wave receiver. All parts are fully guaranteed with SERVICE AFTER PURCHASE. Extend the range of your set— increase your choice of programmes—for the nominal price of 29/6. Wired and fully tested. Sent Post Free. C.O.D. Complete set of parts for home assembly 29/6, including blueprint. Sent post free C.O.D. BLUEPRINT of the "SCIENTIFIC ADAPTOR" price 4d. post free. SCIENTIFIC SUPPLY STORES (Dept. W.R.) 126, NEWINGTON CAUSEWAY, ELEPHANT & CASTLE, LONDON, S.E.1.

# Short-Wave Reports

# Below 100 Metres

By "VERNIER"

To the Editor of WORLD-RADIO

SIR,—I enclose my S.-W. reception report for period May 3 to May 17.

The set used is a super-het. adaptor coupled to a 2-v-2 broadcast set. M.C. speaker. Short outdoor aerial.

- May 3—11 p.m. W2XAF Tel. R6/FF/R/X.
- " 3—11.50 p.m. W2XAF LS R4/FF/R/X.
- " 4—10.0 p.m. Moscow REN LS R6/F/N. Music and speech. Call.
- " 5—11 a.m. Commercials ? Russian (20 m.). LS R6/F/X.
- " 5—10.35 p.m. Lisbon (42.9 m.). LS R8. F/N. Music and speech. Call.
- " 5—11 p.m. W2XAF (31.48 m.). LS R6/FF/X. WGY programme for 1 1/2 hours.
- " 7—11 p.m. W2XAF. LS R5/FF/N/X. WGY programme.
- " 7—12 midnight. W2XAF. LS R8/FF/X. American Derby—good reception—severe fading at times, but speech intelligible throughout race.
- " 7—12.30 a.m. Bound Brook (49.18 m.). LS 5 FF/R/X.
- " 7—12.45 a.m. ? W8XK (48.86 m.). LS 4 Testing.
- " 8—2 p.m. to 5 p.m. WAJ (1,3480 kc/s testing with Berlin and Paris). Musical programme. LS R7/F/N. Very good reception all afternoon. Berlin replying just below at great strength and clarity until what appeared to be a failure of signals at 5.30 p.m.
- " 8—4 p.m. W2XAD (19.56 m.). LS R4/F/X.
- " 8—5.30 p.m. Saigon ? (25.46 m.). LS R2/FF/X.
- " 8—7 p.m. Nairobi 7LO. LS 2 to 4 F/XXX. Orchestral and Organ music. Very slow and protracted fading.
- " 8—7.30 p.m. Moscow REN. Good LS. F/N.
- " 8—9 p.m. Skamlebak. LS 5 F/X. Copenhagen programme.
- " 8—9.40 p.m. Bound Brook. Phones R6/FF/XXX. Weak, becoming stronger.
- " 9—3 p.m. Bangkok (41 m.). LS R4/F/R/X. Generally poor and distorted.
- " 10—3 p.m. Bandoeng (31.86 m.). LS R7/F/R/X. Very loud, but distorted.
- " 14—7.30 p.m. Madrid (30.4 m.). LS R6/FF/N.
- " 15—1.50 p.m. Rabat (23.8 m.). LS R8/F/N. Very clear and good quality music.
- " 15—12 midnight. Bound Brook. LS R5/FF/R/X. Evening programmes.
- " 15—12 midnight. W2XAF. LS R6/F/X. Evening programmes.
- " 15—12 midnight. W1XAZ (31.35 m.). LS R5/F/X. Evening programmes.
- " 16—10.40 p.m. W2XAF LS R6/FF/N. Schenectady programme 1 1/2 hours.
- " 17—10.30 p.m. W2XAD (19.56 m.). LS R8/F/N. Very good till 12.30 a.m. Note: Have not succeeded in finding this station at night previously.
- " 17—10.30 p.m. W2XAF (31.48 m.). LS R5/F/N. Not so good as W2XAD.
- " 17—12.30 a.m. Buenos Aires ? LS R4/FF/N. Dance music. Vocalist and Accordeon.

Moscow TU, Moscow REN, Zeesen, Radio-Col., Rome (43m. or 25m.) Vatican, Madrid and Lisbon are always good LS signals, and have not been listed above. Several other weak stations have been heard but not identified, as well as powerful amateur transmissions on 40m. band.

Bridgwater, Somerset.

A. K.

\* \* \*

To the Editor of WORLD-RADIO

SIR,—I enclose a report of short-wave reception from my log of the past five weeks:—

- April 8—16.20 Cairo, SUC (25.18 m.) Tel. R8/FSS/N. Relay from Jerusalem.
- " 14—19.59 Madrid, EAQ (30.4 m.) LS R5/N/X. First programme for American listeners.
- " 16—23.25 W3XAL (49.18 m.) Tel. R6-8/FS/X. Call.
- " 17—00.15 W8XK (48.86 m.) Tel. R4/FS/X. Call.
- " 17—16.47 Vatican, HJV (50.26 m.) Tel. R4/FSS/N. Call.
- " 17—22.53 W2XAF (31.48 m.) Tel. R4/FFR/XX. Call.
- " 18—13.27 G5SW (25.53 m.) Tel. R5/N/N. Music and call.
- " 19—16.06 Bandoeng, PLV (31.86 m.) Tel. R7/FFS/X. Violin and piano.
- " 19—16.48 Radio-Colonial (25.2 m.) Tel. R6/FSS/N. "Marseillaise".
- " 21—23.00 Lisbon, CT1AA (31.35 m.) LS R5/N/N. Call.
- " 24—21.50 Rabat (32.26 m.) LS R6/FSS/N. Talk and music.
- " 20—22.30—CT1AA (42.9 m.) Tel. R7/N/N. Music.
- May 3—16.25 Bandoeng, PLV (31.86 m.) Tel. R4/FSS/X. Music.
- " 3—23.32 G5SW (25.53 m.) LS R4/N/N. Dance Music.
- " 8—00.15 W2XAF (31.48 m.) LS R6/FS/XX. Kentucky Derby.
- " 8—00.45 W3XAL (49.18 m.) Tel. R8/FFSSXX. Call.

Rome on 43 metres has been heard at R7 to R9 on LS every evening since April 14. Zeesen has been heard most afternoons from 4 p.m. to 6 p.m. Receiver used O-V-2, with outdoor aerial 60ft. long.

London, S.W.11.

A. B.

FIRST of all, I must thank all those readers who wrote last week and gave details of the "mystery" transmitter relaying the N.B.C. programmes on approximately 21 metres. This was most probably WIY, which is really a commercial telephony transmitter. It appears that on the date to which I referred he was broadcasting a special programme for the benefit of European listeners. Several readers, also, tell me of another transmitter WAJ, on 13,480 kc/s, which they have heard relaying the programmes of the Columbia Broadcasting System. So far, I have heard nothing of this station, but I shall keep a good look out for it in the course of the next fortnight.

### Wavelength of Rome

Amateurs who operate on the 40-metre waveband will be more than pleased to hear that Rome (Prato Smeraldo) has definitely given up his transmissions on 43 metres. The powerful Italian transmitter has, during the past weeks, been swamping the signals of the unfortunate European amateurs who operate generally with almost a negligible power in the aerial. Officially Rome has transferred to 48.2 metres, where he will be found in the Short-Wave List, but I have not yet heard him on this wavelength, and most of last week he was still operating on 25.4 metres.

Some time ago reference was made to Lisbon (CT1AA)—which is now becoming one of the popular short-wave stations of Europe—testing on the 30-metre waveband. I heard this station again at great strength on Thursday last when he gave his wavelength as 31.25 metres. Volume and quality were far better than on 42.9 metres, and static was considerably less troublesome.

Conditions were far better during the earlier part of the week, although static has been troublesome most of the time during the period under review: Signals from W2XAD greatly deteriorated during the latter part of the week, as, also, did those from W8XK on 25.25 metres. Buenos Aires, LSY, was received at good strength on the evening of Sunday, May 29, but no musical broadcast took place.

UOR2, Vienna, which has recently been heard testing on 49.4 metres has, I understand, again discontinued his transmissions. For some time now, this transmitter has been mobile, being installed in a lorry, and was used for relaying outside broadcasts to the main Ravag station. Now, I believe, it is intended to establish a more powerful short-wave transmitter on a more permanent basis.

### Moscow's "Harmonic"

I still hear from people who tell me they do not believe that the transmission from Moscow on 25 metres is a harmonic. I have just had news from a short-wave enthusiast in the Far East who informs me that signals from Moscow on this wavelength are received at terrific volume and even drown those of G5SW and Rome. He goes on to say that by far the best signal in the Far East at the moment comes from Khabarovsk. The power of this station, my correspondent has heard, is not 20 kW., but 150 kW. in the aerial, and the station was designed specially for reception in the Far East and Antipodes. Even though the power of this transmitter is so great, it is doubtful whether it would be picked up in this country, as not only is the wavelength unfavourable, but daylight intervenes during the hours when it is transmitting.

Reception conditions will again improve, I trust, with the weather during the coming fortnight; but we are likely to experience some trouble from static during the course of the summer on the higher wavebands.

# SHORT-WAVE STATIONS

The times quoted are reduced to B.S.T.

M.	Kc/s	Station	Time
70.2	4273	Khabarovsk (U.S.S.R.), 20 kW.	10—1 p.m.
62.5	4800	Long Island, W2XV.	FRI., 12—2.30 a.m.
58.3	5145	Bandoeng(PMY) 2 kW.	TUES. 2.40—4.40 p.m.
58	5172	Prague.	TUES. and FRI., 8.30—10.30 p.m.
54.52	5502	Brooklyn (N.Y.) W2XBH.	Relays WCGU.
51.22	5857	Chapultepec (Mex.) XDA,	20kW, 4-5 p.m.
50.26	5969	Vatican City (Italy) HVJ,	10 kW. Daily 9.0—9.15 p.m. SUN. 12—12.30 p.m. also.
50	6000	Barcelona Radio Club EAJ25.	SAT. 9—10p.m.
50	6000	Bucharest (Romania),	0.3 kW.
50	6000	Moscow (Relays Moscow T.U.).	
49.96	6005	Drummondville, Quebec VE9DR.	4 kW.
49.96	6005	Tegucigalpa (Honduras), HRB,	2.5 kW. Daily (except SUN.), 1 a.m.—6 a.m.
49.83	6020	Chicago(III.)W9XF,	5 kW. Relays WENR. SUN., 5-7 a.m., 1-5.30 p.m., 8.30-11 p.m., and 1-6 a.m. (MON.). Weekdays, 3.15-4.45 p.m., 8.30 p.m.—12 m't and (ex.SAT.) 1.30-6 a.m.
49.59	6050	Halifax, N.S. Relays CHNS.	
49.5	6060	Cincinnati, W8XAL,	10 kW. Relays WLW.
49.5	6060	Nairobi (Kenya),	7LO.
49.5	6060	Philadelphia (Pa.) W3XAU,	0.5 kW. Relays WCAU. Daily 2-9 p.m. THURS. and FRI., 2 p.m.—6 a.m.
49.43	6069	Vancouver (B.C.) VE9CS.	
49.4	6072	Johannesburg(S.Africa). D'ly	4.39-9.30p.m.
49.4	6072	UOR2, Vienna Experimental.	
49.34	6080	Chicago (Ill.) W9XAA,	0.5 kW. Relays WCFI. Daily 2-5 a.m.
49.22	6095	Bowmanville (Canada) VE9GW,	0.028 kW. Weekdays, 11.45 a.m.—3 p.m. and 8 p.m.—3 a.m. SUNDAYS, 5.30 p.m.—4.15 a.m.
49.18	6100	Bound Brook (N.J.)W3XAL,	20 kW. Daily 10 p.m.—6 a.m.
49.05	6116	Saigon (French Indo-China) F3ICD,	12 kW. Daily 1 p.m.—4.45 p.m.
49.02	6120	Richmond Hill (N.Y.) W2XE,	0.5 kW. Relays WABC, D'y 1 p.m.—5 a.m. next day.
48.86	6140	Pittsburg East (W8XK). Relays	KDKA. WED., and SAT., 10 p.m.—5 a.m.
48.8	6147	Winnipeg (Canada) VE9CL,	2 kW. Daily (except SUN.) from 12.30—2.30 a.m.
48.65	6167	Mexico City X1F.	
48.35	6205	Bogota (Colombia) HKC.	Daily, 4 p.m.
48.05	6243	Barranquilla (Colombia),	HKD.
48.2	6220	Rome (Italy) 2RO,	9 kW.
48	6250	Casablanca (N. Africa) CN8MC.	Relays Rabat, MON., 9-10 p.m. TUES., 1 p.m.—2 p.m. and 9-10 p.m.
46.69	6425	Bound Brook (N.J.) W3XL,	FRI. 10-11.45 p.m. and 4-6 a.m. SAT. 6.30-11.45 p.m. and 4-6 a.m.
45.38	6611	Moscow, REN (Russia).	
45	6667	Constantine (Algeria) 8KR,	0.2 kW.
43	6976	Madrid (EAR 110),	TUES. & SAT., 11.30p.m.
42.9	6991	Lisbon, CT1AA,	2 kW. FRI., 11 p.m.
41.7	7195	Singapore VS1AB,SUN.&WED.	3.30-5 p.m.
41.6	7211	Tenerife Radio Club EAR58,	0.05 kW.
41	7313	Bangkok HSP2,	2.5 kW. (Testing). MON. only 2-5 p.m.
39.7	7556	Bogota (Colombia) HKF.	
39.4	7612	Nuevo Laredo(Mex.)X26A.	THUR. 5-6 p.m.
34.68	8650	Long Island W2XV.	FRI. 11 p.m.—1.30 a.m.
33	9090	Radio LL (France), 0.5 kW.	Daily 12.30-11 p.m. and 6-6.30 p.m. SUN., MON., WED. and FRI., 8-10 p.m. SAT., 7-8.30 p.m. SUN., 10 a.m.—12.30 p.m. and 2.30-4 p.m.
32.5	9230	Paris (FLJ). Time Sig.	8.56 a.m. and p.m.
32.26	9300	Rabat (Radio Maroc),	6 kW. SUN. 8-10 p.m.
31.86	9415	Bandoeng(PLV) 80kW.	TUES. 2.40-4.40 p.m.
31.75	9450	Rio de Janeiro(Brazil).	10.30 p.m.—12.30a.m.
31.55	9510	Melbourne (Australia) VK3ME,	5 kW. WED. and SAT., 11 a.m.—12.30 p.m.
31.51	9520	Skamlebek (Denmark) OXY,	0.5 kW. Relays Copenhagen. Daily from 7 p.m.
31.48	9530	Schenectady, N.Y. (W2XAF),	40 kW. Relays WGY. Daily, 11 p.m.—5 a.m.
31.38	9560	Zeesen (Germany),	8 kW. Relays various stations, generally 1 p.m.—1.30 a.m.
31.35	9570	Poznan (Poland), SR1,	1 kW. TUES. 6.45-9.45 p.m. THURS., 6.30 p.m.—1 a.m.
31.35	9570	Springfield (Mass.) W1XAZ.	
31.3	9582	Philadelphia (Pa.) W3XAU,	0.5 kW. Daily (except THURS. and FRI.). 9 p.m.—6 a.m.
31.28	9590	Melbourne (Australia) VK3ME,	20 kW. WED. and SAT., 11 a.m.—12.30 p.m.
31.28	9590	Sydney (Australia) VK2ME,	20 kW. SUN., 7-9 a.m. and 3.30-5.30 p.m.
30.4	9669	Madrid (Spain) EAQ,	20 kW. Daily, 12.30 a.m.—2 a.m. SAT., 6-8 p.m.
30	10,000	Belgrade.	MON. only 8-9 p.m.
29.3	10,238	Heredia (Costa Rica) NRRH,	7.5 watts. Daily 11 p.m.—12 m't and 3-4 a.m.
28.98	10,350	Buenos Aires LSX,	20 kW. 9.30 p.m.—1.30.
25.63	11,705	Radio-Colonial(Paris).	D'ly 9 p.m.—12m't.
25.53	11,750	Chelmsford (G5SW),	12 kW. 12.30-1.30 p.m. & 6.45 p.m.—12 m't. News Bulletins at 12.30 p.m.(SAT.12.45) 6.15 p.m. & 12 m't.
25.5	11,763	Chapultepec XDA,	20 kW. Daily, 9-10 p.m.
25.46	11,777	Saigon (French Indo-China) F3ICD,	12kW.
25.4	11,810	Bowmanville (Canada) VE9GW.	(Exptl.).
25.4	11,810	Rome (Italy) 2 RO,	9 kW.
25.34	11,840	Chicago (Ill.) W9XAA.	Relays WCFI.
25.25	11,880	Pittsburg East (W8XK).	5 p.m.—3 a.m.
25.2	11,905	Radio-Colonial(Paris).	Daily 4.30-7.30 p.m.
24	12,500	Funchal (Madeira) CT3AQ,	0.05 kW. TUES. and THURS. 10.30-12.30a.m.SUN.4.30-6 p.m.
23.28	12,882	Rabat (Radio Maroc),	2.5kW.SUN. 12.30p.m.
20.5	14,630	Chapultepec XDA,	20 kW.D'ly 8.30-9 p.m.
19.84	15,123	Vatican City (Italy) HVJ.	10 kW. Daily 12 noon-12.20 p.m.
19.72	15,210	Pittsburgh East (W8XK). Relays	KDKA WED. and SAT., 12 noon-4 p.m.
19.68	15,234	Radio-Colonial (Paris). Daily,	1-4 p.m.
19.56	15,330	Schenectady (W2XAD),	20 kW. Weekdays, 9 p.m.—12 m't.SAT. and SUN., 7p.m.—12m't.
16.57	18,105	Chicago (Ill.) W9XAA.	Relays WCFI.
15.93	18,821	Bandoeng(PLV) 80 kW.	TUES. 2.40-4.40 p.m.

For Long and Medium Wave Stations see page 1114.

## FRENCH

(Supplementary Notes in connexion with the French Talk, Tuesday May 31)

(A) *La négation ne employée seule* (Suite).

Il est facile de voir que dans les exemples que nous avons cités la dernière fois : *je ne sais s'il est arrivé ; je ne savais trop si je devais le croire ; je ne sais où aller*, etc. . . . il y a en réalité interrogation indirecte.

Or, si cette interrogation indirecte prend la forme interrogative par l'emploi de *qui, que, quoi, quel, lequel*, devant un infinitif, la suppression de *pas* est presque toujours nécessaire : Ex. *Il ne savait à qui s'adresser ; je ne sais qu'en penser ; nous ne savons quel parti prendre ; elle ne sait lequel choisir ; il ne savait à quoi s'occuper ; ils ne savent que faire*, etc. . . .

L'expression *n'avoir que faire* se rattache à cette même syntaxe : Ex. *Je n'ai que faire de toutes vos excuses ; elle n'en avait que faire ; nous n'avons que faire de vos promesses*.

Enfin, il nous reste *je ne saurais* au sens de *je ne puis* : Ex. *Je ne saurais vous le dire ; nous ne saurions le leur promettre ; vous ne sauriez le faire*, etc. . . . Il est bien entendu que le conditionnel véritable de savoir est *je ne saurais pas* : Ex. *Je suis sûr que je ne saurais pas le faire ; ce n'est pas la peine que j'essaie de le récrire, je suis certain que je ne saurais pas ; etc.* . . . Dans les deux exemples cités, et dans les exemples du même genre, *si j'essayais* est sous-entendu : *je suis sûr que je ne saurais pas le faire, sous-entendu si j'essayais*.

En dehors des verbes *cesser, oser, pouvoir, savoir* et de certaines expressions que nous avons déjà signalées, il y a des cas où *ne* peut ou doit rester seul, soit dans les propositions principales, soit dans les propositions subordonnées.

Occupons-nous d'abord des propositions principales.

1. On supprime assez volontiers *pas* ou *point* après *qui* interrogatif : Ex. *Qui ne s'en étonnerait ? Qui ne comprendrait cela ? Qui ne se fâcherait d'entendre de telles sottises ?*

Si au lieu de *qui* on emploie *qui donc* la suppression de *pas* ou de *point* ne se fait plus aussi volontiers : *Qui donc ne voit pas que les temps sont durs ? Qui donc ne comprend pas ?*

2. Après *que* interrogatif signifiant *pourquoi* l'omission de *pas* ou de *point* est nécessaire : Ex. *Que n'a-t-il chanté ? Que ne l'avez-vous dit ? Que ne m'est-il possible de vous le raconter ?*

D'aucuns omettent *pas* ou *point* après *que* interrogatif complément direct : *Que n'a-t-il dit ? Que n'a-t-elle fait ? Que n'a-t-il mangé ?*

[N.B.—Ici *que* n'est pas employé au sens de *pourquoi*, mais au sens de *quoi*.]

Toutefois, il vaut mieux employer *pas* ou *point* dans ce cas, afin d'éviter l'équivoque. *Que n'a-t-il pas écrit ?* signifie littéralement quelle est la chose qu'il n'a pas écrite, tandis que : *Que n'a-t-il écrit ?* signifie uniquement *pourquoi n'a-t-il pas écrit ?*

3. Cette même syntaxe s'emploie aussi sous la forme exclamative pour exprimer un souhait : *Que ne vit-il encore ! Que n'êtes-vous à mille lieues d'ici ! A Dieu ne plaise que vous le fassiez ! Qu'à cela ne tienne ! Je chantais ne vous déplaît !*

(B) "Let the cobbler stick to his last."

Faute d'espace j'avais dû me contenter, la semaine dernière, de traduire ce proverbe par l'expression courante "A chacun son métier et les vaches seront bien gardées."

Mais il y a aussi le fameux "Faites des perruques," conseil ironique de Voltaire à un perruquier nommé André, qui s'était avisé de composer une tragédie ridicule intitulée "Le Tremblement de terre de Lisbonne." Le présomptueux perruquier avait dédié sa tragédie au philosophe en appelant celui-ci *mon cher confrère*. Cette expression "Faites des perruques" qui s'adresse à tous ceux qui veulent prétentieusement parler de choses au-dessus de

FOREIGN LANGUAGES  
SECTION

leur compétence, est devenue une des expressions les plus piquantes de notre langue. C'est le *Ne sutor ultra crepidam* ou bien le *Sutor ne supra crepidam* (Cordonnier, pas plus haut que la chaussure) des Latins. Pline nous raconte que le peintre Apelle, après avoir écouté patiemment un cordonnier critiquer le dessin d'une sandale dans un de ses tableaux, l'arrêta par les mots : "*Sutor ne supra crepidam*" lorsque le cordonnier voulut juger du reste du tableau.

(C) . . . *Je fis le signe de la croix* (Lettres de mon Moulin, p. 18, l. 11) : A la fin des mots français, l'*x* n'est plus généralement qu'un signe orthographique qui tient la place d'une *s*. Aussi ne se prononce-t-il pas : *faux, doux, heureux, genoux, aïeux, deux*, etc. . . .

Il ne se prononce pas non plus dans : *paix, prix, perdrix, croix, flux, reflux, influx*, etc. . . .

L'*x* est muet aussi dans la plupart des noms propres ; toutefois il se prononce *cs* dans *Aix, Gex, Dupleix, Félix, Max, Dax, Ajax, Essex, Fox, Pollux, Vercingétorix*, et quelques autres.

Dans un certain nombre de noms communs grecs, latins ou étrangers, l'*x* final se prononce *cs* : *silex, index, sphynx, thorax, phénix, pharynx, larynx*, etc. . . .

*Six et dix* se prononcent *sisse* et *disse* : *j'en ai six, page dix, Charles six, le six mai, le dix août*.

Toutefois, devant un pluriel commençant par un *son-consonne* ils se prononcent *si* et *di* ; devant un pluriel commençant par un *son-voyelle*, ils se prononcent *siz* et *diz* : *si(x) maisons, di(x) tableaux, six hommes* (si zhommes), *dix arbres* (di zarbres).

(D) [Text of the French Dictation given in the course of the French Talk on Tuesday, May 31.]

Vous autres, habitants des rues, vous ne savez pas ce qu'est la rivière. Mais pour le pêcheur, c'est la chose mystérieuse, profonde, inconnue, où l'on voit, la nuit, des choses qui ne sont pas, où l'on entend des bruits que l'on ne connaît point, où l'on tremble sans savoir pourquoi, comme en traversant un cimetière.

E. M. STÉPHAN.

## GERMAN

## Growth of Language and Exercise 28

A.—*Growth of Language*.—A language is an organism, not a thing that can be made or marred by a Government or an Academy. Its growth and development are an unintentional and unconscious process which is at work in the people creating and using it, due to many physical and psychological forces that are constantly active and cause a language to change gradually and imperceptibly, but steadily and surely. The investigation of this process is the province of philology, a highly specialised science. But any intelligent person may, at an early stage of his or her studies, catch a glimpse of the functions of that fascinating subject. This is all the more desirable, because even a most elementary notion of the essence of language and its development is a great help to the learner. It enables him or her to grasp the import of its multifarious forms and of its components, and thereby enhances the understanding and appreciation of language as a living thing. It is thrilling to find that every bit of a language is alive and full of meaning instead of appearing as a dead mass of seemingly meaningless sounds or letters in phantastic combinations and permutations.

Jakob Grimm, whose nature was characterised by simplicity, serenity, and frugality, and by love of work as the greatest pleasure in life, was the founder of German philology. He opened

the series of his remarkable works and discoveries with the first volume of his *Deutsche Grammatik* in 1819. The Danes Rask and Verner and Franz Bopp, the founder of Indo-European philology, and a host of others have since modified and perfected Grimm's fundamental work, so that at the present time their labours present a gigantic monument of voluminous research, great originality, and indefatigable industry, which does the greatest possible credit to its pioneers and their learned, painstaking, and strictly scientific disciples. Let us try to pick up a few crumbs from their richly laid table, that may be helpful and interesting to us in our study of the German language of to-day. In the pre-inflexion period of Indo-European all words were *roots*, which gradually adopted the character of separate parts of speech, some of which developed inflexions involving the addition of another root that became weakened and shortened in time under the influence of accentuation, assimilation, etc., and so the added root became a mere ending or suffix. Thus we reach the inflexion of nouns for the various cases and numbers, further those for the different persons and tenses of verbs, and later the composition by Prefixes and that in compound words in the narrower sense, when each component retains its identity.

That the suffixes had a meaning of their own is clearly seen in our suffix *ly* (in godly, ghostly) which is a remnant of a noun "lika," meaning "body," persisting in German *Leiche* (dead body, corpse), and in *Leichdorn* ("body-thorn," signifying "a corn on the toe"). The meaning of "gleich" (*i.e.*, particle *ge+leich*)=*i.e.*, "having a similar body" and of English "like" is thus revealed. They appear now in our "ly" and German "lich" as in manly: *männlich, älterlich* (elderly), etc.—Similarly "heit" in *Falschheit* (falsehood) denotes "quality," and "haft" in *lebhaft* (lively) probably denotes "haben" (to have).

In a large number of words several suffixes are added to the stem, *e.g.*, *wahr* (true)—*wahrhaft* (truly, genuine, truthful)—*wahrhaftig* (verily)—*die Wahrhaftigkeit* (veracity). Similarly from obsolete *Wank* (waving) still alive in *wanken* (to sway), *wankeln* (to totter), *der Wankelmut* (vacillation)—*wankelmütig* (fickle)—*die Wankelmütigkeit* (unsteadiness of character).

The suffix *bar* is cognate with English "to bear" (*gebären*) and therefore clearly means "bearing." It was first only added to nouns as, for example, *Frucht* : *fruchtbar* (fruit-bearing, fertile)—*Dank* : *dankbar* (grateful), but in course of time the meaning became generalized and it was added to adjectives, as often : *offenbar* (evident(ly)), *sonderbar* (strange), and to verbs ever more increasingly, *e.g.*, *sehen* : *sichtbar* (visible)—*gehen* : *gangbar* (passable)—*halten* : *haltbar* (durable), especially in a passive sense, *e.g.*, *brauchen* : *brauchbar* (useful)—*denken* : *denkbar* (thinkable)—*hören* : *hörbar* (audible)—*schiffen* : *schiffbar* (navigable).

We are now prepared to examine German suffixes and compound words further, with enlightened minds.

B. Exercise 28 (*Achtundzwanzigste Aufgabe*)

I.—*hier—da, unten—oben, vorn—hinten, heute—gestern* (or *morgen*), *nie—immer, früh—spät, ja—nein, —vielleicht, vorbei, deshalb, dadurch, wahrscheinlich, sogleich*.

II.—*Er läuft am schnellsten.—Laufen Sie schnellstens auf die Post*.

III.—(1) *Es ist höchst wahrscheinlich.* (2) *Er ist höchstens fünfzehn.* (3) *Er muss spätestens am Sonntag nach Berlin gehen.* (4) *Er wird längstens einen Monat (lang) dableiben.* (5) *Sie sind meistens dumm.* (6) *Er bedachte sich am längsten.* (7) *Der Zaunkönig flog am höchsten.* (8) *Er möchte lieber zu Hause bleiben.* (9) *Er arbeitet minder (or weniger) gut.* (10) *Er wurde aufs äusserste (or zum äussersten), getrieben.* (11) *Wir wurden aufs freundlichste empfangen.* (12) *Das ist höchst*

wahrscheinlich. (13) Wir danken Ihnen bestens. (14) Erstens ist er nicht hier und zweitens kann er es nicht tun. (15) Er wird bald kommen (or Er kommt bald), cher als Sie denken. (16) Er wird frühestens morgen kommen (or Er kommt frühestens morgen). (17) Ich muss sofort (or sogleich) schreiben. (18) Wir gehen erst (or zuerst) und sie kommen später (nach), spätestens um fünf (Uhr). (19) Laufen Sie schnellstens auf die Post. (20) Zuweilen (or Manchmal) gibt er gute Antworten. (21) Gewöhnlich trifft er den Nagel auf den Kopf. (22) Allerdings, aber was soll ich nun (or jetzt) tun? (23) Das ist zweifellos das Beste, was sie tun können. (24) Es ist all(es) vergebens. (25) Inzwischen wird die Ziege den Kohl fressen. (26) Das ist entschieden so. (27) Warten Sie ein wenig (or ein bisschen or ein klein bisschen or eine Weile or ein Weilchen) länger. (28) Er wird schwerlich (or kaum) viel Schaden tun. (29) Er muss unbedingt die Ziege verlieren. (30) Er wird jedenfalls etwas verlieren. (31) Gar nicht (or Durchaus nicht), ich hab's.

IV.—Ein Bauer (or Landmann) sollte einen Wolf, eine Ziege und einen Kohl über einen Fluss bringen. Er konnte jedesmal nur eins (or eines von ihnen) mitnehmen (or übersetzen or mit hinübernehmen), weil der Nachen (or der Kahn) so klein war. Da er kein Seil (or keinen Strick) hatte, um die Ziege anzubinden (or festzubinden) (or womit er die Ziege anbinden konnte), sah er zuerst nicht ein, wie er es machen konnte, ohne entweder die Ziege oder den Kohl zu verlieren. Aber er fand eine Lösung. Zuerst nahm er die Ziege mit, und als er auf die andre Scitem, ka liess er sie da. Dann kam er zurück und holten den Kohl, aber brachte die Ziege zurück. Auf der dritten Fahrt nahm er den Wolf mit und liess ihn beim Kohl und schliesslich (or endlich or zum Schluss) kam

er zurück, um die Ziege zu holen. Auf diese Weise konnte der Wolf die Ziege nicht fressen und die Ziege konnte den Kohl nicht fressen, und so war alles sicher (or in Ordnung).

O. S.

## SPANISH

### Un mes en Santander

MUCHOS lectores me han escrito pidiéndome más detalles de la Escuela Veraniega (de verano) de Santander, a la cual me refería en mis apuntes (notes) del 6 de Mayo pasado. Algunos de ellos, que sólo disponen de dos o tres semanas de vacaciones, me preguntan si podrían inscribirse por medio curso de quince días. A éstos les contesto que pueden tomar la primera o la segunda quincena del curso general, empezando el 30 de Julio o el 13 de Agosto; o, si son principiantes, el curso preliminar, que sólo dura del 14 al 27 de Julio. Otros quieren saber cuánto les costaría el viaje de ida y vuelta (return) desde Londres, el curso completo, y el mes de hospedaje (board and lodging) en Santander, todo incluso. Tomando por norma (as a guide) los presupuestos (budgets) de alumnos que han asistido a la escuela en años pasados, se ha calculado que el costo total, al cambio de 40 pesetas por £ (=6d. por peseta), no debía pasar de £24. Este año, con el cambio alrededor de 44/45 ptas., y con las rebajas (reducciones) excepcionales que se ofrecen en los derechos de inscripción (fees), mayormente a los que se inscriban antes del 15 de Junio, sin duda habrá quien (alguno que) no gaste mucho más de £20. Escribanme los lectores que quieran saber más pormenores.

Dejo para mi próximo artículo la consulta de un estudiante sobre la traducción de frases del género (de la clase) de: "I wish I could," "I wish you would," etc.

Lectura (continúa el relato). Me llevaron a su casa, pero con la emoción de encontrarme sana y salva (safe and sound) entre gente tan suma-

mente cariñosa, se me pasaron las ganas (los deseos) de comer y dormir, y después de arreglarlo, me declaré dispuesta a salir.

Siendo día de fiesta—(en España son muy numerosos los días festivos)—la ciudad estaba animadísima. Los anchos paseos estaban convertidos en feria (fair), y por todos lados colgaban (hung) lámparas de mil colores. Había música, baile, todo género de atracciones, y carteles grandes anunciaban las corridas de toros y funciones de teatro que habían de celebrarse durante la semana. Bien se veía (it was obvious) que todo el mundo estaba entregado a la diversión.

Entramos en un café y nos sentamos a una mesa. Con gran sorpresa mía (to my great surprise) el señor que nos acompañaba se puso a dar palmadas (clap his hands). Ignorando (no sabiendo) yo que en España era la manera como se acostumbra llamar al camarero (waiter), me pregunté si iba a echar (pronunciar) un discurso a los presentes, o si estaba expresando su alegría por alguna cosa!

(continuará)

W. F. BLETCHER.

## Esperanto Transmissions (June 5—11)

Sunday.—Lille, 9 a.m., Course; News. Hilversum, 8.10 a.m., Course. Toulouse, 5 p.m., Course. Leningrad, 10.5 p.m., News.  
Wednesday.—Stuttgart, 6.25 p.m., "El originala Verkaro" (Dr. Vogt).  
Marseille-Provence, 7.15 p.m., News.  
Thursday.—Paris, 5.45 p.m., Talk. Vienna, 4.45 p.m., News. Grenoble, 5.45 p.m., Talk. Kaunas, 9 p.m., Talk. Valencia, 9 p.m., Talk. Breslau, Gleiwitz, 10 p.m., "Silezia arbaro" (M. Polier).  
Leningrad, 10.5 p.m., News.  
Friday.—Stuttgart, 7.30 p.m., Week's Programme (Prof. Cristaller).  
Radio-Côte d'Azur, 8.10 p.m., Talk. Radio-Normandie, 9.0 p.m., News. CTIAA (42.9 m.), 10.30 p.m., Talk.  
Saturday.—Heilsberg, 6.10 p.m., Week's Programme. Lyon-la-Doua, 8.15 p.m., "Venu al antaŭkongreso en Lyon" (M. Borel).  
Lisbon (282 m.), 10.30 p.m., Course.

## Heard on the Continent

By "CENTRAL EUROPEAN"

SINCE writing my last report I have been for a trip to the Arctic Sea, and much seems to have happened in European broadcasting during that time. The excellent winter reception which had prevailed right up to the end of April has gradually disappeared in the course of the month of May, and now atmospheric thunder into the loud-speaker as if it were midsummer. Especially is this the case in the long-wave region, where only Warsaw, Motala, Kalundborg, and Oslo are heard tolerably well. That is to say, Warsaw is still at the head of all European stations, and Oslo is comparatively the weakest signal in the long-wave region, while Kalundborg's strength has somewhat diminished. Moreover, this station is heterodyned by an as yet unidentified transmitter, with the result that an unblemished reception of the Copenhagen programme has become rather a rarity.

Reception conditions on the medium band are little better. Of the smaller stations, Ljubljana has been quite a good signal, but Budapest's could not be recognised. Its signal strength is perhaps only about one-third of what it was formerly. Palermo, like most Southern European stations, has become very weak, but Vienna has come through tolerably well. The "surprise-packet" of this region is Florence, which can be heard well every evening, apart from some strong atmospheric. Incidentally it is the only Italian station with good audibility. Wilno is a very strong signal. It is interesting to note that this applies to all Polish and Czechoslovak transmitters. Even a low-power and distant station such as Kosiče is better heard than a northern or western European station of the same power.

Prague continues to occupy a leading position in the ether. Its strength at any time of the day is really astonishing. This affects even Langenberg somewhat, although its strength is now again quite respectable, if only it were not subject to strong fading. Reception of Schweizerischer Landessender has become considerably weaker; the same remark applies to Rome, which is but rarely received quite clearly. Katowice has, after a period of deterioration regained its customary signal strength. On the other hand, reception of the Midland Regional has been poor, and Bucharest and Radio-Toulouse have also lost much of their former strength. Lwów has again been a strong signal, and its reception would have been even better but for the fact that it is constantly heterodyned by a Moscow experimental transmitter that operates on a frequency only 4 kc/s distant.

The tests of the new Scottish Regional transmitter were received here with excellent strength. If such comparisons can be made at all, I should say the strength is somewhat between that of North Regional and London Regional. The mutual interference between Stuttgart and London Regional has not been observed of late. I understand that the Moscow experimental transmitter, which had operated on a frequency between these two stations, has ceased to work, for some time at all events. As a result reception of both stations is again quite unblemished, and the rivalry between the two as regards signal strength continues. One day London Regional, the next day Stuttgart, is the better-heard station.

Breslau, which is completely drowned by Göteborg, has again been a very weak signal. Hilversum is heard extremely well in the evenings, when using a power of 20 kW., and is considerably stronger than Huizen.

## Interference between Stations

(May 22—28)

FOR a long time now Radio-Lyon has been using 1,046-1,047 kc/s, and though it was thus slightly heterodyning the British common-wave (1,040 kc/s), the greatest trouble was experienced by Montpellier (1,049 kc/s). Unfortunately, since the 22nd, Radio-Lyon has used 1,043-1,042 kc/s. On such a wavelength the interference with the British stations is much more severe, the heterodyne note being much lower than previously and consequently more audible. Compared with its strength only a few months ago, Radio-Lyon's signal is now undoubtedly more powerful.

Another French private station which has also been causing interference to a British station is Radio-Vitus, which was last mentioned on 970 kc/s, where it was rather severely heterodyning Cardiff (968 kc/s). Since then it has moved again and is now on the other side of Cardiff's wavelength, on 961 kc/s. It is now the turn of Genoa and Cracow, sharing 959 kc/s, to be interfered with seriously, and Cardiff rather benefits by this move.

Radio LL, Paris, since increasing its power, has steadily heterodyned Hamburg (806 kc/s), from whom it is separated by only 4 kc/s.

Barcelona-Asociacion (EAI15), which had been stable for a few weeks on its allotted frequency of 1,193 kc/s, is again off its correct wave and is causing interference. Since May 21, it has been on about 1,189 kc/s and is thus heterodyning—often seriously—Gleiwitz (1,185 kc/s). Barcelona-Asociacion is becoming a relatively strong signal, and its transmissions have greatly improved in quality.

Stavanger, the Norwegian relay which ought to work on 1,247 kc/s, is also off its allotted frequency, and has used 1,251 kc/s since the 22nd, thus interfering with Nürnberg. L. B.

## Last Week's Log

(May 22-28)

By "NORTHERNER."

**D**URING the above week the standard of reception from distant stations was, on the whole, much lower than for any period yet recorded this year, and, indeed, on one or two occasions there was a distinct feeling of deadness on all but the more powerful transmissions—a condition which, following so long a run of excellent results, at first leads one to suspect that all is not well with the receiver. True, the weather has played queer tricks, and perhaps reception was no worse than could be expected, for there was a fair amount of atmospheric interference to be endured along with our radio pleasures, while, curiously enough, week after week seems to pass with the maximum amount of interference being recorded during the first few days and improved results towards the week-end.

My success on the long waves was, of course, limited to periods when static was not too pronounced, and the worst evenings were those of the 22nd, 23rd, and 25th.

It is well known that the amount of interference which spoils reception will vary with different listeners. Some there are who cannot enjoy a programme with even the slightest noise, while others can ignore quite a lot when tuned to the desired programme. Radio-Paris was always up to standard, and his present volume provides splendid reception in spite of disturbances.

Oslo and Kalundborg were very reliable stations, with good strength at all times, and little change in reception of Huizen was noticeable. Königs Wusterhausen has not been quite so well heard, and for varying periods he fell below his normal strength. Warsaw was good on most occasions, but that common heterodyne still mars results. Motala was only fair.

On the medium waves Barcelona now seems to have fallen into a steady stride amongst the better-heard stations, and I have been able to receive him at very good loud-speaker strength on most nights. Prague lacks his usual enormous punch, but there is, nevertheless, ample volume for good reception. The North is evidently more favourable still for the reception of Budapest, for although "The Searcher" tells us he has been lost in his locality, I have been able to obtain first-rate results during the later hours each evening, with the exception of the Tuesday.

Trieste and Turin have remained extraordinarily good throughout the whole period, and so far have eclipsed any reception I have had from Florence, whose signals still remain far below expectations. Langenberg was good on every occasion except on the Friday, when, for an unknown reason, I could not persuade him to reach his normally very fair strength. Rome has weakened during the last few weeks, and Katowice is not as good as he was. Stockholm has been quite steady as compared with similar periods in the past, but Hilversum has faded much more than during my previous review. His worst night was Thursday, when signals completely disappeared for short intervals, then rose to a strength which required a considerable application of the volume control.

Brussels No. 1, Beromünster, Radio Suisse Romande, Poste Parisien, Heilsberg, and Breslau were all very well received in turn, while Lwów is still worth every bit as much attention as formerly.

Toulouse was very powerful throughout the week, but Frankfurt, while a good signal, is still being heterodyned occasionally, but never really badly. Brussels No. 2, Göteborg, and Gleiwitz have all been logged with remarkable clearness, and almost completely free from interference on most evenings. Hörby was very good on the Tuesday and the Friday, while Moravská-

## Which Station Was That?

Replies to Queries

**R. A. (Cricklewood):** (5) Rabat, on 32.26 m.; (6) Prangins (Switzerland) on 19 m. relaying Sottens transmission to U.S.A.; (7) DJB, Zeesen (19.73 m.), relaying German transmission to New York (dance music). **COQUIMBO (St. Helens):** Prangins (35 m.), relay of Sottens transmission. **KEEN TO KNOW (Cambridge):** Radio Maroc (23.28 m.) relaying Grand Prix de Casablanca motor races. **GRID BIAS (Thornton Heath):** (1) DJA, Zeesen (31.38 m.); DJB (Zeesen) on 19.737 m.; DIQ, Königs Wusterhausen (29.18 m.) calling WQV, Riverhead (N.Y.); (2) too vague; cannot trace; (3) this was Radio Maroc (Rabat), on 23.28 m.; (4) harmonic of Croydon aerodrome transmission. **KEEN TO KNOW (Cambridge):** Please number your queries; LSN-LSY, Hurlingham, Buenos Aires, on 14.47 m. **BROADACRES (Barnsley):** (1) Prangins (35 m.), relaying Sottens transmission (Geneva programme—Lausanne Symphony orchestra); (2) DIQ, Königs Wusterhausen (29.18 m.); DJB, Zeesen (19.73 m.). **LONDON LOU (N.1):** Moscow (T.U.). **TRY OUT (Reading):** Prangins, relaying Geneva and Lausanne programmes for benefit of U.S.A. listeners. **SHORTY (Halifax):** DIQ Königs Wusterhausen relaying Berlin programme. **IASKYOU (Bolton):** (1) no, apparently LQE, Buenos Aires (30.75 m.); (2) DEQ, Nauen (29 m.); (3) Prangins (Switzerland). **FIEND (Nottingham):** (1) W9XAA, Chicago (49.34 m.); (2) 50.1 m. **TWIDDLE-KNOB (Letchworth):** DJB, Zeesen (19.737 m.). **PUZZLED (Bristol):** DJB, Zeesen; DIQ, Königs Wusterhausen (29.18 m.) working with WQV, Riverhead (L.I.). The U.S.A. special broadcasts to Berlin are transmitted through W2XBJ, Rocky Point (N.J.), on 20.49 m. The call letters of Zeesen (31.38 m.) are DJA. **SQUEAKER (Merton):** DIQ, Königs Wusterhausen. **S. G. FOUR (Edinburgh):** (173) special Swiss programme for U.S.A. listeners; heard through Prangins (19 and 35 m.); (171) apparently harmonic of ordinary programmes. There is, however, a short-wave transmitter for experiments in television. **WHOZIT (Gravesend):** (1) possibly HKC Bogota (Colombia), on 47.84 m., but cannot confirm; (2) LSY, Buenos Aires, on 14.47 m.; interval signal: 3 oscillating notes. **CHUMMY (Birmingham):** You do not state time at which transmission was heard, but presumably during evening shipping forecast. Apparently a direct pick-up effect on your receiver due to cross-modulation. **SCREENED GRID MANIAC (Brixton Hill):** Scheveningen-Haven (Holland); commercial transmitter; no broadcasts of entertainments. **FIEND (Nottingham):** Amateur transmitter. **TUI (Mundesley-on-Sea):** ZLW, Wellington (N.Z.) on 24.4 m. **LSX (Leytonstone):** CT1AA (Lisbon), said to be testing on 31.25 m. **INSIGNIS (Bournemouth):** Your call-letters do not appear to be correct, but if prefixed VI, a station in the West Indies calling WQV, Riverhead (N.Y.). **XGUSME (S.W.17):** HVJ, Vatican (Rome). **ALEXANDRIA (Egypt):** WQV, Rocky Point (N.Y.), on 20.26 m. (14,800 kc/s). **F. M. M. (Brixton):** VE9DR, Drummondville (Quebec), direct; sometimes relays NBC programmes. **ANXIOUS (Burton-on-Trent):** Belfast. **ALBA DOLENS (Knock, Co. Down):** Hilversum; new transmitter testing. **J. McL. (Knightswood):** (1) possibly R.A.F. short-wave transmissions; not a broadcasting station. **HELENSLEA:** Hilversum; V.A.R.A. transmissions usually close down with the "Internationale." **QUATRE HEURES (Crofton):** Hilversum; new transmitter testing. **CURIEUSE (Birkenhead):** Sottens; a special Swiss programme for U.S.A. listeners. **PADDY (Nuneaton), BEGINNER (Swansea):** New Scottish Regional transmitter relaying Nineteenth Century Costume Ball from Edinburgh. **TICK (Hampstead):** See reply to CURIEUSE (Birkenhead). **YWORREE (Penge):** Valencia. **DOC (Putney):** Turin; altered programme. **ROYAL ARCH (Portsmouth):** Prangins (Switzerland). **BRIDGE (Somerset):** Possibly Rugby (32.59 m.). **BROMIUM (Bath):** PPX, Rio de Janeiro, working with LSY, Hurlingham, Buenos Aires. **CORNISH (Bedford):** Huizen; gramophone records. **GT. OUSE (St. Ives):** Rabat (Morocco). **OIDAR (Bromsgrove):** Hilversum; new transmitter testing. **RAMESES II (E.15):** Prangins (Switzerland), relaying special broadcast from Geneva and Lausanne to U.S.A. **CURIOS (Oxford):** Rennes P.T. **INTERESTED (Moseley):** (1) details given are too vague to permit identification of programme, but probably Warsaw (No. 2) on 214.3 m.; (2) Reykjavik. **ATALANTA (Walthamstow):** Cannot trace GJP, but WQE (if correct) Rocky Point (N.J.). **WELSHMAN (Bacup):** (1) VE9DR, Drummondville (Quebec); (2) s.s. *Majestic*; (3) possibly W2XBJ, Deal Beach (20.39 m.); also Rocky Point (N.J.). **JUNKSET (Ramsgate):** (1) and (2) British amateur transmitters; write to Radio Society of Great Britain, 53, Victoria St., London, S.W.1.; (3) see replies to other listeners re WQV, DJA, DIQ, DJB. **R.H.R.F. (Liverpool):** Scheveningen Haven (Holland) on 1,071 m.; commercial transmitter only. **BILLYANY (Morecambe):** Sottens broadcasting special programme for U.S.A. **UNCERTAIN (Madeley):** Possibly WJZ, Boundbrook, N.J. **R.S.V.P. (Dublin):** GBW (Rugby) 20.77 m. working with LSN, Monte Grande (Buenos Aires). **CURIEUSE COMME UNE CHATTE (Bourne End):** DIQ, Königs Wusterhausen, DJB, Zeesen; see replies to other readers. **AL BABAS GAMEL (Londonderry):** We cannot trace the call-letters given, but further fog beacons off Scottish coasts have been recently installed. Not published in latest list of Admiralty Signals. **TYRES (Kingsstanding):** Regret, cannot trace. **HEATHER (Aberdeen):** (1) Nürnberg relaying Munich; (2) Stavanger relaying Oslo. **LATE TRAIN (Bushey):** DIQ, Königs Wusterhausen (29.18 m.). **EAGLE (Cork):** This was Radio Maroc (Rabat); gramophone records. **EAST GROVE (Exeter):** ZLW, Wellington, N.Z. (24.4 m.). **G. E. M. (Doncaster):** (1) the U.S.A. programmes have been relayed recently through various channels; possibly WOO Deal Beach (N.J.) on 35.25, in this instance; (2) cannot trace any French station on about 29.6 m.; (3) only Spanish station in that section of the waveband is EAQ, Aranjuez-Madrid (30.4 m.); (4) SOV (SUV?) Abn Zabal, Cairo, testing with GBP, Rugby. **AFTERIT (Eastbourne):** (1) EAQ, Madrid (30.4 m.); the Morse station heard was probably DHD, Nauen (30.5 m.); (2) LSM, Buenos Aires, working with Rio de Janeiro; (3) write to Radio Society of Great Britain, 53, Victoria Street, London, S.W.1. **UNITED (Liverpool):** W3XAL, Boundbrook, New Jersey, on 49.18 m.

Ostrava gave excellent reception on the same nights. Stuttgart is still steady and powerful, but Strasbourg fades much more than he did some time ago. Several attempts during the week to receive Wilno were spoilt through interference of such a fierce nature that I have been unable to resolve anything intelligible.

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1. Time and Date of reception.
2. Approximate frequency in kilocycles per sec. (or wavelength in metres).
3. Nearest known stations, above and below.
4. Call or interval signal, if heard.
5. Language.
6. Type of receiver in use and strength of signal.
7. Details of programme or signal received.
8. Name and address.
9. Nom de plume. (*Proprietary names must not be used.*)

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# OSBORN RADIO CABINETS

# Stations in Alphabetical Order

(Above 100 metres)

Corrected according to the latest official information

## EUROPEAN

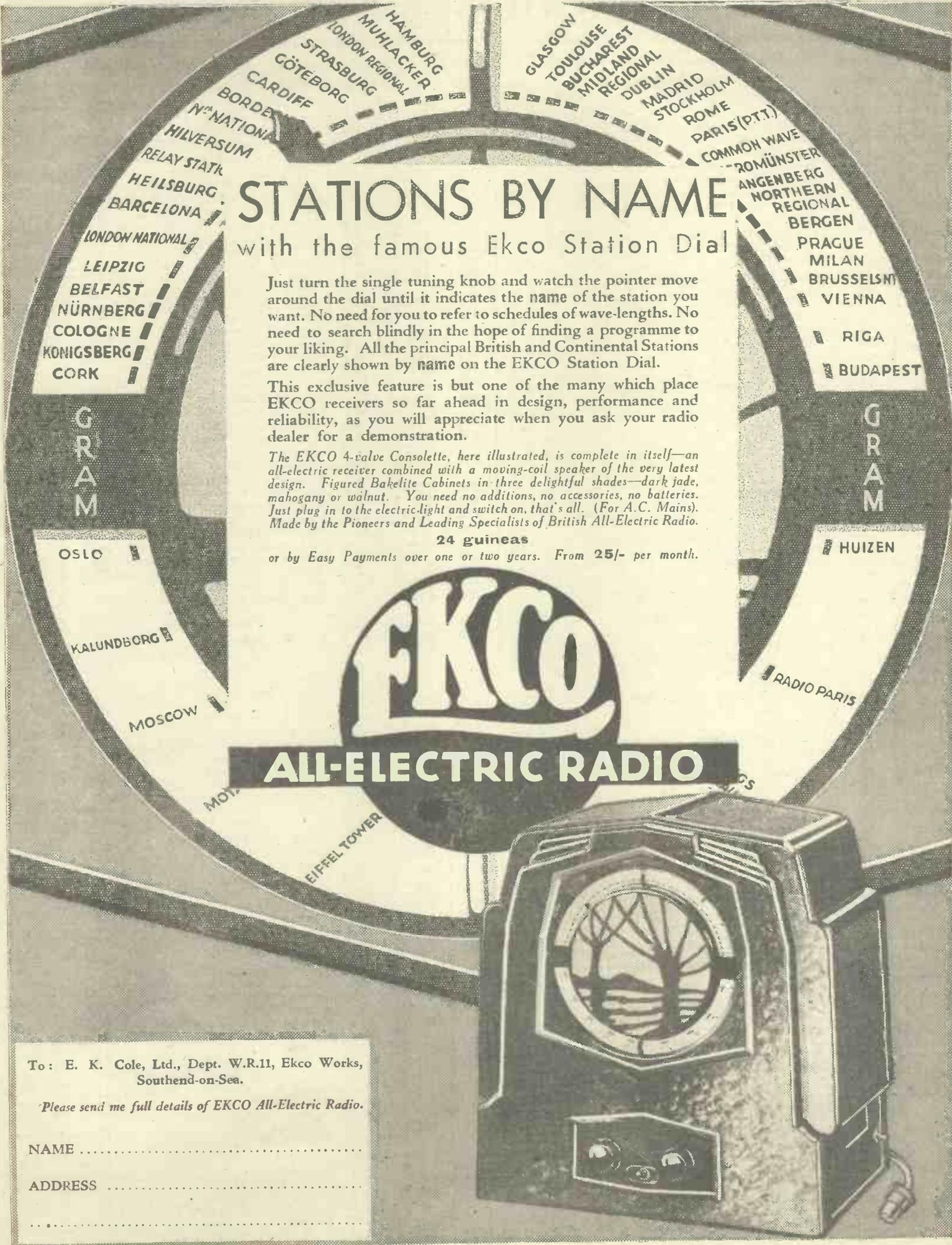
(Including Stations connected with the European System)

	Kc/s	M.	kW.
Aalesund (Norway) ..	671	447.1	0.35
Aberdeen ..	1040	288.5	1
Algiers (North Africa) ..	825.3	363.3	13
Almeria (Spain), EAJ18 ..	1193	252	1
Ankara (Turkey) ..	195	1538	7
Archangel (Russia) ..	770	390	10
Augsburg (Germany) ..	536	560	0.25
Barcelona, Radio Barcelona (Spain), EAJ1 ..	860	349	8
Barcelona, Association National, EAJ15 ..	1193	252	1
Basle (Switzerland) ..	1229	244.1	0.5
Belfast (N. Ireland) ..	1238	242	1
Belgrade (Yugoslavia) ..	697	430.4	2.5
Bergen (Norway) ..	824	364	1
Berlin Relay (Germany) ..	1058	283	0.5
Berlin (Witzleben) ..	715	419.5	1.5
Berne (Switzerland) ..	1220	246	0.5
Beziers, Radio (France) ..	1250	240	1.5
Boden (Sweden) ..	244	1229.5	0.6
Bodø (Norway) ..	662	453.2	0.5
Bolzano (Italy) IBZ ..	815	368.1	1
Borås (Sweden) ..	1450	207	0.15
Bordeaux (Lafayette) PTT (France) ..	986	304	13
Bordeaux-Sud-Ouest (France) ..	1265	237.2	3
Bournemouth ..	1040	288.5	1
Bratislava (Czechoslovakia) ..	1076	279	14
Bremen (Germany) ..	1112	270	0.25
Breslau (Germany) ..	923	325	1.5
Brno (Czechoslovakia) ..	878	342	35
Brussels (No. 1) (Belgium) ..	590	509	15
Brussels (No. 2) (Belgium) ..	887	338.2	15
Bucharest (Romania) ..	761	394	12
Budapest (No. 1) (Hungary) ..	545	550	18.5
Cadiz (Spain) ..	896	335	5.5
Cardiff ..	968	309.9	1
Cartagena (Spain) ..	1220	246	0.4
Cassel (Germany) ..	1220	246	0.25
Chatelineau (Belgium) ..	1391	216	—
Christiansand (Norway) ..	1274	235.5	0.5
Copenhagen (Denmark) ..	1067	281	0.75
Cork (I.F.S.) ..	1337	224.4	1
Cracow (Poland) ..	959	312.8	1.5
Csepel (Hungary) ..	1428	210	3
Danzig (Free City) ..	662	453.2	0.5
Davenry National Stn. (Gt. Britain) ..	193	1554.4	30
Dresden (Germany) ..	941	319	0.25
Dublin (Ireland) ..	725	413	1.2
Dundee ..	1040	288.5	0.12
Edinburgh ..	1040	288.5	0.3
Eskilstuna (Sweden) ..	1220	246	0.2
Falun (Sweden) ..	977	307	0.5
Fécamp (Radio Normandie) (France) ..	1345	223	10
Flensburg (Germany) ..	1373	218	0.5
Florence (Italy) ..	599	500.8	20
Frankfurt-on-Main (Germany) ..	770	390	1.5
Fredriksstad (Norway) ..	810	367.6	0.7
Freiburg-im-Breisgau (Germany) ..	527	570	0.25
Gävle (Sweden) ..	1470	204	0.2
Geneva (Radio-Geneve) (Switzerland) ..	395	760	1.5
Genoa (IGE) (Italy) ..	959	312.8	10
Glasgow ..	797	376.4	1
Gleiwitz (Germany) ..	1184	253	5
Göteborg (Sweden) ..	932	322	10
Graz (Austria) ..	852	352.1	7
Grenoble (France) PTT ..	530	566	2
Halmstad (Sweden) ..	1391	216	0.2
Hälsingborg (Sweden) ..	1301	231	0.2
Hamar (Norway) ..	536	560	0.7
Hamburg (Germany) ..	808	372	1.5
Hannover (Germany) ..	530	566	0.25
Heilsberg (Germany) ..	1085	276.5	60
Helsinki (Finland) ..	815	368.1	13.2
Hilversum (Holland) ..	1013	296.1	20
Hörby (Sweden) ..	1166	257	10
Hudiksvall (Sweden) ..	1328	226	0.15
Huizen (Holland) ..	160	1875	8.5
Innsbruck (Austria) ..	1058	283	0.5
Istanbul (Turkey) ..	250	1200	5
Jönköping (Sweden) ..	1490	202	0.25
Kaiserslautern (Germany) ..	538	560	1.5
Kalmar (Sweden) ..	1211	247.7	0.2
Kalundborg (Denmark) ..	260	1153	7.5
Karlskrona (Sweden) ..	1530	196	0.2
Karlstad (Sweden) ..	1382	217	0.25
Kasbah (Tunis) ..	222.2	1350	0.5
Katowice (Poland) ..	734	408	16
Kaunas (Lithuania) ..	155	1935	7
Kharkov (Russia), RV20 ..	320	937.5	20
Kiel (Germany) ..	1292	232.2	0.25
Kiev (Russia) ..	290	1034	20
Kiruna (Sweden) ..	1220	248	0.25
Klagenfurt (Austria) ..	662	453.2	0.5
Königsberg (Germany) ..	1382	217	0.5
Königs Wusterhausen (Zeeseen, Germany) ..	183.5	1635	60
Kosice (Czechoslovakia) ..	1022	293	2.5
Kristinehamn (Sweden) ..	1480	203	0.25
Lahti (Finland) ..	167	1796	54
Langenberg (Germany) ..	635	473	60
Lausanne (Switzerland) ..	442	680	0.6
Leipzig (Germany) ..	1157	259	0.2
Leninrad (Russia) ..	300	1000	10.0
Leninrad (Russia) ..	855.5	351	1.2
Liège (Belgium) ..	1071	280	—
Liège Experimental (Belgium) ..	1236	242.7	—
Lille (France) PTT ..	1130	265.4	1.3
Limoges (France) ..	1022	293	0.7
Linz (Austria) ..	1220	246	0.5

## EXTRA-EUROPEAN

	Kc/s	M.	kW.
Lisbon (Portugal) ..	1063	282.2	2
Ljubljana (Yugoslavia) ..	522	574.7	2.5
London (Regional) ..	843	356	50
London (National) ..	1147	261.6	50
Lodz (Poland) Experimental ..	1283	235	2
Lwów (Poland) ..	788	381	16
Lyons (La Doua) (France), PTT ..	644	465.8	1.5
Lyons (Radio Lyons) (France) ..	1043	287.6	0.7
Madrid (Union Radio) (Spain), EAJ7 ..	707	424.3	2
Madrid (Radio España) (Spain) ..	707	424.3	—
Magdeburg (Germany) ..	1058	283	0.5
Malmö (Sweden) ..	689	436	0.25
Malmö (Sweden) ..	1301	231	1.25
Marseilles (France), PTT ..	950	315	1.6
Midland Regional Stn. (Gt. Britain) ..	752	398.9	25
Milan (Italy) ..	905	331.5	7
Minsk (Russia) ..	428.8	700	4
Montpellier (France) ..	1049	286	0.8
Moravská-Ostrava (Czechoslovakia) ..	1137	263.8	11
Moscow (Russia) ..	603.6	497	1.2
Moscow (Old Komintern), RVI ..	202.0	1481	100
Moscow (Trades Union) ..	230.1	1304	100
Moscow (Popoff) ..	268.5	1116	40
Moscow (Experimental) ..	416.7	720	20
Moscow-Stalin ..	707	424.3	100
Motala (Sweden) ..	222.5	1348	30
Munich (Germany) ..	563	533	1.5
Naples (Italy), INA ..	941	319	1.5
Newcastle ..	1040	288.5	1
Nice (Juan-les-Pins) (France) ..	1205	249	0.8
Nijni Novgorod (Russia) ..	394	761.4	1.8
Nîmes (France) ..	1265	237.2	1
Norrköping (Sweden) ..	1292	232.2	0.25
North National Stn. (Gt. Britain) ..	995	301.5	50
North Regional Stn. (Gt. Britain) ..	625	480	50
Notodden (Norway) ..	671	447.1	0.08
Novosibirsk (Russia), RA33 ..	238.1	1260	4
Nürnberg (Germany) ..	1256	239	2
Odessa (Russia) ..	866	450.4	4
Örebro (Sweden) ..	1285	237.2	0.2
Ornskoldsvik (Sweden) ..	1460	206	0.2
Oslo (Norway) ..	277	1083	60
Östersund (Sweden) ..	389	770	0.6
Oviedo (Spain) ..	1121	267.6	0.7
Palermo (Italy) ..	554	542	3
Paris (Ecole Supérieure) (France), PTT ..	671	447.1	0.7
Paris (Eiffel Tower), FLE ..	915	1445.7	13
Paris (Poste Parisien) ..	207.3	328.2	60
Paris (Radio LL) ..	180	370.4	1.2
Paris (Radio Paris), CFR ..	174	1725	75
Paris (Radio Vitus) ..	959	312.8	—
Petrozavodsk (Russia) ..	385	778	2
Pietarsaari (Jakobstad) (Finland) ..	1031	291	0.25
Plymouth ..	1040	288.5	0.12
Pori (Björneborg) (Finland) ..	1373	218	0.7
Porsgrund (Norway) ..	662	453.2	0.7
Poznań (Poland) ..	896	335	1.9
Prague (Czechoslovakia) ..	614	488.6	120
Rabat (Morocco) ..	721.1	416	6
Rennes (France) ..	1103	272	1.3
Rijykjavi (Iceland) ..	250	1200	21
Riga (Latvia) ..	572	525	15
Rjukan (Norway) ..	671	447.1	0.15
Roma (Italy), IRO ..	680	441	50
Rostov/Don (Russia) ..	353.5	848.7	4
Saffle (Sweden) ..	1220	246	0.4
Salamanca (Spain), EAJ22 ..	662	453.2	1
Salzburg (Austria) ..	1373	218	0.5
San Sebastian (Spain), EAJS ..	662	453.2	0.6
Schweizerischer Landessender (Bernmünster) (Switzerland) ..	653	459	60
Scottish Regional ..	797	376.4	50
Seville (Spain), EAJ5 ..	815	368.1	1.5
Sebastopol (Russia) ..	630.2	476	1.2
Smolensk (Russia) ..	531	565	2
Sofia (Rodno-Radio) (Bulgaria) ..	941	319	1
St. Quentin (France) ..	1714	175	—
Stavanger (Norway) ..	1247	240.6	0.5
Stettin (Germany) ..	1058	283	0.5
Stockholm (Sweden) ..	689	436	55
Strasbourg-Brumath (France) ..	869	345	11.5
Stuttgart (Müllbacher) (Germany) ..	832	360.5	60
Suisse Romande, Radio (Sottens) (Switzerland) ..	743	403	25
Sundsvall (Sweden) ..	554	542	10
Swansea ..	1040	288.5	0.12
Tallinn (Reval) (Estonia) ..	1004	298.8	11
Tampere (Tammerfors) (Finland) ..	1031	291	1
Tartu (Estonia) ..	644	465.8	0.5
Tashkent (Russia) ..	256	1171.5	—
Tiflis (Russia) ..	280	1071	10
Tiraspol (Russia) ..	842	356.3	—
Toulouse (France), PTT ..	1175	255	0.7
Toulouse (Radio du Midi) (France) ..	779	385	8
Trieste (Italy) ..	1211	247.7	10
Trohättan (Sweden) ..	1193	252	0.25
Tromsø (Norway) ..	662	453.2	0.1
Trondheim (Norway) ..	608	493.4	1.2
Turin (Italy) ..	1096	273.7	7
Turku (Åbo) (Finland) ..	1220	246	0.6
Uddevalla (Sweden) ..	1310	229	0.5
Umea (Sweden) ..	1301	231	0.2
Uppsala (Sweden) ..	662	453.2	0.15
Valencia, Radio (Spain) ..	1121	267.6	1.5
Varberg (Sweden) ..	1202	249.6	0.3
Vienna Experimental (Austria) ..	242.5	1237	—
Vienna (Rosenhügel) (Austria) ..	581	517	15
Viiipuri (Viiborg) (Finland) ..	1031	291	13.2
Warsaw, No. 1 (Poland) ..	212.5	1411	120
Warsaw, No. 2 (Poland) Experimental ..	1400	214.2	1.9
Wilno (Poland) ..	533	563	16
Zagreb (Yugoslavia) ..	977	307	0.75

	Kc/s	M.	kW.
Adelaide (Australia), 5CL ..	730	411	5
Alexandria (Va), WJSV ..	1460	205	10
Atlanta (Ga.), WSB ..	740	405	5
Atlantic City (N.J., U.S.A.), W.P.G. ..	1100	273	5
Auckland (New Zealand), IYA ..	900	333	0.5
Baltimore (Md.), WBAL ..	1060	283	10
Bombay (India), VUB ..	840	357.1	3
Boston (Mass., U.S.A.), WBZ ..	990	303	15
Bound Brook (N.J., U.S.A.), WJZ ..	760	395	30
Brisbane (Australia), 4QG ..	759	395	5
Calcutta (India), VUC ..	810	370.4	1.3
Calgary (Canada), CFCN ..	690	435	18
Cape Town ..	800	375	1.5
Carthage (Radio Tunis), TNV ..	164	1829.1	2
Casablanca (Morocco) ..	984	305	2.5
Chicago (Ill.), KYW—KFKX ..	1020	294	10
Chicago (Ill.), WMAQ ..	670	448	5
Chicago (Ill.), WGN—WLIB ..	720	417	25
Chicago (Ill.), WBBM ..	770	390	25
Chicago (Ill.), WLS ..	870	345	50
Chicago (Ill.), WENR ..	870	345	55
Christchurch (New Zealand), 3YA ..	980	306	0.5
Cincinnati (O.), WLW ..	700	429	50
Cleveland (O., U.S.A.), WTAM ..	1070	280	50
Colombo (Ceylon) ..	700	428.5	1.75
Crystal Brook (Australia) (5CK) ..	720	417	7.5
Dairen, JOAK ..	759	395	1
Dallas (Tex.), WFAA ..	800	375	50
Dallas (Tex.), KRLD ..	1040	288	10
Davenport (Ia.), WOC ..	1000	300	5
Denver (Colo.), KOA ..	830	361	12.5
Des Moines (U.S.A.), WHO ..	1000	300	5
Detroit (Mich., U.S.A.), WJZR ..	750	400	5
Dunedin (New Zealand), 4YA ..	647	463	0.25
Durban (South Africa) ..	731	410	1.5
Edmonton (Canada), CHMA—CKUA ..	580	517	0.5
Fort Wayne (Ind.), WOWO ..	1160	259	10
Fort Worth (Texas), WBAP ..	800	375	50
Gainesville (Fla.), WRUF ..	830	361	5
Hartford (Conn.), WTIC ..	1060	283	50
Hiroshima (Japan), JOFK ..	849	353	10
Hobart (Australia), 7ZL ..	580	517	3
Hollywood, KNX ..	1050	286	5
Hong Kong (China), ZBV ..	845	355	1.5
Hot Springs (Col.), KTHS ..	1040	288	10
Huntsville (Ala.), WBHS ..	1200	250	50
Johannesburg, JB ..	666.5	450	10
Kanazawa, JOJK ..	709	423	3
Keijyo (Japan), JODK ..	690	435	1
Kumamoto (Japan), JOGK ..	789	380	10
Lima (Peru), OAX ..	789	380	5
Lincoln (Neb.), KFAB ..	770	390	5
Los Angeles (Cal.), KFI ..	640	468	50
Louisville (Ken.), WHAS ..	820	386	10
Melbourne (Australia), 3AR ..	620	484	5
Melbourne (Australia), 3LO ..	800	375	5
Miami Beach (Florida), WIOD ..	1300	231	1
Milford (Kan.), KFKB ..	1050	286	5
Minneapolis (Min., U.S.A.), WCCO ..	810	370	5
Mooseheart (Ill.), WJJD ..	1130	265	20
Muscantine (Ia.), KTNT ..	1170	25	



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# Stations in Order of Frequencies and Wavelengths

Corrected in accordance with the latest official information available at the time of going to press

The figures in black type represent the power according to the Copenhagen Power-Rating, but carrier-wave power only is shown

Kc/s	M.	kW.	Station	Dial Readings	Kc/s	M.	kW.	Station	Dial Readings
155	1935	7	Kaunas (Lithuania)		689	436	0.25	Malmberget (relays Boden) (Sweden)	
160	1875	8.5	Huizen (Holland)		697	430.4	55	Stockholm (Sweden)	
167	1796	54	Lahti (Finland) (relays Helsinki)				2.5	Belgrade (Yugoslavia)	
174	1725	75	Radio-Paris (CFR)				2	Madrid (Union Radio)(EAJ7)(Spain)	
183.5	1635	60	Königs Wusterhausen (Zeesen) (Germany) Relays Berlin		707	424.3		7-8.30 p.m. and (except Monday) 10 p.m. to 12 midnight	
193	1554.4	30	Daventry National (Great Britain)					Madrid (Radio España) (Spain) 5-7 p.m. (Mon. 5 p.m. to 12 midnight)	
195	1538	7	Ankara (Turkey)		715	419.5	100	Moscow-Stalin (Russia)	
202.6	1481	100	Moscow (Old Komintern) (RV1) (Russia)		721.1	416	1.5	Berlin (Witzleben)	
207.5	1445.7	13	Eiffel Tower (FLE) Paris (France)		725	413	6	Rabat (Morocco)	
212.5	1411	120	Warsaw No. 1 (Poland)		734	408	1.2	Dublin (Ireland)	
222.2	1350	0.5	Kasbah (Tunis)		743	403	16	Katowice (Poland)	
222.5	1348	30	Motala (Sweden) (relays Stockholm)				25	Radio Suisse Romande (Sottens) (Switzerland)	
230.1	1304	100	Moscow (Trades Union)		752	398.9	25	Midland Regional (Great Britain)	
238.1	1260	4	Novosibirsk (Russia)		761	394	12	Bucharest (Romania)	
242.5	1237		Vienna Experimental (Austria)		770	390	10	Archangel (Russia)	
244	1229.5	0.6	Boden (Sweden)		779	385	1.5	Frankfurt-a-M. (Germany)	
250	1200	5	Istanbul (Turkey)		788	381	8	Toulouse (Radio) (France)	
256	1171.5	21	Reykjavik (Iceland)		792.5	378.6	16	Lwów (Poland)	
260	1153	7.5	Tashkent (Russia)		797	376.4	1	Moscow (Russia)	
268.5	1116	40	Kalundborg (Denmark) (relays Copenhagen)		806	372	50	Glasgow (Great Britain)	
277	1083	60	Moscow, Popoff		810	370.4	1.5	Scottish Regional (Gt. Britain) (testing)	
280	1071	10	Oslo (Norway)				1.2	Hamburg (Germany)	
290	1034	10	Tiflis (Russia)		815	368.1	1	Radio LL, Paris (France)	
290	1034	36	Kiev (Russia)				1	Bolzano (Italy) (IBZ)	
300	1000	100	Leningrad (Russia)		816	367.6	13.2	Helsinki (Finland)	
320	937.5	20	Kharkov (Russia) RV20		824	364	1.5	Seville (Union Radio) (EAJ5) (Spain)	
353.5	848.7	4	Rostov-Don (Russia)		825.3	363.3	0.7	Fredriksstad (Norway) (relays Oslo)	
385	778	2	Petrozavodsk (Russia)		832	360.5	1	Bergen (Norway)	
389	770	0.6	Östersund (Sweden) (relays Sundsvall)		842	356.3	13	Algiers (N. Africa)	
394	761.4	1.8	Nijni Novgorod (Russia)		843	356	60	Stuttgart (Mühlacker) (Germany)	
395	760	1.5	Geneva (Switzerland)		852	352.1	50	Tiraspol (Russia)	
416.7	720	20	Moscow (Experimental)		855.5	351	7	London Regional (Great Britain)	
428.6	700	4	Minsk (Russia)		860	349	1.2	Graz (Austria) (usually relays Vienna)	
442	680	0.6	Lausanne AB2 (Switzerland)				8	Leningrad (Russia)	
522	574.7	2.5	Ljubljana (Yugoslavia)		869	345	11.5	Barcelona (Radio Barcelona) (EAJ1) (Spain)	
527	570	0.25	Freiburg-im-Breisgau (Germany) (relays Stuttgart)		878	342	35	Strasbourg (Brumath) (France)	
530	566	2	Grenoble (PTT) (France)		887	338.2	15	Brno (Czechoslovakia)	
531	565	0.25	Hanover (Germany)(relaysHamburg)				15	Brussels No. 2 (Belgium) (Flemish programme)	
533	563	16	Smolensk (Russia)		896	335	5.5	Cadiz (Spain)	
536	560	1.5	Wilno (Poland)		905	331.5	1.9	Poznań (Poland)	
		0.25	Augsburg (Germany)(relays Munich)		914	328.2	7	Milan (Italy)	
		0.7	Kaiserslautern (Germany) (relays Munich)		923	325	60	Poste Parisien (Paris)	
545	550	18.5	Hamar (Norway) (relays Oslo)		932	322	1.5	Breslau (Germany)	
554	542	3	Budapest No. 1 (Hungary)				10	Göteborg (Sweden) (relays Stockholm)	
563	533	10	Palermo (Italy)		941	319	0.25	Dresden (Germany) (relays Leipzig)	
572	525	15	Sundsvall (Sweden)		950	315	1.5	Naples (INA) (Italy)	
581	517	15	Munich (Germany)		959	312.8	1	Sofia (Rodno-Radio) (Bulgaria)	
590	509	15	Riga (Latvia)		968	309.9	1.6	Marseilles (PTT) (France)	
599	500.8	20	Vienna (Rosenhügel) (Austria)		977	307	1.5	Cracow (Poland)	
603.6	497	1.2	Brussels No. 1 (Belgium)		986	304	0.75	Genoa (IGE) (Italy)	
608	493.4	1.2	Florence (IFI) (Italy)		995	301.5	50	Radio-Vitus, Paris (France)	
614	488.6	120	Nijni Novgorod (Russia)				1	Cardiff (Great Britain)	
625	480	50	Moscow (Russia)		1004	298.8	11	Falun (Sweden)	
			Trondheim (Norway)		1013	296.1	20	Zagreb (Yugoslavia)	
			Prague (Czechoslovakia)				7*	Bordeaux-Lafayette (PTT) (France)	
			North Regional (Manchester) (Great Britain)		1022	293	2.5	North National (Manchester) (Great Britain)	
630.2	476	1.2	Sebastopol (Russia)				0.7	Tallinn (Estonia)	
635	473	60	Langenberg (Germany)		1031	291	1	Hilversum (Holland)	
644	465.8	1.5	Lyons (La Doua) (France) (relays PTT)				13.2	Kosice (Czechoslovakia)	
653	459	0.5	Tartu (Estonia)				0.7	Limoges (PTT) (France)	
		60	Schweizerischer Landessender (Bernmünster)(Switzerland)				0.25	Pietarsaari (Jacobstad) (Finland) (relays Helsinki)	
		0.5	Bödo (Norway)				1	Tampere (Finland) (relays Helsinki)	
		0.5	Danzig (Free City) (relays Königsberg)				13.2	Viipuri (Viborg) (Finland) (relays Helsinki)	
		0.5	Klagenfurt (Austria) (relays Vienna)					British Relay Stations	
662	453.2	0.7	Porsgrund (Norway) (relays Oslo)				1	Aberdeen	
		1	Salamanca (Spain) (EAJ22)				1	Bournemouth	
		0.6	San Sebastian EAJ8 (Spain) (Mon., Wed., Fri. 7.30-9 p.m., other days 10 p.m. to midnight)		1040	288.5	0.12	Dundee	
		0.1	Tromsø (Norway)				0.3	Edinburgh	
666	450.4	0.15	Uppsala (Sweden) (relays Stockholm)				1	Newcastle	
		4	Odessa (Russia)		1043	287.6	0.12	Plymouth	
		0.35	Aalesund (Norway)		1049	286	0.12	Swansea	
		0.08	Notodden (Norway)				0.7	Lyons (Radio) (France)	
671	447.1	0.7	Paris (PTT) (Ecole Supérieure) (France)				0.8	Montpellier (France)	
		0.15	Rjukan (relays Oslo) (Norway)		1058	283	0.5	Berlin Relay (Germany)	
680	441	50	Rome (IRO) (Italy)				0.5	Magdeburg (Germany)	
							0.5	Stettin (Germany) (relays Berlin)	
							0.5	Innsbruck (Austria) (relays Vienna)	

\* Until 4.40 p.m.

STATIONS IN ORDER OF FREQUENCIES AND WAVELENGTHS (Continued)

Kc/s	M.	kW.	Station	Dial Readings	Kc/s	M.	kW.	Station	Dial Readings	
1063	282.2	2	Lisbon (Portugal)		1283	235	2	Lodz (Poland) (Experimental)		
1067	281	0.75	Copenhagen (Denmark)		1292	232.2	0.25	Kiel (Germany) (relays Hamburg)		
1071	280		Radio Liège (Belgium)				0.25	Norrköping (Sweden)		
1076	279	14	Bratislava (Czechoslovakia)				0.2	Hälsingborg (Sweden)		
1085	276.5	60	Heilsberg (Germany) (rel. Königsberg)		1301	231	1.25	Malmö (Sweden) (relays Stockholm)		
1096	273.7	7	Turin (Italy)				0.2	Umea (Sweden)		
1103	272	1.3	Rennes (France)		1310	229	0.05	Uddevala (Sweden)		
1112	270	0.25	Bremen (Germany) (relays Hamburg)		1328	226	0.15	Hudiksvall (Sweden)		
1121	267.6	0.7	Oviedo (Spain)		1337	224.4	1	Cork (Ireland)		
		1.5	Radio Valencia (Spain)		1345	223	10	Fécamp (Radio Normandie) (France)		
1130	265.4	1.3	Lille (PTT) (France)				0.5	Flensburg (Germany) (relays Hamburg)		
1137	263.8	11	Moravská-Ostrava (Czechoslovakia)				0.7	Pori (Björneborg) (Finland) (relays Helsinki)		
1147	261.6	50	London National (Great Britain)		1373	218		0.5	Salzburg (relays Vienna)	
1157	259	2	Leipzig (Germany)				0.25	Karlstad (Sweden)		
1166	257	10	Hörby (Sweden) (relays Stockholm)		1382	217	0.5	Königsberg (Germany)		
1175	255	0.7	Toulouse (PTT) (France)				0.2	Halmstad (Sweden)		
1184	253	5	Gleiwitz (Germany) (relays Breslau)		1391	216	3	Radio Chatelineau (Belgium)		
		1	Almeria (Spain) (EAJ18)				1.9	Warsaw, No.2 (Poland) (Experimental)		
1193	252	1	Barcelona (Association National) (EAJ15)		1400	214.2		Csepel (Hungary)		
		0.25	Trollhättan (Sweden)		1428	210	0.15	Borås (Sweden)		
1202	249.6	0.3	Varberg (Sweden)		1450	207	0.2	Orneköldsвик (Sweden)		
1205	249	0.8	Juan-les-Pins (Nice) (France)		1460	206	0.2	Gävle (Sweden) (relays Stockholm)		
1211	247.7	0.2	Kalmar (relays Stockholm)		1470	204	0.25	Kristinehamn (Sweden)		
		10	Trieste (Italy)		1480	203	0.25	Jönköping (Sweden) (relays Stockholm)		
		0.5	Berne (Switzerland)		1490	202	0.2	Karlskrona (Sweden) (relays Stockholm)		
		0.4	Cartagena (Spain)		1530	196		St. Quentin (France)		
		0.25	Cassel (Germany) (relays Frankfurt)							
1220	246	0.2	Eskilstuna (Sweden) (relays Stockholm)		1714	175				
		0.25	Kiruna (Sweden) (relays Boden)							
		0.5	Linz (Austria) (relays Vienna)							
		0.4	Säffle (Sweden) (relays Stockholm)							
		0.6	Turku (Abo) (Finland) (relays Helsinki)							
1229	244.1	0.5	Basle (Switzerland)							
1236	242.7		Liège Experimental (Belgium)							
1238	242	1	Belfast (Ireland)							
1247	240.6	0.5	Stavanger (Norway)							
1250	240	1.5	Radio Beziers (France)							
1256	239	2	Nürnberg (Germany) (relays Munich)							
		3	Bordeaux Sud-Ouest (France)							
1265	237.2	1	Radio-Nimes (France)							
		0.2	Örebro (Sweden) (relays Stockholm)							
1274	235.5	0.5	Christiansand (Norway)							

DEVIATIONS

The following are the actual deviations from the official frequencies, as noted during measurements made at the Tatsfield Checking Station. All differences at 1.9 kc/s and over are shown.

571.1	525.4	—	Palermo (Italy)
604.9	495.8	—	Trondheim (Norway)
729.5	411.2	—	Madrid (Spain)
961	312.2	—	Radio Vitus (France)
1115.2	269	—	Radio Liège (Belgium)
1189	252.3	—	Barcelona (Association National) (Spain)
1251	239.8	—	Stavanger (Norway)
1349.6	222.2	—	Fécamp (Radio Normandie) (France)
1363.7	220	—	Radio Béziers (France)

(For List of Short-Wave Stations see page 1108)

Schedule of Advance Programmes

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For the benefit of traders who may wish to make arrangements for demonstrating, we are printing each week this schedule of the programmes to be transmitted by the National and Regional stations. It is felt that these programmes—which are roughly divided into one midday, three afternoon and four evening items (on Sunday one evening item only)—will be of service to those of our readers able to use them in connexion with the reception of the Experimental Short Wave Station, G5SW, which relays either the National (5XX) or London Regional Programmes from 7 p.m.

News Bulletins are transmitted daily (except on Sunday) at 12.30 p.m. (Saturday 12.45), 6.15 p.m., and midnight.

SUNDAY, JUNE 19

NATIONAL	LONDON REG.	MIDLAND REG.	NORTH REG.	SCOTTISH REG.
Organ Recital	As National	As National	As National	As National
As Midland Reg.	As Midland Reg.	Studio Orchestra	As Midland Reg.	As Midland Reg.
Gram. Records	As National	As National	As National	As National
Song and Piano-forte Recital	As National	As National	As National	As National
Kneller Hall Band	Light Music	Chamber Music	Studio Orch.	Orgaan Recital
Hotel Orch.	String Orch.	Military Band	As London Reg.	As National

MONDAY, JUNE 20

NATIONAL	LONDON REG.	MIDLAND REG.	NORTH REG.	SCOTTISH REG.
Studio Concert	As Midland Reg.	Cinema Orch.	As Midland Reg.	Cinema Organ
Cinema Orch.	As North Reg.	As North Reg.	Organ Recital	As North Reg.
Gram. Records	As Midland Reg.	Studio Orch.	As Midland Reg.	As Midland Reg.
Hotel Orch.	As National	Gram. Records	As National	Ballad Concert
Talks	Light Music	Studio Orch.	As National	As National
Vaudeville	As North Reg.	As London Reg.	As London Reg.	As National
Light Orch. Con.	Violin and Piano-forte Recital	As London Reg.	As London Reg.	As National
Dance Music	Dance Music	As London Reg.	As London Reg.	As National

TUESDAY, JUNE 21

NATIONAL	LONDON REG.	MIDLAND REG.	NORTH REG.	SCOTTISH REG.
Cinema Organ	As North Reg.	As North Reg.	Buxton Orch.	As National
Hotel Orch.	Ballad Concert	As London Reg.	As London Reg.	As National
Gram. Records	As Midland Reg.	Studio Orch.	As Midland Reg.	As National
Hotel Orch.	As National	Gram. Records	As National	Studio Orch.
French Talk	Light Music	Light Music	Hotel Orch.	As National
Military Band	Vaudeville	As London Reg.	As London Reg.	A Scottish Comedy
The English Singers	Light Orch. Con.	String Orch.	Band Concert	As National
Dance Music	Dance Music	As London Reg.	As London Reg.	Dance Music

WEDNESDAY, JUNE 22

NATIONAL	LONDON REG.	MIDLAND REG.	NORTH REG.	SCOTTISH REG.
Cinema Organ	As Midland Reg.	Cheltenham Orch	As Midland Reg.	As National
Gram. Records	As Midland Reg.	Organ Recital	As Midland Reg.	Gram. Records
Eucharistic Congress	As National	As North Reg.	Studio Orch.	As National
Symphony Con.	As National	Light Music	As National	Studio Orch.
Talks	Military Band	Dance Music	As London Reg.	As National
Light Orch. Con.	Gram. Records	As London Reg.	As London Reg.	As National
Freak Programme	Opera Relay from Berlin	As London Reg.	As London Reg.	As National
Dance Music	Dance Music	As London Reg.	As London Reg.	As National

THURSDAY, JUNE 23

NATIONAL	LONDON REG.	MIDLAND REG.	NORTH REG.	SCOTTISH REG.
Cinema Organ	As North Reg.	As North Reg.	Hotel Orch.	As National
Cinema Orch.	As Midland Reg.	As North Reg.	As Midland Reg.	As National
Abbey Evensong	As North Reg.	As North Reg.	Studio Orch.	Cinema Organ
Dance Music	As National	As North Reg.	As National	As National
German Talk	Light Music	Military Band	Studio Orch.	As National
Light Orch. Con.	Musical Com. Programme.	As London Reg.	As London Reg.	Concert Party
Play	Military Band	Studio Orch.	Studio Orch.	As National
Dance Music	Dance Music	As London Reg.	As London Reg.	As National

FRIDAY, JUNE 24

NATIONAL	LONDON REG.	MIDLAND REG.	NORTH REG.	SCOTTISH REG.
Cinema Orch.	As Midland Reg.	Cinema Organ	As Midland Reg.	Cinema Organ
Organ Recital	As North Reg.	As North Reg.	Cinema Orch.	Studio Concert
Gram. Records	As Midland Reg.	Studio Orch.	As Midland Reg.	As National
As Scottish Reg.	As Scottish Reg.	Instrumental Con.	As Scottish Reg.	Studio Orch.
Talks	Light Music	As London Reg.	Organ Recital	As National
Jack Hylton's Band	Play.	As London Reg.	As London Reg.	As National
Chamber Music	Orchestral Con.	As London Reg.	Studio Orch.	As National
Dance Music	Dance Music	As London Reg.	As London Reg.	As National

SATURDAY, JUNE 25

NATIONAL	LONDON REG.	MIDLAND REG.	NORTH REG.	SCOTTISH REG.
As North Reg.	As North Reg.	As North Reg.	Studio Orch.	As North Reg.
As Midland Reg.	As Midland Reg.	Commentary on Hill Climb for Racing and Sporting Cars	As Midland Reg.	As Midland Reg.
As North Reg.	As North Reg.	As North Reg.	Sailing of M. V. <i>Georgic</i>	As North Reg.
Air Force Pageant	As National	As National	As National	As National
Piano-forte Recital	Light Music	Studio Chorus	Studio Orch.	As National
Mus. Comedy Programme	As North Reg.	Military Band	Scarborough Orch.	Brighter Ballymuleaguey
Light Music	Freak Programme	As London Reg.	As London Reg.	Theatre Relay
Dance Music	Dance Music	As London Reg.	As London Reg.	As National

# PROGRAMMES FOR SUNDAY (June 5)

## PRINCIPAL EVENTS

### SERVICES AND SACRED MUSIC

9.55 a.m. Italian Stations (N.): Missa Cantata  
11.30 „ Leipzig and most German stations:  
Church Cantata (Bach).  
6.0 p.m. Stockholm: Evensong.

### SYMPHONY CONCERTS

12.15 p.m. Warsaw: Moniuszko programme.  
7.55 „ Stockholm.

### CONCERTS (Vocal and Instrumental)

6.15 a.m. Hamburg, etc: Harbour Concert.  
12.15 p.m. Heilsberg, Berlin: Midday Concert.  
6.30 „ Budapest: String Orchestra.  
7.0 „ Prague: Station Orchestra.  
8.0 „ Langenberg: Choral and orchestral.  
8.55 „ Hilversum: Relay from Concertgebouw, Amsterdam.  
9.20 „ Copenhagen: Choral and instrumental.

### OPERAS AND OPERETTAS

7.40 p.m. Vienna: "Mdle. Angot" (Lecocq).  
7.40 „ Leipzig: "La Vedova Scaltra!"  
(Wolf-Ferrari).  
7.50 „ Warsaw: "Halka" (Moniuszko).  
8.0 „ Berlin (Königs Wusterhausen): "The Sicilian Vespers" (Verdi).  
8.0 „ Oslo: "Suor Angelica" (Puccini).  
9.0 „ Italian Stations (N.): "Tannhäuser" (Wagner).

### MISCELLANEOUS

10.0 a.m. Prague: Children's Festival.  
2.0 p.m. Huizen: Football Match—Roman Catholic Holland v. Roman Catholic Germany.  
4.50 „ Vienna: The Austrian Derby.  
6.55 „ Berlin, Königs Wusterhausen: Commentary on a Water Polo Match.

### DANCE MUSIC

7.45 p.m. Strasbourg: Jazz Music.  
10.30 „ Berlin (2), Heilsberg, Langenberg.

The First Polish Opera  
Although Moniuszko's name has almost disappeared from concert programmes except in his native Poland, he is still held in high honour there, and today's WARSAW programmes are almost wholly devoted to him, on the occasion of the 60th anniversary of his death. The evening broadcast is a relay from the Opera House of his *Halka*, the opera which has a place in history as the first truly national



[Photo: Ilustracja Prosy, Warsaw.]  
Moniuszko

work of its kind in Poland. It had its first performance at Wilno in 1846. Parts of it, notably the overture, still appear fairly often on the whole world's concert programmes, but the opera itself is not likely to be revived except in his native country. The libretto is a slight but deeply tragic tale of peasant life, and *Halka* is a village maiden with whom Jontek is hopelessly in love. He tells her that she has been betrayed by the rich Pan Janusz, who is about to wed the daughter of a neighbouring land-owner, one Sophie. There is an effective scene in the second act where *Halka* tries to force her way into Janusz's castle by moonlight, but is caught and thrown out by his servants. She makes her way, nevertheless, to his wedding, and just as the ceremony is over, kills herself before the eyes of the horrified bride. Among the most attractive music are a *Polonaise* and the so-called *Blue Mazurka* in Act I, a splendid aria for *Halka* in the second act and a big ballet for peasants in Act III.

### Liszt's Tasso

In demanding that new paths must be found for the development of the art, Liszt used to insist that the function of music was to convey a message as definite as that of the written word. It was as propaganda for that theory that his twelve Symphonic Poems were composed. *Tasso*, the second of them, which LANGENBERG is broadcasting this evening, was conceived first in 1840, when Liszt was twenty-nine, as a pianoforte piece. It was orchestrated eight years later, and produced in August, 1849, at Weimar, as an Introduction to Goethe's play. As sub-title, Liszt added to its name—*Lamenti and Triumph*, explaining on the title page that the music depicts the poet groaning in prison, and finally meeting with tardy triumph. We are to imagine, as we listen, the city of Venice and its great waterways, haunted by the stern shade of the hero, the town of Ferrara, where his great works were produced, and lastly Rome, which gave him in the end his poet's crown. As in most of the symphonic poems, Liszt uses one tune as the central idea, a tune which is embodied in Tasso's great poem *Jerusalem Delivered*.

	kc/s	m.	kW.
London:	1,148	261.3	50
Daventry:	193	1,554.4	30
Northern:	995	301.5	50

	kc/s	m.	kW.
London:	842	356.3	50
Midland:	752	398.9	25
Northern:	626	479.2	50

The Frequencies and Wavelengths given in the following programmes are those published by the stations in question. For more accurate measurements, readers are referred to our Table of Frequencies and Wavelengths.

### NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME

**ALGIERS (N. Africa)**  
825.3 kc/s (363.3 m.); 13 kW.  
Transmits at intervals from 11.30 a.m. 7.0 p.m.—Dance Music. 7.15—Mozart Concert. 8.0—Orchestral Concert. 10.0 (approx.)—Close Down.

**BARCELONA (Spain)**  
Radio-Barcelona (EAI). 860 kc/s (359 m.); 8 kW.

8.15 a.m.—Physical Culture. 8.30—Topical Review. 9.0—Physical Culture (contd.). 9.15—Topical Review (contd.). 9.45—12 noon—Interval. 12 noon—Chimes and Weather Forecast. 12.15 p.m.—Photographic Weather Chart, followed by Municipal Band Concert, conducted by Juan Lamote de Grignon, relayed from the Palacio de Bellas Artes. 2.0—Light Music on Gramophone Records. 2.30—Sextet Concert. 3.0—Theatre Notes, Popular Music on Gramophone Records and Film Review. 3.20—Sextet Concert (contd.). 4.0—Programme for Hospitals and Benevolent Institutions, with Gramophone Records. 5.0—6.30—Interval. 6.30—Popular Music on Gramophone Records.  
7.0—Concert by the Station Orchestra. March, Vitavan (Leopold). Waltz, Légendes de la Forêt (Waldteufel). Selection from "Boris Godounov" (Moussorgsky). Légende (Dvorák). 7.30—Baritone Song Recital by Ramón Pradell. 8.0—Agricultural Talk in Catalan.

8.10—Concert by the Station Orchestra. Soloist, Blanca Costa (Soprano). Symphony No. 8—The Unfinished (Schubert). Song: Romance from "Manon" (Massenet). Carnival Overture (Dvorák). Soprano Solo: (a) Song from "Tosca" (Puccini), (b) Song from "The Force of Destiny" (Verdi). 9.0—Dance Music, relayed from the Excelsior Restaurant. 10.0—Programme for Women. 10.15—Request Gramophone Concert. 11.45—Chess Lesson. 12.0 mid-night (approx.)—Close Down.

**BELGRADE (Yugoslavia)**  
697 kc/s (430.4 m.); 2.5 kW.  
Transmits at intervals from 8.25 a.m. 12 noon—Time and Chimes. 12.5 p.m.—Tides Report, followed by Orchestral and Vocal Concert. 1.30—News and Film Notes. 4.0—Gramophone Records of Variety Music. 4.30—Medical Talk. 5.0—Popular Concert. 6.55—Time and Programme Announcements. 7.0—Recital of Popular Songs. 7.30 (approx.)—Orchestral Concert. 8.20—Radio Talk.

8.50—Report on the International Football Match France v. Yugoslavia. 9.0—Recital of Operatic Duets. 9.40—News Bulletin. 10.0—Violin Recital. 10.40—Concert from the Gradjevinska Kasina Restaurant.

**BERLIN (Germany)**  
Königs Wusterhausen. 183.5 kc/s (1,635 m.); 60 kW.

Transmits at intervals from 6.0 a.m. (Witzleben Relay).  
11.30 a.m.—1.0 p.m. (approx.)—See Leipzig. 1.0 (approx.)—Concert from Heilsberg. 2.15—Humorous Hunting Anecdotes. 2.45—4.15—See Berlin (Witzleben). 4.15—Talk: German Landscapes. 4.40—5.50—See Berlin (Witzleben). 6.0—The Younger Generation speaks—a Discussion on Business Ethics. 6.40—Wilma Mönckeberg reads Poems by Hölderlin. 6.55—See Berlin (Witzleben). 7.30—Talk: The Idea of Political Freedom.  
8.0—"I Vespri Siciliani" (Sicilian Vespers), Opera (Verdi), relayed from the Opera House, Unter den Linden, in connection with the German Art Weeks. News and Sports Notes in an interval. After the Programme, Second News, and Dance Music from Berlin (Witzleben). 12.30 a.m. (Monday)—Close Down.

**BERLIN (Germany)**  
Witzleben. 715 kc/s (419.5 m.); 1.5 kW.

Transmits at intervals from 6.0 a.m. (Gymnastics and Hamburg Relay).  
11.30 a.m.—See Leipzig. 12.10 p.m.—Part Relay of the Wilhelm Kahl Commemoration Service from the Reichstag. 12.30—Concert from

Heilsberg. 2.15—Fairy Tales for Children. 2.45—Talk for Parents. 3.15—Band Concert from the Kroll-Garten, with Selections by the Willy Groh Dance Band. 4.15—Ernst Wurm reads from his own Works. 4.40—Concert from the Kroll-Garten (contd.). 5.50—Reading (Theodor Borman). 6.15—Concert of Dances and Dance Songs from Five Centuries.

6.55—Water Polo Match: German National Team v. Berlin, relayed from the German Stadium. 7.25—Notes of the Day. 7.50—Sports Notes. 8.0—"Le Petit Duc" (The Little Duke)—Comic Opera in Three Acts (Lecocq). 10.10—Weather, News and Sports Notes, followed by Dance Music. 12.30 a.m. (Monday)—Close Down.

### BORDEAUX-LAFAYETTE (France)

(PTT) 986 kc/s (304 m.); 13 kW.  
12 noon—Programme relayed from Paris (Ecole Supérieure). 671 kc/s (447.1 m.). 2.0—Relay from Paris or Relay of a Local Festival. 6.20 (approx.)—Sports Results. 6.30—Radio Journal. 8.0—Review by M. Salomon. 8.10—Lottery Results. 8.30—Concert of Popular Music on Gramophone Records. 9.0—Gala Concert on Gramophone Records.

### BRATISLAVA (Czechoslovakia)

1,076 kc/s (279 m.); 14 kW.  
Transmits at intervals from 7.0 a.m. 7.0 p.m.—See Prague.  
8.0—"Givoffe-Givoffa"—Operetta in Three Acts (Lecocq). 10.30—See Prague. 10.50—Programme Announcements and News. 10.55—See Prague.

### BRESLAU (Germany)

923 kc/s (325 m.); 1.5 kW.  
Relayed by Gletwitz, 1,184 kc/s (253 m.).  
Transmits at intervals from 6.15 a.m. (Hamburg Relay).  
11.30 a.m.—See Leipzig. 12.15 p.m.—Concert from Heilsberg. 2.0—News Bulletin. 2.10—Talk for Philatelists. 2.35—Agricultural Notes. 2.50—Talk: The Telephone Directory.

10.30—10.45 a.m.—Time Signal (Greenwich); Shipping Forecast.  
12.30 p.m.—Organ Recital by G. D. Cunningham. From the Queen's Hall.  
1.0—A Concert. Reginald King and his Orchestra. Light Orchestral Pieces. Winifred Bury (Soprano).  
2.15—Gramophone Records of Famous Orchestras of Europe.  
3.0—Time Signal (Greenwich).  
3.0—The Gershom Parkington Quintet. Selection, Mignon (Ambroise Thomas), Solveig's Song (Grieg), Rondo (Mozart, arr. Kreisler).  
3.45—Children's Service from St. John's, Smith Square.  
4.15—"Hamlet, Prince of Denmark," by William Shakespeare. Adapted for the microphone by Barbara Burnham. The Play produced by Val Gielgud.  
6.0—6.15—Bible Reading.  
8.0—A Religious Service from the Studio.  
8.45—The Week's Good Cause. Appeal on behalf of The Blaina and District Miners' Hospital by Henry Ainley.  
8.50—"The News," Weather Forecast, General News Bulletin; Shipping Forecast.  
9.0—Time Signal (Greenwich).  
9.5—The Bournemouth Municipal Orchestra—Conductor, Sir Dan Godfrey. Isobel Baillie (Soprano), Arthur Cox (Tenor). Orchestra: Spanish March, El Abanico (Javaloyes), Overture, The Crown Diamonds (Auber), Serenade (Heykema), Isobel Baillie: Aria, Oh! come, do not delay (Figaro) (Mozart). Orchestra: Selection of popular Schubert Extracts (Finck), Waltz, Roses from the South (Johann Strauss), Arthur Cox: Desirée (Parker), Trees (Rasbach), Wanton Gales (Kearton). Orchestra with Xylophone Solo: Whispering Pines (W. Byrne). (Soloist, W. W. Bennett.) Orchestra and Organ: Selection; Cavalleria Rusticana (Mascagni).  
10.30—Epilogue.

12.30 p.m. (London and Northern)—Daventry National Programme.  
3.45 (London and Midland)—The Wireless Military Band. Conductor, B. Walton O'Donnell. John Thorne (Baritone).  
3.45 (Northern)—The Studio Orchestra. Directed by John Bridge. Harry Howson (Tenor).  
4.15 (Midland)—A Military Band Concert. The Band of 2nd Bn. The King's Own Royal Regiment. Conducted by A. T. S. Chandler.  
5.0—5.30—"China in the Melting Pot"—II. Professor P. M. Roxby.  
7.50 (Midland)—A Religious Service. Conducted by the Right Reverend Bishop Hamilton Baynes, D.D., from The Cathedral, Birmingham.  
8.0 (London)—A Religious Service from The Union Church, Brighton.  
8.0 (Northern)—A Roman Catholic Service, relayed from St. Patrick's Church, Manchester.  
8.45 (London)—The Week's Good Cause. Appeal on behalf of The Women and Children's Protection Society, by the Right Reverend The Bishop of Kensington.  
8.45 (Midland)—The Week's Good Cause. An Appeal on behalf of The Birmingham Allotment for The Unemployed Committee, by Canon S. D. Morris.  
8.45 (Northern)—The Week's Good Cause. An Appeal on behalf of The Sheffield Royal Hospital by Mr. Fred M. Osborn (Chairman).  
8.50—"The News," Weather Forecast, General News Bulletin.  
9.5 (London and Northern)—Chamber Music. Sarah Fischer (Soprano). The Kutcher String Quartet: Samuel Kutcher (Violin), Frederick Grinke (Violin), Raymond Jeremy (Viola), Douglas Cameron (Violoncello).  
9.5 (Midland)—An Evening Concert. The Midland Studio Orchestra, directed by Frank Cantell. Joseph Yates (Baritone).  
Epilogue.

**SUNDAY**  
continued

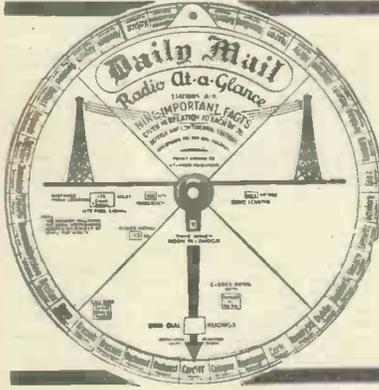
3.20—Talk: The Exhibition of Engravings by Menzel on view in the Silesian Art Museum. 3.45—A Tour round the Fortress of Glaz. 4.20—Concert by a Blind Orchestra. Conductor: Franz Nutsch. Overture, "Venus auf Erden" (Lincke). Song without Words (Tchaikovsky). Symphonic Intermezzo from "Cavalleria rusticana" (Mascagni). Potpourri, Schön ist die Jugend (Rhode). Marionetten-Wachtparade (Kuhn). Dolls' Waltz, on Motives from the Ballet "Die Puppenfee" (Bayer). 5.10—Talk: Is Posterity really Grateful? 5.30 (from Gleiwitz)—Cabaret Concert on Gramophone Records. 6.15—Report on the Second Half of a Football Match relayed from the Grüneiche Sports Ground. 7.0—Short Composition for Flute, by Hermann Zanke. Elegy and Minuet (Zanke). Capriccio (Herrnried). Pan and the Sylphides (Berr). 7.20—Weather for Farmers and Sports Notes. 7.25—Erna Pinner reads from her own Book: "My Travels round the World." 8.0—See Berlin (Witzleben) 10.0—Time Signal, Weather Forecast, News Bulletin, Sports Notes and Programme Announcements. 10.30—Dance Music from Berlin (Witzleben). 12 midnight (approx.)—Close Down. **BRNO (Czechoslovakia)** 878 kc/s (342 m.); 35 kW. Transmits at intervals from 7.0 a.m. 7.0 p.m.—See Prague. 8.0—See Bratislava. 10.30—See Prague. 10.50—News Bulletin. 10.55—See Prague. **BRUSSELS (Belgium) (No. 1)** I.N.R. 590 kc/s (509 m.); 15 kW. 5.0 a.m. and at hourly intervals during the Day: Pigeon Flying Reports. 12 noon—Pianoforte Recital, by Philippe Declercq. Harmonies du Soir (Liszt). Elfenreigen (Liszt). Etude in F Minor (Liszt). Prelude in E Minor, Op. 28, No. 4 (Chopin). Prelude in B Flat Minor, Op. 28, No. 16 (Chopin). Hommage à Rameau (Debussy). Toccata (Ravel). 12.30 p.m.—Weather Report. 12.40—Organ Recital by Louis Joos, relayed from the Carmelite Church. Prelude in D Minor (Bach). Spring Song (Mendelssohn). Petite pièce

(Joos). Träume (Wagner). Chorus (Händel). 1.0—Items by M. Souffret. 1.15—Variety Music on Gramophone Records. 5.0—Orchestral Concert, conducted by Franz André. 6.0—Variety Music on Gramophone Records. 7.15—Religious Address: A Prodigal Son. 7.30—Le Journal Parlé. 8.0—Selection from "Ciboulette"—Operetta (Hahn). The Radio Orchestra, conducted by Franz André. Soloists: Mme. Despy and M. Allain. In the intervals, Sketch and Request Items. 10.0—Agricultural Report. 10.10—Concert from the Memline Hall, Antwerp. 11.0 (approx.)—Close Down. **BRUSSELS (Belgium) (No. 2)** N.I.R. 887 kc/s (338.2 m.); 15 kW. Programme in Flemish. 12 noon—Popular Music on Gramophone Records. 12.30 p.m.—Weather Report. 12.40—Programme of Peasant Songs by Q. Van Triest (Vocalist) and R. Van der Spurt (Pianoforte). 1.0—Concert by the Tea-Room Orchestra. 5.0—Dance Music from the St. Sauveur Palais de Danse. 6.15—Gramophone Concert. Easter Overture, (Rimsky - Korsakov). Polonaise (Liszt). Stenka Rasin (Glazounov). Scherzo from Symphony No. 11 (Widor). Siegfried-Idyll (Wagner). 7.15—Religious Address. 7.30—Music Review by Lode Ontrop. 8.0—Programme relayed from the Centaur Club, Louvain. 9.0—Reading, A Murder (De Bom). 9.15—Concert by the Tea Room Orchestra. Overture, "Orpheus in the Underworld" (Offenbach). Waltz from "The Count of Luxembourg" (Lehár). Dutch Dances (Sieg). Foxtrot Fantasia on "The Gipsy Baron" (Johann Strauss, arranged Kochmann). Violin Solo: Coq et Poules (Léonard). Selection from "The Barber of Seville" (Rossini). Tango, Bells in the Moonlight in Valparaiso (Nuovo). The Kitten on the Keys (Confrey). 10.0—Le Journal Parlé. 10.10—Dance Music from the Memline Hall, Antwerp. 11.0 (approx.)—Close Down. **BUCHAREST (Romania)** Radio-Bucarest. 761 kc/s (394 m.); 12 kW.

9.15 a.m.—Programme for Children. 9.30—Religious Reading. 9.45—Choral Concert of Religious Music. 10.0—Concert of Light Music and Romanian Music by the Jean Dumitrescu Orchestra. 11.0—Popular Music on Gramophone Records. 11.45—News Bulletin and Time Signal. 12 noon—Light Music on Gramophone Records. 3.0 p.m.—Programme for Peasants. 4.0—Concert of Light Music and Romanian Music by the Marco Orchestra. 5.0—News Bulletin and Time Signal. 5.10—Orchestral Concert (contd.). 6.0—Educational Programme. 6.40—Light Music on Gramophone Records. 7.0—Time Signal. 7.1—"Il Seraglio"—Opera in Three Acts (Mozart). News Bulletin in the intervals. **BUDAPEST (Hungary)** 545 kc/s (550 m.); 18.5 kW. Programme also relayed on 210 metres from 6.30 p.m. till Close Down. 9.0 a.m.—Press Review and Beauty Hints. 10.0—Divine Service Relay. 11.0—Religious Address and Sacred Music relayed from the Royal Castle Chapel. After the Service, Time Signal and Weather Report, followed by Concert by the Orchestra of the Royal Hungarian Opera House, conducted by Otto Berg. Soloist: Stefan Haydu (Cello). Overture, "La Dame Blanche" (Boieldieu). Concerto in G Minor for Cello (Pongrácz). Symphony, Die ländliche Hochzeit (Goldmark). Radio Journal in the intervals. 2.0—Sponsored Gramophone Concert. 3.0—Agricultural Programme. 3.45—Concert of Light Music by the Budapest Concert Orchestra. Soloist: Tibor Weygand (Songs). Revue Overture (Lincke). The Two Sparrows (Huszka). Waltz, España (Waldeufel). Two Hungarian Songs. Norwegian Rhapsody (Svendsen). Songs: (a) Air from an Operetta (Kiszaly), (b) Song (Erös). Two Hungarian Dances (Brahms). Foxtrot, Tonight (José). 5.15—Vocal and

Orchestral Concert of Hungarian Songs. 6.0—Talk. 6.30—Concert by the Budapest Concert Orchestra (Strings) conducted by Ferdinand Zsolt. Overture in D (Bach). Serenade in F (Volkmann). Suite (Grieg). 7.45—Sports Notes. 8.0—Dramatic Programme. 9.50—Concert by the Imre Magyari Cigány Band, relayed from the Hotel Hungaria. 11.0 (approx.)—Dance Music by the Gyula Megyeri Dance Band, relayed from the Ritz Hotel. **COPENHAGEN (Denmark)** 1,067 kc/s (281 m.); 0.75 kW. Relayd by Kalundborg, 260 kc/s (1,153 m.). Transmits at intervals from 8.30 a.m. 10.0 a.m.—Divine Service from the Cathedral, Aarhus. 11.30—Weather and News. 12 noon—Town Hall Chimes. 12.2 p.m.—Instrumental Concert. 1.0—Talk in English. 1.20—Talk in German. 1.40—French Reading. 2.0—Divine Service from the Garrison Church. 3.30—Orchestral Concert, conducted by Emil Reesen. 4.30—Programme for Children. 5.0—Radio Pictures of Constitution Day, relayed from the South Mark. 6.20—Talk: The Girl Guide Movement in Denmark. 6.50—Weather and News. 7.15—Time and Sports Notes. 7.30—Talk by Hans Bauer. 8.0—Town Hall Chimes. 8.2—Concert of Danish Music by the Radio Orchestra, conducted by Launy Gröndahl. 8.20—Danish Songs of Freedom—Recital with Talk. 9.20—Choral Concert. Violin Solo by Louis Preil in the interval. 10.10—News Bulletin. 10.20—Orchestral Concert, conducted by Launy Gröndahl. Concert Overture, The Hebrides (Mendelssohn). Ballet Music from "La Belle Hélène" (Offenbach). Love Song (Albeniz). Slavonic Dance in G Minor (Dvorak). Norwegian Rhapsody, No. 2 (Svendsen). 11.0—Dance Music from the Wivex Restaurant. 12 midnight (in an interval)—Town Hall Chimes. 12.30 a.m. (Monday)—Close Down. **DUBLIN (Ireland)** (2RN). 725 kc/s (413 m.); 1.2 kW. Relayd by Cork, 1,337 kc/s (224.4 m.).

8.30—Time Signal. 8.31—Carillon Recital of Irish Airs, by Dr. Staf Gebruers, relayed from Cork Cathedral. 8.45—Mrs. Harding's Orchestra. 9.0—Sacred Songs by K. McCaffery. 9.15—Orchestral Concert. 9.45—Variety Items by Jack O'Sheehan. 10.0—Orchestral Concert. 10.30—Gramophone Concert of Popular Music. 11.0—Time Signal, News, Weather Report and Close Down. **FÈCAMP (France)** Radio Normandie. 1,345 kc/s (223 m.); 10 kW. 11.30 a.m.—Catholic Programme. 12 noon—Concert relayed from Caen. 1.0 p.m.—Radio Gazette for Normandy. 1.30—Light Music on Gramophone Records. In the interval, News. 2.0—6.0—Interval. 6.0—Variety Programme. 8.0—Radio Concert. 9.0—Variety Music. 12.30 a.m. (Monday)—Dance Music. 3.0 a.m. (approx.)—Close Down. **FLORENCE (Italy)** Ente Italiano Audizioni Radiofoniche. 599 kc/s (500.8 m.); 20 kW. See Turin. **FRANKFURT-am-MAIN (Germany)** 770 kc/s (390 m.); 1.5 kW. Relayd by Cassel, 1,220 kc/s (246 m.). Transmits at intervals from 6.15 a.m. 10.0 a.m.—Choral Concert. 11.0—Programme to be announced. 11.30—See Leipzig. 12.10 p.m.—Concert of Light Music by the Georges Boulanger Orchestra relayed from the Café Kieffer Saarbrücken. 1.0—Concert from Langenberg. 2.0—Agricultural Programme from Wiesbaden. 2.10—Rural Programme—Two Talks. 3.0—Programme for Children. 4.0—See Stuttgart. 6.0—See Langenberg. 6.40 (approx.)—Talk: Reminiscences of Wilhelm Busch. 7.20—Weather for Farmers and Sports Notes. 7.30—"Great Actresses"—a Radio Sequence by Renato Mordo and Trude Wessely. 8.0—Popular Concert by the Station Orchestra conducted by Hans Rosbaud. Dietrich's Original Viennese Schrammel Orchestra, and Maurits Frank (Cello). Part I:—Concerto in B Minor, Op. 104 for Cello (Dvorak). Part II:—



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SUNDAY continued

Operatic Music by the Orchestra. Soloist to be announced. Part III:—Old Viennese Folk Music by the Schrammel Orchestra. 10.20—Time Signal, Weather Report, News Bulletin and Sports Notes. 10.45—See Vienna. 12 midnight (approx.)—Close Down.

HAMBURG (Germany) Norag (ha, in Morse). 806 kc/s (372 m.); 1.5 kW. Relayed by Bremen, 1,112 kc/s (270 m.); Flensburg, 1,373 kc/s (218 m.); Hannover, 530 kc/s (566 m.); and Kiel, 1,292 kc/s (232.2 m.). Transmits at intervals from 6.15 a.m. (Hamburg Harbour Concert). 10.25 a.m. (from Bremen)—Divine Service Relay. 12 noon—Time and Weather. 12.5 p.m. (from Bremen)—Demonstration by the Weser Branch of the Aquatic Sports Association. Addresses and Musical Programme. 1.0 (from Kiel)—"With a Camera..." Recitations, with Commentary. 1.40 (from Hannover)—Orchestral Concert, conducted by Otto Ebel von Sosen. 2.20—A Midsummer's Tale, arranged for Radio. 3.0—Military Band Concert, relayed from the Zoo. 4.0—Handball Match, Germany v. Switzerland, relayed from Hannover. 4.45—Relay of Automobile Races. 5.0 (from Hannover)—Choral Concert. 6.10—Talk: "The Hagenbeck Jubilee, 1922—a Radio Report." 6.40 (from Bremen)—Unfamiliar Music by Mozart—a Recital by Karl Berla (Violin), Adolf Handke (Horn), Viktor Hormes (Cello), Martin Laug (Bassoon), Franz Lauschmann (Oboe), Hans Neumark (Pianoforte) Heinz Nordbruch (Viola), Heinrich Rinne (Clarinet), and August Schulz (Viola). Quintet for Violin, two Violas, Horn and Cello. Quartet for Oboe, Violin, Viola and Cello. Quintet for Oboe, Clarinet, Horn, Bassoon and Pianoforte. 7.30—Radio Report on a Women's Gymnastic Display. 7.40—Sports Notes. 7.55—Weather Forecast. 8.0—North German Popular Concert, Richard Germer (Songs to the Lute), the "Frisch voran", Mandoline and Guitar Orchestra, the "Sonderburg" Musical Society, the Gernert Zither Quartet and the Norag Male Voice Quartet. Soloists: Karl Lindow (Vocalist). 10.0—News Bulletin. 10.20—Topical Talk. 10.30—Dance Music from the Boccaccio. 11.10—Dance Music from the "Atlantic," Bremen.

HEILSBURG (Germany) 1,085 kc/s (276.5 m.); 60 kW. Relayed by Danzig, 662 kc/s (453.2 m.). Transmits at intervals from 6.15 a.m. (Concert). 11.30 a.m.—See Leipzig. 12.15 p.m.—Concert by the Königsberg Opera House Orchestra, conducted by Werner Richter-Reichhelm. Overture, "Abu Hassan" (Weber). Suite for Chamber Orchestra (Günar de Frumerie). Overture, "King Stephen" (Beethoven). Musik zu einem Ritterballet (Beethoven). Four Old Dance Pieces for String Orchestra (Walter Niemann). Overture, "Rosamunde" (Schubert). Suite, "Jeux d'enfants" (Bizet). Variations on an Original Theme (Richard Kirsch). Overture, "Heimkehr aus der Fremde" (Mendeissohn). 2.15 (from Danzig)—Talk for Young People. 2.45—Programme for Children: Songs to the Lute. 3.15 (from Danzig)—Talk: Rhine Wines and Their History. 3.45—Talk: Anecdotes and their Origin. 4.0—Goethe—Zelter Memorial Programme, relayed from the Zoological Gardens. Choral Selection: Dutch Thanksgiving. Address on Goethe, by Dr. Schröder, President of the Goethe Association. Two Selections for Male Voice Choir: (a) Bundeslied (Goethe)—Music by Zelter, (b) Der König in Thule (Goethe)—Music by Zelter. Choral Selections: (a) Sah ein Knab' ein Röslein stehn (Heinrich Werner), (b) Ueber allen Gipfeln ist Ruh' (Kuhlau). Two Choral Selections. Address on Zelter by Herr Baatz, President of the East Prussian Choral Society. Two Choral Selections: (a) Wanderers Nachtlied (Weber), (b) Das Veilchen (Reichardt). Two Choral Selections: (a) Weichsellied zum Tanz (Reichardt, arr. Wilhelm Berger), (b) Festgesang an Zelter und Gothe (Nicolaï). Deutschlandlied. 5.0—Orchestral Concert, conducted by Felix Prawniczak. Sports Notes in an interval. 6.30—Reading of Stories. 7.0—"In Memoriam"—Eduard Mörike—Programme of Literature and Music. Poems and Prose. Songs by Schumann, Brahms and Hugo Wolf. 8.0—Sports Notes. 8.15—

Orchestral and Choral Concert, dedicated to Germans abroad. 10.15—Weather, Sports Notes and News, followed by Dance Music from Berlin (Witzleben). 12.30 a.m. (Monday)—Close Down.

HILVERSUM (Holland) 1,013 kc/s (296.1 m.); 20 kW. (7 kW. up till 4.40 p.m.). 7.55—11.40 a.m.—Programme of the Workers' Radio Society (V.A.R.A.). 7.55—Lesson in Physical Culture. 8.10—8.30—Interval. 8.30—Pigeon Flying Report and Football Results. 8.40—Talk on Horticulture. 9.10—Orchestral Concert. 9.40—Recitations. 10.0—Concert (continued). 10.40—Address. 11.0—Concert (continued). 11.40—4.40 p.m.—Programme of the Algemeene Vereeniging Radio Omroep (A.V.R.O.). 11.40—Time Signal. 11.41—Talk. 12.10 p.m.—Orchestral Concert conducted by Nico Treep. Overture, "Le Roi d'Ys" (Lalo). Selection from "La Juive" (Halévy). Canto Popolare (Elgar). Spanish Dance (de-Sarasate). Pavane de la cour (Gabriel Marie). Mattinata (Leoncavallo). Choral Selections. Waltz, Verschmähte Liebe (Lincke). Cavatine (Raff). Ständchen (Schubert). Selection from "Frederica" (Lehar). 1.40—Weekly Book Talk. 2.10—Concert (continued). The Jugler (Rosey). Fortissimo—Potpourri of Kálmán's Music (Feigl). The Dwarf's Festival (Noack). Ich muss wieder einmal in Grinzing sein (Benatzky). March, Sons of the Brave (Bidgood). 2.40—A Radio Play. 4.10—Gramophone Records of Variety Music. 4.40—5.40—V.A.R.A. Programme: Concert with Gramophone Records of Light Music in the Intervals. 5.40—7.40—Programme by the Liberal Protestant Radio Society (V.P.R.O.): 5.40—Literary Talk. 6.25—Religious Programme. 7.40 till Close Down—A.V.R.O. Programme. 7.40—Time Signal. 7.41—News Bulletin.

7.55—Orchestral Concert. Soloist: Carl Heinz (Vocalist). Overture, "The Drum-Major's Daughter" (Offenbach). Songs: (a) A Dream Waltz (Millocker), (b) Heut' Nacht hab' ich geträumt von dir (Kálmán), (c) Sehnsucht, Waltz from "Die blonde Liselott" (Künnecke). Babilage (Gillet). Minuet (Bolzoni). Selection from "Waltzes from Vienna" (Joh. Strauss). Selection (Lehar). 8.40—Talk by Mr. V. Vogt. 8.55—Concert by the Concertgebouw Orchestra conducted by Ed. van Beinum, relayed from the Concert Hall, Amsterdam. Soloist: Alexander Schuller (Violin). Concerto Op. 35 for Violin and Orchestra (Tchaikovsky). Overture 1812 (Tchaikovsky). 9.45—Recitation. 10.10—Orchestral Concert with Songs by Lotte Fernandez. 10.50—Orchestral Concert with Songs by Bob Scholte. 11.40 (approx.)—Close Down.

HUIZEN (Holland) 160 kc/s (1,875 m.); 3.5 kW. 8.10 a.m.—Religious Programme by the Catholic Radio Society (K.R.O.). 9.10—11.55—Programme of the Christian Radio Society (N.C.R.V.). 9.10—Organ Recital. 9.30—Divine Service from a Church in Amsterdam, followed by Organ Recital. 11.55—4.40 p.m.—K.R.O. Programme. 11.55—Sextet Concert. Wenn die kleinen Veilchen blühen (Stolz). Im Krug zum grünen Kranz (German). Klänge aus Wien (Döring). Interlude (Kröme). Potpourri of Popular Songs (Golvond). A Perfect Day (Jacobs-Bond). Dutch Peasant Dances (Stöp). Song and English Waltz (Stolz). March Potpourri, Hals und Beinbruch! (Morena). Lisa (Mittman). Spanish Gipsy Dance (Marquina). 1.10—Talk: The Agricultural Crisis. 1.40—Literary Talk. 2.0—Running Commentary on the Football Match—Catholic Holland v. Catholic Germany. 4.40—N.C.R.V. Programme. Divine Service Relay, followed by Religious Music on Gramophone Records. 7.25 till Close Down—K.R.O. Programme. 7.25—Talk: The Agricultural Crisis. 7.50—Football Results. 7.55—Orchestral Concert conducted by Johan Gerritsen. Overture, "Zampa" (Hérold). Waltz, Fische Geister (Strauss). Selection from "Faust" (Gounod). Military March (Schubert). Der alte Brummbär (Puck). Selection from "The Merry Widow" (Lehár). Overture, "William Tell" (Rossini). An den Frühling (Grieg). Ballet Music from "La Gioconda" (Ponchielli). In a Persian Market (Ketelbey). Marionetten Hochzeit

(Kockert). Selection from "The Geisha" (Jones). In the Interval at 8.55—News Bulletin. 10.20—Epilogue by the Choir. 10.40 (approx.)—Close Down.

KALUNDBORG (Denmark) Kalundborg Radio. 260 kc/s (1,153 m.); 7.5 kW. See Copenhagen.

KATOWICE (Poland) 734 kc/s (408 m.); 16 kW. 10.0 a.m.—Mass from Lwów. 11.58—Time Signal from Warsaw. Bugle Call from the Tower of St. Mary's Church, Cracow, and Programme Announcements. 12.15—See Warsaw. 2.0—Religious Address. 2.15—See Warsaw. 3.40—Programme for Children. 4.45—Answers to Correspondents on Technical Questions. 5.0—See Warsaw. 7.35—Literary Programme. 7.50 till Close Down—See Warsaw.

LAHTI (Finland) 167 kc/s (1,796 m.); 54 kW. Relayed by Helsinki, 815 kc/s (368.1 m.). Transmits at intervals from 7.48 a.m. 6.30 p.m.—"Das Veilchen von Montmartre" (The Violet of Montmartre) Overture (Kálmán). 8.45—News in Finnish and Swedish. 9.15—Military Music relayed from the Kappeli Restaurant. 10.0 (approx.)—Close Down.

LANGENBERG (Germany) Westdeutscher Rundfunk. 635 kc/s (473 m.); 60 kW. Transmits at intervals from 7.0 a.m. (Hamburg Relay). 11.30 a.m.—See Leipzig. 12.10 p.m.—Talk by Hans Ebert: The Music of the Week. 12.20—The World on Gramophone Records: Icelandic Folk Songs. 12.45—Reading from a Book on Westphalia by Hans Stein. 1.0—Concert by the Station Orchestra conducted by Buschköter. Soloist: Feldin (Cello). Overture, "The Barber of Bagdad" (Cornelius). Petite Suite (Debussy). Concerto in D for Cello (Haydn). Scherzo (Mosser). The Flight of the Bumble-Bee (Rimsky-Korsakov). Symphonien Waltz, Olafs Hochzeitstreiben (Ritter). Toréador et Andalouse (Rubinstein).

2.30—Shorthand Dictation. 3.5—Reading. 3.20—Agricultural Programme. 3.45—Talk on Animals: Death among Animals. 4.10—Talk: Germany's History as depicted by her Towns—Leipzig. 4.30—Orchestral Concert, conducted by Wolf. 6.0—Radio Report from the Westerwald. 6.40—Talk: The Modern Bourgeoisie. 7.0—Variety Programme. 7.45—Sports Notes. 8.0—Choral and Orchestral Concert relayed from the Town Hall, Wuppertal-Elberfeld. The Augmented Municipal Orchestra, conducted by Max Beschle, and Various Choirs. Soloists: Hilde Wesselmann (Soprano) and Grete Buchenthal (Contralto). Symphonic Poem for Augmented Orchestra, Tasso (Liszt). Geisterfür, for Eight-Part Double Choir (Baumann). Wanderers Nachtlied, for Choir (Kuhlau). Rhapsody for Contralto, Choir and Orchestra (Brahms). Grenzen der Menschheit, for Choir and Augmented Orchestra (Volbach). Theme and Variations for Augmented Orchestra on the Choral "Wer nur den lieben Gott lässt walten" (Schumann). "Mass for Peace," for Mixed Choir, Soprano Solo, Organ and Augmented Orchestra (Philipp): (a) Kyrie, (b) Benedictus, (c) Gloria. 10.10—News Bulletin, and Sports Notes. 10.30—Dance Music from Berlin (Witzleben). 12 midnight (approx.)—Close Down.

LEIPZIG (Germany) 1,157 kc/s (259 m.); 2 kW. Relayed by Dresden, 941 kc/s (319 m.). Transmits at intervals from 6.0 a.m. 11.30 a.m.—Sei Lob und Ehr dem höchsten Gut—Cantata for the Second Sunday after Trinity (Bach) by the Municipal and Gewandhaus Orchestras, the Choir of St. Thomas', and Soloists. 12.15 p.m.—Talk on Gustavus Adolphus by Dr. Erich Brandenburg, relayed from the University. 12.30—Concert by the Leipzig Symphony Orchestra, conducted by Hilmar Weber. Soloist: Max Krämer (Violin). Overture, "Der saule Hans" (Alexander Ritter). German Baroque—Suite for Orchestra from Music by Old Masters (Alois Pachernegg). Caprice for Violin and Orchestra, Op. 42 (Blücher). Selection from "Tiefand" (d'Albert). Doctrinen-Walzer (Eduard Strauss). Scottish Airs for Violin and Orchestra, Op. 34 (Sarasate). Overture, "A Carnival in Rome" (Johann Strauss). Selection from "The Czarevitch" (Lehár). 2.0—Weather and Time, followed by Programme Summary for the Coming Week. 2.20—Agricultural Talk. 3.0—Violin Duets by Clara Schmidt-Guthaus and Henry Winter. 3.0—Programme for Young People. 3.30—Concert by the Ernde Dance Orchestra, with Franz Baumann (Tenor). 4.30—"Die Kiste"—a Radio Comedy (Horst Biernath). 5.30—Massed Choral Concert. 6.0—6.40—See Langenberg. 7.0—Final of the German Handball Championship (on Gramophone Records), followed by Sports Notes. 7.30—Talk on the following transmission. 7.45—"La vedova scaltra" (The Wily Widow)—Opera (Wolf-Ferrari) relayed from the German National Theatre, Weimar. 10.15—News Bulletin, followed by Dance Music from Berlin (Witzleben). 12 midnight (approx.)—Close Down.

LJUBLJANA (Yugoslavia) 522 kc/s (574.7 m.); 2.5 kW. Transmits at intervals from 9.0 a.m. 5.0 p.m.—Balalaika Concert. 8.0—Concert by the Radio Quartet. 9.15—Song Recital. 10.0—Time and News. 10.15—Quintet Concert.

LYONS (France) La Doua (P.T.T.). 644 kc/s (465.8 m.); 1.5 kW. 8.0 a.m.—Review of the Paris Morning Press, relayed from Paris (Ecole Supérieure), 671 kc/s (447.1 m.). 12 noon—Relay from Paris (Ecole Supérieure). 7.15—Sports Review. 8.0—Concert relay from Paris (Ecole Supérieure).

MADRID (Spain) Union Radio (E.A.J.). 707 kc/s (424.3 m.); 2 kW. 9.0 a.m.—10.30—Topical Review. 12.30 p.m.—Municipal Band Concert from the Retiro. 3.0—Chimes, Time, Theatre Notes and Concert of Popular Music. 4.30—8.0—Interval. 8.0—Chimes from the Cathedral and Request Gramophone Records. 9.30—10.30—Interval. 10.30—Chimes, Time Signal and Band Concert. Pasodoble (Zavala). Selection from "Doña Francisquita" (Vives). Waltz, The Skaters (Waldteufel). Spanish Caprice, Moraima (Espinosa). Selection from "The Master-singers" (Wagner). Sevilla (Albéniz), followed by Pianoforte and Song Recital. 1.0 a.m. (Monday)—Chimes and Close Down.

MILAN (Italy) Ente Italiano Audizioni Radiofoniche. 905 kc/s (331.5 m.); 7 kW. See Turin.

MORAVSKÁ-OSTRAVA (Czechoslovakia) 1,137 kc/s (263.8 m.); 11 kW. Transmits at intervals from 7.0 a.m. 4.0 p.m.—Orchestral Concert. 6.0—See Prague. 7.0—See Prague. 8.0—See Bratislava. 10.30—See Prague. 10.50—Programme Notes and Theatre Guide. 10.55—See Prague.

MOSCOW (Russia) Trades Union. 230.1 kc/s (1,304 m.); 100 kW. Transmits at intervals from 5.0 a.m. 6.30 p.m.—Proletariat Radio Journal. 7.15—Programme for Young Communists. 8.0—Talk in German and English: The Armed Rising in Kronstadt 1905. 9.55—Time. 10.0—Weather Forecast.

MUNICH (Germany) 563 kc/s (533 m.); 1.5 kW. Relayed by Augsburg and Kaiserslautern, 536 kc/s (560 m.), and Nürnberg, 1,256 kc/s (239 m.). 10.0 a.m. (from Nürnberg)—Evangelical Service. 10.45—Chimes from Our Lady's Church. 11.0—Reading. 11.30—See Leipzig. 12.10 p.m.—Orchestral Concert of Popular Music, conducted by Erich Kloss. Overture, "Raymond" (Thomas). Melody in F (Rubinstein). Potpourri, Nachruf an Franz Schubert (Fetras). Little Waltz (Carenno). Peasant Suite (Albouth). Spring Serenade (Lacombe). 1.5—Time Signal, Weather Forecast and Programme Announcements. 1.15 (from Nürnberg)—Agricultural Talk. 1.35—Gramophone Concert: Famous Conductors. 2.30—Chess Lesson. 3.15—Recital of Alpine Songs and Folk Songs by the Brothers Winter and Saurer, with Harp accompaniment. 3.40—Programme for Women.

tion from "Tiefand" (d'Albert). Doctrinen-Walzer (Eduard Strauss). Scottish Airs for Violin and Orchestra, Op. 34 (Sarasate). Overture, "A Carnival in Rome" (Johann Strauss). Selection from "The Czarevitch" (Lehár). 2.0—Weather and Time, followed by Programme Summary for the Coming Week. 2.20—Agricultural Talk. 3.0—Violin Duets by Clara Schmidt-Guthaus and Henry Winter. 3.0—Programme for Young People. 3.30—Concert by the Ernde Dance Orchestra, with Franz Baumann (Tenor). 4.30—"Die Kiste"—a Radio Comedy (Horst Biernath). 5.30—Massed Choral Concert. 6.0—6.40—See Langenberg. 7.0—Final of the German Handball Championship (on Gramophone Records), followed by Sports Notes. 7.30—Talk on the following transmission. 7.45—"La vedova scaltra" (The Wily Widow)—Opera (Wolf-Ferrari) relayed from the German National Theatre, Weimar. 10.15—News Bulletin, followed by Dance Music from Berlin (Witzleben). 12 midnight (approx.)—Close Down.

LJUBLJANA (Yugoslavia) 522 kc/s (574.7 m.); 2.5 kW. Transmits at intervals from 9.0 a.m. 5.0 p.m.—Balalaika Concert. 8.0—Concert by the Radio Quartet. 9.15—Song Recital. 10.0—Time and News. 10.15—Quintet Concert.

LYONS (France) La Doua (P.T.T.). 644 kc/s (465.8 m.); 1.5 kW. 8.0 a.m.—Review of the Paris Morning Press, relayed from Paris (Ecole Supérieure), 671 kc/s (447.1 m.). 12 noon—Relay from Paris (Ecole Supérieure). 7.15—Sports Review. 8.0—Concert relay from Paris (Ecole Supérieure).

MADRID (Spain) Union Radio (E.A.J.). 707 kc/s (424.3 m.); 2 kW. 9.0 a.m.—10.30—Topical Review. 12.30 p.m.—Municipal Band Concert from the Retiro. 3.0—Chimes, Time, Theatre Notes and Concert of Popular Music. 4.30—8.0—Interval. 8.0—Chimes from the Cathedral and Request Gramophone Records. 9.30—10.30—Interval. 10.30—Chimes, Time Signal and Band Concert. Pasodoble (Zavala). Selection from "Doña Francisquita" (Vives). Waltz, The Skaters (Waldteufel). Spanish Caprice, Moraima (Espinosa). Selection from "The Master-singers" (Wagner). Sevilla (Albéniz), followed by Pianoforte and Song Recital. 1.0 a.m. (Monday)—Chimes and Close Down.

MILAN (Italy) Ente Italiano Audizioni Radiofoniche. 905 kc/s (331.5 m.); 7 kW. See Turin.

MORAVSKÁ-OSTRAVA (Czechoslovakia) 1,137 kc/s (263.8 m.); 11 kW. Transmits at intervals from 7.0 a.m. 4.0 p.m.—Orchestral Concert. 6.0—See Prague. 7.0—See Prague. 8.0—See Bratislava. 10.30—See Prague. 10.50—Programme Notes and Theatre Guide. 10.55—See Prague.

MOSCOW (Russia) Trades Union. 230.1 kc/s (1,304 m.); 100 kW. Transmits at intervals from 5.0 a.m. 6.30 p.m.—Proletariat Radio Journal. 7.15—Programme for Young Communists. 8.0—Talk in German and English: The Armed Rising in Kronstadt 1905. 9.55—Time. 10.0—Weather Forecast.

MUNICH (Germany) 563 kc/s (533 m.); 1.5 kW. Relayed by Augsburg and Kaiserslautern, 536 kc/s (560 m.), and Nürnberg, 1,256 kc/s (239 m.). 10.0 a.m. (from Nürnberg)—Evangelical Service. 10.45—Chimes from Our Lady's Church. 11.0—Reading. 11.30—See Leipzig. 12.10 p.m.—Orchestral Concert of Popular Music, conducted by Erich Kloss. Overture, "Raymond" (Thomas). Melody in F (Rubinstein). Potpourri, Nachruf an Franz Schubert (Fetras). Little Waltz (Carenno). Peasant Suite (Albouth). Spring Serenade (Lacombe). 1.5—Time Signal, Weather Forecast and Programme Announcements. 1.15 (from Nürnberg)—Agricultural Talk. 1.35—Gramophone Concert: Famous Conductors. 2.30—Chess Lesson. 3.15—Recital of Alpine Songs and Folk Songs by the Brothers Winter and Saurer, with Harp accompaniment. 3.40—Programme for Women.

4.0—Orchestral Concert, conducted by Erich Kloss. Overture, "Orpheus in the Underworld" (Offenbach). Meditation from "Thais" (Massenet). Scenes from "Il Trovatore" (Verdi). Waltz: Wine, Women and Song (Johann Strauss). Potpourri, Rendezvous bei Lehar (Hrubý). Two Alsatian Peasant Dances (Merkling). The Bells of Saint-Cyr (Schmalstich). March, Grillenbanner (Komzak). 5.20—Walter von Rummel reads his Story: "Die Weinprobe." 5.45—Organ Recital by Gustav Schoedel, with Hermann Schey (Bass-Baritone). Bet' und Bussgesänge for Baritone and Organ (Reznicek). Organ Solo: Prelude in C Minor, No. 63 (Reger). Song for Baritone and Organ: Wenn ich mit Menschen- und mit Engelszungen redete (Brahms). 6.10—Illustrated Talk. 6.30 (from Nürnberg)—Alexander Starke in a Humorous Recital with and without the Lute. 7.0—Violin Recital. 7.25—Weather and Sports Notes. 7.40—Talk: Quelpart, a Remarkable Island in East Asia. 8.0—"Der liebe Augustin"—Opera in Three Acts (Fall). 10.20—Time Signal, Weather Forecast, News Bulletin and Sports Notes. 10.45—Dance Music from Vienna. 12 midnight (approx.)—Close Down.

OSLO (Norway) Kringkastingselskapet. 277 kc/s (1,083 m.); 60 kW. Relayed by Fredrikstad, 816 kc/s (367.6 m.); Hamar, 536 kc/s (560 m.); Nordtoden, 671 kc/s (447.1 m.); Porsgrund, 662 kc/s (453.2 m.); and Rjukan, 671 kc/s (447.1 m.). 10.20 a.m.—Chimes. 10.30—Divine Service. 6.0 p.m.—Talk: [Swedish Lapland]. 6.30—Violin Recital by Leif Halvorsen. Tempo di minueto (Pugnani-Kreisler). Grave (Friedemann Bach-Kreisler). Andantino (Martini-Kreisler). Nocturne in E Minor (Chopin-Auer). Valse mignonne, Arva (Juon). Songs of Vieslemøy (Joh. Halvorsen). Norwegian Dance (Joh. Halvorsen). 7.0—Parliamentary Review. 7.15—Weather Report and News Bulletin. 7.30—Reading. 8.0—Time Signal. 8.1—Suor Angelica—One Act Opera (Puccini). 9.0 (approx.)—Symphony No. 5 in E Minor—From the New World (Dvořák). 9.40—Weather and News Bulletin. 10.0—Topical Talk. 10.15—Accordion Duets by Th. Pedersen and Karl Gustavson. 10.45—Dance Music on Gramophone Records. 12 midnight (approx.)—Close down.

PALERMO (Italy) Ente Italiano Audizioni Radiofoniche. 554 kc/s (542 m.); 3 kW. 10.40 a.m.—Sacred Music. 11.5—Agricultural Report. 12.45 p.m.—Giornale Radio. 1.0—2.0—Light Music. In the interval at 1.30—Time, Announcements and Weather. 5.30—6.30—Light Music and Dance Music. Sports Notes in the interval. 8.0—Announcements and Giornale Radio. 8.20—Sports Notes. 8.25—Variety Music on Gramophone Records. In the interval at 8.30—Time and Announcements. 8.45—Symphony Concert, conducted by A. La Rosa Parodi. After the Concert, Theatre Notes and Songs. 10.55—News Bulletin.

PARIS (France) Eiffel Tower (F.L.E.). 207.5 kc/s (1,445.7 m.); 13 kW. Time Signals (on 2,650 metres) at 10.26 a.m. and 11.26 p.m. (preliminary and 6-dot signals). 1.0 p.m.—News Bulletin. 1.10—Weather Report. 1.25—Symphony Concert by the Station Orchestra, conducted by M. Flament. Selections from "Les Erynnies" (Massenet-Mouton). Parade of the Tin Soldiers (Turina). Ballet from "Isole" (Messager). Violin Solo. Selections from "Les Fantoccini" (Lecocq). Serments dans le Soir (Noletty). Waltz, Amorettenzänze (Gungl). 6.45—Programme for Children. 7.15—Le Journal Parlé. 8.20—Weather Report. 8.30—Gramophone Concert of Classical and Light Music. 10.0 (approx.)—Close Down.

PARIS (France) Poste Parisien. 914 kc/s (328.2 m.); 60 kW. 12 noon—Gramophone Records, News and Announcements. 12.15 p.m.—Popular Music on Gramophone Records. 1.45—News and Announcements. 2.0—7.0—Interval. 7.0—Popular Music on Gramophone Records, News and Announcements. 7.30—Sponsored Gramophone Concert. 8.30—Gramophone Records, Talk and News.

SUNDAY continued

8.45—Vocal and Orchestral Concert. Prelude to "Le Déluge" (Saint-Saëns). Waltz (Johann Strauss). Petite Suite (Debussy). Selection from "Le Pré-aux-Clercs" (Hérold). Selection from "Werther" (Massenet). Conte pastoral (Gardard). Selection from the Ballet, "Les deux Pigeons" (Messager). Serenade for Cello and Orchestra (Lacôme). March and Cortège from "The Queen of Sheba" (Gounod).

PARIS (France)

Radio-Paris (CFR). 174 kc/s (1,725 m.); 75 kW. 7.45 a.m.—Light Music on Gramophone Records. 8.0—News, Weather and Press Review. 8.30—Physical Culture Lesson. 10.20—Book-keeping Lesson. 10.40—Spanish Lesson. 12 noon—Religious Address. 12.20 p.m.—Sacred Music. Prayer and Cradle Song (Guilmant). St. Anne Fugue (Bach). Andante and Allegro (Bach). 12.30—Bilboquet in the Factory. 12.45—Press Review, News and Weather. 1.0—Gramophone Concert. Overture "Carmen" (Bizet). Canzonetta for Clarinet (Pieroni). Selections from "Les Brigands" (Offenbach). Extract from "Mimi Pinson" (de Musset). Hindu Song from "Sadko" (Rimsky-Korsakov). Ballet Music from "Virginie" (Bruneau).

1.30—Variety Concert on Gramophone Records. 2.0—Concert of Decca Records. 4—5 p.m.—Non-Stop Variety. 5.45—Variety Music on Gramophone Records. 6.45—Concert by the Paris Alhambra Orchestra. 8.0—Radio-Paris Music Hall. The Orchestra, conducted by Maurice André. March, "Old Faithful" (Holzmann). M. Firzel in Selections from his Répertoire. Idylle passionnelle (Razigade). Overture, "Das Nachtlager in Granada" (Kreutzer). 8.30—News, Sports Notes and Weather. 8.45—Radio-Paris Music Hall (continued). Selection from "Le pré aux Clercs" (Hérold). Song, "Tango (Lucchesi). 9.15—Press Review and News. 9.30—Radio-Paris Music Hall (continued). On the Volga (Ketyelberg). Selection from "Gillette de Narbonne" (Audran). Waltz from "François le Basbleus" (Messager). In the Shadows (Finck). Good Tobacco (André).

PITTSBURGH (U.S.A.)

Westinghouse Electric (KDKA), 980 kc/s (306 m.); 25 kW. Relayed by W8XK on 48.86 m. and 25.25 m. (See Short Wave List). Transmits at intervals from 3.55 p.m. 9.0 p.m.—Songs of Home, from New York. 9.30—Langley High School Band. 10.0—Shadyside Presbyterian Church Services. 11.0—Time Signal. 11.1—Temperature Report. 11.2—Weather Report. 11.5—Teaberry Sports Review. 11.10—Press News Reeler. 11.15—Westinghouse Concert. 11.45—Rita Cavalieri (Soprano). 11.50—Time Signal. 12 midnight—KDKA Players. 12.15 a.m. (Monday)—Pictures on the Pianoforte by Don Lucas. 12.30—3.45—New York Relay. 12.30—Three Bakers. 1.0—McCrary Brothers. 1.15—S.R.O. 1.30—Enna Jettick Melodies. 1.45—Bayuk Stag Party. 2.0—Making the Movies. 2.15—The Old Singing Master. 2.45—War Stories by Walter G. Myers. 4.0—Time Signal. 4.1—Teaberry Sport Review. 4.11—Temperature Report. 4.12—Weather and Press Last Minute News. 4.20—Alexander Roy (Tenor). 4.30—Ted Cook and his Orchestra, from New York. 5.0 (approx.)—Time and Good Night.

PRAGUE (Czechoslovakia)

614 kc/s (488.6 m.); 120 kW. Transmits at intervals from 6.15 a.m. (Alarm and Gramophone Records). 10.0 a.m.—Festival Programme on the occasion of Children's Day. Speech, Recitations and Music. 11.0—Military Band Concert, relayed from Podiebrady. 12 noon—Chimes. 12.5 p.m.—Brass Band Concert. 1.30—Agricultural Talk. 1.45—Talk: Open Air Schools. 4.0—See Moravská-Ostrava. 6.0—German Transmission: An Evening in Northern Bohemia. 7.0—Orchestral Concert. 8.0—See Bratislava. In the intervals, Time and News. 10.30—News and Sports Notes. 10.50—Theatre Notes and Programme Announcements. 10.55—Variety Music on Gramophone Records.

RADIO-SUISSE ROMANDE (SOTTENS) (Switzerland)

743 kc/s (403 m.); 25 kW.; Lausanne, 442 kc/s (680 m.); and Geneva, 395 kc/s (760 m.). 9.55 a.m. (from Geneva)—Chimes from St. Peter's Cathedral. 10.0—(from Geneva)—Protestant Service. 11.0—Second Concert of the "Thirty-Third Swiss Musicians Festival", relayed from Vevey. The Berne String Quartet, the Ribaupierre Quartet, and Soloists: Walter Frey (Pianoforte), Frédéric Mottier (Cello), Richard Vuataz (Pianoforte), Ilona Durigo (Songs). Theme with variations for two Violins, Viola and Cello (Luc Balmer) by the Berne Quartet. Pieces for Pianoforte (Conrad Veck), by Walter Frey. Sonata for Cello and Pianoforte, Op. 29 (Vuataz), the Composer at the Pianoforte. Songs (Walter Courvoisier). Quintet in A Minor (Fritz Bach), by the Ribaupierre Quartet and Mme. Cheridjian-Charyer (Pianist). 12.30 p.m.—Weather Report and News Bulletin. 12.40—Orchestral Concert. 6.0 (from Lausanne)—Concert of Light Music on Gramophone Records. 7.0 (from Lausanne)—Protestant Address. 7.30 (from Lausanne)—Gramophone Concert (continued). 8.0—Reading. 8.20—Concert by the Station Orchestra, conducted by Fernand Closset. 8.45 (from Geneva)—Recital of Songs by Mme. Dehoges. 9.15—Concert of Light Music by the Station Orchestra. 10.0—Weather Forecast and News Bulletin. 10.15 (approx.)—Close Down.

ROME (Italy)

Ente Italiano Audizioni Radiofoniche (IRO). 680 kc/s (441 m.); 90 kW. Relayed by Naples, 541 kc/s (519 m.), and 2RO, 11,810 kc/s (25.4 m.). 9.40 a.m.—News Bulletin. 9.45—Agricultural Notes. 10.0—Religious Programme. 10.15—Sacred Music. 10.45—11.0—Sports Notes and Amusement Guide. 12.30—2.0—Concert of Light Vocal and Instrumental Music. 1.30 (in an interval)—Time and Announcements. 4.15—(Naples)—Programme for Children, followed by Weather and Sports Notes. 4.45—Sports Notes. 5.0—6.15—Vocal and Instrumental Concert. 7.10 (Naples)—Shipping and Sports Notes. 7.15—Sports Notes, Announcements and News. 8.0—Time, Announcements and Gramophone Records of Variety Music. 8.30—Sports Notes. 8.45—"Fior di neve" (Snowdrop)—Operetta in Three Acts (Blanc). In the intervals: Reading and Talk. News after the Programme.

SCHENECTADY (U.S.A.)

General Electric Company (WGY). 790 kc/s (379.5 m.); 50 kW. Relayed by W2XAF and W2XAD (See Short Wave List). Transmits at intervals from 1.0 p.m. 7.0 p.m.—5.30 a.m. (Monday)—New York Relay. 9.0—Jodent Programme. 9.15—Musical Programme. 10.0—Pastels 10.30—Slow River. 11.0—Catholic Hour. 11.30—Our American Schools. 12 midnight—General Electric Circle. 12.30 a.m. (Monday)—Orchestral Gems. 1.0—Chase and Sanbrun Programme. 2.0—Our Government. 2.15—American Album of Familiar Music. 2.45—"Heure Exquise. 3.15—Scheaffer Lifetime Revue. 3.30—Musings. 3.45—Sunday at Seth Parker's. 4.15—Russ Colombo (Baritone). 4.30—Jesse Crawford (Organist). 5.0—Larry Funk's Orchestra. 5.30—New Kenmore Orchestra. 6.0 (approx.)—Close Down.

SCHWEIZERISCHER LÄNDESSENDER (BEROMÜNSTER) (Switzerland)

653 kc/s (459 m.); 60 kW.; Basle, 1,220 kc/s (244.1 m.); and Berne, 1,220 kc/s (246 m.). 10.0 a.m. (from Basle)—Catholic Service. 10.45 (from Basle)—Programme of Old Seventeenth and Eighteenth Century Music by Hans Visscher van Gassbeck (Tenor), Gerturd Flügel (Violin Obligato), Ruth Mundorf (Violin Obligato), and Martha Hamm-Steocklin (Cembalo). 11.10 (from Basle)—"Eternal Life"—Play (Hermann Schneider). 11.45—Andantino and Rondo from the Concerto in D for Flute and Harp (Mozart), on Gramophone Records. 12 noon—Concert by the Station Orchestra. 12.28 p.m.—Time Signal and Weather Report. 12.30—News Bulletin. 12.40—Orchestral Concert (cont'd). 1.30 (from Basle)—Concert of Swiss Popular Music by the Napoli Mandoline Club, and Reading by Arnold Halder. 2.15—3.30—Interval. 3.30—Works of Swiss Composers on Gramophone Records. 4.30 (from Basle)—Swiss Authors Programme:

Ida Frohnmeyer reads from her own Works. 5.0—Concert of Popular Music on Gramophone Records. 5.30 (from Basle)—Programme of Jewish Liturgical Music by Cantor Robert Loeb. 6.30 (from Basle)—Talk in English by the Rev. John Smith. 7.0 (from Basle)—Talk: How a Newspaper is brought out. 7.40 (from Basle)—Talk: Sport and Christian Ethics. 8.15 (from Berne)—"Job"—Oratorio (Müller). 9.30—Weather Forecast and News Bulletin. 9.45—Late Concert by the Station Orchestra. 10.15—Sports News and Close Down.

STOCKHOLM (Sweden)

Radiotjänst (SASA). 680 kc/s (436 m.); 55 kW. Relayed by Boden, 244 kc/s (1,229.5 m.); Göteborg, 932 kc/s (322 m.); Hörby, 1,166 kc/s (257 m.); Motala, 222.5 kc/s (1,348 m.); Östersund, 389 kc/s (770 m.); and Sundsvall, 554 kc/s (542 m.). 10.30 a.m.—Agricultural Talk, relayed from Malmö, 1,301 kc/s (231 m.). 11.0—Divine Service. 12.45 p.m.—Weather Report. 12.55 p.m.—Time Signal. 3.0 (from Malmö)—Concert of Light Music. 3.45—Gramophone Records of Variety Music. 4.45—Talk on Football. 5.0—Programme for Children. 5.30—Reading. 6.0 (from Sundsvall)—Evensong. 7.15—Weather, News and Sports Notes. 7.35—Talk: Sweden as a Land for Tourists. 7.55—Concert of Scandinavian Music. 8.50—A Radio Play (Ella Byström). 9.45—Weather and News. 10.0—Chamber Music. 11.0 (approx.)—Close Down.

STRASBOURG (France)

Radio-Strasbourg (PTT). 869 kc/s (345 m.); 11.5 kW. 10.45 a.m.—Protestant Service. 11.30—Catholic Service. 12 noon—Gramophone Records of Classical Music. 12.45 p.m.—News in French and German. 1.0—Time Signal. 1.2—Gramophone Records of Light Music. 2.0—Talk in French by Prof. M. P. Montet: My Excavations in Egypt—Tanis. 2.15—Gramophone Records of Dance Music. 3.15—3.45—Interval. 3.45—Dance Music (continued). 4.15—Talk in German. 4.30—Relay of a Concert from Marseilles. 6.0—Medical Talk in French. 6.15—Sports Results. 6.20—Sports Talk in French. 6.30—Orchestral Concert, conducted by Maurice de Villers. Overture, "Les Abencérages" (Cherubini). Ballet Music from "Cinq Mars" (Gounod). Selection from "Tiefeland" (d'Albert). Pavane and Spanish Dance (Bruneau). First Suite from "Peer Gynt" (Grieg). 7.30—Time Signal. 7.32—News in French and German. 7.45—Jazz Music by the Station Orchestra, conducted by Roskam. 8.30—Concert by the Band of the Alsatian Potassium Mines, relayed from Wittenheim. March of the Alsatian Miners (Garnier). Selection from "Messidor" (Bruneau). Overture, "Le Roi d'Ys" (Lalo). March and Bridal Chorus, from "Lohengrin" (Wagner). Sans peur (Wattelet). Talk on Potassium. Louis XIV (Milliot). Pavane pour une Infante défunte (Ravel). Selection from "Manon" (Massenet). Polonaise No. 4 (Chopin). Sambre et Meuse (Ransky). 10.30—Dance Music from the Savoy. 12 midnight (approx.)—Close Down.

STUTTGART (MÜHLACKER) (Germany)

Süddeutscher Rundfunk. 832 kc/s (360.5 m.); 60 kW. Relayed by Freiburg, 527 kc/s (570 m.). Transmits at intervals from 6.15 a.m. (Hamburg Relay). 10.30 a.m.—Catholic Service relayed from Würzburg. 11.30—See Leipzig. 12 noon—Promenade Concert by the Reichswehr Bands and Stuttgart Choral Society. 1.0—Topical Talk. 1.15—Zither and Guitar Recital by Fritz Mühlhölzl. 1.45—Concert of Old Viennese Operetta Music on Gramophone Records. 3.0—See Frankfurt. 4.0—Concert by the Municipal Orchestra, conducted by Karl Assmus, relayed from Baden-Baden. Entry of the Guests into the Wartburg from "Tannhäuser" (Wagner). Overture, Im Frühling (Goldmark). Ballet Suite (Lully-Mottl) No. 1 in F (Liszt). Overture, "Cagliostro in Vienna" (Johann Strauss). The Nutcracker Suite (Tchaikovsky). Selection from "The Land of Smiles" (Lehár). Potpourri, Straussfrenn (Morena). Waltz, Wiener Burger (Zichrer).

6.0—Authors' Programme: Wilhelm Kiefer. 6.30—Sports Notes. 6.50—Holderlin Programme in Commemoration of the 90th Anniversary of his Death. Willy Buschhoff (Recitations), Georg Beerwald (Violin) and Otto Seyfert (Pianoforte). Introductory Talk by Martin Lang. 7.30 (from Freiburg)—Concert of Viennese Music by the Original Viennese Schrammel Quartet. 8.0—See Frankfurt. 10.20—Time Signal, Weather Report, News Bulletin, Programme Announcements and Sports Notes. 10.45—Dance Music from Vienna. 12 midnight (approx.)—Close Down.

TOULOUSE (France)

Radiophonie du Midi. 779 kc/s (385 m.); 8 kW. 12.30 p.m.—Catholic Service. 1.0—Orchestral Selections. 1.15—Dance Music. 1.30—Agricultural Report. 1.45—Protestant Service. 3.30—Picture Transmission. 5.0—Esperanto and News. 5.30—Wagner Opera Selection. 5.45—Orchestral Music. 6.0—Popular Songs. 6.15—Selections by a Viennese Orchestra. 6.30—Racing Results. 6.45—Opéra-Comique Songs. 7.0—Opera Music. 7.30—News Bulletin. 7.45—Military Music. 8.0—Songs from Opéra-Comique. 8.15—Selections by an Argentine Orchestra. 8.30—Operetta Music. Waltz from "The Gipsy Baron" (Johann Strauss). Selection from "Countess Maritza" (Kálmán). Waltz from "The Merry Widow" (Lehár). 8.45—Popular Songs. 9.0—Selections by a Viennese Orchestra. 9.30—Sound Film Music. 9.45—Accordion Solos. 10.0—Military Music. 10.15—Spanish Songs. 10.30—North African News. 10.45—Concert of English Music. 11.15—Orchestral Concert. 12 midnight—Weather, Announcements, and Close Down.

TRIESTE (Italy)

Ente Italiano Audizioni Radiofoniche. 1,211 kc/s (247.7 m.); 10 kW. 9.40 a.m.—12.20 p.m.—See Turin. 12.20 p.m.—German Lesson on Gramophone Records. 12.30—7.5—See Turin. 7.5—Quintet Concert. Sono soltanto un clown (Loubé). Bimbo e bimba (Cerato). Tell me I'm forgiven from "Wonder Bar" (Katscher). Danza dei negri (De Michelii). Selection from "The Land of Smiles" (Lehár). Piccola Czardas (Crisculow). Waltz, Ever or Never (Waldeufel). 8.0 till Close Down.—See Turin.

TURIN (Italy)

Ente Italiano Audizioni Radiofoniche. 1,096 kc/s (273.7 m.); 7 kW. Relayed by Milan, 905 kc/s (331.5 m.); Florence, 599 kc/s (500.8 m.); and Genoa, 959 kc/s (312.8 m.). 9.40 a.m.—Giornale Radio. 9.55—Chimes and Missa cantata from the Cathedral of San Giusio. 11.0—Religious Programme. 11.20—Agricultural Talk. 12.30—2.30 p.m.—Concert of Light Music. 1.0 (in an interval)—Time and Announcements. 4.0—Sports Notes. 4.10—Programme to be announced. In an interval: Notes on Sport and Art. 6.15—Giornale Radio and Football Report. 6.25—Topical Review. 7.0—Football Notes and Announcements, followed by Musical Selections. 7.30—Time Announcements and Gramophone Records of Variety Music. 8.0—Giornale Radio and Sports Notes. 8.15—Concert of Light Music. 9.0—"Tannhäuser"—Opera in Three Acts (Wagner). In the intervals: Talk, Theatre Notes and Giornale Radio. News after the Programme.

VIENNA (Austria)

Radio-Wien. 581 kc/s (517 m.); 15 kW. Relayed by Graz, 852 kc/s (352.1 m.); Innsbruck, 1,058 kc/s (283 m.); Klagenfurt, 662 kc/s (453.2 m.); Linz, 1,220 kc/s (246 m.); and Salzburg, 1,373 kc/s (218 m.). 9.0 a.m.—Organ Recital by Helmut Müllner. 9.30—Talk: The Biology of Light. 10.0—Concert and Speeches on the occasion of The Centenary of the Birth of Josef Schöffel, Founder of The Josef Hyrtl Orphan Asylum in Mödling, relayed from Mödling. 11.0—Festival for The Jubilee of The "Rudolfiner-Hans" Hospital. 11.30—Concert by the Vienna Symphony Orchestra, conducted by Hermann Schmeidel. Soloist: Guy de Mariner (Pianoforte). Pianoforte Concerto in A Minor, Op. 54 (Schumann). First Symphony in C Minor, Op. 68 (Brahms).

12.45 p.m.—Oscar Straus Concert by the Vienna Symphony Orchestra, conducted by Josef Holzer. Overture, "Rund um die Liebe." Waltz from "Liebeszauber." Entr'acte and Intermezzo from "The Chocolate Soldier." Minuet and March from "Die Prinzessin von Tragant." Dance from "Didi." Overture, "Die lustigen Nibelungen." Waltz, Lieben im Mai. Song: My Hero, from "The Chocolate Soldier." Song from "Rund um die Liebe." Selections from "Das Tal der Liebe." Selection from "Marietta."

2.0—Folk Songs of Upper Austria—the Valley of the Enns. Commentary by Dr. Hans Commenda. 2.55—Time and Announcements. 3.0—Readings about other Countries. 3.25—E. T. A. Hoffmann Concert by the Mäldtner Quartet. Soloists: Anton Tausche (Baritone), Natalie Freundlich (Pianoforte) and Franz Jelinek (Harp). Introductory Talk by Dr. Erwin Felber. Sonata in F Minor for Pianoforte. Aria from "Undine." Quintet in C Minor for Harp and String Quartet. 4.25—Talk by Dr. Chavanne: Facts about Figures. 4.50—Running Commentary on the Austrian Derby, relayed from the Freudenau. 5.10—Orchestral Concert. 6.35—A Romanian Picture Book, by Erwin Rieger. 7.0—Talk by Dr. Wolfgang: Walking Excursions. 7.30—Time and Announcements. 7.40—"La Fille de Madame Angot"—Opéra-Comique (Lecocq), for the Centenary of the Composer's Birth. In an interval at 9.20 (approx.)—Announcements. 10.0—Songs and Arias by Mario Salecki (Tenor). Aria from "Fedora" (Giordano). Song from "La Gioconda" (Ponchielli). Selections (Bize): (a) Aria from "Carmen," (b) Aria from "The Pearl Fishers," Aria from "The Magic Flute" (Mozart). Aria from "The Queen of Spades" (Tchaikovsky). Hindu Song (Rimsky-Korsakov). Song from "Casanova" (Rozycki). Folk Song, Krakowiak (Moniuszko). 10.40—Dance Music by the Karl Krall Jazz Band, with Vocal Refrains by Emil Petroff.

WARSAW (Poland)

Polskie Radio. 212.5 kc/s (1,411 m.); 120 kW. 10.0 a.m.—Service relayed from Lubec. 11.58—Time Signal and Bugle Call from the Tower of St. Mary's Church, Cracow. 12.5 p.m.—Programme Announcements. 12.10—Weather Report. 12.15—Moniuszko Concert on the occasion of the Sixtieth Anniversary of his Death. Programme by the Warsaw Philharmonic Orchestra and the Mazowiecka Choir. Soloists: M. Karwowska (Soprano). Ant. Bednarzyk (Recitations), A. Dobosc (Tenor), Sig. Mossoczy (Bass). Cas. Wilkomirsky (Cello), and Louis Urstein (Pianoforte). Overture, Bajka. Sonnets of the Crimea, for Tenor, Mixed Choir and Orchestra. "Cello Solo." Polonaise from "Die Gräfin." Songs from "Vitoltraude" (Kraszewsky), for Soprano, Male Voice Choir and Pianoforte. Bass Solo: Florian's Ballad. Talk for Workers in the interval. 2.0—Talk: The State Aerial Defence League. 2.15—Moniuszko Song Recital by Mme. Mokrzycka and Al. Michalowski. 2.30—Agricultural Talk. 2.50—Song Recital (cont'd). 3.5—Agricultural Talk. 2.25—Moniuszko Song Recital (cont'd). 3.40—Programme for Children. 4.5—Programme in connection with the Polish Co-operative Day Celebrations: Choral Selections relayed from Lodz. In the interval, Talk by Director Chmielewsky. 4.45—Talk: Garibaldi. 5.0—Moniuszko Concert by the Warsaw Philharmonic Orchestra, conducted by Josef Oziminsky. Soloist: Mme. Robowska (Pianoforte). Suite, Moniuszkiana (arr. Rybicki). Pianoforte Solos: (a) Polonaise in F Sharp, (b) Bagatelle, (c) Waltz in E Flat, No. 3, (d) The Spinner. Introduction and Allegro from a Ballet. Cigány Dance and Mazurka. 6.0—Useful Hints. 6.20—Moniuszko Concert by the "Echo" Choir and State Police Orchestra, relayed from Wilno, 533 kc/s (563 m.). 7.15—Miscellaneous Items. 7.35—Answers to Correspondents. 7.50—"Halka"—Opera (Moniuszko), relayed from the Grand Theatre. In the first interval, Talk on Vertigo. In the second interval, Programme Announcements and Weather and Police Notes. In the third interval, Sports Notes. 11.10—Dance Music.

PRINCIPAL EVENTS

MONDAY (June 6)

SYMPHONY CONCERTS

7.45 p.m. Vienna: Weingartner conducts the Philharmonic.  
 9.0 " Italian Stations (all).  
 9.0 " Langenberg: Symphony No. 4 (Brahms), etc.

CONCERTS (Vocal and Instrumental)

12.30 p.m. Radio-Paris: Weber anniversary programme (gramophone).  
 7.30 " Budapest: The pupils of the Royal Hungarian Academy.  
 8.0 " Langenberg: "Des Knaben Wunderhorn."  
 8.5 " Stockholm: Choral programme.  
 8.30 " Schweizerischer Landessender: Florizel v. Reuter (violin).  
 9.10 " Berlin (Witzleben): Spanish-American music.  
 10.0 " Copenhagen: Danish romantic music.  
 10.55 " Munich, Frankfurt, Langenberg, Stuttgart: Late Concert.

OPERA

7.20 p.m. Hamburg: "Light Cavalry" (Suppé).

CHAMBER MUSIC

4.50 p.m. Berlin: Wind Instruments.  
 9.30 " Stuttgart, Frankfurt: Quartets (Brahms).

RECITALS

6.30 p.m. Brussels No. 1: Violin.  
 8.0 Heilsberg: Pianoforte Sonatas (Haydn).  
 10.30 " Warsaw: Music for two pianofortes.

PLAYS

8.0 p.m. Breslau, Königs Wusterhausen: "Das Lusamgärtlein."  
 8.0 " Radio-Paris: "La belle Horloge" (Revel).  
 8.45 " Heilsberg: "The passionate Ego."

MISCELLANEOUS

4.0 p.m. Stockholm: The National Festival.  
 9.10 " Munich, Königs Wusterhausen "Vienna in Nürnberg" (relayed from Nürnberg).

Concert and Concerto

In matters of music our vocabulary is largely made up of foreign words—mainly Italian; it is, of course, a constant reminder of Italy's erstwhile dominion over the world's music. But we score over most of our European neighbours in one way; we have two words for the two things which we call Concert and Concerto. Elsewhere, there is but one, which has to do duty for both, and it would be pretty safe to claim that it is because we alone in Europe knew what a Concert was, in the age of Bach and Handel, when the Concerto was beginning to find its way into favour. The *Concerto Grosso* relied for its effects on contrasts between a little group of solo instruments called the Concertino, and the main body. It is a form in which Handel cast many of his freshest and most wholesome purely orchestral pieces; they are designed

Sweden's National Day

The "name-day" (instead of birthday as it would be in some parts of the world) of their King is celebrated every year by the Swedes with time-honoured ritual. Naval, military and civil bodies gather in force in the Stadium at Stockholm to offer homage to him and to the national flag of blue and yellow, and, beginning at four o'clock in the afternoon, the ceremony and the festivities which always follow it, are to be broadcast. It is a holiday in every sense of the word, and one of the days when young and old don their picturesque national costumes. They speak of it there as their "flag-day," but the term has not the sinister meaning we know too well in Britain: law-abiding citizens do not assume the rôle of bandits as ours are wont to do on flag-days.



Sweden's National Day

	NATIONAL		
	kc/s.	m.	kW
London:	1,148	261.3	50
Daventry:	193	1,554.4	30
Northern:	995	301.5	50

	REGIONAL		
	kc/s.	m.	kW
London:	842	356.3	50
Midland:	752	398.9	25
Northern:	626	479.2	50

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME

**BARCELONA (Spain)**  
 Radio-Barcelona (E.A.J.). 860 kc/s (349 m.); 8 kW.  
 Transmits at intervals from 12 noon.  
 8.0 p.m.—Concert by the Station Trio. Minuet, Op. 14, No. 1 (Paderewsky). Selection from "Norma" (Bellini). Aubade (de Taeye). Humoresque for Violin (Demaret).  
 8.30—Exchange Quotations, Talk in Catalan, Request Gramophone Records, Sports Notes and News Bulletin. 10.0—Chimes and Weather. 10.5—Concert of Sardanas.  
 11.0—*Harpsichord Recital* by Macario Kastuer. Les fastes de la grande et ancienne Ménestrandise (Couperin). Toccata (Sousa-Carvalho). Partita in B Flat (Bach).  
 11.30—Concert of Light Music by the Station Orchestra. 12.30 a.m. (Tuesday)—Dance Music relayed from the Excelsior Restaurant. 1.0 (approx.)—Close Down.

**BERLIN (Germany)**  
 Königs Wusterhausen. 183.5 kc/s (1,635 m.); 60 kW.  
 Transmits at intervals from 5.45 a.m.  
 12.5 p.m.—Talk in English for Schools: Review of England's Trade in 1931; followed by Gramophone Concert of Newly-released Records, and Weather for Farmers. 12.55—Nauen Time Signal. 1.30—News Bulletin. 2.0—Gramophone Concert of German Marches and Dialect Items, relayed from Berlin (Witzleben). 3.0—Reading (Arlen). 3.30—Weather and Exchange Quotations. 3.40—Talk for Young People: Germany and the Olympic Games in 1932. 4.0—Educational Talk.  
 4.30—30—See Berlin (Witzleben).  
 5.0—Talk: Tendencies in Modern Evangelical Theology. 6.0—Talk: Naturalism in Nineteenth-Century Literature. 6.30—Elementary Spanish Lesson. 6.55—Weather for Farmers. 7.0—Topical Talk. 7.20—Agricultural Talk. 7.55—Talk: Lenin and the Intellectual Bases of Bolshevism, followed by Weather for Farmers.  
 8.0—See Breslau. 8.50—News and Sports Notes. 9.10—See Munich. 10.20—Weather, News and Sports

Notes, followed by Dance Music from the Europa Pavillon. 12.30 a.m. (Tuesday)—Close Down.

**BERLIN (Germany)**  
 Witzleben. 715 kc/s (419.5 m.); 1.5 kW.  
 Transmits at intervals from 6.0 a.m. (Gymnastics and Concert Relay).  
 4.30 p.m.—Grieg Songs, by Eva Johann-Fehrmann (Soprano). Zur Rosenzeit. Ein Schwan. Mit einer Primula veris. Abschied. Letzter Frühling. Dein Rat ist wohl gut.  
 4.50—Concert of Chamber Music for Wind Instruments. Sextet, Op. 6, for Flute, Oboe, Clarinet, Bassoon, Horn and Pianoforte (Ludwig Thuille). From the Divertissement, Op. 5, for Oboe, Clarinet, Horn and Bassoon (Max Haefelin).  
 5.30—Talk on Sail-Planing, for Young People. 5.50—Talk, with Gramophone Illustrations: Music in the Japanese Theatre. 6.20—Talk: Men and their Callings—the Proof-Reader. 6.50—Labour Market Report. 6.55—"The Witzleben Station informs its Listeners..." 7.0—Topical Talk.  
 7.10—Erwin Lendvai Programme for his Fiftieth Birthday. The Lendvai Choir conducted by G. O. Schumann, and the Berlin People's Choir, conducted by Dr. Zander. Introductory Talk by Walter Hänel. Women's Choir: Nacht (Bruno Schönlanek). Male Voice Choir, (a) Kumpane (Alfred Thieme), (b) Mannheit (Gustav Schüller). Four Songs from "Nippon"—a Suite for Women's Voices after Old Japanese Poems, Op. 5.  
 7.40—Talk: The Zuider Zee—now a Lake. 8.0—"Listen to the Dreadful Story of..."—a Programme of Horrors arranged by Leo Rein. 9.0—News and Sports Notes.  
 9.10—German-Spanish-American Programme. The Berlin Wireless Orchestra. Conductors: Bruno Seidler-Winkler, Guillermo Espinosa and Dr. Helmuth Thierfelder. The Berlin Wireless Choir. Soloist: Jennie von Thillot (Soprano). Romantic Overture (Julio Baumeister, Mexico). Address by Dr. Otto Boelitz, Director of the Ibero-American Institute. Symphonic Poem, Cuauhtémoc (José Rolon, Mexico). Address by Dr.

Octavio Mendoza Gonzalez, Mexican Ambassador. Four Songs for Soprano (Carlos Pedrell, Argentine). Dances of the Brazilian Mestizos (Heitor Villa-Lobos, Brazil). Selections from the Ballet "La Fête chez Thérèse" (Reynaldo Hahn, Venezuela). Address by Dr. Eduard Dagnino Penny, Venezuelan Ambassador and President of the Ateneo-Ibero-Americano. Symphonic Poem, Noche Campesina (Alfonso Broqua, Uruguay). 10.40—Weather, News and Sports Notes, followed by Dance Music from the Europa Pavillon. 12.30 a.m. (Tuesday)—Close Down.

BORDEAUX-LAFAYETTE (France)

(PTT). 986 kc/s (304 m.); 13 kW. Transmits at intervals from 12.45 pm.  
 7.30 p.m.—News Bulletin, Exchange and Market Prices. 7.40—Sports Notes. 7.55—Lottery Results. 8.0—Talk on Social Hygiene. 8.15—News Bulletin and Weather Forecast. 8.30—Concert of Classical and Modern Music.

BRATISLAVA (Czechoslovakia)

1,076 kc/s (279 m.); 14 kW. Transmits at intervals from 11.0 a.m.  
 7.0 p.m.—See Moravská-Ostrava. 8.0—See Brno. 10.15—Programme Announcements followed by Concert.

BRESLAU (Germany)

923 kc/s (325 m.); 1.5 kW. Relayed by Gleiwitz, 1,184 kc/s (253 m.).  
 Transmits at intervals from 6.0 a.m.  
 4.30 p.m.—Concert of Light Music by the Station Orchestra, conducted by Franz Marszalek. Overture, "The Cunning Peasant" (Dvorák). Elegy (Suk). Potpourri, The Immortal Verdi (Rhode). Friedemann Bach Suite (Leuschner).  
 5.30—Agricultural Prices. 5.35 (approx.)—Book Review. 5.50—Review of Contemporary Cultural Problems. 6.5—Review of Periodicals. 6.35—English Lesson. 6.50—Talk on Gardens. 7.10—Weather for Farmers. 7.12—Concert of Popular Music on Gramophone Records. 7.55—Weather Forecast. 8.0—"Das Lusamgärtlein"—a Radio Sequence from Poems by Max Dauthendey. Music by Ernst

10.15 a.m.—The Daily Service.  
 10.30—Time Signal (Greenwich), Shipping Forecast.  
 10.45—11.0 "Off the Shelf"—VI. 12 noon—Mabel Ferguson (Soprano). The Sylvan Trio.  
 12.45 p.m.—The Commodore Grand Orchestra.  
 1.0—Time Signal (Greenwich).  
 2.0—Gramophone Records.  
 2.25—For the Schools.  
 2.30—3.0—World History. Mr. J. A. White: "Empires, Movements, and Nations—VII, Japan and the Far East."  
 3.25—French Dialogue. Mademoiselle Camille Vière and Monsieur E. M. Stéphan.  
 3.45—A Sonata Recital. Peers Coetmore (Violoncello). Reginald Paul (Pianoforte).  
 4.15—Moscchetto and his Orchestra.  
 4.45—Time Signal (Greenwich).  
 5.15 (Daventry)—The Children's Hour.  
 5.15 (London and Northern)—Dance Music.  
 6.0—"The First News."  
 6.30—Time Signal (Greenwich).  
 6.30—The Foundations of Music. Schubert's Miscellaneous Pianoforte Music, played by Victor Hely-Hutchinson.  
 6.50—"New Books." Mr. Desmond MacCarthy.  
 7.10—7.25—Topical Talk.  
 7.30—"Music, Old and New"—VIII. Mr. Hely-Hutchinson.  
 8.0—"Squirrel's Cage." A play for the Microphone, by Tyrone Guthrie. Produced by the Author.  
 9.0—Time Signal (Greenwich).  
 9.0—"The Second News."  
 9.15—Shipping Forecast; New York Stock Market Report.  
 9.20—"The Rungs of the Ladder"—V. The Rt. Hon. Margaret Bondfield.  
 9.40—Symphony Concert. The B.B.C. Orchestra (Section B) (Leader, Arthur Catterall), conducted by Reginald Stewart, Juan Manen (Violin).  
 11.0—12 midnight—Dance Music.  
 11.30—Time Signal (Greenwich).

10.15 a.m. (London and Northern)—The Daily Service.  
 10.30—11.0 (London and Northern)—Daventry National Programme.  
 11.30—12 noon (London)—Experimental Television Transmission (Baird Process).  
 12 noon—Ernest Parsons and his Orchestra.  
 1.0 p.m.—Reginald Dixon at the Organ.  
 1.45—3.0—The Midland Studio Orchestra. Dorothy Richards (Contralto).  
 3.45 (London and Northern)—Daventry National Programme.  
 5.15—The Children's Hour.  
 6.0—"The First News."  
 6.30 (London and Northern)—The Victor Olof Sextet. Laura Morand (Soprano). Stewart Gardner (Baritone).  
 6.30 (Midland)—Light French Music The Midland Studio Orchestra. Emily Broughton (Soprano). Dorothy Wilson (Pianoforte).  
 7.45—A Promenade Concert. The Hallé Light Orchestra, conducted by Alfred Barker.  
 8.0 (London)—Pianoforte Recital by Lilius Mackinnon.  
 8.0 (Midland)—The Studio Chorus, under the direction of Edgar Morgan.  
 8.30 (London and Midland)—Vaudeville. Georges Seversky, The Singing Pilot. Leslie Weston, Comedian. Rupert Hazel and Elsie Day, in "Harmonyliarity." Clarice Mayne, Comedienne. Norman Long. The B.B.C. Theatre Orchestra.  
 9.0 (Northern)—Dance Music. Bertini's Dance Band.  
 9.30 (London)—A Special Programme of Old Celebrity Gramophone Records, by Christopher Stone.  
 9.30 (Midland)—Dance Music.  
 9.55 (Northern)—Mr. A. A. Harrison: "Holidaying with our Ancestors."  
 10.15—"The Second News."  
 10.35—11.0 (Midland)—As London.  
 10.35—12 midnight (London and Northern)—Dance Music.

**MONDAY**  
continued

August Voelkel. 8.50—News Bulletin.  
9.0—Concert by the Silesian Oratorio Quartet. Abendlied zu Gott (Haydn). Spanisches Liederspiel (Schumann): (a) Erste Begegnung, (b) Intermezzo, (c) Liebesgram, (d) In der Nacht, (e) Es ist verraten (f) Melancholic, (g) Geständnis, (h) Botschaft, (i) Ich bin geliebt. Folk Songs: (a) Wenn ich ein Vöglein war (arr. Strässer), (b) Käferhochzeit (arr. Ottheimer), (c) Jan Hinnerk up de Lammerstrat (arr. Röntgen), (d) Four Slovak Folk Songs (Béla-Bartók).  
10.0—Time Signal. Weather Forecast, News Bulletin, Sports Notes and Programme Announcements.  
10.25—Talk on Horse Racing. 10.40—Answers to Correspondents on Technical Questions. 12 midnight (approx.)—Close Down.

**BRNO (Czechoslovakia)**  
878 kc/s (342 m.); 35 kW.  
Transmits at intervals from 11.0 a.m. 7.0 p.m.—See *Moravská-Ostrava*.  
8.0—Humorous Readings from the Works of Russian Authors.  
9.5—*Balalaika Concert*, conducted by Merkuriev. Song, On the river. Do not leave me (Grico). May, Op. 47, No. 5 (Tchaikovsky). Populiat Song, The Weeping Willows. Concert Polka (Merkuriev). Russian Song, Troika. Song, Beautiful Sea. Song of the Cadets. My Sweetheart is coming. Evening Bell.  
10.0—See *Prague*. 10.15—News Bulletin. 10.20—See *Bratislava*.

**BRUSSELS (Belgium) (No. 1)**  
1.N.R. 590 kc/s (509 m.); 15 kW.  
12 noon—*Gramophone Concert*. Overture, "Don Pasquale" (Donizetti). Hindu Song from "Sadko" (Rimsky-Korsakov). Arlequin (Popper). Erotic (Grieg). Toccata (Debussy); Selection from "Der Orlov"; (Granchistædten). 12.30 p.m.—Weather Report. 12.40—*Gramophone Concert (continued)*. Potpourri, The Show of Shows. The Last Day of Love (Benatzky). Humorous Variations on a Popular Song (Suppé-Lochmann). Ideale (Tosti-Tavan). Sanctuary of the Heart (Kettelbey).  
1.0—*Trio Concert*. Military March (Schubert). Waltz, Très jolie (Waldteufel). Gipsy Romance

(Boldi). In a Pagoda (Bratton). Selection from "The Love Parade" (Schertzing). Violin Solos: (a) Popular Song (Dvorák), (b) Waltz in A (Brahms). Selection from "Madame Butterfly" (Puccini). Minuet for "Cello" (Mozart). Serenade, Milonga (Huguet). March, Ribera del Turia (Lucchesi). 2.0—Educational Programme.

5.0—*Orchestral Concert*, conducted by Jean Kumps. Overture, "Si j'étais roi" (Adam). Four Pieces (Kreisler). Selection from "Manon" (Massenet). Suite No. 2 from "La Source" (Delibes). The Nutcracker Suite (Tchaikovsky).  
6.0—Variety Music on Gramophone Records. 6.15—Talk: Weather in Folklore.

6.30—*Violin Recital of Dances of All Nations and Times*. Sarabande (Bach). Gigue (Bach). Chanson Louis XIII et Pavane (Couperin). Irish Reel (Grainger). Slavonic Dance (Dvorák). Mazurka (Wieniawski). Spanish Dance (Granados). Hungarian Dances (Brahms).

7.0—*Gramophone Records*. Valse poudrée (Popy). Potpourri, Hörst und staunt! (Dostal). Foxtrot, Mausie.  
7.15—Talk: The Economic Situation of Europe—Germany. 7.30—Theatre Review.

8.0—*Orchestral Concert*, conducted by Jean Kumps. Italian Caprice (Tchaikovsky).

8.15—*"The Tureen"*—One-Act Comedy (d'Hervilly). 8.30—*Concert (continued)*. Serenade, Eine kleine Nachtmusik (Mozart). 8.45—Recitations. 9.0—*Concert (continued)*. Norwegian Rhapsody (Lalo). Elegy for "Cello" (Massenet). Suite from "L'Arlésienne" (Bizet). Le Pas des Fleurs (Delibes). Gothic Minuet (Boellman). Serenade (Glazounov). The Flight of the Bumble-bee. (Rimsky-Korsakov). Ballet Music from "Faust" (Gounod).  
10.0—Le Journal Parlé. 10.10—Dance Music from the St. Sauveur Palais de Danse. 11.0 (approx.)—Close Down.

**BRUSSELS (Belgium) (No. 2)**  
N.I.R. 887 kc/s (338.2 m.); 15 kW.  
Programme in Flemish.

12 noon—Concert by Max Alexys and his Orchestra. 12.30 p.m.—Weather Report. 12.40—Concert (continued). 2.0—Educational Programme.

5.0—*Orchestral Concert*, conducted by Charles Walpot. March (Mannfred) Spanish Waltz, La Gitana (Bucalossi). Selection (Siede). Comic Overture (Kéler-Béla). Ave Maria (Schubert). Selections from "Le Grand Mogol" (Audran). Hungarian Dances Nos. 5 and 6 (Brahms). Petite Suite (Chaminade). March, Washington Post (Souza).

6.0—*Gramophone Records*. Selection from "The Last Waltz" (Oscar Straus). El Huesped del Sevillano (Guerrero). Old Russian Air for Guitar. Selection. Hawaiian Sandman (O'Flynn).

6.15—Talk: June Folklore.  
6.30—*Gramophone Records*. Symphony on a Mountain Theme (d'Indy). Song (Schumann-Chamisso). Song of the Flea (Moussorgsky). Gavotte No. 2 (Popper). Prelude (Rachmaninov). Scherzo-Waltz (Chabrier).

7.15—Variety Items. 7.30—Sports Notes.

8.0—*Orchestral Concert*, conducted by Charles Walpot. Radetzky March (Johann Strauss). Waltz, Ever or Never (Waldteufel). Stolz Potpourri (Dostal). Intermezzo (Mannfred). Baby Parade (Mannfred). Trombone Solo: Chickie (Stillwell). French Polka, Wildfeuer (Johann Strauss). Rumba, Bei mir (Michaelov).

8.45—Recitations with Incidental Music.

9.10—*Concert (continued)*. One-step, London March (Nelis). Ballet Music from "Isoline" (Messenger). Selection from "A Waltz Dream" (Oscar Straus). Selections for Two Pianofortes. Waltz, It's hard to forget (Lucchesi). Violin Solo: Gipsy Tango, Jealousy (Gade). Fantasia in Jazz Style on "The Dollar Princess" (Fall).

10.0—Le Journal Parlé. 10.10—Dance Music from the St. Sauveur Palais de Danse. 11.0 (approx.)—Close Down.

**BUCHAREST (Romania)**  
Radio-Bucarest. 761 kc/s (394 m.); 12 kW.  
Transmits at intervals from 11.0 a.m. 4.0 p.m.—Concert of Popular Music by the Station Orchestra. In the interval at 5.0—News Bulletin and Time Signal. 6.0—Scientific Talk. 6.40—Light Music on Gramophone Records. 7.0—Time Signal. 7.1—Quintet Concert of Chamber Music. 7.45—Harp Recital by Mme. Pessione. 8.5—Octet Concert of Chamber Music. 8.45—News Bulletin.

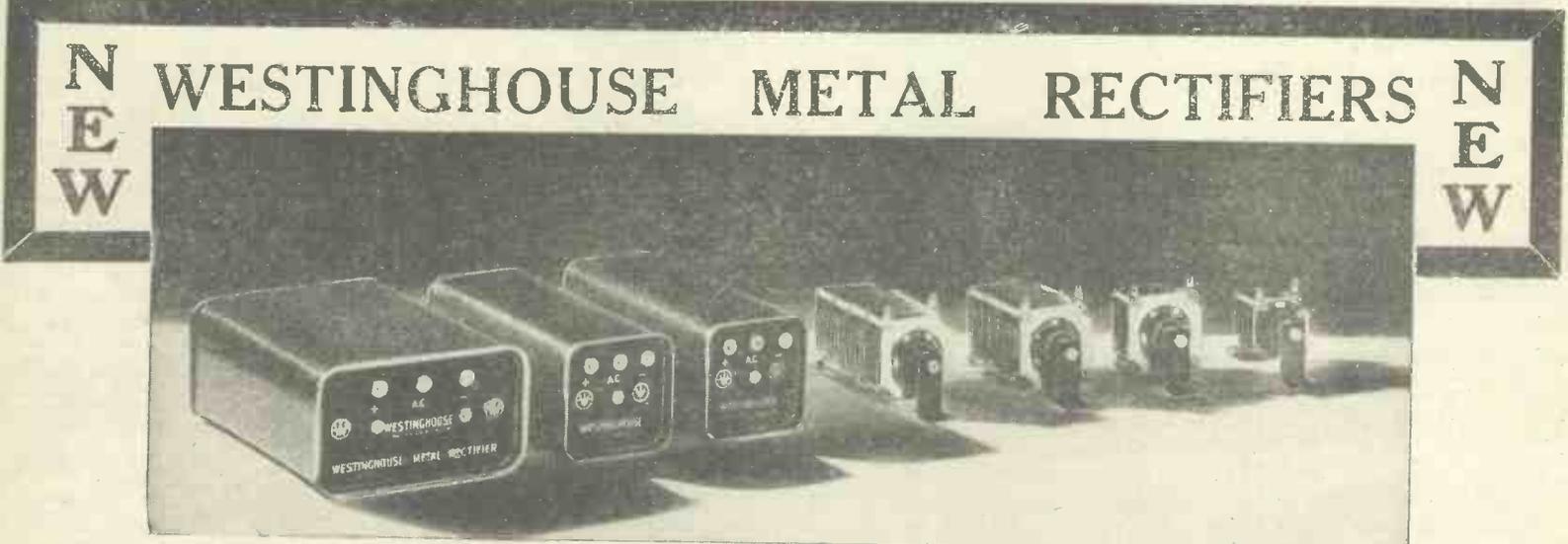
**BUDAPEST (Hungary)**  
545 kc/s (550 m.); 18.5 kW.  
Transmits at intervals from 9.15 a.m. Programme also relayed on 210 metres from 6.40 p.m. till Close Down. 5.30 p.m.—Concert by the Laci Rác Cigány Band. 6.25—German Lesson. 6.50—Talk: Goethe as a Producer. 7.30—Concert by the Pupils of the Royal Hungarian Academy of Music, relayed from the Opera House. Conductor: Ernst Unger. Selections from (a) "The Queen of Sheba" (Goldmark), (b) "Lakmé" (Delibes), (c) "I Pagliacci" (Leoncavallo), (d) "The Prophet" (Meyerbeer), (e) "Dinorah" (Meyerbeer), (f) "The Force of Destiny" (Verdi), (g) "Faust" (Gounod), (h) Act II of "Il Seraglio" (Mozart). After the Concert, Time Signal and Weather Report, followed by Concert of Dance Tunes and Hungarian Popular Music by the Georg Guttenberg Jazz Orchestra, and the Zsiga Rác Cigány Band, relayed from the Dunacorso Café.

**COPENHAGEN (Denmark)**  
1,067 kc/s (281 m.); 0.75 kW.  
Relayed by *Kalundborg*, 260 kc/s (1,153 m.).  
Transmits at intervals from 7.30 a.m. 12 noon—Town Hall Chimes. 12.2—2.0 p.m.—String Ensemble Concert from the Wivex Restaurant. 2.50—*Gramophone Concert*. Aria from "Don Giovanni" (Mozart). Duet from "Rigoletto" (Verdi). Song, Traum durch die Dämmerung (Richard Strauss). Potpourri of German Folk Songs. Selections from "The Flower of Hawaii" (Abraham). Selection from "Der Liebeskommando" (Stolz). Selection (Lindberg).

3.20—Talk for the Housewife. 3.30—*Instrumental Concert*. Turkish March (Mozart). Overture, "La Cenerentola" (Rossini). Waltz from "Faust" (Gounod). Selection from "Manon Lescaut" (Puccini). Violin Solo: Minuet (Axel Schjöler). Overture, "Le Cheval de Bronze" (Auber). Reading. Selections from "The Ciffus Princess" (Kálmán). Three Selections (Tourmior): (a) Prelude, (b) Priere, (c) Dance. Flora (Siede). Waltz from "Der Rosenkavalier" (Richard Strauss). Slavonic Dance, No. 8 (Dvorák). 5.40—Exchange Quotations and Fish Market Prices. 5.50—Talk by Ove Boesdal. 6.20—*Elementary English Lesson*. 6.50—Weather and News. 7.15—Time Signal. 7.30—Concert relayed from *Munkebakken, Naestved*. Military March (Schubert). Introduction to and Choral Selection from "Carmen" (Bizet). Polonaise from "Eugen Onegin" (Tchaikovsky) Choral Selections (Carl Nielsen). Torch Dance (Meyerbeer). Volmerslaget, for Male Voice Choir and Orchestra (Heise). 8.30—Agricultural Talk. 9.0—Talk on Old Instruments, with Illustrations, relayed from the Museum for the History of Music. 9.45—News Bulletin.

10.0—*Concert of Danish Romantic Music*. The Radio Orchestra, conducted by Launy Gröndahl. Overture, "Røverborgen" (Kuhlau). Selections from "King and Marshal" (Heise). Overture, "Axel og Valborg" (J. P. E. Hartmann). Andantino con moto from the Novelettes for Strings (Gade). Selections from "Et Folkesagn" (Gade). Tarantella from "Napoli" (Paulli). 11.0 (approx.)—Close Down.

**DUBLIN (Ireland)**  
(2RN). 725 kc/s (413 m.); 1.2 kW.  
Relayed by *Cork*, 1,337 kc/s (224.4 m.).  
1.30—2.0 p.m.—Time Signal, Weather Forecast, Stock Report and Light Music on Gramophone Records. 6.0—Popular Music on Gramophone Records. 6.15—Programme for Children. 7.0—Gramophone Records of Variety Music. 7.20—News Bulletin. 7.30—Time Signal. 7.31—Gaedhlig. 7.45—Talk. 8.0—The Station Sextet. 8.20—Amhrian



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# MONDAY

continued

Gaedhige. 8.30—Pianoforte Recital of Irish Music. 8.45—Talk by Dr. Macallister. 9.15—Variety Half-hour by Mai Neville and Company. 9.45—Soprano and Cello Recital. 10.10—The Station Sextet. 10.30—Time Signal, News, Weather Report and Close Down.

## FÉCAMP (France)

Radio Normandie. 1,345 kc/s (233 m.); 10 kW.  
12 noon—Variety Music on Gramophone Records. 12.30 p.m.—News Bulletin. 12.45—Radio Concert. 7.30—Radio Gazette for Normandy. 8.00—News Bulletin. 8.30—Concert by the Melodic Syncopated Jazz, relayed from the Casino, *Le Triport*. 11.0—Dance Music Programme. 1.0 a.m. (Tuesday)—Close Down.

## FLORENCE (Italy)

Ente Italiano Audizioni Radiofoniche. 599 kc/s (500.8 m.); 20 kW.  
See Turin.

## FRANKFURT-am-MAIN (Germany)

770 kc/s (390 m.); 1.5 kW. Relayd by Cassel, 1,220 kc/s (246 m.).  
Transmits at intervals from 6.0 a.m. 5.0 p.m.—Concert by the Wireless Orchestra conducted by Reinhold Merten. Soloist: Robert Bröll (Tenor). Military Divertissement (Leopold Mozart). Overture in D (Boccherini). Symphony in C (Dittersdorf). Songs and Arias.  
6.15—Economic Notes. 6.25—Talk: Colonies. 6.50—English Language Lesson. 7.30—10.40—See Stuttgart.  
10.40—Time, Weather, News and Sports Notes. 10.55—Concert from Munich. 12 midnight (approx.)—Close Down.

## HAMBURG (Germany)

Norag (ha, in Morse). 806 kc/s (372 m.); 1.5 kW. Relayd by Bremen, 1,112 kc/s (270 m.); Flensburg, 1,373 kc/s (218 m.); Hanover, 530 kc/s (566 m.) and Kiel, 1,292 kc/s (232.2 m.).  
Transmits at intervals from 5.45 a.m. 6.35 p.m.—Dialogue for Workers. 6.55—Market Prices. 7.0—Topical Talk. 7.15—Weather Forecast. 7.20—"Leichte Kavallerie" (Light Cavalry)—Operetta (Suppé).  
8.35—"Musical Sketches by Joseph Gungl"—by the Little Norag Orchestra, conducted by Gerhard Maasz. Waltz, Jungherren-Tänze. Hungarian Shepherds' Dance. Waltz, Zephrilüfte. Klänge aus der Heimat. Waltz, Mit hunderten Atmosphären. Czardas, Zsambeki.  
9.5 (from Hanover)—"Man in the Social Drama"—Programme of Literature and Music. Commentary by R. Matheus. Overture, "Egmont" (Beethoven). Reading: Scene from "Woyzeck" (Georg Büchner). Funeral March (Beethoven). Reading: Scene from "Vor Sonnenaufgang" (Gerhart Hauptmann). Reading: Scene from "Die Weber" (Gerhart Hauptmann). Overture, "Robespierre" (Litolff). Reading: Die Maschinenstürmer (Ernst Toller). Aufbruch (Hermann Erdlen).  
10.0—News Bulletin. 10.20—Fortnightly Report of the Norag Sound Service.

## HEILSBURG (Germany)

1,085 kc/s (276.5 m.); 60 kW. Relayd by Danzig, 662 kc/s (453.2 m.).

Transmits at intervals from 6.0 a.m. (Weather, Gymnastics and Concert).

1.5—2.30 p.m.—Gramophone Concert. March, Heil Europa (Blon). Per aspera ad astra (Urbach). In a Monastery Garden (Ketselberg). Two Folk Songs: (a) Auf hohen Bergen, (b) Neuhauser Gebirgsweisen. Tenor Solos: (a) Elégie (Massenet), (b) Der Lenz (Hildach). Two Selections (Strauss): (a) Wine, Woman and Song, (b) Wiener Frauen. Selection from "Paganini" (Lehár). Two Selections (Kálmán): (a) Es ist besser so, (b) Wenn die Garde aufmarschiert. Wenn ich Urlaub hab' (Egen). Im Krug zum grünen Kranz (Hirsmann). Two Selections (Heymann): (a) Das muss ein Stück vom Himmel sein, (b) Live, Love and Laugh. Erst trinken wir noch eins (Rosen). Ich hab' den ganzen Tag schon Durst (Lindemann). Das Wetterhüschchen (Krome). Ein Sommerabend (Waldeufel). Deutsche Marschperlen (Blankenburg).

4.0—Programme for Children. 4.30—Concert from Breslau. 5.30—Talk: Do you speak German? 5.45—Review of Books. 6.15—Agricultural Market Prices. 6.25 (from Danzig)—Talk: Food and Agriculture in the Free City of Danzig. 6.50—Talk: Memorable Days of the Week.

7.0—Talk: Growing Old. 7.25—Talk: The Importance of Islam Today, on the Anniversary of the Death of its Founder, Mahomet. 7.55—Weather Forecast.  
8.0—Haydn's Pianoforte Sonatas, played by Rudolf Winkler. Sonata in C Minor. Sonata in E Flat. Sonata in B Flat. 8.35—Announcements.  
8.45 (from Danzig)—"The Passionate Ego"—Friedrich Heibel and his Time—a Radio Sequence (Alfred Mühr). 10.0 (approx.)—Weather, News and Sports Notes.

## HILVERSUM (Holland)

1,013 kc/s (296.1 m.); 20 kW. (7 kW. up till 4.40 p.m.).  
Programme of the Algemeene Vereeniging Radio Omroep (A.V.R.O.). 7.40 a.m.—Time Signal. 7.41—Gramophone Records of Light Music. 9.40—Time Signal. 9.41—The Daily Service. 9.55—Gramophone Records of Light Music. 10.10—Talk. 10.40—Organ Recital by Frans Hasselaar with Songs by Han Heijdenrijk. 11.45—Time Signal.  
11.41—Concert by the Wireless Chamber Orchestra, conducted by Louis Schmidt. March from "Der Obersteiger" (Zeller). Overture, "Le Brasseur de Preston" (Adam). Intermezzo from "Suor Angelica" (Puccini). Selection from "La fille de Madame Angot" (Lecocq). Gavotte (Sinding). Serenata Morisca (Chapi-Reynoso). Gramophone Records of Variety Music. Eine Sängerschaft nach Wien (Silving). Dolores, mio padre (Moretti). Colombine (Dufort). Waltz from "The Arabian Nights" (Johann Strauss). Paraphrase on Hungarian Folk Songs (Padouk). Gramophone Records of Variety Music. The Time of the Roses (Mannfred). Loreley Paraphrase (Nesvadba). Selection from "Old Heidelberg" (May). Goodnight (Grit). Old Dutch March (Kaiser). 1.55—2.10 p.m.—Interval. 2.10—Talk and Gramophone Records of Popular Music. 3.10—Concert, relayed from the Café Central, *The Hague*. 4.10—Programme for Children. 5.10—Orchestral Concert with Songs by Bob Scholte. 6.40—Weekly Book Talk. 7.10—Trio in E Flat, Op. 18 (Saint-Saëns). 7.40—Time Signal.

7.41—Orchestral Concert, conducted by Nico Treep. Soloist: Egbert Veen (Pianoforte). Symphony in A, Op. 134, No. 21 (Mozart). Concerto for Pianoforte and String Orchestra (Dittersdorf). Three Dances from "Céphale et Procris" (Grétry-Mottl). March of the Little Tin Soldiers (Pierne).  
8.25—Gramophone Records of Popular Music.  
8.55—Orchestral Concert, conducted by Nico Treep. Overture, "The Merry Wives of Windsor" (Nicolaï). Selection from "Tannhäuser" (Wagner). Overture, "Les Dragons de Villars" (Maillart). Selection from "Die Fledermaus" (Joh. Strauss).  
9.40—Weather and News.  
9.50—Orchestral Concert, conducted by Nico Treep. March, Stars and Stripes (Sousa). Waltz, Roses of the South (Joh. Strauss). March, Blaze of Glory (Holzmann). Waltz, Child, you can dance! (Foll). Badetzky March (Joh. Strauss). Waltz, Domauwelen (Ivanovic). March, (Lehar). 10.40—Gramophone Records of Variety Music. 11.40 (approx.)—Close Down.

11.41—Concert by the Wireless Chamber Orchestra, conducted by Louis Schmidt. March from "Der Obersteiger" (Zeller). Overture, "Le Brasseur de Preston" (Adam). Intermezzo from "Suor Angelica" (Puccini). Selection from "La fille de Madame Angot" (Lecocq). Gavotte (Sinding). Serenata Morisca (Chapi-Reynoso). Gramophone Records of Variety Music. Eine Sängerschaft nach Wien (Silving). Dolores, mio padre (Moretti). Colombine (Dufort). Waltz from "The Arabian Nights" (Johann Strauss). Paraphrase on Hungarian Folk Songs (Padouk). Gramophone Records of Variety Music. The Time of the Roses (Mannfred). Loreley Paraphrase (Nesvadba). Selection from "Old Heidelberg" (May). Goodnight (Grit). Old Dutch March (Kaiser). 1.55—2.10 p.m.—Interval. 2.10—Talk and Gramophone Records of Popular Music. 3.10—Concert, relayed from the Café Central, *The Hague*. 4.10—Programme for Children. 5.10—Orchestral Concert with Songs by Bob Scholte. 6.40—Weekly Book Talk. 7.10—Trio in E Flat, Op. 18 (Saint-Saëns). 7.40—Time Signal.

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de lune, (b) Passepied. Slavonic Dance Melodies—No. 1 in G Minor (Dvorak). Minstrels (Debussy). Selection from "La vida breve" (Falala).  
6.10—Question Time. 7.10—Police Notes. 7.25—Religious News.  
7.40—Choral and Orchestral Concert, conducted by Frits Schuurman and L. Lauenroth. Three Selections (J. W. Franck). Psalm 89 (Goudimel-Schuurman). Praise the Lord (Bach). Kracht en leven (Franken). O machtige getuigen (Franken). Zal dat geen vreugde zijn (Franken). Selection from "Die Geschöpfe des Prometheus" (Beethoven). 8.40—Talk by Henri de Jongh. 9.10—Concert (contd.). Overture in D (Boccherini). Symphony in C (Dittersdorf). Two Selections (Grieg): (a) Anitra's Dance, (b) Solvieg's Song. Suite of Popular Swedish Melodies (Max Bruch). 9.40 (in an interval)—News Bulletin.  
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10.15—Gramophone Records of Variety Music. 11.10 (approx.)—Close Down.

Potpourri of Viennese Music, Von Wien durch die Welt (Marschka-Karzag).  
8.30—Friedrich Schreyvogel reads from his own works.  
9.0—Concert by the Leipzig Symphony Orchestra, conducted by Karl Friedrich. Overture, "Coriolanus" (Beethoven). Symphony No. 32 in G (Overture in Italian Style) (Mozart). Music for Orchestra (Rudi Stephan). Zauber-Spiegel Suite, Op. 38 (Hans Gal). Overture, "Le Baruffe Chiozzote", Op. 32 (Sinigaglia). 10.20—News Bulletin.

10.30 (approx.)—Concert of Light Music by the Emde Orchestra. Overture, "William Tell" (Rossini). Prelude and Mazurka from "Coppélia" (Delibes). Selection from "Prince Methusalem" (Johann Strauss). Two Selections (Eduard Schütt): (a) An Mignon, (b) A la Gavotte. Dolores Waltz (Waldeufel). Song from "Der liebe Augustin" (Fall). Selection from the Works of Lehár. Sei gegrüßt, du mein schönes Sorrent (Waldeufel). Wolga-Marsch (Hermann Dostal). 12

MONDAY continued

(Revel). In the intervals, at 8.30—News, Sports Notes, Weather and Review by Raul Reboux and at 9.15—Press Review and News.

PITTSBURGH (U.S.A.)

Westinghouse Electric (KDKA). 980 kc/s (306 m.); 25 kW. Relayed by W8XK on 48.86 m., and 25.25 m. (See Short-Wave List.) Transmits at intervals from 3.55 p.m. 9.0 p.m.—Teaberry Baseball Scores. 9.5—Business News. 9.15—Items by Dr. Emlin Jones. 9.30—Pebecco Weather Report. 9.32—Market Report. 9.45—Vera's Musical Story Book. 10.0—Teaberry Baseball Scores. 10.5—David Lawrence Dispatch. 10.10—KDKA Artist Bulletin. 10.15—Programme Announcements and Kiddies' Klub. 10.30—"The Singing Lady" from New York. 10.45—Little Orphan Annie. 11.0—Time Signal. 11.11—Temperature Report. 11.2—Who's News To-day. 11.7—Teaberry Sport Review. 11.12—Press News-Reeler. 11.15—Westinghouse Parade. 11.45—Literary Digest Topics from New York. 11.59—Time Signal. 12 midnight—3.0 a.m. (Tuesday)—New York Relay. 12 midnight—Pepodent Amos 'n Andy. 12.15—Tastevest Jesters. 12.30—Stebbins Boys. 12.45—Billy Jones and Ernie Hare. 1.0—Carnation Contended Programme. 1.30—Death Valley Days. 2.0—Sinclair Minstrels. 2.30—George Olson's Orchestra. 3.0—Bob Nolan's San Felicians. 3.15—Cowboy Reminiscences by Betty Brown. 3.30—Love Songs and Waltzes, from New York. 3.45—Contract Bridge, by E. Hall Downs. 4.0—Time Signal. 4.1—Teaberry Sport Review. 4.11—Temperature and Weather Report. 4.15—Press Last Minute News. 5.0—Lew Conrad and his Orchestra. 5.15 (approx.)—Hotel William Penn Orchestra. 5.30—Time Signal and Good Night.

PRAGUE (Czechoslovakia)

614 kc/s (488.6 m.); 120 kW. Transmits at intervals from 6.15 a.m. (Alarm and Gramophone Records). 5.45 p.m.—Talk arranged by the Masaryk Institute. 5.55—Practical Hints. 6.5—Agricultural Report. 6.15—Talk for Workers: Health Insurance. 6.25—German Transmission: News and Talk on Rationalisation. 7.0—See Moravská-Ostrava. 8.0—See Brno. 9.0—Time and News. 9.5—Trio for Clarinet, Bassoon and Piano-forte (Glinka). 9.30—Piano-forte Recital by Karel Solc. Sonata Op. 54 No. 5 (Novák). Intermezzo Op. 30 No. 1 (Blumcr.). Variations on an old Melody Op. 37 (Blumcr.). Czech Dances (Martini). 10.0—Time, News and Sports Notes. 10.15—Miscellaneous Announcements. 10.20—See Bratislava.

RADIO-SUISSE ROMANDE (SOTTENS) (Switzerland)

743 kc/s (403 m.); 25 kW.; Lausanne, 442 kc/s (680 m.); and Geneva, 395 kc/s (760 m.). 12.30 p.m.—Time Signal from Neuchâtel Observatory. 12.32—Weather Forecast and News Bulletin. 12.40 (from Lausanne)—Gramophone Concert of Light Music. 1.0—Exchange Quotations. 1.5—Gramophone Concert (contd.). 1.45—5.0—Interval. 5.0—Time Signal from Neuchâtel Observatory. 5.1 (from Lausanne)—Programme for Children. 5.30—Concert by a String Orchestra, conducted by Robert Echenard. 7.0—Weather Forecast. 7.1 (from Geneva)—Light Music on Gramophone Records. 7.40 (from Geneva)—Recitations. 7.55—Announcements. 8.0 (from Lausanne)—The Popular Song of the Bernese Jura—Talk on its Origin and Evolution by Joseph Beuret, with illustrations by Mme. Beuret-Frantz. 8.45 (from Geneva)—Review of the Week's Events. 8.55—Concert by the Station Orchestra. 10.0—Weather Forecast and News Bulletin. 10.15 (from Lausanne)—Answers to Correspondents. 10.30 (approx.)—Close Down.

RIGA (Latvia)

572 kc/s (525 m.); 15 kW. Transmits at intervals from 6.0 a.m. 6.0 p.m.—Agricultural Talk. 6.30—English Lesson. 7.0—Weather Report. 7.5—Vocal and Orchestral Concert. 8.0—News Bulletin. 8.20—Song and Violin Recital. 8.40—Orchestral Concert. In the interval at 9.0—Weather and News. 9.30—Concert. 10.30 (approx.)—Close Down.

ROME (Italy)

Ente Italiano Audizioni Radiofoniche (IRO). 680 kc/s (441 m.); 50 kW. Relayed by Naples, 941 kc/s (319 m.) and 2RO. 11,810 kc/s (25.4 m.).

8.15—8.30 a.m.—Giornale Radio and Announcements. 12 noon—2.0 p.m.—Gramophone Records of Variety Music. In the intervals: Weather, Giornale Radio, Exchange, Time and Announcements. 5.0—Exchange, Children's Radio Review, Giornale Radio and Announcements. 5.30—Vocal and Instrumental Concert. Soloists: Maria Viviani (Soprano), Giacomina Proto (Violino) and Nelly Africano (Piano-forte). Sonata in A Minor for Violin and Piano-forte (Schumann). Soprano Solos: (a) Ninnanna strapasana (Ferro), (b) Two French Songs, (c) Aria from "La Juive" (Halevy). Violin Solos: (a) Minuet (Debussy), (b) Ritmi (Castelnuovo-Tedesco). 6.15—Giornale dell'Enit. 6.55 (Naples)—Shipping and Sports Notes. 7.0—Agricultural Notes, Announcements, Giornale Radio and Press Review. 8.0—Time, Announcements and Gramophone Records of Variety Music. 9.0—See Turin.

10.0—Concert of Light Music. Non va (Bixio). Soprano Solo: Come una lucciola (de Serra). Tenor Solo: Anema nera (Valenti). Soprano Solo: Mezzanotte (Staffelli). Passa il torrone (Bixio). Tenor Solo: L'amore viene e va (de Curtis). Soprano Solo: Biglietto rosa (Mariotti). Dance from "Wonder Bar" (Katscher). Soprano Solo: John (Mascheroni). Selection (Kaper). Tenor Solo: Uocchie c'arragnate (Falvo). Soprano Solo: Florata (Staffelli). Soprano Solo: La canzone del perché (Mariotti). Pat Trick (Wlastoff). 10.55—News Bulletin.

SCHENECTADY (U.S.A.)

General Electric Company (WGY). 790 kc/s (379.5 m.); 50 kW. Relayed by W2XAF and W2XAD. (See Short-Wave List.)

Transmits at intervals from 11.45 a.m. 9.0 p.m.—Book Chat. 9.15—William Steven (Baritone). 9.30—Bridge Lesson, from New York. 9.45—Studio Ensemble. 9.50—News Items. 10.0—Stock Reports and Police Notes. 10.15—Skippy, from New York. 10.30—Talk. 10.45—Chandu the Magician. 11.0—De Witt Clinton Orchestra. 11.30—The Music Weavers. 11.55—Baseball Scores. 12 midnight (WGY only)—Musical Programme, from New York. 12 midnight (W2XAF only)—Stock Reports and News. 12.15 a.m. (Tuesday)—Weather Report. 12.16—New Kenmore Orchestra. 12.45—4.0—New York Relay. 12.45—The Goldbergs. 1.0—Soconyland Sketch. 1.30—Voice of the Firestone. 2.0—A. & P. Gypsies. 2.30—Parade of the States. 3.0—National Radio Forum. 3.30—Do you remember? 4.0—Arm-Chair Chats. 4.15—Johnny Albright (Crooner). 4.30—DeWitt Clinton Orchestra. 5.0—Rex Koury (Organist). 5.30—New Kenmore Orchestra. 6.0 (approx.)—Close Down.

SCHWEIZERISCHER LANDESENDER (BEROMÜNSTER) (Switzerland)

653 kc/s (459 m.); 60 kW.; Basle, 1,229 kc/s (244.1 m.); and Berne, 1,220 kc/s (246 m.). 12.30 p.m.—Time Signal from Neuchâtel Observatory. 12.31—Weather Report and News Bulletin. 12.40—Concert of Music from all Countries on Gramophone Records. 1.35—Weather Report and Exchange Quotations. 1.45—3.30—Interval. 3.30—Concert by the Station Orchestra. 4.0—Old and New Dance Music on Gramophone Records. 5.0—6.30—Interval. 6.30 (from Berne)—Programme for Children. 7.0—Time Signal, Weather Forecast and Selections of the latest Gramophone Records. 7.30 (from Berne)—Authors' Programme: Georg Schaeffner reads from his Unpublished Works. 8.0—(from Zürich)—Zither Concert by the Zürich Zither Trio. 8.30—Dvorak Concert by the Station Orchestra, conducted by Hermann Hofmann. Soloist: Florizel von Reuter (Violin). 9.30—Weather Forecast and News Bulletin. 9.45—Late Concert of Music from New Theatre Productions by the Station Orchestra, conducted by Hermann Hofmann. 10.30 (approx.)—Close Down.

STOCKHOLM (Sweden)

Radiotjänst (SASA). 689 kc/s (436 m.); 55 kW. Relayed by Boden, 244 kc/s (1,229.5 m.); Göteborg, 932 kc/s (322 m.); Hörby, 1,166 kc/s (257 m.); Motala, 222.5 kc/s (1,348 m.); Östersund, 389 kc/s (770 m.) and Sundsvall, 554 kc/s (542 m.).

Transmits at intervals from 8.0 a.m. 4.0 p.m.—The National Festival. 5.0 (from Falun) 977 kc/s (307 m.).—Accordion Recital. 5.30—Reading from "The Southern Cross" (Nylander). 6.0—Gramophone Records. 7.0—Talk: Practical Hints. 7.15—Weather and News. 7.30—Haydn Piano-forte Recital. Sonata in D No. 7. Sonata in E Minor No. 2. 7.45—Political Review. 8.5—Choral Concert from the Concert House, on the occasion of the Stockholm Baptist Conference. Soloists: Gustav Nordqvist (Organ) and Set Svanholm (Vocalist). Festival March (Loven). Choral Selections: (a) Hymn of Praise (Bach), (b) Herre, hör min bön (Homilius), (c) Selection from "The Messiah" (Handel). Songs: (a) Vad jag älskar (Geijer), (b) David's Psalm No. 73 (Roman), (c) Aria from "Elijah" (Mendelssohn). Concerto in F for Organ and Orchestra (Handel). Choral Selection: Given at Herren (Mören). 9.15—Talk: Electing the Members of the Riksdag. 9.45—Weather and News. 10.0 (from Göteborg)—Humorous Reading. 10.15 (from Göteborg)—Concert of Light Music. 11.0 (approx.)—Close Down.

STRASBOURG (France)

Radio-Strasbourg (PTT). 869 kc/s (345 m.); 11.5 kW. Transmits at intervals from 11.30 a.m. 11.30 a.m.—Gramophone Concert of Opera and Light Music. 12.45 p.m.—News in French and German. 1.0—Time Signal. 1.2—Gramophone Concert (continued). 2.0—4.45—Interval. 4.45—Scientific Talk in French. 5.0—Orchestral Concert, conducted by Roskam. March, Prosperité (Sélu). Waltz, Rendez-vous (Waldteufel). La boîte à musique d'or (Krone). Overture (Suppé). Magicians of the East (Lindemann). Musical Telegrams (Urbach). The Lute Serenade (Wismer). Selection from "Bouche à bouche" (Yvain). Nachtigall in Fliederbuch (Krome). March, Hail Europa (Blon). 6.0—Literary Talk in French. 6.15—Topical Talk in German. 6.30—Orchestral Concert, conducted by Maurice de Villers. Selections (Mozart): (a) Turkish March, (b) Overture, "Il Seraglio," Suite, from "A Midsummer Night's Dream" (Mendelssohn). "Cello Solo: Souvenir (Roskam). Selection from "Mignon" (Thomas). 7.30—Time Signal. 7.32—News in French and German. 7.45—Orchestral Concert, conducted by Maurice de Villers. Overture, "Alceste" (Gluck). Song from "Xerxes" (Handel). Selections (Schumann). Strändchen (Schumann). Farandole (Pierné). Two Songs (Chaminade): (a) Ecrin, (b) Ronde d'amour. Selection from "La Fille de Madame Angot" (Lecocq).

8.30—Dramatic Programme in French: (a) "Angoise"—Radio Play in Three Scenes (Robert Caillass), (b) "La Farce de la Tarte et du Pâté"—Comedy in One Act (Noël Oudon), (c) "La Déclaration interrompue"—Radio Fantasy (Robert Caillass), (d) "La Farce du Cuvier"—Comedy in One Act (Noël Oudon). 10.30 (approx.)—Close Down.

STÜTTGART (MÜHLACKER) (Germany)

Süddeutscher Rundfunk. 832 kc/s (360.5 m.); 60 kW. Relayed by Freiburg, 527 kc/s (570 m.). Transmits at intervals from 6.0 a.m. (Time, Weather and Gymnastics). 12 noon—Concert of Schrammel Music conducted by Heinz Mönch. Fackermarsch (Nikkel). Romance (Kollmanek). Spanish Dance (Kollmanek). Waltz, Ganz allerliebste (Waldteufel). Julfeier (Kollmanek). Unter dem Dreizackstern (Mönch). Silberblumen (Vetter). Maiglöckchen (Wagner). Ball auf der Alm (Nieder). Spanish Dance (Kollmanek). 12.50 p.m.—Time, Weather, News and Programme Announcements. 1.0—See Langenberg. 1.55—News Bulletin. 2.0—2.15—Sponsored Musical Programme. 2.30—Elementary Spanish Lesson. 3.0—3.30—Elementary English Lesson. 4.0—Talk: Removals. 4.30—Talk on Stamp Collecting, for Young People. 5.0—See Frankfurt. 6.15—Time and Weather. 6.25 (from Freiburg)—Talk: Nature in June. 6.50—See Frankfurt. 7.15—Time and Agricultural Notes.

7.30—Orchestral Concert conducted by Gustav Görlich. Soloist: Anton Maria Topitz (Tenor). Nutzdorf-Marsch (Lorenz). Waltz on Themes by J. Strauss: Verborgene Perlen (Ziehrer). Humorous Austrian Songs. Waltz, Loreley-Rheinklänge (Johann Strauss, Sen.). Polka, Rutschepeter (Ziehrer). Waltz, Jugendträume (Johann Strauss). March from "Rund um Wien" (Bayer). 8.30—"The Alaska Gold Rush"—A Radio Sequence (Alice Fliegel)—Music by Grothey. 9.30—The Evolution of the German String Quartet—by the Wendling Quartet. String Quartet in A Minor, Op. 51, No. 2; and String Quartet in B Flat, Op. 67 (Brahms). 10.40—Time, Weather, News and Programme Announcements. 10.55—Chess Lesson. 11.15—Concert from Munich. 12 midnight (approx.)—Close Down.

TOULOUSE (France)

Radiophonie du Midi. 779 kc/s (385 m.); 8 kW. Transmits at intervals from 12.30 p.m. 5.0 p.m.—Picture Transmission. 5.15—Exchange Quotations. 5.30—Orchestral Selections from "Lohengrin" (Wagner) and "Oberon" (Weber). 5.45—Dance Music Programme. 6.0—Operatic Song Recital. Selections from "Hérodiade" (Massenet) and "Il Trovatore" (Verdi). 6.15—Selections by an Argentine Orchestra. 6.30—Exchange and Racing Results. 6.45—Orchestral Music. 7.0—Orchestral Selections. Overture, "Preciosa" (Weber). Overture, "Le Carnaval romain" (Berlioz). 7.15—News Bulletin. 7.30—Gramophone Variety Music. 8.30—English Lesson. 8.35—Accordion Solos. 8.45—Songs from Operetta. 9.0—Songs from "Don Quichotte" (Massenet). 9.15—Military Music. El abanico (Javaloyes). Overture, "Raymond" (Thomas). Whistling Rufus (Mills). 9.30—Orchestral Concert. Cinderella's Wedding. Chœur de Sirènes (Waldteufel). Estudiantina (Waldteufel). Praterleben (Translatour). Selection (Hall). España (Waldteufel). Donauwellen (Ivanoyici). Les Patineurs (Waldteufel). 10.0—Sound Film Music. 10.15—Opéra-Comique Music. Selection from "La Bohème" (Puccini). Selection from "Hans the Flute Player" (Ganne). 10.30—North African News. 10.45—Solo Selections. 11.0—Concert. La Tour Eiffel s.v.p. (Bach and Laverne). Bonté de gosse (Defès). La Toulousaine (Defès). Ballet Music from "Coppélia" (Delibes). Musette (1803-32). Waltz, The Blue Danube (Johann Strauss). The Cuckoo (Jonasson). La Ronde des heurcs (Sylviano). Les Violettes (Vacher). Toreador's Song from "Carmen" (Bizet). L'amour est en jeu (Parès and Van Parys). Le réveil à la campagne. 12 midnight—Weather and Announcements. 12.5 a.m. (Tuesday)—Concert of English Music. 12.30 (approx.)—Close Down.

TRIESTE (Italy)

Ente Italiano Audizioni Radiofoniche. 1,211 kc/s (247.7 m.); 10 kW. Transmits at intervals from 8.15 a.m. 7.10 p.m.—Quintet Concert. Banderillos (Stocchetti). Selection (Benatzky). Testina cara (Chiappina). Ombre di notte (Sartorio). Matinata from the "Suite gelidardica" (Amadei). Selection (Bayer). The Song is ended (Stolz). 8.0 till Close Down—See Turin.

TURIN (Italy)

Ente Italiano Audizioni Radiofoniche. 1,096 kc/s (273.7 m.); 7 kW. Relayed by Milan, 905 kc/s (331.5 m.); Florence, 959 kc/s (500.8 m.); and Genoa, 959 kc/s (312.8 m.). Transmits at intervals from 8.15 a.m. 6.45 p.m.—Agricultural Notes and Report of the Royal Geographical Society. 7.5—Announcements. 7.10—Gramophone Concert of Variety Music. 7.30 (in an interval)—Time and Announcements. 8.0—Giornale Radio and Weather. 8.15—Variety Concert. 8.50—Review of New Books. 9.0—Sponsored Concert. 10.0—A Comedy in One Act. 11.0—Giornale Radio.

VATICAN CITY (Rome)

15,123 kc/s (19.84 m.) (Morning) and 5,969 kc/s (50.26 m.) (Evening); 10 kW. 11.0—11.15 a.m.—Religious Infor-

mation in Italian. 8.0—8.15 p.m.—Religious Information in Italian.

VIENNA (Austria)

Radio-Wien. 581 kc/s (517 m.); 15 kW. Relayed by Graz, 852 kc/s (352.1 m.); Innsbruck, 1,058 kc/s (283 m.); Klagenfurt, 662 kc/s (453.2 m.); Linz, 1,220 kc/s (246 m.); and Salzburg, 1,373 kc/s (218 m.). Transmits at intervals from 9.20 a.m. 5.0 p.m.—Concert of Waltzes by the Wilhelm Sommer Orchestra. Die Romantiker (Lanner). Waltz Potpourri (Komzak). Waltz Intermezzo from "Nalla" (Delibes). Waltz, Delirium (Josef Strauss). Valse des Fleurs from The Nutcracker Suite (Tchaikovsky). Bei uns z'haus (Johann Strauss). Potpourri, Walzerflut (Fetras). March, Grillenbanner, on Waltz Themes by Johann Straus (Sonn-tag). 6.5—Dramatic Criticism by Ernst Lothar. 6.25—Talk: Books in connection with the Week's Programme. 6.30—Notes on the Broadcasts for Schools. 6.35—English Lesson. 6.55—Talk by Two Architects: Hugo Haring, of Berlin, and André Lurcat, of Paris, on the occasion of the Exhibition of Artisan's Dwellings. 7.25—Time Signal, Weather Report and Programme Announcements. 7.35—Concert by the Viennese Philharmonic Orchestra, conducted by Weingartner, relayed from the Musikvereinsaal. Overture, "The Magic Flute" (Mozart). Symphony No. 7 in A (Beethoven). Overture, "Rosamunde" (Schubert). Symphony No. 8 in B Minor—The Unfinished (Schubert). Pizzicato Polka (Johann Strauss). Waltz, The Blue Danube (Johann Strauss). 9.30—"Paper makes Music"—Programme of Songs and Music. 10.0—Last Round of the Ladies' and Gentlemen's Fencing Matches for the Austrian Championship, relayed from the Konzerthausaal. 10.15—News Bulletin and Programme Announcements. 10.30—Concert of Light and Dance Music by the Ludwig Werba Orchestra. 12 midnight (approx.)—Close Down.

WARSAW (Poland)

Polskie Radio. 212.5 kc/s (1,411 m.); 120 kW. 11.58 a.m.—Time Signal and Bugle Call from the Tower of St. Mary's Church, Cracow. 12.5 p.m.—Programme Announcements. 12.10—Interval. 12.30—Press Review. 12.40—Weather Report. 12.45—Light Music on Gramophone Records. 2.0—Interval. 3.0—Economic Report. 3.10—Popular Music on Gramophone Records. 3.30—Traffic Report. 3.40—Concert by the "Kudajar" Orchestra, conducted by Jurkiewicz. March (Meike). Waltz Fantasia (Baynes). Potpourri, Major and Minor (Schrinzer). Popular Dance (Lada). Serenade, Ritorna (Carosio). Potpourri of Songs. Tango, O Julie (Baer). Mazurka (Levandowsky). 4.35—Hydrographic Report. 4.40—Talk in French. 5.0—Light Music on Gramophone Records. 6.0—Talk: Garibaldi and Poland. 6.20—Concert of Light Music relayed from the Café Gastronomia. 7.15—Miscellaneous Items. 7.35—Radio Journal. 7.45—Agricultural Correspondence. 7.55—Programme Announcements. 8.0—Concert by the Philharmonic Orchestra conducted by Josef Oziminsky. Soloist: Lidja Kmita (Violin). Prince Joseph Poniatowski's Favourite March (Noskowsky). Cracovienne (Noskowsky). Potpourri of the Music of Moniuszko (Noskowsky). Violin Solos (Wienlasky): (a) Legend, (b) Popular Dance. Sailors' Dance and Mazurka from the Opera-Ballet, The Syren (Maliszewsky). Violin and Orchestra: Polonaise in A (Wieniawsky). Hungarian Rhapsody, No. 1 (Liszt). Entr'acte Music from "Mignon" (Thomas). Waltz from the Ballet "Sleeping Beauty" (Tchaikovsky). Ballet Music from "La Gioconda" (Ponchielli). Rakoczy March (Berlioz). 10.0—Feuilleton. 10.15—Radio Journal. 10.20—Aviation Weather Report. 10.25—Interval. 10.30—Recital for Two Piano-fortes by Robert and Gaby Casadesus. Three Romantic Waltzes (Schubert). Rapsodie Viennoise (Chmitt). Three Pieces: (a) Spanish, (b) Russian and (c) English (Casadesus). Variations on a Theme by Beethoven (Saint-Saëns). 11.20—Sports Notes.

PRINCIPAL EVENTS

TUESDAY (June 7)

SYMPHONY CONCERTS

- 8.15 p.m. Munich: Mass in D (Bruckner).
- 8.20 " Heilsberg: Russian programme (Tcherepnin, Pianoforte).
- 8.30 " French P.T.T. and most European stations: Pierre Monteux conducts a programme of French music.
- 9.0 " Prague: Russian composers.

CONCERTS (Vocal and Instrumental)

- 5.0 p.m. Warsaw: Popular Orchestral programme.
- 7.30 " Leipzig: Offenbach programme (Hortense Schneider, the Diva of Offenbach's Day).
- 7.40 " Huizen: K.R.O. Orchestra.
- 8.0 " Brussels No. 2: I.N.R. Orchestra.
- 8.0 " Hamburg: Dr. Sakom ('Cello).
- 8.45 " Hamburg: Verdi programme.
- 9.0 " Frankfurt, Stuttgart, Breslau, Langenberg: From unknown operas.
- 9.30 " Radio-Paris: Italian operatic airs (gramophone).
- 10.30 " Hamburg, 10.45 Königs Wusterhausen: Late Concert.

OPERA

- 8.0 p.m. Copenhagen: "Madame Papillon" (Offenbach).

CHAMBER MUSIC

- 6.40 p.m. Hilversum: French music.
- 10.40 " Leipzig: Contralto, Flute, and Cembalo.

RECITALS

- 3.40 p.m. Hilversum: Dick Schipper (Pianoforte).
- 3.45 " (approx.) Copenhagen: Group of English Songs.
- 6.30 " Oslo: Saxophone.
- 8.30 " Prague: Violin.
- 9.10 " Leipzig: Alfred Hoehn (Pianoforte).
- 9.15 " Copenhagen: Music for two Pianofortes.
- 9.45 " Munich: Elena Gehardt.

DANCE MUSIC

- 10.15 p.m. Vienna: The "Prado" Band.

To-Night's European Conductor

Although the United States have for years claimed him as one of their own masters of music, Pierre Monteux is a Frenchman, heart and soul, and no fitter choice of conductor could have been made



[Photo: E. N. A.]

The Théâtre Champs Elysées, Paris

for the European concert which is being relayed this evening from the Champs Elysées Theatre. Born in Paris, he won the first prize for violinists at the Conservatoire at the age of twenty-one, and for some years served the best of all apprenticeships for conducting, by playing in more than one orchestra. He made his name first by brilliant performances of Ravel's and Debussy's music for the Diaghilev ballet, and it was he who conducted Stravinsky's *Sacre du Printemps* and *Rossignol*. At the beginning of 1914 he set on foot the concerts with which his name is still associated, whose chief purpose was to bring forward new French and other music: several of the works he produced demanded a good deal of courage in the face of opposition. But before the end of that year he was serving his country in another way, devoting his gift of leadership to the cause of which France had then most need. They recalled him from the front, however, at a later stage of the war, and sent him to the U.S.A. on a mission of propaganda on the Allies' behalf, and he has spent most of his life there since, chiefly as conductor of the Boston Symphony Orchestra; he is unquestionably one of the greatest of the many great conductors that splendid body of players has served, and in his choice of programmes as well as his performances, has more than worthily upheld its standard.

The First Helen

At 7.30 this evening, LEIPZIG station gives a programme in honour of Hortense Schneider, the operatic star who first sang the part of Helen in Offenbach's comic opera of that name. Born in 1833, she took a principal role in one of Offenbach's operas at the age of twenty-three, and at once made a name for herself as one of the most brilliant singers and actresses in her own line. By the time *La Belle Hélène* was produced, she was already fêted and honoured on all hands, and her appearance in the name-part did much to make the opera the success it was. Offenbach afterwards wrote an operetta called *The Diva*, which embodied a good deal of her own life-history. She became the Countess Brionne and retired from the stage in early middle life, and lived to a ripe old age, adored by all the people whom her influence and unflinching goodness helped.

	kc/s	m.	kW.
London:	1,148	261.3	50
Daventry:	193	1,554.4	30
Northern:	995	301.5	50

- 10.15 a.m.—The Daily Service.
- 10.30—Time Signal (Greenwich), Shipping Forecast.
- 10.45—Professor S. J. Cowell: "Sense and Sustenance"—IV.
- 11.0—11.5—Housewives' News.
- 12 noon—Reginald Foot at the Organ.
- 1.0 p.m.—Time Signal (Greenwich).
- 1.0—Leonard Kemp and his Piccadilly Hotel Orchestra.
- 1.55—Experimental Transmission by the Fulgraph Process.
- 2.5—For the Schools. Nature Study. Mr. Eric Parker.
- 2.30—Music. Sir Walford Davies.
- 3.35—French. Monsieur E. M. Stéphan: "Early Stages in French"—VII.
- 4.5—"The Claims of Science"—IV. Mr. Gerald Heard: "Man and his Mind—I, Psychology."
- 4.30—"The Grosvenor House Orchestra"
- 4.45—Time Signal (Greenwich).
- 5.15 (Daventry)—The Children's Hour.
- 5.15 (London and Northern)—The B.B.C. Dance Orchestra.
- 6.0—"The First News."
- 6.30—Time Signal (Greenwich).
- 6.30—"The Foundations of Music. Schubert's Miscellaneous Pianoforte Music. Played by Victor Hely-Hutchinson."
- 6.50—French. Talk. Monsieur E. M. Stéphan.
- 7.20—"The Wireless Military Band. Conductor, B. Walton O'Donnell. Laurence Holmes (Baritone).
- 8.30—"Major G. St. J. Orde Browne, O.B.E."
- 9.0—Time Signal (Greenwich).
- 9.0—"The Second News."
- 9.15—Shipping Forecast; New York Stock Market Report.
- 9.20—Choral and Orchestral Concert. Three Famous Poems. The Wireless Chorus. The B.B.C. Orchestra (Section G), conducted by Joseph Lewis. Lochinvar (Scott), Haydn Wood. John Gilpin (Cowper), Cowen. The Revenge (Tennyson), Stanford.
- 10.30—12 midnight—Dance Music.

	kc/s	m.	kW.
London:	842	356.3	50
Midland:	752	398.9	25
Northern:	626	479.2	50

- 10.15 a.m. (London and Northern)—The Daily Service.
- 10.30—11.5 (London and Northern)—Daventry National Programme.
- 11.30—12 noon (London)—Experimental Television Transmission.
- 12 noon—The Municipal Orchestra, conducted by Horace Fellowes. Reginald Whitehouse (Violin).
- 1.0 p.m. (London and Midland)—A Ballad Concert by Winning Competitors at the Cheltenham Spa Musical Competition.
- 1.0 (Northern)—Speches, by the Mayor of Morecambe and Heysham and the Lord Mayor of London.
- 1.25 (Northern)—Gram. Records.
- 2.0—3.0—Midland Studio Orchestra.
- 4.0 (Northern)—Evensong. Relayed from York Minster, York.
- 4.35 (London)—Daventry National Programme.
- 4.45 (Northern)—Daventry National Programme.
- 5.15—"The Children's Hour."
- 6.0—"The First News."
- 6.35 (London)—The B.B.C. Theatre Orchestra. Sophie Rowlands (Soprano).
- 6.35 (Midland)—Pattison's Salon Orchestra. Horace Priestley (Tenor).
- 6.35 (Northern)—A Concert by Young Artists.
- 7.30 (Midland)—The Birmingham Philharmonic String Orchestra.
- 8.0 (London)—String Orchestral Concert. Arthur Benjamin (Pianoforte), conducted by Arthur Catterall.
- 8.0 (Northern)—Mr. W. L. Andrews: "The Month in the North."
- 8.20 (Northern)—"In the Cotton Fields." The Northern Studio Orchestra.
- 8.45 (Midland)—"Schumann." A Recital by Appleby Matthews (Pianoforte).
- 9.15—"Squirrel's Cage." A Play for the Microphone, by Tyrone Guthrie. Produced by the Author.
- 10.15—"The Second News."
- 10.35—11.0 (Midland)—As London.
- 10.35—12 midnight (London and Northern)—Dance Music.

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME

- ALGIERS (N. Africa)**  
825.3 kc/s (363.3 m.); 13 kW.  
Transmits at intervals from 12.30 p.m.  
7.15 p.m.—Humorous Gramophone Records. 7.30—Talk: Backward Children in the Elementary Schools.  
7.45—Saxophone and Harp Solos.  
7.55—News and Time Signal.  
8.0—Instrumental Concert. Overture, Leonora (Beethoven). Gavotte for Wind Instrument Sextet (Thuillé). Le Carnaval des Animaux (Saint-Saëns). Song without Words (Tchaikovsky). Arioso for 'Cello from "I Pagliacci" (Leoncavallo). Alborada del Gracioso (Ravel).  
9.0—Concert of Eastern Music.  
9.55—Tourist Talk in English: Algeria.
- BARCELONA (Spain)**  
Radio-Barcelona (E.A.J.I.) 860 kc/s (349 m.); 8 kW.  
Transmits at intervals from 8.15 a.m.  
8.0 p.m.—Trio Concert. Selection from "Ariane" (Massenet). Phantom Melody (Ketilbey). Nocturne from "Cocorico" (Ganne). Musette for 'Cello (Colin). 8.30—Exchange Quotations. 9.0—Football Report, Request Gramophone Records and Press Notes. 10.0—Chimes from the Cathedral, Weather Forecast, Exchange Quotations and Relay of Foreign Stations. 10.15—Concert by the Station Orchestra. 10.30—Dance Music by the Demons' Jazz Band. 11.15—Recitations.  
11.30—Concert by the Philharmonic Mandoline Orchestra, conducted by Felix de Santos Sebastian. Largo (Handel). Sonatina in C Minor (Beethoven). Polonaise militaire (Chopin). Intermezzo from "El baile de Luis Alonso" (Jimenez). Barcarolle (Tchaikovsky). Prize Song from "The Mastersingers" (Wagner). Oriental Caprice (Santos). Spanish Serenade (Yust). 1.0 a.m. (Wednesday)—Close Down.
- BELGRADE (Yugoslavia)**  
697 kc/s (430.4 m.); 2.5 kW.  
Transmits at intervals from 11.0 a.m.  
5.0 p.m.—Orchestral Concert. Overture, "Queen for a Day" (Adam).

- Selection from "The Circus Princess" (Kálmán). Blumengeflüster (Blon). Frauenlist (Czibulka). Two Selections (Friml). 6.45—Time and Programme Announcements. 6.50—Czech Lesson. 7.20—Beauty Hints. 8.0—A Radio Comedy.
- BERLIN (Germany)**  
Königs Wusterhausen. 183.5 kc/s (1,635 m.); 60 kW.  
Transmits at intervals from 5.45 a.m.  
12.5 p.m.—French Lesson for Schools, followed by Gramophone Records for Farmers. 12.55—Nauen Time Signal.  
1.30—News Bulletin. 2.0—Gramophone Records of Joseph Wolfthal and Alexander Brailovsky, relayed from Berlin (Witzleben). 3.0—Musical Programme for Children—Spring Songs. 3.30—Weather and Exchange Quotations. 3.45—Talk for Women: How to knit a Bathing Costume.  
4.30—See Leipzig. 5.30—Talk: Songs of German Native Birds. 6.0—Talk: The Theme in Instrumental Music. 6.30—Advanced English Lesson. 6.55—Weather for Farmers. 7.0—Talk: The Future of German Universities—Institutes for Research or Education? 7.30—See Frankfurt.  
8.30—International Concert from Paris (Eiffel Tower), followed by News and Concert from Hamburg. 12 midnight (approx.)—Close Down.
- BERLIN (Germany)**  
Witzleben. 715 kc/s (419.5 m.); 1.5 kW.  
Transmits at intervals from 6.0 a.m.  
—(Gymnastics and Concert Relay).  
5.25 p.m.—Pianoforte Recital by Celeste Chop-Groeneveld. Toccata and Fugue in D Minor (Bach-Tausig). Spitzweg-Bilder Op. 104 (Hugo Kaun).  
5.55—Review of Biographies. 6.25—Topical Programme. 6.55—"The Witzleben Station informs its Listeners..." 7.0—Topical Talk.  
7.10—Dances of Yesterday and To-day, by the Felix Lehmann-Bird Band. Vocal Refrains by Luigi Bernauer. 9.0—News and Sports Notes. 9.10—"Radio Calendar for June" (Walter Fried). 10.10—Weather, News and Sports Notes.

- BORDEAUX-LAFAYETTE (France)**  
(PTT) 986 kc/s (304 m.); 13 kW.  
Transmits at intervals from 12 noon.  
7.30 p.m.—News Bulletin and Exchange Quotations. 7.40—Talk organised by the Corporations of Bordeaux. 7.55—Lottery Results. 8.0—Topical Talk. 8.15—News Bulletin and Weather Forecast. 8.30—Musical Programme arranged by the "Fédération Nationale de Radiodiffusion."
- BRATISLAVA (Czechoslovakia)**  
1,076 kc/s (279 m.); 14 kW.  
Transmits at intervals from 11.0 a.m.  
7.0 p.m.—See Prague. 10.15—Programme Announcements and News. 10.20—Café Concert.
- BRESLAU (Germany)**  
923 kc/s (325 m.); 1.5 kW.  
Relayed by Gleiwitz, 1,184 kc/s (253 m.).  
Transmits at intervals from 6.0 a.m.  
4.30 p.m.—Concert of Waltzes by the Station Orchestra, conducted by Franz Marszalek. Soloist: Gretl Sedlaczek (Soprano). Invitation to the Dance (Weber). Waltz from "Romeo and Juliet" (Gounod). Waltz from the Fifth Symphony (Tchaikovsky). Waltz, Parla (Arditi). Waltz from "Der Rosenkavalier" (Richard Strauss). Dorfschwalben aus Oesterreich (Josef Strauss). The Blue Danube (Johann Strauss).  
5.30—Agricultural Prices. 5.35 (approx.)—Book Review. 5.50—This will interest you!—Surprise Programme. 6.15—Review of Coming Events in Silesia. 6.30—Medical Talk. 6.50—Weather for Farmers. 6.52—Talk: The Care of Public Parks and Gardens.  
7.10—See Berlin (Witzleben). 9.0—See Frankfurt. 10.20—Time Signal, Weather Forecast, News Bulletin, Sports Notes and Programme Announcements.  
10.45—Concert of Light Music by the Station Orchestra, conducted by Franz Marszalek. Overture (Auber). Potpourri of the Music of Donizetti (Urbach). Potpourri, Contrasts (Robrecht). Waltz, Sonnenkinder (Schicke). Selections from "Paganini" (Lehár). Turkish March (Langi Bey). 12 midnight (approx.)—Close Down.

**TUESDAY**  
continued

**BRNO (Czechoslovakia)**  
878 kc/s (342 m.); 35 kW.  
Transmits at intervals from 10.30 a.m. to 12.30 p.m.—Brass Band Concert. 7.45—See Prague.  
8.30—*Russian Song Recital*. Songs from "The Nursery" (Moussorgsky). Aria from "The Czar's Bride" (Rimsky-Korsakov). Romance (Rimsky-Korsakov).  
9.0—See Prague. 10.15—News Bulletin. 10.25—See Prague.

**BRUSSELS (Belgium) (No. 1)**  
I.N.R. 590 kc/s (509 m.); 15 kW.  
12 noon—Prologue and Act I from "I Pagliacci"—Opera (Leoncavallo) in Italian followed by Ballet, La Ronde des Saisons (Busser), on Gramophone Records. In the interval at 12.30 p.m.—Weather Report.  
5.0—*Orchestral Concert*, conducted by Arthur Meulemans. Overture (Auber). Suite provençale (Cazaneuve). Selection from "Il Trovatore" (Verdi). Waltz from "The Arabian Nights" (Johann Strauss). Sérénade (De Teye). Selection (Caludi). Ballgästler (Meyer-Helmund). March, Holidays (Lauweyrs).  
6.0—Light Music on Gramophone Records. 6.15—Talk: Flax.  
6.30—*Gramophone Records*. Overture, "Poet and Peasant" (Suppé). Valse bluette (Drigo). Selection from "The Dollar Princess" (Fall). Violin Solo: Star of Love (Ponce). Clair de Lune (Debussy). The Carnival in Venice (Benedict). Overture, "Raymond" (Thomas).  
7.15—Talk: The Economic Situation in Europe—The Danubian States.  
7.30—Talk for Women. 8.0—Quartet in G Minor (Debussy), on Gramophone Records.  
8.30—*French International Concert*, relayed from Paris (Eiffel Tower). After the Concert, Le Journal Parlé, followed by Gramophone Dance Music. 11.0 (approx.)—Close Down.

**BRUSSELS (Belgium) (No. 2)**  
N.I.R. 887 kc/s (338.2 m.); 15 kW.  
Programme in Flemish.  
12 noon—Gramophone Concert of Light Music. In the interval at 12.30 p.m.—Weather Report.  
5.0—*Orchestral Concert* conducted by Charles Walpot. March, Perusa (Kálmán). Waltz, Tout

Paris (Waldteufel). Overture "The Thieving Magpie" (Rossini). Silver Cloud (Kettelbey). Xylophone Solo: Red Heart (Simpson). Humorous Items. March Potpourri (Bernards).

5.45—Programme for Children. 6.30—Gramophone Records of Popular Music. 7.15—Talk: In the Kingdom of Nature. 7.30—Le Journal Parlé.  
8.0—*Orchestral Concert* conducted by Arthur Meulemans. Soloists: Jo Hekker-Van Eysden (Soprano) and Fritz Uyttenboogaard (Pianoforte). Overture Maximilien Robespierre (Litoff). Socialist Songs for Soprano. Liebestraum (Liszt). Rhapsody in G Minor (Brahms). 1812 Overture (Tchaikovsky).

8.45—Talk: Old Age Pensions for Women. 9.0—*Concert (continued)*, Selections from "Lohengrin" (Wagner). Dutch Songs for Soprano. Spring Suite (Wesly). Dutch Songs for Soprano. Potpourri of Dutch Songs (Sluyter and Hoogenboom). 10.0—Le Journal Parlé.  
10.10—*Gramophone Dance Music*. Foxtrot, Yes Yes. Foxtrot, I found you. Boston. Rumba, Fiesta. Foxtrot, Montevideo. Foxtrot, Rumba, Tango, Serenade Callejera. Foxtrot, Sometimes I'm happy. Foxtrot, Hallelujah. Vocal Tango, Adios, Argentina. Mujer Fatal. Spanish Waltz, Santiago. Polka, L'Enclume. Paso doble, Casa Bianca. 11.0 (approx.)—Close Down.

**BUCHAREST (Romania)**  
Radio-Bucarest. 761 kc/s (394 m.); 12 kW.  
Transmits at intervals from 11.0 a.m. to 12.30 p.m.—Concert of Light Music and Romanian Music by the Motzof Orchestra. 5.0—Time Signal and News Bulletin. 5.10—Concert (contd.). 6.0—Talks on Literature and Language. 6.40—Light Music on Gramophone Records.  
7.0—*Concert by the Station Orchestra*. Fantasia on a Cossack Dance (Dargomijsky). Selection from "Boris Godounov" (Moussorgsky). 7.30—Talk (to be announced).  
7.45—*Song Recital* by Aida Helta. Air from "La Juive" (Halévy). Der Neugierige (Schubert). Erlkönig (Schubert). Von ewiger Liebe (Brahms). Romanian Air (Brediceanu). 8.10—*Selections by*

the Station Orchestra. Selection from "Olav Trygvason" (Grieg). Russian Dance (Rubinstein). Potpourri (Dostal). 8.45—News Bulletin.

**BUDAPEST (Hungary)**  
545 kc/s (550 m.); 18.5 kW.  
Transmits at intervals from 9.15 a.m. Programme also relayed on 210 metres from 6.45 p.m. till Close Down.  
5.0 p.m.—Concert of Popular Music on Gramophone Records. 6.15—French Lesson. 6.45—Concert by the Jenő Farkas Cigány Band. 8.0—Talk by Béla Zsolt.  
8.30—*European Concert* relayed from Paris (Eiffel Tower). After the Concert, Time and Weather Report, followed by Concert by the Gyula Horvath Cigány Band, relayed from the Café Ostende.

**COPENHAGEN (Denmark)**  
1,067 kc/s (281 m.); 0.75 kW.  
Relayed by Kalundborg, 260 kc/s (1,153 m.).  
Transmits at intervals from 7.30 a.m. to 12 noon—Town Hall Chimes. 12.2—2.0 p.m.—String Ensemble Concert from the Hotel d'Angleterre.  
3.0—*Instrumental Concert*. Soloist: Henriette Bagger (Vocalist). March, Los Banderilleros (Volpatti). Overture, "La dame blanche" (Boieldieu). Waltz, Herbstweisen (Waldteufel). Selection from "Madame Butterfly" (Puccini). La lettre de Manon (Gillet). Selection from "The Duchess of Chicago" (Kálmán). English Songs: (a) Homing (Teresa del Riego), (b) Down in the Forest (Landon Ronald), (c) Song from "The Robin Woman" (Charles Cadman), (d) Dawn (Curran), (e) At Evening (Maduro), (f) I have hung my tent in Crimison (Spross). Fantasia on Melodies by Hartmann and Gade (Bohlmann). Waltz from "A Waltz Dream" (Oscar Straus). Tango reale (Valverde), Scherzo from a Ballet Suite (Gyldmark). Laensel (Skovgaard). Waltz Intemezzo, Aldrig de Gredos). Marche russe (Ganne).  
5.0—Programme for Children. 5.40—Exchange and Fish Market Prices.

5.50—Swedish Talk and Reading. 6.20—Elementary German Lesson. 6.50—Weather and News. 7.15—Time Signal. 7.30—Talk by Dr. Andersen. 8.0—Town Hall Chimes. 8.2—"Madame Pampillon" (Offenbach). 8.50—Reading: Goethe Anecdotes (Carl Arctander). 9.15—Music for two Pianofortes—Recital by Folmer Jensen and Ove Peters. Sonata in D (Mozart). Scherzo (Saint-Saëns). 9.45—News Bulletin.  
10.0—Recital of Swedish Songs by Adèle Weine.  
10.20—*Contemporary Orchestral Music* by the Station Orchestra, conducted by Emil Reesen. Selection from "Le Festin de l'araignée" (Roussel). Three Dances from "The Three-Cornered Hat" (Fall). 11.0 (approx.)—Close Down.

**DUBLIN (Ireland)**  
(2RN). 725 kc/s (413 m.); 1.2 kW.  
Relayed by Cork, 1,337 kc/s (224.4 m.).  
1.30—2.0 p.m.—Time Signal, Weather Report, Stock Report and Light Music on Gramophone Records.  
6.0—Gramophone Records of Popular Music. 6.15—Programme for Children. 7.0—Gramophone Records of Variety Music. 7.15—News, and British Market Report. 7.30—Time Signal. 7.31—Leighcacht Gaedhilge. 7.45—Talk. 8.0—Concert by the Students' Union of the Royal Irish Academy of Music, relayed from the Gresham Hotel.  
9.0—The Augmented Station Orchestra. 9.30—"The Kerry Courtin'"—presented by the Harmonious Quartet. 9.50—Pianoforte Solos by John Croghan. 10.0—The Augmented Station Orchestra. 10.30—Time Signal, News, Weather Report and Close Down.

**FÉCAMP (France)**  
Radio Normandie. 1,345 kc/s (223 m.); 10 kW.  
12 noon—Variety Music on Gramophone Records. 12.30 p.m.—News Bulletin. 12.45—Radio Concert. 7.30—Radio Gazette for Normandy. 8.0—News Bulletin. 8.30—Le Havre Review. 8.40—Concert relayed from Le Havre. 11.0—Dance Music Programme. 1.0 a.m. (Wednesday)—Close Down.

**FLORENCE (Italy)**  
Ente Italiano Audizioni Radiofoniche. 599 kc/s (500.8 m.); 20 kW.  
See Turin.

**FRANKFURT-am-MAIN (Germany)**  
770 kc/s (390 m.); 1.5 kW. Relayed by Cassel, 1,220 kc/s (246 m.).  
Transmits at intervals from 6.0 a.m. to 6.15 p.m.—Economic Notes. 6.25—See Stuttgart.  
7.30—"The Story of Wun, the Ape"—A Radio Comedy (Leo Matthias). 8.25—Talk: Plans for creating Work.  
9.0—*Concert of Music from Unknown Operas*. The Station Orchestra conducted by Hans Rosbald, with Emmy Joseph (Soprano). Overture, "Anna Bolena" (Donizetti). Aria from "Maria di Rohan" (Donizetti). Prelude to "I Masnadieri" (Verdi). Aria from "Luisa Miller" (Verdi). Overture, "Aroldo" (Verdi). Three Songs: (a) My Star, (b) The Bohemian Girl (c) The Chimney Sweep. Prelude to "I Rantzau" (Mascagni). Two Songs (Mascagni). Intermezzo and two Songs from "L'Amico Fritz" (Mascagni). Three Selections from "William Ratcliff" (Mascagni): (a) Introduction, (b) Ratcliff's Dream, (c) Prelude to the Fourth Act.  
10.20—Time, Weather, News and Sports Notes. 10.45—See Stuttgart. 12 midnight (approx.)—Close Down.

**HAMBURG (Germany)**  
Norag (ha, in Morse). 806 kc/s (372 m.); 1.5 kW. Relayed by Bremen, 1,112 kc/s (270 m.); Flensburg, 1,373 kc/s (218 m.); Hanover, 530 kc/s (566 m.); and Kiel, 1,292 kc/s (232.2 m.).  
Transmits at intervals from 5.45 a.m. to 5.55 p.m.—Variety Programme. 6.30—(from Bremen)—Talk: Economics and Politics in British Malaya. 6.55—Market Prices. 7.0—Topical Talk. 7.15—Weather Forecast. 7.20 (from Hanover)—Young Hanoverian Authors read from their own Works—Fritz W. Schönfeld, Herbert Grünhagen, Werner Schumann and Emil Strodthoff.  
8.0—Concerto for 'Cello and Orchestra Op. 104 (Dvorák) by Dr. Sakom ('Cello) and the Norag

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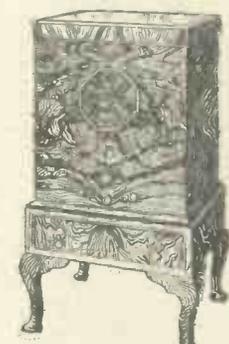
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## TUESDAY continued

Orchestra, conducted by José Eibenschütz.

8.45 (from Bremen)—Verdi Concert. The Hamburg Philharmonic Orchestra, conducted by Adolf Secker, with Sinada Lissitschka and Andreas Böhm (Vocalists). Selections from "La Traviata": (a) Aria from the First Act, (b) Aria from the Second Act, (c) Duet from the Second Act. Prelude to "Sicilian Vespers." Selections from "Rigoletto": (a) Aria from the Second Act, (b) Duet from the Second Act. Overture, "Nebuchadnezzar." Aria and Duet from the Fourth Act of "Il Trovatore." Aria from the Fourth Act of "A Masked Ball." Selection from "Othello." 10.0—News Bulletin.

10.20—Concert by the Hamburg Philharmonic Orchestra, conducted by Horst Platen. Overture, "Le Postillon de Longjumeau" (Adam). Tarantella from "Masaniello" (Auber). Ballet Suite, Sylvia (Delibes). Overture, "La dame blanche" (Boieldieu). Selection from "Rigoletto" (Verdi). Overture, "Le Maçon" (Auber). Selection from "Casanova" (Lincke). Waltz from "Die schöne Risetse" (Fall). Overture, "Raymond" (Thomas). Waltz from "Die geschiedene Frau" (Fall).

**HEILSBURG (Germany)**  
1,085 kc/s (276.5 m.); 60 kW. Relayed by Danzig, 662 kc/s (453.2 m.). Transmits at intervals from 6.0 a.m. (Weather, Gymnastics and Concert Relay).

11.30 a.m.—Concert of Viennese Music by the Orag Orchestra, conducted by Eugen Wilcken. Overture, "Ten Maids and No Man" (Suppé). Waltz, Badner Mad'n (Komzak). Song, Kirschen und Küsse (Dostal). Einmal kommt der Tag (Benatzky). Selection from "Prince Methusalem" (Johann Strauss). Overture, "Das Tal der Liebe" (Oscar Straus). Mein Mutterl war a Wienerin (Gruber), Waltz, Die Schönbrunner (Lanner). Nur eine Nacht (Geiger). Selection from "The Merry Peasant" (Fall).

1.5—2.30 p.m.—Gramophone Concert. Choral, Gott des Himmels und der Erden. Morning (Grieg). Selection from "Der Rosenkavalier" (Richard Strauss). Potpourri, Wien bei Nacht (Komzak). March on Motives from "The Huguenots" (Meyerbeer). Selection from "The Merry Widow" (Lehar). Russian Folk Song, Ochi neri. Russian Folk Song, Have pity on me. Selection from "Rigoletto" (Verdi). Apache Dance (Dubourg). Intermezzo (Lindsay). Overture, "La belle Hélène" (Offenbach). Finale from the Second Act of "The Gipsy Baron" (Johann Strauss). Selection from "Der Obersteiger" (Zeller). Wenn die Füßchen sie heben" (Gilbert). So küsst man nur in Wien (Abraham). Ein bisschen Liebe für mich (Abraham). Das ist mein Oesterreich (Fetras).

2.30—Sponsored Gramophone Records. 3.30—Musical Improvisations. 4.0—Talk: The Postage Stamp in Politics. 4.30—See Leipzig. 5.30—Review of Books. 6.0—Spring Poems by Eva Hein. 6.15—Agricultural Market Prices. 6.25—Talk: The Young Unemployed.

6.50—Concert by the Königsberg Concertina Club, conducted by Gustav Brodovsky. Raketenmarsch (Schmitt). Waltz, Münchener Kindl (Komzak). Am Lagerfeuer (Siede). Waltz Intermezzo (Sampel). Rhenish Folk Song, Hab' ich nicht einen schönen Rosengarten. Folk Song of Nassau, Mädchen so hübsch und fein. March, Bandonion-Klänge.

7.30—Talk: The Origin of the Anecdote.

7.45—Song Recital by Max Mansfeld. Four Songs (Schumann): (a) Ländliches Lied (b) Liebesgarten, (c) Wiegenlied, (d) Sommerzug. Three Songs (Cornelius): (a) Gernennacht, (b) Ich und du, (c) Verrätene Liebe. Three Songs (Brahms): (a) Die Sonne scheint nicht mehr, (b) Schwesterlein, Schwesterlein, (c) Nun lass uns wandern. 8.15—Weather Forecast.

8.20—Concert of Russian Music by the Königsberg Opera House Orchestra, conducted by Erich Seidler. Soloist: Alexander Tcherepnin. Symphonic Poem, A Night on the Bare Mountain (Moussorgsky). Concerto for Piano and Orchestra in A Minor, Op. 26 (Tcherepnin). The Seventh Symphony in F Major, Op. 77 (Glazounov).

9.35—Announcements. 9.45—Friedrich Hölderlin Programme. 10.15 (approx.)—Weather, News and Sports Notes.

**HILVERSUM (Holland)**  
1,013 kc/s (296.1 m.); 20 kW. (7 kW. up till 4.40 p.m.). Programme of the Algemeene Vereeniging Radio Omroep (A.V.R.O.). 7.40 a.m.—Time Signal. 7.41—Gramophone Records of Light Music. 9.40—The Daily Service. 9.55—Gramophone Records of Light Music. 10.10—Violin and Pianoforte Recital. Passacaglia (Handel-Harty). Sonata in A (Mozart). 10.40—Talk: 11.10—Recital (continued). Pianoforte Solos: (a) Arabesque (Schumann), (b) March (Dohnanyi). Sonata in G Minor, Op. 13 (Grieg). 11.40—Time Signal.

11.41—Orchestral Concert, conducted by Nico Trepp. Overture; "The Thieving Magpie" (Rossini). Selection from "The Magic Flute" (Mozart). Am stillen Herd (Wagner). Rose Mousse (Bosc). Talk. Waltz, Seh'n Sie, so tanzst man in Wien (Zeller). La toupie (Gillet). In a Hong-Kong Street (Humphries). Selection from "Gri-Gri" (Lincke). Waltz Selection, (Robrecht). Selection from "The Desert Song" (Romberg). Einzug der Rosenkönigin (Rhode). March (Rosey).

1.55—2.10 p.m.—Interval. 2.10—Gramophone Records of Variety Music. 2.40—Dressmaking Lesson. 3.40—Pianoforte Recital by Dick Schipper. Prelude and Fugue in C Sharp (Bach). Sonata (Haydn). Clair de lune, from "Suite bergamasque" (Debussy). Sonatine (Ravel).

4.10—Concert by a Children's Choir. 4.40—Gramophone Records of Light Music. 4.55—Concert by the Wireless Chamber Orchestra, conducted by G. Hemmes. Overture, "Le Grand Mogol" (Audran). Selection from "Il Trovatore" (Verdi). Two Waltzes for Strings and Pianoforte (Dvorak). Gramophone Records of Variety Music. Selection from "Ritter Pasman" (Joh. Strauss). Serenade (Lacôme). Gramophone Records of Variety Music. Selection from "The Bartered Bride" (Fall). March, Kaffeehoch (Manfred).

6.40—Talk on French Chamber Music, followed by Sonata for "Cello and Pianoforte (Honegger), by Carl van Leeuwen-Boomkamp and Theo van der Pas. 7.10—Talk. 7.40—Time Signal. 7.42—Variety Concert and Radio Play. 10.10—Weather and News. 10.25—Gramophone Records of Popular Music. 11.40 (approx.)—Close Down.

**HUIZEN (Holland)**  
160 kc/s (1,875 m.); 8.5 kW. Programme of the Catholic Radio Society (K.R.O.). 7.40—8.55 a.m.—Gramophone Records of Variety Music. 9.40—Gramophone Records of Variety Music. 11.10—Religious Address. 11.40—Police Notes. 11.55—Trio Concert. 1.25 p.m.—Gramophone Records of Variety Music. 1.40—Programme for Women. 2.40—Dressmaking and Millinery Lesson. 3.40—Concert by Paul Godwin and his Orchestra.

4.40—Instrumental Concert, conducted by Piet Lustenhouwer. Torch Dance of the Brides of Kashmir from "Fetters" (Rubinstein). Waltz (Chopin). Waltz, Le Tourbillon (Mottel). The World in Song—Potpourri of Popular Songs (Intrator). Serenade del Trovatore (Adamei). Suite Op. 98 (Trovatore). 5.40—Educational Talk. 6.15—Concert (continued). Three Selections (Strauss-Morena): (a) Mazurka, (b) Orientale, (c) Viennoise. Ballet égyptien (Luigini). Transaktionerwalzer (Joseph Strauss). Andalusian Serenade (Eilenberg).

6.50—Talk: The Agricultural Crisis. 7.10—Police Notes. 7.25—Talk. 7.40—Orchestral Concert, conducted by Johan Gerritsen. Soloist: Willem Andriessen (Pianoforte). Ballet Suite (Grétry-Mottel). Fifth Concerto for Pianoforte and Orchestra in D (Mozart). Overture, "The Barber of Seville" (Rossini). Suite, La Source (Delibes). Concerto for Pianoforte and Orchestra in G Minor, Op. 22 (Saint-Saëns). Selection from "The Pearl Fishers" (Bizet). Andante cantabile from the String Quartet, Op. 11 (Tchaikovsky). Overture, Im Frühling (Goldmark). 8.55 (in an interval)—News Bulletin.

10.40—Gramophone Records of Variety Music. 11.40 (approx.)—Close Down.

**KALUNDBORG (Denmark)**  
Kalundborg Radio. 260 kc/s (1,153 m.); 7.5 kW. See Copenhagen.

**KATOWICE (Poland)**  
734 kc/s (408 m.); 16 kW. Transmits at intervals from 11.58 a.m. 5.0 p.m.—Concert of Popular Symphony Music. 6.0—Talk by Bronis-

las Romaniszyn. 6.20—10.40—See Warsaw. 10.40—Dance Music.

**LAHTI (Finland)**  
167 kc/s (1,796 m.); 54 kW. Relayed by Helsinki, 815 kc/s (368.1 m.). Transmits at intervals from 8.10 a.m. 6.15 p.m.—Talk.

6.40—Pianoforte Recital. Organ Choral in F Minor (Bach-Busoni). Sonatina in F (Beethoven). Three Intermezzi (Brahms).

7.5—Talk. 7.30—Orchestral Selections. Overture, "Oberon" (Weber). Selection from "L'Arlesienne" (Bizet). 8.0—Recitations. 8.20—Orchestral Selections. Tales from the Vienna Woods (Strauss). Overture, "William Tell" (Rossini).

8.45—News in Finnish and Swedish. 9.15—Military Music from the Kappeli Restaurant. 10.0 (approx.)—Close Down.

**LANGENBERG (Germany)**  
Westdeutscher Rundfunk. 635 kc/s (473 m.); 60 kW. Transmits at intervals from 6.45 a.m. (Exercises, Weather and Concert Relay).

12 noon—Concert of Light Music. 12.50 p.m.—Weather Report, Announcements and Time Signal.

1.0—Orchestral Concert, conducted by Wolf. Overture, "The Armourer" (Lortzing). Waltz, Donauweibchen (Johann Strauss). Selections from "Eugen Onegin" (Tchaikovsky). Two Songs (Lincke): (a) Ob du mich liebste, (b) Die Liebe kam vom Märchenland. Piedmontese Dance, No. 1 (Sinigaglia). Suite, Les Fables de la Fontaine (Mouton). Potpourri, Tonweller (Manfred). Russian March (Polnario).

3.30—Economic Report and Time Signal. 3.50—Programme for Children. 4.20—Notes on the Broadcasts for Schools. 4.30—Educational Talk.

5.0—Orchestral Concert of Dances and Marches, conducted by Wolf. Soloist: Otto Wetzel (Pianoforte). Military March (Schubert). Emperor Waltz (Johann Strauss). Minuet from the Military Symphony (Haydn). Minuet from the Symphony in E Flat (Mozart). Pianoforte Solos. Hungarian Dances, Nos. 5 and 6 (Brahms). Turkish March (Beethoven). Turkish March (Mozart). Pianoforte Solos. Waltz, Man lebt nur einmal (Strauss-Taussig). Minuet (Schubert). Habanera (Debussy). Waltz, Die Weber (Lanner). Polonaise in A (Chopin).

6.15—Talk and Readings: Van Gogh's Letters. 6.40—French Conversation. 7.0—Weather Report, Time Signal, Economic Report and Sports Notes. 7.15—Wireless News. 7.25—Talk: Memel, Lithuania and European Politics. 7.45—News Bulletin.

7.50—Dance Music from Berlin (Witzleben). 9.0—See Frankfurt.

10.15—News Bulletin, Sports Notes and Close Down.

**LEIPZIG (Germany)**  
1,157 kc/s (259 m.); 2 kW. Relayed by Dresden, 941 kc/s (310 m.). Transmits at intervals from 6.0 a.m. 4.30 p.m.—Concert by the Leipzig Symphony Orchestra, conducted by Dr. Ernst Nöbbe. Concert Overture, Im Walde (Brüll). Symphonic Suite in B Minor, Op. 17 (Nicodé). Overture, Simplicius (Johann Strauss). Waltz from "Das Sonntagskind" (Millocker).

5.30—Weather and Time. 5.50—Economic Notes. 6.5—Talk for Women. 6.30—French Lesson. 6.50—Programme to be announced. 7.0—Talk: The Training of the Welfare Worker.

7.30—Hortense Schneider—the Diva of the Offenbach Period (arranged by Dr. Erwin Walter). The Leipzig Symphony Orchestra, conducted by Hilmar Weber. Soloists: Maria Elmsner (Soprano) and Walter Kathammer (Tenor). Duet from "Le Violoncelle" Duet from "La Belle Hélène." Song from "Barbe bleue." Overture and Two Songs from "The Grand Duchess of Gerolstein." Aria from "La Pêriche." Overture and Letter Song from "La Vie parisienne" (Offenbach). Song from "La belle Lurette." Song from "La Chanson de Fortunio."

9.0—Economic Notes. 9.10—Pianoforte Recital by Alfred Hoehn. Prelude, Sarabande and Toccata (Debussy). Vivace (Reger). Two Selections (Chopin): (a) Nocturne in D Flat, (b) Ballad in A Sharp. 9.40—Barli, der Korber—a Narrative

(Jeremias Gotthelf). 10.25—News Bulletin.

10.35 (approx.)—Vocal and Instrumental Concert. Soloists: Dorothea Schröder (Contralto), Oskar Fischer (Flute) and Dr. Ernst Latzko (Cembalo). Aria for Contralto, Flute and Cembalo: Tod und Moder dringt herein (Telemann). Sonata in F Minor for Flute and Cembalo (Jochim Quantz). English Suite in G Minor (Bach). Ihr Völker hört—Cantata for Contralto, Flute and Cembalo (Telemann). 11.30 (approx.)—Close Down.

**LJUBLJANA (Yugoslavia)**  
522 kc/s (574.7 m.); 2.5 kW. Transmits at intervals from 11.30 a.m. 6.0 p.m.—Reading. 6.30—Quintet Concert. 7.30—German Lesson. 8.0—Talk on Hygiene. 8.30—See Paris (Eiffel Tower). 10.30—Time and News Bulletin.

**LYONS (France)**  
La Doua (PTT). 644 kc/s (465.8 m.); 1.5 kW. Transmits at intervals from 8.0 a.m. 7.0 p.m.—Popular Music on Gramophone Records. 7.30—Radio Gazette for Lyon and the South-East. 8.30—European Concert relayed from Paris (Eiffel Tower).

**MADRID (Spain)**  
Union Radio (EAJ7). 707 kc/s (424.3 m.); 2 kW. Transmits at intervals from 9.0 a.m. 8.0 p.m.—Chimes, Exchange Quotations, Market Prices and Request Gramophone Records. In the interval at 8.30—Talk by Joaquin España Centos. 9.15—News and Political Review. 9.30—10.0—Interval. 10.0—Linguaphone French Lesson. 10.30—Chimes and Time Signal; followed by Political Review. 10.45 (approx.)—Selection from "Cavalleria Rusticana"—Opera (Mascagni) on Gramophone Records. 12.45 a.m. (Wednesday)—News Bulletin. 1.0—Chimes and Close Down.

**MILAN (Italy)**  
Ente Italiano Audizioni Radiofoniche. 905 kc/s (331.5 m.); 7 kW. See Turin.

**MORAVSKÁ-OSTRAVA (Czechoslovakia)**  
1,137 kc/s (263.8 m.); 11 kW. Transmits at intervals from 10.0 a.m. 7.0 p.m.—See Prague. 8.30—Concert by the Wagner Guitar Trio. 9.0—Prague. 10.15—Programme Announcements and Theatre Guide. 10.25—See Prague.

**MOSCOW (Russia)**  
Trades Union. 230.1 kc/s (1,304 m.); 100 kW. Transmits at intervals from 5.0 a.m. 6.30 p.m.—Proletariat Radio Journal. 7.15—Programme for Young Communists. 8.0—Talk in Dutch: Soviet Films, and Talk in French: The Armed Rising in Kronstadt, 1905. 9.55—Time. 10.0—Weather Forecast.

**MÜNICH (Germany)**  
563 kc/s (533 m.); 1.5 kW. Relayed by Augsburg and Kaiserslautern, 536 kc/s (560 m.), and Nürnberg, 1,256 kc/s (239 m.). Transmits at intervals from 6.45 a.m. 5.0 p.m.—Orchestral Concert conducted by Erich Kloss. Overture, "William Tell" (Rossini). Serbische Weisen (Gal). Selection from "La Favorita" (Donizetti). Dance Suite (Phillips). Violin Solo: Capriciosa (Ries). Ballet Suite (Tchaikovsky). Viennese Dance (Friedmann-Gärtner).

6.15—Time Signal, Weather Report and Agricultural News. 6.25—Talk: Chinese Secret Societies. 6.45—Talk: Bavarian Benedictine Monks in Manchuria. 7.5—Zither Concert by the Munich Music Teachers' Association. 7.50—Talk: The Ottawa Conference. 8.15—Concert by the St. Cecilia Society, relayed from the Odeon. Mass in D Minor (Bruckner). Two Church Choirs and the Bavarian State Orchestra conducted by Alfons Singer. Soloists: Lotte Medak (Soprano), Luisa Miller (Contralto), Julius Pölzer (Tenor), Georg Hann (Bass) and Hutterer (Organ).

9.30—Reading of Poems by Hugo von Hofmannsthal, Anton Wildgans and Alexander Lernet Holenia. 9.45—Lieder Recital by Elena Gerhardt, accompanied by Richard Staab. 10.20—Time Signal, Weather Report, News Bulletin and Sports Notes.

**OSLO (Norway)**  
Kringkastingselskapet. 277 kc/s (1,083 m.); 60 kW. Relayed by Fredrikstad, 816 kc/s (367.6 m.); Hamar, 536 kc/s (560 m.); Notod-

den, 671 kc/s (447.1 m.); Porsgründ, 662 kc/s (453.2 m.) and Rykjan, 671 kc/s (447.1 m.).

Transmits at intervals from 11.5 a.m. 5.30 p.m.—Light Music on Gramophone Records. 6.0—Talk for Housewives. 6.30—Saxophone Recital by Jules de Vries. 7.0—Weather and News Bulletin. 7.30—English Lesson. 8.0—Time Signal. 8.1—Concert by the Station Orchestra. 9.0—Talk: Wagner's Tristan and Isolde. 9.35—Foreign Market Prices, Weather and News. 10.0—Topical Talk. 10.15—Concert of Popular Violin and Accordion Music by the Akre Trio.

**PALERMO (Italy)**  
Ente Italiano Audizioni Radiofoniche. 554 kc/s (542 m.) 3 kW. Transmits at intervals from 12.45 p.m. 6.0 p.m.—Light Music on Gramophone Records. 6.30—8.0—Interval. 8.0—Announcements, Giornale dell'Enit, Agricultural Notes and Giornale Radio. 8.20—Variety Music on Gramophone Records. 8.30—(in the interval) Time and Announcements. 8.45—Chamber Music Concert. Soloists: O. Nicastro (Pianoforte) A. Ruggeri (Cello), Jole Rondini (Violin) and G. Cottone (Pianoforte). Pianoforte Solos: (a) Capriccio, Nuptine (Savata), (b) Etude (Szymanowski). Sonata No. 5 for Cello (Vivaldi). Sonata in G Minor, for Violin and Pianoforte (Grieg).

9.20—"Santuzza"—One Act Comedy in Dialect (Volpes). 10.0—Chamber Music (continued). Violin Solo: Andante and Allegro from the Spanish Symphony (Lalo). Cello Solos: (a) Aria (D'Ambrosio), (b) Minuet (Valentini), (c) Spanish Dance (Popper). Pianoforte Solo: Andante and Polonaise (Chopin). 10.55—News Bulletin.

**PARIS (France)**  
Eiffel Tower (FLE). 207.5 kc/s (1,445.7 m.); 13 kW. Time Signals (on 2,650 m.) at 10.26 a.m. and 11.26 p.m. (preliminary and 6-dot signals). 6.45 p.m.—Dramatic Programme. 7.0—Le Journal Parlé. 8.20—Weather Report. 8.30—European Concert by the Paris Symphony Orchestra, conducted by Pierre Monteux. Soloists: M. Panzéra (Songs), Maurice Maréchal (Cello) and Alexandre Cellier (Organ). Overture, Le carnaval romain (Berlioz). Songs from "The Damnation of Faust" (Berlioz). Concerto for Cello and Orchestra (Lalo). L'Apprenti Sorcier (Dukas). Prelude to "Fervaal" (d'Indy). Nocturne (Franck). Song: L'Invitation au Voyage (Duparc). Symphony in C Minor for Organ and Orchestra (Saint-Saëns). 11.0 (approx.)—Close Down.

**PARIS (France)**  
Poste Parisien. 914 kc/s (328.2 m.); 60 kW. Transmits at intervals from 12 noon. 7.0 p.m.—Light Music on Gramophone Records, News and Announcements. 7.30—Sponsored Gramophone Records. Talk and News. 8.45—Vocal and Orchestral Concert. Overture, "Jeane, Jeannette and Jeaneton" (Lacôme). Waltz, The Blue Danube (Johann Strauss). Second Orchestral Suite from "La Farandole" (Dubois). Réverie (Händel). Selection from "Sylvia" (Delibes). Selection from "Orpheus in the Underworld" (Offenbach). Ballet Music from "The Cid" (Massenet). Waltz, La plus belle (Waldteufel). A Doll's Wedding March (Lecocq). 10.45—News Bulletin. 10.50 (approx.)—Close Down.

**PARIS (France)**  
Radio-Paris (CFR). 174 kc/s (1,725 m.); 75 kW. 6.45 a.m.—Physical Culture. 7.30—Weather and Physical Culture (continued). 7.45—Gramophone Records. Rondo: Adagietto from "Les Biches" (Poulenc). Spanish Dance (Granados-Casals). Melody (Rubinstein). 8.0—News, Weather and Press Review. 12.30 p.m.—Gramophone Concert. Overture and Selections from "Le Roi d'Ys" (Lalo). Songs by Yvonne Printemps: (a) Song from "L'Amour masqué" (Messager), (b) Aria from "Mozart" (Hahn), (c) Arietta (Lully), (d) Aria from "The Grand Duchess of Gerolstein" (Offenbach). Selections from "Hérodiade" (Massenet). Concerto for Violin and Orchestra (Mendelssohn). In the intervals at 1.0—Exchange, News and Weather.

TUESDAY continued

at 1.30—Exchange, and at 2.0—Exchange and Announcements. 3.45—Exchange and Market Prices. 6.30—Market Prices. Weather, Agricultural Report, Talk and Racing Results. 7.0—Theatre Review. 7.15—Talk on Art by Henri Malo: The Chantilly Museum. 7.30—Advanced English Lesson. 7.45—British Press Review, Commercial Prices and News. 8.0—“Letter from an Unknown”—Play (Stefan Zweig), with the collaboration of Eve Francis. 8.30—News and Weather. 8.40—Review by Miguel Zamacois. 8.45—Concert. Part I. Operetta Programme. Ballet Music from “Gretina Green” (Guiraud). Selection from “Le Cœur y est” (Pares-Van Parys). Selection from “Louis XIV.” (Pares-Van Parys). Selection from “Dédé” (Christine). Selection from “Le bon roi Dagobert” (M. S. Rousseau). Selection from “Sans Tambour ni trompette” (Casadesu). 9.15—Press Review and News. 10.45—Concert. Part II. Songs from Italian Opera on Gramophone Records. Selections from “Rigoletto” (Verdi). Choral Selection from “Don Pasquale” (Donizetti). Selections from “La Sonnambula” (Bellini). Choral Selection from “Ernani” (Verdi). Duet from “Aida” (Verdi). Duet from “La Traviata” (Verdi). Song from “Mephistopheles” (Boito). Selections from “Othello” (Verdi).

PITTSBURGH (U.S.A.)

Westinghouse Electric (KDKA). 980 kc/s (106 m.); 25 kW. Relayed by W8XK on 48.86 m. and 25.25 m. (See Short-Wave List.) Transmits at intervals from 12.30 p.m. 9.0 p.m.—Teaberry Baseball Scores. 9.5—Business News. 9.15—Mary Orr Wilson (Pianoforte). 9.30—Pebecco Weather Report. 9.32 Market Report. 9.45—Musical Clowns. 10.0—Teaberry Baseball Scores. 10.5—David Lawrence Dispatch. 10.10—KDKA Artist Booking Service. 10.12—KDKA Programme Announcements. 10.15—KDKA Kiddies' Klub. 10.30—“The Singing Lady,” from New York. 10.45—Little Orphan Annie. 11.0—Time Signal. 11.1—Temperature Report. 11.2—Who's News Today. 11.7—Teaberry Sport Review. 11.12—Press News-Reeler. 11.15—KDKA Orchestra. 11.30—Ray Perkins, the Old Tapper. 11.45—Literary Digest Topics. 11.50—Time Signal. 12 midnight—1.30 a.m. (Wednesday)—New York Relay. 12 midnight—Pepodent Amos 'n Andy. 12.15 a.m.—Just Willie. 12.30—The Stebbins Boys. 12.45—Billy Jones and Ernie Hare. 1.0—“You and Your Government.” 1.30—Elsa G. Duga (Soprano). 1.45—Sisters of the Skillet, from New York. 2.0—Household Finance Programme, from New York. 2.30—Great Personalities. Frazier Hunt, from New York. 3.0—Quaker State Carefree Programme. 3.15—Westinghouse Pioneers. 3.30—Paris Night Life, from New York. 3.45—Chats between the Acts by Florence Fisher Parry. 4.0—Time Signal. 4.1—Teaberry Sport Review. 4.11—Temperature Report. 4.12—Weather Report. 4.15—Press Last Minute News. 4.20—Lew Conrad and his Orchestra. 4.50—Dancing in Milwaukee, from New York. 5.30—Time Signal and Goodnight.

PRAGUE (Czechoslovakia)

614 kc/s (488.6 m.); 120 kW. Transmits at intervals from 6.15 a.m. (Alarm and Gramophone Records). 6.45 p.m.—Talk arranged by the Masaryk Institute: How to build Wooden Houses. 5.55—Fashion Review. 6.5—Agricultural Report and Market Prices. 6.15—Topical Talk for Workers. 6.25—German Transmission: News and Songs (Lilien) by Nelly von Grasen. 7.0—Russian Songs and Dances. 7.45—Talk: A Hundred Years of Telegraphy. 8.0—Programme to be Announced. 8.30—Violin Recital by Marianne Theiner. Fantasia, Op. 159 (Schubert). Slavonic Dance in E Minor (Dvorak). Prelude and Allegro (Pugnani). 9.0—Time Signal. 9.2—Symphony Concert conducted by J. Scheidler. Symphony in B Minor No. 2 (Borodin). Liturgy of St. John Chrysostom (Tchaikovsky). Solemn Overture (Glazounov). 10.0—Time and News. 10.13—Miscellaneous Announcements. 10.25—Popular Music on Gramophone Records.

RADIO-SUISSE ROMANDE (SOTTENS) (Switzerland)

743 kc/s (403 m.); 25 kW.; Lausanne, 442 kc/s (680 m.); and Geneva, 395 kc/s (760 m.).

12.30 p.m.—Time Signal from Neuchâtel Observatory. 12.31—Weather Forecast and News Bulletin. 12.40 (from Lausanne)—Gramophone Concert of Light Music. 1.0—Exchange Quotations. 1.5—Gramophone Concert (contd.). 1.45—5.0—Interval. 5.0—Time Signal from Neuchâtel Observatory. 5.1 (from Lausanne)—Programme for Women. 5.30 (from Geneva)—Light Music on Gramophone Records. 6.30 (from Lausanne)—Song Recital by Alice Plomb. 7.0—Weather Forecast. 7.1 (from Geneva)—Review of New Gramophone Records by Aloys Mooser, Music Critic. 7.30—(from Geneva)—Talk: The Work of the Disarmament Conference. 7.55—Announcements. 8.0 (from Geneva)—Do you recognize it?—Literary and Musical—Competition. 8.30—European Concert, relayed from Paris (Eiffel Tower). 10.20—Weather Forecast and News Bulletin. 10.30 (approx.)—Close Down.

RIGA (Latvia)

572 kc/s (525 m.); 15 kW. Transmits at intervals from 11.0 a.m. 6.0 p.m.—French Lesson. 6.30—Talk: Johann Reinhold von Patkul and the War between Poland and Sweden. 7.0—Weather Report. 7.5—Orchestral Concert of Italian Opera Music. Selections (Puccini) from (a) “Madame Butterfly,” (b) “Manon Lescaut.” Soprano Solos. Selection from “Rigoletto” (Verdi). Overture, “The Italian Girl in Algiers” (Rossini). Selection from “La Traviata” (Verdi). Soprano Solos. Selection from “The Barber of Seville” (Rossini). Dance of the Hours from “La Gioconda” (Ponchielli). In the intervals, at 8.0—News, and at 9.0—Weather and News. 9.35—Variety Concert. 10.30 (approx.)—Close Down.

ROME (Italy)

Ente Italiano Audizioni Radiofoniche (IRO). 680 kc/s (441 m.); 50 kW. Relayed by Naples, 941 kc/s (319 m.) and 2RO, 11,810 kc/s (25.4 m.). 8.15—8.30 a.m.—Giornale Radio and Announcements. 12 noon—Gramophone Records of Variety Music. 12.35 p.m.—Weather Forecast. 12.45—2.0 p.m.—Sextet Concert. Spanish Fantasia, Through the Streets of Seville (Lattuada). L'ape (Filippucci). Violin Solos: (a) Souvenir (Drdla), (b) Spanish Dance (Sarasate), (c) Moto perpetuo (Paganini). Selection from “Addio giovinezza” (Pietri). Russian Song, Two Guitars (Ferraris). Onestep, Signorina (De Luepuz). In the intervals: Giornale Radio, Exchange, Time and Announcements. 5.0 p.m.—Exchange, Children's Radio Review, Giornale Radio and Announcements. 5.30—Song Recital by Maria Serra Massara (Soprano). Aria from “Hérodiade” (Massenet). Aria from “Parisina” (Mascagni). Dolce notte (Bossi). Desio di voli (Zanella). Selection from “Sicilian Vespers” (Verdi). Non si puo scherzare con l'amore (Bixio). Pavane from “Le Maschere” (Mascagni). Piccola Edelweiss (Sassoli). Ninna-nanna (Culotta). Santuzza indemoniata (Hamud). 6.15—Giornale dell'Enit. 6.25—Talk: The Moon. 6.55—(Naples) Shipping News and Sports Notes. 7.0—Atmospheric Signals. Lesson in Morse, Agricultural Notes, Announcements, Giornale Radio and Press Review. 8.0—Time, Announcements and Gramophone Records of Variety Music. 8.30—Sports Notes and Announcements. 8.45—Concert. Trio for Violin, Cello and Pianoforte (Turina). 9.15—“Il rapido 19.05”—Comedy in One Act (Eduardo Grelia). 9.45—Concert (contd.). Tenor Solos: (a) Puppillette (Falconsper), (b) Ballad in Old Style (Racspighi) (Jota and Seguidilla (Fallas). Selection from “Greek Folk Songs” (Ravel). Cello and Pianoforte Selections: (a) Second Dance in B Flat (Alfano), (b) Alla gitana (Dukas), (c) Prelude and Sicilian Dance from “La gitana” (Casella). Topical Review. Vocal and Instrumental Selections from “Cavalleria rusticana” (Mascagni). 10.55—News Bulletin.

SCHENECTADY (U.S.A.)

General Electric Company (WGY). 790 kc/s (379.5 m.); 50 kW. Relayed at intervals by W2XAF and W2XAD (See Short-Wave List.) Transmits at intervals from 11.45 a.m.

TUESDAY continued

9.0 p.m.—Bridge Lesson. 9.30—Studio Ensemble. 9.35—News Items. 9.45—Stock Reports and Police Notes. 10.0—Sonata Programme from New York. 10.15—Skippy from New York. 10.30—The Success Doctor. 10.45—Chandu the Magician. 11.0—Joe and Eddie. 11.15—New Kenmore Orchestra. 11.24—Baseball Scores. 11.29—Weather Report. 11.30—With Gray McClintock in the Canadian Northwest. 11.45—Sonata Programme. 12 midnight (WGY only)—General Electric Programme. 12 midnight (W2XAF only)—Stock Reports and News Items. 12.15 a.m. (Wednesday)—New Kenmore Orchestra. 12.30—4.0—New York Relay. 12.30—Barbasol Programme. 12.45—The Goldbergs. 1.30—Blackstone Plantation. 1.30—True Story Hour. 2.0—Gay Vienna. 2.30—Ed Wynn and the Fire Chief Band. 3.0—Lucky Strike Dance Hour. 4.0—Freddy Engel's Orchestra. 4.30—DeWitt Clinton Orchestra. 5.0—Ralph Kirbery (the Dream Singer), from New York. 5.5—Hotel New Yorker Orchestra, from New York. 5.30—New Kenmore Orchestra. 6.0 a.m. (approx.)—Close Down.

SCHWEIZERISCHER LANDESSENDER (BEROMÜNSTER) (Switzerland)

653 kc/s (459 m.); 60 kW.; Basle, 1,220 kc/s (244.1 m.); and Berne, 1,220 kc/s (246 m.). 12.30 p.m.—Time Signal from Neuchâtel Observatory. 12.31—Weather Report and News Bulletin. 12.40—Concert by the Station Orchestra. 1.35—Weather Report and Exchange Quotations. 1.45—3.30—Interval. 3.30—Concert of Swiss Music on Gramophone Records. 4.30—Concert by the Station Orchestra. 5.0—6.30—Interval. 6.30 (from Zürich)—Talk on Education: The Joys and Sorrows of Teaching. 7.0—Time Signal, Weather Forecast and Foreign Traffic Report. 7.5 (from Zürich)—Talk: The Swiss School of Economics in Zürich. 7.30 (from Zürich)—Programme for Women. 8.0 (from Berne)—Pianoforte Recital by Ernst Kappeler. 8.30—European Concert, relayed from Paris (Eiffel Tower). 10.20 (approx.)—Weather Forecast and News Bulletin. 10.30 (approx.)—Close Down.

STOCKHOLM (Sweden)

Radiotjänst (SASA). 680 kc/s (436 m.); 55 kW. Relayed by Boden. 244 kc/s (1,229.5 m.); Göteborg, 932 kc/s (322 m.); Hörby, 1,166 kc/s (257 m.); Motala, 222.5 kc/s (1,348 m.); Östersund, 389 kc/s (770 m.), and Sundsvall, 554 kc/s (542 m.). Transmits at intervals from 8.0 a.m. 6.0 p.m.—Gramophone Records of Variety Music. 7.0—Reading. 7.15—Weather and News. 7.30—Concert by the Bellmann Choir, conducted by Hildor Lundvik. Spring Song (Myrberg). Cradle Song (Flodin). I furosogon (Peterson-Berger). Three Selections (Bellmann): (a) Opp Amaryllis, (b) Fjäriln vingad, (c) Bläsn nu alla. Skogen sjunger (Lundvik). May Song (Kuhlau). Glad sasom fågel (Prince Gustavus). 8.0—Talk: Walking and Camping. 8.30—Part Relay of the European Concert, from Paris (Eiffel Tower). 9.15 Literary Review relayed from Malmö, 1,301 kc/s; (231 m.). 9.45—Weather and News. 10.0—Concert of Light Music. March, Solinger Schützer (Blon). Potpourri of Military Music (Meissner). Treasure Waltz from “The Gipsy Baron” (Johann Strauss). Rida ranka (Ekenberg). Selection from “Le petit Faust” (Hervé). Mazurka (Faust). Rheinländer, Anna (Faust). March, Friska vindar (Widqvist). 11.0 (approx.)—Close Down.

STRASBOURG (France)

Radio-Strasbourg (PTT). 869 kc/s (345 m.); 11.5 kW. 11.30 a.m.—Gramophone Concert of Opera and Light Music. 12.45 p.m.—News in French and German. 1.0—Time Signal. 1.2—Gramophone Concert (continued). 2.0—4.45—No transmission. 4.45—Talk in French: The Natural Resources of Algeria. 5.0—Dance Music. 6.0—Talk in French: Through Lorraine. 6.15—Topical Talk in French. 6.30—Orchestral Concert conducted by Maurice de Villers. Overture, “Peter Schmolli” (Weber). Selection from “Robert le Diable” (Meyerbeer). Andante from the Fifth Symphony (Schubert). Sere-nade (Saint-Saëns). International

Suite (Tchaikovsky). Slavonic Rhapsody (Volpatti). 7.30—Time Signal. 7.32—News in French and German. 7.45—Orchestral Concert conducted by Maurice de Villers. March (Blankenburg). Waltz from “Eva” (Lehar). Overture, “The Nuremberg Doll” (Adam). Selection from “Rip van Winkle” (Planquette). Santa Lucia Luntana (Sterling). Waltz Intermezzo, En relisant vos lettres (Masson-Kiecl). Peppina (Mambour). 8.30—European Concert relayed from Paris (Eiffel Tower).

STUTTGART (MÜHL-ACKER) (Germany)

Süddeutscher Rundfunk. 832 kc/s (360.5 m.); 60 kW. Relayed by Freiburg, 527 kc/s (570 m.). Transmits at intervals from 6.0 a.m. (Time, Weather and Gymnastics). 12 noon—Concert from Greiners Grossgastätten. Overture, “Hunyadi Laszlo” (Erkel). Secrets of the Adige (Carena). L'amour toujours l'amour (Friml). Baci al buio (Micheli). Russian Folk Music (Maniskrip). Waltz, Was kann so schön sein wie deine Liebe (Brodsky). Foxtrot, Stemping (Warskov). 12.50 p.m.—Time, Weather, News and Programme Announcements. 1.0—Songs by Dusolina Giannini (on Gramophone Records). Three Songs from “The Force of Destiny” (Verdi). Aria from “Cavalleria rusticana” (Mascagni). Three Songs (Puccini): (a) Aria from “Tosca” (b) Aria from “Manon Lescaut” and (c) One fine day, from “Madame Butterfly.” O sole mio (di Capua). Neapolitan Folk Song, Mannelia mia (Giannini). In the intervals: Orchestral Selections. 1.55—News Bulletin. 2.0—2.15—Sponsored Musical Programme. 2.30—3.0—Advanced English Lesson. 4.0—Talk on Flowers. 4.30 (from Freiburg)—Talk for Women. 5.0—Orchestral Concert conducted by Gustav Görlich. Soloists: Käte Mann (Soprano) and Hans Hanus (Tenor). March, Kunst und Natur (Schrammel). Overture, “Nakiris Hochzeit” (Lincke). Song from “Josefine Galmeyer” (Knepler). Duet from “Josefine Galmeyer” (Knepler). Selection from “The Mikado” (Sullivan). Song and Duet from “Die Musterweiber” (Werther). Schatzwälder (Johann Strauss). Polka-Mazurka, Kriegers Liebschen (Johann Strauss). March, Wien bleibt Wien (Schrammel). 6.15—Time and Weather. 6.25 (from Freiburg)—Talk: Fashion Books? 6.50—Talk by Dr. Berwin. 7.15—Time and Agricultural Notes. 7.30 (approx.)—10.20—See Frankfurt. 10.20—Time, Weather, News, and Programme Announcements. 10.45—Concert by the Stuttgart Philharmonic Orchestra. 12 midnight (approx.)—Close Down.

TOULOUSE (France)

Radiophonie du Midi. 779 kc/s (385 m.); 8 kW. Transmits at intervals from 12.30 p.m. 5.0 p.m.—Picture Transmission. 5.15—Exchange Quotations. 5.30—Orchestral Music. 5.45—Operetta Selections. Overture, “Countess Maritza” (Kálmán). Selection from “La Fille de Madame Angot” (Lecocq). Selection from “Le Petit Duc” (Lecocq). 6.0—Popular Songs. 6.15—Military Music. 6.30—Exchange and Racing Results. 6.45—Petite Suite for Orchestra (Debussy). 7.0—Sound Film Music. 7.15—Instrumental Selections. 7.30—News Bulletin. 7.45—Selections by an Argentine Orchestra. 8.0—Operetta Music. Viennese Operetta Review (Robrecht). Selection from “The Girl in the Taxi” (Gilbert). Selection from “The Gipsy Princess” (Kálmán). 8.15—Popular Music. 8.30—Five Minutes' German. 8.35—Orchestral Music. Strauss Parody (Eden). Operetta Potpourri (Fallas). Waltz, Tales from the Vienna Woods (Johann Strauss). Selection (Lopez). 9.0—Songs from Opéra-Comique. Selections from “Manon” (Massenet) and “Il Trovatore” (Verdi). 9.15—Military Music. 9.30—Concert by Elsa Philips and her Romanian Cigany Orchestra relayed from the Café Albrighi. Spanish Music in the interval. 10.45—Songs from “The Merry Widow” (Lehar). 11.15—Accordion Solos. 11.30—Concerto in G for Orchestra (Beethoven). 12 midnight—Weather and Announcements. 12.5 a.m. (Wednesday)—English Concert. 12.30 (approx.)—Close Down.

TRIESTE (Italy)

Ente Italiano Audizioni Radiofoniche. 1,211 kc/s (247.7 m.); 10 kW. Transmits at intervals from 8.15 a.m. 7.5 p.m.—Quintet Concert. Fair Lady (Gordon). Vieni a danzar (Zuculin). Laguna (Travaglia). Clown (Cullotta). Selection from “Girandola” (Allegria). Pianto di fanciulla (Panizzi). Congo (Montagnini). In the interval at 7.25—English Lesson on Gramophone Records. 8.0 till Close Down—See Turin.

TURIN (Italy)

Ente Italiano Audizioni Radiofoniche. 1,096 kc/s (273.7 m.); 7 kW. Relayed by Milan, 905 kc/s (331.5 m.). Florence, 509 kc/s (500.8 m.) and Genoa, 959 kc/s (312.8 m.). Transmits at intervals from 8.15 a.m. 6.45 p.m.—Agricultural Notes. 7.0—Announcements. 7.5—Musical Selections. Ballet (Kremer). Donausagen (Fucik). Serenata fiorella (Donati). Nozze marocchine (Billi). 7.30—Time and Announcements, followed by Gramophone Records of Variety Music. 8.0—Giornale Radio and Weather. 8.15—Scientific Talk. 8.30—An Operetta in Three Acts (to be announced). In the intervals, Talk: Points of View, and Announcements. Giornale Radio after the Programme.

VATICAN CITY (Rome)

15,123 kc/s (19.84 m.) (Morning), and 5,969 kc/s (50.26 m.) (Evening); 10 kW. 11.0—11.15 a.m.—Religious Information in English. 8.0—8.15 p.m.—Religious Information in Italian.

VIENNA (Austria)

Radio-Wien. 581 kc/s (517 m.); 15 kW. Relayed by Graz, 852 kc/s (352.1 m.); Innsbruck, 1,058 kc/s (283 m.); Klagenfurt, 662 kc/s (453.2 m.); Linz, 1,220 kc/s (246 m.) and Salzburg, 1,373 kc/s (218 m.). Transmits at intervals from 2.0 a.m. 5.0 p.m.—Concert of Popular Music by the Karl Machek Orchestra. 6.10—Agricultural Talk. 6.35—Geological Talk: The Age of the Earth. 7.0—Physical Culture Course. 7.20—Time Signal, Weather Report, and Programme Announcements. 7.30—Suppé Concert by the Josef Hozer Orchestra. Soloist: Karl Zielger (Tenor). Overture, “Light Cavalry.” Humorous Variations on the Song, Was kommt dort von der Höh. Song from “Die grosse Unbekannte.” Song from “Boccaccio.” Overture, “Ein Sommernachtstraum.” Colletta Waltz. Horn Solo, Forget-me-not. Polka from “Donna Juanita.” Songs: (a) Air from “Des Matrones Heimkehr.” (b) Drinking Song from “Die schöne Galathée.” Flute Solo: Idylle. Overture, “Die schöne Galathée.” 8.30—European Concert relayed from Paris (Eiffel Tower). 10.0—News Bulletin, Weather Report and Programme Announcements. 10.15—Concert by the Prado Orchestra, conducted by Georges Gladi-rievsky, relayed from the Café Westminster.

WARSAW (Poland)

Polskie Radio. 212.5 kc/s (1,411 m.); 120 kW. 11.58 a.m.—Time Signal and Bugle Call from the Tower of St. Mary's Church, Cracow. 12.5 p.m.—Programme Announcements. 12.10—Interval. 12.30—Press Review. 12.40—Weather Report. 12.45—Light Music on Gramophone Records. 2.0—Interval. 3.0—Economic Report. 3.10—Light Music on Gramophone Records. 3.30—Aviation Report. 3.35—Announcements. 3.40—Popular Music on Gramophone Records. 4.35—Hydrographic Report. 4.40—Talk: Collective Touring. 5.0—Concert by the Warsaw Philharmonic Orchestra and a Vocal Ensemble. Conductors: Josef Oziminsky and L. Raczkowski. Soloist: Mme. Lozinska (Soprano). Ukrainian Overture, Maria (Grossmann). Air for Soprano, Choir and Orchestra from “Protesilau and Laodamia” (Melcer). Tone Poem from “Tristan und Isolde” (Wagner-Hoffmann). Scherzo from Symphony No. 3—the Eroica (Beethoven). 6.0—Talk. 6.20—Concert of Light Music by the Station Orchestra. 7.15—Miscellaneous Items. 7.35—Radio Journal. 7.45—Agricultural Correspondence Course. 7.55—Programme Announcements. 8.0—Reading. 8.15—Introduction to the following Transmission. 8.30—European Concert relayed from Paris (Eiffel Tower). 10.35—Interval. 10.40—Sports Notes. 10.50—News Music.

# WEDNESDAY (June 8)

## PRINCIPAL EVENTS

### SYMPHONY CONCERTS

- 8.0 p.m. Berlin, Königs Wusterhausen: The Berlin Philharmonic. Arthur Schnabel (pianoforte).  
8.0 " Frankfurt, Stuttgart: Hermann Zilcher and Iwan Knorr programme.

### CONCERTS (Vocal and Instrumental)

- 12.30 p.m. Radio-Paris: Schumann anniversary programme (gramophone).  
8.45 " Radio-Paris: Concert relay.  
9.15 " Prague: The Station Orchestra.  
9.20 " Budapest: Dohnanyi conducts.  
9.45 " Schweizerischer Landessender: Mozart programme.  
10.15 " Leipzig: Late Concert.

### OPERAS AND OPERETTAS

- 8.30 p.m. Italian Stations (N.): "Mese Mariano" and "Marcella" (Giordano).  
8.30 " Strasbourg: "Monsieur de la Palisse" (Terrasse).  
8.45 " Rome: "The Barber of Seville" (Paisiello).

### RECITALS

- 7.0 p.m. Bucharest: Pianoforte and (8.15) Violin.  
8.0 " Vienna, Heilsberg: Erika Morini (Violin).  
8.30 " Stockholm: English Organ and Violin Music.  
8.50 " Warsaw: Pianoforte and Violin.

### PLAYS

- 8.0 p.m. Hamburg: "The other One."  
8.30 " Breslau: "Ingeborg" (Goetz).  
8.45 " Langenberg: "Mörder aus Gerechtigkeit."  
9.15 " Heilsberg: "Ol-Ol" (Music by Tcherepnin).

### DANCE MUSIC

- 9.0 p.m. Copenhagen: (till 2.0 a.m.) Radio Ball.  
10.20 " Hamburg.

### Schnabel's First Broadcast

At the big concert which the BERLIN Philharmonic is giving this evening in aid of the Red Cross Association, Arthur Schnabel will broadcast for the first time in Germany. He was one whose exceptional gifts showed themselves so early that at the age of six he was accepted by the great Leschetizky as a pupil, and as a very young man won himself a position in the front rank of living pianists. He is known to the whole world of music as an artist of



[Photo: Otto Kurt Vogelmann, Berlin] Schnabel

the utmost integrity, one whose complete command of every technical resource goes hand in hand with great strength and poetic insight; as a player both of the classics and of modern music, he is everywhere looked up to as one whose interpretations are authoritative. His own compositions—a pianoforte concerto, chamber music and smaller pieces—are not yet nearly so well-known as he might have made them had he been less modest, but his editions of some of the classical music are held in high regard. In 1919 he was given the title of professor, and six years later was appointed to the staff of the State Academy in Berlin. For his first broadcast he has chosen to appear as soloist in a Mozart Concerto.

### Harmony's One Rule

"If it sounds right, it is right, whether or no it sticks to the text-book rules." That was the principle of Iwan Knorr's teaching, and, though he modified it by insisting that it was to the thoroughly educated ear that music must sound right, it is open to the objection that what sounds right to Stravinsky or Schönberg, for example, may sound pretty badly wrong to ears whose thorough education was in an older school. But Knorr was as successful as he was broadminded in his teaching, and pupils all over the world are grateful for the way in which he encouraged each of them to develop his own original gifts. As a composer he is less well-known, though it was on the strength of one of his own pieces that Brahms recommended the Hoch Conservatorium at Frankfurt to appoint him as its chief professor of composition—a piece of advice for which the school was ever afterwards grateful. He attracted pupils from all corners of the world, a number of distinguished Englishmen like Cyril Scott, Balfour Gardiner, Norman O'Neill and Roger Quilter among them, and for many years Frankfurt owed its fame as a teaching centre largely to him. He left a great deal of music of his own, much of it, like the *Symphonic Fantasy* which FRANKFURT is to broadcast this evening, of a very high standard; he left, too, among a number of valuable text-books, a life of Tchaikovsky, of whom he was a life-long friend. He died in Frankfurt in 1916, at the age of sixty-three.

## NATIONAL

	kc/s.	m.	kW.
London:	1,148	261.3	50
Daventry:	193	1,554.4	30
Northern:	995	301.5	50

- 10.15 a.m.—The Daily Service.  
10.30—Time Signal (Greenwich), Shipping Forecast.  
10.45—11.0—"New Pennies, old Purses"—VI.  
12 noon—Quentin Maclean at the Organ.  
12.45 p.m.—Gramophone Records.  
1.0—Time Signal (Greenwich).  
1.30—Jack Martin and his Hotel Majestic Orchestra.  
2.25—For the Schools. Reception Test.  
2.30—Biology and Hygiene. Professor Winifred Cullis, C.B.E.: "Your Body every Day"—VI.  
2.55—Interval.  
3.0—English Literature. Miss N. Niemeyer: "Delight in Poetry."  
3.30—The Bournemouth Municipal Orchestra, conducted by Montague Birch. Harold Fairhurst (Violin).  
4.45—Time Signal (Greenwich).  
4.45—Reginald New at the Organ.  
5.15 (Daventry)—The Children's Hour.  
5.15 (London and Northern)—Dance Music.  
6.0—"The First News."  
6.30—Time Signal (Greenwich).  
6.30—The Foundations of Music. Schubert's Miscellaneous Pianoforte Music.  
6.50—"The Cinema" Mr. Cedric Belfrage.  
7.10—7.25—Talk on Farming. Sir Daniel Hall, K.C.B., F.R.S.  
7.30—"Speech in the Modern World"—III. Mr. A. Lloyd-James.  
8.0—Jack Payne and his Band.  
9.0—Time Signal (Greenwich).  
9.0—"The Second News."  
9.15—Shipping Forecast; New York Stock Market Report.  
9.20—"Musings without Method." Miss Helen Simpson.  
9.35—Orchestral Concert. Harry Isaacs (Pianoforte). The B.B.C. Orchestra (Section F) conducted by Victor Hely-Hutchinson.  
11.0 p.m.—12 midnight—Dance Music. Roy Fox and his Band from Monseigneur.  
11.30 p.m.—Time Signal (Greenwich).

## REGIONAL

	kc/s.	m.	kW.
London:	842	356.3	50
Midland:	752	398.9	25
Northern:	626	479.2	50

- 10.15 a.m. (London and Northern)—The Daily Service.  
10.30—11.0 (London and Northern)—Daventry National Programme.  
11.30—12 noon (London)—Experimental Television Transmission.  
12 noon—The Midland Studio Orchestra. Russell Green (Pianoforte).  
1.15 p.m.—An Organ Recital by Dr. Harold Rhodes.  
2.45—3.0—The Lightweight T.T. Race. An Eye-Witness account.  
3.30 (London and Northern)—Daventry National Programme.  
5.15—The Children's Hour.  
6.0—"The First News."  
6.30 (London and Northern)—The Pino Tango Orchestra. Gustave Ferrari (Songs at the Pianoforte).  
6.30 (Midland)—The Studio Orchestra. Ethel Houseley (contralto).  
8.0 (London)—Orchestral Concert. Louis Godowsky (Violin). The B.B.C. Orchestra, conducted by Percy Pitt. Orchestra: Divertimento No. 11, in D (K. 251) (Mozart); Adagio for Clarinet and Strings (Wagner) (Solo Clarinet, Ralph Clarke). Louis Godowsky: Nocturne in D, Op. 27, No. 2 (Chopin, arr. Wilhelmj); Rondino, Op. 32, No. 2 (Vieuxtemps). Orchestra: Prunella and A Holiday Tune (B. J. Dale). Louis Godowsky: Piedmontese Rhapsody, Op. 26 (Sinigaglia). Orchestra: Prelude, Philip II (Goossens).  
8.0 (Midland)—A Military Band Concert. The Band of 4/7th Dragon Guards.  
8.0 (Northern)—Musical Coincidences (Gramophone Illustrations).  
8.30 (Northern)—An Eric Coates Programme. The Studio Orchestra.  
9.15—Songs from the Shows—XII. Request Night.  
10.15—"The Second News."  
10.35 (Midland)—Experimental Transmission (Fultograph Process).  
10.40—11.0 (Midland)—As London.  
10.35 p.m.—12 midnight (London and Northern)—Dance Music.

## NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME

### ALGIERS (N. Africa)

825.3 kc/s (363.3 m.); 13 kW.  
Transmits at intervals from 12.30 p.m. 7.15 p.m.—Boy Scout Songs. 7.25—Instrumental Solos. 7.40—Talk for Women. 7.55—News and Time. 8.0—"Modesty"—Comedy (Hervey). 8.30—Review of New Books. 8.45—Orchestral Concert conducted by Hubert Guillet. Suite in D (Bach). The Nursery (Inghelbrecht). Extract from the Fantastic Symphony (Berlioz). Ballet Music (Hüe). 10.0 (approx.)—Close Down.

### BARCELONA (Spain)

Radio-Barcelona (E.A.1). 860 kc/s (349 m.); 8 kW.  
Transmits at intervals from 8.15 a.m. 8.0 p.m.—Trio Concert. Réverie (Marc). Selection from "Don Giovanni" (Mozart). Cradle Song (Grieg). Hungarian Dance No. 5 (Brahms).  
8.30—Exchange Quotations, Lesson in Catalan Grammar, Request Gramophone Records and Press Review.  
10.0—Chimes from the Cathedral, Weather Forecast and Exchange Quotations. 10.5—Concert by the Station Orchestra. 10.30—Soprano Song Recital by Pilar Albero.  
11.0—Violin Recital by Eva Wiederkehr de Lluch. Idylle pastorale (Crickboom). Tears (Crickboom). Mazurka (Wieniawski). Regrets (Vieuxtemps).  
11.30—Concert by the Station Orchestra. Soloist: Pepita Paulet (Songs). Overture, "The Magic Flute" (Mozart). Songs: (a) Popular Portuguese Song, (b) Andalusian Song, El Vito (Nin). Gavotte (Lincke). Songs: (a) Lament, (in Russian) (Balakirev), (b) Song in Catalan, La més hermosa (Buxó).  
12 midnight—Concert by the Toldrà Sextet relayed from the Granja Royal. 1.0 a.m. (Thursday)—Close Down.

### BELGRADE (Yugoslavia)

697 kc/s (430.4 m.); 2.5 kW.  
Transmits at intervals from 9.55 a.m. 5.0 p.m.—Orchestral Concert. 6.55—Time and Programme Announce-

ments. 7.0—Recital of Yugoslavian Songs. 7.30—Talk. 8.30—Vocal and Instrumental Concert of Music by Dr. Bozidar Sirola, relayed from Zagreb. 10.30—News and Sports Notes. 10.50—Relay of Foreign Stations.

### BERLIN (Germany)

Königs Wusterhausen. 183.5 kc/s (1,635 m.); 60 kW.  
Transmits at intervals from 5.45 a.m. 12 noon—Weather for Farmers, followed by Gramophone Concert of Newly-released Records, and Weather for Farmers. 12.55 p.m.—Nauen Time Signal. 1.30—News Bulletin. 2.0—Gramophone Concert of Waltzes, relayed from Berlin (Witzleben). 3.0—Talk: The Airship with Helium and Hydrogen—L.Z. 129. 3.30—Weather and Exchange Quotations. 3.45—Talk for Women. 4.0—Educational Talk.  
4.30—See Hamburg. 5.30—Talk: Little-known Districts of France. 6.0—Talk: German Student Songs and Music. 6.30—Talk: The Middle Ages and the Unity of Western Civilisation. 6.55—Weather for Farmers. 7.0—Talk: The International Importance of the Reparations Question. 7.20—Talk for Civil Servants. 7.40—Wireless Technical Talk, followed by Weather for Farmers.  
8.0—See Berlin (Witzleben). 8.45—News and Sports Notes. 9.0—See Stuttgart. 10.20—Political Press Review. 10.35—Weather, News and Sports Notes, followed by Dance Music from Berlin (Witzleben). 12.30 a.m. (Thursday)—Close Down.

### BERLIN (Germany)

Witzleben. 715 kc/s (419.5 m.); 1.5 kW.  
Transmits at intervals from 6.0 a.m. (Gymnastics and Concert).  
6.0 p.m.—Sociological Review.  
6.25—Recital of Contralto Arias by Melitta Amerling. Aria from "Odysseus" (Bruch). Aria from "Achilleus" (Bruch). Romance from "The Queen of Spades" (Tchaikovsky). O Love, lend me thy aid, from "Samson and Delilah" (Saint-Saëns). Softly awakes my heart, from "Samson and Delilah" (Saint-Saëns).  
6.55—"The Witzleben Station informs its Listeners..." 7.0—Topical Talk. 7.10—Concert of Light Music from the Central Hotel. 7.55—Labour Market Report.

### 8.0—Red Cross Day Festival Concert, relayed from the Philharmonic. The Berlin Philharmonic Orchestra, conducted by Dr. Fritz Stiedry. Soloist: Arthur Schnabel (Pianoforte). Overture, "Rosamunde" (Schubert). Pianoforte Concerto in C Minor (Mozart).

8.45—See Langenberg. 10.15—Weather, News and Sports Notes, followed by Dance Music. 12.30 a.m. (Thursday)—Close Down.

### BORDEAUX-LAFAYETTE

(France)

(P.T.T.) 986 kc/s (304 m.); 13 kW.  
Transmits at intervals from 12.45 p.m. 7.30 p.m.—News Bulletin and Market Prices. 7.40—Light Music on Gramophone Records. 7.55—Lottery Results. 8.0—Agricultural Programme. 8.15—News Bulletin and Weather Forecast.

### 8.30—Viennese Concert by the Symphony Orchestra, conducted by A. Guitrau. Wien bleibt Wien (Schrammel-Salabert). Waltz, Wienerkinder (Josef Strauss). Gramophone Records: (a) Duet from "The Count of Luxembourg" (Lehar), (b) Duet from "The Merry Widow" (Lehar), (c) Waltz, The Blue Danube (Johann Strauss). Hungarian Comedy Overture (Kéler-Béla). Waltz, Tales from the Vienna Woods (Johann Strauss). Gramophone Records: (a) Song from "The Count of Luxembourg" (Lehar), (b) You are my Heart's Delight from "The Land of Smiles" (Lehar), (c) Selection from "The Czarevitch" (Lehar), (d) Two Choral Selections (Bakule). Overture, "Morning, Noon and Night" (Suppé-Salabert). Selection from "Gipsy Love" (Lehar-Mouton). Gramophone Records: (a) Air from "The Chocolate Soldier" (Oscar Strauss), (b) Song (Heymann), (c) Two Choral Selections (Bakule). Hungarian Rhapsody (Liszt-Weninger).

8.30—Viennese Concert by the Symphony Orchestra, conducted by A. Guitrau. Wien bleibt Wien (Schrammel-Salabert). Waltz, Wienerkinder (Josef Strauss). Gramophone Records: (a) Duet from "The Count of Luxembourg" (Lehar), (b) You are my Heart's Delight from "The Land of Smiles" (Lehar), (c) Selection from "The Czarevitch" (Lehar), (d) Two Choral Selections (Bakule). Overture, "Morning, Noon and Night" (Suppé-Salabert). Selection from "Gipsy Love" (Lehar-Mouton). Gramophone Records: (a) Air from "The Chocolate Soldier" (Oscar Strauss), (b) Song (Heymann), (c) Two Choral Selections (Bakule). Hungarian Rhapsody (Liszt-Weninger).

### BRATISLAVA

(Czechoslovakia)

1,076 kc/s (279 m.); 14 kW.  
Transmits at intervals from 11.0 a.m. 7.0 p.m.—Concert of Popular Music. 7.30—A Play (Frank Wollmann). 8.0—Concert of Popular Music. 9.0—See Prague. 10.15—Programme Announcements.

**WEDNESDAY**  
continued

**BRESLAU (Germany)**  
923 kc/s (325 m.); 1.5 kW. Relayed by *Gleitwitz*, 1,184 kc/s (253 m.).  
Transmits at intervals from 6.0 a.m. 5.45 p.m.—Song Recital by Ruth Bail (Soprano). An Anselmus Grab (Schubert). Suleikas zweiter Gesang (Schubert). Im Frühling (Schubert). Seligkeit (Schubert). Geheimnis (Brahms). These (Brahms). Madchenlied (Brahms). Salamander (Brahms). Der Geiger (Brahms).  
6.10—Dialogue: Red Cross Day.  
6.30—Talk: The Importance of Wood in Chemical Industries. 7.0—Talk relayed from *Berlin (Königs Wusterhausen)*, 7.25 (from *Gleitwitz*)—Weather for Farmers.  
7.30—Orchestral Concert of Light Music conducted by Emil Cielnik. Oriental Fantasia (Lange). Waltz, Lustiges Wien (Meisel). Indian Serenade (Moret). Fantasia on "The Serenade" (Herbert). Fox-trot, Natascha (Margulies-Holms). Potpourri, Fünf-Uhr-See bei Robert Stolz (Dostal). Onestep, The Student passes by (Ibanez). March, Silesia (Poralla). 8.25—Weather Forecast.  
8.30—"Ingeborg"—Comedy (Goetz). 10.0—Time Signal, Weather Forecast, News Bulletin, Sports Notes and Programme Announcements.  
10.30—Concert of Light Music by the Station Orchestra, conducted by Franz Marszalek. Soloist: Hellmut Hallendorf. 12 midnight (approx.)—Close Down.  
**BRNO (Czechoslovakia)**  
878 kc/s (342 m.); 35 kW.  
Transmits at intervals from 11.0 a.m. 7.0 p.m.—Talk: Modern Houses. 7.30—"From Head to Foot"—Radio Sketch (R. Boubela). 8.0—See *Bratislava*. 9.0—See *Prague*. 10.15—News Bulletin.  
**BRUSSELS (Belgium) (No. 1)**  
I.N.R. 590 kc/s (500 m.); 15 kW. 12 noon—Concert by the Max Alexys Orchestra. 12.30 p.m.—Weather Report. 12.40—Concert (continued). 5.0—Concert conducted by Jean Kumps. March from "Aida" (Verdi). Selection from "Manon Lescaut" (Puccini). Dance of the Hours from "La Gioconda" (Ponchielli). Plaisir d'amour

(Martini). Madrigal (Simonetti). Waltz, Prima Ballerina (Gabritti). 5.45—Programme for Children arranged by the Belgian Catholic Radio Society. 6.20—Literary Review.  
6.30—Gramophone Concert. Selection from "Pelléas et Mélisande" (Fauré). Songs of Auvergne (arranged Canteloube): (a) Shepherds' Songs, (b) Three Bourrées. Three Preludes (Lazare-Lévy). Symphonic Poem, Pini di Roma (Respighi). 7.15—Report of the Belgian Catholic Radio Society.  
7.30—Medical Talk.  
8.0—Orchestral Concert conducted by Jean Kumps. Soloist: M. Rubeau (Songs). Torch March No. 1 (Meyerbeer). Selection from "La Traviata" (Verdi). Songs. The Butterfly Chase (Kéler-Béla). Waltz, La Paimpolaise (Botrel). 8.45—Talk: The Electrification of Railways. 9.0—Concert (continued). In Italy (Charpentier). Songs. Selection from "The Geisha" (Jones). Arietta (Sudessy). Festival in Cordova (Turina). Song from "The Merry Widow" (Lehár). Suite funambulesque (Messager). 10.0—Le Journal Parlé.  
10.10—Gramophone Concert. Wedding March (Södermann). Aria from "Rigoletto" (Verdi). Serenata (Tarenghio). Gavotte (Gluck-Planté). Selection from "Manon Lescaut" (Auber). Concert Waltz, Le Coqueluche des Femmes (Boulangier). Minuet (Bocherini-Planté). La Lettre de Manon (Gillet). Selection from "Panurge" (Massenet). Waltz, Saffa (Stöcker). Selection from "Galathée" (Massé). Marche héroïque (Saint-Saëns). 11.0 (approx.)—Close Down.  
**BRUSSELS (Belgium) (No. 2)**  
N.I.R. 887 kc/s (338.2 m.); 15kW. Programme in Flemish.  
12 noon—Concert by Max Alexys and his Orchestra. In the interval at 12.30 p.m.—Weather Report. 5.0—Concert relayed from the Hotel Atlanta. 6.15—Talk by J. Cornelissen.  
6.30—Belgian Sonatas—No. 28 of the Series by Henry Wagemans (Violin) and Charles Scharrés (Piano-forte). Sonata for Violin and Piano-forte (Meulemans).

7.0—Gramophone Records. Ballet Music (Darcy). La Lettre de Manon (Gillet). The Clock and the Dresden Figures (Kettelbey).  
7.15—Talk: French Peasants. 7.30—Review of International Affairs.  
8.0—Extracts from "The Taming of the Shrew"—Comedy (Shakespeare). 8.30—Light Music on Gramophone Records.  
9.0—Concert by the Alpaerts Trio. MM. Weyler (Violin), A. Fell (Cello) and Jef Alpaerts (Piano-forte). Scherzo and Andante (Alpaerts). Trio (Delcroix).  
9.45—Light Music on Gramophone Records. 10.0—Le Journal Parlé.  
10.10—Gramophone Records. Strauss Waltz Potpourri (Henry Weber). Song of the Corn (Mylius-Kruger). Selections: (Granichstaedten). Scènes alsaciennes (Massenet). 11.0 (approx.)—Close Down.  
**BUCHAREST (Romania)**  
Radio-Bucarest. 761 kc/s (394 m.); 12 kW.  
Transmits at intervals from 11.0 a.m. 4.0 p.m.—Concert by the Station Orchestra. 5.0—News Bulletin and Time Signal. 5.10—Concert (contd.). 6.0—Talk on Social Problems and Foreign Politics. 6.40—Light Music on Gramophone Records.  
7.0—Piano-forte Recital by Mme. Sgardelly. Sonatine (Ravel). Two Waltzes (Ravel). Triana (Albeniz). Asturia (Albeniz).  
7.30—Cornet Recital by M. Nistor. 7.55—Sketch.  
8.15—Violin Recital by M. Nestoresco. Prelude from the Sixth Violin Sonata (Bach). Romance (Rubinstein-Wieniawsky). Hungarian Dance No. 5 (Brahms-Jochim). Andante from the Spanish Symphony (Lalo). Scherzo Tarantella (Wieniawsky). 8.45—News Bulletin.  
**BUDAPEST (Hungary)**  
545 kc/s (550 m.); 18.5 kW.  
Transmits at intervals from 9.15 a.m. Programme also relayed on 210 metres from 6.0 p.m. till Close Down. 6.0 p.m.—Orchestral Concert conducted by Wilhelm Komor. Overture (Spontini). Selection from "Turandot" (Puccini). Valse

triste (Sibelius). The Flight of the Bumble-bee (Rimsky-Korsakov). Suite from "Najla" (Delibes). Emperor Waltz (Johann Strauss).  
7.15—Italian Lesson. 7.45—The Microphone visits Kecskemet.  
8.20—Concert by the Orchestra of the Royal Hungarian Opera House, conducted by Ernst Dohnanyi. Soloist: Sigmund Pilinszky (Songs). Selection from "Hungary" (Puccini) from (a) "Madame Butterfly" (b) "The Girl of the Golden West." Selection from the Third Act and Legend of the Graal from "Lohengrin" (Wagner). Symphonic Poem, Mazepa (Liszt).  
10.0—Weather Report. 10.5—Concert by the Sándor Farkas Cigány Band from the Parliament Restaurant.  
**COPENHAGEN (Denmark)**  
1,067 kc/s (281 m.); 0.75 kW. Relayed by *Kalundborg*, 260 kc/s (1,153 m.).  
Transmits at intervals from 7.30 a.m. 12 noon—Town Hall Chimes. 12.2—2.0—Concert from the Wivex Restaurant.  
3.0—Orchestral Concert, conducted by Launy Gröndahl. Overture, "Frau Luna" (Lincke). Shepherds Hey (Percy Grainger). Suite fantastique (Gabriel-Marie). Berceuse russe (Gröndahl). March, "The Handicap (Rosey). Talk for Women: Care of Mothers. Prelude to "Lohengrin" (Wagner). Waltz (Fall). Danish Folk Melody, Gangerpilten (Herman Sandby). Pan Americana (Herbert). Selection for Strings: Skumringsstemning (Hakon Børreson). March, I Teten (Frörup).  
5.0—Gramophone Concert. Aria from "Orpheus and Eurydice" (Gluck). Aria from "André Chénier" (Giordano). Selection (Wilson). Heidenröslein (Schubert). Aria from "Die Dubarry" (Millöcker). April, April (Sylvain). He played his Ukulele as the ship went down (Le Clerq).  
5.40—Exchange and Fish Market Prices. 5.50—Reading of Modern Icelandic Lyrics. 6.20—French Lesson. 6.50—Weather and News. 7.15—Time Signal. 7.30—Talk by Ib Kolbjörn. 8.0—Town Hall Chimes.

8.2—Concert by the Radio String Orchestra, conducted by Emil Reesen. Concerto grosso in F for two Solo Violins, Cello, Strings and Cembalo (Corelli). Chaconne from "Roland" (Lully). Symphony for Strings and Cembalo (Matthias Georg Mann). 8.30—Talk: The way to Cheap, Practical and Effective Architecture? 9.0—2.0 p.m. (Thursday)—A Radio Ball for Young People. 9.0—Dance Music by Louis Preils Dance Orchestra. 10.0—News Bulletin. 11.15—Dance Music by the Valencia Orchestra. 12 midnight—Town Hall Chimes. 12.2 a.m. (Thursday)—Dance Music from the Ritz Restaurant. 1.0—Dance Music from the Nimb Restaurant. 2.0 a.m. (approx.)—Close Down.  
**DUBLIN (Ireland)**  
(2RN). 725 kc/s (413 m.); 1.2 kW. Relayed by *Cork*, 1,337 kc/s (224.4 m.).  
1.30—2.0 p.m.—Time Signal, Weather Report, Stock Report and Light Music on Gramophone Records. 6.0—Gramophone Records of Popular Music. 6.15—Children's Programme. 7.0—Gramophone Records of Variety Music. 7.20—News Bulletin. 7.30—Time Signal. 7.31—Gaedhilg. 7.45—German Lesson. 8.0—Military Band Concert, conducted by Colonel Fritz Brase. 9.0—Violin and Song Recital. 9.30—Concert by the Station Sextet. 10.0—Baritone Recital of Mozart and Mendelssohn Songs. 10.15—The Station Sextet (continued). 10.30—Time Signal, News, Weather Report and Close Down.  
**FÉCAMP (France)**  
Radio Normandie. 1,345 kc/s (223 m.); 10 kW.  
12 noon—Variety Music on Gramophone Records. 12.30 p.m.—News Bulletin. 12.45—Concert of Light Music. 7.30—Radio Gazette for Normandy. 8.0—Local News. 8.10—Wireless Notes. 8.20—News Bulletin. 8.30—Café Concert. 11.0—Dance Music Programme. 1.0 a.m. (Thursday)—Close Down.  
**FLORENCE (Italy)**  
Ente Italiano Audizioni Radiofoniche. 599 kc/s (500.8 m.); 20 kW.  
See *Turin*.

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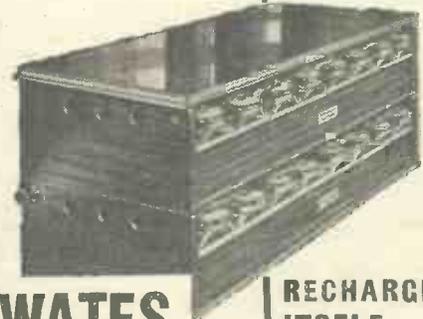
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WEDNESDAY continued

FRANKFURT-am-MAIN

(Germany) 770 kc/s (390 m.); 1.5 kW. Relayed by Cassel, 1,220 kc/s (246 m.). Transmits at intervals from 6.0 a.m. 6.15 p.m.—Economic Notes. 6.25—Talk for Workers. 6.50—See Stuttgart. 7.15—Time, Programme Announcements and Weather. 7.20—News from all over the World. 7.30—Talk: The Conserving of Dialects: Frankish. 8.0—Symphony Concert by the Station Orchestra conducted by Hans Rosbaud. Soloist: Hermann Zilcher (Pianoforte). Pianoforte Concerto in B Minor, Op. 20 (Zilcher). Symphonic Fantasia, Op. 12 (Knorr). 9.0—See Stuttgart. 10.20—Time Signal, Weather Report, News Bulletin and Sports Notes. 10.40 (approx.)—Close Down.

HAMBURG (Germany)

Norag (ha, in Morse). 806 kc/s (372 m.); 1.5 kW. Relayed by Bremen, 1,112 kc/s (270 m.); Flensburg, 1,373 kc/s (218 m.); Hannover, 530 kc/s (566 m.); and Kiel, 1,292 kc/s (232.2 m.). Transmits at intervals from 5.45 a.m. 4.30 p.m. (from Hannover)—concert from Bad Pyrmont. The Dresden Philharmonic Orchestra, conducted by Walter Stever. Overture, "Prometheus" (Beethoven). Invitation to the Dance (Weber). Two Elegiac Melodies (Grieg): (a) Herzwunden, (b) Letzter Frühling, Selection from "La Bohème" (Puccini). Aquarellen-Walzer (Josef Strauss). Selections from "Die Fledermaus" (Johann Strauss). 5.30 (from Kiel)—Talk: Animals in North German Folklore. 5.55 (from Bremen)—Robert Schumann Concert, for the Anniversary of his Birth. Fritz Schweinsberg (Vocalist) and the Norag Trio (Violin, Cello and Pianoforte). From the Song Cycle "Dichterbild" op. 38 (a) Im wunderschönen Monat Mai, (b) Aus meinen Tränen spriehet, (c) Wenn ich in deine Augen seh', (d) Im Rhein, im heiligen Strome. First Movement from the Trio, op. 63. Songs: (a) Ich grölle nicht, und wenn das Herz, (b) Hör ich das Liedchen klingen, (c) Ein Jüngling liebt ein Mädchen. Fourth Movement from the Trio, Op. 63. From the Song Cycle "Dichterbild," Op. 48: (a) Am leuchtenden Sommermorgen, (b) Ich hab' im Trauin geweinert, (c) Aus alten Märchen winkt es, (d) Die alten, bösen Lieder. 6.30—Talk: The Beauties of Styria. 6.55—Exchange and Market Prices. 7.0—Topical Talk. 7.15—Weather Forecast. 7.20—Orchestral Concert, conducted by Gerhard Maasz. Military March (Blech). Puppenspiel-Ouverture (Weinberger). Polonaise (Dvorak). Minuet (Marx). Dance, Pilky (Janacek). Dance Suite from "The Bartered Bride" (Smetana). 8.0—"The Other One"—a Drama in Three Acts and an Epilogue (Miguel de Unamuno) (German by Otto Buck). 9.0—See Stuttgart. 10.0—News Bulletin. 10.20—Dance Music from the "Haus Sieglar."

HEILSBURG (Germany)

1,085 kc/s (276.5 m.); 60 kW. Relayed by Danzig, 662 kc/s (452.2 m.). Transmits at intervals from 6.0 a.m. (Weather, Gymnastics and Gramophone Concert). 1.55—2.30 p.m.—Concert of Light Music. 3.15—Talk for the Housewife. 3.25—Talk for Parents. 3.50—Programme for Young People: "The Milk Boy"—Radio Play (Lola Landau). 4.30—Concert by the Orag Orchestra conducted by Eugen Wilcken. Kinderlieder - Marsch (Ziehler). Overture, "Prinz Karneval" (Blasius). Potpourri of New Children's Songs—Frühling, Sommer, Herbst und Winter (Rohlee). The Tin Soldiers (Kockert). Puppenspiel (Lederer). Potpourri of Folk Songs and Waltzes (Egg). Funkhainzelmanns Geburtstag (Schmidt-Hagen). Parade of the Tin Soldiers (Jessel). Max and Moritz (Zimmer). Plaudereien aus der Kinderstube (Mannfeld). Xylophone Solo: The Wedding of the Painted Doll (Brown). Indian War Dance (Lumbye). Suite for Xylophone, Im Spielwärdchen (Jessel). 5.55—A Radio Report: Practical Life Saving Methods with a Boat. 6.15—Agricultural Prices. 6.30—Talk on Health. 6.55—Reading of Old Prussian Tales (Christian Kröll-

mann). Talk: After the Great and European Politics. 7.55—Weather Forecast. 8.0—See Vienna. 9.15—"01-01"—Opera (Tcherepnin). 10.0 (approx.)—Weather, News and Sports Notes, followed by Dance Music from Berlin (Witzleben). 12.30 a.m. (Thursday)—Close Down.

HILVERSUM (Holland)

1,013 kc/s (296.1 m.); 20 kW. (7 kW. up till 4.40 p.m.). 6.25—9.40 a.m.—Programme of the Workers' Radio Society (V.A.R.A.). 6.25—6.40 and 7.10—7.25 a.m.—Physical Culture. 7.40—Gramophone Records of Popular Music. 8.40—Quintet Concert. 9.40—Religious Programme of the Liberal Protestant Radio Society (V.P.R.O.). 9.55 (till Close Down)—V.A.R.A. Programme. 9.55—Variety Programme and Gramophone Records of Popular Music. 11.40—Septet Concert. Tyrolian March (Dreyer). Kaiser-walzer (Strauss). Foxtrot, Arm in Arm (Elwijn). Gramophone Records of Variety Music. Entry of the Guests into the Wartburg from "Tannhäuser" (Wagner). Tango, Ich habe so ein Gefühl als ab (Meisel). Overture, "The Marriage of Figaro" (Mozart). Potpourri Um das blaue Band (Krome). Frühlingserwachen (E. Bach). Gramophone Records of Variety Music. Silver Bell (Moret). Indian Suite (Lüling). Gramophone Records of Variety Music. Pianoforte Solo: Crickets (Myers). Saxophone Solo: Pep it up (Sid Phillips). Tango (Hajos). I. Casino da steht ein Pianino (Stolz). 1.25—1.55 p.m.—Interval. 1.55—Talk on Cooking. 2.40—Programme for Children. 5.10—Septet Concert. Pasodoble, Flame of Desire (Dazar). Waltz, Tales from the Vienn Woods (Joh. Strauss). I would that my Love (Mendelssohn) Wiegeli (Schubert). Selection from "The Merry Widow" (Lehar). Der Walzer wird nicht unmodern (Ascher). Du wärst für mich (Gilbert). Selections (Denza): (a) Si tu m'aimais, (b) Si vous l'aviez compris. Potpourri, Dividenden (Morena).

6.10—Literary Talk arranged by the People's Radio University (R.V.U.). 6.40—Talk: Imperialism and the League of Nations. 7.0—Gramophone Records of Light Music. 7.10—"The King of Chicago"—Radio Play (Gerhard Schäke). 8.10—Orchestral Concert. Overture, "The Nuremberg Doll" (Adam). Shadow Dance from "Dinorah" (Meyerbeer). Mondnacht am Rheinsberger See (v. Blon). Selection (Fetras). Strauss Potpourri (arr. L. Schlögel).

8.55—Topical Dialogue: The Adventures of Messrs. Wakker and Tropenduit. 9.10—Concert (continued). March, Wien bleibt Wien (Schrammel). Im Prater blühn wieder die Bäume (Stolz). Waltz, Die Schönbrunner (Lanner). Wien, du Stadt meiner Träume (Sieczynsky). Mazurka Frauenherz (Josef Strauss). Gallop (Strauss). Waltz, Wien wird erst schön bei Nacht (Stolz). Waltz, Wine, Woman and Song (Johann Strauss).

9.40—News and Gramophone Records of Variety Music. 10.0—Concert (continued). Das ist der Sonntag (Heymann). Reich mir zum Abschied (Abraham). Tango, Mach dir nichts daraus (Benatzky). Die lustigen Gespenster (May). Wenn der Frühling kommt in's Land (Jurmanna). Ja so ein Liebespaar (Gilbert). Es ist so (Kálmán). Foxtrot, Me (I. Berlin). Es ist doch nicht das letzte Mal (Benatzky).

10.40—Organ Recital by Joh. Jong. Syncopation (Bata-de Rose). Overture, "Si j'étais Roi" (Adam). Waltz, the Skaters (Waldteufel). Selection from "Congress Dances" (Heymann). 11.10—Gramophone Records of Variety Music. 11.40 (approx.)—Close Down.

HUIZEN (Holland)

160 kc/s (1,875 m.); 8.5 kW. Programme of the Christian Radio Society (N.C.R.V.). 7.40 a.m.—Bible Reading. 7.55—Gramophone Records of Light Music. 9.10—9.40—Interval. 9.40—Choral Concert. 10.10—Programme for Invalids. 10.40—Soprano, Contralto and Harmonium Recital. 11.40—Police Notes. 11.55—Concert. H. Hermann (Violin), P. v. d. Hurk (Flute) and J. Monissen (Pianoforte). Paraphrase on "Harre meine Seele" (Ruh). Choral (Ph. E. Bach). Concerto No. 1 in G (Frederick the Great). Was Gott tut, das ist wohlgetan

(Pachelbel). Sonata (Beethoven). Potpourri of Religious Songs. Potpourri of Dutch Melodies. 1.40 p.m.—Interval. 2.10—Religious Reading. 2.40—Mezzo-Soprano Song Recital. 3.10—Violin Recital. Sonata in F, Op. 24, No. 5 for Violin and Pianoforte (Beethoven). 3.40—Song Recital (continued). 4.10—Violin Recital (continued). Romance in F (Beethoven). Valse Caprice (Wieniawski). Romanza andaluz (de Sarasate). Spanish Dance (Granados-Kreisler). Tambourin chinois (Kreisler). 4.40—Programme for Children. 5.40—Talk for Peasants. 6.40—Talk. 7.10—Police Notes. 7.25—Religious Information. 7.40—Band Concert. March, On the Quarter Deck (Alford). Overture, "Mignon" (Thomas). Peer Gynt Suite (Grieg-Barnier). Sehnsucht nach der Heimat (Hartman). Très jolie (Waldteufel). Slavonic Rhapsody, Op. 114 (Friedemann). 8.40—Talk. 9.10—Choral Selections. 9.45—News Bulletin. 9.55—Concert (continued). March, San Lorenzo (Silva). Festival Overture (Leutner). Valse interrompue (Montagne). Interlude dramatique (Popy). Minuet (Boccherini-Bajus). Ballet Suite (Popy). March, Fanfare-Klänge (Fucik). 10.40—Gramophone Records of Popular Music. 11.10 (approx.)—Close Down.

KALUNDBORG (Denmark)

Kalundborg Radio. 260 kc/s (1,153 m.); 7.5 kW. See Copenhagen.

LANGENBERG (Germany)

Westdeutscher Rundfunk. 635 kc/s (473 m.); 60 kW. Transmits at intervals from 6.45 a.m. (Exercises, Weather, Time and Concert Relay). 12 noon—Concert from Munich. 12.50—Weather Report, Announcements and Time Signal. 1.0 p.m.—Orchestral Concert, conducted by Wolf. March, Treue um Treue (Teike). Waltz, Charme de Sirènes (Waldteufel). Overture, "The Force of Destiny" (Verdi). Suite campestre (Amadei). Selection from "Scènes pittoresques" (Massenet). Hungarian Rhapsody No. 1 (Liszt). Intermezzo (Gal). Hungarian Romance (Szirmai). Czardas, Villnay (Lindsay-Theimer). 2.30—Sponsored Gramophone Concert. 3.30—Economic Notes and Time Signal. 3.50—Programme for Children. 4.15—Reading. 4.35—Talk: The Latest Discoveries in the Study of Heredity. 5.0—Orchestral Concert, conducted by Wolf. 6.15—The World on Gramophone Records: Through Marseilles. 6.40—Reading of Poems. 7.0—Weather Report, Time Signal, Economic Report and Sports Notes. 7.15—Talk on Health. 7.30—Talk on Social Insurance. 7.55—News Bulletin. 8.0—Gramophone Concert of 1932 Operatic Music, with Commentary by Paul Gehly. 8.45—"Justifiable Murder"—a Play about Old China (Ehrenstein) with Music by Kneip. 10.15—News Bulletin and Sports Notes. 10.35—Dance Music from Berlin (Witzleben). 12 midnight (approx.)—Close Down.

LEIPZIG (Germany)

1,157 kc/s (259 m.); 2 kW. Relayed by Dresden, 941 kc/s (319 m.). Transmits at intervals from 6.0 a.m. 6.10 p.m.—Educational Talk: Education at Home or at Boarding School? 6.35—Italian Lesson. 6.55—Talk (to be announced). 7.5—"Mahomet"—Talk and Literary Sequence for the Thirtieth Centenary of his Death (Dr. Sophie Cassel). 7.35—Talk: Concentration in Retail Trade. 8.0—Concert by the Dresden Soloist Ensemble. Overture, "Die schöne Müllerin" (Gustave Michiels). Norwegian Rival Procession (Grieg). Ballet Music from "Der Fremde" (Hugo Kaun). Caprice Viennois (Kreisler). Selections from "Das süsse Mädel" (Reinhardt). Pizzicato Serenade, Pierrette (Fritz Bracc). Waltz from "Der Opernball" (Heuberger). 10.5—News Bulletin. 10.15 (approx.)—Concert by the Leipzig Symphony Orchestra conducted by Hilmar Weber. Overture, "The Corsair" (Berlioz). Fröhliche Suite, for Small Orchestra (Friedl. Losse). Javanese Rhapsody, Op. 7 (Dirk Schäfer). Minuet in D (Fiat (Wagner). Selection from "I Pagliacci" (Leoncavallo). Poi-

pourri, Ein Souper bei Suppé (Morena). Du und Du—Waltz from "Die Fledermaus" (Johann Strauss). 12 midnight (approx.)—Close Down.

LJUBLJANA (Yugoslavia)

522 kc/s (574.7 m.); 2.5 kW. Transmits at intervals from 12.15 p.m. 6.0 p.m.—Quintet Concert. 7.0—Russian Lesson. 7.30—Literary Talk. 8.0—Talk on Music. 8.30—Balalaika Concert, relayed from the Sample Fair. 9.30—Quintet Concert. 10.0—Time, News and Light Music.

ŁWÓW (Poland)

788 kc/s (381 m.); 16 kW. Transmits at intervals from 11.58 a.m. 6.20 p.m.—See Warsaw. 7.15—Miscellaneous Items and Light Music on Gramophone Records. 7.35—See Warsaw. 7.45—Literary Talk by Ida Wieniewska. 8.0—See Warsaw. 10.25—Talk in German: Chopin and Popular Polish Music. 10.40—See Warsaw. 11.30 (approx.)—Close Down.

LYONS (France)

La Doua (PTT). 644 kc/s (465.8 m.); 1.5 kW. Transmits at intervals from 8.0 a.m. 7.0 p.m.—Popular Music on Gramophone Records. 7.30—Radio Gazette for Lyons and the South-east. 7.45—Talk on the Occasion of the Children's Week: Vaccination against Diphtheria. 7.52—Astronomic Notes. 8.0—Dental View. 8.10—Commercial Review. 8.20—Literary Review. 8.30—"Rigoletto"—Opera (Verdi), relayed from Paris (Ecole Supérieure), 671 kc/s (447.1 m.).

MADRID (Spain)

Union Radio. (EAJ7). 707 kc/s (424.3 m.); 2 kW. Transmits at intervals from 9.0 a.m. 8.0 p.m.—Chimes, Exchange Quotations, Market Prices and Request Gramophone Concert. 9.15—News Bulletin. 9.30—10.30—Interval. 10.30—Chimes, Time Signal and Political Review. 10.45—"Le Roi s'Amuse"—Play (Victor Hugo), arranged for the Microphone by Isaac Pacheco. 12.45 a.m. (Thursday)—News Bulletin. 1.0—Chimes and Close Down.

MILAN (Italy)

Ente Italiano Audizioni Radiofoniche. 905 kc/s (331.5 m.); 7 kW. See Turin.

MORAVSKÁ-OSTRAVA (Czechoslovakia)

1,137 kc/s (263.8 m.); 11 kW. Transmits at intervals from 11 a.m. 7.5 p.m.—Talk: Education. 7.25—"Wedding"—Radio Drama (Emil Vrba). 8.30—Concert of Popular Music. 9.0—See Prague. 10.15—Programme Announcements and Theatre Guide.

MOSCOW (Russia)

Trades Union. 230.1 kc/s (1,304 m.); 100 kW. Transmits at intervals from 5.0 a.m. 6.30—Proletariat Radio Journal. 7.15—Programme for Young Communists. 8.0—Talk in Czech and Swedish: The Armed Rising in Kronstadt, 1905, followed by Review of the Week's Events and Answers to Correspondents in French. 9.55—Time. 10.0—Weather Forecast.

MUNICH (Germany)

563 kc/s (533 m.); 1.5 kW. Relayed by Augsburg and Kaiserslautern, 536 kc/s (560 m.) and Nürnberg, 1,256 kc/s (239 m.). Transmits at intervals from 6.45 a.m. 5.0 p.m.—Orchestral Concert, conducted by Erich Kloss. Overture, "Jean de Paris" (Boieldieu). Scherzo No. 1 and Minuet from Opus 78 (Schubert). Selection from "Euryanthe" (Weber). Besuch bei Millöcker (Morena). Idyll am Bach (Königsberger). Xantippchen (Königsberger). Waltz Lustiges Wien (Meisl). Intermezzo, Schmetterling (Schlenk). 6.15—Time Signal, Weather Report and Agricultural News. 6.25—Italian Lesson. 6.45—Talk: Yachting on Bavarian Lakes. 7.5—Programme for Women. 7.25—Recital of Schubert's Settings to Ballads by Schiller, by Anton Maria Topitz (Tenor). Der Pilgrim. Ritter Toggenburg. Der Alpenjäger. Die Bürgschaft. 8.0—Concert of Wind Instrument Music, conducted by Georg Lange. Treuschwur (Kistler). Overture, "Euryanthe" (Weber). Selection from "Die Walküre" (Wagner-Seidel). Waltz, Weana G'müat (Schrammel). Intermezzo, Fest der Zwerg (Noack). Selection from "The Maid of the Black Forest" (Jessel). March, Tritt gefasst (Windsch). 8.0—See Stuttgart. 10.20—Time Signal, Weather Report, News Bulletin and Sports Notes. 10.45—Orchestra. Concert conducted by Erich Kloss. 12 midnight (approx.)—Close Down.

OSLO (Norway) Kringkastingsselskapet. 277 kc/s (1,083 m.); 60 kW. Relayed by Fredrikstad, 816 kc/s (367.6 m.); Hamar, 536 kc/s (560 m.); Notodden, 671 kc/s (447.1 m.); Porsgrunn, 662 kc/s (453.2 m.) and Rjukan 671 kc/s (447.1 m.). Transmits at intervals from 11.5 a.m. 5.30 p.m.—Popular Music on Gramophone Records. 6.0—French Lesson. 6.30—Talk for Girls. 7.0—Announcements, Weather and News Bulletin. 7.30—Talk: Electricity in the Home. 8.0—Time Signal. 8.1—Concert by the Station Orchestra conducted by Hugo Kramm. Overture, "Zampa" (Hérold). Selection from "Aida" (Verdi). A la Gavotte (Schütt). Meditation (Bach-Gounod). Two Hungarian Dances (Brahms). Potpourri of the Music of Johann Strauss (Weber). Tango (Niemann). Siamesische Wachtparade (Lincke). 9.30—Reading. 9.45—Agricultural Notes, Weather Report, and News Bulletin. 10.0—Topical Talk. 10.15—Oivind Lunde in a Recital of Popular Songs. 10.45 (approx.)—Close Down.

PALERMO (Italy)

Ente Italiano Audizioni Radiofoniche. 554 kc/s (542 m.); 3 kW. Transmits at intervals from 12.45 p.m. 5.30 p.m.—Dance Music. 6.30—8.0—Interval. 8.0—Announcements, Giornale dell'Ente, Agricultural Report and Giornale Radio. 8.20—Variety Music on Gramophone Records. In the interval at 8.30—Time and Announcements. 8.45—Concert conducted by F. Miliello. Overture (Paër). Fantasia on Popular Romanian Songs (Dimi-triescu). Selection (Nordon). Czardas, Katinka (Michiels). Talk Italian Songs. Selection (Malbert). Arab March (Ganne). Overture, "Si j'étais roi" (Adam). 10.55—News Bulletin.

PARIS (France)

Eiffel Tower (FLE). 207.5 kc/s (1,445.7 m.); 13 kW. Time Signals (on 2,650 m.) at 10.26 a.m. and 11.26 p.m. (preliminary and 6-dot signals). 6.45 p.m.—Music Review. 7.0—Le Journal Parlé. 7.45—Programme for Young People. 8.20—Weather Forecast. 8.30—Schumann Concert for the 122nd Anniversary of his Birth. Soloists: M. Manouvrier (Flute), M. Marchesini (Cello), Mme. Georgette Diehl (Vocalist), M. Flament (Pianoforte) and M. Cantrelle (Violin). Trio for Clarinet, Viola and Pianoforte. Flute Solo: Abandoned (arranged by Saint-Saëns). First Part of the Concerto for Cello. 9.10—News Bulletin. 9.20—Concert (continued). Nine Songs. Sonata in A Minor for Violin and Pianoforte. Overture, "Geno-veva." 10.0 (approx.)—Close Down.

PARIS (France)

Poste Parisien. 914 kc/s (328.2 m.); 60.2 kW. Transmits at intervals from 12.0 noon. 7.0 p.m.—Light Music on Gramophone Records, News and Announcements. 7.30—Concert of Popular Music on Gramophone Records. 8.15—Talk (to be announced). 8.30—Gramophone Records, Talk and News. 8.45—Sponsored Concert. 9.45—Dance Music. 10.45—News Bulletin. 10.50 (approx.)—Close Down.

PARIS (France)

Radio-Paris (CFR). 174 kc/s (1,725 m.); 75 kW. 6.45 a.m.—Physical Culture. 7.30—Weather and Physical Culture (continued). 7.45—Gramophone Records. Selection from "Tosca" (Puccini). Selection from "Rigoletto" (Verdi-Tavan). 8.0—News, Weather and Press Review. 12 noon—Talk: New Methods in Education. 12.30 p.m.—Schumann Gramophone Concert for the 122nd Anniversary of his Birth. Carnival. In der Ferne. Die Lotosblume. Der Nussbaum. Abendlied. Träumerei. The Two Grenadiers. Song. Concerto in A Minor for Pianoforte and Orchestra. Dichterbild. First Movement from Symphony No. 4. In the intervals at 1.0—Exchange, News and Weather and at 1.30 and 2.0—Exchange. 3.45—Exchange and Market Prices. 6.30—Market Prices, Weather, Agricultural Report, Talk and Racing Results. 7.0—Talk on German

**WEDNESDAY**  
continued

Literature: The Novels of Thomas Mann, Heinrich Mann and Wasserman. 7.30—Medical Talk. 7.45—Commercial Prices and News. 8.0—Literary Readings by Denis d'Ines: Willon and Charles d'Orleans. 8.30—News and Weather. 8.40—Fashion Review by Mlle. José. 8.45—Concert in Honour of Maurice Bouchor. Songs by Germaine Martinelli, Jeanne Manceau, Henriette Lebard, Juliane Meyrande and MM. Herent and Tubiana. Reading of Poems by Lucie Brille. MM. Dorival and Bacqué and Georges Colin, with Léon Kartun (Pianoforte) and Gabriel Vuillaume (Violin). In the interval, Press Review and News.

**PITTSBURGH (U.S.A.)**

Westinghouse Electric. (KDKA). 980 kc/s (306 m.); 25 kW. Relayed by W8XK on 48.86 m., and 25.25 m. (See Short Wave List). Transmits at intervals from 12.30 p.m. 9.0 p.m.—Teaberry Baseball Scores. 9.5—Business News. 9.15—Programme to be announced. 9.30—Pebecco Weather Report. 9.32—Market Reports. 9.45—Songs in French Style by Mlle. Diane Laval. 10.0—Teaberry Baseball Scores. 10.5—David Lawrence Dispatch. 10.10—KDKA Artist Bulletin. 10.12—Programme Announcements. 10.15—KDKA Kiddies' Klub. 10.30—The Singing Lady. 10.45—Little Orphan Annie. 11.0—Time Signal. 11.1—Temperature Report. 11.2—Who's News To-day. 11.7—Teaberry Sport Review. 11.12—Press News-Reeler. 11.15—Westinghouse Watchmen. 11.30—The Royal Vagabonds. 11.45—Literary Digest Topics, from New York. 11.50—Time Signal. 12 midnight—1.30 a.m. (Thursday)—New York Relay. 12 midnight—Amos 'n' Andy. 12.15—Esso Programme. Believe it or not, by Ripley. 12.30—The Stebbins Boys. 12.45—Billy Jones and Ernie Hare. 1.0—American Tax Payers' League. 1.15—Willis Overland Silver Streaks. 1.30—Jack Frost Melodies. 2.0—O'Henry Stories, from New York. 2.30—Canada Dry—George Olsen's Orchestra with Jack Benny, from New York. 3.0—Bob Nolan's San Felicians, from New York. 3.15—Ellsworth Giles' Home Singers. 3.30—Waves of Melody, from New York. 3.45—Around the Cracker Barrel. 4.0—Time Signal. 4.1—Teaberry Sport Review. 4.11—Temperature Report. 4.12—Weather Report. 4.15—Press Last Minute News. 4.20—Lew Conrad and his Orchestra. 4.50—Orchestral Concert from New York. 5.30—Time Signal and Good-night.

**PRAGUE (Czechoslovakia)**

614 kc/s (488.6 m.); 120 kW. Transmits at intervals from 6.15 a.m. (Alarm and Gramophone Records). 5.45 p.m.—Educational Talk. 5.55—Reading. 6.5—Agricultural Report. 6.15—Talk on Politics. 6.25—German Transmission: News, Talk on Educational Reform and Talk for Workers. 7.0—Recital by Franz Herl. Nocturne and Intermezzo (Cerny). Concerto (Stein). 7.20—Song Recital by Marie Mustahova. 6.45—Talk: Russian Culture Day. 8.0—See Bratislava. 9.0—Time and News. 9.15 (approx.)—Orchestral Concert conducted by Jeremias. Concerto grosso (Frankenburger). Pianoforte Concerto in A (Liszt). Overture (Vojacek). Symphonic Poem, My Youth (Foerster). 10.0—Time and News. 10.15—Miscellaneous Announcements.

**RADIO-SUISSE ROMANDE (SOTTENS) (Switzerland)**

743 kc/s (403 m.); 25 kW. Lausanne, 442 kc/s (680 m.); and Geneva, 395 kc/s (760 m.). 12.30 p.m.—Time Signal from Neuchâtel Observatory. 12.31—Weather Forecast and News Bulletin. 12.40—Orchestral Concert. 1.0—Exchange Quotations. 1.5—Orchestral Concert (contd.). 1.45—5.0—Interval. 5.0—Time Signal from Neuchâtel Observatory. 5.1—Concert by a String Orchestra, conducted by Robert Echenard. 6.0 (from Lausanne)—Programme for Children. 7.0—Weather Forecast. 7.1 (from Geneva)—Popular Music on Gramophone Records. 7.30 (from Lausanne)—Talk arranged by the "Suisse Romande" Egg Circle. 7.55—Announcements. 8.0—Concert of Popular Music by the Station Orchestra. 9.0 (from Lausanne)—Humorous Programme. 9.10 (from Lausanne)—"La Chance du Mari"—One Act Comedy (Flers and Caillavet) by the "Compagnons du Masque." 10.0—Weather

Forecast and News Bulletin. 10.10 (from Geneva)—Answers to Correspondents. 10.30 (approx.)—Close Down.

**RIGA (Latvia)**

572 kc/s (525 m.); 15 kW. Transmits at intervals from 6.0 a.m. 6.0 p.m.—English Lesson. 6.30—Agricultural Talk. 7.0—Weather Report. 7.5—Variety Concert. In the intervals at 8.0—News and at 9.0—Weather and News.

**ROME (Italy)**

Ente Italiano Audizioni Radiofoniche (IRO). 680 kc/s (441 m.); 50 kW. Relayed by Naples, 941 kc/s (319 m.) and 2RO, 11,810 kc/s (25.4 m.). 8.15—8.30 a.m.—Giornale Radio and Announcements. 12 (noon)—Gramophone Records of Variety Music. 12.35 p.m.—Weather Forecast. 12.45—2.0—Vocal and Instrumental Concert. Soloist: Antonio Sanderelli ('Cello). Russian Fantasia (Leopold). Narcissus (Nevin). 'Cello Solos: (a) Plaisanterie (Magrini), (b) Serenade (Herbert), (c) Mazurka (Neruda). Amor di gaucha (Carabella). Selection from "Lilac Time" (Schubert-Berté). Titiaca (Borsatti). In the intervals, Giornale Radio, Exchange, Time and Announcements. 5.0—Exchange, Report of the Royal Geographical Society, Children's Radio Review, Giornale Radio and Announcements. 5.30—Song Recital by Velia Capuano (Soprano). Selection from "Le astuzie femminili" (Cimarosa). At Granada (Alvarez). Aria from "Il Guarany" (Gomez). 5.45—Instrumental Concert. Soldatini di piuma (Bixio). Meditation (Ranzato). Una donna bruna (d'Anzi). Serenade and Dances from "Iris" (Mascagni). Romany Rose (de Costa). Smiling (Fejder). 6.15—Giornale dell'Enit. 6.25—Talk: The Poppy. 6.55—(Naples) Shipping and Sports Notes. 7.0—Agricultural Notes, Announcements, Giornale Radio and Press Review. 8.0—Time, Announcements and Gramophone Records of Variety Music. 8.15—Talk: Air, Earth and Water. 8.30—Sports Notes and Announcements.

8.45—"Il barbiere di Siviglia" (The Barber of Seville)—Opera in Three Acts (Paisiello). In the intervals: Talk on Literature and Art, and Reading. News after the Programme.

**SCHENECTADY (U.S.A.)**

General Electric Company (WGY). 790 kc/s (379.5 m.); 50 kW. Relayed by W2XAF and W2XAD. (See Short Wave List). Transmits at intervals from 11.45 a.m. 9.0 p.m.—The Pilgrims, from New York. 9.30—Bridge Lesson, from New York. 9.45—Studio Ensemble. 9.50—News Items. 10.0—Stock Reports and Police Notes. 10.15—Skippy, from New York. 10.30—Wayne King's Orchestra, from New York. 10.45—Chandu, the Magician. 11.0—When Day is Done. 11.25—Health Talk. 11.30—Weather Report. 11.31—Song and Story Man. 11.45—New Kenmore Orchestra. 11.55—Baseball Scores. 12 midnight (WGY only)—New York State Educational Series. 12 midnight (W2XAF only)—Stock Reports and News Items. 12.15 a.m. (Thursday)—New Kenmore Orchestra. 12.45—The Goldbergs. 1.0—Big Time. 1.30—Halsey Stuart Programme. 2.0—Goodyear Programme. 2.30—Mobiloil Concert. 3.0—Cola Cola Programme. 3.30—NBC Artists Service Musicale. 4.0—Nellie Revell. 4.15—Songs my Mother taught me. 4.30—DeWitt Clinton Orchestra. 5.0—Ralph Kirby (The Dream Singer), from New York. 5.5—Buddy Rogers and his California Cavaliers, from New York. 5.30—New Kenmore Orchestra. 6.0 (approx.)—Close Down.

**SCHWEIZERISCHER LANDESENDER (BEROMÜNSTER) (Switzerland)**

653 kc/s (459 m.); 60 kW.; Basle, 1,229 kc/s (244.1 m.); and Berne, 1,220 kc/s (246 m.). 12.30 p.m.—Time Signal from Neuchâtel Observatory. 12.31—Weather Report and News Bulletin. 12.40—Gramophone Concert: Some Great Conductors and Singers. 1.35—Weather Report and Exchange Quotations. 1.45—3.30—Interval. 3.30—Concert of Light Music on Gramophone Records. 4.30 (from Berne)—Programme for Children. 5.0—6.30—Interval. 6.30 (from Berne)—Talk on the History of Culture. 7.0—Time Signal. Weather

Forecast and Market Prices, followed by Selection of the latest Gramophone Records. 7.30 (from Zürich)—Book Review. 8.0 (from Zürich)—Concert by Swiss Boys, conducted by W. Jecker. 8.50 (approx.)—Concert of Romantic Music by the Station Orchestra, conducted by Hermann Hymann. Soloist: Willy Wind (Tenor). 9.30—Weather Forecast and News Bulletin. 9.45—Mozart Concert by the Station Orchestra, conducted by Hermann Hofmann. Soloist: Trude Rittmann (Pianoforte). 10.30 (approx.)—Close Down.

**STOCKHOLM (Sweden)**

Radiojäst (SASA). 680 kc/s (436 m.); 55 kW. Relayed by Boden, 244 kc/s (1,229.5 m.); Göteborg, 932 kc/s (322 m.); Hörby, 1,166 kc/s (257 m.); Motala, 222.5 kc/s (1,348 m.); Östersund, 389 kc/s (770 m.) and Sundsvall 554 kc/s (542 m.). Transmits at intervals from 8.0 a.m. 5.55 p.m.—Gramophone Records of Variety Music. 6.55—Agricultural Talk. 7.15—Weather and News. 7.30—Cabaret Programme. Recital for Two Pianos and Songs. 8.0—A One Act Play (Erik Wilhelm Olson). 8.30 (from Sundsvall)—Organ and Violin Recital of English Music. John Hult (Organ), Goran Förlinger (Violin). Toccata and Chaconne (Purcell). Violin Solos: (a) Prelude, (b) Three Lyric Pieces (Cyril Scott). Organ Solos (Lemare): (a) Air with Variations, (b) Concerto. 9.15—Talk: Holiday-making on a Bicycle. 9.45—Weather and News. 10.0—Dance Music from Malmö, 1,301 kc/s (231 m.). 11.0 (approx.)—Close Down.

**STRASBOURG (France)**

Radio-Strasbourg (PTT). 869 kc/s (345 m.); 11.5 kW. 11.30 a.m.—Gramophone Concert of Opera and Classical Music. 12.45 p.m.—News in French and German. 1.0—Time Signal. 1.2—Gramophone Concert (continued). 2.0—4.45—No Transmission. 4.45—Talk in German: Electric Trains. 5.0—Orchestral Concert, conducted by Roskam. Marche du Progrès (Enhal). Valse militaire (Frémoux). Overture, Beherscher der Geister (Weber). Violin Solo: Spanish Dance (Granados-Kreisler). Russian Echoes (Leopold). Selection (E. Bach). Selection from "Quo Vadis" (Nougues). Brise de mer (Leoncavallo). Waltz, Pomone (Waldteufel). March, Boys in Blue (Demaële). 6.0—Talk in French: The Italian Novelist, Alessandro Manzoni. 6.15—Medical Talk in German. 6.30—Gramophone Concert. Selections from (a) "Cavalleria rusticana" (Mascagni), (b) "L'Arlésienne" (Bizet). Pensée d'Autonne (Massenet). Selection from "La Pêricole" (Offenbach). Matinata (Leoncavallo). Vorrei amore (Tosti). You were meant for me (Brown). Glad Rag Doll (Daugherty). Clown Dolly (Rust). Try Dancing (Soby). 7.30—Time Signal. 7.32—News in French and German. 7.45—See Paris (Eiffel Tower). 8.15—Gramophone Records of Variety Music. 8.30—"Monsieur de la Palisse"—Opéra-bouffe; in Three Acts (Claude Terrasse). 10.30—Dance Music from the Savoy. 12 midnight—Close Down.

**STUTTGART (MÜHLACKER) (Germany)**

Süddeutscher Rundfunk. 832 kc/s (360.5 m.); 60 kW. Relayed by Freiburg, 527 kc/s (570 m.). Transmits at intervals from 6.0 a.m. (Time, Weather and Gymnastics). 10.0 a.m.—Beethoven Concert on Gramophone Records. Symphony No. 3 in E Flat—the Eroica. Overture, "Prometheus." Adagio from the Sonata in C Sharp Minor—the Moonlight. Adagio from the Sonata in C Minor—the "Pathetic." 11.0—Time Signal, Weather Report and News Bulletin. 11.15—Sponsored Concert. 12 noon—Concert from Munich. 12.50 p.m.—Time Signal, Weather Report, News Bulletin and Programme Announcements. 1.0—Concert of Light Music on Gramophone Records. 1.55—News Bulletin. 2.0—2.15—Sponsored Musical Programme. 3.0—Programme for Children. 4.0—Concert of Popular Music, relayed from Wildbad. Rustle of Spring (Sinding). Waltz, Meeres-

leuchten (Urbach). Procession to the Minster from "Lohengrin" (Wagner). Selection from "Cavalleria Rusticana" (Mascagni). Mazurka, No. 3 (Chopin). Slavonic Rhapsody (Friedmann). 5.0—Concert from Langenberg. 6.15—Time Signal and Weather Forecast. 6.25—Esperanto Lesson. 6.50—Talk: Mahomet. 7.15—Time Signal and Agricultural News. 7.30—See Frankfurt. 9.0—Swabian Popular Programme by the Station Orchestra, conducted by Gustav Görlch. 10.20—Time Signal, Weather Report, News Bulletin, Programme Announcements and Silent Night for Distant Reception.

**TOULOUSE (France)**

Radiophonie du Midi. 779 kc/s (385 m.); 8 kW. Transmits at intervals from 12.30 p.m. 5.0 p.m.—Picture Transmission. 5.15 Exchange Quotations. 5.30—Selections from an Argentine Orchestra. 5.45—Orchestral Selections. Meditation from "Thais" (Massenet). March from "Rienzi" (Wagner). Selection from "Lohengrin" (Wagner). 6.0—Sound Film Music. 6.15—Rédemption, for Orchestra (Frank). 6.30—Exchange and Racing Results. 6.45—Orchestral Selections from "The Dollar Princess" (Fall), "Countess Maritza" (Kálmán) and "Frasquita" (Lehár). 7.0—Talk, followed by Allegro and Andante from a Symphony (Bach). 7.15—Selections by a Viennese Orchestra. Vienna (Hoffmann). Selection from "Gipsy Love" (Lehár). Viennese Waltz (Drdla). Gay Vienna (Ziehrer). Waltz, Les Patineurs (Waldteufel). 7.30—News Bulletin. 7.45—Accordion Solos. 8.0—Songs from Opéra-Comique. Duet from "Werther" (Massenet). Hopak (Moussorgsky). 8.15—Military Music. 8.30—Orchestral Music. Selection from "The Mikado" (Sullivan). Lehár Potpourri. 8.45—Selections by an Argentine Orchestra. 9.0—Sponsored Concert. 9.30—Opéra-Comique Music. Selection from "Rigoletto" (Verdi). Gavotte from "Mignon" (Thomas). Prelude to "Carmen" (Bizet). 9.45—Accordion Solos. 10.0—Songs from Operetas. Selections from "La Basoche" (Messager), and "The Desert Song" (Romberg). 10.15—Dance Music. 10.30—North African News. 10.45—Orchestral Selection: Mascara (Lacôme). 11.0—Concert. L'embouteillage (Bach and Laverne). Barcarolle from "The Tales of Hoffmann" (Offenbach). Selection from "Cavalleria rusticana" (Mascagni). J'ai deux amours (Scott). Russia under the Snow. Selection from "Il Trovatore" (Verdi). Salut au 85e. Le voltigeur. Selection from "A Waltz Dream" (O. Strauss). Waltz: Wine, Woman and Song (Johann Strauss). Waltz from "Aida" (Verdi). Selection from "Mam'zelle Nitouche" (Hervé). Der Rosehochzeitzug (Jessel). Selection from "Die geschiedene Frau" (Fall). 12 midnight—Weather Report and Announcements. 12.5 a.m. (Thursday)—English Concert. 12.30 a.m. (approx.)—Close Down.

**TRIESTE (Italy)**

Ente Italiano Audizioni Radiofoniche. 1,211 kc/s (247.7 m.); 10 kW. Transmits at intervals from 8.15 a.m. 7.5 p.m.—Quintet Concert. Manon (Berger). Miniatura (Del Prete). Verso l'oblio (Stajano). Selection (Stolz). Pulcinella, from "Neapolitan Scenes" (De Nardis). Waltz, Dolores (Waldteufel). Blue Eyes (Erwin). Bionda Milena (Bergonzi). 8.0 till Close Down—See Turin.

**TURIN (Italy)**

Ente Italiano Audizioni Radiofoniche. 1,066 kc/s (273.7 m.); 7 kW. Relayed by Milan, 905 kc/s (331.5 m.); Genoa, 959 kc/s (312.8 m.); and Florence, 599 kc/s (500.8 m.). Transmits at intervals from 8.15 a.m. 6.45 p.m.—Agricultural Notes. 7.0—Announcements. 7.5—Musical Selections. Impressioni d'Oriente (Amadei). Two Guitars (Ferraris). The Northern Star (Waldteufel). Rusticarella (Cortopassi). 7.30—Time, Announcements and Gramophone Records of Variety Music. 8.0—Giornale Radio and Weather. 8.15—Medical Talk: Air, Earth and Water. 8.30—"Mese Mariano"—Opera in One Act (Giordano), followed by

"Marcella"—Opera in Three Acts (Giordano). In the intervals: Talk on Verga and Pirandello, and Literary Notes. 11.0—Giornale Radio.

**VATICAN CITY (Rome)**

15,123 kc/s (19.84 m.) (Morning) and 5,969 kc/s (50.26 m.) (Evening); 10 kW. 11.0—11.15 a.m.—Religious Information in Spanish. 8.0—8.15 p.m.—Religious information in Italian.

**VIENNA (Austria)**

Radio-Wien. 581 kc/s (517 m.); 15 kW. Relayed by Graz, 852 kc/s (352.1 m.); Innsbruck, 1,058 kc/s (283 m.); Klagenfurt, 662 kc/s (453.2 m.); Linz, 1,220 kc/s (246 m.) and Salzburg, 1,373 kc/s (218 m.). Transmits at intervals from 9.20 a.m. 4.45 p.m.—Soloist Concert. Maria Jelmar (Songs), Marianne Brunner (Pianoforte), and the Auber Trio. Pianoforte Solos: (a) Rhapsody in G Minor (Brahms), (b) Intermezzo in B Flat Minor (Brahms), (c) Intermezzo in E Flat (Brahms), (d) Four Short Waltzes (Brahms), (e) Scherzino (Reger), (f) Albumblatt (Reger), (g) Humoresque (Reger). Songs: (Korngold), (a) Sterbelied, (b) Dies eine kann mein Schen nimmer fassen, (c) Mond, so gehst du wieder auf, (d) Gefasster Abschied. Trio for Pianoforte, Violin and 'Cello, Op. 29, (d'Indy). 6.5—Talk: Doctors as Natural Scientists. 6.30—Talk for Workers. 6.55—French Lesson. 7.20—Time Signal, Weather Report, and Programme Announcements. 7.30—Schumann Song Cycle—Songs written to Eichendorff's Poems. Sung by Berta Klurina (Soprano). In der Fremde, Intermezzo. Waldesgespräch. Die Stille. Mondnacht. Schöne Fremde. Auf einer Burg. In der Ferne. Wehmüt. Zwielficht. Im Walde. Frühlingsnacht. 8.0—Concert by Erika Morini, with the Vienna Symphony Orchestra, conducted by Oswald Kabasta. Soloist: Erika Morini (Violin). Concerto in D Minor, Op. 22 for Violin (Wieniawsky). Concerto in D, Op. 61 for Violin (Beethoven). 9.20—News Bulletin, Weather Report and Announcements. 9.35—Concert of Light Music by the Stern Orchestra.

**WARSAW (Poland)**

Polskie Radio, 212.5 kc/s (1,411 m.); 120 kW. 11.58 a.m.—Time Signal and Bugle Call from the Tower of St. Mary's Church, Cracow. 12.5 p.m.—Programme Announcements. 12.10—Interval. 12.30—Review of the Press. 12.40—Weather Report. 12.45—Light Music on Gramophone Records. 2.0—Interval. 3.0—Economic Report. 3.10—Popular Music on Gramophone Records. 3.30—Boy Scouts' Report. 3.35—Maritime Report. 3.40—Programme for Children. 4.5—Variety Music on Gramophone Records. 4.35—Hydrographic Report. 4.40—Wireless Correspondence. 5.0—Concert of Light Music, by the Station Orchestra, conducted by Josef Oziminsky. Overture, "The Hermit's Bell" (Maillart). Barcarolle (Tchaikovsky). Potpourri, Minuten-Spiele (Fétras). Flirt d'un soir (Mancinetti). Waltz, Hoffnungsstrahlen (Lanner). La Mia Serenata (Staffelli). Intermezzo, Alla Casertinese (Limentani). Tango, Gipsy Song (Marietti). Polka (Rubinstein). Invitation à la Gavotte (Waldteufel). Mazurka, Souveraine (Waldteufel). Talk relayed from Wilno, 533 kc/s (563 metres). 6.20—Dance Music by the Wilkosz Orchestra, relayed from the Hotel de l'Europe. 7.15—Miscellaneous Items. 7.35—Radio Journal. 7.45—Agricultural Correspondence. 7.55—Programme Announcements. 8.0—Recital of Old Warsaw Songs by Robert Boelke. 8.35—Literary Programme. 8.50—Violin and Pianoforte Recital by L. Borunsky (Pianoforte) and J. Kaminsky (Violin). Violin Solos: (a) Variations on a theme by Corelli (Tartini-Kreisler), (b) Adagio and Canzonetta from the Concerto romantico (Godard), (c) Polonaise in A (Wieniawsky). Pianoforte Solos: (a) Gavotte, (b) Prélude, (c) March. Etude in F Minor (Liszt). Paraphrase on "Die Fledermaus" (Strauss-Grünfeld). Violin and Pianoforte Sonata (Ravel). 9.50—Radio Journal. 9.55—Weather Report. 10.0—Dance Music. 10.25—Talk in German relayed from Lubau. 10.40—Sports Notes. 10.50—Dance Music. 11.30 (approx.)—Close Down.

PRINCIPAL EVENTS

THURSDAY (June 9)

SYMPHONY CONCERTS

- 7.20 p.m. Bucharest: Symphony No. 6 (Schubert), etc.
- 7.35 " Vienna: "Missa Solennis" (Beethoven).
- 8.10 " Munich, Heilsberg, Königs Wusterhausen: Bavarian Music Festival, from the Odeon Hall.

CONCERTS (Vocal and Instrumental)

- 7.50 p.m. Stockholm: Oluf Nielsen (Violin).
- 7.55 " Hilversum: Relay from the Concertgebouw, Amsterdam.
- 8.0 " Brussels No. 2: Choir of 400 Ladies.
- 8.0 " Copenhagen: Italian operatic music.
- 8.0 " Schweizerischer Landessender: Chamber Orchestra.
- 8.15 " Radio-Suisse Romande: French music.
- 8.30 " Oslo: Station Orchestra.
- 9.0 " Brussels No. 1: Russian music.
- 9.10 " Berlin (Witzleben): Hermann Scherchen conducts.
- 9.30 " Stuttgart, Frankfurt: New music.
- 9.50 " Copenhagen: Present-Day Danish music.
- 10.20 " Hamburg: German dances.

OPERAS AND OPERETTAS

- 7.0 p.m. Prague: "Dimitrij" (Dvorák) from the National Theatre.
- 8.0 " Langenberg: "The Merry Wives of Windsor" (Nicolai).
- 8.0 " Radio-Paris: "Tosca" (Puccini).

CHAMBER MUSIC

- 8.45 p.m. Rome: The Rome Quartet.

RECITAL

- 8.40 p.m. Breslau: Pianoforte and Violin.

PLAY

- 9.10 p.m. Heilsberg, Königs Wusterhausen: "Virgin Forest" (radio play).

DANCE MUSIC

- 10.15 p.m. Budapest.
- 10.45 " Daventry, Frankfurt, Stuttgart.

The Merry Wives of Windsor

When Carl Otto Ehrenfried Nicolai was only sixteen, he ran away from home; his sole equipment for the battle of life was some skill as a pianist, so that the adventure might have ended in disaster, had not a kindly friend taken the boy in hand and sent him to Berlin to carry on his study of music. Nicolai proved himself a clever and hard-working pupil, and at the age of twenty-three he secured an appointment as Chapel organist in Rome, at the Prussian

Embassy. For the rest of his happy and successful life he held, one after another, posts of importance in the world of music, in many of which he had opportunities of bringing his own works to performance. He was an industrious composer, chiefly in the domain of opera, but none of his works is in the present-day repertoire, except the bright and sparkling *Merry Wives of Windsor*, which is being broadcast from LANGENBERG this evening. The story, though it takes liberties here and there with Shakespeare, is easily followed and enjoyed by anyone who is familiar with Falstaff's pursuit of the two ladies and his discomfort.



The Odeon, Munich, from which to-night's Festival of Bavarian Music will be relayed

(By courtesy of Verkehrsverband, Munich)

NATIONAL		
	kc/s	m. kW.
London:	1,148	261.3 50
Daventry:	193	1,554.4 30
Northern:	995	301.5 50
10.15 a.m.—The Daily Service.		
10.30—Time Signal (Greenwich), Shipping Forecast.		
10.45—11.0—Sister Drayton: "The New Baby" (V.).		
12 noon—The Edinburgh Studio Orchestra, directed by Guy Daines.		
1.0 p.m.—Time Signal (Greenwich).		
1.0—2.0—The Shepherd's Bush Pavilion Orchestra.		
2.5—Tracing History Backwards."		
2.30—Speech Training, Mr. A. Lloyd-James.		
3.0—Church of Ireland National Commemoration Service, relayed from Saint Patrick's Protestant Cathedral, Armagh.		
4.30—The Midland Studio Orchestra.		
4.45—Time Signal (Greenwich).		
5.15 (Daventry)—The Children's Hour.		
5.15 (London and Northern)—The B.B.C. Dance Orchestra.		
6.0—"The First News."		
6.30—Time Signal (Greenwich).		
6.30—The Foundations of Music. Schubert's Miscellaneous Pianoforte Music, played by Victor Hely-Hutchinson.		
6.50—German Talk. Mr. Otto Siepmann.		
7.20—Quarterly Bulletin of the Radio Association.		
7.25—Weekly Special Notices.		
7.30—"The Disintegration of the Modern World Order"—III.		
8.0—"Songs from the Shows"—No. XII. Request Night. Anona Winn; Olive Groves. Reginald Purdell, George Baker, Leonard Gowings and Phyllis Dare.		
9.0—Time Signal (Greenwich).		
9.0—"The Second News."		
9.15—Shipping Forecast; New York Stock Market Report.		
9.20—Reparation and The Lausanne Conference—II. Sir Andrew McFadyean.		
9.40—Debussy Programme. Anne Thurstfield (Soprano), Frank Mannheimer (Pianoforte).		
10.30—A Short Service, relayed from St. Michael's, Chester Square.		
10.45—12 midnight—Dance Music.		
1.30—Time Signal (Greenwich).		

REGIONAL		
	kc/s	m. kW.
London:	842	356.3 50
Midland:	752	398.9 25
Northern:	626	479.2 50
10.15 a.m. (London and Northern)—The Daily Service.		
10.30—11.0 (London and Northern)—Daventry National Programme.		
11.30—12 noon—Experimental Television Transmission (Baird Process).		
12 noon—Edward O'Henry at the Organ.		
1.0—The Northern Studio Orchestra. Eleanor Lomas (Soprano).		
2.0—Laddie Clarke's Imperial Hydro Hotel Orchestra.		
3.0 (London and Northern)—Daventry National Programme.		
5.15—"The Children's Hour."		
6.0—"The First News."		
6.35 (Northern and London). Reginald Dixon at the Organ.		
6.35 (Midland)—Gwen Lewis' Entertainers from The Pavilion, Cheltenham Spa.		
7.0 (London)—Mantovani and his Tipica Orchestra. Herbert de Leon (Baritone).		
7.15 (Northern)—The Yorkshire Mummings.		
7.30 (Midland)—"The Dumb and the Blind." A Play in One Act by Harold Chapin.		
8.0—Symphony Concert. The B.B.C. Orchestra (Section B). (Leader, Arthur Catterall.) Conducted by Julian Clifford. Overture, Benvenuto Cellini (Berlioz), Scherzo in G Minor (Mendelssohn), Symphonic classique (Prokofiev), The Fountains of Rome (Respighi). The Fountain of Valle Giulia at Dawn; the Tritons Fountain in the Morning; the Fountain of Treiz at Midday; The Villa Medici Fountain at Sunset. Don Juan (Strauss).		
9.15 (London)—The Wireless Military Band. Toppis Green (Baritone).		
9.15 (Midland)—Frank Newman at the Organ.		
9.15 (Northern)—The Studio Orchestra. Gilbert and Sullivan.		
9.35 (Northern)—Mr. W. E. Shewell Cooper: "The Northern Garden."		
9.55 (Northern)—Orchestra (continued).		
10.15—"The Second News."		
10.35—12 midnight (London and Northern)—Dance Music.		

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME

**ALGIERS (N. Africa)**  
825.3 kc/s (363.3 m.); 13 kW. Transmits at intervals from 12.30 p.m. 7.35 p.m.—Violin and Cello Solos. 7.45—Talk by M. Salomon. 7.55—News and Time. 8.0—Humorous Gramophone Records. 9.0—Song Recital. 9.30—Request Gramophone Records.

**BARCELONA (Spain)**  
Radio-Barcelona (E.A.J.). 860 kc/s (349 m.); 8 kW. Transmits at intervals from 8.15 a.m. 8.0 p.m.—Trio Concert. 8.30—Exchange Quotations, Talk in Catalan, Request Gramophone Concert and Press Notes. 10.0—Chimes from the Cathedral, Weather Forecast and Exchange Quotations. 10.5—Concert by the Station Orchestra. March, Parade im Märchenwald (Noack). Selection from "The Damnation of Faust" (Berlioz). Réve enchanter (van Dyck). Prelude to Act Three of "The Mastersingers" (Wagner). Cordoba en fiesta (Turina). Valse triste (Sibelius). 11.0—"Els Visionaris"—Play in Catalan in Three Acts (Pous y Lagés). 1.0 a.m. (Friday) (approx.)—Close Down.

**BELGRADE (Yugoslavia)**  
697 kc/s (430.4 m.); 2.5 kW. Transmits at intervals from 8.55 a.m. 6.55 p.m.—Time and Programme Announcements. 7.0—Medical Talk. 7.30—A Radio Comedy. 8.10—Orchestral Concert of Yugoslavian Music. March, Gutesa (Braj). Overture, "Dubravka" (Zajc). Natjecanje divljaka i gorstaka (Gotovac). Prvi splet narodnin melodija (Svoboda). Srpsko Potpourri (Petrovic). March, Cujes seko (Sedlacek). 9.0—Recital of Yugoslavian Songs and Melodies relayed from Backa Palanka. 10.15—News and Sports Notes. 10.35—Cigány Concert from the Potrosacka Zadruga Restaurant.

**BERLIN (Germany)**  
Königs Wusterhausen. 183.5 kc/s (1,635 m.); 60 kW. Transmits at intervals from 5.45 a.m.

12 noon—Weather for Farmers. 12.2 p.m.—Gramophone Concert of Orchestral Music, followed by Weather for Farmers. 12.55—Time Signal. 1.30—News Bulletin. 2.0—Gramophone Concert of Handel's Music, relayed from Berlin (Witzleben). 3.0—Talk: German Life in Sao Paulo. 3.30—Weather and Exchange. 3.45—Talk for Women. 4.0—Educational Talk. 4.30—See Berlin (Witzleben). 5.30—Talk: Remnants of Germanic Civilization in Transylvania. 6.0—Talk: Naturalism in the Literature of the Nineteenth Century. 6.30—Advanced Spanish Lesson. 6.55—Weather for Farmers. 7.0—Topical Programme. 7.20—Agricultural Talk. 7.35—Talk: Lenin and Bolshevism. 8.0—Illustrated Talk on Music. 8.25—Concert from Munich. 9.10—See Heilsberg. 10.10—Weather, News and Sports Notes. 10.30—Concert Relay. 12 midnight (approx.)—Close Down.

**BERLIN (Germany)**  
Witzleben. 715 kc/s (419.5 m.); 1.5 kW. Transmits at intervals from 6.0 a.m. (Gymnastics and Concert Relay). 4.30 p.m.—Cello Recital by Paul Hermann. Sonata in G Minor (Eccles). Sicilienne (Faure). Allegro appassionato (Saint-Saëns). The Flight of the Bumble-Bee (Rimsky-Korsakov). 4.50—Song Recital by Gerti Stoerk (Soprano). Ronzio from "Der Schauspieldirektor" (Mozart). Song from "La Sonnambula" (Bellini). Tarantella (Bizet). 5.5—Pianoforte Recital by Winfried Wolf. Hungarian Rhapsodies (Liszt): (a) No. 5 in E Minor, (b) No. 6 in B Flat, (c) No. 12 in C Sharp Minor. 5.30—Talk for Young People. 5.50—Talk. 6.15—Wireless Notes. 6.30—Siegfried Mauerer reads from his own Works. 6.55—"The Witzleben Station informs its Listeners..." 7.0—Topical Talk. 7.10—Labour Market Report. 7.15—Orchestral Concert. Dance Suite (Muczek). Kabylen-Tänze (Mory). Potpourri, Rendez-vous bei Lehar (Hruby). Intermezzo and Barcarolle from "The Tales of Hoffmann" (Offenbach). Austrian Peasant Dances (Pacler-negg). Polka, I-Tipferl (Joh.

Strauss). Egyptian March (Joh. Strauss). 8.30—Review of Gramophone Records for the Month of May. 9.0—News and Sports Notes. 9.10—Orchestral Concert, conducted by Dr. Hermann Scherchen. Rugby (Honegger). Suite, Hány János (Kodaly). Concerto for Organ and String Orchestra (Wolfgang Fortner). Romanian Folk Dances (Bela Bartok). 10.15—Weather, News and Sports Notes. 10.30 (approx.)—Vocal and Orchestral Concert of Berlin Operetta Music. Soloists: Frida Weber-Fleisberg (Soprano) and John Hendrik (Tenor). Jagd-Ouverture (Künneke). Soprano and Tenor Duets from (a) "Hotel Stadt Lemberg" (Gilbert), (b) "Wenn Liebe erwacht" (Künneke). Overture, "Frau Luna" (Lincke). Soprano Solo from "Hohheit die Tänzerin" (Götze). Tenor Solo: Opiumrausch (Gilbert). Waltz from "The Maid of the Black Forest" (Jessel). Tenor Solo from "Spiel um die Liebe" (Gilbert). Soprano Solo from "Marietta" (Kollo). Selection from "Die Kinokönigin" (Gilbert). March Intermezzo (Zuckermann). Waltz from "The Girl in the Taxi" (Gilbert). Soprano Solo from "Miss Dudelsack" (Nelson). Tenor Solo from "Durchlaucht Radieschen" (Holländer). Waltz from "Die kleine Hohheit" (Knopf). Soprano and Tenor Duets from (a) "Der blonde Traum" (Hirsch) and (b) "Die Peruanerin" (Nelson). March from "Derunter und drüber" (Kollo).

**BORDEAUX-LAFAYETTE (France)**  
(PTT). 986 kc/s (304 m.); 13 kW. Transmits at intervals from 12.45 p.m. 7.30 p.m.—News Bulletin and Exchange Quotations. 7.40—Talk on Bull-fighting. 7.55—Lottery and Charades Results. 8.0—Light Music on Gramophone Records. 8.15—News Bulletin and Weather Forecast. 8.30—Quintet in E Flat (Beethoven) on Gramophone Records. 9.0—"His Father"—Comedy in Three Acts (Guinon and Bouchinet).

THURSDAY continued

BRATISLAVA (Czechoslovakia)

1,076 kc/s (279 m.); 14 kW. Transmits at intervals from 11.0 a.m. 6.55 p.m.—See Prague. 10.15—Programme Announcements. 10.20—See Moravská-Ostrava.

BRESLAU (Germany)

923 kc/s (325 m.); 1.5 kW. Relayed by Gleiwitz, 1,184 kc/s (253 m.). Transmits at intervals from 6.0 a.m. 5.0 p.m.—Six Songs from the Russian with a Foreword by Klubund. 5.30—Market Prices. 5.35—Book Review. 5.40—This will interest you!—Surprise Programme. 6.10—Talk for Workers. 6.35—Talk: Works of Art in the Garden. 7.0—Weather for Farmers. 7.2—Concert of Light Music by the Station Orchestra, conducted by Franz Marszalek. Overture, "The Flying Dutchman" (Wagner). Cradle Song (Cui). Cartabile (Cui). Legend, No. 9 (Dvorak). A la Gavotte (Schütt). Two Viennese Waltzes (Fuchs). Potpourri, Strauss, Millocker, Suppé (Ziehner). March, Barataria (Sullivan).

7.55—Weather Forecast. 8.0—"The Author as the Voice of his Age"—Wolfgang Goetz reads from his own works. 8.40—Concert. Joseph Schwarz Pianoforte and Boris Schwarz Violin. Organ Concerts in D Minor (Bach). La Polka (Corelli). Caprice on Themes from "Alceste" (Gluck-Saint-Saëns). Siciliano (Paradisi). Rondo (Mozart). Rondo brilliant (Schubert).

9.45—Topical Talk. 10.10—Time Signal, Weather Forecast, News Bulletin, Sports News and Programme Announcements. 10.35—Half-Minutes Esperanto. Silesian Forests (Poetry and Prose). 10.45—Talk on Sports. 11.0 (approx.)—Close Down.

BRNO (Czechoslovakia)

878 kc/s (342 m.); 35 kW. Transmits at intervals from 11.0 a.m. 7.20 p.m.—Introductory Talk to the following Transmission. 7.30—"The Bartered Bride"—Opera in Three Acts (Smetana) relayed from the Brno Theatre. 10.0—See Prague. 10.15—News Bulletin. 10.20—See Moravská-Ostrava.

BRUSSELS (Belgium) (No. 1)

I.N.R. 590 kc/s (509 m.); 15 kW. 12 noon—"The Barber of Seville"—Opera (Rossini) on Gramophone Records. In the interval at 12.30 p.m.—Weather. 5.0—Orchestral Concert, conducted by Franz André. 5.45—Programme for Children. 6.15—Talk: Prophylactic Medicines. 6.30—Gramophone Concert. Scottish Symphony (Mendelssohn). Death of Isolde from "Tristan und Isolde" (Wagner). 7.10—Programme for Children. 7.15—Gramophone Records. 7.30—Review of International Affairs. 8.0—Orchestral Concert, conducted by Arthur Meulemans. Soloist: M. Baiwir (Cello). Marche joyeuse (Chabrier). Cello Solos: (a) Fantasia (Rogister), (b) Catalane (Busser). Dream of Love (Marsick). Cello Solos: (a) Estampée (Migot), (b) Sonata No. 4, Op. 11 (Hindemith). Waltz, Bouffées printanières (Waldteufel). 8.45—Talk. 9.0—Concert of Russian Music, conducted by Arthur Meulemans. Prelude (Rachmaninov). Serenade (Glazounov). The Musical Box (Ljadov). Oriental (Cui). Dances from "Prince Igor" (Borodin). Gramophone Record by Chaliapin: Coronation Scene from "Boris Godounov" (Moussorgsky). Spanish Caprice (Rimsky-Korsakov). 10.0—Le Journal Parlé.

BRUSSELS (Belgium) (No. 2)

N.I.R. 887 kc/s (338.2 m.); 15 kW. Programme in Flemish. 12 noon—Music from Many Lands. Soloist: Am. Neirynek. Danses

Liégeois (Grétry). The Bells of St. Malo (Rimmer). Rhapsody, España (Chabrier). Waltz, The Blue Danube (Johann Strauss). Hungarian Dances Nos. 1 and 3 (Brahms). Slavonic Dances Nos. 3 and 5 (Dvorak). 12.30 p.m.—Weather Report. 12.40—Concert (continued). Neapolitan Serenade (Drigo). Italian Caprice (Tchaikovsky). Turkish March (Mozart). Persian Dances (Moussorgsky). Ballet égyptien (Luigini). In a Chinese Temple Garden (Ketelbey). Eastern Dance (Glazounov). Japanese Lantern Dance (Siede). 1.45—Songs by Am. Neirynek. 5.0—Flemish Concert, conducted by Arthur Meulemans. KVRO Strijlied (Meulemans). Rubens-March (Benoit). Rapsodie D'ahoméenne (De Boeck). Symphonic Rhapsody (Gevaert). Commemoration March (De Boeck). 5.40—Reading for Children. 6.0—Programme for Children by the Ursuline Sisters of the Wavre-Notre-Dame. 6.45—Variety Items. 7.15—Talk: The Struggle against Alcohol. 7.30—Programme for Women. 8.0—Concert by a Ladies' Choir (400 Singers), relayed from Wavre-Notre-Dame. In the interval at 8.45—Talk by the Reverend Father Crous. 9.55—Evening Prayer. 10.0—Le Journal Parlé. 10.10—Excerpts from "La Traviata"—Opera (Verdi) on Gramophone Records. 11.0 (approx.)—Close Down.

BUCHAREST (Romania)

Radio-Bucarest. 761 kc/s (394 m.); 12 kW. Transmits at intervals from 11.0 a.m. 4.0 p.m.—Concert of Light Music and Romanian Music by the Dinico Orchestra. 5.0—News Bulletin and Time Signal. 5.10—Orchestral Concert (cont'd.). 6.0—Talks on Art and Music. 6.40—Light Music on Gramophone Records. 7.0—Programme by Mlle. Sophie Munteanu. 7.20—Symphony Concert, conducted by Rogalski. Soloist: N. Ruculesco (Pianoforte). German Dances (Mozart). Concerto in E Flat for Pianoforte and Orchestra (Beethoven). Selection (Sibiano). Symphony in C, No. 6 (Schubert). Talk in the interval. 8.45—News Bulletin.

BUDAPEST (Hungary)

545 kc/s (550 m.); 18.5 kW. Transmits at intervals from 9.15 a.m. Programme also relayed on 210 metres from 5.30 p.m. till Close Down. 5.30 p.m.—Concert. Ilona Virég (Songs), Sziszi Bárány (Violin) and Lúla Hermaun (Pianoforte). 6.45—Programme by Georg Auer. 7.15—Concert by the A. and J. Toll Cigány Band. 8.15—Relay of a Rehearsal from the Academy of Dramatic Art. 10.0—Weather Report and Time Signal. 10.5—Dance Music by D. Pogány's Cigány Band, relayed from the Café Spolarich.

COPENHAGEN (Denmark)

1,067 kc/s (281 m.); 0.75 kW. Relayed by Kalundborg. 260 kc/s (1,153 m.). Transmits at intervals from 7.30 a.m. 12 noon—Time and Chimes from the Town Hall. 12.2 p.m.—String Ensemble Concert conducted by Max Skalka, relayed from the Hotel d'Angleterre. 2.0—3.0—Interval. 3.0—Concert by Louis Prell's Instrumental Ensemble. Soloist: Holger Lund-Christiansen (Pianoforte). Spanish March, Cartagena (Grit). Overture, "Les Deux Savoyards" (Offenbach-Binder). Viennese Waltz Suite (Gilson). Vidste du (Enna). Barndomsminde (Chr. Aage Bruun). Russian Dance No. 1 (Bortkiewicz). Amoreto (Balerian). Pianoforte Solos: (a) Vogel als Prophet (Schumann), (b) Fantasiestücke Op. 111—Nos. 2 and 7 (Schumann), (c) Theme with Variations in B (Schubert), (d) Soirées de Vienne (Liszt-Schubert). Selection from "The Cardas Princess" (Kálmán). Spanish Serenade, Salamanca (Grit). Tal, du sagte unge Nattegerl (Borresen). Serenade (Drigo). Waltz, Hoch lebe der Tanz (Waldteufel). Venetian Serenade (Svendesen). March, Berliner Luft (Lincke). 5.0—Programme for Boys. 5.40—Exchange and Fish Market Prices. 5.50—Talk. 6.20—English Lesson for Beginners. 6.50—Weather Forecast. 7.0—News Bulletin. 7.15—Time Signal. 7.30—Legal Talk. 8.0—Chimes from the Town Hall. 8.2—Orchestral Concert of Italian Opera Music conducted by Launy Gröndahl. Soloist: Margherita Flor (Vocalist). Overture, "La

Sonnambula" (Bellini). Song and Intermezzo from "Cavalleria rusticana" (Mascagni). Selection from "A Masked Ball" (Verdi). Song from "Il Trovatore" (Verdi). Overture, "Tancred" (Rossini). 9.0—Danish Lyrics. 9.20—Suite in D for Oboe and Cembalo (Louis Hottelierre le Romain) by Waldemar Wolsing (Oboe) and Folmer Jensen (Cembalo). 9.35—News Bulletin. 9.50—Concert of Modern Music by the Radio Symphony Orchestra conducted by Launy Gröndahl. Soloists: Gerhard Rafn (Violin), Paulus Baché (Cello) and Folmer Jensen (Pianoforte). Forest Symphony in D, Op. 30 (Glass). Trio in A Minor Op. 44 for Pianoforte, Violin and Cello (Salicmon). 11.0 (approx.)—Close Down.

DUBLIN (Ireland)

(2RN). 223 kc/s (413 m.); 1.2 kW. Relayed by Cork, 1,345 kc/s (224.4 m.). 1.30—2.0 p.m.—Time Signal, Weather Report, Stock Report and Light Music on Gramophone Records. 6.0—Gramophone Records of Popular Music. 6.15—Programme for Children. 7.0—Gramophone Records of Variety Music. 7.10—News and Dublin Cattle Market Report. 7.30—Time Signal. 7.31—Dialogue in French. 7.45—Dora Alton's String Quartet. 8.15—Baritone Solos by John Lynskey. 8.30—Sousa and Strauss Selections by the Station Sextet. 8.45—Soprano Solos. 9.0—Talk: Traffic Developments. 9.20—Pianoforte Solos. 9.40—Concert by the Station Celeste Orchestra. 10.0—Traditional Fiddle. 10.15—The Station Sextet. 10.30—Time Signal, News, Weather Report and Close Down.

FÉCAMP (France)

Radio Normandie. 1,345 kc/s (223 m.); 10 kW. 12 noon—Popular Music on Gramophone Records. 12.30 p.m.—News Bulletin. 12.45—Radio Concert. 7.30—Radio Gazette for Normandy. 8.0—News Bulletin. 8.30—Concert relayed from the Town Hall, Rouen. 11.0—Dance Music Programme. 1.0 a.m. (Friday)—Close Down.

FLORENCE (Italy)

Ente Italiano Audizioni Radiofoniche. 599 kc/s (500.8 m.); 20 kW. See Turin.

FRANKFURT-am-MAIN (Germany)

770 kc/s (390 m.); 1.5 kW. Relayed by Cassel, 1,220 kc/s (246 m.). Transmits at intervals from 6.0 a.m. 3.30 p.m.—Programme for Young People. 4.55—Economic Notes. 5.0—Concert from Bad Kreuznach. 6.15—Economic Notes. 6.25—"Learning to Drive a Car"—A Dialogue between Instructor and Learner. 6.50—Topical Talk. 7.15—Time, Programme Announcements, Weather and Economic Notes. 7.20—Notes on Art and Science. 8.30—10.30—See Stuttgart. 10.30—Time, Weather, News and Sports Notes. 10.45—Dance Music from London. 12 midnight (approx.)—Close Down.

HAMBURG (Germany)

Norag (ha, in Morse). 806 kc/s (372 m.); 1.5 kW. Relayed by Bremen, 1,112 kc/s (279 m.); Flensburg, 1,373 kc/s (218 m.); Hanover, 530 kc/s (566 m.) and Kiel, 1,292 kc/s (232.2 m.). Transmits at intervals from 5.45 a.m. 5.55 p.m.—Variety Programme. 6.30 (from Bremen)—Talk: Enjoying a Holiday at Home. 6.55—Exchange and Market Prices. 7.0—Topical Talk. 7.20 (from Bremen)—Vocal and Instrumental Concert of Unpublished Music. Soloists: Rie Kaemena-Kist (Vocalist), Josef Schöberl (Violin) and Reinhold Krug (Pianoforte). Love Song from "Sechs Phantasiestücke" for Violin and Pianoforte (Julius Klau). Three Songs (Rudolf Müller): (a) Ich möchte mir mein Leid von Herzen geben, (b) Gebet, (c) Schlummerlied. Sonata giocosa for Violin and Pianoforte (Julius Klau). Three Songs (Rudolf Müller): (a) Der Traum, (b) Hab' einen Traum begraben, (c) Gottes Segen. Humoresque and Fantastic Dance from the "Phantasiestücke" for Violin and Pianoforte (Julius Klau). Four Songs (Rudolf Müller): (a) Wenn du die kleine Hand mir gibst, (b) Entschluss, (c) Wiegenlied, (d) Pilger.

8.30—"Bütenlammers"—a North German Musical Play (Walter Bullerdeck). 10.0—News Bulletin. 10.20—Concert of German Dances by the Norag Orchestra, conducted by Adolf Secker. Polonaise in E (Weber). Waltz, Die Remantiker (Lanner). German Dances (Beethoven). Waltz, Dorf-schweiben aus Oesterreich (Johann Strauss). Orpheus Quadrille (Offenbach). Polka Mazurka, Brennende Liebe (Josef Strauss). Gallop, Ulanenfanfare (Bohm). Polka, Immer galant (Fahrbach). The Kiss Waltz (Johann Strauss). Lieder-Quadrille (Johann Strauss). Polka-Mazurka, Wenn die Rosen blühen (Fahrbach). Dollar Waltz (Fall). Leipziger Kristallpalast-Galopp (Herfurt). Kinderlieder-Marsch (Fétras). Dream Waltz (Millocker). Selection from "Film Magic" (Kollo). Waltz from "Gipsy Love" (Lehár). Polka, Im Dorfkrügel (Siede). Hohenzollern-Walzer (Wieduwilt). Vater Rhein, March from "Loreley" (Lincke). Waltz, Herein-spaziert, from "Der Schatzmeister" (Ziehner). Gallop from "Orpheus in the Underworld" (Offenbach).

HEILSBURG (Germany)

1,085 kc/s (276.5 m.); 60 kW. Relayed by Danzig, 662 kc/s (453.2 m.). Transmits at intervals from 6.0 a.m. (Weather, Gymnastics and Concert Relay).

HILVERSUM (Holland)

1,013 kc/s (296.1 m.); 20 kW. (7 kW. up till 4.40 p.m.). Programme of the Algemeene Vereeniging Radio Omroep (A.V.R.O.). 7.40 a.m.—Time Signal. 7.41—Gramophone Records of Variety Music. 9.40—Time Signal. 9.41—"The Daily Service. 9.55—Gramophone Records of Light Music. 10.10—Pianoforte Recital by Eggert Veen. 10.40—Dressmaking Lesson. 11.10—Gramophone Records of Light Music. 11.40—Time Signal. 11.41—Orchestral Concert, conducted by Nico Treep. Overture, "Preciosa" (Weber). Reminiscences of Chopin (Fétras). Künstlerleben (Joh. Strauss). Accordion Music. Oriental Suite (Poppy). None but the Weary Heart (Tchaikovsky). Algerian Scene (Ketelbey). By the Swanee River (Myddleton). La Mousmé (Ganne). Selection from "Countess Maritza" (Kálmán). Wedgwood Blue (Ketelbey). March, The Gladiator's Farewell (Blankenburg). 1.55—Interval. 2.10—Talk. 2.40—Gramophone Records of Popular Music. 3.40—Programme for Hospital. 4.40—Concert by the Wireless Chamber Orchestra, conducted by G. Hermes. Overture, "Der Schauspieldirektor" (Mozart). Gavotte and Musette (d'Ambrosio). Aqua-

relles musicales (Missa). Gramophone Records of Variety Music. Polish Dance (Scharwenka). Serenade (Gounod). Selection from "La Wally" (Catalani). Gramophone Records of Light Music. Selection (Lehar). 6.10—Talk on Sports. 6.40—Concert (continued). Hofballtänze (Joh. Strauss). Pierrette (Ohlsen). Tarantella, Napoli (Mezzacapo). Serenade, We two (Steck). Ideale (Tosti). March (Preckher). 7.10—Talk. 7.40—Time Signal. 7.41—Gramophone Records of Light Music. 7.55—Oscar Straus Concert by the Concert-Gebouw Orchestra, conducted by the Composer, relayed from the Concert Hall, Amsterdam. Soloists: Irene Elsing and Willi Domgraf-Fassbaender (Vocalists). Overture, "Die Königin." Selection from "Die Prinzessin von Tragant." Two Songs from "Marietta": (a) Frau'n, ihr macht uns das Leben schön, (b) Wer nimmer eine Frau geküsst. Intermezzo and Song from "The Chocolate Soldier." Overture, "Rund um die Liebe." Interval. Waltz, Love in May. Song from "Marietta." Two Duets from "A Waltz Dream." Duet from "The Last Waltz." Overture, "A Waltz Dream."

HUIZEN (Holland)

160 kc/s (1,875 m.); 8.5 kW. 7.40—8.55 a.m.—Gramophone Records, by the Catholic Radio Society (K.R.O.). 9.40—10.40—Programme of the Christian Radio Society (N.C.R.V.). 0.40—Variety Music on Gramophone Records. 9.55—Programme for Invalids. 10.25—Popular Gramophone Records. 10.40—1.40 p.m.—K.R.O. Programme. 10.40—Variety Music on Gramophone Records. 11.10—Religious Address. 11.40—Police Notes. 11.55—Orchestral Concert, conducted by Johan Gritsen. Wilhelminal March (Wesly). Overture, "Masanjello" (Auber). Waltz from "Countess Maritza" (Kálmán). Weber Potpourri (Urbach). Berceuse de Jocelyn (Godard). Two Slavonic Dances (Dvorak). Selection from "Lilac Time" (Schubert-Berté). Song of the Flowers (Lange). Czardas (Monti). Potpourri, Dividenden (Morena). 1.40 till Close Down—N.C.V.R. Programme. 1.40—Lesson in Handicrafts. 2.40—Programme for Women. 3.10—3.40—Interval. 3.40—Programme for Invalids. 4.40—Handwork for Young People. 5.25—Cello Recital by K. Borgers. Elsa Hidde Nyland at the Pianoforte. Sonata in A Minor (Martini). Sonata in C (Dall'Abacó). Sonata in A (Pasqualini). Sonata in D (Telemann). Sonata in G (Bach). 6.25—Dressmaking Lesson. 6.40—Recitations. 7.10—Police Notes. 7.25—Religious News. 7.40—Talks arranged by the Protestantisch Christelijke Reclasseerings-Vereeniging (P.C.R.V.). 8.40—Concert by the Christian Oratorio Society relayed from St. Peter's Church, Utrecht. Conductor and Organ Soloist: Anthon v.d. Horst. Organ Solo: Wie schön leuchtet der Morgenstern (Buxtehude). Incipit lamentatio Jeremiae (Allegrí). Tenebrae factae sunt (Anthonio). Christus factus est pro nobis (Anerio). Rorate Coeli (Cuypers). Adoramus te Christe (Corsi). Sanctus (Lotti). Motet No. 3, Jesu meine Freude (Bach). In the interval at 9.25—News and Variety Music on Gramophone Records. After the Programme, Gramophone Records (cont'd.). 11.10 (approx.)—Close Down.

KALUNDBORG (Denmark)

Kalundborg Radio 260 kc/s (1,153 m.); 7.5 kW. See Copenhagen.

KATOWICE (Poland)

734 kc/s (408 m.); 16 kW. Transmits at intervals from 11.58 a.m. 5.0 p.m.—See Warsaw. 6.20—Concert of Light Music. 8.0—Concert of Popular Music. 10.0—Dance Music.

LAHTI (Finland)

167 kc/s (1,796 m.); 54 kW. Relayed by Helsinki, 815 kc/s (368.1 m.). Transmits at intervals from 7.10 a.m. 6.15 p.m.—Orchestral Selections. 7.0—Talk. 7.20—Song Recital. 7.40—Cello Recital. Wie einst in

## THURSDAY continued

in schön'n Tagen (Popper). Romance (Saint-Saëns). Neapolitan Song (Casella). Berceuse (Godard). Minuet (Valensin). 8.0—Humorous Recitations.

8.15—**Orchestral Concert.** Gold and Silver (Lehar). Romance (Denza). Künstlerleben (Strauss). Viennese Song (Sieczynsky). Selections (Kreiser): (a) Alter Refrain, (b) Kleiner Wiener Marsch.

8.45—News in Finnish and Swedish.

9.15—Military Music, relayed from the Kappeli Restaurant 10.0 (approx.)—Close Down.

**LANGENBERG (Germany)**  
Westdeutscher Rundfunk. 635 kc/s (473 m.); 60 kW.

Transmits at intervals from 6.45 a.m. (Exercises, Weather, Time and Concert Relay).

12 noon—Concert of Light Music.

12.50—Weather Report.

1.0—**Orchestral Concert**, conducted by Wolf. Jubel-Ouverture (Plotow). Mozart in Venice (Brase). Selections from "William Tell" (Rossini). Waltz, Reminiscences of Sweden (Heyncke). Catalan Rhapsody (Albouth). Waltz-Intermezzo, Ganz im geheimen (Offermann). Descriptive Piece, Liebesplauderei (Offermann). Potpourri of Music by Kalman, Fortissimo (Feigel).

2.30—Sponsored Gramophone Concert. 3.30—Economic Notes and Time Signal. 3.50—Programme for Children. 4.10—Notes on the Broadcasts for Schools. 4.20—Educational Talk. 5.0—Concert from Frankfurt. 6.15—Talk: "The Centenary of the Death of Josef Michael Seiler." 6.40—Italian Lesson. 7.0—Weather Report, Time Signal, Economic Notes and Sports Forecast. 7.15—Topical Talk. 7.30—Talk on the West German Industrial Area; The West German Iron and Steel Industry in the Crisis. 7.55—News Bulletin.

8.0—"The Merry Wives of Windsor"—Opera in Three Acts (Nicolai).

10.15—Announcements and Sports Notes. 10.45—Programme to be announced. 12 midnight (approx.)—Close Down.

**LEIPZIG (Germany)**

1,157 kc/s (250 m.); 2 kW. Relay by Dresden, 941 kc/s (319 m.). Transmits at intervals from 6.0 a.m. 6.0 p.m.—Talk: Bath—but with Discretion. 6.15—Talk on Taxation. 6.30—Spanish Lesson. 6.50—An Introductory Talk to the following Discussion. 7.0—Discussion: "The Trade Unions' Proposal for supplying Work."

7.30—**Mandoline Concert**, conducted by Otto Bahlmann. Trenkriener-Marsch (Frühaufer-Ernst Muschter). Madrigal (Florida). Fantasia, Auf den Bergen (Otto Bahlmann). Loin du bal (Gillet). Waltz, El Turia (Granados-Bahlmann). 8.0—Talk: Gens des Statesman.

8.15—**Programme of Literature and Music. Part I—Literature.** "Das Gleichnis vom Blinden"—Poem for Radio (Jochen Huth and Friedel Joachim). **Part II—Concert.** Soloists: Gertrud Möllnitz-Schier (Vocalist), and Leo Bücheler-Gertin (Pianoforte). Four Songs with Pianoforte accompaniment (Walter Kuppfer): (a) Spätherbst, (b) Zypressen, (c) Dämmerung, (d) Sterne. *Old Wine in New Bottles—Or Musical Forms Past and Present.* The Suite: (a) Suite (Scriabini), (b) Suite, Op. 14 (Bela Bartok). The Invention: (a) Two-Part Invention in F (Bach), (b) From Op. 37 (Handel). Children's Pieces: (a) Aus den Kinderstücken (Mendelssohn), (b) From "Undici pezzi infantili" (Alfredo Casella). The Romance: (a) Romance in F Sharp (Schumann), (b) Romance (Tcherepnin). The Caprice: (a) Caprice (Brahms), (b) From the "Five Caprices" (Ernst Toch). The Hobby Horse: (a) Ritter von Steckenpferd (Schumann), (b) Mein Steckenpferd (Albrecht Krauss). The Etude: (a) Etude (Czerny), (b) Jazz-Etude (Fritz Mayerhoff). 10.15—News and Silent Night.

**LJUBLJANA (Yugoslavia)**

522 kc/s (574.7 m.); 2.5 kW. Transmits at intervals from 12.15 p.m. 6.0 p.m.—Quintet Concert. 7.0—Italian Lesson. 7.30—Serbo-Croatian Lesson. 8.0—Relay from the Royal Opera House. 10.30—Time and News.

**LYONS (France)**

La Doua (PTT). 644 kc/s (465.8 m.); 1.5 kW. Transmits at intervals from 8.0 a.m. 7.0 p.m.—Popular Music on Gramophone Records. 7.30—Radio Gazette for Lyon and the South-East. 8.45—"Veronique"—Operetta in Three Acts (Messager), relayed from the Molière Hall.

**MADRID (Spain)**  
Union Radio (EAJ7). 707 kc/s (424.3 m.); 2 kW.

Transmits at intervals from 9.0 a.m. 8.0 p.m.—Chimes, Exchange Quotations, and Market Prices, followed by Talk on Camping and Concert of Request Gramophone Records. 9.15—News Bulletin and Political Review. 10.30—10.0—Interval. 10.0—Lingua-phone French Lesson. 10.30—Chimes, Time Signal, Political Review and News. 10.45 (approx.)—Pianoforte Recital by Estrella Sacristan, and Concert by a Guitar Orchestra relayed from the Hotel Nacional. 12.45 a.m. (Friday)—News Bulletin. 1.0—Chimes and Close Down.

**MILAN (Italy)**  
Ente Italiano Audizioni Radiofoniche. 925 kc/s (331.5 m.); 7 kW. See Turin.

**MORAVSKÁ-OSTRAVA (Czechoslovakia)**

1,137 kc/s (263.8 m.); 11 kW. Transmits at intervals from 10 a.m. 6.55 p.m.—See Prague. 10.15—Programme, Announcements and Theatre Guide. 10.20—Orchestral Concert of Popular Music.

**MOSCOW (Russia)**

Trades Union. 230.1 kc/s (1,304 m.); 100 kW. Transmits at intervals from 5.0 a.m. 6.30—Proletariat Radio Journal. 7.15—Programme for Young Communists. 8.0—Review of the Week's Events and Answers to Correspondents in English and German. 9.55—Time. 10.0—Weather Forecast.

**MUNICH (Germany)**

563 kc/s (533 m.); 1.5 kW. Relay by Augsburg and Kaiserslautern, 536 kc/s (560 m.), and Nürnberg, 1,256 kc/s (239 m.).

Transmits at intervals from 6.45 a.m. 5.0 p.m.—"Poste-Haste"—Variety Programme by Members of the State Railways and the Post Office. 6.15—Time Signal, Weather Forecast and Agricultural Report. 6.25—Talk: Banks—Private and State-protected. 6.45—Agricultural Talk. 7.5—Gramophone Concert of Songs from the latest Sound-Films. 7.30—Choral Concert. 7.50—Talk: "The Industrial Distress in the Danube Regions."

8.10—**Bavarian Composers—Concert** by the Station Orchestra, conducted by Hans Winter, relayed from the Odeon. Soloists: Fritz Jold (Soprano), Martha Martensen (Soprano), Julius Pölzer (Tenor), Aldo Schön (Pianoforte), Josef Wurm-dobler (Oboe) and Max Herberth (Horn). Concert Overture, Op. 8 (Schiffmann). Concerto for Oboe, Horn, Pianoforte, Drums and String Orchestra, Op. 5 (Rauch). Symphonic Poem for Soprano and Orchestra, Pan (Frankenburger), conducted by the Composer. Scene and Duet from the Comic Opera "Clothes make the Man" (Suder), conducted by the Composer. Concerto for Pianoforte and Orchestra (Saller). After the Concert, Popular Music on Gramophone Records.

10.20—Time Signal, Weather Forecast, News Bulletin and Sports Notes.

**OSLO (Norway)**

Kringkastingselskapet. 277 kc/s (1,083 m.); 60 kW. Relay by Fredrikstad, 816 kc/s (367.6 m.); Hamar, 536 kc/s (560 m.); Notodden, 671 kc/s (447.1 m.); Porsgrund, 662 kc/s (453.2 m.); and Rykum, 671 kc/s (447.1 m.). Transmits at intervals from 10.0 a.m. 5.30 p.m.—Light Music on Gramophone Records. 6.0—German Lesson. 6.30—Divine Service. 7.0—Announcements, Weather and News Bulletin.

7.30—Pianoforte Recital by Rolf Brandt Pantzau. 8.0—Time Signal. 8.1—Agricultural Talk.

8.30—**Concert by the Station Orchestra**, conducted by Hugo Kramm. Overture, "Don Giovanni" (Mozart). Concerto in C for Violin and Orchestra (Vivaldi). Selection from "The Damnation of Faust" (Berlioz). Poem for Violin and Orchestra (Chausson). Overture, "Carmen" (Bizet).

9.40—Weather and News Bulletin. 10.0—Topical Talk. 10.15—Reading. 10.45 (approx.)—Close Down.

**PALERMO (Italy)**

Ente Italiano Audizioni Radiofoniche. 554 kc/s (542 m.); 3 kW. Transmits at intervals from 12.45 p.m. 5.30 p.m.—Variety Music on Gramophone Records. 6.0—Programme for Children. 6.30—8.0—Interval. 8.0—Announcements, Agricultural Report and Giornale Radio. 8.20—Popular Music on Gramophone Records.

In the interval at 8.30—Time and Announcements

8.45—"Don Pasquale"—Opera in Three Acts (Donizetti). In the intervals, Talk and Cinema Notes. 10.55—News Bulletin.

**PARIS (France)**

Eiffel Tower (FLE). 207.5 kc/s (1,445.7 m.); 13 kW. Time signals (on 2,650 m.) at 10.26 a.m. and 11.26 p.m. (preliminary and 6-dot signals).

6.45 p.m.—Theatre Review. 7.0—Le Journal Parlé. 8.20—Weather Forecast.

8.30—**Gramophone Concert.** Overture, "Euryanthe" (Weber). The Two Last Movements from the Concerto in E Flat for Pianoforte and Orchestra (Beethoven). Two Songs from "The Marriage of Figaro" (Mozart). Minuet (Mozart). Sonata in C for Organ and Orchestra (Mozart). Selection from "Madame Pompadour" (Fall). Two Pieces (Goublier): (a) L'Angélus de la mer, (b) Le Crédo du paysan. Selection from "The Gipsy Princess" (Kálmán). Coquillots (Moret). Sizzietta (Blon). Selections (Pryor): (a) The Whistler and his Dog, (b) The Whistler's Serenade. Le Forgeron du village (Cormant). Mona Lisa (Carter). Nobody's Sweetheart (Myers). Au bal musette (Alexander). 10.0 (approx.)—Close Down.

**PARIS (France)**

Poste Parisien. 914 kc/s (328.2 m.); 60 kW.

Transmits at intervals from 12 noon. 7.0 p.m.—Light Music on Gramophone Records, Talk and News. 7.30—Sponsored Gramophone Concert. 8.0—Dramatic Programme. 8.30—Gramophone Records, Talk and News.

8.45—**Vocal and Orchestral Concert.** Overture, "The Italian Girl in Algiers" (Rossini). Quintet for Pianoforte, Flute, Clarinet, Horn and Bassoon (Rimsky-Korsakov). Andante and Finale from the Concerto in C for Pianoforte and Orchestra (Beethoven). Concertante Quartet for Oboe, Clarinet, Horn, Bassoon and Orchestra (Mozart). Entr'acte from "Rose-munde" (Schubert). Suite in C (Bach). Hungarian Dance No. 6 (Brahms). March from "Etienne Marcell" (Saint-Saëns).

10.45—News Bulletin. 10.50 (approx.)—Close Down.

**PARIS (France)**

Radio-Paris (CFR). 174 kc/s (1,725 m.); 75 kW. 6.45 a.m.—Physical Culture. 7.30—Weather and Physical Culture, (continued).

7.45—**Gramophone Records**, Selection from "Les Noces de Jeannette" (Massé). Overture, "Mignon" (Thomas).

8.0—News, Weather and Press Review. 12 noon—Protestant Address.

12.30 p.m.—**Gramophone Concert for Young People.** Tailor's Dance (May). Selection from "Cocoricó" (Ganne). Un chasseur comme moi (Devilliers). Un pêcheur comme moi (Devilliers). Alpine Greeting. Alpine Joy. Nocturne (Keramy). Anatole recites a Fable (Coquillon). Les petites filles modèles (Péris). Polka, The Snowdrop. Fables (La Fontaine): (a) L'ours et les deux compagnons, (b) Conseil tenu par les rats, (c) Le coche et la mouche. German Dances (Mozart). Harpsichord Solo: Fileuse (Desmarests). Violin Solo: Ronde des Lutins (Bazzini). Suite, Mother Goose (Ravel). Selection from "Das Nachtlager in Granada" (Kreutzer). In the intervals at 1.0—Exchange, News and Weather and at 1.30 and 2.0—Exchange.

3.45—Exchange and Market Prices. 6.30—Market Prices, Weather, Agricultural Report, Talk and Racing Results. 7.0—Talk. 7.30—German Lesson. 7.45—German Press Review, Commercial Prices and News. 8.0—"Tosca"—Opera (Puccini). The Orchestra, conducted by Henri Defosse. Soloists: Madeleine Mathieu, Hermann Simberg of Berlin and Hubert Audoin. In the intervals at 8.30—News, Sports Notes, Weather and Review by Dominique Bonnaud and at 9.15—Press Review and News.

**PITTSBURGH (U.S.A.)**

Westinghouse Electric (KDKA). 980 kc/s (306 m.); 25 kW. Relay by W8XK on 48.8 m. and 25.25 m. (See Short-Wave List).

Transmits at intervals from 12.30 p.m. 9.0 p.m.—Decorating Notes from New York. 9.15—Teaberry Baseball Scores. 9.20—Business News. 9.25—David Lawrence Dispatch. 9.30—Pebeco Weather Report. 9.31—Market Reports. 9.45—KDKA Kiddies' Klub. 10.0—Coffee Matinee from New York. 10.30—Singing Lady, from New York. 10.45—Little Orphan Annie, from New York. 11.0—Time Signal. 11.1—Temperature Report. 11.2—Who's News To-day. 11.7—Teaberry Sport Review. 11.12—Press News-Reeler. 11.15—Westinghouse Musical Maids. 11.45—Literary Digest Topics, from New York. 11.59—Time Signal.

12 midnight—1.15 a.m. (Friday)—New York Relay. 12 midnight—Pepsodent Amos 'n Andy. 12.15—Programme to be announced.

12.30—The Stebbins Boys. 12.45—Billy Jones and Ernie Hare. 1.0—The Edgeworth Programme from New York. 1.5—Rin Tin Tin Thrillers. 1.30—Ivory Tin Programme from New York. 1.45—Sisters of the Skillet. 2.0—Blackstone Plantation from New York. 2.30—Thompkins Corners.

3.0—A. and P. Dance Gypsies from New York. 3.30—Paris Night Life, from New York. 3.45—Contract Bridge, E. Hall Downs. 4.0—Time Signal. 4.1—Teaberry Sport Review. 4.11—Temperature Report. 4.12—Weather Report. 4.15—Press Last Minute News. 4.20—Margaret Russell (Contralto). 4.30—Lew Conrad and his Orchestra, from New York. 5.0—Programme to be announced. 5.15—Time Signal and Goodnight.

**PRAGUE (Czechoslovakia)**

614 kc/s (488.6 m.); 120 kW. Transmits at intervals from 6.15 a.m. 5.45 p.m.—Talk on Music, arranged by the Masaryk Institute. 5.55—Yugoslavian Poetry and Music. 6.5—Programme to be announced. 6.15—Talk: The Crisis and Morals. 6.25—German Transmission: News. 6.5—Introductory Talk to the following Transmission: 7.0—"Dimitri"—Opera in Four Acts (Dvorák), relayed from the National Theatre. In the intervals, Talk; and at 9.0—Time and News. 10.0—Miscellaneous Announcements. 10.20—See Moravská-Ostrava.

**RADIO-SUISSE ROMANDE (SOTTENS) (Switzerland)**

743 kc/s (403 m.); 25 kW.; Lausanne, 442 kc/s (680 m.); and Geneva, 395 kc/s (760 m.).

12.30 p.m.—Time Signal from Neuchâtel Observatory. 12.31—Weather Forecast and News Bulletin. 12.40 (from Lausanne)—Gramophone Concert of Popular Music. 1.0—Exchange Quotations. 1.5—Gramophone Concert (cont.). In the intervals, Humorous Items relayed from Geneva. 1.45—5.0—Interval. 5.0—Time Signal from Neuchâtel Observatory. 5.1—Concert by a String Orchestra, conducted by Robert Echenard. 5.50 (from Lausanne)—Literary Programme. Poems with a Musical Setting, recited by Jane Grau, with Pianoforte accompaniment by Mme. Bauck-Braun. 6.10—Orchestral Concert (contd.). 6.45 (from Geneva)—Programme for Children. 7.0—Weather Forecast. 7.1 (from Lausanne)—Film Talk. 7.20 (from Lausanne)—Report of the Swiss Peasants' Association. 7.30 (from Geneva)—Theatre Notes. 7.55—Announcements. 8.0 (from Lausanne)—"Fantasia"—Programme by Jean Peitrequin. 8.15—Concert of French Music by the Station Orchestra. 9.10 (from Geneva)—Debussy Concert by Marie Panthès (Pianoforte) and Violette Andreassi (Songs). 10.0—Weather Forecast and News Bulletin. 10.15 (approx.)—Close Down.

**ROME (Italy)**

Ente Italiano Audizioni Radiofoniche (IRO). 680 kc/s (441 m.); 50 kW. Relay by Naples, 941 kc/s (319 m.); and 2RO, 11,810 kc/s (25.4 m.). 8.15—8.30 a.m.—Giornale Radio and Announcements. 12 noon—2 p.m.—Gramophone Concert of Variety Music. In the intervals: Weather, Giornale Radio, Exchange, Time and Announcements. 5.0—Exchange Quotations. 5.5 (Naples)—Programme for Children, followed by Sports Notes. 5.5 (Rome only)—Children's Radio Review. 5.25—Giornale Radio and Announcements. 5.30—Song Recital by Armando Zucarelli (Baritone). Ricordando (Gennaro Napoli). Three Songs (de Curtis): (a) Parlez moi d'amour, (b) Non mi ami più, (c) Serenata d'aprile.

5.45—**Instrumental Concert.** Prelude to Act I of "Edmea" (Catalani). Burlesca (Culotta). Oriental Fantasia, Stamboul (Donati). Cerco

una contadina (Culotta). Ronda degli zingari (Ranzato). 6.15—Giornale dell'Enit. 6.55 (Naples)—Shipping and Sports Notes. 7.0—Agricultural Notes, Announcements, Giornale Radio and Press Review. 8.0—Time, Announcements and Gramophone Records of Variety Music. 8.30—Talk for the Housewife, followed by Sports Notes and Announcements.

8.45—**Concert by the Rome Quartet.** Soloists: Elda di Veroli (Soprano), Aldebrando Madami (Siffleur), Emilio Livi (Tenor), Guglielmo Castello (Baritone), Maria Willaume (Mezzo-Soprano), and Arturo Dalmonico (Bass). 1. Quartet in D Minor—"Death and the Maiden," for Two Violins, Viola and Cello (Schubert). 2. Soprano Solos: (a) Vieni amor con me (Carnevali) (b) Aria from "Don Pasquale" (Donizetti), (c) Aria from "Lakmé" (Delibes). Three Whistling Pieces with Guitar accompaniment: (a) Two Old Dances, (b) Bravura Variations on Motives from "A Carnival in Venice" (Paganini). Humorous Talk. Selections from "Rigoletto" (Verdi). Casanova a Venezia (Pick-Mangiagalli). 10.55—News Bulletin.

**SCHENECTADY (U.S.A.)**

General Electric Company (WGY). 790 kc/s (379.5 m.); 50 kW. Relay by W2XAF and W2XAD (See Short-Wave List).

Transmits at intervals from 11.45 a.m. 9.0 p.m.—Musical Comedy Hits from New York. 9.30—Musical Ad Men. 9.50—News Items. 10.0—Stock Reports and Police Notes. 10.15—Skippy, from New York. 10.30—Bosco Children's Programme. 10.45—Chandu the Magician. 11.0—Joe and Eddie. 11.15—Annette McCullough (Crooner). 11.30—Musical Comedy Hits. 11.55—Baseball Scores.

12 midnight (WGY only)—DeWitt Clinton Orchestra. 12 midnight (W2XAF only)—Stock Reports and News Items. 12.30—4.0 a.m. (Friday)—New York Relay. 12.30—Barbours Programme. 12.45—The Goldbergs. 1.0—The Fleishman Hour. 2.0—Big Six of the Air. 2.30—Adventures of Sherlock Holmes. 3.0—Lucky Strike Dance Hour. 4.0—Carmelo Cascio (Pianist). 4.15—Floyd Walter (Organist). 4.45—Cotton Club Orchestra. 5.0—DeWitt Clinton Orchestra. 5.30—New Kenmore Orchestra. 6.0 (approx.)—Close Down.

**SCHWEIZERISCHER LANDESENDER (BEROMÜNSTER) (Switzerland)**

653 kc/s (459 m.); 60 kW.; Basle, 1,229 kc/s (244.1 m.); and Berne, 1,220 kc/s (246 m.). 12.28 p.m.—Time Signal from Neuchâtel Observatory. 12.30—Weather Report and News Bulletin. 12.40—Gramophone Concert: From the Country Dance to the Rumba. 1.35—Weather Report and Exchange Quotations. 1.45—3.30—Interval. 3.30 (from Basle)—Programme for Women.

4.0—Concert by the Station Orchestra. 5.0—6.30 (from Basle)—Topical Talk. 7.0—Time Signal, Weather Forecast, Traffic Report and Light Music on Gramophone Records. 7.30 (from Basle)—Italian Lesson. 8.0 (from Basle)—Concert by the Basle Chamber Orchestra. Conducted by Paul Sacher. Soloist: Lisa Minghetti (Violin). 9.30—Weather Forecast and News Bulletin. 9.45—Late Concert by the Station Orchestra. 10.30 (approx.)—Close Down.

**STOCKHOLM (Sweden)**

Radiojäst (SASA). 689 kc/s (436 m.); 55 kW. Relay by Boden, 244 kc/s (1,229.5 m.); Göteborg, 932 kc/s (322 m.); Hörby, 1,166 kc/s (257 m.); Motala, 222.5 kc/s (1,348 m.); Östersund, 389 kc/s (770 m.); and Sundsvall, 554 kc/s (542 m.). Transmits at intervals from 8.0 a.m. 5.45 p.m.—Gramophone Records of Variety Music. 6.45—Talk on Religious History. 7.15—Weather and News. 7.30—Talk. 7.50—**Orchestral Concert.** Soloist: Oluf Nielsen (Violin). Symphony in B, Op. 4, No. 1 (Svendens). Overture, "Tristan und Isolde" (Wagner). Symphonic Poem, Sarka (Smetana). Introduction and Rondo capriccioso for Violin and Orchestra (Saint-Saëns). Symphonic Dances (Grieg).

9.25—Review of Foreign Affairs. 9.45—Weather and News. 9.45—**Concert of Light Music.** Overture, "The Bohemian Girl" (Balfe). Waltz, Tempi passati (Dreissen). Schlummedielchen (Kocher). Valse fresco (Wersen). Suite (Edward German). Musical

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continued

proibita (Gastaldon). Selection from "Farrangio" (Penna). 11.0 (approx.)—Close Down.

**STRASBOURG (France)**  
Radio-Strasbourg (PTT). 869 kc/s (345 m.); 11.5 kW.

11.30 a.m.—Gramophone Concert of Opera and Light Music. 12.45 p.m.—News in French and German. 1.0—Time Signal. 1.2—Gramophone Concert (continued). 2.0—Programme for Children. 3.0—4.0—Interval. 4.0—Light Music on Gramophone Records. 4.45—Elocution Lesson in French. 5.0—Dance Music. 6.0—Talk in French on History. 6.15—Talk in French: French Towns and Provinces—Burgundy.

6.30—Orchestral Concert conducted by Maurice de Villers. Overture, "Le Roi l'a dit" (Delibes). Bourrée fantasque (Chabrier). Selection from "Samson and Delilah" (Saint-Saëns). Scènes alsaciennes (Massenet). Une fête à Aranjuez (Demersmann).

7.30—Time Signal. 7.32—News in French and German. 7.45—Gramophone Records of Variety Music.

8.0—Concert relayed from *Marseilles*.

9.0—Military Band Concert relayed from Nancy. March. Overture, "Euryanthe" (Weber). Pavane pour une Infante défunte (Ravel). Fantasia on Two Popular Themes (Bretagne). Minuet and Hungarian March from "The Damnation of Faust" (Berlioz). Selections (Wagner): (a) Selection from "Parsifal" (b) March from "Tannhäuser." In the interval, Talk on Military Band Music. 10.30 (approx.)—Close Down.

**STUTTGART (MÜHL-ACKER) (Germany)**  
Süddeutscher Rundfunk. 832 kc/s (360.5 m.); 60 kW. Relay by *Freiburg*, 527 kc/s (570 m.).

Transmits at intervals from 6.0 a.m. (Time, Weather and Gymnastics).

10.0 a.m.—Violin and Guitar Recital. Nocturne (Molino). Serenade (Corulli). Sonata (Gragnani).

10.30—Recital of Swiss Folk Songs by Ernestine Farber-Strasser. German Switzerland: Two Songs in Dialect. Italian Switzerland: (a) Dormi dormi bel Bambin, (b) I trece, (c) Cucu, (d) Son tre mesi, che fo il soldato, (e) La va ni

filanda, (f) Quattro cavai che trottao.

11.0—Time, Weather and News. 11.15—11.30—Sponsored Musical Programme.

12 noon—*The Milan Scala—Gramophone Concert*. Selections from "I Pagliacci" (Leoncavallo). Selections from "Aida" (Verdi). Selections from "La Traviata" (Verdi).

12.50 p.m.—Time, Weather, News and Programme Announcements. 1.0—Concert from *Munich*. 1.55—News Bulletin. 2.0—2.15—Sponsored Musical Programme. 2.30—Elementary Spanish Lesson. 3.0—Elementary English Lesson. 3.30—See *Frankfurt*.

4.0 (from *Freudenstadt*)—Concert, conducted by Albrecht Krämer. Overture, "Der Wildschütz" (Lortzing). Waltz, Münchner Kindl (Komzak). Selection from "The Maid of the Black Forest" (Jessel). Romance in F (Tchaikovsky). Spanish Dances (Moszkovsky).

5.0—See *Frankfurt*. 6.15—Time and Weather. 6.25—Talk: Are Spiders Poisonous? 6.50—See *Frankfurt*.

7.10—Time and Agricultural Notes. 7.30—"Through German Provinces"—a Gay Gramophone Recital by Carl Struve.

8.30—Two Radio Plays: (a) "Heimweg zur Erde" (Otto Bernhard Wendler); (b) "Der Doktor"—Comedy in One Act (Max Heye).

9.30—Concert of New Music [by Austrian Composers. The Stuttgart Philharmonic Orchestra, conducted by Emil Kahn. Soloist: Rhoda von Glehn (*Soprano*). Kammer-symphonie in One Movement (Arnold Schönberg). From the Eighth Suite (Hauer). Triumph der Empfindsamkeit (Ernst Krenek).

10.20—Time, Weather, News and Programme Announcements.

10.45—Dance Music from London. 12 midnight (approx.)—Close Down.

**TOULOUSE (France)**  
Radiophonie du Midi. 779 kc/s (385 m.); 8 kW.

Transmits at intervals from 12.30 p.m. 5.0 p.m.—Picture Transmission. 5.15—Exchange Quotations. 5.30—Military Music. 5.45—Allegro con brio from the Third Symphony—the Eroica (Beethoven).

6.0—Songs from *Opéra-Comique*. Selections from "L'attaque du moulin" (Bruneau), "Si j'étais roi" (Adam) and "The Pearl Fishers" (Bizet).

6.15—Accordion Solos. 6.30—Exchange Quotations and Racing Results.

6.45—*Opéra-Comique Music*. Overture, "Norma" (Bellini). Overture, "La Traviata" (Verdi). Selection from "Rigoletto" (Verdi).

7.0—Tourist Report. 7.15—Sound Film Music. 7.30—News Bulletin.

7.45—Concert by a Viennese Orchestra. Fantasia on Strauss Airs. Hungarian Potpourri. Der Rosehochzeitszug (Jessel). Liebesfreud (Kreisler). Memories (Waldeufel).

8.15—*Opéra-Comique Songs*. Selections from "Lakmé" (Delibes). "La Traviata" (Verdi) and "I Pagliacci" (Leoncavallo).

8.30—Military Music. 8.45—Accordion Solos.

9.0—Songs. Toute ma vie dans un baiser (Gavel). Tilka (Gavel). French Serenade (Leoncavallo). Le temps des cerises (Renard).

9.15—Dance Music. 9.30—*Opéra-Comique Music*. Overture, "The Daughter of the Regiment" (Donizetti). Selection from "The Bartered Bride" (Smetana). 9.45—Selections by an Argentine Orchestra.

10.0—Songs from *Operettas*. Selections from "Countess Maritza" (Kálmán), "The Divine Lady" (Shilkret) and "Paganini" (Lehar).

10.15—Light Music. 10.30—North African News. 10.45—Suite No. 2 from "Peer Gynt" (Grieg).

11.0—Concert. Waltz (Marafioti). Tango (Raiter). Clair de Lune from "Werther" (Massenet). The Glow-Worms (Botrel). La Filieuse (Botrel). Parle-moi (Lenoir). Le Cygne (Saint-Saëns). The Cuckoo. Vilanelle des petits Canards. Berceuse d'amour (Boulant). Le hoquet chinois (Bach and Laverne). Pistonnade (Vacher). Loin du Bal (Gillet). Souvenir (Drldla). Tes yeux (Bonincontro).

12 midnight—Weather and Announcements. 12.5 a.m. (Friday)—English Concert. 12.30 a.m. (approx.)—Close Down.

**TRIESTE (Italy)**  
Ente Italiano Audizioni Radiofoniche. 1,211 kc/s (247.7 m.); 10 kW.

Transmits at intervals from 8.15 a.m. 7.5 p.m.—*Quintet Concert*. Nell Equador (Simonetti). Hungarian Roses (Schmeling). Song without words (De Micheli). Dubbio (Moretti). Suite, Wolfgaister (Leuschner). Bird beneath the Tree (Seybold). Fanciulle (Mastrocinque).

8.0 till Close Down. See *Turin*.

**TURIN (Italy)**  
Ente Italiano Audizioni Radiofoniche. 1,096 kc/s (273.7 m.); 7 kW. Relay by *Milan*, 905 kc/s (331.5 m.), *Genoa*, 959 kc/s (312.8 m.) and *Florence*, 599 kc/s (500.8 m.).

Transmits at intervals from 8.15 a.m. 6.45 p.m.—Agricultural Notes. 7.0—Announcements. 7.5—Variety Concert. 7.30—Time and Announcements, followed by Gramophone Records of Variety Music. 8—Giornale Radio, Weather and Gramophone Records of Variety Music. 8.25—Talk for Housewives. 8.30—A Comedy in Three Acts, followed by Dance Music. 10.55—News Bulletin.

**VATICAN CITY (Rome)**  
15,123 kc/s (19.84 m.) (Morning); and 5,969 kc/s (50.26 m.) (Evening); 10 kW.

11.0—11.15 a.m.—Religious Information in French. 8.0—8.15 p.m.—Religious Information in Italian.

**VIENNA (Austria)**  
Radio-Wien. 581 kc/s (517 m.); 15 kW. Relay by *Graz*, 852 kc/s (352.1 m.); *Innsbruck*, 1,058 kc/s (283 m.); *Klagenfurt*, 662 kc/s (453.2 m.); *Linz*, 1,220 kc/s (246 m.); and *Salzburg*, 1,373 kc/s (218 m.).

Transmits at intervals from 6.20 a.m. 4.55 p.m.—Concert of Light Music by the Karl Haupt Orchestra. 6.5—Talk: The Electric Eye. 6.30—Talk: Things the Taxpayer should know. 6.50—Reading. 7.0—Weekly Feuilleton. 7.25—Time Signal, Weather Report, and Programme Announcements.

7.35—Missa Solennis (Beethoven), relayed from St. Stephen's Cathedral.

The Viennese Symphony Orchestra and Choir of St. Stephen's Cathedral, the "Drczielblinden" Choral Society and Soloists of the Viennese State Opera. Conductor: Ferdinand Habel. 9.0—Talk: Friedrich von Gentz, on the Centenary of his Death. 9.30—"Gentz and Fanny Elssler"—One-Act Play (Wassermann). 10.20—News Bulletin. 10.35—Concert by the Robert Hügel Orchestra, relayed from the Krantz-Ambassador Hotel.

**WARSAW (Poland)**  
Polski Radio, 212.5 kc/s (1,411 m.); 120 kW.

11.58 a.m.—Time Signal and Bugle Call from the Tower of St. Mary's Church, *Cracow*. 12.5 p.m.—Programme Announcements. 12.10—Interval. 12.30—Press Review. 12.40—Weather Report. 12.45—Light Music on Gramophone Records. 2.0—Interval. 3.0—Economic Report. 3.10—Popular Music on Gramophone Records. 3.30—Announcements. 3.35—Light Music on Gramophone Records. 4.35—Hydrographic Report. 4.40—Book Review.

5.0—Concert of Chamber Music by the Dubiska Quartet. Quartet in A Op. 20, No. 6 (Haydn). La Oracion del Torrero (Turino). String Quartet in E Flat, No. 3 (Mozart).

6.0—Talk (to be announced). 6.20—Light Music. 7.15—Miscellaneous News.

8.0—Concert of Light Music by the Philharmonic Orchestra, conducted by S. Nawrot. Soloist: M. Janowsky (Tenor). March of the Gladiators (Fück). Polonaise (Krupinsky). Solemn Overture (Lortzing). Barcarolle from "The Tales of Hoffmann" (Offenbach). Songs: (a) Waltz (Lehar), (b) Air from "Paganini" (Lehar), (c) Song (Stolz). Ballet Music from "Sylvia" (Delibes). Songs. Waltz, "The Christmas Tree" (Rebikow). Procession of the Gnomes (Blon). Tales from the Vienna Woods (Johann Strauss). Mazurka from a Ballet (Krupinsky).

9.20—Reading from the Works of Dygasinsky. 9.50—Radio Journal. 9.55—Weather Report. 10.0—Dance Music. 10.40—Sports Notes. 10.50—Dance Music. 11.30 (approx.)—Close Down.

**PRINCIPAL EVENTS**

**SYMPHONY CONCERTS**

- 7.0 p.m. Prague: The Czech Philharmonic Orchestra.
- 8.0 " Warsaw: Mlynarski conducts.
- 8.30 " Strasbourg.
- 9.0 " Italian Stations (N.): Rito Selvaggi conducts.

**CONCERTS (Vocal and Instrumental)**

- 8.0 p.m. Brussels No. 1: The Station Orchestra.
- 8.0 " Schweizerischer Landessender: "The Unknown Verdi."
- 8.15 " Heilsberg: Operatic programme.
- 8.30 " Budapest: "The Legend of St. Elisabeth" (Liszt).
- 9.15 " Berlin (Witzleben), Heilsberg: Edwin Fischer (pianist and conductor).
- 10.40 " Leipzig: Late Concert.
- 10.45 " Frankfurt, Stuttgart: Late Concert.

**OPERA**

- 7.30 p.m. Munich: "A Masked Ball" (Verdi).
- 8.15 " Stuttgart, Frankfurt, Königs Wusterhausen: "Light Cavalry" (Suppé).
- 9.25 " Breslau: Excerpts from "The Maid of the Black Forest."

**CHAMBER MUSIC**

- 9.0 p.m. Langenberg.
- 10.0 " Stockholm: The Barkel Quartet.

**RECITALS**

- 7.20 p.m. Hamburg: Songs (Josef Marx and Gustav Mahler).
- 8.0 " Prague: Professor Zelenka ('Cello).
- 9.15 " Copenhagen: Sonata, Violin and Piano-forte (Beethoven).

**MISCELLANEOUS**

- 8.45 p.m. Radio-Paris: "Poems in Prose" (Baudelaire).

**DANCE MUSIC**

- 10.45 p.m. Copenhagen.

**FRIDAY (June 10)**

**Viva Verdi**

The plot of Verdi's *Masked Ball* was founded on actual history, and, as the libretto was first written, it dealt with the murder of King Gustav III, of Sweden. When the opera was about to make its appearance, an attempt on the life of Napoleon III had just been made, and the Italian authorities would not hear of an opera which centred round an incident so nearly similar; Verdi was told that the story would have to be drastically altered. He refused to do anything of the kind, and the news of the disagreement between him and the authorities soon became known. Popular feeling was very much on the side of Verdi, and wherever he went crowds followed him shouting their loyalty. It was then that the cry "Viva Verdi" heard on all hands, was discovered, by an odd coincidence, to have a political significance, as the letters of his name stood for "Vittorio Emanuele Re D'Italia."



Von Suppé, whose *Light Cavalry* is being broadcast from Stuttgart.

Eventually it was decided that though the story might remain as it stood, the scene and the people would all have to be re-named, and the setting was accordingly removed to America, in the days of British rule, at that time far enough away from Italy to be to all intents and purposes out of their world. The result was to make the story rather a silly one; none of the characters or incidents have any resemblance to real life, so that it is by Verdi's splendid music alone that the opera has made its way, completely ousting the former settings of the same story, one by Mercedante and one by Auber. It has recently been revived on more than one stage, and this evening is being relayed by MUNICH from the National Theatre.

**When Coffee Was Forbidden**

Hedged about as we are to-day by prohibitions and restrictions, finding at every turn that there are yet more things which we are unexpectedly forbidden to do, we are at least at liberty to drink coffee where and when we please. But in the 18th century, its use was definitely forbidden in more than one part of Europe, and the "coffee-smellers"—as tale-bearers came to be known—were rewarded by being given a proportion of the fines exacted from the offenders. Bach's cantata is not the only piece of its kind which satirizes the stern law. The poem on which it is based is by Picander, the author of a number of texts which Bach used, and it was quite well-known before Bach seized on it as a subject for making merry. The cantata is quite short and has no dramatic action; it consists only of a father's forbidding his daughter to indulge in the terrible habit of coffee drinking, of her pleading with him, and her vow that she will never marry anyone who will not allow her to enjoy her cup of coffee at least three times a day. Unless she may drink her favourite beverage, so she tells her cruel parent, she will become like a dried up piece of roasted goat flesh. Rather would she give up her fashionable wide skirt, spread out on whalebones, her walks abroad, even the embroidered ribbon in her cap. Bach's music is as simple and lighthearted as the little story, one of the best examples we have of the great master in an hour of relaxation from his solemn duties as organist and Cantor of St. Thomas's. The cantata is to be sung in this evening's STRASBOURG Symphony Concert, beginning at 8.30.

**NATIONAL**

	kc/s	m.	kW.
London:	1,148	261.3	50
Daventry:	193	1,554.4	30
Northern:	995	301.5	50

- 10.15 a.m.—The Daily Service.
- 10.30—Time Signal (Greenwich); Shipping Forecast.
- 10.45—11.0—The Week in Westminster. Miss Megan Lloyd George, M.P.
- 12 noon—Emanuel Starkey and his Orchestra.
- 12.45 p.m.—Organ Recital, by J. A. Sowerbutts.
- 1.0—Time Signal (Greenwich).
- 1.30—The Open Golf Championship. An Eye-Witness Account by Mr. Bernard Darwin.
- 1.45—A Recital of New Gramophone Records.
- 2.25—Reception Test.
- 2.30—Sir John Russell, F.R.S.: "How our Food is Produced—IV."
- 2.55—Interval.
- 3.0—"Life and Work in the British Isles"—VII. The Reverend C. J. Beresford.
- 3.20—Interval.
- 3.30—Gramophone Recital for Schools.
- 4.15—The Edinburgh Studio Orchestra.
- 4.45—Time Signal (Greenwich).
- 5.15 (Daventry)—The Children's Hour.
- 5.15 (London and Northern)—The B.B.C. Dance Orchestra.
- 6.0—"The First News."
- 6.30—The Foundations of Music.
- 6.50—"Your Week-end in the Garden." Mr. C. H. Middleton.
- 7.10—7.25—"The Theatre." Mr. James Agate.
- 7.30—"Biology in the Service of Man"—III. Sir J. Arthur Thomson, L.L.D.
- 8.0—Orchestral Concert. The B.B.C. Orchestra, conducted by Edward Clark.
- 9.0—Time Signal (Greenwich).
- 9.0—"The Second News."
- 9.15—The Open Golf Championship. An Eye-Witness Account.
- 9.30—"Here and Now." Mr. Gerald Barry.
- 9.45—"Miscellany" (the third). The Nonsense Barouche or "Don't Wear Opals," by C. Denis Freeman and M. H. Allen.
- 10.45—12 midnight—Dance Music.
- 11.30—Time Signal (Greenwich).

**REGIONAL**

	kc/s	m.	kW.
London:	842	356.3	50
Midland:	752	398.9	25
Northern:	626	479.2	50

- 10.15 a.m. (London and Northern)—The Daily Service.
- 10.30—11.0 (London and Northern)—Daventry National Programme.
- 11.30—12 noon (London)—Experimental Television Transmission (Baird Process).
- 12 noon—Frank Newman at the Organ.
- 12.30 p.m.—The Senior T.T. Race. A Running Commentary on The Senior International Auto-Cycle Tourist Trophy Race.
- 2.0 (approx.)—3.0—The Northern Studio Orchestra.
- 4.15 (London and Northern)—Daventry National Programme.
- 5.15—The Children's Hour.
- 6.0—"The First News."
- 6.30 (London)—Orchestral Concert. Margaret Wilkinson (Soprano). The B.B.C. Orchestra (Section G), conducted by Joseph Lewis.
- 6.30 (Midland)—Light Music. Ernest Parsons and his Orchestra.
- 6.30 (Northern)—The Studio Orchestra. James Murray (Pianoforte).
- 7.30 (Midland)—"The Songs of Brahms." A Recital by Chatterly Ingram (Contralto).
- 7.35 (Northern)—Rex O'Grady at the Organ.
- 8.0—The B.B.C. Dance Orchestra, directed by Henry Hall.
- 9.0—Speeches at The National Savings Assembly. Relayed from The Imperial Hydro Hotel, Blackpool.
- 9.30 (London)—Programme of English Light Music. The B.B.C. Theatre Orchestra. Conductor, Leslie Woodgate.
- 9.30 (Midland)—A Recital of Gramophone Records.
- 9.30 (Northern)—British Composers. The Northern Studio Orchestra.
- 10.15—"The Second News."
- 10.35—11.0 (Midland)—As London.
- 10.35—12 midnight (London and Northern)—Dance Music.

**NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME**

**ALGIERS (N. Africa)**

825.3 kc/s (363.3 m.); 13 kW. Transmits at intervals from 12.30 p.m. 7.15 p.m.—Agricultural Report. 7.30—Songs from "La Traviata" (Verdi), "Mireille" (Gounod), "Lohengrin" (Wagner), "Faust" (Gounod), "Cléopâtre" (Massenet) and "Hamlet" (Thomas). 7.55—News and Time.

8.0—Concert by the Station Orchestra. La Fête chez Thérèse (Hahn). Ballet Music from "Ghismonda" (Février). Serenade (Translatour). Ballet Music from "Le Cid" (Massenet). Pastorale d'été (Hoenegger). Norwegian Rapsody No. 1 (Svendsen). Scènes Napolitaines (Massenet).

9.15—Recitations. 9.30—Dance Music from the Municipal Casino.

**BARCELONA (Spain)**

Radio-Barcelona. (E.A.J.). 860 kc/s (349 m.); 8 kW. Transmits at intervals from 8.15 a.m. 8.0 p.m.—Trio Concert. Serenade, Amoroso (Doulvez). Selection from "Die Walküre" (Wagner). Minuet from "Samson" (Handel).

8.30—Exchange Quotations, Request Gramophone Records and Press Notes. 10.0—Chimes from the Cathedral, Weather Forecast, Exchange Quotations and Relay of Foreign Stations.

10.15—Concert by the Station Orchestra, followed by Programme of Modern Dance Music by the Demons Jazz Band. 11.0—Talk in Catalan by Adrian Gual. 11.30—Concert by the Vilalta Orchestra, relayed from the Café Español. 1.0 a.m. (Saturday)—Close Down.

**BELGRADE (Yugoslavia)**

697 kc/s (430.4 m.); 2.5 kW. Transmits at intervals from 11.0 a.m. 5.0 p.m.—Orchestral Concert. Overture, "La dame blanche" (Boieldieu). Selection from "Fedora" (Giordano). Selection from "The Little Dutch Girl" (Kálmán). Hofballtänze (Lanner).

6.55—Time and Programme Announcements. 7.0—Czech Lesson. 7.30—Recital of Yugoslavian Songs by Frau Boskovic-Agatonovic. 8.0—Sokol Talk. 8.30—Programme to be announced. 10.30—News and Sports Notes. 10.50—Concert from the Imperial Hotel.

**BERLIN (Germany)**

Königs Wusterhausen. 183.5 kc/s (1,635 m.); 60 kW. Transmits at intervals from 5.45 a.m. 12 noon—Weather for Farmers. 12.2 p.m.—Gramophone Concert of Variety Music, followed by Weather for Farmers. 12.55—Time Signal. 1.30—News Bulletin. 2.0—Gramophone Concert of Popular Music, relayed from Berlin (Witzleben). 3.0—Talk for Girls. 3.30—Weather and Exchange Quotations. 3.40—Nature Talk for Young People. 4.0—Educational Talk. 4.30—See Leipzig. 5.30—Talk: Risks run by Men of To-day. 6.0—Talk: The Middle Ages and the Unity of Western Civilisation. 6.30—Talk on Economics. 6.55—Weather for Farmers. 7.0—See Berlin (Witzleben). 7.15—Talk for Dentists. 7.35—Talk for Workers, followed by Weather for Farmers. 8.0—Talk by Kurt G. Sell: What People are talking about in America, relayed from America. 8.15—See Stuttgart. 9.15—See Berlin (Witzleben). 10.20—Weather, News and Sports Notes. 10.30 (approx.)—Dance Music from Berlin (Witzleben). 12.30 a.m. (Saturday)—Close Down.

**BERLIN (Germany)**

Witzleben. 715 kc/s (419.5 m.); 1.5 kW. Transmits at intervals from 6.0 a.m. (Gymnastics and Gramophone Concert).

5.50 p.m.—Orchestral Concert from the Hotel Kaiserhof. 6.55—"The Witzleben Station informs its Listeners." 7.0—Topical Talk. 7.10—Choral Concert. Nachtliches Ständchen (Nagler). Villanella alla Napolitana (Donati-Widmann). Folk Song, Der Tauber und die Tauberin (arr. Kirchl). Die Wetterpropheten (arr. Otto). Willkommen (Schotte). Spielmanns Ständchen (Mozart-Abert). Die Liebe gleicht dem April (Dürmer).

7.30—Hints for the Weekend. 8.0—Talk by Kurt G. Sell: What People are talking about in America, relayed from America. 8.15—See Breslau.

**FRIDAY**  
continued

9.15—Concert conducted by Edwin Fischer. Soloist: Edwin Fischer (Pianoforte). Pianoforte Concerto in A (Bach). Concerto di chiesa in B Flat (Felice dall'Abaco). Pianoforte Concerto in E Flat (Mozart).

10.15—Hints for the Weekend. 10.20—Political Press Review, followed by Weather, News and Sports Notes and Dance Music from the Eden Hotel. 12.30 a.m. (Saturday)—Close Down.

**BORDEAUX-LAFAYETTE (France)**

(P.T.T.). 986 kc/s (304 m.); 13 kW. Transmits at intervals from 12 noon. 7.30 p.m.—News Bulletin. 7.40—Educational Programme. 7.55—Lottery Results. 8.0—Advanced Spanish Lesson. 8.15—News Bulletin and Weather Forecast.

8.30—Gala Concert, organised by the Bordeaux Fair Committee. The Symphony Orchestra. Soloists: Mme. Saint-Val (Soprano), M. Raynal (Songs), and M. Barouk ('Cello). Overture, "Der Freischütz" (Weber-Salabert). Concerto for 'Cello and Orchestra (Lalo). Symphony in C—the Jupiter (Mozart-Salabert). Symphonie Legant, La Forêt enchantée (d'Indy-Mouton). Bacchanale from "Samson and Delilah" (Saint-Saëns-Mouton). In the interval, Songs and Address by the President of the Bordeaux Fair Committee.

**BRATISLAVA (Czechoslovakia)**

1,076 kc/s (279 m.); 14 kW. Transmits at intervals from 10.30 a.m. 7.0 p.m.—See Prague. 10.15—Programme Announcements and News. 10.20—Cigány Band.

**BRESLAU (Germany)**

923 kc/s (325 m.); 1.5 kW. Relayed by Gleiwitz, 1,184 kc/s (253 m.). Transmits at intervals from 6.0 a.m. 4.30 p.m.—Concert by a Bavarian Orchestra relayed from the "Goldene Krone" Café. 5.30—Weather for Farmers and Book Review. 5.50—The Younger Generation—Prose by Willi Schäferdieck, with Introductory Talk and Commentary. 6.30—This will interest you!—Surprise Programme. 6.50—Talk: Rock Gardens. 7.15—Weather for Farmers. 7.17—Concert of Popular Music on Gramophone Records. 7.55—Weather Forecast. 8.0—Talk by Kurt Sell: What People are talking about in America, relayed from America. 8.15—"It must be a Waltz!"—Concert by the Silesian Philharmonic Orchestra, conducted by Edmund Nick. Introductory Talk by the Conductor. 9.15—News Bulletin. 9.25—Extracts from "The Maid of the Black Forest"—Operetta in Three Acts (Jessel). 10.10—Time Signal, Weather Forecast, News Bulletin, Sports Notes and Programme Announcements. 10.30—Dance Music by the Station Orchestra, conducted by Franz Marszałek. In the interval at 11.10 (approx.)—Weekly Sound News from the Deli Theatre. 12 midnight (approx.)—Close Down.

**BRNO (Czechoslovakia)**

878 kc/s (342 m.); 35 kW. Transmits at intervals from 10.30 a.m. 7.0 p.m.—Popular Operatic Music. 8.0—See Prague. 10.15—News Bulletin. 10.20—See Prague.

**BRUSSELS (Belgium) (No. 1)**

I.N.R. 500 kc/s (599 m.); 15 kW. 12 noon—Light Music on Gramophone Records. In the interval at 12.30 p.m.—Weather Report.

5.0—Orchestral Concert, conducted by Charles Walpot. Paso doble, Melilla (Calvete). Waltz, I love you (Waldteufel). Overture, "The Nuremberg Doll" (Adam). The Bells of St. Malo (Rimmer). The Phantom Brigade (Myddleton). Selection from "Le Grand Mogol" (Audran-Hubans). Waltz, Idylle Passionnelle (Razigade). Potpourri, Hallo! Hallo! hier Wien (Morena).

6.0—Gramophone Concert. Hymne à la nuit (Rameau). Nocturne in E Flat (Chopin). The Nightingale (Grétry). 6.15—Announcements.

6.30—Gramophone Records. Overture, "Manfred" (Schumann). Danse macabre (Saint-Saëns). Overture, 1812 (Tchaikovsky). 7.15—Announcements. 7.30—Music Review by Paul Gilson.

8.0—Orchestral Concert, conducted by Jean Kumps. Soloist: Christiane Berlo (Songs). Overture,

"Phèdre" (Massenet). Petite Suite (Debussy). Selection from "Le Roi d'Ys" (Lalo). Two Dances (Falla). 8.45—Talk by Albert Devèze.

9.0—Concert (continued). Ballet Music from "Sylvia" (Delibes). Songs. Minuet (Boccherini). Souvenir (Drda). Tarantella (Filippucci). Songs. Viennese Waltz Suite (Gilsen).

10.0—Le Journal Parlé.

10.10—Gramophone Concert. Waltz, The Wedding of the Winds (Hall). Tango, (Cibolla). Foxtrot, Sweet Summer Breeze (Vallee). Tango (Grothe). Foxtrot, You didn't know the music (Coslow). Foxtrot, Sunshine and Shadows (Stamper). Foxtrot, Sweet Jennie Lee (Donaldson). Foxtrot, Lazy Day (Posford). Foxtrot, Down by a Dutch Canal (Young). Tango, O Cara Mia (Brodzky). Foxtrot, Oh, Glory (Robin). Waltz (Strauss). Slow Foxtrot, I'd rather be a Beggar with you (King). Waltz, from "Gipsy Love" (Lehár). Foxtrot, Roll on, Mississippi (West). 11.0 (approx.)—Close Down.

**BRUSSELS (Belgium) (No. 2)**

N.I.R. 887 kc/s (338.2 m.); 15 kW. Programme in Flemish.

12 noon—Gramophone Concert. Selection from "Miss Decima" (Audran). Song of the Harz Canaries. Intermezzo and Waltz from "Fedora" (Giordano). Selection from "A Waltz Dream" (Oscar Strauss).

12.30 p.m.—Weather Report.

12.40—Concert (continued)—Selection from "The Desert Song" (Romberg). Ballet Music from "Isoline" (Messager).

1.0—Concert by the Station Trio.

5.0—Orchestral Concert, conducted by Jean Kumps. Overture, "The Barber of Bagdad" ("Cornelius). Selection (Satie). Symphony in G (Haydn). Aria (Bach). Le Festin de l'Araignée (Roussel). Hungarian Dances (Brahms).

6.0—Gramophone Records of Popular Music. 6.15—Talk: The Van Eyck Brothers.

6.30—Gramophone Records. Suite from "L'Arlésienne" (Bizet). Overture, "Tannhäuser" (Wagner).

7.15—Talk: The Cuckoo. 7.30—Radio Notes.

8.0—Orchestral Concert, conducted by Franz André. March of the Diplomats (Souza). Overture, "Orpheus in the Underworld" (Offenbach). Pudding Potpourri (Morena). Popular Russian Songs. Romanian Dances (Barch). Sortie militaire (Faulx). 8.45—Programme on the Tenth Anniversary of the Flemish Tourist Society—Musical and Literary Selections.

9.30—Orchestral Selections. 10.0—Le Journal Parlé.

10.10—Concert by the Tea Room Orchestra. Overture, Morning, Noon and Night (Suppé). Waltz, Ever or Never (Waldteufel). Symphonie Dances (Grieg). Foxtrot Fantasia, The Bird Fancier (Kochmann). Tango from "Nina Rosa" (Romberg). Selection from "Véronique" (Messager). Waltz from "Viennese Nights" (Romberg). Rumba (Michaëlov). 11.0 (approx.)—Close Down.

**BUCHAREST (Romania)**

Radio-Bucarest. 761 kc/s (394 m.); 12 kW. Transmits at intervals from 11.0 a.m. 4.0 p.m.—Concert of Military Music. 5.10—News Bulletin and Time Signal. 5.10—Concert (continued). 6.0—Talks on Philosophy and Religion. 6.40—Light Music on Gramophone Records. 7.0—Talk: The History of Music, with Illustrations. 7.45—Choral Concert—César Franck. 8.45—News Bulletin.

**BUDAPEST (Hungary)**

545 kc/s (550 m.); 18.5 kW. Transmits at intervals from 9.15 a.m. Programme also relayed on 210 metres from 5.25 p.m. till Close Down.

5.25 p.m.—Military Band Concert, conducted by Richard Fricsay. 7.0—Stenography Lesson. 7.30—Topical Talk.

7.45—Concert by the Mándits Orchestra. Selection from "Samson and Delilah" (Saint-Saëns). The Legend of the Raven (Huszka). Hortobagy (Stephanides). Auf der Wache (Dierrig). By the Waters of Minnetonka (Luranco).

8.30—Gala Concert by the Szegedin Choral Society. "The Legend of St. Elizabeth"—Oratorio (Liszt). After the Concert, Time Signal, Weather Forecast and Concert by the Joska Radics Cigány Band.

**COPENHAGEN (Denmark)**

1,067 kc/s (281 m.); 0.75 kW. Relayed by Kalundborg, 260 kc/s (1,153 m.). Transmits at intervals from 7.30 a.m. 12 noon—Time and Chimes, from the Town Hall. 12.2 p.m.—String Ensemble Concert, conducted by A. Bendix, from the Wivex Restaurant. 1.15—Educational Talk. 1.45—3.0—Interval.

3.0—Concert of Wind Instrument Music. March, El Capitan (Souza). Overture, "Jean de Paris" (Boieldieu). Largo from "Xerxes" (Handel). Selection from "Carmen" (Bizet). Selection from "Tosca" (Puccini). Waltz, Die Preiswerber (Fahrbach). March, Wien bleibt Wien. Readings. March from "Fatinizza" (Suppé). Waltz, The Blue Danube (Joh. Strauss). Torch Dance of the Brides of Kashmir, from "Feramors" (Rubinstein). Selection from "The Tales of Hoffmann" (Offenbach). Der starr et Slot i Vesterled (Weyse). Dejlige Land (Danning). Coronation March from "The Prophet" (Meyerbeer). 5.0—Programme for Children. 5.40—Exchange and Fish Market Prices. 5.50—Talk by Franz Polke: Danish Burial Customs, followed by Song Recital by Vilh. Michelsen. 6.20—German Lesson for Beginners. 6.50—Weather Forecast. 7.0—News Bulletin. 7.15—Time Signal. 7.30—Talk. 8.0—Chimes from the Town Hall. 8.2—Items by Per Knutzon. 8.10—Concert by the Schierbeck Vocal Trio.

8.30—"William Fox"—A Wall Street Tragedy (Johannes Becher). 9.15—Sonata in G, Op. 96, for Pianoforte and Violin (Beethoven). 9.35—Reading. 10.0—News Bulletin. 10.15—Talk with Gramophone Illustrations: Spain in Dance and Song. 10.45—Dance Music from the Industri Restaurant. 12 midnight (in the interval)—Time and Chimes from the Town Hall. 12.30 a.m. (Saturday)—Close Down.

**DUBLIN (Ireland)**

(2RN). 725 kc/s (413 m.); 1.2 kW. Relayed by Cork, 1,337 kc/s (224.4 m.). 1.30—2.0 p.m.—Time Signal, Weather Report, Stock Report and Light Music on Gramophone Records. 6.0—Gramophone Records of Popular Music. 6.15—Programme for Children. 7.0—Gramophone Records of Variety Music. 7.20—News Bulletin. 7.30—Time Signal. 7.31—Talk on Gardening. 7.45—Talk: Bee-keeping. 8.0—Operatic Ballad Concert by the Station Sextet. May Busby (Soprano), H. Dunkerley (Baritone), and E. Hargreaves (Tenor). 9.0—Talk on Irish History. 9.30—Pianoforte Solos. 9.50—Variety Concert, by Tony Reddin and Company. 10.30—Time Signal, News, Weather Report and Close Down.

**FÈCAMP (France)**

Radio Normandie. 1,345 kc/s (223 m.); 10 kW. 12 noon—Variety Music on Gramophone Records. 12.30 p.m.—News Bulletin. 12.45—Variety Concert. 7.30—Radio Gazette for Normandy. 8.0—News Bulletin. 8.30—Request Concert relayed from Le Havre. 11.0 a.m. (Saturday)—Close Down.

**FLORENCE (Italy)**

Ente Italiano Audizioni Radiofoniche. 599 kc/s (500.8 m.); 20 kW. See Turin.

**FRANKFURT-am-MAIN (Germany)**

770 kc/s (390 m.); 1.5 kW. Relayed by Cassel, 1,220 kc/s (246 m.). Transmits at intervals from 6.0 a.m. 12 noon—Concert by the Station Orchestra, conducted by Reinhold Merten. Part I.—Unfamiliar Overtures. "Les Deux Aveugles" (Méhul). "Rübezahl" (Flotow). "Graziella" (Lecocq). Part II.—Unfamiliar Waltzes. Unserer Wiener Herzen (Ertl). Lippitzbacher Waltz (Koschat). Lieber mich (Ertl).

12.50 p.m.—News Bulletin and Weather Report. 1.0—See Langenberg. 2.0—News Bulletin. 2.10—Sponsored Concert. 3.0—Weather Report. 3.10—Time Signal and Agricultural Programme. 4.55—Economic Notes. 5.0—See Langenberg. 6.15—Economic Notes. 6.25—Programme in Celebration of the 90th Birthday of the Frankfurt Poet, Adolf Stoltze. Addresses by Adolf Stoltze and Paul Lavén. Recitations by Lydia Lerner-Stoltze. 6.50—See Stuttgart. 7.15—Time Signal, Programme Announcements, Weather

Forecast, and Economic Notes. 7.20—Talk: The 1932 Air Mail. 7.30—10.20—See Stuttgart. 10.20—Time Signal, Weather Forecast, News Bulletin and Sports Notes. 10.45—Concert by the Station Orchestra, conducted by Walter Caspar. 12 midnight (approx.)—Close Down.

HAMBURG (Germany)

Norag (ha, in Morse). 806 kc/s (372 m.); 1.5 kW. Relayed by Bremen, 1,112 kc/s (270 m.); Flensburg, 1,373 kc/s (218 m.); Hannover, 530 kc/s (566 m.); and Kiel, 1,292 kc/s (232.2 m.). Transmits at intervals from 5.45 a.m. 6.0 p.m.—Review of New Books about Goethe. 6.35 (from Kiel)—Talk: Social Insurance and the Protection of the Worker. 6.55—Exchange and Market Prices. 7.0—Topical Talk. 7.15—Weather Forecast.

7.20—Josef Marx and Gustav Mahler Song Recital. Thea Böhm-Linhard (Vocalist), Gerhard Maasz (Pianoforte) and Adolf Secker (Accompanist). Songs (Marx): (a) Regen, (b) Selige Nacht, (c) Lied eines Mädchens. Pianoforte Solo: Albulblatt (Marx). Songs (Marx): (a) Marienlied, (b) Japanisches Regenlied, (c) Venezianisches Regenlied. Pianoforte Solo: Impressionen (Paul Graener). Songs (Mahler): (a) Ich bin der Welt abhanden gekommen, (b) Ich ging mit Lust durch einen grünen Wald, (c) Wer hat dies Lied erdacht, (d) Aus...

8.0—See Berlin (Witzleben). 8.20—Goethe Concert. The Hamburg Philharmonic Orchestra, conducted by José Eibenschütz, the Norag Male Voice Choir and Herbert Ernst Groh. A Faust Overture (Wagner). Elfenreigen from "Faust, Part II," for Male Voice Choir and Baritone (Klose). A Faust Symphony (Liszt). 10.20 (from Hannover)—"Scherzo and Humoresque"—Concert by the Hannoverian Norag Orchestra, conducted by Otto Ebel von Sosen. Soloists: Willy Craney (Pianoforte). Humoresque (Levine). Humoresque (Vrenes). Scherzo in B Flat Minor for Pianoforte (Chopin). Allegretto grazioso quasi andantino (Brahms). Humoresque and Reigen (Reger). Pianoforte Solo: Eulenspiegelchen (Josef Haas). Scherzo, Sonnenkind and Wolkenmann (Clemens). Humoresque (Sjögren).

HEILSBURG (Germany)

1,085 kc/s (276.5 m.); 60 kW. Relayed by Danzig, 662 kc/s (453.2 m.).

Transmits at intervals from 6.0 a.m. (Weather, Gymnastics and Gramophone Concert).

1.5 p.m.—Orchestral Concert, conducted by Eugen Wilcken. March, Einzug der Hellebardiere (Blankenburg). Overture, "Raymond" (Thomas). Waltz from "Gipsy Love" (Lehár). Japanese Suite (Yoshitomo). Selection from "William Tell" (Rossini). Noch sind die Tage der Rosen (Baumgartner). An der Weser (Pressel). Waltz, Mon rêve (Waldfelner). Potpourri, Musikalische Neckereien (Warch). Weddigen-Marsch (Büttner).

2.30—Advertising Notes with Gramophone Records. 3.30—Programme for Children. 4.0—Talk for Women. 4.30—Orchestral Concert, conducted by Eugen Wilcken. Overture, "Jean de Paris" (Boieldieu). Nocturne Op. 19, No. 4 (Tchaikovsky). Valse lente (Chopin). Suite from "A Midsummer Night's Dream" (Mendelssohn). A Wedding Day on Trolldhaugen (Grieg). Humoresque (Dvorák). Fantasia on the Works of Schumann (Schreiner). Hungarian Dances Nos. 1, 13 and 17 (Brahms). Military Marches (Schubert).

5.55—Book Review. 6.15—Agricultural Prices. 6.25—Talk: Ninety Years of the Königsberg Gymnastics Society. 6.35—Talk: The Fight at Heilsberg 125 Years Ago. 6.55—Ernst Blass recites his own Poems. 7.25—Trio in D Minor, Op. 63 (Schumann). 7.50—Weather Report. 8.0—Talk by Kurt G. Sell: What People are talking about in America, relayed from America. 8.15—Concert of German Opera Music by Elsa Koch (Soprano), Alfred Bartolitus (Tenor) and the Königsberg Opera House Orchestra, conducted by Werner Richter-Reichhelm. 9.15—See Berlin (Witzleben). 10.15—Weather, News and Sports Notes.

HILVERSUM (Holland)

1,013 kc/s (296.1 m.); 20 kW. 17 kW. up till 4.40 p.m.). 6.25—9.40 a.m.—Programme of the Worker's Radio Society (V.A.R.A.). 6.25—6.40 and 7.10—7.25—Gym-

nastics. 7.40—Gramophone Records of Variety Music. 8.40—Trio Concert. 9.40—Religious Programme by the Liberal Protestant Radio Society (V.P.R.O.). 9.55—11.40—V.A.R.A. Programme. 9.55—Recitations. 10.10—Trio Concert. 10.40—Talk for Women. 10.55—Concert (continued). 11.40—3.40 p.m.—Programme of the Algemeene Vereeniging Radio Omroep (A.V.R.O.).

11.40—Orchestral Concert, conducted by Nico Treep. Overture, "Ten Maids and No Man" (Suppé). Ballet Suite, Callirhoé (Chaminade). First Hungarian Rhapsody (Liszt). Gramophone Records of Variety Music. Selection from "Lilac Time" (Schubert-Berté). Waltz, La Hussarde (Ganne). Variations on "s kommt ein Vogel geflogen" (Ochs). Gramophone Records of Variety Music. March of the Dwarfs (Moszkovsky). Czardas (Monti). Marche solennelle (Tchaikovsky).

1.40 p.m.—Talk for Schools. 2.10—Concert (continued). Limburg Folk Song (Alterego). Selection from "Gasparone" (Millocker). Waltz, Ange d'amour (Waldfelner). Hollywood March (Leopold).

2.40—Concert of Light Music, relayed from the Hotel Atlanta, Rotterdam. 3.40—7.40—V.A.R.A. Programme. 3.40—Pianoforte Recital, by Joh. Jong. The Moonlight Sonata (Beethoven). Waltz in A Flat (Chopin). 4.10—Programme for Children. 4.40—Orchestral Concert conducted by Hugo de Groot. Overture, "Le cheval de bronze" (Auber). Waltz from "Polenblut" (Nedbal). Selection from "Manon" (Massenet). Four Ballet Airs (Drigo). Gramophone Records of Variety Music. Waltz, Millionentanz (Fucik). Serenade (Widor). Caravane hindoue (Popy). Selection from "Sylvia" (Delibes).

6.25—Talk: Imperialism and the League of Nations. 6.45—Orchestral Concert (continued). 7.40—10.40—V.P.R.O. Programme. 7.40—Talk: Young People of to-day. 8.10—Symphony No. 1 in C Minor (Brahms) (on Gramophone Records). 8.40—Religious Address. 9.10—Quintet in B Minor (Brahms) (on Gramophone Records). 9.40—Religious Notes. 9.45—News Bulletin. 9.55—Recitations. 10.25—Gramophone Records of Variety Music. 10.40—11.40—V.A.R.A. Programme. Gramophone Records of Variety Music. 11.40 (approx.)—Close Down.

HUIZEN (Holland)

160 kc/s (1,875 m.); 8.5 kW. Programme of the Christian Radio Society (N.C.R.V.).

7.40 a.m.—Bible Reading. 7.55—9.10—Gramophone Records of Variety Music. 10.10—Programme for Invalids. 10.40—Gramophone Records of Light Music. 11.40—Police Notes.

11.55—Concert. Overture, "The Marriage of Figaro" (Mozart). Song from "The Marriage of Figaro" (Mozart). Song from "The Magic Flute" (Mozart). Selection from "Le Caid" (Thomas). Selections (Mendelssohn): (a) Da lieg ich unter den Bäumen, (b) Wartend, (c) Spring Song, (d) Andres Maieinied. Dem Andenken Beethovens (arr. Urbach). Zwei Königskinder (Reimann). Heidenröslein (Schubert). Das Zauberkleid (Meyer-Helmund). Le Crêdo du Paysan (Goublier). Selection from "Rigoletto" (Verdi). Song from "Simone Boccanegra" (Verdi). Selection from "The Mastersingers" (Wagner).

1.40 p.m.—Interval. 2.10—Gramophone Records of Variety Music. 2.40—Trio Concert. Trio, Op. 1, No. 3 (Beethoven). Three Intermezzi, Op. 116, No. 4, Op. 116 No. 6 and Op. 117 No. 3 (Brahms). Havanaise, Op. 83 (Saint-Saëns). Three Preludes (Debussy): (a) Danseuse de Delphes, (b) Violes, (c) Le vent dans la plaine. Poème Op. 25 (Chausson). Trio, Op. 7 (Wolff-Ferrari).

4.40—Gramophone Records of Variety Music. 5.10—Talk on Photography. 5.40—Talk. 6.10—Wireless Technical Talk. 6.40—Talk on Horticulture. 7.10—Police Notes. 7.25—Talk. 7.40—Musical Programme and Addresses, relayed from the Educational Institute, Amsterdam. 9.40 (approx.)—News. 9.50—Gramophone Records of Popular Music. 11.10 (approx.)—Close Down.

KALUNDBORG (Denmark)

Kalundborg Radio. 260 kc/s (1,153 m.); 7.5 kW. See Copenhagen.

FRIDAY, continued.

KATOWICE (Poland)

734 kc/s (408 m.); 16 kW. Transmits at intervals from 11.58 a.m. 5.0 p.m.—Concert by Professors of the Katowice Conservatoire of Music. 6.0—Talk by Casimir Simm. 6.20—Dance Music. 8.0—See Warsaw. 10.0—Dance Music. 11.0—Answers to Correspondents, in French.

LAHTI (Finland)

167 kc/s (1,796 m.); 54 kW. Relayed by Helsinki, 815 kc/s (368.1 m.). Transmits at intervals from 7.10 a.m. 6.15 p.m.—Programme for Children. 6.40—Pianoforte Recital relayed from Helsinki. 7.0—Talk. 7.25—Wind Instrument Quartet Selections, relayed from Helsinki. 7.45—Recitations. 8.10—Orchestral Selections, relayed from Helsinki. 8.45—News in Finnish and Swedish. 9.15—Military Music, relayed from the Kappeli Restaurant. 10.0 (approx.)—Close Down.

LANGENBERG (Germany)

Westdeutscher Rundfunk. 635 kc/s (473 m.); 60 kW. Transmits at intervals from 6.45 a.m. (Exercises, Weather, Time and Concert Relay).

12 noon—Concert from Frankfurt. 12.50 p.m.—Weather, News and Time Signal.

1.0—Concert, conducted by Wolf. March from "Sigurd Jorsalfar" (Grieg). Overture, "Turandot" (Strauss). Liebesliederwalzer (Lachner). Selections from "Das Nachtlager in Granada" (Kreutzer). Two Selections from the Suite "Dresden China" (Niemann). Russian Dance, Hopak (Moussorgsky). Festival Overture on the Theme "Um immer Treu und Redlichkeit" (Hartung). Selections from "Der Orlov" (Granichstaedten).

2.30—Sponsored Gramophone Concert. 3.30—Economic Notes and Time Signal. 3.50—Programme for Children: Drawing and Painting. 4.10—Talk: The Feminist Movement. 4.20—Programme for Young People. 5.0—Concert by the Station Orchestra, conducted by Kühn, and the Station Choir conducted by Zimmermann. Soloists: Heinz Jolles (Pianoforte) and Hans Wocke (Baritone). Pianoforte Concerto in E No. 2 (d'Albert). Die Wallfahrt nach Kevelaer for String Orchestra, Baritone and Harmonium (Friedland). Te Deum—for Mixed Choir and Orchestra (Wappenschmitt).

6.15—Review of New Books. 6.40—English Conversation. 7.0—Weather, Time, Economic and Sports Notes. 7.30—Talk on Employees' Insurance. 7.55—First General News. 8.0—Talk by Kurt G. Sell: What People are talking about in America, relayed from America. 8.20—"From the Flute to the Kettle Drum"—by Hans Ebert. 9.0—Concert of Chamber Music. 10.20—News, Sports and Miscellaneous Announcements. 10.40—Concert from a Café. 12 midnight (approx.)—Close Down.

LEIPZIG (Germany)

1,157 kc/s (259 m.); 2 kW. Relayed by Dresden, 941 kc/s (319 m.).

Transmits at intervals from 6.0 a.m. 4.30 p.m.—Concert by the Leipzig Symphony Orchestra conducted by Hilmar Weber. Ouverture zu einem ritterlichen Spiel (August Scharrer). Serenade for String Orchestra Op. 93 (Heinrich Hofmann). Entracte and Waltz from "Intermezzo" (Richard Strauss). New Slavonic Dances Nos. 1 to 4, Op. 72 (Dvorák). 5.30—Review of Books on Literatures of the World. 5.50—Economic Notes, Weather and Time Signal. 6.0—"Chinese Impressions" (Max Tobby Scharan). 6.25—English Language Lesson. 6.50—Talk (to be announced). 7.0—Talk: Mozart's Marriage and the Fate of his Family. 7.30—Song Recital by Jessyka Koettrik (Contralto). Eugen Gottlieb-Hellmesberger at the Pianoforte. Scandinavian Folk Melodies: (a) The Rose in the Valley, (b) Cradle Song, (c) The Spring Breezes, (d) Shepherds' Song from Hallingdals Songs (Eugen Gottlieb): (a) Nun ist der letzte Tag erschienen, (b) An den Flieder, (c) Nocturne. Eva Waltz (Johann Strauss). 8.0—Talk by Kurt G. Sell: What People are talking about in America, relayed from America. 8.15—See Breslau. 9.15—Economic Notes. 9.25—"The Clock,"—History, Litera-

ture, Interpretation, Report—a Radio Study (Josef Krahé). 10.25—News Bulletin.

10.35 (approx.)—Concert by the Leipzig Symphony Orchestra conducted by Emil Luh. March, In Treue fest (Teicke). Isa Waltz from "Der dumme August" (Gfeller). Selections from "L'Africaine" (Meyerbeer). Siciliana in F, Op. 90, No. 3 (Schmalstich). Five o'Clock Tea in the Dolls' House (Willy Rosen). Suite, The Flowers (Ludwig Siede). A. B. C. Potpourri (Kozmak). Waltz, Die letzten Tropfen (Kratzl). 12 midnight (approx.)—Close Down.

LJUBLJANA (Yugoslavia)

522 kc/s (574.7 m.); 2.5 kW. Transmits at intervals from 12.15 p.m. 6.0 p.m.—Quintet Concert. 7.0—French Lesson. 7.30—Talk for Women. 8.0—Talk for Sokols. 8.30—Programme from Belgrade. 10.30—Time and News.

LWÓW (Poland)

788 kc/s (381 m.); 16 kW. Transmits at intervals from 11.58 a.m. 6.20 p.m.—See Warsaw. 7.15—Miscellaneous Items and Racing Notes. 7.35—See Warsaw. 7.45—Talk by Marjusz Nowina. 8.0—See Warsaw. 10.0—Reading. 10.10—Dance Music from Warsaw. 11.30 (approx.)—Close Down.

LYONS (France)

La Doua (P.T.I.). 644 kc/s (465.8 m.); 1.5 kW.

Transmits at intervals from 8.0 a.m. 7.0 p.m.—Popular Music on Gramophone Records. 7.30—Radio Gazette for Lyons and the South-East. 8.30—Instrumental Concert by Mme. Gailliard Farey (Violin), M. Dujois (Viola), J. Witkowski (Cello), M. Bridet (Oboe and Cor anglais) and Mlle. Busson (Pianoforte). Serenade for Violin, Viola and Cello (Beethoven). Andante for Oboe (Mozart). Sonata in F (Corelli). Romance for Oboe (Schumann). Sarabande, for Violin, Viola and Cello (Manual). Solo for Cor anglais, from the 3rd Act of "Tristan and Isolde" (Wagner). Cello Solos: (a) Romance sans paroles (Thirion), (b) Two Popular Spanish Songs (Joaquin Nin). Quartet for Pianoforte, Violin, Viola and Cello (Weber).

MADRID (Spain)

Union Radio (E.A.J.). 707 kc/s (424.3 m.); 2 kW.

Transmits at intervals from 9.0 a.m. 8.0 p.m.—Chimes, Exchange Quotations, Market Prices and Request Gramophone Records. 8.30 (in an interval)—Educational Talk. 9.15—News Bulletin and Political Review. 9.30—10.30—Interval. 10.30—Chimes, Time Signal, and Political Review. 10.45—Symphony Concert on Gramophone Records. Overture, Fingal's Cave (Mendelssohn). Suite (Corelli). Persian Dances from "Khovanstchina" (Moussorgsky). Symphony No. 9 (Beethoven). 12.45 a.m. (Saturday)—News Bulletin and Programme announcements. 1.0—Chimes and Close Down.

MILAN (Italy)

Ente Italiano Audizioni Radiofoniche. 905 kc/s (331.5 m.); 7 kW. See Turin.

MORAVSKÁ-OSTRAVA (Czechoslovakia)

1,137 kc/s (263.8 m.); 11 kW. Transmits at intervals from 10.30 a.m. 7.0 p.m.—Brass Band Concert. 8.0—See Prague. 10.15—Programme Announcements and News Bulletin. 10.20—See Prague.

MOSCOW (Russia)

Trades Union. 230.1 kc/s (1,304 m.); 100 kW. Transmits at intervals from 5.0 a.m. 6.30 p.m.—Proletariat Radio Journal. 7.15—Programme for Young Communists. 8.0—German Talk: Answers to Correspondents. Talk in Swedish: Soviet Foreign Politics. Talk in French: Soviet Films.

MUNICH (Germany)

563 kc/s (533 m.); 1.5 kW. Relayed by Augsburg and Kaiserslautern, 536 kc/s (560 m.); and Nürnberg, 1,256 kc/s (239 m.). Transmits at intervals from 6.45 a.m. 4.5 p.m.—Vocal and Instrumental Concert. Max Weissgärber (Violin) and Irene Marik (Pianoforte). 4.40—Educational Talk. 5.5—Concert of Light Music, with Wireless Report in the interval, relayed from Furth. 6.15—Talk by Dr. Stahl. 6.35—

Talk: The Theatre in the Provinces. 6.55—Talk: Four Years as a Theatrical Agent. 7.15—Introductory Talk to the following Transmission. 7.35—"Ballo in Maschera" (A Masked Ball)—Opera in Five Acts (Verdi), relayed from the National Theatre. In the interval at 9.5—Agricultural Notes. 10.20—Time Signal, Weather Report, News Bulletin, Sports Notes and Traffic Report. 10.50—Talk by Kurt Sell: What People are talking about in America, relayed from America.

OSLO (Norway)

Kringkastingsselskapet. 277 kc/s (1,083 m.); 60 kW. Relayed by Fredrikstad, 816 kc/s (367.6 m.); Hamar, 536 kc/s (560 m.); Norddalen, 671 kc/s (447.1 m.); Porsgrund, 662 kc/s (453.2 m.) and Rjukan, 671 kc/s (447.1 m.). Transmits at intervals from 10.0 a.m. 5.30 p.m.—Popular Music on Gramophone Records. 6.0—French Lesson. 6.30—Norwegian Song Recital by Mme. Bertha Wang Halvorsen. 7.0—Weather Report and News Bulletin. 7.30—English Lesson. 8.0—Time Signal. 8.1—Dramatic Programme. 9.10—Talk: Wagner's "Tristan and Isolde." 9.40—Weather Report and News Bulletin. 10.0—Topical Talk. 10.15—Talk: A Journey to Bremen. 10.45 (approx.)—Close Down.

PALERMO (Italy)

Ente Italiano Audizioni Radiofoniche. 554 kc/s (542 m.); 3 kW. Transmits at intervals from 12.45 p.m. 5.30 p.m.—Light Music and Dance Music. 6.30—8.0—Interval. 8.0—Announcements, Giornale dell'Ente, Agricultural Notes, Report of the Royal Geographical Society and Giornale Radio. 8.20—Popular Music on Gramophone Records. In the interval at 8.30—Time and Announcements. 8.45—Orchestral Concert. Soloists: L. Landolfi (Pianoforte), S. Lojacono (Violin). Naples, from "Impressions d'Italie" (Charpentier). Pianoforte Solos: (a) Gavotte in Rondo (Lully), (b) Sonata (Scarlatti), (c) Le tic-toc-toc (Couperin). Violin Solos: (a) Canzonette (d'Ambrosio), (b) Andalusian Romance (Sarasate). Talk on Victor Hugo. Maskerade (Korngold). Pianoforte Solos: (Martucci), (a) Romance, (b) Capriccio. Violin Solos: (a) Kaddish (Ravel), (b) Gipsy Caprice (Kreisler). Baba-jaga (Ljadov). After the Concert: Dance Music. 10.55 (approx.)—Close Down.

PARIS (France)

Eiffel Tower (F.L.E.). 207.5 kc/s (1,445.7 m.); 13 kW. Time Signals (on 2,650 metres) at 10.26 a.m. and 11.26 p.m. (preliminary and 6-dot signals). 6.45 p.m.—Talk on the Theatre. 7.0—Le Journal Parlé. 8.20—Weather Forecast.

8.30—Symphony Concert conducted by E. Flament. Suite of Six Pieces (Bach-Woodhouse). Finale from the Quintet for Flute and Strings (E. Flament). Clarinet Solo: Canzonetta (Pierne). Selection from "Ciboulette" (Hahn-Salabert). Violin Solo. Selection from "L'Amour masqué" (Messager-Salabert).

9.30—Danierff. Concert. 10.9 (approx.)—Close Down.

PARIS (France)

Poste Parisien. 914 kc/s (328.2 m.); 60 kW. Transmits at intervals from 12.0 noon. 6.30 p.m.—Sponsored Concert. 7.30—Light Music on Gramophone Records, News and Announcements. 8.0—Talk (to be announced). 8.30—Gramophone Records, Talk and Announcements. 8.45—Concert of French Songs by Music Hall Artists. 9.45—Dance Music on Gramophone Records. 10.45—News Bulletin. 10.50 (approx.)—Close Down.

PARIS (France)

Radio-Paris (CFR). 174 kc/s (1,725 m.); 75 kW. 6.45 a.m.—Physical Culture. 7.30—Weather and Physical Culture (cont'd). 7.45—Popular Gramophone Records. 8.0—News, Weather and Press Review. 12 noon—Jewish Address. 12.30 p.m.—"Woods and Forests"—Gramophone Concert. The Coach in the Forest (Schaffer). The Mill in the Black Forest (Eilenberg). In the Virgin Forest (Alchansky). Morgenblätter (Johann Strauss). Sous bois (Staub). La Forêt qui chante (Charlys). La voix des Chênes (Goublier). The Forge in the Forest (Michaelis). Selec-

FRIDAY, continued

tion from "L'Attaque du moulin" (Bruneau). In the Forest near the Lake. The Nightingale's Song (Zeller). Song of the Poplars (Doria). Sous la Feuillée (Thomé). Forest Murmurs from "Siegfried" (Wagner). Dans la forêt normande (Ervard). Waltz, Tales from the Vienna Woods (Johann Strauss). Selections from "Lakmé" (Delibes). The Hunter in the Forest. March of the Blacksmiths. In the intervals at 1.0—Exchange, News and Weather; at 1.30—Exchange, and at 2.0—Exchange and Announcements.

3.45—Exchange and Market Prices. 6.30—Market Prices, Weather, Agricultural Report, Talk and Racing Results. 7.0—Talk on the French Colonies: Precious Stones of North Africa. 7.45—Commercial Prices and News. 8.0—Talk with Gramophone Illustrations by M. Jacques Jania: Music and the Cinema. 8.30—News and Weather. 8.40—Gastronomic Review. 8.45—"Poems in Prose" (Baudelaire), with the collaboration of André Bacqué. In the interval at 9.15—Press Review and News.

PITTSBURGH (U.S.A.) Westinghouse Electric (KDKA). 980 kc/s (306 m.); 25 kW. Relayed by W8XK on 48.86 m. and 25.25 m. (See Short-Wave List). Transmits at intervals from 12.30 a.m. 9.0 p.m.—Teaberry Baseball Scores. 9.5—Business News. 9.15—Rita Cavalieri (Soprano). 9.30—Pebeco Weather Report. 9.33—Market Reports. 9.45—Peabody High School a-Capella Choir. 10.0—Teaberry Baseball Scores. 10.5—David Lawrence Dispatch. 10.10—KDKA Artist Bulletin. 10.12—Programme Announcements. 10.15—KDKA Kiddies' Klub. 10.30—The Singing Lady, from New York. 10.45—Little Orphan Annie, from New York.

11.0—Time Signal. 11.1—Temperature Report. 11.2—Who's News To-day. 11.7—Teaberry Sport Review. 11.12—Press News-Reeler. 11.15—KDKA Orchestra. 11.30—Royal Vagabond, from New York. 11.45—Literary Digest Topics, from New York. 11.50—Time Signal. 12 midnight—3.30 a.m. (Saturday)—New York Relay. 12 midnight—Pep-sodent Amos 'n' Andy. 12.15—Eso Programme—Believe it or Not, by Ripley. 12.30—Stebbins Boys. 12.45—Billy Jones and Ernie Hare. 1.0—Nestlé's Programme. 1.30—Ivory Programme. 1.45—Sisters of the Skillet. 2.0—Friendship Town. 2.30—Amour Programme. 3.0—Whiteman's Pontiac Chieftains. 3.30—Love Songs and Waltzes. 3.45—Jean Wald's Orchestra. 4.0—Time Signal. 4.1—Teaberry Sport Review. 4.11—Temperature Report. 4.12—Weather Report. 4.15—Press Last Minute News. 4.20—Lew Conrad and his Orchestra. 5.0—Cotton Club Orchestra, from New York. 5.15—Time Signal and Good-night.

PRAGUE (Czechoslovakia) 614 kc/s (488.6 m.); 120 kW. Transmits at intervals from 6.15 a.m. (Alarm and Gramophone Records). 5.45 p.m.—Talk: The History of Religion in Bohemia. 5.55—Reading. 6.5—Agricultural Report and Market Prices. 6.15—Talk for Workers: Metallurgy. 6.25—German Transmission: News and Talks: (a) Important Inventions, (b) The Economic Crisis and the Future. 7.0—Relay of a Concert by the Czech Philharmonic Orchestra. 8.0—Cello Recital by Professor Ladislav Zelenka. Arpeggione Sonata (Schubert). 8.30—A Play (Lope de Vega). In the interval at 9.0—Time and News. 10.15—Miscellaneous Announcements. 10.20—Variety Music on Gramophone Records.

RADIO-SUISSE ROMANDE (SOTTENS) (Switzerland) 743 kc/s (403 m.); 25 kW.; Lausanne, 442 kc/s (680 m.); and Geneva, 395 kc/s (760 m.). 12.30 p.m.—Time Signal from Neuchâtel Observatory. 12.31—Weather Report and News Bulletin. 12.40 (from Lausanne)—Concert of Light Music on Gramophone Records. 1.0—Exchange Quotations. 1.5—Gramophone Concert (contd.). 1.45—5.0—Interval. 5.0—Time Signal from Neuchâtel Observatory. 5.1—(from Geneva)—Programme for Women. 5.45—Concert by a String Orchestra, conducted by Robert Echenard. 7.0—Weather Forecast. 7.1 (from Lausanne)—Sports Notes. 7.0 (from Lausanne)—Report of the Swiss Automobile Club. 7.30 (from

Geneva)—Talk: The Work of the Disarmament Conference. 7.55—Announcements. 8.0 (from Lausanne)—Recital of Italian Aires, by Bruno Satti (Tenor) and Ubaldo Russo (Baritone). 8.40 (from Geneva)—"La Journée des Cadeaux"—Play in One Act (Blanchon). 9.20 (from Fribourg)—Concert by the "Landwehr" Band, conducted by Gaimard. 10.0—Weather Forecast and News Bulletin. 10.15 (approx.)—Close Down.

RIGA (Latvia) 572 kc/s (525 m.); 15 kW. Transmits at intervals from 6.0 a.m. 6.0 p.m.—French Lesson. 6.30—Latvian Lesson. 7.0—Weather Report. 7.5—Tchaikovsky Concert. Selection from "Iolanthe." Songs. Suite. 8.0—News Bulletin. 8.20—Orchestral Concert. 9.0—Weather and News. 9.35—Variety Music. 10.30 (approx.)—Close Down.

ROME (Italy) Ente Italiano Audizioni Radiofoniche (IRO) 680 kc/s (441 m.); 50 kW. Relayed by Naples, 941 kc/s (319 m.) and 2RO, 11,910 kc/s (25.4 m.). 8.15—8.30 a.m.—Giornale Radio and Announcements. 12 noon—Gramophone Records of Variety Music. 12.35 p.m.—Weather Forecast. 12.45—2.0—Sextet Concert. Festival Overture (Kéler-Béla). Musical Snuff Box (Nikolaievsky). Serenata cilena (Rucello). Intermezzo from "Tiefland" (d'Albert). Bohemian Fantasia (Lattuada). Selection from "The Blue Mazurka" (Lehár). Bolero d'amore (Liza). In the intervals—Giornale Radio, Exchange, Time and Announcements.

4.45 (Naples)—Talk for Women. 5.0—Exchange, Children's Radio Review, Giornale Radio and Announcements. 5.30—Recital of Duets by Giuseppina Marciano (Soprano) and Clara Fioravanti Cinci (Mezzo-Soprano). Song (Schumann). Il ruscelletto (Benedetto Marcello). Cradle Song (Brahms). L'Eden (Falchi). 5.45—Instrumental Concert. Selection from "Anima allegra" (Vittadini). I promise you (Caster). Canzone d'amore (Leoncavallo). Selection (Mann). Selection from "L'Arlesiana" (Cilea). Com'è bella la vita (Bixio). 6.15—Giornale dell'Enit. 6.55—(Naples)—Shipping and Sports Notes. 7.0—Agricultural Notes, Announcements, Giornale Radio and Press Review. 7.50—Gramophone Records of Variety Music. 8.0—Time, Announcements and Report of the International Institute of Agriculture (in Italian, French, English, German and Spanish). 8.30—Sports Notes and Announcements.

8.45—Police Band Concert, conducted by Andrea Marchesini. Selection from "Le Maschere" (Mascagni). Morning and Anita's Dance from "Peer Gynt" (Grieg). Selection from "Tosca" (Puccini). 9.30—A Comedy in One Act (de Croisset). 10.15—Concert (contd.). Selection from "La Resurrezione di Cristo" (Perosi). Polonaise (Chopin). Selection from the Second Act of "Ero e Leandro" (Mancinelli). Notes on Art. Rhapsody, Italia (Casella). 10.55—News Bulletin.

SCHENECTADY (U.S.A.) General Electric Company (WGY). 790 kc/s (379.5 m.); 50 kW. Relayed by W2XAF and W2XAD (See Short-Wave List). Transmits at intervals from 11.45 a.m. 9.0 p.m.—Decorating Notes from New York. 9.15—Ollie Yettru (Pianist). 9.30—Studio Ensemble. 9.50—News Items. 10.0—Stock Reports and Police Notes. 10.15—Skippy, from New York. 10.30—The Success Doctor. 10.45—Chandu, the Magician. 11.0—Musical Programme. 11.24—Baseball Scores. 11.30—With Gray McClintock in the Canadian Northwest. 11.45—Musical Programme. 12 midnight (WGY only)—General Electric Programme. 12 midnight (W2XAF only)—Stock Reports and News Items. 12.15 a.m. (Saturday)—Weather Report. 12.16—New Kenmore Orchestra. 12.45—Trials of the Goldbergs, from New York. 1.0 (WGY only)—Cities Service Concert. 1.0 (W2XAF only)—International General Electric Programme. 1.30—WGY Farm Forum. 2.0—Cliequot Club Eskimos, from New York. 2.30—Pond's Programme, from New York. 3.0—National Oratorio Society Programme, from New York. 4.0—Freddy Engle's Orchestra. 4.30—DeWitt Clinton

Orchestra. 5.0—Ralph Kirby (the Dream Singer), from New York. 5.5—Johnny Hamp's Orchestra, from New York. 5.30—New Kenmore Orchestra. 6.0 (approx.)—Close Down.

SCHWEIZERISCHER LANDESENDER (BEROMÜNSTER) (Switzerland) 653 kc/s (459 m.); 60 kW.; Basle, 1,229 kc/s (244.1 m.); and Berne, 1,220 kc/s (246 m.). 12.28 p.m.—Time Signal from Neuchâtel Observatory. 12.30—Weather Report and News Bulletin. 12.40—Concert by the Station Orchestra. 1.35—Weather Report and Exchange Quotations. 1.45—3.30—Interval. 3.30—Light Music on Gramophone Records. 4.30 (from Basle)—Programme for Children. 5.0—6.30—Interval. 6.30 (from Basle)—"The Microphone"—an Experimental Programme by Rudolf Kraege. 7.0—Time Signal, Weather Forecast, Automobile Report, Market Prices and Sports Forecast. 7.30 (from Basle)—Agricultural Talk. 8.0 (from Berne)—Concert of Unfamiliar Works of Verdi, by the Station Orchestra and the Berne String Quartet. Soloists: André von Diehl (Bass) and Ernst Kappeler (Pianoforte). In the interval, Talks on Verdi. 9.30—Weather Forecast and News Bulletin. 9.45—Cabaret Programme. 10.30 (approx.)—Close Down.

STOCKHOLM (Sweden) Radiotjänst (SASA). 689 kc/s (436 m.); 55 kW. Relayed by Boden, 244 kc/s (1,229.5 m.); Göteborgs, 932 kc/s (322 m.); Hörby, 1,166 kc/s (257 m.); Motala, 222.5 kc/s (1,348 m.); and Östersund, 389 kc/s (770 m.); and Sundsvall, 554 kc/s (542 m.). Transmits at intervals from 8.0 a.m. (Service). 5.0 p.m.—Light Music from Sundsvall. 5.45—Popular Music on Gramophone Records. 6.45—Recital of German Ballads of the Twelfth and Thirteenth Centuries by Erich Burger, with Harp accompaniment. 7.15—Weather Forecast and News Bulletin. 7.30—Talk on Photography. 8.0 (from Sundsvall)—Military Band Concert, conducted by Axel Eek. 9.0—Reading of Soldiers' Ballads. 9.30—Cello Recital by Roman Dukstulsky. Arioso (Bach). Après un rêve (Faure). Pastoral (Couperin-Cassado). Minuet (Boccherini-Cassado). The Flight of the Bumble-bee (Rimsky-Korsakov). 9.45—Weather Report and News Bulletin. 10.0—Chamber Music Concert by the Barkel Quartet. String Quartet in G, Op. 64, No. 4 (Haydn). String Quartet, in F, Op. 18 (Stenhammar). 11.0 (approx.)—Close Down.

STRASBOURG (France) Radio-Strasbourg (PTT). 869 kc/s (345 m.); 11.5 kW. 11.30 a.m.—Gramophone Concert of Classical and Light Music. 12.45 p.m.—News in French and German. 1.0—Time Signal. 1.2—Gramophone Concert of Light Music. 2.0—3.0—Interval. 3.0—Concert relayed from Notre Dame, Paris, on the occasion of the "Refection des Grandes Orgues." 5.0—Literary Talk in French: Leconte de Lisle. 5.15—Orchestral Concert, conducted by Roskam. Colonial March, Vincennes (Wangermée). Valse des Blondes (Ganne). Madrigal (Van de Walle). Comedy Overture (Kéler-Béla). Selection (Wesly). Oriental Intermezzo, Tinkati (Neuds-Kalkmann). Selection from "Die Puppenfee" (Bayer). March, Regimentkind (Fueck). 6.0—Topical Talk in German. 6.15—Legal Talk in German. 6.30—Gramophone Concert. Reflets d'Allemagne (Fl. Schmitt). Villanelle (Dukas). Selection from "Nina Rosa" (Romberg). Adagio (Mirtovsky). Selection from "Rosamunde" (Schubert-Kreisler). Selections (Mayerl): (a) Marigold, (b) Robots. The Glow-worm Gavotte (Lincke). Czardas (Barthet). Le Cœur de Ninon (Becuici). Le Testament de Pierrot (Privas). Selections (Lehár) from (a) "The Count of Luxembourg" (b) "Gipsy Love." Selection (Gilbert). Sweet Jennie Lee (Donaldson). 7.30—Time Signal. 7.32—News in French and German. 7.45—Gramophone Concert. Song from "Femmina" (Messenger). In-

termezzo from "L'Arlesienne" (Bizet). Selection from "La Basoche" (Messenger). Moment Musical (Schubert). Mountaineer's Song (Joquin Nin). Two Selections (Oberfeld-Ruyol). Serenade (Moszkovsky). Valse de rêve (Locatelli). Küssen ist kein Sünd (Eysler). 8.30—Symphony Concert, conducted by Maurice de Villers. Soloists: Mme. Biellmann (Soprano), M. Mourier (Baritone), M. Margulica (Tenor) and M. Halter (Pianoforte). The Coffee Cantata for Soprano, Baritone and Tenor (Bach). Fantasia for Pianoforte, Choir and Orchestra (Beethoven). Third Symphony in D Minor (Cesar Franck).

STUTTGART (MÜHLACKER) (Germany) Süddeutscher Rundfunk. 832 kc/s (360.5 m.); 60 kW. Relayed by Freiburg, 527 kc/s (570 m.). Transmits at intervals from 6.0 a.m. (Time, Weather and Gymnastics). 10.0 a.m.—Pianoforte Recital, relayed from Mannheim. Pastoral and Capriccio (Scarlatti). Sonata in D (Haydn). Variations on "Schöne Minka" (Weber). Ballade in G Minor (Chopin). 10.30 (from Freiburg)—Talk for Schools. 11.0—Time Signal, Weather Report and News. 11.15—Sponsored Concert. 12 noon—See Frankfurt. 12.50 p.m.—Time Signal, Weather Report, News Bulletin and Programme Announcements. 1.0—Concert from Langenberg. 1.55—News Bulletin. 2.0—2.15—Sponsored Musical Programme. 2.30—Advanced English Lesson. 5.0—Concert from Langenberg. 6.15—Time Signal, Weather Report and Agricultural News. 6.25—Talk: It's the same the Whole World over—Reminiscences of a World Tour. 6.50 (from Mannheim)—Medical Talk on Disinfection. 7.15—Time Signal, and Review of Coming Events in Esperanto. 7.30—Folk Songs of East Germany, by Brunhilde Möckesch (Soprano), and Max v. Wistinghausen (Baritone). 8.0—Talk by Kurt Sell: What People are talking about in America, relayed from America. 8.15—"Light Cavalry"—Comic Opera (Supplé). 9.15—"A Lesson in a School in 3000 A.D."—Play (Schaat). 10.20—Time Signal, Weather Report, News Bulletin, Programme Announcements and Sports Notes. 10.45—See Frankfurt. 12 midnight (approx.)—Close Down.

TOULOUSE (France) Radiophonie du Midi. 779 kc/s (385 m.); 8 kW. Transmits at intervals from 12.30 p.m. 5.0 p.m.—Picture Transmission. 5.15—Exchange Quotations. 5.30—Hawaiian Guitar Solos. 5.45—First Suite from "Peer Gynt" (Grieg). 6.0—Orchestral Music. 6.15—Operatic Songs. Selections from "The Prophet" (Meyerbeer), "Hérodiade" (Massenet), "Il Seraglio" (Mozart) and "The Magic Flute" (Mozart). 6.30—Exchange and Racing Results. 7.0—Popular Concert. 7.30—News Bulletin. 7.45—Dance Music. 8.0—Selections by a Viennese Orchestra. 8.30—Sound Film Music. 8.45—Orchestral Selections. Marche joyeuse (Chabrier). Wedding March (Lincke). Selection. Slavonic Dances (Dvorák). 9.0—Concert relayed from the Café des Américains. Light Music in the interval. 10.30—North African News. 10.45—Suite from "L'Arlesienne" (Bizet). 11.15—Popular Songs. 11.30—Symphony No. 7 for Orchestra (Beethoven). 12 midnight—Weather Report and Announcements. 12.5 a.m. (Saturday)—English Concert. 12.30 (approx.)—Close Down.

TRIESTE (Italy) Ente Italiano Audizioni Radiofoniche. 1,211 kc/s (247.7 m.); 10 kW. Transmits at intervals from 8.15 a.m. 7.10 p.m.—Quintet Concert. To Hamburg (Benatzky). Stenka Razin (arranged Goldmann). Invocazione (Sinigaglia). Selection (Brotsky). In campagna (De Micheli). E la bimba fuggi (Oneglia). Leggenda marinara (Stocchetti). Bettina (Manoni). 8.0 till Close Down—See Turin.

TURIN (Italy) Ente Italiano Audizioni Radiofoniche. 1,096 kc/s (273.7 m.); 7 kW. Relayed by Milan, 905 kc/s (331.5 m.); Genoa, 959 kc/s (312.8 m.); and Florence, 599 kc/s (500.8 m.).

Transmits at intervals from 8.15 a.m. 6.45 p.m.—Agricultural Notes and Report of the Royal Geographical Society. 7.5—Announcements. 7.10—Musical Selections. In Persian Market (Kettelbey). Baci al buio (De Micheli). Patuglia turca (Micaceli). Selection from "The Girl in the Taxi" (Gilbert). 7.30—Time, Announcements and Gramophone Records of Variety Music. 8.0—Giornale Radio, Weather and Gramophone Records of Variety Music. 8.55—Technical Talk. 9.0—Symphony Concert, conducted by Rito Selvaggi. Talk in the interval. 11.0—Giornale Radio.

VATICAN CITY (Rome) 15,123 kc/s (19.84 m.) (Morning) and 5,969 kc/s (50.26 m.) (Evening); 20 kW. 11.0—11.15 a.m.—Religious Information in German. 8.0—8.15 p.m.—Religious Information in Italian.

VIENNA (Austria) Radio-Wien. 581 kc/s (517 m.); 15 kW. Relayed by Graz, 852 kc/s (352.1 m.); Innsbruck, 1,058 kc/s (283 m.); Klagenfurt, 662 kc/s (453.2 m.); Linz, 1,220 kc/s (246 m.); and Salzburg, 1,373 kc/s (218 m.). Transmits at intervals from 9.20 a.m. 5.0 p.m.—Concert by English Orchestras on Gramophone Records. The London Philharmonic Orchestra, Conductor: Bruno Walter. Symphonic Poem, "Don Juan" (Richard Strauss). The Hallé Orchestra, conducted by Sir Hamilton Harty: Hungarian Dances Nos 5 and 6 (Brahms). The London Symphony Orchestra, conducted by George Schnevoigt. Norwegian Dances, Op. 35 (Grieg). New Queen's Hall Orchestra, conducted by Sir Henry Wood: Danse macabre (Saint-Saëns). Bournemouth Orchestra: Overture, "Zampa" (Hérold). Regal Cinema Orchestra, conducted by E. Starkey: A Musical Jigsaw (Aston). 6.15—Tourist Report. 6.30—Talk: Excursions with Collapsible Boats. 6.45—Sports Notes. 7.0—Talk by Paris Gütersloh. 7.30—Time Signal, Weather Forecast and News Bulletin. 7.40—Pianoforte Recital by Viktor Ebenstein. Fantasia on two motives from Mozart's "Marriage of Figaro" (Liszt-Busoni). Polonaise-Fantasia (Chopin). Campanella (Liszt-Busoni). 8.10—Ludwig Fulda reads from his own works. Introductory Talk by Ludwig Klünderberger. 8.40—Vienna interpreted by Country Artists—Programme by The Otto Römisch Orchestra. Erika Heller (Songs), the Mandl Quartet, Adalbert Vesely (Zither), and Rudolf Wallner (Pianoforte). 10.5—News Bulletin, Weather Forecast and Announcements. 10.20—Dance Music by the David Mathé Orchestra with Robert Etlinger and Wolfgang Ernst (Songs), relayed from Hübner's Kursalon.

WARSAW (Poland) Polskie Radio, 212.5 kc/s (1,411 m.); 120 kW. 11.58 a.m.—Time Signal and Bugle Call from the Tower of St. Mary's Church, Cracow. 12.5 p.m.—Programme Announcements. 12.10—Interval. 12.30—Press Review. 12.40—Weather Report. 12.45—Light Music on Gramophone Records. 2.0—Interval. 3.0—Economic Report. 3.10—Popular Music on Gramophone Records. 3.30—Report of the Polish Singers Association. 3.35—Variety Music on Gramophone Records. 4.35—Hydrographic Report. 4.40—Talk. 5.0—Concert by the Academic Salon Orchestra, conducted by Karolína March (Miller). Overture, "The Caliph of Bagdad (Boieldieu). Angel's Prayer (Sawnow). Waltz, "The Skaters (Waldteufel). Träumerei (Kratzer). Couiavienne (Karolína). Foxtrot (Pelc). Mazurka (Osmansky). Oberek (Namy-sloWSky). Triumpfal March (Karolína). 6.0—Talk, relayed from Cracow, 959 kc/s (312.8 m.). 6.20—Dance Music, relayed from Lwow. 7.15—Miscellaneous Items. 7.35—Radio Journal. 7.45—Foreign Agricultural Press Review, relayed from Wilno, 533 kc/s (563 m.). 7.55—Programme Announcements. 8.0—Symphony Concert from the Studio. The Philharmonic Orchestra, conducted by E. Mlynarsky. Soloist, Cas. Wilkomirsky ("Cello"). Overture, (Moniuszko). Concerto for Cello and Orchestra (Maklakiewicz). Symphony No. 2, in D (Brahms). 8.55—Feuilleton: Palestine. 9.50—Radio Journal. 9.55—Aviation Weather Report. 10.0—Dance Music. 10.40—Sports Notes. 10.50—Dance Music.

# SATURDAY (June 11)

## PRINCIPAL EVENTS

### CONCERTS (Vocal and Instrumental)

- 7.30 p.m. Munich: Operetta and Sound-film Melodies.
- 8.0 " Copenhagen: "Old-time music.
- 8.0 " Oslo: The Station Orchestra.
- 8.0 " Vienna, Hamburg, Königs Wusterhausen, Breslau, Budapest, Frankfurt, Heilsberg, Leipzig, Radio-Suisse Romande, Stuttgart: Military Music and Soldiers' Songs of Three Centuries.
- 8.0 " Warsaw: Light Orchestral programme.
- 8.45 " Strasbourg: The Municipal Orchestra.

### OPERA

- 8.45 p.m. Rome: "Tannhäuser" (Wagner).

### CHAMBER MUSIC

- 8.0 p.m. Brussels No. 1: Trios.
- 8.50 " Italian Stations (N.): Trios.

### RECITALS

- 9.25 p.m. Copenhagen: Bellman Songs.
- 10.5 " Warsaw: Chopin.

### PLAY AND TALKS

- 6.30 p.m. Schweizerischer Landessender: Dr. Paul Stefan: "Opera and Opernspiel in 1932."
- 8.0 " Radio-Paris: M. André Bacqué, "Fairy Tales."
- 9.20 " Munich: "The Nürnberg Amazons" (Fr. Lehmann), relayed from Nürnberg.

### MISCELLANEOUS

- 8.45 p.m. Radio-Paris: "Soirée de Chansonniers."
- 8.45 " Stockholm: Provincial programme from Göteborg.

### DANCE MUSIC

- 10.15 p.m. (app.) Königs Wusterhausen, etc.
- 10.30 " Vienna, Breslau.
- 10.45 " Munich, Frankfurt, Stuttgart: Alex. Laszlo's Five.
- 10.45 " Oslo: Gramophone records.
- 11.0 " Copenhagen: Kai Julian's Band.

### Massed Bands and Voices

It has always been a subject of debate among musicians—like the problem of the hen and the egg—whether marching tunes were first suggested by the rhythmic tramp of many feet, or whether bodies of men learned to march in step together by having rhythmic music sung or played. In any case, march music is probably almost as old as mankind itself—at any rate as old as warfare, which is nearly the same. But the strange thing is that the oldest

folk-songs and were no doubt sung by the troops when no marching band was available, or even along with the band when it was. This evening's programme from VIENNA, relayed by many other stations, includes martial music of both orders, played and sung. The massed bands of the whole garrison are to join forces, and a choir of 500 soldiers takes part in the programme. The Heldenplatz, from which that great volume of tone is to come, lends itself admirably to such big-scale music.



The Heldenplatz, Vienna

[By courtesy of the Austrian Federal Railways

### NATIONAL

- |           | kc/s  | m.      | kW. |
|-----------|-------|---------|-----|
| London:   | 1,148 | 261.3   | 50  |
| Daventry: | 193   | 1,554.4 | 30  |
| Northern: | 995   | 301.5   | 50  |
- 10.15 a.m.—The Daily Service.
  - 10.30—Time Signal (Greenwich); Shipping Forecast.
  - 10.45—11.0—Mrs. Wood: "Domestic Economics"—IV.
  - 12 noon—The Northern Studio Orchestra.
  - 12.45 p.m.—Reginald New at the Organ.
  - 1.0—Time Signal (Greenwich).
  - 1.30—2.30—The Commodore Grand Orchestra, directed by Joseph Muscant.
  - 3.30—Frederic Hartley's Quintet. Doris Cowen (Contralto).
  - 4.45—Time Signal (Greenwich).
  - 4.45—Reginald Foot at the Organ.
  - 5.15 (Daventry)—The Children's Hour.
  - 5.15 (London and Northern)—The B.B.C. Dance Orchestra, directed by Henry Hall.
  - 6.0—"The First News."
  - 6.30—Time Signal (Greenwich).
  - 6.30—Mr. P. F. Warner: "Coming Cricket Events."
  - 6.45—A Welsh Interlude.
  - 7.5—7.25—Topical Talk.
  - 7.30—Music Hall. Musical Director, S. Kneale Kelly. José Collins, the Famous Musical Comedy Star. Terence P. McGovern and his International Accordion Band. John Tilley, Raconteur. G. H. Elliott, the Chocolate-Coloured Coon. Nomo King and Partner, the Black-Faced Comedians. Jenny Howard, the Comedy Girl, assisted by Percy King. Will Fyffe, the Famous Scots Comedian.
  - 8.40—"The Second News." Weather Forecast, Second General News Bulletin.
  - 8.55—Shipping Forecast: New York Stock Market Report.
  - 9.0—Time Signal (Greenwich).
  - 9.0—"Hazard"—IV. Commander H. G. Stoker, D.S.O., R.N.
  - 9.30—11.50—Aldershot Military Tattoo. Relayed from Aldershot.
  - 10.40—11.0 (Midland)—As London.
  - 10.35—12 midnight (London and Northern)—Dance Music.

### REGIONAL

- |           | kc/s | m.    | kW. |
|-----------|------|-------|-----|
| London:   | 842  | 356.3 | 50  |
| Midland:  | 752  | 398.9 | 25  |
| Northern: | 626  | 479.2 | 50  |
- 10.15 a.m. (London and Northern)—The Daily Service.
  - 10.30—11.0 (London and Northern)—Daventry National Programme.
  - 12 noon—2.30 p.m. (London)—Daventry National Programme.
  - 12 noon (Northern)—French Composers. The Northern Studio Orchestra.
  - 12.45—2.30 p.m. (Northern)—Daventry National Programme.
  - 3.30 (London and Northern)—Frederic Hartley's Quintet. Doris Cowen (Contralto).
  - 3.30 (Midland)—Dance Music. Billy Merrin and his Commanders.
  - 4.45—Daventry National Programme.
  - 5.15—The Children's Hour.
  - 6.0—"The First News."
  - 6.25 (Midland)—The Studio Chorus, under the direction of Edgar Morgan.
  - 6.30 (London)—Callender's "A" Band. Alice Lilley (Soprano). Ronald Gourley (Entertainer).
  - 6.30 (Northern)—The Northern Studio Orchestra. Dorothy Paul and Harold Bowman (Entertainers).
  - 7.0 (Midland)—A Military Band Concert. The City of Birmingham Police Band, conducted by Richard Wassell.
  - 8.0 (Northern and London)—An Orchestral Concert, from The Pavilion Gardens, Buxton. Stanley Pope. (Bass-Baritone). The Municipal Orchestra, conducted by Horace Fellows.
  - 8.0 (Midland)—The Midland Studio Orchestra, directed by Frank Cantell. Eric Cross (Tenor).
  - 9.0 (London)—Chamber Music. Mary Baker (Mezzo). René le Roy (Flute). Vera Moore (Pianoforte).
  - 9.0 (Northern)—A Brass Band Concert. The Bradford City Band, conducted by H. Grace. Sherlock Thomas (Baritone).
  - 9.15 (Midland)—Dance Music. Billy Merrin and his Commanders.
  - 10.15—"The Second News."
  - 10.35 (Midland)—Experimental Transmission by the Fultograph Process.

### NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME

#### ALGIERS (N. Africa)

825.3 kc/s (363.3 m.); 13 kW  
Transmits at intervals from 12.30 p.m. 7.15 p.m.—Instrumental Concert. 7.55—News and Time Signal. 8.0—Concert (continued). 8.30—Request Gramophone Records.

#### BARCELONA (Spain)

Radio-Barcelona (EAJ1). 860 kc/s (349 m.); 8 kW.  
Transmits at intervals from 8.15 a.m. 7.0 p.m.—Programme for Children, followed by Trio Concert and Picture Transmission. 8.30—Exchange Quotations, Request Gramophone Records and News Bulletin. 10.0—Chines from the Cathedral, Weather and Exchange Quotations. 10.5—Gramophone Concert of specially selected Records.

#### BELGRADE (Yugoslavia)

697 kc/s (430.4 m.); 2.5 kW.  
Transmits at intervals from 11.0 a.m. 4.0 p.m.—Request Concert of Variety Music on Gramophone Records. 5.0—Saxophone Recital. 5.30—Recital of Yugoslavian Songs by Herr Rasa Radenkovic. 6.55—Time and Programme Announcements. 7.0—Radio Talk. 7.30—The Second Trio Op. 72, for Pianoforte, Violin and Cello (Godard). 8.10—Talk on the following transmission. 8.20—"Die Wahrsagerin"—The Soothsayer—Operetta (Jenke). 10.20 (approx.)—News and Cigany Music from the Rudnickian Restaurant.

#### BERLIN (Germany)

Königs Wusterhausen. 183.5 kc/s (1,635 m.); 60 kW.  
Transmits at intervals from 5.45 a.m. 12 noon—Weather for Farmers. 12.2 p.m.—Gramophone Concert of Chamber Music, followed by Weather for Farmers. 12.55—Time Signal. 1.30—News Bulletin. 2.0—Gramophone Concert of Dance Music, relayed from Berlin (Witzleben). 3.0—Talk: The "Graf Zeppelin." 3.30—Weather and Exchange. 3.45—Talk for Women. 4.0—Talk. 4.30—See Hamburg. 5.30—Health

Talk. 5.50—Talk: Prospects in Pomerania. 6.5—Weekly Music Review. 6.30—Legal Talk. 6.55—Weather for Farmers. 7.0—Elementary English Lesson. 7.30—"The Quiet Hour," followed by Weather for Farmers. 8.0—See Vienna. 10.0—News and Dance Music from Berlin (Witzleben). 12.30 a.m. (Sunday)—Close Down.

#### BERLIN (Germany)

Witzleben. 715 kc/s (419.5 m.); 1.5 kW.

Transmits at intervals from 6.0 a.m. (Gymnastics and Concert Relay).

#### BRATISLAVA (Czechoslovakia)

1,076 kc/s (279 m.); 14 kW.  
Transmits at intervals from 11.0 a.m. 7.0 p.m.—See Prague. 10.15—Programme Announcements. 10.30—See Moravská-Ostrava.

#### BRESLAU (Germany)

923 kc/s (325 m.); 1.5 kW. Relayed by Gleiwitz, 1,184 kc/s (253 m.).

Transmits at intervals from 6.0 a.m. 4.0 p.m.—Concert of Light Music by the Station Orchestra, conducted by Franz Marszalek. 5.0—Carl Lange reads from his own works. 5.35—Talk: Is the Film Censor a Hindrance to the Production of Artistic Films? 6.0—Musical Programme by Joseph Witkovsky. 6.25—Talk: Silesia's most beautiful Parks. 6.50—Weather for Farmers.

#### BRNO (Czechoslovakia)

878 kc/s (342 m.); 35 kW.  
Transmits at intervals from 11.0 a.m. 7.0 p.m.—See Prague. 10.15—News Bulletin. 10.30—See Moravská-Ostrava.

#### BORDEAUX-LAFAYETTE (France)

(P.T.T.) 986 kc/s (304 m.); 13 kW.  
Transmits at intervals from 12.45 p.m.

6.30 p.m.—Radio Journal. 8.0—News Exchange Quotations and Lottery Results. 8.5—Sports Notes. 8.10—English Lesson. 8.25—News Bulletin and Weather Report. 8.30—Concert of Popular Music on Gramophone Records. 9.0—Two One-Act Comedies: (a) "Le Chevalier Canepin" (Duvernois), (b) "Burglary" (Delamare).

#### BRATISLAVA (Czechoslovakia)

1,076 kc/s (279 m.); 14 kW.  
Transmits at intervals from 11.0 a.m. 7.0 p.m.—See Prague. 10.15—Programme Announcements. 10.30—See Moravská-Ostrava.

#### BRESLAU (Germany)

923 kc/s (325 m.); 1.5 kW. Relayed by Gleiwitz, 1,184 kc/s (253 m.).

Transmits at intervals from 6.0 a.m. 4.0 p.m.—Concert of Light Music by the Station Orchestra, conducted by Franz Marszalek. 5.0—Carl Lange reads from his own works. 5.35—Talk: Is the Film Censor a Hindrance to the Production of Artistic Films? 6.0—Musical Programme by Joseph Witkovsky. 6.25—Talk: Silesia's most beautiful Parks. 6.50—Weather for Farmers.

#### BRNO (Czechoslovakia)

878 kc/s (342 m.); 35 kW.  
Transmits at intervals from 11.0 a.m. 7.0 p.m.—See Prague. 10.15—News Bulletin. 10.30—See Moravská-Ostrava.

#### BORDEAUX-LAFAYETTE (France)

(P.T.T.) 986 kc/s (304 m.); 13 kW.  
Transmits at intervals from 12.45 p.m.

#### BRUSSELS (Belgium) (No. 1)

I.N.R. 590 kc/s (509 m.); 15 kW.  
5.0 a.m. and at hourly intervals throughout the day—Pigeon Flying Report.

SATURDAY continued

12 noon—Concert by the Max Alexys Orchestra. In the interval at 12.30 p.m.—Weather Report. 5.00—Dance Music from the St. Sauveur Palais de Danse. 6.15—Talk: Occupational Diseases—Coal-Miners. 6.30—Gramophone Records. Offenbach Potpourri (Urbach). Marche des Camélias (Volant). Milonga. Pourquoi l'loras? (Cadicamo). Melodious Memories (Finck). Good-night Sweetheart (Noble). Ne coupe pas Mademoiselle (André Sab). Grieg Potpourri (Urbach). Selection from "Le Pré-aux-Cleres" (Hérold). March on Themes from "Les Huguenots" (Meyerbeer). 7.15—Talk: The Economic Situation in Europe—The Oslo Convention. 7.30—Literary Review. 8.00—Chamber Music by the Caecilia Trio. Mm. Bouquet (Violin). Turc (Cello) and A. Dufour (Pianoforte). Trio in G, No. 5 (Mozart). Trio in D Minor (Arensky). 8.45—Talk: Georges Marlow—Belgian Author, with Readings from his Works. 9.00—Gramophone Records. Selections from "Frederica" (Lehar). 9.5—"La Folle Journée"—One-Act Comedy (Mazaud). 9.45—Gramophone Records. Selection from "La Chanson de Fortunio" (Offenbach). Le Temps des Lilas (Chausson). La Maison grise (Messager). L'eau qui court (Georges). 10.00—Le Journal Parlé. 10.10—Concert by the Max Alexys Orchestra, relayed from the "Ancienne Belgique." 11.0 (approx.)—Close Down.

BRUSSELS (Belgium) (No. 2) N.I.R. 887 kc/s (338.2 m.); 15 kw. Programme in Flemish. 5.0 a.m. and at hourly intervals throughout the day—Pigeon Flying Report. 12.0 noon—Concert by the Tea Room Orchestra. In the interval at 12.30 p.m.—Weather Report. 1.0—Gramophone Concert of Popular Music. 5.0—Orchestral Concert, conducted by Franz André. March, Metropole (Lincke). Overture, "Pique Dame" (Suppé). Waltz Potpourri (Fetras). Romanian Airs (Dauber). Spanish Pieces (Granados). Czardas for Violin (Monti). Pieces for two Pianofortes and a Drum. Selection from "The Geisha" (Jones). Faded Summer Love (Baxter). By the Sycamore Tree (Gillespie).

6.0—Gramophone Records. Selections from "Moses in Egypt" (Rossini-Paganini). Minuet (Boccherini). Caprice No. 9 (Paganini-Reuter). Gavotte (Gluck-Planté). Potpourri of Old French Songs. 6.15—Talk: The Poet Hendrik Van Veldeke. 6.30—Gramophone Dance Music. Tango, Por la Pinta, Parade of the Minutes. Pearl of Hawaii. Tango, Milonga. Pourquoi l'loras? Bluc Again. Waltz, Entrainante. Slow Fox-trot, by the River Sainte-Marie. Scottish Dance. First Kiss. Tango-Blues, Enchantment. Fox-trot, Sweetness. Saxophone Solo: Waltz, Inspiration. 7.15—Talk. 7.30—Cinema Notes.

8.0—Orchestral Concert, conducted by Franz André. Soloist: M. Leener (Songs) and M. Fischer (Cello). March (Siroux). Potpourri, Quintessence (Morena). Waltz, Moonlight on the Alster (Fetras). Flemish Songs. Fox-trot Potpourri on "The Gipsy Princess" (Kálmán). 8.45—Humorous Items. 9.0—Concert (continued). Bohemian March (Fillipucci). Carnival (Siede). Polka for Flute, Rossignolet (Bades). Czardas (Michiels). Selections from "Rip van Winkle" (Planquette). Songs. "Cello Solos: (a) Berceuse de Jocelyn (Godard), (b) Arlequin (Popper). Down beside a Dutch Canal. You try somebody else. In a little old Italian Garden. Got the Bench, got the Park. Anatole prend le Metro (Pensó).

10.0—Le Journal Parlé. 10.10—Concert by Max Alexys and his Orchestra, relayed from the "Ancienne Belgique." 11.0 (approx.)—Close Down.

BUCHAREST (Romania) Radio-Bucarest. 761 kc/s (394 m.); 12kW. Transmits at intervals from 11.0 a.m. 4.0 p.m.—Concert of Light Music and Romanian Music by the Sibiccano Orchestra. 5.0—News Bulletin and Time Signal. 5.10—Concert (cont'd.). 6.0—Talks on History and Geography. 7.0—Light Music by the Station Orchestra. Selection (Stolz). Selection from "The White Horse Inn" (Benatzky). 8.0—Talk (to be announced). 8.15—Concert of Romanian Music by

the Luca Orchestra. 9.0—News Bulletin.

BUDAPEST (Hungary) 545 kc/s (550 m.); 18.5 kW. Transmits at intervals from 9.15 a.m. Programme also relayed on 210 metres from 6.30 p.m. till Close Down. 5.0 p.m.—Concert by the Karl Bura Cigany Band. 6.0—Programme by Béla Révész. 6.30—Sponsored Gramophone Concert. 7.30—Answers to Correspondents. 8.0—See Vienna. 10.0—Time Signal and Weather Report. 10.5—Concert by the Eugen Farkas Cigany Band, relayed from the Café Spolarich.

COPENHAGEN (Denmark) 1,067 kc/s (281 m.); 0.75 kW. Relayd by Kalundborg, 260 kc/s (1,153 m.). Transmits at intervals from 7.30 a.m. 12 noon—Time and Chimes from the Town Hall. 12.2 p.m.—String Ensemble Concert, conducted by Max Skalka, relayed from the Hotel d'Angleterre. 2.0—2.30—Interval. 2.30—Gramophone Concert. Elisabeth Rethberg: Song from "Il re pastore" (Mozart). Michail Gítowsky: Song from "The Huguenots" (Meyerbeer). Franz Völkler: Santa Lucia (Gordigiani). Comedian Harmonists: In einem kühlen Grunde (Glück). Willy Fritsch: Two Songs from "Ronny" (Kálmán). Florence Oldham: If they ever had an income tax on love (Washington and Monaco). Nils Jacobsson: Salta biten (Winter). The Boswell Sisters: An ev'ning in Caroline (Donaldson). 3.0—Programme for Children. 3.30—Orchestral Concert, conducted by Launy Gröndahl. Soloist: Kay Abrahamson (Vocalist). Overture, "Halka" (Moniuszko). Fantasia on Workers' Songs (Emil Reesen). Tango (Albéniz). Ballet Suite (Heinrich). Finale from the Second Act of "Linda di Chiamonix" (Donizetti). Songs: (a) Two Songs from "White Horse Inn" (Benatzky), (b) Mona Lisa (Stolz), (c) Two Songs (K. N. Andersen). Polonaise (Glazoumov). Aria from "The Creation" (Haydn). Perpetuum mobile (Joh. Strauss). Waltz from "The Man with the Three Wives" (Lehar). Six Country Dances for Strings (Mozart). Six Melodies by Bellman (arr. A. Söderman). Gallop, Casino (Rasmussen). 5.40—Exchange and Fish Market Prices. 5.50—Talk in English: Cambridge. 6.20—French Lesson. 6.50—Weather Forecast. 7.0—News Bulletin. 7.15—Time Signal. 7.30—Talk. 8.0—Chimes from the Town Hall. 8.2—Orchestral Concert, conducted by Emil Reesen. Soloist: Marie Bundesen (Vocalist). Overture, "Le Postillon de Longjumeau" (Adam). Waltz, Morgenblätter (Joh. Strauss). Selection from "Mam'zelle Nitouche" (Hervé). Six Songs. Selection from "La Fille de Madame Angot" (Lecocq). Selections (Lumbye): (a) Polka, Britta, (b) Mazurka, Columbine. Reel from "Livjægerne paa Amager" (V. Holm). 9.0—Reading. 9.25—Bellman Song Recital by Alf Gildsig, with Introductory Talk. Systrar hören min musik. Tråd fram du nattens gud. Liksom en herdinna. Om ödet mig skull skicka. Skratta mina barn och vänner. Bóljan sig mindre rör. 9.55—Orchestral Concert of Modern Operetta Music. March from "Der liebe Augustin" (Fall). Selection from "Un bon garçon" (Yvain). Waltz from "Der lachende Dreibund" (Benatzky). Fox-trot from "Phi-Phi" (Christiné). Selection from "No, No, Nanette" (Youmans). March from Bacchanalian Nights (Gancehstädten). 10.45—News Bulletin. 11.0—Dance Music from the Lodberg Restaurant. In the interval at 12 midnight—Time and Chimes from the Town Hall. 12.15 a.m. (Sunday)—Close Down.

DUBLIN (Ireland) (2RN). 725 kc/s (413 m.); 1.2 kW. Relayd by Cork, 1,337 kc/s (224.4 m.). 1.30—2.0 p.m.—Time Signal, Weather Report, Stock Report and Popular Music on Gramophone Records. 7.20—News Bulletin. 7.30—Time Signal. 7.31—Gaedhlig. 7.45—Talk on Opera. 8.0—"Lurline"—Opera (Wallace)—The Augmented Station Orchestra; the Station Opera Chorus and Soloists. 10.30—Time Signal, News, Weather Report. 10.40—Weekly Sports Review by Seamus Laverty and Close Down.

FÉCAMP (France) Radio Normandie. 1,345 kc/s (223 m.); 10 kW. 12 noon—Popular Gramophone Music. 12.30 p.m.—News Bulletin. 12.45—Radio Concert. 7.30—Radio Gazette for Normandy. 8.0—Concert. 8.45—Light Concert. 9.0—News Bulletin. 9.15—Concert. Love Waltz (Heymann). Selection from "La Fille de Madame Angot" (Lecocq). Un peu d'amour (Sileu). César Jongleur (Sarvil). Le Fanion de la Victoire (Courtade). Du bist das süsseste Mädel der Welt (Heymann). Dancing Doll (Poldini). César chez les Fantômes (Sarvil). Quand Madelon (Robert). 11.0—Variety Concert. 3.0 a.m. (Sunday)—Close Down.

FLORENCE (Italy) Ente Italiano Audizioni Radiofoniche. 599 kc/s (500.8 m.); 20 kW. See Turin.

FRANKFURT-am-MAIN (Germany) 770 kc/s (390 m.); 1.5 kW. Relayd by Castel, 1,220 kc/s (246 m.). Transmits at intervals from 6.0 a.m. 5.0 p.m.—Concert by the Philharmonic Orchestra, conducted by Bruno Hartl. Overture, "Samori" (Vogler). Symphony in C Minor (Martin Kraus). Symphony in C (Weber). 6.15—Economic Notes. 6.25—Talk arranged by the Frankfurter Zeitung. 6.50—Time, Programme Announcements, Weather and Economic Notes. 7.0—"Coblenz Evening"—Descriptive Pieces on Gramophone Records. 8.0—See Vienna. 10.0—Programme to be announced. 10.20—Time, Weather, News and Sports Notes. 10.45—See Munich. 12 midnight (approx.)—Close Down.

HAMBURG (Germany) Norag (ha, in Morse). 806 kc/s (372 m.); 1.5 kW. Relayd by Bremen, 1,112 kc/s (270 m.); Flensburg, 1,373 kc/s (218 m.); Hanover, 530 kc/s (566 m.) and Kiel, 1,292 kc/s (232.2 m.). Transmits at intervals from 5.45 a.m. 4.30 p.m. (from Hanover)—Concert from Bad Nenndorf. The Spa Orchestra conducted by Ernst August Bürger. Overture, "Prince Igor" (Borodine). Ballet Music from "La Gioconda" (Ponchielli). Selection from "The Girl from the Golden West" (Puccini). Selection from "Frasquita" (Lehar). Ballet Suite (Popy). Waltz, Traumdeale (Fucik). Torch Dance (Meyerbeer). 6.0—Talk: The Olympic Games. 6.30 (from Bremen)—Talk: The People, Government and Administration of Siam. 6.55—Exchange and Market Prices. 7.0—Topical Talk 7.15—Weather Forecast. 7.20—Variety Programme. 8.0—See Vienna. 10.0—News Bulletin. 10.20—Dance Music from the "Haus Siegler."

HEILSBURG (Germany) 1,085 kc/s (276.5 m.); 60 kW. Relayd by Danzig, 662 kc/s (453.2 m.). Transmits at intervals from 6.0 a.m. (Weather, Gymnastics and Concert). 11.30 a.m.—Johann Strauss Concert by the Little Orag Orchestra, conducted by Eugen Wilcken. Overture, "Cagliostro in Wien." Kaiserwalzer. Thermen-Walzer. Overture, "Karneval in Rom." Selection from "The Gipsy Baron." Waltz, "The Blue Danube. Overture, "Eine Nacht in Venedig." 1.20 p.m.—News Bulletin. 1.30—Gramophone Concert of Operatic and Light Music. 2.30—3.30—Interval. 3.30 (from Danzig)—Handwork for Children. 4.0—Orchestral Concert, conducted by Eugen Wilcken. Attila-Marsch (Fucik). Rakoczy Overture (Kéler-Béla). Selections (Richter): (a) Schwarzwälder Spieuhir, (b) Aufzug der Holzpuppen. Ballet Egyptian, Suite No. 1 (Luigini). Waltz from "Drei alte Schachteln" (Kollo). Selection from "Tosca" (Puccini). Intermezzo, "The Butterflyfly (Schlenck). Intermezzo, Gaukler im Orient (Lindemann). Wiener Operetten-Revue (Robrecht). 5.30—Relay from Bischofsburg of the Demonstration of the Ermland Workers' Catholic Societies. 6.0—Programme Announcements. 6.10—Programme Announcements in Esperanto. 6.15—Agricultural Market Prices. 6.20—World Market Prices. 6.30—Talk: The Work of the Red Cross. 6.55—Weather Report. 7.0—An East Prussian Evening at

Hirschfeld. 8.0—See Vienna. 10.0 (approx.)—News and Dance Music, from Berlin (Witzleben). 12.30 a.m. (Sunday)—Close Down.

HILVERSUM (Holland) 1,013 kc/s (296.1 m.); 20 kW. (7 kw. up till 4.40 p.m.). 6.25—9.55 a.m.—Programme of the Workers' Radio Society (VARA). 6.25—6.40 and 7.10—7.25 a.m.—Physical Culture. 7.40—Variety Music on Gramophone Records. 8.40—Quintet Concert. 9.40—Religious Programme by the Liberal Protestant Radio Society (V.P.R.O.). 9.55—Concert. Songs to the Lute by G. Dumont, Quintet Selections and Recitations by K. Bakker. 11.40—Septet Concert conducted by Is. Eyl with Variety Music on Gramophone Records. One Step, O Pimpinella (Benatzky). The Wedding of the Winds (Hall). Tango, Ihr könnt es nicht verbieten, dass die Sonne scheint (Benatzky). Popular Gramophone Music. Duet from "Boris Godounov" (Moussorgsky). Bacchanale from "The Seasons" (Glazoumov). Potpourri, Lasst Schlager sprechen (Dostal). Variety Music on Gramophone Records. Selection from "The Magic Flute" (Mozart). Makin' faces at the Man in the Moon (Rich). Variety Gramophone Music. Potpourri of 'Lyrolese Music (Fetras). Ziegenwehnsucht (Niklas-Kempner). Dance (Sullivan). Schenk mir einen Tango, Manuela (Engelmer). Light Music on Gramophone Records. Potpourri, Minutenspiele (Rubach). March, Hoppla jetzt komm ich (Heymann). 1.25—1.40—Interval. 1.40—Talk. 1.55—Talk with Gramophone Illustrations: The Songs of the Maori. 3.15—Concert by a Mandoline Orchestra conducted by J. Kok. March from "Boccaccio" (Suppé). Chanson triste (Tchaikovsky). Torcedor et Andalouse (Rubinstein). 3.25—A Radio Play (Awertschenko). 3.40—Mandoline Concert (continued). Waltzes (Johann and Joseph Straus). Salut d'amour (Elgar). March, Es muss bald wieder Frühling sein (Winston). 3.54—Sports Talk. 4.10—Chamber Music Concert. Guitar Solo: Variations and Sarabande (Gaultier). Minuet for Oboe and Guitar (Bach). Toccata for Guitar (Goffrey). Aria for Oboe and Guitar: So oft ich meine Tabakspfeife (Bacl). 4.40—Programme for Children. 5.40—Concert by the De Wielewaul Choir, conducted by P. Tiggers. Die Stund ist da (Haydn). Am Bach (Haydn). Juchholla, freud euch mit mir (Schein). Der kühle Maier (Schein). 5.55—Programme for Young Socialists. 6.10—Concert (cont'd.). 6.25—Weekly Review. 6.40—Quintet Concert. 7.10—Variety Programme. L. Davids (Talk and Songs), Leo Fuld (Songs), Johan Jong (Organ). The VARA Dramatic Society, Teun de Klepperman (Topical Talk), The VARA Orchestra, conducted by Hugo de Groot, The Amsterdam Quintet and Items by A. de Vries. In the interval at 10.40—News and Football Report. After the Programme, Variety Music on Gramophone Records. 11.40 (approx.)—Close Down.

HUIZEN (Holland) 1,260 kc/s (1,875 m.); 8.5 kW. Programme of the Catholic Radio Society (K.R.O.). 7.40—8.55 a.m.—Gramophone Records of Variety Music. 9.40—Instrumental Concert. 11.10—Religious Address. 11.40—Police Notes. 11.55—Sextet Concert, conducted by Piet Lustenhouwer. Paso doble, Ein deutsches Mädel (Reisfeld). Du-Du-Du (Stolz). Waltz, Golden Rain (Waldteufel). Marionetten Brautzug (Rathke). Potpourri of Old Popular Dances (Renauus-Lustenhouwer). Fräulein Laura (Rotter). Im Wandel der Zeiten (Morena). Das war herrlich (Benatzky). Waltz; Wine, Woman and Song (Strauss). Sonne der Südsee (Wied). In meinem kleinen Paddleboot (Katt). 1.25—1.40 p.m.—Interval. 1.40—Gramophone Records of Variety Music. 2.10—Programme for Children. 3.40—Swimming Lesson. 4.10—Light Music on Gramophone Records. 5.10—Talk on Sport. 5.25—Gramophone Records of Variety Music. 6.0—Press Review. 6.20—Gramophone Records of Light Music. 6.50—Talk by Dr. Max Jansen. 7.10—Police Notes. 7.25—Gramophone Records of Variety Music. 7.40—Radio Cabaret by K.R.O. the Orchestra, Mme. Fientje de la Mar (Recitations) and the "Cavellis" (Accordion). 8.40 (in an interval)—News. 10.40—Gramophone Concert of Variety Music. 11.40 (approx.)—Close Down.

KALUNDBORG (Denmark) Kalundborg Radio. 260 kc/s (1,153 m.); 7.5 kW. See Copenhagen.

KATOWICE (Poland) 734 kc/s (408 m.); 16 kW. Transmits at intervals from 11.58 a.m. 5.0 p.m.—Light Music. 6.0—Talk by Léon Ferencovicz. 6.20—See Warsaw. 7.45—Talk on Sports. 8.0—Concert of Light Music. 10.5—See Warsaw. 10.50—Dance Music.

LAHTI (Finland) 167 kc/s (1,796 m.); 54 kW. Relayd by Helsinki, 815 kc/s (368.1 m.). Transmits at intervals from 7.10 a.m. 6.15 p.m.—Talk. 6.40—Orchestral Selections. Waltz, Dolores (Waldteufel). Serenade (May). Czardas (Grossmann). 7.0—Talk. 7.20—Dramatic Programme. 8.0—Song Recital. 8.15—Orchestral Selections, from (a) "The Little Dutch Girl" and (b) "The Bayadere" (Kalmán). 8.45—News in Finnish and Swedish. 9.15—Military Music relayed from the Kappeli Restaurant. 10.0 (approx.)—Close Down.

LANGENBERG (Germany) Westdeutscher Rundfunk. 635 kc/s (473 m.); 60 kW. Transmits at intervals from 6.45 a.m. (Exercises, Weather, Time and Concert). 12 noon from Frankfurt. 12.50 p.m.—Weather and News and Time. 1.0—See Stuttgart. 2.35—Sponsored Gramophone Concert. 3.30—Economic Notes and Time Signal. 3.50—Programme for Children. 4.20—Talk: Through the Rhineland and Westphalia—On the Moselle. 4.40—English Lesson. 5.0—Concert. 6.10—A Radio Report from the Dog Show in the Westfalenhalle, Dortmund. 6.30—Talk on Taxation Questions. 6.50—Talk: The Future of East Germany. 7.10—Weather, Time, Economic and Sports Notes. 7.20—Radio Notes. 7.30—Talk: The Problem of Free Will. 7.55—First General News. 8.0—A Variety Programme, with the Station Orchestra conducted by Breuer. 10.5—News Bulletin, Announcements and Sports Notes. 10.30—Concert from Berlin (Witzleben). 12 midnight—Gramophone Dance Music. 1.0 a.m. (Sunday)—Close Down.

LEIPZIG (Germany) 1,157 kc/s (259 m.); 2 kW. Relayd by Dresden, 941 kc/s (319 m.). Transmits at intervals from 6.0 a.m. 5.0 p.m.—Concert by the Weissenfels Municipal Orchestra, conducted by Ernst Schwassmann. Festouvertüre (Hugo Hartung). Auf der Wunderschaft (August Klughardt). Two Selections (Schmalstich): (a) Die Glocken von Saint Cyr, (b) Schmetterlingsreigen. Three Spanish Dances (Moszkovsky). Selections from "Frederica" (Lehar). March, Vom Rhein der Wein (Lincke). Gondoliera (Franz Ries). Lautenstädtchen (Reinhold Wismar). Tanzszenen (Martin Richter). 6.30—German Lesson. 6.50—"A Modern Dictionary." 7.0—Talk: What is South West Africa like? 7.30—Concert by the Chemnitz People's Choir, conducted by Willy Steffen. Hoffnung (Robert Kahn). Two Selections (Karl Thiessen): (a) Aufmunterung, (b) Hochzeitslied. Folk Song, Drei Laub auf einer Linden (arr. Karl Thiessen). Folk Melody of 1500, Schöne Maruschka. Two Selections (Palestrina): (a) Sicut cervus, (b) Sanctus from the "Missa Papae Marcelli." 8.0—See Vienna. 10.5—News Bulletin, followed by Dance Music. 12 midnight (approx.)—Close Down.

LWÓW (Poland) 788 kc/s (381 m.); 16 kW. Transmits at intervals from 11.58 a.m. 4.5 p.m.—Orchestral Concert of Light Music, conducted by Tadeusz Serebinsky. 4.35—Topical Talk. 4.40—Orchestral Concert (continued). 5.0—See Warsaw. 6.0—Talk: Apocryphs. 6.20—See Warsaw. 7.15—Miscellaneous Items and Light Music on Gramophone Records. 7.35—See Warsaw. 7.45—Talk: Twenty-Four Hours in a Model Viennese Reformatory. 8.0—See Warsaw. 10.50—"Radio Serenade for June"—Musical and Literary Programme presented by Viktor Budzysky. 11.10—Dance Music from Warsaw. 12.0 midnight (approx.)—Close Down.

LYONS (France)

La Doua (PTT). 644 kc/s (465.8 m.); 1.5 kW. Transmits at intervals from 8.0 a.m. 7.0 p.m.—Popular Music on Gramophone Records. 7.30—Radio Gazette for Lyons and the South-East. 9.0—Song Recital, by M. Pichard, M. Buisson, Mme. Lysiane Doriani M. Maurice Darbou and Mme. Jane Dubois. Serenade from "Don Giovanni" (Mozart). Si tu le veux, brune Lison (Callet). Cavatina from "Romeo and Juliet" (Gounod). Le Petit Navire (Missa). Aria from "The Messiah" (Handel). Selections by M. Maurice Darbou and Mme. Jane Dubois. Stances (Flégier). L'ombre (Flotow). Song from "The Damnation of Faust" (Berlioz). Two Airs from "Alceste" (Gluck). Duet from "La Source" (Massenet). Duet from "La Fontaine" (Reyer).

MADRID (Spain)

Union Radio (EAJ7). 707 kc/s (424.3 m.); 2 kW. Transmits at intervals from 9.0 a.m. 8.0 p.m.—Chimes, Market Prices, Technical Talk and Request Gramophone Concert. 9.15—News Bulletin. 9.30—10.0—Interval. 10.0—Lingua-phone French Lesson. 10.30—Chimes, and Time Signal. 10.45—Selections from Musical Comedies: (a) "La Verbena de la Paloma" (Bréton), (b) "The Count of Luxembourg" (Lehár). 12.45 a.m. (Sunday)—News Bulletin. 1.0—Chimes and Close Down.

MILAN (Italy)

Ente Italiano Audizioni Radiofoniche. 905 kc/s (331.5 m.); 7 kW. See Turin.

MORAVSKÁ-OSTRAVA

(Czechoslovakia) 1,137 kc/s (263.8 m.); 11 kW. Transmits at intervals from 10.0 a.m. 7.0 p.m.—See Prague. 10.15—Programme Announcements and Theatre Guide. 10.20—Variety Programme.

MOSCOW (Russia)

Trades Union. 230.1 kc/s (1,304 m.); 100 kW. Transmits at intervals from 5.0 a.m. 6.30 p.m.—Proletariat Radio Journal. 7.15—Programme for Young Communists. 8.0—Talk in German

and English: Soviet Foreign Politics. 9.55—Time. 10.0—Talk in Spanish: The Armed Rising in Kronstadt, 1905.

MUNICH (Germany)

563 kc/s (533 m.); 1.5 kW. Relayed by Augsburg and Kaiserslautern, 536 kc/s (560 m.), and Nürnberg, 1,256 kc/s (239 m.). Transmits at intervals from 6.45 a.m. 5.0 p.m.—Concert by the Station Orchestra, conducted by Karl List. Soloist: Siegfried Borries (Violin). Overture, "Martha" (Flotow). Andante con moto from the Symphony in C (Schubert). Concerto in G Minor for Violin and Orchestra (Bruch). Waltz Fantasia (Glinka). Perpetuum mobile (Ehrenberger). Hungarian Dances Nos. 1 and 2 (Brahms).

6.15—Palatine Programme. 6.30—"In the Grand Manner"—Song and Ballad Sequence by the Station Choir, conducted by Eduard Zengerle. Soloists: Elise Lamppmann (Contralto), Richard Staab (Pianoforte) and Kurt Horwitz (Recitations). 7.15—Wireless News. 7.30—Two Radio Potpourris by the Small Station Orchestra, conducted by Erich Kloss, Medy-Schulthe Molitor (Soprano), Friedl Wilhelm (Soprano), Otto Hiel (Tenor), and Karl König (Tenor). I.—Potpourri of Operetta Music II.—Old and New Airs from Sound Films. 8.25—Bavarian Programme, relayed from Regen. 9.20—(from Nürnberg)—"The Nürnberg Amazons"—Farce in Three Acts in Nürnberg Dialect (Lehmann). 10.20—Time Signal, Weather Forecast, News Bulletin and Sports Notes. 10.45—Dance Music by the "Radio Five," with Alexander Laszlo. 12 midnight (approx.)—Close Down.

OSLO (Norway)

Kringkastingsselskapet. 277 kc/s (1,083 m.); 60 kW. Relayed by Fredrikstad, 816 kc/s (367.6 m.); Hamar, 536 kc/s (560 m.); Notodden, 671 kc/s (447.1 m.); Porsgrund, 662 kc/s (453.2 m.) and Rjukan, 671 kc/s (447.1 m.). Transmits at intervals from 11.5 a.m. 6.15 p.m.—Programme of National Music. Recital on the Hardanger Fiddle, by Jørgen Tjønstaul. 6.45—Talk on Economics. 7.0—Weather

SATURDAY continued

Report and News Bulletin. 7.30—Talk. 8.0—Time Signal. 8.1—Concert by the Station Orchestra, conducted by Hugo Kramm. Overture, "La belle Hélène" (Offenbach). Selection from "Mignon" (Thomas). Norwegian Wedding March (Sandby). Selection from "Dinorah" (Meyerbeer). Andalusian Romance (Sarate). Waltz, Roses of the Orient. (Ivanovic). Tyrolese March (Dreyer).

9.10—Reading. 9.40—Weather and News Bulletin. 10.0—Topical Talk. 10.15—Choral Concert. 10.45—Dance Music on Gramophone Records. 12 midnight (approx.)—Close Down.

PALERMO (Italy)

Ente Italiano Audizioni Radiofoniche. 554 kc/s (542 m.); 3 kW. Transmits at intervals from 12.45 p.m. 5.30 p.m.—Popular Music on Gramophone Records. 6.0—Programme for Children. 6.30—8.0—Interval. 8.0—Announcements, Giornale dell'Enit, Agricultural Report and Giornale Radio. 8.20—Popular Gramophone Music. In the interval at 8.25—Sports Notes. 8.30—Time and Announcements. 8.45—"La casa innamorata"—Operetta in Three Acts (Lombardo). Conductor: Militello. In the intervals, Review of New Books and Variety Items. 10.55—News Bulletin.

PARIS (France)

Eiffel Tower (FLE). 207.5 kc/s (1,445.7 m.); 13 kW. Time Signals (on 2,650 metres) at 10.26 a.m. and 11.26 p.m. (preliminary and 6-dot signals). 6.45 p.m.—Talk with Musical Illustrations. 7.0—Lc Journal Parlé. 8.20—Weather Forecast. 8.30—"The Polish Jew"—Play in Three Acts (Eckmann-Chatrian). 10.0 (approx.)—Close Down.

PARIS (France)

Poste Parisien. 914 kc/s (328.2 m.); 60 kW. Transmits at intervals from 12 noon. 7.0 p.m.—Light Music on Gramophone Records, News and Announce-

ments. 7.30—Sponsored Gramophone Concert. 8.30—Gramophone Records, Talk and Announcements. 8.45—"Vocal and Orchestral Concert." Overture, "A Night in May" (Rimsky-Korsakov). Waltz from "L'Enfant et les Sortilèges" (Ravel). Le Festin de l'Araignée (Reussel). Napoli, from "Impressions d'Italie" (Charpentier). Rhapsody in Blue for Pianoforte and Orchestra (Gershwin). Pastorale d'été (Honegger). Ballet, Callirhoe (Chaminade). Fête polonaise from "Le Roi malgré lui" (Chabrier).

PARIS (France)

Radio-Paris (CFR). 174 kc/s (1,725 m.); 75 kW. 6.45 a.m.—Physical Culture. 7.30—Weather and Physical Culture (continued).

7.45—Gramophone Records. Selection from "Enlevez-moi" (Gaba-roche). Selection from "Là-haut" (Yvain). 8.0—News, Weather and Press Review.

12.30 p.m.—Gramophone Concert. C'est Paris (Padilla). C'est toi chéri, mon seul amour (Hermitte). One Little Quarrel (Krier). Le Bal de la Reine (Paradis). Selections from "Nina Rosa" (Romberg). Vagabond Song (Ricmann). Adios Muchachos (Sander). Turkish Patrol (Michaelis). Tarakanova (Roubaud-Bernard). La Mousmé (Ganne). Selection (Fyshard). Selection from "The Czardas Princess" (Kálmán). On the Garden Wall (Sarony). Gai Babillage (Avignon). Mi Madre (Cazes). Japanese Lantern Dance (Yoshitomo). Selection (Petrola). Overture, "Die Fledermaus" (Johann Strauss). In the intervals, News and Weather.

3.0—Programme for Children. 3.45 Market Prices. 6.30—Market Prices, Weather, Agricultural Report, Talk, Exchange and Racing Results: 7.0—Talk arranged by the Union des Grandes Associations Françaises. 7.10—Technical Talk by Colonel Bourgoïn. 7.30—Elementary Book-keeping Lesson. 7.45—Latin Press Review, Commercial Prices and News.

8.0—Readings by André Bacqué: Fairy Stories. 8.30—News, Sports Notes, and Weather. 8.40—Review by René Dorin. 8.45—Song "Evening arranged by

Dominique] Bonnaud. In the interval at 9.15—Press Review and News.

PITTSBURGH (U.S.A.)

Westinghouse Electric (KDKA). 980 kc/s (306 m.); 25 kW. Relayed by W8XK on 48.86 m. and 25.25 m. (See Short Wave List). Transmits at intervals from 12.30 p.m. 9.0 p.m.—Teaberry Baseball Scores. 9.5—Pebecco Weather Report. 9.7—Rhythmic Serenade, from New York. 9.30—Tales of the Pennsylvania State Police—Behind the Law. 9.45—Programme to be announced. 10.0—Teaberry Baseball Scores. 10.5—David Lawrence Dispatch. 10.10—KDKA Artist Bulletin. 10.12—Programme Announcements. 10.15—Roseyhits, by A. K. Rowswell. 10.30—Stories for Children by Louise Guiraud. 10.45—Little Orphan Annie, from New York. 10.50—Temperature Report. 10.51—Weather Report. 11.0—Time Signal. 11.1—Temperature Report. 11.2—Who's News To-day. 11.7—Teaberry Sport Review. 11.12—Press News Reeler. 11.15—Programme to be announced. 11.30—Lew Conrad and his Orchestra. 11.59—Time Signal. 12 midnight—Pepodent Amos 'n' Andy from New York. 12.15 a.m. (Sunday)—Sam Robin's Orchestra, from New York. 12.30—Sacred Songs. 1.0—Danger Fighters from New York. 1.30—Dance with Countess D'Orsay, from New York. 2.0—Porto-Rican American Tobacco Programme, from New York. 2.30—The First Nighter, from New York. 3.0—Homey and Old-Fashioned Quartet. 3.30—Twenty Fingers of Sweetness, from New York. 3.45—McCravy Brothers, from New York. 4.0—Time Signal. 4.1—Teaberry Sport Review. 4.11—Temperature Report. 4.12—Weather Report. 4.15—Press Last Minute News. 4.20—Messages to Explorers and Missionaries.

POZNAŃ (Poland)

896 kc/s (335 m.); 1.0 kW. Transmits at intervals from 11.58 a.m. 6.45—Dramatic Programme. 7.15—Miscellaneous Items and News. 7.35—See Warsaw. 7.45—Talk. 8.0—9.55—See Warsaw. 9.58—Variety Music on Gramophone Records. 10.5—10.40—See Warsaw. 10.40—Sports Notes and Police Notes. 10.55—Dance Music from

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SATURDAY continued

the Café Polonia. 12 midnight (approx.)—Close Down. PRAGUE (Czechoslovakia) 614 kc/s (488.6 m.); 120 kW. Transmits at intervals from 6.15 a.m. (Alarm and Gymnastics). 5.45 p.m.—Two Talks. 6.5—Agricultural Report. 6.15—Talk for Workers. 6.25—German Transmission. 6.30—Weekly Review. 6.40 (approx.)—Vocal and Instrumental Music. 7.0 Brass Band Concert. 8.0—Talk: Pictures of the Renaissance and the Baroque Period and Plastic Art. 8.15 Cabaret Programme. In the interval at 9.0—Time and News. 10.0—Time and News. 10.15—Miscellaneous Announcements. 10.20—See Moravská-Ostrava.

RABAT (Morocco) 721.1 kc/s (416 m.); 6 kW. 1.30 p.m.—Le Journal Parlé, followed by Concert, conducted by Louis Roche. Pasodoble, Sous la cape (Perrin). Valse triste in A Minor (Chopin-Mouton). Overture, "Le Roi d'Ys" (Lalo-Mouton). Romance for Violin (Svendsen). Song. Orchestral Suite, Muguette (Missa). Selection from "Der Orlov" (Granichstaedten-Mouton). Sicilienne for Cello (Fauré). Song. Idylle passionnelle (Razigade). One-step (Roche). 3.0—4.0—Interval. 4.0—Educational Programme. 5.0—Variety Music on Gramophone Records. 6.0—8.0—Interval. 8.0—Arab Programme: Talk, Le Journal Parlé and Variety Music on Gramophone Records. 8.45—Le Journal Parlé. 9.0—Concert. Selection from "L'Haut" (Yvain-Salabert). Song from "Ciboulette" (Messager). Selection (Szulc-Letorey). Song from "The Desert Song" (Romberg). Selection from "Cocorico" (Ganne). Song, La délaissée (Hahn). Selection from "Pas sur la bouche" (Yvain-Salabert). 10.0—Dance Music Programme.

RADIO-SUISSE ROMANDE (SOTTENS) (Switzerland) 743 kc/s (403 m.); 25 kW.; Lausanne, 442 kc/s (680 m.); and Geneva, 395 kc/s (760 m.). 12.30 p.m.—Time Signal from Neuchâtel Observatory. 12.31—Weather Forecast and News Bulletin. 12.40 (from Lausanne)—Concert of Light Music on Gramophone Records. 1.0—Exchange Quotations. 1.5—Gramophone Concert (continued). 2.0—5.0—Interval. 5.0—Time Signal from Neuchâtel Observatory. 5.1 (from Lausanne)—Ceremony in honour of Baron Pierre de Coubertin, Honorary President of the Olympic Games Committee, relayed from the University. Songs by the "Union" Choral Society Double Quartet. Address by the Representative of the State Council. Address by the Rector of the University. Address by the Representative of the Municipality. Songs by the Double Quartet. Address by M. de Baillet Latour. Address by M. Hirschy. Talk by M. de Coubertin. Songs by the Double Quartet. 7.0—Weather Forecast. 7.1 (from Geneva)—Carillon and Bells from St. Peter's Cathedral. 7.10—Light Music on Gramophone Records. 7.30—Talk: The Week in International Politics. 7.55—Announcements. 8.0—See Vienna. 10.0—Weather Forecast and News Bulletin. 10.10 (from Montreux)—Dance Music, relayed from "Le Perroquet." 11.30 (approx.)—Close Down.

RIGA (Latvia) 572 kc/s (525 m.); 15 kW. Transmits at intervals from 6.0 a.m. 6.0 p.m.—French Lesson. 6.30—Agricultural Talk. 7.0—Weather Report. 7.5—Dialogues (de Maupassant). 7.30—Song Recital. 8.0—News Bulletin. 8.20—Variety Music. 8.50—"La Biche"—Dialogue (de Maupassant). 9.0—Weather and News. 9.15—Variety Programme. 9.35 (approx.)—Dance Music. 11.0 (approx.)—Close Down.

ROME (Italy) Ente Italiano Audizioni Radiofoniche (IRO). 680 kc/s (441 m.); 50 kW. Relayd by Naples, 941 kc/s (319 m.); and 200, 11,810 kc/s (25.4 m.). 8.15—8.30 a.m.—Giornale Radio and Announcements. 12 noon—Gramophone Records of Variety Music. 12.35 p.m.—Weather Forecast. 12.45—2.0 p.m.—Vocal and Instrumental Concert. Soloist: Maria d'Alba (Violin). Military March (Schubert). Poem, Ireland (Garofalo). Violin Solos: (a) Serenata al vento (Cartoni), (b) Salut

d'amour (Elgar). Lake Como (Fauchey). Selection from "Turandot" (Puccini). Violin Solos: (a) Spanish Dance (Chaminade), (b) A Window in Seville (Dax). Clarion (Ferretto). In the intervals: Giornale Radio, Exchange, Time and Announcements. 5.0—Exchange, Report of the Royal Geographical Society, Giornale Radio and Announcements. 5.15—Song Recital by Vera Nadia Poggioni (Soprano). O del mio dolce ardor (Gluck). Aria from "Norma" (Bellini). Aria from "Aida" (Verdi). 5.45—Instrumental Concert. A Festival in Seville (Scassola). Barcarolle from "Silvano" (Mascagni). Selection (Colotta). Selection for Cello and Pianoforte: Chanson villageoise (Popper). Sarai la donna mia (de Vito). 6.15—Giornale dell'Enit. 6.25—Talk: Italian Provinces. 6.55—(Naples)—Shipping and Sports Notes. 7.0—Atmospheric Signals; Lesson in Morse, Agricultural Notes; Giornale Radio and Press Review. 8.0—Time, Announcements, and Gramophone Records of Variety Music. 8.30—Sports Notes and Announcements. 8.45—"Tannhäuser"—Opera in Three Acts (Wagner). In the intervals: Review of New Books; and Talk: Actors of To-day. News after the Programme.

SCHENECTADY (U.S.A.) General Electric Company (WGY). 790 kc/s (379.5 m.); 50 kW. Relayd by W2XAF and W2XAD. (see Short Wave List) Transmits at intervals from 11.45 a.m. 9.0 p.m.—Dollar Bill, from New York. 9.15—Alex Drassen's Orchestra from New York. 9.45—Studio Ensemble. 10.15—Skippy, from New York. 10.30—Soloist from New York. 10.45—Lundt Trio, from New York. 11.0—Joe and Eddie. 11.15—Waldorf Astoria Orchestra, from New York. 11.30—American Trio. 11.45—DeWitt Clinton Orchestra. 11.55—Baseball Scores. (W2XAF only)—Stock Reports and News Items. 12 midnight (WGY only)—DeWitt Clinton Orchestra. 12.15 a.m. (Sunday)—Weather Report. 12.16—1.15—New York Relay. 12.16—Laws the Safeguard Society. 12.35—June Pursell in Popular Ballads. 12.45—The Goldbergs. 1.0—Bridge Lesson. 1.15—Bernard Silberg (Cellist). 1.30—4.30—New York Relay. 1.30—National Advisory Council in Radio on Education. 2.0—Drama K-7. 2.30—Club Valspar. 4.0—Lucky Strike Dance Hour. 4.0—DeWitt Clinton Orchestra. 4.30—Hotel New Yorker Orchestra. 5.0—Ralph Kirby (the Dream Singer). 5.5—Buddy Rogers and his California Cavaliers. 5.30—New Kenmore Orchestra. 6.0 a.m. (approx.)—Close Down.

SCHWEIZERISCHE LANDESSENDER (BEROMÜNSTER) (Switzerland) 653 kc/s (459 m.); 60 kW.; Basle, 1,220 kc/s (244.1 m.); and Berne, 1,220 kc/s (246 m.). 12.30 p.m.—Time Signal from Neuchâtel Observatory. 12.31—Weather Forecast and News Bulletin. 12.40—Variety Programme on Gramophone Records. In an interval at 1.15 (approx) Talk on the Day's events. 1.50—3.30—Interval. 3.30—Programme from Zürich. 4.30 (from Zürich)—Talk: Provision for the Unemployed in Switzerland. 5.0 (from Zürich)—Concert by the Zürich Accordion Society, conducted by G. Hebling. 5.30 (from Zürich)—Health Talk. 5.50—Concert of Popular Music on Gramophone Records. 6.15 (from Zürich)—Listeners' Quarter of an Hour. 6.30 (from Zürich)—Talk by Dr. Paul Stefan: Opera in 1932. 7.0 (from Zürich)—Chimes. 7.15—Time Signal, Weather Forecast, and Market Prices. 7.30 (from Zürich)—Musical Programme. 8.0—Selection from "Les Saltimbanques"—Opera (Ganne) (on Gramophone Records. 8.15 (from Basle)—"Variety"—Radio Play on Artists' Life in Modern Times (Hamik). 9.0—Dance Music by a Jazz Band, with Cabaret Turns in the intervals. 9.30—Weather Forecast and News Bulletin. 9.45—Dance Music (cont'd). 11.0 (approx.)—Close Down.

STOCKHOLM (Sweden) Radiotjänst (SASA). 689 kc/s (436 m.); 55 kW. Relayd by Boden, 244 kc/s (1,229.5 m.); Göteborg, 932 kc/s (322 m.); Hovby, 1,166 kc/s (257 m.); Motala, 227.5 kc/s (1,343 m.); Östersund, 380 kc/s (770 m.); and Sundsvall, 554 kc/s (542 m.).

STRASBOURG (France) Radio-Strasbourg (PTT). 869 kc/s (345 m.); 11.5 kW. 11.30 a.m.—Gramophone Concert of Classical and Light Music. 12.45 p.m.—News in French and German. 1.0—Time Signal. 1.2—Gramophone Concert (continued). 2.0—Talk in French: "The Monetary System." 2.15—Dance Music on Gramophone Records. 3.15—3.45—Interval. 3.45—Music Talk in French: Bach's Recitative Style. 4.0—Dance Music (continued). 4.45—Banking Talk in French. 5.0—Dance Music. 6.0—French Lesson in German. 6.15—Agricultural Talk in French. 6.30—Orchestral Concert conducted by Maurice de Villers. Pastoral Suite (Scassola). Waltz (Brahms). Festival Overture (Leutner). Selection from "Manon" (Massenet). 7.30—Time Signal. 7.32—News in French and German. 7.45—Orchestral Concert (continued). Florentine March (Fucik). Spanish Rhapsody (Richardy). Overture, "Czar and Carpenter" (Lortzing). Selection from "Rose Marie" (Friml). Three Dances (German). March (Rösey). 8.45—Concert by the Municipal Orchestra relayed from the Restaurant de l'Orangerie. Overture, "La Princesse Jaune" (Saint-Saëns). Meditation on a Bach Prelude (Gounod). Suite from "Sylvia" (Delibes). Overture, "Mignon" (Thomas). Serenade (Moszkovsky). Rustle of Spring (Sinding). Violin Solo: Prelude to "Le Déluge" (Saint-Saëns). Hungarian Rhapsody No. 2 (Liszt). 10.30—Dance Music from the Savoy. 12 midnight (approx.)—Close Down.

STUTTGART (MÜHLACKER) (Germany) Süddeutscher Rundfunk. 832 kc/s (366.5 m.); 60 kW. Relayd by Freiburg, 527 kc/s (570 m.). Transmits at intervals from 6.0 a.m. (Time, Weather and Gymnastics). 11.0 a.m.—Time and Weather. 11.15—11.30—Sponsored Concert (cont'd). 11.45—Sponsored Concert (cont'd). 12 noon (in the interval)—Weather. 12.20 p.m.—Gramophone Concert of Variety Music. 12.50—Time and News. 1.0—Concert by the Stuttgart Philharmonic Orchestra. Soloists: Hermann Lingor (Tenor) and Hermann Conzelmann (Baritone). Selections (Mozart): (a) Overture, "Don Giovanni." (b) Baritone Solo from "Don Giovanni." (c) Minuet from the Symphony in E Flat, (d) Baritone Solo from "Il Seraglio." Ballet Music from "William Tell" (Rossini). Tenor Solo from "The Hermit's Bell" (Maillart). Dance of the Sylphs from "The Damnation of Faust" (Berlioz). Tenor Solo: Flower Song from "Carmen" (Bizet). Cornetation Match from "The Prophet" (Meyerbeer). Fantasia, Rumania (Michaelov). Dir sing ich mein Lied (Lehar). Foxtrot (Fred Cois). Song and Tango (Allan Gray). Pasodoble (Ricardo). Foxtrot, Frühling heisst Liebe (Sherman). Waltz, Es führt kein anderer Weg zur Seligkeit (Heymann). Tango, Kleine Elisabeth (Rosen). Waltz Potpourri, Altherliner Leierkasten (Leuschner). Quick-Step, Was schenkst du mir dann? (Grothe). 2.30—Readings of Poems by Gottfried Keller and Conrad Ferdinand Meyer. 3.0—Song Recital by Marta Weber-Neubeck. Die schwarze Laute (Möllendorff). Songs (Kaun): (a) Weiss nicht, woher ich gekommen, (b) Wenn's Abend ward. Songs (Wendland): (a) Die Treppe im Mondlicht, (b) Tanz der Götter. Songs (Frunk): (a) Ein Brief, (b) Frühlingssonne. Songs (Byley): (a) Abendlied, (b) Erster Schneck, (c) Dem unbekanntem Gott, (d) Schweifen, o Schweifen! 3.30—Programme for Children.

4.30—Concert by the Concordia Choral Society, relayed from Lappheim. Songs (Knab): (a) Wir Bauern, (b) Ein Brotlaib. Dir, dir Jehova, will ich singen (Grasselius). Sacred Song (Bach, arr. Georg Schumann). Trinitatisfest (Schroter). Ruf an Sankt Raphael (Oltgraven). Russian Folk Song (Lendvai). 5.0—See Frankfurt. 6.15—Time and Sports News. 6.25 (from Freiburg)—Talk: Fifty Years of the St. Gotthard Railway. 6.50—Time and Weather. 7.0—See Frankfurt. 8.0—See Vienna. 10.15—Time and News. 10.45—Dance Music from Munich. 12 midnight—Gramophone Concert of American Dance Music. 12.30 a.m. (Sunday)—Close Down.

TOULOUSE (France) Radiophonie du Midi. 779 kc/s (385 m.); 8 kW. Transmits at intervals from 12.30 p.m. 5.0 p.m.—Picture Transmission. 5.15 Exchange Quotations. 5.30—Popular Songs. 5.45—Opera Music. Selections from "The Damnation of Faust" (Berlioz). Overture, "Philonot et Baucis" (Gounod). Overture, "The Huguenots" (Meyerbeer). 6.0—Orchestral Selections. 6.15—Songs from Operas. Selections from "The Tales of Hoffmann" (Offenbach). "Don Giovanni" (Mozart) and "Il Trovatore" (Verdi). 6.30—Exchange and Racing Results. 6.45—Concert. Narcissus (Nevin). Chanson triste (Tchaikovsky). Trio (Goldmann). Trio in B Flat (Haydn). 7.0—Accordion Music. 7.15—Popular Songs. 7.30—News Bulletin. 7.45—Dance Music. 8.0—Selections by a Viennese Orchestra. 8.30—German Lesson. 8.35—Sound Film Music. 8.45—Orchestral Selections. La Habanera (Laparra). Prelude to "Le roi malgré lui" (Chabrier). 9.0—Selections from "Tosca"—Opera (Puccini). 10.0—Selections by an Argentine Orchestra. 10.15—Military Music. 10.30—North African News. 10.45—Orchestral Music. 11.0—Concert. Tout est permis quand on rêve (Heymann). Avoiz un bon copain. Panis Angelicus (Franck). Lehar Potpourri. Evening in the Black Forest. The Trump Selection from "Manon" (Massenet). Frère Jacques (Raiter). Roule ta bosse (Bétove). Le clochard (Scottro). Wedding Procession in Lilliput (Transtraler). March. Waltz, Künstlerleben (Johann Strauss). Waltz, Wiener Blut (Johann Strauss). O Sole mio (Di Capua). Parade of the Tin Soldiers (Jessel). 12 midnight—Weather Report and Announcements. 12.5 a.m. (Sunday)—English Concert. 12.30 (approx.)—Close Down.

TRieste (Italy) Ente Italiano Audizioni Radiofoniche. 1,211 kc/s (247.7 m.); 10 kW. Transmits at intervals from 8.15 a.m. 7.5 p.m.—Quintet Concert. Signora o signorina? (Apollonio). Mia piccola bambola (Montagnini). Campanone (Di Lazzaro). Brezza notturna (Bonelli). Selection from "The Czarevitch" (Lehar). Ronda brasiliana (Escobar). Pataky e Patuky (Crosti). In the interval at 7.25 p.m.—French Lesson on Gramophone Records. 8.0 till Close Down—See Turin.

TURIN (Italy) Ente Italiano Audizioni Radiofoniche. 1,096 kc/s (273.7 m.); 7 kW. Relayd by Milan, 905 kc/s (331.5 m.); Genoa, 959 kc/s (312.8 m.) and Florence, 599 kc/s (500.8 m.). Transmits at intervals from 8.15 a.m. 6.45 p.m.—Agricultural Notes. 7.0—Announcements. 7.5—Musical Selections. Fior d'Andalusia (Pennati-Alvarez). La campanella (Ranzato). Selection from "La gran via" (Valverde). Rutherfordian Dance (Mignone). 7.30—Time, Announcements and Gramophone Records of Variety Music. 8.0—Giornale Radio and Weather. 8.15—Musical Selections. 8.25—Talk: Events and Problems. 8.50—Concert of Chamber Music. Trio for Clarinet, Violin and Pianoforte (Mozart). Harp Solos. 9.50—Review of New Books. 10.0—Variety Programme. 11.0—Giornale Radio, followed by Dance Music from the Fiaschetta Toscana, Milan. 11.55—News Bulletin.

VATICAN CITY (Rome) 15,123 kc/s (19.84 m.) (Morning); and 5,969 kc/s (50.26 m.) (Evening); 10 kW.

Transmits at intervals from 8.0 a.m. (Service). 4.0 p.m.—Concert of Light Music. 5.0 (from Göteborg)—Programme for Children. 5.30 (from Sundsvall)—Cabaret Programme. 6.15—Popular Music on Gramophone Records. 7.15—Weather Forecast and News Bulletin. 7.30—Talk on Geological Maps. 8.0—Programme of Old-time Dance Music by Knut Esbjörnsson's Orchestra. 8.45 (from Göteborg)—Provincial Programme. 9.45—Weather Forecast and News Bulletin. 10.0—Dance Music by Georg Ender's Orchestra. 11.0 (approx.)—Close Down.

VIENNA (Austria) Radio-Wien. 581 kc/s (517 m.); 15 kW. Relayd by Graz, 852 kc/s (352 m.); Innsbruck, 1,688 kc/s (283 m.); Klagenfurt, 662 kc/s (453.2 m.); Linz, 1,220 kc/s (246 m.) and Salzburg, 1,373 kc/s (218 m.). Transmits at intervals from 9.20 a.m. 5.0 p.m.—Concert of Viennese Music by the Ganglbauer Orchestra, with Vocal Duets and the Strommeyer-Kemeter Folk Selections by Quartet. 6.45—Talk with Gramophone Records: The Mountain Folk of the Caucasus. 7.15—Topical Talk. 7.45—Time Signal, Weather Forecast and Programme Announcements. 8.0—Soldiers' Songs and Military Music of Three Centuries, by a Military Band of 200 Players and Soldiers' Choir (too strong). Part I—The Eighteenth Century. Conductor: Anton Mader. Soldiers' Song for Choir: Prinz Eugen, der edle Ritter. March of the Walloons, for Orchestra (Asbath). Choral Item: General Laudon rückt an. Grand March (Haydn, arr. Mader). Part II—Nineteenth Century. Conductor: Moritz Thann. Choral Items: (a) Oesterreich über alles and (b) Kriegeslied (Lipavsky). Orchestral Selections: (a) Wellington's Victory (Beethoven), (b) Einzugs-marsch (Walch). Part III—Items conducted by Gustav Gaigg: Choral Items: (a) The 10th Battalion at St. Lucia, and (b) Radetzky kommandiert. Orchestral Selections: (a) Reitaite und Zapfenstreich (Leonhardt), (b) Lager-marsch (Zavertthal). Part IV—Twentieth Century. Conductor: Josef Richter. Choral Items: (a) Der gute Kamerad, (b) Lied der Kaiserjäger (Mühlberger). Orchestral Selections: (a) Generalmarsch (Mahr), (b) Festmusik mit Fanfaren (Richter).

WARSAW (Poland) Polskie Radio. 212.5 kc/s (1,411 m.); 120 kW. 11.55 a.m.—Time Signal and Bugle Call from the Tower of St. Mary's Church, Cracow. 12.5 p.m.—Programme Announcements. 12.10—Interval. 12.30—Press Review. 12.40—Weather Report. 12.45—Light Music on Gramophone Records. 2.0—Interval. 3.0—Economic Report. 3.10—Popular Music on Gramophone Records. 3.30—Announcements. 3.40—Programme for Children. 4.5—Light Music on Gramophone Records. 4.35—Hydrographic Report. 4.40—Review of Periodicals. 5.0—Concert of Light Music by the Station Orchestra, conducted by Josef Oziminsky. March (Stelzig). Phantem Melody (Ketchelby). Potpourri of Finnish Airs (Hermann). Gavotte (Ganglbauer). Im Märchenwald (Ganglbauer). Waltz, Dorfschwalben aus Oesterreich (Josef Strauss). Fantasia on Slavonic Themes (Leuschner). Torch Dance (Meyerbeer). 6.0—Talk relayed from Lwow. 6.20—Concert of Chamber Music from the Crystal Restaurant. 7.15—Miscellaneous Items. 7.35—Radio Journal. 7.45—Agricultural News. 7.55—Programme Announcements. 8.0—Concert of Light Music by the Station Orchestra, conducted by S. Nawrot. Soloists: A. Janowski (Flute). Overture, Morning, Noon and Night (Suppé). Intermezzo from "Nalla" (Delibes). Flute Solo: Waltz from "La Traviata" (Verdi-Popy). Waltz from "Eva" (Lehar). Serenade, Amina (Lincke). Trumpet Solos. Spanish Dances, Nos. 2 and 5 (Moszkovsky). Waltz, España (Waldteufel). Galop (Johann Strauss). Mazurka (Namy-slovsky). 8.55—On the Horizon. 9.10—Announcements. 9.50—Radio Journal. 9.55—Weather Report. 10.0—Interval. 10.5—Chopin Pianoforte Recital by J. Smidowicz. Rondo in E Flat, Op. 16: Three Mazurkas, Op. 63: (a) in B Flat, (b) in F Minor, (c) in C Sharp Minor. Waltz in C Sharp minor, Op. 64. Waltz in A Flat, Op. 42. 10.40—Sports Notes. 10.50—Dance Music.

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