



119 24

# WORLD-RADIO



**AND FOREIGN**



**DOMINION PROGRAMMES**

WITH WHICH IS INCORPORATED "THE RADIO SUPPLEMENT"

Vol. 5. No. 104.

Registered at the G.P.O. as a Newspaper.

FRIDAY, JULY 22, 1927.

Two Pence.

### PRINCIPAL CONTENTS.

Using the Mains for Power.  
By Capt. P. P. Eckersley.

Stations in Order of Wavelengths and Frequencies.

Daventry and Foreign Programmes.  
The Compleat (Ether) Angler.

### WORLD-RADIO Station Identification Panel

(No. 72.)

**BORDEAUX PTT  
(France).**

Wavelength: 273 m. (1,098 kc.). Power: 1 kw.

Approximate distance from London: 475 miles.

Call: "Allo! Allo! Ici le Poste radiotéléphonique de Bordeaux-Lafayette."

No Interval Signal, but abbreviated Call: "Ici Bordeaux-Lafayette."

Transmissions: Own concerts on Monday, Tuesday and Wednesday. Relays Toulouse PTT on Thursdays and Ecole Supérieure, Paris, on Saturday. No transmissions on Sundays.

Closes down with "La Marseillaise" and usual French formula.

(Copyright.)

## Broadcasting in Denmark.



Chamberlain Lerche.

Radio Manufacturers and Traders, and three by Radio Societies. The President is Chamberlain Lerche, who is Danish member of Council of the

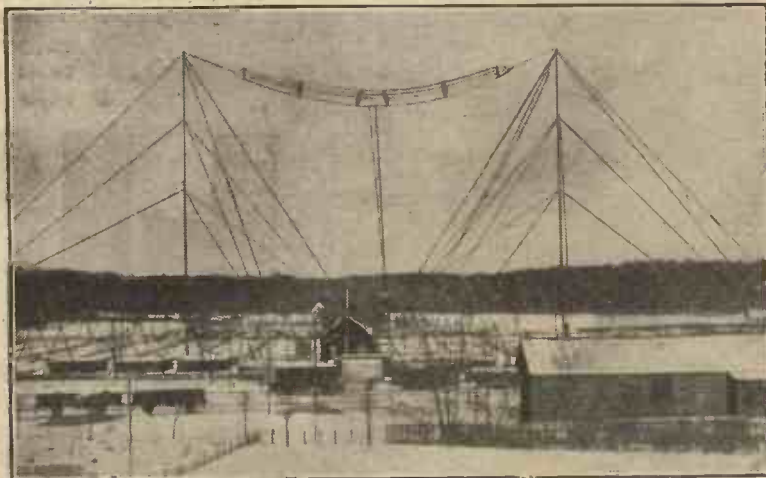
**B**ROADCASTING in Denmark has recently been taken over by the State. Previously it was a composite organization, in which the control was vested in the Press, private commercial concerns, and the listeners. There is now a broadcasting council, "Radio-raadet," consisting of eight members, two of whom are nominated by the Minister for Public Works, one by the Minister of Education, one by the Press, one by the Association of

representatives of the Post Office. Weekly programmes are drawn up by the programme Director, Mr. Emil Holm, with the assistance of the programme department of the broadcasting council. The responsibility for the News Bulletin rests with the representatives of the Press.



Mr. Emil Holm.

The number of licensed listeners is now about 140,000. Half of these live in Copenhagen and the annual listener's fee, both for valve and crystal sets, is 10 kroner (11s.), and there is a drastic law by the provision of which unlicensed listeners are liable to a fine and confiscation of their receiving sets. A special fee of 200 kroner (£11) per annum is charged for the use of loud speakers in public places.



Sorø Station (the Denmark Daventry).

Union Internationale de Radiophonie. The Council are responsible for the financial side of broadcasting as well as for the general supervision of programmes.

The technical side is under the supervision of

Denmark has at present two transmitting stations—Copenhagen and Sorø—a third, Kalundborg, is in the course of construction and will be opened in the Autumn. There are two studios, both situated in the Copenhagen station; one

Letters should be addressed to The Editor, "WORLD-RADIO," Savoy Hill, Strand, London, W.C.

RATES OF SUBSCRIPTION to "World-Radio" (including postage): Twelve Months (Inland and Foreign) 13s. Address **Subscriptions Dept.** "World-Radio," 8-11, Southampton Street, Strand, London, W.C. 2.



*If a meter  
could show  
Quality*



All a voltmeter can do for you is to show you whether the battery is up to specified rating. This is important enough—and actually all LISSEN batteries register well above the nominal rating—but a voltmeter doesn't tell you *all* you'd like to know about the battery.

If you could connect a LISSEN New Process Battery to a meter which showed 'quality' you would never buy any other battery but a LISSEN. You would see registered—extraordinary power smoothness—absolute freshness—stubborn resistance to volt drop—remarkable oxygen liberation—loudspeaker reproduction very pure and as clear at the end of the programme as at the beginning.

Radio users everywhere find these things out for themselves when they try out LISSEN batteries, and the secret of their outstanding success lies in the fact that LISSEN have discovered a unique combination of chemicals which, applied to a special process of manufacture, results in a battery of unsurpassed performance.

And 10,000 dealers throughout the country sell these exceptional batteries at a price which is well within the reach of all—one of these dealers is near you.

Ask for LISSEN New Process Battery next time you want a good battery, and insist on getting it. You will be rewarded with a new power smoothness and a new tone clarity which will agreeably surprise you.

Should you meet with any difficulty in obtaining, order direct from factory. No postage charged, or can be sent C.O.D. by return upon receipt of postcard.

60 volts (reads 66) ... ..	7/11d.
100 volts (reads 108) ... ..	12/11d.
9 volts (grid bias) ... ..	1/6d.

# LISSEN

## NEW PROCESS BATTERY



LISSEN LIMITED, 340-350, FRIARS LANE, RICHMOND, SURREY.

Managing Director: Thomas N. Cole.

for large performances, orchestra and the like, and the smaller one for lectures and smaller musical combinations. Once a week a special transmission is broadcast through the Odense station. There are two announcers who are on duty in turn. The call "Her Kobenhavn og Son Radio" must be familiar to many listeners in this country who hear Copenhagen through the Sorø transmitter. The orchestra, under the directorship of Mr. Launy Grondahl, numbers twenty-four.



The Orchestra of the Copenhagen Station.

The Sorø transmitting station, with an aerial power of 1.5 Kw. is situated in the centre of Zealand, about 40 miles south-west of Copenhagen. The masts of the aerial (of which we give a picture) consist of two wooden towers each about 185 feet in height. This transmitter serves listeners possessing valve sets throughout the country. The Copenhagen station, whose tower is about 700 watts, is situated in the centre of the city and is intended to serve local listeners only. The studios, control room and offices are in the Post Office building in the centre of Copenhagen.



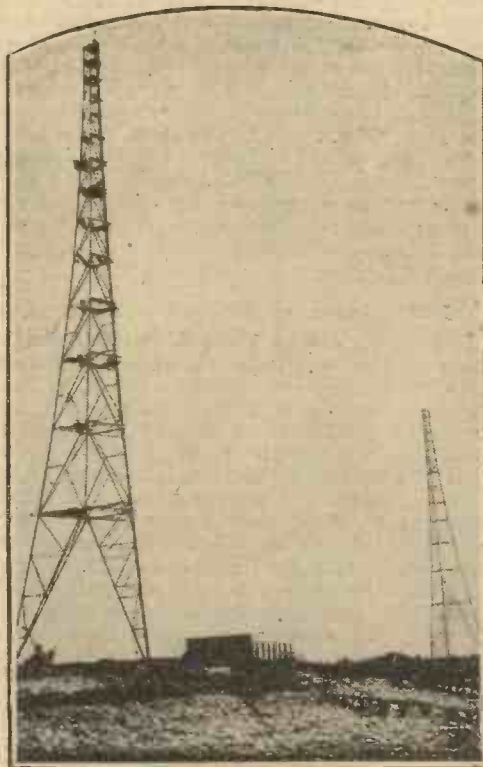
D. Prior.



C. Schionning.

(The Announcers.)

At the present time two stations are in the course of erection: the high power station at Gisseløre, near Kalundborg, which is to replace Sorø, and a local station in Copenhagen to take the place of the present one. The new Kalundborg station will have a relay power of 7.5 kw. Its aerial is supported by two steel towers each about 340 feet high. It will use the same wavelength as Sorø, namely, 1153.8 metres (260 kc).



Masts of New Kalundborg Transmitting Station.

## Summer Time Searching.

IN these notes last week I mentioned something of the possibilities of the deliberate reception of distant broadcasting stations by way of their harmonics. I dealt, then, chiefly with the numerous fourth and fifth harmonics that are to be found between 50 and 80 metres, and suggested that an even more fruitful field might be found between 80 and 200 metres, where first and second harmonics are likely to be encountered. For the last few evenings I have been exploring this band, which has turned out to be as interesting as I expected. The difficulty of identifying stations is, however, considerable, since in many cases call-signs are given only at long intervals. One can, of course, put names without much trouble to transmissions that are heard once the coils in use have been calibrated; but coils cannot be calibrated until a certain number of stations have been found and noted whose wavelengths are known to be stable. One of the most powerful harmonics that I have heard is Leipzig's second on 182.9 metres (1,640 kilocycles) which comes in extraordinarily well. There is no fading or distortion of any kind. Others well worth trying for when conditions for direct reception of the fundamental are unfavourable are Radio Vitus, Nuremberg, Koenigsberg, Paris Petit Parisien (a powerful second harmonic this, though fading is sometimes present), Hamburg, Rome, Lyons PTT and Langenberg.

For reception by normal methods, within the limits of the broadcast band, one of the best stations of late has been Nuremberg, on whose strength several correspondents have commented. At the moment this appears to be the most powerfully received of Continental stations, for even in broad daylight there is no difficulty in obtaining full loudspeaker reception. Others that have been good, at times, are Barcelona EAJ1, Madrid Union Radio, Toulouse Midi, Hamburg, Lyons Doua and Brussels.

On the short waves things have not been quite so good on most evenings as they were up till a week ago. It has always been possible to receive the American stations, but their signal strength has been on the weak side with a great deal of fading. Here is a tip for those who find it difficult to receive KDKA on 62 metres: drop down a little below the settings required for 2XAD and you will find KDKA coming in on 20.6 metres. Many who have heard this signal believe that KDKA is transmitting on this wavelength. A communication from the station itself proves that what is heard is the third harmonic of the fundamental, which has been reported from many parts of the world. This harmonic is frequently much easier to receive than the fundamental, signal strength being greater and there being less trouble from fading. KDKA also states that the 14-metre transmitter is now in regular operation, being used almost whenever short-wave relaying takes place. I cannot think, though, that it has been in use for the last week or so, for I have not been able to hear a sound of it, nor have any of my numerous short-wave correspondents. Those who want to hear an American station early in the evening should make a note that on Tuesday nights 2XAD is at work as a rule from 10.0 p.m. until shortly before 11.0 p.m., after which time 2XAF comes on. The 22.02 metre transmission is often well heard during this early relay. Tuesday is, in fact, one of the most interesting evenings of the week for short-wave work, since we have PCJJ at work from 6.0 p.m. to 9.0 p.m., followed by 2XAD, who is followed in his turn by 2XAF. As KDKA also comes on at 11.0 p.m., and WLW somewhat earlier, one may hear, when conditions are at all favourable, no fewer than four American transmissions before midnight.

WLW, by the way, is a station that must be regarded as always worth trying for. His wavelength is 52.02 metres and in many weeks he is working on every night except Friday. The transmission varies a good deal, being very strong at times and at others most difficult to find. Generally he is best after midnight, though I had him at great strength a few weeks ago before 11.0 p.m.

## "Wimbledon" in Switzerland.

Although living in Switzerland, some hundreds of miles from Wimbledon, I have, through the medium of "the wireless," been enabled to listen to these tennis matches with keen enjoyment.

Of all the matches broadcast, the most exciting was, in my opinion, that of the Men's Doubles Final, when Cochet and Brugnon, the Frenchmen, were opposed to the American pair, Tilden and Hunter, for the Men's Doubles World's Championship.

From a technical point of view the broadcast was perfect, no atmospherics whatever being present, and the well-modulated voice of the commentator came through with perfect clarity and distinctness.

Once, when a player whilst making a difficult shot allowed his racket to fly out of his hand, I distinctly heard the clatter of it against the net.

The applause of the spectators came through very distinctly, and during the last set and game, which gave the Americans the match, the plaudits of the crowd almost drowned the voice of the announcer.

One received a vivid impression of the tremendous speed of the game by the rapidity of the commentator's calls, with his short, staccato sentences: "Tilden drives, Cochet returns—Hunter lobs, Brugnon kills," and in a second another point is scored, almost too quickly for the announcer to keep pace with the rapid passing backward and forward of the ball. After the eighth game, when the score was 4—all, I found myself getting quite as excited as the crowd, and this excitement rose as the score repeatedly went to deuce, first one side obtaining advantage and then the other.

At last, after what seemed a tremendous struggle the Americans won the day, gaining the World's Championship for 1927, and we heard that the players were all shaking hands, Brugnon leaving the court smiling; and so ended another very fine example of a topical broadcast.

J. S.

# Wireless Step by Step.

By "DICTRON."

## XVI.—The Three-Electrode Valve.

HAVING grasped the principle of operation of the two-electrode valve we may now proceed to a study of its latter day development, the three-electrode valve. This study will have to be in greater detail. The three-electrode valve is the keystone of modern radio communication. Without it the transmission of speech and music by wireless would be impossible, and the generation of continuous waves would never have been accomplished. It is not essential to reception, since, as we have already seen, the crystal rectifier can and does fulfil certain requirements, but the valve has very largely replaced the crystal as a rectifier and is absolutely essential for the magnification of received signals in order that they may be heard at great strength in a loud-speaker or by a larger number of telephone receivers. The valve may also be used to increase the effective range of a receiver, that is to say, its extreme sensitivity may be used in conjunction with its power of magnification in such a way that signals from far distant stations are rendered audible which would otherwise be beyond the range of the receiving apparatus. Such a fundamental and ubiquitous piece of apparatus must, then, be studied in great detail, but before considering it in any of its applications we must have a thorough knowledge of its characteristics and means of operation.

### Limitations of Two-Electrode Valve.

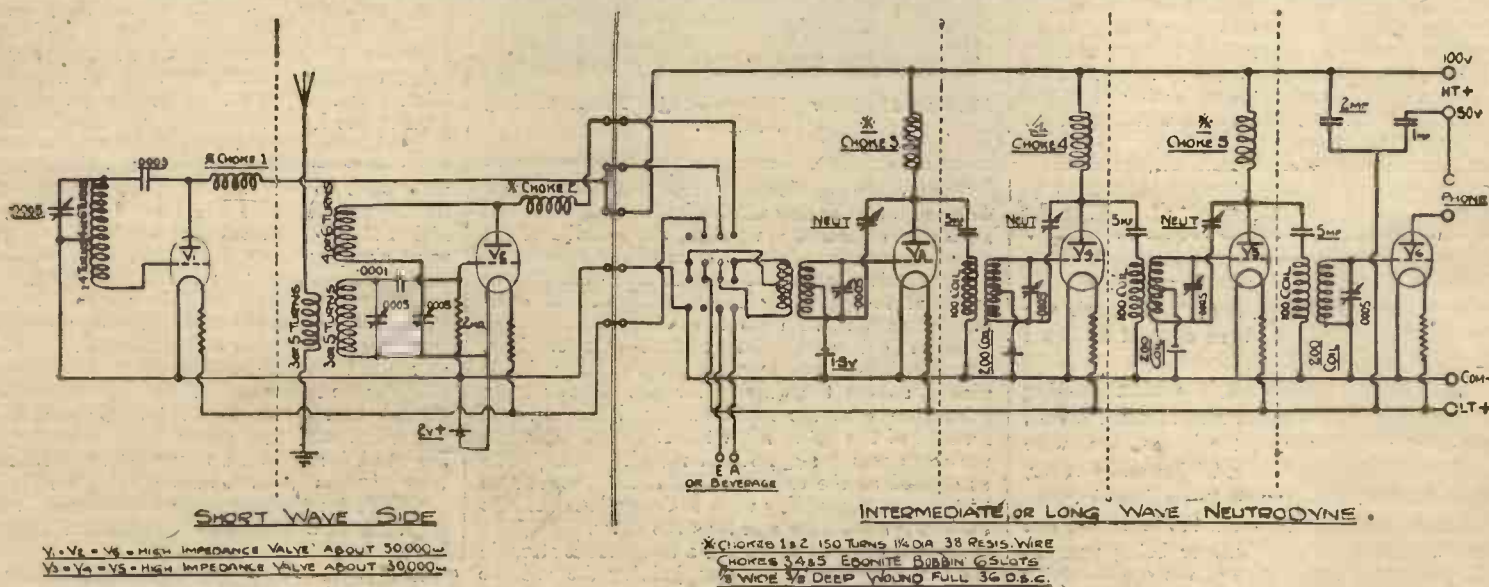
We have learnt in our study of the two-electrode valve that the amount of current which will flow in the exterior circuit connecting the plate and filament depends upon the heat of the filament and the voltage applied to the plate. This current is usually referred to as the "Anode Current." A curve may be plotted on an ordinary piece of squared paper which will show the variation of "Anode Current" in milliamperes corresponding to various filament temperatures, or rather to variation of filament current, since the greater the current passing through the filament the higher will be its temperature. A similar curve may be plotted showing the variation of anode current corresponding to various values of plate voltage. The first curve will show that the filament

only emits electrons effectively over a very small range of changes of current, that is to say that the number of electrons emitted is very small when the filament is below a certain temperature. When that temperature is reached the emission rises rapidly, but it will be found that the temperature can only be raised very slightly beyond that point before the maximum temperature which the filament will stand without melting is reached. Something of the same state of affairs will be found to prevail in the case of the second curve. At low plate voltages an almost negligible anode current will be observed. At a certain value of plate voltage, however, the current will be found to increase rapidly, but a very little way beyond this point we shall arrive at the saturation current, that is we reach the point when all the electrons emitted by the filament are being collected by the plate and passed round the exterior circuit back to the filament. The operation of the two-electrode valve, depending as it does on plate voltage and filament current, is, therefore, limited in both respects. These limitations do not affect its use as a rectifier, since the valve may be operated with the filament temperature fixed at an effective value and, provided that a valve of suitable internal construction is used, the alternating voltage applied to the plate is bound to pass through the effective range of plate potential once in every alternation; in fact the action of rectification depends upon its doing so.

### Introduction of the Third Electrode.

If, however, a third electrode is introduced between filament and plate we shall find a much more useful piece of apparatus; one, in fact, which is capable of generating, receiving and amplifying oscillation of almost any frequency. This third electrode is generally known as the "Grid," both because of its shape and its action. It may consist of a spiral of wire or a piece of wire gauze, more usually the former. It is placed directly in the path between the filament and the plate which must be travelled by the electrons when the filament is heated and the plate voltage applied in order that anode current may flow. By itself, just placed in the path, the grid will

do nothing, but consider what takes place if a potential is applied to the grid. We assume that the valve is operating, the filament is heated, the plate voltage applied and the external circuit closed. If the grid has no potential applied to it there will be no hindrance to the flow of electrons from filament to plate. Now let us apply a potential to the grid so that it is negative in respect to the filament without making any alteration at all to the filament current or plate voltage. What happens? The electrons find right across their path a negatively charged obstruction; they are repelled because they are themselves particles of negative electricity and likes repel likes. Consequently the total number of electrons reaching the plate will be reduced, that is to say, there will be a drop in the anode current. The grid being of open mesh, some electrons can still struggle through to the plate, but in much reduced numbers. The more negative we apply to the grid the greater the drop in anode current. What happens if we reverse the process and apply a positive potential to the grid? Again, assume that the valve is operating, and that the applied plate voltage is fixed at a value which is below that which produces saturation current. This will mean that there are some electrons emitted by the filament which are not reaching the plate and that the anode current is below maximum. Now, if we make the grid slightly positive in respect to the filament the emitted electrons will be attracted towards it. Just on the other side of the grid from the filament is the plate which is much more positive, so the electrons will not remain on the grid but will go on at once to the plate. The grid being nearer to the filament than the plate will collect and pass on some of the emitted electrons which the plate has failed to collect, so that the total number of electrons passing from filament to plate is increased, producing a consequent rise in anode current. This, then, is the fundamental principle upon which the three-electrode valve operates, and this is the important thing to remember: the anode current can be increased or decreased by varying the potential of the grid on each side of zero and without making any alterations to the values of filament current and plate potential.



Last week in an article on "Relayed Programmes" we referred to the short wave receiver in use at Keston for relaying purposes. Above is the circuit diagram. The values of the components are given. The change-over switch in the intermediate circuit is to enable the long wave side of the receiver to be used alone for receiving on 1,000 metres or thereabouts.

# Village Life in Scandinavia.

By E. GEE NASH

(who is giving the last of the series of talks on "Village Life in Other Lands"—broadcast from the London studio, through Daventry, on Wednesday next).

**I**N so short a space it is quite impossible to give more than the merest outline of the very varied country life of Scandinavia (to be dealt with more fully in my talk). The three nations differ in many ways, yet in others are very similar; then again each country has its different phases of village life . . . the fjord villages of Norway; the rich, flat agricultural tracts of Denmark, where dairy farming is brought to such a pitch of perfection under the Co-operative Farming System; and its many fishing communities. In Sweden again, there is the farm life . . . on big isolated farms, largely self-supporting; the sparsely populated tracts round the big church villages; and the many fishing hamlets round the coast, to say nothing of the nomadic life of the migratory Lapps up on the Norwegian-Swedish border, with their summer settlements round the vast, silent, mysterious Lappland Lakes.

So I must confine myself to saying a little about the various illustrations on this page.



Typical Danish Country.

do, but spread it loosely over these racks, where the wind quickly dries it.

The Danish farm, lying in the midst of a typical wide, well-watered plain, shows the old crow-stepped tower so often seen in old buildings round the Baltic provinces

The fishing village of Mölle in Sweden is a characteristic Swedish fishing village, with the houses running down to the water, and the drying grounds, where the fish are dealt with; and the old man, too, is typical of the fine peasant folk, noble in character

and appearance, who form the majority of Scandinavian villagers.

The vast forests of Sweden provide a large part of Europe with timber, and that useful product of timber reduced to a minimum . . . matches; and a great number of Swedish country-folk are engaged on timber work . . . felling, barking, log-driving, and at the innumerable saw-mills.

They are a hardy race, who look death in the eye, daily and hourly, with an amazing calm and indifference. You may imagine a log jam in such a drive, when the great trunks pile themselves up into a treacherous mass, and the men take their lives in their hands as they swarm out over the jam, searching with skilful eyes for the key-logs which must be released before the jam will give way.



Mölle: A Typical Swedish Fishing Village.

The photograph of Förde gives you a very good impression of the typical Norwegian village with the houses dotted over the valley in the shadow of the mountains, and with the ever-present river . . . all Scandinavia is a land of islands, lakes, rivers, and waterfalls, from which is derived the universally used electric power. On an isolated Scandinavian farm it is quite a common sight to see electricity used for lighting, heating, dairying, and farm work; so that one of man's most recent inventions may be seen working side by side with farm tools and old customs that have persisted unchanged for untold centuries.

The houses are of wood; warm and comfortable, and are almost always painted in bright colours, red, blue, green, yellow, making patches of colour that light up the long, dark months. Across the fields in this picture you can see the long racks used throughout Scandinavia for drying the hay. They do not make it into cocks as we



A Log Drive. Fossby, Sweden.



Förde, Norway.

Calm, quiet agricultural life among vast lonely spaces of forest, lake and mountain, through bitter cold winters and short burning summers; hazardous fishing round the coasts, and out on the great cod banks, months spent in constant peril and hardship: the hard, dangerous life in the lonely timber forests—and always scant society and wide unpopulated tracts of country . . . these make up the various phases of Scandinavian country life. And to it the peasants bring a strong, self-reliant character, sad, perhaps a little introspective—the character of folk who live close to nature—yet capable of great gaiety, when the fiddles play at the cross-roads, in the long light summer nights, and they dance the age-old folk dances, often in peasant costumes of sheepskin and embroidery, which have been handed down from generation to generation, and which are often worth a small fortune.

The Scandinavian villager is a splendid character; and his like is not to be found away from his own fjords, mountains, lakes, and forests,

# Broadcasting and Languages.

Pending the resumption in the Autumn of the foreign language broadcast talks, we have arranged for a series of travel articles which will help equally the student and those thinking of taking a holiday abroad.

## LA MODERNIZACIÓN DE ESPAÑA.

By W. F. BLETCHER.

Es realmente asombrosa (*astounding*) la rapidez con que se va transformando la nación española. Algunos pueblos que pocos años atrás no tenían más medio de alumbrado que el aceite, hoy se ven deslumbrados (*dazzled*) por la luz eléctrica. Otros que desconocían por completo el tráfico rodado (*wheeled*), están hoy atravesados por buenas carreteras por las cuales pasan volando autocamiones (*motor trucks*), automóviles y motocicletas.

En el orden intelectual sucede lo mismo. Hasta hace muy poco tiempo las muchachas españolas no se movían de su casa hasta casarse. Hoy existe una institución: "La Residencia de Señoritas" a donde acuden de las provincias para convertirse en maestras, abogadas, médicas, farmacéuticas, empleadas.

Voy a detenerme unos momentos en esta cuestión de la muchacha española. En un artículo mío que apareció en el número de *World-Radio* del 15 de Abril p.pdo., yo citaba un párrafo de una carta que me había escrito una señorita inglesa residente

porque tenía que pasar los sábados remendando medias, y casi todas las cosas que quería hacer no podía hacerlas porque en España "no se hacían."

Pues aquel artículo mío fué leído en España y me trajo dos cartas, una de Barcelona y la otra de Madrid. La de Barcelona era de una señora que me decía lo siguiente:—

"La situación de la muchacha española ha cambiado mucho en estos últimos años. En las poblaciones importantes ya salen solas a las calles y nadie se mete con ellas. Lo que no hacen es ir de paseo con amigos, pero a sus compras, estudios, etc., si que van, lo mismo que se dedican bastante al *sport*."

En cambio, la otra carta, que procedía de un joven madrileño, confirmaba lo manifestado en mi artículo, diciendo:—

"No deja Vd. de llevar algo de razón en lo que dice referente a las señoritas de España, ya que nosotros los muchachos — y lo sé por experiencia — siempre acostumbramos 'darlas la lata,' es decir, a molestarlas piropeándolas (*flattering them*), y por eso las muchachas 'formales' suelen ir acompañadas."

La verdad será, y sin duda es, que en Barcelona, la ciudad más cosmopolita de España, la muchacha se va modernizando más rápidamente que en la capital y demás poblaciones de la península.

Paso ahora a los ferrocarriles de España. No hace mucho que

en su casi totalidad eran obra y propiedad de extranjeros. Hoy España tiene sus propias fábricas de locomotoras y material rodada a las cuales la ley da preferencia en los nuevos contratos. En Bilbao, Barcelona, Zaragoza y otras ciudades se produce material rodado de todas clases, hasta las locomotoras de más potencia y coches-camas de todo lujo.

Y ¿qué diremos del aspecto de las grandes ciudades? Este ha cambiado extraordinariamente en los últimos años. Madrid y Barcelona ya tienen Metropolitanos (*tube railways*) como los de Londres y París, y de resultas de este gran adelanto se van extendiendo rápidamente los arrabales (*suburbs*) o "ensanches." Los laberintos de callejuelas antiguas se están

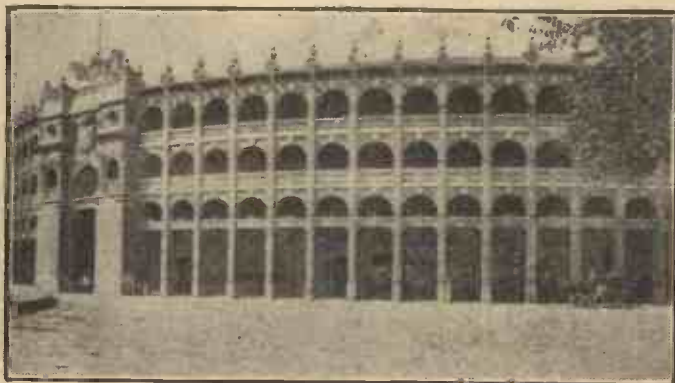
demoliendo a toda prisa para dar lugar a hermosísimos paseos. En fin, tan heroico, tan presuroso es el sistema de modernización que se ha adoptado en España, que en Granada, juntamente con la demolición de lo feo y lo sucio, se ha mutilado parte de lo más pintoresco de aquella histórica ciudad.

De año en año van mejorándose los medios de comunicación. Si el servicio de ferrocarriles de las líneas secundarias aún deja mucho que desear, el de las líneas principales es excelente, y cuando mejoren los hoteles de las ciudades pequeñas, crecerá de un modo considerable el tráfico turístico. Ya por todas partes los autobuses van reemplazando a las desvencijadas (*broken-down*) diligencias, y como la distancia del ferrocarril a muchos pueblos pintorescos suele ser bastante grande, el autobús es una verdadera bendición (*boon*) para los viajeros, a quienes no dejaba de asustarles la perspectiva de tener que pasar medio día encerrados en un incómodo vehículo arrastrado por mulas.

En los teatros es donde se nota poco o ningún progreso. La mayoría de las obras que se representan hoy en día o son antiguas o son traducciones de obras extranjeras. Las zarzuelas y sainetes de hace 30 años, como "La Viejecita," "El rey que rabió," "La Verbena de la Paloma," etc., todavía se representan con éxito. En esto sucede lo que en Inglaterra, donde, con algunas notables excepciones, las obras más populares son las que

se estrenaron (*were first produced*) hace un cuarto de siglo o más. Y como es el caso en todas partes del mundo, una gran proporción de los teatros se van convirtiendo o se han convertido ya en "cines".

Lo más típico del antiguo teatro español, las castañuelas y la peina alta de las mujeres, ha desaparecido casi por completo tanto en la



The Bull Ring (Zaragoza).

capital como en otras ciudades grandes de España.

Donde mejor se conservan las costumbres genuinamente españolas es en Andalucía, la región de la alegría, donde todavía se bailan el "bolero" y el "fandango." La "cachucha" ha desaparecido ya, pero las "sevillanas" y "malagueñas," que son más recientes, no dan señales de decadencia. Estos bailes típicamente andaluces son de una gracia exquisita y son ejecutados con una sinuosidad fascinadora por parejas enfrentadas (*facing each other*) al compás de las castañuelas, llamadas vulgarmente "palillos," y las guitarras. En los bailes llamados "flamencos" cada una de las bailarinas conserva su individualidad y trata de superar a las demás, siendo irresistible la voluptuosidad



Dancing the "Sevillanas" (Seville).

en Madrid. En dicha carta hablaba ella de una muchacha española, amiga suya, que había sido educada en Inglaterra y se había acostumbrado a los juegos atléticos y la vida libre de las jóvenes inglesas. Ella acababa de volver a casa de sus padres y, según decía, estaba volviéndose loca

# BERLITZ

PRIVATE LESSONS. SMALL DAY CLASSES — EVENING CLASSES.

SPECIAL ACCELERATED COURSES FOR PERSONS GOING ABROAD.

Ask for Booklet "W."—Trial Lesson Free.

LONDON { 321, Oxford Street, W.1.  
3, Harrington Road, Sth. Ken.  
2, Queen's Road, Bayswater.  
60, Queen Victoria St. (City).

SCHOOLS OPEN ALL THE SUMMER FROM 9 a.m. TO 9 p.m.

# LANGUAGES

The Very Soul of Music

# CELESTION

Regd. Entirely **REALISTIC** British  
Guaranteed 12 months.

C14 Model

**THE LOUD SPEAKER OF DISTINCTION. AN IDEAL COMBINATION. ELEGANCE—EFFICIENCY.**

The CELESTION C14 Model, shown above, combines a beautiful appearance with a remarkable degree of efficiency. It is but one of the new 1927-28 Celestion Loud Speakers. Its appearance will hold you. Its natural response—even on a two-valve set—will amaze you. All Celestion Speakers improve with age. They are obtainable from £5 - 10 - 0.

**FIRST ON MERIT**  
**ON DEMONSTRATION**

Apply for free particulars.

**CELESTION RADIO CO.,**  
-29-37, High Street,  
Hampton Wick,  
Kingston-on-Thames.  
Phone: Kingston 2474.

Demonstrations gladly given at  
**CELESTION CO.,**  
33, Villiers Street,  
Strand, W.C. 2.  
Phone: Gerrard 0397.

belleza de las andaluzas, cubiertos sus gráciles cuerpos con traje de batista y mantón de flecos (*fringed*). Al que vuelve a España despues de una ausencia de algunos años, no deja de llamarle la atención la creciente popularidad de los deportes de todas clases. Pero desgraciadamente no es probable que el "futbol" (o el *balompié*, si hemos de darle su verdadero nombre español) ni los demás ejercicios atléticos, reemplazan en pocos años a las corridas de toros, si bien la tendencia de hoy es humanizar algún tanto esta diversión nacional, que tan cruel nos parece a los que sentimos cariño por los animales.

El juego de pelota, tan arraigado en las provincias vascongadas, continúa siendo la diversión favorita de los atléticos vascos, pero en estos últimos años, y particularmente desde 1919, el "futbol" ha llegado a constituir una intensa atracción para el pueblo español. Las sociedades obreras, compañías de ferrocarriles, y bancos tienen sus "clubs de fútbol," y los partidos (*games*) entre equipos (*teams*) de una misma ciudad, entre provincias e internacionales atraen a grandes muchedumbres. De toda Europa y hasta de Sud América van a España equipos de "futbol."

Los ingleses residentes en España han tomado parte importante en el movimiento deportivo, y—cosa rara—son los únicos que hasta ahora juegan al "cricket." El gran juego nacional inglés tiene, al parecer, pocos atractivos para el español, cuyo temperamento meridional pide un juego más emocionante, de más rápida decisión, que el "cricket."

¡ España se ha vuelto atlética! ¡ España no se muere, se mueve!

We reprint below two lists of subjects set for the Foreign Language Competition, from which intending competitors may make a choice.

*French.*

- (1) Study the characters of M. Jourdain and Madame Jourdain in *Le Bourgeois Gentilhomme*.
- (2) A certain critic says: "At a time when both poetry and prose had come to be the expression of personal experience and emotion Mérimée is, throughout his work, strictly impersonal." Discuss this statement with reference to Mateo Falcone.
- (3) Which of the tales broadcast from Alphonse Daudet's *Lettres de mon Moulin* do you prefer? Give the reasons for your choice.

*Spanish.*

- (1) Spanish Hospitality.
- (2) Spanish and English Sport Compared.
- (3) The Spanish *Señorita*.

In order to encourage the study of languages, *World-Radio* will hold a foreign language essay competition, and will award for the best essays the following prizes:—

1st prize	.. .. .	£50
2nd "	.. .. .	£25
3rd "	.. .. .	£10
Five prizes of	.. .. .	£1 each
Twenty consolation prizes of 10s. each.		

The newsagents whose customers win any of the above prizes will also receive a prize of 10 per cent. of the amount received by the customer or customers.

There are no entrance fees.  
The conditions will be found below.

**FOREIGN LANGUAGE COMPETITION**  
CONDITIONS OF ENTRY.

- (1) Entries must be received not later than the first post on Saturday, October 1 next.
- (2) The competitor must hold the Post Office listener's licence.
- (3) He must become a registered reader of *World-Radio* for at least 6 calendar months.
- (4) No member of the B.B.C. staff is eligible.
- (5) No competitor shall write the essay in his mother tongue.

- (6) Qualified competitors can select their subjects from a list of six which will be found in the adjoining column. The subjects announced bear upon the talks given throughout the preceding period. Essays should be between 1,000 and 1,500 words in length.
- (7) The decision of the Editor of *World-Radio* shall be final.
- (8) Entry into the competition involves acceptance of these conditions.

*Note.*—Registrations are accepted through bona-fide newsagents. Direct subscription can be accepted only in cases when the reader has no local newsagent.

**USE THE REGISTRATION COUPON BELOW.**

To the Editor *World-Radio*,  
B.B.C., Savoy Hill, W.C. 2.

Please register me as a regular reader of *World-Radio* and enrol my name for the Languages Essay Competition. I am studying the following

languages: .....

My mother tongue is.....  
(Write in Capital Block Letters.)

Name.....

Address.....

Date .....

My newsagent, with whom I have registered to-day, is:

Name.....

Address .....

(Send this coupon to the Editor of *World-Radio*, B.B.C., Savoy Hill, London, W.C. 2.)

..... CUT HERE .....

**GIVE THIS COUPON TO YOUR NEWSAGENT.**

Please supply for six months, starting with the next issue, ..... copy (copies) of *World-Radio*, published weekly at 2d. per copy, to

Name.....

Address .....

Date .....

WARNING TO NEWSAGENTS.—No prizes can be awarded to you, if one of your customers is successful, unless you can produce this coupon.

(Continued from column 3.)

it is not all plain sailing. In my opinion we shall in time come to the generator driven from any supply and having an output for L.T., H.T., and even grid negative, but it will take a long time and a lot of work before that comes.

In the meanwhile, for those who want really good loud-speaker reception, "power" in the last stage and some way of getting it as indicated above, from the mains, whether directly or indirectly, is the right policy.

**TECHNICAL CONSIDERATIONS.**

By Capt. P. P. ECKERSLEY.

**XV.—Using the Mains for Power.**

UNDOUBTEDLY, in time, when all the houses of this country have electricity for heating, cooking, lighting and domestic use, the wireless set will also be energised from the same source.

It does seem so absurd that the wireless set which actually takes only that amount of energy which is required to light an ordinary bedside lamp should cost us so much in time, money and bother.

At present, however, the dry battery is the most common form of high tension and the accumulator lights the valves, since many a house is not lighted by electricity. The difficulty, if electric power exists in a house, is this. How to convert "the mains" which may be 110, 220, 240, etc., volts and may be alternating or direct current, and if the latter, may be earthed on the positive or the negative. There can be with all this variation no standard method of conversion.

One may, in this article, perhaps, point out some of the general methods that have been or may be adopted.

Take first the simplest way of "using" the mains, i.e., by charging the accumulators (low and high tension) from the mains. This is to my mind one of the best ways of using the mains, whether D.C. or A.C., because it involves no especial difficulty. Quality of reproduction depends so much upon having an adequate number of "watts" in the last stage, it is therefore important to have the high tension accumulator of a sensible size. (It takes its charge and discharge well if it is not too small.) Thus assume a "large" high tension accumulator, an ordinary L.T. and mains—suppose these are D.C. 240, or something like this. For charging the H.T. I think the splitting of what should be say a 300 volt battery into sections is best. Thus if you have 240 volt mains and a 300-volt H.T. accumulator, parallel the accumulator in two halves for charging through a lamp when in effect the 240 volt mains charge a 150 volt accumulator.

It is extremely uneconomical to charge the L.T. accumulator from the high voltage D.C. mains direct and, if it can be afforded as capital cost, a little generator is well worth while, a generator which converts the 110, 220, etc., volts of the mains to say 8 to 10 volts for charging the L.T.

All this is expensive and bulky, but it is economical in maintenance cost. Installed in the cellar by a competent electrician it should be perfectly feasible.

The point about such an installation is that it provides the ideal for your wireless set and it is cheap in maintenance, although capital outlay is large. If a higher maintenance cost can be faced, the generator may be dispensed with and a large set of lamps burnt in series with the L.T. to charge the accumulator direct from the mains.

With A.C. the task is much easier, and I should frankly advise anyone with A.C. mains and a high quality loud-speaker to accept the simple solution: buy a 250 volt H.T. accumulator and charge it through any of the many types of "charging units" sold. The L.T. can be economically treated in the same way. Of course, to recommend the above may seem crude when many mains adaptors for working direct on to the set exist. I quite agree, but the warning I give is not to set about designing mains adaptors yourself. Certain reputable firms make mains adaptors for use direct to the set, and these naturally can be relied upon, but just "plunging" by the amateur is not only sometimes dangerous, but may result in poor quality.

To go into the reasons why would take too long. I think those who have had "shots" at making mains adaptors for working directly on to the set will know that

(Continued at foot of column 2.)

## Continental Programme Events.

Sunday, July 24.

- 1.15 p.m.—Stockholm.—Changing of the Guard at the King's Castle.  
 3.30 p.m.—Dublin.—Munster Hurling semi-final: Cork v. Limerick. Relayed from the Agricultural Grounds, Thurles.  
 7.45 p.m.—Stockholm.—The Band of the Royal Swedish Navy.  
 8 p.m.—Munich.—"Polenblut"—Operetta by Leo Stein, music by Oskar Nedbal.  
 8 p.m.—Stuttgart.—French Programme.  
 (Other stations giving French programmes during the evening are Frankfurt (8 p.m.), Langenberg (8.15 p.m.), and Leipzig (8.15 p.m.).  
 8 p.m.—Munich.—"Norma" (Bellini).  
 8.15 p.m.—Breslau.—"With the microphone in Silesia's Seaside Resorts": Concert relayed from the Lukasmuehle, Schreiberhau.  
 9 p.m.—Zurich.—Russian-German Songs.  
 9.10 p.m.—Rome.—Orchestral and Vocal Concert, including Act 4 of "Francesca da Rimini."  
 10 p.m.—Copenhagen.—Ballet Music, of all countries.

Monday, July 25.

- 8 p.m.—Hamburg, Hanover.—Mandoline Concert given by the "1915 Travelling Musicians."  
 8 p.m.—Brussels.—Chamber Music for wind instruments and piano.  
 8.10 p.m.—Breslau.—French Evening.  
 (French programmes will also be given by Berlin (8.30 p.m.) and Copenhagen (9.30 p.m.).  
 8.15 p.m.—Frankfurt.—"Francesca da Rimini."  
 9.30 p.m.—Radio-Paris.—"The Black Domino" (Auber).  
 8.45 p.m.—Langenberg.—"The Rhythm of America."  
 9.30 p.m.—Stuttgart.—Festival in connection with the Jubilee of Tuebingen University. Relayed from Tuebingen.

Tuesday, July 26.

- 8 p.m.—Copenhagen.—Classical Symphony Concert.  
 8 p.m.—Prague.—Concert by the Czech Philharmony. Compositions by Dvorák.  
 8.10 p.m.—Koenigsberg.—"Beautiful Helen": Operetta by Offenbach.  
 8.15 p.m.—Stockholm.—Concert to the memory of Carl Michael Bellman, the singing poet of the 18th Century.  
 8.30 p.m.—Berlin.—Relay from the Music Festival in Krefeld, Frankfurt-on-Maine.  
 9 p.m.—Naples.—"Miss America": Operetta by Evemero Nardella.  
 9.10 p.m.—Rome.—"La Signora del Cinematographo" (Weinberger) and "La Gran Vie" (Verdi).  
 9.15 p.m.—Leipzig.—"In the Summer." Concert by the Leipzig Wireless Orchestra.

Wednesday, July 27.

- 7.50 p.m.—Hilversum.—Italian Operatic night, relayed from the Concert Hall, Amsterdam.  
 8 p.m.—Copenhagen.—Russian Music.  
 8.10 p.m.—Berlin, Breslau.—"Das Dorf ohne Glocke" (The Village without Bells) from a Hungarian legend by Arpad Pasztor; music by Edward Kuenneke.  
 8.15 p.m.—Frankfurt, Hamburg.—Czech Music, by the Prague Ondricet Quartett.  
 8.15 p.m.—Leipzig.—American Evening.  
 8.30 p.m.—Berne.—César Franck Organ Recital from the French Church, Berne.  
 8.30 p.m.—Radio Paris.—"Phyllisse" (Leon-cavallo).  
 8.30 p.m.—Langenburg.—Orchestral Concert of Northern Music.  
 8.45 p.m.—Toulouse.—Concert, followed by the Opéra-comique "Si j'étais Roi" (Adam).  
 9 p.m.—Brussels.—Selections from "Galathea" (Victor Massé).  
 9 p.m.—Milan.—"Don Pasquale" (Donizetti).

- 10.10 p.m.—Union Madrid.—Selections from two musical comedies "La Viejecita" and "El Duo de la Africana" (Caballero).  
 10.30 p.m.—Berlin.—Hungarian Music.

Thursday, July 28.

- 8 p.m.—Brussels.—Swedish programme.  
 8.30 p.m.—Radio-Paris.—Roumanian Festival Concert. Popular and sacred songs by the Choir of the Roumanian Church, under the direction of M. Kiresco.  
 8.30 p.m.—Hamburg.—"Summer Evening" programme, from Koenigswusterhausen.  
 8.30 p.m.—Langenberg.—Mountain songs and music.  
 9 p.m.—Berlin.—Programme of Waltzes.  
 9 p.m.—Naples.—Old and new Neapolitan music.  
 9.30 p.m.—Zurich.—Spanish, Hungarian and Russian Dances.

Friday, July 29.

- 7.50 p.m.—Hilversum.—Symphony Concert relayed from the Kurhaus, Scheveningen.  
 8 p.m.—Stuttgart.—Schubert programme.  
 8 p.m.—Frankfurt.—Dutch Folksongs.  
 8.30 p.m.—Radio-Paris.—"Lohengrin" (Wagner) preceded by Violin Solo "Chacone" (Bach).  
 8.30 p.m.—Munich.—Military Concert: Band of the 7th (Bavarian) Cavalry Regiment.  
 8.32 p.m.—Geneva, Berne.—Russian Music.  
 9 p.m.—Naples.—"Hoffmann," an Opera by Guido Laccetti.  
 9.15 p.m.—Koenigsberg.—Cello Recital.  
 10.30 p.m.—Berlin.—Night Music.

Saturday, July 30.

- 8 p.m.—Copenhagen.—Old Dance Music.  
 8.10 p.m.—Koenigsberg.—Greetings from delegates to the World Esperanto Congress in Dantzig.  
 9 p.m.—Naples.—Concert of Italian Lyrical Music.  
 9.30 p.m.—Oslo.—Concert by the Opera singer, Ornulv Grimsgaard.  
 10 p.m.—Stockholm.—Old Dance Music.



### H.T AND L.T AT YOUR FINGER TIPS

Let the mains provide the electrical energy for your receiver through Marconiphone All-Power Units. Just the turn of a simple switch and both H.T. and L.T. are instantly available. Running costs are many, many times less than those of an accumulator and battery installation. Full particulars from your dealer, or send for descriptive leaflet.

**ALL-POWER UNIT MODEL D.C.1** for Direct Current Mains For use with Marconi 'I amp. valves. Provides all necessary voltages, and provision is made for five values of grid bias. Output at 120 volts, approx. 20 m.a. *Two models are available:* B929 for 100-125 volts B930 for 200-250 volts. Price £6 10 0



**ALL-POWER UNIT MODEL A.C.1** for Alternating Current Mains For use with receivers employing from 1 to 4 Marconi K.L.I valves. Provides H.T., L.T. and grid bias. H.T. Current is rectified by Marconi U.5 valve. Output at 100-110 volts, approx. 20 m.a. *Two models are available:* B927 for 100-125 volts. B928 for 200-250 volts. Price, including U.5 valve and royalty - - £9 7 6



There is also the **MODEL D.C.3 HIGH TENSION UNIT** for those who only want H.T. current direct from D.C. mains. This model is suitable for a one- or two-valve receiver. Output from 120 v. terminal approx. 8 m.a. A 60-volt tapping is provided for detector valve. *Supplied in two models:* B935 for 100-125 volts. B936 for 200-250 volts. Price 35s.



## MARCONIPHONE POWER UNITS

THE MARCONIPHONE COMPANY, LIMITED

Head Office - - - - 210-212 Tottenham Court Road, W.1  
 Registered Office - - - - Marconi House, Strand, W.C.2



# Dominion and Foreign Broadcasting Intelligence

## CANADA

### Confederation Celebration Broadcast.

(By a Correspondent.)

The simultaneous broadcast of the Diamond Jubilee of Confederation from Ottawa to the whole Dominion of Canada gave broadcasting the impetus it required. In the past, radio listening has for the most part been limited to the possessors of long-range sets, but now, with the complete success attained by simultaneous broadcast, crystal sets, with the amplification necessary for loud speakers, will have their day.

The recent broadcast has demonstrated that radio in Canada is not very far behind that across the border, so far as quality, combined with volume, is concerned. The relay of the Carillon bells was a triumph in itself, although far from being perfect, owing to the vibrations in the bell chamber; but Canada is not unique in experiencing this difficulty.

In the history of events in Canada, that of the Confederation broadcast will undoubtedly take a foremost place. Many days were occupied in experiment, and bad lines eliminated, before eventually two or three clear lines were at the disposal of the broadcasting companies concerned. When it is taken into consideration that over 300,000 people in one particular section of the City of Montreal gathered together and heard distinctly every word spoken, as well as the musical part of the ceremony, it speaks well for radio. It is estimated that well over five million people in Canada listened to the transmission, as well as thousands more in America (through the Detroit station).

The outlook for radio in the Dominion of Canada is distinctly promising, considering the enormous distances to be covered and the unevenly scattered population. Twenty-three stations were in operation relaying the special programme, and there is no doubt that, to insure greater success in the future, more stations will be required for relay purposes. Although other countries have perfected simultaneous broadcast, this has really been Canada's first great venture, and it has been entirely successful. Naturally there are many difficulties to contend with, particularly the Northern Lights, which affect not only radio reception, but also that of telephonic and telegraphic communication. This may one day be conquered, but at present there is little sign of this.

Lack of finance is another obstacle, for, owing to the licence fee being only \$1 for each receiving apparatus, the income derived therefrom is not large. Naturally, stations as a rule on the average depend largely upon advertising—that is to say, if they broadcast a programme it must be one arranged by some commercial company. This may be to a certain extent quite satisfactory, but on the other hand publicity items tend to bore the listener. The artists, generally speaking, are not of the same calibre as may be obtained in Great Britain or the United States, as local stations cannot afford to pay enormous fees for the services of some world-wide known artist. When we pause to visualise the scope of radio our thoughts go to Northern Canada, and there we find isolated groups of settlers or missionaries among the Eskimos, whose sole contact with civilization is by means of radio, and it is then that we fully realise its value.

## GERMANY

### A "Hot" Game Broadcast.

(From a Correspondent.)

The Russian working men's football team which played a similar team representing Germany at Hamburg on Sunday, July 10 (relayed by Langenberg, Königswusterhausen and other stations), gave a good game to their opponents. From the first, they set the pace, and their remarkable forward play repeatedly called forth exclamations of admiration

for three prizes to the value of £300, £200 and £100. The awards will be made rather later than was anticipated.

### Licences Nearing 2,000,000.

The healthy state of German broadcasting is shown by the figures of subscribers at the end of the second quarter of this year. On June 30, there were 1,713,899 subscribers—an increase compared with last quarter of 78,171. Reckoning three listeners to every set licensed, about ten per cent. of the German population may be considered radio listeners. By the end of the year, it is hoped to reach the 2,000,000.

## Foreign Radio Humour

### GERMANY.



"The receiver is always smaller and weaker than the sender."

[Der Deutsche Rundfunk.]

from the Norag's announcer. For broadcasting purposes, the field was divided into ten parts, the Russian goal being zero and the German goal ten. It was therefore always possible, by the mere mention of a figure, to indicate the position of the ball. The half-time score was 2-0, and Russia finally won the match by 4-1. The result would have been even less favourable to the home side if it had not been for the excellent work of their goalkeeper. The game was a hot one in more than one sense, the weather being sultry. Germany still shares the disinclination of other European countries to regard football as a purely winter sport.

In the Hamburg Regatta, the broadcast of which preceded the football, the Berlin Ruderklub again won the principal race of the day, the Senate Prize for Eights.

### 1,200 Playwrights Compete.

Twelve hundred radio plays by anonymous authors have been submitted to the Reichs Rundfunk Gesellschaft (the holding Company of all the German Broadcasting Companies), in its competition

## SWEDEN

### Two Years' Licence Extension.

(From our Stockholm Correspondent.)

Under a new resolution of the Swedish Government, the Broadcasting Co. ("Radiotjänst" Ltd.), has obtained a two years' extension of its licence, that is, to the end of 1929.

At the same time, however, the Radiotjänst's proportion of the licence income has been further reduced. At first the division between the Company and the Telegraph Board was equal. From the beginning of 1927, Radiotjänst was granted only 3.72 Swedish crowns from each licence fee of 10 cr., and now its share has been reduced to 3.30 cr.

This division is to be revised yearly. In several other ways the Government has also strengthened its influence on the Company.

### Programme Analysis.

The programme statistics for the Swedish Broadcasting Co. ("Radiotjänst" Ltd.) during the past winter-season shows the following percentage for the different programmes:—

	per cent.
Ordinary Music (orchestras, vocal and instrumental solos)	19.96
Symphony Concerts .. .. .	4.94
Chamber Music .. .. .	2.1
Operas from the Royal Opera House .. .. .	2.84
Talks .. .. .	15.94
Recital and Theatre .. .. .	5.7
Cabaret .. .. .	6.29
Dance Music .. .. .	7.55
Divine Service .. .. .	9.24
Children's Programmes .. .. .	7.95
News (including current reports from actual events) .. .. .	16.89
Transmission of foreign stations .. .. .	0.6

It is worthy of notice that the statistics only refer to the programmes after 6 p.m. (except on Sundays).

## TURKEY

### Programmes from Stamboul.

Turkey opened its first station for broadcasting at Stamboul on June 15, and guests in hotels, restaurants and cafés in Erzeroum, Diabekir, and other places of importance expect to be regaled with the Stamboul programme between 5 and 7 and again later in the evening, with the aid of loud speakers provided by the landlords. The programmes comprise Turkish music and Anatolian songs from 5 to 7, and from 8.30 onwards are mostly made up of orchestral concerts, dance music and lectures, as in the Western countries. The annual subscription in Turkey is about thirty shillings (English).

# “Viâ Ether”

WITH regard to my recent notes on the proposed Berlin relay of noises from Luna Park, although not a weather prophet (Heaven forbid, during this summer!) my prognostications appear to have been correct, and in view of the downpour which was inflicted on the German capital on that evening the transmission did not take place. If, in the meantime, the elements have proved of a more charitable disposition, you will have been taken to the German Earl's Court on July 16, in which case the advertised programme of a *Berlin Night*, to which I referred last week, will have been postponed to a later date, not yet fixed at time of writing. In years to come, meteorologists will emphatically deny that the summer of 1927 took place on a Saturday!

To-day, at 11 a.m., Langenberg and its group of transmitters, as well as many of the other German stations, will broadcast Dr. Stresemann's speech of welcome on the steps of the Elberfeld Rathaus to the members of the Congress of the *Union Cycliste Internationale* arriving in that city. At 9.30 p.m. to-night the "Rheinlandsender" will also offer you a musical sketch in one act by Mozart, *Fritzchen und Lieschen*. He wrote several small one-act operas; Vienna advertises a broadcast of two somewhat better known works, namely, *Bastien and Bastienne* and *The Impresario* for 5 p.m. on Sunday, July 31. It is to be hoped that by that date the Rosenhügel and Stubenring transmitters, which have been closed down during the general labour strike in Austria, will again be on the air. An interesting fact about Mozart's *Impresario* is that it was first produced at the Palace of Schoenbrunn in 1786 at a Court banquet given by the Emperor Joseph II.; it was a musical skit on a voice trial of would-be opera singers by the *Impresario* Frank. Hence its title.

Have you noticed that Frankfurt-on-Main now daily broadcasts a carillon at midday? It is a relay of the bells of Darmstadt Castle. The Music Exhibition is still in full swing, and to-night, at 8 p.m., you will be given the opportunity of hearing the second recital of mechanical instruments, with short explanatory talks. Both Naples and Rome, as usual, present us with operatic performances, the former at 9 p.m. with Bizet's *Carmen*, the latter fifteen minutes later with an operetta, *Sugnizza*, by Costa. Riga, at 8 p.m., will broadcast a symphony concert from the Stadtpark. As this is a 2-kilowatt transmitter working on 526.1 metres, it might be worth a few minutes' search, although I fear that at this time of the year it may prove disappointing.

I can strongly recommend your calling in at Brussels on every Saturday and Sunday evening, as on these days Radio-Belgique now regularly takes its entertainments from the Ostend Kursaal. During the past two weeks I have not failed to listen to them. The Kursaal Concert Hall is one of majestic proportions seating some six thousand people. During the season it possesses an orchestra

of over 100 musicians and many celebrities of the concert platform contribute to its entertainments.

Frankfurt, to-morrow evening, between 6.45 and 7.40 p.m., offers an interesting item, namely, "The Voices and Music of the Nations." These are gramophone records illustrating the songs and instruments popular in all foreign countries. The Berlin Museum for some time past has extensively added to this collection, and during last winter some of these interesting discs were transmitted through German stations. In most instances they are presented and explained by Prof. Wilhelm Doegen who, I understand, is responsible for these entertaining exhibits.

Of operatic transmissions we have quite a number to-day; Kiel, at 4.30 p.m., obliges with excerpts from Tchaikovsky's *Eugen Onegin*; Milan, at 9 p.m., with a relay of Donizetti's *Don Pasquale*; Madrid (EAJ7), at 10.15 p.m., presents two Spanish operettas, namely, *El Pollo Tejada*, by Valverde, and *The Beautiful Mother Country*, by Chapi; and Hilversum, at 10.30 p.m., will take you over to the Scala Theatre at Amsterdam.

Next Sunday, July 24, is the day which, by arrangement with Geneva, will be devoted by the principal continental transmitters to the first of an international series of programmes. On this occasion the entertainments are in honour of France. Radio-Paris has prepared a lengthy broadcast of exceptional interest; it will include some thirty items comprising recitations, songs, excerpts from classical and other plays, orchestral pieces and choral works all of "native manufacture" and to which French artists alone will contribute.

On Sunday week (July 31), at 7 p.m., the Koenigsberg and Danzig transmitters will turn to Zoppot for a relay of a portion of the 1927 Richard Wagner Festival. You will hear a complete performance of that composer's third work in the Nibelungen Ring, *The Twilight of the Gods*, as presented in the open-air theatre of Zoppot under the direction of Professor Dr. Max von Schillings, of the Berlin State Opera House. Singers from the German capital and from Hamburg have been specially engaged for this Festival performance, as well as an augmented orchestra of over 100 musicians and a chorus of 300 mixed voices. Zoppot, on the Baltic, is the Brighton of the Danziger Bucht. As you already know it possesses a famous Kursaal which frequently provides vocal and instrumental concerts to the Koenigsberg and Danzig studios. On many occasions during the summer season spectacular shows are given in the open-air theatre, the stage of which is set in a deep valley flanked on three sides by small hills, the slopes of which can accommodate thousands of paying spectators. Such displays and operatic performances are common to many Central European countries, and the relay of these productions must always prove of great interest to distant listeners.

Although as reported in *World-Radio* last week, the German authorities have abandoned the idea of relaying a part of the Fiftieth Anniversary Festival of the Richard Wagner Theatre at Bayreuth, we shall still be given many opportunities of hearing this composer's works from other opera houses. If you care to tune in to Munich or Nuremberg (the latter for my personal preference), on Sunday, July 31, at 4 p.m., you may assist at a performance of *Tristan and Isolde* at the Prinz Regent Theatre in the Bavarian capital. It may not be Bayreuth, but this house runs the former very closely in Wagner productions.

I notice a curious coincidence in the programmes of the coming week. Whereas a Paris transmitter will broadcast Adam's opera *If I were King*, our own 5XX will give us a musical comedy based on Justin Huntly McCarthy's play of the same title. In reality, the coincidence is only one of names as Adam's opera, *Si j'étais Roi*, produced in Paris in 1852, has nothing in common with the plot containing an alleged incident in the life of François Villon on which the English play is based. As a matter of fact, the story of *Si j'étais Roi* is more or less bodily lifted from the Arabian Nights Entertainments. *The Vagabond King*, at present being performed at a West End theatre, is, of course, a modern musical version of the McCarthy play which dates back to 1901.

In the Koenigsberg programmes will be found on Thursday, July 26, at 8.10 p.m., a studio performance of Offenbach's operetta *La Belle Hélène*; on Saturday, July 30, this station will relay from Danzig at the same time the speeches made by the delegates to the Esperanto World Congress held in that city. There will be representatives of some 15 different nations present, each of whom will be allowed to speak for two minutes in his native tongue and for a further two minutes in Esperanto, followed by a translation into German.

Here is a piece of news which will, without doubt, gladden the hearts of dx searchers both on medium and short waves. Many of the U.S.A. transmitters, including WGY and DKA, will relay the Dempsey-Sharkey boxing bout which will take place on Thursday, July 28, at 9 p.m., Eastern Daylight Saving Time. Whether the transmission will be audible by the ordinary broadcast transmitters I do not know, but I feel sure that with some little help from the ether it will be capturable from 2XAD or 2XAF, the short-wave transmitters of Schenectady, or on the lower wavelengths of East Pittsburg. *World-Radio* will welcome any reports from readers who may succeed in getting them on that night.

Leipzig, on July 27, at 8.15 p.m., devotes its time to music and poetry of the U.S.A. Unintentionally, no doubt, it includes a gramophone record with the curious title of *Land of Hop and Glory!*

JAY COOTE.

## Which Station Was That?

Wireless Billy (Oldham): Eiffel Tower relaying English talk from Sorbonne University, Paris. This transmission is also taken daily by PTT, Paris. Dexite (Mill Hill): The programmes of these shortwave transmissions are not published. Possibly PCJJ (Eindhoven, Holland) on 30.2 m. A. D. (Bandon): Malmö relaying transmission from Stockholm studio. Traversal Two (Sydenham): (1) Marseilles (PTT); this station is heard here at quite good strength; (2) Yes, Milan; the station possesses a lady-announcer. Bellasis (Goring): Hilversum, from the studio; tallies with official programme. Reflex (Dudley): (78) Nuremberg relaying Munich (Hotel Stadt Wien); (96) PTT Lyons relaying dance music from Coliseum Music Hall, Paris; (97) Copenhagen relaying dance music from Restaurant Nimb in that city; (100) Are you sure of your wavelength? We cannot trace this transmission and would welcome further details. Gooder Grammar Teached Here (Coatbridge): Full name and address must accompany a *nom-de-plume*. We cannot give such addresses in these columns. G. R. C. 17 (Taunton): The station was Marseilles PTT. The call of Kosice is *Hallo! Hallo! Zde radiostanica Kosice Slovensko*, that of Agen, is merely *Radio-Agen*. You may pick up the latter transmission every afternoon through Radio Toulouse. Breadalbane (Manchester): *Nom-de-plume* must be accompanied by enquirer's name and address. Nuremberg relaying an organ recital from the Exhibition Hall at Munich. Two Valve Godreaman (Aberdare): 2KG given as the call-sign of an amateur transmitter at Kensington, W. 14; we cannot trace 7AF. Lagos (Ryde): You picked up this programme on a harmonic of 5XX. Manchester did not relay it. Ether-Rider: *Nom-de-plume* must be accompanied by enquirer's name and address. We do not know any official wireless telephony station on this wave-length. H.F. 42 (Regent's Park): (a) Probably Seville (EAJ5) on 357 m.; (b) You heard the concert given on the Rheinterrasse at Düsseldorf from Dortmund via Langenberg. HWB/931 (West Hampstead): Dance music from Leipzig on 365.8 m. Withypool (Taunton): PTT Toulouse relaying concert from Marseilles (PTT) on 260 m. F. G. N. (Goring): Not Salamanca, which has now closed down, but Saragossa (EAJ23) on 410 metres. Two Valve (Hithergreen): No estimated wavelength given; impossible to trace without this information. Shiply (York): *Nom-de-plume* must be accompanied by name and address and coupon must be sent with each query; (1) Nuremberg relaying concert and dance from Regina Palace Hotel, Munich; (2-3-4) Are being held over. Three-Valve Dual (Rochdale): Estimated wave-length very vague; there are 25 stations between Leeds and Bradford, most probably Malmö (Sweden) on 200.9 m. F. G. N. (Goring): (2) Belgrade testing on 1,650 metres. Heal (Yarmouth): Bell Telephone Company of Canada testing through Marconi high-power beam station at Drummondville (Québec) on 26.18 metres.

**NOTE.**

Readers desiring a postal reply should enclose a postal order for sixpence and a STAMPED ADDRESSED ENVELOPE in addition to the coupon. Those who wish to take advantage of our free service by means of these columns must give a *NOM DE PLUME*, in addition to their own name and address. PROPRIETARY TRADE NAMES MUST NOT BE USED AS *NOMS DE PLUME*.

### WORLD-RADIO (No. 104).

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

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

### The Alternative Postal Service.

In response to numerous requests, whilst retaining in *World-Radio* the usual free published service of "Which Station Was That?" we have instituted a paid postal service, which, we are confident, will enable a reply to be posted within forty-eight hours of our reception of a "Which Station Was That?" coupon.

The conditions are as follows:—

A charge of sixpence, payable by postal order or in postage stamps, will be made for each query specially answered by post; but six queries may be sent for a fee of 2s. 6d. Stamped addressed envelope must be sent, and each query should be accompanied by the coupon published in "World-Radio." All queries should be numbered, in order to facilitate reply. Letters must be addressed to the Editor, "World-Radio," Savoy Hill, London, W.C. 2; envelopes to be marked in left-hand top corner "Postal Query Service."

If, owing to paucity of details submitted, or for any other adequate reason, the transmission cannot be identified, a further query will be answered *free of charge*. In this event, the answer form sent to the reader must be returned with the new application.

We are convinced that this alternative postal service will be found of considerable interest to many readers who desire an earlier reply to their enquiries than can possibly be given by publication in a weekly journal.

*Note.*—In the event of queries received in which readers have not complied with the conditions published, replies will not be sent by post, but will be found at the foot of these columns.

# Rome — AT BOURNEMOUTH WITH THE LANGHAM PORTABLE!

- BERNE
- MADRID
- BERLIN
- CARDIFF
- RADIO PARIS
- GLASGOW
- STUTTGART
- DAVENTRY
- HAMBURG
- LONDON
- HILVERSUM
- FRANKFORT
- ABERDEEN
- LANGENBERG

ONE user of a Langham Portable has heard this every night for weeks—at full loud speaker strength, and at 900 miles range!

Actually we only claim 150 miles range for short wave, and 300-400 miles for long wave stations—but you can do much better than that.

Anyhow, send us full price or initial deposit and we will send you a Langham to try for yourself. If you are not satisfied, return the set and we will refund your money.

The Langham Portable — a complete 4-valve set, one tuning control only, a real continental range, and 12 months' guarantee!

Send to us for full particulars.



**30 GNS.**

COMPLETE.

No accessories to buy.

DEFERRED TERMS

£5 down and 12 monthly instalments of £2 7s. 6d.

## Langham Radio

Albion House  
59

NEW OXFORD STREET  
LONDON, W.C.1.

Telephone:  
MUSEUM  
2878 & 8293.

# The Compleat (Ether) Angler: or the Diary of a Simple Soul.

By HUGH R. SEELEY.

WHEN, for several days on the 9.20 each morning, Huggins reiterated the wonderful conquest of the ether he was making by means of his new two-valve receiver, his perpetual bragging fired my imagination, and in a rash moment I decided to enter the lists and compete with him in his deeds of prowess. Whether my experience has been an ordinary one or whether ill-luck has dogged my steps, I know not, but, for the benefit of other radio amateurs, I have put down in sequence the occurrences as they took place. I am known to be a person of an orderly frame of mind; from the outset I have kept a record of my out-of-pocket expenses. So far as I can see—and I do not believe that I have made any serious mistakes in adding up the cash columns—to date I appear to have spent already on this popular hobby a sum which, in pre-War days, might easily have maintained an average family of four heads for a whole year.

The first entry in my diary was on April 1, 1927; I cull the following extracts:—

	£	s.	d.
When at breakfast I informed my wife that I had decided to adopt wireless as a hobby she expressed at first dismay, then anger. . . . To replacement of two china cups, a coffee pot and several plates . . .	0	12	10½
Apr. 2.—I have subscribed to three technical papers and to <i>World-Radio</i> in order to secure all necessary information . . .	2	12	6
Apr. 4.—Finding wireless circuits incomprehensible, invited Huggins, Graves and Potts to dinner to-night; as they assure me they are experts. Extra household expenses refunded to my wife . . .	1	15	0
Apr. 5.—After close perusal of world programmes, have entered for special international language courses, German, French, Italian, and possibly Spanish . . .	20	0	0
Apr. 7.—To 1 doz. packets of headache powders . . .	0	6	9
Apr. 8.—To postage on letters to manufacturers, asking them for catalogues of sets . . .	0	3	4½
Apr. 10.—Tip to postman who staggered to the door with hefty parcels of price lists . . .	0	0	2
Apr. 11.—Called in friends for advice. Drinks, cigars, &c. . . .	0	15	8
Apr. 12.—Paid to French polisher (Huggins having inadvertently left his hot pipe on grand piano) . . .	0	8	0

Apr. 15.—Acting on experts' advice, decided to construct own receiver. Postages on applications to advertisers of kits of components . . .	0	5	3
Apr. 18.—Tip to postman . . .	0	0	6
Apr. 19.—Fares and expenses to high-power transmitting station to see how broadcasting was done. (These included lunch) . . .	2	6	3
Apr. 20.—Cost of full kit of components for eight-valve "Boostodyne" . . .	23	17	9
Apr. 21.—Extra accessories required . . .	18	9	2
Apr. 22.—Tip to carman . . .	0	0	3
Apr. 23.—Replacement of 4 valves dropped by housemaid . . .	2	16	0
Apr. 23.—Housemaids' Wages (1 month in lieu of notice) . . .	4	12	6



The odd structure above serves, not only as a lighthouse, but also as a community radio loud speaker. It is located at Dartmouth, Mass., where the Round Hills Radio Corporation maintains station WMAF. Around this battery of huge speakers the whole population of the town may gather on pleasant evenings to hear programmes reproduced with a volume that fills all outdoors.

Apr. 24.—Sundry tools . . .	2	8	4
Apr. 25.—New ebonite panel . . .	1	10	0
Apr. 26.—Chemist's bill for lotions, having burnt myself while soldering connections . . .	0	1	8
Apr. 27.—New hall rug to replace the one on which I rested newly-charged accumulator . . .	3	5	0
Apr. 28.—New Paris model hat for wife	7	7	0
Apr. 29.—Week-end at Brighton with ditto . . .	12	4	7
May 3.—Purchased two scaffold poles for aerial masts . . .	2	10	0
May 4.—Cartage of same . . .	0	6	6
May 5.—Casual labour for their erection (3 men, 8 hours at ls. 3d.) . . .	1	10	0
May 5.—Replacement of broken panes in neighbour's hot-house . . .	0	12	6
May 5.—New coil of aerial wire . . .	0	3	6
May 5.—Cost of broken skylight on roof	0	5	9
May 5.—Solace to casual labourer after his fall from ladder . . .	0	5	0
May 5.—Emergency repairs by plumber, one expert having tried to screw earth lead into water pipe . . .	0	15	6
May 6.—To purchase of chief works of Mozart, Bach, Beethoven, and Haendel, in order to enjoy Sunday concerts . . .	13	8	3
May 6.—To purchase of libretto of forthcoming opera broadcast . . .	0	0	2
May 7.—Extra expenses allowed to wife for cost of dinner given to Huggins, Potts, and Graves on "demonstration night" . . .	1	10	9
May 9.—Overhaul by local electrician (Potts had suggested taking H.T. from the mains). Replacement of safety fuses . . .	0	7	6
May 10, 11, 12.—Estimated extra cost of electric light during nights spent in trying to get America . . .	0	4	10
May 13.—Replacement of five valves broken by charwoman who mistook them for Christmas Tree ornaments, and dusted them . . .	3	10	0
May 13.—Doctor's bill for attendance on mother-in-law, who tripped over loud-speaker extension cord . . .	1	1	0
May 14.—Chemist's bill for ditto . . .	0	4	8
May 15.—To cost of advertisement in local paper for disposal of set . . .	0	3	9
May 16.—Purchase of two-seater for wife	135	0	0
May 17.—Crystal set for reception of local station . . .	0	7	6
May 17.—Cost of licence . . .	0	10	0

Grand total . . . £267 15 10

Personally, I cannot see for what reason radio has become a popular hobby, and it does not appear to me to be within the reach of the less fortunate classes.

## DAVENTRY PROGRAMME

(Continued from Page 85.)

7.15 p.m.—The Songs of Richard Strauss. Sung by John Armstrong (Tenor). Liebeshymnus (Hymn of Love), Op. 32, No. 3; Ständchen (Serenade), Op. 17, No. 2; Freundschaftliche Vision (A Welcome Vision), Op. 49, No. 1. Ich liebe dich (I love thee), Op. 37, No. 2.	Short Prelude, in D., Prelude and Fugue in F Minor (2nd Book of "48" Preludes and Fugues).
7.25 p.m.—Mr. G. R. O. Crole-Rees: "How we can lead the World at Lawn Tennis."	9.0 p.m.—Weather Forecast, Second General News Bulletin; Local Announcements.
7.45 p.m.—Variety: Josephine Trix (Syncopated Songs); Ed. Lowry (Keep Smiling); Jan Wien (Banjo); Harry Helmley (Child Impersonator).	9.15 p.m.—Shipping Forecast. S.B. from London:— (10.0 p.m.—Time Signal.)
8.30 p.m.—A Bach Recital: By Harold Samuel (Pianoforte) and Keith Falkner (Baritone). Harold Samuel: Toccata, in G minor. Keith Falkner: The Jovial Acolus (Secular Cantata "Der Zufriedenstellte Acolus"); Bist du bel mir (Art thou near me?); Wilst du dein Herz mir schenken (Wilt thou give me thy heart?) (from Anna Magdalena's Book). Harold Samuel: Adagio, in G:	9.20 p.m.—Topical Talk.
	9.35 p.m.—The Victor Olof Sextet. Overture, "Plymouth Hoe" (Ansell).
	9.45 p.m.—"High Tea." A One-Act Play by H. E. Holme. Characters: James Carter, Master-at-Arms on board H.M.S. <i>Ambitious</i> (H. St. Barbe West); Henry Brown, Petty-Officer, 1st class, of the same ship (Mel Sydney); Fred Wilson, Carter's Nephew, and a Trooper in the Royal Horse Guards (Hugh Dempster); Florence Carter, Carter's Daughter (Phyllis Panting).
	10.10 p.m.—Sextet: Suite, "Three English Dances" (Quilter); Valse,

"The Rose Cavalier" (Richard Strauss).	6.0 p.m.—The Daventry Quartet.
10.25 p.m.—"Fire!" A Short Play written specially for Broadcasting by A. J. Alan. Characters: Albert Buckle (a Caretaker) Frank Denton; Jane Buckle (his Wife) Florence Hill; Mrs. Buckle (Albert's Mother), Dora Barton; Mabel Henderson, Phyllis Panting; Ruth Henderson, Margaret Gaskin (Two smart modern sisters, who are house-hunting); Policeman, David Spencer; A Fireman, Fred Vigay.	6.30 p.m.—Time Signal, Greenwich; Weather Forecast, First General News Bulletin.
10.45—11.0 p.m.—Sextet: Suite, "La Source" ("The Spring") (Delibes); Valse from "Eugene Onegin" (Tchaikovsky).	S.B. from Nottingham:—
	6.45 p.m.—Mr. R. Macpherson, Hon. Sec. of the Notts Aero Club: An Eye-Witness Account of the Air Race for the King's Cup.
	S.B. from Aberdeen:—
	7.0 p.m.—Mr. J. C. Rabie: The South African Farmers' Tour. S.B. from London:—
	7.15 p.m.—The Songs of Richard Strauss. Sung by John Armstrong (Tenor); Heimkehr (Homecoming), Op. 15, No. 5; In goldener Fülle (In golden abundance), Op. 49, No. 2; Allerseelen (All Souls' Day), Op. 10, No. 8; Wie sollten wir gehcim sie halten (How shall we keep our secret), Op. 19, No. 4.
	7.30 p.m.—A Popular Concert: Harry Hopewell (Baritone); The Irwell Springs Band. The Band: March, "Machine Gun Guards" (Marchal); Overture to "Tancredi" (Rossini); Cornet Solo, "Majestic" (White). Soloist, C. Jones.
	7.55 p.m.—Harry Hopewell: Down among the Dead Men (arr. Clutsum); The Merry Monk (Bevan); When Dull Care (arr. Lane Wilson).
	8.5 p.m. (approx.)—The Band: Selection from "Lilac Time" (Schubert, arr. Clutsum); Trombone Solo, "The Sailor's Grave"
	(Sullivan); Soloist, H. Beswick; Variations on a Welsh Theme (Rimmer).
	8.30 p.m.—Harry Hopewell: My Song is of the Sturdy North (German); The King's Highway (Stanford); Boot and Saddle (Rupert Marsh).
	8.37 p.m.—The Band: Euphonium Solo, "Kentucky Home" (arr. Rimmer); Soloist, F. Garth; Selection, "Songs of England" (Round).
	9.0 p.m.—Weather Forecast, Second General News Bulletin; Local Announcements; Sports Bulletin.
	9.15 p.m.—Shipping Forecast. S.B. from London:— (10.0 p.m.—Time Signal.)
	9.20 p.m.—Writers of To-day: Mr. Holloway Horn reading a Short Story, "In the Dark"
	9.35 p.m.—"Calling and Recalling." A Radio Revue by John Henry and R. Guy-Reeve. Musical Numbers by Various Composers. Cast includes: John Henry, Marova, Franklyn Gilmour, Alma Vane, Jack Hagan, Blossom, Phillip Wade, Henry Scatchard. Special Revue Orchestra under the direction of Stanley Holt.
	10.35 p.m.—12.0 midnight.—Dance Music: The Savoy Orpheans and The Savoy Havana Band, from the Savoy Hotel.

## SATURDAY.

10.30 a.m.—Time Signal, Greenwich Weather Forecast.
S.B. from London:—
3.0 p.m.—International Athletics: England v. France. Running commentary by H. M. Abrahams. Relayed from Stamford Bridge. Interludes by the Henry Brookhurst Trio from the London Studio.
5.15 p.m.—The Children's Hour.



PROGRAMMES FOR SUNDAY

(July 24)

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

IRELAND

CORK. Cork Broadcasting Station (6CK). W.L. 400 m. (750 kc.); 1.5 kw. Programme relayed by Dublin (319.1 m., 940 kc.)... 10.35 p.m. (approx.)—Close Down.

VIENNA

VIENNA. Radio-Wien. W.L. 577 m. and 517.2 m. (520 and 580 kc.); 1.5 and 5 kw. 11.0 a.m.—Orchestral Concert. 1. Moorish March from "Boabdil"...

BELGIUM

BRUSSELS. Radio-Belgique. W.L. 508.5 m. (590 kc.); 1.5 kw. 5.0 p.m.—Dance Music relayed from the St. Sauveur Palais de Danse. 7.30 p.m.—"Radio-Chronique"...

CZECHO-SLOVAKIA

BRATISLAVA. Radio Bratislava W.L. 263.2 m. (1,140 kc.); 0.5 kw. 10.30 a.m.—Relay from Prague (348.9 m.; 859 kc.)...

BRUNN. Komarov. W.L. 441.2 m. (680 kc.); 3 kw. 9.30 a.m.—Agricultural Report. 10.0 a.m.—Organ Recital. 1. Choral (Franck). 2. The Creation (Haydn)...

PRAGUE. Strascinice. W.L. 348.9 m. (859 kc.); 5 kw. 9.0 a.m.—Agricultural Report. 10.30 a.m.—Orchestral Music. 12.15 p.m.—Commercial Notes. 4.30 p.m.—Talk...

DENMARK

COPENHAGEN. Copenhagen-Radio. W.L. 337 m. (890 kc.); 0.7 kw. Programme relayed by Sorø 1,153 m. (260 kc.)... 12.0 p.m.—Chimes from the Town Hall and Close Down.

FRANCE

PARIS. Ecole Supérieure (FPTT). W.L. 447.8 m. (670 kc.); 0.5 kw. Transmits at intervals from 8.0 a.m. 2.0 p.m.—Relay of Speech by Monsieur Herriot from Vailly-sur-Aisne...

PARIS. Petit Parisien. W.L. 340.9 m. (880 kc.); 0.5 kw. 9.0 p.m.—Concert. 1. "Marco Spada"—Overture (Auber). 2. "Le Pré aux Clercs"—Selection (Herold)...

12.45 p.m.—Orchestral and Solo Concert. 1. El Granuja (Orlando). 2. Zara—Waltz (Roberts). 3. (a) Sevilla, (b) Cordoba (Albeniz)...

8.30 p.m.—Special Concert. Dedicated to "Le Génie Français." 1. Choral Selections: (a) Il est Bel et Bon (Passereau), (b) Dellette Mignonette (du Caurroy)...

TOULOUSE. Radiophone du Midi. W.L. 392 m. (765 kc.). 3 kw. Transmits at intervals from 10.15 a.m. 12.0 (noon)—Sacred Address. 12.15 p.m.—Sacred Music...

GERMANY

BERLIN. Voxhaus. W.L. 566 and 483.9 m. (530 and 620 kc.); 2 and 4 kw. Transmits at intervals from 6.0 a.m. Programme relayed by Koenigs-wusterhausen on 1,250 m. (240 kc)...

5.0 p.m.—Chamber Music: 1. "La Finta Semplice"—Overture (Mozart). 2. (a) Morgen; (b) Heimliche Aufforderung (Rich. Strauss)...

8.30 p.m.—Concert of French Classics. 1. Pianoforte Solos: (a) Le Bavolet Flottant (Couperin); (b) Le Rappel des Oiseaux; (c) Tamborin (Rameau)...

FRANKFURT-AM-MAIN. Südwestdeutscher Rundfunk. W.L. 428.6 m. (700 kc.); 4 kw. 8.0 a.m.—Morning Recital. 11.30 a.m.—Talk for Parents...

HAMBURG. Norg (ha, in Morse). W.L. 396 m. (758 kc.); 4 kw. 8.25 a.m.—Time. 8.30 a.m.—Weather and News. 8.50 a.m.—Agricultural Report...

5.30 p.m.—Concert relayed from the Café Wallhof. 1. "Der Frelschütz"—Overture (Weber). 2. "Rienzi"—Prelude and Chorale (Wagner)...

L. LANGENBERG. Westdeutscher Rundfunk. W.L. 468.8 m. (640 kc); 25 kw. Programme also relayed by Muenster 241.9 m. (1,240 kc.)...

2.30 p.m.—Literary Talk from Muenster. 3.10 p.m.—Talk on "Karoline von Günderode," from Cologne. 3.45 p.m.—Concert of Mandoline Music from Dortmund, 283 m. (1,060 kc.)...

STUTTGART. Süddeutscher Rundfunk. W.L. 379.7 m. (790 kc); 4 kw. 11.30 a.m.—Morning Recital. 1.15 p.m.—Gramophone Concert. 3.0 p.m.—Programme for Children...

HOLLAND

HILVERSUM. Algemeene Nederlandsche Radio Omroep. W.L. 1,070 m. (280 kc); 5 kw. 10.10 a.m.—Divine Service, from Amsterdam. 5.40 p.m.—Divine Service...

HUNGARY

BUDAPEST. Magyar Radio Ujsag. W.L. 555.6 m. (540 kc); 3 kw. 10.0 a.m.—High Mass, relayed from the "Parriskirche." 12.00 noon.—Time and Weather. 12.10 p.m.—Programme of Chamber Music...

ITALY

MILAN. Unione Radiofonica Italiana (1 MI) W.L. 322.6 m. (930 kc); 1.5 kw.







# PROGRAMMES FOR WEDNESDAY

(July 27)

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

## IRELAND

**CORK.** Cork Broadcasting Station (6CK). W.L. 400 m. (750 kc.); 1.5 kw.  
 2.30 p.m.—Weather, Stock Market Report and Gramophone Records.  
 6.30—10.30 p.m.—Programme relayed from Dublin (319.1 m., 940 kc.)

**DUBLIN.** Dublin Broadcasting Station (2RN). W.L. 319.1 m. (940 kc.); 1.5 kw.  
 Transmits at intervals from 1.30 p.m. Programme relayed by Cork (400 m., 750 kc.)  
 6.30 p.m.—Children's Corner.  
 7.0 p.m.—Talk for Women.  
 7.20 p.m.—Exchange Quotations and News.  
 7.30 p.m.—Irish Lesson by M. O'Maolain (As Arainn).  
 7.45 p.m.—German Lesson by Olga von Wenckstern.  
 8.0 p.m.—String Quartet Selections—"A Call from the Classics."  
 8.30 p.m.—Baritone Solos by Patrick Matthews.  
 8.40 p.m.—Concert. 1. Orchestra: (a) Wayside Sketches (Minchin), (b) In Fair Tokio. 2. Soprano Solos by Eileen Gunning. 3. Orchestra: (a) A l'aimée (Fauchey), (b) Arabesque, (c) Au Village (Fossoul). 4. Soprano Solos. 5. Pianoforte Solos by Dinah Copeman.  
 9.5 p.m.—Amhrain Ghacdhéalacha—Donnchadh MacCoiligh.  
 10.20 p.m.—Marching Rhythms by the Orchestra.  
 10.30 p.m.—News and Weather.  
 10.35 p.m. (approx.)—Close Down.

## BELGIUM

**BRUSSELS.** Radio-Belgique. W.L. 508.5 m. (590 kc.); 1.5 kw.  
 5.0 p.m.—Chamber Music.  
 6.0 p.m.—French Lesson.  
 7.30 p.m.—"Radio-Chronique."  
 8.0 p.m.—Orchestral and Solo Concert 1. Suite Saharienne (Ackermann). 2. Chanson et badinerie (Camus). 3. "Tanyris" (Hambour). 4. Melody (Lenon). 5. For Baby and Me (Meyer). 6. Sunday Child (Siede). 7. Je t'aimé (Fonder). 8. Selection (Grieg). 9. Scenes alsaciennes (Massenet).  
 9.0 p.m.—"Galathée"—Operatic Selection (Massé).  
 10.0 p.m.—News.  
 10.15 p.m. (approx.)—Close Down.

## CZECHO-SLOVAKIA

**BRATISLAVA.** Radio Bratislava. W.L. 263.2 m. (1,140 kc.); 0.5 kw.  
 5.35 p.m.—Recitation.  
 6.0 p.m.—Quartet Selection of Popular Music.  
 7.0 p.m.—Agricultural Report.  
 7.5 p.m.—Slovakian Lesson.  
 7.25 p.m.—Gramophone Music.  
 8.0 p.m.—Relay from Prague (348.9 m. 859 kc.)  
 10.20 p.m.—Relay from Prague.

**BRUENN.** Komarov. W.L. 441.2 m. (690 kc.); 3 kw.  
 Transmits at intervals from 12.15 p.m.  
 6.0 p.m.—Time and Market Prices.  
 6.20 p.m.—Talk.  
 7.0 p.m.—Orchestral Music.  
 8.20 p.m.—Concert: 1. Songs (Brahms). 2. Der Evangelmann (Kienzl). 3. Aria (Reger). 4. Songs (Wagner). 5. Selection (Mahler). 6. Lento ma non troppo (Strauss).  
 9.0 p.m.—Orchestral Music.  
 10.0 p.m.—Relay from Prague (348.9 m. 859 kc.)  
 10.20 p.m.—Relay from Bratislava (263.2 m. 1,140 kc.)

**PRAGUE.** Stranice. W.L. 348.9 m. (859 kc.); 5 kw.  
 Transmits at intervals from 10.50 a.m.  
 6.20 p.m.—German Transmission.  
 6.45 p.m.—Agricultural Report.  
 7.0 p.m.—Talk.  
 7.15 p.m.—Commercial Notes.  
 8.0 p.m.—Weather and News.  
 8.10 p.m.—Concert. 1. Souvenir de Smetana (Urbach). 2. Moravian Songs (Dokocil). 3. Potpourri of popular songs (Krieka). 4. Songs (Friml). 5. Three Preludes (Turnier). 6. Petit vals (Haselmanns).  
 9.0 p.m.—Literary Review.  
 9.20 p.m.—Concert. The Gipsy Baron (Strauss). 2. Danse (Gilbert). 3. Menuet de Charms (Dyck). 4. Künstlerleben (Strauss). 5. March (Fueick).  
 10.0 p.m.—Time, News and Orchestral Music.

## DENMARK

**COPENHAGEN.** Copenhagen Radio. W.L. 337 m. (890 kc.); 0.7 kw.  
 Programme relayed by Sorø, 1,153 m. (260 kc.)  
 6.30 p.m.—Five Minutes for Housewives.  
 6.35 p.m.—Wireless Notes.  
 7.0 p.m.—News, Exchange and Time.  
 7.30 p.m.—Talk, "French Romanticism."  
 8.0 p.m.—Concert of Russian Music.  
 9.0 p.m.—News.  
 9.30 p.m.—Orchestral Concert. 1. Pro Patria—March (Yener). 2. "Bocaccio"—Overture (Suppé). 3. Scottish Songs—Potpourri (Oelschlegel). 4. Alt Wiener Reigen for String Instruments (Strauss). 5. Curtain Lectures, Burlesque for Clarinet and Bassoon (Fueick). 6. Honka-Czardas (Michiels). 7. Radetzky March (Joh. Strauss).  
 10.30 p.m. (approx.)—Close Down.

## FRANCE

**PARIS.** Ecole Supérieure (FPTT). W.L. 447.8 m. (670 kc.); 0.5 kw.  
 Transmits at intervals from 8.0 a.m.  
 6.0 p.m.—Radio Journal de France.  
 8.0 p.m.—Talks.  
 9.0 p.m.—Orchestral Concert from the Works of Mozart. Followed by News and Dance Music.  
 12.0 midnight (approx.)—Close Down.

**PARIS.** Eiffel Tower (FL). W.L. 2,650 m. (113 kc.); 5 kw.  
 10.26 a.m.—Time.  
 6.45 p.m.—"Le Journal Parlé."  
 8.0 p.m.—Weather.  
 8.10 p.m.—Concert. 1. Orchestra, "Manfred"—Overture (Schumann). 2. Violin Solo—"Tambourin" (Leclair). 3. Two Songs from "Samson and Delilah" (Saint-Saëns). 4. Pianoforte Solo—Album Leaf (Galeotti). 5. Orchestra—Two Norwegian Dances (Grieg). 6. Violin Solo—Aria (Pergolesi). 7. Two Songs (Sinding). 8. Pianoforte Solo—Berceuse (Galeotti). 9. Orchestra—Norwegian Dances (Grieg).  
 9.15 p.m.—Educational Programme.  
 11.26 p.m.—Time.

**PARIS.** Radio-Paris (CFR). W.L. 1,760 m. (170 kc.); 3 kw.  
 10.30 a.m.—News and Exchange. Followed by Musical Selections.  
 12.30 p.m.—Orchestral and Solo Concert. 1. Carnival (Roberts). 2. Mensonge d'Amour (Suzon). 3. Se Fue (Seras). 4. Songs. 5. Mitza (Pompilio). 6. (a) Boite à Musique, (b) Les Lutins (Smet). 7. Pelerinage (Bonincontro). 8. Blue Waters (Waltham). 9. Scenes du Pardon (Smet), Bamboula (Gavel).  
 1.50 p.m.—Exchange and News.  
 4.30 p.m.—Exchange Quotations.  
 4.45 p.m.—Orchestral and Solo Concert.  
 5.35 p.m.—Market Prices.  
 8.0 p.m.—Exchange and News.  
 8.30 p.m.—"I Pagliacci"—Opera Selection (Leoncavallo). News in the intervals.

**TOULOUSE.** Radiophonie du Midi. W.L. 392 m. (765 kc.); 3 kw.  
 Transmits at intervals from 10.15 a.m.  
 8.0 p.m.—"Si j'étais Roi"—Operatic (Adam).  
 8.45 p.m.—Concert. 1. Polka des Officiers (Farbach). 2. A la Hongroise (Goublier). 3. Dans les Steppes (Fétras). 4. La Vague (Metra). 5. La Berline (Paul). 6. The Lancers (Metra). 7. Le Pas de Quatre (Lutz). 8. La Troika (Elsen). 9. Le Pas de Deux (Hervilliers). 10. Le Pas des Patineurs (Jouve). 11. Joyeux Nègre (Berger). 12. Old Faithful (Holzmann).

## GERMANY

**BERLIN.** Koenigswusterhausen. W.L. 1,250 m. (240 kc.); 8 kw.  
 Transmits at intervals from 6 a.m.  
 6.30 p.m.—English Lesson.  
 6.55 p.m.—Talk.  
 7.20 p.m.—Talk on "Philipp Otto Runge."  
 8.10 p.m.—Programme relayed from Voxhaus.

**BERLIN.** Voxhaus. W.L. 506 and 483.9 m. (530 and 620 kc.); 2 and 4 kw.  
 Transmits at intervals from 6 a.m.  
 6.40 p.m.—Talk on "The Heart and Heart Disease."  
 7.05 p.m.—Sports Talk.

7.30 p.m.—Wireless Talk.  
 Programme relayed by Koenigswusterhausen on 1,250 m. (240 kc.); and 8 kw.  
 8.10 p.m.—"Das Dorf ohne Glocke"—Musical play (Künnecke).  
 10.15 p.m. (approx.)—Weather and News.  
 10.30 p.m.—Concert of Hungarian Music.  
**FRANKFURT-am-MAIN.** Südwestdeutscher Rundfunk. W.L. 428.6 m. (700 kc.); 4 kw.  
 Transmits at intervals from 12 noon.  
 4.30 p.m.—Concert for Children.  
 5.45 p.m.—Review of Books.  
 6.15 p.m.—Talk for Women. Relayed from Cassel, 272.7 m. (1,100 kc.)  
 6.30 p.m.—Talk, "Confidence Tricks."  
 7.0 p.m.—Talk from Cassel.  
 7.30 p.m.—Chess Lesson.  
 8.0 p.m.—Answers to Correspondence.  
 8.15 p.m.—Concert of Czech Music.

**HAMBURG.** Norag (ha, in Morse). W.L. 396 m. (758 kc.); 4 kw.  
 Transmits at intervals from 5.45 a.m.  
 6.0 p.m.—Orchestral Music.  
 6.30 p.m.—Elementary English Lesson. Relayed from Koenigswusterhausen, 1,260 m. (240 kc.)  
 7.0 p.m.—Orchestral Music.  
 7.20 p.m.—Talk, "The Norwegian Peasantry."  
 7.55 p.m.—Weather.  
 8.15 p.m.—Concert by the Ondrick Quartet, Prague. Relayed from Frankfurt-am-Main, 428.6 m. (700 kc.)  
 9.20 p.m.—Song Recital by Clara Voss. 1. Lyrical Suite (Brahms). 2. Songs: (a) Liebestreu; (b) Feldeinsamkeit; (c) Meine Liebe ist grün; (d) Das vergessliche Ständchen (Brahms). 3. "Werther"—Selection (Massenet). 4. Dallah's Song from "Samson and Dallah" (Saint Saëns). 5. "Nalla"—Intermezzo (Delibes). 6. Songs: (a) Du melnes Herzens Krönlein; (b) Schlagende Herzen (Strauss). 7. "Ariadne in Naxos"—Suite (Strauss).  
 10.30 p.m. (approx.)—Concert from the Café Walthof. News.  
 12 midnight (approx.)—Close Down.

**LANGENBERG.** Westdeutscher Rundfunk. W.L. 468.8 m. (640 kc.); 25 kw.  
 Transmits at intervals from 10.30 a.m. Programme also relayed by Muenster on 241.9 m. (1,240 kc.)  
 6.30 p.m.—Gardening Hints, from Cologne.  
 6.40 p.m.—Technical Talk, from Muenster.  
 7.15 p.m.—Talk, "The Social Classes," from Muenster.  
 7.40 p.m.—Talk for Young People, "The Homeland," from Dusseldorf.  
 8.0 p.m.—Review of Books, from Cologne. (Langenberg only.)  
 8.0 p.m.—Talk, "Salzburg, the Rome of Germany," from Dortmund, 283 m. (1,060 kc.). (Muenster and Dortmund only.)  
 8.30 p.m.—Orchestral Concert, from Cologne. Followed by News, Sports Notes, and Dance Music.  
 12 midnight (approx.)—Close Down.

**STUTTGART.** Süddeutscher Rundfunk. W.L. 379.7 m. (790 kc.); 4 kw.  
 Transmits at intervals from 1.15 p.m.  
 6.0 p.m.—Time, Weather, Agricultural Notes.  
 6.15 p.m.—Talk, "I Like That."  
 6.45 p.m.—Wireless Talk.  
 7.15 p.m.—Spanish Lesson.  
 7.45 p.m.—Time, Weather, News.  
 8.0 p.m.—Symphony Concert. 1. Symphony in A major. 2. Comedy Overture (Gade).  
 9.0 p.m.—"Die Grosse Leidenschaft"—Comedy (Anerhheimer).

## HOLLAND

**HILVERSUM.** Algemeene Nederlandsche Radio Omroep. W.L. 1,070 m. (280 kc.); 5 kw.  
 Transmits at intervals from 11.40 a.m.  
 4.40 p.m.—Concert. 1. The Unfinished Symphony in B minor (Schubert). 2. Pianoforte Solos: (a) Ballad in D minor (Brahms), (b) Ballad in G minor (Brahms). 3. J'ai dit aux étolles (Paladine). 4. Pianoforte Solos: (a) Sonatine (Appeldoorn), (b) La fille aux cheveux de lin (Debussy).  
 5.40 p.m.—Talk.  
 6.10 p.m.—Concert. 1. The Liberty Bell (Souza). 2. "Die Schönbrenner"—Waltz (Lanner). 3. Amoretten-Ständchen (Kockert). 4. Die Backisch Parade (Lincke). 5. River Song (Rust).  
 7.25 p.m.—Police News.

7.50 p.m.—Concert of Italian Opera, relayed from the Concert Hall, Amsterdam. 1. Bass Solo, "Se oppressi ognor" from La Juive (Halévy). 2. Soprano Solo, "Morte de Liu" from "Turandot" (Puccini). 3. Baritone Solo, "Cavatine Figaro" from "The Barber of Seville" (Rossini). 4. Mezzo-Soprano Solo, "Romance" from "Sansone" (Sans Gène). 5. Tenor Solos: (a) "Lamento di Federico" from "L'Arlesienne" (Bizet), (b) "Ay, Ay, Ay" (Freire). 6. Soprano Solo, "Dinorah" (Meyerbeer). 7. Duet, "Del tempio al limitar" from "The Pearl Fishers" (Bizet). 8. Baritone Solo—Prologue from "I Pagliacci" (Leoncavallo). 9. Mezzo-Soprano Solo—Canzone russe. 10. Bass solo—"Piff, Paff" from "Les Huguenots" (Meyerbeer). 11. Soprano Solo—"Vissi d'arte" from "La Tosca" (Puccini). 12. Tenor Solos—(a) Elisir d'amore (Donizetti), (b) O Sole mio. 13. Soprano Solos, (a) Solvieg's Song (Grieg), (b) L'Echo (Eckert). 14. Soprano Solo—"In quelle trine" from "Manon" (Puccini). 15. Selection from "Lucia"—Act Two (Donizetti).  
 10.30 p.m. approx.—Close Down.

## ITALY

**MILAN.** Unione Radiofonica Italiana (IMI). W.L. 322.6 m. (930 kc.); 1.5 kw.  
 Transmits at intervals from 12.15 p.m.  
 8.30 p.m.—Opening Signal.  
 8.45 p.m.—Time.  
 8.47 p.m.—Technical Wireless Talk.  
 9.0 p.m.—"Don Pasquale"—Selection (Donizetti), followed by News.  
 11.0 p.m.—Dance Music. Relayed from the "Fiaschetta Toscana."  
 11.30 p.m. (approx.)—Close Down.

**NAPLES.** Unione Radiofonica Italiana (INA). W.L. 333.3 m. (900 kc.); 1.5 kw.  
 Transmits at intervals from 1.0 p.m.  
 8.55 p.m.—News.  
 8.58 p.m.—Harbour Notes.  
 9.0 p.m.—Concert.  
 9.30 p.m.—Time.  
 10.55 p.m.—Calendar.  
 11.0 p.m.—Closing Down Signal.

**ROME.** Unione Radiofonica Italiana (IRO). W.L. 450 m. (666 kc.); 3 kw.  
 Transmits at intervals from 1.0 p.m.  
 9.0 p.m.—Time, News, Exchange Quotations, and Weather.  
 9.10 p.m.—Concert of Choral and Symphony Music.  
 11.25 p.m.—News.  
 11.30 p.m. (approx.)—Close Down.

## LITHUANIA

**KOVNO.** Radio Kaunas. W.L. 2,000 m. (150 kc.); 7 kw.  
 7.30 p.m.—Time, Weather and News.  
 8.0 p.m.—Political News.

## NORWAY

**BERGEN.** Kringkastingselskap. W.L. 370.4 m. (810 kc.); 1 kw.  
 11.15 a.m.—Exchange Quotations.  
 12.15 p.m.—Weather and News.  
 8.25 p.m.—Fishing Notes.  
 8.30 p.m.—Concert by the Station Orchestra.  
 9.0 p.m.—Recitation by the Actor—Rolf Christensen.  
 9.30 p.m.—"Cello Recital" by Miss Cato Steiner.  
 10.0 p.m.—Weather, News and Time.

**OSLO.** Kringkastingselskapet. W.L. 461.5 m. (650 kc.); 1.5 kw.  
 Transmits at intervals from 11.10 a.m. Programme also relayed by Porsgrund 500 m. (600 kc.); Namar, 566 m. (530 kc.); Fredriksstad, 434.8 m. (690 kc.); Rjukan, 476 m. (630 kc.); and Notodden, 445 m. (674 kc.)  
 7.45 p.m.—News.  
 8.0 p.m.—Time.  
 8.5 p.m.—Orchestral Concert. 1. Overture in Italian Style (Schubert). 2. Liebeswalzer (Moscowski). 3. Il Tabarro (Puccini). 4. Le gavotte de Puyjoli (Massenet). 5. Persian Suite (Rubinstein).  
 9.0 p.m.—Talk on "Fishing."  
 9.30 p.m.—Norwegian Songs.  
 10.0 p.m.—News.  
 10.15 p.m.—Dance Music.  
 12 midnight (approx.)—Close Down.

## SPAIN

**BARCELONA.** Radio-Barcelona (EAJI). W.L. 344.8 m. (870 kc.); 2 kw.  
 Transmits at intervals from 12.00 noon.

8.30 p.m.—Lesson in Castilian Spelling.  
 9.0 p.m.—Exchange Quotations and News.  
 9.5 p.m.—Quintet Music.  
 9.30 p.m.—Talk.  
 9.50 p.m.—"Pavane" (d'Ambrosio), and "Sounds from the Sunny South"—Overture (Isenman), by the Station Quintet.  
 10.0 p.m.—Chimes and Weather.  
 10.10 p.m.—Selection from Plays. 1. "La Viejita" (Caballero) and "El Duo de la Africana" (Caballero).  
 12.0 midnight (approx.)—Close Down.

**MADRID.** Union Radio (EAJ7). W.L. 375 m. (800 kc.); 1.5 kw.  
 Transmits at intervals from 11.45 a.m.  
 2.0 p.m.—"Arty's Orchestra"—Interlude by Luis Medina, followed by Theatre Notes, Weather and News.  
 7.0 p.m.—"Arty's Orchestra."  
 10.0 p.m.—Time and Exchange quotations.  
 10.5 p.m.—Programme relayed from Barcelona, (EAJ1), 344.8 m. (870 kc.)  
 12.30 a.m. (approx.)—(Thursday, July 28th)—Close Down.

## SWEDEN

**STOCKHOLM.** Radiotjänst (SASA). W.L. 454.5 m. (660 kc.); 1.5 kw.  
 Programme also relayed by Motala, 1,320 m. (227 kc.); Göteborg 416.7 m. (720 kc.); and Malmö 260.9 m. (1,150 kc.)  
 7.45 p.m.—Meteorological Talk.  
 8.0 p.m.—Time.  
 8.15 p.m.—Contraalto and Pianoforte Solos relayed from Sundsvall, 645.6 m. (550 kc.)  
 8.45 p.m.—Recital of Poems.  
 9.15 p.m.—News.  
 9.30 p.m.—Weather.  
 9.40 p.m.—Biology Talk, relayed from Malmö.

## SWITZERLAND

**BERN.** Radio-Bern. W.L. 411 m. (730 kc.); 1.5 kw.  
 Transmits at intervals from 1.0 p.m.  
 8.0 p.m.—Time and Weather.  
 8.5 p.m.—Talk, "Bees and Man."  
 8.30 p.m.—Organ Recital from the French Church.  
 9.30 p.m.—The Kursaal Orchestra.  
 9.50 p.m.—News and Weather.  
 10.5 p.m.—The Kursaal Orchestra.  
 10.30 p.m. (approx.)—Close Down.

**GENEVA.** Radio-Geneva. W.L. 760 m. (395 kc.); 0.5 kw.  
 8.30 p.m.—Exchange, Time and Weather.  
 8.32 p.m.—Programme relayed from Bern (411 m.; 730 kc.) and Basle (1,100 m., 273 kc.)  
 9.30 p.m.—Legal Talk.  
 9.50 p.m.—News.  
 10.0 p.m. (approx.)—Close Down.

## U.S.A.

**PITTSBURGH.** Westinghouse Electric (KDKA). W.L. 315.9 m. (950 kc.); 30 kw.  
 Transmits at intervals from 4.0 p.m. Programme relayed on 64 m. (4,687 kc.) from 11.0 p.m.  
 11.0 p.m.—Baseball Scores, followed by Music by the Station Orchestra.  
 11.55 p.m.—Baseball Scores and Music.  
 11.20 a.m. (Thursday, July 28th).—Report of Road Conditions.  
 12.30 a.m.—"Power Period."  
 1.0 a.m.—Reading from R. L. Stevenson, relayed from New York.  
 1.30 a.m.—Concert from the "Honor Smith."  
 2.0 a.m.—"Maxwell Hour" relayed from New York.  
 3.0 a.m.—R.C.A. Radiotrons, relayed from New York.  
 4.0 a.m.—Weather and Baseball Scores.  
**SCHENECTADY, N.Y.** General Electric Company (WGY). W.L. 379.5 m. (790 kc.); 30 kw.  
 Transmits at intervals from 11.45 a.m. Relayed by 2XAD on 22.02 m. (13,623 kc.); from 11.0 p.m.  
 11.0 p.m.—Market Prices and News.  
 11.15 p.m.—Baseball Scores.  
 11.20 p.m.—"Review of the English Language."  
 11.40 p.m.—Studio Orchestra.  
 12.15 a.m.—(Thursday, July 28).—Baseball Scores.  
 12.20 a.m.—Agricultural Notes.  
 1.0 p.m.—Remington Band.  
 2.0 a.m.—Time.  
 2.5 a.m.—Troubadours from New York City.  
 2.30 a.m.—Lecture—Recital Validimir Karapetoff (Pianist).  
 3.15 a.m. (approx.)—Close Down.

# PROGRAMMES FOR THURSDAY

(July 28)

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

## IRELAND

**CORK.** Cork Broadcasting Station (6CK). W.L. 400 m. (750 kc).  
 2.30 p.m.—Weather, Stock Market Report and Gramophone Records.  
 6.30—10.30 p.m.—Programme relayed from Dublin (319.1 m. 940 kc).  
 —□—  
**DUBLIN.** Dublin Broadcasting Station (2RN). W.L. 319.1 m. (940 kc); 1.5 kw.  
 Transmits at intervals from 1.30 p.m. Programme relayed from Cork 400 m. (750 kc).  
 6.30 p.m.—Children's Corner.  
 7.0 p.m.—Gramophone Concert.  
 7.15 p.m.—Exchange Quotations and News.  
 7.30 p.m.—French Lesson by Mlle. Giudicelli.  
 7.45 p.m.—Talk, "The Evolution of the Irish Nation," by S. MacCall.  
 8.0 p.m.—"Prometheus"—Overture (Beethoven), by the Orchestra.  
 8.10 p.m.—Austrian Monologues by T. Rowley.  
 8.20 p.m.—Selection from "The Geisha" (Jones).  
 8.40 p.m.—Orchestral Selections and Tenor Solos by A. G. Dundas.  
 9.0 p.m.—Reading by C. Ni Dhalaiigh.  
 9.15 p.m.—Dance Music by Clarke Barry's Dance Band.  
 10.30 p.m.—News and Weather.  
 10.35 p.m. (approx.)—Close Down.

## BELGIUM

**BRUSSELS.** Radio-Belgique. W.L. 508.5 m. (590 kc); 1.5 kw.  
 5.0 p.m.—Programme for Children.  
 6.0 p.m.—Flemish Lesson.  
 7.30 p.m.—"Radio-Chronique."  
 8.0 p.m.—Swedish Programme: 1. The National Anthems of Belgium and Sweden. 2. Speech by M. Otto Leser. 3. "Les Gens du Värmland (Värmlänningarna)"—Musical Folk Comedy (Randel). 4. The Eve of St. John (Mid-sommarvakan) (Hugo Alfvén). 5. Pianoforte Solos: (a) Réverie (Sjögren); (b) Les Roses (Peterson-Berger); (c) Marche Nuptiale de Ulfaas (Soderman). 6. A l'Eglise de Frösö (Peterson-Berger). 7. Chant d'Été (Peterson-Berger). 8. Talk on "Sweden" by Mr. Otto Leser. 9. Two Swedish Ballads: (a) Messire Nils Chante au Son du Luth (Hallen); (b) Sten Sture (Swedborg). 10. Airs and Dances arranged for Orchestra. 11. Sonorité (Sjögren). 12. O Värmland Charmant. 13. Patriotic Hymn for Three Voices (Stenhammar). 14. Popular Dances (Soderman). 15. Rustic Wedding (Soderman). 16. Land of my Fathers.  
 10.30 p.m.—News.  
 10.45 p.m. (approx.)—Close Down.

## CZECHO-SLOVAKIA

**BRATISLAVIA.** Radio Bratislava. W.L. 263.2 m. (1,140 kc); 0.5 kw.  
 4.0 p.m.—Agricultural Report.  
 5.30 p.m.—Talk.  
 5.45 p.m.—Concert of Orchestral Music.  
 6.45 p.m.—Relay from Prague (348.9 m.; 859 kc).  
 7.0 p.m.—Talk.  
 7.25 p.m.—Gramophone Music.  
 8.0 p.m.—Relay from Prague.

**BRUENN.** Komarov. W.L. 441.2 m. (880 kc); 3 kw.  
 Transmits at intervals from 12.15 p.m.  
 6.0 p.m.—Time and Agricultural Report.  
 6.20 p.m.—Talk.  
 6.45 p.m.—Relay from Prague (348.9 m.; 859 kc).  
 7.0 p.m.—Concert. 1. Overture (Rimsky-Korsakoff). 2. L'Histoire (Napraynik). 3. Legend (Tchaikovsky). 4. Pique Dame (Tchaikovsky). 5. Scherzo (Kijui). 6. L'Ange (Warlanow). 7. The Nightingale (Libchenko). 8. Silenka (Sobolewsky). 9. Kamarinskaja (Glinka).  
 8.0 p.m.—Relay from Prague.

**PRAGUE.** Stranice. W.L. 348.9 m. (859 kc); 5 kw.  
 Transmits at intervals from 10.50 a.m.  
 6.15 p.m.—German Transmission.  
 6.45 p.m.—Agricultural Report.  
 7.0 p.m.—Talk.  
 8.0 p.m.—News.  
 8.10 p.m.—Concert of Light Music.  
 9.30 p.m.—Short Comedy.  
 10.0 p.m.—Time, News and Orchestral Music.

## DENMARK

**COPENHAGEN.** Copenhagen Radio. W.L. 337 m. (890 kc); 0.7 kw.  
 Programme relayed by Sorø, 1,153 m. (260 kc).  
 7.0 p.m.—News, Exchange and Time.  
 7.30 p.m.—Talk.  
 8.0 p.m.—Concert of Operetta Music. 1. "Prince Conti"—Overture (Leococq). 2. "Wo die Citronen Blüh'n," from "Eine Nacht in Venedig" (Joh. Strauss). 3. "The Merry Widow"—March (Léhar). 4. "Madame Favert"—Overture (Offenbach). 5. "Miss Helyett"—Selection (Audran). 6. "The Dollar Princess"—March (Fall).  
 9.0 p.m.—News.  
 9.30 p.m.—"Uncle's Love Story"—Musical Farce (Sophus Neumann).  
 10.0 p.m.—Orchestral Concert.  
 11.0 p.m. (approx.)—Close Down.

## FRANCE

**PARIS.** Ecole Supérieure (FPTT). W.L. 447.8 m. (670 kc); 0.5 kw.  
 Transmits at intervals from 8.0 a.m.  
 6.0 p.m.—Radio Journal de France.  
 8.0 p.m.—Espéranto Lesson.  
 9.0 p.m.—"L'Africaine"—Opera Selection (Meyerbeer).  
 —□—  
**PARIS.** Eiffel Tower (FL). W.L. 2,650 m. (113 kc.); 5 kw.  
 10.26 a.m.—Time.  
 6.45 p.m.—"Le Journal Parlé."  
 8.0 p.m.—Weather.  
 8.10 p.m.—Concert. 1. Orchestra, "Sigurd"—Selection (Reyer). 2. Tenor Solo from "Sigurd" (Reyer). 3. "Cello Solo—Chants Russes (Lalo). 4. Tenor Solo from "Le Roi d'Ys" (Lalo). 5. Orchestra, "Monsieur Beaucaire"—Selection (Messager). 6. Tenor Solos. 7. Orchestra, "La Périole"—Selection (Offenbach). 8. Tenor Solo—Credo d'Amant (Suzanne Quentin). 9. Orchestra, "La Danse des Libellules" (Léhar).  
 11.26 p.m.—Time.

**PARIS.** Petit Parisien. W.L. 340.0 m. (880 kc); 0.5 kw.  
 9.0 p.m.—Concert. 1. "The Magic Flute"—Overture (Mozart). 2. Allegro from the Brandenburg "Concerto No. 5" (Bach). 3. Adagio Molto and Cantabile from the Ninth Symphony (Beethoven). 4. Quintet (Mozart). 5. Ballet Music from "Prometheus" (Beethoven). 6. Minuet from "Orpheus" (Gluck). 7. Saltarelle from the "Symphonie Italienne" (Mendelssohn).

**PARIS.** Radio-Paris (CFR). W.L. 1,760 m. (170 kc); 3 kw.  
 10.30 a.m.—News and Exchange followed by Musical Selections.  
 12.30 p.m.—Orchestral and Solo Concert. 1. Mrs. Kennan (Box). 2. Selection (Wagner). 3. Patrie (Paladille). 4. Zyske la Moscovite (Herman and Thomas). 5. Marche Miniature (Kreisler). 6. "Hänsel and Gretel"—Prelude (Humperdinck). 7. (a) Cavatine (d'Ambrosio); (b) Le Bourdon (Lederer). 8. Divertissement Russe (Rabaud). 9. Cornet de Bonbons (Gillet). 10. Symphony (Franck). 11. Selections.  
 1.50 p.m.—Exchange and News.  
 4.40 p.m.—Exchange Quotations.  
 4.45 p.m.—Dance Music.  
 5.35 p.m.—Market Prices.  
 8.0 p.m.—Exchange and News.  
 8.30 p.m.—Concert of Rumanian Music and Songs.

**TOULOUSE.** Radiophonie du Midi. W.L. 392 m. (765 kc); 3 kw.  
 Transmits at intervals from 10.15 a.m.  
 8.0 p.m.—"Quand c'est une Femme."  
 8.45 p.m.—Concert. 1. "Lakmé"—Selection (Delibes). 2. "Lohengrin"—Selection (Wagner). 3. "Manon"—Selection (Massenet). 4. "Il Trovatore"—Selection (Verdi). 5. "Roméo and Juliet"—Selection (Gounod).

## GERMANY

**BERLIN.** Koenigswusterhausen. W.L. 1,250 m. (240 kc); 8 kw.  
 Transmits at intervals from 6 a.m.  
 6.30 p.m.—Spanish Lesson.  
 6.55 p.m.—Talk—"The Songs of Schubert," with illustrations.  
 7.20 p.m.—Talk—"The Agrarian Congress in Rome."  
 8.30 p.m.—Programme relayed from Hamburg, 396 m. (758 kc).  
 —□—  
**BERLIN.** Voxhaus. 566 and 483.0 m. (530 and 620 kc); 2 and 4 kw.  
 Transmits at intervals from 6 a.m.  
 6.40 p.m.—Technical Talk.

7.5 p.m.—Talk on "Tennis."  
 7.30 p.m.—Talk on "Accident Insurance and the Employer."  
 8.0 p.m.—Talk on "The Wonders of Sound."  
 8.30 p.m.—Programme of Waltzes by Weber, Gounod, Rosas, Strauss, Fétas and Lanner.  
 10.15 p.m. (approx.)—Weather and News.  
 10.30 p.m.—Dance Music.  
 12.30 a.m. (Friday July, 20th—approx.)—Close Down.

**FRANKFURT-am-MAIN.** Südwestdeutscher Rundfunk. W.L. 428.6 m. (700 kc); 4 kw.  
 Transmits at intervals from 12 noon.  
 6.15 p.m.—Talk for Gardeners.  
 7.15 p.m.—Talk, "Style and Form in Language."  
 8.0 p.m.—Pianoforte Recital—Samuel Feinberg, Moscow. Relayed from the Music Festival.  
 9.30 p.m.—Recitations by Dr. Rolf Prasch. Relayed from Cassel, 272.7 m. (1,100 kc).  
 —□—

**HAMBURG.** Norag (ha, in Morse). W.L. 396 m. (758 kc); 4 kw.  
 Transmits at intervals from 5.45 a.m.  
 6.0 p.m.—Orchestral Music.  
 6.50 p.m.—Talk, "The New Unemployment Insurance Regulations."  
 7.15 p.m.—Talk, "The Structure of the Universe."  
 7.40 p.m.—Talk for Tourists, "Mecklenburg."  
 7.55 p.m.—Weather.  
 8.0 p.m.—Talk, "The Breakfast of a Diplomat with Emperor Menelik of Abyssinia."

8.30 p.m.—Concert. Relayed by Koenigswusterhausen, 1,250 m. (240 kc). 1. "A Midsummer Night's Dream"—March (Mendelssohn). 2. Recitations: (a) A Summer Evening (Dehmel); (b) A Summer Night (Reinick); (c) Summer Roses (Conradi). 3. Songs: (a) Waldseligkeit; (b) Und Gestern hat er mir Rosen gebracht (Marx). 4. Barcarolle (Offenbach). 5. Song: Vom Monte Pinco (Grieg). 6. Song, Johannisnacht. 7. Recitations: (a) Summer Night Dream (Bierbaum); (b) Midsummer (Heyse). 8. Songs: (a) Waldesruh; (b) Holde, es flüster die Rosen (Müller v. d. Ocker). 9. Songs: (a) Liebeserwachen; (b) Spanish Serenade (Müller v. d. Ocker). 10. Song, Waldezauber (Müller v. d. Ocker). 11. Violin Solo. 12. Recitations: (a) The Nightingale (Theodor Storm); (b) Summer Night Hours (Lilencron). 13. Sommerabend (Waldteufel).  
 10.30 p.m. (approx.)—Concert from the Café Wallhof. News.  
 12 midnight (approx.)—Close Down.

**LANGENBERG.** Westdeutscher Rundfunk. W.L. 468.8 m. (640 kc); 25 kw.  
 Transmits at intervals from 10.30 a.m.  
 Programme also relayed by Muenster on 241.9 m. (1,240 kc).  
 6.30 p.m.—Talk, "Rubens and his Native Town," from Elberfeld.  
 7.15 p.m.—Technical Talk, from Cologne.  
 7.40 p.m.—Talk, "Good German," from Cologne.  
 8.0 p.m.—Talk from Dusseldorf. (Langenberg only).  
 8.0 p.m.—Announcement of Results of the Morse Competition (Dortmund and Muenster only), from Dortmund, 283 m. (1,080 kc).  
 8.30 p.m.—Concert on Instrumental Music and Recitations, from Elberfeld, followed by News, Sports Notes, and Dance Music, from the "Hotel Zur Post," Elberfeld.  
 12 midnight (approx.)—Close Down.

**STUTTGART.** Süddeutscher Rundfunk. W.L. 379.7 m. (790 kc); 4 kw.  
 Transmits at intervals from 1.15 p.m.  
 6.0 p.m.—Time, Weather, News.  
 6.15 p.m.—Literary Talk.  
 6.45 p.m.—Talk for Physicians.  
 7.15 p.m.—Chess Lesson.  
 7.45 p.m.—Talk on "Bathing Resorts."  
 8.0 p.m.—Time, Weather, and News.  
 8.15 p.m.—Popular Concert.  
 9.15 p.m.—Orchestral Concert.

## HOLLAND

**HILVERSUM.** Algemeene Nederlandsche Radio Omroep. W.L. 1,070 m. (280 kc); 5 kw.  
 11.40 p.m.—Police News.  
 12.15 p.m.—Programme of Music by the Station Trio.

5.40 p.m.—Concert by the Station Orchestra: 1. "Zampa"—Overture (Hérold). 2. "Hamlet"—Ballet Music (Thomas). 3. (a) Titan's Song from "Mignon" (Thomas); (b) "Spring" (Linden). 4. "Songe d'amour après le bal" (Czibulka). 5. Spanish Dance (Moszkovsky). 6. "Samson and Delilah"—Selection (Saint-Saëns). 7. (a) Dorfschwalben (Joh. Strauss); (b) Sonnelied (Van Rennes). 8. Slavonic Rhapsody (Meyer). 9. Barcarolle (Grünfeld). 10. Finale.  
 7.25 p.m.—Police News.  
 7.50 p.m.—Concert and Talk.  
 10.10 p.m.—Weather and News.  
 10.20 p.m. (approx.)—Close Down.

## ITALY

**NAPLES.** Unione Radiofonica Italiana (INA). W.L. 333.3 m. (900 kc); 1.5 kw.  
 Transmits at intervals from 1.0 p.m.  
 8.55 p.m.—News.  
 8.58 p.m.—Harbour Notes.  
 9.0 p.m.—Concert of Old and New Neapolitan Music.  
 9.30 p.m.—Time.  
 10.55 p.m.—Calendar.  
 11.0 p.m.—Closing Down Signal.  
 —□—  
**ROME.** Unione Radiofonica Italiana (IRO). W.L. 450 m. (666 kc); 3 kw.  
 Transmits at intervals from 1.0 p.m.  
 9.0 p.m.—Time, News, Exchange Quotations, and Weather.  
 9.10 p.m.—Orchestral and Vocal Concert.  
 11.25 p.m.—News.  
 11.30 p.m. (approx.)—Close Down.

## JUGO-SLAVIA

**ZAGREB.** Radio-Klub Zagreb. W.L. 310 m. (967 kc); 0.35 kw.  
 7.0 p.m.—Programme relayed from Vienna.

## LITHUANIA

**KOVNO.** Radio-Kaunas. W.L. 2,000 m. (150 kc); 7 kw.  
 7.0 p.m.—Talk.  
 7.30 p.m.—Time, Weather and News.  
 7.45 p.m. (approx.)—Close Down.

## NORWAY

**BERGEN.** Kringkastingselskap. W.L. 370.4 m. (810 kc); 1 kw.  
 11.15 a.m.—Exchange Quotations.  
 12.15 p.m.—Weather and News.  
 8.25 p.m.—Fishing News.  
 8.30 p.m.—Concert by the Station Orchestra.  
 9.0 p.m.—Talk by Mr. Carl Johansen (Barrister): "Reminiscences of the Congo."  
 10.0 p.m.—Weather, News and Time.

**OSLO.** Kringkastingselskapet. W.L. 481.5 m. (650 kc); 1.5 kw.  
 Transmits at intervals from 11.10 a.m.  
 Programme also relayed by Porsgrund, 500 m. (600 kc); Namar, 566 m. (530 kc); Frederikstad, 434.8 m. (690 kc); Rjukan, 478 m. (630 kc); and Notodden, 445 m. (674 kc).  
 7.15 p.m.—Studio Service.  
 7.45 p.m.—News.  
 8.0 p.m.—Time.  
 8.5 p.m.—Orchestral Concert.  
 9.0 p.m.—Talk on "Black and White."  
 9.30 p.m.—Recital of Hans E. Kinck's Drama.  
 10.0 p.m.—News.  
 10.15 p.m. (approx.)—Close Down.

## SPAIN

**BARCELONA.** Radio Barcelona (EAJT). W.L. 344.8 m. (870 kc); 2 kw.  
 Transmits at intervals from 12 (noon).  
 8.40 p.m.—English Lesson.  
 9.0 p.m.—Exchange Quotations and News.  
 9.5 p.m.—Music by the Station Quintet.  
 9.30 p.m.—Astronomy Talk by Don José Comas (Director of the Fabra Observatory).  
 9.50 p.m.—"Entre Flores"—Andalusian Dance (Pacheco).  
 10.0 p.m.—Chimes and Weather.  
 10.5 p.m.—Stock Exchange Closing Prices.  
 10.10 p.m.—Song Recital. 10.40 p.m.—"Berceuse" (Grieg), and "Si j'étais Roi"—Overture (Adam), by the Station Quintet.  
 11.0 p.m. (approx.)—Close Down.

**MA DRID.** Union Radió (EAJ7). W.L. 375 m. (800 kc); 1.5 kw.  
 Transmits at intervals from 11.45 a.m.  
 2.0 p.m.—"Arty's Orchestra." Interlude by Luis Medina, followed by Theatre Notes, Weather and News.  
 7.0 p.m.—"Arty's Orchestra." Interlude by Luis Medina.  
 10.0 p.m.—Time. Selections by the Station Orchestra and Concert by the Municipal Band, followed by News.  
 12.30 a.m. (approx. Friday, July 29th)—Close Down.

## SWEDEN

**STOCKHOLM.** Radiotjänst (SASA). W.L. 454.5 m. (660 kc); 1.5 kw.  
 Programme also relayed by Motala, 1,320 m. (227 kc); Göteborg, 416.7 m. (720 kc); and Malmö, 260.9 m. (1,150 kc).  
 7.30 p.m.—Concert—1. The Bartered Bride—Overture (Smetana). 2. Elsa's Dream from "Lohengrin" (Wagner). 3. (a) Schmerzen (Wagner); (b) Im Treibhaus (Wagner); (c) Traume (Wagner). 4. Selection from "Manon Lescaut" (Puccini). 5. Air from "Giocanda" (Ponchielli). 6. Eine Nacht auf dem kalhen Berg (Moussorgsky). 7. (a) Romance from "L'Africaine" (Meyerbeer); (b) Micaela's Song from "Carmen" (Bizet); (c) Song from "Macbeth" (Verdi). 8. Selection from "Der Zarewitsch" (Léhar).  
 8.0 p.m.—Time.  
 9.15 p.m.—News.  
 9.30 p.m.—Weather.  
 9.40 p.m.—Talk—"The Colour of the Sea," relayed from Malmö.

## SWITZERLAND

**BERN.** Radio-Bern. W.L. 411 m. (760 kc); 1.5 kw.  
 Transmits at intervals from 1.0 p.m.  
 8.0 p.m.—Time and Weather.  
 8.5 p.m.—Operatic Song Recital (Tenor) with Orchestral Interludes from the Kursaal.  
 9.50 p.m.—News and Weather.  
 10.5 p.m.—The Kursaal Orchestra.  
 10.30 p.m. (approx.)—Close Down.

**GENEVA.** Radio Geneva. W.L. 700 m. (395 kc); 0.5 kw.  
 8.30 p.m.—Exchange, Time and Weather.  
 8.32 p.m.—Concert from the Hotel Métropole: Gavotte (Gluck). 2. Le Jongleur de Notre-Dame—Selection (Massenet). 3. Dolly—Berceuse (Fauré). 4. Prière de la Symphonie Légendaire (Godard). 5. La Bohème—Selection (Puccini).  
 9.30 p.m.—News.  
 10.0 p.m. (approx.)—Close Down.

## U.S.A.

**PITTSBURGH.** Westinghouse Electric (KDKA). W.L. 315.9 m. (950 kc); 30 kw.  
 Transmits at intervals from 4.0 p.m.  
 Programme relayed on 64 m. (4,687 kc); from 11.0 p.m.  
 11.0 p.m.—Baseball Scores and Music.  
 12.20 a.m. (Friday, July 29).—Report of the Road Conditions.  
 12.30 a.m.—A Short Sketch (Kountz).  
 1.30 a.m.—"Our Musical United States." Relayed from New York.  
 2.0 a.m.—Boxing Match—Dempsey v. Sharkey. Relayed from New York, followed by Time.  
 4.0 a.m.—Weather and Baseball Scores.

**SCHENECTADY, N.Y.** General Electric Company (WGY). W.L. 379.5 m. (790 kc); 30 kw.  
 Transmits at intervals from 11.45 a.m.  
 Relayed by 2XAF on 32.77 m.; (9,155 kc), from 11.0 p.m.  
 11.0 p.m.—Market Prices and News.  
 11.25 p.m.—Baseball Scores.  
 11.30 p.m.—Powell Inn Orchestra.  
 12.25 a.m. (Friday, July 29th).—Baseball Scores.  
 12.30 a.m.—"The Story of America."  
 12.45 a.m.—Studio Musical Programme.  
 1.0 a.m.—National Light Opera Company.  
 2.0 a.m.—Time.  
 2.2 a.m.—Eskimos from New York.  
 3.0 a.m.—Venetian Mandollers.  
 3.30 a.m.—News and Time.  
 4.0 a.m.—Dance Music from New York.  
 4.30 a.m.—Organ Recital.  
 5.30 a.m. (approx.)—Close Down.





PROGRAMMES FOR SATURDAY—(Cont.)

ROME. Unione Radiofonica Italiana (IRO). W.L. 450 m. (667 kc); 3 kw.
1.0 p.m.—News.
5.0 p.m.—News, Exchange Quotations, and Weather.
5.20 p.m.—Wireless Notes.
5.45 p.m.—Concert of Vocal and Instrumental Music. 1. Trio Op. 1, No. 2 for Piano (Beethoven). 2. Romance from "Aida" (Verdi). 3. Air from "Isabeau" (Mascagni). 4. Air from "La Sonnambula" (Bellini). 5. "Oh what feelings," from "The Marriage of Figaro" (Mozart). 6. Trio in E minor, Op. 23 (Zanella). 7. "I have not a poor little room"—Air from "La Bohème" (Leoncavallo). 8. Air from "L'Amico Fritz" (Mascagni). 9. Air (Grieg). 10. "O Robert! my Beloved"—Air from "Robert le Diable" (Meyerbeer).
6.50 p.m.—Agricultural Notes.
9.0 p.m.—Time, News, Exchange Quotations, and Weather.
9.10 p.m.—Programme relayed from a Rome Theatre. In the interval: Review of Periodicals.
11.25 p.m. (approx.)—News.

10.15 p.m.—Dance Music, relayed from the "Café Boulevard."
OSLO. Kringkastingsselskapet. W.L. 461.5 m. (650 kc); 1.5 kw. Transmits at intervals from 11.10a.m. Programme also relayed by Porsgrund, 500 m. (600 kc); Hamar, 566 m. (530 kc); Frederikstad, 434.8 m. (690 kc); Rjukan, 476 m. (630 kc); and Notodden, 445 m. (674 kc).
7.15 p.m.—Prose Reading.
7.45 p.m.—News.
8.0 p.m.—Time.
8.5 p.m.—Orchestral Concert. 1. Felsenmühle (Reissiger). 2. En Valsant (Friedmann). 3. Symphony No. 6 (Haydn). 4. Le moulin frivolin (Gillet).
9.0 p.m.—Talk, on "The Scandinavian Students' Voyage to Nordkap."
9.30 p.m.—Concert of Vocal Selections.
10.0 p.m.—News.
10.15 p.m.—Dance Music.
11.0 p.m. (approx.)—Close Down.

POLAND

WARSAW. Polskie Radio. W.L. 1,111.1 m. (270 kc); 10 kw. Transmits at intervals from 12 noon.
3.0 p.m.—Economics Talk and Weather.
7.15 p.m.—Variety Items.
7.35 p.m.—Hygiene Talk.
8.30 p.m.—Concert.
10.0 p.m.—Weather and Time.
10.30 p.m.—Dance Music.

SPAIN

BARCELONA. Radio-Barcelona (EAJ1). W.L. 344.8 m. (870 kc); 2 kw.
12.0 noon.—Chimes and Weather.
5.30 p.m.—Selections by the Station Quintet. 1. "Las pobres millonarios"—Charleston (Demon). 2. Selection from "The Merry Widow" (Léhar). 3. Confession d'amour (Kockert). 4. Vidalita mia (Valis). 5. Arena tragicapaso-doble (Cuevas).
8.30 p.m.—Elementary French Lesson.

9.0 p.m.—Talk, "Flies as a Menace to Infant Hygiene."
9.15 p.m.—Programme of Music by the "Demons Jazz" Orchestra. 1. "Peppita"—Spanish Fox-trot (Harry). 2. Mock the Bird—Shimmy (Dixan). 3. Pompoff and Teddy (Demon). 4. Escuchame—Tango (Montilla-Morales). 5. Orgie—Fox-trot (Doiras Fors). 6. Back to Me—Charleston (Johnston).
10.0 p.m.—Chimes and Weather.
10.5 p.m.—Programme relayed from Union-Radio, Madrid (EAJ7), 375 m. (800 kc).

CADIZ. Union Radio (EAJ3). W.L. 400 m. (750 kc); 0.55 kw.
7.5 p.m.—Vocal Recital of Argentine Tangos (Spaventa).
7.20 p.m.—Talk for Women.
7.35 p.m.—Spanish Songs by Srta. Pepita Munoz, in the interval—Pianoforte Music.
7.50 p.m.—News.
8.0 p.m.—Time.
8.2 p.m.—Concert by the Station Orchestra.
9.0 p.m. (approx.)—Close Down.
12.0 midnight—Experimental Transmission.

MADRID. Union Radio (EAJ7). W.L. 375 m. (800 kc); 1.5 kw. Transmits at intervals from 11.45 a.m.
2.0 p.m.—"Arty's Orchestra"—Interlude by Luis Medina, followed by Theatre Notes, Weather, News and Review of Books.
7.0 p.m.—"Arty's Orchestra."
10.0 p.m.—Time.
10.5 p.m.—Selection from a Musical Play, by the Station Choir and Orchestra. News.
12.30 a.m. (approx.) (Sunday, July 31st)—Close Down.

SWEDEN

STOCKHOLM. Radiotjänst (SASA). W.L. 454.5 m. (660 kc); 1.5 kw. Programme also relayed by Motala, 1,320 m. (227 kc), Göteborg, 416.7 m. (720 kc), and Malmö, 260.9 m. (1,150 kc).
6.0 p.m.—Children's Corner.
6.40 p.m.—Sports News.
7.0 p.m.—Concert of Light Music. 1. The Caliph of Bagdad—Overture (Boieldieu). 2. Selection from "The Force of Destiny" (Verdi).

3. (a) New Vienna—Waltz (Engel), (b) Liebeslied (Engel-Berger), (c) Wienertanz (Gartner), (d) Der Rosenkavalier—Waltz (Strauss). 4. American Suite (Thurban). 5. (a) Dance from "Feramors" (Rubinstein), (b) Nails—Intermezzo (Dellbes), (c) Despled Love—Waltz (Lincke). 6. Selection from "Clo-Clo" (Léhar).
8.0 p.m.—Time.
8.30 p.m.—Cabaret Music.
9.15 p.m.—News.
9.30 p.m.—Weather.
9.45 p.m.—Talk: "Professions and Professionals," relayed from Malmö.
10.0 p.m.—Old Dance Tunes.
11.0 p.m.—Song Recital.
11.15 p.m.—Dance Music by the Rolf Orchestra.
12.15 a.m. (Sunday, July 31st) (approx.)—Close Down.

SWITZERLAND

BERN. Radio-Bern. W.L. 411 m. (730 kc); 1.5 kw.
1.0 p.m.—Time, Weather, Exchange and Gramophone Selections.
3.56 p.m.—International Time Signal from Neuchâtel.
4.0 p.m.—The Kursaal Orchestra.
4.30 p.m.—Children's Corner.
5.0 p.m.—The Kursaal Orchestra.
8.0 p.m.—Time and Weather.
8.5 p.m.—Concert of Swiss Songs and Music.
9.20 p.m.—The Kursaal Orchestra.
9.50 p.m.—News and Weather.
10.5 p.m.—Dance Music.
11.30 p.m. (approx.)—Close Down.

GENEVA. Radio Geneva. W.L. 760 m. (395 kc); 0.5 kw.
8.30 p.m.—Exchange, Time and Weather.
8.32 p.m.—Concert relayed from the Promenade des Bastions: News in the interval. If weather prevents, Orchestral Music from the Hotel Metropole.
10.0 p.m.—Dance Music by the Kursaal Orchestra.
11.0 p.m. (approx.)—Close Down.
LAUSANNE. Société Romande de Radiophonie. W.L. 850 m. (353 kc); 0.6 kw.
7.0 a.m.—Weather.
1.0 p.m.—Weather, Time, Exchange Quotations and Gramophone Records.

8.30 p.m.—Weather.
8.31 p.m.—Open Air Concert.
ZURICH. Radio Genossenschaft. W.L. 588 m. (510 kc); 1 kw. Transmits at intervals from 12.28 p.m.
5.20 p.m.—Concert by the "Edelweiss" Accordeon Club.
5.55 p.m.—Weather and News.
8.0 p.m.—Concert of Folk Music.
10.10 p.m.—News and Weather.
10.20 p.m.—Dance Music. Relayed from the Hotel Baur au Lac.
11.0 p.m. (approx.)—Close Down.

U.S.A.

PITTSBURGH. Westinghouse Electric (KDKA). W.L. 315.9 m. (950 kc); 30 kw. Programme relayed on 64 m. (4768 kc); from 11.0 p.m.
4.0 p.m.—Weather and Market Prices.
5.57 p.m.—Time.
6.0 p.m.—Weather and Stock Market Report.
8.30 p.m.—Baseball Scores (every half-hour).
11.0 p.m.—Baseball Scores followed by Programme of Dinner Music.
11.55 p.m.—Baseball Scores, and relay of Weekly Meeting of the Pittsburgh Radio Club.
2.20 a.m. (Sunday, July 31).—Report of Road Conditions.
12.30 a.m.—Variety Concert.
4.0 a.m.—Weather and Baseball Scores.

SCHENECTADY, N.Y. General Electric Company (WGY). W.L. 379.5 m. (790 kc); 30 kw. Transmits at intervals from 11.45a.m. Relayed by 2XAF on 92.77 m. (9,155 kc); from 12.25 a.m. (Sunday, July 31).—Baseball Scores.
12.30 a.m.—Orchestral Music from Hotel Onondaga, Syracuse.
1.30 a.m.—Musical Programme from WHAM Studio, Rochester.
2.30 a.m.—Programme from New York.
3.0 a.m.—Programme from New York.
4.0 a.m.—Dance Music.
5.0 a.m. (approx.)—Close Down.

PROGRAMMES FOR SUNDAY

(Continued from page 86.)

10.30 a.m.—Sacred Vocal and Instrumental Music.
1.0 p.m.—News.
4.15 p.m.—Vocal and Instrumental Concert. 1. (a) "I Capuleti e Montecchi"—Air (Bellini); (b) "Peace, Peace O God"—Air from "The Force of Destiny" (Verdi); (c) Lyric (Ferroni). 2. (a) "Mélodie" (Rachmaninoff); (b) Liebeslied (Liszt); (c) Pathos (Florida).
5.15 p.m.—Children's Corner.
5.45 p.m.—Forestry Notes and News.
8.30 p.m.—Opening Signal.
8.45 p.m.—Time.
9.0 p.m.—Variety Concert. 1. "Il Guarany"—Symphony (Gomez). 2. Talk, "The History of Opera-Comique." 3. Baritone Songs: (a) "O Alexandria," from "Thais" (Massenet); (b) April (Tosti). 4. Scherzo in C Sharp Minor (Chopin). 5. (a) Soprano Songs: (a) "O Blue Sky," from "Aida" (Verdi); (b) "Since the day I gave myself to you," from "Louise" (Charpentier). 6. Orchestral Selection—"Nebuchadnezzar"—Symphony (Verdi). 7. Tenor Songs: (a) "The Slave" (Gomez); (b) "But through for aye from thee I'm torn," from "The Force of Destiny" (Verdi). 8. "I Lituani"—Symphony (Ponchielli). 9. "Stand motionless and gaze on the ground"—Baritone Song from "William Tell" (Rossini). 10. (a) "Aufschwung" (Schumann), and (b) Romance (Henselt)—Pianoforte Solos. 11. "Spring"—Tenor Song (Tosti). 12. "William Tell"—Symphony (Rossini).
10.50 p.m.—Sports Notes.
11.0 p.m.—Light Music.
11.30 p.m. (approx.)—Close Down.

Concert. 1. Poet and Peasant—Overture (Suppé). 2. Se tu m'am! (Pergolesi). 3. "I have lost my Eurydice"—Air from "Orpheus" (Gluck). 4. "Il pescatore canta" (Tosti). 5. Baritone Song (de Laya). 6. "Ninna Nanna" (Tirindelli). 7. Bimba Bibbetta (Stibella). 8. Arabesque (Debussy). 9. Gavotte-Op. 82, No. 5 (Reger). 10. Soprano Song from "Adrienne Lecouvreur" (Cilea). 11. Baritone Song from "L'Africain" (Meyerbeer). 12. Air from "Andrea Chénier" (Giordano). 13. Fymphony (Verdi).
9.30 p.m.—Time.
10.0 p.m.—Sports Notes.
10.55 p.m.—Calendar.
11.0 p.m. (approx.)—Close Down.

ROME. Unione Radiofonica Italiana (IRO). W.L. 450 m. (666 kc); 3 kw.
10.30 a.m.—Concert of Instrumental and Vocal Music.
1.0 p.m.—News.
5.30 p.m.—Concert. Relayed from "La Casina delle Rose."
8.20 p.m.—News.
9.0 p.m.—Time, Forestry Notes, Press and Sports News.
9.10 p.m.—Instrumental and Vocal Concert. 1. "Il Carillon Magico" (Mangiagalli). 2. "I have lost my Eurydice"—Air from "Orpheus" (Gluck). 3. Air from "L'amore dei tre Re" (Montemezzi). 4. Fashion Review. 5. Air from "Louise" (Charpentier). 6. "Cecilia" (Strauss). 7. "A Night in Madrid"—Overture (Glinka). 8. Duet from "Der Rosenkavalier" (Strauss). 9. Bass Song from "Mephistopheles" (Boito). 10. Medical Hygiene Talk. 11. Selection from "Francesco da Rimini"—Opera (Zandonini).
11.25 p.m.—News.
11.30 p.m. (approx.)—Close Down.

JUGO-SLAVIA

ZAGREB. Radio-Klub Zagreb. W.L. 310 m. (967 kc); 0.35 kw.
5.0 p.m.—Concert.
8.30 p.m.—Trio Selections.

10.0 p.m.—Relay from the Rathauskeller.

LITHUANIA

KOVNO. Radio-Kaunas. W.L. 2,000 m. (150 kc); 7 kw.
4.0 p.m.—News for Farmers.
5.0 p.m.—Talk, followed by Concert.
6.0 p.m.—Time and Weather.
6.5 p.m.—Political Talk.
6.30 p.m.—Concert.

NORWAY

BERGEN. Kringkastingsselskap. W.L. 370.4 m. (810 kc); 1 kw.
10.30 a.m.—Divine Service.
12.30 p.m.—Weather.
5.0 p.m.—Evensong.
7.55 p.m.—Fishing Notes.
8.0 p.m.—Concert by the Station Orchestra.
9.0 p.m.—Talk by Mr. Karl Just.
9.30 p.m.—Music by the "Twin City" Lutheran Quartet.
10.0 p.m.—Weather, News and Time.
10.15 p.m.—Dance Music, relayed from the Hotel Norge.

OSLO. Kringkastingsselskapet. W.L. 461.5 m. (650 kc); 1.5 kw. Programme relayed by Porsgrund, 500 m. (600 kc); Hamar, 566 m. (530 kc); Fredriksstad, 434.8 m. (690 kc); Rjukan, 476 m. (630 kc); and Notodden, 445 m. (674 kc).
10.30 a.m.—Divine Service from St. Saviour's Church, Oslo.
6.0 p.m.—Evensong from St. Saviour's Church, Oslo.
7.45 p.m.—News.
8.0 p.m.—Time.
8.5 p.m.—Orchestral Concert.
9.0 p.m.—Poetry and Prose Reading.
9.30 p.m.—Concert of Vocal Selections.
10.0 p.m.—News.
10.15 p.m.—Dance Music.
12.0 midnight (approx.)—Close Down.

SPAIN

BARCELONA. Radio-Barcelona (EAJ1). W.L. 344.8 m. (870 kc); 2 kw.
9.0 p.m.—Exchange Quotations and Market Prices.
9.20 p.m.—Sports Notes.
9.20 p.m.—Concert by the Station Quintet. 1. "Addio"—March (Barbieroli). 2. "El chulo"—Schottische (Bas). 3. "Juristen"—Dance (J. Strauss). 4. "Werther"—Selection (Massenet).

5. "Son las tres"—Tango (Villa).
6. Alma andaluzá—Serenade (Marlan).
10.0 p.m.—Relay of the Festivities in Celebration of the Feast of St. James. Flamenco Songs, Dances, Pianoforte Music, and Fortune-Telling.
10.30 p.m.—Quintet Music.
11.0 p.m. (approx.)—Close Down.

MADRID. Union Radio (EAJ 7). W.L. 375 m. (800 kc); 1.5 kw.
2.0 p.m.—Selections by the "Arty's" Orchestra. Interlude by Luis Medina.
7.0 p.m.—Children's Corner and Concert by the "Arty's" Orchestra.
10.0 p.m.—Time.
10.2 p.m.—Concert by the Station Orchestra and Selections by the Municipal Band.
12.30 a.m. (Monday, July 25).—Close Down.

SWEDEN

STOCKHOLM. Radiotjänst (SASA). W.L. 454.5 m. (660 kc); 1.5 kw. Programme also relayed by Motala, 1,320 m. (227 kc); Göteborg, 416.7 m. (720 kc); and Malmö, 260.9 m. (1,150 kc).
11.0 a.m.—Divine Service from Malmö.
5.0 p.m.—Children's Corner.
5.55 p.m.—Chimes from the Town Hall, Stockholm.
6.0 p.m.—Evensong.
7.15 p.m.—Literary Recital.
7.45 p.m.—Concert by the Band of the Royal Navy: 1. Marche des petits Japonais (Gauwin). 2. Die Volgazeuner—Overture (Spialek). 3. Tutta Grazia—Mazurka (Tarditi). 4. Oriental Suite (Popy). 5. Die Dorfschwalben—Waltz (Strauss). 6. Selection from "Carmen" (Bizet). 7. Four Italian Songs. 8. Selection from Cavalleria Rusticana (Mascagni). 9. An dem Frühling (Grieg). 10. Bojarernas intåg—March (Halvorsen).
9.40 p.m.—Old Dance Tunes.
10.30 p.m. (approx.)—Close Down.

SWITZERLAND

BERN. Radio-Bern. W.L. 411 m. (730 kc); 1.5 kw.
10.30 a.m.—Morning Concert.
4.0 p.m.—Time and Weather.
7.5 p.m.—Concert by the Juvenile Accordeon Club, Burgdorf.

2.30 p.m.—Talk, "The Nutritious Qualities of Bread."
3.30 p.m.—The Kursaal Orchestra.
8.0 p.m.—Time and Weather.
8.5 p.m.—Concert of German Songs with Orchestral Interludes with the Kursaal.
9.50 p.m.—Sports Notes, News and Weather.
10.5 p.m.—The Kursaal Orchestra.
10.30 p.m. (approx.)—Close Down.

ZURICH. Radio Genossenschaft. W.L. 588 m. (510 kc); 1 kw.
1.0 p.m.—Music by the "Koppell" Orchestra.
2.45 p.m.—Catholic Address.
4.0 p.m.—Orchestral Concert.
5.20 p.m.—Protestant Address.
7.58 p.m.—Time and Weather.
8.0 p.m.—Programme of Chamber Music.
8.30 p.m.—Talk on "Pushkin."
9.0 p.m.—Concert of Russian and German Songs.
10.10 p.m.—News and Weather.
10.20 p.m. (approx.)—Close Down.

U.S.A.

PITTSBURGH. Westinghouse Electric (KDKA). W.L. 315.9 m. (950 kc); 30 kw.
7.0 p.m.—"Roxy's Gang" Relayed from New York.
11.30 p.m.—Baseball Scores.
12.30 a.m. (Monday, July 25th).—Baseball Scores.
1.0 a.m.—Concert by the Municipal Band. Relayed from Schenley Park.
2.0 a.m.—Concert by the New York Philharmonic Orchestra. Relayed from WJZ, New York.

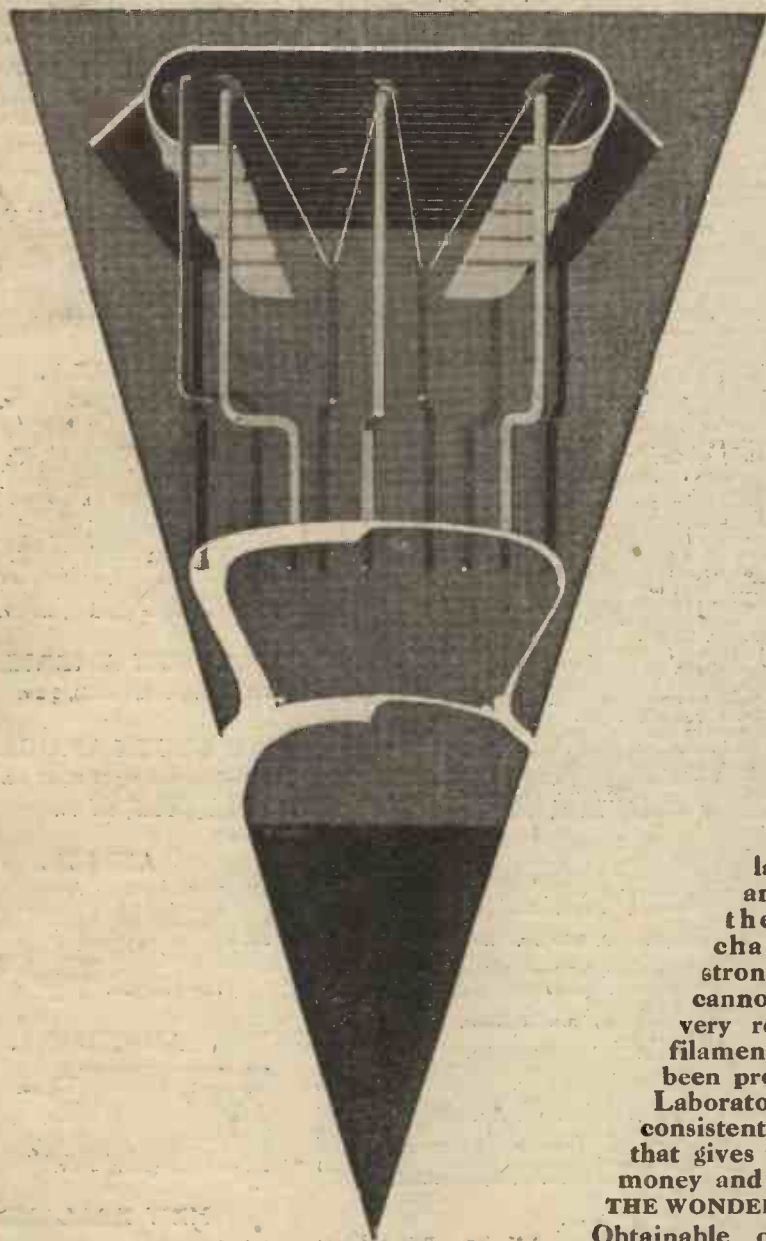
SCHENECTADY, N.Y. General Electric Company (WGY). W.L. 379.5 m. (790 kc); 30 kw. Transmits at intervals from 4.0 p.m. Relayed by 2XAD on 92.02 m.; (13,623 kc) from 12.20 a.m. (Monday, July 25).
7.0 p.m.—Musical Programme from WMAK Studio, Buffalo.
12.20 a.m. (Monday, July 25).—Capitol Theatre Programme from New York City.

2.15 a.m.—Time.
2.16 a.m.—Atwater Kent Programme.
2.45 a.m.—Talks by well-known People.
3.0 a.m. (approx.)—Close Down.





# The WONDERFUL P.M. FILAMENT



A large powerful, lasting filament with ample length to ensure the finest operating characteristics . . . a strong, tough filament that cannot be broken except by the very roughest handling . . . a filament whose life and power have been proved by National Physical Laboratory Test to be long and consistent . . . A British Filament that gives you the fullest value for your money and improves all radio receivers. **THE WONDERFUL MULLARD P.M. FILAMENT.** Obtainable only in Mullard P.M. Valves.

**NOTE**  
the great length and robust construction of the wonderful P.M. Filament shown in the sectional view of the P.M.5X above.

## Mullard

**THE MASTER VALVE**

Advt. The Mullard Wireless Service Co., Ltd.,  
Mullard House, Denmark St., London, W.C.2