

A COLOURED BROADCASTING MAP FREE WITH THIS ISSUE.

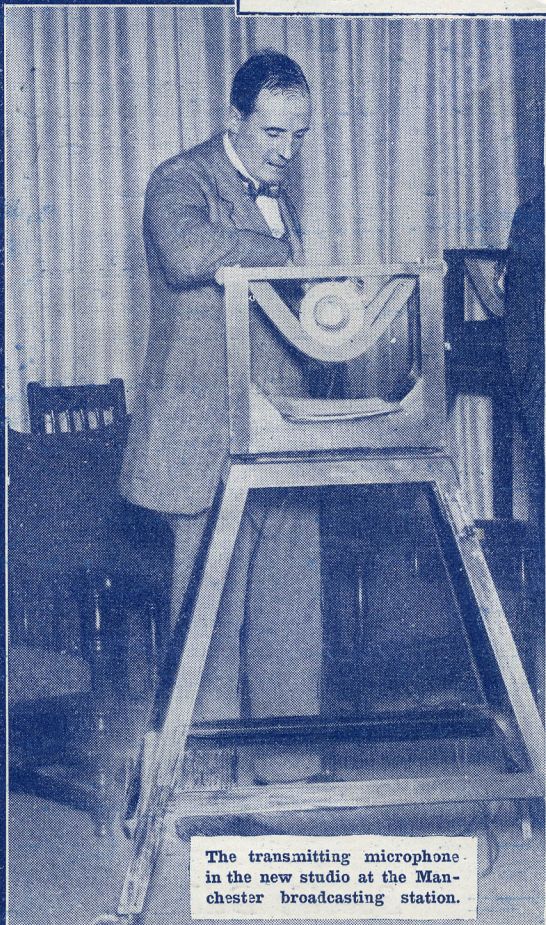
Popular Wireless

PRICE 3d.

and Wireless Review

EVERY THURSDAY.

SCIENTIFIC ADVISER : SIR OLIVER LODGE, F.R.S., D.Sc.



The transmitting microphone in the new studio at the Manchester broadcasting station.

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FEATURES IN THIS ISSUE.

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Practical Ideas for Experimenters.

Twilight and the Heaviside Layer.

An Efficient Slide Inductance.

POPULAR WIRELESS

AND WIRELESS REVIEW.

January 17th, 1925.] THE RADIO WEEKLY WITH THE LARGEST CIRCULATION. [Every Thursday, Price 3d

Technical Editor :
G. V. DOWDING, Grad.I.E.E.Editor :
NORMAN EDWARDS, M.Inst.R.E., F.R.G.S.Scientific Adviser :
Sir OLIVER LODGE, F.R.S.

RADIO NOTES AND NEWS OF THE WEEK.

The "Multidyne."

A SERIES of articles under this title are now in active course of preparation, and will shortly be published, week by week, in P.W. The "Multidyne" is an ideal set for the experimenter, enabling him to utilise an almost unlimited number of circuits by a simple plug-in arrangement which does not necessitate the dismantling of any component parts. The "Multidyne" does not claim to be a new invention: it is, however, a very meritorious improvement in experimental design, and as such it will be presented at an early date to P.W. readers.

* * *

"Best Way" Wireless Books.

DO not fail to secure your copies of the two "Best Way" Wireless books now on sale, price 6d. each.

These magnificently produced guides for wireless constructors represent the best value ever offered to amateurs. The "Best Way" Book, No. 162, entitled "How to Make Valve Sets," contains five detailed constructional articles by well-known experts—and you can't go wrong.

* * *

A Free Blue Print.

THE "Best Way" book, No. 162, also contains a large Pictorial Blue Print; and No. 161, "How to Make Crystal Sets," will supply a long-felt want among crystal set enthusiasts. Both books can now be purchased at ANY bookstall or newsagents, price 6d. each.

* * *

Lifting the Ban.

THE removal of the ban on foreign apparatus, which became effective on January 1st, has not had time to affect the British market yet, but developments are being eagerly awaited. Whilst there is a natural disposition to support home industries, the average listener does not overlook the great discrepancy in price between some Continental and similar British products. There is a feeling that the coming competition will ginger-up the tendency to reduce prices which seems to have halted during the past few months.

The Government's Bill.

ANOTHER feature of the New Year which is being watched with interest is the Government's promised radio Bill to regulate the position of licence holders. The G.P.O. is commendably prompt in sending out requests for renewals, but threats of dire penalties are quite out of place in view of the P.M.G.'s failure to prosecute Mr. Ford, at his own request. What will the Government do with "pirates"?

* * *

Cold Filament Reception.

AN Edinburgh correspondent informs me of an experience he had recently whilst experimenting with a one-valve set, which should be of interest to all experimenters. The L.T. cells were run down and were disconnected, and the filament resistance arm was off the wire, but 50 to 60 volts

Another Super Station.

MR. WILLIAM WRIGLEY—the "chewing-gum king"—and other prominent American business men are planning to erect the largest building in the world at Chicago. It is to be a "temple of agriculture," and amongst the latest scientific equipment it will house a super broadcasting station, which it is expected will be heard in this country. A broadcasting tower, modelled on the Eiffel Tower and rivaling the great European erection, is included in the plans.

* * *

"Corking" the Aerial.

HAVE you "corked" your aerial? Serious damage is being done to pigeon-breeders through valuable birds flying into wireless aerials, and as pigeons as well as wireless rendered great service during the war, it is only fair and humane that the lives of the birds should be safeguarded by the simple precaution of fixing corks to the wires every three or four feet, so that the pigeon in flight can see the obstruction.

* * *

No Trouble, No Danger.

FOR the benefit of those who live near pigeon breeding-grounds it may be as well to point out that the placing of corks along the aerial to make it more easily visible has no harmful effect whatever upon reception. Both the cost and trouble are negligible, and I am sure that once the danger to

the pigeons or other birds has been pointed out, there is no amateur who will not try to make the air safe for them.

* * *

Guiding Pilots.

AS forecast in "P.W." some months ago, beam wireless has been adapted to guide aeroplanes during low visibility. The recent flying fatality near Croydon would probably not have been avoided by such a scheme, but there is no doubt that in the past an invisible ether line along which to fly in bad weather would have saved more than one fatality. During tests at Dayton-Ohio it was found possible for

(Continued on page 1178.)



The main studio at W E A F, the well-known station belonging to the American Telephone and Telegraph Co., New York.

H.T. were plugged in. Despite the cold filament, 2 E H could still be heard, as if the oscillations were building up and broke through, coming loud with a jerk and then dying into nothing. Have any other readers had a similar experience?

* * *

2 LO at Sea.

I HEAR through one of the wireless operators of the s.s. Leviathan that 2 LO is regularly received on board at distances up to 1,000 miles, and 5 X X up to 2,000 miles. The vessel carries eight wireless operators, and by means of specially-balanced aerials they are able to handle spark and continuous-wave transmissions simultaneously.

NOTES AND NEWS.

(Continued from page 1177.)

a pilot to keep a perfectly straight course on a hazy day, unaided by landmarks, by listening in to a kind of radio beam.

W S A I's Claim.

THE Cincinnati station (W S A I), which has been coming over very well during the last month or so, claims to have the finest chime-concerts in the U.S.A., which it broadcasts from a nine-story bell tower. The station is owned by a playing-card manufacturer, and its programmes consist

SHORT WAVES.

"... wireless has this advantage over the schoolmaster: what it says never comes in at one ear and goes out at the other. Not when you use headphones."—*"Daily Herald."*

"... Solomon said there was nothing new under the sun, but he didn't say it by radio."—*Mr. Thomas Jay, of "Punch," speaking at Bristol.*

"... Broadcasting has come to stay, and even allowing for a certain waning of nightly enthusiasm on the part of listeners when the first novelty has worn off, it is likely to become and remain part of the equipment of the majority of households. . . . We shall get used to broadcasting as we get used to everything else; but the chances are that we shall have to listen when there is anything irresistible on the programme."—*The Times.*

"If you are a pirate, wend your conscience-stricken way to the nearest post office and deposit 10s. and receive in return a little slip of paper which will go a long way towards making a respectable citizen of you."—*"Manchester Evening News."*

"... It is clear that wireless in coming days will touch the whole of life and compete more and more powerfully with other interests for the leisure time of the people."—*"Sunday School Chronicle."*

"Broadcasting the image of a clock-face so as to show the exact time is now perfectly feasible, and the only reason why it is not being done is that most people are still satisfied with the audible time-signals we get every night."—*Dr. Fournier d'Albe, in a message to the "Daily News."*

"... Like several other men, I, myself, was once a small boy, and I can only say that an invention which has brought headphones into well-nigh every home, thereby rendering it less necessary than ever to wash behind the ears, is deserving of every encouragement."—*Dudley Clark, in "The Passing Show."*

mainly of local musical talent, drawn from the city's glee-clubs, orchestras, and College of music.

Help Wanted.

A WILLESDEN GREEN reader asks if there is anyone in that district who would be willing to co-operate with him in practising the Morse code? Enthusiasts who favour the idea should write to Mr. E. W. Luff, 38, Strode Road, Willesden Green, London, N.W.10.

To-night's Concert.

T O-NIGHT and on subsequent Thursdays during 1925 the programme from the high-power station will not be provided by the B.B.C. artistes, but will come from some outside source such as a well-known hotel orchestra or famous concert. The popularity of the Hallé concerts has already been enhanced by broadcasting, and it is likely that they will be drawn upon frequently under the new scheme. Other

provincial music which has been inadequately recognised outside its own locality should find a new lease of life through 5 X X.

1925 Prospects.

THE most eagerly awaited development of the New Year is the permanent establishment of the B.B.C.'s high-power super station in the Midlands (just outside Daventry). With this station sanctioned by the Government the scheme of dual entertainment can be pushed to its logical conclusion, and I think that 1925 will see the provision of alternative concerts to practically every section of the B.B.C.'s audience.

The Leeds Exhibition.

I HEAR that bookings for the Leeds Wireless Exhibition are very good, and that the organisers are anticipating that a thoroughly fine show will result. The "Leeds Mercury" is offering prizes to the value of £75, and some interesting competitions for constructors have been arranged. The Exhibition will be open from Tuesday, January 20th to Saturday, January 31st, at the Penton Street Drill Hall, Leeds.

Radio for Surveyors.

SURVEYORS who are mapping the less thickly populated surfaces of the globe are finding wireless time-signals of the utmost assistance in fixing longitudes. Mr. Blanchet, who is surveying the Great Slave Lake, in the Mackenzie River district, uses a portable receiver to listen to European and American time-signals. On one occasion the wire placed between two paddles on a 16 ft. canoe acted as aerial, and the midday time signal from Annapolis was caught as the canoe swept along the Great Slave Lake.

Hilversum Increases Power.

HILVERSUM, the Dutch station which is just starting broadcasting on high-power, is an old friend of the British listener. Formerly the tuning-in of the station on a single-valve circuit was not at all common, but with the power increased ten-fold, reception on the simplest circuits should now be an easy matter. The wave-length is 1,050 metres, and the call-sign H D O.

Concerts from Holland.

I HEAR that some first-class artistes have been engaged to appear at the Hilversum studio, and that in framing the programmes, the listener in this country has been borne in mind and well catered for. Two steel masts, two hundred feet high, have been erected to support the aerial; and the well-known Dutch valve-manufacturing firm who will operate the station inform me that they will relay the famous Mengleberg orchestra from Amsterdam every Tuesday evening.

Ultra-short Waves.

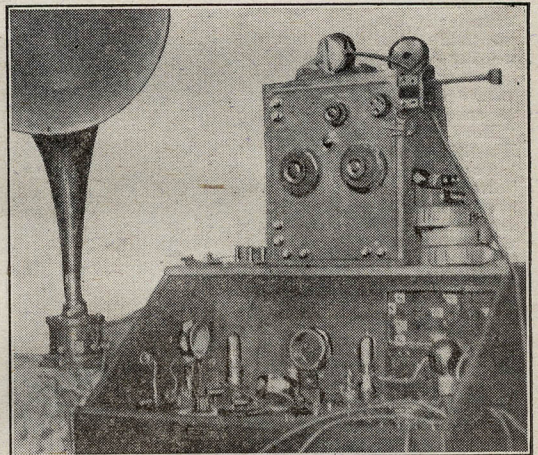
FOLLOWING similar tests in France, the Germans claim to have succeeded in producing ultra-short waves having a frequency of more than 300,000,000 per second, which corresponds with a wavelength of less than one metre. Although at present a laboratory experiment, it is quite likely that such results will greatly affect broadcasting, and the fact that American radio fans are already down upon the ultra-short waves reminds me that if any British amateurs are similarly engaged they are keeping very quiet about it!

Radio Travels.

SINCE the daily Press has given prominence to long-distance wireless "tours" a great deal of interest has been shown in these radio travels. Amongst the very interesting lists I have received in this connection is one from a Cleckheaton correspondent, who gives details of thirty-four different stations received between 7 p.m. and midnight, including broadcasting from Holland, France, Belgium, Germany, Sweden, Austria, Spain, and the United States.

"Mr. Dooley" may be Broadcast.

THERE is an interesting piece of gossip going round to the effect that we may hear "Mr. Dooley" through the microphone soon. The rich Irish-American humour of the stories about Mr. Dooley and



A Preston reader's 4-valve set (1-v.-2) and a super 1-valve set, both built from instructions given in "P.W."

his friends of the bar-room should be extremely effective "on the air," and although they are not as well-known over here as in America, they have plenty of British admirers, amongst them being Mr. J. R. Clynes. It is just possible that the B.B.C. will persuade Mr. Clynes to read them for the benefit of listeners—he is fond of doing so to a select party of his friends.

New Station for Norway.

NORWAY is contemplating the erection of a high-power broadcasting station, with an energy of 15 kilowatts. Such a station would be heard in this country easily. I hear that a company has already been formed for the project, and is being well-supported by the public as regards capital and subscriptions.

ARIEL.

CORRESPONDENCE.

(Continued from page 1220.)

No. 131, Vol. VI, which proves most satisfactory. I receive Chelmsford, 18 miles distant, loud-speaker strength. I also receive London and Paris, the latter somewhat faint. The set gives much better results on higher wave-lengths.

Wishing you and your paper every success.

I remain,

Yours faithfully,

EDGAR PERFECT.

Sunny Bank, Sawbridgeworth.

INTERESTING "D X" RESULTS.

The Editor, POPULAR WIRELESS.

Dear Sir,—It may interest you to know that on my home-built two-valve set (straight D. and L.F.), I have received the following stations: 6 B.M., 2 L.O., 5 T.T., 5 N.O., 2 Z.Y., 5 W.A., 5 S.S., 2 B.E., 5 X.X., 2 D.E., 6 L.V., 5 P.V., 5 N.G., 6 F.L., 6 S.T., 6 K.H., Radio Paris (S.F.R.), Ecole Sup. (P.T.T.), "Le Petit Parisien," Leipzig, Frankfurt-on-Maine, Hamburg, Munich, Münster, Brussels (S.B.R.), Amsterdam, Madrid (R.D.), Zurich (Héngs). All the above were "roped" in on a standard P.M.G. aerial, only 16 feet high.

Wishing "P.W." all the best.

Yours faithfully,

ERNEST W. SONES.

Westergate Street, Aldingbourne, Sussex.

"ALL B.B.C. 'SMALL FRY' TO UNIDYNE."

The Editor, POPULAR WIRELESS.

Dear Sir,—Of late I have, and am still, having some remarkable successes with the famous one-valve Unidyne. The Thorpe K4 seems to have become ultra sensitive with age and use. All B.B.C. stations can be considered as "small fry." So can most European stations. American transmissions, I get nightly. W.S.M. when 550 miles away, came in at good 'phone strength recently. The remarkable part of it is I can tune in Madrid, 800 miles away, on the earth wire alone (3 feet long). Music is quite good, but speech a trifle blurred (due to earth currents, I believe). But to get Madrid on one valve, with 3 feet of earth wire, calls for what Mr. Dowling calls "Operation."

Wishing your valuable paper all success.

Yours faithfully,

D. J. JENKINS.

School House, Gellinudd, Pontardawe.

P.S.—The set is as per specification in "P.W.," No. 112.

BROADCASTING FROM A LINER.

The Editor, POPULAR WIRELESS.

Dear Sir,—I wish to report one-valve reception between 01'00 G.M.T. and 02'44 G.M.T. this morning (December 10th) of pianola music transmitted from the grand ballroom of a liner 2,400 miles S.W. of Land's End, on a wave-length close to that of shipping. Jamming was experienced from untuned spark and a harmonic of G.F.A., but at quiet periods the following items were heard clearly: "Hungarian Rhapsody" (Liszt), 01'00 G.M.T.; "American Medley" (One Step), 01'45 G.M.T.; "Rigoletto" Selection, 02'30 G.M.T.

Before closing the announcer, speaking to American listeners, wished them a Happy New Year, and hoped they had been received. He also added that they were due in Southampton on December 21st.

It would be interesting to know the name of the liner in the above transmission.

Yours faithfully,

H. G. NEVILLE.

11, Carden Road, Peckham, S.E.18.

[This was W.S.M., the s.s. Leviathan. Ed.]

THE UNIDYNE NEUTRODYNE.

The Editor, POPULAR WIRELESS.

Dear Sir,—Just a line to tell you that I have made up the two-valve Unidyne neutrodyne given in your paper of November 22nd, and am very pleased with results.

I had previously made a D. and L.F. Unidyne set, but the first mentioned is a great improvement, and the best I have heard. I am sending a card to Mr. Marcus, and I must thank you all for such a fine set. I was pleased to see Marconi's apology. I thought of writing to him myself.

Yours faithfully,

A. W. BUTLER.

3, Old Church Yard, Liverpool.

B.B.C. AND THE THEATRES.

The Editor, POPULAR WIRELESS.

Dear Sir,—I have read, with much consternation, the views of Sir Oswald Stoll, in an article by "Ariel" in your splendid paper.

Has Sir Oswald realised that the ether is the B.B.C.'s theatre?

I wonder what Sir Oswald would say if it were possible for another company to erect a stage in the Coliseum, and start a rival production at the other end of the theatre?

The B.B.C. must have the monopoly of the ether, as a company has of a theatre, so as to ensure a good organisation.

Yours faithfully,

W. I. LONG.

Longlands, Carlton, Newmarket.



The Living Artistes

THERE is no greater test for a Transformer than a Loud Speaker reproduction of a Symphony Concert. Delicate arias and impressive crescendos mean a wide range in amplification values that will readily discover any integral weakness of design.

For a Transformer to be capable of amplifying all frequencies equally—from the shrill notes of the piccolo to the boom of the double bass—necessitates the application of scientific laws.

The Eureka Concert Grand, owing to its exclusive design, does amplify all audible frequencies equally; that is why in reproduction of a Symphony Concert you will not hear the

violins stressed to the exclusion of the flute or the oboe.

In fact, when the Concert Grand is used in conjunction with a good Loud Speaker each instrument can be readily picked out and identified. How very few L.F. Transformers will permit this being done.

Music lovers throughout the country have been quick to recognise that the Eureka has set an entirely new standard of tone perfection.

Concert Grand 30/- Portable Utilities Co., Ltd., Eureka 22/6
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