

The Radiotelephone Broadcasting

THE announcement which has been so eagerly awaited regarding the facilities to be given for Radio Telephone Broadcasting has now been made by the Postmaster-General. In the House of Commons on Thursday afternoon, May 4th, Mr. Kellaway announced that the recommendations of the Wireless Sub-Committee of the Imperial Communications Committee, which had been appointed to consider the question of broadcasting, had been accepted, and the Postmaster-General then outlined the system which he had sanctioned.

This country is to be divided into areas and broadcasting stations will be located in each area, the following towns forming the centres:—London, Plymouth, Manchester, Glasgow or Edinburgh, Cardiff, Birmingham, Newcastle, and Aberdeen. One or more broadcasting stations will be allowed in each area.

Permission to conduct the broadcasting service will be given to British firms who are *bona fide* manufacturers of wireless apparatus and the Postmaster-General is calling together the representatives of the firms who have made application for this permission, in order that some system can be worked out which will be satisfactory to all concerned.

The limit of power for each broadcasting station is fixed at $1\frac{1}{2}$ kW, and the wavelength is to be such that no interference will be caused with other services and transmissions in each particular area.

Times of broadcasting are fixed for 5 p.m. until 11 p.m. on weekdays with no restrictions as to time on Sundays.

A licence to install a wireless receiving set will cost 10s. and these licences will be obtainable through any Post Office.

So opens in this country a new field of communication, the ultimate future of which it is not yet possible to appreciate. We may, however, look forward to the time when it will be imperative, if one wishes to keep abreast of the times, to install a wireless receiving station at home, and those who do not take advantage of the facilities not offered will be depriving themselves, not only of the enjoyment which may be obtained in the home from listening to musical selections, concerts and so forth, but also any items of general information which may be broadcasted, including lectures and possibly sermons on Sundays. The exact character and classes of news which it will be permitted to transmit has not yet been decided upon by the Postmaster-General.

No doubt full consideration has been given by the authorities to the possibility of serious interference if the wireless telephone receiving sets supplied to the general public are of such a nature as to permit of radiation. This point is still more important when we consider that the vast majority of those who will be installing wireless telephone receivers in the near future will be ignorant of the most elementary points of wireless theory, and will operate their sets entirely by rule of thumb. It would seem desirable that in issuing permits for the reception of telephony, that the Postmaster-General should make a very marked distinction

between permits for experimental wireless and permits for the installation of a set where the user merely desires to avail himself of the broadcasting service.

At the present time, when application is made for a licence to conduct experiments in wireless telegraphy, the applicant is required to satisfy the Postmaster-General as to his ability to handle the apparatus without causing interference by radiation.

It would seem necessary for the proper regulation of wireless in this country that the types of sets to be used in the reception of the broadcasted transmissions should be approved by the Post Office Authorities before being supplied to holders of licences. If these sets were "registered" as it were, at the Post Office, a sample set being submitted by the wireless firm supplying, the position of the *bona fide* experimenter would then be clearly defined and his liberty would not be interfered with. Perhaps, by making this distinction the Postmaster-General might see his way to giving even greater facilities to the *bona fide* experimenter than is the case at present.

In approving applications for permits to conduct the broadcasting service, the Postmaster-General has obviously a difficult task before him. It is essential that no firm should undertake lightly such a service, as the expense of maintaining the service will doubtless be considerable. The financial gain to the firms who undertake the broadcasting service will depend upon the number of receiving sets which they are able to sell. Obviously then it would be grossly unfair for any firm to undertake broadcasting, without giving full guarantees not only of their ability to maintain the service without interruption, and efficiently from a technical point of view, but also that the nature of the transmissions given would be maintained at a reasonable standard.

In his statement Mr. Kellaway made reference to what was being done in the United States in the matter of supplying Radio Telephony Broadcasting Services, and the point was mentioned that the United States Government had found it necessary to reconsider the whole question with a view to controlling the use of wireless, particularly in respect to amateur transmitting stations. As Mr. Kellaway added, "we in this country have been able to profit by the experience of the authorities in the United States and are in a position to legislate in such a way as to prevent any such state of chaos as was threatened in the United States." There, as is generally known, there are no restrictions as to the installation of receiving stations and transmitting licences have been very easily given in the past. Perhaps we might suggest that here again the experience of the United States authorities only serves to emphasise the necessity of distinguishing carefully between the *bona fide* experimenter and the general public.

No doubt there is a very great future for wireless in this country and to use the words of the Postmaster-General in his concluding remarks on the subject in the House of Commons, "the possibilities of this service are almost unlimited. In the United States of America it was suggested that some arrangement might be made by which speeches of

members of Congress might be radiated, and I can foresee a time when perhaps on this table a receiver will be properly concealed so as not to jar the aesthetic sense of members, and their eloquence will be transmitted to those of their constituents who are prepared to pay the cost."

The Broadcasting Service cannot but serve to foster still further the national spirit of our Island Kingdom, and will undoubtedly extend in the near future to all parts of the Empire.

A Four-Way Plug

By V. D. BROOKER.

NO doubt everyone dealing with up-to-date "wireless" apparatus on which valves are employed, has at some time or other experienced the misfortune of either breaking a valve or of having it burnt out. The result being that the old broken valve is usually thrown away as being of no further use, and following is given a description where the same could be used in the making of an efficient non-reversible four-way plug. All that is required of the valve is the plug portion, therefore, first of all, the glass bulb and interior must be removed. When this has been done it will be noticed that left behind, is what might be termed a copper cup with an insulated base, in which are fixed the four pins of the valve. By the side or through the pins are four holes, where the wires from the plate, grid and filament of the valve were previously threaded through the insulated base, and soldered on to the pins. Next

required, different coloured sealing-wax could be used in each case, in order that the plugs may be distinguished one from the other and so avoid confusion. Where a little more elaborate finish might be required, these copper valve bases need not be filled right full with wax, but about $\frac{1}{4}$ of an inch from the top be allowed in order that an ebonite or wooden top may be fitted and secured through the sides by three screws (Fig. 1). When the sealing-wax is cold, the two lengths of flexible wire can be twisted together and the end bound, which will make a very neat four-way cord. The remaining four bared ends for connecting to the apparatus may be finished off with any form of wire grip or connection according to whichever is claimed to be the most suitable. On the receiver or other apparatus, as the case may be, an "R" valve socket can be fixed, and by means of this cheap home-made plug, any tuner, transformer (H.T. and L.T. together), and other apparatus can be connected quickly and without any fear of them becoming reversed.

One of these plugs has been constantly in use for twelve months and is now working well.

Notes

Death of Captain Carus-Wilson, M.C.

Captain Louis Charles Carus-Wilson, M.C., Assistant Experimental Officer at the S.E.E., Woolwich, has died at Brighton from illness contracted whilst on service in the near East.

In 1919 Captain Carus-Wilson was selected by the War Office to be the representative British officer at the Ecole Supérieure d'Electricité of Paris. There he won the diploma in radiotelegraphy, and was first on the list of foreign officers who completed the course. He was appointed to represent the War Office during the installation of the Cairo station.

Short Wave Directional Wireless.

Important research has been carried on in connection with directional transmission on very short wavelengths and in a paper given before the Institution of Electrical Engineers on Wednesday, May 3rd, Mr. C. S. Franklin, an experimental engineer of Marconi's Wireless Telegraph Company, disclosed some hitherto unpublished information on this subject.

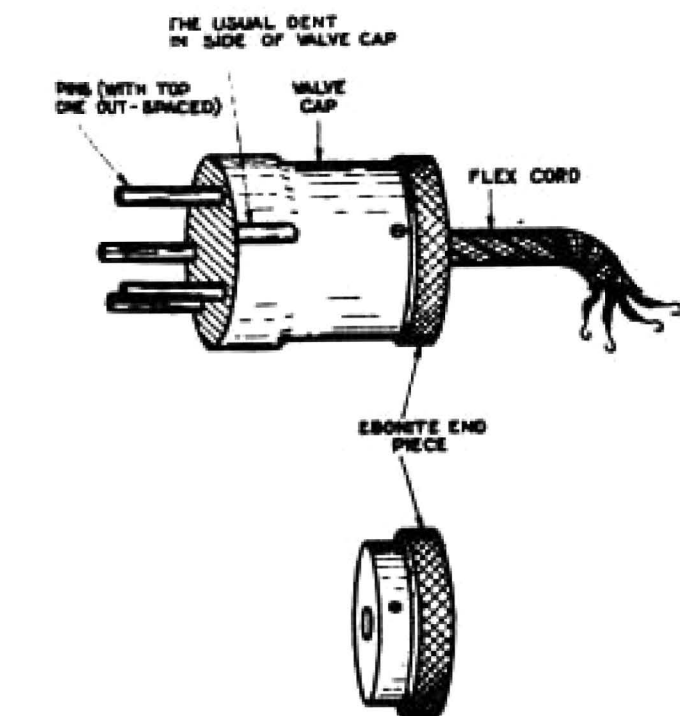
Employing a wavelength of only fifteen metres, duplex wireless telephony has been carried on between London and Birmingham, which has been audible only at the specially designed stations carrying on the experiments.

Another result of this research has been the evolution of a "wireless lighthouse," which may mean much for the safety of navigation. A wireless beam, radiated by a revolving transmitter, can be made to indicate to a ship its exact position with respect to the "wireless lighthouse."

The apparatus concerned was demonstrated with a transmitter using a wavelength of only one metre.

The Dutch Concerts and Interference.

In our issue of April 8th, on page 52, reference was made to complaints of jamming of the Dutch Concerts by local amateur transmissions. Since the publication of this note we have received letters of strong protest from the Secretary of the Halifax Wireless Club and from Mr. H. H. T. Burbury



is required two lengths of town main flexible twin wire, these being long enough to suit the requirements. The eight ends of this wire are then each bared for a distance of about $\frac{1}{4}$ inch and four of them are threaded through the holes in the old valve base and soldered to the four pins. On reaching this stage it has been found that melted sealing-wax, poured into the copper cup, will hold the four wires perfectly tight and also serve as an excellent insulator. Where several plugs might be