

A Message to Meccano Boys

FROM

Dr. J. A. Fleming, F.R.S.



DR. JOHN AMBROSE FLEMING, F.R.S.

Professor of Electrical Engineering in the University of London and Inventor of the original Thermionic Valve, which in its subsequent developments is the instrument that has made Wireless Telegraphy possible on a large scale.

"I am glad to hear that so many Meccano boys are interested in Wireless Telegraphy and Telephony. It is not only a subject of immense scientific interest, but there is an abundant field for new inventions. In this connection it may be mentioned that many of the valuable discoveries in Wireless Telegraphy have come from amateurs. Moreover, a study of this subject necessitates a knowledge of the sciences of Electricity and Magnetism and an intelligent boy can learn more from experiments he carries out himself than from more elaborate performances in the class room or laboratory.

At the lectures I gave last Christmas at the Royal Institution in London I had a very large audience of young people who were greatly attracted by the discourses given on 'Electrons, Electric Waves and Wireless Telegraphy'."

H. Sims (West Bromwich).—The Meccano Receiver will receive on wave lengths of from zero up to approximately 1,000 metres. It is supplied with a single head-phone.

R. Fallows (Londonderry).—No receiving set can be used without an aerial. In your case it would not be practicable to use the electric light wiring in your house as an aerial; as this method requires a Valve Set.

D. J. S. Moysé (Ipswich).—Wave length could be increased by the addition of extra wire if it was considered necessary but as ships work on a wave length of 300 or 600 metres, and as the Broadcasting wave length is between 300 and 400 metres, it is not considered necessary to increase the wave length beyond the present range.

L. G. Blake (Lewisham, S.E.13).—You would not be able to hear Broadcast in any part of the room, as a Crystal Set does not sufficiently magnify the sound to make this possible. It would be possible for you to employ more than one 'phone and so enable two persons to listen-in.

W. Gorton (Stalybridge).—We are afraid that your proposed loud speaker would not be satisfactory, as there is not a sufficient volume of sound from a Crystal detector to make the signals audible.

Yours faithfully
J. A. Fleming

W. J. Turner (Burslem).—We would point out that the induction coil shown in the Meccano Electrical Manual is not intended to be used as a sparking coil but is essentially a "shocking" coil. To make an efficient spark coil that would give an $\frac{1}{2}$ " spark wind about a soft iron core $3\frac{1}{2}$ " long and $\frac{1}{4}$ " in diameter, a primary winding in three layers of No. 20 double cotton covered copper wire. For your secondary winding take a $\frac{1}{2}$ lb. of No. 38 double silk covered copper wire. It will be necessary for you to use also a condenser, made of 21 pieces of tin foil $2" \times 2\frac{1}{4}"$, using dielectric of mica.



H. A. Longley (Surrey).—I hope to publish shortly a series of articles on the theory of Wireless from the beginning to the more advanced stages, so that my readers may thoroughly understand the principles of Radio.

T. A. Gately (Peel Green, near Manchester).—You should be able to listen-in with a Crystal Receiving Set as you live within the 25 miles radius of the Manchester Broadcasting Station. Mr. Hornby is not thinking of paying another visit to America and Canada at present. He has received many applications from Meccano boys who would like to accompany him.

J. E. Govan (Melrose).—Batteries and accumulators are not required with the Meccano Crystal Receiving Set. Apart from the aerial, and ground or earth wire, the Set is complete. These latter are sold separately.

A. Ramsay Rae (Chester-le-Street).—The price of an aerial set complete and ready for connecting to receiver is 12/6. Write again if you are in any difficulty, for I shall be glad to help you.

J. Taylor (West Hartlepool).—Your cage-type aerial should answer very well, but you will not be able to obtain the best results unless particular care is paid to the insulation of the antenna or individual wires forming the cage. Try to keep within the limit of 100 feet of wire, including the leading-in wire, when fitting your aerial. I am glad that you have written to me on this matter, as it is one that will prove of considerable interest to the other readers.

W. H. Evans (Nottingham).—It is necessary to have a licence in order to receive Broadcast. The cost is 10/- and full particulars may be obtained from any Post Office.

E. West (Rochester).—It is quite possible to add an amplifying valve to a crystal receiver, but this does not increase the range of reception.

L. Clayton (Northampton).—It is not necessary to use a battery with the Meccano Receiver but it is essential to have an aerial. On page 7 of our Radio Booklet is a good illustration of an aerial. You will be well advised to have your aerial as long and as high as possible.

Singing to Unseen Thousands



Photograph by

[Western Electric Co.]

Broadcasting is now in full swing in this country. Our illustration shows two vocalists broadcasting a duet at a New York Broadcast Station. The sensitive microphone, which transmits their voices to thousands of listeners-in, is seen on the table near the window. The walls of the Studio are padded with felt and every effort is made to exclude outside noise and inside echoes, for even the minutest sound is picked up by the microphone and sent out broadcast.