HOW PLAYS ARE BROADCAST

Amateur Wireless And Electrics

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WELL ILLUSTRATED

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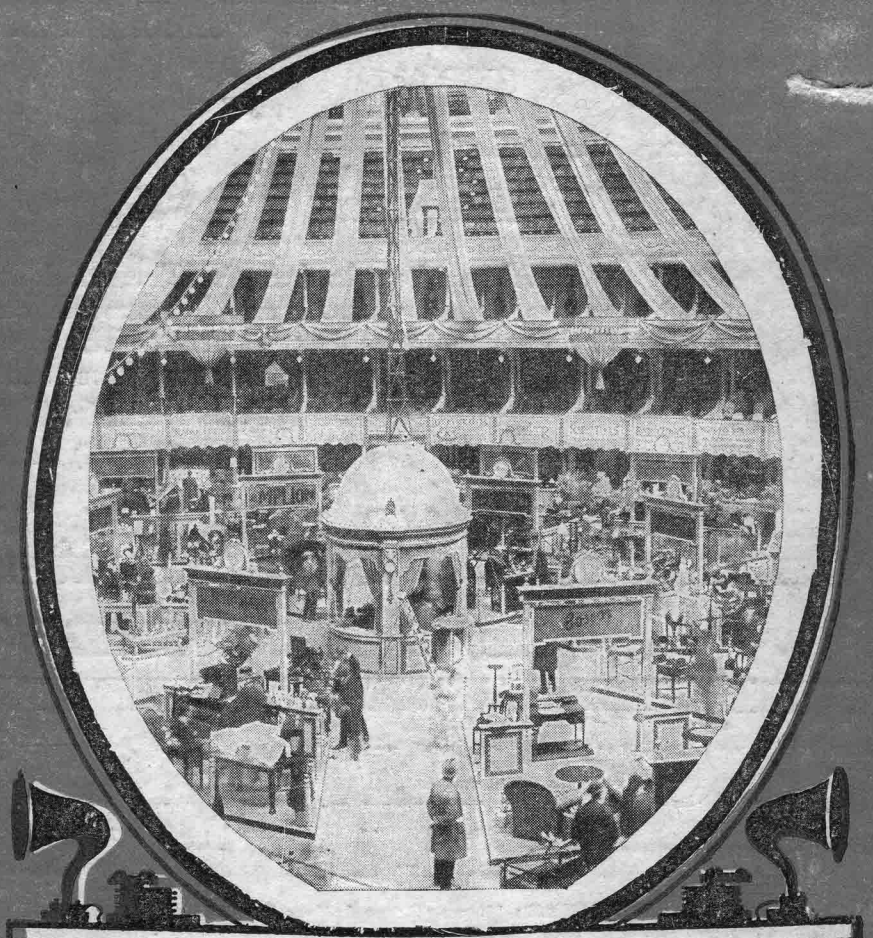
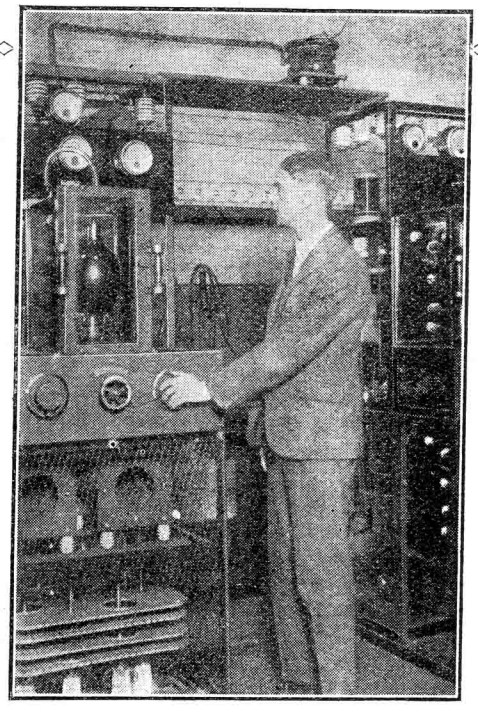


The All-British Wireless Exhibition at the Royal Albert Hall that Closed Last Wednesday.

GLASGOW—5 S C

THE ENGINEER-IN-CHARGE TALKS ABOUT HIS STATION



The Assistant Maintenance Engineer (Mr. H. M. Hill) at the Main Oscillator Panel.

TO say the least, the Glasgow station is rather an antiquity. I do not include the transmitter, of course, for that still stands in all its pristine glory with its 1½ kilowatts input and its 14 amperes in the aerial. No, I refer to the control or business end of things.

When 5 S C first "took the air," as our friends across the pond say, the control room consisted of (1) an amplifier, (2) a battery cabinet and the associate charging board, (3) a single-valve checking receiver, (4) one telephone and a double pole switch. They were the essentials of a broadcast programme.

Now and Later

That was eighteen months ago. . . . What is Glasgow now? Why, it is the nerve centre of the North. We have ten trunk lines, with a possibility of another two when Dundee enters the fold; the same old three lines to the transmitter—which have been maintained always in perfect order by the P.O. engineers—and many others to various places. Everything is controlled by double pole switches, and therein lies the antiquity, for there are thirty of them, and although every switch has several purposes the permutations and combinations of the arrangement are limited. Shortly we will be in new premises, and then nothing will be impossible. Our transmissions will be clearer, purer and altogether a thing of joy for the listener. I know there are critics who will say it is about time our transmissions improved, but I would remind them of our difficulties and sometimes their oscillation. Don't always blame us. . . . Look to your sets first, and if you are convinced you are not at fault, telephone us and we will endeavour to put you wise.

Don't go so far as the elderly listener who, hearing a heterodyne whistle, and with the best intentions in the world, telephoned us to say, "Do your engineers know they have too much steam up and that the safety valves are blowing off?"

All the engineers at Glasgow are station proud, and we have every right to be, for we do our best to radiate good stuff; but obviously, as the art has progressed so rapidly, it has been impossible to install new gear all at once. When our dream of new gear and premises is a material fact we will fearlessly assert that 5 S C is second to none . . . and I guarantee it will be.

Our studio is a small one and is separated from the control-room by a partition that is hardly sound proof. Imagine a telephone conversation between us and, say, Sheffield, via London, with a brass band on the other side of the wall. You will say, "I've no doubt you manage." We do, and though we are beset with many difficulties, our life is a happy one.

The Transmitter

The transmitter is situated in one of the Corporation power stations, the chimneys supporting the four-wire sausage-type aerial. The total length of the aerial is 268½ ft., with an approximate height of 160 ft.—the envy of many amateurs. The earth system is a good one, consisting of two buried plates each 12 ft. 3 in. square, lightning conductors and roof iron-work.

Power is derived from a motor alternator having an input of 500 volts D.C., giving an output of 500 volts A.C. at 300 cycles. This is stepped up and then rectified by a full wave rectifier to give 10,000 volts suitably smoothed D.C., which is the plate voltage for all valves. The rectifier filaments are, of course, lit by alternating current through a step-down transformer.

There are three other panels to the set,

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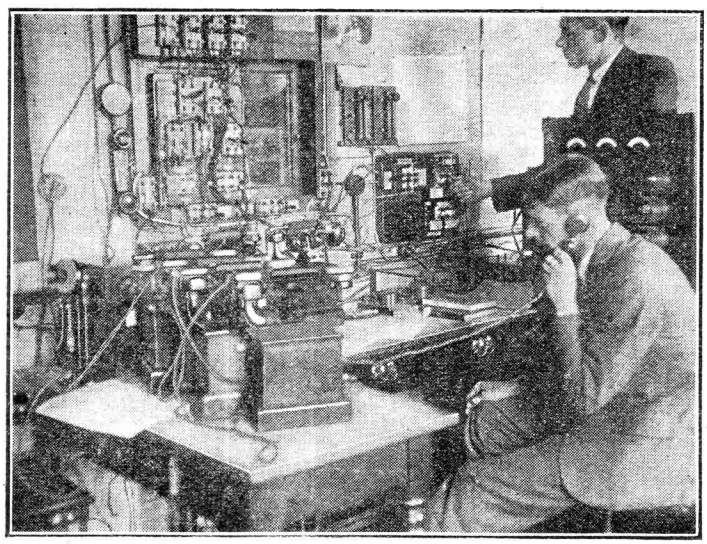
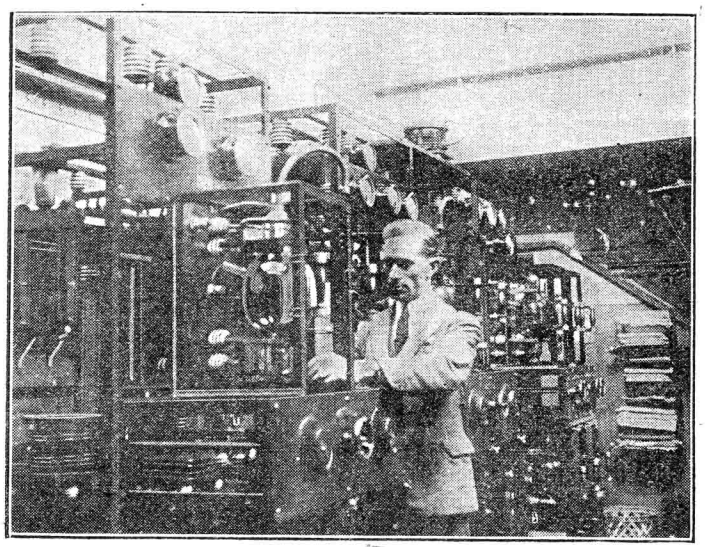


The Author (Mr. L. Hotine) and the Assistant Maintenance Engineer in the Control Room.



An Engineer (Mr. Murch) at One of the Valve Panels at 5 S C.

namely, the independent drive, the power oscillator and the modulator. The drive panel keeps the wavelength absolutely constant, so that it cannot vary by modulation of the carrier wave. The power or main oscillator delivers power of radio frequency to the aerial. Lastly, there is the modulator panel which modulates the power supplied to the power oscillator (and hence the carrier wave) in accordance with the speech frequencies supplied by the incoming line from the studio.

The 1½ kilowatts previously mentioned is input power, and is measured as the oscillator feed at 10,000 volts, which is 150 milliamperes by 10,000 volts or 1,500 watts. The efficiency of the oscillator is about 80 per cent., the aerial power being about 1,200 watts. The efficiency is high and the "stuff" gets well away.

If at any time the land lines between the studio and transmitter go dud, or the studio amplifier developes the same complaint, then it is possible to make an announcement at the transmitter itself. This means that only if there is a complete breakdown at the transmitter is the listener kept in suspense.