

Collection of Short-wave Data—

It will be observed that peak conditions are generally followed in a day or two by magnetic storms. This is due to the fact that sunspots generally have two opposed effects on the ionosphere, the first being an increase in the ionising radiation to provide

better conditions, while the second, which generally occurs suddenly a day or two afterwards, causes very disturbed conditions, reduced ionisation, magnetic storms, etc. The latter radiation is thought to be of corpuscular nature and slower moving than the ultra-violet radiation.

input to the KT66 push-pull output valves. When worked under class AB1 conditions with 400 volts in the plate these have a rated output of over 30 watts. The output transformer is tapped to match loads of 4 or 15 ohms, the required impedance being selected by a switch. Other load impedances can be catered for if ordered specially.

Separate primary windings are provided in the mains transformer for AC mains or the vibrator input. The vibrator is not of the synchronous type and its output is rectified and smoothed by the mains equipment. The circuit connections for mains or battery operation are changed by means of a six-pin plug fitting into either of two sockets. No damage will result if the plug position does not happen to accord with the type of supply when the amplifier is switched on.

On test the amplifier gave 20 watts without any trace of distortion being revealed either by the input-output curve or the cathode-ray oscilloscope. Subsequently it was discovered that the mains and consequently the HT voltage were down, and there is no doubt that if this point is given the attention it requires the full rating of 30 watts will be obtained. Full power is given for an input of 0.0055 volt RMS in the grid of the first valve. In the amplifier tested, the high-impedance input was connected to the grid of the second stage for gramophone reproduction with normal pick-ups, and in this case the input required for full power was 0.072 volt RMS.

The measured frequency characteristic showed a loss of less than 3 db at 30 and 10,000 c/s with the tone control turned fully clockwise. The curve obtained at the other extremity, and with the maximum top cut, showed a steady fall of about 15 db between 600 and 10,000 c/s.

On a 12-volt car battery the amplifier took 8.6 amp. and its performance was in every way comparable with that in AC mains. The vibrator unit was quiet both electrically and mechanically. A switch is provided to break the HT circuit and economise current during intervals between announcements, while keeping the valve heaters ready for instant use.

From every point of view this amplifier shows refreshing originality in design, but at the same time is kept within the bounds of practical PA requirements.

The price is £28 and a high-grade transverse current microphone to work with it is available at £4.

The C25 Acoustical Amplifier

A COMPACT UNIT SUITABLE FOR MOBILE EQUIPMENT

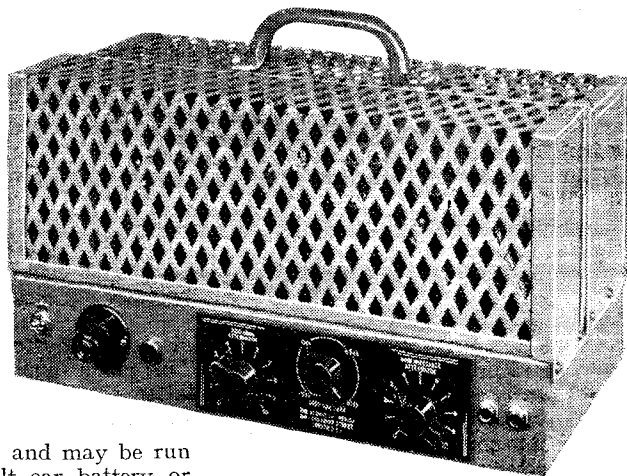
IN most PA work compactness and portability are considerations which play an important part in the choice of equipment. There must be few amplifiers of comparable specification which occupy as little space as the Type C25 made by the Acoustical Manufacturing Co., 201-205, Lever Street, London, E.C.1. Weighing only 18 lb., its dimensions are 14 x 7 x 7 in., yet it has a power output of 30 watts, is provided with separate channels for high and low impedance inputs (the latter polarised for carbon microphones) and may be run from either a 12-volt car battery or AC mains.

Three double-triode valves precede the push-pull output stage and the circuit is briefly as follows. The two halves of the first valve function as separate first-stage amplifiers for the high- and low-impedance inputs. A polarising potential for the latter cir-

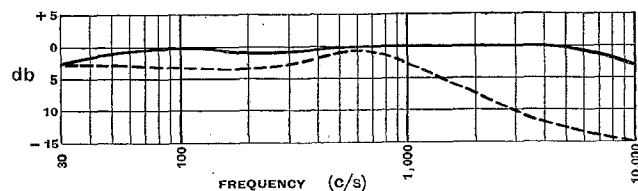
Independent volume controls in the RC couplings following these stages lead to the grids of the second valve, in which the anodes have a common load resistance. This arrangement gives mixing of the two

channels without mutual interaction.

The first half of the third double-triode valve functions as a further stage of straight AF amplification, with a resistance-capacity tone control across its grid circuit. The second half effects phase reversal for the



Acoustical Manufacturing Co.'s Type C25 amplifier.



(Above) Frequency response curves of Acoustical Type C25 amplifier. The dotted curve shows effect of full use of the tone control. (Right) Input-output curve of Acoustical Type C25 amplifier. With direct connection to the grid cap of the first stage 30 watts is obtained for an input of 0.0055 volt.

cuit, which is matched to 200 ohms, is derived from the cathode bias resistance of the output stage.

