Quality
30-Watt AMPLIFIER

This amplifier has been specially developed for use in installations where sound reproduction of the highest order is required. A very considerable degree of negative voltage feedback is applied over four stages with the result that the frequency response of the main amplifier is level within a fraction of a decibel over the entire audible range and the distortion and inter-modulation products are reduced to a very low value. The amplifier is designed for three fader connected inputs—" Microphone," " Music 1 " and " Music 2." Separate bass and treble-lift tone controls are fitted.

The amplifier may be safely operated under " constant-working " or " instant-operation " conditions. A terminal block is provided at the rear of the chassis to enable the H.T supply to the valves to be independently switched, either by means of a local switch or, for distant control, by means of a suitable relay

A valve test meter and an associated selector switch are fitted to enable a check of all valve cathode currents to be carried out under working conditions, the normal values being engraved on a plate adjacent to the meter

The whole assembly is of robust construction and capable of continuous operation for long periods, with components finished to a medium tropical specification.

Two models are available, the chassis model BCS2430 illustrated and a panel model (7E) BCS2430/2. On both models a technical data sheet and circuit diagram is mounted on the inside of the base plate.

Circuit Description

The first (Microphone) stage employs a medium-slope tetrode and incorporates an input transformer suitable for use with a moving coil microphone having an impedance of 15-30 ohms. It is resistance-capacitance coupled to the second stage, where it is mixed with the inputs " Music 1," and " Music 2," both of which are high impedance suitable for an input of about 0.5 volt r.m.s. The sensitivity can be readily increased if required for use with a high fidelity moving iron pickup. The output from the three fader-connected mixing controls is fed into a medium-slope tetrode, in the anode circuit of which are variable tone controls giving bass and treble-lift. The output from this stage is resistance-capacitance coupled to the first stage of the main amplifier. This consists of a medium-slope tetrode, a phase splitter and two medium impedance triodes in push-pull.

The final output is obtained from two beam tetrodes working in push-pull under class AB.1 conditions. The voltage applied to the screen of these valves is regulated by the use of a neon stabiliser as the screen feed resistance. Negative voltage feedback is applied from tertiary windings on the output transformer back to the first stage of the main amplifier with the result that the frequency response of the main amplifier is level within a fraction of a decibel from 40 to 12,000 c/s and the distortion is less than 0.4 per cent. at full output. A further advantage of negative feedback is the electrical " damping " of the associated loudspeakers which effectively suppresses unwanted resonances. The damping factor of the amplifier is 12.