

SECTION 2

GENERAL PURPOSE LOUDSPEAKER LS1/1

General Description

Loudspeaker LS1/1 is a general purpose loudspeaker used in offices and talks studio cubicles and similar positions where the cost of a high-quality monitoring loudspeaker is not justified. It is designed for a programme input level of 0 to -10 dB.

It consists of a Cabinet CT4/2, 20 in. high by 15 in. wide by 10½ in. deep, in which is mounted an 8-in. Goodmans Loudspeaker Unit Type R77/837/3 a mains-operated 3-watt Loudspeaker Amplifier AM8/2 and an Equaliser LS1A/1 for improving the frequency response of the loudspeaker. (Goodmans Axiette 8-in. Loudspeaker Unit was fitted in

Loudspeaker Cabinet CT4/2

The loudspeaker cabinet is constructed of ¾-in. thick light oak faced plywood. The greater part of the volume is used to form an enclosure for the loudspeaker unit, a small recess at the front being provided for the amplifier. The loudspeaker compartment has a solid front in which is cut a 7½-in. diameter hole for the loudspeaker unit and has two small acoustic vents opening into the amplifier compartment below; the latter compartment has an open front which, except for a ventilation slot, is filled by a wooden panel fixed to an expanded aluminium grille which covers the front of the

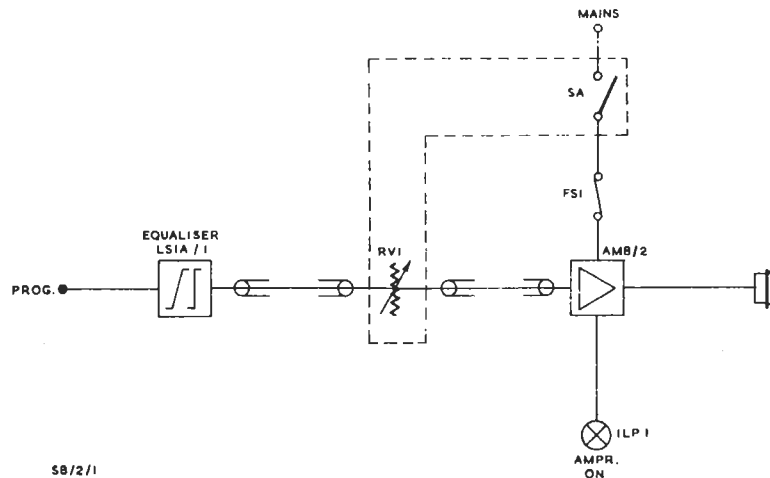


FIG. 2.1 LOUDSPEAKER LS1/1: SCHEMATIC DIAGRAM
DRAWING No. EA 10133

early models and Type R77/837/3 is interchangeable with it both mechanically and electrically.)

A combined volume control and mains switch is fitted on the right-hand side of the cabinet together with a warning light to indicate when the amplifier is switched on.

A mains lead 11 ft long, fitted with a 3-pin plug, and an input lead consisting of a 6-ft P.O. cord fitted with a P.O. plug No. 316 are permanently connected to the equipment.

Loudspeaker Amplifier AM8/2 is described in Instruction S.3.

cabinet. This grille is constructed on a wooden framework the top edge of which is fitted with two brass pins which fit into holes in the top of the cabinet and which, together with two screws through the bottom of the cabinet hold the grille in position.

Access to the amplifier and the front of the loudspeaker and its fixing screws is obtained on removal of the grille by levering it outwards from the bottom corners after removing the two grille fixing screws. Removal of the back panel of the cabinet gives access to the back of the loudspeaker and to the equaliser.

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A rectangular hole covered with expanded aluminium is cut in the bottom of the cabinet to ventilate the amplifier compartment.

The top and sides of the loudspeaker compartment and the inside surface of the rear panel of the cabinet are lined with 2-in. thick blankets of glass fibre.

connected to the loudspeaker which has a nominal impedance of 3 ohms.

The mains supply for the amplifier arrives via an external plug and lead which terminates on a 3-way tag block mounted in the amplifier compartment. It then passes through a double-pole switch which is fitted to the loudspeaker volume control

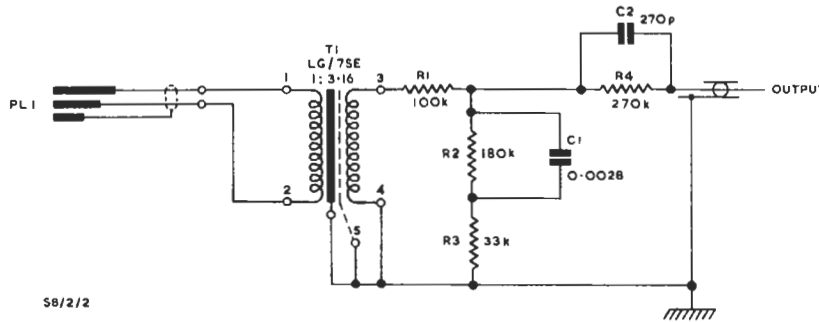


FIG. 2.2 LOUDSPEAKER EQUALISER LS1A/1: CIRCUIT DIAGRAM
DRAWING No. EA 10130

Circuit Description

The circuit schematic is shown in Fig. 2.1. The incoming programme arrives via a P.O. plug and cord at the input terminals of the equaliser; the output of the equaliser is connected by a low-capacitance coaxial cable to the loudspeaker volume control which is mounted near the bottom of the right-hand side of the cabinet with its knob projecting through a hole in the side. Another low-capacitance coaxial cable connects the volume control to the input of the loudspeaker amplifier. Low-capacitance coaxial cable is used because of the high impedance of the circuit, the resistance of the volume control potentiometer being 50 kilohms and the input capacitance of the amplifier being less than 150 pF. The output of the amplifier is

and operated by the same knob, and through a pair of 1-amp fuses to the AM8/2.

An 8-volt, 0.2-amp indicating lamp to show when the amplifier is switched on is fitted below the volume control behind a lens in the side of the cabinet and is fed from the heater supply on the amplifier.

Equaliser LS1A/1

The circuit of the equaliser is shown in Fig. 2.2. It has a frequency response which rises about 3 dB at 100 c/s and about 4 dB at 10 kc/s compared with the response at 1 kc/s. The loudspeaker unit by itself has a cone resonance which lies within the frequency range of 55 to 70 c/s, and a frequency characteristic which begins to fall at about 10 kc/s.