SECTION 13

MICROPHONE CABLE TESTER MCT/1

This unit has been designed to facilitate the testing of studio and O.B microphone leads for continuity and noise

The theory of the tests can be understood from the simplified circuit diagram Fig. 13.1. The microphone lead under test is connected in series with a 6-volt cell, a 6-volt lamp, a lever key and the low-resistance primary winding of a transformer with a turns ratio of 1 : 11. The lamp lights to indicate continuity and the circuit is so arranged that in one position of the key the continuity check is applied to the outer screen of the microphone lead, and in the other position of the key to the two conductors of the lead connected in series. To test for noise the secondary winding of the transformer is connected to the input of a microphone channel and, with current in the primary circuit and the microphone channel faded up, the lead is shaken and moved about whilst the PPM is watched. If there are any fractured strands in the screen or conductors of the microphone lead the changes in resistance resulting from this movement cause changes in the primary circuit, and produce e.m.f.'s in the secondary circuit which are heard as crackles and are registered on the PPM as kicks of the needle. To prevent loud noises when the primary circuit is made and broken, the contacts of the key are arranged to make the primary circuit before making the secondary circuit and to break the secondary circuit before breaking the primary circuit.

The procedure for carrying out these tests at a studio centre and an O.B point is as follows. For the continuity test the lead to be checked is disconnected from the microphone terminals and is connected to the terminals marked *Mic. Lead (Microphone End)* on the unit. The other end of the microphone lead is unplugged from the wall socket and plugged into the Wylex socket labelled *Mic. Lead Plug* below the terminals on the unit. At an O.B. point the end of the lead remote from the microphone is connected to the terminals labelled *Mic. Lead* underneath the Wylex socket. The key

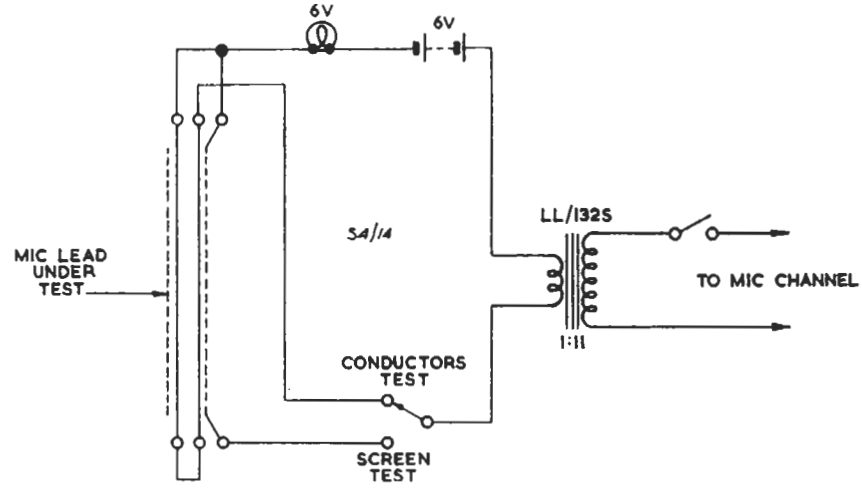

Fig. 13.1. Simplified Circuit Diagram of MCT/1

is then operated to the up position to check screen continuity and to the down position to check conductor continuity.

To carry out the noise test in a studio the microphone lead is connected to the unit as already described and in addition the flexible lead labelled *To Studio Mic. Socket or Adaptor Socket* which passes through the front panel of the unit and terminates in a Wylex plug is plugged into the vacated microphone socket. At an O.B. point this Wylex plug is plugged into the Wylex socket labelled *Adaptor Socket* on the right-hand side of the unit ; this socket is connected internally to a

second flexible lead labelled *Local Amp. In Lead* which passes through the front panel and has ends suitable for connecting to the input terminals of an OBA/8. To test for noise in the screen circuit the key is operated to the up position and the lead is shaken, particularly near its ends, whilst the PPM is watched. The key should then be set to the down position and the lead again shaken to check for noise due to the conductors.

Microphone leads which pass the continuity test sometimes cause noise due to bad contacts near one end of the lead and a cure is usually possible by cutting off, say, one foot of lead and re-making the ends. If crackles are obtained giving deflections up to 1 or 2 on the PPM (with an amplifier gain of 70 db) and if the fault cannot be traced to either end of the lead, the lead should be rejected.

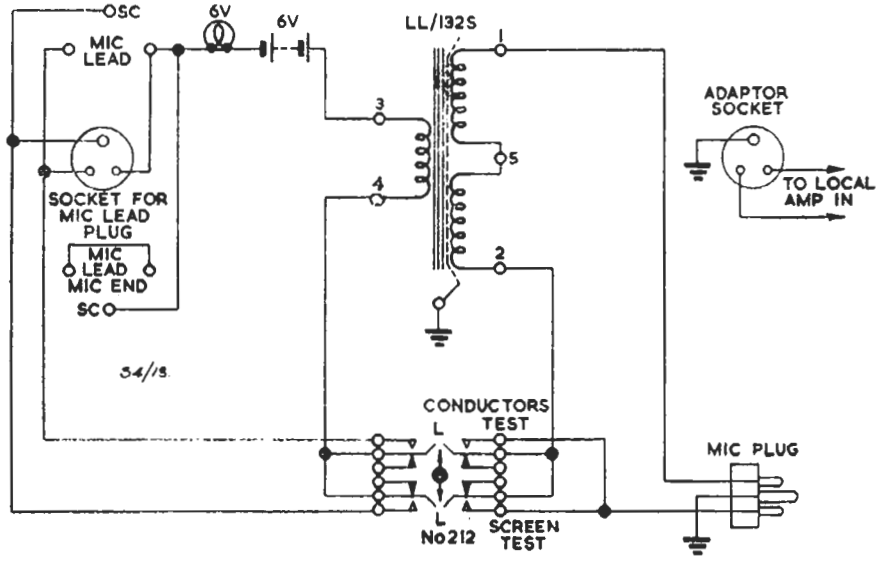

Fig. 13.2. Complete Circuit Diagram of MCT/1