

SERVICING YOUR AU-7a

One of the important features of the AU-7a is the extreme simplicity of design. The impedance matching amplifier contains only six carefully selected electronic parts. This uncluttered solid-state design eliminates many of the weak points found in earlier condenser microphones using vacuum tubes, remote power supplies, or complicated rf circuitry.

Construction of the AU-7a is rugged. Circuit boards are extra heavy and have solder plated two ounce conductors. All plug points and points of connection not soldered are gold or silver plated. Operating voltages and currents are small and all electronic components are operating far below their limits so trouble free operation should be expected. We, however, list some basic checks which can be made on the condition of the batteries and amplifier. These checks can be made without opening the microphone. A vacuum tube voltmeter and a milliammeter are required.

Step 1: By connecting a 0-1 milliammeter from pin B to pin C on the connector, the amplifier drain current is measured. This should be from .3 to .5 ma. An unusually high current at this point would indicate a defect in the amplifier circuit. An unusually low current might also indicate a defective amplifier, but more likely weak 303447 batteries.

Step 2: With a jumper connected from pin B to pin C and a voltmeter connected from the jumper to pin H, the condition of the 303447 batteries under load is checked. Voltage should be 8.4 volts and in no case lower than 6 volts.

Step 3: With a voltmeter connected from pin B to pin A, the condition of the 303448 polarizing batteries is checked. The reading should be 42 volts. This reading must be taken with a VTVM which has a high impedance input as these are special low drain batteries and are capable of polarizing the microphone even though their voltage may be low under a load which might be imposed by a low resistance multimeter.

FREQUENCY RESPONSE

The on-axis frequency response of the AU-7a is linear plus or minus 2.5 db from 40 to 20,000 cycles. A machine-run response curve on a typical AU-7a in an anechoic chamber is shown in fig. 3.

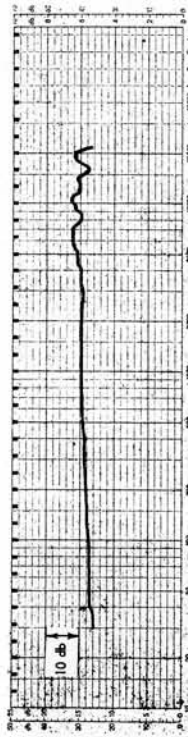


Fig. 3

POWER SUPPLY

Through the use of the Field Effect Transistor and advanced battery technology, it is possible to locate the amplifier supply voltage and the capsule polarizing voltage supply within the microphone housing. The battery arrangement consists of four extremely reliable mercury batteries designed especially for use in the AU-7a by the P. R. Mallory Company. Two batteries rated at 4.2 volts each are operated in series to form the impedance matching amplifier supply of 8.4 volts. These batteries supply 2,500 hours of operating time to the microphone. This is equivalent to four months of continuous operation or one to two years of intermittent duty. The shelf life of these batteries is two years and they must be replaced at the end of this time in any case.

Polarizing voltage for the capsule is supplied by two batteries, operating in series, of 21 volts each. Since there is no current drain imposed on these batteries, they need only be replaced every two years at the end of their shelf life.

The mercury batteries used have excellent regulation characteristics. Voltage is regulated to within 0.5%. At the end of battery life, voltage falls off rapidly so that it is quite evident to the user when battery replacement is due.

Sets of replacement batteries are available directly from Syntron. Our unique revolving stock guarantees shipment of absolutely fresh batteries within 24 hours of receipt of order. Price is \$12.00 per set of four, (2) 303447 and (2) 303448. For microphones in continuous operation a set of two 303447 batteries may be purchased separately. Price is \$6.00 per set.