

NOTES

ON AMPLIFIER CONSTRUCTION

Preliminary Considerations:—Before taking any step whatever in the direction of building an amplifier, read the Partridge P.A. Manual very carefully from cover to cover. A few hours' serious study will place the reader in a better position to choose a circuit suited to his needs and will considerably lessen the risk of trouble and disappointment when the amplifier is put on test.

Circuit Designs:—Modern amplifiers are extremely efficient, give very good quality and are thoroughly stable. The choice of components, however, is definitely critical, and one ill-chosen modification may easily upset the operation of any of the amplifiers described herein.

Lay-Out:—(a) Avoidance of Instability. The lay-out should be progressive, starting with the input circuits followed by the first stage, second stage, etc., and ending with the mains equipment. The "earthy" side of the audio input should be connected to the chassis, which in turn should have a true earth connected to it. Output leads must be kept well away from the audio input circuits and the intervalve and output transformers should have their cores at right angles.

(b) Avoidance of Hum. See that the intervalve transformer has its core at right angles to that of the mains transformer and keep the two components as widely separated as possible. When mounting transformers and chokes, place a stout piece of card or felt beneath each to prevent vibration against the chassis.

Wiring:—Always wire neatly and keep the connections as short as possible. Do not use the chassis as a common earth return except in the case of electrolytic smoothing condensers. All the audio circuits should have proper wired earth connections and every care must be taken to avoid dry joints if the connections are soldered. Wires associated with the input circuits and first stage should be run close to the chassis and not allowed to float in mid-air. Leads to the grids of the output valves and those from the anodes to the output transformer must be kept very short.

A mains transformer rated at 500—0—500v. has 1,000v. A.C. across the outers. Hence the three wires from the H.T. winding must each be run in systoflex. If they are not systoflexed or if all bunched together in one piece of systoflex, breakdown will certainly result. Filament leads should be twisted together similar to lighting flex.

Testing:—Check all connections carefully and see that the valves are in their correct positions before switching on the mains. Never make adjustments or remove a valve while the mains are on . . . such procedure may damage the amplifier.