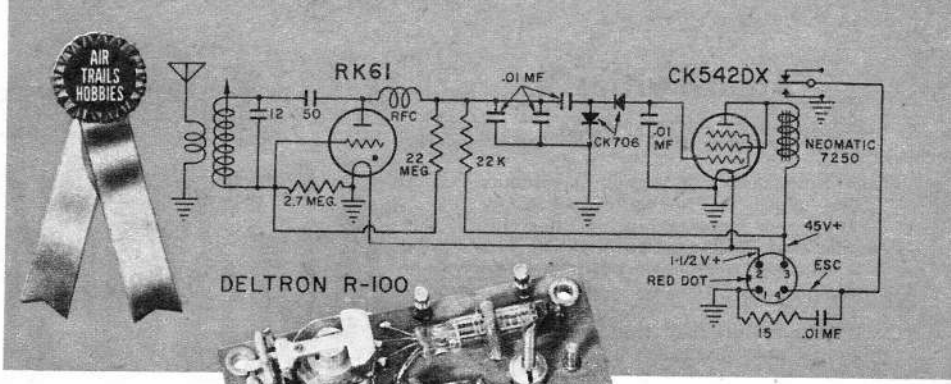


Deltron 27.255 mc. T-100 Transmitter and R-100 Receiver

■ An unusual two-tube lineup is utilized in the Deltron receiver, which, with the special coupling system between the tubes, assures very positive relay operation. It will be seen that a gas tube is in the first position, but the method of coupling it to the second tube is rather unusual. Unlike the normal two-tube receiver, where the second-position tube is fed an audio signal through a coupling condenser, here the output of the gas tube is rectified by a pair of diodes, and the second tube receives just a DC voltage on its grid. Resultant action is so positive that it is possible to eliminate the variable resistor always associated with gas tubes, the only control being for tuning.

A 27" length of flexible wire is supplied with the receiver, and the full length should always be used. If the builder prefers, a vertical music wire whip may be substituted, but the total length from set to antenna tip should be 27".

The makers do not show a milliammeter in the circuit, and suggest that tuning be accomplished with a pair of earphones; there are two terminals on the set for phone connections, and when the set is working correctly a strong steady hiss will be heard. If the hiss is unsteady or sputters, correction may be made by adjustment of the antenna coupling. Note that inductive coupling is used, and the antenna coil may be slid over quite a range.

The receiver was found to be extremely sensitive to weak signals, yet did not appear to overload on strong sigs.

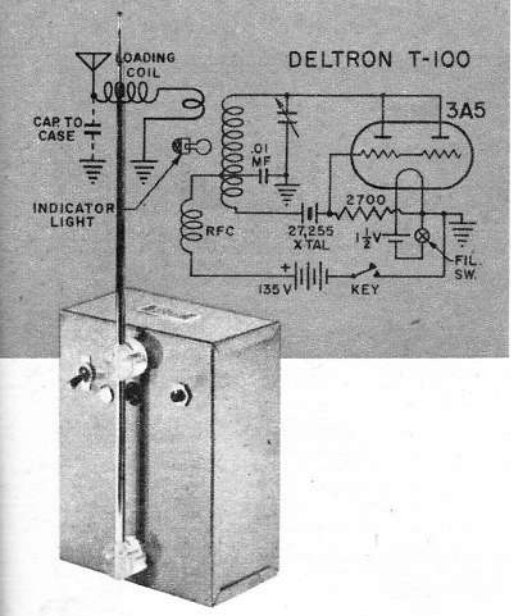
The relay tube is a sub-miniature type drawing a filament current of only 15 ma. Both tubes are soldered to the chassis, and both have wire loops to hold them and take any strain off the leads. There are many little refinements to be found in the receiver. For example, the base is 3/32" thick linen bakelite; four corner holes are provided for mounting, with a smoothly-rolled eyelet in each. The power cable is tied firmly to the chassis, and terminates in a 4-prong plug; a matching socket is included. All components are firmly anchored, either to lugs on other receiver parts, or to eyelets in the base.

The relay is the tiny but rugged Neomatic, and on our set was found to be adjusted to close at .9 ma., and open at .5 ma. Thus a moderate signal will produce three times as much current as required to close the relay. The relay, incidentally, is a special model with spiral armature spring, rather than the flat spring as is found on the standard Neomatic relays.

Contained in a metallic blue finished case, the transmitter features an antenna loading system, to make sure that power *output* will be high. Plate tuning adjustment may be reached through a hole in the front panel, and was not found to be critical. A pilot bulb—located under the antenna for protection against breakage — glows every time key button is depressed. If you don't see the glow, you know attention is required, since it will shine only if the batteries are in good condition and the tube is oscillating. The transmitter was not put out of operation when the antenna was touched while the key was down, though output naturally dropped considerably.

Batteries sit in a row at the bottom of the case, and the latter is of such size that they are held snugly and require no clamps to keep them from rattling around. Connections are by snap fastener and plug, and the back of the case is removable by taking out four screws.

The Deltron equipment is sold only in finished form and cannot be had in make-it-yourself kits.



Specifications

Transmitter: Model T-100, using single 3A5 tube (elements connected in parallel) and Petersen Z9A crystal. Case size, less projections—3x5x7". Toggle switch for A power, and snap-type push button for controlling signal. 4-section collapsible antenna projects 8¾" above case when folded, and 40" when open. Single tuning adjustment reached through hole under removable button on front panel. 60 ma. pilot bulb used as radiation indicator. Weight with all batteries—4 lbs., 4 oz.

Battery requirements: One 1½ V battery for filaments (Eveready 742 or equivalent)—220 ma. drain. Two B bats. (Everyready 457 or equivalent), total of 135 V—drain with antenna extended, about 25 ma.

Receiver: Model R-100. Requires one Raytheon RK61 and one CK542-DX. Base size, 3x1⅝", about 2" thick over all projections. Weight with tubes, power cable and plug, 2.1 oz. Screw adjustment for tuning. Antenna coil may be moved, if operation is not satisfactory. 27" antenna has clip-on end. Relay has screw spring tension adjustment. Escapement connections made through power cable.

Battery requirements: Minimum sizes recommended, A—two pencells in parallel—1.5 V at 65 ma. B—two 22½ V units (Eveready 412 or equivalent) connected in series, 45 V. First tube idles at .5-.75 ma., drops to .1 ma. on signal. Second tube idles at zero, draws about 2.7 ma. on moderate signal. Batteries should be discarded when A drops to 1.3 V with the set on, and B drops to 40 V, with set turned on and signal tuned in.