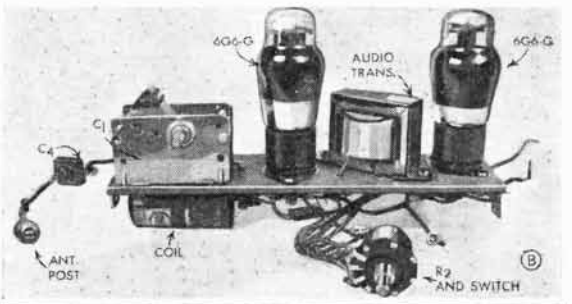
SIX VOLTS WORK THIS



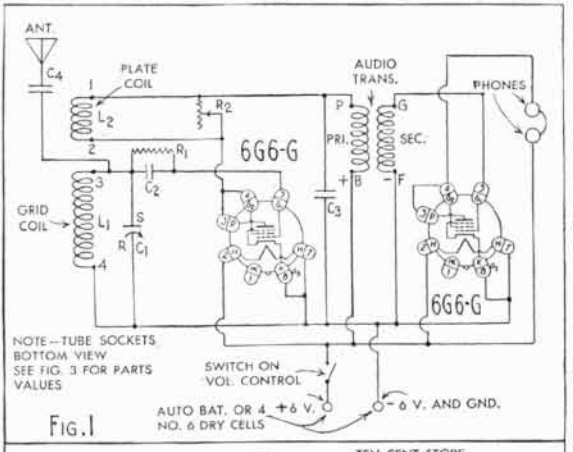


FIG. 1

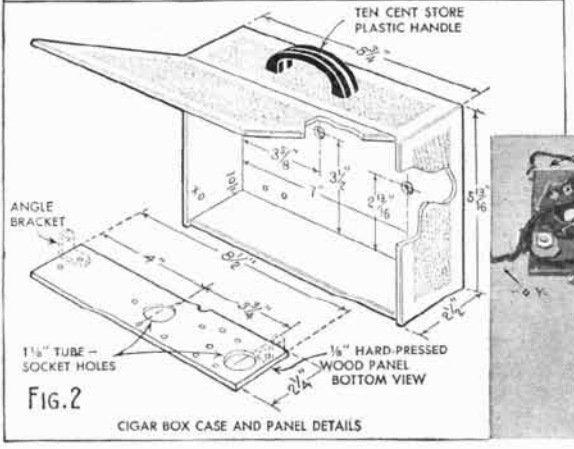
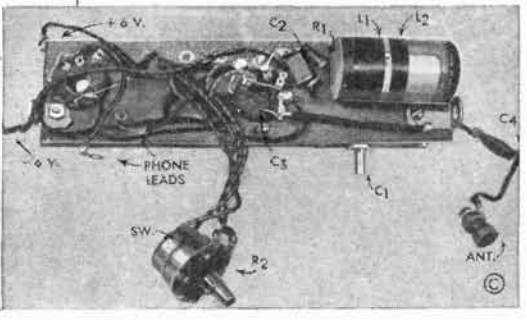


FIG. 2

CIGAR BOX CASE AND PANEL DETAILS



By S. A. Johnson

THIS is an improved wartime version of the 2-tube "Hurricane" emergency receiver originally described in a previous issue of Popular Mechanics Magazine. Like the original model, it requires no B-battery, operating entirely from any 6-volt auto storage battery or four No. 6 dry cells connected in series. Under blackout conditions in localities where a power line supply would not be available for operating standard receivers, and if no dry-cell batteries of any type were obtainable, the nearest automobile would provide a 6-volt storage battery that could be used to listen in on local broadcasting stations for emergency safety and blackout instructions.

Capable of considerably more volume and greater range than the original model, this unit employs two 6G6-G low-drain tubes that require only .15 amp. of heater current, and the B-supply obtained from the same source is so low that it can be disregarded in figuring battery life. These 6-volt tubes are commonly found in the junk boxes of radio students, experimenters, and servicemen.

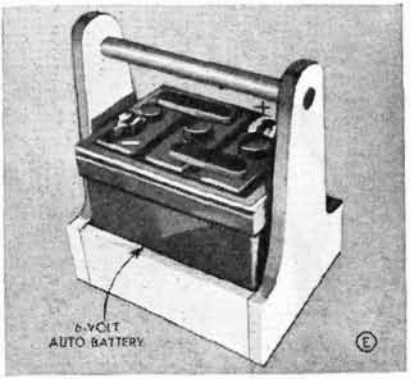
The schematic circuit diagram is given in Fig. 1, and it will be noted that only a handful of junk-box parts are required. These include an old audio transformer of any type with a 3-1 or higher ratio. These parts are assembled on a small hard pressed wood panel as shown in the simplified wiring diagram Fig. 3 and photos B and C. The assembly is housed in a cigar box and finished off with a ten-cent-store plastic handle, as illus-

BLACKOUT EMERGENCY SET

trated in photos A and D. Dimensions and drilling details for this case and panel are given in Fig. 2.

A cardboard tube removed from an old flashlight cell provides the form for winding the coil, the turn data for which is given in diagram Fig. 3. The wire can be salvaged from a burned-out filter choke or an old audio transformer, and can be any size from No. 28 to No. 34, either enameled or cotton covered. Wind coils L_1 and L_2 in the same clockwise direction, space them ⅛ in. apart and anchor the start and finish ends through small holes punched in the form with a needle. Detailed material list R-319 is available from Popular Mechanics radio department, for student use if desired.

The volume control R_2 is mounted directly on the bottom of the cigar box which becomes the front panel of the set. Two small angle brackets support the base panel, and it will be noted that the mounting screw for one of these brackets is also used to mount the variable condenser C_1. The antenna binding post is mounted directly on one side of the cigar box; two Fahnestock clips are mounted on the other end of the box for the positive and negative leads from the 6-volt battery. A ground lead should also be connected to the negative 6-volt battery clip. A good ground connection is necessary for maximum results, and a 20-foot indoor antenna is all that is required for local stations. However much stronger signals will be received if a long outdoor antenna is used. For portable use in certain emergency shelter applications, the 6-volt auto battery can be placed in a home-made wood carrying case of simple design as shown in photo E.



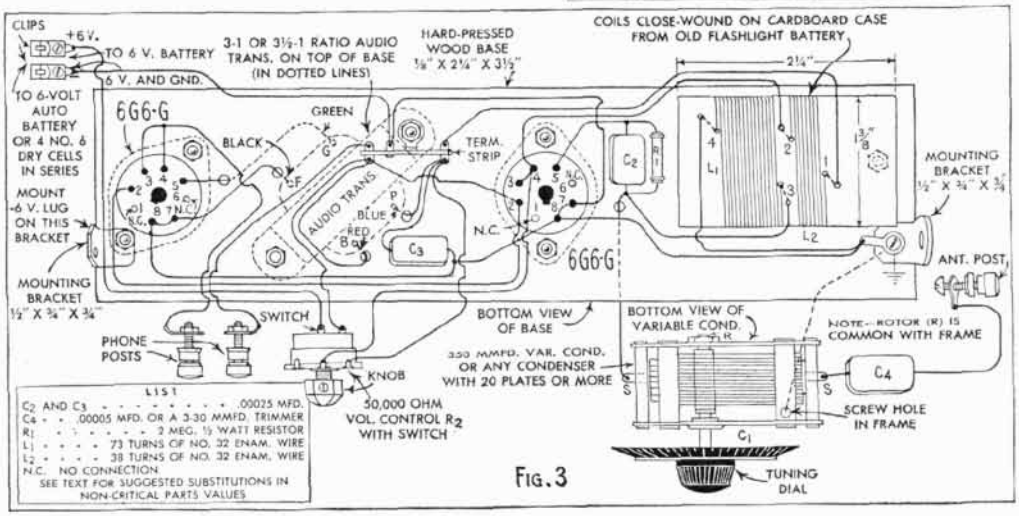
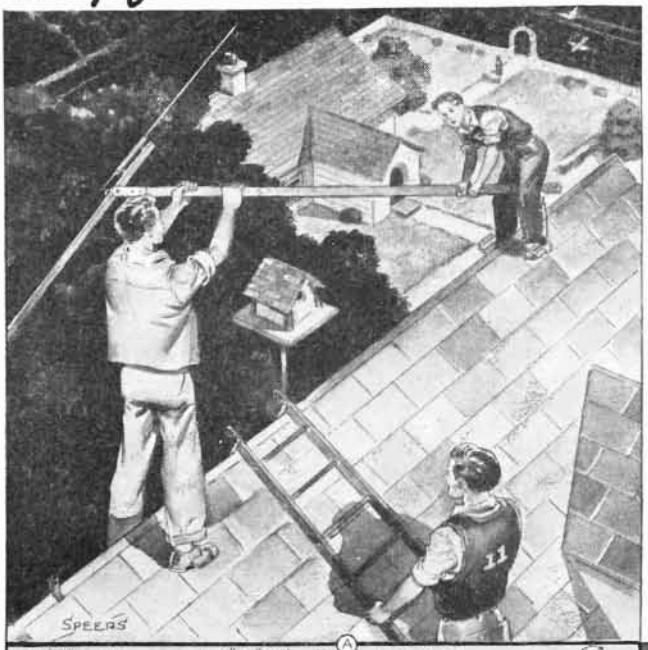
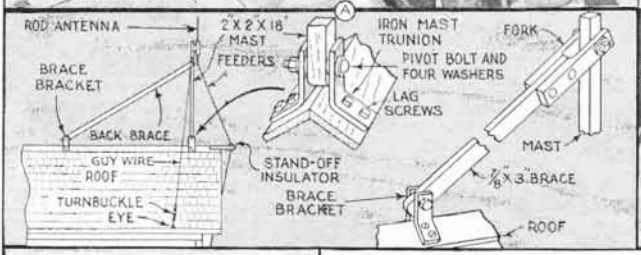


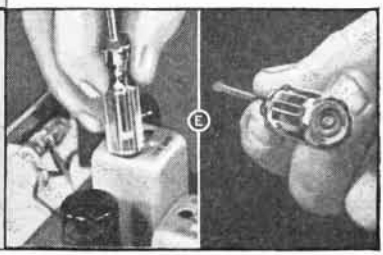
FIG. 3

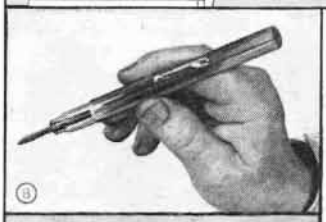
Helpful RADIO SUGGESTIONS

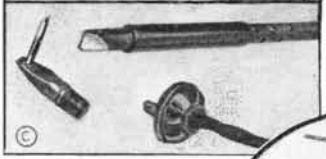


(A) Ridge-pole ultra-high frequency antenna mast for student and WERS applications. Non-critical construction details are given for a mast that is easily raised and lowered to try out various types of rod or di-pole antenna systems. To lower the mast, merely remove the feeders and the brace bolt, and walk back along the ridge with the back brace, as shown in the illustration, until the mast lies flat on the ridge. The guy wires should be located where they will permit raising and lowering of the mast without re-adjustment of tension and prevent side sway during the operation. (B) Insulated screwdriver for radio workers has long plastic handle and is provided with a pocket clip. (C) Extra soldering tip of ⅛-in. copper rod is threaded in a hole drilled and tapped in flat end of regular copper tip for hard-to-reach radio chassis jobs









(E) Handy plastic-handle tool for servicemen combines an aligning tool with a screwdriver. (F) An ordinary paper-type .25 to 2 mfd. 400 volt condenser may be used to determine the presence of voltage in a radio circuit if a voltmeter is not available. Insulate the leads with "spaghetti" tubing, as shown, and place the bared ends across any terminals suspected of voltage. Then remove and bring the leads together; a spark will indicate that voltage was present. (G) Small piece of old rubber sponge stops speaker rattle in midget sets when voice coil is slightly off center. (H) Homemade dual-outlet line filter. Condenser values are not critical, however, these condensers should be tubular paper types rated for either 400 or 600 volts

(D) Temporary repair for carbon volume control in older types of receivers