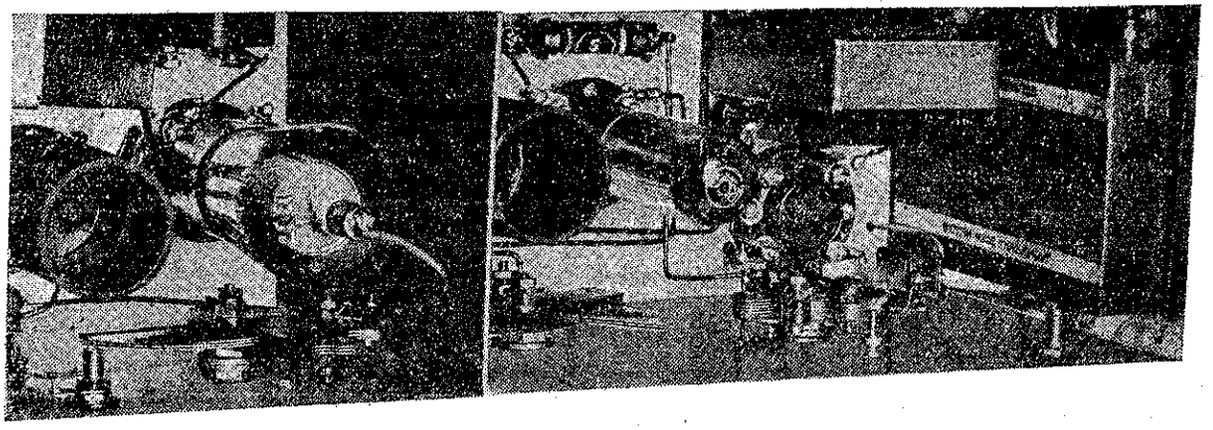
set can be built with everything included at a price under that stipulated.

We found the fourth and last condition the hardest to comply with. By using specially selected components, which, however, could not possibly be easily obtained by the home-constructor, and by using a home-made loudspeaker cone, the size of the set could have been reduced to about two-thirds its present size. Even though standard parts have been adhered to, however, the set is still quite compact, and, what is perhaps more important, is quite light—the complete outfit weighs just over 24lb.

Building the Set.

THE set is built on an aluminium baseboard, 14 x 4 inches, with ¾-inch turnover all round. A list of parts is given, and these should all be obtained before the work is commenced. The baseboard parts are then laid out in accordance with the photograph, and the layout diagram, great care being taken in the positioning of them. The two de-coupling condensers in the r.f. stage are mounted as shown in the photograph, by means of a suitably bent strip of aluminium, bolted to the baseboard. Coils and valves should be placed in their sockets before the latter are mounted, to ensure that sufficient space has been left for the inserting of these components. Coils should be about one inch distant from the screen, not less.

After the baseboard components are mounted, the panel, which forms one side of a four-sided aluminium box, enclosing the set, should be drilled to take the panel components. Space conditions have rendered it imperative that bakelite dielectric variable condensers be used. These are quite readily obtainable and are cheaper than the more bulky air dielectric type. In the original model three small slow-motion tuning dials were used. Only two of these, however, are strictly necessary, as the third is for reaction.



A general view of the interior. Note the compact bakelite dielectric variable condensers.

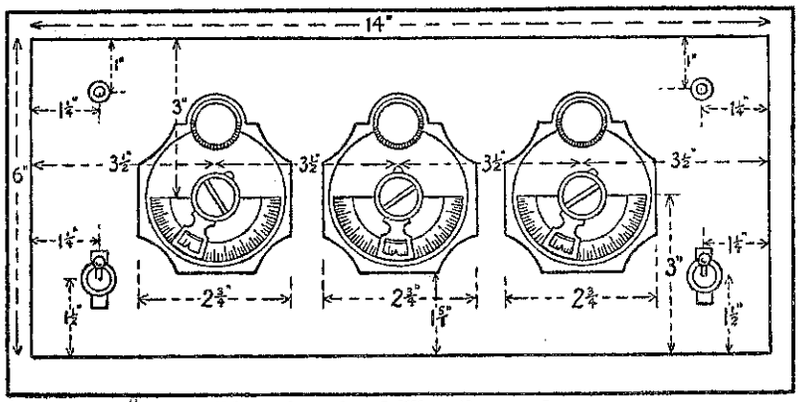
which may be controlled by a small knob.

A word about the three-point switch used to change over from frame antenna to ordinary aerial. The switch has one common terminal, which goes to the grid of the r.f. valve. Two connections are taken from one of the remaining two terminals, one from the top of the secondary coil, and one through a .0001 fixed condenser to the aerial socket mounted on the panel. One end of the frame antenna is taken to the remaining switch terminal.

Notice that the tuning dials should be mounted upside down to render tuning more convenient. When all the panel components are in position, all the baseboard wiring it is possible to do without mounting the boxing should be completed. If, by the way, it is found that a little more baseboard space is needed, the bias battery may be mounted under the lid, which otherwise is really not required.

Instead of employing a battery cable or terminals, ordinary rubber covered flex leads for the "A" and "B" supplies are taken straight through the holes drilled in the chassis, and, where necessary, fitted with wander plugs for battery connections. The "A" — terminals of the valve sockets are taken straight to the chassis via the bolts holding the sockets in position. The wiring is thus greatly simplified. Note that a midget fixed condenser has been used to couple the r.f. stage to the detector. This is mounted under the baseboard, so that the aluminium partition separating the r.f. stage from the rest of the set has no connections made through it. Thus it may be fitted in

(Concluded on page 35.)



Dimensions for drilling the panel.

Parts List for the "Picnic Portable"

Aluminium base and screening, as described.
2 .0005 bakelite dielectric variable condensers.
1 .0003 bakelite dielectric differential condenser.
3 small vernier dials.
1 three-point toggle switch.
1 on/off toggle switch.
1 1,000 ohms spaghetti resistance.
5 UX valve sockets.
2 valve base coils, as specified.
2 1 mfd. fixed condensers.
1 .00025 mfd. fixed condenser.
1 .0001 mfd. fixed condenser.
1 .0003 mfd. grid condenser, with 5 megs. grid-leak.
1 r.f. choke.
1 audio transformer, ratio 5-1.
2 banana plugs and sockets.
Glazite, screws, wander plugs, flex, etc.