

THE fire department of Prague (Czecho-Slovakia) is equipped with radio receiving sets and portable transmitters. These are carried by the apparatus and make possible communication with headquarters while detachments are in attendance at a fire.

**PASSENGER - CARRYING** aeroplanes, now fully equipped with radio, have call letters identical with their registration number. These are five lettered, the first one, or in some cases the first two, indicate the nationality. Most of the 'planes use long wave, varying from 600 to 1550 metres. With the exception of French navy balloons, all the 'planes use continuous wave transmission or telephony. These few dirigibles use spark.

GREAT Britain now grants licenses for radio receivers free of charge to those who are blind. It is necessary for the applicant to register with his or her local council, which issues a certificate. On presenting this at the local post office, a listener's license is issued free of the usual ten-shilling tax.

VARIOUS fake "dopes" and patented mixtures which are alleged to "charge storage batteries, reduce internal resistance, remove sulphation, prevent freezing," have been found by the United States Better Business Bureau to be ineffective. The outstanding battery "dope" coming to the bureau's attention during the past year was composed essentially of corn starch!

DURING the recent flight of the Southern Cross from San Francisco to Brisbane, Mr. J. Warner, the radio operator, found that the main difficulty was that of providing sufficient battery current to operate the receiver over the long periods it was on the air. Although the ignition system on the motors of the plane was not screened, very little trouble was experienced from this source of interference. The chief obstacle in the way of the radio operator was the noise of the three powerful engines, which made all but the loudest signals unreadable even when the 'phones were held closely against the ears. The aerial for the transmitter consisted of a coil of copper wire which was unreel when the plane took the air.

WEATHER maps by radio are among the latest development of science. The system consists of a photo electric transmission from two land stations and pen and ink reception aboard ships. The morning weather reports are collected by the weather bureau and a weather map drawn by hand in ink on an 8 x 10-inch base sheet, printed in black on white paper. Of this map a photographic negative is made. The map with its black background and its clear white lines acts as an interrupting shutter between the point of light and a light sensitive cell. The result is a series of electric current pulses as the lines of the map pass the cell opening. These pulses amplified, operate a fast relay, the secondary of which controls the output of the broadcasting station. The essentials of the receiving instrument consist in a rotating cylinder of bakelite, around which is wrapped a printed base map. A pen box is connected so as to be influenced by incoming signals. The cylinder is set in move-

ment by an impulse caused by the starting up of the cylinder at the transmitting end. After a little adjustment the machine automatically takes care of itself, reproducing faithfully the map transmitted. The whole operation takes about eleven minutes. A simple attachment to the receiver converts it into a transmitter (as well as a receiver) of pencil sketches, handwriting, etc., drawn with ordinary lead pencil or with special ink. As a machine weighs about twenty-five pounds this attachment makes itself useful in transmitting back to headquarters, maps made by an observer aboard an airship as she moves along. It is believed that the system will ultimately be found very useful in many lines of communication.

WHICH give the best tone—headphones or loudspeakers? All things being equal, headphones are superior in tonal qualities, as one or two possible sources of distortion in a loudspeaker are absent in headphones. Still, a really high-class loudspeaker when properly used is not far short of the best headphones.

IF your accumulator case is provided with a carrying strap be very careful that none of the liquid from the accumulator gets into contact with this, as the effect will be to "rot" the strap which may then break suddenly and let the accumulator fall, possibly with disastrous results to the carpet.

IN laying out a bakelite or highly polished hardwood, a piece of paper

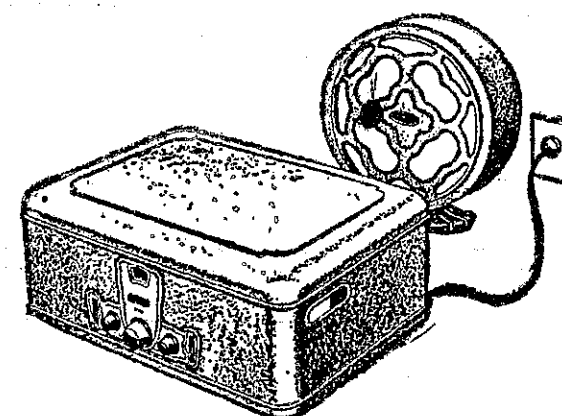
pasted over the entire surface will allow of as much figuring and lay-out guide lines as required. When it has been finally decided where each hole is to be made use a fine punch and a light hammer to make a slight impression. This will serve as a start for the twist drill. Finally soak the paper from the panel and an unscratched surface will remain.

#### Correction.

IN a reply to "T.P.," Island Bay, in the issue of August 17, it was stated that the trouble was caused by having two audio valves and a detector. This should read two radio or high frequency valves and a detector.

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