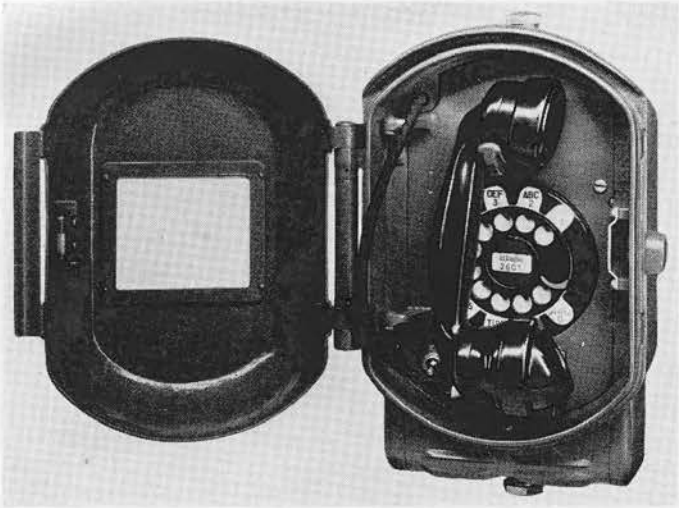


A Telephone Set for Outdoor Use

By W. J. THAYER
Telephone Apparatus Development

OUT-OF-DOOR telephone service is required to a considerable extent by police and fire departments, at taxicab stations, and by watchmen. For this service there has been available the set shown at the left of Figure 1, which has been extensively used with satisfaction. Within a heavy cast iron box was housed a deskstand transmitter and receiver together with the ringer and accessory apparatus. To obtain certain improved features possible through recent developments, however, as well as a more pleasing appearance, a new set, known as the 300 type, has recently been developed.

One of the differentiating features of the new development, shown in the illustration at the head of this article, is that it employs a handset connected to the set by a waterproof cord. The dial provided has a large external number plate to make the digits and letters more plainly visible.

The semi-oval form, with a long lip for a handle on the outer door which balances the hinge on the opposite side, makes a pleasing appearance. The new set has a cast aluminum housing divided by an inner door into a rear and front compartment. The switchhook projects through the upper part of this inner door and carries the handset, and a dial or apparatus blank is mounted near the center of the door. At the bottom of the door, barely visible behind the transmitter of the handset in the illustration, is a pad holder, placed at an angle for convenience in writing and provided with a spring clip for holding a pad, and on the inside of the door is a metal frame which holds an instruction card. A spring catch holds the outer door shut when the set is not being used. The outer door may be opened by pulling the handle at the right of the

set. Associated with the spring catch is a lock which permits locking the set against possible use by unauthorized persons.

Within the rear compartment, shown in Figure 2, is the talking and signaling apparatus, consisting of an induction coil, a condenser, and the ringer, and provision is made for the installation of a relay when auxiliary signals are required. The gongs of the ringer extend through an opening in the bottom of the housing, which is provided with a removable cover with screened louvers to secure maximum audibility and at the same time provide protection against storms. To allow the cover to be readily removed for adjustments of the gongs, only a single screw is employed to fasten it, and the screw is designed to remain in place when the cover is removed—thus eliminating possible loss. When loud ringing telephone bells are used, a switch may be provided below and to the left of the dial, as shown in the illustration at the head of this article, to cut them in or out of the circuit as desired.

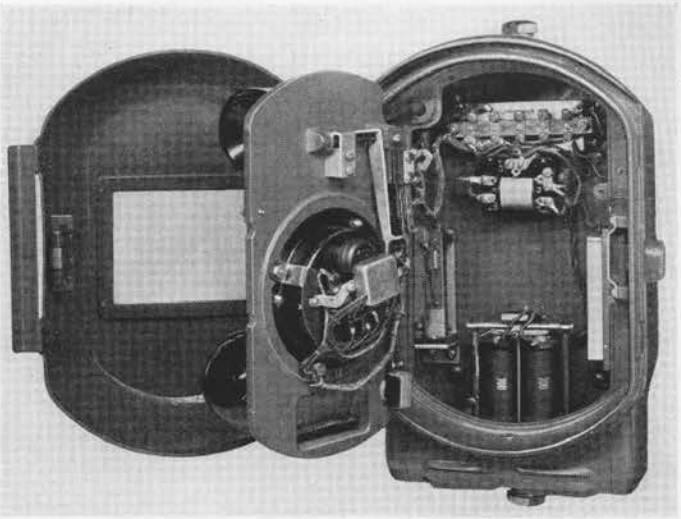


Fig. 2—The screw plugs at the top and bottom of the set block threaded holes left for the conduit through which the connecting wires are carried

The handset employed differs from the more usual type in that the transmitter is protected from the entrance of moisture by a rubber membrane. This construction has previously been described in the RECORD*, although as applied to an operator's transmitter instead of the usual station handset.

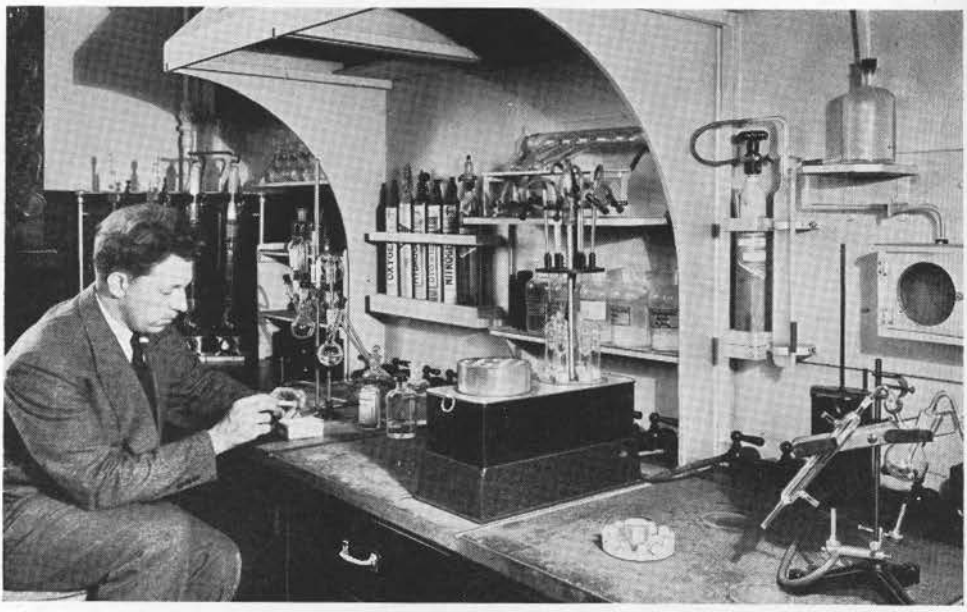
Although the housing is not waterproof in the sense that water could not be forced into it, ample protection is afforded against all usual weather conditions. The outer door, which is of sheet steel

Fig. 1—At the left is the earlier, 530A, type subscriber set, and at the right, the new. A Western Electric nameplate will replace the Bell System nameplate on sets sold to users outside of the Bell System

*RECORD, *February*, 1932, *p.* 182.

for reasons of strength, fits closely over a projecting flange on the housing which forms a barrier against the entrance of water, and additional protection is provided by a hood—another flange on the housing—projecting over the top of the door. Spring hinges insure that the door cannot be left open, thus exposing the apparatus to storm through carelessness, and a small hole in the bottom of the front part of the housing permits any small amounts of water that may gain entrance to run out without entering the rear compartment. An actual test in which severe rain conditions were simulated by a shower sprayed on the set at a 45-degree angle for fifteen minutes resulted in but a single drop of water entering the front compartment; none was found in the rear compartment.

To make the installation of the set easy, a mounting bracket has been designed with a series of mounting holes which will take care of ordinary conditions encountered in mounting on fences, buildings, etc. This bracket is not a component part of the telephone set, however, but is furnished as a separate piece of apparatus when required. The ease with which this new set may be transported and installed, because of its light weight and small size, as well as its improved equipment, should result in wide use.



H. W. Hermance, in the microchemical laboratory, prepares apparatus for a determination of minute quantities of arsenic