

sure-testing manometer adjusted for atmospheric pressure is used for this purpose, in order to obtain measurements of gas pressure within .02 lb. per square inch. A record is made of the readings, together with temperature and atmospheric pressure, which may be necessary for future reference. These readings are plotted on graph paper, with a straight line being drawn between adjacent readings. This establishes the location of the leak opening as being between the two valves having the lowest reading. The gradients on either side of the points of lowest pressure are then projected until they intersect. The point of intersection establishes the relative distance of the leak from each of the adjacent valves. This

portion of the cable is then inspected for clues that might indicate the source of trouble. Should the inspection prove unsuccessful, a man rides the messenger applying pressure testing solution (soap) to the cable sheath, looking for bubbles and listening for the hiss of escaping gas.

Similar procedure is followed in locating faults in buried or underground cable. A supplementary tool is available for determining the fault location with more exactness which, of course, reduces the amount of digging necessary in the repair. This is a gas-flow indicator which reveals the direction of the flow of gas at any particular point in the cable where the instrument is attached in the manner of a shunt.

lighted and, in addition, the majority of our trains are of the MU electric type, which offer splendid visibility.

DRAIN ON DRY CELLS

"To prevent unnecessary drain on dry cells in wayside telephone boxes and booths, thus increasing the life of the cells, what arrangement do you employ to open the battery circuit when the phone is not in use?"

Through Switch Hook

By E. J. MUCKERHEIDE
Telephone & Telegraph Engineer
Chicago, Milwaukee, St. Paul & Pacific
Milwaukee, Wis.

THE telephones we use are wired so that the battery is cut off by either the push-to-talk button, or when the receiver is placed on the switch hook. To my knowledge, this is general practice for telephones used in this type of service.

BURIED OR AERIAL CABLE?

"Within interlocking limits, where signal cable is to be used in runs of 300 ft. or more, and where space is available for a pole line, do you install buried or aerial cable? What are the advantages of both types of construction?"

No Standard Practice

By R. T. SANSOM
Signal Engineer, Atlantic Region
Canadian National, Moncton, N. B.

WE have no standard practice based solely on length of cable and availability of space for a pole line. Our practice is to consider all factors in each case individually.

Aerial cable and its accompanying pole line are subject to all the hazards of traffic and the elements. It is exposed to fire. A pole line may obstruct the view of signals. There are hazards to both types of

construction, but the probabilities are that, when an aerial cable is subjected to injury through an accident, this is reported or ascertained immediately, whereas, with buried cable, the same may not be known for some time—probably not until moisture has entered the cable.

Buried cable can be unwittingly damaged, even by responsible parties; this is not so true with aerial cable. Mechanical injury from outside interference is more serious with buried cable than with aerial cable, and the longer the run, the more probably is the injury.

BATTERY BOX MOISTURE*

"How do you keep moisture out of signal battery boxes on the ground in bringing underground cables into the boxes?"

Two Suggestions

By JOHN O'CONNOR
Signal Maintainer
Chicago, Milwaukee, St. Paul & Pacific
Madison, Wis.

THERE are two ways in which moisture gets into battery boxes and tubs—first, by leaking through the cable outlet and ventilator openings when the boxes are set too deep in the ground and, second, by sweating when the ventilators are closed. Both of these conditions can be corrected if the following suggestions are carried out:

(1) When installing battery boxes and tubs, set them in the ground so that the bottom of the cable outlet and ventilator openings are 10 in. above the surface of the ground. The cable outlet should be sealed with Dux-Seal, which has proved very satisfactory. It is not necessary to set the battery boxes very deep in the ground when you are using

*Other answers on this subject were published on page 517 of the August issue—Editor.

PASSENGER TERMINAL SIGNALS

"In passenger terminals, where trains pull in on stub-end tracks, have you found it desirable to install color-light type signals to warn enginemen when they are approaching bumping posts? If so, what type lamp units and aspects do you use?"

Interlocking Signals

By D. R. VOUGHT
Supervisor Telegraph & Signals
Pennsylvania-Reading Seashore Lines
Camden, N. J.

AT the entrance to our Atlantic City, N. J., passenger terminal, which has a stub-end track arrangement, we have route interlocking signals in service which display a Restricting signal aspect for train

movements into the station-platform tracks. These signals are of the position-light dwarf type.

Not Necessary

By O. S. PENMAN
Supervisor of Signals
Reading, Philadelphia, Pa.

WE have not found it necessary to go into this type of signaling, due to the fact that our terminal is well