

closed position; then knock out the obstruction. If the buffer is operating properly, it will require about 10 seconds for the switch to resume normal position.

## Light Signals as Train-Order Signals

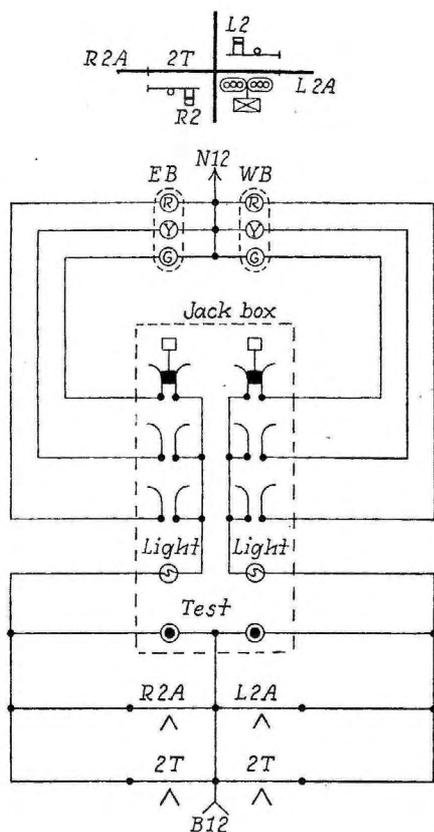
*"Do you use light signals as train-order signals? If so, how are the signals controlled, and what check is made to determine whether the proper aspect is being displayed?"*

### Approach Lighted

By A SIGNALMAN

Recently, I visited a small installation at an intersection of two branch lines, which recalled to my mind the three types of train-order signal circuits shown on page 256 of the April issue of *Railway Signaling*.

An old mechanical plant was abandoned and replaced by a two-lever table interlocking machine which was housed in the joint depot. The outside functions consist of four



Circuits for control of color-light train-order signals

electric signals and two color-light train-order signals. Commercial power not being available, all signals were approach lighted. By using a three-indication order signal, the absence of a light will not give a false clear indication.

Indication lights were installed on

the train-order jack-box, which also served as illuminated approach indicators. Test buttons were installed to check the outside indication prior to the approach of a train. To date this scheme of approach lighting the order signal gives evidence of long life for the primary batteries.

## Railroad Operation and Railway Signaling

*This series has been prepared to present both the background of signaling and an analysis of signaling systems. The general field of railway signaling will be described, an attempt being made to clarify its interconnection with railroad operation. Special attention has been given to obtain an orderly arrangement of the material.*

**Note: Revised STANDARD CODES of operating and block signal and interlocking rules, as adopted in November, 1938, have recently been issued by the Operations and Maintenance department, Association of American Railroads. Hereafter, therefore, all references to the Standard Code made in this department will apply to the rules adopted November, 1938. (The prices at which the revised rules may be obtained from the A.A.R. are listed in an item in the News section of this issue.)**

132-Q: *What is the principal difference between the time-interval and the space-interval methods of directing train movement?* A: The character of the interval established between trains. The essential characteristic of the first is that an attempt is made to prevent collisions by establishing a time-interval between trains, e.g., a train following another train is allowed to start from a particular point only when a certain number of minutes have elapsed after the departure of the preceding train; in the second, attention is centered upon maintaining a space-interval between trains, e.g., a following train is allowed to start from a particular point only when the preceding train is definitely known to have reached a certain point ahead. However, the time-interval and the space-interval systems are similar in that they are both utilized with the same object in view, namely, to prevent collisions and delays due to train interference.

133-Q: *How is train operation directed under the time-interval sys-*

*tem?* A: Through the use of time tables, rules, train orders, train-order signals and train dispatching.

134-Q: *What is the function of the time table?* A: The Standard Code defines *time table* as: "The authority for the movement of regular trains subject to the rules. It contains classified schedules with special instructions relating to the movement of trains." When an employee's duties are in any way affected by the current time table, that employee is required to have a copy of that time table with him when on duty. The Standard Code defines *schedule* as: "That part of a time table which prescribes class, direction, number, and movement for a regular train." In turn, a *regular* train is described as: "A train authorized by a time-table schedule." Variations from the regular schedule, or special movements, under the time-interval system of operation, are provided for by using train orders.

135-Q: *What is meant by "time-table superiority"?* A: Attention has been called to the fact that a train having precedence over another train is known as a *superior* train. When trains are so scheduled that they must meet or pass other trains operated on the same track, one or the other of the two trains involved in each meet or pass must be given precedence over the other if uniform operation is to result, if the more important trains are to be expedited, and if unnecessary delays are to be avoided. A train which is given precedence over another train by the time table is called a *train of superior class*. Trains are thus classified, usually, as first-class,