

What's the Answer?



Signal Aspects During Blackouts

"Please furnish information concerning the operation of signal lamps during blackouts."

Use Hoods and Reduce the Intensity

The signal engineer of one railroad along our coast has inquired concerning methods with reference to the operation of light signals and lamps on semaphore signals during blackouts. In addition to the brief mention of this subject in an article on page 421 of the August, 1941 issue, correspondence with a railroad man in England as well as study and conversation with railroad men in America has brought out further information to be given in the comments below. Readers, who have developed other ideas on this subject, are requested to send their comments to the editor for publication in these columns.

During the earlier air raids in England, trains were stopped as soon as practicable, especially in terminal areas. Later, a speed limit of 15 m.p.h. was established, and more recently this was increased to 50 m.p.h. Evidently the conclusion in England has been that trains are to be kept moving during air raids, and it may be assumed that the same practice is to be followed in America. During the early part of the war, a test flight was made with an airplane of the Royal Air Force. At an elevation of about 6,000 ft., the colored lights of signals could be seen at night throughout a line of about 80 miles, thus providing excellent navigation lights which the enemy bombers could follow from the coast to London. This condition was corrected.

A first consideration is that if the lamps in a light signal are not to be lighted, no aspect can be displayed. Although the blade of a semaphore would display an aspect, the range

would be too short during hours of darkness to permit the operation of trains at normal speeds; this being with the assumption that trains are to be operated with the headlights extinguished. Therefore, if trains are to be operated efficiently, the lamps must be lighted when needed to display aspects, in both the light types and in semaphore signals. Recognizing this necessity, some aids in the solution of the problem are: to provide hoods to conceal the lights from the view of pilots and observers in enemy aircraft overhead at a height at which they normally operate; reduce the intensity of the lights to the absolute minimum required for the display of aspects during darkness; and use automatic approach lighting control, or manual control at interlockings, so that the lamps will be lighted only when needed for the display of aspects when a train is approaching.

Shorten the Range

Many developments have been made to increase the range of signals, and the railroads have purposely located signals so that they can be seen a maximum distance when approaching. However, with three-aspect signaling, and the signals spaced full from stopping distance, an engineman always has an Approach aspect and track length in which to stop short of a signal indicating that he must stop. An exception would be an instance in which a switch might be thrown in a block to set a signal at the most restrictive aspect after a train has passed the signal in approach to the signal for that block. This leads to the thought that long-range aspects are not absolutely necessary except for the

To Be Answered in a Later Issue

(1) *What methods, other than those explained in an accompanying article, have been developed as a means of operating signal lamps during blackouts?*

(2) *In view of the fact that the limited supply of insulating materials and copper is needed in the war program, what methods and schemes have been developed to minimize the quantities of insulated wire and cable required in the maintenance, replacement and new construction of signaling facilities?*

(3) *In a crossing protection installation including flashing-light signals and short-arm gates, how long should be the pre-warning operation of the flashing-light signals and the gate lamps, prior to the time the gates start to move from the raised position? After a train clears the crossing, at what point in the operation should the signals and gate lamps be cut out?*

If you have a question you would like to have someone answer, or if you can answer any of the questions above, please write to the editor. Answers to any of the questions above will be paid for in cash or by a subscription to Railway Signaling.

red aspect of signals for blocks in which switches are located less than emergency braking distance from the signal. From an engineman's standpoint, it is desirable that he see the aspect as soon as he can see the signal, but for the duration of the present

