Editorial Comment

Signal Lights In War

THE railroads are faced with two somewhat similar, yet different, war-time problems involving the lamps in signals. In areas where absolute black-outs are to be in effect, the signal lamps must either be extinguished or provisions must be made so that these lamps are not visible from enemy aircraft overhead. The term "dim-out" applies to the controls required to reduce the general illumination over an entire area, so that a haze of light will not serve as a background to silhouette the outline of a ship off-shore, as viewed from a submarine farther off-shore.

Based on warnings issued from lookout posts and observation aircraft, black-outs will be placed in effect for periods when enemy aircraft are over the area, and the controls of the signal lighting could be brought in conformity with this practice. On the other hand, the approach of submarines may not be known in time to issue warnings, and, therefore, presumably, the dim-out of signal lamps must be in effect during the hours of darkness every night. Therefore, signals equipped with hoods to prevent the light from being seen from aircraft overhead might meet the requirements for black-out, but if the signal is directed off-shore, it may not meet the requirements for dim-out.

In contrast with lights which are used for purposes of illumination during hours of darkness only, the lamps in light signals have the characteristic of serving to display aspects at any time during each 24-hour period. A fundamental feature, however, is that although a high intensity is required during daylight, a much lower intensity serves adequately during darkness, unless there is a dense fog.

The results obtainable in controlling the intensity of signal lamps may be separated into such classes as good, better, and best. Normally-extinguished signal lamps, with automatic track circuit approach control of the illumination, should be classed as "good," because no lamp is lighted long enough to serve as a guide for aircraft overhead. At the comparatively few locations where the light from signals is directed off-shore, the problem with reference to dim-out could perhaps be solved by using sun-relays as a means for reducing the intensity during the hours of darkness.

If something better than normally-extinguished lights, with approach control of illumination, is required to meet legal requirements, arrangements to reduce the voltage and thereby lower the intensity at night seem to be the best solution for both black-out and dim-out. Various schemes for accomplishing these results have been explained from time to time in *Railway Signaling*, as for example, the arrangement including selectors published on page 437 of the August issue. Other ideas were discussed on page 40 of the January issue and on page 153 of the March number.

A study of these and other proposals leads to the conclusion that control of the intensity of signal lamps deserves not only the best of engineering talent, but also good judgment to determine the policy with reference to the expenditures that may be justified by the circumstances.

Scrap Will Win the War

AMERICANS have the ability to construct and operate manufacturing facilities for the production of armament in any quantities required, providing sufficient raw materials are available. In spite of this fact, the production of war machines and ammunitions is being limited, at present, by shortages of copper, tin, steel and rubber. This message has been told repeatedly in newspaper articles, editorials and cartoons. Too many of us, however, fail to understand that the small quantities of scrap, which we might locate, constitute a necessary part of the program to produce large total quantities of scrap.

The 1,316,000 people of the state of Nebraska produced an average of 100 lb. of scrap per person in a period of three weeks. Granting that 60 per cent of the people of Nebraska live on farms and, therefore, had the opportunity to assemble discarded agricultural machines, the fact remains that, regardless of where we live, everyone should make a diligent search for scrap. An average of even a few pounds by each person will represent a large total for the country as a whole.

As a test case, an ex-signalman made a search through his home, garage and back lot, where he located enough scrap brass and copper to fill a half-bushel basket, as well as a bushel of scrap iron. Several items, such as keys, padlocks, carburetors, brass tubing, copper wire, wrenches, screws and hinges, were given up reluctantly, but with the knowledge that our country needs this metal now.

And this *now* means *now*, because some steel furnaces have been closed down for lack of scrap iron, and some munition plants cannot be operated full time because of the shortage of brass, the principal components of which are copper and tin. Your scrap will help "Keep 'Em Rolling and Flying."