

# EDITORIAL COMMENT

## The Outlook for Signaling

PROGRESS in railway signaling is made a step at a time, and the magnitude of any one year's developments can be measured only when viewed from a distance. In the year that has just closed, the construction of new signaling facilities increased to totals greater than for any year since 1931. New lines signaled totaled more than 1,000 miles for the first time since 1931. Extensive replacement of semaphores with light signals aggregated more than 385 track miles. Car retarders were installed in two large yards, the first extensive construction of this character since 1931. Likewise, other types of signaling were installed in sizable quantities so that, viewed as a whole, 1937 was a comparatively active year.

It is true that many of these projects were planned and authorized during 1936 and the early months of 1937, when general business and railroad traffic were increasing, in contrast with conditions during the last six months of 1937, when traffic and earnings declined below those of the same period of the previous year. As a result of this more recent slump, several proposals for signaling improvements that were planned for 1938 are now being held in abeyance. However, the picture is not as dark as may seem at first glance, for, as we emerge from the extreme low levels of 1933, there are bound to be reactions from the gradual rise, to bring about readjustment in those factors which have gone forward too fast. The present recession may continue through the early months of 1938, but the indications are that the last six months of 1938 will be equal to or better than the similar period of 1937. When the Interstate Commerce Commission grants the railroads a substantial increase in rates, as is expected, earnings will be increased sufficiently to restore the credit of the railroads. Extensive railroad buying, especially in the signaling field, will then follow because these facilities, in the majority of instances, effect savings that pay their way.

Signaling will be favored in coming improvement programs for several reasons, principally because the installation of signaling will effect improvement in train schedules, with a minimum expenditure as compared with that required for additional tracks or new motive power. Viewed from another standpoint, the most urgent demand on the railroads today is to reduce the overall time of trains between termini, and the easiest and most efficient means to accomplish this result, in many instances, is to reduce unnecessary delays on the line and in yards. Signaling in one or more of its various forms offers a solution in most cases.

New signaling is not pulled out of a hat by a magician, and it may, therefore, be of interest to analyse the situation to determine where and why some of this prospective signaling is to be installed. In 1937, one road installed automatic block signaling on more than 200

miles of single-track line on which only 10 trains are scheduled daily, and this project was justified by the improvement in safety, the saving in train time, a better on-time performance and savings in operating expenses. A study of the railroad map of the United States, together with consideration of the traffic on various lines, shows that at least 5,000 miles of main lines should be equipped with signals within the next five years, and this can all be justified as readily as the project mentioned above. The greatest need, however, in so far as automatic signaling is concerned, is to rehabilitate extensive mileages of antiquated signals and control arrangements. The railroads made a good start in this direction in 1937, semaphores being replaced with light signals on about 385 track miles, the locations being respaced to meet the requirements of longer braking distances necessitated by higher train speeds.

In the field of interlocking, it might seem, at first consideration, that all of the track layouts to which interlocking is adapted have been so equipped. This is true, with a few possible exceptions, including some new terminals under construction. The construction in the interlocking field for the future, therefore, will consist, for the most part, in replacing obsolete equipment and in combining the control of two or more plants into one modern machine. The Pennsylvania recently combined four interlockings into one. In a C.T.C. installation made in 1936, the Delaware & Hudson included five plants in the control, and is now extending the installation to include two more interlocking layouts. At this rate the number of interlockings, as such, is going to decrease as the years go by, but, in the process, there will be a large amount of new construction for signal forces.

A question might arise as to where C.T.C. installations may be made in 1938, equal to the total for 1937. The necessity for meeting competition is the answer. When one road shortens its schedules and continues to make on-time arrivals and deliveries, it gets the business. The losing competitors soon see the light, and follow suit with the installation of the necessary signaling facilities. When passenger trains continue to run late, day after day, in seasons of heavy traffic, and damages have to be paid for failure to meet schedules on deliveries of fruit, manifest and stock shipments; C.T.C. affords an answer.

Therefore, although the picture of signaling construction for the coming year or two may seem dark at first glance; when it is analysed in the light of "reasons why," it appears to brighten perceptibly and reveal distinct outlines of considerable new automatic mileage, extensive C.T.C. projects, combinations of interlockings, several retarder installations, and some cab signaling thrown in for good measure. All or any of these improvements, however, do not come merely by wishing. As a general rule, operating officers are busy doing their best to keep trains moving by the use of the methods which they learned in past years of experience. Some one must advance the thought that new signaling facilities are

available to solve their operating problems on certain sections of line. The signal engineers might well take the initiative by co-operating with their operating officers in determining where the tight spots are and in offering suggestions as to the remedies to be applied.

## OPEN FORUM

*This column is published to encourage interchange of ideas on railway signaling subjects. Letters published will be signed with the author's name, unless the author objects. However, in order to encourage open discussion of controversial matters, letters may be signed with pen names at the request of the author. In such instances, the correspondent must supply the editor with his name and address as evidence of good faith. This information will not be disclosed, even on inquiry, unless the correspondent consents.*

### Obligation for Crossing Protection

St. Paul, Minn.

To the Editor:

I have read with interest your editorial in the December issue of *Railway Signaling*, concerning "Illumination as a Type of Crossing Protection," and am taking the liberty of commenting to some extent on your statements, as in my opinion, they bring out certain conclusions, inferentially at least, which have been permitted to stand for a long time and which are now growing to such proportions that no one may prophesy where they will eventually end.

It would seem to me that you infer and further the thought, that it is the obligation of the railroads to protect highway traffic at grade crossings, and that the responsibility for the prevention of accidents at such crossings, regardless of conditions, rests entirely with them. This is not so strange, as perhaps the majority of highway users accept this as an established fact.

The railroads may be more or less to blame for this condition, as they have, since the beginning, indicated acceptance of responsibility for crossing accidents by paying damages, not because they considered themselves liable, but because it was the most economical way out. It has, therefore, become a custom for highway users to consider they have all the rights at grade crossings, and if these rights are interfered with in any way whatever the railroads must take the consequences.

In the first instance, the railroads were called upon to protect highway traffic from their trains. Now they are called upon to protect their trains from highway traffic. The railroads were here first and the situation is not of their making, except that they developed the country to the extent that modern highways and the traffic they carry were made possible. They are the senior lines and yet, contrary to established practice, are compelled to furnish and maintain the protection.

You cite the record of crossing accidents but you should also make clear that train-automobile accidents are a very small percentage of highway accidents causing death and injury. You point out that state laws require that headlights of automobiles be directed down-

ward so that they do not blind drivers going in the opposite direction, and this limits the effective range so that freight cars are most difficult to see. Do you think this is any excuse for drivers to proceed at speeds far beyond the range of their headlights? Do you not think the logical legislative action for a state to take would be to compel automobile manufacturers to place lamps on the cars which would not be so objectionable? Can anyone truthfully consider that a driver who is traveling at a speed far beyond the range of his headlights is not driving recklessly? This undoubtedly is the cause of so many other accidents on the highways that those which occur at railway crossings are insignificant by comparison.

Why then should railroads be called upon to protect themselves against such conditions by floodlighting their trains at crossings, when corrections in headlight design and the compelling of drivers to assume some responsibility for their own safety, in accordance with the laws of self-preservation, would not only assist greatly in reducing the comparatively few accidents at railroad crossings, but would also do much in the way of reducing the far greater number of accidents on the highways in general?

You cite instances where neon gas signs make it difficult for drivers of fast moving automobiles to readily pick out flashing-light crossing indications. Can anyone justify this driver continuing blindly at high speed under such conditions? With modern reflectorized approach and railroad crossing signs plainly marking a crossing, could it be anything but reckless driving to miss these signs because of high speed or neon signs? Is there any reason why one major industry should be penalized because of the use of neon gas signs displayed by some other industry at the risk of human life? Why not prohibit the use of such signs in such places or force the use of a non-conflicting color? Are not the railroads entitled to some consideration in the regulating to make highway crossings less dangerous? They most certainly should not be required to change or add to their crossing signal systems every time a reckless driver comes down the highway or some tavern or roadhouse puts up a new neon gas sign.

In the consideration of the floodlight as a safety device, you are advocating the use of another "open circuit" piece of apparatus to be installed by signal departments which consider such devices unsuitable for use as far as train signals are concerned, and some of which oppose the use of such devices for obtaining safety at highway crossings. I need not remind you of what difficulties would be encountered in being required by state or other authorities to practically guarantee against power outages, burned out lamps, and many of the other agencies which act to cause an "open circuit" device to indicate safety when the most dangerous condition may exist.

In my opinion, the more of such devices we are required to add at grade crossings, the more dangerous these crossings become. Why not plainly show their existence, and then make every effort to obtain regulations, for others than the railroads, which will not only improve conditions at grade crossings, but at all other points on the highways.

H. E. BRASHARES,  
Asst. Supt. of Signals, Great Northern.