EDITORIAL COMMENT

What is in Store for the Signal Field?

DURING 1936, the railroads showed more evidence of life than in any period since the onset of the depression. Not content to sit back and wait for the revival of general business to bring about an increase in rail traffic, the more progressive roads acquired new types of equipment, reduced passenger fares, inaugurated pick-up and delivery freight service, and adopted better methods of operation that have speeded up train service. The net result has been to bring back to the rails much passenger and freight business that had been drifting to the highways and other means of transportation. This increased business, augmented by that due to the gradual return of general prosperity, is gradually pulling the railroads out of the doldrums. Furthermore, many of the roads are definitely planning to provide still more efficient service, as is evidenced by the phenomenal increase in orders for new rail, locomotives and cars.

The important question is whether the signaling of the railroads is keeping pace with this progress. New automatic block signaling may well be given first consideration. In one instance, a road is operating 35 trains a day over a single-track line, without automatic block protection. It is recognized that as the number of train movements over a line increases, the chances for delay and the likelihood of accidents increase, this being especially true whenever a few high-speed trains are interspersed with other trains. In some instances, a train accident precipitates action on projects which have been postponed for years, but it would seem advisable to proceed with such installations without waiting for such incentive. In consideration of such conditions, several roads installed extensive sections of automatic block during 1936, and the budgets of four roads alone include over 1,000 miles of new signaling for 1937.

Turning attention to existing signaling, it should be noted that of the 93,401 miles of track equipped with automatic block signaling on January 1, 1936, more than 53,800 miles were installed over 20 years ago. Much of this apparatus is badly worn, difficult to keep in repair, inefficient in operation, and renders poor performance. Of more importance is the fact that many of these signals are now improperly located and afford inadequate aspects for the protection of train movements at the speeds at which passenger as well as freight trains are being operated today. When planning a program of signal rehabilitation, it would also be well to consider the numerous developments and improvements in apparatus which have been brought out in recent years. For example, the Norfolk & Western, when planning to rehabilitate a section of automatics, found that many of the signals should be relocated, that the lower-quadrant semaphores were worn and inadequate as to aspects and should be replaced with light signals, that the track and control relays could be replaced with modern instruments which were more efficient and economical in operation, and that the track wiring should be replaced by cable.

Likewise, in the interlocking field changes in methods of train operation and reductions in train schedules are necessitating so many changes in track layouts and such extensive additions to old interlockings that complete replacements are often not only most expedient but also most economical. For example, as a part of a grade separation project at Elmira, N. Y., the Erie found it necessary to install a power interlocking to replace a mechanical plant, and in conjunction therewith installed a coded control to control an outlying junction formerly handled by another mechanical plant. An outstanding example of modern interlocking is that installed during 1936 on the New York Central, where a modern type miniature lever machine was used with no mechanical locking.

A further illustration of the application of modern apparatus is found on the Delaware & Hudson, where a centralized control installation on several miles of double track included the switches and signals formerly operated by five separate interlocking layouts. Thus, the old conception of the term, interlocking, as applying to the control of switches and signals within an area of a few hundred feet is gradually blending in with that of centralized traffic control, involving the consolidated control of two or more interlocked track layouts, as well as the direction of train movements by signal indication throughout an extended territory. Furthermore, centralized control presents the advantage of using power-operated switches at all or any part of the passing track or outlying junction switches where isolated interlockings were not previously justified, as for example, on the Texas & Pacific where centralized traffic control was installed on 14 miles of single track, including 4 switches and 16 controlled signals. The centralized traffic control recently completed on seven miles of double track on the Denver & Rio Grande Western is an excellent example of the possibility of increasing track capacity by directing train movements by signal indication in either direction on both tracks. The numerous advantages of such projects are very evident.

A Glance into the Future

Two factors, changes in railroading practice and obsolescence of signaling apparatus, are forcing the extensive rehabilitation of signaling and interlocking. Further, the fact that many of these proposed projects show savings in operating expenses sufficient to pay for the improvements in a few years is an excellent incentive toward early action, especially now when interest rates are very low.

However, in each instance, action must be initiated by someone, and, in the majority of cases, it remains for the signal engineer of the road to do so. Conversations with operating officers, dispatchers, enginemen, and train crews will often bring to light difficulties encountered in train operation which can readily be corrected by the application of power switches, signaling, etc. Investigation may well be made of the possibilities of using coded line control apparatus to combine the control of two or more interlockings. In many instances, a brief study of the costs of handling cars in classification yards will show that an installation of power switches and car retarders will facilitate operation and reduce operating costs, while in certain instances, the use of retarders has increased the capacity of the yard sufficiently to permit more classifications to be handled and thereby enable yards at outlying junctions to be closed down. To the extent that signal engineers are awake to these opportunities of serving their respective railroads most effectively, extensive signaling construction programs are in the making for the near future.