

# Editorial Comment

## The Year 1928 in Retrospect and the Outlook for 1929

**A**LTHOUGH the first eight months of 1928 gave evidence that it would be a poor year for the railways, business increased during the last quarter to such an extent that the year proved to be the best since the war, with the exception of 1926, for many railways. The net operating revenues for 1928 was about \$1,180,000,000, or at the annual rate of 4.65 per cent on the property investment. This rate was higher than in 1927, but lower than in 1925 or 1926. Because of the tendency of total earnings to increase slowly of late, by reason of the decline in passenger business and the failure of freight business to grow as rapidly as formerly, the total operating revenues of the railways during 1928 were smaller than in 1923, 1926 and 1927, but their net operating income was greater than in either 1923 or 1927. This is a result of the increased attention that is being given by the managements to improvements in property, equipment, and operating methods that will effect economies. Reductions in operation expenses, brought about by such improvements, afford an explanation of the fact that in spite of the decline in total operating revenues, the net operating income during the last year was larger than in any previous year excepting 1926.

The mileage of second track built during the year was considerably smaller than in 1927, the total of 271 miles comparing with 447 miles in 1927, a decrease of 176 miles, or 40 per cent. It is interesting to note that in the period since 1925, during which there has been a marked increase in the amount of traffic handled by the railways, there has also been a marked decrease, year by year, in the amount of second track constructed. Whereas the construction of second track was formerly almost the first form of relief for congestion of traffic the tendency of the present to increase the capacity of the existing facilities by the installation of signaling, remote control of passing track switches and the direction of train movements by signal indication has resulted in the postponement of such construction until these various agencies function to the limits of their capabilities. The greater part of the second track built in 1928 was on a few of the larger roads in pursuance of programs for double-tracking important parts of the system.

Signal and interlocking equipment is being recognized more and more each year as an economical means of increasing track capacity by reducing the spacing between trains and by reducing the number of train stops. It is, therefore, apparent that the signal department has a duty of growing importance in helping solve modern operating problems in a manner that will assist in reducing operating costs.

The signal engineer has several new tools to help the operating department move trains. The centralized control system for the operation of passing track switches and the direction of trains by signal indica-

tion without written train orders is proving an efficient means of expediting traffic. Some managements advance the objection that the cost of the centralized control system is too high. However, any project must be considered in the light of the savings accomplished in proportion to the cost. Therefore, if a centralized control system produces results that will pay a high rate of return, the original cost should not be the controlling factor. During the last year, several roads have arrived at the conclusion that the train delay hours on the road, rather than the number of trains, should be the measure for determining the need for automatic signals or centralized control, as the case may be.

In instances where it is necessary to reduce the cost of a proposed installation, some roads are considering the use of the centralized system to control the signals for directing train movements, while only a few of the switches on grades where trains are started with difficulty are to be power operated, the others remaining hand-operated.

The simplified circuits developed for centralized control are being adopted extensively for the control of remote power switches and signals, for the remote control of manual block signals with the automatic "O. S."ing of trains, and for the control of complete interlocking plants from a remote point. Extensive use of the centralized control system for this field is anticipated because of the savings in wages made possible.

### Indications for Centralized Control

From a practical operating standpoint, assuming that all of the apparatus in a centralized control system functions properly, the only indications absolutely necessary on the control machine are the red or "O. S."ing indication. Other indications are, however, of considerable advantage to the man in charge of the system. One road has provided indications to show "track occupied" or "unoccupied," or the "O. S." indication and also the full normal and reverse switch indication, as well as the indication of each position of every signal. It is considered that the extra expense to secure this information is well worth while, especially where the man operating the machine has other duties.

### Progress in Eliminating Derails

The recommendation of the Signal Section, A. R. A., that derails be not used in main tracks, and the increasing popularity of interlocked automatic signaling protection for railroad grade crossings, have brought out increased evidence in 1928 that more and more men of influence are coming to the viewpoint that derails are more of a menace than a protection. In reply to a recent questionnaire,\* 33 signal engineers stated that they were in favor of eliminating derails;

5 men believed that derails were of benefit at some special locations; 2 made an unqualified statement that derails should be used, and 2 others believed that derails are not desirable in terminals or in multiple-track territory, but should be used at isolated crossings, especially on single-track lines or on non-automatic block territory where enginemen are not accustomed to signals.

Several state commissions, which were formerly strict in their requirement of derails, are now considering the question with open minds, and during 1928 have given permission for plants to be installed without derails, under certain conditions. It is, therefore, evident that the general tendency is towards the elimination of derails in main tracks.

#### Improved Spring Switches with Better Signal Protection

The use of buffer type spring switches, which was developed during the last few years in the middle west, is now spreading rapidly to all parts of the country. At the ends of double track, at the leaving tracks of yards, and at certain passing tracks, where movements predominate in one direction on certain routes, the spring switch is an economical means of reducing the number of train stops. During 1928, improvements were made that permit the switch to be thrown by hand readily without working against the buffer. This permits the switch to be used more readily for switching movements, while as an additional advantage, the switch can be trailed through with the buffer effective in either position.

The proper signal protection for spring switches is one of the problems being discussed at this time. A signal should be provided at or near the switch to furnish facing point protection. A signal is also used on some roads for the trailing direction, while a dwarf signal for back-up movements from the turnout is also considered desirable.

#### Automatic Highway Crossing Protection of Increased Importance

A few years ago, it was customary to provide automatic highway crossing signals at one or two crossings in a town, but the problem today is to provide protection at all of the more important crossings in the town. Unique arrangements of combined automatic and manual control are being devised that will provide 24-hour protection at more crossings than were formerly protected by flagmen or manually-operated gates for only a portion of the 24-hour period, the whole new arrangement being operated at a saving, compared with the wages of the men formerly employed. Of the 236,283 highway crossings of railroads on the Class I roads in the United States, only about 11,000 are protected by automatic visual signals, and 4,900 by audible signals only. Gates are operated 24 hours a day at 3,280 crossings and part-time at 2,600 crossings. It may, therefore, be seen that there is a field for the use of automatically controlled signals and gates, that will be productive of greater safety and at the same time accomplished savings.

#### Train Control on New Basis for 1929

A new basis has been established for the installation of automatic train control during the year, differing radically from that existing since the first order of the Interstate Commerce Commission was issued in 1922. The railroads are not to be ordered to install any more train control at this time, according to the de-

cision of the commission on November 27. Evidently the commission considers that its previous orders have accomplished their purpose of forcing extensive development of automatic train control. However, the report does not promise relief from further activities regarding train control for the carriers are expected to undertake studies and tests to bring about standardization of train control devices so that they may be used in joint track and terminal areas. Further they are "in no way relieved from the responsibility which rests on them to provide additional protection where needed in territory now protected by automatic signals." This leaves the roads free to use train control, cab signals or other means, as they see fit, to secure additional protection on dense traffic lines, but they should take some action during 1929 if they desire to escape further orders for train control. In fact, the Bureau of Safety is definitely instructed to keep in touch with future developments and report to the commission.

The commission requested complete information on automatic block signals when the case was opened in August, 1927. In its report, the commission listed 19 roads on which certain divisions not now protected by automatic signals are handling over 1,000 trains each month. However, no signal installations were ordered. Although the report does not discuss this matter, Commissioner Eastman, in his dissenting opinion stated that, "the records indicate that the carriers may be expected to make satisfactory progress in extending their use, especially since such signals often promote efficiency of operation as well as safety." This "word to the wise" should be sufficient for those carriers on which heavy traffic is being handled without automatic signals and where anything less than a strict manual block is in effect.

#### Bright Prospects for 1929

During the last four months of 1928, the freight traffic was heavier than in any previous year, with the exception of 1926. This is a favorable indication for good traffic during at least the first half of 1929.

The report issued by the Interstate Commerce Commission in November has relieved the suspense with reference to further train control orders at this time, and leaves the railroads free to proceed with signal installations that have been held in abeyance for the last 18 months since the commission requested information from the roads. The circumstances are, therefore, favorable for a good year for signal and interlocking construction during 1929. The volume of work to be done on any individual road depends to a great extent on the activity of the signal officers in co-operating with the operating department to learn of local operating difficulties that might be solved by signaling, remote control equipment or centralized control. The other field of accomplishment is the combination of control points or the use of automatic control to replace manual control, which will reduce operating costs. More new developments have probably been brought out in signaling than in any other railroad field and the opportunities to apply this apparatus effectively are readily apparent to those who study local conditions. The progress in signaling during the next year, therefore, depends primarily on the extent to which the signal forces make the best of these opportunities. Based on past records, every indication points to a record construction program for 1929.

\* The question of the elimination of lock rods on interlocked switches, which was included in this questionnaire, is ably answered by C. D. Cronk of the Cleveland Union Terminal Co., on page 33 of this issue.