

This Is the Equipment Economy Number

FOLLOWING the practice established in 1926, this March issue of *Railway Signaling* is termed the Annual Equipment Economy Number. In it we have endeavored to assemble articles setting forth especially the use of new or improved equipment and methods that result in more efficient, reliable and economical operation with safety. Equipment economy is not accomplished necessarily by an installation that is cheap in first cost but expensive to maintain and operate. Neither is economy necessarily attained by the most expensive installation, unless the operation and maintenance charges are reduced sufficiently thereby to pay the interest and depreciation on the added original cost. Regardless of the type of equipment used, the ultimate test of any installation is performance, as measured in terms of the absence of trains stopped necessarily by failure of the apparatus to function properly.

Developments are being made so rapidly in the railway signal field that no one man or one road can readily try out all of the different types of equipment or systems extensively. Therefore, we have endeavored to present in this issue data of value on several important phases of signaling. Three articles explain methods and costs of operating signals by primary battery, a-c. floating, and portable storage battery. Another article explains in detail how one road is earning from 70 to 100 per cent on its investment in automatic interlockings. Recent developments in car retarders and modern ideas in yard design adaptable for retarders are described. In addition, an unusually large number of descriptions of new and improved units of equipment are included in the New Devices section. It is to be hoped that a thorough consideration of the experiences and ideas of other railroads set forth in this issue may be found of benefit to many of our readers.

Signaling Is an Aid to Greater Equipment Utilization

A RECENT economic study of the growth of railway traffic and of the increase in railway facilities as published in the *Railway Age*, presents a number of significant facts with relation to the part that automatic block signals have played in increasing revenue ton-miles without increasing train-miles. The study is based upon statistics of the Class I railroads, as presented in the reports of the Bureau of Railway Economics and the Interstate Commerce Commission. Charts are presented showing graphically the comparative growth of three distinct kinds of railway facilities, namely, total locomotive tractive effort, total freight car capacity and miles of automatic signals. As might be expected, the growth of total freight car capacity trails the other two factors.

The figures show that there has been a 115 per cent increase in the mileage of single-track automatic block signaling from 1913 to the end of 1926. During the same interval, the total miles of road protected with automatic block signals increased 82 per cent, while the increase in the total investment in railway facilities, including both roadway and equipment, increased 52 per cent during the same period. Total locomotive tractive effort has been increasing about as rapidly as the increase in total investment for railway facilities. At the end of 1926 it was 45 per cent greater than in 1913. However, the increase in total freight-car capacity was only 25 per cent

during the same period, although there were 49 per cent more revenue ton-miles in 1926 than in 1913.

Signal engineers might well familiarize themselves with this significant verification of the value of automatic signals. To operating men it would appear in the nature of circumstantial evidence of the economic value of signaling. The investment in automatic signals would not show such a consistent increase from year to year if it were not for the fact that signals have demonstrated their value conclusively in securing the fullest utilization of the investment in locomotives and cars. More recognition of this fact by all interested railway officers will undoubtedly result in the continuance of the present trend to spend relatively more money for automatic signals than for other railway facilities.

The survey credits this increase in automatic signals to the activities of the signal engineers by saying, "It is to be presumed that the marked extension of mileage of automatic signaled line is due to the efforts of the signal engineers to show how effectively signals can be made to increase track capacity and assist in economy of operation through the avoidance of delay, and the resulting faster train movements."

Sales Engineering

VARIOUS and sundry opinions on important questions of the day are expressed freely by travelers in the smoking compartments of sleeping cars. While several railway signaling officers were discussing salesmen recently, in such surroundings, the following comments were noted and are here recorded, not for the purpose of advice, but of education, being in harmony with the familiar lines from Robert Burns:

"O wad some power the giftie gie us
To see ousel's as others see us!"

The discussion opened with a remark from one signal engineer that several of the manufacturers' representatives who had been calling at his office recently were not prepared to answer important questions regarding the operation of the equipment they were attempting to sell, and that in general these salesmen did not have a training and experience equivalent to that of the railway men with whom they were discussing the subject at hand. Several of these manufacturers' representatives with titles such as sales engineers, were criticized for overlooking the economic considerations in proposed signaling projects, being accused of looking only at their own side of the problem and neglecting the fact that a railway man must secure the most reliable installation at the lowest cost practicable. Although it is a fact that many of these manufacturers' representatives were ex-railway employees, the explanation was offered that conditions have changed considerably since many of these men left the railway service.

The conclusion of the discussion was that if the engineers of the signal department are to keep the signaling equipment on a par with the track, rolling stock, and locomotives of today, they have no time to waste with the salesman who cannot tell his story accurately and quickly.

Of the motor car accidents at highway crossings on the Pere Marquette during the 42 days ending on January 22, 52 per cent (12 out of 23) were cases in which the automobile ran into the side of a train. These accidents caused two deaths and 29 injuries; and seven of these injuries were serious.