Railway Signaling

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Better Pole Line Construction

SEVERAL railroads have for years made it a practice to build separate pole lines for signal circuits, and especially in connection with the installation of automatic train stop or train control, the majority of the roads prefer to provide a pole line for the line control circuits separate from the telegraph line, which may be owned jointly by the railroad and the commercial telegraph company or exclusively by the latter. When pole lines are constructed for signal lines several important factors must be considered, perhaps the most important of which is the selection of pole timber that will render long service at a minimum expense for replacements. Perhaps the majority of those roads which have recently constructed lines are using southern pine poles, treated full length with about 12 lb. of creosote to the cubic foot. Cross-arms are likewise made of treated wood and the best of galvanized iron pole hardware is used, together with high grade insulators. In other words these pole lines are installed to such high standards that many years of satisfactory service can be expected. Signal officers should not adopt standards or approve of the purchase of materials that are known to be any less reliable.

Approach Signal Lighting vs. Constant Burning

WITH the increasing use of light signals as well as electric lights for semaphore signals, consideration must be given to the question of whether to use approach control circuits for the lights or to let them burn constantly. With the approach control arrangement the lamps are lighted only when a train is approaching within the limits of one or more track circuits from the signal, the principal advantage being the reduction in energy consumption for the lights, especially where the normal supply is obtained from batteries of either the primary or portable storage type. However, where the lights burn normally on a-c. power, such as with the straight a-c., the a-c. floating or the a-c. primary systems, the saving in power is not as important as the increased life of the filament.

An arrangement can be provided on a motor car to shunt the track circuit on the approach section in order to light the signal and this is being done on several roads so that the maintainer can get a test on the lamp indications as well as to find out if a train is approaching. Such a practice on a busy road is, however, liable to cause trains to be delayed by the "stop" indication set up by the maintainer's test.

There is an advantage in using constant burning control for the leaving head block signals because the train crews on a siding or the operator at the station, by watching such a signal, can determine when opposing trains are approaching.

It may, therefore, be said that the answer to the question of using approach control for signals depends somewhat on local conditions and methods of power supply. No hard and fast rule can be applied to its use. Where economy can be shown in power supply and in increased life of filaments the majority of the roads prefer to use the approach control scheme, but exceptions should be made wherever a constant signal indication will be of advantage to those using motor cars or for train operation.

Selling the Importance of Adequate Maintenance to the Management

THE final yard stick with which to measure the maintenance of signal and interlocking facilities is the performance record of unnecessary train stops or delays caused by failures of signaling apparatus. The elimination of false clear failures is also a factor in this consideration.

Some roads have purchased the best available signal equipment and installed it with the most modern approved construction methods, only to later assume that the system is so good that it should practically maintain itself, the maintainers being assigned such long territories that the inspections are inadequate to locate defects in anticipation of failures and as a result the maintainers become "trouble shooters" in a comparatively short time. As a result the equipment deteriorates rapidly and consistently poor performance reports incite criticism from the operating department. Forces are then rushed in to renew wires and trunking, overhaul cables, straighten up the signals, etc., and the pernicious cycle starts all over again.

Of course no degree of maintenance will make wire insulation or track connections last forever but adequate testing will determine when the useful life is nearing its end and enable replacement to be carried on in a progressive program that will preclude both stop signal failures with resultant train delays and false clear indications.

With some types of power supply certain roads have decided that shorter one-man territories can be maintained more efficiently, while other roads prefer to lengthen the sections and furnish helpers. However, the problem of securing satisfactory results is not always solved by providing enough maintainers, properly distributed. Especially on the newer types of equipment and methods of power supply, even experienced maintainers may be overlooking some essential feature that will in time result in numerous failures. The maintainers, especially the newer men must, therefore, be properly instructed, and their special efforts directed to certain features that have been the source of trouble on