

# Editorial Comment

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## *Bargaining for Highway Crossing Protection*

IN years gone by, the state railroad commissions and city councils took the initiative in ordering the railroads to provide flagmen or to install gates or automatic signals for the protection of traffic at highway or street crossings. The fact that the first cost of the equipment as well as the operating charges would eventually reach astounding amounts was not the concern of public officers. In view of the fact that these measures may have saved lives, it is difficult to show that they have not been justified. However, developments in late years have made it possible to provide equally effective protection with lower operating costs, and thought should be given to ways and means of reducing the charges.

In presenting requests to city or state authorities to make changes, the railroads can present several advantages. For example, by using automatic control or centralized manual control of gates or signals, the protection can be provided for the full 24 hours, as compared with protection during only 12 hours or less under present methods. Likewise, in some cases protection may be rendered for switching movements. Still other advantages can be offered in some cases, depending on local conditions. Certain railroads which are studying these situations have made changes that not only provide equal or better protection for a greater percentage of the day, but also show savings amounting to 35 to 100 per cent of the cost of the changes.

## *Changes in Types of Interlocking*

INTERLOCKING is defined as an arrangement of switch, lock and signal appliances so interconnected that their movements must succeed each other in a predetermined order. In the early days of mechanical interlocking plants, the signals, switches, derails and locks were all connected to the levers by pipes or wire lines, and the mechanical locking in the machine was so arranged that the levers had to be operated in a predetermined order. With the development of power interlocking, the levers operated circuit controllers which governed the movement of the switches, signals, etc., and were also so connected as to operate the mechanical locking, which latter function necessitated that the levers be operated in a predetermined order.

With the development of the track circuit, the presence of a train on a certain section of track was utilized to control electric lever-locks, supplementing the mechanical locking in preventing the operation of certain levers. Likewise, detector track circuit locking has rapidly replaced detector bars as a means of preventing the operation of a switch under a train, while electric approach locking is utilized to prevent the changing of a route after it has been accepted by an approaching train. Route locking is effective in maintaining the integrity of a route during the movement of a train over it. Therefore, the possibility is presented of eliminating the mechanical locking, except for the derails and switches in a route which lock the signal lever, and even this can be eliminated, except for facing point switches and derails. Quicker operation of the switch

levers could be secured by eliminating the indication locking, as the lever movement could be completed with one operation. For convenience, a light indication could be used above the lever to indicate the position of the switch. These new methods in interlocking practice are the logical developments of the substitution of electrical circuits for mechanical connections for locking. These changes are not only possible, but will no doubt appear in interlocking plants constructed in the near future.

## *"Established Precedent"*

THERE is nothing easier in signal work than to copy what some one else has done, without making an independent analysis to determine whether the practice, accessory, or maintenance routine in question is really worth while. That signal engineers as a group are not prone to copy the other fellow's "stuff" is evident from a casual survey of the pages of *Railway Signaling*. While some features of signaling are standard on a number of railroads, there is a divergence of opinion on most basic features of signal work such as signal aspects, signal indications, power supply, lighting and automatic control of power switches. This indicates a healthy disregard for "established precedent" although there are a few practices that have been handed down from "father to son" which cannot be accounted for by any other explanation than that they "have always been done that way."

Witness the discussion printed in the "What's the Answer?" pages of this issue relating to the effect of a standardized polarity of connection on the life of the contacts of relays. It has been a common, but not universal, practice to connect the positive side of any signal circuit to the *heel* of the contact so that the direction of current flow (as the term is commonly understood) is from metal to carbon. Extensive laboratory tests made by one manufacturer to determine whether the polarity of current at relay contacts had any effect on the functioning of the contact, indicate that nothing apparently is gained from an electrical standpoint by adhering to the present practice. On the other hand, tests conducted by another signal manufacturer indicate that, in the case of highly inductive circuits, it is much better to connect the positive wire to the *front*, or carbon, post of the relay. This evidence clearly contradicts what has been accepted as an "established precedent."

Of course, the testing of equipment in the field may be simplified if a standardized scheme of connection is employed, but to secure it, plans of wiring should not be made unduly complicated, as is sometimes necessary if rigid adherence to standardization is demanded.

## *Better Housing Quarters for Maintainers*

YEARS ago, during the period of extensive railroad construction, new lines were built through sparsely settled sections of the country, and the railroads found it necessary to construct and maintain homes for company employees regularly stationed at small towns or outlying points. As the towns grew up, the practice of providing residences has been discontinued. These cir-