Separate Batteries Desirable

By C. Robison
Signal Foreman, Canadian Pacific, Toronto, Ont.

The location of storage batteries for the operation of the home signals in an automatic interlocking plant depends upon several things, among the more important of which are the amount of traffic involved and the amount of power that must be supplied at each home signal.

If economy is not too imperative, it is desirable to install a separate set of batteries at each home signal, because one storage battery, in case of a power failure, would be exhausted more quickly than a separate set of batteries at each home signal. Where double track is involved and the traffic is comparatively heavy, it might be even more desirable to have operating batteries located at each home signal.

However, if a centrally located storage battery is powerful enough to operate the home signals and to take care of the control circuit, it should not be necessary to install separate batteries. If color-light signals are to be used and the amount of traffic is not too heavy, the power supply can be located at the crossing and can consist of storage cells of suitable capacity to operate the lighting and control circuits.

The conclusion is that at automatic interlocking plants it is not always necessary to install separate sets of storage batteries at each home signal, but if conditions permit, it is desirable to do so.

C. T. C. Without Power-Operated Switches

"Under what operating conditions should consideration be given to the installation of centralized traffic control for only the direction of train movements, with few or no switches being power operated?"

Not Necessary for All Switches to be Power Operated

By P. M. Gault
Signal Engineer, Missouri Pacific, St. Louis, Mo.

My opinion is that there is quite a field for centralized traffic control with very few power-operated switches. Instead of having a passing track every four or five miles, with both ends remote controlled, I think a much better plan would be to have a few lap siding layouts with all switches electrically operated. This would provide the equivalent of double track at the siding locations and would do more to facilitate traffic than would the operation of a number of single siding switches. Our experience has been that if the switch is not power operated, the machine operator will make all of his meets at locations where the switches are power operated; in fact, most of the sidings where we have hand-throw switches, in the centralized control territory, are rusty, indicating that they are seldom used.

Feels that Cost of Power-Operated Switches is Justifiable

By S. N. Wight
Commercial Engineer, General Railway Signal Company, Rochester, N. Y.

No doubt a centralized traffic control system without power-operated switches provides a very considerable operating advantage over train-order operation. It is very truly a centralized traffic control system, as train movements are directed by signals from a central control office. In this case, speaking of single track for instance, the train is directed by signal indication to open the switch and take the siding, or to open the switch and leave the siding, whichever the case may be. Main-track movements enjoy the same facility as if the switches were power-operated. The difference is that a train taking or leaving a siding must suffer the delay incident to opening and closing the switch. No general statement can be made as to the relative economies that may be expected to result from the two arrangements. It may be said, however, that the economic advantage of the one is found to a considerable extent in the other.

While the cost of a C.T.C. system without power-operated switches is considerably less than the cost of one with them, the general feeling is that this additional cost is justified by the added facility provided. It should be observed, however, that up to the present time centralized traffic control has been employed only where there is heavy traffic. It is not improbable that the time may not be far off when there will exist a greater appreciation of the economic value of directing train movements by signal indication from a central point, which will result in application of the system to lines with less traffic. Then the economic advantage of the two arrangements will more closely approach each other.

In studying any division of a railroad, it is likely to be found that some switches should be power-operated in order to obtain maximum return on investment, and that others may be hand-operated without serious detriment. Those suited for hand-operation may be those at sidings, which must be retained for passing purposes, but which are used for this purpose infrequently and then possibly by inferior trains.

Car Retarder Installations

"What are the controlling factors in deciding whether a proposed installation of car retarders is economically justified? What is the approximate minimum number of cars classified per day that will justify an expenditure for retarders in a yard?"

Each Yard Must Be Studied Separately in the Light Of Its Surrounding Circumstances

By W. B. Rudd
General Engineer, Union Switch & Signal Company, Swissvale, Pa.

It should be appreciated that the application of car retarders to meet given conditions and the economic justification of such an application constitute individual problems that must me solved largely on the merits of the particular application under consideration. There is not, and I do not believe there will be, a hard and fast rule for either the engineering or economic features of a car retarder installation.

As usual, there are two sides to the picture. The economic justification of a car retarder installation depends first, on the initial cost of the installation and, secondly, on the savings to be derived. The initial cost is dependent on the cost of the retarder apparatus, and also on the cost of the changes that may have to be made in the existing facilities in order to provide for an efficient retarder installation. Both of these costs, again, are dependent on the total number of tracks, on the number of