

BRITISH METHODS OF OPERATING SINGLE TRACKS.

(By a British Signal Engineer)

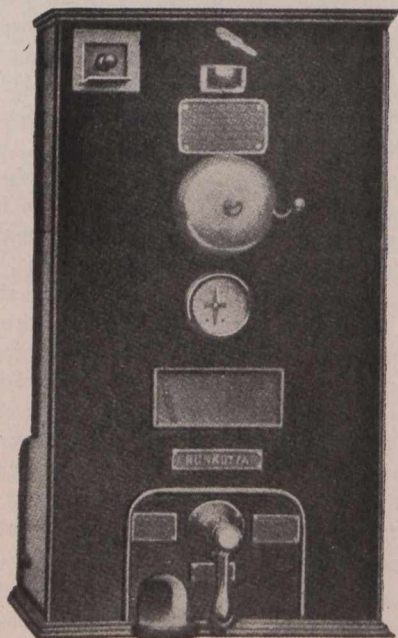
The working a single tracks is one of the vital problems in railway operation. Not only must trains be got over the line safely, but expeditiously and these are by no means synonymous terms. As the traffic of the country grows, train movements must be accelerated and their number increased. This is comparatively easy where the tracks are doubled but on single lines each train that is added generally means two additional trains over the roads as the return trip has to be provided for and each train on a single line is an unusual source of danger. Trouble may come from the front as well as from behind.

Unfortunately, in Canada and in the United States, most of the roads are only single-tracked and as the expense of doubling the road is prohibitive, so single-tracked they will have to remain for some considerable time.

In England most of the railways are doubled. From the latest returns—those for the year ending December, 1908—it appears that of 15,999 route miles in England, only 5,320 are single. In Scotland 2,267 miles out of 3,843 and in Ireland 2,692 miles out of 3,363 are single.

But while the trouble in the United Kingdom has not been so great owing to there being less single track and the lengths being exceedingly short compared with those on this side of the Atlantic, yet the traffic has been heavier or, at least, more frequent. A study, therefore, of British methods may not be devoid of instruction and cannot fail but be of interest.

Before the introduction of the telegraph and block systems all trains on single lines were operated by schedule that could not be departed from without instructions which had, of course, to be written and sent by train. In the meantime, often a train had to wait indefinitely and dare not move. But with the telegraph came easier methods as

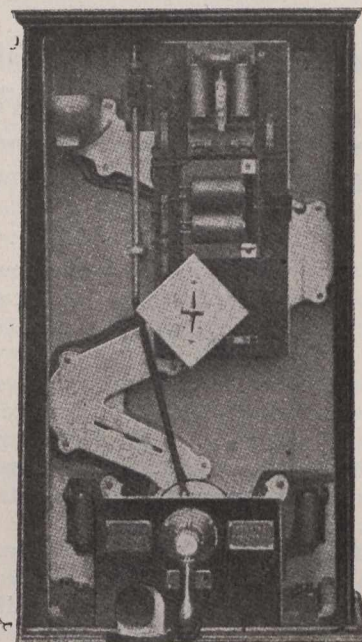


changes could be made, after the issue and exchange of the requisite orders. These were issued solely by the superintendent of the division.

A time table, modified as required by crossing orders, remained the standard method of operating single tracks in

England for many years, but greater safety was provided after the introduction of the old train staff.

The staff was a symbol to an engineer that he was in possession of the single-line section. There was only one staff for a section and no train being allowed in the section



unless the engineer had the staff with him it followed that its possession was an indication to the man that he was also in possession of the section.

The introduction of the staff in regular single track working was brought about in a simple manner. A double-line tunnel in Yorkshire was undergoing repair and all trains were operated over a single track. To guard against two trains meeting in the tunnel it occurred to some one that if a train was not allowed to pass unless the engineer was in possession of a "billy" or stick, a collision could not happen.

Its use under these conditions was found so efficient and provided some of those safeguards that are necessary on single lines that it was tried on a branch of the London & North Western Railway near Leamington as an accessory to the use of the fixed schedule and crossing orders.

Trouble, however, came from every train having to be in possession of the symbol. When there was only a schedule, orders could be laid down for two subsequent movements to be made in one direction, but this was not practicable after the train staff was introduced as the staff had to be brought back from the other end, after being used by the first train, before the second could go.

This led to the introduction of "tickets" which authorized an engineer to proceed through the section, provided he saw that the train staff was being left behind him. This guarded against a train coming from the opposite direction. Such an opposing train could not come with a ticket as the tickets were kept in a box, the key of which was the staff itself.

It is easy to imagine conditions under which there was the possibility of a collision under this method of working, but it should be recorded that an accident was a very rare occurrence. This may be, in part, accounted for by the fact that the block-system was in use in addition. As soon as it was found that the block system could be relied upon, the Board of Trade compelled the railways to put it in and every new line opened after 1871 was compelled to have the block-system.