
THE BLOCK SYSTEM

INTRODUCTION

Despite recent large-scale introductions of power signalling with colour-light signals and extensive track circuiting, much of British Railways is still worked on the block telegraph system, in which signalmen communicate with the men in adjacent boxes regarding train movements by block telegraph instruments and bells, and work signals and points mechanically from levers through wire or rodding.

Originally the positioning of signalboxes was largely governed by the track layout, for when the grouping of points and signal levers in a signalbox had become established, the Board of Trade decreed that technically-worked points should not be more than 250 yards for single ended points and 100 yards for double ended points from the signalbox which controlled them. Thus, at a large junction station, several signalboxes were required, sometimes no more than 1/4 mile apart, solely to control sets of points. But they also had to have signals and were equipped with block instruments and bells for the block system. Most country stations had signalboxes to control points connecting sidings to the main line and, generally speaking, block sections ran from station to station. In some instances, however, where stations were several miles apart, the block sections would have been inconveniently long and one or more intermediate signalboxes were provided solely to divide the line into additional block sections to permit the operation of a greater number of trains, for the overall frequency of trains on a line is governed by the time taken in passing through the longest block section.

Although many safety devices have been added to block instruments to prevent errors by signalmen in the operation of the block system, they have been superimposed on the working of block instruments and basically the method of communication between signalboxes has changed little since the adoption of the block system.

Objects Of The Block System

1. To give advance warning of a train approaching and its classification.
2. To maintain adequate safety margins between trains.

Types In Use On British Rail

1. Absolute Block System:
Ensures the above by means of a three position block instrument.
2. Track Circuit Block:
Occupation of any track circuit places and maintains at danger sufficient signals in rear to provide the requisite space interval.
3. Permissive Block:
Permits the occupation of a block section by more than one train.