

DEVELOPMENT OF GENERAL TRAIN REGULATION STRATEGIES FOR ARS SYSTEMS - INTERIM REPORT

Work in the development of train regulation strategies has culminated in their implementation as part of the prototype Automatic Routesetting System (ARS) controlling train movements in the Haywards Heath and Keymer Junction areas. The basic train sequencing strategy used in the prototype system has been used successfully in simulations of a number of British Rail areas and also areas of Swiss and Norwegian railways. Therefore it is believed to be of widespread applicability. However, a number of area-dependent rules have been included in the prototype, some in response to deficiencies seen in the live running of the system.

Therefore, even though the performance of the prototype strategies has been largely satisfactory, we did not feel able to immediately progress to a specification of a fully general strategies package. In a different area, a high proportion of operating situations would be handled correctly by an ARS system based on existing strategy, but a small minority of situations involving features not present at Haywards Heath would not be handled in the best way. Unlike other signalling functions such as that of an interlocking, the routing of trains is not fully deterministic and relies to some extent on judgement.

Therefore, it was decided to undertake a further investigation of the operating and regulation requirements for ARS systems in other areas. This interim report describes the investigation of the areas proposed for ARS operation in the Waterloo and Glasgow North resignalling schemes.

The areas studied are all suburban areas in which the most frequent movements are regular interval passenger services. A strategies package is described which will allow effective ARS operation of such an area, and it is recommended that this be implemented for Waterloo and Glasgow North.

There are still a few loose ends where further investigation may be worthwhile. These include a small number of possible extensions to handle other types of area such as inter-city lines or those with large amounts of freight working. An investigation of an inter-city area is recommended as the next piece of work.