RAILTRACK

Safety & Standards

Briefing Notes for:	**Interlocking Principles**	
Document No:	GK/RT0060	**Issue: 2**
Subject Committee(s)	**TC&C, OSSC**	
Issue date:	**April, 2000**	
Initial Compliance Date	**1st June, 2000**	

BACKGROUND

1. This second issue of GK/RT0060 reflects various changes, as detailed below. In summary, they are:

   - Changes to reflect how SSI operates.
   - Changes to permit withdrawal of SSP062.
   - Changes to facilitate future cancellation of SSP080.
   - Changes to reflect the publication of GK/RT0044.
   - Restructuring of the document to improve readability.
   - Minor additions to reflect current interlocking practice on mainline UK railways.

KEY CHANGES INTRODUCED BY THIS RAILWAY GROUP STANDARD

2. The scope of the Standard has been restricted so that it applies only to systems that use lineside signals as the means of giving movement authorities to trains. Interlocking systems associated with cab signalling systems will be covered in GE/RT8026 (shortly to be issued for consultation).

3. A clause has been added (4.1.4) to make clear that the requirements apply in full to colour light signalling systems, and so far as reasonably practicable into systems that use other forms of lineside signals. Where the controls cannot be included in the signalling system, they have to be implemented by instructions applied by signallers. This is to recognise that, in the case of mechanical signalling in particular, some of the requirements cannot be implemented, and are instead met by requirements in the Signalling General Instructions (GO/RT3062).

4. The Compliance clause in Part A of issue 1 of the Standard recognised that there was a problem with software based interlocking systems (specifically, SSI) in that they did not fully comply. The Compliance clause indicated that a review of the implications of the Standard for such systems would be undertaken, pending which all software based interlocking systems approved for use by Railtrack prior to 4/10/97 were deemed compliant with the Standard.

5. A review was carried out in May 1999, which identified three areas of non-compliance. These were:

   a) SSI does not comply with the requirement in GK/RT0060 issue 1 that the system shall, having called a set of points for a route, "prevent them responding to any other request". SSI has exhibited problems in this area where the route setting is split (which may occur across interlocking boundaries or because of data processing time constraints).
   b) When a warning route is set to work automatically, and a train passes through for which

the full overlap is available, it is a requirement that the restricted overlap is made available for a following train. In practice, SSI also provides options for "non-step-down" and "once only step-down", which are safe options, but do not comply with the requirements of GK/RT0060 issue 1.

c) GK/RT0060 issue 1 requires that, where swinging overlaps are used, the release of the overlap must not occur until the new overlap is set and locked. SSI releases the old overlap concurrently with the locking of the new overlap, ie., it does not wait until the points have completed their movement.

6. As a result of the review, GK/RT0060 issue 2 has been changed so that SSI is now compliant in respect of (b). However, in the cases of (a) and (c), the Standard remains unaltered in its requirements, with SSI still non-compliant at present. Where it is intended to progress with a non-compliant SSI installation, the Infrastructure Controller must regularise the position by seeking a derogation/temporary non-compliance as appropriate.

7. SSP062 (replacement of signals) has been reviewed, and parts 1-5and 7 of SSP062 have been assimilated into GK/RT0060 issue 2. In the case of part 6 of SSP062, appropriate controls have been placed in GK/RT0044 (clauses 5.3.2 and 5.3.3) to prevent the scenario described. SSP062 is therefore redundant, and is being withdrawn at the same time is GK/RT0060 comes into effect.

8. Virtually all the controls in SSP080 are now absorbed into GK/RT0060 and GK/RT0044. Where there is conflict between GK/RT0060 and SSP080, the requirements of GK/RT0060 take precedence. As soon as the formal analysis of the transfer of requirements in SSP080 to other Group Standards has been completed, it will be withdrawn.

9. Minor additions have been made to the requirements to reflect current practices:

- The sharing of overlaps is not permitted.
- A preset shunt signal must be cleared (not just route set) before the associated main signal clears.
- Distant signals must be controlled to their most restrictive aspect if the stop signal ahead is not alight.

10. The specific positions of signal replacement track circuit joints (previously in SSP062) have been included in an Appendix for information purposes, rather than being mandatory requirements.

COMPLIANCE REQUIREMENTS

The compliance date for this document is 1st June , 2000. This is to coincide with the compliance date for GK/RT0044 Issue 1, Controls for Signalling a Train onto an Occupied Line, which was issued in February 2000. This is necessary as a number of items from GK/RT0060 Issue 1 have been transferred into GK/RT0044 and it was felt that a common compliance date would address any compliance issues for both standards.