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GK/GN0644
Guidance on Permissive Working
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Rail Industry Guidance Note for GK/RT0044



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Guidance on Permissive Working

Issue record

Issue	Date	Comments
One	June 2013	Original document. Published with GK/RT0044 issue two Permissive Working, to provide rationale and guidance on the requirements in that document.
Two	December 2014	Amended requirements to signalling controls in 3.2 and 4.2, with new supporting guidance, to address proposal 12/031 allowing the calling-on movement authority to be displayed when the approaching train is within 100 m of the signal. References have also been updated.

Amended or additional parts and/or sections of revised pages have been marked by a vertical black line in the adjacent margin.

Superseded documents

The following Rail Industry Guidance Note is superseded, either in whole or in part as indicated:

Superseded documents	Sections superseded	Date when sections are superseded
GK/GN0644 issue one Guidance on Permissive Working	All	07 March 2015

GK/GN0644 issue one Guidance on Permissive Working, ceases to be in force and is withdrawn as of 07 March 2015.

Supply

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Guidance on Permissive Working

Part 1 Introduction

G 1.1 Purpose of this document

- G 1.1.1 This document gives guidance on interpreting the requirements of Railway Group Standard GK/RT0044 issue three Permissive Working. It does not constitute a recommended method of meeting any set of mandatory requirements.

G 1.2 The structure of this document

- G 1.2.1 All requirements from Railway Group Standard GK/RT0044 are reproduced with a grey background in this document.
- G 1.2.2 Guidance is provided as a series of sequentially numbered clauses prefixed 'G' immediately below the greyed text to which it relates.
- G 1.2.3 Specific responsibilities and compliance requirements are laid down in the Railway Group Standard itself.

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G 1.4 Approval and authorisation of this document

- G 1.4.1 The content of this document was approved by Control Command and Signalling (CCS) Standards Committee on 18 September 2014.
- G 1.4.2 This document was authorised by RSSB on 21 October 2014.

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Part 2 Guidance on Compatibility Requirements for Permissive Working

G 2.1 Compatibility between systems for permissive working and train operations

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2.1.1 The design of new or altered arrangements for rolling stock, facilities or operation for permissive passenger (PP) or permissive freight (PF) working shall be assessed to establish compatibility with the infrastructure and rolling stock authorised to operate over the route.

G 2.1.1 The rationale for this requirement is that changes to the infrastructure, rolling stock or method of operation without a compatibility check could result in unintended consequences, such as use of longer trains with insufficient room to be accommodated in station platforms, or the introduction of permissive working arrangements that are incompatible with the signalling provided.

G 2.1.2 Examples of changes to PP or PF facilities or operation include:

- a) Timetable alteration.
- b) Change of type / length of trains.
- c) Change of length of vehicles where track circuits are used to detect available space, or number of axles per vehicle where axle counters are used to indicate number of vehicles.
- d) Change of operating procedures or instructions.
- e) Modification of track and / or signalling.
- f) Change in stopping positions.
- g) Change in station lighting or furniture affecting PP or PF.

G 2.1.3 GE/RT8270 sets out the requirements and responsibilities for the assessment of compatibility between rolling stock and infrastructure assets, including control, command and signalling equipment and their operations. It sets out the arrangements by which the assessment of compatibility is undertaken and identifies those responsible for managing that assessment.

G 2.1.4 GK/RT0044 sets out specific technical requirements to achieve compatibility of systems for signalling passenger trains onto an occupied line with train operations.

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2.1.2 The assessment for PP working shall consider the factors set out in Appendix A.

G 2.1.5 The rationale for the requirement to assess the factors set out in Appendix A is that they can affect the safe operation of a PP working facility.

G 2.1.6 Freight trains and passenger trains should not occupy the same signal or block section at the same time. The rationale for segregating freight trains and passenger trains is that the braking characteristics of long freight trains are significantly different from those of passenger trains. Also, their coupling systems are liable to be different. Freight trains and passenger trains should only couple in exceptional situations. Automatic route setting (ARS) programs should be written to avoid freight trains and passenger trains being signalled into the same signal or block section at the same time.

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- G 2.1.7 Platform lines signalled for permissive working can be used on different occasions by either passenger or freight trains, but not by passenger trains and freight trains at the same time.

G 2.2 Specific factors for passenger train movements

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2.2.1 Facilities for signalling a passenger train onto an occupied line shall only be provided where all of the following apply:

- a) It is a platform line.
- b) The purpose is for platform sharing and / or joining trains.
- c) There is no reasonably practicable alternative method of working which presents less risk.

- G 2.2.1 The rationale for allowing permissive working is to:

- a) Realise the operational benefits of being able to join trains, share platforms or attach vehicles.

And

- b) Achieve passenger convenience benefits, including passengers not having to use bridges, stairs or subways.

- G 2.2.2 Allowing trains to join or to share a platform facilitates the working of stations where the number of platforms is restricted.

- G 2.2.3 The rationale for restricting permissive working of passenger trains to platform lines is to avoid such trains being stopped, for example, for joining at locations where passengers cannot alight should any problem arise. Such situations are likely to have performance disadvantages, and passengers may be alarmed or frustrated if a train is stopped other than at a station.

- G 2.2.4 The rationale for using methods for berthing trains that avoid permissive working is to enable each train to be fully protected by the signalling system. Examples of alternative methods for avoidance of permissive working of passenger trains include:

- a) Use of empty platforms.
- b) Provision of mid-platform signals.
- c) Use of non-adjacent platforms.
- d) Timetabling trains to use platforms sequentially.
- e) Forming complete trains in sidings before entering service.

Methods c) and d) are suitable only where passenger interchange is not required between the two services.

- G 2.2.5 A method that is reasonably practicable at one station may not be so at another.

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G 2.3 Specific factors for freight train movements

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2.3.1 Facilities for signalling a freight train onto an occupied line shall be provided where all of the following apply:

- a) There is no reasonably practicable alternative method of working which presents less risk.
- b) Permissive working is confined to freight trains.

G 2.3.1 The rationale for PF working is to realise operational benefits in enabling freight trains to follow one another, for example when awaiting acceptance into depots or yards, or when following along a goods line, and for locomotives running round freight trains.

G 2.3.2 Alternative methods for avoidance of PF working include:

- a) Provision of intermediate signals.

And

- b) Use of multiple (reception) lines.

G 2.3.3 It is not necessary for the first train on a PF line to be stationary for a second train to be admitted to the section.

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Part 3 Guidance on Requirements for Movements Involving Passenger Trains

G 3.1 Provision of signals

GK/RT0044 issue three

3.1.1 Movement of the second train from the protecting signal shall be controlled by either:

a) A position light signal associated with a main signal.

Or

b) A semaphore shunting signal.

3.1.2 If the second train does not convey passengers, but for the purposes of this document is included within the definition of a passenger train, it is also permissible to control the movement by either:

a) A position light shunting signal.

Or

b) A semaphore shunting signal.

G 3.1.1 The rationale for using distinctive signals for permissive moves is that they are recognised by drivers to proceed cautiously on the understanding that there is a stationary train ahead before reaching the next signal.

G 3.1.2 This requires that trains conveying passengers are signalled by running signals having main aspects. Other trains, for example empty coaching stock and light engines, may approach an occupied line by means of a subsidiary signal at the exit from a siding or depot.

G 3.1.3 GK/RT0045 sets out the requirements for the form of the signals and the provision of associated route indicators.

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3.1.3 The distance between the protecting signal and the nearest end of the first train shall be minimised, as far as reasonably practicable, without compromising other requirements for signal positioning.

G 3.1.4 The rationale for keeping the distance between the protecting signal and the rear of the first train (which is the furthest point to which the second train may need to run) as short as possible is:

a) To reduce the time available in which the driver might make an error, for example forgetting that a calling-on aspect had been displayed at the protecting signal.

And

b) To minimise the distance available for the second train to accelerate to a speed and so be travelling too fast into the platform to be able to stop short of the first train.

G 3.1.5 The importance of determining the point of visibility is so that the driver of the second train has a fixed target on which to base his / her braking technique.

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- G 3.1.6 The location of the protecting signal is dictated by many factors, particularly optimum signal spacing, aspect sequence and signal sighting. Where the optimum location of the protecting signal would compromise the standard four-aspect sequence, one possible solution could be the provision of a closing-up signal and use of a non-standard (consecutive single yellow) aspect sequence, as set out in GK/RT0045.

G 3.2 Signalling controls

GK/RT0044 issue three

- 3.2.1 The protecting signal shall display a proceed aspect for a permissive movement if all the following conditions are satisfied:
- a) The platform starting signal ahead of the first train is at danger.
 - b) The line is clear from the protecting signal to the nearest danger point where the end of the first train may legitimately be positioned.
 - c) The first train has completed its movement and can be assumed to be at a stand.
 - d) The second train:
 - i) Is within 100 m of the protecting signal.
- And
- ii) Has reached the point at which the calling-on aspect and any associated route indicator is readable.

- G 3.2.1 The rationale for maintaining the platform starting signal at danger while a permissive move is being made into the platform is to avoid movement of the first train, so giving the second train a fixed end of movement authority. Also, the first train (if allowed to move) may stop unexpectedly, thereby increasing the possibility of the second train colliding with it.
- G 3.2.2 It also eliminates the possibility of the driver of the second train 'reading through' to a proceed aspect on the platform starting signal.
- G 3.2.3 The rationale for not displaying the calling-on movement authority until the train is within 100 m from the protecting signal is that the speed of the train at that distance is consistent with the driver transitioning to the permissive movement and the train then being driven on sight.
- G 3.2.4 The flexibility provided by the calling-on proceed aspect being given when the train is within 100 m from the protecting signal enables operational efficiencies to be realised. For example, for trains approaching a permissive section where the signal is on a rising gradient it might be operationally beneficial for the proceed aspect to be given to maximise the available train momentum which reduces the acceleration that would be needed in negotiating the rising gradient. The distance of the train from the protecting signal when the permissive move proceed aspect is given should be addressed in the permissive movement risk assessment.
- G 3.2.5 In obeying the position light aspect, the driver of the second train takes over responsibility from the infrastructure manager for the prevention of a collision with the first train.
- G 3.2.6 Notwithstanding the instructions to the driver, it is good practice to prove train detection clear between the protecting signal and the commencement of the platform. This reduces the likelihood of the second train having to stop over pointwork, thus causing operating problems.