Application for a Deviation from a Railway Group Standard
(in accordance with Section 6 of the Railway Group Standards Code issue 3)

1. Type of deviation

Deviation Number: RSSB to complete

☐ Is the application for a Temporary non-compliance?
Appropriate for particular circumstances where, for a predetermined period, it is demonstrably not reasonable to comply with a Railway Group Standard (such a situation may, for example, arise because more time is required to comply with a new Railway Group Standard or you wish to trial a new way of working).

OR

☐ Is the application for a Derogation?
Appropriate for particular circumstances where, on a permanent basis, it is demonstrably not reasonable to comply with a Railway Group Standard.

☐ If the application is for a Derogation, is it for a project requiring authorisation for placing in service under the Railways (Interoperability) Regulations 2006?

Some measures in Railway Group Standards have been notified by the Department for Transport to the European Commission as 'national technical rules'. Details can be found on the Department for Transport's website (http://www.dft.gov.uk). Compliance with relevant notified national technical rules is checked as part of the verification of subsystems or vehicles before authorisation for placing in service in accordance with the Railways (Interoperability) Regulations 2006. Section 14.4 of the Standards Manual sets out the procedure for deviations from national technical rules which are Railway Group Standards. Tick this box if the deviation relates to a relevant notified national technical rule.

2. Details of applicant:

NAME, Operations Director, First/Keolis TransPennine Ltd, 7th Floor, Bridgewater House, 60 Whitworth Street, Manchester, M1 6LT

3. Your reference number:

Please provide your company's reference number for this application, if applicable.
TPE/TNC/2010/001

4. Status of applicant:

Please indicate if you are applying a) as a RSSB member who must comply with the requirements that are the subject of this deviation or b) on behalf of a RSSB member. If you are applying on behalf of a RSSB member, please provide their details and attach evidence of their support for this application.

Railway Undertaking, RSSB Member

5. Title of certificate:

Please provide a one line title that describes the deviation
Extension of existing trial of TCA Risk Model to include new operators, different stock classes and routes.
6a. Details of Railway Group Standard (RGS):

(www.rgsonline.co.uk)

<table>
<thead>
<tr>
<th>RGS Number:</th>
<th>Issue No:</th>
<th>Issue Date:</th>
<th>Title:</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE/RT8000/TW5</td>
<td>Three</td>
<td>April 2008</td>
<td>Preparation and Movement of Trains: Defective or isolated vehicles or on-train equipment</td>
</tr>
</tbody>
</table>

6b. RGS clause(s):

Please provide the specific clause number(s) against which deviation is sought.

32

6c. RGS clause requirements:

Please quote the requirements against which this deviation is sought, as set out in the RGS:

“32.1 Entering service from a maintenance depot.

[Driver, train preparer, rolling stock technician]

You must not allow a train to enter service from a maintenance depot if the TCA:

- Is isolated on any vehicle
- Isolating switch is unsealed
- Warning light indicates a system fault

32.2 Entering service from other than a maintenance depot.

[Driver, train preparer, rolling stock technician]

You can allow a train to enter service from somewhere other than a maintenance depot with one or more defective or isolated TCAs, providing:

- For a train formed of one or two vehicles, there is at least one TCA working on the train.
- For a train formed of three or more vehicles, there is at least one TCA working on either of the first two vehicles, and at least one TCA working on either of the last two vehicles.

You must first tell the train operator’s control.

32.3 When in service

a) When the train can continue normally

[Driver]

You can allow the train to proceed normally if one or more TCAs become defective when the train is in service, providing:

- For a train formed of one or two vehicles, there is at least one TCA working on the train.
- For a train formed of three or more vehicles, there is at least one TCA working on either of the first two vehicles, and at least one TCA working on either of the last two vehicles.

You must:

- Tell the train operator’s control at the first convenient opportunity
- Carry out the instructions given

b) When the train cannot proceed normally

[Driver, signaller]

You must carry out these instructions if a TCA becomes defective on any vehicle that does not meet the requirements of section 32.3a)

[Driver]

You must:

- Tell the signaller
Not move the train until instructed to do so
Carry out the instructions given which may be to deal with train as shown in Part A section 2.10 of this module.

[Signaller]
When you are told about the defective TCA, you must make sure that the protecting signal is at danger. You must:
- Deal with the train as if it was an engineer’s self-propelled on-track machine that cannot be relied upon to operate track circuits
- signal the train as shown in regulation 12 of module TS1General signalling regulations
- tell any other signaller concerned.
You must also instruct the driver to proceed at normal speed but approach at caution and not pass over until having made sure it is safe to do so, any:
- automatic level crossing
- barrow or foot crossing with white light indications.

[Driver]
When given authority to proceed, you can do so at normal speed. You must approach at caution and, unless it is safe to do so, not pass over any:
- automatic level crossing
- barrow or foot crossing with white light indications.
Before passing over the crossing, you must sound the horn continuously until the front of your train is on the crossing."

7. Scope of deviation:
Please state (as specifically as possible) to what the deviation applies. Include details of any geographical limits, limits on types, pieces or ranges of equipment, identification numbers, signal numbers, specific assets or operations.
- First TransPennine Express, class 185 DMUs.
- Network Rail routes Barrow in Furness to Carnforth and Scarborough to York, extending to other locations on the train diagrams and diversionary routes.
- Main trial route 1: Barrow in Furness to Manchester Airport via Carnforth, Preston, Chorley, Including Morecambe and Blackpool North; Carnforth to Oxenholme, Windemere, Carstairs, Glasgow Central / Corkerhill and Edinburgh Waverley.
- Additional locations subject to the same assessments and controls.
- Entry of trains to service from a maintenance depot, or other than a maintenance depot, with TCA defective or isolated.
- Continuation in service of trains with defective or isolated TCA.

8. Impacts of complying with the current RGS requirement:
What are the problems with complying with the RGS requirement?
This section should explain the consequences for you (for example cost and service performance) of complying with the RGS requirement. It should allow the reader to understand why these consequences make it unreasonable to comply with the RGS requirement, either temporarily (in the case of a Temporary Non Compliance) or in a particular circumstance (for a Derogation). RSSB Research Project T579 has examined the factors affecting the requirement for TCA to assist in operating track circuits. This has shown that, in circumstances where risk is insignificant as indicated by the TCA Risk Advisor Tool (‘risk model’) produced as part of Project T579, it should be safe for trains with defective or isolated TCAs to enter or continue in service in situations where the Rule Book currently requires them to be taken out of service. A trial is proposed to validate the risk model, involving specific trains being operated with all TCAs isolated under carefully assessed and controlled conditions. Once validated, the risk model should allow changes to the Rule Book and GO/RC3537 that will reduce service
disruption caused by TCA failures without compromising safety.

9. Proposed alternative actions:
What are you proposing to do instead of complying with the RGS?
This section should describe the proposed alternative actions to be taken in place of the requirements of the RGS.
The risk model has been used to assess the risk of track circuit non-detection associated with operating the specified classes of train over the specified routes, based on operation and infrastructure information provided by the Duty Holders. Specific train diagrams have been selected taking account of the routes over which they operate.
The trial will be phased so that low risk conditions are initially trialled, with higher risk ones being added in order of increasing assessed risk as confidence is gained with the preceding phase over a range of weather conditions.
All TCAs on each train in the trial will be isolated to ensure that any non-detection problems are readily apparent to the signalling system and Signaller. The methods of identifying such problems will include direct observation of the track circuit indications and alarms such as train describer stepping irregularities. Experience of past incidents shows that the Signaller has consistently identified track circuit detection problems and applied the Rule Book mitigation measures before the incident has developed into an accident. The Network Rail Route Asset Managers and other specialists consulted agree that failures will be detectable. It should be emphasised that on the main lines no failures are expected, although the risk model does indicate that some may be expected on the lightly used lines. The risk on the branches is reduced by, for example, the low service frequency, signalling by Absolute Block (which makes much less use of track circuits and Signallers directly observe passing trains), and provision of treadles to back-up the use of unsupervised track circuits for level crossings.
In the event of a non-detection incident plausibly attributable to the non-operation of TCAs, the trial will examine the incident investigation and decide on how to proceed. It may be necessary for additional operational mitigation to be put in place at certain locations for trial trains, particularly where TCAIDs are installed. These will be discussed and agreed with the Duty Holders in advance.
Staff involved will be briefed and relevant documentation such as contingency plans revised. The trial will be controlled, monitored and each phase formally reviewed prior to moving on to the next one.
The existing incident response arrangements will be reviewed and enhanced where necessary to ensure that all relevant information is captured.
Quantitative measures for the time/distance operated with TCA isolated and other relevant conditions (e.g. weather) will be established, to support the decision to move from one phase to the next.
The Duty Holders will retain full safety responsibilities under current ROGS Certification of their Safety Management Systems. Key Lloyd’s Register Rail staff involved in the T579 research are supporting the Duty Holders.

10. Impacts of the alternative actions:
What are the impacts of the proposed alternative actions on your company and any affected parties?
This section should allow the reader to understand why the proposed alternative actions are reasonable.
This section should explain the predicted impacts of implementing the alternative actions (to be taken in place of the RGS requirement) on the safety and technical compatibility of the railway system, and on its costs and service performance. The impacts should consider both the activities of your company and those of any affected parties. This explanation should include any relevant supporting documents such as:
- company procedures, processes and instructions
- specific, explanatory drawings, illustrations and diagrams
RSSB research report T579, produced by Lloyd's Register Rail in 2007, sets out a detailed assessment of the train, infrastructure and operational characteristics that affect track circuit operation. It also looked at the consequences of non-detection. This information was used to assess the phasing and conduct of the trial.
Risk assessments have been conducted at both the high level planning of the trial, and the detail level of the individual Duty Holder activities.
The trial forms a bridge between the theoretical analysis to date and any practical measures that the rail industry may take to revise operating practices. To do this it is necessary to seek authority to temporarily non-comply with the current requirements of Rule Book Module TW5 clause 32. In doing so, it allows the
risk model to be validated and potential future changes to TW5 to be assessed under controlled conditions.

11. What other options have been considered?

If it helps to explain why the proposed alternative actions are reasonable, state here other options that you have considered and provide an outline of the reasons for their exclusion.

Further theoretical analysis: Track circuit operation is complex and dependent upon a wide range of variables, many of which are difficult to measure or predict. Therefore any practical approach on how to decide whether to operate a particular train with a defective or isolated TCA must be based on expert judgement across a broad range of infrastructure and operational characteristics. This has been followed to produce the risk model which now requires a practical trial over a significant time and geographic area so that the predictions of the model can be validated.

12. Consultation with affected parties

Please provide all of the results of your consultation with affected parties.

For further guidance on consulting with affected parties and providing evidence of their support, please click on the following link: Guidance on consulting with affected parties.

This has been discussed in detail with the affected parties, directly with the duty holders, and via the TCA Working Group and V/T C&C SIC meetings held at RSSB for the stakeholders. They have offered their full support to the submission of this proposed temporary non-compliance.

13. Additional actions/observations:

Please provide any additional information you have to support your application.

Upon receipt, the applicant is required to identify affected, interfacing parties and copy this certificate, together with supporting information, to those parties.

Extended TCA Trials, Trial Plan for First Transpennine Express; reference 95610, Lloyd’s Register Rail. A method statement will also be produced to detail the required safety assessments and arrangements.

The trial project has been managed as a research project by RSSB, in conjunction with the industry TCA Working Group to facilitate stakeholder liaison. TCA Working Group minutes are available on request.

14. Method of elimination:

For a Temporary Non Compliance, please state how your company plans to become compliant with the Railway Group Standard.

This temporary non-compliance is only required for the trial. It is intended to use information produced by the trial to support a standards change application. Noted that the TCA Working Group is in the process of proposing changes to GE/RT8000 TW5, 32 and GO/RC3537, RC43 which, if approved, will obviate the need for non-trial temporary non-compliances where validated by the use of the risk model.

15. Start and end date:

Please specify the dates you wish your Temporary Non Compliance certificate to start and finish. This will also define the period of time within which you will have to become compliant with the RGS. The maximum period of time for which a Temporary Non Compliance may be issued is 12 months.

From 14/02/2011 to 13/02/2012.

The trial began in September 2008 under 08/149/TNC which was limited to classes 165/166 operated by First Greater Western on various routes from London Paddington. It proposed to extend the scope of the trial to include different operators, rolling stock and geographical areas.

The trial period is envisaged as being for 12 months duration in order to collect sufficient evidence. It may need to be extended according to operational circumstances, weather patterns, etc. Therefore no specific end date can be specified.

16. Signature of applicant: Date of application:

NAME, Operations Director 07/11/2010
17. Status in respect of National Technical Rules:
RSSB to complete details of whether the RGS requirements are a NTR and if so against which TSI(s).

18. Status in respect of National Safety Rules:
RSSB to complete details of whether the RGS requirements are a NSR.

19. Lead Standards Committee details:
Name of Committee: RSSB to complete
Date of meeting: RSSB to complete
Minute reference: RSSB to complete

Authorised by: RSSB to complete
Date of Authorisation: RSSB to complete

All applications should be submitted either in electronic format to the Head of Standards Management at proposalsanddeviations@rssb.co.uk or as a signed copy to Head of Standards Management, RSSB, Block 2 Angel Square, 1 Torrens Street, London, EC1V 1NY.

Rail Safety and Standards Board Limited will use the information you provide on this form for the purpose of processing your deviation application. We will share the information with appropriate Standards Committees and may share the information with third parties if they are affected.