



Deviation from a Railway Group Standard

(In accordance with the Railway Group Standards Code, Issue Four, part 7)

Deviation Number: 13/108/DEV

1. Start and End Date:

N/A

2. Details of applicant:

, Railway Vehicle Technologies, Windhoff Bahn- und Anlagentechnik GmbH, Hovestrasse 10, D-48431, Rheine, Germany

3. Your reference number:

Windhoff / 2400 / 006

4. Status of applicant:

Manufacturer – Contracting Entity

5. Title of certificate:

Derogation to GM/RT2400 Issue 4 Clause 3.5.4 Parking Brake.

6a. Details of Railway Group Standard (RGS):

RGS Number:	Issue No:	Issue Date:	Title:
GM/RT2400	Four	September 2011	Engineering Design of On-Track Machines

6b. RGS clause(s):

Clause 3.5.4, sub-clauses 3.5.4.1 a) and 3.5.4.1 b)

6c. RGS clause requirements:

“3.5.4 Parking brake

3.5.4.1 The requirements of GM/RT2042 and GM/RT2043, with regard to the handbrake, are generally applicable to on-track machines, however, the following conditions are also applicable. (Where there are more restrictive requirements in this document than in GM/RT2042 and GM/RT2043 they shall be applicable to on-track machines).

- a) The parking brake performance shall hold the on-track machine on a gradient of 1 in 30.
- b) If it is of the screw design, the operator should exert a force not exceeding 500 N at the hand-wheel or hand-crank to apply or release the brake. The brake shall apply by the clockwise movement of the control, which shall have an effective minimum diameter of 400 mm.

...”

7. Scope of deviation:

This application is for eight existing KFA wagons modified by Windhoff Bahn- und Anlagentechnik GmbH and re-classified as OTMs to form part of the Network Rail High Output OLE Construction System (HOPS). The application is to permit non-compliance with the RGS clause identified in 6b) above for the following vehicles:

- 99709131002-6
- 99709131004-2
- 99709131008-3
- 99709131012-5
- 99709131016-6
- 99709131017-4
- 99709131019-0
- 99709131009-1.

8. Duration of the deviation:

This application is for a permanent deviation during the lifetime of the vehicles.

9. Method of elimination:

N/A

10. Impacts of complying with the current RGS requirement:

These vehicles were designed as container carrying freight vehicles and are compliant with the applicable RGS. The vehicles are now to be used in the HOPS OLE construction train to carry various loads, including plant and machinery modules mounted on the vehicle twist locks. GM/RT2000 Issue 3 clause 6.4 specifies that such a combination shall be classified as an on-track machine, hence GM/RT2400 applies.

The vehicles were designed to comply with freight vehicle RGS, i.e. a 1 in 40 gradient requirement and no minimum hand wheel diameter. The vehicles will hold on a worst case 1 in 37 gradient (i.e. within the limit prescribed for a freight vehicle) and have a parking brake hand wheel of diameter 270 mm.

To achieve the requirements specified by GM/RT2400 to hold on a gradient of 1 in 30 would require considerable re-design of the vehicle, and there is not sufficient space to fit a hand wheel of diameter 400 mm.

11. Proposed alternative provisions:

GM/RT2000 states that "It is permissible for relevant aspects of the latter certification to be taken into account (for example, brake system performance would not require duplicate evaluation if the mass of the plant and machinery resulted in the host vehicle remaining at its certificated gross laden weight)".

The basis of certifying the modifications being undertaken on these vehicles is to not exceed the current certificated GLW and to comply with existing load distribution patterns. It is therefore proposed that no change will be made to the existing vehicle parking brake mechanism or hand wheels.

12. Impacts of the alternative provisions:

The functionality of the parking brake remains the same and the impact of retaining the existing arrangement is considered minor as the vehicles are compliant if carrying freight containers to the same GLW. The vehicles will be used in train formation in the same way as a freight wagon, this risk is therefore unchanged.

The following measures will be in place:

- An operating instruction to state that the KFA wagons are not to be uncoupled from an MPV on gradients greater than 1 in 40.
- A label to that effect is to be fitted to each wagon adjacent to the couplings.

13. What other options have been considered?

The alternative options are to re-design the parking brake arrangement currently fitted to the vehicles which would require significant design and build changes for little gain. Other derogation certificates which are considered similar and appropriate to this application are:

- 03/265/DGN
- 04/135/DGN
- 09/150/DGN.

14. Consultation with affected parties

The application has been submitted to Network Rail as the owner of the vehicle, and to Amey, as the Operator of the vehicles for consultation. In view of the timescales involved in the project delivery of vehicles and, when appropriate, RSSB Standards committees sit, formal responses from these parties have been requested in parallel with this application and will be submitted to RSSB in due course.

15. Additional actions/observations:

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

The holder of the certificate is responsible for checking that the original assumptions and conclusions contained in the deviation certificate remain valid whenever any material changes occur. If the conditions of the deviation certificate change, the deviation will no longer be valid. In these circumstances, the holder of the deviation certificate may consider applying for a new deviation.

Time-limited deviations will be closed on the expiry date. However, please let us know if you no longer require your non-time limited deviation certificate so that we may close it also.

The following documents have been referenced in this application:

- Amey's conditional letter of support dated 14/10/2013
- Network Rail's support email dated 29/11/2013
- GM/RT2000 Issue 3; Engineering Acceptance of Rail Vehicles
- GM/RT2400 Issue 4; Engineering Design of On-Track Machines
- Derogation certificate 03/265/DGN
- Derogation certificate 04/135/DGN
- Derogation certificate 09/150/DGN.

16. Signature of applicant:

, Railway Vehicle Technologies

Date of application:

02/08/2013

17. Lead Standards Committee details:**Name of Committee:**

Plant

Date of meeting

17/10/2013

Minute reference:

13/PLT/10/136

Authorised by:

Signed by Cliff Cork on 02/12/2013

Date of Authorisation:

02/12/2013

Cliff Cork

Head of Delivery, Infrastructure and Rolling Stock