

Extract from the investigation report BMVIT-795.087-II/BAV/UUB/SCH/2007 on the derailment of train 54352 on 31/10/2007

14. Recommendations

Point	Safety recommendation	Addressed to
14.0	Safety recommendation in accordance with letter from BMVIT [Austrian Federal Ministry of Transport, Innovation and Technology]-795.087/0001-II/BAV/SCH/2008 and/or BMVIT-795.087/0002-II/BAV/SCH/2008 in accordance with UUG Article16(2) of 31 March 2008: Vehicles of construction type 5245.85 only to be used operationally once the following checks have been performed: 1. check of the label of the load limits 'CM' and 'D' in the Agreement Grid in relation to the type approval; 2. check whether the wheel discs of these wagon series are made of a UIC-approved material; 3. check whether the increase in total weight corresponds to the state of the art of vehicle components, in particular the thermal compatibility of the wheel discs (e.g. on long journeys with a descent of > 15 ‰ and failure/malfunction of the electrodynamic braking of the traction unit).	RU (Railway Undertaking)

In response to the safety recommendations, the following measures have already been taken and/or the following knowledge acquired:

- The safety recommendation mentioned under point 1 has been implemented by the owner and the RU. In addition, following a derailment on 9 April 2009, the UUB issued safety recommendation GZ. BMVIT-795.135/0003-II/BAV/UUB/SCH/2009, and this was implemented by the Austrian NSA as 'Safety recommendation for certain axle shafts – Demonstration of fatigue strength in accordance with EN 13103' via GZ. BMVIT-224.067/0001-IV/SCH5/2009 on 2 July 2009.
- The evidence for point 2 that the permitted material for the wheel disc is correct was demonstrated with a probability bordering on certainty in the inspection report [3].
- Concerning point 3, in its letter 3519-35xba/002-0001#002 of November 2008 the EBA confirmed that the administrative regulations of the EBA for the approval of shoe-braked vehicles call for evidence of the thermal compatibility.

The previously issued safety recommendation is thus deemed to have been adhered to and the following safety recommendations have been issued:

Point Annual serial number	Safety recommendations (accident causal)	Addressed to
14.1 A-45/2010	Ensure that maintenance is performed in accordance with the regulations. Reason: During the most recent scheduled maintenance cracks were not detected.	Vehicle owner VTG AG
14.2 A-46/2010	Create uniform regulations for maintenance. Reason: These are being developed by the ERA Task Force Maintenance of Freight Wagons.	NSA, ERA

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14.2a A-47/2010	Check if for certain overheated wheels, in addition to the residual stress measurement, a state of the art check on the wheel discs should be performed (e.g. magnetic particle testing or eddy current test). Reason: This additional testing is a result of the fact that during the residual stress measurement test, performed in the course of the scheduled maintenance in February 2004, no damage to the wheel discs was detected.	NSA, ERA, Vehicle owner
14.3 A-48/2010	Check to see if measures are necessary to identify wheel discs that have already at some point become thermally susceptible. Reason: Raising of awareness among employees. This should, for example, be regulated by the GCU.	ERA, RU, Vehicle owner
14.4 A-49/2010	Check if the fitting of derailment detectors on goods wagons in permanent use for hazardous goods transport (e.g. tank wagons) is necessary. Reason: Use of a derailment detector would have brought Z 54352 to a standstill much earlier and the consequences of the accident would thus have been less serious.	NSA, ERA

Point Annual serial number	Safety recommendations (non-accident causal)	Addressed to
14.5 A-50/2010	Check if fixed derailment detectors (e.g. the prototype from ÖBB-Infrastruktur AG) should be used ahead of critical places (such as tunnels and bridges). A corresponding plan must be presented to the competent authorities and approved by them. Reason: In certain circumstances such systems can provide timely detection of faults.	IM
14.6 A-51/2010	Take account of the multiplication factor for 'G'-braked vehicles of 75 % of the P-value (in accordance with leaflet UIC 544-1) instead of the currently used factor of 80 % in the normative bases for brake calculation. Reason: In accordance with Notification TSI 2004 (bmvit homepage http://www.bmvit.gv.at/verkehr/eisenbahn/recht/downloads/notifizierung_tsi2004.pdf , page 11) leaflet UIC 544-1 applies.	IM
14.7 A-52/2010	Check if a normative basis is necessary to take account of the correction factor κ (kappa factor in accordance with leaflet UIC 544-1, Annex K2) in determining the effective braking power for goods vehicles with a length of > 500 m. Reason: In accordance with Notification TSI 2004 (bmvit homepage http://www.bmvit.gv.at/verkehr/eisenbahn/recht/downloads/notifizierung_tsi2004.pdf , page 11) leaflet UIC 544-1 applies.	IM
14.8 A-14/2010	Check if the regulations on conditioning of brakes (shoe brakes with K-brake-shoe inserts and disc brakes), or if the conditions prior to entering downhill sections are sufficient. Reason: In ÖBB-DV M26 in Article 55(1) the following point was deleted with effect from 13 December 2009: - before entering a decisive incline of more than 10 ‰ This is of key importance for the condition of K-brake-shoe inserts.	IM
14.9 A-53/2010	Check if the additional provision on DV M26 – 'Journeys on downhill gradients (ramps, inclined sections)' needs to be assessed on the basis of the network expansion measures. Reason: The <i>Tauern Südrampe</i> has been extended.	IM
14.10 A-54/2010	Check if safety recommendation point 14.9 must be contained in	NSA

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	regulations requiring approval from the authorities. Reason: Conduct of railway personnel.	
14.11 A-55/2010	When an expert is appointed, care must be taken to ensure that once the investigations have been carried out, the test samples handed over for the investigation are not 'destroyed' but are returned to the client. Reason: Such items of evidence should be available for any further investigations.	ERA, RU
14.12 A-56/2010	Instruct employees when generating train data to take particular account of the addition and removal of traction units. Reason: Compliance with the regulations of the IM. If a re-issue of the wagon list due to the addition or removal of traction units is not absolutely essential, this should be regulated by DB 610.	RU
14.13 A-57/2010	Check the K-value applied (calibration value of the measurement system for the residual stress test) and the permissible limiting values in the residual stress test. Reason: For German wheelsets, the values of RIL 907.0801 apply.	ÖBB Technical Services
14.14	Deleted and replaced by A-47/2010	

The safety authority and other authorities or bodies or, when appropriate, other Member States to which the recommendations have been addressed, shall report back at least annually to the investigating body on measures that have been taken or are planned as a consequence of a recommendation (Directive 2004/49/EC, Article 25(3)).