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## Extract from the investigation report BMVIT-795.135-II/BAV/UUB/SCH/2009 on the derailment of train 45904 on 09/04/2009

### 17. Recommendations

In accordance with UUG, Article 16, on the basis of the findings passed on by the German Federal Railway Authority, the Austrian Federal Ministry of Transport (national accident investigation unit), rail division, issued the following safety recommendation in accordance with the Accident Investigation Act (UUG), Federal Law Gazette I, 123, Article 16(2):

Point	Safety recommendation	Addressed to
17.1	For the wagon type concerned and the wagons of DB AG with axle shafts of type 088 and similarly designed shafts of type 188 with similar technical parameters (centre of gravity height and shoe application force) the <b>wheelset load must be reduced to 20t</b> . Both shafts correspond to Type A in accordance with leaflet UIC 510-1.	RU Vehicle owner

This safety recommendation is supplemented and expanded as follows:

Point	Safety recommendation	Addressed to
17.1a	Check if the <b>wheelset loading should be reduced to below 20 t</b> for wagons with axle shafts BA 088 and identically constructed shafts BA 188 and similar technical parameters (centre of gravity height and shoe application force) for reasons of fatigue strength depending on the diameters of the wheel disc seats. Both shafts correspond to Type A in accordance with leaflet UIC 510-1. Reason: In the ERA Task Force on Maintenance of Freight Wagons, depending on the diameter of the wheel disc seat, the following admissible masses for fatigue strength were given (values still have to be checked): 182 mm → 19.3 t and 188 mm → 20.6 t. Note: The application of a 'provision to safeguard existing standards' could be seen as negligent in any court case.	Rail safety authorities
17.2	Create uniform European maintenance guidelines that correspond to the state of the art (inclusion of a mandatory automated mechanical ultrasound check for cracks, residual stress test of the wheel discs, etc., according to the distance travelled or wear parameters or as a result of particular events such as overloading, grinding of brake shoes, etc.). Note: ERA has set up a Maintenance of Freight Wagons Task Force.	ERA Rail safety authorities
17.3	Certification of maintenance workshops by ERA and periodic checking by ERA or foreign safety authorities or organisations appointed by it on a variable basis. Note: ERA has set up a Maintenance of Freight Wagons Task Force.	ERA Rail safety authorities
17.4	Europe-wide checking of the load limit grid and all approvals of agreement grids. Reason: Despite the measures taken, it cannot be ruled out that vehicles will	IM, RU Vehicle owner

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	circulate with an excessive wheelset loading (e.g. service wagons).	
17.5	<p>Check that the conditioning (cleaning) of the axle shaft surface for trouble-free coupling of the UT test head in accordance with DIN 27201-7, point 5.2, by sandblasting is not contrary to the requirement for a surface roughness of a maximum of 6.3 µm in accordance with guideline 984.0400.</p> <p>Note: ERA has set up a Maintenance of Freight Wagons Task Force.</p>	ERA Rail safety authorities
17.6	<p>Check if a change in design of the axle shafts (e.g. with a hollow bore like traction unit wheelsets) would make these easier to inspect.</p> <p>Note: ERA has set up a Maintenance of Freight Wagons Task Force.</p>	ERA Rail safety authorities