

Transmitted by the expert from Hungary

Informal document No. **GRSG-96-10**
(96th GRSG, 4-8 May 2009)
agenda item 2

FURTHER PROPOSALS TO REGULATION No.66.

The proposals below are additional proposals to the document
ECE/TRANS/WP.29/GRSG/2009/5.

A.) Proposals belonging to the extension of the scope

New paragraph:

5.6. Testing of double deck vehicles

In the case of a double deck vehicle only the upper section (level?) of the vehicle shall comply with the general requirement specified in paragraph 5.1. The whole lower section (level?) may be considered as a rigid part, therefore no test is required on it.

Explanation: similarly to the articulated vehicles (see para.5.5.) the specific feature of the double deck vehicles shall be considered.

Paragraph 5.6 (former) and its sub paragraphs shall be renumbered as para. 5.7.

Annex 4.

New paragraph:

1.1.5. in case of a double deck vehicle the whole lower section (level) shall be considered as one rigid part (see paragraph 5.6. in the Regulation). Only the upper section – above the roof of the lower section – shall be defined according to paragraphs 1.1.1 – 1.1.4

New paragraph:

4.4. In the case of a double deck vehicle the occupant masses on the lower section, belonging to seats having restraint shall be attached to their seats and considered in the mass of the rigid part.

Explanation: It shall be clear that these passenger masses are belonging to the mass of the rigid part.

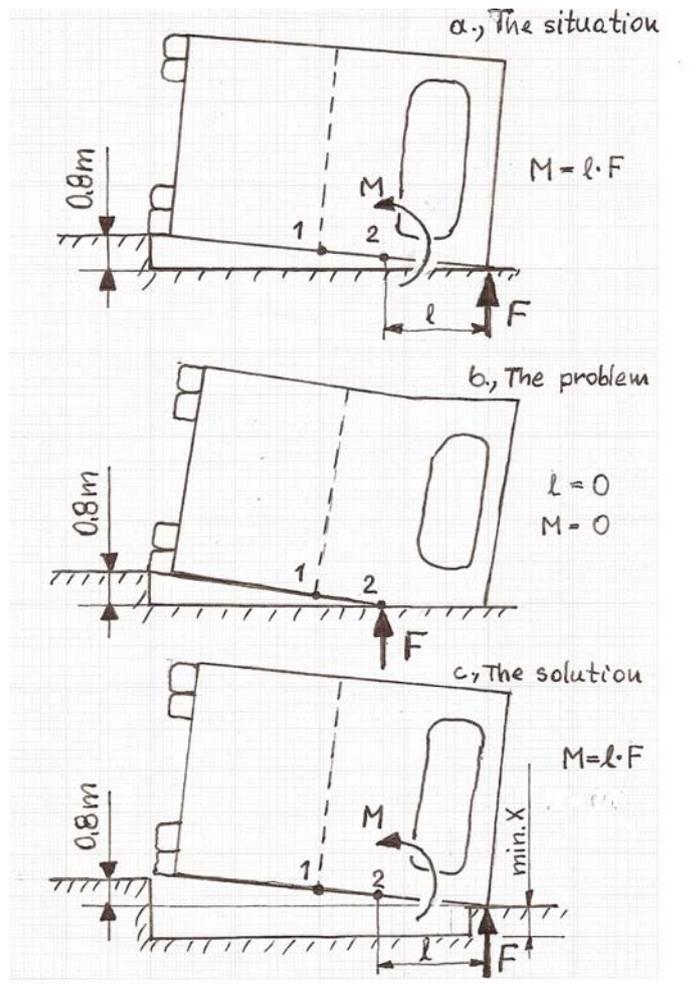
Annex 5.

New paragraph:

5. Double deck vehicle

This test method shall not be applied to double deck vehicles, because the geometrical configuration of this test bench limits the possible deformation of the superstructure.

Explanation: The sketch illustrates the problem:



- a) The basic situation in the rollover test:
- the dynamic reaction force F at the cantrail, when it hits the ground creates a bending moment M
 - the bending moment may cause large scale structural deformation, if the superstructure is not strong enough. The deformation depends on the strength of the superstructure.
- b) The problem with this geometrical configuration:
- after a slight structural deformation, before the superstructure could reach the residual space
 - the waistrail contacts the ground, the reaction force F is transferred from the cantrail to the waistrail
 - the bending moment M comes to the end (no more bending moment)

- no further deformation, even if the superstructure is not strong enough. The deformation does not depend on the strength of the superstructure.

Even it seems to be a similar test to the original one, for double deck vehicles it is a completely different test!

c) Possible solution could be:

- to use a modified, shaped ditch
- where the “mechanical depth” is the same (0,8 m), so the energy input is the same as in the original test
- the dynamic reaction force F at the conrail creates the bending moment M
- the bending moment may cause structural deformation, because there is no geometrical limitation.

But the discussion of this possible solution is out of the authorisation given by GRSG to propose the necessary modifications belonging to extension of the scope.

Annex 6.

New paragraph:

7. Double deck vehicle

This test method shall not be applied to double deck vehicles, because the geometrical configuration of the test bench limits the possible deformation of the superstructure.

Explanation: See above in Annex 5.

If GRSG thinks that this test method would be useful for double decker vehicles as well, the para. 7 above should be modified referring to a simple figure similar to the “c” version in the explanatory sketch. (The estimated value of x should be around 350 mm)

Annex 8.

New paragraph:

- 1.1.3. in the case of a double deck vehicle, the structure below the roof of the upper section (level?) shall be considered as a rigid part, PZ-s and PH-s shall be considered only on the superstructure of the upper section.

Explanation: See above in Annex 5.

- 3.9. Renumber the old para.3.8. as 3.9.

B.) Proposals for correcting mistakes, errors in the existing text.

These proposals are independent from the extension of the scope just trying to correct small errors, mistakes in the existing text.

- 2.4. Instead of “Family of vehicle types” the wording “Group of vehicle types” shall be used.

Explanation: when starting to work on Revision 1. first we used the “Family” formula, but later it was replaced by the “Group”, but in two cases this change did not take place (All the other changes have been done)

5.5. “Vehicles” shall be used instead of “buses”

Explanation: in the definitions this term is used (see para.2.8.)

6.1.1. In the last line: “group” shall be used instead of “family”

Explanation: see above (para.2.4.)

Annex 1.

3. Vehicle category/class⁽¹⁾ Add a footnote:

⁽¹⁾ As specified in Annex 7. of R.E.3 (TRANS/WP.29/78/Rev.1/Amend/2

Explanation: Some reference is needed how to specify the classes and categories