

PROPOSAL FOR AMENDMENTS TO REGULATION No. 58

- I. Rear Underrun Protection Devices (RUPDs)
- II. Vehicles with regard to the Installation of an RUPD of an approved type
- III. Vehicles with regard to their Rear Underrun Protection (RUP)

Note: The text reproduced below was prepared by the expert from Germany to introduce more stringent requirements for rear under run protection devices. This document supersedes document GRSG/2011/19. The modifications to the current text of the Regulation are marked in **bold** for new characters or marked strikethrough for deleted characters.

I. Proposal

Insert a new paragraph in the table of contents:

ANNEXES

Annex 6 – Type of vehicles for exemptions

Delete paragraph 1.2.1.:

"~~1.2.1.~~ ~~Tractive units for articulated vehicles;~~"

Delete paragraph 1.2.2.:

"~~1.2.2.~~ ~~Trailers specially designed and constructed for the carriage of very long loads of indivisible length, such as timber, steel bars, etc.;~~ "

Renumber and amend paragraph 1.2.3 to read.:

"~~1.2.3.~~ **1.2.1.** Vehicles where any RUPD is incompatible with their use;"

Insert a new paragraph 1.2.2.:

"**1.2.2.** **Vehicles listed in paragraph 1.1. and 1.2. of Annex 6.**"

Paragraph 6.2., amend to read:

"6.2. An approval number shall be assigned to each type approved. Its first two digits (at present ~~02~~ **03** corresponding to the ~~02~~ **03** series of amendments) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another type of rear under run protective device."

Paragraph 7.1., amend to read:

"7.1. The section height of the cross-member ~~must~~ **shall** not be less than ~~400~~ **120** mm. The lateral extremities of the cross-member ~~must~~ **shall** not bend to the rear or have a sharp outer edge; this condition is fulfilled when the lateral extremities of the cross-member are rounded on the outside and have a radius of curvature of not less than 2.5 mm.

For vehicles of the category N₃G the section height of the cross-member shall not be less than 100 mm."

Paragraph 7.4.2., amend to read:

"7.4.2. The individual elements of the under run protection, including those outboard of the lift mechanism, where provided, ~~must~~ **shall** have an effective surface area, in each case, of at least ~~350~~ **420** cm².

However, ~~in the case of vehicles having a width of less than 2,000 mm and where it is impossible to achieve the above requirement,~~ the effective surface may be reduced on the condition that the resistance criteria are met, **in the case of:**

- (a) **Vehicles having a width of less than or equal 2,000 mm and where it is impossible to achieve the above requirements, or**

- (b) **Vehicles fitted with a platform lift at the rear where it is impossible to achieve the above requirements."**

Paragraph 15.2., amend to read:

"15.2. An approval number shall be assigned to each type approved. Its first two digits (at present ~~02~~ **03** corresponding to the ~~02~~ **03** series of amendments) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another vehicle type."

Paragraph 16.1., amend to read:

"16.1. The ground clearance with respect to the underside of the protective device, even when the vehicle is unladen, ~~must~~ **shall** not exceed:

- (a) **450 mm for motor vehicles and trailers with hydropneumatic, hydraulic or pneumatic suspension or a device for automatic levelling according to load, and**
- (b) **550-500 mm for vehicles other than those in (a) above.**

This requirement applies over the entire width of the motor vehicle or trailer and shall be such that the height above the ground of the points of application of the test forces applied to the device according to Part I of this Regulation and recorded in the type approval communication form (Annex 1, item 7) does not exceed :

- (a) **600 510 mm for motor vehicles and trailers with hydropneumatic, hydraulic or pneumatic suspension or a device for automatic levelling according to load, and**
- (b) **560 mm for vehicles other than those in (a) above."**

Insert a new paragraph 16.2., to read:

"16.2. Paragraph 16.1 does not apply to vehicles where the height requirements specified in paragraph 16.1 are incompatible with the use of the vehicles. These vehicles may have a departure angle according to ISO 612:1978 of 8°. For vehicles of category N₂ the departure angle may have 10° and for vehicles of category N₃G it may have 15°.

In any case the maximum ground clearance with respect to the underside of the protective device, even when the vehicle is unladen, ~~must~~ shall not exceed 550 mm. For vehicles of category N₃G it shall not exceed 600 mm."

Paragraphs 16.2. (former), renumber as paragraphs 16.3.

Paragraph 16.3. (former), renumber as paragraphs 16.4. and amend to read:

~~"16.3.~~ **16.4.** The device ~~must~~ **shall** be so fitted that the horizontal distance between the rear of the device and the rear extremity of the vehicle, including any platform lift mechanism, does not exceed ~~400~~ **300** mm. ~~diminished by the recorded deformation (paragraph 7.3 of Part I) measured at any of the points where the test forces have been applied (Annex 1, item 8) during the type approval of the rear under run protective device in conformity with the provisions of Part I of this Regulation and recorded in the type approval communication form. In measuring this distance, any part of the vehicle which is more than 2 m above the ground when the vehicle is unladen shall be excluded."~~

Insert a new paragraph 16.5., to read:

"16.5. After applying the test forces (Annex 1, item 8) the recorded deformation (paragraph 7.3 of Part I) measured at any of the points where the test forces have been applied (Annex 1, item 8) during the type approval of the rear under run protective device in conformity with the provisions of Part I of this Regulation and recorded in the type approval communication form ~~must~~ shall not exceed 400 mm measured from the rear extremity of the vehicle, including any platform lift

mechanism. In measuring this distance, any part of the vehicle which is more than 2 m above the ground when the vehicle is unladen ~~must~~ shall be excluded."

Paragraph 16.4. (former), renumber as paragraph 16.6.

Paragraph 24.2., amend to read:

"24.2. An approval number shall be assigned to each type approved. Its first two digits (at present ~~02~~ **03** corresponding to the ~~02~~ **03** series of amendments) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another vehicle type."

Paragraph 25.1., amend to read:

"25.1. The ground clearance with respect to the underside of the RUP, even when the vehicle is unladen, ~~must shall~~ not exceed ~~550~~ **450** mm over its entire width."

Paragraph 25.2., amend to read:

"25.2. The RUP ~~must shall~~ be situated as close to the rear of the vehicle as possible. **The maximum horizontal distance between the rear of the device and the rear extremity of the vehicle ~~must shall~~ not exceed 300 mm.**"

Paragraph 25.4., amend to read:

"25.4. The section height of the RUP ~~must shall~~ not be less than ~~100~~ **120** mm."

Paragraph 25.8.2., amend to read:

"25.8.2. The individual elements of the under run protection, including those outboard of the lift mechanism, where provided, ~~must shall~~ have an effective surface area, in each case, of at least ~~350~~ **420** cm².

However, in the case of vehicles having a width of less than 2,000 mm and where it is impossible to achieve the above requirement, the effective surface may be reduced on the condition that the resistance criteria are met-, in the case of:

- (a) **Vehicles having a width of less than or equal 2,000 mm and where it is impossible to achieve the above requirements, or**
- (b) **Vehicles fitted with a platform lift at the rear where it is impossible to achieve the above requirements.**

Paragraph 31., amend to read:

"31. Transitional provisions

31.1. As from the official date of entry into force of the ~~02~~ **03** series of amendments, no Contracting Party applying this Regulation ~~shall~~:

- (a) ~~shall~~ refuse to grant approval under Parts I, II and III of this Regulation as amended by the ~~02~~ **03** series of amendments;
- (b) ~~shall~~ refuse a type of component or separate technical unit approved under Part I of this Regulation as amended by the ~~02~~ **03** series of amendments;
- (c) ~~may~~ prohibit the fitting on a vehicle of a component or separate technical unit approved under Parts I and II of this Regulation as amended by the ~~02~~ **03** series of amendments.

31.2. Until ~~18~~ **24** months after the date of entry into force of this Regulation as amended by the ~~02~~ **03** series of amendments, Contracting Parties applying this Regulation shall:

- (a) not refuse a type of component or separate technical unit approved under Part I of this Regulation as amended by the ~~01~~ **02** series of amendments;
- (b) not refuse to grant approvals to those types of component or separate technical unit which comply with the requirements of Part I of this Regulation as amended by the ~~01~~ **02** series of amendments;

- (c) not refuse to grant extensions of approval for components or separate technical units which comply with Part I of this Regulation as amended by the ~~01~~ **02** series of amendments;
 - (d) continue to allow the fitting on a vehicle of a component or separate technical unit approved under Parts I and II of this Regulation as amended by the ~~01~~ **02** series of amendments.
- 31.3. Starting ~~18~~ **24** months after the date of entry into force of this Regulation as amended by the ~~02~~ **03** series of amendments, Contracting Parties applying this Regulation ~~shall~~:
- (a) **may** refuse a type of component or separate technical unit which does not meet the requirements of Part I of this Regulation as amended by the ~~02~~ **03** series of amendments;*
 - (b) **shall** grant approvals only if the type of component or separate technical unit to be approved meets the requirements of Part I of this Regulation as amended by the ~~02~~ **03** series of amendments;
 - (c) **may** prohibit the fitting of a component or separate technical unit which does not meet the requirements of Parts I and II of this Regulation as amended by the ~~02~~ **03** series of amendments; *
 - ~~(d) consider approvals in the case of types of component or separate technical unit to be invalid, except where they comply with the requirements of Part I of this Regulation as amended by the 02 series of amendments.~~
- 31.4. Until ~~36~~ **48** months following the date of entry into force of this Regulation as amended by the ~~02~~ **03** series of amendments Contracting Parties applying this Regulation ~~shall~~:
- (a) continue to grant approvals to those types of vehicles which comply with the requirements of Part III of this Regulation as amended by the ~~01~~ **02** series of amendments;
 - (b) continue to accept national or regional type-approval of a vehicle type-approved under Part III of this Regulation as amended by the ~~01~~ **02** series of amendments.
- 31.5. As from ~~36~~ **48** months after the date of entry into force of this Regulation as amended by the ~~02~~ **03** series of amendments, Contracting Parties applying this Regulation ~~shall~~:
- (a) **shall** grant approvals only if the vehicle type to be approved meets the requirements of Part III of this Regulation as amended by the ~~02~~ **03** series of amendments;
 - (b) **may** refuse national or regional type-approval and shall refuse first national or regional registration (first entry into service) of a vehicle which does not meet the requirements of Part III of this Regulation as amended by the ~~02~~ **03** series of amendments; *
 - ~~(c) consider approvals to this Regulation to be invalid, except in the case of vehicle types which comply with the requirements of Part III of this Regulation as amended by the 02 03 series of amendments."~~

**Note by the secretariat:* These transitional provisions are not in line with our guidelines (TRANS/WP.29/1044, in particular see C.7 and F.3). "May" is usually used instead of "shall" for that kind of transitional provisions since UNECE Regulations are only an alternative to the national/regional legislation. The secretariat is of the opinion that this provision may be deleted because it seems already covered by (d). Furthermore paragraphs 31.1. to 31.5. have to be considered with the amendments proposed by ECE/TRANS/WP.29/2011/20.

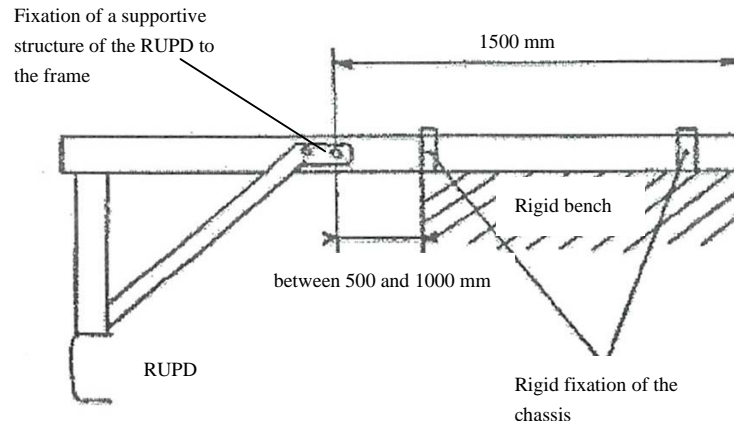
**Note by the secretariat:* These transitional provisions are not in line with our guidelines (TRANS/WP.29/1044, in particular see V.7). "May" is usually used instead of "shall" for that kind of transitional provisions since UNECE Regulations are only an alternative to the national/regional legislation. The secretariat is of the opinion that this provision may be deleted because it seems already covered by (c).

Annex 5,

Paragraph 1.1.3., amend to read:

"1.1.3. On a rigid test bench (see figure 1).

Figure 1



Paragraph 3.1., amend to read:

"3.1. The requirements of paragraphs 7.3 and 25.6 of this Regulation shall be verified by means of suitable test mandrels; the forces for tests prescribed in paragraphs 3.1.1 and 3.1.2 below shall be applied separately and consecutively, via a surface not more than 250 mm in height (the exact height **must shall** be indicated by the manufacturer) and 200 mm wide, with a radius of curvature of 5 ± 1 mm at the vertical edges. The height above the ground of the centre of the surface **must shall** be defined by the manufacturer within the lines that bound the device horizontally. When the test is carried out on a vehicle the height **must shall** not, however, exceed ~~600 mm~~ **the height as specified in paragraph 16.1 of this regulation** when the vehicle is unladen. The order in which the forces are applied may be specified by the manufacturer."

Paragraph 3.1.1., amend to read:

"3.1.1. A horizontal force of ~~400-180~~ **180** kN or ~~50~~ **85** per cent of the force generated by the maximum mass of the vehicle, whichever is the lesser, shall be applied consecutively to two points situated symmetrically about the centre line of the device or of the vehicle whichever is applicable at a minimum distance apart of 700 mm and an maximum of 1 m. The exact location of the points of application shall be specified by the manufacturer."

Paragraph 3.1.2., amend to read:

"3.1.2. In the cases defined in paragraphs 1.1.1 and 1.1.2 of this annex a horizontal force of ~~50~~ **100** kN or ~~25-50~~ **50** per cent of the force generated by the maximum mass of the vehicle, whichever is the lesser, shall be applied consecutively to two points located 300 ± 25 mm from the longitudinal planes tangential to the outer edges of the wheels on the rear axle and to a third point located on the line joining these two points, in the median vertical plane of the vehicle."

Paragraph 3.1.3., amend to read:

"3.1.3. In the cases defined in paragraph 1.1.3 of this annex a horizontal force of ~~50-100~~ **100** kN or ~~25-50~~ **50** per cent of the force generated by the maximum mass of the vehicle for which

the device is intended, whichever is the lesser, shall be applied consecutively to two points located at the discretion of the manufacturer of the rear under run protective device and to a third point located on the line joining these two points, in the median vertical plane of the device."

Insert a new paragraph 3.1.4.:

"3.1.4. On request of the manufacturer the force levels can be reduced to 80% of the requirement given in paragraphs 3.1.1. to 3.1.3. of this annex for the vehicles listed in paragraphs 1.3. to [1.6.] of Annex 6. "

Insert a new Annex 6:

"Annex 6

TYPE OF VEHICLES FOR EXEMPTIONS

1. List of vehicles:

- 1.1. Tractive units for articulated vehicles;**
- 1.2. Trailers specially designed and constructed for the carriage of very long loads of indivisible length, such as timber, steel bars, etc.;**
- 1.3. Motor vehicles with a horizontal distance of less than [750] mm from the center of the most rearward axle to the rear extremity of the vehicle;**
- 1.4. Dump trucks that are equipped with a foldable RUPD;**
- 1.5. Vehicles fitted with a platform lift at the rear;**
- 1.6. Vehicles fitted with a longitudinally adjustable RUPD."**

II. Justification

At the 101st session of GRSG it was agreed to Organise an expert meeting for an exchange of views and for a detailed discussion of the document GRSG/2011/19. This expert meeting took place in Germany on the 23 January 2012. During the meeting some concerns were expressed regarding document GRSG/2011/19.

Japan has raised some concerns regarding category N2 vehicles, while OICA and CLCCR asked for modifications with respect to several vehicle categories. Industry clearly refused any change to the current force requirements for RUPs (Rear Underrun Protection Systems).

Germany has taken several comments on board which have been introduced in the current proposal superseding document GRSG/2011/19.. In general the force requirements have been kept unchanged for most of the vehicles except for some vehicle types listed in the new proposed Annex 6 of the document. By document GRSG-100- Germany has explained the necessity of the proposed force levels to fulfil the purpose of Regulation No. 58 according to paragraph 2 ("The purpose of this Regulation is to offer effective protection against underrunning ..."). As for some vehicles this is nearly impossible to meet, Annex 6 proposes for these vehicle types less stringent force levels.

In the German document it is also proposed to change the test setup for the tests where RUPs are tested in a stand-alone configuration to better reflect the real-world scenario especially in terms of failure mechanisms of the RUPs and its fixation.

Germany would like to remind delegations that according to the 1958 Agreement, safety is one major topic to be addressed by the UN Regulations. While for some areas it may be difficult to find a solution to drive safety in the right direction, the situation for RUPs for Heavy Goods Vehicles is completely different. The effectiveness of improved RUPs with changed geometry and stiffness is well known and has been clearly demonstrated by several parties in different projects. This has already been presented to GRSP in 2006 (document GRSP-39-22) by Canada in the process of changing their national standard for RUPs.