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Economic Commission for Europe**Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****Working Party on Passive Safety****Fifty-ninth session**

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Item 9 of the provisional agenda

Regulation No. 16 (Safety-belts)**Proposal for an 07 series of amendments to Regulation No. 16
(Safety-belts)****Submitted by the expert from Australia***

The text reproduced below was prepared by the expert from Australia and aims at introducing provisions for airbag de-activation devices (where fitted). It is based on informal document GRSP-58-14 distributed at the fifty-eighth session of the Working Party on Passive Safety (GRSP). The modifications to the current text of UN Regulation No. 16, including draft Supplement 7 to the 06 series of amendments (ECE/TRANS/WP.29/GRSP/2015/25), are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2014–2018 (ECE/TRANS/240, para. 105 and ECE/TRANS/2014/26, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



I. Proposal

List of Annexes,

Insert new Annex 19, to read:

"Annex 19 Passenger airbag reminder tests....."

Text of the Regulation

Insert a new paragraph 1.5., to read:

"1.5. Vehicles of categories M₁ and N₁ with regard to passenger airbag de-activation devices."

Paragraphs 1.5. (former) to 1.7., renumber as paragraphs 1.6. to 1.8.

Paragraph 2.9., amend to read:

"2.9. "Passenger frontal protection airbag (or ~~P~~passenger airbag)" means an airbag assembly intended to protect one (or more) occupant(s) ~~in~~ of a seat (or seats) other than the driver's in the event of a frontal collision."

Insert new paragraphs 2.48. to 2.50., to read:

"2.48. "De-activation device (for an airbag)" means an element or an assembly of elements used to de-activate an airbag.

2.49. "Tell-tale" means an optical signal that, when alight, indicates the actuation or deactivation of a device, a correct or defective functioning or condition, or a failure to function.

2.50. "Vehicle master control switch" means the device by which the vehicle's on-board electronics system is brought from being switched off, as is the case when the vehicle is parked without the driver present, to the normal operating mode."

Paragraph 5.2.2., amend to read:

"5.2.2. An approval number shall be assigned to each type approved. Its first two digits (at present ~~0607~~ corresponding to the ~~0607~~ 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 shall not assign the same number to another vehicle type as defined in paragraph 2.16. above."

Paragraph 8.1.1., amend to read:

"8.1.1. With the exception of seating intended solely for use when the vehicle is stationary, the seats of vehicles of categories M₁, M₂ (of Class III or B⁹), M₃ (of Class III or B⁹) and N shall be equipped with safety-belts or restraint systems which satisfy the requirements of this Regulation.

Contracting Parties applying this Regulation may demand the installation of safety belts on M₂ and M₃ vehicles belonging to Class II.

⁹ As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.3, para. 2 - www.unece.org/trans/main/wp29/wgs/wp29gen/wp29resolutions.html

When fitted, the safety belts and/or restraint systems in Class I, II or A vehicles belonging to category M₂ or M₃ have to be in compliance with the requirements of this Regulation.

~~Contracting Parties may, under national law, allow the installation of safety belts or restraint systems other than those covered by this Regulation provided that they are intended for disabled people.~~

Restraint systems complying with the provisions of Annex 8 of the 02 series of amendments to Regulation No. 107 are exempted from the provisions of this Regulation.

Class I, or A vehicles belonging to category M₂ or M₃ may be fitted with safety belts and/or restraint systems conforming to the requirements of this Regulation.

Only vehicles belonging to category M₂ or M₃ may be fitted with restraint systems comprising a flexible shoulder adjustment device for height (paragraph 2.14.7.)."

Insert a new paragraph 8.1.3., to read:

"8.1.3. In the case of seats, not solely intended for use when the vehicle is stationary, but which are capable of being turned to or placed in more than one orientation; the requirements of paragraph 8.1.1. to 8.1.2. above shall only apply to those orientations designated for normal use when the vehicle is travelling on a public road."

Paragraph 8.1.3. (former) to 8.1.10., renumber as paragraphs 8.1.4. to 8.1.11.

Paragraph 8.1.11. (former), shall be deleted.

Insert new paragraphs 8.1.12. to 8.1.15., to read:

- "8.1.12. A separate 'passenger airbag off' tell-tale, satisfying the requirements of Regulation No. 121, shall be provided for the passenger frontal protection airbag(s) in vehicles of categories M₁ and N₁ for which a de-activation device (manual or automatic) is fitted. [The tell-tale shall have the identifying words 'Passenger AIRBAG OFF' within 25 millimetres of (above or below) the tell-tale].¹⁰**
- 8.1.13. Whenever the 'vehicle master control switch' is in the ON position, each 'passenger airbag off' tell-tale provided pursuant to paragraph 8.1.12. above shall (allowing for the completion of necessary vehicle diagnostic/system checks):**
- (a) [Not illuminate at any time when the passenger frontal protection airbag(s) to which it applies is active (ON)]; and**
 - (b) Illuminate and (except where otherwise required by paragraph 8.5. of this Regulation) remain continuously illuminated whenever the passenger frontal protection airbag(s) to which it applies is de-activated (OFF).**

¹⁰ The identifying words 'Passenger AIRBAG OFF/ON' or 'Passenger AIRBAG ON/OFF' (as appropriate) shall instead be used where the 'passenger airbag off' tell-tale is grouped with an additional 'passenger airbag on' tell-tale also provided by the manufacturer.

8.1.14. Where one or more passenger frontal protection airbags of a category M₁ or N₁ vehicle is fitted with a manually operable de-activation device:

8.1.14.1. Each such hardware-based device (e.g. a manual switch) shall:

- (a) Be located on the passenger side of the vehicle and be durably identified with the words ‘Passenger AIRBAG OFF/ON’ or ‘Passenger AIRBAG ON/OFF’ (as appropriate).
- (b) Include a passenger airbag on position/adjustment durably marked with [the word ‘ON’] together with the ‘passenger airbag on’ pictogram¹¹ below:



- (c) Include a passenger airbag off position/adjustment durably marked with [the word ‘OFF’] together with the ‘passenger airbag off’ pictogram¹¹ below:



8.1.14.2. Each such software-based device (e.g. an electronic menu option/sub-option) shall:

- (a) Display/present [the words ‘Passenger AIRBAG ON’] together with (i.e. at the same time as) the ‘passenger airbag on’ pictogram¹¹ shown in paragraph 8.1.14.1. (b) above.
- (b) Display/present [the words ‘Passenger AIRBAG OFF’] together with (i.e. at the same time as) the ‘passenger airbag off’ pictogram¹¹ shown in paragraph 8.1.14.1. (c) above.

8.1.14.3. The owner’s manual of the vehicle shall at least include, in all official languages of the Contracting Party or Parties (e.g. within the territory of the European Union, in Japan, in the Russian Federation or in New Zealand, etc.) for which the manufacturer may seek mutual recognition of approval:

- (a) Complete instructions on the operation of each manual airbag de-activation device.

¹¹ The pictogram may be monochrome and/or mirrored in the vehicle.

- (b) A statement explaining the principal reason for providing a passenger airbag switch (or de-activation device) is to enable the safe use (with the airbag switched off) of a rearward facing child restraint on a seat with a passenger airbag in front of it.

The information shall be easy to find in the owner's manual (e.g. by a specific reference to the information printed on the first page, identifying page tab or separate booklet, etc.).

- 8.1.15. Where any passenger frontal protection airbag, for the front row outboard passenger seat of a category M₁ vehicle, is fitted with a manually operable de-activation device:

8.1.15.1. The vehicle shall comply with the Hybrid III fifth percentile adult female performance requirements of UN R[137] in its original form, when the passenger frontal protection airbag for the front row outboard passenger seat is de-activated prior to a test in accordance with Annex 3 (test procedure) or Annex 7 (test procedure with trolley) of that Regulation; or

- 8.1.15.2. The front row outboard passenger seat shall be equipped with an airbag reminder system, satisfying the requirements of paragraph 8.5. of this Regulation."†

Insert new paragraphs 8.5. to 8.5.2., to read:

8.5. Passenger airbag reminder equipment

- 8.5.1. Any airbag reminder system provided pursuant to paragraph 8.1.15.2. of this Regulation shall, when tested in accordance with Annex 19, operate according to the following requirements:

8.5.1.1. Visual warning shall be provided by intermittent, though frequent, illumination (i.e. flashing) of the corresponding 'passenger airbag off' tell-tale.

8.5.1.2. Audible warning shall be by a continuous or intermittent, though frequent, sound signal or by vocal information. Where vocal information is employed, the manufacturer shall ensure that the alert is able to employ the official language(s) of the market into which the vehicle is first supplied. This audible warning may include more than one stage.

8.5.1.3. Both visual and audible warning shall operate for a cumulative duration of at least [X] seconds within the first [Y] seconds after at least one of (or any combination thereof) the following occurs:

- 8.5.1.3.1. Distance driven is greater than the distance threshold

The threshold (excluding any cumulative distance the vehicle is not in normal operation) shall not exceed 500 m.

- 8.5.1.3.2. Speed greater than the speed threshold

The threshold shall not exceed 25 km/h.

- 8.5.1.3.3. The vehicle is in normal operation for longer than the duration time threshold.

The threshold (excluding any cumulative duration the vehicle is not in normal operation) shall not exceed 60 seconds.

- 8.5.2. The audible warning of any passenger airbag reminder provided pursuant to paragraph 8.1.15.2. of this Regulation, may only be designed to allow de-activation where a sequence of operations not detailed in any instructions provided with the vehicle and/or the use of tools (mechanical, electrical, digital, etc.) not provided with the vehicle, is required to de-activate the audible airbag reminder. **J**

Insert new paragraphs 15.4. to 15.4.4., to read:

- "15.4. As from the official date of entry into force of the 07 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept approvals under this Regulation as amended by the 07 series of amendments.
- 15.4.1. As from 1 September [2018], Contracting Parties applying this Regulation shall grant type approvals only if the vehicle type to be approved meets the requirements of this Regulation as amended by the 07 series of amendments.
- 15.4.2. Until 1 September [2020], no Contracting Party applying this Regulation shall refuse national or regional type approval of a vehicle type approved to this Regulation as amended by the 06 series of amendments.
- 15.4.3. As from 1 September [2020], Contracting Parties applying this Regulation shall not be obliged to accept vehicle types, for the purpose of national or regional type approval, which are not type approved to this Regulation as amended by the 07 series of amendments.
- 15.4.4. Even after the date of entry into force of the 07 series of amendments, Contracting Parties applying the Regulation shall continue to accept and grant extensions of approvals of components and separate technical units (i.e. safety-belts and restraint systems) to the preceding series of amendments to the Regulation."

Annex 2, amend to read:

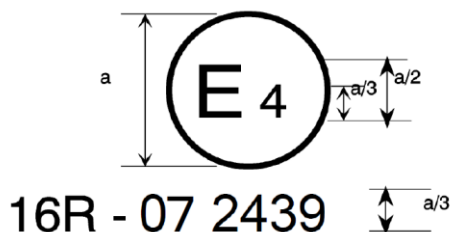
"Annex 2

Arrangements of approval marks

1. Arrangements of the vehicle approval marks concerning the installation of safety-belts

Model A

(See paragraph 5.2.4. of this Regulation)

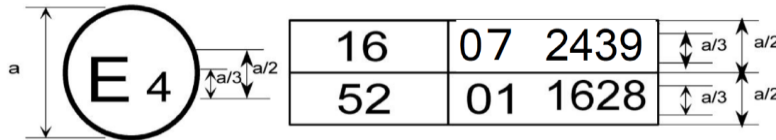


a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has, with regard to safety-belts, been approved in the Netherlands (E 4) pursuant to Regulation No. 16. The approval number indicates that the approval was granted according to the requirements of Regulation No. 16 as amended by the **07** series of amendments.

Model B

(See paragraph 5.2.5. of this Regulation)



The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the Netherlands (E 4) pursuant to Regulations Nos. 16 and 52.¹ The approval numbers indicate that, at the dates when the respective approvals were given, Regulation No. 16 included the **07** series of amendments and Regulation No. 52 the 01 series of amendments."

Insert a new Annex 19, to read:

"Annex 19

[Passenger airbag reminder tests

1. **Test vehicle set-up**
 - 1.1. **The passenger frontal protection airbag(s) is de-activated using the applicable manual de-activation device/means.**
 - 1.2. **Simulate front row outboard passenger seat occupancy using (at the option of the manufacturer):**
 - (a) **[40] kg ± [X] kg total mass, centrally placed on the seat cushion; or**
 - (b) **[A Hybrid III 5th percentile adult female dummy]; or**
 - (c) **[The state in which a front-row outboard passenger seat occupant no larger than a Hybrid III 5th percentile adult female dummy is on-board the vehicle is simulated by a method specified by the manufacturer and agreed by the Approval Authority].**
 - 1.3. **The safety belts for the driver and front row outboard passenger seats shall be fastened.**
 - 1.4. **[For any test in which front-row outboard passenger seat occupancy is simulated in accordance with paragraph 1.2 (b) or (c) of this annex, the front row outboard passenger seat shall be adjusted as follows:**
 - 1.4.1. **Longitudinal position of the seat**

¹ The second number is given merely as an example.

If adjustable longitudinally, the seat shall be placed so that the "H" point, determined in accordance with the procedure set out in Annex 15, is:

- (a) In the position given by the manufacturer, which shall be forward of the middle position of travel; or
- (b) In the absence of any particular recommendation from the manufacturer, as near as possible to a position which is midway between the forward most position of the seat and the centre position of its travel.

1.4.2. Angle of the seat-back

If adjustable, the seat-back shall be adjusted so that the resulting inclination of the torso of the dummy is as close as possible to that recommended by the manufacturer for normal use].

2. Test

2.1. A vehicle prepared in accordance with paragraph 1. is then tested under one of the conditions (at the option of the manufacturer) in paragraph 2.1.1 to 2.1.3. below, or any combination thereof.

2.1.1 Accelerate the test vehicle to a forward speed of 25 –0/+10 km/h from a halt position.

2.1.2. Drive the vehicle forward for at least 500 m from a halt position.

2.1.3. Drive the vehicle forward at a speed greater than 10 km/h for at least 60 seconds.]”

II. Justification

1. UN Regulation No. 94 (frontal collision) and UN Regulation No. [137] (Frontal impact with focus on restraint systems) are performance based standards which are silent with regard to the provision of any airbag de-activation switch. Australia interprets this (as it does with its current full frontal occupant protection standard Australian Design Rule 69/00) as requiring the vehicle to meet the required crash performance regardless of the setting of any de-activation device.

2. However, as Australia has applied UN Regulation No. 94 it does recognise and accept that UN approvals to UN Regulation No. 94 are being issued by approval authorities to vehicle types with manual airbag de-activation on the basis of the vehicle type passing the required test with the airbag switched on only.

3. A similar situation could also develop for the new UN Regulation No. [137], which Australia wishes to accept as an alternative to ADR 69/00. As such, Australia believes that both UN Regulation No. 94 and UN Regulation No. [137] should be amended, to be explicit about the use of a de-activation device and set requirements in UN Regulation No. 16 around its operation if one is to be fitted.

4. The principle reason for providing a passenger airbag de-activation device is to enable the safe use of a rearward-facing child restraint on a seat with a passenger airbag in front of it. While this is generally unnecessary to provide for in Australia (as the road rules prohibit the use of child restraints in front seats of vehicles with more than one seat row) it is recognised that other Contracting Parties may allow it and so it should be accommodated within the regulation.

5. However, clear communication is essential to ensure that any airbag de-activation device will be understood, to minimise the opportunity for any misunderstandings and misuse which could result in death or serious injuries for both child and adult occupants. This applies for both manual and automatic airbag de-activation devices. A user wishing to place a rearward facing child restraint on a seat with an airbag in front of it needs confirmation that the airbag is de-activated. We note that Euro New Car Assessment Programme and Federal Motor Vehicle Safety Standard 208 contain detailed requirements in this respect and recommend that similar requirements be incorporated in UN Regulation No. 16.

6. Durable and standardised labelling as well as handbook instruction requirements have been suggested in this proposal to facilitate better understanding of manual airbag de-activation devices and to reduce opportunities for misuse. This will also assist road authorities and road user and consumer groups to provide the most simple and easy to understand information/explanations of manual airbag de-activation to vehicle users.

7. Tell-tales are essential (for both manual and automatic airbag de-activation devices) to provide confirmation that a passenger airbag is off when a rearward-facing child restraint is installed on a seat with an airbag in front as well as (in case of manual de-activation) to remind any adult passenger to switch the airbag back on.

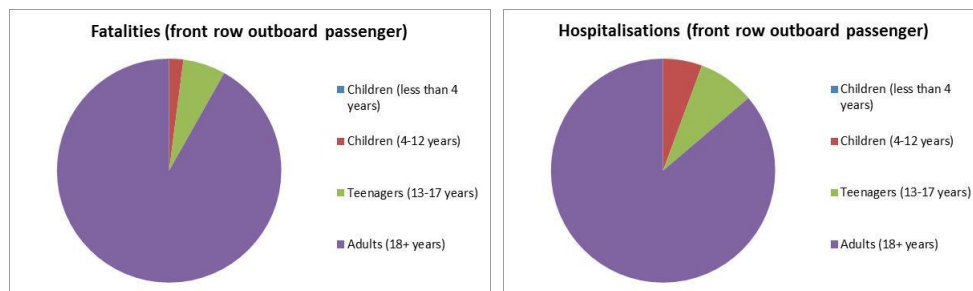
8. In regard to manual passenger airbag de-activation, it is also important to note:

(a) The large majority of front row outboard passengers killed and seriously injured in road crashes are adults (for example see paragraph 9 below);

(b) It is not possible to use enforcement to ensure that any manual airbag switch is in the correct position when an adult passenger occupies the seat; and

(c) Misuse of manual passenger airbag switches has the potential (in the absence of appropriate measures) to reduce the available adult occupant protection benefits of the new UN Regulation No. [137].

9. For example, the distribution (by age) of front row outboard light passenger vehicle (i.e. M₁) occupant fatalities and hospital admissions, in vehicle-to-vehicle accidents classified as head-on (not-overtaking) or head-on (overtaking) in Victoria, Australia between 1 January 2006 and 31 December 2014, is as follows:



Source: VicRoads CrashStats

10. A passenger airbag reminder is proposed for category M₁ vehicles, with a manually operable airbag deactivation device and not otherwise meeting the performance requirements of UN Regulation No. [137] with the airbag switched off. This suggestion should be viewed in the context of the current joint proposal from the EC, Japan and Republic of Korea, which if adopted, would require safety belt reminders for the front row outboard passenger seat and hence the necessary vehicle sensors for a system to remind an adult passenger to switch any manually de-activated passenger airbag back on.

11. If GRSP decides to require passenger safety-belt reminders in UN Regulation No. 16 (as has been jointly proposed by the EC, Japan and Republic of Korea), a passenger airbag reminder system for category M₁ vehicles with manual airbag de-activation, should be of very marginal extra cost.
