



**Economic and Social  
Council**

Distr.  
GENERAL

TRANS/WP.29/GRSG/2005/2  
31 January 2005

Original: ENGLISH  
ENGLISH AND FRENCH ONLY

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**ECONOMIC COMMISSION FOR EUROPE**

INLAND TRANSPORT COMMITTEE

World Forum for Harmonization of Vehicle Regulations (WP.29)

Working Party on General Safety Provisions (GRSG)

(Eighty-eighth session, 18-22 April 2005,  
agenda item 1.4.)

**LIGHTING TO ASSIST BOARDING AND ALIGHTING IN BUSES AND COACHES**

Transmitted by the expert from Sweden

Note: This document is distributed according to the request of GRSG (TRANS/WP.29/GRSG/66, para. 9). It is based on informal document No. GRSG-87-15.

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Note: This document is distributed to the Experts on General Safety Provisions only.

## **Lighting to assist boarding and alighting in buses and coaches**

### **Background**

Adequate lighting that illuminates the area outside the service doors of a bus is an important safety feature. The lighting assists people to board and alight in safety. The lighting also assists the driver to see if a passenger has fallen whilst boarding or alighting. The 01 series of amendments to Regulation No.107, Annex 8, paragraph 3.10.1 states: "Adequate lighting shall be provided to illuminate the area inside and immediately outside the vehicle to allow people with reduced mobility to board and alight in safety". However, this lighting is good for all people and should be a general requirement in Annex 3.

In Sweden several accidents occurred where a passenger has fallen whilst alighting and then glided in under the bus. Thereafter, the passenger has been run over by the rear wheel of the bus when the bus drove away from the bus stop. Some of these accidents were fatal. The buses involved did not have lighting on the outside of the service door. Such accidents are most common during wintertime when it is dark outside and slippery on the ground.

The Swedish bus manufacturers deliver new buses with extra lighting, so called Service-door-lighting, installed on the outside of the bus body near the middle service door. This lighting gives a very good illumination of the area at the service door. Many bus operators have installed Service-door-lighting on buses that are in use. The bus drivers who drive buses with service-door-lighting say that they have a much better view of the area outside the middle service door on these buses. They have been able to avoid accidents and they feel more comfortable and secure because they have better control of the passenger's boarding and alighting.

The problem connected to the service-door-lighting is that the lighting device protrudes somewhat outside the vehicle body. When measuring the vehicle width according to EU Directive 97/27/EC, the service-door-lighting device is included. Therefore, the width will be too big.

The Swedish national regulations allow service-door-lighting to be installed at a service door and state that the lighting device shall not be included when the vehicle width is measured. The regulations specify requirements on service-door-lighting, if fitted. These requirements are as follows:

- Service-door-lighting may only be installed adjacent to a service door.
- The lighting device shall be placed not less than 2000 mm above the ground.
- The lighting device shall not protrude more than 50 mm outside the side of the vehicle.
- The lighting device shall be installed and adjusted so that the light cannot dazzle other road-users within a radius of 10 m from the device.
- The lighting device shall be installed so that the light can only be turned on when a service door is operated and is turned off before the vehicle has reached a speed of 5 km/h.

### **Proposal**

It would be possible to add a new paragraph in the 02 series of amendments to Regulation No. 107 and amend the EU Directive 97/27/EC, Annex I, paragraph 2.4.2., to cater for service-door-lighting on vehicles (there is no equivalent UNECE Regulation to EU Directive 97/27/EC).

The following new paragraph 7.8.4. should be inserted in the 02 series of amendments to Regulation No.107, Annex 3:

- "7.8.4. Adequate lighting shall be provided to illuminate the area inside and immediately outside the vehicle to allow people to board and alight in safety. The lighting device shall be installed so that:
- the light can be turned on only when a service door is operated;
  - the light is turned off before the vehicle has reached a speed of 5 km/h and
  - the light cannot dazzle other road-users within a distance of 10 m from the device."

Paragraph 3.10.1. of the 02 series of amendments to Regulation No.107, Annex 8 should be deleted.

EU Directive 97/27/EC, Annex I, paragraph 2.4.2. should be amended as follows (the proposed amendment is underlined):

- "2.4.2. "Vehicle width" is a dimension which is measured according to ISO standard 612-1978, term No 6.2.
- In addition to the provisions of that standard, when measuring the vehicle width the following devices must not be taken into account:
- customs sealing devices and their protection,
  - devices for securing the tarpaulin and their protection,
  - tyre failure tell-tale devices,
  - protruding flexible parts of a spray-suppression system (see Council Directive 91/226/EEC),
  - lighting equipment,
  - for vehicles of categories M2 and M3, access ramps in running order, lifting platforms and similar equipment in running order provided that they do not exceed 10 mm from the side of the vehicle and the corners of the ramps facing forwards or rearwards are rounded to a radius of not less than 5 mm; the edges must be rounded to a radius of not less than 2.5 mm,
  - mirrors and other devices for indirect vision,
  - tyre-pressure indicators,
  - retractable steps,
  - the deflected part of the tyre walls immediately above the point of contact with the ground,
  - watching aids,
  - retractable lateral guidance devices on buses and coaches intended for use on guided bus systems, if not retracted.
  - for vehicles of categories M2 and M3, lighting devices for the illumination of the area outside service doors provided that the lighting devices are placed not less than 2000 mm above the ground and do not protrude more than 50 mm outside the side of the vehicle."
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