

UN ECE Regulation No. 107
3rd meeting of the GRSG Informal Group on
Service Doors, Windows and Emergency Exits of buses and coaches
2 - 3 June 2010
Plaxton Limited
Scarborough, United Kingdom

DRAFT MINUTES

Attendance:

Michael BECKER	Evobus - Germany
Richard DAMM	Federal Ministry of Transport - Germany
Alan DAVIS	Irisbus-Iveco - France
Olivier FONTAINE	OICA (Secretary)
Jerzy W. KOWNACKI	Motor Transport Institute (ITS) - Poland (Chair)
Donald MACDONALD	Department for Transport - United Kingdom
Allan McKENZIE	SMMT
Pascale REYNTJENS	Van Hool - Belgium
James RICKABY	Alexander Dennis Ltd. - United Kingdom
Josep BORRÓS	Applus+ IDIADA - Spain
Laurence WOOD	Plaxton - United Kingdom
Colin Copelin	IRU - United Kingdom
Geoff Leyland	OPTARE - SMMT - United Kingdom
Annie Luchie	CLCCR - Belgium

1. Welcome by Plaxton

2. Adoption of the Agenda

Document: SDWEE-03-01 (Secretariat)

Mr. Davis requested that the documents referenced as French documents (SDWEE-03-04 and SDWEE-03-05) are from this date referenced as CLCCR documents.

Mrs. Reyntjens added FMVSS 217 (Bus emergency exits and window retention and release), to be referenced as SDWEE-03-07.

Mr. Macdonald distributed a new document, referenced SDWEE-03-08, and titled: "PSV emergency exits: passenger behaviour and exit design".

Mr. Copelin stressed on two particular issues experienced by the operators:

1. Emergency exits

On some usual vehicles for international service the signage for the emergency exits is covered by curtains within the vehicle. Passengers would thus not see them in an emergency.

2. Service doors

The directive 2001/85/EC requires that 'emergency opening controls fitted on the inside or outside of the vehicle should override all other controls'. This means that the driver is

unable to prevent the egress of passengers through the service doors whilst temporarily stopped at traffic obstructions (e.g. traffic lights). This is a safety hazard as they could alight directly into the path of another vehicle passing on the nearside to turn at a filter light. A similar risk applies with pedestrians on the pavement determined to board the bus at a non-authorized stop.

3. Revision of the researches potentially beneficial to the group

Documents: SDWEE-03-03 (UK)
 SDWEE-03-06 (D)
 SDWEE-03-08 (UK)
 Annex 2 to SDWEE-02-08 (NHTSA)

a. Passenger behaviour and exit design

Mr. Macdonald presented SDWEE-03-08. He added that UK is keen to focus on regulatory improvements permitting to keep the occupants in the vehicle because the typical scenario in roll-over accidents makes passengers ejected outside the vehicle to be trapped under it.

Mr. Macdonald stressed the importance of the recommendations given in the document. The experts had an exchange of view about the driver's emergency exit control overriding capabilities. While UNECE R107 seems to permit such overriding (see paragraphs 7.6.5.1.8. and 7.6.5.2.) to some extent, the experts convened that the issue deserves detailed consideration. It was reminded that about 50% of deaths are when getting in or off the vehicle (10/year in the UK). The experts acknowledged that the UK situation may be particular because a secondary emergency door opposite to the driver's door is required due the possibly frequent travels in the continent.

b. Marking and signage visibility

The group then started the revision of document SDWEE-03-03 and initiated a debate about harmonization of signage. Mr. McKenzie recommended that the provisions be very specific, providing detailed requirements on e.g. signage colours, text and background colours, size of letters, etc. Mr. Copelin was of the opinion that the operators will probably welcome such signage harmonization.

A debate took place about the marking and signage visibility: presence of curtains, mounted by OEM or as aftermarket, can jeopardise the visibility of the signage. This was recognized as a proper field for progress for the group. As aftermarket item, it was proposed to consider this as a Periodical Technical Inspection issue (PTI). The experts however developed some ideas that could be applicable at the time of building the vehicle, e.g.: vertical blinds could make the signage more easily visible, luggage rack can be a good location for signage, but poorly convenient to the operator, OEM can produce a "card" showing the emergency exits, some labels on the seatback of the preceding seat could be made available, introducing emergency lighting system for emergency exit doors in association with signage, where the lighting would be activated in case of accident, etc. the experts also envisaged to add exterior signage for the rescue team.

c. Toughened glass vs. laminated glass

Mr. Copelin made clear that some final decision should be made about toughened glass vs. laminated glass. He challenged the "chicken & egg" logic whereby toughened glasses are criticized when a roll-over accident eject passengers from the vehicle, and laminated glasses are criticized when a fire accident occurs and laminated glass prevents the passengers to egress

from the vehicle. He was of the opinion that the group should make a decision about the route to follow.

A lengthy debate took place about the pros and cons of breakable glasses in the vehicle. While there is a lack of data backing a final decision, it was agreed that most accident cases are with the vehicle remaining on the wheels and experiencing a frontal impact and fire. In most cases the passengers leave the vehicle by the exit they used to enter the vehicle. According to the experts' experience, only one case of accident is known where the passengers did leave the vehicle via an emergency window. Such a case occurred in Spain in the nineties. Details about this accident can be found in TRANS/WP.29/GRSG/53 paras 12 & 13 (informal document N°1 to GRSG-74).

Mr. Macdonald stressed that the UK research does not recommend hinged and breakable glass windows as a primary emergency exit. (see page 6 of document SDWEE-03-08).

d. Revision of the other potentially beneficial documents

D informed that document SDWEE-03-06 provides some aspects not included in UNECE R107 or available in documents GRSG/2006/09, GRSG-91-30 and GRSG/2007/07 which could be of some value to the Group.

The group did not discuss in detail the UK "Research into safety belts, windows and the industry approach to escape from passenger compartment".

Mrs. Reyntjens presented the document SDWEE-03-07. She explained that FMVSS 217 follows a quite different philosophy compared to the regulations in application in Europe: no requirements for regular service exit doors, 2-movement emergency exits (2 forces – see document), focused on hinged windows.

4. Targets for progress

The group then decided to sort out the different possible targets for progress in three categories, taking the manufacturing application delay as the key classification parameter. Each item is to be led by a Pilot, member of the informal group:

- Short application term targets
 - Visibility of the signage and controls. Pilot: Mr. McKenzie. He committed in addition to provide M. Rickaby with information about the average person corpulence, coming from FAA (Federal Aviation Administration)
 - Signage harmonization within B&C Industry. Pilot: Mr. McKenzie
 - Assessing benefits of railway experience for B&C situation. Pilot: Mr. Macdonald
- Medium application term targets
 - Separation of doors on small vehicles. Pilot: Mr. Davis
 - Accessibility of the emergency exits, including assessment of current gauges relevance. Pilot: Mr. Rickaby and Mr. Becker.
 - Emergency lighting. Pilot: Mr. Wood to perform a primary investigation
 - Functionality of the controls. Pilot: Mr. McKenzie
- Long application term targets
 - Step height to emergency doors. Pilot: Mr. Rickaby and Mr. Becker
 - Laminated glazing vs. breakable glass: elaboration of an appropriate test, not design restrictive. Pilot: Mr. Wood

The group also had the opportunity to inspect some vehicles kindly made available by the host Plaxton. All the available vehicles were ready for approval, whether to the UK national regulations or the European/UNECE regulation. The list of the vehicles which were available can be found in Annex to this report.



Plaxton - annex to
the report.pdf

After the inspection the experts summarized their observations about items which could be improved as below:

1. Sealed hammers, breakable window hammers, tethered hammers, safety alert hammers (thumb press), “safe-T Punch” etc.
2. Double deck bus emergency exit on sides never used when vehicle is on its wheels. When vehicle on its side, should be possible to use the windshield as an emergency exit. However, this glass is subject of impacts from tree branches etc. hence quite solid windows.
3. Colours for controls and signage.
4. Lower case, horizontally oriented text.
5. Clarity of text. “turn, hold and pull”: the sequence of actions could be clarified?
6. Location of the text relative to the movement of the component
7. Toilet door interfering with emergency door access.
8. Presence of toilet can permit the rear window not to be an emergency exit, while its dimensions are sufficient to be used as an emergency exit.
9. Access to exits + dimension of test gauges (3-D vs. 2-D) for assessing the approach to the exit: a 2-D test gauge could follow a route impossible to a 3-D human being.
10. Centralized overnight unlocking would be appreciated by most European operators. Pilot: Mr. Becker

The representative from UK was keen to start elaborating emergency exit requirements from scratch in order to avoid to repeat the experience of a complicated text . This position was challenged by D and OICA because the group firstly needs to have a good understanding of what is the target for each item and because it is recommended to take advantage of the existing standards/texts.

Conclusion:

- Pilots are designated for each item as above
- 1st outcomes to be communicated to the informal group secretary by end of July 2010
- Secretary to circulate the proposals for comments at the latest two weeks before next meeting (SDWEE-04, 18-19 October 2010).

5. Revision of relevant provisions in UNECE R107

Documents: SDWEE-01-03 (HUN)
SDWEE-02-02 (Secretariat)
SDWEE-02-03 (UK)
SDWEE-02-04 (HUN)
SDWEE-02-05-Rev.1 (Secretariat)
GRSG/2010/16 (CLCCR)
SDWEE-03-02 (HUN)
Email of the secretariat dated 18 May 2010
SDWEE-03-04 (CLCCR)
SDWEE-03-05 (CLCCR)

Background:

- SDWEE-01-03: proposal for assessment of emergency exits “usability”
- SDWEE-02-02: draft list of post-accident scenario items that should be taken into account while drafting a new proposal for requirements for bus and coach emergency exits.
- SDWEE-02-03: discussion paper on emergency exits: clarity of the regulatory text and connection between the type-approval requirements and the actual needs in case of emergency.
- SDWEE-02-04: current text of UNECE R107 inadequately assumes that the vehicle is standing on its wheels, the passengers are in normal, unaffected position, their moving capabilities being represented by an average adult’s capability.
- SDWEE-02-05-Rev.1: basic working document as sent out to the group by email of 30 April 2010. It contains the notes taken during the 2nd meeting of the informal group (Warsaw, January 2010) when the group decided to take the document SDWEE-03-05 as a base for a working document.
- GRSG/2010/16: Prohibits escape hatches where their usage could lead to some danger to the occupants escaping the vehicle
- SDWEE-03-02: input from HUN to the informal group.
- Email of 18 May 2010:
 - Visibility of the emergency signage
 - 2001/85/EC prohibits the driver to prevent the egress of passengers at e.g. traffic lights, because of mandatory emergency opening controls overriding requirements.

Discussions:

SDWEE-03-05: the group adopted the document and supported CLCCR to table it at the next GRSG session.

SDWEE-03-04: Mr. Davis reminded that the passengers face two main situations, i.e. normal and emergency. UK proposed to reduce the number of gauges to those 2 situations. IRU challenged that proposal as WP29/GRSG philosophy is safety rather than comfort, hence the emergency gauge should be the only one.

The group then revised SDWEE-02-07-Rev.1:

The group discussed about Paragraph 7.6.1. and envisaged the possibility of having special provisions for crew seats. A debate took place about the fundament of the number of exits relative to the number of passengers. Quickly two options revealed to be the possible best approaches: increasing the number of exits or improving the quality of the existing ones. However the grouped again had to recognize the lack of data backing any change in the regulation.

Mrs. Reyntjens informed the experts that a vehicle having 5 seats beside the driver and conforming to paragraph 7.6.1.7. does exist.

Safety, feasibility and operability were agreed as the relevant parameters for improving the text of the Regulation.

Mr. Copelin stated that, as glazing is virtually never used in case of emergency, the improvement of existing other emergency exits e.g. doors should be favoured.

Mrs. Luchie recommended to improve existing exits rather than changing the number of exits, as there is no evidence that the existing numbers are not appropriate.

Mr. Macdonald questioned the agreement that there is no evidence that the UNECE R107 minimum requirement is adequate. He requested an IRU investigation about the number and sizes of the emergency exits of vehicles above 12 m.

The group reviewed in depth the rest of document SDWEE-02-07-Rev.1, taking into account the input provided by the relevant experts before and during the meeting. All debates and decisions can be found in document SDWEE-02-07-Rev.2. The revision of the document was interrupted at paragraph 7.6.1.11.

Conclusion:

- Agreed to focus on improving existing exits rather than extending or changing the number of exits.
- IRU to conduct investigation about the number and sizes of the emergency exits of vehicles above 12 m if possible before end of July.
- CLCCR to table document SDWEE-03-05 at GRSG-99 (October 2010) with support from the SDWEE informal group.

6. Other business

7. List of action items

- Each pilot to provide first outcomes of investigation about the items of progress listed under item 4 before the end of July 2010.
- Informal group secretary to make available all contributions at the latest two weeks before the 4th meeting (Geneva, 18-19 October 2010).
- IRU to conduct investigation about the number and sizes of the emergency exits of vehicles above 12 m.
- UK to provide information about plug doors in relation with the provisions of Paragraph 7.6.1.3.

8. Date and place of next meetings

SDWEE-04	18-19 October 2010	Geneva
GRSG-99	19-22 October 2010	Geneva
SDWEE-05	25-26 October 2010	Spain - IDIADA (to be confirmed)
