

Report BMFE-10

1. Welcome and Roll call

Round table presentation of participants

Target of this session: 1. finalise and complete proposal for next GRSG

2. evaluate if remaining points need additional time within the group (ToR might need to be changed)

2. Adoption of the agenda (BMFE-10-01)

Agenda adopted

3. Validation of the minutes of the last meeting (BMFE-09-16)

Moved to 2nd day of the meeting due to absence of Mr. Seiniger.

Minutes adopted with updates, see doc BMFE-09-16 rev 1.

4. Accidentology & statistics: revision of the accidentology collection table

No specific input

5. Regulation No.107

5.1. Automatic emergency exits

- Risk analysis on automatic service door operation : update of the analysis including additional consideration as brake activation or driver in the loop. [Industry]:
No additional input on the risk analysis.

- Synthesis of Dekra report on emergency exits (BMFE-10-10) [Dekra]

Some questions were asked after the presentation.

- *Do we need additional devices like smoke detectors? When smoke detected --> opening of the roof hatch --> smoke gets out and people have more time to evacuate --> more investigation needed (in buildings these kind of smoke extractors already exist). The opening of the hatch can also feed the fire with oxygen so that is not good either. A good balance between fire and how to evacuate is important.*
- *What with the automatic breaking of the windows? We should keep in mind that false detections can occur and that with the automatic breaking also passengers can be shocked by sudden breaking. Also fire is very often in the engine compartment, so the windows must be kept in the vehicle as long as possible to avoid getting smoke in the interior.*
- *No consideration in the report placing the driver in the loop, given the opportunity to disable the automatic opening if evaluated as not relevant by the driver*

this report substantiates the need to test regulatory changes against the nature of the bus fire and its consequences.

5.2. Opportunity on improve hammer efficiency with electronic device

- Update of the analysis on hammer efficiency in evacuation events [All experts]

- Update of the analysis on electronic device (*BMFE-10-05 Rev 01*) [France]

Some clarifications on the presentation:

- *The location of the hammer can be behind the driver (national law in France for buses that drive in potentially dangerous regions)*
- *the electronic device is a button or other technology neutral device that helps to break the glass. It does not need to be called electronic.*
- *The tables in slides 16 & 17 are to show the differences between a manual hammer and a breaking device.*
- *The final position : the principle to break window in case of evacuation need is not challenged but the last evaluations show that the hammer efficiency should be improved following different axis : optimised identification (intrusive for passengers), adapted location and easy-to-use regardless the passenger profile.*

Important remarks:

- *Hammer is not easy to use. But a device to break the windows is not the only adapted solution in every situation. When fire in the engine compartment the best way to exit the bus is via the service doors.*
- *Need to focus on solution to increase safety and look at which situations the glass needs to be broken.*

Need to continue discussions on this topic. ToR will need to be modified, GRSG & WP29 will have to approve further investigations.

Report BMFE-10-05 will be modified; Technical efficiency comparison and BCR calculations will be removed in order to avoid any confusion in the final understanding..

5.3. Opportunity to introduce alarm system in compartments dedicated to propulsion battery in addition to the UN-R n°100 specifications (*BMFE-10-06*) [Dafo - All experts]

Report BMFE-10-06 informs about recent developments aimed at rapid fire detection in Lithium-Ion batteries and preventing rather than fighting them.

With early detection the propagation of temperature build-up between the cells can be stopped in time. Also venting of the battery is very important. Some sensors already exist but what with reliability. They are also very expensive.

Document BMFE-10-09 contains a proposal for integrating a warning to the driver into UNECE-R100 when this occurs (document for WP29).

Insert new paragraphs 5.2.3. to 5.2.4., to read:

"5.2.3. Warning in the event of failure in REESS

The vehicle shall provide a warning to the driver when the vehicle is in active driving possible mode in the event specified in paragraphs 6.13. to 6.15.

In case of optical warning, the tell-tale shall, when illuminated, be sufficiently bright to be visible to the driver under both daylight and night-time driving conditions, when the driver has adapted to the ambient roadway light conditions.

This tell-tale shall be activated as a check of lamp function either when the propulsion system is turned to the "On" position, or when the propulsion system is in a position between "On" and "Start" that is designated by the manufacturer as a check position. This requirement does not apply to the telltale or text shown in a common space.

5.4. GRSG 119th : last amendments on draft proposal (BMFE-10-02)

The provisional proposal regarding the addition to the legal text reads as follows: --> Class I without square brackets and also if fitted without square brackets.

Annex 3, insert a new paragraph 7.5.7. and 7.5.7.1., to read:

"7.5.7 Fire event

7.5.7.1 In the case of vehicles of Classes { I }, II, III and B, having the engine located to the rear of the driver's compartment, in the event of activation of an alarm system:

- the emergency lighting system according to paragraph 7.8.3. { if fitted } shall automatically activate and,
- after a single positive action of the driver on any of the door controls in the driver's compartment, all power-operated doors situated on the side of the vehicle that is nearer of the side of the road corresponding to the direction of traffic for which the vehicle is designed shall open and shall remain in the opened position.

This is applicable when the vehicle is stationary or driving at a speed less than or equal to 3 km/h.

A repeated use of the opening control shall not reverse the opening movement of the door, in order to avoid unintended re-closing in an emergency situation."

Keep text with transitional provisions and series of amendments 09. Second step would be to update ToR for longer time for hammer and then new series of amendments if necessary.

For safety instructions: delete Class I

6. Regulation No.118

6.1. Cost / Ratio analysis for material toxicity evaluations

- Update of BCR with confirmed inputs [All experts]
 - Update of the analysis of toxicity influence on injuries in fire events [All experts]
- No new input

6.2. Smoke toxicity development of a simplified method for interior materials used

- Status of study progress [BAM]

- Toxicity evaluation on materials already approved under UN-R n°118 series 01 and 02 [BAM]

During the update of the investigation, it was stated that the materials of the furniture, curtains and ceiling in particular influence the fire behavior of the interior of a touring coach. The research shows that burning approved materials already leads to high concentrations of highly toxic substances. Smoldering material instead of igniting produces a different emission picture. Because R118 is mainly aimed at preventing flames, further research into this may be useful. Do we need to put requirements for the most important materials? What requirements to put in the regulation? Specific protocol for toxicity testing needed?

- Opportunity to introduce requirements and test protocols in the Regulation [BAM – All experts]

Do we need to put requirements for the most important materials? What requirements to put in the regulation? Specific protocol for toxicity testing needed? BAM will continue to investigate in this way, focusing on “most critical” materials for toxicity and will keep informed the IWG BMFE of the relevant results for UN-R n°118.

- Performance comparison linked to the product. Is flammability more important than toxicity? (BMFE-10-04) [CLEPA - Gerflor]

Will it be likely to get a new test-method? Do we fulfil already now with the materials currently used in buses?

Proposal from CLEPA for amendment? Under investigations, could be proposed in GRSG directly.

6.3. Clarification on plastic glazing covered by the UN-R n°118 scope of application

- Draft amendment proposal (BMFE-10-08) [INSIA]

Because UNECE-R43 already contains (horizontal) fire requirements for plastic windows and because R118 contains regulations for the use of plastic in the position of windows in buses and bus interiors, the proposal is seen as a “description of an example” and not as a supplement .

Test in R43 and test in R118 are not the same, does already approved R43 plastic glazing need to be retested to fulfill R118 (test acc. annex VII R118 because > 500mm from ground?)

Spain will review and confirm this proposal and send it to GRSG directly.

6.4. GRSG 119th : last amendments on draft proposal (BMFE-10-03)

Proposal accepted. Some minor grammatical changes made and some typos removed.

7. Next steps and meetings

Next meeting: 27/10/2020 : 14:00 – 16:00 hrs

28/10/2020 : 10:00—12:00 hrs & 14:00 – 16:00 hrs

8. A.O.B.

- Fire detection performance tests : new input from expert (*BMFE-10-07*) [RISE]

Common reaction on the report was that more investigation is needed to determine whether the parameters for the fire tests to verify the response time are reliable, to avoid that the requirements lead to a higher risk on false alarms and suppression systems to go off (good detection performance needed!)

Please feel free to send your comments on this issue.

The relevant documents can be found using this link: (<https://wiki.unece.org/display/trans/GRSG-BMFE-10>)