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GRSF task-force on the behaviour of M2 & M3 general construction in case of Fire Event (BMFE),

Our assessment of suggestions for improvement as shown on page 19 DOK- BMFE-1-05e

The greatest fire hazard is outside the bus coupé, i.e. in the engine room. For this reason it is required that flames and smoke are prevented from penetrating into the bus coupé before an evacuation. Flames and fire gases will easily be spread through gaps in the section wall between the engine room and the coupé. That is, through cracks as well as through pipes and cable penetrations. In addition it is necessary to make requirements for toxicity.

Furthermore, it would be advantageous to compare the standard of trains with the bus standard

Recommandation page 20:

Addition of a rear exit (which may be an emergency exit door)

Number of bus fires in Norway 2016: 91 2017:95

Two very similar fires with gas-powered (CNG) buses occurred in Trondheim (Norway) in November and December 2016.

- Both fires probably started in the LED lights that illuminated the rear licence plate of the buses.
- Investigation of the used LED-lights revealed cracks that were not compatible with normal impact of fastening, or normal use.
- The lights have most likely had cracks that did not prevent moisture intrusion into the lights.
- Moisture with subsequent irradiation in circuit board components in LED light is therefore a probable source of ignition in both fires.
- The investigation also showed that the fuses in the electrical system were too large in relation to the light manufacturer's recommendations for the license plate lights. Thus, the fuses were not an effective barrier to fire in the event of faults in single components.
- IN ECE reg. 107 it is no requirement for the manufacturer of the lights should state the fuse rating when selling the lights, just the voltage and power. The regulations

does not specify which additional capacity a single-fuse circuit and several consumers may have.

- Furthermore, the sound reducing material used in the two buses were not compatible with good fire resistance, and it contributed to the fire in both cases. It is likely to assume that both fires would be fully developed fires, without fire rescue from the fire department, even with internal fire extinguishing system triggered and the use of handheld extinguisher.

