



Economic Commission for Europe**Inland Transport Committee****Working Party on the Transport of Dangerous Goods****Joint Meeting of the RID Committee of Experts and the
Working Party on the Transport of Dangerous Goods**

Geneva, September 2021

Item 7 of the provisional agenda

Reports of informal working groups**Update on work of the BLEVE working group****Transmitted by the Government of the Spain on behalf of the BLEVE
working group*, **, ******Summary*

Executive summary:	Report of the BLEVE working group meetings.
Action to be taken:	To note the work of the group and that proposals will be submitted in other documents.
Related documents:	ECE/TRANS/WP.15/AC.1/2019/INF.8, ECE/TRANS/WP.15/AC.1/2019/INF.23 (March 2019 session), ECE/TRANS/WP.15/AC.1/2020/42, ECE/TRANS/WP.15/AC.1/2020/INF.7 and Add.1 to Add.7, ECE/TRANS/WP.15/AC.1/2020/INF.20 (September 2020 session) and ECE/TRANS/WP.15/109/INF.7 (May 2021 session).

Introduction

1. The BLEVE working group, working according to terms of reference from the Joint Meeting, has been looking at measures that will prevent a BLEVE occurring in the event of a fire when flammable liquids and flammable gases are transported.
2. At the September 2020 session of the Joint Meeting, documents ECE/TRANS/WP.15/AC.1/2020/42, INF.7, INF.7/Add.1 to Add.7 and INF.20 were presented. The representative of Spain, on behalf of the BLEVE working group, sought guidance on six

* A/75/6 (Sect.20), para 20.51.

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measures identified as being able to help prevent boiling liquid expanding vapor explosions (BLEVEs) occurring: (a) the installation of metallic mudguards, (b) the installation of engine fire suppression systems, (c) the installation of a safety valve, (d) the introduction of technical devices for general traffic safety, (e) a heat resistant screen between cabin and tank, and (f) the use of expanded aluminium alloys (EAA) within the tank.

3. And after its discussion, the following decisions were taken (see report ECE/TRANS/WP.15/AC.1/158):

- The Joint Meeting agreed to prioritize measures (a), (b) and (c) in an individual or combined manner.
- Considering informal document INF.20 on the mandatory application dates of safety provisions for new goods vehicles, delegates felt that the measures under (d) were already addressed by the World Forum for Harmonization of Vehicle Regulations (WP.29).
- The Joint Meeting also agreed to further assess measure (e).
- Some delegates recommended to further investigate on thermal coating in the case new elements appear.
- Measures under (f) were not considered as relevant due to the uncertainty with respect to the efficiency, the impact on maintenance or inspections and the costs resulting from the use of EEA.

4. The BLEVE working group has continued the development of proposals for the implementation of measures (a), (b) and (c), through meetings via Microsoft Teams on 20/11/2020, 01/03/2021, 14/04/2021, 27/05/2021 and 16.06.2021.

5. An informal document (INF.7) was submitted to the May 2021 session of WP.15 providing options for the implementation of measures (a) and (b) given that these are only applicable to road transport (<https://unece.org/sites/default/files/2021-04/ECE-TRANS-WP15-109-GE-inf7e.pdf>). WP.15 was therefore kindly asked to give an initial view on these options in order to provide an indication to the BLEVE working group of the direction in which the proposals should be developed. This feedback will help inform the contents of an official document that will be submitted to the next session to WP.15 in November 2021.

6. The installation of mudguards and fire suppression systems are complementary and, together with a mandatory requirement for safety valves to be fitted to certain tanks, can be effective in preventing a BLEVE according to the research that has been done previously (see INF.8 and INF.23 prepared by INERIS for the Government of France and submitted to the March 2019 session of the Joint Meeting).

7. It should be noted that INF.8 provided the Joint Meeting with information on the scope of the BLEVE working group. It also states that raising the temperature of any liquefied substance above its boiling point can create a BLEVE (INF.8/Add.1 provides a list of substances that have produced a BLEVE (Abbasi & Abbasi, 2006)) and therefore, the purpose of the group is to develop measures that would address the risk of BLEVEs not only in relation to LPG, but also to other substances (other gases, flammable or not, and flammable liquids). Therefore, the scope of proposals from the BLEVE working group to amend RID/ADR is likely to encompass LPG and other gases and flammable liquids which could cause a BLEVE.

8. Furthermore, whilst outside the scope of the work carried out by the BLEVE working group, any measures that prevent the propagation of fires on tank-vehicles are also likely to have more general safety benefits (in addition to reducing the risk of a BLEVE occurring). These benefits have not been quantified but it would seem likely that these measures would nevertheless have additional benefits for road safety.

9. The report of WP15 in its May session, can be found in the report ECE/TRANS/WP.15/253 but the key points are:

- The representative of Spain presented to the Working Party the proposals of the BLEVE working group of the Joint Meeting to equip vehicles with engine fire suppression and tyre fire protection systems, took note of the comments made

during the session and the preferences regarding the different options proposed (there were mixed views on the best option) and invited those delegations that wished to do so to study the various options and to send her their comments, if possible before the next meeting of the informal group scheduled for 27 May 2021. She also invited delegations interested in participating in this informal group to contact her.

- The Working Party noted that the BLEVE working group would submit an official document concerning the fitting of vehicles with engine fire suppression and tyre fire protection systems at the next session.
- The Working Party also noted that proposals on safety valves would be presented separately to the Joint Meeting, as they were applicable to all land transport modes.

Next steps

10. Work is ongoing in the BLEVE working group and it is anticipated that the next steps will include the submission of:

- a working document to the September 2021 session of the Joint Meeting, proposing the mandatory fitment of safety valves, and;
- a working document to the November session of WP.15 with proposals for the introduction of engine fire suppression and tyre fire protection systems.

11. It is anticipated that an additional BLEVE working group meeting will be held in early July, prior to the WP.15 deadline for the submission of working documents, to develop the proposals for submission to WP.15.

12. Several new parties have participated in the BLEVE working group following the WP.15 meeting in May, and it is therefore anticipated that well developed proposals will be submitted to the next session of WP.15.
