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Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations**Working Party on Automated/Autonomous and Connected Vehicles****Thirteenth session**

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Item 4(b) of the provisional agenda

**Automated/Autonomous and Connected Vehicles:
Deliverables of the Informal Working Group on
Validation Methods for Automated Driving****Proposal for amendments to UN Regulation No. 13 (Heavy
vehicle braking)****Submitted by the expert from France***

The text reproduced below was prepared by the expert from France. This proposal aims to equip four axles commercial vehicles over 25 tons with vehicle stability function due to their specific use. It is based on informal document GRVA-12-07. The modifications to the existing text of UN Regulation No. 13 are marked in bold for new characters.

* In accordance with the programme of work of the Inland Transport Committee for 2022 as outlined in proposed programme budget for 2022 (A/76/6 (Sect.20), para 20.76), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



I. Proposal

Paragraph 5.2.1.32., amend to read:

“5.2.1.32. Subject to the provisions of paragraph 12.3. of this Regulation, all vehicles of the following categories shall be equipped with a vehicle stability function:

- (a) M₂, M₃, N₂¹²;
- (b) N₃¹² having no more than 3 axles;
- (c) N₃¹² with 4 axles, **either** with a maximum mass not exceeding 25t and a maximum wheel diameter code not exceeding 19.5 **or maintaining transported material’s state through continuous movement (concrete mixer truck for example).**

The vehicle stability function shall include roll-over control and directional control and meet the technical requirements of Annex 21 to this Regulation.”

II. Justification

1. Specific commercial vehicles carrying materials that are maintained in a continuous movement, such as concrete mixer truck, for example, can be rather unstable when loaded, because their centre of gravity is not static, higher and not centred, as a result of the continuous rotative movement of the spinner, which carries the concrete to the side.
2. Such trucks drive on all types of roads, between the concrete production plant and the construction area, several times a day, either empty or loaded. This implies many different driving conditions to be dealt with by the driver. The density of the concrete can also vary from one site to another, which leads to a change in the position of the centre of gravity, and which is not precisely known by the driver.
3. The generalization of vehicle stability function on this type of vehicle would prevent drivers from having to adapt their driving depending on whether or not such a system is present on their vehicle and thus lowering the non-negligible risk of rollover.
4. There is a significant and constant number of four-axle concrete mixer trucks performing rollovers in France every year. A simple desk research based on a review of media clippings identified around thirty cases in France in 2021 alone; experts consulted confirmed that this finding was also valid abroad). One of these rollovers recently led to a severe accident with several fatalities.
5. The victims to such accidents are mainly the truck driver, except for a few cases such as the accident mentioned above.
6. The occurrence of a rollover, or loss of control of the trajectory, with a collision with another vehicle is therefore low, but the potential severity is very high given, the load transported.
7. The fitment of ESC on these vehicles is therefore very important in order to improve road safety.
8. Moreover, given the technical progress and evolution of vehicle stability function systems, the exemption introduced with Supplement 8 of the 11 series of amendments to UN Regulation No. 13 no longer seems justified.