

## **UN Regulation No. 58 – Rear Underrun Protection Devices (RUPD) - IRU observations and conclusions on the German document ECE/TRANS/WP.29/GRSG/2013/27.**

Note: The text reproduced below was prepared by the IRU International Commission on Technical Affairs (CIT) to inform GRSG of the road transport sector's point of view concerning the strengthening requirements of rear underrun protection devices.

### **I. BACKGROUND**

The German proposal includes:

- higher force requirements,
- reduced ground clearance,
- changed longitudinal location,
- increased section height of the cross-member of the RUPD and
- slightly improved testing conditions.

### **II. IRU OBSERVATIONS**

Due to their design, weights and dimensions, heavy goods vehicles (HGV) involved in accidents might lead to severe consequences for other road users. The safety of commercial vehicles continues to be strictly regulated in the best performing countries in road safety. Measures based on risk analyses of Road Traffic Safety (RTS) performance factors are in focus by HGV transport companies. ISO 39001 is a guide to help road transport companies to reach road traffic safety targets.

The IRU Secretariat General and its Members are not convinced that the revised regulation for RUPD on HGV proposed by Germany is a key issue for Road Traffic Safety.

With respect to the German proposal, several issues must be considered and reviewed:

- Since 1992, European countries have equipped commercial vehicles with compulsory speed limiting devices, which limit the maximum speed to 90 km/h for vehicles over 12 tonnes. The provision was extended in 2002 to all commercial vehicles over 3.5 tonnes - by 1 January 2005 for all new vehicles and 1 January 2006 for existing vehicles.

The speed limiter plays a fundamental role in road traffic safety, but as described in the German proposal, different speeds may be an issue as they vary considerably given vehicle deceleration/acceleration - HGV versus M1, from/to 90 km/h for commercial vehicles and from/to 130km/h or higher speeds for M1 vehicles.

- Indeed, if we consider an impact speed of 80km/h into a commercial vehicle moving at 60 km/h – considering that the car driver saw the HGV at least 3 seconds before the impact – the car is at a distance of approximately 52 metres and at a speed of 142 km/h. This is based on a reaction time of 1s, the deceleration time [braking phase time 0.2s and braking time 1.8s] is 2s which, in the meantime, can reach a deceleration of 9 m/s<sup>2</sup>– *reconstructions of this type of accident take into consideration that the current vehicles M1/N1 have a deceleration of 8.5 m/s<sup>2</sup> to 9 m/s<sup>2</sup> in their braking phase.*

Based on the same parameters, we can consider an impact speed of 56km/h (GRSG-100-25) into a commercial vehicle stopped (standstill position) or parked – considering that the car driver saw the HGV at least 3 seconds before the impact – the car is at a distance of approximately 82 metres and at an initial speed of 118 km/h.

***These examples show that generally, M1 vehicle users do not pay full attention to visible “obstacles” such as HGVs.***

***To see and to be seen is a key road traffic safety factor. Road users, including M1 drivers, shall fully respect speed limit recommendations including in rest areas and at filling stations on motorways or elsewhere.***

***M1 road users should, therefore, be adequately trained and informed about relevant road traffic safety risks on roads.***

***Placing the burden on HGV owners with revised regulation for RUPD does not seem to be an efficient Road Traffic Safety measure.***

*Setting a higher impact speed in a test situation would lead to exaggerated results and would not solve the issue of vehicles not respecting the speed limit. Indeed, at 50km/h - impact speed – severe injuries de facto occur to the occupant of a vehicle impacting a truck or a wall.*

### **III. IRU GENERAL CONCLUSIONS**

The IRU Secretariat General supports all initiatives that can reduce accidents on the road involving not only heavy good vehicles, but also other road users. The ETAC study, which was published in 2007, shows that human error, whether by the truck driver or another road user, is the main cause of accidents (85.2%). However, only 25% of the accidents linked to human error are caused by a truck driver. Other factors such as technical failures, infrastructure and weather conditions play a minor role, representing respectively 5.3%, 5.1% and 4.4% of the main causes of accidents.

Taking into consideration the density of traffic, accordion driving (acceleration / deceleration), the persistent use of multimedia while driving by many road users, the generated stress and misinterpretation of distance, braking behaviour versus the speed of the vehicle in front of each road user, it is indeed very difficult to keep safe distances between the various types of vehicles.

Therefore, regarding the German proposal, it seems to the IRU that there is no approved analysis behind the German proposal taking into account future advanced technologies on the long term.

**Therefore, the IRU Secretariat General rejects the German proposal.**

The German proposal promotes and/or supports aggressive driving behaviour versus eco driving style – free flow traffic - without taking into account all advanced technologies meant to avoid incidents such as rear impacts.

Nowadays, intelligent vehicle systems – such as AEBS, LDWS, ESP and ACC - intelligent speed adaptation/assistance devices - are more or less integrated in HGVs based on regulations or voluntary used in order to mitigate/avoid impacts.

The analysis in the IRU observations, which was based on impact speeds, clearly stated that the redesign of RUPD supports M1 drivers who do not fully respect speed limits and drivers who do not pay full attention to obstacles in the road.

Therefore, the IRU Secretariat General and its Members question why society should implement such stringent RUPD requirements.

HGVs are visible to other road users in cities and/or on motorways and they can easily be seen, even during night driving, due to mandatory rear lights and retro reflective devices and in addition the implementation of contour marking on HGVs according to ECE Regulation 48 in 2007.

It is premature to change requirements concerning the RUPD as the positive or negative effects of all investments done regarding new advanced technologies to mitigate or to avoid any type of incidents, including rear impacts, are not known.

Stronger/heavier RUPD might not be the best solution today, as presented by Germany. All M1 drivers should first meet national road traffic requirements and be better trained.

***Decision-makers should analyse and evaluate future Road Traffic Safety factors and measures and not consider only the current situation.***

***A real estimation of what the situation would be in three to five years - taking into account the implementation of new advanced technologies as indicated in the last two paragraphs of the BAST cost-benefit study on rear underrun protection systems for heavy goods vehicles – would certainly effectively mitigate the risks of rear impacts (rear end collisions).***

There are still outstanding questions, for instance, in which conditions would a higher specification RUPD save more lives? What would such a change cost to society – and would the number of those severely injured due to road traffic accidents be reduced?

#### **IV. JUSTIFICATION**

The IRU Secretariat General and its Members believe that the advanced technologies of tomorrow designed to avoid or mitigate incidents should be taken into account, instead of implementing stronger/heavier mechanical solutions.

The IRU Secretariat General and its Members believe that M1 road users should pay much more attention to road traffic rules and HGVs users are not responsible for M1 drivers' behaviour and speed. M1 drivers should be adequately trained and informed about relevant road safety risks on roads.

The IRU Secretariat General and its Members cannot support the German proposal and think that it would be more adequate to address the issue with measures and existing technologies to mitigate and/or to avoid any rear impact.

The expert group of the GRSG shall consider the IRU's arguments, when they make their decision.

\* \* \* \* \*