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Proposal to develop a new Regulation on mass limiting devices

Proposal to develop a new Regulation on Mass Limiting Device (MLD)

Submitted by the expert from Poland*

The text reproduced below was prepared by the expert from Poland in order to propose a new Regulation on vehicle Mass Limiting Device (MLD). It is based on informal document No. GRSG-98-05.

* In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

1. The problem of overloaded vehicles (trucks, trailers and semi-trailers), damaging roads and bridges around the world, is nearly as old as automotive transport itself. There are many means of eliminating such vehicles from roads, for example, by using Weigh In Motion (WIM) technology or other vehicle weigh preselection techniques. These measures are effective only for overloaded vehicles that are already present on roads and causing damage before they are detected. In most cases such vehicles are not being eliminated from roads at all.

2. The idea behind developing a new Regulation is to introduce Mass Limiting Device (MLD) consisting in a set of axle load sensors, a simple calculating processor and an ignition lock unit. The load sensors would measure actual vehicle load while the vehicle is stationary during its loading operation, giving a driver an [audible and/or optical] warning when the vehicle maximum load is exceeded. After exceeding the vehicle maximum mass or axle load by [10] per cent, the ignition lock unit would immobilize the vehicle's engine. The calculating processor should make some allowances for vehicle configuration, fuel mass variations, etc.

3. The general idea behind the application and operation of such devices is similar to that behind digital tachographs and Speed Limiting Devices (SLDs). It is meant to prevent overloaded vehicles from entering a road or going over a bridge they could damage. The device's processing unit could establish whether a specific road permissible axle load or the total vehicle mass is about to be exceeded and signal the problem to the driver. The device should be tamperproof, so that neither the driver nor the operator could interfere with its settings. That operation should only be performed by authorized inspectors.

4. The device also has a traffic safety aspect. All vehicles are type-approved to all traffic safety Regulations for their maximum vehicle mass and their axle load values and mass distribution as specified by the vehicle manufacturer. Once these values have been exceeded, the vehicle's braking distance, and its fade and stability properties become unpredictable. Therefore, such a vehicle, even driven at legal speeds, may not stop within the required distance or may even roll-over due to an elevated centre of gravity.

5. For the different national permissible axle load or total vehicle mass values, a Global Positioning System (GPS) [or a similar satellite positioning system] could be used as a source of primary information for the device. Based on that, the device would advise the driver of the vehicle load permitted for selected routes, or suggest a route according to the vehicle load. With the GPS technology available today, even temporarily closed roads or roads under reconstruction could be factored into route planning.

6. Aside from the technical aspects of the issue, there are also political and economic aspects. Based on the principle of voluntary installation and/or application of the Mass Limiting Devices, the Contracting Parties could develop their own programmes to protect roads and bridges and offer incentives to operators using the device.

7. In order to make all of the above possible, there is a need to develop a harmonized standard for the device that could work in different countries and adapt to different road traffic conditions. To do so, a new UNECE Regulation would be necessary.

II. Justification

8. The annual damage caused to roads and bridges by overweight vehicles has costs billions of Euros. The existing means of eliminating overweight vehicles act only to identify overloaded vehicles that are already operating on roads and already causing damage. Therefore, using a medical metaphor, they only act as a cure to a disease that has already developed and can only diminish its symptoms. The proposal constitutes preventive action aimed at eliminating overloaded vehicles from roads and bridges before causing damage.