

General homework:

Please comment AEBS-HDV-05-02-r1, providing modifications as necessary, until end of July, to chairs + secretaries (C+S). The document can be found here:

<https://wiki.unece.org/download/attachments/128420657/AEBS-HDV-05-02-r1%20%28CLEPA-OICA%29%20Draft%20regulation%20of%20AEBS-HDV%20%20-%20industry%20comments%20AEBS-HDV-05%20notes.docx?api=v2>

As a party to the discussion regarding the revision of ECE R131 - AEBS - HDW and the invitation to provide input to proposals contained in AEBS -HDV-05-02.

We have used the time since the last working meeting to evaluate the proposal document and made some critical topics and sent these out to the industry and training institutions to get answers back with views. The procedure is carried out with team meetings. Where the participants had to answer about ten questions positions based on the proposed content.

Our prerequisites for transport with heavy vehicles in Norway:

88% of all roads used for goods transport in Norway are made with one lane in each direction. With varying standard and width. The roads are divided into national road network, county road network, municipal road network and European roads which consist of 75% with one lane in each direction.

Links to public reports on Norwegian road standards:

[Kvaliteten-på-det-norske-veinettet.pdf](#) [Veinettet | Opplysningsrådet for veitrafikken \(ofv.no\)](#)



Picture1.

Narrow lanes present driver major challenges, on Norwegian Europe road also when it comes to driver support system. As picture shows from this accident with active Lane departure warning system.



Picture 2.

Tractor with two axles on Norwegian European Road with friction of 0.28. Met van in a sharp curvature just before a bridge over a river. With activation of emergency brake as a result and subsequent accident. One of very many such accidents in the winter of 2020 - 2021 on Norwegian roads with unsuitable vehicles

All these roads, 88% of all goods are transported on wheels by one of Europe's most modern truck parks. Most trucks are used in traffic from three to five years old. Virtually all vehicles sold over 7500 kg are built and single approved in Norway in accordance with Article 24 in Directive 2007/46.

Driver Education and practice in Norway:

The educational race to become a professional driver in Norway means 4 years of education and a minimum of 2 years of practice. Every four years, YSK continuing education is required for one week. The syllabus is comprehensive with economics, technical training on vehicles, driving on slippery and dark driving, with loading and safety on the road. When training a driver, the focus is on training the use of vehicles with a view to operating economy and the correct use of driver support systems, including information from the vehicle. This also applies to push buttons that are available. This is necessary for drivers to be familiar with due to safe accessibility and taking care of fellow road users. In addition, relief and bogie lifting have been approved in Norway due to topography and accessibility, in addition to snow chains a minimum of 7. chains for truck and trailer combinations.

Weight and dimensional requirements in Norway:

Maximum axle weight in Norway on a single axle is 10 tons. bogie shaft 19 tons. Single Truck max 26 tons. Maximum weight national truck and trailer combination 50 tons on 19.5 M length. No height restriction. On roads that have accessibility, there is an opening for MVC - vehicle combinations and timber combinations up to 60 tons.

Under these conditions, we have asked the following questions to a representative selection of companies and drivers who have experience from N3 single vehicles and vehicle combinations up to 60 tons as operated exclusively along Norwegian roads throughout the year. The vehicles and experiences shall not be from vehicles older than three years old:

Questions taken from the proposal on which the revision of ECE - R 131 is based.

1. What experience has their company and drivers had with AEBS so far?

Answers:

85% of the responses acknowledge that AEBS is a necessary safety system when used correctly. We experience constant unjustified activation, and that function can be regulated with a switch. Responsible drivers handle this well. Especially on narrow roads with topography and challenging turns. with today's requirements it works well. The proportion of km driven with adaptive cruise control is increasing. Drivers of timber trailer combinations, MVC vehicles are reserved for activation due to the stability and displacement of high loads.

2. In the revised version which is under discussion of R131 we find in the **introduction** the following text: The intention of this Regulation is to establish uniform provisions for advanced emergency braking systems (AEBS) fitted to motor vehicles of the categories M2, M3, N2 and N3 primarily used under highway conditions.

Answers:

This is in line with what we experience with the use of the system today. Well-established training and routine use of the driver of the vehicle.

3. In the revised version point 2. Definitions nr 5.2.1.2. Emergency braking. When the system has detected the possibility of an imminent collision, there shall be a braking demand of at least 4 m/s² to the service braking system of the vehicle. This does not prohibit higher

demand values for deceleration than 4 m/s^2 during collision warning for very short durations, e.g. as a haptic warning to stimulate the driver's attention.

Answers:

Training of students who are recruited as professional drivers receives theoretical training in the use of the driver support system, including how AEBS works when the vehicle is used on the road in Norway, no practical application test.

In addition, vehicles in Norway are supplied with retarders as additional brakes due to challenging topography and steep underwater tunnels. With large total weights, this is a challenge. If vehicles or the combination of lorries are used over long distances, climate zones and long winter seasons, preferably in 6 months in northern parts of the country, will make it imperative to deactivate AEBS on many routes precisely to secure goods, vehicles, and fellow road users. We also register that the frequency of accidents increases with foreign lorry combinations, especially from Eastern Europe, which has a great challenge with accessibility through our elongated country, especially in winter. Drivers have poor training and a tractor with two axles is not suitable for our national conditions.

4. In the proposal on which the revision of R131 is based, requirements have been made for activation automatically from 10 km/h.

And in order deactivate, the speed must fall below 10 km/h or use the following deactivation requirements specified in section 5.4.

When a vehicle is equipped with a means to manually deactivate the AEBS function. the following conditions shall apply as appropriate:

The AEBS deactivation control shall be designed in such a way that manual deactivation shall not be possible with less than two deliberate actions.

The location of AEBS deactivation control shall be installed so to comply with the relevant requirements and transitional provisions of UN Regulation No. 121 in its 01 series of amendments or any later series of amendments.

It shall not be possible to manually deactivate the AEBS at a speed above 10 km/h.

Where automatic deactivation of the AEBS function is a consequence of the driver manually switching off the ESC function of the vehicle, this deactivation of the AEBS shall require at least two deliberate actions by the driver.

A constant optical warning signal shall inform the driver that the AEBS function has been deactivated. The yellow warning signal specified in paragraph 5.5.4. below may be used for this purpose.

Answers:

For a country like Norway with our special infrastructure in transport, we are afraid of unfortunate situations if the vehicle itself decides when activation of emergency brakes is necessary. On roads with two lanes each way, active emergency braking and additive Cruise control apply. such roads have a very limited length in Norway compared to our neighboring countries. We therefore believe that the switch for deactivation is necessary and will be an important measure to increase the safety of our drivers. In the introduction to the proposal, AEBS's functionality will work down to a ambient temperature 0°C . For many, this will mean that AEBS is disconnected on parts of the vehicle up to 6 months a year due to winter cold. Will there then be an active warning light that the driver will be annoyed by? or it will be possible to disconnect the system via Switch?

5. Warning and activation test with pedestrian targets

When AEBS has discovered the possibility of a collision with a pedestrian crossing the road at a constant speed of not more than 5 km/h, within the conditions specified in section 5.2.2.4. , a

collision warning shall be given as specified in section 5.5.1. and should be given no later than the start of the emergency braking intervention.

The collision warning can be canceled if the conditions for a collision are no longer present.

When the system has detected the possibility of an impending collision, there must be a braking requirement of at least 5.0 m/s^2 / 4 m/s^2 for the vehicle's service brake system. This does not prohibit deceleration demand values higher than 4 m/s^2 during the collision warning for very short durations, for example as a haptic warning to stimulate the driver's attention.

The emergency braking can be interrupted or the need for deceleration reduced below the threshold above (as relevant) if the conditions that apply to a collision are no longer present or the risk of a collision has decreased.

Vehicle for bicycle scenario

When AEBS has discovered the possibility of a collision with a bicycle crossing the road at a constant speed from 10 to 15 km / h, within the conditions specified in section 5.2.3.4. , a collision warning shall be given as specified in section 5.5.1. and should be given no later than the start of the emergency braking intervention. .

The collision warning can be canceled if the conditions for a collision are no longer present.

When the system has detected the possibility of an impending collision, there must be a braking requirement of at least 5.0 m/s^2 / 4 m/s^2 for the vehicle's service brake system. This does not prohibit higher deceleration requirement values than 4 m/s^2 during the collision warning for very short durations, for example as a haptic warning to stimulate the driver's attention.

The emergency braking can be interrupted or the need for deceleration reduced below the threshold above (as relevant) if the conditions that apply to a collision are no longer present or the risk of a collision has decreased.

Answers:

Our infrastructure is complicated with many attractions along our roads, this means that the driver must pay close attention and plan their driving. The main part of our roads lacks bike paths and towns as the road goes through lacks pedestrian crossings. The topography is also varied. Narrow winding city center streets will affect the operation of the AEBS with many driver warnings. Many people answer here that they want to turn off the system due to errors. Many also answer that the topography comes into play when it comes to errors. A truck and a truck combination of 50 and 60 tons is not so easy either to stop or to get started especially on difficult slippery roads in winter.

The collusion:

In this draft, we have conducted a survey based on the proposal that is available. the questions marked with numbers are completed by email. phone and Teams. Essentially, the questions are good for transportation companies and their managers and chief safety representatives. Many of the companies and training institutions have created their own routines for the use of driver systems where scenarios are described. All responsibility for the transport of goods on commercial vehicles, including securing of cargo, belongs to the Driver of the vehicle. It is a great responsibility and long education. If the driver makes a mistake and inflicts damage on the other party with a tragic outcome, the driver will lose the right to drive and take the punishment for the responsibility he has been assigned.

Therefore, the use of driver assistance systems is an important part of the driver's responsibility. It's about operating economy, accessibility and not losing security for oneself cargo and fellow road users. Traffic accidents are declining for Norwegian vehicles, even though we still have challenges on the roadside. The focus has been on improving the road standard in Norway, but it is a long way to go.

This is the point of view that is important for the Norwegian transport industry

the survey has been carried out and arranged
of

Geir Hjertvik

Principal Engineer

Road Users and Vehicles Department

Norwegian Public Roads Administration

Geir.hjertvik@vegvesen.no