

How to benefit from safety-developments in heavy vehicles and infrastructure?

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Introduction

The Nordic Road Association (NVF) is an organization that has evolved from a pavement engineering point of view, towards dealing with a wide range of road traffic and transport issues. Traffic accidents leading to severe injuries often involve heavy vehicles. As result, a general opinion in our society is that heavy goods vehicles (HGV) are causing much of the severe injuries. When groups of different expertise have been discussing the issue, insight has come that the above opinion is based on a poor analysis or maybe even totally wrong. Thus NVF has recognized a need for increased knowledge regarding the influence of both heavy trucks and infrastructure for safer traffic, also including the point of view of truck performance and operations.

Approach

The main documentation for this issue is related to several analyses from traffic accidents. Such material most often is grouped in types of accidents, but also a few are related to the causes for the accident-situation.

A result from analysis of causal links is pointing on driver behavior, especially the lack of understanding among car drivers for heavy vehicle performance.

In order to achieve an arena for discussion and for exchange of experiences, NVF organized a seminar at the Demo Centre of Volvo Trucks in Gothenburg, Sweden. The aim was to initiate dialogue and exchange of experience among stakeholders, such as road users, infrastructure owners and vehicle manufacturers.

The seminar was advertised and was open for all interested parties. It consisted of three parts.

The first part of the seminar commenced with a guided tour in Volvo Trucks safety exhibition.

In the second part, the participants was invited to test drive a wide range of trucks with and without trailers. The test drive included a 25.25 m long European Modular System (EMS) vehicle combination, in order to give experience of how an EMS-combination behaves in tight corners and intersections.

The third part consisted of a number of lectures from a broad range of stakeholders. The lectures were followed by a panel discussion. The lecture topics were design of vehicles, roads and streets, partly from society user perspective, partly from the design, construction, operation and maintenance of roads, and last but not least traffic accident analyses.

Results

The seminar has been documented in a NVF report. The report focuses on important perspectives on the seminar presentations.

The seminar clearly showed that a critical factor of success is the driver, whom is often neglected in our debate. This presentation in VIA Nordica is therefore targeting the potential for increased benefit from safety-developments in heavy vehicles and infrastructure, by improved driver behavior.

In the Volvo safety exhibition, the main point was the driver's importance for efficient and safe transportation. Important key words were comfort, safety and simplicity.

An essential aspect of the excursion was that the participants got to climb into the driver's seat to test drive a 25.25 m long EMS vehicle combination to experience how it behaves in critical maneuvers. There was a large consensus that the EMS combination is easy and smooth to drive. However, EMS vehicles require careful attention by the drivers.

The seminar clearly showed that a very large share of fatal injuries involving HGV's are in fact caused by passenger cars and their drivers, rather than by the HGV's and the truck drivers.

The NVF report 2/2011 "Tunga fordon och infrastruktur för säkrare trafik" is available at: www.nvfnorden.org/pages/389

Conclusions

Driver behavior, vehicle and road design and condition are all critical to the development and prevention of traffic accidents. No chain is stronger than its weakest link.

The overall conclusions of NVF committee on Vehicle and Transport after the seminar are:

- A very large part of actions aiming to prevent fatal accidents involving heavy trucks should be geared towards safer roads and to passenger car driver behavior and safety equipment (including Lane Departure Warning) in passenger cars.
- The main problems facing severe traffic accidents involving heavy duty vehicles can be reduced by combining forces on the development of safer vehicles, support and warning system that helps drivers to drive a vehicle on a road safer, as well as measures for safer roads and safer behavior by all road users.
- There are several simple steps that the road authority can take to reduce accidents. Mapping the road safety risks, warn vehicle drivers by eg signage, provide radar guided speed warning in case of rain on tight and improperly banked curves, lowering the speed limit on winter roads, and redesign of dangerous curves.
- Great risk of accidents is often in the interaction between elements of the road, vehicle and driver. See figure below. When implementing the forthcoming standard ISO 39 001 for road safety, great emphasis should not only be spent on the elements, but also on interaction.
- In a legal perspective on the road authority's liability, the following simple rule applies:
-In case of failure of the road: give immediate warning and take measures against the failure within a reasonable time!

