FFI

Holistic approach to improve road traffic safety

Pre-study of a transport company

Project within Vehicle and Traffic Safety

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Content

FFI in short

FFI is a partnership between the Swedish government and automotive industry for joint funding of research, innovation and development concentrating on Climate & Environment and Safety. FFI has R&D activities worth approx. €100 million per year, of which half is governmental funding. The background to the investment is that development within road transportation and Swedish automotive industry has big impact for growth. FFI will contribute to the following main goals: Reducing the environmental impact of transport, reducing the number killed and injured in traffic and Strengthening international competitiveness. Currently there are five collaboration programs: **Vehicle Development, Transport Efficiency, Vehicle and Traffic Safety, Energy & Environment and Sustainable Production Technology.**

For more information: www.vinnova.se/ffi

1. Executive summary

To take a further steps towards the long term vision of zero fatalities and to reach the targets set for Sweden (halving the number of traffic fatalities and reduce the number of seriously injured by a quarter from 2007 to 2020) and the EU (halving the number of road deaths between 2010 and 2020), it is necessary to focus the cause of accidents and through risk management as early as possible prevent its occurrence. By better understanding the causes of accidents, efficient solutions can be developed through a combination of safe vehicles, safe drivers and safe organizations.

The project Holistic approach to improve road traffic safety, pre-study of a transport company has by a study of PostNord Logistics operations in Sweden investigated accidents in remote, regional and urban distribution and through cooperation between Volvo GTT and PostNord followed up and investigated the causes of accidents. This has been done by taking a holistic approach, where the investigation focus on vehicles, drivers and organization, all of which affect the risk of accidents. Through this work we have become more effective at understanding the causes of accidents, which is a prerequisite to developing effective solutions.

For both truck and van accidents 43 % of the accidents occurred on public roads, mostly on roads within urbanized areas. 53 % of the accidents occurred at docks, in terminals, parking areas and courtyards. The accidents mostly occurred at low speeds when handling the vehicle in tight spaces where it is important to be aware of the vehicle's length, width and height. Of the accidents studied, 4% occurred on the road outside urbanized areas. The majority of these accidents happened on multilane roads and in higher speed. The lane departure accidents and rear-end collisions are recurring accidents types on roads outside built-up areas. 2% of the accidents resulted in personal injury. Two accidents were reversing accidents with pedestrians; two cases were rear-end collisions with another vehicle and one case a turning accident hitting a moped.

To investigate the causes of the accidents that were identified in the project, PostNord Logistics was studies and analysed in the areas of safety priority, problem understanding and actions. Also specific problem areas for drivers in their work were identified. These include the driver's overall driving skills, procedure for vehicle handling at delivery and collection of goods, delivery reliability, conditions for work and motivation of drivers to drive safely. Furthermore, recommendations for actions that have the potential to reduce the risk of accidents at Post Nord Logistics were proposed. They can be summarized in activities within the organization, specifically for the drivers and for technical and vehicle solutions.

2. Background

To take a further steps towards the long term vision of zero fatalities and to reach the targets set for Sweden (halving the number of traffic fatalities and reduce the number of seriously injured by a quarter from 2007 to 2020) and the EU (halving the number of road deaths between 2010 and 2020), it is necessary to focus the cause of accidents and through risk management as early as possible prevent its occurrence. By better understanding the causes of accidents, efficient solutions can be developed through a combination of safe vehicles, safe drivers and safe organizations.

3. Objective

The project has by a study of PostNord Logistics operations in Sweden investigated accidents in remote, regional and urban distribution and through cooperation between Volvo GTT and PostNord followed up and investigated the causes of accidents. This has been done by taking a holistic approach, where the investigation focus on vehicles, drivers and organization, all of which affect the risk of accidents. Through this work we have become more effective at understanding the causes of accidents, which is a prerequisite to developing effective solutions.

4. Project realization

The focus of the project was to identify accidents and investigate the causes of these for PostNord Logistics Region Väst. Region Väst is one of six regions in PostNord Swedish logistics operations and has a fleet of approximately 210 trucks (over 3.5 tonnes) and about 130 vans (under 3.5 tonnes). The region has about 515 drivers employed. The analysis was based on accident statistics, interviews with employees at PostNord Logistics, observations of drivers during work shifts and accident follow-up interviews with drivers when an accident occurred.

5. Results and deliverables

For both truck and van accidents 43 % of the accidents occurred on public roads, mostly on roads within urbanized areas. 53 % of the accidents occurred at docks, in terminals, parking areas and courtyards. The accidents mostly occurred at low speeds when handling the vehicle in tight spaces where it is important to be aware of the vehicle's length, width and height. Of the accidents studied, 4% occurred on the road outside urbanized areas. The majority of these accidents happened on multilane roads and in higher speed. The lane departure accidents and rear-end collisions are recurring accidents types on roads outside built-up areas. 2% of the accidents resulted in personal injury.

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5.1 Delivery to FFI-goals

The project has contributed to new knowledge and methods in the field of accident investigation and accident cause analysis focusing a specific organization, its drivers and vehicles. This aids in becoming more effective at understanding the causes of accidents, which is a prerequisite to developing effective solutions to reduce traffic accidents, deaths and injuries caused by traffic accidents. Solutions that can evolve with the project results as a basis include a systematic approach to safety risk management for transport companies, such as how companies work with driver training and continuous improvement of safety (ISO39001 standard for management systems for road safety).

6. Dissemination and publications

The project results will be presented at “Transport och logistikmässan” in Gothenburg, Sweden in May 2014.

7. Conclusions and future research

The project has contributed to a number of results that can be used by transport companies in their efforts to reduce security risks and the number of traffic accidents. These include the organization way of working in the area of safety risk management, the drivers' skills and motivation and defining vehicle technology which may increase security. The driver training that already is mandatory for transport companies today has the potential to become more effective when developed specifically to the needs of each organization.

8. Participating parties and contact person

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