SAFETY TECHNOLOGIES IN HEAVY DUTY VEHICLES

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A GLOBAL LEADER IN SUSTAINABLE TRANSPORTATION

The Volvo Group is one of the world’s leading manufacturers of trucks, buses, construction equipment, drive systems for marine and industrial applications. The Volvo Group also provides complete solutions for financing and service.
"The basic principle behind all design work is, and must always be, safety"
A history of safety

1959  Seat belt invented by Volvo
1960  Safety cab
1969  Accident Research Team
1996  Front Underrun Protection System
2005  Alcolock
2008  Driver Alert Support
2012  Collision Warning with Emergency Brake
Learning from accidents – since 1969

- Accident Research Team on standby
- Unique knowledge gathered
- Active international cooperation
In the hands of the human factor

10%  30%  90%
Vehicle-related  Road environment  Driver-related
distraction alcohol speed no seat belt used
Car occupants – 65%
Unprotected – 20%
Truck occupants – 15%
The passive safety phase

Injury risk

1950s 1970s 1990s 2010s 2020-

Volvo Group Headquarters
Passive safety achievements

- Collision compatibility (e.g. FUPS)
- Crash & roll-over testing
- Cab strength
- Direct vision (low-entry cabs, incl construction)
The active safety revolution

Injury risk

1950s 1970s 1990s 2010s 2020-

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In 2015 a very important safety step was taken: Mandatory active safety systems in EU by Nov 2015

**Lane Departure Warning System, LDWS**

Reduces risk for driving off road accidents on highways and rural roads.

Camera sensor monitors position of vehicle with respect to the lane boundary. When vehicle is in danger to leave the lane unintentionally, the system warns the driver.

**Automated Emergency Braking System, AEBS**

Reduces risk for, or mitigate a rear end collision with traffic ahead.

Traffic ahead is monitored by radar and camera sensor. The system 1st warn the driver when there is risk for collision and 2nd if driver doesn't react the brakes are autonomously applied.

**Electronic Stability Control, ESC**

Reduces risk for roll or yaw instability due to misjudged speed, for example in a sharp curve, a highway exit and on a slippery road surface.

The system recognizes danger of rolling over or yaw instability by a combination of sensor data (yaw rate, lateral acceleration and steering wheel). The vehicle automatically reduces speed by engine torque reduction and individually applied wheel brakes.
The new safety frontier

Automation & Cooperative safety

Eliminate all Accidents!

Volvo Group Headquarters
Zero Accidents – A Shared Effort

POLICIES AND REGULATIONS

VEHICLE TECHNOLOGY

EDUCATION AND AWARENESS

RESEARCH AND COOPERATION
Thank you!