

VOLVO TRUCKS
SAFETY
EXPERIENCE

Safety Technologies in Heavy Duty Vehicles

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A GLOBAL LEADER IN SUSTAINABLE TRANSPORTATION

VOLVO



RENAULT TRUCKS



UD TRUCKS



MACK



EICHER



VOLVO PENTA



SDLG



PREVOST



NOVABUS



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 always must be safety”



A wide-angle photograph of a two-lane asphalt road stretching into the distance. The road is flanked by dense trees and foliage. The sun is low on the horizon, creating a strong golden glow and long shadows. A small white vehicle, likely a Volvo truck, is visible in the distance on the road.

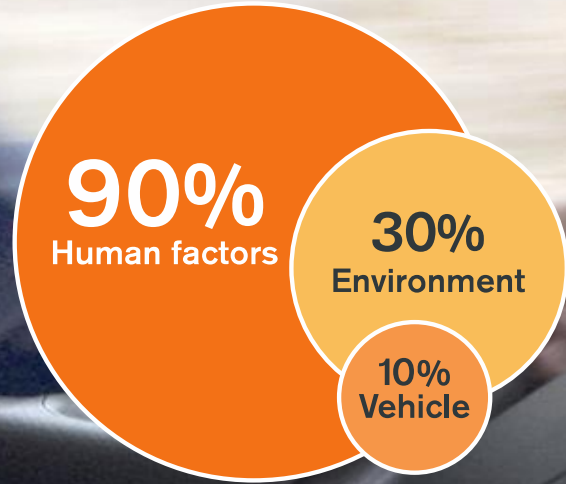
ZERO

accidents with
Volvo Trucks

More than 1.2 million people per year



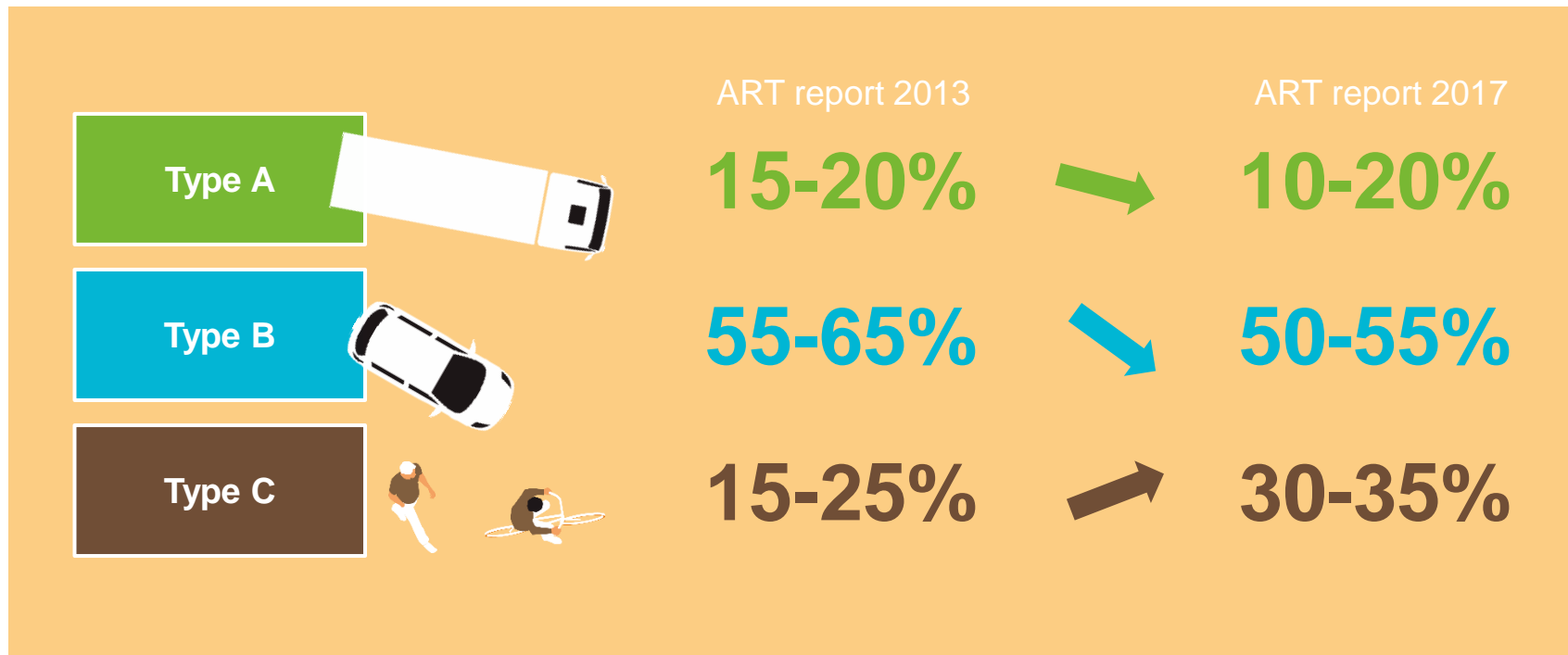
Why do accidents happen?



Distraction
Alcohol
Speed
No seat belt used

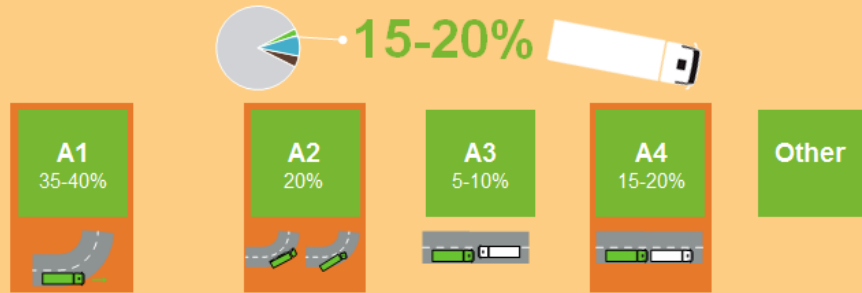


Fatal accident types trend involving a truck



Sources: Analyses of official data and Volvo Trucks ART findings and experiences.

Truck Crashes causing serious injuries and fatalities to

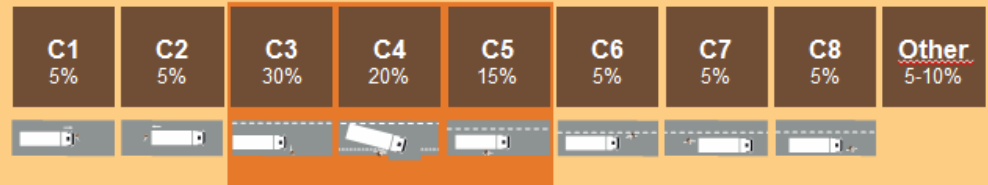
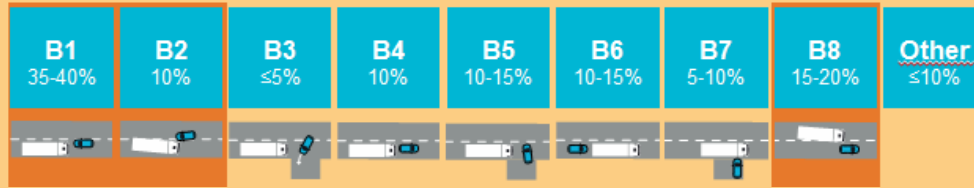


Truck occupants

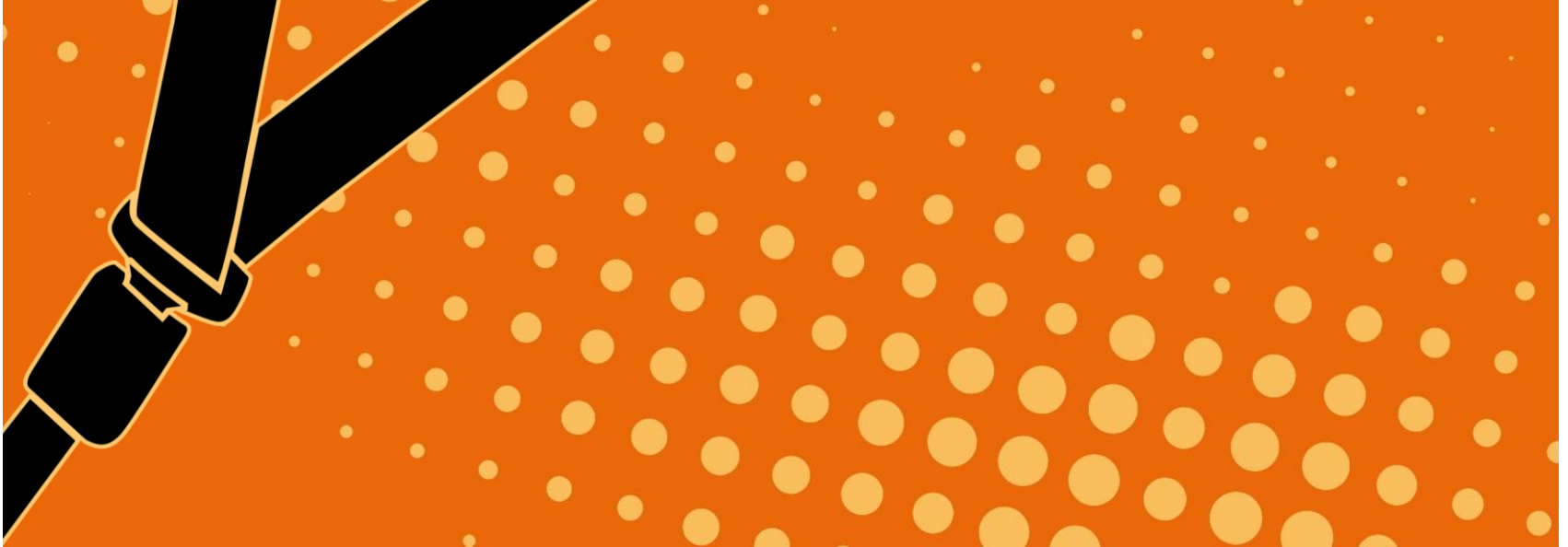


Car occupants

Vulnerable road users



Safety belt would have saved 50% of unbelted truck occupants



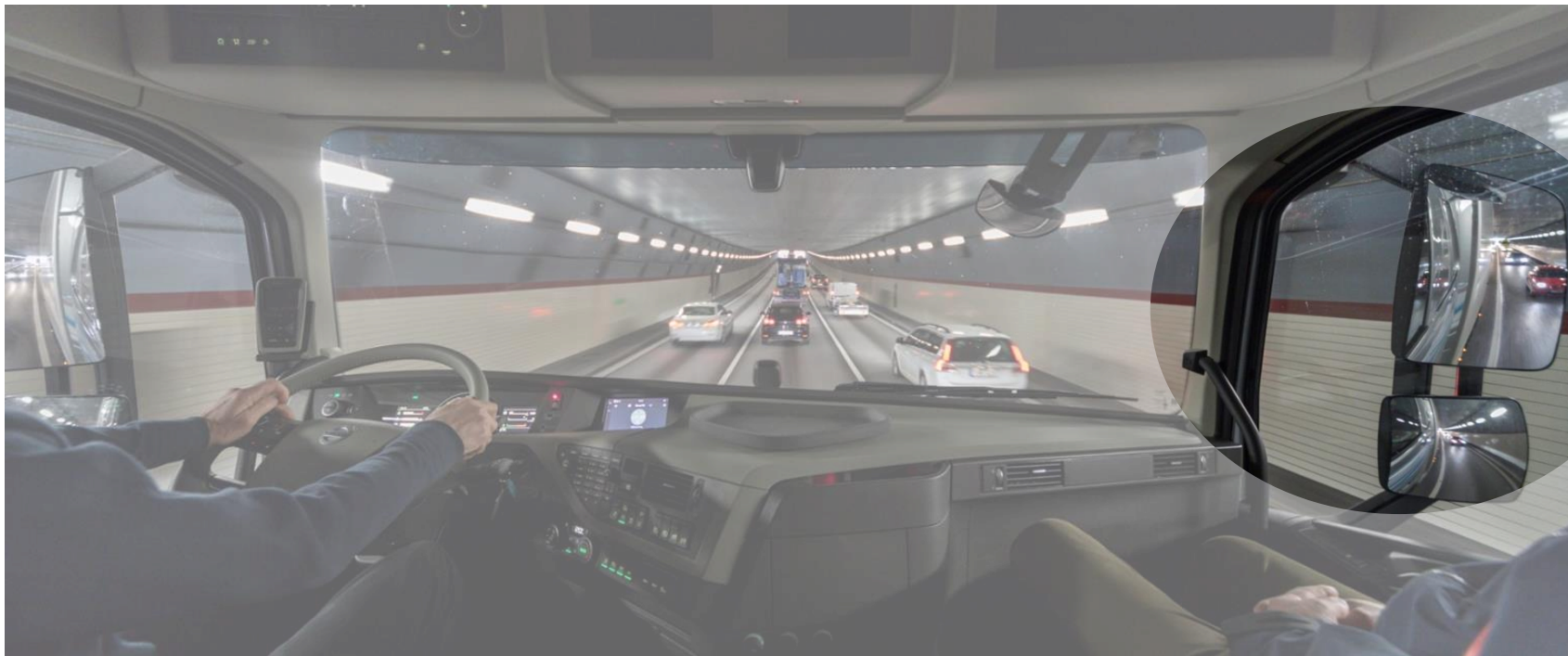
You don't see the whole picture



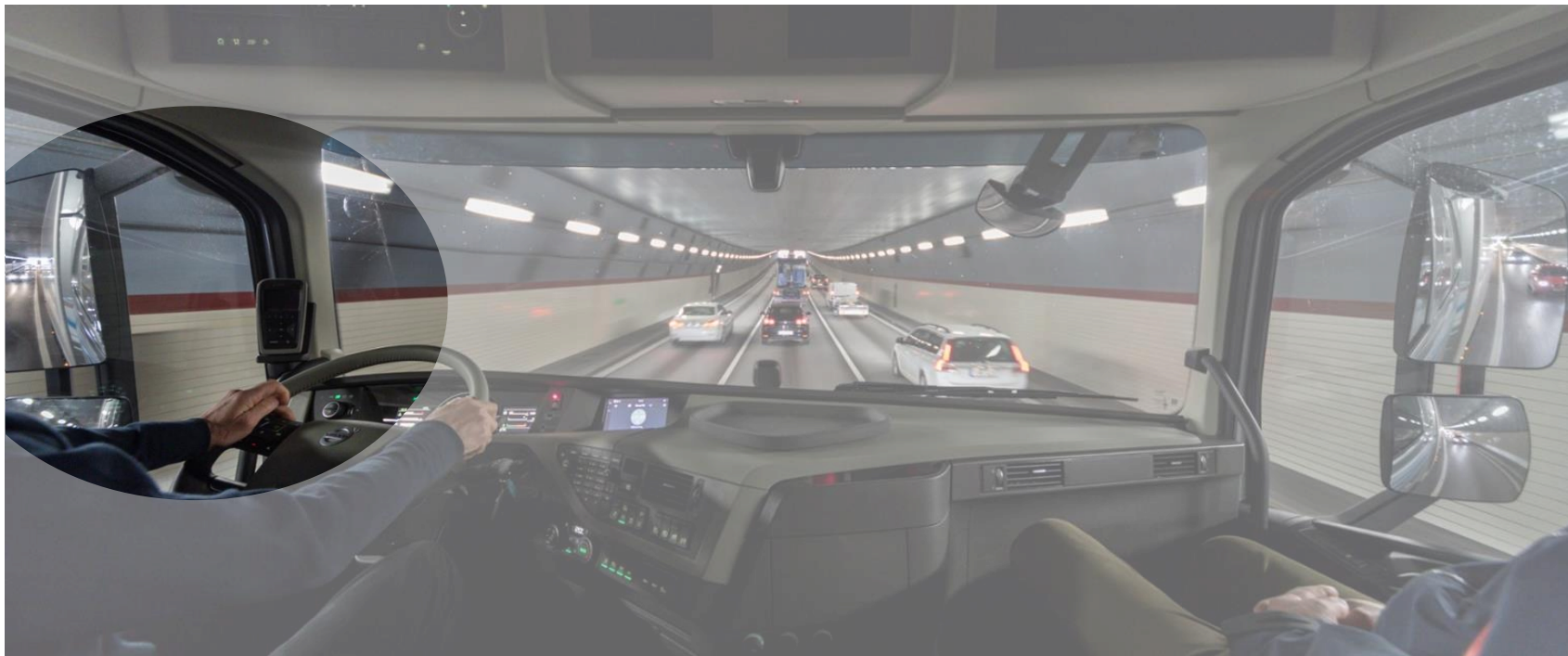
You don't see the whole picture



You don't see the whole picture



You don't see the whole picture



Challenging traffic situations

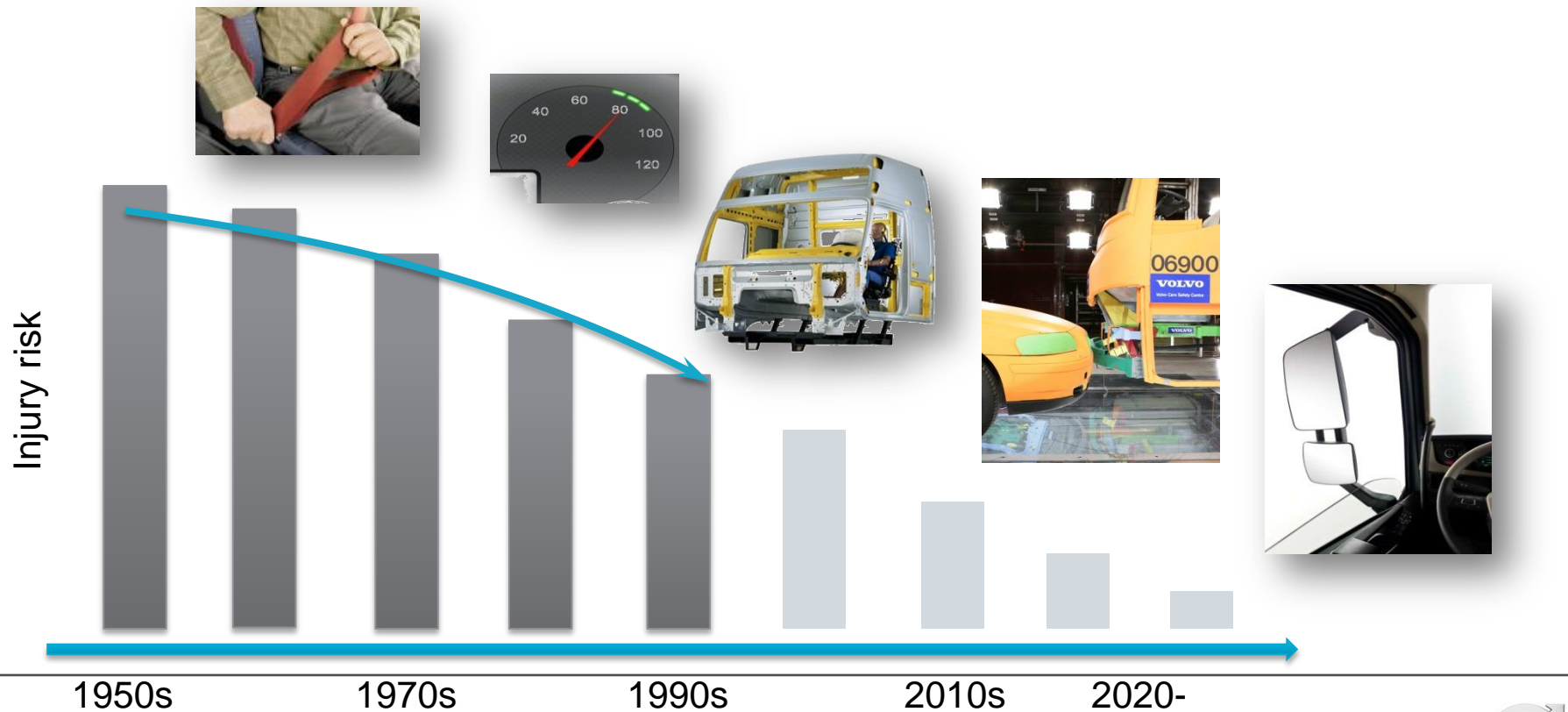


A history of safety

- 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
- 2018** Volvo dynamic steering



The passive safety phase





Better vision – Better detection of pedestrians

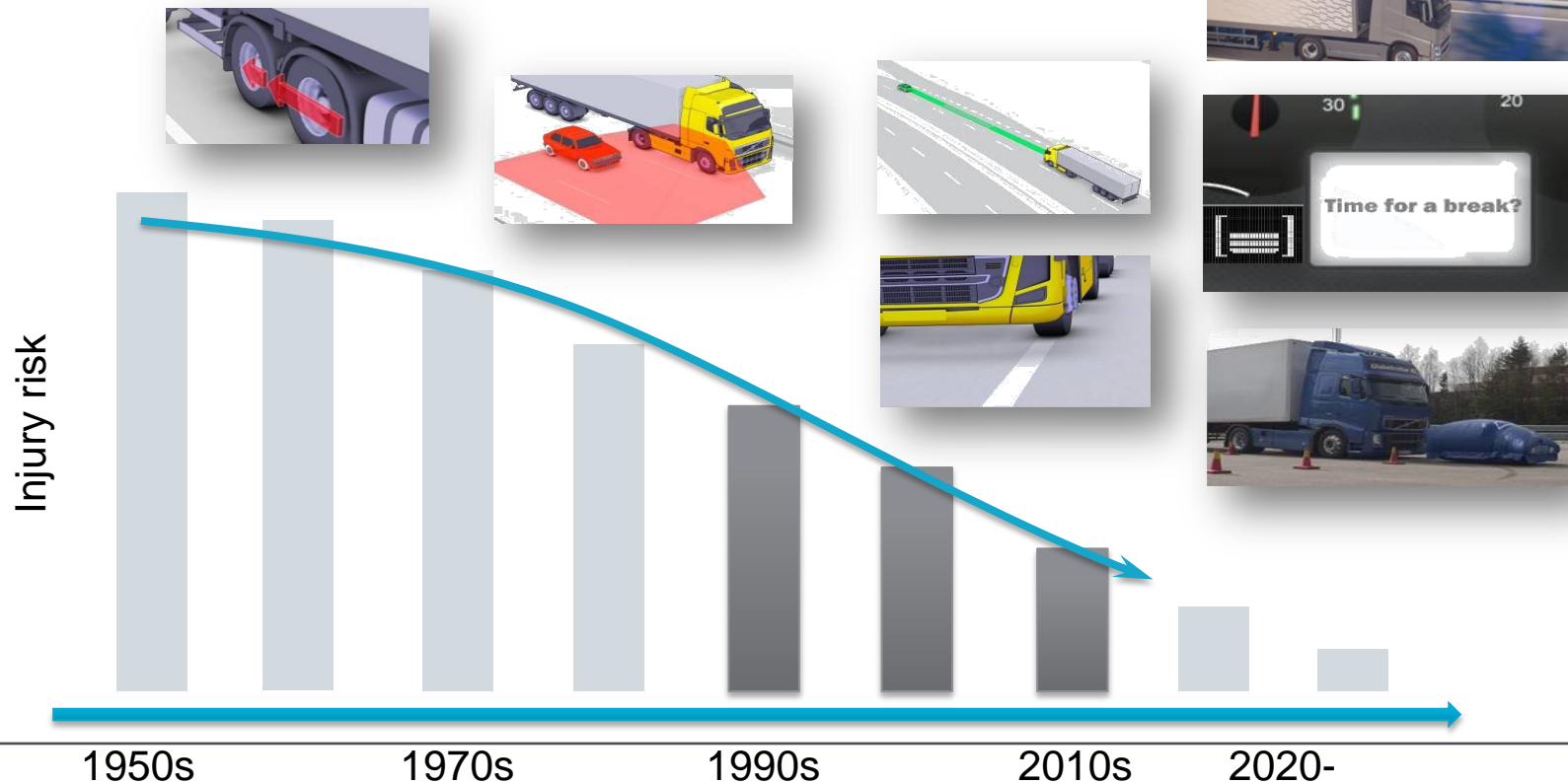


Passive safety achievements

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



The active safety revolution



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

Injury risk

1950s

1970s

1990s

2010s

2020-



Automation & Cooperative safety



**Eliminate all
Accidents!**

Collaboration is key to prevent accidents





References:

- *Youtube video*
 - <https://www.youtube.com/watch?v=dV77UnQ7gH0>
 - <https://www.youtube.com/watch?v=dqNtznccxxcl>
 - <https://www.youtube.com/watch?v=ekMToTiW20c>
 - <https://www.youtube.com/watch?v=JwhyUyJNoY>
- *Volvo truck accident report 2017:* <http://www.volvogroup.com/content/dam/volvo/volvo-group/markets/global/en-en/about-us/traffic-safety/Safety-report-170627.pdf>
- *Volvo Group traffic safety site:* <http://www.volvogroup.com/en-en/about-us/traffic-safety.html>



