

Implementing the Safe System – a progress report OECD seminar on Ambitious Targets

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Vision Zero \neq Zero Fatalities (At least not only) Vision Zero = 5 dimensions (or more?)

1. vision for many stakeholder
2. ethical platform
3. shared responsibility
4. driving forces for change
5. safety philosophy



Shared Vision

1. After ten years, more or less all stakeholders share the vision
2. The private sector and NGO adopted the vision early

The most far reaching approach
has been set by Volvo Cars – in 2020
no one will be killed or seriously injured in a
Volvo



Ethical platform

- Human life and health is paramount
- Life and health can not, in the long run, be traded against other benefits
- Mobility is a function of the safety level

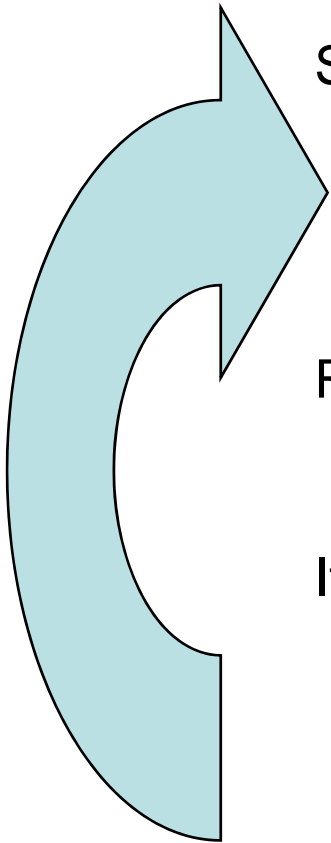


Ethical platform

- Safety is key for mobility in investment
- Tylösand declaration signed
- All fatal crashes investigated in-depth
- New speed limit system based on safety



Shared responsibility



System designers are responsible for the design, operation and the use of the road transport system and are thereby responsible for the level of safety within the entire system.

Road users are responsible for following the rules for using the road transport system set by the system designers.

If the users fail to comply with these rules due to a lack of knowledge, acceptance or ability, the system designers are required to take the necessary further steps to counteract people being killed or injured.

Shared responsibility



Traffic Safety Inspectorate in place from 2003

New infrastructure safety legislation prepared, where provider must have a plan for improvement

Occupational and Health legislation now applied on traffic, where the employer is responsible for traffic safety

ISO 39001 Traffic safety management standard being prepared

Driving mechanism for change

- The individuals have a right to survive
- The driving force is the demand from the citizens
- The system designers will have to co-operate



Driving mechanism for change

- Volvo 2020 target
- ESC on 97,3 % of new cars sold
- Alcohol interlocks in buses and HGV
- Euro NCAP and Euro RAP (i RAP) established
- Insurance linked to traffic safety



THE TYLÖSAND DECLARATION

Articles

1. Everyone has the right to use roads and streets without threats to life or health
2. Everyone has the right to safe and sustainable mobility: safety and sustainability in road transport should complement each other
3. Everyone has the right to use the road transport system without unintentionally imposing any threats to life or health on others

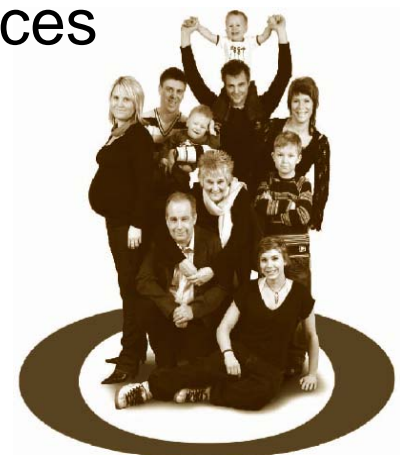
THE TYLÖSAND DECLARATION

Articles

4. Everyone has the right to information about safety problems and the level of safety of any component, product, action or service within the road transport system
5. Everyone has the right to expect systematic and continuous improvement in safety: any stakeholder within the road transport system has the obligation to undertake corrective actions following the detection of any safety hazard that can be reduced or removed.

Safety philosophy

- Inspiration from other areas (i.e. occupational health and safety)
- People make errors, mistakes and misjudgements
- There are biomechanical tolerance limits
- The chain of events can be cut at many places
- Focus on injuries not crashes

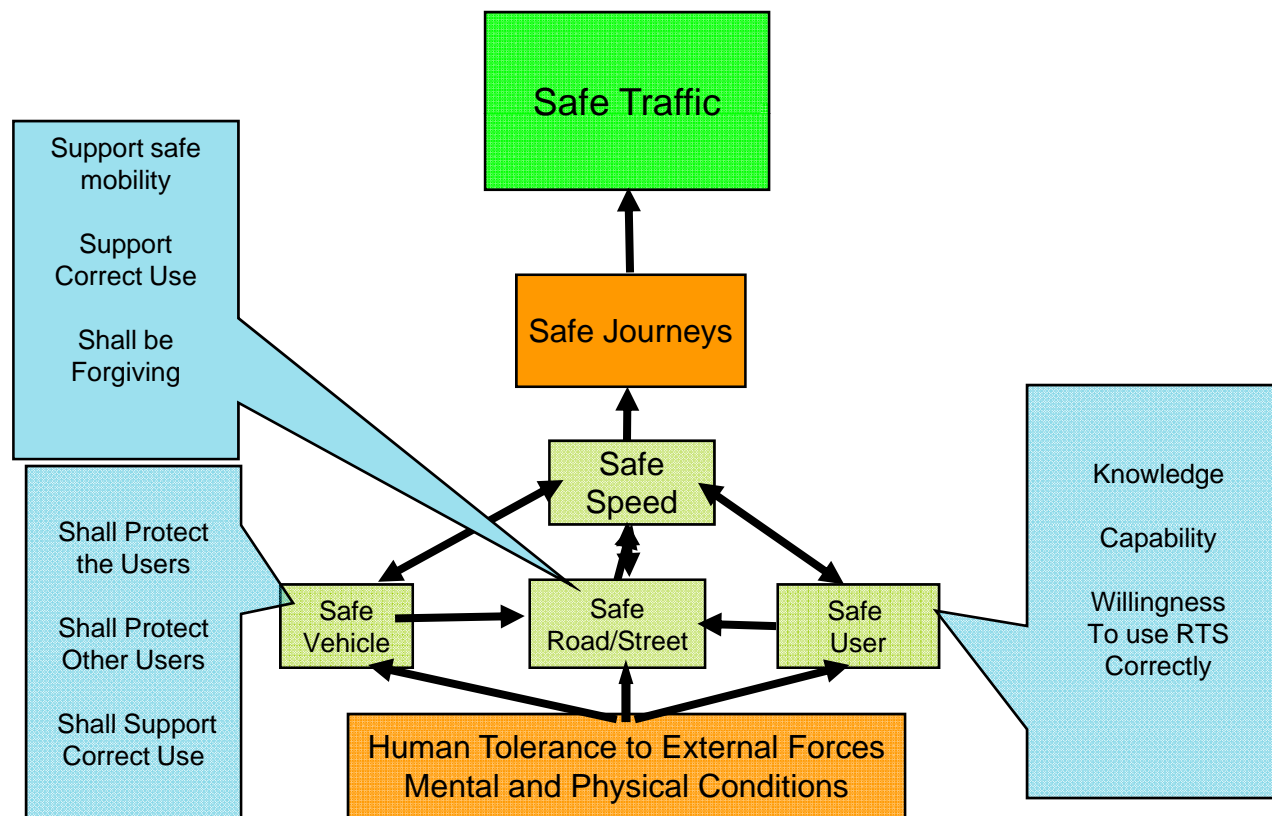


Safety philosophy

- Completely new design philosophy for roads and streets
- Speed limit related to biomechanics and road crashworthiness
- Integrated safety chain established, as well as model for safe traffic
- Death and serious consequences established in ISO 39001 and elsewhere

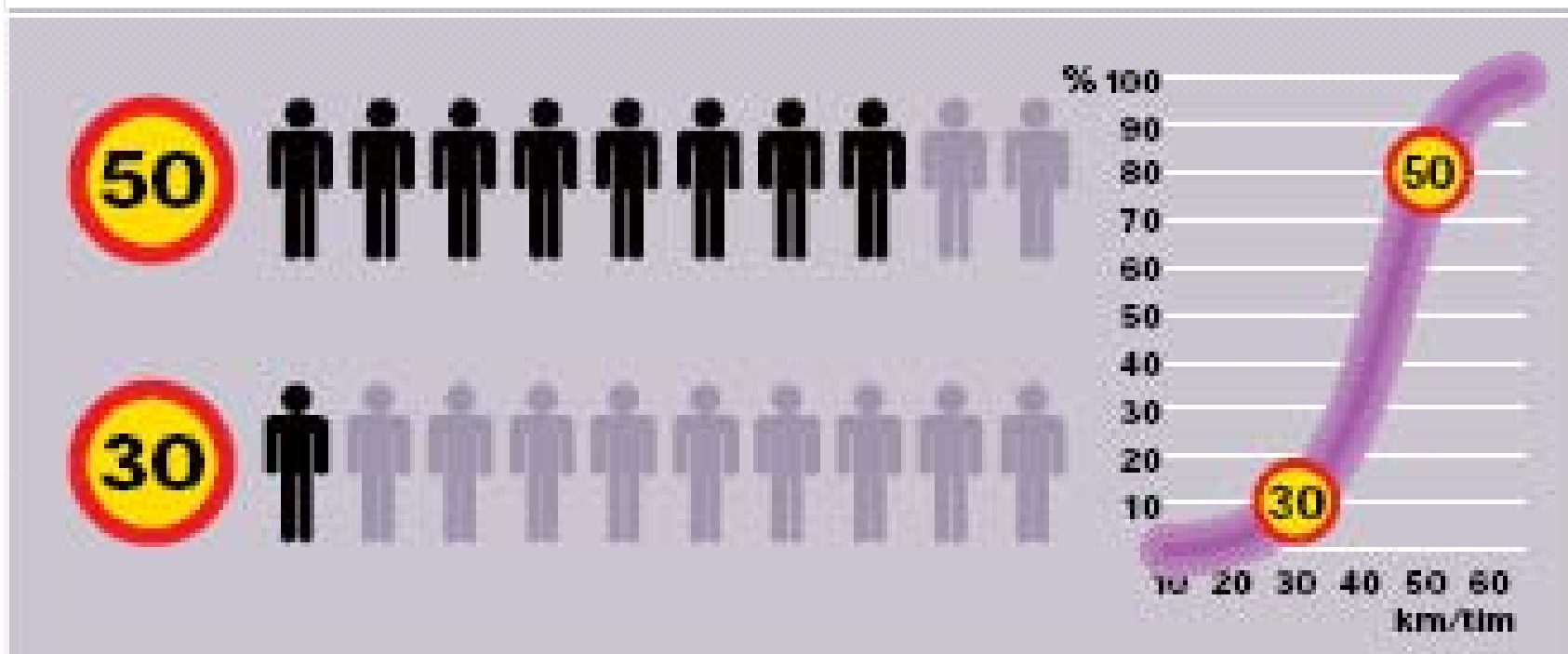


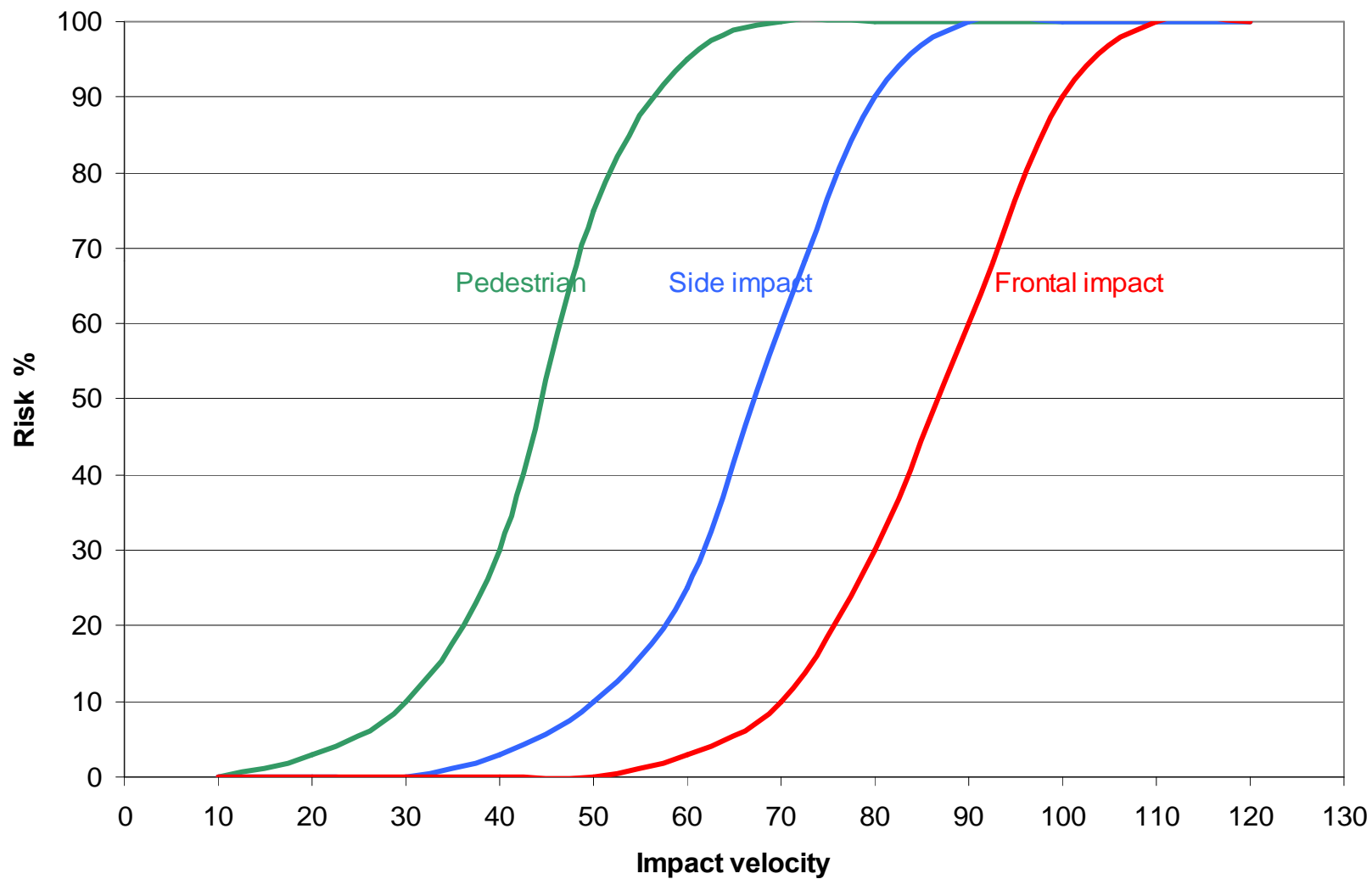
Model for safe traffic





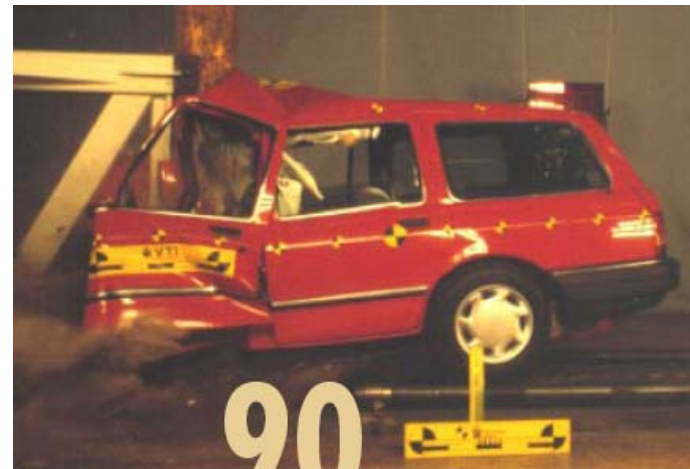
The human as pedestrian road user



Risk of fatal injury related to impact velocity

Speed limit, road design and car design goes hand in hand!

- Crash test 90km/h into tree
- Crash test 90km/h into guard rail



Speed limit systems for modern cars?

- 30km/h mixed with pedestrians
- 50km/h in intersections
- 70km/h in frontal collisions
- Higher speeds need median dividers and safe side areas/guard rails

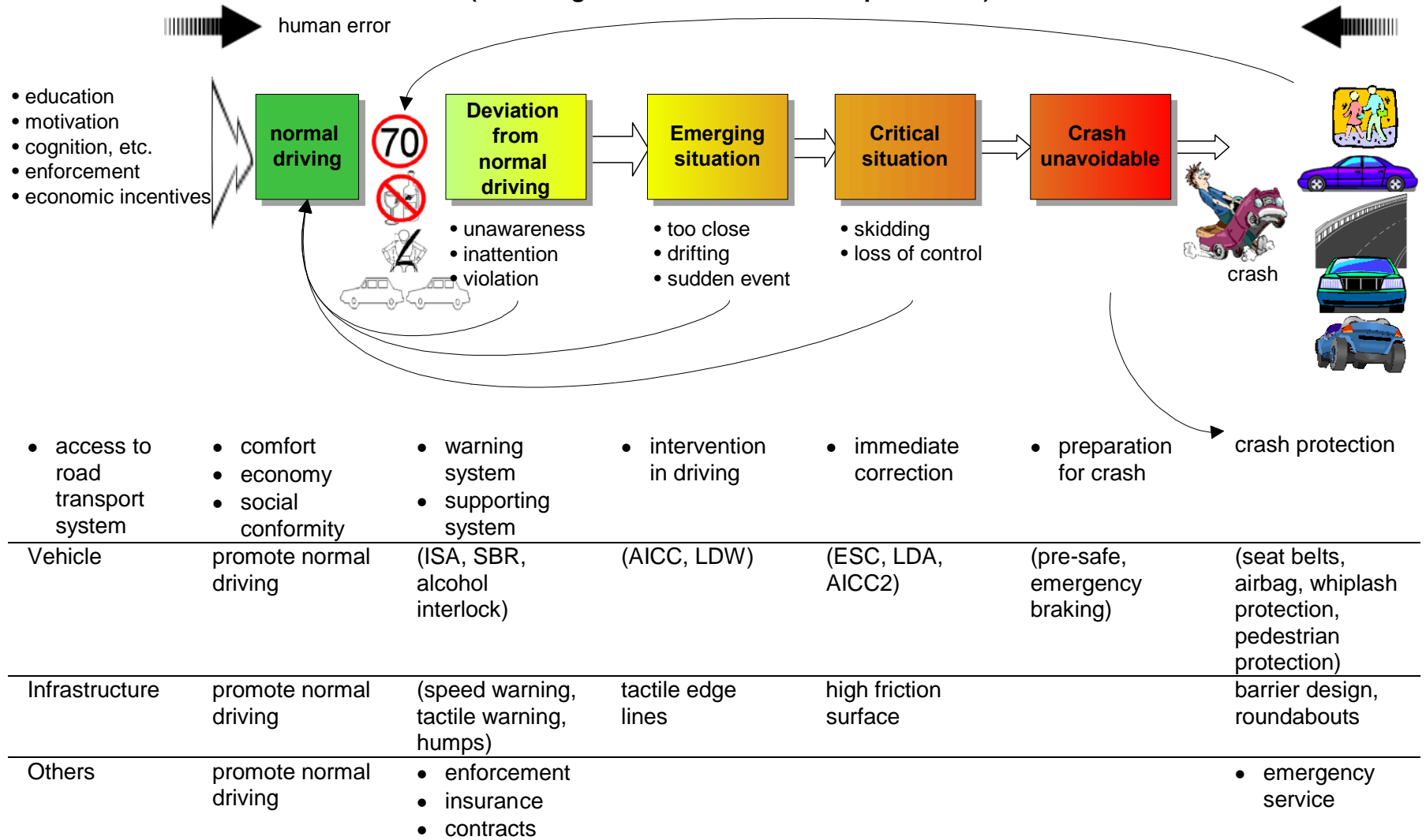


Unsafe driver behaviour can be tackled through the whole integrated safety chain

- Through limited access to the vehicle
- Through support for normal driving
- Through warnings in risky driving
- Through correction in hazardous situations
- Through taking control in situations when driver is out of control

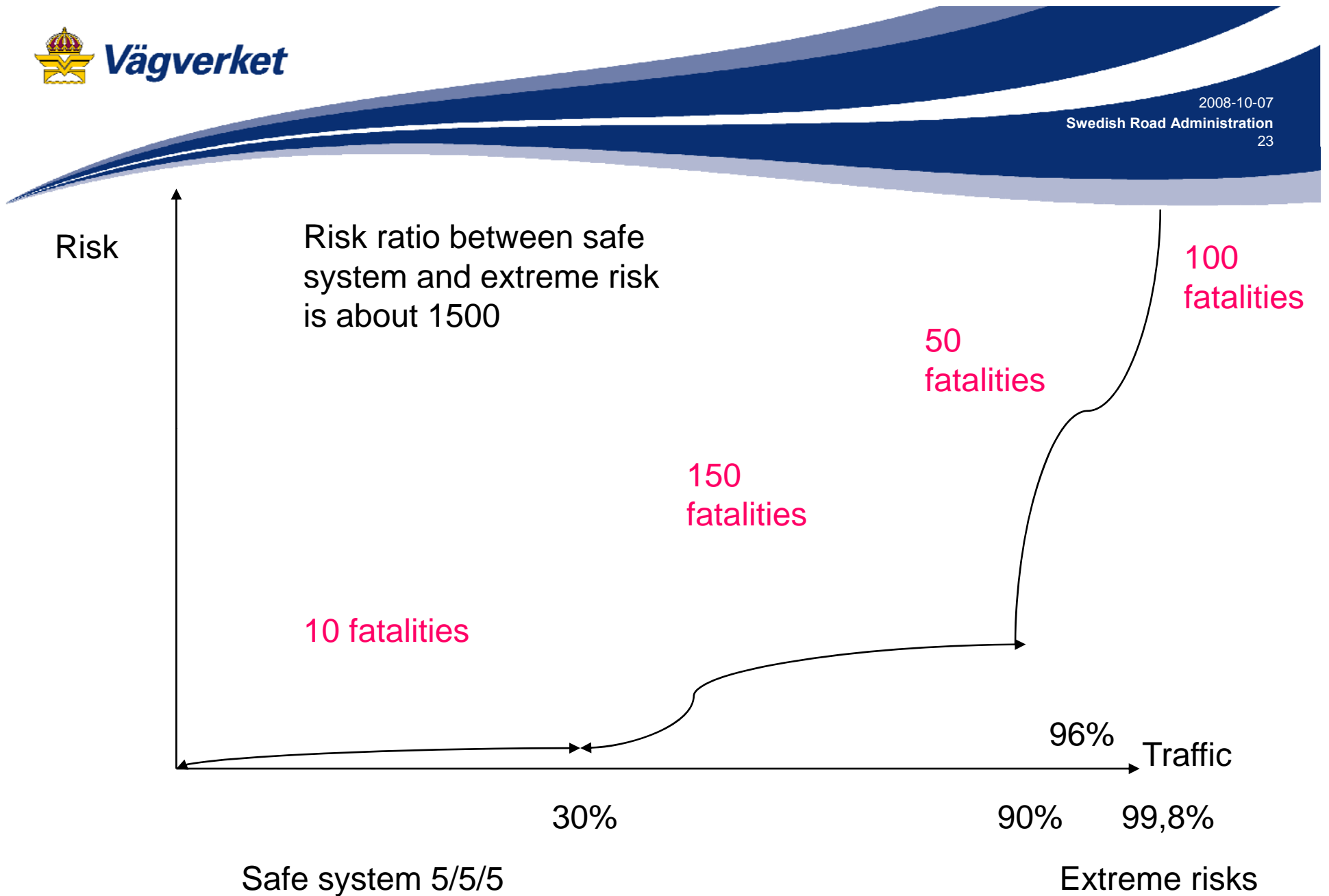
The crash sequence: (matching human error and crash protection)

what we might hit:



Why Sweden missed it's mid term target

- The target was set in a recession, and ended in an economic boom
- Alcohol consumption up 30 %
- Speed management through the transport sector failed
- Effective treatment of infrastructure started too late
- No new speed limit system introduced (now implemented)



Summary

- Major change in policy, management and action
- More focus on infrastructure and speed (energy control)
- Extremely good results of new infrastructure design, including BCR
- Market forces and supply of safety increase
- Slower establishment of institutional changes
- Low political involvement in implementation
- Slow development of extreme risk treatment

In conclusion

- It has been proven that traffic can be generated with very low risks, but that all elements in the safe system model must be fulfilled simultaneously, 5/5/5.
- In Sweden, with 450 fatalities per year (just below 5 fatalities per 100 000 population), less than 50 would be killed each year if the rest of the traffic would be as safe as the best 30 %. This would lead to less than 0,5 fatalities per 100 000 population. In EU, this would mean less than 2000 fatalities per year.