

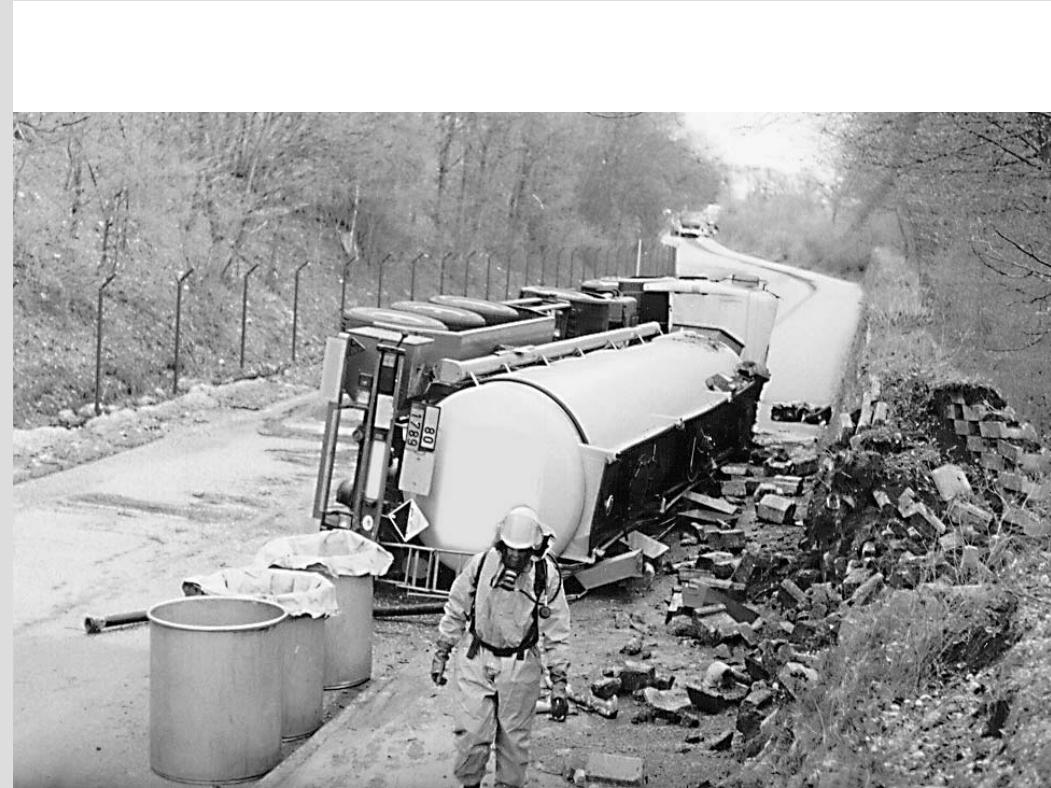
# GDV\* ESP-Study

## Basis

- 850 severe accidents in Bavaria (1997)
- Commercial vehicles involved (GVW > 3.5t)
- With fatalities or severe injuries

## Remarks

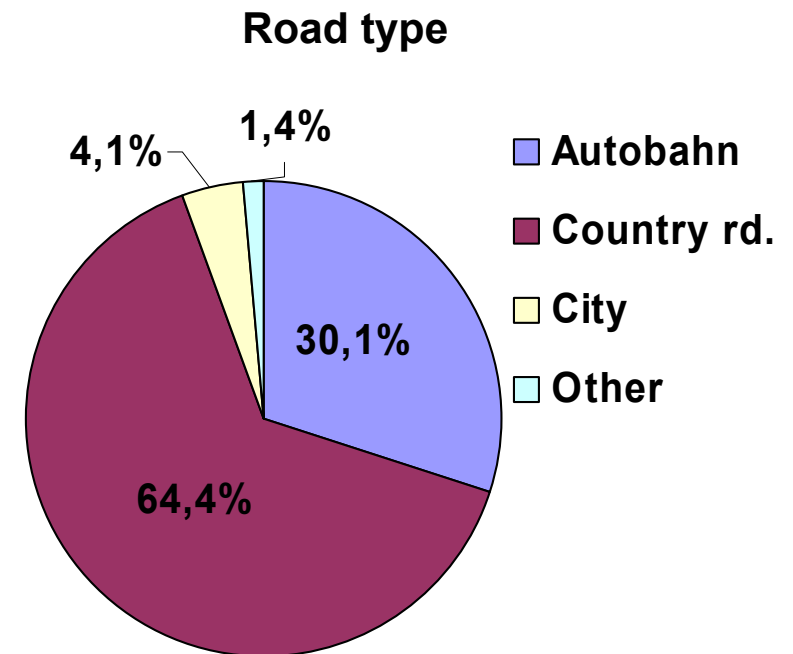
- Accidents were judged as ESP related in case ESP could have had a positive influence on the consequence, e.g.
  - Roll-over due to excessive speed or dynamic steering input
  - Jack-knifing or skidding on wet or slippery roads due to vehicle instability
  - Loss of control by the driver
- All statistics are related to ESP relevant accidents (ca. 8.5%)



\*GDV: German Insurance Association (Gesamtverband der Deutschen Versicherungswirtschaft eV)

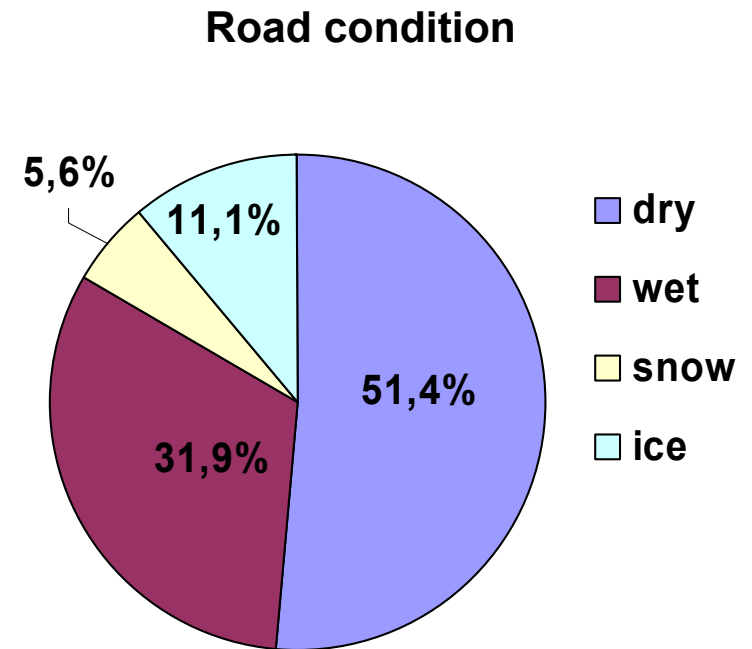
## Distribution of Road Type

- Majority of ESP relevant accidents occur on country roads (64%)
  - One third happen on Autobahn
- => More than 90% of ESP relevant accidents occur either on Autobahn or country roads



## Distribution of Road Condition

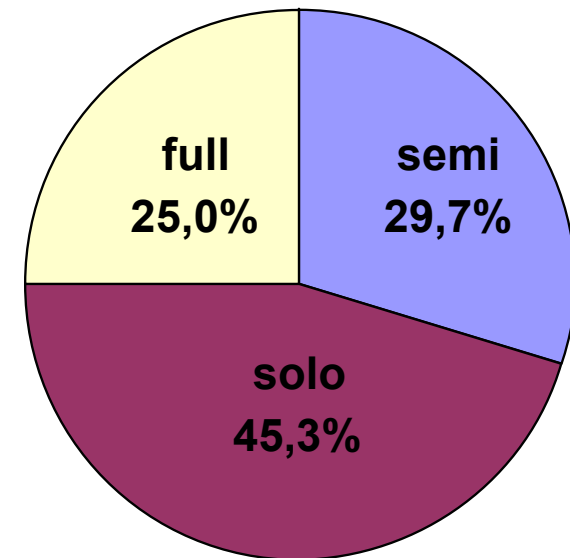
- Half of ESP relevant accidents occur on dry roads
- One third happen on wet roads
- 15% occur on snowy or icy roads



## Distribution of Vehicle Type

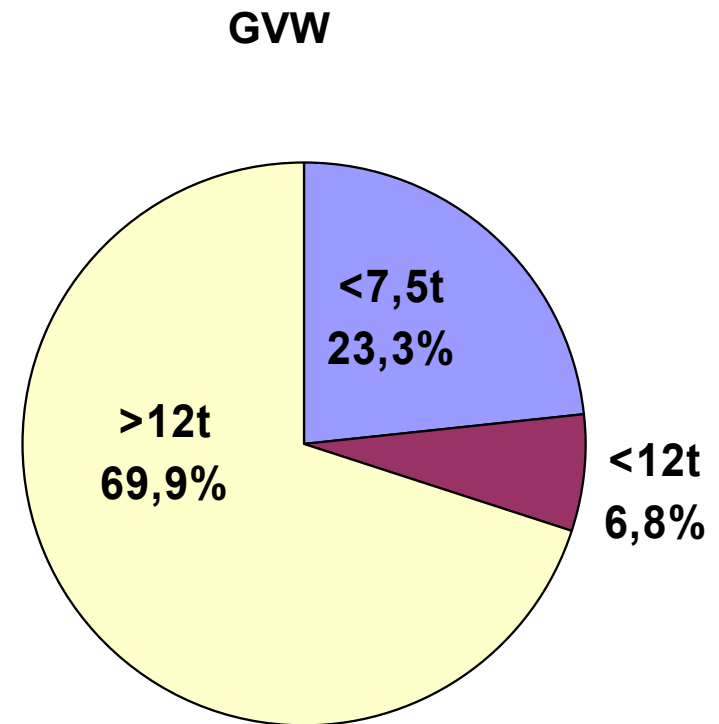
- Nearly half of vehicles are solo vehicles (45%)
- One third are tractor semi-trailer combinations
- One quarter are full trailer combinations

Vehicle type



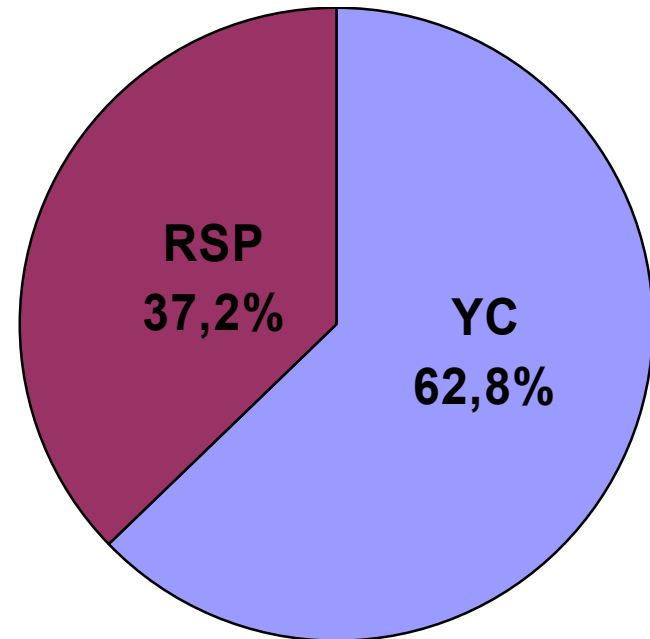
## Distribution of Gross Vehicle Weight

- Majority of vehicles are heavy commercial vehicles >12t (70%)
- Only few vehicles between 7.5t and 12t
- 23% vehicles between 3.5t and 7.5t



## Relevant ESP Function

- **RSP:** Roll Stability Program to prevent roll-over
- **YC:** Yaw-Controller for yaw-stabilization (e.g. prevent jack-knifing)
- Most of the ESP relevant accidents are related to skidding (63% YC relevant)



## Speed Distribution

- Majority of ESP relevant accidents between 70kph and 90kph (>50%)
- 25% between 50kph and 70kph
- Very few accidents above 90kph or below 40kph

