Heavy Vehicles

Austroads

Fundamentals

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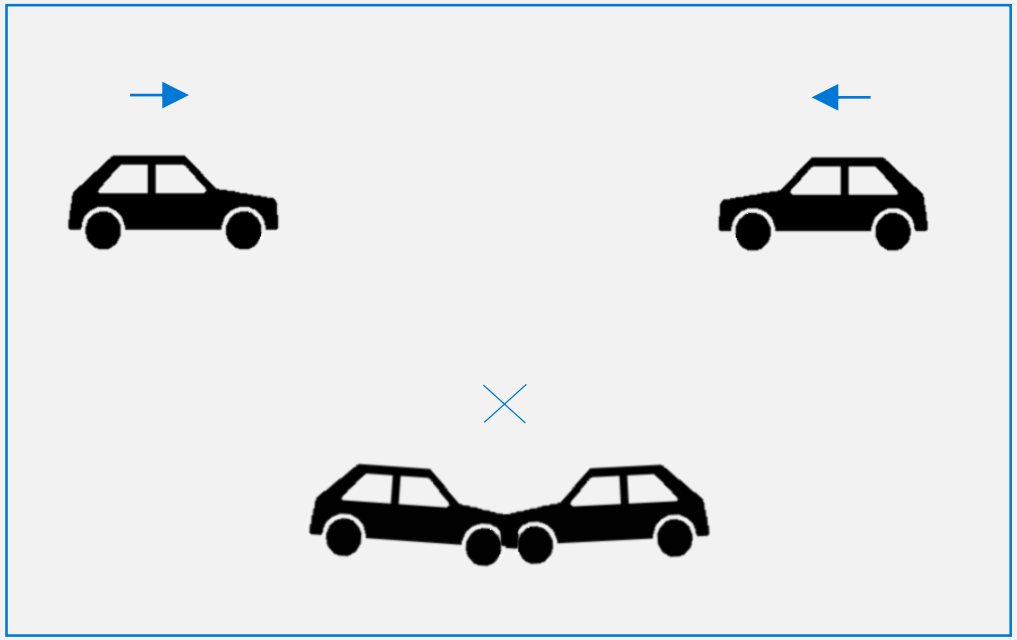
Heavy vehicles (HVs) are over-represented in serious crashes.

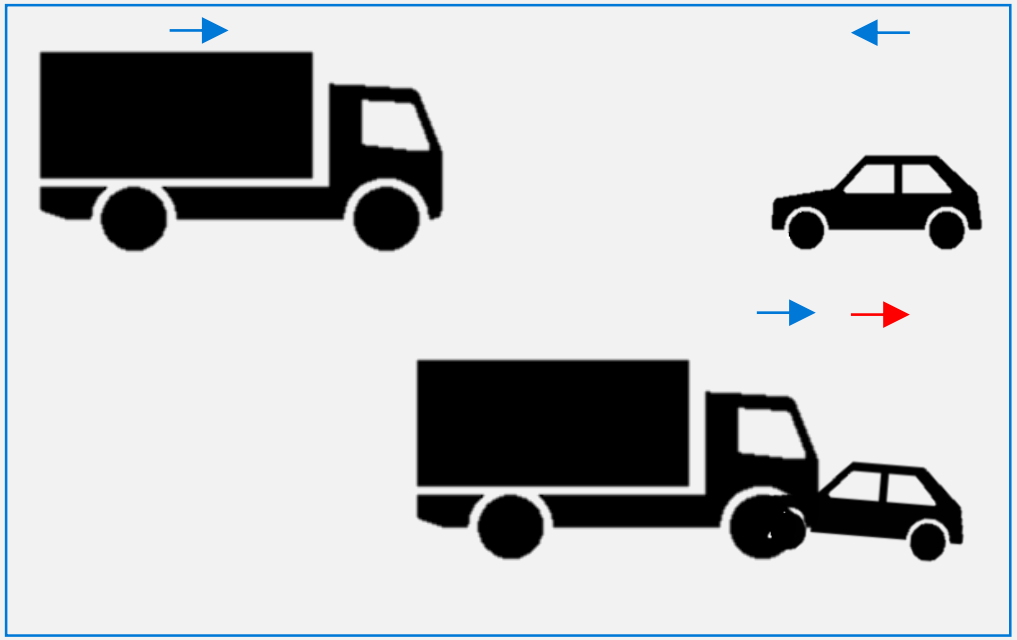
	% of the fleet	% of vehicle kms travelled	% of fatal crashes
All HVs	3%	8%	22%
Rigid	2%	4%	9%
Articulated	0.5%	3%	12%

Sources: ABS and BITRE report *Heavy Vehicles*

Fundamentals

- Mass difference is the key problem, greater ΔV for smaller vehicles
- Much higher FSI probability for occupants of smaller vehicles





Fundamentals

- Run-off-road crashes (rural ~50%)
  - Vehicle stability at high speeds (esp. articulated trucks), fatigue, overloading
  - Most safety barriers designed for larger passenger vehicles, not large rigid or semi-trailers (TL3)
  - Some barriers designed for larger rigid HVs (TL4), increasing in use
  - HV-effective barriers (TL5+) used in few locations, e.g. bridges, but less safe for passenger vehicles.
- Head-on (rural, 15-25%) – very high severity
- Rear-end crashes (urban and rural) – high severity when a HV involved

Fundamentals

Austroads

- Road designs not suited to HV size and driver position, e.g. sight distances, sign visibility, auxiliary lanes
- Relatively low uptake of active vehicle safety by HV industry, slow turnover/high age of vehicles
- Road user issues – fatigue, profit margin pressures, quality control, professional culture

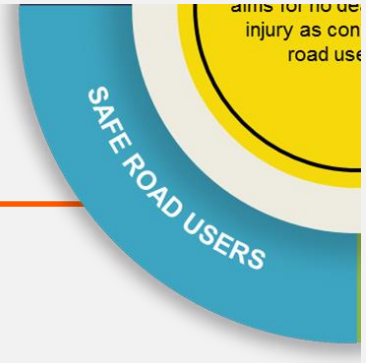
Potential Safe System solutions

- Retrofitting freight corridors, mostly supporting solutions:
  - Sight distances, lane widths, shoulder sealing, horizontal curves, roadside hazards, level crossings
  - Signage, delineation, retro-reflectivity
  - High containment safety barriers, esp. in medians
  - Arrester beds, escape ramps
  - Rest areas.
- Investigate pro's/con's of HV speed limits
- Controlling access for very large HVs, e.g. PBS required for lower-order roads, inner city

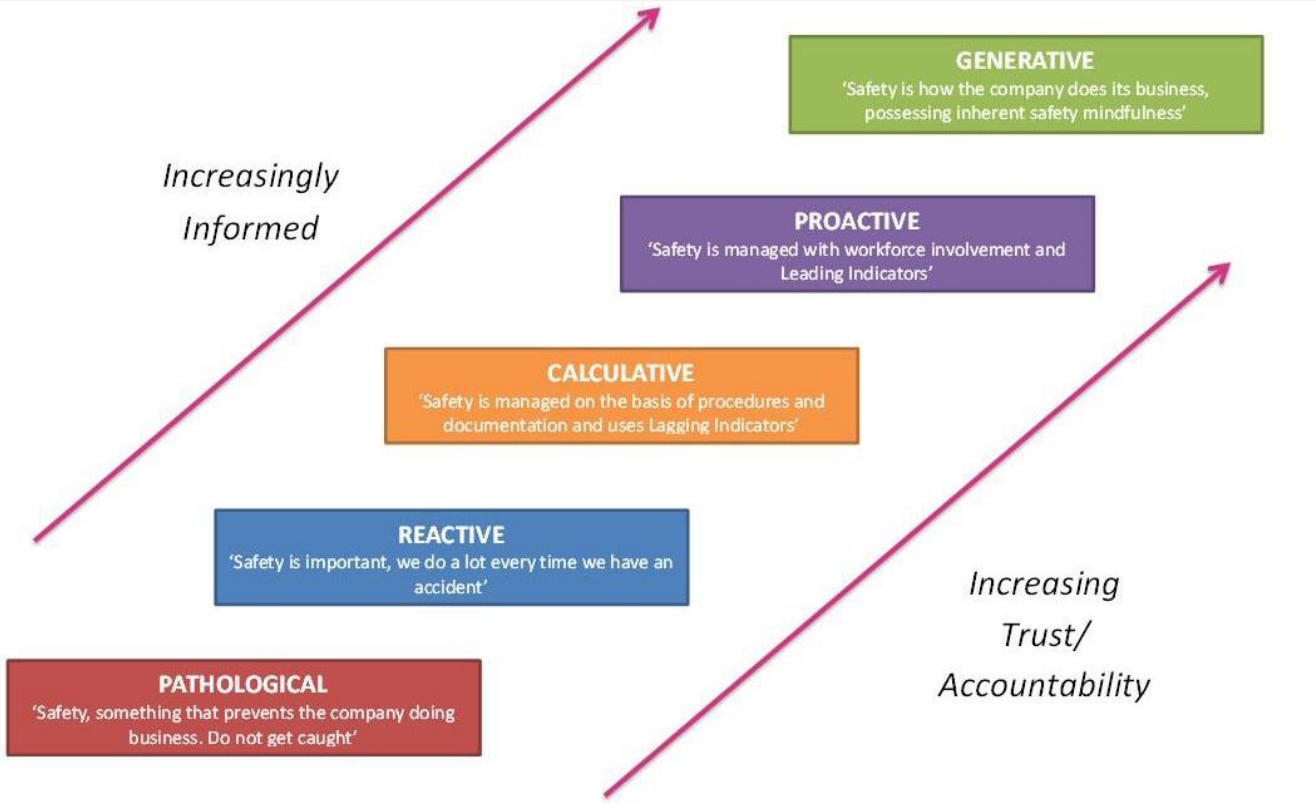
Potential Safe System solutions

- HV active safety:
  - Autonomous emergency braking systems (AEBS), ~65% FSI crash reduction
  - Lane Departure Warning Systems (LDWS)
  - Electronic Stability Control (ESC)
  - Fatigue warning systems
  - Intelligent Speed Adaption (ISA)
  - GPS vehicle tracking and control.
- HV passive safety:
  - Under-run protection (rear)
- Increasing automation of driving, examples from mining

Potential Safe System solutions



- Developing safety culture within companies
- Generative: where safety is ‘what we do’
- Increasing regulation of freight task (e.g. QA, electronic diaries)
- Drug and medical tests for drivers
- National Road Safety Partnership Program (NRSPP) – corporate culture change



Thank you