Heavy vehicles accident causation & Management & Prevention of Traffic Accident Risks in Road Passenger and Goods Transport Undertakings

Pristina, 23 January 2015

Patrick Philipp - Head IRU Academy
This is the International Road Transport Union
Evolution of IRU Membership

1948: eight founder countries

2014: 170 Members in 75 countries

...and CRIPA: 27 Members + FESARTA in 38 countries
Road Safety – a global issue

1.24 million road traffic deaths every year.

As many as 50 million are injured each year.

8th leading cause of death globally

HOW SAFE YOU ARE DEPENDS ON WHERE YOU ARE:
ROAD FATALITIES PER 100,000 POPULATION

- Americas: 16.1
- Europe: 10.3
- Africa: 24.1
- Eastern Mediterranean: 21.3
- South East Asia: 18.5
- Western Pacific: 18.5
Every job depends on road transport
How to avoid this?
Road Safety – An IRU TOP Priority

Road Safety Charter

European Road Safety Charter

25,000 LIVES TO SAVE

Draft IRU Resolution on the "UN Decade of Action for Road Safety"
UN Road Safety Resolution acknowledges IRU’s contribution to saving lives

IRU efforts on improving road safety acknowledged by the UN Road Safety Resolution adopted by the UN General Assembly on April 11, 2014
The IRU supports all measures that improve road safety if they effectively target the main causes of accidents involving professional vehicles.
Which crash causes should be addressed?

**Large Truck Crash Causation Study (LTCCS)**

- **Region**: United States
- **Sample**: 963 crashes resulting in a fatality or injury (2001-2003)
- **Sponsors**: Federal Motor Carrier Safety Administration (FMCSA), National Highway Traffic Safety Administration (NHTSA)

**European Truck Accident Causation (ETAC)**

- **Region**: Europe (7 countries)
- **Sample**: 624 crashes resulting in a fatality or injury (2004-2006)
- **Sponsors**: European Commission, International Road Transport Union (IRU)
Results confirmed by other studies


Focus on Priorities – Road Safety – Main Cause: The Human Factor

Investigation of 624 accidents showed the main cause of the accident is the human error.

However, from the 85.2% linked to human error, 75% were caused by other road users!

Source: EU, IRU
ETAC – Accident causes due to the human factor

Accident

7.4% Single truck

Truck and other road user (vehicles and/or pedestrian)

27.0% Accident at intersection

20.6% Accident in queue

19.5% Accident due to lane departure

11.3% Accident after an overtaking manoeuvre
Staying focused on the main crash causes

- Fatigue (mostly)
- Decision Error: 40%
- Physical failure: 12%
- Recognition Failure: 29%
- Speed & Following distance
- Inattention in its various forms

Source: Analysis Brief, LTCCS Summary, FMCSA
# Large Truck Crash Causation Study (LTCCS)

## Percentages for Truck At-Fault Crashes

<table>
<thead>
<tr>
<th>CR Category</th>
<th>Examples</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver Physical Failure</td>
<td>• Asleep-at-the-wheel</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>• Heart attack</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Other physical impairment</td>
<td></td>
</tr>
<tr>
<td>Driver Recognition Failure</td>
<td>• Inattention</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>• Distraction (internal or external)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• “Looked but did not see”</td>
<td></td>
</tr>
<tr>
<td>Driver Decision Error</td>
<td>• Too fast for conditions</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>• Following too closely</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Misjudgment or false assumption</td>
<td></td>
</tr>
<tr>
<td>Driver Response Execution Error</td>
<td>• Overcompensation</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>• Poor vehicle control/maneuvering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Panic/freezing</td>
<td></td>
</tr>
<tr>
<td>Vehicle Failure</td>
<td>• Brake failure</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>• Tire failure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cargo shift</td>
<td></td>
</tr>
<tr>
<td>Roadway/ Environment</td>
<td>• Road signs/signals missing</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>• Road design</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Weather and/or slick roads</td>
<td></td>
</tr>
</tbody>
</table>

**DRIVER ERROR = 88%!!!**
Multiple Interacting factors & fauses

- Environmental (e.g., weather)
- Environmental (e.g., roadway)
- Temporary Personal (e.g., hours driving, sleep the night before)
- Enduring Personal (e.g., health, physical skill, personality)
- Other Drivers and Traffic
- Vehicle (e.g., brakes, tires)
Multiplier effect

Driver Factors Associated with Risk

Aggressive/angry
Impatient/impulsive
Inattentive
Inexperienced (new driver)
Unhappy with job/company
Young (< 25)
Sleep disorder; e.g., sleep apnea
Unhappy marriage/family
Debt/financial problems
Medical condition; e.g., heart

Personality & Risk Attitudes
Safety Management: Comprehensive and Targeted

Principal Target to Improve Safety
Road safety and accident prevention
at the heart of corporate culture

- Organisation
  - Human Resources
    - Commercial
    - Technical
    - Drivers
    - Management & finances
  - Procedures
  - Rolling stock
  - Customer relations
  - Insurers’ role
Company organisation:

Key role of company manager

Personal involvement

Relayed to all company levels
The most important person/catalyst in road transport safety – The Transport Manager!

**Human Resources:**
- Driver selection
- Training
- Evaluation

**Behavioral management:**
- Rewards
- Discipline & remediation
- Vehicle technologies & maintenance
- Risk avoidance; e.g., dispatching & routing
Human Resources:

• Hiring: Check references, including road safety record

• Continuing education

• Prevention of risk behaviours:
  • Speeding
  • Alcohol / hygiene
  • Excess load
  • Driving & rest times

→ Training / information
  Checklists / first aid

→ Incident identification

→ Incident analysis and management
Business & operating procedures:

→ Management
→ Commercial staff
→ Technical staff
→ Administrative & financial staff
→ Drivers & helpers
Rolling stock:

- Regular maintenance of vehicle fleet
  - Identification of each vehicle
  - Maintenance logbook
  - Incident logbook (on board)
  - Periodic servicing schedule
  - Random checks
  - Visual and sound checks on each return
  - Foremen entitled to prevent non-compliant vehicles leaving base

- Fleet renewal schedule & budget

- Protection and first aid equipment on board and regularly checked
Customer relations:

Reducing accident risks is also in the customer’s interest:

- IRU General Conditions for the International Carriage of Goods by Road (3 November 2011)

  and

  IRU General Conditions for the International Carriage of Goods by Road and Logistic Services (3 November 2011)

- Make clients accountable

- Refuse excess loads

- Refuse instructions jeopardising safety (leading to excessive driving times and/or speeding), ...........
The Insurers’ role:

Insurers should acknowledge the company’s efforts towards accident prevention by:

- Extending profit-sharing
- Supporting assistance networks
- Reducing or raising deductibles

Please refer to the IRU Guidelines for transport operators on insurance matters

The key role of public authorities:

- Make principals accountable for:
  - Excess loads and unsecured loads
  - Breach of safety rules due to instructions leading to:
    - Speeding
    - Non-compliance with driving or rest times

- Monitor subcontracting
  - Banning cut prices which do not cover basic costs

- Enforce and sanction in an efficient and resolute manner
The key role of public authorities (cont’d):

- Professional qualification requirements
- Financial incentives to allow fleet renewal
- Incentives to finance driver training and offset company losses during training periods
Road Safety & Accident Prevention in Road Transport Undertakings

Public authorities

Consignee

Consignor / transport organiser

It’s everybody’s business

Road transport operator

Other road users
The IRU Academy at a glance

- 20 training programmes
- 55 ATIs in 41 countries

IRU Academy

ADC
AAC
ATI

© International Road Transport Union (IRU) 2014
IRU Academy Interactive Programme on Safe Loading and Cargo Securing

Industry reference guidelines

Interactive simulation environment

Calculator: Specific and practical advices

Latest International Reference Standard

EN 12195-1:2010
Contribution to Road Safety – IRU Academy

21 Professional Training Programmes

17 Drivers’ Checklists
IRU Academy Dangerous Goods (ADR) Programme

Full compliance with the ADR 2013 Agreement

Safety
Crash Prevention Programme

1-day classroom-based programme on crash prevention, compatible with periodical training format

- Highly visual
  combines simulation playbacks, on-board camera footage, and various videos

- Highly practical
  Evocative real-life crash cases illustrate the theory

- Highly engaging
  Focus on group discussions and crash case analysis

- Story-based
  The course is introduced by the story of a fatal crash, told by the truck driver

- Includes next generation truck simulator software license
Free & Multilingual

http://www.iru.org/en_drivers_checklists
Focus on Priorities – Defensive/ECO-Driving?

A Defensive driving module combining technology and the latest training techniques that will improve efficiency and safety for the commercial sector;

Train-the-Trainer & Driver training that have been specifically designed for the road transport sector and contribute to:

- important financial savings in fuel and fleet costs,
- impact on the reduction of the road risks, accidents and casualties,
- significant reduction of CO₂ emissions and improve fuel-efficiency.
IRU
WORKING TOGETHER
FOR A BETTER FUTURE
since 1948