

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

Pristina, 23 January 2015

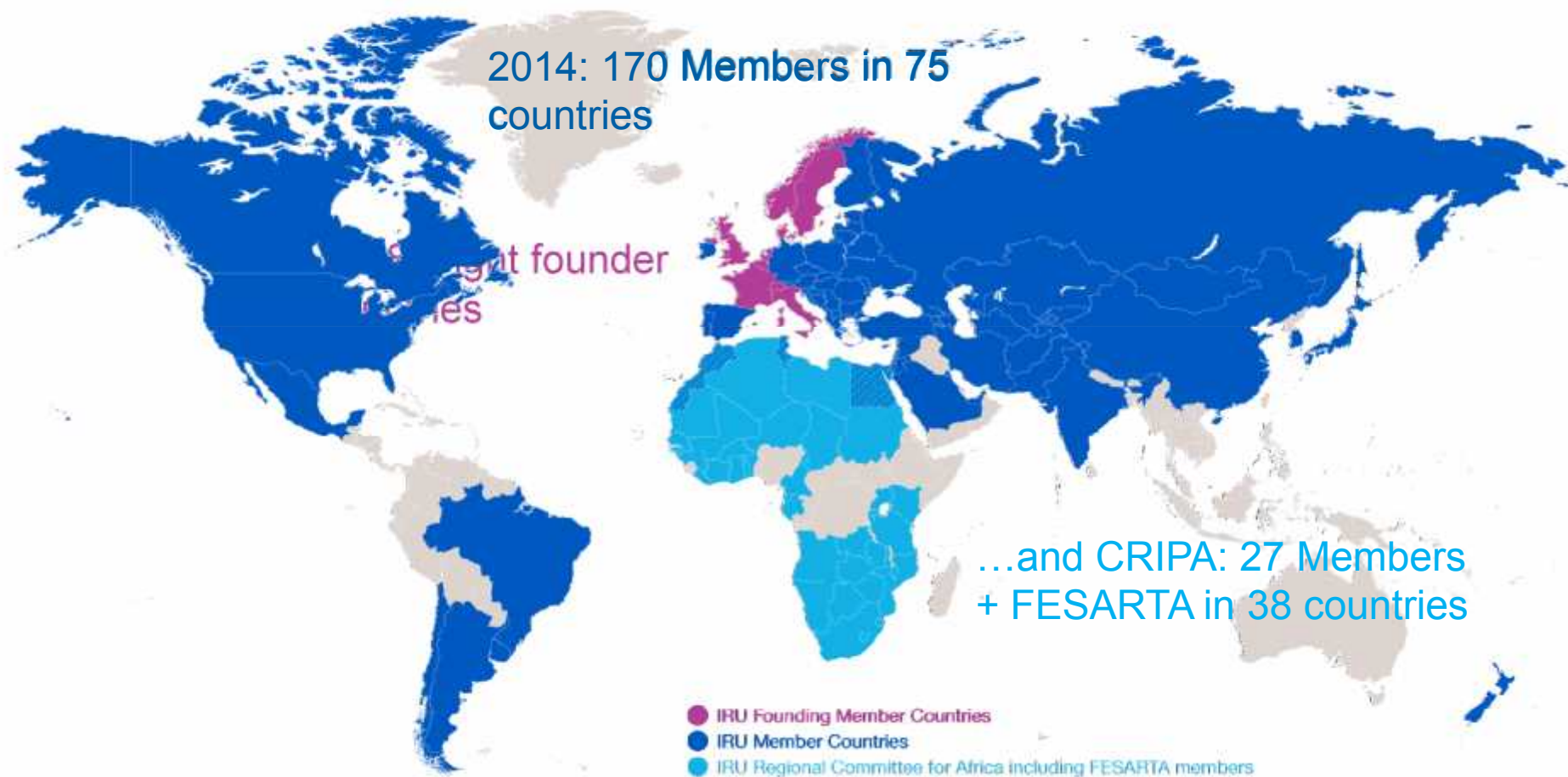
Patrick Philipp - Head IRU Academy

IRU This is the International Road Transport Union





Evolution of IRU Membership





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**



**GLOBAL
STATUS
REPORT
ON ROAD
SAFETY
2013**



SUPPORTING A DECADE OF ACTION



Global Road Safety Facts and Figures Report 2013



Every job depends on road transport

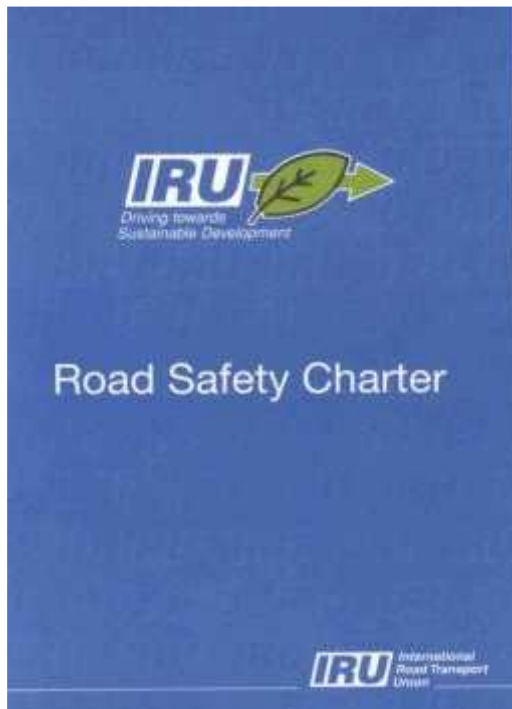


How to avoid this?





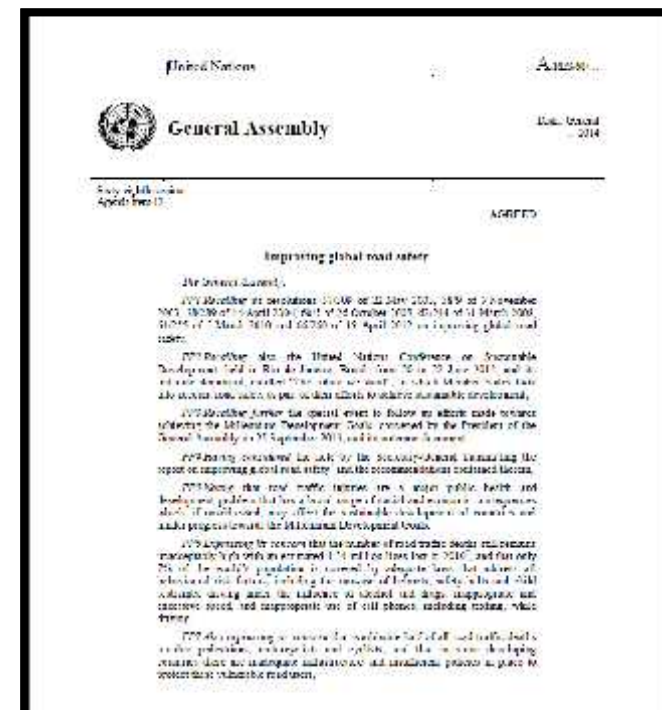
Road Safety – An IRU TOP Priority





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



PP20 Acknowledging a number of other important international efforts on road safety, including the development by the International Road Transport Union of harmonized and internationally recognized standards for vocational training of road transport professionals,

**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)

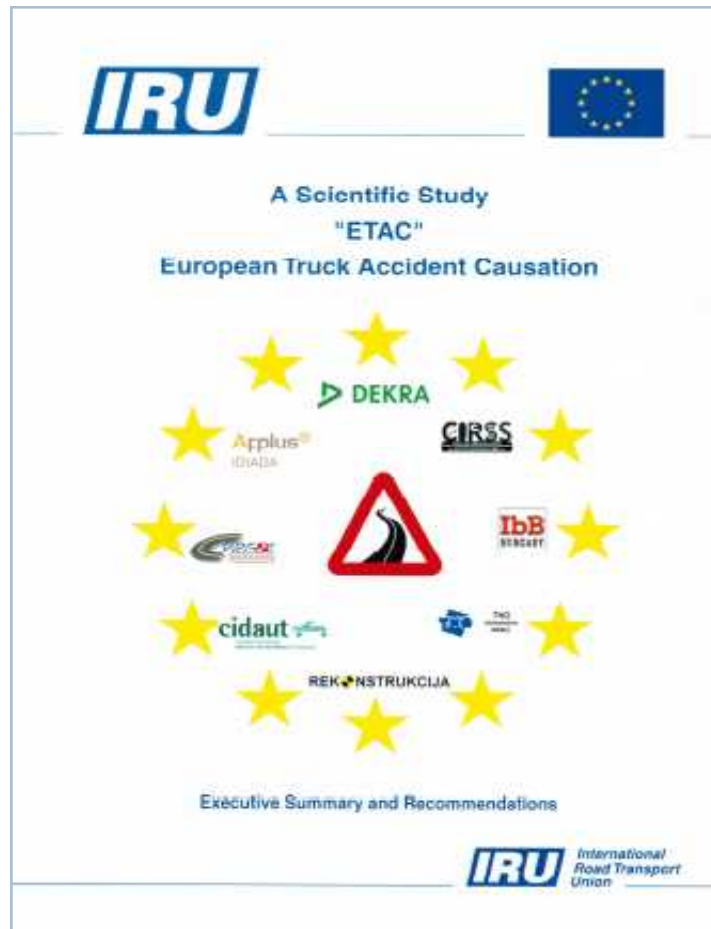
Sponsors

- European Commission
- International Road Transport Union (IRU)



Accident Analysis ETAC – A Scientific Study

Results confirmed by other studies



Large Truck Crash Causation Study

Analytical User's Manual



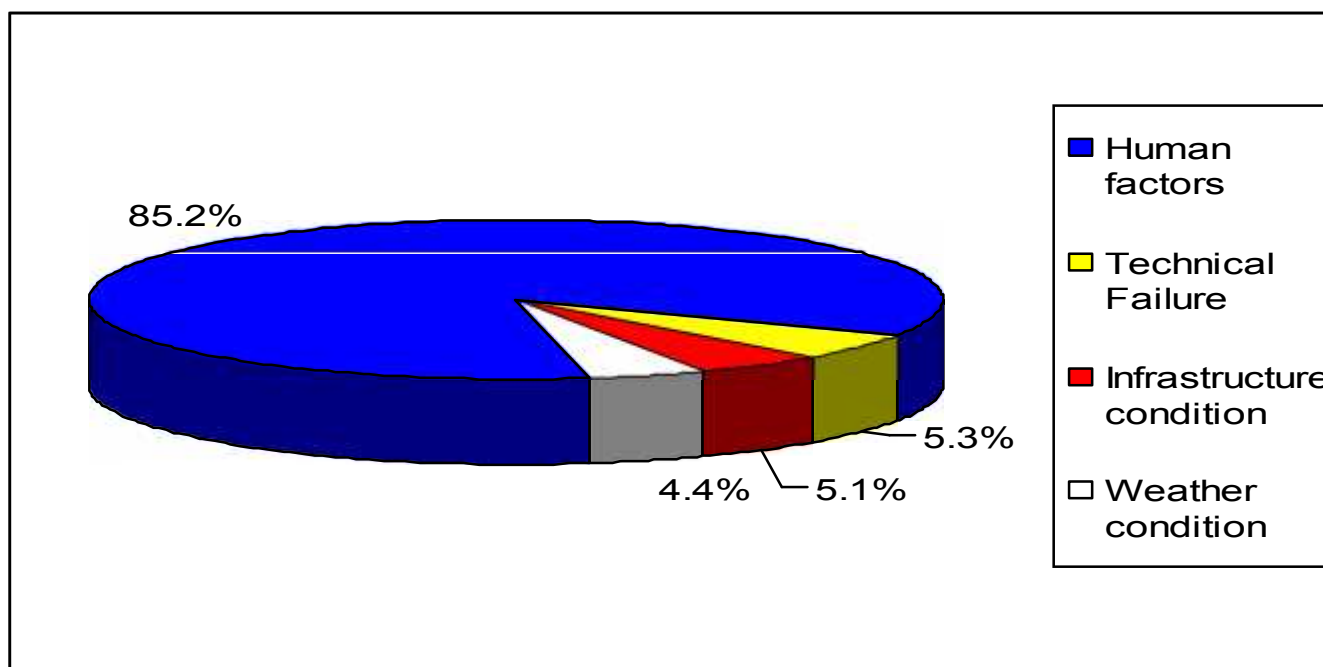
European Truck Accident Causation Study (ETAC) : http://www.iru.org/en_bookshop_item?id=171

Large Truck Crash Causation Study (LTCCS): http://ai.fmcsa.dot.gov/lccs/data/documents/LTCCS_Manual_Public.pdf

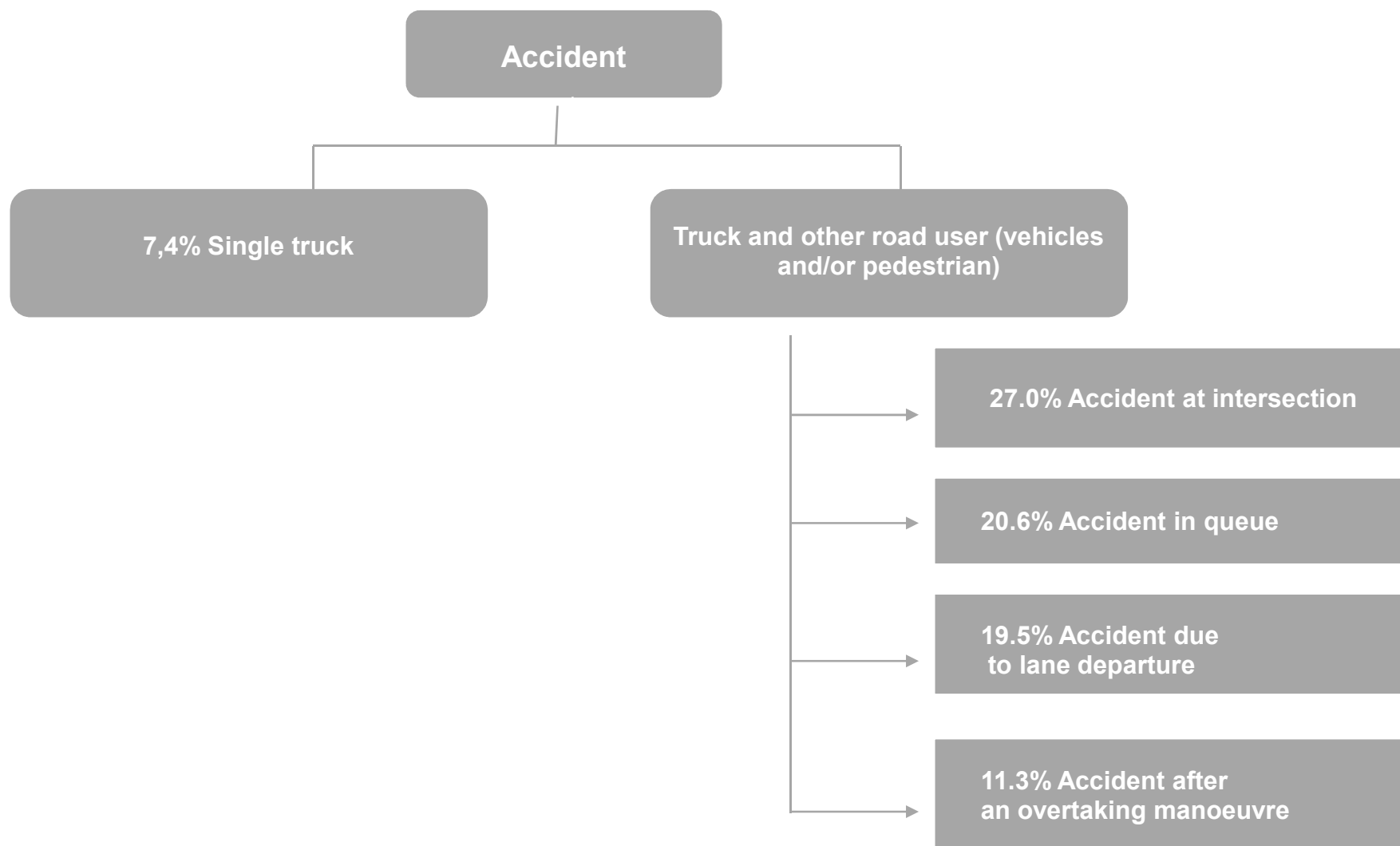
Volvo European Accident Research: <http://www.volvotrucks.com/SiteCollectionDocuments/VTC/Corporate/Values/ART%20Report%202013.pdf>

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

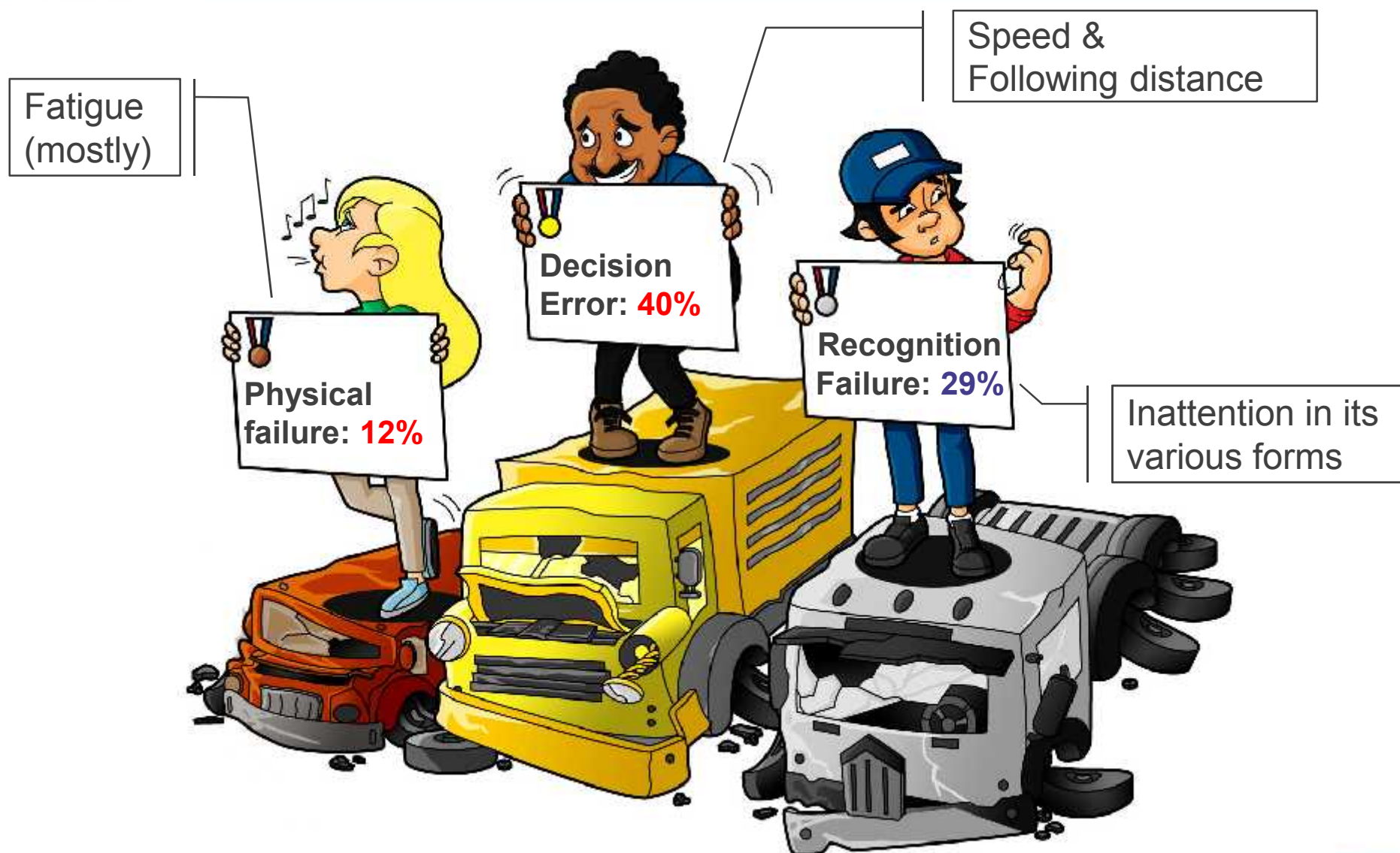
Investigation of 624 accidents showed the main cause of the accident is the human error



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



Staying focused on the main crash causes



Source: Analysis Brief, LTCCS Summary, FMCSA

Large Truck Crash Causation Study (LTCCS)

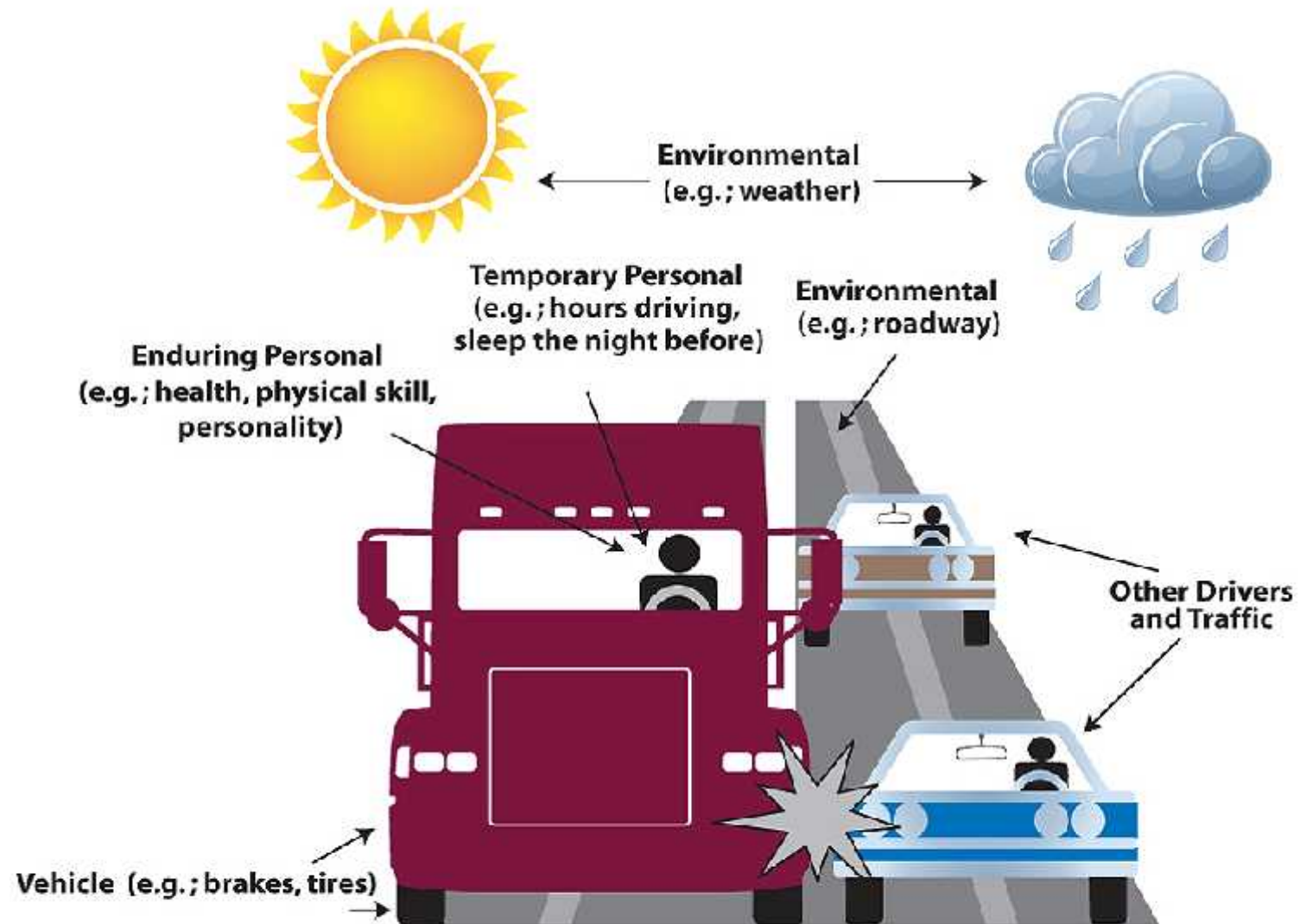


Percentages for Truck At-Fault Crashes

CR Category	Examples	%
Driver Physical Failure	<ul style="list-style-type: none">• Asleep-at-the-wheel• Heart attack• Other physical impairment	12%
Driver Recognition Failure	<ul style="list-style-type: none">• Inattention• Distraction (internal or external)• “Looked but did not see”	29%
Driver Decision Error	<ul style="list-style-type: none">• Too fast for conditions• Following too closely• Misjudgment or false assumption	40%
Driver Response Execution Error	<ul style="list-style-type: none">• Overcompensation• Poor vehicle control/maneuvering• Panic/freezing	6%
Vehicle Failure	<ul style="list-style-type: none">• Brake failure• Tire failure• Cargo shift	10%
Roadway/ Environment	<ul style="list-style-type: none">• Road signs/signals missing• Road design• Weather and/or slick roads	3%

DRIVER ERROR = 88%!!!

Multiple Interacting factors & fauses



Driver Factors Associated with Risk

Aggressive/angry

Impatient/impulsive

Inattentive



**Personality &
Risk Attitudes**

Inexperienced (new driver)

Unhappy with job/company

Young (< 25)

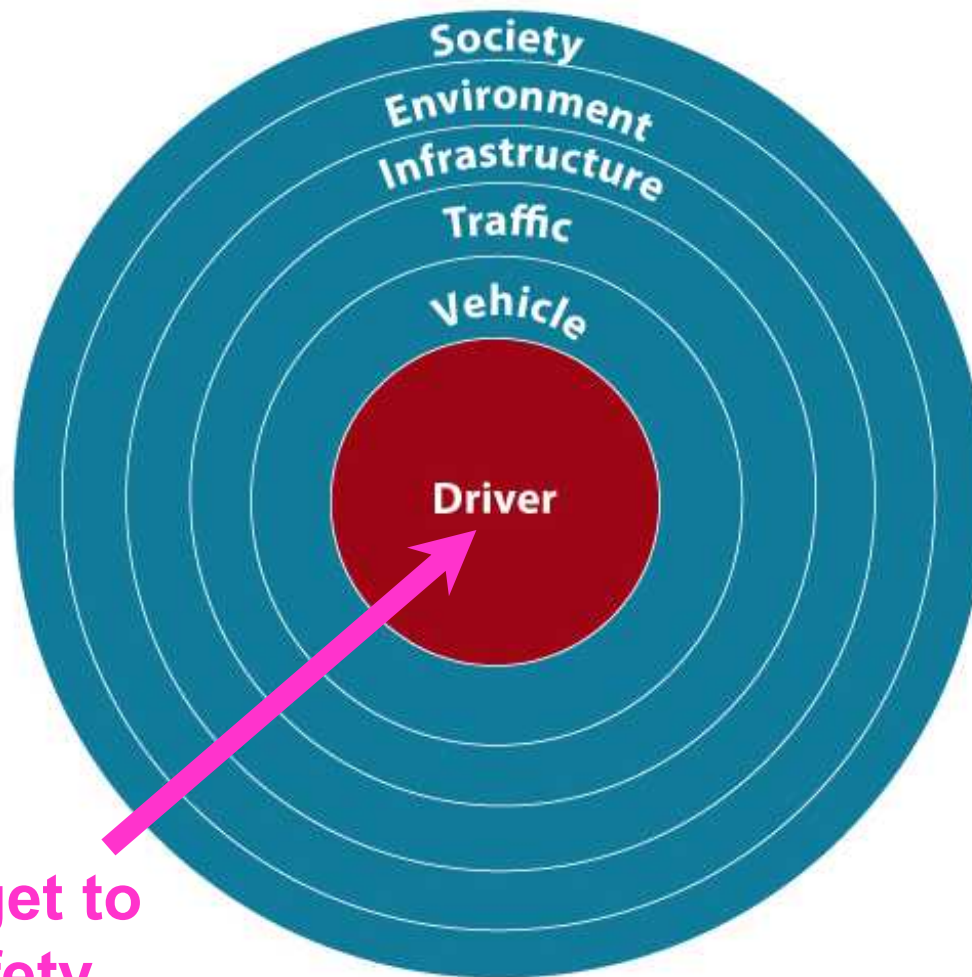
Sleep disorder; e.g., sleep apnea

Unhappy marriage/family

Debt/financial problems

Medical condition; e.g., heart

Safety Management: Comprehensive and Targeted



**Principal Target to
Improve Safety**

Road Safety & Accident Prevention in Road Transport Undertakings

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**



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



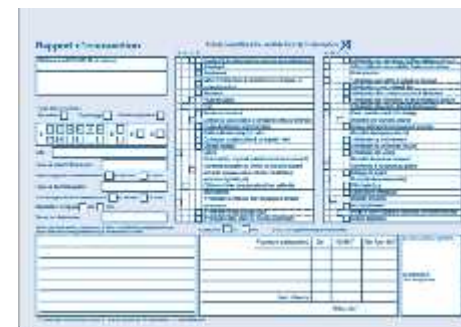
Business & operating procedures:

- 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:

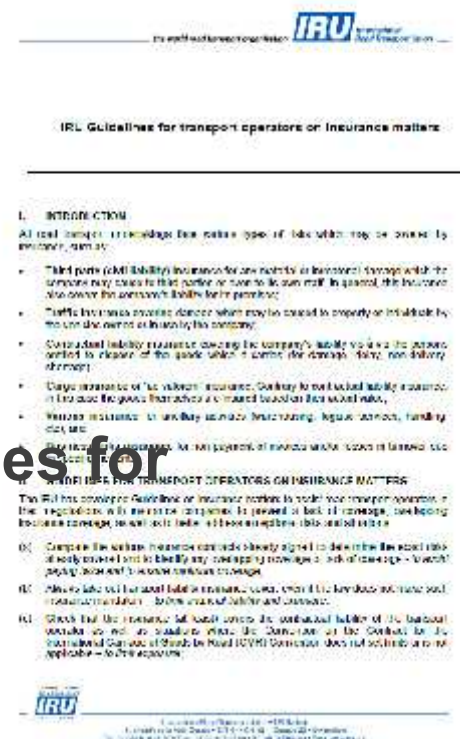
- ➔ - IRU General Conditions for the International Carriage of Goods by Road (3 November 2011)
and
IRU General Conditions for the International Carriage of Goods by Road and Logistic Services (3 November 2011)
- Make clients accountable
- Refuse excess loads
- Refuse instructions jeopardising safety (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**



(http://www.iru.org/cms-filesystem-action/2009_InsuranceContracts/Guidelines-insurance.E.pdf)

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



**It's everybody's
business**

Consignor / transport organiser



Other road users



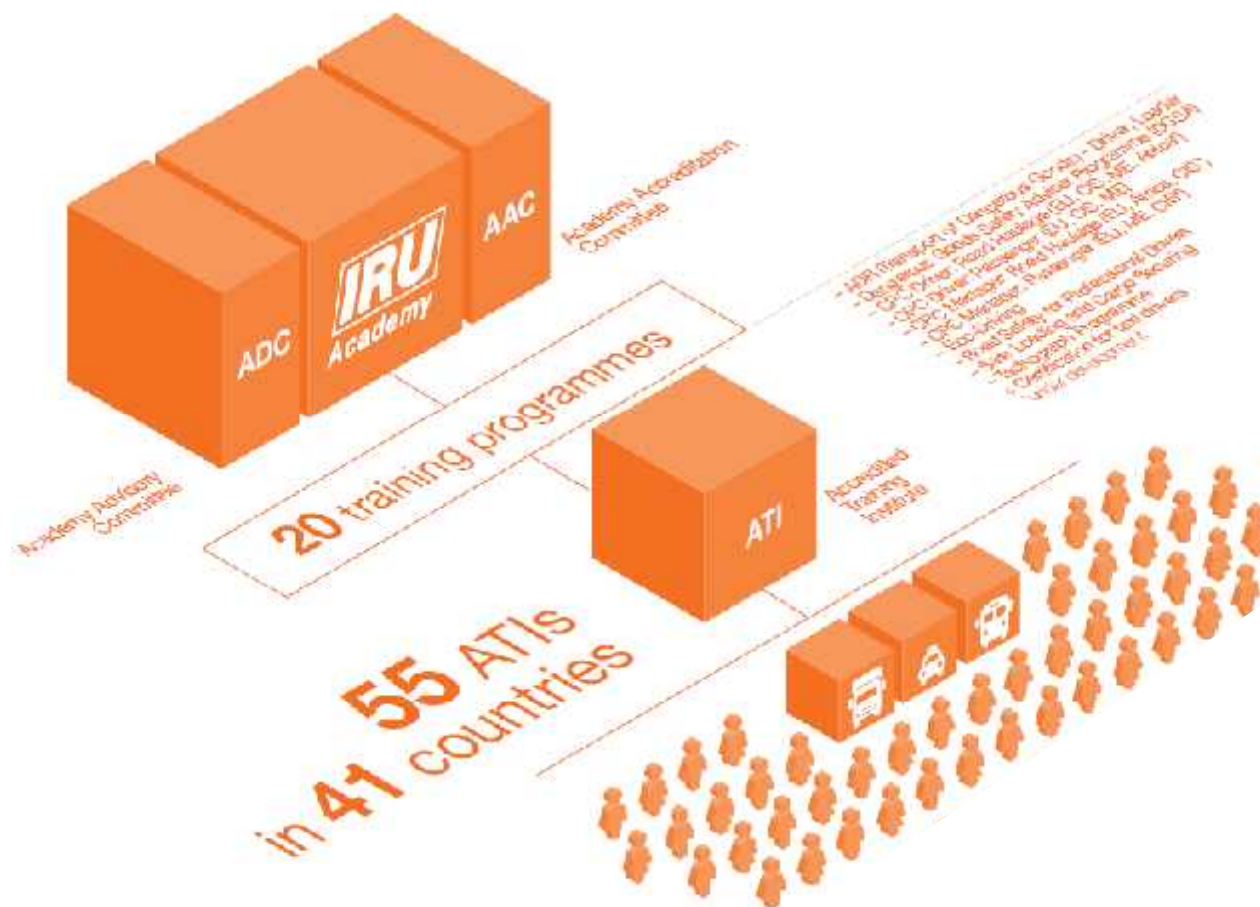
Consignee



Road transport operator



The IRU Academy at a glance





IRU Academy Programmes

Competence

IRU Academy
CPC CERTIFICATE

John Doe

Certificate of Professional Competence (CPC)

For Drivers

IRU Academy
CPC DIPLOMA

John Doe

Certificate of Professional Competence (CPC)
for the Road Transport Manager

- National and International Road Haulage and Passenger Transport -

Recognition

IRU Academy
TACHO CERTIFICATE

Jane DOE

Certificate in the Use of Analogue and Digital Tachographs
and Driving and Rest Time Rules Compliance

Compliance

IRU Academy
ECO-DRIVING CERTIFICATE

Damir TVRDICA

ECO-Driving
- ECO-Driving Training Programme -

IRU Academy
CERTIFICATE

Dragiša IVANOVIĆ

- Crash prevention training -

Safety

IRU Academy
CERTIFICATE

John DOE

- Safe Loading and Cargo Securing -

IRU Academy
ADR CERTIFICATE

John DOE

Certificate of Professional Competence
in Dangerous Goods by Road (ADR)

- ADR Driver: Packagings and Bulk, excluding Classes 1 & 7 -



IRU Academy Interactive Programme on Safe Loading and Cargo Securing



Industry reference guidelines

Interactive simulation environment

Calculator: Specific and practical advices

IRU Academy

Safe Loading and Cargo Securing

Loop lashing

Data

Weight of cargo (t)	3
Area of lashing (m ²) (m ²) (m ²) (m ²)	15
Location of lashing (m ²) (m ²) (m ²) (m ²)	100
Friction between goods and lashing (m ²) (m ²) (m ²) (m ²)	11.2

Results

Number of lashing points required to prevent sliding: 2

Instructions

Enter the data in the highlighted fields. The resulting number of pieces of lashing required is indicated in the "Results" table.

Enter the results in the data provided for the lashing points entered in the "Data" sheet, and the lashing and mode of lashing data entered in the "Basic" sheet.

Friction coefficients

Seawood on steel and steel on steel (m²) (m²) (m²) (m²)

0.45



Latest International Reference Standard

EN 12195-1:2010

21 Professional Training Programmes



17 Drivers' Checklists

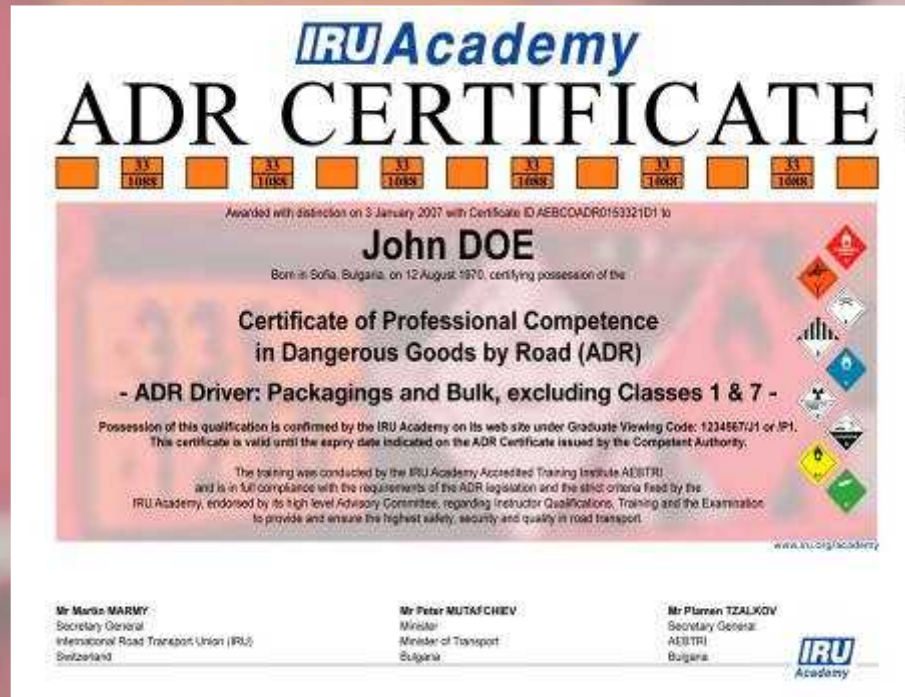




IRU Academy Dangerous Goods (ADR) Programme



**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



Industry Best Practices



Free & Multilingual

http://www.iru.org/en_drivers_checklists



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.

