HOW TO IMPROVE THE SAFETY OF GOODS VEHICLES IN THE EU?

PIN Flash Report 39

May 2020

ETSC
European Transport Safety Council

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The PIN programme relies on panellists in the participating countries to provide data for their countries and to carry out quality assurance of the figures provided. This forms the basis for the PIN Flash reports and other PIN publications. In addition, all PIN panellists are involved in the review process of the reports to ensure the accuracy and reliability of the findings.

ETSC is grateful for the financial support for the PIN programme provided by the German Road Safety Council (DVR), Toyota Motor Europe, the Swedish Transport Administration, the Norwegian Public Roads Administration and CITA, the International Motor Vehicle Inspection Committee.

ABOUT THE EUROPEAN TRANSPORT SAFETY COUNCIL (ETSC)

ETSC is a Brussels-based independent non-profit organisation dedicated to reducing the numbers of deaths and injuries in transport in Europe. Founded in 1993, ETSC provides an impartial source of expert advice on transport safety matters to the European Commission, the European Parliament, Member States and other countries. It maintains its independence through funding from a variety of sources including membership subscriptions, the European Commission, and public and private sector support.

ABOUT THE ROAD SAFETY PERFORMANCE INDEX PROJECT

ETSC's Road Safety Performance Index (PIN) programme was set up in 2006 as a response to the first road safety target set by the European Union to halve road deaths between 2001 and 2010. In 2010, the European Union renewed its commitment to reduce road deaths by 50% by 2020, compared to 2010 levels.

By comparing Member State performance, the PIN serves to identify and promote best practice and inspire the kind of political leadership needed to deliver a road transport system that is as safe as possible.

The PIN covers all relevant areas of road safety including road user behaviour, infrastructure and vehicles, as well as road safety policymaking. Each year ETSC publishes PIN Flash reports on specific areas of road safety. A list of topics covered by the PIN programme can be found on http://etsc.eu/projects/pin/.

"How to improve the safety of goods vehicles in the EU?" is the 39th PIN Flash report. The report covers 32 countries: the 27 Member States of the European Union together with Israel, Norway, the Republic of Serbia, Switzerland and the UK.

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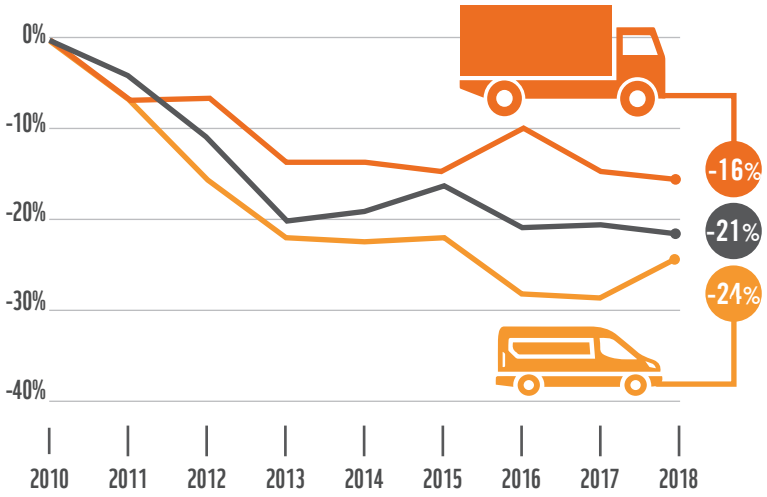
IN THE EU IN 2018

3310 >3.5T
KILLED
IN COLLISIONS INVOLVING
HEAVY GOODS VEHICLES (HGVs)

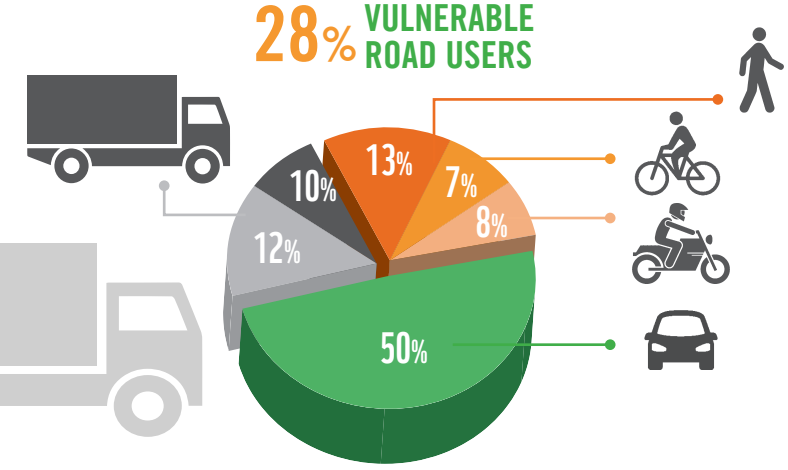
2630 <3.5T
KILLED
IN COLLISIONS INVOLVING
LIGHT GOODS VEHICLES (LGVs)

DEATHS IN HGV COLLISIONS ARE DECLINING MORE SLOWLY THAN OTHER ROAD DEATHS:



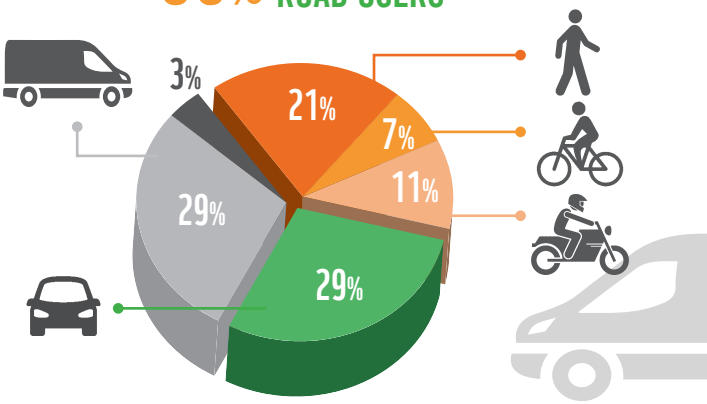
WHO DIES IN COLLISIONS INVOLVING HGVs?

28% VULNERABLE ROAD USERS



WHO DIES IN COLLISIONS INVOLVING LGVs?

39% VULNERABLE ROAD USERS



Observed HGV speeds above the speed limit in free-flowing traffic in a range of countries

17%-64% ABOVE speed limit
URBAN ROADS

8%-30% ABOVE speed limit
RURAL ROADS

RECOMMENDATIONS

- Better direct vision for HGVs
- Good performance of Intelligent Speed Assistance capable of detecting stricter speed limits for HGVs
- Traffic law enforcement for HGVs and LGVs, including speed compliance
- Public procurement of safe goods vehicles
- Regulation on LGV working hours and rest periods
- Require professional driver training for LGV drivers

INTRODUCTION

Since the last ETSC PIN report looking at the safety of goods and passenger transport was published in 2013, the transport sector has continued to evolve[1]. Just-in-time delivery in many industries; next-day delivery of single items from online shops; clothes bought, tried on and then returned; supermarket home delivery - in the background of all these services is an international network of transport that ends with goods vehicles crisscrossing countries, cities and towns.

This report looks at the toll transport of goods and services has taken in terms of road deaths over the period 2010 to 2018. It examines the performance of individual countries, as well as the European Union as a whole, in tackling the risks, and describes some of the policies needed to reduce deaths and serious injuries in the future.

Part I looks at the data on road deaths involving heavy goods vehicles (HGVs) and examines the crucial issue of speed. Part II covers the road death data for light goods vehicles (LGVs). It was not possible to look at LGV speed data because most countries do not separate them from the data for cars.

Unfortunately we were also not able to cover serious injury data for either HGV or LGV collisions – in this case because we are advised by the European Commission that the data are not available in enough detail and quality in enough countries.

In Part III we look at several key policies for tackling the main risks of goods vehicle transport including vehicle safety improvements and regulations on driving and resting hours and driver training. This section also covers distraction, fatigue, seatbelts and driving under the influence of alcohol and/or drugs. We look at current legislation, particularly at EU level, as well as the work-in-progress on some upcoming changes. Although we focus on EU action, examples of national and city-level action are included as always.

At the heart of this report, as ever, are a set of disturbing figures that require urgent action. Thousands of people are still dying in collisions involving goods vehicles in the EU every year: many goods vehicle drivers, but even more car occupants and vulnerable road users. The solutions to preventing many road deaths associated with goods vehicles are available off the shelf and have been for years. There are some great examples of cities and countries taking bold action across Europe, but collectively we can and must do better.

Note on countries covered by the ETSC PIN programme

The summary of this report includes aggregate data analysis covering the 27 EU Member States, which together with the UK agreed to, and are working towards, the aim of achieving the common target to halve the number of road deaths in the EU over the period 2010-2020.

The full report covers the 32 countries that participate in ETSC's Road Safety Performance Index (PIN) programme. They are:

- The 27 EU Member States;
- the United Kingdom, a former EU Member State;
- Norway and Switzerland, two Member States of the European Free Trade Area;
- Israel, an associated state of the European Union;
- Serbia, a candidate Member State.

For the first time, data for the United Kingdom are excluded from aggregate EU data 2010-2018 used in this report, following the UK's exit from the European Union on 31 January 2020.

[1] PIN Flash 24 (2013), Towards Safer Transport of Goods and Passengers in Europe, http://etsc.eu/pinflash24

EXECUTIVE SUMMARY

3310 people lost their lives in police-reported road collisions involving a heavy goods vehicle (HGV) of 3.5t or above in the EU in 2018. In the same year, 2630 people were killed in collisions involving a light goods vehicle (LGV) of less than 3.5t.

Fatal collisions in which both an HGV and an LGV were involved are included in both categories. This is because the data available for this report did not allow for identifying them separately. However, only around 4% of fatal collisions with goods vehicles involve both an HGV and an LGV.

These numbers represent 25% of the overall number of road deaths.

PART I: HEAVY GOODS VEHICLES

Data from countries that collect distance travelled by vehicle type show that fatal road collisions involving HGVs are much more frequent than those involving other vehicles. On a per-km basis, up to three times as many people die in collisions involving HGVs as die in collisions involving only non-goods vehicles.

The majority of those killed in collisions involving HGVs are not HGV occupants but other road users. Car occupants represent half (50%) of all deaths in collisions involving HGVs - the largest share of any road user group. Vulnerable road users account for nearly a third (28%). Of these, 13% are pedestrians, 7% are cyclists and 8% are powered two wheeler (PTW) i.e. motorcycle and moped users. Occupants of HGVs make up 12% of all road deaths involving an HGV, 11% are the drivers and 1% passengers.

Over the nine years covered by this report, deaths in collisions involving HGVs were reduced more slowly than those involving other vehicle types. Since 2010, in the EU, deaths in collisions involving an HGV have been reduced by, on average, 1.8% annually compared to a 2.8% reduction in the number of road deaths in collisions where no goods vehicle of either type was involved.

Since 2010 the number of road deaths in collisions involving HGVs has decreased in 16 out of 25 EU countries that could provide data. In five countries the figure stagnated while five countries saw an increase.

In 2018, 23% of road deaths in collisions involving HGVs occurred within urban areas, 54% on rural non-motorway roads and 23% on motorways.

Among ten EU countries that monitor levels of speed compliance of HGVs countrywide measurements indicate that, with few exceptions, the average travel speed of HGVs on all types of roads is lower than the legal speed limit. On urban roads the range of speeds above the legal speed limit is 17% to 64% whilst on rural roads it is 8% to 30%.

PART II: LIGHT GOODS VEHICLES

The number of road deaths in collisions involving an LGV was reduced by 3.5% annually compared to a 2.8% annual reduction of road deaths in collisions where no goods vehicle of either type was involved. Since 2010, the number of road deaths in collisions involving LGVs has decreased in 18 out of 24 EU countries that could provide data, stagnated in four and increased in two.

In three out of the six EU countries that record the distance travelled by LGVs and other vehicles, the risks posed by LGVs to other road users are similar compared to the risks posed by non-goods vehicles.

Many road deaths following collisions involving LGVs in the EU occur among vulnerable road users - they account for 39% of all deaths in collisions involving LGVs, 21% being pedestrians, 7% cyclists and 11% PTW users. 29% are car occupants. LGV occupants involved in fatal collisions make up 29% of the deaths, 22% being LGVs drivers and 7% passengers.

53% of road deaths in collisions involving LGVs occur on rural roads, 33% in urban areas and 13% on motorways.

Unfortunately, speed data for LGVs were not available for this report as many countries present LGV speed data in a single category with cars.

PART III: POLICY MEASURES

General, as well as targeted, road safety measures should be combined in order to sustainably reduce road deaths in collisions involving heavy goods vehicles (HGVs) and light goods vehicles (LGVs). These measures are related to safe road infrastructure (e.g. median barriers, rumble strips, safe intersections, safe pedestrian and bicycle crossings), safe road use (e.g. sober drivers, use of seatbelts, secured loads, speed limit compliance) and safe vehicles. Measures also include the enforcement of current legislation, particularly when aimed at HGVs and LGVs, the promotion and large-scale rollout of life-saving technologies, and the training of road users with a particular focus on those who drive as part of their work or profession.

Vehicle safety

The EU's General Safety Regulation and Pedestrian Safety Regulation were updated in 2019, with improved passive and active safety requirements for all new vehicles sold in the EU.

Under the new legislation, motor vehicles, including heavy goods vehicles (HGVs), buses, light goods vehicles (LGVs) and cars, will have to be equipped with safety features, including Intelligent Speed Assistance (ISA) and interfaces to support alcohol interlocks. Supplementary advanced safety measures will be required for cars and LGVs, including Automated Emergency Braking (AEB) with vulnerable road user detection and enlarged head impact protection zones capable of mitigating pedestrian and cyclist injuries. Most of the measures will come into effect in 2022 for new models and in 2024 for existing models.

In addition to the general requirements (such as ISA and AEB), HGVs and buses will have to comply with direct vision standards, which should significantly reduce blind spots, from 2026 for new models and from 2029 for existing models. The direct vision standards will be accompanied by advanced systems capable of detecting pedestrians and cyclists located in close proximity to the vehicle.

ETSC's recommendations for the detailed technical requirements for this legislation with regard to HGVs and LGVs, which are under development at the time of writing, are highlighted in the main body of the report. Examples are also given of national and city policies that encourage the purchase and operation of safer goods vehicles.

Driving and resting hours

The Regulation 561/2006/EC provides a common set of EU rules for maximum daily and weekly driving hours, as well as daily and weekly minimum rest periods for all drivers of road haulage and passenger transport vehicles. Regulation 561/2006/EC, along with Regulation 165/2014/EC on tachographs for recording vehicle movements and driver activity, are in the process of an update as part of negotiations on the EU Mobility Package I due for final adoption in the coming months.

According to the updated legislation that looks set to be agreed, international transport operators using light commercial vehicles of over 2.5t would, for the first time, also be subject to EU requirements for transport operators and would need to equip LGVs with a tachograph.

However, the updated regulation 561/2006/EC will not apply to internationally-operated LGVs below 2.5t nor to LGVs below 3.5t operating nationally. ETSC has long advocated for EU rules applicable to professional drivers regarding driving and resting times to be extended to cover all drivers operating LGVs for commercial purposes, not just those engaged in international transport.

Professional training

Under rules set out in Directive 2003/59/EC, Member States issue professional drivers with certificates of professional competence (CPCs), certifying initial qualifications and periodic training. These skills and knowledge are kept up-to-date through periodic training. One of the objectives of the Directive is to make drivers

aware of road risks and accidents at work. The Directive covers road haulage and passenger transport drivers but does not apply to LGVs (<3.5t).

Driver training can be an important tool for reducing work-related road risk. But it is only one part of an employer's road safety programme, which should also focus on issues such as management culture, vehicle safety, journey management and safety of sites.

Distraction

Experts estimate that distraction plays a role in 10-30% of collisions, but data are lacking. There is a long list of distractions that undermine the driver's ability to perform the driving task, they range from the use of mobile devices to eating or other activities.

In-vehicle distraction has been shown to be a specific risk in professional drivers. However, there has been little research recently on the extent to which distracted driving by HGV and LGV drivers is a contributing factor in fatal or serious road traffic collisions. One reason for this could be a lack of good quality data as, in the majority of the PIN countries, police reports do not have a field for indicating distraction as a contributing factor in a collision.

Fatigue

Fatigue is a major risk factor affecting goods vehicle drivers, who often work irregular hours. Research shows that driver fatigue is a significant factor in approximately 20% of commercial road transport collisions. Such collisions are most likely to occur on long journeys on monotonous roads, between 2am and 6am and between 2pm and 4pm. Furthermore, how long a person has been awake is equally important. However, just as with distracted driving, good quality data on fatigue-related collisions are lacking.

Seatbelts

The seatbelt remains the single most effective safety feature in vehicles. Drivers of HGVs and LGVs tend to show lower seatbelt usage rates compared to car drivers, even though strengthened cabs only protect their occupants if they are properly belted.

The EU has adopted updated UNECE regulations on seatbelts that require new vehicles, including HGVs and LGVs, to be fitted with seatbelt reminders on all seats, as from September 2019 for new models, and 2021 for current models. Yet it will take decades until all LGVs and LGVs on EU roads are all fitted with seatbelt reminders.

Alcohol and drugs

Driving under the influence is less prevalent in goods and services transport compared to private transport, however alcohol-related road collisions in goods transport often result in more serious outcomes due to vehicle crash incompatibility caused by the increased size and mass of goods vehicles.

MAIN RECOMMENDATIONS TO MEMBER STATES

- Collect data on all road user groups killed and seriously injured in collisions involving HGVs and LGVs, on speed compliance, average speeds and travel data.
- Include safety as a criterion for public procurement involving the use of goods vehicles and require vehicle safety features such as direct vision, Intelligent Speed Assistance (ISA), Automated Emergency Braking (AEB) with pedestrian and cyclist detection and alcohol interlocks in fleets providing public services and throughout the supply chain until such a time as all vehicles on the roads have such features.
- Enforce compliance with speed limits through, inter-alia, installing safety cameras that are able to apply the lower speed limits for HGVs where applicable.
- Develop and implement national enforcement strategies to target speeding, intoxicated, dangerous and distracted driving and non-use of seatbelt by goods vehicle drivers.
- Provide adequate resources, equipment and training to facilitate enforcement of driving time rules and roadworthiness.
- When possible, separate traffic in opposite directions by a median barrier and install side barriers. To facilitate safe cycling and walking, build separated paths along the roadway.

MAIN RECOMMENDATIONS TO EU INSTITUTIONS AND MEMBER STATES

- Following the adoption of the revision of the General Safety Regulation (GSR) on new minimum safety standards for new vehicles:
  - Deliver on the estimated number of deaths and serious injuries prevented by adopting strong and timely secondary regulation implementing the General Safety Regulation;
  - Insist on the highest achievable vehicle regulation standards at UNECE with regards to blind spot detection systems and direct vision; i.e. minimum 2 stars for all N3 lorries (>12t), and 4 stars for all N2 lorries (>3.5t and <12t);
  - Require a high level of performance of Intelligent Speed Assistance (ISA) systems to be fitted in all new vehicles; the system should be overridable up to 90 km/h for HGVs (in line with existing EU legislation on speed limiters). Check that speed sign detection systems are able to detect lower speed limits applicable for HGVs.
- Extend the legislative framework for working time and driving and resting hours to cover all professional LGV drivers, not just international transport.
- Extend the current CPC requirement (professional driver training) to all professional LGV drivers, in the context of an integrated approach to risk assessment.
- Member States and EU institutions responsible for Transport, policing and occupational safety to work together to engage with employers and employees and develop multidisciplinary and holistic strategies to educate, instruct, train and enable employers to better manage commercial vehicle risk management practices in the workplace and on the road.

OVERVIEW: ONE IN FOUR ROAD DEATHS IN THE EU OCCUR IN COLLISIONS INVOLVING GOODS VEHICLES

Almost 6000 people were killed in collisions involving goods vehicles in the EU in 2018 – a quarter of all road deaths. HGVs are involved in 14% of all fatal collisions and LGVs in 11%.

Over the period 2010-2018 road deaths in collisions involving HGVs decreased by 16%. Those involving LGVs went down by 24%. Road deaths in collisions not involving goods vehicles decreased by 21% (Fig.1) in the 24 EU countries that could provide data.

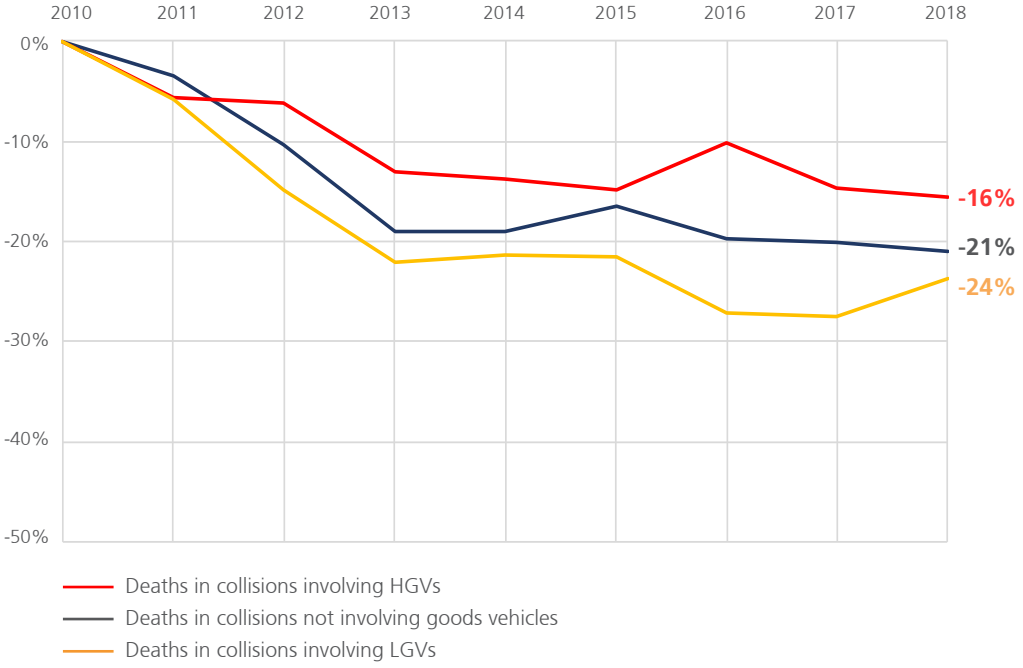


Figure 1. Progress in reducing the number of reported road deaths involving HGVs, LGVs and not involving goods vehicles in 24 EU countries that could provide data over the period 2010-2018.
EU24 average: EU27 excluding BG, MT and PL due to insufficient data. Note: fatal collisions in which both an HGV and an LGV were involved are included in both categories: deaths in collisions involving HGVs and deaths in collisions involving LGVs. This is because the data format available for this report did not allow to identify these collisions separately. However, only around 4% of fatal collisions involving goods vehicles involve both an HGV and an LGV.[2]

[2] European Commission (2018), Traffic safety basic facts, Heavy goods vehicles and buses, https://bit.ly/3bkGwQ0

INDICATOR

This report covers reported road deaths by the police in collisions involving two categories of vehicles: heavy goods vehicles with maximum permitted weight over 3.5t (HGVs) and light goods vehicles (LGVs) with a maximum permitted weight below 3.5t. The term light goods vehicles (LGVs) is used in this report, even though these vehicles can also be used for delivering various services. They can also be used for private purposes. Collisions involving HGVs and LGVs can be single vehicle collisions, but they can also be collisions with other road users: car occupants, powered-two-wheeler users, buses, cyclists, pedestrians or other road users.

The average annual change in the number of recorded road deaths in collisions involving HGVs and LGVs and a corresponding reduction of road deaths in collisions not involving goods vehicles between 2010-2018 (Figs.2 and 14) is used as the main indicator of progress. Country progress is compared since the year 2010, the base year for the EU target to halve the number of road deaths by 2020.

The numbers of recorded road deaths used in this PIN Flash report were retrieved by the European Commission from the CARE database on ETSC's request. Additional data, when needed, and qualitative information were provided by the PIN panellists (see inside cover). Some data used in this report are available in the annexes, the full data set is available at www.etsc/pinflash39. This PIN Flash report makes use of the number of reported road deaths by the police and therefore does not take into account underreporting. Past studies have shown that underreporting is higher for pedestrians, cyclists and powered-two-wheeler (PTW) riders.[3] Collisions involving goods vehicles are more likely to be reported due to their relatively large impact.

Many more people are seriously injured in collisions involving HGVs and LGVs but in general there is a lack of good quality data in many PIN countries. Collisions involving HGVs and LGVs that result in serious injuries are likely to have different characteristics than those resulting in deaths (e.g. different proportion by road type, road user group etc.).

Countries are compared according to the numbers of deaths in collisions involving HGVs and LGVs per distance travelled by those vehicles, with corresponding risks for collisions not involving goods vehicles (Figs.3 and 15). Estimations of vehicle distance travelled were supplied by the PIN panellists.

Figs.6 to 13 show speed measurements in daytime in free flowing traffic for HGVs on urban and rural roads as supplied by the PIN panellists for countries where data are available. Speed data collection procedures and methodologies still vary substantially between countries. Speed data for LGVs are not available in many countries, as measuring equipment is often not able to differentiate between an LGV and a car.

The analysis builds on the previous ranking in ETSC's PIN Flash 24 (2013) report "Towards Safer Transport of goods and passengers in Europe". The publication is available at www.etsc.eu/PIN.

[3] For more information, see for instance ETSC (2018), An Overview of Road Death Data Collection in the EU, PIN Flash 35, https://etsc.eu/pinflash35/ and PIN Flash 37, https://etsc.eu/pinflash37/

PART I

Fatal road collisions involving heavy goods vehicles (HGVs)

01

1.1 COUNTRY PROGRESS IN REDUCING DEATHS IN COLLISIONS INVOLVING HGVs

Deaths in collisions involving heavy goods vehicles (HGVs) were reduced in 16 out of 25 EU countries and in Norway and Switzerland and just slightly in Israel between 2010 and 2018 (Fig.2).

3310 people were killed in collisions involving HGVs in EU in 2018 alone, representing 14% of all road deaths.

The number of deaths in collisions involving HGVs has decreased by 1.8% on average each year in the EU25 over the period 2010 to 2018 compared to a 2.8% annual reduction of road deaths in collisions not involving goods vehicles over the same period.[4]

Estonia and Romania recorded an average annual reduction in the number of deaths involving HGVs of 11% over the period 2010-2018, which was eight and nine percentage points faster respectively than reductions in road deaths not involving goods vehicles (Fig.2). Progress in reducing deaths involving HGVs stagnated in Germany, Spain, the Netherlands, the UK and Denmark.

Deaths in collisions involving HGVs increased by, on average, 9% annually in Ireland[5], 3% in Sweden[6], Slovenia and Latvia and 2% in Italy.

Some countries experience more international freight transport by HGVs than others due to their geographical position or economic activity. Around 28% of all EU freight transport volume (in tonne km) is travelled in Germany, 18% in France, 9% in Poland and 6% in Spain.[7]

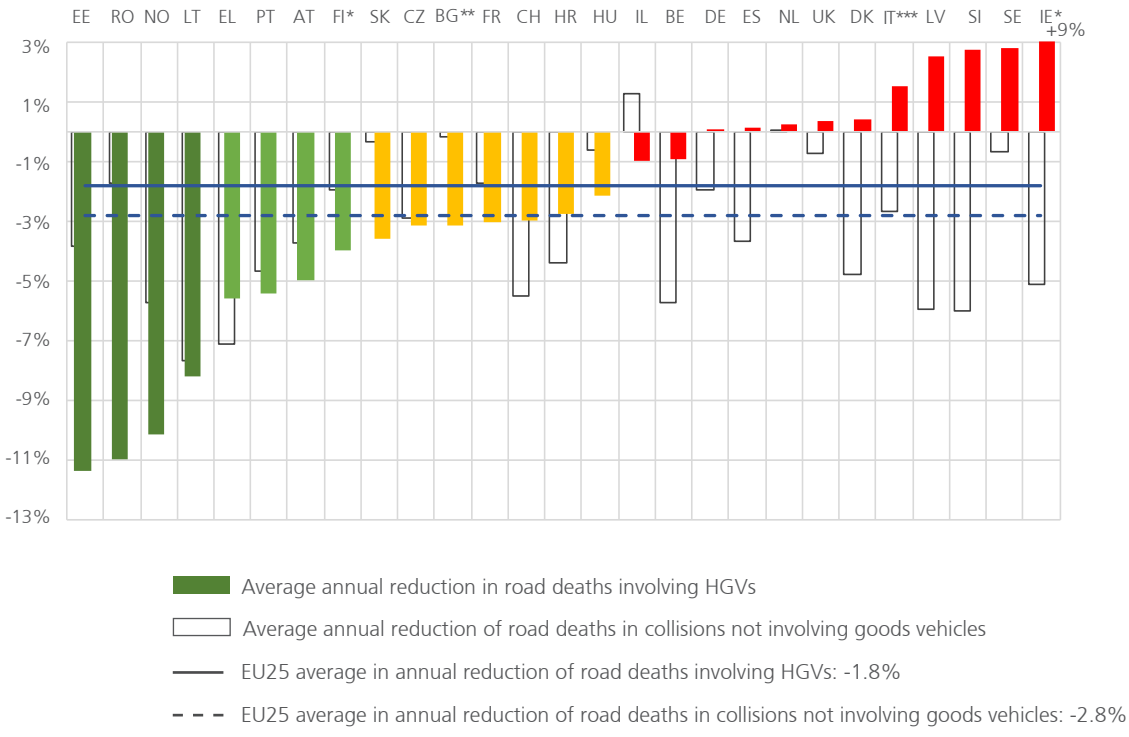


Figure 2. Average annual change in the number of reported road deaths involving HGVs compared to the average annual change in road deaths that did not involve a goods vehicle (HGV or LGV) over the period 2010-2018.
CY and LU are excluded from the figure due to fluctuations in statistically small numbers of deaths but their numbers are included in the EU25 average. EU25 average: EU27 excluding MT and PL due to insufficient data. *FI – provisional 2018 data, *IE - provisional 2017-2018 data. **BG – white bar – reduction in road deaths other than involving HGVs. ***IT – data used in this report are an estimate, changes in reporting methodology of fatal collisions involving HGVs were introduced in 2018.

[4] The average annual change is based on the entire time series of all the nine annual numbers of deaths between 2010 and 2018, and estimates the average exponential trend. For more information read the methodological note of the PIN Flash 6: https://bit.ly/2LVVUtY
[5] In 2010, the base line for this analysis, there was a relatively low number of road deaths involving HGVs compared to other years in Ireland.
[6] Sweden had an exceptionally large increase in the number of road deaths involving HGVs in 2018, which affected significantly the results of the average annual change.
[7] Eurostat (2020), Freight transport statistics – modal split, https://bit.ly/2K2tGKj

SWITZERLAND
TRANSFER OF TRANSALPINE FREIGHT TRAFFIC FROM ROAD TO RAIL

Switzerland is a country with a large proportion of HGV traffic in transit. Statistics on the alpine region show that about 75% of the goods (in terms of weight) are in transit.

In 1994, Switzerland adopted the Alpine Initiative which aimed to move heavy goods transport onto the railways. In 2018, 63% of transport performance on land was generated by road vehicles and 37% by rail. In transalpine goods transport, the share of rail transport was considerably higher at 70%.[8] The most frequent mode of the freight carried by rail is unaccompanied combined transport and less than 10% is accompanied combined transport (i.e. trucks on trains).

The goal of the Alpine Initiative was to reduce the number of HGV journeys through the Alps from 2.1 million a year in 2000 to 650,000 in 2008 but the deadline has been extended to 2018-2019. While the target has not been met in 2018 with 941,000 HGV journeys that year, without the measures, due to the growth in freight traffic, around 800,000 additional HGVs and semi-trailers would be crossing the Alps every year, totalling around 3 million journeys.[9]

Switzerland has taken various measures to implement the Alpine Initiative, including the HGV charge, the Swiss equivalent of a truck toll, as well as financial support for rail freight transport. In order to increase the capacity of the rail system, Switzerland is building the New Rail Link through the Alps (NRLA), which includes the Lötschberg, Gotthard and Ceneri base tunnels. The Ceneri Base Tunnel is the last major element of the NRLA and the rail service is expected to start in December 2020.

1.2 HGVs POSE GREAT ROAD RISKS TO OTHER ROAD USERS

In all countries that collect distance travelled data by HGVs on these countries' roads[10], HGVs pose a greater risk to other road users than non-goods vehicles (Fig.3).[11]

In Switzerland, the risk of a death occurring in a collision involving an HGV per km travelled by HGVs is four times greater than the risk of a death occurring in a collision not involving a goods vehicle per km travelled by non-goods vehicles. The risk is three times greater in Great Britain, Estonia, Sweden, France, the Netherlands and Austria. In Poland and Norway, HGVs are involved in twice as many fatal collisions per km travelled compared with non-goods vehicles. In Slovenia, HGVs are involved in 1.5 as many fatal collisions per billion km travelled compared with non-goods vehicles.

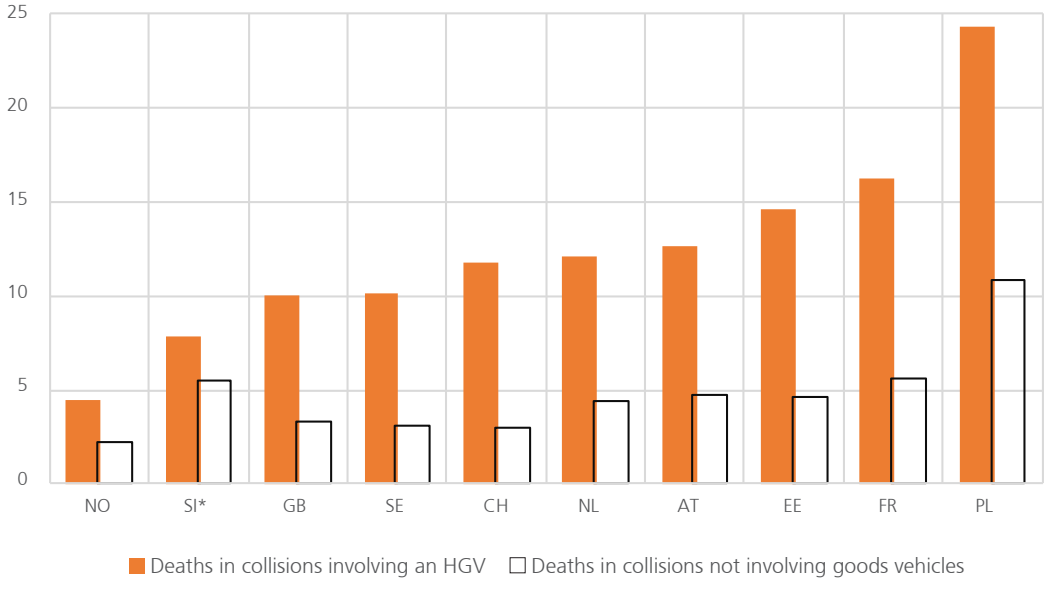


Figure 3. Reported road deaths in collisions involving HGVs per billion km travelled by HGVs and road deaths in collisions not involving goods vehicles per billion km travelled by non-goods vehicles. Average for the last three years for which the data were available. *SI – white bar shows deaths not involving HGVs per km travelled by all motor vehicles, including LGVs but excluding HGVs. Note: in this figure, deaths in collisions not involving goods vehicles include deaths in reported bicycle collisions with no motorised vehicle involved, but these form only a small proportion of deaths in collisions not involving goods vehicles.

[8] Eidgenössisches Departement für Umwelt, Verkehr, Energie und Telekommunikation UVEK, Freight traffic by road and rail through the Swiss Alps 2014, https://bit.ly/2RAjKvN
[9] Federal Office of Transport (FOT), Transfer of transalpine freight traffic from road to rail, https://bit.ly/3el6Ds9
[10] Data includes total km travelled on these countries roads, including national and international transport.
[11] For more information about this indicator, read a monograph by Stipdonk H. "The proportion of crashes involving vehicle type X, compared to distance travelled by vehicle X", www.etsc.eu/pinflash39

1.3 28% OF THOSE KILLED IN COLLISIONS INVOLVING HGVs IN THE EU ARE VULNERABLE ROAD USERS

The largest share of those killed in collisions involving HGVs in the EU are car occupants – on average, they account for 50% of all deaths in collisions involving HGVs (Fig.4).

Vulnerable road users account for 28%: 13% of these are pedestrians, 7% cyclists and 8% PTW riders (Fig.4). HGV occupants make up only 12% of deaths, 11% being drivers and 1% passengers. Other types of road user account for 9% of the road deaths in collisions involving HGVs.

The proportion of pedestrian deaths arising from collisions involving HGVs is highest in Israel (28%), the UK (25%), Lithuania (23%), Portugal and Latvia (22%) and Romania and Ireland (21%).

The proportion of cyclists among those killed in collisions involving HGVs is highest in Switzerland (23%), Denmark (22%), the Netherlands (15%) and Belgium (13%).

The proportion of PTW users among those killed in such collisions is highest in Greece (20%), Israel and the UK (11%), France and Italy (10%).

The proportion of deaths that are car occupants is well above the EU average in Finland (71%), Slovenia (65%), Lithuania and Norway (63%) and Ireland (62%).

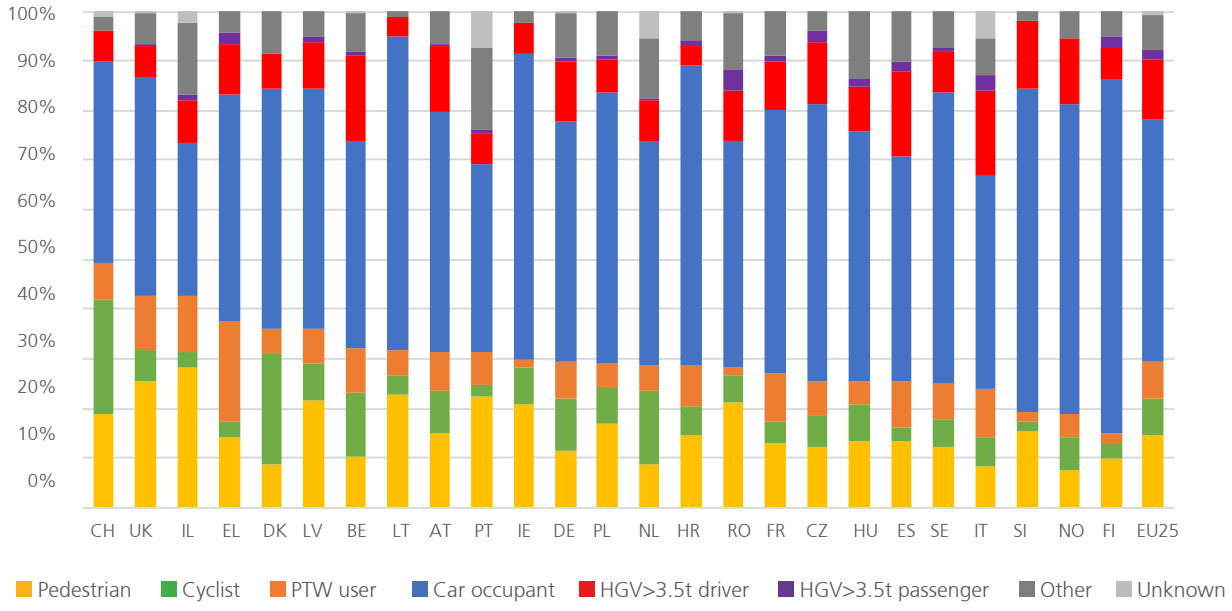


Figure 4. Proportion of reported deaths by road user group in collisions involving HGVs in the last three years (2016-2018), ranked by the proportion of deaths among vulnerable road users. The category "Other" in this figure includes, amongst others, fatal collisions between HGVs and LGVs. CY, EE, LU and MT are excluded from the figure due to fluctuations in statistically small numbers of deaths but their numbers are included in the EU25 average. EU25 average: EU27 excluding BG and SK due to insufficient data.

1.4 54% OF FATAL COLLISIONS INVOLVING HGVs IN THE EU OCCUR ON RURAL ROADS

The breakdown by road type of those killed in HGV collisions in the EU has changed somewhat between 2010 and 2018.

In 2018, 23% of the road deaths in collisions involving HGVs occurred within urban areas, 54% on rural non-motorway roads and 23% on motorways on average across the EU (Fig.5). In 2010, the proportion was 28% on urban roads, 59% on rural non-motorway roads and 13% on motorways.

The proportions in the last three years (2016-2018) vary quite considerably between countries. The differences between countries are, in part, due to differences in the classification of rural and urban roads.

HGV involvement in fatal collisions on urban roads is well above the EU average in Romania (51%), Portugal (43%) and Switzerland (42%).

54% of the overall number of road deaths in the EU occur on rural roads. The same proportion, 54% on average, of road deaths in collisions involving HGVs take place on this type of road in the EU. In Finland, 88% of the road deaths in collisions involving HGVs occur on rural roads, followed by Latvia and Norway with 82% and Slovakia with 75%.

23% of road deaths in collisions involving HGVs occur on motorways compared to 8% for the overall number of road deaths.

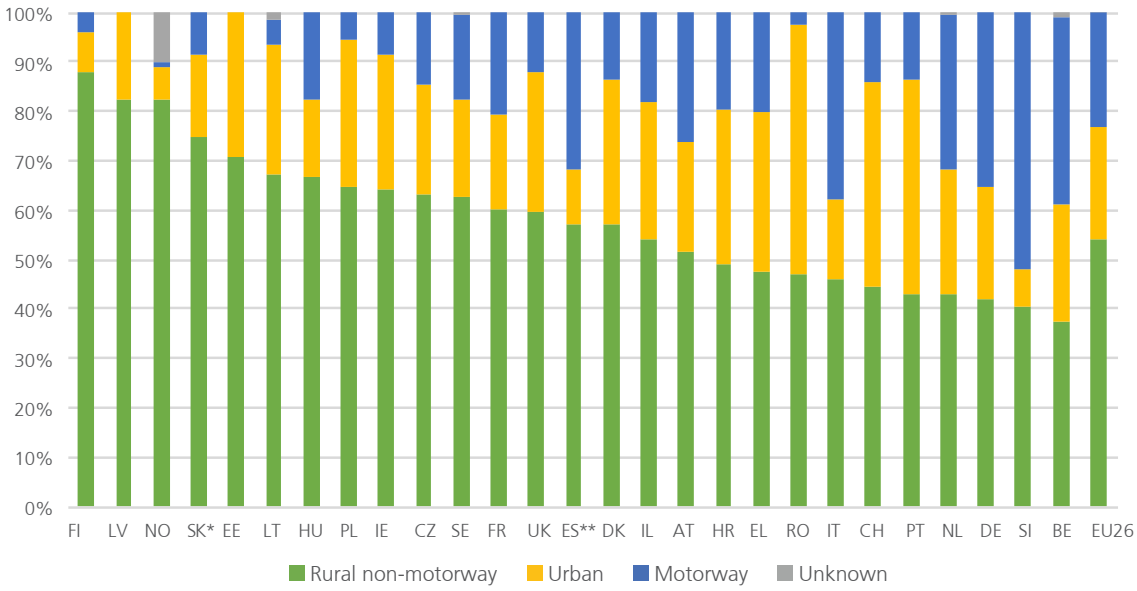


Figure 5. Proportion of reported deaths by road type in collisions involving HGVs in the last three years (2016-2018). *SK 2017-2018. **ES – motorway category includes autovias. CY, LU and MT are excluded from the figure due to fluctuations in statistically small numbers of deaths, but their numbers are included in the EU26 average. EU26 average: EU27 excluding BG due to insufficient data.

1.5 OBSERVED HEAVY GOODS VEHICLE (HGV) TRAVEL SPEEDS

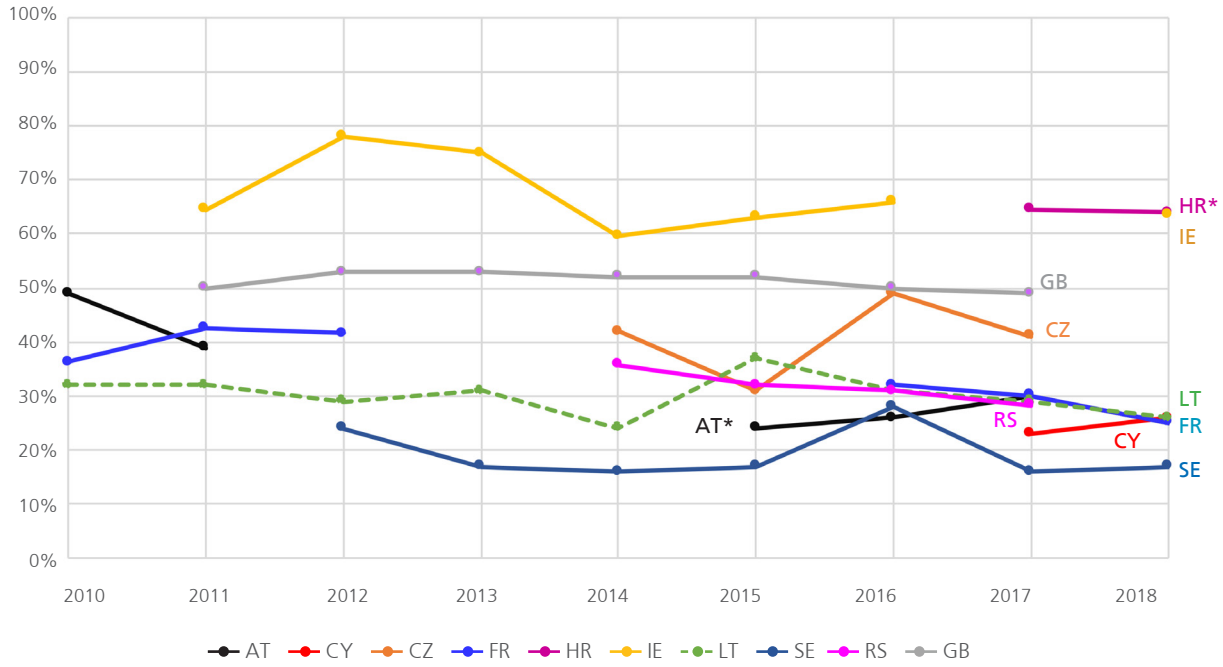
Many countries have specific speed limits applicable to heavy goods vehicles (HGVs), which are lower than the general speed limit applicable to other motor vehicles. This is particularly the case on rural roads and motorways. In this chapter, the presented data show observed HGV compliance with the legal speed limit applicable to HGVs and average observed HGV driving speeds by road type.

Among ten EU countries that monitor levels of speed of HGVs countrywide measurements indicate that, with few exceptions, the average travel speed of HGVs on all types of roads is lower than the legal speed limit. On urban roads the range of speeds above the legal speed limit is 17% to 64% whilst on rural roads it is 8% to 30%. While on urban roads the general speed limits across different countries is 50 km/h, speed limit on rural roads differ.

1.5.1 Observed HGV speeds on 50 km/h urban roads

Data from countries that monitor levels of speed compliance by HGVs on urban roads countrywide, show that between 17% and 64% of observed HGV speeds in free-flowing traffic are higher than the legal speed limit (Fig.6). As many as 64% of observed HGVs exceed 50km/h in Croatia and Ireland, 46% in Great Britain, 26% in Cyprus and Lithuania, 25% in Austria and France and 17% in Sweden. The evolution in the proportion of HGVs that exceed the speed limit on urban roads rather closely mirrors the evolution of the average speed – when speeding levels increase, so does the average speed. Generally, higher levels of speeding also correlate with higher average speeds.

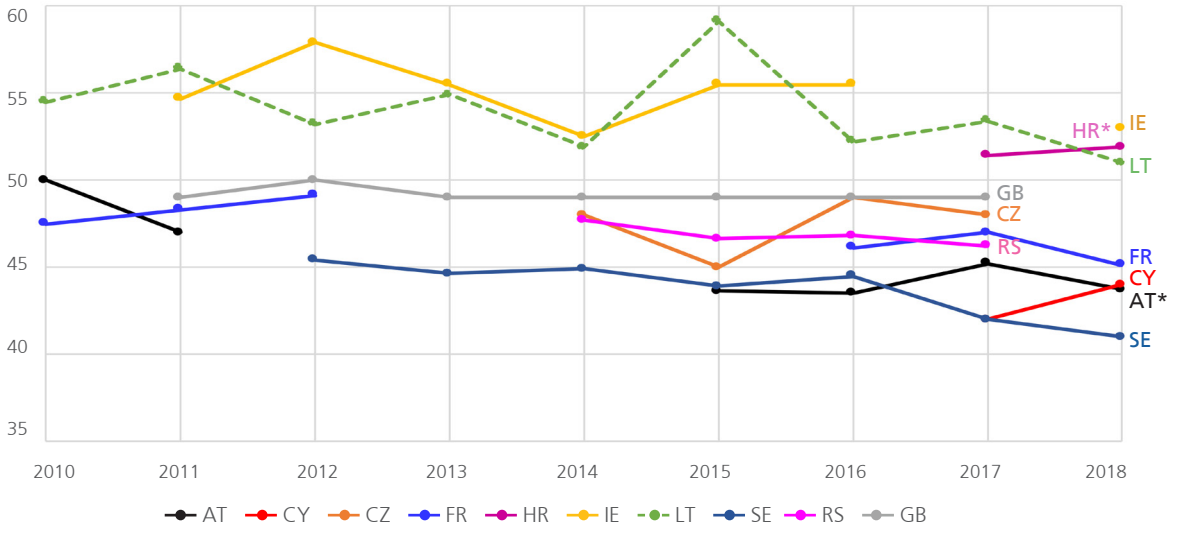
Figure 6. The proportion of HGVs>3.5t observed at speeds higher than the speed limit in free flowing traffic on 50 km/h urban roads since 2010 until the latest available year in some PIN countries based on countries' individual data collection methodologies.
*AT and HR – data on HGVs and buses together.



The average speed of HGVs on urban roads with a 50 km/h speed limit shows mixed trends in the ten PIN countries that collect nationwide data (Fig.7). In Austria, Czechia, Great Britain and Serbia, the average HGV travel speed remained unchanged over the period for which data are available. A reduction in the mean HGV travel speed has been seen in France, Ireland, Lithuania and Sweden. An increase in the average HGV travel speed was recorded in Cyprus.

The observed HGV travel speed on 50 km/h urban roads is the lowest in Sweden, which achieved the largest nominal reduction (from 45.4 km/h in 2012 to 41 km/h in 2018) (Fig.7). In Lithuania, the average observed HGV travel speed has been fluctuating significantly and, despite the reduction, the average observed HGV travel speed is still above the legal speed limit of 50 km/h. The average observed HGV travel speed is also higher than the speed limit in Ireland (53 km/h) and Croatia (52 km/h).

Figure 7. Average speed (in km/h) of HGVs>3.5t measured in free flowing traffic, on urban roads with a speed limit of 50 km/h in some PIN countries since 2010 until the latest available year based on countries' individual data collection methodologies.
*AT and HR – data on HGVs and buses together.



1.5.2 Observed HGV speeds on 70 km/h rural roads

Relevant data are very sparse, but while in Austria, Cyprus, Lithuania and Sweden, countries in which HGV travel speed data were available on rural roads with 70 km/h speed limit applicable to HGVs, the average observed HGV travel speed in free-flowing traffic is below the legal speed limit, speeding is still common (Fig.9). 52% of observed HGV travel speeds in 2016 were higher than the 70 km/h speed limit in Sweden, 24% in 2018 in Austria and 11% in 2018 in Lithuania (Fig.8). In Cyprus, between 11% and 23% observed HGV speeds are higher than the 65km/h speed limit.

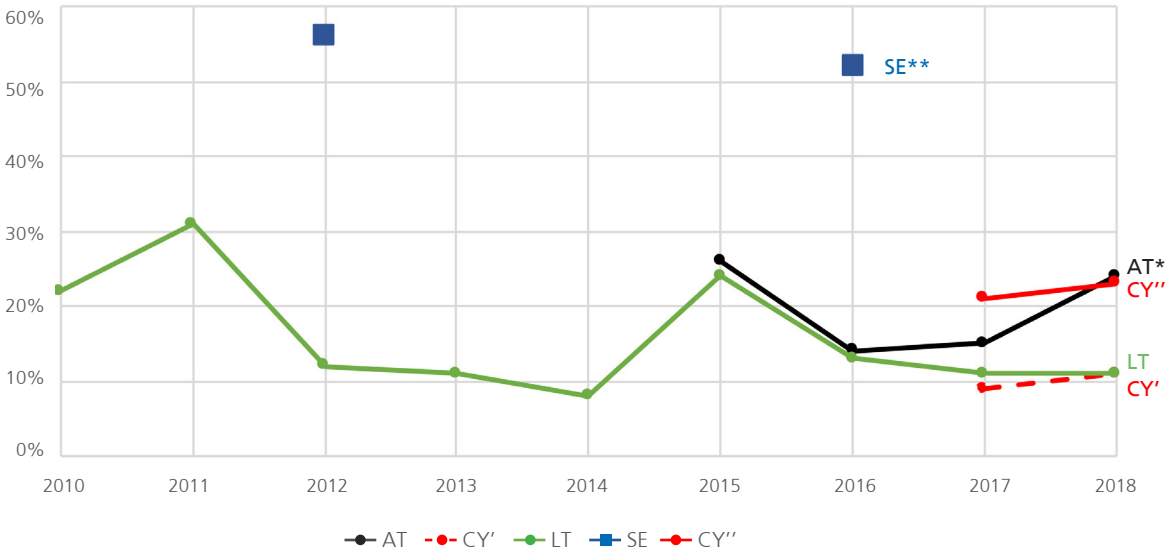


Figure 8. The proportion of HGVs>3.5t observed at speeds higher than the speed limit in free flowing traffic on 70 km/h rural roads since 2010 until the latest available year in some PIN countries based on countries' individual data collection methodologies.
*AT – data on HGVs and buses together on the roads with 70km/h speed limit for HGVs and 80 km/h for buses.
**SE – speed is mainly measured on rural non-motorway roads but includes some motorways where a stricter 70km/h speed limit is applicable to HGVs. CY' – speed limit applicable to HGVs is 65 km/h (70km/h for the rest of the traffic), CY'' – speed limit applicable to HGVs is 65 km/h (80km/h for the rest of the traffic).

In all countries where data are available, the average speed of HGVs on rural non-motorway roads with a 70 km/h speed limit is mostly lower than the speed limit (Fig.9).

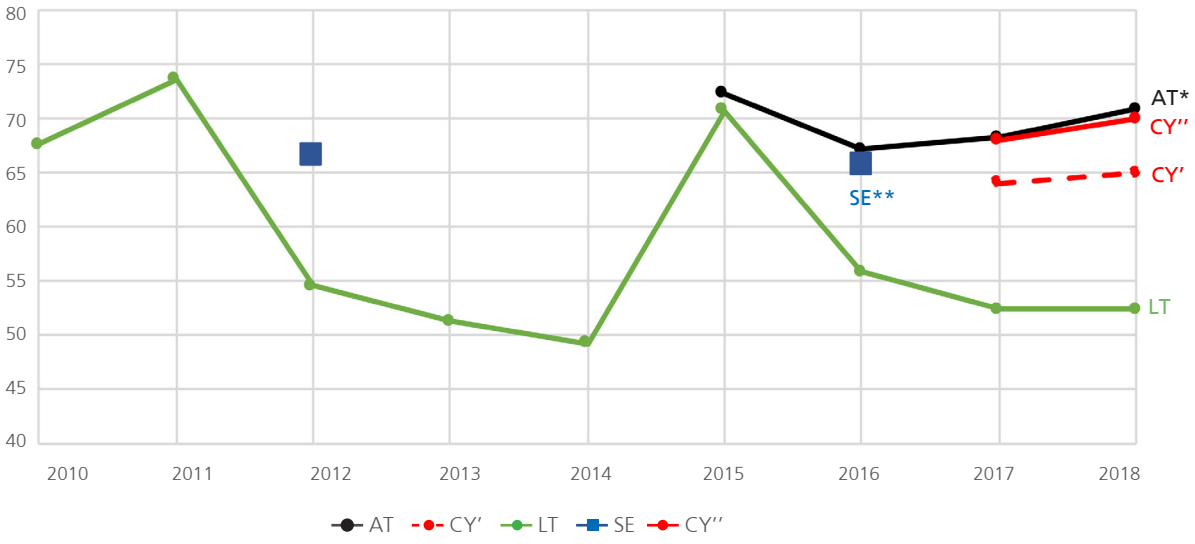


Figure 9. Average speed (in km/h) of HGVs>3.5t measured in free flowing traffic, on rural non-motorway roads with a speed limit of 70 km/h in some PIN countries since 2010 until the latest available year based on countries' individual data collection methodologies.
*AT – data on HGVs and buses together on the roads with 70km/h speed limit for HGVs and 80 km/h for buses. SE – speed is mainly measured on rural non-motorway roads but includes some motorways where 70 km/h speed limit for HGVs is applicable. CY' – speed limit applicable to HGVs is 65 km/h (70km/h for the rest of the traffic), CY'' – speed limit applicable to HGVs is 65 km/h (80km/h for the rest of the traffic).

1.5.3 Observed HGV speeds on 80 km/h rural roads

In Ireland, between 75% and 81% of observed HGV speeds on rural non-motorway roads with an 80 km/h limit are higher than the speed limit (Fig.10) and average HGV speed is higher than the permitted speed limit (Fig.11). 65% of observed HGV speeds are above the speed limit in Israel, 63% in Serbia and 53% in Finland. In all three countries the average HGV travel speed is higher than the speed limit.

67% and 47% of observed HGV speeds are higher than the 80 km/h speed limit in Sweden, 41% in Czechia, 30% in Great Britain, 23% in France, 22% in Lithuania and Croatia, but in these countries the average HGV travel speed is lower than the speed limit (Fig.11).

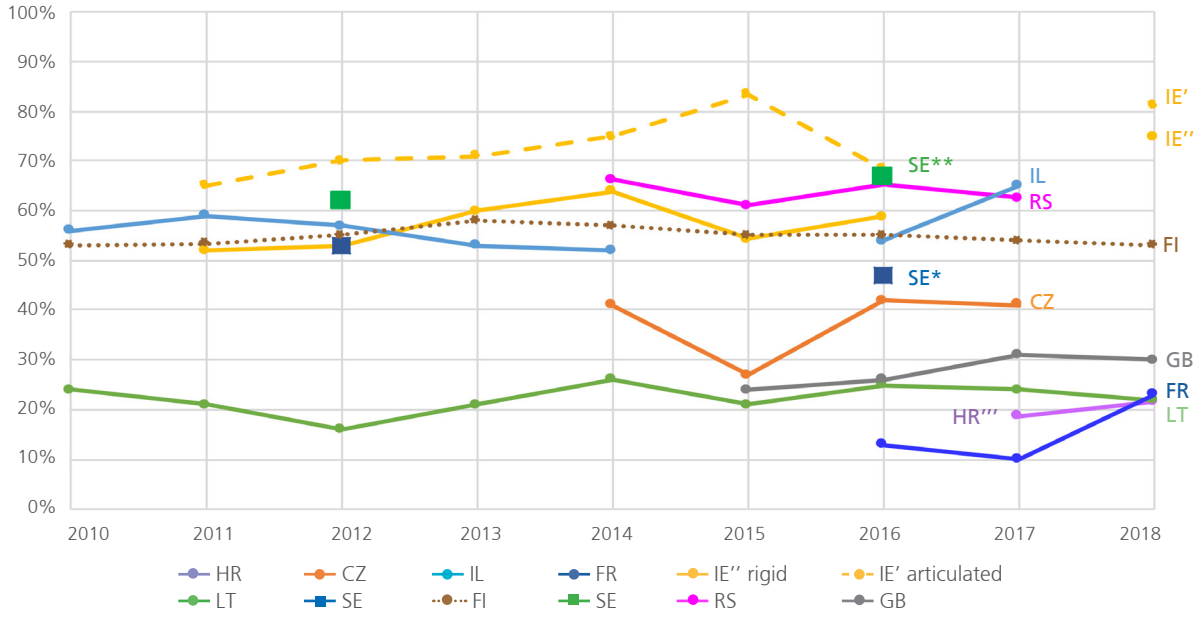


Figure 10. The proportion of HGVs>3.5t observed at speeds higher than the speed limit in free flowing traffic on 80 km/h rural roads since 2010 until the latest available year in some PIN countries based on countries' individual data collection methodologies. *SE – speed is mainly measured on rural non-motorway roads but includes some motorways where a stricter 80km/h speed limit is applicable to HGVs. **SE – speed data on roads with 80 km/h speed limit for HGVs (90km/h for the rest of the traffic). '''HR - HGV and bus data together.

The average speed of HGVs on rural non-motorway roads limited to 80 km/h applicable to HGVs increased in six out of the 11 PIN countries that could provide data, decreased in four and stagnated in one (Fig.11).

An increase was registered in Czechia (from 76 km/h in 2014 to 77 km/h in 2017), Ireland (articulated trucks[11] from 81.5 km/h in 2011 to 84 km/h in 2018, rigid trucks[12] from 79.6 km/h to 83 km/h over the same period), Great Britain (from 74 km/h in 2010 to 75 km/h in 2018) and Israel (from 80 km/h in 2010 to 83 km/h in 2017), Finland (from 79 km/h in 2010 to 80.6 in 2018) and Sweden (from 80.2 km/h in 2012 to 81.4 km/h in 2016).

A decrease in average speed was recorded in Lithuania (from 79 km/h in 2010 to 74.1 km/h in 2018), France (from 79 km/h in 2010 to 78.3 in 2018), Sweden (from 78.6 km/h in 2012 to 77.4 km/h in 2016) and Serbia (from 87.5 km/h in 2014 to 85.5 km/h in 2017).

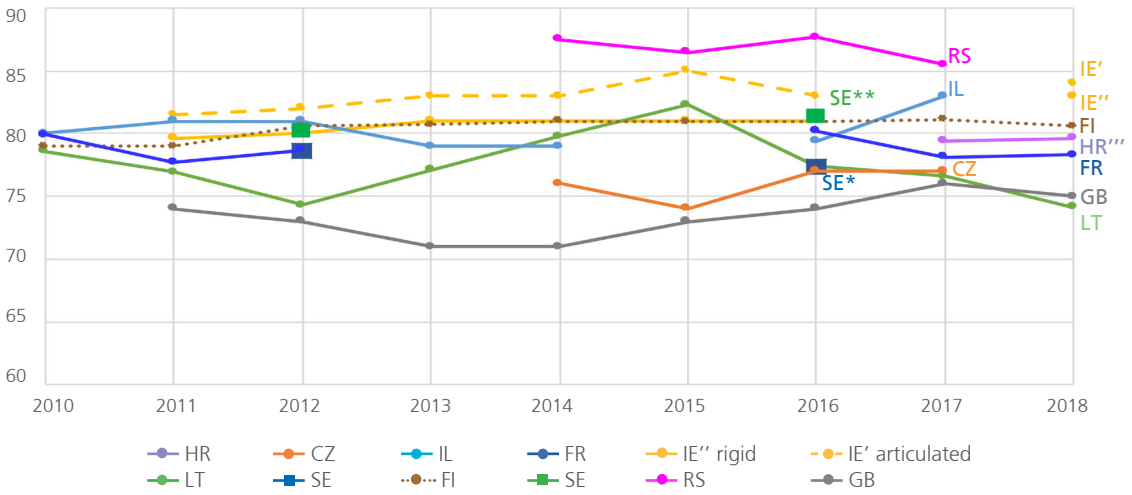


Figure 11. Average speed (in km/h) of HGVs>3.5t measured in free flowing traffic, on rural non-motorway roads with a speed limit of 80 km/h in some PIN countries since 2010 until the latest available year based on countries' individual data collection methodologies. *SE – speed is mainly measured on rural non-motorway roads but includes some motorways where a stricter 80km/h speed limit is applicable to HGVs. **SE – speed data on roads with 80 km/h speed limit for HGVs (90km/h for the rest of the traffic). '''HR - HGV and bus data together.

1.5.4 Observed HGV speeds on 90 km/h rural roads

29% of HGVs are observed going above the speed limit of 90 km/h in Israel, 23% in France and 8% in Lithuania (Fig.12).

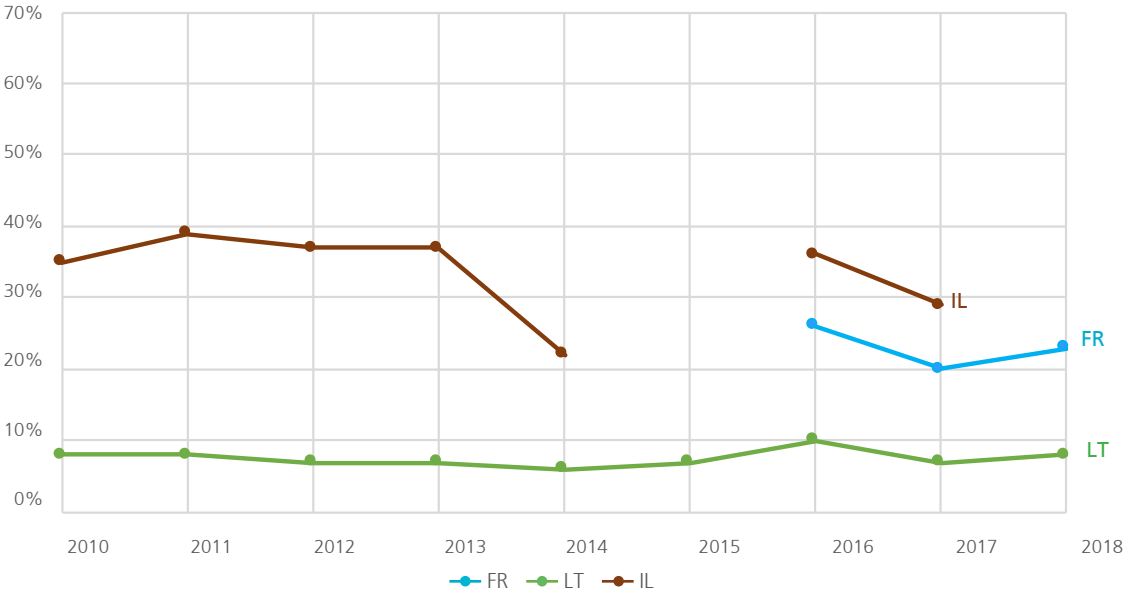


Figure 12. The proportion of HGVs>3.5t observed at speeds higher than the speed limit in free flowing traffic on 90 km/h rural roads since 2010 until the latest available year in some PIN countries based on countries' individual data collection methodologies

In the three countries where data are available, the average speed of HGVs on rural non-motorway roads with a 90 km/h speed limit is lower than the speed limit. The average speed of HGVs decreased in Israel and increased in Lithuania and France (Fig.13).

Data are available in Lithuania only for the whole time series from 2010 to 2018 which shows an increase of average HGV driving speeds from 77 km/h in 2010 to 86 km/h in 2018.

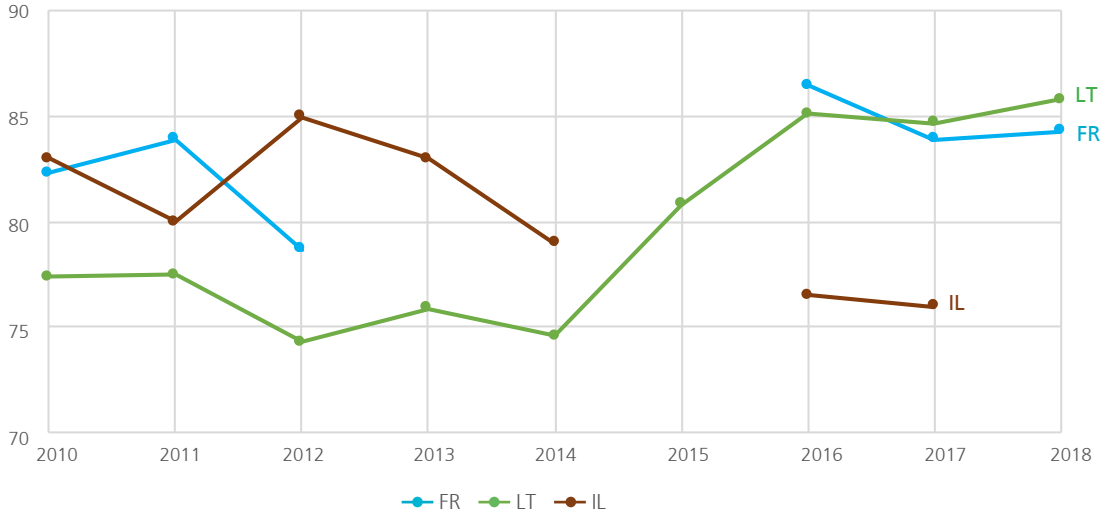


Figure 13. Average speed (in km/h) of HGVs>3.5t measured in free flowing traffic, on rural non-motorway roads with a speed limit of 90 km/h in some PIN countries since 2010 until the latest available year based on countries' individual data collection methodologies.

PART II

Fatal road collisions involving light goods vehicles (LGVs)

02

2.1 COUNTRY PROGRESS IN REDUCING DEATHS IN COLLISIONS INVOLVING LGVs

Road deaths in collisions involving light goods vehicles (LGVs) were reduced in 18 out of 24 EU countries and in Norway, Israel and Switzerland over the period 2010 and 2018 (Fig.14).

2630 people were killed in road collisions involving LGVs in the EU in 2018 alone, representing 11% of all road deaths.

The number of road deaths in collisions involving LGVs has decreased by 3.5% on average each year in the EU over the period 2010 to 2018 compared to a 2.8% annual reduction of road deaths in collisions not involving goods vehicles over the same period.[13]

Norway recorded a 12% average annual reduction in the number of deaths involving LGVs over the period 2010-2018, six percentage points faster than the progress in reducing other road deaths. Slovakia follows with an 11% average annual reduction in deaths involving LGVs, ten percentage points faster than the progress in reducing other road deaths.

Progress in reducing deaths involving LGVs stagnated in the Netherlands, Austria and Romania.

Road deaths in collisions involving LGVs increased by on average 1% annually in the UK.

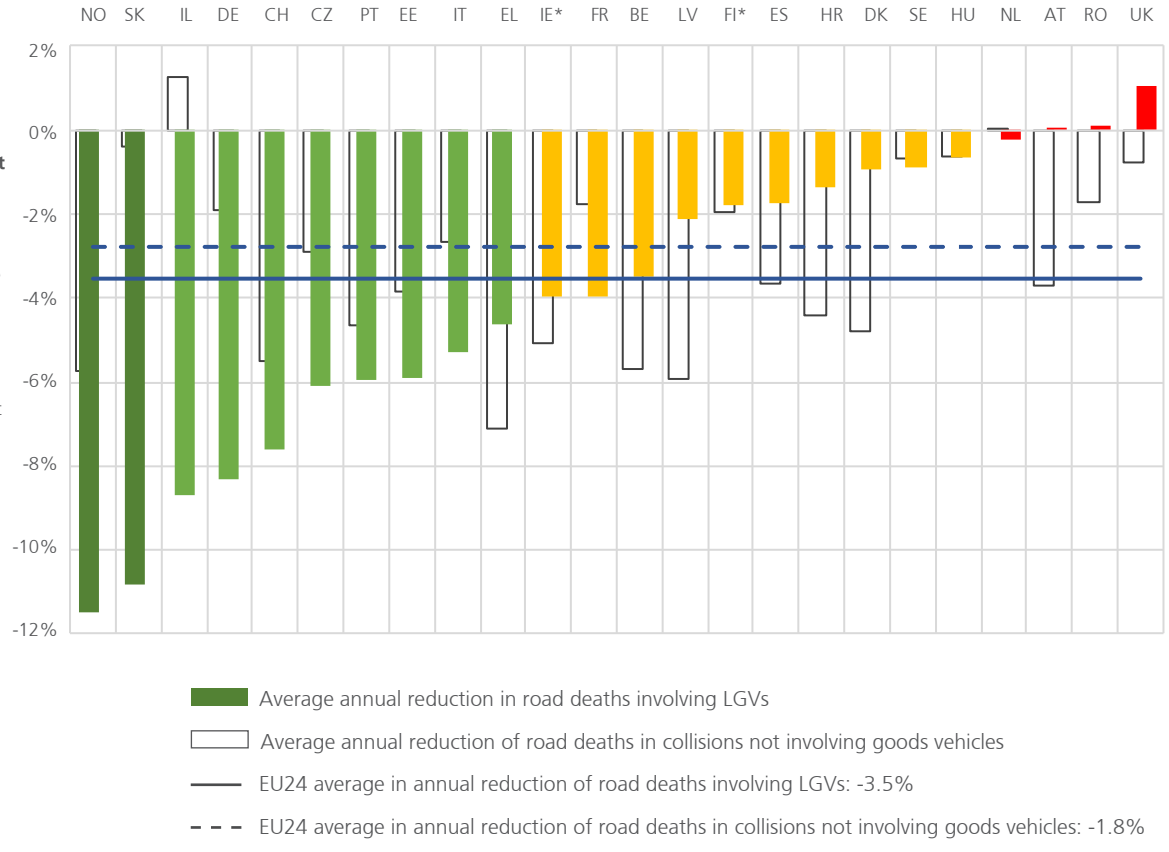


Figure 14. Average annual change in the number of reported road deaths involving LGVs compared to the average annual change in road deaths that did not involve a goods vehicle (HGV or LGV) over the period 2010-2018. CY, LU, LT and SI are excluded from the figure due to fluctuation in statistically small numbers of deaths but their numbers are included in the EU24 average. EU24 average: EU27 excluding BG, MT and PL due to insufficient data. *FI – provisional 2018 data, *IE - provisional 2017-2018 data.

[13] The average annual decrease makes use of the entire time series of all the nine annual numbers of deaths between 2010 and 2018, and estimates the average exponential trend. For more information read the methodological note of the PIN Flash 6: https://bit.ly/2LVVUtY

2.2 RISK TO ROAD USERS FROM LGV USE

In four out of the nine PIN countries that record the distance travelled by LGVs and other vehicles on these countries' roads[14], the risks posed by LGVs to other road users are similar compared to the risks posed by non-goods vehicles (Fig.15).[15]

The risks posed by LGVs are no greater than the risks posed by non-goods vehicles in Norway, Sweden, Great Britain, France, the Netherlands, Austria and Estonia. The risk posed by LGVs is slightly greater than the risks posed by non-goods vehicles in Switzerland and much greater Poland.

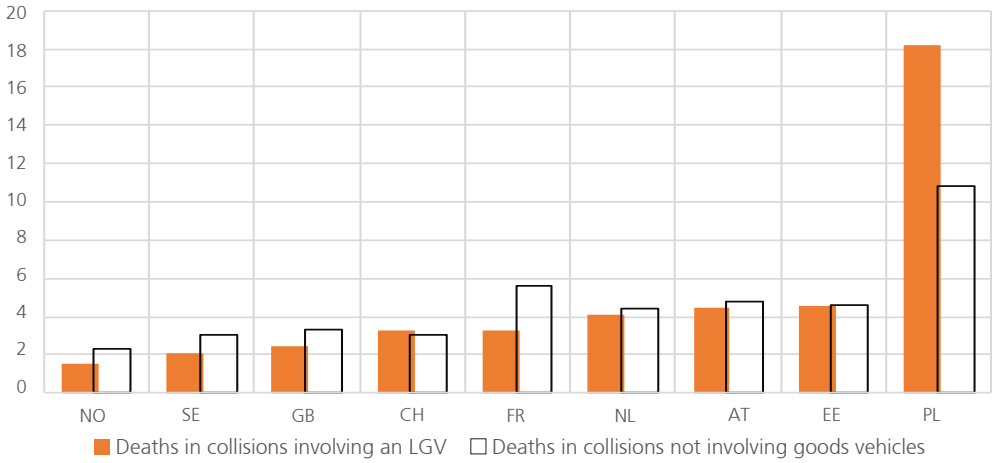


Figure 15. Road deaths in collisions involving LGVs per billion km travelled by those vehicles and road deaths in collisions not involving goods vehicles per billion km travelled by non-goods vehicles. Average for the last three years for which the data were available. Note: in this figure, deaths in collisions not involving goods vehicles include deaths in reported bicycle collisions with no motorised vehicle involved, but these form only a small proportion of deaths in collisions not involving goods vehicles.

2.3 39% OF THOSE KILLED IN COLLISIONS INVOLVING LGVs IN THE EU ARE VULNERABLE ROAD USERS

Across the EU the occupants of LGVs make up 29% of the deaths in fatal road collisions involving LGVs - 22% being drivers and 7% passengers (Fig.16). The highest number of road deaths following collisions involving LGVs is recorded among vulnerable road users. They account for 39% of all such deaths: 21% are pedestrians, 7% cyclists and 11% PTW users. 29% are occupants of passenger cars, (either drivers or passengers). Other road users account for 2% of road deaths in collisions involving LGVs.

The proportion of pedestrians among those killed in collisions involving LGVs is highest in Latvia (39%), Switzerland (37%), Lithuania and Romania (34%).

The proportion of cyclists deaths in collisions involving LGVs is highest in the Netherlands (15%), Lithuania (14%), Hungary, Poland and Latvia (10%), Sweden and Denmark (9%).

The proportion of PTW user deaths among those killed in collisions involving LGVs is highest in Greece (20%), the UK and Austria (17%), France and Portugal (16%).

The proportion of car occupant deaths in such collisions is well above the EU average in Croatia and Lithuania (41%), Romania and Czechia (38%) and Hungary (37%).

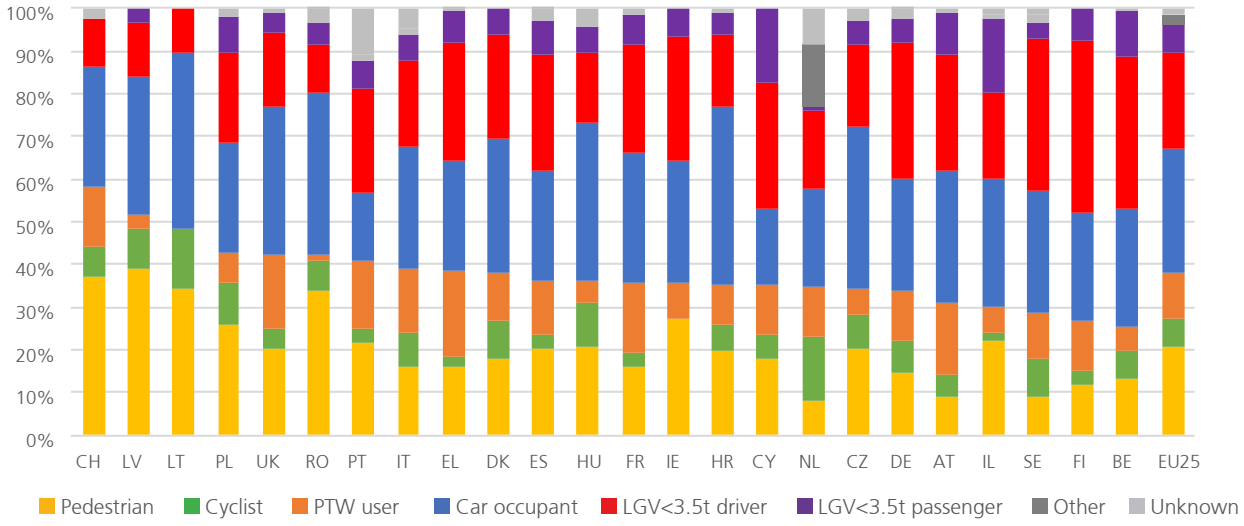


Figure 16. Proportion of deaths by road user group in collisions involving LGVs in the last three years (2016-2018), ranked by the proportion of deaths among vulnerable road users. The category "Other" in this figure includes, amongst others, fatal collisions between HGVs and LGVs. EE, LU, MT, SI and SK are excluded from the figure due to fluctuation in statistically small numbers of deaths but their numbers are included in the EU26 average. NO is excluded from the figure due to fluctuation in statistically small numbers of deaths. EU25 average: EU27 excluding BG and SK due to insufficient data.

[14] Data includes total km travelled on these countries roads, including national and international transport.
[15] For more information about this indicator, read a monograph by Stipdonk H. "The proportion of crashes involving vehicle type X, compared to distance travelled by vehicle X", www.etsc.eu/pinflash39

2.4 53% OF FATAL COLLISIONS INVOLVING LGVs IN THE EU OCCUR ON RURAL ROADS

53% of road deaths in collisions involving LGVs occur on rural roads, 33% in urban areas and 13% on motorways (Fig.17). 54% of the overall number of deaths in the EU occur on rural roads, 38% on urban roads and 8% on motorways.

91% of fatal collisions involving LGVs occur on rural roads in Finland, 77% in Sweden and 71% in Latvia. The lowest proportion of these collisions on rural roads are observed in Cyprus with 32%, Romania with 41% and Portugal and Denmark with 43%.

The differences between countries are, in part, due to differences in the classification of rural and urban roads.

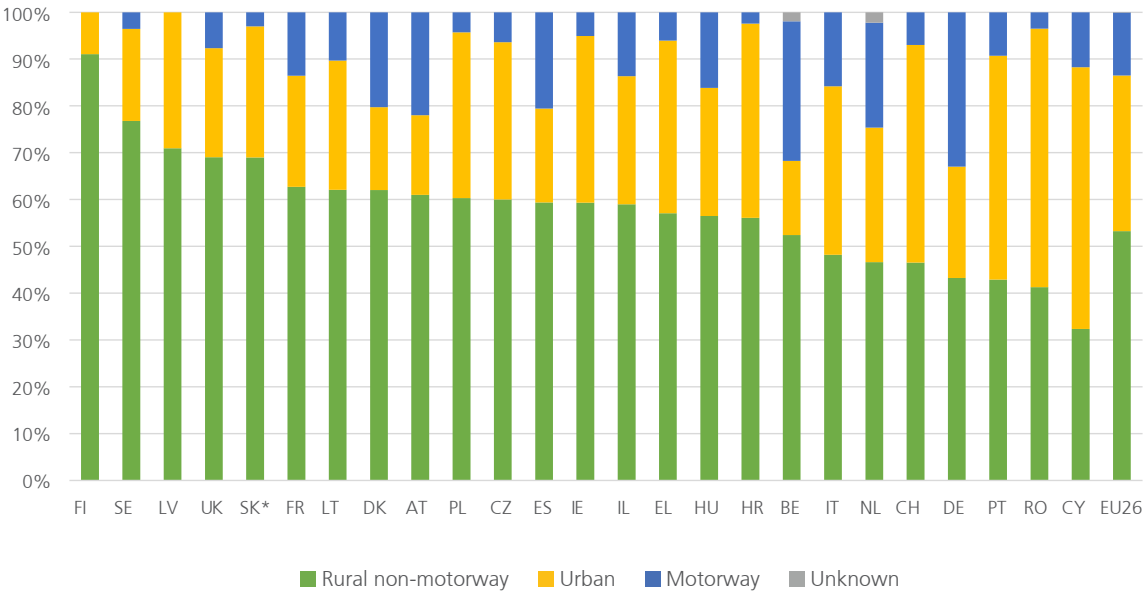


Figure 17. Proportion of deaths by road type in collisions involving LGVs in the last three years (2016-2018). *SK 2017-2018. EE, LU, MT and SI are excluded from the figure due to fluctuation in statistically small numbers of deaths but their numbers are included in the EU26 average. NO is excluded from the figure due to fluctuation in statistically small numbers of deaths. EU26 average: EU27 excluding BG due to insufficient data.

RECOMMENDATIONS ON DATA

RECOMMENDATIONS TO MEMBER STATES

- Collect data on all types of road users killed and seriously injured in collisions involving HGVs and LGVs.
- Collect and monitor high quality data on average speed rates and rates of speed limit compliance for all vehicle types separately and publish regular overviews of changes for different kinds of road user.
- Collect travel data for all road users (pedestrians, cyclists, PTWs, cars, LGVs, HGVs) by road types.
- Collect manoeuvre data (e.g. near side turn, entering roadway, crossing traffic lane etc.) in fatal and serious collisions involving HGVs and LGVs.

PART III

How to further minimise the risks posed by HGVs and LGVs

03

General, as well as targeted, road safety measures should be combined in order to sustainably reduce road deaths in collisions involving heavy goods vehicles (HGVs) and light goods vehicles (LGVs). These measures are related to safe road infrastructure (e.g. median barriers, rumble strips, safe intersections, safe pedestrian and bicycle crossings), safe road use (e.g. sober drivers, use of seatbelts, secured loads, speed limit compliance) and safe vehicles. Measures also include the enforcement of current legislation, particularly when aimed at HGVs and LGVs, the promotion and large-scale rollout of life-saving technologies, and the training of road users with a particular focus on those who drive as part of their work or profession.

GENERAL RECOMMENDATIONS TO MEMBER STATES

- Enforce compliance with speed limits through, inter-alia, installing safety cameras that are able to apply the lower speed limits for HGVs where applicable.
- Consider road use by goods vehicles, matching the use of each road to the functions that the road serves in terms of living space, access and through movement.
- When possible, separate traffic in opposite directions by a median barrier and install side barriers. To facilitate safe cycling and walking, build separated paths along the roadway.
- When possible, build safe overtaking areas for two lane roads (following the concept of 2+1 roads in Sweden and other countries).

RECOMMENDATIONS TO CITIES

- Consider introducing access restrictions for goods vehicles considered to present a high risk to pedestrians and cyclists.
- Introduce logistics plans for urban areas that allow loading and unloading only at times when there are few vulnerable road users on the road.
- Provide sufficient parking spaces for delivery by goods vehicles.

3.1 VEHICLE SAFETY

The EU's General Safety Regulation and Pedestrian Safety Regulation were updated in 2019, with improved passive and active safety requirements for new vehicles sold in the EU.[17]

Under the new legislation, motor vehicles, including HGVs, buses, LGVs and cars, will have to be equipped with safety features, including Intelligent Speed Assistance (ISA) and interfaces to support alcohol interlocks.[18] Supplementary advanced safety measures will be required for cars and LGVs, including Automated Emergency Braking (AEB) with vulnerable road user detection and enlarged head impact protection zones capable of mitigating pedestrian and cyclist injuries.[19] Most of the measures will come into effect in 2022 for new models and in 2024 for existing models.

In addition to the general requirements (such as ISA and AEB), HGVs and buses will have to comply with direct vision standards, which should significantly reduce blind spots, from 2026 for new models and from 2029 for existing models. The direct vision standards will be accompanied by advanced systems capable of detecting pedestrians and cyclists located in close proximity to the vehicle.

3.1.1 Intelligent Speed Assistance is crucial for goods vehicles

Between 17% and 64% of observed HGV speeds are higher than the legal speed limit of 50 km/h on urban roads in EU countries where speeding data are available. The levels of observed HGV speeds higher than the speed limit on rural roads are between 8% and about 30% (see part 1.5).

Because of their large mass, a collision with a heavy goods vehicle (HGV) has severe consequences for other road users. Even at relatively low speeds, HGVs pose major risks, in particular for vulnerable road users. Fast moving HGVs create even greater risks. Speed management of HGVs is therefore a vital component of road safety.
New HGVs will have to be fitted with overridable

[17] Regulation (EU) 2019/2144 of the European Parliament and of the Council of 27 November 2019 on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, http://bit.ly/2RZ6xh5

[18] ISA is a vehicle safety technology already available on several models of new cars in EU showrooms. ETSC is calling for ISA systems that use a sign-recognition video camera and a GPS-linked speed limit database to help drivers keep to the current speed limit. Such a system will limit engine power when necessary to help prevent the driver from exceeding the current speed limit. The system can be overridden, or temporarily switched off. As well as improving road safety, reducing emissions and saving fuel, the system can help drivers avoid speeding fines. https://etsc.eu/briefing-intelligent-speed-assistance-isa/

[19] Council of the European Union, Press release (2019), EU beefs up requirements for car safety, http://bit.ly/2NndrZx

Intelligent Speed Assistance (ISA) systems as from 2022 for new types and 2024 for current models. Directive 2002/85/EC[20] already requires the use of top speed limitation devices with the maximum speed limit set at 90 km/h for all vehicles over 3.5t. However, these top speed limitation devices do not prevent HGVs from speeding on roads where speed limits are lower, nor even on all motorways, as in half of EU countries the maximum legal speed limit on motorways for HGVs is 80 km/h or less.[21] The ISA system will therefore assist drivers to adhere to speed limits lower than 90 km/h.

The detailed technical specifications for mandatory ISA systems are currently being drafted by TRL on behalf of the European Commission. ETSC supports the proposal by TRL, in their interim report on the minimum specifications for Intelligent Speed Assistance for HGVs, to require traffic-sign detection systems that recognise lower limits for HGVs. *"The system shall be able to detect if relevant road signs that apply only to particular vehicle categories/classes, indicated by sub-signs, and perceive the correct speed limit."*[22]

Trucks above 3.5t are limited to 30km/h when entering Morbecque in the north of France, while all other vehicles are limited to 50km/h.

3.1.2 Large goods vehicle blind spots lead to pedestrian and cyclist deaths

Pedestrians and cyclists are often hidden in an HGV driver's blind spot - right in front of or directly to the side, especially the passenger side, of an HGV. The majority of HGVs are designed to maximise the load space that can be achieved within the legally permitted maximum dimensions. This means that almost all HGVs have a 'brick' shape. The dimensions of HGV front and side windows lead to large blind spots in the driver's field of vision. Those blind spots change when the vehicle is turning, particularly because the trailer unit always turns along a tighter path than that of the cabin unit.[23]

To partially address this issue, Council Directive 96/53/EC laying down the maximum authorized weights and dimensions of a certain categories of vehicles, including the HGVs, was modified in 2015 by Directive 719/2015. Some of the objectives of the revision were to improve road safety and to adapt to technological developments. This modification, together with the corresponding revision of the type approval legal framework in 2019, introduced the possibility to grant a length extension to HGV equipped with more aerodynamic and safer cabs, ensuring that they provide benefits in terms of energy performance, better visibility for drivers, safety to other road users as well as safety and comfort for drivers.

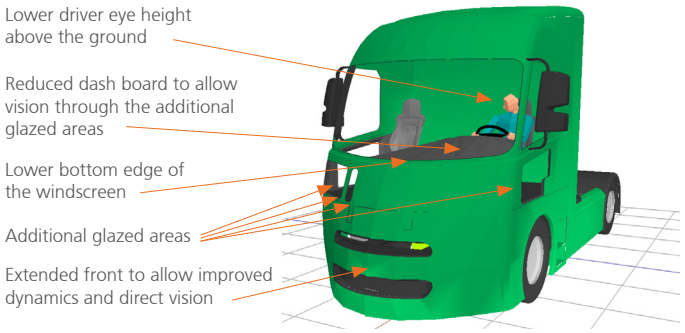
Council Directive 96/53/EC was further revised by Decision (EU) 2019/984 as regards the time limit for the implementation of the special rules regarding maximum length for cabs delivering improved aerodynamic performance, energy efficiency and safety performance. Thanks to this decision, elongated safer cabs for HGVs were allowed as from 1st September 2020.

There were no international or European rules defining what an HGV driver should be able to see directly through the windscreen or side windows (direct vision) – though such standards do exist for passenger cars. Instead, so far European and international regulations have focused on indirect vision, i.e. through mirrors. While mirrors are essential, the coverage they provide, especially immediately ahead of and alongside the driver's cab, can be enhanced substantially by extended and better-placed glazing and/or low-entry or otherwise remodeled cabs.[24]

According to a Danish in-depth study of road collisions involving HGVs, of the 25 HGVs that were involved in collisions with cyclists, 21 had incorrectly adjusted mirrors, 8 of which were directly related to the collision.[25]

[20] Directive 2002/85/EC of the European Parliament and of the Council of 5 November 2002 amending Council Directive 92/6/EEC on the installation and use of speed limitation devices for certain categories of motor vehicles in the Community, https://goo.gl/ePMYHy
[21] Countries where legal speed limit on motorways for HGVs is 80 km/h or less: Austria, Cyprus, the Czechia, Germany, Denmark, Spain, Finland, Hungary, Italy (HGV>12t), Lithuania, Malta, the Netherlands, Poland, Slovenia, Switzerland, Israel, Norway.
[22] TRL (2020), Intelligent Speed Assistance (ISA): Interim report, https://bit.ly/2YERzQN
[23] ETSC (2014), Weights and dimensions of heavy goods vehicles – maximising safety, http://bit.ly/2qRURkF
[24] As allowed by the EU Decision on Weights and Dimensions (2019/984) permitting an extension of the dimensions of HGVs, enabling more rounded aerodynamic chassis that include crumple zones along with better visibility and protection of car occupants, pedestrians and cyclists.
[25] European Cyclists' Federation, General Safety and Pedestrian Safety Regulations, https://bit.ly/2VzdJRj

There are three to four main mirrors at the passenger side and one up front. The work of Richard Wilkie (Leeds University) commissioned by TfL for the European Commission highlighted the issues with indirect vision in comparison o direct vision.[26] Viewing a pedestrian directly resulted in reaction times that were approximately 0.7s quicker than indirect viewing. At slow (15 mph=24 km/h) driving speeds this would equate to 4.7m of extra travel before braking, more than enough to collide with a pedestrian crossing in front of the vehicle. Even at 5 mph (8 km/h, i.e. pulling off speed) this still equates to 1.5m of extra travel. Any collision with an HGV, even at 8 km/h has the potential to be fatal. The number of drivers colliding with simulated pedestrians was 23% higher for the traditional cabs, compared to the low entry cabs. When the drivers were required to perform a mental task while driving, collisions were 40% higher in the traditional cabs, demonstrating that a distracting task may disproportionately affect drivers of cabs without direct line of sight to vulnerable road users. Better direct vision would reduce glance time and improve cognitive visual appreciation of the environment around the cab.[27]



Improved safety features of the direct vision concept, based on LDS Loughborough Design School and FKA [27]

The EU has adopted requirements for improved direct vision in the revised General Safety Regulation (GSR), which will come into effect in 2026 for new models, and 2029 for current models: "*Vehicles of categories M2, M3, N2 and N3 shall be designed and constructed so as to enhance the direct visibility of vulnerable road users from the driver's seat, by reducing to the greatest possible extent the blind spots in front and to the side of the driver, while taking into account the specificities of different categories of vehicles.*"[28] Transport Research Laboratory (TRL) estimated the lifesaving potential of better direct vision to be up to 553 lives saved per year in the EU.[29] The number of lives saved in the real world will depend on the final standard. The specifications are currently being discussed at the international (UNECE) level, with the help of researchers from Loughborough Design School (UK) who were involved in the city of London's Direct Vision Standard for lorries.[30] ETSC and other stakeholders are asking for design standards that correspond to at least the London Direct Vision Standard 2 star rating for all N3 lorries (>12t) and the 4 star rating for all N2 lorries (>3.5t and <12t).[31]

A 2018 study conducted by Vias Institute in Belgium analysed 29 collisions that occurred in an HGV's blind spot and resulted in the injury of a pedestrian or cyclist in Antwerp. In those particular collisions, the highest risk for VRUs was when they were in the blind spot located to the right of the passenger side of the cab, as well as the blind spot directly in front of the cab. In more than half of those collisions, the vulnerable road-user was directly or indirectly visible (i.e. through mirrors) to the HGV driver. This indicates that an appreciable proportion of the collisions were attributable to the complexity of the HGV driver's driving task.[32]

This is why, with the updated General Safety Regulation (GSR), sensors able to detect a pedestrian or a cyclist located in the blind spots near the front or side of the cab will also be mandatory as from 2022 for new models and 2024 for current models.

Yet the average age of HGVs in the EU is 12 years[33] and it will take many years until there is a large-scale market penetration of HGVs with direct vision cabs. To accelerate the process, Member States and local authorities should introduce public procurement requirements for safe vehicles or urban access regulations for safe

[26] Transport for London (2016), Exploring the Road Safety Benefits of Direct versus Indirect Vision in HGV Cabs: A study exploring the potential improvements to road safety through expanding the HGV cab field of vision, https://bit.ly/2T1p3Fr
[27] Transport and Environment (2014), Briefing: Ending lorries' deadly track record: a matter of (direct) vision, https://bit.ly/2ZsnUdI.
[28] Regulation (EU) 2019/2144 of the European Parliament and of the Council of 27 November 2019 on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, http://bit.ly/2RZ6xh5
[29] TRL (2015), Benefit and feasibility of a range of new technologies and unregulated measures in the fields of vehicle occupant safety and protection of vulnerable road users, https://bit.ly/3chH9d8
[30] UNECE, Working Party on General Safety Provisions (GRSG); Summerskills S. et.al (2019), The definition, production and validation of the direct vision standard (DVS) for HGVS. Final Report for TfL review, https://bit.ly/39h7er7
[31] Transport for London, DVS star ratings and Safe System improvements, https://bit.ly/3akAMoa
[32] Vias institute (2018), In-depth investigation of crashes involving heavy goods vehicles, http://bit.ly/36udcEj
[33] ACEA (2019), Average age of EU motor vehicle fleet, by vehicle type, https://bit.ly/2K53YVu

HGVs, as is the case in London.

The Mercedes Econic low entry tipper

LONDON
THE DIRECT VISION STANDARD AND SAFETY PERMIT SCHEME FOR HGVs

The Direct Vision Standard and HGV safety permit for HGVs are part of the Mayor of London's Vision Zero plan to eliminate all deaths and serious injuries on London's transport network by 2041.[35] The world's first Direct Vision Standard for HGVs gives HGVs a star rating, measured by how much a driver can see directly through their cab windows.[36] The rating goes from zero stars (the lowest rating, with poor direct vision) up to five stars (the highest rating with excellent direct vision). Operators have been able to apply for permits since October 2019. As from March 2021, all (new and old) trucks over 12t will need to hold a valid HGV safety permit to enter or operate in London. The policy will encourage the use of vehicles that are more appropriate for urban environments.

The scheme is progressive:

- From March 2021: all zero-star HGVs will be banned unless they have a 'safe system' retrofitted i.e. extra cameras and sensors.[37]

- By 2024, all zero to two-star HGVs will be banned unless they have a 'progressive safe system' retrofitted. The progressive safe system will build on the requirements of the 2021 safe system, but will take into account advances in technology.

THE GERMAN GOVERNMENT
CALLS FOR PERMANENTLY ACTIVE AEB ON HGVs AND PROVIDES NATIONAL INCENTIVES FOR VOLUNTARY USE OF HGVs TURNING ASSISTANCE SYSTEMS

While the current EU General Safety Regulation (GSR) has mandated Autonomous Emergency Braking (AEB) in all new HGVs since 2015[38], drivers are able to manually deactivate the system. Due to a number of serious collisions involving HGVs fitted with AEB that had been manually deactivated, the German government requested the UNECE's WP.29, the international body for harmonisation of vehicle standards based in Geneva, to update its HGV AEB technical specification to require a permanently active AEB in HGVs without a possibility for manual deactivation by the driver. Temporary interruption of automatic AEB would only be possible in specific traffic situations (e.g. when vehicle speed is lower than 30 km/h) with automatic reactivation when the vehicle is back to higher speeds. AEB systems should be overridable by driver actions, such as steering or braking. The AEB system should be improved by eliminating false alarms and allowing the detection of smaller road users, such as motorcycles, bicycles and pedestrians.

While HGV turning assistance systems will eventually become mandatory in the EU, the German Ministry of Transport (BMVI) has decided to accelerate the uptake of the system by launching a "Turn Assistant" campaign. Companies, municipalities and organisations are encouraged to sign safety partnership agreements voluntarily committing to retrofit their fleets with turning assistance or to purchase new HGVs with such systems. Organisations without their own fleet can become safety partners if they work with third parties that operate HGVs. Technical requirements issued by the Federal Motor Transport Authority must be met when retrofitting existing fleets. Partners that meet the requirements receive an official certificate and their list is published on the BMVI website. The BMVI also provides some funding opportunities for stakeholders participating in the initiative.

[34] TfL, Safer lorry scheme, http://bit.ly/32ZhjXs, TfL, Direct vision standards and HGV safety permit, http://bit.ly/2MXnpC3, TfL, Bus safety, http://bit.ly/2Jy3yat
[35] TfL (2018) Vision Zero Action Plan, https://bit.ly/2VAOzBH
[36] Summerskills S. et.al (2019), The definition, production and validation of the direct vision standard (DVS) for HGVS. Final Report for TfL review, https://bit.ly/39h7er7
[37] List of technologies that will have to be fitted on a 0 star truck available here: https://bit.ly/3et8USb
[38] The regulation is applicable for new types of HGVs from 2013.

To further prevent turning collisions, an update of the German traffic code came into force on 28 April 2020 which obliges drivers of vehicles over 3.5t to drive at the so called "walking speed" of 7 km/h while turning. Offending this law will be fined with 70€ and one penalty point. The updated traffic code also includes a compulsory distance of 1.5m inside and 2m outside urban areas when overtaking cyclists, e-scooter riders and pedestrians by all kinds of vehicles including HGVs and LGVs.[39]

DENMARK
WORK ON THE REDUCTION OF NEARSIDE TURN COLLISIONS BETWEEN HGVs AND CYCLISTS

In 2005, the Danish Minister of Transport set up a unique cooperation forum consisting of a wide range of authorities and organisations to work on preventing collisions with right-turning HGVs and cyclists going straight ahead. The efforts to prevent right-turn collisions in Denmark are based on the recommendations of the National Accident Investigation Board and include safer design of roads and intersections, in-depth analyses and studies, targeted police controls, campaigns, training of HGV drivers and improved vehicle technology. The result of the joint interventions has been a significant reduction in collisions over the years. The Danish Road Traffic Authority Agency is also advocating for EU rules mandating lower HGV cabs with better direct vision.[40]

AUSTRIA
RESTRICTIONS FOR RIGHT TURNING HGVs

A recent update to the Austrian Highway Code makes it possible for municipalities to ban right turning for those HGVs (>7.5t) which are not equipped with electronic right-turn assistants or warning systems - either on the whole municipal road network or on parts of it. It is expected that the city of Vienna will decree such a ban in spring 2020 on the whole city road network, allowing for a transitional period until the end of 2020.

ANTWERP
TRIAL OF HGV BAN AT THE BEGINNING AND END OF SCHOOL DAY

In 2019, the Belgian city of Antwerp launched a trial of restrictions on HGVs in one residential area during the early morning and afternoon on school days when children are travelling to and from school.

"Due to efficient and timely communication ahead of the launch of the pilot project, logistics stakeholders were fully prepared to comply with the measure. We are now considering extending the pilot project to another area in the city. The chances that this initiative will become a regular restriction in certain areas in Antwerp are quite high. However, there are still a lot of challenges to overcome before we get there (e.g. proper enforcement). So we made the first steps but there are more to follow."

"We are currently working on a new project called a "route planner for trucks" in cooperation with two large supermarket chains. The idea is to figure out the parameters and their value to establish the safest (e.g. no schools, separate bicycle infrastructure) but still efficient routes for the last mile."
Laura Tavernier, Antwerp municipality

ITALY
FINANCIAL INCENTIVES TO RENEW HGV FLEET

As from 2015, national resources are allocated to encourage a renewal of the HGV fleet in Italy. In 2019, €25 million were allocated for the implementation of the initiative, including buying or leasing new more environmentally friendly HGVs and scrapping old HGVs. While the measure primarily focuses on environmental aspects, it also brings some road safety benefits as new HGVs have safety systems, such as Electronic Stability Control and Autonomous Emergency Braking. Partially due to the measure, the number of HGVs that are less than 3 years old increased from 8% in 2015 to 12% in 2018.

[39] BMVI, Neue Verkehrsregeln gelten, https://bit.ly/3foYGmn
[40] Danish Road Directorate (2019), Prevention of right-turn accidents in Denmark, https://bit.ly/3aP03Hb

3.1.3 RECOMMENDATIONS ON VEHICLE SAFETY

RECOMMENDATIONS TO MEMBER STATES

- Include safety as a criterion for public procurement involving the use of goods vehicles and require vehicle safety features such as direct vision, Intelligent Speed Assistance (ISA), Automated Emergency Braking (AEB) with pedestrian and cyclist detection and alcohol interlocks in fleets providing public services and throughout the supply chain until such a time as all vehicles on the roads have such features.
- Attend UNECE WP.29's working groups dealing with vehicle regulations and insist on the highest achievable standards with regard to the implementation of the General Safety Regulation 2019/2144.
- Encourage employers through financial incentives (such as tax breaks) to fit and purchase vehicles with in-vehicle technologies that have a high life-saving potential.
- Promote the uptake of speed management technology amongst goods vehicle fleets. Buy or lease new goods vehicles fitted with ISA, or retrofit existing fleets with ISA or telematics that can monitor speed compliance.[40]

RECOMMENDATIONS TO MEMBER STATES AND EU INSTITUTIONS

Following the adoption of the revision of the General Safety Regulation (GSR) on new minimum safety standards for new vehicles:

- Deliver on the estimated number of deaths and serious injuries prevented by adopting strong and timely secondary regulation implementing the General Safety Regulation;
- Insist on the highest achievable vehicle regulation standards at UNECE with regards to blind spot detection systems and direct vision; i.e. minimum 2 stars for all N3 lorries (>12t), and 4 stars for all N2 lorries (>3.5t and <12t);
- Require a high level of performance of Intelligent Speed Assistance (ISA) systems to be fitted in all new vehicles; the system should be overridable up to only 90 km/h for HGVs (in line with existing EU legislation on speed limiters). Check that speed sign detection systems are able to detect lower speed limits for HGVs.

In the next revision of the GSR:

- Consider the feasibility and acceptability of non-overridable Intelligent Speed Assistance (ISA) for HGVs;
- Mandate top speed limiters on LGVs;
- Mandate Autonomous Emergency Braking (AEB) systems with pedestrian and cyclist detection for all new HGVs;
- Mandate alcohol interlocks for vehicles driven by professional drivers.

3.2 REGULATIONS FOR HGV DRIVERS SHOULD BE EXTENDED TO LGV DRIVERS

3.2.1 An increasing distance travelled by LGVs

11 out of the 15 PIN countries where LGV travel data were available have seen an increase in the distance driven by LGVs.

In general there is a shift from use of HGVs to LGVs. More LGVs are being used during office hours in central urban areas[42], as heavier vehicles face increasingly restricted access to city centres. Night-time LGV deliveries are also increasing, extending deliveries to evenings or early mornings. In addition, the online shopping phenomenon has led to a large increase in next-day deliveries of small items to customers in their workplaces alongside growth in deliveries to households.

The pressure to keep up with market demands, competition in the movement of goods and a relative lack of regulation has led to poor working conditions for LGV drivers and increased safety risks.

LGVs weighing less than 3.5t are not subject to the same regulations on drivers and working hours as HGVs, although those over 2.5t that are involved in international transport will now be subject to driving hours and rest periods as well as tachograph legislation (see below).

EU HGV regulations require operators to be licensed and drivers are required to obtain Certificates of Professional Competence (CPC), which must be regularly updated. LGV fleets are able to operate with lower standards. More can and should be done to improve the safety of LGV fleets to bring them into line with the rest of the freight and passenger transport sector.

[40] ETSC (2018), Using telematics in professional vehicle fleets, https://bit.ly/3el6Ds9
[42] BESTUFS, 2006, Report on urban freight data collection in Belgium.

3.2.2 Updates to EU Regulation 561/2006/EC on driving hours and rest periods

Regulation 561/2006/EC[43] provides a common set of EU rules for maximum daily and weekly driving hours, as well as daily and weekly minimum rest periods for all drivers of road haulage and passenger transport vehicles. Regulation 561/2006/EC, along with Regulation 165/2014/EC on tachographs for recording vehicle movements and driver activity, are in the process of being updated as part of negotiations on the EU Mobility Package I[44] due for final adoption in the coming months.[45]

According to the updated legislation that looks set to be agreed, international transport operators using light commercial vehicles of over 2.5t would, for the first time, also be subject to EU requirements for transport operators and would need to equip LGVs with a tachograph[46].

However, the updated Regulation 561/2006/EC will not apply to internationally-operated LGVs below 2.5t nor to LGVs below 3.5t operating nationally. ETSC has long advocated for EU rules applicable to professional drivers regarding driving and resting times to be extended to cover all drivers operating LGVs for commercial purposes, not just those engaged in international transport.

One of the major risk factors affecting HGV and LGV drivers is fatigue. Research shows that driver fatigue is a significant factor in approximately 20% of collisions involving commercial vehicles.[47] A rule of thumb is that no driver should drive continuously for more than two hours without at least a 15-minute break. Fatigue-related collisions have very severe consequences.[48]

Another significant change in the updated legislation is a ban on taking weekly rest periods in the cab. If the rest period is taken away from home, the employer will be obliged to cover accommodation costs. This could help reduce fatigue to some extent, as long as it is appropriately enforced.

Another small improvement is an attempt to reduce inducements to speed. A transport undertaking shall not give drivers it employs or who are put at its disposal any payment, even in the form of a bonus or wage supplement, related to distances travelled, the speed of delivery and/or the amount of goods carried if that payment is of such a kind as to endanger road safety or encourages infringement of this Regulation.[49]

However, the updated rules contain a new derogation which could be counterproductive, whereby exceptionally, international drivers' longer weekly rest periods can be accumulated over a longer period, up to two and half weeks apart, up from two weeks under the current rules. This change could increase fatigue – with drivers forced to work without a longer rest period over an extended time frame. The use of this derogation must be carefully enforced by the authorities to be sure that this derogation is used only in exceptional circumstances, as set in the new law, by employers in their logistics planning. It should also be subject to review and reassessment in the future if exploited unduly.

[43] Regulation (EC) No 561/2006 of the European Parliament and of the Council of 15 March 2006 on the harmonisation of certain social legislation relating to road transport and amending Council Regulations (EEC) No 3821/85 and (EC) No 2135/98 and repealing Council Regulation (EEC) No 3820/85, https://goo.gl/52bg8u
[44] European Commission (2017), Europe on the Move: Commission takes action for clean, competitive and connected mobility, https://bit.ly/2VuQYxB
[45] European Parliament Press Release on Mobility Package Deal (21.01.2020), https://bit.ly/2QMgixP
[46] Ibid
[47] ETSC, PRAISE (2011), Tackling Fatigue: EU Social Rules and heavy goods vehicle drivers, https://goo.gl/VoMDlu
[48] ETSC (2018), ETSC Position Paper on Proposed Changes to Driving and Resting Time, https://bit.ly/3a5m18v
[49] European Parliament Press Release on Mobility Package Deal (21.01.2020), https://bit.ly/2QMgixP

3.2.3 Tachographs for larger LGVs

A tachograph is a recording device fitted to commercial vehicles with a mass exceeding 3.5t that records vehicle movements and driver activity. Under the new rules, HGVs must be fitted with a 'smart' tachograph by 2025 at the latest.[50] The introduction of smart tachographs will help with the gathering of more detailed, reliable and accurate information on vehicle movements and driver activity. This could help improve enforcement and compliance with social and cabotage rules (which govern the rights of foreign transport companies to offer services within the borders of another country).[51]

According to the latest update of the rules, international transport operators using light commercial vehicles of >2.5t would also be subject to EU regulations on transport operators and would need to equip these larger LGVs with a smart tachograph by June 2026 at the latest.[52]

CROSS BORDER HGV INSPECTIONS REVEAL HIGH LEVELS OF DRIVING HOUR AND TACHOGRAPH OFFENCES

During the cross border control weeks organised by Euro Contrôle Route (ECR)[53] in 2017, 242,758 commercial vehicles were stopped for technical inspections. Slightly over one fifth of the vehicles checked, 53,960 (22%) were found to have at least one infringement. 27% of all offences were driving hour offences and 10% tachograph offences.[54]

3.2.4 Roadside vehicle inspections, risk ratings for transport operators and securing cargo

Under EU law, unannounced roadside inspections of HGVs can be carried out in any EU country, whether or not the vehicle is registered in the EU. These checks cover brakes, emissions and the vehicle's overall condition. Drivers may also be required to produce recent inspection reports or proof the vehicle has passed a mandatory roadworthiness test.[55]

According to Directive 2014/47/EC on roadside technical inspections, 5% of the total number of HGVs registered in the EU should undergo roadside inspections every year. This target is often missed. Technical inspection services have lost personnel and capacity in the past decade across the EU, even as demand for transport services has increased. To help make more efficient use of the remaining resources, checks should target repeat offenders who may pose a higher risk.[56]

According to Directive 22/2006 on enforcement of social rules, EU Member States should introduce a Risk Rating System for transport undertakings based on the number and severity of infringements of driving hours rules. The aim is to increase checks on undertakings with a poor record. This approach obliges Member States to exchange data and launch a European Risk Rating System through which poorly performing companies can be identified and targeted at the EU level. The update of the rules will also enhance EU Member State co-operation on enforcement by including the sharing of 'other specific information, including the risk rating of the undertaking, liable to have consequences for compliance with the provisions of this Regulation.'[57]

Correct securing of cargo is another important measure to improve road safety in the commercial transport sector. Every day road collisions occur as a result of cargo that has not been properly stowed or secured.

Cargo must be placed on the vehicle so that it can neither endanger persons nor goods and cannot move on or off the vehicle. European Best Practices Guidelines were redrafted and adopted in 2014 to provide technical background information as well as practical securing rules for road transport.[58] They also serve as a common basis for both practical application and enforcement of cargo securing. Yet according to the 2014 revision of the Directive the inspection of cargo securing is optional for Member States.[59]

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[50] Ibid
[51] ETSC (2018), ETSC Position Paper on Proposed Changes to Driving and Resting Time.
[52] European Parliament Press Release on Mobility Package Deal (21.01.2020).
[53] Euro Contrôle Route (ECR) is a group of European Transport Inspection Services working together to improve road safety, sustainability, fair competition and labour conditions in road transport by activities related to compliance with existing regulations.
[54] Euro Contrôle Route, https://bit.ly/2wPWPpa
[55] European Commission, Vehicle inspection, https://bit.ly/2K15VIS
[56] Upcoming ETSC position on roadworthiness.
[57] European Parliament Press Release on Mobility Package Deal (21.01.2020), https://bit.ly/2QMgixP
[58] European Commission (2014) Best Practice Guidelines Cargo Securing for Road Transport, https://bit.ly/34BCn83
[59] Upcoming ETSC position on roadworthiness.

3.2.5 EU Directive 2003/59/EC on the Certificate of Professional Competence (CPC)

Under rules set out in Directive 2003/59/EC[60], Member States issue professional drivers with certificates of professional competence (CPCs), certifying initial qualifications and periodic training. These skills and knowledge are kept up-to-date through periodic training.[61] One of the objectives of the Directive is to make drivers aware of road risks and accidents at work. The directive covers road haulage and passenger transport drivers but does not apply to LGVs (<3.5t).

The vast majority of EU Member States rely exclusively on EU legislation on professional driver training. Only Belgium, Germany, Italy and Sweden go beyond the minimum requirements established in the CPC Directive. It is therefore crucial to have a high minimum standard across the EU.

Driver training can be an important tool for reducing work-related road risk. But it is only one part of an employer's road safety programme, which should also focus on issues such as management culture, vehicle safety, journey management and safety of sites.

In-vehicle, skills-based driver training is one type of training. Research suggests that driving is about more than just skills. Health, well-being, lifestyle, attitude, knowledge, hazard perception, attention to detail, hand eye co-ordination, concentration, anticipation and observation, coping with stress and aggressive driving and the reactions of others, are all important and should be reflected in the EU's CPC rules.[62]

PRAISE
Work-Related Road Safety

Whether employed directly or self-employed, drivers of commercial vehicles are influenced by the terms and conditions of their employment and rules and procedures laid down at work.

Therefore part of the solution to reducing commercial vehicle involvement in fatal road collisions must recognise the key role of employers in influencing a sustainable reduction in road collisions by managing risk through appropriate safety management systems.

Duty of care, occupational safety and health (OSH) and road safety compliance are legal necessities in all EU Member States, and employers must take them into consideration.

For more information and ETSC recommendations for employers on LGV and HGV safety, read ETSC's PRAISE reports and case studies that are available at www.etsc.eu/PRAISE

3.2.6 RECOMMENDATIONS ON REGULATION

RECOMMENDATIONS TO MEMBER STATES

- Provide adequate resources, equipment and training to facilitate enforcement of driving time rules and roadworthiness.
- Equip enforcement officers with knowledge and equipment to be able to spot tachograph-related fraud and prevent it from occurring in commercial road freight.
- Establish a risk monitoring system to include not only tachographs and drivers' hours noncompliance but also other areas which present a risk to other road users such as overloaded vehicles and defective vehicles.

RECOMMENDATIONS TO EU INSTITUTIONS

- Work with Member States towards achieving a more harmonised approach to checks and penalties for tachographs and driving times rules.
- Support the implementation of the European Risk Rating System and deal with barriers to data sharing among national authorities.
- Extend the legislative framework for working time and driving and resting hours to cover all professional LGV drivers, not just international transport.
- Extend the current CPC requirement (professional driver training) to all professional LGV drivers, in the context of an integrated approach to risk assessment.

Within the context of the upcoming revision of Directive 2014/47/EC on technical roadside inspections of commercial vehicles:

- Include all LGVs in regular roadside technical inspections;
- Develop a harmonised training curriculum with requirements for personnel involved in securing cargo on HGVs and also LGVs;
- Define harmonised minimum requirements for cargo securing for HGVs and LGVs.

[60] Directive 2003/59/EC of the European Parliament and of the Council of 15 July 2003 on the initial qualification and periodic training of drivers of certain road vehicles for the carriage of goods or passengers, amending Council Regulation (EEC) No 3820/85 and Council Directive 91/439/EEC and repealing Council Directive 76/914/EEC, https://bit.ly/3bPNDAj
[61] ETSC, Position Paper (2017), Revision of Directive 2003/59/EC on the Initial Qualification and Periodic Training of Drivers of Certain Road Vehicles for the Carriage of Goods or Passengers, https://goo.gl/zzLMZz
[62] Berufenet, Berufskraftfahrer/in, https://goo.gl/ZjlnGf

3.3 DRIVER-RELATED ROAD RISK FACTORS IN GOODS TRANSPORT

Drivers in the goods and services sector experience non-standard working hours, increasing workloads, pressure to deliver goods and services faster and requirements to use electronic devices for work purposes. HGV drivers often face long, monotonous journeys and might not always get a good rest given that they often sleep in HGV cabs parked near busy roads. EU rules on driving and resting periods will soon be applicable to international LGV transport, but tachograph fraud still exists and the Directive does not prevent night shifts. For LGV operating nationally, driving times and resting periods are not regulated. All these issues have a direct effect on levels of driver alertness and the ability to drive a vehicle safely.[63]

3.3.1 Distraction

Experts estimate that distraction plays a role in 10-30% of collisions, but data are lacking.[64] There is a long list of distractions that undermine the driver's ability to perform the driving task, they range from the use of mobile devices to eating or other activities.

In-vehicle distraction has been shown to be a specific risk in professional drivers.[65] However, there has been little research recently on the extent to which distracted driving by HGV and LGV drivers is a contributing factor in fatal or serious road traffic collisions. One reason for this could be a lack of good quality data as, in the majority of the PIN countries, police reports do not have a field for indicating distraction as a contributing factor in a collision. Even if such a field were present, it is difficult for the police to identify whether distraction played a role in a collision.[66] Analysis done by in-depth accident investigation teams might be more informative. A naturalistic study known as Udrive conducted on behalf of the European Commission revealed that HGV drivers in the Netherlands are engaged in distracting activities for about 20% of their driving time compared to 10% for car drivers.[67] Using a mobile phone accounts for 25% of the total time spent on distracting activities, another 25% is spent on food-related activities, 12% is reading and writing and 6% is the use of electronic devices which are work-related in HGVs.[68]

A deeper investigation of phone-related activities revealed that handheld phone use is the most frequent and it accounts for 35% of phone activities. This is especially concerning, as it involves visual-manual interaction which means that for a significant amount of time HGV drivers' eyes are off the road. The HGV travel speed with the highest frequency of phone task initiations, but also most time spent driving, is 80 km/h and above. This may be when the road environment is less complex and the driver may have support systems, such as cruise control, engaged. In the Udrive study, HGV drivers initiated phone-tasks less often when at a standstill and at 70 km/h, and more often at 5 to 20 km/h.[69]

In an observation study conducted in Ireland in 2018 on the use of mobile phones by drivers, 15% of LGV drivers were recorded using their mobile phone whilst behind the wheel of their vehicle, compared to 12% of HGV drivers and 6% of car drivers.[70]

Police reports in the UK identify contributory factors that led to an injury collision, including distraction. Based on these reports, in 5% of all reported injury collisions involving LGVs and 4% of all reported injury collisions involving HGVs that occurred the period 2016-2018, driver distraction was identified as a contributory factor. The most common identified category of distraction was driver fatigue and in-vehicle distraction, while the use of a mobile phone was significantly less frequent.[71] However, it may be difficult for a police officer, attending the scene after a collision has occurred, to identify certain factors that may have contributed to a cause of a collision. Therefore, these figures have to be interpreted with caution.

[63] ETSC, PRAISE (2011), Tackling Fatigue: EU Social Rules and Heavy Goods Vehicle Drivers, https://bit.ly/2RCVKrY
[64] TRL, TNO and Rapp-Trans for the European Commission (2015), Study on good practices for reducing road safety risks caused by road user distractions, http://bit.ly/39pla2X
[65] Ibid
[66] ETSC (2018), PIN Flash 35, An overview of road death data collection in the EU, http://bit.ly/2x2FVDk
[67] European Commission (2017), Udrive Deliverable 41.1, European Naturalistic Driving Study, http://bit.ly/2Tm1k3f
[68] Ibid
[69] Ibid
[70] Information provided by the PIN panellist.
[71] Department for Transport statistics, Vehicles in reported accidents by contributory factor and vehicle type, Great Britain, https://bit.ly/3eleBkX

3.3.2 Fatigue

Fatigue is a major risk factor affecting goods vehicle drivers, who often work irregular hours. Research shows that driver fatigue is a significant factor in approximately 20% of commercial road transport collisions.[72] Such collisions are most likely to occur on long journeys on monotonous roads, between 2am and 6am and between 2pm and 4pm.[73] Furthermore, how long a person has been awake is equally important.[74] However, just as with distracted driving, good quality data on fatigue-related collisions are lacking.

In general, the chances of a collision increase considerably when a driver is tired. A meta-analysis of 11 studies focusing on professional drivers arrived at a 72% increased risk for drivers who are extremely tired during the day.[75]

In a study undertaken by SWOV, a group of mainly international HGV drivers said they were tired behind the wheel and reported falling asleep while driving more frequently than car drivers (23% of HGV drivers compared to 10% of car drivers). They also said that in the past year they had continued or started to drive although they felt they were too tired to do so (37% of HGV drivers vs. 20% of car drivers).[76]

3.3.3 Seatbelts

The seatbelt remains the single most effective safety feature in vehicles. Drivers of HGVs and LGV tend to show lower seat belt usage rates compared to car drivers, even though strengthened HGV cabs only protect their occupants if they are properly belted. Moreover, a belted driver can keep greater control of the vehicle if a collision occurs. A report by Volvo trucks revealed that 50% of the non-belted HGV occupants killed in collisions would have survived had they used seatbelts properly. [77]

Results of in-depth accident investigation in Finland over the period 2014-2018 revealed that 68% of all killed HGV drivers and 44% of all killed LGV drivers were not belted. 5 out of 17 HGV drivers and 8 out of 19 LGV drivers would have survived had they been using a seatbelt.[78] In Czechia, over the period 2015-2019, 27% of all killed HGV drivers were not wearing a seatbelt.[79] In France, over the period 2013-2017 and in cases where the wearing of a seatbelt is indicated, 33% of killed LGV drivers and 28% of killed HGV drivers were not belted, against 21% for killed car drivers. [80]

A survey from Great Britain shows that car driver seatbelt wearing rates are 99% compared to 90% for HGV, LGV and bus drivers.[81]

The EU has adopted updated UNECE regulations on seatbelts that will require all new vehicles, including HGVs and LGVs, to be fitted with seatbelt reminders on all seats, as from September 2019 for new models, and 2021 for current models.[82] Yet it will take decades until all HGVs and LGVs on EU roads are all fitted with seatbelt reminders.

3.3.4 Driving under the influence of alcohol or drugs

Driving under the influence is less prevalent in goods and services transport compared to private transport, however alcohol-related road collisions in commercial transport often result in more serious outcomes due to vehicle crash incompatibility caused by the greater size and mass of commercial vehicles.[83]

A Swedish study based on in-depth accident investigation results showed that, over the period 2008-2015, the presence of alcohol was found in 15% of all killed truck drivers, illegal

[72] ETSC, PRAISE (2011), Tackling Fatigue: EU Social Rules and Heavy Goods Vehicle Drivers, https://bit.ly/2RCVKrY
[73] Ibid
[74] ETSC (2001), The Role of Driver Fatigue in Commercial Road Transport Crashes.
[75] Safety Science (2014), Zhang T. et al. Sleepiness and the risk of road accidents for professional drivers: A systematic review and meta-analysis of retrospective studies, https://bit.ly/2WaqGkG
[76] SWOV (2011), Driver fatigue: prevalence and state awareness of drivers of passenger cars and trucks; A questionnaire study among driving licence holders in the Netherlands, https://bit.ly/3ceTu1S
[77] Volvo trucks safety report 2017, https://bit.ly/2K36mMH
[78] Information provided by the PIN panellist.
[79] Information provided by the PIN panellist.
[80] Information provided by the PIN panellist.
[81] GB data does not allow to see seatbelt wearing rates separately for HGV, LGV and bus drivers, https://bit.ly/2yh269n
[82] Regulation No 16 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of: I. Safety-belts, restraint systems, child restraint systems and ISOFIX child restraint systems for occupants of power-driven vehicles; II Vehicles equipped with safety-belts, safety-belt reminders, restraint systems, child restraint systems, ISOFIX child restraint systems and i-Size child restraint systems [2018/629] https://bit.ly/34JXwg2
[83] ETSC, Drink driving in commercial transport, https://bit.ly/2yhciPy

drugs in 6% and medicine in 9%. Compared to the corresponding figures for car drivers, the presence of alcohol for truck drivers is lower, whereas the presence of illegal drugs and medicine is at the same level. In fatal collisions involving trucks, regardless of the level of injury to the truck driver, the presence of substances in a truck driver's blood is lower – it is 2% for alcohol, 1% for illegal drugs and 1% for medicines. However, there are differences between the types of trucks driven – 10% of lighter truck drivers had alcohol or illegal drugs detected, the figure was 1% of large trucks.[84]

Results of in-depth accident investigations in Finland over the period 2014-2018 revealed that 16% of all killed HGV drivers and 13% of all killed LGV drivers were under the influence of alcohol and/or drugs.[85]

In fatal collisions that occurred in France in 2018, 1% of HGV drivers were under the influence of alcohol, and 4% under the influence of drugs compared to, respectively, 20% and 13% for car drivers.[86]

Analysis of fatal road traffic collisions data from coronial files in Ireland (2013-2017) indicated that 34.5% of goods vehicle driver fatalities (HGV and LGV) with a toxicology result available had a positive toxicology for alcohol.[87] 40.5% of killed car drivers with a toxicology result available had a positive toxicology for alcohol.

Police reports of injury collisions that occurred over the period 2016-2018 in Great Britain revealed that out of all tested LGV drivers, 3.1% had a BAC higher than the legal limit compared to 0.7% of HGV drivers and 1.9% of car drivers.[88] Out of all alcohol-related injury collisions that occurred in Germany in 2018, 1.1% involved an alcohol impaired HGV driver.[89]

ROADPOL: EUROPEAN TRUCKS AND BUSES CAMPAIGN

The European traffic police network Roadpol (formerly known as Tispol) runs an annual joint European campaign to intensify roadside police checks of HGVs and buses across Europe. The police check compliance with speed limits as well as compliance with EU and national regulations. This joint action at European level aims to develop road user awareness on road safety and enables EU police forces to operate using similar tools to achieve common goals.

8,660 HGVs were checked in Bulgaria in February 2020 during an operation that lasted for two weeks. 37% of all checked drivers had committed a violation, the most common being excess speed – as many as 12% of all checked HGVs were going above the legal speed limit.[90]

During a four week Roadpol operation in Italy in 2019, 40,500 HGVs were checked and 33% were fined for an offence. 26% of fined HGV drivers did not comply with the EU driving hours and resting periods regulation, 22% were driving above the speed limit and 22% committed infractions related to the cargo load.[91]

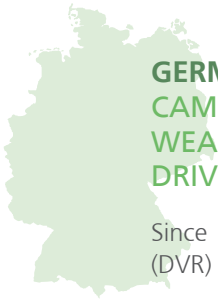
UK
HGVs FOR ENFORCING RULES AGAINST UNSAFE DRIVER BEHAVIOUR

The first unmarked police HGV to target unsafe driving behaviour on motorways and major roads was deployed in the UK in 2015. The unsafe behavior is recorded by a police officer in the passenger seat using a handheld camcorder which helps to spot all kinds of offences, including non-use of seatbelt, the use of mobile devices and others. The police HGV is accompanied by marked or unmarked police patrol vehicles to pull drivers over in case of an offence. The HGV cab allows police officers to film evidence on unsafe driving behavior by pulling up alongside vehicles.

The police HGV has a derestricted speed limiter which means it can travel at speeds up to the national speed limit. In 2018, three more police HGV cabs were deployed. Over the period 2015 - beginning of 2020, 12,242 vehicles have been

[84] Ekström C., Forsman Å., VTI (2018), Förekomst av alkohol och droger hos förare av lastbil och buss som varit inblandade i dödsolyckor och olyckor med svåra personskador.
[85] Information provided by the PIN panellist.
[86] Information provided by the PIN panellist.
[87] This analysis refers to a small sub-set of fatalities. All findings should be considered in light of this. A positive toxicology for alcohol is defined as a Blood Alcohol Concentration (BAC) >20mg alcohol per 100ml blood.
[88] RAS51004, Breath tests and breath test failures in reported accidents by road user type and age, https://bit.ly/2x887oZ
[89] Information provided by the PIN panellist.
[90] Focus information agency (2020), Roadpol operation checks 10,785 bus and truck drivers, https://bit.ly/35fAY7f
[91] Information provided to panelist by Road Police, specialized Body of the National Police, and referred to controls on motorways and on main extra-urban roads.

stopped during the police HGV operations. 48% of those stopped for committing an offence were HGV drivers, 32% - private motorists and 15% - LGV drivers. 36% of all offences were a use of a mobile phone and 26% - non-use of a seatbelt.[91]



GERMANY

CAMPAIGN TO INCREASE SEATBELT WEARING RATES AMONG HGV DRIVERS

Since 2002, the German Road Safety Council (DVR) together with partner organisations has been running the "Did it click?[92] campaign aimed at informing HGV drivers about the safety benefits of seatbelts. The campaign is implemented by actively interacting with HGV drivers, demonstrating HGV cab rollover tests, and distributing printed information materials.

The overall use of seatbelts among commercial vehicle drivers with German license plates has increased considerably – 87% of HGV drivers belted up in 2018 compared to 45% in 2002 and 92% of LGV drivers used a seatbelt in 2018 compared to 78% in 2002.

3.3.5 RECOMMENDATIONS ON DRIVER-RELATED RISK FACTORS

RECOMMENDATIONS TO MEMBER STATES

- Develop and implement national enforcement strategies to target speeding, intoxicated, dangerous and distracted driving and non-use of seatbelt by goods vehicle drivers.
- Run campaigns about interaction of goods vehicles with other road users, coupled with enforcement campaigns targeting HGVs and LGVs.
- Adopt clear and strict legislation banning the use of mobile phones, including hands free, whilst driving.
- Collect yearly numbers of offences for the use of the mobile phone by professional drivers.
- Collect rates of drink-driving and drug-driving and rates of road deaths from collisions involving impaired professional drivers. Use the SafetyNet project definition for drink-driving collisions.[93]
- Install rumble strips to alert drivers who drift from the carriageway - which may occur if tired.
- Provide adequate road markings that Lane Departure Warning Systems can read, which is crucial to managing fatigue and is of particular relevance to professional drivers.
- Adopt zero tolerance for drink-driving for professional drivers and raise enforcement levels.
- Target professional drivers, through information, education and training (CPC), about the dangers of driving when tired. Efforts should be made to target transport subgroups such as small firms and self-employed workers.
- Mandate the use of seatbelts for LGV drivers without any exemptions for short delivery trips. Increase enforcement of seatbelt wearing amongst professional drivers and include seatbelt wearing as an offence within penalty point systems.

RECOMMENDATIONS TO MEMBER STATES AND EU INSTITUTIONS

- Make safe and secure roadside rest facilities a long-term commitment, featuring a set of annual objectives as well as providing EU funding, particularly on routes with goods vehicle traffic.
- EU institutions responsible for Transport, policing and occupational safety to work together to engage with employers and employees and develop multidisciplinary and holistic strategies to educate, instruct, train and enable employers to better manage commercial vehicle risk management practices in the workplace and on the road.

[91] Information provided by Highways England.
[92] Hat's geklickt? https://bit.ly/2yh2nZX
[93] SafetyNet recommended definition: any death occurring as a result of road accident in which any active participant (being a driver of a motor vehicle, a rider, a pedestrian or a cyclist) was found with blood alcohol level above the legal limit.

ANNEXES

ANNEXES

COUNTRY	ISO CODE
Austria	AT
Belgium	BE
Bulgaria	BG
Croatia	HR
Cyprus	CY
Czechia	CZ
Denmark	DK
Estonia	EE
Finland	FI
France	FR
Germany	DE
Greece	EL
Hungary	HU
Ireland	IE
Israel	IL
Italy	IT
Latvia	LV
Lithuania	LT
Luxembourg	LU
Malta	MT
Norway	NO
Poland	PL
Portugal	PT
Romania	RO
Serbia	RS
Slovakia	SK
Slovenia	SI
Spain	ES
Sweden	SE
Switzerland	CH
The Netherlands	NL
United Kingdom	UK

Table 1 (Fig.2) Total number of deaths that occured in collisions involving an HGV (>3.5t) over the period 2010-2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
AT	101	70	77	50	51	66	74	52	56
BE	117	119	115	107	133	111	112	107	111
BG	121	90	93	109	91	121	72	95	80
CY	2	4	1	4	2	4	3	1	2
CZ	175	159	139	124	138	145	136	127	125
DE	534	564	812	759	601	604	620	626	602
DK	36	33	29	32	24	17	47	36	33
EE	20	17	16	16	13	13	6	7	11
EL	127	91	58	74	73	69	79	51	72
ES	333	297	245	217	262	262	284	321	283
FI[1]	92	85	98	70	59	64	73	74	66
FR	557	578	486	465	480	473	493	418	444
HR	44	37	29	41	39	38	39	38	25
HU	144	101	118	106	112	109	93	100	117
IE[2]	13	20	12	22	17	19	32	26	23
IT[3]	358	337	280	267	272	252	403	377	348
LT	48	39	58	41	33	46	24	31	24
LU	9	3	3	8	5	6	4	4	2
LV	36	19	34	31	38	39	29	28	40
MT	1	n/a				1	1	2	0
NL	80	77	73	85	75	76	76	72	88
PL	n/a						558	492	497
PT	95	107	77	80	78	68	59	75	64
RO	191	169	169	139	147	146	96	86	73
SE	41	46	41	30	55	40	46	34	68
SI	14	20	11	14	19	19	18	16	18
SK	69	64	56	35	64	68	n/a	55	36
UK	269	265	278	264	279	300	284	281	260
RS	n/a								
IL	51	62	49	71	45	58	71	57	41
NO	71	55	35	48	33	28	36	29	26
CH	29	33	35	31	25	34	27	30	22
EU25	**3,357**	**3,146**	**3,130**	**2,926**	**2,881**	**2,875**	**2,918**	**2,857**	**2,811**

	Average annual change[4] in deaths involving HGVs 2010-2018	Average annual change[4] in deaths not involving goods vehicles 2010-2018
EE	-11.3%	-3.8%
RO	-10.9%	-1.7%
NO	-10.1%	-5.7%
LT	-8.2%	-7.7%
EL	-5.6%	-7.1%
PT	-5.4%	-4.6%
AT	-5.0%	-3.7%
FI[1]	-4.0%	-2.0%
SK	-3.6%	-0.4%
CZ	-3.1%	-2.9%
BG[5]	-3.1%	-0.2%
FR	-3.0%	-1.7%
CH	-3.0%	-5.5%
HR	-2.7%	-4.4%
HU	-2.2%	-0.6%
IL	-1.0%	1.3%
BE	-0.9%	-5.7%
DE	0.0%	-1.9%
ES	0.1%	-3.6%
NL	0.2%	0.0%
UK	0.4%	-0.8%
DK	0.4%	-4.8%
IT[3]	1.5%	-2.7%
LV	2.5%	-5.9%
SI	2.7%	-6.0%
SE	2.8%	-0.7%
IE[2]	8.5%	-5.1%
EU25	**-1.8%**	**-2.8%**

LU	-7.8%	0.5%
CY	n/a	n/a
MT	n/a	n/a
PL	n/a	n/a
RS	n/a	n/a

Data source: EC CARE database and PIN panellists.
EU25 average: EU27 excluding MT and PL due to insufficient data.
[1] FI – provisional 2018 data.
[2] IE – provisional 2017-2018 data.
[3] IT – data used in this report are an estimate, changes in reporting methodology of fatal collisions involving HGVs was introduced in 2018.
[4] The average annual change is based on the entire time series of all the nine annual numbers of deaths between 2010 and 2018, and estimates the average exponential trend. For more information read the methodological note of the PIN Flash 6: https://bit.ly/2LVVUtY
[5] BG - 0.2% represent reduction in road deaths other than involving HGVs.

Table 2 (Fig.3) HGV km travelled (in millions) over the period 2010-2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
AT*	4,447	4,624	4,590	4,631	4,773	4,873	5,094	5,271	
BE**	8,134	7,986	7,805	8,143	8,274	8,327	8,491	8,758	
EE*(3)	1,166	1,132			322	395	456	519	638
ES**							17,733	17,959	18,541
FI**	3,120	3,205	3,155	3,190	3,295	3,285	3,493	3,370	3,411
FR*	28,428	29,200	27,110	27,121	26,723	26,471	27,319	28,117	28,332
HR**				1,568	1,604	1,674	1,781	1,860	1,880
IE**					2,875	2,679	2,855	3,353	3,571
IT(1)	18,773	18,752	17,347	16,945	17,076	17,874	18,540	19,136	19,585
LV**	1,229	1,411	1,471	1,529	1,527	1,564	1,598	1,727	1,780
NL*	6,484	6,423	6,323	5,921	5,906	6,167	6,499	6,554	6,495
PL*	18,517	19,505	18,958	19,212	19,914	20,461	21,181	22,066	
SE*	4,659	4,699	4,578	4,584	4,617	4,604	4,736	4,827	4,952
SI*(2)							2,025	2,203	2,395
GB*	263,372	25,632	25,005	25,225	25,876	26,828	27,079	27,398	27,492
IL**	3,034	3,002	3,060	3,158	3,284	3,430	3,632	3,862	4,017
NO*	4,738	4,881	5,595	6,124	6,215	6,409	6,681	6,893	7,038
CH*	2,226	2,258	2,229	2,243	2,236	2,235	2,235	2,242	2,238

	2016-2018 or the last three years available	
	Deaths in collisions involving an HGV	Deaths in collisions not involving goods vehicles
NO	4.4	2.3
SI(2)	7.9	5.5
GB	10.1	3.3
SE	10.2	3.1
CH	11.8	3.0
NL	12.1	4.4
AT	12.6	4.8
EE	14.6	4.6
FR	16.2	5.6
PL	24.3	10.8

Data source: PIN panellists.
*AT, EE, FR, NL, PL, SE, GB, CH, NO - total km travelled within the country.
**BE, ES, FI, HR, IE, LV, IL - total km travelled by nationally registered vehicles.
(1) IT - data for motorway network only.
(2) SI - 2018 data on km travelled are provisional. Data indicated in the box "Deaths in collisions not involving goods vehicles" cover deaths not involving HGVs per km travelled by all motor vehicles, including LGVs but excluding HGVs.
(3) EE - change in data collection methodology in 2014.

Table 3 (Fig.4) Proportion of reported deaths by road user group in collisions involving HGVs in the last three years (2016-2018), ranked by the proportion of deaths among vulnerable road users.

	2016-2018							
	Pedestrian	Cyclist	PTW user	Car occupant	HGV >3.5t driver	HGV >3.5t passenger	Other[1]	Unknown
CH	19%	23%	8%	41%	6%	0%	3%	1%
UK	25%	6%	11%	44%	6%	0%	7%	0%
IL	28%	3%	11%	31%	9%	1%	14%	2%
EL	14%	3%	20%	46%	10%	2%	4%	0%
DK	9%	22%	5%	48%	7%	0%	9%	0%
LV	22%	7%	7%	48%	9%	1%	5%	0%
BE	10%	13%	9%	42%	17%	1%	8%	0%
LT	23%	4%	5%	63%	4%	0%	1%	0%
AT	15%	9%	8%	48%	13%	1%	7%	0%
PT	22%	3%	7%	38%	6%	1%	16%	8%
IE	21%	7%	1%	62%	6%	0%	2%	0%
DE	12%	10%	7%	48%	12%	1%	9%	0%
PL	17%	8%	5%	55%	7%	1%	9%	0%
NL	9%	15%	5%	45%	8%	0%	12%	6%
HR	15%	6%	8%	61%	4%	1%	6%	0%
RO	21%	5%	2%	45%	10%	4%	11%	0%
FR	13%	4%	10%	53%	10%	1%	9%	0%
CZ	12%	6%	7%	56%	12%	2%	4%	0%
HU	14%	7%	5%	50%	9%	2%	14%	0%
ES	14%	3%	9%	45%	17%	2%	10%	0%
SE	12%	5%	7%	59%	8%	1%	7%	0%
IT	8%	6%	10%	43%	17%	3%	8%	5%
SI	15%	2%	2%	65%	13%	0%	2%	0%
NO	8%	7%	4%	63%	13%	0%	5%	0%
FI	10%	3%	2%	71%	6%	2%	5%	0%
EU25	**13%**	**7%**	**8%**	**50%**	**11%**	**1%**	**9%**	**1%**
EE	29%	8%	0%	46%	8%	0%	8%	0%
LU	40%	0%	0%	40%	0%	0%	20%	0%
CY	33%	0%	0%	17%	0%	0%	50%	0%
MT	67%	0%	33%	0%	0%	0%	0%	0%
BG	n/a							
SK	n/a							
RS	n/a							

Data source: EC CARE database and PIN panellists.
EU25 average: EU27 excluding BG and SK due to insufficient data.
EE, LU, CY and MT are excluded from the Fig.4 due to fluctuations in statistically small numbers of deaths but their numbers are included in the EU25 average.
[1] The category "Other" in this figure includes, amongst others, fatal collisions between HGVs and LGVs.

Table 4 (Fig.5) Proportion of reported deaths by road type in collisions involving HGVs in the last three years (2016-2018).

	2016-2018 average			
	Rural non-motorway	Urban	Motorway	Unknown
FI	88%	8%	4%	0%
LV	82%	18%	0%	0%
NO	82%	7%	1%	10%
SK[1]	75%	16%	9%	0%
EE	71%	29%	0%	0%
LT	67%	27%	5%	1%
HU	66%	16%	17%	0%
PL	65%	30%	6%	0%
IE	64%	27%	9%	0%
CZ	63%	22%	15%	0%
SE	63%	20%	17%	1%
FR	60%	19%	21%	0%
UK	60%	28%	12%	0%
ES[2]	57%	11%	32%	0%
DK	57%	29%	14%	0%
IL	54%	28%	18%	0%
AT	52%	22%	26%	0%
HR	49%	31%	20%	0%
EL	48%	32%	20%	0%
RO	47%	51%	2%	0%
IT	46%	16%	38%	0%
CH	44%	42%	14%	0%
PT	43%	43%	14%	0%
NL	43%	25%	32%	0%
DE	42%	23%	35%	0%
SI	40%	8%	52%	0%
BE	38%	23%	38%	1%
EU26	**54%**	**23%**	**23%**	**0%**
LU	30%	40%	30%	0%
MT	0%	100%	0%	0%
CY	0%	67%	33%	0%
BG	n/a			
RS	n/a			

Data source: EC CARE database and PIN panellists.
EU26 average: EU27 excluding BG due to insufficient data.
CY, LU and MT are excluded from the figure due to fluctuations in statistically small numbers of deaths, but their numbers are included in the EU26 average.
[1] SK 2017-2018 data.
[2] ES – motorway category includes autovias.

Table 5 (Figs.6 and 7) Proportion of observed speeds of HGVs higher than the speed limit on 50 km/h urban roads and mean observed driving speed on these roads in free flow traffic.
Note: data collection methodologies differ between contries.

	Speed limit for HGVs (in km/h) applicable to HGVs	2010		2011		2012		2013		2014		2015		2016		2017		2018	
		Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit
AT[1]	30	31	54%	25	28%							29.2	47%	29.5	50%	29.7	53%	28.7	42%
AT[1]	50	50	49%	47	39%							43.6	24%	43.5	26%	45.2	30%	43.7	25%
CY	50															42	23%	44	26%
CZ	50									48	42%	45	31%	49	49%	48	41%		
FR	50	47.5	36%	48.3	43%	49.1	42%							46.1	32%	47.0	30%	45.1	25%
HR[1]	50															51.4	64%	51.9	64%
IE[2]	50 rigid			54.6	65%	56.8	78%	55	73%	52	56%	55	60%	56	66%			51	55%
	50 articulated			54.7	64%	59	78%	56	77%	53	63%	56	66%	55	66%			55	72%
LT	50	54.5	32%	56.4	32%	53.2	29%	54.9	31%	51.9	24%	59.1	37%	52.2	31%	53.4	29%	51	26%
SE	50					45.4	24%	44.6	17%	44.9	16%	43.9	17%	44.5	28%	42	16%	41	17%
GB	48			49	50%	50	53%	49	53%	49	52%	49	52%	49	50%	49	49%	49	46%
RS	50									47.7	36%	46.6	32%	46.8	31%	46.2	28%		
IL	50	54	61%	51	49%	55	61%	54	58%										

Data source: PIN panellists
[1]AT and HR - data for HGVs and buses together.
[2] IE - data for national urban roads.

Table 6 (Figs.8-13) Proportion of observed speeds of HGVs higher than the speed limit on rural non-motorway roads and mean observed driving speed on these roads in free flow traffic.
Note: data collection methodologies differ between contries.

	Speed limit (in km/h) applicable to HGVs	2010		2011		2012		2013		2014		2015		2016		2017		2018	
		Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit
AT[1]	70	70	48%	68	43%							72.3	26%	67.2	14%	68.2	15%	70.9	24%
BE[2]	70											66.6	27%						
BE[2]	90 - 1 lane											77	47%						
BE[2]	90 - 2 lane											82.3	11%						
BE[2]	120 - 2 lane											86.7	13%						
CY	65 for all traffic															64	9%	65	11%
CY	65 (80 for other traffic)															68	21%	70	23%
CZ	80									76	41%	74	27%	77	42%	77	41%		
ES[3]	70					81.8	44%												
ES[4]	80					82.2	25%												
FI	80	79	53%	79	53%	80.6	55%	80.7	58%	81	57%	80.9	55%	81	55%	81.1	54%	80.6	53%
FR	80	79.9		77.7		78.7								80.2	13%	78.1	10%	78.3	23%
FR	90	86.0		82.3		83.9								86.5	26%	83.9	20%	84.3	23%
HR[5]	80															79.4	19%	79.6	22%
IE[6]	80 articulated			82	65%	82	70%	83	71%	83	75%	85	83%	83	68%			84	81%
IE[6]	80 rigid			80	52%	80	53%	81	60%	82	64%	81	54%	81	59%			83	75%
LT	60	58	17%	58	16%	58	20%	59.6	20%	60.4	23%	58.6	21%	58	24%	58.1	22%	59	24%
LT	70	68	22%	74	31%	54.6	12%	51.3	11%	49.2	8%	70.7	24%	55.9	13%	52.4	11%	52.4	11%
LT	80	79	24%	77	21%	74.3	16%	77.1	21%	79.8	26%	82.3	21%	77.4	25%	76.6	24%	74.1	22%
LT	90	77	8%	78	8%	74.3	7%	75.9	7%	74.6	6%	80.8	7%	85.1	10%	84.7	7%	85.8	8%
SE[7]	70					66.7	56%							65.9	52%				
SE[7]	80					78.6	53%							77.4	47%				
SE[7]	80 (90 for other traffic)					80.2	62%							81.4	67%				
GB	81 as of 2015			74		73		71		71		73	24%	74	26%	76	31%	75	30%
RS	80									87.5	66%	86.5	61%	87.7	65%	85.5	63%		
IL	90 (dual carriageway)	83	35%	80	39%	85	37%	83	37%	79	22%			76.5	36%	76	29%		
IL	80 (single carriageway)	80	56%	81	59%	81	57%	79	53%	79	52%			79.4	54%	83	65%		

Data source: PIN panellists
[1] AT - data collection methodology changed in 2015. Data on HGVs and buses presented together. HGV speed limit is 70km/h and bus speed limit is 80km/h.
[2] BE - the classification algorithm does not allow distinguishing between busses, small lorries and lorries with a load more than 3.5t.
[3] ES - data on HGVs and buses together. HGV speed limit is 70km/h and bus speed limit is 80km/h.
[4] ES - data on HGVs and buses together. HGV speed limit is 80km/h and bus speed limit is 90km/h.
[5] HR - data on HGVs and buses together.
[6] IE - national primary 2-lane roads data.
[7] SE – speed is mainly measured on rural non-motorway roads but includes some motorways.

Table 7 (Fig.14) Total number of deaths that occurred in collisions involving an LGV (<3.5t) over the period 2010-2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
AT	29	28	53	48	47	38	33	28	39
BE	81	86	89	88	63	81	78	68	62
BG	n/a								
CY	7	7	6	1	5	6	12	13	9
CZ	59	68	55	53	48	45	46	40	39
DE	392	398	n/a		210	234	177	235	222
DK	33	29	20	35	33	28	15	26	38
EE	14	9	5	2	13	9	6	3	8
EL	151	127	110	98	100	109	103	114	81
ES	346	278	263	206	253	218	246	280	271
FI[1]	28	23	22	27	22	39	24	26	17
FR	413	408	391	365	378	373	420	315	262
HR	32	25	38	22	28	21	17	33	32
HU	82	124	106	87	109	91	90	105	90
IE[2]	24	29	23	25	16	22	21	16	22
IT	546	448	461	378	409	423	233	253	508
LT	4	5	10	7	4	6	10	11	8
LU	n/a	4	2	3	3	7	1	2	3
LV	13	8	13	12	18	9	9	14	8
MT	0	n/a				3	2	4	0
NL	69	74	68	58	41	46	82	70	67
PL	n/a						267	288	261
PT	180	199	125	136	127	121	98	136	111
RO	421	377	352	362	365	355	420	400	375
SE	18	23	19	15	26	17	16	11	29
SI	10	9	9	2	5	6	13	4	12
SK	144	134	94	80	116	126	n/a	46	54
UK	174	195	174	169	180	172	204	200	184
RS	n/a								
IL	74	64	56	54	48	34	41	42	34
NO	18	16	16	16	8	10	8	5	11
CH	24	26	20	15	18	15	14	17	12
EU24	**3,099**	**2,922**	**2,640**	**2,416**	**2,441**	**2,433**	**2,258**	**2,253**	**2,367**

	Average annual change[3] in deaths involving LGVs 2010-2018	Average annual change[3] in deaths not involving goods vehicles 2010-2018
NO	-11.5%	-5.7%
SK	-10.8%	-0.4%
IL	-8.7%	1.3%
DE	-8.3%	-1.9%
CH	-7.6%	-5.5%
CZ	-6.1%	-2.9%
PT	-5.9%	-4.6%
EE	-5.9%	-3.8%
IT	-5.3%	-2.7%
EL	-4.6%	-7.1%
IE	-4.0%	-5.1%
FR	-4.0%	-1.8%
BE	-3.5%	-5.7%
LV	-2.1%	-5.9%
FI	-1.8%	-2.0%
ES	-1.7%	-3.6%
HR	-1.4%	-4.4%
DK	-0.9%	-4.8%
SE	-0.9%	-0.7%
HU	-0.7%	-0.6%
NL	-0.2%	0.0%
AT	0.0%	-3.7%
RO	0.1%	-1.7%
UK	1.1%	-0.8%
EU25	**-3.5%**	**-2.8%**

CY	10.6%	-5.5%
LT	8.7%	-7.7%
LU	-4.3%	0.5%
SI	0.2%	-6.0%
BG	n/a	n/a
MT	n/a	n/a
PL	n/a	n/a
RS	n/a	n/a

Data source: EC CARE database and PIN panellists.
EU24 average: EU27 excluding CY, MT and PL due to insufficient data.
CY, SI, LU and LT are excluded from the figure due to fluctuation in statistically small numbers of deaths but their numbers are included in the EU24 average
(1) FI – preliminary data 2018.
(2) IE – provisional 2017-2018 data.
(3) The average annual change is based on the entire time series of all the nine annual numbers of deaths between 2010 and 2018, and estimates the average exponential trend. For more information read the methodological note of the PIN Flash 6: https://bit.ly/2LVVUtY

Table 8 (Fig.15) LGV km travelled (in millions) over the period 2010-2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
AT*	6,633	6,735	6,729	6,812	6,988	7,170	7,378	7,532	
BE**	10,660	10,727	10,953	10,753	11,109	11,456	11,976	12,407	
EE*	7,048	7,194						1,124	1,232
ES**							69,298	67,267	68,712
FI**	3,870	3,895	3,880	3,890	3,905	3,925	5,514	5,611	5,693
FR*	95,394	98,266	92,878	94,743	95,303	97,454	98,819	102,120	101,775
HR**				1,977	1,972	2,088	2,247	2,393	2,675
IE**					4,385	4,342	4,556	4,433	4,320
LV**	798	883	977	1,052	1,162	1,220	1,248	1,281	1,283
NL*	17,287	17,056	16,649	16,309	16,296	16,544	17,144	17,668	18,412
PL*	15,122	15,694	15,785	16,135	15,591	15,098	15,214	15,295	
SE*	7,588	7,991	8,107	8,177	8,399	8,573	8,835	9,096	9,115
GB*	66,054	66,594	66,436	68,527	72,436	75,488	79,187	81,287	82,049
IL**	6,167	6,812	6,232	5,878	5,526	5,240	5,024	4,816	4,539
NO*						7,363			7,342
CH*	3,502	3,635	3,776	3,874	3,998	4,129	4,269	4,392	4,530

	2016-2018 or the last three years available	
	Deaths in collisions involving an LGV	Deaths in collisions not involving goods vehicles
NO	1.5	2.3
SE	2.1	3.1
GB	2.4	3.3
CH	3.3	3.0
FR	3.3	5.6
NL	4.1	4.4
AT	4.5	4.8
EE	4.6	4.6
PL	18.2	10.8

Data source: PIN panellists.
*AT, EE, FR, NL, SE, GB, CH, NO - total km travelled within the country.
**BE, ES, FI, HR, IE, LV, IL - total km travelled by nationally registered vehicles.
EE - change in data collection methodology in 2014.

Table 9 (Fig.16) Proportion of reported deaths by road user group in collisions involving LGVs in the last three years (2016-2018), ranked by the proportion of deaths among vulnerable road users.

	2016-2018							
	Pedestrian	Cyclist	PTW user	Car occupant	LGV <3.5t driver	LGV <3.5t passenger	Other[1]	Unknown
CH	37%	7%	14%	28%	12%	0%	2%	0%
LV	39%	10%	3%	32%	13%	3%	0%	0%
LT	34%	14%	0%	41%	10%	0%	0%	0%
PL	26%	10%	7%	26%	21%	9%	2%	0%
UK	20%	5%	17%	35%	18%	5%	1%	0%
RO	34%	7%	1%	38%	11%	5%	3%	0%
PT	21%	3%	16%	16%	24%	7%	1%	11%
IT	16%	8%	15%	29%	20%	6%	1%	5%
EL	16%	2%	20%	26%	28%	7%	0%	0%
DK	18%	9%	11%	32%	24%	6%	0%	0%
ES	20%	3%	13%	26%	27%	8%	3%	0%
HU	21%	10%	5%	37%	16%	6%	4%	0%
FR	16%	3%	16%	31%	25%	7%	2%	0%
IE	27%	0%	8%	29%	29%	7%	0%	0%
HR	20%	6%	10%	41%	17%	5%	1%	0%
CY	18%	6%	12%	18%	29%	18%	0%	0%
NL	8%	15%	12%	23%	18%	1%	15%	9%
CZ	20%	8%	6%	38%	19%	6%	3%	0%
DE	15%	8%	12%	26%	32%	6%	2%	0%
AT	9%	5%	17%	31%	27%	10%	1%	0%
IL	22%	2%	6%	30%	21%	17%	1%	2%
SE	9%	9%	11%	29%	36%	4%	2%	2%
FI	12%	3%	12%	25%	40%	7%	0%	0%
BE	13%	7%	6%	27%	36%	11%	0%	0%
EU26	**21%**	**7%**	**11%**	**29%**	**22%**	**7%**	**2%**	**1%**
SI	34%	7%	10%	28%	10%	3%	7%	0%
NO	4%	4%	0%	38%	46%	0%	8%	0%
LU	17%	0%	17%	17%	50%	0%	0%	0%
EE	18%	0%	0%	71%	12%	0%	0%	0%
MT	50%	0%	33%	17%	0%	0%	0%	0%
BG	n/a							
SK	n/a							
RS	n/a							

Data source: EC CARE database and PIN panellists.
EU25 average: EU27 excluding BG and SK due to insufficient data.
EE, LU, MT, SI and SK are excluded from the figure due to fluctuation in statistically small numbers of deaths but their numbers are included in the EU26 average.
NO is excluded from the figure due to fluctuation in statistically small numbers of deaths.
[1] The category "Other" in this figure includes, amongst others, fatal collisions between HGVs and LGVs.

Table 10 (Fig.17) Proportion of reported deaths by road type in collisions involving LGVs in the last three years (2016-2018).

	2016-2018 average			
	Rural non-motorway	Urban	Motorway	Unknown
FI	91%	9%	0%	0%
SE	77%	20%	4%	0%
LV	71%	29%	0%	0%
UK	69%	23%	8%	0%
SK[1]	69%	28%	3%	0%
FR	63%	24%	14%	0%
LT	62%	28%	10%	0%
DK	62%	18%	20%	0%
AT	61%	17%	22%	0%
PL	60%	35%	4%	0%
CZ	60%	34%	6%	0%
ES[2]	59%	20%	21%	0%
IE	59%	36%	5%	0%
IL	59%	27%	14%	0%
EL	57%	37%	6%	0%
HU	56%	27%	16%	0%
HR	56%	41%	2%	0%
BE	52%	16%	30%	2%
IT	48%	36%	16%	0%
NL	47%	29%	22%	2%
CH	47%	47%	7%	0%
DE	43%	24%	33%	0%
PT	43%	48%	9%	0%
RO	41%	55%	4%	0%
CY	32%	56%	12%	0%
EU26	**53%**	**33%**	**13%**	**0%**
EE	76%	24%	0%	0%
NO	71%	8%	13%	8%
MT	33%	67%	0%	0%
LU	50%	17%	33%	0%
SI	38%	24%	38%	0%
BG	n/a			
RS	n/a			

Data source: EC CARE database and PIN panellists.
EU26 average: EU27 excluding BG due to insufficient data.
EE, LU and MT are excluded from the figure due to fluctuations in statistically small numbers of deaths, but their numbers are included in the EU26 average.
[1] SK 2017-2018 data.
[2] ES – motorway category includes autovias.

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