

FOREWORD FROM THE RSA CHIEF EXECUTIVE OFFICER

This Driver Certificate of Professional Competence (Driver CPC) syllabus has been carefully developed by the RSA with the assistance of the transport industry and experienced training organisations. The next few pages set out what the programme has to offer those attending, whether you are already working as a professional bus or truck driver, or you are new to the profession and want to become a qualified driver with a view to working in the transport industry.

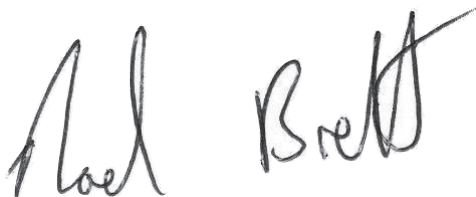
The course is broken down into modules covering a wide range of areas outlined in Driver CPC EU Directive, which will be of interest to all professional bus and truck drivers.

Some areas may be new to you, in other parts you may simply wish to refresh your skills or knowledge - in either case I am certain you will find the programme challenging yet enjoyable. On completion of the course the material should be kept for future reference, as it is a useful resource that professional drivers will refer to on an ongoing basis. The RSA will be adding up-dates to the material as required.

The Board of the RSA considers the introduction of Driver CPC to be a key step in our common aim to reduce death and serious injuries on our roads. There will also be benefits to the transport industry through eco-driving, lower insurance costs and a highly trained resource of professional drivers. By participating in Driver CPC training you will be developing/refreshing the skills required for your profession. By taking this training at an RSA approved training centre you can be confident that the provider has met all the quality assurance targets required of an RSA registered training provider and is committed to helping you achieve your own personal objectives from this course.

May I take this opportunity to wish you well with the course and I look forward to your contribution in the ever-increasing demand for quality drivers.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Noel Brett'. The signature is written in a cursive, slightly slanted style.

Noel Brett

CEO

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It is the absolute obligation of the holder of the Certificate of Professional Competence to be familiar with and comply with all aspects of the law relating to the Certificate of Professional Competence and in particular the obligation to obtain and maintain the level of training and instruction required for the Certificate of Professional Competence.

The training process has been designed and developed by the Road Safety Authority for the express purpose of facilitating the training of all classes of drivers required to acquire and hold the Certificate of Professional Competence.

The Road Safety Authority does not accept any obligation and/or responsibility arising out of the use of and/or the application of the materials, whether directly and/ or indirectly, and the materials used in the training of drivers are not intended to replace knowledge of the laws and regulations relating to the Certificate of Professional Competence.

It is the primary duty of the driver to know the laws and regulations applicable to their profession.



MINIMISING RISKS AND MANAGING EMERGENCIES IN THE TRANSPORT INDUSTRIES

Session 1 – Objective 3.1

Risks of the road and accidents at work

REVISED EDITION October 2012

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MEDICAL REPORT REQUIREMENTS FOR OBTAINING A DRIVING LICENCE

If you have any of the diseases or disabilities listed below, you must supply a Medical Report when applying for a driving licence.

- Alcoholism
- Any physical disability likely to affect your ability to drive safely
- Any illness that requires you to regularly use psychotropic drugs
- Any illness or disease that requires you to regularly take medication likely to affect your ability to drive safely
- Cardiovascular diseases (those relating to the heart and blood system), diabetes, serious diseases of the blood
- Diplopia (double vision), defective binocular vision (vision with both eyes) or loss of visual field
- Encephalitis, multiple sclerosis, myasthenia gravis or hereditary diseases of the nervous system associated with progressive muscular atrophy (wasting) and congenital myotonic disorders (disorders from birth that make it difficult to relax muscles after contracting them)
- Epilepsy, diseases of the peripheral nervous system (the nerves in the body outside the brain and spinal cord), trauma of the central or peripheral nervous system
- Cerebrovascular diseases (those relating to blood vessels in the brain), lesion with damage to spinal cord and resulting paraplegia (loss of movement in the legs)
- Mental disturbance due to disease of trauma to, or operation on the central nervous system (brain and spinal cord)
- Severe mental retardation, psychosis, psychoneurosis or personality disorders
- Serious hearing difficulties
- Any disease of the genito-urinary system (including kidney disorder) that is likely to affect ability to drive safely

Absence of illness does not mean fitness.

The European Agency for Safety and Health at Work (<http://osha.europa.eu>) has established that many professional drivers suffer from lower back pain, overweight, cardiovascular and respiratory diseases, work-related stress, fatigue, sleep disorders, unhealthy diet, neck and shoulder pain, alcohol abuse and smoking.

Obtaining or renewing a driving licence for HGV or PSV

From 19-Jan-2013, driving licences which are issued for categories C1, C, C1E, CE, D1, D, D1E, DE will have a maximum validity period of 5 years.

Ongoing renewal of those licences will be subject to continuing compliance with minimum standards of physical and mental fitness for driving.

Age limits for driving licences not obtained through the CPC Initial Qualification process will increase to 21 years for truck licences and to 24 years for bus licences.

INTRODUCTION / WELCOME

Welcome to the Road Safety Authority's Approved Training Programme for the Drivers Certificate of Professional Competence. (CPC).

Initial and Periodic qualifications are an E.U. legal requirement to ensure that all professional drivers have good driving and safety standards, and that those standards are maintained throughout the drivers career.

The E. U. has encouraged its member states to provide better training for professional drivers.

Many professional drivers in the E. U. are working without the benefit of on-going training or the opportunity to regularly refresh their skills.

As a result, the E. U. introduced Directive 2003/59/EC, which makes it compulsory for member states to have a driver CPC programme for professional drivers.

In Ireland, this is given effect by S. I. 359 of 2008.

A professional driver for the purposes of this programme is a person who drives a truck or a bus for a living and has one of the following categories of driving licence; C1, C1E, C, CE, (trucks) D1, D1E, D, DE (buses).

This class fulfils part of the requirements for CPC driver training as required by Directive 2003/59/EC.

The Directive identifies 17 distinct elements that drivers need to develop their skills/knowledge around:

- 10 of the elements apply to all licences (1.1, 1.2,1.3, 2.1, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6).
- 4 are unique to bus drivers (1.5, 1.6, 2.3, 3.8).
- 3 are unique to truck drivers (1.4, 2.2, 3.7).

The Directive requires new entrants to the profession to pass an advanced test, which examines not only the person's driving skills but also the knowledge that the person has regarding the profession and industry s/he is about to join.

It also requires that once the person receives his/her initial qualification, then in each subsequent 5-year period all truck and bus drivers must undertake 35 hours of training, which is known as CPC Periodic Training. Each training event must be for a minimum of 7 hours and deal with one or more of the elements outlined in the Directive.

This module is in response to this requirement. The module may be taken as part of a driver's preparation for the initial qualification process, or as part of the periodic training.

It is recognised that many people who will participate in this training may be owner/operators, while others will work for transport organisations.

Please note, any time the text mentions `company` or `your employer`, those who are owner/operators should consider this to refer to them.

This training material will contain references to best practice (must) in relation to specific areas.

Please read this `must` as a recommended practice rather than absolute.

Your manufacturers guidelines for your vehicle may differ and should always be followed.

In areas where the term `must` refers to legislation, this should be read as absolute.

OVERALL OBJECTIVES OF THE DRIVER CPC PROGRAMME

The purpose of the CPC training programme is to confirm and expand on the existing knowledge and skills of each driver, ensuring professional drivers continue to be safe, courteous and fuel-efficient drivers who drive from a road-sharing perspective.

It is intended that the development of a defensive driving style - anticipating danger, making allowance for other road users – together with economical fuel consumption, will have a positive impact both on society and on the road transport sector itself.

In particular, the CPC programme is designed to ensure that drivers know

- the characteristics of the transmission system in order to make the best possible use of it
- the technical characteristics and operation of the safety controls in order to control the vehicle, minimize wear and tear and prevent disfunctioning
- how to optimize fuel consumption
- how to load the vehicle (goods) with due regard for safety rules and proper vehicle use
- how to load the vehicle (passenger) with due regard for safety rules and proper vehicle use
- how to ensure passenger comfort and safety
- the regulations governing the carriage of goods
- the social environment of road transport and the rules governing it
- the regulations governing the carriage of passengers
- the risks of the road and of accidents at work
- how to prevent criminality and trafficking in illegal immigrants
- how to prevent physical risks
- the importance of physical and mental ability
- how to assess emergency situations
- how to adopt behavior to help enhance the image of the company
- the economic environment of road haulage and the organization of the market
- the economic environment of the carriage of passengers by road and the organization of the market

This module – Minimising Risks and Managing Emergencies in the Transport Industries- deals with the risks of the road and the ability to assess emergency situations .

In session 1 of this module we will look at different types of accidents, accident statistics, how to reduce the number and severity of accidents, and post-impact care.

In session 2, we will look at how to;- behave in an emergency situation, assess the situation, avoid the complications of an accident, assist casualties and give first aid, react in the event of fire, evacuate the occupants of a truck or bus, ensure the safety of all drivers and passengers, react in the event of aggression, and how to draft an accident report form.

There will be knowledge testing at the end of each section to give everyone an opportunity to recap on what they have learned so far, and to create an opportunity to discuss and clarify any issues or areas of confusion.

> SESSION 1 OBJECTIVES

Objective heading

To make drivers aware of the risks of the road and of accidents at work.

Directive text

Types of accidents at work in the transport sector; road accident statistics; involvement of lorries/coaches; human, material and financial consequences.

Training Aim

On completion of this session you will be able to:

1. Describe the different risks at work and give examples of how to prevent them.
2. Interpret statistics related to traffic accidents.
3. Describe and discuss the accident rate of trucks and coaches.
4. Describe the measures to prevent collisions with bicycles.
5. Outline the benefits of long-term safe work.
6. Describe the material damages related to vehicles and goods.
7. Name the financial consequences of accidents for people, companies, the environment and society.

PERSONAL EXPECTATIONS

While the Road Safety Authority has objectives for all the people attending CPC Periodic Training, it is also vital that you reflect on what you would like to get from the training yourself.

Q1. What do I hope to get out of this training?

Your Response

Q2. What would I like to see happening during the training that I feel would help me in my day-to-day working arrangements?

Your Response

Q3. What could happen during the training that could prevent me from being able to benefit from it?

Your Response

GROUP GROUND RULES

The course trainer will facilitate a discussion aimed at agreeing a set of `Ground Rules` by which the class agrees to abide.

By abiding by these rules the class will:

- Cover the required material
- Finish on time
- Not have people disrupting the training
- Be able to concentrate
- Treat each other with dignity and respect

By agreeing a set of rules together, we all have an opportunity to clearly understand what is expected of ourselves and of others. By observing our agreed rules we can be confident that we will be able to avoid issues like those listed above.

The day will be more enjoyable and easy to follow if we observe our set of Ground Rules.

Please consider what sort of things can or should be included, and contribute to the discussion. You may wish to note what has been agreed by the group in the box below.

Agreed Ground Rules

SECTION A – TYPES OF ACCIDENTS

In 2010, the latest year for which figures are available, some 27,221 road users were fatally injured in 23 of the EU Member states. This includes 212 fatalities in Ireland. In 2000 there were a total of 50,748 fatalities in the same member states, including 415 in Ireland.



All Road Collisions

‘All reported road collisions’ means all collisions investigated by or brought to the notice of An Garda Síochána where the exact location of the collision can be determined.

Collisions and Casualties

Road collisions are classified as fatal, personal injury or material damage; casualties are classified as either killed or injured.

Fatal Collision:

Where at least one person is killed as a result of the collision and death occurs within 30 days.

Serious Injury Collision:

Where there are no deaths, but a person or persons are seriously injured. The definition of “serious injury” is an injury for which the person is detained in hospital as an ‘in-patient’, or any of the following injuries whether or not detained in hospital: fractures, concussion, internal injuries, crushings, severe cuts and lacerations, severe general shock requiring medical treatment.

Minor Injury Collision:

Where there are no deaths or serious injuries. The definition of a “minor injury” is an injury of a minor character such as a sprain or bruise.

Material Damage Collision:

Where no deaths or injuries occur but damage is caused to a vehicle or property.

Learner Driver

A learner driver is a driver holding a learner permit.

Vehicles are classified as follows:

1. Pedal Cycle

A pedal cycle is a two or three-wheeled road vehicle fitted with pedals deriving its sole means of propulsion from human power.

2. Motorcycle

A motorcycle is any mechanically propelled two-wheeled machine and includes mopeds and motor scooters.

3. Car

A passenger road motor vehicle, other than a motorcycle, seating not more than eight passengers (excluding the driver).

4. Public Service Vehicle (PSV)

A passenger road motor vehicle having seating accommodation for more than eight passengers (excluding the driver), and used for the carriage of passengers for reward.

5. Goods Vehicle

A road motor vehicle designed, exclusively or primarily, to carry goods.

6. Other Motor Vehicle

Other motor vehicles are miscellaneous types of motor vehicle not falling into any of the main categories (e.g. Agricultural Tractor).

Rural Area

A rural area is defined as an area where the speed limit zone is greater than 60km/h.

Urban Area

An urban area is defined as an area where the speed limit zone is less than or equal to 60km/h.

Built-up Area

A built-up area means an area which is within a 50 to 60km/h. speed limit zone.

Dark

By ‘dark’ is meant the hours of darkness which begin half an hour after sunset and end half an hour before sunrise.

EU CRASH CHARACTERISTICS

Definition of a traffic-related crash

Not all crashes involving pedestrians and/or cyclists are considered to be traffic-related. A definition of road traffic accidents is those accidents:

- Which occurred or originated on a way or street open to public traffic;
- Which resulted in one or more persons being killed or injured;
- In which at least one moving vehicle was involved.

These accidents therefore include collisions between vehicles, between vehicles and pedestrians, and between vehicles and animals or fixed obstacles. Single-vehicle accidents, in which one vehicle alone (and no other road user) was involved, are included. Multi-vehicle collisions are counted as only one accident, provided that the successive collisions happen at very short intervals.

Where and how?

The trends for the number of fatalities among pedestrians and cyclists in Europe show that since 1980 both numbers have decreased by about 65% and 55% respectively. However, of all traffic fatalities, the proportion of pedestrian fatalities is still about 17%, and the proportion of cyclist fatalities is about 6%. Age groups that have the highest percentage of pedestrian fatalities are children younger than 10 years of age and adults aged 65 years or older. Cyclist fatalities have the highest share among children between 6 and 14 years of age. The percentages for these age groups are about twice as high as the average percentages for all age groups.

Pedestrians and cyclists - unprotected road users

Walking and cycling are transport modes where relatively unprotected road users interact with traffic of high speed and mass. This makes pedestrians and cyclists vulnerable. They suffer the most severe consequences in collisions with other road users because they cannot protect themselves against the speed and mass of the other party. Preventing collisions between fast and slow traffic is, therefore, one of the most important requirements for safe road use by pedestrians and cyclists.

No speed, no mass, and no protection

Speed is a fundamental risk factor in traffic. Firstly, speed is related to crash rate. Several studies have concluded that higher vehicle speeds are related to an increase in crash rates and injury severity.

For any given road, clear physical relationships lead to higher severity of injury outcomes as speed increases. When the collision speed increases, the amount of energy that is released increases as well.

Part of the energy will be `absorbed` by the human body. However, the human body tolerates only a limited amount of external forces. When the amount of external forces exceeds the physical threshold, severe or fatal injury will occur. Hence, higher speeds result in more severe injury. This is particularly true for occupants of light vehicles, when colliding with heavier vehicles, and for unprotected road users, such as pedestrians and cyclists when colliding with motorised vehicles.

Goods vehicles and passenger services vehicles

When a heavy and a light vehicle collide, the occupants of light vehicles are far more at risk of sustaining severe injury. This is because the energy that is released in the collision is mainly absorbed by the lighter vehicle. Pedestrians, cyclists and moped riders have the largest risk of severe injury when colliding with a motor vehicle. The difference in mass is huge and the collision energy is mainly absorbed by the lighter “object”.

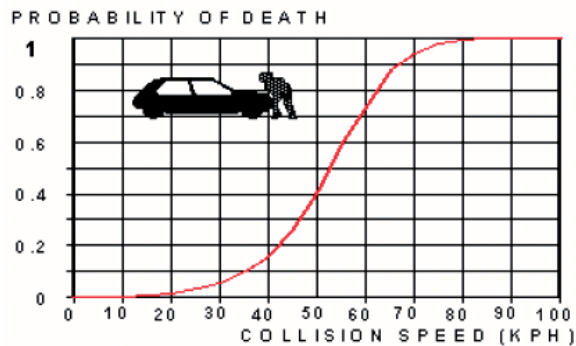
In addition, pedestrians and cyclists are completely unprotected – no iron framework, no seatbelts and no airbags to absorb part of the energy. The difference between a heavy goods vehicle and a car can easily be a factor of 20, but also the differences between cars are large and are increasing. A mass difference of a factor of 3 is not unusual.

Nevertheless, inappropriate speed remains a greater factor than mass differences in contributing to numbers of severe accidents.

For a collision between a vehicle and a pedestrian, the following relationship between speed and survival chance was established;

Car speed	% fatally injured pedestrians
32 km/h	5%
48 km/h	45%
64 km/h	85%

In a graph, the probability of fatal injury for a pedestrian colliding with a vehicle looks like this:



Speed

It is a statistical fact that drivers who drive at speed have a greater chance of having an accident. Inexperienced drivers in particular will often not see the potential danger in certain traffic situations and approach at too high a speed. If a hazard presents itself they have less time to react.

Road safety campaigns have the central theme that 'Speed Kills' and excessive speed does kill. A child hit by a moving vehicle at 30km/h will probably survive but if hit by a vehicle at 60km/h will most likely die. Any speed, if inappropriate to the prevailing circumstances can be dangerous. The objective of any driver training course is to teach the participant to be in the correct position, correct gear and doing the speed which is appropriate to the prevailing conditions at all times.

When assessing what the correct speed is for any circumstance we must refer to the most basic rule that you must at all times be travelling at a speed that enables you to stop safely on your side of the road in the distance that you can see to be clear.

Conditions that affect safety at any given speed include the driver, vehicle, road, weather and speed limits.

Driver

Experienced drivers tend to be safer due to the fact that they can more readily identify hazardous and potentially hazardous situations earlier, and thus react sooner. However whether experienced or not, external pressures can sometimes cause drivers to drive to the limits of their competency and beyond. One of the most important aspects of driving safely, whatever the speed, is that the driver must have the correct attitude before setting out on their journey and maintain this attitude during the journey regardless of any external pressures that come to bear on them.

Vehicle

Vehicles will respond in different ways to the way they are driven depending on size, weight, condition and age. Generally the larger the vehicle the slower it will respond to acceleration or braking, and therefore should be driven more slowly. If a vehicle is not maintained according to the manufacturers recommendations it may have a slower braking response, or steering feedback may not be as positive. Older vehicles also tend to be slower in response to braking or acceleration and the good driver, if driving an unfamiliar vehicle, will always ensure that they familiarise themselves first with the vehicles handling characteristics at lower speeds.

Road

Roads vary in quality and a driver should adjust their speed as road conditions, such as overall width and surface type, change. These conditions can change many times during a journey and it is imperative that the driver responds accordingly.

Weather

When considering weather as a driving factor we think of wind, rain, snow or frost and the loss of grip a vehicle experiences on a road surface encountering any of these conditions. Good weather conditions can create their own hazards as a very bright day can cause drivers to misjudge distances and can also cause glare and eye fatigue. Abnormal heat can melt the tar in the road surface and this can lead to reduced tyre grip. In order to improve visibility to other road users drivers are strongly encouraged to use dipped headlights at all times. In fog, use dipped headlights/fog lights and where visibility drops below 100 metres (110 yards), switch on your rear fog-lights. On most vehicles, these will only work if the headlights are already on dip. Switch them off when visibility improves. They are misleading and can dazzle other drivers in clear weather. They also make the brake lights less conspicuous

Speed Limits

Speed limits are the maximum legally permissible speeds and should not be taken as the speed at which it is safe to drive. As we have already seen, many factors affect the vehicles handling and if any of these conditions are present the driver should always adjust their speed accordingly.

The onus is always on the driver to select the appropriate speed for the conditions. All roads have a maximum speed limit, and all vehicles have a maximum speed limit which may be lower than the maximum permitted road speed.

SELF-ASSESSMENT OF KNOWLEDGE

Please complete the following questions to help assess your understanding of the module so far:

Q.1 How is a fatal collision defined?

Your Response

Q.2 What protection do pedestrians and cyclists have in a crash?

Your Response

Q.3 Name 4 conditions that affect safety at any given speed?

Your Response

Q.4 What weather conditions can contribute to an accident?

Your Response

Q.5 How are the hours of darkness defined?

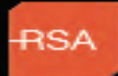
Your Response



THE FASTER THE SPEED



THE BIGGER THE MESS



SPEEDSHAME

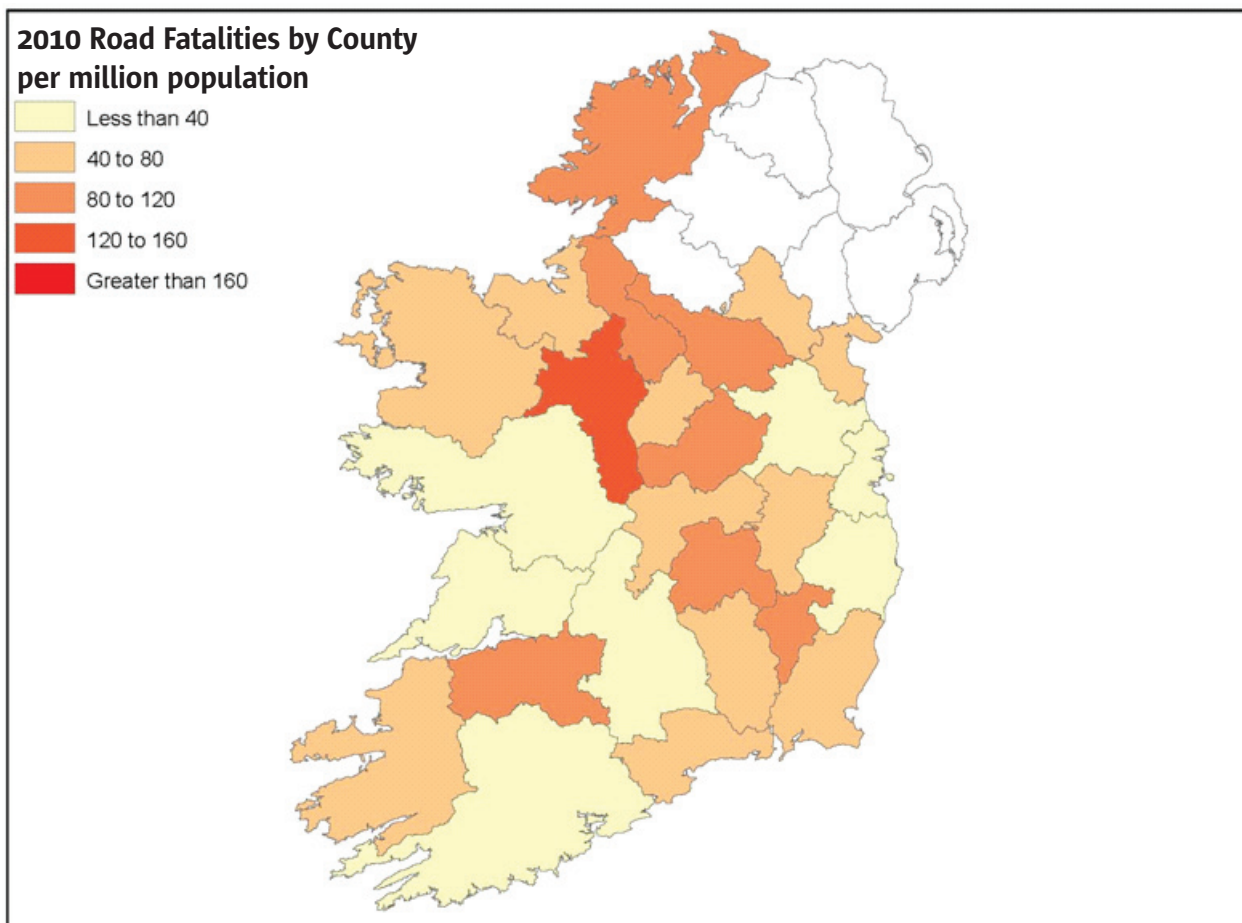


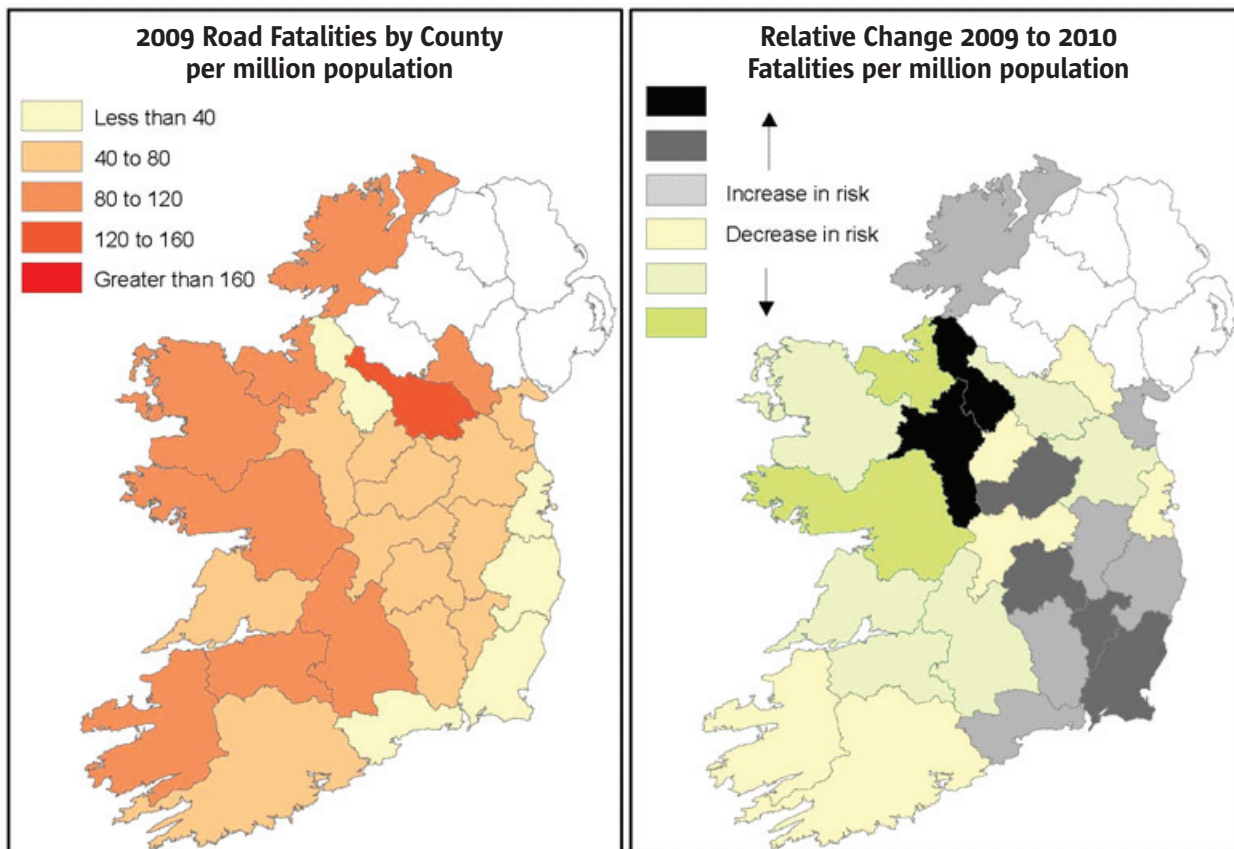
SECTION B – ROAD ACCIDENT STATISTICS

Road Collision Facts 2010

Human, Material and Financial Consequences.

Despite an increase in population as well as growing numbers of driver licence holders and registered vehicles, the annual number of fatalities in Ireland has been declining. Data trends in the Republic of Ireland for registered vehicles, driver licence holders, population and fatalities are shown below. As illustrated, there has been a steady decline in the number of fatalities and injuries. Quite apart from the enormous cost in terms of human misery, grief, and suffering, the cost to the Irish economy of all the fatal road accidents and all of the serious accidents amounts to a very large amount of money. Money spent on the cost of fatal and non-fatal collisions is not available for providing improvements to society as a whole. Where a road user is killed, that person will no longer be contributing to the support of his/her family or to society in general. In addition to any lost revenue through taxes not paid and their economic contribution, social welfare payments may have to be paid to support the victims family. Over the remainder of a lifetime, it could amount to a significant cost. Families can be severely affected as a result of grief due to the loss of a loved one. The long-term impact of such a loss or serious injury may never be truly quantified, but can have long-lasting and devastating consequences.





OVERVIEW

Introduction

Road deaths in the Republic of Ireland have fallen to the lowest level they have been since records were first officially taken in 1959. The rate of fatalities per million population is now 47, less than half of the rate in 2000 (110).

In recent years, road deaths levelled out around 340-390 per annum, but year on year since 2008, they have been the lowest since 1959. In 2000, the fatality rate per million registered vehicles was 247. By 2010, the rate had fallen to 88 per million registered vehicles.

In 2010, of the 27,085 Garda-recorded motor vehicle traffic collisions, 212 people were killed and 8,270 people were injured of which 561 were seriously injured. 21,305 collisions involved property or material damage only.

The fatality rate per million population was 47 in 2010, a decrease of 11 per cent from the 2009 rate of 53. The estimated cost of all road collisions reported to, and recorded by, An Garda Síochána in 2010 was €853 million. This is a reduction of 38 per cent since 2007.

This report covers all road traffic collisions reported to An Garda Síochána, where details involving

fatalities, personal injury or material damage which occurred on public roads in Ireland in 2010 have been recorded and forwarded to the Road Safety Authority. It details when and where road collisions occurred, who was involved, contributory actions and contributory factors and the cost of collisions to the public. Collisions on private property, such as railway station approaches or private lanes and car parks are excluded.

This report also examines trends in collisions, fatalities and injuries over time in the last decade as well as the most recent trends in various cross sections of road traffic and transport systems.

“In 2000, the fatality rate per million population was 110. In 2010, it was 47.”

“In 2000, the fatality rate per billion vehicle kilometres travelled was 12.6. In 2010 it was 4.5.”

IRELAND'S ROAD SAFETY PERFORMANCE

Despite an increase in population, as well as growing numbers of driving licence holders and registered vehicles, the annual number of fatalities has been declining since 2000. Data trends for registered vehicles, driver licence holders, population and fatalities in the Republic of Ireland between 2000 and 2010 are shown in Figure A1. As illustrated in the graph below, there is a decrease

in the number of fatalities.

Since 2000, the population has increased by 18 per cent, registered motor vehicles have increased by 44 per cent and the number of driving licence holders (both full and provisional) has increased by 32 per cent. On the other hand, fuel consumption for road transport has decreased by 7 per cent and the number of fatalities has decreased by 49 per cent.

Figure A1: Data Trends in Ireland 2000-2010
Increasing Motorisation Versus a Decreasing Road Toll

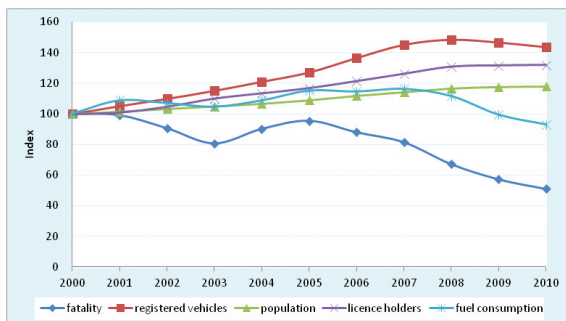


Figure A2 : Fatalities per 100,000 Population in a Given Age Group in Ireland

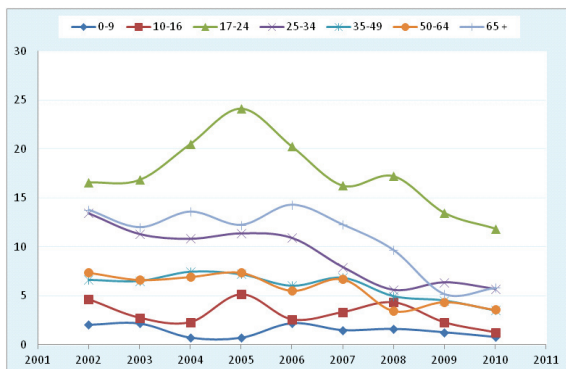
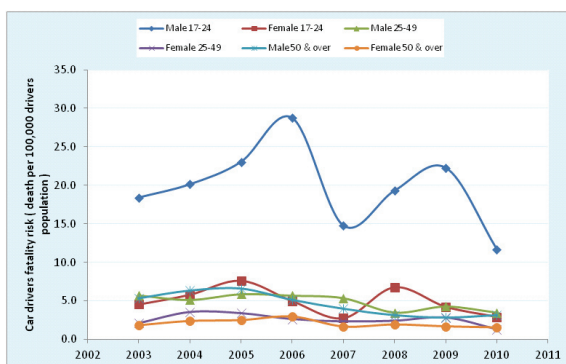


Figure A3: Car Drivers Fatality Risk (Death Per 100,000 Drivers Population)



In 2010, there were 212 road collision fatalities, an average of 18 deaths per month, which is the lowest recorded number of fatalities since 1959.

In 2010, there were 8,270 injuries as a result of road collisions. The number of recorded injuries resulting from road collisions gradually decreased between 2005 and 2007, but increased in 2008 and marginally decreased in 2009.

As the graph (Figure A1) shows, the reduction in road collision fatalities and injuries has occurred despite:

Increased population

Between 2000 and 2010, the population of the Republic grew by approximately 18 per cent.

Increased number of driver licence holders

The number of driver licence holders overall (full and provisional) has increased from 2,014,296 in 2000 to 2,655,048 in 2010. Contributing to the increase is an increase in the proportion of individual licence holders to adult population (17 years and over). This was 71 per cent in 2000 but by 2010 this proportion had increased to 74 per cent.

Increased number of registered vehicles

The number of registered motor vehicles and motorcycles increased by 44 per cent from 1,682,221 in 2000 to 2,416,387 in 2010.

Table 1: Annual Fatalities and Injuries as Per Million Vehicles Registered and Per Million Population in Ireland, 2000 - 2010

Year	Fatalities per million vehicles registered	Fatalities per million population	Injuries per million vehicles registered	Injuries per million population
2000	247	110	7,159	3,180
2001	232	107	5,776	2,660
2002	203	96	4,976	2,350
2003	173	84	4,264	2,080
2004	184	92	3,863	1,950
2005	185	96	4,357	2,260
2006	159	86	3,734	2,020
2007	138	78	3,197	1,803
2008	112	63	3,907	2,207
2009	97	53	3,948	2,185
2010	88	47	3,423	1,850

Casualties

Cars

In 2010, 130 car occupants were killed in collisions accounting for 61 per cent of all fatalities. An additional 5,814 were injured. 72 per cent of car occupants killed were drivers and 17 percent were front seat passengers. Most of the car drivers killed were male (76%).

16 per cent of car drivers and 41 per cent of front seat car passengers killed in fatal collisions were not using a seat belt.

Motorcycles

The 17 motorcyclist fatalities that occurred in 2010 accounted for eight per cent of all fatalities. An additional 391 motorcyclists were injured.

For a motorcyclist, the risk of being killed in a traffic crash per vehicle kilometres travelled is about 16 times higher than it is for a car occupant.

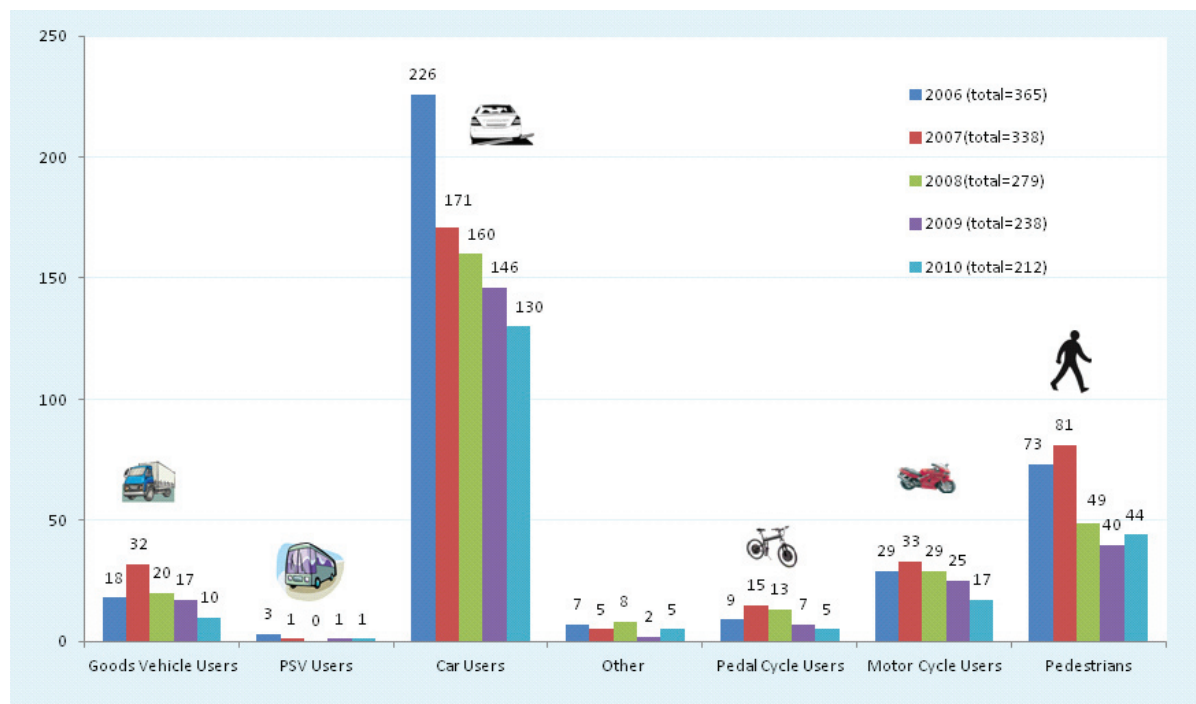
Pedalcycles

In 2010, five pedal cyclists were killed and 399 were injured in collisions. Pedal cyclists made up approximately two per cent of all fatalities. Four out of five pedal cyclists killed were male.

Pedestrians

In 2010, 44 pedestrians were killed and 923 were injured. 23 per cent of pedestrians killed were aged 65 and over. The number of pedestrians killed in hours of darkness has been reduced by 40 per cent between 2007 and 2010.

Figure A4: Road fatalities by category 2006-2010.



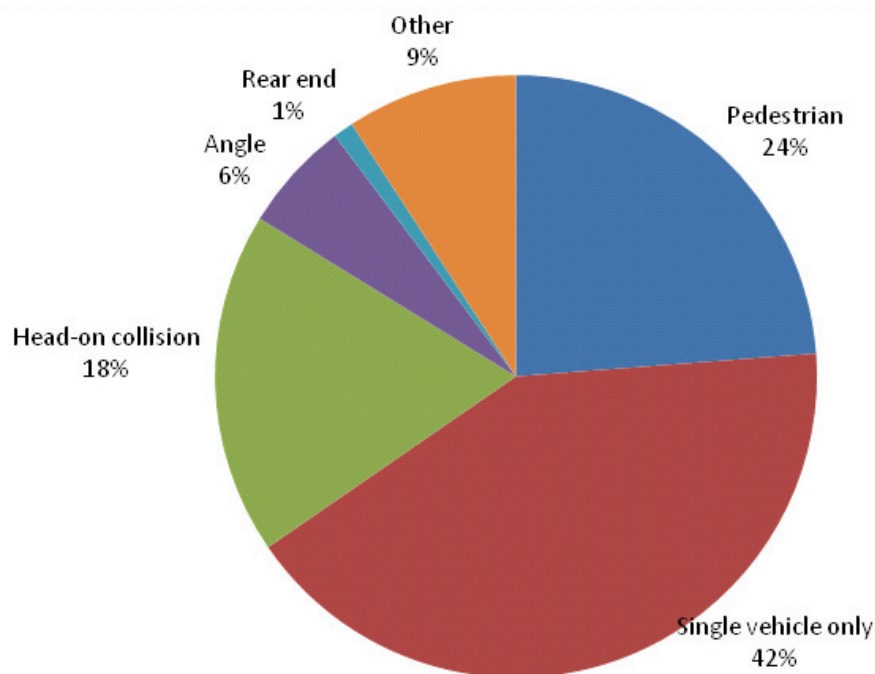
Primary Collision Type

42 per cent of all fatal collisions in 2010 were single vehicle only collisions. This collision type, which involves no other road user, is most probably associated with a number of causal factors including excessive speed, fatigue and/or alcohol/drug consumption. Single vehicle only collisions accounted for 26 per cent of injury collisions.

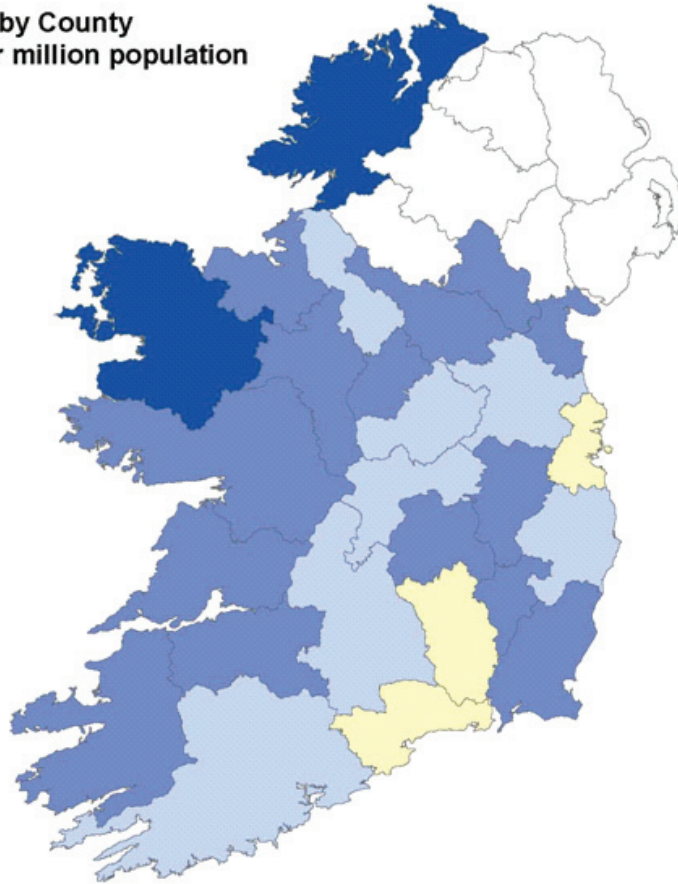
Head-on collisions accounted for 18 per cent of fatal collisions and 10 per cent of injury collisions. Collisions involving pedestrians accounted for 24 per cent of all fatal collisions and 16 per cent of all injury collisions.

Five out of six of all fatal collisions were either single vehicle, head-on collision or pedestrian collisions. This indicates that single vehicle, head-on or pedestrian collision types are, on average, more severe than angle, rear-end or 'other' road collision types, which together accounted for 47 per cent of injury collisions but only 16 per cent of fatal collisions.

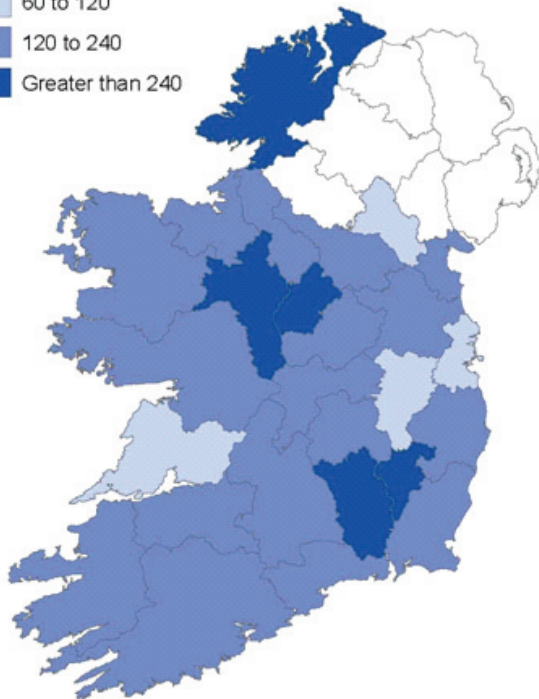
Figure A5: Primary Fatal Collision Type in 2010



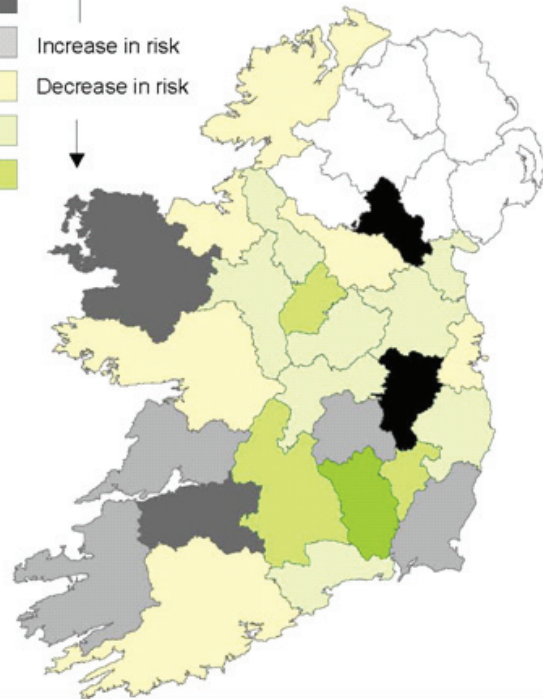
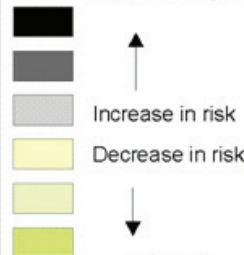
2010 Road Injuries by County
Serious injuries per million population



2009 Road Injuries by County
Serious injuries per million population



Relative change 2009 to 2010
Serious Injuries per million population



Trends in Fatalities by Transport Mode

The annual number of fatalities by road transport mode in the period 2000-2010 is given in Figure A6 and A7. The number of car user fatalities decreased sharply from 2000 to 2003. During the period 2003-2006, the number of car user fatalities increased gradually. In the period 2006-2010, there has been a steady decline in the number of car user fatalities.

There was a downward trend in the number of pedestrian fatalities in the period 1999-2003. However, the number of pedestrian fatalities increased in the period 2003-2007. The downward trend has been maintained in pedal cyclist fatalities

over the period 2003-2006, with a sharp increase in 2007. The pedal cyclist fatalities have reduced by 67 per cent between 2007 and 2010. The number of motorcyclist fatalities generally showed an upward trend in the period 2000-2005, then fell by 48 per cent in 2006, marginally increased in 2007 and decreased by 41 per cent between 2008 and 2010. The trend for PSV users, goods vehicle users and other road user fatalities (miscellaneous types of motor vehicles) was sporadic.

Number of Fatalities by Transport Mode, 2000-2010

Figure A6:

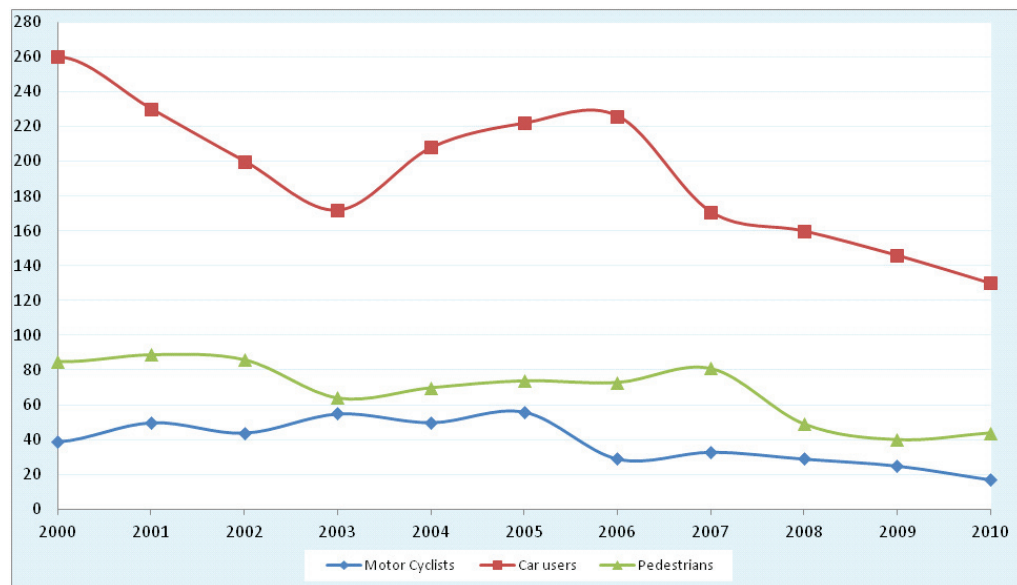


Figure A7

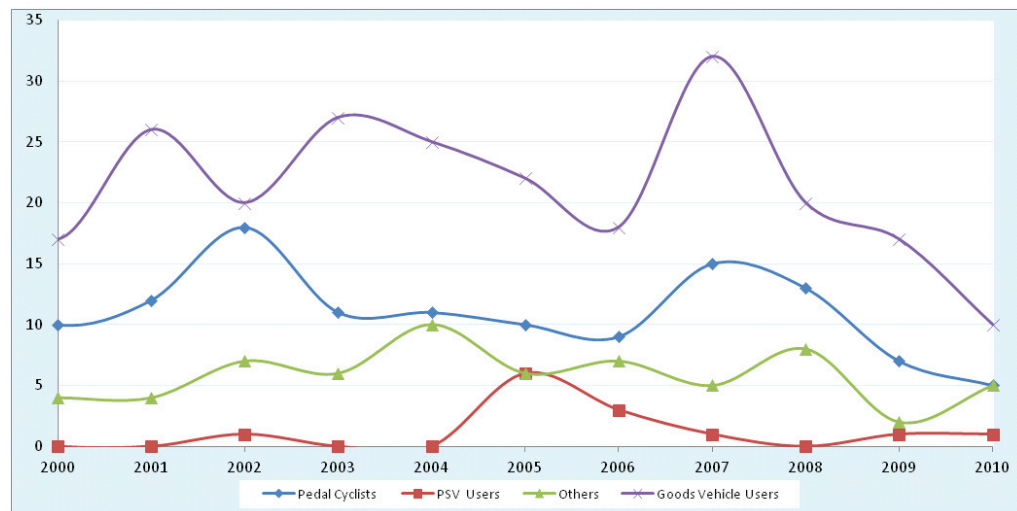
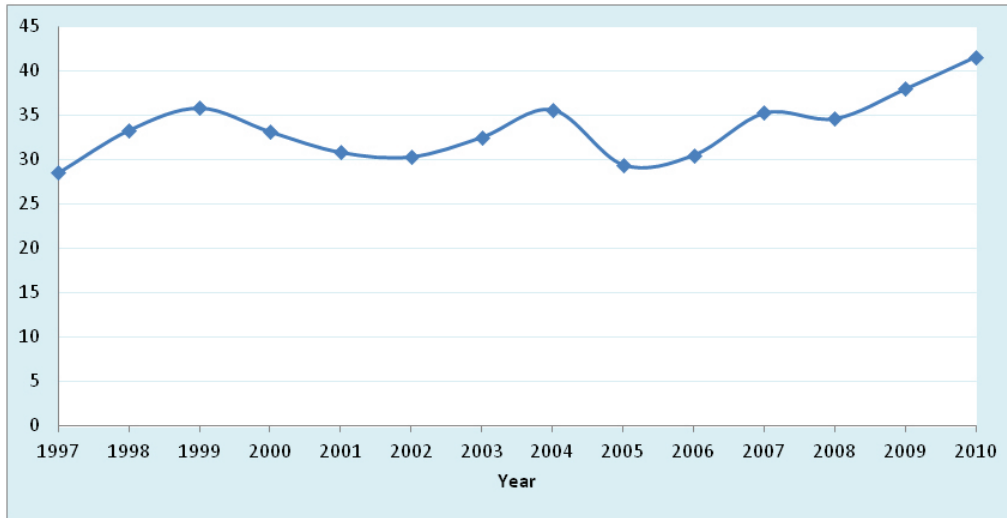


Figure A8: Percentage of Fatal Collisions Involving a Single Vehicle Only, 1997-2010

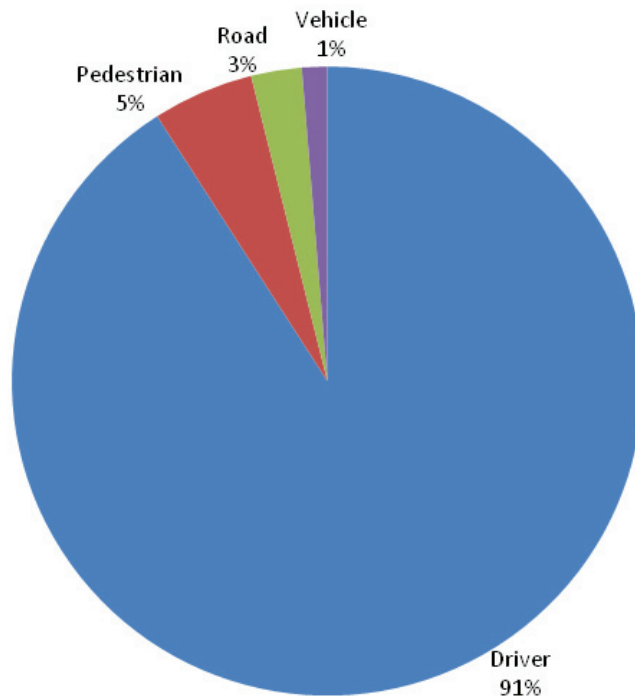


Contributory Factors to Road Collisions

The contributory factors listed by An Garda Síochána on collision report forms changed little from 2003 to date. Driver error accounted for 91 per cent of all contributory factors identified in fatal collisions, while the next most listed factor,

pedestrian error, accounted for five per cent. Road factors accounted for three per cent and vehicle factors accounted for one per cent of all listed contributory factors. The breakdown of contributory factors to fatal collisions is shown in Figure A9 below.

Figure A9: Contributory Factors to Fatal Road Collisions

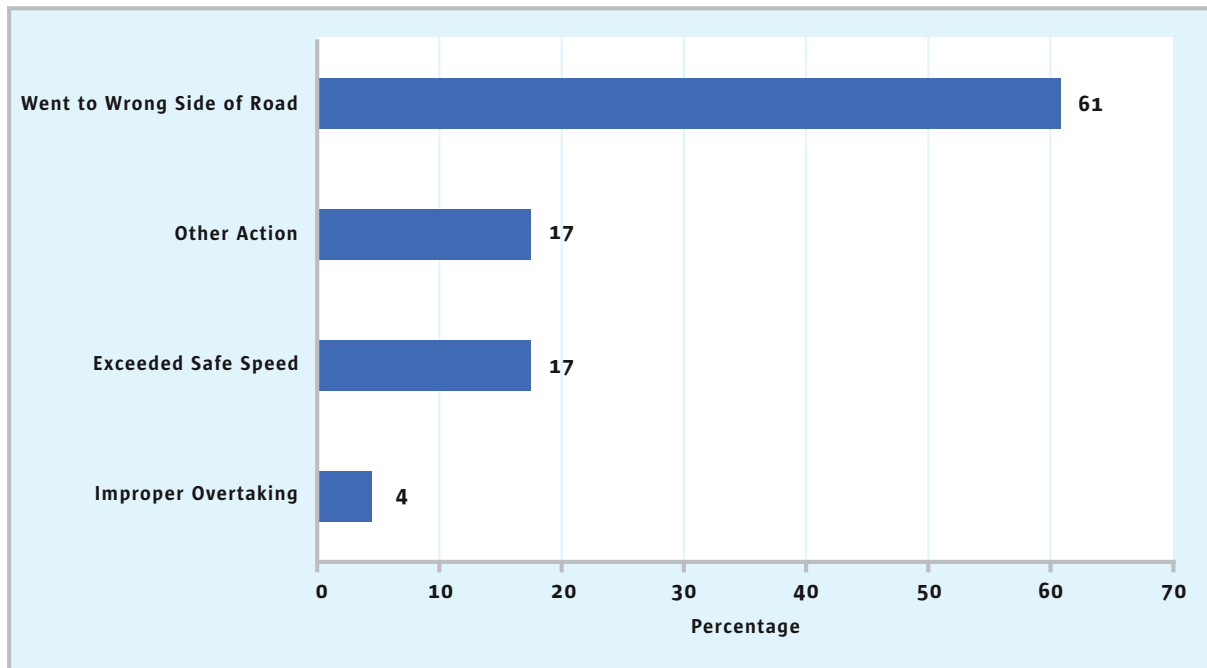


Contributory Actions to Road Collisions

In two-vehicle fatal collisions - see Figure A10 - the most frequently cited contributory action is 'went to the wrong side of the road' (61 per cent)

followed in turn by 'exceeded safe speed limit' (17 per cent), 'other action' (17 per cent) and 'improper overtaking' (4 per cent).

Figure A10. Two Vehicle fatal collisions in 2010. Classified by Contributory Action.



Collision Costs

The cost of collisions is based on those as outlined in the 2004 Goodbody Economic Consultants' report entitled 'Cost Benefit Parameters and Application Rules for Transport Project Appraisal' which was commissioned by the Department of Transport. Using the updating mechanism as set out in the Goodbody Economic Consultants' report which is to inflate the year 2002 cost values to 2010 values using the growth in Gross National Product (GNP) per person employed, the estimated cost of all fatal and injury road collisions reported to and recorded by An Garda Síochána in 2010 is €853 million. There is a decrease in the cost of collisions of €121 million when compared to the 2009 figure.

Table 2: Total Cost of Road Collisions in 2010

Type	Number of collisions	Cost per collision	Total cost
Fatal	185	2,583,311	477,912,535
Serious	409	345,121	141,154,489
Minor	5,186	33,991	176,277,326
Material Damage	21,305	2,719	57,928,295
Total	27,085	N/A	853,272,645

(Source of GNP per person employed growth rate: CSO)

International Comparisons

On the basis of road deaths per million population, in 2010, the latest year for which international comparative information is available, Ireland is ranked seventh out of the EU-27.

(Sources: IRTAD and ETSC)

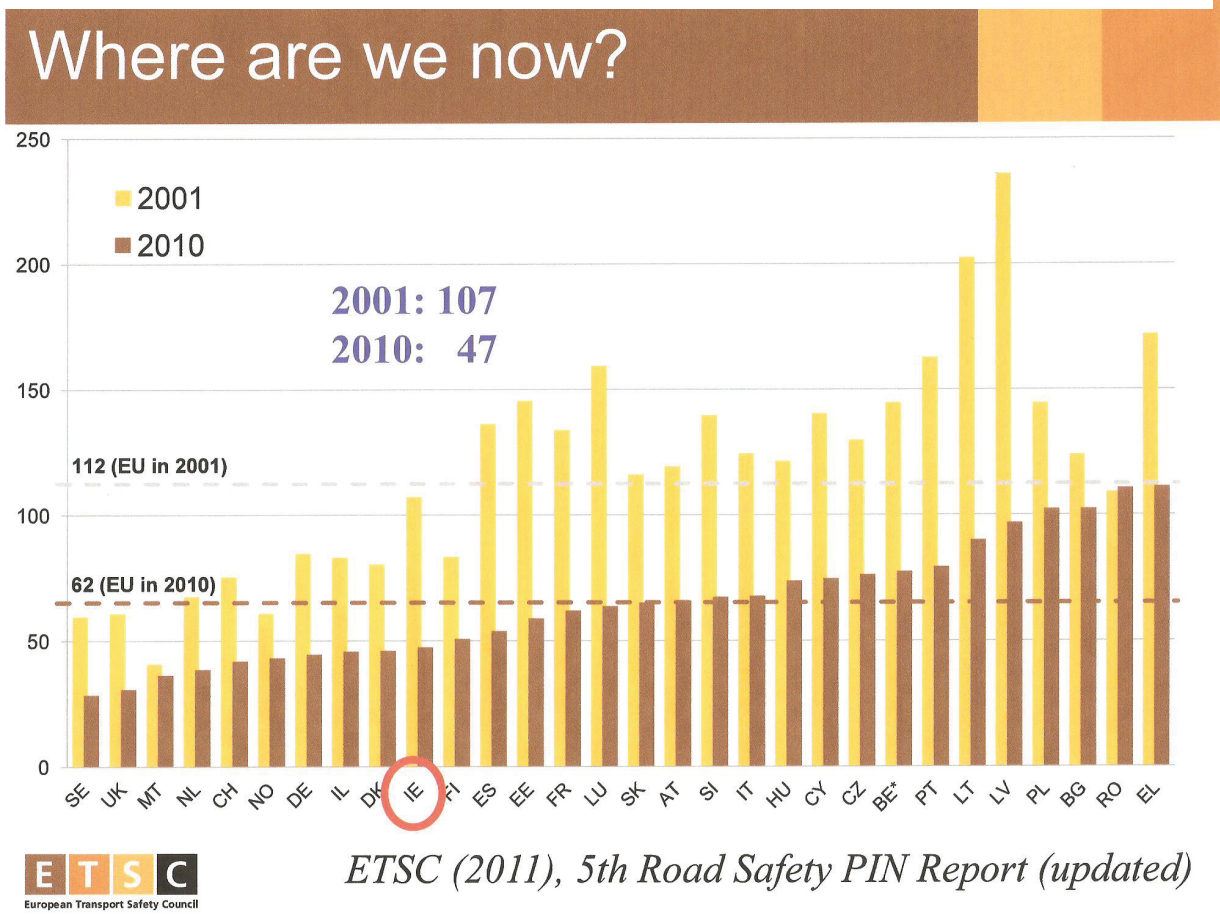
Table 3: Persons Killed and Injured, 2001-2010

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Killed	411	376	335	374	396	365	338	279	238	212
Injured	10,222	9,206	8,262	7,867	9,318	8,575	7,806	9,758	9,742	8,270
TOTAL	10,633	9,582	8,597	8,241	9,714	8,940	8,144	10,037	9,980	8,482

Table 4: Persons Killed Classified by Road User Type, 2001-2010

Road User Type	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Pedestrians	89	86	64	70	74	73	81	49	40	44
Pedal Cyclists	12	18	11	11	10	9	15	13	7	5
Motor Cyclists	50	44	55	50	56	29	33	29	25	17
Car Users	230	200	172	208	222	226	171	160	146	130
PSV Users	0	1	0	0	6	3	1	0	1	1
Goods Vehicle	26	20	27	25	22	18	32	20	17	10
Other or Unknown	4	7	6	10	6	7	5	8	2	5
TOTAL	411	376	335	374	396	365	338	279	238	212

Table 5: Road Deaths per million population in 2010 (with 2001 for comparison)



As illustrated in the above table, it can be seen that the road deaths per million population in Ireland have fallen from 107 deaths per million in 2001 to 47 deaths per million population in 2010. The 2010 figure compares with the EU average of 62.

Table 6: Road fatalities. Long-term trends.

Country	Road user fatalities						% change latest year available compared to previous year			
	1980	1990	2000	2005	2009	2010	1980	1990	2000	2010
Australia	3272	2331	1817	1627	1488	1352	-58.7	-42	-25.6	-9.1
Austria	2003	1558	976	768	633	552	-72.4	-64.6	-43.4	-12.8
Belgium	2396	1976	1470	1089	944	-	-60.6	-52.2	-35.8	-13.3
Canada	5461	3963	2903	2898	2207	-	-59.6	-44.3	-24	-23.8
Czech Republic	1261	1291	1486	1286	901	802	-36.4	-37.9	-46	-11
Denmark	690	634	498	331	303	255	-63	-59.8	-48.8	-15.8
Finland	551	649	396	379	279	272	-50.6	-58.1	-31.3	-2.5
France	13636	11215	8079	5318	4273	3992	-70.7	-64.4	-50.6	-6.6
Germany	15050	11046	7503	5361	4152	3648	-75.8	-67	-51.4	-12.1
Great Britain	5953	5217	3409	3201	2222	1850	-68.9	-64.5	-45.7	-16.7
Greece	1446	2050	2037	1658	1456	1258	-13	-38.6	-38.2	-13.6
Hungary	1630	2432	1200	1278	822	740	-54.6	-69.6	-38.3	-10
Iceland	25	24	32	19	17	8	-68	-66.7	-75	-52.9
Ireland	564	478	415	396	238	212	-62.4	-55.6	-48.9	-10.9
Israel	425	418	452	437	314	352	-17.2	-15.8	-22.1	12.1
Italy	9220	7151	7061	5818	4237	4090	-55.6	-42.8	-42.1	-3.5
Japan	11388	14595	10403	7931	5772	5745	-49.6	-60.6	-44.8	-0.5
Korea	6449	14174	10236	6376	5838	5505	-14.6	-61.2	-46.2	-5.7
Luxemburg	98	71	76	47	48	32	-67.3	-54.9	-57.9	-33.3
Netherlands	1996	1376	1082	750	644	537	-73.1	-61	-50.4	-16.6
New Zealand	597	729	462	405	384	375	-37.2	-48.6	-18.8	-2.3
Norway	362	332	341	223	212	208	-42.5	-37.3	-39	-1.9
Poland	6002	7333	6294	5444	4572	3907	-34.9	-46.7	-37.9	-14.5
Portugal	2850	2924	2053	1378	929	937	-67.1	-68	-54.4	0.9
Slovenia	558	517	314	258	171	138	-75.3	-73.3	-56.1	-19.3
Spain	6522	9032	5776	4442	2714	2478	-62	-72.6	-57.1	-8.7
Sweden	848	772	591	440	358	266	-68.6	-65.5	-55	-25.7
Switzerland	1209	925	592	409	349	327	-73	-64.6	-44.8	-6.3
United Kingdom	6182	5402	3580	3336	2337	1905	-69.2	-64.7	-46.8	-18.5
USA	51091	44599	41945	43510	33883	32885	-35.6	-26.3	-21.6	-2.9

SELF-ASSESSMENT OF KNOWLEDGE

Please complete the following questions to assess your understanding of the module so far:

Q.1 What was the total number of licence holders in Ireland in 2010?

Your Response

Q.2 How many persons were injured in road collisions in Ireland in 2010?

Your Response

Q.3 What was the total cost of road collisions in Ireland in 2010?

Your Response

Q.4 How can a road accident affect a family?

Your Response

Q.5 How many people were killed on the roads in Ireland in 2010?

Your Response

KNOW THE LOWER DRINK DRIVE LIMITS AND THE NEW PENALTIES

Under the new limits if the level of alcohol present in the body (*Blood Alcohol Concentration or BAC*) is between:

**50mg
& 80mg**



The driver will be arrested, brought to a Garda Station and required to provide evidential breath or blood or urine specimens. In all cases where the BAC is between 50 and 80mg, the driver will be served with a fixed penalty notice and receive a fine of €200 and 3 penalty points. Points will remain on a licence record for a period of three years. Any driver accumulating 12 points in a three year period will be disqualified from driving for a period of 6 months.

Under the new limits if the level of alcohol present in the body (*Blood Alcohol Concentration or BAC*) is between:

**80mg
& 100mg**



The driver will be arrested, brought to a Garda Station and required to provide evidential breath or blood or urine specimens. In all cases where the BAC is between 80 and 100mg, the driver will be served with a fixed penalty notice and receive a fine of €400 and the person will be disqualified from holding a driving licence for a period of 6 months.

Under the new limits if the level of alcohol present in the body for learner, newly qualified or professional drivers (*Goods, Bus, Public Service Vehicle e.g. Taxi*) is between:

**20mg
& 80mg**



The driver will be arrested, brought to a Garda Station and required to provide evidential breath or blood or urine specimens. In all cases where the BAC is between 20 and 80mg, the driver will be served with a fixed penalty notice and receive a fine of €200 and the person will be disqualified from holding a driving licence for a period of 3 months.

*If a driver cannot produce his or her driving licence when required to undergo the preliminary roadside breath test the lower limit of 20mg will apply until such time as the driver produces their licence. Drivers are reminded that it is a legal requirement to carry a valid driving licence at all times when driving.

*If a person does not wish to accept the fixed penalty notice and chooses to go to court and is convicted, the penalties are increased. Specifically for first offences where the BAC does not exceed 80 mg the disqualification period that applies is 6 months. In situations where the BAC detected is between 80mg and 100mg the disqualification period is 1 year. Where the BAC detected is above 100mg, or above 80mg for learner drivers and professional drivers, please see www.rsa.ie for disqualification periods.

*A driver can only avail of the penalty points/Fixed penalty option once in a 3 year period.

*Learner Drivers & Professional Drivers

- (a) Someone who holds a learner permit,
- (b) Someone who holds his or her first driving licence, for a 2 year period from its date of issue,
- (c) Someone who holds a driving licence to drive a vehicle in the category C, C1, D, D1, EB, EC, EC1, ED, ED1 and W while driving, attempting to drive or being in charge of such a vehicle,
- (d) Someone who holds a licence to drive a small public service vehicle granted under section 34 of the Taxi Regulation Act 2003 attempting to drive or being in charge of such a vehicle when the vehicle is being used in the course of business.



Údarás Um Shábháilteacht Ar Bhóithre
Road Safety Authority



NEVER EVER DRINK & DRIVE

SECTION C – ACCIDENT REDUCTION

As a professional driver you should set a good example to other road users. You should always be aware of how other road users see your vehicle and why they might not understand why you take up certain positions on the road to make turns or to manoeuvre. A good attitude will help you to enjoy your work, and is safer for yourself and for others around you on the road.

The EU perspective

Over a quarter of cyclist deaths are as a result of collisions with trucks. You need to be aware of the limited vision you have around your vehicle due to its size and shape. Use your mirrors including the Cyclops so that you have a constant picture of what's happening all around. Always check any blind spots before you move away. Also remember that cyclists could become unbalanced by the buffeting effect of a large vehicle passing closely.

Contributory factors - Apart from general factors such as the speed of motorised vehicles, the weight and design of motor vehicles and the lack of protection of pedestrians and cyclists, factors that have also been identified as causes of pedestrian and cyclist crashes are visibility, vehicle control and alcohol consumption. Lack of visibility is a factor in cyclist crashes. The fact that vulnerable road users are not always very well detected in the traffic plays a part, even in daytime. This is aggravated at dusk, dawn and night, especially when public lighting is absent or weak.

The most serious problem for cyclists seems to be detection of them by drivers approaching alongside or from behind.

Road types - Due to the high concentration of road traffic, most fatalities, severe and slight injuries to pedestrians and cyclists occur in urban areas. However, in rural areas, the percentage of fatalities is higher than the percentage of slight injuries due to the fact that that traffic is travelling much faster.

Crossing facilities - Crashes involving pedestrians and cyclists occur frequently at facilities designed for pedestrians and cyclists, such as pedestrian crossings, cycle tracks and cycle lanes. One of the causes is the driver's difficulty in perceiving pedestrians because of darkness and/or parked cars.

Defensive Driving

As the driver of a large and/or heavy vehicle, you have a special responsibility both to yourself and to all other road users to ensure that you do not create or contribute to a situation on the road which could lead to an accident.

A professional driver should set an example to other drivers by ensuring that the vehicle is driven

at all times with the utmost safety, courtesy and consideration.

Defensive Driving

- means looking after yourself, your vehicle, your passengers or your load
- is based on planning well ahead
- requires good observation and concentration
- means being in control, and
- means anticipating events

Know what others are going to do before they even do it! Almost every event is predictable. You must consider and prepare for all possibilities in all situations, especially when you don't know what other road users intend to do. Remember that you cannot brake or swerve like lighter, smaller vehicles can.

You must always drive: Responsibly, carefully, considerately, courteously, in an eco-friendly manner.

You must show at all times that your standards are high and that you can drive a large vehicle with skill and safety. It is important to understand that the right of way is not an absolute right of way. You must proceed with caution, having regard for other road users. Remember: Always give way to emergency vehicles.

By driving defensively, you will show that you care for the safety of all road users, including yourself, your passengers and your load.

When passing the scene of an incident or crash do not be distracted or slow down unnecessarily. This may cause traffic congestion or a collision.

Cockpit drill

When entering the cab, use the hand grips and steps provided.

Adjust the seat, steering, and mirrors, and familiarise yourself with the cab layout;

Always wear your seatbelt if provided - it is a legal requirement, and is fitted for your safety.

Ensure you have a clear view from the driver's seat which enables you to have effective all round observation.

Before driving any vehicle the driver's cab and "work station" must be kept free of any article that might interfere with the safe operation of the vehicle.

All notices displayed in the cab must be strictly adhered to and windscreens must be clear & clean at all times.

Ensure that all gauges and dials on the instrument panel are working and are not highlighting a problem.

Before starting your journey, make sure you know and understand the:

- Controls: where they are and how they work. (Including emergency door controls).
- Vehicle width, length, height, and weight
- Handling: the vehicle's characteristics
- Brakes: whether ABS brakes are fitted
- Safety systems fitted to your vehicle, e.g., Stability control, fire suppression etc.

When exiting the cab, ensure the handbrake is securely applied, neutral gear is selected and the ignition is switched off. Use the hand grips and steps provided – do not jump from the cab to the ground.

Hazard Identification and management. Driver error is a feature of nearly all collisions on the road. The following skills are essential for hazard recognition and negotiation:

Strategic – taking into account personal factors, attitudes, and the destination of the journey that might influence your driving

Tactical – near, middle and far distant scanning of the road and the environment, recognizing, anticipating and prioritizing hazards and forming a safe and achievable driving plan

Operational – translating intentions and thoughts into physical action – manoeuvring your vehicle accurately and smoothly

Stationary hazards e.g.

- Junctions,
- Low bridges,
- Low cables
- Railway crossings
- Road surface
- Road works,
- Temporary traffic lights
- Road Signs

- Roadside poles
- Buildings

Moving hazards and their probable actions, e.g.,

- Pedestrians
- Cyclists
- Motor cyclists
- Other vehicles
- Animals



Power Lines

Drivers of high vehicles, tipper trucks, excavators and cranes should be particularly careful when working near or under electricity cables.

The electricity can arc more than a metre from a high-tension cable.

The LUAS cables carry 750vDC and are at a height of 6 metres unless otherwise indicated.

Bus or coach driver speaking while the vehicle is in motion

A bus or coach driver is not permitted to hold a microphone or any attachment when the vehicle is moving except where it is essential to speak in an emergency, or to deal with safety issues.

A driver may only communicate with a “relevant” person on an operational matter so long as this can be done without distraction from the driving of the vehicle.

Relevant person:

- Includes an employee of the operator, a partner in an operations firm, an individual who is the operator, or the director of a company which is the operator.
- When operating a service for hire or reward at separate fares (other than an excursion and tour or a sightseeing service) to indicate the location of the vehicle by means of occasional short statements so long as this can be done without distraction from the driving of the vehicle.

Mobile phones and `in-vehicle` personal entertainment systems

As a professional driver you must not use a mobile phone or personal entertainment system through earphones or headset, including blue-tooth type telephone equipment when driving. If you do use an in-vehicle system, play it at a volume that does not distract or prevent you from hearing emergency sirens or vehicle horns. Never use a mobile phone close to a vehicle carrying inflammable loads or in a fuel filling station.

Safe Refuelling

- 1) Turn off engine.
- 2) Do not smoke.
- 3) Do not use your mobile phone - leave it inside the vehicle or turn it off.
- 4) Do not re-enter your vehicle during fuelling.
- 5) Do not overfill.

Fuel Economy

Eco-driving is a proven style of driving that contributes to road safety while reducing fuel consumption and emissions. By increasing your hazard perception and forward planning skills, you can make maximum use of the vehicles momentum and engine braking. By doing this, you will avoid late braking and harsh acceleration.

By taking your foot off the accelerator your vehicle will slow down and fuel consumption will be reduced.

When driving away, avoid over-revving the engine and try to pull away smoothly.

Use the accelerator smoothly and progressively.

It is not always necessary to use each gear. Drivers should block-change whenever possible, and this reduces the amount of time spent accelerating which in turn reduces fuel consumption.

You should use the highest gear possible without making the engine labour.

Fuel consumption should be checked regularly and any increase could mean that the vehicle needs to be serviced or there could be some other reason such as a leak, or a different driving style being used.

To maximise fuel economy, think ‘high gear-low revs’, and always keep the tachometer in the green band.

When looking at reducing and minimising risks, truck and bus drivers need to be aware of the dangers involved for other road users when diesel spillages occur. Diesel tanks need to be checked regularly for damage or corrosion and drivers need to ensure that diesel caps are replaced and secured correctly after filling with diesel. Diesel spillages will predominantly take place where there are cambers on the road or at certain types of junctions, bends or roundabouts. This, coupled with wet or damp roads can become a lethal combination for the motorcyclist / cyclist / other road users, increasing the risk of serious crashes or fatalities.

Care of tyres

Excessive damage can be caused by drivers who continue to drive with an under inflated tyre. If you experience a puncture, stop your vehicle as soon as possible in a safe position and contact your depot or tyre repair centre. Care should always be exercised when drawing into or away from the nearside kerb and when cornering or negotiating islands and roundabouts, as any scraping of the tyre wall may require expensive repairs. Tyre valves and wheel nut covers can also be damaged where high kerbs are encountered.

Unintended acceleration

Research shows that the underlying causes of unintended acceleration can be explained in terms of normal human behaviour and action; it usually

happens when the driver takes over a vehicle already in service or when the driver has left the vehicle cab with the engine running, even for a short time, then returns to resume driving, or is undertaking a slow speed manoeuvre. Therefore to help prevent unintended acceleration, every time you get into the vehicle carry out the cockpit drill as outlined earlier.

Potential symptoms and causes of unintended acceleration could be that the driver presses the accelerator in mistake for the brake (and continues to do so). Be professional, always apply the handbrake, select neutral gear and switch off the engine when parked.

When you are driving

- Expect others to make mistakes
- Be forgiving of other drivers
- Do not “rise” to aggression
- Be aware of the swept path of your vehicle. (It may be in excess of a metre wider than the path you steer).
- Do not make an un-necessary ‘swan neck’ by passing the correct turning point and then having to turn back into the road you want to enter.

Aggressive drivers/Road rage/Theft

People who drive aggressively often see their driving as competition. In every situation, they want to win. If you let them go first, you will not have lost—you are simply refusing to be involved in their accident. Aggressive drivers may be under severe personal pressure or tension, and their responses may be difficult to predict. Where you experience aggression, try to stay calm and be courteous. Do not make provocative statements or gestures, or flash the lights, or sound the horn. Do not get out of the cab to confront the other driver. Where you experience verbal abuse, do not take it personally – the more professional you are, the more the abuser will calm down. Bus, coach and truck drivers may be threatened with a needle or suffer a needle-stick injury. In that event, a skin puncture should be encouraged to bleed in an attempt to express any substance deposited in the wound. The wound should then be washed thoroughly with soap and clean water, and should be covered with a water-proof dressing. The driver should get medical attention as soon as possible. All hospital A&E departments now have a protocol in place for dealing with such incidents. It may be

necessary to receive specified treatment and/or counselling. The incident should be reported to the manager or supervisor, and to the Gardai, at the earliest opportunity. Where a driver is a witness to, or is the victim of theft, it is important that no action is taken which gives rise to further danger or threat. The driver should not attempt to take any aggressive action during a robbery.

The driver should

- keep calm and do what is asked
- Look for details such as appearance, clothing, eyes, build, scars, hair, accent, or other identifiers.
- Preserve the scene until the Gardai arrive, and get witnesses names and addresses.

Effective Observation

Just looking is not enough. As a driver of a large and/or heavy vehicle, you will often have a better view of the road from your driving position than most other road users. However, because of its size and design, a large and/or heavy vehicle will have more blind spots than smaller vehicles. You must use the mirrors constantly, effectively, and in the correct sequence, both off-side and near-side, to observe other road users around you, to know what they are doing or going to do next, and act sensibly upon what you see.

You must be constantly checking down the sides of the vehicle for any hazards with particular attention:

- for overtaking traffic coming up behind, or already alongside
- before signalling
- before changing lanes, overtaking, moving to the right, or turning right
- for cyclists or motorcyclists “filtering” up the nearside
- for traffic on your left when moving in two or more lanes
- to check when you have passed another road user, pedestrian, or parked vehicles before moving back to the left
- before changing lanes, after overtaking, moving closer to the left, leaving roundabouts, or before turning left to see where your wheels are in relation to the kerb or gutter

You must also be aware of pedestrians or cyclists who may be out of sight directly in front of your

vehicle, especially at pedestrian crossings and in slow-moving congested traffic. The fitting of cyclops or front view mirrors on trucks is mandatory from 1 October 2012.

When moving off from a stationary position always check your blind spots by looking around you as well as using your mirrors. In some vehicles particularly those with high side windows it is difficult to see to either side. When you want to move off you should open the window and look down and around to the right, to ensure that it is clear before you pull away.

Speed Limits

Speed Limits in the Republic of Ireland

With effect from 1st February 2009 new regulations came into force which have changed the maximum speed limits for Buses and Coaches when they are travelling on a Motorway or Dual-carriageway.

The main points to be aware of are;

Single Deck & Double Deck Buses travelling on a Motorway or Dual –carriageway can now travel at a maximum permitted speed of 100 km/h

Where a Bus or Coach is travelling on a normal road (not Motorway or Dual-carriageway) the maximum permitted speed remains at 80 km/h. As before, where the vehicle is designed or adapted to carry standing passengers, the maximum permitted speed remains at 65 km/h (Speed Limits SI 546 of 2008).

PSVs and HGVs may use the right-hand lane of a Dual-Carriageway but may not use the right-hand lane of a Motorway

S.I. 75 of 2012 which came into effect on 1 April 2012 permits a HGV to be driven at a speed of 90 km/h on a Motorway. For Heavy Goods Vehicles the maximum permitted speed is 80km/h on all roads (except motorways) not subject to a lower speed limit.

Speed limiters are fitted to buses/coaches restricting their maximum speed to 100km/h

Speed Limiters are fitted to Large Goods Vehicles restricting their maximum speed to 90km/h

Local authorities can apply special speed limits at some locations i.e. schools, on different sides on a dual-carriageway, on selected locations such as a tunnel, where the limit may be lowered if one lane must be closed, where there is a series of bends and at road works.

Note; under the present regulations breaching such limits could attract penalty points.

Night Driving

Make sure your lights, indicators, reflectors and number plate lighting are clean and in a serviceable condition. Drive at a speed that allows you to stop within the distance covered by your lights. Do not wear tinted or sunglasses at night (or in poor visibility). Whilst being aware of the official lighting up time, always use lights as appropriate to the conditions prevailing at any time of the day. Allow time for your eyes to adjust from brightly lit conditions into the darkness and vice-versa, (this advice may also apply to driving in and out of tunnels). Always use dipped headlights in built up areas at night as it helps others see you and aids your visibility.

Note:

- When driving at night, it is important to use your headlights correctly to avoid dazzling other road users.
- Ensure your lights are in a serviceable condition, give yourself time to adjust to dark conditions and remember it is more difficult to judge speed and distances at night and in dark conditions.
- If you are dazzled, the advice given in the Rules of the Road is; slow down and stop if necessary. Always watch for pedestrians or cyclists on your side of the road. If the dazzle is from an oncoming vehicle, avoid it by looking towards the verge (edge of your side of the road) until the vehicle has passed. If the dazzle is from a vehicle behind you and reflected in your mirror, operate the night driving mode on the mirror. (if fitted).

Never drive at such a speed that you cannot stop in the distance you can see is clear ahead

- Whatever the weather
- Regardless of the type of road you are driving on
- Whether you are carrying passengers or goods
- Never drive so fast that you cannot see clearly ahead
- Keep a safe separation distance between you and the vehicle in front
- In good weather conditions use the 2-second time gap. This means that when the vehicle in front passes a fixed point, it should take you at least 2 seconds to pass the same point. At higher speeds or in larger vehicles make this a 3 second time gap.

- On wet roads, you will need to at least double the distance, and allow at least a 4 second gap

Stopping Distance

When driving in icy or snowy weather, stopping distance can be ten times greater than on dry roads. Professional drivers allow drivers behind ample time to react. Do not tailgate. If a vehicle in front brakes heavily you need time to react and move your foot to the brake pedal. Your reaction time and perception time could be as much as 1.25 seconds. Remember at 80km per hour you'll have travelled approximately 15 metres in this time. When you are waiting at traffic lights, or pedestrian crossings, or any type of crossing, you should stop a metre or two short of the white line; otherwise you may find it difficult to spot any approaching pedestrians who may start to cross as the lights change. Also when waiting in traffic queues keep far enough back from the vehicle in front i.e. be able to clearly see its rear wheels where they come into contact with the road surface. If you stop in a tunnel, leave at least a 5 metre gap between you and the vehicle in front.

Zones of Vision

As a truck or bus driver, you must have better than average eyesight. As a professional driver, you must watch the road ahead constantly, to see what is happening and try to work out what might happen next. You should know what is ahead, behind, and beside you. You need to know what is happening at the edges of your vision and note what is happening out of the corner of your eye, and act on your observations.

Check for:

- vehicles about to emerge from junctions
- children running out
- cyclists and motorcycles
- pedestrians stepping out

Look for clues

If you see a cyclist ahead glance round to the right, they are probably going to try to turn right into the next road, be ready for it: watch the actions of pedestrians as they approach kerbs. Older people sometimes become confused and change direction suddenly, or even turn back after they have started to cross the road. Before you change direction or speed, you must decide how any change will affect other road users. Cars or motorbikes which try to overtake will normally catch up with you much faster than you are moving. Drivers of large vehicles

usually cannot see much by looking round, which is why you must always be aware of vehicles just behind you to either your left or right hand side as they come into your blind spot position. A quick sideways glance is often helpful before changing lanes on a motorway or dual carriageway, or where traffic joins from the right or left, or when joining the main carriageway from a motorway or dual-carriageway slip road. Do not take your attention off the road ahead for too long.

Traffic Lights

At many busy road junctions the road is covered in skid marks. This shows that vehicles have approached the junction too fast and have had to brake hard.

When Traffic Lights are on Green

Look well ahead; decide how much traffic is waiting at each side of the junction you are coming to and ask yourself

- How long has green been showing?
- Can I stop safely from this speed if the lights change?
- If I had to brake hard, will the traffic behind be able to stop safely?
- Are there any vehicles waiting to turn left or right?
- How will the weather and road conditions affect my braking?

When Traffic Lights are on Red.

You must, of course, stop at red traffic lights. However, you may be able to time your approach to the lights at such a speed that will enable you to keep your vehicle moving as they change.

If you can see that traffic on the other road has stopped, look for clues to suggest whether your traffic lights are likely to go to green next.

The professional driver should be able to judge whether a pedestrian phase may interrupt the usual pattern, or if other factors such as filter arrows or flashing amber lights may affect the sequence.

This can be especially important when driving a large or heavy vehicle uphill to traffic lights. Timing your approach to avoid stopping and moving off again may make your driving easier, more eco-friendly and your passengers more comfortable.

When Traffic Lights are on amber

You must stop, unless you are so close to the stop line or lights that stopping would be dangerous.

Where Traffic Lights are not working

If you come to traffic lights that are not working, or there is a sign to show they are out of order, treat the junction like an unmarked junction.

Give way to traffic coming from the right, but even then drive on only with great care.

Ensure that your observation misses nothing and be prepared to stop if others assume priority.

Don't

- Speed up to try to beat the signals – remember what might happen if you have to change suddenly from the accelerator to the brake!
- Leave it until the last moment to apply the brakes – heavy braking can end up in loss of control.

A vehicle driving across your path may anticipate the lights changing and accelerate forward while their lights are still on red. Don't take any risks.

The results of these actions are accidents which need not happen.

Roundabouts

On the approach to roundabouts drivers should take note of road markings and signs, and get into the appropriate lane for their intended direction when safe to do so. To negotiate roundabouts safely the appropriate position will always have to be adopted. Conditions at roundabouts may vary, exercise caution at all times and pay attention to mirrors while approaching, negotiating, and leaving the roundabout.

Not every roundabout is the same. They are different shapes and sizes and can have different numbers of exits. Some are controlled by traffic lights.

The purpose of having a roundabout is:

- to reduce delays - traffic flows smoothly compared to the stop and go traffic at normal intersections such as at traffic lights.
- to significantly reduce the risk of collisions.
- to reduce pollution - emissions from vehicles on roundabouts are less than they would be at traffic light junctions.

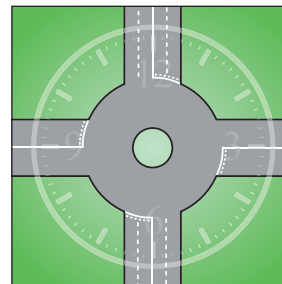
Golden Rule

This 'golden rule' should help motorists to drive safely at any roundabout regardless of the number of exits:

Think of the roundabout as a clock.

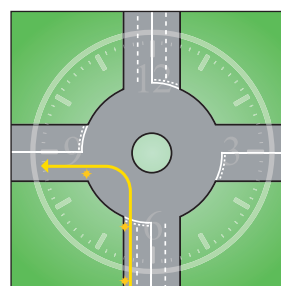
- If taking any exit from the 6 o'clock to the 12 o'clock position, motorists should generally approach in the left-hand lane.
- If taking any exit between the 12 o'clock to the 6 o'clock positions, motorists should generally approach in the right-hand lane.
- If there are road markings showing you what lane you should be in, follow those directions. Traffic conditions might sometimes mean you have to take a different approach but, in the main, the 'golden rule' will help you to drive safely on almost any roundabout.

Approaching a roundabout



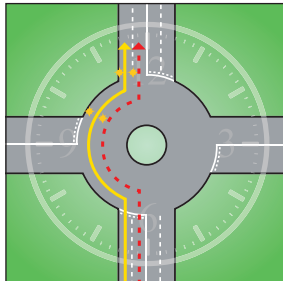
- Conditions at roundabouts may vary. When you're coming up to a roundabout, look for directional arrows, road markings or signs which might be indicating which lane you should use for the exit you're taking.
- Move into the correct lane in good time. Use the 12 o'clock 'golden rule' to help you plan a safe course of action unless road signs indicate otherwise.
- Treat the roundabout as a junction, yield to traffic coming from the right, but keep moving if the way is clear.

Making a left turn



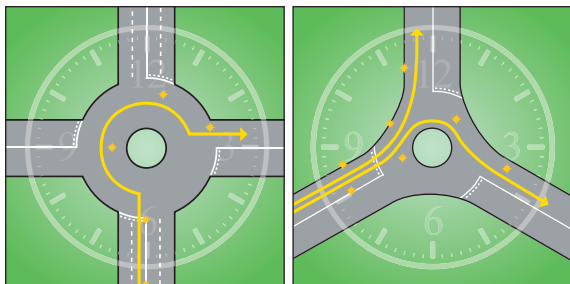
- Approach in the left-hand lane, indicate 'left' as you approach and continue to indicate until you have taken the left exit.

Going straight ahead (or any exit to the left of 12 o'clock)



- Approach in the left-hand lane (unless road markings say otherwise) but do not indicate 'left' until you have passed the exit before the one you intend to take. Where traffic conditions dictate otherwise for example a long line of traffic in left lane signalling left or road works in the left lane, you may follow the course shown by the broken red line.

Taking any later exits (those past 12 o'clock - Right)



- Approach in the right-hand lane (unless road markings say otherwise), indicate 'right' on your approach and leave your indicator on until you have passed the exit before the one you intend to take. Then change to the 'left' turn indicator.

Many roundabouts have different road layouts to those shown. It is not possible to cover all possible layouts in this manual, however the general rules given here are a basic guide for approaching any roundabout.

If a roundabout is controlled by traffic lights, the traffic lights must be obeyed.

Motorists should be aware of other road users such as cyclists, motorcyclists, horse riders, large or long vehicles and so on, who may have to change their position on the road to get around the roundabout safely. It is also important to watch out for pedestrians who may be attempting to cross the road at the roundabout.

Enquiries relating to particular roundabouts may be directed to the Gardaí or to the local authorities.

By law, a driver must enter a roundabout by turning to the left. Failure to do so is an offence. If you are guilty of this offence and you pay the fixed charge, you will get one penalty point on your licence. If you choose not to pay the fixed charge and go to court instead, you will get three penalty points on your licence if you are convicted.

One-Way Streets

Even though all traffic on a one-way street is travelling in the same direction, you should still normally drive on the left-hand side.

You may leave the left-hand side only if you intend to overtake or turn right up ahead.

You may drive on either side of a traffic island, but take note of arrow markings on the road.

Signals

- To warn others about what you are going to do – especially if this involves a manoeuvre which is not obvious to other road users
- To help other road users.
- Remember the MSM-PSL (Mirror-Signal-Manoeuvre-Position-Speed-Look) routine.

Examples of the road users you need to consider:

- drivers of oncoming vehicles
- drivers of following vehicles
- motorcyclists
- cyclists
- school crossing supervisors
- Gardaí directing traffic
- pedestrians
- horse riders

Give signals:

- Clearly, correctly and in good time.
- Which are only those in the Rules of the Road

Avoid:

- Giving signals which could confuse – especially when you are going to pull up just after a road on the left when another road user might misunderstand the meaning of the signal.
- Giving unauthorised signals – despite how widely you assume they are understood.

This applies to:

- Headlight codes and alternating indicator signals.

Remember, any signal which does not appear in the Rules of the Road is not only unauthorised, but could also be misunderstood by another road user.

Always consider the effect your signal will have on all other road users.

Sounding the Horn

There are few instances when you will need to use the horn.

Using the horn does not:

- Give you the right of way
- Relieve you of the right to drive safely

Sound it only if:

- You think another road user may not have seen you.
- You need to warn other road users that you are there – e.g. at blind bends or a hump back bridge.

Never use the horn as a rebuke or simply to attract attention (unless to avoid an accident)

Do not use the horn:

- When stationary.
- At night between 23:30 hrs and 07:00 hrs in a built up area unless there is a traffic emergency.

Avoid any long blasts on the horn which could alarm pedestrians.

If they don't react they may be deaf!

Animals

Dogs – When you see a dog, notice whether it is on a lead. If it is not (or if you can't see for sure) use your mirrors and then keep an eye on the dog. If it runs into the road do your best to avoid it – but don't swerve or stop in a manner which could endanger other people.

Cats - can usually look after themselves but they do sometimes make a high-speed dash across the road. Be ready to ease your foot off the accelerator pedal – but do not swerve or carry out emergency stops.

Horses – When you see a horse and rider, slow down, avoid making unnecessary noise, and leave plenty of room. A group of riders may mean a riding school and children learning. Drive slowly and be ready to stop or crawl past. If you see a string of

horses near racing stables, look for signals from the first and last riders. Horses being led should be keeping to the same side of the road as vehicular traffic.

Horses are easily frightened by noise and by vehicles passing too closely. When passing them a driver should do so slowly and allow plenty of room between the vehicle and the horse. Drivers need to check the nearside mirror to ensure that the manoeuvre has been completed safely. Do not flash lights as these may startle the horses. Another point to keep in mind is that the release of an air brake should not be done near horses as it may cause them to bolt.

Other animals– Always reduce speed and be ready to stop. Be patient, even if animals block the road while they are being moved, and respect the signals of the person in charge of them.

Signs about animals – In some areas you will see warning signs about ponies, deer or livestock which may come on to the road. Watch out for them, especially at dawn or dusk and other times when it is difficult to see – in dazzling sunshine, mist and heavy rain.

Animals at night- Look out for any lights which may warn you of animals on the road. Drivers sometimes rely on the lamps of their own bicycles.

Motorways

The generally higher speeds and volume of traffic mean that conditions can change much more quickly on this type of road. Therefore you need to be alert at all times, physically fit, concentrating fully and assessing the traffic conditions well ahead. Don't drive if you are tired, feeling ill, or taking medication that could affect your driving or make you unable to concentrate for any reason.

Joining a Motorway

The slip road leads to an acceleration lane. This allows you to see the motorway and adjust your speed to that of the traffic already on the motorway before joining it.

You must always give way to traffic already on the motorway.

Join where there is a suitable gap in the left-hand lane. You must not drive a large/heavy vehicle in the right-hand lane of a motorway. Do not cross continuous white lines that separate lanes, or drive on chevron markings. Use the Mirrors, Signal, Manoeuvre, Position, Speed Look routine.

A quick sideways glance might be necessary to verify

the position of other vehicles.

You must not

- Force your way into the traffic stream, or
- Drive along the hard shoulder

You should

- Indicate your intention to join the motorway.
- Make sure you can be seen.
- Assess the speed of the traffic on the motorway before you try to merge in.
- Once you have joined the motorway, keep in the left-hand lane until you have had time to judge and adjust to the faster speed of the moving traffic.
- Follow the advice in the Rules of the Road regarding Motorways.

Lane Discipline

You should drive in the left-hand lane if the road ahead is clear

When overtaking or changing lanes take a quick sideways glance into the blind spot area to verify the position of a vehicle that may have disappeared from your view in the mirror.

Remember: you must not use the lane nearest the central median (lane 2 or lane 3) if you are driving a passenger carrying vehicle with seating for more than 8 passengers, or a large goods vehicle.

This similar rule applies in the UK to the right-hand lane of a motorway with three or more lanes.

Leaving a motorway

Unless you are going to the end of the motorway, you will leave by moving left from the left-hand lane into the deceleration lane (extra lane) taking you to the slip road. Get into that lane in plenty of time. Plan well ahead. Generally you should indicate no later than the 300-metre marker and if it would benefit other drivers you should indicate well before this point.

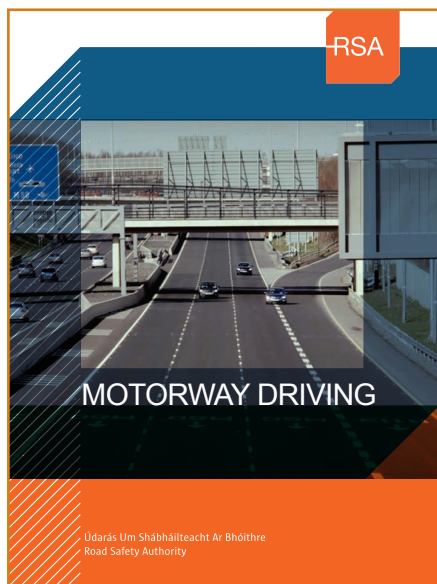
Bus Lanes

Bus lanes are becoming more a part of the public transport infrastructure. Bus and coach drivers should use them sensibly and not be tempted to speed just because the lane is clear ahead. Where the lane has been obstructed drivers should exercise patience. Drivers should take extra care when driving along the near-side of slow moving or stationary traffic where pedestrians could be tempted to cross the road. They may not be prepared for vehicles moving faster along the bus lane.

Drivers should be particularly careful when using or dealing with:

- With-flow bus and cycle lanes.
- Contra-flow bus lanes.




Always be prepared for the end of the bus lane, the bus must give way to other vehicles as it merges back into normal traffic. In addition to buses and coaches with-flow bus lanes can be used by taxis, cyclists and emergency vehicles.



Rail/Light Rail signs

Level crossings

It is important to know the traffic signs that indicate the different types of level crossings. The following table shows the different signs and what you **must** do when you see them.

Level crossing signs	What you must do
 <p data-bbox="602 856 736 978">Level crossing ahead, guarded by gates or lifting barriers</p>	<ol data-bbox="790 738 1243 1084" style="list-style-type: none"> 1. Stop clear of the railway line so you have a good view along the track in both directions. 2. Look for the approach of trains. In fog or at night, watch for the light of an approaching train. 3. Listen for the horn or the sound of an approaching train. 4. See that both gates are open before starting to cross or wait for all barriers to go back up before moving on. 5. Close both gates after you cross. 6. Obey any other instructions signposted at the crossing.
 <p data-bbox="602 1206 736 1328">Level crossing ahead, unguarded by gates or lifting barriers</p>	<p data-bbox="790 1128 1197 1178">As a train approaches, two red lights will start flashing.</p> <p data-bbox="790 1190 1106 1215">Nothing else protects this crossing.</p> <ol data-bbox="790 1227 1248 1406" style="list-style-type: none"> 1. If the lights are flashing as you approach the crossing, you must stay behind the stop line or, if there is no stop line, stay behind the flashing red lights. 2. Wait to see if a second train is coming. You will know this if the sign 'SECOND TRAIN COMING' (below the light board) is lit up.
 <p data-bbox="602 1531 736 1629">Level crossing ahead with lights and barriers</p>	<ol data-bbox="790 1477 1236 1684" style="list-style-type: none"> 1. The light at this crossing is usually steady and amber. As a train approaches, two red lights start to flash in turn and warning bells sound. 2. Stop clear of the railway crossing. 3. Never try to zigzag around the barriers. 4. Wait for all barriers to go back up before moving on.

Other types of level crossings include:

- attended gated crossings, and
- unattended crossings with barriers that extend over the full width of the road.

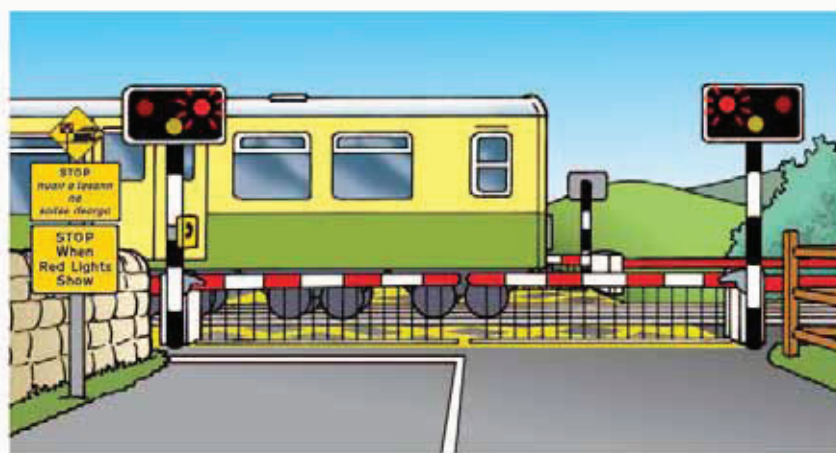
Road vehicles risk hitting level crossing gates, barriers and trains, so you **must** approach level crossings with care and be able to come to a stop in front of the gates or barriers.

If your vehicle breaks down or gets stuck on a level crossing:

- make sure that everybody gets out and gets clear of the railway line, and
- use the phone provided by Iarnród Éireann or warn of the danger immediately as best you can.

REMEMBER

You **must not** trespass onto a railway line. It is highly dangerous.



A railway level crossing is an intersection where a road or passage crosses a railway track.

Drivers and other users should be aware of the different types of crossing and should know how to cross safely.

You must always approach a level crossing with care.

You must not enter a yellow box area unless you can clear it without stopping.

You must never stop on the railway tracks.

Use the Rail Cross Code: Stop, Look and Listen

Stop – two meters back clear of the railway line

Look - Right and Left, watching for the lights of approaching trains

Listen – for engine noise, a train horn or whistle

Give Way to Trains

Let the approaching train pass, then look right and left again

When the Railway is clear

Cross quickly.

REMEMBER

Never stop a vehicle on the railway tracks

Railway bridge signs

Warning signs

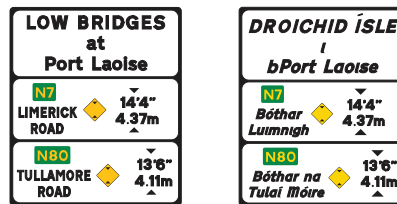
As you approach a bridge, you will see a warning sign, such as the sign below, showing the highest vehicle that will be able to pass under the bridge. The height is called the maximum headroom and is written first in feet and inches and then in metres.



Low bridge ahead
(height restriction show)

If your vehicle, including any load being carried, is higher than the height shown on the warning sign, you will not fit under the bridge ahead. It is very important to know the height of your vehicle and of any load being carried before you start your journey – know your height, know your route.

You may also encounter advance warning signs such as the sign below.



Advance information sign for low clearance

Information signs

You **must** report all incidents of striking any railway structure whether or not damage is obvious. The information signs shown below appear on bridges and give the code for the bridge and a local Iarnród Éireann contact phone number.



Advance information sign for low clearance

Forces at work on your vehicle

It is important to know what forces are acting on your vehicle and how they can affect it. Gravity affects the braking, steering, suspension and fuel efficiency of a vehicle depending on whether it is on level ground, travelling uphill or travelling downhill.

A vehicle's centre of gravity is the point around which all its weight is balanced. Kinetic energy is the energy stored by a moving vehicle. The amount of the energy depends on the weight of the vehicle and its speed. Momentum is the tendency of a moving vehicle to continue in a straight line. Centrifugal force affects a vehicle taking a curved track on the road and tends to make the vehicle and its passengers or load lean in the opposite direction to the curve.

Correct load distribution is essential to ensuring that no axle is overloaded.

Friction

This is the grip between two surfaces. The grip which the tyres have on the road surface transmits the force (traction) which is essential when:

- moving away or accelerating
- turning/ changing direction
- braking/ slowing down

The amount of grip will depend on:

- the weight of the vehicle
- the speed of the vehicle
- the condition of the tyre tread
- whether the tyre is
 - under inflated
 - over inflated
- the type and condition of the road surface
 - loose
 - smooth
 - anti-skid
- weather conditions
 - fine and dry
 - rain
 - ice or snow
- any other material present
 - mud
 - wet leaves

- diesel spillage
- other slippery spillages
- inset metal rails
- loose road surfaces

- whether the vehicle is braking or steering sharply
- the condition of steering and suspension components

Sudden acceleration or braking can lead to loss of friction between the tyre tread and the road surface.

Under these conditions the vehicle may

- lose traction (wheel spin)
- break away on a turn (skid)
- not stop safely (skid)
- overturn

The same will happen when changing into a lower gear if travelling too fast, or if the clutch is suddenly released, because the braking effect will only be applied to the driven wheels.

Load Security

Loads carried in any vehicle, whether a motorbike, car, van, lorry, truck, bus or trailer, should be secured so that they cannot move or fall off or out of the vehicle. Loose items such as a computer laptop or tools in a vehicle cab are all potential missiles especially in a collision and can cause serious injury to the vehicle occupants, to other road users and to pedestrians. Loads must be secured even if the vehicle is only travelling a short distance or at low speeds.

What is Load Security?

Load security is a term used to cover load restraint and load containment. Load restraint means preventing the movement of the load in any direction in relation to the vehicle load bed. Load containment means preventing goods falling from the vehicle. Unsecured loads can move in any direction (forward, backwards, sideways and even upwards). The weight of the load and the friction between the load and the vehicle are never enough to keep the load in place. Unsecured loads may become unstable during a journey and fall from a vehicle during unloading. Loads must be secured so that they are unlikely to shift, fall, be dislodged or blown from the vehicle both during the journey and when the vehicle is being unloaded.

Why should loads be secured?

Unsecured or inadequately secured loads can injure and even kill people. Failure to secure a load properly can also result in financial losses due to damaged goods, vehicles, property and roads. Financial losses may also result from lost working time, clean up costs, time delays during unloading, legal costs and damage to company reputation.

Loads that are unsecured or inadequately secured often begin to move when the driver is accelerating, braking, going around corners or roundabouts, entering or exiting motorway slip roads or taking evasive action such as avoiding a collision. Sudden steering movements can also cause the load to move. Loads can move even at low speeds. Drivers, vehicle occupants, other road users, pedestrians and anyone who may be involved in loading and unloading the vehicle may be at risk of injury. As well as being a distraction to the driver, shifting loads can make the vehicle unstable, result in loss of control of the vehicle and may cause the vehicle to overturn. Unsecured loads or objects may fall on or hit people and can cause road obstructions, traffic disruptions and collisions especially if drivers swerve to avoid fallen items. Certain vehicle

spillages may cause other vehicles to skid and lose control. Unrestrained goods may crash into the vehicle cab during emergency braking. Loads which have shifted may have to be manually removed from the vehicle which may increase the risk of an injury or a fall from the vehicle.

What Law applies to Load Security?

Load security is covered specifically by Road Traffic legislation, which requires that loads carried by vehicles must be properly secured at all times. It is an offence for a vehicle to be overloaded or to discharge material onto the public road.

Occupational Health and Safety legislation is also applicable to load security. Under the Safety, Health and Welfare at Work Act 2005 (No.10 of 2005)

Employers must ensure systems of work are planned, performed and maintained for securing and transporting loads.

Drivers, loading and unloading staff must be provided with instruction, information and training about securing loads.

Employers must ensure that adequate equipment is provided and maintained for securing loads.

Appropriate plans and procedures must also be in place in the event of an emergency such as a load shifting.

The law also requires that employers co-operate, so where several parties are involved in ensuring the safe transport of a load, there should be adequate co-ordination and co-operation between the parties and clear responsibilities laid down.

Who is responsible for securing loads?

Load security is not the sole responsibility of the vehicle driver. Everyone has a role to play in ensuring that loads are transported safely.

Employers: Must ensure that the vehicle is safe and suitable for the load being carried. They must also ensure that safe systems of work are in place for securing loads, that staff are trained and that during load securing the risk of people falling from the vehicle or suffering an injury is avoided or minimised.

Vehicle Owners: If the vehicle is leased or rented, the company that owns the vehicle has a responsibility to ensure that the vehicle is safe and fit for purpose.

Loading & Unloading Staff: Must be trained how to

secure loads and be competent to load and unload the vehicle safely.

The Driver: On the road, the driver is responsible for the load so the driver should know how the vehicle has been loaded and how the load is secured. While carrying out the journey, the driver should check that the load is secure at regular intervals as the load may settle or move during the journey.

What should be used to secure loads

Different loads will require different methods of securing, for example, fastening straps, chains, adjustable brackets, sliding slatboards, use of dunnage, blocking or bracing. However, what works for one type of load will not necessarily work for another type. The vehicle must always be appropriate to carry the load and have suitable attachment points for chains, straps and other load securing devices. Whatever system is used it must not create an additional risk for people who have to use it. Carry out a risk assessment and select the safest and most appropriate method of securing the load. Consult the vehicle manufacturer, trade industry bodies and suppliers of proprietary load security systems who will be able to provide advice.

Driving For Work

- Work Related Vehicle Safety
 - Legal Requirements
 - Work Related Vehicle Statistics
 - Vehicle Risks
 - Forklift Trucks
 - PRAISE Project. Managing Work Related Road Risks
- Workplace Transport Safety
- Driving for Work
- Working On or Near a Road



Get Health & Safety Information

LoCall: 1890 289 389

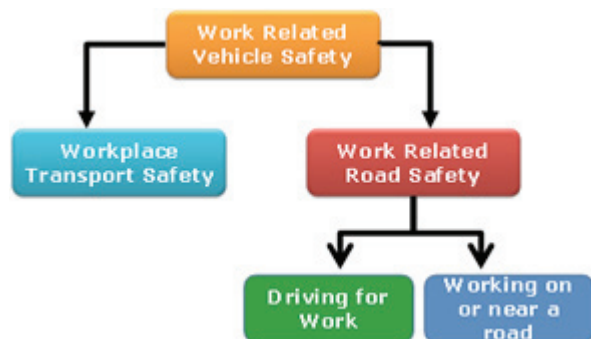
Email: wcu@hsa.ie

Web: [Learn More Here](#)



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Work Related Vehicle Safety (WRVS)



Work Related Vehicle Safety (WRVS) is the management of the hazards and risks associated with work activities involving vehicles and mobile equipment. This includes the risks to employers, self-employed people, employees and members of the public. WRVS encompasses both workplace transport safety and work related road safety.

Workplace Transport Safety(WTS) is the management of hazards and risks associated with any vehicle or piece of mobile equipment that is used by an employer, employee, self-employed person or a visitor in a fixed or temporary workplace but excludes work related road safety.

Work Related Road Safety (WRRS) is the management of the hazards and risks to persons engaged in or affected by work related driving or work activities on or near a road.

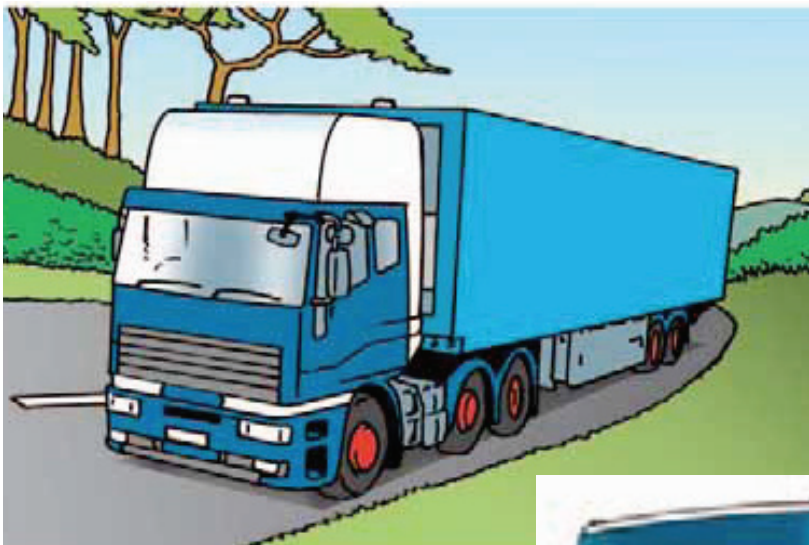
Driving for Work (DFW) is the activity of driving on the road for work purposes. This includes the risk posed to workers themselves and those not at work who may be affected by the work activity, such as pedestrians and other road users. Driving for Work excludes commuting to work, except where the person's journey either starts from their home and they are travelling to a work location that is not their normal place of work or their journey involves

travel in a company provided vehicle.

Working on or near a road (WNR) is work activity carried out on or near a road and includes, for example, the safety of personnel working to maintain roads and street furniture, traffic wardens, engineers, and also the public if they could be affected by the work activity.

View the Authority's Work Related Vehicle Safety Five Year Plan aimed at influencing a reduction in the number of people who are killed, seriously injured or who suffer illness as a result of vehicles being used for work purposes.

- Visit www.hsa.ie for information on occupational health and safety or contact the Workplace Contact Unit at wcu@hsa.ie or 1890 289 389.
- For information on Road Safety visit www.rsa.ie and www.garda.ie
Load Security Information Series
The Basics of Vehicle Load Security
www.hsa.ie www.garda.ie www.rsa.ie



SELF-ASSESSMENT OF KNOWLEDGE

Please complete the following questions to assess your understanding of the module so far:

Q.1 How can an unsecured load affect road safety?

Your Response

Q.2 What can cause tyres to be damaged?

Your Response

Q.3 What vehicles can use a bus lane?

Your Response

Q.4 What is the maximum permitted speed of a bus or coach on a motorway?

Your Response

Q.5 What is the maximum permitted speed of a truck on a motorway?

Your Response

Q.6 Name 4 things not to do when refueling.

Your Response

Q.7 How can fuel economy be best achieved?

Your Response

Q.8 What is the telephone number for reporting a bridge strike?

Your Response

Q.9 What does the term Defensive Driving mean?

Your Response

Q.10 Why are pedestrians and cyclists more vulnerable with heavy vehicles?

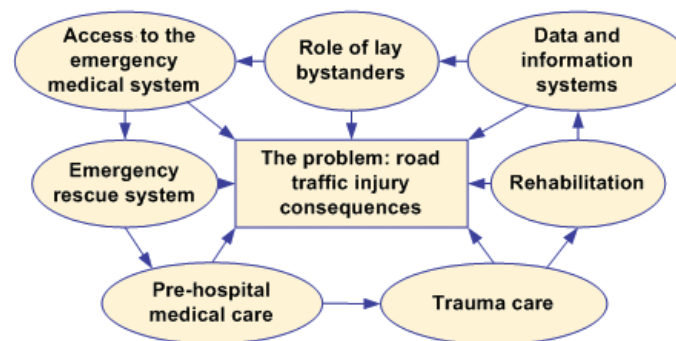
Your Response

Q.11 Name four stationary hazards on the road.

Your Response

SECTION D – POST-IMPACT CARE

Post-impact care is a strategy that aims to reduce the severity of injury consequences once a road traffic crash has occurred. Minor injury patients will often need the help of a general practitioner and optimal medical and psychological follow-up care is important to alleviate pain and distress. For major injuries, clinical experts define the post-impact care needed as the chain of help, starting with action taken by the victims themselves or, more commonly, by lay bystanders at the scene of the crash; emergency rescue; access to the pre-hospital medical care system; trauma care, and helping road crash victims who have suffered debilitating injury re-integrate into work and family life. The effectiveness of such a chain depends upon the strength of each of its links.



Despite the fact that the cost of years of life lost from road trauma is larger than from cancer or cardio-vascular diseases, the attention paid by health policymakers, by the medical community and by the road safety field to trauma-related care and research has been disproportionately small so far.

The European Commission has stated that several thousands of lives could be saved in the EU by improving the response times of the emergency services and other elements of post-impact care in the event of road traffic accidents.

Nevertheless, over the last 30-40 years improvements have been seen in post-impact care in several countries, ranging from improvements in emergency medical response systems, to advanced trauma care procedures, to specific surgical intervention techniques. While studies analysing the relationship between the performance of the trauma management system and road crash outcomes are not frequent, research indicates that various improvements have contributed to better injury outcomes. In a review of data in several OECD countries it is suggested that between 5% and 25% of the reductions in road crash fatalities may have been due to improvements in medical care and technology (including trauma and emergency response systems).

In 2010 there were more than 27,000 road deaths in the European Union (23 countries) with a fourfold

difference in highest and lowest death rates per 100,000 population. Involvement in road accidents is one of the three leading causes of death and hospital admission for EU inhabitants (together with cancer and coronary heart diseases), and it is the leading cause of death for EU citizens under 50 years old. It has also been estimated that for EU countries:

- 1 in 3 citizens will need hospital treatment during their lifetime due to road crashes;
- 1 in 20 citizens will be killed or impaired by road crashes;
- 1 in 80 citizens will end their life 40 years too early due to road crashes;
- Road crashes cause 6 months shorter life expectancy.

Health of survivors and long-term disability

While information on road traffic deaths is available in most European countries, there is no systematic information that can be compared on the health of survivors. There are a variety of definitions of “serious injury”; many serious injuries are not reported; data on the long-term health consequences of road traffic injury is not collected on a systematic basis; and while rating systems have been devised and are in use, there are no international standards for describing and quantifying the disabilities arising from traffic injuries, particularly those involving neurological trauma.

The World Health Organisation uses a severity ratio guideline of 15 serious injuries (requiring hospital admission) and 70 minor injuries for every road death. The European Federation of Road Accident Victims has estimated that a minimum of 150,000 survivors in road crashes sustain permanent disability in EU countries every year. Disability is usually defined as an individual’s inability to carry out a normal range of daily activities due to physical and/or psychological challenge. Permanent disability, such as paraplegia, quadriplegia, loss of eyesight, or brain damage, can deprive an individual of the ability to achieve even minor goals and result in dependence on others for economic support and routine physical care. Less serious – but more common – injuries to ankles, knees and the cervical spine can result in chronic physical pain and limit an injured person’s physical activity for long periods. Serious burns, contusions and lacerations can lead to emotional trauma associated with permanent disfigurement. Road crashes can also result in a variety of long-term psychiatric and psycho-social problems.

In-depth studies indicate that:

- Motor vehicle crashes are the leading cause of traumatic brain injury.
- The majority of whiplash injuries are sustained by car occupants in crashes, and around 50% of these are in rear impacts.
- 22% of a sample of patients attending hospital with fractures to the upper or lower limb, or a soft tissue injury to their cervical spine (“whiplash”) had some form of disability 4 years after the crash.
- Pedestrians and motorcyclists suffer the most severe injuries as a result of motor vehicle collisions. They report more continuing

medical problems and require more assistance, compared with other types of road user.

The socio-economic cost of fatal, serious and minor injuries, and taking into account intangible elements, is estimated to be about 2% of EU countries’ gross domestic product - around 180 billion Euro and twice the EU’s annual budget.

Many national estimates, however, do not take account of the cost of long-term disability resulting from road traffic accidents and associated intangible costs. Injuries reported as being minor at the time of crash can often lead to costly long-term disability. One British study, which contributed to subsequent national accident cost estimates, monitored the costs to the Health and Social Security services of treatment of patients with whiplash and fractures over a 4-year period. For fracture injuries, the largest single cost to the health service was in-patient treatment, and for “whiplash” patients, physiotherapy was the largest single cost. Long-term disability also brings, however, many intangible costs to the patient and family.

Time between road crash and road death?

A study by medical experts in European high-income countries found that about 50% of deaths from road traffic crashes occurred within minutes, either at the scene or while in transit to hospital. For those patients taken to hospital, around 15% of deaths occurred within 1-4 hours after the crash, but around 35%, occurred after four hours.

The three phases of a crash.

Phase 1. When the vehicle crashes into an object – another vehicle, a wall, a tree, a building, a pole, a pillar, etc., and comes to a sudden stop.

Phase 2. The driver and passengers crash into the vehicle interior – the steering wheel, windscreen, instrument panel, seat backs, other passengers, airbags, loose items, etc.

The neck is violently whipped forward and then back.

Phase 3. Internal organs crash into the skeletal frame – brain into the skull, stomach into the spine, lungs into the ribcage, heart into the sternum, kidneys, liver spleen etc into the ribcage.

Three phases of deaths from severe injury

Phase 1. Deaths occur immediately or occur quickly as a result of overwhelming injury.

Phase 2. Deaths occur during the intermediate or sub-acute phase. These deaths occur within several hours of the event and are frequently the result of treatable conditions.

Phase 3. Deaths are delayed. Deaths during this phase often occur days or weeks after the initial injury and are the result of infection, multi-system failure or other late complications of trauma.

World Health Organisation, 2005

In reality, as the World Report on Road Traffic Injury Prevention underlined, there is not so much a “golden hour” in which interventions have to take place as a chain of opportunities for intervening across a longer timescale. A comparative study of mortality among seriously injured patients across a range of countries found that for low-income and middle-income countries, the vast majority of deaths occurred in the pre-hospital phase.

Survivable and non-survivable road traffic injury?

A Swedish study into survivability in fatal road traffic crashes concluded that 48% of those who died sustained non-survivable injuries. Out of the group who sustained survivable injuries, 5% were not located in time to prevent death, 12% could have survived had they been transported more quickly to hospital and a further 32% could have survived if they had been transported quickly to an advanced trauma centre. A UK study estimated that 12% of road crash victims with serious skeletal trauma went on to have significant preventable disability. The appropriate management of road casualties following the crash is a crucial determinant of the chance and quality of survival.

While post-impact care is acknowledged as a key road safety strategy, it is often neglected in national road safety plans and programmes in European countries. This may be because it is outside the direct responsibility of the lead agency for road safety. Good inter-governmental coordination arrangements can ensure that attention is given to this key area in target setting and plans.



SELF-ASSESSMENT OF KNOWLEDGE

Please complete the following questions to assess your understanding of the module so far:

Q.1 What are the three phases of death from severe injury?

Your Response

Q.2 Why is it important to get accident victims to hospital as soon as possible?

Your Response

Q.3 What percentage of patients with whiplash injuries still had a form of disability 4 years later?

Your Response

Q.4 What is the estimated socio-economic cost of road accidents to the EU gross domestic product?

Your Response

Q.5 What is Post-Impact care?

Your Response



HARD AND FAST FACTS

Pedestrians hit by a car...

at 30 km/h – 1 in 10 will die



at 50 km/h – 5 in 10 will die



at 60 km/h – 9 in 10 will die



Source: Rules of the Road, 2007



T: Lo Call 1890 506080 E: info@rsa.ie W: www.rsa.ie

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THE BIGGER THE PENALTY

Speeding drivers risk getting **two penalty points on their driving licence plus a fine of between €80 to €120**, if you decide to go to court and are convicted you risk **four penalty points and a fine of up to €800**.

ANY DRIVER WHO GETS 12 PENALTY POINTS AT ANY TIME INSIDE A THREE YEAR PERIOD FACES DISQUALIFICATION FROM DRIVING FOR SIX MONTHS.

For more information on speed limits and stopping distances read the **Rules of the Road** at www.rsa.ie

GET THE POINT! NOT THE POINTS!

THE FASTER THE SPEED THE BIGGER THE MESS



THE BIGGER THE RISK OF DEATH

Speed is the **biggest contributory factor to road deaths** in the Republic of Ireland.

Between 1997 and 2009, **excessive speed** contributed to **24% of our road deaths**.

THE BIGGER THE NUMBER OF DEATHS

Speed is **directly killing an average of 101 people a year** in Ireland.

THE BIGGER THE MISERY

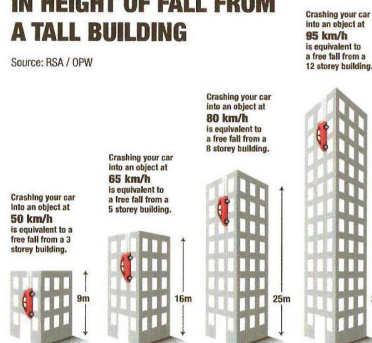
A speeding crash is over in a second but, for the victims, the **misery lasts a lifetime**.

Speeding is a selfish act which sentences innocent people to a **lifetime of pain**.

THE BIGGER THE HIT

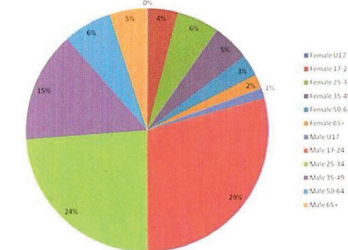
COLLISION IMPACT MEASURED IN HEIGHT OF FALL FROM A TALL BUILDING

Source: RSA / OPW



WHO IS TO BLAME? DRIVERS

Drivers responsible for fatal/serious injury collisions by age/gender (Ireland 1997-2009)



Source: RSA Data

EVERY DRIVER IS AT RISK!

THE FASTER THE SPEED, THE BIGGER THE MESS