Körkortsboken in English

We are all different and we learn things in different ways. Some people like to read texts while others learn better by looking at pictures. Which do you prefer?

Here you have 150 double pages of clear and easy-to-read information. At last, people can enjoy learning driving licence theory!

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You will find a wealth of exciting information at www.korkort.com which will serve as a complement to the Driving Licence Book.

Swedish National Association of Driving Schools
Järvgatan 4, 261 44 LANDSKRONA
www.str.se
How to use this book

Before you start to read this book, you should go back to the previous page to get an idea of the book's contents.

The left-hand pages consist of a collage of pictures and short explanations. These pictures and texts express as far as possible what is explained in the text on the right-hand pages.

The right-hand pages consist of more detailed explanations. They have keywords expressing the main points in the margin to make it easier for you to find the paragraph you are looking for.

When you read the book, it may help you to use the following technique:

Start by skimming through both left and right pages so you understand what the topic is.

Read through the right-hand page text several times and underline important words and rules.

Go back frequently to the left-hand page while reading through the text.

Jot down questions you want to ask your instructor, either on the page itself or at the back of the book.

Answer the questions in the Theory Handbook.

If you read the book thoroughly and carefully in this way, later on you can go back to do quick revision by just reading the left-hand pages.

Side heading

The side heading indicates which chapter section you are at. The side heading is positioned vertically so that you can easily find your way when thumbing through the book.

Colour codes

The left-hand pages have a certain colour for each chapter.

Page header

At the top left you can see the chapter title, followed by the section title. In this example you are at the section All of us are different which is part of the chapter People.

Margin text

The margin texts are to help you find your way around the book. These keywords express the main points in the text. In this example, visual acuity is the important term.

Page references

At the end of the book there is an index with keywords.

Working materials

The book has complementary working materials consisting of:

- a Theory Handbook
- a Driving Handbook
**You can begin to practice-drive**

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For explanations of the classes of driving licence, see page 19.

**Taking your driving licence**

There are various routes to your coveted driving licence depending on the choices you yourself make. For many people the natural thing is to let a driving school arrange the whole training course. Others may choose a combined course of which the driving school is one part and the other consists of repetitive practice at home. A few driving licence pupils feel it suits them best to arrange all their tuition privately with the help of a supervisor.

Regardless of which method you choose, much theoretical knowledge and many practical skills will have to be learned. Then you must remember and apply these things all your life. In addition, your knowledge and skills will be checked by means of a driving test conducted by the National Road Administration. For your learning to be as effective as possible, there are certain terms which are necessary for you to know.

To prevent your theoretical knowledge from being forgotten after a short time it is important for you to strive to achieve deep learning. This means that you learn to understand the context of and reasons for a rule. If you have an overall understanding of the context, your knowledge will stay with you in quite a different way than if you only try to acquire superficial knowledge.

Superficial learning, i.e. just swotting up for the test, means that you are not trying to understand. If you memorise the rules quickly you will also forget them quickly.

Overlearning is important during driving practice as well. Your actual driving technique has to become automatic. When you do not need to think about the technical side of driving because it takes place automatically, you are free to use your thinking abilities when something happens which requires rapid reactions.
Practice driving?
OK, you're sixteen and you've got your permit to learn to drive. What do you do next?

How to drive - is best learnt at a driving school
Repetitive practice - you can do at home as well

Go to a driving school?

Do it at home?

A combination is best!

How to go about it?
You are allowed to practice-drive a private car, whether at a driving school or with a supervisor, once you reach age sixteen.

You must start off by getting a permit to learn to drive for the driving licence you have in mind. You apply on a special form, also enclosing a health declaration and sight test.

The easiest way to arrange a permit to learn to drive is by contacting a driving school, which will have the necessary forms and can also help with the sight test.

If you have in mind to practice-drive under private arrangements you will need a supervisor's permit. The driving school will help with this form too.

When you have seen to all these formalities you are ready to start your training course. This is laid down by a syllabus issued by the National Road Administration. The syllabus is the groundwork for what you have to be able to do when you do your driving test.

Driving school
Swedish driving schools have a joint organisation called Sveriges Trafikskolors Riksförbund (Swedish National Association of Driving Schools), known for short as STR, whose members can help you with all parts of your training course. The most effective training course usually consists of a combination of driving school training and private repetitive practice.

As a rule you will start with an information evening, when a driving instructor will tell you how a driving school works. After that you are on course for your target – your driving licence.

You and your driving instructor should set up a plan for your tuition. How long will it take? What will it cost? What do you have to do? How can you best combine driving school tuition with your own private practising?

For those who choose an STR-affiliated driving school there is an extra security factor, STR Reklamationsnämnd (STR Claims Board), whom you can approach in the event of any dispute which you and the driving school cannot resolve satisfactorily.
The private option
You also have the option of arranging your tuition privately and taking the driving test as a private candidate.

To be allowed to practice-drive you must have an authorised supervisor to superintend your driving and you must have a permit to learn to drive. Contact with a driving school at an early stage can be valuable. You can buy learning materials from there and a copy of the National Road Administration syllabus. You can also get help from the driving school with parts of the syllabus, if desired. It is usually a combination of private practising and tuition by the driving school that gives the best result.

Advice to the supervisor
In order to act as a supervisor you must have a supervisor’s permit, which must be carried with you during driving practice.

You must also have reached age 24 and held a driving licence for the class of vehicle for at least five years in unbroken succession. The driving licence must have been issued in a country within the EEA, which is a term denoting countries within the EU plus Norway, Iceland and Liechtenstein.

In addition you must be accustomed to and proficient in driving the vehicle.

During practice driving you must be in the car next to the driver. During practice driving of a motorcycle you must ride on the motorcycle or be driving a motorcycle yourself. Also remember that the ÖVNINGSKÖR (LEARNER DRIVER) sign must be fitted to the practice vehicle. The supervisor is regarded as the driver of the vehicle during practice driving.

The National Road Administration syllabus is a must for knowing what knowledge is required. The National Road Administration also has information material which can help you with certain tasks. Many of the learning materials sold via driving schools contain useful advice.

It is best to establish cooperation with an STR driving school. A number of driving lessons to begin with, before you start training in earnest, can provide very valuable tips to prevent faulty learning.

Private practice driving
Requires
- the pupil to have a permit to learn to drive
- the supervisor to have a supervisor’s permit

A syllabus for practice driving is a must

Vägverkets författningsamling

[Vägverkets föreskrifter om kursplaner, behörighet B; beslutade den 19 juni 1996]

Kärkort 04-02

VVFS 1996:168

Utkom från trycket den 10 juli 1996
A driving licence may be issued to anyone who
1. holds a permit to learn to drive
2. is permanently resident in Sweden or has studied in Sweden for more than six months
3. is the correct age to be eligible
4. has passed the official driving test.

However, a driving licence may not be issued to anyone who has a driving licence issued by any other state in the European Economic Area.

The driving licence
This is the target ...

Driving test
Theory test
- taken via a computer
- you get the result immediately

Practical test
- when you have passed the theory test

You must produce a recognised form of ID on both occasions.

The driving test
When your training course is finished and you feel ready, it is time to take the driving test. If you are a driving school pupil, the school will enter you and certify your tuition.

If you have done your training privately, you must yourself arrange a time for the driving test with the National Road Administration.

The driving test begins with a theory test. The test takes place via a computer and you get the result immediately.

After passing the theory test, it is time for the practical test.

When taking the practical test for class B vehicles, the vehicle you drive must be equipped with dual control brakes. If you do not have such a vehicle, you may be able to borrow one from a driving school or hire one from the National Road Administration.

When you have passed the practical test you will receive a “Certificate of issue of driving licence”. This will permit you to drive while waiting for your actual licence to be made.

Your new driving licence is issued for a probationary period of two years. This means that if your driving licence is revoked during the probationary period, you will have to take a new driving test to get it back. The probationary period is reckoned from your first driving licence and will not be repeated if you supplement your driving licence qualifications.

If you are taking a tractor licence, a driver’s certificate for a moped class I or a driver’s certificate for an off-road scooter, no practical test is required.
Driving licence qualifications

Driver's certificate for moped class I
To drive a moped class I, you must be 15 years of age and have a driver's certificate. You get this after a special training course and after passing a theory test.
A tractor licence or driving licence also authorises you to drive a moped class I.
For a moped class II, the only requirement is to have attained age 15.

Driver's certificate for off-road scooter
In order to drive an off-road scooter, you must be 16 years of age and have a driver's certificate for an off-road scooter. You get this after a special training course and after passing a theory test.
A driving licence or tractor licence issued prior to 1 January 2000 also entitles you to drive off-road scooters.

Tractor licence
A tractor licence or driving licence is required for tractors or motorised equipment class II when driven on a public road. To obtain a tractor licence you must be 16 years of age, or in certain cases 15 by dispensation.
If you only have to drive a short way on a public road between farm holdings, or to or from a place of work, no tractor licence is required.
A tractor licence also authorises you to drive a moped class I.

Driving licence qualifications
The A1 driving licence is required for a light motorcycle. This is a motorcycle with a maximum engine capacity of 11 kilowatts and maximum cubic capacity of 125 cm³. You may also drive a moped class I and any vehicle requiring only a tractor licence. The qualifying age for this driving licence is 16 years.

If you want to drive motorcycles of higher engine capacity you must
- be 20 years of age and have held an A licence for at least two years
- or be 21 years of age and have passed a driving test on a larger motorcycle
- or, if you hold an A1 driving licence, be 21 years of age and have passed a practical test on a larger motorcycle.

The B driving licence entitles you to drive a private car with a total weight not exceeding 3.5 tons and a light goods vehicle plus a light towed vehicle in both cases. You may also drive a three-wheeled motorcycle, a heavy off-road motor vehicle, motorised equipment class I, moped class I and vehicles requiring a tractor licence. The qualifying age is 18.

The C driving licence is valid for heavy goods vehicles and for private cars with a total weight in excess of 3.5 tons, plus a light towed vehicle. To take the test for the C driving licence you must be at least 18 years of age and hold a B licence.

The D driving licence is valid for buses and a light towed vehicle.
The qualifying age is 21 and you must hold a B licence.

The E driving licence is valid for towed vehicles irrespective of weight and number. To take the test for the E licence you must first have a driving licence valid for the towing vehicle.
To be allowed to drive a taxi you must have a taxi-driver permit.
You must be age 21 or over and have held a B driving licence for at least two years or hold a D licence. You must pass a theory test at the National Road Administration and undergo a character assessment by the county administrative board.
**Introductory terms**

**Road**
The term "road" denotes roads, streets, marketplaces and squares, and other routes and thoroughfares or places generally used by motor vehicles. Cycle tracks are reckoned as roads, as are pedestrian and bridle paths alongside other roads.

**Road user**
Everyone travelling or sojourns on a road or in a vehicle on a road is a road user. This means that you are a road user even as a passenger in a vehicle or if you are riding along a road, skateboarding, rollerblading, roller-skiing and so forth.

**Vehicles**
There are numerous kinds of vehicles: motor-powered vehicles, towed vehicles, cycles, horse-drawn vehicles etc.

**Motor-powered vehicles**
Motor-powered vehicles are divided into motor vehicles, tractors, motorised equipment and off-road motor vehicles.

As you can see from the picture, motorcar category vehicles, motorcycles and mopeds belong to the motor vehicle group. Motorcar category vehicles are then divided into private cars, goods vehicles and buses.

More terms and more details about the different types of vehicle will be found in the Definitions on pages 288-290.

**Road markings**

**Longitudinal markings**
Longitudinal markings are used as barrier lines and verge markings and as dividing lines between lanes.

**Transverse markings**
Stop lines, give way lines and pedestrian crossings are examples of transverse markings.

**Other markings**
Lane arrows, symbols, text and yellow markings at bus stops are examples of other types of marking.

You can find all road markings and their meanings in Traffic Signs & Road Markings pages 271-286.
Traffic signs
Traffic signs exist to give information. There are signs which give warning of danger and signs which prohibit or compel. Signs may also give you important information. There are very many traffic signs and they therefore give different kinds of information. To make them easier to learn, they are divided into different groups.

Warning signs
Warning signs are triangular in shape. They have a yellow ground with a red border and as a rule are mounted about 150-250 metres before the hazard. In heavily built-up areas or on sections of road with special speed limits, the distance is usually shorter. Because they warn of danger you should reduce your speed and avoid overtaking immediately after passing them. Supplementary plates may indicate how far along the road the warning applies.

Prohibitory signs
Prohibitory signs are round in shape. As a rule they have a yellow ground with a red border. As the name suggests they are there to prohibit something, for example, to show that certain types of traffic must not enter here. As a rule the prohibition applies from the sign to the next road junction. The prohibited zone may also end at another sign cancelling the prohibition.

Mandatory signs
Mandatory signs are round in shape. They have a blue ground with a white border. Mandatory signs tell you what you must do. Just like the prohibitory signs, they come into force at the sign and continue to apply up to the next road junction.

Information signs
Information signs may be of varying shape and appearance. They are divided into advisory signs and direction signs

Advisory signs tell you that special traffic rules may apply. Signs indicating motorways and clearways, major roads and one-way routes are all examples of advisory signs.

Direction signs show the way. Common examples of direction signs are centre, lay-by, restaurant and signs showing road numbers, e.g. E4.

Supplementary plates
Supplementary plates are only erected along with other traffic signs. Their function is to supplement the traffic sign above the plate. In the case illustrated, the wildlife warning zone begins 200 metres after the sign and ends 1500 metres further on.

You can read more about traffic signs in the traffic signs section, page 271 and following.
Defensive driving

Defensive driving means that you:
- have plenty of time for your journey
- are aware that unexpected things can happen
- refrain from taking risks
- think first, then act
- are one step ahead
- have large safety margins
- brake in good time
- drive gently
- keep a good lookout to the rear

Basic traffic rules

Traffic rules have been formulated so that people will understand that as road users they have a number of duties but no rights. We come across expressions like must give way to, must not, must give, must follow. On the other hand we find nothing about the right to do something where someone else has a duty. The reason for this is simple. Under this system, road users are forced to be cautious. Caution is of the highest importance to traffic safety!

The traffic rules apply not only on the roads but also off-road. Since everything that is not on the road is off-road, this means that almost all traffic rules apply everywhere.

Traffic is based on interplay. Its essence is to drive so that you do not surprise others and are not taken by surprise yourself. Your driving style needs to be steady and clear, not erratic, and it should be governed by awareness of possible risks. Such a style of driving, featuring this kind of risk-awareness, is also called defensive driving.

When you drive defensively you are driving in accordance with the basic traffic rules:
- Use prudence and caution at all times
- Give special consideration to children, the elderly, school crossing patrols and the disabled
- Do not obstruct or disturb others unnecessarily
- Be considerate of residents and others along the roads

Off-road travellers must also
- not disturb people or animals unnecessarily
- not damage ground or vegetation.
Adapt your speed

Examples of conditions and places where low speed is particularly required because accident risks are high

Densely built-up areas

Reduced visibility

Slippery road surface

Darkness

Proximity to unprotected road users

On sharp bends and where the view is blocked

---

General speed rules

Correct speed is one of the most important factors in avoiding accidents. At lower speeds you have a better chance of spotting others who may be on or near the road. If an accident does happen, it will be less serious at a lower speed.

You should adapt your speed as necessary for traffic safety. This means that you must never drive so fast as not to be in control of your vehicle. You must be able to stop within the distance that you can see ahead and before reaching any foreseeable obstacle. You must take account of road conditions, weather conditions and the view ahead when deciding your speed. The condition of your vehicle and how it is loaded also determine what speed you can maintain. The overall traffic situation is an important factor in deciding your speed.

The rules contain specific examples of circumstances and locations where the risk of accidents is especially high. In these situations you are obliged to keep your speed sufficiently low. They are:

- in densely built-up areas
- when visibility is impaired by darkness or bad weather
- at pedestrian crossings or other places where pedestrians cross the road
- wherever cross-traffic may occur
- on sharp bends
- at the brows of hills and other places where the view is blocked
- where there is a risk of dazzle
- when meeting other vehicles on narrow roads
- in slippery road conditions
- when approaching a tram, bus or school bus which has stopped to let passengers on or off
- when approaching children on or beside the road
- when approaching livestock on the road
- wherever road works are in progress
- when passing the site of an accident
- in dirty road conditions where there is a risk of splashing other road users.

There is also a rule which prohibits you from hindering other drivers by driving excessively slowly or suddenly braking without cause.

Adapting your speed

Sufficiently low speed

No hindering
Drives steadily, not erratically
Show what you intend to do!

TOWN DRIVING / DRIVING ON LESS BUSY STREETS

Driving on less busy streets
To most people it quite soon feels natural to start driving on residential streets, where it is usually quiet and there is not so much traffic to watch out for. You must respect the rules in force. Then you will avoid some of the risks which could make your driving less safe. You need to develop good driving habits as quickly as possible. Driving steadily, for example, and showing clearly what you intend to do.

What is said here about sound and light signals, the positioning of the car and the use of indicators usually applies in busier town traffic as well.

Sound and light signals
You should use your horn to warn other road users if you think they have not observed you. You must not use your horn for any other purpose, for greeting an acquaintance for example. Sometimes it works just as well or better to use the headlight flasher.

Brake lights
When you use the brake lights they show that you are reducing speed. You can warn the driver behind by braking once cautiously immediately before applying the brakes in earnest. This is especially useful when driving on a country road or in heavy traffic.

Speed
The level of difficulty of your driving is influenced by your choice of speed. When your speed is well suited to the conditions you have more time to observe what is happening around you. At the same time it is easier for other road users to observe you.

You must never drive faster than will allow you to come to a halt within the area of road you can see. You must also be able to stop before reaching any foreseeable obstacle.

Observation – the importance of eye-contact
It is extremely important for your eyes to be on the alert so that you see other road users in time. It is also important to learn to interpret other road users’ intentions through eye-contact. By looking directly at your fellow road user, you can grasp what he is thinking and show him your own intentions.

Make eye-contact!
By making eye-contact you can show your intentions and understand what others intend to do. There will be fewer misunderstandings between you and other road users.

Eye-contact
Level of difficulty
Attract attention!

Speed correctly adapted
- Degree of difficulty diminishes
- You have more time to keep a lookout
- You are able to stop within the area you can see
- You are able to stop before reaching any foreseeable obstacle

By making eye-contact you can show your intentions and understand what others intend to do. There will be fewer misunderstandings between you and other road users.
**Positioning**
When you have your car properly positioned on the road, this tells people where you intend to drive. It helps traffic flow as well.

If you are turning to the right, position your car close to the right-hand kerb both before and after the turn.

If turning to the left, position your car as close as possible to the centre of the road and complete your turn on the right-hand side of the road.

In neighbourhoods where streets are narrow you are often forced to drive on the left-hand side of the street because of parked cars. At junctions, however, you must position yourself to the right of centre. Otherwise there will be a problem if someone comes out of the side street.

When vehicles from opposite directions meet in narrow streets, a driver with an obstacle on his half of the street must give way. It may be possible to use a gap among the parked cars to allow the oncoming vehicle to get through.

Leave a safety margin of space for cyclists and pedestrians when you pass them. The same applies to parked cars. A suitable margin is at least the breadth of a car door.

**Use indicators**
Traffic involves interplay. To enable it to function you ought not to spring surprises on your fellow road users. You must use your indicators in good time without being misleading in the following situations:

- When you intend to move off from the kerb
- When you intend to make a U-turn
- When you intend to turn at a junction
- When you intend to change lanes
- In general, whenever you intend to move your vehicle sideways

Of course you must watch out and make sure that your manoeuvre can be made without danger. Using your indicators does not of itself free you from responsibility in the event of an accident.

**Hazard warning lights**
Hazard warning lights are fitted to most cars and are intended to warn other road users of an emergency stop or accident. It is also permitted to use hazard warning lights when towing.
Children

In residential areas there is always a risk of small children running out into the road. They can pop up behind parked cars or from an exit. They can also act in ways which seem peculiar to a grown-up. You see the children and they see you. But don't be deceived! Even though they seem to be looking at you, they may still run out in front of the car. Their impulsiveness and tendency to obey sudden whims make them very unpredictable in traffic.

Small children find it hard to judge distance correctly. They have difficulty in switching over from close to long-distance vision. If you have ever filmed with a video camera you will know that it takes a little time to get the picture into sharp focus when you point the camera at objects at different distances. Children's eyes function in the same way.

Children's hearing develops as they grow up, so that they gradually acquire an adult's capacity for judging the direction from which a sound is coming. As adults we make use of this ability as cyclists and pedestrians even if we are not conscious of doing so.

Children play almost all the time. Play is a natural way for them to develop and learn. A five year-old child on a bicycle is almost anything but a cyclist. He may be playing at riding a fast horse or piloting a jet plane. In his make-believe world he easily forgets the traffic around him.

Children are small; they cannot be seen behind parked cars and hedges. Of course this also makes it more difficult for them to see cars.

It is impossible to teach small children to foresee and calculate risks. Certainly a five year-old has no difficulty in learning to look both ways before crossing a street, but in the world of play there are no such rules.
As a car driver you have a great responsibility towards children

Traffic warning
- 50 children die on the roads every year
- 2000 children are injured on the roads every year
- Asthma and allergies are caused by exhaust fumes from traffic

Accidents are not the only problems created by traffic. Car exhaust fumes contaminate the air. Children are particularly sensitive to this. The huge increase in allergies and hyper-sensitivity may have several explanations, but exhaust fumes can be linked quite clearly to asthmatic ailments. This is one reason why modern ideas for traffic planning include car-free zones.

School crossing patrols
The demand of the motorcar for space and accessibility has brought a curtailment of children's freedom of movement. For example they have to be able to get to and from school safely. School crossing patrols operate at some schools. Their task is to help the children. Their orange-coloured rainwear should alert you to the presence of children in the vicinity. School crossing patrols have no authority to halt motor traffic. Instead, their task is to see that children do not rush across when there is traffic coming. But we cannot rely on the children to follow their instructions. So reduce your speed and come to a halt when you see that pedestrians are waiting to cross the street.

School buses
A school bus which has stopped to set down or take on passengers is a warning sign. Be extremely careful: the responsibility rests on you if you overtake!

To make you aware that the bus is going to stop, the bus driver starts blinking the bus sign lights 100 metres before the bus stop. They will continue to blink while standing at the stop and will cease blinking about 100 metres after pulling away from it.

School bus warning
What is concealed beyond the school bus?
Look for feet under the bus.
Always reckon that a child may suddenly rush out across the street.
Elderly people deserve consideration and extra time!
Reduced mobility, sight and hearing heighten the sense of insecurity of the elderly. This is particularly the case when they want to cross at a road junction. This situation necessitates extra consideration on the part of other road users.

Disability. What is it?
It is when there is a difference between what we can cope with and what is required of us. Sometimes we ourselves are in that very situation, and when it happens we are usually grateful for any help we get.

Not all disabilities are as visibly obvious as this.
A pedestrian who is moving slowly or who gives a hesitant impression may need to be shown special consideration.

The elderly
Elderly people have less of the abilities needed for coping successfully with traffic. Eyesight, hearing and balance deteriorate with age. The elderly also find it more difficult to assess a traffic situation and interpret all their impressions quickly and correctly. Many older people, whether walking, cycling or driving a car, feel uncertain when about to cross a road junction. We must show consideration and give them the time they need to think and come to a correct decision.

The disabled
There are both visible and invisible types of disability. Visually handicapped and wheelchair-bound persons are easily recognised. Among road users there are many disabled people who are difficult to detect. One person perhaps has to walk more slowly. Others need more time to take decisions. Diabetes, epilepsy and hearing problems are other examples of hidden disabilities. These handicaps may not be easily spotted. Those afflicted with them may neither want nor need to display their handicap.

Any visually handicapped person out in traffic has big problems. Close your eyes for a moment and imagine how it would feel crossing a street! Unexpected obstacles, motorists who disobey the red light and the difficulty of figuring out where all the noises are coming from: all these things make going for a walk a risky undertaking.

You can recognise those with the most severely impaired vision because they use a white stick to feel their way forward. When intending to cross a street, partially sighted persons use their stick like this:

- The stick is held pointed straight down while they wait and listen
- The stick is extended diagonally forward when they intend to go

A guide dog is an enormous help to the visually handicapped. One of the things the dog is trained to do is to avoid or halt before obstacles and changes of level. However, the dog cannot be trained to determine when it is a suitable moment to cross the street, or to distinguish between a red and a green light. You must not disturb a guide dog in white harness by attempting to make any kind of approaches to it.
Driving on busier streets

When you have become more accustomed to driving, you will then go on to practise on streets with more traffic and higher speeds. It is important at this stage that you should be familiar with the give way rules, the positioning of your car and the traffic risks you will encounter.

Give way rules
The give way rules use the term “duty to give way”. This means that you must clearly show your intention to give way to others by slowing down in good time and stopping if necessary. You must not continue if this will obstruct or endanger other road users.

The right-hand rule
The right-hand rule means that you have a duty to give way to vehicles approaching from the right. It is the most frequently occurring give way rule at road junctions.

The right-hand rule also applies when the courses of two vehicles intersect in any kind of open space, for example in a car park or on petrol station premises.

Sometimes the Warning, Road Junction traffic sign is used to remind you that the right-hand rule is in force. This may be in places where the view at the junction is obscured. The sign may also be erected at junctions where accidents have happened.

The right-hand rule is basically very simple, but despite this it is misunderstood. People commonly have their own ideas of the rules, conceived in terms of major and minor streets.

The right-hand rule does not apply
- when joining a major road
- when you are driving on a major road
- where Give Way or Stop traffic signs are erected
- where traffic lights are in operation
- where an acceleration lane is in use
- at roundabouts

The right-hand rule
- You must give way to traffic from the right.
- Warning signs may be erected before road junctions which are concealed or very busy.
- when entering or driving on a major road
- where a “Stop” or “Give Way” sign is in use
- where traffic lights are in operation
- where an acceleration lane is in use
- at roundabouts

Open spaces

Misunderstanding
Major road junctions

The yellow sign shows that cross-traffic has a duty to give way.

Traffic wanting to join the major road has a duty to give way. This is shown by a traffic sign and a road marking. At certain junctions there are Stop markings and Stop lines.

Left-hand turn at a junction

- First, eye-contact with the lorry driver so that you are in agreement
- Next, extreme caution because of vehicles concealed from view behind the lorry
- Then check whether there are any pedestrians and cyclists crossing the street after the turn

Now you are ready to turn left!!!

TOWN DRIVING / DRIVING ON BUSIER STREETS

Major road junctions

At road junctions with busy traffic the right-hand rule is inadequate and works badly.

Busier streets are often major roads. They are marked as such by a major road sign positioned immediately after the junction. The major road designation continues until ended by a cancellation sign.

Driving on a major road means that traffic from both right and left has a duty to give way.

Drivers approaching the junction from side roads are warned by a traffic sign of their duty to give way. The traffic sign is usually reinforced by a road marking.

At some road junctions the duty to give way is reinforced by a duty to stop. The reason may be that visibility is poor or that accidents have occurred in the past. The duty to stop means that you must come to a halt and fulfil the duty to give way before proceeding further. You must halt at the stop line or, if there is none, immediately before driving out on to the other road.

There are some junctions where all vehicles entering the junction have a duty to stop. This is called “all-roads stop”, and the vehicle which stops first should then be the first to drive on. It is important to show consideration and make eye-contact with the other drivers so as to avoid misunderstandings.

Turning at a road junction

When turning at a junction you must not obstruct traffic on the road you are turning into. There may be pedestrians or cyclists crossing the road.

When you turn left at a junction you must also give way to oncoming traffic.

If a vehicle from the opposite direction also wants to turn left you must be extra vigilant. Make eye-contact with the driver and be ready to give way to other vehicles which are concealed.
**Exit points with a duty to give way**
The red car is exiting from a petrol station and must give way to us!

**Reduce your speed and be alert**
On streets with a 50 kph speed limit or less, the bus has priority when moving off from a bus stop.
- Is the bus standing stationary? Watch out for passengers crossing the street in front of the bus!

**Town driving / driving on busier streets**

**Entering a street or road**
You always have a duty to give way when driving out on to a road or street from
- a parking place, property, petrol station or similar place
- a pathway, private driveway or similar exit
- a cycle track, verge/shoulder, pedestrian precinct, access road or off-road terrain
- a footpath or cycle track which you have crossed.

**The exit rule**

**Buses at bus stops**
When you pass a stationary bus extra vigilance is always necessary. You never know whether there is someone at the front of the bus about to spring out into the roadway. Reduce your speed and be alert!

If the maximum permitted speed is 50 kph or less, you must slow down or stop if the bus driver uses his indicators to show that he intends to move off from the bus stop.

**The bus rule**

**Do not block junctions and pedestrian crossings**
Adapt your driving when approaching a junction so that you are not forced to halt at a point where you are obstructing cross-traffic. The same applies when approaching pedestrian and bicycle crossings.

**The blocking rule**
Groups of children under supervision
Extra vigilance is needed! Stop and allow the whole group to pass!

Make way for emergency vehicles
Rotating blue lights and sometimes sirens mean that you have to allow free passage!

Exceptions in certain cases
The police, customs officials, rescue service and coastguard personnel, doctors, nurses, midwives, veterinary surgeons and others have the right to infringe traffic rules when deemed necessary. This right can apply to speed restrictions, parking regulations and other such rules.

Making way
Police cars, fire engines and ambulances with sirens or rotating blue lights are emergency vehicles. You must make way for them. This means that you must pull in to the side and possibly stop to allow free passage.

It can be extremely difficult to determine where the vehicle is coming from. Therefore you must bring yourself to maximum readiness to act when you hear an emergency vehicle's siren calling for free passage.

Railway trains and trams must be allowed free passage. Of course the reason is that it is difficult for them to stop and it is impossible for them to make way for other vehicles.

Free passage does not apply when it is obvious that the tram driver has a duty to give way.

No obstructing or cutting through
If you should meet or catch up with a military column, a group of children under supervision, a funeral procession or something similar, you must not obstruct or cut through the procession.

Yellow warning light
Road works vehicles often have rotating yellow lights as a warning. Reduce your speed and show consideration towards the workers!
Positioning at a road junction

- This is how you should drive when there are no arrows marking the lanes.

Positioning at a roundabout

Single lane
- Drive at low speed
- Use your indicators
Thus you show your intentions more clearly

Double lanes
- Follow arrows and guideline markings
- Check your blind spot when changing lanes
- Use your indicators!

Positioning

By positioning yourself correctly you can avoid obstructing or disturbing other traffic.

When turning right, position your vehicle to the right.

When turning left, position your vehicle near the middle of the roadway. If there is a centre line, drive as close to it as you can. In this way the road users behind you will have room to pass on your right side. There are other advantages in positioning yourself like this. You can see better and be seen better, which in both cases means less risk of an accident.

One-way traffic

Positioning yourself on a street with one-way traffic differs from the normal in only one respect. When you want to turn left, position yourself furthest to the left prior to the turn.

Roundabouts

More and more roundabouts are being built. Their advantages are increased traffic flow and a simultaneous reduction in both the number and seriousness of accidents. One of the reasons is that motorists are forced to slow down.

All vehicles approaching a roundabout have a duty to give way to traffic on the roundabout. Plan your approach so as to avoid having to stop unnecessarily!

If you want to go straight on or turn to the right, use the right-hand lane. If you want to turn left, use the left-hand lane. On a roundabout with several lanes you can normally also go straight on from the left-hand lane. This may be a good idea if you intend to turn left at the next junction after the roundabout.

When emerging from a roundabout

- you must use your right-hand indicators to indicate your intentions
- you must keep a lookout behind you and indicate before changing lanes
- you must watch out for any cyclists. Drive at low speed and give way to cyclists and moped riders on bicycle crossings!

Duty to give way

Beware of bicycle crossings!
Unprotected road users

Pedestrians, cyclists and moped riders

In the year 2000:
- 130 killed
- 1064 seriously injured
- 3643 slightly injured

Pedestrians

Uncontrolled pedestrian crossing
- You have a duty to give way here
- Make eye-contact to avoid misunderstanding
- Never wave pedestrians on

Controlled pedestrian crossing
When turning at a junction controlled by traffic lights you must
- Drive carefully
- Let pedestrians cross

Unprotected road users
A serious hazard arises in densely built-up areas when cars and unprotected pedestrians and cyclists encounter one another. Much is being done to reduce the risks. Cycle tracks and footpaths are being built, separated from the carriageway for motor vehicles. Even so the unprotected traffic has to come into contact with motor traffic when it crosses the carriageway. The rules for these situations often mean that car drivers have a duty to give way to unprotected traffic. A bigger responsibility has been placed on cyclists, however, when they cross a street by means of an uncontrolled bicycle crossing. This is because of the greater speed of cyclists and moped riders compared with pedestrians.

Pedestrians
Many misunderstandings occur and lead to accidents when pedestrians are crossing a street. About one third of all pedestrians injured in traffic are at a pedestrian crossing!

When approaching an uncontrolled pedestrian crossing, you have a duty to give way to pedestrians on the crossing or about to step on to it.

One way of avoiding misunderstandings is to make eye-contact with pedestrians. You can then foresee their intentions more easily.

Never wave on a pedestrian when you have stopped for him. This may tempt him not to keep a proper lookout because he feels safe. There is a risk that the pedestrian will not see or think about traffic which may be coming in another lane.

If you pass over a controlled pedestrian crossing when making a turn, you must drive at low speed, giving way to pedestrians who have proceeded on the green light.

If you are driving straight ahead on the green light or in response to a police hand signal you must wait for pedestrians who may have proceeded on the green light but have not yet reached the other side of the street.
Cyclists and moped riders

Leave sufficient sideways clearance when overtaking a cyclist. Remember that he may wobble. A bicycle does not have the protective covering provided by a car body, with the result that cyclists are often seriously injured when there is an accident.

In many built-up areas cycle tracks are being built so that cyclists and motorists do not have to compete for space. These cycle tracks are for use by cyclists and riders of mopeds class II. Riders of mopeds class I have to use the carriageway even if there is a cycle track.

- If you cross a cycle track, you have a duty to give way to users of the cycle track.
- If you cross a controlled or uncontrolled bicycle crossing while making a turn, you must keep your speed low and give way to cyclists and moped riders. This also applies when you drive out from a roundabout.
- In general when approaching a bicycle crossing you must adapt your speed so as not to create a hazard for those using the bicycle crossing. Cyclists have a duty to give way. On this point the traffic rules differ considerably from the rules which apply at a pedestrian crossing. A much heavier responsibility rests on cyclists than on pedestrians.

In places where a cycle track ends and does not lead to a bicycle crossing, it is cyclists and moped riders on the cycle track who have to give way to traffic on the carriageway.

Cyclists and moped riders may turn left at a junction in two ways. Prior to the turn they can keep alongside the centre line, or else they can stay next to the right-side edge of the carriageway.

This carries a possibility of misunderstanding. You must bear in mind that the cyclist may be intending to turn left even when he is proceeding straight ahead alongside the right-hand edge.

At a junction with a lane intended solely for right-turning traffic, cyclists must not use that lane for proceeding straight ahead or turning left. If a cyclist is entering or leaving a bus lane at the junction, however, this is permissible.

Be aware that cyclists and moped riders are allowed to overtake you on the right side. This requires you to be on the alert, especially when traffic is dense or there is queuing.
A safer and more humane traffic environment

Up to now the motorcar has dominated traffic while more vulnerable groups of road users have had to take second place. This has naturally caused conflicts and many accidents.

Things are beginning to change. Our knowledge about the significance of the speed factor in both the risk of accidents occurring and their consequences has increased. Many measures have been introduced and more will follow in future.

Densely built-up areas

This sign indicates a densely built-up area where speed is limited to 50 kph. Within the area there may be other speed limits as well, which will be indicated by traffic signs.

The sign may be supplemented with prohibitory signs, which in that case apply to the whole area.

30 kph

Speed greatly affects whether an accident takes place and how serious its consequences will be. Therefore lower speed limits are likely to become more common in places frequented by many unprotected road users.

Low-speed street

The sign means that it is unsuitable to drive faster than 30 kph. It is used in combination with various traffic-calming measures such as road humps and other obstacles. This creates a better environment for local residents in terms of both safety and exhaust fumes.

Access road

Instead of prohibiting motor traffic totally, it is sometimes convenient to allow traffic on pedestrians’ terms. On an access road you may only drive at walking speed, and you must give way to pedestrians. Parking is only permitted at specially assigned parking places. When you drive out from an access road the duty to give way applies.

Pedestrian precinct

The same rules apply to a pedestrian precinct as to an access road. The difference is that in a pedestrian precinct motor-powered vehicles are restricted.

In addition to cyclists, permitted traffic includes goods deliveries, transport of patients, and transport to and from private dwellings and hotels in the precinct.

Raised crossings

To improve safety further for pedestrians and cyclists when crossing the street, the level of the surface may be raised to that of the pavement and cycle track. This makes it easier for car drivers to see that there is a crossing, and raising the level also has a slowing-down effect.
Driving in heavy town traffic

This section is concerned with more advanced town traffic and deals with
- instructions from the police
- driving at junctions with traffic lights
- lane driving
- changing lanes
- overtaking in town traffic

Police signals

It goes without saying that we must obey police instructions. However, be aware that there are others besides the police who have authority to direct and stop traffic. These may be military policemen, customs officials, traffic wardens, road works traffic controllers etc. It must be clear from his dress or in some other way that he has this authority.

Traffic lights

Traffic lights are erected at junctions bearing dense traffic to make it flow more smoothly and safely.
- A red light means stop.
- Red and amber mean that a change to green is about to take place. You must not pass the light before it has changed to green.
- A green light means you may proceed.
- Continuous amber means you must stop if you can brake safely.
- A flashing amber light is a warning light. You must drive with special caution. Because traffic control at the junction is out of operation, the instructions indicated by the road markings apply. If you are driving through the junction on a major road, crossing traffic must give you priority. If a Give Way traffic sign has been erected, you must give way to crossing traffic. In exceptional cases there may be no traffic signs. In that event the right-hand rule applies at the junction.

Order of rank

It may happen that you encounter several instructions simultaneously. A police officer may signal you forward even though the traffic lights are at red. There may be a Stop sign at the same time as a traffic light is green. The instructions rank in the following order:
1. Police officer’s signal
2. Traffic light
3. Traffic sign.
**Bus lane**
A bus lane may only be used by public transport vehicles, cyclists and moped riders (TN: What about taxis? They do it). When the bus lane continues after the junction, as in the picture, vehicles from this lane may continue straight ahead despite the lane arrow.

**Stop signal**
- Stop at the stop line when the light is red and if you want to go straight ahead.
- The sign does not apply to vehicles turning left or right.

**Other signals**
There are numerous other traffic signals. They may be signals which apply to a particular group of road users or to certain situations. Examples of these are:
- Public transport signals
- Tram signals
- Bridge-opening or emergency services signals
- Lane signals
- Bicycle and pedestrian signals

**More about instructions**
An instruction from a police officer, traffic controller, traffic signal or from a traffic sign or road marking takes priority over traffic rules.
A special instruction to pedestrians and cyclists has priority for these categories of road user over instructions to traffic in general.

**Traffic lanes**
When there are several lanes it is important to plan where you are going to drive in good time. Late changes of lane are a frequent cause of accident situations because the sudden manoeuvre takes nearby vehicles by surprise. If you have chosen the wrong lane for some reason, it is better to carry on and then turn round at some suitable place.

**Bus lanes**
To enable town buses to run as timetabled and not be affected by traffic jams, special reserved lanes are often provided. These are called bus lanes. Cyclists and moped riders are also allowed to use bus lanes. Whether and when other vehicles may use them is indicated by supplementary plates.

At the junction depicted in the drawing it is permitted, despite the lane arrow, to drive straight ahead from the right-hand lane. But remember that this only applies to vehicles coming from the bus lane!

**Reversible lane**
A reversible lane means that a lane is used for traffic in both directions. Traffic signals are used to indicate which direction is in force at the moment.
Positioning when driving in lanes

On a street with marked lanes where the highest permitted speed is 70 kph, you should choose the lane most suitable for your destination. The entire vehicle should be positioned within the lane.

On a street with four lanes or more you must not drive on the left side of the centre of the street. If the street has three lanes, you must not drive in the lane furthest to the left.

If there are lane arrows on the roadway or lane direction signs above the lane, you should obviously follow these. They are there to make your planning easier.

Keep a sufficient separation distance between yourself and the car in front so that you will not be taken by surprise and receive important information too late. With a bigger separation distance to the car in front, you increase your range of vision and will more easily be able to reduce your speed if something unexpected happens. You will have more time to read traffic signs and the ride will be less jerky and irregular. Heavy braking and repeated acceleration increase petrol consumption and exhaust fumes.

Large vehicles such as buses and lorries need a lot of space. Avoid driving alongside them on bends. The risk of being crushed can be high if a lorry encroaches on your lane.

Changing lanes

When you are thinking of changing lanes you should do it immediately after a junction. Do not do it before a junction, when there is often a solid line prohibiting the change.

If another road user signals that he wants to change lanes, help him! You can do this by increasing the separation distance to the vehicle ahead of you.

A change of lane in heavy traffic requires both adaptation and interplay. On streets with a speed limit of 70 kph or less you should stay in your lane to reduce the risk of accidents. Change lane only if you are going to stop, turn at a junction or overtake! You should not return to your original lane after overtaking.

In situations where a lot of traffic has to share a limited amount of space, drivers must show consideration for one another. There may be places where two lanes or two carriageways merge into one. This is where the zip fastener principle should be applied, i.e. one vehicle at a time from each queue moves forward in turn.
Overtaking in town traffic

**Overtaking on the right permitted**
- maximum 70 kph
- at least two marked lanes

**But not here**
For overtaking to be permitted
- the lanes must be marked
- or a substantial queue must be forming
- or the overtaking must take place at a junction

**No overtaking here!**
- Leads up to an uncontrolled pedestrian crossing
- Leads up to a road junction where the right-hand rule applies
- Oncoming traffic is approaching

**Overtaking in town traffic**
Occasions for overtaking are very common in town traffic, considerably more so than on country roads. Because of heavy cross-traffic the accident risks are high, especially if overtaking is done in the wrong place.
When you overtake you must maintain adequate sideways clearance. This is of course especially important when overtaking cyclists.

On streets where the maximum speed is 70 kph and there are at least two marked lanes in each direction, you can choose to overtake on either the right or the left side. The purpose of this rule is to reduce the number of lane-changes.

**Overtaking another vehicle is prohibited**
- if it cannot be done safely
- if there is oncoming traffic in the lane
- if a vehicle behind you is starting to overtake you
- on the left-hand side, if the vehicle in front signals a left-hand turn

**Overtaking is also prohibited**
- before a railway level crossing without barriers or traffic lights of the type used at road junctions. But two-wheeled vehicles may be overtaken.

**It is prohibited to overtake on streets with one lane in each direction**
- before an uncontrolled pedestrian or bicycle crossing and
- before a junction where the right-hand rule applies
- when you cannot get back on to the right-hand side, e.g. in a queue of cars

But you may overtake two-wheeled vehicles or pass on the right side of a vehicle whose driver shows clearly that he intends to turn to the left. This applies only to the circumstances described after the last two dashes above.
A dangerous situation in town traffic!
The car in front hinders your view of pedestrians on the pedestrian crossing.
- Drive slowly!
- Be prepared to give way!

Trams
Overtaking often takes place on the right-hand side. Pedestrian and bicycle crossings are special hazards.

On streets with several lanes in each direction it is prohibited to overtake
- before uncontrolled pedestrian or bicycle crossings
- when there is dense queuing in all lanes
- when the lanes have lane direction signs for various destinations
- when the crossing is at a junction

Overtaking a tram
You must not overtake a tram immediately before or at an uncontrolled pedestrian or bicycle crossing.

Trams are overtaken on the right in most instances. On a one-way street and at places where the positioning of the tram lines gives occasion for it, you may pass on the left-hand side with all due caution.

When the tram has halted at a tram stop where there is no traffic island, you must stop and yield free passage to passengers.

Overtaking road works and maintenance machines
A vehicle engaged in road works or maintenance may be passed on whichever side is most suitable.
Stopping or parking

When you stop or park your car you must ensure that it does not create a hazard or unnecessary obstruction. Reversing and turning are only permitted if it can be done without danger or hindrance to other road users.

This is not equally obvious to everybody. For this reason the rules for stopping and parking have become very detailed.

Parking allowed

The sign means that parking is allowed for a maximum of 24 continuous hours on weekdays except for the days before Sundays and holidays. Parking times may be restricted by the supplementary plates, which may also indicate whether and when a fee must be paid.

Supplementary plates

Supplementary plates are often used for giving parking information. The principle is that the supplementary plate refers to the traffic sign immediately above it. It does not apply to any other signs on the same post.

Time information is often given on the supplementary plate.
- Black or white figures without brackets refer to weekdays except a weekday before Sundays and holidays, usually Monday – Friday
- Figures in brackets refer to weekdays before Sundays and holidays, usually Saturday
- Red figures refer to Sundays and holidays, i.e. red days in the calendar

Arrows on the supplementary plate show in which direction the sign applies.
You should look at the pictures and study the traffic signs section to understand how the system functions.

Disabled parking spaces

A parking place displaying a disabled symbol means that a disabled person with a special permit may park. Those without a permit are only allowed to stop for boarding and alighting.

The P-card

The P-card is becoming an increasingly common method of time-limiting parking. One benefit is that you avoid having to pay for parking. You can often get a P-card from a tobacconist's shop or news-stand in those towns which operate the system.

The P-card should be placed on the inside of the windscreen.
Parking here is prohibited

On a road less than 30 metres from a railway crossing
You may block the view and hinder accessibility for other road users

On major roads
Stationary vehicles at points where traffic is busy may be both an obstruction and a source of danger

Bus and tram stops have special rules
At bus and tram stops it is permitted to stop only for boarding and alighting which can take place without hindering the bus or tram.
This applies to an area 20 metres before and 5 metres after the stop sign or inside a marked zone.
The stop may be marked by a broken yellow line on the kerbstone of the pavement possibly combined with a yellow zigzag line on the street.

If the marking is in the form of a continuous yellow line, possibly supplemented with a zigzag yellow line, this means that no stopping is permitted at the stop.

On a road so that your car obstructs the entrance driveway to a property
Of course people must be able to drive in or out of their own property

On the carriageway on the outside of another parked vehicle or a container, for example.
Does not apply outside a two-wheeled bicycle, moped, motorcycle or anything of similar size

So close to another vehicle that your car prevents anyone from getting into the vehicle or makes it difficult to move it

So that your car stands with any wheel outside its parking space

Where parking is prohibited you are allowed to
- stop for alighting and boarding
- load and unload the car
- stop if traffic conditions require it
Stopping here is prohibited

Or within a distance of 10 metres before a pedestrian or bicycle crossing

The car may block the view for both passing drivers and for pedestrians on the crossing. Notice that the prohibition does not apply after the pedestrian or bicycle crossing.

At or within 10 metres before a crossing cycle track or footpath.

At a railway or tramway crossing
- Obviously it is prohibited to stop within the zone required for trains or trams.

Where your car would block the view of traffic signs or traffic signals

In underpasses or tunnels
- There is often less space in a tunnel, and the risk that a stationary car will constitute an obstruction or cause an accident is higher.

Along a solid line painted on your side of the centre line and where the distance to the line is less than 3 metres
- The rule applies at those places where solid lines are used even though visibility is good. This may be before junctions on country roads or before pedestrian crossings and other junctions in towns.

On a continuous yellow line along road or pavement edges
- Most commonly used at bus stops.

On a footpath or cycle track
- Because these are reserved for pedestrians and cyclists.

In a bicycle lane
- Because it is reserved for cyclists, not motorists.

In a restricted area

On motorways or clearways
- Applies also to slip roads and acceleration/deceleration lanes.

Where stopping is prohibited, you may only stop if the traffic situation requires it.
Date zone

Date-zone parking is applied in many built-up areas in order to facilitate street-cleaning and snow-clearing. During the times when date-parking is in force, all cars must be parked on the same side of the street. This enables the vacant side to be cleaned easily.

At the times when date-parking is in force, parking is prohibited on
- the odd house-numbers side when the date is odd
- the even-numbers side when the date is even

If date-parking is in force between 0-6 this means that
- the date rule applies during the 6 hours between 0-6
- during most of the day, from 06 to 24, you may park on both sides of the street

A P-sign on a street cancels date-parking for the parking space so indicated.

Local traffic regulations

All municipalities have local traffic regulations concerning stopping, parking and other matters. These also cover engine-idling, the definition of a built-up area, and vehicle speeds on streets within the built-up area.

Local traffic regulations can be consulted in a register at the municipality office. Often the municipality will publish information brochures for their road users. The roads department will often provide information on the municipality’s homepage as well.

Many municipalities employ traffic wardens to ensure that parking regulations are complied with. Their duties also include ensuring traffic safety and accessibility.

Hints and tips about parking

- You may only park on the right-hand side in the direction of travel. However, you may park on the left-hand side if there are tram tracks in the right-hand carriageway or if the street is one-way.
- If the street has a slope you can turn your front wheels so that they catch on the kerb. This reduces the risk of the car starting to roll of its own accord.
- You must not leave your car with the keys still in it. One reason for this is to prevent accidents from being caused by imprudent actions on the part of children, for example.
Parking here is prohibited

On a road less than 30 metres from a railway crossing
- You may block the view and hinder accessibility for other road users

On major roads
- Stationary vehicles at points where traffic is busy may be both an obstruction and a source of danger

On a road so that your car obstructs the entrance driveway to a property
- Of course people must be able to drive in or out of their own property

On the carriageway on the outside of another parked vehicle or a container, for example.
- Does not apply outside a two-wheeled bicycle, moped, motorcycle or anything of similar size

So close to another vehicle that your car prevents anyone from getting into the vehicle or makes it difficult to move it

So that your car stands with any wheel outside its parking space

Wherever a “No Parking” sign applies

Bus and tram stops have special rules
At bus and tram stops it is permitted to stop only for boarding and alighting which can take place without hindering the bus or tram.
This applies to an area 20 metres before and 5 metres after the stop sign or inside a marked zone.
The stop may be marked by a broken yellow line on the kerbstone of the pavement possibly combined with a yellow zigzag line on the street.
If the marking is in the form of a continuous yellow line, possibly supplemented with a zigzag yellow line, this means that no stopping is permitted at the stop.

Where parking is prohibited you are allowed to
- stop for alighting and boarding
- load and unload the car
- stop if traffic conditions require it
Stopping or parking

At or within a distance of 10 metres before a pedestrian or bicycle crossing
- The car may block the view for both passing drivers and for pedestrians on the crossing. Notice that the prohibition does not apply after the pedestrian or bicycle crossing.

At a road junction and within 10 metres of it
- The car blocks the view and impairs accessibility. The prohibition applies both before and after the junction.

At or in the vicinity of the brow of a hill, or near a bend with obscured visibility
- Bearing in mind that the field of vision is cut short it is dangerous to force overtaking traffic on to the wrong side of the road. Remember that the prohibition applies both before and after the brow of the hill or the bend!

At or within 10 metres before a crossing cycle track or footpath.

At a railway or tramway crossing
- Obviously it is prohibited to stop within the zone required for trains or trams.

Where your car would block the view of traffic signs or traffic signals

In underpasses or tunnels
- There is often less space in a tunnel, and the risk that a stationary car will constitute an obstruction or cause an accident is higher.

Along a solid line painted on your side of the centre line and where the distance to the line is less than 3 metres
- The rule applies at those places where solid lines are used even though visibility is good. This may be before junctions on country roads or before pedestrian crossings and other junctions in towns.

On a continuous yellow line along road or pavement edges
- Most commonly used at bus stops.

On a footpath or cycle track
- Because these are reserved for pedestrians and cyclists.

In a bicycle lane
- Because it is reserved for cyclists, not motorists.

In a restricted area

On motorways or clearways
- Applies also to slip roads and acceleration/deceleration lanes.

Where stopping is prohibited, you
- may only stop if the traffic situation requires it
- may not park
Zone parking

Date zone
Do you want to park during the period when date-parking applies? Choose the odd or even house-number side of the street according to the date which will apply then.

For example:
It is the evening of 31 December. Park on the “even-date” side and avoid having to move your car at midnight.

Prohibited zone sign
This indicates no parking over the entire area.
You may park on marked parking spaces.
The prohibition does not end until you pass a cancellation sign.

Date zone
Date-zone parking is applied in many built-up areas in order to facilitate street-cleaning and snow-clearing. During the times when date-parking is in force, all cars must be parked on the same side of the street. This enables the vacant side to be cleaned easily.

At the times when date-parking is in force, parking is prohibited on
- the odd house-numbers side when the date is odd
- the even-numbers side when the date is even
If date-parking is in force between 0-6 this means that
- the date rule applies during the 6 hours between 0-6
- during most of the day, from 06 to 24, you may park on both sides of the street
A P-sign on a street cancels date-parking for the parking space so indicated.

Local traffic regulations
All municipalities have local traffic regulations concerning stopping, parking and other matters. These also cover engine-idling, the definition of a built-up area, and vehicle speeds on streets within the built-up area.

Local traffic regulations can be consulted in a register at the municipality office. Often the municipality will publish information brochures for their road users. The roads department will often provide information on the municipality’s homepage as well.

Many municipalities employ traffic wardens to ensure that parking regulations are complied with. Their duties also include ensuring traffic safety and accessibility.

Hints and tips about parking

- You may only park on the right-hand side in the direction of travel. However, you may park on the left-hand side if there are tram tracks in the right-hand carriageway or if the street is one-way.
- If the street has a slope you can turn your front wheels so that they catch on the kerb. This reduces the risk of the car starting to roll of its own accord.
- You must not leave your car with the keys still in it. One reason for this is to prevent accidents from being caused by imprudent actions on the part of children, for example. Another is to hinder the activities of opportunist thieves.
- Remember that a car becomes extremely hot standing in the sun. Never leave children or domestic pets alone in the car!
When you emerge on to a major road

You must reduce speed in good time when approaching a major road ahead. Drivers on the cross-road must be able to rely on your intention to stop. The only evidence to show your thinking and intentions is the way you drive.

When emerging on to a major road, the duty to give way always applies. This means that you must yield right of way to all traffic on the major road.

If there is a Give Way traffic sign at the junction you only need to stop when traffic is coming. Otherwise you may drive out.

If there is a Stop sign you must always stop and give way to traffic on the major road. There is usually a stop line showing where to halt. If there is not, you must stop immediately before the point where you emerge on to the road.

A situation which often entails a risk of accident is carelessness about looking to the right when turning right. It is just as important as looking to the left. Think about vehicles approaching from the right and perhaps one of them overtaking.

Another dangerous situation can occur if a car turns into your road and so obstructs your view.

After emerging on to the major road you should increase speed sharply. At the same time you should keep well to the right and check whether anyone is approaching you from behind.

Some points of entry on to country roads are provided with acceleration lanes similar to those found on motorways. The same rules apply here as on motorway slip roads.
Road markings

Centre line
- In built-up areas the distance between the lines is often shorter

Warning line
- Warns of obscured visibility
- May be a preliminary warning of a solid line

Solid line
A solid line may only be straddled or crossed
- when you are passing a fixed obstruction
- in order to gain access to property
- when there is a broken line to the right of the line

Are you correctly positioned?

Good
- Easy for drivers behind you to plan overtaking
- You usually avoid any ruts worn into the road surface
  But
- Don't drive like this in the dark

Less good
- Difficult for drivers behind to see in front of you
  But
- Is safer in the dark

Positioning
On country roads where speeds are higher, the field of scan has to be longer. To an inexperienced driver it does not feel natural to focus attention on the view of the road far ahead. It is something that needs to be practised. It is also important to practise scanning the view to the rear.

Under normal conditions you should drive close to the edge-line. This makes it easier for vehicles behind you when overtaking. It also reduces the risk of aquaplaning in wet weather because you will not be driving in the deepest ruts. By positioning yourself correctly you will also increase the safety clearance between yourself and oncoming traffic.

Darkness makes it difficult to detect obstacles along the edge; therefore you should position your car nearer to the centre.
The three-second rule is most useful when there are clear points of reference on the road. For example, you can use the shadow from a viaduct or a repaired patch on the road. When the vehicle in front passes such a reference point, you start to count 1001 – 1002. If you yourself have passed that point before you have counted 1003, the distance is too short.

The verge reflector posts may also help you to judge the distance. Two sectors mean the distance is 100 metres, which is usually sufficient at ordinary country road speeds.

Passing on narrow roads
- Keep well to the right when the view is blocked
- The vehicle reaching the passing place first must wait at the widened sector

Distance to the vehicle in front
It is a common mistake in country road driving to drive too close to the vehicle in front. This increases the risk of collision. A rear-end collision often causes unpleasant whiplash (neck) injuries.

You can use two rules-of-thumb to keep the correct separation distance, one being the three-second rule, the other the same distance in metres as your speed in kph (70 metres at 70 kph). These rules of thumb are only useful in good road conditions. The gap must be increased further when conditions are worse.

It is unpleasant to have another car driving too close behind you. You can do nothing about how the driver behind you behaves. But you can reduce the risk by keeping well back from the cars in front. Then if anything happens to one of them, you will not have to brake so hard.

Passing oncoming traffic
In most instances, situations involving oncoming vehicles are both common and easily managed. You only have to remember to keep to the right so as to ensure safe clearance as you pass each other.

If you are driving on a narrow road it is important to keep well to the right in all places where the view is obscured. An oncoming vehicle can pop up faster than you think! Adapt your driving so that you can pass each other at one of the passing places frequently found on these roads.

In the dark it is extremely difficult to detect a pedestrian walking along the side of the road, for example. For this reason you should keep nearer to the centre, though without impeding oncoming vehicles.

If there is an obstruction in the road, the vehicle on the same side of the road as the obstruction must wait for the oncoming vehicle.

Special rules apply to certain types of road works and maintenance machinery. Because they operate over the entire road it is both permitted and customary to pass them on the left side when this is most appropriate.
Speed blindness

Speed blindness can result in:
- excessive speed at exit roads
- insufficient separation distance ahead
- misjudgement of stopping distance

The risk increases with:
- wide, smooth roads in open countryside
- quiet-running cars

Road works

Would you like to have cars rushing past you in your workplace?

Tunnel vision

High speed and tiredness, alcohol or stress can cause a narrowing of your field of scan.

Speed blindness

Speed blindness is easy to become speed blind when driving fast. The consequence may be that you judge your braking distance incorrectly and apply your brakes too late and too little if a dangerous situation occurs. Speed blindness is one of the causes of the excessively short separation distances which motorists leave in front of them on country roads. They probably believe they can brake in good time because they misjudge their speed. The risk of speed blindness increases with quiet-running cars and large, wide, smooth roads. When you have driven a long distance on the motorway and brake at an exit, speed blindness may cause you to do so much too late, perhaps driving off the road as a result.

Tunnel vision

At high speeds your field of scan becomes narrower, and tunnel vision results. This increases the risk of overlooking what is happening just off the road, such as animals approaching. To counteract the risks created by tunnel vision it is important to maintain vigilance by glancing about at the areas alongside the road. Tunnel vision may also arise because tiredness, alcohol or stress affects your vision by narrowing the area you can see. You then fail to detect movements on the periphery. Your field of scan has become narrower.

Road works

Road workers have a very stressful work environment. The continual noise of machinery makes it hard to take in other sounds. Smoke, dust and a torrential stream of cars passing only a few metres away all contribute to this. A dropped tool or momentary loss of concentration can be an accident in the making. Show consideration and respect to those who have the road for their workplace. Drive slowly when passing them and leave plenty of sideways clearance!

Consider these things:
- Backing of machinery is common. Stress and lapsed attention may cause the driver not to see you.
- The noise around road works means that he probably has not heard you approaching.
- Follow the orange traffic signs and orange road markings! They take priority over ordinary instructions.
- Your car may be damaged by chippings flying up from the road. Your own speed will determine how serious the damage will be.
- The carriageway is often slippery when asphalting is taking place.
- Do not drive over newly-painted lines! You will spoil the new lines and may splash paint on your car.
Overtaking

Overtaking another vehicle makes great demands on your judgment. In today's heavy traffic it is rare to be entirely free of oncoming vehicles. This is something you need to have thought about before you begin overtaking.

Will you save any time by overtaking?

This is a question you should always ask yourself. To start overtaking in heavy traffic is stupid. Moving up a few places in the queue is all you can achieve. It is equally pointless to overtake immediately before turning on to another road.

Be aware that the difference in average speed between a quiet and relaxed journey and one filled with hurrying and risk-taking is usually much less than you think. Rushing your journey, with constant acceleration and braking, also causes considerably higher fuel consumption and harmful exhaust emissions.

How far ahead can you see clearly?

Naturally overtaking is prohibited in places where the view is blocked by hilltops and bends. It is also prohibited where the view is obscured by fog, snow and the like. The reason of course is that you cannot see sufficiently far ahead. As long as you are unaccustomed to making these assessments, it is wise to allow a substantial safety margin. The crux of the matter is how rapidly your car can accelerate and how fast the oncoming vehicle is approaching.

How much clear road you need depends among other things on which overtaking technique you use. If you are driving behind a vehicle and then increase speed and overtake — “acceleration overtaking” as it is called — you need more clear road.

Flying overtaking means that you approach the vehicle you intend to overtake at considerably higher speed, which requires less clear road ahead.
Where will we pass one another?
We tend to believe we will meet halfway.
- *That is to simplify a difficult judgment.*

What if we misunderstand the situation?
The oncoming driver expects us to move over to the hard shoulder.
- *It is a quite common but dangerous situation.*

Breaking off overtaking in time
- *may be your most important ability.*

**How far away is the oncoming vehicle and where will we meet?**
Naturally you must not overtake when there is oncoming traffic. In heavy traffic you will seldom be completely free from oncoming vehicles. This is when you must make accurate judgments. Your distance from the oncoming vehicle must be sufficiently large for you to be able to complete your overtaking manoeuvre safely. At this point we need to look at two situations which you can find yourself in.

If you are meeting an oncoming car you have to bear in mind how difficult it is to judge where you will pass one another. It is tempting to estimate the passing point to be halfway between the two cars. This may lead you to misjudge the free overtaking space entirely if the oncoming car is going faster than you are. Look at the picture opposite!

The second situation is common on country roads with hard shoulders. Many motorists straddle the centre line when overtaking even though there is oncoming traffic. Of course this is prohibited and indeed dangerous, because it forces oncoming motorists to go on to the hard shoulder to avoid a collision. The oncoming drivers may have their attention focused on something entirely different. Look at the picture!

When traffic is heavy or the road winding and hilly, situations can occur while overtaking which are hard to foresee. Perhaps you have not correctly assessed the field of view, the distance or the oncoming car’s speed. In that case you must break off from overtaking. Apply your brakes and try again at a safer place! If breaking off, try to do it at an early stage, since otherwise there is a risk that both you and the driver you are overtaking may apply your brakes at the same time.
Don't overtake where danger may arise ...

... or
- when you yourself are being overtaken
- in queues
- when there is oncoming traffic
- when your view is blocked
- before right-hand rule junctions
- on the left of a vehicle which is signalling a left turn

The picture is a montage.

Differences in speed magnify the risks
Tractors, cyclists and road works vehicles call for special planning on your part.

Is overtaking permitted?
You must not overtake anywhere where danger may arise. You are also prohibited from overtaking
- when a vehicle behind is starting to overtake you
- when there are queues with short gaps between the cars
- when there are oncoming vehicles if this involves straddling or crossing the centre line
- at hilltops or on bends with a blocked view, if you need to straddle or cross the centre line
- immediately before and at junctions where the right-hand rule applies
- immediately before or at uncontrolled pedestrian and cycle crossings
- immediately before or at railway level crossings without barriers
- to the left of a vehicle which is signalling a left turn

Is there a risk that the motorist you are overtaking may turn left?
When overtaking there is also always a risk that the person you are overtaking may make a left turn or himself start to overtake. You must then wait before you can overtake. When overtaking a tractor especially, you must remember that it may make a turn almost anywhere. Tractors do not need a road to turn on to. Moreover the difference in speed between your vehicle and a tractor is often great. To warn you of the wide difference in speed, slow-moving vehicles such as tractors and motorised equipment class II are fitted with a slow-moving vehicle sign. This sign means that the vehicle is designed for a speed of not more than 30-40 kph.

Road maintenance vehicles of course need your special consideration when overtaking. It is quite impossible for the driver of such a machine to have his attention constantly fixed on the traffic. Not very much work would get done that way. Slow down, and leave good safety margins before you pass!

Cyclists can also be a risk factor. Many elderly people find it difficult to look round before they turn, and children can be very impulsive when cycling. The difference in speed between these vehicles and yours is large, and it is often too late to take action unless you are prepared.
Obstructions along the roadside
What is the tractor hiding?

When being overtaken:
- Keep to the edge line!
- Don't increase your speed!
- Do use the hard shoulder if you consider it safe

Overtaking on the right
You may overtake on the right here because there are lane direction signs indicating different destinations.

Are there obstructions along the roadside?
Before overtaking you must keep in mind that the vehicle in front may need more room. There may be a cyclist, pedestrian or some obstruction which you cannot see. The risk is greatest if it is a large vehicle you are overtaking.

When being overtaken
The rules are simple and self-evident. You must keep to the right, i.e. out towards the edge line, and you must not increase your speed. You may be able to make it easier for the vehicle behind by moving over to the hard shoulder. This is usually much appreciated.

If you are driving slowly or occupying a lot of space and the road is narrow, winding or has much oncoming traffic, you must reduce your speed and keep well to the side. This is to make overtaking easier.

Obviously you can find yourself in situations where these rules are not enough. If you are being overtaken in a dangerous place, you must help the overtaking driver by braking and keeping clear as far as you can.

Many inexperienced drivers have difficulty in keeping a straight course when being overtaken, which can be dangerous on narrow roads. This is because they give too much attention to the overtaking vehicle, watching it either directly or in the driving mirror. Keep looking well ahead of you, then you will keep a straight course!

Sometimes you are allowed to pass on the right side
On roads with two or more lanes in the same direction you may pass vehicles which are driving in the left-hand lane if:
- there is dense queuing in all lanes
- there are lane direction signs indicating different destinations
- the vehicles are in different lanes at a junction.
**The hard shoulder**
- is not an extra lane
- is for use by pedestrians, cyclists, moped riders and drivers of slow-moving vehicles
- may be used for allowing overtaking vehicles to pass
- should be avoided during darkness and at places where the view is blocked

**Crawler lanes**
Examples of traffic signs used

- Steep hill
- Lane ends

**DRIVING ON COUNTRY ROADS / OVERTAKING ON COUNTRY ROADS**

**The hard shoulder**
The sector of carriageway outside the edge line is called the hard shoulder. There are many opinions about what it is for.

The hard shoulder is not an extra lane but primarily a safety zone for use by pedestrians, cyclists, moped riders and drivers of slow-moving vehicles. As you no doubt have noticed, many drivers use the hard shoulder for allowing faster-moving vehicles to pass them. It is often convenient, and appreciated, if you do so. You must not drive for any length of time on the hard shoulder. Use it only temporarily to let people overtake from behind.

Don’t use the hard shoulder during hours of darkness when the field of view is too short and there is the danger of encountering pedestrians, cyclists and various obstacles.

Be cautious generally about using the hard shoulder when your field of view is short, e.g. before a hilltop or bend. If you are late spotting an obstruction you cannot simply swing back on to the main carriageway again without further ado. You have a duty to give way to vehicles approaching you from behind.

You also have the same duty towards any oncoming vehicle which is overtaking.

Before junctions too you should avoid using the hard shoulder to allow a following vehicle to overtake. There is a risk of misunderstanding. Road users coming out on to the road may interpret your positioning to mean that you are going to turn off at the junction.

Some very wide country roads have narrow shoulders. There is usually room for overtaking here despite oncoming vehicles. The condition is that the vehicle you are overtaking keeps well over to the right so that overtaking takes place on your own half of the roadway.

**Crawler lanes**
Heavy goods vehicles have difficulty in maintaining speed up long steep hills. This often creates dangerous overtaking problems. In some places the problem has been solved by providing crawler lanes.

Normally the right-hand lane is used when climbing a hill and the left-hand lane only for overtaking. When the top of the hill is reached the crawler lane ends and the traffic from the two lanes merges into a single lane.
Right turn
When you are making a right turn from a major road on to another road it is important, as always, to drive steadily when turning, so as not to take your fellow road users by surprise. Prepare for the turn in good time by checking the traffic behind you, give directional signals, and position your car on the right of the carriageway. Brake gently and manoeuvre your car as close to the side as possible for the last few metres before turning. If there is a hard shoulder, then those behind you will appreciate it if you use it in the final stages. Be mindful of the risk of entering the turn too fast, perhaps because of speed blindness.

Left turn
One of the most complicated traffic situations is the left turn on a country road. Many and frequently serious traffic accidents are the result of faulty judgments and failures of cooperation between drivers.

Normally a left turn is made like this: Prepare for the turn in good time by checking the traffic behind you, give directional signals, and position your car carefully alongside the centre line. During braking you must check behind while still leaving yourself sufficient time to watch for oncoming vehicles. If you can then adjust your speed so as to avoid stopping before the turn, you will reduce the accident risk considerably.

If you are compelled to stop despite all this, two things are important.
- Firstly, you must be positioned right against the centre line. The reason is that your car will be seen better by anyone coming from behind.
- Secondly, you must not turn your wheels to the left, since you would then be at risk of your car being thrown into the path of oncoming traffic if anyone drives into you.

Safer road design
Accident-prone junctions may be re-designed so that left-hand turns are prohibited from the major road. Exit to the left is effected by first turning into an exit slip road to the right which then curves round to cross the major road. In this way no dangerous left turn is necessary.
Common accidents when turning left
The rules say: You may turn only if you can do so without obstructing oncoming traffic and without danger or unnecessary hindrance to traffic behind.
In these contingencies you have various possibilities:
- You can refrain from turning left and continue ahead instead, turn round, then come back to the junction
- You can turn to the right, turn round and then drive straight across the junction
- You can give the traffic behind you an opportunity of overtaking you by slowing down in good time before the junction

Rear-end collision
Avoid turning left when there is oncoming traffic!
- If you are forced to stop in order to wait for oncoming traffic there is a high risk of being run into from behind.
- Standing stationary with the wheels turned to the left involves a high risk of being thrown into the path of oncoming traffic in the event of a rear-end collision.

Collision with oncoming vehicle

Collision with overtaking vehicle

Avoid turning left if there is traffic behind!
- Either you should let vehicles behind you get past in good time before the turn or else you should drive on, turn round and come back.
- The drivers behind the turning car can reduce the risk of this type of accident. If they position themselves next to the right-hand edge as soon as the red car's driver indicates left, the turning car will be visible sooner.
Some hints to remember when approaching a horse and rider:
- Show the utmost consideration! The riders are often young people who are little accustomed to traffic.
- Reduce your speed! Be prepared to stop if the horse shows signs of uneasiness.
- Do not sound your horn or dazzle with your headlights!
- Try to make eye-contact with the rider or driver.
- Leave wide sideways clearance.
- Increase your speed gently after passing!
Railway level crossings

A reminder of the rules:
- It is prohibited to overtake immediately before or on a railway level crossing without barriers or traffic lights of the same type as are used at road junctions.
- It is prohibited to stop on a railway level crossing.
- It is prohibited to park closer than 30 metres before or after a railway level crossing.

Here you must stop immediately before the crossing. When there is a stop line, that is where you halt!

Your responsibility

Railway level crossings
When you want to pass a railway level crossing it is you alone who has the responsibility of not placing yourself in a dangerous situation. The braking distance for a train at high speed is often around 600-1500 metres. In other words you cannot count on the train being able to stop.

At railway level crossings on the major roads there are various safety devices in the form of lights and sound signals, and sometimes barriers as well. There are often distance signs to help you to regulate your speed as you approach the crossing. It is important that you don't just rely on the signals when they indicate no train approaching. There could be a fault in the technical equipment, and the train driver could also make a mistake. You must always satisfy yourself personally that passage is free.

On minor roads there are large numbers of railway level crossings, sometimes only marked by a cross sign at the crossing itself. In such places, obviously, it is absolutely vital to watch out carefully before you cross.

Some hints and tips:
- It is the field of view at the level crossing that determines the speed at which you can pass over it.
- Always change to a lower gear when passing over a level crossing! It gives you better acceleration and reduces the risk of the engine stalling fatally as you cross the track.
- If your engine stalls while in the middle of the crossing, you can move the car out of danger by using first gear and the starter motor. Release the clutch completely and hold the ignition key in the start position. The car will then jerk forwards.
- If your car has an automatic gearbox the above advice will not work. Try to move the car by pushing it manually. If that does not work, you must warn the engine driver!
- If you are stuck between the barriers, drive through them. They are manufactured so that this can be done easily.
- You must not start off too soon and drive over the crossing before the red light goes off.
- If there is a Stop sign before the crossing you must halt at the stop line. If there is no line, you must halt immediately before driving over the crossing.
- If you stop before a railway crossing in darkness you should switch over to parking lights so as not to dazzle drivers of vehicles approaching from the other direction.
There is always a risk of wild animals suddenly appearing

The risk is particularly high
- at dawn and dusk
- in May-June
- in September-October
- in winter on salted roads

Be especially careful
- in forested areas with watercourses
- in open fields
- in clear-felled areas
- at start and end of wildlife protection fences

Mark the location and notify the police if you have collided with a:
- bear, wolf, wolverine, lynx, elk, deer, roe deer, otter, wild boar, mouflon sheep or eagle

Something to think about:
Imagine you are driving through an area of Sweden with fairly flourishing wildlife and your speed is 90 kph. In that case you will be passing an elk or roe deer less than 200 metres from your car every fifteen seconds. How many of them do you see?

Wildlife hazards

The type of accident which is increasing fastest in Sweden is the kind involving wildlife. These are collisions with elk, roe deer, deer and reindeer. About 35 000 such accidents happen every year. Undoubtedly the most dangerous of these involve elk. A fully-grown elk weighs anything up to 700 kg. The force of a collision is concentrated at windscreen height, and for this reason serious injuries to the passengers in the car are often a consequence. Other animals usually cause damage only to the car but here the danger is the driver making errors such as panic-braking or swerving. This in turn may lead to collisions with other cars or obstructions at the side of the road.

The risk of animals passing over the road is present all the year round and throughout the 24 hours, but it is greatest
- at dawn and dusk, when the animals are seeking water and food
- in May-June, when the elk cows are expelling the previous year’s calves
- in September-October, when the animals’ mating season occurs simultaneously with the hunting season
- in the wintertime when there is much snow. The animals find it easier then to move about along the roads. Also, they seem to like the salt on the roads.

To avoid wildlife accidents it may be useful to know a little about the animals’ movements.
- Forested areas with watercourses on one side of the road are danger zones.
- Animals often frequent the edges of forest tracts. It is easy to move around there, while at the same time the protection of the forest is near at hand.
- Clear-felled forest is rich in fodder and therefore attracts wildlife.
- Areas where wildlife protection fences begin and end are points of high danger.
- A black plastic sack on a snowploughing marker-post indicates a risk of wandering reindeer.

If you do have an accident?
If you do have an accident involving wild animals you must switch on your hazard warning lights and put out a warning triangle so that other motorists can see your car in good time.

If the animal died in the collision you must remove it from the carriageway.

If the animal was injured and has fled into the forest you must mark the exact place where it disappeared. This will make it easier for a hunting dog to pick up its trail. Remember that all collisions with larger animals must be notified to the police!
Stopping, parking and turning

Because cars maintain considerably higher speeds on country roads, you must be careful when stopping or parking. There is a risk that you may create hazardous situations if you stop at places where the view is poor.

Parking is prohibited on major roads. This applies to the entire roadway, so you are not allowed to park on the hard shoulder either but must use special parking areas or lay-bys.

If you need to stop, remember that it is prohibited to stop in places where the view is blocked. This applies both before, at and after the brow of a hill. It also applies before, at and after bends where the view is restricted. In addition, of course, the usual rules apply with regard to pedestrian crossings, road junctions and railway level crossings. Details are given earlier in this book.

Warning lines and solid lines are used where the view is blocked, i.e. in places where stopping is not allowed. There is one exception, i.e. where solid lines are used without the view being obscured, for example before major junctions. Here you may stop if you have more than 3 metres between the solid line and the car. This is provided there is no sign prohibiting it.

If your car develops a fault and you are forced to stop at a place which is dangerous, you must position the car as far out to the side as possible and switch on the hazard warning lights. Put out a warning triangle 50-100 metres behind the car if the permitted speed is more than 50 kph. Obviously it is your responsibility to move the car to a more suitable place as soon as possible.

The best way of turning is to drive into a smaller road. Once away from the faster and busier road, the risks are less. You are sure to find some suitable place which you can reverse into. Another possibility is to stop on the major road and reverse directly into a smaller road. Remember that the place you select must be clearly visible in both directions! Avoid this manoeuvre when there is traffic coming from behind!

A considerably more dangerous way of turning is to make a U-turn from a parking place. This is a manoeuvre to be avoided unless your view is very clear in both directions. You must also be absolutely sure that you can get round without having to reverse.
### Motorway
- 110 kph unless otherwise indicated
- No stopping
- No turning
- No reversing
- No pedestrians, cyclists, moped riders. Applies also to EU moped riders
- No tractors or motorised equipment. Does not apply to motorised equipment class I, fitted as a mobile crane

### Acceleration lane
- adapt your speed to the motorway traffic
- use indicators in good time
- find a gap in the traffic
- leave the acceleration lane as quickly as possible

- you do not have priority
- the motorway traffic does not have priority
- mutual consideration is required

### Motorway
The motorway is a fast, safe road. Everyone is driving in the same direction and the traffic is not as mixed on the motorway as it is on ordinary country roads. Motorways nowadays are often fitted with central reservation barriers to reduce the risk of vehicles physically crossing over into the opposite carriageway.

Only vehicles designed for a speed of at least 40 kph are allowed to be on a motorway or clearway. Permitted vehicles are motorcycles, cars, buses and goods vehicles. Cyclists and pedestrians are not allowed on the motorway. Mopeds, tractors and motorised equipment are likewise prohibited.

An exception is made for motorised equipment class I, fitted as mobile cranes, which is also permitted there.

### Entry to the motorway
In most cases there is a special slip road with an acceleration lane intended for use when bringing your speed up to that of the motorway traffic. Adjust your speed and slip into a gap as quickly as possible! The main responsibility rests on you for ensuring that no mishap occurs when changing from the acceleration lane to the motorway itself. Drivers on the motorway must facilitate your entry by adjusting their speed. They can also make it easier by changing to the left-hand lane.

If the motorway has no acceleration lane, the “give way” rule applies, and you must give way to traffic already on the motorway.
Motorway driving

An exit from the motorway is signposted in this order:
- First you see one or two preparatory exit signs
- Next you see the exit sign and exit divider

Motorway exits are designed so that you do not normally need to brake until you are into the exit lane. This is so that the traffic can continue to flow without unnecessary braking or other disturbance.

Once into the exit slip road, you must ensure that you are not going too fast when you reach the sharp bend or junction usually found there. The risk of speed blindness is high after fast driving.
Hazard when driving on a motorway
- too short separation distances can cause multiple collisions
- monotonous driving can cause one-car accidents
- high speed in wet conditions can cause aquaplaning

Clearways
- same rules as on motorways
  but 110 kph speed limit not automatic
- oncoming traffic on same carriageway
- high accident risk

Hazards of motorway driving
We said earlier that motorway driving is safe. Even so, accidents do happen.

Inadequate separation distances bring risks which, in combination with icy roads and above all fog, can lead to serious collisions. Multiple pile-ups involving many cars are not very common but when they do occur, they are often very serious. The cause is nearly always inadequate separation distances and some kind of disturbance factor in the form of fog or the like.

Another hazard is that driving can become monotonous, so that concentration fails and a one-car accident results.

Driving at high speed in wet weather increases the risk of aquaplaning.

Another risk factor is when the motorway ends and is replaced by an ordinary road or clearway because there is now oncoming traffic.

Clearway

The same rules apply to clearways as to motorways, with the exception of the 110 kph speed limit. The difference is that you now have to cope with oncoming traffic. Entry roads generally lack an acceleration lane, the "give way" rule applying instead. Exit roads are considerably shorter than on the motorway.

Speeds are high and these roads are among the most dangerous and accident-prone. Serious head-on collisions resulting from overtaking against oncoming traffic are common.
A modern motorcar has high built-in safety. If we use all the safety systems properly the risk of serious injury in a collision will be much reduced.

**A protective shell**

The built-in safety of modern cars consists of several different systems. The front and rear ends are crumple zones. This means that in a collision the car crumples in a controlled and relatively gentle manner. This makes the stresses on the occupants considerably less than they would be in an older and more rigid vehicle, where they would take more of the force of the collision.

Protecting the occupants of the car in side-on collisions is harder. There are various design features which disperse the collision forces in the car, lateral girders in the doors etc. Nevertheless the problem remains that we are less well protected in side-on collisions.

There are constructional features inside the car for our protection, from padded panels and soft components to considerably more advanced protection.

**Seat belt**

Your best protection is a properly fitted seat belt. It must sit correctly on the body and be as tight as possible (see picture). The belt gives its best protection when it lies close to the body. Many new cars are equipped with **seat belt tensioners** which in the event of a collision immediately tighten the belt very hard.

It is “doubly” important to use a seat belt during pregnancy. Ensure that the lower part of the belt is pulled under the stomach down towards the thighs. During late pregnancy you should avoid driving yourself. In a collision the child can be injured by the steering wheel and the airbag. As a passenger, on the other hand, you have the possibility of pushing your seat a long way back to avoid injury.

**Seat and head restraint**

The head restraint and back rest give important protection against neck injuries in a collision. Adjust the height of the head restraint so that your head cannot be thrown backwards! If it is positioned too low it does no good.

Despite more cars being fitted with head restraints, the proportion of whiplash injuries has risen substantially in recent times. Several car manufacturers, including Volvo and Saab, have been trying to solve the problem through a variety of seat and head restraint designs. The common feature of all these solutions is that they attempt to capture the movement of the head in a collision more gently.
Use your seat belt!
No child seats where airbags are fitted!

Position your load correctly
Low down, tightly secured, braced in place – this is how it should look!

The airbag works in conjunction with the seat belt
- The airbag fills in 0.15 seconds
- The force of its inflation can cause serious injury if you are too close to it

Airbag
The airbag is another important protective device. In a sharp collision a protective cushion inflates in front of the driver and passenger in the front seats. It gives protection against face and chest injuries.

On newer cars there are also side airbags to protect the occupants of the car in side-on collisions. You need not fear airbags being inflated in minor accidents: a speed of 20-30 kph is required to activate them.

Seat belts must be used in conjunction with airbags because the airbag can cause very severe injuries if you are too close when it inflates. A child car seat must not be used in the front passenger seat unless the airbag has been disconnected. Otherwise the child will be injured by the airbag if there is a collision. Disconnection must be carried out by an authorised agent for the make of car. It usually costs nothing.

Baggage load
The force of a collision is so great that you can be injured by baggage which is not well secured. Loose objects in the car fly forward like projectiles in a crash. Therefore you must place heavier objects as low as possible, on the floor at the back for example. Heavy things in the baggage compartment can penetrate right through the back rest. A case of soft drinks thrown forward in a collision is one example of an article which can seriously injure the car’s occupants. Place all heavy articles furthest forward and low down in the baggage compartment. Secure them if possible. More recent models of car often have eyelets or loops to which straps can be secured.
**Children in the car**

As driver you are responsible for seeing that children under age 15 are well protected when they travel in the car. What sort of protection they should have depends chiefly on how big they are.

The very smallest children are best protected by being in a backward-facing baby seat.

When they have grown out of the baby seat at about 9 months old, the backward-facing child car seat provides the best protection. Both are often mounted in the front seat, so if there is an airbag it will have to be disconnected as mentioned before.

There are also possibilities for fitting the child car seat in the rear seat. To do this requires special fixing devices or a special bracket for fixing.

A few models of child car seat are also approved for use in the forward-facing position. The car’s ordinary seat belt then has to be used. Consequently the protection afforded by the seat is much inferior.

By four years of age the child will have grown out of the child car seat and will now travel most safely in the rear passenger seat sitting on a belt seat or belt cushion.

From about 10 years of age children can usually sit in the same way as adults in a place with an ordinary seat belt. It is not recommended for children less than 140 cm tall to ride in the front passenger seat if there is an airbag. If the airbag inflates, the child may be injured.

It is not the child's age but its size that determines which form of protection should be adopted. A child who can sit steadily should ride in a child car seat. If the top of the child’s head reaches the upper edge of the child car seat, he should change to a belt seat.
How speed affects stopping distance

Stopping distance = reaction distance + braking distance

The length of the reaction distance is determined by the speed and the reaction time.
E.g. The speed is 30 kph, i.e. nearly 9 metres per second.
The reaction time is assumed to be about one second.
The reaction distance is therefore about 9 metres.

A simplified method of working out the approximate reaction distance:
Delete the nought in the speed and multiply by three.
E.g. 30 kph = 3 x 3 = 9 metres
60 kph = 6 x 3 = 18 metres
90 kph = 9 x 3 = 27 metres

The braking distance depends on speed, state of the road, tyres, braking technique, brakes etc.
It increases quadratically as speed increases.

The illustration shows how stopping distance is affected by speed:
1. low speed in town traffic
2. speed doubled in outer districts
3. speed trebled on country roads

R = reaction distance
B = braking distance

Laws of nature

For many people driving a motorcar is a pleasant experience. Complete control and freedom to choose are attractive to most of us. But when speed rises the car’s motive energy increases as well. We notice this when braking hard or driving fast on bends. If the state of the road is bad, it does not need much force on the brake pedal for braking to turn into an uncontrolled skid.

Making the car stop

Of course it is important to you as a car driver to be able to stop in time before every conceivable obstruction on the road in front of you.

The stopping distance you need can be divided into two parts: reaction distance and braking distance.

Reaction distance is the distance you travel during the time it takes from noticing the obstruction until you start braking. How long this will be depends on how quickly you react and what your speed is.

All moving objects have a motive energy which increases as speed increases. The greater the motive energy, the longer your braking distance when you brake. It is important to understand how motive energy, and therefore braking distance, change with speed. Motive energy can be said to change quadratically relative to speed.

If you double your speed, the motive energy will be quadrupled, and therefore the braking distance will also be quadrupled. If you increase your speed three times, then the motive energy will multiply nine times and so will the braking distance.

In other words, speed has an enormous influence on how long the braking distance will be. This also means that you have a much shorter braking distance at low speed. If you halve your speed, you will cut your braking distance to a quarter, and so on.

But there are many other factors which determine the length of the braking distance as well. The road grip – meaning the friction of your tyres against the road surface – is determined by the nature of the road surface and quality of the tyres. The condition of the car’s brakes and the way you brake affect the braking distance enormously.
The braking distance is also influenced by

- state of the roads
- tyres
- brakes
- braking technique
- positioning of load

The braking distance can be more than ten times longer in poor conditions than in ideal conditions.

The braking forces on the tyres reduce the road grip available so that the car may become unsteerable or spin round.

Braking and lateral forces on tyres from the road

- are necessary for reducing speed, turning and maintaining course stability
- must be capable of increasing quadratically at increasing speed in a given manoeuvre.

Road grip

On icy roads, road grip can become so reduced as to make it feel as though the brakes have ceased to function. In this situation it takes almost a minute to stop from 90 kph. Without effective studded tyres the braking distance on smooth ice may be over ten times longer than on a summer road surface. The difference in braking distance between different cars and drivers is then so great that normal separation distances when queuing are insufficient.

Dirigibility and course stability

Lateral road grip is also needed to steer the car and prevent it from swerving of its own accord into rear-wheel skids, which are hard to control.

Without lateral forces from the road the front tyres cannot make the vehicle turn. It revolves around its centre of gravity, which often lies about halfway between the front and rear wheels. Turning is initiated by the lateral forces on the front wheels and is prevented from becoming too acute by the lateral forces acting on the rear wheels.

The need for lateral force rises and falls quadratically according to speed, in the same way as the need for braking force.

When a wheel is braking or driving it uses up part of the tyre’s road grip. Sometimes the road grip which remains is insufficient for the lateral forces which the tyre needs in order to steer or stabilise the car. Sudden braking, applying excessive pressure on the rear wheels, may therefore have the effect that the car cannot respond to steering or else spins round.

Law of gravity

It is easy to stop when travelling uphill and more difficult to do so downhill. Everyone who has cycled has experienced this. Naturally the law of gravity influences the braking distance when you are driving a motorcar. Be aware that the difficulties of stopping on a downhill slope are great, especially when the road is slippery.

Driving down long hills places a heavy strain on your car’s brakes. Enormous heat is generated in the braking system and can cause the linings to weaken or the hydraulic fluid to boil so that the brakes cease to function. You can help to relieve these strains by selecting a lower gear, thus bringing the engine’s braking power to bear. The same gear downhill as up is the rule of thumb!

The section on driving characteristics has been compiled in collaboration with Lennart Strandberg, professor of transport safety at Linköping University.
It can happen that when you turn the steering wheel the car fails to change direction. The reason for this may be:
- that the front tyres are planing on water or slush
- that the driver has applied the brakes (in vehicles without ABS, anti-lock braking system)
- engine braking or acceleration in front-wheel drive vehicle
- low front-tyre pressures and heavy front load
- worn front tyres
- heavy load or trailer
- blocked differential gear
- four-wheel drive without intermediate differential gear

The lateral-grip ratio between front and rear wheels determines whether the car is understeered and stable or oversteered and inclined to veer of its own volition. However, lateral grip is influenced by so many factors that one and the same car can vary between over- and understeering from one moment to the next.

More about the driving characteristics of motorcars

Some people know a lot about the behaviour of motorcars in different situations. Others find it difficult to understand a car's behaviour. The majority of people do not think about whether a car is oversteered or understeered or whether it is front or rear-wheel driven. They don't think about the placing of the tyres but simply change them when they are worn out. Neither do they notice a faulty distribution of braking force until they have to brake hard and the car perhaps begins to turn of its own volition. Knowing something about these factors can mean the difference between a near-accident and a real one.

Over- and understeering

For the car to turn it is first necessary for the wheels to be turned so as to thrust against the road surface, moving the vehicle to the side or inwards into the curve. If the rear wheels have a less effective lateral grip than the front wheels, then the rear end will end up outside the front end and the front of the car will point more and more inward into the curve. This is called oversteering and can lead to rear-end skidding and fatally dangerous sideways movements, even on straight stretches of road when gusts of wind or an uneven road surface set rotation going. In other words the car may turn of its own volition and lose its directional stability even though the driver has not turned the steering wheel at all.

If the front wheels have poor lateral grip the situation may be the reverse, in which the car proceeds almost straight ahead no matter how much the driver turns the steering wheel. This is called understeering and is preferred by car safety experts because it makes fewer demands on driver proficiency. It is also considered less dangerous to slide straight forward than to find yourself in an uncontrolled broadside skid. Today's cars do give better crash protection at the front than at the sides. But poor dirigibility too can lead to fatally dangerous sideways movements on straight stretches. This can happen, for example, after temporary aquaplaning if the driver turns the steering wheel too far and the car's front wheels suddenly resume their lateral grip.

Importance of tyres

When you change your car's tyres you should put the best tyres on the rear axle. In many accidents the car slides across the road and collides with an oncoming vehicle. The reason is that the rear wheels lose their grip before the front wheels. If your car has a good grip at the back, its road-holding qualities will be better.
Different drive systems

- Front-wheel drive
- Rear-wheel drive
- Four-wheel drive

Rear-wheel skidding – a very dangerous consequence of hard braking

Causes
- rear tyres inferior to front tyres
- faulty distribution of braking force
- poor shock absorbers at rear

Importance of the drive system
Most modern cars are driven by the front wheels. Many consider that these cars have advantages in winter road conditions. But if you accelerate too hard in poor road conditions and the front wheels start to spin, you lose all your steering and cannot change direction. If you cease accelerating, this will suffice to restore road grip as a rule.

The second group consists of rear-wheel drive vehicles. Most motorcar manufacturers are abandoning rear-wheel in favour of front-wheel drive. The most important reason is inferior road-holding in poor road conditions. If the drive-wheels get into a spin, the result could be a severe rear-end skid.

A relatively small proportion of cars drive on all four wheels. Four-wheel drive has great advantages when driving off-road and on snow and ice.

More recent cars may be fitted with an anti-spin system which enhances the ability to tackle slippery road conditions even for cars with only two drive-wheels. There are also cars fitted with ESP (Electronic Stability Program). This system senses if the car is skidding and immediately adjusts the course by braking on the appropriate wheels. These systems, like four-wheel drive, have the disadvantage of making it possible to drive faster in poor conditions. This makes for great danger if something happens to necessitate stopping immediately!

Faulty brakes
Normally the front wheels ought to brake harder than the rear wheels. If the wheels lock, it is best for it to happen to the front wheels first. When the braking force distribution in your car is faulty the opposite happens. The rear wheels lock first, and there is then a very great risk of a severe rear-wheel skid. The car will turn and possibly skid off the road out of control. You can check your brakes yourself by braking harder and harder at low speed on a gravel road. When wheel-locking occurs it ought to be on the front wheels.

Importance of shock absorbers
Worn-out shock absorbers bring much-reduced road grip, especially when braking and driving on bends. This is particularly so when the road surface is uneven. You can check the shock absorbers by pressing down hard by the wheels. The car ought to spring back softly without rocking.
Braking systems

Handbrake

The handbrake is a separate brake, usually operating on the rear wheels only. There is a warning light which helps you to remember to release it before driving.

Make a habit of engaging a low gear and applying the handbrake when you park your car. This is not merely in order to keep the car stationary where you positioned it but also because the handbrake may begin to bind if it is never used.

In damp and cold weather you should only leave the car in low gear. Otherwise you risk the handbrake freezing up!

You can check the handbrake by trying to drive with the brake on.

Footbrake (= service brake)

The force of your foot on the brake pedal is transmitted to the wheels with the aid of the brake fluid in the brake lines. If the system is not completely tight, brake fluid leaks out when braking. If a leakage occurs in one of the lines, there is a reserve line which makes the brakes continue to function on some of the wheels. This is called a dual circuit braking system and it is fitted to all cars except the very oldest.

The brake warning light on the instrument panel and a check of the brake fluid reservoir in the engine compartment will tell you if the system is functioning.

You should check the brake fluid level every time you fill up with petrol and you should change the brake fluid about every other year. This is because brake fluid absorbs damp which makes its boiling point lower. With a lower boiling point, there is a risk that the brakes will not work if you have to brake hard.

On many cars your braking force is power-assisted, i.e. reinforced by a vacuum servo. This is usually called the brake servo. The servo only functions when the engine is running. This means that when your car is being towed or is coasting with the engine switched off, it is difficult to brake. Because the servo is not functioning you have to apply much more force when pressing the foot pedal. You can check the servo by pressing the foot pedal a few times and then starting the engine with the pedal depressed. If the servo is functioning you will feel how the brake pedal goes down on the instant the engine starts.
Warning light for the ABS system
If the light comes on during braking
- the ABS system is out of action. There is a risk of the wheels locking when braking hard.
- go to a garage!

Brake warning light
If the light comes on during braking
- don’t drive any further!
- if the brake fails on any wheel the car must be towed away!
On certain models of car the light is combined with the “handbrake on” warning light.

Brake check
Press the brake pedal down as hard as you can for about 20 seconds
If the pedal sinks
- leakage
If the brakes come on very far down
- worn brakes
If the brakes feel springy
- air in the system

Test your brakes
- after washing the car
- when you have driven through pools or puddles
- when you borrow someone else’s car

Many new cars have brakes fitted with ABS (anti-lock braking systems), or non-locking brakes. This offers many benefits, such as minimising the risk of skidding when braking. Its biggest advantage is that the steering will function even during the severest braking.

The braking distance will also be shorter under most road conditions. On gravel roads and on snow and ice, however, the braking distance may be somewhat longer with ABS brakes compared with an ordinary braking system.

There is a warning light on the instrument panel which gives warning of any defect which may have arisen in the ABS system.

When the system is functioning you will notice a throbbing, pulsing movement of the brake pedal when braking hard. This is a signal that everything is working, not a symptom indicating a fault. This pulsing of the brake pedal does not indicate maximum braking, only that one of the wheels is close to locking. There may be more braking power available, so press the brake still harder and steer to avoid the obstacle!

Checking the braking system
Press hard down on the brake pedal while the car is stationary. The pedal should stop about halfway down and offer firm resistance. If the brake comes on only when far down, the brakes are probably worn out and may have to be replaced. If the pedal gives slowly under heavy pressure there is a leak in the system. Do not drive the car! If the pedal does not offer firm resistance but feels springy, there may be air in the system, and this must be remedied at a garage.

Carry out test braking at low speed. The car must not pull to one side, and there should be no metallic scraping sound during braking. Any defects found must be repaired, probably at a garage.

The brake warning light should be out while driving. The ABS system check light should come on for a few seconds when the engine is started. It must not be on while driving or during braking.

Always test your brakes after driving through pools or puddles and after washing the car. Damp in the brakes diminishes braking efficiency drastically. Test braking heats the brakes and the damp disperses.
**Spare wheel or emergency wheel?**
- Emergency wheel must have higher pressure
- Speed is restricted
- See your instruction book!

**Tread depth**
- Use the wear indicators
- Minimum permitted depth
  - 1.6 mm
- Reduced grip on wet roads at
  - 3-4 mm
- A new tyre has about 9 mm
- Tyres used in winter conditions must have at least 3 mm

**Tread depth gauge**
To check the depth of tread accurately a tread depth gauge is used. You can get one from your tyre supplier. The minimum permitted depth, 1.6 mm, is specially marked.

**Wheels and tyres**
There are tyres of many different types and makes. A tyre's tread pattern and blend of rubber may be intended for summer or winter use. Winter tyres may or may not be studded. There are also used tyres with renewed treads, i.e. retreads, as they are known.

When your car is new it comes equipped with four identical summer tyres. In addition there is a spare wheel which is either identical to all the other wheels or a so-called emergency wheel. If you have an emergency wheel as your spare, you must make sure you know the rules pertaining to the maximum speed and correct air pressure for this tyre. Read the car's instruction book!

The depth of tread of a new tyre is about 8-9 mm. Gradually as the tyre wears down the tread depth decreases of course. A tread which has worn down to 3-4 mm of pattern has very poor characteristics with respect to aquaplaning while still functioning well in dry road conditions. When a tyre begins to wear out it is important to check the tread depth frequently, and this is when the built-in wear indicators are very useful. Ask your instructor to show you where they are on the tyres! You must replace tyres when they have worn down to 1.6 mm of tread at the latest.

Winter tyres used in winter road conditions must have at least 3 mm of tread depth.

When you need to change tyres you must ensure that all the tyres are of the same type. You must not mix summer tyres with winter, or studded with unstudded. You will find information about the right tyres and rims for your car in the car's instruction book and certificate of registration.

It is important for the driving characteristics of the car that you should have approximately the same depth of tread on the tyres mounted on the same wheel axle. Change both front tyres or both rear tyres at the same time!

Tyres are perishable goods. Tyres more than ten years old ought to be replaced since their friction properties will have deteriorated.

To avoid the risk of a wheel nut coming loose it is important to retighten wheel nuts when you have driven about 500 km after a change of tyres. If your wheel rims are of light metal they must be tightened by means of a special torque wrench to avoid damaging them. It is then especially important that the tension should be checked afterwards.
Tyre economy
- Check tyre pressures regularly
- Correct wheel alignment
- Eliminate "steering-wheel shake" or incorrectly balanced wheels
- Drive gently - avoid high speeds
- Use winter tyres only in winter

Unevenly worn tyres
- Usually caused by incorrect wheel alignment

1 December – 31 March
Winter tyres with at least 3 mm of tread depth must be used in winter road conditions

1 May – 30 September
Studded tyres prohibited!
Not applicable if winter conditions appropriate for studded tyres prevail or are expected.

MS marking
During the winter months when there is a risk of icy roads you must fit your car with winter tyres. These must be manufactured for winter driving and marked MS (Mud and Snow). They are available with or without studs.
The advantage of studded tyres is better grip on ice and hard-packed snow. The disadvantage is heavier wear and tear on roads.
Winter tyres without studs – friction tyres as they are called – function well on snow and slush but less well on ice.
Both types are of course better than summer tyres in all winter road conditions.

If you choose studded tyres you must have them on all wheels. A coupled trailer must also have studded tyres if the towing vehicle has studded tyres. This applies only in winter road conditions.

Studded and unstudded winter tyres must be used in winter road conditions, during the period 1 December – 31 March. This applies to private cars, light goods vehicles and buses with a maximum total weight of 3.5 tons, and to trailers towed by such vehicles. The tyres must have a tread depth of at least 3 mm. A permitted alternative to winter tyres is summer tyres fitted with snow-chains.

During the period 1 May – 30 September it is prohibited to use studded tyres as long as winter road conditions do not prevail and are not expected.

Tyres are a major cost item. Therefore it is prudent to make them last as long as possible! Correct air pressure is important. You can enquire at a tyre workshop to find out what pressure is suitable.
The pressure in modern tyres often has to be higher than the car's instruction book indicates in order to get the most even wear possible.

Make sure that your wheel alignment is correct! Otherwise the outer edges of your front tyres will wear out much faster. The wheel alignment can be affected if you hit a kerb or a hole in the road. It is a sign of faulty wheel alignment if your car pulls diagonally when you are driving along a straight road.

Faulty wheel balance causes the steering wheel to shake at certain speeds. Another consequence is that the tyres wear out more quickly, often in the form of patchy wear and tear.

Your driving style affects the wear on tyres. A gentle driving technique with no flying starts or heavy braking will make your tyres last longer while also reducing your fuel consumption. Driving at high speed makes the tyres hotter so that the wear on them increases considerably compared with lower speeds.
The steering system

Wear and age can give rise to play in the steering system of a motorcar. You can check this by standing alongside the car and checking by means of slight movements of the steering wheel that the wheels respond immediately. The wheels must be facing straight ahead when you make the check.

Shaking in the steering wheel while driving may be the result of imbalance in the front wheels or worn-out parts in the steering system.

Modern cars are equipped with power-assisted steering which makes steering easier. In time the system’s efficiency deteriorates.

If you notice when you turn the wheel that it jerks and goes light and heavy by turns, you have probably got dirt or air in the servo system.

If the car becomes extremely heavy to steer there may be a leakage causing the hydraulic fluid to dwindle. You can check the fluid level in the hydraulic fluid reservoir in the engine compartment.

The car may also become hard to steer if the valve system in the servo mechanism is not functioning.

All these faults must be rectified at a garage!

When the engine is switched off the servo system does not work, so steering will be very heavy. Remember this when towing!

The electrical system

The generator

The electric current stored in the battery is created by the generator. From time to time, check the belt which drives the generator.

A worn belt may break, and the generator will then no longer produce current.

A badly-tensioned belt slips, frequently with a characteristic screeching sound. The generator is then not generating as it should.

For your assistance there is a generator light or charging light on the instrument panel. When it comes on this indicates some fault associated with the generator.
**Fuses**
The blue ones are “blown”. Replace with a fuse of the same colour, i.e. with the same ampere number.

**The battery**
Check the fluid level regularly
Cell two from the left needs to be replenished. Use distilled water only.

**Help with starting**
1. Connect the positive terminals together!
2. Connect the negative terminal to a part of the car body! A spark will occur and this must not happen near the battery. There is a risk of an oxy-hydrogen gas explosion.
3. Start the engine of the car with a fully-charged battery.
4. Start the other car’s engine.

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**The fuses**
Fuses give protection against short-circuiting and therefore against fire in your car. All fuses are located either in a box in the engine compartment or under the instrument panel inside the car.

The instruction book for your car describes which fuse you have to change if one has blown.

**The battery**
The battery stores the electric power from the generator. The battery makes it possible to use this power even when the engine is switched off.

Check the battery to ensure that the fluid is up to the mark! If the fluid is down in any of the battery cells, top up with distilled water.

Batteries deteriorate with age.

**Some advice:**
Frost can burst a poorly-charged battery. Make sure your battery is charged prior to a cold weather period! You can get help with this at a petrol station, or you can do it yourself using a battery charger.

When working with a battery, be careful of the oxy-hydrogen gas which may be in its vicinity. There is a risk of explosion if the air circulation is poor and you have a naked flame or sparks near the battery.

The battery fluid consists of distilled water and sulphuric acid, so be careful not to get it on your skin or in your eyes! Take care with your clothing as well! Sulphuric acid is corrosive!

A flat battery may result in the car refusing to start. Another car and a pair of jump leads connecting the batteries of the two cars may help you to start the car. Be very careful to make the connection as shown in the picture! The negative lead should not be connected directly to the battery because there will be a spark and therefore a risk of an oxy-hydrogen gas explosion.

Don’t muddle up the connections to the battery! If you do, you may short-circuit the power. You may ruin both the battery and the generator. It is also possible you may damage all the electronics in the car. That would be a very expensive mistake!
Cooling system

- Coolant consists of glycol and water
- Glycol prevents freezing
- Glycol protects against rust
- The engine temperature may be too hot if there is insufficient fluid
- Excessive engine temperature may also be caused by a fuse having blown in the electric cooling fan

Coolant = water + glycol

Overheating

The fuel system

The car is driven by petrol or diesel oil in combination with masses of air. It is important that the air filter should not become blocked because this will cause a rise in fuel consumption.

On older cars there is often a choke mechanism which is used for cold starting. Petrol consumption also rises when this is in use. During the winter months starting problems may be avoided by mixing a little methylated spirits in the petrol.

Be careful when filling with petrol: don't breathe in the fumes, and avoid getting petrol on your skin! There are carcinogenic substances in petrol.

The lubrication system

The engine needs oil for lubricating and purifying. Oil is pumped under pressure to all parts of the engine. You should normally check the engine oil level every time you fill up with fuel and top up as necessary.

Whenever you are driving keep an eye on the oil pressure light on the instrument panel.
The exhaust system
You will notice any leakage in the exhaust pipe or silencer in the form of a louder exhaust sound. Such leakage can be dangerous because the exhaust fumes may penetrate to the car interior.

Danger – carbon monoxide
Switch the interior fan off, or else into recirculating mode, before entering tunnels or when driving in traffic queues.

The exhaust system
From the 1989 models onwards, motorcars have been fitted with catalytic converters and must be driven on unleaded petrol. Otherwise the converter will be damaged and the exhaust will not be effectively purified. Only unleaded petrol is now sold at Swedish petrol stations.

Exhaust fumes contain many harmful substances such as carbon monoxide, nitric oxide, hydrocarbon and carbon dioxide. Catalytic converter cleaning is very efficient, about 80-95% of the noxious substances being converted mainly into carbon dioxide and water. Carbon dioxide is a problem to which we have no effective solution for the moment. It is formed in all combustion processes. The only way to reduce emissions is to consume less fuel. The raising of global temperatures – the so-called “greenhouse effect” – is a consequence of our carbon dioxide emissions.

The catalytic converter operates at a high temperature. Its high working temperature presents a degree of fire hazard, for example if you park your car in high dry grass. It can catch fire. The converter is ineffective when starting from cold because of its need for a high working temperature. For the first minute or so the exhaust emissions are largely uncleaned. If you use an engine pre-heater all the year round you will contribute substantially to preserving the environment. The catalytic converter will reach its operating temperature much more quickly. The engine pre-heater will also reduce wear and tear on the car engine.

Remember never to run the engine in confined spaces such as your garage. Regardless of whether you have a catalytic converter or not, you are at risk of carbon monoxide poisoning if you inhale exhaust fumes.

Traffic queues in tunnels and other such places are a hazard, and so is staying too long in large indoor car parks. If you are driving with your boot lid open, there is the risk of exhaust fumes being sucked into the car. You can counteract this at least partly by closing the windows and switching on your interior fan at high revolutions.

A leaky exhaust system means not only unnecessary noise but also a risk of exhaust fumes finding their way into the car interior.

Be aware that carbon monoxide is very treacherous inasmuch as it is both odourless and colourless. If you get a headache or feel unwell, see that you get some fresh air immediately!
**Checks when you fill up!**

**Motor oil**
- Check level with the dipstick

**Brake fluid**
- Check brake fluid level.
  - It should be on the MAX line

**Coolant**
- Check level. Should consist of 50% water and 50% glycol

**Windscreen washer fluid**
- water and spirit to prevent freezing

**Battery**
- Top up with distilled water!
- Contains corrosive acid

**Hydraulic fluid – power-assisted steering**
- Have hydraulic fluid checked at a garage

**Safety checks**
- lighting
- tyres
- brakes
- sound signal (horn)
- steering
- windscreen wipers and washers
- seat belts and adjustment of head restraints

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**Checks before and during driving**

**Lighting**
You should check the car's lighting daily. This means checking that the parking lights, dipped and main beam headlights, rear lights, indicators, rear number plate light and brake lights are functioning. You ought also to check the rear fog lights and other extra lights now and then. You should always have spare bulbs with you in the car so that you can replace bulbs which have failed. Sometimes this is easy. Read about it in your car's instruction book!

You should also check your tyres frequently. Watch your tread depth and look out for tyre damage. Check the air pressures. Do a detailed check from time to time and measure your tread depth on all tyres; examine and feel for damage on the tyre walls. In between these detailed checks it is usually enough to walk round the car and look at the tyres. If you compare two tyres you can immediately see major differences in air pressure.

Check for play in the steering. Stand alongside the car so that you can see the front wheel and wiggle the steering wheel. The front wheels should move in response to very slight movements of the steering wheel. If they do not you should go to a garage for a check-up. The functioning of power steering can be checked by turning the steering fully in both directions with the engine going. If the servo mechanism is functioning correctly you should be able to steer between the two end-positions by applying even force.

Checking the brakes is simple. Push the foot brake down as hard as you can and hold it there for a few moments. The brake pedal should stop about halfway to the car floor and not sink slowly further down. If the brake comes on too far down it needs to be adjusted, and if the pedal sinks under heavy pressure then there is leakage. If you do not get rigid resistance but the pedal feels springy, air may have got into the braking system. In all cases you must get the braking system repaired immediately.

The handbrake may be tested by trying to set the car into motion with the brake on.

Once inside behind the wheel you can also check the horn, windscreen wipers and washers. If they are functioning as they should, it only remains to fasten your seat belt, adjust the head restraint and rear mirrors, and drive off.
Warning lights and gauges

While driving, keep an eye on the warning lights and gauges. The commonest warning lights are fitted to all cars and are similar in appearance.

The oil pressure lamp is usually in the shape of an oilcan. If this lights up while driving, you should switch off the engine immediately to avoid damage to the engine. There may be too little oil in the engine, in which case you simply need to top up. But it may be a more serious fault with which only a garage can help you.

The charging system lamp often looks like a battery. If it comes on, this indicates that the battery is not charging properly. In that case you will gradually run out of electric power. If the engine temperature rises, the cause may be a defective fan belt. You can drive to a garage for help provided the engine temperature does not become excessive.

Engine temperature is indicated by a gauge which is sometimes combined with a warning lamp. The needle of the gauge should normally be in the halfway position. The temperature must not become so high that the needle reaches the warning area.

The brake system lamp often has two functions. Firstly it tells you if you have failed to release the handbrake; secondly it shows if the brake fluid level is too low. In the latter case you must not drive any further. If the car lacks braking on one of its wheels the car must be towed away!

On more recent cars it is becoming increasingly common to fit other warning lights. These can refer to airbags, ABS brakes and automatic skid control. A common feature is that these lamps come on for a few moments after starting up and then go out. Should they come on while driving, a fault has arisen. A visit to a garage is then necessary.
Hard to see

Our eyes get accustomed to light very quickly. It takes a long
time for them to get accustomed to the dark, however. This
means that if we are dazzled by the lights of an oncoming car
our ability to see in the dark deteriorates in an instant. After
being dazzled it takes a minute or two to recover our ability to
see in the dark reasonably well again.

Driving in town traffic during the hours of darkness involves
being constantly dazzled by light from street lamps, shop
windows and oncoming cars. In order to retain effective night
vision the eyes must be protected from this dazzle. This is
impossible in town traffic, where we must be constantly scan-
ing the entire street ahead of us.

When driving on country roads it is dazzle from oncoming
cars that creates the problem. The risk of your eyes being
“drawn to the light” is always present. It makes it more dif-
ficult, for example, to detect a pedestrian on the edge of the
road. Dangers which we cannot see also lie in wait in the zone
along the roadside.

Tiredness creeps up insidiously

Who has not fallen victim to the tiredness which hits us when
we sit in front of the television watching a not very interesting
programme? We receive similar tiredness signals behind the
wheel when the journey becomes monotonous or the eyes are
fatigued by constant dazzle.

The majority of one-vehicle accidents happen during the hours
of darkness, many involving a driver who has fallen asleep at
the wheel.

We must learn how dangerous it is to ignore fatigue signals.
We can never conquer tiredness, but we may be able to delay it
by taking a break. Just stretching the legs, breathing fresh air
and doing something other than sitting behind the wheel can
help to keep us awake.
Ranges of visibility

A car's main beam headlights illuminate the road relatively well for about 100 metres ahead. This means that it ought to be possible to make out darker objects at that distance. But main beam lights cast their illumination much further than that. A reflector can be seen from 300 metres away because it reflects the light extremely well.

Dipped headlights have a considerably shorter range. If you have an oncoming vehicle's headlights in your eyes, the visibility range will often be no more than 5-30 metres. With a speed of 90 kph or 25 metres per second, this means that the time from detecting an object until you can no longer avoid an accident is no more than one second.

How can you have time both to register, react and then stop?

In town traffic

Streets are often illuminated by streetlamps, which can give a false sense of security to pedestrians and car drivers alike. Sadly it is very common for pedestrians to be run over at pedestrian crossings. They believe they can be seen and feel safe on a crossing. Motorists drive as fast as during the day because they think they can see well. There is a great contrast between the sharp street lighting and the pedestrian's clothing, which usually reflects very feebly. It is therefore very difficult to see the pedestrian.

On country roads

Pedestrians and motorists both have to be understanding of each other's difficulties. The pedestrian needs to appreciate how hard it is to see him. New and properly positioned reflectors are important. Reflectors are perishable articles and their reflective capability may deteriorate considerably as time goes by.

The car driver usually sees the pedestrian in good time when he is driving on main beam lights. The problems come when he has an oncoming car's headlights in his eyes and is forced to switch to dipped headlights. The range of visibility is then very short. If his speed is too high he will not have time to react before the accident has become a fact.
How can we drive safely in the dark?

In order to spot pedestrians, cyclists and other obstacles in good time it is important to use your lights correctly.

You should use main beam headlights as often, as much and for as long as you can. Make sure you scan the road as far ahead as possible right up to the moment you dip your lights for oncoming traffic. After dipping, that area will be in darkness. Follow the series of pictures on the left-hand page for advice on what to do.

Positioning your car for the meeting is important. Because it is difficult to see obstacles along the roadside you should drive closer to the middle of the road when you pass oncoming vehicles.

Where should you be looking? The eye is drawn automatically to the lights of the oncoming cars. There is a risk of dazzle. You should be scanning far ahead along the side of the road.

Your speed affects the safety of your driving. On a narrow road you must reduce speed substantially when passing oncoming vehicles. Tests have shown that even at 30 kph it is difficult to see a dark-clad pedestrian in time to give way or brake for him.

It is a good idea to dip your lights briefly before reaching the top of a hill or a bend. You will see any oncoming vehicle earlier, and you will have a chance of detecting obstacles as a silhouette against the lights of the oncoming vehicle.

When you meet an oncoming vehicle on a left-hand bend you can maintain your main beam lights for longer than he can. This will not dazzle him but gives you better vision.
Overtaking in darkness
It is important that the two drivers, both the one overtaking and the one being overtaken, use their main beam lights as much as possible. We must watch out for both pedestrians and cyclists. And of course pedestrians on the left side of the road will also have their backs to the traffic.

Cyclists need to be aware of their relatively poor visibility even with good bicycle lights.

Making a good assessment
It is difficult to assess distance and speed in the dark. Situations in which this is particularly noticeable are at exits on to country roads and when overtaking.

Good visibility
A scratched and worn-out windscreens causes reflections when driving in the dark, and it impedes vision when the sun is shining through it. Fields of view are impaireed dramatically, making driving in the dark both more difficult and more dangerous. If your windscreens is like that, change it!

The inside of the windscreens must also be cleaned. A dirty windscreens causes problems when driving in the dark and when the sun is low in the sky.

Good windscreens wiper blades keep the windscreens clean, and when it is raining you will have the best view possible.

Your headlights must also be kept clean. A dirty headlamp glass makes driving in the dark considerably more difficult. Fields of vision become shorter, and you will be seen less easily from behind. Make it a habit to clean all lamp glasses frequently, and check that they are uncracked! A cracked headlamp glass can mean that your dipped headlights can dazzle oncoming traffic.
Main beam headlights

Main beam headlights should be used as often as possible. They give you a better chance of seeing what is happening ahead of your car.

Dipped headlights

You must have your headlights on while driving. The most common procedure is to drive with dipped headlights and parking lights on. It is prohibited to have fog lights or day-running lights on at the same time as dipped headlights.

Fog lights

Some cars are fitted with fog lights. It is permitted to replace dipped headlights with fog lights during daylight hours. It is also permitted in the dark but only if there is fog or heavy rain or snow. It is prohibited to have dipped headlights or day-running lights on at the same time as fog lights.

Day-running lights

In conditions of good daylight visibility, day-running lights may be used instead of dipped headlights. It is unusual nowadays for cars to be fitted with day-running lights. Most of them have dipped headlights instead which go on automatically when the car is started. It is prohibited to have dipped headlights or fog lights on at the same time as day-running lights.

Extra lights

There are extra lights whose function is to provide additional illumination in various situations. For instance, swinging headlights, which give a broader spread of beam. Another possibility is long-distance lights to illuminate further ahead than normal. A common factor of all of these is that they can only be used in conjunction with main beam headlights, never with dipped headlights.

Parking lights

When your car is standing stationary on the road and the road lighting is poor, you must use your parking lights. Even for the most momentary stop you must switch over to parking lights.

Rear lights

The rearward illumination consists of two red lights. They are always on at the same time as parking, dipped or main beam lights.

Rear fog lights

The majority of more recent cars have rear fog lights. This usually means one, sometimes two, extra strong rear lights. The purpose of the rear fog light is to make the car visible to road users behind when visibility is poor because of fog, snow or heavy rain. The light is strong and dazzling, and therefore you must switch it off as soon as you know that drivers behind have seen you. There should be a warning light on the instrument panel which comes on at the same time when you switch on the rear fog light.

Brake lights

Two strong red lights come on when you press the brake pedal. On more recent car models there is often another brake light located high up in the rear window.

Reversing light

One or two white lights come on when you select reverse gear.

Number plate light

One or two lights illuminate the rear number plate. These come on simultaneously with the rear lights.

Direction indicators

Four lights with yellow-orange lamps

Hazard warning lights

All four indicators flash simultaneously. Used during emergency stops or to warn of an accident.
**Dipped or main beam headlights?**

You must not drive with main beam headlights:
- when the road is satisfactorily illuminated (meaning that there are no dark patches on the carriageway or that the road is so well lit that you cannot see better with main beam than with dipped lights)
- when you are passing oncoming vehicles and are so close that their drivers could be dazzled
- when you are passing a train, tram or vessel in movement alongside the road and there is a risk of dazzle
- when you are driving close behind another vehicle

The rules are based on the principle that you must not dazzle drivers of other vehicles when passing or via the rear mirror of a vehicle in front.

**Some hints and tips to be heeded although not contained in the rules:**

If you encounter pedestrians on the road you should continue to drive with main beam headlights. It is important that you should see where and how many there are. The risk of dazzling them is small, since they can look away.

At the approach to a junction it may be appropriate to dip your headlights even though you are not passing anyone. By doing this you avoid irritating the cross-traffic at the junction.

**Driving in poor visibility**

Fog, heavy rain or "snow smoke" (fog-like clouds of finely-particled new snow thrown up by road traffic) is extremely treacherous. Visibility seems to be better than it is, and judgment of distance becomes more difficult. This often leads to excessive speed and inadequate separation distances between vehicles on country roads. It is important for you to be seen properly, from both front and rear.

Use dipped headlights or fog lights and rear fog lights. You must never use both dipped headlights and fog lights at the same time.

There is a risk of dazzling the driver behind you with your rear fog light. Switch it off as soon as you are sure that the driver behind has observed you!
Parking and emergency stops

It is obvious that when you park on a road or street in the dark, the car has to be visible. It is now that you must use your parking lights. These do not take much electric current. You can easily leave them switched on for several hours if necessary, provided that the car battery is in reasonably good condition.

You must always park on the right-hand side of the road in the direction of travel. If you park on the wrong side of the road you may create a very confusing and perhaps dangerous optical illusion for oncoming drivers.

From a distance they see an oncoming car. It is natural to pass it on the right side. Because your car is parked on the wrong side of the road there is a risk of their driving into the ditch.

If you are parking on a dark street in a built-up area, then it is enough if the left-hand parking lights are on. This possibility only exists for certain models of car. As a rule you switch them on by putting on your left-hand indicator with the engine switched off. But if you have a trailer coupled to your car you must switch all your parking lights on.

If you have to make an emergency stop you cannot always choose the place for this. If your car is stationary in a dangerous location such as a motorway or clearway, near the brow of a hill or on a concealed bend, in an underpass or tunnel, you have to remove it as quickly as possible!

Until you have removed the car you must:
- switch on the parking lights
- switch on the hazard warning lights
- put out a warning triangle about 100 metres behind the car
- use reflectors. It is important that you should be visible too!

Wildlife hazards

Keep a careful lookout and drive cautiously in wildlife areas. The view to the sides is extremely poor, so it is very difficult to detect the approach of roe deer and elk.
Road conditions like these usually don’t make the headlines at all...
Fully aware of the slipperiness, everyone drives carefully but a road in this state makes both headlines and unexpected problems...
The road is nice and dry but look at the shady areas!

How do you detect that it is slippery?
- Plus 3°C???
- Wet but quiet. Hmm...
- Is the asphalt shiny?
- Felt a bit odd there ... is it slippery?

Driving in slippery conditions

The perils and problems of slippery conditions do not arise on the mornings when there are three decimetres of new snow on the steps outside the house. That is the day when everyone drives slowly, with plenty of separation distance between vehicles. If anything does go wrong, it is usually a matter of a simple skid off the road with nobody getting hurt.

The danger is more likely to be that a driver goes into a bend much too fast or finds himself forced to brake and is unprepared for the road being slippery.

It can often be difficult for an inexperienced driver to foresee and assess the road’s slipperiness.

How do you detect that it is slippery?
The problem in winter driving is to detect slippery conditions in good time. An experienced driver runs less risk of being taken by surprise, but obviously he too can make mistakes. A device which can be very useful is a thermometer inside the car showing the outside temperature. If the temperature is +4°C or below there is always a risk of the road being slippery.

A road may look damp, and if you don’t hear the sound of water being splashed up by the wheels, better beware! The road may be frozen. In general you should observe carefully how the carriageway looks and take note of all changes. Slippery patches are very common, especially in southerly parts of Sweden.

The risk of slipperiness is greater on bridges and viaducts. This is because the cold air chills the roadway, from both above and below. Where a bridge crosses a watercourse the air in the vicinity will be damp, which increase the risk of slipperiness.

If there is snow on the carriageway the risk of slipperiness increases in all places subjected to extra polishing by car tyres. A junction is an example of such a place, where many drivers lock their wheels as they brake or spin their wheels as they move off.
Winter
Winter is normally a slippery period with snow and ice on the roads.

Autumn
Leaves from trees and mud and soil from agricultural machinery, along with rain, can be a cause of slipperiness. A stealthy transition to colder weather may mean that the first slipperiness caused by frost comes suddenly.

Watch out for:
- leaves, mud or soil with rain
- the first sudden slipperiness caused by frost
- bridges and viaducts
- hollows
- slippery patches

Spring
Sudden temperature changes can happen in springtime. Melted snow which runs over the roadway during the day freezes into ice when evening comes. Slippery patches can occur when the temperature is hovering around zero Celsius. The sun warms and dries the carriageway on open stretches. In hollows and shady areas, on bridges and viaducts there are often patches which may be slippery.

Watch out for:
- sudden temperature fluctuations
- melted snow which has turned to ice
- shady areas
- slippery patches

Summer
On really hot summer days, tar in the asphalt can work upwards to the surface and make it slippery. Don’t be surprised to find a road sanded on a fine summer’s day! Another problem arises when it starts to rain after a long period of hot, dry weather. The road has acquired a film compounded from exhaust fumes, oil residues and tyre particles. This is dissolved by rain to form a slippery sludge. Pavingstones become particularly slippery just after rain has begun falling.

Watch out for:
- asphalt made slippery by the heat of the sun
- slippery conditions brought about by rain on warm summer days

Different kinds of slipperiness
**Treacherous conditions**

"Slippery as glass" really is an apt description of freezing rain. The rain turns to ice the moment it touches the frozen roadway.

If you are lucky, you will find a layer of glass-like ice when you go out to scrape your windscreen before driving. It is worse if you encounter freezing rain while driving. The relatively warm windscreen may make you think that it is ordinary rain. Use an outside-thermometer in the car! It cannot be ordinary rain when the outside temperature is below zero!

After a snowfall, heavy traffic may form bare wheel tracks on the road. It is then a temptation to drive too fast because the road grip on the bare tracks may be good. Remember that only a decimetre or so on either side there is snow and practically no grip at all.

“Snow strings” are also very hazardous if you overtake another vehicle. The risk of skidding can be very high.

When driving on a ploughed road after a snowfall you should be aware that the ploughed area may be wider than the roadway. If you go beyond the edge there is a risk of sinking into the verge, whereupon a skid will result. Snowplough drivers often have snowploughing marker posts to guide them as to the width of the roadway but sometimes they may still plough too far out.

Cold new snow brings big visibility problems. The “snow smoke” created by oncoming vehicles and those in front of you can reduce your range of visibility very drastically. This is a big problem, especially in northern Sweden.

In southern Sweden strong winds accompanying snowfalls are a problem. Snow drifting across the road impedes traffic and makes it difficult to know where the roadway actually is.
Aquaplaning

Rain brings a risk of aquaplaning at any time of year.

Fitting a car with wide tyres increases the risk of aquaplaning. It is important to have a good tread depth on the tyres.

Worn tyres function badly in the rain. The task of the tread is to lead water away. If the tread depth is poor this does not happen. The tyre is lifted up on to the surface of the water and “planes”. The car loses contact with the roadway and becomes impossible to steer.

Speed has a crucial role in aquaplaning. Even at low speeds the tyres may aquaplane when you drive through a deep accumulation of water.

Slush has a similar effect on a car’s driving characteristics. The tyres are unable to press the slush aside and slush-planing can occur.

The state of the road also influences the risk of aquaplaning. Deep ruts can be formed on a worn road-surface and may contain much water.

Driving with a trailer in slippery conditions

If you drive with a trailer in slippery conditions there is always a risk of jackknifing when you brake. What this means is that the car brakes better than the trailer. The consequence may be that the car and trailer fold up like a jackknife and the entire rig becomes uncontrollable.

Remember that in winter road conditions you must have studded tyres on the trailer if you have them on the car! It is precisely because of the risk of jackknifing that the rule exists.

This brings us to the law relating to winter tyres, covering trailers as well, which you can read about in the next section.
**Studded tyres**
Must not be used 1 May – 30 September.
This does not apply if winter road conditions justifying the use of winter tyres prevail or are expected.

**Winter tyres**
Must be used when winter road conditions prevail during the period 1 December – 31 March.
The tread depth must be at least 3 mm.

**Winter equipment**
- jump leads
- snow shovel
- towline
- ice-scraper
- warm clothing
- heavy shoes

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**Tyres**
During the winter months when slippery roads are a hazard you must fit your car with winter tyres. These must be tyres manufactured for winter driving and marked MS (Mud and Snow). They are available with or without studs. There are advantages and disadvantages with both types.

Studded tyres give the best grip on ice, but they inflict much wear and tear on the road when it is free from snow. You may have a longer braking distance on roads clear of snow because the steel studs have less friction against asphalt.

Studded and unstudded tyres are equally effective on snow.

During the period 1 May – 30 September it is prohibited to use winter tyres unless winter road conditions prevail or are expected.

Studded or unstudded winter tyres must be used when winter road conditions prevail during the period 1 December – 31 March. This applies to private cars, light goods vehicles and buses with a total weight not exceeding 3.5 tons and to trailers towed by such vehicles. Tread depth must be not less than 3 mm.

Summer tyres fitted with snow chains are a permitted alternative to winter tyres.

You should avoid summer tyres in winter, however, because they contain much synthetic rubber. In cold weather they become hard and exert less friction. There is more natural rubber in winter tyres. They stay softer and therefore give better road grip. Read more about tyres on pages 132-135.

**Winter equipment**
You should equip your car with a towline and jump leads. In winter you may find a snow shovel useful. For lengthy journeys you must absolutely ensure that you have warm clothing and proper shoes with you. If snowy weather takes you by surprise you will be glad of them. Obviously you should equip yourself and your car with an eye to the kind of roads you will be travelling on and the areas you expect to be driving in.
Tips on driving

If you drive too fast, you cannot deal with all the situations you may find yourself in.

It’s as simple as that.

It makes no difference if you are a skilful driver or have the best conceivable brakes and tyres. No one can stop in time if the road is blocked by some obstruction immediately after a bend, no matter how much practice you have had beforehand.

Driving in slippery conditions is the art of not getting into dangerous situations.

In order not to exceed safety margins you have to know your own and your car’s limitations. The more times you have experienced and tested the boundaries, the more easily you can judge and adapt your speed. You should therefore take every opportunity of practising skid-driving in safe conditions.

The most important thing if a skid occurs is to steer quickly and precisely so that the wheels roll all the time in the direction of the road. If you are too slow or don’t turn the steering wheel the exact amount required, you will not retrieve the situation successfully. Disengage the clutch as soon as you can and avoid braking - the purpose being to have the best possible road grip available to arrest the skid!

If you brake so that the wheels lock, you lose the ability to steer. If you have to dodge an obstacle, therefore, you must release the brake first. This is not easy when panic has set in.

If you are driving a car with ABS brakes, this technology will help you, in part, to retain road grip. You can brake fully and steer at the same time since the wheels do not lock. If your speed is too high there is a high risk of skidding, even with ABS brakes.
Today's traffic environment is highly complex and intensive, with large numbers of vehicles of every description and multitudes of unprotected road users. The whole system would collapse were it not governed by rules. At the same time it must be remembered that those who have to follow the rules are people. This results in masses of differing interpretations of the rules and masses of mistakes. To make the system work requires common sense and acceptance of responsibility by all the parties involved.

**The maturing process**

The personal development of a human being normally goes through several phases. But we are all individuals who develop in different ways and at different speeds. Some of us stop developing, while others carry on developing all through their lives.

Immature car drivers dominated by selfishness continually create situations which irritate and perhaps frighten their fellow road users.

Even a driver who follows all the rules can make mistakes and be downright dangerous. You cannot have rules to cover every single situation. Rules have to be combined with common sense and consideration.

To become both proficient and safe as drivers we have to develop as quickly as possible into the sort of person who accepts responsibility and shows consideration for others. We have to accept that all road users have an equal right to be on the road. We must understand that people are all different out in traffic too.
The young car driver

Many factors govern a young person’s development as a car driver.

One factor is what ideals you have and what sort of person you identify with. Is a safety-conscious young lady or a competitive speed-­maniac the ideal we want to imitate?

What is our perception of reality? Young people are influenced by TV, films and computer games. We have to distinguish between fiction and reality!

Good self-­control is essential for a car driver. It is important to be able to stay cool. A hot temper must be mastered.

A young person with little experience often has no idea how to react to unexpected happenings and critical situations. It is important to act calmly and methodically, not to be gripped by panic. How we react can make the difference between a harmless near-­mis­hap and a serious accident.

A car driver with poor self-­knowledge often overestimates his abilities. He may be a young driver who believes he can do things for which he is not yet mature enough. A common consequence of over­esti­mat­ing one’s own abilities is to increase speed.

Studies have shown that young men have a tendency to overestimate their driving ability. This was specially marked when they had had their driving licence for a year or so. The same study showed that young women were more realistic in assessing their own driving ability.

More recent studies suggest that a change is happening in the way young women drive. This change takes the form of increased risk-­taking and higher speeds.
Learning from probability

Girl nearly run over. Municipal authorities do nothing!

BORLÅNGA Yet another near-accident occurred on Friday outside the Björnen pre-school at Innerdal. A little girl was almost knocked down by a car. The driver managed to brake and by doing so avoided running over the child, who had run into the street. “Something must be done,” said the motorist, who lives next door to the school and is well aware of the situation there. “If the school does not put up a proper fence, a serious accident is going to happen soon.”

Learning by imitation

- If she can do it, so can I...

We learn unconsciously

An important part of our development as road users is the learning process, which often goes on unconsciously. This learning can give us both positive and negative experience and knowledge.

You drive the same route to work every day. You pass the same railway level crossing twice. Usually you do not see a train. There is a risk that after a time you may stop checking whether it is safe to drive across. Perhaps you have begun to relax and become careless, thereby exposing yourself to great and unnecessary risks. This is an example of how learning from probability produces a negative result.

Learning from probability can also be a positive factor. You may become more responsible, and a better driver.

At a playground a short distance from your workplace you know from experience that there is a great risk of children rushing out into the roadway. It has happened several times and you know there is a strong probability that it will happen again. Obviously you keep a sharper lookout and take it slowly when your pass the playground.

Another important factor is learning by imitation. This means that we absorb other people's behaviour without being aware of it. Thus the behaviour of our parents and friends when driving has an influence on how we ourselves will act.
Research has shown that certain individuals are more prone to have accidents than others. It has been found that lifestyle and personality play a large part in the risk of being involved in an accident.

The high-risk group

"The partygoer"
- seldom exercises
- drives his car a lot, often at night
- drinks a lot
- takes his car to parties

"The adventurer"
- seeks excitement
- and sensation
- takes risks

"The accident-prone"
- 15% cause half the accidents

Impulsiveness, i.e. acting first and thinking afterwards, is dangerous behaviour in traffic. It can take other drivers by surprise.

We all have in some degree a tendency to protect ourselves by explaining away our mistakes. This tendency is very pronounced among the "accident-prone" group. By constantly making excuses they miss the opportunity of learning from their mistakes. If we take the attitude that mistakes are always someone else's fault, we see no need to change our own behaviour.

Some people regard dangerous overtaking as less risky than it is. This is particularly the case with drivers in a hurry. To ignore dangers even though they are there is called repression.

Persons with strong prestige-mindedness may react negatively to being overtaken. It touches their pride too closely.

Persons with a strong need to assert themselves frequently react in surprising and dangerous ways to other people's mistakes in traffic.

There are people among whom reaction formation is a prominent characteristic. In everyday life their behaviour is unobtrusive and withdrawn. But in other situations, perhaps in company with younger friends, they exhibit quite different behaviour with high risk-taking. In some sense they are taking revenge because they feel that otherwise no one notices them.
Stress

A situation in which the demands on us exceed our capabilities can lead to our becoming stressed.

How we react and in what situations we experience stress are individual matters. Tolerance of stress varies widely from one person to another. How much driving experience we have had also plays a part. A skid on a slippery surface can throw an inexperienced driver into a state of panic. Another driver may be so stress-tolerant and experienced that such a skid causes him only moderate stress.

To become a good car driver we have to know something about how we react to stress.

When we are subjected to moderate stress our performance capacity increases. But if we are subjected to danger, high stress, we react in different ways and our performance capacity can diminish drastically.

Panic and blackout are examples of stress reactions. There are persons who give up without even trying to resolve the situation. Others react with confusion or inertia. This can be described as a form of tunnel vision because the brain's functioning is so limited.

For a car driver it is important not to get into a situation where the demands made on him are too high. The degree of difficulty entailed in driving is reduced by having plenty of time and driving at a lower speed.

A defensive driving style, featuring patience, caution and planning, is a good way of avoiding dangerous situations.

Selecting when to make a journey can reduce the difficulty factor.

Your own condition and that of the car are also important factors which can govern the situations you find yourself in.
You are approaching a car which you want to overtake. The road is not all that wide and there is oncoming traffic. After a couple of kilometres your friends are getting impatient and urging you to overtake. You begin to feel under pressure.

**What do you do?**
Have the courage to tell them that you decide how you will drive!

**Who let themselves be influenced?**
Insecure persons with low self-confidence are most strongly influenced.
- They often show a tendency to make excuses and display repression.
- They often react confusedly when under stress which can make a dangerous situation worse.

**Group pressure**
- A group's ideals and values determine whether group pressure is positive or negative.
- Group pressure may carry a heavy share of the blame if a traffic accident occurs, not least from the moral standpoint.

**A mature car driver**
- Takes his own decisions
- Is aware of the danger of challenging his friends

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**Group pressure**
A group of people always influences us. This may mean that we act in a way that we would not have done had we been alone.

In a group that is functioning well it is possible to be candid and hold your own opinions. It means that if someone is on the wrong track you have the courage to say so. The pressure on the individual concerned is positive, and he alters his behaviour for the better.

In a group that functions less well, you may not dare to have deviant opinions. You do what all the others do, or what you believe they would do. You do not want to be frozen out or thought a coward. Driving with friends in the car may feel more stressful than driving alone. Do you dare to stick to your opinion or do you go with the swim? Or are you the one who takes the lead and suggests what to do next?

If you usually have no opinions of your own or do not dare to express them, perhaps you stop believing in your own capabilities. In the end this has a negative effect on your self-confidence. You become unsure of yourself. In order to be accepted by the group you put on a tough driving style and become reckless. This means you take the risk of overtaking so that the others won't think you a coward.

It takes a lot of courage not to be influenced by your friends. But think about it! Accidents happen terrifyingly fast! Even if the group did help to cause the accident, you are still the one responsible. As driver you have to be aware of how you are influenced by your friends being with you.

Be careful about what you say yourself! Even if you are only provoking the driver as a joke, it is not certain that he will take it the same way. An immature driver takes it personally and decides to show you that he jolly well does dare. In this way he can easily be pushed into situations which he cannot cope with.
**Eyesight**

**Direct vision**
- 1-2% of the field of vision

**Peripheral vision**
- Visual acuity is less good over the rest of your field of vision

### Facts about eyesight

**Peripheral vision**
- Is impaired by alcohol, tiredness and stress

**Short-sightedness in the dark**
- For some of us, short-sightedness increases in the dark

**Night blindness**
- Lack of night vision may be inborn or a consequence of illness

**Defective vision**
- Is often insidious. It is difficult to detect yourself. Check your eyesight regularly!

**Defects in field of vision**
- Can arise through various ailments. This is a serious matter, because your ability to observe other road users becomes impaired.

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**Eyesight**

To drive a motorcar is to receive and interpret a constant stream of information. Our senses are continually feeding the brain with new information. For example, it may be visual impressions that the brain receives. You do not only use your sense of sight when driving a car although that is the most important.

The eye provides about 90% of the information you need. One of the requirements for a driving licence is visual acuity of not less than 0.5. If you need spectacles or contact lenses to achieve this level of visual acuity, you must use them when driving.

Some of us may have difficulty with short-sightedness in the dark. Some professional drivers therefore use spectacles of higher strength when driving at night.

If you have lost the sight of one eye you must wait 6 months before driving a car. This is because part of the field of vision has been lost and it takes time to become accustomed to it.

Normally you have a 180 degrees field of vision, i.e. a semicircle. Of what you see, however, it is only a small part, about 1-2%, that you see with full visual acuity. This sector of the field of vision is called central vision or direct vision.

The rest of the field of vision, peripheral vision, enables you to perceive objects and movements. Tiredness, alcohol and other drugs impair perception of what you see in the peripheral field.

**Your other senses**

*Hearing, touch, smell and sense of balance* are used in combination with *sight*.

You can sometimes hear a change in the state of the road. The road looks damp, but there is no sound of splashing water. A signal is sent to the brain at once. The roadway may be frozen!

To decide which gear is appropriate you use both *hearing* and *touch*.

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**Visual acuity**

**Short-sightedness in the dark**

**One eye**

**Direct vision**

**Peripheral vision**

**Hearing**

**Touch**
When you drive a car you are utterly bombarded with impressions transmitted by your senses, and they all have to be interpreted by your brain.

Your knowledge and experience
- your sense of smell
- your balance
- your perception
- your selection
- your knowledge
- your experience
- your interests
- your needs and feelings
- your motives
- your expectations

The passing point
Abandon overtaking!
You have misjudged the passing point

People / All of Us Are Different

Your sense of smell can warn you that exhaust gases are leaking into the car, thus saving you from breathing dangerous carbon monoxide.

Your sense of balance is extremely important. It is actually capable of alerting you to slipperiness on the road. If you are sitting correctly in the car, then you will feel even the hint of a skid. You then have a chance to counteract the skid at an early stage.

We see with our brains
All impressions conveyed by your senses are interpreted and processed by the brain. Your awareness of what is happening in your surroundings is called perception.

If you were to react to all the sound and sight impressions which hit you as you proceed down a busy road, your brain would soon be in chaos. Therefore the brain makes a selection of what is important for you to notice. This is called selective perception.

What does the brain select and what does it discard?
The selection may be made quite unconsciously. In that case your knowledge and experience will have a vital influence on what your brain will discard. Your interests, needs, feelings and expectations also have an important effect on your perception. Lack of knowledge and experience of the dangers inherent in traffic may cause new drivers to be less observant.

The brain assesses
Many factors have to be taken into account when overtaking, and many judgments have to be made. The road is seldom entirely free from oncoming vehicles.

Where will the passing point be?
The brain draws conclusions on the basis of the knowledge and experience stored in it. You get an estimated mid-point between yourself and the oncoming vehicle. Be aware that this is a general idea and the passing point can come much earlier. The other driver may be travelling faster than you think!
Different ways of seeing

Experienced drivers
- mainly observe moving objects
- look around more actively
- have a broader and longer field of observation

Inexperienced drivers
- see mainly fixed objects, road edges, parked cars etc
- fix their eyes on objects
- have a short and narrow field of observation

Optical illusions
In other circumstances perhaps you might perceive this car as a motorcycle!

Experienced drivers

Inexperienced drivers

Scanning
A person who has greater experience will grasp situations more rapidly and often more accurately than others. This applies to anything we do, and of course it includes driving a motorcar.

Experienced car drivers look around more actively and see further ahead than inexperienced ones. Experience has also taught them to concentrate on moving objects.

Inexperienced drivers often concentrate their gaze on fixed objects such as pavement edges and parked cars. They watch things too close to the car and thus receive information too late.

Optical illusions
When we are awake our brain is processing, sorting and interpreting all the impressions that stream into it. It is amazing that this complicated process almost always functions without problems. But mistakes do happen sometimes.

This may be because the brain interprets reality incorrectly. This phenomenon is called an optical (or other) illusion and results from the brain receiving insufficient information. It then cannot make an accurate assessment.

Occasions when you are at risk of experiencing optical illusions arise when you are driving on winding and hilly roads. Misleading information in the terrain may cause you to wonder "Where did the road go?"

What you think in the dark to be an oncoming motorcycle may turn out to be a "one-eyed" car.

Snowstorms and main beam headlights, especially when combined with fatigue and excessive speed, can create illusions. You cannot see the edge of the road and may become disoriented.

There is a risk of mixing up a motorcycle with a moped. At a distance they are confusingly alike, but they will approach you at very different speeds.
How does this work in fog or darkness?

To be able to judge distances you need distinct clues

Judging distances

Whenever you drive out on to a very busy, major road, great demands will be made on your ability to judge distance and speed. The same applies when you are planning to overtake another vehicle in heavy traffic.

Our ability to judge distance correctly is dependent on a whole mass of details. We believe that the road is narrowing. Lines and objects crowd together more closely the further away they are. We compare sizes. Cars in the far distance look smaller than those which are nearer.

Our judgment of distances becomes very uncertain when the clues we need for making our assessment become more difficult to perceive. *Fog, heavy rain and darkness* influence your judgment.

Reaction ability

Younger car drivers, especially males, believe themselves able to react more quickly than the average driver. It is perhaps for this reason that many of them drive at speeds faster than they can cope with.

What is the truth?

Younger drivers react considerably more slowly than experienced drivers. The age group with the best reaction ability consists of experienced drivers aged 45-54 years. Experiments in driving simulators have shown this.

The explanation is probably that the experienced driver is ready for action more often. This may be the case in situations requiring the kind of foresight which the inexperienced driver lacks. A defensive driving style in which awareness of risk is prominent enables the well-practised driver to stop his car more promptly than a younger and less experienced driver can.

Experience creates foresight and therefore shorter reaction times.
Older drivers can compensate for their shortcomings
They keep to lower speeds
They avoid heavy traffic
They avoid night driving
They give themselves plenty of time

Dangerous behaviour can be caused by driver illness
- seeing cross-traffic but “forgetting” it a moment later
- driving on the wrong side of the motorway
- inexplicable reactions, e.g. pressing the wrong pedal or leaving the scene of an accident

Many older car drivers have problems in complicated situations, e.g. at junctions

Older car drivers
Don’t older car drivers have more experience of life and less need to show off their skill? That’s true of course! Older drivers, in the 65-74 age group, are involved in fewer accidents than young people. This is where long familiarity with traffic situations plays its part. By adapting their driving to their capabilities and the particular circumstances of the moment, they succeed in avoiding accidents. Perhaps they avoid driving in the dark because their night vision has deteriorated. Nor do they drive in heavy town traffic, because it requires rapid reactions.

Just like 18-19 year-olds, drivers aged 75 and over are at 5-6 times more risk of being involved in an accident. These older drivers often have problems at junctions, where the amount of information is large and swift decisions are called for. Perhaps they do not stop for red lights or at stop signs. They forget to signal when they intend to turn. On the other hand they are seldom involved in one-car accidents, because they are not in a hurry and do not overestimate their capabilities.
**Tiredness impairs**

- decision-making ability
- concentration
- coordination
- reaction ability
- perceptive ability

**Plan your driving**

- take notice of fatigue signals
- drive in short spells, 1-1½ hours maximum
- car interior not too warm
- regular breaks, outside the car
- avoid “heavy” food
- fruit, chocolate, cola will liven you up

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**Fatigue**

We spoke of illusions earlier. These are misinterpretations which can arise when the surrounding circumstances are unclear and misleading. Other misinterpretations arise as a result of hallucinations. A tired-out driver can experience phenomena that are not real. He is “seeing things”.

To drive when fatigued is deadly dangerous. The reaction time after a night without sleep can be compared to 0.8 per mille alcohol in the bloodstream. The law is strict on this point and regards an accident caused by fatigue as equivalent to one caused by drunken driving.

If we study how tiredness affects us we discover close similarities to what happens when we have been drinking alcohol.

Perception, our ability to see and hear, deteriorates.

Judgment, the ability to assess correctly and take decisions, is affected.

Reaction ability deteriorates.

Ability to concentrate diminishes.

Coordination, the ability to do several different things simultaneously, deteriorates.

Tiredness is the body’s defence against exhaustion. In the end the urge to sleep cannot be denied even by the strongest effort of will.

**Tiredness creeps up on us**

Your eyes are open but your thoughts are far away. Do you remember the last lessons of the day at school? “What? Was she asking me that question?”

Imagine yourself sitting in a car instead of at a school desk. On a gentle left-hand bend you lose concentration for a few tenths of a second. The car does not follow the curve but goes a metre too far to the right. What happens next? Your inattention may be a condition we call microsleep. It can happen to us at any time of day, anywhere at all and with only a brief forewarning if we do not take fatigue signals seriously.
How long can we be “switched off”?  
- After one tenth of a second you are on the oncoming vehicle’s half of the road. What will happen then?  
- How long were you “away” during the last lesson yesterday?  
- Monotony and sleep-inducing sounds are a hazard at any time of day or night.

Which fatigue signals do you get?  
- listless and indifferent  
- sluggish thinking  
- course-holding tends to deteriorate  
- tendency to overreact  
- dryness of mouth  
- deeper and more frequent yawning  
- feeling chilly  
- eyelids blinking  
- speed erratic  
- eyes smarting  
- stereotyped thinking  
- neck muscles relax  
- double vision  
- disorientation in time or space  
- illusions – “seeing things”  
- overreactions – hallucinations  
- totally “gone” with your eyes open  
- eyelids close  
- head falls

Fatigue signals  
Thoroughly rested, you take your place behind the wheel and start your journey. After driving for a while you feel less alert. If you drive long distances which do not demand your total attention you soon begin to daydream. The sound of the engine and tyres makes you drowsy, and after a while your blood circulation deteriorates and you begin to feel chilly. You turn up the heater but find it hard to concentrate. You increase the volume on the stereo and lower the window to get some fresh air but still cannot overcome your tiredness. Suddenly you give a start! “What happened?” you wonder. The muscles holding your head up slackened, so your head nodded. If you now continue to drive, there is a strong risk that you will not awaken next time you nod. In fact there is a risk that you may never wake up again at all!

Of course you will have drawn the conclusion that you must stop long before the nodding occurs. If you take a break as soon as you sense that the journey is beginning to feel monotonous, you will recover quickly. If you go on driving until you begin to nod you have left it too late. Now you cannot recover sufficiently to be capable of continuing after a break. After only a few minutes you will be as tired as you were before. You must stop and have a sleep!

The most common type of accident outside built-up areas is the one-car accident. Forty per cent of all one-car accidents happen in darkness or at dawn. A probable cause is the driver falling asleep at the wheel. Alcohol is a factor in almost every other one-car accident with a fatal outcome. Drivers under the influence of alcohol are not as observant of fatigue symptoms as sober drivers. Therefore they fall asleep at the wheel more easily.

Anyone who has ever drunk alcohol knows that at first you feel in high spirits but a little later become tired and sleepy. Becoming sleepy is the result of the nerve cells of the brain being anaesthetised by the alcohol.
Alcohol or driving
Alcohol makes us sleepy. That is not the only reason why it is highly dangerous to drive while under the influence.

Drivers under the influence of alcohol cause the deaths of 150 people every year in Sweden. Those who survive often have their lives ruined because of the injuries sustained. In many cases it turns out that drunken drivers are alcoholics.

But how do we account for the fact that young people are responsible for one third of all reported accidents involving alcohol? The majority of young people are not alcoholics. Can it be that young people are less experienced drivers, overestimate their own capabilities and perhaps underestimate the risks involved?

How are we influenced by alcohol?
Alcohol affects the brain even in small quantities. Perhaps you feel relaxed, a little happier and more easy-going after drinking a beer or a glass of wine? This is usually the reason why we drink. You don’t feel or consider yourself under the influence, and therefore there is a risk you may take your car. There is also a risk that when you feel invigorated by alcohol you may want more of it.

After having drunk some more, your judgment becomes warped and your normal attitude to risk gets blotted out. Taking the car – something you would never think of doing when sober – does not now seem so risky at all!

When you are sober you know what you should do; when you have been drinking someone else must tell you!
You have to make your mind up!
- What do you do when your friend wants to drive his car after the party?
- Would you go in a car with a driver who has been drinking?
- What would your life be like after crippling a child through your drunken driving?
- Make your mind up when you are sober!
- Make a plan before the party about how you intend to get home!

**40-50% of all car drivers who die in one-car accidents are under the influence of alcohol**

**Feeling sober is not the same as being sober**

Many people become drunken drivers when they are “just going to collect the car” the next day

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**People / Under the Influence**

**What does the law say?**

Anyone with 0.2 per mille or more in the bloodstream is deemed guilty of drunken driving. The penalty is a fine or up to six months imprisonment. The driving licence is normally revoked for between one month and three years.

Anyone with 1.0 per mille or more in the bloodstream is deemed guilty of aggravated drunken driving. The penalty is imprisonment for up to two years. For anyone guilty of both aggravated drunken driving and manslaughter the penalty may be up to six years imprisonment, with driving licence revoked for at least one year.

You can be found guilty of aggravated drunken driving even if the alcohol content was less than 1 per mille. The ground for this could be that your driving entailed a palpable risk of accident or that an accident in fact occurred.

If your driving licence has been revoked on the ground of aggravated drunken driving, the application for a new permit to learn to drive must be accompanied by a doctor’s report on your drinking habits. The report is based on tests of the liver repeated several times over a lengthy period. Even if the permit is granted, further tests of the liver have to be taken six and twelve months later.

**Driving licence – permit to learn to drive**

Be aware that in most cases the rules applying to driving licences also apply to a permit to learn to drive. That is to say, if you have not yet got your driving licence, you may lose your chance of getting one. Even if you are not driving a car, your permit to learn to drive can still be revoked if you behave in drunken fashion and are unable to look after yourself.

**Warning instead of withdrawal of driving licence**

If a person has less than 0.5 per mille of alcohol, a warning may suffice in certain cases. This means that the person concerned retains his driving licence on condition that no new traffic offence comes to light.

**Testing the “alcolock”**

In certain parts of Sweden persons who have been found guilty of drunken driving may be allowed to retain their licences if they fit an alcolock to the car. If the driver has been drinking alcohol the car will not start.
Some common questions about alcohol

How much is one per mille?
One per mille can be compared to one drop of alcohol to every thousand drops of blood. Thus the quantity of alcohol needed to put us under the influence of drink is not large.

How much do you have to drink to put one per mille of alcohol into your bloodstream impossible to know exactly. A number of factors play a part: how much you weigh, your state of health, whether you are a man or a woman. The same quantity of alcohol can give different per mille readings depending on whether you have eaten, what kind of food it was, the rate at which you drank, whether you are tired, and so forth. If you are unaccustomed to drinking you will show a higher concentration of alcohol.

Remember that the boundary-line for drunken driving is set at only 0.2 per mille!

How much alcohol is there in a can of beer?
50 cl of medium-strength Swedish beer is equivalent to about 4.5 cl of 40 % spirit, while a can of normal strong beer corresponds to about 7 cl of spirit.

What effect does alcohol have in combination with tranquillisers?
The combination of alcohol and tranquillisers can produce very powerful effects and greatly affect your ability to drive.

Is it possible to accelerate the burning up of the alcohol?
No! Forget all the stories about speeding up the combustion process. It is no help to drink coffee or milk, take a sauna, go for a run, sleep or to vomit. You may feel better, but the alcohol remains in your body.

But surely just a few beers can't be all that dangerous?
Oh but they can!
Because beer contains carbohydrates, the stomach regards it as food. This means that the alcohol uptake proceeds more slowly, and you have to drink more in order to feel intoxicated. It is easier to understand if we take an example. If you drink 20 cl of vodka on an empty stomach, you will become palpably intoxicated. That is approximately equivalent to three strong beers. But because beer contains "food calories" the resultant intoxicated sensation is weaker. Six cans of strong beer correspond to the same degree of intoxication. That is twice as much alcohol!

Am I a worse car driver the "morning after"?
Yes! A study has shown that participants who were allowed to eat and drink as much as they wanted in the evening and then sleep properly were about 20% worse than normal as car drivers despite having no alcohol in their bodies when driving the next day.

Is it possible to calculate when one can drive the following day?
It is usual that a healthy male adult weighing 70 kg burns up about 2 cl of strong spirit per hour. This is an average value and may not apply to you personally. Furthermore certain kinds of medication slow down the combustion of alcohol! The rate of combustion is also affected by what you have drunk.
Is your medication a danger on the road?

If you have any of these problems
- You feel tired or dizzy
- Your reactions are slower than usual
- Everyday chores feel more trouble to do
- You have difficulty seeing or hearing
- You have difficulty in following conversations
- You or others think that your judgment has deteriorated

Don't drive!

Stop and think!
The responsibility is yours.

Medication
Many medicines are unsuitable for taking when you are going to drive a car. Medicines can bring on tiredness, reduced attention, longer reaction time or impaired judgment. Thus they make you a worse driver. A considerable number of medicines contain narcotics.

A medicine may affect you when you start using it, but the problems may go over after a few days.

Some medicines may cause big problems in the period after ceasing to take them.

Combinations of medicines may reinforce the effects of individual medicines in isolation. Very small quantities of alcohol in combination with medicines can make you a danger in traffic.

Of course it is prohibited to drive a car, and you may be found guilty of drunken driving
- if you are a danger to other traffic through the effects of a medicine. This applies even if the medicine was prescribed by a doctor.
- if your blood contains any substance classed as a narcotic. This does not apply if a doctor prescribed the medicine.

In other words the law does not prohibit you from driving when you are taking medication, except for substances classed as narcotics without a prescription. It prohibits you from driving when affected by medication.

The responsibility rests on you when it comes to deciding whether a medicine affects you so that you become a worse driver.
To help you there is
- the doctor, who is responsible for giving you information
- the dispensing pharmacist, who also has to give you information
- a red warning triangle on the packing of certain medicines.

Be aware that a medicine may be a cause of danger on the road even when it does not have a warning triangle.
A distorted picture of reality – in traffic?

- Have you tried it?
- Only once.
- Why?
- My mates kept on at me ... you know!
- Would you want to try it again?
- Never!
- Why not?
- My mates ... you know.
  They’re dead ...
- What happened?
- We crashed.

Narcotics

Every day, all the year round, there are vehicles on our roads driven by people high on drugs. No one knows exactly how many there are, but what we do know is that the problem with such drivers is getting worse.

Of course driving a car while under the influence of narcotics is prohibited. You can be convicted of drunken driving if there is any narcotic substance left in the bloodstream when you drive. In other words the limit for being under the influence of narcotics is zero.

Alcohol is a soporific substance. Other drugs produce different effects.

- Cocaine and amphetamines produce hyperactivity, often with gross overestimation of one’s own abilities as a result. These drugs dispel sensations of fatigue. A drugged driver does not notice that he is tired and may collapse without warning. An amphetamine-influenced driver shows impaired ability to form judgments and coordinate his actions.

- Cannabis causes hallucinations and deranged perceptions of reality. It also produces unreceptiveness to impressions from outside the self, strong self-overestimation and disorientation. A cannabis-influenced motorcar driver has difficulty in judging distances and maintaining an even traffic rhythm. One pipe of cannabis has effects lasting at least a week. During that period you are probably unfit to drive. The poison may remain in your body for up to two months.

Cannabis can both intensify the alcohol intoxication and delay it. You can leave a party without feeling intoxicated and still become a serious danger to other road users later on. People who have succeeded in freeing themselves from drug-addiction describe a driving-style that is frequently aggressive. Some have suffered from insomnia, not sleeping for several days at a time.
Cycle or take the bus for short journeys
- 30% of the journeys we make are shorter than three kilometres
- Exhaust emission control needs about 5-7 minutes of driving to bring it into full operation.

Learn EcoDriving
- Increase speed firmly up to maximum 3000 rpm
- Skip over gears
- "Surf in high gear"
- Plan your driving – avoid braking and stopping
- Engine-brake in good time

Skip over gears
- change 1-2-4, 3-5 etc

What can you do?
About every third journey that we make is unnecessary. These journeys are often short and made with a cold engine, resulting in high fuel consumption and high exhaust emissions. Do you really need to drive your car to the newsstand, a distance of perhaps 400 metres? Cycle or walk instead and get some fresh air and exercise.

Your driving style has a direct effect on fuel consumption and the wear and tear of engine and tyres. Plan your driving, try to keep to an even speed, avoid violent braking and rapid acceleration and you will drive with considerably lower fuel consumption! What constitutes an economical driving style varies between modern and older cars.

If your car is fitted with fuel injection and a warmed-up catalytic converter you should increase speed decisively and change up quickly to the highest gears. Once having got your speed up, you should try to keep your engine revolutions as low as possible. You should also exploit every opportunity of running with the least possible use of the throttle. Avoid fierce acceleration and high speed. It burns more petrol. With most new cars it is acceptable to use fifth gear even at a speed of just under 50 kph. A useful technique is to change up 1-2-4, 3-5 etc.

It is different with older cars fitted with carburettors. It is important to be as gentle as possible with the gas when accelerating. It is also common for the engine to become sooted up by driving at low revolutions. This causes increased exhaust emissions. Servicing and maintenance therefore become all the more important.
Cold starts
Cold starts bring higher petrol consumption and heavy exhaust emissions – use an engine pre-heater.

Times for engine pre-heater
10°C - 30 mins
0°C - 60 mins
20°C - 90 mins

Travel light - lower petrol consumption
- little air resistance
- correct tyre pressures
- no unnecessary baggage

“Green tyres”
- reduce emissions of toxic oils and carcinogenic hydrocarbons

Light-running tyres
- give lower fuel consumption

Get an engine pre-heater
If you use an engine pre-heater, the engine and catalytic converter will reach their working temperatures faster. This is an excellent way to reduce both petrol consumption and exhaust emissions.

An engine pre-heater is effective for most of the year up to a temperature of +10 degrees or more. Use a timer for the pre-heater! There is no need to have it switched on for long. In severe cold you can have it on for about 1½-2 hours maximum, after which the benefit is not worth the consumption of electricity.

Low air resistance is a help
A car which runs light uses less petrol.
If you have a roof rack, take it off when it is not being used so as to reduce air resistance.
Other components affecting air resistance are e.g. open side windows, open roof hatch, wide wheels, rear spoiler and mud flaps.

Correct tyres help the environment
Many tyre manufacturers have brought out “green tyres” to reduce the emission of toxic oils and carcinogenic hydrocarbons. This is important bearing in mind that 9000 tons of rubber dust from car tyres are dispersed around Sweden every year.

Check the air pressures of your tyres at regular intervals! Excessively low tyre pressures increase running resistance significantly.

By means of tread design and choice of rubber most tyre manufacturers have managed to bring out light-running tyres. These can reduce petrol consumption by 3-5%.

An alternative is to use retreaded tyres, i.e. used tyres recapped with a new tread. A good environmental choice, perhaps at the expense of less good driving characteristics?

Nowadays winter tyres have no great effect on fuel consumption. But studded tyres throw up dust from the roadway which is injurious to health.
Servicing
- reduces emissions and petrol consumption
- enhances safety
- older cars – more frequent servicing

Look after your car the environment-friendly way!
- Street drains can accept rainwater, not chemicals

Some equipment and accessories raise fuel consumption
- automatic gearbox 0-20%
- roofbox 10%
- air conditioning 5-10%
- four-wheel drive 5%

The three-litre car is here*

*"Three-litre" refers to a project intended to bring out motorcar models which consume less than 3.0 litres per 100 km.

Regular servicing is important
Servicing a car reduces fuel consumption and therefore lessens harmful environmental effects. The older a car is, the more frequently it requires servicing to keep exhaust emissions at an acceptable level.

Environment-friendly car washing
Choosing environment-friendly car-care products ought to go without saying. Wash the car with ordinary soft soap or an ecologically-approved car shampoo! Avoid using cold degreasing agent. There are environment-friendly alternatives. Many car-care products must not be swilled off into the street drains. They may be harmful to sensitive processes at the sewage treatment works.

For preference wash your car at a so-called do-it-yourself car wash equipped with special purification gear. In this way you avoid making problems for your local sewage treatment works.

If you wax your car regularly, dirt will not stick to it as it would to an unwaxed car.

Be aware that environmentally harmful waste such as oil filters and oil should always be handed in to your local recycling and waste disposal centre.

Choose a fuel-efficient car
The majority of motorcar manufacturers are working on the development of smaller cars and more economical engines. This, combined with aerodynamically designed car bodies, is reducing fuel consumption. At the same time, unfortunately, there is a trend for equipping cars with air conditioning, wide tyres, four-wheel drive and other extra accessories which increase fuel consumption considerably.
Choose a car with a catalytic converter
- purifying efficiency 80-95%
- working temperature 400-600%
- does not function at all when cold starting
- use an engine pre-heater

...out come carbon dioxide and water

Exhaust gases containing various toxic substances pass through the converter and ...

Examples of environmentally classified cars

<table>
<thead>
<tr>
<th>model</th>
<th>fuel type</th>
<th>l/100 km</th>
<th>CO₂ emission</th>
<th>environmental classification</th>
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<td>95</td>
<td>8.7</td>
<td>201</td>
<td>2005</td>
</tr>
<tr>
<td>Volkswagen Golf 1.6</td>
<td>95</td>
<td>6.9</td>
<td>166</td>
<td>2005</td>
</tr>
<tr>
<td>Ford Fiesta 1.3</td>
<td>95</td>
<td>6.9</td>
<td>161</td>
<td>2005</td>
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</tbody>
</table>

Catalytic converter purifies exhaust gases
The catalytic converter converts between 80% and 90% of the toxic substances in exhaust emissions mainly into carbon dioxide and water. The emission of carbon dioxide is a problem which at present can only be solved through reduced petrol consumption.

The catalytic converter does not function until it has reached its working temperature. This means that unpurified gases are released by cold starts and short journeys. If you use an engine pre-heater this will halve the time the converter takes to warm up.

You should avoid very powerful acceleration or high engine revolutions. In both these circumstances the catalytic converter cannot keep up, and emissions increase. The purification process is most efficient when the engine is working at 3000 rpm or less.

Environmentally classified motorcars
Environmental classification of new private cars was introduced in 1993. It is based on the quantities of nitric oxide, hydrocarbon, carbon monoxide and particles emitted. The rate of fuel consumption and, therefore, also the emission of carbon dioxide, is not determined when cars are being environmentally classified. Environmental classification is best regarded as a health classification.

Cars in environmental class 2005 will have to fulfill the exhaust control requirements which will become obligatory in the EU countries on 1 January 2006.

All new cars have to qualify for environmental class 2000. This means fulfilling the requirements which have been obligatory in the EU since 2001.

Cars powered by electricity from batteries are placed in environmental class El.

Cars powered by electricity from batteries or by internal combustion engines are placed in environmental class Hybrid.

Private cars which meet the requirements of environmental class El or Hybrid are exempt from motor vehicle tax for the first five years.
**The Environment / Different Fuels**

**Fuel is becoming cleaner**

Propellant in environmental class 1 has a lower benzene and sulphur content.

**Biofuel or fossil fuel?**

When biofuel is burnt, the same quantity of carbon dioxide is formed as was consumed by the plant before being harvested. There is no surplus; the process is cyclical.

When fossil fuel is burnt, an additional amount of carbon dioxide is produced. The surplus contributes to a process of climate change.

**Environmentally classified propellants**

**The diesel engine**

**Emissions of particles**

**Fossil fuels**

**Alternative fuels**

**Biofuels**

Petrol, like diesel fuel, is supplied in three environmental classes. The petrol which sells most nowadays is class 1, which is the best quality. This means that emissions of harmful benzene and sulphur will diminish further.

The diesel engine emits higher contents of nitric acid than a petrol engine fitted with a catalytic converter and twice to three times as much hydrocarbon. Diesel vehicles make a major contribution to the formation of smog which occurs in large cities. Emissions of particles from a diesel car are reckoned to be 10 to 15 times greater compared with those from a petrol vehicle. This means that diesel vehicles are less suitable in densely built-up areas.

The diesel fuel most sold at petrol stations is of environmental class 1. This means that emissions of smoke, hydrocarbon, sulphur and nitric oxides are diminishing and air quality is improving.

Petrol, diesel and natural gas are fossil fuels, which when burnt make an addition to greenhouse gases.

Research and development of alternative propellants are going on everywhere in the world. However, there are problems which have to be solved before they can be used more widely. Propellants have to be capable of being produced in large quantities at low cost. In addition, production of propellants has to be environment-friendly. Regional differences, that is to say the supply of electricity, solar energy and biofuels, will influence the course of events.

Biofuels, i.e. organic fuels, such as ethanol, natural gas and rape-oil, have the advantage that they do not contribute to the greenhouse effect. This is because the quantity of carbon dioxide released by combustion is equivalent to the quantity consumed by the plant up to the time it was harvested.
How are people affected by exhaust fumes and noise?

Lead in petrol, which used to be a serious health risk and a danger to the environment, has now been eliminated. Noise and dust, along with emissions of nitric oxides, hydrocarbon and ozone, still present us with health problems. Asthmatics and sufferers from disorders of the respiratory passages, heart or vascular system are particularly vulnerable in densely populated areas.

- Car exhaust fumes cause between 300 and 2,000 cancer cases in Sweden every year.

Pollutants become stored in our environment

- Our roads are salted in winter to reduce the risk of skidding.
- Calcium chloride is used to bind the dust on gravel roads. This eventually finds its way into our groundwater.
- Traffic accidents involving heavy vehicles loaded with dangerous goods cause severe contamination with the dispersal of chemicals into watercourses and groundwater.
- Roadways sustain wear and tear from heavy traffic, tyres and tyre studs. About 365,000 tons of road surface are worn away and distributed over land and watercourses every year.
- 9,000 tons of rubber material from car tyres are distributed around Sweden every year.

Pollutants are spread in the air

Road traffic is responsible for a considerable proportion of the pollutants released into the air:

- about 42% of nitric oxide emissions, NO. These contribute to the acidification of land and water. Nitric oxide affects our genetic makeup, respiratory passages and mucous membranes. It contributes to the forming of low-lying ozone.
- about 28% of hydrocarbon emissions, HC. These affect our genes and cause cancer diseases. Along with nitric oxide they form low-lying ozone.
- about 26% of carbon dioxide emissions, CO₂. These contribute to the greenhouse effect, which is bringing about a rise in the average global temperature of the earth. This in turn is causing melting of the polar icecaps and a rise in ocean levels.

- about 2% of sulphuric acid emissions, SO₂. Sulphur irritates the mucous membranes, causes allergies and affects breathing. Precipitation of sulphur in the form of so-called acid rain causes plant death.
- about 56% of carbon monoxide emissions, CO. Carbon monoxide reduces the ability of the blood to absorb oxygen. This in turn leads to tiredness and difficulty in concentrating. Carbon monoxide also affects the central nervous system and in large doses is directly life-threatening. Emissions are being reduced by the use of catalytic converters.

Other pollutants too are spread in the air:

Low-lying ozone. Ozone is formed by the oxidation of oxygen in the air. In the atmosphere, ozone provides protection against solar radiation, but at ground level it is harmful. Since the supply of hydrocarbons and nitric oxides determines how much ozone is formed, it is important to keep these emissions down. Levels are highest in summer because of the weather. Ozone leads to reduced harvests and damages vegetation, but it is also injurious to health.

Soot. High levels of soot and particles can cause respiratory disorders, interfere with breathing and present a risk of cancer diseases. Road traffic accounts for about 20% (National Road Administration 1996) of emissions of particles in Sweden.

Noise

Many people are regularly exposed to traffic noise. Soundproofing between busy roads and residential areas reduces the problem. Road traffic also creates an inaudible noise called infrasound. This can cause people to suffer from difficulty in concentrating, headaches and general tiredness.

Soundproofing improves the environment!
The average car is driven a total distance of 14,000 km per year.
If the car consumes 8.5 litres of petrol per 100 km, this means that each car emits 2800 kg of CO₂ per year.
There are 4 million private cars in Sweden!

We must start caring – for the sake of the next generation!

- Become a better driver!
- Learn EcoDriving!
- Improve your everyday routines!
- Less petrol-thirsty cars
- Better fuel
- Technical improvements.

4 million cars in the traffic system

11 million tons of CO₂ per year

- Share cars!
- Leave your car at home if you can!
- Cycle or use public transport!
- Form car pools!

The environment / you can shape the future

The future
Traffic on the roads will increase during the twenty-first century and it is therefore necessary to find new solutions to the problems this poses. There are constantly new developments as the call for cleaner air is heard more loudly, both from individual towns and from states, such as California for example.

The motorcar engines of the future will resemble those of today but with refined technology for purifying exhaust fumes. Engines will create less emission when cold-starting through such techniques as storing waste heat in salt. Turbo units will become more common, because they give better power effect with lower fuel consumption. Cars will be of lower weight without losing out on safety, and this will also lead to lower fuel consumption.

The electric car
The electric car is an old concept, older than the petrol-driven car. At present the electric car has drawbacks in the form of higher production costs and poor battery capacity. It is not expected to assume major importance until some way into the twenty-first century, and this will be in the form of a hybrid vehicle with fuel cells.

The hybrid car
The hybrid car is a car with two power sources, viz. an electric motor and a normal liquid-fuel engine. When driving on country roads it runs on liquid fuel while simultaneously charging its battery. In town traffic the electric motor is used to avoid emissions. The technology already exists, and some car manufacturers offer hybrid cars in their model ranges.

Car pools – how to have a car at your disposal without owning it
Car cooperatives are already in existence, enabling their members to have the use of a car without owning one. The advantages are that members can drive new, safe, environment-friendly cars without hitting their own pockets too heavily. Car pools are a phenomenon which will increase in the next few years, especially in big cities with parking problems.
**Speed**

The speed at which we drive has a very great influence on traffic safety. Therefore there are many rules determining the speed at which we are allowed to drive.

Basically what matters is to adapt speed to suit the prevailing circumstances.

The law also specifies 15 examples of circumstances and places in which the risk of accidents is high and we have a duty to drive at a sufficiently low speed. Read more about this on pages 26-27.

Many vehicles and vehicle combinations are also unsuitable for driving too fast. Which these are and how fast they may be driven will be seen on the left-hand page.

Furthermore speed may also be restricted on different types of road and at different places. The basic rules are that:
- in densely built-up areas you must not drive faster than 50 kph
- outside built-up areas the basic speed of 70 kph applies
- on motorways the speed limit is 110 kph

These general speed limits apply if no other is indicated by traffic signs.

Research shows how large an influence speed has in terms of the risk of injury to unprotected road users. The chance of survival for a pedestrian is very much greater if the car's speed is 30 kph than if it is 50 kph.

Studies of reaction and braking distances show that the driver of a car doing 30 kph is able to stop before the driver of a car doing 50 kph has even started braking.

Therefore extremely low speeds are going to become increasingly common in localities where there are many unprotected road users. You will certainly have noticed this already outside schools and in central parts of built-up areas etc.

In other countries successful experiments have been made with lower speed limits in winter road conditions. Minor adjustments of speed limits at particular places have been made in Sweden too. It is possible that we may become accustomed in future to speed limits that vary according to the time of year.
**Vehicle testing**

Vehicle testing is compulsory in Sweden. Its purpose is to reduce the number of accidents caused by technical defects and also to reduce the amount of pollution. Vehicle testing is carried out by the official agency, AB Svensk Bilprovning (the Swedish Motor Vehicle Inspection Company).

**Private cars, goods vehicles and buses with a total weight not exceeding 3.5 tons**

These must be tested for the first time after 3 years. They must be tested again two years later, and thereafter every year.

It is the last digit of the vehicle's registration number which governs the time of year when the vehicle must be tested. The last digit indicates the regular inspection month in accordance with the table on the left-hand page. Testing may also be carried out two months before and two months after the regular inspection month.

**Motorcycles and trailers with total weight not exceeding 3.5 tons**

The first test must be carried out not more than two years after the vehicle is taken into use. Thereafter testing is due every two years, and when the vehicle has been in use for more than 10 years it must be tested every year.

**What happens if I do not have my vehicle tested?**

A ban on driving the vehicle comes into force automatically if you have not had it tested within the prescribed period. You then must not use the vehicle until the test has been carried out.

**Random inspection/Vehicle inspection**

A police officer or vehicle inspector has authority to check your vehicle at any time out on the road. This is called a random inspection. If any defects are found, the owner will be served with an order to effect repairs and subsequently have the car checked by the Swedish Motor Vehicle Inspection Company or an accredited motorcar workshop. If serious defects are discovered the vehicle will be banned for driving.

**The check emblem**

A check emblem affixed to the rear number plate is changed once a year. To obtain a new emblem the vehicle must be officially tested, vehicle tax must have been paid and third party insurance must be in force.
Registration
Certificate of registration
For every registered motor vehicle there is a certificate of registration containing many important details. The certificate gives dimensions relating to the vehicle, engine type, types of tyre permitted, types of trailer permitted etc.

The certificate also has a reporting section. This is for use when ownership changes or the vehicle is deregistered etc. When notifying particulars to the National Road Administration, only the original of the reporting section of the latest certificate of registration issued may be used. Thus this document is an important paper which you should keep in a secure place.

Registration inspection
If you change your vehicle so that e.g. dimensions, engine type, or weight details no longer correspond to what is in the certificate of registration, you must present the vehicle for a registration inspection within one month.

The following are examples of the kind of changes which necessitate a registration inspection:
- fitting a towbar
- changing the engine capacity of a car or motorcycle
- private import of a vehicle

Change of vehicle ownership
Both the new owner and the seller must notify the National Road Administration of the change of owner within ten days. This is done by using the reporting section, in original, of the most recent certificate of registration issued.

Deregistration
A vehicle not intended to be used for a lengthy period can be deregistered. Notification of deregistration is easily done either by using the reporting section of the certificate of registration or by telephoning the automatic telephone service, "Bilsvar". Deregistration is a good way for motorcycle owners to save money during the off-season. You do not need to pay third party insurance or vehicle tax for the period when the vehicle is deregistered.
Insurance

Notification of damage – motor vehicle

To be carried in the car
- always fill in the form at the site of the accident
- for a collision between two vehicles one set of forms is used. The drivers fill in and sign the front of the form. Each driver keeps one copy. Details for your own insurance company are then written on the back.
- if more than two vehicles are involved, more sets of forms are used. Each set of forms must contain details of all those involved and the sketch must show the positions of all vehicles in the collision

On the back page
- the back page of the notification of damage is where you fill in details for your own insurance company
- this is where you give a more detailed description of the collision.

Insurance

Third party insurance is compulsory for all registered motor-powered vehicles and for mopeds. This is an insurance which covers the costs arising from a traffic accident. However, it does not cover damage to your own vehicle.

In cases of gross negligence in traffic situations, drunken driving or aggravated drunken driving, the insurance company may avail itself of its right of recourse. This means that compensation for damage is paid but is reclaimed from the insured party responsible for the accident.

It is possible to obtain a discount on the third party insurance premium. This is called a no claims bonus and is based on the number of claim-free years. You reach the full bonus after six claim-free years. After any accident resulting in a claim on the third party insurance, the bonus is reduced.

Partial material loss insurance is a collective name given to a number of different types of insurance. Fire, theft, glass, breakdown, legal assistance, consequential loss and machinery insurance can be included. This is a voluntary form of insurance which you should of course take out if you wish to protect your vehicle.

Own vehicle insurance compensates you for damage to your own car when compensation cannot be obtained in other ways, e.g. in a collision or by driving into a ditch. Own vehicle insurance also pays for salvaging costs, material damage or other effects on the vehicle.

If you have an accident you will find a notification of damage form very useful. The forms are available from all insurance companies and you should always have one in the car. Never discuss the question of blame at the site of the accident but refer to your insurance company.

Home insurance

A householder’s insurance policy may cover damage to belongings arising from a traffic accident. A motorcyclist’s leather suit or baggage damaged in an accident are examples of the kind of thing that could be covered in this way.
Load the car correctly!

Load projecting sideways
- The load must not project more than 20 cm sideways.
- The total width, including load, must not exceed 260 cm.

Length, width and projecting loads
- A load which projects forward or more than 1 metre backward must be marked.
- A forward-projecting load clearly visible to other road users need not be marked unless it projects more than 1 metre ahead of the front of the vehicle.
- Marking should be done by a flag in daylight and with a light and reflectors in darkness.
- The vehicle’s total length, including load, must not exceed 24 metres.

Loading rules
When you are loading your car there are many points to be considered. The load must be so positioned and secured that it cannot injure anyone in the car. On the roof or on a trailer it must be firmly enough secured so that it cannot shift or fall off and cause an accident. The load must not trail behind the vehicle and securing straps and cords or tarpaulins must not hang loose outside the vehicle or trail along the ground. Neither must the load cause unnecessary noise. The load carried on a trailer must not create troublesome dust. You must not load the vehicle in such a way as to obscure the car’s lighting or obstruct the view of the number plates. Neither must the load obstruct the driver’s vision or impede manoeuvring of the car.

You must not take so many passengers as to impair safety. The passengers you do take must sit in a place where there is a seat belt, if such a place is available, and they must use the seat belts.

The car’s certificate of registration states the maximum permitted weight. The driver is not reckoned as part of the load, but the passengers and everything else you transport is counted. With four passengers in the car the weight of baggage included within the maximum permitted load is often not all that great. How heavy a part of this load you may carry on a roof rack is stated in the instruction book.

Length
- The vehicle’s total length, including load, is 24 metres. Certain EU-classed vehicle combinations may be up to 25.25 metres long.

Load projecting lengthways
- The load may project forward or backward without limit as long as the total load is within the permitted length of 24 metres.

Passengers
- Maximum permitted load
- Roof load

1 metre forward
- In daylight
- In darkness

A load which projects less than 1 metre forward of the car does not need to be marked provided it is clearly visible to other road users.
Driving with a trailer

With a B driving licence you are permitted to drive a car with a light trailer coupled on. Heavy trailers may be towed only by a car driven by a person possessing a BE licence.

The following are reckoned as light trailers:
- all trailers with a total weight not exceeding 750 kg
- trailer whose total weight does not exceed the car’s kerb weight, with the combined total weight not exceeding 3.5 tons

This means that in the majority of cases it is the towing car’s kerb weight which determines whether a trailer is heavy or light.

This in turn means that one and the same trailer may sometimes be light and sometimes be heavy depending on the model of car being used.

In other words, to determine whether a trailer is light or heavy you need to see the certificates of registration of both the towing vehicle and the trailer. These give the weights you have to know in order to make the calculation.

The certificate of registration for the car also gives details of the weight of trailer which the car is allowed to tow. The stability, braking and towing capacity of a car naturally do not permit any and every size of trailer to be towed. To couple an excessively heavy trailer to a car is dangerous even if the driver does have a BE driving licence!
Driving with a trailer

**Kerb weight, gross weight, total weight and maximum load?**

**Car’s kerb weight**
- The car’s weight when unloaded and fully equipped, including driver

**Trailer’s kerb weight**
- Weight of trailer when unloaded

**Total weight**
  \[ \text{Total weight} = \text{kerb weight} + \text{maximum load} \]

**Gross weight**
- Gross weight is the car’s weight or trailer’s weight on a specific occasion
- Thus gross weight can vary depending on how much weight the vehicle is carrying for the moment

**Maximum load**
- Trailer’s or car’s maximum permitted load according to certificate of registration

**High towbar noseweight**

**Low towbar noseweight**

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**Safety check**

When you couple a trailer to your car you must check carefully that the coupling is secure and the wire to the emergency brake is properly fixed in place. Check also that the electricity plug is firmly in the socket and that all lighting is functioning on both car and trailer! Make sure that the jockey wheel is properly locked in the up position. The emergency wire and electric cable must be the right length – long enough to allow play but not trailing on the ground.

To achieve acceptable driving characteristics for the vehicle plus trailer combination, it is important to distribute the load in the trailer so that the towbar noseweight is the best possible.

How heavy the towbar noseweight ought to be will be described in the car’s instruction manual. It normally varies between thirty and a hundred kilograms. The easiest way to measure it is with a bathroom scale underneath the jockey wheel of the trailer, before it is coupled to the car.

If the load is too low, the result will be that the combination will meander or “snake” along the road. The risk of overturning increases and the pulling power of rear wheel drive cars will be impaired. If you become the subject of a random inspection, too low a towbar noseweight may result in a driving ban on the combination.

If your towbar noseweight is too high, your headlights will dazzle when dipped. You will also have instability in the steering, and in addition the pulling power of front wheel drive cars will be impaired. This is because the front wheels have less grip on the road surface.

Trailers of *total weight exceeding* 750 kg must also be fitted with a service brake. On most smaller trailers a pusher brake is used. When the towing vehicle is braked the trailer exerts forward pressure, thus applying its brake automatically.

Trailers of *kerb weight exceeding* 400 kg must also be fitted with a parking brake.

You should check the brakes at regular intervals. Apply the parking brake and try to drive off. You will then know whether the brake is working. You should also brake sharply in very low gear and then check that the piston of the pusher brake has not “bottomed”.

If you intend to tow a caravan you may have to fit extra external mirrors. This is because the caravan is often wider than the car.

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**External rear mirrors**
Anchor the load

Brace the load
- The biggest risk of the load shifting arises when braking.

Use tensioning straps
- These are easy to use and will hold the load in place.

Towing by line
- The maximum permitted speed when towing by line is 30 kph.
- If the distance between the two cars is greater than 2 metres the towline must be clearly marked.

If the lighting of the towed vehicle is not functioning then the vehicle has to be marked in darkness or fog
- at the front by white reflectors and a white lamp.
- at the rear by red reflectors and a red lamp.

Reflectors and lights on trailer
- rear light, brake light, indicators, rear number plate light and triangular red reflectors at rear.
- orange lights and reflectors on sides.
- white reflectors and (on trailers wider than 160 cm) white position lights at front.

Driving a motorcar with trailer may bring increased risk. Some advice:

- Anchor the load well! Use bracing and tensioning straps. Bracing means securing the load so that it cannot be displaced. A couple of planks of appropriate length between the load and the front flap of the trailer will ensure that the load will not shift during heavy braking.
- Do not leave behind any object which can cause danger or obstruction on the roadway. If anything has fallen off from your car or trailer you must remove it from the roadway. If this is impossible you must mark the object until it is removed.
- If driving with a caravan you must take care in strong winds. A caravan acts as a large windbreak and can be pushed off the road in a high wind. On certain roads and bridges, caravans and light goods vehicles may be suspended when winds are severe.

Towing another car
Sometimes you may have occasion to tow another car, because of engine failure for example. Towing must be done on the hard shoulder or, in its absence, as far over to the right-hand side of the roadway as possible.

If engine failure occurs on a motorway or clearway, towing must be done on the hard shoulder and only to the nearest exit.

The highest permitted speed is 30 kph.

If the towline is longer than 2 metres it must be marked.

It is permissible to use hazard warning lights while towing. The risk of misunderstanding of where you are going is increased however. You should use hazard warning lights only on the car on tow, not on the towing vehicle!

You are not allowed to tow a motorcycle. Neither is it permitted to use a motorcycle as a towing vehicle.
Questions and answers about driving licences

Now that I have my probationary driving licence, will I lose it for the tiniest offence?
No: you will be judged in the same way as those who have had a driving licence for a longer period. But if you do lose your licence, you must always take a new test. Anyone possessing a driving licence beyond the probationary period gets his old licence back without taking a new test, provided that the suspension period was not more than twelve months.

Suspension period?
Yes, when a driving licence is revoked a period is set during which it will remain suspended. This is called the suspension period. It can be anything from a month or so to several years depending on the gravity of the offence.

What happens if I miss a red light or a stop sign?
It is regarded as a serious offence, and there is a risk that your driving licence may be suspended in accordance with point 4 on the right-hand page. In addition you will probably be fined a sum assessed according to your income. Other traffic offences which are also regarded as serious include overtaking at an uncontrolled pedestrian crossing or a cycle crossing.

Help, I've been done for speeding! What happens now?
More than 20 kph too fast in a 30 zone or more than 30 kph too fast elsewhere will probably have already resulted in your driving licence being taken away on the spot. You will be fined as well. If your excess speed was below these limits you have either admitted the offence and been fined on the spot or else you will be summoned to appear in court.

Now I've had another parking fine! Is my driving licence at risk?
No, you can stop worrying. As long as you pay your parking fines on time I don't think you'll have any more surprises.

I'm taking my motorcycle test now and will take my car test in two years' time. Will I have a probationary period on my next licence?
No, the probationary period is two years and is reckoned from the day you get your first licence.

Who has authority to stop me and check my driving licence?
A police officer or vehicle inspector.

What kind of traffic offence would cause my driving licence to be revoked?
Well, it is set out precisely in the driving licence law. There are ten contingencies which can cause a licence to be revoked.

In simplified form they are if you:
1. are guilty of dangerous or drunken driving
2. are guilty of leaving the scene of an accident in circumstances where the offence cannot be regarded as minor
3. are guilty of repeated offences showing that you lack willingness to conduct yourself in accordance with traffic regulations
4. are guilty of an offence against an important road safety regulation
5. are deemed unsuitable as a driver by virtue of the insobriety of your mode of life
6. are deemed unsuitable as a driver by virtue of your criminality of character
7. are deemed unsuitable as a driver by virtue of illness or disability
8. fail to obey an instruction to submit a medical certificate or a new proof of having passed a driving test
9. fail to obey an instruction to renew your driving licence
10. yourself request your driving licence to be withdrawn
What can you do?
Everyone involved in a traffic accident, whether at fault or not, must
- remain at the scene of the accident until all information has
  been gathered
- give your name and address along with details of how the
  accident happened
- help at the accident scene to the best of your ability by assisting
  the injured or giving any other help that may be needed

Remain at the scene
Regardless of whether you consider yourself to be involved in the
accident you have a duty to remain at the scene until all inform-
ation about it has been gathered. There may be details of the
course of events which only you can give. There may be injured
persons who need help or other things that have to be done.

To leave the scene of an accident is a serious crime. If the acci-
dent involves personal injuries, the penalty for anyone leaving
the scene is imprisonment. In addition, of course, such a per-
son’s driving licence will be revoked.

If the accident has only resulted in damage to property and
someone involved leaves the scene, the penalty is a fine. Even
then there is a possibility of such a person’s driving licence
being revoked.

Sometimes it may be difficult to make contact with the owner of
a vehicle with which you have collided accidentally, e.g. when
parking. To safeguard yourself against any accusation of having
left the scene of an accident you should always phone the police
if you cannot find the owner. Ask them to make an official note
of your call. You should do the same if you run over a domestic
animal or anything else on or alongside the road.

After having informed the police you must try to contact the
owner and compensate him for the damage caused.

Should you damage a traffic sign or other such item you
should immediately put it back in place. If this is impossible,
mark the place and phone the police.

Giving information
You are required to give your name and address when requested
by anyone else involved or by the owner of any property which
has been damaged. You also have a duty to give details of the
incident. Failure to do this can result in the same kind of pen-
alty as for leaving the scene.
If an accident happens / What can you do?

Give help
To be first on the scene of an accident is a situation demanding calmness and the ability to organise and cooperate. You have a duty to do everything which is necessary and within the scope of your ability.

Start by surveying the scene of the accident. How many are injured? Is there any risk of fire or of being run over? Switch off the ignition in the vehicles involved! Get your fire extinguisher if you have one in your car!

Is a vehicle with dangerous goods involved – think about the risk of explosion or poisoning. Don’t approach too close!

Warn other road users by switching on hazard warning lights! Set out warning triangles as appropriate. Never move injured persons unless they are in danger of further injury by fire or from being run over. The vehicles involved should be moved to a suitable place unless somebody is severely injured or dead. In that case the vehicles should only be moved if they are a danger to other traffic.

Raise the alarm with the police and ambulance service by phoning the emergency number 112. Be ready to describe where the accident occurred and how many injured there are. If a vehicle with orange signs, i.e. with dangerous goods, is involved, you must tell the emergency operator.

Give first aid to the injured. It is extremely important for people seriously injured to receive prompt and efficient help. It only takes a few minutes for someone whose breathing or heartbeat has stopped to sustain very severe brain damage. If such a victim survives he may be gravely disabled in future.

If there are several persons who are severely injured you must prioritise the things that have to be done. Those whose breathing or heartbeat has stopped must have immediate help, as must those who are bleeding heavily.

First of all see if the person is conscious. If he does not react when you speak to him or touch him you can assume he is unconscious. Find out if he is breathing by putting your ear to his nose and mouth and listening. Look to see if his chest is moving, and see if you can feel exhaled air against your cheek. Feel for a pulsebeat with two fingers at the side of the throat, between the larynx and the throat muscle.
If an Accident Happens / What Can You Do?

Breathing

A person who is breathing normally should be placed in the semiprone position. Never leave him lying on his back because then he can be suffocated through his tongue falling backwards and blocking the airways.

A person who is not breathing but has a pulse beat must be helped to breathe by the mouth-to-mouth resuscitation. Ensure that his airways are free and hold his nose! Blow air in through the mouth at the same time for about 2 seconds. Repeat blowing 10-15 times per minute. Check that his chest rises and falls. If it does not, try to raise his head still further back to create free airways. Continue with mouth-to-mouth resuscitation until the person breathes by himself or until someone else takes over responsibility.

A person whose breathing has stopped and who has no pulse beat needs cardiopulmonary resuscitation. This involves combining blowing in two breaths of air with 15 chest compressions. The method can be learnt on a course in cardiopulmonary resuscitation.

You must try to stop severe bleeding by direct pressure on the site of the bleeding and by raising up the injured part of the body. Usually you should place the victim with his head low and legs high. Place a pressure bandage on the wound. If you have no pressure bandage you can use a piece of material, roll it up and place it over the wound, then secure it tight with another piece of material.

Serious wounds with severe bleeding, internal bleeding, burns and so on can bring on circulatory shock. This is a life-threatening condition in which the circulation of the blood is so feeble that oxygen deficiency and cell damage results. You can recognise circulatory shock from the victim’s paleness, cold sweat, rapid but weak pulse, and sensations of cold and thirst. You must then see to it that he can breathe freely, is not bleeding and is kept warm. Lay him down and speak to him calmly. Do not give him anything to drink!

To be able to deal with the injured competently and correctly at the scene of an accident takes training. There are courses available in First Aid and Cardiopulmonary Resuscitation. This training can be useful in other circumstances too. An accident can happen at any time, whether at work or at leisure. Learn how to take care of an injured person before it is too late!
Traffic accidents
The Zero Vision
The Swedish Parliament has enacted that Sweden’s efforts in the traffic safety field are to be governed by the Zero Vision. This is a picture of a future in which no one is seriously injured or killed in a traffic accident. Even prior to this decision, the end in view was to bring the number killed down to not more then 400 by the year 2000.

The Zero Vision stresses the point that since people do make mistakes, accidents cannot always be avoided. Therefore roads and vehicles must be so designed that mistakes do not result in serious personal injuries or death.

Accident statistics
As you can see from the diagram, the numbers killed in traffic accidents in Sweden have been falling steadily except possibly in the most recent years. Even so we can see that the target of less than 400 fatalities has not been reached. Much remains to be done before we can achieve the objective set under the Zero Vision.

The diagram shows the number of fatalities in traffic accidents 1960-2000

Casualties in road traffic accidents 2002
Number of road traffic accidents involving personal injuries 16 947
Number killed 560
Number seriously injured 4592
Number slightly injured 20 155

Types of accident
One-car accidents
The type of accident which causes the most fatalities is the one-car accident, i.e. where a single vehicle drives off the road. A quarter of all the accidents reported belong to this group.

These accidents can have many causes, but the most common are probably:
- alcohol and other drugs
- excessive speed
- fatigue

Accidents in darkness
About one third of all accidents involving casualties happen in darkness. It has been calculated that the risk of an accident is twice to three times higher than in daylight. Unprotected road users are particularly vulnerable.

Head-on accidents
Head-on collisions between two vehicles claim many victims every year. Just under 150 persons died in 2002. The reasons why a vehicle crosses to the wrong side of the road are often difficult to establish.

There is reason to believe that some of the causes are:
- driver distracted by something happening inside the car
- fatigue
- alcohol
- excessive speed in slippery conditions

Rear-end collisions
A large proportion of accidents are rear-end collisions, i.e. one vehicle colliding with another from behind. Such accidents often cause severe neck injuries known as whiplash injuries. This type of injury has been increasing rapidly in recent years. Unexpectedly, this is probably because of increasingly strong seat design in modern cars.

Reasons for rear-end collisions may be:
- too short a separation distance between vehicles
- failure of concentration while driving
- excessive speed in conditions of poor visibility, e.g. fog

Accidents involving wildlife
About 35 000 accidents a year in Sweden involve cloven-footed wild animals. These are accidents which result in people and animals being injured or killed. In some counties 75% of all traffic accidents involve wildlife.

Source: Statistics Sweden, publication Vägtrafikskador (Road Traffic Accidents).
**Before you set off**

**Planning**
This can be useful before travelling abroad with your car. If you feel uncertain about what awaits you in the various countries, the motoring organisations (M, MHPF and KAK) have more detailed information.

- **Tickets**
- **Passports**
Be aware that in most countries you must always be able to show your passport, not merely at the frontier!

- **Insurance**
Motorcar insurance: Check with your insurance company what insurance cover you have!

Sickness insurance card: You can obtain a card from your regional social insurance office which is valid in all countries with which Sweden has an agreement.

Householder's insurance: Check that the policy is valid and what is covered.

- **Letter of authority**
If you are driving a company car you should carry a document signed by the owner authorising your use of the vehicle

- **Certificate of registration for your car**
You must have this with you as soon as you leave Sweden

- **S-plate**
It is obligatory to have an S-plate on your car

- **Maps**
A general map of Europe is far the best when planning a motoring holiday. It is not suitable to drive by, however. Poor and outdated maps can ruin your holiday. A tip: You will find a large selection of maps at petrol stations in Germany. They cost less than at home too.

- **Warning triangle**
In certain countries two warning triangles are required.

- **First aid box**

- **Fire extinguisher**
Some countries require a fire extinguisher to be carried.

- **Servicing the car**
For a successful holiday you have to have a car that works. It is advisable to make contact with a garage in good time before going on holiday.

- **Tools and spare parts**
Simple spare parts such as lightbulbs and a generator belt can save you a lot of trouble if you carry them with you. It may also be a good idea to supplement these with some serviceable tools. If your car is equipped with only an emergency spare tyre, a puncture will mean that you have to stay where you are until the tyre has been repaired. A proper spare wheel is a necessity.

- **Spare keys for the car**
Not having spare car keys with you could cause a week's delay on your journey if you have bad luck. It is impossible to make keys on the spot for cars with modern immobilizer locks. This can only be done via the car firm where the car was bought.

- **Studded tyres**
You should check the rules in force. For example in Germany, which you often have to drive through in order to reach destinations elsewhere in Europe, the use of studded tyres is banned.

- **Correct tyre pressures**
Driving at high speed and/or with a heavy load requires considerably increased tyre pressures. See the car's instruction book!
On your way

Ferry transport
In most cases you leave Sweden by ferry. This is often a pleasant start for a holiday. The loading of cars on the car deck can be something of a problem however. It is often very crowded, making it easy to scrape against other cars. You may find yourself landed with a tricky compensation problem, and it is by no means certain that your insurance policy covers you on the ferry.

Bridge tolls
You may find yourself using the Oresund and Great Belt bridges to get to your continental destination. Be aware that you will have to pay bridge tolls at the special toll booths immediately before the bridge entrance.

Driving
The practical tips we give here, and the countries we mention, are only a selection. You can obtain more detailed information from a motoring organisation such as M. MHF or KAK.

Seat belts
Seat belts, (including rear seats) are compulsory in the great majority of countries.

Children in the car
In certain countries it is prohibited for children to ride in a front seat. They are not allowed to do so even in a child car seat.

Snow chains
In winter snow chains are obligatory on certain roads in high locations, especially the Alps. It is possible to hire snow chains at various places.

Alpine roads
Cars on the up slope always have priority. Remember to drive in low gear and to brake on the engine downhill, using lower gears for steeper slopes. Otherwise the car’s brakes can become too hot and cease to function.

Dipped headlights in the daytime
In southern Europe particularly it can become tedious to drive with our automatic dipped headlights. Everyone flashes to remind you, believing you have left them switched on accidentally. You can disconnect them at a garage, but a simpler solution is to drive on parking lights.

Alcohol
Never goes together with driving a car, regardless of which country you are in! The rules do vary, and there are some countries which set the limit at absolute zero.

Parking regulations
Parking regulations are complicated everywhere. Take a P-card with you. You may find it useful.

Speed regulations
These vary in all countries. You should read the notices displayed on large information boards directly at the frontier.

Fines
In many countries fines are imposed directly on the spot. You will get no further if the money is not forthcoming.

Learner drivers
Do not count on practice driving while on a motoring holiday. There are a few countries which permit private practice-driving, but only for their own residents.
**Denmark**
Speed limits in built-up areas apply from the place-name sign and remain in force until cancelled by another sign with the place-name struck through. This is the same system that we have begun to introduce in Sweden.

**Germany**
The country is renowned for its Autobahn system. You will often come across the sign *Recommended Speed 130* on the sections where speed is not restricted. Be aware that you have a duty to give way when entering the Autobahn. Don’t reckon on getting the same help that you would in Sweden.

“Stau” is a derisive word for everybody on the Autobahn but you just have to accept that there are queues. The traffic intensity is in no way comparable to that in Sweden. Plan your journey so as to drive at times when there is less traffic. Getting caught by “Stau” can happen very suddenly, and the risk of being hit from behind is very high! Switch on your hazard warning lights until you see that the drivers behind have observed that you are at a standstill! If you are in the right-hand lane position yourself well to the right, or in the left-hand lane well to the left. This is to allow free passage for emergency vehicles between the driving lanes.

Listen on the car radio for warnings of queues and accidents. Bulletins for drivers are broadcast every hour. There are alternative routes (Umlleitung) which you can use if you plan your journey and have a little luck.

Why not try something different from the Autobahn? Germany is an extremely beautiful country once you are off the Autobahn. There are many named tourist routes which are a delight to drive on. For speed limits the same system is used as in Denmark. A booklet entitled “Links + Rechts der Autobahn” (Left and Right on the Autobahn) can be very useful when planning overnight stops. You can buy it in Sweden, but it is often cheaper at petrol stations in Germany.

**Austria**
In Austria the speed limits are different from those in Germany. Otherwise the rules are pretty much the same, though you will have to pay a toll to drive on the Autobahn. You buy a token at the frontier post and stick it on your windscreen. You can also choose the period for which you want the motorway toll to be valid.

There are a number of roads and tunnels for which an extra toll, “Maut”, is charged.

**Switzerland**
As in Austria, you have to pay for a token to drive on the motorways. The difference is that you have to pay for a whole year (30 CHF) even if you drive for only a single day. In Switzerland there are also roads where you have to pay a one-time toll to drive.

**France**
In France you pay motorway tolls according to the distance you travel. Payment is made at special toll-booths, “Péage”, at the motorway entrance or exit. There are also other toll roads in France. Road tolls are quite a heavy item in your travel budget.

**Italy**
The same system of road tolls is used as in France. Be aware that the Italian driver considers himself to be the most macho in Europe, so much so that he seems able to find non-existent gaps for overtaking! When you overtake on an Italian motorway, keep your left-hand indicators going all the time.

**Great Britain**
One of the few countries of Europe which drive on the left. The biggest problem it causes really is when you are out walking. To cross a London street without your mind fully concentrated is perilous to life and limb! Since your dipped headlights are asymmetrical you dazzle oncoming traffic when you drive on the left. Use sticky tape on your headlights to avoid making yourself unpopular with your British fellow-drivers!

Roads in England are often very narrow with houses and exits directly verging on the carriageway. Despite this the traffic tempo is fast and intensive.

**Norway**
You have to pay a road toll to drive a car in Oslo. In addition you had better rehearse the right-hand rule! It is in force here.

**Finland**
The traffic in Finland is pretty much the same as in Sweden.
Warning signs

Warning signs are erected 150-250 metres before the hazard of which they give warning unless a supplementary plate states a different distance. In a densely built-up area the distance is shorter. The symbol depicted on the sign is adapted according to the circumstances at the site.

1. Right-hand bend
   Be prepared for oncoming vehicles. Judge your speed to suit visibility, state of the road, sharpness and camber of bend. You must not stop where the view is impeded.

2. Left-hand bend
   Be prepared for oncoming vehicles. Judge your speed to suit visibility, state of the road, sharpness and camber of bend. You must not stop where the view is impeded.

3. More than one bend, the first to the left
   If the warning relates to a sector of road with more than two bends, the length of the sector is indicated by a supplementary plate.

4. More than one bend, the first to the right
   If the warning relates to a sector of road with more than two bends, the length of the sector is indicated by a supplementary plate.

5. Steep hill upwards
   Braking distance will be longer. Perhaps select lower gear to save brakes.

6. Steep hill downwards
   Plan in good time for oncoming traffic. Stop overtaking in good time.

7. Road narrows on both sides
   Plan in good time for oncoming traffic. Stop overtaking in good time.

8. Road narrows on right
   Plan in good time for oncoming traffic. Stop overtaking in good time.

9. Road narrows from left
   Plan in good time for oncoming traffic. Stop overtaking in good time.

10. Opening or swing bridge
    Traffic signals? Be prepared to stop.

11. Quayside, beach or ferry berth
    Road will end!

12. Uneven road
    Poor road grip. Risk of skidding. Longer braking distance.

13. Road works
    Show consideration. Poor road surface. Loose chippings?

14. Slippery road surface
    Poor road grip for reasons other than snow and ice.

15. Risk of falling or fallen stones from the right
    May be large stones on the carriageway.

16. Loose chippings
    Reduce speed when passing oncoming vehicles. Increase forward separation distance. Avoid overtaking.

17. Crossroads
    View blocked? Right-hand rule applies.

18. Roundabout
    View blocked? Right-hand rule applies.

19. Road junction where vehicles joining from side roads have duty to give way.

20. See 19. Sign is adapted to suit circumstances at site.

21. See 19. Sign is adapted to suit circumstances at site.

22. Traffic light signals
    Be prepared to stop ahead.

23. Junction with tramway
    Be prepared to make way for tram!

24. Railway level crossing with barriers
    It is the train that is dangerous. Think of your own and others' safety.

25. Railway level crossing without barriers
    It is the train that is dangerous. Think of your own and others' safety.

26. Distance to railway level crossing.
    Distance to level crossing reduces with number of countdown markers.

27. Railway level crossing with single track.
    Drive so you are sure of stopping before reaching the track.
    The cross sign may be missing at crossing on private road.

28. Railway level crossing with more than one track.

29. Give way.
    Drive steadily. Give way. The sign is erected as close to the crossing as possible.

30. Low-flying aircraft
    Be prepared for engine noise. There may be light signals as well.

31. Bridle path crossing.

32. Elk
    Keep a sharp lookout to the sides. Reduce speed. Risk is greatest at dawn and dusk.

33. Cyclists and mopeds riders on the carriageway

34. Ski-track crossing.

35. Pedestrian crossing.

36. Children
    Children see and are seen with difficulty. They are unpredictable and may change their minds suddenly.

37. Dangerous side winds from right.
    Side winds from right and left are most common. Be especially cautious when driving large vehicle or towing caravan.

38. Dangerous side winds from left.

39. Two-way traffic
    Be prepared for oncoming vehicles. One-way carriageway becomes two-way.

40. Tunnel
    No stopping.

41. Other danger.
    A supplementary plate states nature of hazard.
Prohibitory signs
Prohibitions apply from the point where the sign is erected. Prohibitions and orders apply, with a few exceptions, to the next road junction unless otherwise indicated by the sign's content or the circumstances at the site.

1. No vehicles
Applies to all vehicles in both directions. Often limited by supplementary plates.

2. No entry for vehicular traffic.
The sign may be curved in shape to make it easily recognisable from the rear.

3. No motor vehicles
Moped class II may be ridden here.

4. No motor vehicles
Two-wheeled motorbikes and mopeds may be ridden.

5. No motor vehicles with coupled trailers
Does not apply to semi-trailers or single-axle trailers.

6. No goods vehicles
If the prohibition applies only to goods vehicles whose total weight exceeds a certain tonnage, this information will be given on a supplementary plate.

7. No tractors or motorised equipment
Exceptions stated on supplementary plate.

8. No off-road motor vehicles or off-road trailers
A supplementary plate will state if the prohibition does not apply to heavy off-road motor vehicles.

9. No bicycles or mopeds
Bicycles and mopeds may be wheeled.

10. No horse-drawn vehicles

11. No horse-drawn vehicles

12. No horse-drawing

13. No riding

14. No riding

15. No riding

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275. No riding
Mandatory signs

Mandatory signs indicating that a particular kind of traffic is mandatory also mean that any other kind of traffic is prohibited unless stated otherwise. This means that sign 114, for example, signifies two things:

1. All cyclists and riders of class II mopeds must ride here and nowhere else.
2. No other vehicle may be driven here.

Mandatory direction of travel, signs 101-108

101. Right
102. Left
103. Straight ahead
104. Turn right ahead
105. Turn left ahead
106. Straight ahead or turn right
107. Straight ahead or turn left
108. Turn right or left

Mandatory carriageway, signs 109-120

109. Keep right
The signs must be passed only on the side shown by the arrow.
110. Keep left
111. Vehicles may pass either side of sign.
112. Roundabout
113. Mandatory footpath
Applies to mopeds class II
114. Mandatory cycle and moped track
Applies to mopeds class II
115. Mandatory shared pedestrian, cycle and moped track
Applies to mopeds class II
116. Mandatory separated footpath and cycle and moped track
Applies to mopeds class II
117. Mandatory bridle path
Also pedestrians.
118. Mandatory route for off-road motor vehicles and off-road trailers
Vehicles drive on right on off-road routes. Right-hand rule applies. Duty to give way to pedestrians and skiers.
119. Traffic lane for public transport vehicles etc
Lane may be used by public transport vehicles, mopeds and cycles. The sign also means that vehicles prohibited from travelling on the lane must not stop or be parked there either. The prohibition on parking also applies to vehicles permitted to travel on the lane.
120. End of traffic lane for public transport

Information signs

Information signs are divided into advisory signs and direction signs.

131. Motorway
132. Motorway ends
133. Clearway
134. Clearway ends

A motorway has two carriageways, one in each direction. A clearway as a rule has only one carriageway with traffic in both directions. The roads are built with flyover junctions and are intended for higher speeds than those on ordinary roads. When the motorway ends you must be ready to encounter oncoming traffic.

135. Major road
Traffic on the minor roads at junctions must give way to all traffic on the major road. The sign must be repeated after every junction.
136. Major road ends
137. Low-speed road
The sign indicates that speed-reducing measures have been introduced making it unsuitable to drive faster than 30 kph.
138. Low-speed road ends

139. Access road
140. Access road ends
141. Pedestrian zone
142. Pedestrian zone ends

143. No through route
144. Pedestrian crossing
You have special duties towards pedestrians
145. Priority over oncoming vehicles

146. One-way traffic
Sign stands parallel with lane and indicates permitted direction to driver.

147. Built-up area
Speed limit 50 kph unless otherwise indicated by traffic sign
148. Built-up area ends
50 kph speed limit ends

149. Parking
Parking not exceeding 24 hours permitted on weekdays except on day before Sunday and holidays.

150. Beginning of area with parking always permitted up to 15 minutes.

151. End of area with parking permitted for a set period.
152. Taxi rank
Sign indicates end of taxi rank zone
153. Passing place
Sign marks broadening of roadway to enable vehicles to pass each other on narrow road
Not all roads lead to Rome

Not all roads lead to Rome and, in order for you to find your way easily, not all direction signs look the same either. Direction signs do not merely help you find the right way. Sometimes they tell you things about the sort of road or destination that lies ahead of you.

The ordinary geographical direction sign on public roads and streets.

This direction sign shows that you are approaching a motorway or clearway (the symbol for a motorway or clearway only appears on the last direction sign prior to the entry junction).

If you are travelling by cycle, moped or tractor you are not allowed to use the green-signposted roads. And you absolutely must not walk or hitch-hike there. But the good news is that you can always find a “blue” road to the same destination.

To help you to find local destinations such as the suburbs of towns, some major built-up areas have black-and-white signs with text in capital letters. If you are travelling through you should follow the blue direction signs in the usual way.

There are also black-and-white direction signs for local establishments and services such as tourist offices, police, railway station etc. These have their text in small letters.

This sign shows the way to a destination on a private road. This type of road does not usually function as a through route.

This direction sign is used at traffic diversions caused by roadworks, for example. In other words it means that the normal route is not accessible.
Supplementary plates
Supplementary plates can be set up below a traffic sign to clarify a warning or item of information or to explain or limit a prohibition.

200 - 800 m
200 - 800 m
201. Indicates how far after the sign the road section begins, and its length

0 - 1,2 km
0 - 1,2 km
202. Length of road section, beginning at the sign

100 m
100 m
203. Distance to

200 m
200 m
204. Distance to

8 - 17
8 - 17
205. Times of day
Black or white figures without brackets indicate that regulation applies to weekdays except days before Sunday and holidays between the times specified. Black or white figures within brackets indicate that regulation applies to weekdays before Sunday and holidays between the times specified. Red figures indicate that regulation applies to Sundays and holidays between the times specified.

3,5 m
3,5 m
206. Maximum width

8 - 18
8 - 18
207. Total weight
Applies to vehicles whose total weight exceeds the stated figure

208. Times of day

209. No parking between times specified

210 and 211. Applies on both sides of sign

12 L
12 L
212. Symbol plate for particular type of vehicle or road user

12 L
12 L
213. Symbol plate for particular types of vehicle or road user

30 min
30 min
214. Duration of parking permitted

30 min
30 min
215. Symbol plate for particular type of vehicle or road user

216. Symbol plate for particular types of vehicle or road user

217. Indicates direction.
Same ground colour as traffic sign.

218. Indicate directions.

219. Indicate directions.

220 and 221. Ends

222 and 223. Applies on both sides of sign

224. Ends

225. Indicates direction.

226. Vehicle parking spaces

227. Symbol plate for particular type of vehicle or road user

228. Symbol plate for particular types of vehicle or road user

229. Duration of parking permitted

230. Soft shoulder or high road edge

231. Timber traffic crossing

232. Danger! High voltage!

233. Indicates direction.

234. Impaired vision
Visually handicapped often have white stick only. Guide dog may have white harness.

235. Impaired hearing

236. Continuation of major road at junction
Vehicles on adjoining roads have duty to give way or stop

237. Roadworks end

238. Two-way traffic on cycle and moped track

239. All-roads stop
Sign is used along with "Stop" sign if all roads at a junction have duty to stop.

240. Limited access

241. Chevron indicating change of direction (at curves, junctions etc)

242. Road works marker

243. Marker for fixed obstructions at side of carriageway

244. Traffic divider where exit road diverges from main carriageway

245. Change of lane

246. Change of lane

247. Change of lane

248. Route information sign

249. Change of direction

250. Direction of travel.

251. Reaction point

252. Check point.
Drive in for checking. If vehicle symbol is displayed, checking only applies to drivers of vehicles whose symbol is displayed.

253. Indicate reaction point.

254. Indicate check point.

255. Indicate check point.

256. Indicate check point.

Recommended speed

50
50
257. Recommended maximum speed

258. Recommended maximum speed ends

Tourist information

259. Tourist route

260. World heritage site

261. Tourist area

262. Landmark
318. Edge line
is usually broken. You may cross a broken edge line when you e.g. facilitate overtaking.

Orange road marking
Orange road markings are often used where lanes are rearranged during road works. These markings override other markings.

319. Stop line
indicates where you must stop in accordance with a traffic sign or traffic light.

305. Solid line
You may cross the line only if there is a broken line between you and the solid line.

306. Warning line and solid line
signifies advance warning of solid line or special hazard. Traffic in the red arrow's direction must never encroach with any wheel to the left of the solid line. Traffic in the yellow arrow's direction, if overtaking, must complete the manoeuvre as quickly as possible and return to the right-hand half of the carriageway. This is because there will soon be a solid.

308-309. Centre line and solid line
indicates that view ahead is limited. Traffic in the red arrow's direction must not encroach with any wheel to left of solid line. Traffic in yellow arrow's direction may cross the solid line if appropriate in other respects.

307. Warning line
replaces centre line and solid line on roads narrower than 7 metres. Warning lines may also be found on wider roads in built-up areas. Warning lines may also give advance warning of a solid line or special hazard. Warning lines are 9 metres long. The distance between the lines is 9 metres.

310. Warning line and centre line
You may cross the lines if you have sufficient view and can make the manoeuvre without danger.

311. Warning line and solid line
signifies advance warning of solid line or special hazard. Traffic in the red arrow's direction must never encroach with any wheel to the left of the solid line. Traffic in the yellow arrow's direction, if overtaking, must complete the manoeuvre as quickly as possible and return to the right-hand half of the carriageway. This is because there will soon be a solid.

320. Give way line
supplements Give Way traffic sign.

304. Solid edge line
is used where driving on the verge is deemed to be inappropriate.

301. Centre line
consists of a broken line. On country roads the length of line is 3 metres. The distance between the lines is 9 metres.

302. Centre line in built-up area
In a built-up area, the distance between the lines may be shorter.

303. Centre line in built-up area
consists of a broken line. On country roads the length of line is 3 metres. The distance between the lines is 9 metres.

307. Warning line
replaces centre line and solid line on roads narrower than 7 metres. Warning lines may also be found on wider roads in built-up areas. Warning lines may also give advance warning of a solid line or special hazard. Warning lines are 9 metres long. The distance between the lines is 9 metres.

312. Double solid line
normally occurs on carriageways with two lanes in each direction. Double solid lines may also be found on a carriageway with one lane in each direction where prohibition is necessary. You must not drive on the left of a double solid line with any wheel.

313. Lane lines
The broken lane lines divide the carriageway into two or more lanes going in the same direction. In built-up areas the distance separating the broken lines may be less.
315. Guideline markings indicate how turning traffic must drive through the crossing.

316. Cycle crossing indicated by road markings and traffic signs.

317. Cycle lane line separates cycle lane from other lanes. Where cycle lanes exist, cyclists and moped riders have a duty to follow the markings.

318. Instruction for change of lane also serves as a warning, irrespective of whether you are changing lanes yourself, to be prepared for someone entering the lane in front of you.

Solid barrier line is used in order to separate cycle lane from other lanes. A vehicle positioned to the left of the lane must not encroach on it with any wheel.

321-327. Lane arrows If lane is demarcated by solid lines you must follow the direction(s) indicated by the arrow. Otherwise the arrow indicates a suitable route which you ought to follow.

326. Route for cyclists and moped riders Painted symbols on carriageway may prepare and amplify other instructions.

328. Prohibited zone Entry to the zone prohibited! If there is a broken boundary line, however, the zone may be entered with special caution.

330. Text is used to amplify instructions.

331. Parking places are marked by broken or solid lines. You must have the wheels of the car at least within the markings.

332. Solid yellow line means stopping prohibited.

333. Broken yellow line indicates no parking or else shows extent of a bus stop.

334. Zigzag yellow lines may be used together with line 332 and 333.

335. Route for cyclists and moped riders Painted symbols on carriageway may prepare and amplify other instructions.

336. Advance warning of duty to give way

337. Disabled symbol reserved parking place. Permit required.

314. Pedestrian crossing indicated by road markings and traffic signs or traffic lights.

329. Prohibited zone Entry to the zone prohibited!

332. Solid yellow line means stopping prohibited.

334. Zigzag yellow lines may be used together with line 332 and 333.

335. Route for cyclists and moped riders Painted symbols on carriageway may prepare and amplify other instructions.

336. Advance warning of duty to give way

337. Disabled symbol reserved parking place. Permit required.

317. Cycle lane line separates cycle lane from other lanes. Where cycle lanes exist, cyclists and moped riders have a duty to follow the markings.

Solid barrier line is used in order to separate cycle lane from other lanes. A vehicle positioned to the left of the lane must not encroach on it with any wheel.

321-327. Lane arrows If lane is demarcated by solid lines you must follow the direction(s) indicated by the arrow. Otherwise the arrow indicates a suitable route which you ought to follow.

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333. Broken yellow line indicates no parking or else shows extent of a bus stop.

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335. Route for cyclists and moped riders Painted symbols on carriageway may prepare and amplify other instructions.

336. Advance warning of duty to give way

337. Disabled symbol reserved parking place. Permit required.
Definitions

Road
Acceleration lane
A traffic lane intended for joining vehicles only

Cycle track
Road or part of a road intended for cycle traffic and mopeds class II traffic.

Cycle lane
A special traffic lane designated by road marking for use by cyclists and mopeds class II riders.

Cycle crossing
Part of a road intended for use by cyclists or mopeds class II riders to cross a carriageway or cycle track and which is designated by a road marking. A cycle crossing is controlled if regulated by traffic signals or a police officer, otherwise it is uncontrolled.

Footpath
Path or track intended for pedestrians.

Access road/Pedestrian zone/Major road
Road or section of road designated under local traffic regulations as access road/pedestrian zone/major road and which is marked by traffic signs as an access road/pedestrian zone/major road.

Carriageway/Roadway
Part of a road intended for vehicular traffic, but not a cycle track, verge or shoulder.

Traffic lane
A longitudinal section of a carriageway which is indicated by road marking or, in the absence of road marking, is sufficiently wide for four-wheeled vehicles in single file.

Motorway/Clearway
Road or sector of road designated under local traffic regulations as a motorway/clearway and indicated accordingly by traffic signs.

Parking
To place and/or leave a vehicle stationary, with or without a driver, for reasons other than 1. as caused by the state of traffic 2. to avoid danger 3. to allow passengers to board or alight, or to load or unload goods.

Level crossing
Crossing on same level of road and railway or tramway laid on a special roadbed.

Refuge/Traffic island
A raised place for pedestrians or a traffic sign on the carriageway.

Deceleration lane
A traffic lane intended for exiting vehicles only.

Barrier line
Solid longitudinal line not to be regarded as an edge line.

Prohibited zone
An area of road marked by diagonal or angled parallel lines. Bordered by solid or broken line.

Off-road terrain
Area which is not a road.

Road
1. Road, street, square and other thoroughfare or place generally frequented by traffic with motor vehicles.
2. Track or path provided for cyclists.
3. Footpath or bridle path adjacent to a road as defined in 1 or 2.

Road user
A person (with or without vehicle) frequenting the road.

Pedestrian crossing
Part of a road intended for use by pedestrians to cross a carriageway or cycle track and indicated by a road marking or traffic sign. A pedestrian crossing is controlled if regulated by traffic lights or a police officer; otherwise it is uncontrolled.

Vehicles
Vehicle
A conveyance on wheels, caterpillar tracks, runners or the like devised for travel on the ground and not running on rails. These vehicles are divided into motor-powered vehicles, towed vehicles, off-road trailers, towed machinery, sidecars, cycles, horse-drawn vehicles, and other vehicles.

Motor vehicle
Motor-powered vehicle with one or more coupled vehicles.

Motor-powered vehicle
Vehicle which is equipped for propulsion by a motor, but not an aircraft or an electified wheeled vehicle which would be classed as a cycle. Motor-powered vehicles are divided into motor vehicles, tractors, motorised equipment and off-road motor vehicles.

Motor vehicle
Motor vehicle which is not an off-road motor vehicle and which is equipped 1. mainly to be used independently for transporting people or goods 2. for purposes other than those given under 1 if the vehicle is not to be regarded as a tractor as or motorised equipment. Motor vehicles are divided into motorcar category vehicles, motorcycles and mopeds.

Motorised equipment
Motor-powered vehicles equipped mainly as working devices or for short transportation of goods. Motorised equipment is divided into motorised equipment classes I and II.

Motorised equipment class I
Motorised equipment which is designed for a maximum speed exceeding 30 km/h.

Motorised equipment class II
Motorised equipment which is designed for a maximum speed not exceeding 30 km/h.

Motorcar category vehicle
Motor vehicle fitted with three or four wheels, or with runners or caterpillar tracks, and which is not to be regarded as a motorcycle or moped. Motorcar category vehicles are divided into private cars, goods vehicles and buses.

Private car
A car which is fitted out mainly for transporting people, to a maximum of eight passengers plus driver.

Bus
A motorcar category vehicle fitted out mainly for transporting people and with seats for more than eight passengers plus driver.

Goods vehicle
1. A motorcar category vehicle fitted out mainly for transporting goods and/or livestock
2. Any other motorcar category vehicle not to be regarded as a private car or bus.

Goods vehicles are divided into light and heavy categories.

Light goods vehicle
A goods vehicle of total weight not exceeding 3.5 tons.

Heavy goods vehicle
A goods vehicle of a total weight exceeding 3.5 tons.

Motorcycle
1. A motor vehicle on two wheels or three symmetrically-placed wheels designed for a speed in excess of 45 kph, or, if powered by an internal combustion engine, with a cubic capacity of in excess of 50 cm³.
2. A motor vehicle on four wheels and with a mass excluding load of maximum 400 kg or 550 kg in the case of a transport vehicle and whose maximum net engine output does not exceed 15 kW, but not a moped.

In calculating the mass of a motorcycle, the batteries of an electric-powered vehicle shall not be included.

Motorcycles are divided into light and heavy motorcycles.

Light motorcycle
Motorcycles whose engines have a maximum cubic capacity of 125 cm³ and a maximum output of 11 kW.

Heavy motorcycle
Motorcycles whose engines have a cubic capacity exceeding 125 cm³ and an output exceeding 11 kW.

Moped
Motor vehicles which are designed for a speed not exceeding 45 kph and which have: 1. two or three wheels and, if powered by an internal combustion engine, have a cubic capacity of not more than 50 cm³. 2. four wheels and a mass excluding load of less than 35 kg and a. if powered by an internal combustion engine, have a cubic capacity of not more than 50 cm³, or b. if fitted with some other type of engine, the latter has a maximum net output of not more than 4 kW.

In calculating the mass of a moped, the batteries of an electric-powered vehicle shall not be included.

Mopeds are divided into classes I and II.

Moped class I
Mopeds not categorised in class II.

Moped class II
Mopeds with pedals designed for a maximum speed of 25 kph and which have an engine whose output does not exceed 1 kW.

Towed vehicles
Vehicles which are equipped for coupling to a motorcar category vehicle, motorcycle, moped class I, tractor or motorised equipment and intended for the transport of passengers or goods or to carry equipment for power ing these vehicles. Towed vehicles are divided into trailers and towed sledges.

Light towed vehicles
1. Towed vehicles of a total weight not exceeding 750 kg.
2. Towed vehicles of a total weight exceeding 750 kg on condition that it does not exceed the towing vehicle's kerb weight and that the combined total weight of the towing and towed vehicle does not exceed 3.5 tons.

Heavy towed vehicle
Other towed vehicle than a light towed vehicle.

Trailer
A towed vehicle on wheels or caterpillar tracks.

Semitrailers
Trailer fitted with a pin and turntable or similar mechanism for coupling to a motorcar category vehicle, tractor or motorised equipment and which is secured in such a way that the chassis or body rests directly on the towing vehicle.

Cart
Trailer with unarticulated towbar in which the static vertical load transferred to the towing vehicle does not exceed 10 % of the total weight of the trailer or 1000 kg.

Dolly
Cart intended to act as steering axle for a semitrailer and which is fitted with a semitrailer coupling device (turntable)

Towed machinery
Vehicle, not being a towed vehicle or off-road trailer, coupled on behind a motorcar category vehicle, tractor, motorised equipment or off-road motor vehicle.

Sidecar
Vehicle equipped for coupling alongside a two-wheeled motorbike or cycle. A coupled-on sidecar is not regarded as a separate vehicle, however.

Tractor
Motor-powered vehicle with at least two wheel-axes which is equipped mainly for towing other vehicles or work machinery and which is designed for a maximum speed of 40 kph and which can be adapted for higher speeds only with difficulty. A tractor may be equipped for carrying goods or passengers.

Tractor train
Tractor with one or more trailers coupled on.

Off-road vehicle
Off-road motor vehicle and off-road trailer.

Off-road motor vehicle
Motor-powered vehicle fitted out mainly for independent use on off-road carriage of passengers and goods. Off-road motor vehicles are divided into heavy off-road motor vehicles and off-road scooters.

Heavy off-road motor vehicle
Heavy off-road motor vehicle with a kerb weight exceeding 400 kg. Heavy off-road motor vehicles are divided into lightweight heavy off-road motor vehicles and off-road motorcycles.

Lightweight heavy off-road motor vehicle
Heavy off-road motor vehicle with a kerb weight not exceeding 2000 kg.
LAGTEXT
Utdrag ur körkortslagen (KKL)

2 kap
Förarbehörighet

Krog på körkort
1 § Personbil, lastbil, buss, motocykeln, terrängvagn och motorredskap klass I får köras endast av den som har ett gällande körkort för fordonet. Har släpfordon kopplats till en bil skall föraren ha körkortbehörighet även för släpfordonet.

2 § Traktor med gummihjul och motorredskap klass II får köras på väg endast av den som har ett gällande körkort eller traktorkort, om inte körningen på väg avser en korrekt sträcka för färd till eller från en arbetssätt eller mellan en gårdsläger för eller för liknande ändamål.

3 § Terrängskoter får köras endast av den som har förarbevis för terrängskoter.

4 § Moped klass I får köras endast av den som har körkort, traktorkort eller förarbevis för moped klass I. Moped klass II får köras endast av den som har fyllt 15 år.


6 § Terrängskoter och moped klass II får köras endast av den som har ett gällande körkort eller försiktighet.


8 § Förarbevis för terrängskoter med körkort och försiktighet föreställer att föraren har försiktighet.

9 § Förarbevis för terrängskoter med körkort och försiktighet föreställer att föraren har försiktighet.

10 § Förarbevis för moped klass II föreställer att föraren har försiktighet.

11 § Förarbevis för moped klass II föreställer att föraren har försiktighet.

12 § Förarbevis för moped klass II föreställer att föraren har försiktighet.

13 § Förarbevis för moped klass II föreställer att föraren har försiktighet.

14 § Förarbevis för moped klass II föreställer att föraren har försiktighet.

15 § Förarbevis för moped klass II föreställer att föraren har försiktighet.

16 § Förarbevis för moped klass II föreställer att föraren har försiktighet.

17 § Förarbevis för moped klass II föreställer att föraren har försiktighet.

18 § Förarbevis för moped klass II föreställer att föraren har försiktighet.

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34 § Förarbevis för moped klass II föreställer att föraren har försiktighet.

35 § Förarbevis för moped klass II föreställer att föraren har försiktighet.