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Safety on the motorway



Safe driving on the highway.



General information and advice

Driving on the highway/motorway is particular compared to urban driving because it is very monotonous: there are no intersections for kilometres, it is always straight, the rear-view mirror is used more often and there are few situations where you have to pay great attention. This repetitive situation can distract you and cause sleepiness, the cause of many tragedies. Sleepiness does not come suddenly, it is gradual: your control and reactions start to reduce...**SO YOU MUST STOP.**

A few minutes are sufficient: take a coffee, a brief walk, have a funny conversation, refresh your face while you have a 15 minute break, can all be regenerating. The most critical hours for this reaction are from 2a.m. to 4a.m. and from 2 p.m. to 4p.m.

Driving around urban streets often present subjects and situations that need continuous attention, and vigilance, while the constant and uniform driving on the highway/motorway induces the reduction of concentration because there are no intersections, pedestrians, cyclists, etc...but only drivers that travel up or down the tarmac in a single direction.

It must be specified that circulation is forbidden on highways/motorways for: pedestrians, cycles, mopeds, motorcycles under 150 ccs and motorcycles with side cars under 250 ccs; other motor-vehicles with empty loads up to 400 kg or with loads up to 1.300 kg; vehicles without tyres and agricultural machines

It's forbidden to reverse the sense of direction or cross the divider on the roadways, ramps or releases, reverse and circulate on the emergency lane (one may use the emergency lane to go out of the motorway only when traffic blocks at 500 m from the exit). Racing and hitch-hiking it is forbidden and it's necessary to pay a toll. Although the motorway/ highway is the safer type of road, unfortunately it can be the place for serious accidents.

To drive with safety your eyesight and hearing must always be alert, with an overall view inside and outside the vehicle too.

Quick reflexes permit safe driving.

The most frequent accident are usually frontal/side collisions, followed by going out of the road. The principal causes of road accidents depends on the driver's behaviour: carelessness, going against the rules, excessive speed and alcohol or drug intake.

It should be remembered that during one's digestion a sense of numbness can occur reducing ones alertness, heavy meals reduce the driver's capabilities because during digestion there is a major draw of blood from the alimentary apparatus that is removed from the muscles and brain. Other factors like age and health conditions, can reduce one's driving performance.

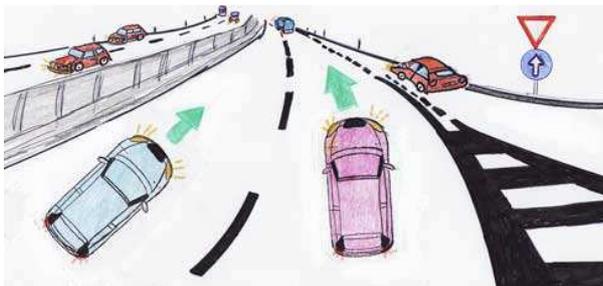
With tiredness exterior factors like traffic, stress, general transport comfort can affect one's driving. It's advisable to take a rest every 2 hours.

Driving with safety means: drive comfortably and in a good position, adjust mirrors and head-rest, ready to react in all situations. It's necessary to keep everything under control by having an overall view.

Tyres must be in good condition and remember that lights are not there just to help you see but also for others to notice you. It's advisable to adopt a defensive or anticipated type of driving, because it implies that one has mastered the rules of the road and the basic mechanisms of safety driving, besides it has the object to reduce the number of accidents anticipating dangerous situations, preventing unfavourable situations and other drivers mistakes.

Entrance

When entering the highway, you must give priority to other vehicles circulating. Vehicles that are already circulating on the highway always have priority over those getting onto the motorway.



Get into the first lane without forcing other vehicles already circulating to brake or move to the next lane: take advantage of the accelerating lane to reach a suitable speed without hindering circulation. When in the accelerating lane, don't go too close to the car in front.

It's also necessary to observe, as soon as possible, the traffic on highway, by using your rear or side mirrors.

It's necessary to look over your left shoulder (a backwards safety look to avoid possible vehicle in the dead corner) and keep the steering wheel straight.

Besides this, use the indicator, only when you are next to the vehicle which you must go behind. Don't stop at the end of the accelerating lane: if necessary, continue in the emergency lane until you are able to drive into the right lane.

Near motorway entrances accidents often occur, due to sudden changes of lane or insufficient safety distances. Every lane change must be indicated.

Exit

If you are about to get out of the highway you shouldn't overtake.

Observe the road signs: 1000 m. before the exit and 500 meters before leaving the highway in order to get into the right lane.

Around 200 meters before the exit use the indicator to let the other drivers know your intentions. Slow down only when you are in the other lane.

Accidents are frequent on the exit ramps due to skidding.

It's wise to maintain a safety distance of at least two seconds: higher the speed and more the space of distance. To draw too near the vehicle in front is among the principal causes of accident on the highway, above all when traffic is intense and near the links.

Safety Distance.



The safety distance is the minimum distance that must be kept by the vehicle in front to avoid collision.

It must be at least equal to the space crossed, during the **time of reaction** (the time necessary for the brain to record the danger and activate the limbs for braking action), that is equal to A SECOND for a normal person, precisely 7/10".

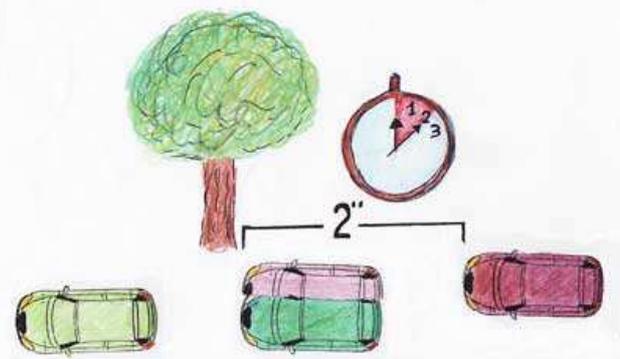
Remember that a normal driver needs ONE SECOND to react to any **emergency situation**.

The Time of reaction (TR) depends on the psychophysical condition and from the type of manoeuvre.

The rule of **two seconds** is the minimum distance to avoid collisions.

The safety distance must be increased to FIVE seconds in fog, rain and other particular conditions such as dusk and dazzling sun.

At the speed of 100 Km/h around 27,5 meters are made before one starts braking.



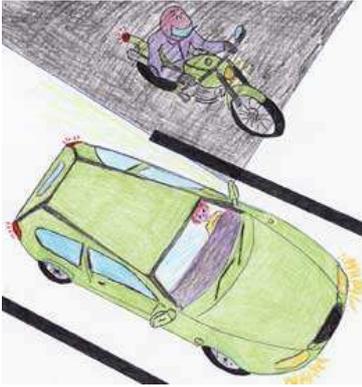
The space of braking varies due to the road surface, the condition of the tyres, and the efficiency and type of braking system.

A suitable safety distance allows a relaxed drive and less use of the brakes: this increases safety and improves the flow of road circulation. If the road surface is wet it's necessary to increase the safety distance in comparison to when driving in optimal conditions.

Increase the safety distance when driving behind wide long vehicles and to maintain greater visibility. The safety distance must be adjusted to the car condition (tyres suspensions, weight, brakes, etc...), to the road conditions (road surface, visibility, weather, etc...) and to the human factor because every driver is different from others for various reasons: experience, age, eyesight, tiredness, etc... Remember always to observe the traffic at a distance, not only the vehicle in front of you.

Overtaking

Before overtaking you must make sure, by using the rear mirrors, that there aren't any vehicles arriving in the overtaking lane and watch out for the DEAD ANGLE.



In cases of intense traffic the speed difference between the different lanes is minimum.

Before overtaking you must not be too near the vehicle in front of you.

Before beginning the manoeuvre, look at the overtaking lane in the rear mirror to make sure that there aren't any vehicles in the **DEAD ANGLE**: if not this can cause serious accidents.

Often changing lanes can hamper the fluidity of the circulation, cause useless manoeuvres, great stress among the drivers and increase the risk of accidents.

As a principle, the left lane must only be used for overtaking. It is forbidden to zig-zag. If you aren't hindering other vehicles, indicate and move into the left lane.

Avoid aggressive driving, that is:

- don't proceed at a high speed,
- don't stay "attached" to the vehicle in front of you because if it has to brake you will cause an accident,
- if someone is "attached" to your car, give way and allow him to go,
- the horn can irritate people, use it only for emergencies and if you have to signal anything use your high lights.

Do not get yourself in the visual dead angle of cars (or trucks) that are in front of you. Symbolically it's found between the hours 7-8 and hours 4-5 taking the other cars as a reference as centre of the hands.

You must always be careful of possible unexpected lane changes from other vehicles. When you can see the bonnet of the vehicle that you are overtaking in your rear mirror (the light of the headlights, in the dark), put your indicator out and re-enter in the right lane.

Speed

For peoples safety road circulation on highways/motorways cannot be more than 130 Km/h; in case of rain or snow or when the road is wet, the limit is 110 Km/h.

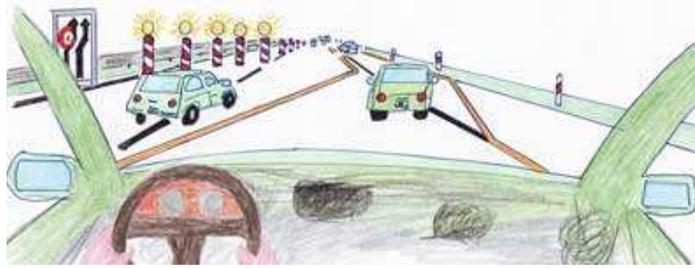
The corporate body owner of a three laned highway/motorway with an emergency lane can raise the limit of speed to 150 Km/h.

Buses must stay in the limit of speed of 100 Km/h, while 3,5 ton trucks cannot go over 80 Km/h. Even when driving on a highway/motorway it is necessary to be able to stop before an obstacle, therefore you can travel at the maximum speed allowed, only if you can brake within the visible space.

You must remember that when traffic is intense, it increases the danger of unexpected situations and behaviour.

Remember that: on a wet road surface the braking space increases about 1/3, on snow about 3-4 times, on ice up to 8-10 times. Water plaining can also be a danger when it rains for vehicles travelling at a speed inferior to 80 Km/h.

Water plaining causes the vehicle to be lifted onto a layer of water that covers the roads surface, in front of the tyre a "wedge" of water is gradually formed that the outrider doesn't eliminate to the sides, up to when the wheel **loses adherence**. The result of water plaining is dangerous skidding, which often causes accidents. When it rains avoid abrupt accelerations, decelerations and sudden swerves; watch out for puddles because it's impossible to know the depth and increase the safety distance by 20%-80% because it takes longer to brake and it's more difficult to control the vehicle. Besides in case of rain visibility is reduced and splashes of water from other vehicles (especially from trucks) can form a wall of water. To prevent water plaining tyres must be in good condition both in the outrider, the pressure and to reduce speed. The depth of the furrows must be than at least 1,6mm, but experts advise tyre replacement when the profile reaches 3-4 mm.



Road works

When approaching road works on highways/motorways, which are signed in advance, it's necessary to reduce speed. Occasionally the use of some lanes can be limited for vehicles of certain dimensions. (O.K.)

Sudden changes of direction can occur, especially in road works where it is compulsory to cross a one-way line.

Besides the passages in the yards are more tightened of the usual one: attention to the dead angle if passage must be changed.

It's essential to observe well the colored demarcations on the roadway.

The itinerary is pointed out with the relative system of signs, besides it's necessary to observe the delimitations and, for a great fluidity and safety of the traffic, the limits of speed must be respected. It needs to avoid changes of passage and passing, and circulate "alternate", that is to avoid the parallel circulation of two vehicles one close to the other.

Reduction of lanes.



The elimination of a passage (for instance: in proximity of a yard) it's signalled in advance (m. 500 – m. 1000). To change passage, after the signal you must look a space that allows to move. Remember that if the obstacle is found in the passage of right, the vehicles on the left have the precedence, while instead if the obstacle is on the left passage, they have the precedence the vehicles that circulate to the right.

The reduction of the number of passages with a special system of bright signals, is signalled at times for the number of passages with a special system of bright signals, is signalled at time for the temporary closing of the passages.

Green arrow turns downward in vertical way it means that it is permitted circular on that passage.

Arrow downward yellow flashing revolt in oblique way means that it needs to abandon the passage as soon as possible in the direction pointed out by the arrow.

Draws red cross (X) it means that it is forbidden to continue on that passage and it must be abandoned. It can happen that the passage is jammed from a red (X) cross in your direction of march and open to the vehicles that circulate in opposite direction of march.

Column.

In case of intense traffic and sudden tails, it needs to brake in suitable way avoiding of “to nail” and to immediately turn on the intermittent lights of warning (4 arrows) to tell some danger the vehicles that follow.

In case of block you must always tell the vehicles that follow.

The defensive guide allows to avoid you brake. When you realize that the vehicles before are slowing down or arresting, it's necessary to tell the vehicles to back inserting the flashing (3 arrows) lights of warning, that you/they must be extinguished as soon as the car that follows has closed the line.

All the columns circulate to the height of the obstacle and in case of tabulated intense traffic, it needs circular on all the free passages up to the height of the obstacle for then to mix to the other vehicles, with “zipper effect” and, naturally, in case of intense traffic the columns can parallel stir. To prevent the blocks you can be adopted some shrewdness: don't travel in highway if there are anticipated columns, use a defensive (because it avoids abrupt brake) guide, maintain a suitable safety distance, avoid useless variations of the speed and to accelerate just overcome the obstacle that has caused the block.

Accident.

In case of accident the better thing to do is to bring the vehicle, on the passage of emergency, it will be necessary to insert the flashing (4 arrows) lights of warning and to watch out for the traffic when he goes down from the vehicle.

You must go to a safety place and make the point of the situation, making sure the place of the accident; then it's necessary to walk along the passage of emergency or out of the roadway in opposite sense to the traffic and to position the safety triangle to at least m.100 from the place of the accident.



The wounded, can be moved, and they must be brought out of the danger zone, but it is important to tell the police and to lend help waiting in a sure place, better not returning on the roadway. It's advisable to use the mullion of help S.O.S. rather than the mobile, because it allows to place and to position with precision the place of the accident.

The left one with a wild animal (example: wild boar, roe etc...) it's to signal it to the police, while if you are a eye fitness or you come on an accident, it's necessary to stay on the passage of emergency and to lend help: there is the juridical obligation, over that the moral duty, to lend help to third in the limit of the to delay, uselessly and not to snoop: a carelessness can cause a further accident. Remember:

Road Police 113

Ambulance 118

Vigilant of the Fire 115

Breakdowns.

In case of brackdown to the vehicle it needs immediately to insert the intermittent lights of warning (4 arrows) and to move on the passage of emergency.



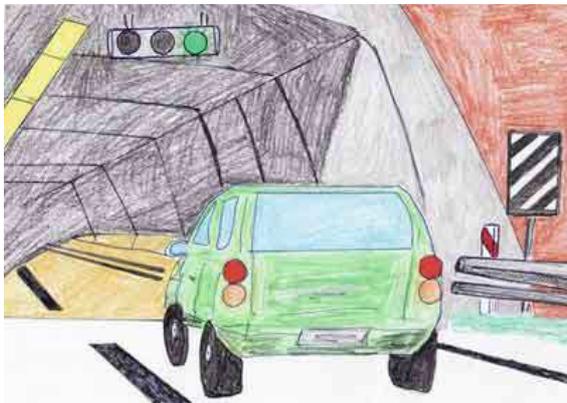
If he happened in moving the vehicle from the roadway, it is opportune to surrender it from the side not statement to the traffic; also the passengers must save out of the roadway and from the passage of emergency and prepare the triangle to a distance than at least m.100 from the vehicle.

A particular attention must be used if it's happen a brackdown on a bridge.

You don't have to cross the roadway, and it's necessary to go to the nearest mullion of help and to call pointing out the exact location, the data of the vehicle (plate, brand, model and color) and type of brackdown.

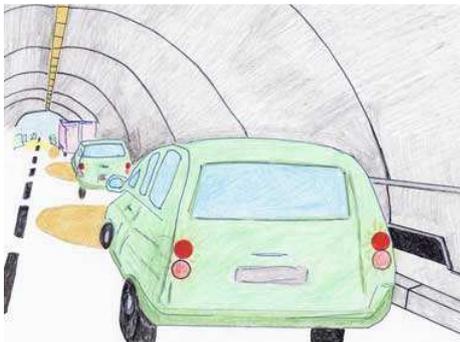
Unexpected in gallery.

It's correct to remember that to the entry and the exit of a gallery, the conditions of adherence of the tires to the road and the brightness can vary because he comes into contact with a different environment. To remember that the eye must have the time to suit for the variation of brightness, therefore to the exit of a gallery it is opportune to wear the sunglasses or to protect with the parasol to limit the effects of visual levelling. If happens an unforeseen event in gallery, it is necessary to stay calm.



Advisable in gallery to close the car's windows and to reduce the ventilation, or to insert the closed circuit. Try to maintain the fluid traffic proceeding, if conditions allows it, at the maximum speed. Don't wear the sunglasses and observe the system of signs. It's not permitted to circular on the safety line and not even to reverse the sense of march.

In column the motor must be extinguished without abandoning the vehicle.



Traffic Jam and column gallery



Fault and accident



Smoke and fire in the tunnel

In case of brackdown insert the flashing (4 arrows) lights of warning and reach the nearest platform, while if smoke escapes from the motor it is better to open the chest and

to sprinkle the motor of foam. It must be avoided to make the smoke enter the vehicle and if visibility allows it, it needs to continue with prudence toward the nearest portal.

If it increases the smoke or if it develops a fire, it's necessary to arrest the vehicle on the border of the roadway and to extinguish the motor (right border for the one who is on the passage of right, left border for the one who finds on the left passage). Quickly abandon the vehicle leaving the key in the lighting and watching out for the other vehicles; later set out toward the safety exit or the nearest portal.

Suggestions (advices)for the trip.

Also in highway you can find obstacles not illuminated or few visible (for instance: lost loads, animals, etc...). When tunnel, underpasses or woods are crossed, it can verify that the light suddenly changes and is necessary to adjust the speed to the conditions of visibility. The strong wind, especially the side one, can make the guide difficult. A loaded vehicle otherwise reacts, it has great inactivity, more sensibility to the abrupt manoeuvres, great strength centrifuge in curve: sudden and sudden changes of direction and march can cause disbandments. Before beginning a trip it is necessary to inquire on the run: listen to the forecasts;

Call center viability: (unique release to the answer) 840. 04.2121 and, during the run, the communicated radio (In Italy **Isoradio FM 103.3**).

It's better to be in good condition psicho-physics, don't drink alcoholic (neither before and even during the guide) and departing only if you are rested, having consumed light meals and making a standstill every two hours; it is advisable to inquire on possible collateral effects of medicines.

Many medicines can negatively interfere with the guide. The medicines at risk are:

- ansiolitici (tranquillizing) and sedatives, used for reducing the anxiety and to favor the sleep;
- antidepressants and antipsicotici, used for the treatment of the depression and the psychiatric illnesses;
- anticonvulsivanti, used in case of epilepsy;
- antistaminanti (antihistamine), used against the seasonal allergies and not.

It's always better to read the illustrative sheet and to ask the possible effects to the physician on the guide.

It is convenient to check the vehicle (oil, rubbers, fuel, liquid radiator and liquidate windshield wipers) and the possible baggages must be assured well and there must not be any obstacle to the view; the loads and the animals must be well fixed because in case of abrupt braked all of this that is on not well jammed it can be very dangerous, projecting yourself violently in before.

Maintain clean the windscreen during the night time march and check the state of the windshield wiper that must not leave lines.

We suggests to avoid the hours of point, better departing before or later. It has made obligation to have the belts laced and a well regulated headrest for every body. We advises you to occupy always the right free est passage.

Make and receive calls only when the vehicle is firm.

We specifies that the article 173 of the Code of the road foresees the use of the alone earphone with systems that don't ask for the use of the hands to work, as the telephones trained to the vocal calls.

An ear system and / or alive voice involves a lowering of the level of concentration and a consequent carelessness that can cause an accident.

Obligatory the lighthouses turned on in the daytime also, not only in case of rain, fog, snow and in gallery, but always.

This because the law foresees it and you are more visible from far.

The back fendinebbias (fog lamp, fog light) must be turned on only with inferior visibility to m. 50, dazzle otherwise they will dazzle the drivers that follow from back.



Drive to be able to stop with safety in the visible street portion from where you are. It's essential to pay attention to the system of signs, both horizontal and vertical, to drive in a careful and relaxed way, maintain always calm and prudence, concentration and a overview. Do never forget that it's a risk also to who possesses an expensive car with sophisticated technologies: the cars always remain pieces of iron on 4 wheels of rubber and **the first element for a safety guide ARE YOU!**

Have a good trip

Manuela Bellelli

23 November 2008

Bibliografia:

www.upi.ch www.tcs.ch

(it's not possible to ask for this document in paper form outside Switzerland)

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