

CHAPTERS ON ROAD SAFETY FOR STUDENTS FROM CLASS VI TO X

Chapter 1: Introduction & Evolution of traffic - With facts and figures

In the ancient times, there was no transportation system. With the passage of time human beings tamed animals and used them as mode of transportation. Invention of wheel marked the turning point in human civilization. Carriages that could carry three-four passengers, driven by animals, came into usage. In the sixteenth century invention of automatic mechanized vehicles helped people travel from one place to another faster. The world's first car was invented in 1769 by Nicholas Joseph Cugnot.

After that there was no turning back, vehicles of different shapes and sizes began to be developed and introduced. All this brought with them a new threat to human life i.e. roadside accident. Ways and means were introduced for safety and smoothness of traffic on roads. Several rules were introduced to make the road safe and reduce the number of accidents. Even *Manusmriti* and Kautilya's *Arthashastra* contain road rules and regulations in great detail.

The rules have been modified from time to time, keeping in view the local/topical needs and requirements. New regulations have been laid down for different categories of road users.

- As wheel got invented in the Mesopotamian Civilization, our own civilization was set to motion, for it wheeled our imaginations. In 1645 a sort of cycle was invented by Jean Theson but it had no Brakes, Peddle or Steering and needed feet motion. Laufmachine cycle was then created by Karl Von (1817). Soon this was made into the regal Dandy Horse by Dennis Johnson. In 1839 the proper cycle was shaped by K. Macmillan. It had iron wheels and a wooden frame. The manifestation of automobile horse-power was taught in 1769 by Nicolas Joseph Cugnot, who invented the first 'Steam Truck' which the French army thought was useful.
- Then after, automobiles enveloped our life and culture. But the notion called 'accident' endangered our future. The first accident of the Steam Truck in 1771 was the eye opener. During 1899 the first fatal accident took place with the death of a driver. Then onward, the world coined several road safety measures. Still, today 12 lakh people are killed and 50 millions get seriously injured all over the world every year.
- This accident menace makes our citizens an endangered species of the future. So let us follow the Road Safety Culture and be cautious about traffic rules today's informed child can only ensure a safe future.

The Firsts in the History of World Traffic

- **The First Accident:-** In 1771 the first accident involving a motor vehicle took place in Paris when Cugnot's steam tractor hit a low wall in the grounds of the Paris arsenal.

- **The First Act:** - The Locomotives and Highway Act was the first piece of British motoring legislation. This was also known as the red Flag act of 1865. The act required three persons in attendance one to steer, one to stoke and one to walk 60 yards ahead with a red flag to warn the oncoming traffic.
- **First Man to Be Challenged:** - In 1895 John Henry Knight was convicted and fined for using a motor-tricycle on the highway. He was probably the first motorist to appear in court.
- **First Fatal Car Accident:-** The first motor-car accident in Britain resulting in the death of the driver occurred in Grive Hill, Harrow-on-the Hill, London on 25th February 1899.
- **Dusty Road to Tar Surface:** - In 1902 Tar was first used on a Macadam surface to prevent dust in Monte Carlo. It was the idea of Dr. Guglieminetti, a Swiss. At first the tar was brushed on cold, but soon it was applied hot.
- **The First Number Plate of London:** - The Motor car Act of Britain came into force on 1st January 1904. It required that all cars be registered and carry a number plate, and all motorists to have a driving licence. But there was no driving test to pass and the licence was obtained by filling up a form and paying the fee at a post office. The act made dangerous driving an indictable offence.
- **The First Petrol Pump:** - The first petrol pump was installed in USA in 1906.
- **The First Traffic Light of the World:** - The World's first traffic lights were installed in Detroit, USA in 1919. The first traffic lights in Britain were installed in Wolverhampton during 1928. However, they did not come to London till 1932.
- **Pedestrian Crossing:** - The pedestrian crossing was instituted in Britain in 1934. The roads were marked by dotted lines. On the pavement there were striped Belisha beacon light poles named after Britain's Minister of transport L. Hore-Belisha. The Zebra crossing with black and white stripes was developed after the Second World War.
- **First Traffic Police Woman:** - Police woman were used for traffic control duties for the first time in Paris, in 1964. In Delhi, we introduced woman traffic police, in 1989.
- **First Box Junction:** - Box junctions, marked with yellow cross-hatching, were introduced in London during 1964. The aim was to prevent traffic blocking junctions when it could not proceed and this was successful.

Chapters 2: Need of Road Safety

Modern metropolitan living is getting more and more associated with traffic hazards. This can be attributed to complex and complicated road structures as well as increasing human and vehicular population. Enhanced life style and increase in the number of privately owned vehicles especially two-wheelers have made travelling on roads the most dangerous tasks to be undertaken. Globalisation, free market economy and free trade policies have had a direct impact on the increase of automobiles on roads, which in turn has led to vehicular congestion. Though the number of vehicles increased, the length and breadth of roads remained static. The only way left with the authorities to cope up with problem was to make improvisation on the already existing structures. Hence, construction of flyovers and other road accessories to ease vehicular movement. All such high-tech construction works involved engineering skill of a higher order and traversing on them requires driving skills of the higher order, which only a few road users have. Though this has eased congestion, chances of accidents have increased. And in maximum cases, accidents occurred because of human folly. Free flow of traffic has resulted in increase in speed of vehicles, which in turn has resulted in maximum number of accidents on flyovers because of drivers' inability or incompetence to manipulate the speed properly. Most of the drivers lack intuitive judgement and defensive driving skills, the necessary qualities that a driver must possess.

Most of the road users are unaware of road realities and are ignorant about road signs and markings. They have the least hint of things to come by the way they behave. Some such callous behaviours include improper parking, improper maintenance of vehicle which results in both air and noise pollution causing inconvenience to others, overspeeding, rash driving, crossing the road at wrong places, and many more. Any one such act on the part of any one road user may be the cause of chaos and confusion on roads. And most of the people are either blind or inconsiderate about this and do things according to their whims. In face of all this road safety education has become an essential aspect of road management. Making people aware of the road situations and giving them precautionary tips would be of great help to redeem the situation. An ideal road safety education programme should be able to

- i. inculcate a sense of road discipline in the mind of every road user
- ii. develop a willful respect for road rules
- iii. help a road user tide over any adverse situation on roads
- iv. instill in the minds of road users a sense of fellow feeling

Specific Road awareness programmes:

- Knowledge of road rules
- An understanding of why road rules are broken and broken and why doing so is dangerous.
- Enrolling students in Road Safety Patrol so that they get a feel of the road and its rules.

Correct Road Attitude Programmes:

An understanding that orderliness on roads has nothing to do with low traffic density (many nations like Japan have high density of traffic yet road rules are scrupulously followed). It is important and worthwhile to wait for your turn, on the roads. Rules have to be followed in letter and spirit. Road users have to understand the value of Live & Let Live rather than live & Let Die!

The art of time management is vital while taking to the roads. Much of the stress is due to having insufficient time to reach the intended destination, which is compounded by the confusion on the roads.

Programmes for Creating Integrated Minds and Sound Value Systems

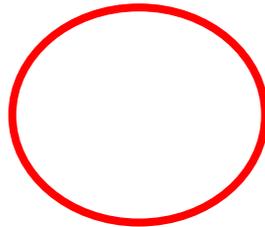
Specific programmes to develop self awareness, self confidence, collective consciousness, critical reasoning, distinguishing right from wrong, a sound value system that steers clear of superficial material values and false sense of worth must be evolved. Through curricular and co-curricular activities, efforts should be made to inculcate a strong moral and ethical base, a sense of social responsibility, a belief that individual goals are not different from social goals and deep rooted social sensitivity.

Chapter 3: Traffic signs, signals and traffic furniture & Role of traffic signals

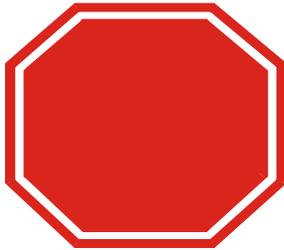
Road Signs, markings, traffic signals and other traffic devices are there to guide the road users and hence are the languages of the road. Every road user whether a pedestrian, two-wheeler rider, driver of four-wheeled vehicle should have knowledge regarding these traffic controlling devices and should be aware of what they signify. **Traffic Signs are there to regulate traffic, warn about hazards and to guide the road user**

There are three types of traffic signs - Mandatory, Cautionary, and Informatory. **Mandatory road signs** are the ones that give order regarding dos and don'ts and are to be followed strictly. These are generally circular in shape.

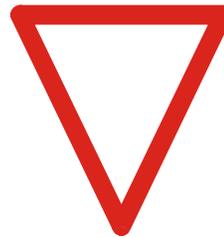
WARNING



Exceptions:-



Stop sign



Give way sign

'Stop' sign and 'Give Way' sign though of octagonal and inverse triangular shapes are two very important mandatory road signs.



No entry



One way



Vehicle Prohibited in both directions



Right turn Prohibited



Left turn Prohibited



U-turn Prohibited



Overtaking Prohibited



Horn Prohibited



Hand cart Prohibited



Cycle Prohibited



Pedestrian Prohibited



Tonga Prohibited



All motor vehicles Prohibited



Truck Prohibited



Bullock/hand cart Prohibited



Bullock cart Prohibited



Speed Limit



Load Limit



Axle Load Limit



Width Limit



Height Limit



Length Limit



Restriction ends



No Parking



No Stopping



Compulsory Turn left



Compulsory Ahead only



Compulsory Turn Right



Compulsory ahead or turn right



Compulsory ahead or turn left



Compulsory keep left



Compulsory Cycle Track



Compulsory sound horn

Cautionary road signs are the ones that warn the road user regarding the road situation ahead. Cautionary signs are generally in triangular shape.

CAUTIONING



Right hand curve



Left hand curve



Right - Hair Pin Bend - Left



Right - Reverse Bend - Left



Cross road



Gap in median



Narrow road ahead



Road widens ahead



Narrow bridge



Y-Intersection



Left

Side road



Right



Roundabout



Major road ahead



Staggered intersections



T-Intersection



Dual carriageway Ends



School



Cattle



Falling rocks



Steep descent



Steep ascent



Speed breaker



Horses



Men at work



Slippery road



Ferry



Dangerous Dip



Hump/Rough road



Barrier ahead



Loose Gravel



Cycle crossing



Pedestrian crossing



Guarded Rly Crossing



Unguarded Rly crossing

Informatory road signs are the ones that give information regarding directions, destinations, etc. Informatory signs are generally rectangular in shape.

INFORMING



Public telephone



Petrol pump



Hospital



First-aid post



Eating place



Light Refreshment



Resting place



No through road



No through Side road



Parking this side



Parking both sides



Scooter/motor cycle stand



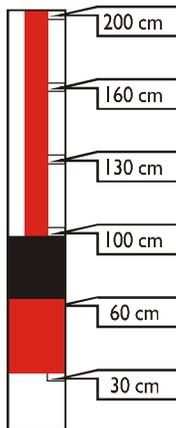
Cycle stand



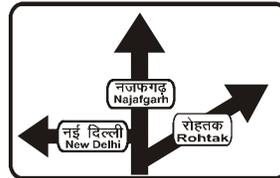
Taxi stand



Cycle rickshaw stand



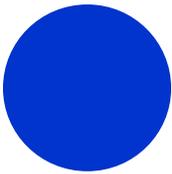
Flood gauge



Advance direction sign

↑	नजफगढ़	3
	Najafgarh	3
→	नई दिल्ली	28
	New Delhi	28
←	रोहतक	81
	Rohtak	81

Destination sign



Blue circles give a positive instruction. What is to be done



Red rings or circles give negative instructions. What should not be done

But the “No Parking” and “No Stopping” signs are exceptions to the above mentioned rules.

Location of road signs:

- Left side of the road
- On multilane road repeated on other side of the road
- On wide carriageway overhead signs are also used
- On hilly roads signs are installed on valley side
- Warning signs in urban areas are located 50 m in advance

Road Markings are there to discipline the motorists and pedestrians while on road.

These can be divided into two categories

Carriageway markings: Markings made on road

Object markings: Markings made on objects such as trees, stones, etc.

Colour of the road markings: Specific colours are used for road markings.

- **White** for all carriageway markings except for parking restrictions
- **Yellow** for parking restrictions and continuous centre or barrier line
- **Alternate Black & White** for kerb and object markings

Kerb Markings

- Painted with black and white strips or chequered black & white designs
- Guard rails, guard stones, drums, trees are marked with solid white colour
- Objects in the carriageway are marked by alternate black and white strips sloping down at 45° angle towards the side of obstruction on which traffic passes.

Night Driving Aids

- Reflectorised paint
- Use of glass beads
- Cats eye reflecting road studs

Traffic Light Signals: Light signals play a vital role in traffic regulation

- Installed at road junctions to control the movement of vehicles
- All traffic must move in conformity with these traffic lights
- Only heed the traffic light directly facing the direction in which you are moving

Necessity of Traffic Lights

- To reduce delays at junctions
- To reduce vehicular conflicts
- To reduce accidents
- To economise on police time and strength

Location of Traffic Signals – Traffic signals are installed taking into consideration

- Traffic volumes on approaching roads
- Heavy pedestrian volumes
- Accident history of the junction
- Signals may be added on a route to obtain coordination of existing signals
- It may be provided on roundabouts which experience frequent lockings

What does the three colours Red, Amber and Green signify?

RED means **STOP** – Wait behind the stop line or cross walk

- If there are no lines, stop before the traffic light at the intersection so that traffic light is clearly visible.
- Wait until a green signal appears before proceeding
- You may turn left while the signal is red, if it is not prohibited by a sign. But give importance to pedestrians and other traffic

AMBER means **CAUTION** – You may move on if the amber appears after you have already crossed the stop line or when you feel that your stopping may cause accident.

Anyhow be extra careful

GREEN means **GO** – Proceed ahead ensuring that the way is clear

- You can make a right or left turn if not prohibited by signs, but take special care and give way to pedestrians crossing the road
- **GREEN ARROW** means that you can go in the direction shown by the arrow

Flashing Signals are installed at locations where the traffic volume is comparatively low

- These are generally red and yellow lights that blink on and off to indicate/warn the road users, potentially hazardous road locations
- Typical locations – Median openings, service road openings and minor road junctions
- At intersections where traffic light signals are switched off at night, they are put into flashing modes

Flashing Red – Generally provided at level crossings, bridges, airfield, fire stations, minor roads, etc.

- It means you must come to a full stop and proceed cautiously after making a safety check on all approaching traffic

Flashing Yellow – Generally provided where major roads meet minor roads

- Slow down and proceed with caution, giving due attention to other traffic and pedestrians

Types of Signals

- **Fixed Time Signals** – Signal timings are fixed for a given time period and predetermined on the basis of traffic volumes
- **Vehicle Actuated Signals** – The green timings vary for each cycle depending upon the traffic demand at that point of time subject to some minimum and maximum timings.

Chapter 4: Road Safety Tips for Different Categories of Road Users

As pedestrian

Dos

- Walk on any side of the road if there are footpaths
- On roads without footpath walk on your extreme right side facing the oncoming traffic.
- Use Zebra Crossing, Foot Overbridge & Subways to cross the roads. Where such facilities are not available be extra cautious while crossing road.
- Children below 8 years of age should cross the road with the help of elders
- Cross the road when the vehicles are at a safe distance
- Wear light coloured dresses during night

Don'ts

- Don't cross the road hastily by running
- Don't cross the road in front of or in between parked vehicles
- Don't try to cross the road from blind corners, turnings where you are not visible to the vehicle drivers
- Don't jump over the railings to cross the road

As cyclist

Dos

- Cycle must be fitted with the standard gadgets – bell, brakes, rearview mirror, both front & back mudguard painted white, reflective tapes affixed at the front & back
- Cycle on the extreme left side of the road or use service road, if available
- Avoid busy roads
- Keep a safe distance from fast motorised vehicles
- Give proper indications before stopping or turning

Don'ts

- Don't indulge in any kinds of stunts
- Don't load the cycle with another person or heavy goods
- Don't ride holding on to other fast moving vehicle

While commuting in school transportation

Dos

- Get up early and start from home early
- Board the bus from the designated bus stop in a queue
- Once inside the bus behave properly
- Hold on to the railings of the bus
- Alight only at the designated bus stop
- Get down only when the bus has completely stopped
- The number of students should not exceed 1.5 of the actual seating capacity

- If the driver is not following the road safety norms bring it to the notice of school authorities/parents or Traffic Helpline at 23378888

Don'ts

- Do not rush or run to catch your bus
- Do not stand on the steps of the bus
- Do not make noise that may distract the driver
- Do not put any part of the body outside the bus
- Do not alight from a moving bus

As pillion rider/co-passenger

- Always wear helmet/seatbelt
- Do not indulge in talking with the driver
- Children below 12 years of age should occupy the back seat

Play at safe places

- Do not play on roads
- Look for a playground or vacant land to play
- Do not play around a vehicle parked inside your school premises/colony or near your residence

Chapter 5: Causes of Accidents, Prevention & First Aid to Accident Victim

Causes

- **Lack of qualified drivers:** The procedure of issuing driving license is full of lacunae. The present system of procuring driving license does not lay down any criteria or qualification for a prospective driver. As a result anyone who can move a vehicle is able to acquire a driving license.
- **Callous attitude of road users:** Certain categories of road users such as pedestrians, cyclists and two-wheeler riders behave in a most reckless manner resulting in their involvement in accidents. Vehicle drivers knowingly indulge in risky situations while on road.
- **Lack of strict laws:** Stringent punishment is the only deterrent for people to follow traffic rules. The present laws are so flexible and mild that anyone can get away very easily after committing a grave traffic violation. In western countries people abide by traffic rules because the fines are hefty and punishment accompanying traffic offences are strict such as cancellation of license, permit, etc.
- **Lack of fear of being watched:** There is no fear in the minds of the violators of being watched. Major roads should be covered by advanced electronic gadgets to keep a watch on the violators and violations.

Major violations leading to accidents

- Overspeeding
- Drunken driving
- Wrong overtaking
- Red light jumping
- Overtaking from blind corners
- Overloading
- Sudden turning
- Driving by minors
- Lane violation
- Talking on mobile
- Not wearing helmet
- Poorly maintained vehicle

Analysis of Road Deaths

- 50% within minutes after crash due to disruption of brain, central nervous system, heart, major blood vessels
- 35% within 1-2 hrs of injury – major head crest, abdominal injury or significant blood loss
- 15% within 30 days – brain death, organ failure, overwhelming sepsis

Importance of initial care

- 50% of deaths occur on roads itself
- Hence, chances of survival depend upon the initial care given at road side
- Correct, expeditious and efficient management is required for the survival of critically injured

Post Injury Management: Timely Provision of Services

- Effective communication service
- Efficient transportation
- Integrated trauma services
- Rehabilitation

Providing First-Aid to the Accident Victims

- Assessment of the condition of the patient
- Maintenance of airway, if the patient is unconscious
- In case of injury to spine or limbs, minimal handling and proper stabilisation of spine and/or splintage of fractures
- Arrest bleeding and prevent shock by compression tourniquet
- General wound care with proper sterilised first aid dressing material
- Cardio pulmonary resuscitation (artificial breathing) if required

In Case of Minor External Injuries

- Clean the wound by washing them with running water



- In case of profuse bleeding cover the wound with a clean cloth, tissue paper, etc.



- Raise the wounded part so as to reduce the blood flow to the wounded area.



In Case of Fracture

- First aid to all fractures and dislocations must aim to reduce movement
- Try to shift the person to the hospital in the very same position as movement may cause more harm to the part which has been damaged

In Case Part of a Limb is Cut Off

- It may be possible to reattach a cut off part. Put it inside a clean polythene bag and place this in another bag with cold water or ice



- If nothing is available, carry the amputated part in a clean cloth quickly to the hospital
- In large crush injuries/amputation involving limbs, avoid washing the wounds as it will lead to more blood loss. To stop excessive bleeding just cover the wound with a clean cloth and tie a cloth/ pressure bandage (neither very tight nor loose) slightly above the actual wounded area.

Shifting the Injured to the Hospital

- Ensure that the injured should be carried on a firm board or stretcher so that the spine remains stable
- The back, neck and airways need to be protected from further injury. Hence always take the help of another person
- If he/she is unconscious, gently place a large folded cloth or towel under the neck so that the neck does not sag against the ground.
- During transportation keep a watch on the victims breathing and pulse, keep the airway clear to ensure proper breathing
- If there is only a limb injury the patient can be safely taken to the hospital on a chair in a sitting position

In case of Accidents

- Always carry a basic emergency kit in your vehicle, containing flares and first aid supplies.
- If involved in a crash you must stop, regardless of the extent of damage.
- It is a traffic violation to leave the scene of an accident involving property damage.
- It is a criminal offence to leave the scene of an accident involving a fatality or a personal injury.
- Exchange information with other drivers involved. Give your name, address, etc. to the other drivers and police on the scene.

- If a parked vehicle or property other than a vehicle is damaged or if a domestic animal is injured, try to locate the owner or notify the police.
- Do not stop at an accident scene unless you are involved or emergency help has not yet arrived. Otherwise, keep your attention on driving and the directions given by traffic police.
- Shift the injured immediately to the hospital in any vehicle available.

Chapter 6: Road etiquettes and good road user behavior

Roads are for all to share. Every act of yours or every behavior on your part while on road, whether you are a pedestrian, cyclist, bus commuter or a co-passenger, should be governed by a sense of concern and considerateness towards fellow road users. As a good road using citizen you should follow proper road etiquettes and give room for and respect the rights of fellow road users also.

Right of way

- Disabled and children have the right of way
- Pedestrians have the first at unmanned intersections
- At an unmanned intersection traffic on the right has the right of way
- At round about traffic on your right has the right of way
- Traffic on major road has the right of way
- On hilly and steep roads vehicles going uphill have the right of way
- Emergency vehicles like fire brigade, ambulance, police has the right of way
- These vehicles while on emergency duty can jump a red light, drive in no entry areas or on wrong side
- These vehicles should be given priority and given clear passage
- Pedestrians have right on the roads. They should be given safe passage through zebra crossings.
- If subway/foot over bridge is available the pedestrians should be regulated to use them to cross the road.
- All road users including pedestrians, cyclists, slow moving vehicles should strictly obey traffic light signals
- Cyclists should remain on the edge of the extreme left lane. Where there is a cycle track/service lane cyclists should be regulated to use it.
- Emergency vehicles should be always given priority

Chapter 7: Rules of Road

Negotiating an Intersection Judiciously

- Almost 50% of all city driving collisions occur at intersections.
- Choose the left lane if you want to turn left, the middle lane if you want to go straight, the right lane if turning right, at least 100 m in advance.
- Give proper indication before you turn.
- Slow down while approaching an intersection.
- Stop before stop line at red light.
- Even if the signal allows you to go, proceed slowly and cautiously.
- While approaching an unmanned intersection cover the brake and be prepared to stop.

Negotiating a Round About

- Choose your lane as per your exit, at least 100m in advance.
- Slow down while approaching a round about.
- Enter the round about at an angle.
- Give way to traffic on your right.
- Merge slowly with the traffic inside the round about.
- Move towards your exit gradually giving proper indications.
- Be watchful of a pedestrian or an animal that may suddenly appear.

While Overtaking

- Never overtake from left, always overtake from right.
- Show your intentions of overtaking clearly to your fellow drivers.
- Give proper indications, before overtaking.
- Be watchful of a pedestrian or an animal that may suddenly appear in front of the vehicle you are overtaking.
- On roads having two-way traffic overtake only when the oncoming vehicle is at a safe distance.

While Turning

- Give proper indications.
- Start changing lane only when the vehicles behind you have understood your intentions.
- Slow down while approaching the turning point.
- Turn only when the vehicle coming from the opposite direction is at a safe distance.
- The vehicle coming from the opposite direction has the right of way.
- Watch out for pedestrians as well as vehicles coming from your right side.

Right of Way

- The children and the disabled have the right of way.

- Pedestrians have the first right of way at unmanned intersections.
- At an unmanned intersections traffic on your right has the right of way.
- At a round about, traffic on your right has the right of way.
- Traffic on major road has the right of way.
- On hilly and steep roads vehicles going uphill have the right of way.
- Emergency vehicles like fire brigade, ambulance, police have the right of way.
- These vehicles, during emergency, can jump a red right, drive in non entry areas or on wrong side.
- These vehicles should be given priority and clear passage.

Keep left

How far from the left side of the road you should drive depends upon the road condition and the type of traffic on it. But, as a driver you must drive sufficiently to the left. You must allow all traffic proceeding in the opposite directions to pass on the right hand side.

Lane driving

Every road has lanes, whether marked or not. Where they are not marked, divide the road mentally into appropriate lanes. Where it is marked, drive within your lane. Change only if it is safe to do so and after giving a proper signal.

Sudden changes should be avoided. A good driver never weaves in and out of a lane, in a traffic hold-up, don't try to get ahead by jumping the queue or by cutting into another lane.

Changing Lanes

If you need to move into another lane, check through your rear view mirror and look over your shoulder for the traffic following you, if it is safe, give the proper signal and then change lanes. After you have changed your lane or overtaken, make sure that the indicator given to change lane is switched off, keeping to your lane is important to maintain discipline and safe road usage. Do not change lanes frequently. Remember, weaving in and out is bad driving and you could be booked by traffic police for negligent driving.

Signal

To signal:

- Use indicator or
- Give hand signal

Reverse driving

Make sure you have rear side view mirrors on you left and right doors in addition to the one fitted inside.

A good driver uses all the mirrors before beginning the reverse driving. However, you should also turn around for an all side vision.

Before you reverse make sure there are no pedestrians, especially children or any other impediments on the road behind you. Be particularly careful of the blind areas that are obscured from the driver's seat. In case of doubt it is always better to step down from the vehicle or get the help of someone to ensure that there are no obstructions all the back. Never reverse from a side road on to a main road. If there is no other way, seek someone's help while doing so. Don't drive backwards more than necessary while making sure you don't cause danger or inconvenience to other road users.

U Turn

A U- Turn means a turn carried out within the width of the road without reversing so as to proceed in the opposite direction.

After ensuring that there is no prohibition to take a U-turn, also make sure:

- That the road is wide enough for this manoeuvre
- That there is no traffic approaching from either side and you have full visibility of the road on both sides.

One-way

There are three types of one-way regulations in force.

- The first and the most common type is the operation of traffic in one direction at all times. It is suitable in situations where parallel roads are available, a short distance apart, to handle traffic from opposite directions.
- The second type is the reversible one-way street, where the direction of flow is reversed depending upon the predominant direction of movement, as introduced in some metropolitan cities.
- The third type is operated as a two way facility during off-peak hours and is made one-way in the direction of predominant flow during peak hours.

Remember

- On one-way roads, you must choose the correct lane for exit as soon as you can.
- Unless road marking indicate otherwise, choose the left lane when going to the left, right lane when going to the right, choose centre lane when going straight.
- Do not drive your vehicle on roads declared as one-way except in the direction specified by the road sign. Do not drive your vehicle in a reverse direction with a road designated as one-way.

Speed

Speed is a relative term. You must aim at a good average speed of travel. Over speeding with reference to driver control, circumstances and violation of law is

dangerous. Speeding with negligence is the direct cause of most road accidents leading to injury and death.

Driving at a high speed does not give you sufficient reaction time to observe hazards. Other road users too, get less time to react. The higher the speed, the greater the stopping distance and larger the chances of an accident.

So make sure and drive within the stipulated speed limits. However, speed limit does not mean that it is safe to drive at that speed. Always drive keeping the following conditions in mind:

- Condition of the road
- Traffic
- Weather and vision
- Type of vehicle
- Restricted areas
- Your own skills and concentration

The golden rule for speed: Drive at a speed that will allow you to stop well within the distance you can see clearly

Over speed: one should not drive his own vehicle beyond prescribed speed limits. In Delhi the speed limit for vehicles is as follows:-

Car 50 KMPH

LGV/HGV 40 KMPH

The driver of a motor vehicle shall, when passing or meeting a procession or a body of troops or police on the march or when passing workmen engaged in road repair, drive at a speed not exceeding 25 Kmt. an hour.

Parking

Every moving vehicle needs to be parked. You must know how vehicles may be parked effectively and where and how to manoeuvre parking.

Absence of 'No Parking' sign does not necessarily mean that you can park there. Wherever possible, park off the road or in a car park. Normally, a parking space is indicated by a road sign or markings. Look for the sign and park your vehicle accordingly.

If you have to park on the road choose a safe place. Park your vehicle in the direction of traffic movement. If there is a kerb, park as close as you can on the left side. If there is no kerb, leave space for pedestrians. When you park on the road, there must be a clear space of at least 3 meters for other vehicles to pass. Park your vehicle in such a way that it is not likely to cause danger, obstruction or undue inconvenience to other road users. When you have parked, make sure that handbrake is drawn up fully so that your vehicle does not move.

Use of Seatbelt

- Seat belt save lives and reduce the severity of injuries.
- With seat belt properly fasten, you become a part of the vehicle, rather than a loose object that can be tossed around inside during a crash or may be thrown outside.
- If someone is thrown out of a vehicle in a crash, his chances of being killed are 25 times greater than if he stay inside.
- People not having fastened their seat belts have been killed in crashes even at speed as low as 20 Km/h.

Driving in dangerous conditions

Driving at Night

Be alert: pedestrians, bicycles, animals and hand drawn vehicles that travel without light are difficult to see.

- Drive at a slow speed to get a safe reaction and stoppage time.
- Turn on the headlights when darkness falls.
- Drive with dipped headlights in places where the roads are amply lit.
- Keep the headlights clear and clean and check them frequently. Also carry spare bulbs.
- Keep your windscreen clean because dirty windscreen can impair your vision.
- Avoid looking to the dazzling light if an oncoming vehicle is driving in high beam and gradually slow down your speed.
- To reduce the glare of lights following you, switch your interior rearview mirror to the night position or slightly tilt it or tilt the exterior rear view mirrors.
- Do not mistake cock-eyed vehicle-a vehicle with one fused headlamp-for a two-wheeler.
- Before overtaking ensure that the oncoming vehicle is at a safe distance.

Driving in rain

- Check the working of wipers, windscreen washing fluid system, all vehicle lights, tyres, exhaust pipe.
- Be careful and reduce your speed as people may run across the roads in panic.
- Keep slow or away from water logged areas as water may enter the carburetor, ignition, muffler or distributor causing the vehicle to stop.
- Be considerate of other road users, avoid splashing of water.
- On slippery roads drive carefully and slowly. In case the vehicle slips, stop acceleration and press the clutch, hold the steering in a straight position and do not brake. Wait till you regain the grip.

Driving in foggy conditions

- Drive slow but not so slow that it becomes a hazard to others.
- Distances are hard to judge and low visibility decreases your reaction time.

- Give yourself extra time to respond to any road hazards.
- Do not hit your brakes in panic, you may get hit from the back.
- Turn on your wipers and defroster and turn off the music.
- Drive with dipped headlights, high beams produce too much glare in fog.
- Use the central verge of the road to guide you.
- Honk your horn periodically to let other drivers know you are there.
- Never attempt overtaking.

Driving in skidding conditions

Triggered by abrupt steering, braking or acceleration and due to loss of traction on slippery roads- skidding takes place. Roads become slippery when rain water and mud form a slippery material. Locations outside petrol pumps and oil refineries are generally slippery. Snow and ice are major factors that contribute to slippery roads.

If you get into a skid, the best way to recover is

- Stop accelerating
- Press clutch
- Do not brake- it will enhance the skid
- For a slight skid that you can feel rather than see it happen – steer slightly in the directions of the skid to bring the front and rear wheels into line.

Driving where traffic lights are not functional

At signalized intersections, sometimes signals are non-functional due to no electricity or are partly functional due to missing or fused bulbs, and sometimes these are encroached by trees, poles or advertisement materials. It could also happen that on one side there may be a green signal and on the other side nothing is functional

In such cases, always stop. You have to perform as if the Octagonal Stop sign is there.

Stop, look, observe the traffic signals on your left and right, be cautious and proceed.

Most accidents occur on intersections due to the carelessness of drivers.

Drunken Driving: *Do not drive when drunk*

When under the influence of alcohol, drivers lose the ability to take any decisive action resulting in unfortunate crashes. This happens because

- Alcohol slows down the mental process.
- It increases confidence but decreases performance.
- It affects brain's ability to control and coordinate body's movement.
- It slows down the reflex and hence the reaction time increases.
- It impairs the ability to judge speed and distance.
- It also impairs vision and hearing.

In case of Breakdowns and Accidents

Most breakdowns are the result of negligence, failing to make routine checks, inadequate preventive maintenance and abuse of vehicle

Preventive maintenance reduces chances of a breakdown. However even a well maintained vehicle can break down occasionally.

Warning lights

- In case of a breakdown, switch on your warning lights to make your stationary presence known.
- In case it is possible – get the vehicle out of way of traffic for free movement of traffic. Be patient and do not panic.

Warning triangle

Carry and advance warning triangle. It folds easily and is easy to stow. Use it to warn other road users if your car is obstructing the highway or is in a dangerous position as a result of a breakdown or accident.

Where to place the triangle

- On the road, in the same lane, well behind the car
- Recommended distance is 50 mts behind your vehicle
- On a winding or hilly road, place the triangle where drivers will see it before they have to deal with any bend or hump in the road
- On a very narrow road place the triangle on the near side kerb or footpath.

Co-exist Peacefully on Road

When confronted by an aggressive driver

- Avoid eye contact.
- Stay calm and relaxed
- Make every attempt to get out of the way safely.
- Avoid confrontation – Do not respond by blowing horn, flowing too closely, cutting them off or applying brakes; give such drivers ample space.
- Do not take other driver's behaviour personally, he might have some reason to drive erratically.
- If you feel you are being followed too closely, signal and pull over to allow the other driver to go by.
- Ignore harassing gestures and name calling, and do not return them.

Avoid becoming an aggressive driver

- Allow enough travel time to reach the destination on schedule.
- Alter your schedule to avoid driving during peak highway congestion periods.
- If you are running late, call ahead so you can relax.
- Do not drive when you are angry, upset or overly tired.
- Make your vehicle comfortable. Listen to relaxing music and avoid situations that raise your anxiety.
- When driving, relax and remain aware of your posture. Sit back in your seat, loosen your grip on the steering wheel and do not clench your teeth.

- Give others the benefit of doubt; be polite, courteous and forgiving.
- If you commit any driving error, apologize by simply waving your hands.
- Do not follow too closely. Allow at least a three-second space between the vehicle ahead.
- Do not make gestures that may offend others.
- Remember, driving is not a contest. Hence, forget about winning.

Mandatory pre-checks of vehicles

Do not take your vehicle for granted. Before you drive your vehicle each day, make it a habit to inspect the basics of the vehicle. In addition to your daily review, periodical technical checking and regular servicing must be carried out. The saying, 'a stitch in time saves nine' is an apt example for your vehicle.

Daily check list

Before you start the engine, make a walk around exterior check of your vehicle and ensure that:

- The windscreen, windows, mirrors and number plates are clean.
- The tyres have a good tread and are properly inflated.
- Wheel nuts are securely fastened.
- No damage or theft of any exterior parts
- There is no leakage of fuel, water or oil under your vehicle and their levels are correct.
- Doors are secured properly

Then while sitting on the driver's seat, check the following :

- All lights and indicators are in proper working conditions
- Brakes are functional
- Ensure that the driver's seat is in the proper position. The controls should be within reach and the visibility clear in all directions
- Sufficient fuel for travel
- Properly adjusted mirrors
- Car documents, especially your driving license is with you.

Regular checks and servicing

Regular checks for the following depend upon the frequency of vehicle usage.

- Engine oil, Water level (coolant) in the radiator, Brake fluid level
- Tyres must have the correct tread depth and be free of dangerous cuts or other defects and are inflated at the right pressure.
- Battery - top up with distilled water, when required. Some batteries are maintenance free and don't need topping up
- Windscreen washer bottles are topped up.
- Working of wipers

Mechanical failures

Brake failure

If your pedal brake suddenly gives way

- a) Pump the brake pedal fast and strongly many times to build pressure
- b) Put your vehicle in low gear as we call this engine brakes
- c) If vehicle still does not come under control, use hand brake.

Tyre burst/flat tyre

Tyre burst or sudden tyre puncture while driving at higher speed could be dangerous, especially of the front wheel tyres as you may lose control.

Avoid panic – hold your steering wheel firmly. Do not brake abruptly and draw the vehicle towards the road side

Sudden loss of acceleration

An accelerator wire break or a break in petrol or current may create sudden loss of acceleration. Do not brake suddenly. Indicate your desire to turn left. Draw vehicle off the road to attend to failure.

Stuck accelerator

This happens due to accelerator pedal or accelerator wire getting stuck. Press clutch immediately and bring gear to neutral. Then switch off the ignition and draw your vehicle to road side, preferable off the road, while activating your hazard lights.

Fire

If you get a strong burning smell, it could be prelude to the possibility of a fire. Switch off ignition, draw the vehicle towards the road off side. Put on the hazard lights. Try to pull out the affected wires with a thick cloth or pleyer. Do not use bare hands. Try to throw sand to put off the emerging fire. If fire is increasing, stay away from the vehicle. Fire can lead to explosion of the fuel tank. Warn other people near your vehicle to stay away.

Chapter 8: Role of Different Types of Gadgets

Traffic Police uses different types of safety gadgets to ensure safety of road users and also to ensure visibility at night. Various civic agencies and road owning agencies also play a vital role in road engineering and affixing of various road furniture to ensure safety of road users. These include reflectors, barricades, Crash barrier, collapse barrier, dragon light, blinker light, channeliser, etc.

Speed Radar Gun: It is an instrument used to measure the speed of an oncoming vehicle. By holding it at a distance of 100-300 m it reads and shows the actual speed at which the vehicle is being driven. If the rate of speed displayed by the meter exceeds the prescribed speed limit, the information is passed on to the team of personnel ahead and the vehicle is intercepted and the driver is prosecuted.

Alchometer: The instrument is being used to measure the content of alcohol. The breath of the driver is analysed for the purpose. The driver is asked to blow into the pipe attached to the instrument and the instrument in turn displays the content of alcohol intake. If the content of alcohol exceeds the prescribed limit, prosecution is carried out.

Red Speed Camera: Cameras are being installed at major intersections to book the violators who indulge in red light jumping. The camera shoots the picture of the violating vehicle – the Registration No of the vehicle, time, date, and place and sends the same to the computer wherein the data is processed and notice generated, which is sent to the violator. It is a foolproof mechanism to prosecute the violators of intersection discipline.

Reflector: Reflectors are affixed on road to ensure visibility at night.

Speed Governor: Speed governors are mandatorily affixed in commercial vehicles so as to restrict its speed within the prescribed speed limit so as to avoid any kinds of accidents related to overspeeding.

Interceptor:- The vehicle is fitted with latest gadgets to keep a check on violators. There is a video camera affixed inside the vehicle which can shoot violations within a range of half kilometer. Laser based speed radar is attached to a computer, which detects overspeeding by vehicles, captures the image of the violating vehicle along with the complete detail. The data is recorded in the computer and shown to the violator at the time of prosecution.

Disaster Management Vehicle: -The vehicle is fully equipped with all necessary equipment to deal with any emergency situations on road resulting in traffic hazards such as accident, storm, etc. Instruments such as wood cutter, iron cutter, air filling machine, welding machine, high mast lights at a height of 20 ft. capable of illuminating an area of half kilometer radius is available in the vehicle.

Mobile Exhibition Van:- An effective medium of imparting road safety education to general public and school children. It consists of display panel, projector, VCD player, Television and generator for intermittent power supply. School children/general public are educated regarding road safety norms through photographic exhibition and film shows.

QUIZ

1. While crossing the road, if it is safe to cross, you will: -

Walk quickly

- i) Run fast
- ii) Walk Slowly

2. Before crossing the road what would you do:-

- i) Look to the right, then to the left and again look to the right
- ii) Look to the left, then right and again to the left
- iii) Show hand to convey your intention to cross the road

3. What is the proper sequence of traffic light:-

- i) Red, amber and then green
- ii) Amber, green and then red
- iii) Red, green and then amber

4. While waiting for your school bus you will wait:-

- i) On the bus box
- ii) On the foot path
- iii) On the road

5. Before taking seat in the bus what will you would do first:-

- i) Occupy the seat
- ii) Stand near the seat
- iii) Check under your seat

6. From which side you would get out from the car on the road:-

- i) Right side
- ii) Left side
- iii) Any side

7. If there are no pavements on the road, then you would walk in the:-

- i) Left of the road, while traffic is coming from behind
- ii) Right of the road, while facing the traffic
- iii) Any side of the road

8. You will play on the road, where there is

- i) Less traffic on road
- ii) No traffic on the road
- iii) Never play on the road

9. What type of clothes should you wear at night:-

- i) Any colour of clothes
- ii) White or light coloured clothes
- iii) Dark coloured clothes like black, brown etc.

10. What is the colour of the Traffic Gypsy:-

- i) Green
- ii) White
- iii) Blue

11. What is the colour of the helmet of a traffic constable

- i) Blue
- ii) White
- iii) Khaki

12. Sub way are for:-

- i) Vehicluar traffic
- ii) Pedestrian
- iii) For all

13. Cycle is for:-

- i) Two Persons
- ii) One Person
- iii) Three Persons

14. What you should do while travelling in the school bus:-

- i) Talk with the driver
- ii) Run to and fro
- iii) Sit Calmly

15 Which road marking has a name of an animal:-

- i) Camel crossing
- ii) Zebra crossing
- iii) Lion crossing

16 You should ride a bicycle on

- i) Footpath
- ii) Side road
- iii) Cycle Track

17. Which road marking divides the road:-

- i) Yellow line/ white line
- ii) Red line
- iii) Green line

18. Blowing horn frequently is harmful for:-

- i) Eyes
- ii) Legs
- iii) Ears

19. What is specific colour of a school bus:-

- i) Green
- ii) Yellow
- iii) Blue

20. You should paint the rear mudguard of your cycle white in order:-

- i) To beautify
- ii) To prevent mudguard from rusting
- iii) To enhance your visibility

21. Where to stop the vehicle if there is red light:-

- i) After the stop line
- ii) Before the stop line
- iii) Any where

22. While driving, is it safe to talk on mobile phone

- i) Yes
- ii) No

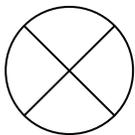
23. Why should we follow traffic rules:-

- i) Fear of challan/Punishment
- ii) For own safety
- iii) For the safety of other road users

24. What is the meaning of road safety:-

- i) Safety of roads
- ii) Safety of vehicles
- iii) Safety of road users

25. This is a :-



- i) Mandatory Sign
- ii) Cautionary Sign
- iii) Informatory Sign

SLOGANS

1. It's better to be late than Mr. Late.
2. It is better to reach late than never
3. Lane Driving is Safe Driving
4. No Mobile While Mobile
5. Obey the sign and pay no fine.
6. You are always right, when you obey light.
7. With precaution, reach your destination
8. Obey traffic rules, the life saving tools.
9. Caution and care, make accident rare.
10. Don't be rash, lest you crash.
11. Dusk or Dawn, headlights on.
12. A little care makes accidents rare.
13. Turn left and right, and cross when time is right.
14. Accident brings tear, safety brings cheer.
15. Alert today, alive tomorrow.
16. Keep death off the road, learn the Highway Code.
17. Drive carefully, drive again.
18. Better to prevent than lament.
19. Drinking and Driving: A bleak chance of surviving.
20. A few safety measures are life's treasures.
21. Take care, accident will be rare.
22. Be cautious, Life is precious.
23. Share the roads with care.
24. Drive with care, as life has no spare.
25. On road, be cautious because everybody's life is precious.
26. Thoda care Apna, Life bachalen Kitno Ka
27. Drinking & Driving, Easy way to hell.
28. Drive carefully to live joyfully.
29. Driving with grace, and giving others space.
30. Have road sense, live with confidence.
31. Using dipper at night, to see the traffic right.
32. A little care and no Medicare
33. Follow regulations, avoid collisions
34. Don't be daring, be caring!
35. Rules of traffic are there to obey, follow them every day
36. On the road to school, Be careful, don't be playful
37. Drive to care but not to dare.
38. Speed thrills but kills.