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<b>Principal Investigator</b>	<b>Co-Principal Investigator</b>	<b>Co- Principal Investigator (Technical)</b>
<b>Dr. A.K. Gupta</b> Professor and Head, Department of Forensic Science Sam Higginbottom Institute of Agriculture, Technology & Sciences SHIATS, Allahabad	<b>Dr. G.S. Sodhi</b> Associate Professor Forensic Science Unit Department of Chemistry SGTB Khalsa College University of Delhi	<b>Dr. (Mrs.) Vimal Rarh</b> Deputy Director, Centre for e-Learning and Assistant Professor, Department of Chemistry, SGTB Khalsa College, University of Delhi <i>Specialised in : e-Learning and Educational            Technologies</i>
<b>Paper Coordinator</b>	<b>Author</b>	<b>Reviewer</b>
<b>Dr. Mukesh Kumar Thakar</b> Professor, Department of Forensic Science, Punjabi University, Patiala	<b>Dr. Mukesh Kumar Thakar</b> Professor, Department of Forensic Science, Punjabi University, Patiala	<b>Dr. G.S. Sodhi</b> Associate Professor Forensic Science Unit Department of Chemistry SGTB Khalsa College University of Delhi
<b>Anchor Institute : SGTB Khalsa College, University of Delhi</b>		

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## 1. Learning Outcomes

After studying this module, you shall be able to know about-

- The concept of road accidents
- The common reasons ensuing traffic collisions
- The mechanism of Road Accidents

## 2. Introduction

The word *accident* is derived from the Latin verb *accidere*, signifying occurrence, happening, falls upon, or by chance. A road accident may be defined as an event which happens suddenly without prior knowledge of the person while walking or driving on the road. Vehicles of different descriptions may be involved in road accidents. In India, the problem has taken alarming proportions as the number of mechanized and non-mechanized (Fig-3a&b) vehicles is increasing rapidly, but the development of infrastructure is not enough to cope up with the situation.

*Accident* is quite often used as a specific legal term. It may be used generally in reference to various types of mishaps, but has a particular significance to Insurance agencies, to which it means a sudden, unintended and fortuitous external and visible event.

*The terms “accident” and “occurrence” are not very distinct from each other. The occurrence is more comprehensive in terms of scope and purpose in comparison to accident, which include injuries and damages caused by exposure to a set of conditions over the periods of time and as well as act of intentional and conduct.*

In India, a road accident used to be a sensational affair two or three decades ago, whereas now- a-days; it has become something that occupies the headlines of our newspapers almost every day. Though additional traffic regulations, such as speed limits, and other restrictions have been imposed to reduce the number of accidents, yet the number is increasing.



**Fig-1: Condition of the Vehicle after Accident**



**Fig-2: Vehicle met with Road Accident**



**Fig-3a**



**Fig-3b: Non-Mechanized vehicle on the Busy Road**

Many accidents result in vehicle damage or injuries to the occupants or even other innocents at times, insurance claims related to which often have to be settled in court. The investigation is conducted by police.

To ascertain the cause of accident Investigation Officer should visit the accident scene and examine the road environment and the vehicle as soon as possible, either at the scene or in a garage, and try to talk to the persons involved and witnesses if available.

### 3. Causes of Road Accidents

The road accidents always take place because of one or the other lapse. These lapses or causes can be attributed to either individually or combination of the followings:

- 3.1 Causes Related to the Road Conditions
- 3.2 Causes Related to the Driver
- 3.3 Causes Related to the Vehicle
- 3.4 Causes Related to the Traffic Lights and Signals
- 3.5 Causes Related to the Victim

#### 3.1 Causes Related To the Road Conditions

The Poor quality of roads and their conditions are responsible for many road accidents and some of them are discussed as follows:

- Roads may be bumpy or slippery and lack proper illumination.
- Quite often the road signs are either confusing or damaged or even missing.
- Fluorescent indicators or appropriate road markings are not visible particularly during nights.



**Fig-4: Showing condition of the Road**

- Lack of signal/signs on blind curves and poorly banked roads
- Lack of traffic signals or poorly placed signals
- Improperly graded curves and uneven shoulders
- Vision obstructions may be because of poor landscaping of roadways and other factors
- Excessively bright lights at crucial places
- Inappropriate road materials
- Low and narrow bridges or incorrect overhead bridge markings
- Broken Guardrails
- Areas where the roads having snow are not salted or ploughed properly, particularly in the winter season.



**Fig-5: Pot Holes in between the road**

- Dividing lines may not be properly maintained.
- Dividing lines made up of Chemicals (polymer) can cause skidding of the vehicle particularly in the rainy days.
- Many openings for vehicles after short distances on national highways.
- Unauthorized improper and unmarked speed breakers on highways.
- In foreign country, if your accident was due to either faulty roadway design or a defect in the road or may be because of poor maintenance, Mostly liability policies of insurance company cover property damage and injuries from accidents occurring on roads and highways, even when the accident involves only your car.

### 3.2 Causes Related to the Driver

Everybody does more than one job at a time, so *Multi-tasking* has become most common these days, which was never like this before. The relentless communication of emails, text messages, phone calls, status updating on social media, etc. has become a prime goal and people everywhere are rushing to get things done faster, easier and more effectively. But when it comes to driving, it's never been more important to just slow down or stop. One's safety, one's life, and the lives of others all depend on oneself to make the right choices behind the wheel.

- ***Drunken Driving:***

The judgment of the driver may be impaired under the influence of liquor, drugs or any other medicine.

- ***Feeling Sleepy:***

He may be tired or feeling sleepy. He falls asleep for a moment and loses control over the vehicle.

- ***Distracted Driving:***

Distracted driving can be attributed to three main types of distraction:

- ✓ Visual Distraction: taking your eyes off the road;
- ✓ Manual Distraction: taking your hands off the wheel; and
- ✓ Cognitive Distraction: taking your mind off of driving.

His attention gets diverted due to certain things or events on or around the road or may be using Mobile Phone, texting or reading, eating, grooming or just talking while driving or Using in-vehicle technologies (such as navigation systems) can also be sources of distraction.



**Fig-6: Showing the Usage of Mobile While Driving a Car**

Texting while driving is especially dangerous because it combines all three types of distraction.

- ***Bad Driving Habits:***

Some of the drivers have bad tailgating, while poor lane discipline and not giving proper indicator are few other irritating habits. Beside from the inconvenience to other road users, this kind of inconsiderate driving is irritating and dangerous also.

- ***Suffering from disease:***

He suffers from some kind of illness and is unable to control the vehicle.

- ***High Speeding Driving:***

He drives the vehicle at a high speed and some unexpected obstruction such as stone, animal, human, pit, or any other vehicle suddenly comes in the way.

- ***Over confidence:***

It is evident from the MUARC study that the most common subtypes of inattention are restricted attention, which primarily may be due to intoxication and/or fatigue, and diverted attention or distraction.

### **3.3 Causes Related To the Vehicle**

- Irregular services and inspection of different parts of the vehicle.
- Lack of safety equipment such as seat belts
- Non-Mechanized vehicle on road.
- Air pressure in the tires may not be properly maintained.
- Conditions of the tyres and tubes may not be good.
- A tyre bursts (*Fig-7*)
- Failure of the brakes.
- The steering handle may not function properly.

- The head and rear lights of the vehicle may be faulty or not working.
- The indicators may not be working.
- Absence of fog lamps in foggy conditions
- Requirement to improve the design of the vehicle to provide ease of vision and control to the driver.
- Overloading of the vehicle.
- The other machinery of the vehicle fails.



**Fig-7: Tyre Burst**

### **3.4 Causes Related to the Traffic Lights and Signals**

The primary functions of traffic lights and signals is to assign a right way to various traffic movements at intersections and allow the pedestrians, bicyclists and cross-street traffic to move properly and safely through the intersection and reduce certain types of accidents. The world's first gas-lit traffic signal/lights (manually operated) installed in London in December 1868, exploded less than a month later killing its policeman operator.

These were replaced by first safe, electric, automatic traffic lights in United States during late 1890s. But these can sometimes be the main cause of accident if:

- Traffic indicating signals or lights are not properly placed or misplaced or hit by the vehicle.
- Traffic indicating signals or lights are not properly visible from distances.
- Traffic lights are not working properly either due to burnt out lamps or due to power outage.
- Duration of each traffic light is not properly adjusted or non-regularized red and green signal.
- Disobedience of the traffic lights and signals.

### **3.5 Causes Related to the Victim**

When the victim is negligent and drives in a thoughtless or careless manner, it becomes a cause of road accident. Other causes related to the victim are as follows:

- Victim may not have observed the traffic regulations.
- Over speeding.
- Illegal lane changing without proper signal or indicator
- Miscalculation of the time, distance and the speed of the other vehicle while crossing the road or overtaking.
- Failure to yield the right way.
- Victim may be drunk and suddenly comes in front of the vehicle going at high speed.
- Victim may be a maniac or suffering from any other such diseases and comes in the way of the driving without knowing or caring for the consequences.
- Some other vehicle might have hit the victim.

#### 4. Investigation of Traffic Collision

- The finger and palm or other prints should be searched and developed.
- Prepare the casts of the marks whenever required.
- Ascertain ownership of the vehicle.
- Collect greases or any lubricants found at the scene of occurrence. If found absorbed by the surface material, then absorbent material should be cut in the form of a cone and a control sample of the material should also be collected from the nearest point separately.
- Victim should be sent to hospital for medical examination for any possible injuries, alcohol or narcotics in his body. The description of injuries or the post-mortem report (as the case may be) will help to decide whether injuries of the victim or damage to the vehicle are consistent with the version of the victim, or of the culprit or the witnesses.
- Get the blood of the culprit and the victim examined for alcohol and narcotics.

#### 5. Summary

1. The word *accident* is derived from the Latin verb *accidere*, signifying occurrence, happening, falls upon, or by chance. A road accident may be defined as an event which happens suddenly without prior knowledge of the person while walking or driving on the road.
2. Many accidents result in vehicle damage or injuries to occupants or even other innocents at times, insurance claims related to which often have to be settled in court. The investigation is conducted by police forces.
3. Some of the drivers have bad tailgating; while poor lane discipline, not giving proper indicator are few other irritating habits.
4. The primary functions of traffic lights and signals is to assign a right way to various traffic movements at intersections and allow the pedestrians, bicyclists and cross-street traffic to move properly and safely through the intersection and reduce certain types of accidents.