



## A Study of Motor Vehicle Accident Techniques

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#### ABSTRACT:

Motor Vehicle accident prevention program is essentially a driving in a manner that utilizes safe driving strategies to enable the motorists to address the identified hazards in a predictable manner. These strategies go well beyond instruction on basic traffic laws and procedures. With Motor Vehicle accident prevention program, drivers learn to improve their driving skills by reducing their driving risks by anticipating situations and by making safe & well-informed decisions. Such decisions are usually implemented based on road and environmental conditions present when completing a safe driving maneuver.

**KEYWORDS:** Driving behavior, Accident Techniques.

#### 1. INTRODUCTION

The frequency of traffic collisions in India is amongst the highest in the world. A National Crime Records Bureau (NCRB) report revealed that every year, more than 135,000 traffic collision-related deaths occur in India. India accounts for more than 200,000 deaths on account of road accidents, according to the Global Road Safety Report, 2015 released by the World Health Organization (WHO). In India, there has been a continuous increase in road crash deaths since 2007, with a brief annual reduction in 2012. The report states that the “Indian road safety laws do not meet the best practice requirements for four out of five risk factors”:

- Enforcing speed limits,
- Prevention of drunk driving,
- Safety of children and use of helmets.
- Not using seat-belts,

According to the WHO report, around 1.25 million people die each year globally as a result of road traffic crashes despite the improvements in road safety.

#### 2. OBJECTIVES OF THE STUDY

- To study the reduction of motor vehicle accident rates by establishing a standard safe driving program
- To study the Motor Vehicle Accident Prevention Techniques
- To study on an effective system for safe driving performance monitoring
- To have a study on the improvement of driver skills and knowledge through training programs.

#### Common Causes of Automobile Accidents in India:

Road accident is the most unwanted thing to happen to a road user, though they happen quite often. Most of the road users are quite well aware of the Indian traffic rules and safety measures while using roads but it is only the laxity on part of road users, which cause accidents and crashes. The main cause of accidents and crashes are due to human errors. Some of the common behavior of humans which results in accidents are:

- Over Speeding
- Drunken Driving
- Distractions to Driver
- Red Light Jumping

- Avoiding Safety Gears like Seat belts and Helmets
- Non-adherence to lane driving and overtaking in a wrong manner
- Weather Condition

**Over Speeding:** Most of the fatal accidents occur due to over speeding. It is a natural psyche of humans to excel. But when we are sharing the road with other users we will always remain behind some or other vehicle. Increase in speed multiplies the risk of accident and severity of injury during accident. Faster vehicles are more prone to accident than the slower one and the severity of accident will also be more in case of faster the vehicles. Higher the speed, greater the risk. At high speed the vehicle needs greater distance to stop i.e. braking distance. A slower vehicle comes to halt immediately while a faster one takes a long way to stop and also skids a long distance due to law of motion. A vehicle moving on high speed will have greater impact during the crash and hence will cause more injuries. The ability to judge the forthcoming events also gets reduced while driving at faster speed which causes error in judgment and finally results in a crash.

**Drunken Driving:** When driving mixed with alcohol it turns celebration into a misfortune. Alcohol reduces concentration. It decreases the reaction time of a human body. Limbs take more time to react to the instructions of the brain. It hampers vision due to dizziness. Alcohol dampens fear and incite humans to take risks. While driving, all these factors cause accidents and many a times it proves fatal. For every increase of 0.05 blood alcohol concentration, the risk of accident doubles. Apart from alcohol many drugs and medicines also affect the skills and concentration which is necessary for driving. First of all, we recommend not to consume alcohol. But if you feel your merrymaking is not complete without booze, do not drive under the influence of alcohol. Ask a teetotaler friend to drop you home.

**Distraction to Driver:** Though distraction while driving could be minor, it can cause major accidents. Distractions could be outside or inside the vehicle. Now a days, the major distraction is “talking on mobile phone while driving”. Act of talking on phone occupies major portion of brain and only a smaller part handles the driving skills. This division of brain hampers reaction time and ability of judgment. This

becomes one of the reasons for crashes. One should not attend any telephone calls while driving. In case the call is urgent, one should pull out beside the road and then attend the call. Some of the distractions on road are adjusting mirrors while driving, stereo/radio in vehicle, animals on the road and banners and posters. The driver should not be distracted due to the above things and always reduce the speed so as to remain safe during diversions and other kind of outside distractions.

**Red Light Crossing:** It is a common sight at road intersections that vehicles cross without caring for the light. The main motive behind Red light jumping is saving time. The common conception is that stopping at red signal is a wastage of time and fuel. Studies have shown that traffic signals, if followed properly by all drivers saves time and commuters reach destination safely and timely. A red light jumper not only jeopardizes his life but also the safety of other road users. This act by one driver incites other driver to attempt it and finally causes chaos at crossing. This chaos at intersection is the main cause of traffic jams. Eventually everybody gets late to their destinations.

**Avoiding Safety Gears like seat belts and helmets:** Use of seat belt in a four-wheeler is mandatory and not wearing seat belt invites penalty; same is the case of helmets for two wheeler drivers. Wearing seat belts and helmet has been brought under law after proven studies. It means that these two things reduce the severity of injury during accidents. Wearing seat belts and helmets doubles the chances of survival in a serious accident. Safety Gears keep you intact and safe in case of accidents. Two wheeler deaths have been drastically reduced after making the use of helmet mandatory. One should use safety gears of prescribed standard and tie them properly for optimum safety.

**Weather Condition:** Inclement weather, including heavy rain, hail, snowstorms, ice, high winds and fog can make driving more difficult. You'll need more time to stop and may have trouble seeing the road clearly. So when the weather gets bad be sure to leave extra room between the car in front of you and slow down. If necessary, pull off the road to a rest stop (or to the side of the road, well out of the traffic lanes) until conditions improve.

#### **Accident Prevention Techniques:**

**Slow down** - Speeding reduces the time required for you to react and increases the likelihood of you having an accident. The faster you're going, the harder it is to slow down. When you can't slow down, you are risking the possibility of causing an accident.

**Stay in your lane.** Defensive driving means letting others go ahead of you and not defending your position in traffic. Avoid the urge to be a vigilante and stay away from weaving and cutting others off by sticking to your lane. Accept the fact that someone is always going to think they're in more of a hurry than you. You also have more "escape routes" in the

right lane should a problem suddenly arise that requires you to quickly change lanes or pull onto the shoulder.

**Drive with both hands on the wheel.** Two hands on the wheel allow you to have more control over the car if an emergency situation were to arise. Imagine having one hand leisurely resting on it when you have to swerve out of the way – you lose that precious split second in adjusting your position that could mean the difference between safety and an accident. Keep your hands in the 10 o'clock and 2 o'clock positions. While this isn't necessarily the most comfortable, this position does allow you the most flexibility should you suddenly need to adjust your course.

**Don't tailgate the car in front of you.** No matter how slowly the traffic is moving, keep at least two seconds of following distance between you and the car ahead of you. Any less and you won't be able to stop in time if the driver in front of you slams on their brakes. (This is especially important in high traffic times. You may think the car ahead of you is speeding up significantly, when really they're moving forward only to stop again. If you don't tailgate, you'll put less wear on your brakes and save gas, too. All that stopping and starting isn't good for your vehicle.

**Use your signals properly.** Always use your signal, even if you think no one is there. When changing lanes on the freeway, don't signal as an afterthought or during the lane change. Signal at least a couple of seconds in advance so that others know what you're going to do before you do it and can account for your actions should there be an issue.

**Keep your eyes moving.** Don't get in the habit of staring at the back of the car ahead of you. Periodically shift your eyes to the side-view mirrors, the rear-view mirror, and ahead to where you'll be in 10-15 seconds. Doing this, you can spot a potentially dangerous situation before it really happens. This can help you predict what the traffic is going to do. Looking at the cars a few ahead of you will let you know whether you'll have to soon hit the brakes or not. This will help you monitor your blind spot as well, which makes it much easier to know if the lane changes you plan to make are safe.

**Always wear a seat belt.** This is a must, no matter where you are, what kind of car you're driving, or where you're driving to. By law in many countries, all cars must have a safety restraint and it must be used properly. Buckling up only takes a second and can save your life in an accident. Children should always be in a booster seat or car seat until they are tall enough and heavy enough to sit by themselves. This generally includes children aged eight and under. Never put a child in a car or booster seat in the front passenger seat or other seat with airbags. Children should generally be 12 and older in order to sit in the front passenger seat.

**Avoid driving at night.** Most accidents happen at night or in the wee hours of the morning. Here's why:

- It is more difficult to see, regardless of the weather.
- You and other drivers are more tired. Your reaction times are slower, making driving overall more dangerous.

**Don't text or talk on the phone while driving.** If your eyes are on your phone or your thoughts are anywhere else other than on the road, you're more likely to get into an accident.

**Try to avoid driving in bad weather.** Inclement weather – be it fog, wind, rain, or snow – means your car can't perform as normal and neither can the cars around you (regardless of how good a driver you are or those around you are). And even if no one is around you, you still run the risk of having a weather-related accident. Here's a few things to keep in mind:

- Always keep your windshield wipers going in the rain or snow
- Defrost your windshield to keep it from fogging up
- Turn on your headlights to help others to see you

**Keep your tires properly inflated.** According to a recent study, five percent of all vehicles experience tire problems immediately before a crash. Tires that are underinflated by more than 25 percent are three times more likely to be involved in a crash related to tire problems than vehicles with proper inflation.

**Periodical Maintenance.** When your car is in tiptop shape, the likelihood of you getting into an accident due to a technical malfunction is greatly reduced. You can't prevent the weather, but you can prevent your car from causing your next accident. Get your brakes checked. A surefire way to get into an accident is to have your brakes go out on you. Get your brake lining checked by your mechanic the next time you're in for a tune-up.

**Keep your windshield and mirrors clean.** Simply enough, to avoid accidents, you've got to be able to see. With your vision even slightly impaired, you could lose that split second you need to adjust your course and put yourself in danger. Keep the mirrors positioned well, too. If you can't see what's behind you, next to you, or in your blind spot, you're much, much more likely to get into a car accident.

### 3. RECOMMENDATIONS

Establishing a safe Driving Program with an aim to Prevent Motor Vehicle Accidents (MVA) and Improve Safety Performance by reducing risk & potential Harm to the Drivers as well as to fellow Road Users. Even experienced drivers gain more benefit by conducting periodic training and reminders of safe driving practices & skills. Creating and implementing an effective safe driving program will

protect financial and human resources; reduce liability; and, above all, ensure the continued health and safety of employees for both the company and their families. Companies must promote and support employee participation, understanding and adoption of safe driving practices. It is strongly believed to keep "SAFETY" as our top priority, so it is highly recommended that all companies should take the initiative to create and implement a driver safety program as soon as possible. Prevention of motor vehicle accidents can be achieved through an effective monitoring and implementation of the following programs in various levels of an organization.

- Management Commitment
- Employee Participation
- Approved Policies and Procedures
- Driver Job descriptions with roles and responsibilities
- Records related maintenance programs
- Accident Investigation
- Periodical Vehicle Maintenance and Inspection
- Disciplinary Action System
- Motivational Program
- Defensive Driver Trainings (DDT)
- Regulatory Compliance

### 4. GLOSSARY

- MVA: Motor Vehicle Accident
- NCRB: National Crime Records Bureau
- DDT: Defensive Driver Trainings
- WHO: World Health Organization
- RC: Regulatory Compliance

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