

## Evaluation of Accidents on Curves in Ghats Sections

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**Abstract** - The latest emerging technologies for road safety focuses on finding ways to avoid or minimize road accidents to road users with special concern by reducing the causes of road accidents. Research in this paper includes important issues like road accident and their impacts, causes of this accident, effect of accident, prevention and control that we can improve this situation. Percentage of accident in ghat area is increasing day by day. This paper includes some solutions and ideas to improve safety in ghat areas.

**Key Words:** Accident, road, injuries, ghat section, road safety

### 1. INTRODUCTION

Road traffic accidents are a human tragedy. Globally, about one million people die each year due to traffic accident and about 20-50 millions are injured or permanently disabled. In India, number of road accidents increase over the years. In India, the year 2016 has recorded the highest number of road accidents around 4, 80,652 which comprised 1, 50,785 deaths. Road safety is a multi-sectorial and multi-dimensional issue. It in-corporates the development and management of road infrastructure, provision of safer vehicles, legislation and law enforcement, mobility planning, provision of health and hospital services, etc. According to the report Government of India there are 17 deaths on road every hour in India as per record of government of India more than 140,000 people were killed on India's roads in 2015. The total number of fatalities represents an increase of 4.6% on the previous year according to figures released by the government. More than half of the people are killed in more than

500,000 road accidents in 2015 were aged 15-34. Road accidents cause death or severe injury

Accidents are multifactor and random which leads to loss of life and property. Road accidents cannot be totally prevented but by suitable engineering and management the accident rate can be reduced to a certain extent. A systematic study of accidents can reduce the impact of accidents and save human life. Proper investigation of the cause of accident will help to propose preventive measures in terms of design and control. In This paper an attempt is made to evaluate the causes of accidents and suggest remedial measures. In the hilly regions of India, the traffic accidents are due to the poorly developed in hilly regions, poor infrastructure and unattended hazard zones. Road safety is a shared responsibility of the government and a range of civil society stakeholders. Thus, the engineers have to undertake a big responsibility of providing safety in hilly region, on curve movements to the road users and ensure their safety.

### 1.1 Causes of road accidents in hilly areas

#### 1. Road users:

Around one third road accidents are caused due to over speeding. So, main reason for road accidents is over speeding, rash driving, carelessness fatigue, alcohol and sleep etc.

#### 2. Due to vehicles:

Most of the accidents occur due to defects such as failure of brakes, steering system, tyre burst and

lighting system so; the vehicle owners and drivers should maintain their vehicle in top condition.

### 3. Road condition:

Indian roads are unfortunately famous for their potholes. Potholes are bowl shaped depressions in the roads due to wear and tear and further deepened by rain water.

### 4. Road design:

In India, accidents occur due to road design such as defective geometric design like inadequate sight distance, inadequate width of shoulders, improper curve design.

### 5. Environmental factor:

In this, unfavorable weather conditions like mist, snow, smoke and heavy rainfall which restrict normal visibility and makes driving unsafe.

### 6. Drunken driving:

Consumption of alcohol to celebrate any occasion is common. But when mixed with driving it turns celebration into a misfortune. Alcohol reduces concentration. Drinking makes people lose the ability to focus and function properly. This makes it dangerous for the driver to operate the vehicle.

### 7. Distracted driving:

To safely drive a car, the driver must give full attention to the road. Drivers who divert their awareness, whether it's to talk on their cellphone or send text messages to their friends, end up putting the lives of the other driver to risk. Though distraction while driving could be minor but it can cause major accidents.

Some of the distractions on road are:

a. Adjusting mirrors while driving

b. Stereo/radio in vehicle

c. Animals on the road

### 8. Over speeding:

Another main reason for road accidents is over-speeding. Higher the speed, greater the risk. Faster vehicles are more prone to accident than the slower one and the severity of accident will also be more in case of faster vehicles. At high speed the vehicle needs greater distance to stop i.e. Braking distance. A vehicle moving on high speed will have greater impact during the crash hence will cause more injuries.

#### 1.2 Effects of accidents in hilly areas

Traffic accidents can cause physical, financial and mental effects for everyone involved. Drivers and passengers can suffer from minor cuts and bruises to broken limbs, whiplash, back and spinal injuries, paralysis and even death. Vehicles in traffic accidents are damaged and may be in need of minor or costly repairs or may even be completely totaled and no longer drivable. Additional effects of traffic accidents can include emotional and mental distress as people can suffer from post-traumatic stress from being involved in the accident or from losing a loved one due to a traffic accident.

#### 1. Death and Injury

Road rage gives aggressive drivers an avenue to vent their frustrations and anger on other drivers who share the road. Unfortunately, innocent passengers, bystanders and pedestrians get caught up in the mix. A report from the AAA Foundation for Traffic Safety states that at least 218 men, women, and children are known to have been murdered and 12,610 people injured as a result of 10,037 road rage incidents it examined. "The 12,610 injuries included scores of cases in which people suffered paralysis, brain damage, amputation, and other seriously disabling injuries," the report says. Victims are usually considered accidental deaths, and find them unable to avoid the onslaught of an aggressive driver.

## 2. Permanent Disability

Permanent disabilities occur whenever an injury impairs a victim from mentally or physically performing certain occupational and/or non-occupational functions for the rest of his or her life. Even though a victim may not experience ongoing physical pain, he or she may still suffer from a permanent disability that limits their abilities. Some examples of permanent disabilities include:

- Paralysis
- Loss of Hearing/Sight
- Loss of Mobility
- Traumatic Brain Injury
- Loss of Cognitive Abilities
- Amputations

## 3. Temporary Disability

This is where you suffer a minor injury expected to impair you for a short time and heal completely. Examples of injuries that may result in temporary disability include:

- Minor whiplash
- Broken bones
- Strained muscles

These injuries may impair you from performing your job or the treatment may require time off from work, so you should seek lost wages for the healing period.

## 4. Vehicular Damage

If you are stopped at a stop sign, and the car behind you rear-ends you, then that driver is most likely liable for damage to your vehicle and for any injuries you suffer. But what if your vehicle is damaged (or you are injured) because of:

- potholes,
- shoulder drop-off
- oil and chip

- construction zone
- icy or snowy roads, or
- Wet roads.

## 1.3 Solutions or control measures to be undertaken

### 1. Proper road design:

Road design should be proper in width as per IS recommendation and also the quality of material that used to construct the road in hilly area should must be good

### 2. Safety and warning signs:

The hilly road has great number of dangerous turns or another chance to accidents. So it is very much advisable to have ample number of road size put up to warn and alert the drivers

### 3. Avoid distraction:

The driver should always give out most attention while driving. They should avoid loud music in cars and also should avoid headphones. The co-passengers should avoid distracting the driver.

### 4. Adequate sleep:

The driver should have adequate sleep before driving, especially before driving in hilly roads. This will eliminate the risk of the drowsy drivers.

### 5. Maintainance of vehicles:

The vehicle owners and drivers should always maintain their vehicles in top condition. They brakes, tyres and other components of vehicle should be replaced and service as when necessary.

### 6. Citizens should be compassionate:

The citizen should have the social responsibility and help others in need they should attend to the casualties and take immediate action. They should inform the police force about accidents and also call

for an ambulance in case of emergency. They should have the courtesy to always leave way for an ambulance.

## 2. CONCLUSIONS

Road accident is increasing every day and it is dangerous to all people, In this case all people must realize and give more attention to decrease the rate of road accident So Road safety education is therefore the need of hour. As a conclusion, there is lot of causes of road accidents.

So there is a clearly need of road safety education and it should be directly given to the road users who are frequently involved and injured in road accident.

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