Hill Area Accident Protection

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Abstract - Mostly in Road traffic accidents and deaths caused by them are most critical issues now a days. It is also impacting the country's economy. 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. Also it is not safe now a days to cross the ghat while having any long journey. Percentage of accident in ghat area is increasing day by day. Severity of this accidents are non-reparable. Road traffic accidents (RTA) are responsible for 1.2 million deaths worldwide each year. So it is first important to control this scenario and have some safety measures in ghat area. This paper includes some solutions and ideas to improve safety in ghat areas.

Keywords -. Accident, Road safety, Ghat Section,.

I. INTRODUCTION

Today, road traffic injuries are one of the leading causes of death, disabilities and hospitalization in the country. Road network in India, of about 56 lakh km in March 2016, is one of the largest in the world. A total of 4,64,910 road accidents have been reported by States and Union Territories (UTs) in the calendar year 2017 claiming 1,47,913 lives and causing injuries to 4,70,975 persons. These figures translate, on an average, into 1274 accidents and 405 deaths every day or 53 accidents and 17 deaths every hour in the country. There are many dangerous roads in the world like mountain roads, narrow curve roads, T roads. The problem in these curve roads is drivers can't able to see the vehicle or obstacles coming from other end of the curve. If the vehicle is in very speed then it is difficult to control and there are chances of falling to cliff. The solution for this problem is alerting the driver about the obstacle or vehicle. Usually horn is used for this purpose but it is not a valid. To avoid these problems in curve roads or T roads we are introducing sensor based accident prevention system. That is we are keeping ultrasonic sensor in one side of the road before the curve and keeping a LED light after the curve.

Mostly, in the hilly areas of Northern India, accidents due to poor development of national highways and hazard zones. In India the rate of accidents in ghat section is increasing day by day. In India 1 out of 6 serious victim's dies, but in the U.S.A. the figure is 1:200. It will become the third largest contributor to the Global burden of the disease. It is estimated that 60,000 are killed on the roads every year.

- Preventive measures
- Engineering measures
- Enforcement of regulation.
- Educators of public in traffic laws.

Road design, road lighting, penance of the defective vehicles taken to decrease the rate of accidents. Speed control, traffic control, training and supervision, section observance of law and regulation and medical check up to all these points were included in the enforcement of regulation. It is necessary to provide education related to traffic laws to educate the road user regarding the necessary safety precaution taken while using the road.

II. SURVEY

Some road conditions responsible for accident
Road crossing
Potholes
Damaged road
Diversions
Illegal speed breakers
Merging of rural road with highways
Signal crossing
Narrow width of road at bridge section
Ghat section

III. METHOD

Arduino Uno is a microcontroller board based on the ATmega328P. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz quartz crystal, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller, simply connect it to a computer with a USB cable or power it with an AC to-DC adapter or battery to get started. The power for Arduino can be derived from Nonconventional sources like solar energy.

Ultrasonic sensors

Ultrasonic sensors are "based on the measurement of the properties of acoustic waves with frequencies above the human audible range" often at roughly 40 kHz. They typically operate by generating a high-frequency pulse of sound, and then receiving and evaluating the properties of the echo pulse. In the presence of vehicle the sensor senses the vehicle; the light will glow at the other end of the curve. In the absence of the vehicle the sensor will not sense and the light will not glow. This process repeats continuously.

3.1 Causes of road accidents in ghat section

1. This happens while a vehicle tries to overtake other vehicle when entering village town and suddenly a road divider starts.
2. For increasing number of accident is overloading vehicle
3. So many times while driving drivers are drunk
4. Lack of connectivity between villages Occur due to drivers losing control over the vehicle at sharp bends
5. 25% of accident have occur because of drunken driving.
6. Also the enforcement of police is weak
7. Topography nature of ground is another reason for spread in accident.
8. It is observed that 50% accidents have occurred while negotiating the sharp bends.
9. A majority of drivers are not properly trained and many drivers not even have their licence.
10. Basic elements in accident on road user's vehicle road and its condition environmental factors etc.
11. Drivers pedestrian's element of surprise passenger vehicle defects road condition Road design whether animal's other causes are also the cause of accident.

IV. RESULTS AND DISCUSSION

Ultrasonic sensor has 4 pins. They are +5V VCC, GND, Trig pin and Echo pin. Here Trigger pin is output pin and Echo pin is input pin. Ultrasonic sensor sends the signal in the form of pulses from trigger pin. When this signal hit the object it will get reflected back and is received by the echo pin. From echo the signal is sent to microcontroller Arduino UNO. Microcontroller Arduino UNO processes this data and operates the LED which is connected to output pin of the microcontroller Arduino UNO. LED is operated according to the command. In this study, we got to know about the accident which occurs on the road at Ghat section. We understand the causes and effect of accidents and then founded out a solution introducing a new technique to avoid such accident.

V. CONCLUSION

The new technique consists of two CCTV cameras and two LCD screen which displays the live scene captured from the CCTV. This help in reducing the accidents and to enjoy the safer ride. Life is important than any other thing, once gone cannot be regained. So, to save this valuable life, this method have important role. It can help Road users at Ghats from being killed in a serious injury.

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Special Issue:

Department of Electrical and Electronics Engineering, Malla Reddy Engineering College (Autonomous).

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