

SEAT BELT ALERT SYSTEM WITH IGNITION CONTROL IN FOUR WHEELER

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ABSTRACT :

Most of the accidents are occurred because of violation of rules. Result of this major accidents happened . When accidents that careless mistake makes loss of life of driving person and near person. More injuries for driving person and near person only than back sitting persons. In our day-to-day life we are careless in our safety while driving in vehicles for this we have to introduce some techniques to do these precautions compulsory. While driving car wearing seat belt is important that can safe our life during accident periods .But most of us are careless to wear seatbelt. Driver will be unable to start vehicle without wearing seat belt. The technology connects the drivers and the co passenger seat belts with the Ignition system such that without fastening the seat belts, the engine will not start. If the driver unfastens their seat belt is removed after starting off vehicle, the control unit will disengage the power input to the ignition switch after 30 seconds resulting in halt position.

▪ **KEY WORDS :** ECU, Sensors, Actuators Linking cables, Battery.

1. Introduction

Driving without fastening the seat belt was one of the most common traffic offences in India. With 6,175 charges laid in the first six months, Young drivers were the least likely to buckle up seat belt. In the year 2011 a survey conducted, it was found that 55% university students did not consistently wear a seat belt. We all thought on this careless behavior and came to a solution that can resolve this problem. We have decided to work on this project that ensures that the driver wear's his or her seatbelt properly and compulsory.

To do so we have decided to make the seatbelt assembly and use the sensor and distance measuring device to wear the seat in properly

Now-a-days vehicles are getting way more faster and the passengers are getting way more less cautious about their safety in the car in case of any mishappening takes place.

The passengers are getting careless and are not using safety system like seat-belts provided for their protection in any mishappening.

The passengers do not feel the necessity to tighten their seat belts that are meant for their protection.

2. Main Component of System

ECU

Seat Belt Assembly

Sensor

Actuators Linking Cables

Stator

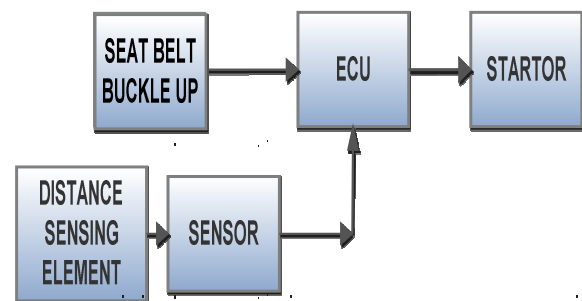
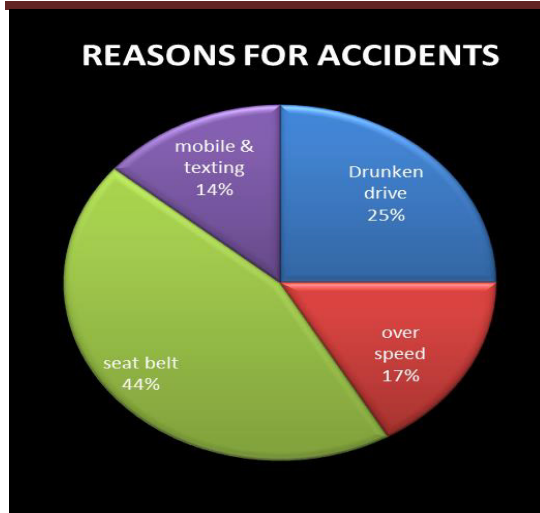


Fig.Block Diagram Of System

3. Statistics For The Cause Of Accidents

Very year the lives of almost 1.24 million people are cut short as a result of a road traffic crash. Between 20 to 50 million more people suffer non-fatal injuries, with many incurring a disability as a result of their injury.

Road traffic injuries cause considerable economic losses to victims, their families, and to nations as a whole. These losses arise from the cost of treatment (including rehabilitation and incident investigation) as well as reduced/lost productivity (e.g. in wages) for those killed or disabled by their injuries, and for family members who need to take time off work (or school) to care for the injured.

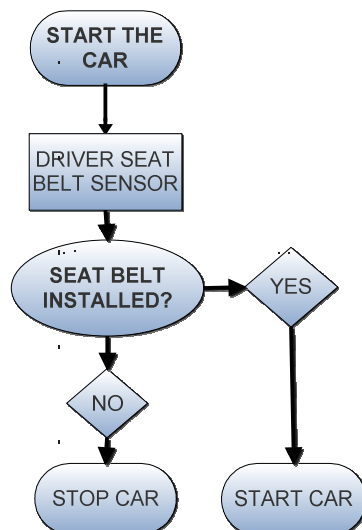


There are few global estimates of the costs of injury, but an estimate carried out in 2000 suggest that the economic cost of road traffic crashes was approximately US\$ 518 billion. National estimates have illustrated that road traffic crashes cost countries between 1–3% of their gross national product, while the financial impact on individual families has been shown to result in increased financial borrowing and debt, and even a decline in food consumption.

Road traffic injuries have been neglected from the global health agenda for many years, despite being predictable and largely preventable. Evidence from many countries shows that dramatic successes in preventing road traffic crashes can be achieved through concerted efforts that involve, but are not limited to, the health sector.

4. Reduce Accident

We can avoid accidents by wearing a seat-belt reduces the risk of a fatality among front-seat passengers by 40–50% and of rear-seat passengers by between 25–75%. For this we have to make a controlling system by which wearing seat belt is made as compulsory. The operating principle of the controller is explained in the below flow chart.



This technique is to detect that the seat belt was installed successfully or not. If the driver tries to start the car the controlling system checks that the driver worn seat belt or not if he / she worn then car will start if no car will not start .

5. How Would Be This ?

This control system can be made by using sensors to detect that the seatbelt is installed successfully . These sensors are attached with driver seatbelt.

The seat belt is placed between the IR emitter and detector . The seat belt is teared horizontally at the center after leaving some length this helps to receive IR rays from the emitter by the detector to complete the circuit and it is encoded by RF circuit it converts it into radio frequencies . the radio frequencies are transmitted through antenna.

These radio frequencies are received by a receiver and it is decoded to micro controller . Microcontroller is programmed and it is connected with display to indicate to the passengers. And micro controller is connected with ignition system this helps to start the car. And the distance sensing element can be sense the distance from seat belt to the steering if the range will be under 1m then the sensor will be send signal to ECU and ECU get order to the staror to start the vehicle only if the seat belts are installed perfectly.

6. Advantages and Future Scope

- a) Compulsion to wear seat belt
- b) Insurance of driver safety
- c) Less no. of injuries to the passenger of the car in an accident
- d) No. of deaths due to seat belt use will be less.
- e) Increase the passenger safety

7. Conclusion

The road accidents are now proving to be one of major losses of human resources although the accident are not fully solved but the losses from the accident can be avoided by wearing the seat belts. By ensuring the seat belt it can be used very effective in saving the man life.

8. Referances

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