

# SMART STEERING INDICATOR (SSI)

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**Abstract**— As the population is increasing day by day to meet the increasing demand of the people so many vehicles are running on the road. Every driver in the road wants to reach the destination as soon as possible. In that situation they generally cross their speed limits. While overtaking or changing the lane sometimes due to the less precise steering indicator (current indicators) at the rear end of the vehicle there is lack of coordination between the driver and the following driver, thus resulting in severe collisions.

In this project we have made an advanced form of the steering indicator, and termed it as a **Smart Steering Indicator (SSI)**. Our main motto is to help the driver and the following driver to setup an appropriate coordination such that the precise degree of steering of the driver will be displayed at the rear of the vehicle, thus resulting in accurate awareness to the following driver. It will surely result in the safe overtaking of the following vehicle and will reduce a big number of accidents occurring in the roads. In this we have connected the potentiometer with the steering axle, which is connected with the electric circuit to the rear and the front steering indicator display.

**Index Terms**— Smart Steering Indicator, Advance lane change System, Advance indicator, Precise steering indicator.

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## 1 INTRODUCTION

Now a day's vehicle is the need of each and every people to travel from one place to another because it saves the precious time. Lots of accidents takes place every day due to the lots of reasons and one of the reasons is the misunderstanding between the drivers. Around 1.3 million people die every year and 20 to 50 million suffer non lethal injuries due to the road accidents. In today's world a great loss of life is due to the road accidents that takes place on the road every day. Lane driving, which is the foremost requirement and is given the utmost priority in the developed nations (such as U.S.A, Germany, Russia, etc) greatly relies on the system of steering indication to avoid the road accidents. So we believe that there is an important need of a system that gives the precise indication while steering the vehicle on the road.

Hence a system is needed to be developed which is reliable, easy to operate, cheap and a standard for the entire vehicles worldwide. The loss of life and money on the roads in terms of goods can be avoided if proper indication methods are available for use. "A stitch in time saves nine" is a proverb that says a precaution taken during the time, can lead us to neglect or bypass bigger issues. So here we are with a system that is a solution to this problem of the 21<sup>st</sup> century and with this system being on place we can take favourable decisions on time and stay safe from the dangerous accidents. If this system

is used, lot of accidents would not even occur.

## 2 RESEARCH OBJECTIVE

In this project our main aim is to reduce the accidents due to the misunderstandings between the drivers while driving on the road (especially overtaking). The system developed is of very low cost which works as a safety feature for the driver and the following driver. It comprises of the automatic indication at the rear end of the vehicle which is directly connected to the steering axle rotation.

## 3 WORKING OF SSI

While using SSI in the road there is no need to open the indicator manually, as it opens up automatically according to the steering axle (wheel) rotation. Here we are using only four slabs of indicator from bottom to top which glows according to the rotation angle of the steering axle (or we can say the steering wheel).(fig. 1)

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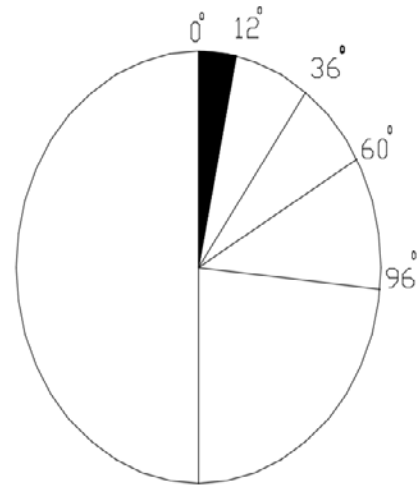
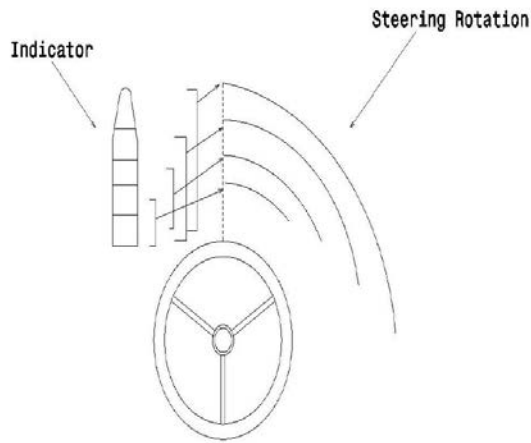
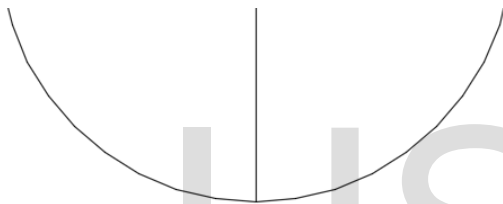


Fig3. Right Rotation of the Steering Wheel



0° to 12° - it will be the free zone i.e there will be no indication.  
 12° to 36° - will be indicated by the first slab.  
 36° to 60° - will be indicated by first + second.  
 60° to 96° - will be indicated by first + second + third.  
 > 96° - will be indicated by the first + second + third + fourth.

Note: Here the indication is shown at the respective end towards which the vehicle is steered.

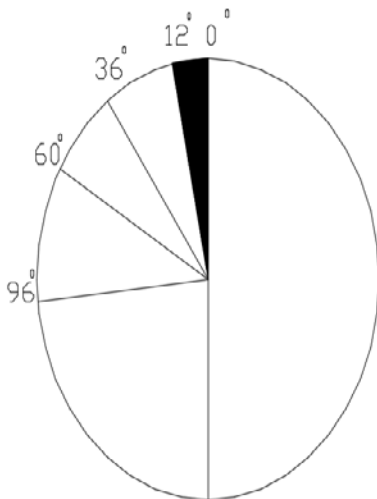


Fig2. Left rotation of the steering Wheel

### 3.2 Electric Component Used

- Led
- Potentiometer(Variable resistor)
- Battery
- Wire

### 3.3 Component Assembly

D 1, D 2, D 3, D 4 these are diodes.

R 1, R 2, R 3, R 4, R 5 are the resistors of 250 ohm.

In this system all the led's are connected in series before giving them the current supply these are connected to the resistance of 250 ohm which is connected in parallel with the led. Potentiometer is used to vary the resistance for glowing the led's. The third terminal is connected to the left side of the positive terminal of diode and first terminal is connected to the right side of the positive terminal of the diode. And second terminal to the negative end of the battery. (Fig.4).

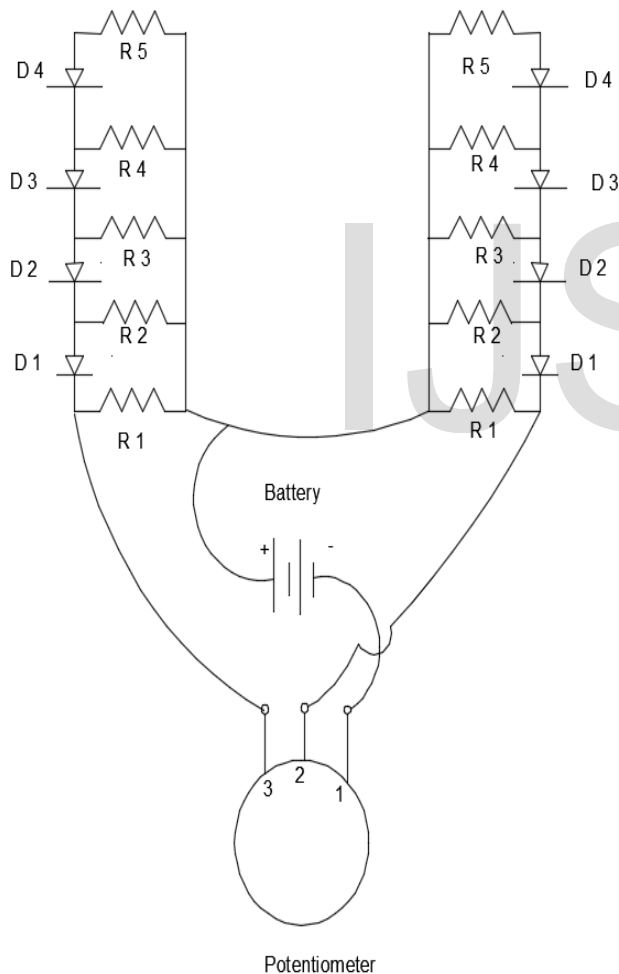


Fig4. Circuit assembly of SSI

#### 4 WORKING MODEL OF SSI



Fig5. Working model of SSI

#### 3 CONCLUSION

The project "Smart Steering Indicator" has been successfully design and model is tested.

Advantages –

- It will reduce the risk of accidents while lanes changing.
- It will prevent the accident which occurs due to the misunderstanding between the driver and the following driver on the road.
- It is of low cost and has no complexity.
- It is easy to install.

### **Acknowledgment**

I would like to express my great appreciation to Ms. Vaishally Dogra, Assitant Professor, Mechanical Department, Graphic Era Hill University.

I would like to offer my special thanks to Mr. Bhaskar Singh Bisht and Mr. Yatharth Joshi as the advice given by them has been a great help in my project.

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