

# **AUTOMATIC VEHICLE HORN CONTROL SYSTEM USING PROXIMITY SENSORS**

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## **ABSTRACT**

In this system we use intelligent instruments in every part of our lives. It won't take much time that we realize that most of our tasks are being done by electronics. Very soon, as we shall see, they will perform one of the most complicated tasks that a person does in a day, that of driving a vehicle. This is for the better. As the days of manned driving are getting extremely numbered, so are those of traffic jams, bad, dangerous and rough drivers and more importantly, accidents. a person dies in a car crash every second. Automation of the driving control of car is one of the most vital need of the hour. This technology can very well implement what was absent before, by the help of obstacle sensor it detects the closer vehicle in any direction immediately it sends control signal to control and activate the horn system by the help Arduino. But In the traffic area the car will be in manual mode to control horn manually.

**Keywords:** Arduino, Industrial Sensors, Relay.

## **I.INTRODUCTION**

Due to increase in vehicle the amount of pollution, that is generated by these vehicles have increased significantly. This has in turn caused disturbances and therefore, in some areas such as in central cities, near hospital, near school, zoos etc, honking (operating a horn to generate to generate sound) is prohibited by law or regulation.

On the contrary the driver, in some areas uses the horn to draw attention of people or the animals towards his vehicle. In general, there are many traffic signs in various areas to notice the drivers not to operate horns. Additionally, or alternatively, local governments issue permanent or temporary regulations the horn operations. However, some drivers ignore such traffic signs or

forget or do not know of such regulations, especially in those areas that they are not familiar with, and thus operate horns in a wrong way against the regulations. The only way by which the driver can honk is that if the driver gets close to the other cars range only then the driver will have full access to honk, if the other car is not nearer to the car of the driver, he will not be able to honk. Thus, it needs to provide a technical solution for automatically deciding the closeness of the car and preventing unnecessary honking.

**II.COMPLICATIONS FACED DUE TO UNNECESSARY HONKING**

Horns have been provided in cars so that drivers can alert the pedestrians and other travelers in case of any threat. But instead we tend to blow the horn relentlessly in order to avoid the trouble of driving carefully. Apart from the inconvenience and unpleasant emotion that incessant honking evokes, it is also something which leads to, hazardous health consequences. Honking poses threat to life of pedestrians, to cyclists and bikers. [1] Incessant honking is a sign of growing impatience, anger, anxiety and stress. [2] Also seen as an assertion of power by drivers. [3] Most importantly constant exposure to loud noise causes long term damage to health.

A survey was conducted regarding the unnecessary honking in the city of Nagpur. The most important factors for increase in noise pollution in urban areas are vehicular traffic. Vehicular traffic contributes to about 55% of the total urban noise generation. The necessity for studies regarding urban noise pollution and its consequences on the environment has motivated various researchers in several countries including India. Several cities in India have been facing serious noise pollution problems in the last few decades due to substantial growth in the number of vehicles, expansion of road network, industrialization and urbanization.

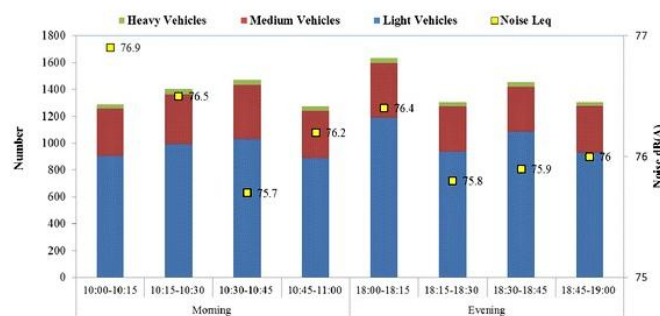


Fig. 1. Statistics for noise level generated by heavy, medium and light vehicles.

Hence the conclusion was made regarding the survey stating. Impact of heavy vehicles on traffic noise was more as compared to light and medium vehicles. Honking is a frequent phenomenon in Indian road context therefore it was observed that honking has significant impact on traffic noise besides vehicular speed.

### III.PREVIOUS SYSTEM

It is known that a horn, although indispensable for a vehicle, produces much noise. Thus, in some areas, such as in central cities, near hospitals, schools or zoos, etc., honking (operating a horn to generate sound) is prohibited by regulation. It uses Global Positioning System to

1.If in a current driving location where honking is prohibited then the circuit will not allow to operate the horn to produce the noise.

2.If at current location, when there is a need to honk, the horn is prepared to honk.

3.If at current location, the horn is set in a free mode in which the driver may decide whether to operate horn or not according to the real traffic condition.

### IV. PROPOSED SYSTEM

The changes that we have made to the proposed system is that the horn won't work unless a vehicle is close enough or else simply the horn won't work. By this way we can avoid all the noise pollution and give a noise free environment, this project ensures that there will be less noise generated by horn and we can avoid the unnecessary honking where it is not at all required. Noise pollution causes a harmful impact on human and animal life. The existing system is a patent registered is of way by which vehicle cannot honk unless they are in some location of the city. Our proposed circuit also decides the frequency to which the driver can honk and if the vehicle is near the honking intensity decreases and if the vehicle is little far the hoking intensity increases (only in honking range).

### V. EXPLANATION FOR THE PROPOSED SYSTEM

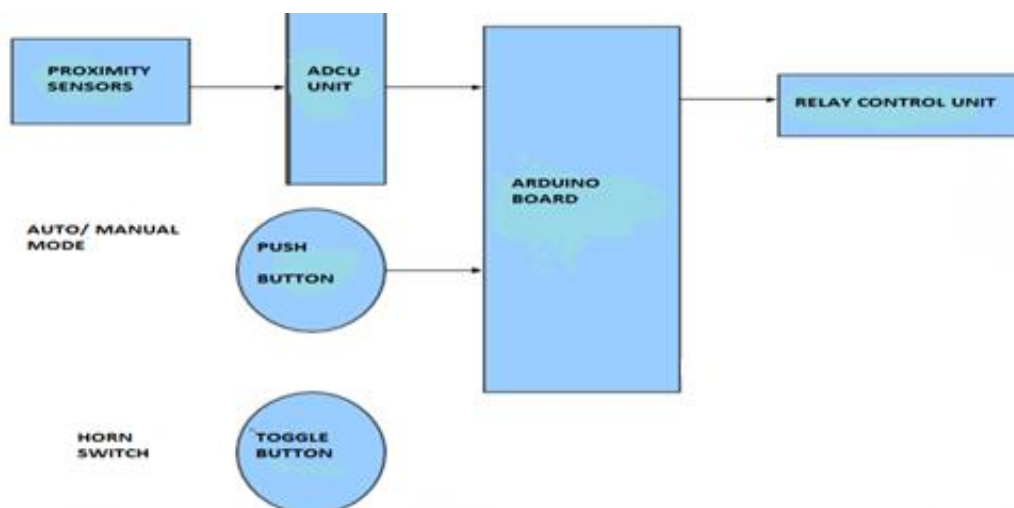


Fig. 2. Block Diagram of proposed system.

The components in this system are Arduino, Relay, Proximity sensors, Connecting wires, Bread board, Battery, Resistors, Horn, Wires and ADCU Unit.

#### Arduino

The main component of the for the effective working. All the programming is done in Arduino board and the Arduino board is responsible for determining the effective distance between the vehicle. The programming is done using Arduino language That is combination of C/C++ functions that can called. Arduino uses an ATmega32 microcontroller on which the Coding can be done.

#### Relay

It is like a switch that controls the effective honking. Only, when the Arduino sends the signal the relay completes the circuit of the horn and the driver can horn if the relay does not get the signal the circuit of the horn is broken, and the driver won't be able to honk.

#### Proximity Sensors

Proximity sensors detect the distance between one vehicle to another vehicle. When a vehicle is at a close proximity only then the proximity gives a high signal to the Arduino the Arduino then analyze the data that is supplied by the proximity sensors. Arduino cannot be directly connected to proximity sensors so there is a breadboard that is used as a main junction by which the Arduino can get the outputs of the proximity sensors easily.

#### WORKING

Let us imagine the whole setup as a circuit with two switches (switch A and switch B) with a battery and a horn. Now both the switches should be on only then the horn can be initialized. Now one switch (switch A) is directly connected to the push button to which driver is given access to. Another switch (switch B) is connected to the Arduino. Now when the Arduino gives signal only then switch B will be on otherwise the switch will be open and the horn cannot be initialized. Now, Arduino is connected to the proximity sensors and distance is known. So now when both the switches are closed the horn can be initialized but if only one is closed then horn cannot be initialized.

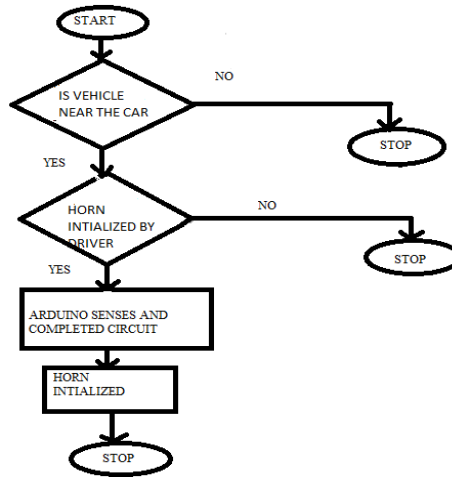


Fig. 3. Flow of working.

### VI. CONCLUSION

Noise pollution seems to be a general problem, but when seen through global perspective it is a major issue. When honking unnecessarily is reduced it results in a peaceful environment and less stress for the daily travelers. Travelling is a part of day to day life for every human, so when noise due to unnecessary honking is eliminated humans will be able to sleep, concentrate and improvise their memory efficiently. Therefore, with this this initiative overall stress is reduced and a peaceful journey will begin.

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