

# Automatic Speed Breakers

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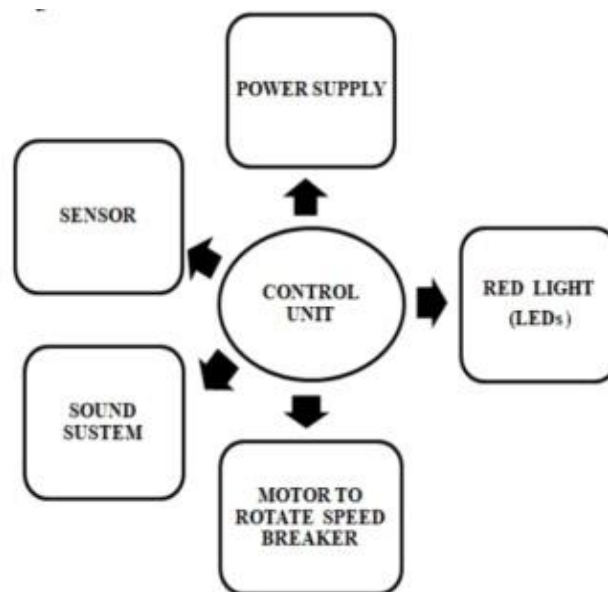
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**Abstract:** Safety is a necessary part of man's life. Due to the accident cases reported daily on the major roads in all parts of the developed and developing countries, more attention is needed for research in the designing an efficient car driving aiding system. It is expected that if such a device is designed and incorporated into our cars as a road safety device, it will reduce the incidence of accidents on our roads and various premises, with subsection in loss of life and property. When it comes to the use of a motor vehicle, accidents that have occurred over the years tell us that something needs to be done about them from an engineering point of view. Now it is suffice to say that the implementation of certain highway safety means such as speed restrictions, among others, alone has done a lot in reducing the rates of these accidents. Many motorists have had to travel through areas with little light under much fatigue, yet compelled to undertake the journey out of necessity. It is therefore imperative to consider the advantages of an early warning system where the driver is alerted of a possible collision with some considerable amount of time before it occurs.

**Keywords:** Automatic Speed Breakers.

## I. INTRODUCTION

Road plays an essential role for the general population all over the world to travel from one place to a different with the help of different modes of vehicle thus, there safety, security is significant; so for the correct working of the roads "controlling driving velocity" is taken under consideration to be an effective methodology for enhancing vehicular safety because increase speed of vehicles can lead to the possibility of serious mishaps. An issue regarding loss of life due to mishaps well-being and safety of road is very essential, so for the decrease of vehicular speed and furthermore mishaps many TEM are utilized and these are "speed bumps and speed humps" which is speed breakers (Conventional Breaker System) and there are also "dynamic speed bumps" which is called as automated or advanced speed breakers (Automated Breaker System) that are totally different from usual CBS this is absolutely new idea to control the vehicular velocity and serious mishaps over the speed breakers. ABS is the "time demand" according to the requirements and also ABS comprises of ITS.



**II. LITERATURE REVIEW****U. Sandhya, V. V. V. S. Vineela, M. Manikanta, S. Siva Sri, N S S R Deepika Patnala<sup>1</sup>**

By using Embedded system speed of the vehicle can be controlled effectively according to different zones. This system will be implemented for any kind of vehicles. With the help of this system we can control the over speed and the rash driving of the drivers. This system can be seen in highly populated regions and thus the effects of accidents can be decreased. This research work shows that a realistic and practical life like research work has been made and in the IR sensors play a major role when the vehicles are going with high speed at that time the sensors will be activated and start it's working according to their requirements.

**Mohit Raj, Prof. S. D. Ghodmare, Rakesh Kumar Choubey<sup>2</sup>**

The research paper deals with the Comparison of Automated speed breakers with Conventional speed breakers. Different studies and analysis on automated and conventional speed breakers are done. Concluded travel time, fuel consumption and fuel emission is less in automated speed breakers when compared with conventional speed breakers. Whereas cost development of automated speed breakers is more when compared with conventional speed breakers.

**Punyaban Patel, Uma Valle, Navya Kola, Hari Priya Sathyam<sup>3</sup>**

The concept of having a smart speed breaker control system based on the Time Demand using Arduino Nano Micro-Controller. It is very innovative and useful for the requirements of today's speedy life. This research concept idea is to make the performance of the vehicle better. This speed breaker allows emergency vehicle for maintaining its constant speed by deactivating the speed breaker using Radio Frequency that makes the road flat which plays a major role in safeguarding human lives. This makes the transportation much easier and much more convenient for emergency vehicles like ambulances, fire engines, and VIP police vehicles.

**Kumaravel A, Tharani R, Thillaikarasi G, Varsha A<sup>4</sup>**

If the speed of the vehicle will be in the given allowed speed limit then the speed bumps will remain flat on the surface of the road and the vehicle can pass through it comfortably. In implementation they used an iron finished flat speed breaker which is skilled of rising with the help of control circuitry of embedded system. In the Arduino board and proximity sensors to detect the speed of vehicle and activate the speed breaker and a warning to shown to the driver using a standard traffic light signal, where Red light for slowing down and green to maintain the speed and a buzzer is also used to warn the driver of speed breaker ahead of him. If the speed exceeds the allowed speed an Image is also captured of the vehicle and is sent to the cloud, which can be accessed by RTO for fining the vehicle. They have tested our system on multiple times called as stress testing to see if the model works correctly in stress and the results are good as expected.

**Ajay s, Govind G, Dharmendhar S, Parthasarathy J<sup>5</sup>**

The research work of an Automatic speed breaker on time demand using embedded systems shows that a realistic and practical life like research work has been made which can be a milestone in electronics world. The future advancements in the concept is as told before that more channels can be given to the RTC to have more time slots to be worked for. Thrones can be used to make any specified vehicle punctured. The more complicated and more useful speed breaker on time demand can be made in future easily. More will be the useful in respect of the applications, more will be the complications.

**T.Sureshkumar<sup>1</sup>, V.Thilipkumar<sup>2</sup>, S.Venkatesh<sup>3</sup>, S.Vignesh<sup>4</sup>, V.Vignesh<sup>5</sup><sup>6</sup>**

This paper represents design and implementation of an Automatic Braking system based on sensor fusion indented to use in vehicles that can solve the problem the resulting system can achieve measurements with high accuracy and improved short distance measurement also The system is very suitable in case of highway and emergency conditions The tests prove that the designed system can satisfy its goals within the budget limits.

**S. Chandhini, Dr.D.VeeraVanitha, K. BharathiNandha, M. PoojaDharshini<sup>7</sup>**

In hectic situation the time is an important factor to be considered, because ambulance needs to reach hospital in time to save a patient. The speed breakers reduce the speed of every vehicle to a certain range which causes time delay. Since the conventional speed breakers cannot be completely removed as they avoid accidents, hence an automatic speed breaker flattening system was introduced. Artificial system detects the ambulance measurements provided by IRC 99 guidelines and hence speed breakers disappear and provide the free flow path.

### III. CONCLUSION

- Embedded system effectively controls the speed of the vehicles in different zones and highly populated regions this decreases the effect of accidents.
- Travel time, fuel consumption and fuel emission is less in automated speed breakers when compared to conventional speed breakers both in peak and non peak hours. Cost of development of automated speed breakers is 30% higher than conventional speed breakers.
- This idea makes transportation system easier and more convenient for emergency vehicles and thus safeguarding human lives.
- IOT is used to capture the image of high speed vehicles and sends to the RTO through cloud for fining the vehicle.
- PIC controller system activates the speed breaker day time and flattens during night time. This system is very suitable in case of highway and emergency and even budget friendly.
- In this system it provides a break free path for emergency vehicles.

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