

New Concepts for Controlling Vehicle at Signal Using Spike Speed Breaker

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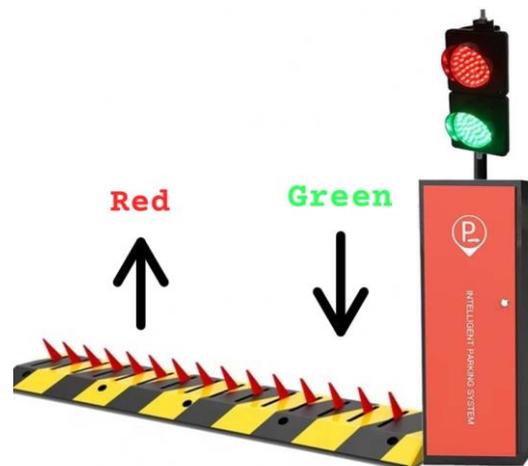
Abstract - This project is a study on spike-speed breakers. Where can we use a spike speedbreaker? It's objective, conclusion & methodology etc. Nowadays there is a great problem of heavy traffic at the signal because increasing percentage of the population in cities. & not following the rules of traffic then we are trying to control the traffic at signal & people's are following the traffic rules using spike speed breaker. with the development of science and technology, the progress of society, the popularity of cars, and the frequent Occurrence of high-speed chasing on roads, some are caused by an illegal hit and run, and some criminals will try to get rid of the pursuit of the police by driving vehicles at high speed. problems faced in urban cities. For this "Road Spike System" has been developed which probably helps to control the traffic. The system consists of knife-edge elements arranged in series. It punctures the tyres if a vehicle tries to cross the traffic signal. The unit consists of cam operated mechanism.

Key Words:- spikes speed breaker, motor, micro switches, shaft, road safety.

1. INTRODUCTION

"spike speed breaker" is used in places where heavy traffic is at the signal. Because many people are not following the rule of traffic. For stopping at a red signal and going on a green signal etc. hence we use the spike speed breaker, which is helpful for pedestrians to cross the road. Many people or cars, two-wheelers, four-wheelers, trucks, buses, etc. are "zebra -crossing" and hence pedestrians do not cross the road at the signal. Then this system is useful for

pedestrians crossing the road and increases more chances of controlling the traffic at the signal and reduces the percentage of accidents at the signal.



2. Use of "Spike speed breaker":-

With the development of science and technology, the progress of society, the popularity of cars, and the frequent occurrence of high-speed chasing on roads, some are caused by an illegal hit and run, and some criminals will try to get rid of the pursuit of the police by driving vehicles at high speed. No matter what kind of situation, it will bring no small potential safety hazards to road safety and personal safety. Whether the use of tyre killers will become a common phenomenon in society, the figure of tyre killers on the road is very common. To protect the passing vehicles and pedestrians, hydraulic traffic

spikes will be used and placed at the entrances and exits of buildings or roads. In the past, when police officers checked and controlled vehicles, they needed to intercept vehicles through old-fashioned mobile horses or plastic cones. It requires multiple policemen to work together, which is inefficient. In addition, when a criminal vehicle forcibly flushes the card, it cannot be intercepted quickly and effectively. The application of tyre killers greatly reduces the road safety risk coefficient and effectively supports the interception tasks of military and police forces and various checkpoints.

3. OBJECTIVE

This Project carries four objectives as follows:-

- To avoid accidents at the signal.
- To control the vehicle at the signal.
- It is helpful for pedestrians to cross the road.
- To damage the tyres of the vehicle when a vehicle breaks the traffic rules.

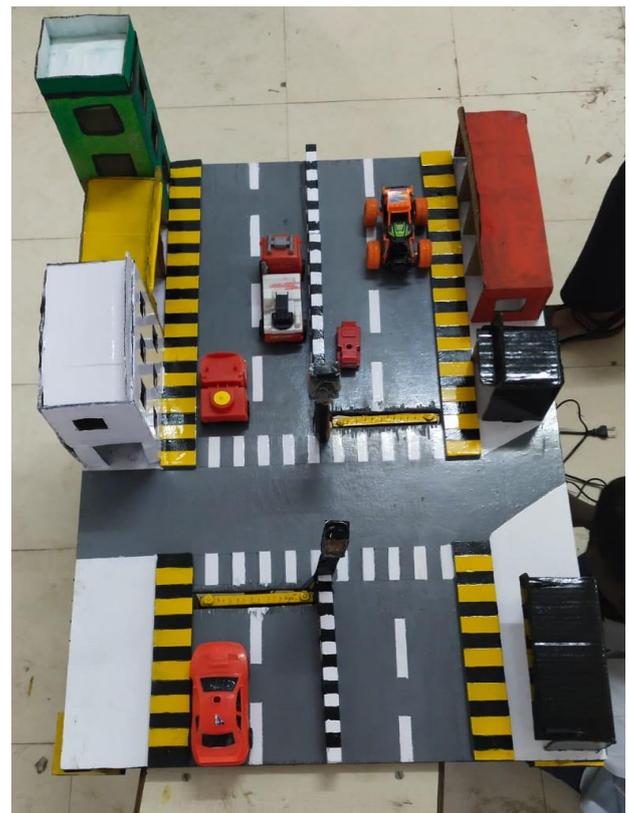
PROBLEM STATEMENT

Nowadays there is a great problem of heavy traffic at the signal because of more in percentage of population and vehicles in cities & not Follows the rules of traffic. Then we try to control the traffic at the signal & people follow the rule by using spike speed breaker.

4. METHODOLOGY

Spike speed breaker covers an area of 10-12 inches on the actual surface of the road. It is made up of a spike steel plate, using steel material. This fully automatically works in conditions, when the red light is on the spike speed breaker is lifted in an upward direction and its height is 4-5 inches from the surface of the road. We use all electronic Equipment in this system. When the signal changes to red When the red switch is pressed it closes the switch S1 while Switch S2 remains open. When switch S1 is activated it Simulates a red signal which runs two parallel circuits one Which switches on the red light and the other which activates The motor, the motor circuit has limit switches M1 and M2 (normally closed) in series with the motor. When the red Light is ON the motor rotates in an anticlockwise direction (when viewed from the motor to the model). The motor is Geared to a shaft on

which lies a circular cam with a gear Reduction of 5:1 hence the motor torque which is 10kg-cm Gets multiplied 5 times and the speed of the shaft is reduced From the motor speed of 60 rpm to 12 rpm. The cam rotates Such that it allows the shaft carrying the dead weight to come down smoothly. The downward motion of the dead-weight Shaft causes the spikes fixed to its end to rise above the road Level.



5. FUTURE SCOPE

- 1) It can be used as a speed breaker for aligning the traffic in one direction.
- 2) It can be used in hospitals, parking and various institutions.
- 3) It can be used as a barrier to stop the vehicles approaching the highway in the wrong direction.
- 4) It can produce an ample amount of electricity which can be used in various proposes.

6. CONCLUSIONS

- 1) It is successfully lifted in an upward direction when the red signal is on.
- 2) It is good for reducing the percentage of accidents.
- 3) It is Successfully controlling the vehicles at the signal.
- 4) It is Helpful for pedestrians to cross the road.

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