NEW INSTRUMENTATION SYSTEM TO ENSURE THE COMPLIANCE OF RTO RULES BY A FOUR WHEELER

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INTRODUCTION:

This project is prepared purely for the purpose to prevent the damage of roads and to prevent unauthorized, unlicensed driving. Roads are now-a-days playing a very important role in every part of world. We have many more advantages with these roads like it directs the way for communicating other places, time is consumed for reaching from one place to another place etc.

Overloading and road safety has been recognized to be both a safety concern as well as a cost concern, and the National department of transport has incorporated a campaign against overloading in its Road to Safety strategy.

Economic growth demands an adequate transport infrastructure. Overloaded vehicles, especially freight vehicles, are destroying the roads, impacting negatively on economic growth – the damage caused grows exponentially as the load increases. Damage to roads as a result of overloading leads to higher maintenance and repair costs and shortens the life of a road which in turn places an additional burden on the state. If the problem of overloading is not controlled, this cost has to be carried by the road user, which will require significant increases in road user charges such as the fuel levy, vehicles license fees, and overloading fees. Overloading is a safety hazard that leads to unnecessary loss of life, and also the rapid deterioration of our roads, resulting in increased maintenance and transportation costs

OBJECTIVES:

1. The main aim of this project is to make the system on the vehicle by which it will stop the overloading on vehicles so that overloaded vehicle damaging the roads is reduced or avoided, and accidents are avoided.
2. The vehicle will be driven by the authorized driver or licensed driver only.

In this project a new instrumentation system has been developed to reduce the overloading of the vehicle. If this system is strictly implemented by the Government of India then it will help in reducing the overloading of trucks to a greater extent. Damage caused by overloading on roads can also be reduced. Since India is a populated country and the most reliable transport is considered to be busses. Indian busses are mostly found overloaded. If the system is successful in preventing overloading in the trucks then it can also be used to reduce the overloading in busses. Furthermore success of the system can find its way in reducing overloading in trains as well.
**METHODOLOGY:**

This is a four wheel vehicle in the truck shape with a cabin and a tray with drive mechanism. The vehicle is being moved by the DC motor drivethrough chain sprocket with trolley and cabin, load carrying trolley which is having coil spring cushioning and the cushioning is set for the particular load and if overloaded, will activate the micro-switch to trigger the control circuit to indicate the small light on the dash board and sound a buzzer so that the driver come to know the overloading, so that the overloading is controlled. If the driver tends to move the vehicle with overload, the buzzer sounds continuously which is heard by the driver only. When the vehicle is moving on road and when it comes across the police station or outpost, it is sensed by the vehicle through radio remote frequency receiver circuit within the vehicle (radio remote frequency are continuously transmitted by the check post or police station or police vehicles of the same frequencies) which is received and the control circuit will trigger the siren on, drawing the attention of the police enforcer or authorities to stop the vehicle and penalize and force to unload the extra load. The vehicle is moved by DC motor to show the demonstration.

The next feature of this project is the license card insertion, here we are making a special card with the magnet in it, and in actual it will be detecting the magnetic strip or something else according to the card. Here once inserted, the magnet is detected which closes the magnetic sensor provided at the place, which will give the input to the control circuit, to connect the ignition, here the motor connection for the drive. In the absence of the license card insertion, here the motor connection will not effect, and even if we put on the button for starting, the vehicle drive motor will not connect.

If either of the parameter is not followed, the buzzer sounds and when it comes near the check post or the checking vehicle, the siren in this vehicle starts which draws the attention of the authorities who will make the vehicle to stop and penalize according to law. If the driver when caught near the check post tries to flee away with vehicle, if not stop when asked to, the police from their radio frequency signals can stop the fleeing vehicle.

**RESULTS:**

1. Overloaded vehicle can be stopped by the police through the control unit by using radio frequency.
2. Only authorized driver are allowed to drive the vehicle.
CONCLUSION:
1. Significant GVW violation involving overweight commercial is observed.
2. The frequency and degree of overloading in heavy commercial vehicles is very significant and alarming.
3. Monitoring and enhancing enforcement of weight limits of heavy vehicles may be a step in the right direction.