

Public Testimony to the House Committee On Transportation and Economic Development

March 15th, 2015 by Brian Maguire HB 2810 introduced by Representative Julie Parish is bill aimed at correcting our laws so as to not diminish driver and passenger safety to comply with an outdated law.

Available space on the front of new cars no longer allows for a front plate without compromising safety. Today's cars, not just electric in the name of safety are putting in a significant crash avoidance systems into vehicles improve safety by helping the driver to detect obstacles and to control the vehicle to decrease traffic deaths. These are becoming more and more needed as the number of distracted drivers increases.

A subset of crash avoidance is *driver assistance* systems. Driver assistance systems include:

- Infrared night vision systems to increase seeing distance beyond headlamp range
- Adaptive cruise control which maintains a safe distance from the vehicle in front
- Lane departure warning systems to alert the driver of an unintended departure from the intended lane of travel
- Road Edge/Barrier Detection with Steering Assist
- Pedestrian Detection in Darkness and Animal Detection with Collision Mitigation.
- Large Animal detection systems
- Obstacle detection sensor systems notify a driver how close their vehicle is to an object - usually providing a distance measurement, to the inch, as to how close they are.
- anti-wrong-way driver-warning system
- Automatic Braking systems to prevent or reduce the severity of collision or If the driver doesn't respond to the warning, some systems are able to brake automatically
- Large front crumple zones

- DADS: *DADS : Driver Alertness Detection System* ^[9] System to prevent accident caused by fatigue
- Adaptive headlamps control the direction and range of the headlight beams to light the driver's way through curves and maximize seeing distance without partially blinding other drivers
- Reverse backup sensors, which alert drivers to difficult-to-see objects in their path when reversing
- Backup camera
- Tire pressure monitoring systems or Deflation Detection Systems
- Traction control systems which restore traction if driven wheels begin to spin
- Electronic Stability Control, which intervenes to avert an impending loss of control
- Anti-lock braking systems
- Electronic brake force distribution systems
- Emergency brake assist systems
- Cornering Brake Control systems
- Pre-crash systems
- Automated parking system

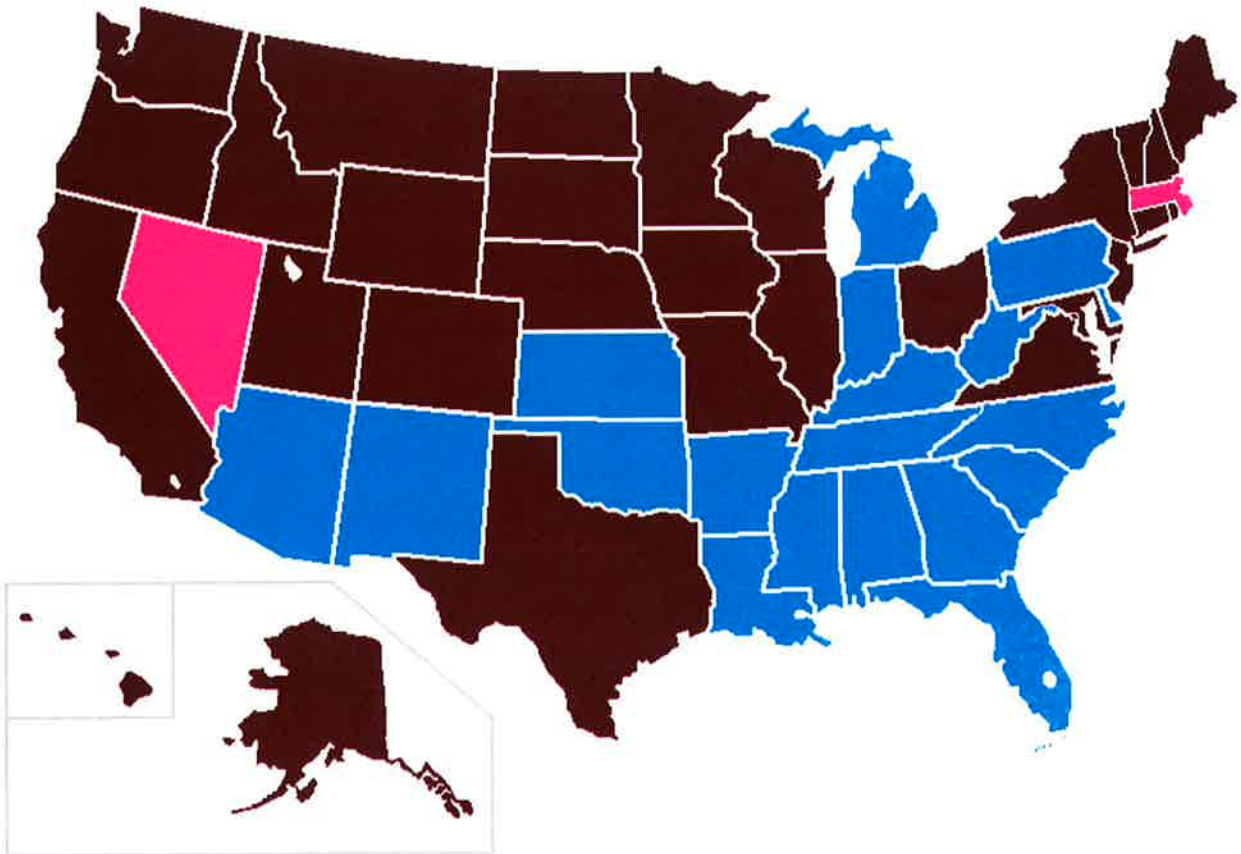
All of these systems require sensors. Simultaneous to this the Federal government is mandating better fuel economy efficiency and increased front collision safety. This has led to more efficient motors, but also significant investment in the aero dynamics of the vehicles and the design of the front impact zones to channel force to crumple zones.

With electric cars and many of the new gas cars these factors have converged to make vehicle front real estate a premium. With electric cars this becomes even more pronounced because they no longer need a large radiator to cool the engine, a small radiator is needed to cool the battery but can be positioned such that it does not require large boxy space. This has now manifested in the new Tesla as no place to put a front plate that does not impact occupant safety. This is going to become even more prevalent in the future as hybrids morph into all electric vehicles. I think we can all agree that occupant and pedestrian safety is more important than any other reason than a front plate may provide some marginal benefit in vehicle identification.

Not as important as occupant safety but none the less and important issue is fuel efficiency. Vehicle manufacturers are not designing and producing cars with front plates in mind. The fuel efficiency standards have become so stringent that they are trying to get every last bit of aerodynamic efficiency for their designs. The addition of a front plate as anyone can tell, increases aerodynamic drag, if it did not car manufactures would still include them. This varies from car to car but suffice it to say that it is present. I have read that the Mazda Miata this increases drag by 3%, and a study in Europe that plates over the radiator reduced the HP in the VW GTI by as much as 16 HP.

There are more than 3.2 million cars in Oregon, each with a front plate, each plate is 12" X 6", or 1/2 sq./ft totaled up this equates to more than 37 acres of plates. We all know a front plate increases drag the question is how much. The average fuel efficiency for new cars today is 23.2 MPG, the average car travels 15K miles per year. If front plates decrease fuel efficiency by .1%, a conservative number, every car on the road will burn and extra 6.5 gallons a year, at \$3 a gallon, that is more than \$20 per person. The striking numbers are what it costs society, this costs Oregonian's more \$21.1M a year and 414.4M pounds of CO2.

States that do, don't require front plates or have exceptions to the plate law.



Map of which states require 1 or 2 license plates on passenger vehicles

- State requires both front and rear plates.
- State only requires rear plate.
- State requires rear plate only, for some passenger vehicles.

