

Government and Voluntary Standards as They Relate to Unintended Acceleration



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Crash Avoidance Standards

Rulemaking

Overview

- ▶ Review related standards
 - US standards for Throttle Control, Brake Transmission Shift Interlock, Keyless Ignitions, Gear Selector
 - Provide references to related Industry and Non-US government standards

- ▶ Current Activities

Glossary of Terms

▶ Government

- FMVSS – Federal Motor Vehicle Safety Standard
- CMVSS – Canadian Motor Vehicle Safety Standard
- ECE – United Nations Economic Commission for Europe
- EU – European Union

▶ Industry

- SAE – SAE International
- ISO – International Organization for Standardization

Standards Related to Throttle Control

- ▶ FMVSS 124 “Accelerator Control Systems”
 - Throttle must return to idle position if there is a disconnection.
 - Does apply to electronic throttles
 - Disconnections may include separations of electrical connectors or conductors linking the accelerator pedal with the ECU and the ECU with the throttle actuator on the engine
 - Canadian Standard is identical.
 - There is a standard in Korea but to our knowledge no other standards for throttle control on passenger cars.

Brake Transmission Shift Interlock

Brake Transmission Shift Interlock

- ▶ Helpful from “Park” position
- ▶ Congress has required all light vehicles to be equipped with BTSI by September 1, 2010.
 - NHTSA has placed the requirement in FMVSS 114.
 - System must function in any key position
- ▶ To our knowledge there are no other standards for BTSI.

Keyless Ignition-Push Button Start



Standards Related to Keyless Ignitions

- ▶ Labeling - FMVSS No.101, “Controls and displays”
 - Button must be labeled “Engine Start” or Engine Stop”
 - Manufacturers can add text or graphics to the required label.
- ▶ Operation - FMVSS No. 114, “Theft protection and rollaway prevention,”
 - Can not start the car without the key (theft), and
 - Key cannot be removed unless the vehicle is in Park (rollaway prevention).
- ▶ Canadian Standards are identical in these provisions
- ▶ There are applicable ISO, ECE, and EU standards. Also an SAE standard is under development

Gear Selection Control



Standards Related to Gear Selection

- ▶ FMVSS No.102, “Transmission shift position sequence, starter interlock, and transmission braking effect.”
 - Neutral must be located between forward and Reverse on passenger cars.
 - On steering column mounted controls movement from Neutral to forward is clockwise and Park is located at the end adjacent to Reverse.
 - Identification of shift positions, in relation to each other and the position selected, must be displayed in view of the driver.
 - Canadian standard is identical. There is an applicable SAE standard.

Standards Related to Gear Selection

- ▶ FMVSS No. 101, “Controls and displays”
 - P, R, N, D, and L are separate identifiers
 - PRNDL must be illuminated
 - Canadian Standard is identical
 - To our knowledge there are no other standards similar to this labeling requirement.

Current Activity

Current Regulatory Activity

- ▶ FMVSS No. 124
 - Finalizing new tests for hybrid vehicles, electric vehicles, and diesels

- ▶ Brake Throttle Override/Smart Pedal
 - Conducting testing to determine performance differences between manufacturers
 - Developing test procedures

- ▶ Keyless Ignitions
 - SAE is working on a consensus standard for the operation of keyless ignitions.
 - Work being performed by a subcommittee of the Controls and Displays Committee within the Motor Vehicle Council

Current Regulatory Activity

- ▶ The agency is conducting research in this area.
- We will be evaluating manufacturers internal guidelines and the applicable SAE and ECE standards

Foot Pedals

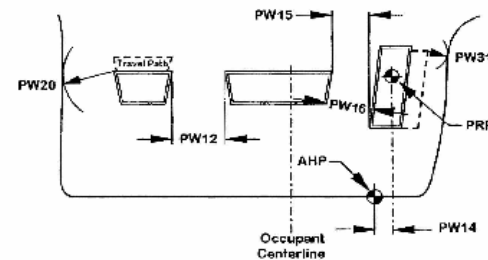


FIGURE 13B—REAR VIEW OF PEDALS

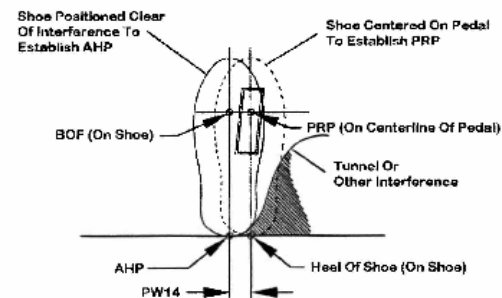


FIGURE 13C—AHP TO PRP LATERAL OFFSET

Summary

- ▶ What additional steps are recommended to ensure the safety of throttle controls?
- ▶ Are additional standards necessary to mitigate UA events?
- ▶ The industry standards for foot pedals are design specific and very similar. Can they be made to be more performance based and are there significant differences between approaches?
- ▶ What best practices from other sectors are applicable to vehicle electronics?