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SUDDEN ACCELERATION

Sudden Acceleration - Vehicle defect or Driver Error?
Mechanical Engineer from Maryland

Sudden acceleration includes several types of incidents where a driver is surprised by a sudden, unintended application of power to drive a vehicle. Most drivers report that they are "absolutely positive" their right foot was on the brake, but the vehicle accelerated anyway. In nearly every incident of this type, the driver attempts to steer clear of obstacles, and ultimately crashes. Drivers usually respond instinctively, by attempting to brake and steer. Most of these incidents are over in a matter of seconds, and some have fatal results for occupants or pedestrians.

In many cases, a mechanical examination of the crashed vehicle does not uncover any mechanical problem with the throttle system or cruise control. This can be puzzling, since the only way an engine can produce high power is for the throttle to open. Opening the throttle requires either a) the driver to depress the gas pedal, or b) the cruise control to actuate the throttle. Most passenger cars and light trucks built since the early 1990s have a safety feature called a brakeshift interlock that prevents the driver from shifting the transmission out of PARK unless the brake is depressed. This safety feature effectively prevents accidents that occur when a driver may inadvertently apply his/her foot to the gas pedal instead of the brake when shifting from PARK into DRIVE or REVERSE. The brakeshift interlock does not prevent inadvertent shifting from NEUTRAL to DRIVE or REVERSE.

One notable model to have a brake-shift interlock installed as a safety recall campaign was the Audi 5000. After a disproportionately high number of sudden acceleration reports on this model in the 1980's, it was found that the unusual physical layout of the steering column, brake and gas pedal positions in the Audi 5000 caused some drivers to step on the gas pedal when they thought they were stepping on the brake. After those cars were recalled in 1987 and retrofitted with a brake-shift interlock, sudden acceleration reports dropped dramatically. Most manufacturers incorporated the brake-shift interlock as standard equipment by 1992. Japanese passenger vehicle manufacturers implemented shift interlocks in or before the 1990 model year. For vehicles built since 1990 without a

brake-shift interlock, the absence of this safety feature is another design defect. It is not surprising that those vehicles with the poorest record for sudden acceleration are the ones in which the gas pedal is positioned close to the driver's seat centerline, and that do not have a brake-shift interlock. Sudden unintended acceleration incidents occur at a somewhat lower frequency in vehicles with conventional pedal layouts, and the installation of a shift interlock would be effective in preventing those incidents as well.

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