

Toyota and the Runaway Technology

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Running Into Trouble?

By Roger Witherspoon

The sun was high, the road was dry, and I was cruising at 75 miles per hour on I-94 and slowly gaining on the car ahead of me. I tapped on the brake pedal to cut off the cruise command and slow the car. But it did not slow down.

Instead, the accelerator pedal suddenly went to the floor, as if jumped on by an invisible foot, and the sedan leaped forward. Startled, I tapped the brake several times to turn off the cruise command, but to no avail. I then mashed the brake pedal to the floor. This slowed it only a little, as the two pedals and their electronic control systems dueled, the engine raced, the brakes smoked, and the car continued to accelerate.

I shifted the car into neutral gear and then turned the ignition key to “off,” and the car began slowing down. It was a dead stick without power steering, but I was already in the left lane and the Interstate highway had a broad shoulder and grassy center median. I cruised off the highway and, after coming to a full stop on the grass, again turned on the ignition. The cruise command, at this point, was disengaged and I resumed the trip – using my own feet to control the pedals.

That car wasn't built by Toyota. It was an Ambassador, the top of the line of the sedans built in the 70s by American Motors, then the fourth Detroit auto company and now just another member of the automakers' graveyard. The problem lay in the intricacies of the early days of the introduction of electronics to vehicular systems. Laptops hadn't been invented then, and programmable systems were novelties, prone to failure. While advances in technology promised a lot for the future of the car industry, this early glitch showed the pitfalls of putting a computer chip in charge of a two ton, fast moving machine.

American Motors eventually had to recall cars with what were then the advanced cruise command systems and modify them. The electronic comfort systems known as cruise command continued to improve and, over the decades, more and more technology was added to vehicles.

Which brings us to the unprecedented recall of several models of Toyotas and Lexus vehicles and the halt in production of eight Toyota models world wide. Trouble has been reported when some models of Toyotas have suddenly accelerated, jumping out of control and running full speed into accidents – some of them fatal.

But unlike American Motors, which immediately looked at the technology involved, Toyota, with a reputation for quality on the line, is blaming the problem with unprovoked acceleration on a “sticking” or “slow return” accelerator pedal produced by the Indiana firm of CTS Corp. When the driver’s foot rises off the accelerator pedal, the company says the pedal – in a few cases – either does not rise completely or does not rise at all. Toyota first recalled the floor mats in some models, and then issued the current recall, still focusing solely on the pedal.

Company spokesman Brian Lyons said “this is a mechanical wear issue internal to the accelerator pedal itself. We never found anything wrong with the electronic system.”

While that is reassuring, the company’s explanation is technologically implausible. People have died because the cars inexplicably *accelerate*. If the pedal stays put, or rises only part way, there is a change in the *rate of deceleration* – *but the car does not speed up*. Toyota, therefore, seems determined to pursue a solution to the wrong problem, substituting a target that may be a nuisance for a different target that may be demonstrably fatal.

CTS Corp, in a statement posted on its website www.CTScorp.com , stated “the rare slow return pedal phenomenon, which may occur in extreme environmental conditions, should absolutely not be linked with any sudden unintended acceleration incidents.”

The issue is more than one of dueling press releases.

Cars today are increasingly two ton, mobile, electronic platforms with a plethora of items for both convenience and safety. The cruise commands on today’s Toyota and Lexus vehicles can send out radar reads of cars in front and in adjacent lanes, maintaining a steady distance between the vehicles. Other technology can alert the driver when the car is drifting across lane lines – an especially useful tool on dark rainy nights when the lines are all but obscured – or sense a collision and begin slowing the car and tightening the seat belts. Command systems in the cars’ computers interact with each wheel and brake system thousands of times per minute, monitoring each revolution to detect skids or other road-induced problems and selectively applying either brakes or more power as needed to keep the car going forward.

And all of these critical safety systems are working in a small metal environment replete with audio, broadcast, music, Bluetooth, lights, and other electronic systems. That is an intense electronic field: Consider the static that typically erupts from home radios whenever a blender or vacuum cleaner is turned on.

With interlocking control systems like these it is not surprising that a system may, on a rare occasion, encounter a problem. The marvel is that with so much control vested in so many potentially interfering electronic systems that the safety-related systems rarely break down. It is a testament to modern engineering that cars containing more computerized systems than the Apollo moon landing craft work so smoothly that they are considered standard features in the average car or truck.

And therein lies the danger for Toyota and Lexus. If the company rushes to defend its internal engineering and lay the blame for its problems on external mechanical systems, it runs the risk of prematurely declaring “mission accomplished” and ignoring a potentially fatal problem that will not go away.

That would not bode well for either the company's reputation for quality and responsiveness, or for the owners of future runaway Toyotas.