

# Toyota's acceleration issue due to electronics, experts say

By GARY FEUERBERG  
Epoch Times Staff

WASHINGTON—After recalling over 8 million vehicles worldwide, Toyota Motor Corp. has been on a PR campaign to repair its reputation as well as repair mechanical issues related to sudden acceleration in its vehicles.

But a panel of electrical engineers say that the issue lies in electronics, not mechanical parts, and that Toyota is taking the wrong approach in its investigations, according to a March 23 news conference in Washington.

"Electronics have weaknesses and can go wrong in many ways," said Euring Keith Armstrong, an electronics expert. "Many electronic throttles are not safe enough, but it is easier to blame drivers, floor mats, and sticky pedals."

Anthony Anderson, an electrical failure expert, and Brian Kirk, a safety software expert agree. All three engineers are from the U.K. Their observations about the behavior of electronics in automobiles is no different than the way electronics behaves in all other industries and is backed up by scientific standards and peer-reviewed papers.

Questions about sudden, unintended acceleration in Toyota and Lexus vehicles are raised every time an incident hits the news. On March 8 James Sikes's Prius accelerated to 90 miles per hour and could not be stopped on a San Diego freeway by application of the brakes. Unable to replicate the problem, Toyota said that Sikes's account has little merit.

In another well-publicized case, Mark Saylor, an off-duty California Highway Patrol trooper, died with three members of his family on Aug. 28, 2009, when his 2009 Lexus



British Electronics and EMI expert Euring Keith Armstrong says it's bad science when automakers deny design fault and software bugs that can cause unintended vehicle accelerations when they can't find them.

GARY FEUERBERG/THE EPOCH TIMES

sped out of control and crashed in Santee, Calif.

On March 25, the Los Angeles Times reported 102 deaths because of sudden acceleration of Toyota vehicles.

**NOT ELECTRONICS SAYS TOYOTA**  
Toyota claims that the issue is due to either unsecured driver's floor mat, sticky accelerator pedal, or driver error. More than 8.5 million cars were recalled worldwide (5.3 million in the United States), according to Reuters, to remedy the issue—by changing the design of the pedal as well as the floor below it.

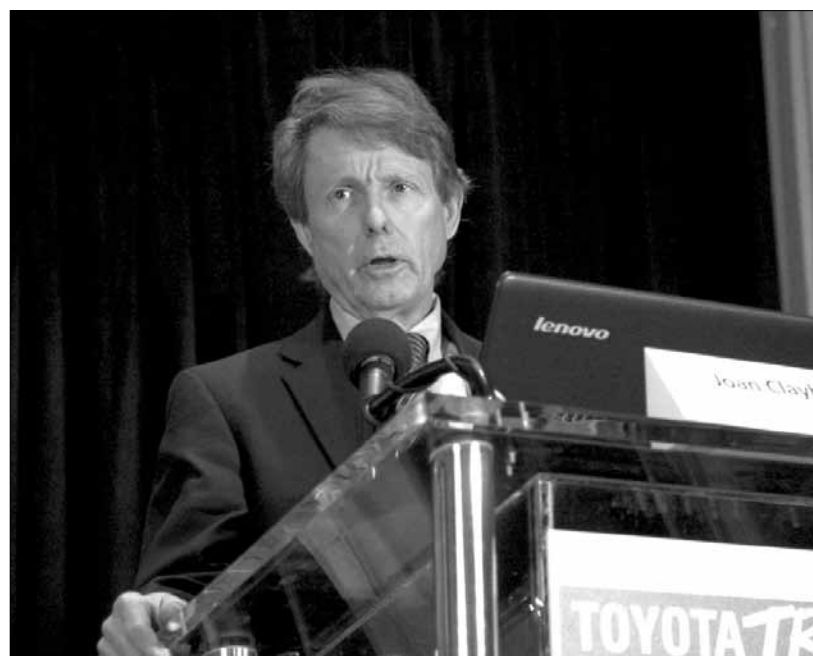
Toyota has steadfastly ruled out the electronic system faults as the cause of sudden acceleration. "Six times in the past six years NHTSA [National Highway Traffic Safety Administration] has undertaken an exhaustive review of allegations of unintended acceleration on

Toyota and Lexus vehicles and six times the agency closed the investigation without finding any electronic engine control system malfunction to be the cause of unintended acceleration," Toyota said.

"[Toyota claims] that because they can find no defect after a sudden acceleration incident that the sudden acceleration could not have been caused by a design fault," said Armstrong. But he says the argument that "an absence of a detectable fault proves absence of a design effect" uses false logic. Most electronic faults don't leave any evidence, "Especially after the ignition is turned off." Electronics have weaknesses and can go wrong in many ways, explained Armstrong.

"In most instances it recovers, leaving no trace."

It's akin to having a computer go awry. If one reboots the computer, the problem often



Clarence Ditlow, executive director of the Center for Auto Safety, says we need to pinpoint the sudden acceleration problem. He called upon Toyota to cease denying computer and electronics malfunctions and investigate.

LISA FAN/THE EPOCH TIMES

disappears without a trace, and it may be impossible to reproduce the fault.

## COMPUTER CONTROLLED

The industry went through a revolutionary change when computers began controlling a car's functions. The throttle used to be directly controlled by mechanics—a metal rod linked the driver's gas pedal. This design was replaced by the gas pedal and throttle motor being mediated by the engine control module (ECM), which connects to the gas pedal sensors via electrical wires. The system became more vulnerable to electromagnetic interference (EMI). Problems became more evident beginning in the year 2002 when the electronic throttle control was introduced in the 2002 Camry and Lexus ES300.

Some EMI, such as a lightning strike, leaves visible damage, but most types do not have

sufficient energy to cause actual damage. "They are weak and do no more than distort or otherwise confuse the electric signals in a circuit, causing it to suffer errors or malfunctions in the operation of its hardware, software or firmware," Armstrong wrote in a report on his Web site.

The engineer argued that EMC design engineers know its weaknesses, but that automakers—Toyota is only the latest to use this argument of not finding detectable design fault—take advantage of people's ignorance. It's an excuse not to have to reprogram or change the electronics, he said.

It is possible for electromagnetic compatibility tests to replicate sudden acceleration in the laboratory, but in the application of normal testing, we should not expect to find anything, according to Armstrong. Based on complaints tallied by

NHTSA, to detect one sudden acceleration in just one model would require testing 36 vehicles, 24/7, for 10 years—testing that is not practical to do.

Automakers claim that no danger is posed because they build in "redundant systems"—but that's not foolproof unless they are truly independent, according to the engineers. EMI can affect both systems the same way. Anderson showed that the two systems lie physically next to each other. It would seem that interference affecting one would affect the other.

A safety override must be a totally independent system, said Armstrong. Safety cannot be achieved by relying only on complex electronic systems. To reduce risk to an acceptable level, independent "fail safes" or backup systems are required. "But the auto industry continues to ignore standard safety engineering principles ... even though a modern vehicle is actually a computer controlled machine," writes Armstrong.

The problem is not recent—sudden accelerations occurred in the late 1980s—and all automakers are subject to EMI and software faults. Toyota is only the most recent auto manufacturer to be confronted by frequent runaway vehicles.

However, Clarence Ditlow, Center for Auto Safety, said that Toyota is avoiding responsibility. He provided a list of nine "exemplary" vehicle-software recalls where the electronic control module or another system became a safety hazard. BMW, General Motors, Nissan, and Mercedes-Benz voluntarily recalled vehicles and reprogrammed the module upon recall.

With over a hundred deaths from sudden accelerations and the number continuing to rise, Toyota has an incentive to find the true cause of the problem.

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## Volvo sold to Chinese carmaker

Epoch Times Staff

Chinese car company Zhejiang Geely Holding Group Co. Ltd and Ford Motor Co. signed a binding agreement to sell the Volvo Car Corporation to Geely for \$1.8 billion, in Gothenburg, Sweden, on Sunday.

Ford originally paid over \$6.4 billion for the Swedish car brand. Geely and Ford are expected to close the sale at the end of the 2010 third quarter.

After initially withholding support on grounds that they were not given enough information about the specifics of the sale, Volvo unions yesterday came out in support.

As part of the deal, Ford has agreed to "provide engineering support, information technology, access to tooling for common components, and other selected services" during the transitional period to ensure a smooth takeover, according to PR Newswire.



A Volvo logo is seen at Rusnak Volvo car dealership on December 23, 2009 in Pasadena, California. DAVID MCNEW/GETTY IMAGES

## EU moves towards Greek financial safety net

By NTDTV

The Greek debt crisis has shaken the credibility of the 16-nation eurozone, and European leaders are under intense pressure to fix the problem.

On Thursday, EU leaders began a summit in Brussels to discuss a contingency rescue plan for Greece. They are close to reaching a consensus on a financial aid package.

"Now obviously today the challenge is an important one, to strengthen and fortify the eurozone, to take the necessary steps so that we do stabilize the euro and move forward to a more prosperous Europe," said Greek Prime Minister George Papandreou.

Greece would be receiving financial aid from the IMF, or International Monetary Fund, and its EU partners.

But not all EU leaders agreed on the IMF involvement. France opposed the IMF role, while Sweden believed that it is necessary to work with the IMF.

Greece was at risk of having its bonds rejected as collateral for refinancing with the expiry of the relaxed rules

"The position will be that this should be alongside with also an IMF program because they have the strength and the experience and the resources to actually be able to push through the structural reforms needed to get up in a better shape, and I mean if you don't do the job thoroughly you don't solve your basic problems," said Swedish Prime Minister Fredrik Reinfeldt.

Greece says a standby aid package from the EU would reassure

credit markets.

The European Central Bank offered some good news to Athens, announcing that it would extend looser collateral rules, which were due to expire at the end of this year, into 2011.

Greece was at risk of having its bonds rejected as collateral for refinancing with the expiry of the relaxed rules, a step that risked triggering an even deeper liquidity crunch.

Some EU leaders were confident that Greece would pull through the crisis.

Hungarian Prime Minister Gordon Bajnai said, "Well I talk to Prime Minister Papandreou regularly and I do support him and I think he is a very brave man who has indicated very important reforms in the right direction..."

Without a fallback mechanism, EU leaders fear Greece's debt problems could spread to other countries in the eurozone including Portugal, Spain or Italy.

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