Detroit Free Press
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# Toyota denies Tacoma is defective

## Media inspired acceleration claims, it says

BY JUSTIN HYDE • FREE PRESS WASHINGTON STAFF • June 10, 2008



WASHINGTON -- Some 431 customers from around the country have reported unintended or sudden acceleration in their Toyota Tacoma pickups, resulting in 51 crashes and 12 injuries, but the automaker said there are no flaws in the trucks and that many reports were "inspired by publicity."



Federal regulators are still weighing whether to upgrade the investigation launched in February, which has broadened to include 775,000 Tacomas sold between the 2004 and 2008 model years. That probe was spurred by a Tacoma owner who noted 32 complaints to the National Highway Traffic Safety Administration over acceleration problems.

A deeper investigation could force Toyota to recall the trucks if officials find a defect, and raise questions about sudden-acceleration claims that safety regulators and automakers have blamed on driver error for years. It could also address why no pickup model other than the Tacoma has garnered more than a few complaints of unexpected acceleration to the NHTSA during the same period.

Yet the NHTSA typically ends probes that don't uncover a clear fault in vehicles, and has previously ruled that without such evidence, driver error is an inescapable conclusion.

Toyota told the NHTSA last month that most of the claims to itself and the agency dealt with minor engine speed changes that have no relation to safety, and that its own investigation last October of 12 trucks reported to have sudden acceleration problems found no defects.

It also said "extensive media coverage" spurred additional reports and could explain why no other pickup has similar complaints.

"Toyota believes that it is likely that many of the consumer complaints about the general issue of unwanted acceleration ... as well as many of the complaints about this subject that have been received by Toyota, were inspired by publicity," Toyota said in a letter to the NHTSA released Thursday.

"But even taking them at face value, it is clear that the majority of the complaints are related to minor drivability issues and are not indicative of a safety-related defect."

That's not the way Hal Burtzloff sees it. A firefighter from Commerce Township, Burtzloff owns a 2007 Tacoma that he said surged on him in January as he turned off his cruise control to exit a freeway.

Burtzloff said he had to dodge a couple of vehicles as the truck's engine revved, despite having his foot on the brake, and that he was able to stop only by putting the truck in neutral gear, where the engine revved to the limit. The truck hasn't surged since, a dealer found nothing wrong, and Burtzloff said he's taking Toyota to arbitration.

"I think about it constantly," said Burtzloff, who added that he had not heard of acceleration complaints with the Tacoma before his incident. "I don't use the cruise control, and I've got my hand on the shift knob all the time."

## Toyota's explanation

The Tacoma uses a drive-by-wire system, where computer controls replace a direct physical connection between the accelerator pedal and the throttle. Toyota said its system was designed to report an error in case the accelerator pedal and throttle are mismatched, and that it has not found error codes in vehicles inspected either by technicians or mechanics at dealerships.

While Toyota told regulators that "extensive media coverage and Internet references" fueled the surge of reports, it doesn't offer specifics. The first local TV report of the problem came from a Nashville station in October 2007. According to data obtained by the Free Press, 403 of the 514 complaints Toyota reported to the NHTSA were received before then.

NHTSA records show that 18 complaints of sudden acceleration in Tacomas were made before then, with the earliest from February 2006. Media databases show no reporting in a U.S. newspaper about the problems until a Free Press story early this April.

Toyota spokesman Bill Kwong said tests by the automaker and the NHTSA revealed no problems that would explain the complaints. He said the problems were not as prevalent as the number of complaints suggested, saying the NHTSA asked for any cases where engine idle speed increased.

"We remain confident in the safety of the vehicles," Kwong said.

## Action urged

William Kronholm, a retired journalist in Montana whose petition to the NHTSA spurred the investigation, said Toyota's explanation should force the NHTSA to look more closely at the Tacoma.

"The reasonable possibility of a safety-related defect should be the standard," Kronholm said in a letter to regulators Saturday. "And that possibility is supported."

*Contact **JUSTIN HYDE** at 202-906-8204 or jhyde@freepress.com.*

Hello all,

***Online Buzz Summary***

On June 10, 2008, the *Detroit Free Press* is reporting that Toyota has claimed the 431 customer complaints associated with the current generation Toyota Tacoma and unexpected acceleration are a result of media publicity, and that the vehicle is not defective. The article also claims that federal regulators are debating whether to "upgrade" the investigation that launched in February of this year, which has now expanded to include over 775,000 Tacomas sold between the 2004 and 2008 model years.

Online consumer reaction at this very early point is minimal to moderate in volume, but this may change if the *Detroit Free Press* article is picked up by influential automotive enthusiast blogs such as Autoblog.com or Jalopnik.com, or more general consumer research sites such as Edmunds.com or Consumerist.com. Sentiment is generally negative towards Toyota and Toyota quality, with some stating that Toyota quality has fallen or is overrated. Still, some speak in defense of the brand with a few noting that Audi faced a similar media problem in the 1980s, in which there was no defect in its vehicles but the brand's sales and image suffered because of consumer perceptions of unintended acceleration. On MotorTrend.com, there are a few references to the recent Toyota Tacoma Frame Rust issue as evidence that Toyota supports its customers and will act appropriately if there is a problem uncovered by the NHTSA. Some discussion on the *Detroit Free Press* website, Freep.com, is off-topic and discusses the import vs. domestic argument along with UAW concerns.

***Where is the conversation?***

http://www.freep.com/apps/pbcs.dll/article?AID=/20080610/BUSINESS01/806100389
http://forums.motortrend.com/70/6816837/the-general-forum/toyota-denies-tacoma-is-defective/index.html

***What exactly are online consumers and saying?***

***Negative towards Toyota, Toyota Quality***

"If this were a Ford or GM, it would be on the 6:00 news, and 20/20 would do a full investigation of the sudden acceleration claims. I truly hope that no one is hurt or killed by one of these faulty trucks."
**Freep.com, June 10, 2008**

"It's cheeper to pay some of owerns then fix the problem. You know like Ford did with the pinto. So is toyoa's on its down fall"
**Freep.com, June 10, 2008**

"All I can say is that I worked at an auto auction and witnessed two issues like this. They are truly horrifying to see. Toyota should be adopting a "better safe than sorry" policy with this, not making excuses and placing the blame on other people. I'm not saying foreign cars are inferior, but they are not immune to problems, either. When questioned on the recently larger number of recalls, Toyota said it is because they are selling more vehicles. Toyota needs to realize that they should focus on safety and sales equally. I don't care how many vehicles you sell. If they're not safe, then your company's not worth a dime."
**Freep.com, June 10, 2008**

"Toyota is taking it's usual stance on defects, deny, deny, deny and blame the customer."
**Freep.com, June 10, 2008**

"I have said this many times over and over again, Toyota is one of the most overrated auto companies. They are becoming a larger company and the larger you become the more problems you are going to experience. Come on people; you would bash an American car company for denying these claims and placing blame on the customer but you won't do the same for your beloved Toyota? "Ooooh no!!! Toyota is having problems; the world is going to end!! It can't be true!!"
Get a grip people; no car company is perfect and certainly not Toyota. I am not an American Auto apologist either; they have their problems that they are still obviously working on (heck, I am a Euro car fan that is starting to warm up to American autos). However, we need to give equal criticism and accountability."
**Freep.com, June 10, 2008**

“This is typical of reporting news about Toyota. If this was GM, Ford or Chrysler, this article would be on the front page. Yet, Toyota, with it's unwarranted teflon reputation, this gets buried. This is not a driver error or misunderstanding. Tom Burtzloff in the article explains it best.
Burtzloff said he had to dodge a couple of vehicles as the truck's engine revved, despite having his foot on the brake, and that he was able to stop only by putting the truck in neutral gear, where the engine revved to the limit. The truck hasn't surged since, a dealer found nothing wrong, and Burtzloff said he's taking Toyota to arbitration.
"I think about it constantly," said Burtzloff, who added that he had not heard of acceleration complaints with the Tacoma before his incident. "I don't use the cruise control, and I've got my hand on the shift knob all the time."
**Freep.com, June 10, 2008**

“If I were Toyota, having that many people say there is a problem should put some kind of research into action. But then again are they really interested in fixing it?
"If you can't laugh then you might as well stop living. It is the only medicine that cannot be patented or taxed by the government. Plus you can't get arrested for distributing it."
**MotorTrend.com, June 10, 2008**

“Toyota has a problem about announcing recalls, they just shrug off the problem until it gets to big to control”
**MotorTrend.com, June 10, 2008**

**“**Its wrong to ignore those poor 431 cutomers. Its also wrong blaming it on media, if Toyota has faith in its product, it should allow NHTSA to investigate.”
**MotorTrend.com, June 10, 2008**

“toyota is not even close to top quality on recalls and customer service. Even if there is a problem they won't fix it. When there was a problem with the camrys transmission they knew about but refused to do any thing about. This very same problem happened with the prius and lexus es and toyota once again did nothing. So who cares about there reputation. So they were good in the past this however is the present and toyota is nowhere near good now.”
**MotorTrend.com, June 10, 2008**

***In defense of Toyota, References to Audi Unexpected acceleration, Tacoma Frame Rust***
“To have any meaning we'd have to know how common reports of increased engine speed are in other makes and models of vehicles. I know some makes have had problems. Audi comes to mind.
Isn't this obvious enough the reporter and helpers should have done some research? Or is no such research needed for a newspaper biased against foreign owned companies? I suspect the latter and don't trust you to report without bias since the Freep still lists US assembled Hondas under imports in the want ads but US owned cars as domestic even if assembled outside the US. The policy is petty and dishonest.”
**Freep.com, June 10, 2008**

“In the Audi case, it was pretty clear that the sudden acceleration was from DRIVER ERROR.
None the less, they put the pedals a little father apart and put some type of lock on the auto transmission.”
**Freep.com, June 10, 2008**

“I find that Toyota is top quality on recalls and customer service. But if there is a problem, they need to solve it. I am sure they will. Their reputation for customer service is the best. They do not want to create a problem that ends up in court. And luckily for us, our legal system provides for a method of fixing things if a customer is not being taken care of. If Toyota becomes 'difficult' i am sure the legions of lawyers out there will help convince them that they need to start paying attention.”
**MotorTrend.com, June 10, 2008**

“Um on this one, I am waiting for the NHTSA verdict. Stuff like this nearly killed Audi because of people not knowing how to drive. And yes, that time it was the drivers fault. Could be the case here.”
**MotorTrend.com, June 10, 2008**

“If there is a defect, then Toyota will certainly handle it well. Heck, they've just bought some trucks at 150% of there value, something no other automaker has done.
Then again, Toyo has the money to take care of these issues too.
So out of 775K vehicles, .05% noticed sudden acceleration, and even less than that (51) had an accident where they claim teh truck simply accelerated on their own until they bashed into something?
Sounds like some people don't want to admit fault in their own accidents.

Either way, if there's a defect, they'll handle it no doubt."
**MotorTrend.com, June 10, 2008**

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*Contact **JUSTIN HYDE** at 202-906-8204 or jhyde@freepress.com.*

| | | |
|---|---|---|
| From: | <Scott.Yon@dot.gov> <Scott.Yon@dot.gov>. | Sent:9/2/2008 9:41 AM. |
| To: [ - ] | CSantucci@tma.toyota.com <CSantucci@tma.toyota.com>. | |
| Cc: [ - ] | ctinto@tma.toyota.com <ctinto@tma.toyota.com>; Jeff.Quandt@dot.gov <Jeff.Quandt@dot.gov>. | |
| Bcc: [ - ] | . | |
| Subject: | RE: DP08001. | |

Chris,

The notice is scheduled to publish tomorrow but it is currently publically available at archives.gov, copy attached fyi.

Scott

From: CSantucci@tma.toyota.com [mailto:CSantucci@tma.toyota.com]
Sent: Tuesday, September 02, 2008 11:00 AM
To: Quandt, Jeff <NHTSA>
Cc: ctinto@tma.toyota.com; Yon, Scott <NHTSA>
Subject: RE: DP08001

Jeff,

We saw this on the ODI website. Is the Federal Register notice available?

Regards,

Chris Santucci - Assistant Manager
Technical and Regulatory Affairs
Toyota Motor North America, Inc.
Ofc (202) 463-6856 Cell (202) 651-1581 Fax (202) 463-8513
email: Chris_Santucci@tma.toyota.com

Note: We cannot receive attachment extensions listed below.
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**DEPARTMENT OF TRANSPORTATION**

National Highway Traffic Safety Administration

Denial of Motor Vehicle Defect Petition

**AGENCY**: National Highway Traffic Safety Administration, (NHTSA), Department of Transportation.

**ACTION**: Denial of a petition for a defect investigation.

**SUMMARY**: This notice sets forth the reasons for the denial of a petition (Defect Petition DP08-001) submitted by Mr. William Kronholm to NHTSA's Office of Defects Investigation (ODI) by letter dated January 10, 2008, under 49 U.S.C. § 30162. The Petition requests that the agency commence a proceeding to determine the existence of a defect related to motor vehicle safety within the electronically actuated throttle control system that is allegedly causing sudden and uncontrolled acceleration in model year (MY) 2006 to 2007 Toyota Tacoma pickup trucks (vehicles).

After conducting a technical review of the material cited and provided by the petitioner and other information, and taking into account several considerations, including, among others, allocation of agency resources, agency priorities, and the likelihood that additional investigation would result in a finding that a defect related to motor vehicle safety exists, NHTSA has concluded that further investigation of the issues raised by the petition is not warranted. The agency accordingly has denied the petition.

**FOR FURTHER INFORMATION CONTACT**:

Mr. Scott Yon, Vehicle Control Division, Office of Defects Investigation, NHTSA, 1200 New Jersey Avenue, SE, Washington, DC 20590. Telephone 202-366-0139.

**SUPPLEMENTARY INFORMATION**:

## I. INTRODUCTION

Interested persons may petition NHTSA requesting that the agency initiate an investigation to determine whether a motor vehicle or item of replacement equipment does not comply with an applicable Federal motor vehicle safety standard or contains a defect that relates to motor vehicle safety. 49 CFR § 552.1. Upon receipt of a properly filed petition, the agency conducts a technical review of the petition, material submitted with the petition, and any additional information. § 552.6. After considering the technical review and taking into account appropriate factors, which may include, among others, allocation of agency resources, agency priorities, and the likelihood of success in litigation that might arise from a determination of a noncompliance or a defect related to motor vehicle safety, the agency will grant or deny the petition. § 552.8.

## II. DEFECT PETITION BACKGROUND INFORMATION

The Petitioner, Mr. William Kronholm of Helena, Montana, purchased a new model year (MY) 2006 Toyota Tacoma pickup (VIN 5TEUU42N26Z[redacted], Petitioner's vehicle) on May 10, 2006. The vehicle is equipped with a V6 engine (4.0 L, 1GR-FE), five speed automatic transmission, air conditioning (A/C), cruise control, antilock brakes (ABS), limited slip rear differential, and four-wheel drivetrain (4WD), and was manufactured in April 2006. The Petitioner's vehicle is also equipped with an electronically actuated throttle control system[1]. The Petitioner is the primary driver of the Petitioner's vehicle and he drove the vehicle for approximately 24,500 miles without experiencing a problem with the throttle control system.

On the morning of January 5, 2008, the Petitioner and his wife drove the vehicle to a cross-country skiing area about 100 miles from their home. After skiing several hours, they returned home

[1] The design of the Tacoma throttle control system is similar to that reviewed in PE04-021. Interested persons can refer to this investigation for more information on the basic design and operation of the system.

on Rt. 141. During the return trip, the Petitioner pulled off the road and stopped briefly at the intersection with Rt. 271. The transmission was placed in Park and the engine was left running.

When the Petitioner was ready to resume the trip south on Rt. 141, he engaged Drive and allowed the vehicle to move forward under its own power (without accelerator pedal application). As he approached the intersection, and while braking and checking for oncoming traffic, he sensed that the vehicle was not slowing as expected from the brake application.[2] He struggled with the vehicle for about 10 seconds, continuing to press on the brake, before regaining control of the vehicle. By this time the vehicle had moved about 7 to 10 meters beyond where the Petitioner had intended to stop, coming to rest in the southbound lane of Rt. 141. He was alarmed by the event and wasn't quite sure what had happened. However, he could not identify a specific problem with his vehicle, so he continued driving.

When the Petitioner arrived at his home, he began to back the vehicle into his short driveway.[3] While steering the vehicle into the driveway and using the brake to regulate the vehicle speed, the Petitioner reports that the vehicle began to accelerate suddenly in the rearward direction. He applied the brakes forcefully, which slowed the vehicle,[4] but he was concerned that he was nearing the garage door. He concluded that his vehicle was out of control and, fearing a crash, he turned the ignition switch off. He estimates the duration of this event was approximately 10 seconds. He subsequently restarted the vehicle and it operated normally.

Due to the similarity with his earlier incident, and since both incidents had occurred within a two hour period, he suspected that a defect with his vehicle was the likely cause. He conducted some research, including finding some related news articles and news broadcasts via web research that

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[2] His wife also recognized that the vehicle was not stopping as she had expected, or that something was wrong, and she asked her husband what was going on.
[3] There is a slight grade that would allow the vehicle to reverse without accelerator application.
[4] The Petitioner states his vehicle's rear wheels were spinning freely as he recalls hearing the sound of gravel hitting the inside of the rear wheel wells.

reported similar occurrences on other MY 2006 and 2007 Tacoma vehicles. He also found the NHTSA website, where he filed his Vehicle Owner Questionnaire (VOQ) report (ODI 10214130) and conducted a VOQ search for other Tacoma reports similar to his. His search identified a number of reports for MY 2006 and 2007 Tacoma vehicles that he considered similar to the incidents he had experienced, as well as a small number of reports for peer vehicles (non-Toyota) of similar age, usage, and design type.

The Petitioner took his Tacoma to a local Toyota dealer on January 7, 2008, advised it of the two incidents he had experienced, and requested that they inspect the vehicle for a potential problem or defect that caused the unintended accelerations. The dealership tested the vehicle, inspected the air intake, throttle and accelerator pedal wiring, and checked for any stored diagnostic codes or service messages in the engine control unit. The dealer also checked for any pertinent bulletins or "health" updates. The dealer could not duplicate the unintended acceleration, no codes were stored and no bulletins or updates were available. No repairs were made and the vehicle was returned to the Petitioner.

The Petitioner filed a Defect Petition (DP) with NHTSA that was received in NHTSA on January 18, 2008. The petition identified his previous VOQ and discussed his research on Tacoma and peer vehicle VOQs with throttle control complaints. He requested that NHTSA open an investigation into sudden and uncontrolled acceleration on the MY 2006 and 2007 Toyota Tacoma vehicles. In a letter to Toyota dated January 25, 2008, the Petitioner described the two "spontaneous and uncommanded sudden acceleration incidents in the span of less than two hours" and the results of his search for related complaints on the NHTSA website. The letter takes issue with Toyota's response to his and other complaints of sudden acceleration and requests that Toyota conduct a "full and complete investigation of the defect" in his Tacoma.[5]

[5] See www.safercar.gov under VOQ report ODI 10214130 to view the 1/25/2008 letter.

ODI contacted the Petitioner on January 24, 2008, to advise that we received his petition. During this call, ODI staff briefly reviewed the specifics of the two incidents the Petitioner reported and requested that he provide the ODI numbers of the reports he identified in his petition for both the Toyota and non-Toyota vehicles. During this conversation, the Petitioner confirmed his assessment that during both incidents, his vehicle's brake system had functioned properly and that the cause of the incidents was a failure of the throttle control system, specifically that the throttle control system opened the throttle without accelerator pedal application. In other words, the vehicle self-accelerated. In his opinion, this acceleration made the vehicle difficult to control and unsafe to operate.

The Petitioner provided a list of 37 VOQ reports via email, 33 for Toyota Tacoma, including the Petitioner's report ODI 10214130, and four for non-Toyota pickups[6]. The Toyota Tacoma reports included 16 reports on MY 2006 and 17 reports on MY 2007 Tacoma. ODI notes that two reports (10180652 and 10181486) were submitted by the same complainant, and one (10184332) was submitted by a Canadian consumer.

In response to the petition, ODI opened Defect Petition (DP) 08-001 on January 31, 2008. ODI sent an Information Request (IR) letter to Toyota on February 8, 2008, with a response due date of March 28, 2008. The IR letter sought information relating to a range of potential consumer complaints and defined the MY 2004[7] to 2008 Tacoma models as the subject vehicles.[8] Toyota requested and was granted extensions to the original response date, with partial submissions made on

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[6] ODI numbers for MY 2006 Tacoma: 10152011, 10172030, 10183012, 10184332 (Canadian vehicle), 10184375, 10184416, 10184759, 10185253, 10186996, 10191371, 10201595, 10202727, 10211100, 10212718, 10214130, 10215598. For MY 2007 Tacoma: 10180652, 10181411, 10181486 (same complainant as 10180652), 10182045, 10187789, 10197535, 10198196, 10199820, 10201655, 10202283, 10207528, 10208120, 10208868, 10208890, 10212294, 10212602, 10212656. For non-Toyota products: 10166548, 10183144, 10199048, 10203722.

[7] The MY 2004 vehicles are an earlier design version that used different engines and body style.

[8] This was done to ensure a comprehensive sample of the types of complaints Toyota received.

the agreed upon dates, and the submission was completed on April 25, 2008.[9] Toyota also conducted a technical meeting with ODI on May 21, 2008.

## III. NHTSA REVIEW – VOQ DATA

ODI began its assessment of the petition by attempting to contact each of the persons who had submitted a VOQ report on a Tacoma, as identified by the Petitioner. We interviewed 26 of the 31 consumers.[10] In the interviews, consumers described events that could be attributed to a throttle control system issue. Their concerns stemmed from a variety of vehicle operating conditions and driving circumstances. Some owners described events similar to the Petitioner's allegations, in that unintended acceleration occurred on vehicles equipped with an automatic transmission while slowing or stopped. Other complainants described unintended acceleration that was minor in comparison to the events that the Petitioner described. Other owners described events that varied significantly from what the Petitioner reported. For example, some consumers described events that occurred on manual transmission vehicles at highway speeds when the clutch was depressed, while others reported that a condition only occurred after the accelerator pedal had been depressed significantly (intentionally) or only when the cruise control or A/C system was engaged. Some consumers reported events occurring when more than one of these conditions was present.

After the initial interviews, ODI elected to expand its analysis to include a broader representation of Tacoma reports in the VOQ complaint database. Noting that the DP subject vehicles were of a consistent design type (generation) from MY 2005 through MY 2008,[11] we searched the complaint database to identify all reports potentially involving the throttle control system for MY 2005 and later Tacoma vehicles. Table 1 shows the number of Tacoma VOQ reports, by MY, that include an allegation possibly related to the throttle control system. We attempted to

[9] Some portions of the response were submitted with a request for confidentiality
[10] The five remaining consumers failed to respond to requests for an interview, or could not be contacted.
[11] At MY 2005, the Tacoma vehicle line underwent a major design revision from the MY 2004 vehicle, with a new body style and powertrain being introduced.

interview each person who submitted a report. We have interviewed 64 of these 97 consumers (about 66%).

| MY: | 2005 | 2006 | 2007 | 2008 | Totals |
|---|---|---|---|---|---|
| Complaints | 18 | 36 | 38 | 5 | 97 |

Table 1: Unique Tacoma Throttle Control System Complaints, through 5/31/2008

As shown in Table 1, there were fewer reports for MY 2005 Tacoma reports than for MY 2006 and 2007. When vehicles share a common design configuration over more than one model year, there typically tends to be higher rates of reports on the older vehicles than the newer ones. The trend found here may reflect an abnormal variability or another factor such as more recent publicity.

Based on the report descriptions and the interviews conducted, ODI separated the consumer complaints into (1) those that may involve the throttle control system, (2) those that did not relate to the throttle control system (or that relate to a different system or component), and (3) those that we could not categorize, often because of limited information. The analysis revealed that some VOQs implicate more than one of the above issues, resulting in a total of 104 discrete complaints in these three categories.

Of the 104 complaints, 59 relate or may relate to the throttle control system. These complaints include allegations of high idle speed on cold start; short duration (less than one second), small magnitude vehicle surges while the vehicle is at rest and in gear (possibly related to A/C system operation); excessive engine speed and transmission downshifts when the cruise control is engaged and the vehicle encounters an uphill grade; and failure of the engine to return to "idle" in a normal manner while at highway speeds when the clutch is depressed for shifting (termed by Toyota as "catalyst protection").

Regarding the vehicle's throttle control system, we note that NHTSA's Office of Vehicle Safety Compliance (OVSC) conducted testing on a MY 2007 Tacoma for compliance with Federal Motor Vehicle Safety Standard (FMVSS) No. 124, **Accelerator Controls** in September 2007. In a November 23, 2007, report, OVSC indicated that the Tacoma throttle control system is compliant with the requirements set forth in FMVSS No. 124.[12] OVSC completed this testing prior to the opening of DP08-001.

Of the 59 complaints that may be related to the vehicle's throttle control system, two of the complaints (about three percent) related to high idle speed on cold start. None of these reports allege a crash or injury. NHTSA's Vehicle Research and Test Center (VRTC) conducted testing to compare two MY 2008 Tacoma (four- and six-cylinder engines with automatic transmissions) to 15 other non-Tacoma vehicles. The objective was to determine the engine RPM and the sustaining brake pedal force (effort required to maintain a stationary position) during cold start.[13] For the vehicles tested, the Tacoma idle speeds and pedal forces were both above the average of the 17 vehicles tested but within the range of values measured.

Thirty-seven of the 59 complaints (about 63 percent) related to a short duration, small magnitude vehicle surge increase while the vehicle is at rest and in gear. None of these reports allege a crash or injury. In assessing the safety consequence of these at-rest surge complaints, we note first that these events occur only on vehicles equipped with automatic transmissions. Like many other vehicles, the Tacoma idle speed varies depending on whether the A/C compressor is engaged. We note also that the A/C compressor operates when the front windshield defroster is enabled, regardless of the state of the A/C compressor switch.

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[12] See http://nhthqnwws111.odi.nhtsa.dot.gov/acms/docservlet/Artemis/Public/OVSC/2007/ Test%20Reports/ TRTR-639126-2007.PDF for vehicle specification, test results, and details on obtaining more information.

[13] This work was completed prior to the opening of DP08-001 also.

In our IR to Toyota, we asked the company to explain the functionality of the Tacoma A/C system and how it affects the idle speed. According to Toyota's response, there is a modest increase in idle speed when the AC compressor engages. With this functionality, it is possible for the vehicle to inch forward if, after it is stopped and in gear, the driver applies only enough braking to prevent the vehicle from rolling forward under normal conditions without the A/C engaged and the A/C compressor subsequently engages. However, a small additional brake force suppresses this forward movement.

Some of these 37 consumers, typically those with 4WD, reported that within about five seconds after stopping the vehicle, they experienced a surge that felt like a sharp jolt in the vehicle as though a following driver had tapped the rear bumper (some consumers reported looking in the rearview mirror to see if this was the case). The duration of the jolt was very short (< 1 second), would occur only once per stop, and occurred randomly—perhaps on a weekly basis or less frequently. Consumers did not report a simultaneous change in engine speed, so it is unclear if this issue involves the vehicle's throttle control system[14]. We were not able to simulate this event on a vehicle. However, to the extent that these events could be related to the throttle control system, we note that consumers reported they easily controlled vehicle movement with normal brake force.

Eleven of the 59 complaints (about nineteen percent) involve excessive engine speed and transmission downshifts when the cruise control is engaged and the vehicle encounters an uphill grade. None of these reports allege a crash or injury. We note that this occurs only on vehicles equipped with automatic transmissions and cruise control, and that it appears to be more prevalent on the four cylinder models. We identified VOQ report ODI 10183271 that provided detailed information regarding this issue. The report states that while on the interstate with the cruise control engaged and set within a speed range of about 65 to 75 miles per hour, if the vehicle encounters an

[14] Some consumer's have alleged that the vehicle's drivetrain or suspension causes the condition.

uphill grade, the vehicle will first downshift to a lower gear, then apply additional throttle, resulting in the engine revving to a high RPM.[15] The VOQ alleges that the combined effect of downshifting then opening the throttle can cause a yaw or loss of control condition and that a crash could result, and that a near crash incident occurred on one occasion.[16]

We interviewed this consumer[17] and discussed the results of testing conducted on his vehicle by a local Toyota dealer. He provided a description of what he learned from Toyota's testing, and agreed to allow us to inspect his vehicle. We met with him on March 12, 2008, and test drove the vehicle on local interstates where he had previously experienced the alleged event. We connected a commercially available test device to the vehicle's diagnostic connector to monitor throttle and transmission data. We confirmed that when the vehicle cruise control is set to a specific speed range and it encounters an incline, the transmission will downshift to second gear and the engine will rev to a high RPM. However, we could not confirm that the transmission downshift preceded the throttle application. To the contrary, the data showed that the transmission downshift was in response to throttle opening, similar to what would occur if the operator were to manually apply the accelerator pedal under similar circumstances (same speed range, on an incline). We do not perceive a significant safety risk related to this phenomenon.

Nine of the 59 complaints (about 15 percent) relate to an alleged failure of the engine to return to "idle' in a normal manner while at highway speeds when the clutch is depressed for shifting (what Toyota describes as catalyst protection). One of these reports alleges a crash with no injury, as discussed below. We note first that this event only occurs on vehicles equipped with four cylinder engines and manual transmission. The condition is typically described in reports as a failure of the

[15] He states that he met with a Toyota technical representative and observed the results of test work they conducted. The consumer claims that the test results verified the system operated in the manner described in his report, though he did not obtain copies of the test results.
[16] See the VOQ report ODI 10183271 for details of the near loss of control incident that was alleged.
[17] The complainant is an engineer who owns a four cylinder Tacoma with automatic transmission.

engine to return to normal idle speed and an increase in engine speed that occurs when the clutch is depressed while shifting from 4th to 5th gear (see ODI 10150731, 10157923, 10175527, and 10208505).

In its IR response, Toyota described the system used on four cylinder vehicles to protect the long-term durability of the catalytic converter, a component of the emissions control system. Toyota reported that under certain operating conditions and when the accelerator pedal is not being depressed (i.e., an overrun condition), the vehicle's catalytic converter can be damaged if there is inadequate air flow through the engine. In simplified terms, the throttle control system opens the throttle without driver input to provide a minimal airflow through the engine. This can produce a temporary elevated idle speed if the clutch is depressed. However, according to Toyota's IR response, the air flow increase by the throttle control system is limited so that it does not result in a net power output to the vehicle. Toyota advised that while increased air flow diminishes engine braking (deceleration caused by engine drag in an overrun condition), it cannot produce vehicle acceleration.

VRTC testing of a MY 2006 Tacoma equipped with a four cylinder engine and manual transmission verified that the catalyst protection feature operated as Toyota described.[18] We confirmed that the strategy is only implemented when the transmission is in 4th or 5th gear and note that when the clutch was depressed we observed free-wheel engine speeds as high as 3,000 RPMs. However, at the road speeds where this occurred (60 to 75 MPH), and with the limited amount of airflow involved, the effect on vehicle control, though perhaps annoying to consumers, did not appear to be consequential.

One VOQ report (ODI 10152011) alleged that this operation caused the operator to lose control of his vehicle and crash on a rural/semi-urban Colorado roadway. However, the road was

[18] Also, Toyota demonstrated this system to ODI during the May 21, 2008, technical meeting.

snow-covered at the time of the crash. Based on the information in the report, the vehicle was travelling at a high speed when the crash occurred (70 MPH on a snow-covered rural/semi-urban road). Since speed and road conditions may have been a factor, the incident described in this report is of little probative value with regard to the alleged defect described in the petition.

Beyond the 59 reports, ODI identified 19 reports that did not relate to the throttle control system, or that relate to a different system or component. Fourteen of these appear to have been caused by floor mat interference with the accelerator pedal, including 4 crashes and 3 injuries. The other five reports were related to dual pedal application, where the operator inadvertently depresses both the accelerator pedal and the brake pedal when intending to apply the brake only. One of these reports alleges a minor crash with no injury (ODI 10221144). These five complaints involve vehicles equipped with automatic transmissions. When dual pedal application occurs, the vehicle moves forward further than the driver intends. During ODI interviews, complainants reported that they had inadvertently applied both the brake and gas pedals at the same time. Three complainants determined this prior to filing VOQs (ODI 10210488, 10221144, and 10223599), one concluded it after filing and disclosed it during the interview (ODI 10208868), and one mentioned that this may have been a factor during our interview (ODI 10198196). To the extent that causes are identified that are not related to the electronic throttle control system but which may raise possible safety defect issues, such as floor mat interference or pedal placement, ODI will continue to examine them as part of our regular screening process and will open investigations if warranted.

In a few reports, consumers questioned the design of the pedal configuration, suggesting that the pedals were too close to one another (lateral separation) or that there was insufficient step-over[19] clearance. We note that, dimensionally speaking, the pedal configuration of the MY 2005 to 2008 Tacoma is typical of other light trucks and passenger vehicles. Some complainants noted that they

[19] This is the difference in the height (distance) of the pedals from the floor board.

had been wearing larger or stiffer than usual shoes, such as work boots, when the dual pedal application occurred, and they reported that this was a factor in the occurrence.

Related to this topic, ODI interviewed the Petitioner and inspected his Tacoma at his home on March 26, 2008. In an earlier interview, the Petitioner advised that he was wearing his cross-country ski boots (shoes) when his two incidents occurred, so we took this opportunity to look at them. The cross country ski shoes (Merrell brand, men's size 9½), unlike down-hill ski boots, are similar in size and width to a work boot with the exception of an extension at the toe of the boot that acts as a binding for the ski. The binding is of the same thickness as the sole of the shoe and it extends forward (outward) from the shoe about 5/8 of an inch. During a test drive, we noted that the Petitioner used his right foot to operate the brake and gas pedal, and that he lifts and relocates his foot when he transitions from one pedal to another[20].

Considering that the shoes may have played a role in his incidents, we discussed the issue of dual pedal application with the Petitioner. He noted that he skied two to three times per year, that he typically drove with his ski shoes on to save time at the ski facility, and that he had never had a problem before. Additionally, he noted that he had made this same trip using the Tacoma a few times the prior ski season without incident. We asked the Petitioner to assess the vehicle with his ski shoes on to see if he could apply both pedals at the same time and to advise us of his findings. He subsequently reported that it was possible for him to inadvertently hit both pedals while wearing the ski shoes but that his foot had to be in an abnormal orientation for this to occur, one that would be plainly obvious to him. In his estimation this was not the cause of his two incidents.

Finally, for the remaining 26 complaints, these are reports where we have assessed the available information from the complainants, yet we are unable to identify a cause that may be related to the vehicle's throttle control system or, in many cases, *any* specific cause or explanation.

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[20] The toe of the Petitioner's foot is oriented to the right of his heel when he applies either the brake or gas pedal.

These reports allege 13 crashes with four injury allegations (one minor, two moderate, one severe). In some cases, the VOQ was inconclusive and the consumer filing the VOQ could not be contacted for an interview. However, in no instances did the complainants report or allege a specific component failure or replacement, the illumination of a warning indicator, the detection of a stored trouble or fault code, or the identification of any other physical evidence supporting a vehicle-based problem. The incidents occur randomly and are therefore unable to be reproduced for testing or further analysis[21].

## IV. NHTSA REVIEW - TOYOTA IR RESPONSE DATA

ODI reviewed the information Toyota provided in its IR response for the MY 2005 to 2008 vehicles.[22] We reviewed the population data and provide the number of vehicles by MY and transmission type in Table 2.

| | 2005 | 2006 | 2007 | 2008* | Totals |
|---|---|---|---|---|---|
| Auto | 111,625 | 152,727 | 134,665 | 83,828 | 482,845 |
| Manual | 40,013 | 42,441 | 31,156 | 19,105 | 132,715 |
| Totals | 151,638 | 195,168 | 165,821 | 102,933 | 615,560 |

* - partial MY

Table 2: Vehicle Population by MY and Transmission Type.

We reviewed Toyota's responses to several other questions to ensure we fully understood any product or design changes, the studies of issues relevant to the alleged defect conducted by Toyota, the design and operation of the systems that interact with the throttle control system, and Toyota's assessment of the possible problem with the Tacoma throttle control system. We did not identify any

[21] As an example of the type of analysis possible, for the Petitioner's vehicle, we have interviewed the Petitioner (multiple times), interviewed his wife (she was a passenger for one of the incidents), conducted a physical inspection of the Petitioner's vehicle, reviewed the Petitioner's vehicle service and warranty history, test driven the Petitioner's vehicle, and monitored the Petitioner's vehicle diagnostic/control system using a commercially available diagnostic tool; the Petitioner's vehicle has not exhibited another incident as of this date.

[22] We reviewed the MY2004 IR information on a limited basis only so it will not be discussed.

information indicating a product- or component-based issue that could explain or cause a throttle control system failure.

We conducted a limited review of the responses to questions regarding the complaint and warranty data. Our review of the field report, legal claim,[23] and warranty claim data did not identify any concern or trend. We also conducted an analysis of the consumer complaints as described below. Table 3 shows the count of consumer complaints by MY.

| | ***2005*** | ***2006*** | ***2007*** | ***2008*** | ***Total*** |
|---|---|---|---|---|---|
| ***Consumer Complaints*** | 176 | 167 | 90 | 13 | ***446*** |

Table 3: Consumer Complaint Counts by MY from Toyota's IR Response

We based our review of the Toyota consumer complaints on the information provided in the IR response. We first note that the trend we saw in the VOQ data—that the MY 2006 and 2007 vehicles were over-represented (or MY 2005 was under represented)— does not appear in the consumer complaint data submitted by Toyota. In fact, Toyota's consumer complaint data do not suggest any identifiable reporting trend for any MY(s).

In reading the consumer complaint reports, we noted most were similar to the complaints identified in the VOQ reports. Accordingly, we followed the same approach used for VOQ reports and conducted an analysis of a random sample of consumer complaints. We reviewed 133 reports[24] from MYs 2005 to 2008 and identified 142 separate complaint types. ODI categorized 96 (about 68%) of the complaints as potentially related to the vehicle's throttle control system, 23 (about 16%) as not related to the throttle control system (or related to a different system or component), and 23

[23] The legal claims were duplicative of the consumer reports, which were also reviewed.
[24] We actually reviewed 143 reports but deemed 10 reports fell outside the scope of the alleged defect.

(about 16%) as not permitting us to identify a cause that relates to the vehicle's throttle control system.[25]. These proportions are similar to the VOQ analysis.

For the crashes and injuries reported in the Toyota IR response, we reviewed the reports for the MY 2006 and 2007 Tacoma (since these were the subject of the DP request) where a crash or injury was alleged. From these reports, we identified 33 unique incidents. Eight of these incidents, with three injuries, were duplicates of reports to ODI that we had reviewed. For the remaining 25 reports unique to the Toyota response, we determined that four reports, with no injuries, fell outside the scope of the alleged defect (these involved brake system or other unrelated issues), two involved dual pedal application errors, and six involved other issues not related to the throttle control system. For the remaining 13 crash allegations, with one injury allegation, we were unable to make an assessment of the underlying cause of the crash[26].

## CONCLUSION

ODI's review of the petition, assessment of VOQs, interviews of persons who filed VOQs, testing, and review of Toyota's IR response reveals that about three-quarters of the complaints involved various explained aspects of the Tacoma's throttle control system that do not seem to present a significant safety risk under most circumstances, or did not involve a failure of the throttle control system. For the remaining quarter, although there may have been an issue with the throttle control system as one possible explanation, we have been unable to determine a throttle control related or any underlying cause that gave rise to the complaint. For those vehicles where the throttle control system did not perform as the owner believes it should have, the information suggesting a possible defect related to motor vehicle safety is quite limited. In our view, additional investigation

[25] As with the VOQ reports, these consumer complaints did not contain evidence of a vehicle causation but were simply allegations that the vehicle had suffered a throttle control system-related incident. Based on this analysis, we estimate that of the 257 MY 2006 and 2007 Toyota consumer complaints, about 40 would be in this category. This number will be reflected as the manufacturer failure counts in the closing resume for DP08-001.

[26] None of the 25 reports contained any specific evidence of a failure of the throttle control system.

is unlikely to result in a finding that a defect related to motor vehicle safety exists with regard to the Tacoma's throttle control system or a NHTSA order for the notification and remedy of a safety-related defect as alleged by the petitioner at the conclusion of the requested investigation. Therefore, in view of the need to allocate and prioritize NHTSA's limited resources to best accomplish the agency's safety mission, the petition is denied. This action does not constitute a finding by NHTSA that a safety-related defect does not exist. The agency will take further action if warranted by future circumstances.

Authority: 49 U.S.C. 30162(d); delegations of authority at 49 CFR 1.50 and 501.8.

Issued on:

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Daniel C. Smith

Associate Administrator

for Enforcement

Billing Code 4910-59-P

[FR Doc. 2008-19994 Filed 09/02/2008 at 8:45 am; Publication Date: 09/03/2008]

| | | |
|---|---|---|
| From: | <Scott.Yon@dot.gov> <Scott.Yon@dot.gov>. | Sent:9/2/2008 9:41 AM. |
| To: [ - ] | CSantucci@tma.toyota.com <CSantucci@tma.toyota.com>. | |
| Cc: [ - ] | ctinto@tma.toyota.com <ctinto@tma.toyota.com>; Jeff.Quandt@dot.gov <Jeff.Quandt@dot.gov>. | |
| Bcc: [ - ] | . | |
| Subject: | RE: DP08001. | |

Chris,

The notice is scheduled to publish tomorrow but it is currently publically available at archives.gov, copy attached fyi.

Scott

From: CSantucci@tma.toyota.com [mailto:CSantucci@tma.toyota.com]
Sent: Tuesday, September 02, 2008 11:00 AM
To: Quandt, Jeff <NHTSA>
Cc: ctinto@tma.toyota.com; Yon, Scott <NHTSA>
Subject: RE: DP08001

Jeff,

We saw this on the ODI website. Is the Federal Register notice available?

Regards,

Chris Santucci - Assistant Manager
Technical and Regulatory Affairs
Toyota Motor North America, Inc.
Ofc (202) 463-6856 Cell (202) 651-1581 Fax (202) 463-8513
email: Chris_Santucci@tma.toyota.com

Note: We cannot receive attachment extensions listed below.
.exe, .com, .pif, .scr, .cmd, .bat, .vbs, .lnk, .htm, .html, .shs, .mdb, or .zip - 2008-19994_PI.pdf

**DEPARTMENT OF TRANSPORTATION**

National Highway Traffic Safety Administration

Denial of Motor Vehicle Defect Petition

**AGENCY**: National Highway Traffic Safety Administration, (NHTSA), Department of Transportation.

**ACTION**: Denial of a petition for a defect investigation.

**SUMMARY**: This notice sets forth the reasons for the denial of a petition (Defect Petition DP08-001) submitted by Mr. William Kronholm to NHTSA's Office of Defects Investigation (ODI) by letter dated January 10, 2008, under 49 U.S.C. § 30162. The Petition requests that the agency commence a proceeding to determine the existence of a defect related to motor vehicle safety within the electronically actuated throttle control system that is allegedly causing sudden and uncontrolled acceleration in model year (MY) 2006 to 2007 Toyota Tacoma pickup trucks (vehicles).

After conducting a technical review of the material cited and provided by the petitioner and other information, and taking into account several considerations, including, among others, allocation of agency resources, agency priorities, and the likelihood that additional investigation would result in a finding that a defect related to motor vehicle safety exists, NHTSA has concluded that further investigation of the issues raised by the petition is not warranted. The agency accordingly has denied the petition.

**FOR FURTHER INFORMATION CONTACT**:

Mr. Scott Yon, Vehicle Control Division, Office of Defects Investigation, NHTSA, 1200 New Jersey Avenue, SE, Washington, DC 20590. Telephone 202-366-0139.

**SUPPLEMENTARY INFORMATION**:

## I. INTRODUCTION

Interested persons may petition NHTSA requesting that the agency initiate an investigation to determine whether a motor vehicle or item of replacement equipment does not comply with an applicable Federal motor vehicle safety standard or contains a defect that relates to motor vehicle safety. 49 CFR § 552.1. Upon receipt of a properly filed petition, the agency conducts a technical review of the petition, material submitted with the petition, and any additional information. § 552.6. After considering the technical review and taking into account appropriate factors, which may include, among others, allocation of agency resources, agency priorities, and the likelihood of success in litigation that might arise from a determination of a noncompliance or a defect related to motor vehicle safety, the agency will grant or deny the petition. § 552.8.

## II. DEFECT PETITION BACKGROUND INFORMATION

The Petitioner, Mr. William Kronholm of Helena, Montana, purchased a new model year (MY) 2006 Toyota Tacoma pickup (VIN 5TEUU42N26Z[redacted] Petitioner's vehicle) on May 10, 2006. The vehicle is equipped with a V6 engine (4.0 L, 1GR-FE), five speed automatic transmission, air conditioning (A/C), cruise control, antilock brakes (ABS), limited slip rear differential, and four-wheel drivetrain (4WD), and was manufactured in April 2006. The Petitioner's vehicle is also equipped with an electronically actuated throttle control system[1]. The Petitioner is the primary driver of the Petitioner's vehicle and he drove the vehicle for approximately 24,500 miles without experiencing a problem with the throttle control system.

On the morning of January 5, 2008, the Petitioner and his wife drove the vehicle to a cross-country skiing area about 100 miles from their home. After skiing several hours, they returned home

[1] The design of the Tacoma throttle control system is similar to that reviewed in PE04-021. Interested persons can refer to this investigation for more information on the basic design and operation of the system.

on Rt. 141. During the return trip, the Petitioner pulled off the road and stopped briefly at the intersection with Rt. 271. The transmission was placed in Park and the engine was left running.

When the Petitioner was ready to resume the trip south on Rt. 141, he engaged Drive and allowed the vehicle to move forward under its own power (without accelerator pedal application). As he approached the intersection, and while braking and checking for oncoming traffic, he sensed that the vehicle was not slowing as expected from the brake application.[2] He struggled with the vehicle for about 10 seconds, continuing to press on the brake, before regaining control of the vehicle. By this time the vehicle had moved about 7 to 10 meters beyond where the Petitioner had intended to stop, coming to rest in the southbound lane of Rt. 141. He was alarmed by the event and wasn't quite sure what had happened. However, he could not identify a specific problem with his vehicle, so he continued driving.

When the Petitioner arrived at his home, he began to back the vehicle into his short driveway.[3] While steering the vehicle into the driveway and using the brake to regulate the vehicle speed, the Petitioner reports that the vehicle began to accelerate suddenly in the rearward direction. He applied the brakes forcefully, which slowed the vehicle,[4] but he was concerned that he was nearing the garage door. He concluded that his vehicle was out of control and, fearing a crash, he turned the ignition switch off. He estimates the duration of this event was approximately 10 seconds. He subsequently restarted the vehicle and it operated normally.

Due to the similarity with his earlier incident, and since both incidents had occurred within a two hour period, he suspected that a defect with his vehicle was the likely cause. He conducted some research, including finding some related news articles and news broadcasts via web research that

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[2] His wife also recognized that the vehicle was not stopping as she had expected, or that something was wrong, and she asked her husband what was going on.
[3] There is a slight grade that would allow the vehicle to reverse without accelerator application.
[4] The Petitioner states his vehicle's rear wheels were spinning freely as he recalls hearing the sound of gravel hitting the inside of the rear wheel wells.

reported similar occurrences on other MY 2006 and 2007 Tacoma vehicles. He also found the NHTSA website, where he filed his Vehicle Owner Questionnaire (VOQ) report (ODI 10214130) and conducted a VOQ search for other Tacoma reports similar to his. His search identified a number of reports for MY 2006 and 2007 Tacoma vehicles that he considered similar to the incidents he had experienced, as well as a small number of reports for peer vehicles (non-Toyota) of similar age, usage, and design type.

The Petitioner took his Tacoma to a local Toyota dealer on January 7, 2008, advised it of the two incidents he had experienced, and requested that they inspect the vehicle for a potential problem or defect that caused the unintended accelerations. The dealership tested the vehicle, inspected the air intake, throttle and accelerator pedal wiring, and checked for any stored diagnostic codes or service messages in the engine control unit. The dealer also checked for any pertinent bulletins or "health" updates. The dealer could not duplicate the unintended acceleration, no codes were stored and no bulletins or updates were available. No repairs were made and the vehicle was returned to the Petitioner.

The Petitioner filed a Defect Petition (DP) with NHTSA that was received in NHTSA on January 18, 2008. The petition identified his previous VOQ and discussed his research on Tacoma and peer vehicle VOQs with throttle control complaints. He requested that NHTSA open an investigation into sudden and uncontrolled acceleration on the MY 2006 and 2007 Toyota Tacoma vehicles. In a letter to Toyota dated January 25, 2008, the Petitioner described the two "spontaneous and uncommanded sudden acceleration incidents in the span of less than two hours" and the results of his search for related complaints on the NHTSA website. The letter takes issue with Toyota's response to his and other complaints of sudden acceleration and requests that Toyota conduct a "full and complete investigation of the defect" in his Tacoma.[5]

[5] See www.safercar.gov under VOQ report ODI 10214130 to view the 1/25/2008 letter.

ODI contacted the Petitioner on January 24, 2008, to advise that we received his petition. During this call, ODI staff briefly reviewed the specifics of the two incidents the Petitioner reported and requested that he provide the ODI numbers of the reports he identified in his petition for both the Toyota and non-Toyota vehicles. During this conversation, the Petitioner confirmed his assessment that during both incidents, his vehicle's brake system had functioned properly and that the cause of the incidents was a failure of the throttle control system, specifically that the throttle control system opened the throttle without accelerator pedal application. In other words, the vehicle self-accelerated. In his opinion, this acceleration made the vehicle difficult to control and unsafe to operate.

The Petitioner provided a list of 37 VOQ reports via email, 33 for Toyota Tacoma, including the Petitioner's report ODI 10214130, and four for non-Toyota pickups[6]. The Toyota Tacoma reports included 16 reports on MY 2006 and 17 reports on MY 2007 Tacoma. ODI notes that two reports (10180652 and 10181486) were submitted by the same complainant, and one (10184332) was submitted by a Canadian consumer.

In response to the petition, ODI opened Defect Petition (DP) 08-001 on January 31, 2008. ODI sent an Information Request (IR) letter to Toyota on February 8, 2008, with a response due date of March 28, 2008. The IR letter sought information relating to a range of potential consumer complaints and defined the MY 2004[7] to 2008 Tacoma models as the subject vehicles.[8] Toyota requested and was granted extensions to the original response date, with partial submissions made on

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[6] ODI numbers for MY 2006 Tacoma: 10152011, 10172030, 10183012, 10184332 (Canadian vehicle), 10184375, 10184416, 10184759, 10185253, 10186996, 10191371, 10201595, 10202727, 10211100, 10212718, 10214130, 10215598. For MY 2007 Tacoma: 10180652, 10181411, 10181486 (same complainant as 10180652), 10182045, 10187789, 10197535, 10198196, 10199820, 10201655, 10202283, 10207528, 10208120, 10208868, 10208890, 10212294, 10212602, 10212656. For non-Toyota products: 10166548, 10183144, 10199048, 10203722.

[7] The MY 2004 vehicles are an earlier design version that used different engines and body style.

[8] This was done to ensure a comprehensive sample of the types of complaints Toyota received.

the agreed upon dates, and the submission was completed on April 25, 2008.[9] Toyota also conducted a technical meeting with ODI on May 21, 2008.

## III. NHTSA REVIEW – VOQ DATA

ODI began its assessment of the petition by attempting to contact each of the persons who had submitted a VOQ report on a Tacoma, as identified by the Petitioner. We interviewed 26 of the 31 consumers.[10] In the interviews, consumers described events that could be attributed to a throttle control system issue. Their concerns stemmed from a variety of vehicle operating conditions and driving circumstances. Some owners described events similar to the Petitioner's allegations, in that unintended acceleration occurred on vehicles equipped with an automatic transmission while slowing or stopped. Other complainants described unintended acceleration that was minor in comparison to the events that the Petitioner described. Other owners described events that varied significantly from what the Petitioner reported. For example, some consumers described events that occurred on manual transmission vehicles at highway speeds when the clutch was depressed, while others reported that a condition only occurred after the accelerator pedal had been depressed significantly (intentionally) or only when the cruise control or A/C system was engaged. Some consumers reported events occurring when more than one of these conditions was present.

After the initial interviews, ODI elected to expand its analysis to include a broader representation of Tacoma reports in the VOQ complaint database. Noting that the DP subject vehicles were of a consistent design type (generation) from MY 2005 through MY 2008,[11] we searched the complaint database to identify all reports potentially involving the throttle control system for MY 2005 and later Tacoma vehicles. Table 1 shows the number of Tacoma VOQ reports, by MY, that include an allegation possibly related to the throttle control system. We attempted to

[9] Some portions of the response were submitted with a request for confidentiality
[10] The five remaining consumers failed to respond to requests for an interview, or could not be contacted.
[11] At MY 2005, the Tacoma vehicle line underwent a major design revision from the MY 2004 vehicle, with a new body style and powertrain being introduced.

interview each person who submitted a report. We have interviewed 64 of these 97 consumers (about 66%).

| MY: | 2005 | 2006 | 2007 | 2008 | Totals |
|---|---|---|---|---|---|
| Complaints | 18 | 36 | 38 | 5 | 97 |

Table 1: Unique Tacoma Throttle Control System Complaints, through 5/31/2008

As shown in Table 1, there were fewer reports for MY 2005 Tacoma reports than for MY 2006 and 2007. When vehicles share a common design configuration over more than one model year, there typically tends to be higher rates of reports on the older vehicles than the newer ones. The trend found here may reflect an abnormal variability or another factor such as more recent publicity.

Based on the report descriptions and the interviews conducted, ODI separated the consumer complaints into (1) those that may involve the throttle control system, (2) those that did not relate to the throttle control system (or that relate to a different system or component), and (3) those that we could not categorize, often because of limited information. The analysis revealed that some VOQs implicate more than one of the above issues, resulting in a total of 104 discrete complaints in these three categories.

Of the 104 complaints, 59 relate or may relate to the throttle control system. These complaints include allegations of high idle speed on cold start; short duration (less than one second), small magnitude vehicle surges while the vehicle is at rest and in gear (possibly related to A/C system operation); excessive engine speed and transmission downshifts when the cruise control is engaged and the vehicle encounters an uphill grade; and failure of the engine to return to "idle" in a normal manner while at highway speeds when the clutch is depressed for shifting (termed by Toyota as "catalyst protection").

Regarding the vehicle's throttle control system, we note that NHTSA's Office of Vehicle Safety Compliance (OVSC) conducted testing on a MY 2007 Tacoma for compliance with Federal Motor Vehicle Safety Standard (FMVSS) No. 124, **Accelerator Controls** in September 2007. In a November 23, 2007, report, OVSC indicated that the Tacoma throttle control system is compliant with the requirements set forth in FMVSS No. 124.[12] OVSC completed this testing prior to the opening of DP08-001.

Of the 59 complaints that may be related to the vehicle's throttle control system, two of the complaints (about three percent) related to high idle speed on cold start. None of these reports allege a crash or injury. NHTSA's Vehicle Research and Test Center (VRTC) conducted testing to compare two MY 2008 Tacoma (four- and six-cylinder engines with automatic transmissions) to 15 other non-Tacoma vehicles. The objective was to determine the engine RPM and the sustaining brake pedal force (effort required to maintain a stationary position) during cold start.[13] For the vehicles tested, the Tacoma idle speeds and pedal forces were both above the average of the 17 vehicles tested but within the range of values measured.

Thirty-seven of the 59 complaints (about 63 percent) related to a short duration, small magnitude vehicle surge increase while the vehicle is at rest and in gear. None of these reports allege a crash or injury. In assessing the safety consequence of these at-rest surge complaints, we note first that these events occur only on vehicles equipped with automatic transmissions. Like many other vehicles, the Tacoma idle speed varies depending on whether the A/C compressor is engaged. We note also that the A/C compressor operates when the front windshield defroster is enabled, regardless of the state of the A/C compressor switch.

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[12] See http://nhthqnwws111.odi.nhtsa.dot.gov/acms/docservlet/Artemis/Public/OVSC/2007/ Test%20Reports/ TRTR-639126-2007.PDF for vehicle specification, test results, and details on obtaining more information.

[13] This work was completed prior to the opening of DP08-001 also.

In our IR to Toyota, we asked the company to explain the functionality of the Tacoma A/C system and how it affects the idle speed. According to Toyota's response, there is a modest increase in idle speed when the AC compressor engages. With this functionality, it is possible for the vehicle to inch forward if, after it is stopped and in gear, the driver applies only enough braking to prevent the vehicle from rolling forward under normal conditions without the A/C engaged and the A/C compressor subsequently engages. However, a small additional brake force suppresses this forward movement.

Some of these 37 consumers, typically those with 4WD, reported that within about five seconds after stopping the vehicle, they experienced a surge that felt like a sharp jolt in the vehicle as though a following driver had tapped the rear bumper (some consumers reported looking in the rearview mirror to see if this was the case). The duration of the jolt was very short (< 1 second), would occur only once per stop, and occurred randomly—perhaps on a weekly basis or less frequently. Consumers did not report a simultaneous change in engine speed, so it is unclear if this issue involves the vehicle's throttle control system[14]. We were not able to simulate this event on a vehicle. However, to the extent that these events could be related to the throttle control system, we note that consumers reported they easily controlled vehicle movement with normal brake force.

Eleven of the 59 complaints (about nineteen percent) involve excessive engine speed and transmission downshifts when the cruise control is engaged and the vehicle encounters an uphill grade. None of these reports allege a crash or injury. We note that this occurs only on vehicles equipped with automatic transmissions and cruise control, and that it appears to be more prevalent on the four cylinder models. We identified VOQ report ODI 10183271 that provided detailed information regarding this issue. The report states that while on the interstate with the cruise control engaged and set within a speed range of about 65 to 75 miles per hour, if the vehicle encounters an

[14] Some consumer's have alleged that the vehicle's drivetrain or suspension causes the condition.

uphill grade, the vehicle will first downshift to a lower gear, then apply additional throttle, resulting in the engine revving to a high RPM.[15] The VOQ alleges that the combined effect of downshifting then opening the throttle can cause a yaw or loss of control condition and that a crash could result, and that a near crash incident occurred on one occasion.[16]

We interviewed this consumer[17] and discussed the results of testing conducted on his vehicle by a local Toyota dealer. He provided a description of what he learned from Toyota's testing, and agreed to allow us to inspect his vehicle. We met with him on March 12, 2008, and test drove the vehicle on local interstates where he had previously experienced the alleged event. We connected a commercially available test device to the vehicle's diagnostic connector to monitor throttle and transmission data. We confirmed that when the vehicle cruise control is set to a specific speed range and it encounters an incline, the transmission will downshift to second gear and the engine will rev to a high RPM. However, we could not confirm that the transmission downshift preceded the throttle application. To the contrary, the data showed that the transmission downshift was in response to throttle opening, similar to what would occur if the operator were to manually apply the accelerator pedal under similar circumstances (same speed range, on an incline). We do not perceive a significant safety risk related to this phenomenon.

Nine of the 59 complaints (about 15 percent) relate to an alleged failure of the engine to return to "idle' in a normal manner while at highway speeds when the clutch is depressed for shifting (what Toyota describes as catalyst protection). One of these reports alleges a crash with no injury, as discussed below. We note first that this event only occurs on vehicles equipped with four cylinder engines and manual transmission. The condition is typically described in reports as a failure of the

[15] He states that he met with a Toyota technical representative and observed the results of test work they conducted. The consumer claims that the test results verified the system operated in the manner described in his report, though he did not obtain copies of the test results.
[16] See the VOQ report ODI 10183271 for details of the near loss of control incident that was alleged.
[17] The complainant is an engineer who owns a four cylinder Tacoma with automatic transmission.

engine to return to normal idle speed and an increase in engine speed that occurs when the clutch is depressed while shifting from 4th to 5th gear (see ODI 10150731, 10157923, 10175527, and 10208505).

In its IR response, Toyota described the system used on four cylinder vehicles to protect the long-term durability of the catalytic converter, a component of the emissions control system. Toyota reported that under certain operating conditions and when the accelerator pedal is not being depressed (i.e., an overrun condition), the vehicle's catalytic converter can be damaged if there is inadequate air flow through the engine. In simplified terms, the throttle control system opens the throttle without driver input to provide a minimal airflow through the engine. This can produce a temporary elevated idle speed if the clutch is depressed. However, according to Toyota's IR response, the air flow increase by the throttle control system is limited so that it does not result in a net power output to the vehicle. Toyota advised that while increased air flow diminishes engine braking (deceleration caused by engine drag in an overrun condition), it cannot produce vehicle acceleration.

VRTC testing of a MY 2006 Tacoma equipped with a four cylinder engine and manual transmission verified that the catalyst protection feature operated as Toyota described.[18] We confirmed that the strategy is only implemented when the transmission is in 4th or 5th gear and note that when the clutch was depressed we observed free-wheel engine speeds as high as 3,000 RPMs. However, at the road speeds where this occurred (60 to 75 MPH), and with the limited amount of airflow involved, the effect on vehicle control, though perhaps annoying to consumers, did not appear to be consequential.

One VOQ report (ODI 10152011) alleged that this operation caused the operator to lose control of his vehicle and crash on a rural/semi-urban Colorado roadway. However, the road was

[18] Also, Toyota demonstrated this system to ODI during the May 21, 2008, technical meeting.

snow-covered at the time of the crash. Based on the information in the report, the vehicle was travelling at a high speed when the crash occurred (70 MPH on a snow-covered rural/semi-urban road). Since speed and road conditions may have been a factor, the incident described in this report is of little probative value with regard to the alleged defect described in the petition.

Beyond the 59 reports, ODI identified 19 reports that did not relate to the throttle control system, or that relate to a different system or component. Fourteen of these appear to have been caused by floor mat interference with the accelerator pedal, including 4 crashes and 3 injuries. The other five reports were related to dual pedal application, where the operator inadvertently depresses both the accelerator pedal and the brake pedal when intending to apply the brake only. One of these reports alleges a minor crash with no injury (ODI 10221144). These five complaints involve vehicles equipped with automatic transmissions. When dual pedal application occurs, the vehicle moves forward further than the driver intends. During ODI interviews, complainants reported that they had inadvertently applied both the brake and gas pedals at the same time. Three complainants determined this prior to filing VOQs (ODI 10210488, 10221144, and 10223599), one concluded it after filing and disclosed it during the interview (ODI 10208868), and one mentioned that this may have been a factor during our interview (ODI 10198196). To the extent that causes are identified that are not related to the electronic throttle control system but which may raise possible safety defect issues, such as floor mat interference or pedal placement, ODI will continue to examine them as part of our regular screening process and will open investigations if warranted.

In a few reports, consumers questioned the design of the pedal configuration, suggesting that the pedals were too close to one another (lateral separation) or that there was insufficient step-over[19] clearance. We note that, dimensionally speaking, the pedal configuration of the MY 2005 to 2008 Tacoma is typical of other light trucks and passenger vehicles. Some complainants noted that they

[19] This is the difference in the height (distance) of the pedals from the floor board.

had been wearing larger or stiffer than usual shoes, such as work boots, when the dual pedal application occurred, and they reported that this was a factor in the occurrence.

Related to this topic, ODI interviewed the Petitioner and inspected his Tacoma at his home on March 26, 2008. In an earlier interview, the Petitioner advised that he was wearing his cross-country ski boots (shoes) when his two incidents occurred, so we took this opportunity to look at them. The cross country ski shoes (Merrell brand, men's size 9½), unlike down-hill ski boots, are similar in size and width to a work boot with the exception of an extension at the toe of the boot that acts as a binding for the ski. The binding is of the same thickness as the sole of the shoe and it extends forward (outward) from the shoe about 5/8 of an inch. During a test drive, we noted that the Petitioner used his right foot to operate the brake and gas pedal, and that he lifts and relocates his foot when he transitions from one pedal to another[20].

Considering that the shoes may have played a role in his incidents, we discussed the issue of dual pedal application with the Petitioner. He noted that he skied two to three times per year, that he typically drove with his ski shoes on to save time at the ski facility, and that he had never had a problem before. Additionally, he noted that he had made this same trip using the Tacoma a few times the prior ski season without incident. We asked the Petitioner to assess the vehicle with his ski shoes on to see if he could apply both pedals at the same time and to advise us of his findings. He subsequently reported that it was possible for him to inadvertently hit both pedals while wearing the ski shoes but that his foot had to be in an abnormal orientation for this to occur, one that would be plainly obvious to him. In his estimation this was not the cause of his two incidents.

Finally, for the remaining 26 complaints, these are reports where we have assessed the available information from the complainants, yet we are unable to identify a cause that may be related to the vehicle's throttle control system or, in many cases, *any* specific cause or explanation.

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[20] The toe of the Petitioner's foot is oriented to the right of his heel when he applies either the brake or gas pedal.

These reports allege 13 crashes with four injury allegations (one minor, two moderate, one severe). In some cases, the VOQ was inconclusive and the consumer filing the VOQ could not be contacted for an interview. However, in no instances did the complainants report or allege a specific component failure or replacement, the illumination of a warning indicator, the detection of a stored trouble or fault code, or the identification of any other physical evidence supporting a vehicle-based problem. The incidents occur randomly and are therefore unable to be reproduced for testing or further analysis[21].

## IV. NHTSA REVIEW - TOYOTA IR RESPONSE DATA

ODI reviewed the information Toyota provided in its IR response for the MY 2005 to 2008 vehicles.[22] We reviewed the population data and provide the number of vehicles by MY and transmission type in Table 2.

| | 2005 | 2006 | 2007 | 2008* | Totals |
|---|---|---|---|---|---|
| Auto | 111,625 | 152,727 | 134,665 | 83,828 | 482,845 |
| Manual | 40,013 | 42,441 | 31,156 | 19,105 | 132,715 |
| Totals | 151,638 | 195,168 | 165,821 | 102,933 | 615,560 |

* - partial MY

Table 2: Vehicle Population by MY and Transmission Type.

We reviewed Toyota's responses to several other questions to ensure we fully understood any product or design changes, the studies of issues relevant to the alleged defect conducted by Toyota, the design and operation of the systems that interact with the throttle control system, and Toyota's assessment of the possible problem with the Tacoma throttle control system. We did not identify any

[21] As an example of the type of analysis possible, for the Petitioner's vehicle, we have interviewed the Petitioner (multiple times), interviewed his wife (she was a passenger for one of the incidents), conducted a physical inspection of the Petitioner's vehicle, reviewed the Petitioner's vehicle service and warranty history, test driven the Petitioner's vehicle, and monitored the Petitioner's vehicle diagnostic/control system using a commercially available diagnostic tool; the Petitioner's vehicle has not exhibited another incident as of this date.

[22] We reviewed the MY2004 IR information on a limited basis only so it will not be discussed.

information indicating a product- or component-based issue that could explain or cause a throttle control system failure.

We conducted a limited review of the responses to questions regarding the complaint and warranty data. Our review of the field report, legal claim,[23] and warranty claim data did not identify any concern or trend. We also conducted an analysis of the consumer complaints as described below. Table 3 shows the count of consumer complaints by MY.

| | ***2005*** | ***2006*** | ***2007*** | ***2008*** | ***Total*** |
|---|---|---|---|---|---|
| ***Consumer Complaints*** | 176 | 167 | 90 | 13 | ***446*** |

Table 3: Consumer Complaint Counts by MY from Toyota's IR Response

We based our review of the Toyota consumer complaints on the information provided in the IR response. We first note that the trend we saw in the VOQ data—that the MY 2006 and 2007 vehicles were over-represented (or MY 2005 was under represented)— does not appear in the consumer complaint data submitted by Toyota. In fact, Toyota's consumer complaint data do not suggest any identifiable reporting trend for any MY(s).

In reading the consumer complaint reports, we noted most were similar to the complaints identified in the VOQ reports. Accordingly, we followed the same approach used for VOQ reports and conducted an analysis of a random sample of consumer complaints. We reviewed 133 reports[24] from MYs 2005 to 2008 and identified 142 separate complaint types. ODI categorized 96 (about 68%) of the complaints as potentially related to the vehicle's throttle control system, 23 (about 16%) as not related to the throttle control system (or related to a different system or component), and 23

[23] The legal claims were duplicative of the consumer reports, which were also reviewed.
[24] We actually reviewed 143 reports but deemed 10 reports fell outside the scope of the alleged defect.

(about 16%) as not permitting us to identify a cause that relates to the vehicle's throttle control system.[25]. These proportions are similar to the VOQ analysis.

For the crashes and injuries reported in the Toyota IR response, we reviewed the reports for the MY 2006 and 2007 Tacoma (since these were the subject of the DP request) where a crash or injury was alleged. From these reports, we identified 33 unique incidents. Eight of these incidents, with three injuries, were duplicates of reports to ODI that we had reviewed. For the remaining 25 reports unique to the Toyota response, we determined that four reports, with no injuries, fell outside the scope of the alleged defect (these involved brake system or other unrelated issues), two involved dual pedal application errors, and six involved other issues not related to the throttle control system. For the remaining 13 crash allegations, with one injury allegation, we were unable to make an assessment of the underlying cause of the crash[26].

## CONCLUSION

ODI's review of the petition, assessment of VOQs, interviews of persons who filed VOQs, testing, and review of Toyota's IR response reveals that about three-quarters of the complaints involved various explained aspects of the Tacoma's throttle control system that do not seem to present a significant safety risk under most circumstances, or did not involve a failure of the throttle control system. For the remaining quarter, although there may have been an issue with the throttle control system as one possible explanation, we have been unable to determine a throttle control related or any underlying cause that gave rise to the complaint. For those vehicles where the throttle control system did not perform as the owner believes it should have, the information suggesting a possible defect related to motor vehicle safety is quite limited. In our view, additional investigation

[25] As with the VOQ reports, these consumer complaints did not contain evidence of a vehicle causation but were simply allegations that the vehicle had suffered a throttle control system-related incident. Based on this analysis, we estimate that of the 257 MY 2006 and 2007 Toyota consumer complaints, about 40 would be in this category. This number will be reflected as the manufacturer failure counts in the closing resume for DP08-001.

[26] None of the 25 reports contained any specific evidence of a failure of the throttle control system.

is unlikely to result in a finding that a defect related to motor vehicle safety exists with regard to the Tacoma's throttle control system or a NHTSA order for the notification and remedy of a safety-related defect as alleged by the petitioner at the conclusion of the requested investigation. Therefore, in view of the need to allocate and prioritize NHTSA's limited resources to best accomplish the agency's safety mission, the petition is denied. This action does not constitute a finding by NHTSA that a safety-related defect does not exist. The agency will take further action if warranted by future circumstances.

Authority: 49 U.S.C. 30162(d); delegations of authority at 49 CFR 1.50 and 501.8.

Issued on:

Daniel C. Smith

Associate Administrator

for Enforcement

Billing Code 4910-59-P

[FR Doc. 2008-19994 Filed 09/02/2008 at 8:45 am; Publication Date: 09/03/2008]

## Prius Unintended (unwanted) Acceleration

### Statement

**Background:**

- On April 22nd, Paul Knight, a staff writer for the Houston Press posted a story titled: Just how safe is that Prius? on houstonpress.com. Variants of this story are also posted on other Web sites, such as westword.com
    - Both stories are included on the bottom of this document

**Statement:**

Unintended acceleration allegations have been an industry issue for many years, including a variety of Toyota and Lexus vehicles.

Both Toyota and the National Highway Transportation Safety Administration (NHTSA) have investigated these allegations. Neither Toyota nor NHTSA has identified a vehicle-based cause to explain these allegations, or uncovered any evidence to indicate that a throttle control system failure has occurred in past investigations.

Total Prius sales: 690,181 as of 4/23/09

Please refer media contacts to: Toyota Environmental, Safety and Quality Communications


| | |
|---|---|
| Brian R. Lyons | (310) 468-2552 |
| John Hanson | (310) 468-4718 |

| | | |
|---|---|---|
| From: | Chris Santucci/=WDC/Toyota_NY. | Sent:5/14/2009 11:05 AM. |
| To: [ - ] | kdemeter@dot.gov;Jeff.Quandt@dot.gov;stephen.mchenry@dot.gov. | |
| Cc: [ - ] | ctinto@tma.toyota.com. | |
| Bcc: [ - ] | . | |
| Subject: | Letter to ODI Regarding DP09-001. | |

Kathy,

Please find attached a copy of the letter we are sending to your office today regarding the petition identified as DP09-001.

If you have any question, please let me know.

Regards,

Chris Santucci - Assistant Manager
Technical and Regulatory Affairs
Toyota Motor North America, Inc.
Ofc (202) 463-6856 Cell (202) 651-1581 Fax (202) 463-8513
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Note: We cannot receive attachment extensions listed below.
.exe, .com, .pif, .scr, .cmd, .bat, .vbs, .lnk, .htm, .html, .shs, .mdb, or .zip

TOYOTA

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May 14, 2009

Ms. Kathleen C. DeMeter
Director
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Avenue, S.E.
Washington, D.C. 20690

Re: Response to the Petition for a Defect Investigation Submitted by Jeffrey Pepski

Dear Ms. DeMeter:

On March 13, 2009, Mr. Jeffrey Pepski submitted a petition for a defect investigation that requested the Office of Defects Investigation (ODI) to conduct "an additional investigation into the unwanted and unintended acceleration of model year 2007 Lexus ES350 [subject vehicle]." The petitioner is aware that ODI previously investigated acceleration issues in the Lexus ES350 vehicles (PE07-016), but he contends that that investigation "was too narrow in scope and did not adequately address all complaints made to the NHTSA."[1]

By way of background, Mr. Pepski owns a subject vehicle. He contends while driving his vehicle on February 3, 2009, he experienced "a sudden uncontrollable surge in acceleration." Soon thereafter, Mr. Pepski submitted a complaint and a claim to the Lexus Customer Satisfaction Department, in which he requested that Lexus repurchase his vehicle.

As reflected in the work order prepared by the Lexus dealer service technician who looked at Mr. Pepski's vehicle immediately after the incident, the floor mat at the driver's position was not clipped in place.[2] Based on an inspection of the vehicle, Toyota concluded that the incident was due to entrapment of the floor mat under the accelerator pedal, and the company therefore denied his claim on March 10 (a copy of that letter is attached). Mr. Pepski is

[1] Mr. Pepski also requested "an additional investigation of model years 2002-2003 Lexus ES300" vehicles to address issues that were "not within the scope of an earlier investigation (PE04-021) closed on July 22, 2004." However, his petition contains virtually no information supporting this request, and therefore there is no basis on which to reopen that investigation.

[2] Mr. Pepski stated that this was the floor mat that came with the vehicle as original equipment. He also stated that he did not purchase the all-weather floor mats that were the focus of PE07-016.

dissatisfied with that denial, and he contends that the incident that he experienced was unrelated to the floor mat. He submitted a complaint to ODI via the Internet on March 12 (ODI Complaint No. 10261660), and he submitted this defect petition one day thereafter.

As you are aware, ODI has previously considered the issue of alleged unintended acceleration in the subject vehicles. As explained below, Mr. Pepski has not identified any new evidence or new issues that would warrant an additional investigation, and therefore his petition should be denied. However, because he has made several arguments that ODI did not consider during its prior investigation (because they have no bearing on the alleged defect), Toyota Motor North America, Inc. (Toyota), is submitting this response. We will respond separately to each of the seven "issues" raised in the petition.

**Issue # 1**

Mr. Pepski contends that Toyota's response to ODI's April 5, 2007 information request (IR) in PE07-016 "may have been limited in some manner by the failure to properly address the appropriate parties to the investigation," and that the IR should have defined Toyota "more broadly to include all US incorporated subsidiaries of TMC regardless of level or tier." Toyota hereby confirms that it construed the request to apply to all Toyota entities, including the entities identified by Mr. Pepski, and that its earlier responses included all non-privileged responsive information and documents in the possession of all of those Toyota entities. Therefore, this purported "issue" provides no basis for granting the petition.

**Issue # 2**

Mr. Pepski notes that Toyota's response to the IR in PE07-016 "implies that not all allegations of incident . . . were related to the improper installation of the all weather floor mat in the driver's foot well." Toyota agrees that there have been some allegations of unintended acceleration on the subject vehicles that do not appear to be related to interference with the floor mat. However, the limited number of such incidents does not suggest the existence of a safety-related defect in these vehicles. Moreover, ODI was aware of such reports at the time it closed the PE, so Mr. Pepski's reference to them at this time does not provide any basis for granting his petition.[3]

[3] At page10 of his petition, Mr. Pepski identifies a number of VOQs that complain of unintended acceleration in the subject vehicles that, in his view, were not related to interference with the floor mat. Toyota has reviewed each of those VOQs. While we agree that these owners assert that that the floor mats were not involved in the incidents in question, that does not mean that the floor mats were, in fact, uninvolved. For example, Mr. Pepski continues to assert that his incident was not caused by interference between the floor mat and the accelerator pedal, despite clear evidence to the contrary.

**Issue # 3**

Mr. Pepski notes that ODI has received reports alleging unintended acceleration in the subject vehicles that is unrelated to the all-weather floor mats in addition to the ten vehicle owner questionnaires (VOQ) that the agency knew of at the time it originally opened PE07-016.[4] However, he concedes that ODI was fully aware of these reports at the time it closed that investigation. Therefore, as with Issue # 2, the existence of these reports does not provide any basis for reopening that investigation.

**Issue # 4**

Mr. Pepski asserts that the Electronic Throttle Control System (ETCS) in the subject vehicles "does not satisfy the requirements of Standard No. 124; Accelerator control systems, specifically S5.1 and S5.3 . . . ." There is no basis for that assertion.

S5.1 of FMVSS No. 124 provides:

> There shall be at least two sources of energy capable of returning the throttle to the idle position within the time limit specified by S5.3 from any accelerator position or speed whenever the driver removes the opposing actuating force. In the event of failure of one source of energy by a single severance or disconnection, the throttle shall return to the idle position within the time limits specified by S5.3, from any accelerator position or speed whenever the driver removes the opposing actuating force.

Mr. Pepski appears to believe that because the sensors in the ETCS in the subject vehicles "do not measure either any force/pressure to the driver-operated control or any release of the actuating force to the driver-operated control (i.e., accelerator pedal)," the vehicles fail to comply with the standard. However, as NHTSA well knows, the FMVSSs are performance standards and do not mandate any specific design or designs. In fact, the throttle control system in the subject vehicles fully complies with the requirements of FMVSS No. 124, as demonstrated by tests conducted in the manner specified in the laboratory test procedure issued by NHTSA's Office of Vehicle Safety Compliance (OVSC), TP-124-06 (April 20, 2000).[5]

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[4] Mr. Pepski refers to reports provided by Toyota in the IR response and information received by ODI in response to a survey that it conducted during its investigation.

[5] Because the vehicles fully comply with the standard, it is obvious that there is no merit to Mr. Pepski's allegations that Toyota violated 49 U.S.C. § 30112(a) when it sold those vehicles, or that it violated 49 U.S.C. § 30115(a) when it certified them as complying with all applicable FMVSSs.

**Issue # 5**

Mr. Pepski asserts that the difficulty that he experienced in trying to stop his vehicle during the February 3 incident, coupled with reports from other complainants describing similar difficulties, indicates that it is "unlikely" that the subject vehicles satisfy the requirements of S7.11.4 of FMVSS No. 135, "Light vehicle brake systems." S7.11.4 of that standard provides:

> The service brakes on a vehicle equipped with one or more brake power assist units or brake power units, with one such unit inoperative and depleted of all reserve capability, shall stop the vehicle as specified in S7.11.4(a) or S7.11.4(b).
>
> (a) Stopping distance from 100 km/h test speed: <= 168 m (551 ft).
> (b) Stopping distance for reduced test speed: $S <= 0.10V + 0.0158V^2$.

There is absolutely no merit to the petitioner's assertion. For ODI's convenience, Toyota has enclosed a copy of the relevant portions of the test report it submitted to the Office of Vehicle Safety Compliance for the 2009 MY demonstrating such compliance.[6]

**Issue # 6**

Mr. Pepski has also criticized the manner in which the starting system[7] in the subject vehicles functions. However, his description of that system is not accurate (his confusion is apparently due to a misunderstanding of language that appears in the Owner's Manual for the subject vehicles), and thus his criticisms do not warrant further investigation.

The subject vehicles have a starting system that does not utilize a traditional metal ignition key. Rather, when a fob that contains an electronic code is present, the driver can start the vehicle's engine by pressing a button located on the instrument panel while depressing the brake pedal. When the vehicle is stopped, the driver can stop the engine by simply pressing this button again. However, if the driver wishes to shut off the engine while the vehicle is in motion, he or she must press the button for approximately three seconds. The purpose of this feature is to avoid the possibility that a driver might inadvertently shut off the engine while the vehicle is in motion by accidentally pressing or brushing against the button.

Mr. Pepski does not criticize the fact that the starter button must be pushed for three seconds to shut off the engine. Rather, he is concerned about the safety consequences if a vehicle's steering wheel were to lock while the vehicle is in motion, or if the steering wheel were to automatically move away from the driver while the vehicle is in motion, and he believes that both of these things would occur if the engine in the subject vehicles is turned off by pressing the start button for three seconds.

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[6] Mr. Pepski may be under the misconception that a vehicle must be able to satisfy the specified requirements of FMVSS No. 135 while the throttle pedal is depressed and the transmission is in a forward gear. Of course, that is not accurate. *See* S7.11.2(b), which specifies that the transmission is "in neutral" when this test is conducted.

[7] This term is defined in FMVSS No. 114, "Theft protection and rollaway prevention," as "the vehicle system used in conjunction with the key to activate the engine or motor."

Toyota agrees that it would not be appropriate for the steering wheel to lock or for it to move automatically to the stowed position while a vehicle is in motion. However, neither of these scenarios can or will occur in the subject vehicles. Mr. Pepski's assertions to the contrary are based on language in the Owner's Manual, which contains a description of the starting system in these vehicles that may be confusing.

For example, at page 95, the Owner's Manual states: "The engine cannot be switched to OFF unless the shift lever is in P." As an example, in order to be more clear, the Manual should have used the word "vehicle" instead of the word "engine" in that sentence, since – as described above – the engine ***can*** be shut off by depressing the starter button for three seconds even if the transmission is not in "Park." If that occurs, the electronic code that allows the driver to activate the engine, and which constitutes the vehicle's "key," will remain in the vehicle until the transmission is moved to "Park," and the key-locking system of the vehicle will remain in the "accessory" (ACC) mode, rather than the "OFF" mode. This is consistent with – indeed is required by – S5.2.1 of FMVSS No. 114. Toyota plans to revise this portion of the manual to address any confusion in the near future.

The Owner's Manual for the subject vehicles states, at page 38, "When the engine switch is turned OFF, the steering wheel returns to its stowed position by moving up and away to enable easier driver entry and exit. Switching to ACC or IG-ON mode will return the steering wheel to the original position." While this section of the manual is technically correct, the steering wheel will not move to the stowed position because, as described above, the vehicle will remain in the ACC mode rather than the OFF mode if the engine switch is actuated with the transmission in any position other than "Park."

Since the scenarios that concern Mr. Pepski cannot occur in these vehicles, there is no reason to grant his petition with respect to this "issue." Moreover, even apart from the specific matters raised by Mr. Pepski, Toyota believes that it would not be appropriate for ODI to address issues related to the operation of keyless starting systems through a defect investigation. FMVSS No. 114 contains detailed requirements applicable to such systems, and there is no doubt that the subject vehicles comply with those requirements. If the agency were to consider the possibility of establishing additional requirements applicable to starting systems, it should proceed through a rulemaking proceeding, rather than through one or more defect investigations

**Issue # 7**

Although the issue that troubles Mr. Pepski is not articulated very precisely, he appears to criticize the fact that the engine control module (ECM) in the subject vehicles does not automatically shut off fuel to the engine when the brake system's power assist feature is being used. As mentioned above, the vehicle fully complies with FMVSS 124 and FMVSS 135.

For the reasons noted with respect to these prior issues, the analysis of this sort of design choice is not an appropriate subject for a defect investigation. If NHTSA believes that it should look into the possibility of imposing requirements applicable to the functioning of ECMs, it should do so in the context of a rulemaking proceeding, in which all interested persons could participate, rather than in the context of a defect investigation.

## CONCLUSION

For all of the reasons stated above, the petitioner has not alleged facts to support his claim that the subject vehicles contain a safety related defect. Therefore, Toyota believes the petition should be denied. Should you have any questions about this letter, please contact myself or Mr. Chris Santucci of my staff at (202) 775-1707.

Sincerely,

TOYOTA MOTOR NORTH AMERICA, INC.

Chris Tinto
Vice President
Technical & Regulatory Affairs

CT:cs
Attachment

TOYOTA

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March 10, 2009

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3630 YUMA LN N
PLYMOUTH MN 55446-2000

Re: Date of Loss: February 2, 2009
Vehicle: 2007 Lexus ES 350
VIN: JTHBJ46G072[redacted]

Dear Mr. Pepski:

This letter is in response to your communication with Lexus Customer Satisfaction. Toyota Motor Sales, USA, Inc. ("TMS") has reviewed your claim and conducted a technical inspection of your vehicle.

You reported that while driving the vehicle on the interstate it accelerated on its own and you were unable to stop it for nearly two miles when it finally slowed after a concerted effort on your part. You believe that this was due to a defect in your vehicle.

The inspection of your vehicle revealed no evidence of any vehicle defects or malfunction. The throttle assembly and accelerator pedal were operating as designed, with no binding or sticking of any of the components. The brakes showed signs of excessive wear which is consistent with what you described happened to you.

The inspection also revealed that the floor mat was in a position where it could interfere with the operation and travel of the accelerator pedal. When the vehicle was taken in to the dealership, the floor mat retaining clips were not properly secured which allowed the floor mat to move out of position. While we understand that you feel the floor mat was not the problem, the evidence revealed during our inspection showed otherwise.

We are very sorry about to learn of this unfortunate incident, however, our inspection of your vehicle found that the incident was not due to any sort of manufacturing or design defect, and we are unable to offer additional assistance.

Thank you for allowing us the opportunity to address your concerns.

Very truly yours,

Troy H. Higa
Claims Administrator

Attachment 1
FORM – 135
Rev. 10/10/08

# VEHICLE INFORMATION / TEST SPECIFICATIONS

FMVSS No. 135
(Specify Units)

Vehicle Make/Model/Year: LEXUS ES350 2009MY

**MANUFACTURER RECOMMENDED BRAKE ADJUSTMENT PERFORMED AFTER 200 STOP BURNISH:**

■ Making stops, define: _____

_____

**BRAKE SYSTEM INDICATOR LAMP LABELING, OPERATION & IGNITION KEY CHECK:**

☐Single lamp ■ Multiple lamps

CONDITION(S) INDICATED:

☐ Pressure differential or ■ Drop in fluid level

LAMP ON AT:

Pressure _____ Pedal Force _____

OR

LOW FLUID:

Reservoir full 324cc Lamp on at 121cc

Manufacturer recommended safe level of reservoir _____

ELECTRICAL FAILURE:

■ Antilock ■ Variable Proportioning

PARKING BRAKES ON:

■ Ignition Key Check – All Lamps ■ Yes ☐ No

ELECTRICALLY ACTUATED SERVICE BRAKES:

Failure of power source ■ Yes ☐ No

ELECTRIC TRANSMISSION OF SERVICE BRAKE CONTROL SIGNAL:

■ Yes ☐ No

EV WITH RBS, FAILURE OF RBS:

■ Yes ☐ No

**POWER BRAKES:**

☐ Not Available ■ Vacuum

☐ Hydraulic ☐ Power Assist Unit

☐ Brake Power Unit ☐ Accumulator

☐ Electrically Actuated ☐ Electrical Backup

**MASTER CYLINDER PISTON DIAMETER:**

Primary 22.2mm Secondary 22.2mm

**SERVICE BRAKE PEDAL RATIO:** 2.61 to 1

**PARKING BRAKE:**

☐ Front Wheels ■ Rear Wheels

☐ Drive Shaft Brake ☐ Service Brake Linings

■ Non-service Brake Linings

**Note:** For non-service brake linings, submit a copy of the burnish instructions provided to vehicle owners.

☐ Hand Control ■ Foot Control Ratio 5.18~5.84 ~~to 1~~

Parking Mechanism ■ Yes ☐ No

Describe: Have your Lexus dealer perform the bedding-down.

**PRESSURE VALVE:**

☐ Metering _____ ☐ Reblend _____

☐ Proportioning _____

Ratio _____ to 1

☐ Variable Proportioning -- ☐ Mechanical ■ Electrical

**Note:** For either, submit procedure to render inoperative: _____

NA

**HYDRAULIC SPLIT:**

■ Diagonal ☐ Front/Rear ☐ Other

**ANTISKID SYSTEM:**

☐ Not Available ■ 4-wheels ☐ Rears Only

☐ Other Manufacturer _____

> ***Submit procedure for rendering ABS inoperative*** (provide sufficient detail for laboratory personnel including step by step, schematics, wiring diagrams, photos, etc...)

Remove the wire of ABS ECU unit.

**MASTER CYLINDER RESERVOIR:**

Reservoir Capacity: 324cc

Fluid displaced new to worn linings: 121cc

Subsystem 1 capacity: 33cc

Subsystem 2 capacity: 33cc

Primary system fluid output for single stroke of master cylinder: 9.7cc

Secondary system fluid output for single stroke of master cylinder: 9.7cc

**FOR VEHICLES EQUIPPED WITH REGNERATIVE BRAKING SYSTEM (RBS):**

Additional Manufacturer Recommended Procedures:

> ***Submit procedure for rendering RBS inoperative*** (provide sufficient detail for laboratory personnel including step by step, schematics, wiring diagrams, photos, etc...)

NA

**FOR VEHICLES EQUIPPED WITH BATTERIES FOR PROPULSION OR BRAKING:**

> ***Submit procedure for depletion or disconnection of batteries*** (provide sufficient detail for laboratory personnel including step by step, schematics, wiring diagrams, photos, etc...)

NA

## FRONT BRAKES:

| DRUM: | | DISC: | |
|---|---|---|---|
| ☐ Cast | ☐ Composite | ■ Cast | ☐ Fixed Caliper |
| ☐ Duo Servo | ☐ Leading/Trailing | ☐ Multi-piece | ■ Float Caliper |
| ☐ Finned | ☐ Leading/Leading | ■ Vented | ■ Pin ☐ Slider |

SIZE:

Drum Inside Diameter _____

Disc Diameter 296 mm

Disc Thickness 28mm

LINING SIZE:

Primary Pad:

Length _____

Width _____

Thickness _____

Secondary Pad:

Length _____

Width _____

Thickness _____

Fully Worn Pad Thickness: _____

Inboard Pad:

Length 127.8mm

Width 49.5 mm

Thickness 12.0 mm

Outboard Pad:

Length 127.8 mm

Width 49.5 mm

Thickness 12.0 mm

Fully Worn Pad Thickness: 6.5mm

LINING INSTALLED DIMENSIONS (Nominal Production Values):

Drum Shoe Cage Diameter _____
(Outside Diameter of Shoe Cage Diameter)

Diametral Clearance _____
(Drum Diameter – Shoe Cage Diameter)

Disc-Clearence To Lining:

Inboard 0

Outboard 0

LINING CODES:

Primary _____

Secondary _____

Inboard _____

Outboard _____

LINING ATTACHMENT:

| | BONDED | RIVETED | | BONDED | RIVETED |
|---|---|---|---|---|---|
| Primary | ☐ | ☐ | Inboard | ■ | ☐ |
| Secondary | ☐ | ☐ | Outboard | ■ | ☐ |

Wheel Cylinder Diameter: _____

Caliper Bore Diameter: 63.5mm

Calipers Per Wheel: 1

Non-Service Parking Brake Type and Size (specify) _____

## REAR BRAKES:

DRUM:

☐ Cast ☐ Composite

☐ Duo Servo ☐ Leading/Trailing

☐ Finned ☐ Leading/Leading

DISC:

■ Cast ☐ Fixed Caliper

☐ Multi-piece ■ Float Caliper

☐ Vented ■ Pin ☐ Slider

SIZE:

Drum Inside Diameter _____

Disc Diameter 281mm

Disc Thickness 10mm

LINING SIZE:

Primary Pad:

Length _____

Width _____

Thickness _____

Secondary Pad:

Length _____

Width _____

Thickness _____

Fully Worn Pad Thickness: _____

Inboard Pad:

Length 80.6mm

Width 41.5mm

Thickness 10.5mm

Outboard Pad:

Length 80.6mm

Width 41.5mm

Thickness 10.5mm

Fully Worn Pad Thickness: 6mm

LINING INSTALLED DIMENSIONS (Nominal Production Values):

Drum Shoe Cage Diameter _____
(Outside Diameter of Shoe Cage Diameter)

Diametral Clearance _____
(Drum Diameter – Shoe Cage Diameter)

Disc-Clearance To Lining:

Inboard 0

Outboard 0

LINING CODES:

Primary _____

Secondary _____

Inboard _____

Outboard _____

LINING ATTACHMENT:

| | BONDED | RIVETED |
|---|---|---|
| Primary | ☐ | ☐ |
| Secondary | ☐ | ☐ |

| | BONDED | RIVETED |
|---|---|---|
| Inboard | ■ | ☐ |
| Outboard | ■ | ☐ |

Wheel Cylinder Diameter: _____

Caliper Bore Diameter: 38.1mm

Calipers Per Wheel: 1

Non-Service Parking Brake Type and Size (specify) Drum in hut D170mm

## FMVSS No. 135 DATA SUMMARY - MANUFACTURER TEST RESULTS

(Use sample table below or similar to provide results)

MY: 2007 / Make: LEXUS / Model: ES350

GVWR: 2127kg LLVW: 1866kg

| TEST | Loading Condition | Specification and Limit | | | | TEST RESULTS (In compliance if one stop meets requirement) | | |
|---|---|---|---|---|---|---|---|---|
| | | Speed (km/h) | Min. Pedal Force (N) | Max. Pedal Force (N) | Stopping Distance Requirement (m) | Shortest Stop Minimum Pedal Force (N) | Shortest Stop Maximum Pedal Force (N) | Shortest Stop Stopping Distance (m) |
| Vehicle Maximum Speed | LLVW | 228 | | | | | | |
| Cold Effectiveness | GVWR | 100 | 65 | 500 | 70 m | | 490 | 46.1 |
| High Speed Effectiveness | GVWR | 160 | 65 | 500 | speed dependant | | 460 | 115.9 |
| Stops with Engine Off | GVWR | 100 | 65 | 500 | 70 m | | 480 | 45.4 |
| Cold Effectiveness | LLVW | 100 | 65 | 500 | 70 | | 475 | 43.4 |
| High Speed Effectiveness | LLVW | | 65 | 500 | speed dependant | | 470 | 110.1 |
| Failed Antilock | LLVW | 100 | 65 | 500 | 85 | | 265 | 49.6 |
| Failed Proportioning Valve | LLVW | 100 | 65 | 500 | 110 | | | |
| Failed Hydraulic Circuit #1 | LLVW | 100 | 65 | 500 | 168 | | 500 | 83.2 |
| Failed Hydraulic Circuit #2 | LLVW | 100 | 65 | 500 | 168 | | 490 | 83.5 |
| Failed Hydraulic Circuit #1 | GVWR | 100 | 65 | 500 | 168 | | 470 | 92.1 |
| Failed Hydraulic Circuit #2 | GVWR | 100 | 65 | 500 | 168 | | 475 | 93.4 |
| Failed Antilock | GVWR | 100 | 65 | 500 | 85 | | 370 | 51.2 |
| Failed Proportioning Valve | GVWR | 100 | 65 | 500 | 110 | | | |
| Signal Transmitted Electrically, RBS, Electrically Actuated Brakes | | | | | | | | |
| Power Brake Unit Failure | GVWR | 100 | 65 | 500 | 168 | | 500 | 127.8 |
| Depleted EV batteries | | | | | | | | |
| Parking Brake - Uphill | GVWR | B | B | B | B | | 330 | |
| Parking Brake - Downhill | GVWR | B | B | B | B | | 270 | |
| Hot Performance Stop #1 | GVWR | 100 | 65 | 460 | 68.2 | | 450 | 47.7 |
| Hot Performance Stop #2 | GVWR | 100 | 65 | 500 | 89 | | 475 | 48.0 |
| Recovery Performance Stop | GVWR | 100 | 65 | 460 | 59.9 | | 455 | 43.9 |

| | | |
|---|---|---|
| From: | <Stephen.McHenry@dot.gov>. | Sent:8/25/2009 5:28 AM. |
| To: [ - ] | <CSantucci@tma.toyota.com>. | |
| Cc: [ - ] | <Jeff.Quandt@dot.gov>. | |
| Bcc: [ - ] | . | |
| Subject: | DP09-001. | |

Chris,

Perhaps you can see if your people have any information on this VOQ which just came in.

Steve

Stephen McHenry

Investigator, USD.O.T.

National Highway Traffic Safety Administration

Office of Defects Investigation

NVS-213 Room W48-217

1200 New Jersey Ave., SE

Washington D.C. 20590-0001

202.366.4883 or 1.877.536.8368 x-64883

Fax 202.366.3171

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Form Approved: O.M.B. No. 2127-0008

U.S. Department of Transportation

**National Highway Traffic Safety Administration**

**DOT Auto Safety Hotline**

# Vehicle Owner's Questionnaire

**To Report Vehicle Safety Defects**
**1-888-DASH-2-DOT**
**(1-888-327-4236)**
**INTERNET:www.nhtsa.dot.gov/hotline**

FOR AGENCY USE ONLY 100148

| Date Received | Repository ☐ |
|---|---|
| 24-AUG-2009 | Reference No. 10281605 |

**OWNER INFORMATION (Type or Print)**

| Name | [redacted] | | |
|---|---|---|---|
| Address | [redacted] | | |
| City OLYMPIA | State WA | Zip Code [redacted] | |

| Daytime Telephone Number | E-mail Address |
|---|---|
| [redacted] | [redacted] |
| Evening Telephone Number | |

*The information you provide will be used to identify potential safety-related defects. We may share your information with the applicable vehicle manufacturer during an investigation or recall in accordance with the routine uses described in the agency's Privacy Act notice. See 49 FR 53971 (Sep. 3, 2004).*

**VEHICLE INFORMATION**

| 17 digit Vehicle Identification Number Located at bottom of windshield on driver's side | Make | Model | Model Year |
|---|---|---|---|
| | LEXUS | ES350 | 2009 |

| Date Purchased | Dealer's Name and Telephone Number | | | Engine: No: Cylinders | Fuel Type: |
|---|---|---|---|---|---|
| Original Owner ☐ | Dealer's City | State | Zip Code | | |

| Transmission Type | ☐ Antilock Brakes ☐ Cruise Control | Powertrain | Multiple Failure: | Incident Date(s) 23-AUG-2009 |
|---|---|---|---|---|

**FAILED COMPONENT(S)/PART(S) INFORMATION**

| Vehicle Component Code: 180000 VEHICLE SPEED CONTROL | Failure Mileage | Failure Speed |
|---|---|---|
| | 500 | 40 |

**ADDITIONAL ITEMS TO BE COMPLETED WHEN REPORTING A TIRE FAILURE**

| Tire Make | Tire Model (Name or Number) | Tire Size (Example P215/65R15) |
|---|---|---|
| DOT No. (Example: DOTMAL9ABC036) | ☐ Original Equipment ☐ Prior Repair | Failure Location: |
| Tire Component Code | | Tire Failure Type: |

**ADDITIONAL ITEMS TO BE COMPLETED WHEN REPORTING A CHILD SEAT FAILURE**

| Make: | Date Manufactured: | Model No./Name: |
|---|---|---|
| Seat Type: | Installation System: | |
| Child Seat Component Code: | Failed Part: | |

**APPLICABLE INCIDENT INFORMATION**

*(Please describe in detail the incident(s), Failure(s), Crash(es), and injury(ies).)*

| Crash | Fire | Number of Persons Iniured | Number of Deaths | Reported to Police |
|---|---|---|---|---|
| ☐ Yes ☒ No | ☐ Yes ☒ No | | | Y |

**Narrative Description of Incident(S), Crash(es), and Injury(ies).**
**Please describe (1) events leading up to the failure, (2) failure and its consequences, and (3) what was done to correct the failure; i.e, parts repaired or replaced (and if old part is available).**

LEXUS ES 350 HAD UNCONTROLLED ACCELERATOR CAUSING SPEEDS IN EXCESS OF 90 MILES PER HOUR UNTIL CAR WAS FORCED OUT OF GEAR. WITHOUT ATTEMPTS TO ACCELERATE THE CAR TOOK OVER AND SPED OUT OF CONTROL. CRUISE CONTROL WAS NOT ENGAGED AND BRAKES WOULD NOT SLOW THE VEHICLE. I CALLED 911 AND THEY TOLD ME TO PUT THE CAR IN NEUTRAL WHICH CAUSED THE RPMS TO RACE OUT OF CONTROL. THE CAR THEN WENT INTO REVERSE BY ITSELF UNTIL I SLAMMED IT INTO PARK. THE DEALER CAME AND PICKED UP THE CAR AS IT WAS UNSAFE TO DRIVE. FORUNATELY THIS OCCURRED ON THE FREEWAY AND I HAD ROOM TO MANEUVER AND MISS CARS AND OBSTACLES. HAD THIS OCCURRED ANYWHERE ELSE I WOULD BE IN THE HOSPITAL.

Include, if available: Police/Fire Department Report, Photos, and Repair Invoice. ATTACH ADDITIONAL SHEETS IF NECESSARY

| | | |
|---|---|---|
| From: | Christopher Tinto/=WDC/Toyota_NY. | Sent:10/8/2009 1:21 PM. |
| To: [ - ] | <George.Person@dot.gov>. | |
| Cc: [ - ] | ejones@mayerbrown.com. | |
| Bcc: [ - ] | . | |
| Subject: | Fw: 09V388.doc - OK. | |

George:

This is fine - Erika and I discussed.

THANK YOU again.

Best Regards,
Chris

Chris Tinto
**********
Vice President, Technical and Regulatory Affairs, Safety
Toyota Motor North America, Inc.
Washington, DC 20005

----- Forwarded by Christopher Tinto/WDC/Toyota_NY on 10/08/2009 04:15 PM -----

Christopher Tinto/WDC/Toyota_NY
10/08/2009 04:06 PM
To <George.Person@dot.gov>
cc Chris_Tinto@TMA.Toyota.com, ejones@mayerbrown.com
Subject Re: 09V388.doc

I am sorry we didnt get back to you today George. Would it be possible to get one day? Actually, I think this is fine, but I wanted to check with Erika too and she is tied up today.

However, I do want to thank you for being willing to work with us on this George. And it was a pleasure seeing you yesterday.

Best Regards,
Chris

Chris Tinto
**********
Vice President, Technical and Regulatory Affairs, Safety
Toyota Motor North America, Inc.
Washington, DC 20005

U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**

1200 New Jersey Avenue SE
Washington, DC 20590

October 6, 2009

MR. CHRIS SANTUCCI
ASSISTANT MANAGER
TECHNICAL & REGULATORY AFFAIRS
TOYOTA MOTOR NORTH AMERICA, INC.
601 THIRTEENTH STREET, NW.,
SUITE 910 SOUTH
WASHINGTON, DC 20005

NVS-215dgl
09V-388

SUBJECT: FLOOR MAT INTERFERENCE WITH ACCELERATOR PEDAL

DEAR MR. SANTUCCI:

This letter serves to acknowledge Toyota Motor Corporation's notification to the National Highway Traffic Safety Administration (NHTSA) of a safety recall campaign it will conduct, pursuant to Federal law, in the products described below.

Please review the following information to ensure that it conforms to your records as this information is being made available to the public. If the information does not agree with your records, please contact us immediately to discuss your concerns.

**Makes/Models/Model Years:**
LEXUS/ES350/2007-2010
LEXUS/IS/2006-2010
TOYOTA/AVALON/2005-2010
TOYOTA/CAMRY/2007-2010
TOYOTA/PRIUS/2004-2009
TOYOTA/TACOMA/2005-2010
TOYOTA/TUNDRA/2007-2010

**NHTSA Campaign Number:** 09V-388

**Mfg's Report Date:** October 5, 2009

**Components:** VEHICLE SPEED CONTROL: ACCELERATOR PEDAL

**Potential Number of Units Affected:** 3.8M

**Summary:**
TOYOTA IS RECALLING CERTAIN MODEL YEAR 2004-2010 PASSENGER VEHICLES. THE ACCELERATOR PEDAL CAN GET STUCK IN THE WIDE OPEN POSITION DUE TO ITS BEING TRAPPED BY AN UNSECURED OR INCOMPATIBLE DRIVER'S FLOOR MAT.

**Consequence:**
A STUCK OPEN ACCELERATOR PEDAL MAY RESULT IN VERY HIGH VEHICLE SPEEDS AND MAKE IT DIFFICULT TO STOP THE VEHICLE, WHICH COULD CAUSE A CRASH, SERIOUS INJURY OR DEATH.

**Remedy:**
TOYOTA WILL NOTIFY OWNERS OF AFFECTED VEHICLES TO REMOVE ANY DRIVER'S FLOOR MAT AND NOT REPLACE IT WITH ANY OTHER FLOOR MAT PENDING THE DEVELOPMENT OF MODEL-SPECIFIC REMEDIES. TOYOTA WILL MAIL A SECOND NOTIFICATION TO OWNERS OF AFFECTED VEHICLES NOTIFYING THEM OF THE FREE REMEDY WHEN IT IS AVAILABLE. THE FIRST NOTICE IS EXPECTED TO BE MAILED DURING OCTOBER 2009 AND TOYOTA WILL ADVISE NHTSA AN ESTIMATE OF THE DATE WHEN THE REMEDY PARTS WILL BE AVAILABLE. OWNERS MAY CONTACT TOYOTA AT 1-800-331-4331, LEXUS AT 1-800-255-3987.

**Notes:**
OWNERS MAY ALSO CONTACT THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION'S VEHICLE SAFETY HOTLINE AT 1-888-327-4236 (TTY 1-800-424-9153), OR GO TO HTTP://WWW.SAFERCAR.GOV.

The information in your defect report appears to satisfy the requirements of 49 CFR 573.6.

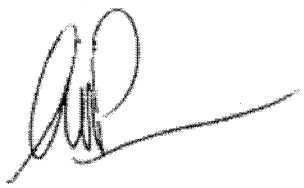
Please provide the following additional information and be reminded of the following requirements:

> You are required to submit a draft owner notification letter to this office no less than five days prior to mailing it to the customers. Also, copies of all notices, bulletins, dealer notifications, and other communications that relate to this recall, including a copy of the final owner notification letter and any subsequent owner follow-up notification letter(s), are required to be submitted to this office no later than 5 days after they are originally sent (if they are sent to more than one manufacturer, distributor, dealer, or purchaser/owner).

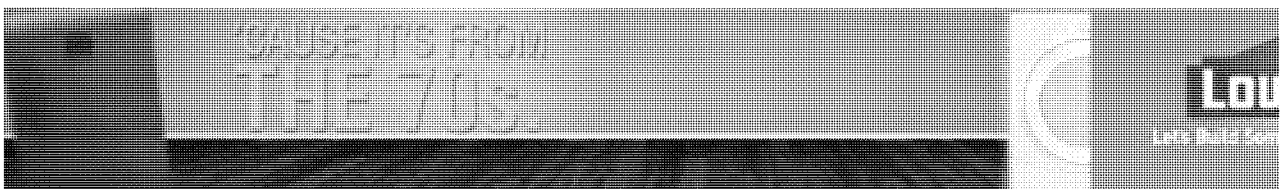
As stated in Part 573.7, submission of the first of six consecutive quarterly status reports is required within one month after the close of the calendar quarter in which notification to purchasers occurs. Therefore, the first quarterly report will be due on or before 30 days after the close of the calendar quarter.

Your contact for this recall will be Delia Lopez who may be reached by phone at 202-366-9525, or by email at Delia.lopez@dot.gov, or through the office email at RMD.ODI@dot.gov. We look forward to working with you toward a successful completion of this recall campaign.

Sincerely,



George H. Person
Chief, Recall Management Division
Office of Defects Investigation
Enforcement



# Toyota's runaway-car worries may not stop at floor mats

A fatal accident in San Diego raises the question: Might a vehicle's complex electronic features make it hard for drivers to react quickly when accelerating out of control?

Despite CHP officer's vehicle safety training, he couldn't control runaway Lexus

Graphic: High-speed dangers

Toyota and Lexus vehicles slated for recall, at a glance

Discuss: Have you experienced sudden acceleration in a Toyota?

By Ralph Vartabedian and Ken Bensinger
*October 18, 2009*



The 2009 Lexus ES 350 shot through suburban San Diego like a runaway missile, weaving at 120 miles an hour through rush hour freeway traffic as flames flashed from under the car.

At the wheel, veteran California Highway Patrol Officer Mark Saylor desperately tried to control the 272-horsepower engine that was roaring at full throttle as his wife, teenage daughter and brother-in-law were gripped by fear.

"We're in trouble. . . . There's no brakes," Saylor's brother-in-law Chris Lastrella told a police dispatcher over a cellphone. Moments later, frantic shrieks filled the car as it slammed into another vehicle and then careened into a dirt embankment, killing all four aboard.

The tragedy Aug. 28 was at least the fifth fatal crash in the U.S. over the last two years involving runaway Toyota and Lexus vehicles made by Toyota Motor Corp. It is also among hundreds of incidents of sudden acceleration involving the company's vehicles that have been reported to Toyota or the federal government, according to an examination of public records by The Times.

Toyota has blamed the incidents -- apart from those caused by driver error -- on its floor mats, asserting that if they are improperly installed they can jam open the accelerator pedal. A month after the Saylor crash, Toyota issued its biggest recall in company history, affecting 3.8 million vehicles in model years as far back as 2004. But auto safety experts believe there may be a bigger problem with Toyota vehicles than simply the floor mats.

The Saylor crash and others like it across the country, they say, point to a troubling possibility: that Toyota's ignition, transmission and braking systems may make it difficult for drivers to combat sudden or unintended accelerations and safely recover, regardless of their cause.

Toyota is not the only car company to be hit with reports of sudden acceleration, but the San Diego fatality, the massive recall that came in its wake and Toyota's position as the world's largest automaker have focused intense scrutiny on the company by federal safety regulators and others.

"This is Toyota's Firestone," said Sean Kane, president of Safety Research & Strategies, a Rehoboth, Mass., auto safety consulting firm. He was referring to the public relations disaster that hit Bridgestone/Firestone almost 10 years ago over defective tires that caused a series of fatal accidents.

"Right now," Kane said, "when you say sudden acceleration, Toyota is it."

In addition to Saylor and Lastrella, the San Diego crash killed Saylor's wife, Cleofe Lastrella, and their only child, 13-year-old daughter Mahala.

Signaling how seriously the company takes the incident, Toyota President Akio Toyoda made an apology this month while meeting with the Japanese news media.

"Customers bought our cars because they thought they were the safest," he said. "But now we have given them cause for grave concern. I can't begin to express my remorse."

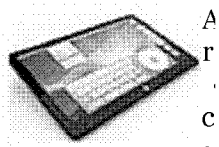
One remedy being considered by Toyota implicitly acknowledges what critics have been saying for almost 10 years: that the company's highly computerized engine control system lacks a fail-safe mechanism that can quickly extinguish sudden acceleration events, whether they are caused by floor mats, driver errors or even unknown defects in the electronic control system, as alleged in some lawsuits.

Reports of sudden acceleration in Toyota vehicles has resulted in nine federal inquiries and investigations since 2000, two of which determined that there were improperly positioned floor mats. Another found a loose part in Sienna minivans, and yet another probe remains open. The rest were dismissed with no findings of equipment problems.

In most Toyota vehicles, the floor mats are held in place by two clips, which can come loose. Toyota offers a standard carpeted floor mat and an optional rubber version. Both mats have a cutout around the accelerator pedal. The vehicle driven by Saylor had a rubber floor mat, but Toyota said it was for a different model of Lexus.

Since the San Diego crash, Toyota has urged all its customers to remove their floor mats as an interim fix. But longer term, Toyota spokesman Brian Lyons said, the company is examining significant design changes.

A federal about-
3. Environmental California deser
4. California appe power-guzzling
5. Neighbors thou Halloween displ
6. Holdup sets the
7. Elizabeth Clare of religious sect
8. Mike Dunleavy upside
9. Bill Plaschke: D Cliff Lee
10. BCS computers Carroll

Gadget Gu
*Tech reviews and*

through the air
• App store downl

One possible remedy is to redesign the accelerator pedal to make it harder to get caught by a floor mat, he said. Another potential fix, he said, involves reprogramming the engine's computer to automatically cut power when a driver brakes while the gas pedal is depressed.

Such fail-safes are needed, auto experts say, because sudden acceleration can cause drivers to panic, diminishing their ability to take swift action -- such as shutting off the engine or shifting into neutral.

If anybody should have known how to stop an out-of-control car, it was Saylor, who was trained in emergency and high-speed driving as a 19-year CHP veteran. But a close look at the Lexus ES 350 raises questions about whether the car's very design may have compromised Saylor's skills.

One obvious line of defense is to simply shut off the engine, a step that may not be intuitive on the ES 350. The car has a push-button start system, activated by the combination of a wireless electronic fob carried by the driver and a button on the dashboard.

But once the vehicle is moving, the engine will not shut off unless the button is held down for a full three seconds -- a period of time in which Saylor's car would have traveled 528 feet. A driver may push the button repeatedly, not knowing it requires a three-second hold.

"When you are dealing with an emergency, you can't wait three seconds for the car to respond at 120 miles an hour," said Clarence Ditlow, executive director of the nonprofit Center for Auto Safety.

The ES 350 Saylor was driving that day was a loaner provided to him by Bob Baker Lexus when he took his family's Lexus in for servicing. It's unclear whether Saylor's own car had the same feature or whether he was aware of the shutdown procedure. Bob Baker Lexus did not return calls.

That procedure is explained deep in the owners manual. In a text box labeled "! Caution," Toyota tells owners, "Do not touch the 'power' switch while driving." But under the warning it adds, "If you have to make an emergency stop, press and hold the 'power' switch for more than three seconds."

Lyons, the Toyota spokesman, said: "I think the text is valid. What I'd prefer it to say is to explain that you'll lose power assist [for] brakes and steering if you do so."

The shutdown procedure reflects a larger problem: As auto manufacturers adopt increasingly complex electronic features, it becomes more difficult to explain how they work, said Paul Green, a human factors expert at the University of Michigan's Transportation Research Institute. A study by the institute found that in some cases, owners manuals would have to run up to 1,000 pages to fully disclose everything.

"In the past, systems were pretty simple," Green said. "You put a key in the lock and turn it. Now we have a fob with functionality."

The other common defense tactic advised by experts is to simply shift a runaway vehicle into neutral. But the ES 350 is equipped with an automatic transmission that can mimic manual shifting, and its shift lever on the console has a series of gates and detents that allow a driver to select any of at least four forward gears.

The arrangement of those gear selections could make it difficult to shift from a forward gear directly into neutral in a panic situation, Toyota spokesman Lyons acknowledged.

"I think it's possible to get the shifter confused, but I can't be sure that's what happened" in San Diego, Lyons said. "You'd be surprised how many people around here [Toyota] don't know what the neutral position is for."

The most obvious impulse for any driver experiencing sudden acceleration is to apply the brakes. But when an engine goes to full throttle and is speeding at 120 mph, the brake might not stop the car.

The ES 350 and most other modern vehicles are equipped with power-assisted brakes, which operate by drawing vacuum power from the engine. But when an engine opens to full throttle, the vacuum drops, and after one or two pumps of the brake pedal the power assist feature disappears.

As a result, a driver would have to apply enormous pressure to the brake pedal to stop the car, and if the throttle was wide open might not be able to stop it at all, safety experts say.

"I don't think you can stop a car going 120 mph and an engine at full throttle without power assist," said Ditlow, the safety center director.

Indeed, a 2007 study by federal highway safety officials showed that braking distance and force on a Lexus ES 350 increased fivefold when the throttle was wide open. And evidence introduced in sudden acceleration trials suggests that it can take up to 225 pounds of pressure on a brake pedal to arrest a runaway vehicle, far more than most drivers can muster from a seated position, said Edgar "Hike" Heiskell, a Charleston, W.Va., attorney who is suing Toyota over a fatal acceleration accident in Flint, Mich.

Lyons acknowledged that the vacuum can be depleted when an engine throttle is wide open, leaving the drivers without power-assisted brakes.

"There's a [federal] standard where you have to be able to stop the car without power-assisted brakes, but obviously I don't think it includes situations where the throttle is wide open," he added.

Drivers in other crashes also found it difficult to rein in a runaway Toyota. Guadalupe Gomez of Redwood City said he was held hostage for 20 miles on a Bay Area freeway by a 2007Camry traveling more than 100 mph.

Gomez was unable to turn off the engine or shift into neutral and then burned out his brakes before slamming into another car and killing that driver, said attorney Louis Franecke, who represented that victim's family.

The San Diego crash is still under investigation by the San Diego County Sheriff's Department and the CHP; until the probe is complete, neither agency is commenting.

The National Highway Traffic Safety Administration, meanwhile, says it has an open investigation into sudden acceleration events involving Toyota vehicles.

ralph.vartabedian@latimes.com

ken.bensinger@latimes.com

Times staff writer Tony Perry in San Diego contributed to this report.





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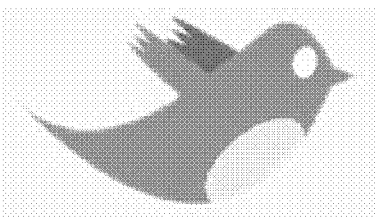

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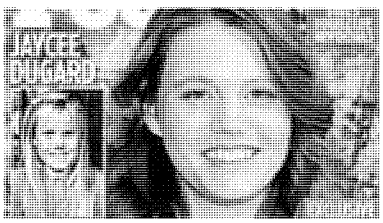

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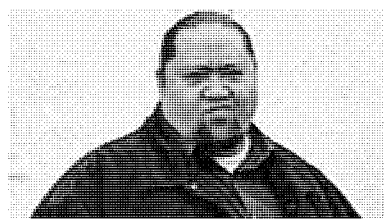

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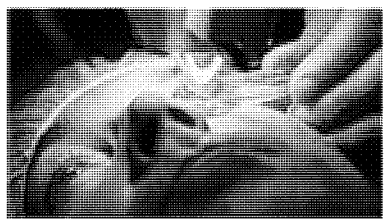

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# Owners of Toyota Cars in Rebellion Over Series of Accidents Caused by Sudden Acceleration

ABC News Investigation Uncovers Reports of 16 Deaths, Over 200 Accidents; Toyota Owners Demand Answers

By BRIAN ROSS, JOSEPH RHEE, ANGELA M. HILL and MEGAN CHUCHMACH
Nov. 3, 2009

ABC WORLD NEWS with Charles Gibson
177 comments

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Refusing to accept the explanation of Toyota and the federal government, hundreds of Toyota owners are in rebellion after a series of accidents caused by what they call "runaway cars."

Safety analysts found an estimated 2000 cases in which owners of Toyota cars including Camry, Prius and Lexus, reported that their cars surged without warning up to speeds of 100 miles per hour.

CLICK HERE FOR MORE OF THE RUNAWAY TOYOTAS STORY.

Toyota says the incidents are caused by floor mats becoming stuck under gas

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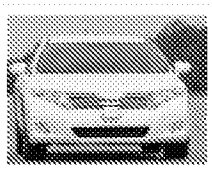
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**Watch the full report tonight on 'World News with Charles Gibson' and 'Nightline'.**

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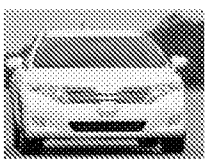
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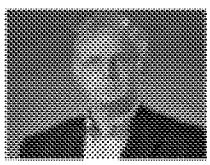
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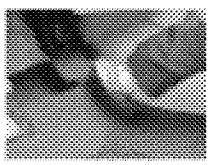
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## Comment & Contribute

Do you have more information about this topic? If so, please click here to contact the editors of ABC News.

POST YOUR COMMENT

### Member Comments (177)

I typed too fast. It should read " Ask yourself, why don't semitrucks use their brakes when going down a mountain or long steep hill?"
*lotus1 10:09 PM*

Many things are quite obvious when reading comments, one of them is ignorance. Engines will not blow up,

they are protected by rev limiters. Just like it sounds, a limiter preventing them from over reving. This "hard braking" theory people are talking about, ever try it? Do this on a desserted road, go interstate speeds, floor the gas and hold it there, now try to brake the car to a stop. Not happening. I've done it for fun and it will not stop the car. Ask yourself, why semitrucks use their brakes when going down a mountain or long steep hill? That's right, they ice up. Which means that they get so hot, they have zero friction, none. Same thing happens in your car. Zero brake and I don't care if you weigh 400 lbs and put all your weight on the pedal. Shift to neutral or YES, shut off the engine. You can stop a car without power brakes and you can steer without power steering. People used to actually drive cars and trucks without power brakes and steering you know, and they did it very well. If for some reason you can't, don't drive period.
*lotus1 10:00 PM*

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**Nov. 3, 2009 —**

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CLICK HERE FOR MORE OF THE RUNAWAY TOYOTAS STORY.

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### Some Toyota Owners Point to Problem Other than Floor Mats

Many Toyota owners remain convinced that an electronic problem is to blame.

Bulent Ezal was driving with his wife of 46 years in their Toyota Camry in central California, when he says it suddenly took off. The car plunged over a 100 foot cliff into the Pacific ocean, and while he survived, his wife did not.

"All of a sudden the car surged with force and I was thrown back to the seat," Ezal said. The last thing he heard was his wife screaming before he blacked out.

Toyota says the accident was caused by Ezal mistakenly pushing the gas pedal, but Ezal is adamant that his foot was "absolutely, positively on the brake."

There have been other deaths as well, including a fatal accident near San Diego this August that took the lives of California Highway patrol officer Mark Saylor, his wife, daughter and brother-in-law.

The Lexus they were driving, borrowed from a dealer, raced out of control at 100 miles an hour before hitting another vehicle, crashing into an embankment and bursting into flames.

Right before the crash, Saylor's brother-in-law called 911 from the backseat of the vehicle and said urgently, "Our accelerator is stuck. We're in trouble&There's no brakes."

Toyota said the problem was the wrong-sized, all-weather rubber floor mat in the car which was caught and held down the gas pedal. The company ordered a huge floor mat recall for 3.8 million cars.

In Tokyo, the president of Toyota, Akio Toyoda, formally apologized, saying, "Four precious lives have been lost. I offer my deepest condolences."

But many Toyota owners remained unconvinced, including Elizabeth James in Denver, CO and her husband Ted. They organized a YouTube campaign accusing Toyota of gross negligence and cover-up and are demanding answers.

**To see more of ABC News' investigation, tune in to 'Nightline' tonight.**

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Nov. 3, 2009

ABC WORLD NEWS with Charles Gibson

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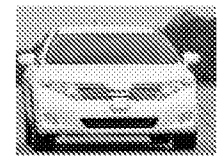
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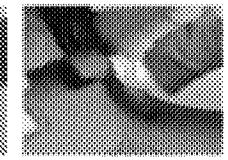
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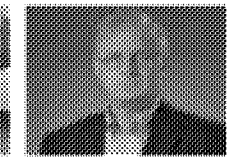
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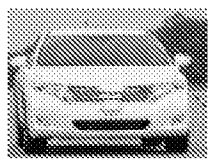
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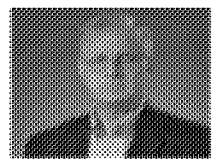
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| Cc: [ - ] | . | |
| Bcc: [ - ] | . | |
| Subject: | FW: Results of "mini-study" on reaction to Unwanted Acceleration. | |

Chris – This is a mini study conducted by VRTC. Neither VRTC nor ODI is holding this out as a statistically valid study, but rather just a set of data points that can start a useful dialogue on how to design new vehicles and the need to communicate any new technology to consumers. VRTC tells us that most of the folks out there know about the trapped accelerator pedal, so that may explain why a large number did not press brake pedal first.

We conducted a short study on operator reaction to unwanted acceleration in the Lexus ES350. We parked the vehicle and disabled it for testing, then verbally discussed the scenario with volunteer test subjects. We collected information on years of driving experience and gender, then went through the following routine:

1- Simulate starting the car (though they were informed that the car wouldn't start)

2- Place car in Reverse

3- Place car in Drive

4- Scenario- You're driving but need to pass a vehicle. You depress the accelerator as though you are passing, then release the accelerator. The car does not slow down; you will be going 100 mph in less than five seconds. Do something.

5- We observe their "countermeasure" and take note. We inform them that their effort didn't work. What will they try next? We follow each countermeasure by telling them it is ineffective and asking what they then do. We record the order for each person. Countermeasures include:

a. Pull on accelerator

b. Push on brake

c. Place in Neutral

d. Place in other gear

e. Turn off ignition

f. Depress parking brake

g. Other

>

We had 23 test subjects. While we know there are limitations to the data, it still provides for interesting discussion. The results were as follows:

Results:

-9 of 23 people placed the car in Drive "Sport" instead of Drive.

-12 of 23 people placed the car in "Sport Upshift" instead of Neutral (probably indicative of being misled by the diagram).

-Only 1 person went from “Sport Upshift” to Neutral.

-4 people went from Drive over to “Sport Upshift” (probably indicative of being misled by the diagram).

-13 of 23 subjects applied brakes as first countermeasure.

-3 of 23 tried to free the accelerator pedal first (possibly reveals a test design issue).

-3 of 23 used the parking brake.

-10 of 23 tried to turn off the ignition by tapping the button. It appears no one knew about the three second hold.

-14 of 23 successfully put the car into Neutral.

| | |
|---|---|
| From: | "JEFF GREEN, BLOOMBERG/ NEWSROOM:" <jgreen16@bloomberg.net>. Sent:11/6/2009 5:09 PM. |
| To: [ - ] | jgreen16@bloomberg.net. |
| Cc: [ - ] | . |
| Bcc: [ - ] | . |
| Subject: | Fwd: Toyota Sued by Consumers Over Sudden Acceleration (Update1). |

Toyota Sued by Consumers Over Sudden Acceleration (Update1)

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---
Jeff Green
Bloomberg News
Work: +1 (248) 827-2945
Mobile: +1 (248) 310-9015
---
Sent From Bloomberg Mobile MSG

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Toyota Sued by Consumers Over Sudden Acceleration (Update1)
2009-11-07 00:10:01.656 GMT

(Adds defect claim in ninth paragraph.)

By Margaret Cronin Fisk and Alan Ohnsman
Nov. 6 (Bloomberg) -- Toyota Motor Corp. has failed to correct a problem with the throttle control system on some of its vehicles, causing them to suddenly accelerate, lawyers for consumers said in a lawsuit.
Los Angeles residents Seong Bae Choi and Chris Chan Park, who claim they experienced multiple instances of unintended acceleration, filed the suit as a class action yesterday, seeking to represent all U.S. owners of certain Toyota and Lexus models.
Toyota last month said it would recall as many as 3.8 million vehicles including Lexus ES luxury cars, Camry sedans and Prius hybrids over a potential flaw in which floor mats shifting out of position could jam the accelerator pedal. The mats aren't the problem, plaintiff's lawyer David Wright said. "Neither driver error nor floor mats can explain away many other frightening instances of runaway Toyotas," Wright said in a statement. "Until the company acknowledges the real problem and fixes it, we worry that other preventable injuries and deaths will occur."
John Hanson, a spokesman for Toyota's U.S. sales unit, said he hadn't seen the suit and declined immediate comment.

2,000 Complaints

The plaintiffs claim Toyota and Lexus owners have made more than 2,000 complaints of sudden acceleration to the company and government agencies. They also allege that sudden acceleration episodes have resulted in accidents causing 16 deaths and 243 injuries.
Toyota failed to "incorporate important failsafe measures" allowing drivers to control the vehicles, the lawsuit said.
The National Highway Traffic Safety Administration on Oct.

30 declined a request to investigate Lexus ES models for possible flaws related to vehicle electronics that may also cause unintended acceleration.
The plaintiffs in the California lawsuit claim that unintended acceleration episodes are linked to an electronic throttle control system called ETCS-i in these vehicles.
An initial design called for "an electronic throttle control and a redundant mechanical linkage between the gas pedal and the engine throttle control as a failsafe in the event of a sudden unintended acceleration," according to the complaint.
This feature would disconnect the electronic throttle control and allow a driver to stop the vehicle, the plaintiffs said. The company began selling vehicles without this feature around 2001, the consumers allege in the lawsuit.

'Failsafe Measure'

They also claim Toyota failed to include another "failsafe measure" that would "automatically reduce the engine to idle when the brakes are being applied while the throttle is in an open position," according to the complaint.
The plaintiffs are asking for an injunction, ordering the company to recall all Toyota and Lexus vehicles equipped with ETCS-i.
On Oct. 30, in a statement posted to the Federal Register denying a request for further investigation of Lexus ES models, NHTSA said "the only defect related to vehicle speed control in the subject vehicles involved the potential for accelerator pedals to become trapped near the floor by out-of-position or inappropriate floor mat installations."
The agency said that after interviewing the Lexus ES owner who sought a federal investigation, examining his vehicle and conducting a range of tests on drive-train and electric systems, it failed to find sufficient evidence of electronic flaws.
The agency said that denying the petition "does not constitute a finding by NHTSA that a safety-related defect does not exist."
Toyota, the world's largest automaker, has its U.S. sales headquarters in Torrance, California. The company is based in Toyota City, Japan.
The lawsuit is Choi v. Toyota Motor Corp., CV 09-08143, U.S. District Court, Central District of California.

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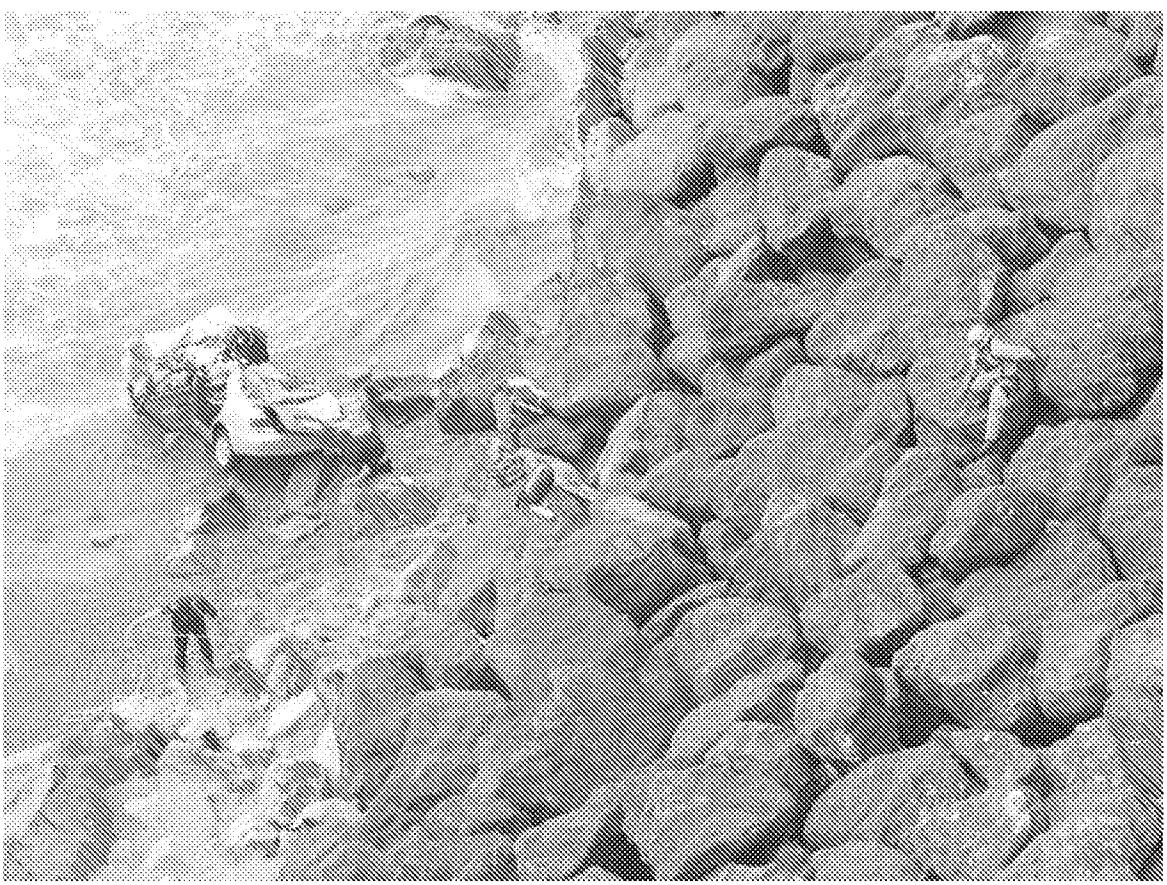
Los Angeles Times | LOCAL





# Runaway Toyota cases ignored

Safety investigators dismissed numerous reports of sudden acceleration, then said data were lacking.



Bulent Ezal said his Camry suddenly accelerated before it plunged off a Pismo Beach cliff in 2007, killing his wife. (Pismo Beach Police Department / May 3, 2007)

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*November 8, 2009*

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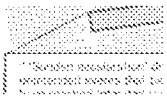

Graphic: Nothing to see here, folks

Prius damage

Toyota is sued over concerns of sudden acceleration

MULTIMEDIA

Discuss: Have you experienced sudden acceleration in a Toyota?



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More than 1,000 Toyota and Lexus owners have reported since 2001 that their vehicles suddenly accelerated on their own, in many cases slamming into trees, parked cars and brick walls, among other obstacles, a Times review of federal records has found.

The crashes resulted in at least 19 deaths and scores of injuries over the last decade, records show. Federal regulators say that is far more than any other automaker has experienced.

Owner complaints helped trigger at least eight investigations into sudden acceleration in Toyota and Lexus vehicles by the National Highway Traffic Safety Administration in the last seven years. Toyota Motor Corp. recalled fewer than 85,000 vehicles in response to two of those probes, and the federal agency closed six other cases without finding a defect.

But those investigations systematically excluded or dismissed the majority of complaints by owners that their Toyota and Lexus vehicles had suddenly accelerated, which sharply narrowed the scope of the probes, the Times investigation revealed.

Federal officials eliminated broad categories of sudden-acceleration complaints, including cases in which drivers said they were unable to stop runaway cars using their brakes; incidents of unintended acceleration lasting more than a few seconds; and reports in which owners did not identify the possible causes of the problem.

NHTSA officials used the exclusions as part of their rationale to close at least five of the investigations without finding any defect, because -- with fewer incidents to consider -- the agency concluded there were not enough reported problems to warrant further inquiry. In a 2003 Lexus probe, for example, the agency threw out all but one of 37 customer complaints cited in a defect petition. It then halted further investigation, saying it "found no data indicating the existence of a defect trend."

Meanwhile, fatal crashes involving Toyota vehicles continued to mount.

In a written statement, the NHTSA said its records show that a total of 15 people died in crashes related to possible sudden acceleration in Toyota vehicles from the 2002 model year and newer, compared with 11 such deaths in vehicles made by all other automakers.

The Times located federal and other records of 19 fatalities involving Toyota and Lexus vehicles from the same model years in which sudden or unintended acceleration may have been a factor, as well as more than 1,000 reports by owners that their vehicles had suddenly accelerated. Independent safety expert Sean Kane, president of Safety Research and Strategies, said he has identified nearly 2,000 sudden-acceleration cases for Toyota vehicles built since 2001.

Other experts say the numbers may be far higher, pointing to a 2007 NHTSA survey of 600 Lexus owners that found 10% complained they had experienced sudden acceleration.

Most sudden accelerations did not result in a crash, but there were notable exceptions. Bulent Ezal, a retired engineer, plunged 70 feet off a Pismo Beach cliff into the Pacific Ocean surf. He was hospitalized with minor injuries, but his wife of 46 years was killed.

"By the time they pulled me out, the tide was about to cover the car," Ezal said.

He said his 2005 Camry had suddenly accelerated in a parking lot.

In its research, The Times examined thousands of federal defect investigation records, complaints filed with NHTSA by Toyota and Lexus owners, lawsuits against the company, and reports by independent safety experts and local police agencies.

Toyota has been under a spotlight since Aug. 28, when off-duty California Highway Patrolman Mark Saylor and three members of his family died in a Lexus ES 350 that accelerated to more than 100 mph and crashed in San Diego County.

Toyota has blamed the Saylor crash on an incorrectly installed floor mat that jammed the accelerator pedal. The company announced a recall of 3.8 million vehicles in September and is designing a fix aimed at preventing sudden acceleration caused by floor mats.

The recall affects the following Toyota models: the 2007-2010 Camry, the 2004-2009 Prius, the 2005-2010 Avalon, the 2005-2010 Tacoma and the 2007-2010 Tundra, as well as the 2007-2010 Lexus ES 350 and the 2006-2010 Lexus IS 250 and IS 350.

Last week, the NHTSA called the issue a "very dangerous problem" and said the remedy remains to be determined.

The agency declined a request for interviews, but issued a statement defending its past actions, saying its officials have continuously monitored Toyota vehicles for potential defects and that many of the reports of sudden acceleration involved only momentary surges of engine power that did not result in any loss of vehicle control.

"NHTSA takes every allegation of safety problems seriously and that is why we read every consumer complaint within one business day of its receipt," the agency said. "In the case of complaints about sudden acceleration in Toyota vehicles NHTSA moved very quickly to respond to them."

Toyota Motor Corp. defended its Toyota and Lexus vehicles and the validity of prior investigations.

"Over the past six years, NHTSA has undertaken several exhaustive reviews of allegations of unintended acceleration on Toyota and Lexus vehicles. In each case, the agency closed the investigation without finding any electronic engine control system malfunction to be the cause of unintended acceleration," the company said in a statement.

Whatever the cause, Toyota and Lexus owners have grappled with the dangerous consequences.

* Jean Bookout awoke in an Oklahoma hospital a month after a crash in her 2005 Camry.

She said the car sped out of control on a freeway, then smashed into an embankment after she swerved it onto an exit ramp, leaving behind long skid marks from attempts to stop the vehicle with her brakes and emergency brake.

Bookout sustained permanent memory loss, and her best friend died.

"I did everything I could to stop the car," she said Tuesday.

* Nancy Bernstein, a vice president for a Long Beach community garden and former science teacher, said she was taken on an 8-mile high-speed ride by her 2007 Prius while she was following her husband in a group bicycle tour in Wisconsin. She said her Prius accelerated from 45 mph to 75 mph on a winding, two-lane highway crowded with 100 cyclists.

"I was sure I was going to kill someone on a bicycle or myself," she recalled. "I stood on the brakes with both feet. All of a sudden, I see fire. I thought, sure, my brakes are on fire. I thought about maybe trying to sideswipe a tree to slow down."

Eventually she was able to stop at the bottom of a hill, using her brakes and emergency brake. A local resident rushed out with a fire extinguisher.

* Dr. David. W. Smith, an emergency room physician from San Dimas, has yet to receive a satisfactory answer from Toyota about his Lexus GS 300. Smith said he was driving with his cruise control in Central California on Highway 99 last year, not touching the accelerator, when suddenly the vehicle accelerated to 100 mph.

The brakes did not release the cruise control or slow down the vehicle, Smith recalled. Finally, he shifted into neutral and shut off the engine. "I am sure it is the cruise control," he said. "I haven't used it since."

In reviewing consumer complaints during its investigations, the NHTSA relied on established "positions" that defined how the agency viewed the causes of sudden acceleration. Cases in which consumers alleged that the brakes did not stop a car were discarded, for example, because the agency's official position was that a braking system would always overcome an engine and stop a car. The decision was laid out in a March 2004 memorandum.

When asked to submit its own complaint data to the NHTSA, Toyota eliminated reports claiming that sudden acceleration occurred for "a long duration," or more than a few seconds. Elsewhere, the company said a fail-safe in its throttle system makes such an event impossible.

NHTSA officials acknowledged in a statement that the exclusions were made, but defended the practice.

"While some vehicles may be excluded from the scope of an investigation into a specific defect allegation, all are continuously reviewed, along with other relevant information, in order to identify other emerging issues of concern," the statement said.

A reduced pool of reports created the appearance that the problem was much smaller than the total number of complaints suggested, making a broader vehicle recall seem less necessary, critics say.

"NHTSA has ways of pigeonholing reports, categorizing them as brake failure rather than sudden acceleration," said attorney Edgar Heiskell of Charleston, W.Va., who is suing Toyota over a fatal crash in Flint, Mich. "By excluding these braking and long-duration events, they have taken 80% of the cases off the table."

In 2004, the NHTSA began a probe into a defect petition filed by Carol J. Mathews, a registered nurse who was then director of health services for the Montgomery County, Md., school system. Matthews reported that she had her foot on the brake of her 2002 Lexus ES when it took off and hit a tree.

In its subsequent investigation, the NHTSA and Toyota both winnowed down other reports of sudden acceleration involving 2002 and 2003 Lexus ES and Camry models.

When the agency asked Toyota to disgorge all of the reports it knew about, the company eliminated an unknown number in five broad categories, including cases in which drivers said they were unable to control a runaway engine by applying the brakes.

In closing the probe, federal investigators said only 20 cases were considered relevant.

But The Times' examination of consumer complaints and a sampling of reports from Toyota dealers found more than 400 reports of sudden acceleration involving those models. And federal records show that the NHTSA knew about 260 of those cases and another 114 cases identified by Toyota.

As for its position that brakes can always overcome a vehicle's engine, the safety agency and Toyota now acknowledge that a braking system cannot always counter a wide-open throttle, as is the case in sudden acceleration.

The NHTSA began investigating the problem of sudden acceleration in the mid-1980s, after a flood of complaints about the Audi 5000. One outgrowth of the subsequent investigation was the NHTSA view that acceleration events at high speed are a different issue than events at low speed.

In 2005, for example, Jordan Ziprin of Phoenix, who had experienced a minor accident he blamed on sudden acceleration, filed a defect petition with the NHTSA that included nearly 1,200 owner complaints about Toyota vehicles. The automaker argued that the majority should be eliminated because they dealt "with two completely different issues."

When owners said the "vehicle unintentionally or suddenly 'accelerated,' " Toyota claimed that represented a different issue than when they said "the vehicle 'surged' or 'lurched.' " The NHTSA ultimately went a step further, eliminating every single complaint except Ziprin's, finding them to have "ambiguous significance."

The agency also has thrown out evidence for other reasons. In 2008, the NHTSA opened a probe of the Toyota Tacoma after a consumer found that the truck had accumulated 32 times as many sudden-acceleration complaints as any other pickup. But Toyota at the time said the complaints stemmed from "media and Internet exposure." The NHTSA closed the case without a finding after it whittled down a list of more than 450 complaints to just 62.

"To this day I still can't find evidence online of a flood of media exposure," said William Kronholm, the Helena, Mont., man who said he requested the investigation after he experienced two acceleration events in his 2006 Tacoma. "They never dealt with the question I presented in any real way."

The NHTSA has declined to reconsider previous investigations, even in the face of new evidence.

In March, Jeffrey Pepski of Plymouth, Minn., formally requested that the NHTSA reopen two closed investigations into Toyota and Lexus vehicles for the acceleration problem, arguing in part that 10 other motorists had experienced sudden acceleration that could not be explained by floor mats.

The NHTSA looked at the 10 cases and tossed them out. The agency's way of looking at them sharply contrasted with the drivers' original accounts.

In one case, the driver of a 2007 Lexus ES 350 reported that the sedan accelerated into a building, bounced backward, struck another vehicle and ended up on top of a snowbank.

But federal officials described the same case as a "single incident of alleged engine surge while parking vehicle. No trouble found by dealer."

The NHTSA denied Pepski's petition last week, arguing that further study was "not warranted."

ralph.vartabedian@ latimes.com

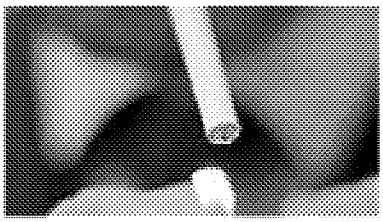
ken.bensinger@latimes.com

Times researcher Scott J. Wilson and Times staff writer Melissa Rohlin contributed to this report.





## In Case You Missed It...



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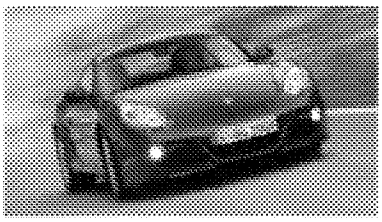

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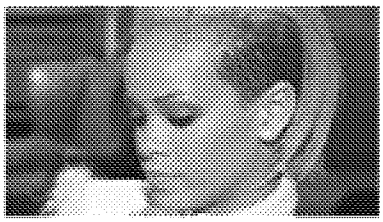

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*A Tribune Web site*

From: "Thor Toma" <thort@servco.com>. Sent:11/25/2009 8:45 AM.

To: [ - ] "George Morino" <george_morino@toyota.com>.

Cc: [ - ] .

Bcc: [ - ] .

Subject: Gas pedal.

Hi George,

Various news agencies have been running details on the gas pedal issue.

Do you know when we will receive official information to answer customer and dealer questions?

Thank you very much!

Thor

| | |
|---|---|
| From: | "Colacurcio, Joe" <Joe.Colacurcio@nielsen.com>. Sent:11/30/2009 2:08 PM. |
| To: [ - ] | "Allison Takahashi" <allison_takahashi@toyota.com>; "Amy K Taylor" <amy_k_taylor@toyota.com>; "Art Garner" <agarner@golinharris.com>; "Atsuko Daly" <Adaly@tma.toyota.com>; "Barbara McDaniel" <barbara.mcdaniel@tema.toyota.com>; "Bill Kwong" <bill_kwong@toyota.com>; "Bill Reinert" <bill_reinert@toyota.com>; "Brian Lyons" <brian_lyons@toyota.com>; "Brin Wall" <brin_wall@toyota.com>; "C Highland" <chighland@tma.toyota.com>; "Chad Harp" <chad_harp@toyota.com>; "Charley Roberts" <charley_roberts@toyota.com>; "Cindy Knight" <cindy_knight@toyota.com>; "Connie Lee" <connie_lee@toyota.com>; "Craig Erickson" <craig_erickson@toyota.com>; "Dan Miller" <dan_miller@toyota.com>; "Dan Sieger" <dsieger@tma.toyota.com>; "Denise Morrissey" <denise_morrissey@toyota.com>; "Doug Coleman" <douglas_coleman@toyota.com>; "Doug Frisbie" <Doug_Frisbie@toyota.com>; "E J Garner" <ej_garner@toyota.com>; "Erica Gartsbeyn" <erica_gartsbeyn@toyota.com>; "Florence Drakton" <florence_drakton@toyota.com>; "George Morino" <george_morino@toyota.com>; "Greg Brummer" <greg.brummer@gmail.com>; "Greg Thome" <greg_thome@toyota.com>; "Irv Miller" <irv_miller@toyota.com>; "Jana Hartline" <jana_hartline@toyota.com>; "Jennifer Chung" <jennifer_chung@toyota.com>; "Jim Wiseman" <jim.wiseman@tema.toyota.com>; "Joe Tetherow" <joe_tetherow@toyota.com>; "John Hanson" <john_hanson@toyota.com>; "Julie Alfonso" <julie_alfonso@toyota.com>; "Latondra Newton" <Latondra_Newton@tma.toyota.com>; "M Sleilati" <msleilati@tma.toyota.com>; "Mark Simmons" <Mark_F_Simmons@Toyota.com>; "Martha Voss" <martha_voss@toyota.com>; "Mary Dardarian" <mdardarian@tma.toyota.com>; "Mary Nickerson" <mary_nickerson@toyota.com>; "Matthew Plasch" <matthew_plasch@toyota.com>; "Michael Kroll" <michael_kroll@toyota.com>; "Michael Rouse" <michael_rouse@toyota.com>; "Mike Goss" <mike.goss@tema.toyota.com>; "Mike Michels" <mike_michels@toyota.com>; "Ming-Jou Chen" <ming-jou_chen@toyota.com>; "Nancy Banks" <nancy.banks@tema.toyota.com>; "Nancy Hubbell" <nancy_hubbell@toyota.com>; "Nancy Poderycki" <npoderycki@tma.toyota.com>; "Rob Funk" <rob_funk@toyota.com>; "Ron Kirkpatrick" <ron_kirkpatrick@toyota.com>; "Ryo Sakai" <ryo_sakai@toyota.com>; "S Curtis" <scurtis@tma.toyota.com>; "Sacha Terrill" <sacha_terrill@toyota.com>; "Sam Butto" <sam_butto@toyota.com>; "Scott DeYager" <scott_deyager@toyota.com>; "Sona Iliffe-Moon" <sona_iliffe-moon@toyota.com>; "Stephanie Arvin" <Stephanie.arvin@tema.toyota.com>; "Steve Sturm" <ssturm@tma.toyota.com>; "Susan Pack" <susan_pack@toyota.com>; "Victor Vanov" <victor.vanov@tema.toyota.com>; "Zoe Zeigler" <zoe_zeigler@toyota.com>. |
| Cc: [ - ] | "Stephenson, Bill" <Bill.Stephenson@nielsen.com>; "Primrose, Jon" <Jon.Primrose@nielsen.com>; "Meixner, Kevin" <Kevin.Meixner@nielsen.com>; "Hirsch, Sallie" <Sallie.Hirsch@nielsen.com>; "Dangers, Brian" <Brian.Dangers@nielsen.com>; "White, James" <James.White@nielsen.com>; "Winburn, Kimberly" <Kimberly.Winburn@nielsen.com>; "Blackshaw, Pete" <Pete.Blackshaw@nielsen.com>; "Hammond, Joshua" <Joshua.Hammond@nielsen.com>. |
| Bcc: [ - ] | . |
| Subject: | BuzzAlert: Online consumers offer robust reactions to news of Toyota's accelerator entrapment recall last week. |

Hello,

On Wednesday, November 25, 2009, Toyotaannounced details of its remedy to address potential accelerator entrapment in 3.8 million vehicles, eliciting a significant volume of online consumer commentary on that day, but fading discussion over the holiday weekend. Online discussion was fairly widely dispersed, appearing on general news or consumer sites such as USAToday.com and Consumerist.com as well as myriad auto enthusiast venues. Overall comments are generally negative, though some online consumers express a degree of relief that a more permanent fix for potential floor mat-related or sudden acceleration issues has been reached.

Key Online Themes:

Several online consumers and enthusiasts continue to criticize Toyotaquality, sometimes also highlighting last weekâ€™s recall of 2000-2003 Tundra frame rust or earlier problems such as engine sludge. At times, some question how Toyotawill repair its reputation, or offer the previously reported notion that Toyotahas grown quickly, potentially sacrificing its quality in the process.

Â

Some online enthusiasts question if the recall goes far enough, still speculating potential problems with the affected vehiclesâ€™ ECUs or with drive-by-wire throttle systems in general. Others note that the brake-override system is a logical solution, but some question if this will also be featured in manual transmission models.

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A few comments from online consumers express that dealerships that they have called do not know the details of this recent announcement, and a story on influential automotive enthusiast site Autoblog.com today reflects such reports that Toyotadealerships may have been caught off guard by the pedal entrapment recall. This has elicited further commentary on the topic today.

Â

Comments on Twitter.com reflect a similar discussion trend to that in the general online buzz, according to analyst Greg Brummer. A total of 2410 tweets have posted since the story broke Wednesday, November 25th. A vast majority of those tweets, some 1900, emerged on that day. Thursdayâ€™s total fell to 305, and 205 emerged in the subsequent three days, indicating significantly decreased velocity.Â  Tweets generally lacked expression of sentiment, more succinctly re-posting the news that Toyotawas recalling 3.8 million vehicles to adjust the gas pedal.

Â

Recommendation for Consideration:

To the extent possible, make sure that dealerships have timely access to the correct information regarding recalls and can convey the necessary owner actions to these individuals.

Continue to monitor online buzz regarding the accelerator entrapment recall as owners begin receiving notifications and have the recalls performed. This can help identify any potential confusion or outstanding questions that may be expressed by owners of affected vehicles.
Continue to use the Toyota USA Newsroom as a depot for information regarding this topic, integrating the content with the Toyota.com homepage as is currently occurring

Â

Where exactly is online consumer discussion occurring?

http://consumerist.com/2009/11/toyota-will-shorten-recalled-vehicles-gas-pedals.html

http://content.usatoday.com/communities/driveon/post/2009/11/is-toyota-still-endangering-its-owners-with-a-floor-mat-recall-solution-that-doesnt-go-far-enough/1

http://wheels.blogs.nytimes.com/2009/11/25/toyota-says-cars-to-get-smart-gas-pedals/

http://www.huffingtonpost.com/2009/11/25/toyota-gas-pedal-replacem_n_370285.html

http://abcnews.go.com/Business/comments?type=story&id=9171742

http://jalopnik.com/5412585/toyota-to-fix-gas-pedals-so-floor-mats-wont-cause-fiery-death

http://wot.motortrend.com/6580492/recalls/toyota-announces-accelerator-pedal-fix-in-unintended-acceleration-recall/index.html

http://forums.motortrend.com/70/8003838/the-general-forum/toyota-dealers-to-use-existing-tools-to-fix-pedal/index.html

http://www.thetruthaboutcars.com/toyota-floormatgate-autobox-burnouts-banned/

http://priuschat.com/news/toyota-replace-2004-2009-prius-gas-pedals-give-new-all-weather-mats

http://forums.vwvortex.com/zerothread?id=4662234

http://www.autoblog.com/2009/11/25/breaking-toyota-to-recall-3-8m-vehicles-to-reshape-and-replace/

http://my.is/forums/f41/recall-notice-toyota-recalls-3-8-million-vehicles-replace-reshape-gas-pedals-402459/

http://www.npr.org/templates/story/story.php?storyId=120809937

http://www.nytimes.com/2009/11/26/business/26toyota.html

http://forum.carsandcoffee.info/showthread.php?t=18257

http://www.motorauthority.com/blog/1039011_toyota-replacing-accelerator-pedals-on-3-8-million-toyota-and-lexus-vehicles

http://www.autospies.com/news/Did-Toyota-Sell-Out-It-s-Hard-Earned-Reputation-To-Become-Number-One-50028/

http://www.autoblog.com/2009/11/30/report-toyota-dealers-caught-out-by-pedal-entrapment-recall/

Example Tweets (of those expressing sentiment):
Overly dramatic - http://twitter.com/waynejohn/statuses/6054795284

Toyota will get hurt by this - http://twitter.com/venterchris/statuses/6053259208

Dealership lack of information - http://twitter.com/PeggyR/statuses/6052663381

Concern for Toyota's PR folks - http://twitter.com/stacypearson/status/6052426092

Combining the Tundra and pedal recalls - http://twitter.com/lanewsnow/statuses/6052287234

SnarkyÂ  - http://twitter.com/MikeS2K/statuses/6052167103

A critical look- http://twitter.com/mdanif/statuses/6072175619

Possibly bemoaning a purchase decision - http://twitter.com/ktnk1964/statuses/6129505007

Â

What exactly are online consumers and enthusiasts saying?
"Glad to see Toyotastep up to the plate but now I want to know what took them so long? There were numerous cases well before the tragedy in California.

HuffingtonPost.com, November 25, 2009

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"First floor mats, then gas pedals, and the other day spare tire mounts rusting and spare tires falling on the road from import trucks, for me I'm proud to buy only the best.....Â.....amerÂican brands only!"

HuffingtonPost.com, November 25, 2009

Â

"The throttle override is an obvious safety feature. All vehicles should close the throttle valve when the brake pedal is pressed and the clutch is engaged, regardless of the position of the throttle pedal.

If both pedals are pressed, the brakes take precedence. That's just common sense.

Most cars have cruise control systems that deactivate when the brake pedal is pressed, and the same brake pedal sensor and throttle valve actuator can be used to implement the throttle override.

Toyota would be wise, though, to make sure that the brake sensor is on a half-amp fuse and an accessory power relay to avoid the problem Ford had with vehicles catching fire while powered off.

HuffingtonPost.com, November 25, 2009

Â

"Toyotahas a history of lemons.

They haven't had a single year of the Tundra without a major recall - cracking crankshafts, rusting brakes, etc - it's just a lousy product. This is new one (or new in the sense that they are finally paying up) shows a pattern of kicking back against NHTSA regulation. They did this before with the recall on the brake master cylinders on all their cars just a few year back."

HuffingtonPost.com, November 25, 2009

Â

"How are you supposed to do heal-to-toe shifting? I know this is usually reserved with sports cars and Toyotareally doesn't have any. But can't you get the sporty lexas in a manual transmission option? The whole brake thing better be thought out better so certain situations the brakes and the gas can be applied together."

Consumerist.com, November 26, 2009

Â

"The extent with which the USmedia is chasing this issue magnifies the state of automarket self-protectionism going on in America. Pretty disgraceful for a country that preached globalization while its own corporate empires were doing well. Whether we take the Paice patent issue with its board of managers from GM and Ford (even more ironic considering Toyota helped Ford with Hybrid technology!), or we consider the consumer reports new car automotive reliability study that actually places Toyota and Lexus with 18 top performers... only that they are then relegated to the end of almost all US media articles as a footnote - With big titles at the top like FORD is tops! Well basically it is all so transparent you could be mistaken for a piece of polycarbonate glazing. If a 3.8 million recall doesnt satisfy you then you really are just out for market protectionism. One can only imagine that the USauto companies sat down to resolve their financial issues and decided to cripple the opposition legally and financially rather than shelve their private jets and commercialize a new winning technical concept. The cash for clunkers program generating profit for Toyotaand Honda must have been a real bite in the backside.

USAToday.com, November 29, 2009

Â

"I think it is very responsible of Toyotato address this potentially lethal problem.

I had similar problem with my Montero Sport. Had to fight Mitsubishi tooth an nail to have it fixed.

USAToday.com, November 25, 2009

Â

"This is a PR disaster for Toyota. How they would let this get so out of hand is beyond me. It would have been far more cost effective to take care of the problem promptly and quietly than let it get this far.

USAToday.com, NOvember 26, 2009

Â

"even if this were to happen to anybody with a brain, you could just throw it in neutral, or even park??! So what if you blow the engine, better than blowing up yourself.

This is ridiculous, this is just a punch to toyotafrom the good ole government to try and bring down every company that ever stood for anything good.

Blogs.NYTimes.com, November 28, 2009

Â

"I will pick up my new Prius on Friday after Thanksgiving. NO CONCERNS! None of us can be sure what we would do in such a situation as a runaway car, but my lifes experience has taught me that I'm dang well going to do SOMETHING other than hang on! Turn off the ignition, throw the car into nuetral, destroy the car, who cares about it at that point just save yourself and your occupants. Who cares that you've no power steering if the engines off, or that the cars engine blows up from over reving? I've got a better chance w/o power steering, or power brakes if I don't have an engine dragging me to my death! Cars are sooo complicated today, and drivers/owners have been lulled into a false sense of security, ------ I grew up in an era when you had to have some common sense and do SOME things for yourself. Vehicles WILL kill you, think about what you might do in an emergency,---------- everytime you get behind the wheel. Happy I'll be getting my second Toyota.

ABCNews.com, November 25, 2009

Â

"I called my the Toyota dealership here in Indianapolis where I bought my car and they said they no nothing about this recall and just said it was the only floormat and would not discuss the situation. What are we supposed to do now? When will dealerships acknowlege the problem and fix this?"

ABCNews.com, November 25, 2009

Â

"Rusty frames...killer floor mats...this kind of thing runs counter to Toyota's marketing, which is almost as smug and smarmy as Mac's..."I drive a Toyota like my father and my father's father."

Well, if that person wants to live long enough to see his son's children driving, here's a tip: buy a Honda.

Toyota: Moving Forward...even when you want to actually stop."

Jalopnik.com, November 25, 2009

Â

"DBW is my guess as well. Especially when a few of the news stories I've read have mentioned that Toyotaplans to "recalibrate" the systems in some of their models. If it were as simple as floor mats or pedals, they wouldn't be doing that."

Autoblog.com, November 30, 2009

Â

"Meet the recall king of 2009."

Autoblog.com, November 25, 2009

Â

"Other recalls haven't been in the news in other sources as much as this one. It needs to be pointed out that there was already a previous temporary fix of removing floor mats, then Toyota's false statement that the NHTSA was through with its investigation and found no other problem, then NHTSA's rebuttal and Toyota's backpeddling. Now this is an actual fix."

Autoblog.com, November 25, 2009

-Joe

| | | |
|---|---|---|
| From: | Mike Michels/=TMS/Toyota. | Sent:12/5/2009 2:45 PM. |
| To: [ - ] | letters@latimes.com;Nicholas.goldberg@latimes.com;Sue.horton@latimes.com. | |
| Cc: [ - ] | Ken.bensinger@latimes.com;ralph.vartebedian@latimes.com;martin.zimmerman@latimes.com. | |
| Bcc: [ - ] | Jim Lentz/=TMS/Toyota. | |
| Subject: | Toyota Response to Editorial: "Toyota's Troubles". | |

On behalf of Toyota Motor Sales, USA, we would like to respond to today's editorial opinion regarding reports of sudden acceleration in Toyota vehicles. Toyota appreciates the recognition of recall measures that have been implemented. Heightened awareness of the issue of pedal interference is important for public safety.

Given the intensity of the Times' reporting on this issue, we believe that the Times has a responsibility to publish this letter as soon as possible and in its entirety.

Please attribute the letter to Irv Miller, Group Vice President, Environmental and Public Affairs, Toyota Motor Sales, USA, Inc.

You can reach Mr. Miller at 310 291 2428 or myself at 310 200 4968 if you have any questions.

Thank you for your consideration.

_____

Mike Michels
Vice President, Communications
Toyota Motor Sales USA, Inc.
19001 S.Western Ave.
Torrance, CA 90509
Phone: 310 468 7730
Mobile: 310 200 4968
Fax: 310 381 4500
mike_michels@toyota.com

December 5, 2009

To:

Letters to the Editor
Los Angeles Times

Toyota's highest priority is the safety of our customers and public, and we believe we are demonstrating this in the voluntary recall of selected models we are currently undertaking.

We appreciate the LA Times' acknowledgement that Toyota "did the right thing" in instituting a recall in response to incidents of unwanted acceleration, and in committing to add "smart pedal" software technology as an added fail-safe measure. We also respect the Times' in-depth reporting of this issue, though we disagree with some of the theories it has embraced.

The issue of unintended acceleration involving Toyota and Lexus vehicles has been thoroughly and methodically investigated on several occasions over the past few years. These investigations have used a variety of proven and recognized scientific methods. Importantly, none of these studies has ever found that an electronic engine control system malfunction is the cause of unintended acceleration.

In fact, electronic throttle control, which has been adopted in some form by nearly all automakers, has several fail-safe features and enhances vehicle safety by making possible functions such as traction control, stability control, adaptive laser cruise control and snow mode power control on current or future vehicles.

Based on the comprehensive investigation and testing, we are highly confident that we have addressed the root cause of unwanted acceleration -- the entrapment of the accelerator pedal. As the Times acknowledged, Toyota moved quickly, in cooperation with the National Highway Traffic Safety Administration, to issue an initial safety advisory and then to develop a comprehensive package of measures that both reduce the risk of pedal entrapment

and better enable drivers to deal with this situation when it occurs.

The safety measures we are undertaking include the incorporation of a brake override system that cuts engine power if the accelerator and brake are depressed at the same time. This will become standard on all Toyota and Lexus vehicles globally by the end of 2010. Dealers will be ready to implement this remedy starting in January. We will begin mailing letters to customers at the end of this month, advising them how to proceed.

Again, the safety of our owners and the public is our utmost concern, and Toyota will continue to thoroughly investigate and take appropriate measures to address any vehicle defect trends that are identified. We also will continue to introduce advanced safety technology into Toyota and Lexus vehicles with the goal of ensuring that they meet the highest industry standards.

Irv Miller
Group Vice President, Environmental and Public Affairs
Toyota Motor Sales, USA, Inc.
Torrance, CA

____

December 5, 2009

To:

Letters to the Editor
Los Angeles Times

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any vehicle defect trends that are identified. We also will continue to introduce advanced safety technology into Toyota and Lexus vehicles with the goal of ensuring that they meet the highest industry standards.

| | |
|---|---|
| From: | "Winburn, Kimberly" <Kimberly.Winburn@nielsen.com>. Sent:12/8/2009 8:27 PM. |
| To: [ - ] | "Allison Takahashi" <allison_takahashi@toyota.com>; "Amy K Taylor" <amy_k_taylor@toyota.com>; "Art Garner" <agarner@golinharris.com>; "Atsuko Daly" <Adaly@tma.toyota.com>; "Barbara McDaniel" <barbara.mcdaniel@tema.toyota.com>; "Bill Kwong" <bill_kwong@toyota.com>; "Bill Reinert" <bill_reinert@toyota.com>; "Brian Lyons" <brian_lyons@toyota.com>; "Brin Wall" <brin_wall@toyota.com>; "C Highland" <chighland@tma.toyota.com>; "Chad Harp" <chad_harp@toyota.com>; "Charley Roberts" <charley_roberts@toyota.com>; "Cindy Knight" <cindy_knight@toyota.com>; "Connie Lee" <connie_lee@toyota.com>; "Craig Erickson" <craig_erickson@toyota.com>; "Dan Miller" <dan_miller@toyota.com>; "Dan Sieger" <dsieger@tma.toyota.com>; "Denise Morrissey" <denise_morrissey@toyota.com>; "Doug Coleman" <douglas_coleman@toyota.com>; "Doug Frisbie" <Doug_Frisbie@toyota.com>; "E J Garner" <ej_garner@toyota.com>; "Erica Gartsbeyn" <erica_gartsbeyn@toyota.com>; "Florence Drakton" <florence_drakton@toyota.com>; "George Morino" <george_morino@toyota.com>; "Greg Thome" <greg_thome@toyota.com>; "Irv Miller" <irv_miller@toyota.com>; "Jana Hartline" <jana_hartline@toyota.com>; "Jennifer Chung" <jennifer_chung@toyota.com>; "Jim Wiseman" <jim.wiseman@tema.toyota.com>; "Joe Tetherow" <joe_tetherow@toyota.com>; "John Hanson" <john_hanson@toyota.com>; "Julie Alfonso" <julie_alfonso@toyota.com>; "Latondra Newton" <Latondra_Newton@tma.toyota.com>; "M Sleilati" <msleilati@tma.toyota.com>; "Mark Simmons" <Mark_F_Simmons@Toyota.com>; "Martha Voss" <martha_voss@toyota.com>; "Mary Dardarian" <mdardarian@tma.toyota.com>; "Mary Nickerson" <mary_nickerson@toyota.com>; "Matthew Plasch" <matthew_plasch@toyota.com>; "Michael Kroll" <michael_kroll@toyota.com>; "Michael Rouse" <michael_rouse@toyota.com>; "Mike Goss" <mike.goss@tema.toyota.com>; "Mike Michels" <mike_michels@toyota.com>; "Ming-Jou Chen" <ming-jou_chen@toyota.com>; "Nancy Banks" <nancy.banks@tema.toyota.com>; "Nancy Hubbell" <nancy_hubbell@toyota.com>; "Nancy Poderycki" <npoderycki@tma.toyota.com>; "Rob Funk" <rob_funk@toyota.com>; "Ron Kirkpatrick" <ron_kirkpatrick@toyota.com>; "Ryo Sakai" <ryo_sakai@toyota.com>; "S Curtis" <scurtis@tma.toyota.com>; "Sacha Terrill" <sacha_terrill@toyota.com>; "Sam Butto" <sam_butto@toyota.com>; "Scott DeYager" <scott_deyager@toyota.com>; "Sona Iliffe-Moon" <sona_iliffe-moon@toyota.com>; "Stephanie Arvin" <Stephanie.arvin@tema.toyota.com>; "Steve Sturm" <ssturm@tma.toyota.com>; "Susan Pack" <susan_pack@toyota.com>; "Victor Vanov" <victor.vanov@tema.toyota.com>; "Zoe Zeigler" <zoe_zeigler@toyota.com>. |
| Cc: [ - ] | "Meixner, Kevin" <Kevin.Meixner@nielsen.com>;"Hirsch, Sallie" <Sallie.Hirsch@nielsen.com>;"Dangers, Brian" <Brian.Dangers@nielsen.com>. |
| Bcc: [ - ] | . |
| Subject: | BuzzUpdate: Online discussion on Toyota Floor Mats/Sudden Acceleration Topic-Consumer Reports claims Toyota is responsibly for 41% of sudden acceleration complaints/Prior driver of loaner Lexus reported floor mat issues before crash. |

<http://www.nielsen.com/>
Hello,

On December 7, 2009 Consumer Reports analyzed and reported safety complaints from the NHTSA database that claimed Toyota comprised 41% of all sudden acceleration complaints in 2008 models. High visibility sites, Wheels.blogs.nytimes.com and Consumerist.com were the first to report on the results, and focus their articles on the Lexus crash that involved sudden acceleration. Subsequently, a robust amount of discussion regarding Toyota floor mats/sudden acceleration has resurfaced online. Separately, news that a prior driver of the loaner Lexus involved in the crash had reported floor mat issues to the dealership, also drives new discussion related to the incident.

Key Online Discussion Themes

Â· Most online consumers commenting on Toyota's percentage of safety complaints disagree with Consumer Reports' evaluation. Many believe that the results are being sensationalized and feel that a total of 52 complaints is an insignificant amount. Some also comment that Consumer Reports and like-media have given Toyota an "easy ride" until now, and are searching for negative issues to report on the company

Â· Online consumers continue to debate whether the sudden acceleration is a design flaw, or driver error. Several online consumers blame drivers for not understanding how to operate their vehicle, while others are convinced that owners are fraudulently claiming sudden acceleration. Conversely, some believe that Toyota would not have recalled 3.8 million vehicles if they were not at fault

Â· Regarding the floor mat issues reported by the prior driver of the Lexus vehicle that crashed, online consumers have begun blaming the dealership for improper communication. While many continue to blame Toyota for the floor mat issue, or the driver for driver error, many believe the entire situation could have been prevented if the dealership had internally communicated the complaint and fixed the floor mat issue with the vehicle

Â· Twitter discussion surrounding both topics is limited at this point, with each topic generating approximately 50 tweets each. Overall, despite the flurry of additional stories on these two major topics, tweet buzz has been significantly low which indicates the general public on Twitter simply do not see these as attention grabbing stories

Where exactly is online discussion occurring?

http://consumerist.com/2009/12/41-of-sudden-acceleration-complaints-are-toyotas-thats-a-lot.html

http://wheels.blogs.nytimes.com/2009/12/08/toyota-tops-complaints-of-unintended-acceleration-report-says/

http://www.thetruthaboutcars.com/surprise-toyota-wins-unintended-acceleration-sweepstakes/

http://blogs.consumerreports.org/cars/2009/12/sudden-unintended-acceleration-sua-analysis-2008-toyota-lexus-ford-gm.html

http://www.bobistheoilguy.com/forums/ubbthreads.php?ubb=showflat&Number=1699951

http://blogs.thecarconnection.com/marty-blog/1039807_cr-41-percent-of-acceleration-complaints-involve-toyotas

http://www.chron.com/disp/story.mpl/hotstories/6757703.html
http://www.canadiandriver.com/forum/index.php?action=printpage;topic=65064.0
http://blogs.insideline.com/straightline/2009/12/lexus-es-350-involved-in-fatal-crash-evidently-had-a-stuck-throttle-during-previous-loan.html

http://www.gminsidenews.com/forums/f37/prior-driver-lexus-says-pedal-stuck-86778/

http://my.is/forums/f104/report-prior-driver-loaner-lexus-fatal-crash-told-dealer-floormat-issue-403131/
http://jalopnik.com/5420928/report-lexus-floor-mat-almost-caused-fiery-death-before-causing-fiery-death

Example Tweets:

Charlene Blake ( who is up to 44 whole followers on Twitter) weighs in - http://twitter.com/toyotasludge/statuses/6414780958
Concern about other nameplates - http://twitter.com/jonberrydesign/statuses/6454809915

Basic reporting of headline - http://twitter.com/bitmapped/statuses/6439528198

Snark - http://twitter.com/Newsxchng/statuses/6449795454

What exactly are online consumer and enthusiasts saying:

"How damning is this? Well, I suppose that depends on how much Toyota knew before putting these cars on the market. Did they not test this? Was it not caught in testing for some reason? Or did they know, and made a calculated decision not to fix it (see: Ford Pinto)?"
Consumerist.com, December 7, 2009

"Toyotas are boring appliances made for boring people. Yawn."
Consumerist.com, December 7, 2009

"Problem exists behind the wheel. Driver education and common sense could have prevented all these "accidents".
"Sudden acceleration" is legal talk for gimme money"
Consumerist.com, December 7, 2009

"Toyota sold 1,957,575 vehicles in 2008. 52 had complaints. Just like Audi I think these issues are due to driver error."
Consumerist.com, December 7, 2009

"41% of a very tiny number is still a very tiny number. That's not "a lot". It's making a mountain out of a molehill. Also, it's a bit inflammatory to drag in the example of the state trooper who would rather pray than shift into neutral. He had the training and means

to save himself and his family. He didn't, and that's tragically his fault."
Consumerist.com, December 7, 2009

"41% of almost nothing is a very small number. I don't think there's much to be concerned about here, especially considering the fact that if the fault does occur, it's very easy to fix (shift into neutral)."
Consumerist.com, December 7, 2009

"So, like, I know that panicking about this is dumb, but this whole concept scares the hell out of me."
Consumerist.com, December 7, 2009

"That's not the important percentage. Looks like Toyota sold over 500,000 cars in the U.S. in 2008.
http://www.nytimes.com/2009/01/22/business/22auto.html <http://www.nytimes.com/2009/01/22/business/22auto.html>
52/500,000 = .0001% of Toyotas sold in the United States in 2008 had this problem reported.
Obviously, this is a serious problem for the driver who encounters it-- I'd hate to experience it. But Consumer Reports is waaaay off base in the way they publicized these numbers. Again, that "market share" percentage is an irrelevant stat when you're only talking about *52* vehicles-- a fact that CR mentions, but only at the very end of the story.
Shame on CR for sexing up the story"
Consumerist.com, December 7, 2009

"Correct! Cars are designed so they cannot override their brakes. Period. I cannot understand why no one talks about this. This whole situation is people panicking, hitting the gas instead of the brake.
Again, cars cannot override their brakes, cars do not suddenly start accelerating on their own. Hit the brakes and you will stop.
It's starting to become mass hysteria."
Consumerist.com, December 7, 2009

"Wow, do you really think that CR would spin their magazine articles to placate the majority of their readers? What are they going to do for all of those Toyota buyers who they con-vinced with those little red circles... When they all turn back next year, were they producing statistically biased reports last year or will next years report be biased?"
Thetruthaboutcars.com, December 7, 2009

"I think Ed has a good point. 55 out of 2.2 million cars is .0025%. Is that a defective design? The numbers may be a little different, but the point is valid. This is a rare problem getting more attention than it should."
Thetruthaboutcars.com, December 7, 2009

"Lies, lies, and statistics! Sorry, but I don't buy the claim that the Toyotas are more likely than other cars to "unexpectedly accelerate". First of all, the CR study only looks at 2008 MY cars. Why? Did that particular sample space just happen to lead to the conclusion CR perhaps wanted? If you want accurate statistical inferences, you need to look at the biggest most random sample space possible. Also, it it possible that a lot of "me too" complaints were logged after the big news story about the tragic CA ES350 crash. It'd 'be interesting to see the dates the complaints were logged. And, if they're going by NHTSA website safety complaints - there are many many duplicate entries on there by idiots who treat the website like a customer service portal and repeatedly log the same complaint over and over. It would be far more accurate to base the statistics on the number of complaints reported to dealers and garages by car owners. After all, if you truly think your car is accelerating on its own, you're probably going to take it in for a repair.
The famous ES350 that tragically crashed in CA had an *incorrect* floormat laying in the footwell which jammed the pedal - this was confirmed when someone who had the same loaner car earlier and had experienced an unintended acceleration spoke to the press recently. The high-profile ES accelerations are not the fault of the car's design, the OEM floormat's design, or the mfgr; they are the fault of of the dealer lot jockeys and their managers."
Thetruthaboutcars.com, December 7, 2009

"In Toyota's case the cause is clearly poor design/engineering, not stupid drivers. Drivers -reasonably- assume their factory floormats will fit under the accelerator pedal."
Thetruthaboutcars.com, December 8, 2009

"Well, if this is the only thing that the media can find to pick on Toyota, then I say congrats to Toyota!
To Toyota drivers - if you can see the floormat starting to push forward and squeeze under the gas pedal, pull it out. How hard is that?"
Thetruthaboutcars.com, December 8, 2009

"A quick observation: of course consumers wouldn't blame themselves or something simple like a car mat. They're probably thinking that they'll get a bunch of money or something out of it.
That said, is there any symptoms that would indicate a problem prior to it occurring? My 2006 Camry has been excellent, with no throttle-related problems whatsoever. I'm not so keen on getting the pedals reshaped, but if it's a software issue, I'd be interested in getting it fixed."
Bobistheoilguy.com, December 7, 2009

"O-God everyone who runs into the back of someone will claim vehicle fault and want to go to court. It is the American way to blame

everything or someone."
Bobistheoilguy.com, December 7, 2009

"47 Toyota complaints plus 5 Lexus = 52 and 52 into 166 is 31.3%. I am not a Toyota fan, but it had to be said."
Autoblog.com December 8, 2009

"funny, but the example mentioned in the article was clear that the driver's foot wasn't on the accelerator, as the cruise control was engaged. The problem is with the CAR, not the DRIVER."
Autoblog.com December 8, 2009

"CR won't stay mad at Toyota. They give Toyota nearly an unlimited leash. Toyota will make some actions, issue some statements about how they have the problem under control and next year CR will be putting Toyota right at the top of their recommended list again."
Autoblog.com December 8, 2009

"You are just another apologist. When you read the accounts, you can see that a lot of these unintended acceleration claims happened after the cruise control was engaged. It has something to do with the electronics/throttle/computer. You just blame the driver instead of your beloved Toyota."
Autoblog.com December 8, 2009

"Sorry, but 47 complaints from 2008 results in a recall of 3.8 million vehicles? How many of these complaints were operator error? How many were lies to get free warranty work or lemon law because they didn't like the car? I don't believe one bit of this unintended acceleration stuff."

Autoblog.com December 8, 2009

"I dont understand...I owned so many Toyotas and know people who own Toyota's and no one has had a problem with the gas pedal or floor mat....I dont get it.
Im not sayin people are making this up but why the sudden surge of this issue like its all happening at once?"
Autoblog.com December 8, 2009

"I've said it from the beginning: Toyota floormats come with hooks that the dealer is supposed to install. Often they just toss them in without securing them. This is the dealers fault and they should be punished for not following the manufacturers installation procedures."
Autoblog.com, December 7, 2009

"the car also had floormats in it THAT DIDN'T BELONG THERE. THEY WERE FROM A LEXUS SUV!
Toyota shouldn't be held responsible for this.....THAT is truly criminal."
Autoblog.com, December 7, 2009

"My understanding is that not only did the dealer throw in incorrect all-weather RX mats, they put them *on top of* the stock ES mats. There was a good two or three inches of floormat in that footwell."
Autoblog.com, December 7, 2009

"First I'd like to say that I think Toyota actually should make the pedals more idiot-proof since owners, dealerships, and random detailing/maintenance/repair/collision shops often do not bother to use the correct floor mats mounted correctly. As much as we can all b*tch about responsibility it's not so nice to have grandma go get an oil change and detailing then end up dead because the dipsh*t at the service place put her floormats in wrong."
Autoblog.com, December 7, 2009

"Toyota is to be blamed for this for sure, but it seems like dealership also should be blamed, as is receptionists, Frank Bernard and the mechanical staff."
Autoblog.com, December 7, 2009

"That's the dumbest thing I have ever heard....aside from merlot's comments.
Why should Toyota be held responsible? They didn't install the WRONG floormat in the sedan...one that was NOT DESIGNED to be there. It was the dealer."
Autoblog.com, December 7, 2009

"This dealership is guilty of killing a police officer and his family."
Autoblog.com, December 7, 2009

"I'm not necessarily disagreeing with you Matt, but it's strange Toyota's going to such extents (changing gas pedals) to fix something that's not their fault, no?"
Autoblog.com, December 7, 2009

Kimberly Winburn

Automotive Industry Analyst

Nielsen BuzzMetrics

The Nielsen Company

859.905.4977 voice

http://www.nielsen.com/

| | | |
|---|---|---|
| From: | "Bensinger, Ken" <Ken.Bensinger@latimes.com>. | Sent:1/5/2010 6:04 PM. |
| To: [ - ] | <Mike_Michels@toyota.com>. | |
| Cc: [ - ] | <brian_lyons@toyota.com>;<Gary_E_Smith@toyota.com>. | |
| Bcc: [ - ] | . | |
| Subject: | RE: Meeting date. | |

That's fine on attire.

Double checking on parking. There's also an executive parking structure built into the LA Times building itself, with an entrance on 2nd street between Broadway and Spring. I'm trying to figure out whether you can park there instead. Will let you know soonest.

Ken

-----Original Message-----
From: Mike_Michels@toyota.com [mailto:Mike_Michels@toyota.com]
Sent: Tuesday, January 05, 2010 5:42 PM
To: Bensinger, Ken
Cc: brian_lyons@toyota.com; Gary_E_Smith@toyota.com
Subject: RE: Meeting date

One more question. We plan on business attire, unless that is entirely inappropriate.


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"Bensinger, Ken"

<Ken.Bensinger@la

times.com>
To
<Mike_Michels@toyota.com>

01/05/2010 05:35
cc
PM <brian_lyons@toyota.com>,

<Gary_E_Smith@toyota.com>

Subject
RE: Meeting date

Mike,

It sounds like a great plan for a meeting. We're very interested in hearing your take on this safety issue and how it is being resolved, as well as a little more about the communications challenges you refer to. On the record is great -- if something comes up and you'd like to change to background, that'll be fine.

As far as the cars go, we have a parking garage on the north side of Spring, between 2nd and 3rd. I'll see about making sure they let you park there.

Looking forward to Thursday,
Ken

-----Original Message-----
From: Mike_Michels@toyota.com [mailto:Mike_Michels@toyota.com]
Sent: Tuesday, January 05, 2010 3:58 PM
To: Bensinger, Ken
Cc: brian_lyons@toyota.com; Gary_E_Smith@toyota.com
Subject: RE: Meeting date

I'm of the same mind. I prefer to be on the record and certainly our update on the recall, display of the actual recall modifications and electronic throttle control failsafes are for the record.

It's my hope that we would not use the time to cover all of the same ground
of past interviews, third party allegations and reports again, since you have our answers and position on the various issues. There have been some
unfortunate misunderstandings in the media about this matter. Some of it because of the fact that the recall was announced two months before we were
able to announce the actual fix, some of it because there was a widespread
assumption that we were just blaming it on floor mats and some of it due to
a clumsy communication on our part. So we would very much like to review
how this was a communications challenge for us and correct some common misperceptions.

Perhaps most importantly, you raised the question of balance, which I appreciate, and we would look forward to a constructive discussion on this
topic.

We plan to have three participants: myself, Quality and Safety Communications Manager Brian Lyons and Corporate Manager of Quality Assurance and Tech Support Gary Smith.

11:30 sounds fine. We will have two vehicles to display, so let me know how
best to locate them when we arrive. And we may have a powerpoint to help
illustrate how the electronic control system fail-safes and redundancies work.

Please let me know what your expectations would be.

We look forward to a productive meeting.

---

Mike Michels
Vice President, Communications
Toyota Motor Sales USA, Inc.
19001 S.Western Ave.
Torrance, CA 90509
Phone: 310 468 7730
Mobile: 310 200 4968
Fax: 310 381 4500
mike_michels@toyota.com

"Bensinger, Ken"

<Ken.Bensinger@la

times.com>
To
<Mike_Michels@toyota.com>

01/05/2010 03:10
cc
PM

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In terms of how we envision the terms of the meeting, being newspaper folk, we always prefer things to be on the record. That said, if you prefer to do all or part of the meeting on background, we'd be willing to play along.

Let me know if that time works, and can you tell me how many people will be in your party?

Thanks,
Ken

PS: my soccer dad days are not yet come. But from all accounts, I should wish for a child with limited athletic prowess if I value my free time!

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From: Mike_Michels@toyota.com [mailto:Mike_Michels@toyota.com]
Sent: Tuesday, January 05, 2010 2:01 PM
To: Bensinger, Ken
Subject: RE: Meeting date

Thanks and Happy New year to you and your family. I'm not sad to see 2009
go, for both professional and personal reasons!

I know the child care thing. I started a family rather late, so we have a
12-year old daughter. She is almost ready to leave on her own. But I have
reached the soccer saturation point!!

Regards,

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Fax: 310 381 4500
mike_michels@toyota.com

"Bensinger, Ken"

<Ken.Bensinger@la

times.com>
To
<Mike_Michels@toyota.com>

01/05/2010 12:00
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Subject: Meeting date

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_____
Mike Michels
Vice President, Communications
Toyota Motor Sales USA, Inc.
19001 S.Western Ave.

| | | |
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| From: | Mike Michels/=TMS/Toyota. | Sent:1/5/2010 3:58 PM. |
| To: [ - ] | "Bensinger, Ken" <Ken.Bensinger@latimes.com>. | |
| Cc: [ - ] | brian_lyons@toyota.com;Gary E Smith/=TMS/Toyota@Toyota. | |
| Bcc: [ - ] | . | |
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Phone: 310 468 7730
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Fax: 310 381 4500
mike_michels@toyota.com

| | | |
|---|---|---|
| From: | <Delia.Lopez@dot.gov>. | Sent:1/12/2010 11:20 AM. |
| To: [ - ] | <CSantucci@tma.toyota.com>. | |
| Cc: [ - ] | <John.Abbott@dot.gov>. | |
| Bcc: [ - ] | . | |
| Subject: | RE: Tundra Documents. | |

I received your amended defect report and owner letter and we have reviewed your proposed owner letter and it meets the requirements of 49 CFR Part 577.Â Â  Please donâ€™t forget to provide me with a final copy of the owner letter for which itâ€™s very important for NHTSA to have so that I can file it appropriately to your recall campaign.

Â

Â

Â

From: Abbott, John (NHTSA)
Sent: Tuesday, January 12, 2010 9:21 AM
To: Lopez, Delia (NHTSA)
Cc: Person, George (NHTSA)
Subject: FW: Tundra Documents

Â

The attached is an addendum to the 573 for 09V-444 to include fuel tank mounting and a new 577 letter to reflect same.

Â

John Abbott, Investigator

United States Department of Transportation

National Highway Traffic Safety Administration

Office of Defects Investigation

Vehicle Integrity Division (NVS-212)

Room W45-202

1200 New Jersey AvenueÂ S.E.

Washington, DCÂ  20590

Â

Telephone:

202-366-5221

877-536-8368-65221Â (toll free)

202-366-1767 (fax)

From: CSantucci@tma.toyota.com [mailto:CSantucci@tma.toyota.com]
Sent: Friday, January 08, 2010 4:13 PM
To: Yon, Scott (NHTSA)
Cc: Abbott, John (NHTSA)
Subject: Tundra Documents

Â

Scott,

Please see the attached documents as we discussed. Â Original documents should arrive by Monday.

Regards,

Chris Santucci - Manager
Technical and Regulatory Affairs
Toyota Motor North America, Inc.
Ofc (202) 775-1707 Fax (202) 463-8513

Note: We cannot receive attachment extensions listed below.
.exe, .com, .pif, .scr, .cmd, .bat, .vbs, .lnk, .htm, .html, .shs, .mdb, or .zip

Safety Record Blog

**Toyota Sudden Acceleration in Reverse**

Earlier this week, The Safety Record reported another Toyota SUA incident involving a 2007 Avalon and a New Jersey driver who managed to get his over-accelerating vehicle to the dealership with smoking brakes and an engine at full throttle. For those of you who missed it:

This owner had experienced several unintended acceleration incidents – incidents in which the vehicle accelerated without driver input. The most recent occurred on Dec. 29 as he drove on the highway. The man was unable to stop the vehicle with the brakes alone, but he was able to shift the vehicle into Neutral. As the engine continued to race to full-throttle, he immediately called the local Toyota dealer, about two miles away, to alert them he was bringing the vehicle to their lot. He drove the car to the dealer by shifting from Neutral to Drive, foot on the brake, with the engine at full throttle.

Upon arrival, he parked the vehicle and left the engine running. The engine continued to race at full throttle. The dealer service personnel inspected the vehicle in the full-throttle condition with no floor mat or other mechanical interference. A technician attempted to reduce the engine RPMs by physically manipulating the pedal, to no avail. The vehicle was then shut down.

The Toyota dealer contacted Toyota's regional representative in Caldwell, NJ who later inspected the vehicle. The details of this inspection were not provided to the owner. However, Toyota authorized replacement of the throttle body and accelerator pedal assemblies and sensors and paid for the $1700 repairs and rental car costs. The owner was told that the vehicle's computer had stored no error codes. We have learned that the parts from his vehicle were going to be shipped to California for study. While the dealer didn't say that they had identified the root cause, Toyota was willing to give the vehicle back to the owner.

Toyota has always claimed to NHTSA that no electronically-induced SUA event could have occurred without the vehicle computer taking note in the form of a Diagnostic Trouble Code (DTC). No code = didn't happen electronically. NHTSA, has, so far, bought the party line. No matter how many drivers insisted that pedal interference did not explain their SUA event, Toyota and NHTSA linked arms and told them that they were very much mistaken.

This time, with the evidence smoking and heaving in front of the dealer's face, the media breathing down their necks, and another suspicious Toyota crash, in which four occupants of a 2008 Toyota Avalon died after the sedan inexplicably went off the road, crashed through a fence and landed upside down in a pond (with the floor mats in the truck), Toyota has taken a different tack. They've apparently taken it upon themselves to tell the agency all about it and invite NHTSA investigators to their inspection party.

Things that make you go Hmmm.

| | | |
|---|---|---|
| From: | <Jeff.Quandt@dot.gov>. | Sent: 1/21/2010 7:19 AM. |
| To: [ - ] | <CSantucci@tma.toyota.com>. | |
| Cc: [ - ] | <Scott.Yon@dot.gov>. | |
| Bcc: [ - ] | . | |
| Subject: | CATD meeting. | |

Chris â€“ As I mentioned in my phone message to you this morning, here is a rough agenda of topics we would like to discuss, information we would like to see and review and parts we would like to see when we meet at the Central Atlantictraining center.Â  Please confirm that Toyotacan meet on Wed and cover the requested agenda items.

Â

Accelerator Pedal assembly return part testing and forensic analysis â€“ (see attached)
Pedal assembly data â€“ Please bring the following information:
Baseline hysteresis (force-displacement on apply & release) curves for all CTS pedal assemblies and all other hysteresis curves generated from testing done to assess root cause of high resistance â€œstickingâ€ condition (this should include overlaid curves of baseline part and part with condition (as shown at meeting Tues for Aygo vehicle).
Information describing test procedure for simulating high humidity condition to produce condensation on friction surface (and any changes to part specification based on lessons learned from subject condition)
All material/data that is available regarding the following:

The relationship between age and/or pedal cycles and â€œsmootheningâ€ of friction surfaces;

The relationship between â€œsmootheningâ€ and friction for both wet and dry conditions over the full range of pedal stroke;

The relationship between differing amounts of moisture/condensation on the friction over the full range of pedal stroke (for both PPS and PA46);

All Design of Experiment testing to identify contributing factors and assess the influence of each (for both PPS and PA46);

Friction as a function of pedal stroke (for PPS, PA46 and POM) for (1) a new/dry part; (2) a used/dry part; (3) a new/wet part; and (4) a used/wet part; and

The amount of friction necessary to cause a â€œstuckâ€ pedal over the full range of pedal stroke.

Old & redesigned versions of CTS pedals for Avalon and Tundra
Denso pedal to discuss design for generating friction/feel
Electronic throttle control â€“ Review Toyotaâ€™s electronic throttle control system design, including self-diagnostics, associated DTCâ€™s, all FMEA and fault tree analysis related to the ETC system or the accelerator pedal position sensor assembly, throttle body, ECM and associated wiring (this can be limited to conditions related to the potential for unintended acceleration)
Electromagnetic compatibility â€“ Review Toyotaâ€™s general EMC standards/testing and discuss how they are applied to the ETC & cruise/speed control systems specifically.
Review Toyota EMC & ETC standards and design strategy
Discuss/compare with other EMC standards (e.g., ISO, SAE, peer mfrs)
Discuss/compare ETC design, testing with peers
Discuss attached article

Â

Please call to discuss and confirm date/logistics.

Â

Thanks,

Jeff

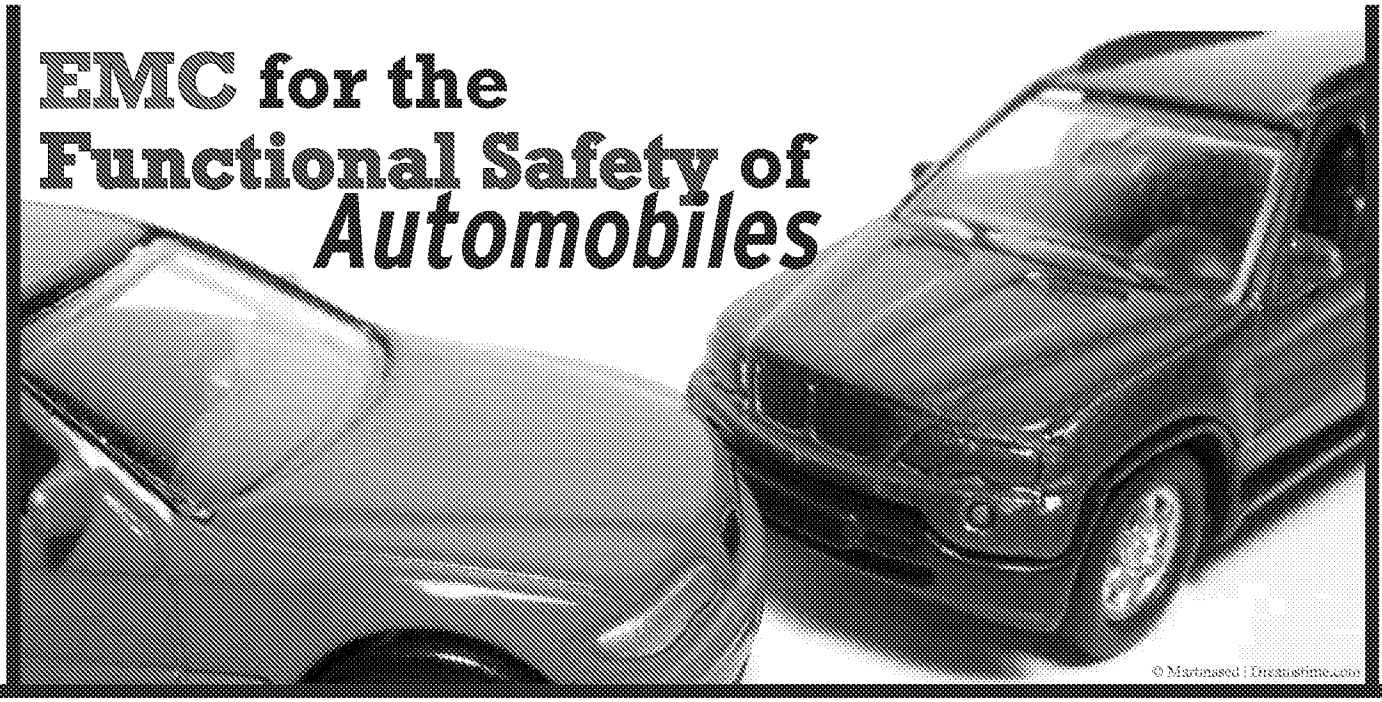
Â

# ODI/VRTC/Toyota Removed Components Inspection Protocol

We understand Toyota has one throttle body and two accelerator pedal assemblies which they removed from one vehicle in NJ and one in CA. The following protocol is proposed.

1) Information review (subject parts): Can Toyota provide the vehicle histories, any dealer service/TAS/FTE information related to the alleged component failure (including pictures, videos, notes, and any electronic data taken from the vehicle ECU, etc), a statement on what's been done with each part since its removal from the vehicle (custody, shipment, testing, etc), and the x-rays Toyota did of the components (15 min).
2) Information review (other returned pedal assemblies): Review how Toyota, and/or the pedal supplier, analyzed earlier pedals returned from the field with reports of sticking or slow to return to idle and all related inspection/test reports and forensic data.
3) Component inspection (off vehicle): We'd like to conduct a physical inspection of the each components including manual actuation, a visual assessment, photography and/or videotaping, and discuss any observations or questions with Toyota technical staff (30 min).
4) Component inspection (on vehicle): We'd like to have the two pedal assemblies installed on representative vehicles, make a (static) physical assessment of its operation during actuation, and connect a Tech Stream to assess the electrical operation and collect any pertinent electronic data. If any anomalies are noted we may want to install another (non-suspect) pedal assembly on the vehicle for comparative testing (about an hour or so). *Please advise if equipment can be made available to capture force-displacement data on pedals installed in vehicle (in as received or dry condition and after "component conditioning" discussed in #6.*
5) Test drive: Dependant on the outcome of the above, we'd like to test drive each vehicle with the Tech Stream attached (about 15 or 20 minutes).
6) Component conditioning: Dependent on the outcome of the above, we'd like Toyota to explain and provide a procedure for how they want to 'condition' the pedal assemblies to introduce condensation into the component (the friction system specifically). Toyota can perform the procedure and we will repeat items 3 and 4 above (estimating an hour or so)
7) Component disassembly: Dependent on the outcome of the above, we'd like to disassemble one or both pedal assemblies (see item below) to assess the condition of the internal components and mechanisms.
8) If we are unable to experience any pedal sticking or return-to-close concerns from the above testing we may request to leave one pedal assembly intact so that it can be taken back to VRTC for further assessment. We will discuss and agree this with Toyota at the meeting.
9) Dependent on the outcome of the above, we will discuss and agree future possession and next steps for the above components at the meeting. We may request the throttle body that was removed from the NJ vehicle for further assessment at VRTC.

# EMC for the Functional Safety of *Automobiles*



## by Eurlng Keith Armstrong, Cherry Clough Consultants

Electronic sub-assemblies (ESAs) are being increasingly used where they could affect vehicle safety risks, including every aspect of drivetrain control, and many aspects of body control, including lighting, displays, indicators and mirrors. Anything that could affect the direct control of a vehicle, or could confuse other road users, is of concern [2]. Indeed, there are many current developments that are safety-related, such as automatic parking, intelligent cruise control, automatic lane following, vision-aids, and vehicle-to-vehicle telemetry (enables vehicles to start braking when traffic ahead slows, even when hidden around bends or in fog) that would not be possible without advanced electronics and its software.

The problem is that all ESAs can suffer from errors, malfunctions and even permanent damage due to electromagnetic interference (EMI). Further, the EM environment is continually worsening due to the increasing use of electronic technologies in all areas of society, especially switch-mode power conversion and wireless communications.

Another problem is that all ESAs rely on semiconductors, either as discrete or integrated circuits (ICs), and the continuing shrinkage in their internal silicon features and reductions in operating voltages are making them more susceptible to EMI. So, for several reasons, the importance of EMI to the safety of vehicular transport is increasing.

Standards in all industry sectors, including the automotive industry, generally deal with EMI-related safety issues very poorly, if they even cover it at all [3] [4] [5]. The few that attempt to address these issues simply require the application of traditional EMC immunity tests that can never be sufficient for ensuring tolerable safety risks over the entire lifecycle, for reasons which we'll described later.

Figure 1 outlines the general situation at the time this article is being written.

Over the last ten years or so, there have been developments in applying risk management techniques to EMC to correctly address EMI-related safety issues. Specifically, there is IEC TS 61000-1-2 [7] (which is effectively the missing EMC Annex of the basic functional safety standard IEC 61508 [8]), and the IET's new guide on "EMC for Functional Safety" [9].

### Twelve Reasons Why EMC Testing is Insufficient for Safety

(Also see references [1] [9] [10] [11] and [12].)

#### *1. Anechoic Test Chambers Do Not Simulate Real EM Environments*

Traditional radiated field immunity tests specify anechoic test chambers, which are unlike all real-life EM environments experienced by road-going vehicles, so their results can differ markedly from real-life. Vehicle manufacturers overtest to address this and other shortcomings in their test methods, but over-testing cannot compensate for the deficiencies associated with anechoic chambers.

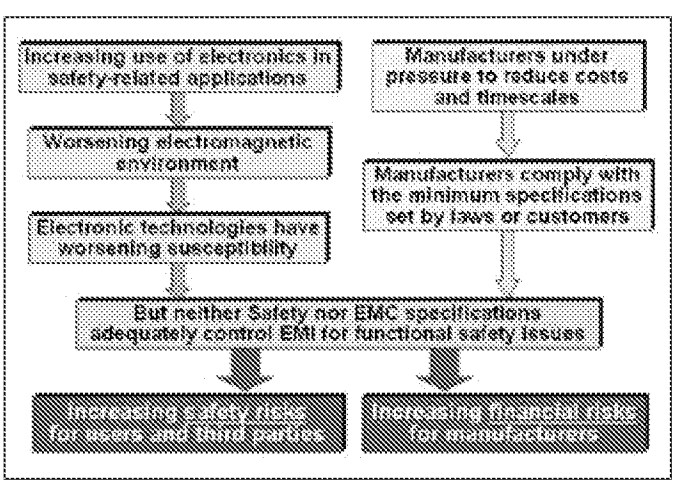
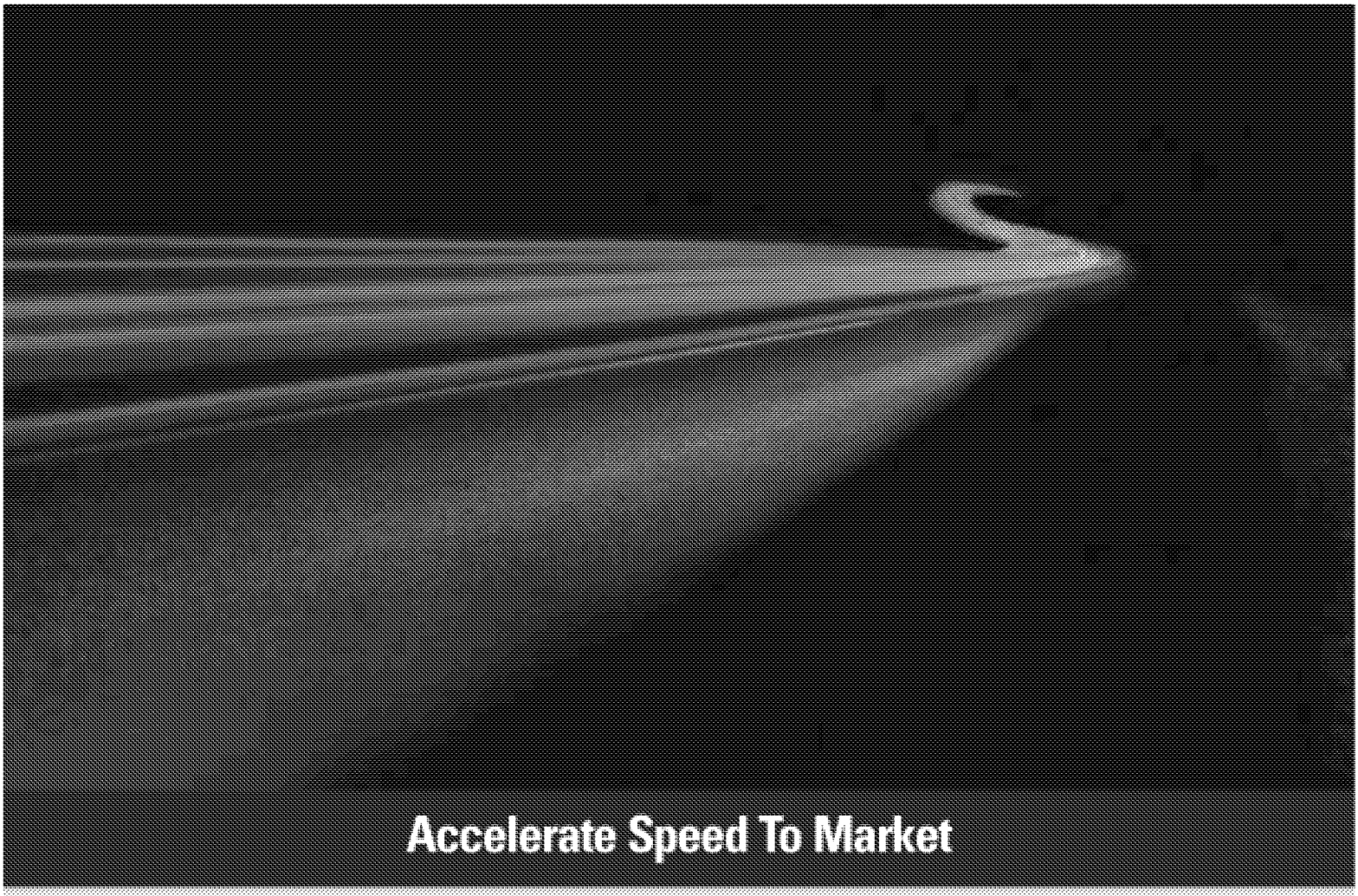



**Figure 1: Increasing safety risks due to EMI**

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TOY-RQ-00060026

Some EMC testing experts suggest there are large and unpredictable uncertainties associated with the use of anechoic chambers [13] [14]. Reverberation chambers can provide much more realistic tests [15] [16] and, for this reason (plus their lower costs), they are used by many manufacturers of flight-critical avionics.

### 2. RF Modulation Types and Frequencies Are Not Realistic

Traditional radio-frequency (RF) immunity tests use 1kHz sinewave modulation for ease of testing, low costs and repeatability, although some vehicle manufacturers employ pulse modulation to simulate digital cell phones and radars, at frequencies above 600MHz or so.

But real-life transmitters use a wide range of analog and digital modulation types and frequencies. References [17] and [18] show that immunity can be significantly degraded (e.g., 20dB or more) when EMI modulation corresponds with frequencies or waveforms used in internal processes, or resonates with circuits, cables, transducers or loads. Therefore, testing with 1kHz is too simple where safety issues are concerned.

Designers of military electronic warfare/countermeasures have known about the importance of modulation to immunity for many decades, but it is only now just starting to be addressed in standards (see [19] and [20]).

### 3. DC Power Disturbance Tests Are Not Realistic or Thorough

ISO 7637 [21] specifies conducted transient tests to simulate noise on a vehicle's power supply distribution network. The tests use waveforms based on simplifications of the transients that occur in real vehicles, so they can easily and repeatably be generated by low-cost test equipment.

Reference [22] describes tests of the DC power supply on a variety of real vehicles, and shows that the use of even the highest level pulses in [21] can be insufficient for some vehicles. Reference [22] also includes examples of real-life conducted transients in vehicles for which there are, as yet, no corresponding tests.

Varying the timings used by Pulse 2b of Reference [21] can delete the firmware in some ESAs, and varying the test settings can cause some ESAs to switch on or off without command. However, most vehicle and Tier 1 manufacturers do not vary the timings. Instead, they choose settings to reduce testing cost and time, or even to achieve a pass, possibly failing to detect latent unreliabilities that could increase safety risks.

The Ford Motor Company is unique in that its EMC test specification [23] deviates in part from [21] by using chattering relay tests that should produce transient tests with waveforms closer to what is probably experienced in real life.

### 4. Simultaneous Disturbances Are Not Tested

In real-life operation, ESAs are exposed to simultaneous EM disturbances, for example, two or more RF fields at different frequencies, a radiated field plus a conducted transient or electrostatic discharge, etc. But EMC immunity tests only apply disturbances one at a time.

Simultaneous disturbances that have different frequencies can cause EMI through intermodulation (IM), which (like demodulation) occurs naturally in non-linear devices like semiconductors. Figure 2 shows a simple example of two RF fields at different frequencies, which can cause EMI by:

- Direct interference from each frequency independently;
- Demodulation of the amplitude envelopes of either frequency, or both mixed together;
- Intermodulation, in which new frequencies are created.

Equipment that passes individual immunity tests can be much more susceptible to lower levels of the same disturbances when they are applied two at a time [24].

Vehicles have many independent sources of EM disturbances that can occur at the same time. A simple analysis, based on reasonable assumptions for a 6-cylinder engine at 2000 rpm with spark-ignition transients lasting 50ns, shows that, if there was an average of one unrelated 100ns transient per minute (e.g. due to the actuation of an electric motor or solenoid), there would be a 0.001% likelihood that the 100ns transient would overlap with a 50ns spark-ignition transient.

If this vehicle were driven for 1 hour/day, 5 days/week, 40 weeks/year, the likelihood of it experiencing an overlapping pulse event would be 12% per year. And, if the overlapping pulses caused an ESA to malfunction and caused a 1% chance of death (the official rate of death due to runaway vehicles in the United States over recent decades), the driver would have a risk of death of 0.12% per year. This might not sound much, but it is comparable with the risk of death knowingly accepted

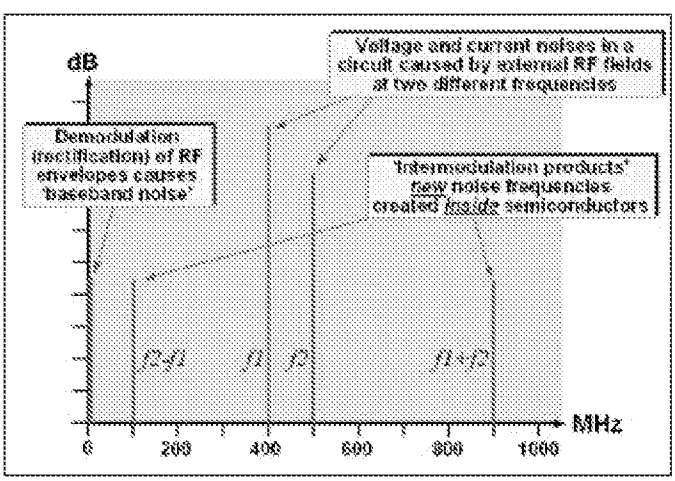



**Figure 2: Example of demodulation and intermodulation**

by people working in the most hazardous occupations (e.g., oil industry divers). If there were 100,000 such vehicles on the roads for similar periods, we could expect 120 deaths from these overlapping transients every year.

In this example, to be sure of experiencing just one overlapping pulse, a test vehicle would need to be driven 24/7 for 19 weeks. The likelihood of this discovering a significant safety problem is extremely remote, and even then it would almost certainly be diagnosed as something else. Were a customer to complain to his car dealer of a malfunction (that was due to these overlapping transients), the likelihood of the dealer experiencing the problem by test-driving the vehicle for a full eight hours would be very small indeed. Most likely the dealer would assume the driver had simply made a mistake.

### 5. Only One Port is Tested at a Time

When an ESA is subjected to a radiated RF field, all of its interconnecting cables pick up RF voltages, but with phase differences between them. But traditional EMC conducted immunity tests intended to simulate the effects of radiated fields only test one cable at a time.

Qinetiq PLC has injected RF into all of an ESA's conductors simultaneously, with phase shifts to match what would be expected in real life. They discovered that the immunity could be significantly worse than that experienced when one cable was tested at a time.

### 6. EMC Tests Ignore the Physical Environment

ESAs that are involved in safety-related activities must maintain certain EM characteristics over their life-cycles, despite the effects of the physical environment, including the following:

- Mechanical (static forces, shock, vibration, etc.)
- Climatic (temperature, humidity, air pressure, etc. – both extremes and cycling effects)
- Chemical (oxidation, galvanic corrosion, conductive dusts, condensation, drips, spray, immersion, icing, etc.)
- Biological (e.g., mould growth, etc.)
- Operational wear and tear over the lifetime (friction, fretting, repetitive cleaning, grease build-up, etc.)

Effects vary from immediate (e.g., non-flat mounting opening a gap and degrading shielding) to long-term (e.g., corrosion of a shield joint or filter ground bond). Reference [25] describes a number of real-life problems of this nature.

Reference [26] shows that a filter can suffer up to 20dB degradation in its attenuation due to a combination of ambient

temperature, supply voltage and load current that are within its specified ratings, when compared with the results of traditional immunity tests.

Highly-accelerated life tests are often used by vehicle manufacturers to verify that functionality will be maintained over the lifecycle, despite the physical environment. But the resulting aged units are rarely, if ever, tested to see if their EM characteristics have degraded, although this is understood to be common practice for Russian military equipment.

### 7. Quality of EM Design Is Ignored

Manufacturers apply the traditional immunity tests to their products, iterating their designs until they pass. But this approach cannot distinguish between a pass that was achieved by good EM design, or by something that would not be adequately controlled in serial manufacture over the production life of a vehicle.

EMC standards ignore design issues. So, if a product's EM design does not cope with component tolerances, semiconductor die-shrinks, variations in assembly (e.g., cable harnesses, grounding, etc.), replacement of obsolete components, firmware bug fixes, etc., the fact that some samples passed EMC tests means nothing at all for the EM characteristics of the ESAs or vehicles supplied to customers.

### 8. Assembly Errors are Ignored

Safety engineering generally requires verifying each manufactured product to make sure that assembly errors have not made it unsafe. But traditional EMC standards do not include any requirements for manufacturers to perform routine checks in serial manufacture on the EM characteristics that are necessary for achieving tolerable safety risks.

Automotive EMC test laboratories say that it is not uncommon for ESAs and vehicles that function correctly to fail EMC tests because of a misbuild. When this happens, the manufacturing errors are corrected and they are retested. Although most manufacturers employ rigorous end-of-line testing, including in-circuit test that will discover misbuilds that affect functionality, they do not generally design them to discover misbuilds that could affect EM characteristics.

So, based on type testing, a customer could receive a vehicle that includes one or more assembly errors that could prevent it from having the EM characteristics claimed by its manufacturer.

### 9. The Maximum Test Level is Not Necessarily the Worst

Electronic devices are non-linear, and circuits, firmware and software can be very complex. So ESAs can fail when tested with EM disturbances at a low level, but fail in a different way, or even pass, when tested at the specified levels. But most EM tests only expose equipment at the highest specified level to save testing time and cost. The likelihood of lower disturbance levels occurring is usually much higher than that of higher levels, so the immunity to low level disturbances could be much more significant for achieving tolerable safety risks.

### 10. Reasonably Foreseeable Faults are Ignored

Immunity to EMI can be significantly affected by faults, for example:

- Intermittent electrical connections;
- Dry joints, open or short circuits;
- Out-of-tolerance or incorrect components;
- Missing or damaged conductive gaskets;
- Loose/missing fixings in enclosures or cable shielding;
- Failure of a surge protection device.

But traditional automotive EMC testing ignores all faults; only perfect specimens of ESAs and vehicles are tested.

### 11. Reasonably Foreseeable Use and Misuse are Ignored

Tolerable safety risk levels must be maintained despite reasonably foreseeable use or misuse over the life-cycle. Of course, it is impossible to make anything perfectly safe, but people are known to behave in certain ways, so safety engineering should take this into account.

But traditional EM testing assumes vehicles are driven perfectly at all times, and are not damaged or modified.

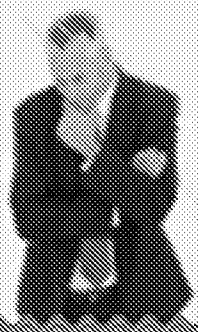
### 12. Systematic Effects are Ignored

Many system designers incorrectly assume that, if all the ESAs incorporated into a system pass their immunity tests, those systems will also be immune enough.

But performance degradations that are perfectly acceptable when an ESA is EMC tested, or are not even measured during the testing, could have significant implications for the functional safety of systems that use those ESAs. Agreement between the EMC test results on ESAs, and on the systems that incorporate them, is frequently found to be poor. This is often attributed to the principle known as emergence, which states that the characteristics of complex systems cannot necessarily be predicted from the characteristics of its component parts.

## What Needs to Be Done

The IET's new guide [9] provides a comprehensive and detailed practical approach to dealing with the issues described above by applying modern risk management principles to EMC. It adopts the principles of [7], but uses an application-neutral language that makes it useful whichever functional safety standard is being applied (e.g., IEC 61508, or ISO 26262), or not. Unlike [7], it includes suggestions for how to take EMC into account when using modern risk assessment methods (e.g., FMEA, fault tree analysis, brainstorming, etc.), and adds checklists that will be useful for management,



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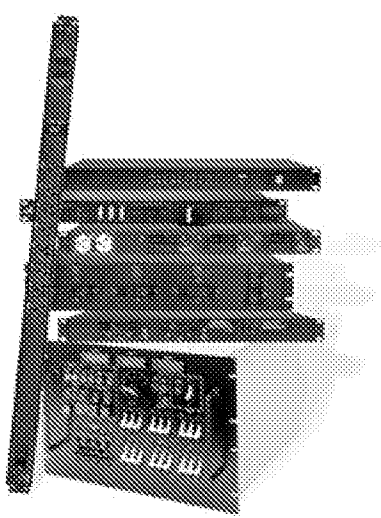

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design, and assessment. Its basic features for an automotive application are described below.

The approach described in [7] and [9] will require a significant learning curve for many manufacturers, functional safety assessors, and EMC test laboratories who want to develop the skills to assess a design's EMC for functional safety.

### Manufacturers Need to be More Clever

Using only EMC testing to demonstrate due diligence in achieving tolerable safety risks over a vehicle's lifecycle, requires the twelve issues raised above – and their combinations (for example, an older vehicle with one or more faults, corroded metalwork and conductors, driven incorrectly, suffering multiple physical and EM disturbances simultaneously) – to be addressed by the test program. This would be so lengthy that no organization could possibly afford it. Manufacturers need to be cleverer, if they are to achieve tolerable functional safety risks with reasonable times and costs.

One aspect of this cleverness is to use EM design techniques that ensure safety-related systems will maintain the necessary EM characteristics over their lifetime, taking the reasonably foreseeable EM and physical environments into account [27]. Another is to verify and validate these more robust designs, using a variety of methods (generally including some EMC testing) to achieve the necessary confidence without excessive timescales or costs.

### Assessing the Lifetime EM and Physical Environments

An assessment of the reasonably foreseeable real-life possibilities over the vehicle lifetime [28] [29] should include:

- EM disturbances in the near-field (e.g., crosstalk in cable bundles) and far-field (e.g., radio/radar transmitters);
- Intra-system interference (between ESAs in a system);
- Inter-system interference (between different systems in a vehicle, and a vehicle system and the world outside; also considering electronic devices carried by people);
- Modulation types, and their frequencies or waveshapes;
- Simultaneous EM and/or physical disturbances (including continuous, extremes, cycling and transients);
- Possibilities for use and misuse;
- Physical environment(s) (e.g., mechanical, climatic, biological, wear, etc.);
- The effects of aging;
- Future changes to the EM and physical environments;
- Component tolerances, and future changes to components (e.g., obsolescence, die shrinks, etc.)

It is usually only possible to establish the types of EM phenomena (see Figure 3), their modulations and worst-case levels, with any confidence.

Standards from the IEC and military describe a variety of physical environments, but the compatibility levels (or test levels) they specify should not be applied unquestioningly, as they may not have been created for safety purposes.

If a vehicle type is to be sold into an EM and/or physical environment not fully addressed during its original design, an assessment of the new EM and physical environments is required. To maintain tolerable risk levels could require design changes, reverification and revalidation.

### Good EM and Physical Design Engineering

There are a great many publications on good EM design techniques that can be applied at different levels of assembly, from ICs to cabling and vehicle structures. Reference [27] discusses a number of well-proven, good EM and physical design techniques for controlling functional safety risks, which is greatly expanded upon in an Annex to [7] and Part 4 of [9].

### Hazard Identification and Risk Assessment

A documented hazard identification and risk assessment process is required that assesses how the reasonably foreseeable EM and physical environments over the lifecycle could possibly affect the ESA or vehicle, taking into account faults, misuse, etc. It should show how any excessive risks were reduced to an acceptable degree by design, and be a living document that guides the design process throughout.

Inductive (or consequence) methods start with a low-level error or failure, and try to determine whether it could lead to a hazardous situation. They include failure mode effects analysis (FMEA) and event tree analysis [30].

Deductive (or causal) methods start with hazardous situations, and try to determine what could have caused them, and include fault tree analysis [30].

Brainstorming techniques identify any possibilities. They apply inductive methods to see if the possibilities could have hazardous consequences, and then apply deductive methods to discover what could cause them, and also their likely effects.

It is usual to employ at least one inductive and at least one deductive method to improve the coverage of the risk assessment. Brainstorming is always required to foresee faults, use, misuse, etc., overlooked by standard methods.

All of the above must take into account the EM and physical characteristics of the product and its reasonably foreseeable EM and physical environments over its lifetime. Many vehicle manufacturers and Tier 1 companies employ risk assessment methods, but they tend to do it by rote, which is not recommended by functional safety experts [31] [32].

Any risk assessment method must take into account the fact that some failure modes (e.g., latch-up) can cause some/all

of an IC's output pins to change state at the same time, and common-mode EMI causes noise on many/all circuit nodes at the same time. Also, EMI and some types of faults can create noise that can be mistaken for valid signals.

It is generally assumed that two or more independent faults are so unlikely that only single-fault issues need be considered, but this is a misunderstanding. Where the likelihood of certain faults is high enough (e.g., due to inadequate design or assembly) the possibility that two or more such independent faults could occur simultaneously should be taken into account.

When designing a vehicle so that a person can drive it safely, it is also appropriate to use task analysis and human reliability analysis.

### EM and Physical Specifications

Specifications should be written for each vehicle safety-related system in order to control their design, manufacture, verification and validation, and the specifications should include EM and physical requirements derived from the above. Specifications for the ESAs to be incorporated in a safety-related system should then be derived from the system's specification, taking into account any EM or physical mitigation measures employed by the system (e.g., shielding, filtering, surge suppression, anti-vibration mountings, forced cooling, etc.)

### A Verification/Validation Plan

Achieving sufficient confidence when verifying and validating the design and assembly requires a mixture of techniques [33], none of which is sufficient alone, including:

- Demonstrations
- Checklists
- Inspections
- Reviews and audits
- Independent assessments
- EM tests on ESAs and complete vehicles
- Validated computer simulations

EM tests are most useful when they closely replicate the EM/physical characteristics of the real-world environment(s). It is generally best to base such tests on the standardized test methods, competently modified to better simulate the real life EM/physical environments.

HALT (highly-accelerated life testing) is a powerful tool for assessing the lifecycle suitability of design and assembly methods, and of EM mitigation techniques such as shielding and filtering [34]. Appropriate design of test set-ups can make it possible to detect unacceptably degraded EM performance during HALT testing.

ESAs for use in safety systems always require some final verification/validation tests, as do the completed vehicle safety systems themselves. These tests should be designed to provide the required confidence without high costs.

The EM characteristics of serially-manufactured ESAs and vehicles can be significantly affected by any of the following issues:

- Variations in purchased parts (e.g., IC die-shrinks);
- Alternative or replacement parts;
- Variations in plating, painting and fixing;
- Differences in assembly (e.g., wiring);
- Design changes and improvements;
- Firmware bug-fixes and upgrades, etc.

Therefore, all of the build-state issues relevant for maintaining tolerable functional safety risks should be identified during design, and controlled by quality control (QC).

QC should use a range of techniques; including quick, easy, low-cost EM checks on delivered goods, ESAs and sub-assemblies, plus sample-based testing designed to maintain an acceptable quality level. QC should employ competent personnel, backed up by appropriate testing, to assess every proposal for a design change for its implications for EM characteristics and functional safety risks.

### The Results of Verification and Validation

Documents should show how any shortcomings in meeting the specifications were dealt with, and the specifications achieved.

### Measures Necessary to Maintain EM Characteristics

Assumptions originally made about real-life EM and physical environments should be verified during the lifecycle of a model of vehicle and, if they are in error, what appropriate actions were taken.

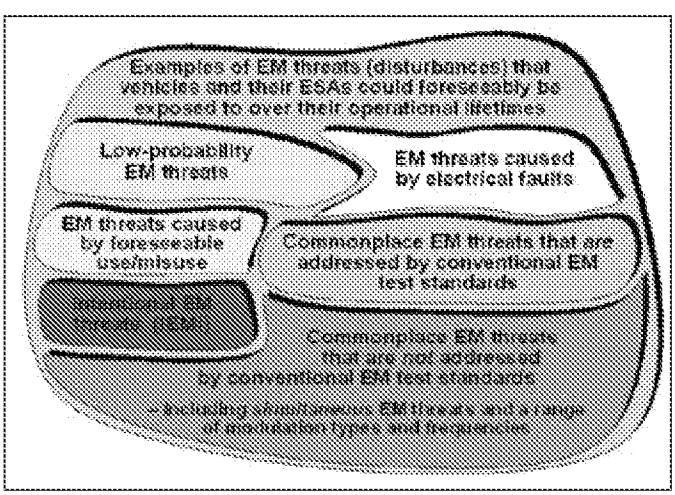


**Figure 3: Examples of foreseeable EM disturbances**

Appropriate QC activities are required for maintenance, repair, refurbishment, modification and firmware upgrades to ensure that the required EM and physical characteristics are not compromised over the vehicle lifecycle.

Vehicle service schedules might need to include certain checks, tests or component replacements. EMC checks or tests might also need to be devised, and equipment provided for use by relatively unskilled technicians in dealers' service departments for use at scheduled intervals. Computerized diagnostic programs might need to be modified to detect certain EM or physical characteristics.

Repair instructions should include activities that maintain the vehicle's EM/physical characteristics, possibly followed by EM and physical verification to specification. User manuals should recommend activities that help maintain the required EM/physical characteristics over the vehicle's lifecycle, and may need to describe, in layman's terms, how the user can identify EMI as the cause of a problem, and perhaps how to deal with it (in some circumstances).

### *Documentation – the Safety Case*

To help manage functional safety, and for a good defense in case of a legal challenge, a safety case should be created that documents all the activities described above and shows how they achieve tolerable safety risks over the vehicle's lifecycle.

### *The Amount of Work Required Depends on the Level of Risk*

The greater the excess safety risk is above the tolerable level of risk (making increased risk-reduction necessary), the more critical the need that all of the activities described above are more detailed, comprehensive and in-depth, and that they are performed by people who are more knowledgeable and more competent in the necessary techniques.

## Conclusions

This article has described a dozen reasons why it is generally not possible to rely solely on EM testing to help achieve tolerable functional safety risks.

We have also shown that rare and untested EMI events that could cause a safety incident only once during a 10-year vehicle life could expose drivers to safety risks comparable with those of the world's most dangerous occupations. These safety risks are most unlikely to be detected by a car dealer, even when a customer complains about the symptoms.

EMI must be treated like any other possible cause of hazards, including malfunctions in firmware [35]. Appropriate techniques in assessing the EM/physical environments, and in design, verification and validation, manufacture, maintenance, repair, modification and upgrade are required to ensure that tolerable safety risks are achieved over the vehicle's anticipated operational lifecycle. □

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| From: | <Jeff.Quandt@dot.gov>. | Sent:1/21/2010 7:19 AM. |
| To: [ - ] | <CSantucci@tma.toyota.com>. | |
| Cc: [ - ] | <Scott.Yon@dot.gov>. | |
| Bcc: [ - ] | . | |
| Subject: | CATD meeting. | |

Chris – As I mentioned in my phone message to you this morning, here is a rough agenda of topics we would like to discuss, information we would like to see and review and parts we would like to see when we meet at the Central Atlantictraining center. Please confirm that Toyotacan meet on Wed and cover the requested agenda items.

Accelerator Pedal assembly return part testing and forensic analysis – (see attached)
Pedal assembly data – Please bring the following information:
Baseline hysteresis (force-displacement on apply & release) curves for all CTS pedal assemblies and all other hysteresis curves generated from testing done to assess root cause of high resistance "sticking" condition (this should include overlaid curves of baseline part and part with condition (as shown at meeting Tues for Aygo vehicle).
Information describing test procedure for simulating high humidity condition to produce condensation on friction surface (and any changes to part specification based on lessons learned from subject condition)
All material/data that is available regarding the following:

i. The relationship between age and/or pedal cycles and "smoothening" of friction surfaces;

ii. The relationship between "smoothening" and friction for both wet and dry conditions over the full range of pedal stroke;

iii. The relationship between differing amounts of moisture/condensation on the friction over the full range of pedal stroke (for both PPS and PA46);

iv. All Design of Experiment testing to identify contributing factors and assess the influence of each (for both PPS and PA46);

v. Friction as a function of pedal stroke (for PPS, PA46 and POM) for (1) a new/dry part; (2) a used/dry part; (3) a new/wet part; and (4) a used/wet part; and

vi. The amount of friction necessary to cause a "stuck" pedal over the full range of pedal stroke.

Old & redesigned versions of CTS pedals for Avalon and Tundra
Denso pedal to discuss design for generating friction/feel
Electronic throttle control – Review Toyota's electronic throttle control system design, including self-diagnostics, associated DTC's, all FMEA and fault tree analysis related to the ETC system or the accelerator pedal position sensor assembly, throttle body, ECM and associated wiring (this can be limited to conditions related to the potential for unintended acceleration)
Electromagnetic compatibility – Review Toyota's general EMC standards/testing and discuss how they are applied to the ETC & cruise/speed control systems specifically.
Review Toyota EMC & ETC standards and design strategy
Discuss/compare with other EMC standards (e.g., ISO, SAE, peer mfrs)
Discuss/compare ETC design, testing with peers
Discuss attached article

Please call to discuss and confirm date/logistics.

Thanks,

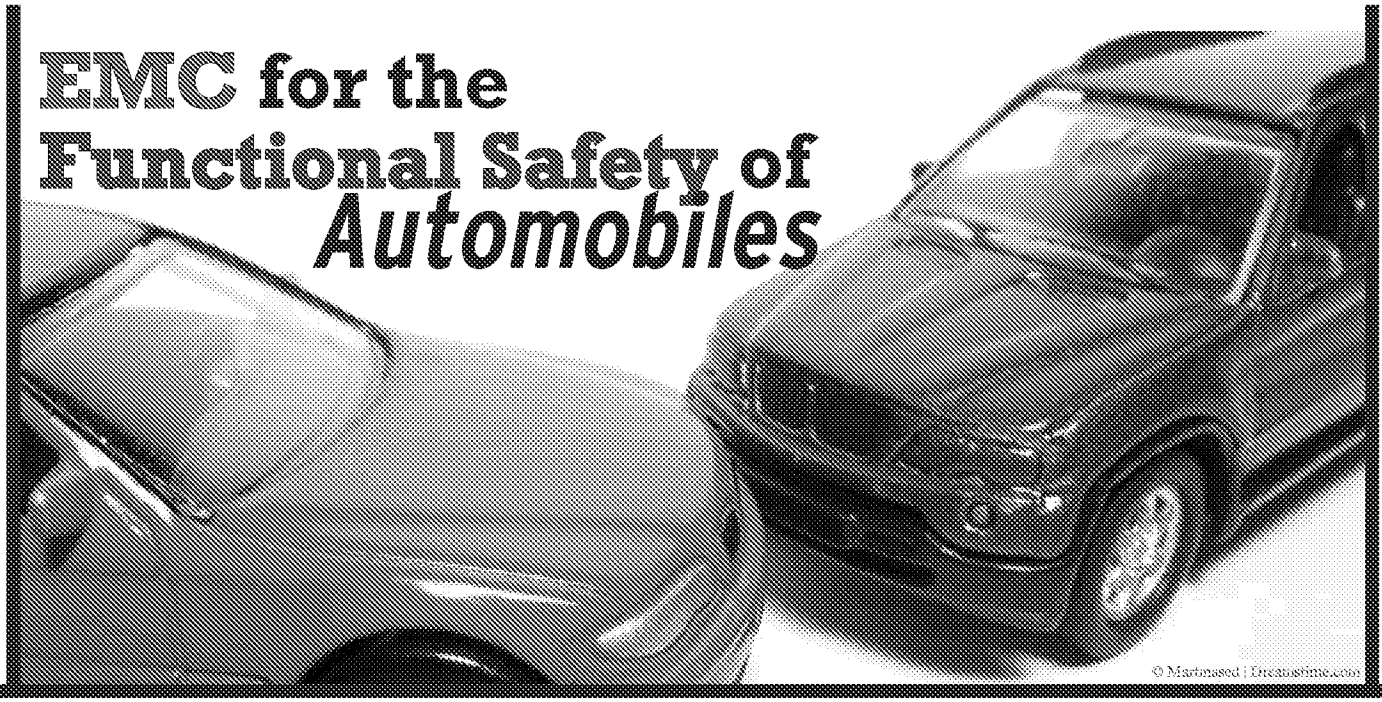
Jeff

# ODI/VRTC/Toyota Removed Components Inspection Protocol

We understand Toyota has one throttle body and two accelerator pedal assemblies which they removed from one vehicle in NJ and one in CA. The following protocol is proposed.

1) Information review (subject parts): Can Toyota provide the vehicle histories, any dealer service/TAS/FTE information related to the alleged component failure (including pictures, videos, notes, and any electronic data taken from the vehicle ECU, etc), a statement on what's been done with each part since its removal from the vehicle (custody, shipment, testing, etc), and the x-rays Toyota did of the components (15 min).
2) Information review (other returned pedal assemblies): Review how Toyota, and/or the pedal supplier, analyzed earlier pedals returned from the field with reports of sticking or slow to return to idle and all related inspection/test reports and forensic data.
3) Component inspection (off vehicle): We'd like to conduct a physical inspection of the each components including manual actuation, a visual assessment, photography and/or videotaping, and discuss any observations or questions with Toyota technical staff (30 min).
4) Component inspection (on vehicle): We'd like to have the two pedal assemblies installed on representative vehicles, make a (static) physical assessment of its operation during actuation, and connect a Tech Stream to assess the electrical operation and collect any pertinent electronic data. If any anomalies are noted we may want to install another (non-suspect) pedal assembly on the vehicle for comparative testing (about an hour or so). *Please advise if equipment can be made available to capture force-displacement data on pedals installed in vehicle (in as received or dry condition and after "component conditioning" discussed in #6.*
5) Test drive: Dependant on the outcome of the above, we'd like to test drive each vehicle with the Tech Stream attached (about 15 or 20 minutes).
6) Component conditioning: Dependent on the outcome of the above, we'd like Toyota to explain and provide a procedure for how they want to 'condition' the pedal assemblies to introduce condensation into the component (the friction system specifically). Toyota can perform the procedure and we will repeat items 3 and 4 above (estimating an hour or so)
7) Component disassembly: Dependent on the outcome of the above, we'd like to disassemble one or both pedal assemblies (see item below) to assess the condition of the internal components and mechanisms.
8) If we are unable to experience any pedal sticking or return-to-close concerns from the above testing we may request to leave one pedal assembly intact so that it can be taken back to VRTC for further assessment. We will discuss and agree this with Toyota at the meeting.
9) Dependent on the outcome of the above, we will discuss and agree future possession and next steps for the above components at the meeting. We may request the throttle body that was removed from the NJ vehicle for further assessment at VRTC.

# EMC for the Functional Safety of *Automobiles*



by EurIng Keith Armstrong, Cherry Clough Consultants

Electronic sub-assemblies (ESAs) are being increasingly used where they could affect vehicle safety risks, including every aspect of drivetrain control, and many aspects of body control, including lighting, displays, indicators and mirrors. Anything that could affect the direct control of a vehicle, or could confuse other road users, is of concern [2]. Indeed, there are many current developments that are safety-related, such as automatic parking, intelligent cruise control, automatic lane following, vision-aids, and vehicle-to-vehicle telemetry (enables vehicles to start braking when traffic ahead slows, even when hidden around bends or in fog) that would not be possible without advanced electronics and its software.

The problem is that all ESAs can suffer from errors, malfunctions and even permanent damage due to electromagnetic interference (EMI). Further, the EM environment is continually worsening due to the increasing use of electronic technologies in all areas of society, especially switch-mode power conversion and wireless communications.

Another problem is that all ESAs rely on semiconductors, either as discrete or integrated circuits (ICs), and the continuing shrinkage in their internal silicon features and reductions in operating voltages are making them more susceptible to EMI. So, for several reasons, the importance of EMI to the safety of vehicular transport is increasing.

Standards in all industry sectors, including the automotive industry, generally deal with EMI-related safety issues very poorly, if they even cover it at all [3] [4] [5]. The few that attempt to address these issues simply require the application of traditional EMC immunity tests that can never be sufficient for ensuring tolerable safety risks over the entire lifecycle, for reasons which we'll described later.

Figure 1 outlines the general situation at the time this article is being written.

Over the last ten years or so, there have been developments in applying risk management techniques to EMC to correctly address EMI-related safety issues. Specifically, there is IEC TS 61000-1-2 [7] (which is effectively the missing EMC Annex of the basic functional safety standard IEC 61508 [8]), and the IET's new guide on "EMC for Functional Safety" [9].

## Twelve Reasons Why EMC Testing is Insufficient for Safety

(Also see references [1] [9] [10] [11] and [12].)

### *1. Anechoic Test Chambers Do Not Simulate Real EM Environments*

Traditional radiated field immunity tests specify anechoic test chambers, which are unlike all real-life EM environments experienced by road-going vehicles, so their results can differ markedly from real-life. Vehicle manufacturers overtest to address this and other shortcomings in their test methods, but over-testing cannot compensate for the deficiencies associated with anechoic chambers.

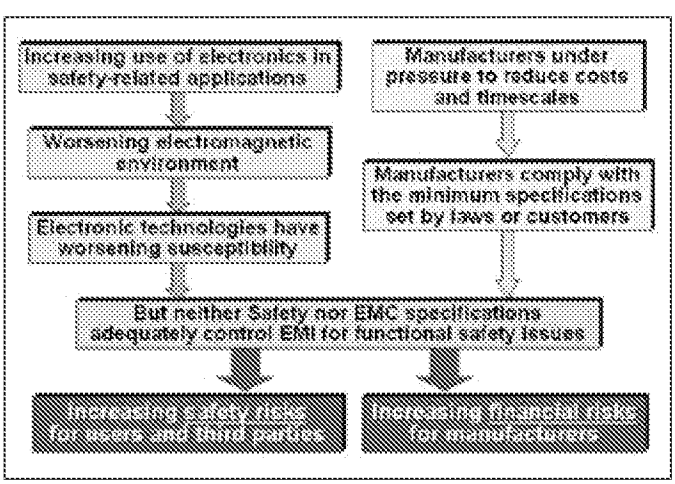
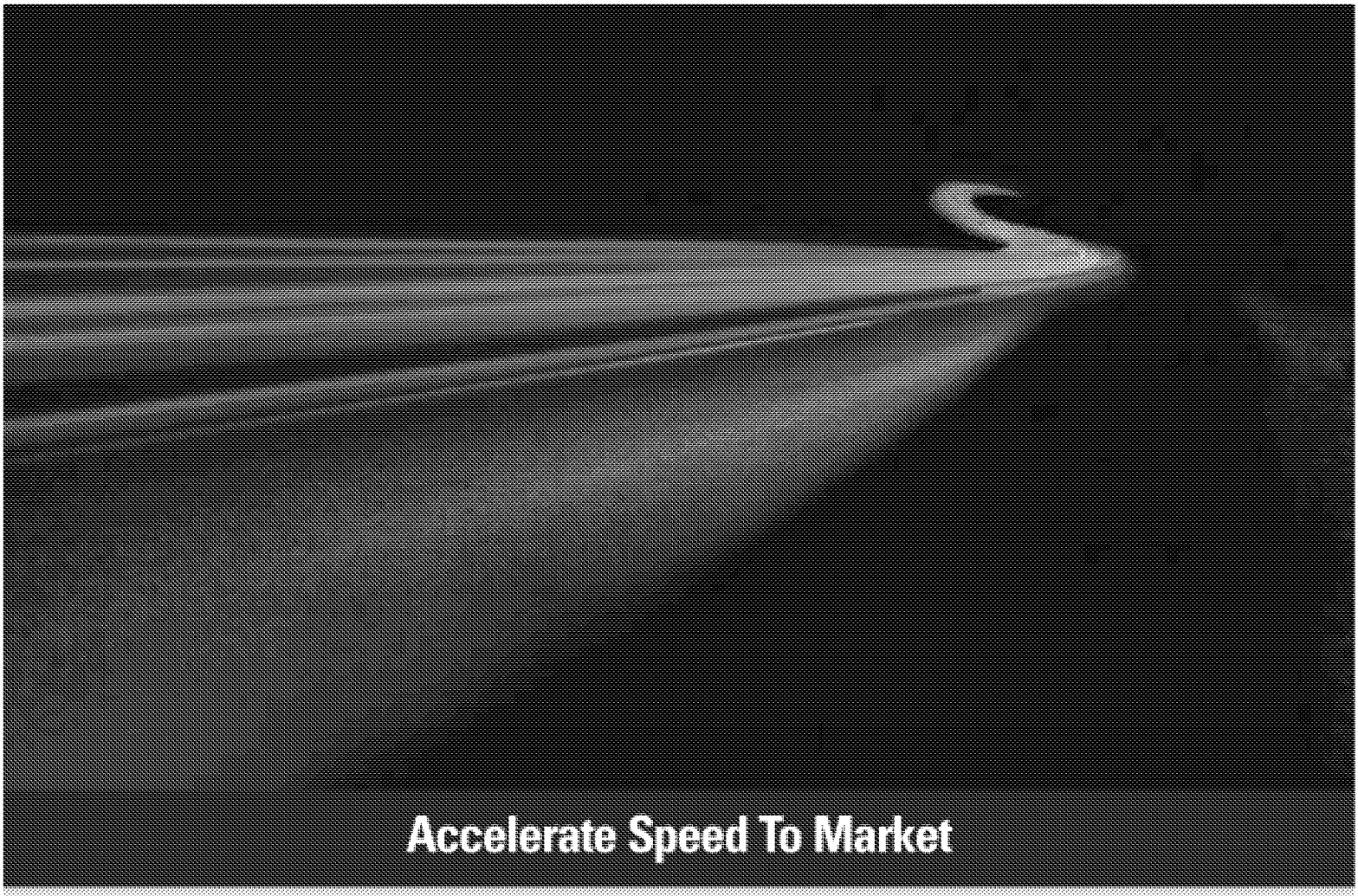



**Figure 1: Increasing safety risks due to EMI**



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Some EMC testing experts suggest there are large and unpredictable uncertainties associated with the use of anechoic chambers [13] [14]. Reverberation chambers can provide much more realistic tests [15] [16] and, for this reason (plus their lower costs), they are used by many manufacturers of flight-critical avionics.

### 2. RF Modulation Types and Frequencies Are Not Realistic

Traditional radio-frequency (RF) immunity tests use 1kHz sinewave modulation for ease of testing, low costs and repeatability, although some vehicle manufacturers employ pulse modulation to simulate digital cell phones and radars, at frequencies above 600MHz or so.

But real-life transmitters use a wide range of analog and digital modulation types and frequencies. References [17] and [18] show that immunity can be significantly degraded (e.g., 20dB or more) when EMI modulation corresponds with frequencies or waveforms used in internal processes, or resonates with circuits, cables, transducers or loads. Therefore, testing with 1kHz is too simple where safety issues are concerned.

Designers of military electronic warfare/countermeasures have known about the importance of modulation to immunity for many decades, but it is only now just starting to be addressed in standards (see [19] and [20]).

### 3. DC Power Disturbance Tests Are Not Realistic or Thorough

ISO 7637 [21] specifies conducted transient tests to simulate noise on a vehicle's power supply distribution network. The tests use waveforms based on simplifications of the transients that occur in real vehicles, so they can easily and repeatably be generated by low-cost test equipment.

Reference [22] describes tests of the DC power supply on a variety of real vehicles, and shows that the use of even the highest level pulses in [21] can be insufficient for some vehicles. Reference [22] also includes examples of real-life conducted transients in vehicles for which there are, as yet, no corresponding tests.

Varying the timings used by Pulse 2b of Reference [21] can delete the firmware in some ESAs, and varying the test settings can cause some ESAs to switch on or off without command. However, most vehicle and Tier 1 manufacturers do not vary the timings. Instead, they choose settings to reduce testing cost and time, or even to achieve a pass, possibly failing to detect latent unreliabilities that could increase safety risks.

The Ford Motor Company is unique in that its EMC test specification [23] deviates in part from [21] by using chattering relay tests that should produce transient tests with waveforms closer to what is probably experienced in real life.

### 4. Simultaneous Disturbances Are Not Tested

In real-life operation, ESAs are exposed to simultaneous EM disturbances, for example, two or more RF fields at different frequencies, a radiated field plus a conducted transient or electrostatic discharge, etc. But EMC immunity tests only apply disturbances one at a time.

Simultaneous disturbances that have different frequencies can cause EMI through intermodulation (IM), which (like demodulation) occurs naturally in non-linear devices like semiconductors. Figure 2 shows a simple example of two RF fields at different frequencies, which can cause EMI by:

- Direct interference from each frequency independently;
- Demodulation of the amplitude envelopes of either frequency, or both mixed together;
- Intermodulation, in which new frequencies are created.

Equipment that passes individual immunity tests can be much more susceptible to lower levels of the same disturbances when they are applied two at a time [24].

Vehicles have many independent sources of EM disturbances that can occur at the same time. A simple analysis, based on reasonable assumptions for a 6-cylinder engine at 2000 rpm with spark-ignition transients lasting 50ns, shows that, if there was an average of one unrelated 100ns transient per minute (e.g. due to the actuation of an electric motor or solenoid), there would be a 0.001% likelihood that the 100ns transient would overlap with a 50ns spark-ignition transient.

If this vehicle were driven for 1 hour/day, 5 days/week, 40 weeks/year, the likelihood of it experiencing an overlapping pulse event would be 12% per year. And, if the overlapping pulses caused an ESA to malfunction and caused a 1% chance of death (the official rate of death due to runaway vehicles in the United States over recent decades), the driver would have a risk of death of 0.12% per year. This might not sound much, but it is comparable with the risk of death knowingly accepted

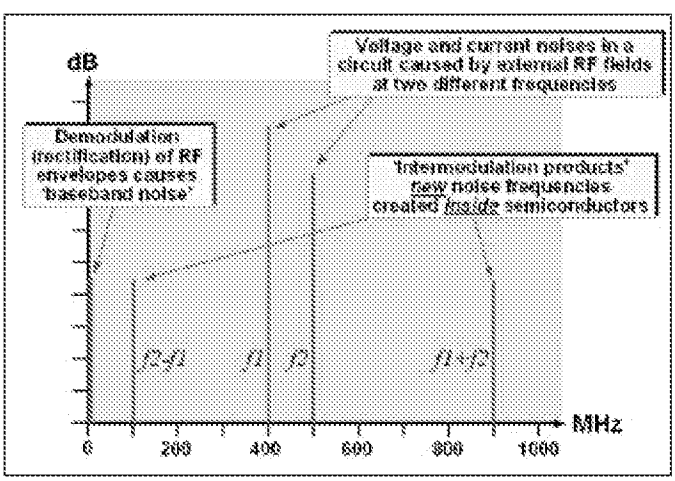



**Figure 2: Example of demodulation and intermodulation**

by people working in the most hazardous occupations (e.g., oil industry divers). If there were 100,000 such vehicles on the roads for similar periods, we could expect 120 deaths from these overlapping transients every year.

In this example, to be sure of experiencing just one overlapping pulse, a test vehicle would need to be driven 24/7 for 19 weeks. The likelihood of this discovering a significant safety problem is extremely remote, and even then it would almost certainly be diagnosed as something else. Were a customer to complain to his car dealer of a malfunction (that was due to these overlapping transients), the likelihood of the dealer experiencing the problem by test-driving the vehicle for a full eight hours would be very small indeed. Most likely the dealer would assume the driver had simply made a mistake.

### 5. Only One Port is Tested at a Time

When an ESA is subjected to a radiated RF field, all of its interconnecting cables pick up RF voltages, but with phase differences between them. But traditional EMC conducted immunity tests intended to simulate the effects of radiated fields only test one cable at a time.

Qinetiq PLC has injected RF into all of an ESA's conductors simultaneously, with phase shifts to match what would be expected in real life. They discovered that the immunity could be significantly worse than that experienced when one cable was tested at a time.

### 6. EMC Tests Ignore the Physical Environment

ESAs that are involved in safety-related activities must maintain certain EM characteristics over their life-cycles, despite the effects of the physical environment, including the following:

- Mechanical (static forces, shock, vibration, etc.)
- Climatic (temperature, humidity, air pressure, etc. – both extremes and cycling effects)
- Chemical (oxidation, galvanic corrosion, conductive dusts, condensation, drips, spray, immersion, icing, etc.)
- Biological (e.g., mould growth, etc.)
- Operational wear and tear over the lifetime (friction, fretting, repetitive cleaning, grease build-up, etc.)

Effects vary from immediate (e.g., non-flat mounting opening a gap and degrading shielding) to long-term (e.g., corrosion of a shield joint or filter ground bond). Reference [25] describes a number of real-life problems of this nature.

Reference [26] shows that a filter can suffer up to 20dB degradation in its attenuation due to a combination of ambient

temperature, supply voltage and load current that are within its specified ratings, when compared with the results of traditional immunity tests.

Highly-accelerated life tests are often used by vehicle manufacturers to verify that functionality will be maintained over the lifecycle, despite the physical environment. But the resulting aged units are rarely, if ever, tested to see if their EM characteristics have degraded, although this is understood to be common practice for Russian military equipment.

### 7. Quality of EM Design Is Ignored

Manufacturers apply the traditional immunity tests to their products, iterating their designs until they pass. But this approach cannot distinguish between a pass that was achieved by good EM design, or by something that would not be adequately controlled in serial manufacture over the production life of a vehicle.

EMC standards ignore design issues. So, if a product's EM design does not cope with component tolerances, semiconductor die-shrinks, variations in assembly (e.g., cable harnesses, grounding, etc.), replacement of obsolete components, firmware bug fixes, etc., the fact that some samples passed EMC tests means nothing at all for the EM characteristics of the ESAs or vehicles supplied to customers.

### 8. Assembly Errors are Ignored

Safety engineering generally requires verifying each manufactured product to make sure that assembly errors have not made it unsafe. But traditional EMC standards do not include any requirements for manufacturers to perform routine checks in serial manufacture on the EM characteristics that are necessary for achieving tolerable safety risks.

Automotive EMC test laboratories say that it is not uncommon for ESAs and vehicles that function correctly to fail EMC tests because of a misbuild. When this happens, the manufacturing errors are corrected and they are retested. Although most manufacturers employ rigorous end-of-line testing, including in-circuit test that will discover misbuilds that affect functionality, they do not generally design them to discover misbuilds that could affect EM characteristics.

So, based on type testing, a customer could receive a vehicle that includes one or more assembly errors that could prevent it from having the EM characteristics claimed by its manufacturer.

### 9. The Maximum Test Level is Not Necessarily the Worst

Electronic devices are non-linear, and circuits, firmware and software can be very complex. So ESAs can fail when tested with EM disturbances at a low level, but fail in a different way, or even pass, when tested at the specified levels. But most EM tests only expose equipment at the highest specified level to save testing time and cost. The likelihood of lower disturbance levels occurring is usually much higher than that of higher levels, so the immunity to low level disturbances could be much more significant for achieving tolerable safety risks.

### 10. Reasonably Foreseeable Faults are Ignored

Immunity to EMI can be significantly affected by faults, for example:

- Intermittent electrical connections;
- Dry joints, open or short circuits;
- Out-of-tolerance or incorrect components;
- Missing or damaged conductive gaskets;
- Loose/missing fixings in enclosures or cable shielding;
- Failure of a surge protection device.

But traditional automotive EMC testing ignores all faults; only perfect specimens of ESAs and vehicles are tested.

### 11. Reasonably Foreseeable Use and Misuse are Ignored

Tolerable safety risk levels must be maintained despite reasonably foreseeable use or misuse over the life-cycle. Of course, it is impossible to make anything perfectly safe, but people are known to behave in certain ways, so safety engineering should take this into account.

But traditional EM testing assumes vehicles are driven perfectly at all times, and are not damaged or modified.

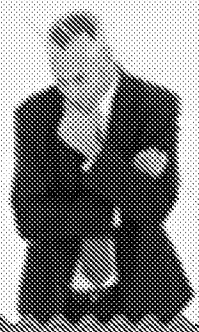
### 12. Systematic Effects are Ignored

Many system designers incorrectly assume that, if all the ESAs incorporated into a system pass their immunity tests, those systems will also be immune enough.

But performance degradations that are perfectly acceptable when an ESA is EMC tested, or are not even measured during the testing, could have significant implications for the functional safety of systems that use those ESAs. Agreement between the EMC test results on ESAs, and on the systems that incorporate them, is frequently found to be poor. This is often attributed to the principle known as emergence, which states that the characteristics of complex systems cannot necessarily be predicted from the characteristics of its component parts.

## What Needs to Be Done

The IET's new guide [9] provides a comprehensive and detailed practical approach to dealing with the issues described above by applying modern risk management principles to EMC. It adopts the principles of [7], but uses an application-neutral language that makes it useful whichever functional safety standard is being applied (e.g., IEC 61508, or ISO 26262), or not. Unlike [7], it includes suggestions for how to take EMC into account when using modern risk assessment methods (e.g., FMEA, fault tree analysis, brainstorming, etc.), and adds checklists that will be useful for management,



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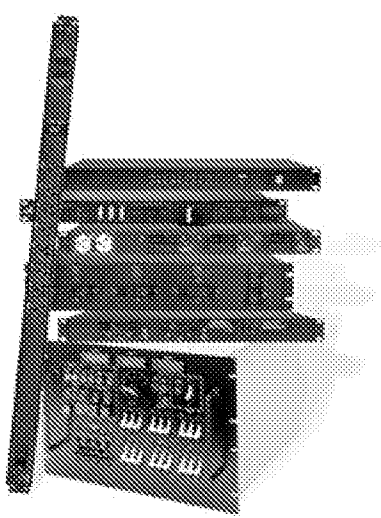

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The approach described in [7] and [9] will require a significant learning curve for many manufacturers, functional safety assessors, and EMC test laboratories who want to develop the skills to assess a design's EMC for functional safety.

### Manufacturers Need to be More Clever

Using only EMC testing to demonstrate due diligence in achieving tolerable safety risks over a vehicle's lifecycle, requires the twelve issues raised above – and their combinations (for example, an older vehicle with one or more faults, corroded metalwork and conductors, driven incorrectly, suffering multiple physical and EM disturbances simultaneously) – to be addressed by the test program. This would be so lengthy that no organization could possibly afford it. Manufacturers need to be cleverer, if they are to achieve tolerable functional safety risks with reasonable times and costs.

One aspect of this cleverness is to use EM design techniques that ensure safety-related systems will maintain the necessary EM characteristics over their lifetime, taking the reasonably foreseeable EM and physical environments into account [27]. Another is to verify and validate these more robust designs, using a variety of methods (generally including some EMC testing) to achieve the necessary confidence without excessive timescales or costs.

### Assessing the Lifetime EM and Physical Environments

An assessment of the reasonably foreseeable real-life possibilities over the vehicle lifetime [28] [29] should include:

- EM disturbances in the near-field (e.g., crosstalk in cable bundles) and far-field (e.g., radio/radar transmitters);
- Intra-system interference (between ESAs in a system);
- Inter-system interference (between different systems in a vehicle, and a vehicle system and the world outside; also considering electronic devices carried by people);
- Modulation types, and their frequencies or waveshapes;
- Simultaneous EM and/or physical disturbances (including continuous, extremes, cycling and transients);
- Possibilities for use and misuse;
- Physical environment(s) (e.g., mechanical, climatic, biological, wear, etc.);
- The effects of aging;
- Future changes to the EM and physical environments;
- Component tolerances, and future changes to components (e.g., obsolescence, die shrinks, etc.)

It is usually only possible to establish the types of EM phenomena (see Figure 3), their modulations and worst-case levels, with any confidence.

Standards from the IEC and military describe a variety of physical environments, but the compatibility levels (or test levels) they specify should not be applied unquestioningly, as they may not have been created for safety purposes.

If a vehicle type is to be sold into an EM and/or physical environment not fully addressed during its original design, an assessment of the new EM and physical environments is required. To maintain tolerable risk levels could require design changes, reverification and revalidation.

### Good EM and Physical Design Engineering

There are a great many publications on good EM design techniques that can be applied at different levels of assembly, from ICs to cabling and vehicle structures. Reference [27] discusses a number of well-proven, good EM and physical design techniques for controlling functional safety risks, which is greatly expanded upon in an Annex to [7] and Part 4 of [9].

### Hazard Identification and Risk Assessment

A documented hazard identification and risk assessment process is required that assesses how the reasonably foreseeable EM and physical environments over the lifecycle could possibly affect the ESA or vehicle, taking into account faults, misuse, etc. It should show how any excessive risks were reduced to an acceptable degree by design, and be a living document that guides the design process throughout.

Inductive (or consequence) methods start with a low-level error or failure, and try to determine whether it could lead to a hazardous situation. They include failure mode effects analysis (FMEA) and event tree analysis [30].

Deductive (or causal) methods start with hazardous situations, and try to determine what could have caused them, and include fault tree analysis [30].

Brainstorming techniques identify any possibilities. They apply inductive methods to see if the possibilities could have hazardous consequences, and then apply deductive methods to discover what could cause them, and also their likely effects.

It is usual to employ at least one inductive and at least one deductive method to improve the coverage of the risk assessment. Brainstorming is always required to foresee faults, use, misuse, etc., overlooked by standard methods.

All of the above must take into account the EM and physical characteristics of the product and its reasonably foreseeable EM and physical environments over its lifetime. Many vehicle manufacturers and Tier 1 companies employ risk assessment methods, but they tend to do it by rote, which is not recommended by functional safety experts [31] [32].

Any risk assessment method must take into account the fact that some failure modes (e.g., latch-up) can cause some/all

of an IC's output pins to change state at the same time, and common-mode EMI causes noise on many/all circuit nodes at the same time. Also, EMI and some types of faults can create noise that can be mistaken for valid signals.

It is generally assumed that two or more independent faults are so unlikely that only single-fault issues need be considered, but this is a misunderstanding. Where the likelihood of certain faults is high enough (e.g., due to inadequate design or assembly) the possibility that two or more such independent faults could occur simultaneously should be taken into account.

When designing a vehicle so that a person can drive it safely, it is also appropriate to use task analysis and human reliability analysis.

### *EM and Physical Specifications*

Specifications should be written for each vehicle safety-related system in order to control their design, manufacture, verification and validation, and the specifications should include EM and physical requirements derived from the above. Specifications for the ESAs to be incorporated in a safety-related system should then be derived from the system's specification, taking into account any EM or physical mitigation measures employed by the system (e.g., shielding, filtering, surge suppression, anti-vibration mountings, forced cooling, etc.)

### *A Verification/Validation Plan*

Achieving sufficient confidence when verifying and validating the design and assembly requires a mixture of techniques [33], none of which is sufficient alone, including:

- Demonstrations
- Checklists
- Inspections
- Reviews and audits
- Independent assessments
- EM tests on ESAs and complete vehicles
- Validated computer simulations

EM tests are most useful when they closely replicate the EM/physical characteristics of the real-world environment(s). It is generally best to base such tests on the standardized test methods, competently modified to better simulate the real life EM/physical environments.

HALT (highly-accelerated life testing) is a powerful tool for assessing the lifecycle suitability of design and assembly methods, and of EM mitigation techniques such as shielding and filtering [34]. Appropriate design of test set-ups can make it possible to detect unacceptably degraded EM performance during HALT testing.

ESAs for use in safety systems always require some final verification/validation tests, as do the completed vehicle safety systems themselves. These tests should be designed to provide the required confidence without high costs.

The EM characteristics of serially-manufactured ESAs and vehicles can be significantly affected by any of the following issues:

- Variations in purchased parts (e.g., IC die-shrinks);
- Alternative or replacement parts;
- Variations in plating, painting and fixing;
- Differences in assembly (e.g., wiring);
- Design changes and improvements;
- Firmware bug-fixes and upgrades, etc.

Therefore, all of the build-state issues relevant for maintaining tolerable functional safety risks should be identified during design, and controlled by quality control (QC).

QC should use a range of techniques; including quick, easy, low-cost EM checks on delivered goods, ESAs and sub-assemblies, plus sample-based testing designed to maintain an acceptable quality level. QC should employ competent personnel, backed up by appropriate testing, to assess every proposal for a design change for its implications for EM characteristics and functional safety risks.

### *The Results of Verification and Validation*

Documents should show how any shortcomings in meeting the specifications were dealt with, and the specifications achieved.

### *Measures Necessary to Maintain EM Characteristics*

Assumptions originally made about real-life EM and physical environments should be verified during the lifecycle of a model of vehicle and, if they are in error, what appropriate actions were taken.

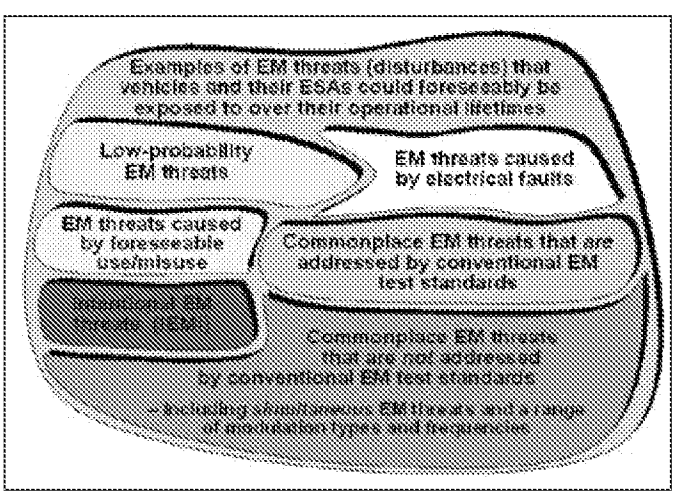


**Figure 3: Examples of foreseeable EM disturbances**

Appropriate QC activities are required for maintenance, repair, refurbishment, modification and firmware upgrades to ensure that the required EM and physical characteristics are not compromised over the vehicle lifecycle.

Vehicle service schedules might need to include certain checks, tests or component replacements. EMC checks or tests might also need to be devised, and equipment provided for use by relatively unskilled technicians in dealers' service departments for use at scheduled intervals. Computerized diagnostic programs might need to be modified to detect certain EM or physical characteristics.

Repair instructions should include activities that maintain the vehicle's EM/physical characteristics, possibly followed by EM and physical verification to specification. User manuals should recommend activities that help maintain the required EM/physical characteristics over the vehicle's lifecycle, and may need to describe, in layman's terms, how the user can identify EMI as the cause of a problem, and perhaps how to deal with it (in some circumstances).

### *Documentation – the Safety Case*

To help manage functional safety, and for a good defense in case of a legal challenge, a safety case should be created that documents all the activities described above and shows how they achieve tolerable safety risks over the vehicle's lifecycle.

### *The Amount of Work Required Depends on the Level of Risk*

The greater the excess safety risk is above the tolerable level of risk (making increased risk-reduction necessary), the more critical the need that all of the activities described above are more detailed, comprehensive and in-depth, and that they are performed by people who are more knowledgeable and more competent in the necessary techniques.

## Conclusions

This article has described a dozen reasons why it is generally not possible to rely solely on EM testing to help achieve tolerable functional safety risks.

We have also shown that rare and untested EMI events that could cause a safety incident only once during a 10-year vehicle life could expose drivers to safety risks comparable with those of the world's most dangerous occupations. These safety risks are most unlikely to be detected by a car dealer, even when a customer complains about the symptoms.

EMI must be treated like any other possible cause of hazards, including malfunctions in firmware [35]. Appropriate techniques in assessing the EM/physical environments, and in design, verification and validation, manufacture, maintenance, repair, modification and upgrade are required to ensure that tolerable safety risks are achieved over the vehicle's anticipated operational lifecycle. □

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Toyota Speed-Up Suits Say Problem Goes Deeper Than Gas Pedal
2010-01-29 05:01:01.8 GMT

By Thom Weidlich and Margaret Cronin Fisk
Jan. 29 (Bloomberg) -- Toyota Motor Corp., which last week recalled 2.3 million vehicles in the U.S. to fix sticking gas pedals, faces lawsuits involving at least three deaths that allegedly link so-called sudden acceleration to other causes.
Consumers also filed at least three class-action, or group, lawsuits, in November and another last week against Toyota, the world's largest automaker. Those car-owners blame the sudden acceleration on the vehicles' electronic throttle-control system, known as the ETCS-Intelligent System.
"Vehicles equipped with ETCS-I have a dangerous propensity to suddenly accelerate without driver input and against the intentions of the driver," Toyota customers said in a complaint filed in federal court in Charleston, West Virginia.
Toyota's Jan. 26 decision to stop U.S. production and sales of eight models to fix defective accelerator pedals may cost the company as much as 100 billion yen ($1.1 billion) a month in operating profit, according to Koji Endo, managing director of Advanced Research Japan in Tokyo. The recall, announced Jan. 21, covers the same eight models, including Toyota's top-selling Camry and Corolla cars.
The carmaker, based in Toyota City, Japan, said on Jan. 27 it's also adding 1.09 million U.S. cars to a November recall of a record 4.26 million vehicles because floor mats could jam the pedals. A class action filed on Jan. 4 in federal court in Miami cites the floor mats as the cause of the sudden acceleration.
John Hanson, a spokesman for Toyota, didn't return a call yesterday seeking comment on the litigation.

'Blamed the Driver'

Plaintiffs' lawyers claim that Toyota knew of the sudden acceleration problem for years before the November recall.

“First they blamed it on the driver, then it was the floor mats, then the accelerator pedal, and now they’re shutting down the plants,” Edgar Heiskell, one of the attorneys in the West Virginia case, said yesterday in a phone interview. “Toyota’s position has changed at least three times.”

Other class actions may follow, Heiskell said.

Los Angeles residents Seong Bae Choi and Chris Chan Park, who claim they experienced multiple instances of unintended acceleration, filed a class action in federal court in Los Angeles on Nov. 5, seeking to represent all U.S. owners of certain Toyota and Lexus models.

Joseph Hauter, a resident of Los Angeles County in California, once pulled his 2008 Toyota Tundra pickup truck into a service station “with his foot solely on the brake pedal when his vehicle suddenly accelerated,” according to a complaint he filed Jan. 22 against the company.

Put in Park

The vehicle continued to try to accelerate even after Hauter slammed on the brakes and it lurched to a stop, according to the lawsuit in federal court in Santa Ana, California. The acceleration attempts stopped after Hauter put the Tundra into park, he said. His lawsuit also cites the electronic throttle-control system.

The law firm representing Hauter, Kirtland & Packard LLP of El Segundo, California, filed a similar lawsuit against Toyota in November.

Reports of unintended accelerations of Toyota cars “began to increase significantly in 2002, when Toyota began installing the ETCS-I in a broad range of its vehicle lines,” according to the West Virginia complaint. The electronic system “has no mechanical linkage between the accelerator pedal and the throttle plate in the engine,” lawyers wrote in the complaint.

Toyota faces at least seven lawsuits brought by individual plaintiffs claiming deaths or injuries caused by sudden acceleration. In a Michigan lawsuit filed in August, the family of Guadalupe Alberto claims she was killed when her 2005 Toyota Camry sped out of control on a residential street in April 2008.

80 Miles an Hour

That lawsuit also claims a defect in the electronic throttle control, said Heiskell, the lawyer for Alberto’s family. The vehicle didn’t have a floor mat, he said.

“She blew past an intersection, witnesses saw her with both hands on the wheel,” Heiskell said. “She appeared to be standing on the brake while steering.”

Alberto, 76, was killed instantly when the Camry hit a tree at a speed of almost 80 miles an hour, he said.

A sudden-acceleration lawsuit spurred by an accident in Oklahoma also involved a 2005 Camry, attorney R. Graham Esdale Jr. said in a phone interview yesterday. Jean Bookout, then 76, pulled off a highway as her car sped out of control, he said.

“She engaged the emergency brake, which kept the crash from being worse than it was,” Esdale said. Bookout was injured and her friend, Barbara Schwarz, 70, was killed in the September 2007 accident. Bookout and the Schwarz family sued Toyota in state court in Oklahoma City in September 2008.

Accelerated Over Cliff

Another accident involving a 2005 Camry killed a woman when the vehicle accelerated over a cliff, according to a 2007 lawsuit in California.
Sudden-acceleration rates on the 2005 Camry are “three times higher than those in the recalled vehicles,” Esdale said. “That’s one of the things we’re very concerned about. Toyota has ignored our class of vehicles.”
Esdale said he’s looking at three additional accident claims for possible lawsuits.
The Toyota customers in the class actions seek damages from the company for selling the allegedly faulty cars.
The automaker’s American depositary receipts, each representing two ordinary shares, fell $2.10, or 2.6 percent, to $77.67 in New York Stock Exchange composite trading yesterday.
The class actions are Graves v. Toyota Motor Manufacturing West Virginia Inc., 09-cv-1247, U.S. District Court, Southern District of West Virginia (Charleston); Hauter v. Toyota Motor Sales USA Inc., 10-cv-105, U.S. District Court, Central District of California (Santa Ana); Choi v. Toyota Motor Corp., 09-cv-8143, Kmetz v. Toyota Motor Sales USA Inc., 09-cv-8478, U.S. District Court, Central District of California (Los Angeles); and Gellman v. Toyota Motor Sales USA Inc., 10-cv-20006, U.S. District Court, Southern District of Florida (Miami).

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LaHood Says Agency Plans Response to Toyota Defects (Update1)
2010-01-29 23:13:27.157 GMT

(Adds LaHood comments from 11th paragraph.)

By John Hughes
Jan. 29 (Bloomberg) -- U.S. Transportation Secretary Ray LaHood said he is prepared to lay out for congressional investigators everything his safety agency did to deal with defective Toyota Motor Corp. vehicles and that he will take responsibility for any failures.
“We’ll take responsibility if something should have occurred that didn’t,” LaHood said in an interview today in Bloomberg’s Washington office. “I don’t know if that’s the case, but we’re doing a lot of reviews right now.”
Toyota recalled 2.3 million U.S. cars and light trucks on Jan. 21 after reports of unintended acceleration in the vehicles. The House Energy and Commerce Committee will hold a hearing on the matter, in part to examine the response by the National Highway Traffic Safety Administration, panel Chairman Henry Waxman of California said yesterday.
Democrats Waxman and Representative Bart Stupak of Michigan said in a joint statement they “continue to have questions” about the responses of NHTSA and Toyota.
LaHood will tell Waxman that “we did everything that we were supposed to do, in a timely fashion,” he said in a separate interview on Bloomberg Television’s “Political Capital with Al Hunt,” airing this weekend.

Every Complaint

Waxman and Stupak said in a letter yesterday to David Strickland, who heads the safety agency under LaHood, that they want to a report on every Toyota model NHTSA has received a consumer complaint about since 2000. They also want the date upon which NHTSA became aware of the sudden unintended acceleration and all actions the agency took to examine each allegation.
“We’re going to do a complete review of everything that

we've done," LaHood said.
Before Strickland was confirmed as administrator this month, NHTSA's acting administrator Ron Medford traveled to Japan to meet with Toyota, LaHood said.
Toyota City, Japan-based Toyota has separately recalled more than 5 million vehicles to prevent pedals from getting trapped by floor mats.
Sudden acceleration of Toyota vehicles has been linked to 19 deaths in the past decade, according to Waxman. His panel plans a hearing Feb. 25, following a Feb. 10 hearing by the House Committee on Oversight and Government Reform.

Distracted Drivers

LaHood said he plans to meet with automobile executives "soon" on the issue of distracted driving and "our passion to eliminate" the practice.
"We want them to be part of the solution," LaHood said of the automakers. "We'll just have a frank discussion."
LaHood has made the issue a priority after more than 5,800 people died in 2008 in accidents where at least one form of driver distraction was cited in the crash report. His agency on Jan. 26 banned texting for commercial bus and truck drivers as part of an effort to combat traffic deaths stemming from distracted motorists.
LaHood also said he will announce within 10 days the formation of a federal advisory panel to examine airline industry competitiveness. He said he has picked the panelists but wasn't prepared to reveal them.
LaHood, who accompanied President Barack Obama to a meeting with Republicans in Baltimore today, said the president "didn't go there to just sort of patronize them, I think he went there to talk frankly with them about his point of view" on issues.
Obama and Republicans will be able to work together on issues including the budget, climate change, health care and immigration, LaHood said.
"What the president did in the State of the Union and today is extend a hand," he said. "Now it's up to Republicans."

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Toyota Faces U.S. Congress Probes on Accelerators (Update4)
2010-01-29 22:00:14.643 GMT

(Adds LaHood's comments in starting in eighth paragraph.)

By Angela Greiling Keane
Jan. 29 (Bloomberg) -- Toyota Motor Corp.'s handling of defective gas pedals that led to a record recall of vehicles in the U.S. will be investigated by Congress amid criticism that the automaker may not have acted quickly enough.
Sudden acceleration of Toyota vehicles has been linked to 19 deaths in the past decade, according to House Energy and Commerce Committee Chairman Henry Waxman. His panel plans a hearing Feb. 25, following a Feb. 4 hearing by the House Committee on Oversight and Government Reform.
Lawmakers will examine what the company knew and what it's doing to resolve the problem, Waxman, a California Democrat, said in a statement on his committee's Web site.
"Like many consumers, I am concerned by the seriousness and scope of Toyota's recent recall announcements," he said.
Toyota recalled 2.3 million U.S. cars and light trucks on Jan. 21 for pedal-related problems linked to sudden acceleration. The company separately recalled more than 5 million vehicles to prevent pedals from getting trapped by floor mats. Toyota City, Japan-based Toyota stopped U.S. production and sales on eight models this week.
"The public is unsure as to what exactly the problem is, whether it is safe to drive their cars, or what they should do about it," Representative Edolphus Towns, a New York Democrat and chairman of the oversight and government reform panel, said today in a statement.
The world's largest automaker said it will give customers details next week on a fix to the pedal flaw. Parts supplied by CTS Corp. will be either replaced or new assemblies will be installed, Brian Lyons, a Toyota spokesman, said today. He didn't immediately have specifics on repair timing.

Meeting With Lawmakers

Transportation Secretary Ray LaHood planned to talk today with Towns and the panel's top Republican, Representative Darrell Issa of California, he said in an interview in Bloomberg's Washington office. He said he will appear before Congress to explain how his agency handled the pedal issue.
While Toyota officials met with committee lawmakers and staff this week, "we continue to have questions about what was done to investigate and resolve this safety issue both by Toyota" and the National Highway Traffic Safety Administration, said U.S. Representative Bart Stupak, Democrat of Michigan and chairman of the subcommittee on oversight and investigations.
"Incidents of sticking accelerators have been ongoing with Toyota vehicles for up to a decade, and have led to a disproportionately high number of deaths," Stupak said. "Failure to take every possible step to prevent future deaths or injuries is simply unacceptable."
"Toyota appreciates the opportunity to inform the committee" about the problem and the company's efforts to address it, Ed Lewis, a Toyota spokesman in Washington, said in a statement today.

Dealer Losses

U.S. dealers who sell Toyota's namesake brand may lose as much as $2.47 billion in combined monthly revenue because of the sales halt, said John McEleney, the chairman of the National Automobile Dealers Association and owner of McEleney Toyota in Clinton, Iowa.
The automaker said today it would also recall eight models in Europe, including some Corolla and Avensis cars. The move may cover as many as 1.8 million vehicles. Toyota's effort to fix the pedals doesn't extend to Japan, where it uses different parts makers.
Waxman and Stupak said they asked Toyota North America President Yoshimi Inaba and David Strickland, NHTSA administrator, for more information on the matter.

Analysis and Review

The regulator and Toyota both moved too slowly to pinpoint the problem and advise consumers about dangerous pedal-related defects, Joan Claybrook, a former NHTSA administrator, said in an interview yesterday.
"They weren't doing much with enforcement," Claybrook, a former head of the Washington-based advocacy group Public Citizen, said of the safety agency. "They're supposed to review, analyze and go back to the companies and say, 'What's going on here?'"
LaHood defended the automaker and the safety agency. "Toyota has followed the law," he told Bloomberg reporters. "Our people did a good job."
The accelerator pedals drew attention after a California Highway Patrol officer and three family members were killed in an August accident. A floor mat on a Lexus sedan he was driving may have jammed the pedal and caused the car to speed out of control, according to Toyota.

Public Clash

NHTSA and Toyota clashed publicly over the recalls last year.
In November, the safety agency said Toyota was "inaccurate

and misleading" in comments the company made on the problem. Toyota had issued a statement two days earlier saying U.S. safety investigators found no defect existed in vehicles "in which the driver's floor mat is compatible with the vehicle and properly secured."

The agency said Toyota's remedy didn't "correct the underlying defect," which it said was related to the accelerator pedal and floor pan design. LaHood urged Toyota owners to remove floor mats.

LaHood said yesterday that he's "absolutely" satisfied with the performance of NHTSA, which until this month lacked an administrator under President Barack Obama.

Before Strickland was confirmed as administrator this month, NHTSA's acting administrator Ron Medford traveled to Japan to meet with Toyota, LaHood said.

"The problem is that NHTSA always has the underdog role" in dealing with automakers, said Sean Kane, president of Safety Research & Strategies Inc., a safety advocacy group in Rehoboth, Massachusetts.

Long History

NHTSA's office of defects investigation has a staff of only 20, has no expertise in electronics and has a "long history of missing unintended-acceleration complaints that can't be easily identified," Kane said in an interview yesterday. "They relied a lot on Toyota to tell them what the issues are and that's not uncommon. The sophistication of Toyota is at a much greater level than that of the agency."

NHTSA has been in "constant contact" with Toyota throughout the course of the recalls, said Karen Aldana, an agency spokeswoman.

Toyota's American depositary receipts, each representing two ordinary shares, fell 67 cents to $77 at 4:15 p.m. in New York Stock Exchange composite trading. The receipts have dropped for six consecutive trading days.

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--With assistance from John Hughes and Roger Runningen in Washington, Alan Ohnsman in Los Angeles, Cornelius Rahn in Frankfurt, Mike Ramsey and Doron Levin in Southfield, Michigan and Makiko Kitamura in Tokyo. Editors: Joe Richter, Romaine Bostick

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| Subject: | Letter to Strickland. | |

The Center for Auto Safety today released the results of its FOIAs into NHTSA's inadequate investigation of electronic control malfunction causing unintended acceleration in Toyota vehicles. CAS Executive Director Clarence Ditlow wrote NHTSA Administrator David Strickland:

"Under the pressure of FOIA to produce documentation on the one test the agency did to see whether intermittent failures in the electronic control system cause unintended acceleration in Toyota and Lexus vehicles, NHTSA can't say what it did, how it did it or what the results were. To put this in context, the very first Toyota unintended acceleration recalls, 86V-132 and 90V-040, were for defective cruise control computers. Incoming cell phones calls have produced inadvertent movement and transmission shifts in transit buses, 06V-100.

Toyota unintended acceleration to date raises more questions than answers. Toyota owners need to know if they are safe from unintended acceleration or if their next ride is their last ride. As the new Administrator of the agency whose mission it is to protect the public from "the unreasonable risk of accidents occurring as a result of the design, construction and or performance of motor vehicles," you are in a unique position to raise the agency to the challenges and opportunities presented by complex electronic systems in motor vehicles. There is no better place to start than with the issue of Toyota unintended acceleration."

CENTER FOR AUTO SAFETY
1825 CONNECTICUT AVENUE NW SUITE 330 WASHINGTON DC 20009-5708
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February 2, 2010

**VIA FAX AND FIRST CLASS MAIL**

Honorable David Strickland, Administrator
National Highway Traffic Safety Administration (NHTSA)
1200 New Jersey Ave. SE
Washington, DC 20590

Dear Administrator Strickland:

All across America, if not all across the world, Toyota owners are asking if they will be the next victim of unintended acceleration or will the latest recalls for floor mat interference and sticking accelerator pedals (of 6 million vehicles in the US alone)[i] announced by Toyota remedy the defect. If floor mats were at the heart of the matter, why didn't Toyota notify NHTSA in September 2000 that it did a floor mat accelerator pedal interference recall in the UK? What if intermittent failures in the electronic control system cause unintended acceleration?

A thorough analysis of all the NHTSA investigations and recalls into unintended acceleration shows there has been no documented engineering analysis done of whether intermittent failures in the electronic control system cause the unintended acceleration events.

During Engineering Analysis EA07-010, NHTSA purchased a 2007 Lexus ES-350 for $34,778 and subjected it to testing with the objective to:

> "Determine whether reported incidents of unintended acceleration were caused by a vehicle system malfunction or mechanical interference;"

The test report which is attached concluded:

> "Multiple electrical signals were introduced into the electrical system to test the robustness of the electronics against single point failures due to electrical interference. The system proved to have multiple redundancies and showed no vulnerabilities to electrical signal activities. Magnetic fields were introduced in proximity to the throttle body and accelerator pedal potentiometers and did result in an increase in engine revolutions per minute (RPM) of up to approximately 1,000 RPM, similar to a cold-idle engine RPM level."

During Defect Petition DP09-001 which the petitioner asked the agency to look at causes of unintended acceleration other than mechanical interference such as electronic controls, the agency used the test report from EA07-010 to deny the petition <u>without even sending a single information request to Toyota</u>:

"ODI and VRTC also conducted design reviews and testing to evaluate the possibility of other potential causes of unintended acceleration in the subject vehicles. Some of this work is summarized in the following excerpt from the VRTC test report:
*The Vehicle Research and Test Center obtained a Lexus ES350 for testing. The vehicle was fully instrumented to monitor and acquire data relating to yaw rate, speed, acceleration, deceleration, brake pedal effort, brake line hydraulic pressure, brake pad temperature, engine vacuum, brake booster vacuum, throttle plate position, and accelerator pedal position. Multiple electrical signals were introduced into the electrical system to test the robustness of the electronics against single point failures due to electrical interference. The system proved to have multiple redundancies and showed no vulnerabilities to electrical signal activities. Magnetic fields were introduced in proximity to the throttle body and accelerator pedal potentiometers and did result in an increase in engine revolutions per minute (RPM) of up to approximately 1,000 RPM, similar to a cold-idle engine RPM level. Mechanical interferences at the throttle body caused the engine to shut down.*
Petitioner's assertion that the Agency failed to investigate other causes of unintended acceleration and, as a result, may have failed to identify other causes of unintended acceleration is unsupported."

CAS filed two Freedom of Information Act (FOIA) requests to obtain information on the specific test procedures utilized by VRTC and the data obtained. Specifically, CAS sought:

(1) Any and all records relating to or describing test protocols including the maneuver used to activate the ESC
(2) Any and all records reflecting, containing, or recording test data including video tapes and other electronic media.
(3) All documentation describing the type, location and intensity of magnetic or electro-magnetic fields used to evaluate their potential for causing increased vehicle engine RPM.
(4) All documentation describing the selection of the type, location and intensity of magnetic or electronic fields used in the testing performed on the vehicle in question.

We were shocked by NHTSA's response to our FOIAs:
As to test protocols, NHTSA said it found "no records relating to or describing test protocols."
As to test data, NHTSA provided only a video showing a driver on a course with floor mat entanglement, pedal entrapment and ESC maneuvers – i.e., no test data whatsoever.
As to type, location and intensity of magnetic, electro-magnetic or electronic fields, NHTSA responded that the only responsive information was the cursory summary quoted above in the VRTC test report and repeated in DP09-001.

Under the pressure of FOIA to produce documentation on the one test the agency did to see whether intermittent failures in the electronic control system cause unintended acceleration in Toyota and Lexus vehicles, NHTSA can't say what it did, how it did it or what the results were. To put this in context, the very first Toyota unintended acceleration recalls, 86V-132 and 90V-

040, were for defective cruise control computers. Incoming cell phones calls have produced inadvertent movement and transmission shifts in transit buses, 06V-100.

Toyota unintended acceleration to date raises more questions than answers. Toyota owners need to know if they are safe from unintended acceleration or if their next ride is their last ride. As the new Administrator of the agency whose mission it is to protect the public from "the unreasonable risk of accidents occurring as a result of the design, construction and or performance of motor vehicles," you are in a unique position to raise the agency to the challenges and opportunities presented by complex electronic systems in motor vehicles. There is no better place to start than with the issue of Toyota unintended acceleration.

Sincerely,

Clarence M Ditlow
Executive Director

[i] The following table lists all known unintended acceleration recalls of Toyota vehicles in the US, UK and Canada.

**Toyota Sudden Acceleration Recalls**

| Recall Number | Make/Model/Year | # Recalled | Subject |
|---|---|---|---|
| 86V-132 | 1982 Cressida, Supra | 4,561 | Cruise Control Computer |
| 90V-040 | 1983-84 Camry<br>1984 Corolla | 121,389 | Cruise Control Computer |
| RCOMP/2000/2 (UK) | 1999-2000 Lexus LS200 | 10,919 | Floor Mat |
| 01V-012 | 1998-01 Camry | 53,061 | Accelerator Cable |
| 07E-082 | 2007-08 Camry, Lexus ES350 | 55,000 | Floor Mat |
| 09V-023 | 2004 Sienna | 26,501 | Trim Panel |
| 2009290 (Canada) | 2006-10 Lexus IS250/350, IS C, IS F<br>2007-10 Camry, Tundra, Lexus ES350<br>2005-10 Avalon, Tacoma<br>2004-09 Prius | 200,000 | Floor Mat |
| 09V-388 | 2005-10 Avalon, Tacoma<br>2004-09 Prius<br>2007-10 Camry, Tundra, Lexus ES350<br>2006-10 Lexus IS250/350 | 4,260,319 | Floor Mat |
| 2010012 (Canada) | 2005-10 Avalon<br>2007-10 Camry, Tundra<br>2008-10 Sequoia<br>2009-10 Corolla, Matrix, RAV4<br>2010 Highlander | 270,000 | Accelerator Pedal |
| 10V-017 | 2009-10 Corolla, Matrix, RAV4, Pontiac Vibe<br>2007-10 Camry, Tundra<br>2008-10 Sequoia<br>2005-10 Avalon<br>2010 Highlander | 2,300,000 | Accelerator Pedal |
| 10V-023 | 2008-10 Highlander<br>2009-10 Corolla, Venza, Matrix, Pontiac Vibe | 1,093,000 | Floor Mat |

From: [redacted] Sent: 2/2/2010 9:04 AM

To: [ - ] jim_lentz@toyota.com;mike_michels@toyota.com;carri.chandler@tema.toyota.com;tania.saldana@tema.toyota.com;Cynthia.mahalak@tema.toyota.com;mike.goss@tema.toyota.com

Cc: [ - ]

Bcc: [ - ]

Subject: Toyota recall

Dear Mr. Lentz,

I own a 2008 Toyota Highlander which is involved in the recall.
I know there are problems with sticking gas pedals and floor mats. I have not seen any mention of software or firmware problems or corrections that are mentioned in the trade magazine article below.

I would like to know if this software/firmware issue will be investigated and resolved during the recall?
This issue has not been mentioned in any press release that I have seen.

Please let me know if the firmware in the ECM will be changed during the recall to override the accelerator when the brake is pressed.
This seems like a good idea to me. I know there are times when you may need to accelerate with the break on such when you pull away from a stoplight on a hill. These will need to be accounted for in the firmware.

Thanks, Please let me know what you think of the article. If there is anybody else I should send the article to for comment please let me know.

Best regards,

[redacted]

PS I love my Highlander and would not hesitate to buy another.

This is the article that appeared in Design News.

Toyota's Problem Was Unforeseeable

As systems grow in complexity, experts say designing for failure may be the best course of action for managing it

By Charles J. Murray, senior technical editor, electronics -- Design News, January 28, 2010

http://www.designnews.com/article/446480-Toyota_s_Problem_Was_Unforeseeable.php?nid=4871&rid=9621440

Toyota's sticking gas pedal was an almost-unforeseeable problem, experts say, and the best course of action now is for engineers to ensure that drivers can handle the failure if it happens again.

"This is one of those horrifying nightmare problems that will occasionally occur, no matter how hard you try," said David Cole, chairman of the Center for Automotive Research.

Automotive experts said this week that predicting the problem would have been nearly impossible during design and test, especially given the kind of accelerated testing that is typically used to evaluate components which may have to last from 10 to 15 years. Making it even more difficult was the fact that the gas pedals didn't appear to fail by themselves, but rather, by interaction with other components, such as heaters or floor mats.

"It's not that they didn't design a good accelerator pedal or linkage or floor mat or heater," said Steven D. Eppinger, professor of Management Science and Engineering Systems at Massachusetts Institute of Technology (MIT). "They designed them each quite well. But the most difficult problems always relate to interactions between components and other systems."

Although Toyota now appears to be coming close to a repair for the gas pedal problem, many questions still remain about its genesis. The giant automaker has gone through a succession of theories about the problem's cause, including interaction with floor mats, materials in the accelerator's friction lever, and condensation and corrosion from heaters. During the two-year course of problems, Toyota has examined its floor mats, shortened its pedals, lengthened the friction lever and changed its linkage materials. This morning, the company reportedly said it will add a "spacer" that will increase the tension in a spring that would keep the pedal from sticking.

Still, experts say that one of the best fixes is one that helps drivers deal with the problem when it happens. "The takeaway is that it's less about durability testing and accelerated testing, and more about designing for failure," said Jake Fisher, senior automotive engineer for Consumer Reports.

Software Fix

The key to empowering drivers lies in software, the experts said.

Toyota's throttle-by-wire systems, already in place on most or all of the affected vehicles, will soon contain additional software commands that will interrupt the flow of gasoline to the engine if a driver hits the brake pedal. Such software could go a long way toward preventing fatalities, since most drivers instinctively step on the brake pedal when the gas pedal sticks. Many competing automakers already incorporate those software commands in their electronic throttle bodies.

Affected vehicles include the Toyota RAV4, Corolla, Matrix, Avalon, Tundra, Sequoia, some Camrys, and non-hybrid Highlanders. Recent news reports have also said that millions of Toyota vehicles in Europe and China will also be included in the recall. Most of the vehicles are believed to incorporate throttle-by-wire systems, which will be able to cut off fuel flow based on the driver's actions. Throttle-by-wire, which has grown enormously popular in recent years, uses a sensor to monitor position and a tiny electric motor to open and close the throttle. The electric motor is driven to its required position through communication with the engine's ECU. By adding software code to the ECU, engineers will enable braking action to override the throttle when the gas pedal is stuck. Toyota has said it will incorporate the new software algorithms in its production by the end of 2010.

"With the software fix, if the throttle is depressed and you step on the brake, the electronics will say, "The driver wants to stop more than he wants to go ahead, so we'll cut off the engine,'" Cole said.

Up to now, Toyota's ECUs haven't contained such override commands, even though some other manufacturer's vehicles have, says Consumer Reports. "Most German vehicles and Toyotas have electronic throttle bodies," Fisher said. "In the German vehicles, if you push down on the gas pedal, it overrides the brake pedal. Toyota never implemented that logic when it went to electronic throttle bodies."

Without a "smart" throttle, drivers have little chance of dealing with a stuck pedal, especially by engaging the brakes. "When you have a 250-horsepower engine at wide-open throttle, you can stop it with the brakes â€" but only temporarily," Cole said. "And then the brakes get hot. They fade and deteriorate, and you're in trouble again."

Finding the Source

For Toyota, as well as for engineers around the world, the stuck-gas-pedal story has served as a painful lesson in how difficult it is to get everything right in the design of a machine with tens of thousands of parts.
"You can't design a part and test it through its real lifetime," Cole said. "There's not enough time for that. You have to use accelerated testing. The problem is this is not the type of problem that you would notice in accelerated test. It's a very tough issue for engineers to deal with: How do you simulate something that will only occur over a lengthy aging process and, even then, only very rarely?"

Cole credits Toyota for publicly taking responsibility for the problem, saying that in the long term it will work to the company's advantage. When Audi experienced a similar problem more than two decades ago, company executives refused to accept blame, largely because no mechanical or electrical faults were observed. The ultimate cause (the gas pedal and brake were too close together) was eliminated with a redesign, but Audi's reputation was severely damaged. "Audi's response was, â€˜It was the driver's fault,'" Cole said. "And that's what really hurt them."

Experts wonder if Toyota will ever pin down the real reason for the gas pedal problem. "It's a culmination of a lot of factors," Fisher said. "It's difficult to get a real handle on it."

Even if the "spacer" and the smart throttle help Toyota deal with the problem, experts aren't convinced Toyota will ultimately find the smoking gun. Nor do they blame engineers for not being

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LaHood Says Comment on Toyota Was 'Misstatement' (Update1)
2010-02-03 17:31:32.526 GMT

(Adds LaHood's comments starting in second paragraph.)

By Daniel Whitten
Feb. 3 (Bloomberg) -- U.S. Transportation Secretary Ray LaHood said he misspoke today when he said owners of recalled Toyota Motor Corp. vehicles should stop driving them until the company fixes a defect causing sudden acceleration.
LaHood sought to clarify his remarks in comments to reporters after a congressional hearing. He said that if owners are in doubt, they should take their cars to the dealership.
In earlier comments to a House Appropriations panel in Washington, LaHood advised drivers to "stop driving it and take it to a Toyota dealer."
"What I said in there was obviously a misstatement," LaHood told reporters. "If you own one of these cars, take it to the dealer. If you are in doubt, take it to the dealer and have them fix it."

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--Editors: Joe Richter, Larry Liebert

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Toyota Told by Japan to Investigate Prius Amid Brake Complaints
2010-02-03 09:51:33.594 GMT

By Makiko Kitamura and Tetsuya Komatsu

Feb. 3 (Bloomberg) -- Toyota Motor Corp. has been ordered by Japan's government to investigate brake-related problems with its latest Prius hybrid, adding to company woes following the recall of millions of vehicles in overseas markets.

The Transport Ministry has received 14 complaints about the model's brakes since it was introduced in May, said Masaya Ota, an official in the ministry's recall division. The ministry contacted the company about the issue in August, said Shunsuke Miyaoka, who works in the same division.

An investigation into the Prius could undermine Toyota's domestic sales after recalls of at least 7.6 million vehicles outside Japan, including a recall that forced the company to suspend the U.S. sale and production of eight models. The Prius was Japan's top-selling vehicle model last year.

"The Prius is Toyota's flagship model, its key to the future," said Ashvin Chotai, managing director of London-based Intelligence Automotive Asia Ltd., a consulting company. "If that model gets tainted, that would suggest Toyota's crisis has moved on to the next level."

Toyota spokeswoman Ririko Takeuchi said the government had ordered the investigation. She declined to say when officials contacted the company. The latest Prius model isn't included in overseas recalls for repairs related to unintended acceleration.

Other Carmakers

The Transport Ministry has asked other carmakers to investigate problems and complaints it received about acceleration and brake problems, Ota said. "'This is something we do on a regular basis."

The 14 complaints in Japan may not be statistically significant, Intelligence Automotive's Chotai said. The Transport Ministry in December reported a total of 13 accidents that occurred in 2008 and 2009 related to gas-pedal and brake issues in vehicles from carmakers including Mitsubishi Motors

Corp., Mazda Motor Corp., Daihatsu Motor Co. and Nissan Motor Co.
“Maybe we need more evidence,” Chotai said.
Toyota shares fell 5.7 percent to 3,400 yen in Tokyo. The carmaker’s U.S. sales in January dropped 16 percent from a year earlier to a 10-year low.
Separately, the latest Prius has drawn more than 100 complaints related to brakes in the U.S., Kyodo News reported. The report, which cited the U.S. National Highway Traffic Safety Administration, didn’t provide details about the complaints.
Takanori Yokoi, a spokesman for Toyota in Tokyo, said he couldn’t immediately confirm or deny the report when reached by phone.
Karen Aldana, a spokeswoman for the U.S. safety agency, didn’t return a call to her mobile phone or respond to an e-mail message sent after normal business hours.
Denso Corp., a Japanese auto-parts maker, doesn’t make the electronic control systems related to the complaints about the Prius being reported in Japan, said spokesman Goro Kanemasu. He declined to name which models Denso’s electronic throttle control system is used in.

--With assistance from Angela Greiling Keane in Washington.
Editors: Patrick Harrington, Terje Langeland

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Toyota's U.S. Sales Decline Signals 'Uphill Battle' (Update1)
2010-02-03 03:05:24.459 GMT

(Adds Kelley Blue Book survey in ninth paragraph.)

By Alan Ohnsman and Keith Naughton
Feb. 3 (Bloomberg) -- Toyota Motor Corp.'s U.S. sales slid to a 10-year low in January as the company's worst-ever recall crisis took its most popular models off the market and made drivers wary.

The decline snapped three months of advances as the company couldn't take advantage of the U.S. auto market's longest streak of gains since 2006. The Toyota City, Japan-based carmaker, which has recalled more than 7.6 million vehicles worldwide for defects linked to sudden acceleration, faces U.S. congressional hearings and a rising number of product liability lawsuits.

"This is going to be a tough, uphill battle for Toyota," said Jesse Toprak, vice president of industry trends at researcher TrueCar.com in Santa Monica, California. "In the next few months, it is going to be a challenge for Toyota to convince consumers to consider their cars."

Toyota shares declined as much as 4 percent in Tokyo trading. The company's U.S. sales last month dropped 16 percent from a year earlier while Hyundai Motor Co.'s sales rose 24 percent, Nissan Motor Co.'s gained 16 percent, General Motors Co.'s climbed 14 percent and Ford Motor Co.'s advanced 25 percent. Honda Motor Co.'s sales fell 5 percent.

U.S. industry sales rose 6.3 percent to 698,378 cars and trucks, equal to an annualized rate of 10.8 million light vehicles, according to researcher Autodata Corp. That beat the average estimate of 10.5 million by eight analysts surveyed by Bloomberg.

Asian Brands Lose Share

Toyota fell 3.7 percent to 3,470 yen as of the 11 a.m. trading break in Tokyo. The stock has declined 17 percent since Jan. 21, when the company recalled 2.3 million U.S. vehicles for a gas-pedal defect linked to unintended acceleration.

The carmaker's sales drop fueled the first U.S. market-share decline for Asian brands since July. Japanese and South Korean brands accounted for a combined 45.7 percent share of U.S. sales last month, down from 49.5 percent, Autodata said. The combined market share for GM, Ford and Chrysler LLC rose to 45.1 percent from 42.5 percent.

Toyota's sales slumped to 98,796 vehicles from 117,287, the lowest monthly total for the automaker since January 1999, based on data compiled by Bloomberg. Ford said it outsold Toyota for the first time since June 2009.

Buyers' consideration of Toyota vehicles has dropped "dramatically" since last month's recall, according to Kelley Blue Book, an automotive pricing and data service.

'Difficult to Quantify'

"More than 20 percent of those who said they were considering a Toyota prior to the recall now say they no longer are considering the brand for their next vehicle purchase," Irvine, California-based Kelley Blue Book said in an e-mailed statement late yesterday.

Toyota suspended U.S. sales of eight models on Jan. 26 while fixing the accelerator-pedal flaw, which meant customers couldn't purchase models such as the Camry sedan and Corolla compact for the last five days of the month. Those were the top-selling cars in the U.S. last year.

"It's very difficult to quantify the impact on sales," Bob Carter, group vice president for Toyota's U.S. sales, said in a conference call yesterday. The month's results were 20,000 units, or 23 percent less than Toyota initially expected, he said. The company hasn't yet adjusted its sales goal for the year, he said.

Market Share

IHS Global Insight forecasts Toyota's U.S. market share will fall to 16.6 percent this year from 17 percent in 2009 and continue to decline in 2011, analyst Rebecca Lindland said.

Before the latest recall, Toyota had already begun to lose customers to Hyundai, Kia Motors Corp., Honda and Ford, she said. "Smaller companies were already chipping away at Toyota, and now I see them having an even more difficult time getting conquest sales from other automakers and attracting new buyers," said Lindland, who is based in Lexington, Massachusetts. "Trying to convince people driving something else to buy a Toyota used to be easy. That game has changed."

While Honda's U.S. sales fell last month, some models that compete directly with those Toyota couldn't sell posted gains, including Accord and Civic cars. The Tokyo-based company hasn't followed GM, Ford and Hyundai in creating incentive programs that target Toyota buyers.

Nissan, based in Yokohama, Japan, also decided against doing that, Al Castignetti, vice president of U.S. Nissan brand sales, said in an interview.

'All Brethren'

"We're not going to do anything on customer cash to target Toyota customers," Castignetti said. "We're all competitors, but we're all brethren in this, as well."

Sales of Nissan's Altima, a Camry competitor, jumped 32 percent last month while demand for its Sentra compact, a

Corolla rival, rose 41 percent.
"We can't really tell what impact it's having on consumers at this point," Castignetti said of Toyota's recalls. "Toyota tends to react very quickly, and I think they'll minimize the damage.
The eight models Toyota was unable to sell make up about 60 percent of its volume, Carter said. Vehicles still on sale include the Prius hybrid, Sienna minivan and Yaris subcompact, as well as its Lexus and Scion models.
New-vehicle sales tumbled 22 percent last weekend at El Monte, California-based Longo Toyota, the brand's largest U.S. dealership, President Greg Penske said.

'Trust Toyota'

"We have to trust Toyota that the fix is the right thing," he said. "Toyota has been our partner for a long time, and they've never let us down."
Seoul-based Hyundai, which plans to deliver a revamped Sonata sedan to dealers this month, said it more than doubled sales last month for both its Elantra compact, a rival of the Corolla, and its Tucson sport-utility vehicle, which vies with Toyota's RAV4 SUV, a model that was also temporarily suspended.
U.S.-based automakers' results were measured against the average estimates of five analysts surveyed by Bloomberg, while the Asian brands were compared with an Edmunds.com projection. The estimates are based on daily selling rates. January had 24 sales days, 2 fewer than in 2009. Without the adjustment, results reported by some automakers are about 8 percent lower.

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--With assistance from Jeff Green, Doron Levin, Mike Ramsey, Katie Merx and Bill Koenig in Southfield, Michigan. Editors: Patrick Harrington, Terje Langeland

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Honda Raises Profit Forecast on Weaker Yen, Cost Cuts (Update2)
2010-02-03 07:59:32.95 GMT

(Adds 2010 U.S. sales outlook in 10th paragraph.)

By Makiko Kitamura and Tetsuya Komatsu
Feb. 3 (Bloomberg) -- Honda Motor Co., Japan's second-largest carmaker, raised its full-year profit forecast as it cut spending on research and the yen strengthened less against the dollar than the company predicted.
Honda expects net income of 265 billion yen ($2.9 billion) in the year ending March 31, compared with an earlier forecast of 155 billion yen, the Tokyo-based company said in a statement today. Third-quarter profit totaled 135 billion yen, exceeding analyst estimates of 80 billion yen.
The carmaker raised its profit forecast for the third time this fiscal year, saying the yen may average 92 against the dollar for the year ending March 31, compared with an earlier forecast of 90 yen. Honda also plans 45 billion yen in combined additional cuts to capital and research spending, it said in a statement today.
"Honda was a bit conservative," said Yoshihiro Okumura, who helps oversee the equivalent of $365 million at Chiba-gin Asset Management Co. in Tokyo. "The change in the forecast reflects recent trends in the foreign exchange rate."
A weaker yen against the dollar raises the repatriated value of Honda's sales in the U.S. The Japanese currency has averaged 90 against the dollar so far in the fiscal second half that began Oct. 1, compared with the company's previous forecast of 85 yen.
The carmaker's operating profit from financial services also rose to 53.6 billion yen in the third quarter from 9.4 billion yen a year earlier.

Vehicle Sales

Honda rose 2.3 percent to close at 3,140 yen in Tokyo trading before the earnings announcement.
The company lowered its estimate for North American vehicle

sales in the year ending March 31 to 1.29 million from 1.305 million, even as Honda may benefit from Toyota Motor Corp.'s recalls of at least 7.6 million vehicles globally to repair defects linked to cases of sudden acceleration.

"It's likely that Toyota's sales will swing to other Asian carmakers like Honda because of the recall," said Mitsuru Kurokawa, an analyst at consulting company IHS Global Insight in Tokyo.

For the current calendar year, Honda aims to boost U.S. sales to 1.23 million vehicles from 1.15 million in 2009, Executive Vice President Koichi Kondo told reporters in Tokyo.

The carmaker's sales in the nation rose 2.9 percent in January, adjusted for two fewer sales days compared with last year, while Toyota's adjusted sales dropped 8.7 percent.

Honda raised its full-year forecast for Asian sales outside Japan to 950,000 vehicles from 910,000 and left its global sales forecast unchanged at 3.4 million units.

Toyota's Recalls

Toyota, the world's biggest carmaker, has suspended U.S. sales and production of eight recalled models, including its top-selling Camry and Corolla cars. Production will resume Feb. 8, according to the company.

Honda announced its biggest recall in seven years last week, calling back 646,000 City, Fit and Jazz cars globally to fix faulty power window switches that could short-circuit and cause fires. Honda won't need to suspend sales or production because models now being built and sold already have an improved power window switch design that prevents short-circuiting, spokesman Yoshiyuki Kuroda said.

Honda will unveil a new gasoline-electric hybrid CR-Z sports car in Japan on Feb. 25 and a hybrid version of its Fit compact later this year.

Toyota reports third-quarter earnings tomorrow.

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--Editors: Terje Langeland, Ian Rowley

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2010-02-03 09:51:33.593 GMT

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An investigation into the Prius could undermine Toyota's domestic sales after recalls of at least 7.6 million vehicles outside Japan, including a recall that forced the company to suspend the U.S. sale and production of eight models. The Prius was Japan's top-selling vehicle model last year.

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Other Carmakers

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Karen Aldana, a spokeswoman for the U.S. safety agency, didn’t return a call to her mobile phone or respond to an e-mail message sent after normal business hours.
Denso Corp., a Japanese auto-parts maker, doesn’t make the electronic control systems related to the complaints about the Prius being reported in Japan, said spokesman Goro Kanemasu. He declined to name which models Denso’s electronic throttle control system is used in.

--With assistance from Angela Greiling Keane in Washington.
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+ Nader Accuses Toyota of 'Unseemly Coverup' in Vehicle Recalls

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Nader Accuses Toyota of 'Unseemly Coverup' in Vehicle Recalls
2010-02-04 21:50:02.754 GMT

(For more coverage of Toyota's recalls, see {EXT2 <GO>})

By Angela Greiling Keane
Feb. 5 (Bloomberg) -- Toyota Motor Corp. is guilty of an "unseemly coverup" in dealing with reports of dangerous sudden acceleration by some of its vehicles, consumer advocate Ralph Nader said.
"Toyota dropped the ball -- too little, too late," Nader, who founded groups including Public Citizen to push for strong auto-safety regulation, said in an interview yesterday. "It was an unseemly coverup."
Toyota has known about sudden acceleration complaints since the mid-1980s and should have acted sooner, said Nader, 75, who slammed the auto industry's safety record in his 1965 book, "Unsafe at Any Speed."
Nader, who said he doesn't own a car, also blamed the National Highway Traffic Safety Administration for lax oversight and said presidents dating back to Ronald Reagan haven't adequately funded the regulator.
"Toyota dropped the ball, and NHTSA allowed it to drop the ball and did not protect the American public from a very frightening problem," said Nader, who is based in Washington.
Ed Lewis, a Toyota spokesman in Washington, declined to respond directly to Nader's coverup charge, saying in an e-mail he would "rather take the high road and focus on what we're doing to remedy the situation."

Prius Brakes

"Obviously, our first priority had to be to find the right solution for our customers," Lewis said in an earlier e-mail in response to Nader's comments. "Now that we have done that, we are focused on making this recall as simple and trouble-free as possible for our customers. And, we are working night and day with our dealers to get that done."
Nader commented after the U.S. said yesterday it has opened

an investigation into Toyota's Prius hybrid cars for reported brake defects. Toyota, the world's largest automaker, has already recalled almost 8 million vehicles worldwide for defects linked to sudden acceleration.

Toyota's president of U.S. sales, Jim Lentz, this week told reporters on a conference call that he thought the company dealt with the acceleration problem promptly.

"If you look at this whole issue of unintended acceleration, it's a very complex issue," he said. "It's been an industrywide concern."

President Barack Obama on Feb. 1 proposed cutting discretionary spending for NHTSA, which is part of the Transportation Department, by 4.9 percent to $136 million in his proposed 2011 federal budget. Obama should increase the agency's budget, Nader said.

Get the Fix

"They're not supported by the White House over the years," he said. "They didn't have enough data, enough analysis to catch this problem."

Sudden acceleration reports aren't new, Nader said, citing a 1971 General Motors Co. recall involving 6.68 million vehicles for engine-mount defects linked to the phenomenon.

"Over the years, most manufacturers have had problems with sudden acceleration," Nader said.

Toyota has shipped steel shims to its dealers as a fix for the gas pedals on 2.3 million cars and trucks in the U.S. Nader urged owners to take their vehicles in for the repair "even if they haven't gotten the certified letter."

"Mentally, they should prepare themselves to brake and put the car in neutral in case they have a sudden-acceleration problem," he said. "Fortunately in all the millions of cars, it doesn't occur very often."

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--Editors: Larry Liebert, Joe Winski

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Toyota Faces at Least 29 Class-Action Suits Over Acceleration
2010-02-04 20:12:22.929 GMT

By Margaret Cronin Fisk
Feb. 4 (Bloomberg) -- Toyota Motor Corp., the world's largest automaker, faces at least 29 lawsuits filed on behalf of customers in the U.S. and Canada seeking a range of damages from loss of cars' value to a return of profits.
The class-action suits, in U.S. state and federal courts and Canadadian provinces, demand compensation for flaws including those disclosed in Toyota's recalls over sudden acceleration of its vehicles. More than half the cases go beyond the floor mats and pedals the company cited.
Suits include Texas and South Carolina cases limited to customers in those states, and California complaints aimed at bringing in all Toyota owners in the U.S. Eventually the U.S. suits will be combined before one federal judge for pretrial evidence-gathering and rulings, said Michael Louis Kelly, a lawyer who filed two proposed national cases in California.
"Either Toyota will ask for it or we will," Kelly said today in an interview. Combining the lawsuits in a multidistrict litigation would "streamline pretrial matters" for both sides, he said.
Mike Michels, a Toyota spokesman, declined to comment for this story.
The number of cases has grown daily in the past week. The company also faces at least 10 lawsuits brought by individuals claiming deaths or injuries caused by uncontrollable acceleration of vehicles.
The cases probably will be combined in a federal court in Los Angeles near Toyota's U.S. sales headquarters in Torrance, California, Kelly said. At least eight class actions are in that state.

Accelerator Pedals

The suits were spurred by multiple recalls by Toyota and its Jan. 26 decision to stop U.S. production and sales of eight models to fix defective accelerator pedals. Almost 8 million

Toyota vehicles have been recalled worldwide.
Many of those suing the company are seeking damages for buyers of Toyota models that aren't part of the recall. The South Carolina suit was filed on behalf of purchasers of any Toyota vehicle containing the electronic throttle control system known as the ETCS-i, dating to 1998.
Plaintiffs are asking for "restitution and disgorgement" of profits and punitive damages, as well as reimbursements for any costs incurred by Toyota owners.
At least nine other U.S. class actions allege a defect in the electronic control system, contending that replacing floor mats and accelerator pedals isn't treating the root of the defect.
If plaintiffs' lawyers can prove this allegation, it will be expensive for Toyota, said Kelly, of the law firm Kirtland & Packard LLP in El Segundo, California.
"If there's a problem other than the carpet or the pedal, you have to be talking billions of dollars," he said.
The South Carolina case is Wooten v. Toyota Motor North America Inc., 3:10-cv-00229, U.S. District Court, District of South Carolina (Columbia). The California cases include Hauter v. Toyota Motor Sales USA Inc., 10-cv-105, U.S. District Court, Central District of California (Santa Ana).

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--With assistance from Alan Ohnsman in Los Angeles. Editors: Charles Carter, Peter Blumberg

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Toyota Pedal Recall May Spur U.S. to Require New Brake Systems
2010-02-04 21:28:28.304 GMT

(Toyota recall stories can be found at {EXT2 <GO>}.)

By Jeff Green and Margaret Cronin Fisk
Feb. 5 (Bloomberg) -- Toyota Motor Corp.'s U.S. recall of 5.6 million vehicles for possible unintended acceleration may spur regulators to require braking technology that prevents such sudden bursts of speed in all future vehicles.

So-called brake override systems, which disengage the engine when the brake and throttle are both depressed, are now on many newer autos that use computers instead of cables to control acceleration. Toyota said last month it is adding the equipment on most models, in response to a Sept. 29 recall.

"There's no question," said Joan Claybrook, a safety advocate and former director of the National Highway Traffic Safety Administration. "We are going to see a brake override system requirement in response to this."

New regulations would build on the government's history of expanding its safety rules in response to accidents that expose dangerous vehicle defects. Upgrades such as improved fuel tanks, new gearshift designs and air-bag warnings all flowed from federal mandates to automakers since the 1970s.

"The most likely outcome of this will be a regulatory catharsis," said Brian Johnson, a Barclays Plc analyst based in Chicago. "There will probably be some sort of fail-safe system against unintended acceleration."

Cost Estimate

Requiring automakers to upgrade braking software may cost $25 to $50 on each vehicle, Johnson said. That expense would rise to a range of $50 to $150 should regulators compel installation of new technology, he said.

A NHTSA spokeswoman, Karen Aldana, didn't respond to a phone call or e-mail seeking comment.

Brake override systems work in tandem with the electronic throttle control technology that was unveiled in the late 1980s

and is becoming an industry standard as automakers rush to meet safety rules taking effect in 2012.
Electronic throttle controls use computer signals, not the mechanical action of cables attached to the accelerator pedal, to adjust a car's speed. In a conventional auto, releasing the pedal eases the cable pressure, closing the throttle. In vehicles with an electronic control, a brake override unit would cut power to the wheels if the throttle is stuck open.
General Motors Co. and Ford Motor Co. now have brake override units on some models, while Honda Motor Co. said it doesn't have the technology. Chrysler Group LLC said it has override controls on all autos with electronic throttle systems.

Toyota's Response

Toyota said Jan. 11 it would install the technology to cover most of its lineup after a 2009 recall. Hyundai Motor Co. and Nissan Motor Co. said they have brake override systems, as do luxury brands such as Daimler AG's Mercedes-Benz, which put the units on autos with electronic throttle control.
"It would make sense to require a brake override," said Michael Omotoso, a powertrain analyst at J.D. Power & Associates in Troy, Michigan. "I would be pretty surprised if it didn't happen soon."
Toyota's most-recent recall began Jan. 21, covering about 2.57 million vehicles in the U.S. and Canada to fix pedals that may cause the throttle to stick in an open position. The Toyota City, Japan-based automaker halted sales of eight models and shut five North American factories while it rolls out a repair.
That followed a separate recall of 5.35 million Toyotas after floor mats in some models interfered with the accelerator pedal and kept the throttle propped open.

Pending Lawsuits

The world's largest automaker faces at least 29 lawsuits seeking class action status in the U.S. and Canada, with 17 alleging defects in electronic throttle control systems. At least 10 lawsuits have been filed in the U.S. claiming deaths and injuries caused by sudden acceleration.
U.S. Transportation Secretary Ray LaHood said this week the government is investigating whether some sudden speedups can be traced to electronic throttle control systems. Toyota said it has found no unintended-acceleration cases from the technology.
"I'm not sure if there are electronic gremlins in these cars that are making them malfunction," Bill Visnic, a senior editor for auto researcher Edmunds.com in Weirton, West Virginia. "It's not impossible, but it's improbable. But, either way, the brake system would prevent it."
After introducing electronic throttle control, Toyota also had a cable on the accelerator pedal as a backup from 1998 to 2002, when it determined the mechanical link was no longer needed, said Brian Lyons, a company spokesman.

Override System

Had Toyota added a backup system such as a brake override unit to cut power to the wheels, it could have kept most cars from losing control in any unintended acceleration, said attorney Robert Hilliard, who filed a suit on Jan. 29 seeking class action status in Corpus Christi, Texas. He likened the approach to a sky diver wearing an emergency parachute.

“Let’s say your first chute doesn’t open,” Hilliard said. “The safety chute doesn’t stop the problem, it just prevents the consequences.”

Antony Anderson, a U.K.-based electrical engineering consultant who has testified as an expert witness for plaintiffs in lawsuits, said any federal rule for brake override systems should ensure that the units aren’t run by the computer controlling the electronic throttle system.

A case of sudden acceleration may be caused by electronic interference, so brakes guided by the same computer might not work, Anderson said.

“If the electronics have malfunctioned, the software is in disarray,” he said. “It won’t accept an additional command.”

Regulatory Legacy

Regulatory changes spurred a number of the features now taken for granted in modern autos, said John Wolkonowicz, an analyst at IHS Global Insight in Lexington, Massachusetts.

Stronger fuel tanks, for example, emerged from the 1978 recall of about 1.5 million Ford Pintos on concern that rear-end collisions could spill gasoline and ignite fires, Wolkonowicz said.

So-called shift locks, which require drivers to place a foot on the brake before putting a car with automatic transmission in gear, came in response to sudden-acceleration cases involving Volkswagen AG’s Audi, Wolkonowicz said. Recalls of Audi 5000 sedans from the 1978 through 1986 model years began in 1982 after more than 1,000 complaints.

While NHTSA closed its Audi investigation in 1989, the class action in that case is still pending in Cook County, Illinois.

More-recent automotive innovations include monitors to alert motorists to low tire pressure, Wolkonowicz said. Those devices became required after 271 deaths attributed to rollovers of Ford Explorer sport-utility vehicles, which spurred recalls of Firestone tires in 2000 and 2001. Worn, underinflated tires were cited for many of the Explorer crashes.

What Next?

Claybrook, the NHTSA chief during the Pinto recall, said Toyota’s case may prompt the U.S. to consider criminal penalties for companies that don’t react quickly to safety flaws and boost fines for some infractions to $100 million or more from a cap of $16.4 million.

Another likely quick fix is a warning label telling drivers how to stop a vehicle that accelerates unintentionally, said Omotoso, the J.D. Power analyst. Similar advisories were placed in cars after air bags were blamed for deaths of front-seat passengers, he said.

“More and more of the direct control of the car is being taken away from the driver, and there is this growing sense of helplessness in the face of technology that’s supposed to help us,” Omotoso said. “You just have to hope it all works.”

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--With assistance from Keith Naughton, Mike Ramsey and Katie Merx in Southfield, Michigan, and Alan Ohnsman in Los Angeles.
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They've started to catch up, especially with Jim Lentz [Toyota's president of US sales] going on the Today Show. But he should've done that a week earlier. ...
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Hello,

On February 4, 2010, the owner of a 2005 Tacomareports a situation in which the vehicle appears to accelerate “suddenly” when overtaking a slower vehicle. The owner notes that the floor mats are properly secured, and indicates it feels like the cruise congrol is engaged at full throttle when this symptom occurs. The owner also states trying to slow the car using the brake. In response, the owner of a 2007 Tacomareports that the trucks engine appears to “rev” when depressing the brake.

Recent Post (#46)
“I have a '05 Tacomaand I've had this acceleration issue happen to me twice already. It usually happens when I accelerate suddenly to try and overtake a slow vehicle. It seems to engage the cruise control at full throttle or at least that's what it felt like. When it happened I stepped on the brake with my left foot and then try and kick down on the accelerator to try and release it. I don't know if this is attributable to the mat issue but my mats are securely fastened.”
ToyotaNation.com, February 3, 2010, author: sixgears

Direct Link to ToyotaNation.com: http://www.toyotanation.com/forum/showthread.php?t=253336&page=4

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Toyota Faces at Least 30 Lawsuits Over Acceleration (Update2)
2010-02-05 18:00:12.398 GMT

(Adds new case in headline and first, seventh and 12th paragraphs.)

By Margaret Cronin Fisk
Feb. 5 (Bloomberg) -- Toyota Motor Corp., the world's largest automaker, faces at least 30 lawsuits filed on behalf of customers in the U.S. and Canada seeking a range of damages from loss of cars' value to a return of profits.
The class-action suits, in U.S. state and federal courts and Canadian provinces, demand compensation for flaws including those disclosed in Toyota's recalls over sudden acceleration of its vehicles. More than half the cases go beyond the floor mats and pedals cited by the company.
Suits include Texas and South Carolina cases limited to customers in those states, and California complaints aimed at bringing in all Toyota owners in the U.S. Eventually the U.S. suits will be combined before one federal judge for pretrial evidence-gathering and rulings, said Michael Louis Kelly, a lawyer who filed two proposed national cases in California.
"Either Toyota will ask for it or we will," Kelly said yesterday in an interview. Combining the lawsuits in a multidistrict litigation would "streamline pretrial matters" for both sides, he said.
Mike Michels, a Toyota spokesman, declined to comment for this story. Ririko Takeuchi, a Toyota spokeswoman in Tokyo, said she is not aware of any lawsuits against the company in Japan citing defects in its cars when contacted by phone today.

Growing Cases

The number of cases has grown daily in the past week. The company also faces at least 10 lawsuits brought by individuals claiming deaths or injuries caused by uncontrollable acceleration of vehicles.
The cases probably will be combined in a federal court in Los Angeles near Toyota's U.S. sales headquarters in Torrance,

California, Kelly said. At least nine class actions are in that state, including one filed yesterday in Los Angeles.
Toyota shares rose 1.1 percent to close at 3,315 yen in Tokyo.
The suits were spurred by multiple recalls by Toyota and its Jan. 26 decision to stop U.S. production and sales of eight models to fix defective accelerator pedals. Almost 8 million Toyota vehicles have been recalled worldwide.
Many of those suing the company are seeking damages for buyers of Toyota models that aren't part of the recall. The South Carolina suit was filed on behalf of purchasers of any Toyota vehicle containing the electronic throttle control system known as the ETCS-i, dating to 1998.

'Restitution, Disgorgement'

Plaintiffs are asking for "restitution and disgorgement" of profits and punitive damages, as well as reimbursements for any costs incurred by Toyota owners.
At least 10 other U.S. class actions allege a defect in the electronic control system, contending that replacing floor mats and accelerator pedals isn't treating the root of the defect.
If plaintiffs' lawyers can prove this allegation, it will be expensive for Toyota, said Kelly, of the law firm Kirtland & Packard LLP in El Segundo, California.
"If there's a problem other than the carpet or the pedal, you have to be talking billions of dollars," he said.
The South Carolina case is Wooten v. Toyota Motor North America Inc., 3:10-cv-00229, U.S. District Court, District of South Carolina (Columbia). The California cases include Hauter v. Toyota Motor Sales USA Inc., 10-cv-105, U.S. District Court, Central District of California (Santa Ana).

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Jim Lentz, president and CEO of Toyota Motor Sales, USA, Inc., addressed concerns in newspaper ads taken out following the recall announcement. ...
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| Bcc: [ - ] | . | |
| Subject: | RE: CATD meeting. | |

Chris - I have begun sending companies a list of questions on ETC and EMC prior to holding meetings/discussions. I don't think I sent them to you yet, so I have attached them. Some of the material has already been provided by Toyota (e.g., ETC use matrix) and some of the other material has been discussed at a higher level. I think it would be helpful to have another meeting on ETC and EMC at a later date, but in the interim, please let me know how soon the company can prepare a written response to these questions (and the additional questions below). To the extent that the information is included in the material we reviewed last week, simply refer to the relevant slides/pages.

Also, I added some more questions to the list based on a 1999 Siemens paper (attached). Rather than sending a new list of questions, please review the attached paper and be prepared to discuss/address the basic issues raised in the paper regarding engine runaway in ETC vehicles, with focus on the following issues:

- The FMEA and fault tree approaches discussed in the paper
- The faults considered (sensors, actuator, ECU)
- The fault effects considered, with particular attention to accelerator drift and engine runaway
- Discussion of specific faults said to pose risk of engine runaway (e.g., faulty torque requests via the CAN bus, common A/D convertor error, common processor error) and the design countermeasures for each
- All system diagnostic capabilities for determining if an event may have been caused by any of the issues identified in the paper has occurred

Thanks,
Jeff

-----Original Message-----
From: Quandt, Jeff (NHTSA)
Sent: Thu 1/21/2010 10:19 AM
To: 'CSantucci@tma.toyota.com'
Cc: Yon, Scott (NHTSA)
Subject: CATD meeting

Chris - As I mentioned in my phone message to you this morning, here is a rough agenda of topics we would like to discuss, information we would like to see and review and parts we would like to see when we meet at the Central Atlantic training center. Please confirm that Toyota can meet on Wed and cover the requested agenda items.

1. Accelerator Pedal assembly return part testing and forensic analysis - (see attached)
2. Pedal assembly data - Please bring the following information:

a. Baseline hysteresis (force-displacement on apply & release) curves for all CTS pedal assemblies and all other hysteresis curves generated from testing done to assess root cause of high resistance "sticking" condition (this should include overlaid curves of baseline part and part with condition (as shown at meeting Tues for Aygo vehicle).
b. Information describing test procedure for simulating high humidity condition to produce condensation on friction surface (and any changes to part specification based on lessons learned from subject condition)
c. All material/data that is available regarding the following:

i. The relationship between age and/or pedal cycles and "smoothening" of friction surfaces;

ii. The relationship between "smoothening" and friction for both wet and dry conditions over the full range of pedal stroke;

iii. The relationship between differing amounts of moisture/condensation on the friction over the full range of pedal stroke (for both PPS and PA46);

iv. All Design of Experiment testing to identify contributing factors and assess the influence of each (for both PPS and PA46);

v. Friction as a function of pedal stroke (for PPS, PA46 and POM) for (1) a new/dry part; (2) a used/dry part; (3) a new/wet part; and (4) a used/wet part; and

vi. The amount of friction necessary to cause a "stuck" pedal over the full range of pedal stroke.

d. Old & redesigned versions of CTS pedals for Avalon and Tundra
e. Denso pedal to discuss design for generating friction/feel

2. Electronic throttle control - Review Toyota's electronic throttle control system design, including self-diagnostics, associated DTC's, all FMEA and fault tree analysis related to the ETC system or the accelerator pedal position sensor assembly, throttle body, ECM and associated wiring (this can be limited to conditions related to the potential for unintended acceleration)
3. Electromagnetic compatibility - Review Toyota's general EMC standards/testing and discuss how they are applied to the ETC & cruise/speed control systems specifically.

a. Review Toyota EMC & ETC standards and design strategy
b. Discuss/compare with other EMC standards (e.g., ISO, SAE, peer mfrs)
c. Discuss/compare ETC design, testing with peers
d. Discuss attached article

Please call to discuss and confirm date/logistics.

Thanks,

Jeff

# ETC/EMC Questions For [Mfr name] Discussion

## Electronic Throttle Control

1. Describe [Mfr name] ETC system architectures from initial introduction to date.
2. Provide overview of ETC market penetration from initial use to current % of products sold.
3. Describe [Mfr name]'s processes for ensuring safe operation of "by-wire" systems and how they were applied to ETC.
    a. Identify potential hazards and associated requirements for avoidance
    b. Describe tests relevant to ETC
    c. Describe process for monitoring test and field issues for safety trends
    d. Describe experience with 2.c.
4. Describe [Mfr name]'s process for Risk Analysis/Assessment for "by-wire" systems, with emphasis on potential for unwanted acceleration in ETC equipped systems/vehicles, including:
    a. Description of FMEA approach (include software FMEA);
    b. How risk assessment process is applied to potential for unwanted acceleration in ETC vehicles and how it is translated into engineering requirements; and
    c. Other safety tasks associated with ETC/"by-wire" product development, testing and monitoring (e.g., field experience).
5. Describe the self-checking features of [Mfr name] ETC systems, including:
    a. How they have evolved over time in successive architectures; and
    b. How they may differ between [Mfr name] manufacturers
6. Describe ETC processing diagnostics including range of throttle authority as a function of pedal position.
7. Describe all design countermeasures related to potential for unwanted acceleration (including all related "fail-safe" components or operating modes).
8. Describe all data collection capabilities built into ETC system triggered by unusual events, such as simultaneous application of accelerator and brake pedals, including:
    a. Events and/or sensor inputs that trigger data collection;
    b. Description of data collected & associated time interval;
    c. Description of experience with data collection in lab/test environment; and
    d. Description of experience with data collection for field incidents.
9. Discuss variation between OE's in ETC design/testing
10. Describe [Mfr name]'s experience with investigating unintended acceleration field incidents, including all inspection/test protocols/procedures.

## Electromagnetic Compatibility

1. Describe [Mfr name] design approach for EMC in "by-wire" systems in general, with emphasis on ETC.
2. Describe testing approach for EMC
3. Describe experience with EMC/EMI issues identified in either component or vehicle testing of "by-wire" systems, with emphasis on ETC
4. Describe process for investigating possibility of EMI as an issue in unwanted acceleration incidents
5. Describe experience with EMC/EMI issues indentified in field investigations of "by-wire" systems, with emphasis on ETC and unintended acceleration.
6. Discuss variation between OE's in EMC design/testing (and field experience?)

2/2/2010

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# Electronic Throttle Control – A Dependability Case Study

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**Abstract:** The so-called Electronic Throttle Control unit was a big step towards reducing important parameters like fuel consumption or exhaust emmission. Due to its safety-criticality, a dependability study was initiated by the manufacturer Siemens Automotive. As the most important result, values could be stated for the quantitative estimation of the safety-critical and the availability-relevant cases. The study was based on the existing safety concept, but after this study, a slightly changed system architecture of the ECU was proposed to VDA (Verband der Automobilindustrie), which enhances availability and safety of the ECU significantly, at about the same cost. For this study, a new kind of Markov evaluation method was used, called TEFT (Time-Extended Fault Trees). This was necessary to deal with concepts like multiple faults, faulty states, and time. In this paper, the questions raised by the Electronic Throttle Control system are described, together with our way to solve these problems.

**Key Words:** Dependability, Availability, Safety, Markovian methods, TEFT (Time-Extended Fault Trees), Cars, Powertrain, ECU (Electronic Control Unit), Electronic Throttle Control (ETC)

## 1 Problem Description

Higher requests caused by public and by law, to improve fuel consumption, exhaust emmission, or comfort, forced the development of the Electronic Throttle Control (ETC) system. This solution removes the traditional Bowden cable, and uses the torque request instead as relevant parameter [see Fig. 1]. The torque request can be generated by the driver or by car comfort systems.

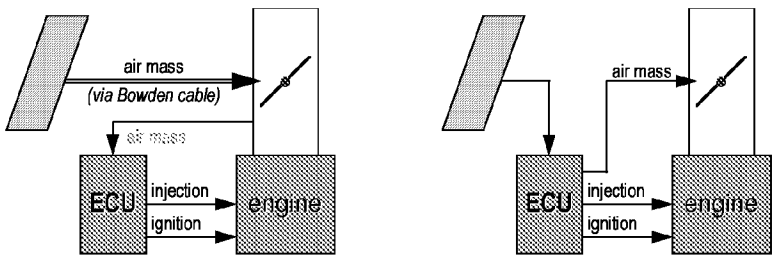


*Fig. 1: Traditional Bowden cable solution versus Electronic Throttle Control*

This approach makes it possible to give the car engine in every moment exactly the necessary mixture of air, fuel, and ignition angle, in contrast to the Bowden cable solution, in which fuel and ignition angle try to follow the air mass provided by the throttle. Due to this exact and consistent engine control, ETC reduces fuel consumption and reaches low-emission requirements. In addition, this concept eases the integration of comfort functions like cruise control or anti-ice measures, and environmental measures, e.g. heating the catalyst.

The ETC unit, however, is considered to be safety-critical. Due to this, a dependability study was initiated by the ETC manufacturer Siemens AG, section Automotive. Goals were to scrutinise safety and availability of the considered Electronic Throttle Control system solutions, in order to detect weaknesses and to select the best architecture. The considered architectures were compared to the existing ETC system proposal. With our approach, it was possible

- to make quantitative statements about the safety and availability of the system, also considering degrading states,
- to compare the considered architectures quantitatively,
- to detect weaknesses of the system already in the design phase,
- to give a base for system tests.

## 2 Considered Faults

As a first step, possible faults and their system interference were analysed by a FMEA (Failure Mode and Effects Analysis, [3]). The fault sources were roughly structured as faults appearing in sensors, actuators, and ECU (Electronic Control Unit). In the next section, we will highlight the differences in the structure of the faults. By using our Markovian method TEFT, it became easier to describe the influence of any faults on the system behavior, also integrating system states and time.

### 2.1 Sensor Faults

From the beginning, the pedal sensor was considered to be safety-critical. Due to this, the sensors generally are built with redundancy, to be able to detect and to mask appearing faults. Note that common-mode failures like a mechanical sensor break has the same effect as they have at Bowden cables, namely stuck at a random sensor value – e.g. at highest value! The measures to avoid faults in the A/D converters were not clear at the project beginning: the standard architecture only checks the A/D converters regularly, in the other architectures we also considered alternatives with redundant components.

Other sensors – like the oil temperature sensor – were not considered safety-critical. Here, the goal of this study was to check the plausibility of these assumptions.

Other "sensor" signals come via the CAN bus. These signals were also considered, and their inflnence on the system behavior appeared as being under-estimated.

### 2.2 Actuator Faults

Actuators do directly influence the engine behavior. Examples are ignition angle and fuel injection mass. The throttle seemed to be most significant: Here, both actuators faults *and* sensor faults may appear, and this device is critical due to high temperature or ice.

Actuator faults have in common, that they are rather an availability problem than safety-critical: They rather *decrease* the engine performance than increasing it.

### 2.3 Faults of the Electronic Control Unit (ECU)

The remaining faults appear in the ECU: Examples are processor faults, computing faults caused by hardware defects, or driver faults. These faults cause random values. Some of these faults are transient ones, so measures (like plausibilty checks) can be taken to detect and possibly mask them.

In the ECU, the most failure-avoiding concepts of the ETC system are found. These will be considered next.

## 3 Monitoring Concepts

To make sure that the system is functioning correctly also in case of faults, several checking strategies were designed. The overall goal was to discover as many faults as possible and to trigger an adequate reaction, in order to avoid critical states. Particularly the *runaway* case, i.e. undesired high engine performance, has to be avoided.

To get the desired torque (performance) the ECU controls the parameters *air mass, fuel mass, ignition angle*. The ECU also controls the checking concepts. Due to this

important role, the main processor is considered to be very important. The software of the ECU was considered as correct, but hardware faults that lead to software errors were taken into account:

– Faults that lead to a partial processor failure.

– Memory faults that influence critical variables.

– I/O errors, e.g. given by the A/D converters.

### 3.1 Processor Monitoring

Processor monitoring are measures that guarantee the correct function of the ECU processors. Examples are watchdog-timers. Due to a two-processor concept, each ECU processor can be checked by the other. Implemented *function tests* are:

- Instruction set tests execute representative instruction sequences and check the result.
- Memory tests detect stuck-at faults in the processor memory.
- Test computings check the complete function of a software part, by executing tests and comparing the results.

These monitoring-means efficiently check processor functions. Note that most processor faults lead to a total system failure causing an engine halt.

### 3.2 Process Monitoring

Process monitoring deals with the complete function of the ETC system. This is done by executing all safety-critical computation twice. To guarantee the efficiency of this checking strategy, the system has to be redundant ("two channels"). The processors get input values from different sensors, they have own A/D converters, and they use diverse software. By these measures, the appearing of identical faults is avoided.

### 3.3 Plausibility Monitoring and Signal Comparison

All the input values are checked for their plausibility. Short circuits and wire breaks can be discovered as leaving the allowed value range. All safety-critical input values are measured by two sensors, and compared between each other. Sensors often use different transfer functions.

These checks deal with the complete input stream, including sensors, signal wires, and A/D converters.

## 4 Safety Reactions

In order to guarantee the safety of the ETC system, a variety of safety reactions with different severity grades were implemented. The overall goal was to keep the system running as long as possible, e.g. to be able to maintain the heating function of the motor in very cold regions.

Thus, the following *system modes* were implemented (in rising severity):

- **intact:** Although an error occured, the system reacts according to its specification. In this mode, the built-in redundancy avoids a system error. This state is possible as long as no safety-critical fault occors.
- **extended limp home:** In this mode, the car still reacts on the pedal request, but acceleration and torque are reduced, in order to avoid endangering. Thus, the driver is able to react within reasonable time.
- **limp home:** The engine runs a slightly higher idle number-of-revolutions. The goal is to maintain heating and servo functions. Possibly, the car still can be moved.
- **safety stop:** In this mode, the car is stopped. This mode is selected, if no other means are able to maintain safety.

The safety of the system modes increases in the sense, that the probability of a *runaway* decreases. These modes are implemented as *internal states*. The selection of the appropriate state as a fault reaction is an important part of the safety-concept.

For the modeling approach is important, that this system has an *internal memory*. The ECU reaction depends on the current mode, i.e. on the errors that occured in the past.

## 5 Modeling Technique

We took an "extended fault tree approach" to model this system. To motivate this, let us shortly consider some features of standard fault trees:

- Fault trees are a system function that maps sets of component faults onto a specified undesired event.
- *Stochastic dependencies* have to be taken into account explicitly. In many fault tree tools, extensions exist to decribe this. A similar problem is raised by common-mode failures.
- Using highly redundant or re-configurable systems, the fault *sequence* sometimes plays a role: It is a difference, if a component fails first, or its checking function (cf. silent errors!). This kind of faults need the introduction of *states*. Unfortunately, fault trees only consist of (combinatorial) system functions. Furthermore, fault trees are usually defined over sets of faults, not over ordered sets.

- For the system analysis, only *relevant* fault sequences have to be considered. Thus, we have to "cut" the evaluation, when the system is coming into the *safety stop* mode.
- Fault rates may be *state-dependent*. A typical example is warm redundancy.

Note that this obstacles need not cause problems if they are properly taken into account. But on the other hand, for complex systems it can be rather difficult to model this using fault trees. Furthermore, significant errors can be caused by a naive evaluation of redundant systems.

Generalised Stochastic Petri Nets (GSPNs, [1]) are able to cope with the aspects mentioned above. This formalism uses a Petri Net extension for the description of the system failure behavior and its interdependencies, and maps this net to Markov chains for an evaluation, as pointed out in [1]. Thus, concurrent subsystems, synchronisation, system states, and exponential failure rates can be modeled consistently.

### 5.1 The TEFT Approach

For modeling the ETC system, we used our Markovian technique TEFT (Time-Extended Fault Trees). In this approach, the system function is modeled using fault trees, and the temporal behavior is modeled by GSPNs. The state transitions caused by faults are described by fault trees in a functional way. This comprises component faults, distinguished by the state in which they may occur, and the sequential state. TEFT can only be used for acyclic Markov chains. This usage is motivated by the *repairing strategy of car-based systems*: As soon as a fault occurs, cars are expected to be repaired in a way they behave like new ones, i.e. the Markov chain is reset to its initial state.

The evaluation is done by state space exploration: All fault sequences are generated, until a given depth, i.e. number of errors, is reached. This reachability graph with the exponential fault rates of the components, spans a Markov chain. The evaluation of this Markov chain gives the probability of the considered failures. For the performance of the Markov chain solver it is very important, that the reachability graph does not need to be held within memory, thus avoiding the main obstacle of state space explosion. The TEFT evaluation algorithm evaluates 200,000 states within one minute, so that one billion states can be reached within reasonable computing time. Furthermore, time-consuming iteration is avoided. The solution can be given as closed-form expression.

This TEFT approach enables the modeler to put very detailed questions to the system by computing several fault sequences, e.g. to measure how long the system can be used after the first fault.

### 5.2 System Components

The first modeling step is to break the system down into its "components" or "logical blocks". This dissection is determined by the appropriate abstraction level.

The ETC system was broken down into 40 logical blocks, comprising sensors, actuators, processors, and software components. If several logical blocks appear to be a serial system, they can be aggregated to one single logical block, to ease modeling and reduce the evaluation complexity. For each component the failure modes are listed; this work is done on the base of a FMEA. Note that these failure modes only describe the faults of a single component. Here, several failure modes are possible, i.e. the pedal faults can be described in "Runaway/Middle/Idle" rather than in a Boolean "Ok/Faulty". For ETC, we considered 72 failure modes. All the failure modes get (exponential) fault rates, expressed in FIT (Failure In Time, i.e. within $10^9$ hours).

### 5.3 Functional Part

The *fault effects*, i.e. the system behavior that can be watched from outside, were distinguished like this:

- **intact:** The car reacts in the specified way.
- **accelaration drift:** Slight undesired accelerations are noted by the driver. The driver usually is able to compensate this system reactions; they compare to effects like sudden wind changes.
- **limited performance:** The car still reacts on the pedal request, but acceleration and torque are reduced. This reaction appears in system mode *extended limp home*.
- **idle performance:** The engine runs at slightly increased idling speed. This reaction appears in system mode *limp home*.
- **engine stop:** The engine is turned off.
- **runaway:** Undesired high engine performance appears, e.g. high accelerations.

These effects are considered like "top events" in faults trees, i.e. undesired resulting events. Each combination of faults falls into exactly one of these categories; this circumstance can be used for model consistency checks. The modeling has to be done manually. In our case, it required an extensive modeling specification; in this work package, we and our customers had many useful discussions and got a lot of very relevant knowledge that was represented in the resulting model. In the modeling phase, the *multi-value* property of faults and the availability of system *states*, which are implemented in TEFT, turned out to be extremely useful.

### 5.4 Temporal Behavior

Time appeared in two aspects:

1. Some faults were only possible after primary faults, i.e. not in every case and particularly not in the initial state of the system. TEFT describes this by using state-dependend activation conditions.
2. The internal states, i.e. the system memory, have to be modeled. TEFT implements this by a reference on more than one state.

## 6 Model Validation

A big advantage of TEFT is, that every fault sequence and its effect can be listed. This list may be compared to minimal cut sets of fault trees, but representing ordered sets. It can also be sorted by the resulting FIT rate. This representation may remind to a FMECA analysis, but the criticality is not estimated, but computed. (There are also some formal differences, so we will avoid naive comparison.)

This list can also be used as a base for generating test cases: Then, it can be used to compare the real system directly with the modeled one. And it can be compared systematically with every system that leaves a production line.

The length of the list produced by TEFT is not always a pure advantage: Several 100,000s of list entries can no longer handled with standard table calculation tools. Furthermore, to order the results may become difficult. On the other hand, it really reflects the system complexity, and by using postprocessors the handling can become very easy, without losing information. We often do this by writing a "question sensitive postprocessor". This makes the captured results very valuable.

The evaluation speed makes it also possible to vary parameters, and to enable the modeler to study the effect on the complete system. This can be used both for the variation of component values, and for components, whose FIT rates are unknown, e.g. very new components.

## 7 Modeling results

We modeled and evaluated several system alternatives, to study several architectural changes that were in discussion.

All systems have in common, that redundant pedal and throttle sensors are used. System differences are:

- **System #1:** This is a one-processor solution. The processor does process checking. We modeled this system to compare the availability of the redundant solution to a – non-existing – naive one.

- **System #2a:** This system uses two processors, which do processor checks. No process checking is done.
- **System #2b:** The only difference to #2 is the process checking.
- **System #3:** This is a kind of true 2-channel system. The processors do processor checks; in addition the 2nd processor does process checking. Both processors have A/D converters, and the redundant pedal and throttle signals are delivered to both processors.

The following table gives an overview of the main system differences [see Table 1]. Note: "p1" means processor #1.

| | **A/D converters** | **Comparing redundant signals** | **Processor check p1** | **Processor check p2** | **Process checking** |
|---|---|---|---|---|---|
| **System #1** | p1 | p1 | *none* | *irrelevant* | p1 |
| **System #2a** | p1 | p1 | p2 | p1 | *none* |
| **System #2b** | p1 | 2x p1 | p2 | p1 | p1 |
| **System #3** | p1 and p2 | p1 and p2 | p2 | p1 | p2 |

*Table 1: Significant differences of the considered system alternatives*

### 7.1 Single Faults

Since cars are expected to be maintained regularly, single faults are expected to play the most important role in the system. All the systems turned out to be rather similar; exception was the safety-critical *runaway* case. For the *runaway* probability we got the following values [see Fig. 2]:

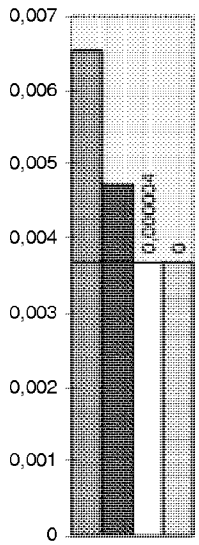


*Fig. 2: Results for single faults (scale is linear, using arbitrary units)*

Much less than 1% of the single faults lead to a *runaway*. The fault cases are:

- The greatest part of the resulting probability is caused by faulty torque requests via the CAN bus. Note that in such cases the ETC system has no possibility to recognize these torque requests as faulty. These requests can be induced by several car components; examples are gear switch signal at automatic transmissions, the so-called deceleration slip control, or faulty reference voltage at the pedal sensor. Moreover, at system #3 these torque requests are the only single faults that lead to the *runaway* case.
- Faults in the A/D converters may cause a runaway, if both pedal sensor values are wrong. This is possible, if both analogue signal from the pedal are multiplexed to a single A/D converter; only at system #3 this fault constellation is avoided. The A/D converter errors can be recognized with a rather high probability, so that the resulting effect is rather small. But this is the only single fault that leads to the *runaway* case system #2b.
- Systems without process check – e.g. system #2b – may trigger the *runaway* case by faulty torque computings.
- Systems without processor check – e.g. system #1 – may trigger the *runaway* case by a processor error.

The modeling result was that only the systems #3 and #2b are safe enough for the real-world implementation. Another result was to have a closer view to the external torque requests: Their plausibility cannot be checked by ETC-immanent means. Due to this, these comfort (!) signals have to be considered as being safety-critical.

### 7.2 Double Faults

The main goal for the double fault examination was to make sure the single fault results. Another goal was to have statements, if it is critical to run the car after some single faults. Fortunately double faults turned out to lead mainly to *idle performance* or *engine stop*. This result emphasises the relevance of single faults as the main safety criterion [see Fig. 3].

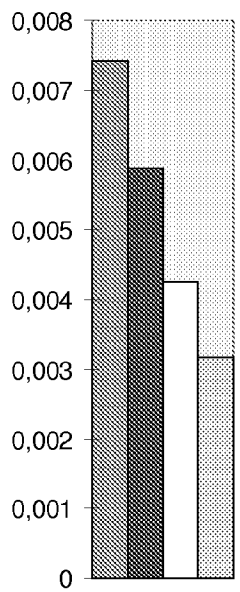


*Fig. 3: Results for double faults (scale is linear, using arbitrary units)*

### 7.3 Common-Mode Failures

Following common-mode failures lead to a *runaway*.

- Common pedal value error, e.g. if the pedal breaks.
- Common throttle value error. But this fault can be recognized by using the air mass sensor, maybe by other engine parameters.
- Common A/D converter error. The most likely cause is a faulty reference voltage.

- Common processor errors. They are mainly caused by software faults.

These failures can be avoided by a diversity approach.

## 8 Conclusions

The TEFT modeling method turned out to be able to scrutinize even complex systems, in order to make the systems safer by targeted architecture optimisation. This guided optimisation is a sound base to design systems efficiently and to save costs for unnecessary components, which can be an additional failure cause.

## References

[1] Ajmone Marsan, M.; Balbo, G.; Conte, G.: "Performance Models of Multiprocessor Systems"; MIT-Press 1986

[2] DIN 25424: "Fehlerbaumanalyse. Methode und Bildzeichen". 1981 (part 1) and 1990 (part 2)

[3] DIN 25448: "Ausfalleffektanalyse (Fehler-Möglichkeits- und -Einfluß-Analyse)". 1990

[4] Jurgen, R.: "Automotive Electronics Handbook". McGraw-Hill 1995

| | | |
|---|---|---|
| From: | <Jeff.Quandt@dot.gov>. | Sent:2/8/2010 8:49 AM. |
| To: [ - ] | <CSantucci@tma.toyota.com>. | |
| Cc: [ - ] | . | |
| Bcc: [ - ] | . | |
| Subject: | RE: CATD meeting. | |

Chris - Let me know if we could get any comments from Toyota's ETC experts regarding the material covered in the Siemens paper. I would like to get at least a preliminary comment on the various "engine runaway" scenarios discussed in the paper; particularly the issue of fault torque requests discussed in 7.1 Single Faults on pages 738-739. Also, page 731 of the paper discusses the advantages of ETC over a mechanical system with a Bowden cable, because the system is not limited by a fixed throttle position tied to the accelerator pedal - this goes to the question of throttle authority that we had difficulty getting answered at the meeting. Can you ask your experts to clarify that information (I think the final answer was +/- 7deg, but that still is vague). I'm home today because of the snow, but I'll call to discuss.

Thanks,
Jeff

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Subject: CATD meeting

Chris - As I mentioned in my phone message to you this morning, here is a rough agenda of topics we would like to discuss, information we would like to see and review and parts we would like to see when we meet at the Central Atlantic training center. Please confirm that Toyota can meet on Wed and cover the requested agenda items.

1. Accelerator Pedal assembly return part testing and forensic analysis - (see attached)

2. Pedal assembly data - Please bring the following information:

a. Baseline hysteresis (force-displacement on apply & release) curves for all CTS pedal assemblies and all other hysteresis curves generated from testing done to assess root cause of high resistance "sticking" condition (this should include overlaid curves of baseline part and part with condition (as shown at meeting Tues for Aygo vehicle).
b. Information describing test procedure for simulating high humidity condition to produce condensation on friction surface (and any changes to part specification based on lessons learned from subject condition)
c. All material/data that is available regarding the following:

i. The relationship between age and/or pedal cycles and "smoothening" of friction surfaces;

ii. The relationship between "smoothening" and friction for both wet and dry conditions over the full range of pedal stroke;

iii. The relationship between differing amounts of moisture/condensation on the friction over the full range of pedal stroke (for both PPS and PA46);

iv. All Design of Experiment testing to identify contributing factors and assess the influence of each (for both PPS and PA46);

v. Friction as a function of pedal stroke (for PPS, PA46 and POM) for (1) a new/dry part; (2) a used/dry part; (3) a new/wet part; and (4) a used/wet part; and

vi. The amount of friction necessary to cause a "stuck" pedal over the full range of pedal stroke.

d. Old & redesigned versions of CTS pedals for Avalon and Tundra
e. Denso pedal to discuss design for generating friction/feel

2. Electronic throttle control - Review Toyota's electronic throttle control system design, including self-diagnostics, associated DTC's, all FMEA and fault tree analysis related to the ETC system or the accelerator pedal position sensor assembly, throttle body, ECM and associated wiring (this can be limited to conditions related to the potential for unintended acceleration)
3. Electromagnetic compatibility - Review Toyota's general EMC standards/testing and discuss how they are applied to the ETC & cruise/speed control systems specifically.

a. Review Toyota EMC & ETC standards and design strategy
b. Discuss/compare with other EMC standards (e.g., ISO, SAE, peer mfrs)
c. Discuss/compare ETC design, testing with peers
d. Discuss attached article

Please call to discuss and confirm date/logistics.

Thanks,

Jeff

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| Subject: | (BN) Toyota Employees Hit Washington to Help Automaker in Crisis. |

(BN) Toyota Employees Hit Washington to Help Automaker in Crisis

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Toyota Employees Hit Washington to Help Automaker in Crisis
2010-02-10 00:16:35.786 GMT

(See {EXT2 <GO>} for coverage of Toyota's recalls.)

By Jonathan D. Salant
Feb. 10 (Bloomberg) -- Alesia Murdoch has spent 11 years building transmissions at the Toyota Motor Corp. plant in Buffalo, West Virginia. Yesterday, she got a new job: Lobbyist.
Murdoch was one of 23 U.S. employees of the Toyota City, Japan-based carmaker to visit lawmakers' offices in advance of congressional hearings into millions of vehicles recalled for sudden acceleration.
She said she and her fellow employees wanted to remind lawmakers that while Toyota is Japanese-owned, many of the workers affected by the recalls and probes are American.
"We stand behind our products," she said between stops. "We may have had a little setback, but we're going to come out stronger."
Toyota, the world's largest automaker, has recalled almost 8 million vehicles on five continents to repair defects linked to unintended acceleration. At least three U.S. congressional committees plan hearings into whether the recalls were handled properly by Toyota and the National Highway Traffic Safety Administration.
The automaker sent people from eight states with company plants to Washington and covered their expenses, said Martha Voss, a company spokeswoman. The visits were timed to be a day ahead of the first hearing, which was scheduled for today and then postponed to Feb. 24 because of a snowstorm.

Learning the Game

The crisis-spawned calls on lawmakers follow a surge in spending that has made Toyota one of the auto industry's biggest lobbyists in Washington.
In 1999, the company spent $685,684 on Washington lobbying, Senate disclosure documents show. Last year, the world's largest automaker spent $5.2 million, more than seven times the 1999 amount, and passed one of the big three U.S. automakers, Chrysler Group LLC, for the first time.
"Toyota learned the lobbying game swiftly and ahead of most other non-U.S. carmakers," said Rogan Kersh, associate dean of New York University's Wagner School of Public Service. "They've spent resources strategically, hired the right kinds of people and have been able at least to gain a hearing when they have questions or concerns about legislation or proposed regulations."
The company bolstered its Washington team last week by hiring the Glover Park Group, a public relations, crisis

management and lobbying firm headed by several former officials in Democratic President Bill Clinton's administration.

'Work to Do'

The $5.2 million spent last year by Toyota City, Japan-based Toyota to influence Congress and federal agencies exceeded the $3.8 million spent by Auburn Hills, Michigan-based Chrysler. Toyota also outspent Japan-based automakers Nissan Motor Co. of Yokohama and Honda Motor Co. of Tokyo.

"We have a lot of work to do to make sure we are effectively communicating what the company and our dealers are doing regarding the recalls, and emphasize that the company is doing everything it can to fix any safety issues as quickly as possible," Voss said.

Detroit-based General Motors Co., the second-biggest automaker, spent $8.6 million last year, while Dearborn, Michigan-based Ford Motor Co. spent $7 million. Toyota is accelerating its spending at a faster clip, with an increase of almost 660 percent since 1999, compared with GM's 48 percent and Ford's 67 percent.

Among the 29 people registered to lobby for Toyota last year was one former lawmaker, Bill Brewster, a Democrat who represented Oklahoma in the House of Representatives. Eighteen others worked for Congress or the executive branch.

"The real test comes now, when the company is facing a real safety crisis and lots of questions, rather than smiling faces, on Capitol Hill," Kersh said.

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U.S. auto industry sales: SAARTOTL <Index> GP <GO>
Toyota's U.S. market share: USMSTOYO <Index> GP <GO>

--Editors: Larry Liebert, Joe Winski

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(BN) Toyota Faces U.S. Recall Inquiries as Washington Lobbying F
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Toyota Faces U.S. Recall Inquiries as Washington Lobbying Force
2010-02-09 19:30:20.157 GMT

(See {EXT2 <GO>} for coverage of Toyota's recalls.)

By Jonathan D. Salant
Feb. 9 (Bloomberg) -- Toyota Motor Corp. is armed with one of the auto industry's biggest lobbying budgets as it faces U.S. government and congressional inquiries into millions of vehicles recalled for sudden acceleration.
A decade ago, Toyota spent $685,684 on Washington lobbying, Senate disclosure documents show. Last year, the world's largest automaker spent $5.2 million, more than seven times the 1999 amount, and passed one of the big three U.S. automakers, Chrysler Group LLC, for the first time.
"Toyota learned the lobbying game swiftly and ahead of most other non-U.S. carmakers," said Rogan Kersh, associate dean of New York University's Wagner School of Public Service. "They've spent resources strategically, hired the right kinds of people and have been able at least to gain a hearing when they have questions or concerns about legislation or proposed regulations."
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'Work to Do'

"We have a lot of work to do to make sure we are effectively communicating what the company and our dealers are doing regarding the recalls, and emphasize that the company is doing everything it can to fix any safety issues as quickly as possible," said Martha Voss, a Washington spokeswoman for Toyota.
The $5.2 million spent last year by Toyota City, Japan-based Toyota to influence Congress and federal agencies exceeded the $3.8 million spent by Auburn Hills, Michigan-based Chrysler. Toyota also outspent Japan-based automakers Nissan Motor Co. of Yokohama and Honda Motor Co. of Tokyo.
Detroit-based General Motors Co., the second-biggest automaker, spent $8.6 million last year, while Dearborn, Michigan-based Ford Motor Co. spent $7 million. Toyota is accelerating its spending at a faster clip, with an increase of

almost 660 percent since 1999, compared with GM's 48 percent and Ford's 67 percent.
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Toyota's U.S. market share: USMSTOYO <Index> GP <GO>

--Editors: Larry Liebert, Joe Winski

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+ Toyota Employees Hit Washington to Help Automaker (Update1)

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Toyota Employees Hit Washington to Help Automaker (Update1)
2010-02-10 08:33:04.824 GMT

(Adds Japan cabinet member comment in sixth paragraph. See {EXT2 <GO>} for coverage of Toyota's recalls.)

By Jonathan D. Salant
Feb. 10 (Bloomberg) -- Alesia Murdoch has spent 11 years building transmissions at the Toyota Motor Corp. plant in Buffalo, West Virginia. Yesterday, she got a new job: Lobbyist.
Murdoch was one of 23 U.S. employees of the Toyota City, Japan-based carmaker to visit lawmakers' offices in advance of congressional hearings into millions of vehicles recalled for sudden acceleration.
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Toyota, the world's largest automaker, has recalled almost 8 million vehicles on five continents to repair defects linked to unintended acceleration. At least three U.S. congressional committees plan hearings into whether the recalls were handled properly by Toyota and the National Highway Traffic Safety Administration.

'Japan Bashing'

Failing to address the problems more swiftly has led to global criticism, a member of Prime Minister Yukio Hatoyama's cabinet said today. "This might not have resulted in Japan-bashing and Toyota-bashing" with quicker action, Mizuho Fukushima, the minister in charge of consumer affairs, said in an interview in Tokyo.
The automaker sent people from eight states with company plants to Washington and covered their expenses, said Martha Voss, a company spokeswoman. The visits were timed to be a day ahead of the first hearing, which was scheduled for today and

then postponed to Feb. 24 because of a snowstorm.
The crisis-spawned calls on lawmakers follow a surge in spending that has made Toyota one of the auto industry's biggest lobbyists in Washington.
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'Lobbying Game'

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--Editors: Larry Liebert, Joe Winski

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Regulators Hired by Toyota Helped Halt Probes, Documents Show
2010-02-12 01:36:03.128 GMT

By Jeff Green, Margaret Cronin Fisk, Angela Greiling Keane and Alan Ohnsman

(For more Toyota recall coverage, see {EXT2<GO>}.)

Feb. 12 (Bloomberg) -- Former regulators hired by Toyota Motor Corp. helped end at least four U.S. investigations of unintended acceleration by company vehicles in the last decade, warding off possible recalls, court and government records show.

Christopher Tinto, vice president of regulatory affairs in Toyota's Washington office, and Christopher Santucci, who works for Tinto, helped persuade the National Highway Traffic Safety Administration to end probes including those of 2002-2003 Toyota Camrys and Solaras, court documents show. Both men joined Toyota directly from NHTSA, Tinto in 1994 and Santucci in 2003.

While all automakers have employees who handle NHTSA issues, Toyota may be alone among the major companies in employing former agency staffers to do so. Spokesmen for General Motors Co., Ford Motor Co., Chrysler Group LLC and Honda Motor Co. all say their companies have no ex-NHTSA people who deal with the agency on defects.

Possible links between Toyota and NHTSA may fuel mounting criticism of their handling of defects in Toyota and Lexus models tied to 19 deaths between 2004 and 2009. Three congressional committees have scheduled hearings on the recalls.

"Toyota bamboozled NHTSA or NHTSA was bamboozled by itself," said Joan Claybrook, an auto safety advocate and former NHTSA administrator in the Jimmy Carter administration. "I think there is going to be a lot of heat on NHTSA over this."

'Discussed Scope'

In one example of the Toyota aides' role, Santucci testified in a Michigan lawsuit that the company and NHTSA discussed limiting an examination of unintended acceleration

complaints to incidents lasting less than a second.
"We discussed the scope" of the investigation, Santucci testified. "NHTSA's concerns about the scope ultimately led to a decision by the agency to reduce that scope. You say it worked out well for Toyota, I think it worked out well for both the agency and Toyota."
In an e-mailed response to questions about possible influence of former NHTSA employees on agency Toyota decisions, Transportation Department spokeswoman Olivia Alair said NHTSA "currently has three open investigations involving Toyota and is monitoring two major safety recalls involving Toyota vehicles. NHTSA's record reflects that safety is its singular priority."
Toyota City, Japan-based Toyota on Jan. 21 recalled 2.3 million U.S. cars and trucks with a potentially defective accelerator pedals. That followed Toyota's decision in November to recall 4.48 million vehicles in the U.S. and Canada because floor mats might trap gas pedals while they were depressed.

Electronics Probe

Combined worldwide recalls for pedals, floor mats and a software fix to adjust brakes on the Prius and other hybrid models rose to more than 8 million vehicles as of Feb. 8.
"A recall is bad for any automaker because they have to admit there's a defect in their vehicle and the repairs can be expensive," said Rebecca Lindland, a forecaster at IHS Global Insight Inc. in Lexington, Massachusetts.
In Toyota's case, "the company has built itself on pillars of safety, quality and reliability," she said. "A defect in their product is appalling to them, sort of unthinkable."
All four of the probes the Toyota aides helped end were into complaints that the unintended acceleration was caused by flaws in the vehicles' electronic throttle systems. Toyota has denied that the system is a problem. U.S. Transportation Secretary Ray LaHood said on Feb. 3 that NHTSA is reviewing the electronics.
Toyota spokeswoman Martha Voss declined to make Santucci and Tinto available for comment.

'Highest Standards'

"Anything Mr. Tinto and Mr. Santucci did was in the interest of full disclosure, transparency and openness with regulators and safety experts," Voss said in an e-mailed statement.
"Their actions have been consistent with our efforts to maintain the highest professional and ethical standards in all of our legal and regulatory practices. Their paramount concern was for the safety of every single owner of one of our vehicles."
The NHTSA decisions on Toyota weren't necessarily biased just because former agency people were involved, said Sidney Shapiro, a law professor at Wake Forest University in Winston-Salem, North Carolina.
"I'm not sure regulators set out to say 'I'm going to give a special deal to my old friends in the auto industry,'" he said. "But what happens is it just sort of deteriorates because these are the only people you talk to."

Opposite Sides

There are no waiting-period requirements for moves to a company from its regulator for lower-level positions like those of Tinto and Santucci, said Allan Kam, former NHTSA senior enforcement attorney, who retired in 2000 after 25 years and said he was a "mentor" to Tinto at the agency. Santucci came to NHTSA after Kam's retirement.

"They're not supposed to deal with the agency about a matter they dealt with at the agency," he said. Neither former NHTSA employee testified to any such conflicts when asked by attorneys.

Tinto, 46, came to Toyota after about four years at NHTSA. He hired Santucci from NHTSA in 2003, after the two met on opposite sides of the table in defect investigation cases, Santucci said in a deposition in the Michigan lawsuit. Santucci, 39, works on most of the automaker's recall petitions, he said in the deposition. In last year's floor-mat recall, Santucci said he helped write Toyota's explanation of the remedy and had phone calls and meetings with NHTSA to describe the automaker's plans.

Cases Closed

NHTSA opened eight investigations of unintended acceleration of Toyota vehicles from 2003 to 2010, according to Safety Research & Strategies Inc., a Rehoboth, Massachusetts, group that gathers data from NHTSA and other sources for plaintiff's attorneys and consumers. Three of the probes resulted in recalls for floor mats. Five were closed, meaning NHTSA found no evidence of a defect.

In four of the five cases that were closed, Tinto and Santucci worked with NHTSA on Toyota's responses to the consumer complaints the agency was investigating, agency documents show. The first closed case where NHTSA records show the involvement of Tinto and Santucci dealt with unanticipated acceleration by 2002 and 2003 Toyota Camrys and Solaras. The case, opened in March 2004, was the one Santucci testified about when he discussed limiting the scope of the probe. He did so in a deposition for a lawsuit filed on behalf of a Michigan woman who was killed in an April 2008 accident.

'Blew Past' Intersection

In that lawsuit, the family of Guadalupe Alberto, 76, says she died when her 2005 Toyota Camry sped out of control and crashed into a tree. The lawsuit blames a defect in the electronic throttle control, said attorney Edgar Heiskell, who represents the Alberto family.

"She blew past an intersection, witnesses saw her with both hands on the wheel," Heiskell said. "She appeared to be standing on the brake while steering."

On March 3, 2004, the agency told Toyota it was opening a preliminary investigation to determine "if the throttle control system could be the cause of vehicle surge or unwanted acceleration."

Santucci and Tinto worked with Santucci's former NHTSA co-workers, Scott Yon and Jeffrey Quandt, on the investigation, Santucci testified in his deposition. Yon and Quandt weren't available for comment, Alair of the Transportation Department said.

'Certainly, We Talked'

Twenty days after the probe began, NHTSA investigator Yon determined that the agency wouldn't investigate "longer duration incidents involving uncontrollable acceleration where brake pedal application allegedly had no effect," according to a document provided in the Michigan lawsuit.
"But that was after talking with you and Mr. Tinto, correct?" Heiskell asked during the deposition.
"Certainly, we talked to them in that time period," Santucci said.
NHSTA opted to limit the investigation to unintended acceleration events that lasted less than a second and those where the brake could be used to control the vehicle, or about 11 incidents with 5 crashes. In Toyota's initial response, Tinto identified 114 similar cases, according to NHTSA documents. The case was closed July 22, 2004, agency records show.
The agency decided to limit the cases to eliminate instances where a driver may have used the wrong pedal, the Transportation Department's Alair said.

No Social Relationship

Santucci didn't work on unintended acceleration cases involving Toyota while at NHTSA and doesn't have a social relationship with former co-workers, he said in his deposition.
The second NHTSA-Toyota case settled with the automaker's input was a 2005 investigation requested by the owner of a 2002 Toyota Camry who reported two instances of unintended acceleration, one involving a crash. The owner cited eight other complaints from other Toyota drivers about similar episodes, without identifying the vehicle make and model.
Toyota said dealer representatives investigated 59 of 100 vehicles whose owners complained.
"In each of these vehicles, no evidence of a system or component failure was found and the vehicles were operating as designed," Tinto wrote in a Nov. 15 letter to NHSTA. He also cited the findings that ended the Camry investigation in 2004.

Water Corrosion

NHTSA ended its probe of the 2002 Camry in January 2006, citing lack of evidence of a problem and the agency's need to allocate "limited resources" to other investigations.
Tinto also weighed in on a broader August 2006 complaint about the Camry, this time covering model years 2002 to 2006. In that case, Tinto wrote that Toyota had found no abnormality in the throttle actuator, or controller, which the petitioner blamed. In the defect investigation notice, NHSTA noted 3,546 cases where Toyota had replaced throttle actuators under warranty terms.
The automaker did find evidence that returned actuators had corroded due to water intrusion caused by circumstances "such as driving through a flooded road, in the heavy rain or a hurricane" and a drain hose was modified to prevent future water intrusion, Tinto wrote in a Dec. 20, 2006, letter to the agency.
NHTSA decided not to pursue the investigation, telling the owner "after reviewing the concerns raised by the petitioner and other information, NHTSA has concluded that further expenditure of the agency's investigative issues raised by the petition in not warranted."

Tacoma Pickups

In the fourth case, in 2008, Tinto told NHTSA the automaker couldn't find enough evidence to support allegations of unintended acceleration in 2006-2007 Toyota Tacoma pickup trucks.
The owner reported two incidents of unintended acceleration in his 2006 Tacoma and pointed to 32 similar complaints in the NHTSA database.
Toyota itself received complaints of 478 incidents involving 431 Tacomas, for model years 2004 to 2008, that allegedly increased engine speed when the accelerator pedal wasn't pushed, according to an April 25, 2008, memo by Tinto. Of those incidents, 49 resulted in a crash and 9 had injuries, he said.
After a review, Tinto said he disagreed that the complaints to NHSTA "in and of themselves justify opening an investigation" and said media attention to driver complaints contributed to the allegations.
"In Toyota's view, neither the consumer complaints nor the field study indicate the existence of any defect in the subject vehicles, much less a safety-related defect," he wrote.

Request Denied

NHTSA closed the investigation on Aug. 27, 2008, after an eight-month review, saying that "we have been unable to determine a cause related to throttle control or any underlying cause that gave rise to the complaint."
Tinto also may have helped thwart an attempt by the owner of a 2007 Lexus ES350 to reopen a NHTSA investigation that resulted in a 55,000-unit recall for floor mat problems.
The owner, Jeffrey Pepski of Plymouth, Minnesota, said he experienced an unintended acceleration incident in February 2009 and wanted the agency to probe other possible causes, such as the electronic throttle.
Tinto's response to NHTSA last May said the incident was Pepski's fault because his floor mat wasn't secured and that there was no need for a new investigation because the "limited number of such incidents does not suggest the existence of a safety-related defect in these vehicles."

Seeking Toyoda

U.S. Transportation Department, NHTSA and Toyota officials have been asked to appear on Feb. 24 before the House Oversight and Government Reform Committee and Feb. 25 before the House Energy and Commerce Committee to talk about the recalls. The Senate Commerce Committee plans a hearing March 2.
"At the heart of the matter is determining whether Toyota acted as quickly as possible to notify regulators there was a problem and whether or not government acted as quickly and diligently as possible to investigate and act," Representative Darrell Issa, a California Republican and ranking member of the House Committee on Oversight and Government Reform, said in a statement this week.
Issa called on Toyota President Akio Toyoda to appear before the Senate panel. "I would fully support the issuance of a subpoena" if Toyoda doesn't cooperate, Issa said in a statement yesterday.

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--With assistance from Andrew Harris in Chicago and Makiko Kitamura in Tokyo. Editors: Joe Winski, Jeffrey Taylor, Larry Liebert

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February 16, 2010

American International Automobile Dealers Announce 2010 Chairman, Officers
The American International Automobile Dealers Association (AIADA) today announced New Jersey auto dealer Rick DeSilva as its new 2010 chairman. According to PhillyBurbs.com, DeSilva took the reins of AIADA during its 40th Annual Meeting and Luncheon in Orlando, Fla. “I am looking forward to AIADA’s 40th year. To spending it with dealers and legislators from around the country. To helping for sound and lasting policies for our industry. To protecting the interests of our members. And most of all, I’m looking forward to the re-growth of this industry we all love,” said DeSilva during his remarks at the luncheon. “For us, 2010 will be a game changer, and I’m excited to be a part of it.” DeSilva has been recognized with the Time Magazine Quality Dealer Award as well as the AIADA All Star Dealer Award. His efforts to advocate on behalf of the auto retail industry include his past chairmanship of the New Jersey Coalition of Automotive Retailers and the Subaru National Dealer Advisory Board. During the meeting, AIADA also recognized dealer Tim Smith of Calabasas, Calif. with the David F. Mungenast, Sr. Lifetime Achievement Award. Smith is the President of Bob smith BMW/MINI in Calabasas and served as 2003 chairman of AIADA. Click here for more on AIADA’s 2010 Chairman.

NHTSA Investigates Toyota
The National Highway Traffic Safety Administration said Monday it was quickly investigating new complaints about recalled Toyota Motor Corp. vehicles. According to The Detroit News, NHTSA reported that it has now received complaints alleging 34 deaths linked to sudden unintended acceleration in Toyota vehicles since 2000. Government records also show nearly 1,000 new braking complaints about the recalled Toyota Prius in recent weeks. "NHTSA is working quickly to review the surge in consumer complaints resulting from the recall announcements," Transportation Department spokeswoman Olivia Alair said. "Staff are currently gathering preliminary information to determine what next steps are needed." The automaker said it is considering increasing incentives or extending warranties as part of its response to the recalls. Last week, Toyota recalled 437,000 Priuses and other hybrids worldwide over concerns the brakes could lose power over bumpy or icy terrain. The automaker has announced a software upgrade to address that problem. Toyota President Akio Toyoda will brief reporters in Japan on Wednesday and is expected to announce more safety and quality initiatives – including public notification of vehicle improvements. Click here for the latest on Toyota’s work to correct issues with brakes in its vehicles.

Audi U.S. Chief Ranks Profit Above Parent's Sales Goal
Despite Audi's oft-stated plans to sell 200,000 vehicles in the United States by 2018, the luxury brand's North American chief isn't completely on board with that target. Audi of America President Johan de Nysschen told Automotive News that profitable growth is more important than hitting a specific sales number. The U.S. sales division won't pursue that number at all costs. "I'm not married to 200,000 cars," said de Nysschen. He said Audi of America needs a directional target but that could be 150,000 vehicles, 200,000 or 250,000. "We are not going to chase volume for the sake of volume," de Nysschen said. "We will only grow if it puts an extra dollar in the bank. Otherwise it is no good." De Nysschen said he expects Audi's U.S. sales to increase this year, probably to just over 90,000 vehicles. To feed that growth and help bolster thin dealership inventory levels, Audi will increase production for the North American market by 10 percent, he said. Today's supply is at 38 days versus a goal of 60 days. The supply should begin to increase in late April as the extra production arrives. The Audi of America chief also confirmed that Audi will introduce a gasoline-electric hybrid version of the Q5 crossover in late 2011. Click here for de Nysschen's full remarks on the future of Audi in the U.S.

Hyundai Targets 2010 U.S. Market Share of 4.5%
According to Automotive News, Hyundai Motor Co. aims to increase its U.S. market share to 4.5 percent this year from 4.2 percent in 2009, propelled by new product launches and aggressive marketing. Hyundai, one of the few brand's to increase sales in the battered U.S. market last year, sees a "really good chance" that its U.S. sales will break the 500,000 unit mark for the first time in 2010, U.S. sales chief David Zuchowski told Reuters in an interview. Hyundai U.S. chief executive John Krafcik, in a separate interview, said it is unlikely that the automaker can match its hefty 1.2-percentage-point gain in U.S. market share in 2010. Krafcik said a key to Hyundai's success in 2010 will be new product. It has announced that by the end of 2011 it will have introduced seven new products in the U.S. market. Krafcik and Zuchowski both said that the highly successful "Hyundai Assurance" program, introduced in early 2009 as U.S. consumer confidence ebbed, will not expire until after 2011. Whether it will live beyond that, they said, no decision had been made. For more on Krafcik and Zuchowski's forecast for Hyundai's U.S. auto sales, click here.

What You Get for $199 a Month
The ad is tantalizing, aimed at pulling you through the showroom door: a brand-new midsize sedan for just $199 a month, plus tax, after you've put $2,199 down. For your money, you get a specific version — Model CP2F3AEW — of the base-trim 2010 Honda Accord LX on a three-year lease. It comes with an automatic transmission, a decent CD player, air-conditioning, cruise control, remote locking, power windows, and power mirrors. According to the New York Times, the killer lease deals are back. But it's not quite 2005 all over again. Leasing declined markedly last year as credit got tight and automakers cut their lease programs, though it has increased in the last few months. One reason leasing has become more attractive is that as new car sales have dropped over the last three years, the supply of high-quality used cars has also declined. Also contributing to the brighter leasing climate are low interest rates, the vast production capacity of assembly plants that build mainstream models like the Accord, automakers' desire to keep those plants busy and their willingness to subsidize the leases (a $2,000 "capitalized cost reduction" on the Accord for example). Click here to read more about the rebound in the leasing market.

Suzuki SX4 SportBack: Good, Clean, Noisy Fun
Dan Neil at the Los Angeles Times writes that the Suzuki SX4 Sportback is a racy, capering little hot hatch that's respectably quick. Click here for a photo. Figure zero to 60 in 8ish seconds. With all-wheel drive, standard navigation system and loads of power accessories and convenience features, for around $18,000, the SX4 Crossover stands just about alone in the desirable econobox all-wheel-drive segment. Transmission choices are either a six-speed manual or a paddle-shifted continuously variable transmission. The underpinnings of the SX4 SportBack are suitably reinforced: Lower ride height, stiffer springs and shocks, 17-inch wheels and racy Dunlop tires. That's the car you get when you drive off the Suzuki lot. However, Neil's test car had been further breathed upon by Suzuki's favorite tuner shop, Road Race Motorsports. It added a less-restrictive exhaust system, a cold-air intake. RRM kicked in beefier springs, a stouter anti-roll bar and racetrack-ready Dunlop Direzza Sport Z1 Star Specs (215/45-17s). Tires are the most important part of any car's ride-and-handling package, and Neil says these tires are just about the meanest, stickiest gum balls on the market. The steering was alert and lively in his hands. And the extra grip put more iron into the brakes. Click here for Dan Neil's entire rundown of his Suzuki SX4 test drive.

Let Your Customers Know: Motor Oil Matters.
AIADA's Affinity Partner Shell Lubricants is working to raise consumer awareness about quality distinctions in motor oil. Its new program, Motor Oil Matters, has two powerful goals: one is to halt installers who illegally display and advertise Pennzoil® and Quaker State® trademarks, yet fail to deliver those respected brands. The company is taking aggressive legal action against trademark infringers. The other goal – a more positive one – is to educate consumers about the benefits of asking for a quality branded motor oil to help their engine operate cleanly and efficiently. Your dealership can join in. Begin by telling your customers about the benefits of quality branded motor

oils and advise them to ask for the brand they choose by name. If you're already installing Pennzoil® or Quaker State® oils, you can officially become a Certified Installer who keeps the Motor Oil Matters promise (no cost to you). Certified installers receive point of sale materials to help start a dialog with customers about why motor oil matters. To learn more about AIADA's program with Pennzoil-Quaker State, contact Mike Burns, Automotive Dealer Group Manager at (817) 301-7884 or click here.

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