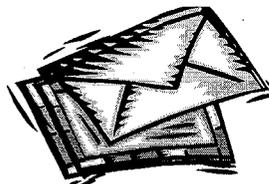


NHTSA ccmMercury Routing Slip



CL-10932103-5345

Printed: 8/21/2015

INFORMATION Redacted PURSUANT TO THE FREEDOM OF INFORMATION ACT (FOIA), 5 U.S.C. 552(B)(6)

NHTSA #: ES15-004380	Rec'd Date: 8/21/2015	Referred By: NPO-011
XREF #:	Doc Type: S10	Doc Date: 8/12/2015
Delivery: S10 E-MAIL	Address To: S1	Due Date:
S10 #: S10-150821-022	DOT/I #:	RMP #:
Subject: S10 APPROPRIATE HANDLING LETTER TO THE SECRETARY FROM [REDACTED] RE COPY OF A LETTER ADDRESSED TO SENATOR JOHN THUNE REGARDING THE LACK OF PROACTIVE EFFORT BY NHTSA IN TOYOTA SUDDEN ACCELERATION COMPLAINTS		
Ack Date:	Ack By:	Signed For:
Sign Office: ENFORCEMENT	Signature: AS APPROPRIATE	Cleared For:
Cleared Date:	Cleared By:	Closed Date: 8/21/2015
File Loc:	XREF File:	
Added By: CBUTLER x60180	Modified By: Chris.Butler	
Most Recent Comment:		

Author:



THOUSAND OAKS, CA

Tel: [REDACTED] Fax: E-mail: [REDACTED]

AUG 25 2015

Assigned To	Task	Asgn Date	Deadline	Returned Date
NVS-200	APPROPRIATE	8/21/2015		8/21/2015

NM
82515
SND

August 12, 2015

To,
Senator John Thune,
511 Dirksen Senate Office Building,
Washington, DC 20510

Subject: Lack of proactive effort by NHTSA in Toyota sudden acceleration complaints – could lives have been saved and has Toyota really solved the problem?

Dear Senator Thune,

I raise this issue with you since you are a member of the Senate Committee on Commerce, Science and Transportation that has oversight of NHTSA.

About 6 months back, my wife had a case of sudden acceleration (at low speed) in our Lexus automobile. She was able to turn off the ignition switch so she and my daughter were lucky not to suffer any injuries. Toyota examined the electronic data records and promptly denied any responsibility (as they have done for many other complainants). Based on my technical background (MSEE, Ph.D. EE Stanford, founder of a chip company - NYSE:IPHI), I found Toyota's analysis woefully inadequate and decided to dig deeper. To my surprise, my analysis of very limited publicly-available data showed a remarkable similarity in the electronic data records of vehicles involved in these accidents. I forwarded my report to NHTSA in early July 2015 and petitioned them to get all the electronic records of sudden acceleration in Toyota's possession to exhaustively study this problem (report attached). This petition is currently under consideration at NHTSA.

News of this petition was reported in the press. Subsequently, I started to receive many letters from Toyota customers complaining of similar problems and how Toyota had denied any responsibility in all these cases. This led me to start analyzing the NHTSA complaint data base and what I found was even more appalling. My analysis is attached in the enclosed presentation. Lowlights from the report include:

- With the introduction of electronic throttle control in ~2002, complaints of sudden acceleration in Toyota automobiles increased tenfold (10x).
- Complaints remained at that level till 2009/2010 when the fatality of the CHP officer and family driving a Lexus was widely reported. Associated publicity probably caused the spike of complaints in 2009-2010 (about a fivefold increase).
- Toyota introduced a "fix" by changing floor mats and some accelerator pedals. As the data shows, the complaint rate dropped from the 2009/2010 highs but there has no substantial change in the baseline (2004-2008) complaint rates after the fix.
- Toyota leads the industry in the number of sudden acceleration complaints.

We are then inevitably led to the following questions:

- Could NHTSA have been pro-active in 2004-2007 based on the sharp increase in Toyota owner complaints and saved multiple lives?
- Has NHTSA been very quick to accept Toyota's problem identification and "FIX" considering that baseline complaint rates show no reduction?
- ARE MORE LIVES STILL AT RISK?

Dr. Rosekind took over NHTSA in December 2014 and he appears to have made some positive changes. However I am still concerned that many of the "establishment" folks at NHTSA do not have the will or

skill to address these concerns particularly with the enormous increase in the electronics and software content of automobiles.

I request your committee to investigate the following issues while reorganizing NHTSA to meet future challenges more successfully than it has in the past.

- NHTSA-Toyota relationship both past and present. Was NHTSA handling of Toyota customer complaints satisfactory?
- Provide oversight to ensure that the Toyota sudden acceleration issue is not swept under the rug. Toyota is the only company to hire ex-NHTSA employees and give them high positions. This puts them in a position to influence NHTSA investigations of Toyota problems.
- Ensure that NHTSA has the proper skill sets to analyze automobiles with an increased amount of electronics and software.
- Ensure that NHTSA is pro-active. The Toyota case is a clear indicator that there was a high Toyota customer complaint rate as early as 2004 but serious action was taken ONLY after multiple fatalities. Let us ensure that this never happens again.

Currently, many of the Toyota sudden acceleration cases are in litigation such as Federal MDL-2151. While Toyota software and hardware have been examined by experts, their reports are kept confidential. In some cases, Toyota has used settlements to avoid expert reports and depositions becoming public. It would be of great use to NHTSA to study these reports to get a better understanding of Toyota shortcomings. I urge Congress to pass legislation that allows NHTSA to access these reports and expert depositions under a public safety exemption for all automobile accidents .

Thank you for your time and consideration. I am glad to offer my time and assistance in whatever way you need.

Sincerely,

[Redacted]
Thousand Oaks, CA

Email: [Redacted]

Mobile: [Redacted]

Cc:

Senate Committee on Commerce, Science and Transportation

Senator Diane Feinstein, CA

Senator Barbara Boxer, CA

Dr. Rosekind, Administrator NHTSA

Hon. Anthony Foxx, Transportation Secretary

Attachments:

- Petition to NHTSA to acquire electronic records of Toyota automobiles involved in sudden acceleration
- Analysis of Toyota sudden acceleration cases reported to NHTSA over the last 25 years

[REDACTED]
Thousand Oaks, CA
[REDACTED]

Dr. Mark R. Rosekind,
Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE West Building
Washington, DC 20590

Dear Dr. Rosekind:

RE: Petition for a Defect Investigation under 49 U.S.C. § 30162 Petitions by interested persons for standards and enforcement

This is a petition for an investigation into low-speed surging in different models of Toyota automobiles in which the car starts accelerating and the engine RPM increases even when the accelerator pedal is not depressed. Recently the NHTSA rejected a petition from [REDACTED] asking for a similar investigation. I am petitioning NHTSA a second time based on my wife and my case and additional data analysis which shows a troubling similarity amongst EDRs of Toyota cars showing sudden acceleration.

This request is based on our own low-speed surge experience as well as similarities observed in the EDR reports of 3 cars (ours + 2 others). I have other similar records and reports but these three EDRs clearly exemplify the problem.

1. Our Case:

We bought our 2009 Lexus ES350 on March 7, 2009. The car was brand new and had ~5 miles on the odometer when we purchased it. Till the date of the accident, we have put about 20,000 miles on the car and the car was in excellent condition. Car maintenance has been performed regularly by our local Lexus dealer. We also checked the Toyota recall website and there are no outstanding recalls for our VIN.

On February 13, 2015 my wife was driving our daughter to the dentist around 4:30 PM. She pulled into the parking lot and DID NOT have her foot on the brake pedal as she was coasting in to the parking spot. The car suddenly accelerated. Big bushes in front of the car limited the speed and my wife had the presence of mind to turn off the ignition and the car fell back. A witness who saw the entire event attested to the fact the engine suddenly started roaring. The front of the car was smashed but my wife and daughter were unharmed.

We got the car towed to a body shop and contacted Lexus. On February 24, Ron Reynolds representing Lexus went to the body shop and downloaded EDR data and transmitted it to Lexus. On April 1, we received a letter from Mr. Ron Inton representing Toyota (Attachment 1). The letter stated that "based on our inspection of your vehicle and the EDR readout, we found no evidence that this incident was the result of any type of manufacturing or design defect".

I called Mr. Inton to discuss their findings. He suggested that I contact Lexus to seek relief under

the Lemon Law to see if they would buy the car back. After going through that process, I finally got a letter dated May 18. This letter again stated "...we do not believe your vehicle suffers from a defect in materials or workmanship..."

2. Incomplete Testing by Toyota/Lexus:

I have a Ph.D. in Electrical Engineering from Stanford and have worked in the semiconductor industry for over 30 years. I and have been personally involved in shipping millions of electronic components and debugging low defect rate failures. Based on my expertise, Toyota's approach to root cause the problem appears to be incomplete at best and reckless at worst.

- a. As shown in the next section, some research of the web and NHTSA data shows a lot of commonality amongst the EDR records of cars exhibiting low speed surges (and I expect Toyota has access to much more). Toyota did not mention doing any data analysis or correlation of EDR data.
- b. A test done by Toyota was to check to see if the accelerator pedal moves smoothly without any restriction and the accelerator returns to the idle position when released. This is a meaningless test since:
 - i. My wife had not pressed the accelerator and was coasting and the car was moving at a low speed initially.
 - ii. The car was not on the recall list for sudden acceleration or the floor mat recall. Why would Toyota check for a problem that they claim the car does not have since it is not on the recall list?
- c. The last test was to ensure that the engine response was proportional to the accelerator pedal application.

3. Our EDR record:

I have attached the EDR record for our event (Attachment 2) and shown the pre-crash data table below.

Pre-Crash Data, -5 to 0 seconds (Most Recent Event, TRG 1)

Time (sec)	-4.6	-3.6	-2.6	-1.6	-0.6	0 (TRG)
Vehicle Speed (MPH [km/h])	3.7 [6]	3.7 [6]	3.7 [6]	3.7 [6]	5 [8]	8.7 [14]
Brake Switch	OFF	OFF	OFF	OFF	OFF	ON
Accelerator Rate (V)	0.78	0.78	0.78	0.78	2.38	0.78
Engine RPM (RPM)	400	400	400	800	1,600	1,600

Please note that from -4.6 seconds to -1.6 seconds the accelerator has not been depressed (0.78V being the off position) and the brake switch is off. This is consistent with my wife's report that she was coasting and did not press the accelerator OR the brake. However by -1.6 seconds, the engine RPM has DOUBLED to 800 with no depression of the accelerator.

4. EDR record - II:

As an engineer, this data looked very suspicious so I went on the Internet to see if I could get more data. There is plenty of data that seems to suggest that low-speed surge in Toyota cars is not uncommon. I have picked 2 other cases that show a remarkably similar EDR signature. The second EDR comes from [REDACTED] who had filed a similar petition with NHTSA. EDR data for [REDACTED] (2010 Toyota Corolla) is shown in the table below.

Pre-Crash Data, -5 to 0 seconds (Most Recent Frontal/Rear Event, TRG 1)

Time (sec)	-4.8	-3.8	-2.8	-1.8	-0.8	0 (TRG)
Vehicle Speed (MPH (km/h))	3.7 (6)	3.7 (6)	3.7 (6)	3.7 (6)	5 (8)	7.5 (12)
Brake Switch	OFF	OFF	OFF	OFF	OFF	ON
Accelerator Rate (V)	0.78	0.78	0.88	0.78	0.78	0.78
Engine RPM (RPM)	800	800	800	800	800	1,600
Pre-Crash Data Status *	Valid	Valid	Valid	Valid	Valid	Valid

* Invalid if more than one EDR is used

There is a marked similarity to our EDR record above:

- i. Car appears to be coasting.
- ii. Accelerator pedal not depressed (except for a small glitch at -2.8 seconds) but vehicle speed and RPM increasing at -0.8 seconds.
- iii. VEHICLE SPEED OF 3.7 MPH WHEN SUDDEN-ACCELERATION EVENT STARTS.

5. EDR record – III

On the NHTSA website showing multiple EDR records for suspected Toyota sudden acceleration events, I came across Case 33 (Toyota EDR Data from NHTSA Pre-Crash Field Inspections, January 2011).

Time	-5	-4	-3	-2	-1	0
Vehicle Speed (MPH)	3.7	3.7	3.7	9.9	13.7	19.9
Brake Switch	OFF	OFF	OFF	OFF	OFF	OFF
Accelerator	OFF	OFF	OFF	OFF	FULL	OFF
Engine RPM	400	400	800	1600	3200	4400

Accelerator Rate(V)	0.78	0.78	0.78	0.78	2.5	0.78	My Estimate
---------------------	------	------	------	------	-----	------	-------------

By this time, the similarities are striking:

- i. Car appears to be coasting.
- ii. Engine RPM starts increasing at -3 seconds even though the accelerator pedal is not depressed.
- iii. VEHICLE SPEED OF 3.7 MPH WHEN SUDDEN-ACCELERATION EVENT STARTS.
- iv. Glitch in accelerator seen at -1 second similar to our car (first table). Even the accelerator being at FULL is very similar to our EDR value of 2.38V.

6. A COMMON ISSUE?

The fact that all three cars were coasting at 3.7 mph when the sudden-acceleration happened appears to be a strong signature of a common issue. Additionally, the spike in accelerator rate shown by 2 of the cars seems to suggest a potential source of the problem – it appears that the accelerator is either calculating an incorrect accelerator value or receiving a noise spike on the accelerator sensor. In any case, much more detailed analysis of software and hardware from the suspect cars is required to track the root cause of the problem. Additionally, it would be critical to see if the same signature is observed amongst other sudden acceleration reports that Toyota might have.

7. Improper analysis or lack of analysis by Toyota

The fear of unearthing a major problem and associated economic loss appears to be a motivating factor for Toyota to so quickly dismiss this issue. Toyota performs irrelevant tests and claims that the car is functioning properly.

- i. This problem does not happen on every Toyota car nor does it happen all the time on the cars identified above. Sending someone to check whether the accelerator pedal moves properly seems totally irrelevant to the problems that we car owners have identified.
- ii. EDR data on these few cars appears to show a strong signature. If we can identify similarities based on the limited data set we have, it is clear that Toyota should have a much larger database to better identify these correlations or the associated causation. Considering that these cars are different models and different years, it should be possible for Toyota to identify commonality amongst hardware and software to root cause this problem.
- iii. Finally, to rule out a hardware problem, it is important for Toyota to collect these cars and test them over a prolonged period of time and under various conditions. Any professional engineer can attest to the fact the intermittent problems and low defect rates are the toughest problems to debug. Toyota is not interested in acquiring these cars and performing a scientific analysis. Based on a personal conversation with [REDACTED], it appears that he recently disposed his car after waiting for over a year – that is one sample less we have to test.

In summary, based on my analysis of limited records available from the Internet, it appears that there is a strong signature in the EDR of multiple low speed surge events in different models and years of Toyota automobiles. It also appears that Toyota is not interested in finding the root cause of these surge events since they have not taken any constructive steps to test the automobiles exhibiting this problem. Unlike Toyota, I am convinced this is a real problem. I will not sell my car to another buyer but take the financial loss. I am keeping the car unaltered so that interested parties can examine the car to see if they can root cause the problem.

[REDACTED] in his NHTSA petition that was denied has given many examples of Toyota cars exhibiting low-speed surges. In this petition, I have shown a correlation amongst EDR of 3 Toyota cars undergoing low-speed surges. I request the NHTSA to acquire ALL the data on low speed sudden acceleration that Toyota currently has and constitute a panel to study this problem (similar to the high speed NASA panel). I have also contacted Senator Diane Feinstein regarding this issue and you might have received a query from her office also.

Based on this new information, I hope that you would order a strong and active investigation into this matter and potentially save someone's life. I am happy to assist the NHTSA as required.

Sincerely

[REDACTED]
Cc: Sen. Diane Feinstein

[REDACTED]
Sean Kane

Are Toyota Sudden Acceleration Problems Solved ?



July 31, 2015

NHTSA Complaint Database is a Useful Source to Identify Early Defects

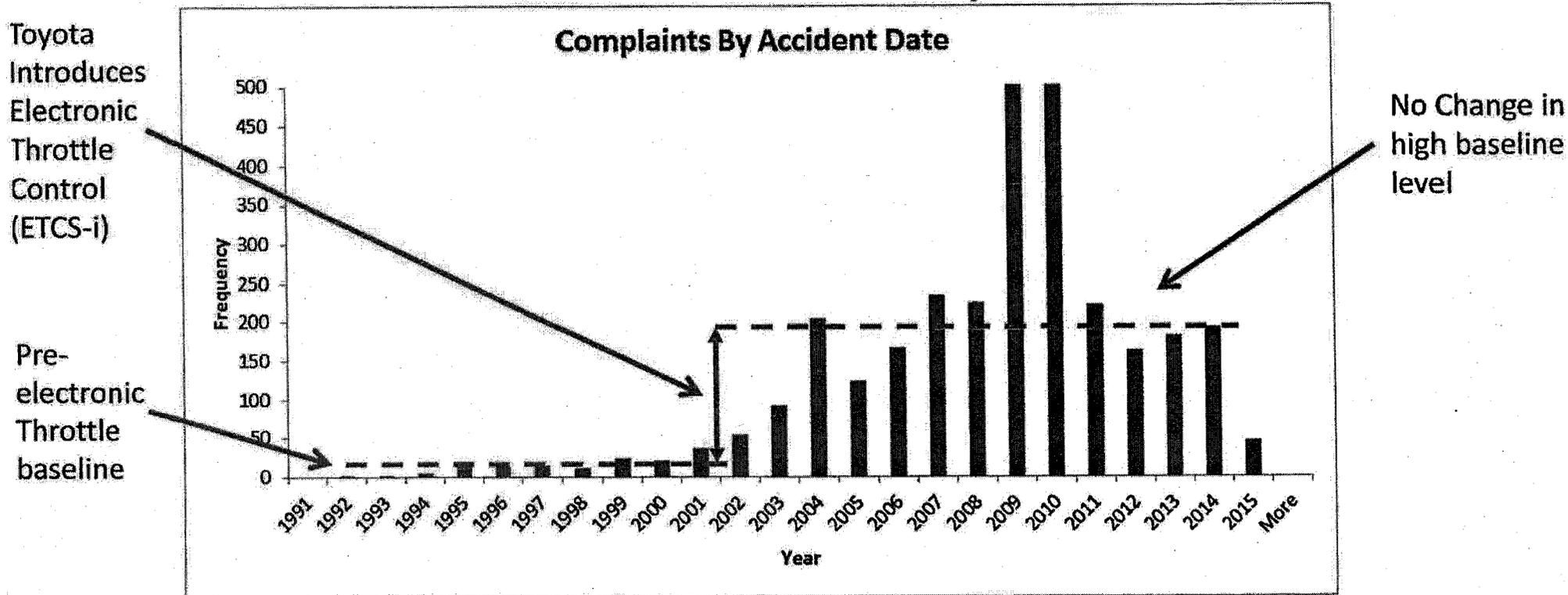
- NHTSA complaint database has issues collected over many years
 - Sources include customers, insurance companies, congressional referrals
 - Although every incident has not been verified by technical experts, problem trends can be identified
- This presentation will show that this database is a very useful indicator of early problems with automobiles
- All the data in these slides are mined from the NHTSA Complaint Database (using search terms in Slide 14)

<http://www-odi.nhtsa.dot.gov/downloads/flatfiles.cfm>

Version : 07/28/2015 04:43:22 AM

- Recently, my experience shows that there may have been modifications to the database to possibly eliminate or modify some complaints (see slides later). How can we be sure that real complaints have not been modified or eliminated ?

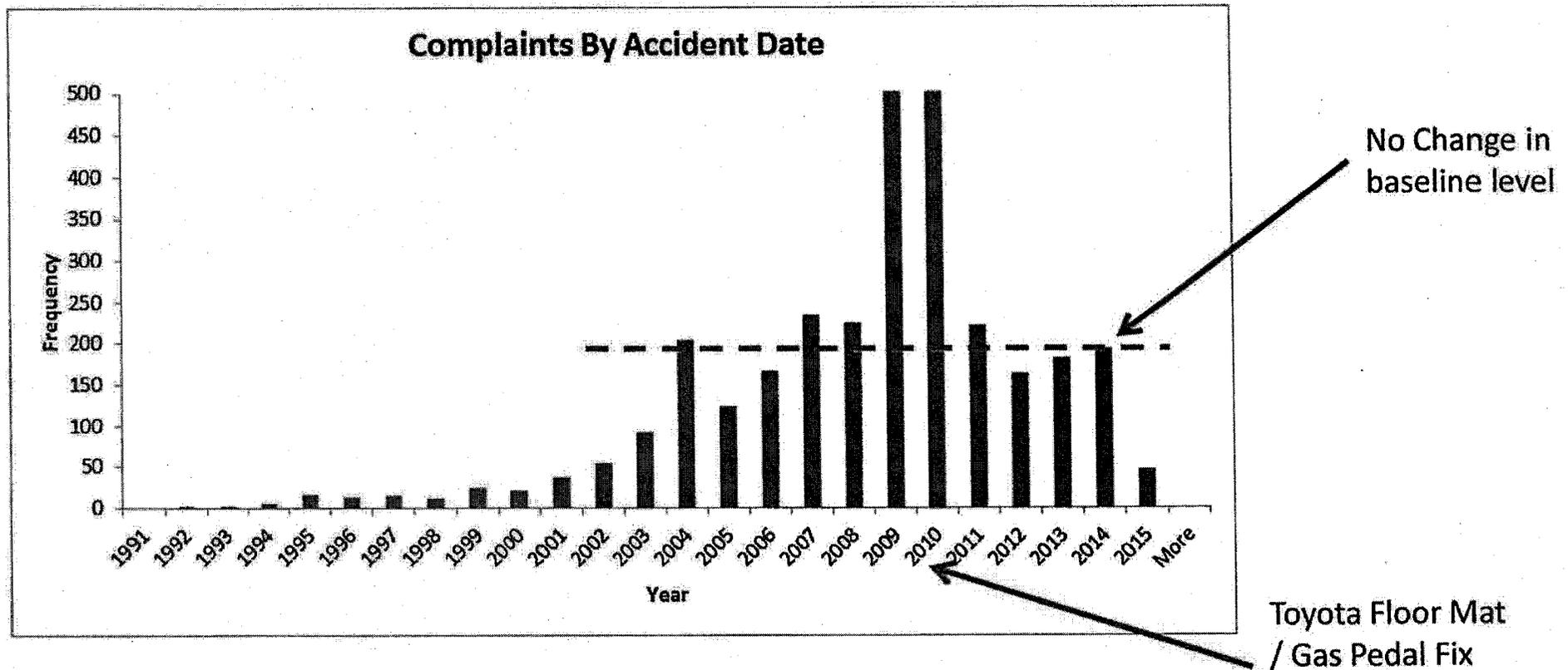
Canary in the Coal Mine – 10x Increase in Toyota Sudden Acceleration Complaints by 2007



* 2009 and 2010 bars have been chopped at 500. The actual numbers are 617 and 944 respectively.

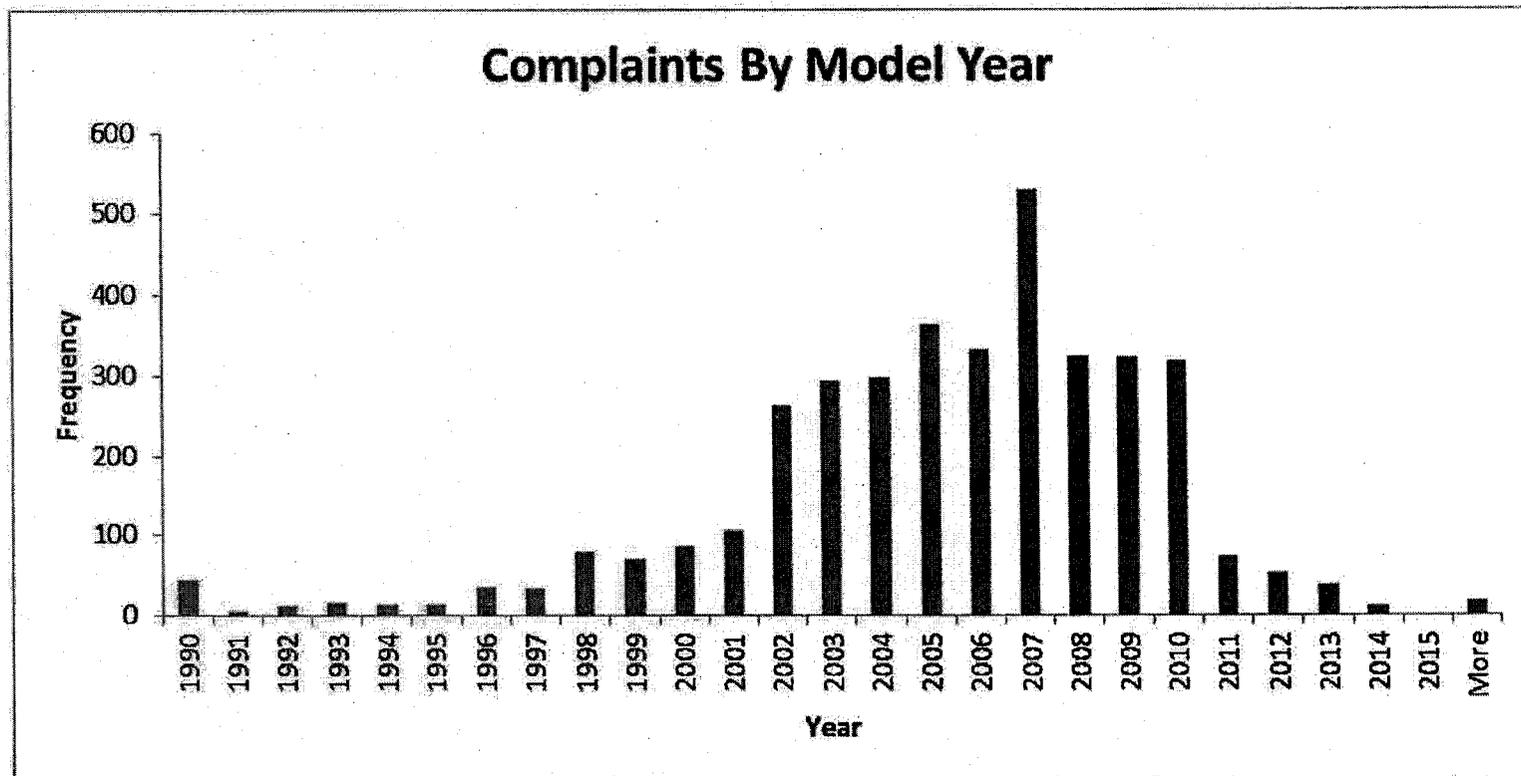
- Complaints related to Toyota vehicle speed started increasing drastically in 2002 and were averaging about 1 every 2 days in 2007
- In 2011, the number of reports dropped to a pre-2009 rate – the problem has not gone away despite the “floor mat and gas pedal solution”
- In 2009, the tragic accident of a Lexus driven by a CHP officer took place. That could explain the spike in reports in 2009 and 2010

Does the Sudden Acceleration problem still exist ?



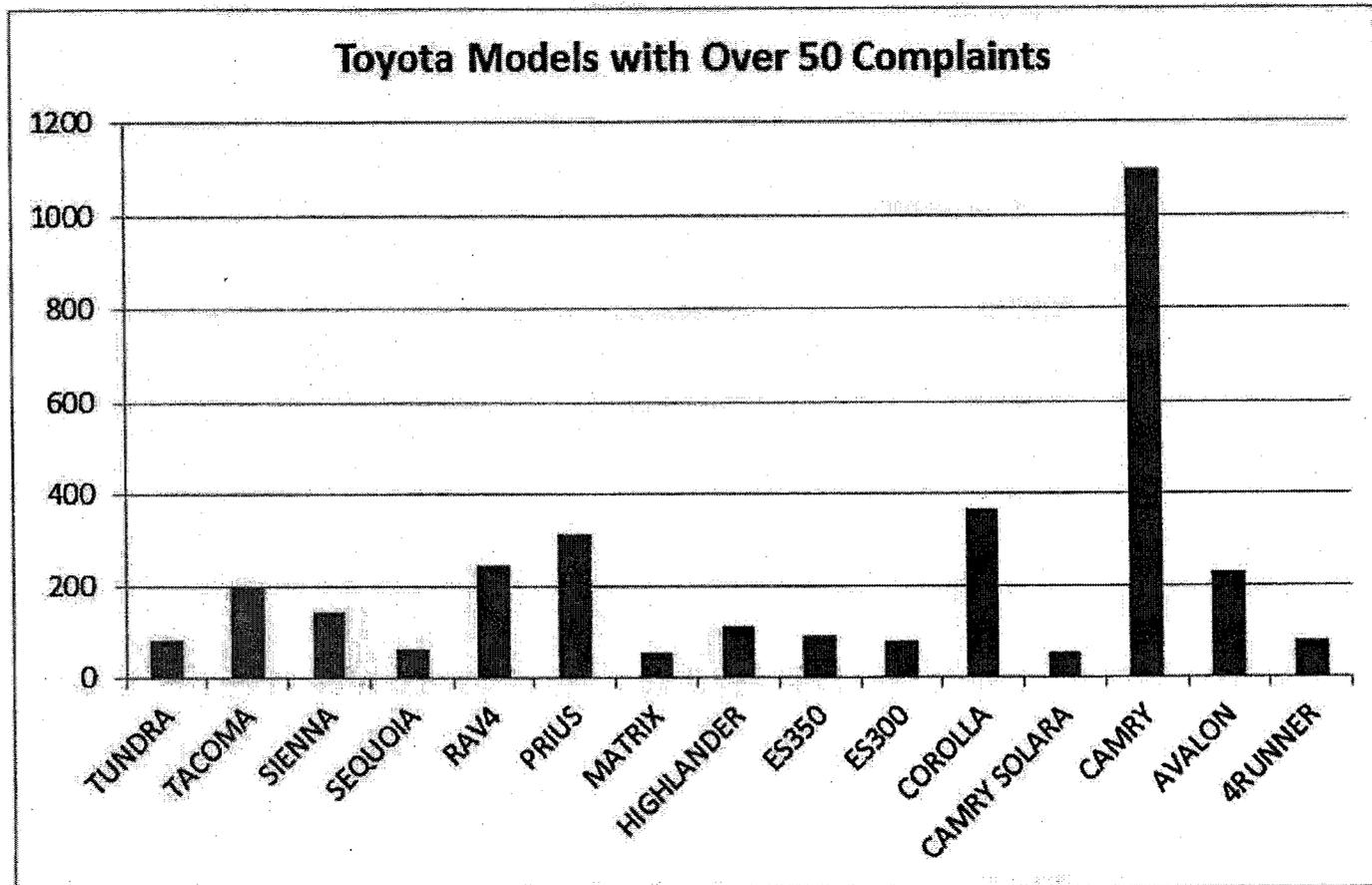
- Ignoring 2009/2010 numbers because of publicity, we find that the frequency of complaints has dropped to the 2007/2008 level
 - About 10x the pre-Electronic Control (ETCS-i) level of the 1990s.
- **Have we really addressed the root cause of this problem ?**

Sudden Acceleration Complaints By Model Year



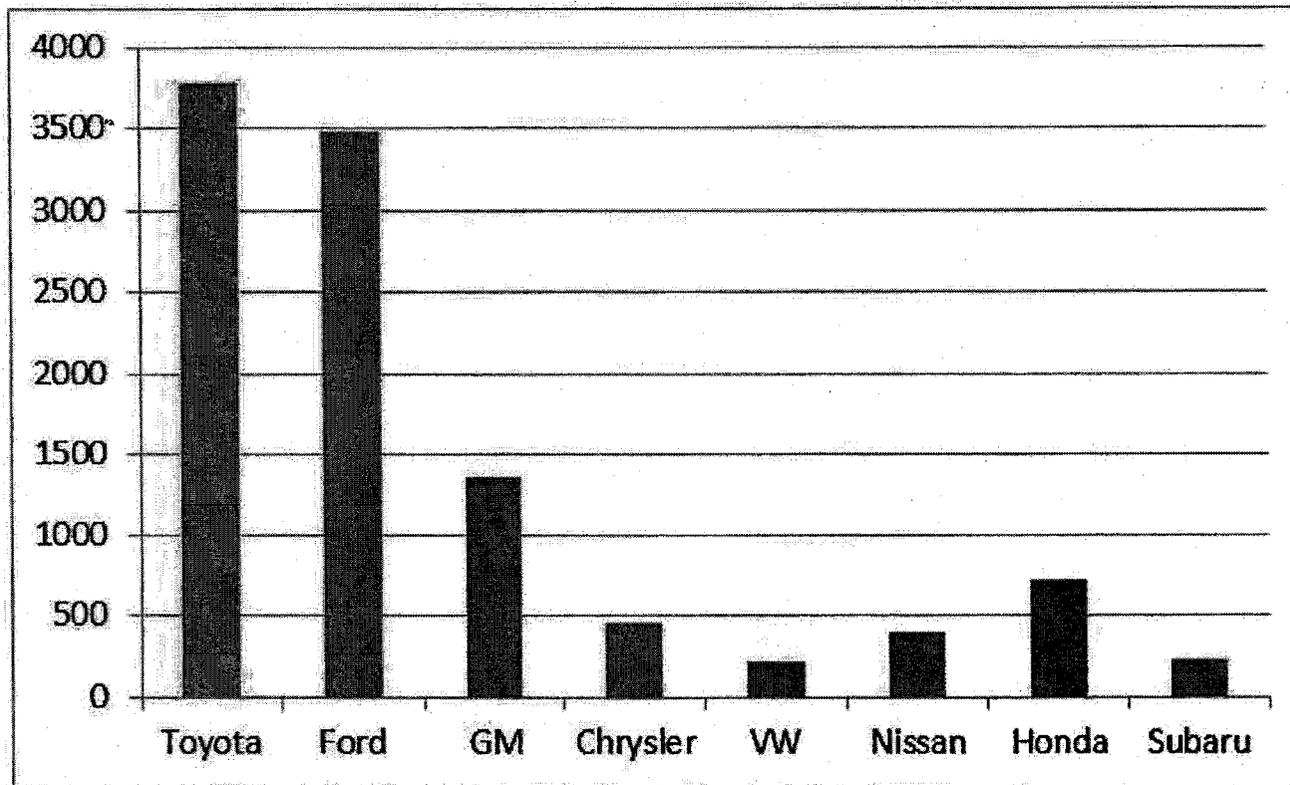
- Consistent with the previous slide, cars after model years 2002 started showing lot of sudden acceleration complaints
- Interestingly, cars after 2011 model year show a significant drop – is this because Toyota changed something or is it too early to accumulate enough cases ?

Sudden Acceleration Incidence by Model



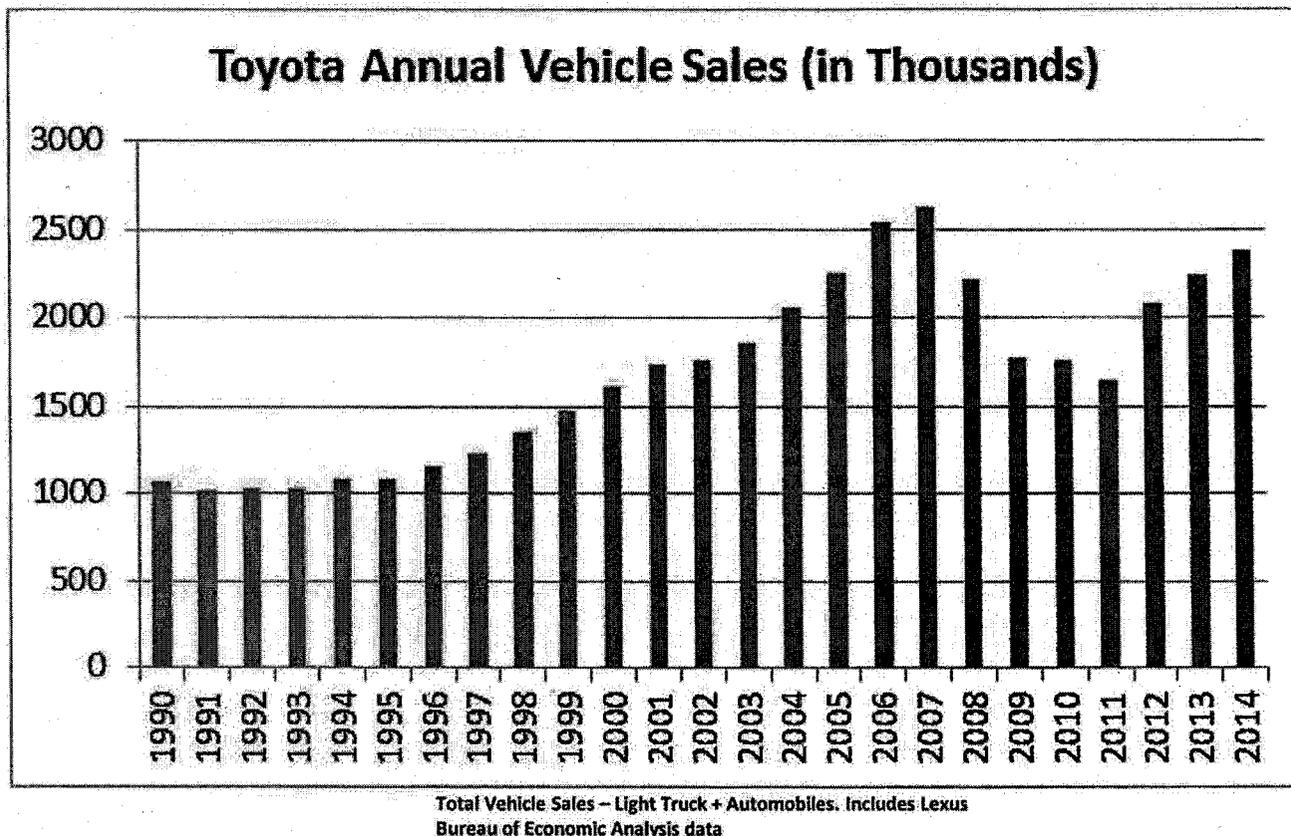
- These results match with Toyota recall models and show that this methodology produces consistent results

Sudden Acceleration Across Manufacturers



- Toyota has the most number of complaints regarding sudden acceleration, followed by Ford
- Rest of the industry is significantly lower

Toyota Sales



- **Key Observations**

- Peak sales in 2007
- From 2000 to peak, sales increased by a factor of ~ 1.45
- In the same timeframe, complaints increased by a factor of 10

NHTSA Database Integrity - I

- I had petitioned NHTSA about sudden acceleration in my Lexus (petition attached)
- On July 27, my complaint summary in the database was modified and the following sentence added:
 - THE EDR READOUT PROVIDED NO EVIDENCE THAT THE INCIDENT WAS THE RESULT OF ANY TYPE OF DESIGN OR MANUFACTURING DEFECT. *JB UPDATED 07/27/15. *JB

NHTSA Database Integrity - II

- On contacting NHTSA again, I got the following response from Jeff Quandt at NHTSA:
 - Thank you for the message regarding the accuracy of the information regarding your complaint. ODI uses contractors to create electronic records summarizing complaints received by written correspondence. In this case, the contractor mistakenly included a summary of the paragraph in your petition regarding the manufacturer's conclusion that the EDR readout provided no evidence of any type of manufacturing or design defect without explaining the source of this information. We recognize that you dispute this assessment and have changed the summary of your complaint accordingly (see attached update). We apologize for the error and thank you for bringing it to our attention.
- A modification to my complaint in favor of Toyota leads me to question the integrity of the complaints process and complaints database. Who are these contractors ? How are they hired, trained and what procedures are followed to maintain integrity of the complaints process at NHTSA ?
- **At this point, we don't know how many sudden acceleration complaints against Toyota have been erased or altered**

Toyota-NHTSA Nexus ?

- Toyota does not appear to be making a serious attempt at understanding or solving the sudden acceleration problem
 - Please look at my earlier petition (attached)
 - Brake override DOES NOT FIX the problem. It manages the problem from becoming more catastrophic – IF the driver is able to act promptly and appropriately in a very stressful situation
- Hiring by Toyota of ex-NHTSA officials and their involvement in this investigation casts a large shadow of doubt over the entire investigation
- Ready acceptance by NHTSA of proposed Toyota “fixes” and “explanations”
- NHTSA needs to access reports presented by engineering experts in many of the Toyota sudden acceleration lawsuits and understand the root cause of the problem
- Toyota does not share crash Electronic Data Records (EDR) with NHTSA nor does NHTSA demand access to these records for analysis. These EDR records should be made public

Technology Suggestions for NHTSA

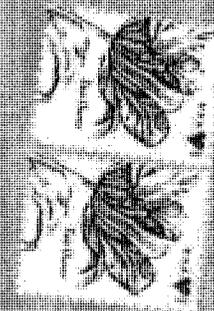
- NHTSA needs to be pro-active
 - They had all the data to figure out there might be a problem by 2007. Prompt action and investigation could have resulted in many lives saved.
- Electronics form a large portion of automobiles and will be a key part of self driving car efforts. Ensure enough engineers in NHTSA with skill sets in EE and Computer Science
- Aggressively data mine to detect problems well ahead of people dying
 - Crash reports from across the US
 - Complaint database
 - Social Media

Appendix

Search Terms Used in Data Analysis

- Field 3: MFR_NAME - MANUFACTURER'S NAME was selected as "TOYOTA MOTOR CORPORATION"
- Field 12 : COMPDESC - SPECIFIC COMPONENT'S DESCRIPTION was selected as: "VEHICLE SPEED CONTROL"
- Field 20 : CDESCR - DESCRIPTION OF THE COMPLAINT was selected when the terms "sudden" or "acceleration" were present
- Over 8000 records related to Toyota ! Hard to manually look through each one. Mostly statistical analysis has been used.

Theresa G. [REDACTED]



TO /
THE HON ANTHONY FOXX,
SECRETARY OF TRANSPORTATION,
1200 NEW JERSEY AVE, SE
WASHINGTON DC 20590



Office of the Secretary of Transportation
Executive Secretariat

EXECUTIVE SECRETARIAT
RECEIVED-NHTSA
AUG 21 P 1:44

Control number: S10-150821-022	Action office: NHTSA
Document date: 8/12/2015	Due date:
Author(s): [REDACTED]	
Subject:	Copy of a Letter Addressed to Senator John Thune Regarding the Lack of Proactive Effort by the National Highway Transportation Safety Administration (NHTSA) in Toyota Sudden Acceleration Complaints
Action:	Appropriate Handling

Comments:

Date	Action	Action by
8/21/2015	Folder Processed for Appropriate Handling.	ASHLEIGH.SCHOFIELD
8/21/2015	DIST: A1,C1,S3,I1	ASHLEIGH.SCHOFIELD
8/21/2015	Updated Folder Information.	ASHLEIGH.SCHOFIELD
8/21/2015	Work Folder Assigned to NHTSA.	ANGELICA.GERTEL1
8/21/2015	Incoming File Uploaded.	ANGELICA.GERTEL1
8/21/2015	Control Number Created.	ANGELICA.GERTEL1

Date	Note	Note by
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