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 denying a petition (DP14–003) submitted to NHTSA 49 U.S.C. 30162, 49 CFR part 552, requesting that the agency open ''an investigation into low-speed surging in the 2006–2010 Toyota Corolla [vehicles] with ETCS-i, in which the brakes fail to stop the vehicle in time to prevent a crash.''

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SUPPLEMENTARY INFORMATION:

1.0 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 motor vehicle safety standard or contains a defect that relates to motor vehicle safety. 49 U.S.C. 30162(a)(2); 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. 49 U.S.C. 30162(c); 49 CFR 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. 49 U.S.C. 30162(d); 49 CFR 552.8.

2.0 Petition Background Information

In a letter dated September 11, 2014, Mr. Robert Ruginis requested that NHTSA open ''an investigation into low-speed surging in the 2006–2010 Toyota Corolla [vehicles] with ETCS-i, in which the brakes fail to stop the vehicle in time to prevent a crash.'' Mr. Ruginis based his request upon multiple low-speed ''surge events'' allegedly experienced by his wife in their model year (MY) 2010 Toyota Corolla, the latest of which resulting in a crash into a parked vehicle on June 8, 2014. Mr. Ruginis makes the following claims in support of his petition: (1) The Event Data Recorder (EDR) readout of his wife's crash supports her account of vehicle acceleration after she applied the brake; (2) NHTSA has never investigated surges in low-speed crashes in Toyota vehicles; (3) a software expert has identified vulnerabilities in Toyota's ETCS-i source code; (4) there are other similar incidents of ''surge at low speed or no speed'' in Toyota Corolla vehicles in NHTSA's consumer complaint database; and (5) surges in low-speed parking scenarios are a safety problem.

NHTSA has reviewed the material cited by the petitioner. The results of this review and our analysis of the petition's merits are set forth in the DP14–003 Petition Analysis Report, published in its entirety as an appendix to this notice.

For the reasons presented in the petition analysis report after a thorough assessment of the potential risks to safety, it is unlikely that an order concerning the notification and remedy of a safety-related defect would be issued as a result of granting Mr. Ruginis's petition. After full consideration of the potential for finding a safety related defect in the vehicle and in view of the need to allocate and prioritize NHTSA's limited resources to best accomplish the agency's mission, the petition is respectfully denied.

Appendix—Petition Analysis—DP14–003

1.0 Introduction

On September 12, 2014, the National Highway Traffic Safety Administration (NHTSA) received a September 11, 2014, letter from Mr. Robert Ruginis petitioning the agency ''for an investigation into low-speed surging in the 2006–2010 Toyota Corolla [vehicles] with ETCS-i, in which the brakes fail to stop the vehicle in time to prevent a crash.'' The letter provides the following basis for the request:

> *This request is based on first-hand experience in which multiple low-speed surge events that occurred while driving our 2010 Corolla. The latest incident resulted in a crash on June 8, 2014. In addition to the evidence from our crash incident, we are providing evidence that many other Corolla owners are experiencing similarly unsafe scenarios that are leading to crashes.*

The petition letter provides information regarding the June 8, 2014, crash incident, including the petitioner's interpretation of pre-crash data downloaded from the vehicle Event Data Recorder (EDR) by Toyota field inspectors:

> *The EDR investigation report clearly showed that at the moment the airbag module made the decision whether to deploy (about the time of impact), the voltage to the accelerator pedal was .78 (at idle), the brake was engaged, yet both the speed of the vehicle and engine RPM's had doubled in less than 2 seconds.*

Mr. Ruginis provided copies of the police report for the accident, the EDR report, and a list of ODI complaints (VOQs) that he considered similar to his wife's experience in the crash and in prior driving experience. He provided the following five reasons supporting an ODI investigation of the alleged defect in the MY 2006 through 2010 Toyota Corolla vehicles:

1. The EDR results suggest that unsafe and unexpected surges can occur even when the driver's action is to apply the brake;
2. NHTSA has never investigated surges in low-speed crashes in Toyotas;
3. The observations of software expert Michael Barr suggest that Toyota's electronic architecture has many vulnerabilities;
4. Unintended surges in low-speed parking scenarios are common; and
5. Surges in low-speed parking scenarios are a safety problem.

In evaluating the petitioner's allegations and preparing a response, ODI:

- Reviewed the petition request and submitted appendices, interviewed the petitioner and his wife—who was the primary driver and who was driving when the crash occurred.
- Provided the 163 VOQs submitted by the petitioner to Toyota, formally requested Toyota to provide full warranty claim histories for throttle and braking systems on the subject vehicles, as well as copies of all reports made to Toyota by the complainants or by dealership or Toyota technical personnel related to the complaints, field inspection data, and all related EDR download data obtained by Toyota collected from vehicles identified in incidents reported in the subject vehicle VOQs.
- Requested technical and engineering information from Toyota related to the alleged defect as submitted by the petitioner.
- Analyzed the information provided by Toyota in response to our specific requests for information.
- Reviewed previous analysis and investigative work into unintended acceleration done by NHTSA, the National Aeronautics and Space

Administration, and the National Academy of Sciences as well as papers from the Society of Automotive Engineers related to EDR download data interpretation and limitations.

• Interviewed complainants who had submitted the 163 VOQs noted by the petitioner. Gathered, when possible, law enforcement crash reports, insurance reports, repair facility invoices, photographs of crash sites, security camera surveillance video, and any other relevant information related to the reported incidents.

• Acquired the petitioner's vehicle and transported it to the Vehicle Research Test Center (VRTC) in East Liberty, Ohio, for evaluation.

2.0 Background

2.1 Definitions

The term ''unintended acceleration'' (UA) is often used to generally describe any unintended speed increase in a motor vehicle. This is an extremely broad definition that includes some aspects of normal vehicle performance (*e.g.,* idle speed control and transmission control), as well as many forms of abnormal performance of those systems that represent little to no hazards to highway safety (*i.e.,* issues generally described as ''driveability'' issues).[1] Within the universe of unintended acceleration issues that do involve potentially serious safety hazards, ''sudden acceleration'' (SA) incidents are the most common and are defined as allegations of ''unintended, unexpected, high-power acceleration from a stationary position or a very low initial speed accompanied by an apparent loss of braking effectiveness.'' [2] This definition was developed in the 1980's, when ODI first began investigating the subject in a large cross-section of passenger car makes and models sold in the U.S., including Audi 5000 sedans.

The foregoing definition purposefully excludes ''stuck throttle'' type incident symptoms, which involve failure of the throttle to return to idle when the accelerator pedal is released by the driver. Stuck throttle defects generally follow patterns including relatively high initiation speeds, large accelerator pedal applications and other driving conditions specific to each defect condition. For example, floor mat entrapments tend to occur after the driver has intentionally pressed the accelerator pedal to the floor to pass vehicles on the highway, merge with highway traffic or accelerate up hills. Unintended accelerations resulting from pedal entrapment involve maximum engine power and often include degraded brake effectiveness if the driver pumps out the reserve vacuum in the brake booster, resulting in loss of power assist to the brakes. If the driver is unable to bring the vehicle to a complete stop within the first couple of miles, the brakes will continue to lose effectiveness due to brake fade or heat degradation of the friction materials.

2.2 Sudden Acceleration Background

ODI's first investigation of sudden acceleration, EA78–110, opened almost 40 years ago, covered approximately 60 million MY 1973 through 1986 General Motors passenger cars. That investigation established that sustained, unintended, ''high-power acceleration'' could only be caused by failure mechanisms that produced large throttle openings. This finding reduced the potential failure modes to defects affecting throttle linkages and cruise control components. Ninety percent of the accident vehicles in EA78–110 were not equipped with cruise control, thus eliminating the only potential electronic mechanism capable of opening the throttle in that investigation.[3] The investigation was closed in 1986 after eight years of testing and studies, concluding that:

> *Inadvertent and unknowing driver application of the accelerator pedal when the driver intended to apply the brake* [''pedal misapplication''] *appears to be the cause of many of the reported sudden acceleration related accidents, even though many of the drivers continue to believe that they had been pushing on the brake pedal.*[4]

In October 1987, a little over a year after EA78–110 was closed; NHTSA's Administrator ordered an independent review of SA (the ''Study''). While the phenomena affected all automatic transmission-equipped cars sold in the U.S., some had notably higher occurrence rates, raising questions about vehicle design factors that may be contributing to the problem. The Study re-examined potential causes of SA, as well as design factors that may contribute to higher rates of pedal misapplication. The results of the Study were released in March 1989, in a report titled ''*An Examination of Sudden Acceleration.*'' [5] With respect to the cause of SA incidents, the Study concluded that, absent evidence of a throttle, cruise control or brake malfunction, ''the inescapable conclusion is that these definitely involve the driver inadvertently pressing the accelerator instead of, or in addition to, the brake pedal.''

Because the majority of incidents were associated with accelerations that began after the vehicle was started and shifted from Park to Drive or Reverse gear, the most effective countermeasure for pedal error related SA incidents was the incorporation of brake-shift interlocks to prevent shifting from Park when the brake pedal is not depressed. Shift interlocks were voluntarily implemented by most manufacturers in the late-1980's and early-1990's and early studies showed reductions in the number of SA complaints during this time period, with the trend driven by the drop in events occurring immediately after shift from Park.[6] Brake shift interlocks have no effect on mitigating pedal errors later in the drive cycle (*e.g.,* parking).

2.3 Toyota Investigations and NHTSA/NASA Study

From 2003 through 2009, ODI examined unintended acceleration issues in Toyota vehicles equipped with ETCS-i in 3 defect investigations and 5 defect petition evaluations. These activities prompted 4 safety recalls addressing floor mat entrapment, a ''sticky pedal'' condition, and an accelerator pedal interference condition. Publicity surrounding a fatal crash in August 2009, that was determined to have been caused by floor mat entrapment, the ensuing floor mat recall by Toyota and the ''sticky pedal'' recall led to intense media coverage of Toyota unintended acceleration issues and possible electronic defects.

Much of the interest focused on low-speed SA incidents in Toyotas not included in the floor mat recalls or in recalled vehicles that had clearly not

[1] ODI's analysis of warranty data for MY 2002–2010 Toyota Camry vehicles submitted by Toyota as part of RQ10–003, determined that approximately 80 percent of the claims were related to engine or transmission recalibrations to address a number of vehicle driveability concerns (*e.g.,* improving shift feel) as described in a series of technical service bulletins, each related to separate conditions and vehicle subpopulations. Claim rates were negligible (less than 0.03%) in vehicles with no such TSB's (*e.g.,* MY 2002–2006 Camry L4 with 2AZ–FE engines).

[2] The definition has been broadened in recent years to include incidents occurring in certain on-road driving maneuvers that require braking, such as approaching controlled intersections or highway exit ramps, but the majority of incidents continue to be reported in low-speed parking maneuvers.

[3] Reinhart, W. 1996. *Engineering Analysis Closing Report, EA78–110.* Washington, DC: NHTSA, (11).

[4] Reinhart, W. 1996. *Engineering Analysis Closing Report, EA78–110.* Washington, DC: NHTSA, (18).

[5] Pollard, J., and E.D. Sussman. 1989. *An Examination of Sudden Acceleration.* Report DOT–HS–807–367. Transportation Systems Center, U.S. Department of Transportation.

[6] Reinhart, W. 1994. The Effect of Countermeasures to Reduce the Incidence of Unintended Acceleration Accidents. Paper 94 S5 O 07. *Proc., 14th International Technical Conference on Enhanced Safety of Vehicles,* Washington, DC, Vol. 1, (821–845).

experienced either mat entrapment or ''sticking accelerator pedals.'' NHTSA responded by conducting an in-depth examination of Toyota's electronic throttle control systems in partnership with NASA's Engineering and Safety Center. NHTSA and NASA released reports detailing the results of this study in early 2011, concluding that incidents alleging low-speed surges during brake application were most likely related to driver pedal misapplication and were not associated with an electronic or software defect in Toyota's ETCS-i system.

2.4 National Research Council Special Report 308

In 2012, the National Academy of Sciences released a report that included a review of NHTSA's defects investigations of low-speed surging in Toyota vehicles and the results of the joint study with NASA. The report, titled ''*The Safety Promise and Challenge of Automotive Electronics, Insights from Unintended Acceleration,''* concluded that NHTSA's decision to close its investigations of Toyota's ETC were justified based on the initial investigations, complaint analyses, field investigations using EDR data and NASA's examination of the Toyota ETC. With regard to allegations of low-speed surging with ineffective brakes, the report stated:

Reports of braking ineffectiveness in controlling a vehicle experiencing the onset of unintended acceleration from a stopped position or when moving slowly require an explanation for the ineffectiveness, such as physical evidence of damage to the brake system. Under these circumstances, investigating for phenomena other than pedal misapplication absent an explanation for the ineffectiveness of the brakes, which are independent of the throttle control system and are designed to dominate engine torque, is not likely to be useful.[7]

3.0 Petition Analysis

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	0.86	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" may be set for M/T vehicle

3.1 Petitioner's Vehicle

3.1.1 Petitioner's Accident

The petition was prompted by a collision with a parked vehicle during an attempted curbside parking maneuver in a residential neighborhood on June 8, 2014. In the police report, the driver states that she stopped at an intersection with the intention of turning right and parking along the curb behind a parked vehicle.

Figure 1. Pre-Crash Data for Petitioner's Accident (Image From Bosch CDR Report)

During a subsequent vehicle inspection on June 24, 2014, Toyota downloaded data from the vehicle EDR (Figure 1).

3.1.2 EDR Data Analysis

Although the EDR data shown in Figure 1 appears to show that engine speed doubled on or about the same time that the brake switch shows brake pedal application, examination of this data as well as the ways in which the EDR collects, transmits and records it, does not support the petitioner's conclusion that the vehicle accelerated when the brake was applied. Interpretation of EDR pre-crash data should be done within the context of the incident reconstruction, including a detailed statement from the driver, and must take into account the limitations of the system as documented on the Bosch Crash Data Retrieval (CDR) report. The limitations include the resolution of each data element, the asynchronous refresh rates of the data elements, and the rate at which the EDR samples and records the data. Toyota provided the following EDR design information for the 2010 Corolla in response to a formal request by ODI:

The Vehicle Speed is based on the front wheel speed sensors and recorded in 2 kph increments and nominally updated every 500 ms. The Brake Switch, based on the stop lamp switch status, is either ON or OFF, and is updated instantly. The service brake pedal must be depressed minimally for the stop lamp to activate. The accelerator pedal position is recorded in 0.039 volt increments, and the value is nominally updated every 524 ms. This measurement is taken directly at the operator's accelerator pedal. The Engine RPM is measured in 400 RPM increments and is nominally updated every 524 ms.[8]

ODI interviewed the driver to obtain her description of the incident. She indicated that her normal braking style when parking is to apply light, gradual pressure to the brake pedal, rather than a sudden, hard stop. She indicated that as she applied the brakes during the incident, the car responded by accelerating. She stated that it did not slow down, and it continued to increase in speed until it hit the back of the parked vehicle. The petitioner provided a similar description in a call to Toyota's customer relations department three days after the incident, alleging simultaneous failures of both the engine/accelerator and brakes that resulted in full throttle acceleration into a parked vehicle.

The EDR data for the petitioner's incident shows no recorded service brake application until the airbag module trigger point (t = 0s).[9] This indicates that the brake switch was ON immediately after impact, but does not indicate the degree or duration of brake application. The fact that the EDR showed a nominal 3.8 mph increase in vehicle speed in the last 1.8 seconds of recording, and subsequent vehicle testing found the brakes to be fully functional, indicates that no meaningful braking occurred prior to impact. Based on the vehicle speeds recorded just prior to impact (t = −0.8 s), the Corolla was less than a car length from the parked vehicle and traveling 7 to 9 feet per second with no indication of service brake application. Based on the vehicle

[7] NRC. 2011. *TRB Special Report 308: The Safety Challenge and Promise of Automotive Electronics: Insights from Unintended Acceleration.* Washington, DC: National Academies Press, (164).

[8] As indicated in the Bosch CDR report, the Vehicle Speed and Engine RPM values are both rounded down in the given increments.

[9] Airbag deployment software is triggered within 1ms of the airbag module sensing a longitudinal deceleration of about 2 g's (''algorithm enable''). The time interval between impact and airbag algorithm enable is very short, with the precise time depending upon specific crash dynamics.

speed and the driver's stated braking habits, initiation of braking would be expected when the vehicle is about a full car length or more from the intended stopping point. Based upon all of these factors, ODI does not believe that the brake switch data recorded by the EDR is consistent with the petitioner's statement that the vehicle accelerated with the brake applied and vehicle testing demonstrated that acceleration would not occur if the brake pedal had been applied with any meaningful force.

In addition, although the EDR does not show any increase in accelerator pedal voltage in the final 2.8 seconds prior to impact, this does not mean that the accelerator pedal was not depressed during that time period. According to Toyota, *''The increase in the vehicle speed and engine speed prior to impact is consistent with an accelerator pedal being depressed between the recorded data points but not recorded by the EDR.''* VRTC testing confirmed that a short and rapid application of the accelerator could: (1) Fail to be recorded by the EDR based on the asynchronous update rates of the CAN bus signals and the relatively slow sampling rate used by the EDR; and (2) produce the engine and vehicle speed changes recorded by the EDR at t = 0.0 s.

3.1.3 VRTC Vehicle Evaluation/Testing

Following detailed instructions provided by the petitioner regarding the conditions of the surging during the parking maneuvers, VRTC performed over 2,000 miles of test driving while evaluating the petitioner's accident and the vehicle itself. The testing did not produce any unusual performance of the throttle or transmission systems. In addition, testing of the incident vehicle brake system found that it functioned normally and could hold the vehicle stationary with the engine at 2,000 RPM with less than 15 lb of pedal pressure applied to the brakes. The brakes could also hold the vehicle stationary at full throttle with less than 20 lb of force applied to the brake pedal. Testing also showed the vehicle's brakes could bring it to a full stop in less than three feet at the speeds provided in the petitioner's account of the crash.

The petitioner also alleged that uncommanded, short-duration throttle surges occurred in the Corolla during certain decelerations from highway speed. VRTC also conducted testing to try to reproduce this phenomenon but did not observe any unusual performance or symptoms associated with harsh downshifting or changes in torque converter clutch status. Drivers that use light braking during coasting decelerations are likely to be more sensitive to certain transmission shift transients that are triggered by brake application (*e.g.,* torque converter unlock), that may not be noticed by drivers who use more brake pedal force. However, such transients have very brief durations, involve minor changes in vehicle deceleration and are normal operating characteristics of automatic transmission vehicles that do not represent an unreasonable risk to motor vehicle safety. Furthermore, ODI does not consider the coast down condition reported by the petitioner to be related to the surging alleged in the accident, which did not involve transmission shifting.

3.2 NHTSA Investigations of Low-Speed Surges

The petitioner claims that NHTSA has never investigated low-speed surges in Toyota vehicles. This is incorrect. NHTSA has investigated complaints alleging low-speed surges in Toyota vehicles equipped with ETCS-i for over 10 years, starting with a defect petition (DP03–003) in 2003. Altogether, ODI completed 5 defect petition evaluations and 1 investigation (PE04–021) related to allegations of low-speed surging in Toyota vehicles equipped with ETCS-i prior to the joint study of the issue initiated by NHTSA and NASA in 2010.[10]

Low-speed surges were the primary focus of the study by NHTSA and NASA in 2010. As clearly stated in the Executive Summary of NHTSA's February 2011 report from this study:

Both [NHTSA and NASA] also noted that the vast majority of complaints involved incidents that originated when the vehicle was stationary or at very low speeds and contained allegations of very wide throttle openings, often with allegations that brakes were not effective. NHTSA's analysis indicated that these types of complaints generally do not appear to involve vehicle-based causes and that, where the complaint included allegations that the brakes were not effective or that the incident began with a brake application, the most likely cause of the acceleration was actually pedal misapplication (i.e., the driver's unintended application of the accelerator rather than, or in addition to, the brake.)

The results of NHTSA's field inspections of vehicles involved in alleged UA incidents during 2010 supported this analysis. Those vehicle inspections, which included objective evidence from event data recorders, indicated that drivers were applying the accelerator and not applying the brake (or not applying it until the last second or so).'' [11]

A review of the NHTSA and NASA reports from the Toyota ETCS-i study show that the petitioner's incident and the other similar incidents presented by the petitioner fall within the scope of the prior work, which concluded that allegations of sudden acceleration from a stop or low-speed with ineffective brakes are most likely caused by pedal error by the driver and not indicative of a vehicle-based defect (unless potential faults are identified in pedal design or in shift-interlock safeguards—for incidents occurring after a shift from Park).

3.3 Software Theories

The petition states that ''the observations of software expert Michael Barr suggest that Toyota's electronic architecture has many vulnerabilities'' and concludes that these observations suggest that ''floor mats and sticky accelerator pedals are not the only causes of unintended low-speed surges in Toyota vehicles.''

Before responding to the petitioner's statement regarding recent software theories, ODI first notes that floor mats and sticky pedals have never been considered likely ''causes of unintended low-speed surges in Toyota vehicles.'' Incidents of pedal entrapment by improper or out-of-position floor mats are a severe form of a stuck throttle condition, as they occur after the pedal has intentionally been fully depressed to wide-open throttle (WOT) by the driver, generally during attempted passing maneuvers, accelerations on highway entrance ramps to merge with highway traffic or attempts to maintain speed or accelerate up hills. When the driver releases pressure from the accelerator, the pedal remains stuck at WOT resulting in an incident of high-speed unintended acceleration.

The ''sticky pedal'' condition was associated with excessive friction in the accelerator pedal assembly which could develop after the vehicle had been parked overnight in certain environmental conditions (*e.g.,* high relative humidity and cool ambient temperature). A pedal with excessive friction may be slow to return to idle when released by the driver and, in some cases, may stick after being held at a constant position for an extended period of time. This would typically occur during steady-state highway driving (*i.e.,* pedal held at constant position for some period of time)

[10] DP03–003, DP04–003, PE04–021, DP05–002, DP06–003 and DP08–001 all included examination of alleged vehicle accelerations from low-speeds.

[11] NHTSA. 2011. *Technical Assessment of Toyota Electronic Throttle Control (ETC) Systems.* (viii). *http://www.nhtsa.gov/PR/DOT-16-11.*

following a morning cold-start and the pedal could ordinarily be returned to idle simply by tapping the accelerator pedal to free the sticking condition. Although ODI is not aware of any crashes or injuries resulting from sticking pedals, the condition has been mistaken for evidence of electronic UA in at least one instance.[12]

With regard to Mr. Barr, ODI is aware that he and other consultants have raised certain software design and electrical architecture issues in the course of civil litigation regarding Toyota ETCS-i vehicles. The petition does not cite, and ODI is unaware of, any instance where Barr or any other consultant postulating that the ETCS-i software is defective has reproduced unintended acceleration in a Toyota ETCS-i vehicle under real-world driving conditions.

The petitioner submitted a presentation prepared by Barr regarding his analysis of the software in a 2005 Toyota Camry and cites several opinions contained in that document, but does not identify any specific condition or theory that could result in SA in the subject vehicles.[13] The Barr presentation summarizes his review of Toyota's ETCS-i source code and a case review of a defect theory he developed as part of a lawsuit relating to a fatal accident in a 2005 Toyota Camry with a 4-cylinder engine. Barr's defect theory involved the suspension of a specific operating system task that performs multiple throttle control and failsafe functions in the Toyota ETCS-i source code (Task X death). Task X death would result in the throttle remaining stuck at the last computed throttle command, but would be terminated by any transition in brake switch status.[14]

We note that the Corolla vehicles that are the subject of this petition are equipped with engine control modules (ECM's) supplied by Delphi, while Barr's task death theory applies to Toyota Camry vehicles equipped with Denso modules. The Delphi modules contain different source code with different task and stack monitoring functionality than the Denso modules and, hence, do not contain substantially similar software. It is therefore reasonable to conclude that the theories and mechanisms advanced by Mr. Barr in regard to the software employed in the Denso throttle controls are inapplicable to the petitioner's vehicle.

Nonetheless, since the low-speed surge incidents that are the subject of the petition are similar to the SA crash incidents reported in other Toyota vehicles, regardless of throttle control technology or ECM supplier, ODI offers the following assessment of the Barr task death theory submitted by the petitioner:

- *No specific defect identified*—Barr identifies a number of issues with Toyota's ETCS-i software and electrical architecture, including several potential failure mechanisms that he speculates could result in task death.[15] However, as stated in his ''Case Specific Opinions'' slide [54], he ''cannot identify with 100% certainty the specific software defects'' responsible for the UA incident. ODI sees no factual basis for assigning any level of probability to his theories.
- *Not reproduced*—Barr does not identify any specific software states or vehicle operating conditions necessary for any of the failure mechanisms to occur and has not reproduced a task death or any other software failure resulting in SA in real world driving conditions.[16]
- *Untestable*—Rather than identifying the specific conditions necessary for theoretical software failures to occur, Barr and other proponents of the theory have suggested that such failures cannot be reproduced because ''the test space is effectively infinite'' resulting in ''too many possible tests.'' [17] This precludes any scientific evaluation of the validity of such theories.[18]
- *Fault injection did not produce SA*—When Task X deaths were reproduced by fault injection, they did not result in sudden increases in throttle opening or any loss of brake effectiveness. Incidents that begin when the brake is not applied result in loss of power to the throttle when the brake is applied and incidents that begin with the brake already applied would, necessarily, involve low severity because the engine would be frozen at idle.[19] Table 1 describes throttle and brake responses for each of the initial condition pedal state scenarios associated with Task X death. The risk of uncontrolled acceleration, crash or injury would be low and complaints associated with such incidents would be more likely to cite loss of power or stalling than uncontrolled engine power.

TABLE 1—TASK X DEATH SCENARIOS

Initial conditions	Throttle and brake symptoms
Foot on the accelerator pedal	• Throttle stuck at last computed throttle command. • Brake application cuts power to the throttle.
Foot on the brake pedal	• Throttle is initially stuck at idle. • Normal braking (brake release cuts power to the throttle).
Foot on neither pedal	• Throttle is initially stuck at idle.

[12] Testing conducted by Toyota and observed by NHTSA engineers reproduced the sticking pedal condition in the pedal assembly removed from a MY 2007 Toyota Avalon involved in an incident in January 2010 that was reported by some as evidence of electronic UA (VOQ 10300210).

[13] For example, the petitioner cited Barr's opinions that ''Toyota's ETCS source code is of unreasonable quality'' and ''Toyota's source code is defective and contains bugs, including bugs that can cause unintended acceleration.''

[14] Any transition in brake switch status would result in a discrepancy between brake status recognized by the Main CPU, which would be frozen by the task death, and the Sub-CPU which would continue to receive actual brake status voltage from the stop lamp switch (''brake echo check''). This would trigger failsafe operation with throttle opening limited to less than 10 degrees and set a fault code.

[15] For example, Barr speculated that memory corruptions resulting from stack overflow or unidentified software bugs could result in task death and other negative effects.

[16] Barr's only testing of Task X death involved a fault injection method, performed with Toyota's assistance, to artificially induce task deaths to study system and failsafe performance. There is no evidence of any scenario in which the ''brake echo check'' failed to cut power to the throttle after brake switch transition during this testing.

[17] In ODI's investigations of defects involving embedded control system faults, either VRTC, the manufacturer, or the supplier have been able to: (1) Identify the specific operating conditions necessary to produce the fault through field data analysis, system review and testing; and (2) reproduce the conditions to duplicate the faults in vehicle testing.

[18] Theories of electromagnetic interference (EMI) effects on ETC or cruise control systems as causes of SA incidents have included similar claims regarding testability. No EMI theories have ever been duplicated in a vehicle and no specific source or path for the interference has been identified.

[19] With regard to the potential for more severe failure modes associated with Task X death, Barr further speculates that one memory corruption event ''can cause task death and open [the] throttle'' and that the brake echo check may not always cut power to the throttle. He states that ''memory corruptions are like ricocheting bullets'' that may result in more severe effects. However, these theories have never been demonstrated in any testing nor were they observed during fault injection tests conducted to observe system performance with artificially induced task death.

TABLE 1—TASK X DEATH SCENARIOS—Continued

Initial conditions	Throttle and brake symptoms
	• Brake application cuts power to the throttle.

• *No evidence in field data*—The fault injection testing did not reproduce an SA, but it did demonstrate that failures related to Task X death would result in a very specific set of symptoms that can be used to identify potentially relevant incidents in field data, such as: (1) Allegations of unresponsive accelerator pedals that do not increase or decrease engine power when the driver presses or releases the pedal; (2) allegations of vehicles suddenly losing power when the brake is applied; and (3) fault codes associated with ''brake echo check'' failsafe operation. ODI's analyses of complaints and warranty data have not revealed any sign of these symptoms in any Toyota ETCS-i vehicles.

• *Not consistent with reported SA*—Incidents of sudden acceleration also involve very specific symptom patterns, including: (1) Primarily occurring in low-speed driving maneuvers in parking lots and driveways, as well as other driving maneuvers associated with required brake application (see Table 3); (2) reports of sudden increases in engine power allegedly initiated by application of the brake; and (3) the allegations of brake ineffectiveness in the same complaints. None of the software task death theories postulated by Barr fit or otherwise explain these patterns. The same patterns and vehicle dynamics are evident in the large volume of crashes in which pedal misapplication has been identified as the undisputed cause (see section 3.5, *Low-speed surge hazards*). ODI has observed these patterns in SA complaints in investigations and research covering nearly 40 years and involving vehicles with all forms of throttle control, both mechanical and electronic.

• *Brake effectiveness*—None of the electronic theories reviewed by ODI explain how pressing on the ''brake'' would result in a sudden increase in engine power as alleged in SA complaints, nor do they explain why the brakes would suddenly lose effectiveness at the same time as the engine power surge.[20]

• *Different software*—As noted above, the Corolla vehicles at issue in this petition are equipped with ECM's supplied by Delphi, while Barr's task death theory applies to certain Toyota Camry vehicles equipped with Denso modules. The Delphi modules contain different system monitoring functionality than the Denso modules and, hence, do not contain substantially similar software.

• *Pedal error not excluded*—As Barr indicated in a slide titled ''*Other Similar Incident Criteria* [55],'' evidence contradicting correct use of pedals is one factor that would exclude his theories from consideration. As outlined in Section 3.4 of this report, *Other Similar Incidents,* the available EDR data for the subject vehicles does provide evidence contradicting the correct use of pedals.

3.4 Other Similar Incidents

The petitioner states: ''I reviewed the complaints made to NHTSA by owners of 2006–2010 Toyota Corollas [and] found 163 reports in which the driver experienced a surge at low speed or no speed; 99 drivers mentioned that the brakes were already depressed when the surge occurred or the surge occurred when the brakes were depressed; 83 incidents resulted in crashes.'' ODI provided copies of the 163 VOQs noted by the petitioner to Toyota and requested complaint, warranty, inspection and EDR information about each vehicle (''subject vehicles'').

Using information supplied by Toyota, the VOQ text, and any supporting or additional information (*e.g.,* law enforcement crash reports, repair orders from dealers or independent repair facilities, photographs, interviews with complainants and/or complainants' families,[21] witness statements, letters to elected representatives, letters to NHTSA, etc.) ODI analyzed the petitioner's incident and the 163 VOQs reporting similar incidents as alleged by the petitioner. Six of the VOQs are duplicate submissions, resulting in a total of 158 unique vehicles. ODI's analysis of these complaints is summarized in Table 2, which groups the complaints in three major categories.[22] The categories are based on ODI's analysis of all available information and not solely on the initial VOQ complaint text.

TABLE 2—ODI ANALYSIS OF PETITIONER SELECTED VOQ'S

Category	Description of category	Number of VOQs	Number of crashes	Supported by EDR pre-crash data
A	There is an alleged increase in engine power in which the brakes are allegedly unable to control: Incidents are caused by pedal misapplication or by a late braking effort of the driver.	105	93	17
B	Dual pedal application: The driver inadvertently applied both the brake and the accelerator simultaneously during the event.	28	2	0
C	Incidents that do not fit the alleged defect of ''engine surge in which the brakes fail to stop the vehicle in time to prevent a crash.''.	25	10	0

Category A: Category A complaints are those alleging simultaneous failures of the vehicle's braking ability and a sudden increase in engine power that the driver did not request by pressing on the accelerator pedal, with no evidence

[20] Pressing the brake pedal with a nominal force of 40 lbs or less would produce sufficient braking torque to overcome full/maximum drivetrain torque in all vehicles that have been evaluated by ODI to date.

[21] Three complainants were now deceased and in some cases the complainant was not the driver at the time of the incident.

[22] An itemization of VOQ number by Category is provided in the closing resume for this investigation, which can be obtained at *www.safercar.gov.*

of brake system malfunction observed in post-incident inspections/testing. These complaints fit the definition of ''sudden acceleration'' incident allegations as described in the background section of this report and fall within the scope of the petitioner's allegations. As discussed in previously in this report, these incidents fit the profile of pedal misapplications. Again quoting from the from the 2012 TRB report reviewing ODI's processes for investigating unintended acceleration: ''*investigating for phenomena other than pedal misapplication absent an explanation for the ineffectiveness of the brakes, which are independent of the throttle control system and are designed to dominate engine torque, is not likely to be useful.* [164]''

As further confirmation of this assessment, some of the VOQs submitted by the petitioner had pre-crash EDR data available that show brake status, accelerator pedal voltage, engine speed and vehicle speed in the 5 seconds prior to the time of the collision trigger (if it was on a model year 2009 or later Corolla). This information, together with other relevant facts (*e.g.,* law enforcement reports, accident reconstruction, witness interviews), can be compared to the driver's statement regarding the use of foot controls and their alleged effectiveness prior to the collision.

TABLE 3—SUMMARY OF INCIDENTS WITH PRE-CRASH EDR DATA

Case No.	VOQ No.	Incident date	T_{-5} speed (mph)	ODI brake category A—misapply B—late apply C—no apply	Summary of driver allegation
1	10534094	Sep-11	45	B	Driving at night in rain, released accelerator, departed road, crashed into tree.
2	10334936	May-10	31	A	Approaching stop sign, applied brake, accelerated into fence.
3	10363685	Oct-10	31	C	Approaching stop sign, applied brake, accelerated into utility pole.
4	10523677	May-13	20	A	Approaching intersection, applied brake, accelerated into tree.
5	10352668	Mar-09	11	A	Entering parking space, applied brake, accelerated into parked vehicle.
6	10479582	Oct-12	10	A	Entering parking space, applied brake, accelerated into building.
7	10369494	Nov-10	8	A/B	Entering parking space, applied brake, accelerated into concrete post.
8	10344874	Jul-10	6	A	Entering driveway, applied brake, accelerated into iron fence.
9	10363886	Sep-10	6	A/B	Entering parking space, applied brake, accelerated into building.
10	10520195	Jun-13	6	A/B	Entering parking space, applied brake, accelerated over two curbs.
11	10551478	Oct-13	5	A	Entering parking space, applied brake, accelerated into dumpster.
12	10597296	May-14	4	A	Entering parking space, applied brake, accelerated into parked vehicle.
13 *	10637908	Jun-14	4	A/B	Entering parking space, applied brake, accelerated into parked vehicle.
14	10507434	Apr-13	2	A	Entering parking space, applied brake, accelerated into building.
15	10552563	Oct-13	1	A	Entering parking space, applied brake, accelerated into parked vehicle.
16	10578871	Apr-14	1	A	Backing from parking space, lightly pressed accelerator, accelerated into vehicle.
17	10447756	Jan-12	0	A	Exiting parking space, applied brake, accelerated into brick wall.

* petition incident.

TABLE 4—SUMMARY OF BRAKE AND ACCELERATOR PEDAL USE IN INCIDENTS WITH PRE-CRASH EDR DATA.[23]

Case No.	T_{-5} speed (mph)	Brake switch status by EDR time interval						Accelerator pedal apply status by EDR time interval					
		−5	−4	−3	−2	−1	0	−5	−4	−3	−2	−1	0
2	31	Off	Off	Off	Off	Off	Off	High	High	High	High	High	High
6	10	Off	Off	Off	Off	Off	Off	Low	High	High	High	High	High
4	20	Off	Off	Off	Off	Off	Off	Low	Off	Low	High	High	High
16	1	Off	Off	Off	Off	Off	Off	Low	Low	Low	Med	High	High
14	2	Off	Off	Off	Off	Off	Off	Low	Low	Low	Low	High	High
8	6	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	High	High
12	4	Off	Off	Off	Off	Off	Off	Low	Low	Low	Low	High	Off
15	1	Off	Off	Off	Off	Off	Off	Off	Off	Low	Low	Low	High
10	6	Off	Off	Off	Off	Off	On	Low	Low	Off	Low	High	Off
11	5	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	High
5	11	Off	Off	Off	Off	Off	Off	Med	Med	Med	Med	Med	Med
17	0	Off	Off	Off	Off	Off	Off	Low	Low	Low	Low	Low	Med
7	8	Off	Off	Off	Off	Off	On	Low	Low	Low	Low	Med	Off
1	45	Off	Off	Off	Off	On	On	Low	Low	Low	Low	Off	Off
9	6	Off	Off	Off	Off	Off	On	Off	Off	Off	Off	Low	Off
13 *	4	Off	Off	Off	Off	Off	On	Off	Off	Low	Off	Off	Off

TABLE 4—SUMMARY OF BRAKE AND ACCELERATOR PEDAL USE IN INCIDENTS WITH PRE-CRASH EDR DATA.[23]—Continued

Case No.	T_{-5} speed (mph)	Brake switch status by EDR time interval						Accelerator pedal apply status by EDR time interval					
		−5	−4	−3	−2	−1	0	−5	−4	−3	−2	−1	0
3	31	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off

* petition incident.

Summaries of the 17 crash incidents in which pre-crash EDR was available are provided in Tables 3 and 4. Table 3 provides a summary of the speeds the vehicles were traveling approximately 5 seconds prior to the collision events, ODI's assessment of the causes, and the incident driver's allegation of the sequence of events leading to the collision. Thirteen (13) of the incidents involved vehicles travelling at low-speeds in parking lot maneuvers, including 11 that occurred while parking the vehicle. Fifteen (15) of the incidents alleged that the acceleration began after the brake was applied.[24] These data are consistent with EDR data collected during the prior Toyota study in 2010, which included 39 incidents assessed as pedal misapplications due to no brake application or late braking, including 29 that initiated in parking lots or at low speeds.

ODI's assessments were based on the EDR download data and all available supporting information, as to the cause of the unintended acceleration event, *i.e.,* a pedal misapplication, a braking that occurred too late to in the event to effectively stop the vehicle in time (driver error), a combination of both, and in one case no application of accelerator or brake. Table 4 provides the EDR download information for brake and accelerator pedal information for the individual incidents. Twelve incidents showed no evidence of braking during the crash event, 4 do not show braking until the airbag trigger point, t = 0, and the final incident involved late transition from accelerator to brake for a vehicle travelling over 40 mph (Case #1).

These incidents are a representative sampling of the incidents alleging low-speed surging with ineffective brakes and demonstrate that driver statements regarding pedal use in such incidents are not reliable. It should be emphasized that in order for these 105 VOQs to be included in this category there must have been an alleged concurrent failure or weakness of the throttle and braking systems. No mechanism has been identified that could cause a sudden failure of both systems. No evidence of throttle or brake system faults were found in post-incident inspections of these vehicles and there is no indication of faults in those systems in the available service histories before and after the events. Based on this analysis, ODI does not believe there is evidence of a vehicle based defect in this category of complaints.

Category B: Category B complaints are incidents involving allegations of engine racing or surging during brake application. These incidents do not allege brake ineffectiveness and are therefore not within the scope of the petitioner's alleged defect. The common explanation for complaints alleging engine racing or surging during brake application is that the driver is inadvertently applying both the brake and accelerator pedals when intending to only apply the brake. This is particularly evident in complaints that indicate that engine races faster when the brake is pressed harder.[25]

Several drivers recognized that inadvertently stepping on both pedals was the cause of the engine surging they reported, either in the initial complaint or in subsequent interviews with ODI. For example, in a follow-up interview one owner (VOQ 10363529) noted that after a few incidents, ''I realized in that case that my foot was on both the brake and the accelerator. This may have been carelessness on my part. However, it being a compact car, the brake is very close to the accelerator. Perhaps closer that the other cars that I drive or have driven. No one else in our family has reported unintended acceleration with this car.''

A variation of dual application that increases the potential severity of such incidents involves unsecured floor mats that slide forward into a position where they can impede brake application. ODI identified two crashes involving drivers who had floor mats that had moved forward over the accelerator pedal and under the brake pedal such that when the brake pedal was applied the force was transferred through the floor mat to the accelerator pedal (in one case it was an aftermarket floor mat plus a bathroom rug).

Category C: Category C complaints are incidents that do not fit the alleged defect of ''engine surge in which the brakes fail to stop the vehicle in time to prevent a crash.'' Examples are instances of high idle at initial startup, transmission shift flares or delays in coast down idle. Two of the crashes in this category were due to vehicles being struck by following traffic which then propelled the vehicles forward uncontrollably. Four of the crashes were due to a lack of brake effectiveness, such as a soft brake pedal, without any corresponding engine surge, three of the crashes were due to the driver applying the accelerator pedal too aggressively without any brake application, and one crash was due to a medical condition experienced by the driver.

3.5 Low-Speed Surge Hazards

ODI agrees that uncontrolled vehicle accelerations in parking lot environments represent a clear safety hazard to surrounding traffic, pedestrians and even building occupants, as vehicles often accelerate inside of businesses with facing parking spaces where they have caused serious and sometimes fatal injuries. However, investigations have shown that these incidents are not isolated to any particular makes or models of vehicles and rarely have any vehicle based defects been identified in the throttle or brake systems in post-incident inspections.

As background, to put ODI complaints of low-speed surging during brake application in context, separate research conducted for NHTSA by the Highway Safety Research Center to examine the prevalence of crashes caused by pedal application errors found that they occur more frequently than is generally known and exhibit many of the same characteristics as the SA complaints received by ODI, although in much greater numbers. The study included a review of North Carolina state crash database records, which identified 2,411

[23] EDR reports with accelerator pedal data shown as voltage readings from 0.78 to 3.70V were converted as follows: Off = 0.78V; Low = 0.79 to 1.75V; Medium = 1.76 to 2.72V; and High = 2.73V and above.

[24] See supplemental report in the public file for this investigation (*www.safercar.gov*) for a discussion of some of the EDR downloads and associated VOQs, *Supplemental Report, DP14–003, EDR Examples.*

[25] These complaints further demonstrate the effectiveness of the brakes in overcoming engine power.

self-reported pedal misapplication crashes between 2004 and 2008, an average of approximately 480 per year.[26]

Projected nationally, the North Carolina data predict over 16,000 pedal error crashes per year, or about 44 incidents per day. These pedal error crash counts are likely conservative, since they are limited to self-reported incidents that were documented in law enforcement accident reports. The total number of pedal error incidents, including those in which the driver is not aware of the error (such as the petitioner's incident) are unknown and the there is no systematic process or database in the United States for tracking such events. An April 2012 summary of the study notes that 57 percent of pedal error crashes identified in the study occurred in parking lots or driveways, which projects to over 9,000 incidents per year in those driving environments nationwide.[27]

In addition, the Storefront Safety Council, an independent private organization focused on safety hazards associated with vehicle into building crashes, estimates that over 20,000 such crashes occur annually in the U.S. (60 per day), resulting in over 4,000 injuries and as many as 500 deaths.[28] The Storefront Safety Council identifies pedal error as the number one cause of these crashes at 35 percent (other causes include other types of operator error, such as confusing Drive and Reverse, impaired driving, medical conditions and deliberate building intrusions).

These data indicate that pedal error crashes are much more common than previously known, even well after the implementation of brake shift interlocks. The patterns associated with these incidents are similar to complaints to ODI and manufacturers alleging SA incidents when analyzed by: (1) Location; (2) vehicle dynamics; (3) driver demographics; and (4) vehicle design. Both occur predominantly in parking lots and driveways; both involve sudden increases in engine power, unchecked by braking, and coinciding with intended application of the brake; both disproportionately involve younger and older drivers; and both have occurred in vehicles with all forms of throttle and cruise control systems. As previously noted, the incidents were initially observed by ODI in vehicles with purely mechanical throttle control and no cruise control in the earliest years of NHTSA's safety defect enforcement program (EA78–010).

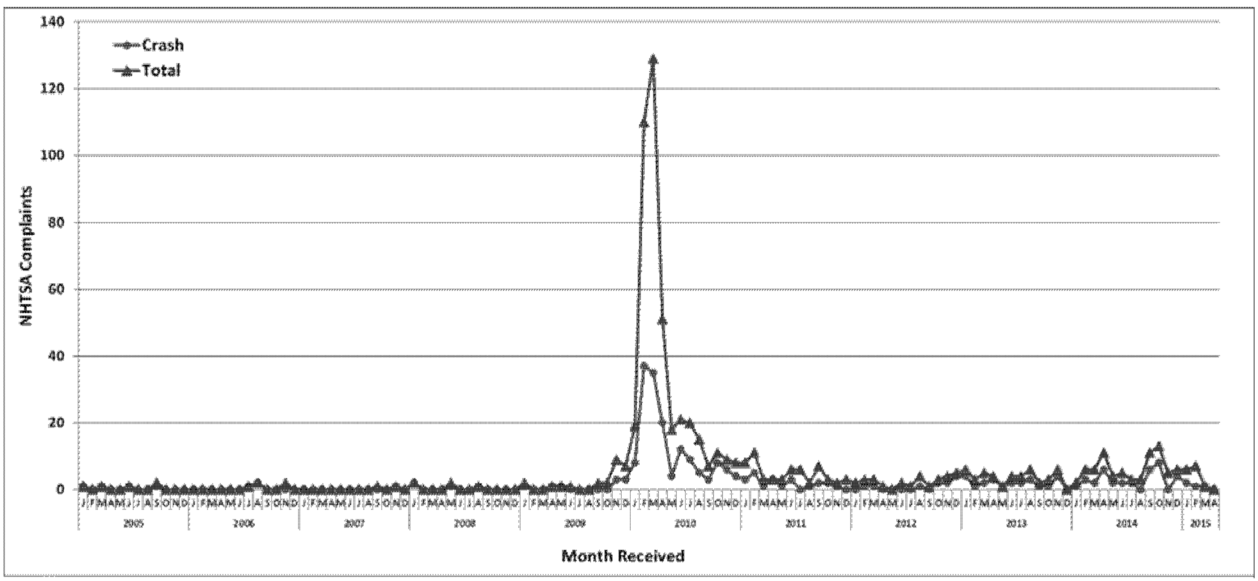

Figure 2. MY 2005-2015 Toyota Corolla Speed Control Complaints by Month Reported.

Complaints to ODI alleging SA related crashes are far less common. In the same period from 2004 through 2008 that the pedal error study identified over 2,400 pedal error related crashes in North Carolina police reports, ODI received less than 40 complaints alleging SA crashes in North Carolina in all light vehicles—or less than 2 percent of the number of crash incidents identified in the pedal error study. However, publicity can significantly increase ODI complaint volumes, as is evident for Toyota Corolla vehicles equipped with ETCS-i, which saw a 7,900% increase in speed control complaints alleging crashes and a 12,800% increase in total speed control complaints from the first quarter of 2009 to the first quarter of 2010, after news media coverage of Toyota's pedal entrapment and sticky pedal recalls (Figure 2). Each of these factors, as well as the incident characteristics used for identifying complaints likely to be related to a common cause (see Section 2.1, *Definitions*), must be considered before conducting any analysis of, or drawing any conclusions regarding, SA rates or trends based strictly upon ODI complaint data.

These data support the petitioner's claim that uncontrolled vehicle accelerations in parking environments are a public safety issue but are not evidence of a motor vehicle defect and, therefore, do not support the opening of a defect investigation.

4.0 Conclusion

In our view, a defects investigation is unlikely to result in a finding that a defect related to motor vehicle safety

[26] Lococo, K., Staplin, L., Martell, C., and Sifrit, K. 2012. *Pedal Application Errors.* Report DOT–HS–811–597. TransAnalytics, LLC and Highway Safety Research Center, U.S. Department of Transportation. *www.nhtsa.gov/staticfiles/nti/pdf/811597.pdf.*

[27] NHTSA. 2012. *Pedal Error Crashes.* Report DOT–HS–811–605. Traffic Tech. U.S. Department of Transportation. (1). *www.nhtsa.gov/staticfiles/traffic_tech/811605.pdf.*

[28] *Storefront Safety Council—working to end vehicle into building crashes. http://www.storefrontsafety.org/.*

exists 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, given a thorough analysis of the potential for finding a safety related defect in the vehicle and in view of the need to allocate and prioritize NHTSA's limited resources to best accomplish the agency's safety mission and mitigate risk, the petition is respectfully 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.

Frank S. Borris, II,

Acting Associate Administrator for Enforcement.

[FR Doc. 2015–11632 Filed 5–13–15; 8:45 am]

BILLING CODE 4910–59–P

DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

[Docket No. PHMSA–2012–0082 (Notice No. 15–13)]

Hazardous Materials: Information Collection Activities

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), Department of Transportation (DOT).

ACTION: Notice and request for comments.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, PHMSA invites comments on its intention to revise an information collection under Office of Management and Budget (OMB) Control Number 2137–0628, ''Flammable Hazardous Materials by Rail Transportation''. This reporting requirement would require tank car owners to report their progress in the retrofitting of tank cars to the Department of Transportation (DOT).

DATES: Interested persons are invited to submit comments on or before July 13, 2015.

ADDRESSES: You may submit comments identified by the docket number (PHMSA–2012–0082) by any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov.* Follow the online instructions for submitting comments.
- *Fax:* 1–202–493–2251.
- *Mail:* Docket Operations, U.S. Department of Transportation, West Building, Ground Floor, Room W12–140, Routing Symbol M–30, 1200 New Jersey Avenue SE., Washington, DC 20590.
- *Hand Delivery:* To Docket Operations, Room W12–140 on the ground floor of the West Building, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Instructions: All submissions must include the agency name and docket number for this notice. Internet users may access comments received by DOT at: *http://www.regulations.gov.* Please note that comments received will be posted without change to: *http://www.regulations.gov* including any personal information provided.

Privacy Act: In accordance with 5 U.S.C. 553(c), DOT solicits comments from the public. DOT posts these comments, without edit, including any personal information the commenter provides, to *www.regulations.gov,* as described in the system of records notice (DOT/ALL–14 FDMS), which can be reviewed at *www.dot.gov/privacy.*

Requests for a copy of an information collection should be directed to Steven Andrews or T. Glenn Foster, Standards and Rulemaking Division (PHH–12), Pipeline and Hazardous Materials Safety Administration, 1200 New Jersey Avenue SE., East Building, 2nd Floor, Washington, DC 20590–0001, Telephone (202) 366–8553.

FOR FURTHER INFORMATION CONTACT: Steven Andrews or T. Glenn Foster, Standards and Rulemaking Division (PHH–12), Pipeline and Hazardous Materials Safety Administration, 1200 New Jersey Avenue SE., East Building, 2nd Floor, Washington, DC 20590–0001, Telephone (202) 366–8553.

SUPPLEMENTARY INFORMATION: Section 1320.8(d), Title 5, Code of Federal Regulations requires PHMSA to provide interested members of the public and affected agencies an opportunity to comment on information collection and recordkeeping requests. This notice identifies an information collection request that PHMSA will be submitting to OMB for revision. This information collection request is contained in 49 CFR part 174 of the Hazardous Materials Regulations (HMR; 49 CFR parts 171–180). PHMSA has revised the burden estimate, where appropriate, to reflect current reporting levels or adjustments based on changes described in this notice. The following information is provided for the information collection: (1) Title of the information collection, including former title if a change is being made; (2) OMB control number; (3) summary of the information collection activity; (4) description of affected public; (5) estimate of total annual reporting and recordkeeping burden; and (6) frequency of collection. PHMSA will request a three-year term of approval for the information collection activity and, when approved by OMB, publish a notice of the approval in the **Federal Register**.

PHMSA requests comments on the following information collection:

Title: Flammable Hazardous Materials by Rail Transportation.

OMB Control Number: 2137–0628.

Summary: This information collection pertains to requirements for the creation of a sampling and testing program for mined gas or liquid and rail routing for High Hazard Flammable Trains (HHFTs),[a] routing requirements for rail operators, and the reporting of incidents that may occur from HFFTs.

In the final rule entitled ''Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains'' PHMSA and FRA adopted a risk-based timeline for the retrofit of existing tank cars to meet an enhanced CPC–1232 standard when used as part of an HHFT. The retrofit timeline focuses on two risk factors, the packing group and differing types of DOT–111 and CPC–1232 tank cars. The timeline provides an accelerated risk reduction that more appropriately addresses the overall risk. The timeline is provided in the §§ 173.241, 173.242, and 173.243 tables of the final rulemaking (80 FR 26643) and includes a January 1, 2017 deadline for of non-jacketed DOT–111 tank cars in PG I service in an HHFT. Not adhering to the January 1, 2017 deadline would trigger a reporting requirement.

This reporting requirement would require owners of non-jacketed DOT–111 tank cars in Packing Group I service in an HHFT to report to DOT the following information regarding the retrofitting progress:

- The total number of tank cars retrofitted to meet the DOT–117R specification;
- The total number of tank cars built or retrofitted to meet the DOT–117P specification;
- The total number of DOT–111 tank cars (including those built to CPC–1232 industry standard) that have not been modified;

[a] An HHFT means a single train transporting 20 or more loaded tank cars of a Class 3 flammable liquid in a continuous block or a single train carrying 35 or more loaded tank cars of a Class 3 flammable liquid throughout the train consist.