

**TOYOTA**  
**TOYOTA MOTOR NORTH AMERICA, INC.**

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June 4, 2004

Mr. Jeffrey Quandt  
Chief - Vehicle Controls Division  
Office of Defects Investigation  
National Highway Traffic Safety Administration  
400 Seventh St., SW  
Washington, DC 20590

Re: NVS-213dsy; PE04-021

Dear Mr. Quandt:

This letter is being sent in response to your March 30, 2004 letter regarding PE04-021. Attached is Question 12, which completes the response to your inquiry.

Should you have any questions about this response, please contact Mr. Chris Santucci or Mr. Tsuyoshi Yokoi at (202) 775-1707.

Sincerely,



Chris Tinto  
Director  
TOYOTA MOTOR NORTH AMERICA, INC.

CT:cs  
Attachment

RECEIVED  
NVS-210  
2004 JUN -7 A 10 19  
OFFICE OF DEFECTS  
INVESTIGATION

RECEIVED  
NVS-210  
2004 JUN -7 A 10 19  
OFFICE OF DEFECTS  
INVESTIGATION

As per our discussion with NHTSA Office of Defect Investigation Mr. Scott Yon, please note that data provided in this submission ("i.e. subject vehicles") is limited to vehicles with the electronic throttle control system. Therefore since the 2002 and 2003MY Toyota Solara vehicles with a V6 engine have been equipped with the mechanical throttle system (i.e. cable type), these vehicles were excluded from this submission.

1. State, by model and model year, the number of subject vehicles Toyota has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Toyota, state the following:
  - a. Vehicle identification number (VIN);
  - b. Type of pedal system vehicle was manufactured with (fixed or adjustable);
  - c. Type of transmission vehicle was manufactured with (auto or manual);
  - d. Date of manufacture;
  - e. Date warranty coverage commenced; and
  - f. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

Provide the table in Microsoft Access 2000, or a compatible format, entitled "PRODUCTION DATA." See Enclosure 1, PE04-021 Attachments, for a pre-formatted table which provides further details regarding this submission. Please adhere to the format defined in this file.

### **Response 1**

The number of subject vehicles Toyota has manufactured for sale or lease in the United States by model and model year is provided in Attachment 1.

In addition, detailed information for each subject vehicle is provided electronically on CD-ROM, in Microsoft Access 2000 format entitled "PRODUCTION DATA(PE04-021).mdb".

2. State the number of each of the following, received by Toyota, or of which Toyota are otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:
  - a. Consumer complaints, including those from fleet operators;
  - b. Field reports, including dealer field reports;
  - c. Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
  - d. Property damage claims;
  - e. Third-party arbitration proceedings where Toyota is or was a party to the arbitration; and
  - f. Lawsuits, both pending and closed, in which Toyota is or was a defendant or codefendant.

For subparts "a" through "d," state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a

consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "f," provide a summary description of the alleged problem and causal and contributing factors and Toyota's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "e" and "f", identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

## Response 2

- a. There are 124 consumer complaints (7 written, 2 e-mail, and 115 verbal complaints) that may relate to the alleged defect. Since some customers contacted Toyota more than once when complaining about the same incident, the total number of unique incidents in the consumer complaint list is 114. This includes 6 incidents which are duplicated with NHTSA's VOQs attached to the inquiry letter.

Based on the available information, such as the content of the allegation or a result of vehicle inspection at a dealer, Toyota did not include consumer complaints alleging one of the following that clearly do not relate to the alleged defect. However, please note that complaints in which the vehicle condition and the circumstances are not clearly specified are included in this response even though they may not relate to the alleged defect.

- (1) an incident alleging uncontrollable acceleration that occurred for a long duration
  - (2) an incident in which the customer alleged that they could not control a vehicle by applying the brake
  - (3) an incident alleging unintended acceleration occurred when moving the shift lever to the reverse or the drive position
  - (4) incidents involving dissatisfaction with drivability, such as shift shock or engine response
  - (5) no explanation of circumstances (customer complained about unintended acceleration, but did not actually experience subject defect, or just stated their concern)
- b. There are no field reports that may relate to the alleged defect.
- c. In the consumer complaints, 45 incidents have been reported where a vehicle crash was alleged and 6 of these incidents alleged an injury had occurred. In addition, Toyota has received 3 legal related claims (i.e. PL claims) that may relate to the alleged defect. All 3 of these incidents involved a vehicle crash and one of the incidents also alleged an injury occurred. Two of these incidents are duplicated in the consumer complaint list. There are no reports alleging fatality.
- d. Toyota has received 3 property damage claims that may relate to the alleged defect. These 3 claims are duplicated with the claims involving a vehicle crash.
- e. There are no third party arbitration proceedings.
- f. There are no lawsuits in which Toyota is or was a defendant or codefendant.
3. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:
- a. Toyota's file number or other identifier used;

- b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
- c. Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
- d. Vehicle's VIN;
- e. Vehicle's make, model and model year;
- f. Vehicle's mileage at time of incident;
- g. Incident date;
- h. Report or claim date;
- i. The incident type (alleged defect statement, type A, B, or both) alleged in the report;
- j. Any retrieved diagnostic trouble code(s) related to the subject component (P codes);
- k. Whether a subject component was determined to be the cause of the alleged incident;
- l. Whether a subject component(s) was replaced during a service visit which was related to the report;
- m. Whether Toyota inspected the vehicle in relation to the report;
- n. Whether a crash is alleged;
- o. Whether property damage is alleged;
- p. Number of alleged injuries, if any;
- q. Number of alleged fatalities, if any; and
- r. Summary description (request No. 2 items 'c' through 'f' only).

Provide this information in Microsoft Access 2000, or a compatible format, entitled "COMPLAINT DATA." See Enclosure 1, PE04-021 Attachments, for a pre-formatted table which provides further details regarding this submission. Please adhere to the format defined in this file.

### **Response 3**

The information for each item (complaint, report, claim, notice, or matter) is provided electronically on CD-ROM, in Microsoft Access 2000 format entitled "COMPLAINT DATA(PE04-021).mdb".

4. Produce copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method Toyota used for further organizing the documents within each category.

### **Response 4**

Copies of all consumer complaints stored in the database are provided electronically on CD-ROM, in Microsoft Excel 2000 format, and submitted as Attachment 2. In addition, copies of the written/ e-mail consumer complaint, that is listed in Attachment 2 with the following ID#, and the legal related claims are submitted as Attachment 3. These documents are organized by category and within each category by order of reported date.

Written complaint : 200301071160, 200312170492, 200401290690, 200306131246  
200301101020, 200308130329, 200402040570

E-mail complaint : 200301311231, 200403181118

5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by Toyota to date that relate to, or may relate to, the alleged defect in the subject vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

Separately, for each such claim, state the following information:

- a. Toyota's claim number;
- b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
- c. VIN;
- d. Repair date;
- e. Vehicle mileage at time of repair;
- f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- g. Labor operation number;
- h. Problem code;
- i. Replacement part number(s) and description(s);
- j. Concern stated by customer; and
- k. Comment, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA." See Enclosure 1, PE04-021 Attachments, for a pre-formatted table which provides further details regarding this submission. Please adhere to the format defined in this file.

#### **Response 5**

The total counts of warranty claims, extended warranty claims, and claims for good will services paid by Toyota for the subject vehicles that may relate to the alleged defect are provided as Attachment 4.

The information for each claim is provided electronically on CD-ROM, in Microsoft Access 2000 format entitled "WARRANTY DATA(PE04-021).mdb".

6. Describe in detail the search criteria used by Toyota to identify the claims submitted in response to Request No. 5, including the labor operations, problem codes, part numbers and any other pertinent parameters used. Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to the alleged defect in the subject vehicles. State, by make and model year, the terms of the new vehicle warranty coverage offered by Toyota on the subject vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Describe any extended warranty coverage option(s) that Toyota offered for the subject vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.

## **Response 6**

The search criteria used by Toyota to identify the claims are provided electronically on CD-ROM, in Microsoft Excel 2000 format, and submitted as Attachment 5. In addition, a list of all labor operations, labor operation descriptions, problem codes and problem code descriptions are provided in Attachment 5.

\*\*\*The terms that Toyota offers for new vehicle warranty coverage on the subject vehicles is as follows;

**Accelerator pedal failure, except pedal position sensor malfunction**

36 months or 36,000 miles for the Toyota vehicles and 48 months or 50,000 miles for the Lexus vehicles from the vehicle's date-of-use (DFU), whichever occurs first.

**Other electronic throttle control system failure, including pedal position sensor malfunction**

60 months or 60,000 miles for the Toyota vehicles and 72 months or 70,000 miles for the Lexus vehicles from the vehicle's date-of-first-use (DFU), whichever occurs first.

There are some extended warranty coverage options that Toyota offered for purchase with the subject vehicles. Detailed information about these options is provided electronically on CD-ROM, in PDF format, and submitted as Attachment 6. The number of vehicles that are covered under each such extended warranty option is provided as Attachment 7.

7. Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that Toyota has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that Toyota is planning to issue within the next 120 days.

## **Response 7**

Toyota has not issued any service or technical bulletins, advisories, or other communications to dealers, contractors, consultants, zone offices, vehicle owners, technicians, or field offices that relate to, or may relate to, the alleged defect in the subject vehicles.

However, Toyota has issued 9 service bulletins pertaining to the "subject components". Although Toyota believes that these bulletins do not relate to the alleged defect defined by NHTSA, Toyota provides these bulletins for your information as Attachment 8. Two of the 9 bulletins relate to the service campaign concerning throttle position sensor failure that Toyota conducted in the past, and one of the bulletins has been issued to reduce the possibility of the throttle sticking at the closed position in cold weather. The others were issued to improve the shift quality of the automatic transmission.

8. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged

defect in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, Toyota. For each such action, provide the following information:

- a. Action title or identifier;
- b. The actual or planned start date;
- c. The actual or expected end date;
- d. Brief summary of the subject and objective of the action;
- e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
- f. A brief summary of the findings and/or conclusions resulting from the action.

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

### **Response 8**

Toyota conducted investigations on two vehicles bought back from customers alleging unintended acceleration. Required information and copies of each investigation report are submitted as Attachment 9. Toyota continues its investigation on these two vehicles and will send an additional report as it becomes available.

9. Describe all modifications or changes made by, or on behalf of, Toyota in the design, material composition, manufacture, quality control, supply, or installation of the subject component, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:
  - a. The date or approximate date on which the modification or change was incorporated into vehicle production;
  - b. A detailed description of the modification or change;
  - c. The reason(s) for the modification or change;
  - d. The part numbers (service and engineering) of the original component;
  - e. The part number (service and engineering) of the modified component;
  - f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
  - g. When the modified component was made available as a service component; and
  - h. Whether the modified component can be interchanged with earlier production components.

Also, provide the above information for any modification or change that Toyota is aware of which may be incorporated into vehicle production within the next 120 days.

### **Response 9**

All modifications or changes made by Toyota, or on behalf of Toyota in the design, material composition, manufacture, quality control or installation, which relate to the subject component are provided electronically on CD-ROM, in Microsoft Excel 2000 format, and submitted as Attachment

10. However Toyota believes that all these modifications or changes described in Attachment 10 do not relate to the alleged defect.

10. Produce samples of one of each of the following:

- a. An exemplar accelerator pedal assembly (with sensors); and
- b. An exemplar throttle body assembly (with sensors and throttle valve control motor).

#### **Response 10**

Exemplar accelerator pedal assembly (with sensors) and throttle body assembly (with sensors and motor) were sent to NHTSA on May 10<sup>th</sup>.

11. State the number of each of the following that Toyota has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used and month/year of sale (*including the cut-off date for sales, if applicable*):

- a. Accelerator pedal assembly (or sensor if serviced separately from assembly);
- b. Throttle body assembly;
- c. Throttle valve position sensor (if serviced separately from the throttle body assembly); and
- d. Throttle valve control motor (if serviced separately from the throttle body assembly).

For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number) Also identify by make, model and model year, any other vehicles of which Toyota is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

#### **Response 11**

The number of each the requested component that Toyota has sold that may be used in the subject vehicles by component name, part number, and month/year of sale is provided electronically on CD-ROM, in Microsoft Excel 2000 format, and submitted as Attachment 11. Please note that Toyota's part sales database does not have the data on the model and model year of the vehicle in which the sold component is used, therefore, the sales data in Attachment 11 includes the number of the component sold for use not only in the subject vehicles but also in the vehicles that contain the identical components installed in production or in service. The lists of any other vehicles that contain the identical components are also provided in Attachment 11.

The information on the supplier for each components parts number is also provided in Attachment 11.

12. Furnish Toyota's assessment of the alleged defect in the subject vehicle, including:

- a. The causal or contributory factor(s);
- b. The failure mechanism(s);
- c. The failure mode(s);



- d. The risk to motor vehicle safety that it poses;
- e. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning; and
- f. The reports included with this inquiry.

## Response 12

### Analysis of ODI Complaints

In order to fully understand the allegations of defect in the subject vehicles, Toyota has conducted a thorough investigation into the complaints registered at NHTSA, as well as complaints registered through our Customer Relations operation. When we reviewed the 12 cases attached to your letter, we recognized that one case (ODI number 8004502) does not relate to this investigation because the vehicle, a 2002 Camry Solara with a V6 engine, is equipped with a mechanical throttle system, not the subject electronic throttle control (ETC) system. This is important to note because as we reviewed complaints on engine surge and sudden acceleration, we learned that similar complaints exist for vehicles with both mechanical throttle controls and electronic throttle controls. However, since this one case does not have an ETC system, we consider this to be, as we believe your agency does, outside the scope of this investigation.

In the remaining 11 cases, although Toyota carefully analyzed all of the available data, there are no specific trends of occasion or facts which help in our estimation of possible causes, because no specific component failures nor malfunctions are specified. The complaints only describe abnormal vehicle behavior, which are not unique to vehicles with electronic throttle controls. Toyota believes that it would be easy to identify an ETC failure or malfunction, because the ETC system will detect if there is a potential problem in the system and will display diagnostic trouble codes (DTCs) to the operator or service technician. In all of the cases that Toyota reviewed, no DTCs related to ETC system or component failure were found in the complainants' vehicles.

In our review of the remaining 11 complaints, Toyota has classified them as they related to "Alleged Defect A", and "Alleged Defect B," based on their statements to NHTSA and, if available, to Toyota. As stated in your letter, "Alleged Defect A" refers to "an engine speed increase without the driver pressing on the accelerator pedal." "Alleged Defect B" refers to a situation where "the engine speed fails to decrease when the accelerator pedal was no longer being depressed." Nine of the complaints could be related to A, two of the complaints could be related to B.

**Alleged Defect A:** Of the nine that could be related to A, six are duplicated in our consumer complaint list. (Although one of the six VOQs did not submit the VIN, we inferred this complaint to be that of the petitioner.) One submitted an inaccurate VIN which we could not identify, and the remaining two complainants did not submit a complaint to Toyota. Of the 8 vehicles (6900639, 8013543, 10026512, 10045944, 10053774, 10055375, 10060806, 10062212) for which a correct VIN was provided, none are listed in our warranty database for repairs of the ETC system. A common theme within the complaints is the inability for replication of the problem by a service technician, as well as the lack of any DTC's stored in the ECU or any physical evidence of failure.

Toyota reviewed the complaints that could be related to A, and found a common theme in 4 of them. In 8015215, the consumer states "VEHICLE WOULD INTERMITTANTLY ACCELERATE

**WHEN APPLYING THE BRAKES."** In 10026512, the consumer states, "...APPLIED THE BRAKES, BUT IT FELT AS THOUGH HE STEPPED ON THE ACCELERATOR." In 10062212 the consumer states, "...AS I APPLIED THE BRAKES TO SLOW DOWN THE ENGINE BEGAN TO RACE." In 10045944, the consumer states, "... WITH MY FOOT ON THE BRAKE, THE CAR SUDDENLY ACCERATED (sic) AT FULL SPEED..." These four vehicles were inspected by a service technician, and no ETC related DTCs were stored at the time

In addition, the four complaints listed in the prior paragraph use terms like "FULL SPEED," "RACE," and "ACCELERATE," when referring to vehicle behavior. This is different from Toyota's opinion of what is referred to in both your letter and memo: vehicle or engine surge. Toyota believes a vehicle surge to be something less than a wide open throttle event, but above typical throttle adjustments such as when the air conditioning compressor is activated or power steering assist is required. Also, according to the complainants' own words, the vehicles tended to accelerate at the time of application of the brake pedal. Without physical evidence or electronic codes stored in the vehicles' computers, we believe these incidents to be similar to incidents referenced in previous investigations into sudden acceleration (SA) occurrences by your office, and conclude that they are events unrelated to an electronic throttle control failure.

In your memo dated March 23, 2004, the agency determined that "Longer duration incidents involving uncontrollable acceleration where brake pedal application had no affect are not within the scope of this investigation." In reviewing 8013543 and 10045944, Toyota believes that if the throttle had opened, as was alleged by the complainant, and the consumer was applying the brake pedal as stated, the vehicle brakes would have restrained vehicle motion. For this reason, we believe that these complaints are unrelated to the failure of the electronic throttle control system, and again consider them as similar to complaints referenced in other SA investigations and, per your memo, outside the scope of this investigation.

**Alleged Defect B:** There are two cases (8013908, 10008367) which mention about throttle sticking, but no actual component failure is specified. Toyota classifies these complaints under "Alleged Defect B." Since no VIN was provided on 8013908, Toyota is unable to make a clear assessment of this incident. In ODI # 10008367, the consumer makes no reference to how the alleged defect related to their ability control the vehicle. This consumer did not complain to Toyota about the issue, and there are no related warranty claims paid on the ETC system. Without a frame of reference on the amount of throttle opening when allegedly stuck, it is not possible for Toyota to determine whether this is an issue with a high idle during engine warm up or normal operation, or related to the alleged defect. Regardless, no reference is made to any loss of control or "greater than expected brake pedal application force," so that complaint appears to be outside the scope of this investigation.

#### **Field Information**

Toyota has also reviewed field information in its possession including consumer complaints, dealer examination results and police reports, but there are no cases that show specific vehicle and/or component failure, such as breakage/malfunction of a mechanical component or a malfunction/short circuit of any electronic components. If the ETC system had experienced some problem, such as an electrical short circuit or mismatch of any signal from one of its components, it would record a DTC and the engine warning lamp would be illuminated. However, when reviewing all of the dealer work comments, we found no ETC-related DTCs in the vehicles inspected. As it is related to "Alleged

Defect B," no physical evidence, like pedals or throttles that are sticky and bind within their travel, or interferences with nearby objects that would cause such an issue were discovered.

Among these cases, Toyota bought back two vehicles from owners (one from ODI# 10055375) that reported unintended acceleration incidents and has investigated these vehicles. As a result, there have been no abnormal conditions detected up to the writing of this letter. Toyota is continuing its investigation on these two vehicles through monitoring their operation under daily usage. (See Attachment 9 for investigation details)

### **Electronic Throttle Control Design**

The outline of electronic throttle control (ETC) system and its function including failsafe functionality is described in the new car feature booklet. (See Attachment 12) The ETC system essentially consists of an electronic control unit (ECU) with two central processing units (CPU) that controls a motor that opens and closes the throttle. Four sensors, two on the accelerator pedal and two on the throttle body, measure the positions of the accelerator and the throttle and feed this information to the ECU. Based on the two pedal sensors, the ECU determines how to move the throttle by activating the motor. The throttle position sensors (TPS) tell the ECU where the throttle is located. To ensure that events such as unintended throttle opening never occur, the system has built in redundancies and failsafes. For more detail, Toyota is planning to fully explain the operation to NHTSA in a demonstration using an actual vehicle and simulated failures.

In case of alleged defect A (engine speed increase without the driver pressing on the accelerator pedal) and B (engine speed failing to decrease when the accelerator pedal was no longer being depressed), the ETC system works as summarized below and prevents against an unintended acceleration incident. The ECU is monitoring/comparing accelerator pedal position and throttle position. If throttle position is greater than pedal position, the ECU detects this inconsistency within a 600-millisecond period and the ECU goes into the failsafe mode. In addition, the accelerator pedal position and the throttle position are monitored with two sensors. If there is mismatch between the outputs of each sensor, the ECU will also judge it to be a problem and the system will go into failsafe mode. All failsafe modes for the above described single point failures include illuminating the engine warning lamp.

In case the ECU itself experiences a malfunction and an abnormal throttle opening signal is sent to the throttle motor, the above detection will still work as designed because of built in redundancy. The ECU has two CPUs and these two CPUs are comparing each signal received every 100 millisecond in order to monitor its own functionality. In the event of a multi-point failure (one of the CPU's and any sensor or sensors), the system will still go into failsafe mode and illuminate the engine warning lamp because of the built in redundancies of the ETC system.

### **Toyota Investigations**

After Toyota received the query from NHTSA, Toyota conducted an actual vehicle trial to confirm vehicle movement in case of each component malfunction that could potentially make an engine's speed increase. As a result, Toyota confirmed that vehicle movement was quite limited and the driver could easily control the vehicle by applying brake and, in some cases, no additional braking was necessary. Toyota submits the summary of the trial as Attachment 13. As it is difficult to express the influence to the driver by numerical value, Toyota will also demonstrate these conditions to NHTSA with a vehicle.

In addition, if events similar to the trial cases can happen in the field, a DTC will be stored and the engine warning lamp will be illuminated (except for a very small engine speed change, i.e. similar to idle up for air conditioner and power steering assist). Again, we note that no such DTC was stored in field incident that may relate to alleged defect. In many cases the dealer checked for DTC's and confirmed that no related code was stored. In other cases it was not clear if the dealer confirmed any DTC's, however, the customer/dealer can easily recognize a warning lamp in the instrument panel, and Toyota believes that they would confirm this in their notes

Toyota believes that the ETC system works as designed, and that if a single or multi-point failure were to occur, the ECU would signal a DTC and put the system into one of its failsafe modes. As evidence that the failsafe system works as designed, Toyota has provided information on the special service campaign that was conducted. Due to an improperly manufactured throttle position sensor that was failing in the field, the ETC system properly identified the component, registered DTC codes, and enabled the failsafe protocol. Toyota conducted the campaign because of customer satisfaction concerns relative to the inconvenience associated with the illuminated engine warning lamp and the "limp-home" failsafe mode. In sum, when the ETC system experiences a failure, it is doing so safely and is consistently providing warning lamps and DTCs.

#### Design/Manufacturing Changes

As it pertains to design and manufacturing, there were no changes made to the ETC system to improve or measure throttle control performance as related to the alleged defect. On the V6 engine models, there have been ECU program changes based on customer comments alleging rough acceleration and shift timing, where the vehicle does not meet the customers expectation, or when transmission shift shock is noticeable. Another ECU program change was done to prevent an inappropriate illumination of the engine warning lamp. In these ECU program changes, there were no changes for the detection of irregular conditions or the failsafe functionality. Please note that these changes were only for the V6 version and that no program changes were made on 4-cylinder engine models. For throttle mechanism itself, material, production process, and supplier changes were made on several components, such as the motor shaft and gears. These changes were made to improve or increase productivity/production capacity and no failures identified by "throttle sticking" were ever reported from the field.

#### Conclusion

Based on the findings mentioned above, Toyota believes that there is no possible factor or trend of vehicle/component defect. For any factor other than vehicle itself, such as environment, driver's age, driving circumstances or style, Toyota is unable to specify any particular trend because of the indistinct and limited information. Finally, Toyota believes that this investigation to be similar to other, prior investigations into mechanical throttle controls. Toyota has found no evidence or behavior that vehicles equipped with electronic throttle controls behave differently than those equipped with mechanical throttle controls when it comes to alleged unintended acceleration.

\* \* \*

Regarding privileged documents that may be responsive to this information request, Toyota understands that it is acceptable to the Agency at this stage for Toyota to identify categories of privileged documents rather than any specific document within those categories. These categories

include (a) communications between outside counsel and employees of Toyota's Law Department, other Toyota employees, or employees of parties represented by Toyota in litigation or claims; (b) communications between employees of Toyota's Law Department and other Toyota employees or employees of parties represented by Toyota in litigation or claims; (c) notes and other work product of outside counsel or employees of Toyota's Law Department, including work product of employees or consultants done for or at the request of outside counsel or Toyota's Law Department. For any privileged documents that are not covered by these categories, if any, Toyota will provide a privilege log identifying any such documents under separate cover. Toyota is not claiming a legal privilege for any documents provided with this response; however, Toyota does not waive the legal privilege or work product protection with respect to other documents that may have been prepared in connection with a specific litigation or claim. In addition, Toyota may assert the attorney client privilege or claim protection under the work-product doctrine for analyses or other documents that may be prepared in connection with litigation or claims in the future.

Toyota understands that NHTSA will protect any private information about persons that is contained in the Attachments to this response, based on privacy policy considerations. Such private information includes data such as names, addresses, phone or fax numbers, email addresses, license plate numbers, driver's license numbers and last 4 digits of the vehicle's VIN.

Data provided in this document is current as of the following dates:

Response 2 through 4:

Owner reports (April 13, 2004)

Crash, injury and property damage claims (April 16, 2004)

Response 5: Warranty, goodwill, extended warranty claims (April 14, 2004)

Response 7: Dealer communications (April 27, 2004)

Response 8: Investigation reports (May 31, 2004)

Response 9: Modifications or changes (May 7, 2004)

Response 11: Number of parts sales (April 27, 2004)

## **Attachment 12**

**The copy of engine section in New Car Feature is stored on CD-ROM as an electronic file.**

Confirmation of vehicle behavior by making intentional failure mode

Date	May 18,2004
Time	14:00 – 16:00
Location	Test track in Toyota Motor Corporation technical center
Test vehicle	Toyota Camry L4 and V6 engine model
Test condition	Normal driving
	Under slow speed
	When almost stop
	Parking in gear with applying brake
	Parking with shift in park

## Test result:

1	Throttle motor circuit open	Yes (goes to limp mode <sup>*1</sup> )	Aware of engine speed increase while in park and idle condition. But unaware of engine speed change while any driving condition.
2	A/C compressor clutch failure	No	Same as No. 1 result
3	Power steering SW short	No	Same as No. 1 result
4	Engine coolant temperature sensor circuit short	Yes (goes to fail-safe mode <sup>*2</sup> )	Aware of slight engine speed increase. But it is a little change enough to apply brake and control the vehicle.
5	Throttle sensor circuit open	Yes (goes to limp mode <sup>*1</sup> )	Same as No. 1 result

\*1: When ECU goes to limp mode throttle valve will stay at prescribed opening position by return spring.

\*2: When ECU goes to fail-safe engine coolant temperature is assumed to be 80 degree Celsius.