NOV 14 1986

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Kenichi Kato
General Manager
Toyota Motor Corporation
U.S. Office
9 West 57th Street, Suite 4550
New York, NY 10019

NEF-12gdc
EA85-045

Dear Mr. Kato:

The purpose of this letter is to request additional information relating to our investigation (EA85-045) of alleged sudden unexpected acceleration of 1981 through 1984 Toyota Cressida vehicles.

Enclosed for your information are copies of 10 additional reports we have received.

For purposes of this information request, the following terms are defined unless otherwise described:

- o Subject vehicles: all 1981 through 1984 model Toyota Cressida vehicles with automatic transmission.
- o Toyota: all the personnel and files of the Toyota Motor Corporation including all field personnel.
- o Alleged problem: shall refer to sudden unexpected vehicle acceleration.

In order for my staff to evaluate the alleged defect, certain information is required. Pursuant to Sections 108 and 112 of the National Traffic and Motor Vehicle Safety Act (the Act), please provide numbered responses to the following items. Please repeat each item verbatim before the response. If any information has been provided to this office in response to a previous information request on this matter, that information need not be resubmitted. All other information must be submitted as requested. The submitted information is to include, but not be limited to, all written reports or documents; transcriptions, notes or other documentation of oral communications; and information contained on electronic storage media. If you cannot answer any specific question, please state the reason.

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1. In reference to your letter of September 30, 1986, concerning the safety recall of certain 1982 model year Cressida, Celica and Celica Supra vehicles, provide the following information:

   a. Describe in detail how the improper application of the printed circuit board coating could cause the soldered terminals of the integrated circuit to develop cracks, and the difference between the proper and improper application of the coating.

   b. State when Toyota discovered the improper application of the printed circuit board coating.

   c. Provide with English translation the relevant manufacturing processes and production records which provide the basis for the number of vehicles in 86V-132.

   d. Describe in detail criterion for selecting 4,561 subject vehicles to be recalled.

   e. Explain what Toyota intends to do about the vast majority of owner complaints pertaining to the alleged problem which are not covered by this recall. Out of the total of 54 owner complaints we have received, only 2 are in the group of vehicles being recalled.

2. Furnish the number and copies of all owner reports or consumer complaints received by Toyota, or of which Toyota is otherwise aware, pertaining to the alleged problem. Furnish all reports or complaints whether or not Toyota has verified each report.

3. Furnish the number and copies of all other reports, complaints, surveys, or investigations from all sources either received or authorized by Toyota, or of which Toyota is otherwise aware, pertaining to the alleged problem on the subject vehicles. Furnish all reports whether or not Toyota has verified each report.

4. Identify and describe each accident or subrogation claim (including the names, addresses, and telephone numbers of the owner/occupants involved) of which Toyota is aware on the subject vehicles and which may have occurred due to circumstances, conditions, or problems caused by the alleged problem. Furnish all reports whether or not Toyota has verified each report.

5. Identify all lawsuits, both pending and closed, by title, location, and docket number in which Toyota is or was a defendant (or co-defendant) pertaining to, at least in part, the alleged problem on the subject vehicles. Provide a brief synopsis of each case, including Toyota's analysis of the incident, the identification of the

vehicle (model series, model year, and VIN), the date of the incident which was the basis for the lawsuit, the date the lawsuit was filed, and the vehicle owner's name, address, and telephone number. Identify all parties involved in the lawsuit.

6. Provide the following technical information relating to engine performance on 1980 through 1984 model year subject vehicles:

   a. Provide a copy of a training publication or other description of the engine control system including, but not necessarily limited to, control of air intake, air fuel ratio, ignition timing, and any other components which directly or indirectly affect engine speed or power output.

   b. Provide a copy of the Part I submission to the Environmental Protection Agency describing engine control systems for the 1984 Cressida vehicles (with and without turbocharger).

   c. If not included in your response to parts a. and b. above, provide the following:

      (1) Identify by name and function all computers or microprocessors which can affect engine speed or efficiency and identify all sensors and other electrical input signals received by each computer.

      (2) A flow chart or similar description of how the relevant control units control the idle stabilization valve and the deceleration cut-off valve, and under which conditions each control system action occurs.

      (3) For each input and output signal to or from the computers or microprocessors which can affect engine speed or efficiency, specify the maximum and minimum voltage which would exist during any phase of normal vehicle use.

      (4) A description of the cold acceleration enrichment system.

      (5) A description of the ignition timing control system.

   d. Provide charts showing engine torque versus engine speed for the following conditions:

      (1) After a cold engine was started with the air conditioner on and off (specify ambient or engine temperature and time delay between engine start-up and torque measurement) with the throttle position at: closed, open 5 degrees, 1/4 open, half open, and fully open.

(2) Engine at normal operating temperature (warm) with the throttle position at: closed, open 5 degrees, 1/4 open, half open, and fully open.

(3) Throttle closed, but the idle stabilization valve is fully open (due to a simulated or actual malfunction) with the engine cold and also with the engine warm.

e. Specify the maximum and minimum power or engine torque required to operate the power steering vane pump, the water pump, the alternator, and the air conditioning compressor, and describe the conditions when the maximum and minimum power requirements occur. Provide separate data for each of these accessories:

f. Describe the differences between engines (and engine control systems) used with manual transmissions and those used with automatic transmissions.

7. Provide the following technical information relating to performance of automatic transmissions on 1984 model year subject vehicles:

a. With the transmission in reverse, specify the maximum force (or drive wheel torque) acting to accelerate the vehicle if the idle stabilization valve is fully open (due to an actual or simulated malfunction). Provide a graph showing vehicle acceleration, speed, and distance as a function of time.

b. With the transmission in drive, specify the maximum force (or drive wheel torque) acting to accelerate the vehicle if the idle stabilization valve is fully open (due to an actual or simulated malfunction). Provide a graph showing vehicle acceleration, speed, and distance as a function of time

c. Provide a graph showing vehicle acceleration from a stationary position in reverse and also in drive if the throttle is one quarter open and the brakes are released.

d. Could a different gear ratio result from any type of clutch failure or other failure when the transmission is in reverse? Explain.

8. Provide a graph showing the magnitude of forces acting to close the throttle as a function of throttle plate angle.

9. Provide a training publication or other description of the design and operation of the cruise control system installed on 1984 and 1985 model year subject vehicles.

10. Provide, to the extent possible, the interior driver compartment measurements, as defined by the Society of Automotive Engineers (SAE) in SAE Standard J1100, listed in enclosed Table 1 for each model year of the subject vehicles.

11. Provide demographic data describing the average United States subject vehicle purchaser.

12. Compare the rate of sudden acceleration related accidents which have allegedly occurred in the United States with the Japanese accident rate for comparable Japanese vehicles.

13. Describe the differences, if any, between the design and location of the control pedals, steering wheels, and driver seats of the United States and Japanese versions of the subject vehicles.

14. Provide the results of Toyota's analysis into possible mechanical or electrical causes of the alleged problem in the subject vehicles. Your response should include, but not necessarily be limited to, a discussion of the following:

    a. Possibility that movement of the transmission selector linkage may cause movement of the throttle linkage due to friction, mechanical interference, or hydraulic action.

    b. Possibility that the brakes will fail or that power assist will not function for the braking system.

    c. Possibility of cruise control system malfunction.

    d. Possibility engine speed can be increased by the idle speed control system, emission control system, fuel injection control system, or by some other malfunction.

    Include actual measured values of pressure, force, RPM, etc., and explain how the measurements were taken.

15. Provide the results of Toyota's analysis relating to possible driver activation of the accelerator pedal on the subject vehicles when the driver believes he or she is applying the brake pedal. Include all measurements of control pedal dimensions and relevant vehicle dimensions which were taken of the subject vehicles and of other vehicles for comparison, and explain how each measurement was taken. Include an analysis of factors relating to the likelihood that drivers may not become aware that they may be applying the wrong pedal when such an error occurs. Measurements of pedal force-displacement characteristics for the brake and the accelerator pedals on the subject vehicles as well as all other vehicles measured for comparison shall also be provided.

16. If Toyota has repurchased, leased, or inspected/tested any of the subject vehicles which has reportedly experienced the alleged problem, identify each such vehicle by VIN and owner's name, describe the circumstances of the reported sudden acceleration incident involving each such vehicle, described the vehicle inspection or tests to which the vehicles were subjected after the alleged sudden acceleration incident had occurred, and present the results of each such test or inspection.

It is important that Toyota respond to this letter on time. This letter is being sent pursuant to Section 112 of the Act, which authorizes this agency to conduct any investigation which may be necessary to enforce Title I of the Act. Your failure to respond promptly and fully to this letter may be construed as a violation of Section 108(a)(1)(B) of the Act.

Your written response, in triplicate, referencing the identification codes in the upper right hand corner of page 1 of this letter, must be submitted to this office within 40 working days from your receipt of this letter. If you find that you cannot respond within the allotted time with all the requested information, you must request an extension from the Director, Office of Defects Investigation, no later than 5 working days prior to the due date for your response. A telephone request for an extension may be made to the Director at (202) 366-2850, but it must be confirmed in writing. On-time delivery of partial submissions should be made when circumstances prevent meeting the required delivery schedule.

If any portion of your response is considered confidential information, include all such material in a separate enclosure marked confidential. In addition, you must submit a copy of all such confidential material directly to the Chief Counsel of the National Highway Traffic Safety Administration and comply with all other requirements of 49 CFR Part 512, Confidential Business Information.

If you have any technical questions concerning this matter, please contact Dr. George Chiang of my staff at (202) 366-5201.

Sincerely,

/s/ Philip W. Davis

Philip W. Davis, Director
Office of Defects Investigation
Enforcement

Enclosures:
10 Consumer Reports
SAE J1100

cc: Teiji Iida (DC)

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