NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF DEFECTS INVESTIGATION MEMORANUM
ISSUE EVALUATION

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Date: December 9, 2003

SUBJECT: Unintended Acceleration (UA) on Model Year (MY) 2002-2003 Toyota Camry.

BASIS: Consumer complaints; TSBs

I. Issue Identification

Vehicle/System Description: Possibly the engine's Electronic Control Module (ECM), or the drive-by-wire throttle system that is standard on Toyota Camry beginning MY 2002.

Applicable TSB: Two similar Toyota technical service bulletins may be pertinent to the issue, one for each subject model year Toyota Camry. The TSBs titled: "ECM Calibration Update: 1MZ-FE Engine Surging." Subject: "Some 2002 (or 2003) model year Camry vehicles equipped with the 1MZ-FE (V6) engine may exhibit a surging during light throttle input at speeds between 38-42 MPH with lock-up (L/U) "ON". The Engine Control Module (ECM) calibration has been revised to correct this condition." See **Attachment 1**.

Failure Mode and Warning:

Alleged circumstances prior to or cause of the unintended acceleration	**4-cylinder**			**V6**			**Grand Total**
	MY02	MY03	Subtotal	MY02	MY03	Subtotal	
Shift to 'D' from 'P' or 'R'	1/1	2/2	3/3	3/3	0/0	3/3	6/6
While backing up	1/1	1/1	2/2	3/3	1/1	4/4	6/6
Pulling in or out of parking space	3/3	1/1	4/4	3/3	1/1	4/4	8/8
Brake Pedal too low/close to gas pedal	4/0	2/0	6/0	1/1	0/0	1/1	7/1
Abnormal throttle response	1/0	1/1	2/1	0/0	2/2	2/2	4/3
While brake was applied	1/0	1/0	2/0	1/0	1/1	2/1	4/1
Engine control module calibration	0/0	0/0	0/0	0/0	1/0	1/0	1/0
Unspecified UA	1/0	0/0	1/0	0/0	0/0	0/0	1/0
While stopped engine raced	1/0	1/1	2/1	0/0	0/0	0/0	2/1
Total:	13/5	9/6	**22/11**	12/11	6/5	**17/15**	**39/26**

The number after the slash in the second table represents alleged number of alleged crashes.

There were no warnings prior to the above incidents. See **Attachment 2** for a complaint summary and complaints.

II. Alleged Defect Scope

Subject Population: 684,000 units for MY 2002-2003 Toyota Camry vehicles (Including Solara).

Problem Experience: The table below shows the number of complaints and complaint rate for unintended acceleration for the subject vehicles.

Model Year	**2001**	**2002**	**2003**	**Total***
# Complaint	2	24	15	39
Complaint Rate	0.6/100K	7.0/100K	4.4/100K	5.8/100K

* MY 2002 and 2003 only.

The complaint receipt dates indicate a strong recent UA trend:

CY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2003	4	3	0	5	1	5	4	2	1	2	3	- - -	30
2002	0	1	0	0	0	1	2	0	1	0	1	1	7
2001	---	---	---	---	0	0	0	0	0	0	0	2	2

TSB History: See Section I above.

Investigative History: None for the last five years for the Toyota for unintended vehicle acceleration.

Safety Recall History: (1) Toyota recalled 53,000 units (NHTSA Recall no. 01V012000) of MY 1998-2001 Toyota Camry vehicles because the accelerator cable housing on certain passenger vehicles equipped with cruise control and a V6 engine could be deformed at the cruise control actuator-to-throttle body connection, which could cause the accelerator inner cable to wear away and break. The result is that regardless of accelerator pedal operation, the throttle could return to idle or remain in its most recent position, increasing the risk of a crash. (2) Toyota recalled 13,000 units (NHTSA Recall no. 00V252000) of MY 2000 Toyota Camry, Corolla, Echo, and Tacoma vehicles because the e-clip could break, causing the speed control to stop working. The result is that the accelerator could stick, preventing normal stopping and handling of the vehicle. See **Attachment 3**.

III. Supporting Information

Peer Experience: The following table compares the number of complaints for unintended acceleration reported to ODI between the subject vehicles and certain MY 2002-2003 peer vehicles.

	Toyota Camry	Honda Accord	Nissan Maxima	Dodge Intrepid	Lexus ES300
No. of Complaints	40	12	6	1	4
Complaint rate	5.8/100K	1.82/100K	5.8/100K	0.89/100K	5.7/100K

* Ford Taurus not included due to recall 02V266000 involving a minimum separation distance between accelerator and brake pedals.

ODI Investigative Experience: See table below for the case opening complaint rates and exposure complaint rates for the subject vehicles and recent investigations on vehicles concerning unintended acceleration.

Case	Vehicle make and model	Issue	No. of Complaint	Complaint Rate	Exposure Rate	Resolution
Subject IE	2002-2003 Toyota Camry		39	5.8 /100K	3.9/100K-yr	
PE02-035	2000-2001 Ford Taurus, Mercury Sable	Pedals too close together	22	5.9 /100K*	4.8/100K-yr*	02V266000

* Based on recall vehicle population and model years

Safety Recall Experience: The table below shows recent unintended acceleration or stuck throttle recalls.

Recall	Make, Model, Model Year	Failure Mode	ODI Influence?
03V124000	2003 BMW 325I, 325CI	ECM increased engine idle speed (up to 1,300 rpm)	No
02V266000	2000-2002 Ford Taurus, Mercury Sable	Accelerator and brake pedals too close together	PE02-035
01V012000	1998-2001 Toyota Camry	Deformed accelerator cable housing at cruise control actuator-to-throttle body connection	No
00V252000	2000 Toyota Camry, Corolla, Echo, Tacoma	Speed control failed to release throttle cable.	No

IV. Problem Discussion

The possible "defects" could result in the aforementioned UA are: (1) ECM calibration error as indicated in the TSB; (2) flaw in the newly introduced drive-by-wire throttle system; (3) total pedal misapplication where the driver steps on the gas pedal instead of the brake pedal; and (4) partial pedal misapplication where the driver steps on both the gas pedal and the brake pedal instead of just the brake pedal.

By process of elimination, possible defect no. 3 is unlikely because the subject vehicles were built with a brake-shift interlock feature. Possible defect no. 4 could relate to the eleven complaints and two crashes categorized in the table in Section I above under "Brake pedal too low/close to gas pedal" and "While brake was applied." The writer and a Co-op had visited two Toyota dealers and found that the lateral brake and gas pedal distance to be approximately 3 inches. This distance is not considered to be too short. (Ford recalled (02V266000) the MY 2000-2002 Taurus and Sable to adjust the brake pedal to gas pedal lateral distance to 50 mm minimum.) However, ODI has 36 records of complaints for MY 2002-2003 Toyota Camry concerning brake pedal going to the floor when applied. There was only 1 similar complaint for the MY 2001 Toyota Camry. So for drivers with large shoe sizes and/or who pivots their foot to operate the gas and brake pedal, depressing the gas pedal while braking is a possibility even thought the distance between the pedals are not consider to be too close.

For possible defect no. 1, although the TSBs indicated that engine surging occurring at 38-42 mph on subject vehicle with the V6 engine, a complainant reported that engine surging had occurred at all speeds. VOQ 10020916 stated "2003 V6 CAMRY HAS ENGINE SURGES/SHUDDERING THROUGH ALL SPEEDS. IS REALLY NOTICEABLE AT38-40 MPH. DIAGNOSTICS SHOWED ENGINE COMPUTER NEEDED TO BE REPROGRAMED - PROBLEM WAS MORE NOTICEABLE WHEN DRIVING IN CITTY WHERE SPEEDS WERE MORE INCREASED AND DECREASED. CONTINUED TO TAKE BACK TO DEALERSHIP." It is also possible that the concern may also exhibit in subject vehicles with 4-cyclinder engines. Last but not the least is possible defect no. 2. Being a new feature, there is a reasonable probability that the drive-by-wire throttle system may have a defect that could result in an UA.

The complaints do not show a geographic or seasonal trend but do show a strong recent trend of UA incidents.

Risk Assessment: Although most of the alleged UA incidents had occurred at very low speed (5 to 15 mph), the percentage of incidents that resulted in a crash is high (27/40 or about 68%). Estimation from some of the complainants on engine surging duration ranged from a low of 2 seconds to as high as 20 seconds. These incidents, thought generally at low speeds, are of high risk to pedestrians because they represent situations that could occur in parking lots, at intersections, and at school lots.

Phone Log with the Complainants

ODI # 10045988: [redacted] states that his problems with his car have occurred continuously. In one instance, he made a turn at a traffic light and then had to accelerate up a steep hill. At this point, the car downshifted and the engine raced to 6000 rpm as he almost hit the car in front of him. In another occurrence, he was driving along a highway, and as he ascended a slight hill, the car repeatedly up shifted and downshifted and the car accelerated to 15 mph above the cruise control set point. Several times, his car has shown a "lag" in acceleration, which may lead to a sudden surge in speed. [redacted] works with the designing of automated systems and states that his experience suggests that there is a problem with the electronic-computer controlled throttle and transmission. He has had problems at various speeds, but he states that the problems are more noticeable at lower speeds. His car is currently being tested by Toyota, but it has been 3 months since he has heard from them.

ODI # 10044151: [redacted] states that both he and his wife have inadvertently stepped on the accelerator pedal while attempting to brake. He states that the clearance between the two pedals is 3.0 inches wide, while his foot is 4.5 inches wide. The result is that both pedals have been pushed simultaneously, which causes the car to shoot forward when braking is intended/needed. He has brought this issue to the dealer's attention where he was told that nothing could be done to remedy the problem.

ODI # 10038103: [redacted] states that the incident occurred while attempting to parallel park. His foot was on the brake as he shifted from park to drive, at which time the vehicle accelerated forward. The car went through an intersection and over a curb. It traveled another 200 ft and crashed through two fences, bushes, a shed, and finally stopped after taking out about 8 ft of brick wall. [redacted] attempted to brake but was unsuccessful in stopping the car. The vehicle was totaled. Photos and the police report have been sent in.

ODI # 10039916: [redacted] states that she was in a parking garage structure when the incident occurred. With her foot on the brake, she made the turn into the parking spot, at which time she heard a "slipping" and the engine raced. The car shot ahead and ran into a wall. Prior to the incident, [redacted] noticed that it was hard to decelerate when driving. The

car was taken to the dealer and nothing wrong had been found with the car. She will be mailing in photos and the police report.

ODI # 10015971: [redacted] states that he owned the car for approximately 4 hours before prior to the incident. He was driving along the interstate where he had to swerve to avoid being hit by another automobile. After swerving, the car "overreacted" and accelerated. [redacted] applied the brakes but they did not work. He states that after he had finally stopped he checked to make sure that his foot was only on the brake pedal. He was forced to continue to swerve to avoid traffic and ended up crashing into the median on the interstate. Even after this, [redacted] states that he could still hear a noise like the engine revving. The car was taken to the dealer and inspected by a defects investigator [redacted] but no problem was found. The problem has not reoccurred. [redacted] will be sending in a police report and repair invoice.

ODI # 10024048: [redacted] states that his car was parked 20 ft from the corner of an intersection. He had shifted the car from park to drive and had begun to let up on the brake when it began to accelerate. [redacted] hit the front end of an automobile in the intersection and then continued around the corner, at which point he struck a tree and eventually came to rest. [redacted] states that his foot was on the brake pedal. He had noticed similar occurrences prior to this incident in which the car would make slight jerking movements. The car was taken to the dealer and no problem was found. [redacted] will be sending in the police report.

ODI # 10048030: [redacted] states that she was at a gas station and was stopped at a gas pump during the incident. While putting the car into park, the engine raced and accelerated forward into another car. The driver of the other car was injured. [redacted] states that this same thing occurred in a previous incident in a parking lot. When she attempted to put the car into park, the engine revved and accelerated into a concrete barrier. The car has been taken to the dealer and no problem has been found. [redacted] states that she will mail in the police report and repair invoice.

ODI #10022695: [redacted] stated that him and his wife have both experienced the problem with the location of the gas pedal and the brake pedal being too close. He stated that the new computerized braking system causes the brake pedal to be pressed farther down than the previous braking system before it engages, which interferes with the gas pedal. His wife was slowing down to make a turn and when she hit the brakes, she hit the gas pedal by mistake also resulting in the sudden acceleration. She went over a curb and through the fence of a library patio. There were no injuries but damage of $10,000 to car. Dealership and insurance fixed the car but did not acknowledge that there was a design flaw in the car. He thought the accident was due to the age of his wife, but he was able to produce the same results. He would like to be notified if any actions are taken resulting this problem.

ODI #10016546: [redacted] stated that several times he has attempted to press the brake pedal and ended up pressing the gas pedal by mistake. The sudden acceleration caused several near accidents but he was able to keep the vehicle in control. He took the car to the dealer for a solution to the problem. Dealer stated that they had gotten many complaints regarding the same situation but at the time had no solution.

ODI #767312: [redacted] stated that while driving he would attempt to slow down the car and when it would not slow down, he realized that he was pressing the gas pedal as well. He stated that the brake and gas pedal are at the same level making it hard to distinguish between the two pedals. He did not feel it was worth taking it to the dealer for a solution but now drives it with extreme caution.

ODI #10011757: [redacted] said that the brake pedal goes too far down while braking, resulting in his shoe pressing on the accelerator pedal as well. He said most men pivot their foot so it's possible to depress both the brake and accelerator pedals at the same time.

ODI #10029427: [redacted] said that he was backing out the garage slowly without his foot on the gas pedal. Suddenly the engine raced and the vehicle surged backward and struck the neighbor's house. Later, he noted that the gas and brake pedals are fairly close together. He has size 13 feet. Even so, [redacted] said that the engine raced by itself.

ODI #10015633: [redacted] said that she pulled into her L-shape driveway. To straighten the vehicle, she shifted into 'R' and that when the 2003 Camry roared forward (not reverse) and crashed onto the concrete porch. [redacted] said that here were skid marks on the driveway to prove that her foot was on the brake pedal to attempt to stop the vehicle. A Toyota representative asked her a lot of questions concerning the brake pedal placement and feel. Eventually Toyota

agreed to replace her vehicle with another Toyota model. [redacted] said that the brake pedal does travel down very far before braking takes effect, but that was not the reason for the crash.

ODI #10022695: [redacted] said that his wife was driving in the parking lot of a public library when suddenly the vehicle accelerated and crashed into the library. The crash resulted in $10,000 damage to the vehicle. They concluded that the brake pedal went to far down causing [redacted]'s right foot to depress the accelerator pedal when she was braking. This problem of depressing both the brake and gas pedal at the same time had occurred with [redacted] three times before; fortunately, he was able to make timely correction to avoid a crash.

ODI #10003939: [redacted] said that his father stopped his 2002 Toyota Camry to check the mail. After his father shifted back to 'D', the engine suddenly raced. The vehicle surged ahead and struck his house. This has happened to [redacted] himself several times. The engine would suddenly raced for 15 to 20 second. [redacted] said that it could not have been pedal misapplication as the vehicle has brake-shift interlock that the driver must step on the brake before shifting the transmission.

ODI #8004502: [redacted] said that she was pulling into a parking space very slowly (foot was not touch either the gas or brake pedal) when the engine suddenly raced. The vehicle surged forward and crashed onto a wall resulting in $6,000 damages. The dealer said that they couldn't find anything wrong. The problem has not occurred before or since. It had logged 8,000 miles when the incident happened.

ODI #10026392: [redacted] said that she was pulling out of a parking space when suddenly the engine raced. The vehicle jumped a curve and struck a fence. The fender was dented. Similar engine racings also occurred at stop lights.