# INDIANA UNIVERSITY

# **TRANSPORTATION RESEARCH CENTER**

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# ON-SITE OFFICE OF DEFECTS INVESTIGATION POTENTIAL UNINTENDED ACCELERATION INVESTIGATION

CASE NUMBER - IN10012 LOCATION - WISCONSIN VEHICLE - 2009 TOYOTA CAMRY CRASH DATE - March 2010

Submitted:

August 10, 2010



Contract Number: DTNH22-07-C-00044

Prepared for:

U.S. Department of Transportation National Highway Traffic Safety Administration National Center for Statistics and Analysis Washington, D.C. 20590-0003

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points be coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

## **Technical Report Documentation Page**

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15.	Supplementary Notes On-site potential unintended a	acceleration investigation involvin	g a 2009 Toyota Car	nry.		
16.	Abstract This on-site investigation focu Unintended Acceleration (UA against a building that was a traveling north on a city street maneuver to travel around a d maneuver and entered the par right steering maneuver and er that she slowly entered the par 20 seconds with her foot on th UA occurred. The driver stat accelerated forward. The vel plane impacted a building. Th the brake. Two security came lot captured the entire crash se and travels into the parking sp and impacts the building. No approximately 1 meter (3.3 ft) of pre-crash data. The brak accelerator was recorded as "C <i>Key Words</i> Unintended acceleration	used on a 2009 Toyota Camry, wh ) that led to an alleged loss of con- djacent to a parking lot. The rest tapproaching the parking lot entra- louble parked delivery van and im- king lot. Immediately after enteri- intered a diagonal parking space. The rking space and stopped the vehicle the brake and was about to shift the ed that suddenly the vehicle's engi- hicle traveled over a curb and tra- he driver was certain that she had eras located on a police headquarter equence. The vehicle does not stop a brake lights are seen until after the and stops. The vehicle's Event D te was recorded as "Off" for 5 Off" from 5 to 3 seconds and as "F	hich was alleged to h htrol by the driver. ' strained 76-year-old unce. The driver init unediately initiated a ng the parking lot, th he driver stated durin te. She said she was transmission into par ine began to roar and versed 7.6 m (24.9 stopped the vehicle a ers building located s the art to slow apprecial nd continues through the impact as the vehicle ata Recorder (EDR) seconds of pre-crass Full" for the remainder <i>18. Distribution Stater</i> General Public	ave experienced an The crash occurred female driver was iated a left steering nother left steering the driver initiated a g the SCI interview stopped for at least the when the alleged the vehicle rapidly ft) where the front and had her foot on outh of the parking oby as it approaches a the parking space le travels backward recorded 5 seconds the recording. The er of the recording.		
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#### IN10012

#### BACKGROUND

This on-site investigation focused on a 2009 Toyota Camry LE (Figure 1), which was alleged to have experienced an Unintended Acceleration (UA) that led to an alleged loss of control by the driver. This crash was brought to our attention by the National Highway Traffic Safety Administration (NHTSA) on April 1, 2010 through the Office of Defects Investigation in Washington D.C. This investigation was assigned on April 7, 2010. The crash involved the Toyota, which experienced the alleged UA in a parking lot and impacted a building. The crash occurred in March, 2010, at 1052 hours, in Wisconsin and was investigated by the local police department.



The Toyota was inspected and the vehicle's Event Data Recorder (EDR) was imaged on April 14, 2010. The crash scene was also inspected on April 14, 2010. The driver was interviewed on June 7, 2010. This report is based on the police crash report, vehicle inspection, crash scene inspection, exemplar vehicle inspection, driver interview, review of video of the crash captured by two security cameras, occupant kinematic principles, and evaluation of the evidence.

#### **CRASH CIRCUMSTANCES**

**Crash Environment:** This crash occurred during daylight hours and under clear weather conditions. The alleged UA occurred in a parking lot as the driver was entering a diagonal parking space. The driver entered the parking lot from a 2-lane, undivided city street. The parking space was located 9.8 m (32.1 ft) directly east of the street entrance. A 15 cm (6 in) high concrete curb was located at the end of the parking space. A building, which was impacted during the alleged UA event was located 7.6 m (24.9 ft) north of the parking space. A police headquarters was located south of the parking lot and a public library was located across the street east of the parking lot. The grade on the approach to the parking space was negative 2%, while the grade in the parking space was negative 1.6%. The grade across the grass lawn between the curb and the building was positive 12.5 %. The parking lot pavement was dry bituminous and the grass was dry. The Crash Diagram is on page 9 of this report.

**Pre-Crash:** The Toyota was driven by a restrained 76-year-old female. She was the only occupant in the vehicle. The driver stated during the SCI interview that she purchased the vehicle new in approximately May of 2008. The vehicle was the third Toyota Camry that she had owned. She was the only driver of the vehicle and drove it on a daily basis. Just prior to the crash, the driver was traveling north on the city street and intended to park in the parking lot and return a book to the library. She had just finished exercising at a physical fitness facility, which was located approximately three blocks from the crash site. As she was traveling north on the city street approaching the parking lot entrance, a northbound delivery van doubled-parked in front of the library. The driver of the Toyota initiated a left steering maneuver to travel around the delivery van and immediately initiated another left steering maneuver to enter the parking lot

#### IN10012

#### Crash Circumstances (Continued)

(Figures 2 and 3). Immediately after entering the parking lot, the driver initiated a right steering maneuver and entered a diagonal parking space. The driver stated that she slowly entered the parking space and stopped the vehicle. She said she was stopped for at least 20 seconds with her foot on the brake and was about to shift the transmission into park when the alleged UA occurred. The driver stated that suddenly the vehicle's engine began to roar and the vehicle rapidly accelerated forward over the curb toward impact with the building. The driver stated she was certain that she had stopped the vehicle and had her foot on the brake. Two security cameras located on the police headquarters building located south of the parking lot captured the entire crash sequence. The videos showed the Toyota travel around the double-parked delivery van and immediately enter the parking lot. The vehicle did not appear to slow appreciably as it approached and traveled into the parking space. The vehicle did not stop and continued through the parking space and over the curb then impacted the building. No brake lights were visible until after the impact as the vehicle traveled backward approximately 1 meter (3.3 ft) and stops.



Figure 2: Approach of the Toyota; arrow on left shows the location of the impact on the building; arrow on right shows area of double-parked delivery van



**Figure 3:** Approach through parking lot entrance to parking space (arrow on left); arrow on right shows location of impact on the building

*EDR Pre-Crash Data:* The EDR (version 1.4.1.0) recorded two front and two side events. The pre-crash data recorded by the vehicle's EDR is presented in the table below. A row was added to convert the speed from mph to km/h.

Seconds	-5	-4	-3	-2	-1	-0.5
Speed (mph)	9.9	8.7	8.7	9.9	14.9	27.3
Speed (km/h)	15.9	14.0	14.0	15.9	24.0	43.9
Brake	Off	Off	Off	Off	Off	Off
Accelerator (Volts)	Off 0.78	Off 0.82	Off 0.86	Full 2.54	Full 3.52	Full 2.42
Engine (rpm)	800	800	400	2000	4400	5200

#### "Latest Pre-Crash Page 0" data block

#### Crash Circumstances (Continued)

*Crash:* The front plane of the Toyota (Figure 4) impacted the building. The direction of force on the vehicle was within the 12 o'clock sector. The driver's frontal air bag did not deploy. The vehicle traversed a distance of 7.6 m (24.9 ft) from the curb to the building. The tire mark evidence on the grass (Figure 5) indicated that the vehicle traveled along a path that was slightly curved to the right. Acceleration marks were evident on the grass (Figure 6) and were located approximately 0.6 m (2 ft) from the building. The impact cracked several mortar joints on the inside and outside of the wall but did not displace the cinder blocks or the building's exterior fascia. The vehicle came to final rest heading north with the front end located approximately 1 meter (3.3 ft) from the building.

**Post-Crash:** The police were notified of the crash at 1052 hours and arrived on scene at 1055 hours. The driver of the Toyota was transported by ambulance to a hospital where she was treated in the emergency room and released. The vehicle was towed due to damage and impounded by the police.

#### **CASE VEHICLE**

The 2009 Toyota Camry LE was a front wheel drive, 5-passenger, 4-door sedan (VIN: 4T4BE46K59R------) equipped with a 2.4-liter, 4cylinder engine, a 5-speed automatic transmission, and 4-wheel anti-lock brakes with electronic brake force distribution. The front row was equipped with bucket seats, adjustable head restraints, lapand-shoulder safety belts, driver and front passenger frontal air bags, driver knee air bag, seat-mounted side impact air bags, and side impact inflatable curtain (IC) air bags that provided protection for the front and second rows outboard seating positions. The second row was equipped with a bench seat, lap-and-shoulder safety belts, adjustable head restraints, and Lower Anchor and



**Figure 4:** Damage on the front plane of the Toyota from the impact with the building; impressions of the building's fascia are highlighted with tape



Figure 5: Police photo showing tire marks on grass from the Toyota



**Figure 6:** Police photo showing the final rest position of the vehicle; arrows show marks in the grass from spinning front wheels

Tethers for Children (LATCH) in the outboard seating positions. The vehicle's odometer reading

#### Case Vehicle (Continued)

at the time of the inspection was 25,417 miles (40,905 kilometers). The specified wheelbase was 278 cm (109.4 in).

The Toyota was subject to two safety recalls. One involved potential driver's floor mat interference with the accelerator pedal. The NHTSA recall campaign identification number is 09V388000. The recall service involved replacing the driver and front right passenger all weather floor mats and modifying the accelerator pedal and carpet area. The recall campaign summary also indicated that a computer upgrade would be loaded which included an override system that would cut engine power in case of simultaneous application of both accelerator and brake pedals at certain speeds and driving conditions. The second safety recall involved the accelerator pedal sensor assembly and the manner in which the friction lever interacts with the sliding surface of the accelerator pedal inside the pedal sensor assembly. The NHTSA recall campaign identification number is 10V017000. The recall service involved installing a reinforcement bar in the accelerator pedal which would allow the pedal to operate smoothly. A copy of each NHTSA recall summary is attached at the end of this report. The service receipt for the recall service performed on the vehicle by the local Toyota dealer on February 11, 2010 is also attached at the end of this report. The driver understood the nature of both recalls and was able to describe what the recall service involved. This incident occurred 2,420 kilometers (1,504 miles) following the recall remedy

#### CASE VEHICLE DAMAGE

*Exterior Damage:* The Toyota sustained front plane damage during the impact with the building. The front bumper and hood were directly damaged. The direct damage began 23 cm (9.1 in) right of the front left bumper corner and extended 114 cm (44.9 in) across the bumper. The crush measurements were taken on the bumper bar and the maximum residual crush was 22 cm (8.7 in) occurring at  $C_4$ . The left and right wheelbases were unchanged. The induced damaged involved the hood and both headlamp/turn signal assemblies. The table below presents the front crush profile.

		Direct Da	umage								Direct	Field L
Units	Event	Width CDC	Max Crush	Field L	<b>C</b> <sub>1</sub>	<b>C</b> <sub>2</sub>	C <sub>3</sub>	$C_4$	<b>C</b> <sub>5</sub>	<b>C</b> <sub>6</sub>	±D	±D
cm	1	114	22	163	0	5	21	22	7	0	4	0
in	1	44.9	8.7	64.2	0.0	2.0	8.3	8.7	2.8	0.0	1.6	0.0

**Damage Classification:** The Collision Deformation Classification for the front impact with the building was 12FDEW1 (0 degrees). The WinSMASH program could not be used to calculate a Delta-V since an impact with a yielding object is out of scope for the program. The wall of the building yielded and was cracked in several locations from the impact. The Barrier Algorithm of WinSMASH was used to calculate a Barrier Equivalent Speed (BES) for the impact. The calculated BES was 22.3 km/h (13.9 mph). A maximum velocity change of 19.1 mph (30.7 km/h)

#### Case Vehicle Damage (Continued)

occurring at 110 ms following the impact trigger was reported in the "Frontal Crash Page 0" data block of the EDR report.

Tire	Meas Press	ured sure	Vehio Manufact Recomm Cold Tire I	cle turer's ended Pressure	Tread I	Depth	Damage	Restricted	Deflated
	kPa	psi	kPa	psi	milli- meters	32 <sup>nd</sup> of an inch			
LF	214	31	221	32	4	5	None	No	No
LR	214	31	221	32	4	5	None	No	No
RR	221	32	221	32	4	5	None	No	No
RF	214	31	221	32	4	5	None	No	No

The manufacturer's recommended tire size was P215/60R16. The Toyota was equipped with the recommended size tires. The vehicle's tire data are shown in the table below.

*Vehicle Interior:* The inspection of the interior of the Toyota revealed no discernable evidence of occupant contact. There was no deformation of the steering wheel or compression of the energy absorbing steering column.

All the doors remained closed and operational. Prior to the crash, all the window glazings were either closed for operable windows or fixed for the others. There was no damage to any window glazing during the crash. The vehicle sustained no passenger compartment intrusions.

#### ACCELERATOR PEDAL, BRAKE PEDAL, AND FLOOR MAT

The CTS accelerator pedal, brake pedal, and a floor cover placed in the vehicle by the driver are shown in their initial status at the time of the SCI inspection in Figure 7. The floor cover was a 67.3 cm x 59.7 cm (26.5 in x 23.5 in) piece of upholstery cloth that was placed over the Toyota OEM floor mat. A similar upholstery cloth was on the floor at the front right passenger position. Figure 8 is an on-scene police photograph that shows the condition and position of the upholstery cloth floor cover at the crash scene. Figure 9 shows the initial status of the Toyota floor mat at the SCI inspection following the removal of the upholstery cloth. The Toyota floor mat was secured by the floor mounted attachments and was not free to move. The product identification on the back of the floor mat was "Front Left PT206-32060." The carpet under the accelerator pedal was smooth and flat against the toe pan. The distance from the Toyota floor mat to the bottom of the accelerator pedal was 7 cm (2.8 in). The distance from the back of the accelerator pedal to the toe pan was 5.5 cm (2.2 in). A test of the accelerator pedal was conducted by pushing it to the floor and releasing it three times. It functioned smoothly and did not bind for each of the three tests. Figure 10 shows the CTS accelerator pedal mechanism housing. The identification numbers on the accelerator pedal mechanism housing were 78110-07011, 08060A3A Y, 49033070404 LHD.

#### Accelerator Pedal, Brake Pedal, and Floor Mat (Continued)



**Figure 7:** The initial status at the SCI inspection of the accelerator pedal, brake pedal, and floor cover placed in the vehicle by the driver of the Toyota



Figure 9: The initial status of the Toyota floor mat at the time of the SCI inspection

**EVENT DATA RECORDER** 



Figure 8: Police on-scene photo showing the status of the floor covering at the crash scene



Figure 10: The CTS accelerator pedal mechanism housing

# The Toyota's EDR was imaged via the diagnostic link connector using the prototype EDR readout tool with software version 1.1.0. The imaged file was subsequently read and printed using version 1.4.1.0 of the readout tool software. The "Latest Pre-Crash Page. 0" data block reported the driver's safety belt switch status as "Belted" and the driver's seat position as "RW." The transmission shifter position was recorded as "Others," which is understood to indicate that the transmission was not in the park, neutral, reverse positions nor was it invalid data. The EDR reported two frontal event data blocks. The "Frontal Crash Page.1" data block was probably related to impact with the curb since the velocity change was reported a 0 mph throughout the 200 ms of velocity change recording. The "Frontal Crash Page.0" data block was related to the building impact and the time from the pre-crash trigger was reported as 0 ms. The frontal air bag and pretensioner deployment times were reported as "Not Fired". The EDR recorded 200 milliseconds (ms) of velocity change data, which is presented in the table below. A column was added to convert mph to km/h.

#### Event Data Recorder (Continued)

ms	mph	km/h	ms	mph	km/h	ms	mph	km/h	ms	mph	km/h
10	1.4	2.3	60	13.4	21.6	110	19.1	30.7	160	18.6	29.9
20	3.3	5.3	70	15.9	25.6	120	19.1	30.7	170	18.5	29.8
30	5.8	9.3	80	17.7	28.5	130	19.0	30.6	180	18.3	29.5
40	8.1	13.0	90	18.5	29.8	140	18.9	30.4	190	18.1	29.1
50	10.8	17.4	100	19.0	30.6	150	18.7	30.1	200	17.9	28.8

"Frontal Crash Page.0" Data Block

The EDR also recorded a side event on the driver's and passenger's sides. The time from the pre-crash trigger for the driver's side was recorded as 0 ms. The velocity change data was recorded beginning at -20 ms and extended to 76 ms in 4 ms intervals. The velocity change for the driver's side was recorded as 0.0 mph for each recording interval at the B-pillar, C-pillar, and the floor. The deployment times at the driver's side B-and C-pillars were recorded as "Not Fired." The time from the pre-crash trigger for the passenger's side was recorded as 38 ms. The velocity change data was recorded at the B-pillar, C-pillar, and the floor beginning at -22 ms and extended to 74 ms. At -22 ms the velocity change at the B-pillar, C-pillar, and floor were 0.0 mph, -0.1 mph (-0.2 km/h) and 0.1 mph (0.2 km/h), respectively increasing to -1.4 mph (2.3 km/h), -2.3 mph (3.7 km/h), and 0.8 mph (1.3 km/h), respectively at 74 ms. The deployment times at the B-and C-pillars were recorded as "Not Fired." The EDR pre-crash data was discussed in the Pre-Crash section on page 2 of this report.

#### **AUTOMATIC RESTRAINT SYSTEM**

The Toyota was equipped with a Certified Advanced 208-Compliant (CAC) frontal air bag system that consisted of dual stage driver and front passenger frontal air bags, driver knee air bag, driver seat position sensor, and safety belt usage sensors. The front passenger seat was equipped with a weight sensor. Based on the 7<sup>th</sup> edition of Holmatro's Rescuer's Guide to Vehicle Safety Systems, the frontal air bag sensors were located on the inner fenders. None of the frontal air bags deployed in this crash. The manufacturer has certified that the vehicle is compliant to the Advanced Air Bag portion of the Federal Motor Vehicle Safety Standard (FMVSS) No. 208.

The Toyota was also equipped with a side impact air bag system that consisted of roof railmounted IC air bags and front seat-mounted side impact air bags. Based on the Holmatro Rescuer's Guide to Vehicle Safety Systems, the side impact sensors were located within the lower B-and C-pillars. Neither the IC air bags nor the seat-mounted side impact air bags deployed in this crash.

#### MANUAL RESTRAINT SYSTEM

The Toyota was equipped with lap-and-shoulder safety belts for all the seating positions. The driver's safety belt consisted of continuous loop belt webbing, an Emergency Locking

#### Manual Restraint System (Continued)

Retractor (ELR), sliding latch plate, and an adjustable upper anchor that was located one notch above the full-down position. The front passenger safety belt was similar but was equipped with a switchable ELR/Automatic Locking Retractor (ALR). Both safety belts were equipped with retractor-mounted pretensioners. Neither pretensioner actuated during the crash. The second row lap-and-shoulder safety belts were similar to the front passenger safety belt except that they were equipped with fixed upper anchors.

The inspection of the driver's safety belt assembly revealed heavy historical usage scratches on the latch plate. There was no discernable evidence of loading on the belt webbing, latch plate belt guide, or the D-ring. The EDR recorded the driver's safety belt switch status as "belted."

#### **CASE VEHICLE DRIVER KINEMATICS**

Based on the SCI interview, the driver of the Toyota [76-year-old female 165 cm (65 in) 59 kg (130 lbs)] was seated in an upright posture with her back against the seat back and both hands on the steering wheel. The seat track was adjusted 15 cm (5.9 in) rear of the forward position, which corresponded to between the middle and rear track position. The total travel distance from the forward track position to the rear track position was 25.5 cm (10 in). The driver stated she was wearing her safety belt snugly over her shoulder and hips. She was not wearing glasses at the time of the crash.

The impact with the building displaced the driver forward and opposite the 12 o'clock direction of force. She sustained a fractured sternum from loading the safety belt.

#### **CASE VEHICLE DRIVER INJURIES**

The driver was transported by ambulance to a hospital where she was treated in the emergency room and released. The table below presents the driver's injury and injury source.

Injury Number	Injury Description (including Aspect)	NASS In- jury Code & AIS 90	Injury Source	Source Confi- dence	Source of Injury Data
1	Fractured sternum, upper body, obliquely oriented and slightly displaced, not further specified, with small left pleural effusion <sup>1</sup>	moderate 450804.2,4	Torso portion of safety belt system	Probable	Emergency room records

<sup>&</sup>lt;sup>1</sup> The driver was subsequently hospitalized due to pleural effusion, pericardial effusion, and pneumonia. During her 14 day hospitalization, she had multiple ultrasound guided thoracenteses for the pleural effusions with removal of 1.8 liters of fluid from her left plural cavity and 500 milliliters of fluid from her right pleural cavity. She also received one unit of packed red blood cells. The treating physicians were silent regarding any association of her injury with the crash.

#### **CRASH DIAGRAM**

#### IN10012



09V388000

# **RECALLS SUMMARY**

Vehicle Make / Model:	Model Year(s):
LEXUS / ES350	2007-2010
LEXUS / IS	2006-2010
TOYOTA / AVALON	2005-2010
TOYOTA / CAMRY	2007-2010
TOYOTA / PRIUS	2004-2009
TOYOTA / TACOMA	2005-2010
TOYOTA / TUNDRA	2007-2010

#### NHTSA CAMPAIGN ID Number:

#### Summary:

TOYOTA IS RECALLING CERTAIN MODEL YEAR 2004-2010 PASSENGER VEHICLES. THE ACCELERATOR PEDAL CAN GET STUCK IN THE WIDE OPEN POSITION DUE TO ITS BEING TRAPPED BY AN UNSECURED OR INCOMPATIBLE DRIVER'S FLOOR MAT.

#### Consequence:

A STUCK OPEN ACCELERATOR PEDAL MAY RESULT IN VERY HIGH VEHICLE SPEEDS AND MAKE IT DIFFICULT TO STOP THE VEHICLE, WHICH COULD CAUSE A CRASH, SERIOUS INJURY OR DEATH.

#### Remedy:

TOYOTA FILED AN AMENDED DEFECT REPORT ON NOVEMBER 25, 2009, STATING THAT DEALERS WILL MODIFY THE ACCELERATOR PEDAL AND, ON CERTAIN VEHICLES, ALTER THE SHAPE OF THE FLOOR SURFACE UNDER THE PEDAL. THESE CHANGES ADDRESS THE RISK OF PEDAL ENTRAPMENT DUE TO INTERFERENCE WITH THE FLOOR MAT. REDESIGNED ACCELERATOR PEDALS WILL BECOME AVAILABLE BEGINNING IN APRIL 2010 AND DEALERS WILL REPLACE ANY MODIFIED PEDAL WITH THE NEW PEDAL IF DESIRED. ALSO, DEALERS WILL REPLACE ANY GENUINE TOYOTA OR LEXUS ALL-WEATHER FLOOR MATS WITH REDESIGNED ALL-WEATHER MATS, OR REPURCHASE THE PREVIOUS MATS FROM OWNERS WHO DO NOT WANT THE NEW ONES. ADDITIONALLY, SOFTWARE MODIFICATIONS WILL BE INSTALLED ON CAMRY, AVALON AND LEXUS ES 350, IS 350 AND IS 250 MODELS THAT WILL ENSURE THAT THE BRAKE OVERRIDES THE ACCELERATOR IN THE EVENT BOTH BRAKE AND ACCELERATOR PEDALS ARE APPLIED. TOYOTA WILL BEGIN MAILING LETTERS TO OWNERS IN DECEMBER 2009. OWNERS MAY CONTACT TOYOTA AT 1-800-331-4331, LEXUS AT 1-800-255-3987.

#### Notes:

TOYOTA RECALL NO. 90L. OWNERS MAY ALSO CONTACT THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION'S VEHICLE SAFETY HOTLINE AT 1-888-327-4236 (TTY 1-800-424-9153), OR GO TO <u>HTTP://WWW.SAFERCAR.GOV</u>.

Close Window

Model Year(s):
2005-2010
2007-2010
2009-2010
2009-2010
2010
2009-2010
2008-2010
2007-2010

#### NHTSA CAMPAIGN ID Number: 10V017000

#### **Summary:**

TOYOTA IS RECALLING CERTAIN MODEL YEAR 2005-2010 AVALON, MODEL YEAR 2007-2010 CAMRY, MODEL YEAR 2009-2010 COROLLA, COROLLA MATRIX, RAV4, MODEL YEAR 2010 HIGHLANDER, MODEL YEAR 2008-2010 SEQUOIA, AND MODEL YEAR 2007-2010 TUNDRA VEHICLES. DUE TO THE MANNER IN WHICH THE FRICTION LEVER INTERACTS WITH THE SLIDING SURFACE OF THE ACCELERATOR PEDAL INSIDE THE PEDAL SENSOR ASSEMBLY, THE SLIDING SURFACE OF THE LEVER MAY BECOME SMOOTH DURING VEHICLE OPERATION. IN THIS CONDITION, IF CONDENSATION OCCURS ON THE SURFACE, AS MAY OCCUR FROM HEATER OPERATION (WITHOUT A/C) WHEN THE PEDAL ASSEMBLY IS COLD, THE FRICTION WHEN THE ACCELERATOR PEDAL IS OPERATED MAY INCREASE, WHICH MAY RESULT IN THE ACCELERATOR PEDAL BECOMING HARDER TO DEPRESS, SLOWER TO RETURN, OR, IN THE WORST CASE, MECHANICALLY STUCK IN A PARTIALLY DEPRESSED POSITION.

#### **Consequence:**

THE ACCELERATOR PEDAL MAY BECOME HARD TO DEPRESS, SLOW TO RETURN TO IDLE, OR, IN THE WORST CASE, MECHANICALLY STUCK IN A PARTIALLY DEPRESSED POSITION, INCREASING THE RISK OF A CRASH.

#### **Remedy:**

DEALERS WILL INSTALL A REINFORCEMENT BAR IN THE ACCELERATOR PEDAL WHICH WILL ALLOW THE PEDAL TO OPERATE SMOOTHLY. GM WILL NOTIFY OWNERS FOR THE PONTIAC VIBE PLEASE SEE 10V-018. THIS SERVICE WILL BE PERFORMED FREE OF CHARGE. THE SAFETY RECALL IS EXPECTED TO BEGIN EARLY FEBRUARY AND WILL BE COMPLETED IN LATE APRIL 2010. OWNERS MAY CONTACT TOYOTA AT 1-800-331-4331.

#### Notes:

TOYOTA SAFETY RECALL NO. AOA. OWNERS MAY ALSO CONTACT THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION'S VEHICLE SAFETY HOTLINE AT 1-888-327-4236 (TTY 1-800-424-9153), OR GO TO HTTP://WWW.SAFERCAR.GOV .

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THE OF LIKED ALADY OF TIONS:	DLR:LAKE ENG:2.4	4_Liters		
08:57 11FEB10 11:17 11FEB10 LINE OPCODE TECH TYPE HOURS		LIST	NET	TOTAL
A PERFORM AGA SPECIAL SERVICE CAMPAIGN REINFORCEMENT BAR	INSTALL ACCELERA	ATOR PEDA	۸L	
CAUSE: PERFORM AGA ACCEL. RECALL				
INSTALL ACCELERATOR PEDAL RE	INFORCEMENT BAR			
18WTOYS 1 78112-07050 PLATE, ACCELERAT	OR P			(N/C) (N/C)
FC: 99/99				
COUNT: 1				
AUTH CODE:	· · · · ·			
PARTS: 0.00 LABOR: 0.00 OT	HER: 0.00	TOTAL LI	INE A:	0.00
23913 PERFORM AOA ACCEL. RECALL PERFO	RM RECALL AOA			
**************************************	****	*******	**	
CAUSE: PERFORMED OPEN CAMPAIGN	_		3	
9911MA PERFORM 90L RECALL 18WTOYS	<b>D</b>	7 11 1		(N/C)
1 04009-52106 PAD KIT		B1 T 2010	SUL	(N/C) (N/C)
FC: 99/99		C. C		(,,
PART#: 04009-52106 COUNT: 1		and the second second		
CLAIM TYPE: AUTH CODE:				
	JED. 0.00		INF B.	0 00
	HEK: 0.00	IOIAL LI	INE D.	0.00
23913 PERFORM RECALL 90L ************************************	******	*******	***	
C REPLACE ENGINE OIL & FILTER, REPLACE	DRAIN PLUG GASKI	ET, TOP ( DESCRI	DFF ALL	TOTALS
INFORMATION CONTAINED HEREON IS ACCURATE UNLESS OTHERWISE SHOWN, SERVICES DESCRIBED WERE PERFORMED AT NO CHARGE TO	The factory warranty constitutes all of the warranties with respect to			
OWNER. THERE WAS NO INDICATION FROM THE APPEARANCE OF THE VEHICLE OR OTHERWISE, THAT ANY PART REPAIRED OR REPLACED	the sale of this item\items. The Seller hereby expressly disclaims all warranties either express or	GAS, OIL, LU	BE	i i i i i i i i i i i i i i i i i i i
UNDER THIS CLAIM HAD BEEN CONNECTED IN ANY WAY WITH ANY ACCIDENT, NEGLIGENCE OR MISUSE. RECORDS SUPPORTING THIS	implied, including any implied warranty of merchantability or fitness for a particular purpose	SUBLET AMO	UNT	
NOTIFICATION AT THE SERVICING DEALER FOR INSPECTION BY	Seller neither assumes nor authorizes any other person to	TOTAL CHAR	GES	
	assume for it any liability in connection with the sale of this item/items.	LESS		
(SIGNED) DEALER, GENERAL MANAGER OR AUTHORIZED PERSON (DATE)	CUSTOMER SIGNATURE	PLEASE PA	Ý	
Motor vehicle repair practices are regulate by chapter ATCP 132, Wis. Adm. C	ode, administered by the Bureau	TERMS: STRICTLY CA	AHS OR CREDIT CARD	UNLESS ARRANGEMENTS ARE MA ALL CHARGES ARE DUE WITHIN
of Consumer Protection, Wisconsin Dept. of Agriculture, Trade and Consum Madison, Wisconsin 53708-8911	ner Protection, P.O. Box 8911,	DAYS FROM DELIVE PAYMENT PENALTY AFTER 30 DAYS.	RY DATE. A 1% PER WILL BE ASSESSED ON	MONTH (12% PER ANNUM) LA ANY UNPAID BALANCE REMAINI

(Statement)		Contraction of the second seco	
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	"INVOICE"		
Alter Martine	PAGE 2	- 10 2 2 4 C - 7 4 4 5 5 6 5 6 5 6 5 6 5 6 5 6 5 6 5 6 5	
COLOR YEAR MAKE/MODEL	SERVICE ADVISOR:	LICENSE MILE	AGE IN/ OUT TAG
		2391	3/23913
IN SERVICE DATE PROD. DATE WARR, EXP. PROMISED	PO NO.	RATE PAYMENT	INV. DATE
28APR08 DD 17:00 11FEI R.O. OPENED READY OPTIONS:	B10	CASH	11FEB10
09.57 1122210 11.17 1122210	DLR:LARE ENG:2.4		
LINE OPCODE TECH TYPE HOURS	NOTON CERTIFIC C	LIST N	ET TOTAL
RESET MAINTENANCE MINDER IF EQU	UIPPED	UNDERBODI,	
PLUG GASKET, TOP OFF ALL CRI	FICAL FLUIDS,		
RESET MAINTENANCE MINDER IF I	& UNDERBODY, EQUIPPED		
18 CPT 1 90915-YZZF1 FILTER S/A, OIL		11. 5.50 5.	75 11.75 50 5.50
5 5-20 5-20 MOBILE OIL		1.45 1. 2.25 2.	45 1.45 25 11.25
PARTS: 18.20 LABOR: 11.75 OTH	HER: 0.00	TOTAL LINE C:	29.95
23913 REPLACE OIL AND FILTER ************************************	* * * * * * * * * * * * * * * * * * *	****	
D ROTATE 4 TIRES R4 ROTATE 4 TIRES			
18 CPT PARTS: 0.00 LABOR: 15.00 OTH	HER: 0.00	15. TOTAL LINE D:	00 15.00 15.00
23913 ROTATE TIRES			
**************************************	******************** FION	******	1
VI PERFORM COMPLIMENTARY VEHICLE : 18 ITSP	INSPECTION	AL	(N/C)
TIRE6 TIRE TREAD DEPTH MEASURED AT CONDITION	r 6/32", GOOD	J FEB 11 2010	HI H
18 ITSP BRK9 BRAKE THICKNESS MEASURED AT 9	9MM OR		(N/C)
MORE-GREAT SHAPE 18 ITSP	•	Ву	(N/C)
PARTS: 0.00 LABOR: 0.00 OTH	HER: 0.00	TOTAL LINE E:	0.00
23913 VI	*******	****	
ON BEHALF OF SERVICING DEALER, I HEREBY CERTIFY THAT THE	STATEMENT OF DISCLAIMER	DESCRIPTION	TOTALS
SHOWN. SERVICES DESCRIBED WERE PERFORMED AT NO CHARGE TO OWNER. THERE WAS NO INDICATION FROM THE APPEARANCE OF THE VEHICLE OR OTHERWISE. THAT ANY PART REPAIRED OR REPLACED	of the warranties with respect to the sale of this item\items. The Seller hereby expressly disclaims all	PARTS AMOUNT	
UNDER THIS CLAIM HAD BEEN CONNECTED IN ANY WAY WITH ANY ACCIDENT, NEGLIGENCE OR MISUSE. RECORDS SUPPORTING THIS CLAIM ARE AVAILABLE FOR (1) YEAR FROM THE DATE OF PAYMENT	warranties either express or implied, including any implied warranty of merchantability or fitness for a particular purpose.		
NOTIFICATION AT THE SERVICING DEALER FOR INSPECTION BY MANUFACTURER'S REPRESENTATIVE.	Seller neither assumes nor authorizes any other person to assume for it any liability in	TOTAL CHARGES	
(SIGNED) DEALER GENERAL MANAGED OD AUTHORIZED DERSON (ONTO)	CUSTOMER SIGNATURE	SALES TAX	
Motor vehicle repair practices are serviced by charter (DATE)		PLEASE PAY THIS AMOUNT	ARD UNLESS ARRANGEMENTS ARE M.
of Consumer Protection, Wisconsin Dept. of Agriculture, Trade and Consum Madison, Wisconsin 53708-8911	nore, administered by the Bureau mer Protection, P.O. Box 8911,	IN ADVANCE. IF PAYMENT IS DEFER DAYS FROM DELIVERY DATE. A 1% PAYMENT PENALTY WILL BE ASSESSE AFTER 30 DAYS.	RED ALL CHARGES ARE DUE WITHIN PER MONTH (12% PER ANNUM) L D ON ANY UNPAID BALANCE REMAIN

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an trapper Agenetic Calmer	an an an				PAGE 3			
Relies				SER	VICE ADVISOR:		(	ACE IN/COUT
					VIN	LICENO		
IN SERVICE DATE	PROD. DAT	E WARR. EXP.	Y PROMISED	4T4BE	PO NO.	RATE	PAYMENT	INV. DATE
28APR08 DI	D NED	PEADY	17:00 11F	EB10		4 7 4 4 4 4	CASH	11FEB10
		NEAU1	UPTIONS:	DLF	C:LAKE ENG:2.	4_Liter	îs.	
08:57 11FI LINE OPCOI	EB10  11 DE TECH	:17 11FEB TYPE HOUR	10   S			LIS	ST N	ET TOTAL
SHOP SUPPI	LIES AND	HAZARDOU	S WASTE FEE	S	2.2			2.68
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						Fri. Sat	. 7 a.m 6 p.m. . 8 a.m 4 p.m.	La se se
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					1 <sup>1</sup>			
ON BEHALF OF	SERVICING D	EALER, I HEREBY	CERTIFY THAT THE UNLESS OTHERWISE	STA The f	TEMENT OF DISCLAIMER actory warranty constitutes a	DES	SCRIPTION MOUNT	TOTALS 26.75
OWNER. THERE	WAS NO INDIC HERWISE, THA	T ANY PART REP	D AT NO CHARGE TO APPEARANCE OF THE AIRED OR REPLACED	of the solution of the solutio	e warranties with respect to sale of this item\items. Th hereby expressly disclaims a poties either express	PARTS A GAS, OIL	MOUNT	18.20
UNDER THIS CLA ACCIDENT, NEG CLAIM ARE AVA	LIGENCE OR	MISUSE. RECORDS ) YEAR FROM THE	S SUPPORTING THIS	implie warra fitnes	ad, including any implied anty of merchantability of s for a particular purpose	SUBLET	AMOUNT	0.00
NOTIFICATION MANUFACTURER	AT THE SERV	ICING DEALER F	OR INSPECTION BY	Seller author assur	neither assumes no rizes any other person to ne for it any liability in	TOTAL C	HARGES	47.63
1				conne item/	ection with the sale of this tems.	SALES T	AX	0.00
(SIGNED) DEA	LER, GENERAL MA	NAGER OR AUTHORIZ	ED PERSON (DATE)	CUS	TOMER SIGNATURE	PLEASE THIS AM	PAY MOUNT	50.01
Motor vehicle repair of Consumer Prote Madison, Wisconsin	r practices are r ction, Wiscons 53708-8911	egulate by chapter in Dept. of Agricu	ATCP 132, Wis. Adm Iture, Trade and Con	n. Code, ad Isumer Pro	dministered by the Burea otection, P.O. Box 8911	U TERMS: STRIC IN ADVANCE. DAYS FROM I PAYMENT PEN AFTER 30 DAY	TLY CAHS OR CREDIT C IF PAYMENT IS DEFER DELIVERY DATE. A 1% ALTY WILL BE ASSESSE S.	ARD UNLESS ARRANGEMENTS ARE M IRED ALL CHARGES ARE DUE WITHIN 5 PER MONTH (12% PER ANNUM) L ED ON ANY UNPAID BALANCE REMAIN