

# *A Review of Past NHTSA Defect Investigations*

*June 2011 Update*



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# **A Review of NHTSA Defect Investigations June 2011 Update**

## **TABLE OF CONTENTS**

<b>Section I</b>	<b>Overview</b>
<b>Section II</b>	<b>Precedent Tables for Select Defects</b>
<b>Section III</b>	<b>Chronological Listing of Investigations by Defect Type</b>

## **Section I – Overview**

Each year NHTSA conducts numerous investigations into motor vehicles and items of motor vehicle equipment that contain an alleged or actual defect that is related to motor vehicle safety. Over the past five years, NHTSA has initiated, on average, about 100 investigations per year. In total, over forty-six hundred investigations of varying types have been conducted by the agency since its inception.

In conducting a defect investigation, NHTSA attempts to determine the existence of a safety-related defect trend. If a trend is identified, the manufacturer is required to remedy the defect in accordance with 49 CFR Part 573. In determining whether or not a safety-related defect trend exists, NHTSA identifies the numbers of complaints, crashes, fires, injuries, fatalities, and warranty claims for each investigation and calculates the frequency of their occurrence. Typically, NHTSA will compare the occurrence rates for the current investigation to occurrence rates identified in prior investigations. When confronted with an investigation, manufacturers may want to similarly review the outcome of related past defect investigations. This report was developed to assist in that regard.

The information presented in this report was compiled from NHTSA's defect investigation LST file in conjunction with the agency's monthly defect investigation update reports. Section II of the report consists of defect precedent tables for thirty-four of the most frequently investigated defect areas. These include:

ABS	ESC	Head Lamps	Side Air Bag	Tailgate
Accelerator Pedal	Eng. Comp. Fire	Ignition	Sliding Door	Throttle
Ball Joint	Explosion	Parking Brake	Speed Control	Turn Signal
Brake Lamp & Switch	Frame	Power Steering	Stalling	Transmission
Brake Line	Fuel Leak	Refueling	Steering Column	Wheel Rim
Coil Spring	Fuel Tank Punc. Glass/Glazing	Seatback Seat Belt	Steering Wheel Suspension	Wheel Separation Windshield Wiper

In this June 2011 update, investigations previously contained in the category called "Steering Failure" were moved to the "Power Steering" or "Steering Column" categories. Also, investigations previously contained in the "Brake Lamp" and "Brake Light Switch" categories have been combined into a single category "Brake Lamp/Brake Light Switch." As a result of these changes, this update contains 34 categories whereas the last update contained 36. Each precedent table is organized as follows:

Make/Model	Model Year(s)	NHTSA Case ID #	Pop.	Problem	Investigation Statistics					Outcome
					Complaint Rate	Crashes/Fire Rate	Injury Incidents Rate	Fatality Incidents Rate	Warranty Rate	
					per 100,000 vehicles				as % of the recall pop.	

The information contained in the defect precedent tables was obtained from the Closing Resumes prepared by NHTSA's Office of Defect Investigations (ODI). Altogether, there are approximately 451 separate investigations included in the 34 precedent tables. In this June 2011 Update, 30 new investigations were added<sup>1</sup>. There are also 29 "updated" investigations in this latest report. Over the past year, the defect areas with the most activity included:

- Engine compartment fire (5 new investigations or updates)
- Stalling (6 new investigations or updates)
- Fuel leak (5 new investigations or updates)
- Power steering (6 new investigations or updates)

Since only the 1998 and newer Closing Resumes are accessible online, the precedent tables contained in Section II of the report include only those investigations undertaken during the 1999-2011 period. Please further note that, for various reasons, not all the 1999 and later investigations identified in Section III of the report are included in the precedent tables. In most cases, investigations involving motorcycles, trailers, etc. were intentionally omitted from the tables.

Section III of the report contains chronological listings covering all defect investigations for the 36 defect types dating back to 1972. The chronological listings include the following information:

- NHTSA Investigation ID
- Make
- Model
- Model Year (MY)
- Date the investigation was closed
- Recall ID

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<sup>1</sup> The last update was issued August 2010.

## **Section II**

### **Precedent Tables for Select Defects**

**ABS**

Make/Model	Model Year(s)	NHTSA Case ID #	Pop.	Problem	Investigation Statistics					Outcome	
					Complaint Rate	Crashes/Fire Rate	Injury Incidents Rate	Fatality Incidents Rate	Warranty Rate		
					per 100,000 vehicles						
Bendix EC-17-1030R ABS ECU	--	DP03004	216,000	Extended vehicle braking distance	73	0	0.0	0.0	0.00	No safety defect trend identified Closed 12/24/2003	C L O S E D
Freightliner	1996-2002	EA02036	43,220	Vehicle stopping distances increase due to unintended ABS cycling caused by weak or faulty signal generated by corroded ABS tone ring.	5	0	0.0	0.0	0.00	Freightliner issued information to all affected owners alerting them of the importance of responding to an illuminated ABS warning light. Freightliner adopted coated rotors and ODI intends to evaluate the durability of the coated rotors in 18-24 months. Closed 1/26/2004	C L O S E D
Chevy Blazer, Jimmy, S-10, Sonoma, Bravada, Cyclone, Typhoon, pickups	1991	EA94038	3,383,133	Consumers alleged that their vehicles' brakes intermittently fail.	384	80	17.0	0.0	0.00	Recall conducted (99V-193) along with service campaign 99I-006. Closed 02/28/00	R E C A L L
Chrysler Fifth Avenue	1990	EA95016		The ABS hydraulic control unit can experience excessive brake actuator piston seal wear causing pump-motor deterioration. ABS function can be lost and reduced power assist experienced during vehicle braking.	--	--	--	--	--	Recall conducted (NHTSA 96V-099)	R E C A L L

**ABS**

Make/Model	Model Year(s)	NHTSA Case ID #	Pop.	Problem	Investigation Statistics					Outcome	
					Complaint Rate	Crashes/Fire Rate	Injury Incidents Rate	Fatality Incidents Rate	Warranty Rate		
					per 100,000 vehicles						as % of the recall pop.
International	1999-2003	PE02060	97,000	ABS ECU can misinterpret false wheel speed signals resulting from an incorrect gap between the sensor and the tone ring. This can be caused by various conditions, including a corroded tone ring. If one of these conditions occurs, the ECU can improperly activate the ABS, instead of deactivating the ABS in response to a false signal.	1777	0.0	0.0	0.0	0.02	Recall conducted (NHTSA 02V-252) Closed 11/23/2002	R E C A L L
Freightliner	1996-2002	PE02061	39,000	Vehicle stopping distances increase due to unintended ABS cycling caused by weak or faulty signal generated by corroded ABS tone ring.	5	0	0.0	0.0	0.01	Closed 12/11/2002 EA recommended	U P G R A D E D
Cadillac C/K series trucks	1999-2002	PE05020	873,000	Stopping distances during low-speed (between 3.7 and 10 mph) brake applications may increase due to loss of ABS wheel speed sensor signal resulting from corrosion build-up on sensor mounting surfaces.	106	28	1.5	0.0	0.00	GM notified ODI on 8/29/05 that is was conducting a recall. The recall covers approximately 804,000 vehicles registered in 14 "Salt-Belt" states. These states account for 91% of the incidents but only 24% of the subject vehicles. Outside these states, the complaint rate was only 7.0 per 100k vehicles, 31 crashes and one injury. GM and NHTSA will continue to monitor the data.	R E C A L L

Accelerator Pedal											
Make/Model	Model Year(s)	NHTSA Case ID #	Pop.	Problem	Investigation Statistics					Outcome	
					Complaint Rate	Crashes/Fire Rate	Injury Incidents Rate	Fatality Incidents Rate	Warranty Rate		
					per 100,000 vehicles				as % of the recall pop.		
<b>**NEW**</b> Ford Fusion and Mercury Milan	2010	PE10019	249,301	An accessory floor mat may entrap the accelerator pedal.	1	0	0	0.0	0.00%	Opened: 5/28/10. Remains open as of 6/10/11.	O P E N
<b>**NEW**</b> Dodge Caliber	2007	PE10012	176,185	The accelerator pedal can stick or bind and not return to the idle position when it is released.	23	0	0	0.0	0.04%	Opened: 4/29/10. Closed: 8/26/10. The investigation was closed subsequent to Chrysler announced Safety Recall 10V-234 on June 3, 2010. The recall will remedy a defect in the accelerator pedal assembly of the ETC system that can cause the accelerator pedal to stick in an open position. In the Closing Resume, ODI noted that Chrysler Defect Info. Report stated that teh subject vehicles are equipped with "Smart Brake" technology and contends that the impact of a binding or sticking accelerator pedal can be negated by its Smart Brake system.ODI does not concur with Chrysler's position that the "Smart Brake" technology employed in the subject vehicles eliminates unreasonable risks to safety stemming from the ETC accelerator pedal defect.	R E C A L L
<b>**NEW**</b> Toyota Highlander & 4Runner and Lexus GS300 & GS350	2003-2009	RQ10003	2,170,000	Unintended Acceleration	0	0	0	0.0	0.00%	Opened: 2/16/10. Closed: 3/1/11. The investigation was opened to determine whether the scope of prior Toyota recalls relating to potential unintended acceleration were sufficiently board, including, among others, Toyota recalls 07E-082, 09V-388, 10V-017, and 10V-023. The investigation was closed subsequent to Toyota initiating 3 additonal new recalls (11V-112, 11V-113, and 11V-115).	R E C A L L

**Accelerator Pedal**

Make/Model	Model Year(s)	NHTSA Case ID #	Pop.	Problem	Investigation Statistics					Outcome	
					Complaint Rate	Crashes/Fire Rate	Injury Incidents Rate	Fatality Incidents Rate	Warranty Rate		
					per 100,000 vehicles						as % of the recall pop.
Toyota Sienna	2004	EA08014	26,501	Under certain conditions, an interior trim panel may interfere with accelerator pedal movement, resulting in unwanted acceleration.	8	4	0	0.0	0.00%	Opened: 08/08/08. Closed: 01/26/09. Resulted in NHTSA Recall No. 09V-023. Problem caused by missing retaining clip that allowed trim panel to trap the accelerator pedal. Most incidents occurred after this trim panel had been serviced. ODI survey on less than 100 vehicles showed 5 clips missing. Toyota recalled vehicles built between 01/10/03 - 06/22/03 with new carpet that would prevent the trim panel from trapping the accelerator pedal even if the retaining clip is missing.	R E C A L L
Toyota Sienna	2004	PE08025	23,000	Under certain conditions, an interior trim panel may interfere with accelerator pedal movement, resulting in unwanted acceleration.	9	0	0	0.0	0.00%	Opened 04/10/08. Closed: 08/08/08. Toyota reported an incident where the accelerator pedal was trapped during a dynamometer test. Toyota identified an initial trim design that could trap the pedal if a retainer clip was missing. Toyota will conduct a field survey. NHTSA in a preliminary survey had two complaints and prior to opening the PE, one vehicle with a missing clip. Upgraded to EA08014.	U P G R A D E D
Toyota Lexus ES350	2002-2008	EA07010	55,000	The accessory all weather floor mat can entrap the throttle pedal.	89	18	24	1.8	0.07%	Opened: 08/08/07. Closed: 10/11/07. Toyota conducted NHTSA Recall No. 07E-082 on 09/26/07 to replace the all weather mats with a redesigned mat that would reduce the potential for mat interference with the throttle pedal. The estimated population is the number of subject mats sold in the United States. Since Toyota cannot identify which vehicles have the subject mats, Toyota will send a letter to all registered vehicle owners (750 K) advising them of the concern and the remedy. This letter will also be placed on file with NHTSA Recall No. 07E-082.	R E C A L L

**Accelerator Pedal**

Make/Model	Model Year(s)	NHTSA Case ID #	Pop.	Problem	Investigation Statistics					Outcome	
					Complaint Rate	Crashes/Fire Rate	Injury Incidents Rate	Fatality Incidents Rate	Warranty Rate		
					per 100,000 vehicles				as % of the recall pop.		
Toyota Lexus ES350	2007	PE07016	98,454	The accessory floor mat may interfere with the throttle pedal resulting in significant unwanted vehicle acceleration.	41	8	7	12.2	0.00%	Opened: 03/29/07; Closed: 08/08/07. Complaints reviewed by ODI stated that they applied the throttle and then experienced unwanted acceleration after release. Applications of the brake pedal reduced acceleration but did not stop the vehicle. Driver attempts to turn off the vehicle using the vehicle ignition button were unsuccessful. An unsecured Lexus accessory floor mat can trap the throttle pedal in the open position resulting in significant unwanted acceleration. Unsecured floor mats were found in the majority of incident vehicles. Toyota made various changes to the floor mat labeling and mat package design. Toyota also sent a mailing to subject vehicle owners warning of the dangers of improper mat installation. PE closed on 08/08/07 and upgraded to EA07010.	UPGRADED
MacNeil Automotive Products WeatherTech "All-Weather Floor Mats" and "FloorLiners" used on Various Make/Model Vehicles	2006-2007	PE08039	Confidential	Under certain conditions, aftermarket WeatherTech "All-Weather Floor Mats" and/or "FloorLiners" may interfere with the accelerator pedal, resulting in unwanted accelerations.	12 total	N/A	N/A	N/A	N/A	Opened: 06/25/08; Closed: 10/27/08. These mats and floor liners were used on various 2006-2007 make/model vehicles. No vehicle/mat combination had more than one complaint. The mats were not designed for specific vehicles. The floor liners were designed for specific vehicles using retaining clips. There were various vehicle, mat geometry and usage factors identified. Usage factors include installing mats on top of existing mats, passenger mats used in driver-side locations, upside down installation and not using retaining clips provided.	CLOSED

## **Section III**

### **Chronological Listing of Investigations for Select Defects**

# ABS

<i>NHTSA ID</i>	<i>Make</i>	<i>Model</i>	<i>MY</i>	<i>Close Date</i>	<i>Recall ID</i>	<i>Subject</i>
DP03004	BENDIX	EC-17-1030R ECU	9999	20031224		ABS ECU AND TRAILER BRAKE MODULATOR
EA02036	FREIGHTLINER	BUSINESS CLASS	1996	20040126		ABS CORROSION EXTENDS STOPPING DIST
EA94028	CHRYSLER	TOWN AND COUNTR	1991	19960624	96V099000	ABS BRAKING SYSTEM FAILS
EA94038	CHEVROLET	BLAZER	1991	20000228	99I006000	ABS BRAKING SYSTEM
EA95016	CHRYSLER	FIFTH AVENUE	1990	19960624	96V099000	ABS BRAKING MALFUNCTION
PE02060	INTERNATIONAL	INTERNATIONAL	1999	20021121		ABS TONE RING CORRODES ABS ACTUATION
PE02061	FREIGHTLINER	FREIGHTLINER	1996	20021211		ABS TONE RING CORRODES CAUSING UNINTENDE
PE05020	CADILLAC	ESCALADE	1999	20050913	05V379000	UNWANTED LOW-SPEED ABS ACTIVATION
PE88100	LINCOLN	CONTINENTAL	1985	19890417		ABS FAILURE
PE88032	MERCEDES BENZ	190	1985	19880502		ABS FAILURES
PE89153	JAGUAR	XJ6	1987	19891023		ABS FAILURE
PE91093	CHRYSLER	TOWN AND COUNTR	1991	19911023		ABS CONTROL FAILURE
PE94024	CHRYSLER	TOWN AND COUNTR	1991	19940729		ABS BRAKING SYSTEM FAILS
PE94046	CHEVROLET	BLAZER	1991	19941031		ABS BRAKING SYSTEM FAILS

## ***ACCELERATOR PEDAL***

<b><i>NHTSA ID</i></b>	<b><i>MAKE</i></b>	<b><i>MODEL</i></b>	<b><i>MY</i></b>	<b><i>_DATE</i></b>	<b><i>RECALL ID</i></b>	<b><i>SUBJECT</i></b>
EA05014	FORD	MUSTANG	2003	20060410	06V108000	ACCELERATOR PEDAL INTERFERENCE
PE05038	FORD	MUSTANG	2003	20050913		ACCELERATOR PEDAL INTERFERENCE
EA04006	FORD	EXCURSION	2001	20050210		ACCELERATOR PEDAL SENSOR (ETC)
RP03001	FORD	TAURUS	2000	20040323		BRAKE/ACCELERATOR PEDAL APPLICATION
PE03044	FORD	EXCURSION	2002	20040218		ACCELERATOR PEDAL SENSOR FAILURE (ETC)
PE99068	FORD	EXPLORER	1995	20000309		ACCELERATOR PEDAL
PE98054	ISUZU	RODEO	1998	19990218		BROKEN ACCELERATOR PEDAL
PE98053	HONDA	PASSPORT	1998	19990218		BROKEN ACCELERATOR PEDAL

## SECTION III ADDENDUM – INVESTIGATIONS INITIATED SUBSEQUENT TO THE PUBLICATION OF THE DECEMBER 2006 REPORT

<b>ABS</b>
No new investigations

<b>ACCELERATOR PEDAL</b>						
<i>NHTSA ID</i>	<i>MAKE</i>	<i>MODEL</i>	<i>MY</i>	<i>OPENED</i>	<i>CLOSED</i>	<i>RECALL</i>
PE07016	LEXUS	ES350	2007	3/29/07	8/8/07	--
EA07010	LEXUS	ES350	2002-2008	8/8/07	10/11/07	07E-082
PE08039	MACNEIL AUTOMOTIVE	WEATHERTEC ALL-WEATHER FLOOR MATS AND FLOORLINERS	2006-2007	6/25/08	10/27/08	--
EA08014	TOYOTA	SIENNA	2004	8/8/08	1/26/09	09V-023
PE08025	TOYOTA	SIENNA	2004	4/10/08	8/8/08	--
RQ10-003	TOYOTA/LEXUS	HIGHLANDER & 4RUNNER/GS300 & GS350	2003-2009	2/16/10	3/1/11	11V-112, 11V-113, 11V-115
PE10-012	DODGE	CALIBER	2007	4/29/10	8/26/10	10V-234
PE10-019	FORD	FUSION & MILAN	2010	5/28/10	OPEN	--

<b>BALL JOINT</b>						
<i>NHTSA ID</i>	<i>MAKE</i>	<i>MODEL</i>	<i>MY</i>	<i>OPENED</i>	<i>CLOSED</i>	<i>RECALL</i>
PE09011	HYUNDAI	ELANTRA	2001-2003	2/18/09	4/21/09	09V-125
PE11-009	DODGE	RAM	2008-2011	4/4/11	OPEN	--