U.S. Department of Transportation
National Highway Traffic Safety Administration

ODI RESUME

Investigation: EA05-018
Prompted By: PE05-027
Date Opened: 11/02/2005 Date Closed: 08/29/07
Principal Investigator: Chris Lash
Subject: Engine Stall

Manufacturer: DaimlerChrysler Corporation
Products: 2004-05 Dodge Durango/Ram Pickups with 5.7L V8 Engine
Population: 425,198

Problem Description: The engine may stall during low speed deceleration while driving.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	249	1,075	1,292
Crashes/Fires:	0	4	4
Injury Incidents:	0	2	2
# Injuries:	0	2	2
Fatality Incidents:	0	0	0
# Fatalities:	0	0	0
Other*:	0	0	0

*Description of other:

Action: This Engineering Analysis has been closed.

Engineer: *Christopher Lash* Date: *08/29/2007*
Div. Chief: *Jeffrey L. Quandt* Date: *08/29/2007*
Office Dir.: *Kathleen C. DeMeter* Date: *08/29/2007*

Summary: Analysis of the complaint, field report and warranty data shows that the majority of stalling incidents in the subject vehicles appear to be related to the engine calibration concerns that DaimlerChrysler addressed with service bulletins releasing revised PCM software. Analysis of the complaints and ODI's survey of owners of vehicles that received engine management software updates under TSB #18-013-05 show that these stalling incidents have the following characteristics:

- They occur at low speeds, often during parking lot or driveway maneuvers;
- They occur during decelerations, such as braking for a stop sign or traffic signal; and
- The operator is almost always able to immediately restart the vehicle.

When compared with other safety defect investigations and recalls of conditions that result in stalling during low-speed deceleration with immediate engine restart possible, the failure rate in the subject vehicles is low. Analyses of complaint and warranty data also show a declining trend. Accordingly, this investigation is closed. The closing of this investigation does not constitute a finding by NHTSA that a safety-related defect does not exist. The Agency will continue to monitor complaints and other information relating to the alleged defect in the subject vehicles and take further action in the future if warranted.

ENGINEERING ANALYSIS CLOSING REPORT

SUBJECT: Engine stall while driving due to idle undershoot during deceleration.

EA No.: EA05-018 **Date Opened:** 3-Nov-2005 **Date Closed:** 20-Aug-2007

BASIS: On May 16, 2005, the National Highway Traffic Safety Administration's (NHTSA) Office of Defects Investigation (ODI) opened Preliminary Evaluation PE05-027 to investigate 24 complaints to ODI alleging engine stalls while driving in model year (MY) 2004 through 2005 Dodge Durango sport utility vehicles and Ram 1500 pickup trucks equipped with 5.7L V8 ("Hemi") engines. Information provided by DaimlerChrysler Corporation (DCC) during PE05-027 indicated that a large percentage of the engine stall complaints were related to an idle undershoot condition that may cause the engine to stall during low-speed deceleration maneuvers. ODI upgraded the investigation to an Engineering Analysis on November 3, 2005, based on 125 ODI complaints and 533 complaints, field reports, claims and lawsuits from DCC that were not duplicative of the ODI complaints.

THE ALLEGED DEFECT: The engine may stall without warning while driving.

CORRESPONDENCE: On July 28, 2005, DCC responded to ODI's information request letter for PE05-027 and provided failure data and analysis of incidents by cause, driving conditions and consequences. DCC provided similar data in a supplemental response dated October 20, 2005. DaimlerChrysler responded to the EA05-018 information request letter on February 20, 2006 and provided monthly updates of warranty claims pertaining to the engine management system in the subject vehicles from April 3, 2006 through November 1, 2006. On March 5, 2007, DCC submitted updated complaint, field report, claims and lawsuit information.

NHTSA to MFR	MFR to NHTSA	NHTSA to MFR Supplement	Confidentiality		
			Date of Request	Date of NCC Response	Items Confidential
08-Jun-2005	28-Jul-2005	20-Oct-2005	-	-	-
28-Dec-2005	20-Feb-2006	03-Apr-2006 01-May-2006 01-Jun-2006 05-Jul-2006 01-Aug-2006 01-Sep-2006 02-Oct-2006 01-Nov-2006 05-Mar-2007	24-Oct-2006	08-Jan-2007	Information related to CAN bus design and specifications.

Table 1. ODI-DCC Correspondence.

DESCRIPTION OF COMPONENT OR VEHICLE SYSTEM: The subject vehicles are equipped with 5.7L V8 engines. Engine fuel delivery and spark timing are controlled by the Powertrain Control Module (PCM), a microprocessor programmed to control engine function during prescribed operating conditions based on data received from various sensors. All information required by the PCM is continuously transmitted to and read from the Controller Area Network (CAN) bus, a communication network between control modules and sensors. CAN technology was introduced in the subject models in MY 2004.

VEHICLE POPULATION: DaimlerChrysler produced about 495,000 MY 2004 and 2005 Durango and Ram vehicles with 5.7L engines (Table 2).

Model	Model Year		Total
	2004	2005	
Durango	63,244	47,125	110,369
Ram	221,885	163,152	385,037
Total	285,129	210,277	495,406

Table 2. Subject Vehicle Population by Model and Model Year.

FAILURE REPORT SUMMARY: Table 3 summarizes the complaint, field report, property damage claim and lawsuit data received by ODI and DCC when EA05-018 was opened and through the last update from DCC. The counts represent ODI's analysis of all inputs from these sources regarding incidents of engine stall. The total counts shown in the table are adjusted to eliminate duplicate claims.

Problem Experience	EA Opened			EA Closed		
	ODI	MFR	Total	ODI	MFR	Total
Owner Reports	135[1]	316	421	249	437	643
Field Reports	-	281	281	-	522	522
Claims/Lawsuits	-	28	28	-	127	127
Total	135[1]	609	730	249	1,075	1,292
Crashes	0	0	0	0	4	4
Injury Incidents	0	0	0	0	2	2
Injuries	0	0	0	0	2	2
Fatal Incidents	0	0	0	0	0	0

Table 3. Summary of ODI and DCC complaint, field report, claim and lawsuit counts.

The failure data includes all complaints related to stall while driving. There were a total of 572 complaints involving Durango and 774 complaints involving Ram vehicles. There were four crashes identified that were potentially related to the alleged defect, 2 involving Ram vehicles and 2 involving Durango vehicles. ODI contacted three of the owners to obtain further information about the incidents and the cause of the stall. Two crashes involve relatively minor rear end collisions allegedly caused by diminished brake vacuum assist in the stalled vehicles and another involved impact with a guard rail in the rain at approximately 30 mph due to diminished power assist to the steering and braking systems. The dealer attributed the latter incident to dirty fuel injectors, but the owner claimed a problem with prior stall incidents in the preceding months. Minor injuries were alleged in each of the Durango crashes – facial bruises and a chipped tooth to the driver of one of the Durango vehicles and soft tissue injuries to the driver of the vehicle struck by the Durango in the other crash.

DESIGN, MATERIAL, AND/OR PRODUCTION MODIFICATIONS: Table 4 summarizes the design change history for the engine management program and related sensors in the subject

[1] Includes 11 reports that were not counted in the opening resume.

vehicles. The engine calibration software changes associated with the spark run-to-start transfer threshold changes were also provided as a PCM reprogramming service repair (see Technical Service Bulletins).

Change Date		Change description	Reason for change
Durango	Ram		
10-Sep-03	15-Sep-03	Initial torque adaptive term changed to address green engine friction that requires more airflow.	Engine stall could occur on **deceleration maneuvers**.
06-Jul-04	13-Oct-04	Transient fuel change when shifting into drive immediately after start.	Engine stall could occur while **shifting into drive or reverse immediately after the engine is started** where the fuel delivery was too low during the transient.
04-Oct-04	01-Nov-04	Minimum airflow calibration limit change.	A minimum airflow calibration error existed at MY 2005 launch. This would inhibit reaching the desired low-idle-speed and eventually corrupt the throttle air flow adaptive values. Corrupted throttle airflow adaptive values would yield too little airflow on **deceleration transitions to idle** and therefore create the potential to stall.
17-Nov-04	17-Nov-04	The KAVLICO manifold absolute pressure (MAP) sensor was changed by the supplier.	The MAP sensor was found to be out of specification in a direction that would cause the fuel system to shift in the lean direction while the engine and sensor were hot. On the subsequent cold start the sensor would respond nominally and the resulting open loop fuel delivery would be too lean and therefore create the potential to stall during a **cold idle, parking lot maneuver or on acceleration from a stop.**
31-Jan-05	15-Mar-05	The spark run-to-start transfer threshold was changed.	The spark run-to-start transfer threshold defines when the controls transfer from "Run Mode" to "Start Mode." The threshold is normally set to approximately 200 rpm. However, the 2005 software was released at approximately 400 rpm. Any **idle speed undershoot** of 400 rpm would transfer spark advance to the fixed timing used during engine starting. Transferring to start mode spark advance creates the potential to stall.
07-Mar-05	07-Mar-05	The transmission filler seal installation and verification process was changed.	A misinstalled or misaligned transmission filler seal can allow fluid leakage internal to the transmission. This can cause low line pressure which could allow the torque converter to lock up at **idle or low speed conditions** thus creating the potential for a stall.
11-Mar-05	11-Mar-05	The process for tightening the fastener for the PCM's power ground to the cylinder head was improved.	The fastener could be inadequately tightened causing an intermittent ground and potential engine stall.

Table 4. Design and manufacturing process changes.

SERVICE BULLETINS: DCC identified two technical service bulletins, both released in early 2005, that may be related to engine stall while driving in the subject vehicles. These are summarized in Table 5. The first bulletin, TSB 18-002-05, addressed a potential for rough idle with the A/C on in early production MY 2005 Durango vehicles. The second bulletin, TSB 18-

013-05, affected MY 2004 and early-2005 Durango and Ram vehicles with 5.7L engines. Both bulletins provide repairs that involve selectively erasing and reprogramming the PCM with new software.

No.	Date	Affected vehicles	Symptoms	Overview
18-002-05	05-Jan-05	MY 2005 Durango	The vehicle operator may describe rough idle or a booming sound being present in the passenger compartment at idle, in drive, with the A/C on.	The bulletin involves selectively erasing and reprogramming the Powertrain Control Module (PCM) with new software and applying adhesive to the roof supports.
18-013-05	16-Mar-05 29-Apr-05 (Rev A)	MY 2004-05 Durango and Ram with 5.7L engines built on or before Feb 21, 2005.	The vehicle operator may experience rough idle or idle fluctuation or a MIL [Malfunction Indicator Lamp] illumination. Diagnosis may determine that the MIL was caused by one or more of the following Diagnostic Trouble Codes (DTCs): P0171 – Fuel System Lean, Bank 1 P0174 – Fuel System Lean, Bank 2	The bulletin involves selectively erasing and reprogramming the Powertrain Control Module (PCM) with new software.

Table 5. Technical Service Bulletins.

WARRANTY: Table 6 summarizes the counts of all warranty claims potentially related to the alleged defect through February 2007 (all failure codes) by labor operation, model and model year. This table includes all claims for vehicles with multiple repair attempts. It also includes claims for engine or electrical diagnostics where no problem was detected and no repair was performed. Repairs associated with DCC's two service bulletins providing revised PCM

	Durango				Ram			
	MY 2004		MY 2005		MY 2004		MY 2005	
Labor Operation (Description – Code)	Claims	Rate (%)	Claims	Rate (%)	Claims	Rate (%)	Claims	Rate (%)
Replace PCM – 08-19-06-01	62	0.10	238	0.51	211	0.10	409	0.26
Replace PCM – 5.7L only – 08-19-06-02	496	0.78	0	0.00	1,760	0.79	0	0.00
Reprogram PCM – 08-19-06-50	12	0.02	25	0.05	26	0.01	28	0.02
Chk & adj PCM (NGC3) – 08-19-06-94	0	0.00	0	0.00	576	0.26	0	0.00
Reprogram control module – 08-19-43-91[2]	**1,645**	**2.60**	**2,450**	**5.20**	**4,321**	**1.95**	**3,544**	**2.47**
Reprogram control module – 08-19-48-99[3]	1,847	2.92	1,059	2.25	n/a	n/a	n/a	n/a
Diagnostic LOP: engine – 85-41-08-00	4,521	7.15	878	1.86	4,530	2.04	758	0.47
Diagnostic LOP: electrical – 85-41-09-00	629	0.99	203	0.43	1,708	0.77	352	0.22
Total	**9,212**	**14.57**	**4,853**	**10.30**	**13,132**	**5.92**	**5,501**	**3.43**

Table 6. Warranty claims by labor operation, model and model year.

software accounted for approximately 63% of the warranty claims (61% Durango, 64% Ram) since March 2005. ODI conducted a survey of owners receiving repairs under TSB 08-19-43-91 (highlighted), which was the most common repair (see ODI Analysis). According to DCC, any issue identified with the PCM is covered by the 8 year/ 80,000 mile emissions system warranty.

[2] Labor operation for completing repairs associated with TSB 18-013-05 (both original and Rev A).
[3] Labor operation for completing repairs associated with TSB 18-002-05.

TESTING: NHTSA's Vehicle Research and Test Center (VRTC) in East Liberty, Ohio evaluated a MY 2005 Dodge Durango that was the subject of ODI complaint 10147705, which alleges recurring stalling incidents. The vehicle was manufactured in September 2004. The owner alleged 2-3 stall incidents per week starting a few months after purchase, usually when decelerating to a stop. According to the owner, the dealer attempted several repairs, including updating the PCM software.

VRTC instrumented the vehicle to diagnose conditions of the CAN bus data system. VRTC drove the vehicle 1,037 miles through a mix of highway and city (stop-and-go) driving conditions. Several trouble codes for non-stall related CAN activity were recorded (e.g., HVAC system codes). However, no stalling or driveability incidents were observed or recorded during the test drives. The PCM and front control module (FCM) were replaced with the most current versions and the vehicle was returned to the owner.[4] The vehicle has not experienced a stalling incident since being returned to the owner on May 18, 2006.

MANUFACTURER'S EVALUATION OF THE ALLEGED DEFECT: In an October 20, 2005 letter supplementing its response to the PE05-027 information request, DCC provided its analysis of the repair histories for the 355 vehicles identified in consumer complaints, field reports and claims/lawsuits in its July 28, 2005 PE05-027 response. New data was also provided for 178 vehicles identified in the updated data from June 1 through October 5, 2005. DCC's analysis found that a PCM reprogramming was the final repair for the vast majority of subject vehicles with the alleged defect. DCC also analyzed narrative information contained in a small number of warranty claims (87) submitted in the PE05-027 response to assess the frequency of engine stalls in warranty claim data. According to DCC, 69 percent of these (60 of 87) were clearly not related to the alleged condition and another 18 percent (16 of 87) did not include enough information to determine if the claim was related. For the remaining 13 percent (11 of 87), DCC divided them into three categories based upon the speed of the vehicle at the time of the engine stall: (1) steady-state greater than 15 mph – 8 percent (7 of 87); (2) garage shift, idle, stopped – 3 percent (3 of 87); and (3) low speed < 15 mph – 1 percent (1 of 87).

DaimlerChrysler provided the following evaluation of the alleged defect in its February 20, 2006 letter responding to the information request for EA05-018:

> **DCC has not identified a single causal factor that may be responsible for the reported stalling events occurring in the 2004 and 2005 MY Dodge Durango and Dodge Ram pickup trucks equipped with 5.7L engines. All, or nearly all, of these vehicles were evaluated by our trained dealership technicians, and the alleged condition was not repeatable nor did it leave any fault codes identifying a problem with the subject component. All of the vehicles in the population are covered by DCC's 8 year / 80,000 emission system warranty, which will correct free of charge any identified issue with the powertrain control module (PCM).**
>
> **DCC has not identified a single failure mechanism responsible for the alleged stalling events. Based on calibration development experience, most stalling conditions can be explained by idle undershoot during transient load and/or**

[4] FCM version 41.42, software version 05.01.0E, part no. 56040661AK. PCM version 04.31, software version 03.07.00, part no. 56028973AI.

environmental conditions. The field input suggests that stalling due to calibration related issues does not typically occur during steady state operation with a warm engine. In addition, problems with any of the hardware providing input to the engine control software would generate a fault code and/or illuminate the MIL, which is not the case.

With respect to the alleged complaints of stalling while driving in which no causal condition has been identified, 91% have reported immediate restart. None of the reported stalling events – whether at low, idle or steady state speeds – has resulted in injury death or property damage. Moreover, the three crashes now being reported cannot be confirmed to have resulted from a stalling event.

The fact[s] and data contained in this response illustrate a significantly lower frequency of stalling reports and little or no safety risk in the subject population compared to other NHTSA stalling investigations. The corrective measures that have been taken to date have significantly reduced the number of occurrences of alleged stalling events in those vehicles where no causal condition could be identified. Not a single stalling event involving death, injury or property damage has been reported to DCC or the agency. Accordingly, DCC believes there is no unreasonable risk to motor vehicle safety and this investigation should be closed.

ODI ANALYSIS: To assess the frequency and safety consequences associated with the alleged defect in the subject vehicles, ODI analyzed consumer complaints, field reports and warranty claim data. ODI also conducted a survey of consumers receiving repairs for the primary condition causing stalling in the subject vehicle population. ODI analyzed the data to determine frequency and trend for each model and for build ranges of interest. Complaint and survey response data were analyzed to assess the severity of potential safety consequences associated with the software conditions contributing to the majority of the stalling experience in the subject vehicles. Survey data were also used to estimate the percentage of warranty claims that involved a repair for a stall while driving. The data were compared with prior investigations and recalls involving similar safety consequences and, finally, the trends in the complaint and warranty failure data were analyzed.

Figure 1 shows the warranty claims and associated claim rates by model and month of build for all conditions related to PCM replacement, reprogramming or diagnostics. The Durango claim rates are approximately 2 to 3 times higher than the Ram rates. DCC identified several factors that could explain the different rates for the two models: 1) PCM calibrations; 2) Ram has a totally integrated program module (TIPM) and Durango has a front control module (FCM); 3) wiring routings; 4) fuel vapor purge system routings (Durango purge hose is in frame rail); 5) fuel tanks; 6) engine compartments; 7) air induction systems; 8) ESP calibrations; and 9) A/C systems (dual A/C system on Durango with increase load).

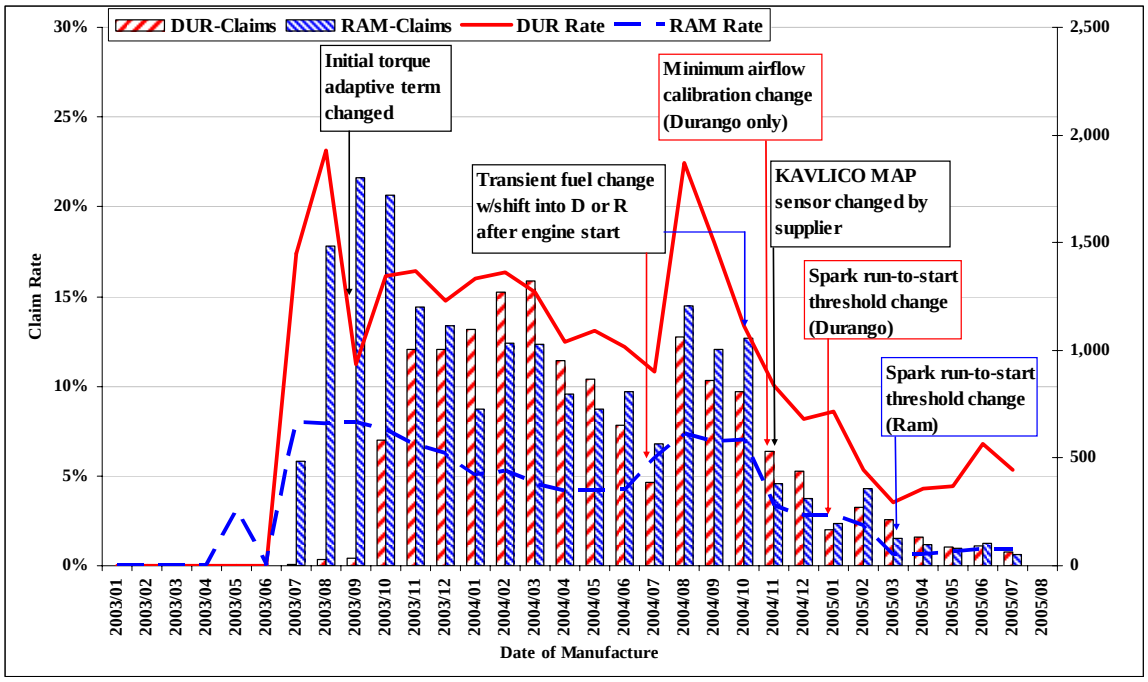

Figure 1. Total PCM Warranty Claims and Claim Rates (%), by Model and Month of Build.

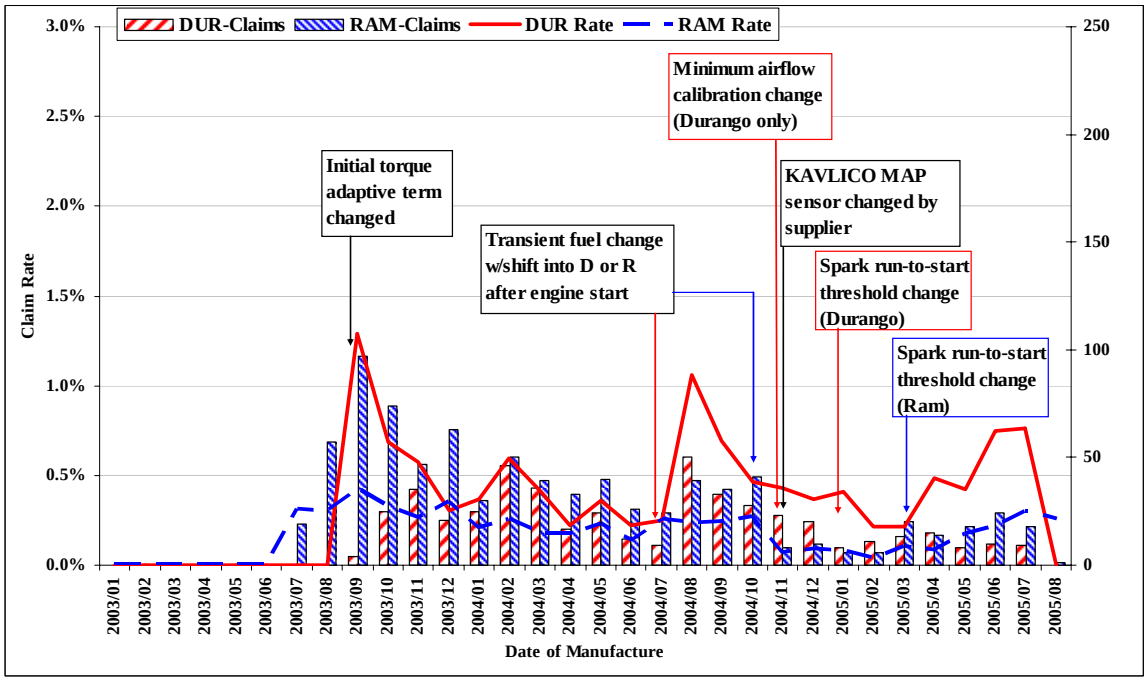

Figure 2. Stall/Die-out Engine Calibration Warranty Claims and Claim Rates (%), by Model and Month of Build.

Figure 2 shows a similar plot limited to warranty claims coded "stall" or "die-out." This data is of limited analytical value as (1) these claims did not necessarily involve a stall while driving incident and (2) there were likely to be claims involving repairs for stalling that were not coded "stall" or "die-out." This chart shows less difference between the Durango and Ram vehicles for MY 2004, but again shows greater Durango rates for MY 2005 vehicles – particularly at the start

of MY 2005 production from August through October 2004.

Figure 3 shows the warranty claims and rates for repairs involving PCM reprogramming. Repairs in this category were predominantly related to the technical service bulletins issued by DCC in early 2005 (see Tables 5 and 6). Once again the Durango rates are significantly higher with experience peaking in early MY 2005 production, when there were multiple PCM calibration issues identified by DCC for the Durango vehicles.[5]

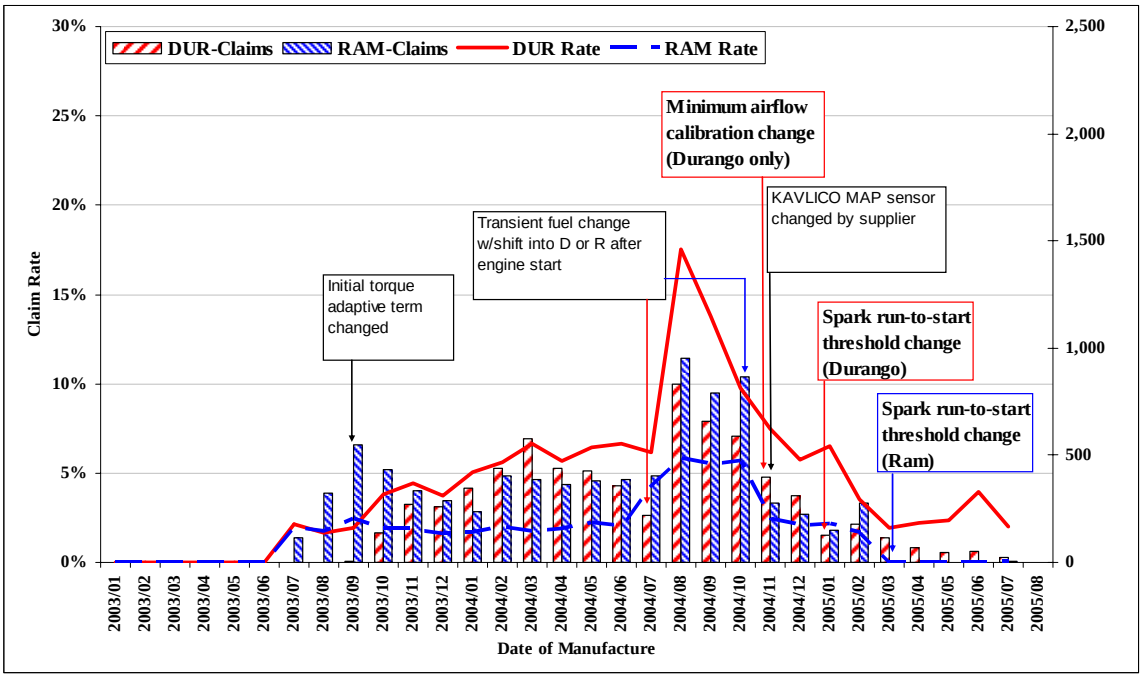

Figure 3. PCM Reprogramming Warranty Claims and Claim Rates (%), by Model and Month of Build.

Stalling conditions. When investigating vehicle stalls, ODI evaluates various indications of the frequency of stalls to determine the likelihood of the problem and the conditions/circumstances under which the stalling tends to occur to assess the potential safety consequences of the alleged defect. Of course, ODI also looks at actual crashes and injuries to determine the frequency and severity of actual consequences. For example, a technical review of the defect condition is done to determine the speeds, throttle positions and other conditions where stalls are most likely to occur, as well as the conditions where stalls are not likely. In addition, the incidents are categorized by various factors including speed, driving conditions (e.g., acceleration, deceleration, steady state, etc.), the effect of the stall on the driver's ability to control the vehicle (e.g.,, the effect on steering and braking), and the ability of the operator to restart the vehicle (because of the greater risk of being struck by a vehicle traveling at high speed if the vehicle will not restart quickly). Incidents that can occur at higher speeds, during acceleration, involve reduction in the driver's ability to control the vehicle, and/or which may involve difficulty restarting the vehicle are generally considered more severe. Generally, the greater the risk (i.e., the greater the likelihood of the failure and the greater the severity of the actual or potential consequences), the more likely it is that the condition constitutes a safety-related defect.

[5] Each of the calibration issues identified by DCC involved potential stall during closed throttle deceleration (see Table 4).

Survey. To assess the safety risk associated with the stall events occurring because of the engine calibration problems addressed by TSB 018-13-005, ODI conducted a telephone survey of 143 owners who received the bulletin repairs, including 133 who owned vehicles built prior to the spark-to-run transition software changes implemented in production by DCC. Ninety-two of these consumers (42 Durango, 50 Ram) indicated that they had experienced at least one stalling incident, with 82 reporting multiple stall incidents (39 Durango, 43 Ram).[6]

Ninety percent of the consumers who experienced stalling indicated that the events occurred at low speeds (37 Durango, 45 Ram). These stalling events typically occurred during closed throttle braking decelerations to stop signs or traffic signals (26 Durango, 35 Ram) or during parking lot/driveway type maneuvers (11 Durango, 6 Ram). Three consumers alleged incidents while making low speed turns through an intersection (0 Durango, 3 Ram). All of the consumers experiencing stalling incidents indicted that the engine could be restarted. Ninety percent indicated the engine was restarted immediately after the stall.

Three consumers who owned vehicles produced after the spark-to-run transition software production changes alleged stalling experience. All three of these incidents involved MY 2005 Durango vehicles that stalled during low-speed deceleration to a stop. All three were immediately restarted.

All of the consumers interviewed by ODI who experienced engine stalls indicated that the incidents occurred without warning.

DCC analyzed complaints, field reports and claims/lawsuits by vehicle speed and driving conditions. DCC categorized the records from these sources in its responses to PE05-027 and in the February 20, 2006 response to EA05-018. Table 7 summarizes the combined data from DCC's analyses. Approximately 60 percent of these records involved incidents that occurred at low speeds, including about 16 percent that occurred during garage shifts, idle or while stopped. These data are consistent with ODI's analysis of similar data and its survey results.

	DCC Complaints		**DCC Field Reports**		**DCC Claims/ Lawsuits**		**ODI Complaints**		**Total Unique VIN's**	
Stall Category Description	**No.**	**%Tot**	**No.**	**%Tot**	**No.**	**%Tot**	**No.**	**%Tot**	**No.**	**%Tot**
Steady state > 15 mph	241	55.9	104	34.0	26	34.7	34	34.3	321	39.9
Low speed < 15 mph	122	28.3	146	47.7	33	44.0	59	59.6	354	44.0
Garage shift, idle or stopped	68	15.8	56	18.3	16	21.3	6	6.1	130	16.1
Total	**431**		**306**		**75**		**99**		**805**	
Indeterminate	172		119		16		39		266	
Not related	18		28		7		15		54	

Table 7. DCC analysis of complaints by driving speed/conditions.

Trends. ODI analyzed complaint and warranty claim data by month of report and claim to assess whether the stalling experience in the subject vehicles is increasing, decreasing or constant over time. Figures 4 and 5 show the number of complaints received by DCC and ODI from late 2003 through January 2007 (DCC) and July 2007 (ODI). The data show that complaint inputs to DCC and ODI both peaked in 2005. After 2005, complaints continued at lower but steady levels with a slight increase noted in ODI input in early 2007.

[6] These stalls were not necessarily related to the warranty claims for reprogramming the PCM.

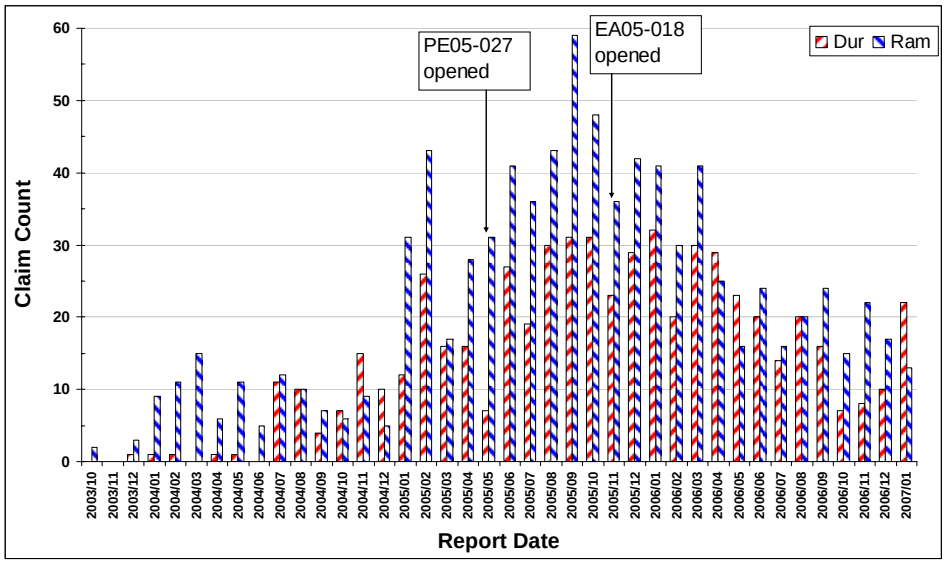

Figure 4. DCC complaints by model and report month.

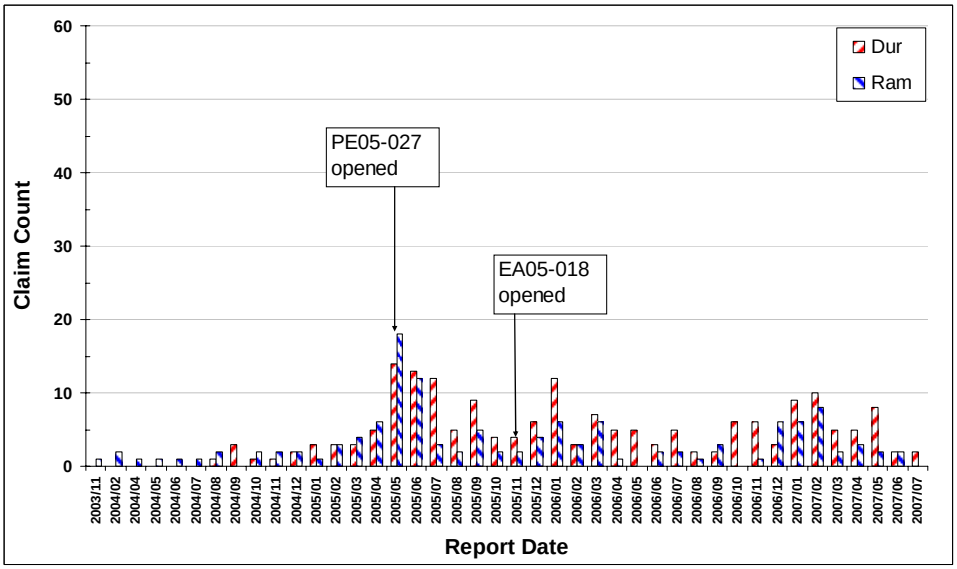

Figure 5. ODI complaints by model and report month.

Figure 6 shows the overall trend in warranty claims related to PCM replacement, PCM reprogramming and engine or electrical diagnostic claims in the subject vehicles by model and repair month. Claims peaked in mid-2005 and showed a steady decline through 2006 and into early 2007.

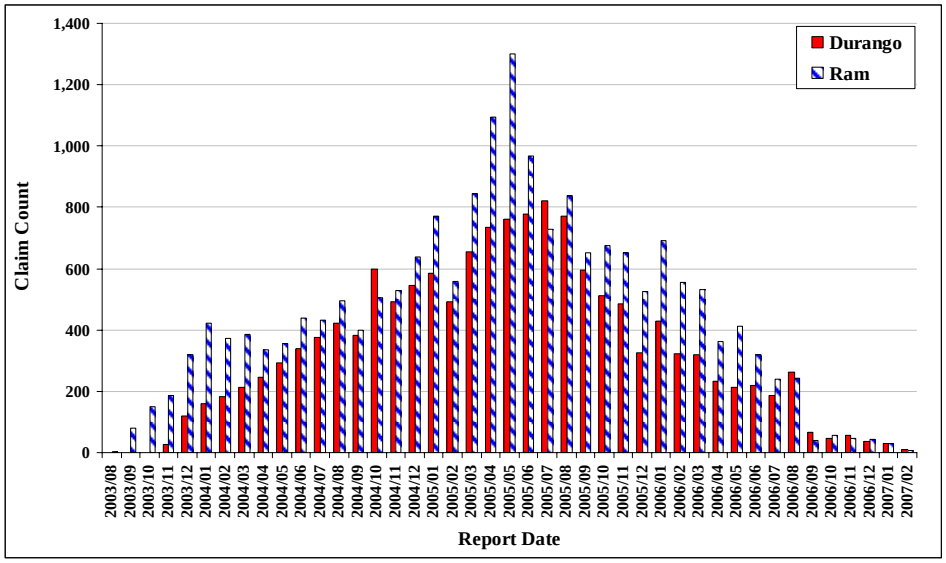

Figure 6. Warranty claim trends by model and repair month.

Figure 7 shows the trends for claims not related to PCM reprogramming. These claims primarily involve engine or electrical diagnostics, which were the predominant claim type prior to DCC's issuance of TSB 018-13-005 in early 2005. These claims dropped sharply when the TSB was issued and have continued to decline in number in the months that followed.

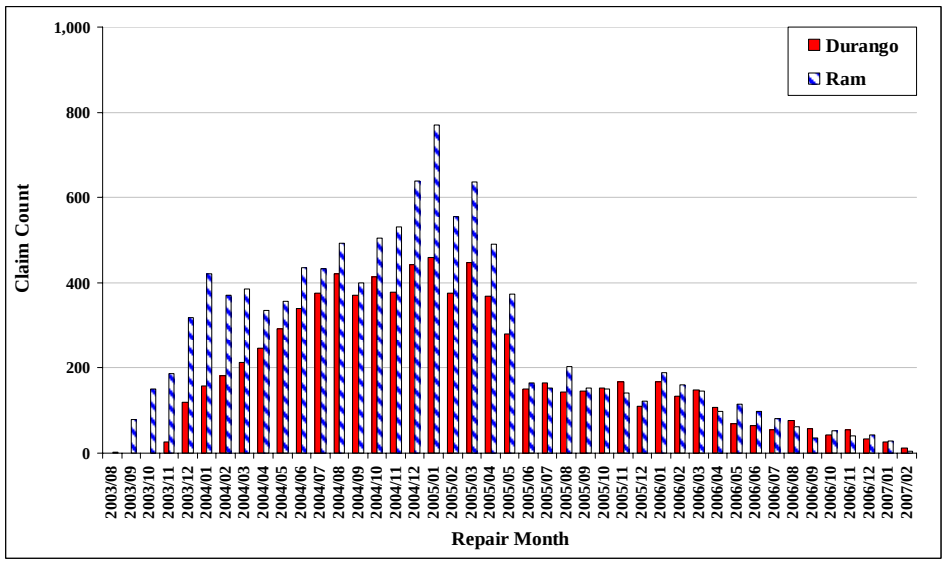

Figure 7. Warranty claim trends, not related to PCM reprogramming, by model and repair month.

Figure 8 shows the trends for claims involving reprogramming of the PCM. These claims rose sharply in early-2005 when the PCM reprogramming TSB's were released, but have shown a steady decline in 2006 and again in 2007.

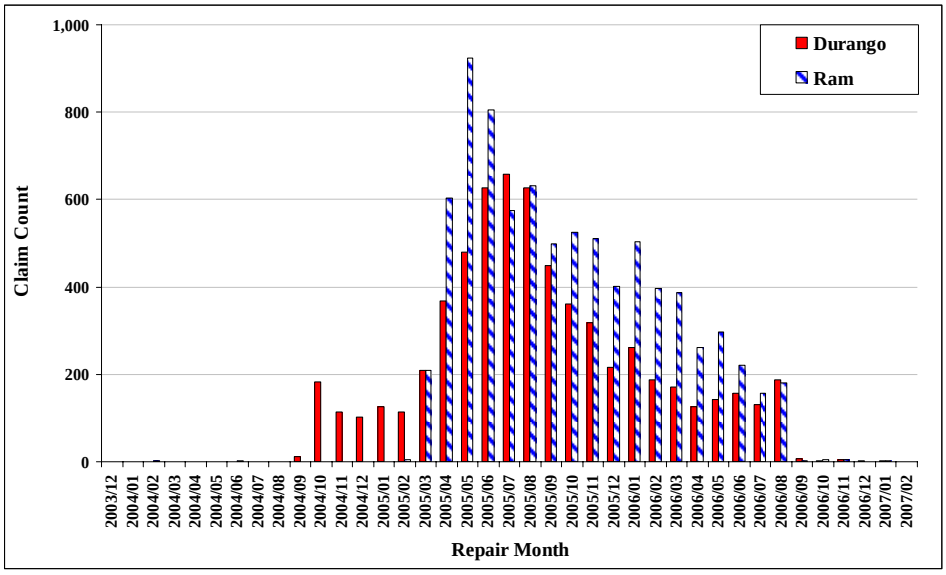

Figure 8. Warranty claim trends, PCM reprogramming, by model and repair month

Similar investigations. Table 8 compares the failure rates of the subject vehicles and other vehicles investigated for conditions that could result in stall while driving during deceleration with immediate restart possible. The subject vehicle analysis is limited to the MY 2004 and early-2005 Durango and Ram vehicles with 5.7L engines that were affected by the PCM calibration issues and which exhibited the highest complaint and warranty claim rates. The complaint rates for the Durango and Ram vehicles are both significantly lower than those observed in the earlier investigations of stalling conditions with similar consequences.

Inv No	Subject	Comp rate (C/100k)	Crash/ inj	Action
EA04-008	2003 Saab 9-3 210-hp reprogram engine management software	4,104	0/0	04V-540[7]
EA04-008	2003 Saab 9-3 175-hp reprogram engine management software	3,809	0/0	04V-540[1]
EA02-027	2001-02 Ford Escape and Mazda Tribute reprogram engine management software	1,652	36/6	04V-165 04V-175
EA06-013	2005-06 Chrysler Pacifica reprogram engine management software	1,207	9/0	06V-432
EA05-018	**2004-05 Dodge Durango 5.7L reprogram engine management software**	**518**	**2/0**	**-**
EA05-018	**2004-05 Dodge Ram 5.7L reprogram engine management software**	**201**	**2/2**	**-**

Table 8 – Investigations of engine calibration conditions that may result in low speed stall during deceleration with immediate restart possible.

[7] Conducted by General Motors as a Customer Satisfaction Campaign, but recorded and tracked by ODI as Safety Recall 04V-540.

REASON FOR CLOSING: Analysis of the complaint, field report and warranty data and shows that the majority of stalling incidents in the subject vehicles appear to be related to the engine calibration concerns that DCC addressed with service bulletins releasing revised PCM software. Analysis of the complaints and ODI's survey of owners of vehicles that received engine management software updates under TSB #18-013-05 show that these stalling incidents have the following characteristics:

- They occur at low speeds, often during parking lot or driveway maneuvers;
- They occur during decelerations, such as braking for a stop sign or traffic signal; and
- The operator is almost always able to immediately restart the vehicle.

When compared with other safety defect investigations and recalls of conditions that result in stalling during low-speed deceleration with immediate engine restart possible, the failure rate in the subject vehicles is low. Analyses of complaint and warranty data also show a declining trend. Accordingly, this investigation is closed. The closing of this investigation does not constitute a finding by NHTSA that a safety-related defect does not exist. The Agency will continue to monitor complaints and other information relating to the alleged defect in the subject vehicles and take further action in the future if warranted.