

Ford Motor Company

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OFFICE OF
DEFECTS INVESTIGATION

James P. Vendale, Director
Automotive Safety Office
Environmental & Safety Engineering

February 27, 2004

Ms. Kathleen C. DeMeter, Director
Office of Defects Investigation Safety Assurance
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

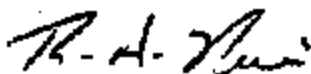
Dear Ms. DeMeter:

Subject: PE03-044;NVS-213dey

Enclosed is the Ford Motor Company (Ford) response to the agency's January 29, 2004 e-mail requesting additional information concerning the electronic throttle control (ETC) accelerator pedal in 1999-2003 model year F-Super Duty and Excursion vehicles. Complete answers to each request are attached.

As previously discussed in Ford's response to PE03-044, the data consistently show that an ETC accelerator pedal malfunction results in the throttle returning to idle, thus preserving power assist for braking and steering. Further, if the condition occurs, it is normally corrected simply by returning the pedal to the idle position and then reapplying it, as appropriate.

Sincerely,



James P. Vendale

Attachment

Question 1:

Acronyms: I've provided Bates numbers on some of these for context help. If you need further detail let me know.

- 1) GR&R; Bates 2554
- 2) FMEM; Bates 2576
- 3) FASS; Bates 25125
- 4) NGS, WDS and PID; Bates 2888
- 5) SDS
- 6) VDS
- 7) WCR

Answer:

1) **GR&R (Gage Repeatability and Reproducibility):** A system and techniques used in the manufacturing environment to ensure manufactured component measurement tools are both repeatable (same operator, equipment variation) and reproducible (same equipment, operator variation).

2) **FMEM (Failure Mode Effect Management):** The process of understanding the outcome of a sub-system failure and how it will influence the greater system. In the statement referenced in Bates 2576, "What causes your pedal (sic) to go into FMEM", the engineer was likely interested in the root cause(s) of failure in an electronic throttle control pedal.

3) **FASS (Field Action Stop Shipment):** A Ford Supplier Technical Assistance process used to avert the shipment of parts with potential concerns and to identify the systemic root cause while guiding the supplier/engineering community toward actions to prevent future occurrences. This particular FASS was directed at the accelerator pedal grease migration issue that led to CSA 03B03.

4) **PID, NGS, WDS (Parameter Identification, New Generation Star, Worldwide Diagnostics System):** PID designates the code stored and available in a Powertrain Control Module (PCM) for use in powertrain diagnostics. NGS is the tool to read PID codes stored in the PCM. WDS is the latest level tool for reading PID codes and is used with the new 6.0L diesel engine.

5) **SDS (System Design Specifications):** The SDS supports systems engineering by describing the system (e.g. accelerator pedal plus PCM plus throttle body) in terms of interfacing systems and sub-systems. The SDS consolidates performance requirements, standards, and metrics and provides a discreet location to capture these data as they are developed and refined for each unique program.

6) **VDS (Vehicle Design Specifications)** The VDS is a bookshelf of vehicle level requirements that is divided into a discreet list of vehicle attributes requirements. There are two types of VDS requirements: Generic (used as a starting point for all programs, and Program Specific (generic VDS customized for a specific program).

7) **WCR (Worldwide Customer Requirements):** WCR is a set of requirements for Ford Motor Company brands of Passenger Car, Light Truck, and Commercial Truck. These standards represent the starting point of design and performance for Ford

vehicles and associated products. Vehicle programs or brands may have requirements that exceed these requirements.

Programs: Please provide Model and MY detail.

- 1) P131
- 2) PN96
- 3) P221
- 4) VN127
- 5) U137
- 6) U152
- 7) DEW
- 8) Transit

Answer:

- 1) P131 – F-Super Duty (F250/350/450/550) from 1999 model year through present
- 2) PN96 – F Series (F150/250 LD) from 1997 through 2003 model years
- 3) P221 – F Series (F150) beginning 2004 model year
- 4) VN127 – E Series (E150/250/350/450) from 1997 model year through present
- 5) U137 – Excursion from 2000 model year through present
- 6) U152 – Explorer/Mountaineer from 2002 model year through present
- 7) DEW – Lincoln LS / Jaguar S Type from 2000 model year through present
- 8) Transit – European commercial truck (called Transit) sold outside the United States

Program Timing/Build Phases: Please confirm if this is the right order (chronologically), a brief explanation, and what the acronym stands for?

- 1) CP2
- 2) HTFB
- 3) CC
- 4) PSW
- 5) 1PP
- 6) FEU
- 7) IB
- 8) J#1

Answer:

The following list is in the proper sequence:

- 1) CP2 (Confirmation Prototype, 2nd Build)
Confirmation Prototype (CP) is a checkpoint in the Ford Product Development System (FPDS) which delivers a prototype vehicle built from production authority released material, from prototype or production tooling, assembled using the production processes and used to evaluate the Job #1 product content. CP2 is a discretionary second prototype build in

support of the CP checkpoint. CP2 may be used to evaluate components, systems, or vehicle build combinations not evaluated during the initial CP build.

2) CC (Change Cutoff)

The Change Cut-off milestone is the point in a vehicle program where the Program Team declares engineering is complete, the Job #1 date will be met and all suppliers are authorized to execute the launch plan.

3) HTFB (Hard Tooled Functional Build)

The Hard Tooled Functional Build is a non-functional, partial vehicle or buck build process used to objectively assess hard tooled try out parts for dimensional corrections/concessions (spring back, mean shifts, etc.). Part content for the HTFB consists of new tooled sheet metal stampings, new tooled plastic parts and any carry over attaching parts required to complete the assessment.

4) PSW (Parts Submission Warrant)

Report of the test results of the initial sample. The initial sample is a small quantity of parts that are checked against every dimensional and test requirement of the Ford part drawing. Initial samples should be produced from production tooling and process, and, in most cases, in a run of at least 300 units.

5) 1PP (First Production Proveout)

First phase of production prove-out (approximately 5 months prior to Job#1). This is the phase of production prove-out in which part function and fit are to be verified at the Job #1 design level.

6) FEU (Field Evaluation Unit)

Field Evaluation Units (approximately 3 months prior to Job#1) are driven from 3 to 6 months for accelerated mileage accumulation to identify, resolve and verify countermeasures to potential customer vehicle concerns.

7) IB (Integrated Build)

The Integrated Build phase (approximately 1 month prior to Job#1) is designed for plant training and readiness. The rate of vehicles built during this build is generally from 5 per day to 2 per hour. All vehicles are intended to be saleable.

8) J#1 (Job#1)

Job#1 is the beginning of the production build at the assembly plant.

Unfamiliar Term:

Can you explain what an "added starter" is? It was used in reference to a pedal system, perhaps in connection with program timing, or production timing? (This maybe a mid model year running change?????)

Answer:

An added starter is a product change that occurs after a model year Job #1 date.

Incident of Interest:

Please see the top of Bates 2648 (confidential submission, book 3 of 36) regarding an incident referred to as "undemanded WOT". I found other references to an "undemanded WOT"

incident, or similar occurrence, elsewhere in the confidential submission. Do you know if these references are all regarding the same incident, or have there been multiple occurrences of this type? In the event ODI wants to learn more about what happened in this(these) case(s), will you be able to arrange contact with the individuals involved in the incident(s)? I may want to communicate with the person(s) who experienced the incident(s), and the person(s) who can explain on a technical basis what happened to cause it (which may be you). Please advise.

Answer:

Ford has diligently researched the events, meetings, and actions surrounding the e-mail (Bates 2648) that referenced the terms "underrated WOT". Based on discussion with the engineers noted in the e-mail, Ford could not find any evidence to suggest that, at any time, was there an issue of unwanted wide open throttle (WOT) related to the F-Super Duty and Excursion electronic throttle control (ETC) accelerator pedals. What Ford did find was evidence of an immature calibration (not representative of production vehicles) on a prototype vehicle.

As the agency is aware, the three track ETC pedal, on 2003 model year F-Super Duty and Excursion vehicles with the 6.0L diesel engine, has three potentiometers. During the course of normal development engineering, Ford engineers discovered that an interaction between potentiometer readings and the existing Visteon strategy could cause a dynamic shift in indicated pedal position. Such an event could cause only a minor engine surge or unnecessary transmission shift.

As documented by the e-mail copies included in Attachment I, Ford initiated and completed corrective action for this potential minor engine surge for all saleable units. Ford has found no evidence, in production vehicles, to suggest that this issue was not fully corrected.

Response to Request 5:

Can you confirm that each warranty claim record Ford submitted in response to this request would have involved the replacement of an ETC pedal assembly (with base part number 9F836) as part of the warranty repair (as Appendix B indicates)? The reason I'm asking is because some of the claim records (about 2000) do not show 9F836 in the base part number field; is this just an anomaly in the way part number data was selected by your IT system, or is there some other explanation? I may need to follow-up with you on this issue.

Answer:

Yes, each warranty claim submitted to the agency in Ford's response to PE03-044 represents a reported ETC pedal replacement. When multiple parts are replaced during a discreet service operation, a part other than the pedal may be the one to appear in the base part number field.

Response to Request 8:

- 1) On page 11 of Ford's response in the next to the last paragraph a reference is made to an Appendix J. Has Ford submitted that appendix?
- 2) Do you have any knowledge of an OASIS broadcast message, # 0999, which involved the ETC pedal sensor on MY 2003 7.3L diesel Econoline Vans? I don't think this was submitted with Ford's response. Can you confirm this and explain why?

February 27, 2004

Answer:

- 1) Appendix J is the Ford Privilege Log. It contains information considered to be proprietary and confidential to Ford. The log had not been submitted while Ford and the agency's Office of the Chief Counsel discussed certain requirements related to Ford's requests for confidentiality. The log and accompanying redacted documents will be submitted shortly.

- 2) Broadcast message # 0699 was initiated in October 2003 to alert the Ford dealer network to SSM 17245, defining a condition where the accelerator pedal on 7.3L diesel Econoline vehicles might malfunction and put the vehicle into an idle condition. The root cause of this condition was an out of specification crimping fixture used by the supplier (Teleflex) in the Econoline pedal component assembly process. The SSM was not included in Ford's response to PE03-044 because the condition was unique to Econoline ETC pedals. This pedal was not installed on F-Super Duty or Excursion vehicles.

Response to Request 12:

Ford's response letter states that the supplier name and contact details for the subject components sold are provided in Appendix M, however I didn't see that information in the file on the CD provided. ODI also requested usage dates and application detail (what Makes, Models and MYs it is used on) for each subject component part number, but I didn't find that information either. I don't need supplier contact detail for WCMO or Teleflex right now, but I do need the usage date and application data. Can you provide a table that states the following for each unique subject component part number (pre-fix, base and suffix) used in production or service on the IR letter subject vehicles; service part number, engineering part number, description (Gen II-Fixed, Gen II-Adjustable, GEN III.... etc), supplier name, approx. date first used in production, approx. date first available as a service component, and application details (makes, models, MYs)? I.E., a summary of all the ETC pedals with base part number 9F838 used on vehicle covered in the IR submission.

Answer:

As discussed in the teleconference between Ford and NHTSA on February 17, 2004, Appendix L, Ford's response to inquiry PE03-044, responds to the above question. However, it was determined that some service part information was either incorrect or absent. A revised Appendix L, with updated service information, is included with Attachment II.

###

Love, Keith (K.A.)

From: Dunaway, Scott (S.S.)
Sent: Monday, February 18, 2004 1:00 PM
To: Love, Keith (K.A.)
Subject: RE: PDA Meeting Notice for Gas vs Diesel Calibration Discussion

Keith,

Here it is.



PFS_MTG.TXT

Scott Dunaway

Diesel Controls Supervisor
CAPE Diesel Task Force
313-84-90812
SDunaway@ford.com www.ford.com

-----Original Message-----

From: Love, Keith (K.A.)
Sent: Friday, February 13, 2004 3:06 PM
To: Dunaway, Scott (S.S.)
Subject: PDA Meeting Notice for Gas vs Diesel Calibration Discussion

You referenced a meeting notice in your PDA archive for the subject meeting that was held on July 1, 2002. It would be useful if I could get a copy of it. Is this possible?

Keith A. Love
Automotive Safety Office
Fairlane Plaza South Suite 500
Phone (313) 800-1932
Fax (313) 594-2268

PPS_MTG.TXT

Description: PPS Software Investigation
Start Date : 7/01/2002
Start Time : 10:00am
End Time : 2:00pm
Location : FTDC 152 South

Love, Keith (K.A.)

From: Auiler, Jim (J.E.)
Sent: Thursday, July 18, 2002 9:06 AM
To: Brefeld, Thomas (T.E.); Beydoun, Al (A.I.); Srinivasiah, Sadasanda (S.G.)
Cc: John Pawlowicz (E-mail)
Subject: FW: HOT!!! 8.0L Diesel Pedal Issue

Importance: High

Let's prepare for this meeting today. You should also plan on joining the Friday morning meeting.

Scott Dunaway

Diesel Control Systems Supervisor
Ford GCE Powertrain Electronic Applications
(Voice) 313-84-50812 (Fax) 313-32-36743
SDunaway@ford.com <mailto:SDunaway@ford.com>

- > -----Original Appointment-----
> **From:** Auiler, Jim (J.E.)
> **Sent:** Thursday, July 18, 2002 9:00 AM
> **To:** Auiler, Jim (J.E.); Auiler, Jim (J.E.); Greene, Tom (Thomas L.);
Szwabowski, Steve (S.J.); Espinoza, Bob (R.J.); Gaw, Ron (R.M.); Liposky,
Lawrence (L.J.); Gilkey, James (J.K.); Gaw, Ron (R.M.); Dunaway, Scott
(S.S.); Fulton, Brian (B.L.); POEE-A065 (16); 'tculbert@vistson.com';
Willard, Karen (K.A.)
> **Cc:** Figurski, Patrick (P.M.); Gaynier, Larry (L.J.); Sohran, Tim (T.D.);
Freese, Charlie (C.E.); Thompson, Greg (G.J.)
> **Subject:** Updated: HOT!!! 6.0L Diesel Pedal Issue
> **When:** Friday, July 19, 2002 7:00 AM-8:00 AM (GMT-05:00) Eastern Time (US &
Canada).
> **Where:** POEE Building, Conference Room A065
> **Importance:** High
>
> Updated Agenda
>
> 1. Describe Problem -Brian Fulton
>
> 2. Identify Differences between Diesel
> Pedal and Gass ETC Pedal -Group
> *HW Differences
> *SW processing differences
> *Calibration differences
> *Monitor differences
>
> 3. Identify Next Steps -Group

Lova, Keith (K.A.)

From: Kromberg, Arnold (A.W.)
Sent: Wednesday, October 02, 2002 12:18 PM
To: Scherman, Brooks (B.M.); Fincham, Jonathan (J.R.); Rio, John (J.C.); Garman, Benjamin (B.D.); Fulton, Brian (B.L.); Srinivasalah, Sadananda (S.G.); Gaw, Ron (R.M.); West, Gregory (G.S.)
Co: Hazegian, Michael (M.J.); Beydoun, AJ (A.I.); Culbertson, Tom (T.R.)
Subject: 6.0L ETC pedal calibrations for R08 release



6.0L ETC Pedal
Calibration_R08..

Attached are the ETC pedal calibrations for the R08 release as agreed by the team. Items in red represent changes from R07, however EVERY parameter should be verified in the master calibration files to ensure accuracy. These parameter values are required to be rolled into the trans and engine calibrations. If any values violate APR restriction, a bypass will be required.

Forward as needed to anyone I may have missed on the distribution. If there are any questions/concerns please let us know. Thanks all for the efforts in developing the optimized values.

<<6.0L ETC Pedal Calibration_R08 release.xls>>

Regards,

Arnold Kromberg
Diesel Powertrain Calibration
Phone: 313-248-9289 Fax: 313-337-1712 Pager: 888-442-0255
E-Mail: akromber@ford.com
Text page: [mailto:8884420255@airtouchpaging.com]

Change type (Design or Process)	Description of change	Approximate date incorporated into vehicle production	Approximate date incorporated into engineering production	Reasons for change	Models where the part fit, or could be, integral for vehicle production		Original Ford Production part number	New Ford Production part number	Disposition of original parts			Date original service part withdrawn from sale	Service Part Number	Supplier
					Model and Year	Production dates (Start-End)			Part production inventory	Supplier production inventory	Ford Service classification/ Dealer stock			
D	Revised design of the articulated foot pedal spring	January, 1999	January, 1999	Accel pedal bezel	1999 P131U137	1999 & 2000 P131U137	F81A-8F836-AC	F81A-8F836-AE	0			SEP for sale	F812-AB	Telstar
D	New supplier, design changed from an mechanical idle validation switch & potentiometer back to an electrical IV8 & Pot track.	October, 2000	July, 2000	MCR	2001 P131U137	2001&2002 P131U137	F81A-8F836-AE	1C34-8F836-BA	0			August, 2002	1C32-BA	Williams Controls
D	Revised lever arm to improve overheat capability	August, 2002	August, 2002	Part didn't pass required overload test in EB	2002 P131U137	2002 to 2003.25	1C34-8F836-BA	1C34-8F836-BB	0			SEP for sale	1C32-BA	Williams Controls
D	Additional part for adjustable pedal option in vehicle	2002 Job 1	August, 2001	Added vehicle option	2002 P131U137 with adj pedal	2002 P131U137	2C34-8F836-DD		0			September, 2002	2C32-DA	Telstar
D	Added phenolic bearing to sensor bracket to allow migration of oil from switch track to pot track.	September, 2002	September, 2002	Promoters sensor failures	2002 P131U137 with adj pedal	2002 P131U137	2C34-8F836-DD	2C34-8F836-DE	0			September, 2002	2C32-DE	Telstar
D	Cost reduction to welded adjuster tube.	September, 2002	September, 2002	MCR	2002 P131U137 with adj pedal	2002 P131U137	2C34-8F836-DE	2C34-8F836-DF	0			November, 2002	2C32-DE	Telstar
D	New run migrating tube applied to sensor switch track with welded geometry and location.	November, 2002	November, 2002	Permanent fix to premature sensor failures for service parts.	2002 P131U137 with adj pedal service part	2002 P131U137	2C34-8F836-DF	2C34-8F836-DG	0			SEP for sale	2C32-DE	Telstar
D	Updated sensor for new Ford ETC system.	2003.25 Job 1	August, 2002	New pedal output signals	2003 P131U137 with Adj pedal	2003 P131U137	2C34-8F836-DG	3C34-8F836-BD	0			NA	3C32-BA	Telstar
D	Cost reduction to welded adjuster tube.	2003 Job 1	July, 2002	MCR	2003 P131U137 with Adj pedal	2003 P131U137	3C34-8F836-BD	3C34-8F836-BE	Current Production Part			SEP for sale	3C32-BA	Telstar
D	Updated sensor for new Ford ETC system.	2003.25 Job 1	August, 2002	New pedal output signals	2003 P131U137 with fixed pedal	2003 P131U137	1C34-8F836-BB	3C44-8F836-AC	0			August, 2003	3C42-AA	Williams Controls
D	Revised bracket to contact dash panel.	August, 2003	August, 2003	Original design was supposed to contact dash panel	2003 P131U137 with fixed pedal	2003 P131U137	3C44-8F836-AC	3C44-8F836-AD	Current Production Part			SEP for sale	3C42-AA	Williams Controls