



June 26, 2002

Mr. K. N. Weinstein
Associate Administrator for Safety Assurance
National Highway Traffic Safety Administration
400 Seventh Street, S.W., Room 5321
Washington, D.C. 20590

02V-178 ① of ③

Dear Mr. Weinstein:

The following information is submitted pursuant to the requirements of 49 CFR 573.5 as it applies to a determination by General Motors of a safety defect involving certain 2000 CK model vehicles.

573.5(c)(1): Chevrolet and GMC Divisions of the General Motors Corporation.

573.5(c)(2)(3)(4): This information is shown on the attached sheet.

573.5(c)(5): General Motors has decided that a defect which relates to motor vehicle safety exists in certain 2000 model year Chevrolet and GMC C/K model trucks. Some of these vehicles have an air bag sensing diagnostic module (SDM), which contains an anomaly that could result in the driver and passenger's air bag failing to deploy during certain frontal collisions. In a vehicle crash, front seat occupants may receive more severe injuries.

573.5(c)(6): The following chronology of principal events led to the determination of a defect:

- September 1, 1999: A 30 mph, frontal barrier impact, validation test of a 2000 Interim MY four-door extended-cab GMT 800 pickup with belted occupants (test C12638) was conducted at the Milford Proving Ground (MPG) as part of the validation of a new frame in this vehicle application. The passenger front air bag did not deploy during the test as a result of the air bag switch inadvertently being placed in the "Passenger Air Bag Off" position.
- October 22, 1999: A repeat of this test (C12755) was conducted at the MPG. The test vehicle was assembled using parts from two different vehicles. Both front air bags failed to deploy during the test. Even though the airbags did not deploy, the driver occupant performance met the FMVSS 208 occupant protection standard. The Head Injury Criteria (HIC) performance of 790 was substantially below the 1000 HIC requirement of the standard. However, the resulting passenger HIC was 1,610, exceeding the FMVSS 208 requirement.
- October 28, 1999: A repeat of the October 22 test (test C12784) was conducted at the MPG. During this test the driver and passenger front air bags did deploy, and all applicable requirements of FMVSS 208 were met for both the driver and the passenger. An investigation and analysis into the non-deployment of the air bags in test C12755 was conducted to determine the cause of this condition and its effect on vehicle performance. The investigation was conducted from both a compliance perspective and an unreasonable risk to safety perspective.
- October 29, 1999: Delphi the supplier of the sensing system began an extensive analysis of the sensing system design in response to test C12755. Delphi was able to produce

Product Investigations

Mail Code: 480-106-304 • 30500 Mound Road • Warren, MI 48090-9055

Phone: (586) 986-8029 • Fax: (586) 947-2318

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"below specification" output currents by testing the SDM-G from C12755 on a laboratory deceleration test fixture called a "thruster" when using the crash pulse from C12755.

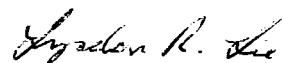
Subsequently, Delphi reproduced similar results on one of six additional SDMs tested on this laboratory test fixture using the C12755 crash pulse. Delphi found in its bench testing that "below specification" output current pulses were related to the contacts in the "safing" sensor "bouncing" open. When this bounce occurred after the SDM-G had initiated current flow to the squibs, it could, under certain circumstances, cause a reset of the SDD chip that controls that current flow.

- November 1999: The SIR (Supplemental Inflatable Restraint) Sensing Development EGM (Engineering Group Manager) initiated a study of system inductance in vehicles as set up for crash testing because Delphi indicated that inductance was a contributing factor to the subject condition.
- January 2000 - June 2002: GM Engineering and GM suppliers continued to conduct extensive investigation and testing to determine the causes of this complex condition and its effects with vehicle compliance and vehicle safety.
- June 14, 2002: The FPE Director reviewed the issue with the SMC.
- June 20, 2002: The decision was made to conduct a safety recall.

573.5(c)(8): General Motors is currently developing a service procedure to recalibrate the SDM on the affected vehicles. This information will be sent forth in the dealer bulletin.

573.5(c)(9): General Motors will notify NHTSA when the campaign mailing dates are determined. Draft copies of the dealer bulletin and owner notification will be forwarded when available.

Sincerely,



Lyndon R. Lie
Director
Product Investigations

573.5(c)(2),(3),(4)

**VEHICLES POTENTIALLY AFFECTED BY MAKE, MODEL, AND MODEL YEAR
PLUS INCLUSIVE DATES OF MANUFACTURE**

<u>MAKE</u>	<u>MODEL SERIES</u>	<u>MODEL YEAR</u>	<u>NUMBER INVOLVED</u>	<u>INCLUSIVE MANUFACTURING DATES (FROM) (TO)</u>		<u>DESCRIPTIVE INFO. TO PROPERLY IDENT. VEH.</u>	<u>EST. NO. W/CONDITION</u>
Chevrolet	C/K	2000	360,213	2/99	2/00	Pickup Trucks	* Unknown
Chevrolet	C/K	2000	37,743	8/99	2/00	Utility Trucks	"
GMC	C/K	2000	110,757	2/99	2/00	Pickup Trucks	"
GMC	C/K	2000	<u>16,541</u>	8/99	2/00	Utility Trucks	"
Grand Total:			525,254				

* All involved vehicles will have the SDM recalibrated.

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