

ODI Action Number: **EA02-030**

Date: **10-22-2002**

Subject: **GENERAL MOTORS CORPORATION
1996 – 2000 LESABRE, PARK AVENUE, REGAL, 88, 98,
RIVIERA, BONNEVILLE, GRAND PRIX, CUTLASS,
AND MONTE CARLO VEHICLES EQUIPPED WITH 3.8
LITER ENGINES (VIN8 = "K")**

ALLEGED ENGINE COMPARTMENT FIRES FAILURE

This file contains consumer letters received by the National Highway Traffic Safety Administration, which complain of the alleged defect that is the subject of this Engineering Analysis. It also contains correspondence between this agency and the manufacturer on the subject. Portions of that correspondence may be withheld where the manufacturer has claimed that they are confidential pursuant to the Freedom of Information Act, 5 U.S.C. ' 552(b)(4), which exempts from disclosure confidential commercial and financial information. Additional documents relating to this Engineering Analysis may exist, but have not been included in this public file.

If you have any information or concerns you would like to discuss with NHTSA staff, please call the

TOLL FREE AUTO SAFETY HOTLINE

800-424-9393

(In the Washington, DC metropolitan area, please call 202-366-0123)

Also, if you wish to discuss the investigation with NHTSA staff, the HOTLINE contact representative will have a technical staff member return your telephone call.



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

INVESTIGATION: EA02-030
DATE OPENED: 22-OCT-02
SUBJECT: Engine Compartment Fires
PROMPTED BY: PE02-050
PRINCIPAL INVESTIGATOR: Bruce B. York

MANUFACTURER: General Motors Corporation (GM)
MODELS: Le Sabre, Park Avenue, Regal, 88, 98, Riviera, Bonneville, Grand Prix, Cutlass, and Monte Carlo vehicles equipped with 3.8 liter engines (VIN8 = "K")
MODEL YEARS: 1996 through 2000
TIRE POPULATION: 2,285,636

PROBLEM DESCRIPTION: A backfire during engine starting may result in fracture of the plastic intake manifold with the potential for severe engine compartment fire.

FAILURE REPORT SUMMARY

	ODI	MANUFACTURER	TOTAL
COMPLAINTS:	44	565	609
FIRES:	44	unk	44
INJ INCIDENTS:	0	2	2
INJURIES:	0	0	0
FAT INCIDENTS:	0	0	0
FATALITIES:	0	0	0
OTHER:	-	-	-

DESCRIPTION OF OTHER: n/a.

ACTION: An Engineering Analysis has been opened.

Investigator: *[Signature]*

DIV. CHIEF: *[Signature]*

OFC. DIR: *[Signature]*

DATE: 10/22/02

DATE: 10/21/02

DATE: 10-22-02

SUMMARY: On June 24, 1996, GM filed a Defect Information Report concerning a condition that could result in engine compartment fire in approximately 276,000 model year (MY) 1996 GM 88, 98, Bonneville, Park Avenue, Regal, and Riviera and MY 1996 through 1997 LeSabre passenger cars equipped with 3.8L V6 (GM "L36") engines and built between July 1, 1995 and May 1, 1996 (NHTSA Recall No. 96V-116, GM Recall No. 97-C-02).

According to GM, if a backfire occurs during engine startup, the intake manifold could break and possibly cause an engine compartment fire. GM's recall remedy involved updating the Powertrain Control Module (PCM) programming to reduce the risk of a backfire event, in accordance with a production change implemented in May 1996. Pending completion of repairs, GM warned consumers to keep the hood closed whenever starting the engine to reduce the risk of personal injury.

ODI opened PE02-050 based on 44 complaints of backfire related engine compartment fires in MY 1996 through 2000 GM passenger cars equipped with the same 3.8L V6 engines that were the subject of 96V-116. Documents furnished by GM in response to PE02-050 indicate that it has implemented three design changes to address concerns with backfire incidents in the subject vehicle population.

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GM Engineering refers to the backfire incidents in the subject engines as Manifold Over-Pressurization (MOP) events and has labeled its design changes accordingly (MOP I, MOP II, and P04). GM's design changes have yielded at least four separate groups of vehicles equipped with the subject 3.8L V6 engines: (1) vehicles recalled by 96V-116 -- prior to MOP I recall modifications; (2) vehicles produced after the MOP I change in PCM programming in May 1996 (including all recalled vehicles that received the PCM update); (3) vehicles produced after the MOP II change in PCM programming that was implemented in May 1997; and (4) vehicles produced after P04 change in PCM programming in July 1997.

Information provided by GM concerning the alleged defect in the subject vehicles indicates that there is a relationship between battery voltage and the risk of backfire. This relationship is evidenced by a disproportionate number of failure incidents occurring in winter months. The subject intake manifold is constructed from an injection molded plastic material (Nylon 6/6). MOP events typically result in catastrophic fracture of the intake manifold (Figure 1) and can disturb the fuel injection assembly, resulting in leakage of pressurized fuel within the engine compartment. ODI has not completed its assessments of the effects of GM's design changes and other factors (e.g., vehicle age and battery condition) on the risks and trends of the alleged defect in the various populations. The overall failure trend has been increasing over the last 6 calendar years (Figure 2).



Figure 1

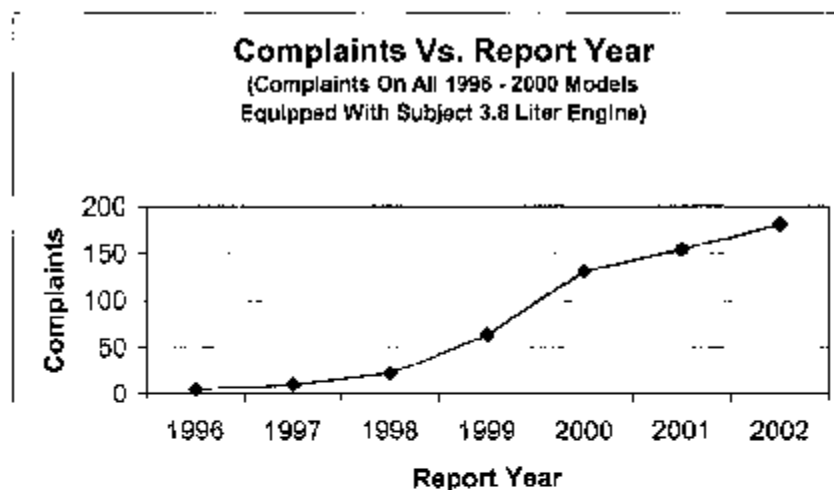


Figure 2

GM maintains that the alleged defect condition does not represent an unreasonable risk to motor vehicle safety in the subject vehicles for the following reasons: (1) low frequency of occurrence and injury; (2) a back fire prior to the MOP event indicating unusual operation and potential problem with the vehicle; and (3) the MOP event occurs during start-up and not during vehicle operations. ODI is opcring this Engineering Analysis to further assess the scope, frequency, and trend of the engine compartment fire risk associated with the alleged defect in the subject vehicles. The scope of the investigation has been changed to include the Monte Carlo, Riviera, Cutlass and 98 GM models. #