

engine mount recall

71-0235 (31)

GENERAL MOTORS CORPORATION

December 10, 1971

Douglas Toms
National Highway Traffic Safety Adm.
Department of Transportation
West Building
17th Street, S. W.
Washington, D. C. 20591

NHTSA Executive Secretariat	
	Adm. Info
Adm. Serv.	
Div. Adm. Serv.	
CCS	
TSP	
MVP	
RI	
PSP	
CAPI	
Legal	

Re: Mr. Toms:

On December 1, 1971 General Motors received a letter from Robert L. Carter, Acting Associate Administrator, Motor Vehicle Programs, advising that the National Highway Traffic Safety Administration was "very close to making a formal initial determination of safety defect" in connection with the investigation of Chevrolet engine mounts and urging that General Motors send a "defect notification letter" to owners of certain Chevrolet cars and trucks.

In our letter of reply dated December 3, 1971, we advised Mr. Carter that "General Motors does not agree that any potential problem incident to the use of these engine mounts constitutes a safety-related defect as that term is defined in the National Traffic and Motor Vehicle Safety Act of 1956." Nevertheless, to eliminate misinformation and misunderstanding on the part of Chevrolet owners resulting from the publicity given the engine mount issue and also to avoid time consuming litigation of the issue with NHTSA, General Motors further advised Mr. Carter that it had decided to send notification letters containing the information specified in Section 123(c) of the Act.

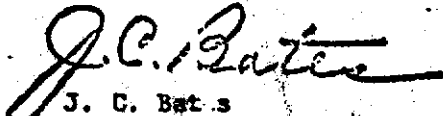
The information in this letter is submitted in accordance with the requirements of Federal Regulation 573.4 on the basis that, as pointed out in our letter to Mr. Carter dated December 3, 1971, we construe his letter of December 1, 1971 as the "substantial equivalent of a determination of the existence of a safety-related defect". It should be clearly understood that in submitting this information General Motors still does not agree with such a determination.

1. Chevrolet Motor Division and GMC Truck & Coach Division, General Motors Corporation.
2. & 3. The identifying classifications and the total number of vehicles in each classification which are included in this campaign are shown on the attached schedule.

003755

4. There is no reasonable basis for us to estimate the percentage of the vehicles potentially affected.
5. The only description of the defect is set forth in Mr. Carter's letter dated December 1, 1971.
6. We are unable to furnish a chronology of the principal events that were the basis of the determination made by the National Highway Traffic Safety Administration.
7. We advised Mr. Carter in our letter dated December 3, 1971 that General Motors will send notification letters containing the information specified in Section 113(c) of the Safety Act to all known owners of 1965 through 1969 regular-size V-8 Chevrolet cars, 1967 through 1969 V-8 Camaros, 1965 through 1969 V-8 Novas, and applicable Chevrolet and GMC truck models for the years 1965 through 1970. These letters will inform owners that, at General Motors expense, dealers will install restraints which will limit the lifting of the engine should an engine mount separate. Restraints will be installed on all of the above-described vehicles which, at the time they are presented to the dealer, are equipped with non-interlocking type front engine mounts.
8. Three copies of the Chevrolet Dealer Bulletin were submitted to you by our letter dated December 8, 1971. Copies of other applicable documents will be furnished to you as soon as they become available.

Very truly yours,


J. C. Bates
Director, Service Section

att.

	CHEVROLET "B"	CHEVY II NOVA	CAMARO	TOTAL	"C"	"P"	"G"	TOTAL
1965	1,161,591	14,389		1,175,980	19,761			19,261
1966	1,168,507	39,113		1,207,620	33,221			31,221
1967	974,015	23,611	147,250	1,144,876	30,921		10,717	41,638
1968	1,072,952	45,154	167,344	1,285,450	76,515	396	11,862	88,773
1969	1,048,500	84,453	167,295	1,300,248	132,888	1,265	15,758	149,911
1970					155,383	2,413	1,925	159,721
TOTAL	5,425,565	206,720	481,889	6,114,174	448,189	4,074	40,262	492,525

	"C"	"P"	"G"	TOTAL
1965				
1966				
1967	1,167	2,256		3,423
1968	12,488	2,610	127	15,225
1969	23,170	2,810	280	26,261
1970	28,710	1,016	750	30,476
TOTAL	65,535	8,693	1,157	75,385

6,114,174
492,525
75,385
6,682,084

71-8235 (03)

GENERAL MOTORS CORPORATION
DECEMBER 10, 1971

CHEVROLET DIVISION

CHEVROLET
SERVICE

70-C-10
Number

12/03/71
Date

Attn: Service Manager

CHEVROLET DIVISION
1970 LIGHT DUTY TRUCKS

71-0235

TO: ALL CHEVROLET DEALERS

The National Highway Traffic Safety Administration, U. S. Department of Transportation, has written to General Motors urging Chevrolet Division to take corrective action due to possible secondary effects on throttle and transmission linkage and power brake assist which may result from engine mount separation. The NHTSA also issued a Consumer Protection Bulletin on October 15, 1971, covering such conditions.

While Chevrolet does not agree that the problem constitutes a safety related defect as defined by the National Traffic and Motor Vehicle Safety Act of 1966, it recognizes potential secondary conditions as follows:

- a. The separation of either a right or left front engine mount in and of itself has essentially no adverse effect on vehicle operation. The engine will continue to rest upon the separated mount and maintain its relative position in the car aided by the other front mount and by the rear (transmission) mount. The car will operate normally under nearly all driving conditions.
- b. Hard acceleration in forward gears will tend to lift the left side of the engine; and should a left mount be separated, the engine lift is opposed only by the weight of the engine and transmission assembly. As speed increases, the torque reaction forces, which lessen as road speed increases, are overcome by the opposing weight force so that the engine lowers to its normal position.
- c. A separated mount will permit engine lift which may affect throttle linkage, momentarily increasing the throttle opening possibly to full throttle. This effect would basically be noted on medium to heavy acceleration from a standing or a low-speed start. Left turns aggravate the condition as the centrifugal force of the turn supplements the engine torque reaction. As the vehicle speed increases, the torque reaction is reduced and the engine-transmission weight will return the engine to normal position and throttle returns to idle or wherever the driver holds it.

This effect on throttle control varies considerably from vehicle to vehicle with vehicles equipped with a high torque engine being more susceptible. Engine torque lift can only be encountered at approximately maximum speeds of 15 to 30 mph dependent upon available engine torque, torque multiplication in the transmission and axle, tire traction, etc. Above these speeds, there is not sufficient torque reaction to cause engine lift with possible secondary effects.

- d. An affect on power brake assist may result on regular 1967 thru 1969 Chevrolet passenger models when engine lift is sufficient to pull the vacuum line and/or check valve loose from the power brake booster. Braking action is retained but without the power assist. Other passenger models and trucks are not so affected.
- e. In a relatively few cases, engine torque lift may disengage transmission and/or clutch linkage. On vehicles equipped with manual transmissions, unit will normally stay in gear selected; however, clutch will be inoperative. On vehicles with automatic transmissions, normally the linkage will go to neutral with further gear selection not available.
- f. Steering is not affected.
- g. There is generally adequate warning to the driver at the first occurrence due to the engine fan contacting the shroud. The resultant noise is significant. There may be some vehicles without shrouds, particularly truck models; however, even here, the engine movement should be felt and be audible.

It must be recognized that engine mounts may well separate as the result of accidents as the engine transmission mass cannot be restrained by the mounts during hard impacts. Subsequent engine movement may well distort, disengage, etc., other engine components and/or linkages. Reported instances of suddenly increasing speeds on expressways, or in fact, any high speed incidents, should not be attributed to engine mount separation.

As a result of the publicity which has been given to the engine mount issue, there is a great deal of misinformation and misunderstanding on the part of Chevrolet owners which we are anxious to eliminate as soon as possible. Therefore, Chevrolet is proceeding to recall vehicles subject to this campaign to install restrainers which will limit engine lift and eliminate possible secondary effects of engine mount separation.

VEHICLES INVOLVED

771-0235 (C)

Vehicles subject to the recall activities are as follows:

- 1965 through 1969 Chevrolet with V-8 engine.
- 1965 through 1969 Chevy II and Nova with V-8 engine.
- 1967 through 1969 Camaro with V-8 engine.
- 1965 through 1970 "C" & "P" 10 through 30 series trucks with V-8 engine and automatic transmission.
- 1967 through 1970 G-10 and G-30 Chevy Vans and Sportvans with V-8 engine.

MODIFICATION

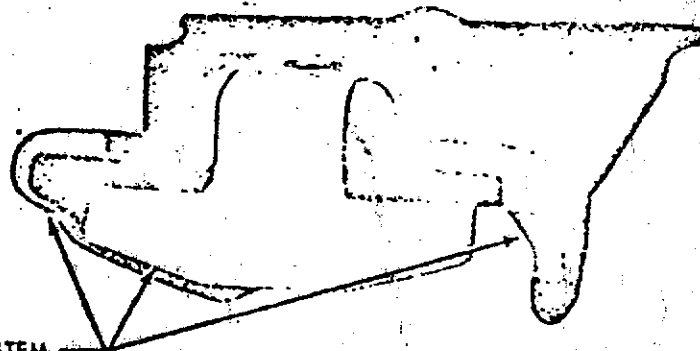
Basically on passenger cars, the modification will be the installation of restraining cable units (Figure 1) that will limit engine movement in the event of mount separation. On truck models, the modification will be the addition of metal straps between mounts and frame brackets. Parts are being processed and unitized and should become available in February, 1972, at which time a supplement to this bulletin concerning the installation of applicable cable, metal strap and/or mount units will be issued. Some few engine applications will still require the installation of interlock mounts or a combination of the interlock mount and cable. These are as follows:

<u>MODEL YEAR</u>	<u>VEHICLE</u>	<u>MODIFICATION</u>
1965	Chevrolet with 409 cu. in. engine	Interlock mounts - both sides.
1969	Camaro with 302 or 350 cu. in. engine and air conditioning	Interlock mount - left side; cable unit - right side.
1969	Nova with 307 or 327 cu. in. engine and air conditioning	Interlock mount - left side; cable unit - right side.
1969	Chevrolet and Camaro with 396 or 427 cu. in. engine, air conditioning and A.I.R.	Interlock mounts - both sides.

Presently, the only service replacement mount available from Chevrolet is the interlock type (Figure 2), and this is the only type that should be used for repair on any mount replacement on Chevrolet models, 1958 through 1971. The interlock feature is an important improvement, and use of engine mounts without the interlock feature or modification of the interlock for ease of installation, does not represent acceptable service procedures.



FIGURE 1



INTERLOCK SYSTEM

ENGINE MOUNT (TYPICAL)

FIGURE 2

Except for those vehicles listed under "Modification" on which installation of the interlock mount is to be the modification, inspection of mount replacement remains the responsibility of the owner if the provisions of the applicable vehicle warranty do not apply. Chevrolet will provide at no cost to the owners, installation of the restraining cables as soon as available.

The engine mount warranty coverage for the years 1965-70 is:

- 1965 and 1966 - Engine mounts are subject to the vehicle warranty for these model years. The vehicle warranty was limited to 24 months from the date of sale to the original retail purchaser or until it has been driven for 24,000 miles, whichever first occurs.
- 1967 through 1970 - Engine mounts are subject to the power train warranty for those years applicable. This warranty applies until the expiration of five (5) years from the date of delivery to the original retail purchaser or until it has been driven for 50,000 miles, whichever first occurs, subject to the limitation of the warranty for the particular model year.

Chevrolet Motor Division
General Motors Corporation

IMPORTANT--All Service Personnel Should Read and Initial

NUMBER: 70-C-8

GROUP: GM GASOLINE ENGINE

DATE: December 22, 1971

Subject: ENGINE MOUNTS
Models: 1967 - 1970 1500-2500-3500 MODEL TRUCKS
WITH V-8 ENGINES

71-0235 (09)

The National Highway Traffic Safety Administration, U.S. Department of Transportation, has advised General Motors urging General Motors to take corrective action due to possible secondary effects on throttle and transmission linkage which may result from engine mount separation. The NHTSA also issued a Consumer Protection Bulletin on October 15, 1971, covering such conditions.

While GMC does not agree that the problem constitutes a safety related defect as defined by the National Traffic and Motor Vehicle Safety Act of 1966, it recognizes potential secondary conditions as follows:

- a. The separation of either a right or left front engine mount in and of itself has essentially no adverse effect on vehicle operation. The engine will continue to rest upon the separated mount and maintain its relative position in the vehicle aided by the other front mount and by the rear (transmission) mount. The vehicle will operate normally under nearly all driving conditions.
- b. Hard acceleration in forward gears will tend to lift the left side of the engine; and should a left mount be separated, the engine lift is opposed only by the weight of the engine and transmission assembly. As speed increases, the torque reaction forces, which lessen as road speed increases, are overcome by the opposing weight force so that the engine lowers to its normal position.
- c. A separated mount will permit engine lift which may affect throttle linkage, momentarily increasing the throttle opening possibly to full throttle. This effect would basically be noted on medium to heavy acceleration from a standing or a low speed start. Left turns aggravate the condition as the centrifugal force of the turn supplements the engine torque reaction. As the vehicle speed increases, the torque reaction is reduced and the engine transmission weight will return the engine to normal position and throttle returns to idle or wherever the driver holds it.

This effect on throttle control varies considerably from vehicle to vehicle with vehicles equipped with a high torque engine being more susceptible. Engine torque lift can only be encountered at approximately maximum speeds of 15 to 30 mph dependent upon available engine torque, torque multiplication in the transmission and axle, tire traction, etc. Above these speeds, there is not sufficient torque reaction to cause engine lift with possible secondary effects.

- d. Braking is not affected.
- e. In a relatively few cases, engine torque lift may disengage transmission and/or clutch linkage. On vehicles equipped with manual transmissions, unit will normally stay in gear selected; however, clutch will be inoperative. On vehicles with automatic transmissions, normally the linkage will go to neutral with further gear selection not available.
- f. Steering is not affected.
- g. There is generally adequate warning to the driver at the first occurrence due to the engine fan contacting the shroud. The resultant noise is significant. On models without shrouds the engine movement should be felt and be audible.

It must be recognized that engine mounts may well separate as the result of accidents as the engine transmission mass cannot be restrained by the mounts during hard impacts. Subsequent engine movement may well distort, disengage, etc., other engine components and/or linkages. Reported instances of suddenly increasing speeds on expressways, or in fact, any high speed incidents, should not be attributed to engine mount separation.

As a result of the publicity which has been given to the engine mount issue, there may be a great deal of misinformation and misunderstanding on the part of GMC owners which we are anxious to eliminate as soon as possible. Therefore, GMC is proceeding to recall vehicles subject to this campaign to install restraints which will limit engine lift and eliminate possible secondary effects of engine mount separation.

VEHICLES INVOLVED

Only those vehicles with V-8 engines are involved and as follows:

- A. 1967-1970 CE1500-2500-3500 models with automatic transmissions.
- B. 1968-1970 PE1500-2500-3500 models with automatic transmissions.
- C. 1967-1970 GE1500-2500-3500 models regardless of transmission combination.

MODIFICATION

The modification will be the addition of metal straps between mounts and frame brackets. Parts are being processed and unitized and should become available in February, 1972, at which time a supplement to this bulletin concerning the installation of applicable metal strap and or mount units will be issued. Some few engine applications will

still require the installation of interlock mounts or a combination of the interlock mount and strap.

For purposes of providing information as to those mounts that should be covered by warranty and those that are covered under this campaign, the following is provided.

1967 through 1970 - Engine mounts are subject to the power train warranty for those years applicable. This warranty applies until the expiration of five (5) years from the date of delivery to the original retail purchaser or until it has been driven for 50,000 miles, whichever first occurs, subject to the limitation of the warranty for the particular model year.

Fortiac, Michigan

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