December 10, 1971

To: Mr. Tomes

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 or that the term is defined in the National Traffic and Motor Vehicle Safety Act of 1966. 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 has decided to send notification letters containing the information specified in Section 113(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 our 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.

4. 4.1. The identifying classifications and the total number of vehicles in each classification which are included in this campaign are shown on the attached schedule.
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, 1963 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,

[Signature]

J. C. Bates
Director, Service Section

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<table>
<thead>
<tr>
<th></th>
<th>CHEVROLET</th>
<th>CHEVY II</th>
<th>CAMARO</th>
<th>TOTAL</th>
<th>&quot;C&quot;</th>
<th>&quot;P&quot;</th>
<th>&quot;G&quot;</th>
<th>TOTAL</th>
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<th>&quot;C&quot;</th>
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<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td>1965</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1966</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>1967</td>
<td>1,167</td>
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<td>1968</td>
<td>12,488</td>
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<td>1969</td>
<td>23,170</td>
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<tr>
<td>1970</td>
<td>23,710</td>
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<td>750</td>
<td>30,476</td>
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<tr>
<td>TOTAL</td>
<td>65,535</td>
<td>8,593</td>
<td>1,157</td>
<td>75,385</td>
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GENERAL MOTORS CORPORATION  
DECEMBER 10, 1971
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.

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This effect on throttle control varies considerably, 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 restraints which will limit engine lift and eliminate possible secondary effects of engine mount separation.
VEHICLES INVOLVED

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 any 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:

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

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, 1959 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

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 or parts 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
Subject: ENGINE MOUNTS

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

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.

c. 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 of the first occurrence due to the engine fan contacting the shroud. The resultant noise is significant. On models without shroud the engine movement should be felt and 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 follow:


MODIFICATION

The modification will be the addition of metal straps between mounts and frame brackets. Parts are being processed and utilized 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.

Ford, Michigan

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