



April 29, 2013

Scott Yon, Chief  
Vehicle Integrity Division  
Office of Defects Investigation  
National Highway Traffic Safety Administration  
1200 New Jersey Ave, SE, Room W46-409  
Washington, DC 20590

N110175

NVS-212llh  
EA11-015

Dear Mr. Yon:

This letter is General Motors' (GM) partial response to your Engineering Assessment (EA) dated March 7, 2013, to investigate allegations of failure of the transmission shift cable on model year (MY) 2007-2008 Saturn Aura vehicles manufactured by GM.

This response contains responses to request numbers 1, 7, 8, 10, 11, 12, 13, 14 and 17, as agreed to in an e-mail from you dated April 22, 2013, the remainder of the responses will be provided by May 14, 2013.

Your requests and our corresponding replies are as follows:

1. **State by model and model year, the number of subject vehicles GM has manufactured for sale or lease in the United States. Separately, for each such vehicle manufactured to date by GM, state the following:**
  - a. **Vehicle's identification number (VIN);**
  - b. **Make;**
  - c. **Model year;**
  - d. **Transmission (4-speed automatic, 6-speed automatic, etc.) and transmission designation (MN5, MH2, etc.), or other;**
  - e. **Date of manufacture;**
  - f. **Date warranty coverage commenced;**
  - g. **Gear shift cable Part Number(s) and supplier name; and,**
  - h. **The state in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).**

General Motors is providing the number of subject vehicles which were sold or leased in the United States in Table 1-1 below.



MAKE	MODEL	VEHICLES BUILT WITH THE SUBJECT COMPONENT (LEGGETT & PLATT SHIFT CABLES)			VEHICLES BUILT WITH KONGSBERG SHIFT CABLES	
		2007MY	2008 MY: AURA AND G6 BUILT THROUGH 10/31/2007, AND ALL MALIBU 380	TOTAL BUILT WITH LEGGETT & PLATT SHIFT CABLES	2008 MY: AURA AND G6 BUILT AFTER 10/31/2007, AND ALL MALIBU 386	TOTAL SUBJECT VEHICLES
CHEVROLET	MALIBU 380	127,718	29,225	156,943	0	156,943
CHEVROLET	MALIBU 386	0	0	0	126,208	126,208
PONTIAC	G6	163,648	61,372	225,020	92,965	317,985
Saturn	Aura	64,847	24,693	89,540	36,024	125,564
	Total	356,213	115,290	471,503	255,197	726,700

TABLE 1: SUBJECT VEHICLE PRODUCTION

The production information requested in 1a – 1h is provided on the ATT\_1\_GM disk; folder labeled "Q\_01." Refer to the Microsoft Access 2000 file labeled: "Q\_01\_PRODUCTION DATA."

The transition from building with Leggett & Platt cables to Kongsberg cables took place during the Fall of 2007. The above chart shows the date of November 1, 2007 as the conservative date by which all Leggett & Platt parts were built out, and Kongsberg cables were being used.

- 7. Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that GM has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that GM is planning to issue within the next 120 days.**

Since GM's previous EA response on May 4, 2012, there are four documents that GM has issued, and one document that is in draft form.

This includes the original bulletin related to safety recall 12V460, two updates to that bulletin and a draft of an additional update of that bulletin that GM intends to issue within the next 120 days.

Also included in this response is one update to Technical Service Bulletin (TSB) 11175. The original version of TSB 11175 was provided in GM's prior response to

EA12-015 on May 4, 2012, but is also provided in this response for reference. A copy of these documents may be found on ATT\_1\_GM\_disk; folder labeled "Q\_07".

- 8. State the number of subject components that GM has sold by part number, model and model year of the vehicle(s) in which it is used or intended to be used, month/year of sale (including the cut-off date for sales, if applicable), and VIN range if applicable. For each subject component included as part of this response, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number).**
  - a. Identify each part number used for subject components and for each such part number state whether it has been used for warranty cable replacement, special coverage cable replacement as outlined in Technical Service Bulletin Nos. 11175 and 11175A, recall 12V-460, customer paid dealer repairs, or over the counter sales.**

Electronic summary tables of the requested service part information for the subject components are provided on the ATT\_1\_GM disk; folder labeled "Q\_8\_10\_11".

These sales numbers represent sales to dealers in the United States through March 28, 2013. This data has limited analytical value in analyzing the field performance of a motor vehicle component because the reports do not contain sufficient information to establish the reason for the part sale. It is not possible from this data to determine the number of these parts that have been installed in the subject vehicles or the number remaining in dealer or replacement part supplier inventory.

These tables contain service part numbers, part description, part usage information including the GM vehicles that contain the identical component, part sales figures by month and calendar year, and the supplier's name and address, contact name and phone number.

- a. It is not possible to identify whether these individual part number sales were used for warranty, special coverage cable replacement as outlined in TSB Nos. 11175 and 11175A, customer paid dealer repairs, or over the counter sales. Since the subject components are manufactured by Leggett & Platt, and the subject of recall 12V-460 was transmission shift cables manufactured by Kongsberg, none of these sales were used for recall 12V-460.**

- 10. State the number of transmission end cable mounting brackets intended for use with the Kongsberg cable, and that must be utilized when converting a subject vehicle originally equipped with a Leggett & Platt cable to instead use a Kongsberg cable, that GM has sold or provided by component name, part number, model and model year of the vehicle in which it is used, month/year**

of sale (including the cut-off date for sales, if applicable), and VIN range if applicable. For each bracket included as part of this response, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number).

- a. Identify each part number used for the transmission end cable mounting brackets described above and for each such part number state whether it has been used for warranty cable replacement, special coverage cable replacement as outlined in Technical Service Bulletin Nos. 11175 and 11175A, recall 12V-460, customer paid dealer repairs, or over the counter sales.

Electronic summary tables of the requested service part information for the subject components are provided on the ATT\_1\_GM disk; folder labeled "Q\_8\_10\_11".

These sales numbers represent sales to dealers in the United States through March 28, 2013. This data has limited analytical value in analyzing the field performance of a motor vehicle component because the reports do not contain sufficient information to establish the reason for the part sale. It is not possible from this data to determine the number of these parts that have been installed in the subject vehicles or the number remaining in dealer or replacement part supplier inventory.

These tables contain service part numbers, part description, part usage information including the GM vehicles that contain the identical component, part sales figures by month and calendar year, and the supplier's name and address, contact name and phone number.

- a. It is not possible to identify whether these individual part number sales were used for warranty, special coverage cable replacement as outlined in TSB Nos. 11175 and 11175A, recall 12V-460, customer paid dealer repairs, or over the counter sales.

**11.State the number of clam shells and service clamps, as described in item numbers 2 through 4 on pages 3 and 4 of Recall Bulletin No. 12106 (and as related to NHTSA Safety Recall 12V-460), and intended for use with the Kongsberg cable, that GM has sold or provided, by component name, part number, model and model year of the vehicle in which it is used, month/year of sale (including the cut-off date for sales, if applicable), and VIN range if applicable. For each clam shell and service clamp part number included in this response, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number).**

**Additionally:**

- a. Describe in detail what purpose or function the clam shell and service

- clamp devices serve when used in conjunction with the Kongsberg cable;
- b. State whether or not the Leggett & Platt cable used a clam shell and service clamp, or any similar type of device in the original as manufactured condition;
  - c. Describe in detail the consequence(s) and potential consequence(s) of installing a Kongsberg cable on the subject vehicle without a clam shell and service clamp being installed; and,
  - d. For each part number included in this response, identify whether it has been used for warranty cable replacement, special coverage cable replacement as outlined in Technical Service Bulletin Nos. 11175 and 11175A, recall 12V-460, customer paid dealer repairs, or over the counter sales.

Electronic summary tables of the requested service part information for the subject components are provided on the ATT\_1\_GM disk; folder labeled "Q\_8\_10\_11". The part number of the clam shell service clamp kit is 19210732.

These sales numbers represent sales to dealers in the United States through March 28, 2013. This data has limited analytical value in analyzing the field performance of a motor vehicle component because the reports do not contain sufficient information to establish the reason for the part sale. It is not possible from this data to determine the number of these parts that have been installed in the subject vehicles or the number remaining in dealer or replacement part supplier inventory.

These tables contain service part numbers, part description, part usage information including the GM vehicles that contain the identical component, part sales figures by month and calendar year, and the supplier's name and address, contact name and phone number.

- a. The function of the clam shell service clamp device is to maintain the structural integrity of the shift cable end fitting throughout the life of the vehicle.
- b. The Leggett & Platt cable did not use a clam shell service clamp or any similar type of device in the original as-manufactured condition.
- c. Without the clam shell service clamp, the locking tabs of the shift cable end fitting may fracture, resulting in a reduction of cable travel at the transmission as the shifter is moved into the Park position. The most significant effects of this reduced cable travel are: (1) the transmission gear position may not match the gear indication on the shifter; (2) if the shifter is in the Park position, but the transmission is not in Park, the doors will not automatically unlock, the vehicle won't start, the operator may be able to remove the key, and the vehicle may roll.

- d. It is not possible to identify whether these individual part number sales were used for warranty, special coverage cable replacement as outlined in TSB Nos. 11175 and 11175A, recall 12V-460, customer paid dealer repairs, or over the counter sales.

**12. For any and all service documentation and instruction that GM has produced which explains or discusses the service replacement of the shift cable on the subject vehicles, including service-manual procedures, service bulletins, part bulletins, warranty bulletins, bulletins related to special coverage cable replacements such as Technical Service Bulletin Nos. 11175 and 11175A and any revisions thereto, identify all instructions GM has provided to ensure that the retrofitting of a Kongsberg cable onto a subject vehicle will include installation of the clam shells and service clamps, as described in Recall Bulletin No. 12106 dated December 2012.**

- a. Provide a copy of each service documentation and instruction related to subject vehicle shift cable replacement that GM has produced, specify the date it was published and provide a copy of every version of Technical Service Bulletin 11175 that GM has published;
- b. For each service documentation and instruction version identified in item "a," state whether or not it included an instruction or other explanation regarding use of the clam shell and service clamp devices; and, if no such instruction was provided to ensure that the retrofitting of a Kongsberg cable onto a subject vehicle will include installation of the clam shells and service clamps, as described in Recall Bulletin No. 12106 dated December 2012, explain all other steps that have been taken, and/or are planned to be taken, to ensure that clam shells and service clamps will be installed with Kongsberg cables for all future Kongsberg cable installations on subject vehicles, and will be installed on subject vehicles that already have Kongsberg cables, but lack clam shells and service clamps; and,
- c. Identify all modifications of each service documentation and instruction identified in "a" that GM has published, explain why such modification was made as well as when and how such modification was made, and explain how GM became aware that the modification was required.

- a. The requested service manual instructions are provided in the ATT\_1\_GM disk; folder labeled "Q\_12". The publication date is included in the filename of each procedure. A copy of every version of TSB 11175 that GM has published is included ATT\_1\_GM disk; folder labeled "Q\_7". Copies of all versions of TSB 12106, related to recall 12V460, are included in ATT\_1\_GM disk; folder labeled "Q\_7" as well.
- b. The service manual was written prior to any field actions requiring the use of the clam shell service device, and therefore does not include a reference to that

device. TSB Nos. 11175A, 12106, 12106A, 12106B and draft bulletin 12106C all include an explanation regarding the use of the clam shell service device.

In addition, in order to ensure that the retrofitting of a Kongsberg cable onto a subject vehicle will include installation of the clam shell service clamp, GM's electronic parts catalogue has been updated to require the order of the clam shell kit (part number 19210732) with an order for a Kongsberg shift cable. The parts catalogue also refers the dealer to TSB 12106B, which explains the installation of the clam shell kit.

- c. TSB 11175A was released in February 2013. It specified the use of the clam shell service clamp when a Kongsberg cable was used to replace a failed Leggett & Platt cable. This modification was made to clarify the need for the clam shell service clamp with any new Kongsberg cable.

TSB 12106A and 12106B were released in January 2013.

TSB 12106A requires the dealer to inspect the vehicle and ascertain whether the shift cable is a "first design" (Leggett & Platt) or a "second design" (Kongsberg) cable. This modification was necessary because GM conservatively included vehicles built during the transition from Leggett & Platt to Kongsberg cables in recall 12V460, and some recalled vehicles were actually built with a Leggett & Platt cable.

TSB 12106B was issued to clarify that some vehicles may already have received the clam shell service part as part of a previous recall, and that no further action was required.

Draft bulletin 12106C adds the recall of vehicles that have been identified to have received a Kongsberg cable as a customer-pay dealer repair. Draft bulletin 12106C also includes a point-of-sale recall poster to advise other vehicle owners who may have purchased a Kongsberg cable as a service part, that they should have their vehicle inspected, and repaired if necessary.

**13. Discuss in detail any and all analyses GM has conducted to determine if Kongsberg cables have been installed as replacement parts in subject vehicles, either by GM dealer service personnel, other repair businesses or by consumers making repairs themselves, without the use of the clam shell and service clamp devices described in item numbers 2 through 4 on pages 3 and 4 of Recall Bulletin No. 12106 dated December 2012.**

- a. Describe the process and the underlying rationale GM used in conducting these analyses, which data sources were used, including data sources involving dealership related data (service parts sales data, dealer orders,

- dealer sales, remaining stock data), and how data was selected from each of those sources;
- b. State which vehicle makes, models, model years, and production dates GM considered (e.g., Aura and G6) in its analyses and the basis for this selection, and identify any makes, models, model years, and production dates GM eliminated from its analysis (e.g., Malibu GMX 380) and the basis for such elimination;
  - c. State the period of time (including but not limited to the dates of repairs) GM considered in its analyses and the basis for this selection;
  - d. Provide GM's estimates of the number of vehicles that may have been retrofitted with Kongsberg cables but did not include the clam shells and service clamps, and describe the method used to make these estimates, including any unknowns or uncertainties involved; and,
  - e. Explain the relevant differences in safety performance between the vehicles recalled under 12V-460 and any non-recalled subject vehicle which may be equipped with a Kongsberg shift cable that does not include the clam shell and service clamp device, as well as any reason why GM believes such a vehicle does not pose an unreasonable risk to safety.
- a. For vehicles which were not part of recall 12V-460, GM searched warranty claims for labor codes indicating a cable replacement or adjustment, and for any claim which referenced one of the Kongsberg cable part numbers. In addition, GM's service parts sales were searched, by part number, to identify, to the extent that the information was available, the portion of sales that was used in customer-pay repair orders, the portion that was sold over-the-counter, and the portion still remaining in dealer inventory. For the list of customer-pay repair orders which indicated the use of a Kongsberg cable part number, GM examined the repair history of the vehicles involved and was able to identify 1,163 vehicles which could have had a Kongsberg cable installed without the clam shell service clamp. GM is adding these vehicles to recall 12V-460. This will be explained to dealers in bulletin 12106C.
  - b. GM searched for vehicles which could have been serviced with a Kongsberg cable, but which were not included in recall 12V-460. This included MY 2005 to 2008 G6's with MN5 transmissions which were built before October 1, 2007, and MY 2007 to 2008 Saturn Aura's with MN5 or ME7 transmissions built before November 1, 2007. Because there was never a Kongsberg service part designed for the 380 Malibu, it was not part of this analysis. The Malibu 380 (MY 2004 – early 2008) was built and serviced with Leggett & Platt cables. For the MY 2008, the Malibu 380 was called the Malibu Classic. The Malibu 386 (MY 2008 – 2010) was built and serviced with Kongsberg cables and was part of recall 12V-460.



- c. GM searched for repairs which took place after October 1, 2007, when the Kongsberg cables were introduced as service parts, through March 6, 2013, one month after the electronic service parts catalogue was updated to indicate the required use of a clam shell service clamp with a Kongsberg service cable.
- d. GM has estimated the number of Kongsberg cables which could have been installed on vehicles without the clam shell service clamp. To do this, GM has compared cable use in various categories (warranty, special coverage, previous recalls, customer-pay dealer repairs, and remaining dealer inventory) to the total number of service parts sales.

When GM's estimate of the number of warranty, special coverage, recall, customer-pay repair orders, and dealer inventory is subtracted from the total service part sales, there are approximately 1,800 Saturn Aura cables and approximately 1,600 G6 cables remaining. However, due to the factors explained below, the number of cables which actually were installed in customer vehicles without a clam shell service clamp is likely much less.

First, many of the Saturn Aura part sales without an identified VIN represent over-the-counter sales to owners who have since requested reimbursement under special coverage 11175 and who were subsequently included in recall 12V-460. These vehicles either now have the clam shell service clamp installed, or their owners have notice that the clamp is needed.

Second, the number of Kongsberg service cables which were used in warranty claims was estimated by searching the normal replace/adjust labor codes, and the cable replacement labor codes indicated for dealer use under previous cable recalls. If at any time a dealer billed a claim which included a cable replacement to a labor code which was not on this search list, its use would not be captured in the total warranty usage, and the number of estimated remaining cable sales would be artificially high.

- e. Non-recalled subject vehicles that may now have a Kongsberg cable without the clam shell service device would only include vehicles that were originally built with a Leggett and Platt cable which required replacement for any reason and was then replaced with a Kongsberg cable without the clam shell.

The number of vehicles in this category is expected to be small due to the low failure rate of the Leggett & Platt cable and GM's efforts to identify and remedy these vehicles, as described below in response to request 14. This small number of cables would be spread over a very large vehicle population (over 450,000 vehicles) and would then require a 2nd cable failure in the same vehicle in order to pose a risk. In addition, most customers with a shift cable failure do not report unintended motion, but experience other symptoms such as the vehicle won't go into Park, there is difficulty with selecting other gears, the vehicle won't start, or the vehicle will only start in Neutral.

In summary, while a non-recalled vehicle equipped with a Kongsberg shift cable without the clam shell service clamp may have the same performance as the vehicles recalled under 12V-460, the failure rate of an originally installed Leggett and Platt cable is very low. Additionally, if one were replaced with a Kongsberg cable without the clam shell, the failure rate of such a cable is also very low. Even in the rare event that a Kongsberg cable without the clam shell failed, the rate of unintended vehicle motion would be extremely low, and does not create an unreasonable risk to motor vehicle safety.

**14. Explain in detail what GM has done, or what GM intends to do, to identify and remedy any vehicles that may contain a Kongsberg cable which, due to inaccurate and or incomplete service instructions or part supersessions, may not contain the clam shell and service clamp devices described in item numbers 2 through 4 on pages 3 and 4 of Recall Bulletin No. 12106 dated December 2012. Discuss any limitations or uncertainties of such an effort and provide an estimate of the likelihood of identifying all affected vehicles.**

In February 2013, GM clarified the need to order the clam shell service clamp with any Kongsberg service cable by adding a note in the electronic parts catalogue. At the same time, GM also revised special coverage bulletin 11175A to explicitly state the need for the clam shell service clamp with any Kongsberg replacement cable. At that time, GM added 357 VIN's to recall population 12V-460. These vehicles had been repaired under special coverage 11175 after recall 12V-460, and may not have received a clam shell service clamp.

While not in response to inaccurate or incomplete service instructions, GM took additional actions to identify any vehicles as described above. The following is a summary of the thorough efforts GM has taken to identify and include vehicles:

- Vehicles included in safety recall 12V-460:
  - All vehicles originally built with a Kongsberg shift cable,
  - Vehicles built with Leggett & Platt cables which had a warranty claim indicating a Kongsberg replacement cable was installed,
  - Vehicles built with Leggett & Platt cables found to have received a Kongsberg replacement cable as part of a customer-pay dealer repair order, and
  - Vehicles for which a reimbursement claim was submitted where the repair was done with a Kongsberg cable.
- GM has also drafted a recall poster which dealers are to post in their service facility. This poster is part of proposed bulletin 12106C which will be posted on the NHTSA website

**17. Provide all documents, data and information concerning transmission shift cable-related issues in subject vehicles that have been presented to:**

- a. The Field Performance Evaluation Review Committee; and**
- b. The Executive Field Action Decision Committee.**

A copy of these documents may be found on ATT\_2\_GM\_disk; folder labeled "Q\_17".

\* \* \*

This response is based on searches of General Motors (GM) locations where documents determined to be responsive to your request would ordinarily be found. As a result, the scope of this search did not include, nor could it reasonably include, "all of their divisions, subsidiaries (whether or not incorporated) and affiliated enterprises and all of their headquarters, regional, zone and other offices and their employees, and all agents, contractors, consultants, attorneys and law firms and other persons engaged directly or indirectly (e.g., employee of a consultant) by or under the control of GM (including all business units and persons previously referred to), who are or, in or after 2003, were involved in any way with any of the following related to the alleged defect(s) in the subject vehicles:

- a. Design, engineering, analysis, modification or production (e.g. quality control);
- b. Testing, assessment or evaluation;
- c. Consideration, or recognition of potential or actual defects, reporting, record-keeping and information management, (e.g., complaints, field reports, warranty information, part sales), analysis, claims, or lawsuits; or,
- d. Communication to, from or intended for zone representatives, fleets, dealers, or other field locations, including but not limited to people who have the capacity to obtain information from dealers."

This response was compiled and prepared by this office upon review of the documents produced by various GM locations, and does not include documents generated or received at those GM locations subsequent to their searches.

Please contact me if you require further information about this response or the nature or scope of our searches.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Carmen Benavides". The signature is fluid and cursive, with a large, stylized initial "M" and a long, sweeping underline.

M. Carmen Benavides, Director  
Product Investigations and Safety Regulations

Attachments