



U.S. Department  
of Transportation

**National Highway  
Traffic Safety  
Administration**

# ODI RESUME

**Investigation:** PE 11-021  
**Date Opened:** 05/20/2011  
**Investigator:** Lawrence Hershman  
**Approver:** Frank Borris  
**Subject:** Transmission Cable Failure

**Date Closed:** 11/22/2011  
**Reviewer:** Scott Yon

## MANUFACTURER & PRODUCT INFORMATION

**Manufacturer:** GENERAL MOTORS LLC  
**Products:** MY 2007 Saturn Aura  
**Population:** 64,036

**Problem Description:** Transmission shift cable may fail resulting in unintended movement of the vehicle.

## FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
<b>Complaints:</b>	14	111	121**
<b>Crashes/Fires:</b>	1	4	5
<b>Injury Incidents:</b>	0	1	1
<b>Number of Injuries:</b>	0	1	1
<b>Fatality Incidents:</b>	0	0	0
<b>Other*:</b>	0	415	415

\*Description of Other: Warranty reports.

\*\* Count indicates duplicate reports received by ODI and manufacturer.

## ACTION / SUMMARY INFORMATION

**Action:** Close this Preliminary Evaluation and upgrade the investigation. Engineering Analysis EA11-015 has been opened.

### Summary:

GM advised that the shift cable's protective outer conduit (jacket) deteriorates with time and use. Variables that affect jacket life include installation variability (routing, etc), environmental and temperature effects, and material quality. Jacket deterioration could lead to a tear of the conduit material which allows moisture to reach the lay wires, potentially causing them to corrode and weaken. The lay wires provide support to the inner core wire that performs the shift detent actuation of the transmission. Without sufficient lay wire support, the shifter position inside the vehicle and the actual transmission gear selection may not match. A complete loss of shift function can occur when the core wire fractures and fails fully. GM asserts that the problem primarily affects the four-speed equipped subject vehicles, but not the six-speed transmissions, and notes that similar cable installations are used in other model and MY GM vehicles (2004-2008 Chevrolet Malibu and 2005-2008 Pontiac G6).

In reviewing consumer reports ODI notes multiple failure modes that occur as the cable allegedly fails and shift function is affected. One involves an engine no-start condition where the gear shifter is in the park position but the transmission is actually in drive or reverse gear (engine starting is inhibited in this circumstance). A second involves non-powered vehicle movement where the driver turns the engine off and moves the shifter to park but the transmission fails to engage the park gear; the vehicle may roll away if the driver exits without setting the park brake. A third involves powered vehicle movements, where the driver moves the gearshift but the transmission fails to engage the intended gear, and the engine remains running. For instance the driver can shift to park but the transmission may remain in drive or reverse, resulting in vehicle movement when the driver does not expect it. Or the driver may shift to reverse but the transmission remains in drive, resulting in the vehicle moving in a direction opposite

to that the driver intended. Another failure mode results in complete loss of shifting.

Both NHTSA and GM have received complaints alleging one or more of these failure scenarios, and in some cases consumers report experiencing multiple problems over the course of several drive cycles. In the crash incident reported to NHTSA (ODI 10383044) the driver reportedly placed the gear shift selector into park but the transmission remained in drive causing the vehicle to unexpectedly move (accelerate) forward and strike a building. In one of the crash incidents reported to GM, the driver placed the shifter in park but the transmission remained in reverse. When the driver exited with the engine running, the vehicle continued (accelerated) in reverse and struck a building. In the injury incident reported to GM, the driver reportedly placed the shifter in park, exited the vehicle, and was struck when the vehicle unexpectedly rolled backwards.

ODI is upgrading this investigation to evaluate the frequency of shift cable failure, the consequences, and the scope of vehicles that may be affected, including the models, model years and transmissions types.