



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: EA 13-005
Prompted by: RQ13-001, Consumer Complaints
Date Opened: 06/06/2013 **Date Closed:** 07/01/2014
Investigator: Emily Reichard **Reviewer:** Scott Yon
Approver: Frank Borris
Subject: Brake Light Switch/Sensor Malfunction

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: General Motors LLC
Products: 05-09 Pontiac G6, 04-11 Chevrolet Malibu, 07-09 Saturn Aura
Population: 2,440,524
Problem Description: An inaccurate brake light switch (brake apply sensor, BAS) signal may result in failures of the brake lights, shift interlock, and stability, traction, cruise control, or panic brake assist systems.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	855	4,664	5395**
Crashes/Fires:	7	9	16
Injury Incidents:	1	2	3
Number of Injuries:	1	2	3
Fatality Incidents:	0	0	0
Other*:	0	70,037	70,037

*Description of Other: Portion of (total) warranty claims submitted for replacement of the BCM based on sampling of submitted data (approximately 35% related to the alleged problem).

** Total eliminates duplicates received by ODI and manufacturer.

ACTION / SUMMARY INFORMATION

Action: This Engineering Analysis is closed. See Safety Recall 14V-252.

Summary:

On May 14, 2014 General Motors (GM) announced a recall action (14V-252) involving model year (MY) 2004-12 Chevrolet Malibu, MY 2004-07 Malibu Maxx, MY 2005-10 Pontiac G6 and MY 2007-10 Saturn Aura vehicles. An increased resistance can develop in the Body Control Module connection systems and result in voltage fluctuations in the Brake Apply Sensor (BAS, or brake light switch) circuit that can cause the brake lamps to malfunction. As a result, and according to GM, the brake lamps may illuminate when pedal application is not being applied or may not illuminate when pedal force is applied. Additionally, the cruise control may not engage or if it is engaged it may require increased pedal travel to disengage. Pedal application may not be required to move the shift lever out of PARK or additional travel may be required to move the shift lever out of PARK. Traction control, electronic stability control (ESC) and panic brake assist features may also become disabled. These failure conditions may increase the risk of a crash.

The Office of Defects Investigation (ODI) opened Engineering Analysis EA13-005 on June 6, 2013 to further investigate complaints alleging that the brake lights did not operate properly on MY 2005-08 Pontiac G6 vehicles. The BAS in these vehicles produces a single analog voltage output proportional to the brake pedal's position. The BAS signal is used by various systems to determine both pedal position and rate of displacement, so a failure or inaccuracy of the signal may affect multiple systems. ODI also received similar complaints on MY 2009 Pontiac G6, MY 2004-11 Chevrolet Malibu and MY 2007-09 Saturn Aura vehicles that use the same BAS. All of these above models were

included in the subject vehicle population of ODI's Information Request (IR) letter to GM. Prior to the recall announcement date, ODI received 855 reports of brake light malfunction resulting in one or several of the failure conditions. Eight (8) of the reports alleged crashes, with 1 resulting in an injury. Of these crash allegations, 2 were roll-away incidents, in which the shift interlock was moved out of PARK without pedal application and the vehicle rolled into another object. Three (3) crashes involved rear-end hits, which were believed to be due to brake light reversal. ESC/Traction Control failures were the alleged cause of 2 incidents, which resulted in unresponsive brake application and in 1 case caused the vehicle to leave the roadway. One (1) crash allegation was not counted as the circumstances of the crash were not related to any of the failure modes. ODI notes that it is difficult to determine the actual cause of incidents where brake light reversal or ESC/Traction Control failures were the alleged cause.

In response to ODI's IR, GM submitted 2,268 unique reports that related to brake lamp malfunction. Combined with the data submitted during Recall Query 13-001, a total of 4,664 unique complaints were submitted. Twelve (12) of the GM reports alleged a crash, with 2 reporting minor injuries and 4 alleging property damage. Of the 12 reports, 3 involved brake light reversal allegations, 4 involved roll-away incidents and 2 involved ESC/Traction Control malfunctions. ODI did not include three (3) reports that involved allegations inconsistent with the alleged defect.

This investigation is closed on the basis of GM's announcement of safety recall 14V-252.

The ODI complaints cited above can be reviewed at: <http://www-odi.nhtsa.dot.gov/owners/SearchNHTSAID>, see the attached list for ODI numbers.

VOQ Listing for EA13-005: GM Brake Light Brake Light Switch/Sensor Malfunctions

10126333, 10186123, 10198379, 10225557, 10226647, 10233337, 10237257, 10237443, 10241305, 10242800, 10242892, 10242974, 10245994, 10246251, 10246811, 10247445, 10248648, 10249311, 10251698, 10252653, 10252857, 10256146, 10259508, 10262328, 10262510, 10265137, 10267563, 10272554, 10272680, 10274756, 10276198, 10278314, 10280214, 10280437, 10280702, 10281405, 10281960, 10282601, 10283648, 10283709, 10283872, 10283981, 10284439, 10284739, 10284895, 10287117, 10288681, 10288769, 10290292, 10290754, 10291552, 10292045, 10292342, 10292602, 10293731, 10294340, 10294987, 10296554, 10297002, 10298743, 10304753, 10311147, 10312295, 10315923, 10323819, 10325883, 10331954, 10334393, 10335330, 10336458, 10339070, 10339082, 10339962, 10341313, 10341956, 10342135, 10342311, 10343065, 10343160, 10343380, 10343552, 10345234, 10345667, 10346508, 10346703, 10347380, 10347975, 10347988, 10348195, 10348484, 10348702, 10348929, 10349096, 10349144, 10350337, 10350521, 10352203, 10361349, 10361827, 10362834, 10362876, 10367071, 10368142, 10369205, 10369579, 10369862, 10373273, 10374645, 10374747, 10379879, 10381158, 10381620, 10382960, 10383965, 10386426, 10389668, 10392581, 10393829, 10393852, 10394125, 10396647, 10398195, 10399927, 10400458, 10400984, 10401363, 10401464, 10402717, 10403746, 10403971, 10405393, 10405413, 10407113, 10408424, 10408468, 10410850, 10412313, 10413139, 10414693, 10415351, 10416069, 10416411, 10417874, 10418583, 10420933, 10420940, 10421355, 10421423, 10421445, 10422254, 10423956, 10425361, 10425391, 10425485, 10426017, 10426529, 10426787, 10428011, 10428874, 10428883, 10429031, 10429156, 10430063, 10432946, 10434054, 10434857, 10434904, 10434936, 10435989, 10437323, 10438816, 10439882, 10441803, 10441938, 10443742, 10444920, 10445188, 10445424, 10446383, 10447843, 10448235, 10448509, 10448994, 10450150, 10450225, 10450513, 10453534, 10453764, 10455341, 10456640, 10458116, 10459253, 10461152, 10461732, 10461824, 10462109, 10462511, 10463009, 10463197, 10463381, 10464125, 10464372, 10468772, 10468993, 10565221, 10564522, 10564276, 10567036, 10566717, 10566632, 10469095, 10469357, 10469673, 10471918, 10472737, 10474135, 10474209, 10474396, 10474418, 10475196, 10475636, 10476699, 10476719, 10476721, 10476902, 10477478, 10479221, 10479327, 10480124, 10480866, 10534856, 10534874, 10534979, 10535144, 10535584, 10535637, 10535719, 10536038, 10536123, 10536427, 10551191, 10551117, 10552648, 10552810, 10553026, 10552241, 10549445, 10549443, 10481987, 10482008, 10482132, 10482148, 10483307, 10485249, 10487427, 10487512, 10487969, 10489094, 10490655, 10491871, 10493271, 10493401, 10494522, 10496851, 10496921, 10497583, 10497636, 10497688, 10497713, 10497721, 10497780, 10497806, 10498081, 10498088, 10498093, 10498106, 10498205, 10498382, 10498556, 10499368, 10499665, 10499764, 10499857, 10500742, 10500763, 10500782, 10500976, 10500977, 10501325, 10501448, 10502599, 10502628, 10502634, 10502698, 10502788, 10503894, 10504251, 10504474, 10504710, 10505043, 10505213, 10505502, 10507023, 10508264, 10508500, 10508618, 10508621, 10508622, 10508831, 10508832, 10509057, 10509312, 10509500, 10509655, 10509681, 10509830, 10510304, 10510400, 10510508, 10510603, 10510670, 10510707, 10510735, 10510994, 10511217, 10511569, 10511750, 10511822, 10512062, 10512260, 10512505, 10512710, 10512821, 10512928, 10513451, 10513462, 10513541, 10513587, 10513691, 10514005, 10514621, 10514925, 10514934, 10515287, 10515724, 10515843, 10515874, 10519350, 10519461, 10519482, 10519568, 10519581, 10519788, 10519873, 10519990, 10520006, 10520033, 10520059, 10520150, 10520222,

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