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ON-SITE OFFICE OF DEFECTS INVESTIGATION POTENTIAL UNINTENDED ACCELERATION INVESTIGATION

CASE NUMBER - IN10009

LOCATION - INDIANA

VEHICLE - 2007 LEXUS ES-350

CRASH DATE - March 2010

Submitted:

August 25, 2010



Contract Number: DTNH22-07-C-00044

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points be coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

Technical Report Documentation Page

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| 15. <i>Supplementary Notes</i> On-site unintended acceleration investigation involving a 2007 Lexus ES-350. | | | | | |
| 16. <i>Abstract</i> This on-site investigation focused on a 2007 Lexus ES-350, which was alleged to have experienced an Unintended Acceleration (UA) that led to a loss of control by the driver. The vehicle was driven by a 67-year-old female. She was shopping at a large urban shopping mall complex and had driven from the south side of the mall to the north side where she intended to have lunch at the food court. She was unable to find a parking place near the food court entrance and turned the vehicle around and traveled east via the same route. The driver traveled approximately 43 m (141 ft) east of the food court entrance when the alleged UA event began. The driver stated that she suddenly felt the accelerator pedal move from under her foot to the floor and the vehicle accelerated rapidly. She stated that she immediately applied the brakes but the vehicle continued to accelerate. She shifted the transmission into neutral and attempted to turn off the engine but was unsuccessful. The vehicle traveled a total distance of approximately 328 m (1109 ft) along the main mall access roadway and through a parking lot where the vehicle impacted a curb and concrete light pole. The vehicle was equipped with an Event Data Recorder (EDR), which reported pre-crash data. The EDR reported the transmission selector as "N." The brake was reported as "OFF" and the accelerator as "Full" for the entire pre-crash recording. Inspection of the brake rotors and pads showed no evidence of overheating. The driver sustained a moderate injury and was transported by ambulance to a hospital where she was treated in the emergency room and released. The vehicle was towed due to damage. | | | | | |
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This on-site investigation focused on a 2007 Lexus ES-350 (**Figure 1**), which was alleged to have experienced an Unintended Acceleration (UA) that led to an alleged loss of control by the driver. This crash was brought to the attention of the National Highway Traffic Safety Administration (NHTSA) on March 15, 2010 by this contractor. This investigation was assigned on March 18, 2010. The crash involved the Lexus, which departed a shopping mall roadway and impacted a curb and concrete light pole. The crash occurred in March, 2010, at 1252 hours, in Indiana and was investigated by the local police department. The Lexus was inspected and the vehicle's Event Data Recorder (EDR) was imaged on March 31, 2010. The crash scene was also inspected and the driver interviewed on March 31, 2010. This report is based on the police crash report, vehicle inspection, crash scene inspection, driver interview, Lexus recall letter, Lexus customer receipt for the recall service, occupant kinematic principles, and evaluation of the evidence.



Figure 1: The damaged 2007 Lexus ES350

CRASH CIRCUMSTANCES

Crash Environment: This crash occurred within a large urban shopping mall complex during daylight hours and clear weather conditions. The Lexus was traveling on a 2-lane, undivided roadway that traversed around and was directly adjacent to the mall. The roadway pavement was dry bituminous and the speed limit was 40 km/h (25 mph). The traffic density was heavy at the time of the crash and the site was urban commercial. The Crash Diagram is on page 13 of this report.

Pre-Crash: The Lexus was driven by an restrained 67-year-old female. She was the primary driver of the vehicle, which she purchased new in December 2006. The following sequence of events leading to the alleged UA and the crash are based on the SCI interview with the driver and the statement that she gave to the police: The driver was shopping at the mall and traveled east from the south side of the mall (A in **Figure 2**) to the north side of the mall where she intended to have lunch at the food court (B in **Figure 2**). The driver was familiar with the mall having shopped there previously. She was unable to find a parking place near the food court entrance and turned the vehicle around (C in **Figure 2**) and traveled east via the same route. The driver traveled approximately 43 m (141 ft) east of the food court entrance when the alleged UA

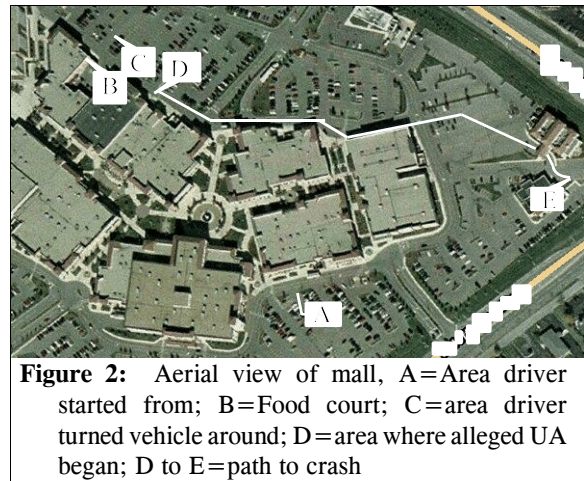


Figure 2: Aerial view of mall, A=Area driver started from; B=Food court; C=area driver turned vehicle around; D=area where alleged UA began; D to E=path to crash

event began (Figure 3, and D in Figure 2). The driver stated that she suddenly felt the accelerator pedal move from under her foot to the floor and the vehicle accelerated rapidly. She stated that she immediately applied the brakes but the vehicle continued to accelerate. The driver avoided several cars and pedestrians as the vehicle accelerated. She shifted the transmission into neutral and attempted to turn the keyless ignition off but was unsuccessful. The vehicle traveled approximately 181 m (592 ft) where it passed through a 4-leg intersection at the northeast corner of the mall (Figure 4). After the vehicle crossed the intersection and entered a parking lot, the driver initiated a right steering maneuver. The vehicle traveled on a southeast trajectory an additional 121 m (398 ft) from the intersection to a restaurant where it passed under a covered customer drop-off area (Figure 5). The driver initiated a right steering maneuver to negotiate the restaurant driveway. She initiated a hard left steering maneuver as the vehicle exited the driveway and approached the area of the crash (Figure 6). The right front tire created a curved tire mark 11 m (36.2 ft) in length, which led to the initial impact with a 15 cm (6 in) high concrete curb (Figure 6). The vehicle traveled a total distance of approximately 328 m (1109 ft) from the area where the alleged UA began to the area of the crash (D to E in Figure 2).



Figure 3: Area on north side of mall where alleged UA began; arrow shows area of 4-leg intersection at northeast corner of mall and referenced in Figure 4



Figure 4: Lexus passes through 4-leg intersection enters parking lot and approaches restaurant (arrow)



Figure 5: Lexus traveled under covered customer drop off area of restaurant; arrow shows location of impacted concrete light pole



Figure 6: Approach to impacts with curb and concrete light pole; arrows show right front tire mark

EDR Pre-Crash Data: The table below presents the pre-crash data reported by the vehicle's EDR for the "Latest Pre-Crash Page 0" data block. A row was added to covert mph to km/h. The EDR reported the transmission shifter as "N." The driver stated she had shifted the transmission to neutral and was applying the brakes and not the accelerator during the alleged UA.

"Latest Pre-Crash Page 0"

| | | | | | | |
|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Seconds | -5 | -4 | -3 | -2 | -1 | -0.7 |
| Speed (mph) | 39.8 | 38.5 | 37.3 | 36.0 | 36.0 | 33.6 |
| Speed (km/h) | 64.1 | 62.0 | 60.0 | 57.9 | 57.9 | 54.1 |
| Brake | Off | Off | Off | Off | Off | Off |
| Accelerator Volts | Full 3.52 | Full 3.55 | Full 3.55 | Full 3.55 | Full 3.63 | Full 3.63 |
| Engine (rpm) | 5200 | 5200 | 5200 | 5200 | 5200 | 5200 |

Crash: The right front wheel of the Lexus (**Figure 7**) impacted a 15 cm (6 in) high concrete curb (event 1). The Lexus traveled over the curb and traversed 2 m (5.9 ft) where the front plane (**Figure 8**) impacted a 21 cm (8.3 in) diameter concrete light pole (event 2). The force direction on the Lexus from this impact was within the 12 o'clock sector and the impact force was sufficient to trigger deployment of the driver's frontal and knee air bags. The EDR reported this as a "Low" stage deployment, which occurred 35 ms following the impact trigger. The pole impact was immediately followed by a left front wheel impact on the curb (event 3). The impact on the concrete pole broke it off near the base and it impacted the top plane of the Lexus (event 4, **Figure 9**). The concrete pole also impacted the side of the left roof side rail, A-pillar, and fender (event 5) as it fell off the vehicle. The Lexus came to final rest partially on a sidewalk and a flower bed heading southeast. The vehicle traveled a total distance of 8.8 m (28.9 ft) from the initial impact with the curb to its final rest position.

Post-Crash: The police were notified of the crash at 1252 hours and arrived on scene at 1255 hours. The driver of the Lexus was transported by ambulance to a hospital where she was treated in



Figure 7: Damage on right front rim from curb impact

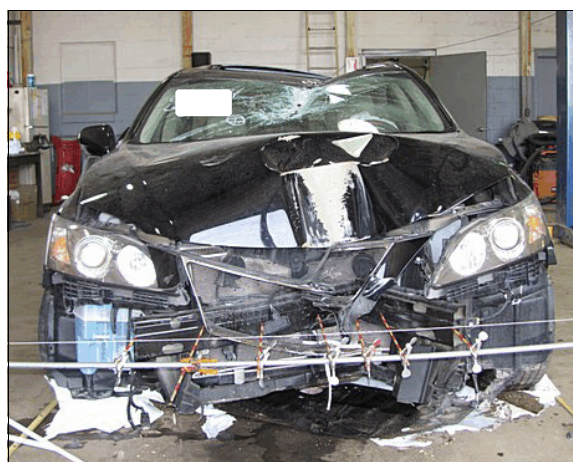


Figure 8: Damage on front plane of Lexus from impact with concrete light pole

the emergency room and released. The vehicle was towed due to damage.

CASE VEHICLE

The 2007 Lexus ES-350 was a front wheel drive, 5-passenger, 4-door sedan (VIN: JTHBJ46G672-----) equipped with a 3.5-liter, V-6 engine, a 6-speed sequential-shift automatic transmission, Smart Key push-button ignition, 4-wheel anti-lock brakes with electronic brake force distribution, traction control, electronic stability control, and a tire pressure monitoring system.

The front row was equipped with bucket seats, adjustable head restraints, lap-and-shoulder safety belts, driver and front right passenger frontal air bags, driver and front right passenger knee air bags, seat-mounted side impact air bags, and side impact inflatable curtain (IC) air bags that provided protection for the front and second rows. The second row was equipped with a bench seat, lap-and-shoulder safety belts, adjustable head restraints in the outboard seating positions, and Lower Anchor and Tethers for Children (LATCH) in the outboard seating positions. The odometer reading at the time of the inspection was 67,032 miles (107,878 kilometers). The specified wheelbase was 278 cm (109.4 in).

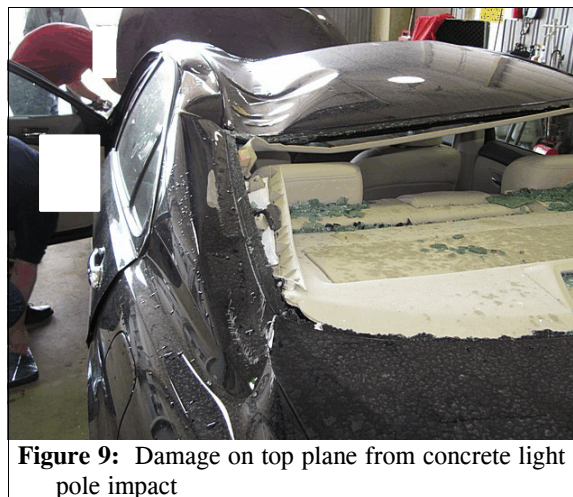


Figure 9: Damage on top plane from concrete light pole impact

The Lexus was subject to a safety recall involving potential driver's floor mat interference with the accelerator pedal. The NHTSA recall campaign identification number is 09V388000. A copy of the NHTSA recall summary is attached at the end of this report. The owner of the vehicle received the safety recall campaign notice from Lexus and the recall service was performed by a Lexus dealer on February 17, 2010. The recall service involved replacing the driver and front passenger all weather floor mats and modifying the accelerator pedal and carpet area as specified in the Lexus recall notice. The Lexus recall campaign notice also indicated that a computer upgrade would be loaded which included an override system that would cut engine power in case of simultaneous application of both accelerator and brake pedals at certain speeds and driving conditions. Copies of the Lexus' recall campaign notice and the customer receipt for the recall service performed by the Lexus dealer are attached at the end of this report.

CASE VEHICLE DAMAGE

Exterior Damage: Both front wheels sustained damage from the curb impacts. The left front wheel rim was dented and the right front wheel rim was broken. The front bumper and hood of the Lexus sustained direct damage from the impact with the concrete light pole. The direct damage began 78 cm (30.7 in) left of the right corner of the bumper fascia and was 24 cm (9.4 in) in length. The crush measurements were taken on the bumper bar and the maximum residual crush was 33 cm (13 in) occurring 9 cm (3.5 in) left of C₂. The bumper, hood and grille sustained induced damage. The table below presents the front crush profile.

| Units | Event | Direct Damage | | Field L | C ₁ | C ₂ | C ₃ | C ₄ | C ₅ | C ₆ | Direct | Field L |
|-------|-------|---------------|-----------|---------|----------------|----------------|----------------|----------------|----------------|----------------|--------|---------|
| | | Width CDC | Max Crush | | | | | | | | ±D | ±D |
| cm | 2 | 24 | 33 | 92 | 0 | 21 | 26 | 14 | 6 | 0 | -15 | 0 |
| in | | 9.4 | 13.0 | 36.2 | 0.0 | 8.3 | 10.2 | 5.5 | 2.4 | 0.0 | -5.9 | 0.0 |

The direct damage on the top plane from the concrete light pole impact began near the front of the hood on the approximate centerline of the vehicle. It extended 427 cm (168 in) along a diagonal onto the windshield, roof, left C-pillar and left quarter panel. The direct damage width at its widest point was 22 cm (8.7 in). The maximum crush on the top plane was 11 cm (4.3 in).

The concrete light pole also damaged the left side plane as the pole separated from the vehicle. The left fender, A-pillar, and roof side rail were directly damaged. The direct damage began 25 cm (9.8 in) forward of the left front axle and extended rearward 117 cm (46.1 in) on the side of the fender and onto the left A-pillar. There was a 41 cm (16.1 in) gap in the direct damage and it began again on the left roof side rail extending an additional 89 cm (35 in) rearward. The roof side rail above the left front door was crushed approximately 2 cm (0.8 in).

Damage Classification: The Collision Deformation Classifications (CDC) for the right and left front wheel impacts with the curb (events 1 and 3) were 12FRWN3 and 12FLWN3. The CDC for the front impact with the concrete light pole (event 2) was 12FYEN2. The CDC for the concrete light pole impact on the top plane (event 4) was 00TDYN3 and 00TDLN2 for the pole impact involving the left roof side rail, left A-pillar, and left fender (event 5).

The WinSMASH program could not be used to calculate a Delta-V for any of the impacts since a wheel impact, yielding object impact, and non-horizontal impacts are out of scope for the program. The Barrier Algorithm of WinSMASH was used to calculate a Barrier Equivalent Speed (BES) for the front plane impact with the concrete pole. The calculated BES was 28 km/h (17.4 mph). The vehicle’s EDR reported the velocity change for this impact as 25.3 km/h (15.7 mph).

The manufacturer’s recommended tire size was P215/55R17. The Lexus was equipped with the recommended size tires. The vehicle’s tire data are shown in the table below.

| Tire | Measured Pressure | | Vehicle Manufacturer’s Recommended Cold Tire Pressure | | Tread Depth | | Damage | Restricted | Deflated |
|------|-------------------|-----|---|-----|--------------|-----------------------------|--------|------------|----------|
| | kPa | psi | kPa | psi | milli-meters | 32 nd of an inch | | | |
| LF | 248 | 36 | 207 | 30 | 3 | 4 | None | No | No |
| LR | 248 | 36 | 207 | 30 | 3 | 4 | None | No | No |
| RR | 248 | 36 | 207 | 30 | 2 | 3 | None | No | No |

| Tire | Measured Pressure | | Vehicle Manufacturer's Recommended Cold Tire Pressure | | Tread Depth | | Damage | Restricted | Deflated |
|------|-------------------|------|---|-----|--------------|-----------------------------|--------|------------|----------|
| | kPa | psi | kPa | psi | milli-meters | 32 nd of an inch | | | |
| RF | Flat | Flat | 207 | 30 | 3 | 4 | None | Yes | Yes |

Vehicle Interior: The inspection of the interior of the Lexus revealed a transfer of lip stick and make-up on the driver's frontal air bag (**Figure 10**). There was no other discernable evidence of occupant contact. There was no deformation of the steering wheel or compression of the energy absorbing steering column.

All the doors remained closed and operational. All the window glazings were either closed or fixed prior to the crash. The windshield was in place and cracked from impact forces, while the sunroof and backlight glazings were disintegrated from impact forces. None of the other window glazings were damaged.

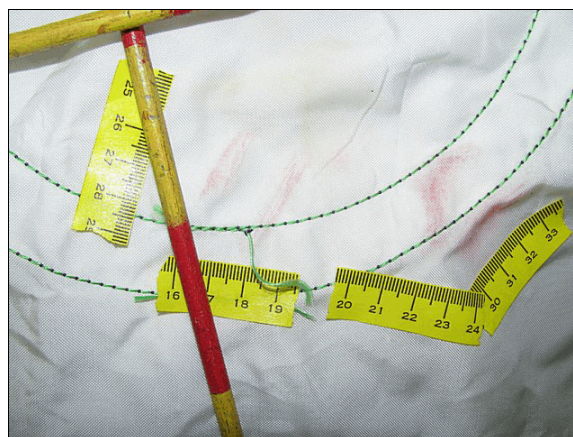


Figure 10: Lip stick and make-up transfer on driver's frontal air bag of the Lexus

The passenger compartment sustained 18 intrusions. The most severe intrusions into the driver's space involved the windshield, windshield header, and the roof. These components intruded vertically 8 cm (3.1 in), 8 cm (3.1 in), and 7 cm (2.8 in), respectively.

ACCELERATOR PEDAL, FLOOR MAT, AND BRAKE COMPONENTS

The initial status of the Denso accelerator pedal, floor mat, and brake pedal at the time of the SCI inspection are shown in **Figures 11** and **12**. The driver's floor mat was secured by the floor mat attachment clips and was not free to move. The floor mat appeared to be in nearly new condition. The product identification on the back of the floor mat was PT908-33100 Driver/Front TPE 789-1. The carpet under the accelerator pedal was smooth and flat against the floor and toe pan. There was a black transfer and impression on the carpet directly below the end of the accelerator pedal (**Figure 13**). The imprint was 19 mm in length and was the same shape and size as the back of the accelerator pedal (**Figures**



Figure 11: The initial status at inspection of the accelerator pedal, front of the floor mat, and brake pedal of the Lexus

14 and 15). The accelerator pedal functioned smoothly and did not bind. **Figure 16** shows the Denso accelerator pedal mechanism housing. Inspection of the left front and right rear brake rotors and pads showed no evidence of overheating (**Figures 17 and 18**).



Figure 12: Initial status at inspection of the left front floor mat of the Lexus



Figure 13: Accelerator pedal and black transfer on carpet (outlined in white) of the Lexus



Figure 14: Black transfer and impression on carpet from back of accelerator pedal end



Figure 15: End of accelerator pedal



Figure 16: The accelerator pedal mechanism housing of the Lexus

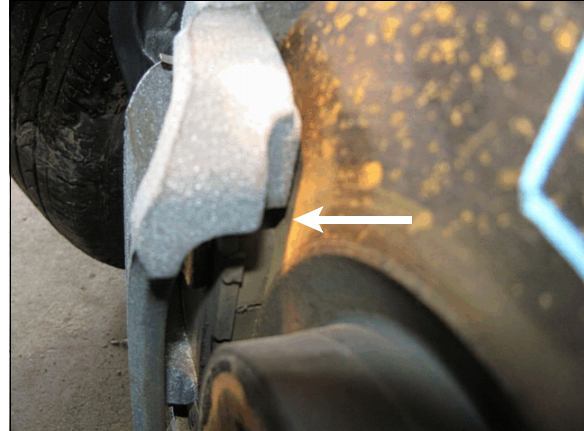


Figure 17: Left rear brake rotor, caliper, and brake pad (arrow) of the Lexus

EVENT DATA RECORDER

The EDR of the Lexus was imaged via the diagnostic link connector using the manufacturer's EDR readout tool with software version 1.1.0. The EDR data was re-read and printed with version 1.4.1.0 of the readout tool software. The EDR reported the driver's safety belt switch status as "Belted" and the driver's seat position as "RM." The transmission shifter position was reported as "N." The EDR reported two frontal events and two side events. The first reported frontal event was related to the right front wheel impact with the curb. The time from the pre-crash trigger for this event was reported as 4 ms. The driver's frontal air bag and pretensioner were reported as "Not Fired" for this event. The EDR reported 200 ms of velocity change data in the "Frontal Crash Page 0" data block, which are presented in the following table. A column was added to convert mph to km/h. The pre-crash data is discussed in the pre-crash section of this report on page 3.

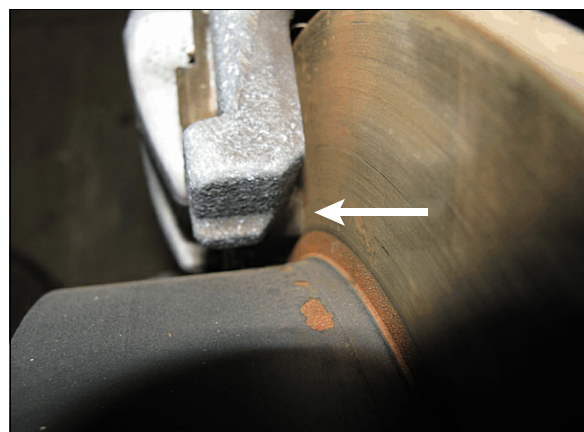


Figure 18: Right rear brake rotor, caliper, and brake pad (arrow) of the Lexus

"Frontal Crash Page 0"

| Time (ms) | mph | km/h | Time (ms) | mph | km/h |
|-----------|-----|------|-----------|-----|------|
| 10 | 0.9 | 1.4 | 110 | 3.4 | 5.5 |
| 20 | 1.4 | 2.3 | 120 | 3.4 | 3.5 |
| 30 | 2.6 | 4.2 | 130 | 3.3 | 5.3 |
| 40 | 3.2 | 5.1 | 140 | 3.2 | 5.1 |
| 50 | 3.2 | 5.1 | 150 | 3.1 | 5.0 |

| Time (ms) | mph | km/h | Time (ms) | mph | km/h |
|-----------|-----|------|-----------|-----|------|
| 60 | 3.0 | 4.8 | 160 | 3.1 | 5.0 |
| 70 | 2.9 | 4.7 | 170 | 3.1 | 5.0 |
| 80 | 3.0 | 4.8 | 180 | 3.1 | 5.0 |
| 90 | 3.2 | 5.1 | 190 | 3.2 | 5.1 |
| 100 | 3.3 | 5.3 | 200 | 4.0 | 6.4 |

The second reported frontal event was related to the frontal impact with the concrete light pole. The time from the pre-crash trigger was reported as 205 ms. The driver's frontal air bag deployed and the pretensioner actuated during this event. The "deployment time" for the frontal air bag and the pretensioner was reported as 35 ms. The EDR reported 200 ms of velocity change data in the "Frontal Crash Page 1" data block, which are presented in the following table.

"Frontal Crash Page 1"

| Time (ms) | mph | km/h | Time (ms) | mph | km/h |
|-----------|------|------|-----------|------|------|
| 10 | 0.7 | 1.2 | 110 | 14.0 | 22.5 |
| 20 | 2.0 | 3.2 | 120 | 14.5 | 23.3 |
| 30 | 3.9 | 6.3 | 130 | 14.8 | 23.8 |
| 40 | 6.7 | 10.8 | 140 | 14.6 | 23.5 |
| 50 | 10.2 | 16.4 | 150 | 14.8 | 23.8 |
| 60 | 11.8 | 19.0 | 160 | 14.9 | 24.0 |
| 70 | 12.6 | 20.3 | 170 | 15.0 | 24.1 |
| 80 | 12.9 | 20.8 | 180 | 15.3 | 24.6 |
| 90 | 13.8 | 22.2 | 190 | 15.6 | 25.1 |
| 100 | 13.8 | 22.2 | 200 | 15.7 | 25.3 |

AUTOMATIC RESTRAINT SYSTEM

Lexus was equipped with a Certified Advanced 208-Compliant (CAC) frontal air bag system and driver and front passenger knee air bags. Based on the Holmatro Rescuer's Guide to Vehicle Safety Systems, the frontal air bag sensors were located on the inner fenders. The driver's frontal air bag and knee air bag deployed in this crash. The manufacturer has certified that the vehicle is compliant to the Advanced Air Bag portion of the Federal Motor Vehicle Safety Standard (FMVSS) No. 208.

The Lexus was also equipped with a side impact air bag system that consisted of roof rail-mounted side impact inflatable curtain (IC) air bags and front seat-mounted side impact air bags. Based on the Holmatro Rescuer's Guide to Vehicle Safety Systems, the IC air bag inflators were located within the roof side rails between the B-and C-pillars and the side impact sensors were located within the lower B-and C-pillars. Neither the IC air bags nor the seat-mounted side impact air bags deployed in this crash.

The driver's frontal air bag was located within the steering wheel hub. The module cover was a three flap configuration constructed of pliable vinyl. The top cover flap was 12.5 cm (4.9 in) in width and 6 cm (2.4 in) in height. Each of the lower flaps was 6.5 cm (2.6 in) in width and 9.5 cm (3.7 in) in height. An inspection of the cover flaps revealed that they opened at the designated tear points and were undamaged. The deployed air bag was 62 cm (24.4 in) in diameter and had two vent ports, each 2 cm (0.8 in) in diameter on the back of the air bag at the 11 and 1 o'clock positions. An inspection of the air bag revealed a transfer of lip stick and make-up located near the center of the air bag. There was no damage on the air bag.

The driver's knee air bag was located within the lower left instrument panel and deployed through two rectangular module covers. Each module cover was 25 cm (9.8 in) in width and 4 cm (1.6 in) in height. The module cover opened at the designated tear points and was undamaged. The deployed knee air bag was 62 cm (24.4 in) in width and 29 cm (11.4 in) in height. While the driver's knees loaded the air bag during the crash, there was no discernable evidence of occupant contact on the air bag and the air bag was not damaged.

MANUAL RESTRAINT SYSTEM

The Lexus was equipped with lap-and-shoulder safety belts for all the seating positions. The driver's safety belt consisted of continuous loop belt webbing, an Emergency Locking Retractor (ELR), sliding latch plate, and an adjustable upper anchor that was located in the full-down position. The front passenger safety belt was similar but was equipped with a switchable ELR/Automatic Locking Retractor (ALR). Both safety belts were equipped with retractor-mounted pretensioners. The driver's pretensioner actuated during the crash. The front passenger pretensioner did not actuate. The second row lap-and-shoulder safety belts were similar to the front passenger safety belt except that they were equipped with fixed upper anchors. The outboard safety belts were equipped with retractor-mounted pretensioners, both of which actuated during the crash. The center safety belt was not equipped with a pretensioner.

The inspection of the driver's safety belt assembly revealed a heavy load abrasion on the D-ring housing and the belt webbing appeared stretched. The retractor was jammed with a length of belt webbing extending out of the retractor consistent with usage. The length of the belt webbing as measured from the stop button to the D-ring was 118 cm (46.5 in). This evidence indicated that the driver was restrained by the lap-and-shoulder safety belt at the time of the crash. The EDR also reported the driver's safety belt switch status as "belted."

Based on the SCI interview, the driver of the Lexus [67-year-old, female; 170 cm (67 in) and 70 kg (155 lbs)] had both hands on the steering wheel. She was unsure of her seated posture. The seat track was adjusted between the middle and rear position and the seat back was upright. The driver was wearing contact lenses at the time of the crash.

Just prior to the impacts, the driver initiated a right steering maneuver to negotiate the restaurant driveway and then a hard left steering maneuver as she exited the driveway and approached impact. The left steering maneuver was severe enough for the right front tire to mark the pavement as the vehicle approached the initial impact with the curb. As a result of the left steering maneuver, the driver was probably displaced to the right within the safety belt. The impacts with the curb and concrete light pole displaced the driver forward and she loaded the safety belt. The driver's face loaded the deployed frontal air bag and both knees loaded the deployed knee air bag. She sustained a concussion from loading the frontal air bag and contusions on the right knee and both shins from loading the deployed knee air bag. Her right foot contacted the floor and foot controls, which caused a fracture of the right fibula midway between the ankle and knee and a 10.2 cm (4 in) contusion on the inside of the right ankle. The driver sustained a 2.5 cm (1 in) contusion on the left thumb from contacting the steering wheel rim. She also sustained abrasions on the medial aspect of the left leg just below the knee from loading the knee air bag.

CASE VEHICLE DRIVER INJURIES

Following the crash, the driver exited the vehicle through the driver's door with the assistance of two passers-by. She was transported by ambulance to a hospital and was treated in the emergency room and released. The table below presents the driver's injuries and injury sources.

| Injury Number | Injury Description (including Aspect) | NASS Injury Code & AIS 90 | Injury Source | Source Confidence | Source of Injury Data |
|---------------|--|---------------------------|--|-------------------|---------------------------|
| 1 | Fracture right fibular shaft (midway between ankle and knee) | moderate 854471.2,1 | Floor, foot controls (indirect injury) | Probable | Emergency room records |
| 2 | Contusion (bruise), 2.5 cm (1 in) at base of left thumb with swelling of left wrist | minor 710402.1,2 | Steering wheel rim | Possible | Interviewee (same person) |
| 3 | Abrasions ¹ (scrapes) x 3, 2.5 cm to 7.6 cm (1 to 3 in) in length, medial (inside) aspect, just below left knee | minor 810602.1,2 | Air bag, driver's knee blocker | Probable | Emergency room records |

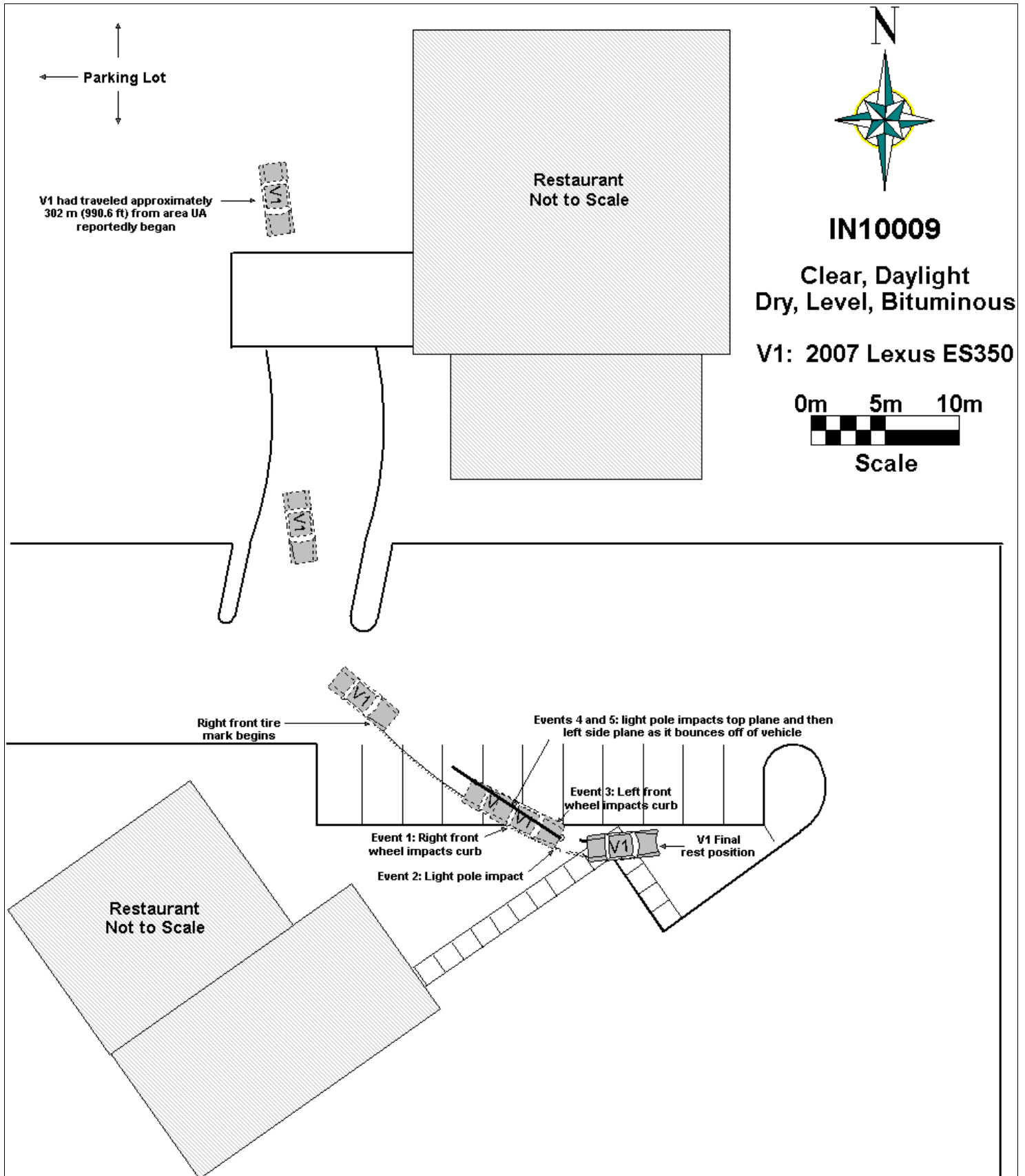
¹ The interviewee indicated she had lacerations (cuts) and provided the lesion detail. The patient's medical records referred to these lesions as abrasions/scrapes and provided no detail.

Case Vehicle Driver Injuries (Continued)

IN10009

| Injury Number | Injury Description (including Aspect) | NASS Injury Code & AIS 90 | Injury Source | Source Confidence | Source of Injury Data |
|---------------|--|---------------------------|--------------------------------|-------------------|-------------------------------------|
| 4 | Contusions (bruises) x 3, 7.6 cm (3 in) medial (inside) right knee; 15.2 cm (6 in) antero-medial (left front) right shin; 15.2-17.8 cm (6-7 in), on left shin, not further specified | minor 810402.1,3 | Air bag, driver's knee blocker | Probable | Emergency ² room records |
| 5 | Contusion (bruise), 10.2 cm (4 in), medial (inside) right ankle | minor 810402.1,1 | Floor, foot controls | Probable | Interviewee (same person) |
| 6 | Cerebral concussion, not further specified | minor 161000.1,0 | Air bag, driver's | Probable | Emergency room records |

² The patient's medical records indicate she had bruising to her lower legs but did not provide any detail. The detail came from the interview with this person.



RECALLS SUMMARY

| | |
|------------------------------|-----------------------|
| Vehicle Make / Model: | Model Year(s): |
| LEXUS / ES350 | 2007-2010 |
| LEXUS / IS | 2006-2010 |
| TOYOTA / AVALON | 2005-2010 |
| TOYOTA / CAMRY | 2007-2010 |
| TOYOTA / PRIUS | 2004-2009 |
| TOYOTA / TACOMA | 2005-2010 |
| TOYOTA / TUNDRA | 2007-2010 |

NHTSA CAMPAIGN ID Number: **09V388000**

Summary:
 TOYOTA IS RECALLING CERTAIN MODEL YEAR 2004-2010 PASSENGER VEHICLES. THE ACCELERATOR PEDAL CAN GET STUCK IN THE WIDE OPEN POSITION DUE TO ITS BEING TRAPPED BY AN UNSECURED OR INCOMPATIBLE DRIVER'S FLOOR MAT.

Consequence:
 A STUCK OPEN ACCELERATOR PEDAL MAY RESULT IN VERY HIGH VEHICLE SPEEDS AND MAKE IT DIFFICULT TO STOP THE VEHICLE, WHICH COULD CAUSE A CRASH, SERIOUS INJURY OR DEATH.

Remedy:
 TOYOTA FILED AN AMENDED DEFECT REPORT ON NOVEMBER 25, 2009, STATING THAT DEALERS WILL MODIFY THE ACCELERATOR PEDAL AND, ON CERTAIN VEHICLES, ALTER THE SHAPE OF THE FLOOR SURFACE UNDER THE PEDAL. THESE CHANGES ADDRESS THE RISK OF PEDAL ENTRAPMENT DUE TO INTERFERENCE WITH THE FLOOR MAT. REDESIGNED ACCELERATOR PEDALS WILL BECOME AVAILABLE BEGINNING IN APRIL 2010 AND DEALERS WILL REPLACE ANY MODIFIED PEDAL WITH THE NEW PEDAL IF DESIRED. ALSO, DEALERS WILL REPLACE ANY GENUINE TOYOTA OR LEXUS ALL-WEATHER FLOOR MATS WITH REDESIGNED ALL-WEATHER MATS, OR REPURCHASE THE PREVIOUS MATS FROM OWNERS WHO DO NOT WANT THE NEW ONES. ADDITIONALLY, SOFTWARE MODIFICATIONS WILL BE INSTALLED ON CAMRY, AVALON AND LEXUS ES 350, IS 350 AND IS 250 MODELS THAT WILL ENSURE THAT THE BRAKE OVERRIDES THE ACCELERATOR IN THE EVENT BOTH BRAKE AND ACCELERATOR PEDALS ARE APPLIED. TOYOTA WILL BEGIN MAILING LETTERS TO OWNERS IN DECEMBER 2009. OWNERS MAY CONTACT TOYOTA AT 1-800-331-4331, LEXUS AT 1-800-255-3987.

Notes:
 TOYOTA RECALL NO. 90L. OWNERS MAY ALSO CONTACT THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION'S VEHICLE SAFETY HOTLINE AT 1-888-327-4236 (TTY 1-800-424-9153), OR GO TO [HTTP://WWW.SAFERCAR.GOV](http://www.safercar.gov).

Close Window



Lexus Division
Toyota Motor Sales, U.S.A., Inc.
19001 South Western Avenue
P.O. Box 2991
Torrance, CA 90509-2991

GNN



Certain 2007 through 2010 Model Year ES 350 Potential Floor Mat Interference with Accelerator Pedal Safety Recall Campaign

Please make an appointment with your local Lexus Dealer to have this important remedy completed.

Vin: JTHBJ46G672

Dear Lexus Owner:

This notice is being sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act. Lexus has decided that a defect which relates to motor vehicle safety exists in certain 2007 through certain 2010 model year ES 350 vehicles.

What is the Condition?

As we notified you earlier this past fall, the defect is the potential for an unsecured or incompatible driver's floor mat to interfere with the accelerator pedal and cause it to get stuck in the wide open position. A stuck open accelerator pedal may result in very high vehicle speeds and make it difficult to stop the vehicle, which could cause a crash, serious injury or death. Lexus has determined that this defect does not exist in vehicles in which the driver side floor mat is compatible with the vehicle and properly secured.

What will Lexus do?

- To make it less likely that an unsecured or incompatible driver's floor mat can interfere with the accelerator pedal on your vehicle, any Lexus dealer will remedy your vehicle at **NO CHARGE** to you. The remedy will entail modification to both the accelerator pedal and the floor surface in the driver's foot-well.
- If your vehicle is equipped with a set of optional genuine Lexus All Weather Floor Mats (AWFM), it will be inspected to determine if the AWFM set is of an older design. If it is, the older design AWFMs for the driver and the front seat passenger will be replaced with newly designed ones at **NO CHARGE** to you.
- Before the vehicle is returned to you, Lexus will inspect the driver's carpet and will clean it if necessary at **NO CHARGE** to you.

As an additional measure independent of the vehicle-based recall remedy, Lexus will install a newly designed override system onto your vehicle to provide an extra measure of confidence. This system will cut engine power in case of simultaneous application of both accelerator and brake pedals at certain speeds and driving conditions. This installation will also be conducted at **NO CHARGE** to you.

What should you do?

This is an important Safety Recall

Please contact your authorized Lexus dealer to make an appointment to have these important remedies performed on your vehicle as soon as possible.

The remedy will take approximately two hours. However, depending upon the dealer's work schedule, it may be necessary to make your vehicle available for a longer period of time.

Until these important remedies are completed, we request that you take out **any removable** driver's floor mat, place them in the trunk, and **NOT** replace it with any other floor mat until the campaign remedy has been implemented on your vehicle. ***If you have an optional genuine Lexus All Weather Floor Mat, please bring it to the dealership at the time of your remedy.***

In the event you choose not to take out your removable floor mat, Lexus strongly recommends that you ensure that the correct floor mat is being used, that it is properly installed and secured, that it is not flipped over with the bottom-side up, and that one floor mat is not stacked over another. Please visit <http://www.lexus.com/floormats> for additional information.

Spanish translation on back side
Traducción en español en el reverso

What should you do if you experience accelerator pedal interference?

Should the vehicle continue to accelerate rapidly after releasing the accelerator pedal, this could be an indication of floor mat interference. If this occurs, Lexus recommends you take the following actions:

First, if it is possible and safe to do so, pull back the floor mat and dislodge it from the accelerator pedal; then pull over and stop the vehicle. If the floor mat cannot be dislodged, then firmly and steadily step on the brake pedal with both feet. Do NOT pump the brake pedal repeatedly as this will increase the effort required to slow the vehicle.

Shift the transmission gear selector to the Neutral (N) position and use the brakes to make a controlled stop at the side of the road and turn off the engine.

If unable to put the vehicle in Neutral, turn the engine OFF by firmly and steadily pushing the button for at least three seconds. Do NOT tap the Engine Start/Stop button. This will not cause loss of steering or braking control, but the power assist to these systems will be lost.

What if you have other questions?

Please visit <http://www.lexus.com/floormats> for further information. Your local Lexus dealer will be more than happy to answer any of your questions as well. If you require further assistance, you may contact the ***Lexus Customer Experience Center at 1-800-255-3987*** Monday through Friday, 5:00 am to 6:00 pm, or Saturday 7:00 am through 4:00 pm Pacific Standard Time. Your satisfaction is extremely important to us. In the event you are not satisfied with the modification of your accelerator pedal after it is completed, a replacement accelerator pedal will be offered beginning around April 2010. Customers who have had the remedy completed will have the opportunity to receive a new pedal at no charge if desired.

If you believe that the dealer or Lexus has failed or is unable to remedy the defect within a reasonable time, you may submit a complaint to the Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590; or call the toll-free Vehicle Safety Hotline at 1-888-327-4236 (TTY: 1-800-424-9153) or go to <http://www.safercar.gov>.

What if you have previously paid for your vehicle's accelerator pedal or floor surface to be modified to address the same condition described above?

If you have previously paid for your vehicle's accelerator pedal or floor surface to be modified to address the same condition described above, please mail a copy of your repair order, proof-of-payment, and proof-of-ownership to the following address for reimbursement consideration

Toyota Motor Sales, U.S.A., Inc.
Lexus Customer Assistance, L201
19001 South Western Avenue
Torrance, CA 90509

If you are a vehicle lessor, Federal law requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the vehicle lessee within ten days.

We have sent this notice in the interest of your continued satisfaction with our products.

Thank you for driving a Lexus.

Sincerely,

Lexus Division

TOYOTA MOTOR SALES, U.S.A., INC.

What if you have other questions?

Your local Lexus dealer will be more than happy to answer any of your questions and set up an appointment to perform the repair. If you require further assistance, you may contact the Lexus Customer Assistance Center at 1-800-255-3987 Monday through Friday, 5:00 am to 6:00 pm, or Saturday 7:00 am to 4:00 pm Pacific Standard Time.

What if you have previously paid for the replacement of this VVT-i oil hose for this specific condition?

If you have previously paid for the replacement of this VVT-i oil hose pertaining to this specific condition prior to receiving this letter, please mail a copy of your repair order, proof-of-payment, and proof-of-ownership to the following address for reimbursement consideration:

Toyota Motor Sales, U.S.A., Inc.
Lexus Customer Experience, L201
19001 South Western Avenue
Torrance, CA 90509

We have sent this notice in the interest of your continued satisfaction with our products, and we sincerely regret any inconvenience this condition may have caused you.

Thank you for driving a Lexus.

Sincerely,

Lexus Division,
TOYOTA MOTOR SALES, U.S.A., INC.



Lexus Division
Toyota Motor Sales, U.S.A., Inc.
19001 South Western Avenue
P.O. Box 2991
Torrance, CA 90509-2991

Limited Service Campaign (LSC) 9LH – Certain 2007 Lexus ES Vehicles Equipped with the V6 (2GR-FE) Engine Variable Valve Timing with Intelligence (VVT-i) Oil Hose Replacement

VIN: JTHBJ46G672[REDACTED] – 2007 Model Year Lexus ES

Dear Lexus Owner:

Thank you very much for your patronage of Lexus. We are dedicated to providing vehicles of outstanding quality and value. As part of our continuing efforts to provide superior customer satisfaction, Lexus is announcing a Limited Service Campaign (LSC) for your 2007 Lexus ES equipped with a 2GR-FE engine.

What is the condition?

On your 2007 Lexus ES vehicle, the rubber portion of the oil supply hose for the VVT-i actuator may degrade over time. This condition may cause oil to leak from the VVT-i oil hose producing abnormal engine noise and the oil pressure light to illuminate.

What will Lexus do?

Any Lexus dealer will replace the VVT-i oil hose with a newly designed one at **NO CHARGE** to you. This LSC will be offered until **March 31, 2013**, and will only be available at your authorized Lexus Dealer.

What should you do?

Before you are inconvenienced by this condition, please contact your authorized Lexus dealer to schedule an appointment to replace the VVT-i oil hose with a newly designed one. This LSC will be offered until **March 31, 2013**. Based upon your specific model, the repair may take approximately 1 hour. However, depending upon the dealer's work schedule, it may be necessary to make your vehicle available for a longer period of time.

Please present this notice to the dealer when you bring the vehicle in for your service appointment.

If you would like to update your vehicle ownership or contact information, please go to www.lexus.com/ownersupdate. You will need your full 17-digit Vehicle Identification Number (VIN) to input the new information.

CUSTOMER #: [REDACTED]

INVOICE

PAGE 1



HOME: [REDACTED] CONT: [REDACTED]
BUS: [REDACTED] CELL: [REDACTED]

SERVICE ADVISOR: 196 ANEES QURESHI

| | | | | | | | |
|---------------|---------------|-------------------|------------------------|---------|------------------|---------|-----------|
| COLOR | YEAR | MAKE/MODEL | VIN | LICENSE | MILEAGE IN / OUT | TAG | |
| 0202/BLACK | 07 | LEXUS ES350 | JTHBJ46G672 [REDACTED] | | 65646/65647 | T3805 | |
| DEL DATE | PROD. DATE | WARR. EXP. | PROMISED | PO NO. | RATE | PAYMENT | INV. DATE |
| 29NOV06 DD | | | 14:00 17FEB10 | | 100.00 | CASH | 17FEB10 |
| R.O. OPENED | READY | OPTIONS: STK:4830 | | | | | |
| 09:03 17FEB10 | 15:11 17FEB10 | | | | | | |

| LINE | OPCODE | TECH | TYPE | HOURS | LIST | NET | TOTAL |
|------|--------|------|------|-------|------|-----|-------|
|------|--------|------|------|-------|------|-----|-------|

A 9LG-SSC 9LG - 2007 through 2010 MY ES 350 Potential Floor Mat Interference with Accelerator Pedal AWFM are in THE VEHICLE

CAUSE: 99 99

9911M3 9LG PEDAL AND FLOOR MOD, ECU AND REPLACE AWFM

| | | | |
|-----|---|-----------------------------------|-------|
| 493 | W | | (N/C) |
| 1 | | 78118-41010 STOPPER, ACCELERATOR | (N/C) |
| 1 | | 58571-33010 PAD, FR FLOOR, FR | (N/C) |
| 1 | | PT908-3310W-14 2PC AW FMAT BWN ES | (N/C) |

FC:

PART#: 78118-41010

COUNT: 1

CLAIM TYPE: SC

AUTH CODE:

SUBL EXTERIOR W (N/C)

SUBL RENTAL W (N/C)

SUBL FILLED WITH PREMIUM GASOLINE @ SPEEDWAY # 5161. VEH34936830, 4.684 GALLONS @ \$2.799/GAL W (N/C)

65646 9LG DONE, MODIFIED THE GAS PEDAL AND THE CARPET AREA, REPLACED AWFM

B 9LH-LSC 9LH - Variable Valve Timing (VVT-i) Oil Hose Replacement

CAUSE: 99 99

9609KC 9LH REPLACE OIL COOLER HOSE FOR ES 350

| | | | |
|-----|---|-------------------------------|-------|
| 493 | W | | (N/C) |
| 1 | | 04009-33131 KIT,OIL HOSE,NO.1 | (N/C) |

FC:

PART#: 04009-33131

COUNT: 1

CLAIM TYPE: SC

ON BEHALF OF SERVICING DEALER, I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREON IS ACCURATE UNLESS OTHERWISE SHOWN. SERVICES DESCRIBED WERE PERFORMED AT NO CHARGE TO OWNER. THERE WAS NO INDICATION FROM THE APPEARANCE OF THE VEHICLE OR OTHERWISE, THAT ANY PART REPAIRED OR REPLACED UNDER THIS CLAIM HAD BEEN CONNECTED IN ANY WAY WITH ANY ACCIDENT, NEGLIGENCE OR MISUSE. RECORDS SUPPORTING THIS CLAIM ARE AVAILABLE FOR (1) YEAR FROM THE DATE OF PAYMENT NOTIFICATION AT THE SERVICING DEALER FOR INSPECTION BY MANUFACTURER'S REPRESENTATIVE.

STATEMENT OF DISCLAIMER

The factory warranty constitutes all of the warranties with respect to the sale of this item/items. The Seller hereby expressly disclaims all warranties either express or implied, including any implied warranty of merchantability or fitness for a particular purpose. Seller neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of this item/items.

| DESCRIPTION | TOTALS |
|------------------------|--------|
| LABOR AMOUNT | |
| PARTS AMOUNT | |
| GAS, OIL, LUBE | |
| SUBLET AMOUNT | |
| MISC. CHARGES | |
| TOTAL CHARGES | |
| LESS INSURANCE | |
| SALES TAX | |
| PLEASE PAY THIS AMOUNT | |

(SIGNED) DEALER, GENERAL MANAGER OR AUTHORIZED PERSON (DATE)

CUSTOMER SIGNATURE

CUSTOMER COPY