

REPORT ON SAFETY ISSUES WITH 4 CYLINDER TOYOTA TACOMA TRUCKS AND  
POTENTIAL SOLUTIONS THERETO

SUBMITTED BY:



Greer, SC 

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## 1. STATEMENT OF PROBLEMS:

1.1. The 2006 4 cylinder Tacoma pickups have 2 safety issues as listed below.

1.1.1. The cruise control will make sudden surges when the vehicle is above 60 miles per hour which have a potential loss of control and abruptly drops the transmission into second gear. The resultant torque can cause damage to the engine and gear train.

This defect has also been reported on 2006 4 cylinder Toyota Matrix models according to Toyota service personnel.

1.1.2. The electric door locks do not automatically lock the doors when the vehicle is put into gear. This opens the occupants to the hazard of carjacking unnecessarily.

Again, Toyota service personnel state that this cannot be reprogrammed and also occurs on all Tacomas and the Highlander with a gasoline engine. The doors automatically lock on all other models including the Highlander Hybrid according to Toyota service personnel.

## 2. SCOPE:

2.1. This report applies only to 4 cylinder Tacoma Pickup trucks as I have not tested any Matrix.

2.2. The truck tested is a Tacoma Access Cab, VIN #5TETX22N36Z [REDACTED] owned by the writer. The vehicle currently has less than 5000 miles and was purchased new in June, 2006, from Toyota of Easley in Easley, SC.

2.3. I was told by [REDACTED] that he had tested a new 2006 Toyota Tacoma SR5 with the same drive train and at the same conditions with the same results. Therefore it can be said that the condition is generic to the vehicle model and not specific to the test vehicle.

2.4. No changes of any kind have been made to the vehicle. It remains as it was received from the dealer.

## 3. STATEMENT OF EVENTS INVOLVING THE CRUISE CONTROL SURGE PROBLEM:

3.1. In late July, 2006, I was operating my 2006 Toyota Access Cab with a 4 cylinder engine and the cruise control engaged on I 85 northbound between Greer, SC and Gaffney, SC. I was going 70 mph at 2100 RPM. When I encountered small hills and the speed dropped less than 1 mph, the vehicle shifted from 4th gear down to 3rd gear and the rpm increased about 400 rpm. After a few seconds (< 5) the transmission shifted down into 2nd gear and the rpm surged to 5100 rpm. The shift was not smooth and most disconcerting. Again after a few seconds, the transmission shifted back up into 3rd and then 4th as speed was returned to 70 mph.

3.2. On Sunday, 8/27/2006, I was driving on I 385 at 70 mph and on cruise control in my 2006 Tacoma Access Cab. When I crossed the US 276 bridge with its very slight incline and curve, the engine surged to 4500+ RPM. The surge was so abrupt that the vehicle almost went out of control by swerving and headed toward the bridge railing. I was able to regain control by tapping the brakes and disconnecting the cruise control. Had the road been slightly wet, it is any one's guess if I would have been able to avoid an accident. Since that incident, I do not think it is safe to use the cruise control.

3.3. I have been to the Toyota of Easley Service Center and the vehicle has been thoroughly checked and the phenomenon demonstrated to the Service Manager.

3.4. These events have been reported to the Toyota on-line Help Desk, Toyota of Easley Service Department and to Regina Williams, Toyota District Service Manager.

#### **4. EXPERIMENTS TO DETERMINE CAUSES AND TO EXPLORE POSSIBLE SOLUTIONS:**

- 4.1. All tests were conducted on I 85 from Atlanta, GA, to Charlotte, NC, and I 385/26 between Greenville, SC and Columbia, SC, except as noted below.
- 4.2. Results have been the same in all instances.
- 4.3. Several iterations of each test were made.
- 4.4. Tests and results are as follows:
  - 4.4.1. Test 1: Operate on cruise control below 60 mph. The surge does not occur.
  - 4.4.2. Test 2: Operate on cruise control at 65 mph. The surge occurs occasionally.
  - 4.4.3. Test 3: Operate on cruise control at 70 mph. The surge occurs without exception on all but the slightest upslope. The transmission drops from 4th to 3rd and the surge is almost immediate after the speed starts to drop and the downshift to 3<sup>rd</sup> gear. At that point the transmission drops to 2nd gear and the rpm spikes to 5100. It returns to approximately 2400 to 2800 rpm and shifts back to 3rd within a few seconds.
  - 4.4.4. Test 4: Operate the vehicle with manual speed control (cruise control off at 70 mph). Absolutely no problems and the rpm remains at approximately 2100.
  - 4.4.5. Test 5: Operate on cruise control at 70 mph and manually adding gas when the speed drops. The surge usually can be avoided if the extra fuel is supplied early enough.
  - 4.4.6. Test 6: I drove my 2004 4 cylinder Camry with 3 adult passengers up US 25 from Greenville, SC toward Hendersonville, NC. This road has a 6% upslope. While the RPM rose to 4,000 the transition was smooth and there was no surge. The surge also does not occur on Corollas. (Shown by previous drives on the same route.)

#### **5. CONCLUSIONS:**

- 5.1. The tests indicate that the surge at 70 mph occurrence is limited to Toyota 4cylinder Tacomas (and possibly Matrixes if the reports given me are true) and does not occur on other vehicles. (Test 6 and previous experience with Camrys and Corollas)
- 5.2. The surge is related to the speed of the vehicle. (Tests 1, 2, 3)
- 5.3. The amount of fuel delivered to the engine plays a role in the occurrence of the surge. (Tests 4, 5)
- 5.4. There may be insufficient time delay between the electronic fuel control calling for additional fuel and the downshift to 2<sup>nd</sup>. (Test 1, 2, 3, 5)
- 5.5. The problem is entirely in the engine and transition control computer. The fuel supply system is adequate for the operating conditions. (Tests 4, 5)

#### **6. POTENTIAL FIXES:**

- 6.1. Reprogram the control computer to add fuel at a greater rate when the cruise control calls for it, or
- 6.2. Reprogram the control computer to delay or prevent the drop to 2nd gear when operating in cruise control mode, or
- 6.3. Do some combination of 6.1 and 6.2.
- 6.4. While reprogramming the computer on the cruise control problem, make the computer lock the vehicle doors when the gears are shifted out of Park as happens on almost every other Toyota.