SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 138
TIRE PRESSURE MONITORING SYSTEMS

MAZDA MOTOR CORPORATION
2010 MAZDA 6
FOUR-DOOR PASSENGER CAR
NHTSA NO. CA5402

U.S. DOT SAN ANGELO TEST FACILITY
131 COMANCHE TRAIL, BUILDING 3527
GOODFELLOW AFB, TEXAS 76908

MAY 20, 2010
FINAL REPORT

PREPARED FOR
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
NVS-220
OFFICE OF VEHICLE SAFETY COMPLIANCE
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April 27 through May 6, 2010

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**16. Abstract**
Compliance tests were conducted on the subject 2010 Mazda 6 four-door passenger car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure Number TP-138-03 for the determination of FMVSS 138 compliance. Test failures identified were as follows: None

**17. Key Words**
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<td>5.3</td>
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<td>5.8</td>
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<td>5.10</td>
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<td>5.11</td>
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<td>5.12</td>
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<td>5.13</td>
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<td>5.14</td>
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<td>5.15</td>
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<td>5.16</td>
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</tbody>
</table>
SECTION 1
INTRODUCTION

1.1 PURPOSE OF COMPLIANCE TEST

A 2010 Mazda 6 four-door passenger car was tested to determine if the vehicle was in compliance with the requirements of FMVSS 138. All tests were conducted in accordance with NHTSA/Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure TP-138-03 dated July 12, 2007.

1.2 TEST VEHICLE

The test vehicle was a 2010 Mazda 6 four-door passenger car. Nomenclatures applicable to the test vehicle are:

A. Vehicle Identification Number: 1YVHZ8BH3A5M11305

B. NHTSA Number: CA5402

C. Manufacturer: Mazda Motor Corporation

D. Manufacture Date: 10/2009

1.3 TEST DATE

The test vehicle was tested during the time period April 27 through May 6, 2010.
2.1 **TEST PROCEDURE**

Prior to test, the test vehicle was inspected for completeness, systems operability, and appropriate fuel and liquid levels, i.e. oil and coolant. The vehicle was then photographically documented as required by the NHTSA/OVSC Test Procedure. Tire sidewall and vehicle labeling information were recorded. The owner’s manual was reviewed, and pertinent tire and TPMS information were noted. Telltale’s symbol, color, location, and lamp function were checked.

Subsequent events included weighing the vehicle to establish the Unloaded Vehicle Weight (UVW) and the distribution of weight on the front and rear axles and each wheel position. The vehicle was loaded to its Lightly Loaded Vehicle Weight (LLVW) for three tire deflation scenarios. This LLVW included the weights of driver, one passenger, test equipment, and ballast. The vehicle was loaded to its Unloaded Vehicle Weight plus Vehicle Capacity Weight (VCW) for three additional tire deflation scenarios. The VCW included the weights of driver, one passenger, test equipment, ballast in the rear seat, and ballast in the rear cargo area. The vehicle is required to be loaded to its maximum capacity without exceeding either the Vehicle Capacity Weight or Gross Vehicle Weight Rating (GVWR). For determination of the telltale warning activation pressure, the recommended cold inflation pressure was identified from the vehicle placard.

The vehicle was instrumented with a Racelogic VBOX III 100 Hz GPS Data Logger and brake pedal trigger. The VBOX uses GPS to measure vehicle speed, time, and distance. Test data were recorded to a compact flash card. During the test, a stopwatch was used to determine the approximate “cumulative driving time” during each test phase. Cumulative driving time does not include time during the brake application or when the vehicle speed was below 50 km/h or above 100 km/h. Upon completion of a tire deflation scenario, graphs were generated by VBOX software showing vehicle speed versus time during the test procedures. The graphs furnish a second by second analysis of each calibration and low inflation pressure detection phase (as appropriate). The cumulative driving time was calculated by post-processing the VBOX graph data, and is reported in Section 3 (Test Data) as ‘Total Driving Time’.

The tire deflation test scenario consisted of four phases:

1. **Calibration phase:** Tires were set at vehicle placard cold inflation pressure and the vehicle was driven for at least twenty minutes of cumulative driving time between 50 and 100 km/h.
2. Detection phase: Immediately after calibration phase, the selected tire(s) were deflated to seven kPa (one psi) below the Telltale Warning Activation Pressure. After one minute, the inflation pressure(s) of only deflated tire(s) were rechecked and adjusted if necessary. The vehicle was started and driven to ensure that the low inflation pressure telltale illuminated.

3. Cool down phase: Vehicle was parked in the San Angelo Test Facility (SATF) open bay shielded from direct sunlight. Tires were allowed to cool down for a minimum of one hour. After cool down, the vehicle was started and the low tire pressure telltale was checked for re-illumination.

4. Extinguishment phase: Tires were adjusted to vehicle placard cold inflation pressure. The vehicle was started and driven to ensure that the low inflation pressure telltale extinguished.

Two malfunction scenarios were performed on the Mazda 6. The first scenario was performed with the vehicle loaded to its LLVW. The malfunction was simulated by placing the compact spare tire, with no TPMS sensor, on the right front wheel position. The second scenario was performed by disconnecting the ABS unit wiring harness connector.

2.2 SUMMARY OF RESULTS

Three tire deflation scenarios were performed on the test vehicle at LLVW:

A. Left rear
B. Right front and right rear
C. Left front, left rear, right rear, and right front

Three tire deflation scenarios were performed on the test vehicle at UVW + VCW:

D. Right front
E. Left rear and right rear
F. Left front, left rear, and right rear

The data indicate compliance of the test vehicle’s tire pressure monitoring system for the six tire deflation scenarios tested.

One malfunction detection scenario was performed on the test vehicle at LLVW:

G. Spare tire without TPMS sensor was applied to right front wheel position.

One malfunction detection scenario was performed on the test vehicle at UVW + VCW:

H. The wiring harness connector was disconnected from the under-hood ABS unit.

In both scenarios, the vehicle’s combination malfunction telltale properly operated per the standard’s requirements.
SECTION 3
TEST DATA
**FMVSS No. 138 – TEST DATA SUMMARY**

TEST DATES: April 27 – May 6, 2010  
LAB: U.S. DOT San Angelo Test Facility

VIN: 1YVHZ8BH3A5M11305  
VEHICLE NHTSA NUMBER: CA5402

CERTIFICATION LABEL BUILD DATE: 10/2009

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LOW TIRE PRESSURE WARNING TELLTALE</strong></td>
<td></td>
</tr>
<tr>
<td>S138: S4.3.1 (a), (b); S4.3.3 (a), (b)</td>
<td></td>
</tr>
<tr>
<td>Mounting</td>
<td>PASS</td>
</tr>
<tr>
<td>Symbol and color</td>
<td>PASS</td>
</tr>
<tr>
<td>Check of lamp function</td>
<td>PASS</td>
</tr>
<tr>
<td><strong>MALFUNCTION TELLTALE</strong></td>
<td></td>
</tr>
<tr>
<td>S138: S4.4 (b) or (c)</td>
<td></td>
</tr>
<tr>
<td>Mounting</td>
<td>PASS</td>
</tr>
<tr>
<td>Symbol and color</td>
<td>PASS</td>
</tr>
<tr>
<td>Check of lamp function</td>
<td>PASS</td>
</tr>
<tr>
<td><strong>LOW TIRE PRESSURE WARNING - OPERATIONAL PERFORMANCE</strong></td>
<td></td>
</tr>
<tr>
<td>S138: S4.2, S4.3.1 (c), S4.3.2</td>
<td></td>
</tr>
<tr>
<td>Telltale illumination</td>
<td>PASS</td>
</tr>
<tr>
<td><strong>MALFUNCTION INDICATOR – OPERATIONAL PERFORMANCE</strong></td>
<td></td>
</tr>
<tr>
<td>S138: S4.4 (a)</td>
<td></td>
</tr>
<tr>
<td>Telltale illumination</td>
<td>PASS</td>
</tr>
<tr>
<td><strong>TPMS WRITTEN INSTRUCTIONS</strong></td>
<td></td>
</tr>
<tr>
<td>S138: S4.5</td>
<td></td>
</tr>
<tr>
<td>Image of telltales</td>
<td>PASS</td>
</tr>
<tr>
<td>Verbatim statements</td>
<td>PASS</td>
</tr>
</tbody>
</table>

**REMARKS:** None
DATA SHEET 1 (Sheet 1 of 3)
TEST PREPARATION INFORMATION

TEST DATE: April 27, 2010
LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: CA5402
VIN: 1YVHZ8BH3A5M11305

CERTIFICATION LABEL BUILD DATE: 10/2009
ENGINE: 2.5 liter, 4 cylinder

MY/MAKE/MODEL/BODY STYLE: 2010 Mazda 6 four-door passenger car

TIRE CONDITIONING:
( X ) Tires used more than 100 km. Actual odometer reading: 192 km (119 mi)

VEHICLE ALIGNMENT AND WHEEL BALANCING:
Alignment checked: ( ) Front ( ) Rear ( X ) COTR waived
Wheels balanced: ( ) Front ( ) Rear ( X ) COTR waived

TPMS IDENTIFICATION:
TPMS MAKE/MODEL: Sensor: Continental Automotive; receiver: no independent ECU unit – system uses keyless receiver and control module.
Source: Manufacturer supplied information

TPMS TYPE: ( X ) Direct ( ) Indirect ( ) Other

Does TPMS require execution of a learning/calibration driving phase? ( )YES ( X )NO
Source: Manufacturer supplied information

Does TPMS have a manual reset control? ( )YES ( X )NO

TPMS MALFUNCTION INDICATOR TYPE:
( ) None ( ) Dedicated Telltale ( X ) Combination low tire pressure/malfunction telltale
DATA SHEET 1 (Sheet 2 of 3)
TEST PREPARATION INFORMATION

DESIGNATED TIRE SIZE(S) FROM VEHICLE LABELING AND OWNER’S MANUAL:

<table>
<thead>
<tr>
<th>Axle</th>
<th>Tire Size</th>
<th>Recommended Cold Inflation Pressure</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>P205/65R16</td>
<td>220 kPa (32 psi)</td>
<td>Vehicle placard</td>
</tr>
<tr>
<td>Rear</td>
<td>P205/65R16</td>
<td>220 kPa (32 psi)</td>
<td>Vehicle placard</td>
</tr>
</tbody>
</table>

INSTALLED TIRE DATA
Diagram - PASSENGER CAR Tire Labeling

Front and Rear Axles

Tire Size and Load Index / Speed Rating: __P205/65R16 94H__
Manufacturer/Tire Name: __Michelin Energy MXV4 S8__
Sidewall Max Load Rating: __670 kg (1,477 lbs)__
Max Inflation Pressure: __300 kPa (44 psi)__
Sidewall Construction (number of plies and ply material): __1 polyester__
Tread Construction (number of plies and ply material): __1 polyester, 1 polyamide, 2 steel__

Do all installed tires have the same sidewall information? (X) YES  ( ) NO
Are all installed tires the same as designated by the vehicle manufacturer on the vehicle placard? (X) YES  ( ) NO
## Worksheet for Determining FMVSS No. 138 Telltale Warning Activation Pressure for Tires Installed on Vehicle

<table>
<thead>
<tr>
<th>Part</th>
<th>Front Axle</th>
<th>Rear Axle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(A)</strong> Recommended Inflation Pressure x .75</td>
<td>(220 \text{ kPa} \times 0.75 = 165 \text{ kPa})</td>
<td>(220 \text{ kPa} \times 0.75 = 165 \text{ kPa})</td>
</tr>
<tr>
<td><strong>(B)</strong> Information from FMVSS 138 Table 1 below, Tire types are:</td>
<td>((X)) P-metric-Standard load ((X)) P-metric-Extra Load Load Range ( ) C, ( ) D, or ( ) E</td>
<td>((X)) P-metric-Standard load ((X)) P-metric-Extra Load ((X)) P-metric-Standard load ((X)) P-metric-Extra Load Load Range ( ) C, ( ) D, or ( ) E</td>
</tr>
<tr>
<td>Inflation pressure</td>
<td>((X)) Maximum or ( ) Rated (300) kPa (44 psi) (140) kPa (20 psi)</td>
<td>((X)) Maximum or ( ) Rated (300) kPa (44 psi) (140) kPa (20 psi)</td>
</tr>
<tr>
<td>Minimum activation pressures from Table 1</td>
<td>(165) kPa (24 psi)</td>
<td>(165) kPa (24 psi)</td>
</tr>
<tr>
<td><strong>(C)</strong> Telltale Warning Activation Pressure is the higher of Part (A) or (B)</td>
<td>(158) kPa (23 psi)</td>
<td>(158) kPa (23 psi)</td>
</tr>
<tr>
<td><strong>(D)</strong> Pressure at which to deflate tire(s) = (C) – 7 kPa</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### FMVSS 138 Table 1 - Low Tire Pressure Warning Telltale - Minimum Activation Pressure

<table>
<thead>
<tr>
<th>Tire Type</th>
<th>Maximum or Rated Inflation Pressure</th>
<th>Minimum Activation Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(kPa)</td>
<td>(psi)</td>
</tr>
<tr>
<td>P-metric -- Standard Load</td>
<td>240, 300, or 350</td>
<td>35, 44, or 51</td>
</tr>
<tr>
<td>P-metric - Extra Load</td>
<td>280 or 340</td>
<td>41 or 49</td>
</tr>
<tr>
<td>Load Range C</td>
<td>350</td>
<td>51</td>
</tr>
<tr>
<td>Load Range D</td>
<td>450</td>
<td>65</td>
</tr>
<tr>
<td>Load Range E</td>
<td>550</td>
<td>80</td>
</tr>
</tbody>
</table>

**REMARKS:** None

**RECORDED BY:** Todd P. Groghan  **DATE:** April 27, 2010

**APPROVED BY:** Kenneth H. Yates
DATA SHEET 2 (Sheet 1 of 2)
LOW TIRE PRESSURE WARNING AND MALFUNCTION TELLTALE

TEST DATE: April 27, 2010 LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: CA5402

TPMS Low Tire Pressure Warning Telltale
Telltale is mounted inside the occupant compartment in front of and in clear view of the driver?
( X )YES ( )NO (fail)

TPMS Low Tire Pressure Warning Telltale Location: In center of tachometer in instrument cluster

Identify Telltale Symbol Used (check box above figure).

Note any words or additional symbols used: None

Telltale is part of a reconfigurable display? ( )YES ( X )NO

TPMS Malfunction Telltale
( ) None ( ) Dedicated stand-alone ( X ) Combined with low tire pressure telltale
Check Telltale Lamp Functions:

Ignition locking system position when telltale illuminates:

- [ ] OFF/LOCK
- [ ] Between OFF/LOCK and ON/RUN
- [x] ON/RUN
- [ ] Between ON/RUN and START

Is the telltale yellow in color? (X) YES ( ) NO (fail)

Time telltale remains illuminated 3 seconds.

Starter Interlocks:

Does vehicle have any starter, transmission or other interlocks that affect operation of the telltale lamp check function? ( ) YES (X) NO

Low Tire Pressure Warning and Malfunction Telltales (PASS/FAIL)  PASS

REMARKS: None

RECORDED BY: Todd P. Groghan
DATE: April 27, 2010

APPROVED BY: Kenneth H. Yates
TEST DATE: April 27, 2010       LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: CA5402

Time: Start: 10:32 am       End: 12:31 pm

Ambient Temperature: Start: 19.5°C (67.1°F)       End: 21.5°C (70.7°F)

Odometer Reading: Start: 192 km (119 mi)

Fuel Level: Start: Full

Weather Conditions: Sunny, calm

Time vehicle remained with engine off and tires shielded from direct sunlight (1 hour minimum): overnight

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test cold measurements after ambient soak:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>20.8°C (69.4°F)</td>
<td>20.8°C (69.4°F)</td>
<td>21.0°C (69.8°F)</td>
<td>21.4°C (70.5°F)</td>
</tr>
</tbody>
</table>
VEHICLE WEIGHT:

Vehicle Ratings from Certification Label:

- GVWR: 1,969 kg (4,340 lbs)
- GAWR (front): 1,037 kg (2,286 lbs)
- GAWR (rear): 935 kg (2,062 lbs)

Vehicle Capacity Weight:

Vehicle Capacity Weight: 385 kg (850 lbs)

Measured Unloaded Vehicle Weight:

- LF: 441 kg (973 lbs)
- LR: 293 kg (645 lbs)
- RF: 436 kg (961 lbs)
- RR: 303 kg (668 lbs)
- Front Axle: 877 kg (1,934 lbs)
- Rear Axle: 596 kg (1,313 lbs)

Total Vehicle 1,473 kg (3,247 lbs)

Measured Test Weight: (X) LLVW (+50, -0 kg) ( ) UVW + VCW ( ) GVWR (+0, -50 kg)

- LF: 489 kg (1,077 lbs)
- LR: 338 kg (744 lbs)
- RF: 482 kg (1,063 lbs)
- RR: 344 kg (759 lbs)
- Front Axle: 971 kg (2,140 lbs) (≤ GAWR)
- Rear Axle: 682 kg (1,503 lbs) (≤ GAWR)

Total Vehicle 1,653 kg (3,643 lbs) (not greater than GVWR)

Note: For scenarios A through C, this Total Vehicle Weight measures the vehicle loaded to Lightly Loaded Vehicle Weight (LLVW), 180 kg (396 lbs) of driver, passenger, ballast, and test equipment.

RECORDED BY: Todd P. Groghan
DATE: April 27, 2010
APPROVED BY: Kenneth H. Yates
DATA SHEET 3 (Sheet 3 of 22)
TPMS OPERATIONAL PERFORMANCE

SCENARIO A – Left Rear Tire Deflation at LLVW

TEST DATE: April 28, 2010  LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: CA5402

Note: See Data Sheet 3 (Sheet 2 of 22) for Test Weight.

TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES BEFORE CALIBRATION PHASE:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After loading vehicle to LLVW, positioning vehicle at selected test start point, and vehicle cool down period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature: 14.5°C (58.1°F)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period: overnight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure 220.0 kPa (31.9 psi)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tire Sidewall Temp 15.2°C (59.4°F)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp 17.2°C (63.0°F)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SYSTEM CALIBRATION/LEARNING PHASE:


Trip Odometer Reading: Start: 0.6 km (0.4 mi)  End: 32.2 km (20.0 mi)

Ambient Temperature: Start: 14.5°C (58.1°F)  End: 16.4°C (61.5°F)

Roadway Temperature: Start: 17.6°C (63.7°F)  End: 19.6°C (67.3°F)

Driving in first direction:

Goodfellow Air Force
Starting point: Base (GAFB) north gate  Direction: see chart, page 60

10:09 minutes (stopwatch time)  15.6 km (9.7 mi) distance

Driving in opposite direction:

Starting point: US 87 crossover overpass  Direction: see chart, page 60

10:25 minutes (stopwatch time)  15.9 km (9.9 mi) distance

Max speed: 100.4 km/h (62.4 mph)

Total Driving Time: 20:35 minutes (VBox time)
DATA SHEET 3 (Sheet 4 of 22)
TPMS OPERATIONAL PERFORMANCE
SCENARIO A – Left Rear Tire Deflation at LLVW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediately, after vehicle is stopped, engine off:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>241.9 kPa (35.1 psi)</td>
<td>239.1 kPa (34.7 psi)</td>
<td>239.7 kPa (34.8 psi)</td>
<td>241.5 kPa (35.0 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>32.2°C (90.0°F)</td>
<td>28.4°C (83.1°F)</td>
<td>25.8°C (78.4°F)</td>
<td>27.4°C (81.3°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>16.8°C (62.2°F)</td>
<td>16.6°C (61.9°F)</td>
<td>17.2°C (63.0°F)</td>
<td>16.8°C (62.2°F)</td>
</tr>
</tbody>
</table>

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicate Location of Tire(s) Deflated:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( )LF ( X )LR ( )RR ( )RF Inflation Pressure</td>
<td></td>
<td>158.0 kPa (22.9 psi)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop

Telltale illuminated in 6 seconds. Driving was not necessary.

TEST RESULTS

TELLTALE ILLUMINATES WITHIN 20 MINUTES:  ( X )YES ( )NO (fail)

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?  ( X )YES ( )NO (fail)

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?  ( X )YES ( )NO (fail)
DATA SHEET 3 (Sheet 5 of 22)
TPMS OPERATIONAL PERFORMANCE
SCENARIO A – Left Rear Tire Deflation at LLVW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELTTALE ILLUMINATION:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After vehicle cool down period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>19.3°C (66.7°F)</td>
<td>Vehicle cool down period:</td>
<td>60</td>
<td>minutes</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>229.2 kPa (33.2 psi)</td>
<td>151.0 kPa (21.9 psi)</td>
<td>226.6 kPa (32.9 psi)</td>
<td>229.4 kPa (33.3 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>22.2°C (72.0°F)</td>
<td>20.6°C (69.1°F)</td>
<td>20.8°C (69.4°F)</td>
<td>23.0°C (73.4°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>18.4°C (65.1°F)</td>
<td>18.2°C (64.8°F)</td>
<td>18.6°C (65.5°F)</td>
<td>18.6°C (65.5°F)</td>
</tr>
</tbody>
</table>

After the cool down period of a minimum of one hour, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?  
( X )YES (   )NO (fail)

TELLTALTE EXTINGUISHMENT:

RE-ADJUSTED TIRE INFLATION PRESSURES:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After illumination verification:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-adjusted Inflation Pressure:</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
</tr>
</tbody>
</table>

Is it necessary to drive the vehicle to extinguish the telltale?  
( X )YES (   )NO

Starting point:  San Angelo Test Facility shop

1:20 minutes (stopwatch time – non-cumulative)  0.2 km (0.1 mi) distance

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)  PASS
Left rear tire was deflated at LLVW.

REMARKS:  None

RECORDED BY:  Todd P. Groghan  DATE:  April 28, 2010
APPROVED BY:  Kenneth H. Yates
DATA SHEET 3 (Sheet 6 of 22)
TPMS OPERATIONAL PERFORMANCE
SCENARIO B – Right Rear, Right Front Tire Deflation at LLVW

TEST DATE: April 28, 2010       LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: CA5402

Note: See Data Sheet 3 (Sheet 2 of 22) for Test Weight.

TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES BEFORE CALIBRATION PHASE:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After loading vehicle to LLVW, positioning vehicle at selected test start point, and vehicle cool down period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature: 22.2°C (72.0°F)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period: 62 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>220.0 kPa (31.9 psi)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.8°C (73.0°F)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.6°C (67.3°F)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SYSTEM CALIBRATION/LEARNING PHASE:

Time: Start: 16:42:59 UTC End: 17:08:26 UTC
Trip Odometer Reading: Start: 0.6 km (0.4 mi) End: 32.3 km (20.1 mi)
Ambient Temperature: Start: 22.2°C (72.0°F) End: 23.5°C (74.3°F)
Roadway Temperature: Start: 35.4°C (95.7°F) End: 36.2°C (97.2°F)

Driving in first direction:
Starting point: GAFB north gate    Direction: see chart, page 61
10:11 minutes (stopwatch time) 15.8 km (9.8 mi) distance

Driving in opposite direction:
Starting point: US 87 crossover overpass    Direction: see chart, page 61
10:36 minutes (stopwatch time) 15.9 km (9.9 mi) distance

Max speed: 99.8 km/h (62.0 mph)
Total Driving Time: 20:46 minutes (VBox time)
DATA SHEET 3 (Sheet 7 of 22)
TPMS OPERATIONAL PERFORMANCE
SCENARIO B – Right Rear, Right Front Tire Deflation at LLVW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediately, after vehicle is stopped,</td>
<td>240.1 kPa</td>
<td>238.7 kPa</td>
<td>239.9 kPa</td>
<td>240.3 kPa</td>
</tr>
<tr>
<td>engine off:</td>
<td>(34.8 psi)</td>
<td>(34.6 psi)</td>
<td>(34.8 psi)</td>
<td>(34.9 psi)</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>158.0 kPa</td>
<td>158.0 kPa</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(22.9 psi)</td>
<td>(22.9 psi)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>39.0°C</td>
<td>35.4°C</td>
<td>34.2°C</td>
<td>35.8°C</td>
</tr>
<tr>
<td></td>
<td>(102.2°F)</td>
<td>(95.7°F)</td>
<td>(93.6°F)</td>
<td>(96.4°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>19.6°C</td>
<td>19.6°C</td>
<td>19.6°C</td>
<td>19.8°C</td>
</tr>
<tr>
<td></td>
<td>(67.3°F)</td>
<td>(67.3°F)</td>
<td>(67.3°F)</td>
<td>(67.6°F)</td>
</tr>
</tbody>
</table>

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicate Location of Tire(s) Deflated:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( x )LF ( x )LR ( x )RR ( x )RF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>158.0 kPa</td>
<td>158.0 kPa</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(22.9 psi)</td>
<td>(22.9 psi)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop

Telltale illuminated in 35 seconds. Driving was not necessary.

TEST RESULTS

TELLTALE ILLUMINATES WITHIN 20 MINUTES: ( x )YES ( )NO (fail)

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? ( x )YES ( )NO (fail)

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? ( x )YES ( )NO (fail)
DATA SHEET 3 (Sheet 8 of 22)
TPMS OPERATIONAL PERFORMANCE
SCENARIO B – Right Rear, Right Front Tire Deflation at LLVW

TIRES INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After vehicle cool down period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>25.4°C (77.7°F)</td>
<td>Vehicle cool down period:</td>
<td>60 minutes</td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>225.6 kPa (32.7 psi)</td>
<td>224.8 kPa (32.6 psi)</td>
<td>148.4 kPa (21.5 psi)</td>
<td>149.6 kPa (21.7 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>27.6°C (81.7°F)</td>
<td>26.2°C (79.2°F)</td>
<td>26.4°C (79.5°F)</td>
<td>29.2°C (84.6°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>21.4°C (70.5°F)</td>
<td>21.4°C (70.5°F)</td>
<td>21.6°C (70.9°F)</td>
<td>21.4°C (70.5°F)</td>
</tr>
</tbody>
</table>

After the cool down period of a minimum of one hour, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ( )NO (fail)

TELLTALE EXTINGUISHMENT:
RE-ADJUSTED TIRE INFLATION PRESSURES:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After illumination verification:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-adjusted Inflation Pressure:</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
</tr>
</tbody>
</table>

Is it necessary to drive the vehicle to extinguish the telltale? (X)YES ( )NO

Starting point: San Angelo Test Facility shop

1:19 minutes (stopwatch time – non-cumulative) 0.2 km (0.1 mi) distance

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL) PASS
Right rear and right front tires were deflated at LLVW.

REMARKS: None

RECORDED BY: Todd P. Groghan DATE: April 28, 2010
APPROVED BY: Kenneth H. Yates
DATA SHEET 3 (Sheet 9 of 22)
TPMS OPERATIONAL PERFORMANCE
SCENARIO C – Left Front, Left Rear, Right Rear, and Right Front Tire Deflation at LLVW

TEST DATE: April 29, 2010  LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: CA5402

Note: See Data Sheet 3 (Sheet 2 of 22) for Test Weight.

TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES BEFORE CALIBRATION PHASE:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After loading vehicle to LLVW, positioning vehicle at selected test start point, and vehicle cool down period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature: 18.3°C (64.9°F)</td>
<td>Vehicle cool down period: overnight minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>18.4°C (65.1°F)</td>
<td>18.6°C (65.5°F)</td>
<td>18.6°C (65.5°F)</td>
<td>18.8°C (65.8°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>19.8°C (67.6°F)</td>
<td>19.6°C (67.3°F)</td>
<td>19.8°C (67.6°F)</td>
<td>19.8°C (67.6°F)</td>
</tr>
</tbody>
</table>

SYSTEM CALIBRATION/LEARNING PHASE:

Trip Odometer Reading: Start: 60.2 km (37.4 mi)  End: 91.9 km (57.1 mi)
Ambient Temperature: Start: 18.3°C (64.9°F)  End: 18.3°C (64.9°F)
Roadway Temperature: Start: 18.8°C (65.8°F)  End: 20.2°C (68.4°F)

Driving in first direction:
Starting point: GAFB north gate  Direction: see chart, page 62
10:15 minutes (stopwatch time)  15.6 km (9.7 mi) distance

Driving in opposite direction:
Starting point: US 87 crossover overpass  Direction: see chart, page 62
10:26 minutes (stopwatch time)  16.1 km (10.0 mi) distance

Max speed: 101.6 km/h (63.1 mph)
Total Driving Time: 20:43 minutes (VBox time)
SCENARIO C – Left Front, Left Rear, Right Rear, and Right Front Tire Deflation at LLVW

**TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:**

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediately, after vehicle is stopped, engine off: Inflation Pressure</td>
<td>238.0 kPa (34.5 psi)</td>
<td>235.8 kPa (34.2 psi)</td>
<td>237.1 kPa (34.4 psi)</td>
<td>237.6 kPa (34.5 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>31.8°C (89.2°F)</td>
<td>28.2°C (82.8°F)</td>
<td>28.2°C (82.8°F)</td>
<td>29.8°C (85.6°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>19.4°C (66.9°F)</td>
<td>19.8°C (67.6°F)</td>
<td>19.8°C (67.6°F)</td>
<td>20.0°C (68.0°F)</td>
</tr>
</tbody>
</table>

**SYSTEM DETECTION PHASE:**

**LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):**

| Indicate Location of Tire(s) Deflated: |
| LF (X) | LR (X) | RR (X) | RF (X) |
| Inflation Pressure | 158.0 kPa (22.9 psi) | 158.0 kPa (22.9 psi) | 158.0 kPa (22.9 psi) | 158.0 kPa (22.9 psi) |

**TELLTALE ILLUMINATION:**

Starting point: San Angelo Test Facility shop

Telltale illuminated in 14 seconds. Driving was not necessary.

**TEST RESULTS**

**TELLTALE ILLUMINATES WITHIN 20 MINUTES:** (X) YES ( ) NO (fail)

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X) YES ( ) NO (fail)

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X) YES ( ) NO (fail)
TPMS OPERATIONAL PERFORMANCE
SCENARIO C – Left Front, Left Rear, Right Rear, and Right Front Tire Deflation at LLVW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLETALE ILLUMINATION:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After vehicle cool down period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>21.3°C (70.3°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period:</td>
<td>77 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>150.3 kPa (21.8 psi)</td>
<td>151.5 kPa (22.0 psi)</td>
<td>151.2 kPa (21.9 psi)</td>
<td>151.7 kPa (22.0 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>22.6°C (72.7°F)</td>
<td>22.0°C (71.6°F)</td>
<td>22.2°C (72.0°F)</td>
<td>23.6°C (74.5°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>21.0°C (69.8°F)</td>
<td>21.0°C (69.8°F)</td>
<td>20.8°C (69.4°F)</td>
<td>21.2°C (70.4°F)</td>
</tr>
</tbody>
</table>

After the cool down period of a minimum of one hour, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?

( X )YES   (   )NO (fail)

TELLTALE EXTINGUISHMENT:
RE-ADJUSTED TIRE INFLATION PRESSURES:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After illumination verification:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-adjusted Inflation Pressure:</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
</tr>
</tbody>
</table>

Is it necessary to drive the vehicle to extinguish the telltale?   ( X )YES   (   )NO

Starting point: San Angelo Test Facility shop

1:02 minutes (stopwatch time – non-cumulative)  0.2 km (0.1 mi) distance

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)  PASS
Left front, left rear, right rear, and right front tires were deflated at LLVW.

REMARKS: None

RECORDED BY: Todd P. Groghan  DATE: April 29, 2010
APPROVED BY: Kenneth H. Yates
DATA SHEET 3 (Sheet 12 of 22)
TPMS OPERATIONAL PERFORMANCE

TEST DATE: ___April 30, 2010____  LAB: ___U.S. DOT San Angelo Test Facility____

VEHICLE NHTSA NUMBER: ___CA5402____

Time: Start: ___6:55 am____  End: ___8:58 am____
Ambient Temperature: Start: ___21.7°C (71.1°F)____  End: ___21.7°C (71.1°F)____
Odometer Reading: Start: ___319 km (198 mi)____
Fuel Level: Start: ___Full____
Weather Conditions: ___Sunny____

Time vehicle remained with engine off and tires shielded from direct sunlight
(1 hour minimum): ___overnight____

PRE-TEST TIRE INFLATION Pressures AND TIRE/SURFACE TEMPERATURES:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test cold measurements after ambient soak:</td>
<td>220.0 kPa</td>
<td>220.0 kPa</td>
<td>220.0 kPa</td>
<td>220.0 kPa</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>(31.9 psi)</td>
<td>(31.9 psi)</td>
<td>(31.9 psi)</td>
<td>(31.9 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>22.4°C</td>
<td>22.2°C</td>
<td>22.4°C</td>
<td>22.2°C</td>
</tr>
<tr>
<td></td>
<td>(72.3°F)</td>
<td>(72.0°F)</td>
<td>(72.3°F)</td>
<td>(72.0°F)</td>
</tr>
</tbody>
</table>
VEHICLE WEIGHT:

Vehicle Ratings from Certification Label:

GVWR: 1,969 kg (4,340 lbs)
GAWR (front): 1,037 kg (2,286 lbs)
GAWR (rear): 935 kg (2,062 lbs)

Vehicle Capacity Weight:

Vehicle Capacity Weight 385 kg (850 lbs)

Measured Unloaded Vehicle Weight:

<table>
<thead>
<tr>
<th></th>
<th>LF</th>
<th>LR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>456 kg (1,005 lbs)</td>
<td>280 kg (618 lbs)</td>
</tr>
<tr>
<td></td>
<td>RF</td>
<td>RR</td>
</tr>
<tr>
<td>Weight</td>
<td>421 kg (928 lbs)</td>
<td>316 kg (697 lbs)</td>
</tr>
<tr>
<td>Front Axle</td>
<td>877 kg (1,933 lbs)</td>
<td>596 kg (1,315 lbs)</td>
</tr>
<tr>
<td>Total Vehicle</td>
<td>1,473 kg (3,248 lbs)</td>
<td></td>
</tr>
</tbody>
</table>

Measured Test Weight: ( ) LLVW (+50, -0 kg) ( X ) UVW + VCW ( ) GVWR (+0, -50 kg)

<table>
<thead>
<tr>
<th></th>
<th>LF</th>
<th>LR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>503 kg (1,109 lbs)</td>
<td>427 kg (942 lbs)</td>
</tr>
<tr>
<td></td>
<td>RF</td>
<td>RR</td>
</tr>
<tr>
<td>Weight</td>
<td>494 kg (1,090 lbs)</td>
<td>434 kg (957 lbs)</td>
</tr>
<tr>
<td>Front Axle</td>
<td>997 kg (2,199 lbs) ( ≤ GAWR)</td>
<td>861 kg (1,899 lbs) ( ≤ GAWR)</td>
</tr>
<tr>
<td>Total Vehicle</td>
<td>1,858 kg (4,098 lbs) (not greater than GVWR)</td>
<td></td>
</tr>
</tbody>
</table>

Note: For scenarios D through F, this Total Vehicle Weight measures the vehicle loaded to Unloaded Vehicle Weight (UVW) and Vehicle Capacity Weight (VCW), 385 kg (850 lbs) of driver, passenger, test equipment, and ballast.

RECORDED BY: Todd P. Groghan DATE: April 30, 2010
APPROVED BY: Kenneth H. Yates
DATA SHEET 3 (Sheet 14 of 22)
TPMS OPERATIONAL PERFORMANCE
SCENARIO D – Right Front Tire Deflation at UVW + VCW

TEST DATE: April 30, 2010 LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: CA5402

Note: See Data Sheet 3 (Sheet 13 of 22) for Test Weight.

TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES
BEFORE CALIBRATION PHASE:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After loading vehicle to UVW + VCW, positioning vehicle at selected test start point, and vehicle cool down period:</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>20.8°C (69.4°F)</td>
<td>Vehicle cool down period:</td>
<td>overnight</td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>21.8°C (71.2°F)</td>
<td>21.6°C (70.9°F)</td>
<td>21.6°C (70.9°F)</td>
<td>21.4°C (70.5°F)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>22.4°C (72.3°F)</td>
<td>22.6°C (72.7°F)</td>
<td>22.8°C (73.0°F)</td>
<td>21.8°C (71.2°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>22.4°C (72.3°F)</td>
<td>22.6°C (72.7°F)</td>
<td>22.8°C (73.0°F)</td>
<td>21.8°C (71.2°F)</td>
</tr>
</tbody>
</table>

SYSTEM CALIBRATION/LEARNING PHASE:

Trip Odometer Reading: Start: 94.3 km (58.6 mi) End: 126.0 km (78.3 mi)
Ambient Temperature: Start: 20.8°C (69.4°F) End: 21.8°C (71.2°F)
Roadway Temperature: Start: 26.8°C (80.2°F) End: 28.4°C (83.1°F)

Driving in first direction:
Starting point: GAFB north gate Direction: see chart, page 63
10:10 minutes (stopwatch time) 15.6 km (9.7 mi) distance

Driving in opposite direction:
Starting point: US 87 crossover overpass Direction: see chart, page 63
10:28 minutes (stopwatch time) 16.1 km (10.0 mi) distance

Max speed: 99.8 km/h (62.0 mph)
Total Driving Time: 20:38 minutes (VBox time)
DATA SHEET 3 (Sheet 15 of 22)
TPMS OPERATIONAL PERFORMANCE
SCENARIO D – Right Front Tire Deflation at UVW + VCW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediately, after vehicle is stopped, engine off:</td>
<td>239.1 kPa</td>
<td>239.1 kPa</td>
<td>239.4 kPa</td>
<td>239.6 kPa</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>(34.7 psi)</td>
<td>(34.7 psi)</td>
<td>(34.7 psi)</td>
<td>(34.8 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>39.0°C</td>
<td>36.8°C</td>
<td>34.4°C</td>
<td>35.0°C</td>
</tr>
<tr>
<td></td>
<td>(102.2°F)</td>
<td>(98.2°F)</td>
<td>(93.9°F)</td>
<td>(95.0°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>22.4°C</td>
<td>22.6°C</td>
<td>22.2°C</td>
<td>22.4°C</td>
</tr>
<tr>
<td></td>
<td>(72.3°F)</td>
<td>(72.7°F)</td>
<td>(72.0°F)</td>
<td>(72.3°F)</td>
</tr>
</tbody>
</table>

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicate Location of Tire(s) Deflated:</td>
<td>158.0 kPa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(22.9 psi)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop

Telltale illuminated in 7 seconds. Driving was not necessary.

TEST RESULTS

TELLTALE ILLUMINATES WITHIN 20 MINUTES: ( X )YES (   )NO (fail)

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? ( X )YES (   )NO (fail)

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? ( X )YES (   )NO (fail)
### DATA SHEET 3 (Sheet 16 of 22)
### TPMS OPERATIONAL PERFORMANCE
### SCENARIO D – Right Front Tire Deflation at UVW + VCW

#### TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELTTALE ILLUMINATION:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After vehicle cool down period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>24.4°C (75.9°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period:</td>
<td>74 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>226.7 kPa (32.9 psi)</td>
<td>224.8 kPa (32.6 psi)</td>
<td>225.1 kPa (32.6 psi)</td>
<td>150.4 kPa (21.8 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>29.4°C (84.9°F)</td>
<td>27.2°C (81.0°F)</td>
<td>26.2°C (79.2°F)</td>
<td>28.0°C (82.4°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>23.6°C (74.5°F)</td>
<td>23.6°C (74.5°F)</td>
<td>23.4°C (74.1°F)</td>
<td>23.2°C (73.8°F)</td>
</tr>
</tbody>
</table>

After the cool down period of a minimum of one hour, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? 
(X) YES  ( ) NO (fail)

#### TELTTALE EXTINGUISHMENT:
#### RE-ADJUSTED TIRE INFLATION PRESSURES:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After illumination verification:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-adjusted Inflation Pressure:</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
</tr>
</tbody>
</table>

Is it necessary to drive the vehicle to extinguish the telltale? 
(X) YES  ( ) NO

Starting point:  San Angelo Test Facility shop

0:53 minutes (stopwatch time – non-cumulative)  0.2 km (0.1 mi) distance

#### TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)  
**PASS**

Right front tire was deflated at UVW + VCW.

REMARKS:  None

RECORDED BY:  Todd P. Groghan  DATE:  April 30, 2010

APPROVED BY:  Kenneth H. Yates
TEST DATE: April 30, 2010 LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: CA5402

Note: See Data Sheet 3 (Sheet 13 of 22) for Test Weight.

### TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES BEFORE CALIBRATION PHASE:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After loading vehicle to UVW + VCW, positioning vehicle at selected test start point, and vehicle cool down period:</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>25.4°C (77.7°F)</td>
<td>Vehicle cool down period:</td>
<td>97 minutes</td>
<td></td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>27.2°C (81.0°F)</td>
<td>25.8°C (78.4°F)</td>
<td>25.8°C (78.4°F)</td>
<td>26.8°C (80.2°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>24.0°C (75.2°F)</td>
<td>24.2°C (75.6°F)</td>
<td>24.0°C (75.2°F)</td>
<td>23.8°C (74.8°F)</td>
</tr>
</tbody>
</table>

### SYSTEM CALIBRATION/LEARNING PHASE:

<table>
<thead>
<tr>
<th>Time:</th>
<th>Start: 18:08:58 UTC</th>
<th>End: 18:34:02 UTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trip Odometer Reading:</td>
<td>Start: 127.8 km (79.4 mi)</td>
<td>End: 159.5 km (99.1 mi)</td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>Start: 25.4°C (77.7°F)</td>
<td>End: 26.3°C (79.3°F)</td>
</tr>
<tr>
<td>Roadway Temperature:</td>
<td>Start: 45.2°C (113.4°F)</td>
<td>End: 46.0°C (114.8°F)</td>
</tr>
</tbody>
</table>

Driving in first direction:
- Starting point: GAFB north gate
- Direction: see chart, page 64
- 10:09 minutes (stopwatch time) 15.6 km (9.7 mi) distance

Driving in opposite direction:
- Starting point: US 87 crossover overpass
- Direction: see chart, page 64
- 10:25 minutes (stopwatch time) 16.1 km (10.0 mi) distance

Max speed: 104.8 km/h (65.1 mph)
Total Driving Time: 20:32 minutes (VBox time)
TPMS OPERATIONAL PERFORMANCE

SCENARIO E – Left Rear, Right Rear Tire Deflation at UVW + VCW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>238.9 kPa (34.6 psi)</td>
<td>241.0 kPa (35.0 psi)</td>
<td>242.7 kPa (35.2 psi)</td>
<td>239.6 kPa (34.8 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>42.6°C (108.7°F)</td>
<td>40.4°C (104.7°F)</td>
<td>41.0°C (105.8°F)</td>
<td>41.2°C (106.2°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>24.8°C (76.6°F)</td>
<td>24.8°C (76.6°F)</td>
<td>25.0°C (77.0°F)</td>
<td>24.6°C (76.3°F)</td>
</tr>
</tbody>
</table>

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicate Location of Tire(s) Deflated: ( )LF (X)LR (X)RR ( )RF</td>
<td>158.0 kPa (22.9 psi)</td>
<td>158.0 kPa (22.9 psi)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop

Telltale illuminated in 37 seconds. Driving was not necessary.

TEST RESULTS

TELLTALE ILLUMINATES WITHIN 20 MINUTES: (X) YES ( ) NO (fail)

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X) YES ( ) NO (fail)

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X) YES ( ) NO (fail)
SCENARIO E – Left Rear, Right Rear Tire Deflation at UVW + VCW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After vehicle cool down period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>26.4°C (79.5°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period:</td>
<td>61 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>224.2 kPa (32.5 psi)</td>
<td>148.2 kPa (21.5 psi)</td>
<td>147.0 kPa (21.3 psi)</td>
<td>225.1 kPa (32.6 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>31.6°C (88.9°F)</td>
<td>30.8°C (87.4°F)</td>
<td>29.0°C (84.2°F)</td>
<td>30.8°C (87.4°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>25.2°C (77.4°F)</td>
<td>25.2°C (77.4°F)</td>
<td>25.4°C (77.7°F)</td>
<td>24.8°C (76.6°F)</td>
</tr>
</tbody>
</table>

After the cool down period of a minimum of one hour, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?  
( X )YES (   )NO (fail)

TELLTALE EXTINGUISHMENT:  
RE-ADJUSTED TIRE INFLATION PRESSURES:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After illumination verification:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-adjusted Inflation Pressure:</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
</tr>
</tbody>
</table>

Is it necessary to drive the vehicle to extinguish the telltale?  
( X )YES (   )NO

Starting point:  San Angelo Test Facility shop

0:43 minutes (stopwatch time – non-cumulative)  0.2 km (0.1 mi) distance

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)  
PASS

Left rear and right rear tires were deflated at UVW + VCW.

REMARKS:  None

RECORDED BY:  Todd P. Groghan  DATE:  April 30, 2010

APPROVED BY:  Kenneth H. Yates
DATA SHEET 3 (Sheet 20 of 22)
TPMS OPERATIONAL PERFORMANCE

SCENARIO F – Left Front, Left Rear, and Right Rear Tire Deflation at UVW + VCW

TEST DATE: May 3, 2010 LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: CA5402

Note: See Data Sheet 3 (Sheet 13 of 22) for Test Weight.

TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES BEFORE CALIBRATION PHASE:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After loading vehicle to UVW + VCW, positioning vehicle at selected test start point, and vehicle cool down period:</td>
<td>Inflation Pressure</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
</tr>
<tr>
<td></td>
<td>Tire Sidewall Temp</td>
<td>17.0°C (62.6°F)</td>
<td>17.0°C (62.6°F)</td>
<td>16.8°C (62.2°F)</td>
</tr>
<tr>
<td></td>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>18.6°C (65.5°F)</td>
<td>18.6°C (65.5°F)</td>
<td>18.6°C (65.5°F)</td>
</tr>
</tbody>
</table>

SYSTEM CALIBRATION/LEARNING PHASE:

| Trip Odometer Reading: Start: 161.7 km (100.5 mi) End: 193.4 km (120.2 mi) |
| Ambient Temperature: Start: 15.6°C (60.1°F) End: 16.6°C (61.9°F) |
| Roadway Temperature: Start: 19.4°C (66.9°F) End: 17.6°C (63.7°F) |

Driving in first direction:
Starting point: GAFB north gate Direction: see chart, page 65
10:12 minutes (stopwatch time) 15.6 km (9.7 mi) distance

Driving in opposite direction:
Starting point: US 87 crossover overpass Direction: see chart, page 65
10:22 minutes (stopwatch time) 16.1 km (10.0 mi) distance

Max speed: 98.9 km/h (61.5 mph)
Total Driving Time: 20:35 minutes (VBox time)
**DATA SHEET 3 (Sheet 21 of 22)**
**TPMS OPERATIONAL PERFORMANCE**
**SCENARIO F – Left Front, Left Rear, and Right Rear Tire Deflation at UVW + VCW**

### TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediately, after vehicle is stopped, engine off:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>237.0 kPa (34.4 psi)</td>
<td>237.5 kPa (34.4 psi)</td>
<td>238.9 kPa (34.6 psi)</td>
<td>237.7 kPa (34.5 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>27.4°C (81.3°F)</td>
<td>25.6°C (78.1°F)</td>
<td>26.2°C (79.2°F)</td>
<td>27.2°C (81.0°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>17.4°C (63.3°F)</td>
<td>17.6°C (63.7°F)</td>
<td>17.6°C (63.7°F)</td>
<td>17.6°C (63.7°F)</td>
</tr>
</tbody>
</table>

### SYSTEM DETECTION PHASE:

**LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):**

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicate Location of Tire(s) Deflated:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( X )LF ( X )LR ( X )RR (   )RF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>158.0 kPa (22.9 psi)</td>
<td>158.0 kPa (22.9 psi)</td>
<td>158.0 kPa (22.9 psi)</td>
<td></td>
</tr>
</tbody>
</table>

### TELLTALE ILLUMINATION:

- Starting point: San Angelo Test Facility shop
- Telltale illuminated in 13 seconds. Driving was not necessary.

### TEST RESULTS

**TELLTALE ILLUMINATES WITHIN 20 MINUTES:**

( X )YES (   )NO (fail)

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? ( X )YES (   )NO (fail)

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? ( X )YES (   )NO (fail)
DATA SHEET 3 (Sheet 22 of 22)
TPMS OPERATIONAL PERFORMANCE

SCENARIO F – Left Front, Left Rear, and Right Rear Tire Deflation at UVW + VCW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELTTLA ELLUMINATION:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After vehicle cool down period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>16.6°C (61.9°F)</td>
<td>Vehicle cool down period:</td>
<td>61 minutes</td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>149.6 kPa (21.7 psi)</td>
<td>149.5 kPa (21.7 psi)</td>
<td>148.2 kPa (21.5 psi)</td>
<td>225.4 kPa (32.7 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>21.4°C (70.5°F)</td>
<td>20.4°C (68.7°F)</td>
<td>18.8°C (65.8°F)</td>
<td>21.2°C (70.2°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>19.2°C (66.6°F)</td>
<td>19.4°C (66.9°F)</td>
<td>19.2°C (66.6°F)</td>
<td>19.2°C (66.6°F)</td>
</tr>
</tbody>
</table>

After the cool down period of a minimum of one hour, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? ( X )YES ( )NO (fail)

TELLTALE EXTINGUISHMENT:
RE-ADJUSTED TIRE INFLATION PRESSURES:

<table>
<thead>
<tr>
<th>Execution Procedure</th>
<th>LF Tire</th>
<th>LR Tire</th>
<th>RR Tire</th>
<th>RF Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>After illumination verification:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-adjusted Inflation Pressure:</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
<td>220.0 kPa (31.9 psi)</td>
</tr>
</tbody>
</table>

Is it necessary to drive the vehicle to extinguish the telltale? ( X )YES ( )NO

Starting point: San Angelo Test Facility shop

0:45 minutes (stopwatch time – non-cumulative) 0.2 km (0.1 mi) distance

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL) PASS

Left front, left rear, and right rear tires were deflated at UVW + VCW.

REMARKS: None

RECORDED BY: Todd P. Groghan DATE: May 3, 2010

APPROVED BY: Kenneth H. Yates
DATA SHEET 4 (Sheet 1 of 4)
Scenario G – Malfunction Detection Test at LLVW -
Spare Installed on Right Front

TEST DATE: April 28, 2010 LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: CA5402

Time: Start: 18:48:16 UTC End: 19:00:35 UTC

Trip Odometer Reading: Start: 34.6 km (21.5 mi) End: 49.4 km (30.7 mi)

Ambient Temperature: Start: 25.6°C (78.1°F) End: 25.6°C (78.1°F)

Roadway Temperature: Start: 43.2°C (109.8°F) End: 41.2°C (106.2°F)

Fuel Level: Start: Full

Note: See Data Sheet 3 (Sheet 2 of 22) for Test Weight.

TPMS TYPE: (X) Direct ( ) Indirect ( ) Other Describe: ____________________________

TPMS MALFUNCTION TELLTALE: ( ) Dedicated stand-alone (X) Combination low tire pressure warning/malfunction telltale

METHOD OF MALFUNCTION SIMULATION:
Describe method of malfunction simulation: Spare tire without TPMS sensor was applied to right front at LLVW. (See Figure 5.16)

MALFUNCTION TELLTALE ILLUMINATION
(after ignition locking system is activated to “On” (“Run”) position):

Combination Malfunction Telltale

Driving in first direction:
Starting point: San Angelo Test Facility shop Direction: see chart, page 66

14.8 km (9.2 mi) distance

Max speed: 99.9 km/h (62.1 mph)
Total Driving Time: 9:08 minutes (VBox time)

COMBINATION MALFUNCTION TELLTALE ILLUMINATES (FLASHING AND ILLUMINATION SEQUENCE) WITHIN 20 MINUTES:
(X) YES ( ) NO
After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the combination low tire pressure/malfunction telltale flash for a period of at least 60 seconds but no longer than 90 seconds, and then remain illuminated when the ignition locking system is activated to the “On” or “Run” position? (X) YES ( ) NO (fail)

| Time it takes before telltale starts flashing | 3     seconds |
| Time telltale remains flashing              | 76    seconds |
| Time telltale remains illuminated           | >60   seconds |
|                                            | (Verified for a minimum of 60 seconds) |

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale’s illumination sequence repeat when the ignition locking system is activated and the engine running? (X) YES ( ) NO (fail)

**Extinguishment Phase:**

 Restore the TPMS to normal operation. Is it necessary to drive the vehicle to extinguish the telltale? (X) YES ( ) NO

Starting point: San Angelo Test Facility shop

2:15 minutes (stopwatch time – non-cumulative) 0.2 km (0.1 mi) distance

**COMBINATION MALFUNCTION TELLTALE EXTINGUISHED:**

(X) YES ( ) NO (FAIL)

**TPMS MALFUNCTION PERFORMANCE TEST RESULTS (PASS/FAIL)** PASS

Spare without TPMS sensor was applied to right front at LLVW.

**REMARKS:** None

**RECORDED BY:** Todd P. Groghan  DATE: April 28, 2010

**APPROVED BY:** Kenneth H. Yates
DATA SHEET 4 (Sheet 3 of 4)
Scenario H – Malfunction Detection Test – ABS Unit Disconnected

TEST DATE: May 6, 2010  LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: CA5402

Time: Start: 1:07 pm  End: 1:32 pm
Odometer Reading: Start: 195.1 km (121.2 mi)  End: 195.1 km (121.2 mi)
Ambient Temperature: Start: 30.7°C (87.3°F)  End: 30.7°C (87.3°F)
Roadway Temperature: Start: NA  End: NA
Fuel Level: Start: Full

TPMS TYPE: ( X ) Direct  (   ) Indirect  (   ) Other  Describe: 

TPMS MALFUNCTION TELLTALE:  (   ) Dedicated stand-alone  ( X ) Combination low tire pressure warning/malfunction telltale

METHOD OF MALFUNCTION SIMULATION:
Describe method of malfunction simulation: Wiring harness connector was disconnected from under-hood ABS unit. (See Figure 5.17)

MALFUNCTION TELLTALE ILLUMINATION (after ignition locking system is activated to “On” (“Run”) position):

Combination Malfunction Telltale
Illumination upon start-up - driving was not necessary.

COMBINATION MALFUNCTION TELLTALE ILLUMINATES (FLASHING AND ILLUMINATION SEQUENCE) WITHIN 20 MINUTES:
( X )YES  (   )NO
Scenario H – Malfunction Detection Test – ABS Unit Disconnected

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the combination low tire pressure/malfunction telltale flash for a period of at least 60 seconds but no longer than 90 seconds, and then remain illuminated when the ignition locking system is activated to the “On” or “Run” position? ( X )YES ( )NO (fail)

Time it takes before telltale starts flashing 3 seconds
Time telltale remains flashing 75 seconds
Time telltale remains illuminated >60 seconds (Verified for a minimum of 60 seconds)

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale’s illumination sequence repeat when the ignition locking system is activated and the engine running? ( X )YES ( )NO (fail)

Extinguishment Phase:

Restore the TPMS to normal operation. Is it necessary to drive the vehicle to extinguish the telltale? ( )YES ( X )NO

COMBINATION MALFUNCTION TELLTALE EXTINGUISHED: ( X )YES ( )NO (FAIL)

TPMS MALFUNCTION PERFORMANCE TEST RESULTS (PASS/FAIL) PASS
Wiring harness connector was disconnected from under-hood ABS unit.

REMARKS: None

RECORDED BY: Todd P. Groghan DATE: May 6, 2010
APPROVED BY: Kenneth H. Yates
The following statement, in the English language, is provided verbatim in the Owner’s Manual.

( X )YES   ( )NO

"Each tire, including the spare (if provided), should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label. (If your vehicle has tires of a different size than the size indicated on the vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)

As an added safety feature, your vehicle has been equipped with a tire pressure monitoring system (TPMS) that illuminates a low tire pressure telltale when one or more of your tires is significantly under-inflated. Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire failure. Under-inflation also reduces fuel efficiency and tire tread life, and may affect the vehicle’s handling and stopping ability.

Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver’s responsibility to maintain correct tire pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale."

DATA SHEET 5 (Sheet 1 of 3)
TPMS WRITTEN INSTRUCTIONS

TEST DATE: __April 27, 2010__  LAB: __San Angelo Test Facility__  VEHICLE NHTSA NO: __CA5402__
DATA SHEET 5 (Sheet 2 of 3)
TPMS WRITTEN INSTRUCTIONS

As specified, the following sections, in the English language, are required verbatim in paragraph form in the Owner’s Manual:

The following statement is required for all vehicles certified to the standard starting on September 1, 2007 and for vehicles voluntarily equipped with a compliant TPMS MIL before that time.

"Your vehicle has also been equipped with a TPMS malfunction indicator to indicate when the system is not operating properly."

The above statement in the English language is provided verbatim in owner’s manual: ( X )YES ( )NO

For vehicles with a dedicated MIL telltale, add the following statement:

"The TPMS malfunction indicator is provided by a separate telltale, which displays the symbol “TPMS” when illuminated."

The above statement in the English language is provided verbatim in owner’s manual: ( )YES ( )NO ( X )N/A

For vehicles with a combined low tire pressure/MIL telltale, add the following statement:

The TPMS malfunction indicator is combined with the low tire pressure telltale. When the system detects a malfunction, the telltale will flash for approximately one minute and then remain continuously illuminated. This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists.

The above statement in the English language is provided verbatim in owner’s manual: ( X )YES ( )NO ( )N/A

The following statement is required for all vehicles certified to the standard starting on September 1, 2007 and for vehicles voluntarily equipped with a compliant TPMS MIL before that time.

When the malfunction indicator is illuminated, the system may not be able to detect or signal low tire pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS malfunction telltale after replacing one or more tires or wheels on your vehicle to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly."

The above statement in the English language is provided verbatim in owner’s manual: ( X )YES ( )NO

DATA INDICATES COMPLIANCE: PASS/FAIL: PASS
DATA SHEET 5 (Sheet 3 of 3)
TPMS WRITTEN INSTRUCTIONS

Does the Owner’s Manual provide an image of the Low Tire Pressure Warning Telltale symbol (and an image of the TPMS Malfunction Telltale warning (“TPMS”), if a dedicated telltale is utilized for this function)?

( X ) YES   ( ) NO

Does the Owner’s Manual include the following (allowable) information?

☑ Significance of the low tire pressure warning telltale illuminating

☑ A description of corrective action to be undertaken

☐ Whether the tire pressure monitoring system functions with the vehicle’s spare tire (if provided)

☐ How to use a reset button, if one is provided

☑ The time for the TPMS telltale(s) to extinguish once the low tire pressure condition or the malfunction is corrected

REMARKS:  None

RECORDED BY:  Todd P. Groghan    DATE:  April 27, 2010

APPROVED BY:  Kenneth H. Yates
<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>DESCRIPTION</th>
<th>MODEL/ SERIAL NO</th>
<th>CAL. DATE</th>
<th>NEXT CAL. DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOPWATCH</td>
<td>CHAMPION SPORTS TIMER</td>
<td>910 R</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>AMBIENT TEMPERATURE GAUGE</td>
<td>FLUKE 179 DIGITAL THERMOMETER</td>
<td>SERIAL # 84740316</td>
<td>2/24/2010</td>
<td>2/24/2011</td>
</tr>
<tr>
<td>LASER TEMPERATURE GAUGE (TIRES AND GROUND)</td>
<td>RAYTEK ST20</td>
<td>SERIAL 2065640101-0014</td>
<td>8/19/2009</td>
<td>8/19/2010</td>
</tr>
<tr>
<td>AIR PRESSURE GAUGE</td>
<td>ASHCROFT GENERAL PURPOSE DIGITAL GAUGE</td>
<td>MODEL # D1005PS 02L 100 PSI SERIAL # 20017398-01</td>
<td>12/9/2009</td>
<td>12/9/2010</td>
</tr>
<tr>
<td>FLOOR SCALES (VEHICLE)</td>
<td>INTERCOMP SW DELUXE SCALES</td>
<td>PART # 100156 SERIAL # 24032382</td>
<td>7/28/2009</td>
<td>7/28/2010</td>
</tr>
<tr>
<td>PLATFORM SCALE (BALLAST)</td>
<td>HOWE RICHARDSON</td>
<td>MODEL #6401 SERIAL #0181-5509-26</td>
<td>7/28/2009</td>
<td>7/28/2010</td>
</tr>
</tbody>
</table>
SECTION 5
PHOTOGRAPHS
2010 MAZDA 6
NHTSA NO. CA5402
FMVSS NO.138

FIGURE 5.1
¾ FRONT VIEW FROM LEFT SIDE OF VEHICLE
MFD. BY AUTO ALLIANCE INTERNATIONAL, INC.
FOR MAZDA MOTOR CORPORATION
MADE IN U.S.A.

DATE: 10/09  GVWR: 4340LB/1969KG
FRONT GAWR: 2286LB/1037KG  REAR GAWR: 2062LB/935KG

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: 1YVHZ8BH3A5M11305
TYPE: Passenger Car

FIGURE 5.2
VEHICLE CERTIFICATION LABEL
### Tire and Loading Information

**Seating Capacity**
- Total: 5
- Front: 2
- Rear: 3

The combined weight of occupants and cargo should never exceed 385 kg or 850 lbs.

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Cold Tire Pressure</th>
<th>Spare Tire Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>P205/65R16</td>
<td>220 kPa, 32 psi</td>
<td>T115/70D16</td>
</tr>
<tr>
<td>P205/65R16</td>
<td>220 kPa, 32 psi</td>
<td></td>
</tr>
<tr>
<td>T115/70D16</td>
<td>420 kPa, 60 psi</td>
<td></td>
</tr>
</tbody>
</table>

See Owner’s Manual for Additional Information

Voir le Manuel de l’Usager pour Plus de Renseignements

**2010 MAZDA 6**
NHTSA NO. CA5402
FMVSS NO. 138

**FIGURE 5.3**
VEHICLE PLACARD
2010 MAZDA 6
NHTSA NO. CA5402
FMVSS NO. 138

FIGURE 5.4
TIRE SHOWING BRAND
2010 MAZDA 6
NHTSA NO. CA5402
FMVSS NO. 138

FIGURE 5.5
TIRE SHOWING MODEL, SIZE, AND LOAD INDEX / SPEED RATING
FIGURE 5.6
TIRE SHOWING DOT SERIAL NUMBER
2010 MAZDA 6
NHTSA NO. CA5402
FMVSS NO. 138

FIGURE 5.7
TIRE SHOWING MAX LOAD RATING AND MAX COLD INFLATION PRESSURE
TREAD PLIES: 1 POLYESTER
+ 1 POLYAMIDE + 2 STEEL
SIDEWALL PLIES: 1 POLYESTER

ONLY TRAINED PERSONS SHOULD MOUNT TIRES.
2010 MAZDA 6
NHTSA NO. CA5402
FMVSS NO. 138

FIGURE 5.9
RIM SHOWING TPMS SENSOR AND RIM CONTOUR FOR FULL WIDTH OF CROSS SECTION
2010 MAZDA 6
NHTSA NO. CA5402
FMVSS NO. 138

FIGURE 5.10
DISPLAY SHOWING COMBINATION LOW TIRE PRESSURE WARNING/TPMS MALFUNCTION WARNING TELLTALE
FIGURE 5.11
TEST INSTRUMENTATION INSTALLED IN VEHICLE
FIGURE 5.12
VEHICLE REAR SEAT BALLAST FOR LLVW LOAD
2010 MAZDA 6
NHTSA NO. CA5402
FMVSS NO. 138

FIGURE 5.13
VEHICLE REAR SEAT BALLAST FOR UVW + VCW LOAD
2010 MAZDA 6
NHTSA NO. CA5402
FMVSS NO. 138

FIGURE 5.14
VEHICLE CARGO AREA BALLAST FOR UVW + VCW LOAD
FIGURE 5.16
SPARE INSTALLED ON RIGHT FRONT

2010 MAZDA 6
NHTSA NO. CA5402
FMVSS NO. 138
FIGURE 5.17
REMOVAL OF WIRING HARNESS CONNECTOR FROM UNDER-HOOD ABS UNIT

2010 MAZDA 6
NHTSA NO. CA5402
FMVSS NO. 138
SECTION 6
TEST PLOTS
Scenario A: Left Rear Tire at LLVW
Test Date: 4/28/10
Data File Time: 25:40 minutes
Cumulative Driving Time: 20:35 minutes
Start Point: GAFB north gate

Calibration Phase:

LR Detection Phase: Telltale illuminated in 6 seconds. Driving was not necessary.
Scenario B: Right Rear, Right Front Tires at LLVW
Test Date: 4/28/10
Data File Time: 25:56 minutes
Cumulative Driving Time: 20:46 minutes
Start Point: GAFB north gate

Calibration Phase:

**2010 Mazda 6 (CA5402) RR, RF Calibration LLVW**

Log Rate := 100.00 Hz

RR, RF Detection Phase: Telltale illuminated in 35 seconds. Driving was not necessary.
Scenario C: Left Front, Left Rear, Right Rear, Right Front Tires at LLVW
Test Date: 4/29/10
Data File Time: 24:55 minutes
Cumulative Driving Time: 20:43 minutes
Start Point: GAFB north gate

Calibration Phase:

2010 Mazda 8 (CA5402) LF, LR, RR, RF Calibration LLVW

LF, LR, RR, RF Detection Phase: Telltale illuminated in 14 seconds. Driving was not necessary.
Scenario D: Right Front Tire at UVW + VCW
Test Date: 4/30/10
Data File Time: 25:24 minutes
Cumulative Driving Time: 20:38 minutes
Start Point: GAFB north gate

Calibration Phase:

RF Detection Phase: Telltale illuminated in 7 seconds. Driving was not necessary.
Scenario E: Left Rear, Right Rear Tires at UVW + VCW
Test Date: 4/30/10
Data File Time: 25:24 minutes
Cumulative Driving Time: 20:32 minutes
Start Point: GAFB north gate

Calibration Phase:

LR, RR Detection Phase: Telltale illuminated in 37 seconds. Driving was not necessary.
Scenario F: Left Front, Left Rear, Right Rear Tires at UVW + VCW
Test Date: 5/3/10
Data File Time: 25:16 minutes
Cumulative Driving Time: 20:35 minutes
Start Point: GAFB north gate

Calibration Phase:

2010 Mazda 6 (CA5402) LF, LR, RR Calibration UVW+VCW

Log Rate: ≈ 100.00 Hz

LF, LR, RR Detection Phase: Telltale illuminated in 13 seconds. Driving was not necessary.
Scenario G: Malfunction Detection Test at LLVW
Test Date: 4/28/10
Data File Time: 13:29 minutes
Cumulative Driving Time: 9:08 minutes
Start Point: San Angelo Test Facility shop

Malfunction Telltale Illumination:

2010 Mazda 6 (CA5402) RF Spare Tire Malfunction Illumination LLVW
Tire Pressure Monitoring System
Warning Light

This warning light illuminates for a few seconds when the ignition is switched ON.

Thereafter, the warning light illuminates and a beep is heard when tire pressure is too low in one or more tires, and flashes when there is a system malfunction.

⚠️ WARNING ⚠️
If the tire pressure monitoring system warning light illuminates or flashes, or the tire pressure warning beep sound is heard, decrease vehicle speed immediately and avoid sudden maneuvering and braking:

If the tire pressure monitoring system warning light illuminates or flashes, or the tire pressure warning beep sound is heard, it is dangerous to drive the vehicle at high speeds, or perform sudden maneuvering or braking. Vehicle drivability could worsen and result in an accident. To determine if you have a slow leak or a flat, pull over to a safe position where you can check the visual condition of the tire and determine if you have enough air to proceed to a place where air may be added and the system monitored again, an Authorized Mazda Dealer or a tire repair station.

Do not ignore the TPMS Warning Light:
Ignoring the TPMS warning light is dangerous, even if you know why it is illuminated. Have the problem taken care of as soon as possible before it develops into a more serious situation that could lead to tire failure and a dangerous accident.

Warning light illuminates/Warning beep sounds
When the warning light illuminates, and the warning beep sound is heard (about 3 seconds), tire pressure is too low in one or more tires.
Adjust the tire pressure to the correct tire pressure. Refer to the specification charts (page 10-7).

⚠️ CAUTION

When replacing/repairing the tires or wheels or both, have the work done by an Authorized Mazda Dealer, or the tire pressure sensors may be damaged.

NOTE

- Perform tire pressure adjustment when the tires are cold. Tire pressure will vary according to the tire temperature, therefore let the vehicle stand for 1 hour or only drive it 1.6 km (1 mile) or less before adjusting the tire pressures. When pressure is adjusted on hot tires to the cold inflation pressure, the TPMS warning light/beep may turn on after the tires cool and pressure drops below specification. Also, an illuminated TPMS warning light, resulting from the tire air pressure dropping due to cold ambient temperature, may turn off if the ambient temperature rises. In this case, it will also be necessary to adjust the tire air pressures. If the TPMS warning light illuminates due to a drop in tire air pressure, make sure to check and adjust the tire air pressures.

- After adjusting the tire air pressures, it may require some time for the TPMS warning light to turn off. If the TPMS warning light remains illuminated, drive the vehicle at a speed of at least 25 km/h (16 mph) for 10 minutes, and then verify that it turns off.

- Tires loose air naturally over time and the TPMS cannot tell if the tires are getting too soft over time or you have a flat. However, when you find one low tire in a set of four—that is an indication of trouble; you should have someone drive the vehicle slowly forward so you can inspect any low tire for cuts and any metal objects sticking through tread or sidewall. Put a few drops of water in the valve stem to see if it bubbles indicating a bad valve. Leaks need to be addressed by more than simply refilling the trouble tire as leaks are dangerous - take it to an Authorized Mazda Dealer which has all the equipment to fix tires, TPMS systems and order the best replacement tire for your vehicle.
If the warning light illuminates again even after the tire pressures are adjusted, there may be a tire puncture. Replace the punctured tire with the temporary spare tire (page 7-6).

**NOTE**
A tire pressure sensor is not installed to the temporary spare tire. The warning light will flash continuously while the temporary spare tire is being used.

**Warning light flashes**
When the warning light flashes, there may be a system malfunction. Consult an Authorized Mazda Dealer.

**System Error Activation**
When the warning light flashes, there may be a system malfunction. Consult an Authorized Mazda Dealer.

A system error activation may occur in the following cases:
- When there is equipment or a device near the vehicle using the same radio frequency as that of the tire pressure sensors.
- When using the following devices in the vehicle that may cause radio interference with the receiver unit:
  - A digital device such as a personal computer.
  - A current converter device such as a DC-AC converter.
- When excess snow or ice adheres to the vehicle, especially around the wheels.
- When the tire pressure sensor batteries are exhausted.
- When using a wheel with no tire pressure sensor installed.
- When using tires with steel wire reinforcement in the side walls.

**Tires and Wheels**

**CAUTION**
When inspecting or adjusting the tire air pressures, do not apply excessive force to the stem part of the wheel unit. The stem part could be damaged.

**Changing tires and wheels**
The following procedure allows the TPMS to recognize a tire pressure sensor's unique ID signal code whenever tires or wheels are changed, such as changing to and from winter tires.

**NOTE**
Each tire pressure sensor has a unique ID signal code. The signal code must be registered with the TPMS before it can work. The easiest way to do it is to have an Authorized Mazda Dealer change your tire and complete ID signal code registration.

**When having tires changed at an Authorized Mazda Dealer**
Tire pressure sensor ID signal code registration is completed when an Authorized Mazda Dealer changes your vehicle's tires.

**When changing tires yourself**
If you or someone else changes tires, you or someone else can also undertake the steps for the TPMS to complete the ID signal code registration.

1. After tires have been changed, switch the ignition ON, then back to ACC or off (LOCK).
2. Wait for about 15 minutes.