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

NISSAN MOTOR COMPANY, LTD.
2006 NISSAN PATHFINDER LE
4X2 FOUR-DOOR MPV
NHTSA NO. C65200

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

April 4, 2007
FINAL REPORT

PREPARED FOR
U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
ROOM 6111 (NVS-220)
WASHINGTON, D.C. 20590
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Prepared By: Doris Lee

Approved By: ______________________

Accepted By: ______________________

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<tr>
<td>David Banks, Junior Systems Analyst</td>
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<tr>
<td>Bob Gregg, Safety Compliance Specialist</td>
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</tr>
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<td></td>
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<td>August 29 through September 6, 2006</td>
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<td>Safety Engineering</td>
<td>NHTSA Technical Information Services</td>
</tr>
<tr>
<td>FMVSS 138</td>
<td>Room 2334, (NPO-411)</td>
</tr>
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<td>400 Seventh Street, SW</td>
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<tr>
<td></td>
<td>Email: <a href="mailto:tis@nhtsa.dot.gov">tis@nhtsa.dot.gov</a></td>
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SECTION 1
INTRODUCTION

1.1 PURPOSE OF COMPLIANCE TEST

A 2006 Nissan Pathfinder LE 4X2 four-door MPV was tested to determine if the vehicle was in compliance with the requirements of the standard. All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure TP-138-02 dated September 14, 2005.

1.2 TEST VEHICLE

The test vehicle was a 2006 Nissan Pathfinder LE 4X2 four-door MPV. Nomenclatures applicable to the test vehicle are:

A. **Vehicle Identification Number:** 5N1AR18U06C655172

B. **NHTSA No.:** C65200

C. **Manufacturer:** Nissan Motor Company, Ltd.

D. **Manufacture Date:** 04/2006

1.3 TEST DATE

The test vehicle was tested during the time period August 29 through September 6, 2006.
SECTION 2
TEST PROCEDURE AND SUMMARY OF RESULTS

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 information was 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 six tire deflation scenarios. This LLVW included the weights of driver, one passenger, and test equipment. The vehicle was loaded to its Gross Vehicle Weight Rating (GVWR) for four tire deflation scenarios. The gross vehicle weight included the weights of driver, one passenger, equipment, ballast in the rear seat, and ballast in the cargo area. 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 test, graph(s) were generated by VBOX software showing vehicle speed versus time during the test procedure calibration phase and detection phase. The graphs furnish a second-by-second analysis of each test phase. The cumulative driving time for each test 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 consisted of four parts:
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 50-100 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. Vehicle was started and driven (if necessary) between 50 -100 km/h until low tire pressure telltale illuminated.
3. Cool down phase: Vehicle was parked in the San Angelo Test Facility (SATF) garage. Tires were allowed to cool down for one hour, or until all tires excluding deflated tire(s) were within seven kPa (one psi) of vehicle placard cold inflation pressure. 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 driven (if necessary) until the telltale extinguished.

An indicant malfunction detection test was performed with the vehicle loaded to its GVWR. A malfunction was simulated by placing the full size spare tire (with no TPMS sensor) on the left rear wheel position. The vehicle was driven until telltale illumination or until a minimum of 20 minutes of cumulative driving time between 50-100 km/h was attained.

2.2 SUMMARY OF RESULTS

Six tire deflation scenarios were performed on the test vehicle at LLVW: A. left front; B. left rear; C. right front; D. right rear; E. left front and left rear; and F. left front, left rear, right rear, right front. Four tire deflation scenarios were performed on the test vehicle at GVWR: G. left front; H. right rear; I. left front and right front; and J. left front, left rear, right rear, right front.

The data indicate compliance of the test vehicle’s tire pressure monitoring system for the ten tire deflation scenarios tested. The reconfigurable display lists the tire pressures when that menu item is selected (see Figure 5.12), but does not identify the tire locations.

One indicant malfunction detection test was performed on the test vehicle at GVWR. The vehicle’s combination low tire pressure warning and malfunction telltale did not indicate a malfunction. The telltale did not flash and illuminate per the standard’s requirements effective September 1, 2007.
SECTION 3
TEST DATA
**FMVSS No. 138 – TEST DATA SUMMARY**

**TEST DATE:** August 29 - September 6, 2006  
**LAB:** U. S. DOT San Angelo Test Facility  
**CONTRACT:** N/A  
**VEHICLE NHTSA NUMBER:** C65200  
**VIN:** 5N1AR18U06C655172  
**CERTIFICATION LABEL BUILD DATE:** 04/2006

### REQUIREMENTS

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

**REMARKS:** The FMVSS 138 malfunction performance requirements do not become effective until September 1, 2007. The test vehicle is equipped with a malfunction capability that would not correctly meet the future requirements.
TEST DATE: August 29, 2006  
LAB: U.S. DOT San Angelo Test Facility 

CONTRACT: N/A  
VEHICLE NHTSA NUMBER: C65200 

VIN: 5N1AR18U06C655172  
CERTIFICATION LABEL BUILD DATE: 04/2006 

MY/MAKE/MODEL/BODY STYLE: 2006 Nissan Pathfinder LE 4X2 four-door MPV 

ENGINE: 4.0 L V-6 

TIRE CONDITIONING:
(X) Tires used more than 100 km. Actual odometer reading: 111 km (69 mi) 

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

TPMS IDENTIFICATION:
TPMS SENSOR MAKE/MODEL: Schrader PN 70503161 [5] 
TPMS TUNER MAKE/MODEL: Alps Electric Company, Ltd. PN TFWC1U 
TPMS TYPE: (X) Direct ( ) Indirect ( ) Other 

TPMS MALFUNCTION INDICATOR TYPE:
( ) None ( ) Dedicated Telltale (X) Combination low tire pressure/malfunction telltale 

Does TPMS require execution of a learning/calibration driving phase? ( )YES (X)NO 
Does TPMS have a manual reset control? ( )YES (X)NO
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>
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<tbody>
<tr>
<td>Front</td>
<td>P265/65R17</td>
<td>240 kPa (35 psi)</td>
<td>Vehicle Placard</td>
</tr>
<tr>
<td>Rear</td>
<td>P265/65R17</td>
<td>240 kPa (35 psi)</td>
<td>Vehicle Placard</td>
</tr>
<tr>
<td>Spare</td>
<td>P265/65R17</td>
<td>240 kPa (35 psi)</td>
<td>Vehicle Placard</td>
</tr>
</tbody>
</table>

INSTALLED TIRE DATA (Use diagrams as reference):
Diagram - Passenger Car Tire Labeling  Diagram - Other Markings on Light Trucks

Front and Rear Axles

Tire Size (ex. P225/65R15 89H): P265/65R17 110S

Manufacturer/Tire Name: General Grabber AW

Sidewall Max Load Rating: 1,060 kg (2,337 lbs)

Max Inflation Pressure: 300 kPa (44 psi)

Sidewall Construction (number of plies and ply material): 2 ply polyester

Tread Construction (number of plies and ply material): 5 ply – 2 polyester, 2 steel, 1 nylon

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 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>(A) Recommended Inflation Pressure x .75</td>
<td>(240 \text{ kPa} \times 0.75 = 180.0 \text{ kPa})</td>
<td>(240 \text{ kPa} \times 0.75 = 180.0 \text{ kPa})</td>
</tr>
<tr>
<td>(B) Information from FMVSS 138 Table 1 below, Tire types are:</td>
<td>(\text{ (X) P-metric-Standard load ( ) P-metric-Extra Load Load Range ( ) C, ( ) D, or ( ) E})</td>
<td>(\text{ (X) P-metric-Standard load ( ) P-metric-Extra Load Load Range ( ) C, ( ) D, or ( ) E})</td>
</tr>
<tr>
<td>Inflation pressure</td>
<td>(\text{(X) Maximum or ( ) Rated}) 300 kPa (44 psi)</td>
<td>(\text{(X) Maximum or ( ) Rated}) 300 kPa (44 psi)</td>
</tr>
<tr>
<td>Minimum activation pressures from Table 1</td>
<td>140 kPa (20 psi)</td>
<td>140 kPa (20 psi)</td>
</tr>
<tr>
<td>(C) Telltale Warning Activation Pressure is the higher of Part (A) or (B)</td>
<td>(180.0 \text{ kPa (26.1 psi)})</td>
<td>(180.0 \text{ kPa (26.1 psi)})</td>
</tr>
<tr>
<td>(D) Pressure at which to deflate tire(s) = (C) – 7 kPa</td>
<td>(173.0 \text{ kPa (25.1 psi)})</td>
<td>(173.0 \text{ kPa (25.1 psi)})</td>
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#### 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>
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<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:** David K. Banks  
**DATE:** August 29, 2006

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

TEST DATE: August 29, 2006       LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C65200

TPMS Low Tire Pressure Warning Telltale

TPMS Low Tire Pressure Warning Telltale Location: Upper left instrument cluster
Telltale is mounted inside the occupant compartment in front of and in clear view of the driver?
( X )YES   ( )NO (fail)
Telltale is part of a reconfigurable display?   ( )YES   ( X )NO
Identify Telltale Symbol Used (check box above figure).

Note any words or additional symbols used.
Reconfigurable display provides additional low inflation pressure warnings to
driver. See Figure 5.12

TPMS Malfunction Telltale

( ) None   ( ) Dedicated stand-alone   ( X ) Combined with low tire pressure telltale
DATA SHEET 2 (Sheet 2 of 2)
LOW TIRE PRESSURE WARNING AND MALFUNCTION TELLTALE

Check Telltale Lamp Functions:

LOW TIRE PRESSURE TELLTALE AND MALFUNCTION INDICATION, IF COMBINED

Identify position of ignition locking system when telltale illuminates.

☐ OFF/LOCK  ☐ Between OFF/LOCK and ON/RUN

☐ ON/RUN  ☐ Between ON/RUN and START

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

Time telltale remains illuminated 1.28 seconds

Starter Interlocks:

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

TEST RESULTS

Low Tire Pressure Warning Telltale (PASS/FAIL)  PASS

REMARKS:  None

RECORDED BY:  David K. Banks  DATE:  August 29, 2006

APPROVED BY:  Kenneth H. Yates
TEST DATE: August 29, 2006 LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C65200

Time: Start: 9.51 am

Ambient Temperature: Start: 23.2°C (73.8°F)

Odometer Reading: Start: 155.6 km (96.7 mi)

Fuel Level: Start: Full

Weather Conditions: Overcast, light wind

Time vehicle has remained indoors with engine off and tires shielded from direct sunlight: (1 hour minimum): overnight (inside the SATF garage)

VEHICLE WEIGHT:
Vehicle Ratings from Certification Label:

<table>
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<tr>
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<th>GVWR: 2,631 kg (5,800 lbs)</th>
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</thead>
<tbody>
<tr>
<td>GAWR (front):</td>
<td>1,259 kg (2,775 lbs)</td>
</tr>
<tr>
<td>GAWR (rear):</td>
<td>1,588 kg (3,500 lbs)</td>
</tr>
</tbody>
</table>

Vehicle Capacity Weight: 507 kg (1,118 lbs)

Measured Unloaded Vehicle Weight:

<table>
<thead>
<tr>
<th></th>
<th>LF</th>
<th>LR</th>
<th>RF</th>
<th>RR</th>
<th>Front Axle</th>
<th>Rear Axle</th>
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<tbody>
<tr>
<td></td>
<td>543 kg</td>
<td>507 kg</td>
<td>523 kg</td>
<td>520 kg</td>
<td>1,066 kg</td>
<td>1,027 kg</td>
</tr>
<tr>
<td></td>
<td>(1,197 lbs)</td>
<td>(1,118 lbs)</td>
<td>(1,153 lbs)</td>
<td>(1,146 lbs)</td>
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Total Vehicle 2,093 kg (4,614 lbs)

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

<table>
<thead>
<tr>
<th></th>
<th>LF</th>
<th>LR</th>
<th>RF</th>
<th>RR</th>
<th>Front Axle</th>
<th>Rear Axle</th>
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<tbody>
<tr>
<td></td>
<td>587 kg</td>
<td>550 kg</td>
<td>569 kg</td>
<td>565 kg</td>
<td>1,156 kg</td>
<td>1,115 kg</td>
</tr>
<tr>
<td></td>
<td>(1,294 lbs)</td>
<td>(1,213 lbs)</td>
<td>(1,254 lbs)</td>
<td>(1,246 lbs)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Vehicle 2,271 kg (5,007 lbs) (not greater than GVWR)

Note: Scenarios A through F - this Total Vehicle Weight measures the vehicle loaded to LLVW, 180 kg (396 lbs) of passengers and equipment.
**DATA SHEET 3 (Sheet 2 of 32)**

**TPMS OPERATIONAL PERFORMANCE**

**TEST DATE:** September 1, 2006  
**LAB:** US DOT San Angelo Test Facility

**VEHICLE NHTSA NUMBER:** C65200

**Time:**  
Start: 8:44 am

**Ambient Temperature:**  
Start: 25.9°C (78.6°F)

**Odometer Reading:**  
Start: 344.6 km (214.1 mi)

**Fuel Level:**  
Start: Full

**Weather Conditions:** Overcast, very light wind

**Time vehicle has remained indoors with engine off and tires shielded from direct sunlight:** (1 hour minimum) overnight (inside the SATF garage)

### VEHICLE WEIGHT:

**Vehicle Ratings from Certification Label:**

<table>
<thead>
<tr>
<th></th>
<th>Rating</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GVWR</td>
<td>2,631 kg (5,800 lbs)</td>
<td></td>
</tr>
<tr>
<td>GAWR (front)</td>
<td>1,259 kg (2,775 lbs)</td>
<td></td>
</tr>
<tr>
<td>GAWR (rear)</td>
<td>1,588 kg (3,500 lbs)</td>
<td></td>
</tr>
</tbody>
</table>

**Vehicle Capacity Weight:**

<table>
<thead>
<tr>
<th></th>
<th>Rating</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>507 kg (1,118 lbs)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Measured Unloaded Vehicle Weight (from August 29):**

<table>
<thead>
<tr>
<th></th>
<th>Rating</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>543 kg (1,197 lbs)</td>
<td></td>
</tr>
<tr>
<td>LR</td>
<td>507 kg (1,118 lbs)</td>
<td></td>
</tr>
<tr>
<td>RF</td>
<td>523 kg (1,153 lbs)</td>
<td></td>
</tr>
<tr>
<td>RR</td>
<td>520 kg (1,146 lbs)</td>
<td></td>
</tr>
<tr>
<td>Front Axle</td>
<td>1,066 kg (2,350 lbs)</td>
<td></td>
</tr>
<tr>
<td>Rear Axle</td>
<td>1,027 kg (2,264 lbs)</td>
<td></td>
</tr>
</tbody>
</table>

**Total Vehicle** 2,093 kg (4,614 lbs)

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

<table>
<thead>
<tr>
<th></th>
<th>Rating</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>556 kg (1,226 lbs)</td>
<td></td>
</tr>
<tr>
<td>LR</td>
<td>750 kg (1,653 lbs)</td>
<td></td>
</tr>
<tr>
<td>RF</td>
<td>568 kg (1,252 lbs)</td>
<td></td>
</tr>
<tr>
<td>RR</td>
<td>722 kg (1,592 lbs)</td>
<td></td>
</tr>
<tr>
<td>Front Axle</td>
<td>1,124 kg (2,478 lbs) ( ≤ GAWR)</td>
<td></td>
</tr>
<tr>
<td>Rear Axle</td>
<td>1,472 kg (3,245 lbs) ( ≤ GAWR)</td>
<td></td>
</tr>
</tbody>
</table>

**Total Vehicle** 2,596 kg (5,723 lbs) (not greater than GVWR)

**Note:** Scenarios G through J were run with the vehicle loaded to GVWR including 503 kg (1,109 lbs) of passengers, equipment, and ballast.
DATA SHEET 3 (Sheet 3 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO A - Left Front Tire Deflation at LLVW

TEST DATE:  August 30, 2006   LAB:  U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER:  C65200

Time:  Start:  7:26 am

Odometer Reading:  Start:  155.6 km (96.7 mi)

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 lightly loaded vehicle weight or GVWR, 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:</td>
<td>19.0°C (66.2°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period:</td>
<td>overnight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>240.1 kPa (34.8 psi)</td>
<td>240.1 kPa (34.8 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
<td>240.1 kPa (34.8 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>21.4°C (70.5°F)</td>
<td>23.0°C (73.4°F)</td>
<td>23.4°C (74.1°F)</td>
<td>22.5°C (72.5°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>24.0°C (75.2°F)</td>
<td>25.6°C (78.1°F)</td>
<td>25.4°C (77.7°F)</td>
<td>23.0°C (73.4°F)</td>
</tr>
</tbody>
</table>

Note: see Data Sheet 3 (Sheet 1 of 32) for Test Weight.

SYSTEM CALIBRATION/LEARNING PHASE:
(V-Box time – see Section 6 test plots)

Driving in first direction:
Starting point:  San Angelo Test Facility shop   Direction:  south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

10:19 minutes (stopwatch time)   14.6 km (9.1 mi) distance

Driving in opposite direction:
Starting point:  Brodnax Road / Highway 87   Direction:  north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

10:17 minutes (stopwatch time)   14.8 km (9.2 mi) distance

Max speed:  87.8 km/hr (54.6 mph)
Total Driving Time:  20:40 minutes (V-Box time)
### DATA SHEET 3 (Sheet 4 of 32)
**TPMS OPERATIONAL PERFORMANCE**  
**SCENARIO A - Left 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;</td>
<td>250.3 kPa</td>
<td>251.9 kPa</td>
<td>252.1 kPa</td>
<td>249.4 kPa</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>(36.3 psi)</td>
<td>(36.5 psi)</td>
<td>(36.6 psi)</td>
<td>(36.2 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>27.2°C</td>
<td>27.8°C</td>
<td>28.0°C</td>
<td>28.4°C</td>
</tr>
<tr>
<td></td>
<td>(81.0°F)</td>
<td>(82.0°F)</td>
<td>(82.4°F)</td>
<td>(83.1°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>25.4°C</td>
<td>26.0°C</td>
<td>26.0°C</td>
<td>25.8°C</td>
</tr>
<tr>
<td></td>
<td>(77.7°F)</td>
<td>(78.8°F)</td>
<td>(78.8°F)</td>
<td>(78.4°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>173.0 kPa</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>(25.1 psi)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### TELTTALE ILLUMINATION:

- **Starting point:** San Angelo Test Facility shop  
- **Direction:** South
- **Did the telltale illuminate?** (X) YES ( ) NO
- **Time and Distance to Illuminate:**
  - Illumination during V-Box satellite acquisition - driving was not required.

#### TELTTALE ILLUMINATES WITHIN 20 MINUTES:  
(X) YES ( ) NO (fail)

- Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated? ( ) YES (X) NO
- 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)

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: Ambient Temperature: 22.5 °C (72.5 °F)</td>
<td>170.4 kPa (24.7 psi)</td>
<td>242.9 kPa (35.2 psi)</td>
<td>243.3 kPa (35.3 psi)</td>
<td>244.6 kPa (35.5 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp: 25.9 °C (78.6 °F)</td>
<td>26.6 °C (79.9 °F)</td>
<td>24.6 °C (76.3 °F)</td>
<td>26.0 °C (78.8 °F)</td>
<td></td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp: 25.2 °C (77.4 °F)</td>
<td>25.8 °C (78.4 °F)</td>
<td>25.2 °C (77.4 °F)</td>
<td>26.2 °C (79.2 °F)</td>
<td></td>
</tr>
</tbody>
</table>

After the cool down period of approximately one hour, restart 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)

TELLTALIE 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 cool down period; Re-adjusted Inflation Pressure:</td>
<td>240.0 kPa (34.8 psi)</td>
<td>242.9 kPa (35.2 psi)</td>
<td>243.3 kPa (35.3 psi)</td>
<td>244.6 kPa (35.5 psi)</td>
</tr>
</tbody>
</table>

Is it necessary to drive the vehicle to extinguish the telltale?  

( X ) YES    (   ) NO

Driving direction:

Starting point: SATF shop  Direction: south

Time and Distance to Extinguish:

1:06 minutes  0.3 km (0.2 mi) distance

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)  PASS

Left front tire was deflated at LLVW.

REMARKS: None

RECORDED BY: David K. Banks  DATE: August 30, 2006

APPROVED BY: Kenneth H. Yates
DATA SHEET 3 (Sheet 6 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO B - Left Rear Tire Deflation at LLVW

TEST DATE: August 30, 2006       LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C65200

Time: Start:  9:16 am

Odometer Reading: Start: 186.7 km  (116.0 mi)

Note: see Data Sheet 3 (Sheet 1 of 32) for Test Weight. Tire pressures were re-adjusted to cold inflation pressure of 240 kPa before calibration phase.

SYSTEM CALIBRATION/LEARNING PHASE:
(V-Box time – see Section 6 test plots)

Driving in first direction:
Starting point:  San Angelo Test Facility shop       Direction:  south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

10:04  minutes (stopwatch time)  14.5 km  (9.0 mi)  distance

Driving in opposite direction:
Starting point:  Brodnax Road / Highway 87       Direction:  north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

10:22  minutes (stopwatch time)  14.8 km  (9.2 mi)  distance

Max speed:  85.8 km/hr  (53.3 mph)
Total Driving Time:  20:27  minutes (V-Box time)

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>247.4 kPa (35.9 psi)</td>
<td>256.3 kPa (37.2 psi)</td>
<td>255.3 kPa (37.0 psi)</td>
<td>253.7 kPa (36.8 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>34.0°C   (93.2°F)</td>
<td>33.2°C   (91.8°F)</td>
<td>30.8°C   (87.4°F)</td>
<td>33.2°C   (91.8°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>26.4°C   (79.5°F)</td>
<td>27.4°C   (81.3°F)</td>
<td>27.0°C   (80.6°F)</td>
<td>26.8°C   (80.2°F)</td>
</tr>
</tbody>
</table>
DATA SHEET 3 (Sheet 7 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO B - Left Rear Tire Deflation at LLVW

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>N/A</td>
<td>173.0 kPa (25.1 psi)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>( )LF (X)LR ( )RR ( )RF</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>(35.9 psi) (25.1 psi) (37.0 psi) (36.8 psi)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TELLTALE ILLUMINATION:

Starting point: __San Angelo Test Facility shop__  Direction: __south__

Did the telltale illuminate?  (X)YES  ( )NO

Time and Distance to Illuminate:

___46___ seconds (stopwatch time)  ___0.3 km (0.2 mi)___ distance

Max speed: ___45.3 km/hr (28.1 mph)___

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

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?  ( )YES  (X)NO

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)

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELTTLATE 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><strong>After vehicle cool down period:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>24.9°C (76.8°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vehicle cool down period:</strong></td>
<td>57 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inflation Pressure</strong></td>
<td>240.2 kPa (34.8 psi)</td>
<td>167.9 kPa (24.4 psi)</td>
<td>246.2 kPa (35.7 psi)</td>
<td>246.6 kPa (35.8 psi)</td>
</tr>
<tr>
<td><strong>Tire Sidewall Temp</strong></td>
<td>27.2°C (81.0°F)</td>
<td>27.4°C (81.3°F)</td>
<td>27.4°C (81.3°F)</td>
<td>26.6°C (79.9°F)</td>
</tr>
<tr>
<td><strong>San Angelo Test Facility Shop Floor Temp</strong></td>
<td>26.2°C (79.2°F)</td>
<td>26.8°C (80.2°F)</td>
<td>26.8°C (80.2°F)</td>
<td>26.0°C (78.8°F)</td>
</tr>
</tbody>
</table>

After the cool down period of approximately one hour, restart 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)

TELLTLE 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><strong>After cool down period:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-adjusted Inflation Pressure:</td>
<td>240.2 kPa (34.8 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
<td>246.2 kPa (35.7 psi)</td>
<td>246.6 kPa (35.8 psi)</td>
</tr>
</tbody>
</table>

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

Driving direction:

Starting point: SATF shop  Direction: south

Time and Distance to Extinguish:

1:13 minutes  0.6 km (0.4 mi) distance

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)  PASS

Left rear tire was deflated at LLVW.

REMARKS: None

RECORDED BY: David K. Banks  DATE: August 30, 2006

APPROVED BY: Kenneth H. Yates
DATA SHEET 3 (Sheet 9 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO C – Right Front Tire Deflation at LLVW

TEST DATE: August 30, 2006  LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C65200

Time: Start: 12:13 pm
Odometer Reading: Start: 218.7 km (135.9 mi)

Note: see Data Sheet 3 (Sheet 1 of 32) for Test Weight. Tire pressures were re-adjusted to cold inflation pressure of 240 kPa before calibration phase.

SYSTEM CALIBRATION/LEARNING PHASE:
(V-Box time – see Section 6 test plots)

Driving in first direction:
Starting point: San Angelo Test Facility shop  Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75+ 25 km/h excluding time periods when brake pedal is applied.

9:57 minutes (stopwatch time)  14.6 km (9.1 mi)  distance

Driving in opposite direction:
Starting point: Brodnax Road / Highway 87  Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75+ 25 km/h excluding time periods when brake pedal is applied.

10:33 minutes (stopwatch time)  14.8 km (9.2 mi)  distance

Max speed: 85.6 km/hr (53.2 mph)
Total Driving Time: 20:35 minutes (V-Box time)

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>254.6 kPa (36.9 psi)</td>
<td>254.8 kPa (37.0 psi)</td>
<td>256.0 kPa (37.1 psi)</td>
<td>253.8 kPa (36.8 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>40.1°C (104.2°F)</td>
<td>39.2°C (102.6°F)</td>
<td>36.6°C (97.9°F)</td>
<td>37.6°C (99.7°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>28.0°C (82.4°F)</td>
<td>29.0°C (84.2°F)</td>
<td>28.6°C (83.5°F)</td>
<td>27.4°C (81.3°F)</td>
</tr>
</tbody>
</table>
DATA SHEET 3 (Sheet 10 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO C – Right Front Tire Deflation at LLVW

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>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>173.0 kPa</td>
</tr>
<tr>
<td>( )LF ( )LR ( )RR ( X )RF</td>
<td>(36.9 psi)</td>
<td>(37.0 psi)</td>
<td>(37.1 psi)</td>
<td>(25.1 psi)</td>
</tr>
</tbody>
</table>

Inflation Pressure

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop
Direction: south

Did the telltale illuminate? ( X )YES ( )NO

Time and Distance to Illuminate:
Illumination upon vehicle start-up. Driving was not required.

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

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated? ( )YES ( X )NO

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)

### 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>29.8°C (85.6°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period:</td>
<td>65 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>244.0 kPa (35.4 psi)</td>
<td>244.0 kPa (35.4 psi)</td>
<td>243.3 kPa (35.3 psi)</td>
<td>167.3 kPa (24.3 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>30.8°C (87.4°F)</td>
<td>32.4°C (90.3°F)</td>
<td>31.4°C (88.5°F)</td>
<td>30.6°C (87.1°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>28.0°C (82.4°F)</td>
<td>28.4°C (83.1°F)</td>
<td>29.2°C (84.6°F)</td>
<td>28.4°C (83.1°F)</td>
</tr>
</tbody>
</table>

After the cool down period of approximately one hour, restart 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)

### TELLTTALE 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 cool down period; Re-adjusted Inflation Pressure:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>244.0 kPa (35.4 psi)</td>
<td>244.0 kPa (35.4 psi)</td>
<td>243.0 kPa (35.2 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
<td></td>
</tr>
</tbody>
</table>

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

Driving direction:  
  
Starting point: SATF shop  
Direction: south  

Time and Distance to Extinguish:  
  
56 seconds  0.3 km (0.2 mi) distance

### TEST RESULTS

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

PASS

Right front tire was deflated at LLVW.

**REMARKS:** None

**RECORDED BY:** David K. Banks  
**DATE:** August 30, 2006

**APPROVED BY:** Kenneth H. Yates
DATA SHEET 3 (Sheet 12 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO D – Right Rear Tire Deflation at LLVW

TEST DATE: August 31, 2006 LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C65200

Time: Start: 7:03 am

Odometer Reading: Start: 249.8 km (155.2 mi)

Note: see Data Sheet 3 (Sheet 1 of 32) for Test Weight. Tire pressures were re-adjusted to cold inflation pressure of 240 kPa before calibration phase.

SYSTEM CALIBRATION/LEARNING PHASE:
(V-Box time – see Section 6 test plots)

Driving in first direction:
Starting point: San Angelo Test Facility shop Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

10:05 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Driving in opposite direction:
Starting point: Brodnax Road / Highway 87 Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

10:25 minutes (stopwatch time) 15.0 km (9.3 mi) distance

Max speed: 86.3 km/hr (53.6 mph)
Total Driving Time: 20:32 minutes (V-Box time)

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>250.1 kPa</td>
<td>251.5 kPa</td>
<td>250.8 kPa</td>
<td>251.7 kPa</td>
</tr>
<tr>
<td>engine off; Inflation Pressure</td>
<td>(36.3 psi)</td>
<td>(36.5 psi)</td>
<td>(36.4 psi)</td>
<td>(36.5 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>30.9°C (87.6°F)</td>
<td>29.0°C (84.2°F)</td>
<td>29.8°C (85.6°F)</td>
<td>30.4°C (86.7°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>27.2°C (81.0°F)</td>
<td>28.8°C (83.8°F)</td>
<td>28.0°C (82.4°F)</td>
<td>27.9°C (82.2°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>N/A</td>
<td>N/A</td>
<td>173.0 kPa (25.1 psi)</td>
<td>N/A</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>N/A</td>
<td>N/A</td>
<td>(X)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop  Direction: south

Did the telltale illuminate? (X) YES  ( ) NO

Time and Distance to Illuminate:

33 seconds (stopwatch time)  0.3 km (0.2 mi) distance

Max speed: 43.6 km/hr (27.1 mph)

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

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated? ( ) YES  (X) NO

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)

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><strong>After vehicle cool down period:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature:</td>
<td>24.0°C (75.2°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period:</td>
<td>59 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>242.7 kPa (35.2 psi)</td>
<td>242.7 kPa (35.2 psi)</td>
<td>167.3 kPa (24.3 psi)</td>
<td>244.0 kPa (35.4 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>26.4°C (79.5°F)</td>
<td>27.0°C (80.6°F)</td>
<td>26.0°C (78.8°F)</td>
<td>25.2°C (77.4°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>26.6°C (79.9°F)</td>
<td>27.8°C (82.0°F)</td>
<td>28.0°C (82.4°F)</td>
<td>26.2°C (79.2°F)</td>
</tr>
</tbody>
</table>

After the cool down period of approximately one hour, restart 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)

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><strong>After cool down period:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-adjusted Inflation Pressure:</td>
<td>242.7 kPa (35.2 psi)</td>
<td>242.7 kPa (35.2 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
<td>244.0 kPa (35.4 psi)</td>
</tr>
</tbody>
</table>

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

Driving direction:

Starting point: SATF shop Direction: south

Time and Distance to Extinguish:

11 seconds 0.05 km (0.03 mi) distance

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL) PASS

Right rear tire was deflated at LLVW.

REMARKS: V-Box lost power during detection phase due to accidental disconnect of power cord.

RECORDED BY: David K. Banks DATE: August 31, 2006

APPROVED BY: Kenneth H. Yates
DATA SHEET 3 (Sheet 15 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO E – Left Front, Left Rear Tire Deflation at LLVW

TEST DATE: August 31, 2006 LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C65200

Time: Start: 8:54 am
Odometer Reading: Start: 280.7 km (174.4 mi)

Note: see Data Sheet 3 (Sheet 1 of 32) for Test Weight. Tire pressures were re-adjusted to cold inflation pressure of 240 kPa before calibration phase.

SYSTEM CALIBRATION/LEARNING PHASE:
(V-Box time – see Section 6 test plots)

Driving in first direction:
Starting point: San Angelo Test Facility shop Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75+ 25 km/h excluding time periods when brake pedal is applied.

9:59 minutes (stopwatch time) 14.6 km (9.1 mi) distance

Driving in opposite direction:
Starting point: Brodnax Road / Highway 87 Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75+ 25 km/h excluding time periods when brake pedal is applied.

10:27 minutes (stopwatch time) 14.8 km (9.2 mi) distance

Max speed: 86.7 km/hr (53.9 mph)

Total Driving Time: 20:39 minutes (V-Box time)

TIREF 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>254.0 kPa (36.8 psi)</td>
<td>255.6 kPa (37.1 psi)</td>
<td>252.1 kPa (36.6 psi)</td>
<td>255.1 kPa (37.0 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>36.4°C (97.5°F)</td>
<td>36.0°C (96.8°F)</td>
<td>33.9°C (93.0°F)</td>
<td>35.0°C (95.0°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>27.6°C (81.7°F)</td>
<td>29.0°C (84.2°F)</td>
<td>28.6°C (83.5°F)</td>
<td>27.6°C (81.7°F)</td>
</tr>
</tbody>
</table>
DATA SHEET 3 (Sheet 16 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO E – Left Front, Left Rear Tire Deflation at LLVW

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>( X )LF ( X )LR ( )RR ( )RF</td>
<td>173.1 kPa (25.1 psi)</td>
<td>173.1 kPa (25.1 psi)</td>
<td>N/A</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? ( X )YES ( )NO

Time and Distance to Illuminate:

48 seconds (stopwatch time) 0.3 km (0.2 mi) distance

Max speed: 43.0 km/hr (26.7 mph)

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

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated? ( )YES ( X )NO

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)

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>240.0 kPa (34.8 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
<td>241.4 kPa (35.0 psi)</td>
<td>246.3 kPa (35.7 psi)</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>167.3 kPa (24.3 psi)</td>
<td>168.2 kPa (24.4 psi)</td>
<td>241.4 kPa (35.0 psi)</td>
<td>246.3 kPa (35.7 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>28.4°C (83.1°F)</td>
<td>29.4°C (84.9°F)</td>
<td>29.0°C (84.2°F)</td>
<td>28.4°C (83.1°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>28.4°C (83.1°F)</td>
<td>29.4°C (84.9°F)</td>
<td>28.8°C (83.8°F)</td>
<td>27.9°C (82.2°F)</td>
</tr>
</tbody>
</table>

After the cool down period of approximately one hour, restart 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)

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 cool down period; Re-adjusted Inflation Pressure:</td>
<td>240.0 kPa (34.8 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
<td>241.4 kPa (35.0 psi)</td>
<td>246.3 kPa (35.7 psi)</td>
</tr>
</tbody>
</table>

Is it necessary to drive the vehicle to extinguish the telltale?  

( X )YES    (   )NO

Driving direction:
Starting point: SATF shop  
Direction: south

Time and Distance to Extinguish:
42 seconds 0.3 km (0.2 mi) distance

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)  
PASS

Left front and left rear tires were deflated at LLVW.

REMARKS: None

RECORDED BY: David K. Banks  
DATE: August 31, 2006

APPROVED BY: Kenneth H. Yates
DATA SHEET 3 (Sheet 18 of 32)
TPMS OPERATIONAL PERFORMANCE

SCENARIO F – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at LLVW

TEST DATE: August 31, 2006 LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C65200

Time: Start: 12:51 pm

Odometer Reading: Start: 312.5 km (194.2 mi)

Note: see Data Sheet 3 (Sheet 1 of 32) for Test Weight. Tire pressures were re-adjusted to cold inflation pressure of 240 kPa before calibration phase.

SYSTEM CALIBRATION/LEARNING PHASE:
(V-Box time – see Section 6 test plots)

Driving in first direction:
Starting point: San Angelo Test Facility shop Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75+ 25 km/h excluding time periods when brake pedal is applied.

10:04 minutes (stopwatch time) 14.6 km (9.1 mi) distance

Driving in opposite direction:
Starting point: Brodnax Road / Highway 87 Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75+ 25 km/h excluding time periods when brake pedal is applied.

10:26 minutes (stopwatch time) 15.0 km (9.3 mi) distance

Max speed: 88.4km/hr (54.9 mph)
Total Driving Time: 20:33 minutes (V-Box time)

TIREF 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>257.0 kPa (37.3 psi)</td>
<td>257.1 kPa (37.3 psi)</td>
<td>260.1 kPa (37.7 psi)</td>
<td>264.5 kPa (38.4 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>41.0°C (105.8°F)</td>
<td>40.7°C (105.3°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>29.8°C (85.6°F)</td>
<td>30.4°C (86.7°F)</td>
<td>30.4°C (86.7°F)</td>
<td>29.0°C (84.2°F)</td>
</tr>
</tbody>
</table>
TPMS OPERATIONAL PERFORMANCE

SCENARIO F – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at LLVW

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>173.0 kPa</td>
<td>173.0 kPa</td>
<td>172.8 kPa</td>
<td>173.0 kPa</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>(25.1 psi)</td>
<td>(25.1 psi)</td>
<td>(25.1 psi)</td>
<td>(25.1 psi)</td>
</tr>
</tbody>
</table>

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop     Direction: south

Did the telltale illuminate? ( X )YES  ( )NO

Time and Distance to Illuminate:

Illumination just after V-Box satellite acquisition - driving was not required.

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

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated? ( )YES  ( X )NO

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)

**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>32.2°C (90.0°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period:</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inflation Pressure</th>
<th>240.2 kPa (34.8 psi)</th>
<th>240.0 kPa (34.8 psi)</th>
<th>240.1 kPa (34.8 psi)</th>
<th>240.2 kPa (34.8 psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tire Sidewall Temp</td>
<td>32.2°C (90.0°F)</td>
<td>33.6°C (92.5°F)</td>
<td>34.4°C (93.9°F)</td>
<td>32.2°C (90.0°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>30.2°C (86.4°F)</td>
<td>30.5°C (86.9°F)</td>
<td>30.2°C (86.4°F)</td>
<td>31.0°C (87.8°F)</td>
</tr>
</tbody>
</table>

After the cool down period of approximately one hour, restart 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)

**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 cool down period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-adjusted Inflation Pressure:</td>
<td>240.2 kPa (34.8 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
<td>240.1 kPa (34.8 psi)</td>
<td>240.2 kPa (34.8 psi)</td>
</tr>
</tbody>
</table>

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

Driving direction:
Starting point: SATF shop  Direction: south

Time and Distance to Extinguish: 1:15 minutes  0.6 km (0.4 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:** David K. Banks  **DATE:** August 31, 2006

**APPROVED BY:** Kenneth H. Yates
DATA SHEET 3 (Sheet 21 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO G – Left Front Tire Deflation at GVWR

TEST DATE: September 1, 2006 LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C65200

Time: Start: 10:00 am

Odometer Reading: Start: 344.6 km (214.1 mi)

Note: see Data Sheet 3 (Sheet 2 of 32) for Test Weight. Tire pressures were re-adjusted to cold inflation pressure of 240 kPa before calibration phase.

SYSTEM CALIBRATION/LEARNING PHASE:
(V-Box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75+ 25 km/h excluding time periods when brake pedal is applied.

10:10 minutes (stopwatch time) 16.1 km (10.0 mi) distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87 Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75+ 25 km/h excluding time periods when brake pedal is applied.

10:32 minutes (stopwatch time) 15.8 km (9.8 mi) distance

Max speed: 84.0 km/hr (52.2 mph)
Total Driving Time: 20:46 minutes (V-Box time)

<table>
<thead>
<tr>
<th>TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Execution Procedure</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Immediately, after vehicle is stopped, engine off: Inflation Pressure</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
</tr>
</tbody>
</table>
DATA SHEET 3 (Sheet 22 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO G – Left Front Tire Deflation at GVWR

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>( X )LF ( )LR ( )RR ( )RF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>173.0 kPa (25.1 psi)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop  
Direction: south

Did the telltale illuminate? ( X )YES ( )NO

Time and Distance to Illuminate:

53 seconds (stopwatch time) 0.5 km (0.3 mi) distance

Max speed: 44.8 km/hr (27.8 mph)

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

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated? ( )YES ( X )NO

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)
TPMS OPERATIONAL PERFORMANCE

SCENARIO G – Left Front Tire Deflation at GVWR

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)

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>28.6°C (83.5°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period:</td>
<td>64 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>166.7 kPa (24.2 psi)</td>
<td>246.7 kPa (35.8 psi)</td>
<td>245.3 kPa (35.6 psi)</td>
<td>242.8 kPa (35.2 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>31.4°C (88.5°F)</td>
<td>33.0°C (91.4°F)</td>
<td>31.8°C (89.2°F)</td>
<td>30.2°C (86.4°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>29.4°C (84.9°F)</td>
<td>31.4°C (88.5°F)</td>
<td>31.2°C (88.2°F)</td>
<td>29.0°C (84.2°F)</td>
</tr>
</tbody>
</table>

After the cool down period of approximately one hour, restart 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)

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 cool down period; Re-adjusted Inflation Pressure:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>240.0 kPa (34.8 psi)</td>
<td>246.5 kPa (35.8 psi)</td>
<td>245.3 Pa (35.6 psi)</td>
<td>242.8 kPa (35.2 psi)</td>
<td></td>
</tr>
</tbody>
</table>

Is it necessary to drive the vehicle to extinguish the telltale?  

(X) YES  ( ) NO

Driving direction:

Starting point: SATF shop  Direction: south

Time and Distance to Extinguish:  

55 seconds  0.3 km (0.2 mi) distance

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)  
PASS

Left front tire was deflated at GVWR.

REMARKS: None

RECORDED BY: David K. Banks  DATE: September 1, 2006

APPROVED BY: Kenneth H. Yates
DATA SHEET 3 (Sheet 24 of 32)  
TPMS OPERATIONAL PERFORMANCE  
SCENARIO H – Right Rear Tire Deflation at GVWR

TEST DATE: September 1, 2006  LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C65200

Time: Start: 12:05 pm

Odometer Reading: Start: 379.3 km (235.7 mi)

PRE-TEST TIRE INFLATION PRESSEURES 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: Inflation Pressure</td>
<td>240.0 kPa (34.8 psi)</td>
<td>240.1 kPa (34.8 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>27.2°C (81.0°F)</td>
<td>27.0°C (80.6°F)</td>
<td>27.0°C (80.6°F)</td>
<td>27.4°C (81.3°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>27.8°C (82.0°F)</td>
<td>29.2°C (84.6°F)</td>
<td>29.2°C (84.6°F)</td>
<td>28.2°C (82.8°F)</td>
</tr>
<tr>
<td>Adjusted pre-test inflation pressure to recommended cold pressure</td>
<td>240.0 kPa (34.8 psi)</td>
<td>240.1 kPa (34.8 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
</tr>
</tbody>
</table>

Note: see Data Sheet 3 (Sheet 2 of 32) for Test Weight.

SYSTEM CALIBRATION/LEARNING PHASE:
(V-Box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop  Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

10:18 minutes (stopwatch time)  14.5 km (9.0 mi) distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87  Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

10:24 minutes (stopwatch time)  15.0 km (9.3 mi) distance

Max speed: 88.5 km/hr (55.0 mph)
Total Driving Time: 20:46 minutes (V-Box time)
### 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>254.3 kPa (36.9 psi)</td>
<td>264.3 kPa (38.3 psi)</td>
<td>262.7 kPa (38.1 psi)</td>
<td>257.6 kPa (37.4 psi)</td>
</tr>
<tr>
<td></td>
<td>42.6°C (108.7°F)</td>
<td>42.6°C (108.7°F)</td>
<td>40.9°C (105.6°F)</td>
<td>40.6°C (105.1°F)</td>
</tr>
<tr>
<td></td>
<td>30.6°C (87.1°F)</td>
<td>32.6°C (90.7°F)</td>
<td>31.8°C (89.2°F)</td>
<td>29.8°C (85.6°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>N/A</td>
<td>N/A</td>
<td>172.8 kPa (25.1 psi)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### TELTALTE ILLUMINATION:

- Starting point: San Angelo Test Facility shop
- Direction: south

Did the telltale illuminate? (X)YES ( )NO

Time and Distance to Illuminate:

- 1:11 minutes (stopwatch time)
- 0.3 km (0.2 mi) distance
- Max speed: 41.1 km/hr (25.5 mph)

#### TELTALTE ILLUMINATES WITHIN 20 MINUTES: (X)YES ( )NO (fail)

- Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated? ( )YES (X)NO
- 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)

**TIRED 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>32.8°C (91.0°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period:</td>
<td>93 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>243.0 kPa (35.2 psi)</td>
<td>246.7 kPa (35.8 psi)</td>
<td>163.6 kPa (23.7 psi)</td>
<td>246.1 kPa (35.7 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>32.6°C (90.7°F)</td>
<td>35.4°C (95.7°F)</td>
<td>33.4°C (92.1°F)</td>
<td>32.4°C (90.3°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>30.4°C (86.7°F)</td>
<td>32.6°C (90.7°F)</td>
<td>32.4°C (90.3°F)</td>
<td>30.4°C (86.7°F)</td>
</tr>
</tbody>
</table>

After the cool down period of approximately one hour, restart 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)

**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 cool down period; Re-adjusted Inflation Pressure:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>243.0 kPa (35.2 psi)</td>
<td>246.7 kPa (35.8 psi)</td>
<td>240.1 Pa (34.8 psi)</td>
<td>246.1 kPa (35.7 psi)</td>
</tr>
</tbody>
</table>

Is it necessary to drive the vehicle to extinguish the telltale?  

( X )YES  (   )NO

Driving direction:  
Starting point: SATF shop  Direction: south

Time and Distance to Extinguish:  
46 seconds  0.5 km (0.3 mi) distance

**TEST RESULTS**

TPMS Performance Test Results (PASS/FAIL)  
PASS

Right rear tire was deflated at GVWR.

**REMARKS:** None

RECORDED BY: David K. Banks  DATE: September 1, 2006

APPROVED BY: Kenneth H. Yates
DATA SHEET 3 (Sheet 27 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO I – Left Front, Right Front Tire Deflation at GVWR

TEST DATE: September 5, 2006  LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C65200

Time: Start: 9:03 am

Odometer Reading: Start: 414.6 km (257.6 mi)

Note: see Data Sheet 3 (Sheet 2 of 32) for Test Weight. Tire pressures were re-adjusted to cold inflation pressure of 240 kPa before calibration phase.

SYSTEM CALIBRATION/LEARNING PHASE:
(V-Box time – see Section 6 test plots)

Driving in first direction:
Starting point: San Angelo Test Facility shop  Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75+25 km/h excluding time periods when brake pedal is applied.

10:04 minutes (stopwatch time)  14.8 km (9.2 mi) distance

Driving in opposite direction:
Starting point: Brodnax Road / Highway 87  Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75+25 km/h excluding time periods when brake pedal is applied.

10:28 minutes (stopwatch time)  15.6 km (9.7 mi) distance

Max speed: 87.6 km/hr (54.4 mph)
Total Driving Time: 20:45 minutes (V-Box time)

TIRED 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>254.4 kPa (36.9 psi)</td>
<td>258.8 kPa (37.5 psi)</td>
<td>259.5 kPa (37.6 psi)</td>
<td>254.7 kPa (36.9 psi)</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>30.4°C (86.7°F)</td>
<td>30.6°C (87.1°F)</td>
<td>30.2°C (86.4°F)</td>
<td>29.2°C (84.6°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>24.4°C (75.9°F)</td>
<td>24.6°C (76.3°F)</td>
<td>24.6°C (76.3°F)</td>
<td>24.4°C (75.9°F)</td>
</tr>
</tbody>
</table>
SCENARIO I – Left Front, Right Front Tire Deflation at GVWR

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 ( )LR ( )RR ( X )RF</td>
<td>173.1 kPa (25.1 psi)</td>
<td>N/A</td>
<td>N/A</td>
<td>173.0 kPa (25.1 psi)</td>
</tr>
</tbody>
</table>

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? ( X )YES ( )NO

Time and Distance to Illuminate:

1:06 minutes (stopwatch time) 0.6 km (0.4 mi) distance

Max speed: 41.4 km/hr (25.7 mph)

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

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated? ( )YES ( X )NO

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)

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>23.3°C (73.9°F)</td>
<td>Vehicle cool down period:</td>
<td>61 minutes</td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>168.2 kPa (24.4 psi)</td>
<td>244.0 kPa (35.4 psi)</td>
<td>245.0 kPa (35.5 psi)</td>
<td>168.9 kPa (24.5 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>25.6°C (78.1°F)</td>
<td>27.2°C (81.0°F)</td>
<td>25.6°C (78.1°F)</td>
<td>25.2°C (77.4°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>24.8°C (76.6°F)</td>
<td>26.0°C (78.8°F)</td>
<td>25.6°C (78.1°F)</td>
<td>25.0°C (77.0°F)</td>
</tr>
</tbody>
</table>

After the cool down period of approximately one hour, restart 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)

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 cool down period;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-adjusted Inflation Pressure:</td>
<td>240.1 kPa (34.8 psi)</td>
<td>244.0 kPa (35.4 psi)</td>
<td>245.0 Pa (35.5 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
</tr>
</tbody>
</table>

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

Driving direction:
Starting point: SATF shop Direction: south

Time and Distance to Extinguish:
1:14 minutes 1.0 km (0.6 mi) distance

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL) PASS
Left front and right front tires were deflated at GVWR.

REMARKS: None

RECORDED BY: David K. Banks DATE: September 5, 2006
APPROVED BY: Kenneth H. Yates
DATA SHEET 3 (Sheet 30 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO J – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at GVWR

TEST DATE: September 5, 2006 LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C65200

Time: Start: 10:55 am

Odometer Reading: Start: 447.4 km (278.0 mi)

Note: see Data Sheet 3 (Sheet 2 of 32) for Test Weight. Tire pressures were re-adjusted to cold inflation pressure of 240 kPa before calibration phase.

SYSTEM CALIBRATION/LEARNING PHASE:
(V-Box time – see Section 6 test plots)

Driving in first direction:
Starting point: San Angelo Test Facility shop Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75+ 25 km/h excluding time periods when brake pedal is applied.

10:07 minutes (stopwatch time) 14.6 km (9.1 mi) distance

Driving in opposite direction:
Starting point: Brodnax Road / Highway 87 Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75+ 25 km/h excluding time periods when brake pedal is applied.

10:28 minutes (stopwatch time) 14.8 km (9.2 mi) distance

Max speed: 89.0 km/hr (55.3 mph)
Total Driving Time: 20:38 minutes (V-Box time)

TIRED 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>248.0 kPa</td>
<td>259.1 kPa</td>
<td>260.0 kPa</td>
<td>246.6 kPa</td>
</tr>
<tr>
<td>engine off:</td>
<td>(36.0 psi)</td>
<td>(37.6 psi)</td>
<td>(37.7 psi)</td>
<td>(35.8 psi)</td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>32.4°C</td>
<td>31.8°C</td>
<td>31.0°C</td>
<td>29.9°C</td>
</tr>
<tr>
<td></td>
<td>(90.3°F)</td>
<td>(89.2°F)</td>
<td>(87.8°F)</td>
<td>(85.8°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>25.4°C</td>
<td>26.6°C</td>
<td>26.6°C</td>
<td>25.4°C</td>
</tr>
<tr>
<td></td>
<td>(77.7°F)</td>
<td>(79.9°F)</td>
<td>(79.9°F)</td>
<td>(77.7°F)</td>
</tr>
</tbody>
</table>
DATA SHEET 3 (Sheet 31 of 32)
TPMS OPERATIONAL PERFORMANCE
SCENARIO J – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at GVWR

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>173.0 kPa (25.1 psi)</td>
<td>173.0 kPa (25.1 psi)</td>
<td>173.2 kPa (25.1 psi)</td>
<td>173.0 kPa (25.1 psi)</td>
</tr>
</tbody>
</table>

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop  Direction: south

Did the telltale illuminate?  ( X )YES (   )NO

Time and Distance to Illuminate:

31 seconds (stopwatch time)  0.3 km (0.2 mi) distance

Max speed: 42.8 km/hr (26.6 mph)

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

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?  ( )YES ( X )NO

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)
SCENARIO J – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at GVWR

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)

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTEALE 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>25.1°C (77.2°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle cool down period:</td>
<td>75 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>168.6 kPa (24.5 psi)</td>
<td>167.8 kPa (24.3 psi)</td>
<td>166.9 kPa (24.2 psi)</td>
<td>169.4 kPa (24.6 psi)</td>
</tr>
<tr>
<td>Tire Sidewall Temp</td>
<td>26.6°C (79.9°F)</td>
<td>29.2°C (84.6°F)</td>
<td>28.0°C (82.4°F)</td>
<td>26.6°C (79.9°F)</td>
</tr>
<tr>
<td>San Angelo Test Facility Shop Floor Temp</td>
<td>26.4°C (79.5°F)</td>
<td>27.4°C (81.3°F)</td>
<td>26.6°C (79.9°F)</td>
<td>25.8°C (78.4°F)</td>
</tr>
</tbody>
</table>

After the cool down period of approximately one hour, restart 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)

TELLTALOE 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 cool down period;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-adjusted Inflation Pressure:</td>
<td>240.1 kPa (34.8 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
<td>240.0 Pa (34.8 psi)</td>
<td>240.0 kPa (34.8 psi)</td>
</tr>
</tbody>
</table>

Is it necessary to drive the vehicle to extinguish the telltale?  

(X) YES ( ) NO

Driving direction:
Starting point: SATF shop  Direction: south

Time and Distance to Extinguish:
1:24 minutes  1.0 km (0.6 mi) distance

TEST RESULTS

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

REMARKS: None

RECORDED BY: David K. Banks  DATE: September 5, 2006
APPROVED BY: Kenneth H. Yates
DATA SHEET 4 (Sheet 1 of 2)
TPMS OPERATIONAL PERFORMANCE
SCENARIO K – Malfunction Detection Test at GVWR

TEST DATE: September 5, 2006  LAB: SATF  VEHICLE NHTSA NO: C75100

Time: Start: 1:20 pm; End: 2:01 pm

Ambient Temperature: Start: 25.1°C (69.8°F); End: 26.0°C (78.8°F)

Odometer Reading: Start: 480.2 km (298.4 mi); End: 526.4 km (327.1 mi)

Fuel Level: Start: ¾ tank; End: Just under ¾ tank

Note: See Data Sheet 3 (Sheet 2 of 32) 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: Full size spare tire assembly without sensor was installed on left rear wheel position.

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

Combination Low Tire Pressure Warning/Malfunction Telltale

Driving in first direction:

Starting point: San Angelo Test Facility shop  Direction: south
Cumulative vehicle driving time at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal was applied. Drive the vehicle for 15-17 minutes or until the telltale illuminates, whichever occurs first.

Did the telltale illuminate? ( ) YES (X) NO
20:00 minutes (stopwatch time)  23.0 km (14.3 mi) distance

Driving in opposite direction:

Starting point: Highway 277  Direction: north
Cumulative vehicle driving time at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal was applied. Drive the vehicle for 5-10 minutes or until the telltale illuminates, whichever occurs first.

Did the telltale illuminate? ( ) YES (X) NO
19:01 minutes (stopwatch time)  23.2 km (14.4 mi) distance

Max speed: 88.8 km/hr (55.2 mph)
Total Driving Time: 39:40 minutes (V-Box time)
COMBINATION MALFUNCTION TELLTALE ILLUMINATES (FLASHING AND ILLUMINATION SEQUENCE) WITHIN 20 MINUTES: ( )YES ( X )NO

TPMS MALFUNCTION PERFORMANCE TEST RESULTS (PASS/FAIL)
Full size spare tire assembly with no sensor was installed on left rear wheel position at GVWR.

REMARKS: FMVSS 138 malfunction performance requirements do not become effective until September 1, 2007.

RECORDED BY: David K. Banks                      DATE: September 5, 2006
APPROVED BY: Kenneth H. Yates
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

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."
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.

Statement is provided verbatim: ( )YES ( )NO ( X )N/A

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.

Statement is provided verbatim: ( )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.

Statement is provided verbatim: ( )YES ( )NO ( X )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."

Statement is provided verbatim: ( )YES ( )NO ( X )N/A

DATA INDICATES COMPLIANCE: PASS/FAIL  PASS/FAIL: __N/A__
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: FMVSS 138 malfunction performance requirements do not become effective until September 1, 2007.
## TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

<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>WESTCLOX QUARTZ STOPWATCH</td>
<td>NONE</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>LASER TEMPERATURE GAUGE (TIRES AND GROUND)</td>
<td>RAYNGER ST20 PRO NON-CONTACT INFRARED THERMOMETER</td>
<td>SERIAL #2065640101-0014</td>
<td>8/10/2006</td>
<td>8/10/2007</td>
</tr>
<tr>
<td>AIR PRESSURE GAUGE</td>
<td>ASHCROFT GENERAL PURPOSE DIGITAL GAUGE</td>
<td>MODEL #25C1005 PS02L100-B1 SERIAL #1003098</td>
<td>12/15/2005</td>
<td>12/15/2006</td>
</tr>
<tr>
<td>FLOOR SCALES (VEHICLE)</td>
<td>INTERCOMP SW DELUXE SCALES</td>
<td>PART #100156 SERIAL #27032382</td>
<td>8/10/2006</td>
<td>8/10/2007</td>
</tr>
<tr>
<td>ASHCROFT MASTER PRESSURE GAUGE (KILOPASCALS)</td>
<td>ASHCROFT</td>
<td>MODEL #1082 SERIAL #COO0618 STD. #40584</td>
<td>11/2/2005</td>
<td>11/2/2006</td>
</tr>
<tr>
<td>PLATFORM SCALE (BALLAST)</td>
<td>HOWE RICHARDSON</td>
<td>MODEL #6401 SERIAL #0181-5509-26</td>
<td>8/10/2006</td>
<td>8/10/2007</td>
</tr>
</tbody>
</table>
SECTION 5
PHOTOGRAPHS
FIGURE 5.1

¾ FRONTAL VIEW FROM LEFT SIDE OF VEHICLE

2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138

FIGURE 5.2
VEHICLE CERTIFICATION LABEL
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138

FIGURE 5.4
TIRE SHOWING BRAND
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138

FIGURE 5.5
TIRE SHOWING MODEL
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138

FIGURE 5.6
TIRE SHOWING SIZE
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138

FIGURE 5.7
TIRE SHOWING DOT SERIAL NUMBER
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138

FIGURE 5.8
TIRE SHOWING MAX LOAD RATING AND MAX COLD INFLATION PRESSURE
FIGURE 5.9
TIRE SHOWING SIDEWALL/TREAD CONSTRUCTION
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138

FIGURE 5.10
RIM SHOWING VALVE STEM
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138

FIGURE 5.11
INSTRUMENT PANEL SHOWING COMBINATION LOW TIRE PRESSURE WARNING AND MALFUNCTION TELLTALE
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138

FIGURE 5.12
TIRE PRESSURE INFORMATION FROM RECONFIGURABLE DISPLAY
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138

FIGURE 5.14
VEHICLE REAR SEAT BALLAST FOR GVWR LOAD
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO. 138

FIGURE 5.15
VEHICLE CARGO AREA BALLAST FOR GVWR LOAD
2006 NISSAN PATHFINDER LE MPV
NHTSA NO. C65200
FMVSS NO 138

FIGURE 5.16
VEHICLE ON WEIGHT SCALES
SECTION 6
TEST PLOTS
Scenario A: Left Front Tire
Test Date: 8/30/06
Data File Time: 26:04 minutes
Cumulative Driving Time: 20:40 minutes
Start Point: SATF shop

Calibration Phase

LF Detection Phase: Illumination during V-Box satellite acquisition - driving was not required.
Scenario B:  Left Rear Tire
Test Date:  8/30/06
Data File Time:  25:26 minutes
Cumulative Driving Time:  20:27 minutes
Start Point:  SATF shop

Calibration Phase

2006 Nissan Pathfinder (C65200) LR Calibration / LLWV

Log Rate := 100.00 Hz
Scenario B: Left Rear Tire
Test Date: 8/30/06
Data File Time: 1:32 minutes
Illumination: 46 seconds
Start Point: SATF shop

Detection Phase

2006 Nissan Pathfinder (C65200) LR Telltale Illumination / GWWR

[Graph of speed and telltale illumination over time]
Scenario C: Right Front Tire
Test Date: 8/30/06
Data File Time: 26:07 minutes
Cumulative Driving Time: 20:35 minutes
Start Point: SATF shop

Calibration Phase

RF Detection Phase: Illumination upon vehicle start-up. Driving was not required.
Scenario D: Right Rear Tire
Test Date: 8/31/06
Data File Time: 26:33 minutes
Cumulative Driving Time: 20:32 minutes
Start Point: SATF shop

Calibration Phase

2006 Nissan Pathfinder (C65200) RR Calibration / LLW

Log Rate := 100.00 Hz

0 100 200 300 400 500 600 700 800 900 1,000 1,100 1,200 1,300 1,400 1,500 1,600
Kmh 0 10 20 30 40 50 60 70 80 90 100
secs

RT. 388 E Loop 306 S U.S. 87 W U.S. 87 E Loop 306 N RT. 388 W

Speed Trace

Brake Triggers
Scenario D: Right Rear Tire
Test Date: 8/31/06
Data File Time: Chart incomplete due to loss of V-Box power
Illumination: 33 seconds
Start Point: SATF shop

Detection Phase
Scenario E: Left Front, Left Rear Tires
Test Date: 8/31/06
Data File Time: 25:58 minutes
Cumulative Driving Time: 20:39 minutes
Start Point: SATF shop

Calibration Phase
Scenario E: Left Front, Left Rear Tires
Test Date: 8/31/06
Data File Time: 1:42 minutes
Illumination: 48 seconds
Start Point: SATF shop

Detection Phase
Scenario F: Left Front, Left Rear, Right Rear, Right Front Tires
Test Date: 8/31/06
Data File Time: 26:27 minutes
Cumulative Driving Time: 20:33 minutes
Start Point: SATF shop

Calibration Phase

2006 Nissan Pathfinder (C65200) LF, LR, RR, RF Calibration / LLW

Log Rate := 100.00 Hz

LF, LR, RR, RF Detection Phase: Illumination just after V-Box satellite acquisition - driving was not required.
Scenario G: Left Front Tire
Test Date: 9/1/06
Data File Time: 30:42 minutes
Cumulative Driving Time: 20:46 minutes
Start Point: SATF shop

Calibration Phase

2006 Nissan Pathfinder (C65200) LF Calibration / GWR

Log Rate := 100.00 Hz
Scenario G: Left Front Tire
Test Date: 9/1/06
Data File Time: 2:57 minutes
Illumination: 53 seconds
Start Point: SATF shop

Detection Phase

2006 Nissan Pathfinder (C65200) LF Telltale Illumination / GVWR

Log Rate := 100.00 Hz
Scenario H: Right Rear Tire
Test Date: 9/1/06
Data File Time: 26:20 minutes
Cumulative Driving Time: 20:46 minutes
Start Point: SATF shop

Calibration Phase

2006 Nissan Pathfinder (C65200) RR Calibration / GWR
Log Rate := 100.00 Hz
Scenario H: Right Rear Tire
Test Date: 9/1/06
Data File Time: 4:13 minutes
Illumination: 1:11 minutes
Start Point: SATF shop

Detection Phase

2006 Nissan Pathfinder (C65200) RR Telltale Illumination / GWR

Log Rate := 100.00 Hz
Scenario I: Left Front, Right Front Tires
Test Date: 9/5/06
Data File Time: 26:17 minutes
Cumulative Driving Time: 20:45 minutes
Start Point: SATF shop

Calibration Phase
Scenario I: Left Front, Right Front Tires
Test Date: 9/5/06
Data File Time: 3:23 minutes
Illumination: 1:06 minutes
Start Point: SATF shop

Detection Phase

2006 Nissan Pathfinder (C65200) LF, RF Telltale Illumination / GVWR

Log Rate := 100.00 Hz
Scenario J: Left Front, Left Rear, Right Rear, Right Front Tires
Test Date: 9/5/06
Data File Time: 26:03 minutes
Cumulative Driving Time: 20:38 minutes
Start Point: SATF shop

Calibration Phase

2006 Nissan Pathfinder (C65200) LF, LR, RR, RF Calibration / GWR

Log Rate := 100.00 Hz
Scenario J: Left Front, Left Rear, Right Rear, Right Front Tires
Test Date: 9/5/06
Data File Time: 1:47 minutes
Illumination: 31 seconds
Start Point: SATF shop

Detection Phase

2006 Nissan Pathfinder (C65200) LF, LR, RR, RF Telltale Illumination / GWV

Log Rate := 100.00 Hz
Scenario K: Spare without Sensor Installed on Left Rear
Test Date: 9/5/06
Data File Time: 39:40 minutes
Illumination: NONE
Start Point: SATF shop

Malfunction Detection

2006 Nissan Pathfinder (C65200) LR Spare Tire / Combination Low Tire / Malfunction Telltale Illumination / GWIR

Log Rate := 100.00 Hz