SAFETY COMPLIANCE TESTING FOR
FMVSS 124H
ACCELERATOR CONTROL SYSTEMS

LANDROVER IN THE UK
2004 LANDROVER FREELANDER, MPV
NHTSA NO. C40600

GENERAL TESTING LABORATORIES, INC.
1623 LEEDSTOWN ROAD
COLONIAL BEACH, VIRGINIA 22443

AUGUST 6, 2004
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 6115 (MV9-220)
WASHINGTON, D.C. 20560
This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By: Debra Messick

Approved By: [Signature]

Approval Date: 8/30/04

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: [Signature]

Acceptance Date: 8/24/04
<table>
<thead>
<tr>
<th>1. Report No.</th>
<th>124-GTL-04-005</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Government Accession No.</td>
<td></td>
</tr>
<tr>
<td>3. Recipient's Catalog No.</td>
<td></td>
</tr>
<tr>
<td>5. Report Date</td>
<td>August 6, 2004</td>
</tr>
<tr>
<td>6. Performing Organ. Code</td>
<td>GTL</td>
</tr>
<tr>
<td>7. Author(s)</td>
<td>Grant Farrand, Project Engineer Debbie Messick, Project Manager</td>
</tr>
<tr>
<td>9. Performing Organization Name and Address</td>
<td>General Testing Laboratories, Inc. 1623 Leedstown Road Colonial Beach, Va 22443</td>
</tr>
<tr>
<td>10. Work Unit No. (TRAIS)</td>
<td></td>
</tr>
<tr>
<td>11. Contract or Grant No.</td>
<td>DTNH22-01-C-11025</td>
</tr>
<tr>
<td>13. Type of Report and Period Covered</td>
<td>Final Test Report April 27, 2004</td>
</tr>
<tr>
<td>15. Supplementary Notes</td>
<td></td>
</tr>
<tr>
<td>16. Abstract</td>
<td>Compliance tests were conducted on the subject 2004 Landrover Freelander MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-124-06 for the determination of FMVSS 124 compliance. Test failures identified were as follows: Throttle Return Times</td>
</tr>
<tr>
<td>17. Key Words</td>
<td>Compliance Testing Safety Engineering FMVSS 124</td>
</tr>
<tr>
<td>18. Distribution Statement</td>
<td>Copies of this report are available from NHTSA NHTSA Technical Reference Div., Rm. 5108 (NAD-52) 400 7th St., S.W. Washington, DC 20590 Telephone No. (202) 366-4946</td>
</tr>
<tr>
<td>19. Security Classif. (of this report)</td>
<td>UNCLASSIFIED</td>
</tr>
<tr>
<td>21. No. of Pages</td>
<td>90</td>
</tr>
<tr>
<td>20. Security Classif. (of this page)</td>
<td>UNCLASSIFIED</td>
</tr>
<tr>
<td>22. Price</td>
<td></td>
</tr>
</tbody>
</table>

Form DOT F 1700.7 (8-72)
<table>
<thead>
<tr>
<th>SECTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Purpose of Compliance Test</td>
</tr>
<tr>
<td>2</td>
<td>Test Procedure and Discussion of Results</td>
</tr>
<tr>
<td>3</td>
<td>Compliance Test Data</td>
</tr>
<tr>
<td>4</td>
<td>Test Equipment List and Calibration Information</td>
</tr>
<tr>
<td>5</td>
<td>Photographs</td>
</tr>
<tr>
<td>5.1</td>
<td>Front of Vehicle</td>
</tr>
<tr>
<td>5.2</td>
<td>Left Side View of Vehicle</td>
</tr>
<tr>
<td>5.3</td>
<td>Right Side View of Vehicle</td>
</tr>
<tr>
<td>5.4</td>
<td>Vehicle's Certification and Tire Information Label</td>
</tr>
<tr>
<td>5.5</td>
<td>View of Throttle Body on Engine</td>
</tr>
<tr>
<td>5.6</td>
<td>Location of TPS and TPM</td>
</tr>
<tr>
<td>5.7</td>
<td>TPS and TPM Connector</td>
</tr>
<tr>
<td>5.8</td>
<td>ECM Connectors #1 through #5</td>
</tr>
<tr>
<td>5.9</td>
<td>Accelerator Pedal Assembly in Car</td>
</tr>
<tr>
<td>5.10</td>
<td>Accelerator Connector</td>
</tr>
<tr>
<td>5.11</td>
<td>Accelerator Pedal Springs #1 and #2</td>
</tr>
<tr>
<td>5.12</td>
<td>Accelerator Pedal Assembly</td>
</tr>
<tr>
<td>5.13</td>
<td>Throttle Body Assembly Front View</td>
</tr>
<tr>
<td>5.14</td>
<td>Throttle Body Assembly Side View</td>
</tr>
<tr>
<td>5.15</td>
<td>Vehicle in Test Chamber</td>
</tr>
<tr>
<td>5.16</td>
<td>124 Test Instrumentation Set-up</td>
</tr>
<tr>
<td>6</td>
<td>Plots</td>
</tr>
<tr>
<td>7</td>
<td>Manufacturer's Drawings</td>
</tr>
<tr>
<td>8</td>
<td>Notice of Possible Non-Compliance</td>
</tr>
</tbody>
</table>
SECTION 1
PURPOSE OF COMPLIANCE TEST

FMVSS 124 specifies requirements for the return of a vehicle’s throttle to the idle position when the driver removes the actuating force from the accelerator control, or in the event of a severance or disconnection in the accelerator control system. The purpose of FMVSS 124 is to reduce deaths and injuries resulting from engine overspeed caused by malfunctions in the accelerator control system. This standard applies to passenger cars, multipurpose passenger vehicles (MPV's), trucks and buses.
SECTION 2
TEST PROCEDURES AND DISCUSSION OF RESULTS

Compliance testing was conducted on a 2004 LANDROVER FREELANDER, MPV, NHTSA No. C40600 in accordance with the National Highway Traffic Safety Administration (NHTSA) Laboratory Procedure TP-124-06.

The drive-by wire vehicle was equipped with an Accelerator Pedal Position Sensor (APS), Throttle Plate Position Sensor (TPS), Electronic Control Module (ECM), and Air Throttle Plate Actuator Motor (TPM).

Output from the throttle position sensor on the air throttle plate shaft was used to measure throttle position and data was recorded at 1000 HZ with GTL's data acquisition system. Normal operation testing was conducted to simulate the normal removal of the driver’s foot from the accelerator pedal. Return to idle times were determined for various throttle plate positions with the accelerator control system complete and with each of the wires to the TPS/TPM actuator motor and APS independently severed and also shorted to ground. Return to idle times were also determined for severance of the connectors to the APS, and TPS/TPM actuator motor. Removal of two springs in the accelerator pedal was also performed and return to idle times individually checked. A motor return spring in the TPM was not removed due to the unit being a non-serviceable unit. The ECM connectors were also tested for severance and affect on throttle return times.

The Laboratory by observation, did not experience any failures which resulted in a runaway engine. System failures were induced approximately simultaneously with release of pedal
force. Some tests were conducted only at 100% W.O.T. as it represented the worst case return time scenario.

This testing was performed at high ambient temperature of 52° C (-5 +0) in accordance with the NHTSA Test Procedure TP-124-06.
SECTION 3
COMPLIANCE TEST DATA

Test data for this test can be found on the following pages. Photographs are found in Section 5 and Test Plots are found in Section 6.
VEHICLE DESCRIPTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 LANDROVER FREELANDER MPV
VEHICLE NHTSA NO.: C40600
VEHICLE VIN: SALNY22214AD160095
DATE OF TEST: APRIL 27, 2004
TEST LAB: GENERAL TESTING LABORATORIES

VEHICLE ENGINE TYPE: V6
ENGINE SIZE: 2.5 L

GVWR: 2080 KG

VEHICLE ACCEL. CONTROL SYSTEM (ACS) (Air or Fuel Throttled): AIR
MAX. BHP ENGINE SPEED: 174 HP
MFR. IDLE RPM: COMPUTER CONTROLLED (750)

FUEL METERING DEVICE (Carburetor, fuel injection, etc): FUEL INJECTION

REMARKS:

RECORDED BY: [Signature]  DATE: 04/27/04
APPROVED BY: [Signature]
DATA SHEET 2
NORMAL OPERATION TEST
(fully operational system)

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 LANDROVER FREELANDER MPV
VEHICLE NHTSA NO.: C40600
DATE OF TEST: APRIL 27, 2004

Check one:


SYSTEM CONDITION: COMPLETE (no modifications) Normal Operation

<table>
<thead>
<tr>
<th>ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)</th>
<th>THROTTLE POSITION SENSOR READING</th>
<th>RPM</th>
<th>TEMPERATURE (°F)</th>
<th>THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)</th>
<th>RETURN TIME TO IDLE (Msec)</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td>25</td>
<td>6750</td>
<td>120.1</td>
<td>120.7</td>
<td>8%</td>
<td>2437</td>
</tr>
<tr>
<td>50%</td>
<td>50</td>
<td>6750</td>
<td>130.4</td>
<td>120.7</td>
<td>8%</td>
<td>2731</td>
</tr>
<tr>
<td>75%</td>
<td>75</td>
<td>6750</td>
<td>145.3</td>
<td>121.0</td>
<td>8%</td>
<td>1958</td>
</tr>
<tr>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>148.5</td>
<td>121.2</td>
<td>8%</td>
<td>1862</td>
</tr>
</tbody>
</table>

RETURN TIME REQUIREMENTS:

1 second (1000 ms) for vehicles less than 4536 kg.
2 seconds (2000 ms) for vehicles more than 4536 kg.
3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS _______ FAIL X

REMARKS:

RECORDED BY: [Signature] DATE: 04/27/04
APPROVED BY: [Signature]
DATA SHEET 3 (1 of 9)
FAILSAFE OPERATION DISCONNECTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 LANDROVER FREELANDER, MPV
VEHICLE NHTSA NO.: C40600
DATE OF TEST: APRIL 27, 2004

Check one:

SYSTEM CONDITION: #1 SPRING DISCONNECTED IN APS

<table>
<thead>
<tr>
<th>ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)</th>
<th>THROTTLE POSITION SENSOR READING</th>
<th>RPM</th>
<th>TEMPERATURE (°F)</th>
<th>THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)</th>
<th>RETURN TIME TO IDLE (Msec)</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td>25</td>
<td>6750</td>
<td>136.0</td>
<td>120.4</td>
<td>8%</td>
<td>1573</td>
</tr>
<tr>
<td>50%</td>
<td>50</td>
<td>6750</td>
<td>142.2</td>
<td>120.4</td>
<td>8%</td>
<td>1969</td>
</tr>
<tr>
<td>75%</td>
<td>75</td>
<td>6750</td>
<td>160.5</td>
<td>120.5</td>
<td>8%</td>
<td>1818</td>
</tr>
<tr>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>165.6</td>
<td>120.5</td>
<td>8%</td>
<td>1882</td>
</tr>
</tbody>
</table>

RETURN TIME REQUIREMENTS:

1 second (1000 ms) for vehicles less than 4536 kg.
2 seconds (2000 ms) for vehicles more than 4536 kg.
3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS _______  FAIL       X _____

REMARKS:

RECORDED BY: [Signature]  DATE: 04/27/04
APPROVED BY: [Signature]
DATA SHEET 3 (2 of 9)
FAIL-SAFE OPERATION DISCONNECTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 LANDROVER FREELANDER, MPV
VEHICLE NHTSA NO.: C40600
DATE OF TEST: APRIL 27, 2004

Check one:


SYSTEM CONDITION: #2 SPRING DISCONNECTED IN APS

<table>
<thead>
<tr>
<th>ACCELERATOR POSITION</th>
<th>THROTTLE POSITION SENSOR READING</th>
<th>RPM</th>
<th>TEMPERATURE (°F)</th>
<th>RETURN TIME TO IDLE (Msec)</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>% WIDE OPEN THROTTLE (WOT)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25%</td>
<td>25</td>
<td>6750</td>
<td>136.4</td>
<td>121.4</td>
<td>8%</td>
</tr>
<tr>
<td>50%</td>
<td>50</td>
<td>6750</td>
<td>138.2</td>
<td>121.4</td>
<td>8%</td>
</tr>
<tr>
<td>75%</td>
<td>75</td>
<td>6750</td>
<td>140.7</td>
<td>121.8</td>
<td>8%</td>
</tr>
<tr>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>145.0</td>
<td>121.7</td>
<td>8%</td>
</tr>
</tbody>
</table>

RETURN TIME REQUIREMENTS:

1 second (1000 ms) for vehicles less than 4536 kg.
2 seconds (2000 ms) for vehicles more than 4536 kg.
3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS _______ FAIL ___ X ___

REMARKS:

RECORDED BY: [Signature] DATE: 04/27/04
APPROVED BY: [Signature]
FAIL-SAFE OPERATION DISCONNECTION

VEHICLE MAKE/MODEL/BODY STYLE: 2004 LANDROVER FREELANDER, MPV
VEHICLE NHTSA NO.: C408000
DATE OF TEST: APRIL 27, 2004

Check one:


SYSTEM CONDITION: TPS/TPM CONNECTOR DISCONNECT

<table>
<thead>
<tr>
<th>ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)</th>
<th>THROTTLE POSITION SENSOR READING</th>
<th>RPM</th>
<th>TEMPERATURE (°F)</th>
<th>THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)</th>
<th>RETURN TIME TO IDLE (Msec)</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>155</td>
<td>121.4</td>
<td>8%</td>
<td>P</td>
</tr>
</tbody>
</table>

RETURN TIME REQUIREMENTS:

1 second (1000 ms) for vehicles less than 4536 kg.
2 seconds (2000 ms) for vehicles more than 4536 kg.
3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS ___ X ___ FAIL ___________

REMARKS:

RECORDED BY: ___________________ DATE: 04/27/04
APPROVED BY: ___________________
DATA SHEET 3 (4 of 9)
FAIL-SAFE OPERATION DISCONNECTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 LANDROVER FREELANDER, MPV
VEHICLE NHTSA NO.: C40600
DATE OF TEST: APRIL 27, 2004

Check one:
- Mid Temp. Test: ___
- Low Temp. Test: ___
- High Temp. Test: X

SYSTEM CONDITION: APS CONNECTOR DISCONNECT

<table>
<thead>
<tr>
<th>ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)</th>
<th>THROTTLE POSITION SENSOR READING</th>
<th>RPM</th>
<th>TEMPERATURE (°F)</th>
<th>THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)</th>
<th>RETURN TIME TO IDLE (Msec)</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>146</td>
<td>121.6</td>
<td>8%</td>
<td>7</td>
</tr>
</tbody>
</table>

RETURN TIME REQUIREMENTS:

1 second (1000 ms) for vehicles less than 4536 kg.
2 seconds (2000 ms) for vehicles more than 4536 kg.
3 seconds (3000 ms) for vehicles exposed to -18°C or less

PASS X   FAIL

REMARKS:

RECORDED BY: [Signature]
DATE: 04/27/04

APPROVED BY: [Signature]
DATA SHEET 3 (5 of 9)
FAIL-SAFE OPERATION DISCONNECTION

VEHICLE MAKE/MODEL/BODY STYLE: 2004 LANDROVER FREELANDER, MPV
VEHICLE NHTSA NO.: C40600
DATE OF TEST: APRIL 27, 2004

Check one:


SYSTEM CONDITION: ECM CONNECTOR DISCONNECT

<table>
<thead>
<tr>
<th>CONN NO.</th>
<th>ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)</th>
<th>THROTTLE POSITION SENSOR READING</th>
<th>RPM</th>
<th>TEMPERATURE (°F)</th>
<th>THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)</th>
<th>RETURN TIME TO IDLE (Msec) OR LIMP MODE</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 100%</td>
<td>100</td>
<td>6750</td>
<td>155</td>
<td>121.2</td>
<td>8%</td>
<td>13</td>
<td>P*</td>
</tr>
<tr>
<td>2 100%</td>
<td>100</td>
<td>6750</td>
<td>156</td>
<td>121.2</td>
<td>8%</td>
<td>138</td>
<td>P*</td>
</tr>
<tr>
<td>3 100%</td>
<td>100</td>
<td>6750</td>
<td>165</td>
<td>121.5</td>
<td>8%</td>
<td>28</td>
<td>P*</td>
</tr>
<tr>
<td>4 100%</td>
<td>100</td>
<td>6750</td>
<td>177</td>
<td>121.7</td>
<td>8%</td>
<td>2250</td>
<td>F</td>
</tr>
<tr>
<td>5 100%</td>
<td>100</td>
<td>6750</td>
<td>178</td>
<td>121.8</td>
<td>8%</td>
<td>1316</td>
<td>F</td>
</tr>
</tbody>
</table>

RETURN TIME REQUIREMENTS:

1 second (1000 ms) for vehicles less than 4536 kg.
2 seconds (2000 ms) for vehicles more than 4536 kg.
3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS __________ FAIL __________ X

REMARKS: * Engine stopped during all of the above disconnects.

RECORDED BY: __________ DATE: 04/27/04

APPROVED BY: __________
DATA SHEET 3 (6 of 9)
FAIL-SAFE OPERATION DISCONNECTION

VEHICLE MAKE/MODEL/BODY STYLE: 2004 LANDROVER FREELANDER, MPV
VEHICLE NHTSA NO.: C40600
DATE OF TEST: APRIL 27, 2004

Check one:

SYSTEM CONDITION: TPS/TPM INDIVIDUAL WIRES SEVERED

<table>
<thead>
<tr>
<th>WIRE NO.</th>
<th>ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)</th>
<th>THROTTLE POSITION SENSOR READING</th>
<th>RPM</th>
<th>TEMPERATURE (°F)</th>
<th>RETURN TIME TO IDLE (Mssec) OR LIMP MODE</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACCELERATOR POSITION % WIDE OPEN THROTTLE</td>
<td>THROTTLE POSITION SENSOR</td>
<td>RPM</td>
<td>TEMPERATURE (°F)</td>
<td>ENGINE COOLANT</td>
<td>AMBIENT</td>
</tr>
<tr>
<td>1</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>146.6</td>
<td>121.8</td>
<td>8%</td>
</tr>
<tr>
<td>2</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>165.6</td>
<td>121.8</td>
<td>8%</td>
</tr>
<tr>
<td>3</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>176.8</td>
<td>121.9</td>
<td>8%</td>
</tr>
<tr>
<td>4</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>175.3</td>
<td>122.0</td>
<td>8%</td>
</tr>
<tr>
<td>5</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>180.1</td>
<td>122.1</td>
<td>8%</td>
</tr>
<tr>
<td>6</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>193.8</td>
<td>122.4</td>
<td>8%</td>
</tr>
</tbody>
</table>

RETURN TIME REQUIREMENTS:

1 second (1000 ms) for vehicles less than 4536 kg,
2 seconds (2000 ms) for vehicles more than 4536 kg,
3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS _________  FAIL _________ X _______

REMARKS:

RECORDED BY: _______________________________  DATE: __04/27/04__
APPROVED BY: _______________________________
DATA SHEET 3 (7 of 9)
FAIL-SAFE OPERATION DISCONNECTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 LANDROVER FREELANDER, MPV
VEHICLE NHTSA NO.: C40600
DATE OF TEST: APRIL 27, 2004

Check one:
Mid Temp. Test:____  Low Temp. Test:____  High Temp. Test: X____

SYSTEM CONDITION: TPS/TPM INDIVIDUAL WIRES SHORTED TO GROUND

<table>
<thead>
<tr>
<th>WIRE NO.</th>
<th>ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)</th>
<th>THROTTLE POSITION SENSOR READING</th>
<th>RPM</th>
<th>TEMPERATURE (°F)</th>
<th>THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)</th>
<th>RETURN TIME TO IDLE (Msec) OR LIMP MODE</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>167.7</td>
<td>121.6</td>
<td>3549</td>
<td>F</td>
</tr>
<tr>
<td>2</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>178.3</td>
<td>122.3</td>
<td>2789</td>
<td>F</td>
</tr>
<tr>
<td>3</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>178.8</td>
<td>122.5</td>
<td>156</td>
<td>P</td>
</tr>
<tr>
<td>4</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>182.5</td>
<td>122.6</td>
<td>67</td>
<td>P</td>
</tr>
<tr>
<td>5</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>193.8</td>
<td>122.9</td>
<td>2936</td>
<td>F</td>
</tr>
<tr>
<td>6</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>183.6</td>
<td>12</td>
<td>27</td>
<td>P</td>
</tr>
</tbody>
</table>

RETURN TIME REQUIREMENTS:

1 second (1000 ms) for vehicles less than 4536 kg.
2 seconds (2000 ms) for vehicles more than 4536 kg.
3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS _________  FAIL _______ X____

REMARKS:

RECORDED BY: [Signature]  DATE: 04/27/04
APPROVED BY: [Signature]
DATA SHEET 3 (8 of 9)
FAIL-SAFE OPERATION DISCONNECTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 LANDROVER FREELANDER, MPV
VEHICLE NHTSA NO.: C40600
DATE OF TEST: APRIL 27, 2004

Check one:

SYSTEM CONDITION: APS INDIVIDUAL WIRES SEVERED

<table>
<thead>
<tr>
<th>WIRE NO.</th>
<th>ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)</th>
<th>THROTTLE POSITION SENSOR READING</th>
<th>RPM</th>
<th>TEMPERATURE (°F)</th>
<th>THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)</th>
<th>RETURN TIME TO IDLE (Meec) OR LIMP MODE</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>152.4</td>
<td>122.9</td>
<td>8%</td>
<td>F</td>
</tr>
<tr>
<td>12</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>175.5</td>
<td>122.8</td>
<td>8%</td>
<td>F</td>
</tr>
<tr>
<td>13</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>179.4</td>
<td>123.0</td>
<td>8%</td>
<td>F</td>
</tr>
<tr>
<td>14</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>185.5</td>
<td>123.0</td>
<td>8%</td>
<td>F</td>
</tr>
<tr>
<td>15</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>190.1</td>
<td>123.1</td>
<td>8%</td>
<td>F</td>
</tr>
<tr>
<td>16</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>194.7</td>
<td>123.2</td>
<td>8%</td>
<td>F</td>
</tr>
</tbody>
</table>

RETURN TIME REQUIREMENTS:

1 second (1000 ms) for vehicles less than 4536 kg.
2 seconds (2000 ms) for vehicles more than 4536 kg.
3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS _______ FAIL _______ X _______

REMARKS:

RECORDED BY: ______________________ DATE: 04/27/04
APPROVED BY: ______________________
DATA SHEET 3 (9 of 9)  
FAIL-SAFE OPERATION DISCONNECTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 LANDROVER FREELANDER, MPV  
VEHICLE NHTSA NO.: C40600  
DATE OF TEST: APRIL 27, 2004

Check one:  

SYSTEM CONDITION: APS INDIVIDUAL WIRES SHORTED TO GROUND

<table>
<thead>
<tr>
<th>WIRE NO.</th>
<th>ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)</th>
<th>THROTTLE POSITION SENSOR READING</th>
<th>RPM</th>
<th>TEMPERATURE (°F)</th>
<th>RETURN TIME TO IDLE (Msec) OR LIMP MODE</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>154.6</td>
<td>8%</td>
<td>18</td>
</tr>
<tr>
<td>12</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>174.6</td>
<td>8%</td>
<td>2132</td>
</tr>
<tr>
<td>13</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>185.8</td>
<td>8%</td>
<td>1927</td>
</tr>
<tr>
<td>14</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>190.0</td>
<td>8%</td>
<td>2036</td>
</tr>
<tr>
<td>15</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>190.8</td>
<td>8%</td>
<td>1881</td>
</tr>
<tr>
<td>16</td>
<td>100%</td>
<td>100</td>
<td>6750</td>
<td>190.9</td>
<td>8%</td>
<td>2130</td>
</tr>
</tbody>
</table>

RETURN TIME REQUIREMENTS:

1 second (1000 ms) for vehicles less than 4536 kg.  
2 seconds (2000 ms) for vehicles more than 4536 kg.  
3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS _______  FAIL _______  X

REMARKS:

RECORDED BY:  
APPROVED BY:  
DATE: 04/27/04
## SECTION 4
**TEST EQUIPMENT LIST AND CALIBRATION INFORMATION**

<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>CONTINUOUS RECORDER</td>
<td>OMEGA</td>
<td>55662</td>
<td>03/04</td>
<td>03/05</td>
</tr>
<tr>
<td>ENGINE RECORDING</td>
<td>FLUKE</td>
<td>7471026</td>
<td>03/04</td>
<td>03/05</td>
</tr>
<tr>
<td>ENGINE RECORDING</td>
<td>MONARCH</td>
<td>1444664</td>
<td>01/04</td>
<td>07/05</td>
</tr>
<tr>
<td>SOFTWARE</td>
<td>GTL</td>
<td>N/A</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>CHAMBER</td>
<td>GTL</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>EXHAUST DUCT</td>
<td>GTL</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
SECTION 5
PHOTOGRAPHS
SECTION 6
PLOTS
FMVSS 124 THROTTLE RETURN TEST
124 HOT / NORMAL/25% WOT

NHTSA C40800 FREELANDER

TRIGGER

THROTTLE POSITION %

RPM


TRIGGER [V] THROTTLE POSITION [%] ENGINE RPM [RPM] h:min:s

Channel: THROTTLE POSITION

Y1: 35.245 %  Y2: 8.488 %
T1: -54711.000 ms  T2: -52274.000 ms
dt: 2.437 s  f: 0.410 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/NORMAL/75% WOT
9:49:24 AM 4/28/04

NHTSA O40800 FREELANDER

Channel: THROTTLE POSITION
Y1: 82.299%  Y2: 8.914%
T1: -32220.000 ms  T2: -32220.000 ms
dt: 1.856 s  f: 0.511 Hz
FMVSS 124 THROTTLE RETURN TEST
124 AMBIENT/NORMAL/ 100% WOT
10:51:33 AM 4/28/04

NHTSA C40600 FREELANDER

V % RPM

THROTTLE POSITION %

TRIGGER

RPM

Channel: Throttle Position
Y1: 100.000 %
T1: 5437.365 ms
dt: 1.711 s

Y2: 8.480 %
T2: -3725.385 ms
T: 0.954 Hz
NHTSA C40500 FREELANDER

FMVSS 124 THROTTLE RETURN TEST
124 HOT / NORMAL / BASELINE IDLE 9:59:36 AM 4/28/04

Channel: THROTTLE POSITION
Y1: 5.381 %  Y2: 8.171 %
t1: 29538.000 ms  t2: 29681.000 ms
dt: 1.135 s  f: 0.881 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/SPRING 1/25% WOT
3:07:14 PM 4/27/04

NHTSA C40600 FREELANDER

V % RPM

TRIGGER

THROTTLE POSITION %

RPM

TRIGGER [V] Throttle Position [%] Engine RPM [RPM] h:min:s

Channel: Throttle Position
Y1: 29.424 % Y2: 8.988 %
T1: 39976.962 ms T2: -3249.962 ms
dt: 1.579 s f: 0.636 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/ SPRING 1/ 75% WOT 3:02:31 PM 4/27/04

NHTSA C40600 FREELANDER

V % RPM

TRIGGER

THROTTLE POSITION %

RPM

Channel: Throttle Position

Y1: 55.312 %  YZ: 8.963 %
T1: -1.3706.922 ms  T2: 11.850.992 ms
dt: 1.316 s  f: 0.550 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/SPRING 1/100% WOT
2:57:22 PM 4/27/04

NHTSA C40000 FREELANDER

V % RPM

TRIGGER

THROTTLE POSITION %

RPM

14:31:48.0 14:31:47.0 14:31:48.0 14:31:49.0 14:31:50.0

TRIGGER [V] Throttle Position [%] Engine RPM [RPM]

Channel: Throttle Position

Y1: 95.776 % Y2: 8.396 %
H: -5555.992 ms t2: -3977.992 ms
dt: 1.882 s t: 0.631 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/SPRING 2/25% WOT

3:13:12 PM 4/27/04

NHTSA C40600 FREELANDER

V % RPM

--- TRIGGER

--- THROTTLE POSITION %

--- RPM

15:10:17.5 15:10:18.0 15:10:18.5 15:10:19.0 15:10:19.5 15:10:20.0

--- TRIGGER [V] --- Throttle Position [%] --- Engine RPM [RPM]

Channel: Throttle Position
Y1: 47.412 % Y2: 8.954 %
t1: 34017.668 ms t2: 32199.888 ms
dt: 1.856 s t: 0.538 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/SPRING 2/ 50% WOT
3:15:46 PM 4/27/04

NHTSA C40600 FREELANDER

V % RPM

TRIGGER

THROTTLE POSITION %

RPM

15:10:26.0 15:10:27.0 15:10:28.0 15:10:29.0 15:10:30.0

h:min:s

Channel: Throttle Position
Y1: 67.812 %
Y2: 8.648 %

T: 25147.888 ms
T2: 23166.888 ms

dt: 1.861 s
f: 0.510 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/SPRING 2/ 100% WOT 3:22:32 PM 4/27/04

NHTSA C40600 FREELANDER

V % RPM

TRIGGER

THROTTLE POSITION %

RPM

Channel: Throttle Position

Y1: 90.571% Y2: 8.026%
T1: -5757.885 ms T2: -3255.889 ms
dt: 1.901 s f: 0.526 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT / TPS DISCONNECT / 100% WOT
10:25:54 AM 4/28/04

NHTSA C40800 FREELANDER

Channel: THROTTLE POSITION

Y1: 13.140 %  Y2: -10.694 %
I1: -43862.000 ms  I2: -43867.000 ms
dt: 0.005 s  f: 200.000 Hz
FMVSS 124  THROTTLE RETURN TEST
124 HOT/APS DISCONNECT/ 100% WOT  4:02:41 PM 4/27/04

NHTSA C46600 FREELANDER

V  %  RPM
5.00  3.75  2.50  1.25  0.00  0.00
100  75  50  25

THROTTLE POSITION %

RPM


Channel: Throttle Position

Y1: -7.633 %  Y2: -12.896 %
\text{time}: -3611.782 \text{ms}  \text{time}: -3904.782 \text{ms}
\text{dt}: 0.007 \text{s}  \text{frequency}: 142.867 \text{Hz}
FMVSS 124 THROTTLE RETURN TEST
124 HOT/ECM CONNECTOR 1/100% WOT 4:15:39 PM 4/27/04

NHTSA C40808 FREELANDER

Channel: Throttle Position

Y1: 81.852 %
Input 1: -47627.703 ms
dt: 0.013 s

Y2: 0.669 %
Input 2: -47614.709 ms
t: 78.623 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/ECM CONNECTOR 2/ 100% WOT 4:17:24 PM 4/27/04

NHTSA C40600 FREELANDER

V % RPM

TRIGGER

THROTTLE POSITION %

Channel: Throttle Position

Y1: 89.849 %
Y2: 6.225 %
T1: -36258.709 ms
T2: -38121.709 ms
dt: 0.138 s
f: 7.246 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/ECM CONNECTOR 5/ 100% WOT
4:29:29 PM 4/27/04

NHTSA C40800 FREELANDER

V % RPM

16:09:53.5 16:09:54.0 16:09:54.5 16:09:55.0 16:09:55.5
h:min:s

Channel: Throttle Position
Y1: 103.272 %
Y2: 8.833 %
T1: -8071.703 ms
t2: -4755.703 ms
dt: 1.316 s
f: 0.760 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/TPS/TPM WIRE 3/ 100% WOT 4:48:40 PM 4/27/04

NHTSA C40600 FREELANDER

V % RPM

THROTTLE POSITION %

RPM

16:36:35.5 16:36:36.5 16:36:37.5 16:36:38.5
- TRIGGER [V] - Throttle Position [%] - Engine RPM [RPM] h:mm:ss

Channel: Throttle Position
Y1: 107.313 %, Y2: -12.933 %
I1: -35432.740 ma, I2: -35364.740 ma
dt: 0.114 s, f: 8.772 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/TPS/TPM WIRE 2 SHORTED/100% WOT

5:11:57 PM 4/27/04

NHTSA C40600 FREELANDER

V % RPM

TRIGGER

THROTTLE POSITION %

RPM

Channel: Throttle Position

Y1: 98.821 %   Y2: 8.470 %
R1: -45468.298 ms   R2: -42980.988 ms
dt: 2788 s   f: 0.359 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/TPS/TPM WIRE 4 SHORTED/ 100% WOT  5:17:25 PM  4/27/04

NHTSA C40600 FREELANDER

V % RPM

TRIGGER

THROTTLE POSITION %

RPM

Channel: Throttle Position

Y1: 101.153 %  
Y2: -11.427 %

t1: -25364.998 ms  
t2: -25297.998 ms

dt: 0.067 s  
f: 14325 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/TPS/TPM WIRE 6 SHORTED/ 100% WOT 5:19:20 PM 4/27/04

NHTSA C40600 FREELANDER

V  %  RPM

TRIGGER

THROTTLE POSITION %

RPM

17:02:27.0  17:02:28.0  17:02:29.0  17:02:30.0  17:02:31.0

Channel: Throttle Position
Y1: 98.983 %  Y2: 8.963 %
T1: -15995.999 ms  T2: -12749.999 ms
dt: 2.936 s  f: 0.341 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/APS WIRE 14 OPEN/100% WOT

NHTSA C40600 FREELANDER

V % RPM

TRIGGER

THROTTLE POSITION %

17:26:47.0 17:26:48.0 17:26:49.0 17:26:50.0
h:mm:ss

TRIGGER [V] Throttle Position [%] Engine RPM [RPM]

Channel: Throttle Position

Y1: 103.466 % Y2: 0.866 %
H: 25113.116 ms H: 23114.318 ms
dt: 2.667 s f: 0.371 Hz
FMVSS 124  THROTTLE RETURN TEST
124 HOT/APS WIRE 16 OPEN/ 100% WOT
5:40:38 PM 4/27/04

NHTSA C40600 FREELANDER

V  %  RPM

0.00  0  0
1.25  25  25
2.50  50  50
3.75  75
5.00  100

TRIGGER

THROTTLE POSITION %

RPM

7:27:06.5  17:27:07.5  17:27:08.5  17:27:09.5  17:27:10.5  17:27:11.5
h:mins

Channel: Throttle Position

Y1: 98.662 %
Y2: 8.959 %
T1: -2218.318 ms
T2: -2223.318 ms
dt: 2.395 s
f: 0.419 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/APS WIRE 11 SHORTED/100% WOT 5:54:40 PM 4/27/04

NHTSA C40600 FREELANDER

V % RPM

TRIGGER

THROTTLE POSITION %

RPM


TRIGGER [V] Throttle Position [%] Engine RPM [RPM]

Channel: Throttle Position

Y1: -10.511 %  Y2: 10.218 %
T1: -54367.942 ms  T2: -54369.942 ms
dt: 0.016 s  f: 65.556 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/APS WIRE 12 SHORTED/ 100% WOT

NHTSA C40600 FREELANDER

Channel: Throttle Position

Y1: 100.001 %
t1: 44524.942 ms
dt: 2.132 s

Y2: 9.388 %
t2: 42492.942 ms
t: 0.468 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/APS WIRE 13 SHORTED/ 100% WOT 5:56:06 PM 4/27/04

NHTSA C40600 FREELANDER

Channel: Throttle Position

Y1: 99.732 %  Y2: 8.683 %
T1: -34825.942 ms  T2: -32728.842 ms
dt: 1.827 s  f: 0.5198 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/APS WIRE 14 SHORTED/100% WOT 5:59:52 PM 4/27/04

NHTSA C40600 FREELANDER

V % RPM

TRIGGER

THROTTLE POSITION %

17:46:38.5 17:46:39.5 17:46:40.5 17:46:41.5

- TRIGGER [V] - Throttle Position [%] - Engine RPM [RPM]

Channel: Throttle Position

Y1: 100.484 %  Y2: 6.845 %
T1: -24882.942 ms  T2: -22043.942 ms
dt: 2.636 s  t: 0.401 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/APS WIRE 15 SHORTED/ 100% WOT 6:01:28 PM 4/27/04

NHTSA 040800 FREELANDER

Channel: Throttle Position

Y1: 102.829 %  
Y2: 8.946 %

t1: 152226.942 ms  
t2: 12346.942 ms
dt: 1.881 s  
f: 0.532 Hz
FMVSS 124 THROTTLE RETURN TEST
124 HOT/APS WIRE 16 SHORTED/ 100% WOT 8:03:29 PM 4/27/04

NHTSA C40400 FREELANDER

V % RPM

17:48:58.5 17:48:59.5 17:49:00.5 17:49:01.5 17:49:02.5
- TRIGGER [V] - Throttle Position [%] - Engine RPM [RPM]

Channel: Throttle Position

Y1: 102.095 %  Y2: 8.821 %
M: -4573.942 mA  I2: -2443.842 mA
dt: 2.130 s  f: 0.459 Hz
VEHICLE INFORMATION/TEST SPECIFICATIONS
FMVSS 124 - Accelerator Control Systems

Requested information:

1.) A sketch of the driver operated accelerator control system (ACS) starting from the accelerator pedal up to and including the fuel metering device (carburetor, fuel injectors, fuel distributor, or fuel injection pump).

2.) For Normal ACS operation, the method utilized to determine the engine idle state (air throttle plate position, fuel delivery rate, other).

   - A setpoint idle speed is determined and the ECM tries to achieve this setpoint primarily through throttle opening angle, with adjustments to ignition angle and fuelling to suit momentary changes in load and mass airflow.

3.) For Fail-Safe operation of the ACS (disconnection or severance), the method utilized to determine return of engine power to the idle state (air throttle plate position, fuel delivery rate, air intake, engine rpm, other)
- The first reaction to a fault as described above is reversible Fuel Cut-off, also known as reversible SAS, until the throttle plate has arrived at the Limp Home position through spring activation.

4.) Is the vehicle ACS equipped with any of the following:
   A. Accelerator Pedal Position Sensor (APS)
   B. Throttle Plate Position Sensor (TPS)
   C. Electronic Control Module (ECM)
   D. Air throttle plate actuator motor

- All of the above.

5.) If air throttle plate equipped, is there a procedure which can be utilized by the test laboratory to measure the position of the throttle plate by tapping into the TPS or ECM? If so, please describe.

   Measure voltage across pins 3-19 (TPS1 signal) and 3-20 (TPS ground) at the ECM or the corresponding pins at the TPS sensor. The absolute throttle angle is then given by;

   \[ \text{TPS} = \left( \frac{\text{measured value}}{5V} \right) \times 100\% \]

6.) Point(s) chosen to demonstrate compliance with FMVSS 124 for single point disconnect and severance.

   See Items under 7.)

7.) Where applicable, were connections in the ACS beyond the ECM such as the fuel injectors tested for disconnection and severance. If yes, provide details.

   - CAM (Camshaft) sensor: fault reaction test at start, idle and Part Load with and without engine speed fault.
   - CRK (Crankshaft) sensor: fault reaction test at start, idle and Part Load with and without engine speed fault.
   - MAF sensor: fault reaction test for MAF signal line break at start and Part Load.
   - Throttle control motor: fault reaction test for break in supply line to Air Throttle plate actuator motor.
   - APS sensors: fault reaction test for disconnection of each line (supply, ground, signal) separately and the whole plug of each pot.
   - ECT sensor: fault reaction test for signal line disconnection at start and Part Load.
   - TPS sensors: fault reaction test for disconnection of each line (supply, ground, signal) separately and the whole plug of each pot.
8.) Where applicable, were idle return times tested for electrical severance accompanied by shorting to ground? If yes, please provide details.

- Data available, but not analyzed to this purpose.

9.) All sources of return energy (springs) for the accelerator pedal and if applicable, the air throttle plate.

- Limp home position return spring used for air throttle plate. Accelerator pedal spring loaded to return to uppermost position.

10.) If fuel delivery rate is used to demonstrate return to idle state, provide:
   A. The method used to measure this signal i.e. connection to standard SAE J1587 data bus.
   B. Equipment required to measure signal.
   C. Fuel rate signal output range at the idle state.

 N/A

11.) Is the ACS equipped with a limp home mode? If yes, provide operation description.

   When a failure that requires limp home mode is detected, the ECM deactivates, when possible, the air throttle plate motor whilst reversible fuel cut-off is activated. The throttle plate acquires it’s limp home position through spring action. When appropriate, fuel injection is reinstated when the throttle plate has assumed the limp home position.
Please target pin 17 in this region.

Connector 1

Connector 4

Please target pin 17 in this region.
SECTION 8
NOTICE OF POSSIBLE NON-COMPLIANCE
LABORATORY NOTICE OF TEST FAILURE TO OVSC

FMVSS NO.: 124 TEST DATE: 04/27/04

LABORATORY: General Testing Laboratories, Inc.

CONTRACT NO.: DTNH22-01-C-11025; DELV. ORDER NO.: 

LABORATORY PROJECT ENGINEER'S NAME: Grant Farrand

TEST VEHICLE MAKE/MODEL/BODY STYLE: 2004 Landrover Freelander MPV

VEHICLE NHTSA NO.: C40600 VIN: SALNY22214A

VEHICLE MODEL YEAR: 2004 BUILD DATE: 10/03

TEST FAILURE DESCRIPTION: During various failure modes of the accelerator control system, return time to base idle exceeds the allowed 1 second maximum.

S124 REQUIREMENT, PARAGRAPH S5.3: Except as provided below, maximum time to return to idle position shall be 1 second for vehicles of 4536 kg or less GVWR.

NOTIFICATION TO NHTSA (COTR): Stu Seigel

DATE: 06/06/04 BY: Grant Farrand

REMARKS: