FINAL REPORT NUMBER 225-MGA-06-006

SAFETY COMPLIANCE TESTING FOR FMVSS 225
"Child Restraint Anchorage Systems"

LANDROVER IN THE UK
2006 LAND ROVER LR3
NHTSA No. C60600

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083

Test Date: September 26, 2006
Report Date: January 11, 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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_____
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Approved By: _____

Approval Date: 01/11/2007

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: Edward E. Chan Digitally signed by Edward E. Chan DN: CN = Edward E. Chan, C = US, O = National Highway Traffic Safety Administration, OU = Office of Vehicle Safety Compliance Date: 2007.01.11 14:53:17 -05'00'

Acceptance Date: _____

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 225-MGA-06-006	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Final Report of FMVSS 225 Compliance Testing of a 2006 Land Rover LR3, NHTSA No. C60600		5. Report Date January 11, 2007 6. Performing Organization Code MGA	
7. Author(s) Helen A. Kaleto, Laboratory Manager Melanie Schick, Project Engineer Brad Reaume, Test Personnel		8. Performing Organization Report No. 225-MGA-06-006	
9. Performing Organization Name and Address MGA Research Corporation 446 Executive Drive Troy, Michigan 48083		10. Work Unit No. 11. Contract or Grant No. DTNH22-02-D-11043	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Enforcement Office of Vehicle Safety Compliance (NVS-220) 400 Seventh Street, SW Room 6111 Washington, DC 20590		13. Type of Report and Period Covered Final Test Report 14. Sponsoring Agency Code NVS-220	
15. Supplementary Notes			
16. Abstract A compliance test was conducted on the subject 2006 Land Rover LR3, NHTSA No. C60600, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-225-01 for the determination of FMVSS 225 compliance. The tests were conducted at MGA Research Corporation in Troy, Michigan on September 26, 2006. Test failures identified were as follows: NONE The data recorded indicates that the 2006 Land Rover LR3 tested appears to meet the requirements of FMVSS 225.			
17. Key Words Compliance Testing Safety Engineering FMVSS 225 2006 Land Rover LR3		18. Distribution Statement Copies of this report are available From: NHTSA Technical Reference Division, Mail Code: NPO-230 400 Seventh Street, SW, Room PL-403 Washington, D.C. 20590 Telephone No. (202) 366-4946	
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Form DOT F 1700.7 (8-70)

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1.0 PURPOSE AND PROCEDURE

PURPOSE

The child restraint anchorage testing results presented in this report are part of the Federal Motor Vehicle Safety Standard (FMVSS) No. 225 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation (MGA) under Contract No. DTNH22-02-D-11043. The purpose of the testing was to determine if the subject vehicle, a 2006 Land Rover LR3, NHTSA No. C60600 meets the performance requirements of FMVSS No. 225, "Child Restraint Anchorage Systems."

PROCEDURE

This testing was conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure TP-225-01 (4/11/05) and MGA's Laboratory Test Procedure, MGATP225GOV (6/23/06).

The front occupant compartment consisted of two (2) adjustable outboard bucket seats and the rear occupant compartment consisted of a 2nd row 60/40 seat. Each 2nd row outboard seating position was equipped with a child restraint anchorage system (one tether and two lower anchorages). The 2nd row center seating position was equipped with a tether anchorage. The center-to-center spacing between the 2nd row outboard lower anchorages was approximately 790 mm. Each 2nd row outboard seating position was tested with the SFADII fixture and the 2nd row center seating position was tested with the SFADI fixture.

2.0 COMPLIANCE TEST AND DATA SUMMARY

TEST SUMMARY

The testing was conducted at MGA in Troy, Michigan on September 26, 2006.

Based on the test results, the 2006 Land Rover LR3 appears to meet the requirements of FMVSS No. 225 for this testing.

The SFADII at the 2nd row left seating position sustained a maximum force of 15,244 N and held the required load for 3 seconds. The SFADII at the 2nd row right seating position sustained a maximum force of 11,209 N and held the required load for 3 seconds. The total displacement from point "X" on the SFADII for the 2nd row right seating position was 77 mm. The SFADI at the 2nd row center seating position sustained a maximum force of 15,171 N and held the required load for 3 seconds.

DATA SUMMARY

Strength and displacement summary data are provided below. Data for the configuration and the location of each child restraint anchorage system are provided in Section 5.0. Photographs are found in Section 6.0 and test plots are found in Section 7.0.

Table 1. Summary Data for Strength and Displacement

MGA Test #	Fixture Type	Test Configuration	Seating Position	Max. Load (N)	Displacement (mm)
SB6443	SFADII	Forward w/Tether	2nd Row Left	15,244	N/A
		Forward	2nd Row Right	11,209	77
SB6444	SFADI	Forward	2nd Row Center	15,171	N/A

N/A indicates that the displacement criteria does not apply to this test.

3.0 TEST VEHICLE INFORMATION

Table 2. General Test and Vehicle Parameter Data

VEH. MOD YR/MAKE/MODEL/BODY	2006 Land Rover LR3
VEH. NHTSA NO.	C60600
VIN	SALAB24406A369458
COLOR	Silver
VEH. BUILD DATE	11/2005
TEST DATE	September 26, 2006
TEST LABORATORY	MGA Research Corporation
OBSERVERS	Melanie Schick, Brad Reaume, Kenney Godfrey

GENERAL INFORMATION:

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: LandRover in the UK

Date of Manufacture: 11/05; VIN: SALAB24406A369458

GVWR: 7011 lbs; GAWR FRONT: 3197 lbs

GAWR REAR: 4056 lbs

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 33 psi REAR: 42 psi

Recommended Tire Size: P225/60R18

Recommended Cold Tire Pressure:

FRONT: 33 psi REAR: 42 psi

Size of Tire on Test Vehicle: P225/60R18

Size of Spare Tire: T175/80R19

VEHICLE CAPACITY DATA:

Type of Front Seats: Bench ____; Bucket __X__; Split Bench ____

Number of Occupants: Front __2__; Middle N/A; Rear __3__; TOTAL __5__.

4.0 TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

MGA Research Corporation 446 Executive Drive Troy, Michigan 48083	
Test Equipment Used for Testing	**Calibration Due Date**
MGA Hydraulic Test Frame	N/A
Two (2) Load Cell 10,000 lb Capability	S/N 662 (12/20/06), S/N 304 (12/20/06)
String Potentiometer	Calibrated at each use (S/N F1603960A)
Hydraulic Pump	N/A
MGA CRF Fixture	N/A
MGA SFADI	N/A
MGA SFADII	N/A
MGA 2-Dimensional Template	N/A
Linear Scale	S/N TPM027 (08/14/07)
MGA Data Acquisition System	N/A
Digital Calipers	S/N MGA00074 (07/07/07), S/N MGA00304 (7/26/07)
Force Gauge	S/N MGA00647 (05/26/07)
Inclinometer (Digital)	S/N MGA00071 (06/23/07)

5.0 DATA

Table 3. Child Restraint Tether Anchorage Configuration

Seating Position		Permit the attachment of a tether hook	Accessible without the need for any tool other than a screwdriver or coin	Ready for use without the need for any tools	Sealed to prevent the entry of exhaust fumes
Front Row		N/A	N/A	N/A	N/A
Second Row	LH	Yes	Yes	Yes	Yes
	Ctr.	Yes	Yes	Yes	Yes
	RH	Yes	Yes	Yes	Yes
Third Row		N/A	N/A	N/A	N/A

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225-01.

REMARKS: NONE.

Table 4. Child Restraint Lower Anchorage Configuration

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION				
		FRONT ROW	SECOND ROW		THIRD ROW
			I/B	O/B	
Above anchorage, permanently marked with a circle not less than 13 mm in Dia.; and whose color contrasts with its background; and its center is not less than 50 mm and not more than 100 mm above the bar, and in the vertical longitudinal plane that passes through the center of the bar.	LH	N/A	N/A	N/A	N/A
	Ctr		N/A		
	RH		N/A	N/A	
Each of the bars is visible, without the compression of the seat cushion or seat back, when the bar is viewed, in a vertical longitudinal plane passing through the center of the bar, along a line marking an upward 30 degree angle with a horizontal plane.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Diameter of the bar (mm)	LH	N/A	5.97	5.99	N/A
	Ctr		N/A		
	RH		5.98	5.98	
Inspect if the bars are straight, horizontal and transverse	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Optional Marking: At least one anchorage bar (when deployed for use, if storable anchorages), one guidance fixture, or one seat marking is visible.	LH	N/A	N/A		N/A
	Ctr				
	RH				
Optional Marking: If guidance fixtures are used, the fixture(s) must be installed.	LH	N/A	N/A		N/A
	Ctr				
	RH				
Measure the distance between Point "Z" of the CRF and the front surface of the anchorage bar (mm)	LH	N/A	55		N/A
	Ctr		N/A		
	RH		55		
Measure the distance between the SRP to the front surface of the anchorage bar (mm)	LH	N/A	160	160	N/A
	Ctr		N/A		
	RH		159	159	

Table 4. Child Restraint Lower Anchorage Configuration (continued)

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION				
		FRONT ROW	SECOND ROW		THIRD ROW
			I/B	O/B	
Inspect if the centroidal longitudinal axes are collinear within 5 degrees	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Inspect if the inside surface of the bar that is straight and horizontal section of the bars, and determine they are not less than 25 mm, but not more than 60 mm in length (mm).	LH	N/A	29	30	N/A
			35	35	
	Ctr		N/A		
	RH		30	29	
			36	36	
Inspect if the bars can be connected to, over their entire inside length by the connectors of child restraint system.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Inspect if the bars are an integral and permanent part of the vehicle.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Inspect if the bars are rigidly attached to the vehicle. If feasible, hold the bar firmly with two fingers and gently pull.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		

PITCH, YAW, & ROLL INFORMATION

SEAT POSITION	PITCH (deg)	YAW (deg)	ROLL (deg)
2nd Row Left	14.0	No Data	0.4
2nd Row Center	N/A	N/A	N/A
2nd Row Right	13.0	No Data	0.3

N/A indicates that there were no lower anchorages in the 2nd row center seating position.

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225-01.

REMARKS: NONE

Table 5. Tether Location and Dimensional Measurements

SEAT POSITION FOR TETHER		TETHER ANCHORAGE LOCATION Located in the required zone?
Front Row		N/A
Second Row	LH	Yes
	Ctr.	Yes
	RH	Yes
Third Row		N/A

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225-01.

REMARKS: NONE

Table 6. Tether Anchorage Static Loading and Displacement

SEAT POSITION		Seat, Seat Back, & Head Restraint Positions			Type of SFAD Used	Angle (deg)	Initial Location (mm)	Onset Rate (N/sec.)	Force Applied (N)	Max. Load (N)	Final Location (mm)	Horiz. Displ. (mm)
		Seat	Seat Back	Is There a H/R?								
Front Row		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Second Row	LH	Fixed	Fixed	Yes	II	10	N/A	535	15,000	15,244*	N/A	N/A
	Ctr.			Yes	I	10	N/A	535	11,000	11,209*	N/A	N/A
	RH			Yes	II	10	40	387	15,000	15,171*	117	77
Third Row		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225-01.

REMARKS: * Applied force exceeded the force specified in the test procedure.

6.0 PHOTOGRAPHS

6.1 Front view

6.2 Rear view


09/20/06
NHTSA 2006 Land Rover LR3
Rear View
FMVSS 225
C60600
Pre-Test
G06Q7-002.6
LAND ROVER
ALEXANDRIA
LR3

6.3 ¾ Front left view

6.4 ¾ Front right view

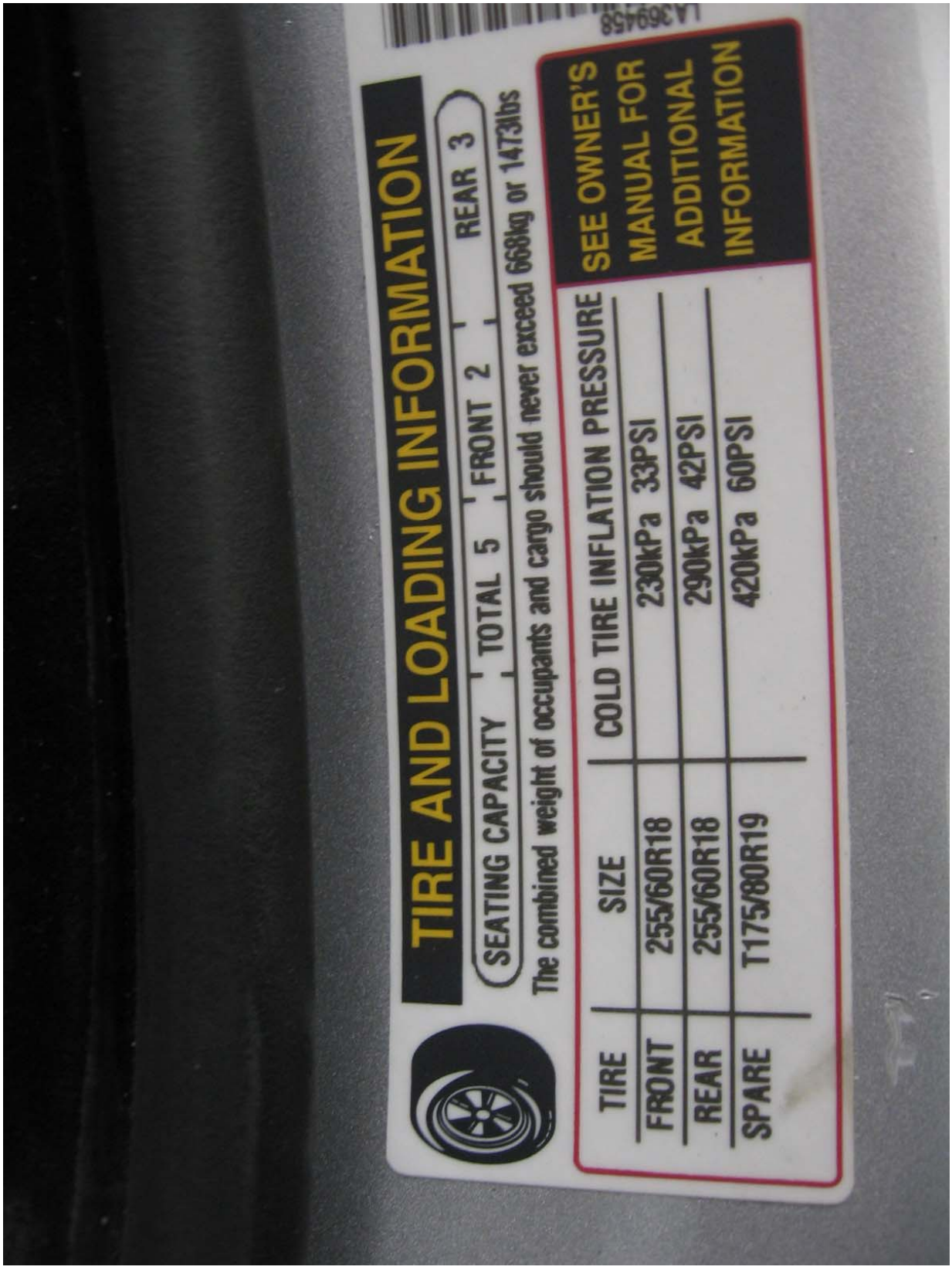
6.5 Test vehicle's certification label

6.5.1 Certification label photo #1

6.5.2 Certification label photo #2

6.5.3 Tire information label photo #1

6.5.4 Tire information label photo #2

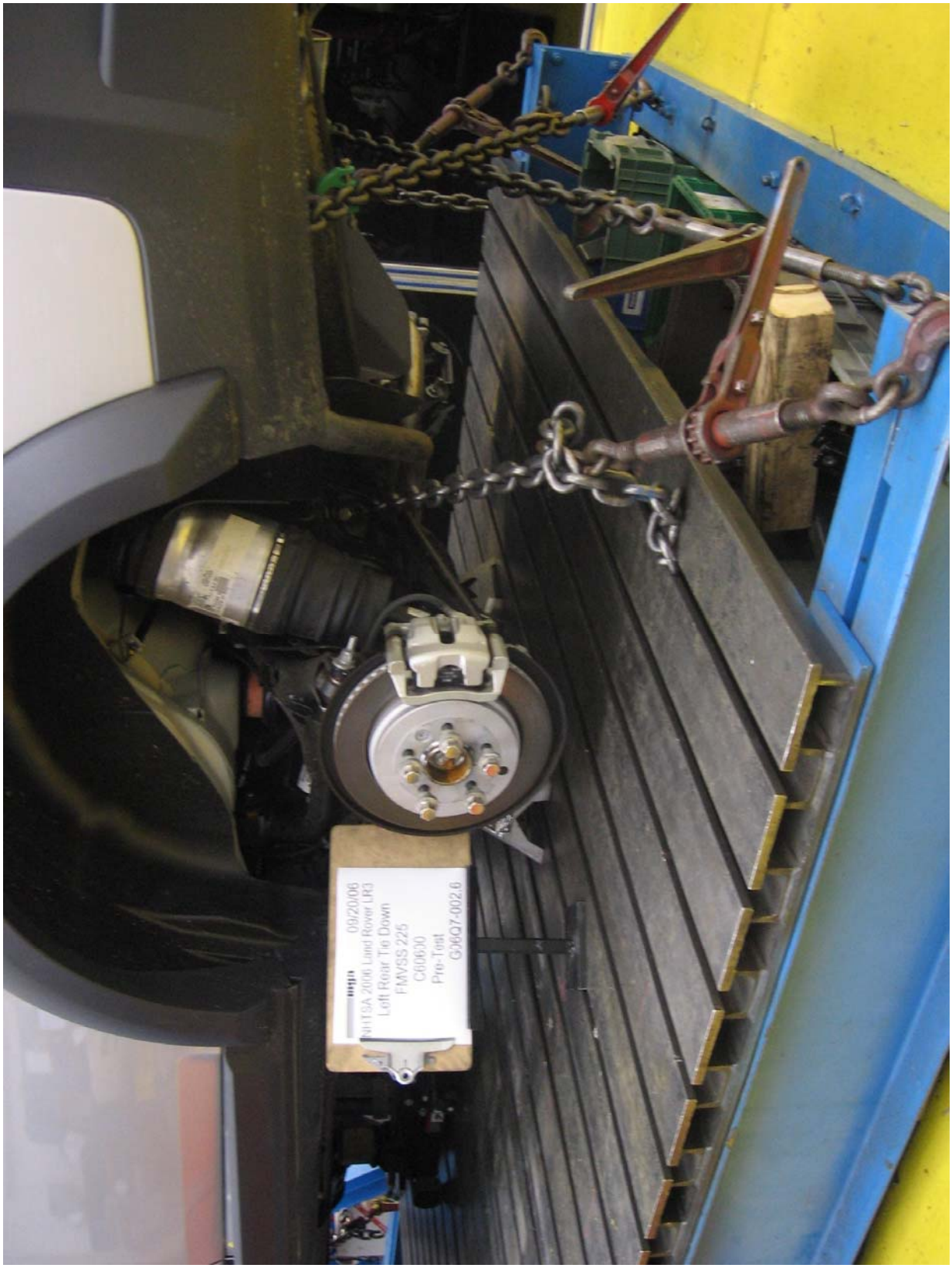


6.6 Vehicle tie down at each tie down location

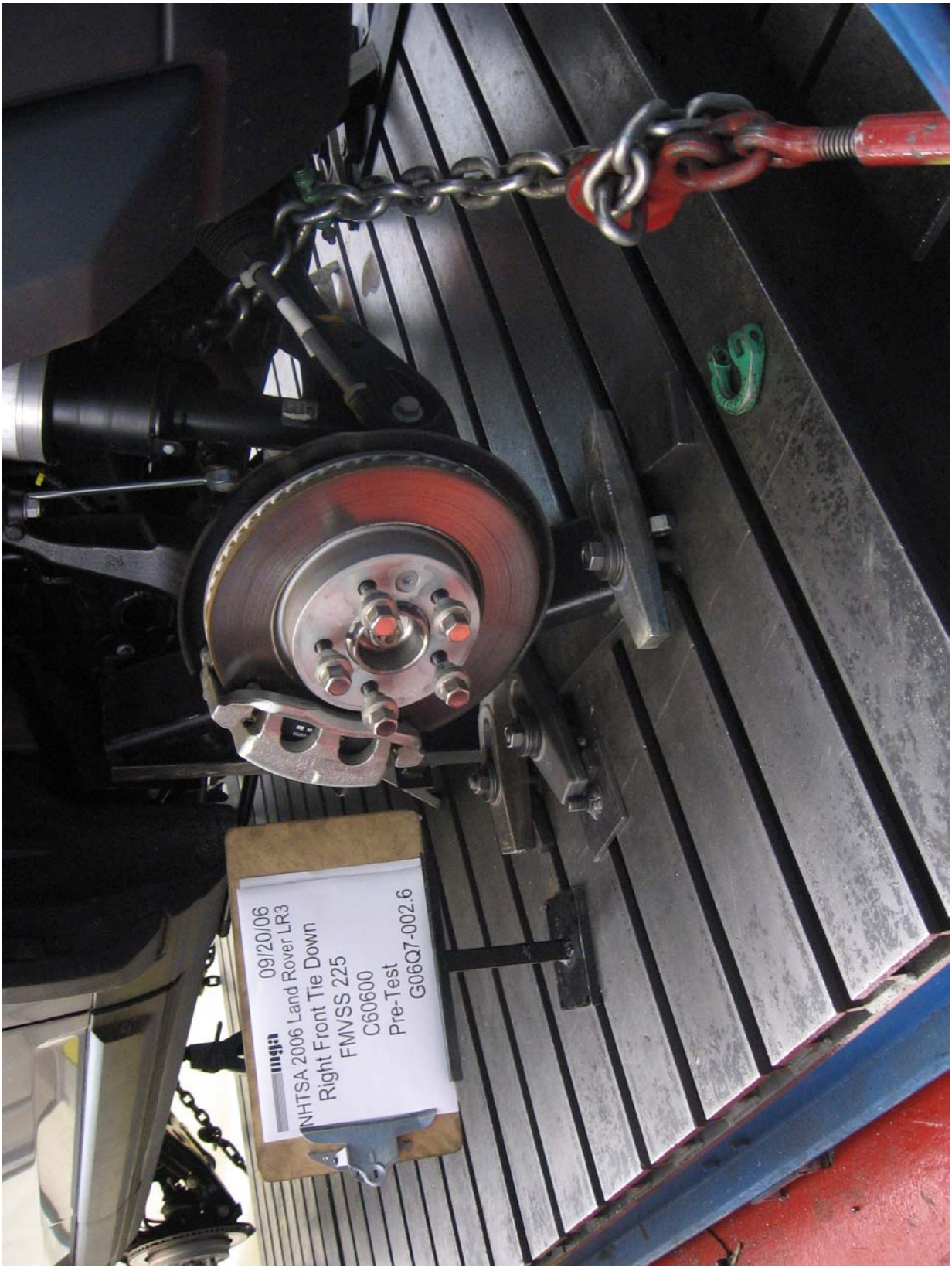
6.6.1 Front under vehicle

6.6.2 Left front

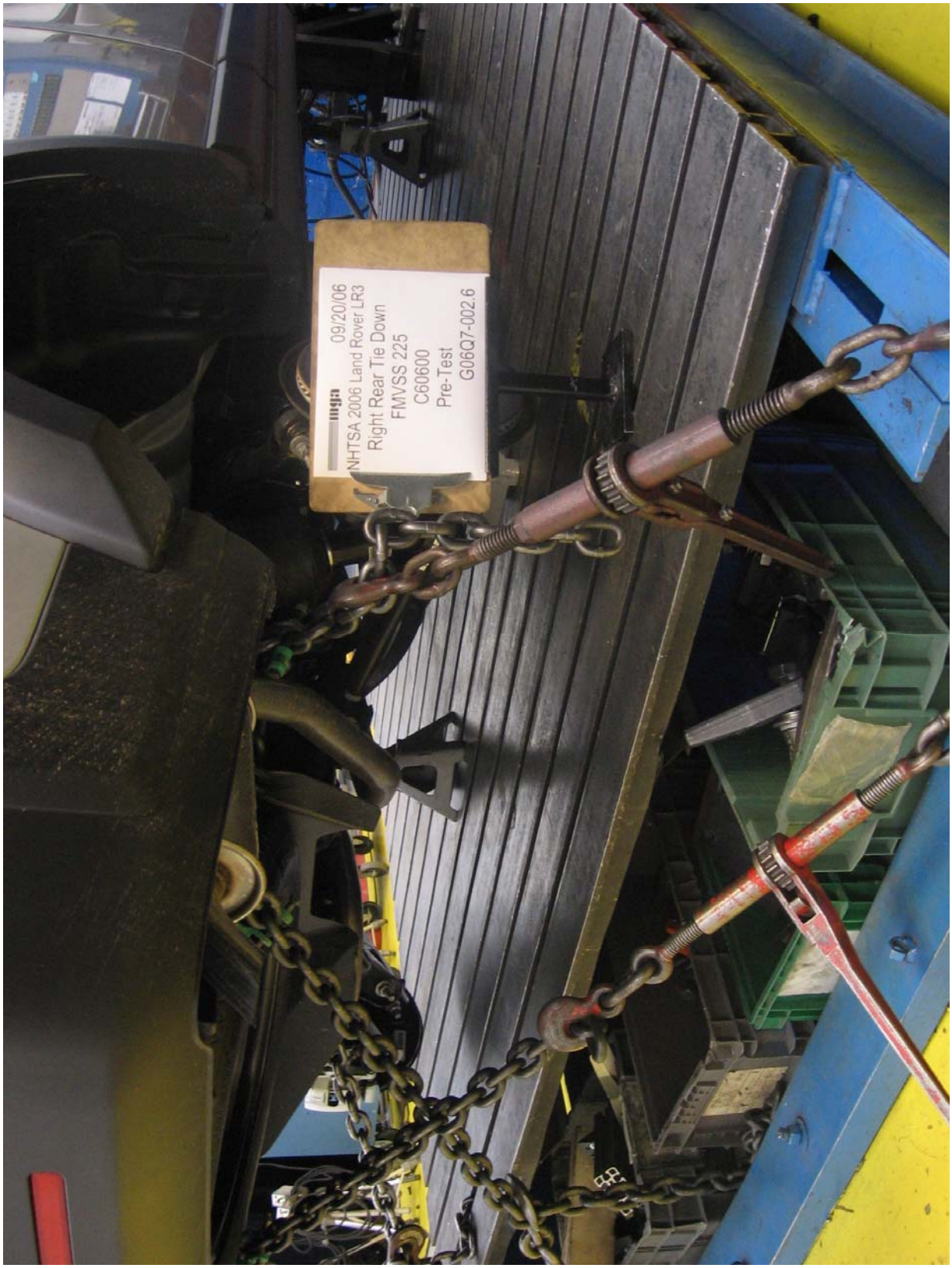
6.6.3 Left rear



6.6.4 Right front



6.6.5 Right rear



6.7 2-dimensional template

6.7.1 LH position photo #1

6.7.2 LH position photo #2

6.7.3 Center position photo #1

6.7.4 Center position photo #2

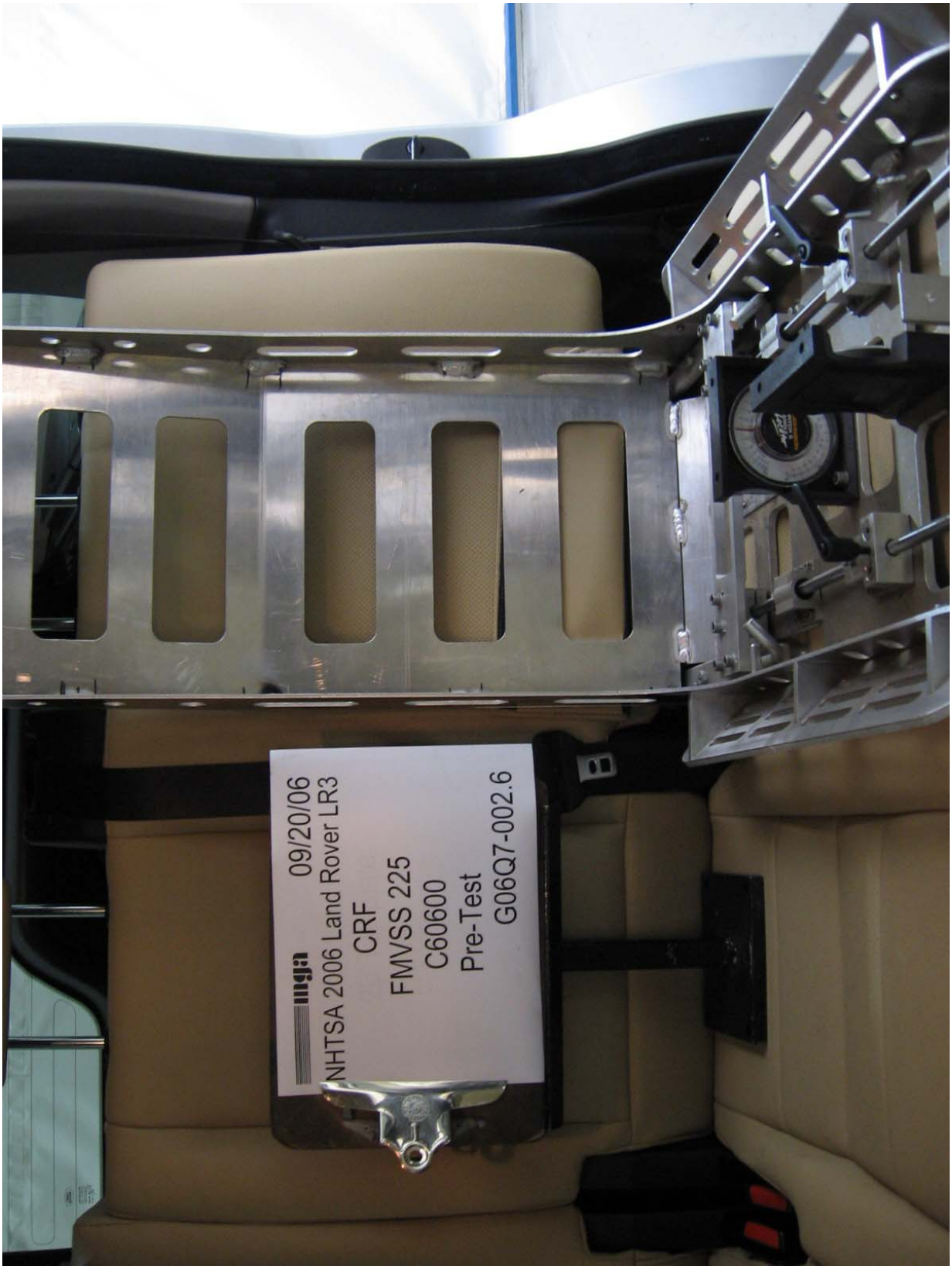
6.7.5 RH position photo #1

6.7.6 RH position photo #2

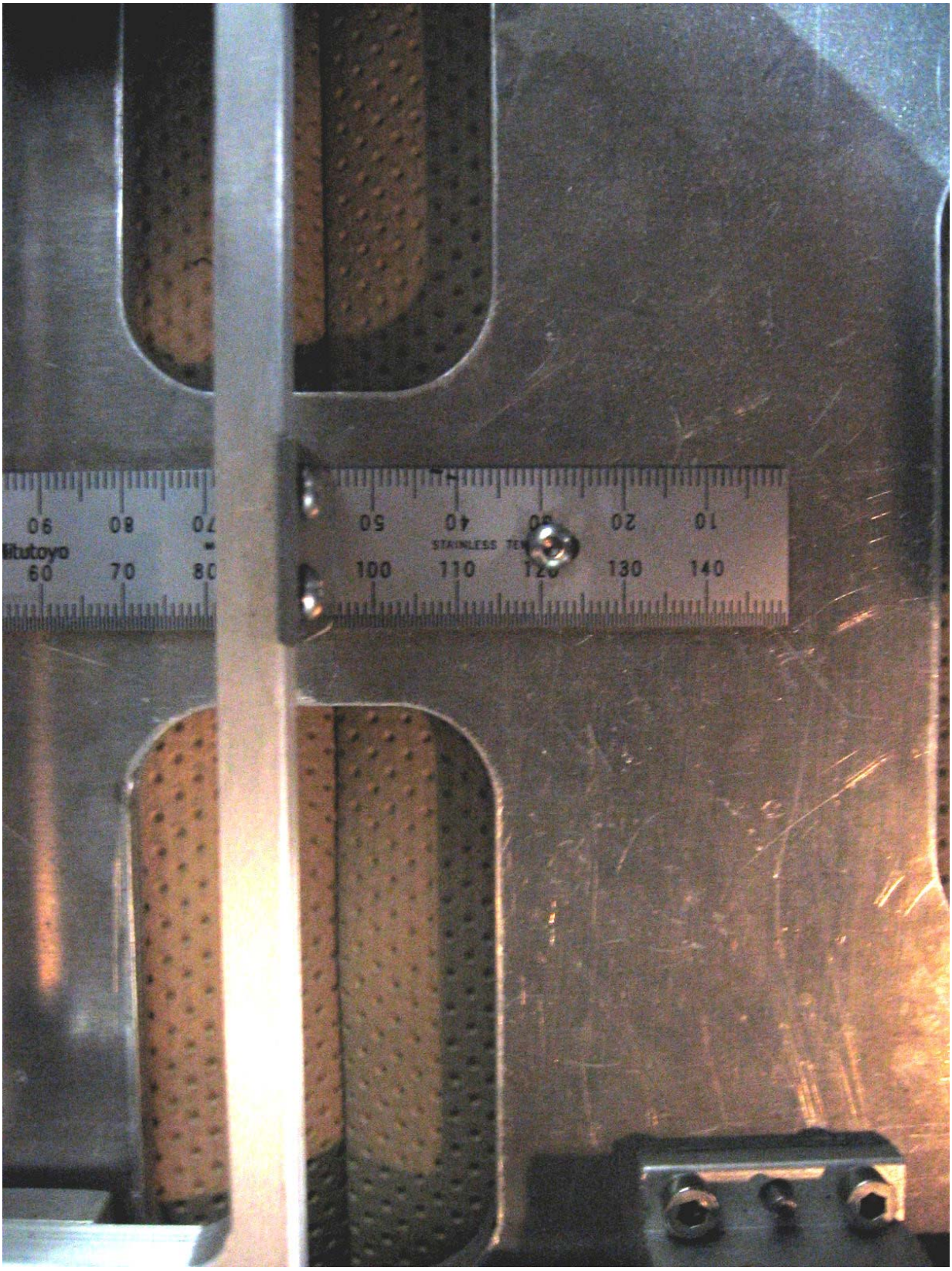
6.8 CRF verification

6.8.1 LH position photo #1

6.8.2 LH position photo #2

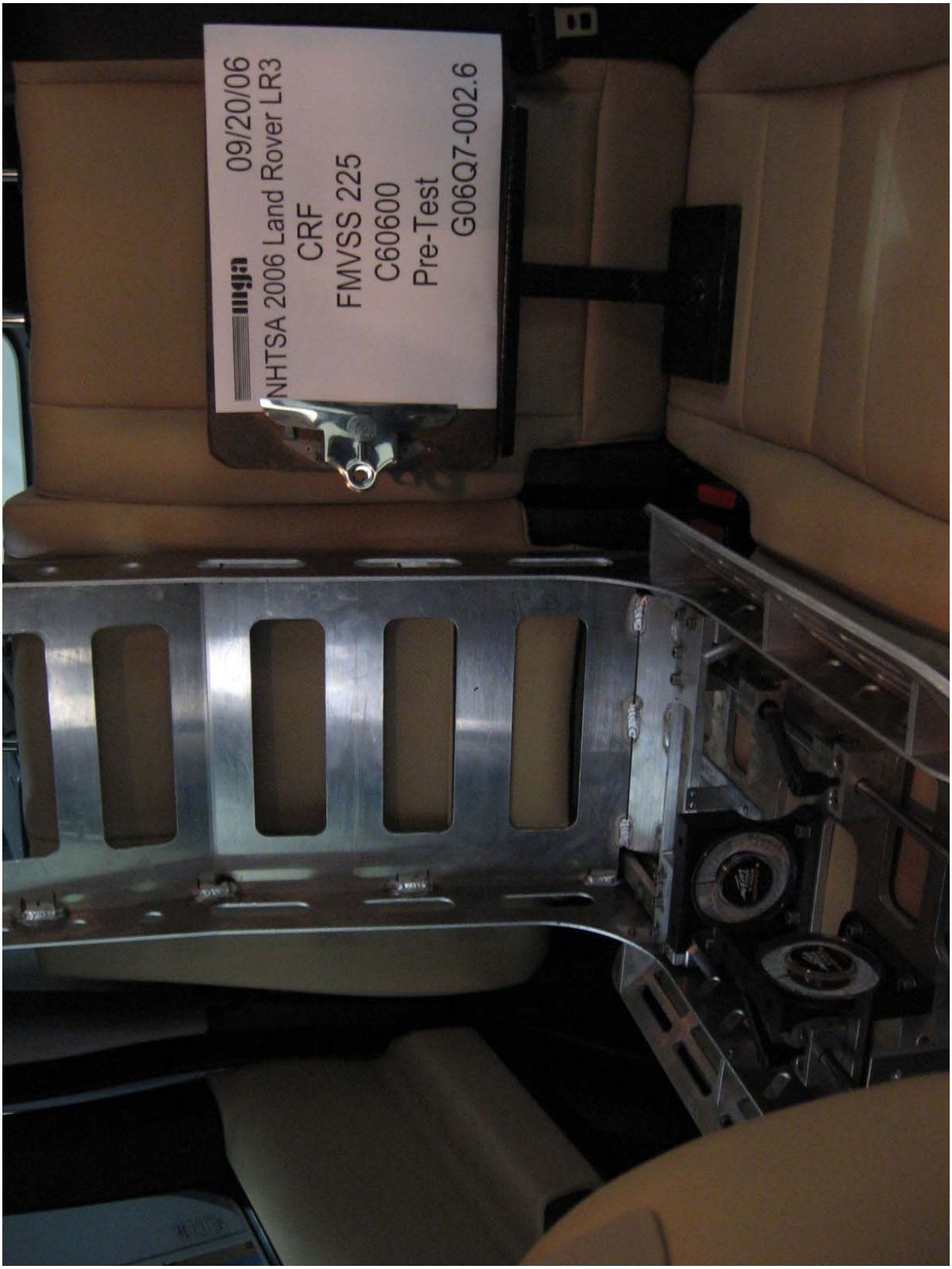


6.8.3 LH position photo #3

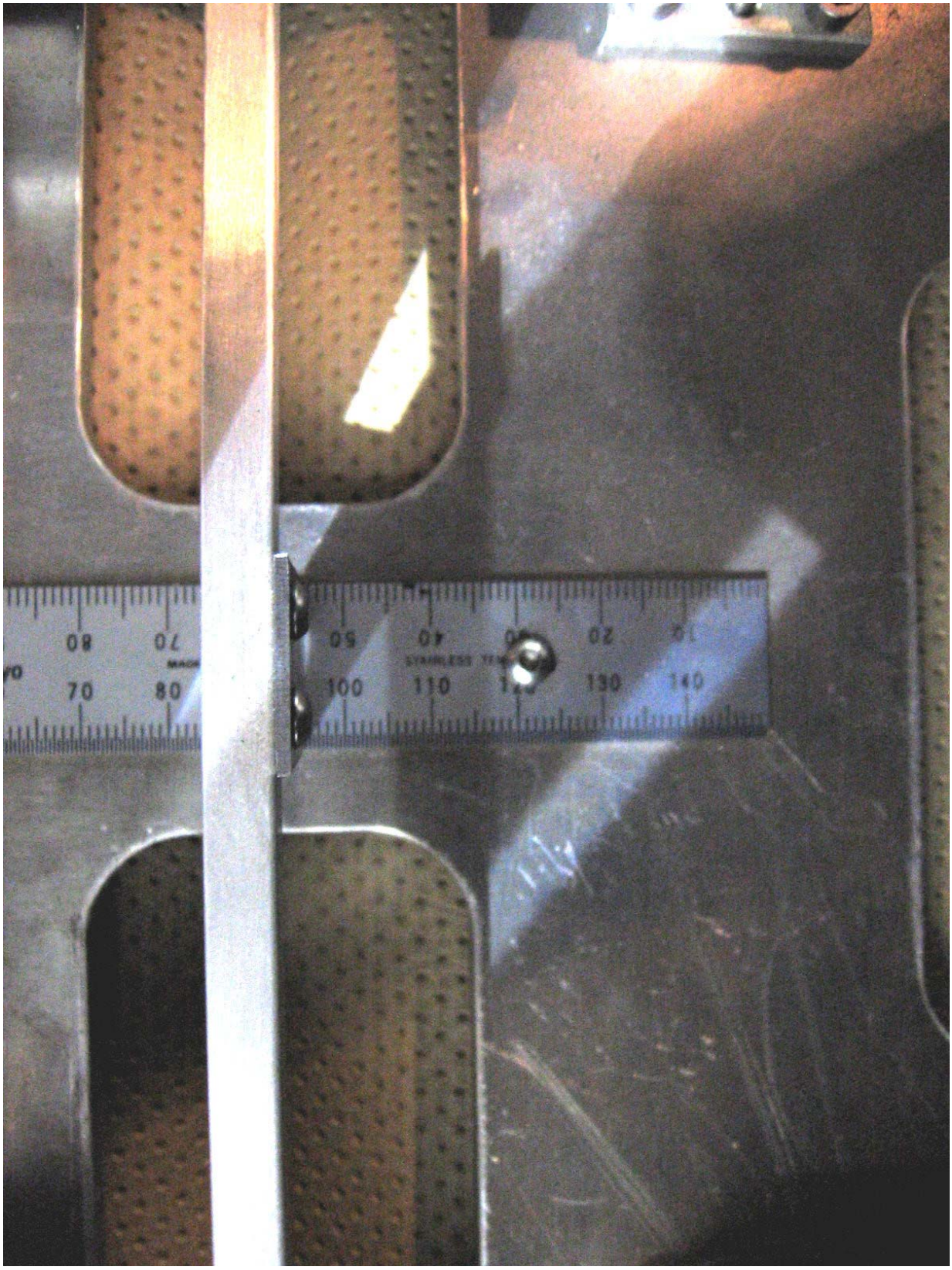


6.8.4 RH position photo #1

6.8.5 RH position photo #2



6.8.6 RH position photo #3



6.9 ¾ Front view of test vehicle with test apparatus in place

6.9.1 ¾ Front left view of SFADII test 1 of 2

6.9.2 ¾ Front right view of SFADII test 1 of 2

6.9.3 ¾ Front left view of SFADI test 2 of 2

6.9.4 ¾ Front right view of SFADI test 2 of 2

6.10 Pre-test views of each child restraint anchorage system installed in the vehicle

6.10.1 Pre-test photo #1 of SFADII test 1 of 2

6.10.2 Pre-test photo #2 of SFADII test 1 of 2

6.10.3 Pre-test photo #3 of SFADII test 1 of 2

6.10.4 Pre-test photo #4 of SFADII test 1 of 2

6.10.5 Pre-test photo #5 of SFADI test 2 of 2

6.10.6 Pre-test photo #6 of SFADI test 2 of 2

6.10.7 Pre-test photo #7 of SFADI test 2 of 2

6.11 Post-test condition of each child restraint anchorage system

6.11.1 Post-test photo #1 of SFADII test 1 of 2

6.11.2 Post-test photo #2 of SFADII test 1 of 2

6.11.3 Post-test photo #3 of SFADII test 1 of 2

6.11.4 Post-test photo #4 of SFADII test 1 of 2

6.11.5 Post-test photo #5 of SFADII test 1 of 2

6.11.6 Post-test photo #6 of SFADII test 1 of 2

6.11.7 Post-test photo #7 of SFADII test 1 of 2

6.11.8 Post-test photo #8 of SFADII test 1 of 2

6.11.9 Post-test photo #9 of SFADII test 1 of 2

6.11.10 Post-test photo #10 of SFADII test 1 of 2

6.11.11 Post-test photo #11 of SFADI test 2 of 2

6.11.12 Post-test photo #12 of SFADI test 2 of 2

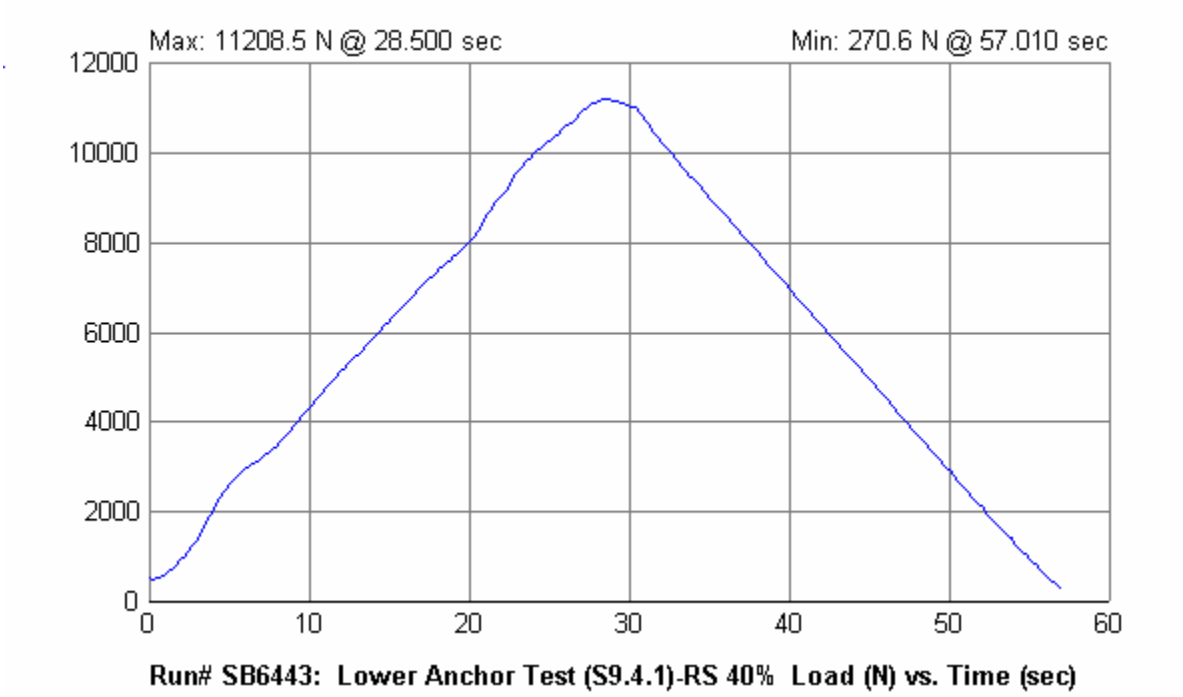
6.11.13 Post-test photo #13 of SFADI test 2 of 2

6.11.14 Post-test photo #14 of SFADI test 2 of 2

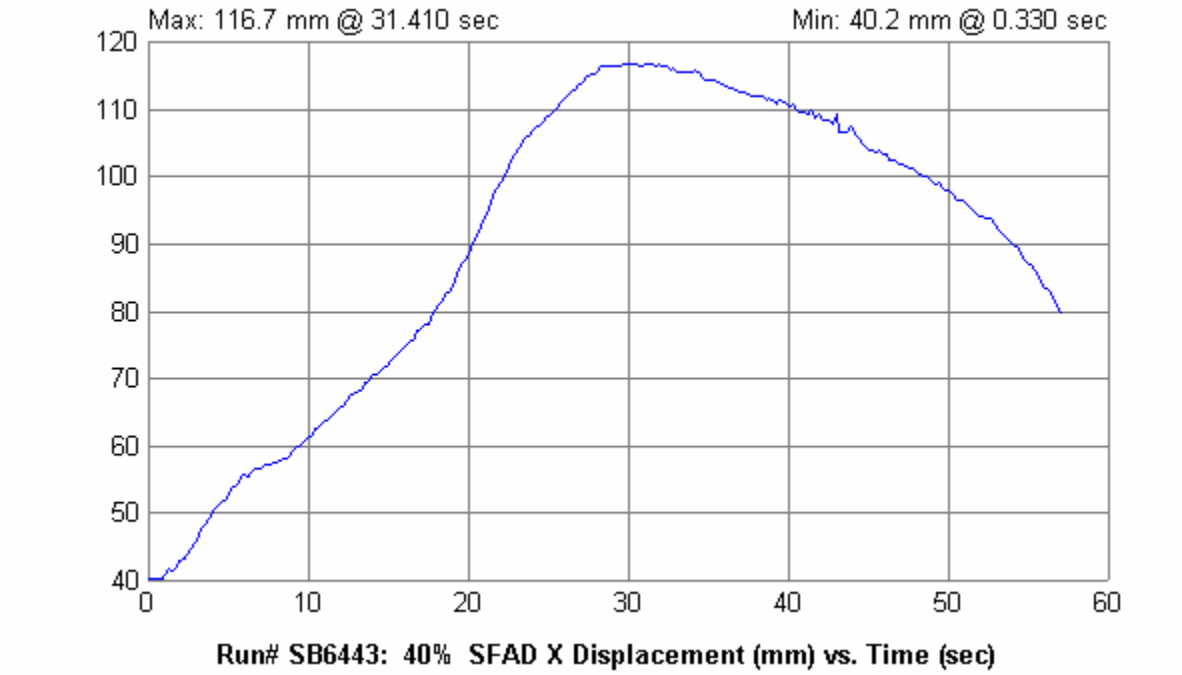
6.11.15 Post-test photo #15 of SFADI test 2 of 2

6.11.16 Post-test photo #16 of SFADI test 2 of 2

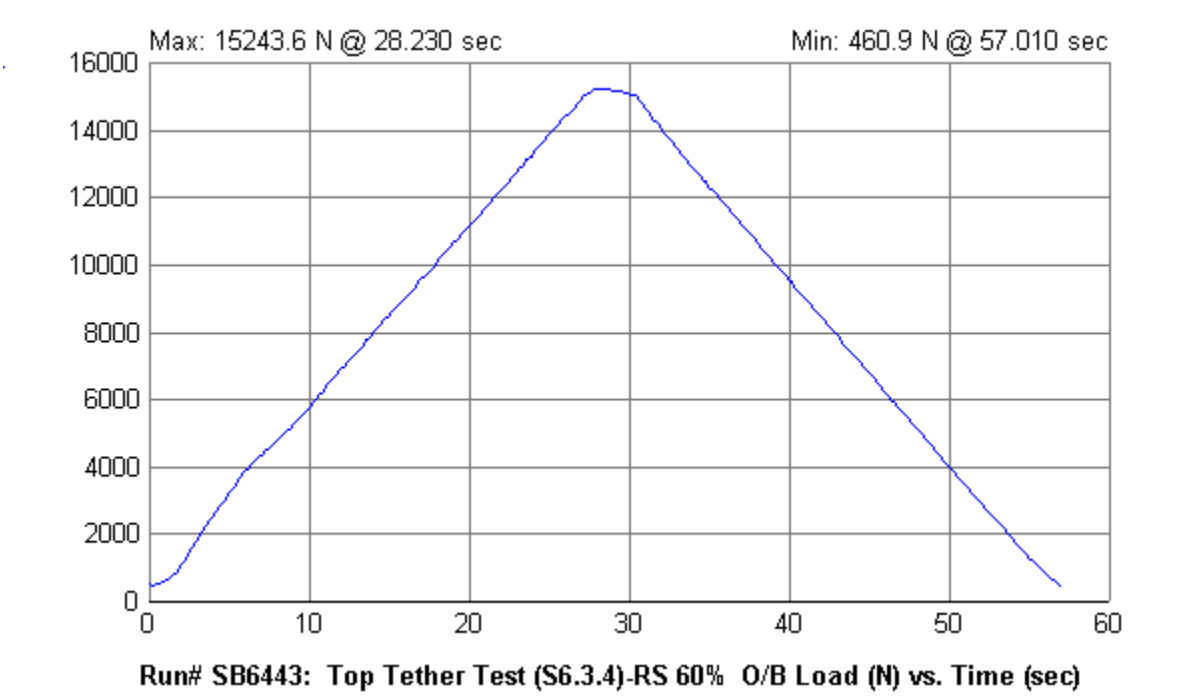
7.0 PLOTS



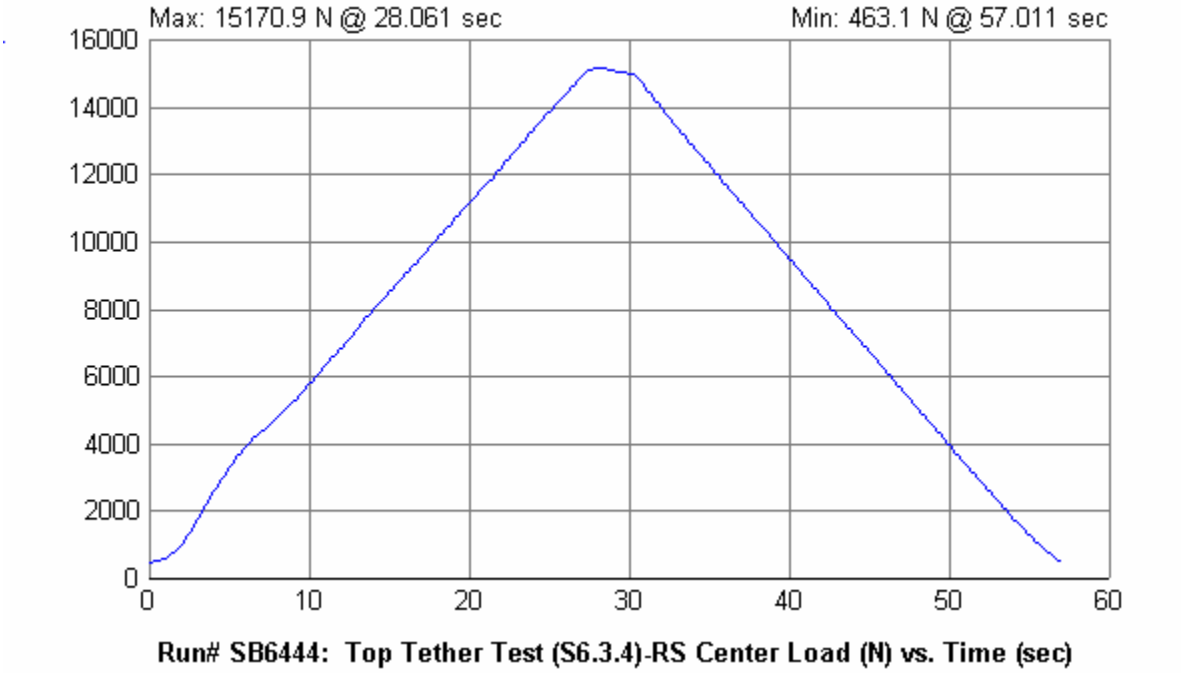
Run# SB6443: Lower Anchor Test (S9.4.1)-RS 40% Load (N) vs. Time (sec)



Run# SB6443: 40% SFAD X Displacement (mm) vs. Time (sec)



Run# SB6443: Top Tether Test (S6.3.4)-RS 60% O/B Load (N) vs. Time (sec)



Run# SB6444: Top Tether Test (S6.3.4)-RS Center Load (N) vs. Time (sec)

8.0 REPORT of VEHICLE CONDITION

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

CONTRACT No.: DTNH22-02-D-11043 DATE: September 26, 2006

From: MGA Research Corporation, 446 Executive Drive, Troy, MI 48083

To: NHTSA, OVSC, NVS-220

The following vehicle has been subjected to compliance testing for FMVSS No. 201U and 225

The vehicle was inspected upon arrival at the laboratory for the test and found to contain all of the equipment listed below. All variances have been reported within 2 working days of vehicle arrival, by letter, to the NHTSA Industrial Property Manager (NAD0-30), with a copy to the OVSC COTR. The vehicle is again inspected, after the above test has been conducted, and all changes are noted below. The final condition of the vehicle is also noted in detail.

VEH. MOD YR/MAKE/MODEL/BODY: 2006 Land Rover LR3

VEH. NHTSA NO.: C60600 VIN: SALAB24406A369458

COLOR: Silver

ODOMETER READINGS: ARRIVAL 10 miles Date: 08/17/06

COMPLETION 10 miles Date: 09/26/06

PURCHASE PRICE: $36,500 DEALER'S NAME: Land Rover Alexandria

ENGINE DATA: 6 Cylinders 4.0 Liters ____ Cubic Inches

TRANSMISSION DATA: X Automatic ____Manual No. of Speeds 6

FINAL DRIVE DATA: ____Rear Drive ___ Front Drive X 4 Wheel Drive

CHECK APPROPRIATE BOXES FOR VEHICLE EQUIPMENT:

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Melanie Schick, Brad Reaume, Kenney Godfrey

X	Air Conditioning	X	Traction Control	X	Clock
X	Tinted Glass		All Wheel Drive		Roof Rack
X	Power Steering	X	Speed Control	X	Console
X	Power Windows	X	Rear Window Defroster	X	Driver Air Bag
X	Power Door Locks		Sun Roof or T-Top	X	Passenger Air Bag
X	Power Seat(s)		Tachometer	X	Front Disc Brakes
X	Power Brakes	X	Tilt Steering Wheel	X	Rear Disc Brakes
	Antilock Brake System	X	AM/FM/Compact Disc		Other

REMARKS:

Salvage only.

Equipment that is no longer on the test vehicle as noted on previous pages:

All equipment inventoried and placed in vehicle.

Explanation for equipment removal:

Windshield and front seats were removed before conducting the testing.

Test Vehicle Condition:

Salvage only.

RECORDED BY: Melanie Schick, Kenney Godfrey DATE: September 26, 2006

APPROVED BY: Brad Reaume

APPENDIX A
OWNERS MANUAL CHILD RESTRAINT SYSTEMS

Child Restraints

CHILD SEATS

The seat belts fitted to your vehicle are designed for adults and larger children. For their safety, it is very important that all infants and children under 12 years are restrained in a suitable child safety seat appropriate to their age and size.

Only fit a child seat that has been approved for use in your vehicle, and ensure that the manufacturer's fitting instructions are followed exactly.

For optimum safety, children should travel in the rear of the vehicle at all times, front passenger seat travel is NOT recommended.

Note: *Crash statistics show that children are safer when properly restrained in the rear (2nd row) seating positions, than they are in the front.*

However, if it is essential that a child travel in the front, set the seat fully rearward and seat the child in a FORWARD FACING child seat.

This symbol affixed to the passenger side B post of your vehicle, warns against the use of a REAR-FACING child seat in the front passenger seat, when a passenger airbag is fitted and operational.

WARNING

EXTREME HAZARD. Do not use a rearward facing child restraint on a seat protected by an airbag in front of it. There is a risk of serious injury or death when the airbag deploys.

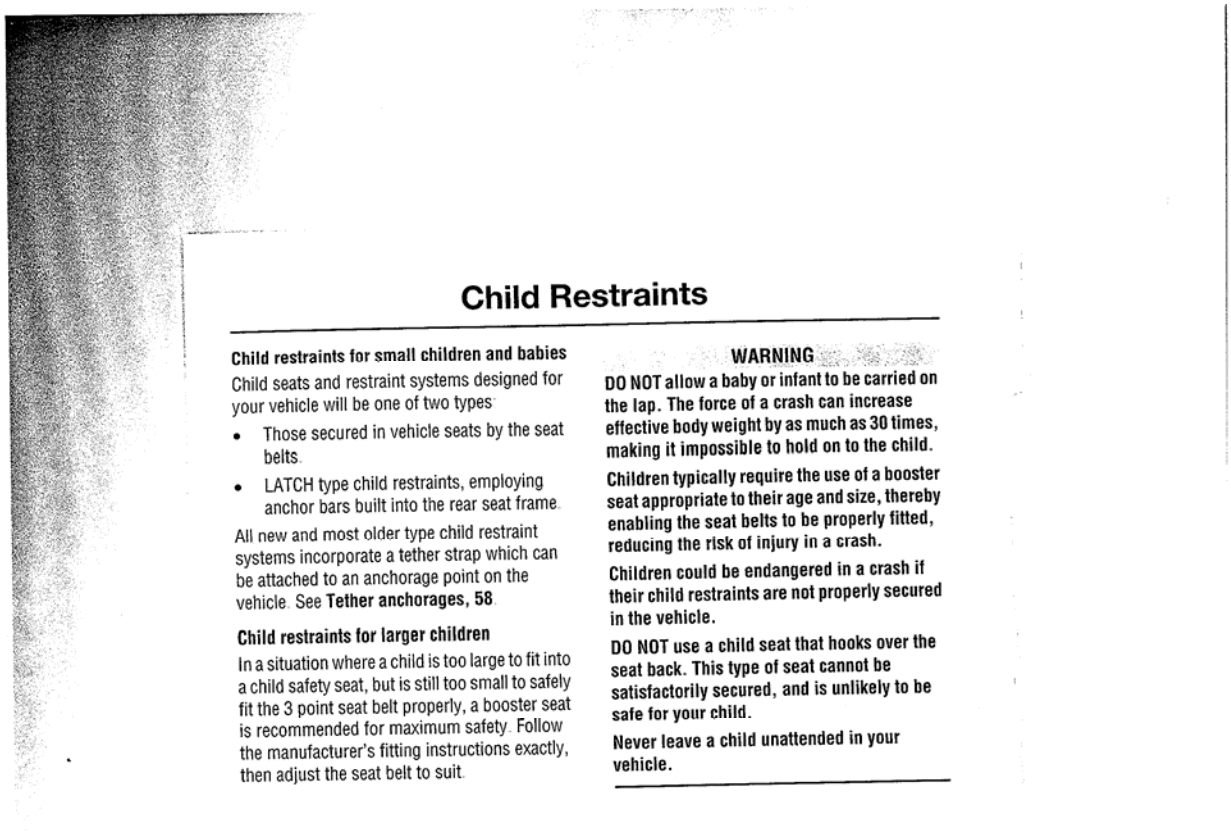
Do not use a forward-facing seat until a child is above the minimum weight of 9 kg (20 lb.) and able to sit up unaided. Up to the age of two, a child's spine and neck are not sufficiently developed to avoid injury in a frontal impact.

Seat belt locking mechanism

The second and third row seat belts have a special locking mechanism which aids the retention of child seats. The procedure to install a child seat is as follows:

1. Place the child seat in the vehicle, attach the seat belt and secure the buckle in accordance with the manufacturer's fitting instructions.
2. Pull on the shoulder section of the belt to unreel all of the remaining webbing to the limit of its travel. This will engage the automatic locking feature, which then acts as a ratchet, allowing the webbing ONLY to retract.
3. Allow the seat belt to retract onto the child seat (a clicking sound will confirm that the ratchet has engaged), while firmly pushing the child seat into the vehicle seat.
4. Ensure that there is no slack in the seat belt by pulling upwards on the shoulder belt immediately above the child restraint. This seat belt should now be locked and the child seat held firmly in position.

When the child seat is removed and all of the seat belt webbing is allowed to retract, the seat belt locking mechanism reverts to normal operation.



Child Restraints

Child restraints for small children and babies

Child seats and restraint systems designed for your vehicle will be one of two types:

- Those secured in vehicle seats by the seat belts.
- LATCH type child restraints, employing anchor bars built into the rear seat frame.

All new and most older type child restraint systems incorporate a tether strap which can be attached to an anchorage point on the vehicle. See **Tether anchorages, 58**.

Child restraints for larger children

In a situation where a child is too large to fit into a child safety seat, but is still too small to safely fit the 3 point seat belt properly, a booster seat is recommended for maximum safety. Follow the manufacturer's fitting instructions exactly, then adjust the seat belt to suit.

WARNING

DO NOT allow a baby or infant to be carried on the lap. The force of a crash can increase effective body weight by as much as 30 times, making it impossible to hold on to the child.

Children typically require the use of a booster seat appropriate to their age and size, thereby enabling the seat belts to be properly fitted, reducing the risk of injury in a crash.

Children could be endangered in a crash if their child restraints are not properly secured in the vehicle.

DO NOT use a child seat that hooks over the seat back. This type of seat cannot be satisfactorily secured, and is unlikely to be safe for your child.

Never leave a child unattended in your vehicle.

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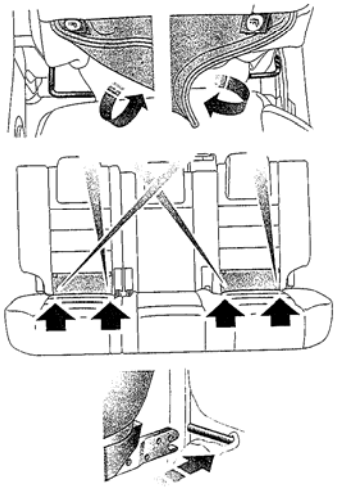
Child Restraints

LATCH CHILD RESTRAINTS (Second-row seats)

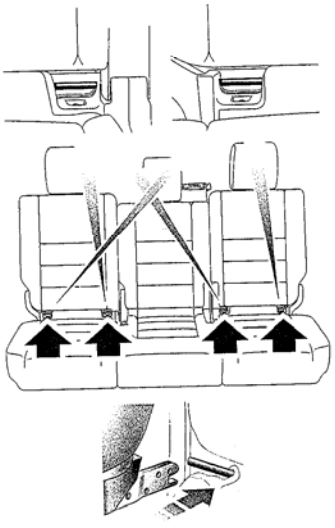
Both second-row outer seating positions in your vehicle are equipped to accept LATCH restraints.

This symbol on the label sewn into the seats indicates the location of the LATCH lower anchorages.



H5433G

5-seat vehicles



H5895G

7-seat vehicles

WARNING

DO NOT attempt to fit LATCH restraints to the center seating position - the anchor bars are not designed to hold a LATCH restraint in this position.

57

Child Restraints

Fitting LATCH child restraints

LATCH child restraints should only be fitted in the two outer seating positions of the second-row seats. Anchor bars built into the rear seat frame, enable the LATCH restraints to be securely attached to the vehicle seat only in these positions.

In addition, two tether anchor bars are fitted to back of the rear seats, to secure child restraint anchor straps.

When fitting LATCH child restraints, always follow the instructions supplied by the manufacturer of the restraint.

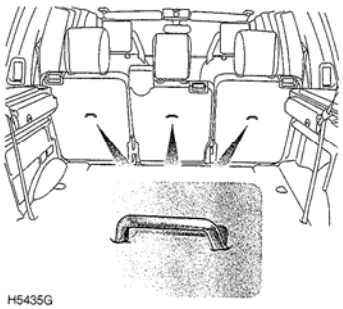
Once the LATCH restraint is installed, you are recommended to test the security of the installation before seating the child. Attempt to twist the restraint from side to side and to pull the restraint away from the vehicle seat; then check that the anchors are still securely in place.

WARNING

If the restraint is not correctly anchored, there is a significant risk of injury to the child in the event of a collision or emergency braking.

Tether anchorages

Upper tether anchorage is provided at each seating position equipped to accept LATCH child restraints.



H5435G

Note: *Always ensure that, if an upper tether is provided, it is secured and tightened properly as this provides the maximum protection for a child.*

WARNING

Child restraint anchorages are designed to withstand only loads imposed by correctly fitted child restraints. Under no circumstances are they to be used for adult seat belts, harnesses or for attaching other items or equipment to the vehicle.

Child Restraints

Attaching tether straps

1. Install the child restraint securely in one of the second or third row seating positions.
2. Pass the tether strap over the back of the vehicle seat and beneath the underside of the head restraint.
3. Attach the clip on the head of the tether strap to the tether anchor on the back of the vehicle seat.
4. Tighten the tether strap according to the manufacturer's instructions to remove any slack in the webbing.

WARNING

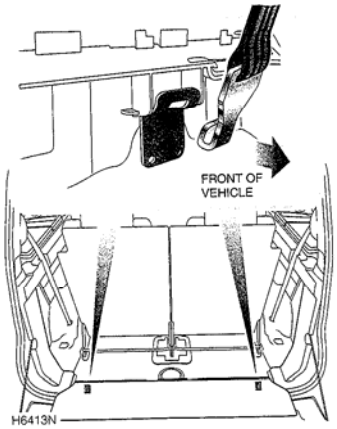
Always follow the child seat or restraint system manufacturer's instructions when fitting tether straps.

When fitting a child seat or restraint system, always pass the tether strap over the top of the seat back and beneath the underside of the head restraint.

If a child seat or restraint system is to be fitted to the center seating position, the center armrest must be in the stowed position (folded into the seat).

Third-row child seat tether anchorages

A tether anchorage is provided at each seating position.



WARNING

NEVER use the luggage anchor points to secure ANY child seat, they are not designed to accept the potential loading that could result in such use, resulting in personal injury.

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Child Restraints

CHILD RESTRAINT CHECK LISTS

Non-LATCH child restraints

Follow the check list every time a child travels in the vehicle:

- Carefully follow the instructions provided by the manufacturer of the restraint system.
- Always use the appropriate child restraints and adjust harnesses for every child, every trip.
- Avoid dressing a child in bulky clothing and do not place any objects between the child and the restraint system.
- Regularly check the fit of a child seat and replace seats or harnesses that show signs of wear.
- Ensure that you have removed all slack from the adult seat belt.
- No child seat is completely child-proof. Encourage a child not to play with the buckle or harness.
- Never leave a child unsupervised in the vehicle.
- Activate the rear door child safety locks. See **CHILD SAFETY LOCKS, 33**.
- Ensure that a child does not exit the vehicle from the side where there is traffic.
- Set children a good example - always wear your seat belt.

LATCH child restraints

Follow the check list every time a child travels in the vehicle:

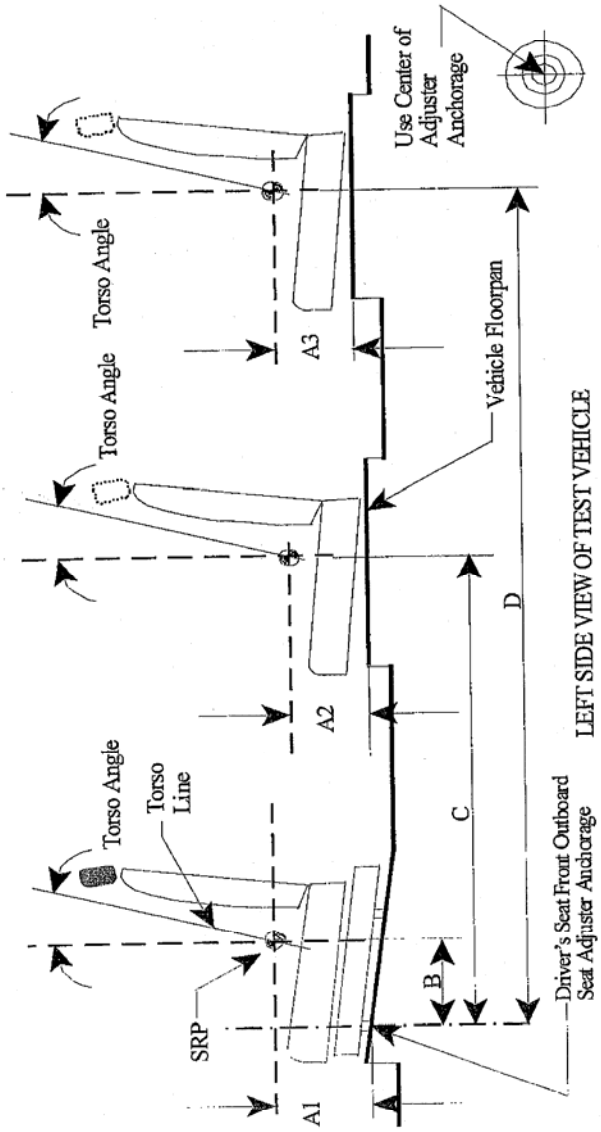
- **Always attach the top tether when installing the LATCH seat.**
- Carefully follow the instructions supplied with the child seat.
- Always give the LATCH seat a final pull to ensure that the lower anchors are secure.
- Always use the appropriate child restraints and adjust the harnesses for every child, every trip.
- Make sure that a child falls into the correct weight range for the seat.
- Avoid dressing a child in bulky clothing and do not place any objects between the child and the restraint system.
- Regularly check the fit of a child seat and replace seats and harnesses that show signs of wear.
- No child seat is completely child-proof. Encourage children not to play with the buckle or harness.
- Never leave a child unsupervised in the vehicle.
- Activate the rear door child safety locks. See **CHILD SAFETY LOCKS, 33**.
- Ensure that a child does not exit the vehicle from the side where there is traffic.
- Set children a good example - always wear your seat belt.

APPENDIX B
MANUFACTURER'S DATA (OVSC FORM 14)

Appendix A

SEAT REFERENCE POINT (SRP) AND TORSO ANGLE DATA
FOR FMVSS 225
(All dimensions in mm[1])

Model Year: **2006** ; Make: **Land Rover** ; Model: **LR3 4 door SUV**; Body Style: **5-seat**
Seat Style: Front row: **6-way or 8-way power**; Second row: **65/35 split bench**; Third row: **N/A**



LEFT SIDE VIEW OF TEST VEHICLE

Note: Dimensions are taken from centre of seat adjuster anchorage mounting hole, on body panel A-surface.

FORM 14 (FMVSS 225)
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Appendix A

Table 1. Seating Positions[1] and Torso Angles

		Left (Driver Side)	Center (if any)	Right
A1		(Driver) 313.0	N/A	(Front Passenger) 313.0
A2		381.0	381.0	381.0
A3		N/A	N/A	N/A
B		355.5	N/A	355.5
C		1210.5	1210.5	1210.5
D		N/A	N/A	N/A
Torso Angle (degree)	Front Row	25°	N/A	25°
	Second Row	25°	25°	25°
	Third Row	N/A	N/A	N/A

Note: 1. All dimensions are in mm. If not, provide the unit used.

FORM 14 (FMVSS 225)
Last Updated: 12/12/2005

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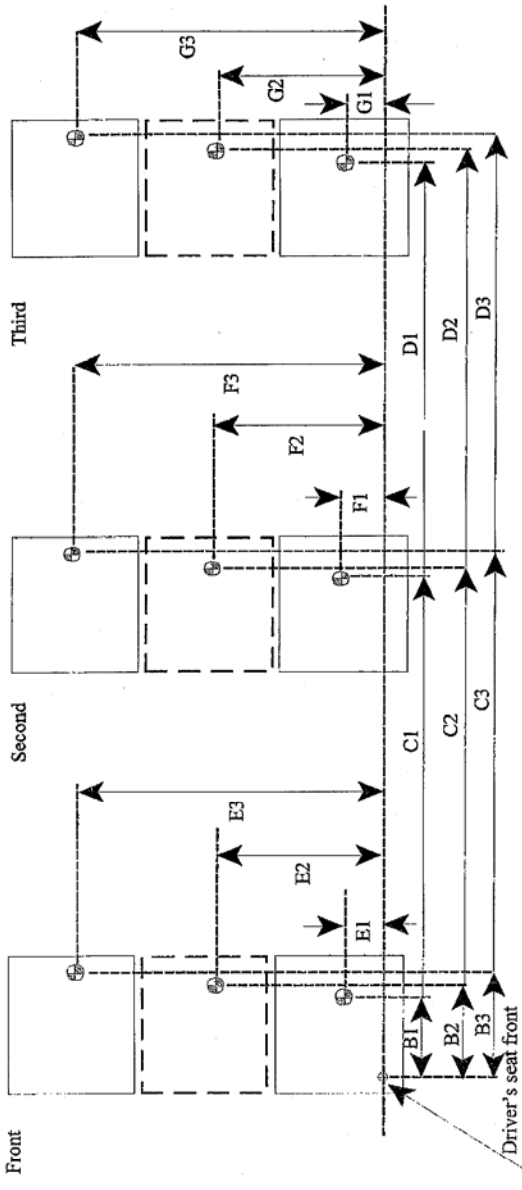
Appendix A

SEATING REFERENCE POINT
FOR FMVSS 225
(All dimensions in mm)

Model Year: **2006** ; Make: **Land Rover** ; Model: **LR3 4 door SUV**; Body Style: **5-seat**
Seat Style: Front row: **6-way or 8-way power**; Second row: **65/35 split bench**; Third row: **N/A**



Note: Dimensions are taken from centre of seat adjuster anchorage mounting hole, on body panel A-surface.

FORM 14 (FMVSS 225)
Last Updated: 12/12/2005

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Table 2. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)		Distance from Driver's front outboard seat adjuster anchorage[1]
Front Row	B1	355.5
	E1	213.0
	B2	N/A
	E2	N/A
	B3	355.5
	E3	1053.0
Second Row	C1	1210.5
	F1	243.0
	C2	1210.5
	F2	633.0
	C3	1210.5
	F3	1023.0
Third Row	D1	N/A
	G1	N/A
	D2	N/A
	G2	N/A
	D3	N/A
	G3	N/A

Note: 1. Use the center of anchorage.

Appendix A

FORM 14 (FMVSS 225)
Last Updated: 12/12/2005

TETHER ANCHORAGE LOCATIONS
FOR FMVSS 225
(All dimensions in mm)

Model Year: **2006** ; Make: **Land Rover** ; Model: **LR3 4 door SUV**; Body Style: **5-seat**
Seat Style: Front row: **6-way or 8-way power**; Second row: **65/35 split bench**; Third row: **N/A**

⊕: SRP
✦: Tether anchorage

Note: 1. The location shall be measured at the center of the bar.

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Table 3. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)	Distance from SRP	
Front Row	H1	**N/A**
	K1	**N/A**
	H2	**N/A**
	K2	**N/A**
	H3	**N/A**
	K3	**N/A**
Second Row	I1	**240.0**
	L1	**0.0**
	I2	**240.0**
	L2	**0.0**
	I3	**240.0**
	L3	**0.0**
Third Row	J1	**N/A**
	M1	**N/A**
	J2	**N/A**
	M2	**N/A**
	J3	**N/A**
	M3	**N/A**

Note: 1. Use the center of anchorage.

Appendix A

FORM 14 (FMVSS 225)
Last Updated: 12/12/2005

TETHER ANCHORAGE LOCATIONS - VERTICAL
FOR FMVSS 225
(All dimensions in mm)

Model Year: **2006** ; Make: **Land Rover** ; Model: **LR3 4 door SUV**; Body Style: **5-seat**
Seat Style: Front row: **6-way or 8-way power**; Second row: **65/35 split bench**; Third row: **N/A**

LEFT SIDE VIEW OF TEST VEHICLE

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Last Updated: 12/12/2005

Appendix A

Table 4. Vertical Dimension For The Tether Anchorage

Seating Row	Vertical Distance from Seating Reference Point	
Front Row	N1 (Driver)	**N/A**
	N2 (Center)	**N/A**
	N3 (Right)	**N/A**
Second Row	O1 (Left)	**19.0**
	O2 (Center)	**19.0**
	O3 (Right)	**19.0**
Third Row	P1 (Left)	**N/A**
	P2 (Center)	**N/A**
	P3 (Right)	**N/A**

Note: 1. All dimensions are in mm. If not, provide the unit used.

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Appendix A

For each vehicle, provide the following information:

1. How many designated seating positions exist in the vehicle?

   Answer:
   5 designated seating positions exist within this particular vehicle model derivative.

2. How many designated seating positions are equipped with lower anchorages and tether anchorages? Specify which position(s).

   Answer:
   2 - Both Row 2 outer seating positions are equipped with both lower anchorages and top tether anchorages.

3. How many designated seating positions are equipped with tether anchorages? Specify which position(s).

   Answer:
   3 - All three Row 2 seating positions are equipped with top tether anchorages.

4. Lower Anchorage Marking and Conspicuity: Whether the anchorages are certified to S9.5(a) or S9.5(b) of FMVSS 225.

   Answer:
   In terms of lower anchorage marking and conspicuity, they are certified to S9.5(b) of FMVSS 225.