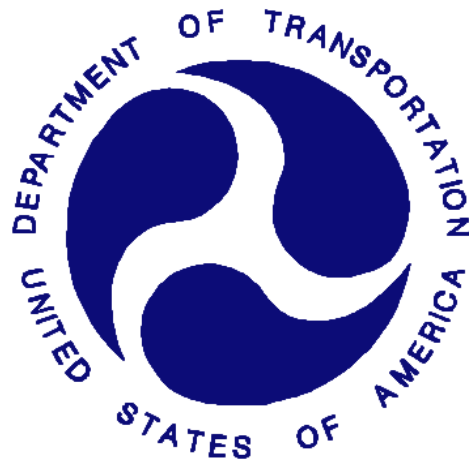


**REPORT NUMBER: SPNCAP-MGA-2015-024**

**NEW CAR ASSESSMENT PROGRAM (NCAP)  
Side Impact Pole Test**

**FORD MOTOR COMPANY  
2015 Ford Transit 150 LR Wagon XLT  
NHTSA No.: M20150204**

**MGA RESEARCH CORPORATION  
5000 Warren Road  
Burlington, WI 53105**



**Test Date: October 28, 2014**


**Final Report Date: December 11, 2014**

**FINAL REPORT**

**U.S. DEPARTMENT OF TRANSPORTATION  
National Highway Traffic Safety Administration  
Office of Crashworthiness Standards  
Mail Code: NVS-111  
1200 New Jersey Ave, SE  
Room W43-410  
Washington, DC 20590**

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Prepared by:   
Donna Janovicz, Project Manager

Approved by:   
Ben Fischer, Project Engineer

Approval Date: December 11, 2014

FINAL REPORT ACCEPTANCE BY OCWS:

\_\_\_\_\_  
Division Chief, New Car Assessment Program  
NHTSA, Office of Crashworthiness Standards

Date: \_\_\_\_\_

\_\_\_\_\_  
COTR, New Car Assessment Program  
NHTSA, Office of Crashworthiness Standards

Date: \_\_\_\_\_

### Technical Report Documentation Page

<b>1. Report No.</b> SPNCAP-MGA-2015-024	<b>2. Government Accession No.</b>	<b>3. Recipient's Catalog No.</b>																												
<b>4. Title and Subtitle</b> Final Report of New Car Assessment Program Side Impact Pole Testing of a 2015 Ford Transit 150 LR Wagon XLT, NHTSA No.: M20150204		<b>5. Report Date</b> December 11, 2014																												
		<b>6. Performing Organization Code</b> MGA																												
<b>7. Author(s)</b> Donna Janovicz, Project Manager Ben Fischer, Project Engineer		<b>8. Performing Organization Report No.</b> SPNCAP-MGA-2015-024																												
<b>9. Performing Organization Name and Address</b> MGA Research Corporation 5000 Warren Road Burlington, WI 53105		<b>10. Work Unit No.</b>																												
		<b>11. Contract or Grant No.</b> DTNH22-09-D-00124																												
<b>12. Sponsoring Agency Name and Address</b> United States Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NVS-111) 1200 New Jersey Ave, SE, Room W43-410 Washington, DC 20590		<b>13. Type of Report and Period Covered:</b> Final Test Report October 28, 2014 to December 11, 2014																												
		<b>14. Sponsoring Agency Code</b> NVS-111																												
<b>15. Supplementary Notes</b>																														
<b>16. Abstract</b> A 32.20 km/h, 75° oblique impact Side NCAP Test was conducted on the subject 2015 Ford Transit 150 LR Wagon XLT in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. The test was conducted at MGA Research Corporation, in Burlington, Wisconsin, on October 28, 2014.  The impact velocity was 32.1 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.0°C. The test vehicle post-test maximum crush was 422 mm at level 2. The test vehicle's performance was as follows:																														
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: left;">Measurement Description</th> <th colspan="3" style="text-align: center;">Driver ATD (SID-IIs)</th> </tr> <tr> <th style="text-align: center;">Units</th> <th style="text-align: center;">Threshold</th> <th style="text-align: center;">Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC<sub>36</sub>)</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">1000</td> <td style="text-align: center;">329</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td style="text-align: center;">Gs</td> <td style="text-align: center;">82</td> <td style="text-align: center;">40</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td style="text-align: center;">N</td> <td style="text-align: center;">5525</td> <td style="text-align: center;">3011</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">38*</td> <td style="text-align: center;">15</td> </tr> <tr> <td>Maximum Abdomen Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">45*</td> <td style="text-align: center;">22</td> </tr> </tbody> </table>				Measurement Description	Driver ATD (SID-IIs)			Units	Threshold	Result	Head Injury Criteria (HIC <sub>36</sub> )	N/A	1000	329	Resultant Lower Spine Acceleration	Gs	82	40	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3011	Maximum Thoracic Rib Deflection	mm	38*	15	Maximum Abdomen Rib Deflection	mm	45*	22
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*Proposed IARV																														
The door on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.																														
<b>17. Key Words</b> New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs		<b>18. Distribution Statement</b> Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave, SE Washington, DC 20590 e-mail: <a href="mailto:tis@nhtsa.dot.gov">tis@nhtsa.dot.gov</a> FAX: 202-493-2833																												
<b>19. Security Classification of Report</b> Unclassified	<b>20. Security Classification of Page</b> Unclassified	<b>21. No. of Pages</b>  137	<b>22. Price</b>																											

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**SECTION 1**  
**TEST PURPOSE AND PROCEDURE**

This side impact test is part of the MY 2015 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-09-D-00124. The purpose of this test is to generate comparative side impact performance in a 2015 Ford Transit 150 LR Wagon XLT. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated September 2013.

## SECTION 2 SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2015 Ford Transit 150 LR Wagon XLT. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.1 km/h. The test was conducted by MGA Research Corporation in Burlington, Wisconsin, on October 28, 2014. Pre-test and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure dated September 2013. Camera locations and other pertinent camera information are included in this report.

The Part 572V (SID-IIs) dummy was instrumented accordingly:

- Primary and Redundant Head CG Triaxial Accelerometers
- Thorax Upper, Middle, and Lower Rib Displacement Potentiometers
- Abdomen Upper Rib and Lower Rib Displacement Potentiometers
- Lower Spine (T12) Triaxial Accelerometers
- Iliac Load Cell
- Acetabulum Load Cell

Appendix B contains the vehicle and dummy response data. Dummy configuration and performance verification data can be found in Appendix C of this report. Appendix D contains the test equipment and instrumentation calibration data.

Injury readings for the SID-IIs dummy were recorded as follows:

Measurement Description	Driver ATD (SID-IIs)		
	Units	Threshold	Result
Head Injury Criteria (HIC <sub>36</sub> )	N/A	1000	329
Resultant Lower Spine Acceleration	Gs	82	40
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3011
Maximum Thoracic Rib Deflection	mm	38*	15
Maximum Abdominal Rib Deflection	mm	45*	22

\*Proposed IARV

Supplemental restraint information is given below:

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other				

The test data can be found on the NHTSA website at [www.nhtsa.dot.gov](http://www.nhtsa.dot.gov)

### **GENERAL COMMENTS**

Left Floor Sill Y has no valid data after 5 ms.

Left A-Post @ Sill Y has no valid data after 50 ms.

Driver Seat Track Y has no valid data after 30 ms.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

**SECTION 3  
OCCUPANT AND VEHICLE INFORMATION**

**DATA SHEET NO. 1  
GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
Test Date: 10/28/2014

**TEST VEHICLE INFORMATION AND OPTIONS**

NHTSA No.	M20150204	Traction Control System (TCS)	Yes
Model Year	2015	Auto-Leveling System	No
Make	Ford	Automatic Door Locks (ADL)	Yes
Model	Transit	Power Window Auto-Reverse	Yes
Body Style	MPV	Other Optional Feature	N/A
VIN	1FMZK1YG1FKA10327	Driver Front Airbag	Yes
Body Color	Oxford White	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	69 / 43	Driver Head/Torso Airbag	No
Engine Displacement (L)	3.5	Driver Torso Airbag	No
Type/No. Cylinders	6	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Longitudinal	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	No
Transmission Speeds	6	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	Rear	Rear Pass. Torso Airbag	No
Roof Rack	No	Rear Pass. Torso/Pelvis Airbag	No
Sunroof/T-Top	No	Rear Pass. Pelvis Airbag	No
Running Boards	No	Driver Seat Belt Pretensioner	Yes
Tilt Steering Wheel	Yes	Rear Pass. Seat Belt Pretensioner	No
Power Seats	Driver Only	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	No
		Other Restraint Feature	N/A

Does owner's manual provide instructions to turn off automatic door locks?	Yes
--	-----

**DATA FROM CERTIFICATION LABEL**

Manufactured By	Ford Motor Company	GVWR (kg)	3878
Date of Manufacture	08/14	GAWR Front (kg)	1873
Vehicle Type	MPV	GAWR Rear (kg)	2300

**VEHICLE SEATING AND WEIGHT CAPACITY DATA**

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3	3	8	
Capacity Weight (VCW) (kg)				1224	(A)
DSC x 68.04 kg				544	(B)
Rated Cargo and Luggage Weight (RCLW) (kg)				680	(A-B)

**VEHICLE SEAT TYPE**

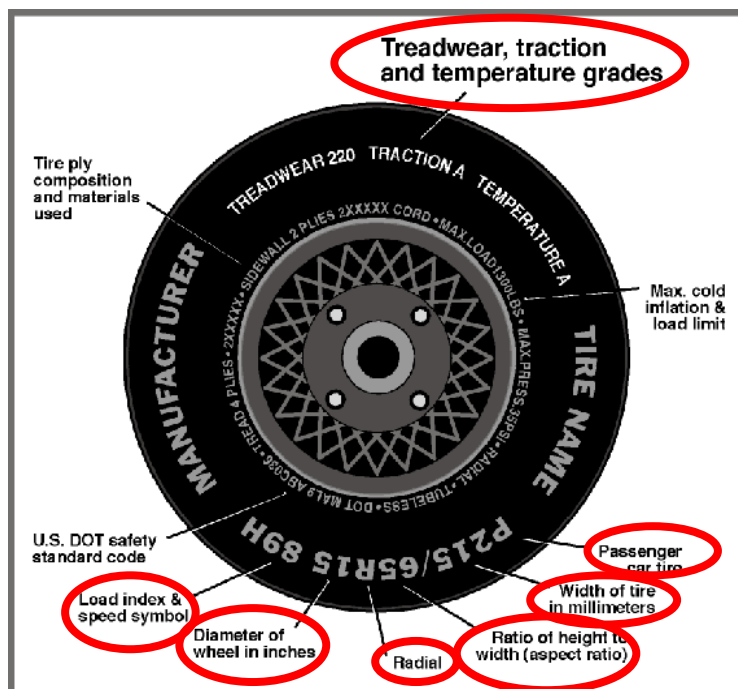
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						Manual	Power
Front Seat	X						X
Rear or Second Row			X			w/strap	
Third Row Seat			X			w/strap	

**DATA SHEET NO. 1 (CONTINUED)**  
**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014

**VEHICLE TIRE INFORMATION**



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	619	619
Cold Pressure (kPa)	340	490
Recommended Tire Size	235/65R16	235/65R16
Tire Size on Vehicle	235/65R16	235/65R16
Tire Manufacturer	Continental	Continental
Tire Model	Vanco Four Season	Vanco Four Season
Treadwear		
Traction		
Temperature Grade		
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 2 Steel, 2 Polyamide	2 Polyester, 2 Steel, 2 Polyamide
Load Index/Speed Symbol	121/119R	121/119R
Tire Material	Rubber	Rubber
DOT Safety Code Left	65B0 HN6C 1714	65B0 HN6C 1614
DOT Safety Code Right	65B0 HN6C 1614	65B0 HN6C 1614

**DATA SHEET NO. 1 (CONTINUED)**  
**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014

**TEST PRESSURES**

	Units	LF	RF	LR	RR
As Delivered	kpa	338	317	462	469
Tire Placard	kpa	340	340	490	490
Owner's Manual	kpa				
As Tested	kpa	340	340	490	490

**TEST VEHICLE WEIGHTS**

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	680.5	619.5		714.5	711.0		693.5	714.0	
Right	kg	689.5	602.5		678.0	669.5		685.0	687.5	
Ratio	%	52.9	47.1		50.2	49.8		49.6	50.4	
Totals	kg	1370.0	1222.0	2592.0	1392.5	1380.5	2773.0	1378.5	1401.5	2780.0

**TARGET TEST WEIGHT CALCULATION**

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	2592.0	(A)
Actual Weight of 1 P572V ATD (SID-IIs) ATD Used	kg	52.2	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	136	(C)
Calculated Vehicle Target Weight (TVTW)	kg	2780.2	(A+B+C)

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e. Calculated Test Vehicle Target Weight – 4.5 kg to 9 kg)? **YES**

**TEST VEHICLE ATTITUDES AND CG**

	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	deg	-0.6	-0.6	-0.3	Yes
Front Pass. Sill Angle (front-to-rear)*	deg	-0.8	-0.7	-0.4	Yes
Front Bumper Angle (left-to-right)**	deg	-0.3	-0.5	-0.4	No
Rear Bumper Angle (left-to-right)**	deg	0.2	-0.5	0.0	No
Vehicle CG (Aft of Front Axle)	mm	1556	1643	1664	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	2	24	10	

\*ND=Nose Down (-), NU=Nose Up (+) \*\* LD=Left Down (-), LU=Left Up (+)

\*\*\* The "As Tested" vehicle attitude measurements must be equal to or between the "As Delivered" and "Fully Loaded" vehicle attitude measurements.

**WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW**

Component Description	Weight (kg)
Ballast (if any)	95.3
Cargo carpet, jack & tools, right taillight.	26.8

Test height adjustable suspension setting, if applicable:	Not Applicable
---	----------------

**DATA SHEET NO. 2**  
**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014

**SEAT POSITIONING**

The driver's seat, front center seat (if applicable), and right front passenger's seat should be set to the forward-most, mid-height, mid-angle position. The struck-side rear passenger's seat, rear center seat, and non-struck side rear passenger's seats should be set to the rear-most, lowest, mid-angle position.

**SCRL ANGLE RANGE**

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	15.2	9.0	12.1
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

**SEAT HEIGHT AND ANGLE**

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rear-most	Mid-Fore/Aft	Forward-Most
Driver Seat	12.1	34	Max	68	68	68
			Mid	34	34	34
			Min	0	0	0
Front Passenger Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed

**DATA SHEET NO. 2 (CONTINUED)**  
**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

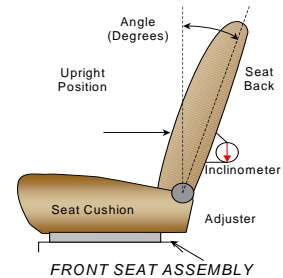
NHTSA No. M20150204  
 Test Date: 10/28/2014

**SEAT FORE/AFT POSITIONS**

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	246		0	
Front Passenger Seat	250	37 (1 <sup>st</sup> as 1)	0	0 <sup>th</sup> (1 <sup>st</sup> as 0)
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

**SEAT BACK ANGLE ADJUSTMENT**

The driver's seat back is positioned such that the dummy's head is level. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck-side rear passenger seat back is positioned in accordance with the information provided by the manufacturer on Form No. 1 for the 5<sup>th</sup> percentile female dummy in a Side NCAP MDB test. The rear center and non-struck side rear passenger's seat back is set to match the struck-side rear seat back.



Seat	Total Seat Back Angle Range		Test Position from Vertical	
	Degrees	Detents	Degree	Detent
Driver Seat w/Seated Dummy	90.6		-5.5	
Front Passenger Seat	87.2	35 (1 <sup>st</sup> as 1)	-5.4	16 <sup>th</sup> (1 <sup>st</sup> as 0)
Front Center Seat				
Struck Side Rear Seat	11.8	7 (1 <sup>st</sup> as 1)	0.0	0 <sup>th</sup> (1 <sup>st</sup> as 0)
Non-Struck Side Rear Seat	11.8	7 (1 <sup>st</sup> as 1)	0.0	0 <sup>th</sup> (1 <sup>st</sup> as 0)
Rear Center Seat	11.8	7 (1 <sup>st</sup> as 1)	0.0	0 <sup>th</sup> (1 <sup>st</sup> as 0)

Seat back angles measured on headrest post.

**SEAT BELT ANCHORAGE ADJUSTMENT**

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1.

	Total # of Positions	Placed in Position #
Driver Seat	4 detents (1 <sup>st</sup> as 1)	0 (uppermost as 0)

**HEAD RESTRAINT ADJUSTMENT**

Head restraints are adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	5	Lowest

**DATA SHEET NO. 2 (CONTINUED)**  
**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**

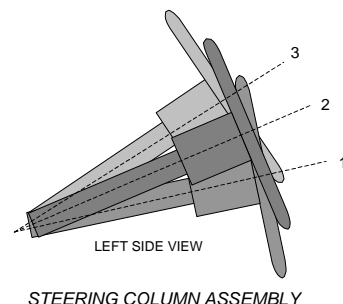
Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014

**STEERING COLUMN ADJUSTMENT**

Steering wheel and column adjustments are made so that the steering wheel geometric locus is described when it moves through its full range of motion.

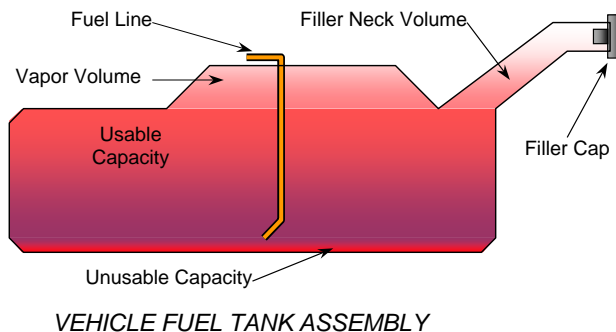
	Degrees	Fore/Aft Position (mm)
Lowermost, Position 1	59.0	232
Geometric Center, Position 2	56.9	206
Uppermost, Position 3	54.8	180
Telescoping Steering Wheel Travel		52
Test Position	56.9	206



**FUEL PUMP**

Describe the fuel pump type, details about how it operates and the location of the fuel filler pipe.

The vehicle is equipped with an electric fuel pump. The electric fuel pump operates for 2 seconds to pressurize the fuel system following actuation of the ignition. If no attempt has been made to start the engine within 2 seconds following ignition actuation the fuel pump will shut off. The fuel pump operates continuously while the engine is running. If the engine stalls the fuel pump is deactivated. Also, fuel pump shut-off is provided via the RC, designed to stop fuel flow to the engine if the vehicle sustains an impact above a certain magnitude. The fuel pipe is on the left side.



**FUEL TANK CAPACITY DATA**

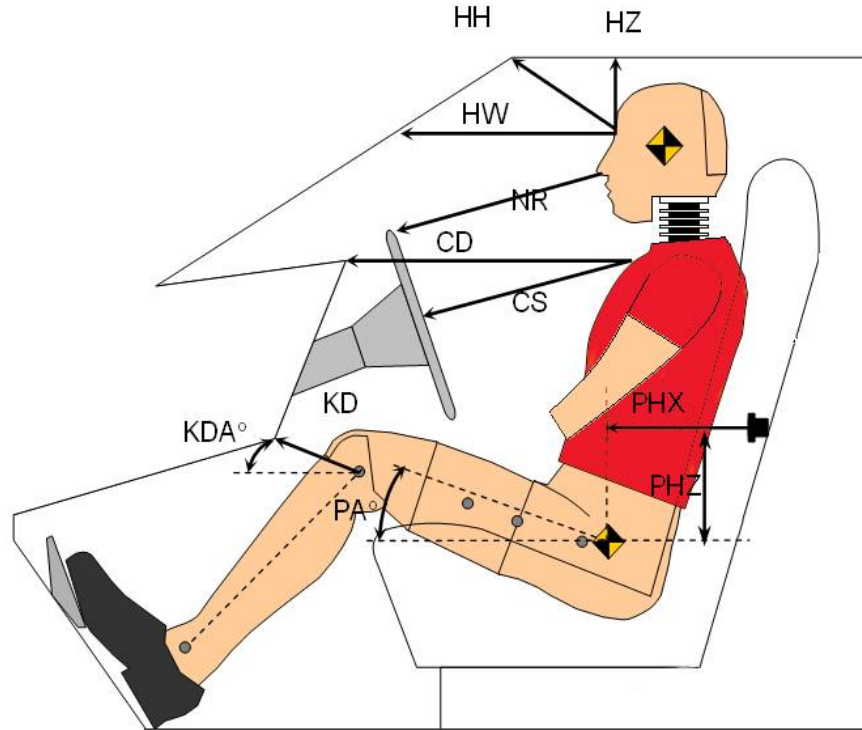
	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	96.5
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	95.0
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	89.7
Actual Amount of Solvent Used	89.7
1/3 of Usable Capacity	32.2

Is the actual amount of solvent used in the test equal to 93% ± 1% of the Usable Capacity stated in Form No. 1? **YES**

**.DATA SHEET NO. 3  
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014



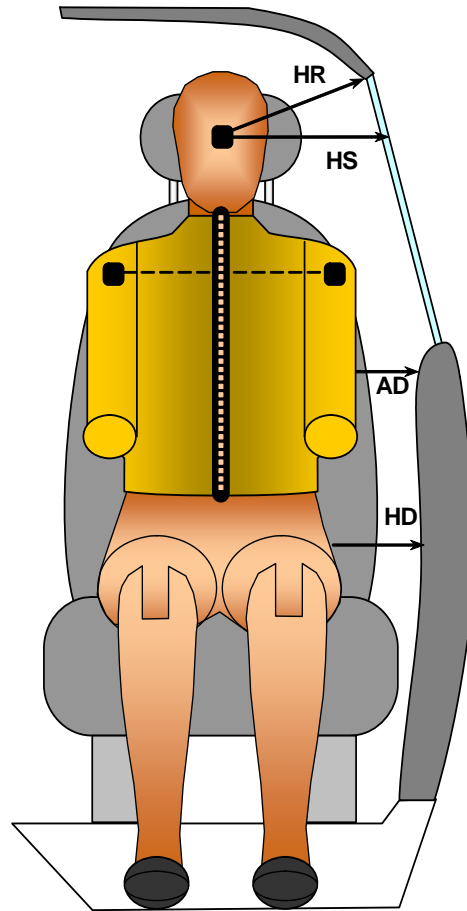
**LEFT SIDE VIEW**

Code	Measurement Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	315	
HW	Head to Windshield	600	
HZ	Head to Roof Liner	259	
NR	Nose to Rim	295	
CD	Chest to Dashboard	470	
CS	Chest to Steering Wheel	211	
KDL/KDAL°	Left Knee to Dash	107	28.8
KDR/KDAR°	Right Knee to Dash	108	24.2
PAX°	Pelvic Tilt Angle (X-Axis)		18.5
PAY°	Pelvic Tilt Angle (Y-Axis)		-0.6
PHX	Hip Point to Striker (X-Axis)	333	
PHZ	Hip Point to Striker (Z-Axis)	34	

**DATA SHEET NO. 4  
DUMMY LATERAL CLEARANCE DIMENSIONS**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014



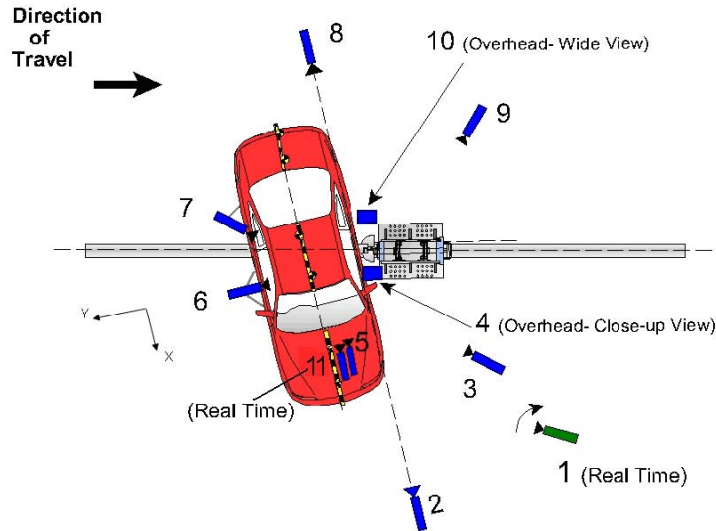
*FRONT VIEW OF DUMMY*

Code	Measurement Description	Driver
		Length (mm)
HR	Head to Side Header	362
HS	Head to Side Window	355
AD	Arm to Door	277
HD	Hip Point to Door	173

**DATA SHEET NO. 5  
CAMERA AND INSTRUMENTATION DATA**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014



Reference: (from Point of Impact for X and Y; from Ground for Z):  
 +X = Forward of Impact, + Y = Right of Impact, +Z = Down

Camera No.	View	Coordinates (mm)			Lens (mm)	Film Speed (fps)
		X*	Y*	Z*		
1	Real-Time Pan View					30
2	Front Ground Level	-60	6120	-1810	24	1000
3	Impact Side 45° Forward	-2320	5120	-1970	20	1000
4	Overhead Closeup	90	0	-4420	50	1000
5	Onboard – Driver Front				16	1000
6	Onboard – Driver Side				8	1000
7	Onboard – Driver Rear				8	1000
8	Rear Ground Level	-80	-7010	-1830	24	1000
9	Impact Side 45° Rearward	-4420	-3880	-1970	20	1000
10	Overhead Wide View	330	0	-4610	14	1000
11	Real-Time Dummy Front View					30

\* All measurements accurate to  $\pm 6$  mm

Note: Vehicle was at a 75° angle to the rigid pole.

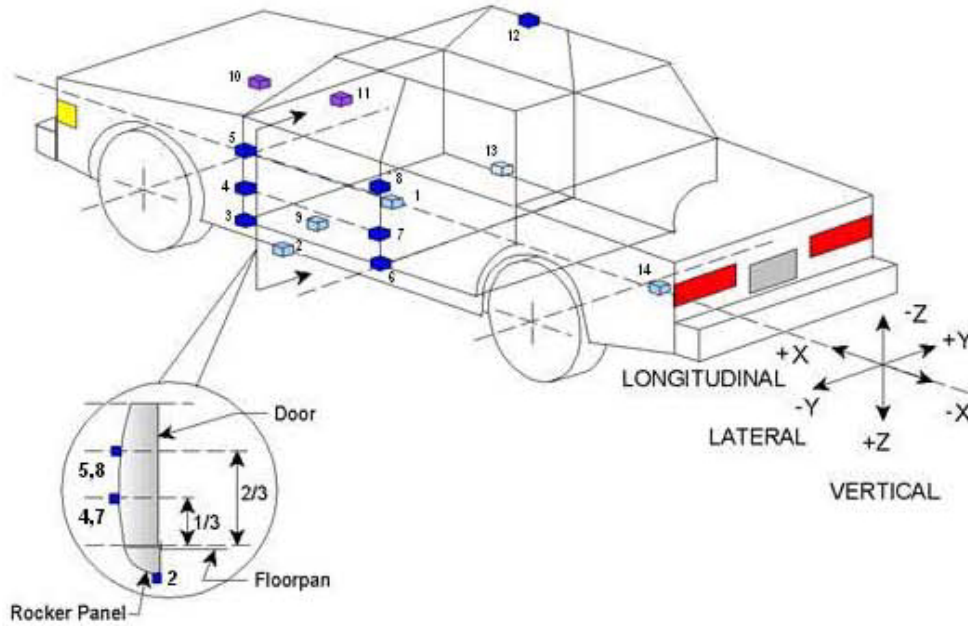
Explain why camera(s) did not operate as intended: None

INSTRUMENTATION	Number of Channels
Driver Dummy	16
Vehicle Structure	18
Pole Load Cells	8
<b>TOTAL</b>	<b>42</b>

**DATA SHEET NO. 6  
VEHICLE ACCELEROMETER DATA**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014



	Accelerometer Location			
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2796	0	-550
2	Left Floor Sill	3773	-860	-299
3	A Pillar Sill	4099	-865	-310
4	A Pillar Low	4444	-935	-873
5	A Pillar Mid	4451	-930	-1045
6	B Pillar Sill	3041	-860	-305
7	B Pillar Low	3263	-830	-930
8	B Pillar Mid	3266	-827	-1131
9	Driver Seat Track	3335	-399	-612
10	Engine Top	4709	64	-1092
11	Firewall	4628	-33	-1230
12	Right Roof	3447	685	-2045
13	Right Floor Sill	3770	860	-305
14	Rear Floorpan	1341	0	-660

Reference:

- X – Test Vehicle Rear Bumper (+forward)
- Y – Test Vehicle Centerline (+ to right)
- Z – Ground Plane (+ down)

**DATA SHEET NO. 7**  
**RIGID POLE LOAD CELL DATA**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
Test Date: 10/28/2014



254 mm Diameter Rigid Pole

Load Cell Locations	
ID	Height From Impact Surface (mm)
1	182
2	470
3	698
4	986
5	1212
6	1641
7	1854
8	2053

**DATA SHEET NO. 8  
POST-TEST OBSERVATIONS**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014

**TEST DUMMY INFORMATION AND CONTACT POINTS**

Description	Driver SID-IIs Dummy
Face	Curtain Airbag, Headrest
Top of Head	Curtain Airbag, Headrest
Left Side of Head	Curtain Airbag
Back of Head	Curtain Airbag, Headrest
Left Shoulder	Side Airbag, Seatback
Upper Torso	Side Airbag, Seatback
Lower Torso	Side Airbag, Seatback
Left Hip	Side Airbag, Seatpan
Left Knee	Door Panel

**POST-TEST DOOR PERFORMANCE**

Description	Struck Side		Non-Struck Side		Rear Hatch/ Other Door
	Front	Rear	Front	Rear	
Remained Closed and Operational	No		Yes	Yes	Yes
Total Separation from Vehicle at Hinges or Latches	No		No	No	No
Latch or Hinge Systems Pulled Out of Their Anchorages	No		No	No	No
Disengaged from Latched Position	No		No	No	No
Latch Separated from Striker	No		No	No	No
Jammed Shut	Yes		No	No	No
If Door Opened at Striker, Record Width of Opening at Striker (mm)	N/A		N/A	N/A	N/A

**POST-TEST SEAT PERFORMANCE**

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	No	No	No
Seat Disengagement from Floor Pan	No	No	No	No
Seat Back Movement from Initial Position	No	No	No	No
Seat Back Collapse	No	No	No	No

**POST-TEST STRUCTURAL OBSERVATIONS**

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	Cracked
Side Window Damage	Left Front Window Broken
Other Notable Effects	None

**DATA SHEET NO. 8 (CONTINUED)  
POST-TEST OBSERVATIONS**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other				

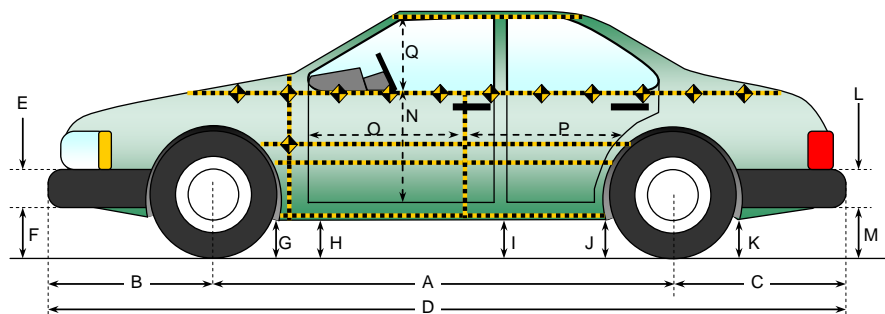
**VEHICLE SPEED, VEHICLE ANGLE AT IMPACT, AND IMPACT POINT LOCATION DATA**

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		725
Actual Impact Point (Aft of Front Axle)	mm		730
Horizontal Offset (+forward / -rearward)	mm	+/- 38 of Intended Impact Point	-5
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	deg	75 +/- 3	75
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.05
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.09

**DATA SHEET NO. 9  
VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014



All measurements in (mm) with tolerance of  $\pm 3$  mm

**LEFT SIDE VIEW**

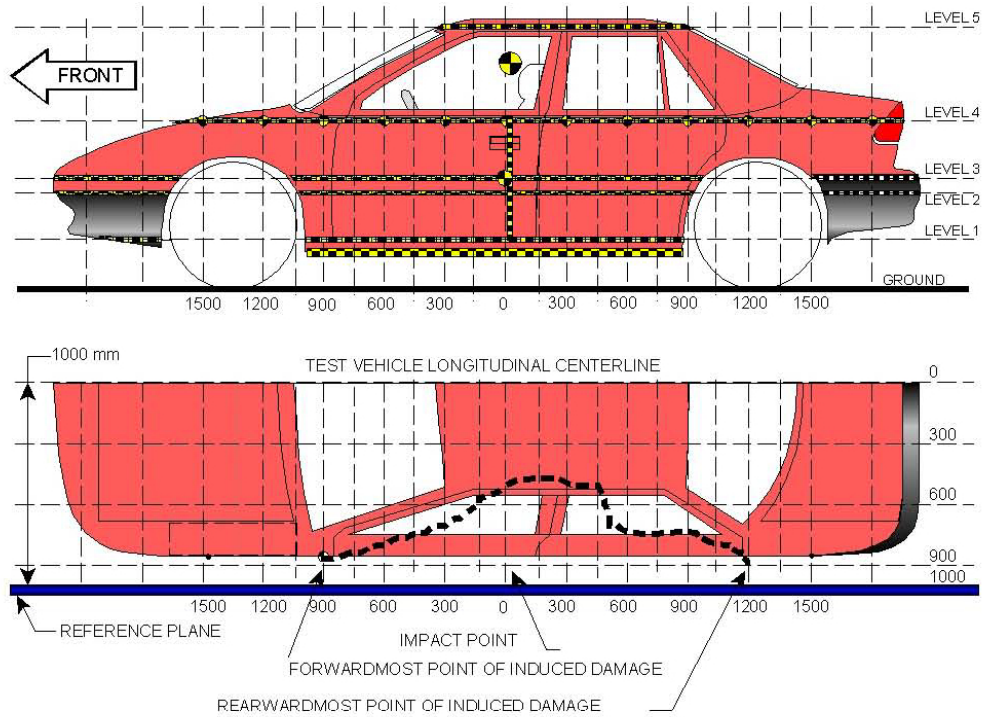
**VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION**

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	3300	3323	-23
B	Front Axle to FSOV	1030	1014	16
C	Rear Axle to RSOV	1252	1243	9
D	Total Vehicle Length at Centerline	5582	5580	-2
E	Front Bumper Thickness	140	140	0
F	Front Bumper Bottom to Ground	254	281	-27
G	Sill Height at Front Wheel Well	265	283	-18
H	Sill Height at Front Door Leading Edge	269	274	-5
I	Sill Height at B-Pillar	274	285	-11
J1	Sill Height at Rear Wheel Well	286	295	-9
J2	Pinch Weld Height at Rear Wheel Well	280	296	-16
K	Sill Height Aft of Rear Wheel Well	367	376	-9
L	Rear Bumper Thickness	80	80	0
M	Rear Bumper Bottom to Ground	288	270	18
N	Sill Height to Bottom of Front Window Sill	916	906	10
O	Front Door Leading Edge to Impact CL	617	484	133
P	Rear Door Trailing Edge to Impact CL	366	148	218
Q	Front Window Opening	710	655	55
R	Right Side Length	4682	4702	-20
S	Left Side Length	4682	4480	202
T	Vehicle Width at B-Pillars	2018	1964	54

**DATA SHEET NO. 10  
VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014



NOTE: The measurements are taken along the vertical impact reference line. Vehicle measurements forward of the vertical impact reference line are negative.

**MAXIMUM EXTERIOR CRUSH MEASUREMENTS**

Level	Measurement Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	385	414	0
2	Mid Door	789	422	-75
3	Occupant Hip Point	1010	414	0
4	Window Sill	1128	419	0
5	Window Top	1840	336	-75

**DATA SHEET NO. 10 (CONTINUED)**  
**VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014

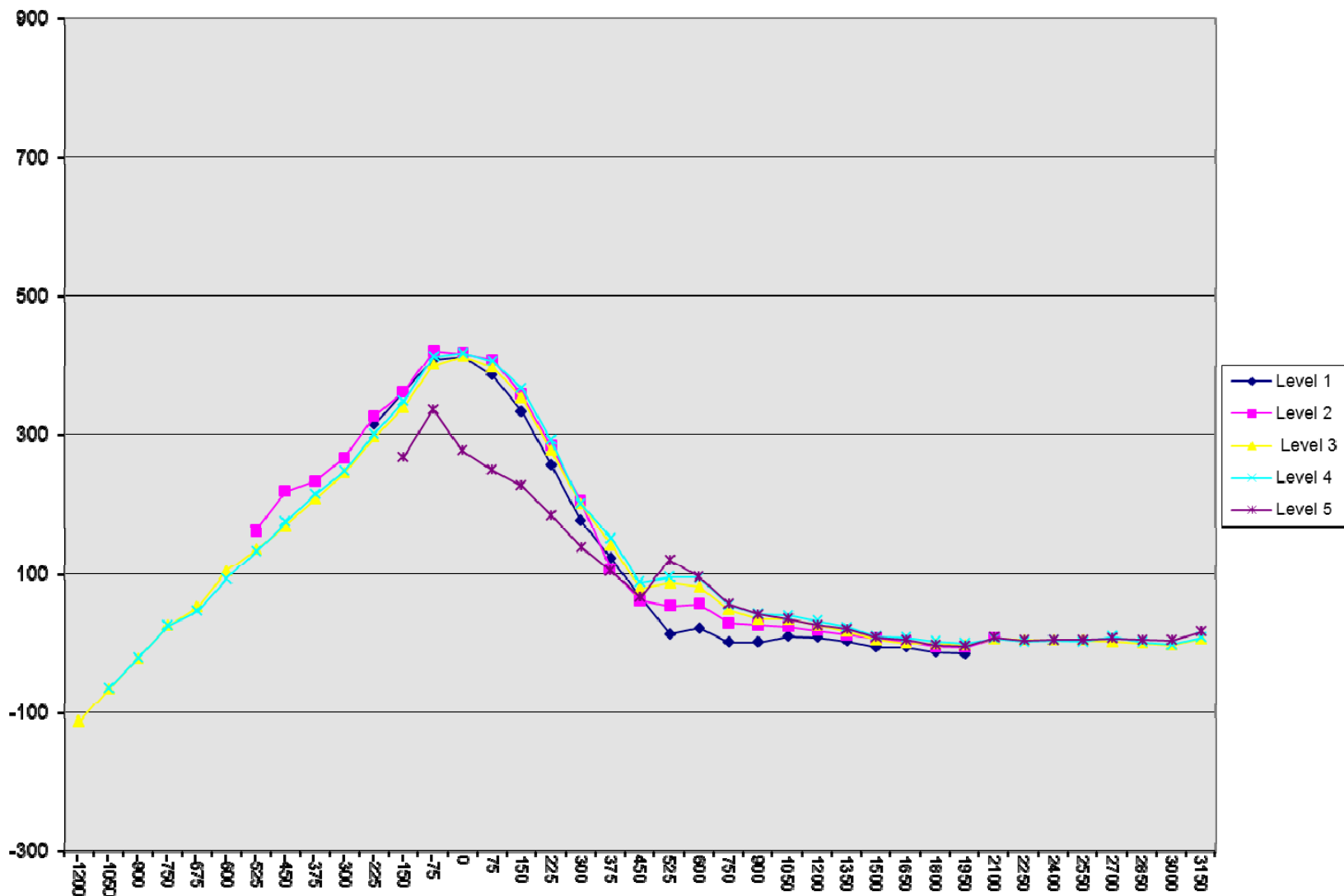
	Pre-Test					Post-Test					Difference					
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	
-1200			173					60						-113		
-1050			154	171				89	107					-65	-64	
-900			142	159				121	139					-21	-20	
-750			133	150				159	176					26	26	
-675			131	145				184	192					53	47	
-600			129	140				233	233					104	93	
-525		95	127	135			256	263	268			161	136	133		
-450		101	126	130			318	295	304			217	169	174		
-375		111	124	126			343	330	339			232	206	213		
-300		125	123	122			391	367	369			266	244	247		
-225	147	126	123	120		461	452	419	421		314	326	296	301		
-150	147	125	123	116	259	508	486	462	464	526	361	361	339	348	267	
-75	147	123	122	114	239	557	545	523	528	575	410	422	401	414	336	
0	147	123	121	112	231	561	541	535	531	507	414	418	414	419	276	
75	147	122	121	110	230	533	531	519	517	478	386	409	398	407	248	
150	147	121	120	107	227	480	479	473	474	453	333	358	353	367	226	
225	147	120	118	106	223	403	403	394	398	406	256	283	276	292	183	
300	147	120	118	120	221	323	324	318	320	360	176	204	200	200	139	
375	144	116	116	103	219	267	222	258	255	323	123	106	142	152	104	
450	145	116	114	102	217	212	178	193	190	284	67	62	79	88	67	
525	144	116	113	101	215	158	170	200	196	335	14	54	87	95	120	
600	142	114	112	100	211	165	171	194	194	307	23	57	82	94	96	
750	145	114	108	98	208	147	144	157	154	265	2	30	49	56	57	
900	145	113	105	97	205	147	140	140	140	247	2	27	35	43	42	
1050	146	112	102	95	201	157	137	137	136	237	11	25	35	41	36	
1200	147	111	100	94	199	156	130	127	127	226	9	19	27	33	27	
1350	150	110	98	94	195	154	123	116	118	216	4	13	18	24	21	
1500	150	110	96	94	195	145	118	102	105	204	-5	8	6	11	9	
1650	151	108	94	95	194	146	111	95	104	200	-5	3	1	9	6	
1800	154	108	93	95	194	142	104	93	99	192	-12	-4	0	4	-2	
1950	156	107	93	97	193	142	102	91	98	190	-14	-5	-2	1	-3	
2100		99	94	100	193		107	101	108	202		8	7	8	9	
2250			95	102	194			101	105	199			6	3	5	
2400			94	103	194			99	108	200			5	5	6	
2550			94	108	194			99	111	200			5	3	6	
2700			101	112	195			104	123	203			3	11	8	
2850			110	116	198			111	118	204			1	2	6	
3000			114	120	202			112	119	207			-2	-1	5	
3150			118	121	205			125	130	223			7	9	18	

Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush pile grid is established prior to the test based on an estimated impact point. The final distance from impact is determined after the final dummy positioning and the pole is aligned with the center of gravity of the dummy's head.

**DATA SHEET NO. 10 (CONTINUED)**  
**VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

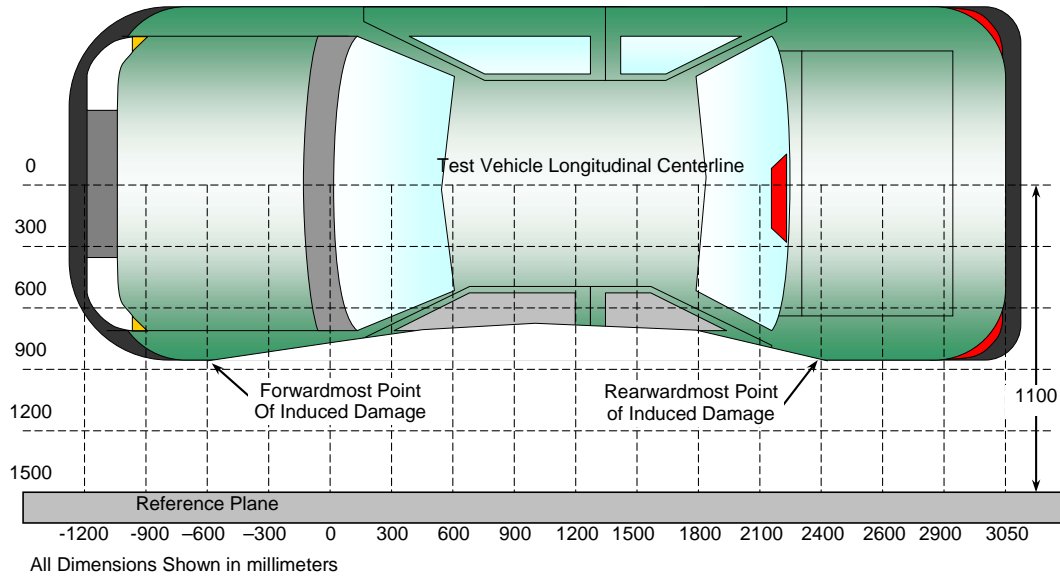
NHTSA No. M20150204  
 Test Date: 10/28/2014



**DATA SHEET NO. 11**  
**VEHICLE DAMAGE PROFILE DISTANCES**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014



**TOP VIEW**

**DAMAGE PROFILE DISTANCES**

DPD	Distance from Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	785	3	107	215	108
2	464	3	114	273	159
3	143	3	120	448	328
4	-178	3	123	509	386
5	-499	3	126	314	188
6	-827	3	137	212	75

**DATA SHEET NO. 12**  
**FMVSS NO. 301 STATIC ROLLOVER RESULTS**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

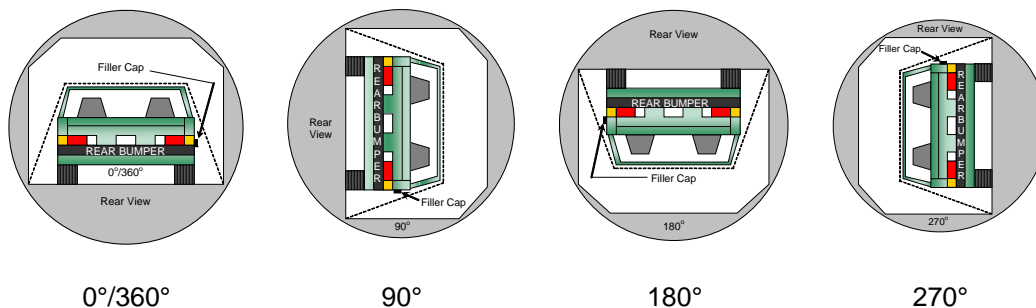
NHTSA No. M20150204  
 Test Date: 10/28/2014

Test Time: 12:46 pm

Temperature: 21.0°C

- A. From impact until vehicle motion ceases: 0 oz.  
 (Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: None  
 (Maximum allowable = 5 ounces)
- C. For the following 25 minutes: None  
 (Maximum allowable = 1 oz./minute)
- D. Spillage Details: None

**FMVSS 301 STATIC ROLLOVER DATA**



**ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS**

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	160	300	460
90° to 180°	145	300	445
180° to 270°	145	300	445
270° to 360°	160	300	460

**FMVSS 301 ROLLOVER SPILLAGE TABLE (units in ounces)**

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eight Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

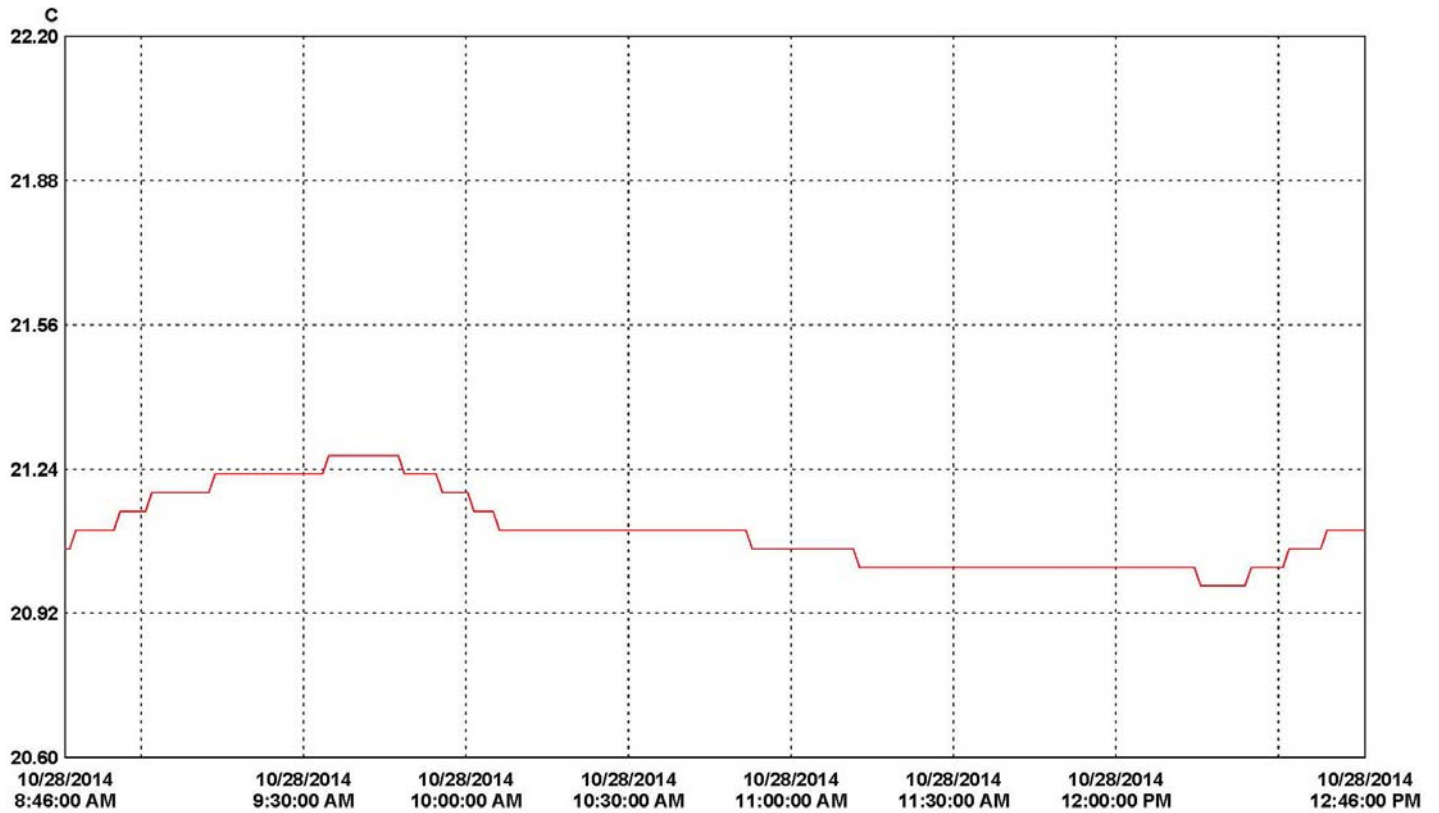
**ROLLOVER SOLVENT SPILLAGE LOCATION TABLE**

Test Phase	Spillage Location
0° to 90°	
90° to 180°	
180° to 270°	
270° to 360°	

**DATA SHEET NO. 13**  
**DUMMY/VEHICLE TEMPERATURE STABILIZATION DATA**

Test Vehicle: 2015 Ford Transit 150 LR Wagon XLT  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20150204  
 Test Date: 10/28/2014



30 minutes/div 4 hours (M/d/yyyy h:mm:ss tt) Central Time Graph file (truncated): 2015 Ford Transit SPNCAP 10-28-14.spg

LN	Serial #	Description	CH	Value	Maximum	Average	Minimum	Units	CH description	Logger file		
1	10102162	MGATemp_10102162	1	21.27	21.10	20.98	C	Temperature	10102162_MGATemp_10102162.spl			
LN	Logger file								ID #	Security	Created by	Creation time
1	C:\Program Files (x86)\Veriteq Instruments\lLog 4.4\2015 NCAP\10102162_MGATemp_10102162.spl											

**APPENDIX A  
PHOTOGRAPHS**

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As Delivered Right Front ¾ View of Test Vehicle



As Delivered Left Rear ¾ View of Test Vehicle



Pre-Test Frontal View of Test Vehicle



Post-Test Frontal View of Test Vehicle



Pre-Test Left Front ¾ View of Test Vehicle



Post-Test Left Front ¾ View of Test Vehicle



Pre-Test Left Side View of Test Vehicle



Post-Test Left Side View of Test Vehicle



Pre-Test Left Rear  $\frac{3}{4}$  View of Test Vehicle



Post-Test Left Rear  $\frac{3}{4}$  View of Test Vehicle



Pre-Test Rear View of Test Vehicle



Post-Test Rear View of Test Vehicle



Pre-Test Right Side View of Test Vehicle



Post-Test Right Side View of Test Vehicle



Pre-Test Overhead View of Test Area



Post-Test Overhead View of Test Area



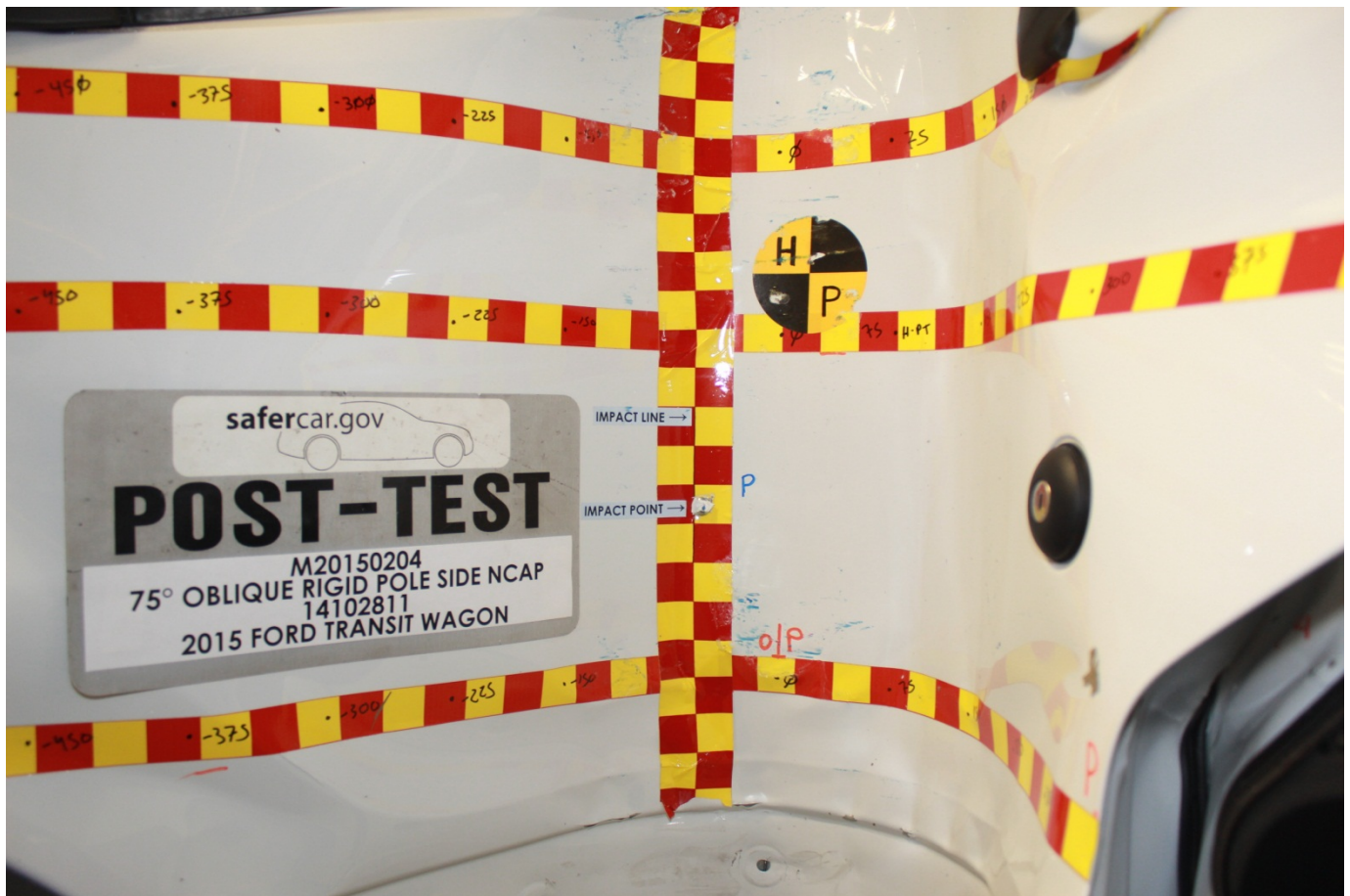
Pre-Test Left Side View of Pole Positioned Against Side of Vehicle



Pre-Test Right Side View of Pole Positioned Against Side of Vehicle



Pre-Test Close-Up View of Impact Point Target



Post-Test Close-Up View of Impact Point Target Showing Impact Location



Pre-Test Front Close-Up View of Dummy Head and Chest



Post-Test Front Close-Up View of Dummy



Pre-Test Left Side View of Dummy Showing Belt and Chalking



Pre-Test Left Side View of Dummy Shoulder and Door Top View



Post-Test Left Side View of Dummy Shoulder and Door Top View



Pre-Test Front View of Seat Back Prior to Dummy Positioning



Pre-Test Front Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint



Pre-Test Front Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint



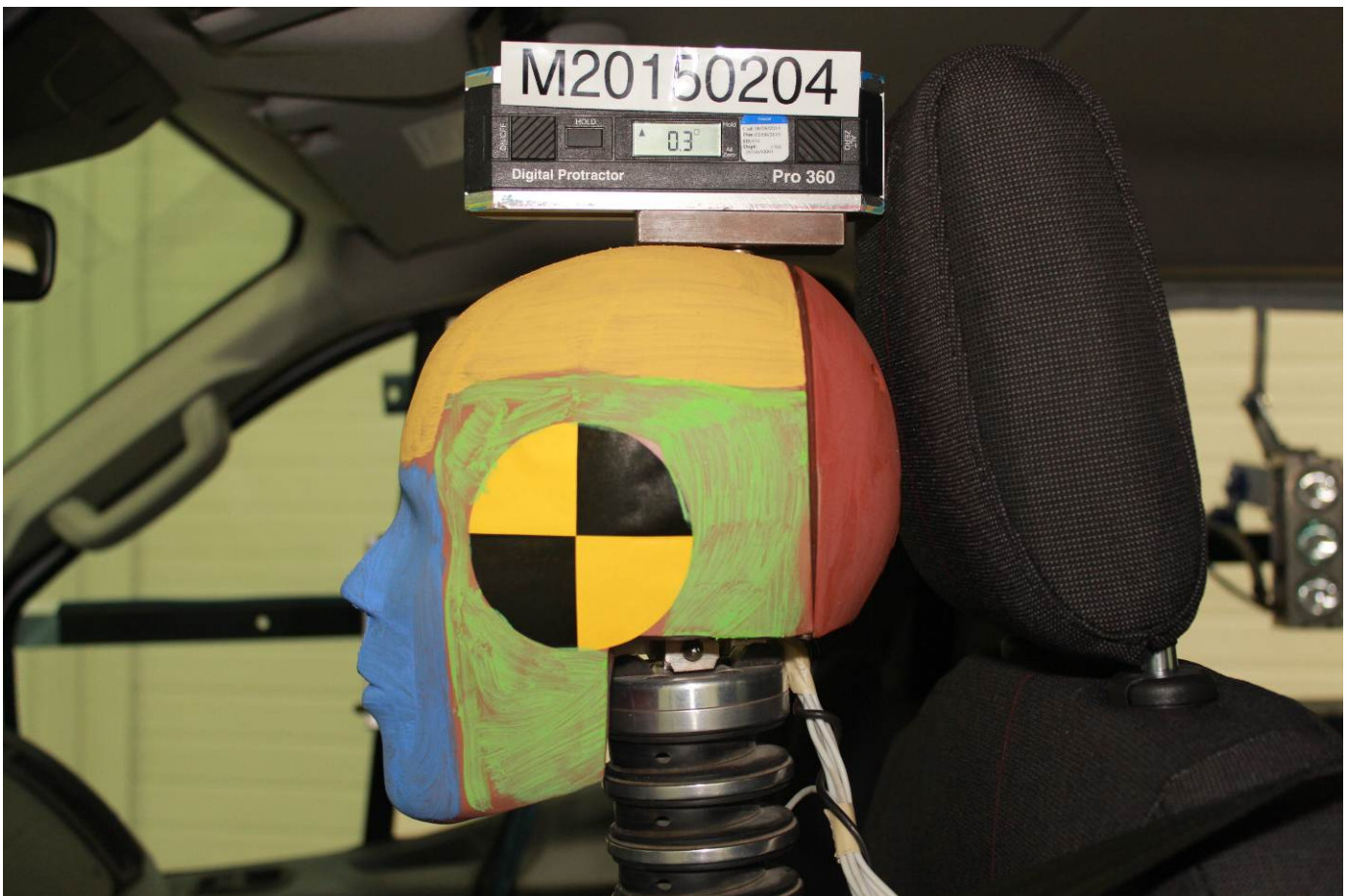
Pre-Test Front View of Seat Pan Prior to Dummy Positioning



Pre-Test Overhead View of Dummy Thighs on Seat Pan



Pre-Test Left Side View of Dummy's Neck Showing Position of Adjustable Neck Bracket



Pre-Test Left Side View of Dummy's Head Showing Dummy's Head is Level



Pre-Test Placement of Dummy's Feet



Pre-Test View of Belt Anchorage for Dummy



Pre-Test Left Side View of Steering Wheel



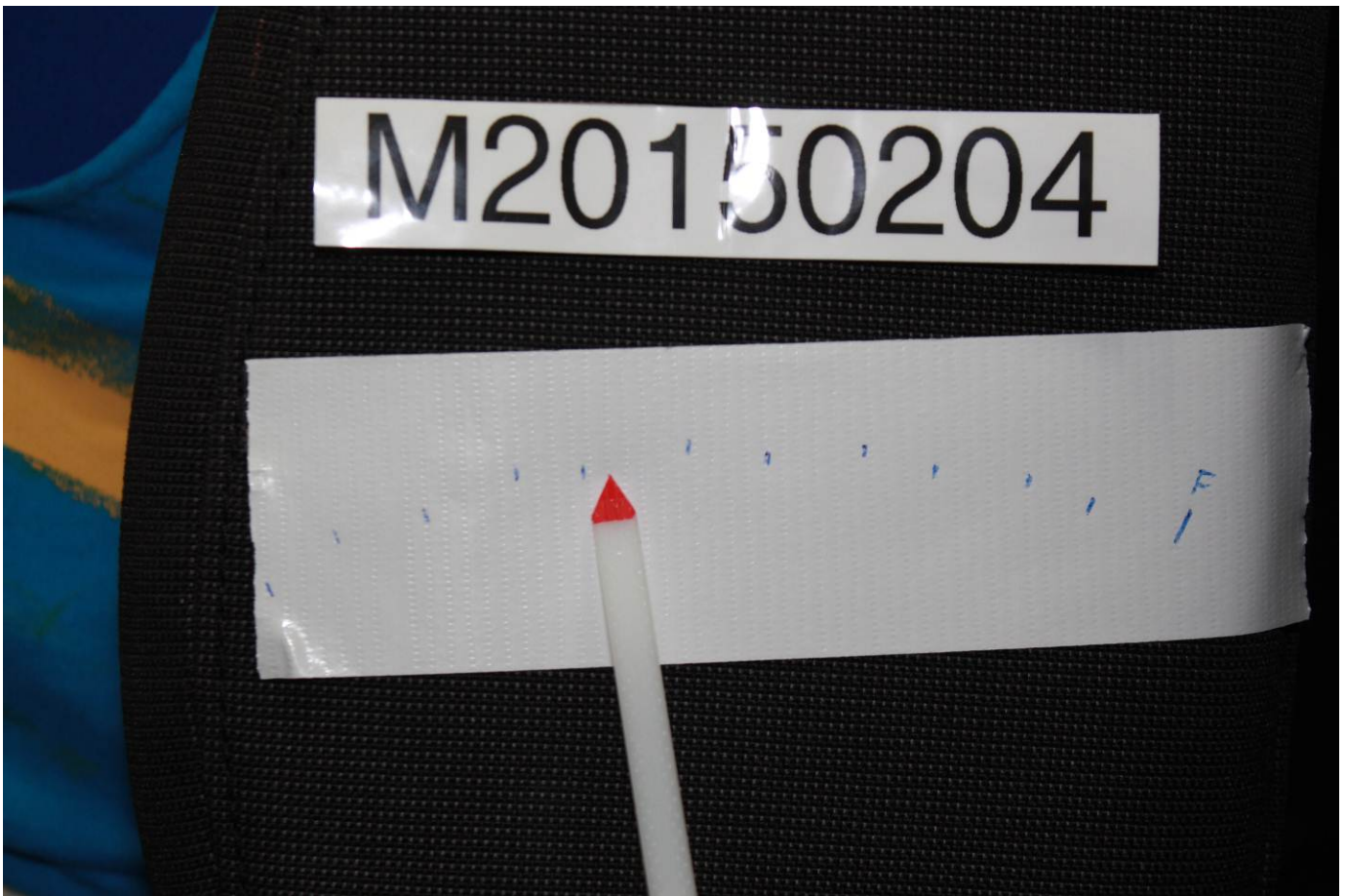
Pre-Test View of Disengaged Parking Brake



Pre-Test View of Parking Brake



Pre-Test Close-Up Left Side View of Driver Seat Track



Pre-Test Close-Up Left Side View of Driver Seat Back



Pre-Test Close-Up View of Driver Seat Back or Head Restraint



Pre-Test Dummy and Door Clearance View



Post-Test Dummy and Door Clearance View



Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Pre-Test Inner Door Panel View



Post-Test Inner Door Panel View Showing Dummy Contact Location



Post-Test Dummy Close-Up Head Contact with Vehicle Interior View



Post-Test Dummy Close-Up Head Contact with Side Air Bag View



Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



Post-Test Dummy Close-Up Torso Contact with Side Air Bag View



Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View



Post-Test Dummy Close-Up Pelvis Contact with Side Air Bag View



Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View



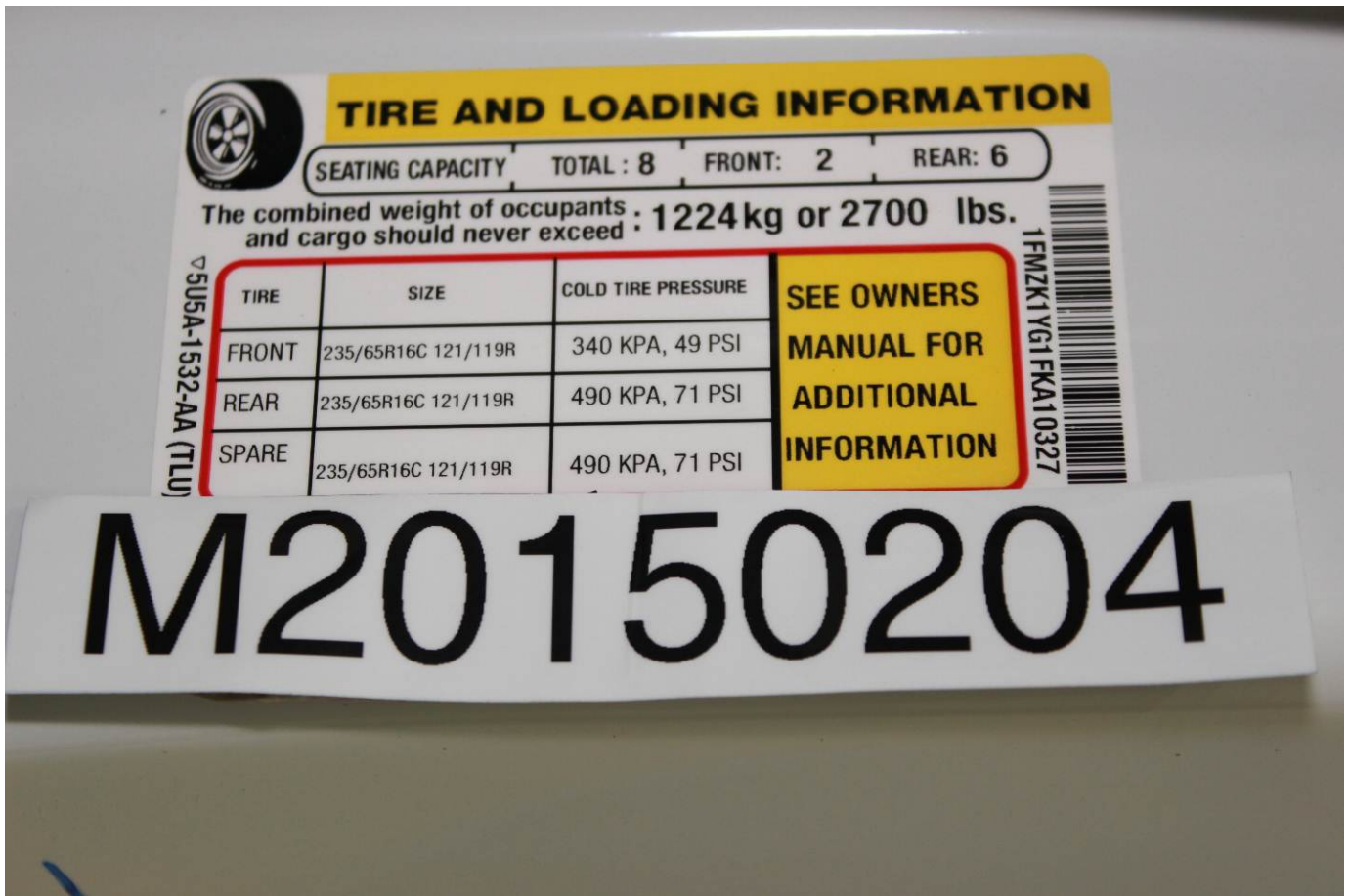
Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



Post-Test View of Fuel Filler Cap or Fuel Filler Neck



Close-Up View of Vehicle's Certification Label



Close-Up View of Vehicle's Tire Information Placard or Label



Pre-Test Pole Barrier Front View



Post-Test Pole Barrier Front View



Pre-Test Pole Barrier Side View



Post-Test Pole Barrier Side View



Pre-Test Ballast View



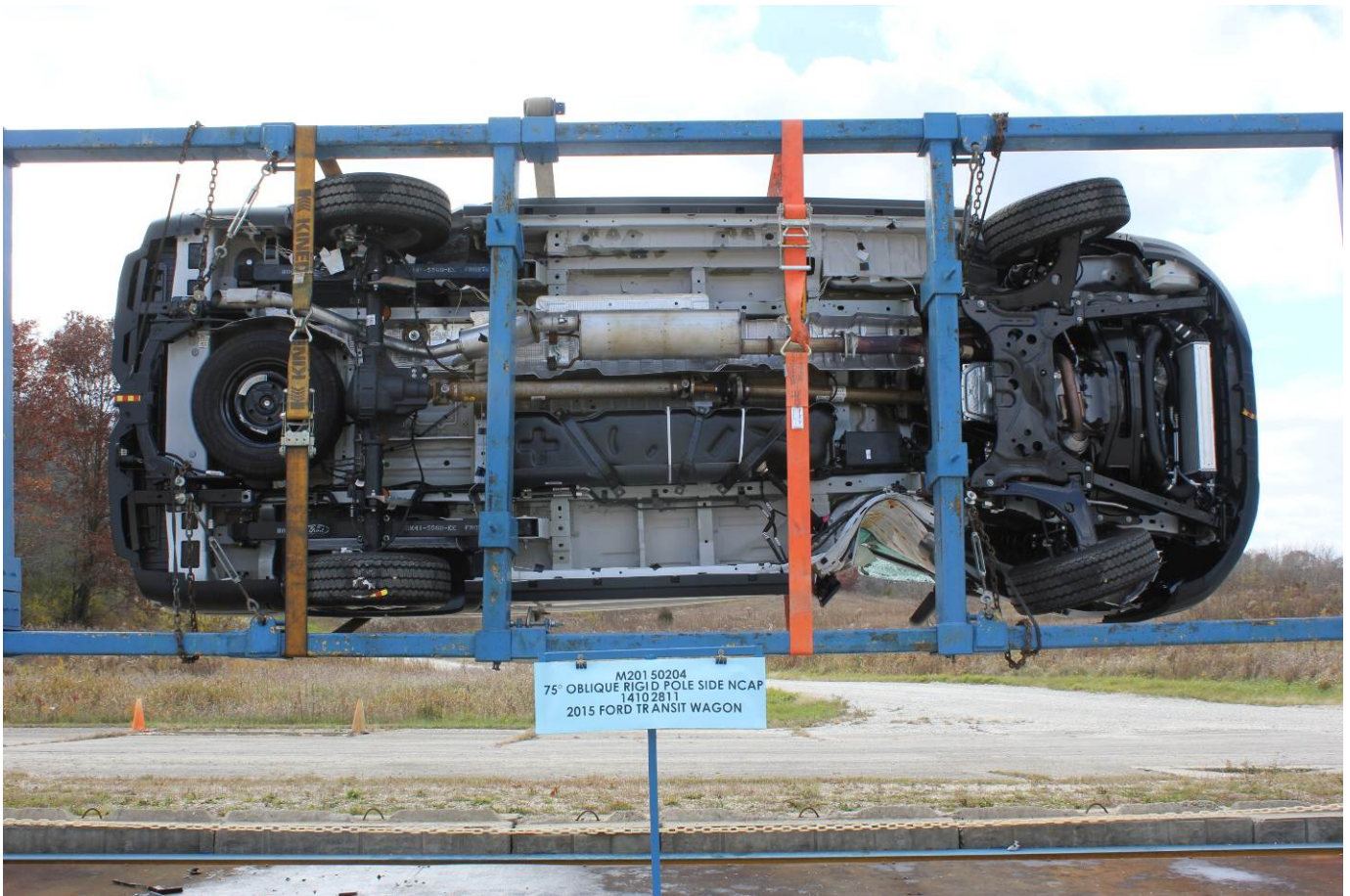
Pre-Test Ballast View



Post-Test Primary and Redundant Speed Trap Read-Out



FMVSS No. 301 Static Rollover 0 Degrees



FMVSS No. 301 Static Rollover 90 Degrees



FMVSS No. 301 Static Rollover 180 Degrees



FMVSS No. 301 Static Rollover 270 Degrees



FMVSS No. 301 Static Rollover 360 Degrees



Impact Event

VEHICLE DESCRIPTION		FK A10327		EPA DOT Fuel Economy and Environment		Gasoline Vehicle	
<p>Go Further ford.com</p>		<p>2015 TRANSIT 150 LR WAGON XL1 TRIM 3.5L GTDI V6 ENGINE 6-SPD AUTO SELECT SHIFT TR</p>		<p>EXTERIOR OXFORD WHITE INTERIOR CHARCOAL CLOTH</p>		<p>Fuel Economy <b>16</b> MPG combined city/hwy 6.2 gallons per 100 miles</p> <p>Vans range from 11 to 16 MPG. The best vehicle rates 119 MPG.</p> <p>You spend <b>\$5,500</b> more in fuel costs over 5 years compared to the average new vehicle.</p>	
<p>STANDARD EQUIPMENT INCLUDED AT NO EXTRA CHARGE</p>							
<p><b>EXTERIOR</b></p> <ul style="list-style-type: none"> <li>• SPARE TIRE AND WHEEL</li> <li>• RAIN SENSING WIPERS</li> <li>• BUMPERS - BLACK</li> <li>• SINGLE SLIDING SIDE DOOR</li> <li>• DUAL POWER MIRRORS</li> </ul>		<p><b>INTERIOR</b></p> <ul style="list-style-type: none"> <li>• CLOTH HEADLINER</li> <li>• CENTER CONSOLE</li> <li>• FLOOR COVERING - CARPETED</li> </ul>		<p><b>FUNCTIONAL</b></p> <ul style="list-style-type: none"> <li>• POWER STEERING</li> <li>• AIR CONDITIONING</li> <li>• AM/FM SINGLE CD W/AUX JACK</li> <li>• 26.0 GALLON FUEL TANK</li> <li>• POWER LOCKS AND WINDOWS</li> <li>• ALTERNATOR 150 AMP</li> </ul>		<p><b>SAFETY/SECURITY</b></p> <ul style="list-style-type: none"> <li>• DRIVER/PASSENGER AIR BAGS</li> <li>• 3 POINT SAFETY BELTS</li> <li>• 4-WHEEL DISC BRAKES W/AES</li> <li>• ADVANCED TRAC W/ESC</li> <li>• TIRE PRESSURE MONITOR SYS</li> <li>• AIRBAGS - SAFETY CANOPY</li> <li>• SIDE AIRBAGS</li> </ul>	
<p><b>WARRANTY</b></p> <ul style="list-style-type: none"> <li>• 3YR/36,000 BUMPER TO BUMPER</li> <li>• 5YR/60,000 POWERTRAIN</li> <li>• 5YR/60,000 ROADSIDE ASSIST</li> </ul>							
<p>INCLUDED ON THIS VEHICLE (MSRP)</p>				<p>PRICE INFORMATION (MSRP)</p>			
<p><b>OPTIONAL EQUIPMENT</b></p> <ul style="list-style-type: none"> <li>PREFERRED EQUIPMENT PKG.302A 1,865.00</li> <li>3.5L GTDI V6 ENGINE 325.00</li> <li>3.81 LIMITED SLIP AXLE XSL NO CHARGE</li> <li>HEADLINER COMPLETE NO CHARGE</li> <li>FRONT LICENSE PLATE BRACKET NO CHARGE</li> <li>8550F GVWR PACKAGE NO CHARGE</li> <li>CHARCOAL CLOTH 10 WAY POWER 425.00</li> <li>89 STATE EMISSIONS NO CHARGE</li> <li>KEYLESS ENTRY PAD 95.00</li> <li>TRAILER TOW PACKAGE 485.00</li> <li>TRAILER WIRING PROVISIONS 175.00</li> <li>REAR WINDOW DEFROSTER 250.00</li> <li>REAR VIEW CAMERA 395.00</li> <li>6.5X16 ALLOY WHEEL NO CHARGE</li> <li>FRONT FLOOR MATS NO CHARGE</li> <li>TINTED GLASS NO CHARGE</li> </ul>				<p><b>BASE PRICE</b> \$38,750.00</p> <p><b>TOTAL OPTIONS</b> 3,965.00</p> <p><b>TOTAL VEHICLE &amp; OPTIONS DESTINATION &amp; DELIVERY</b> 37,745.00</p> <p><b>TOTAL MSRP</b> \$38,740.00</p>			
<p>SOLD TO Brian Beatty Ford 1875 DeKalb Ave. Sycamore IL 60178</p>		<p>RAMP ONE 41W 600 CC79</p>		<p>DEALER NO. 41W 500</p>		<p><b>TOTAL MSRP \$38,740.00</b></p>	
<p>SHIP TO (IF OTHER THAN SELLER'S)</p>		<p>RAMP TWO</p>		<p>FINAL ASSEMBLY PLANT KANSAS CITY</p>		<p>This label is utilized pursuant to the Federal Automobile Information Disclosure Act, Consumer, Lemon, and Title Fees, State and Local taxes are not included. Dealer installed options or accessories are not included unless listed above.</p>	
<p>SHIP THROUGH</p>		<p>METHOD OF TRANSF. CONVOY</p>		<p>ITEM # 41-1555 Q/T 2</p>		<p>EG312 N RB 2X 526 000331 07 31 14</p>	

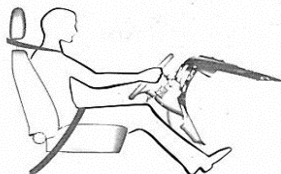
## Monroney Label

### Seats

#### SITTING IN THE CORRECT POSITION

##### WARNINGS

- Do not recline the seat backrest too far as this can cause the occupant to slide under the safety belt, resulting in serious injury in the event of a crash.
- Sitting improperly, out of position or with the seat backrest reclined too far, can result in serious injury or death in the event of a crash. Always sit upright against your seat backrest, with your feet on the floor.
- Do not place objects higher than the seat backrest to reduce the risk of serious injury in the event of a crash or during heavy braking.



E068595  
When you use them properly, the seat, head restraint, safety belt and airbags will provide optimum protection in the event of a crash.

We recommend that you follow these guidelines:

- Sit in an upright position with the base of your spine as far back as possible.
- Do not recline the seat backrest more than 30 degrees.

- Adjust the head restraint so that the top of it is level with the top of your head and as far forward as possible. Make sure that you remain comfortable.
- Keep sufficient distance between yourself and the steering wheel. We recommend a minimum of 10 inches (25 centimeters) between your breastbone and the airbag cover.
- Hold the steering wheel with your arms slightly bent.
- Bend your legs slightly so that you can press the pedals fully.
- Position the shoulder strap of the safety belt over the center of your shoulder and position the lap strap tightly across your hips.

Make sure that your driving position is comfortable and that you can maintain full control of your vehicle.

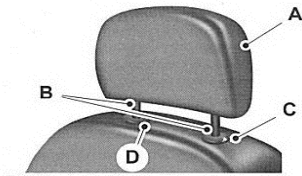
#### HEAD RESTRAINTS

##### WARNING

- The adjustable head restraint is a safety device. Whenever possible it should be installed and correctly adjusted when the seat is occupied. An incorrectly adjusted head restraint may provide reduced protection to an occupant during certain rear impacts.

## Seats


### The head restraint consists of:




- A Energy absorbing head restraint.
- B Steel stems.
- C Guide sleeve adjust and unlock button.
- D Guide sleeve unlock and remove button.

### Adjusting the Head Restraint

#### WARNINGS

 Adjust the head restraints for all passengers before you drive your vehicle. This will help minimize the risk of neck injury in the event of a crash. Do not adjust the head restraints when your vehicle is moving.

 Do not adjust the head restraints when your vehicle is moving.

Adjust the head restraint so that the top of it is level with the top of your head.

**Note:** Adjust the seat backrest to an upright driving position before adjusting the head restraint. Adjust the head restraint so that the top of it is level with the top of your head and as far forward as possible. Make sure that you remain comfortable. If you are extremely tall, adjust the head restraint to its highest position.

### Raising the Head Restraint

Lift the head restraint up.

### Lowering the Head Restraint

1. Press and hold button C.
2. Push the head restraint down.

### Removing the Head Restraint


#### WARNING

 Do not remove the head restraint from an occupied seat.

1. Lift the head restraint up until it reaches its highest position.
2. Press and hold buttons C and D.
3. Remove the head restraint.

### Installing the Head Restraint

#### WARNING

 Install head restraints correctly to help minimize the risk of neck injury in the event of a crash.

1. Align the steel stems into the guide sleeves and push the head restraint down until in locks.
2. Adjust the head restraint.

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## Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



Post-Test View of Shattered Vehicle Inner Door Panel

**APPENDIX B**  
**DUMMY RESPONSE DATA PLOTS**

**TABLE OF DATA PLOTS**  
**Driver Dummy Instrumentation Plots**

		<u>Page No.</u>
Figure No. 1.	Driver Head CG Acceleration (X) vs. Time	B-1
Figure No. 2.	Driver Head CG Acceleration (Y) vs. Time	B-1
Figure No. 3.	Driver Head CG Acceleration (Z) vs. Time	B-1
Figure No. 4.	Driver Head CG Resultant Acceleration (X) vs. Time	B-1
Figure No. 5.	Driver Lower Spine T12 Acceleration (X) vs. Time	B-2
Figure No. 6.	Driver Lower Spine T12 Acceleration (Y) vs. Time	B-2
Figure No. 7.	Driver Lower Spine T12 Acceleration (Z) vs. Time	B-2
Figure No. 8.	Driver Lower Spine T12 Resultant Acceleration vs. Time	B-2
Figure No. 9.	Driver Iliac Wing Force on Impact Side (Y) vs. Time	B-3
Figure No. 10.	Driver Acetabulum Force on Impact Side (Y) vs. Time	B-3
Figure No. 11.	Driver Total Pelvis Force on Impact Side (Y) vs. Time	B-3

**The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at [www.NHTSA.dot.gov](http://www.NHTSA.dot.gov)**

**Additional Driver Dummy Instrumentation Data**

Driver Head CG Redundant Acceleration (X) vs. Time

Driver Head CG Redundant Acceleration (Y) vs. Time

Driver Head CG Redundant Acceleration (Z) vs. Time

Driver Upper Thorax Rib Deflection (Y)

Driver Middle Thorax Rib Deflection (Y)

Driver Lower Thorax Rib Deflection (Y)

Driver Upper Abdomen Rib Deflection (Y)

Driver Lower Abdomen Rib Deflection (Y)

### **Vehicle Instrumentation Data**

Vehicle Center of Gravity Acceleration (X)

Vehicle Center of Gravity Acceleration (Y)

Vehicle Center of Gravity Acceleration (Z)

Left Floor Sill Acceleration (Y)

Left A-Pillar Sill Acceleration (Y)

Left Lower A-Pillar Acceleration (Y)

Left Mid A-Pillar Acceleration (Y)

Left B-Pillar Sill Acceleration (Y)

Left Lower B-Pillar Acceleration (Y)

Left Mid B-Pillar Acceleration (Y)

Driver Seat Track at Dummy Hip Point Acceleration (Y)

Engine Top Acceleration (X)

Engine Top Acceleration (Y)

Firewall Center Acceleration (Y)

Right Roof at Vertical Impact Reference Line Acceleration (Y)

Right Sill at Vertical Impact Reference Line Acceleration (Y)

Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)

Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)

### **Pole Instrumentation Data**

Load Cell Pole Barrier #1 Force (Y)

Load Cell Pole Barrier #2 Force (Y)

Load Cell Pole Barrier #3 Force (Y)

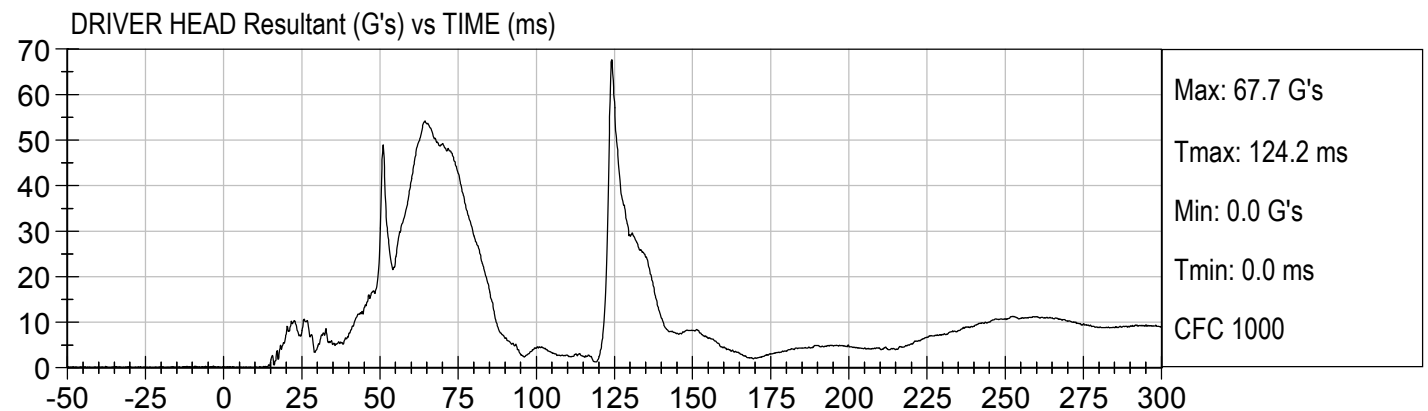
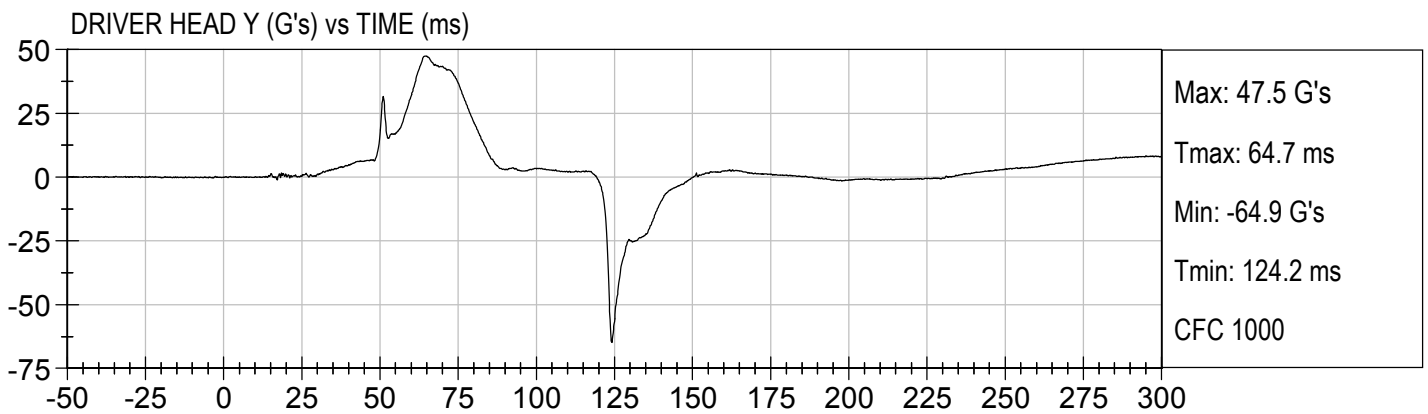
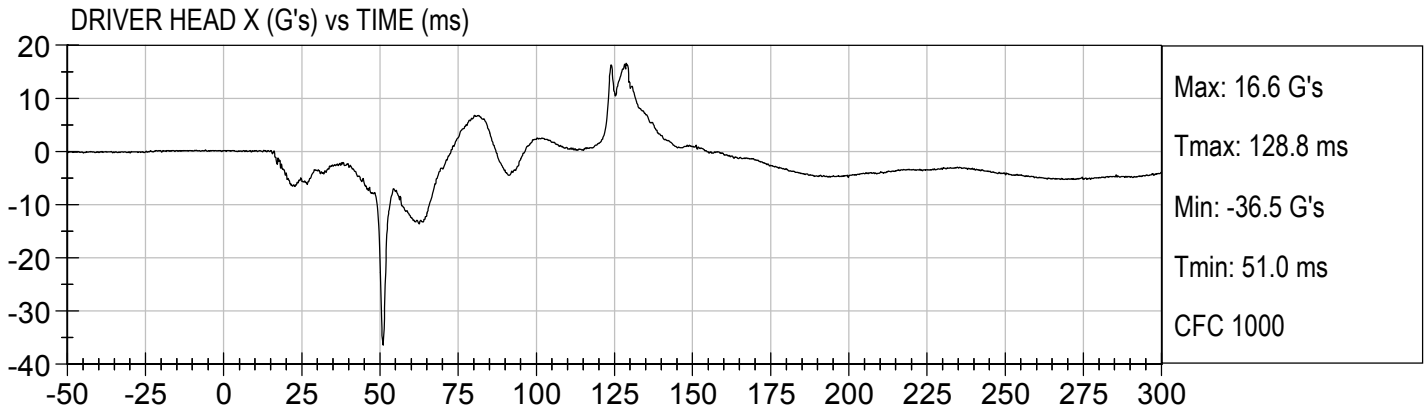
Load Cell Pole Barrier #4 Force (Y)

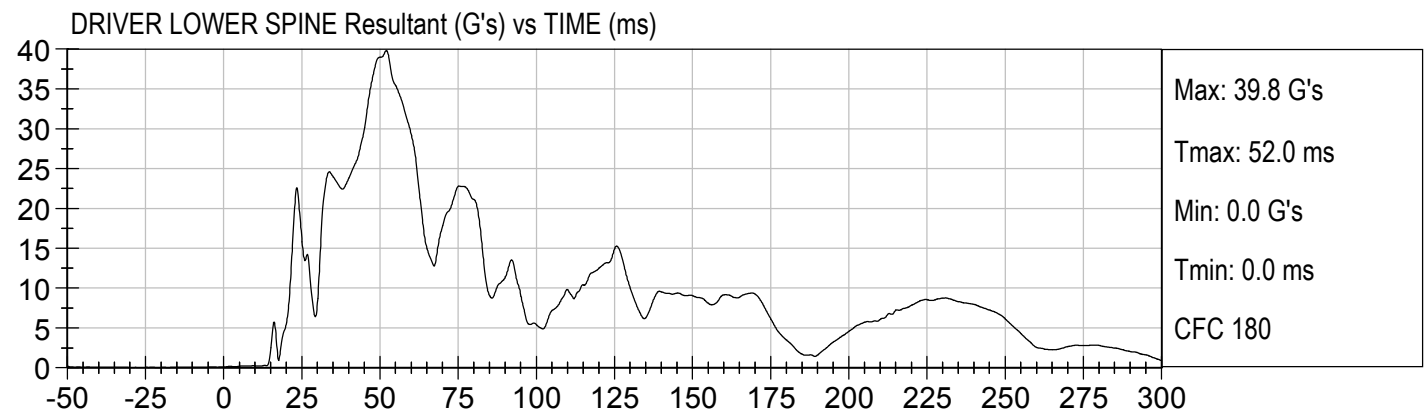
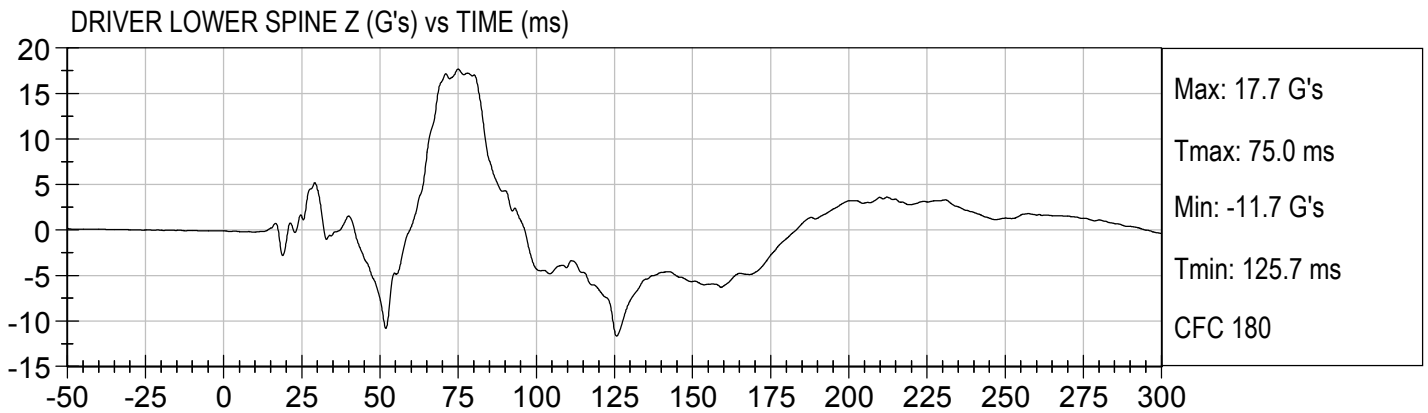
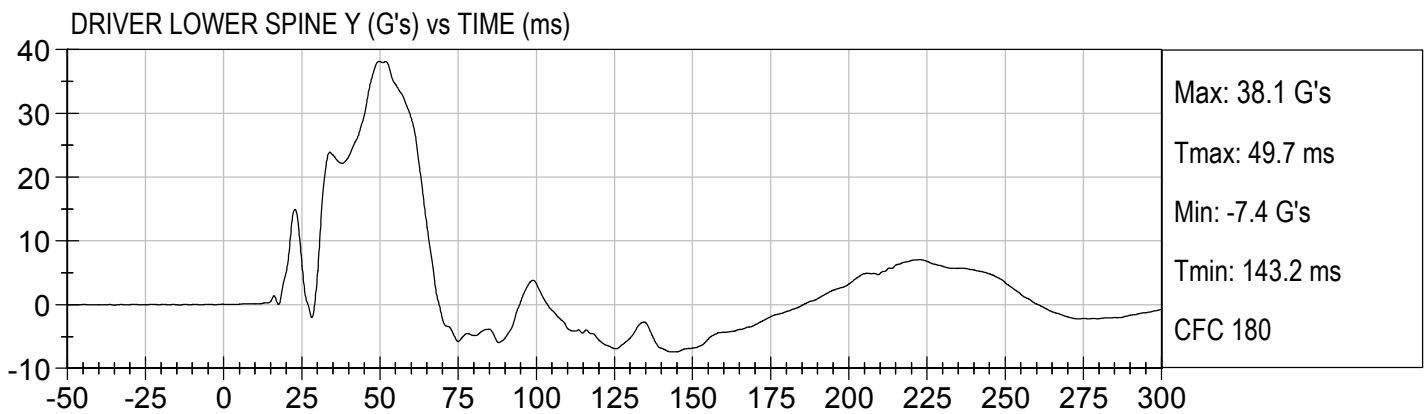
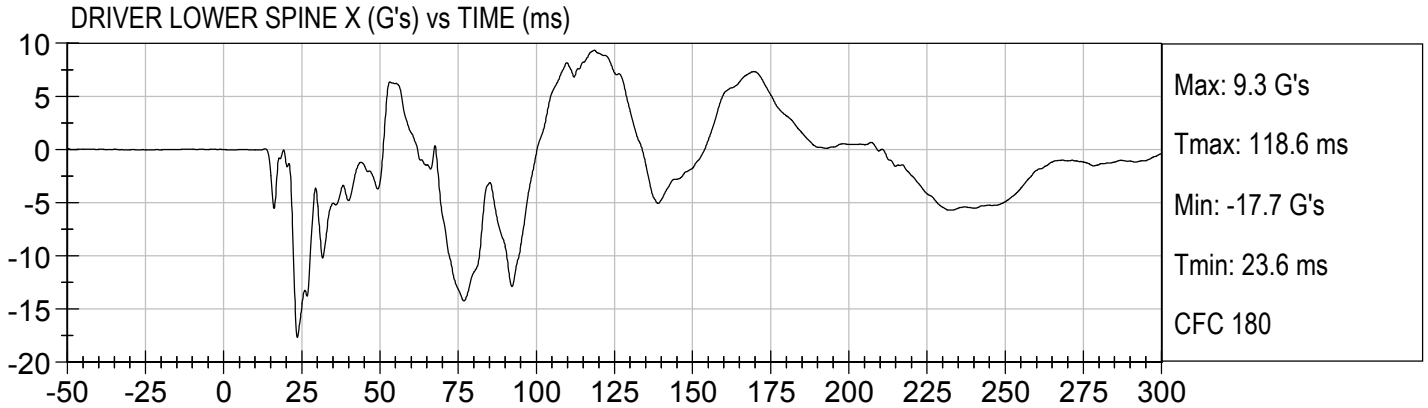
Load Cell Pole Barrier #5 Force (Y)

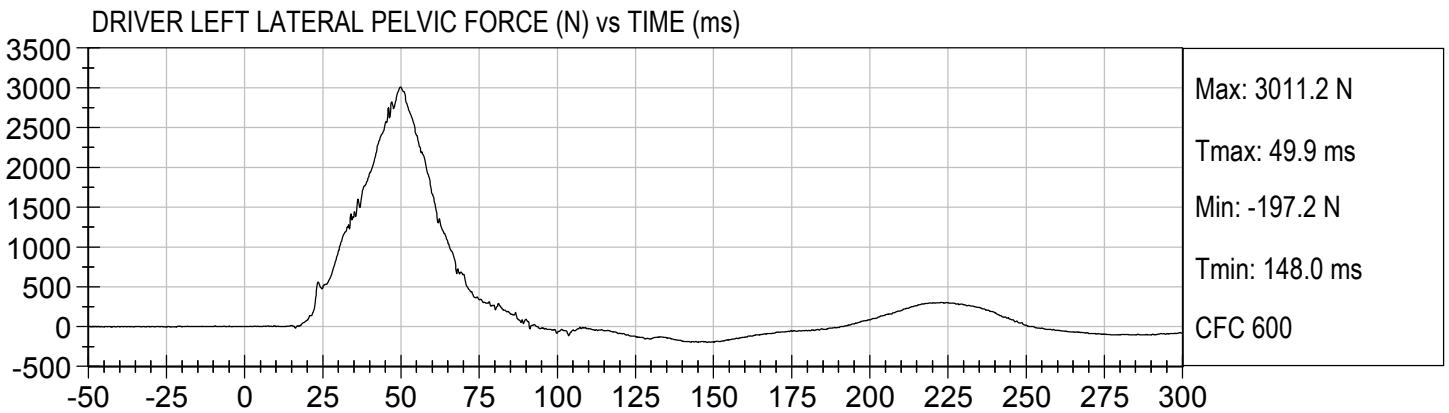
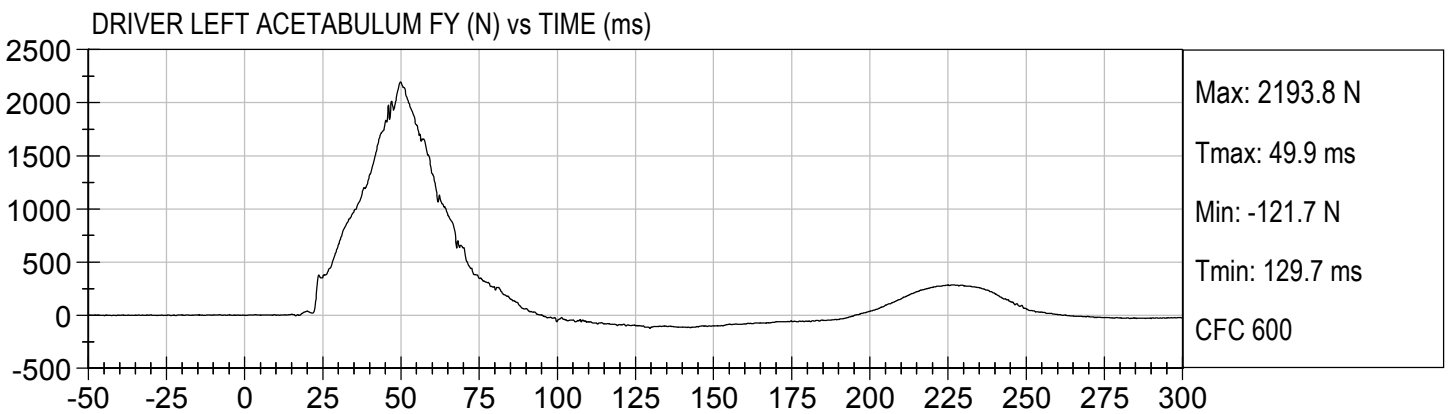
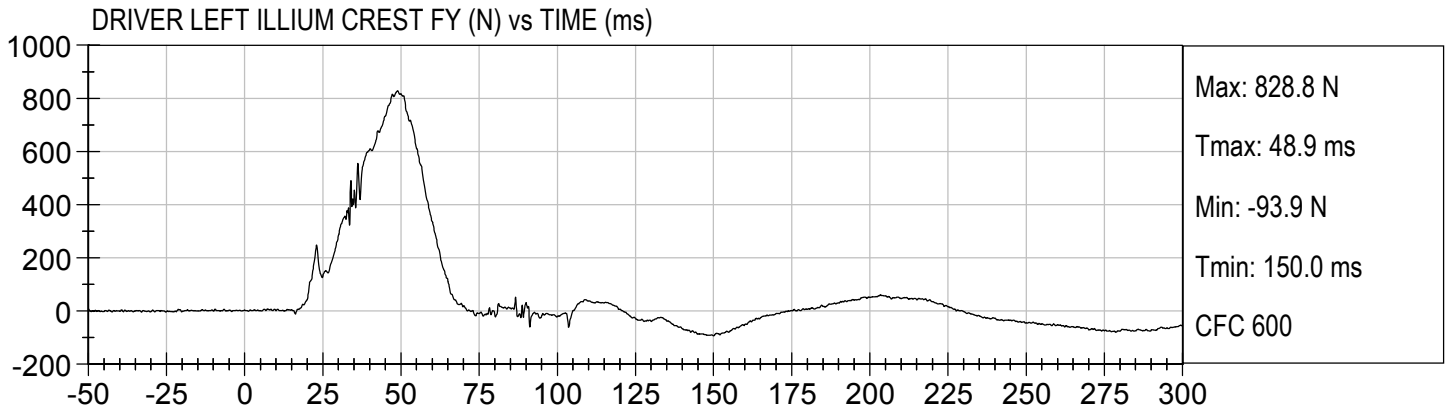
Load Cell Pole Barrier #6 Force (Y)

Load Cell Pole Barrier #7 Force (Y)

Load Cell Pole Barrier #8 Force (Y)







**APPENDIX C**  
**DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA**

**SID-IIsD External Measurements**  
**SN: 306**

<b>No.</b>	<b>Name</b>	<b>Spec. (mm)</b>	<b>Result</b>	<b>Pass/Fail</b>
<b>A</b>	Sitting Height	772 - 788	785	Pass
<b>B</b>	Shoulder Pivot Height	437 - 453	449	Pass
<b>C</b>	H-point Height	79 - 89	86	Pass
<b>D</b>	H-point from Seatback	141 - 151	147	Pass
<b>E</b>	Shoulder Pivot from Backline	97 - 107	99	Pass
<b>F</b>	Thigh Clearance	119 -135	120	Pass
<b>G</b>	Head Breadth	140 - 148	141	Pass
<b>H</b>	Head Back from Backline	40 - 46	45	Pass
<b>I</b>	Head Depth	178 - 188	182	Pass
<b>J</b>	Head Circumference	541 - 551	550	Pass
<b>K</b>	Buttock to Knee Length	514 - 540	538	Pass
<b>L</b>	Popliteal Height	343 - 369	349	Pass
<b>M</b>	Knee Pivot to Floor Height	392 - 409	394	Pass
<b>N</b>	Buttock Popliteal Length	416 - 442	435	Pass
<b>O</b>	Chest Depth w/o Jacket	195 - 211	198	Pass
<b>P</b>	Foot Length	216 - 232	222	Pass
<b>Q</b>	Hip Breadth (w/ pelvic plugs)	313 - 323	317	Pass
<b>R</b>	Arm Length	249 - 259	250	Pass
<b>S</b>	Knee Joint to Seatback	477 - 493	483	Pass
<b>V</b>	Shoulder Width	341 - 357	351	Pass
<b>W</b>	Foot Width	78 - 94	82	Pass
<b>Y</b>	Chest Circumference w/ jacket	851 - 881	863	Pass
<b>Z</b>	Waist Circumference	761 - 791	782	Pass

**MGA RESEARCH CORPORATION  
HEAD DROP TEST  
SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

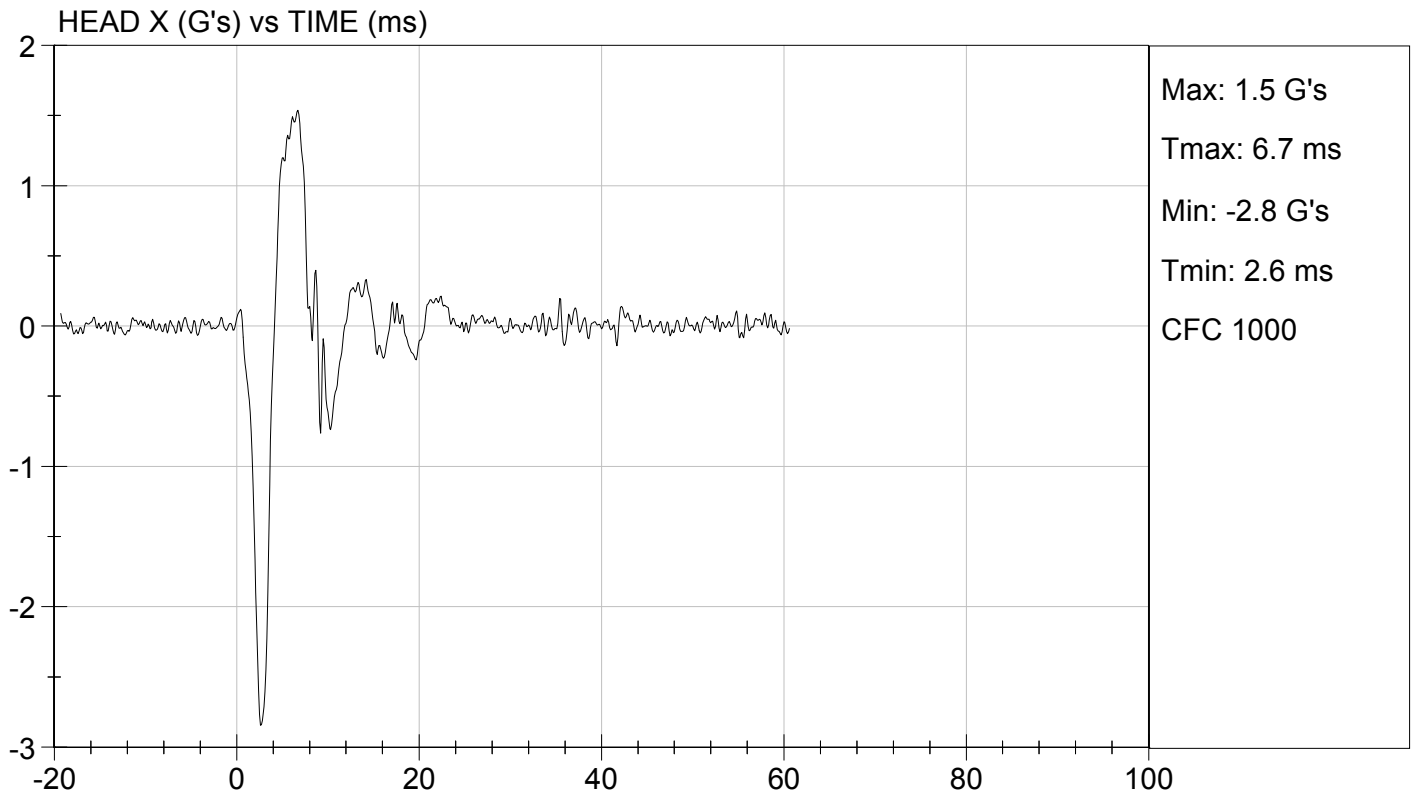
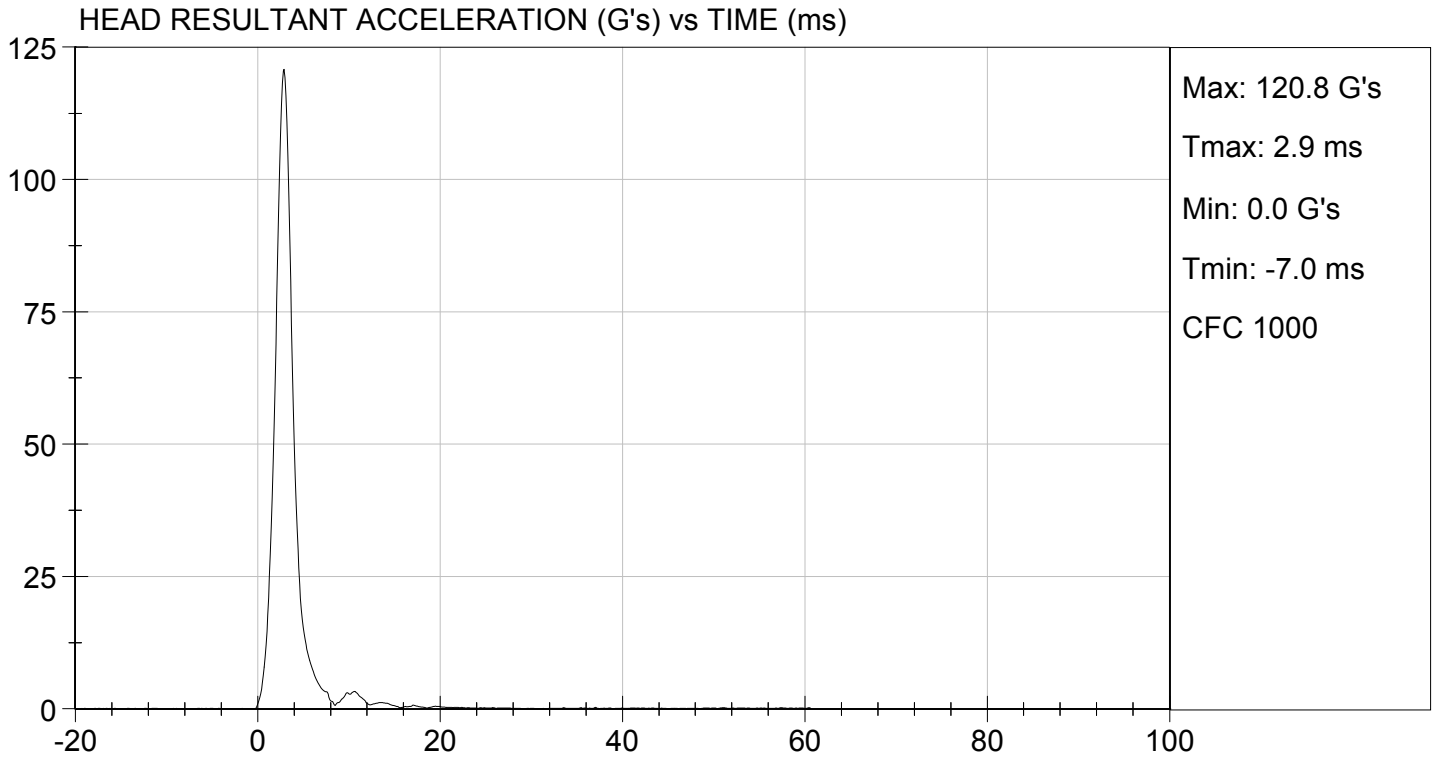
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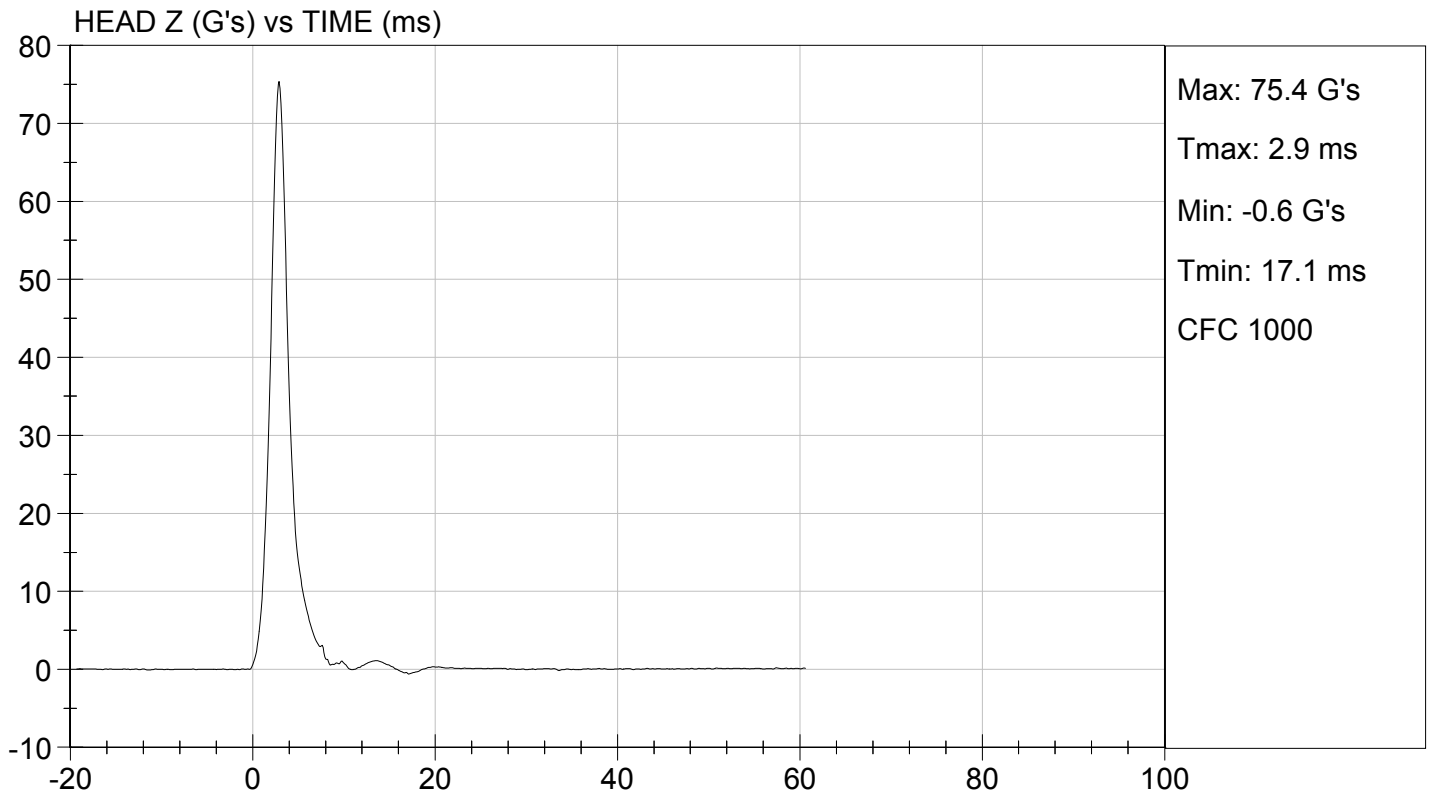
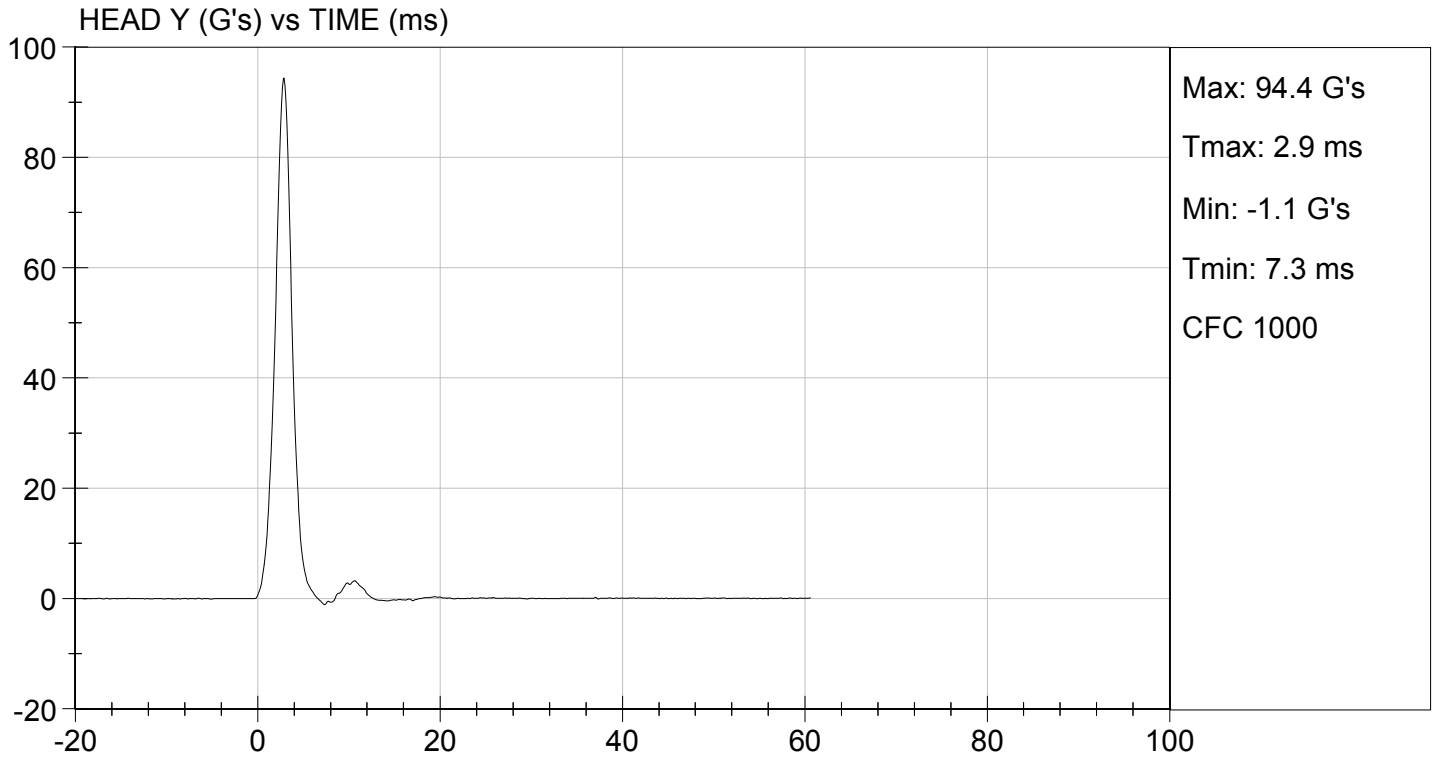
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Peak Resultant Acceleration	G's	115 to 137	121	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-2.8	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
Overall Test Results				Pass

*David Schoedel*  
Laboratory Technician

10/03/2014  
Test Date

*Jessica Hall*  
Approved By





**MGA RESEARCH CORPORATION  
LATERAL NECK PENDULUM TEST  
SID-IIs BUILD LEVEL D DUMMY**

**ATD Serial No:** 306

**Test I.D.:** D143502

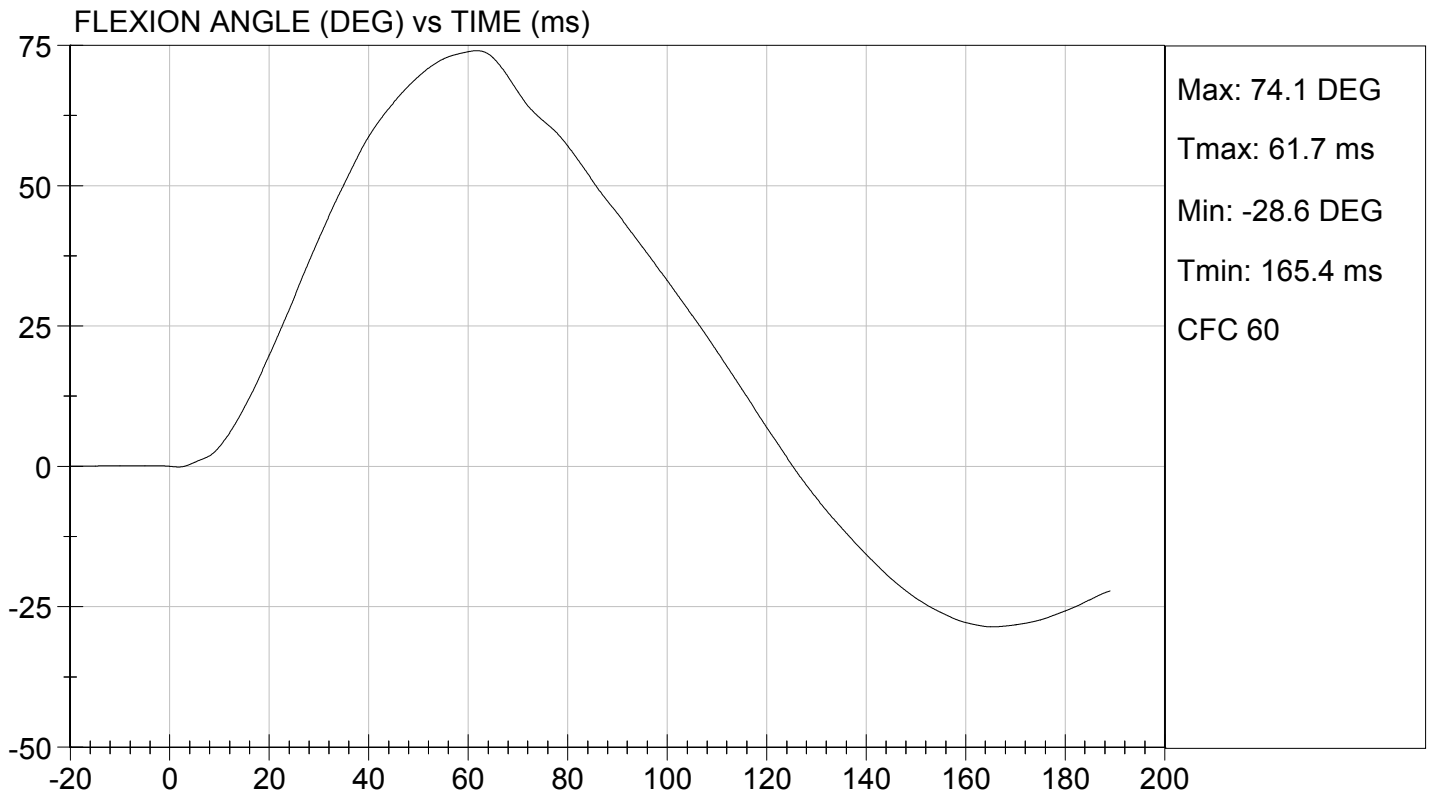
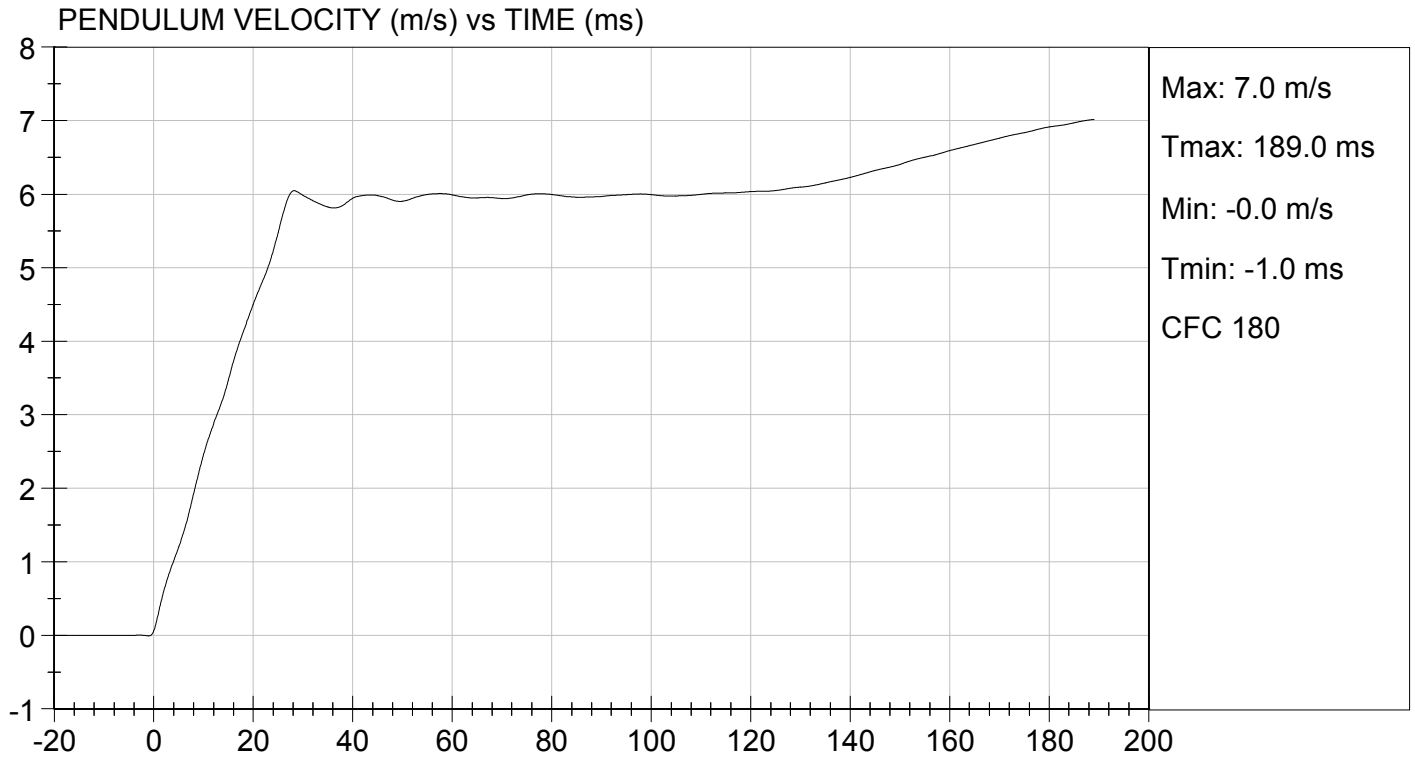
Tested Parameter	Units	Specification	Result	Pass/Fail	
Temperature	deg C	20.6 to 22.2	21.5	Pass	
Humidity	%	10 to 70	48	Pass	
Impact Velocity	m/s	5.51 to 5.63	5.58	Pass	
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.46	Pass
	15 ms	m/s	3.30 to 4.10	3.47	Pass
	20 ms	m/s	4.40 to 5.40	4.50	Pass
	25 ms	m/s	5.40 to 6.10	5.48	Pass
	25-100 ms	m/s	5.50 to 6.20	6.05	Pass
Maximum D-Plane Rotation	deg	71 to 81	74	Pass	
Time of Maximum D-Plane Rotation	ms	50 to 70	62	Pass	
Maximum Occipital Condyle Moment	Nm	-44 to -36	-40	Pass	
Time of Moment Decay to 0 Nm	ms	102 to 126	114	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	

*David Schoedel*  
Laboratory Technician

10/03/2014

Test Date

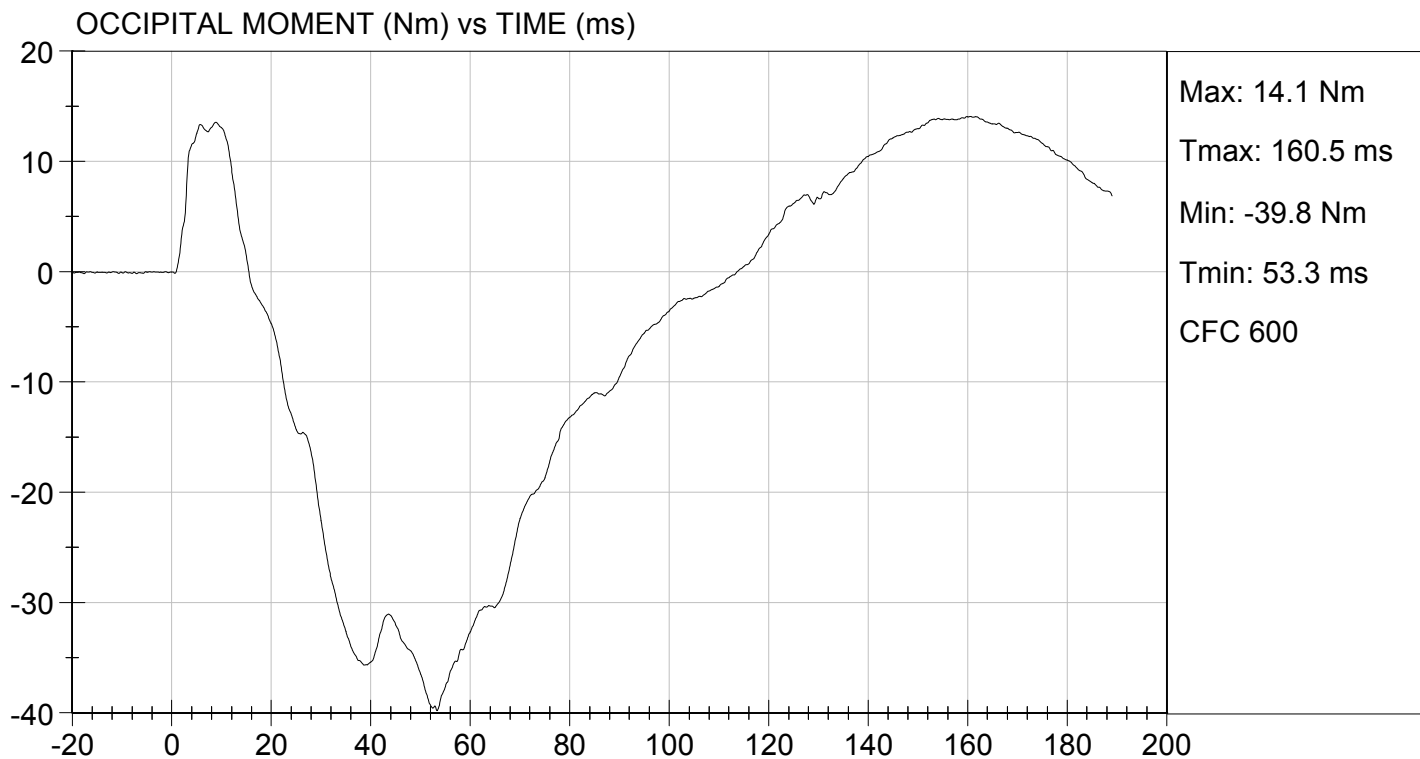
*Jessica Hall*  
Approved By





TEST DESC: NECK BENDING  
VELOCITY: 18.32 ft/s, 5.58 m/s

TEST DATE: 10/03/2014  
TEST #: D143502



**MGA RESEARCH CORPORATION  
SHOULDER IMPACT TEST  
SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

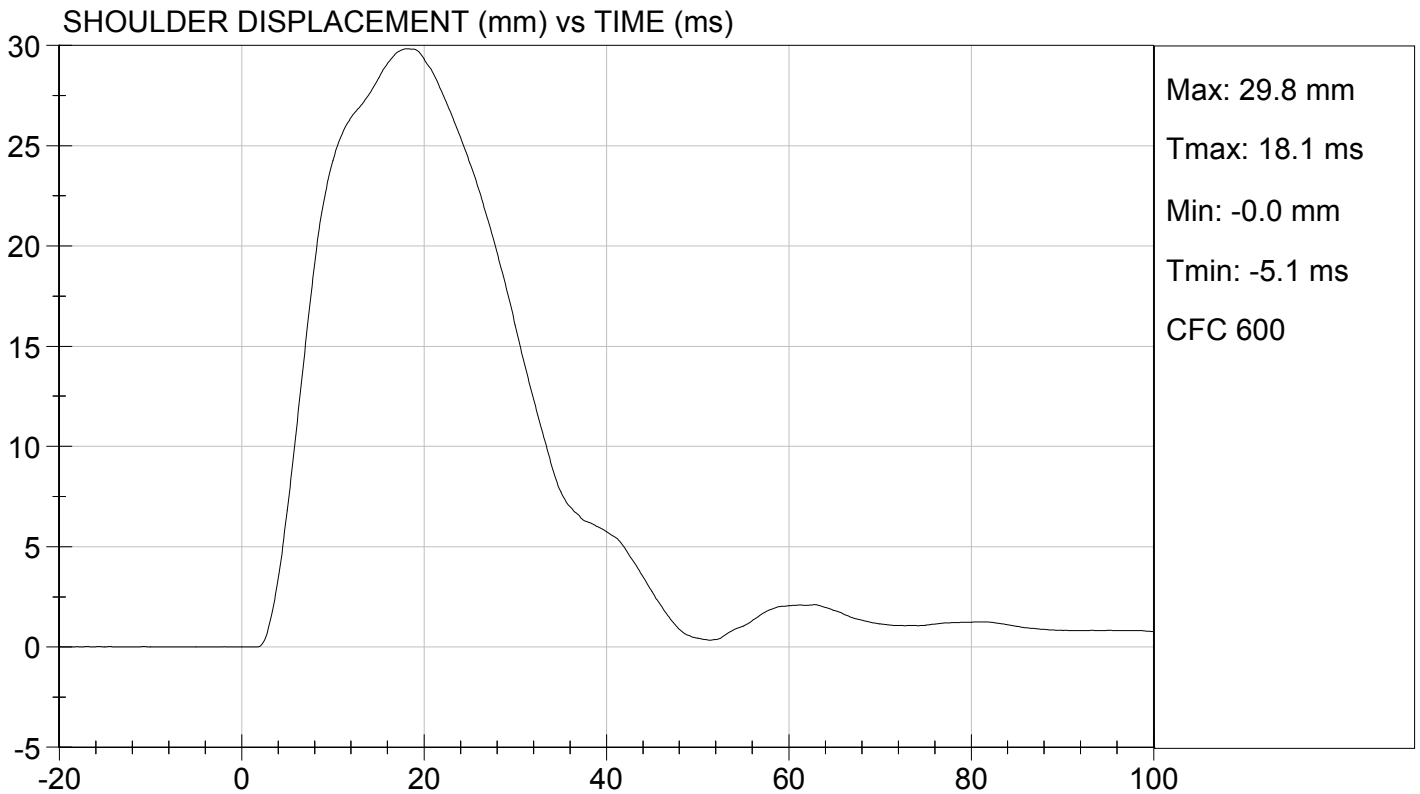
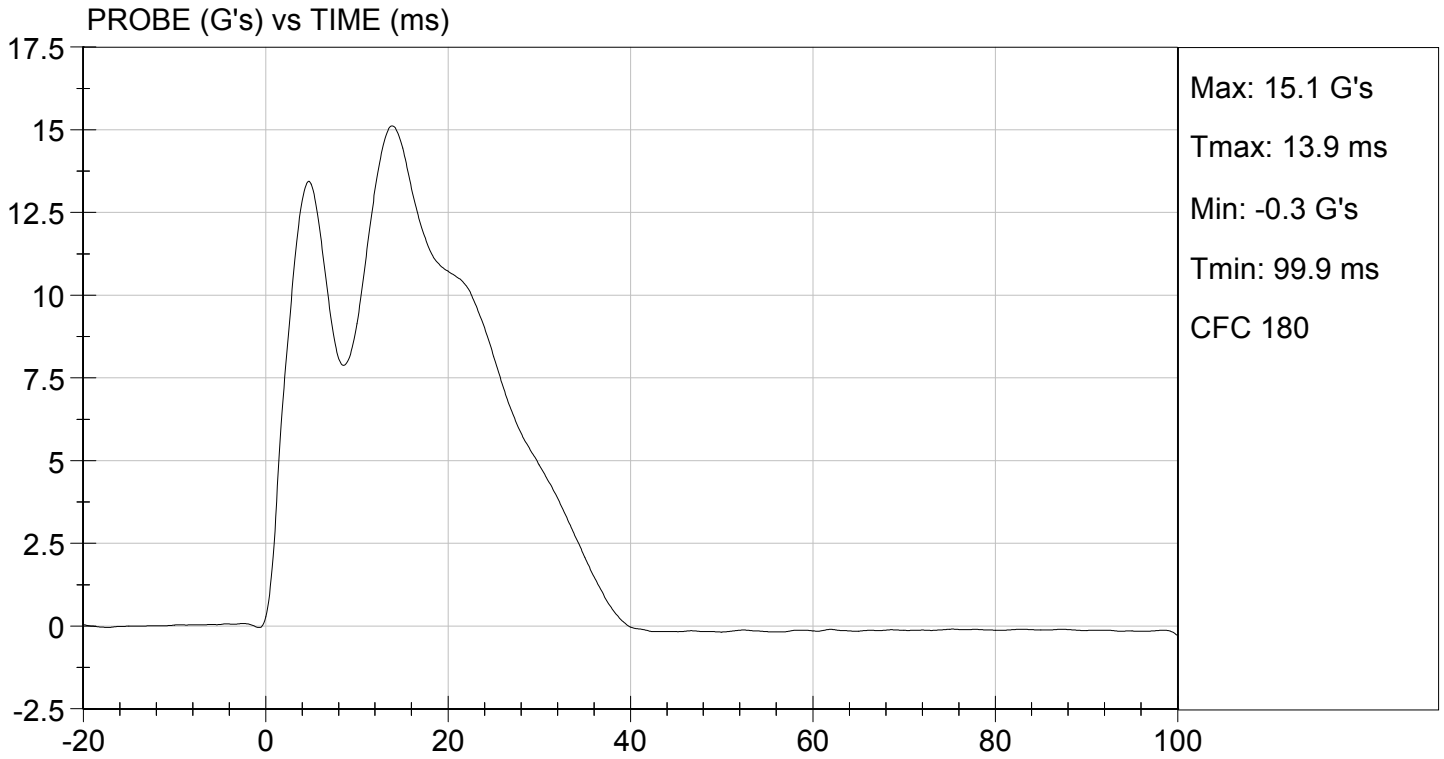
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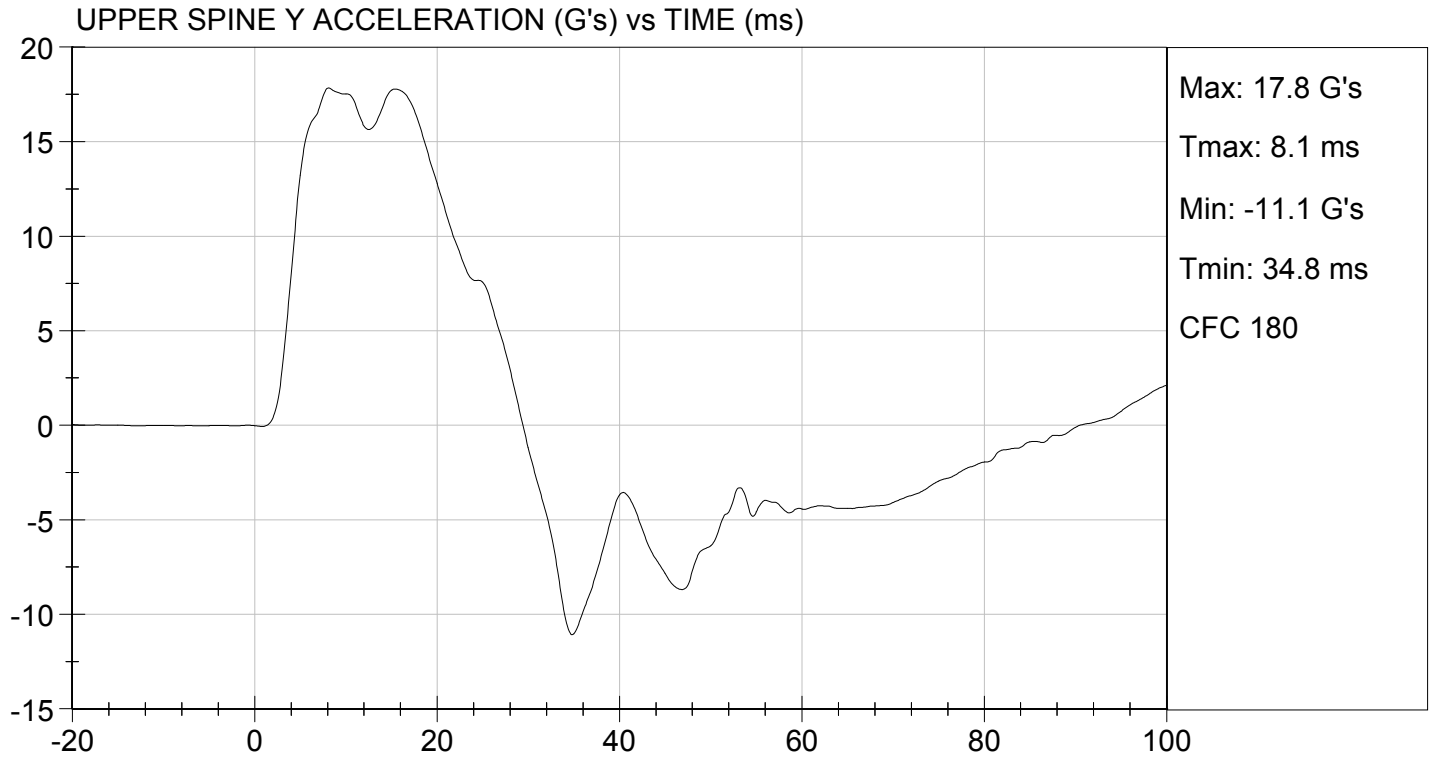
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	36	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	30	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	18	Pass
Overall Test Results				Pass

Maxime Chamberland  
Laboratory Technician

10/06/2014  
Test Date

Jessica Hall  
Approved By





**MGA RESEARCH CORPORATION**  
**THORAX (WITH ARM) IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

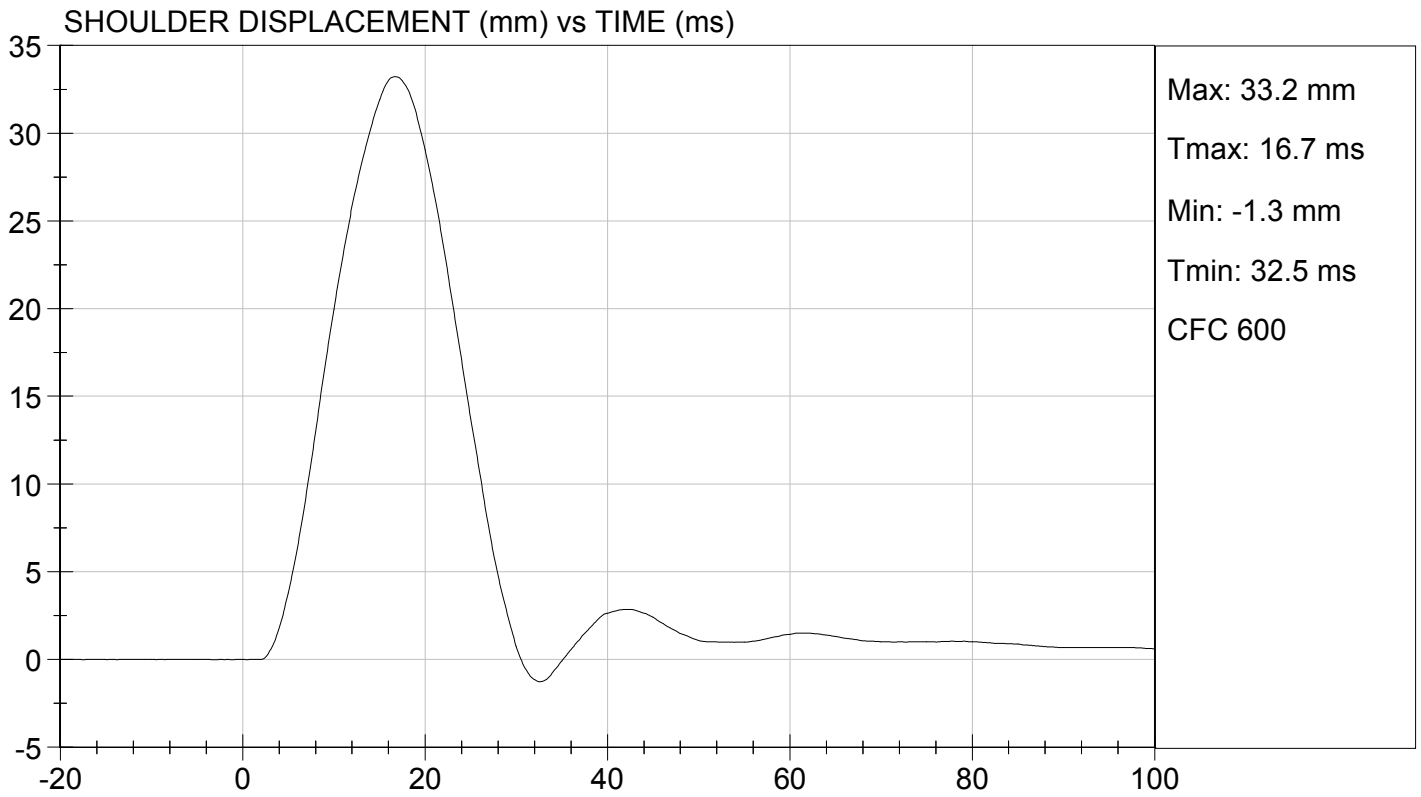
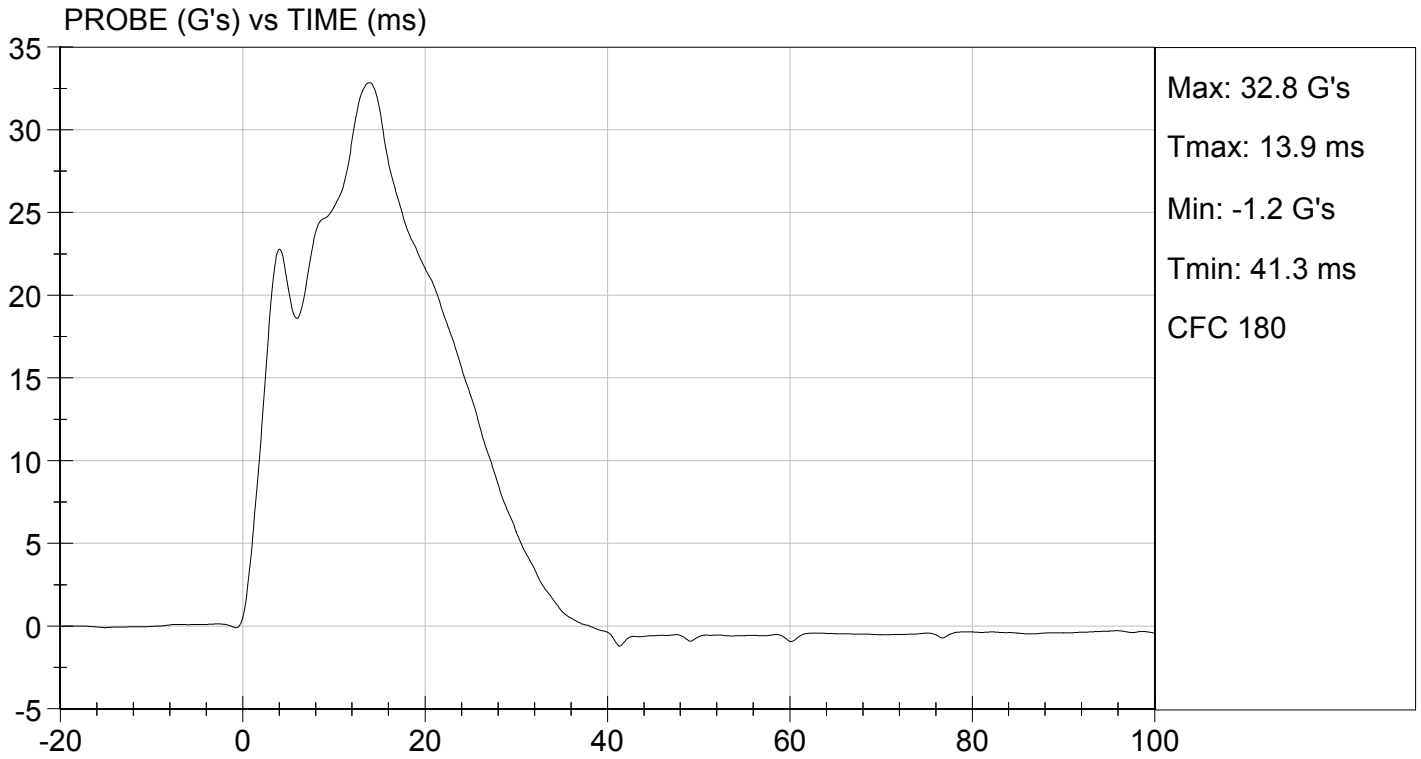
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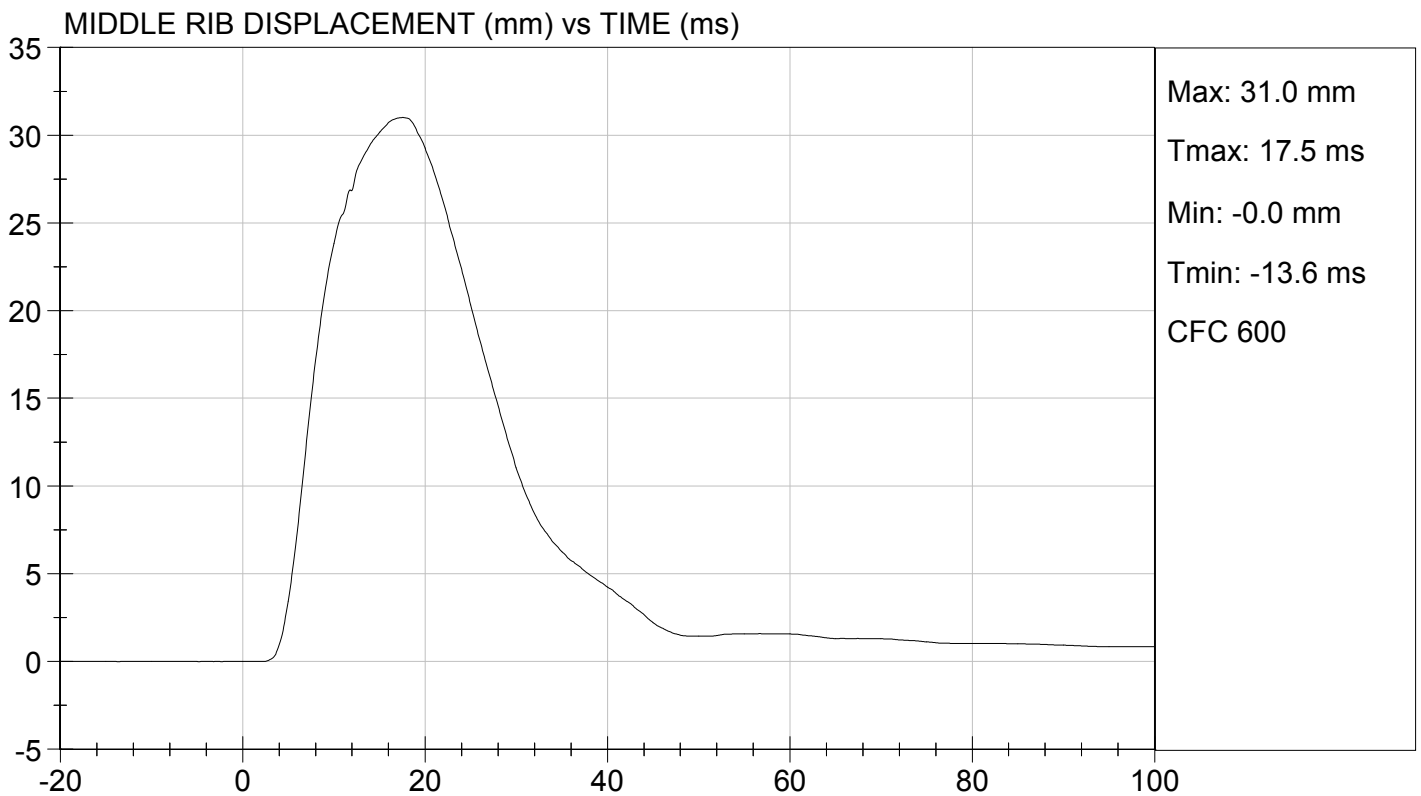
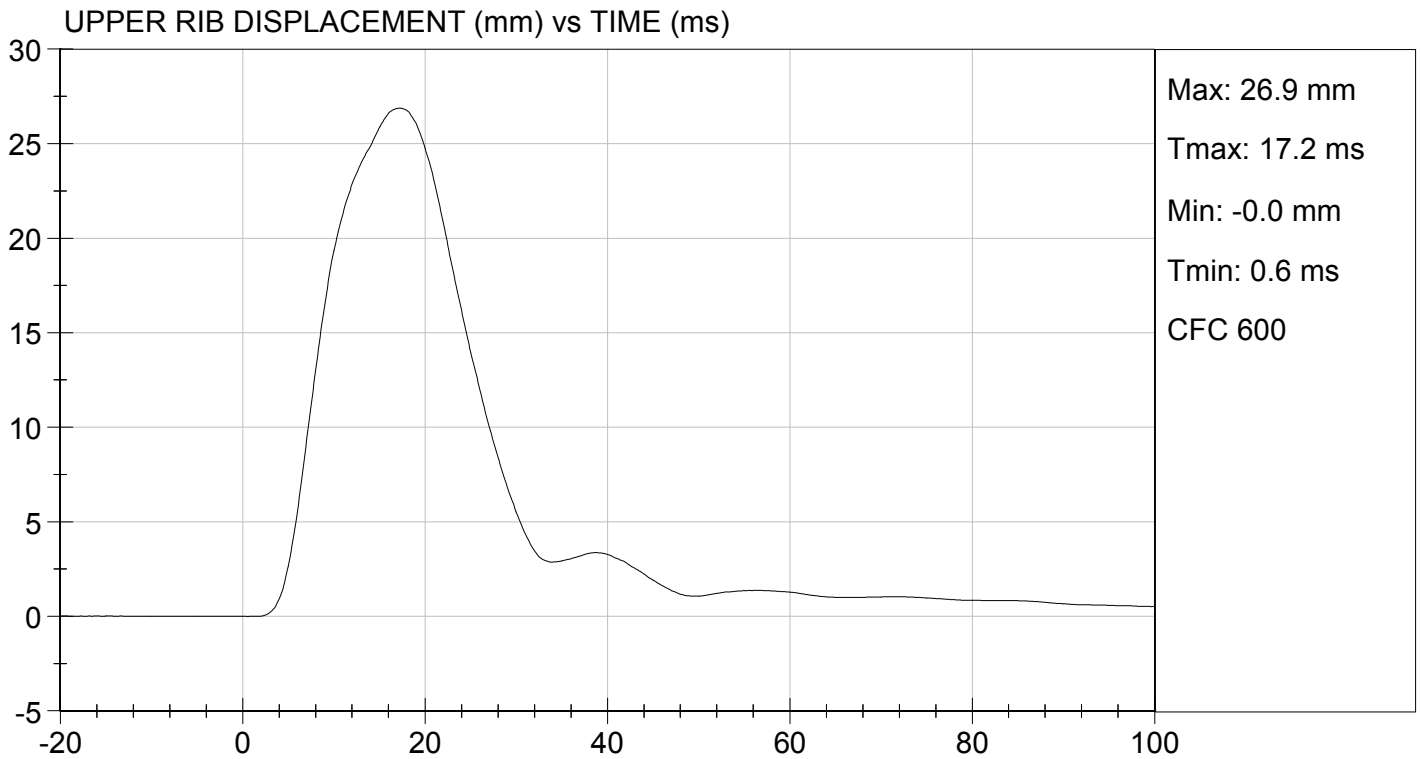
Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	20.7	Pass
Humidity	%	10 to 70	38	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	30 to 36	33	Pass
Shoulder Displacement	mm	31 to 40	33	Pass
Upper Rib Displacement	mm	25 to 32	27	Pass
Middle Rib Displacement	mm	30 to 36	31	Pass
Lower Rib Displacement	mm	32 to 38	35	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	39	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	32	Pass
Overall Test Results				Pass

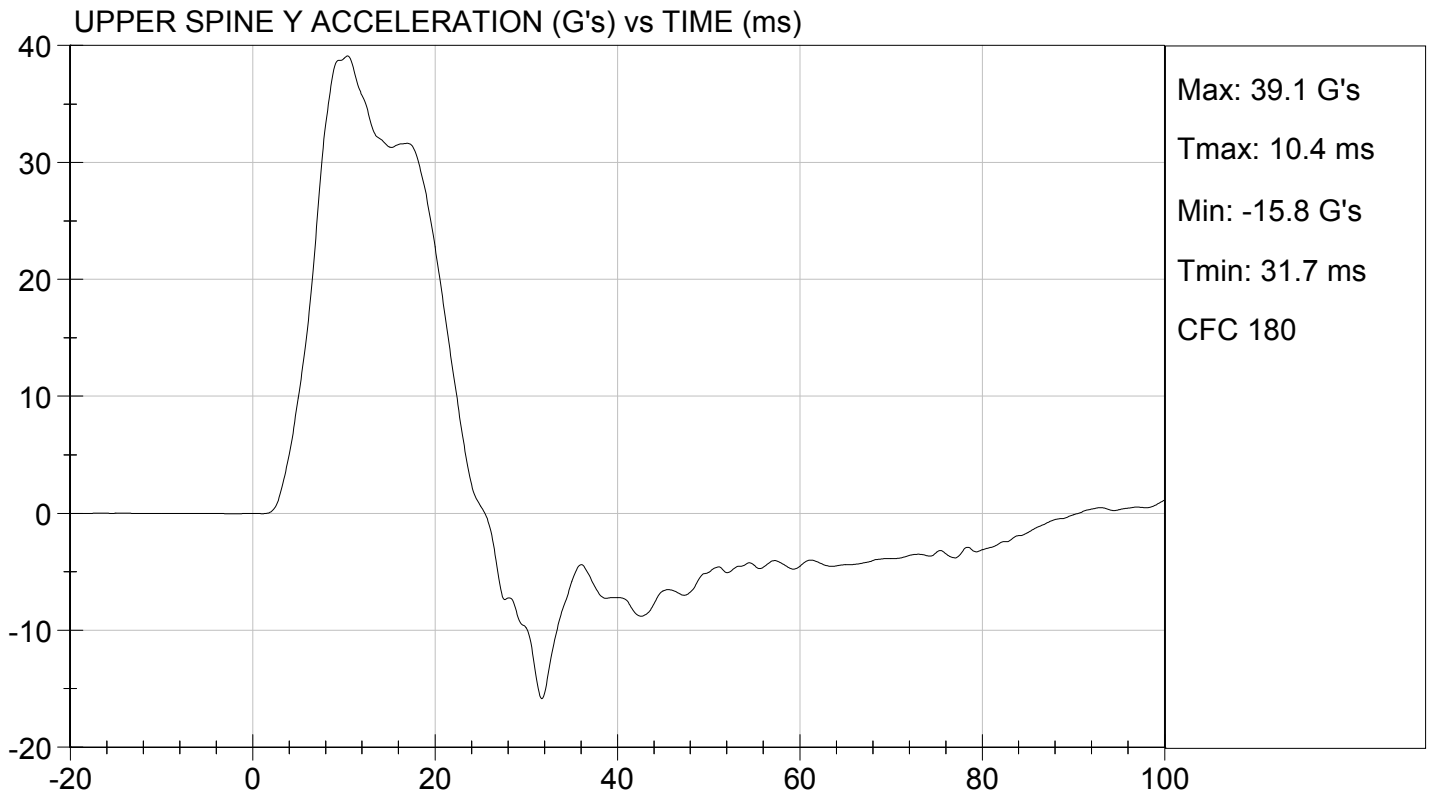
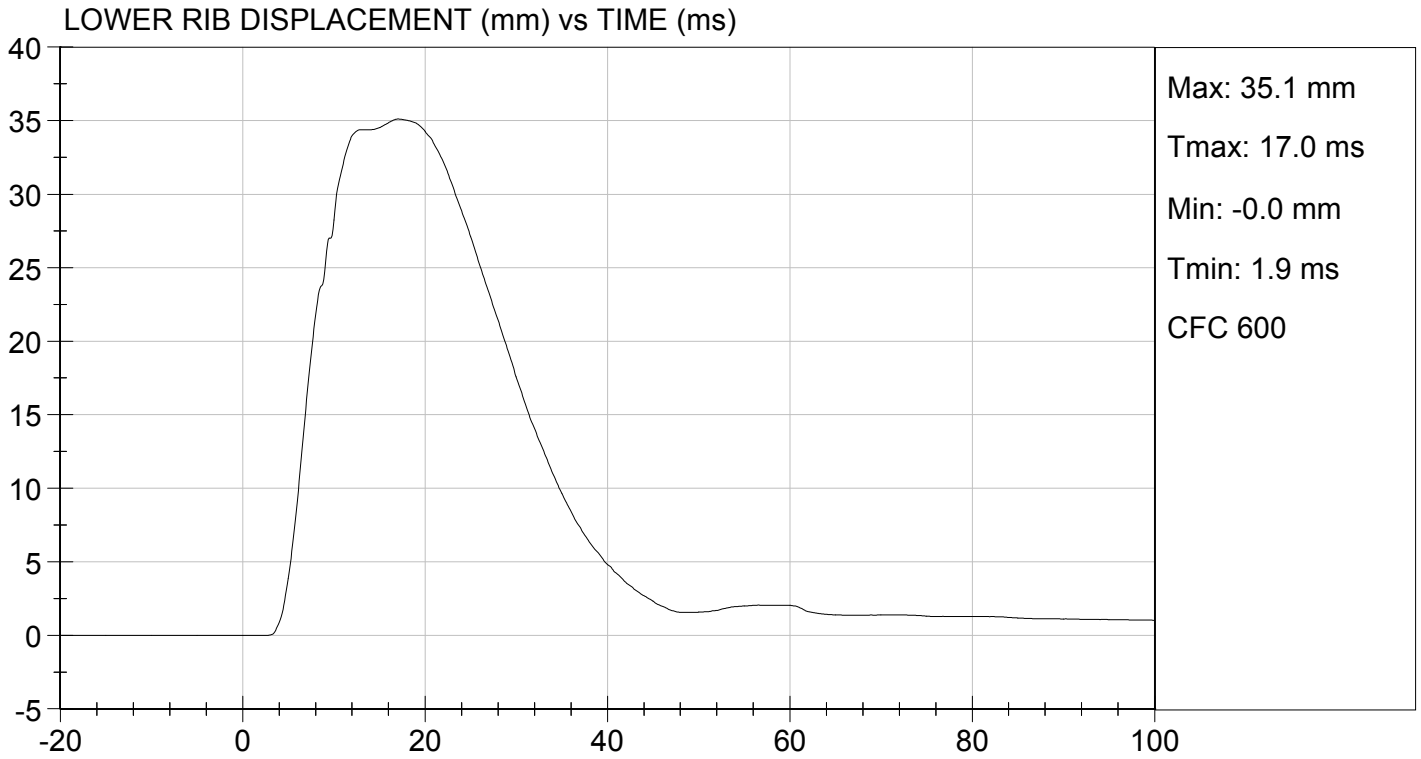
Maxime Chamberland  
 Laboratory Technician

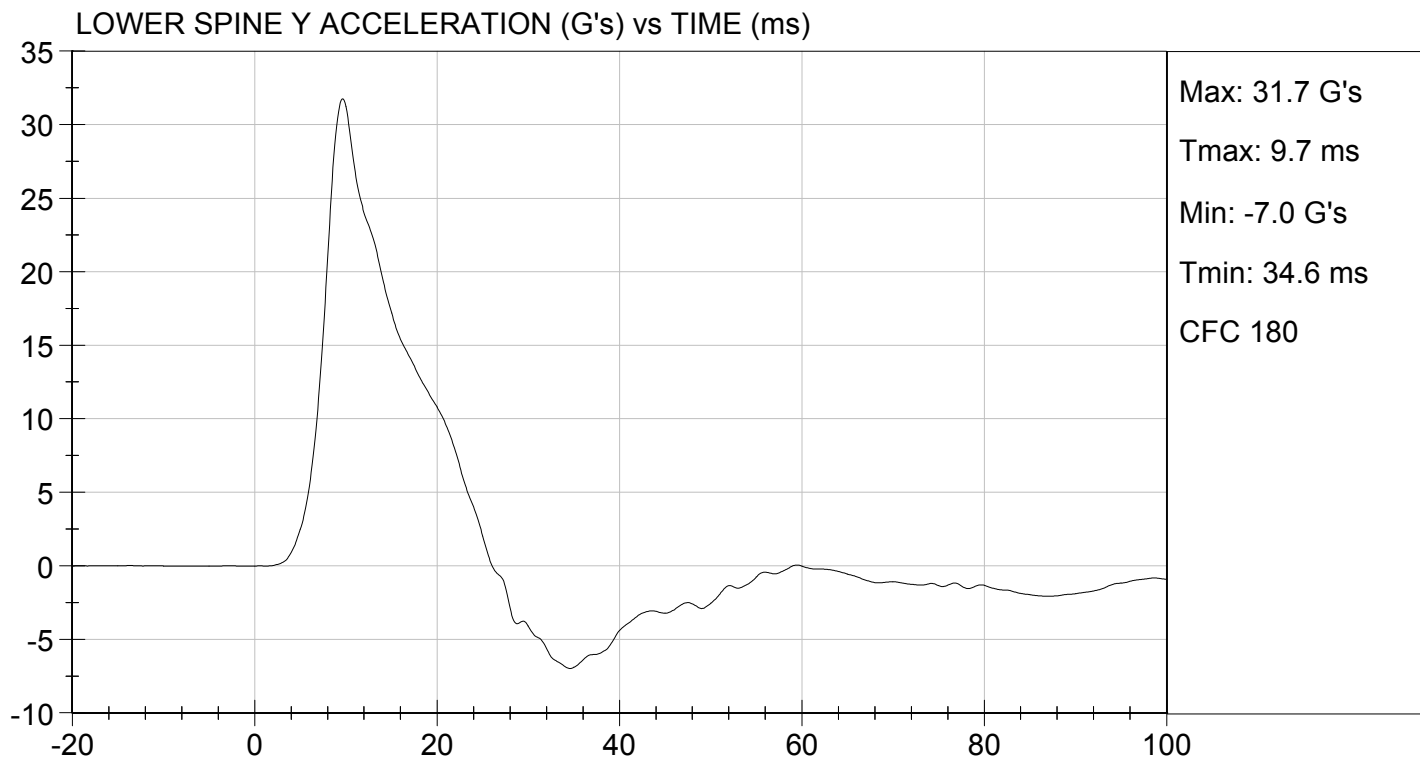
10/06/2014  
 Test Date

Jessica Hall  
 Approved By









**MGA RESEARCH CORPORATION**  
**THORAX (WITHOUT ARM) IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

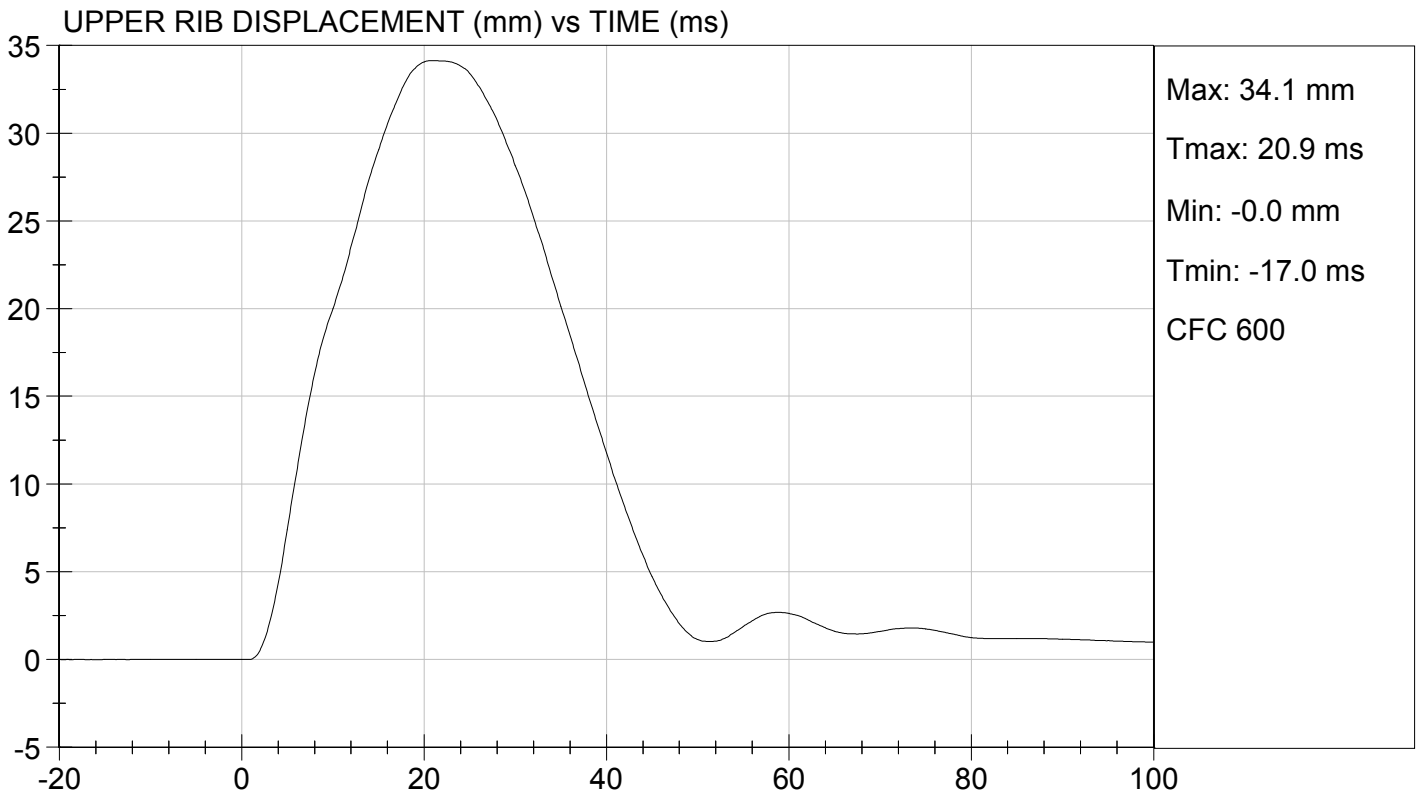
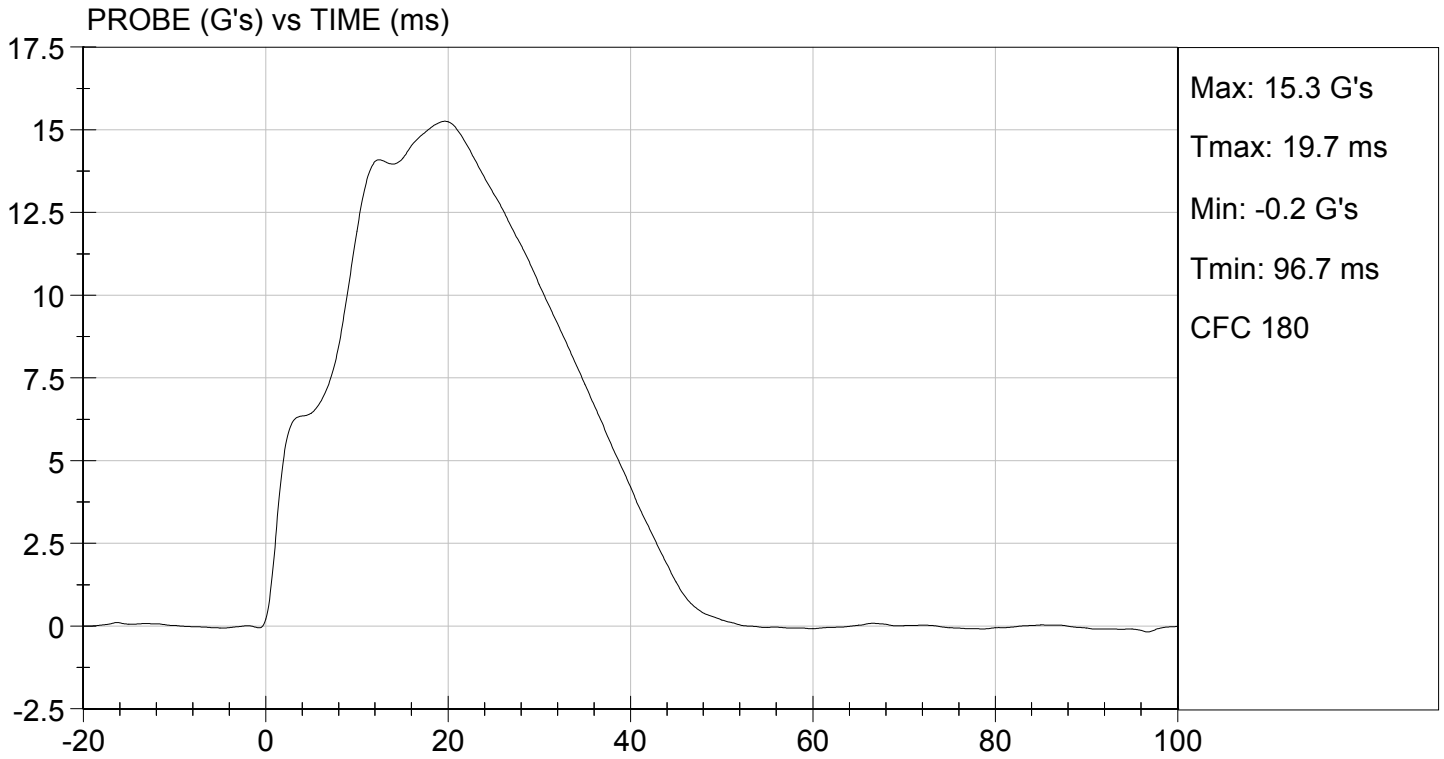
Test I.D: D143505

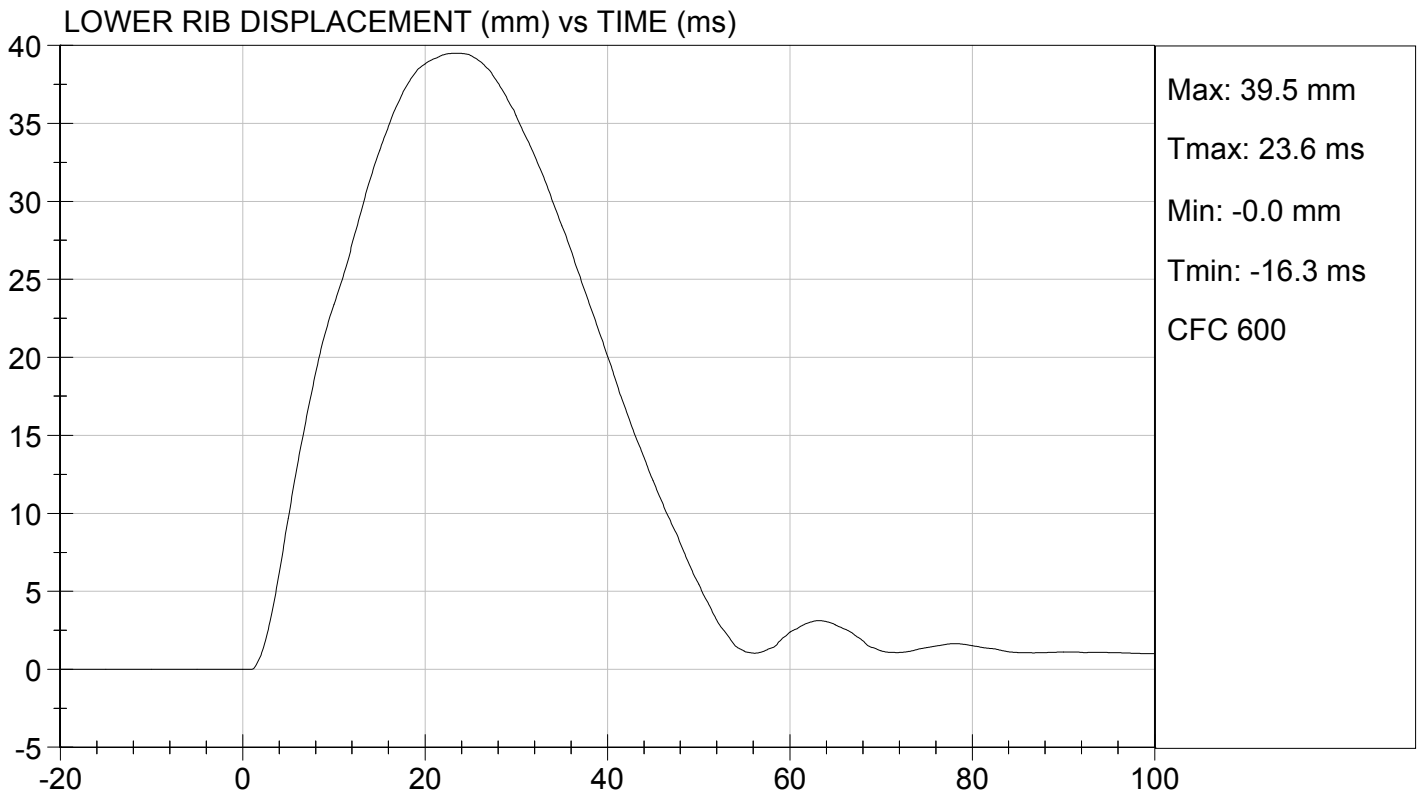
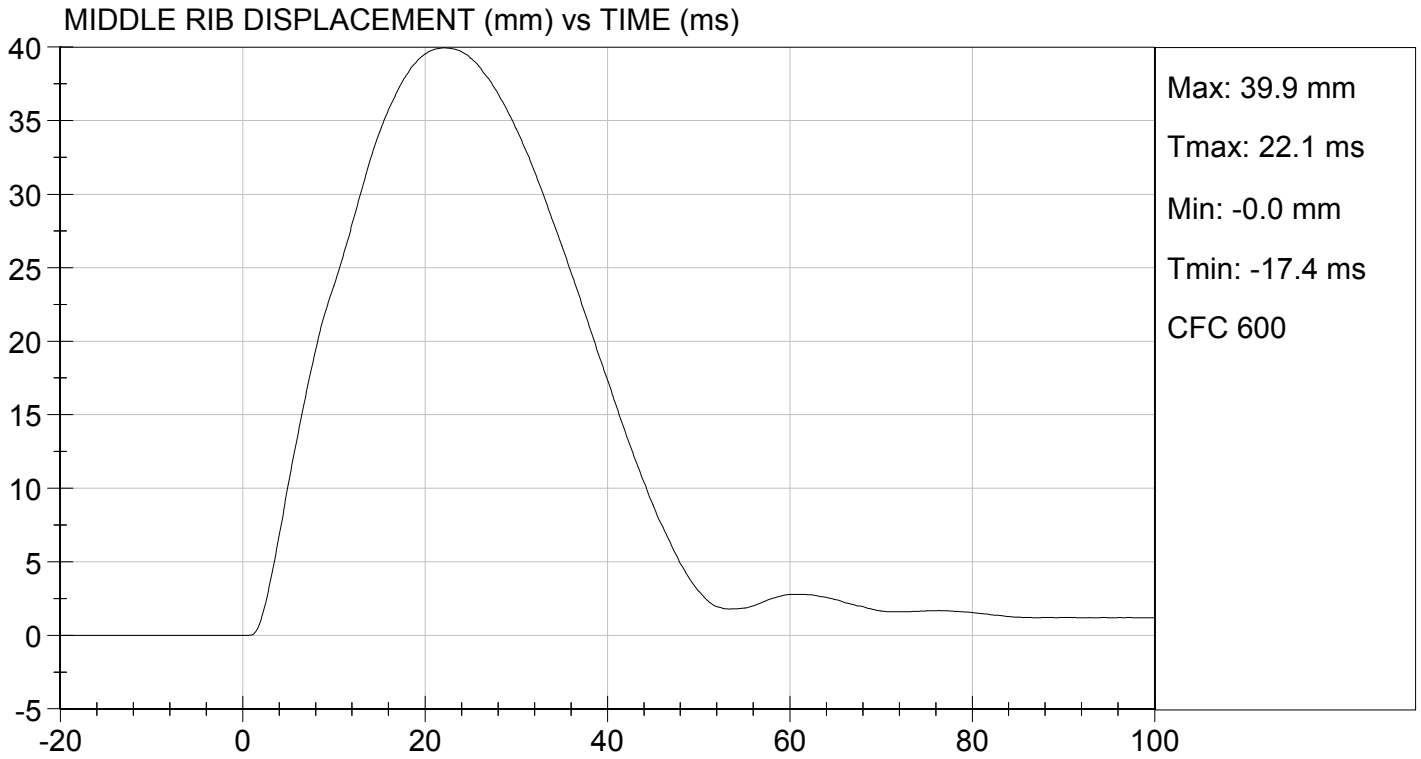
Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	39	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Maximum Probe Acceleration	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	34	Pass
Middle Rib Displacement	mm	39 to 45	40	Pass
Lower Rib Displacement	mm	35 to 43	40	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	15	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	9	Pass
<b>Overall Test Results</b>				<b>Pass</b>

Maxime Chamberland  
 Laboratory Technician

10/06/2014  
 Test Date

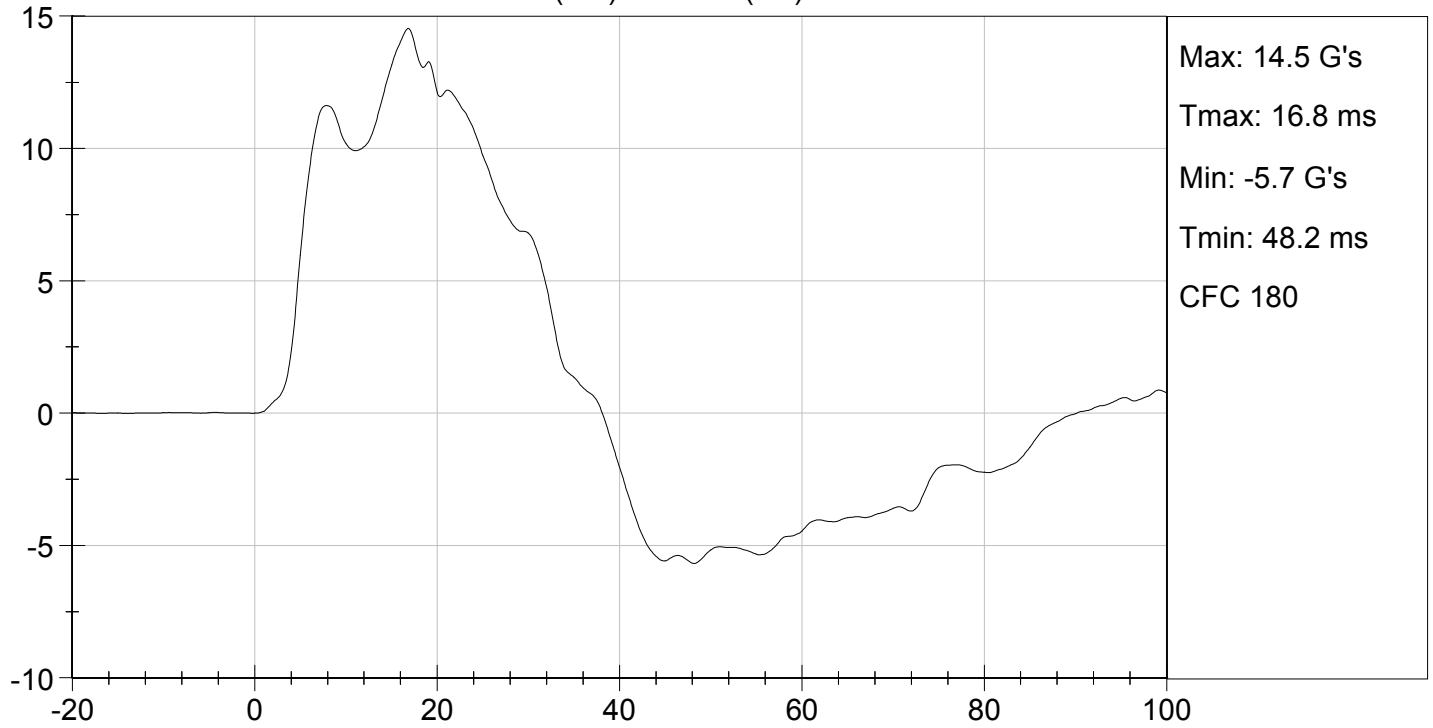
Jessica Hall  
 Approved By



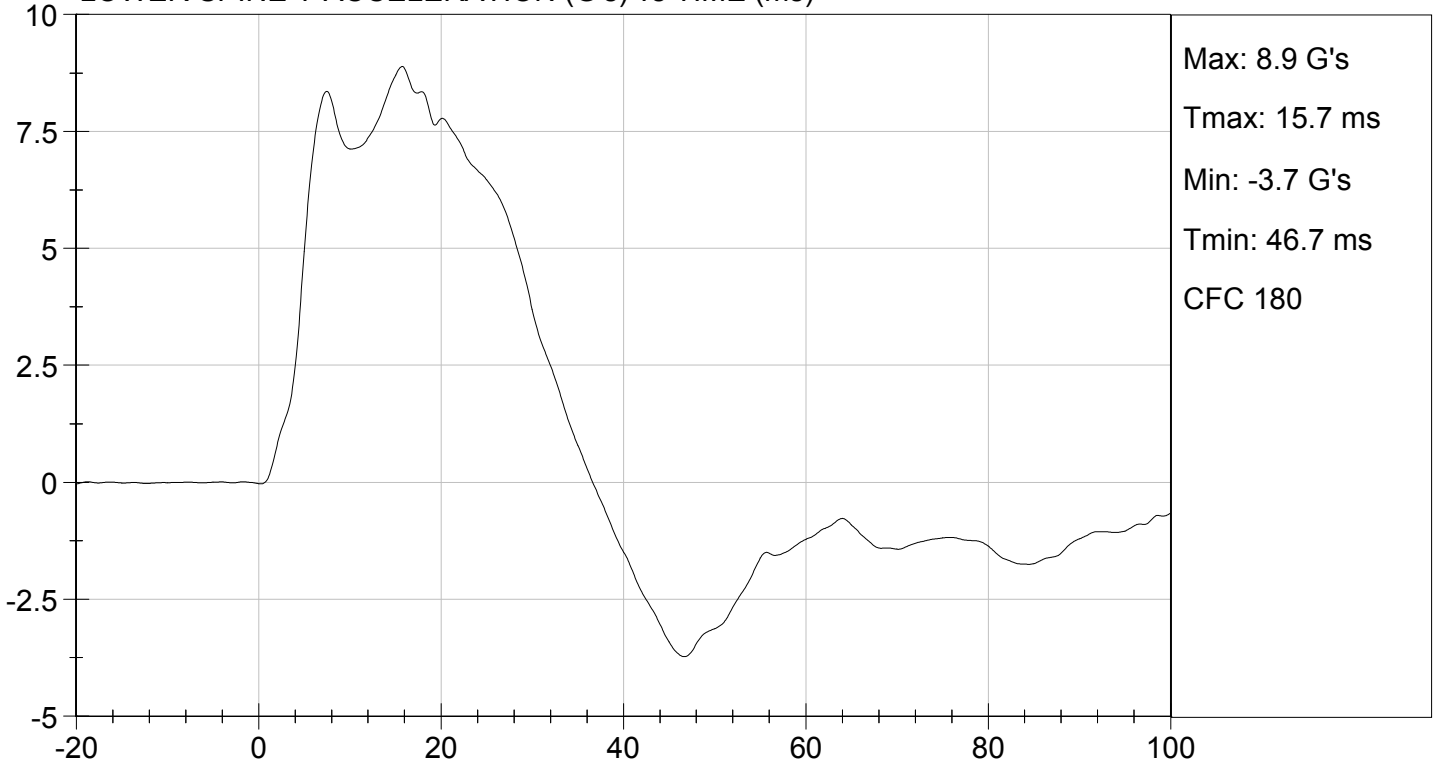




UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)



LOWER SPINE Y ACCELERATION (G's) vs TIME (ms)



**MGA RESEARCH CORPORATION**  
**ABDOMINAL IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

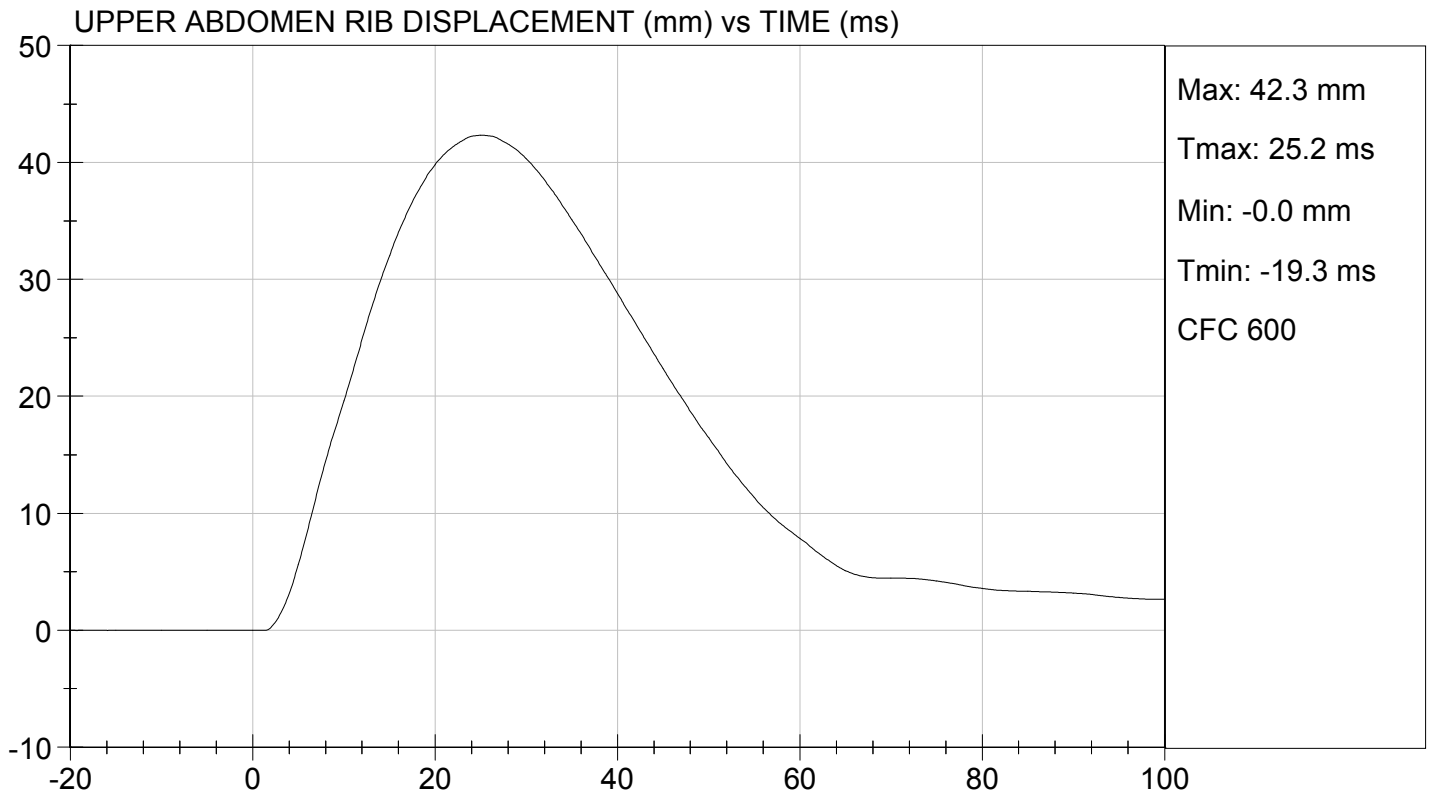
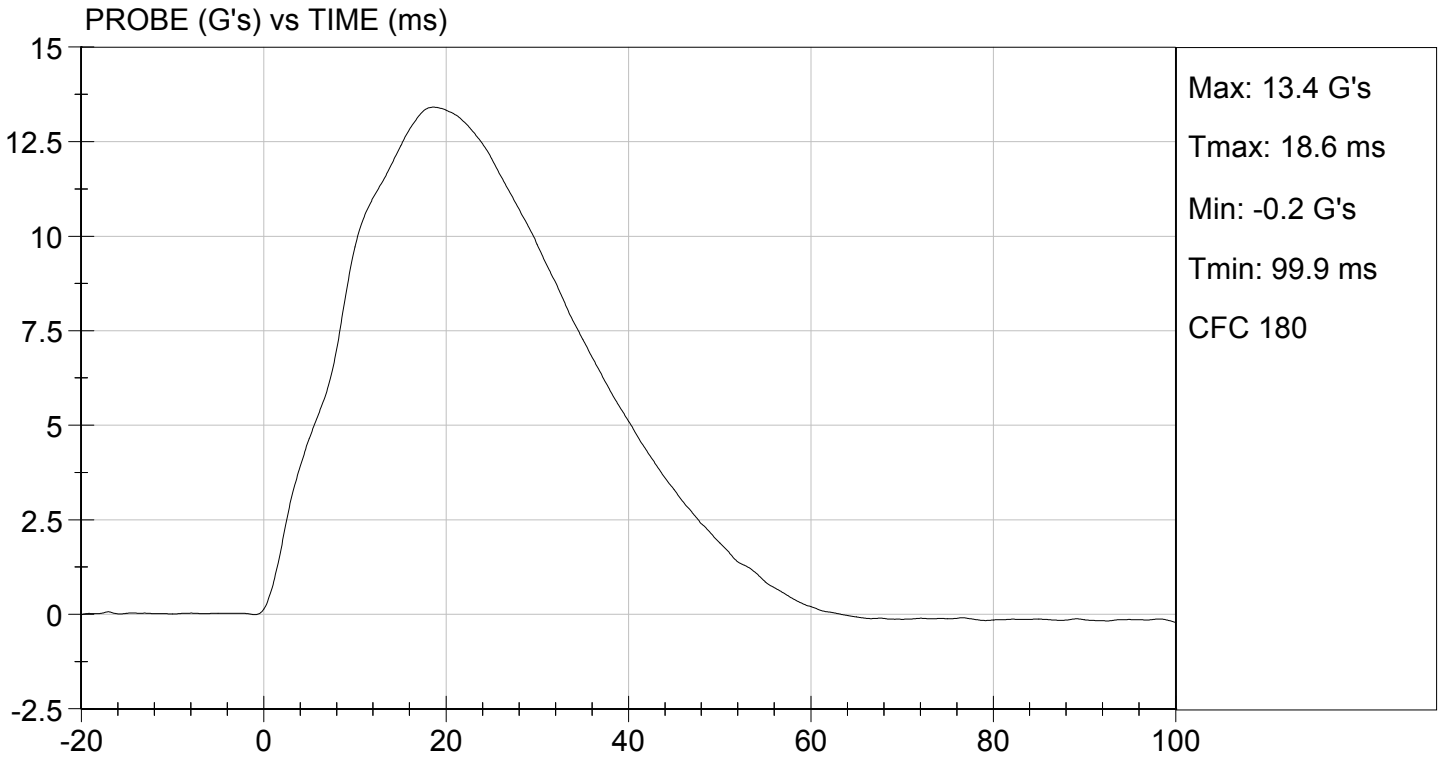
Test I.D: D143506

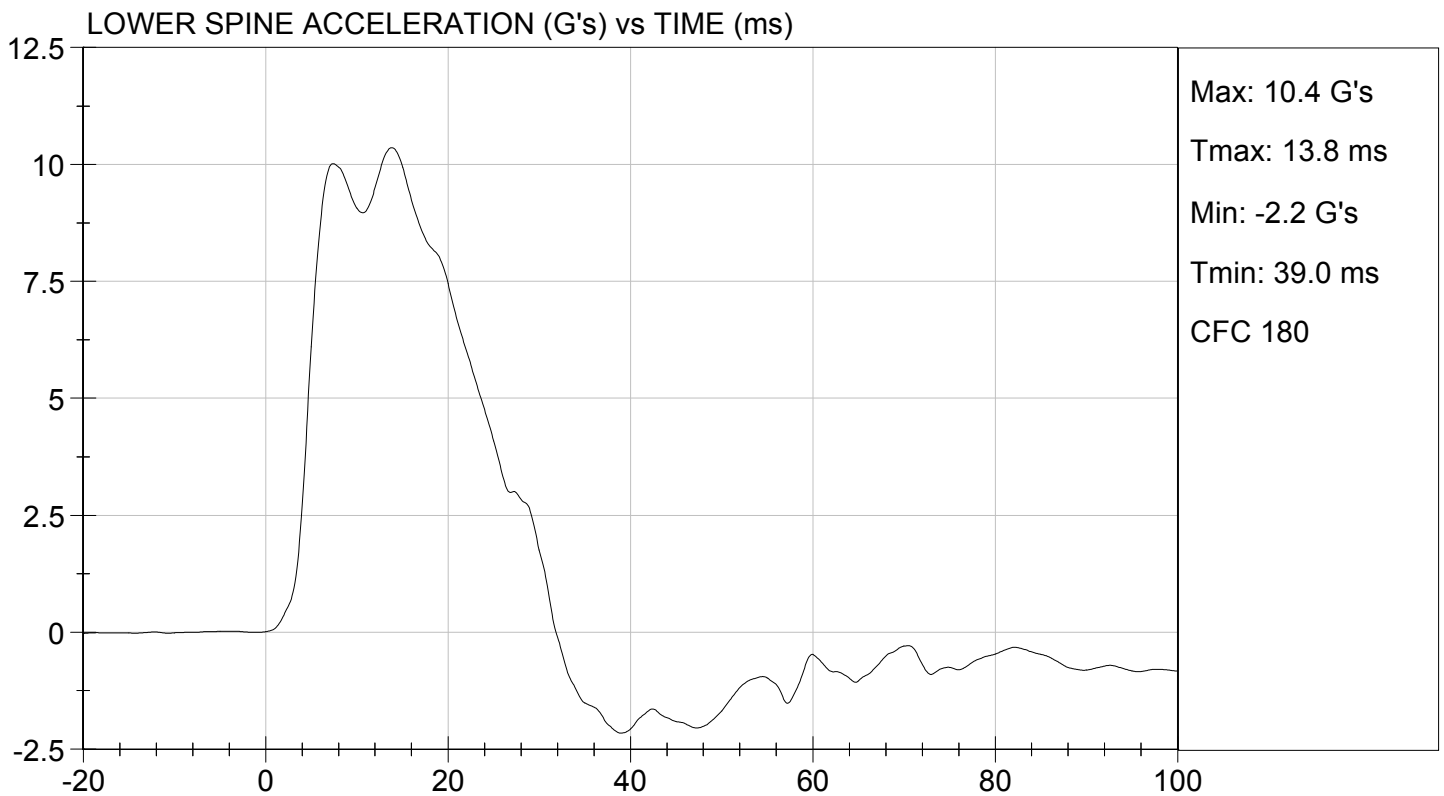
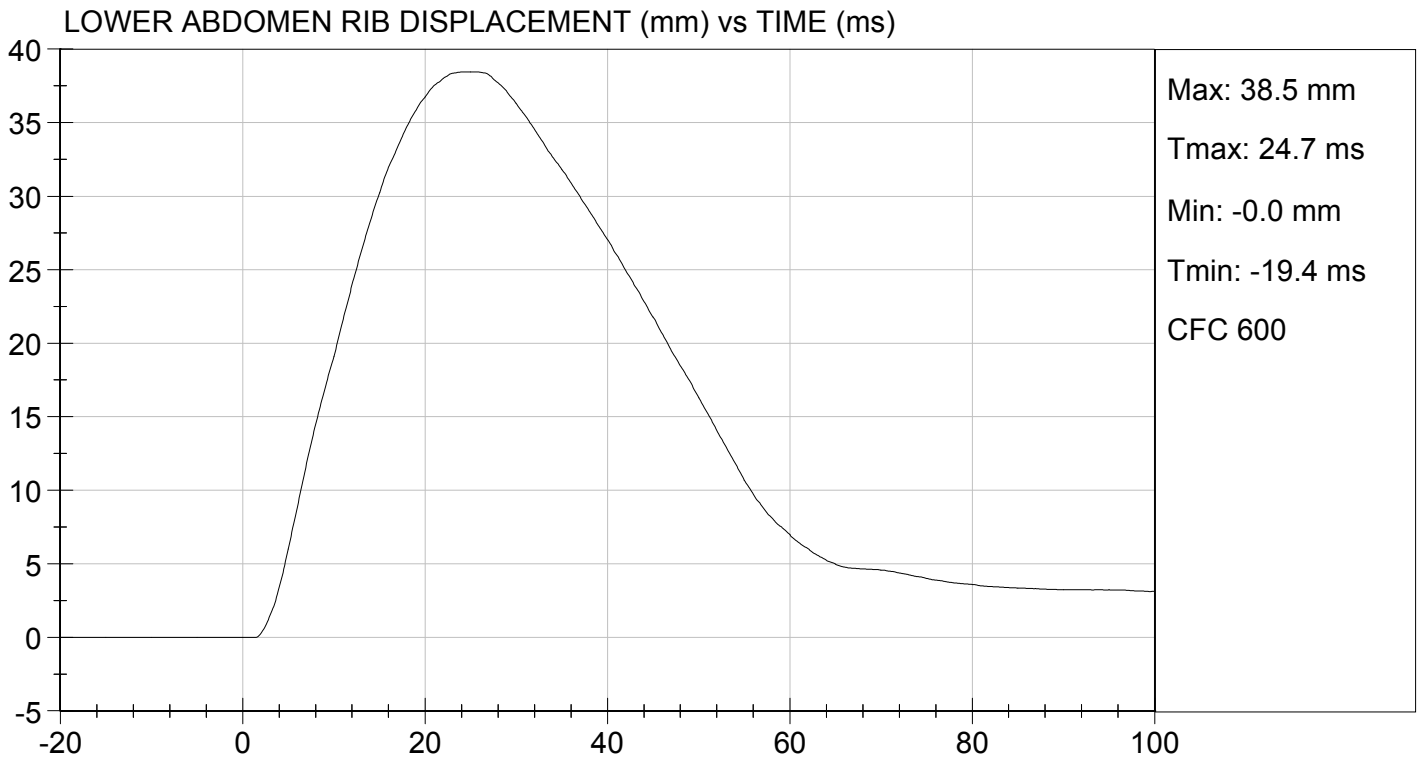
Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.5	Pass
Humidity	%	10 to 70	37	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	12 to 16	13	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	42	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	39	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	10	Pass
Overall Test Results				Pass

Maxime Chamberland  
 Laboratory Technician

10/06/2014  
 Test Date

Jessica Gall  
 Approved By





**MGA RESEARCH CORPORATION**  
**PELVIS IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

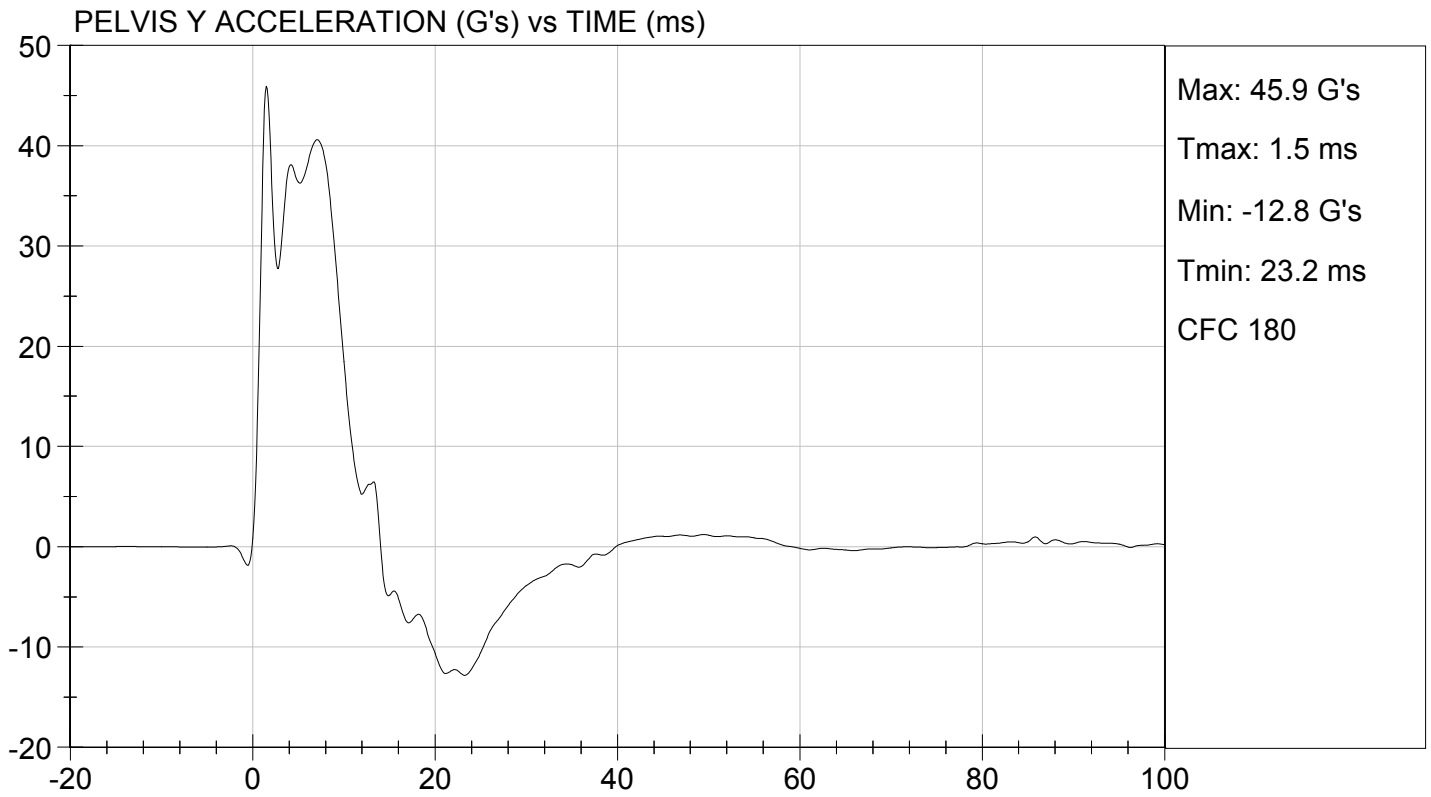
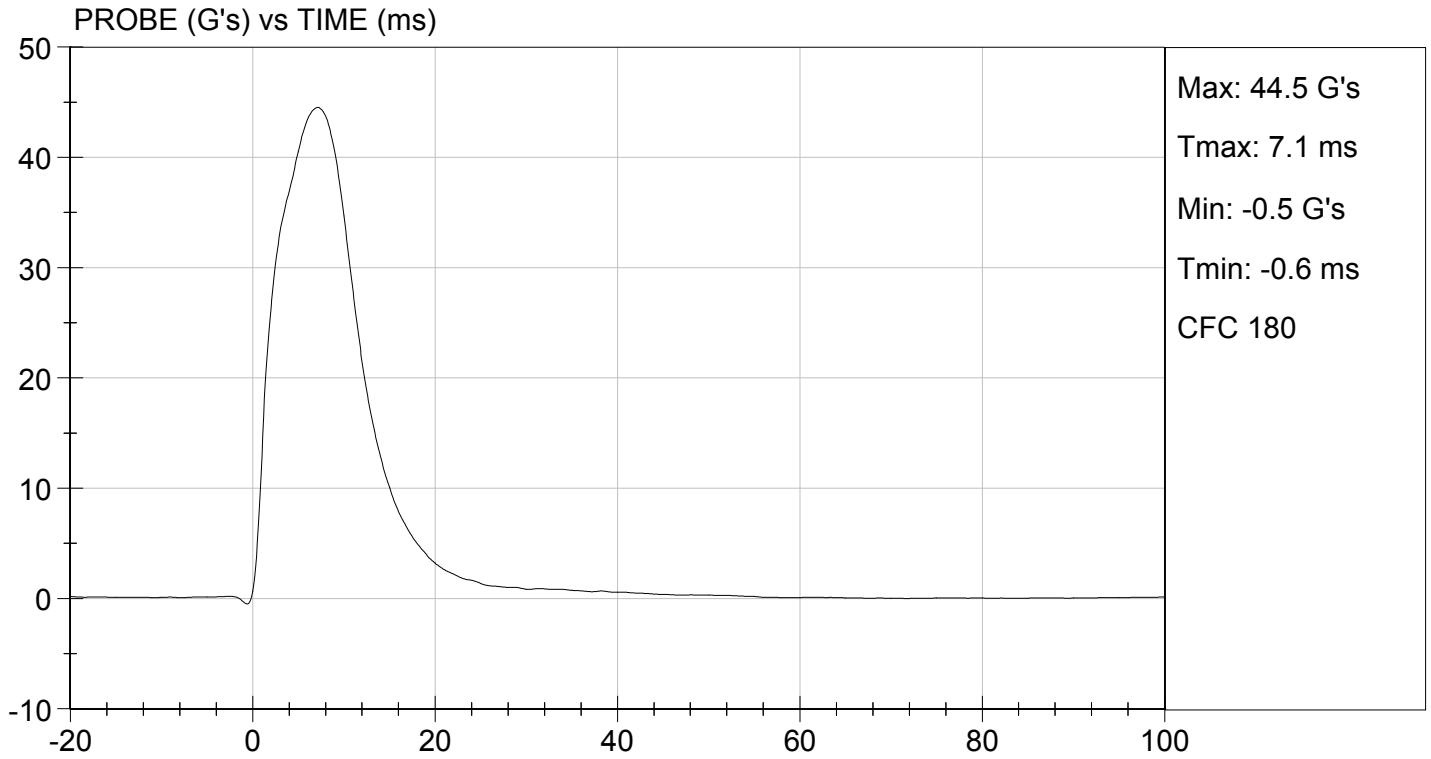
Test I.D: D143507

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	37	Pass
Impact Velocity	m/s	6.60 to 6.80	6.60	Pass
Maximum Probe Acceleration	G's	38 to 47	45	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	41	Pass
Peak Acetabulum Force	N	3600 to 4300	4,225	Pass
Overall Test Results				Pass

Maxime Chamberland  
 Laboratory Technician

10/06/2014  
 Test Date

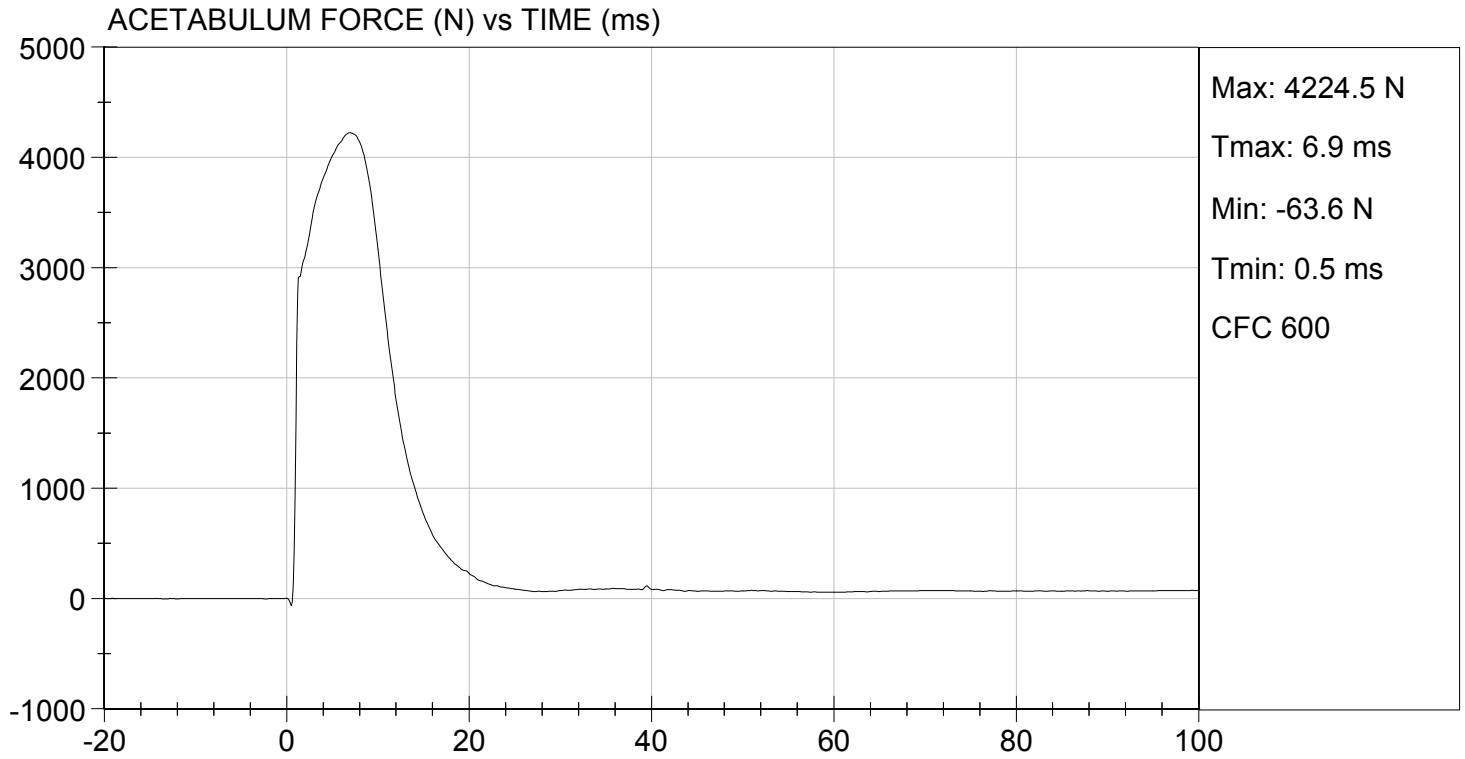
Jessica Gall  
 Approved By





TEST DESC: PELVIS IMPACT  
VELOCITY: 21.66 ft/s, 6.60 m/s

TEST DATE: 10/06/2014  
TEST #: D143507



**MGA RESEARCH CORPORATION**  
**ILIAC IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

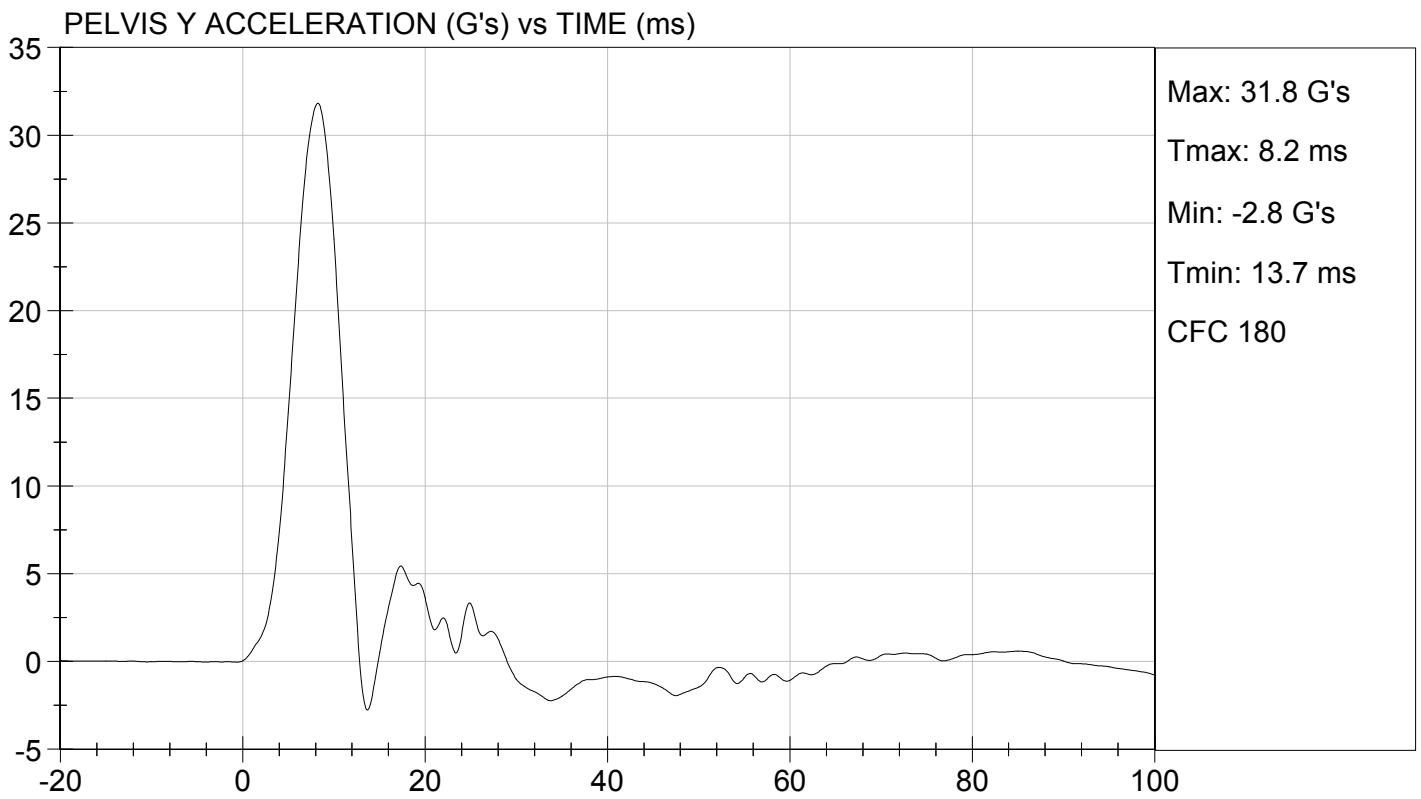
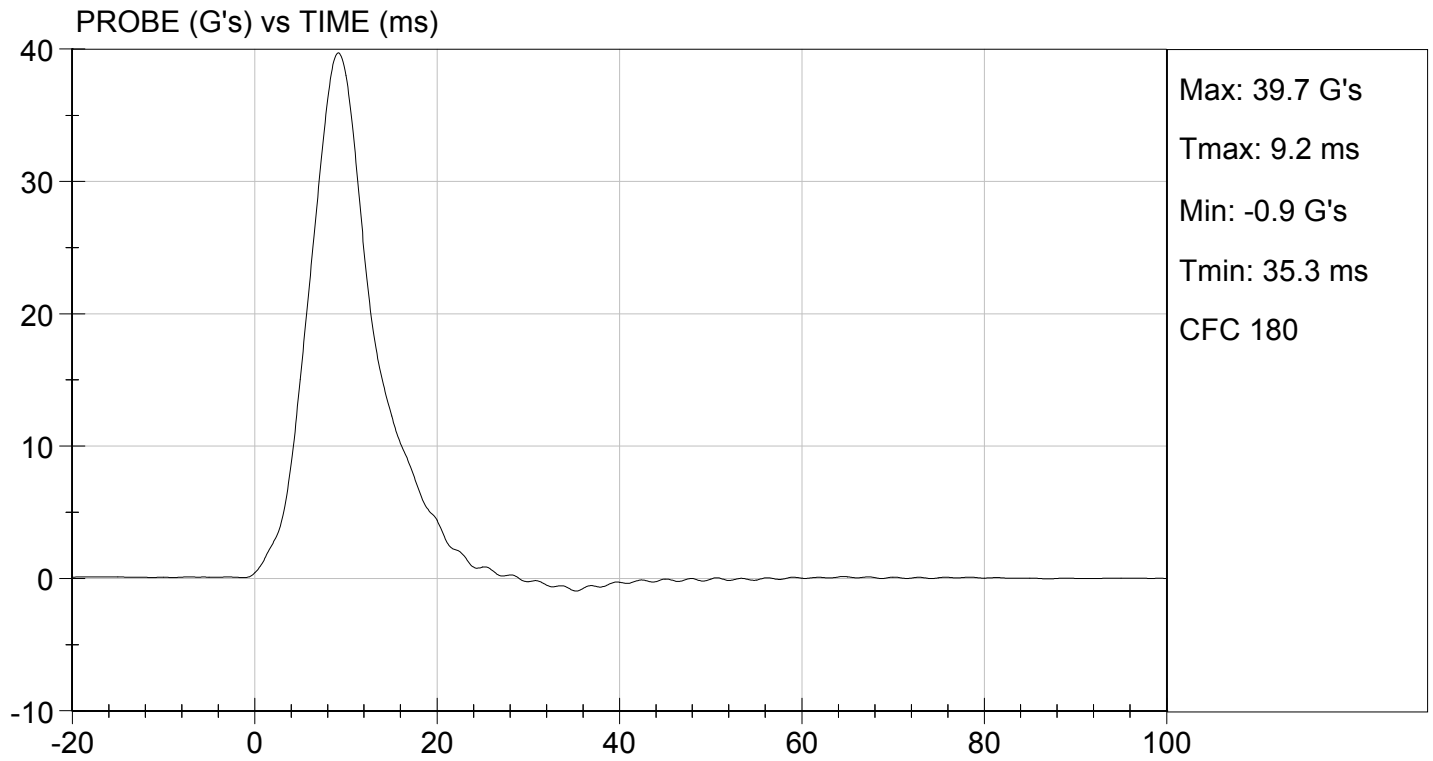
Test I.D: D143508

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	35	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Maximum Probe Acceleration	G's	36 to 45	40	Pass
Pelvis Y Acceleration	G's	28 to 39	32	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,697	Pass
Overall Test Results				Pass

Maxime Chamberland  
 Laboratory Technician

10/06/2014  
 Test Date

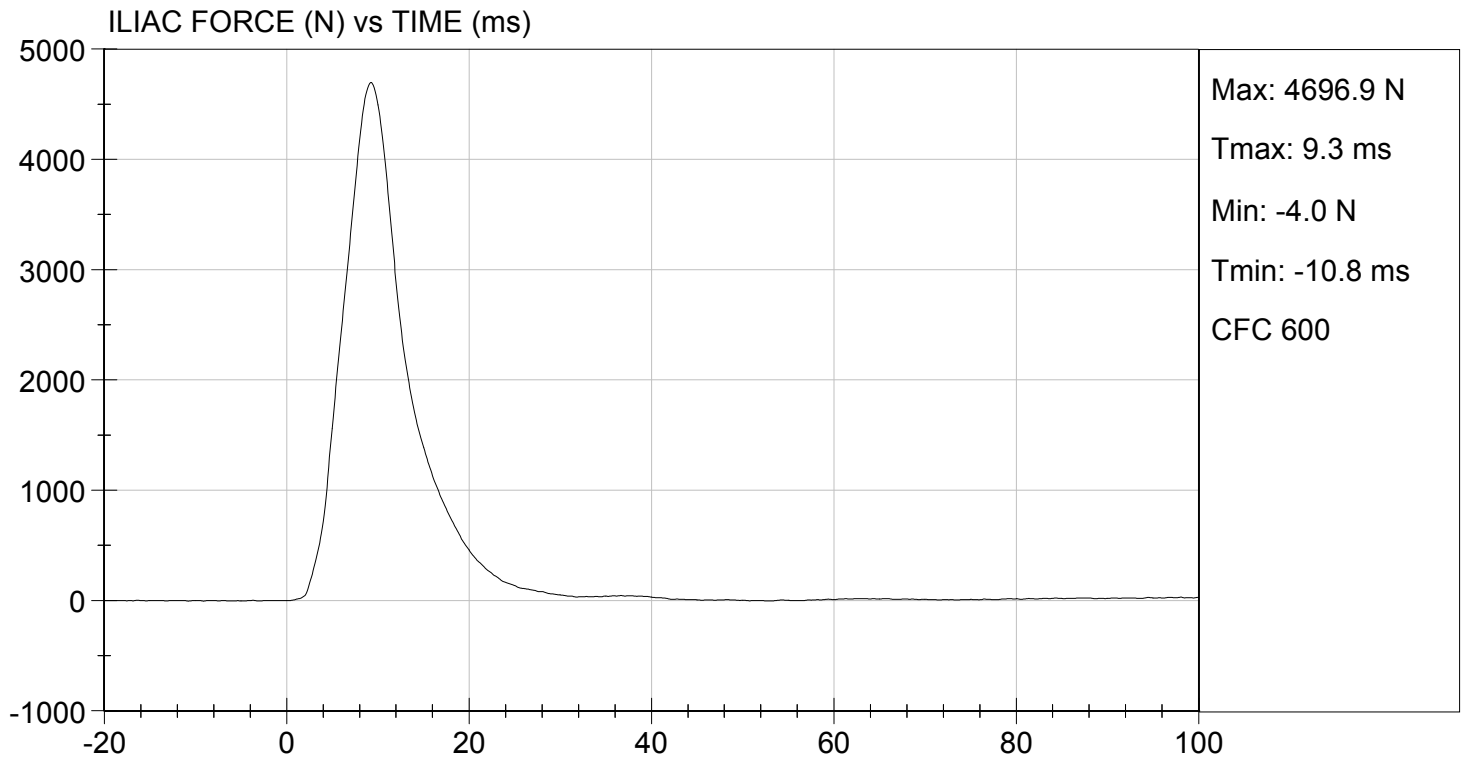
Jessica Hall  
 Approved By





TEST DESC: ILLIAC  
VELOCITY: 13.89 ft/s, 4.23 m/s

TEST DATE: 10/06/2014  
TEST #: D143508



**SID-IIsD External Measurements**  
**SN: 306**

<b>No.</b>	<b>Name</b>	<b>Spec. (mm)</b>	<b>Result</b>	<b>Pass/Fail</b>
<b>A</b>	Sitting Height	772 - 788	785	Pass
<b>B</b>	Shoulder Pivot Height	437 - 453	449	Pass
<b>C</b>	H-point Height	79 - 89	86	Pass
<b>D</b>	H-point from Seatback	141 - 151	147	Pass
<b>E</b>	Shoulder Pivot from Backline	97 - 107	99	Pass
<b>F</b>	Thigh Clearance	119 -135	120	Pass
<b>G</b>	Head Breadth	140 - 148	141	Pass
<b>H</b>	Head Back from Backline	40 - 46	45	Pass
<b>I</b>	Head Depth	178 - 188	182	Pass
<b>J</b>	Head Circumference	541 - 551	550	Pass
<b>K</b>	Buttock to Knee Length	514 - 540	538	Pass
<b>L</b>	Popliteal Height	343 - 369	349	Pass
<b>M</b>	Knee Pivot to Floor Height	392 - 409	394	Pass
<b>N</b>	Buttock Popliteal Length	416 - 442	435	Pass
<b>O</b>	Chest Depth w/o Jacket	195 - 211	198	Pass
<b>P</b>	Foot Length	216 - 232	222	Pass
<b>Q</b>	Hip Breadth (w/ pelvic plugs)	313 - 323	317	Pass
<b>R</b>	Arm Length	249 - 259	250	Pass
<b>S</b>	Knee Joint to Seatback	477 - 493	483	Pass
<b>V</b>	Shoulder Width	341 - 357	351	Pass
<b>W</b>	Foot Width	78 - 94	82	Pass
<b>Y</b>	Chest Circumference w/ jacket	851 - 881	863	Pass
<b>Z</b>	Waist Circumference	761 - 791	782	Pass

**MGA RESEARCH CORPORATION  
HEAD DROP TEST  
SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

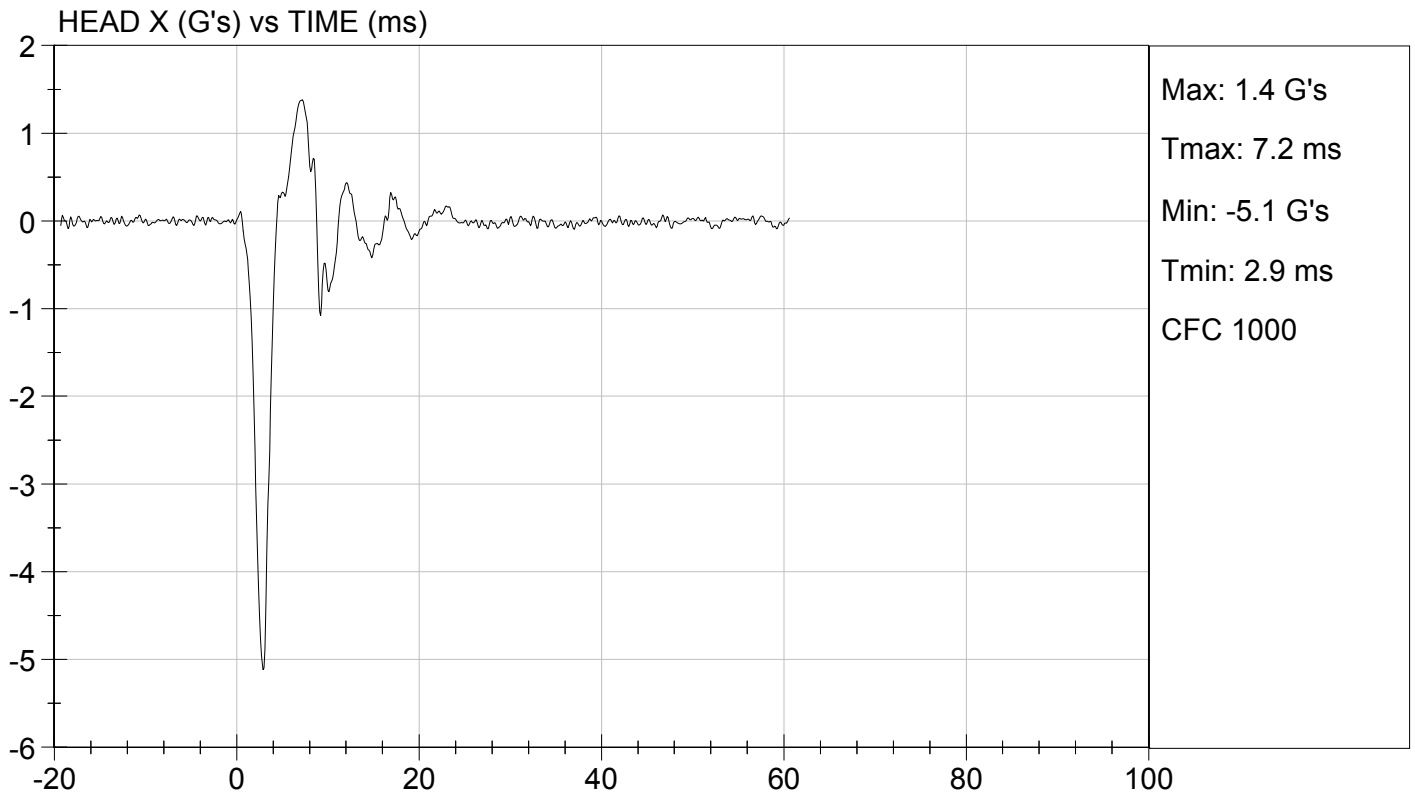
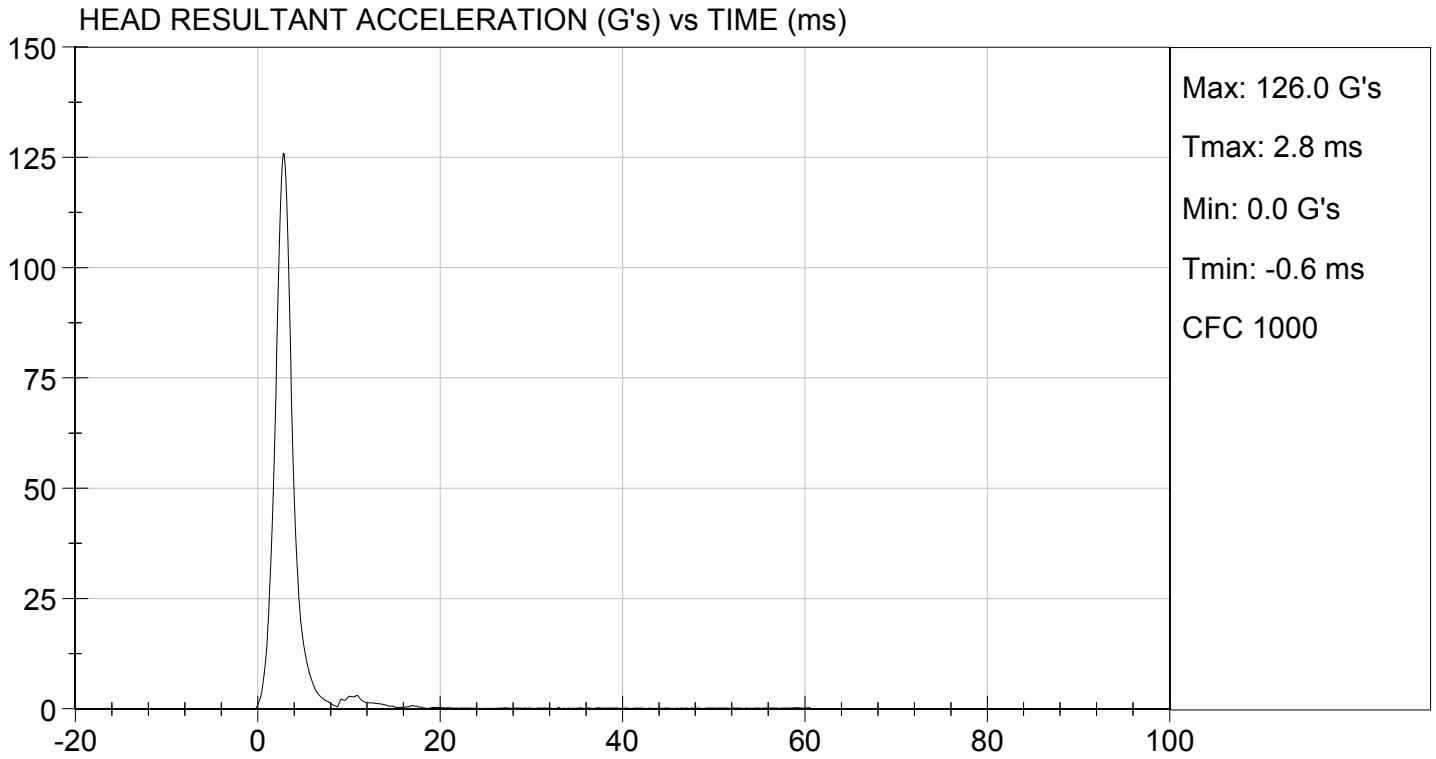
Test ID: D143791

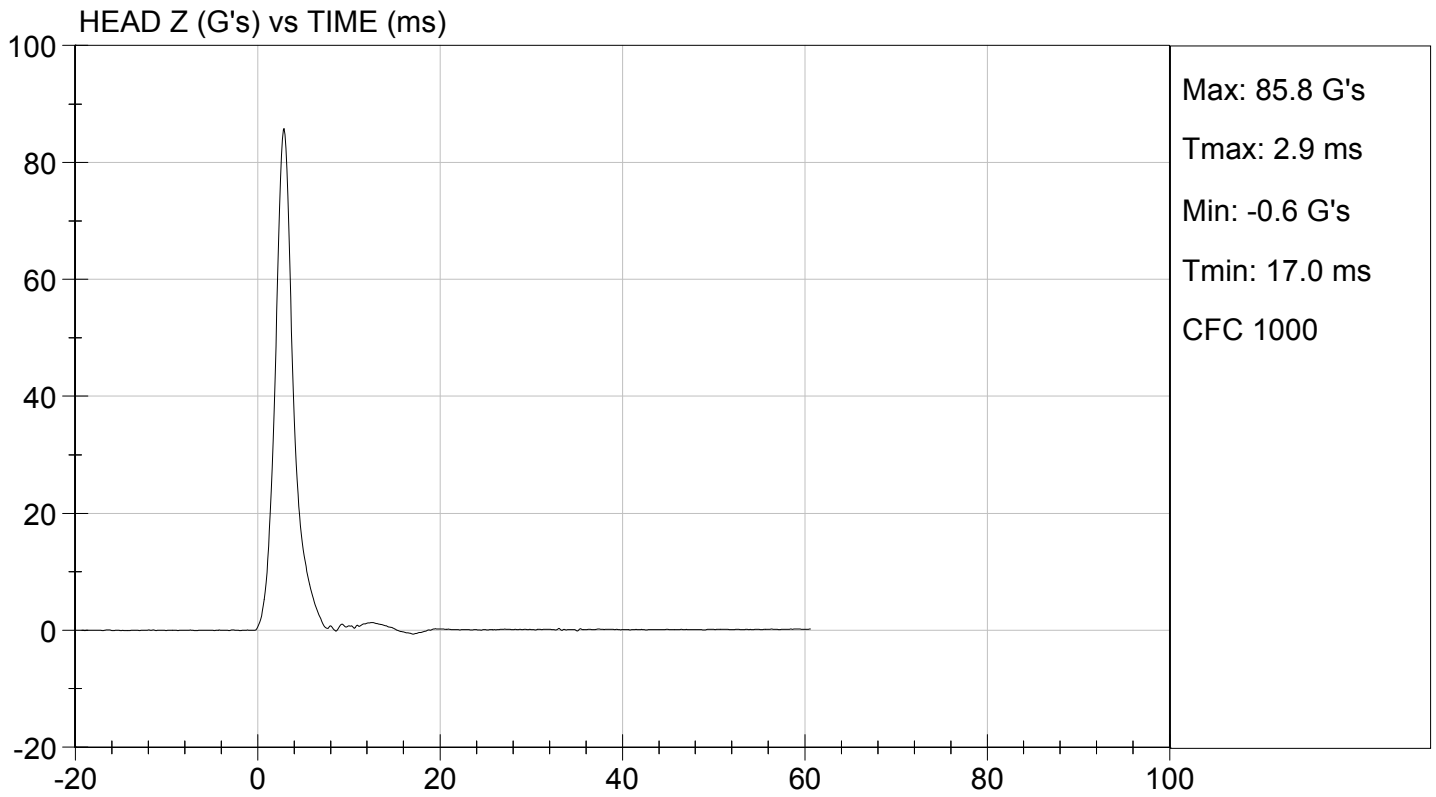
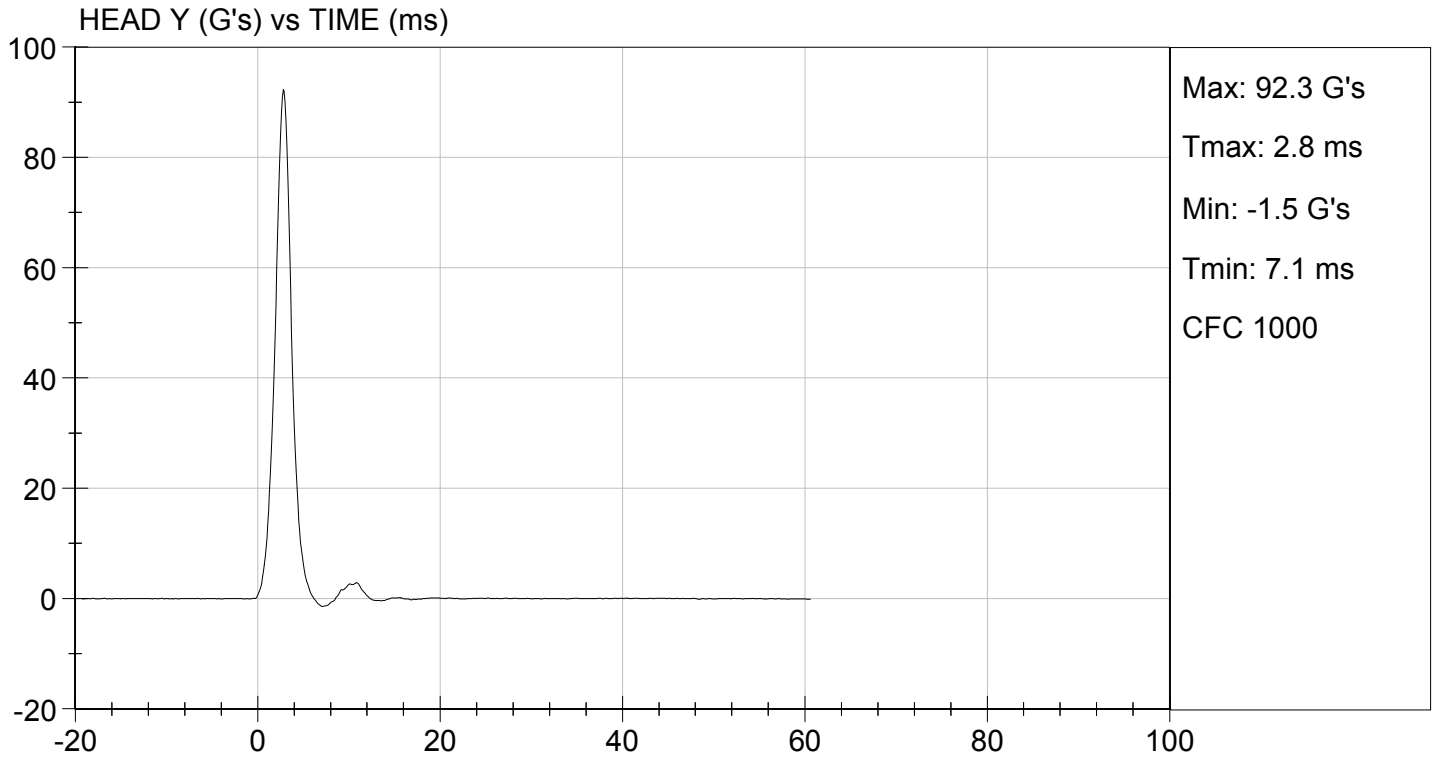
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	22.0	Pass
Laboratory Relative Humidity	%	10 to 70	38	Pass
Peak Resultant Acceleration	G's	115 to 137	126	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-5.1	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
Overall Test Results				Pass

*David Schoedel*  
Laboratory Technician

10/28/2014  
Test Date

*Jessica Hall*  
Approved By





**MGA RESEARCH CORPORATION  
LATERAL NECK PENDULUM TEST  
SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

Test I.D.: D143792

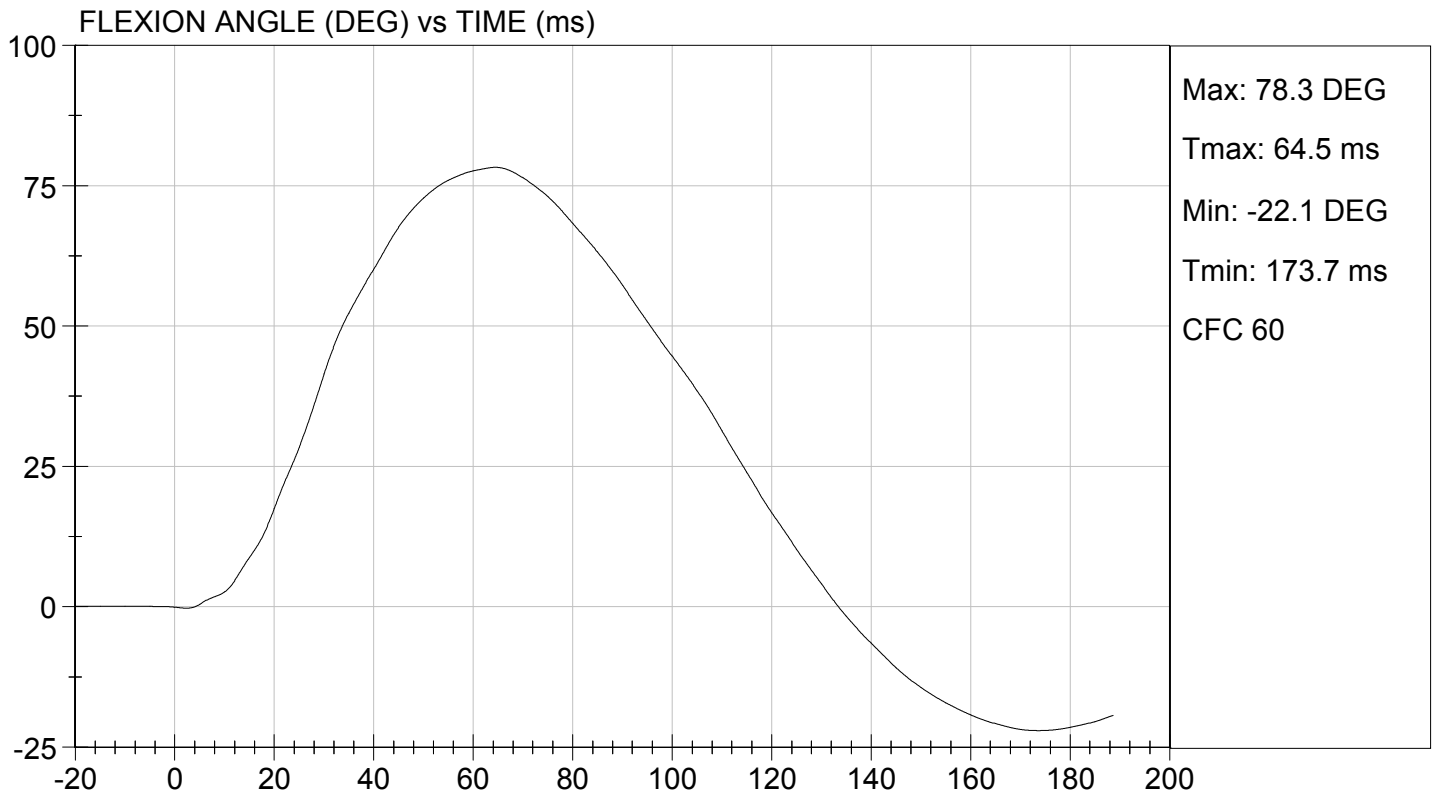
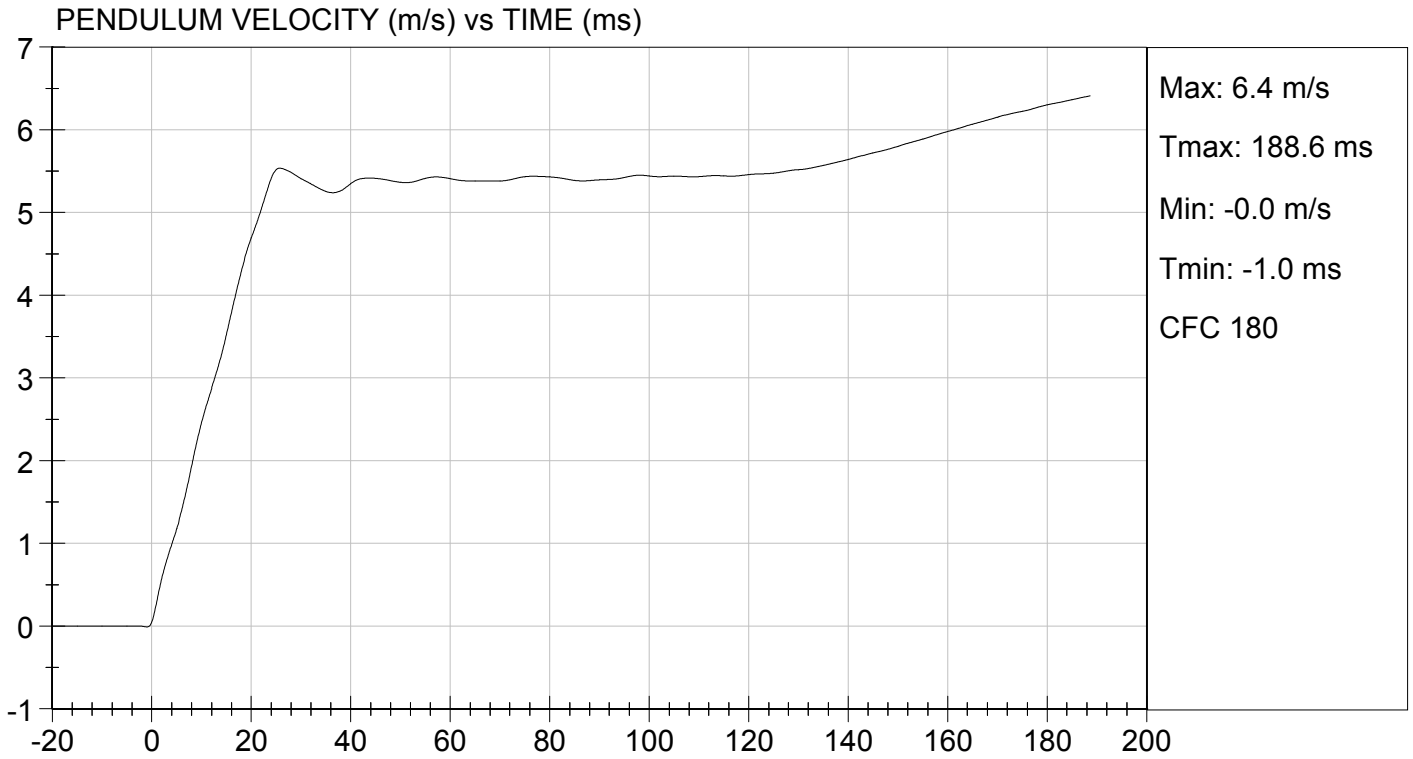
Tested Parameter	Units	Specification	Result	Pass/Fail	
Temperature	deg C	20.6 to 22.2	21.5	Pass	
Humidity	%	10 to 70	36	Pass	
Impact Velocity	m/s	5.51 to 5.63	5.58	Pass	
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.47	Pass
	15 ms	m/s	3.30 to 4.10	3.53	Pass
	20 ms	m/s	4.40 to 5.40	4.69	Pass
	25 ms	m/s	5.40 to 6.10	5.52	Pass
	25-100 ms	m/s	5.50 to 6.20	5.54	Pass
Maximum D-Plane Rotation	deg	71 to 81	78	Pass	
Time of Maximum D-Plane Rotation	ms	50 to 70	65	Pass	
Maximum Occipital Condyle Moment	Nm	-44 to -36	-41	Pass	
Time of Moment Decay to 0 Nm	ms	102 to 126	115	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	

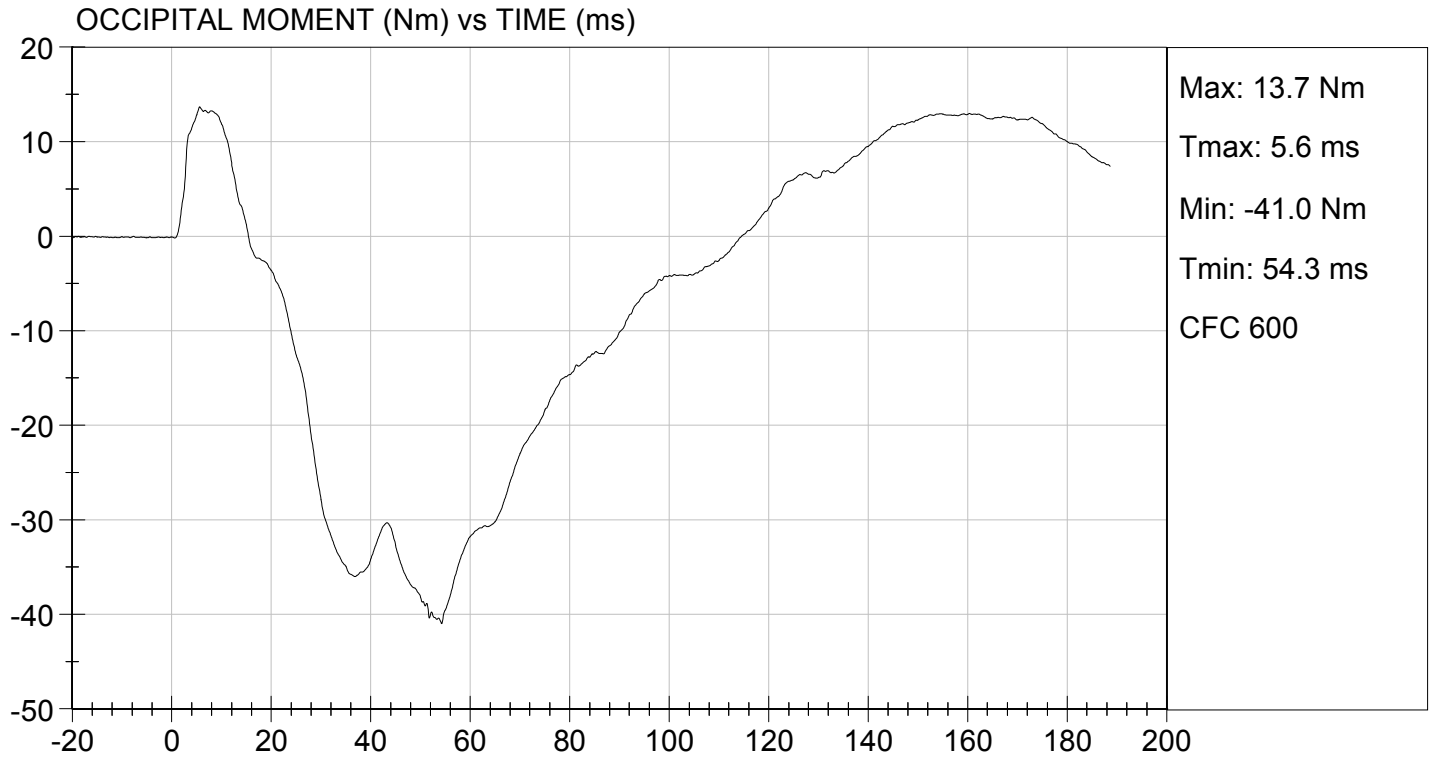
Maxime Chamberland  
Laboratory Technician

10/28/2014

Test Date

Jessica Hall  
Approved By





**MGA RESEARCH CORPORATION  
SHOULDER IMPACT TEST  
SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

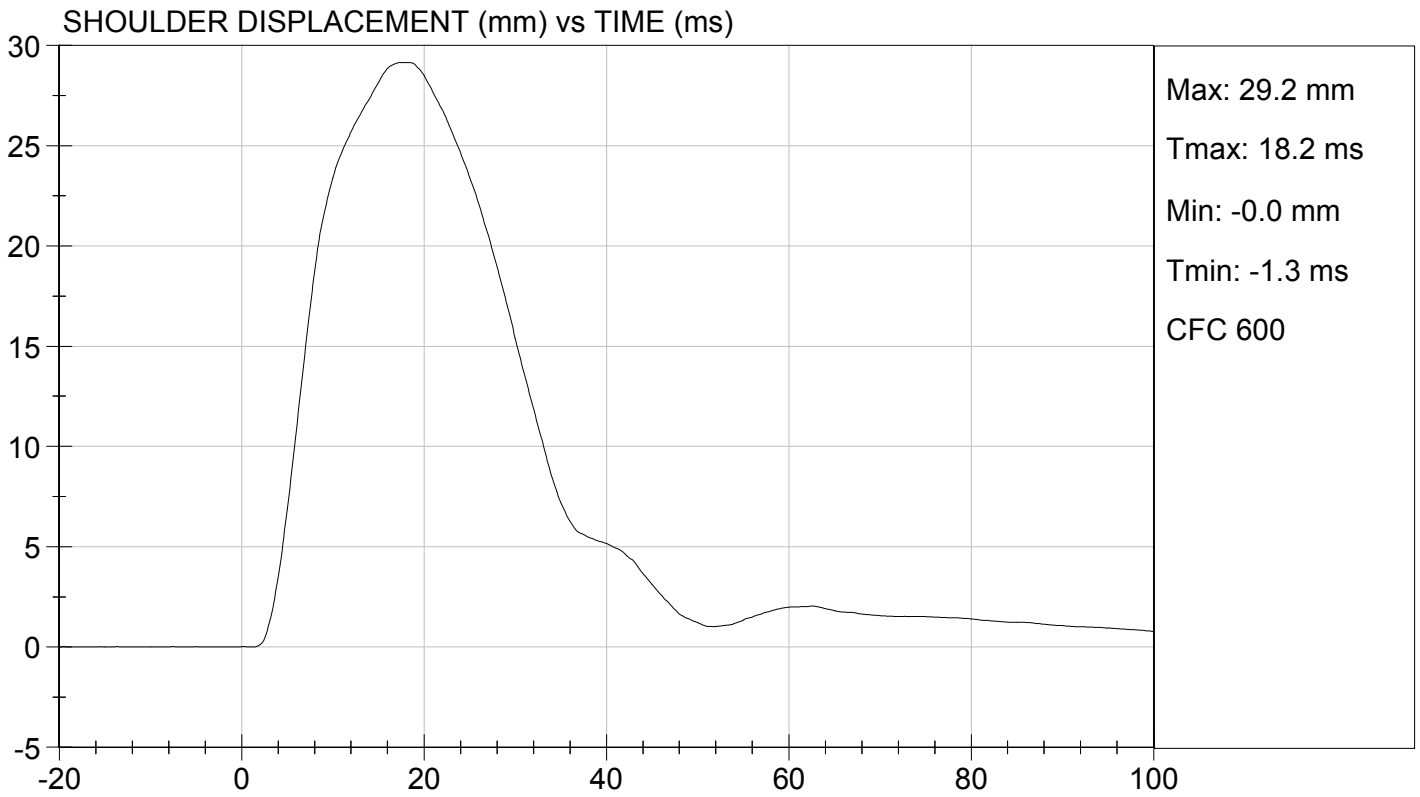
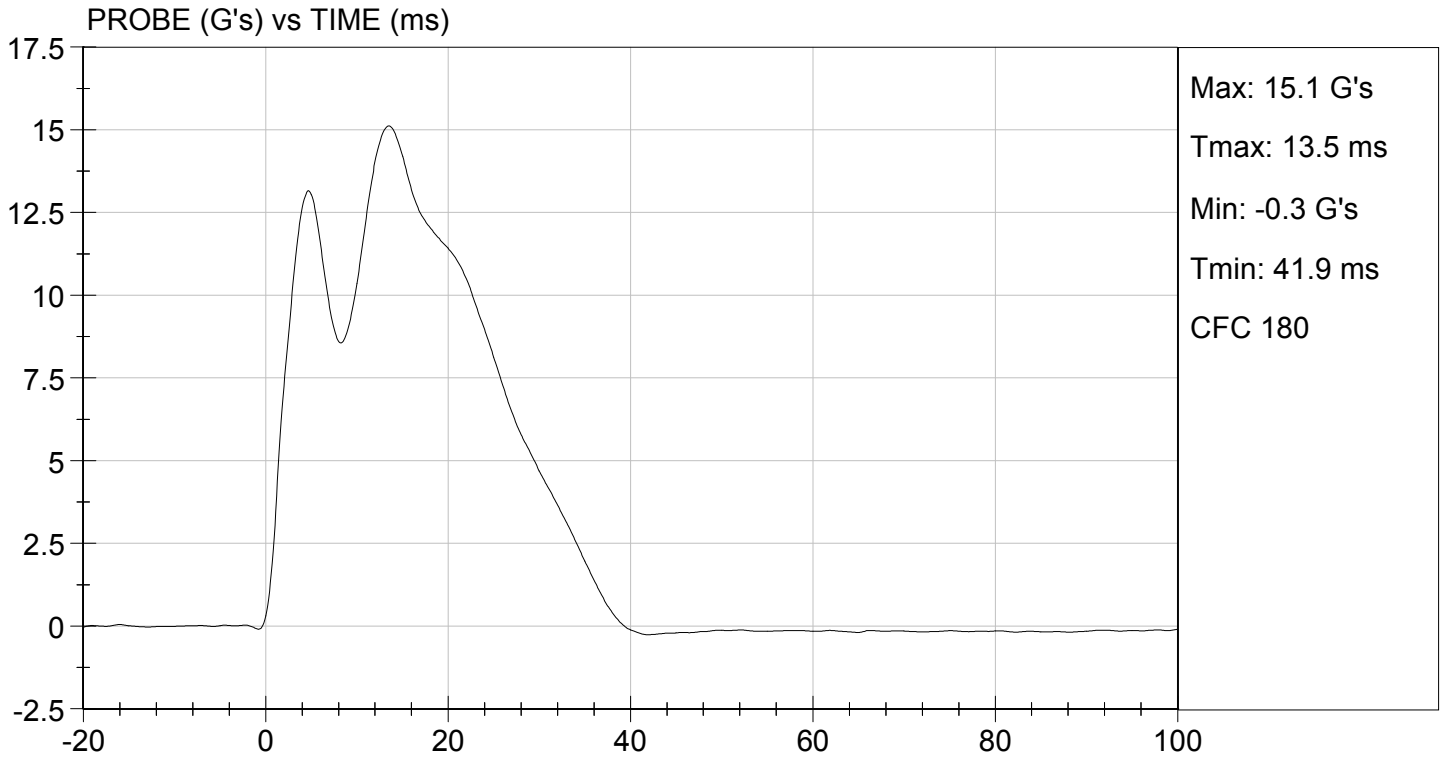
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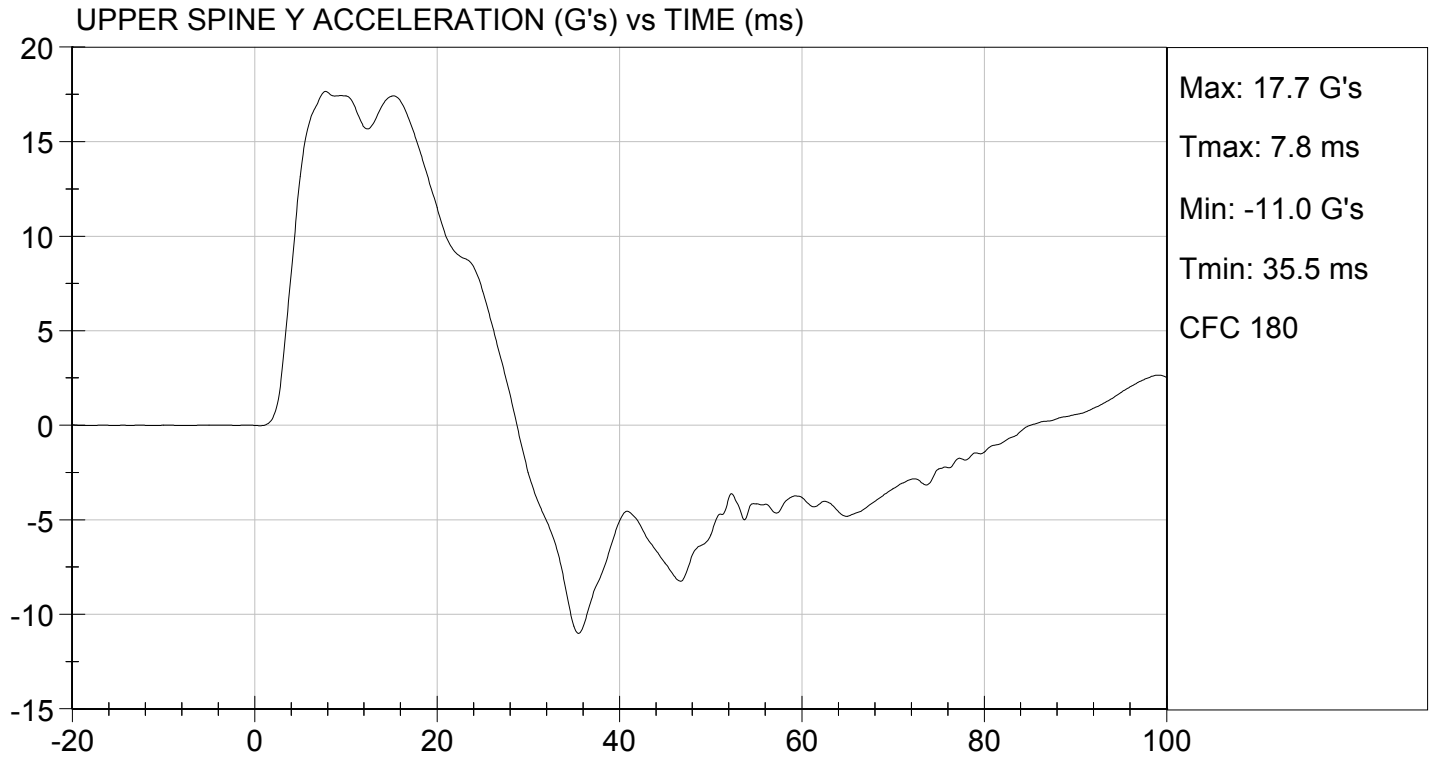
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	33	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	29	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	18	Pass
Overall Test Results				Pass

Maxime Chamberland  
Laboratory Technician

10/29/2014  
Test Date

Jessica Hall  
Approved By





**MGA RESEARCH CORPORATION  
THORAX (WITH ARM) IMPACT TEST  
SID-IIs BUILD LEVEL D DUMMY**

**ATD Serial No:** 306

**Test I.D.:** D143794

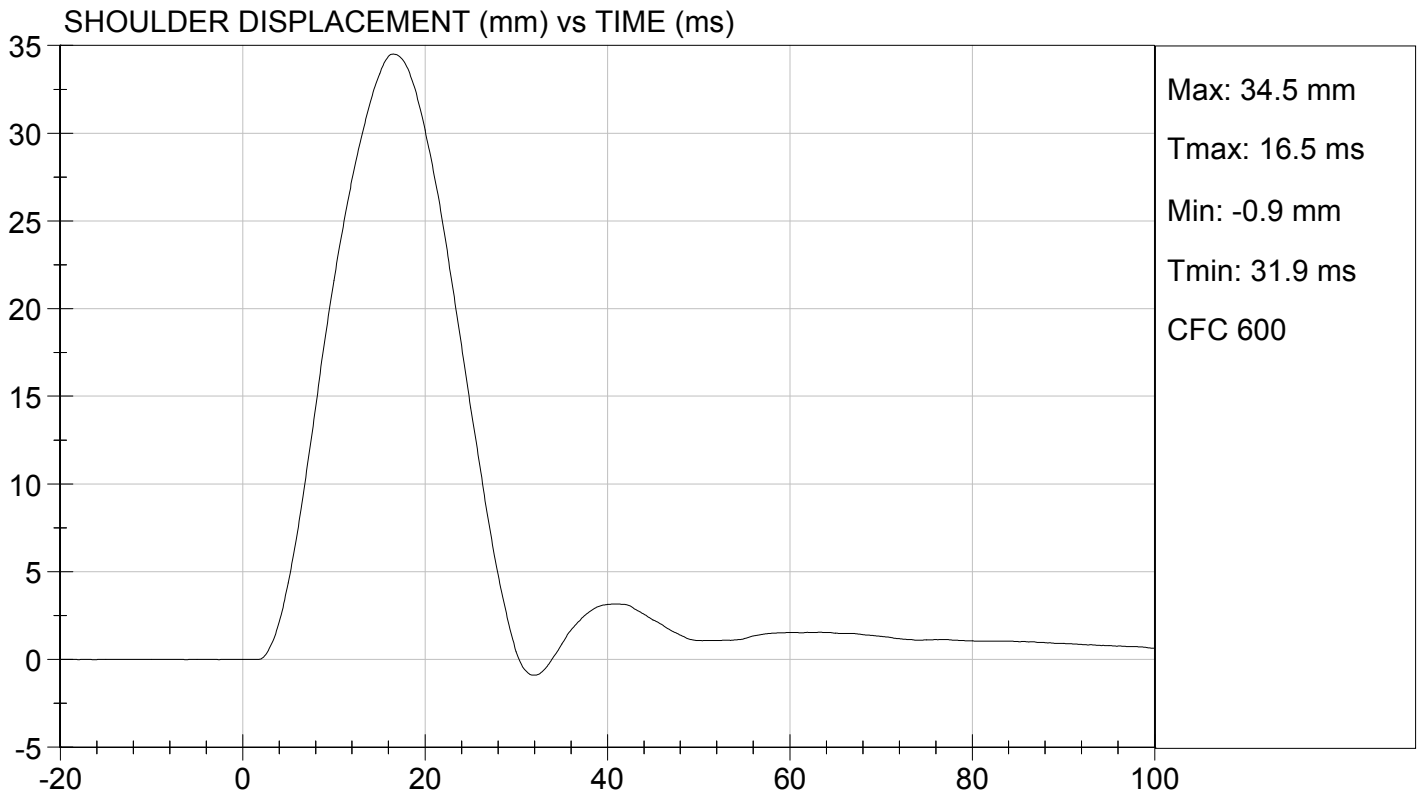
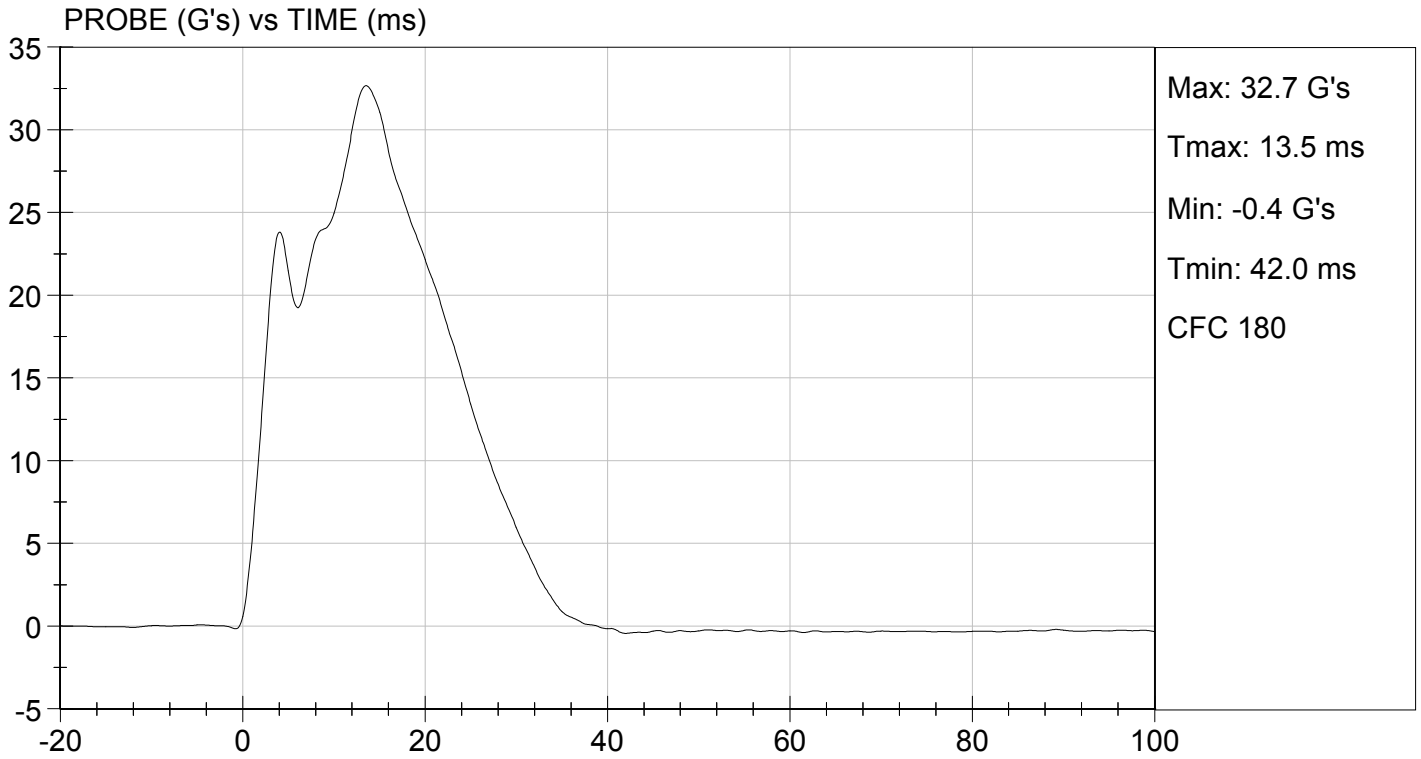
Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.3	Pass
Humidity	%	10 to 70	33	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	30 to 36	33	Pass
Shoulder Displacement	mm	31 to 40	35	Pass
Upper Rib Displacement	mm	25 to 32	27	Pass
Middle Rib Displacement	mm	30 to 36	31	Pass
Lower Rib Displacement	mm	32 to 38	34	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	38	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	32	Pass
			<b>Overall Test Results</b>	<b>Pass</b>

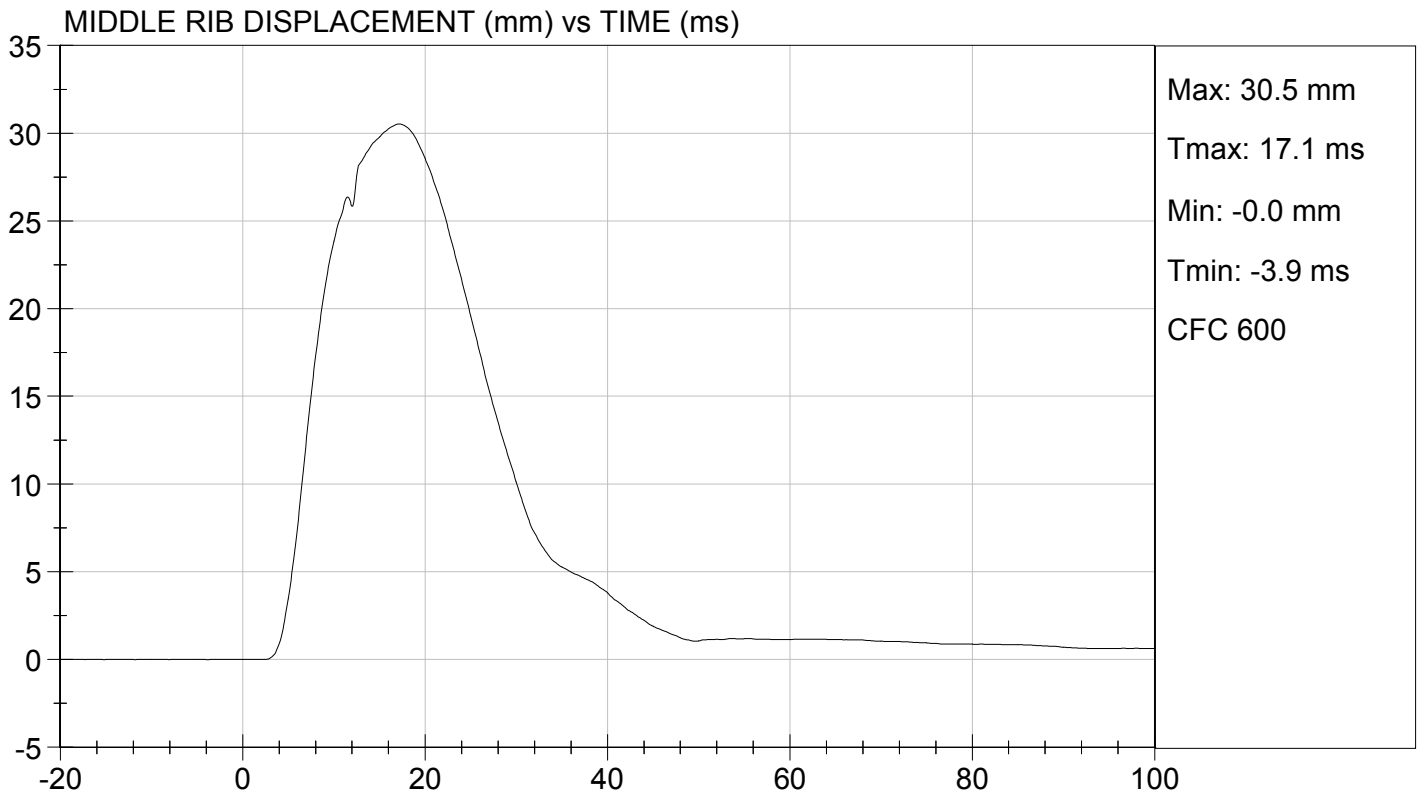
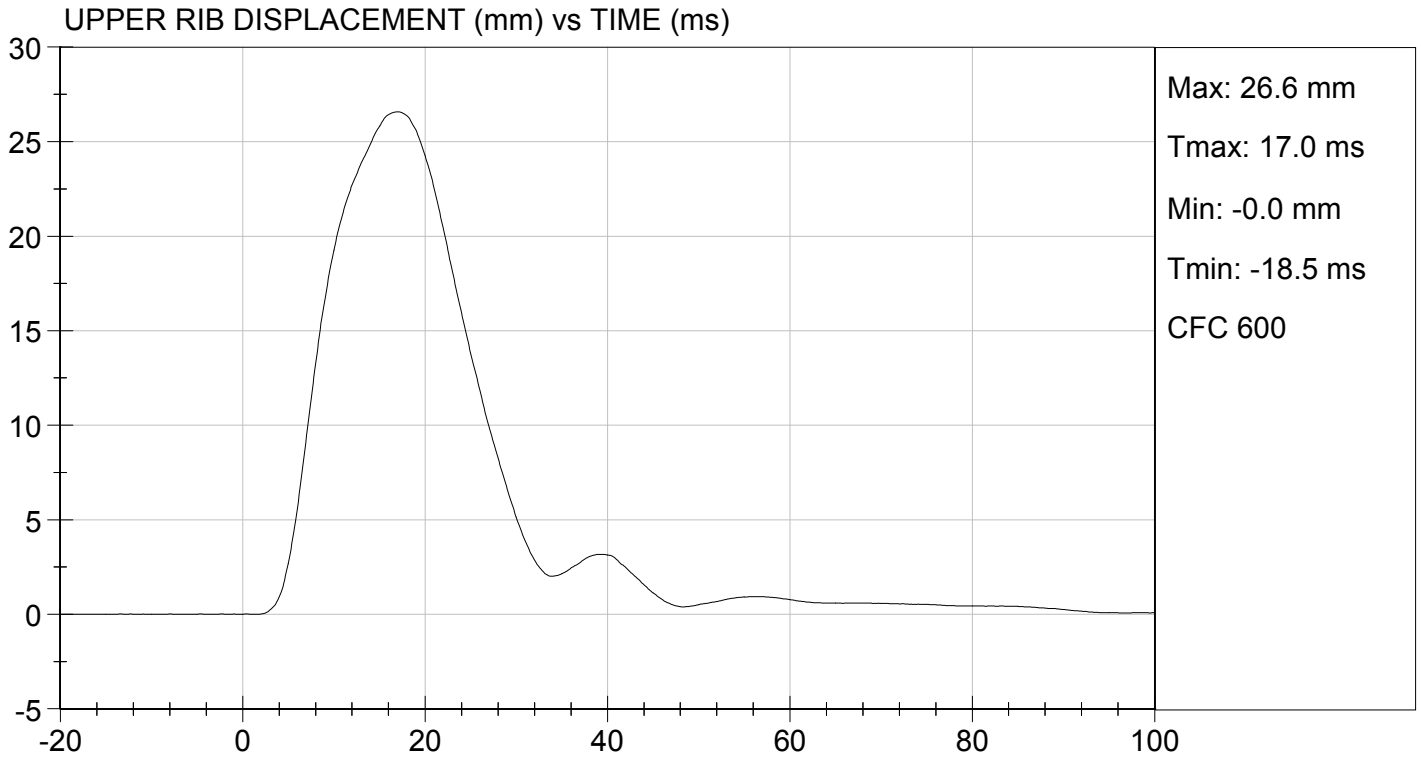
*David Schoedel*  
Laboratory Technician

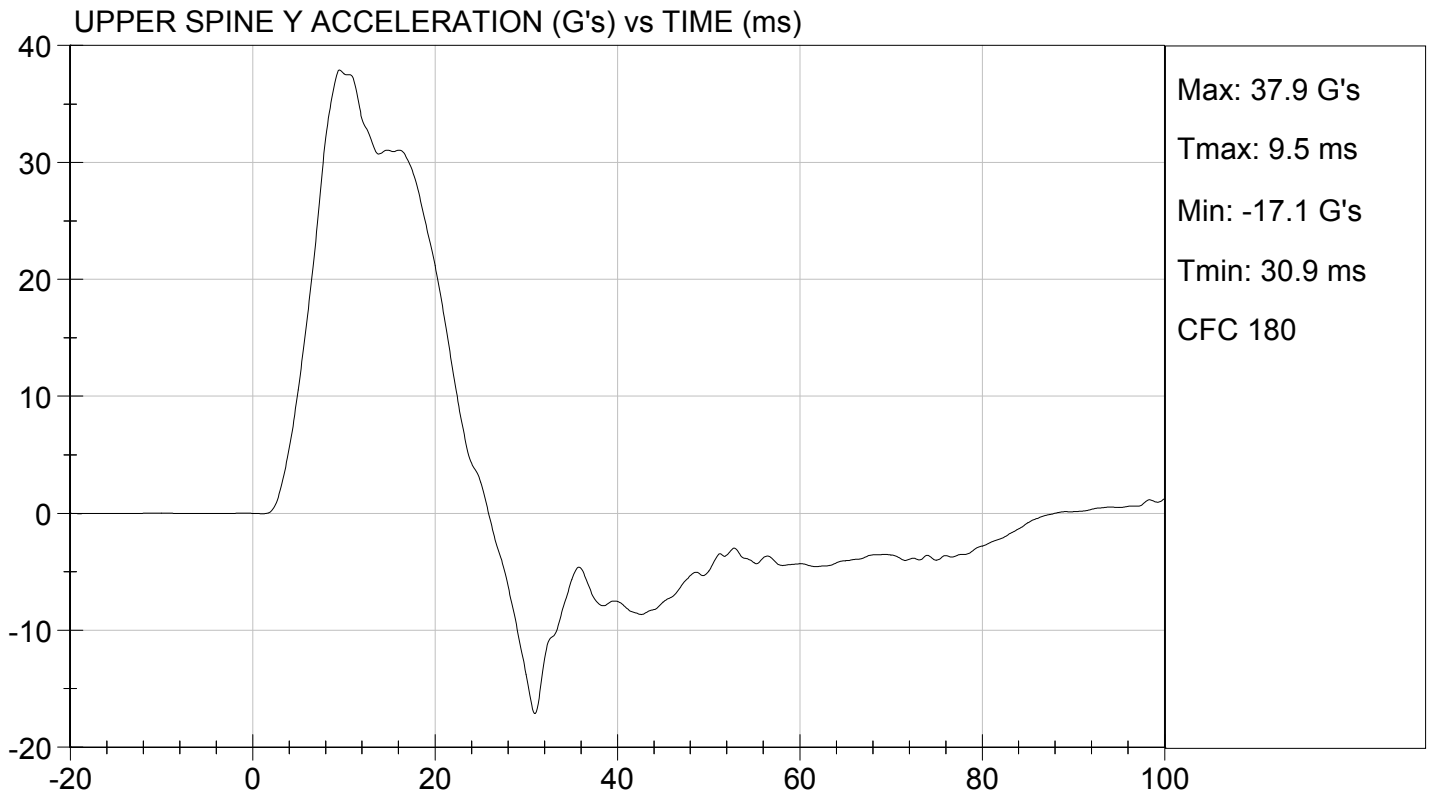
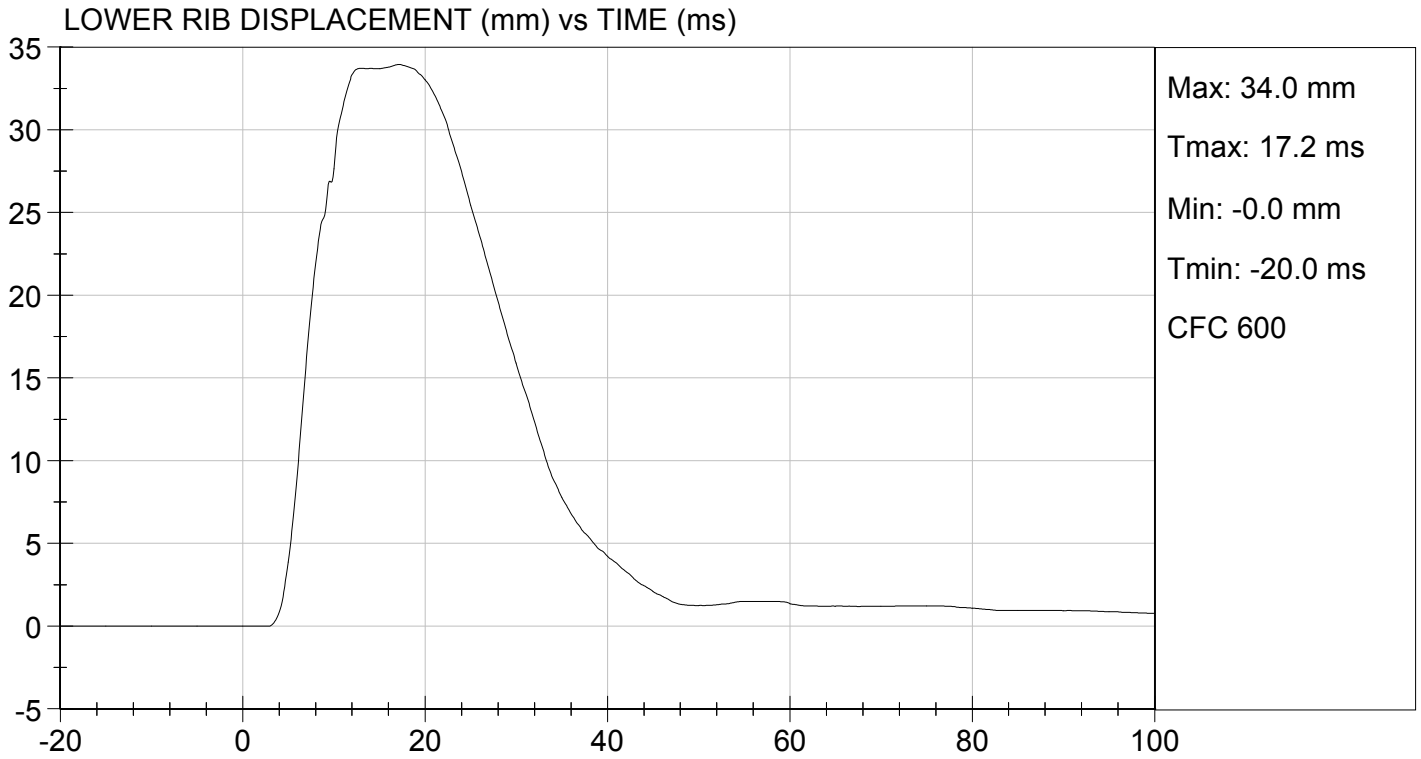
10/29/2014

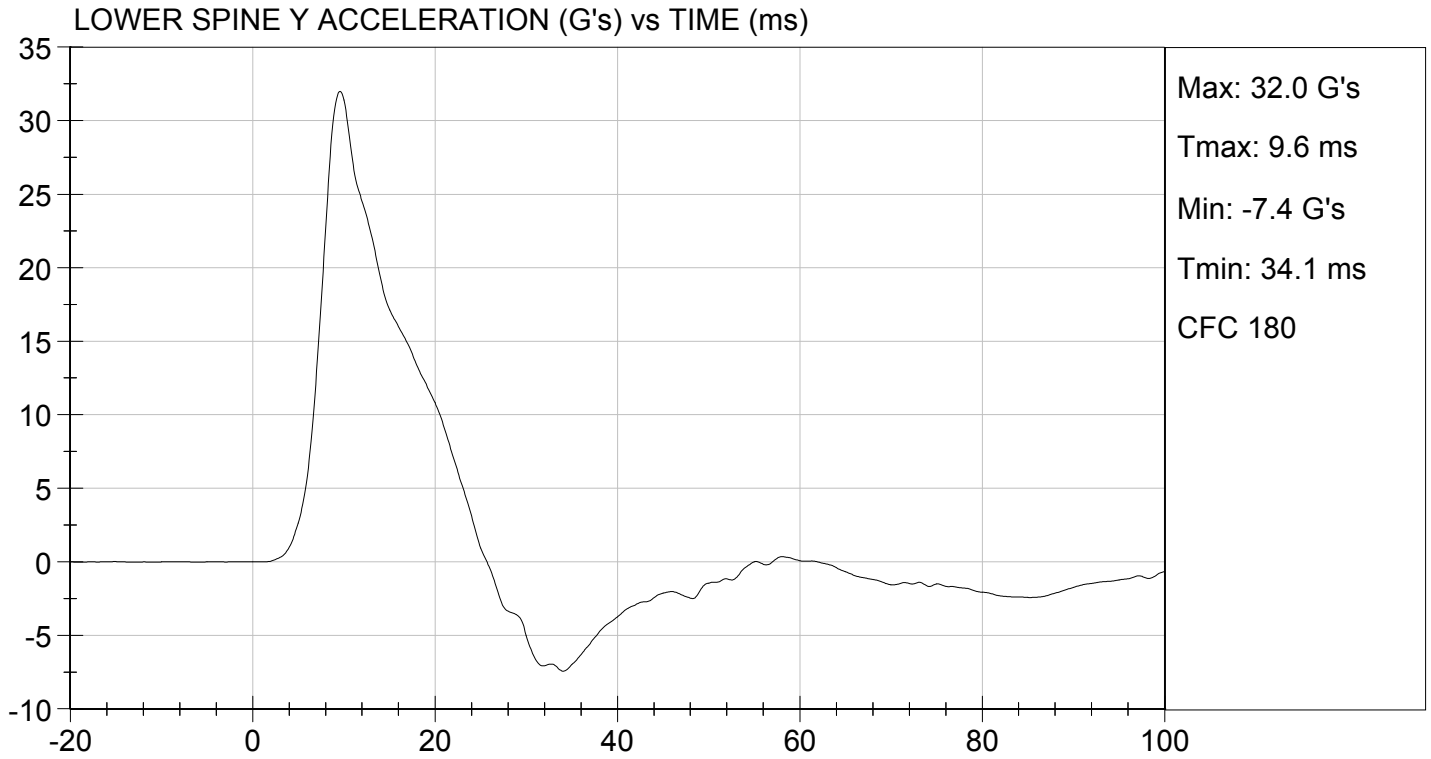
Test Date

*Jessica Hall*  
Approved By









**MGA RESEARCH CORPORATION**  
**THORAX (WITHOUT ARM) IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

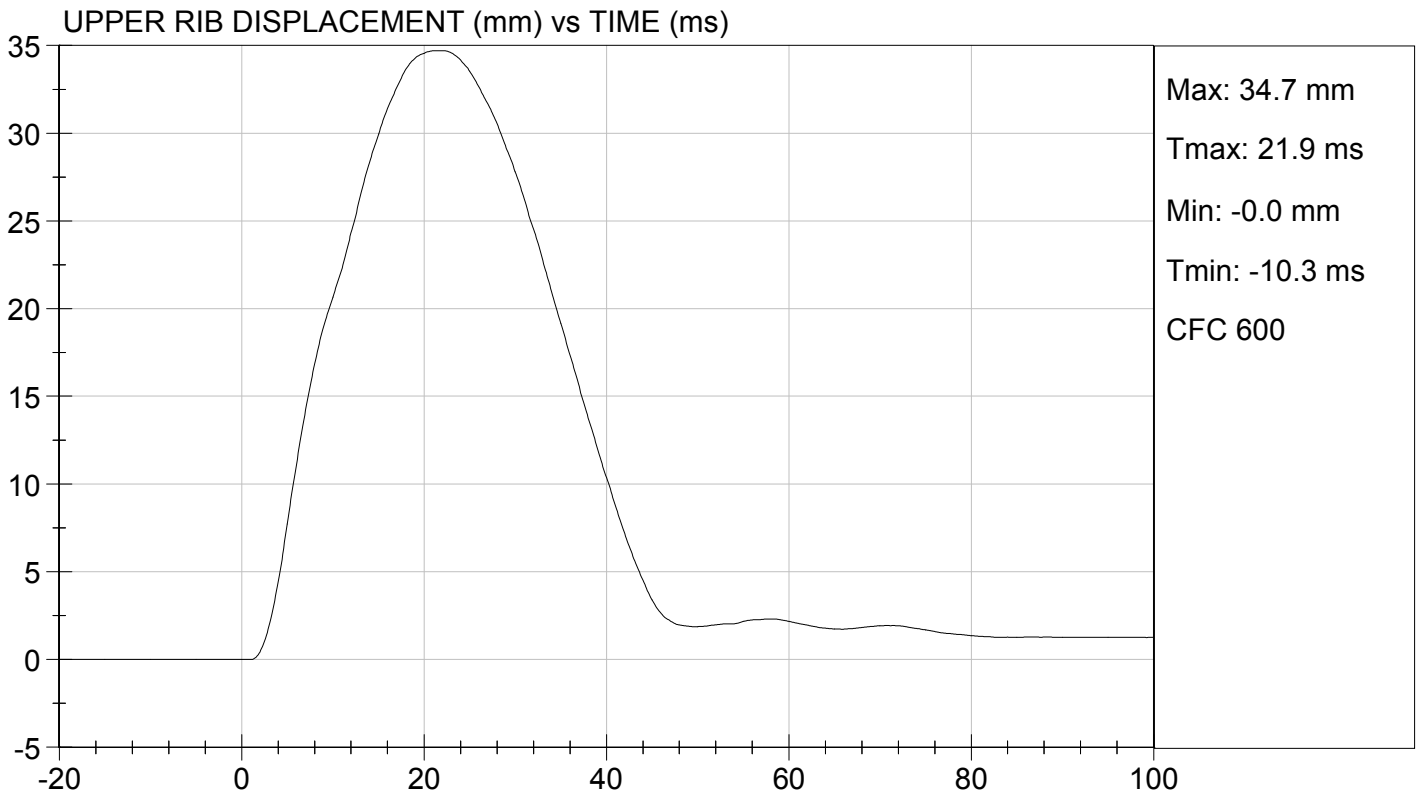
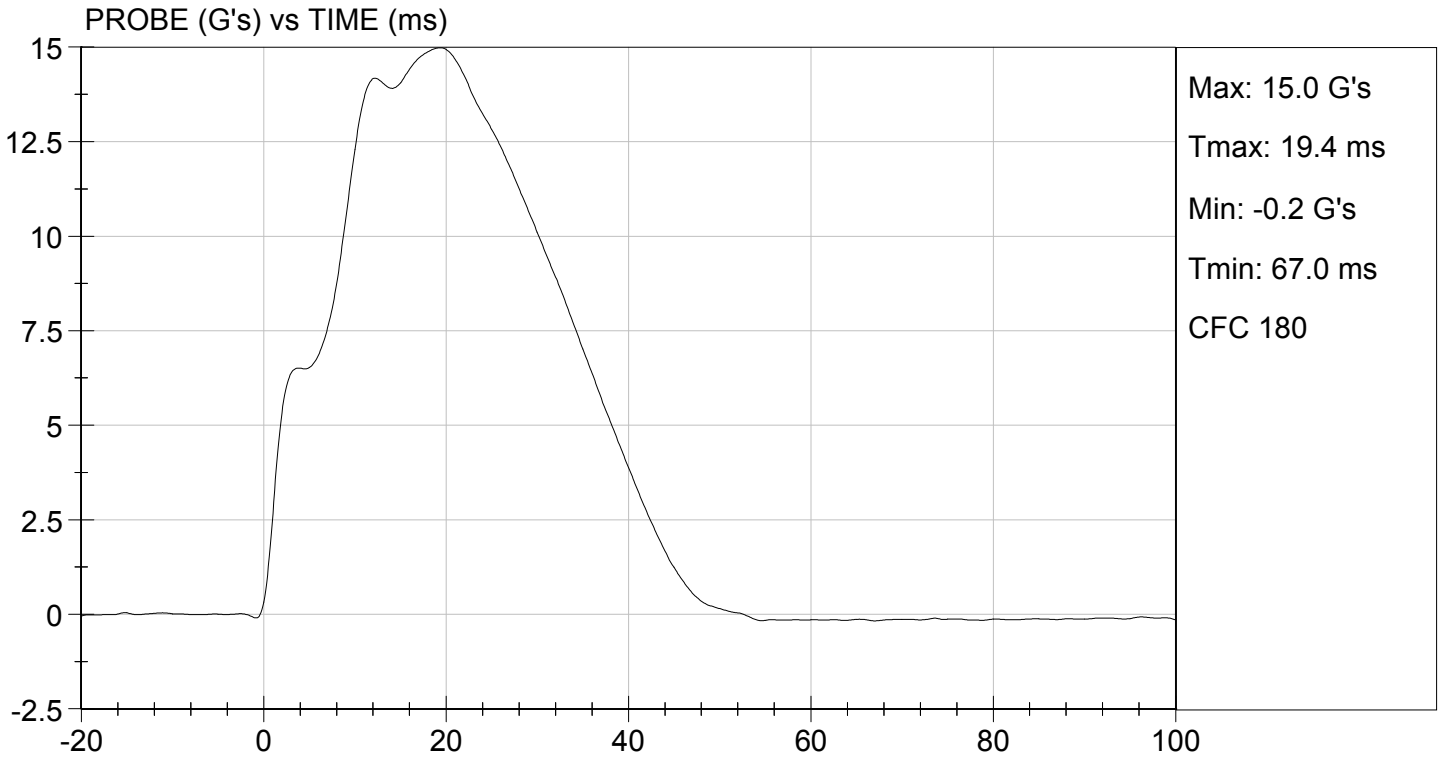
Test I.D: D143795

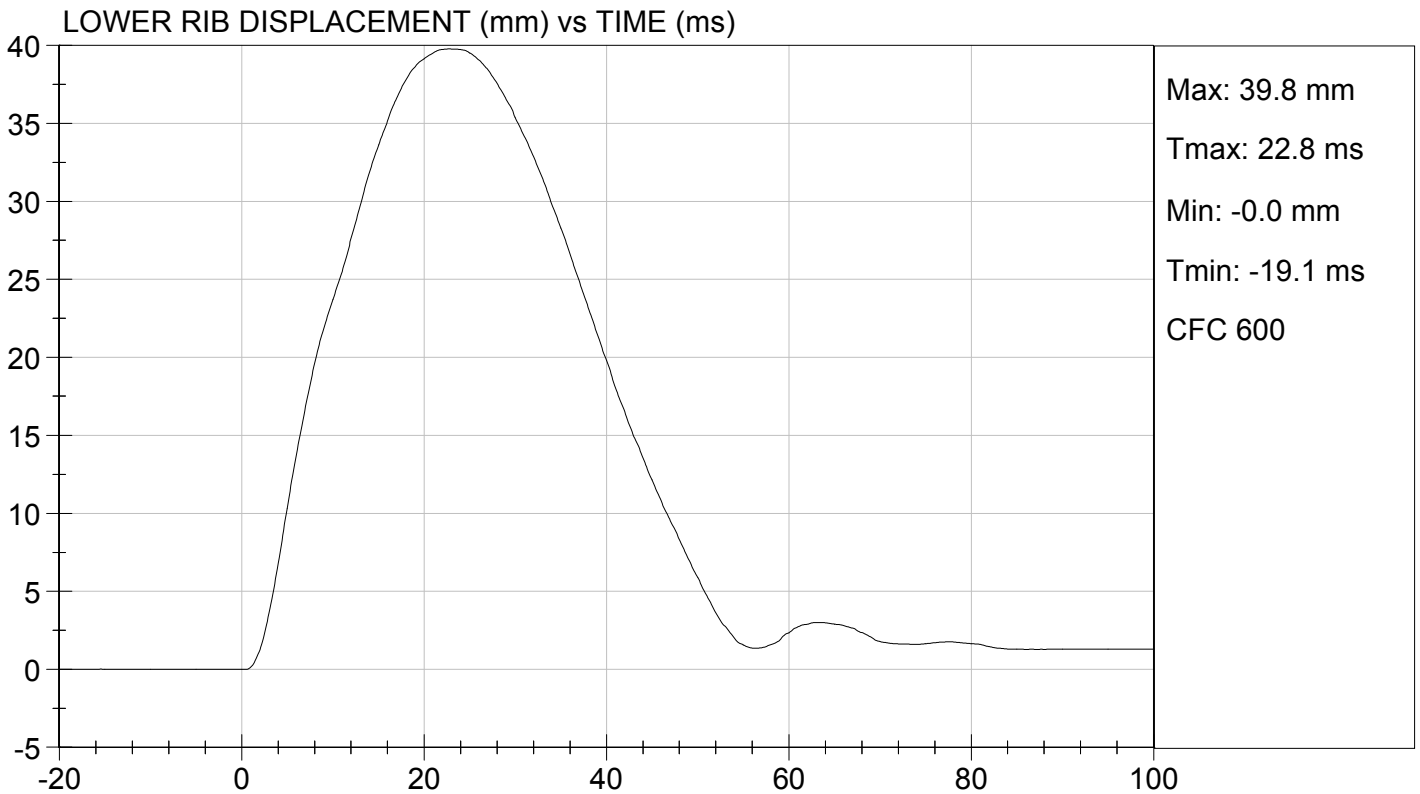
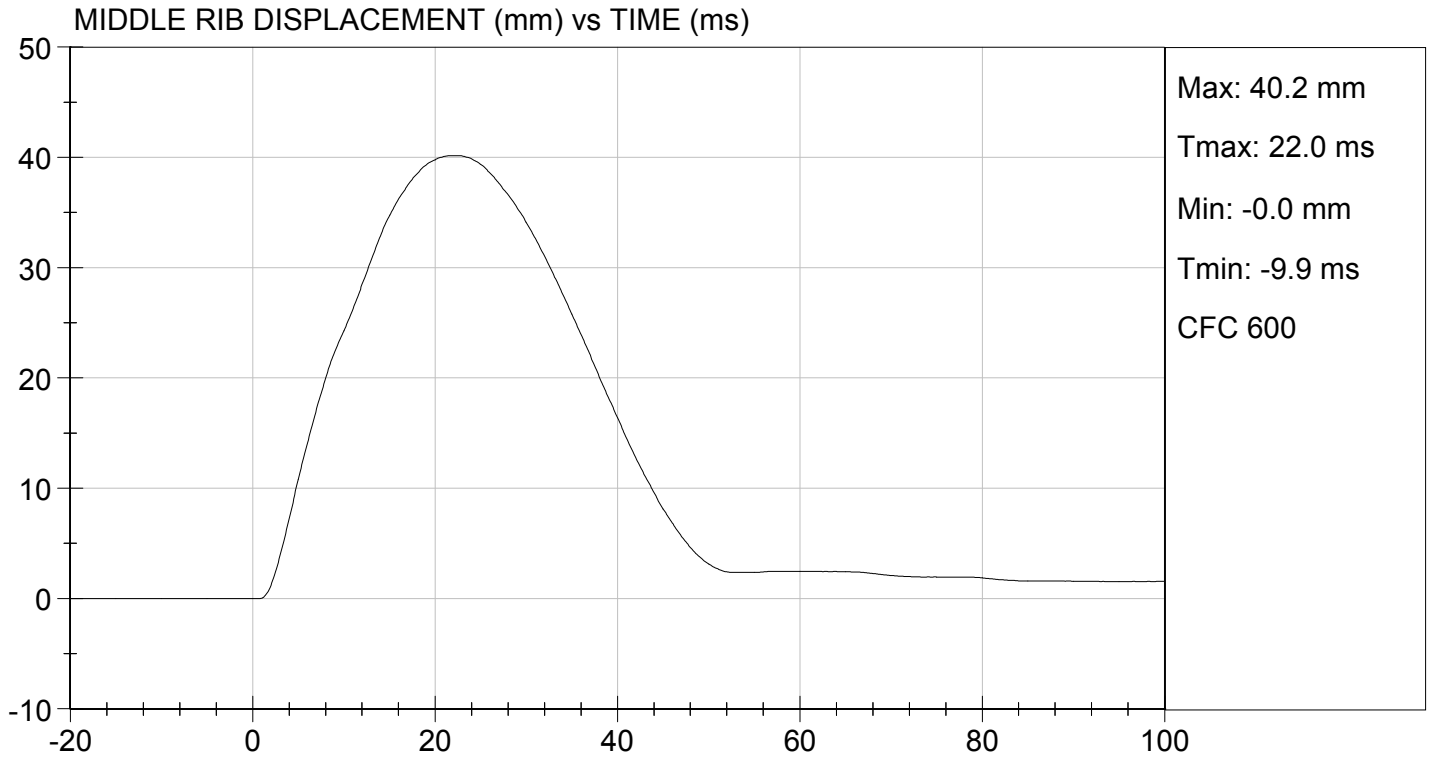
Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.3	Pass
Humidity	%	10 to 70	33	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	35	Pass
Middle Rib Displacement	mm	39 to 45	40	Pass
Lower Rib Displacement	mm	35 to 43	40	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	15	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	8	Pass
<b>Overall Test Results</b>				<b>Pass</b>

*David Schoedel*  
 Laboratory Technician

10/29/2014  
 Test Date

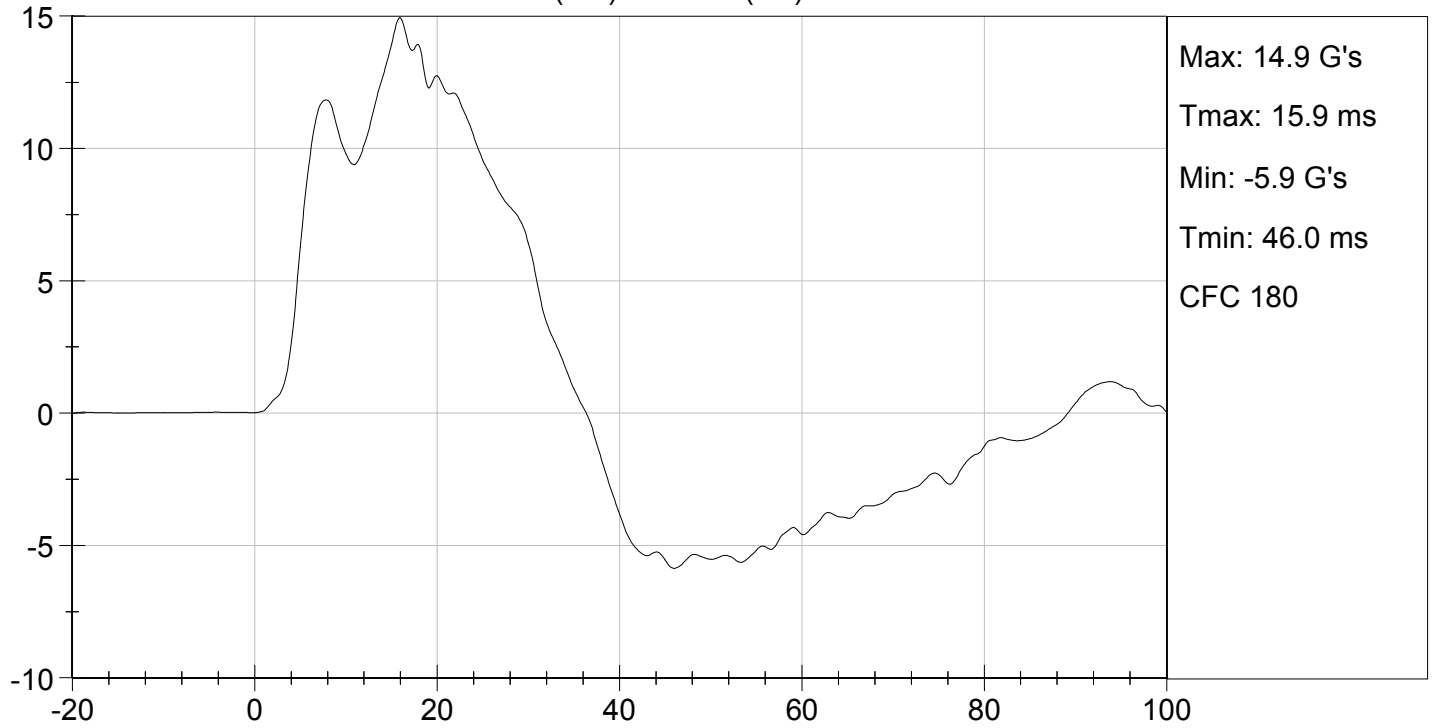
*Jessica Hall*  
 Approved By



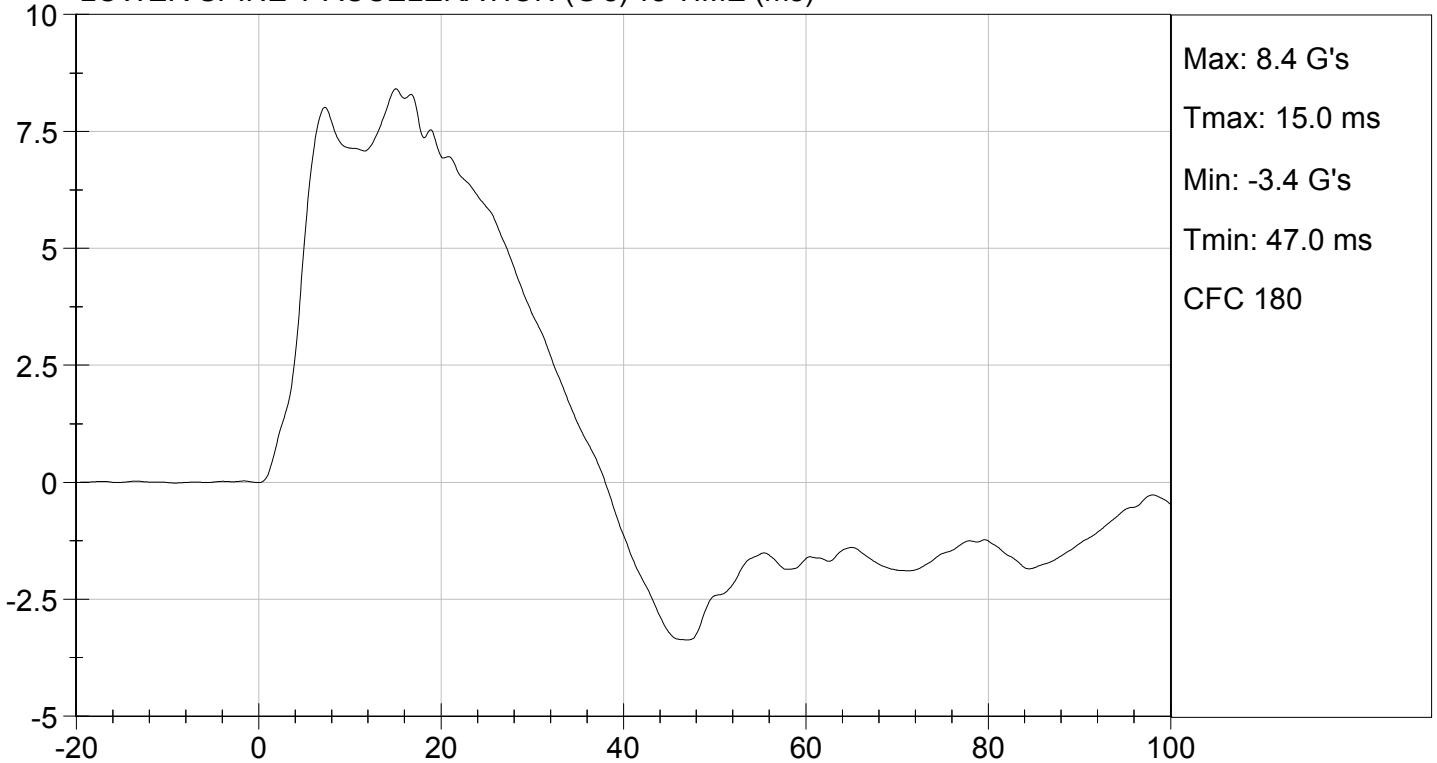




UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)



LOWER SPINE Y ACCELERATION (G's) vs TIME (ms)



**MGA RESEARCH CORPORATION**  
**ABDOMINAL IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

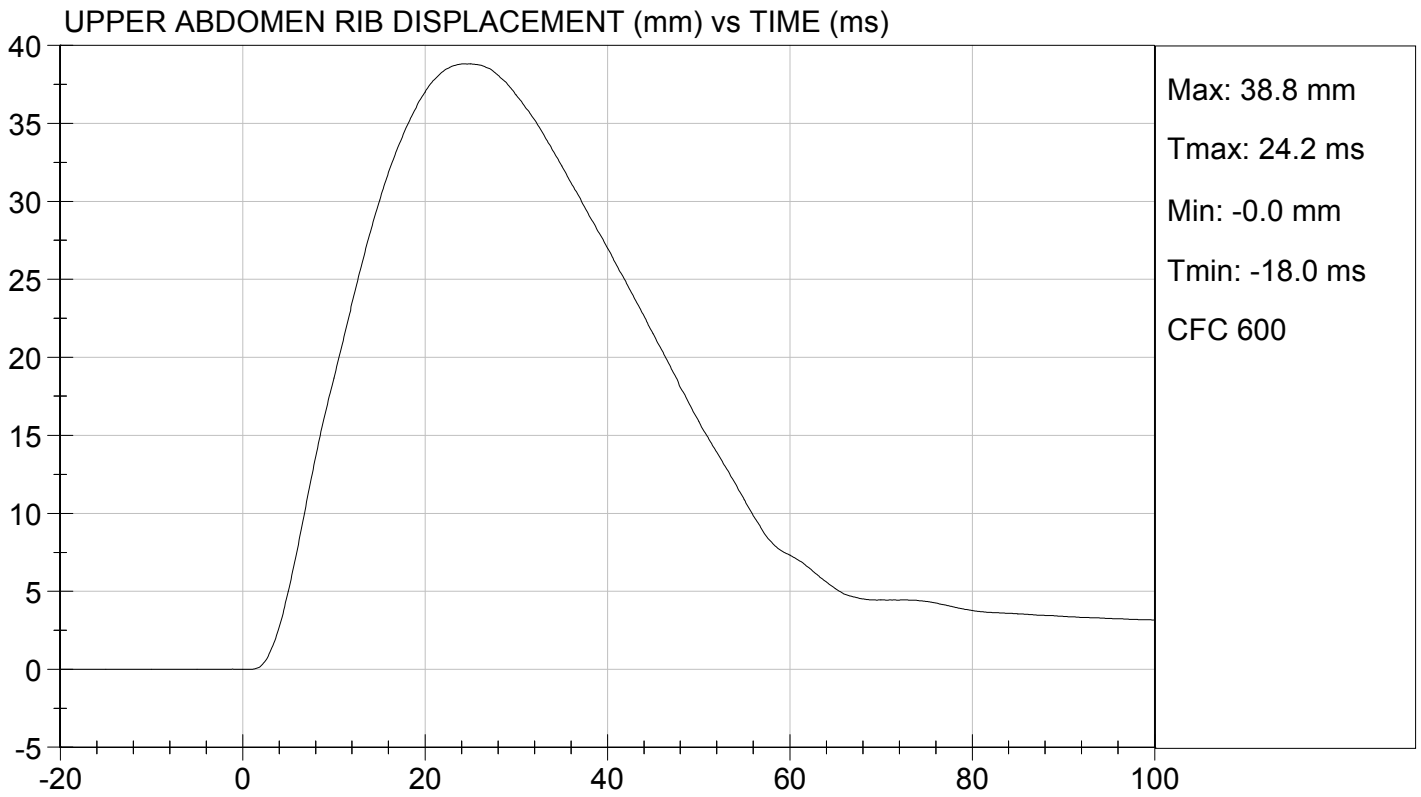
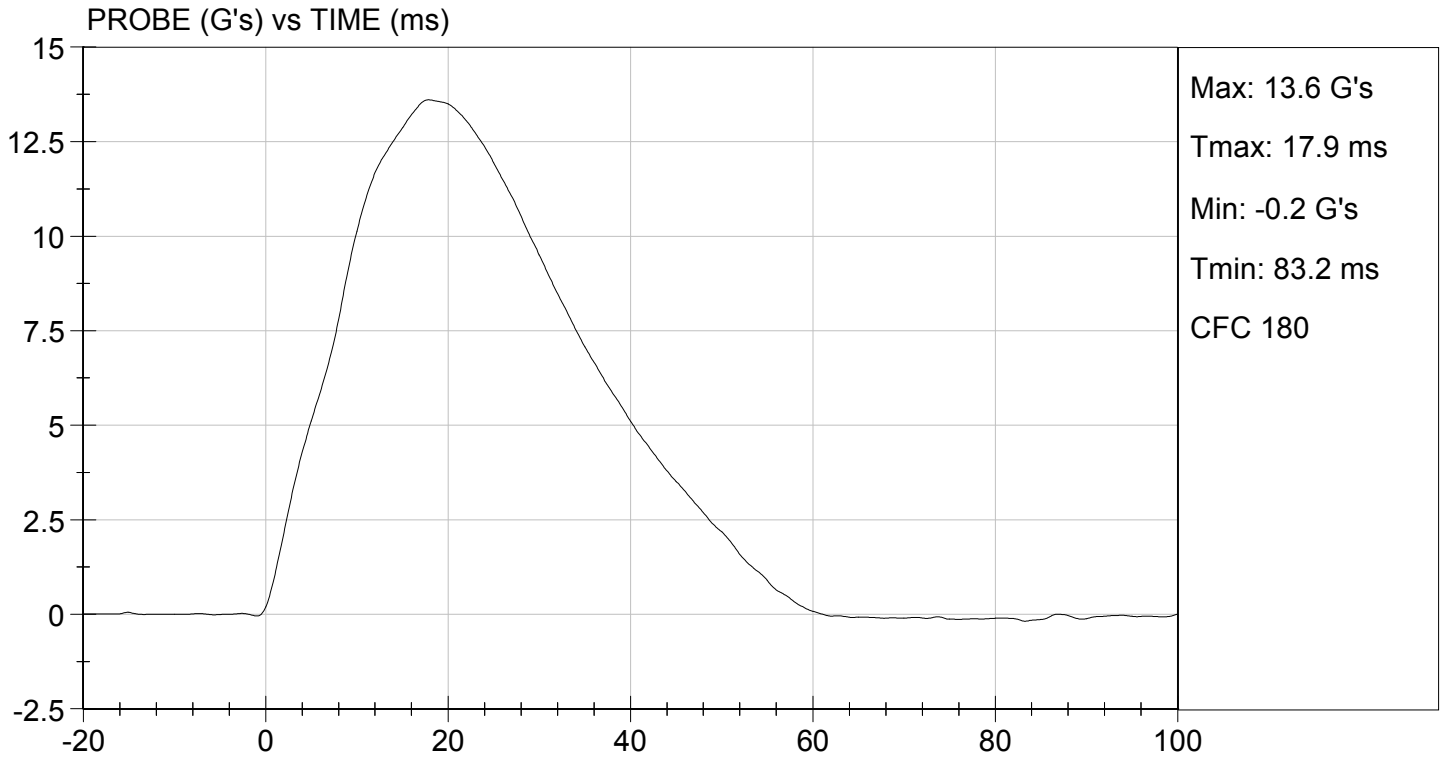
Test I.D: D143796

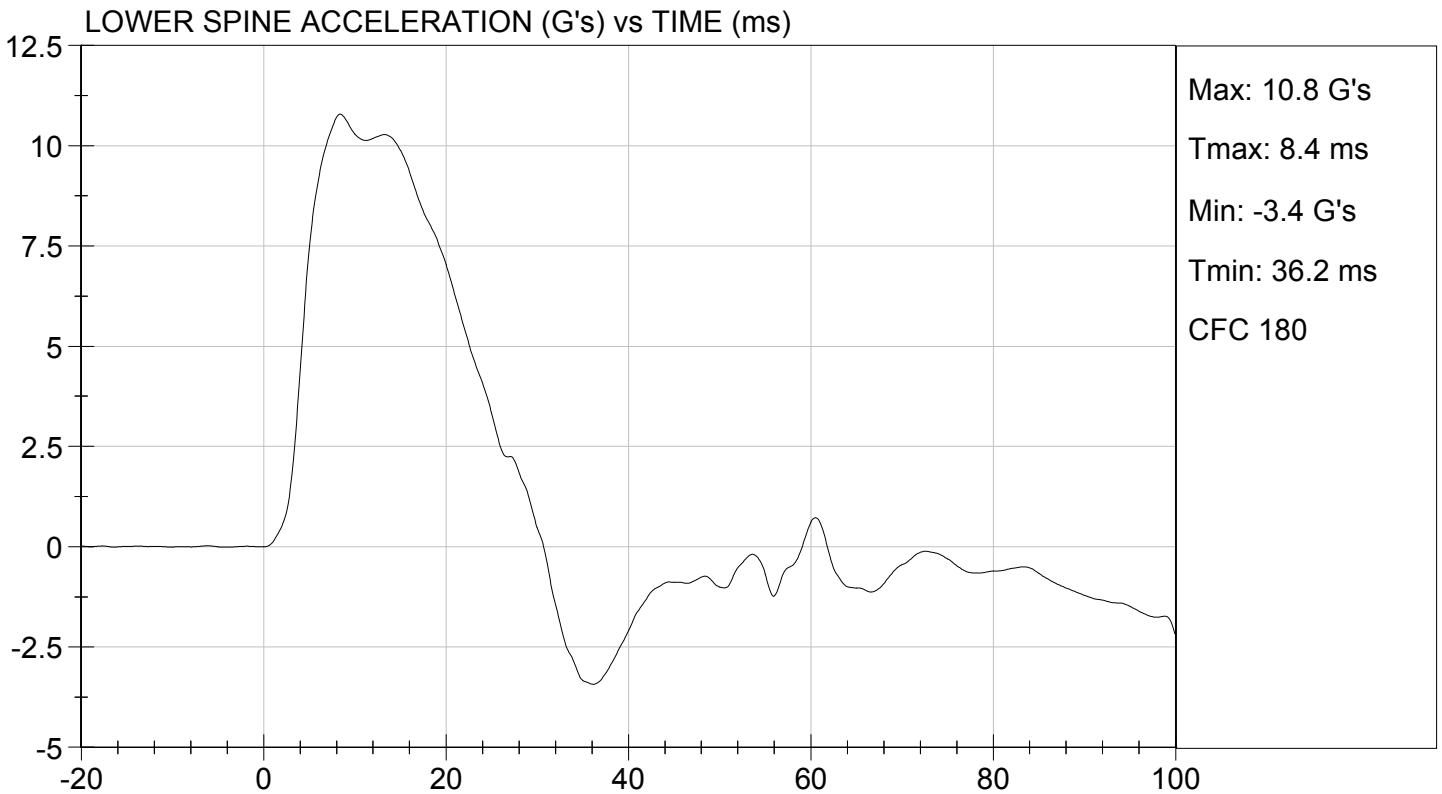
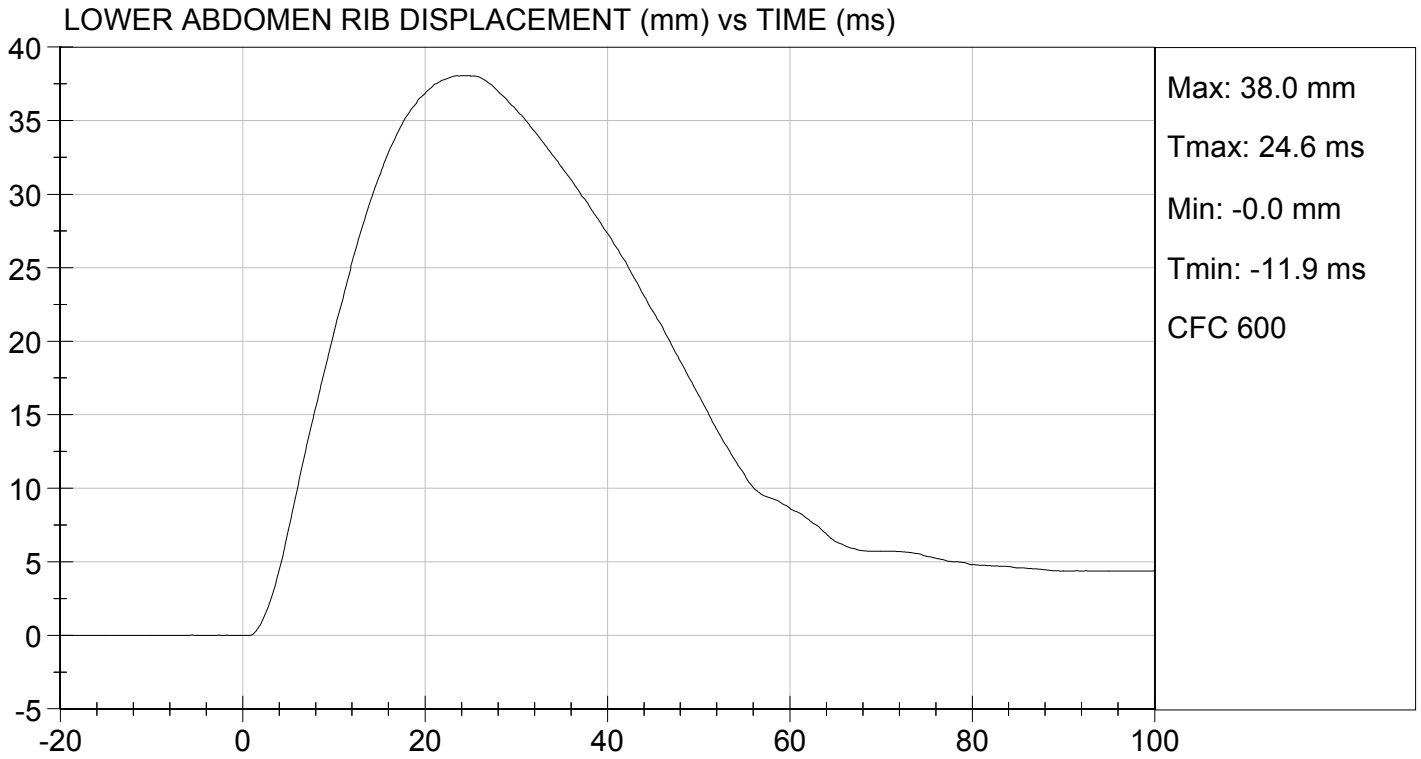
Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.3	Pass
Humidity	%	10 to 70	33	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	12 to 16	14	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	39	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	38	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
Overall Test Results				Pass

*David Schoedel*  
 Laboratory Technician

10/29/2014  
 Test Date

*Jessica Hall*  
 Approved By





**MGA RESEARCH CORPORATION**  
**PELVIS IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

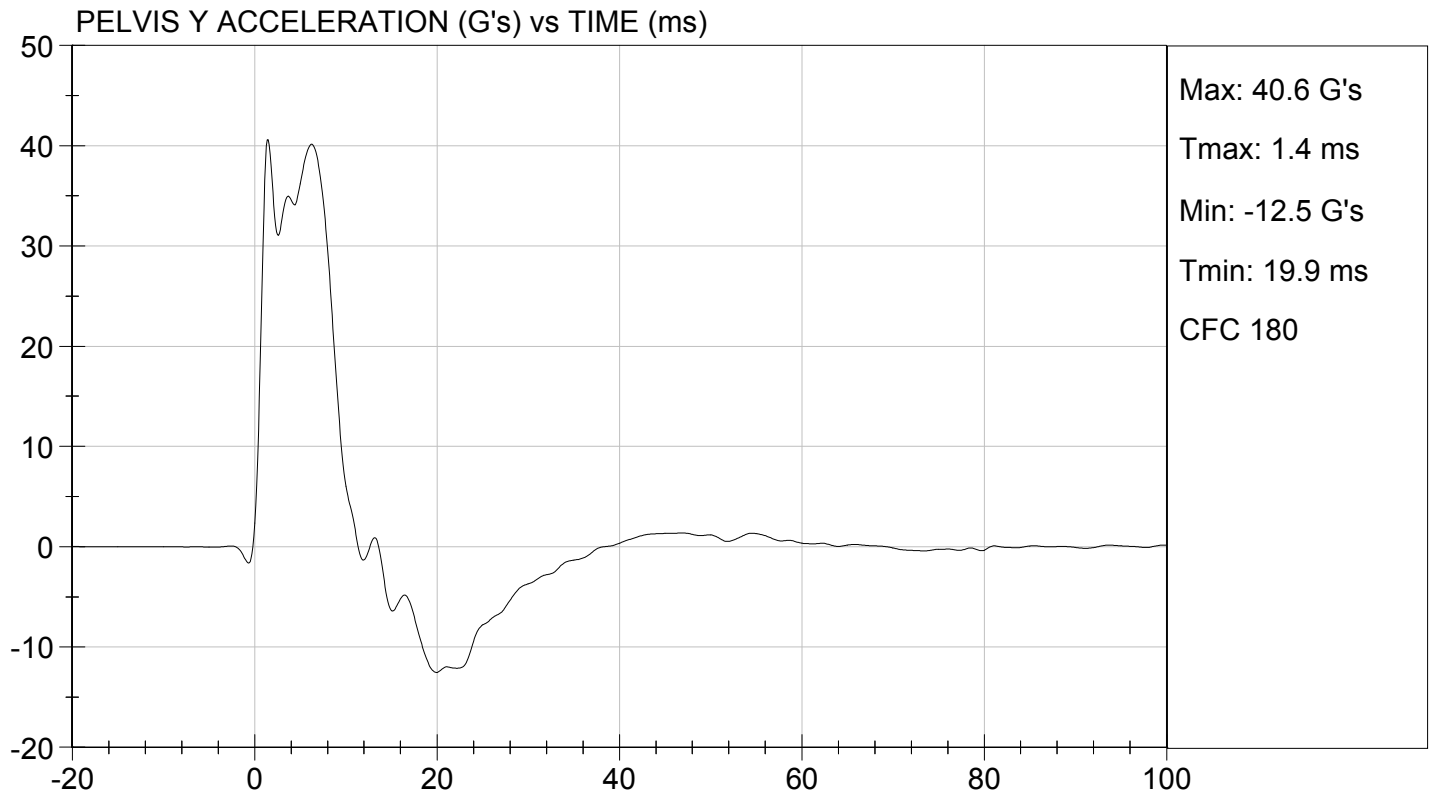
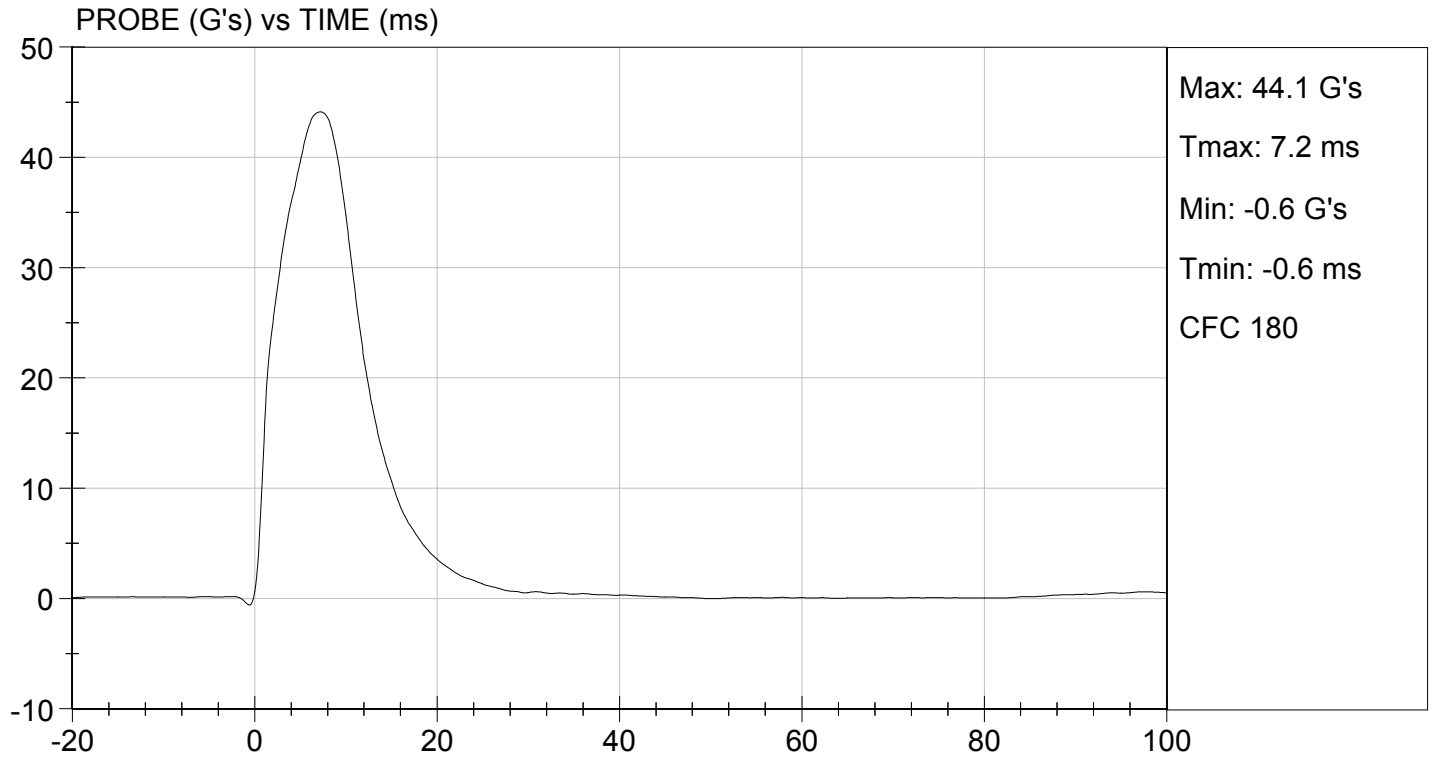
Test I.D: D143797

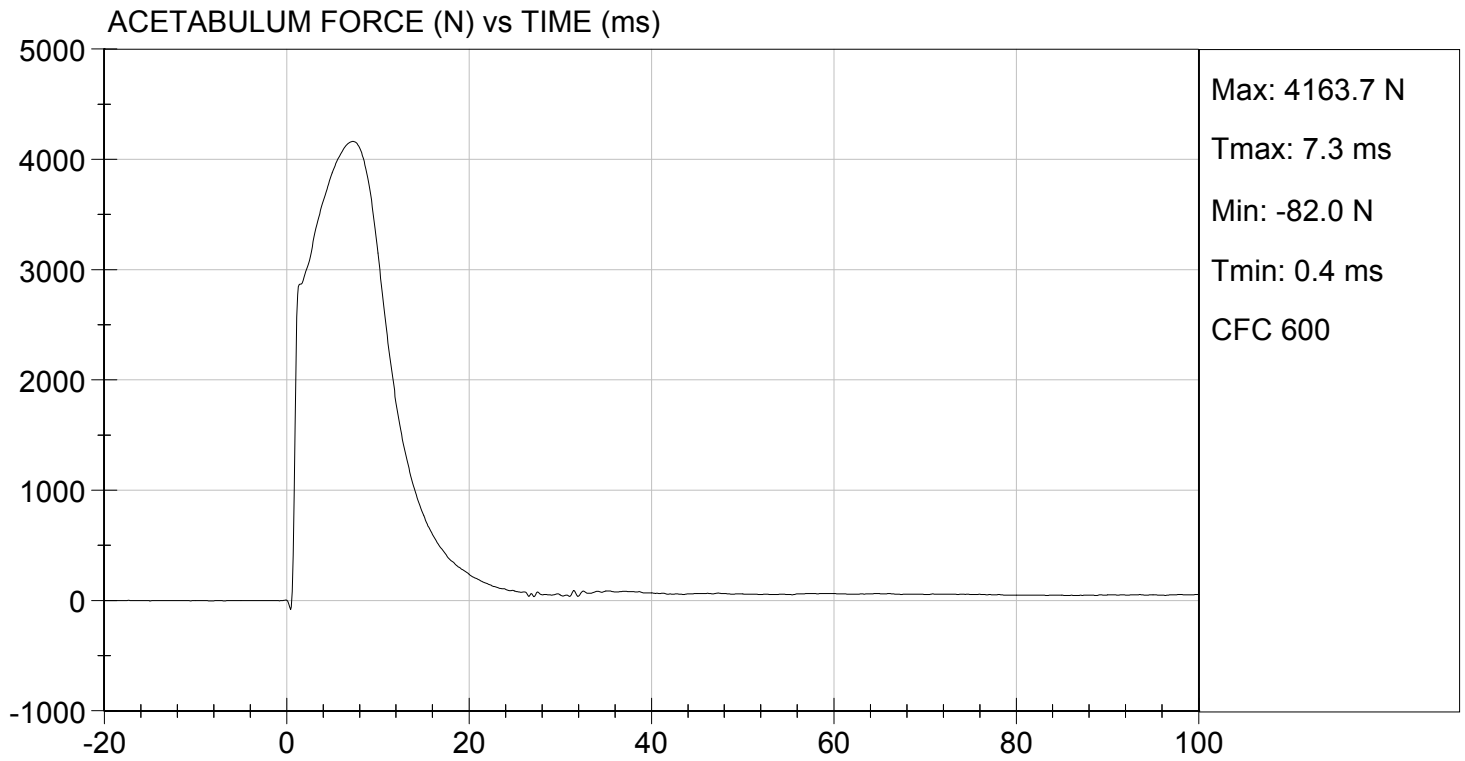
Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.3	Pass
Humidity	%	10 to 70	33	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	38 to 47	44	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	40	Pass
Peak Acetabulum Force	N	3600 to 4300	4,164	Pass
Overall Test Results				Pass

David Schoedel  
 Laboratory Technician

10/29/2014  
 Test Date

Jessica Hall  
 Approved By





**MGA RESEARCH CORPORATION**  
**ILIAC IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 306

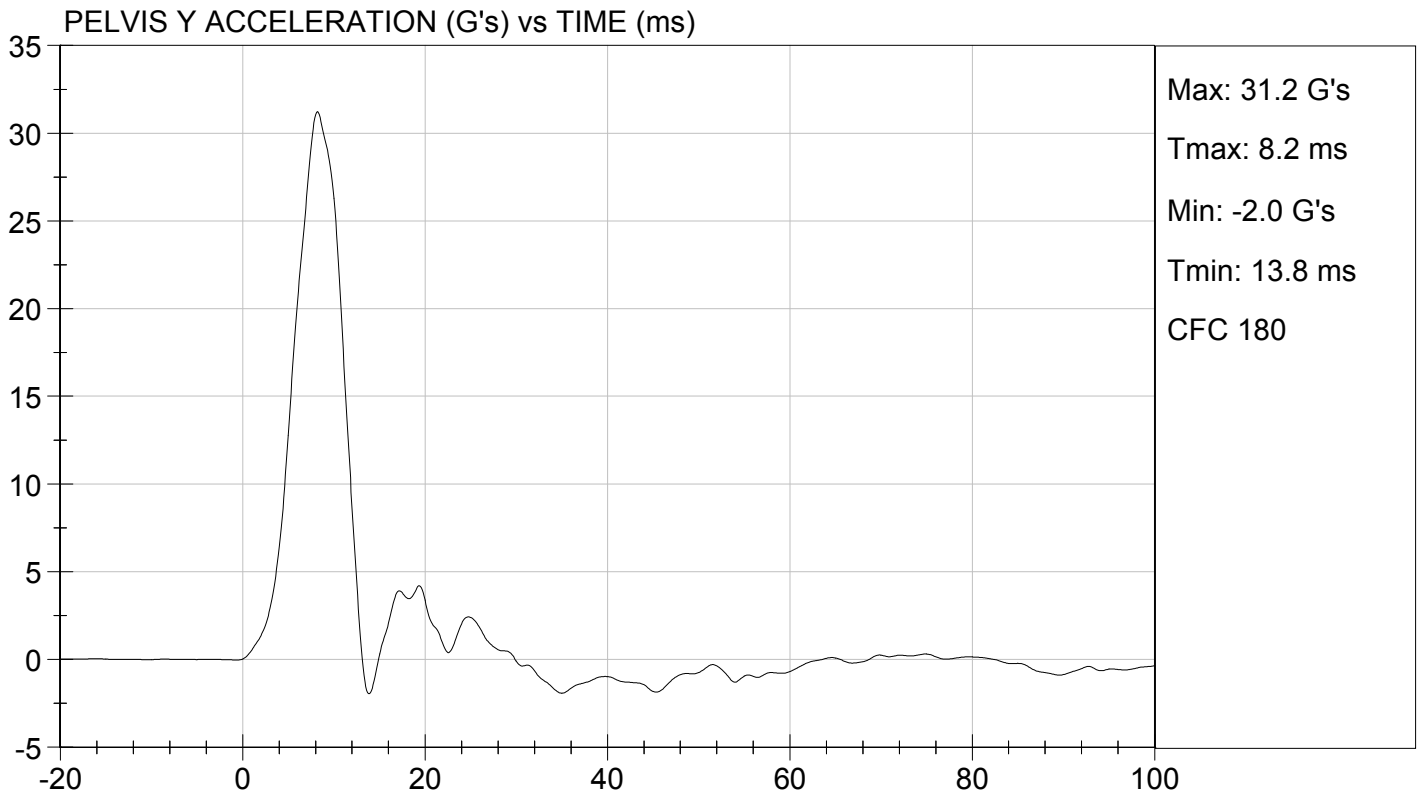
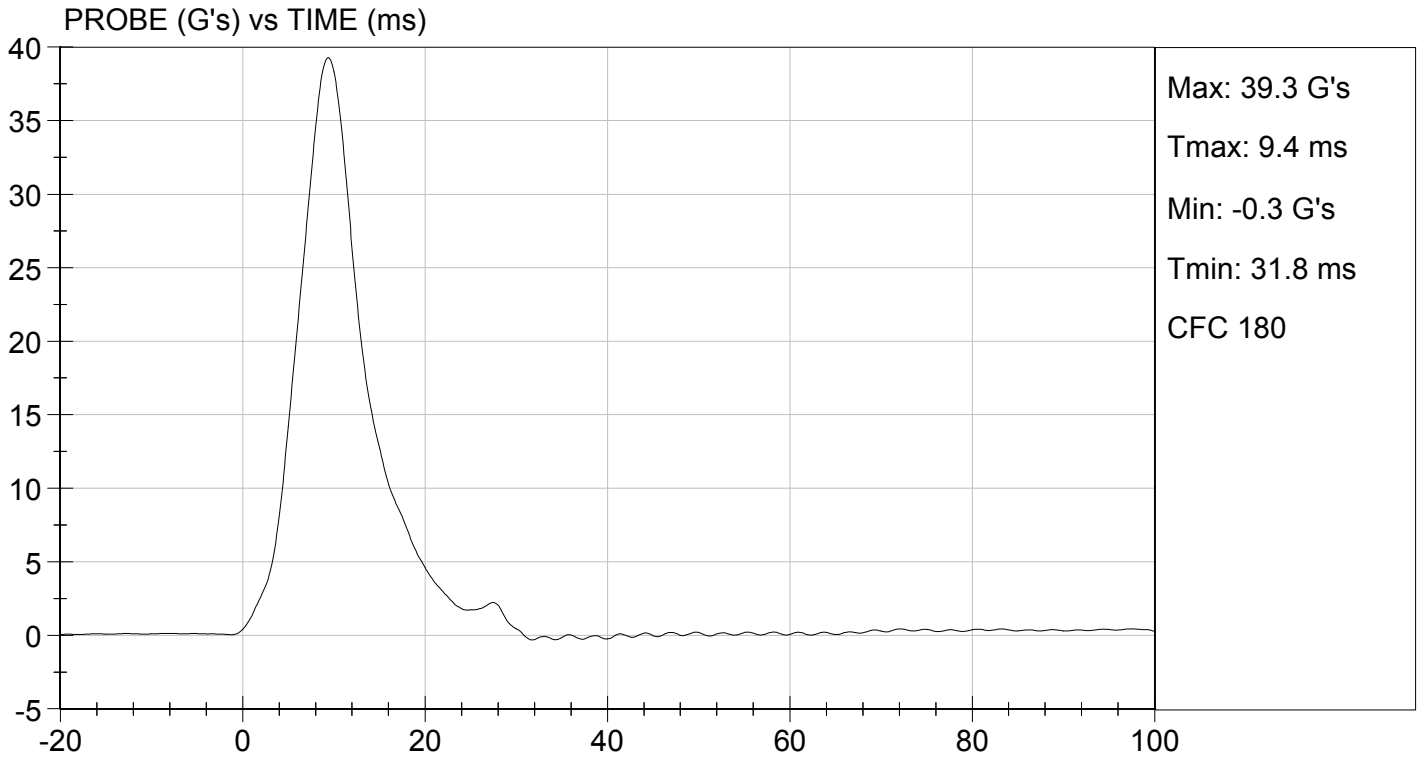
Test I.D: D143798

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.3	Pass
Humidity	%	10 to 70	33	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	36 to 45	39	Pass
Pelvis Y Acceleration	G's	28 to 39	31	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,605	Pass
Overall Test Results				Pass

*David Schoedel*  
 Laboratory Technician

10/29/2014  
 Test Date

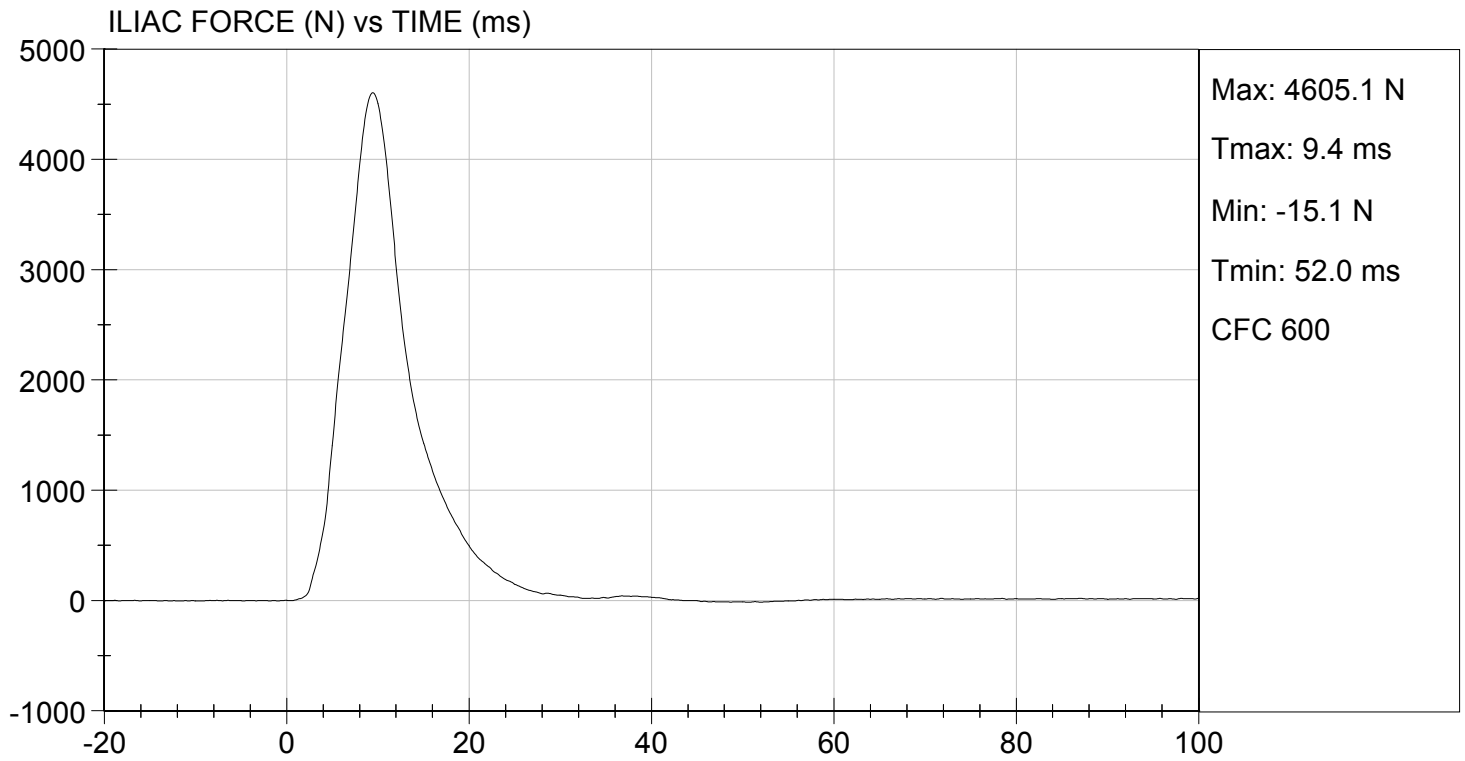
*Jessica Hall*  
 Approved By



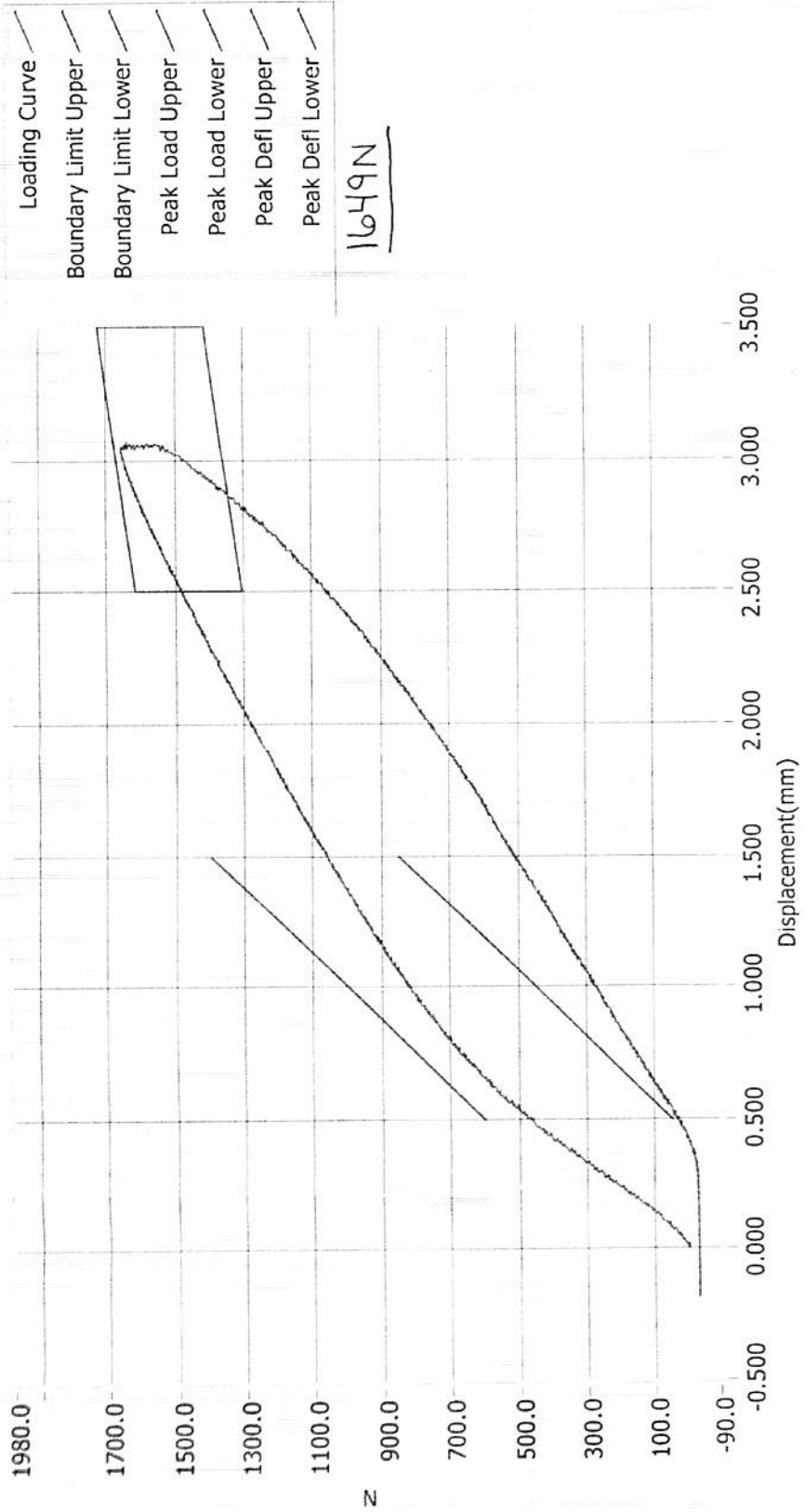


TEST DESC: ILLIAC  
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 10/29/2014  
TEST #: D143798



### Resultant Data - SIDIIs Plug Compression

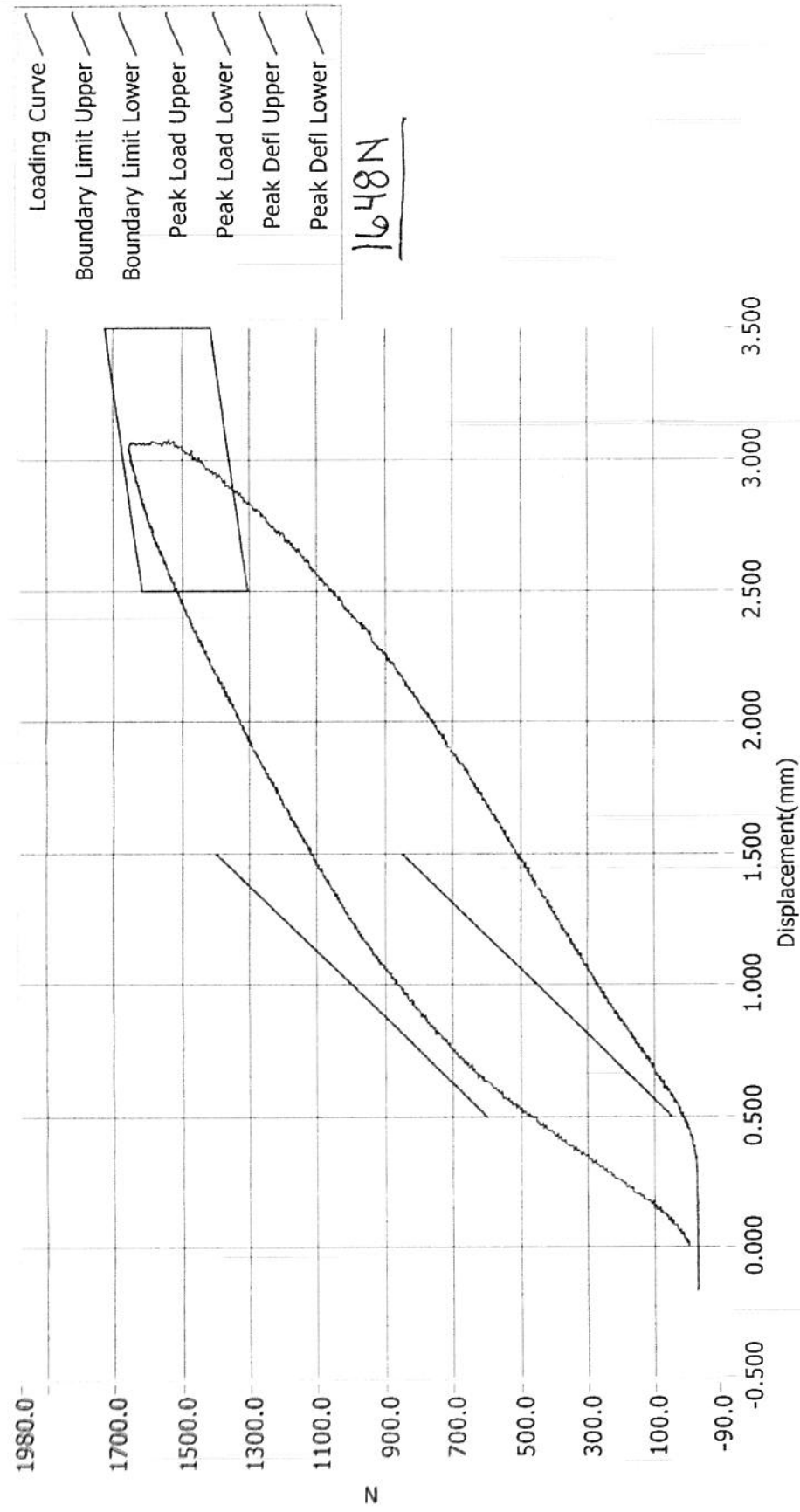


ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	70665	12/12/2013	9:05 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 12/12/2013      Current Time : 21:06:24

# Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	70715	12/12/2013	10:21 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 12/12/2013      Current Time : 22:22:06

**APPENDIX D**  
**TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA**

**Table 1 – Dummy Instrumentation**

			SID-IIs S/N 306			
			Serial Number	Manufacturer	Calibration Date	
Head CG Accelerometers			X	P78806	Endevco	08/26/14
			Y	P78810	Endevco	08/26/14
			Z	P78826	Endevco	08/26/14
			Xr	P82097	Endevco	09/08/14
			Yr	P82294	Endevco	05/05/14
			Zr	P82295	Endevco	05/05/14
Displacement Potentiometers	Thoracic Rib	Upper	Y	G033	FTSS	10/03/14
		Middle	Y	G1261	FTSS	10/03/14
		Lower	Y	G1270	FTSS	10/03/14
	Abdominal Rib	Upper	Y	G032	FTSS	10/03/14
		Lower	Y	G1304	FTSS	10/03/14
Lower Spine Accelerometers (T12)			X	P82084	Endevco	09/11/14
			Y	P82085	Endevco	09/11/14
			Z	P82086	Endevco	09/11/14
Acetabulum Load Cell			Y	ACG111	FTSS	04/03/14
Iliac Wing Load Cell			Y	IWG226	FTSS	04/03/14
Pelvis Plug (struck side)				70665	FTSS	12/12/13
Pelvis Plug (non-struck side)				70715	FTSS	12/12/13

**Table 2 – Vehicle Instrumentation**

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P73140	Endevco	05/30/14
Vehicle Center of Gravity	Y	P73142	Endevco	05/30/14
Vehicle Center of Gravity	Z	P73141	Endevco	05/30/14
Left Floor Sill	Y	P66821	Endevco	06/06/14
A-Pillar Sill	Y	P63353	Endevco	07/01/14
A-Pillar Low	Y	P63546	Endevco	07/01/14
A-Pillar Mid	Y	P77686	Endevco	08/21/14
B-Pillar Sill	Y	P63905	Endevco	07/01/14
B-Pillar Low	Y	P59625	Endevco	07/15/14
B-Pillar Mid	V	P72786	Endevco	07/15/14
Driver Seat	Y	P68887	Endevco	09/08/14
Engine Top	X	P73732	Endevco	05/22/14
Engine Top	Y	P73731	Endevco	05/22/14
Firewall	Y	P59658	Endevco	07/01/14
Right Roof	Y	P78848	Endevco	07/31/14
Right Floor Sill	Y	P74681	Endevco	09/23/14
Rear Floorpan	X	P78723	Endevco	05/07/14
Rear Floorpan	Y	P78722	Endevco	10/27/14

**Table 3 – Pole Instrumentation**

	Serial Number	Manufacturer	Calibration Date
Load Cell 1	DG6277	FTSS	08/12/14
Load Cell 2	DG6278	FTSS	08/12/14
Load Cell 3	DG6279	FTSS	08/12/14
Load Cell 4	DG6280	FTSS	08/12/14
Load Cell 5	DG6281	FTSS	08/12/14
Load Cell 6	DG6283	FTSS	08/12/14
Load Cell 7	DG6284	FTSS	08/12/14
Load Cell 8	DG6582	FTSS	08/12/14