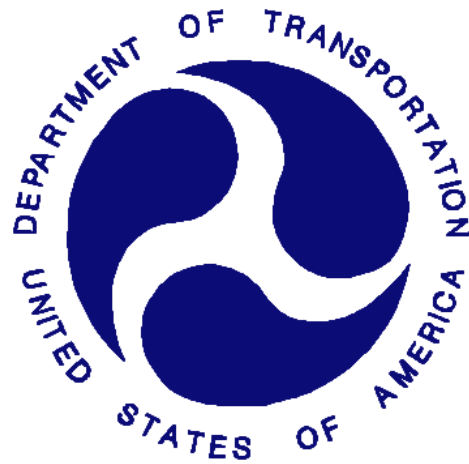


REPORT NUMBER: SPNCAP-MGA-2016-027

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

**FCA US LLC.
2016 Dodge Charger SE RWD 4-Door Sedan
NHTSA No.: M20160304**

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



Test Date: December 8, 2015

Final Report Date: December 15, 2015

FINAL REPORT

**U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
Mail Code: NRM-110
1200 New Jersey Ave, SE
Room W43-410
Washington, DC 20590**

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Prepared by: alex Pinelli
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Approved by: Ben Fischer
Ben Fischer, Project Manager

Approval Date: February 4, 2016

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

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4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Pole Testing of a 2016 Dodge Charger SE RWD 4-Door Sedan, NHTSA No.: M20160304		5. Report Date December 15, 2015																												
		6. Performing Organization Code MGA																												
7. Author(s) Ben Fischer, Project Engineer		8. Performing Organization Report No. SPNCAP-MGA-2016-027																												
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		14. Sponsoring Agency Code NRM-110																												
15. Supplementary Notes																														
16. Abstract A 32.20 km/h, 75° oblique impact Side NCAP Test was conducted on the subject 2016 Dodge Charger SE RWD 4-Door Sedan 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 December 8, 2015. The impact velocity was 32.22 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.4°C. The test vehicle post-test maximum crush was 380 mm at level 3. 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 (HIC₃₆)</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">1000</td> <td style="text-align: center;">270</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;">48</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;">3078</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;">26</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;">33</td> </tr> </tbody> </table>				Measurement Description	Driver ATD (SID-IIs)			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)	N/A	1000	270	Resultant Lower Spine Acceleration	Gs	82	48	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3078	Maximum Thoracic Rib Deflection	mm	38*	26	Maximum Abdomen Rib Deflection	mm	45*	33
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*Proposed IARV																														
The doors 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.																														
17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs		18. Distribution Statement 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: tis@nhtsa.dot.gov FAX: 202-493-2833																												
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SECTION 1
TEST PURPOSE AND PROCEDURE

This side impact test is part of the MY 2016 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-14-D-00353. The purpose of this test is to generate comparative side impact performance in a 2016 Dodge Charger SE RWD 4-Door Sedan. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated October 2015.

SECTION 2 SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2016 Dodge Charger SE RWD 4-Door Sedan. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.22 km/h. The test was conducted by MGA Research Corporation in Burlington, Wisconsin on December 8, 2015. 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 October 2015. 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 ₃₆)	N/A	1000	270
Resultant Lower Spine Acceleration	Gs	82	48
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3078
Maximum Thoracic Rib Deflection	mm	38*	26
Maximum Abdominal Rib Deflection	mm	45*	33

*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	Yes	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

GENERAL COMMENTS

Left Lower B-Post Y was not installed.

Left Mid B-Post Y was not installed.

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: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20160304	Traction Control System (TCS)	Yes
Model Year	2016	Auto-Leveling System	No
Make	Dodge	Automatic Door Locks (ADL)	Yes
Model	Charger SE RWD	Power Window Auto-Reverse	Yes
Body Style	4-Door Sedan	Other Optional Feature	N/A
VIN	2C3CDXBG6GH121856	Driver Front Airbag	Yes
Body Color	Billet Silver Metallic	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	177km / 110mi	Driver Head/Torso Airbag	No
Engine Displacement (L)	3.6	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	Yes
Transmission Speeds	8	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	RWD	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	Yes	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?	No
--	----

DATA FROM CERTIFICATION LABEL

Manufactured By	FCA US LLC.	GVWR (kg)	2314
Date of Manufacture	10/15	GAWR Front (kg)	1275
Vehicle Type	Passenger Car	GAWR Rear (kg)	1275

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3		5	
Capacity Weight (VCW) (kg)				392	(A)
DSC x 68.04 kg				340	(B)
Rated Cargo and Luggage Weight (RCLW) (kg)				52	(A-B)

VEHICLE SEAT TYPE

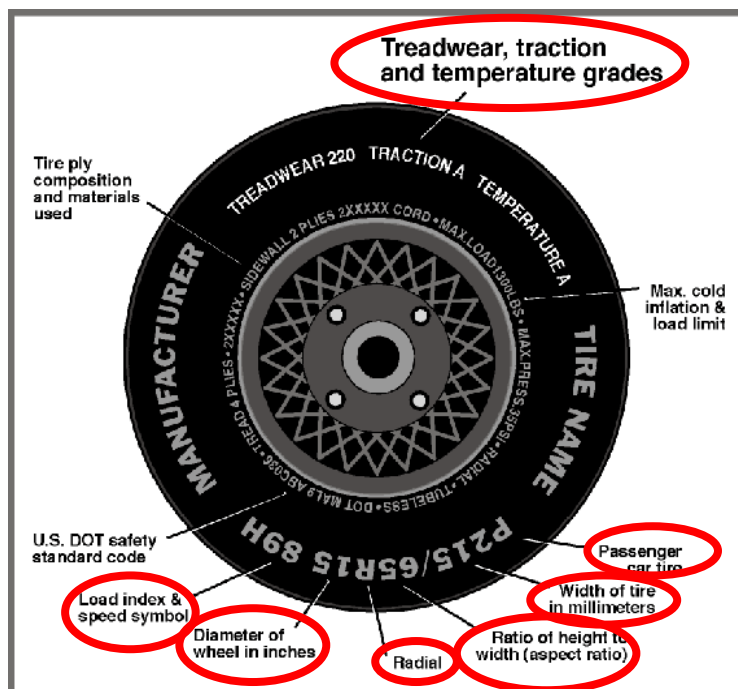
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						Manual	Power
Front Seat	X						X
Rear or Second Row				X	X		
Third Row Seat							

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

Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015

VEHICLE TIRE INFORMATION



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	240	240
Recommended Tire Size	215/65R17	215/65R17
Tire Size on Vehicle	215/65R17	215/65R17
Tire Manufacturer	Michelin	Michelin
Tire Model	Energy Saver A/5	Energy Saver A/5
Treadwear	480	480
Traction	A	A
Temperature Grade	B	B
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 1 Polyamide, 2 Steel	1 Polyester, 1 Polyamide, 2 Steel
Load Index/Speed Symbol	98T	98T
Tire Material	Rubber	Rubber
DOT Safety Code Left	M322 OOBX 3915	M322 OOBX 3915
DOT Safety Code Right	M322 OOBX 3915	M322 OOBX 3915

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

Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015

TEST PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kpa	283	290	290	283
Tire Placard	kpa	240	240	240	240
Owner's Manual	kpa	240	240	240	240
As Tested	kpa	240	240	240	240

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	483.0	414.5		499.0	456.5		499.5	463.5	
Right	kg	466.0	435.0		466.0	474.0		465.0	474.5	
Ratio	%	52.8	47.2		50.9	49.1		50.7	49.3	
Totals	kg	949.0	849.5	1798.5	965.0	930.5	1895.5	964.5	938.0	1902.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	98.5	(A)
Actual Weight of 1 P572V ATD (SID-IIs) ATD Used	kg	52	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	52	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1902.5	(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	-0.7	-0.6	-0.5	Yes
Front Pass. Sill Angle (front-to-rear)*	deg	-0.8	-0.8	-0.7	Yes
Front Bumper Angle (left-to-right)**	deg	-0.1	-0.1	-0.2	Yes
Rear Bumper Angle (left-to-right)**	deg	0.2	0.2	0.2	Yes
Vehicle CG (Aft of Front Axle)	mm	1441	1498	1504	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	-2	7	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)	7
Cargo area floor	

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: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015

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	19.1	11.6	15.4
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	15.4	26	Max	52	52	52
			Mid	26	26	26
			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: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

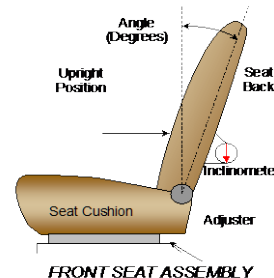
NHTSA No. M20160304
 Test Date: 12/8/2015

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	258		0	
Front Passenger Seat	220	23 (1 st as 1)	0	0 th (1 st as 0)
Front Center Seat				
Struck Side Rear Seat	Fixed		Fixed	
Non-Struck Side Rear Seat	Fixed		Fixed	
Rear Center Seat	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 5th 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	67.0	35 (1 st as 1)	3.9	4 th (1 st as 0)
Front Passenger Seat	66.4	35 (1 st as 1)	3.5	3 rd (1 st as 0)
Front Center Seat				
Struck Side Rear Seat	Fixed		Fixed	
Non-Struck Side Rear Seat	Fixed		Fixed	
Rear Center Seat	Fixed		Fixed	

Seat back angles measured on outboard 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 st as 1)	0 th (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	4 (1 st as 1)	0 th (Lowest as 0)

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

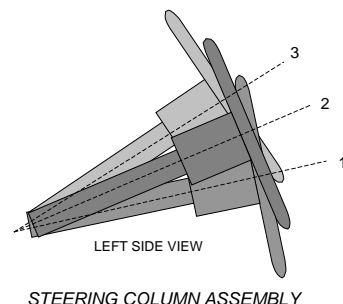
Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015

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.

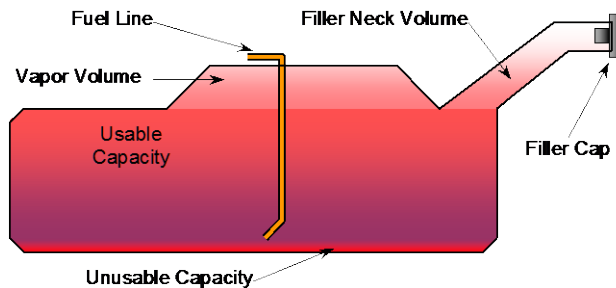
	Degrees	Fore/Aft Position (mm)
Lowermost, Position 1	69.8	250
Geometric Center, Position 2	67.6	278
Uppermost, Position 3	65.3	305
Telescoping Steering Wheel Travel		55
Test Position	67.6	278



FUEL PUMP

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

The fuel pump starts pumping fuel when the ignition is "ON" position. The filler neck is located on the driver's side.



FUEL TANK CAPACITY DATA

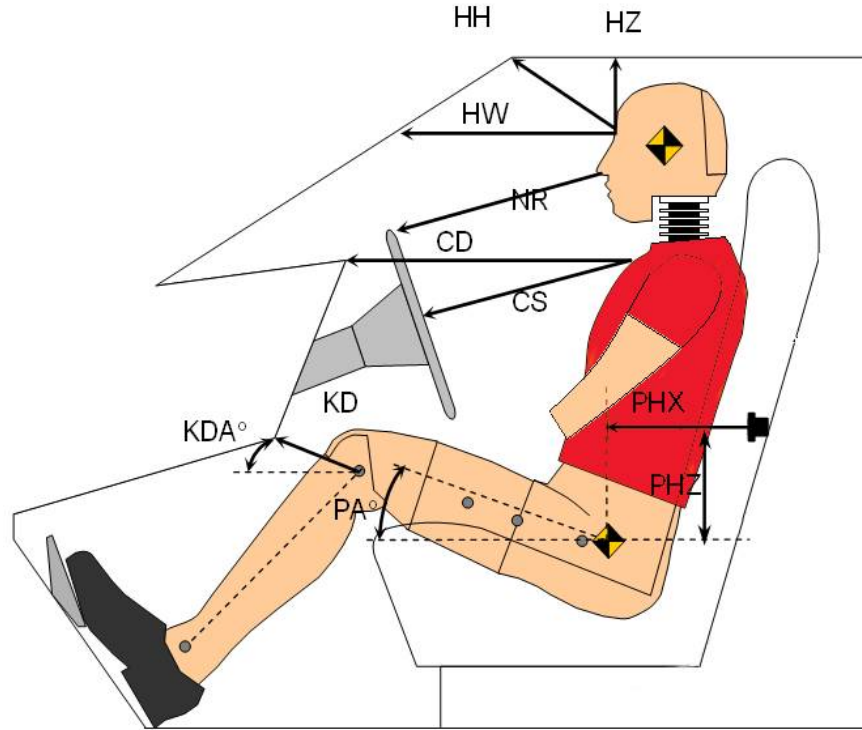
	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	70.0
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	70.0
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	65.1
Actual Amount of Solvent Used	65.1
1/3 of Usable Capacity	23.3

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: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015



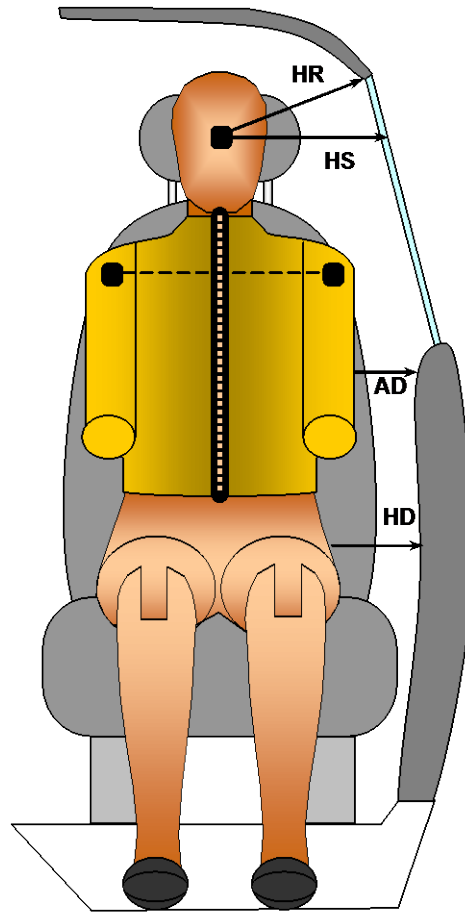
LEFT SIDE VIEW

Code	Measurement Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	272	
HW	Head to Windshield	600	
HZ	Head to Roof Liner	181	
NR	Nose to Rim	200	
CD	Chest to Dashboard	396	
CS	Chest to Steering Wheel	146	
KDL/KDAL°	Left Knee to Dash	110	40.4
KDR/KDAR°	Right Knee to Dash	99	39.1
PAX°	Pelvic Tilt Angle (X-Axis)		19.4
PAY°	Pelvic Tilt Angle (Y-Axis)		0.4
PHX	Hip Point to Striker (X-Axis)	333	
PHZ	Hip Point to Striker (Z-Axis)	125	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015



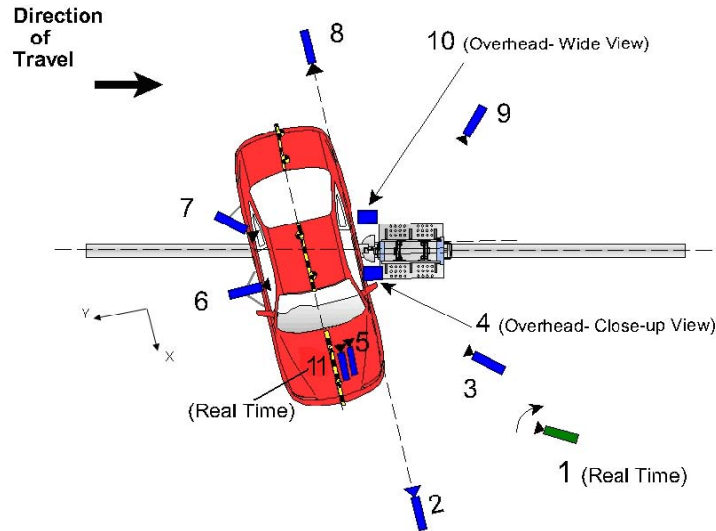
FRONT VIEW OF DUMMY

Code	Measurement Description	Driver
		Length (mm)
HR	Head to Side Header	213
HS	Head to Side Window	365
AD	Arm to Door	191
HD	Hip Point to Door	180

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

Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015



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	4740	-100	-1850	24	1000
3	Impact Side 45° Forward	3490	-1830	-1940	20	1000
4	Overhead Closeup	0	0	-4890	50	1000
5	Onboard – Driver Front				16	1000
6	Onboard – Driver Side				8	1000
7	Onboard – Driver Rear				8	1000
8	Rear Ground Level	-7180	60	-2010	24	1000
9	Impact Side 45° Rearward	-4450	-3770	-2000	20	1000
10	Overhead Wide View	-95	370	-4910	14	1000
11	Real-Time Dummy Front View					30

*All measurements accurate to ± 6 mm

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

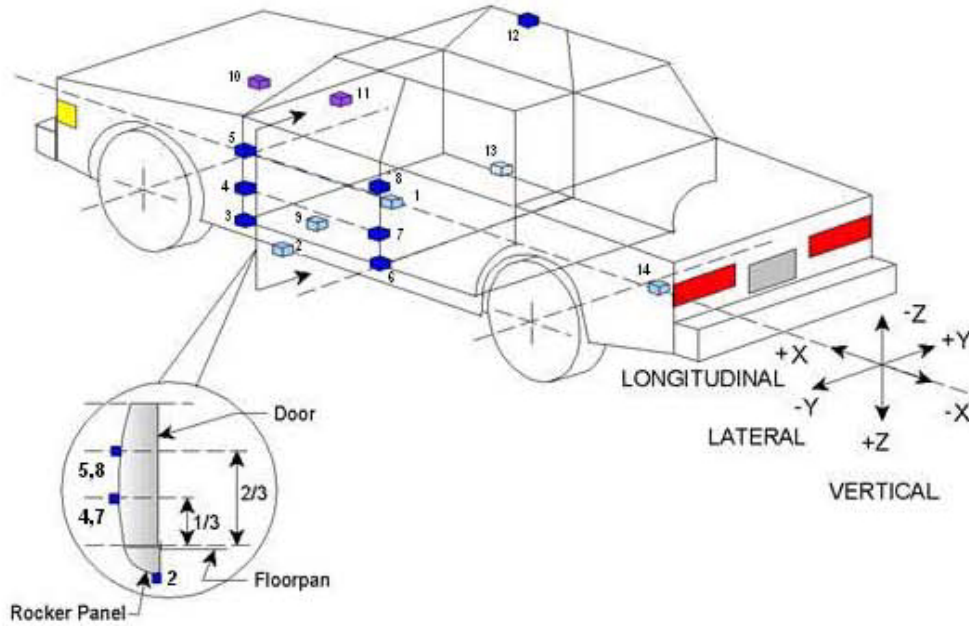
Explain why camera(s) did not operate as intended: None

INSTRUMENTATION	Number of Channels
Driver Dummy	19
Vehicle Structure	18
Pole Load Cells	8
TOTAL	45

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

Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015



	Accelerometer Location			
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2634	162	-192
2	Left Floor Sill	3136	-787	-168
3	A Pillar Sill	3414	-787	-166
4	A Pillar Low	3414	-854	-607
5	A Pillar Mid	3414	-854	-791
6	B Pillar Sill	2307	-787	-174
7	B Pillar Low			
8	B Pillar Mid			
9	Driver Seat Track	2432	-382	-185
10	Engine Top	4039	-33	-949
11	Firewall	3964	0	-937
12	Right Roof	2287	550	-1463
13	Right Floor Sill	3136	787	-165
14	Rear Floorpan	1065	-4	-518

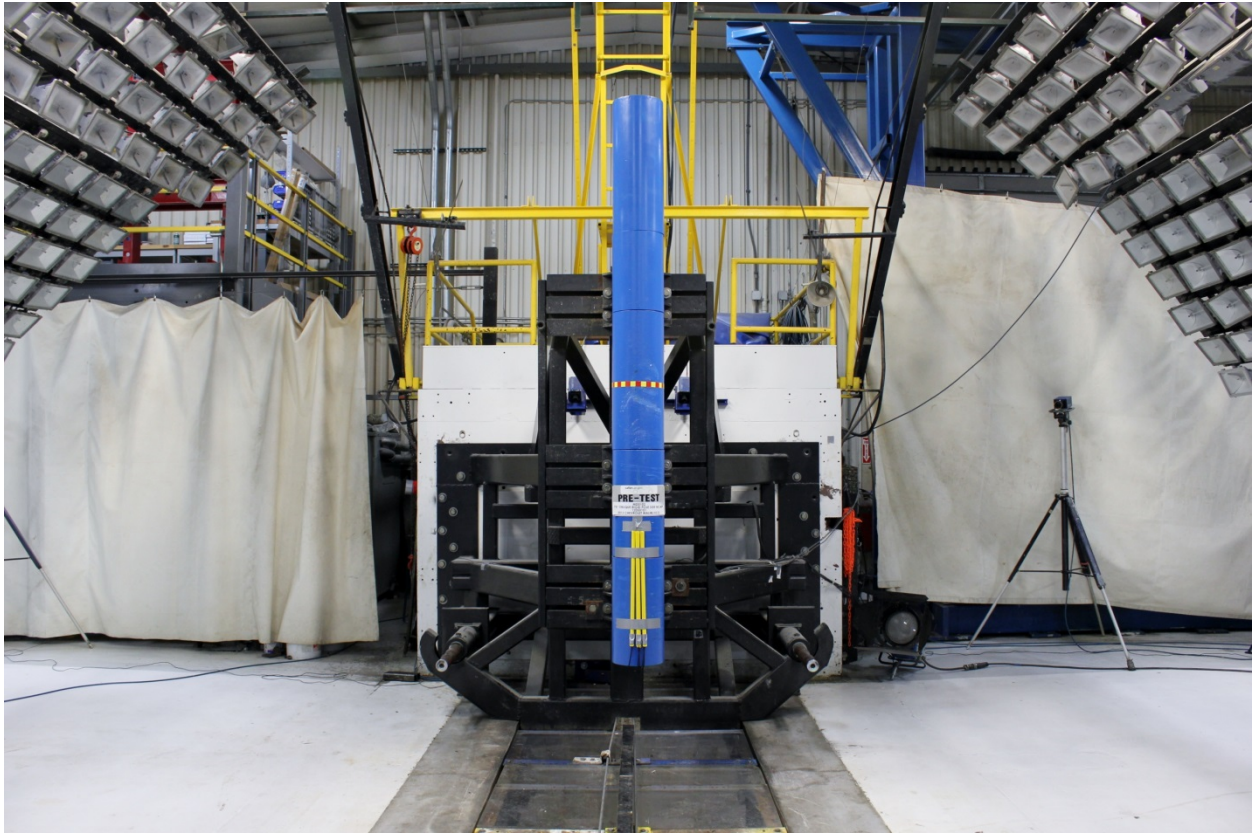
Reference:

- 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: 2016 Dodge Charger SE RWD 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
Test Date: 12/8/2015



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: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Driver SID-IIs Dummy
Face	Curtain Airbag
Top of Head	Curtain Airbag
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, Seat Cushion
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	No	Yes	Yes	Yes
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	No
Latch or Hinge Systems Pulled Out of Their Anchorages	No	No	No	No	No
Disengaged from Latched Position	No	No	No	No	No
Latch Separated from Striker	No	No	No	No	No
Jammed Shut	Yes	Yes	No	No	No
If Door Opened at Striker, Record Width of Opening at Striker (mm)	N/A	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 Cracked
Other Notable Effects	None

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

Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	Yes	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				

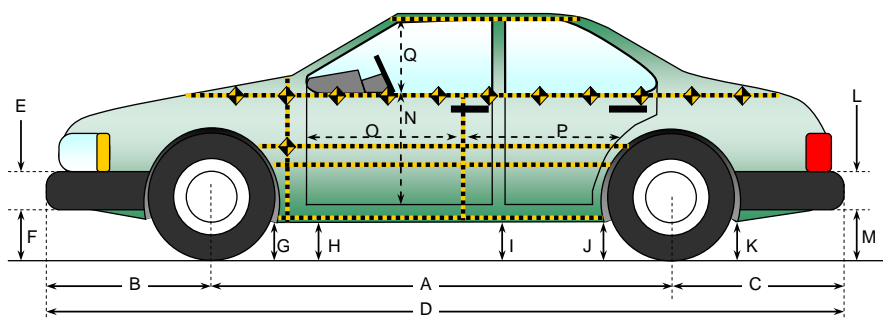
VEHICLE SPEED, VEHICLE ANGLE AT IMPACT, AND IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		1358
Actual Impact Point (Aft of Front Axle)	mm		1346
Horizontal Offset (+forward / -rearward)	mm	+/- 38 of Intended Impact Point	12
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	32.22
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.29

DATA SHEET NO. 9
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
Test Date: 12/8/2015



All measurements in (mm) with tolerance of ± 3 mm

LEFT SIDE VIEW

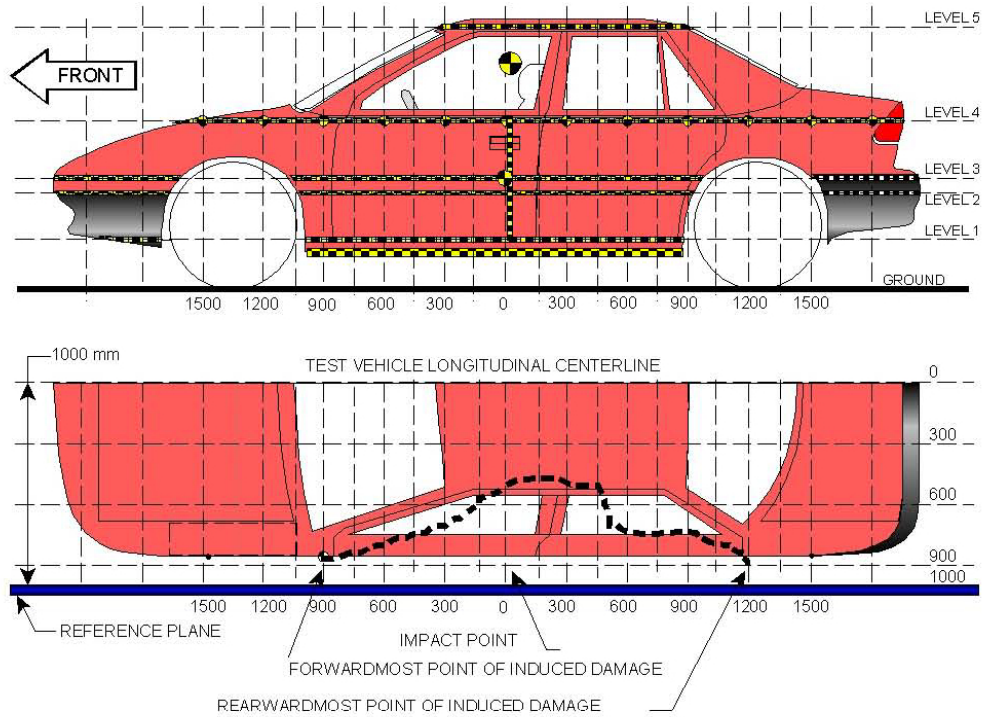
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	3050	2928	122
B	Front Axle to FSOV	902	1001	-99
C	Rear Axle to RSOV	1090	1071	19
D	Total Vehicle Length at Centerline	5042	5000	42
E	Front Bumper Thickness	115	115	0
F	Front Bumper Bottom to Ground	207	250	-43
G	Sill Height at Front Wheel Well	151	121	30
H	Sill Height at Front Door Leading Edge	153	122	31
I	Sill Height at B-Pillar	162	194	-32
J1	Sill Height at Rear Wheel Well	167	185	-18
J2	Pinch Weld Height at Rear Wheel Well	167	186	-19
K	Sill Height Aft of Rear Wheel Well	235	246	-11
L	Rear Bumper Thickness	120	120	0
M	Rear Bumper Bottom to Ground	315	309	6
N	Sill Height to Bottom of Front Window Sill	762	755	7
O	Front Door Leading Edge to Impact CL	725	596	29
P	Rear Door Trailing Edge to Impact CL	1372	1239	133
Q	Front Window Opening	433	383	50
R	Right Side Length	4213	4232	-19
S	Left Side Length	4213	4064	149
T	Vehicle Width at B-Pillars	1895	1534	364

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

Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015



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	299	312	0
2	Occupant Hip Point	566	363	0
3	Mid Door	642	380	75
4	Window Sill	975	322	75
5	Window Top	1400	131	0

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

Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015

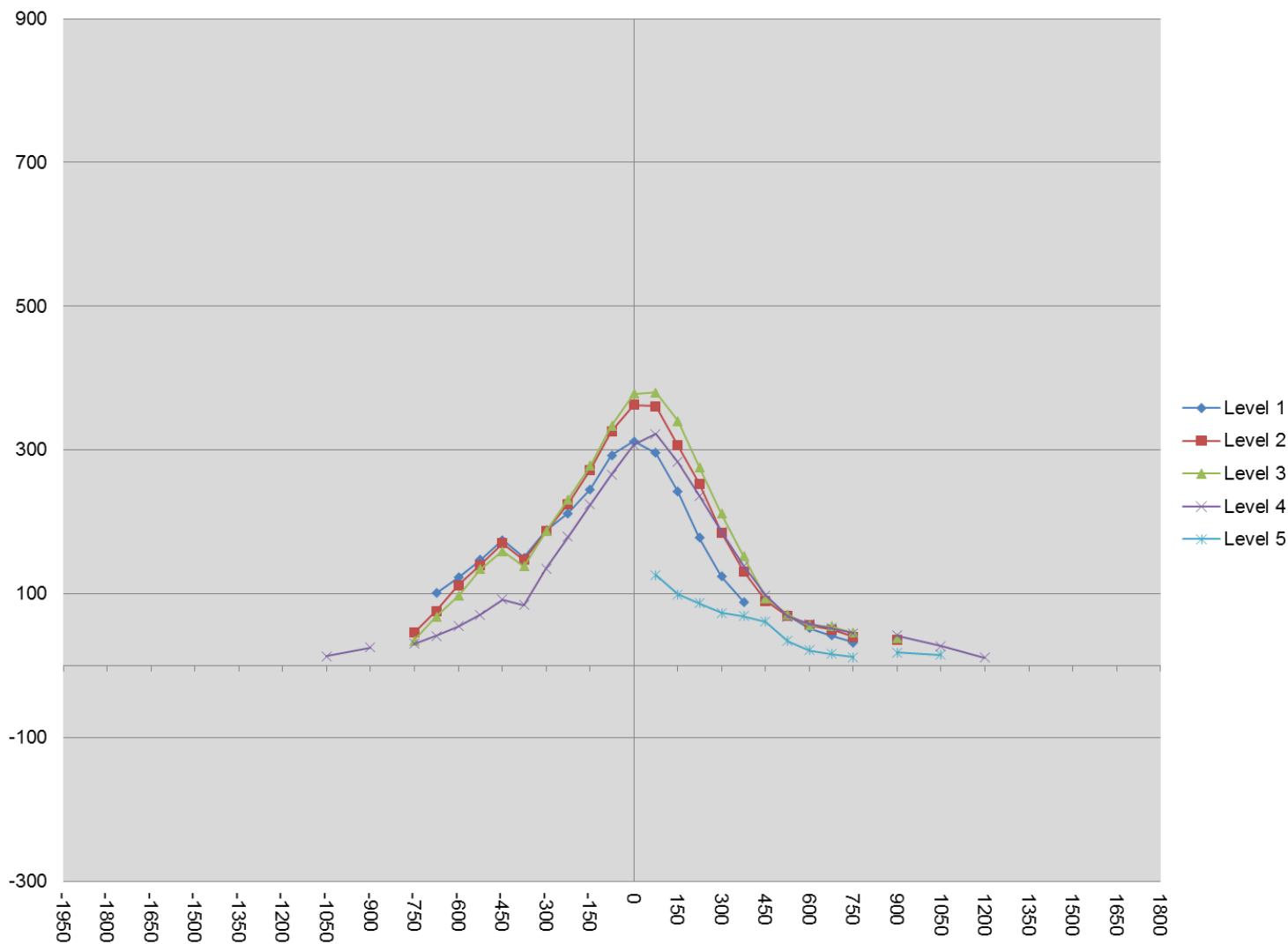
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1650															
-1500															
-1350															
-1200															
-1050			156	285				200	298				44	13	
-900	197	161	158	266		274	220	194	291		77	59	36	25	
-825															
-750	200	162	158	256		314	208	193	286		114	46	35	30	
-675	205	162	158	254		306	238	226	295		101	76	68	41	
-600	205	162	158	254		328	274	255	309		123	112	97	55	
-525	207	161	155	252		354	301	289	323		147	140	134	71	
-450	207	166	164	252		382	336	323	344		175	170	159	92	
-375	210	175	168	249		360	322	306	333		150	147	138	84	
-300	209	175	167	246		397	362	354	381		188	187	187	135	
-225	209	172	165	244		421	297	396	423		212	225	231	179	
-150	209	172	164	240		454	444	442	464		245	272	278	224	
-75	209	171	163	237	489	502	497	497	503	593	293	326	334	266	104
0	209	169	161	234	481	521	532	539	541	612	312	363	378	307	131
75	210	169	160	228	476	506	530	540	550	602	296	361	380	322	126
150	211	168	159	221	474	453	474	499	504	573	242	306	340	283	99
225	210	168	159	218	472	388	421	435	454	559	178	253	276	236	87
300	211	168	158	210	471	335	353	369	396	544	124	185	211	186	73
375	211	167	157	206	470	300	298	309	345	539	89	131	152	139	69
450		168	157	202	469		258	251	300	530		90	94	98	61
525	209	167	156	195	466	279	236	227	263	500	70	69	71	68	34
600	209	166	157	189	465	261	222	213	247	486	52	56	56	58	21
675	210	165	155	185	466	252	215	210	237	482	42	50	55	52	16
750	208	164	155	181	462	240	204	201	226	474	32	40	46	45	12
825															
900	206	162	155	180	462	229	198	193	222	480	23	36	38	42	18
1050	203	160	153	180	467	205	178	174	207	482	2	18	21	27	15
1200	197	156	152	181	492	181	157	154	192	500	-16	1	2	11	8
1350															
1500															
1650															
1800															
1950															

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: 2016 Dodge Charger SE RWD 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

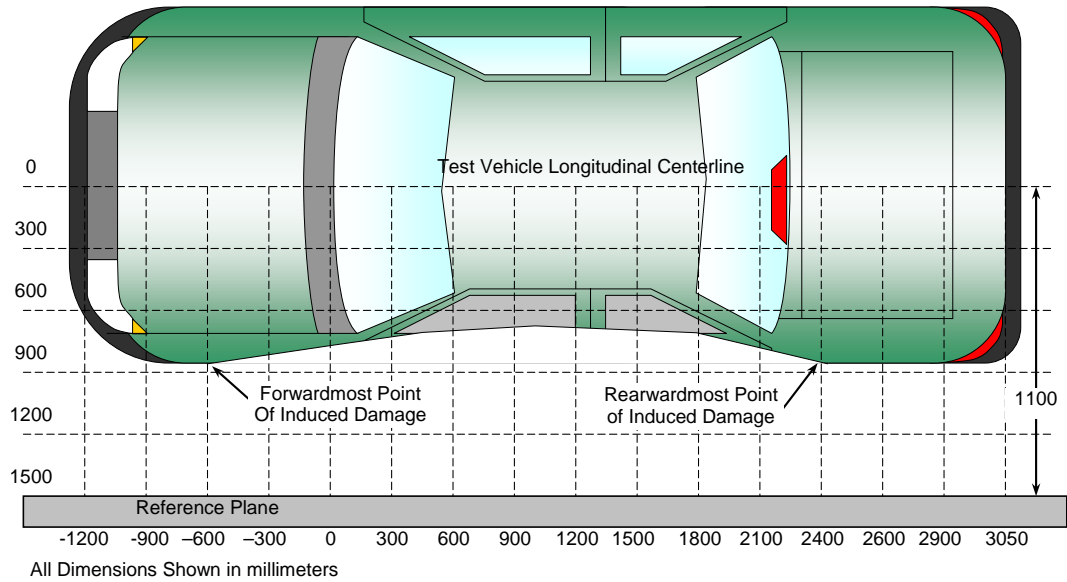
NHTSA No. M20160304
Test Date: 12/8/2015



DATA SHEET NO. 11
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015



TOP VIEW

DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	635	3	209	212	3
2	338	3	211	335	124
3	41	3	209	539	330
4	-256	3	209	379	170
5	-553	3	206	279	73
6	-850	3	198	194	-4

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

Test Vehicle: 2016 Dodge Charger SE RWD 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

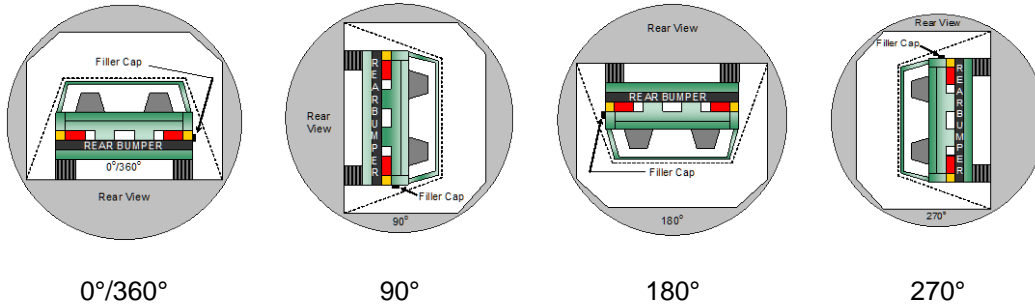
NHTSA No. M20160304
Test Date: 12/8/2015

Test Time: 10:02 a.m.

Temperature: 21.4°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°	112	300	412
90° to 180°	109	300	409
180° to 270°	106	300	406
270° to 360°	112	300	412

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

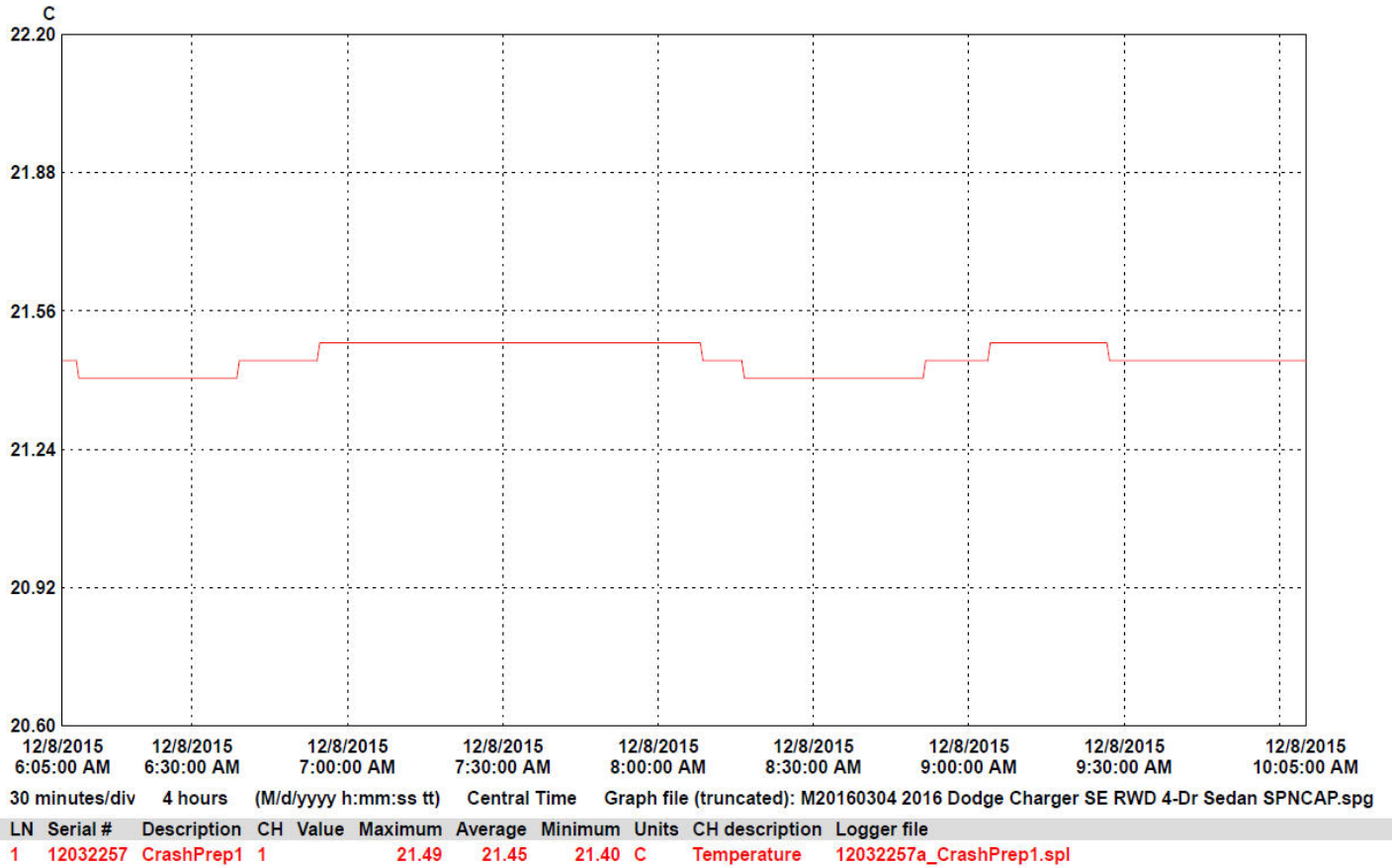
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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: 2016 Dodge Charger SE RWD 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20160304
 Test Date: 12/8/2015



**APPENDIX A
PHOTOGRAPHS**

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Photo No. 001 - As Delivered Right Front ¼ View of Test Vehicle



Photo No. 002 - As Delivered Left Rear ¼ View of Test Vehicle

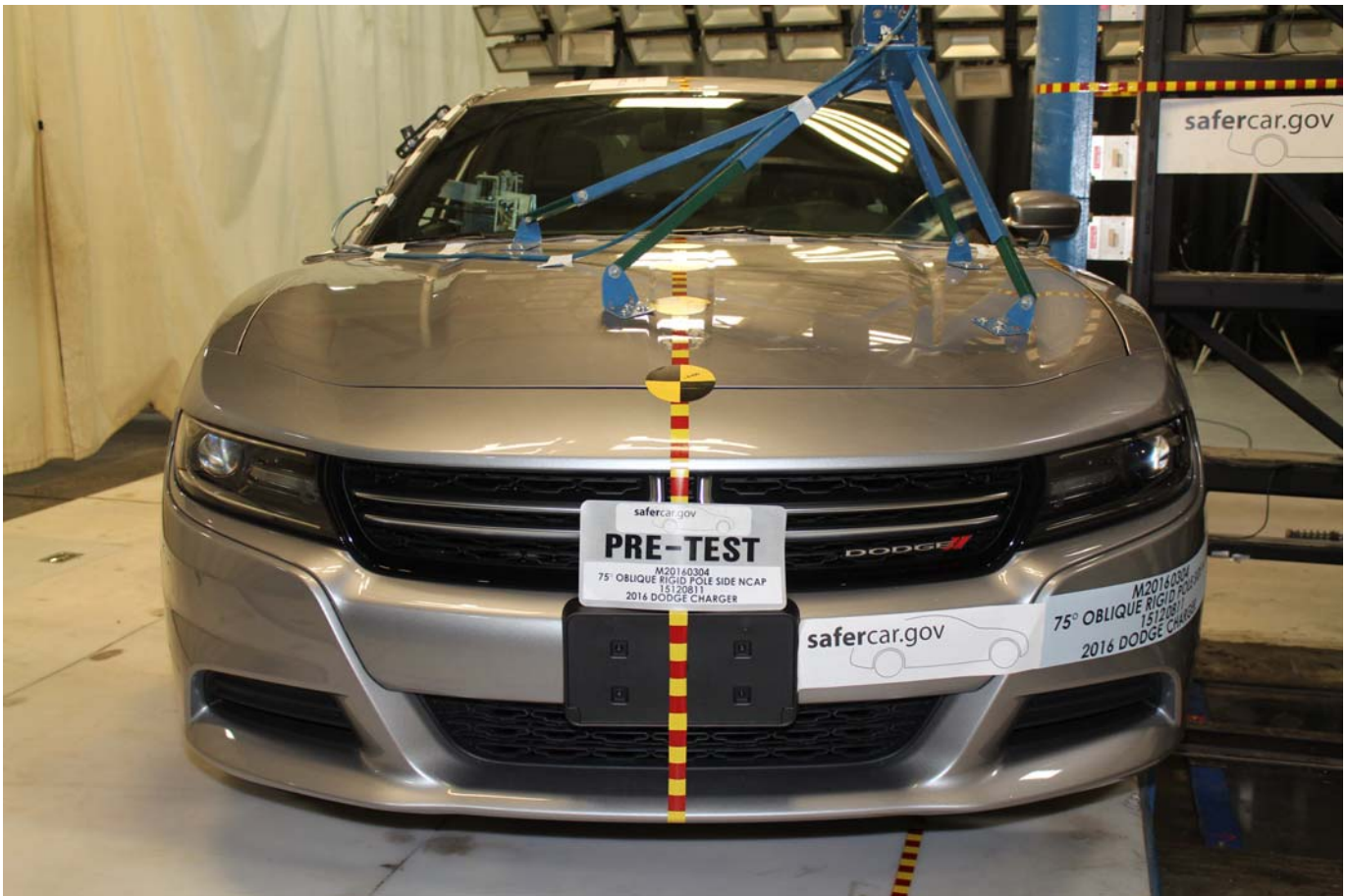


Photo No. 003 - Pre-Test Frontal View of Test Vehicle

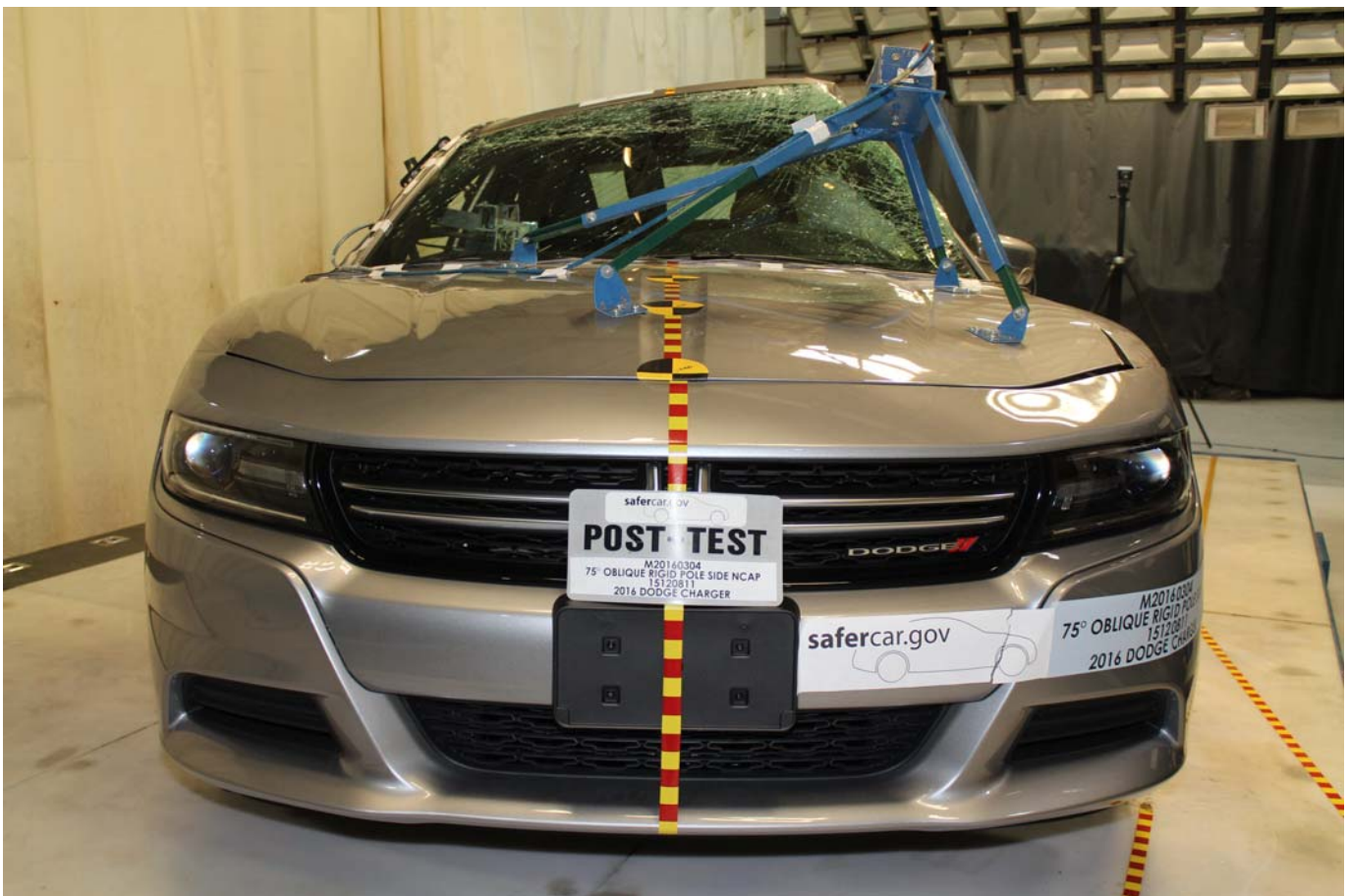


Photo No. 004 - Post-Test Frontal View of Test Vehicle



Photo No. 005 - Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle



Photo No. 006 - Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle



Photo No. 007 - Pre-Test Left Side View of Test Vehicle

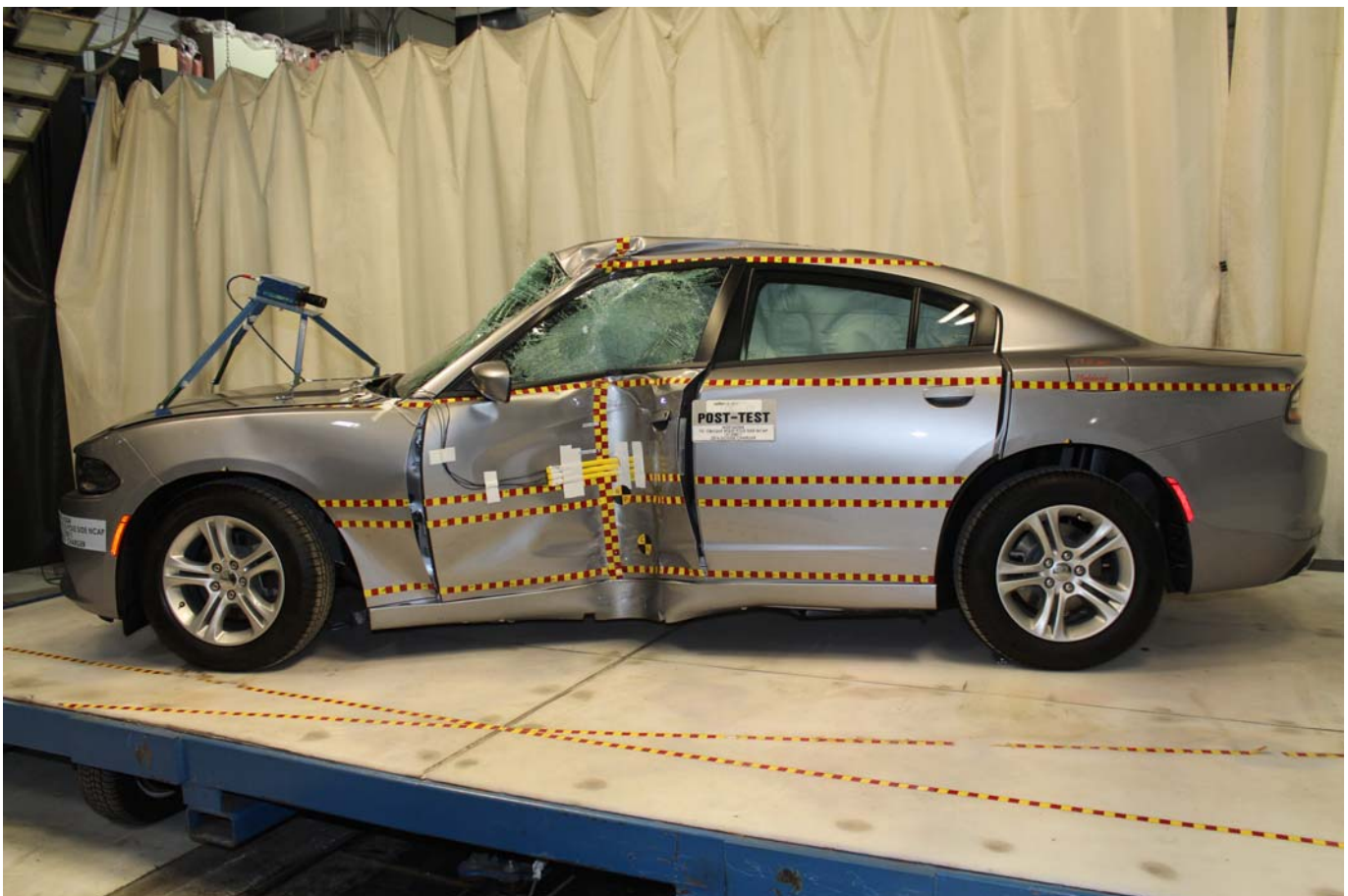


Photo No. 008 - Post-Test Left Side View of Test Vehicle



Photo No. 009 - Pre-Test Left Rear 3/4 View of Test Vehicle



Photo No. 010 - Post-Test Left Rear 3/4 View of Test Vehicle



Photo No. 011 - Pre-Test Rear View of Test Vehicle



Photo No. 012 - Post-Test Rear View of Test Vehicle



Photo No. 013 - Pre-Test Right Side View of Test Vehicle



Photo No. 014 - Post-Test Right Side View of Test Vehicle

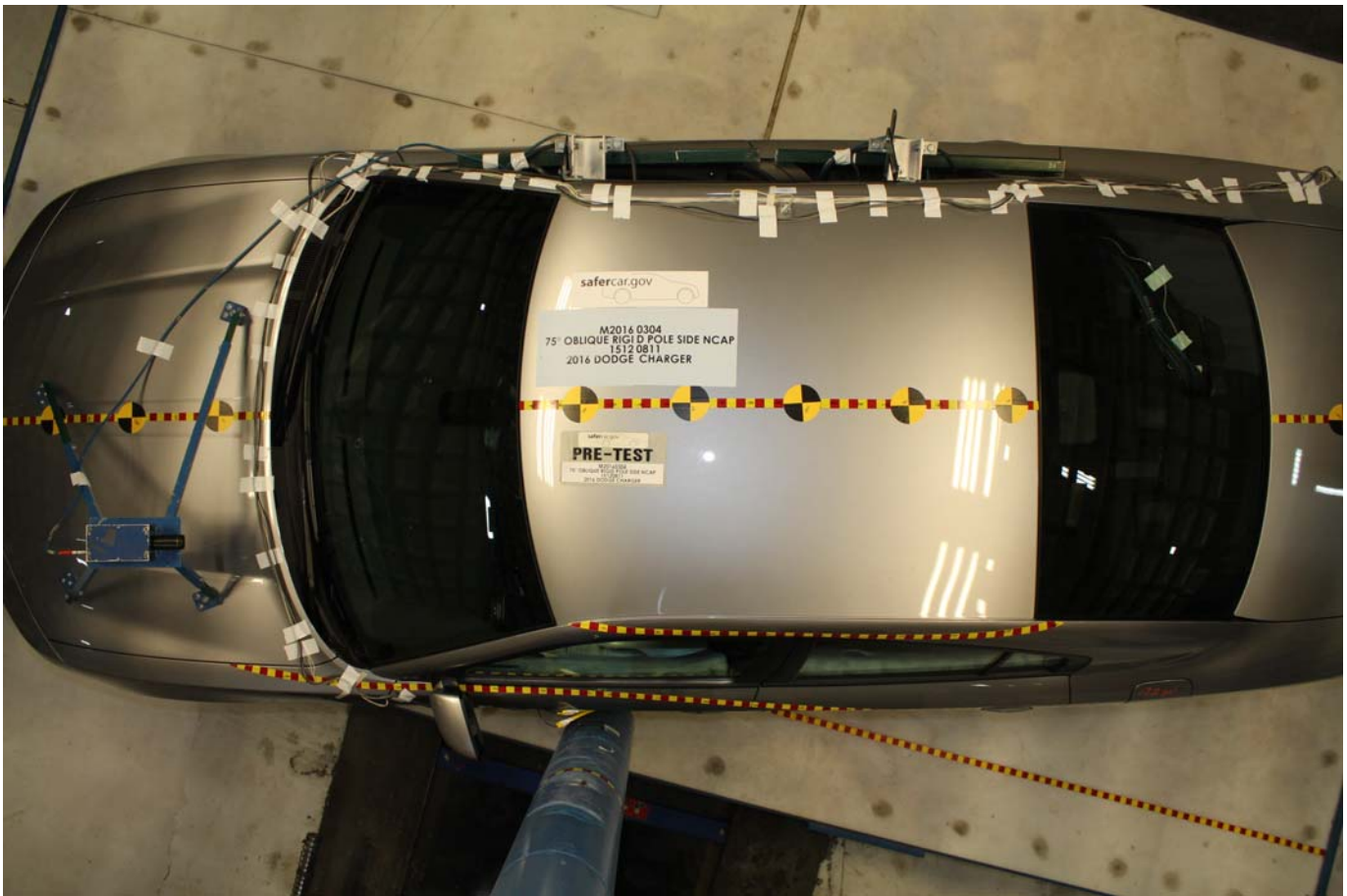


Photo No. 015 - Pre-Test Overhead View of Test Area



Photo No. 016 - Post-Test Overhead View of Test Area



Photo No. 017 - Pre-Test Left Side View of Pole Positioned Against Side of Vehicle



Photo No. 018 - Pre-Test Right Side View of Pole Positioned Against Side of Vehicle



Photo No. 019 - Pre-Test Close-Up View of Impact Point Target



Photo No. 020 - Post-Test Close-Up View of Impact Point Target Showing Impact Location



Photo No. 021 - Pre-Test Front Close-Up View of Dummy Head and Chest



Photo No. 022 - Post-Test Front Close-Up View of Dummy



Photo No. 023 - Pre-Test Left Side View of Dummy Showing Belt and Chalking



Photo No. 024 - Pre-Test Left Side View of Dummy Shoulder and Door Top View



Photo No. 025 - Post-Test Left Side View of Dummy Shoulder and Door Top View



Photo No. 026 - Pre-Test Front View of Seat Back Prior to Dummy Positioning



Photo No. 027 - Pre-Test Front Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint

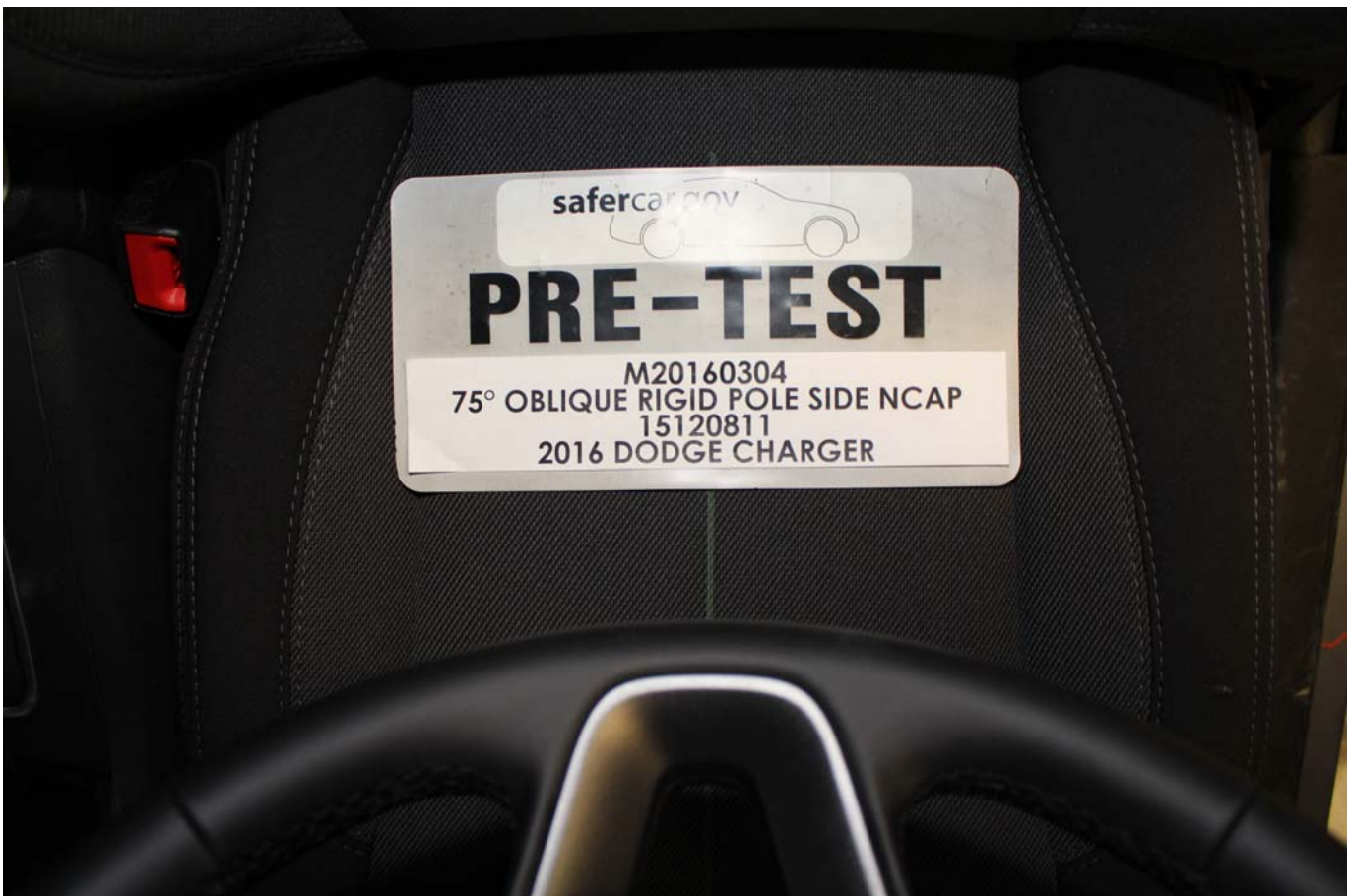


Photo No. 028 - Pre-Test Front View of Seat Pan Prior to Dummy Positioning



Photo No. 029 - Pre-Test Overhead View of Dummy Thighs on Seat Pan



Photo No. 030 - Pre-Test Left Side View of Dummy's Neck Showing Position of Adjustable Neck Bracket



Photo No. 031 - Pre-Test Left Side View of Dummy's Head Showing Dummy's Head is Level



Photo No. 032 - Pre-Test Placement of Dummy's Feet



Photo No. 033 - Pre-Test View of Belt Anchorage for Dummy



Photo No. 034 - Pre-Test Left Side View of Steering Wheel



Photo No. 035 - Pre-Test View of Disengaged Parking Brake



Photo No. 036 - Pre-Test View of Parking Brake



Photo No. 037 - Pre-Test Close-Up Left Side View of Driver Seat Track



Photo No. 038 - Pre-Test Close-Up Left Side View of Driver Seat Back

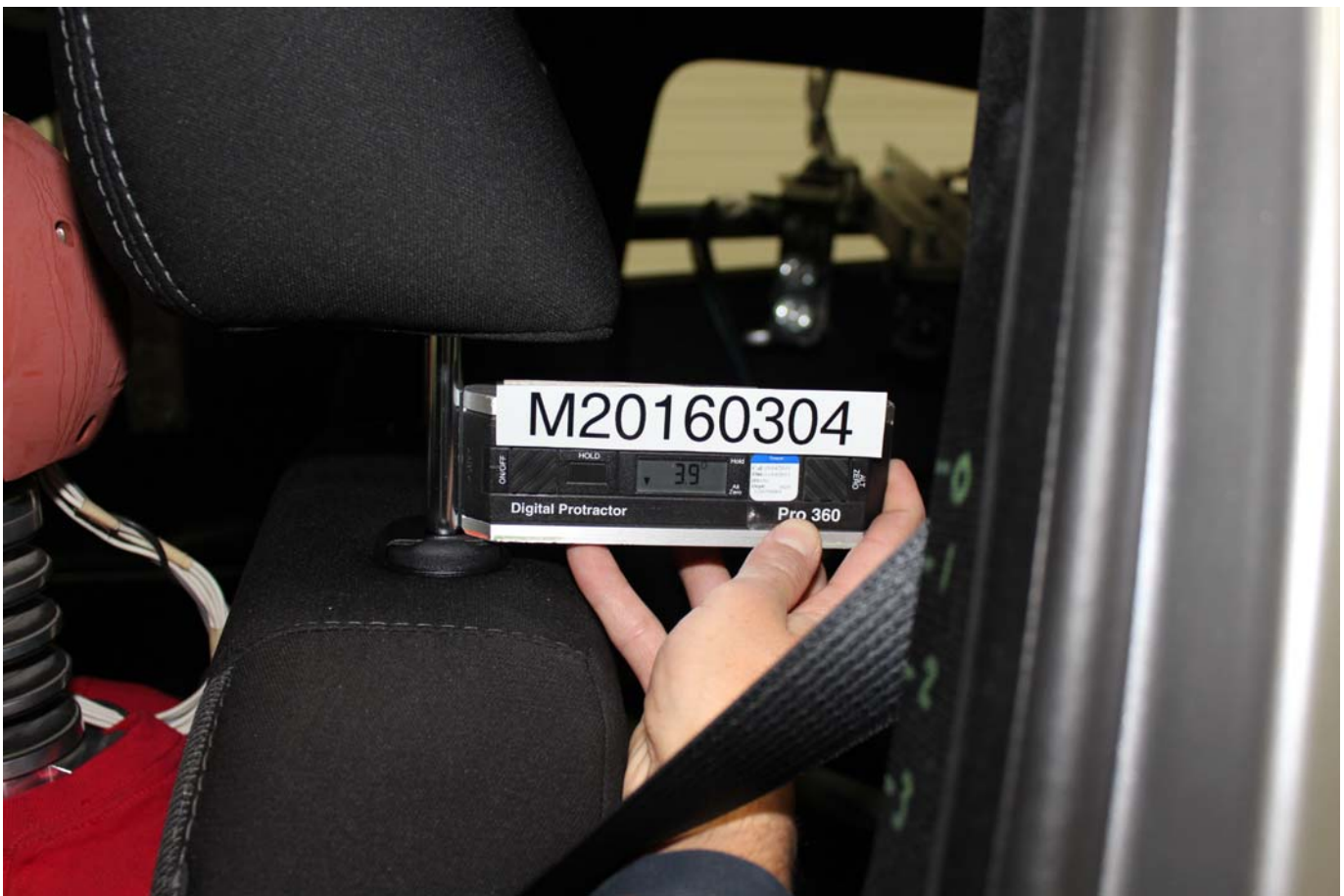


Photo No. 039 - Pre-Test Close-Up View of Driver Seat Back or Head Restraint



Photo No. 040 - Pre-Test Dummy and Door Clearance View



Photo No. 041 - Post-Test Dummy and Door Clearance View



Photo No. 042 - Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Photo No. 043 - Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Photo No. 044 - Pre-Test Inner Door Panel View



Photo No. 045 - Post-Test Inner Door Panel View Showing Dummy Contact Location



Photo No. 046 - Post-Test Dummy Close-Up Head Contact with Vehicle Interior View



Photo No. 047 - Post-Test Dummy Close-Up Head Contact with Side Air Bag View



Photo No. 048 - Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



Photo No. 049 - Post-Test Dummy Close-Up Torso Contact with Side Air Bag View

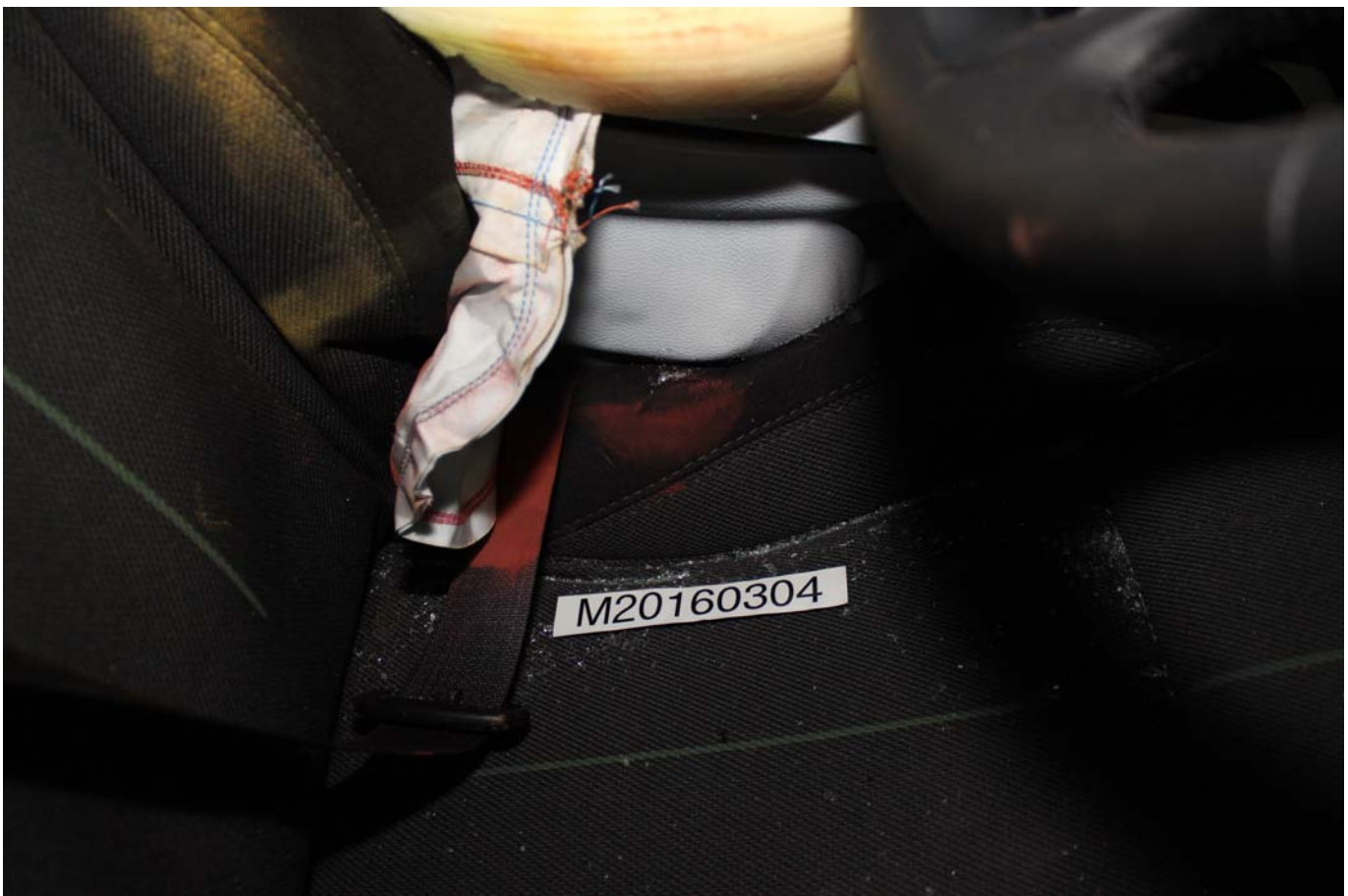


Photo No. 050 - Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View



Photo No. 051 - Post-Test Dummy Close-Up Pelvis Contact with Side Air Bag View



Photo No. 052 - Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View



Photo No. 053 - Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



Photo No. 054 - Post-Test View of Fuel Filler Cap or Fuel Filler Neck



Photo No. 055 - Close-Up View of Vehicle's Certification Label

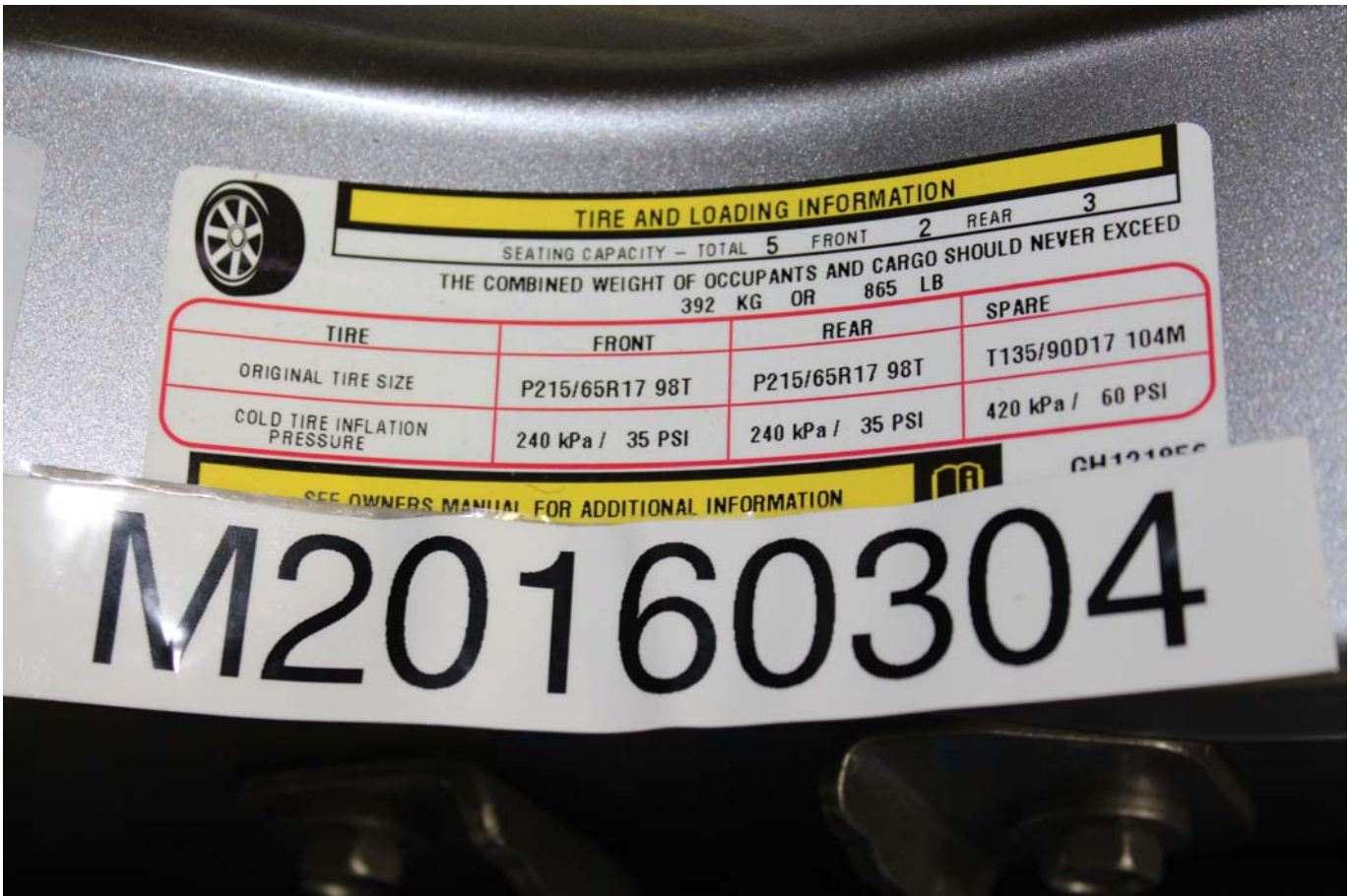


Photo No. 056 - Close-Up View of Vehicle's Tire Information Placard or Label



Photo No. 057 - Pre-Test Pole Barrier Front View



Photo No. 058 - Post-Test Pole Barrier Front View

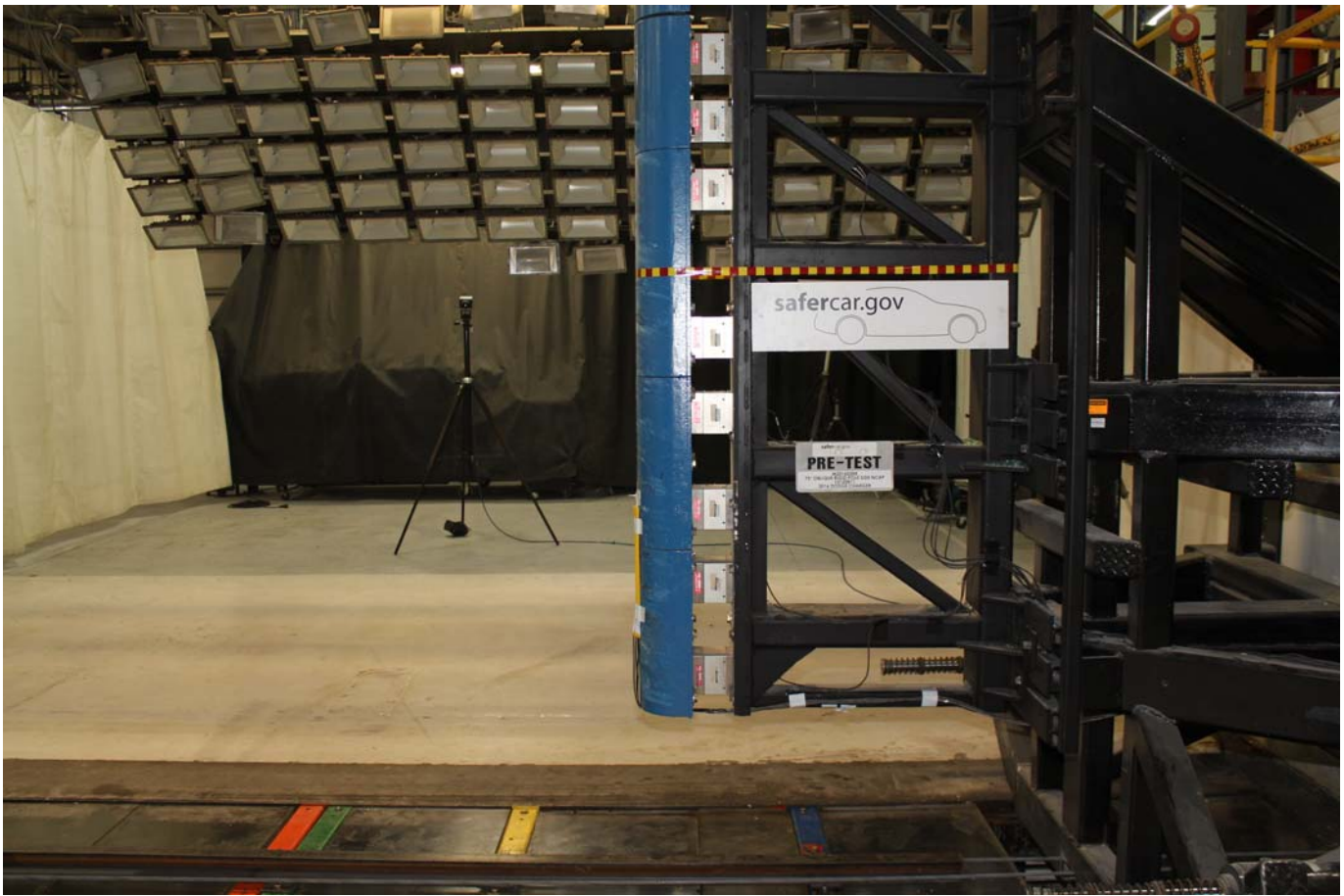


Photo No. 059 - Pre-Test Pole Barrier Side View

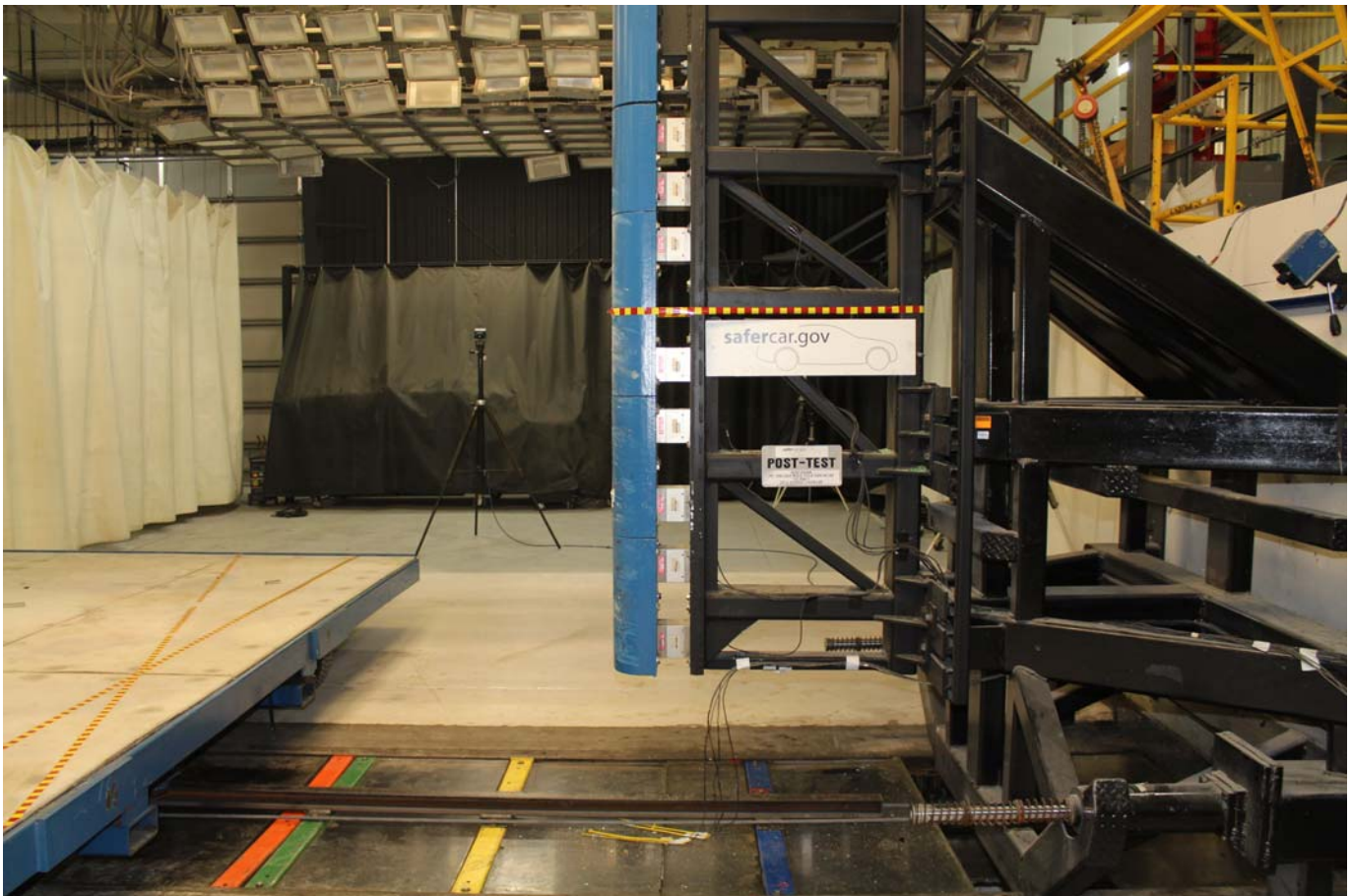


Photo No. 060 - Post-Test Pole Barrier Side View

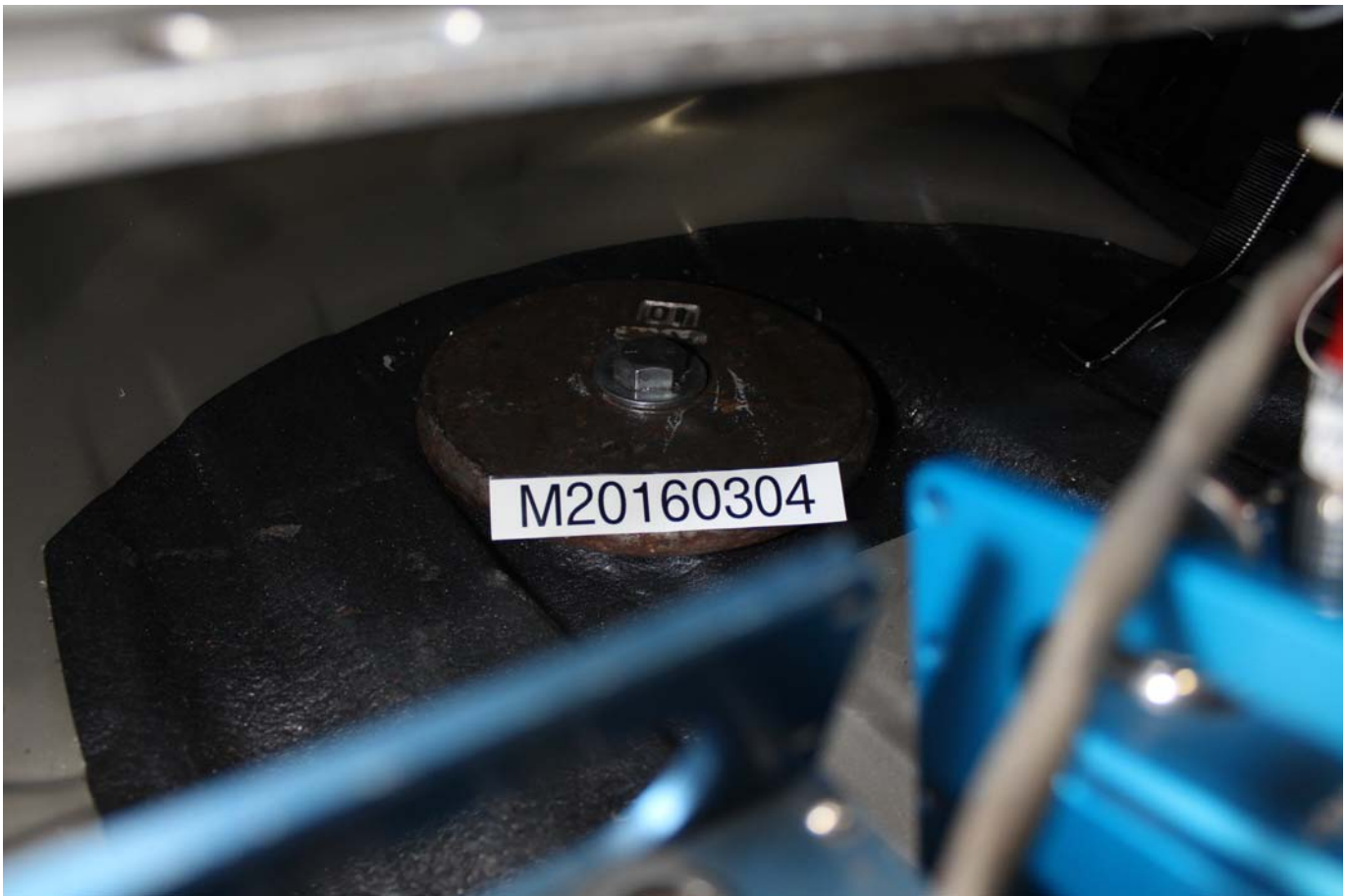


Photo No. 061 - Pre-Test Ballast View

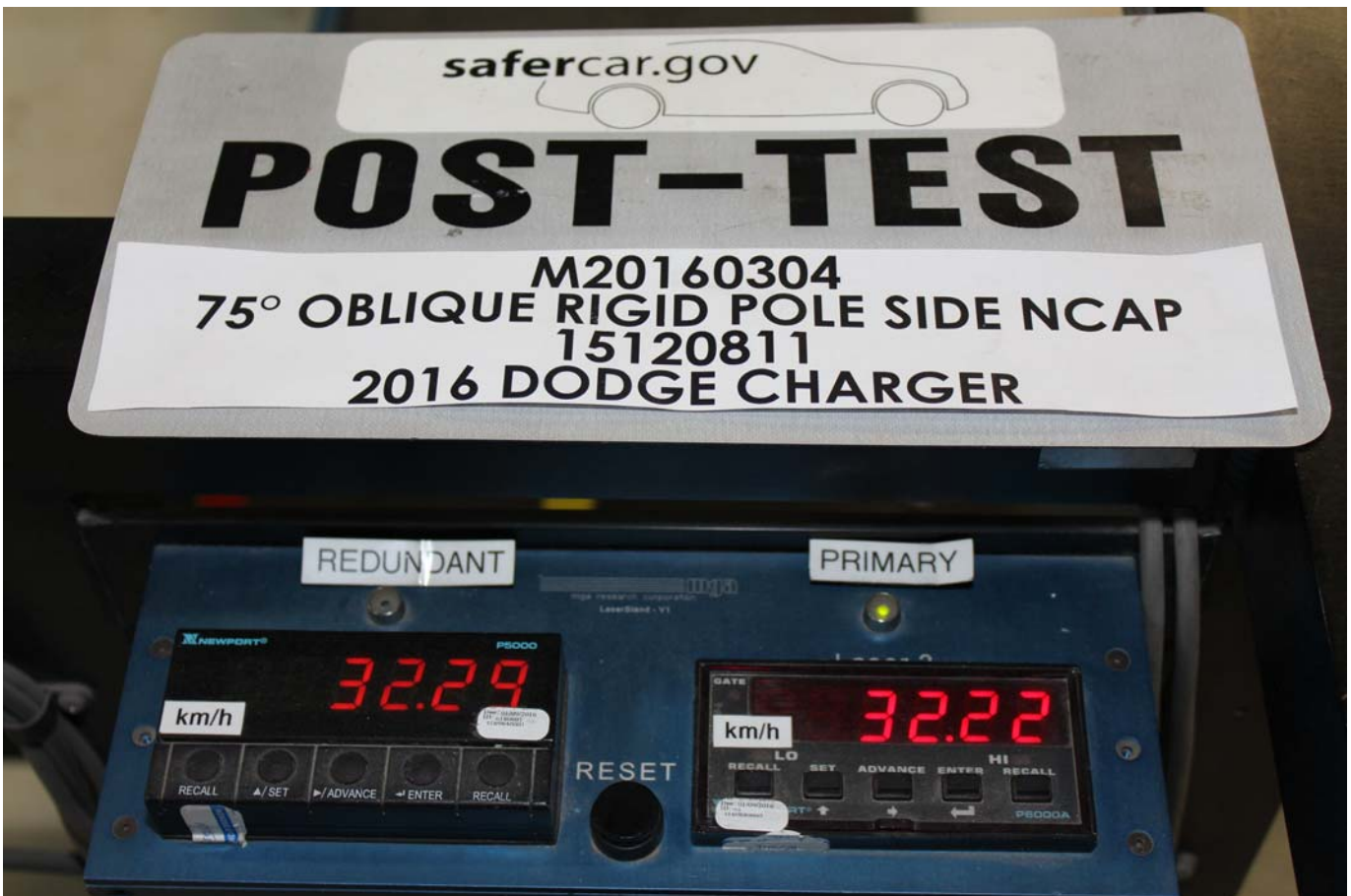


Photo No. 062 - Post-Test Primary and Redundant Speed Trap Read-Out

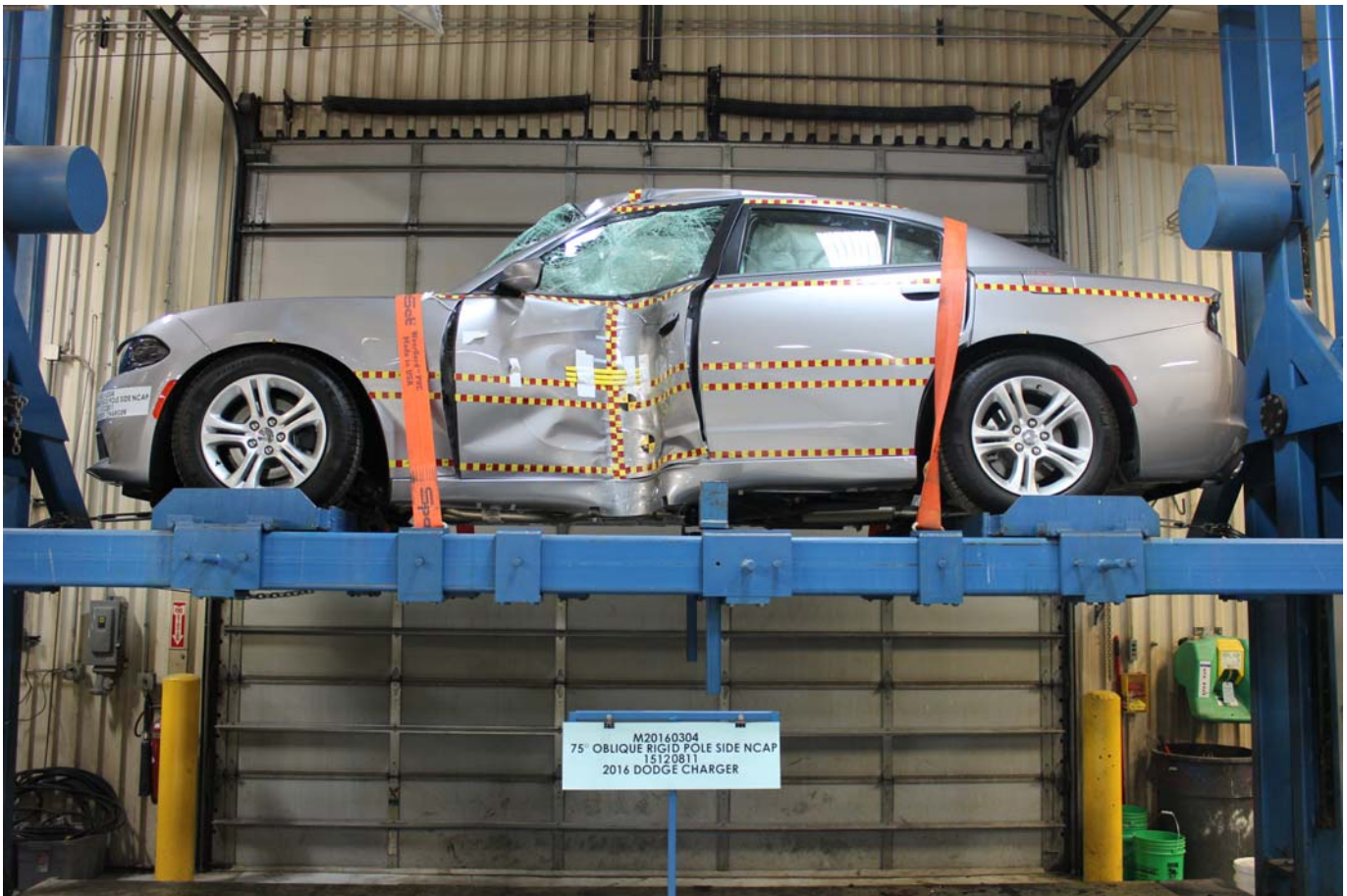


Photo No. 063 - FMVSS No. 301 Static Rollover 0 Degrees



Photo No. 064 - FMVSS No. 301 Static Rollover 90 Degrees



Photo No. 065 - FMVSS No. 301 Static Rollover 180 Degrees

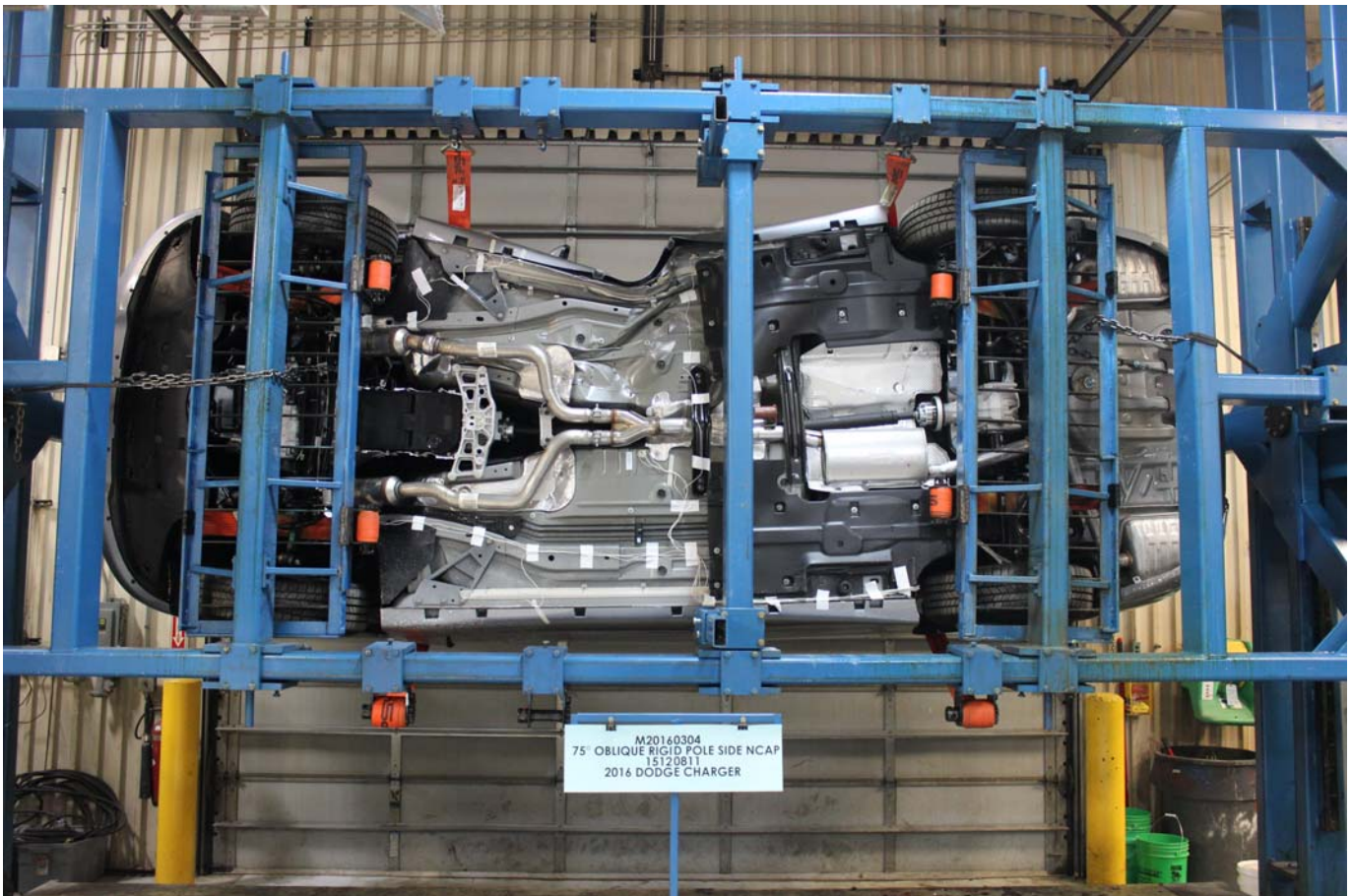


Photo No. 066 - FMVSS No. 301 Static Rollover 270 Degrees

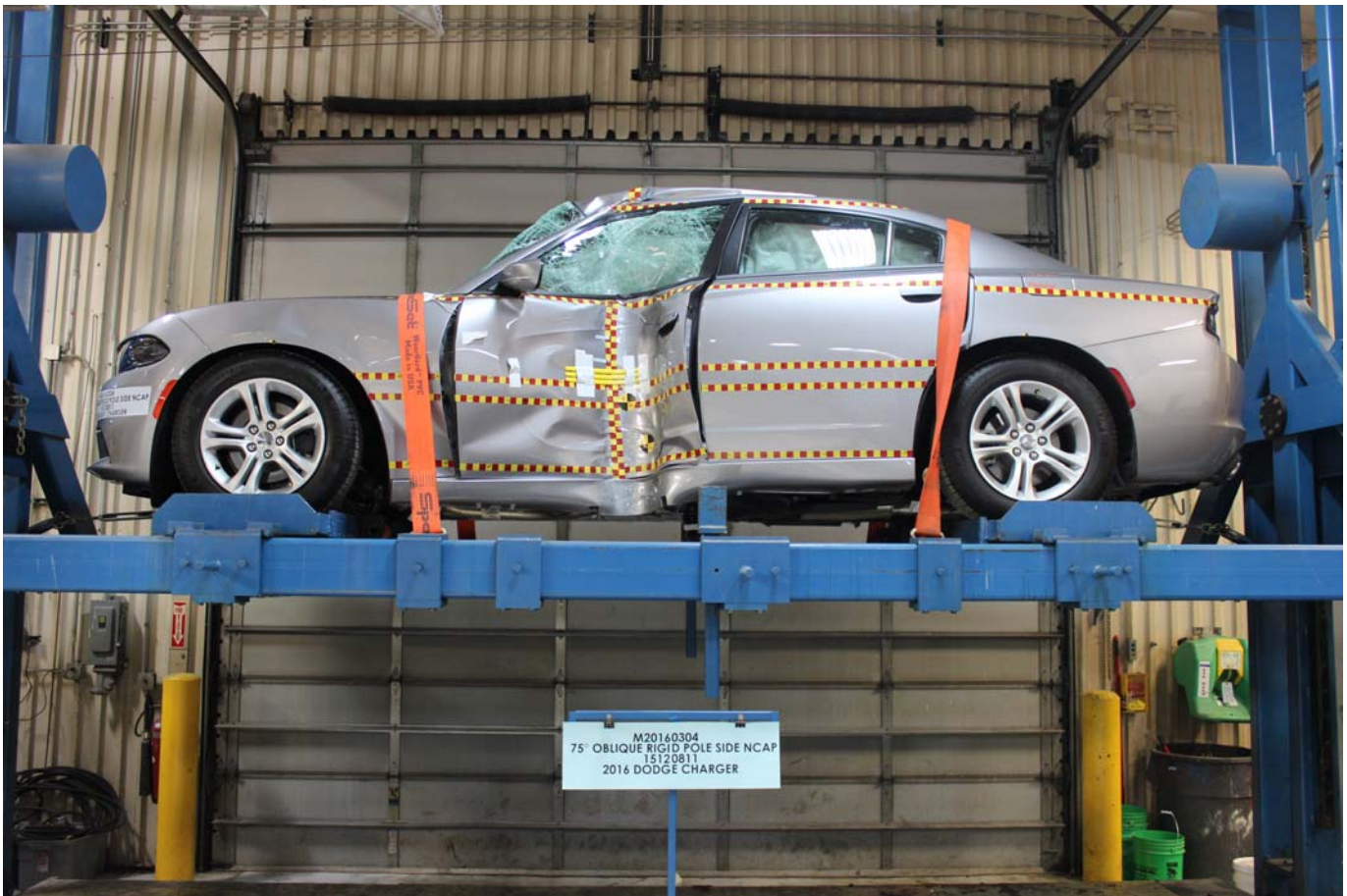


Photo No. 067 - FMVSS No. 301 Static Rollover 360 Degrees

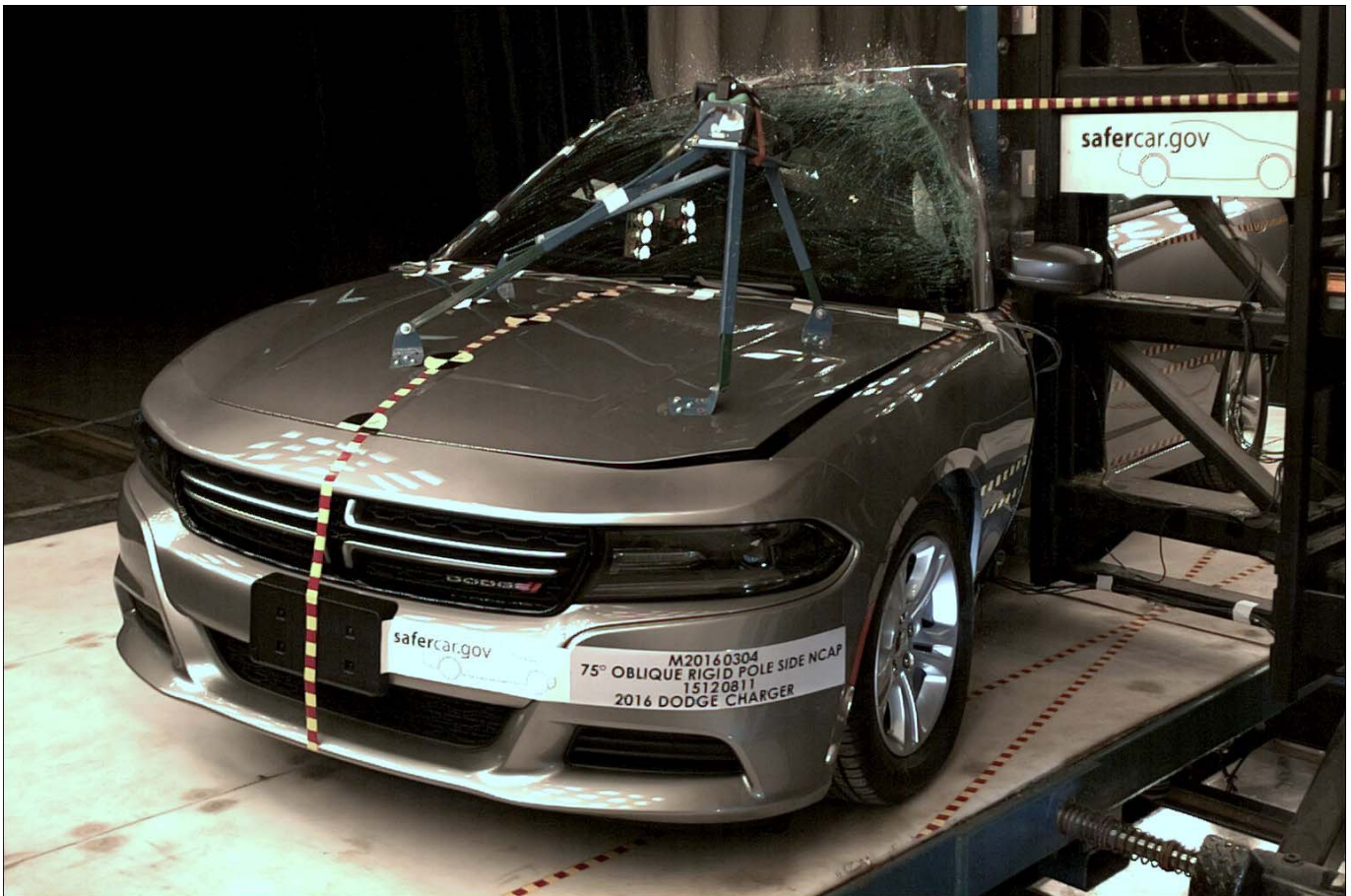


Photo No. 068 - Impact Event

2016 DODGE CHARGER SE

For more information visit: www.dodge.com
or call 1-800-4ADODGE

FCA US LLC

THIS VEHICLE IS MANUFACTURED IN MEXICO OR LIMITED SUPPLY REQUIREMENTS. THIS VEHICLE IS NOT MANUFACTURED FOR SALE OR REGISTRATION OUTSIDE OF THE UNITED STATES.

MANUFACTURER'S SUGGESTED RETAIL PRICE OF THIS MODEL INCLUDING DEALER PREPARATION
Base Price: **\$27,995**

DODGE CHARGER SE IWB
Exterior Color: Silver Metallic Clear Coat Exterior Paint
Interior Color: Black Interior Color
Interior Cloth Code
Engine: 3.6-Liter V6 24-Valve VVT Engine
Transmission: TorqueFlite 8-Speed Automatic Transmission

STANDARD EQUIPMENT (unless replaced by optional equipment)
FUNCTIONAL SAFETY FEATURES

Advanced Multistage Front Airbag
Supplemental Front Seat-Mounted Side Airbag
Supplemental Side-Curtain Front and Rear Airbag
Active Head Restraints
Anti-Lock 4-Wheel Disc Brakes
Rear Brake Support
Ready-Alert Braking
Electronic Stability Control
All-Speed Traction Control
Electric Power Steering
Hill Start Assist
Tire Pressure Monitoring Display
Keyless Go™
Safety Alert™ Theft Deterrent System
Power Front Mirrors w/ 4-Touch Up and Down Feature
Automatic Headlamps
Variable Intermittent Windshield Wipers
Speed Control
Child Seat Upper Tether Anchorage
Rear Cross Child Protection Locks
INTERIOR FEATURES
Uconnect® 8.4
8 Speakers
Instrument Cluster w/ 7-Touch Reconfigurable Display
Integrated Voice Command w/ Bluetooth®
Leather-Wrapped Steering Wheel
Steering Wheel Mounted Audio Controls
Tilt/Telescope Steering Column
Media Hub (CD, USB, Aux)
Dual Remote USB Port - Charge Only
Two 12-Volt Auxiliary Power Outlets

Air Conditioning with Dual Zone Temperature Control
Compass Gauge
Outside Temperature Display
Power 8-Way Driver Seat
Height-Adjustable Front Overhead Belts
Steer-By-Wire™
Front and Rear Power Locks

EXTERIOR FEATURES
LED Daytime Running Lamps
24-Function Halogen Projector Headlamps
Driver Side Mirror / Side Chrome Crossbars
16.5-Gallon Fuel Tank
Compact Spare Tire
P215/65R17 Low Rolling Res Tire
17-Inch x 7.6-Inch Painted Cast Aluminum Wheels
Dual 8-Speakers
Power Mirrors with Manual Fold-Away
Cross Path™

OPTIONAL EQUIPMENT (May Require Standard Equipment)
Customer Preferred Package 26G

DESTINATION CHARGE **\$885**

TOTAL PRICE: *\$28,990

WARRANTY COVERAGE
5-year or 60,000-mile Powertrain Limited Warranty,
3-year or 50,000-mile Basic Limited Warranty,
See Dealer for a copy of the full dealer warranties or
see your owner's manual for details.

**5 YEAR / 60,000 MILE
POWERTRAIN WARRANTY**

Assembly Plant/Port of Origin: BRAMPTON, ONTARIO, CANADA
VIN: 2C3CDX6G9H121856

MSRP: \$27,995
EXTRA COSTS:
OUTSIDE EQUIPMENT: \$885
CHARGES: \$0
TOTAL: \$28,990
MSRP: \$28,990
EXTRA COSTS:
OUTSIDE EQUIPMENT: \$885
CHARGES: \$0
TOTAL: \$29,875
MSRP: \$29,875
EXTRA COSTS:
OUTSIDE EQUIPMENT: \$885
CHARGES: \$0
TOTAL: \$30,760

EPA DOT Fuel Economy and Environment Gasoline Vehicle

Fuel Economy
23 MPG combined city/hwy
19 city
31 highway
4.3 gallons per 100 miles
Large city range from 14 to 49 MPG.
The best vehicle ever: 139 MPG.

You spend \$750 more in fuel costs over 5 years compared to the average new vehicle.

Annual fuel COST \$1,950

Fuel Economy & Greenhouse Gas Rating (relative only) - Smog Rating (relative only)

fuel economy.gov
Click to learn about fuel economy and choose a vehicle.

GOVERNMENT 5-STAR SAFETY RATINGS

Overall Vehicle Score Not Rated
Based on the combined ratings of frontal, side, and rollover. Should ONLY be compared to other vehicles of similar size and weight.

Frontal Crash	Driver Passenger	Not Rated
Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.		
Side Crash	Front seat Rear seat	Not Rated
Based on the risk of injury in a side impact.		
Rollover		★★★★★
Based on the risk of rollover in a single-vehicle crash.		

5-STAR ratings range from 1 to 5 stars (4-4-4-4-4) with 5 being the highest.
Source: National Highway Traffic Safety Administration (NHTSA)
www.safercar.gov or 1-888-327-4236

PARTS CONTENT INFORMATION FOR VEHICLES IN THIS COUNTRY:
U.S./CANADIAN PARTS CONTENT: 64%
MAJOR SOURCES OF FOREIGN PARTS CONTENT:
MEXICO: 26%
NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS.
FOR THIS VEHICLE:
FINAL ASSEMBLY POINT: BRAMPTON, ONTARIO, CANADA
COUNTRY OF ORIGIN: ENGINE: MEXICO TRANSMISSION: GERMANY

Photo No. 069 - Monroney Label

GETTING STARTED

WARNING!

- In a collision, an unrestrained child, even a tiny baby, can become a projectile inside the vehicle. The force required to hold even an infant on your lap could become so great that you could not hold the child, no matter how strong you are. The child and others could be severely injured or killed. Any child riding in your vehicle should be in a proper restraint for the child's size.
- Never place a rear-facing child restraint in front of an air bag. A deploying Passenger Advanced Front Air Bag can cause death or serious injury to a child 12 years or younger, including a child in a rear-facing child restraint.
- Only use a rear-facing child restraint in a vehicle with a rear seat.
- Improper installation of a child restraint to the LATCH anchorages can lead to failure of an infant or child restraint. The child could be severely injured or killed. Follow the manufacturer's directions exactly when installing an infant or child restraint.
- An incorrectly anchored tether strap could lead to increased head motion and possible injury to the child. Use only the anchor positions directly behind the child seat to secure a child restraint top tether strap.
- If your vehicle is equipped with a split rear seat, make sure the tether strap does not slip into the opening between the seatbacks as you remove slack in the strap.

HEAD RESTRAINTS

Head restraints are designed to reduce the risk of injury by restricting head movement in the event of a rear impact. Head restraints should be adjusted so that the top of the head restraint is located above the top of your ear.

WARNING!

The head restraints for all occupants must be properly adjusted prior to operating the vehicle or occupying a seat. Head restraints should never be adjusted while the vehicle is in motion. Driving a vehicle with the head restraints improperly adjusted or removed could cause serious injury or death in the event of a collision.

NOTE:
Do not reverse the head restraints (making the rear of the head restraint face forward) in an attempt to gain additional clearance to the back of your head.

GETTING STARTED

Reactive Head Restraints — Front Seats

The front driver and passenger seats are equipped with Reactive Head Restraints (RHR). In the event of a rear impact the RHRs will automatically extend forward minimizing the gap between the back of the occupants head and the RHR.

The RHRs will automatically return to their normal position following a rear impact. If the RHRs do not return to their normal position see your authorized dealer immediately.

To raise the head restraint, pull upward on the head restraint. To lower the head restraint, push the adjustment button located at the base of the head restraint and push downward on the head restraint.

NOTE:
To remove the head restraint, raise it as far as it can go then push the release button and the adjustment button at the base of each post while pulling the head restraint up. To reinstall the head restraint, put the head restraint posts into the holes and push downward. Then adjust the head restraint to the appropriate height.

WARNING!

- A loose head restraint thrown forward in a collision or hard stop could cause serious injury or death to occupants of the vehicle. Always securely stow removed head restraints in a location outside the occupant compartment.
- ALL the head restraints MUST be reinstalled in the vehicle to properly protect the occupants. Follow the re-installation instructions above prior to operating the vehicle or occupying a seat.
- Do not place items over the top of the Reactive Head Restraint, such as coats, seat covers or portable DVD players. These items may interfere with the operation of the Reactive Head Restraint in the event of a collision and could result in serious injury or death.

Rear Head Restraints

The center head restraint has two adjustable positions, up or down. When the center seat is being occupied the head restraint should be in the raised position. When there are no occupants in the center seat the head restraint can be lowered for maximum visibility for the driver.

To raise the head restraint, pull upward on the head restraint. To lower the head restraint, push the adjustment button located at the base of the head restraint and push downward on the head restraint.

NOTE:

- The head restraint should only be removed by qualified technicians, for service purposes only. If the center rear head restraints requires removal, see your authorized dealer.
- The outboard head restraints are not adjustable.

Photo No. 070 - Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



Photo No. 071 - 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

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 Head Angular Velocity X (Deg/Sec) vs. Time
 Driver Head Angular Velocity Y (Deg/Sec) vs. Time
 Driver Head Angular Velocity Z (Deg/Sec) 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)

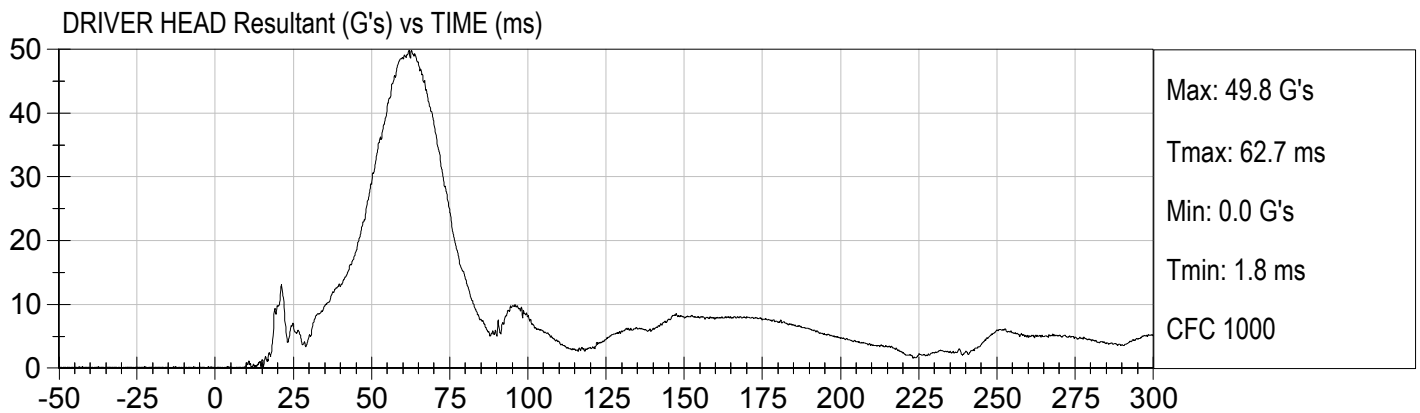
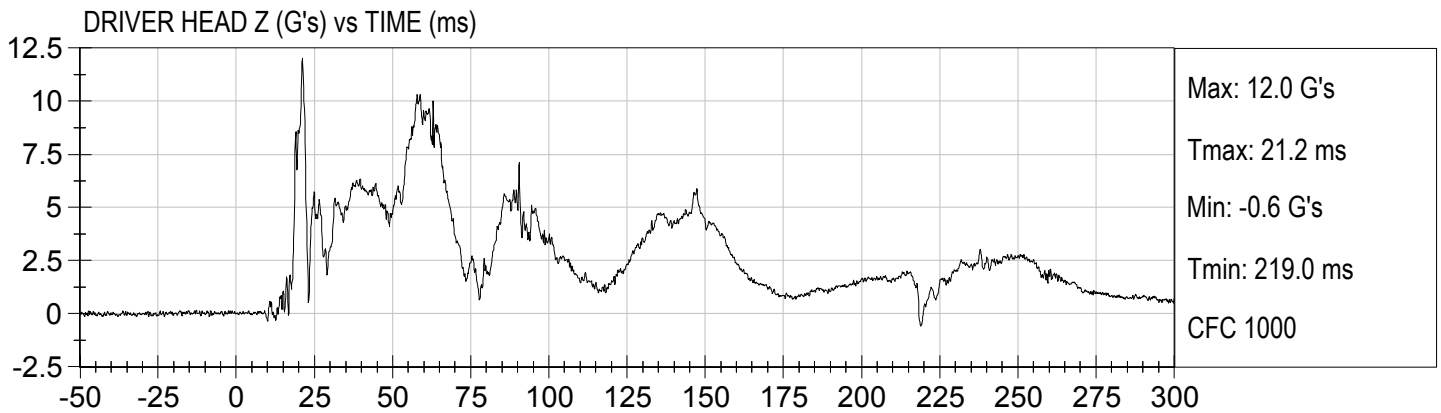
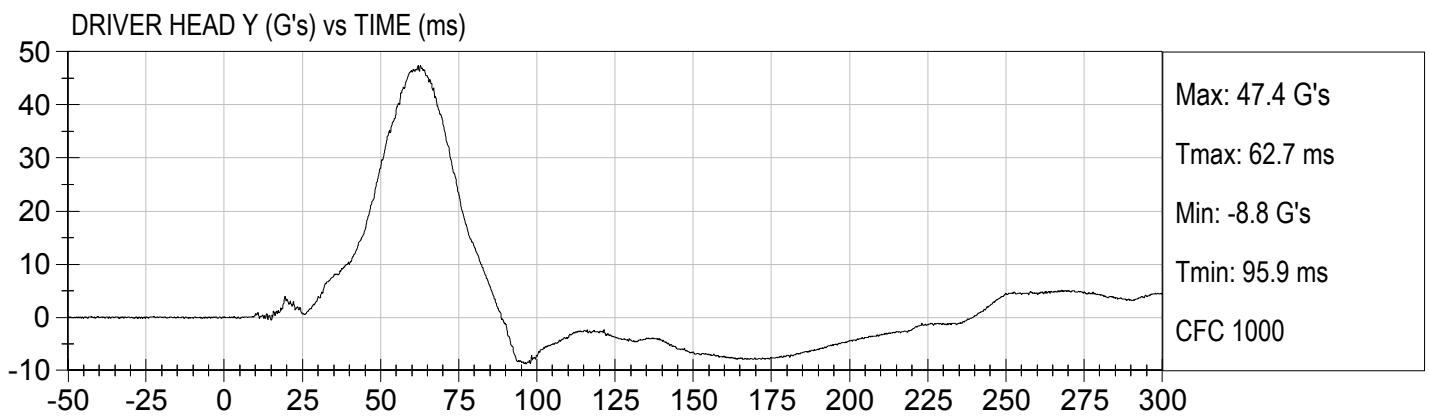
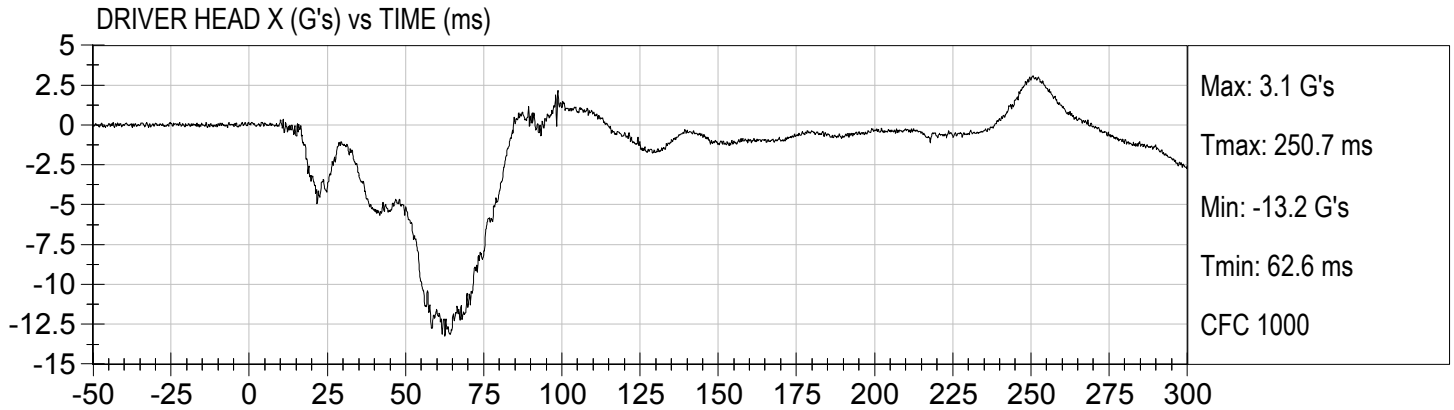
Load Cell Pole Barrier #4 Force (Y)

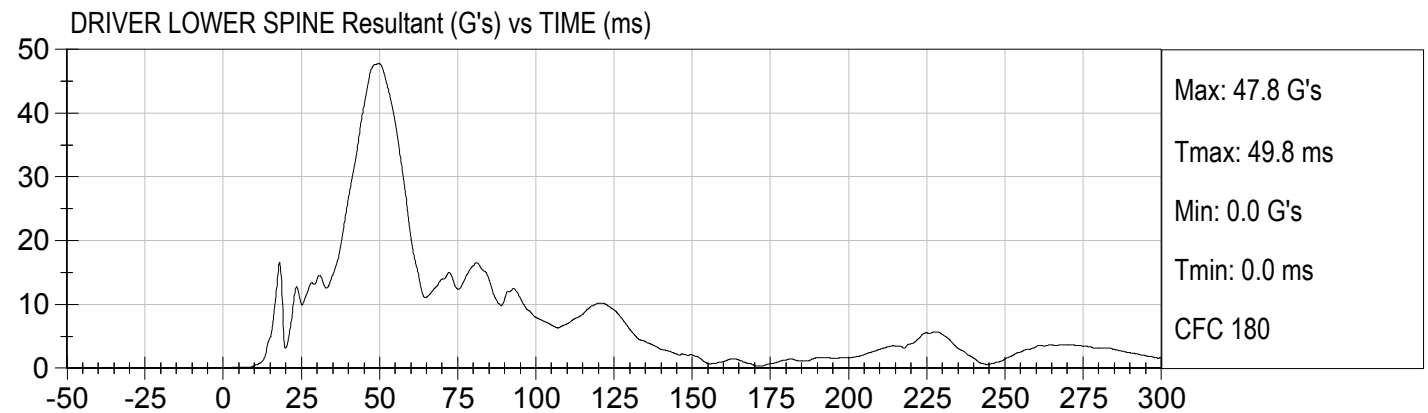
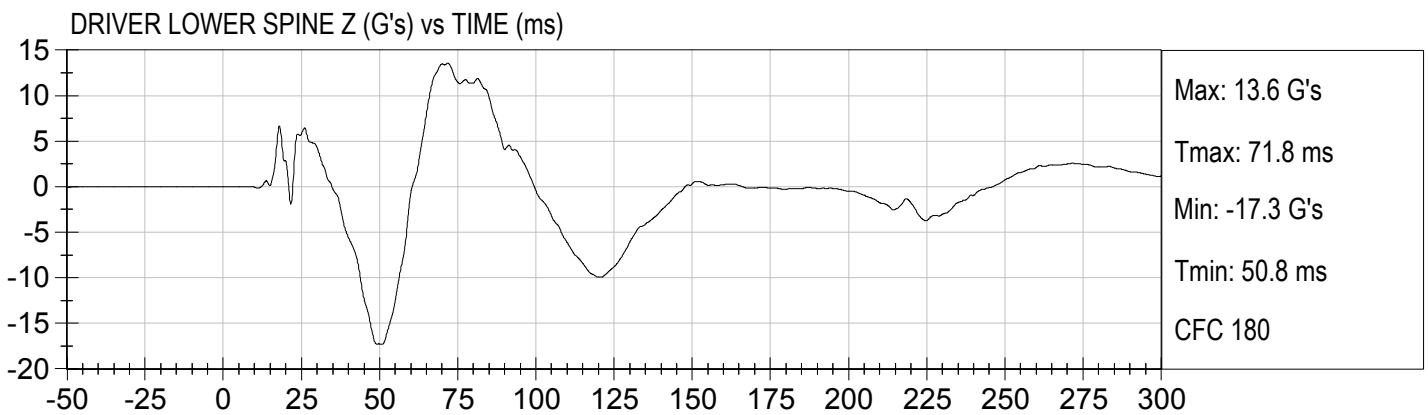
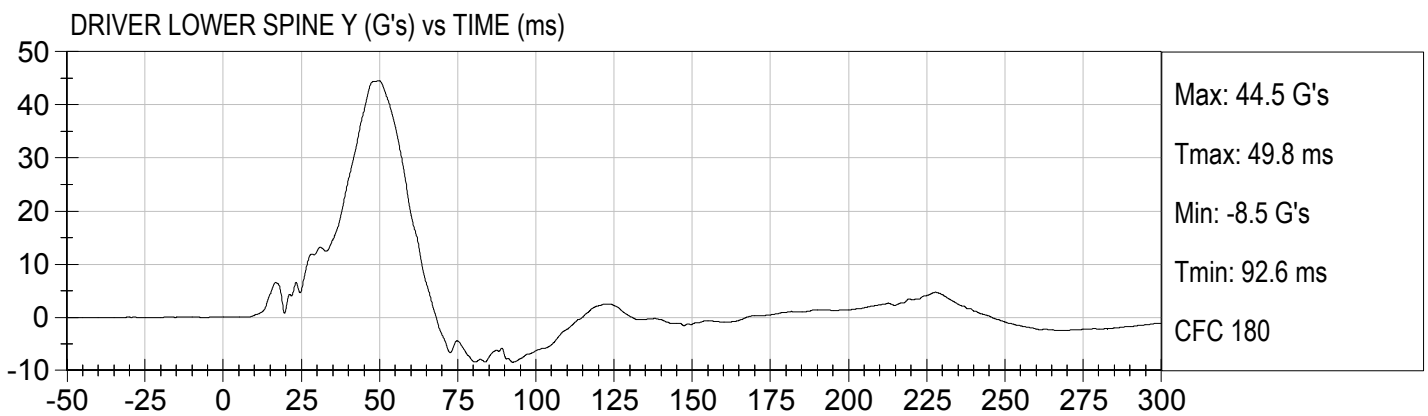
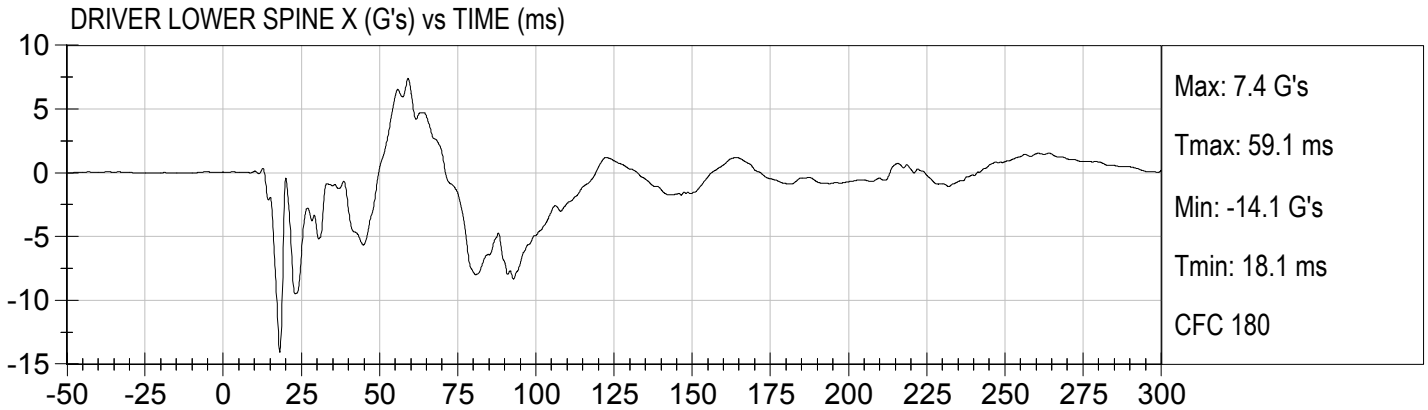
Load Cell Pole Barrier #5 Force (Y)

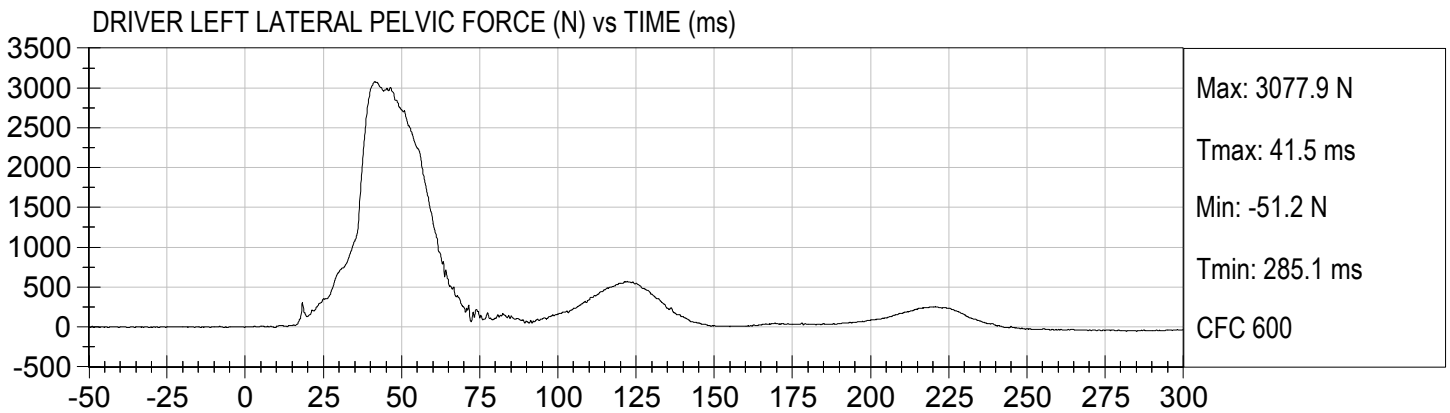
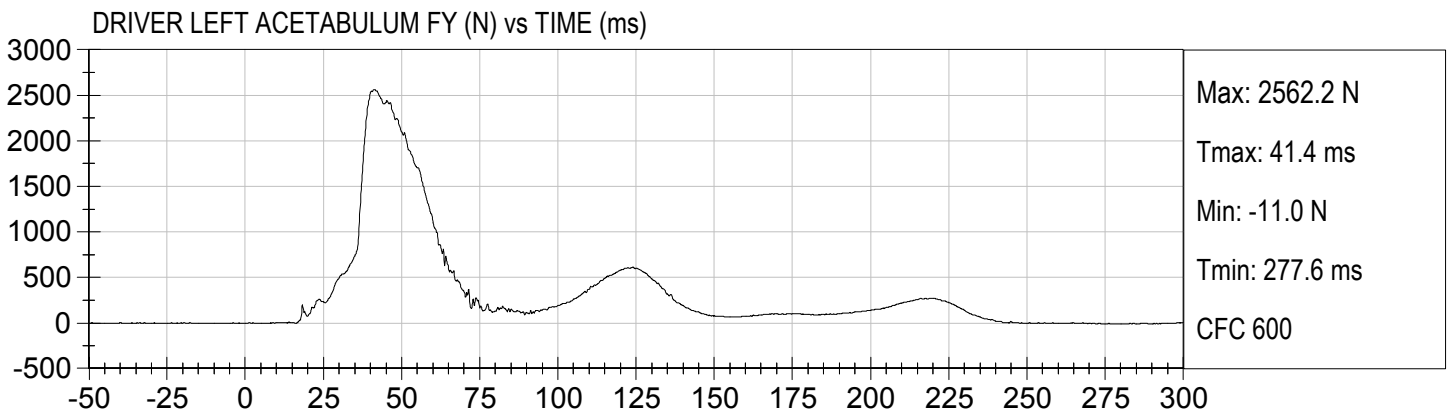
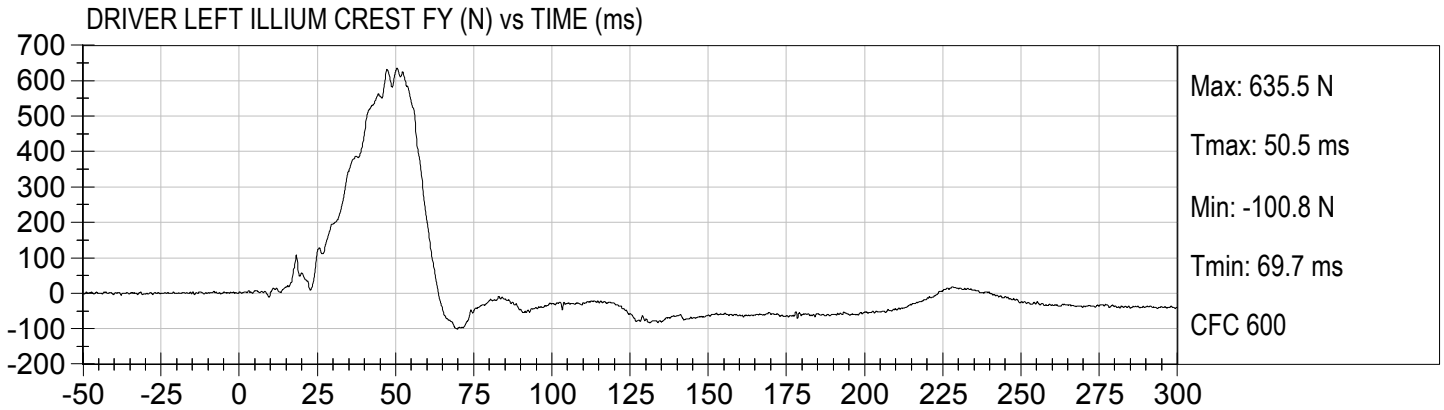
Load Cell Pole Barrier #6 Force (Y)

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

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

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

ATD Serial No: 306

Test ID: D153331

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	36	Pass
Peak Resultant Acceleration	G's	115 to 137	119	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-9.9	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
Overall Test Results				Pass

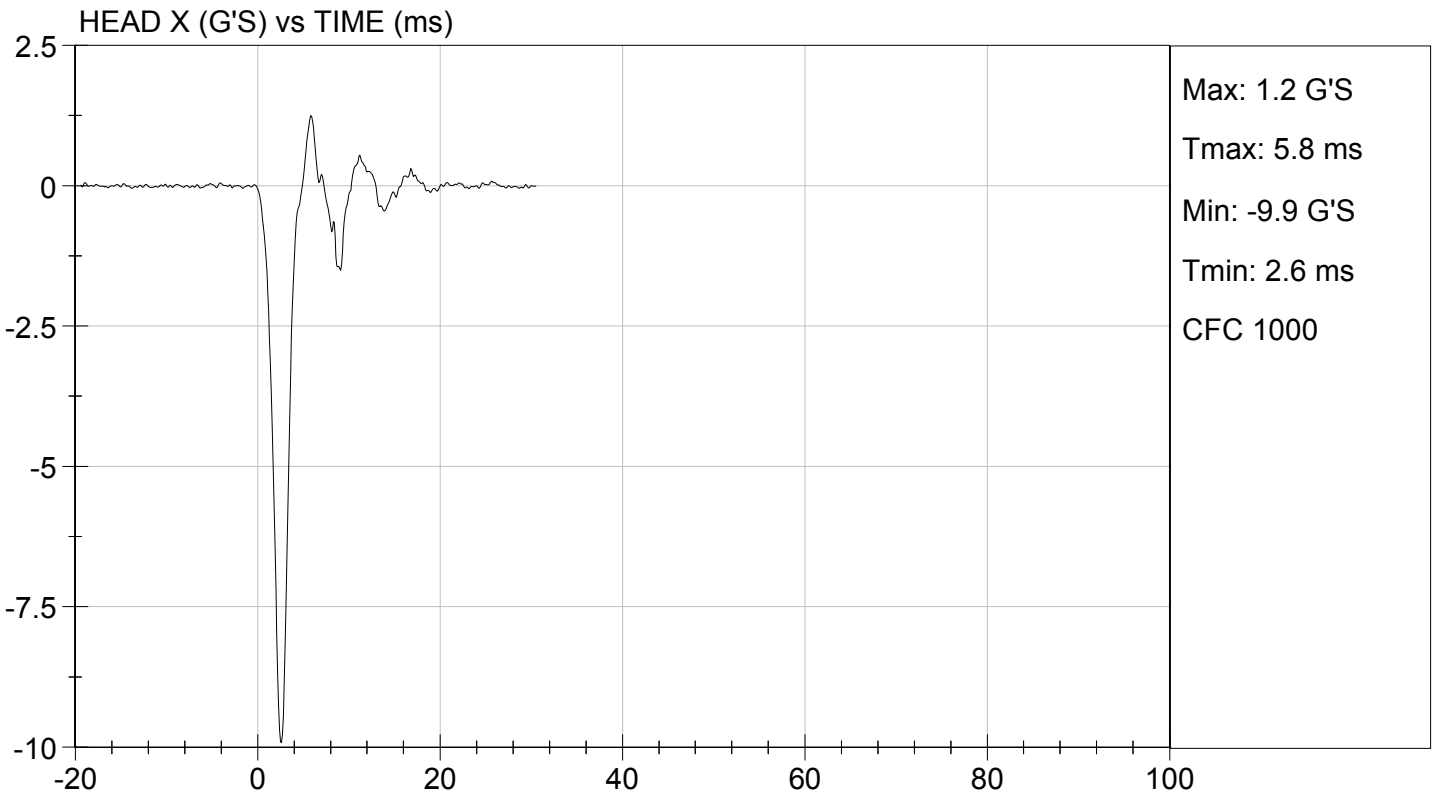
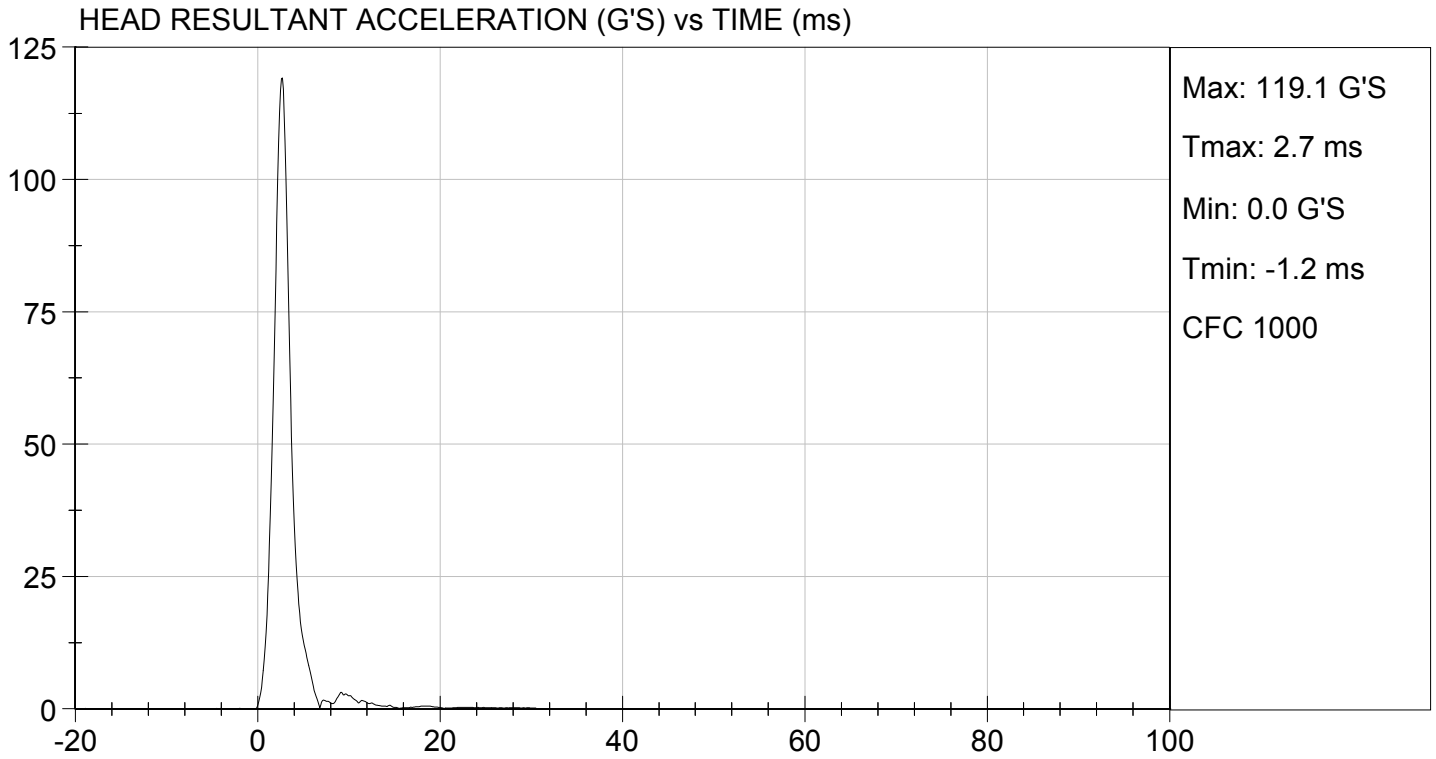
David Schoedel

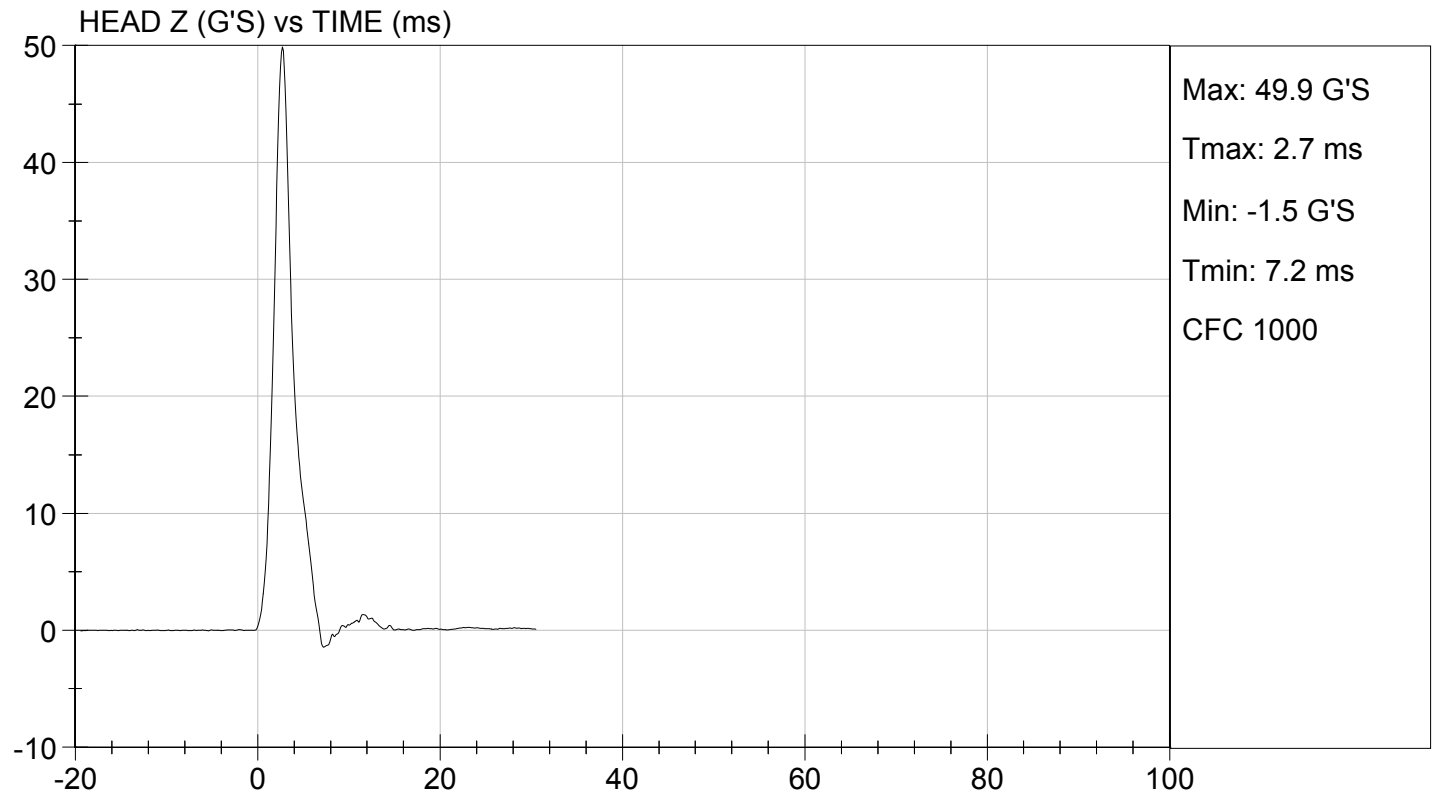
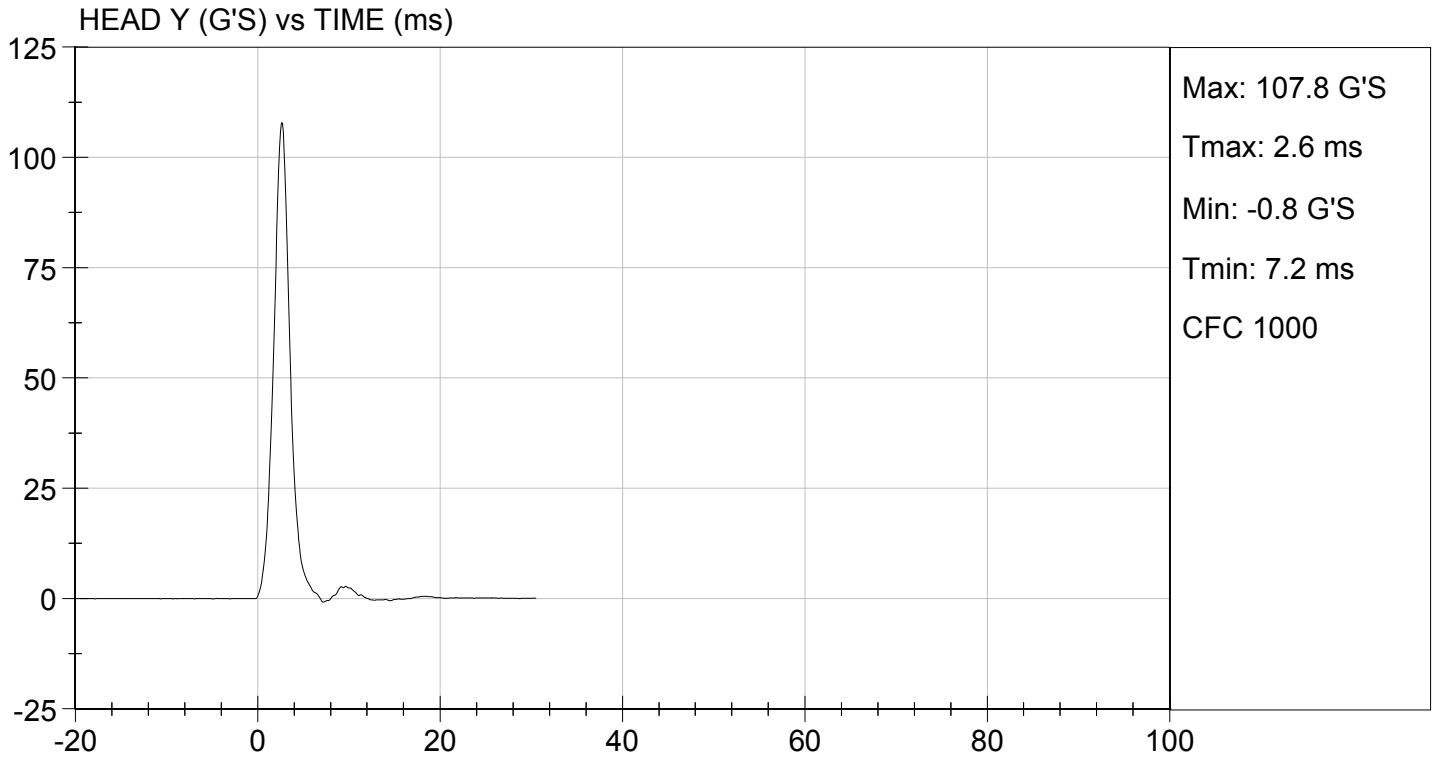
 Laboratory Technician

10/20/2015
 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.: D153332

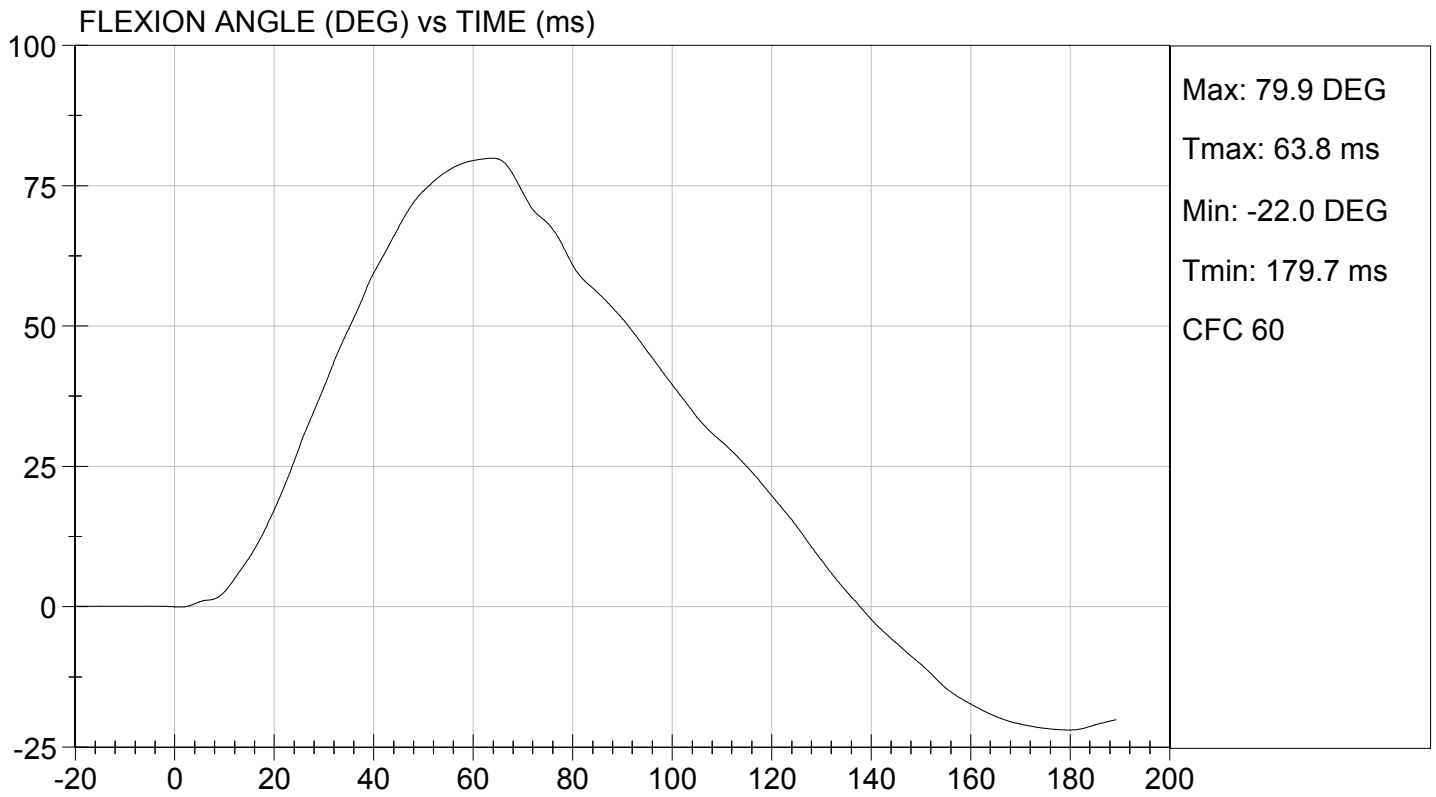
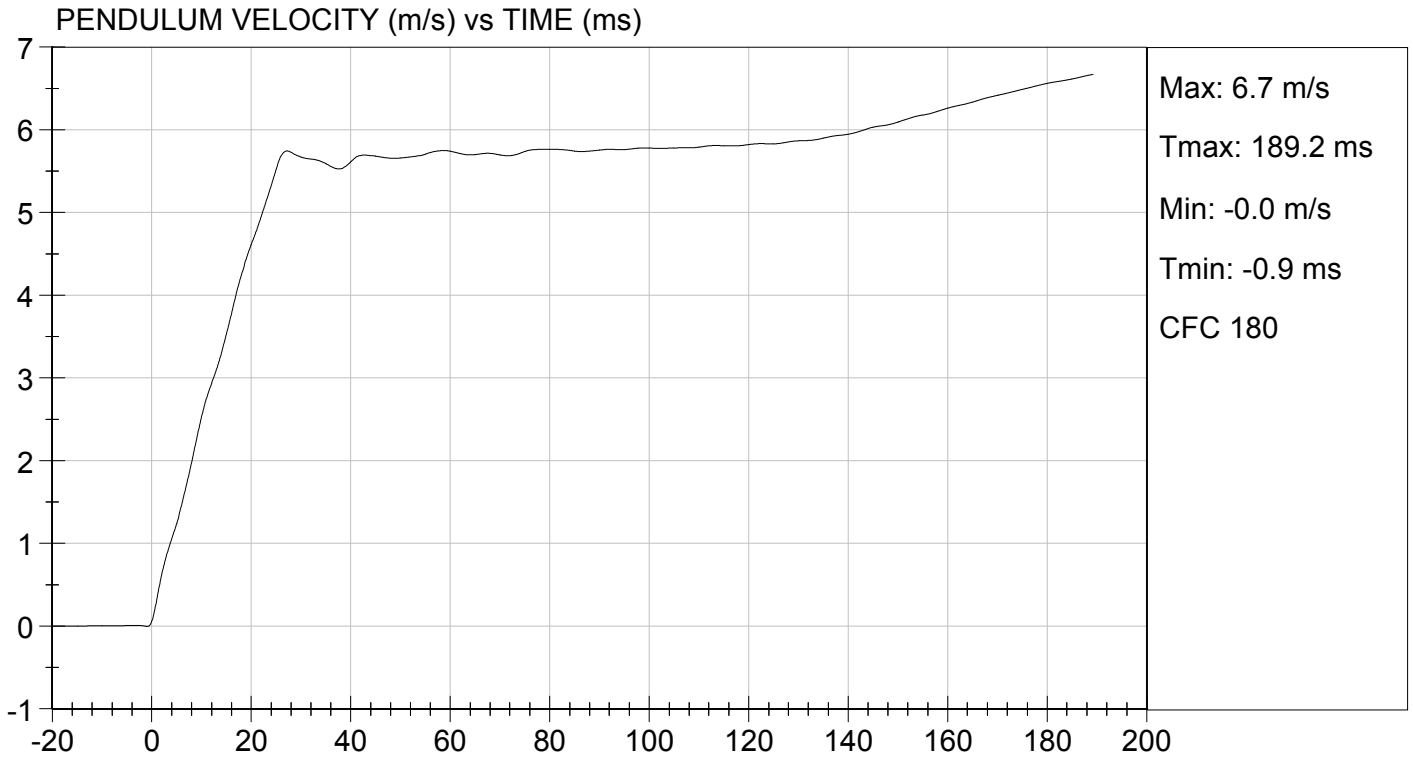
Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.5	Pass
Humidity		%	10 to 70	32	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.53	Pass
	15 ms	m/s	3.30 to 4.10	3.53	Pass
	20 ms	m/s	4.40 to 5.40	4.61	Pass
	25 ms	m/s	5.40 to 6.10	5.53	Pass
	25-100 ms	m/s	5.50 to 6.20	5.78	Pass
Maximum D-Plane Rotation		deg	71 to 81	80	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	64	Pass
Maximum Occipital Condyle Moment		Nm	-44 to -36	-39	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	118	Pass
Overall Test Results					Pass

David Schoedel
Laboratory Technician

10/20/2015

Test Date

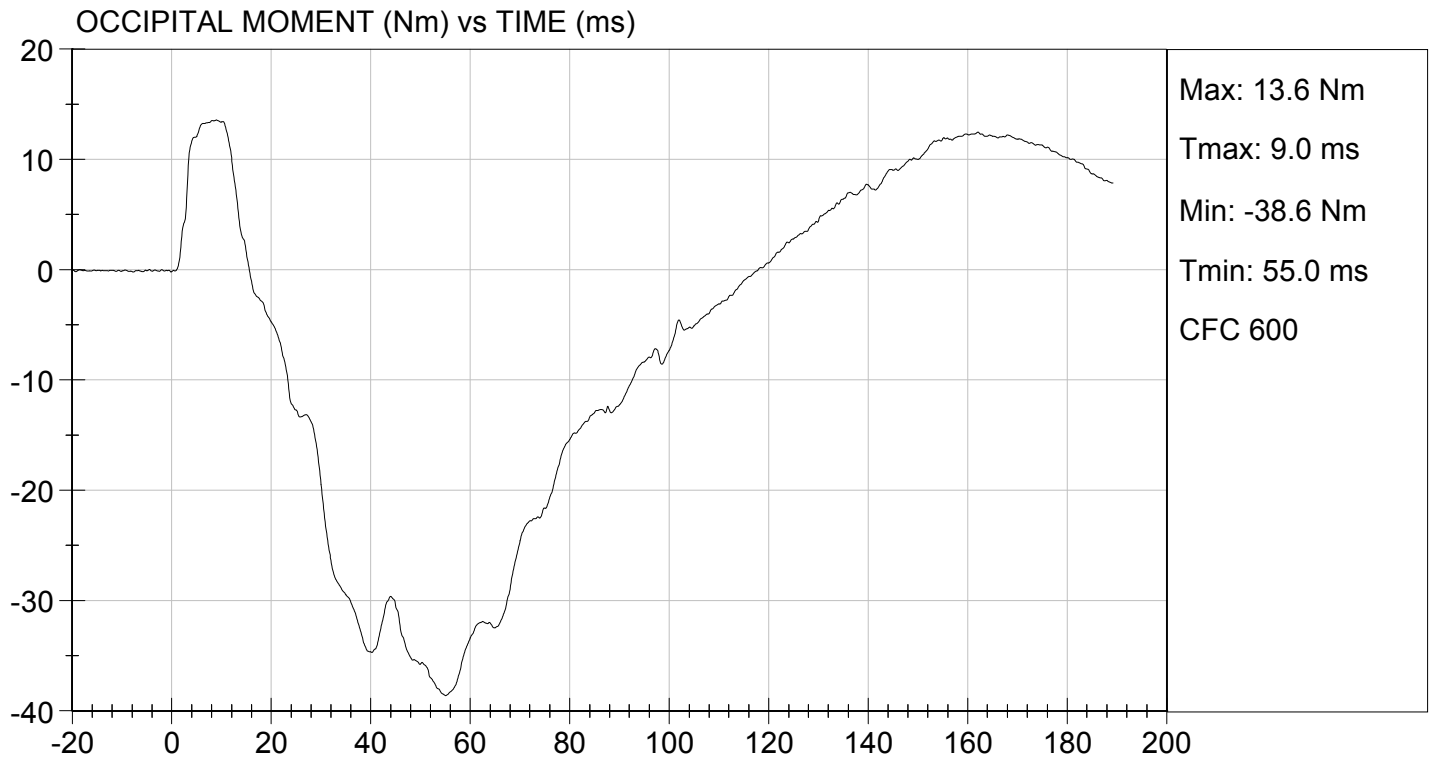
Jessica Hall
Approved By





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

TEST DATE: 10/20/2015
TEST #: D153332



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

ATD Serial No: 306

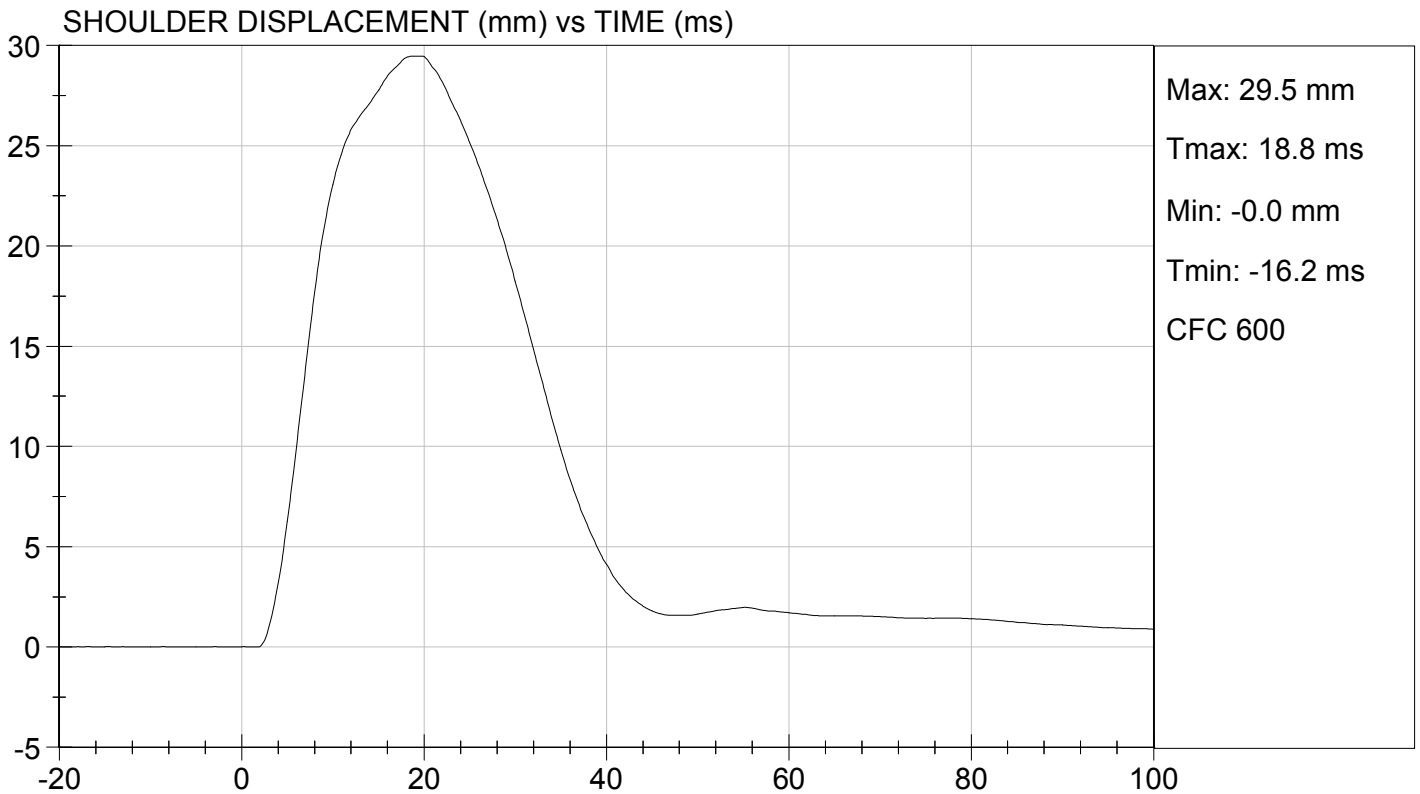
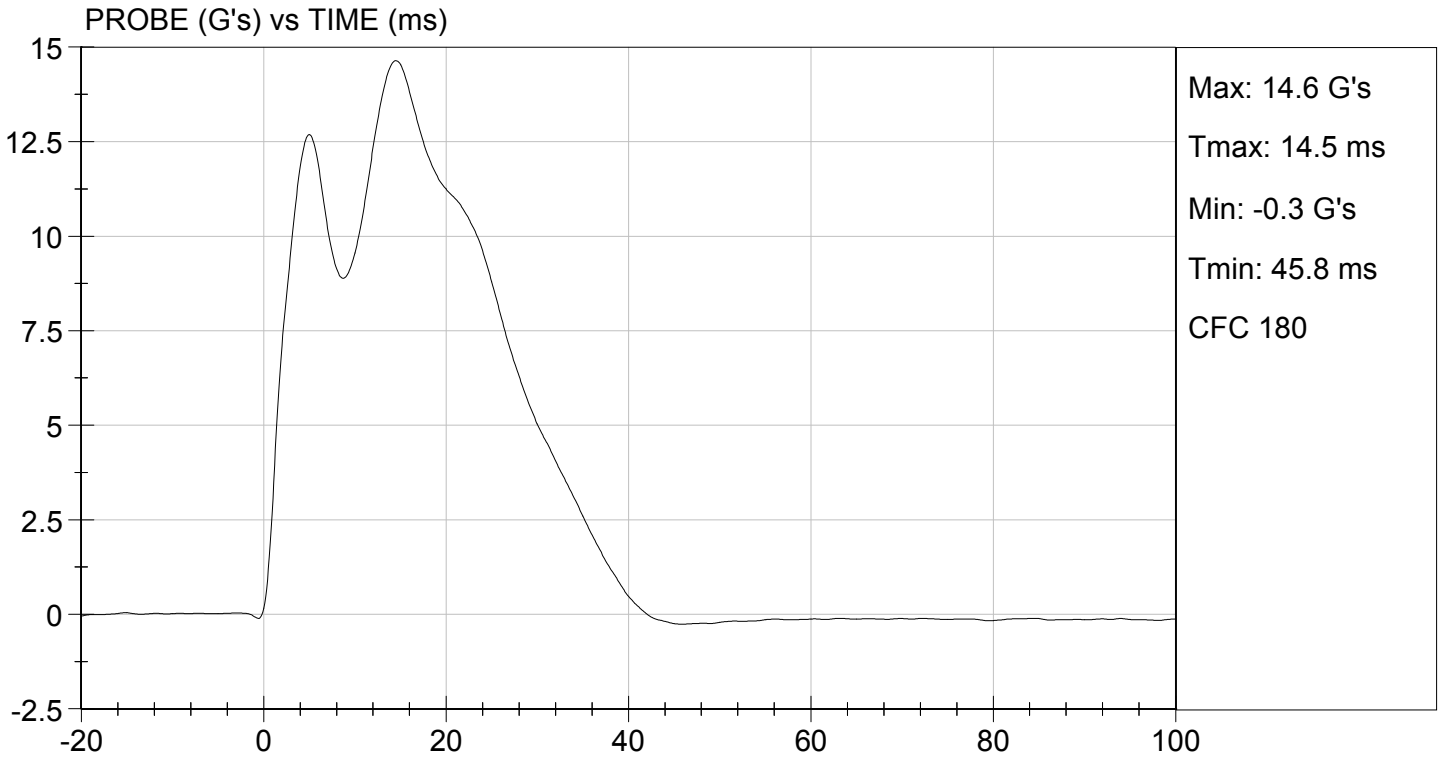
Test ID: D153333

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	36	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	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	19	Pass
Overall Test Results				Pass

David Schoedel
Laboratory Technician

10/20/2015
Test Date

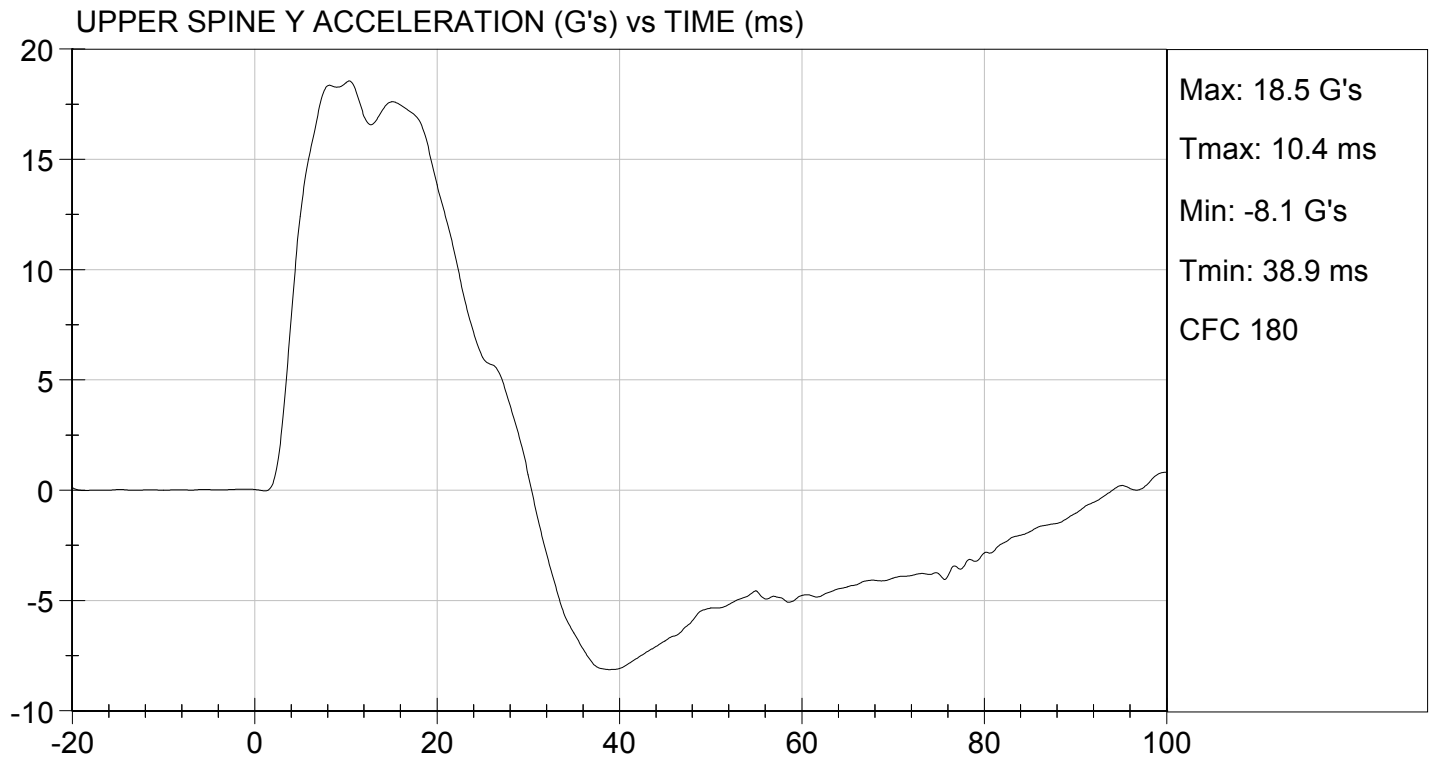
Jessica Hall
Approved By





TEST DESC: SHOULDER IMPACT
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 10/20/2015
TEST #: D153333



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

ATD Serial No: 306

Test I.D.: D153334

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	36	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	28	Pass
Middle Rib Displacement	mm	30 to 36	32	Pass
Lower Rib Displacement	mm	32 to 38	35	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	36	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	33	Pass
Overall Test Results				Pass

David Schoedel

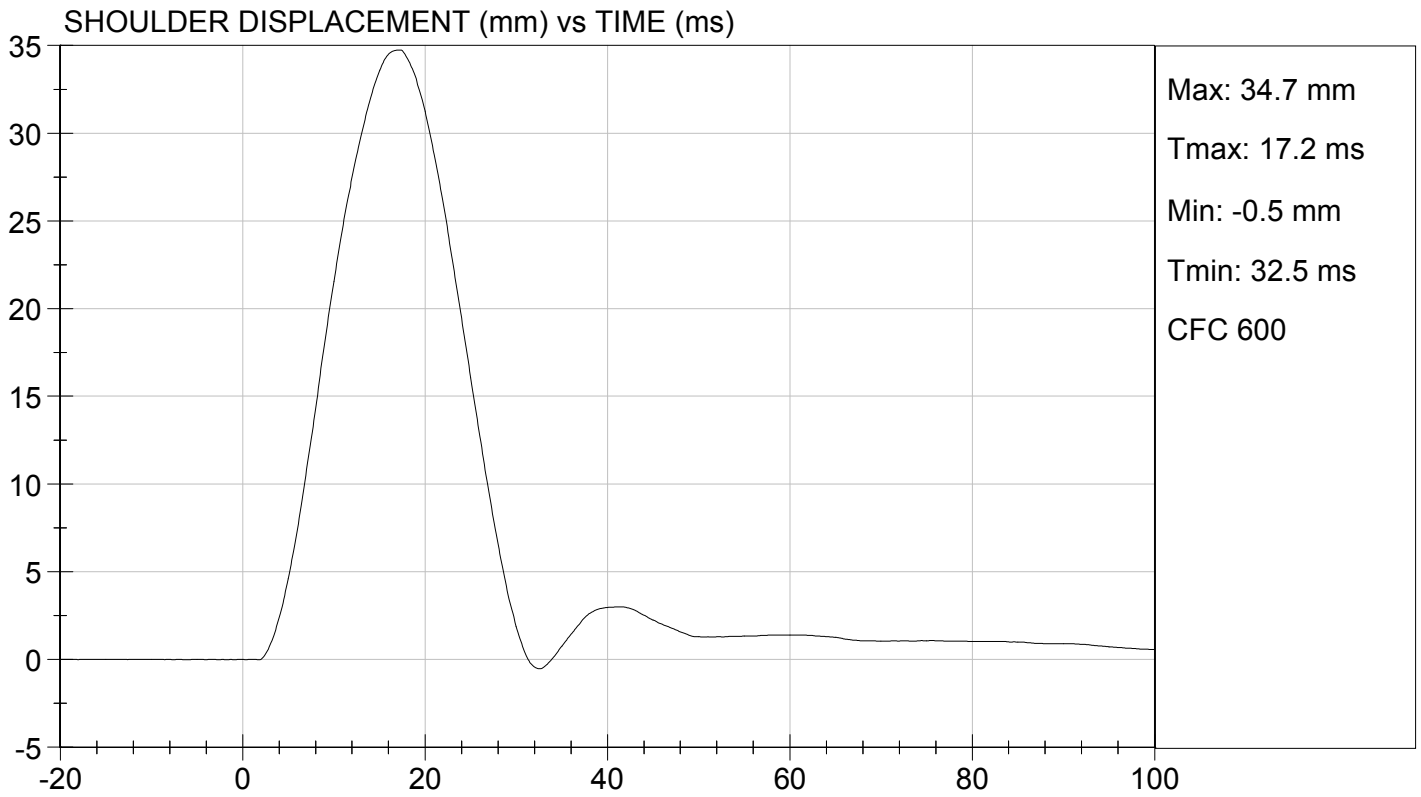
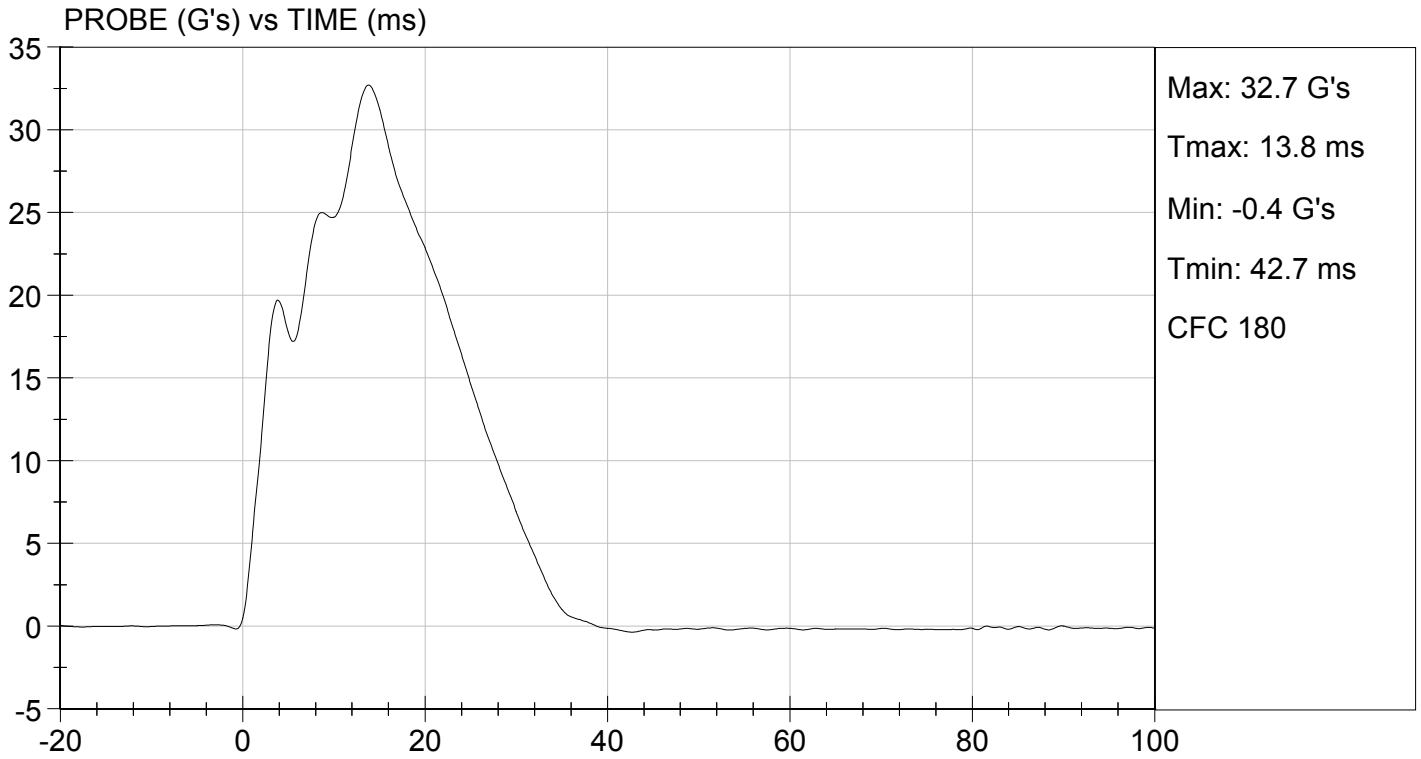
 Laboratory Technician

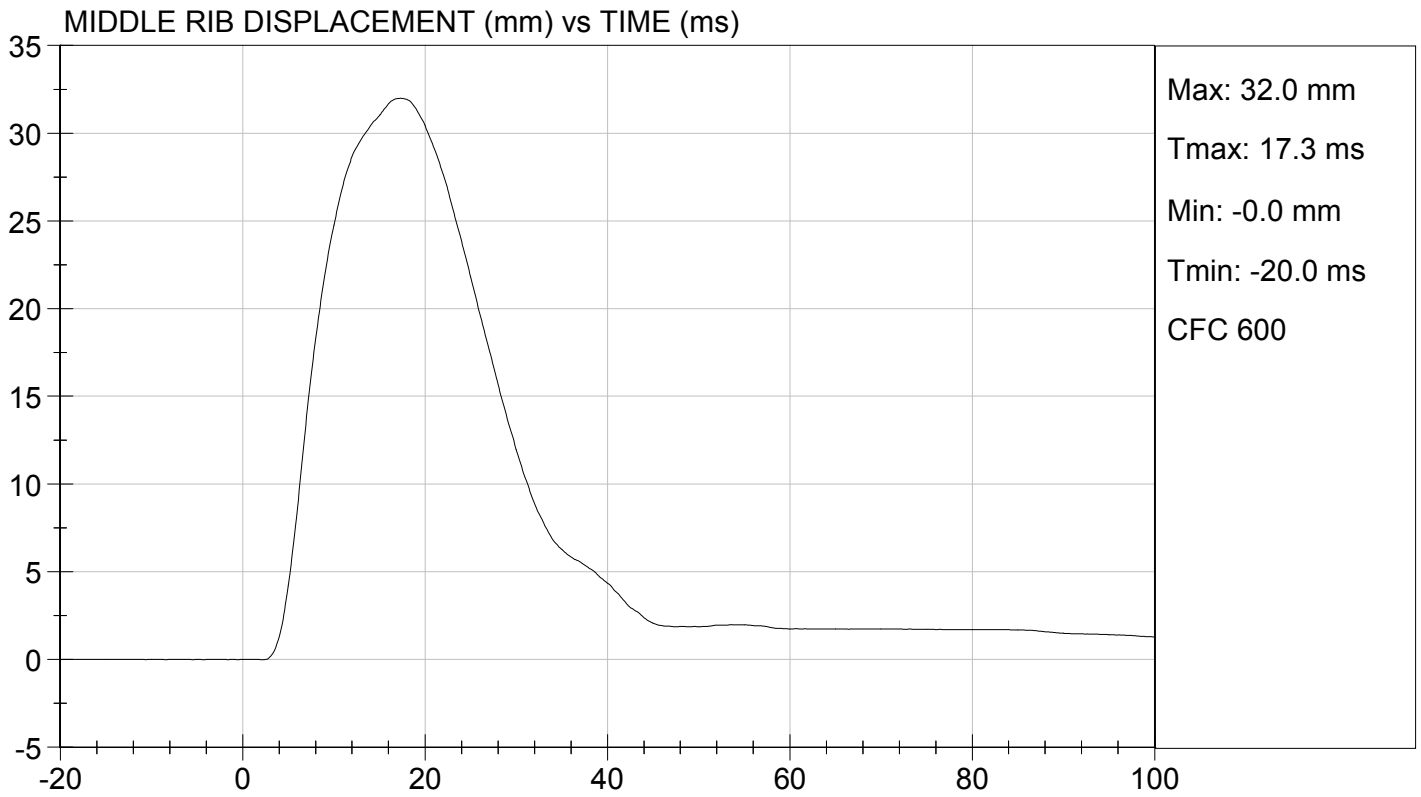
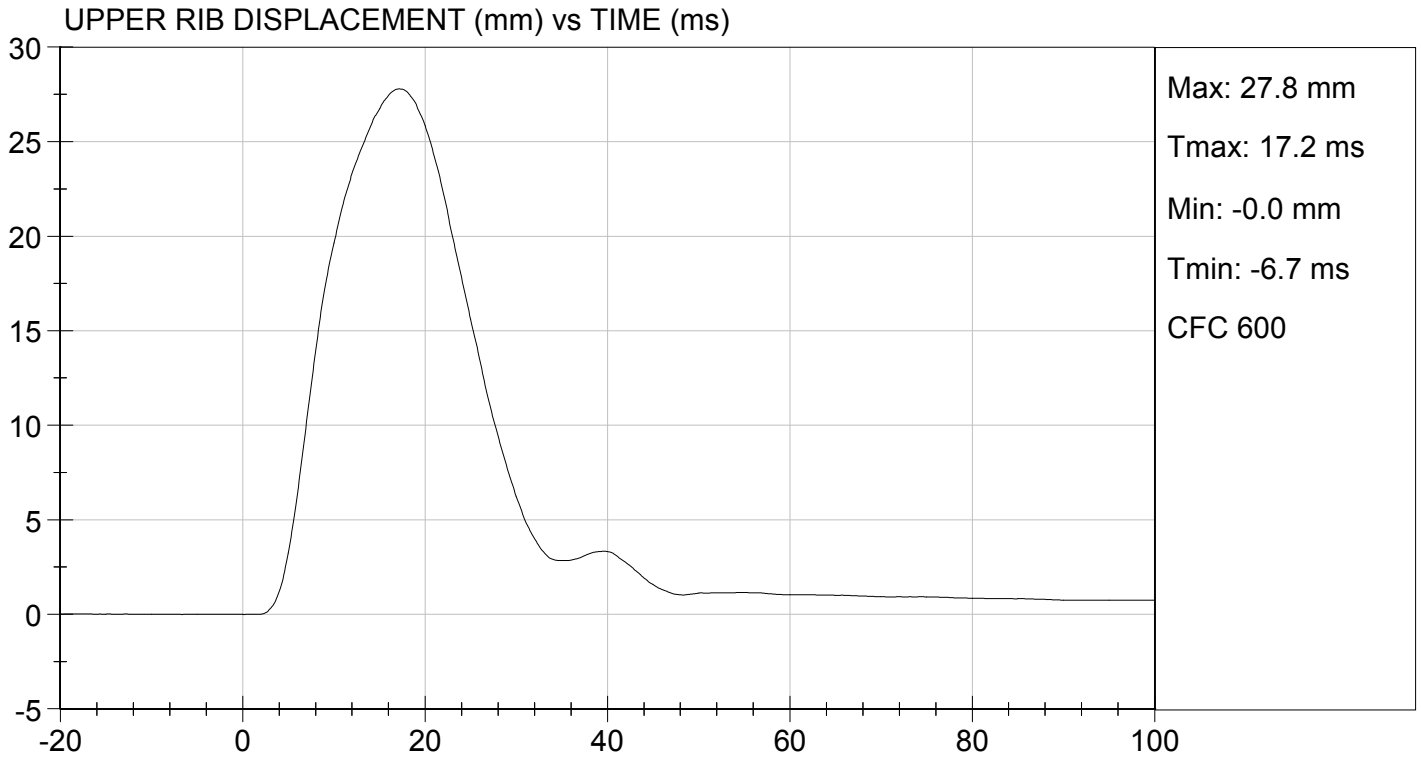
10/20/2015

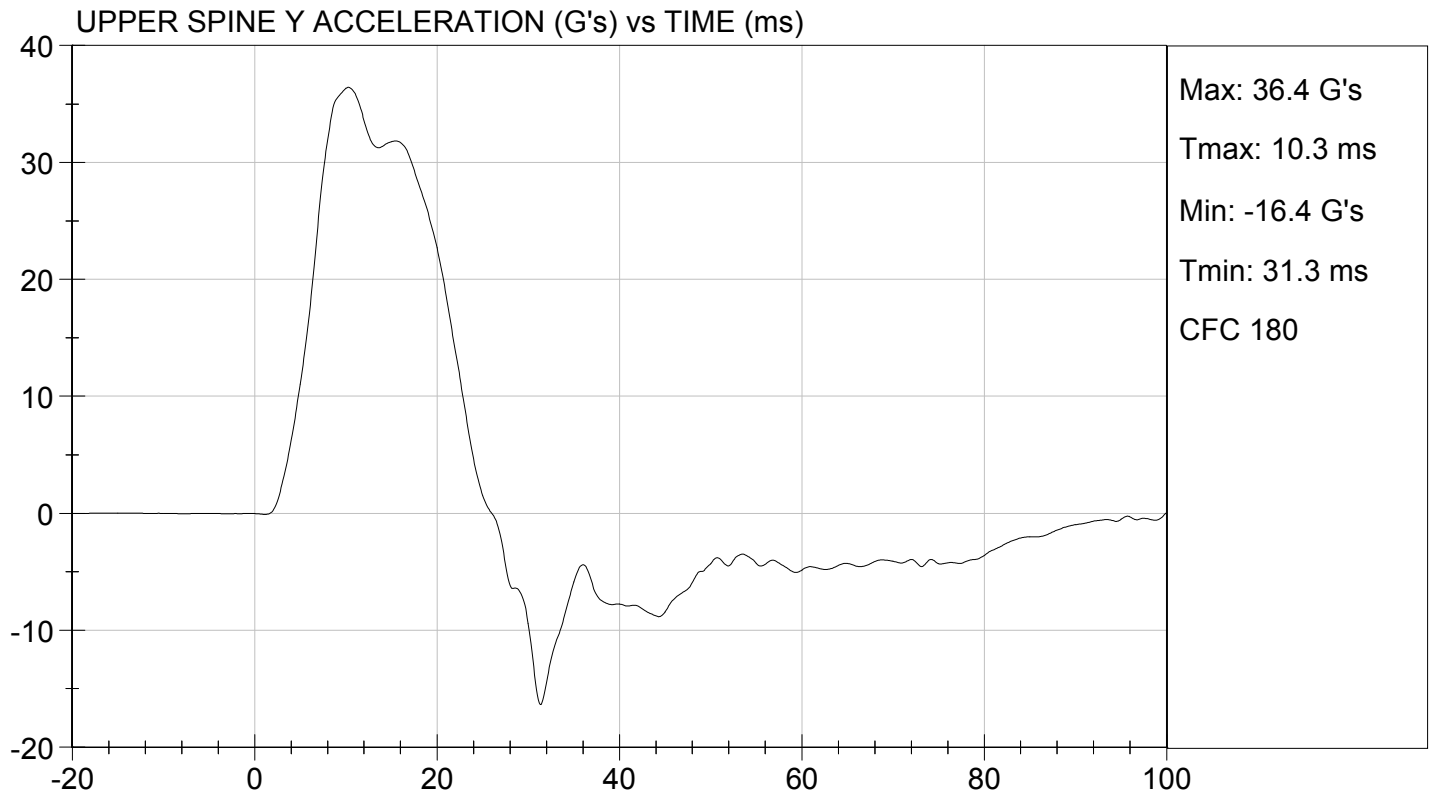
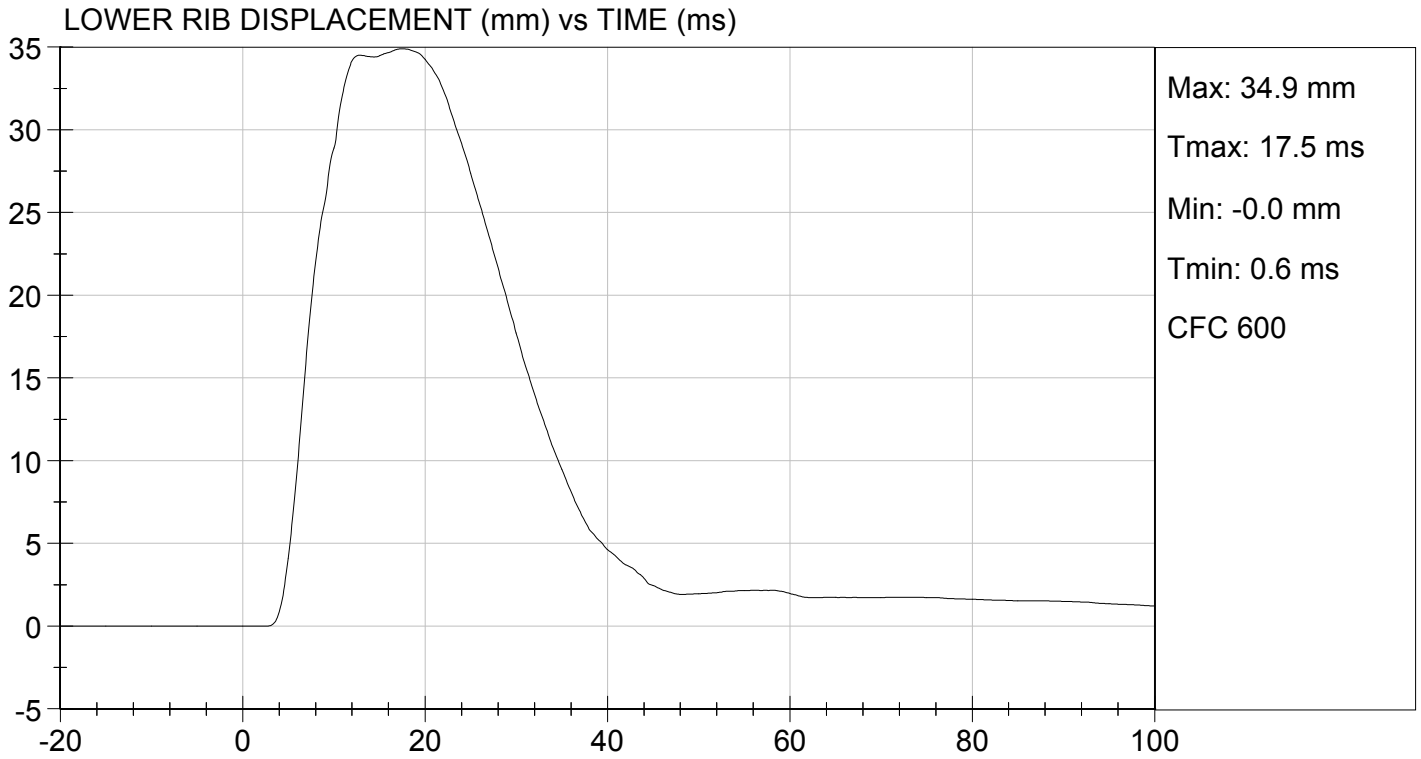
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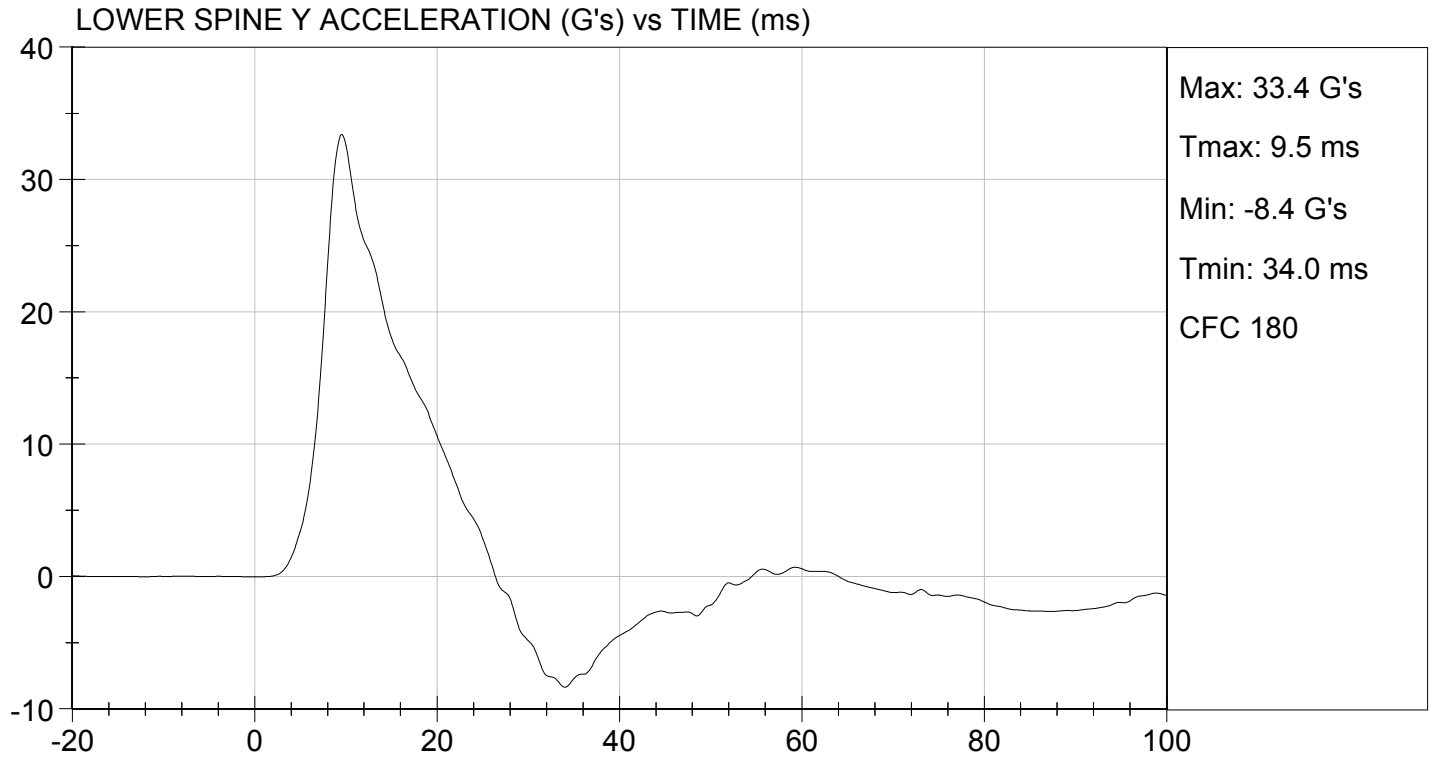
Jessica Hall

 Approved By









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

ATD Serial No: 306

Test I.D: D153335

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	36	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Maximum Probe Acceleration	G's	14 to 18	16	Pass
Upper Rib Displacement	mm	32 to 40	36	Pass
Middle Rib Displacement	mm	39 to 45	42	Pass
Lower Rib Displacement	mm	35 to 43	41	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	14	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	10	Pass
Overall Test Results				Pass

David Schoedel

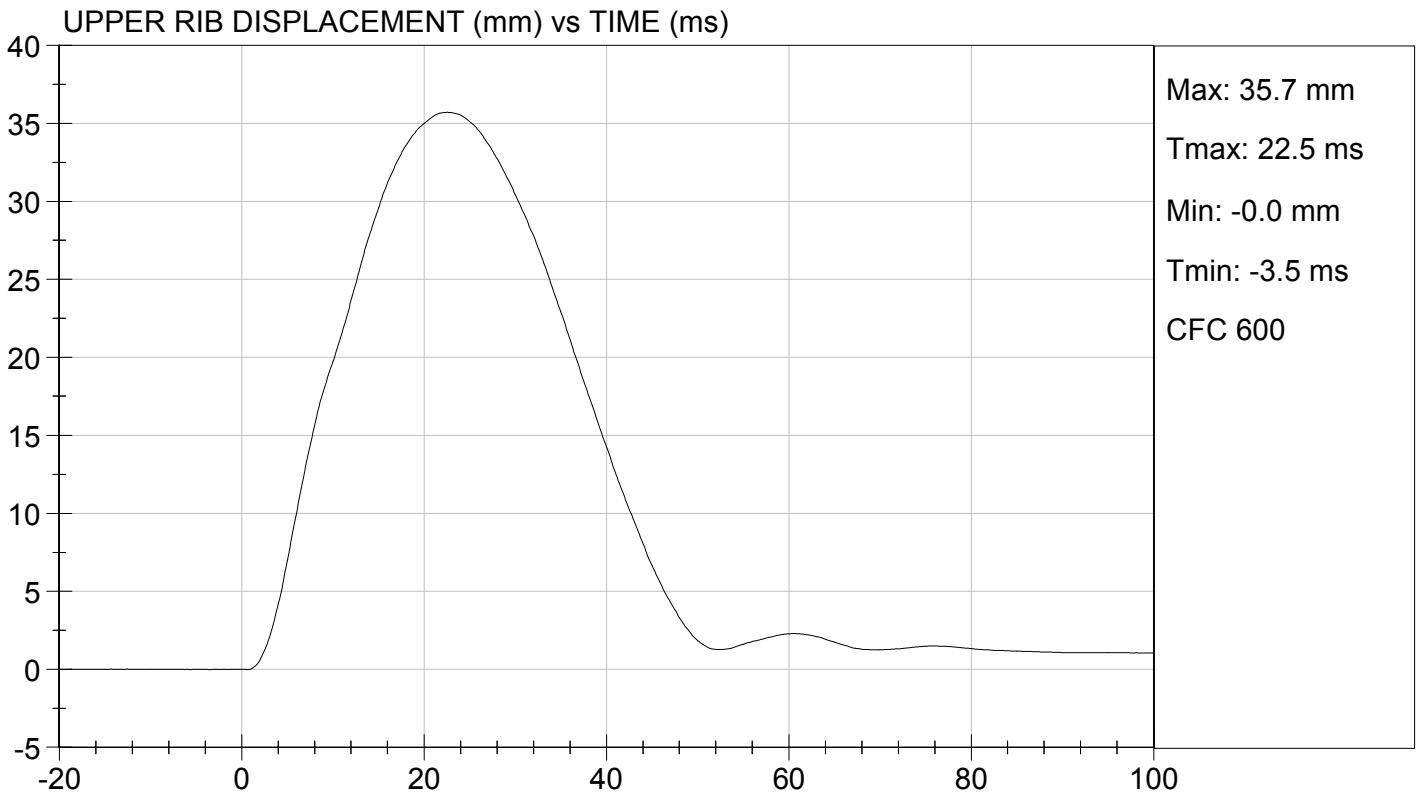
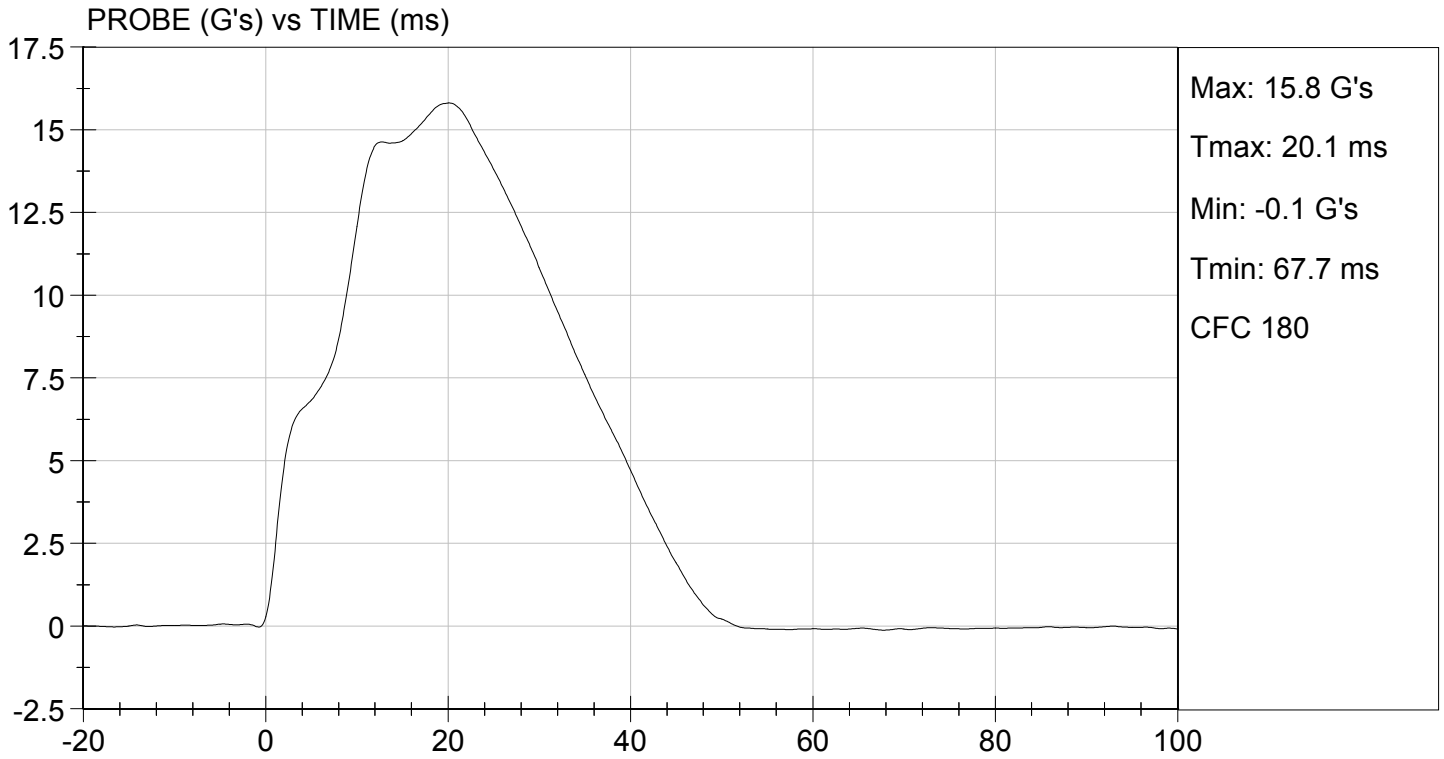
 Laboratory Technician

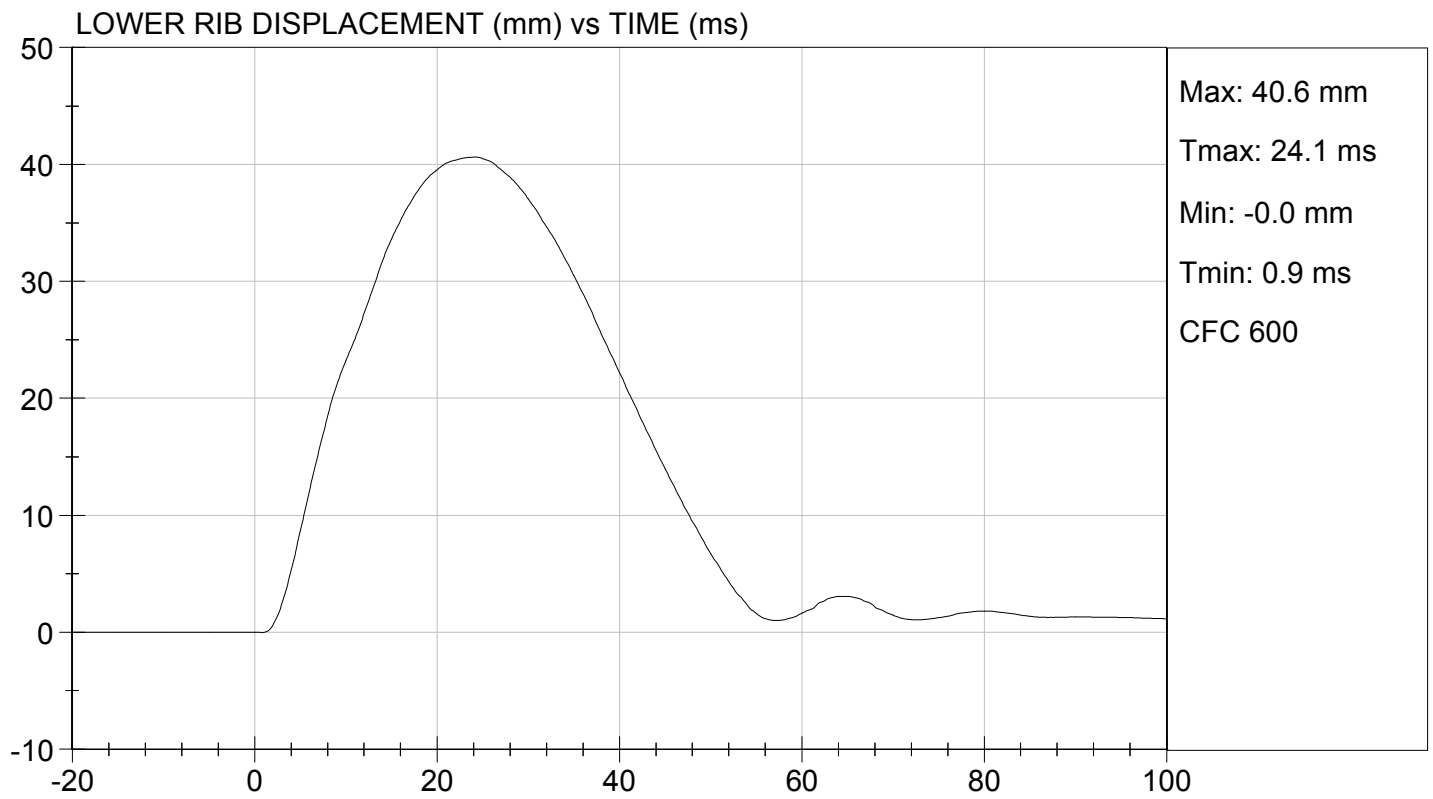
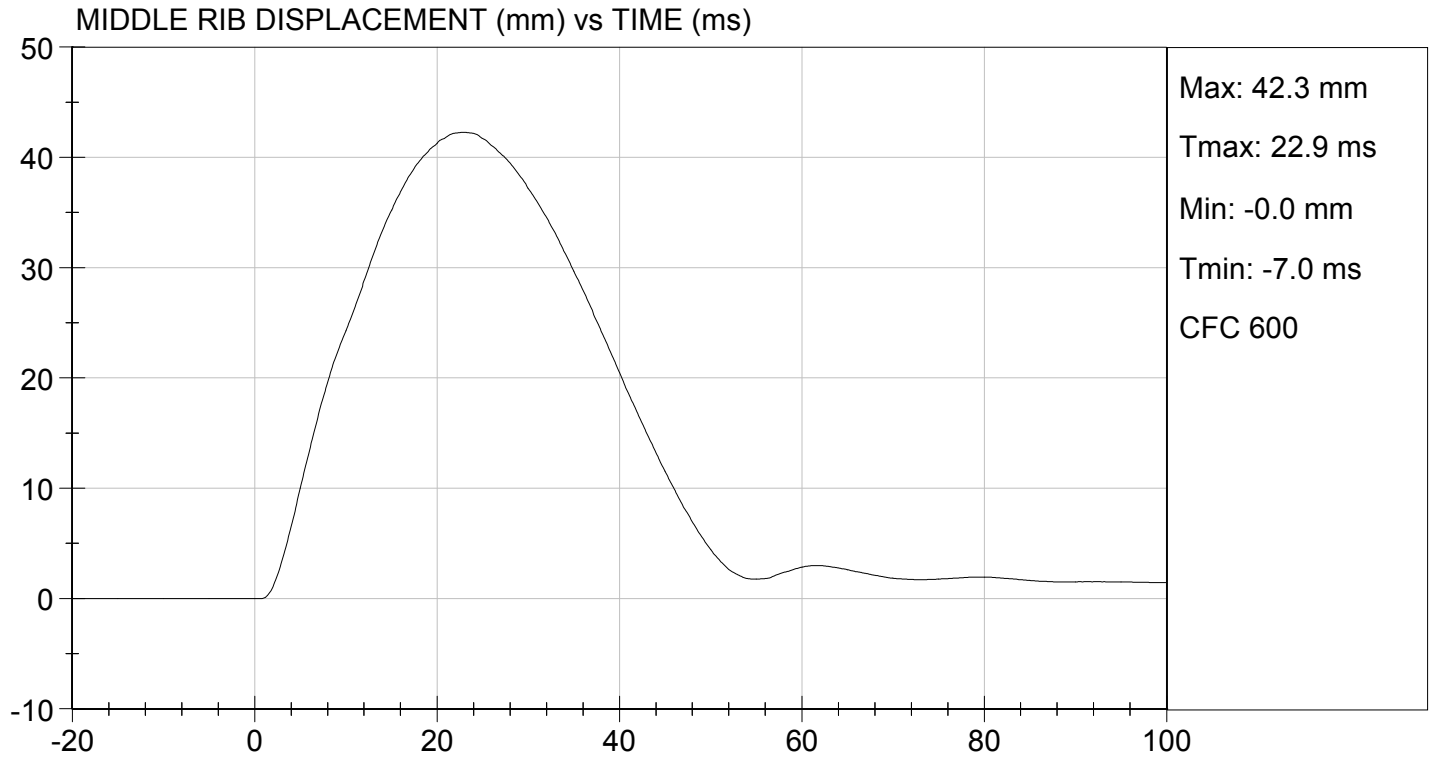
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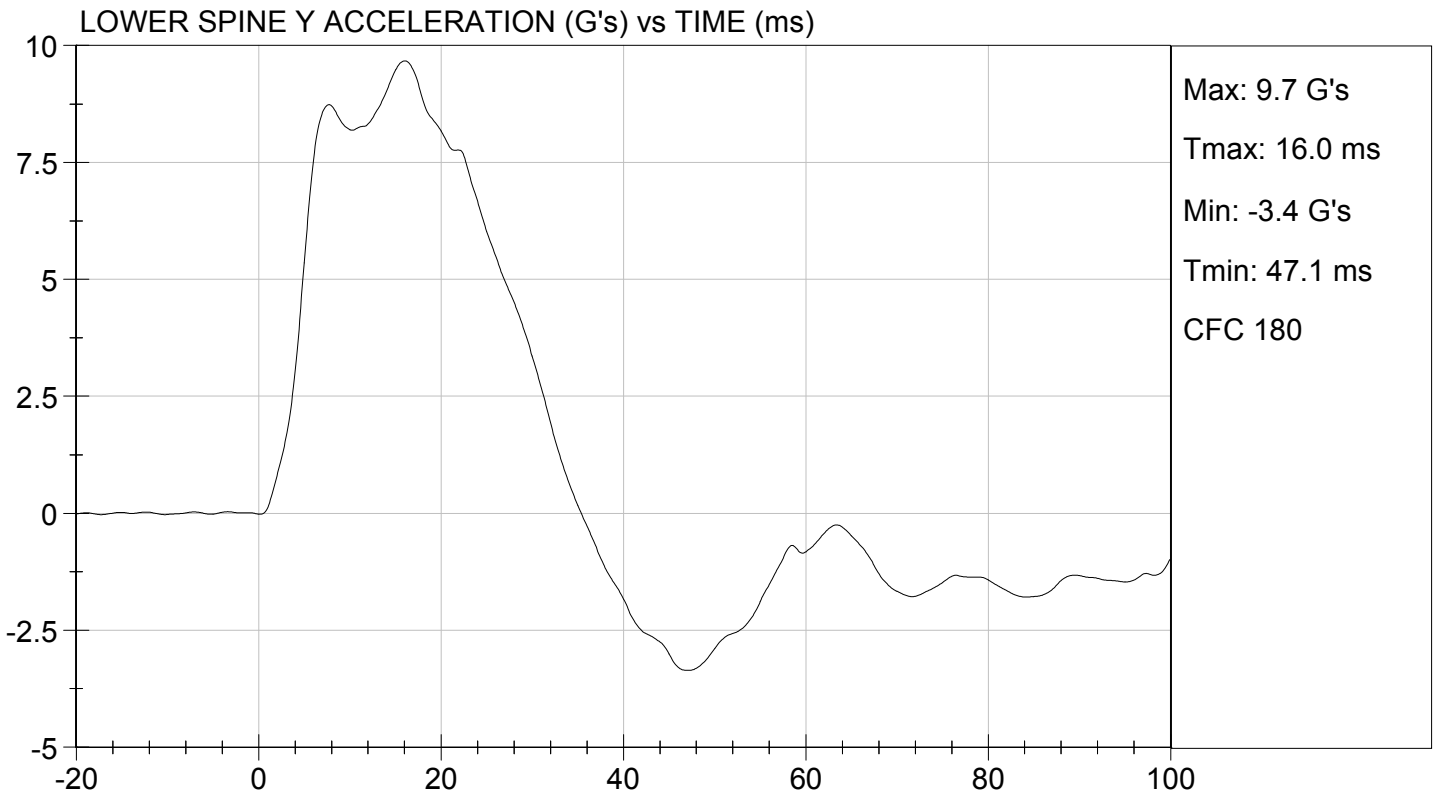
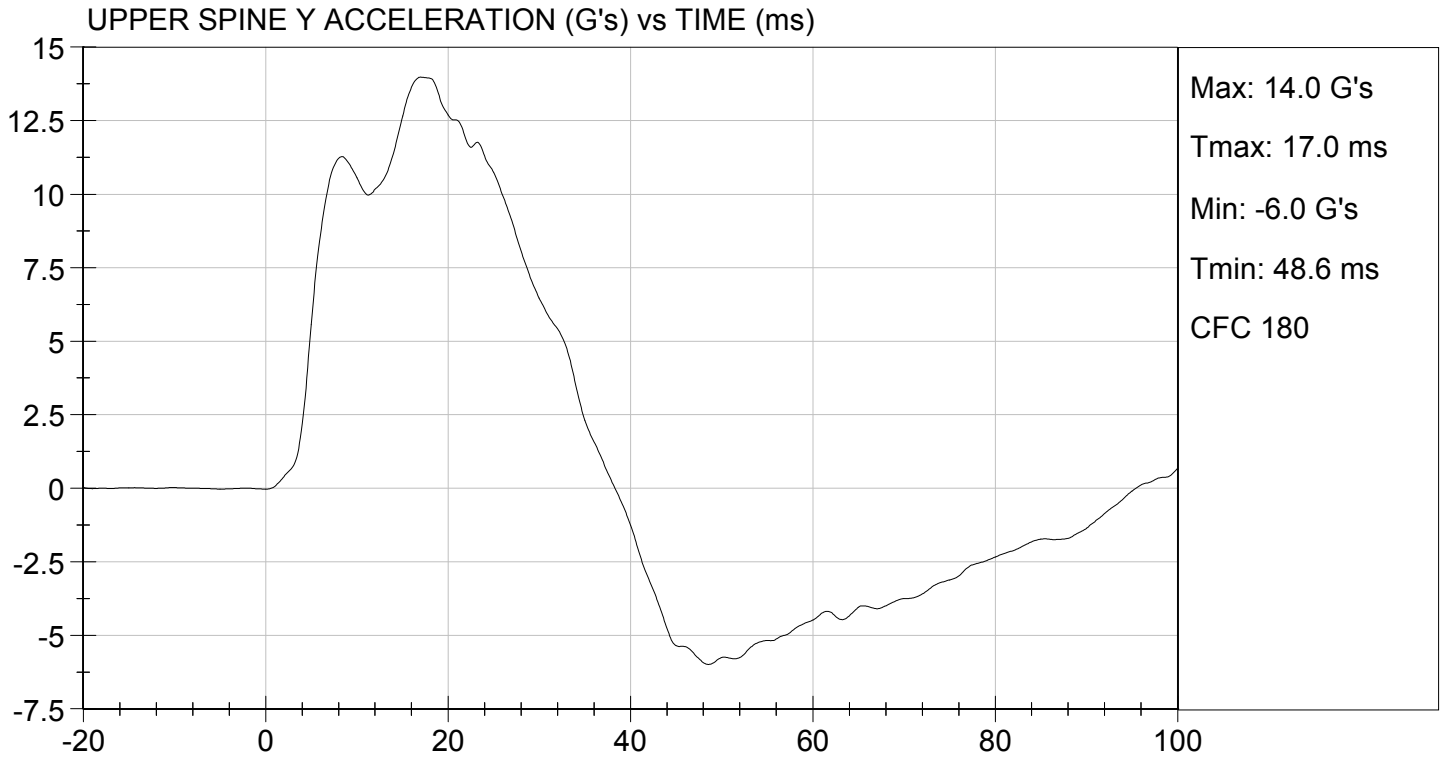
 Test Date

Jessica Hall

 Approved By







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

ATD Serial No: 306

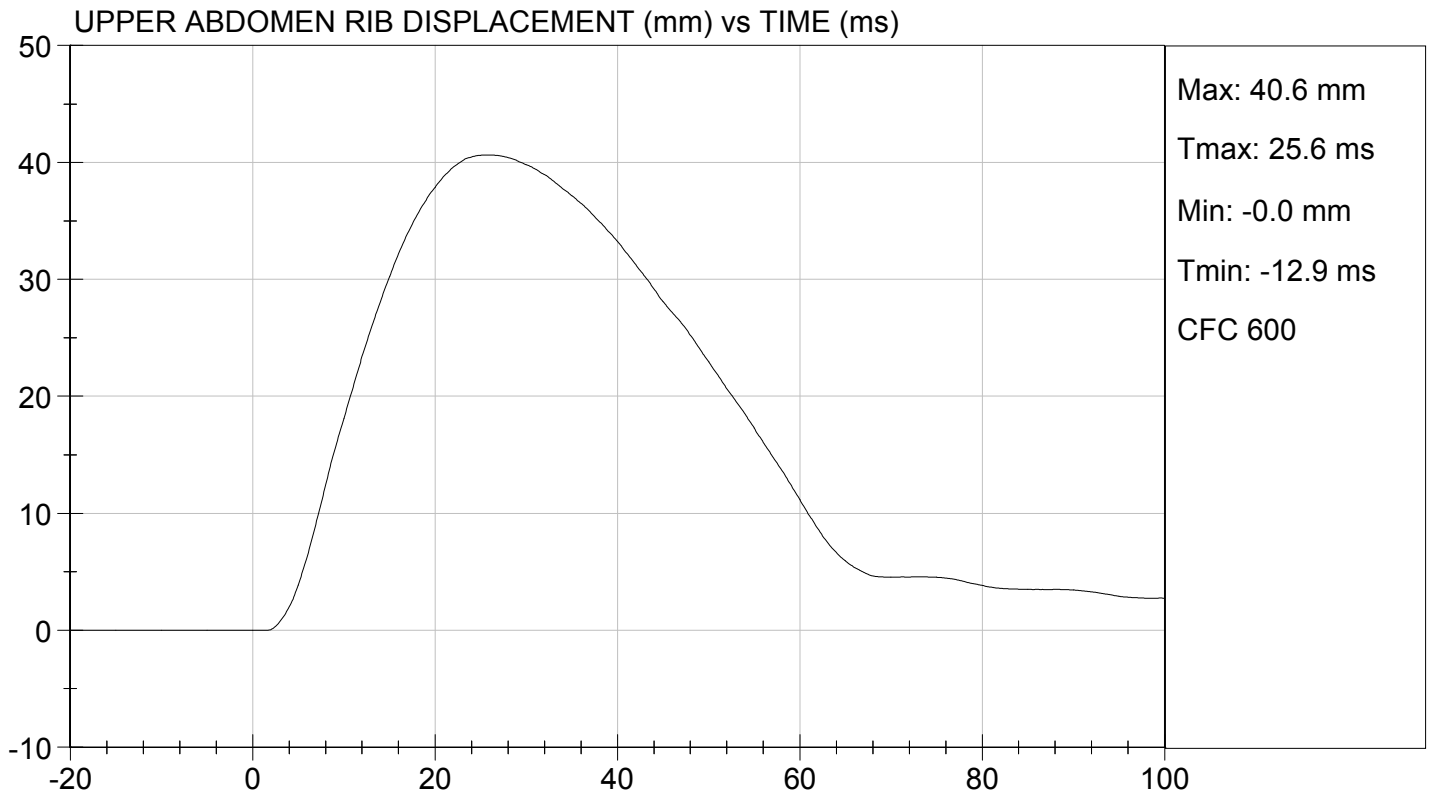
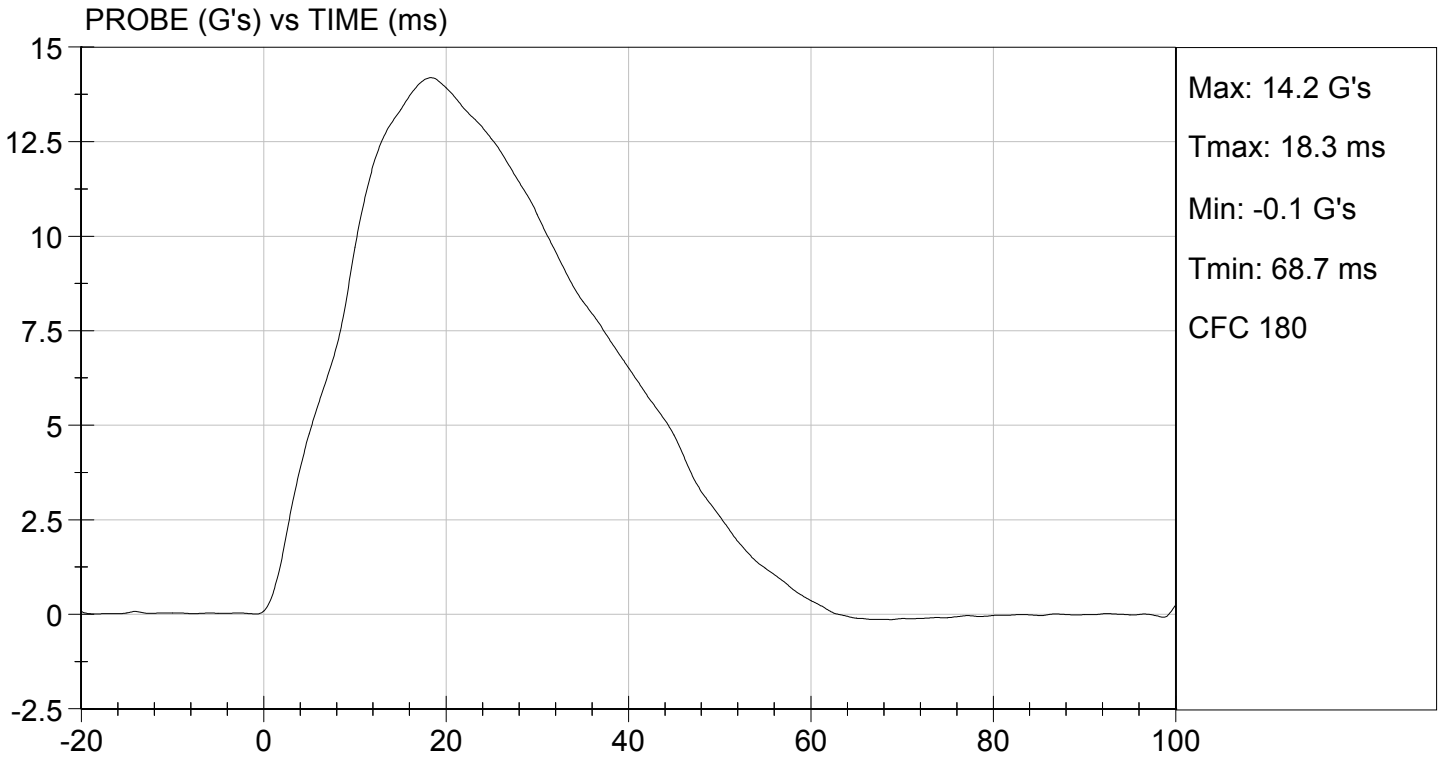
Test I.D: D153336

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	36	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	12 to 16	14	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	41	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	41	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
Overall Test Results				Pass

David Schoedel
Laboratory Technician

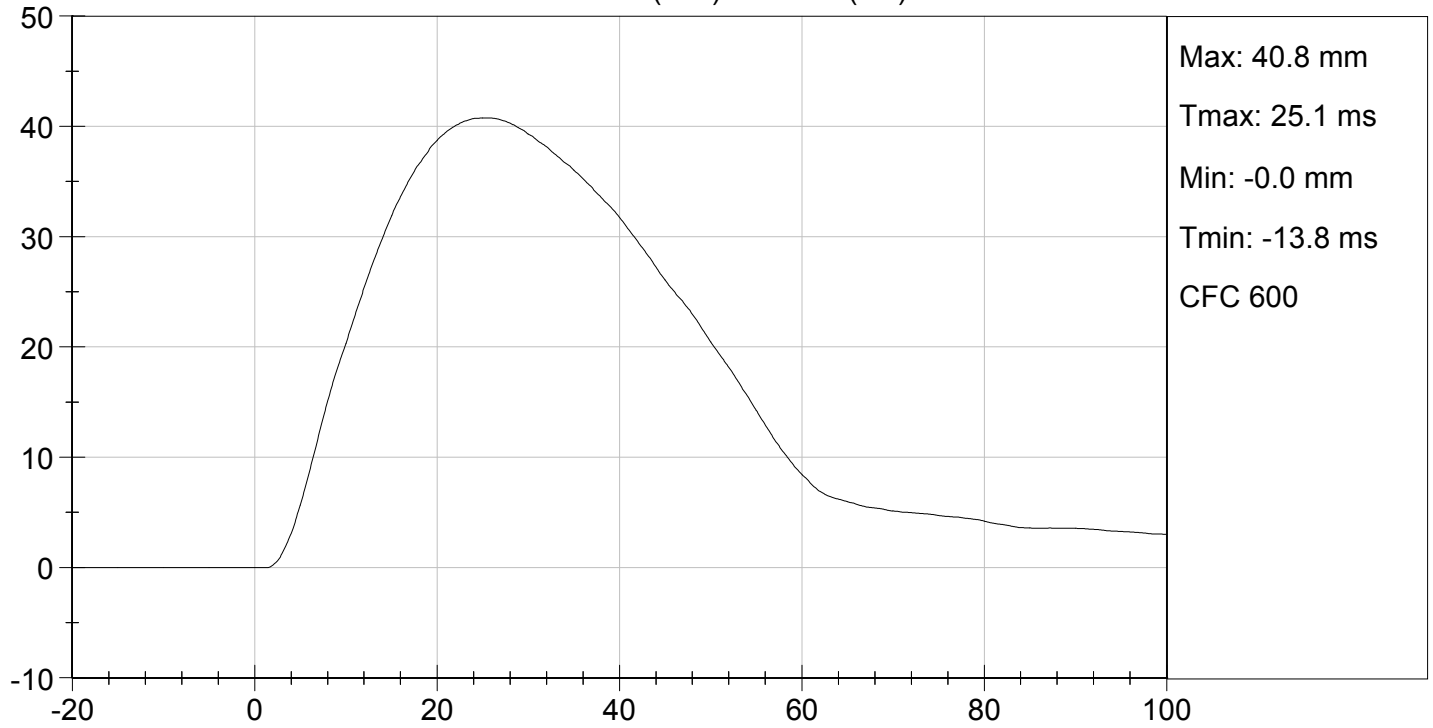
10/20/2015
Test Date

Jessica Hall
Approved By

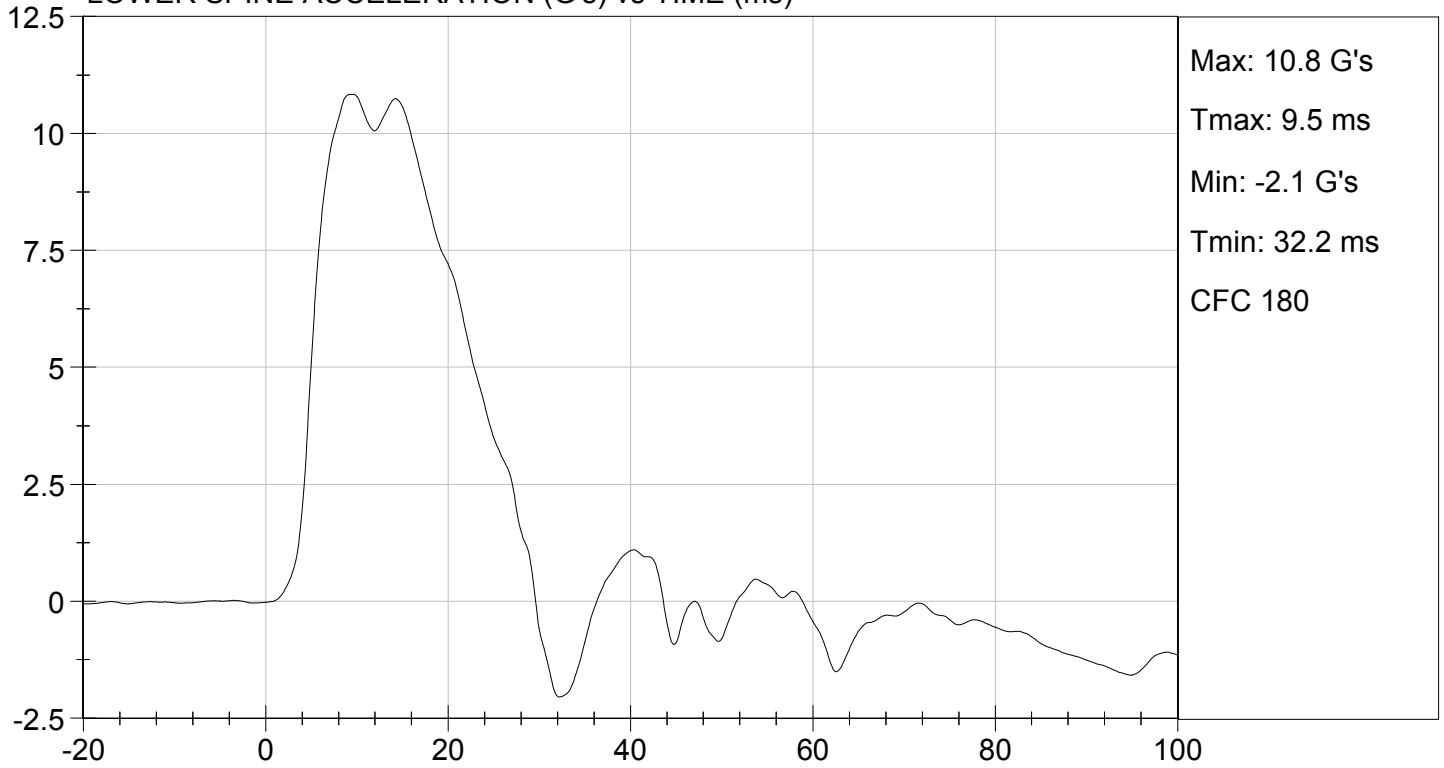




LOWER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



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



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

ATD Serial No: 306

Test I.D: D153337

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	36	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	38 to 47	45	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	42	Pass
Peak Acetabulum Force	N	3600 to 4300	4,102	Pass
Overall Test Results				Pass

David Schoedel

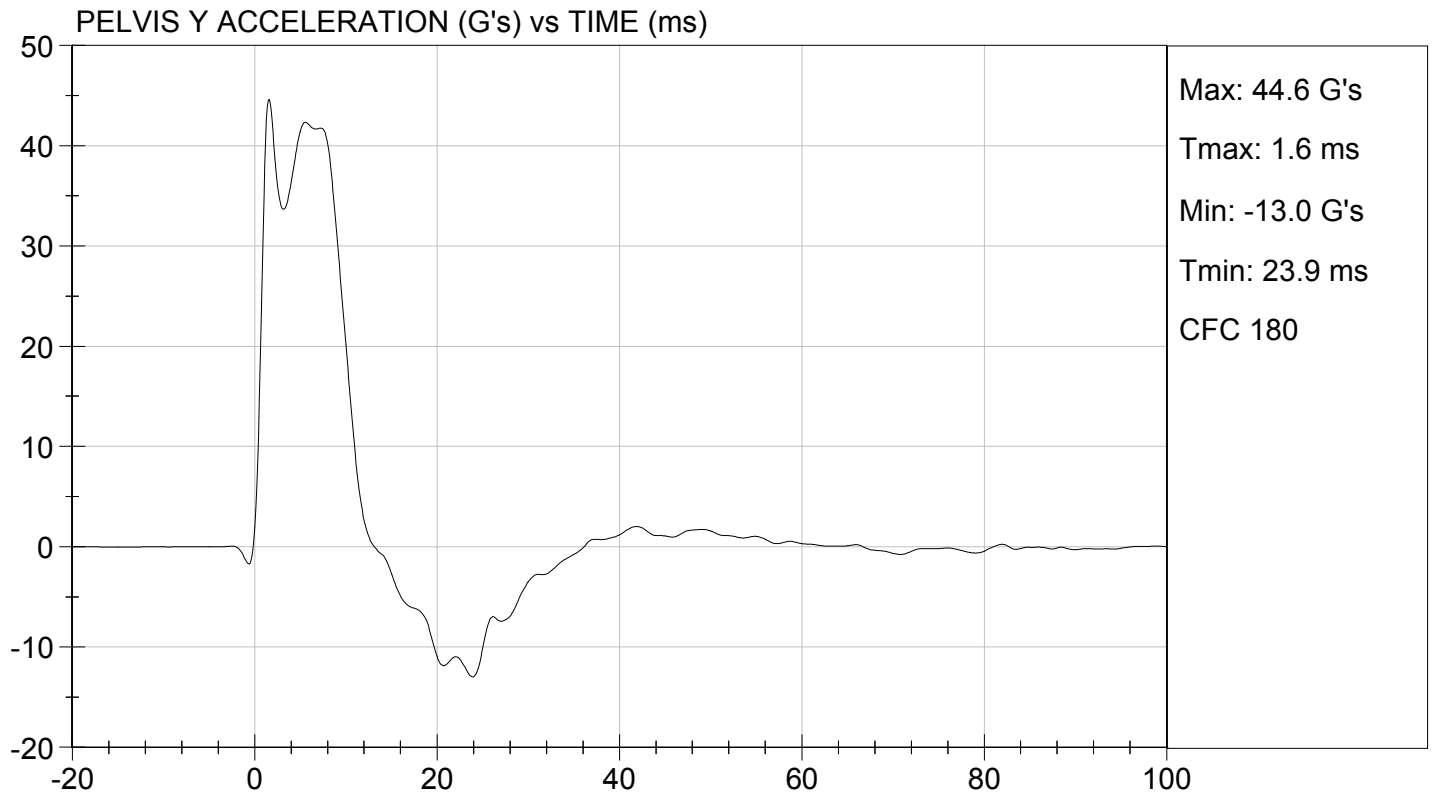
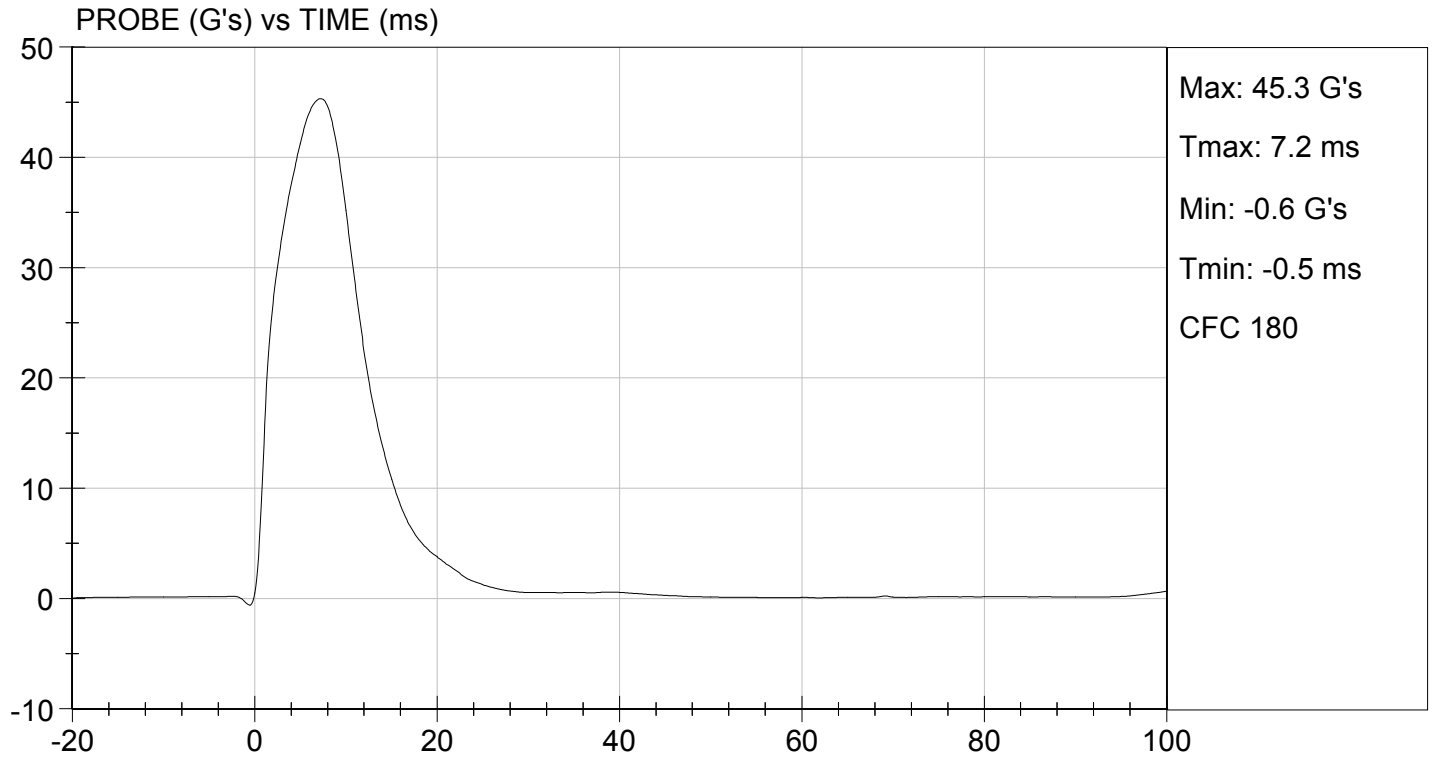
 Laboratory Technician

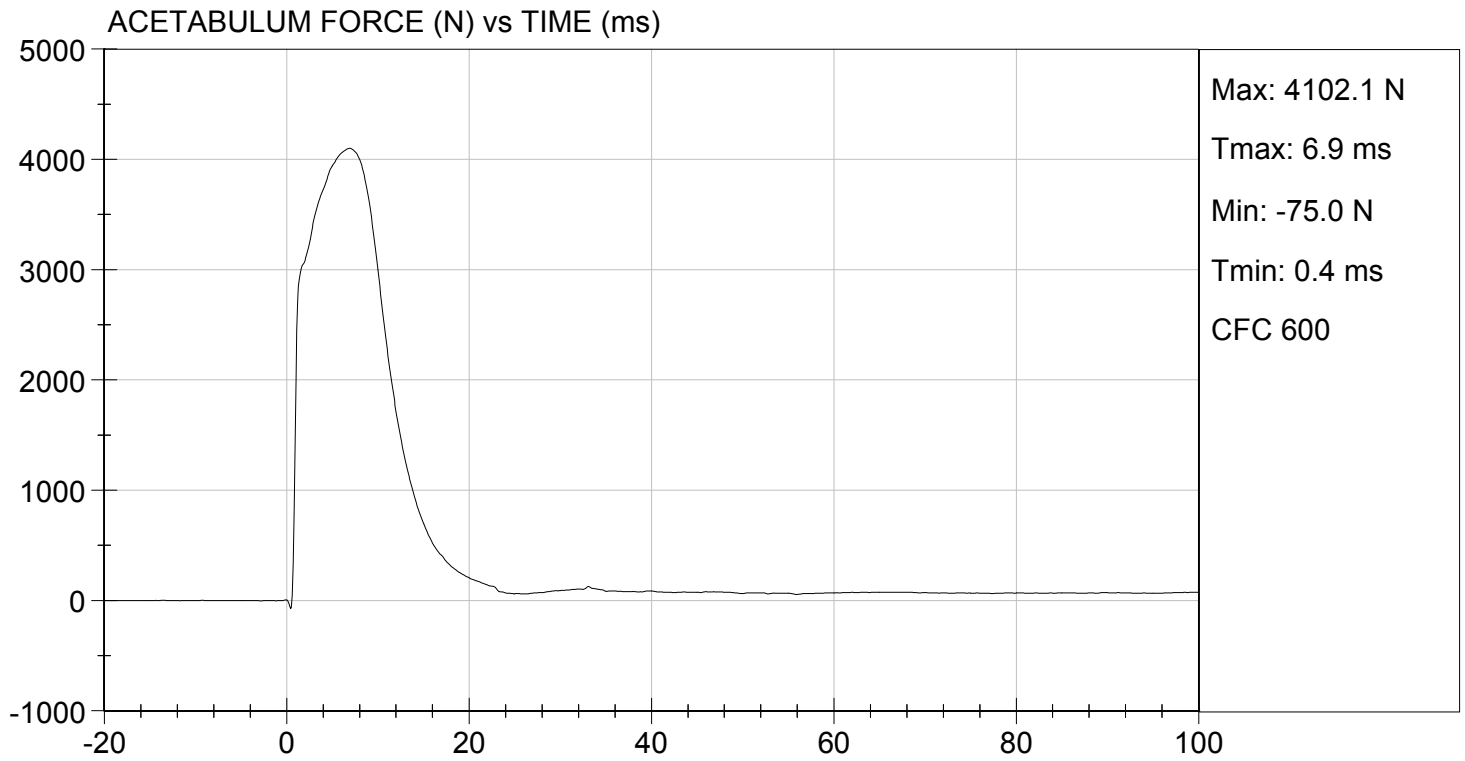
10/20/2015

 Test Date

Jessica Hall

 Approved By





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

ATD Serial No: 306

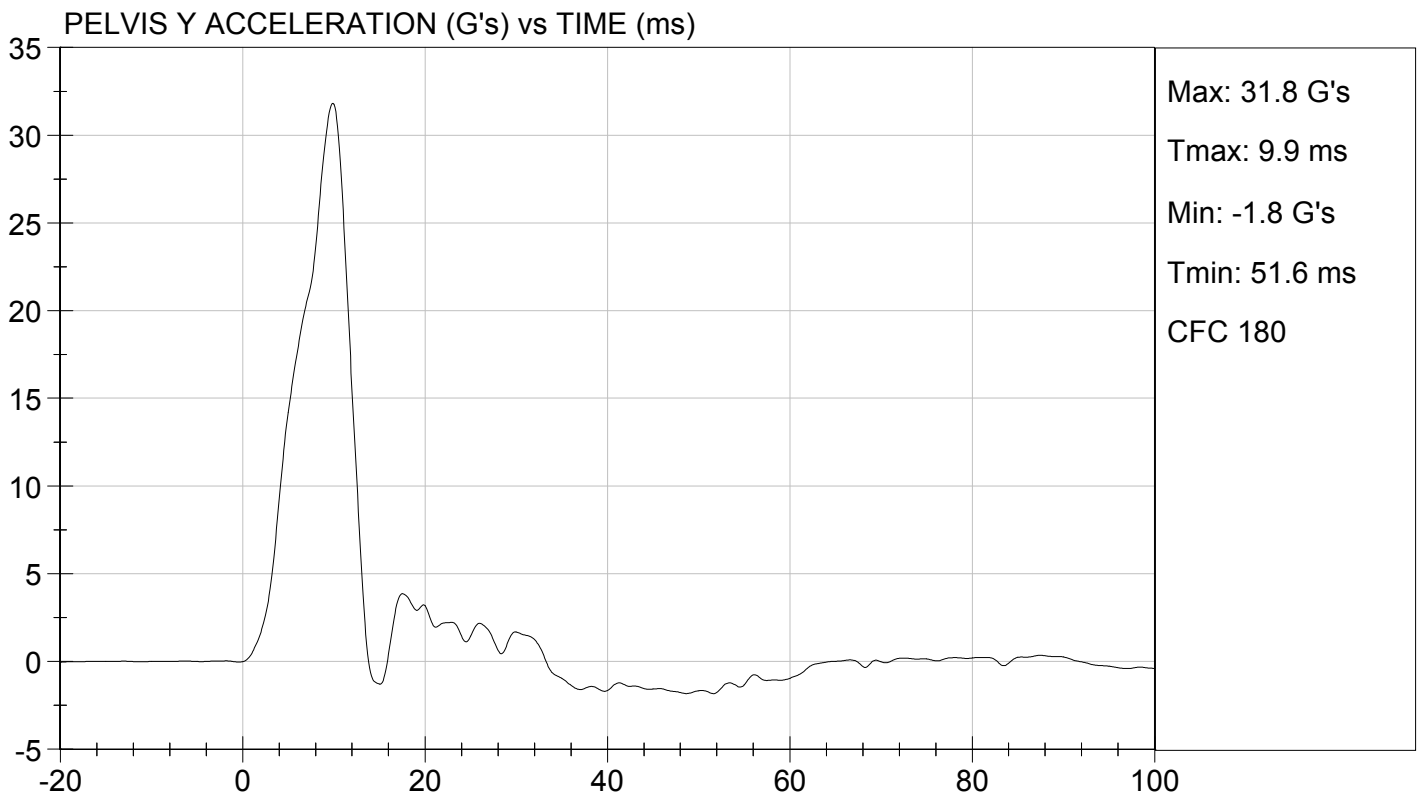
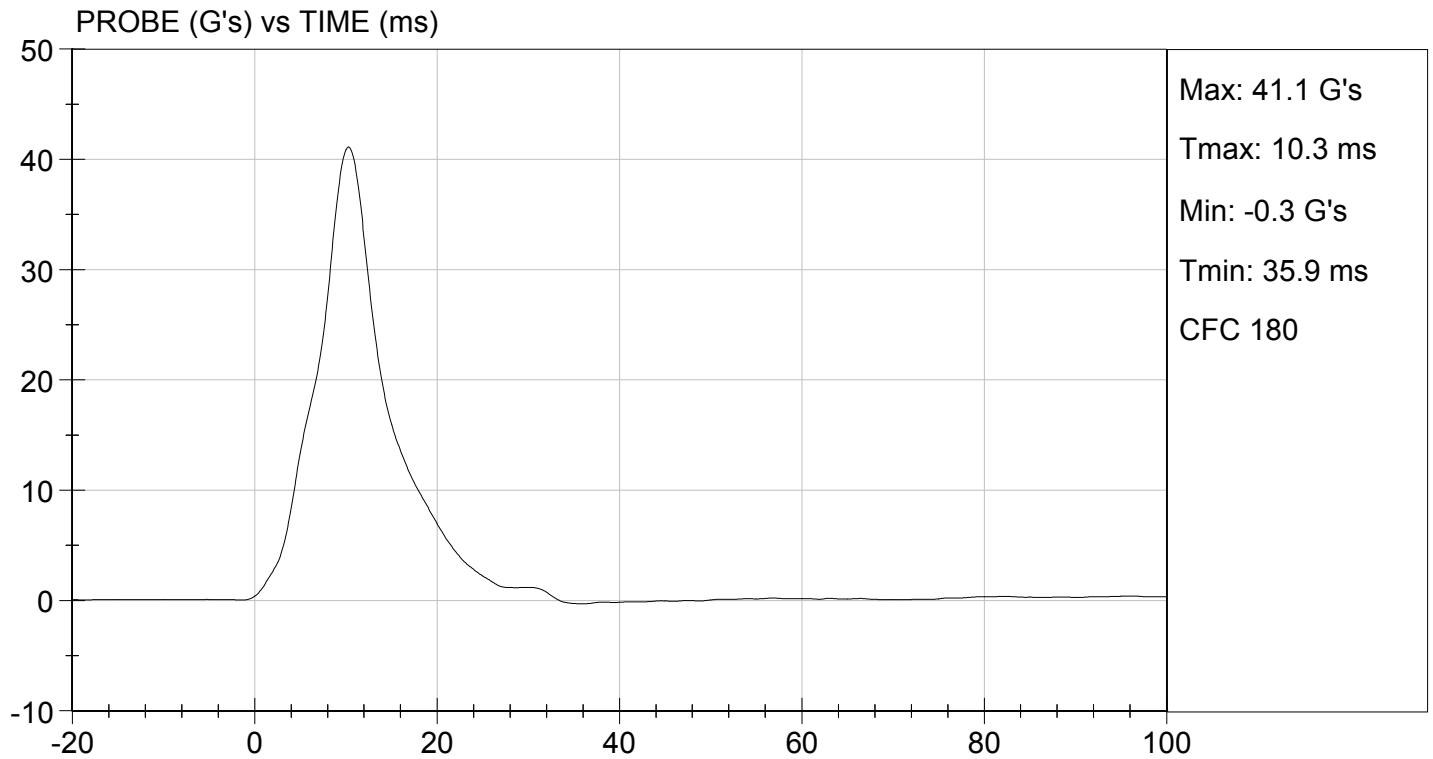
Test I.D: D153338

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	36	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Maximum Probe Acceleration	G's	36 to 45	41	Pass
Pelvis Y Acceleration	G's	28 to 39	32	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,680	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

10/20/2015
 Test Date

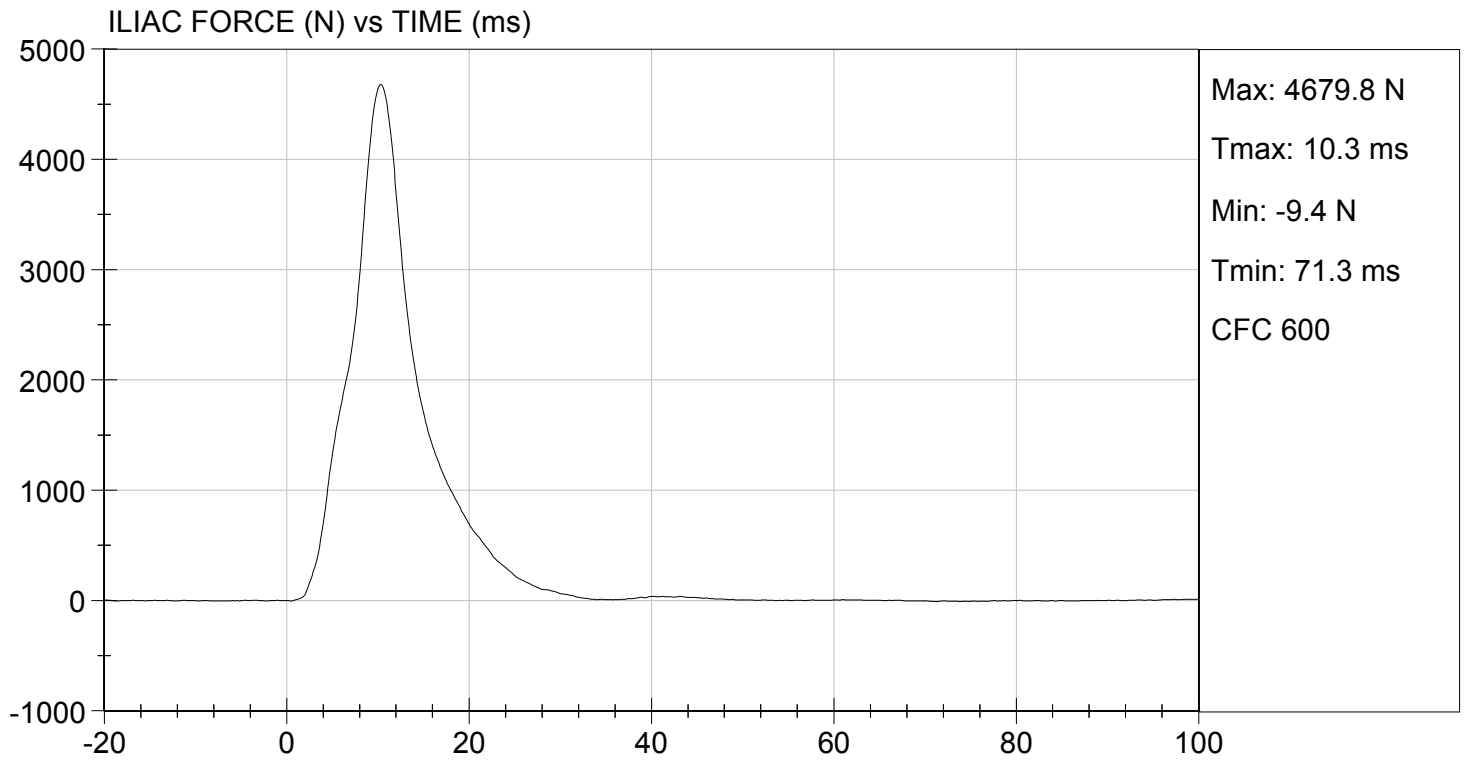
Jessica Hall
 Approved By





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

TEST DATE: 10/20/2015
TEST #: D153338



SID-IIsD External Measurements
SN: 306

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

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

ATD Serial No: 306

Test ID: D154071

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	33	Pass
Peak Resultant Acceleration	G's	115 to 137	125	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-4.9	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
Overall Test Results				Pass

David Schoedel

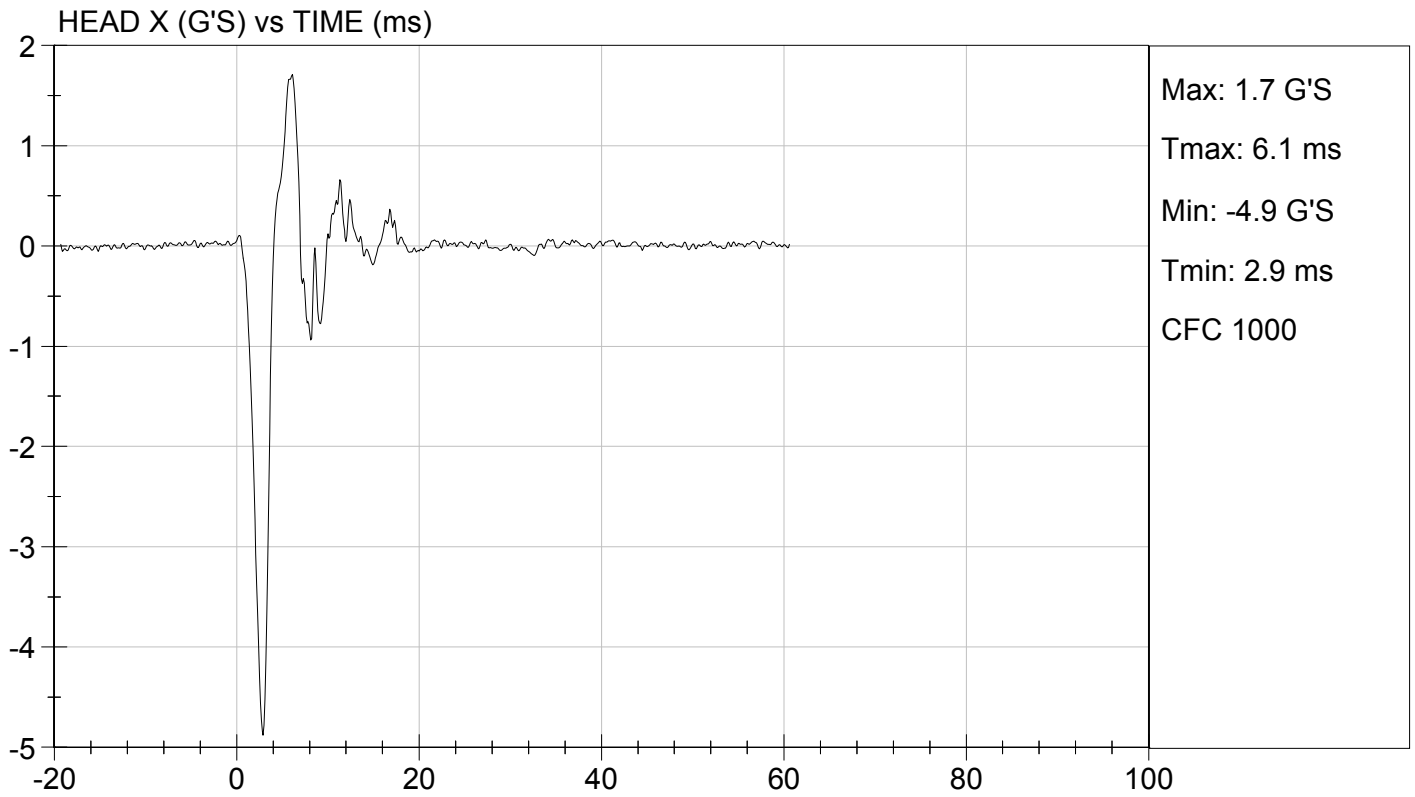
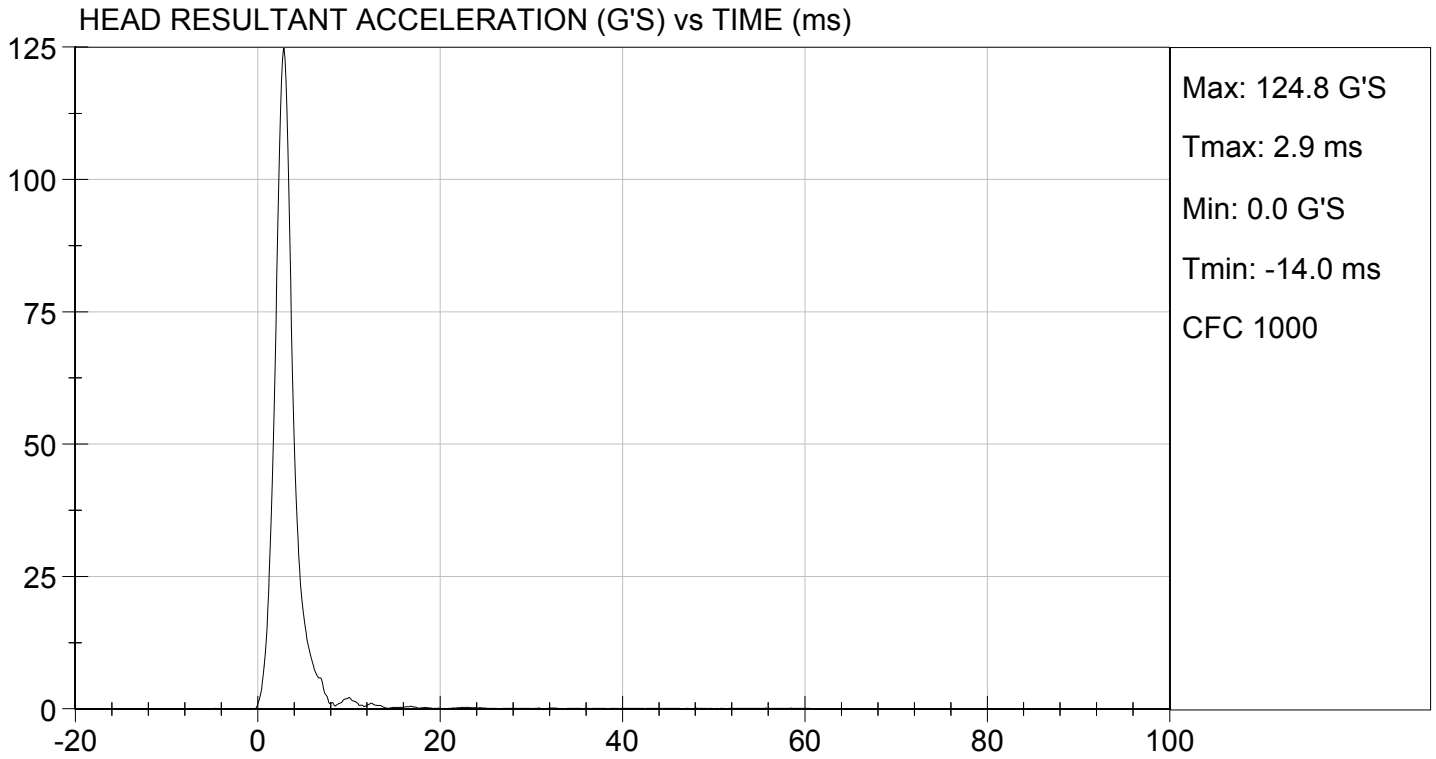
Laboratory Technician

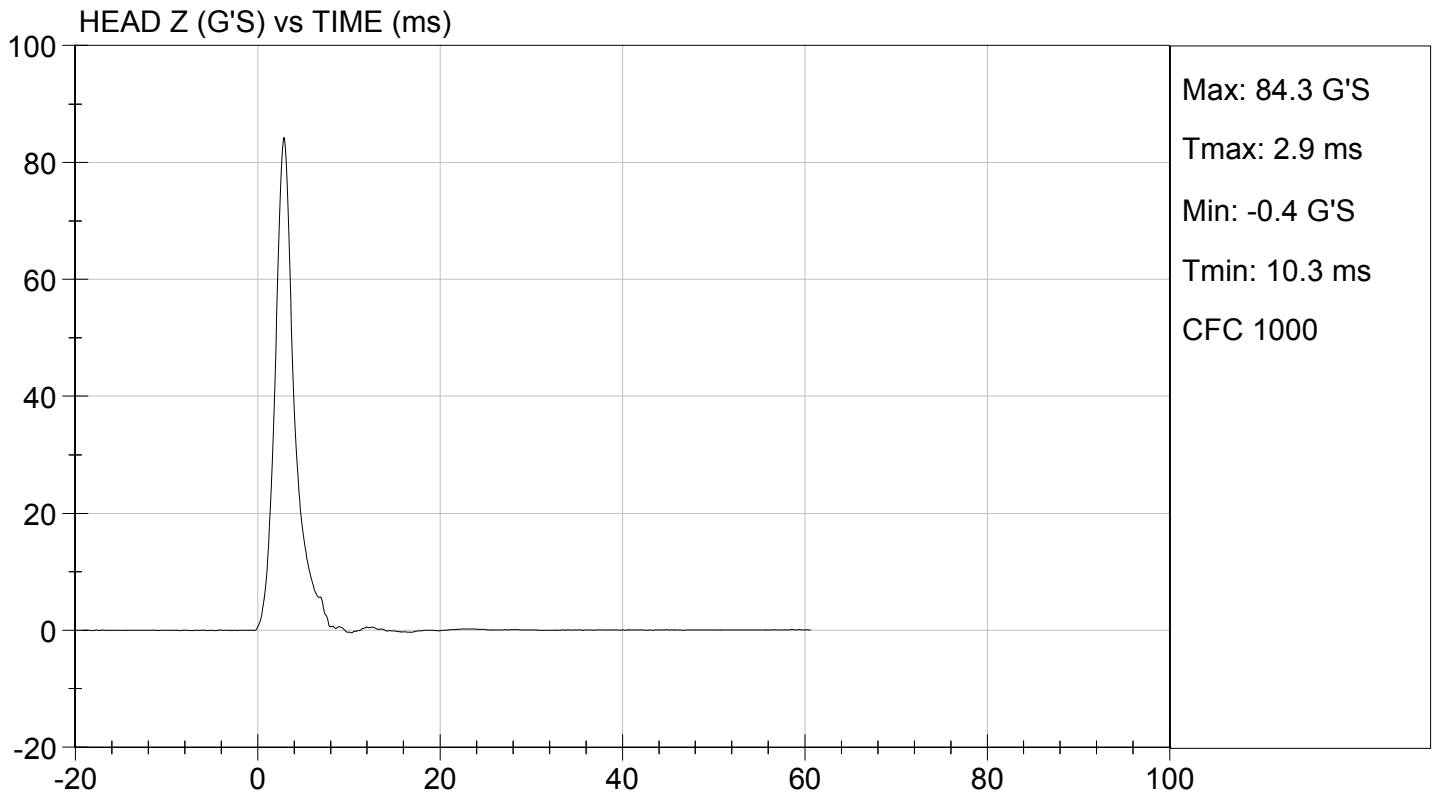
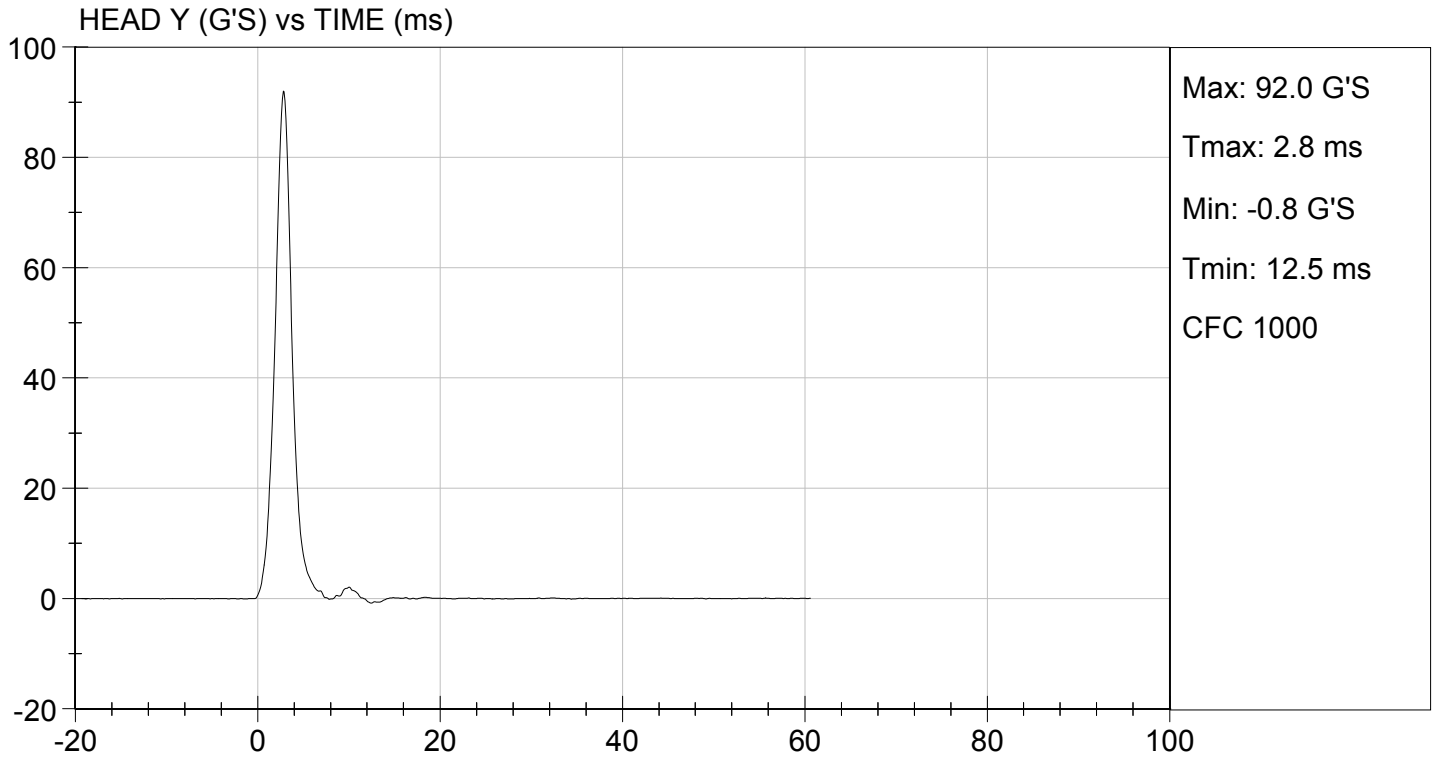
12/08/2015

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.: D154072

Tested Parameter	Units	Specification	Result	Pass/Fail	
Temperature	deg C	20.6 to 22.2	21.6	Pass	
Humidity	%	10 to 70	33	Pass	
Impact Velocity	m/s	5.51 to 5.63	5.52	Pass	
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.61	Pass
	15 ms	m/s	3.30 to 4.10	3.74	Pass
	20 ms	m/s	4.40 to 5.40	5.00	Pass
	25 ms	m/s	5.40 to 6.10	5.79	Pass
	25-100 ms	m/s	5.50 to 6.20	5.80	Pass
Maximum D-Plane Rotation	deg	71 to 81	72	Pass	
Time of Maximum D-Plane Rotation	ms	50 to 70	64	Pass	
Maximum Occipital Condyle Moment	Nm	-44 to -36	-42	Pass	
Time of Moment Decay to 0 Nm	ms	102 to 126	118	Pass	
Overall Test Results				Pass	

David Schoedel

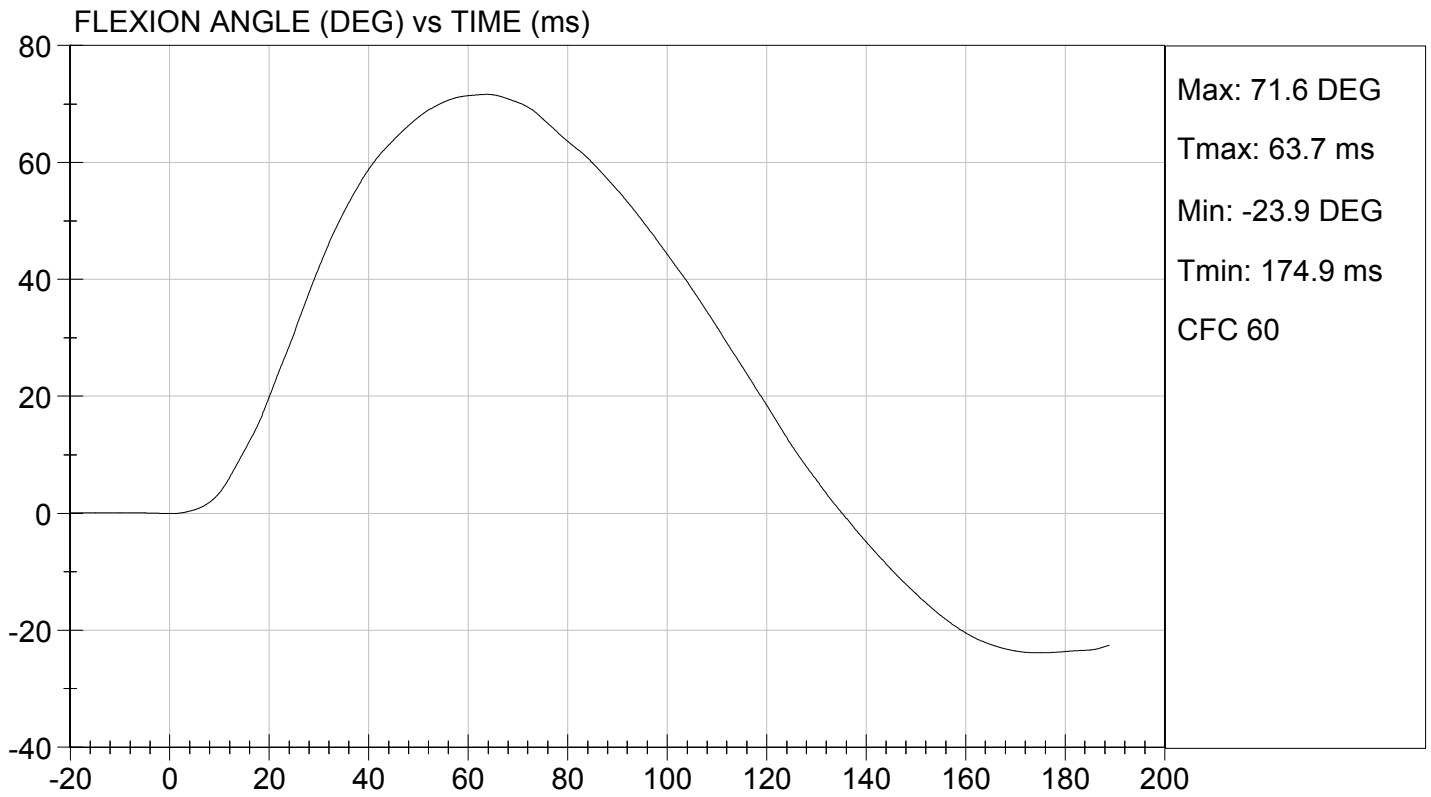
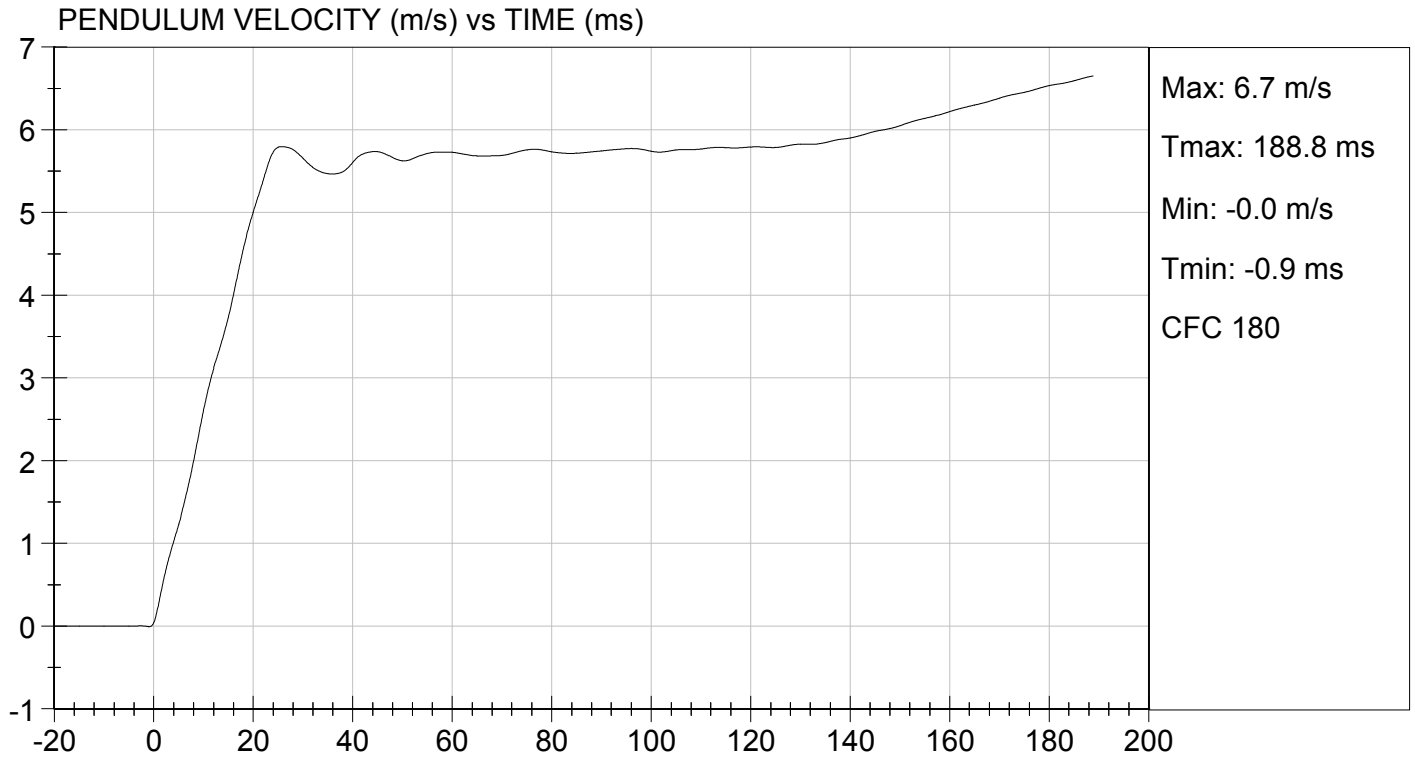
Laboratory Technician

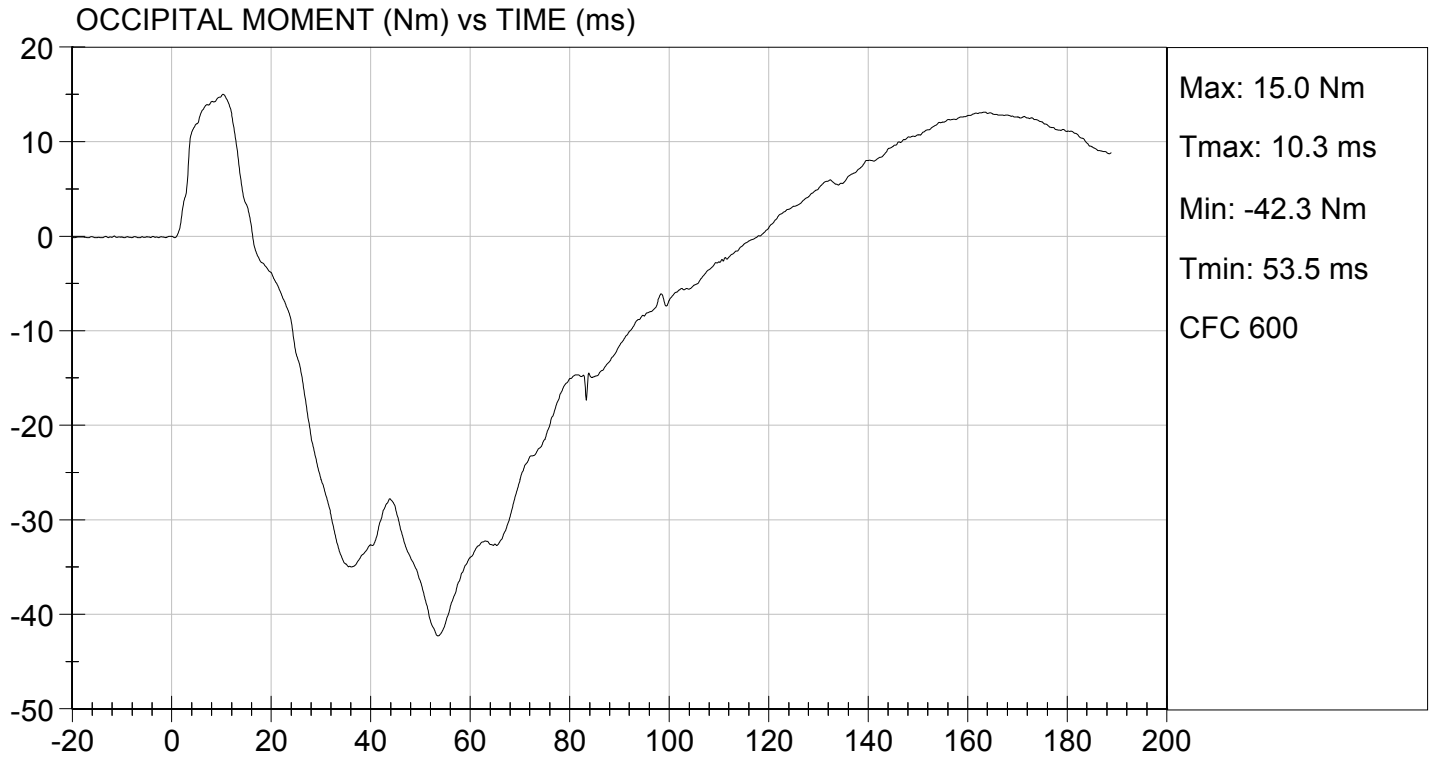
12/08/2015

Test Date

Jessica Gall

Approved By





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

ATD Serial No: 306

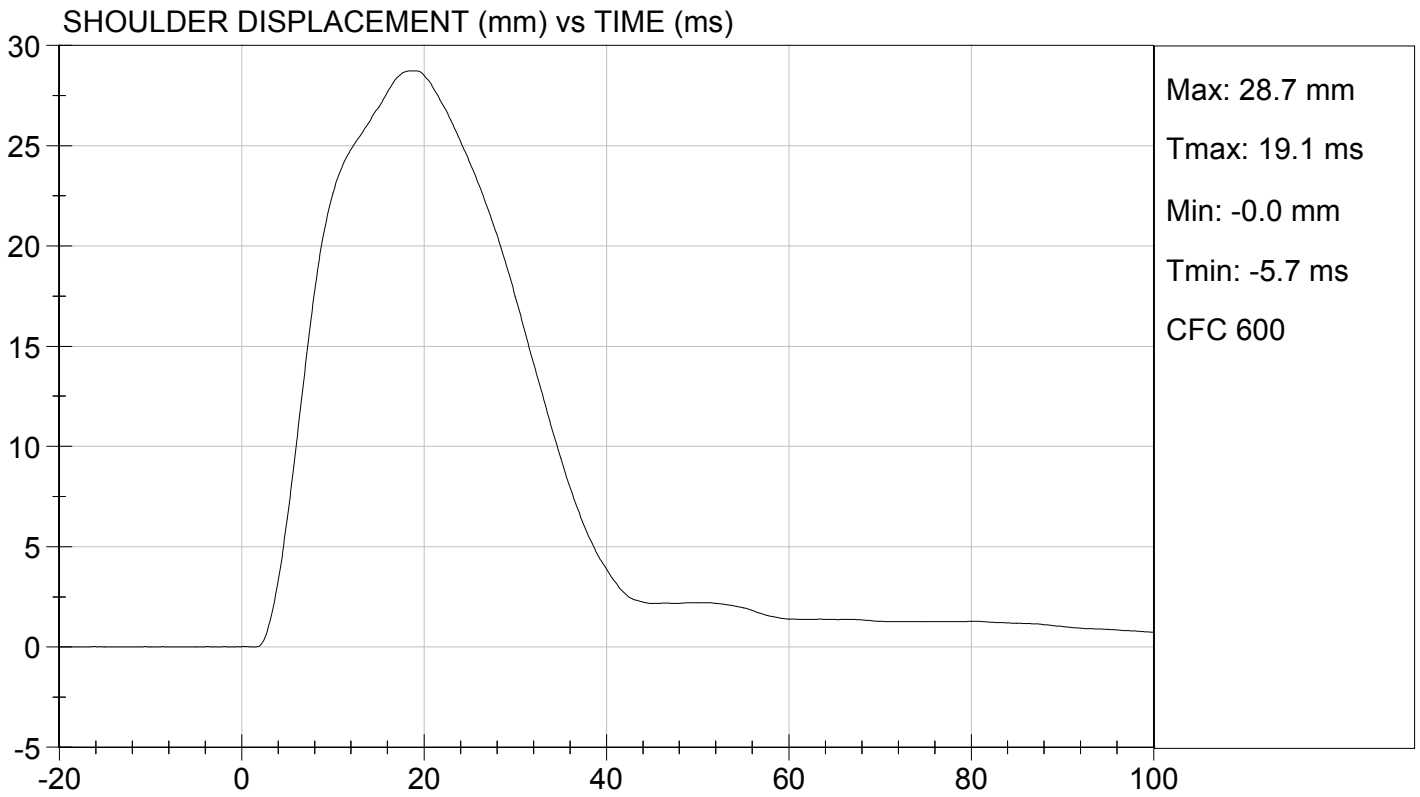
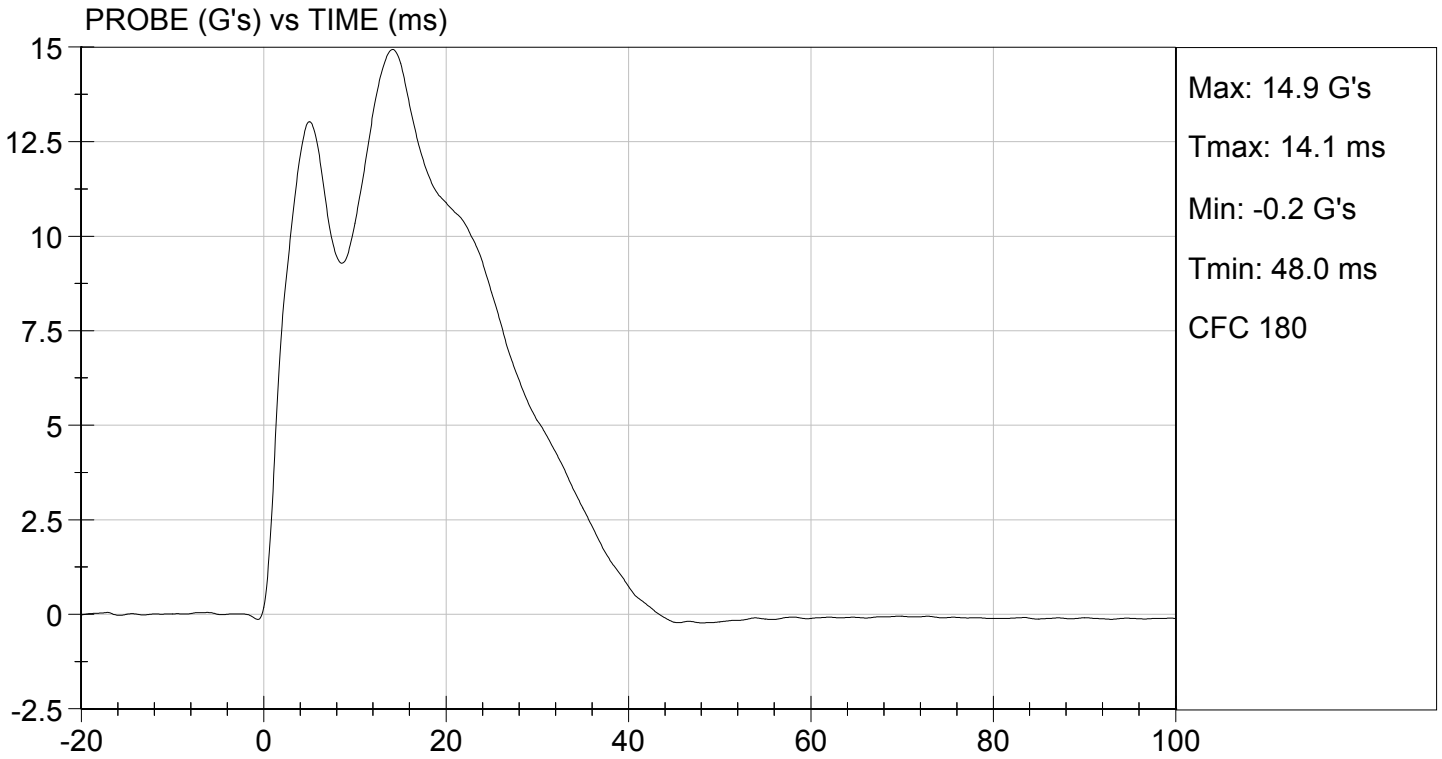
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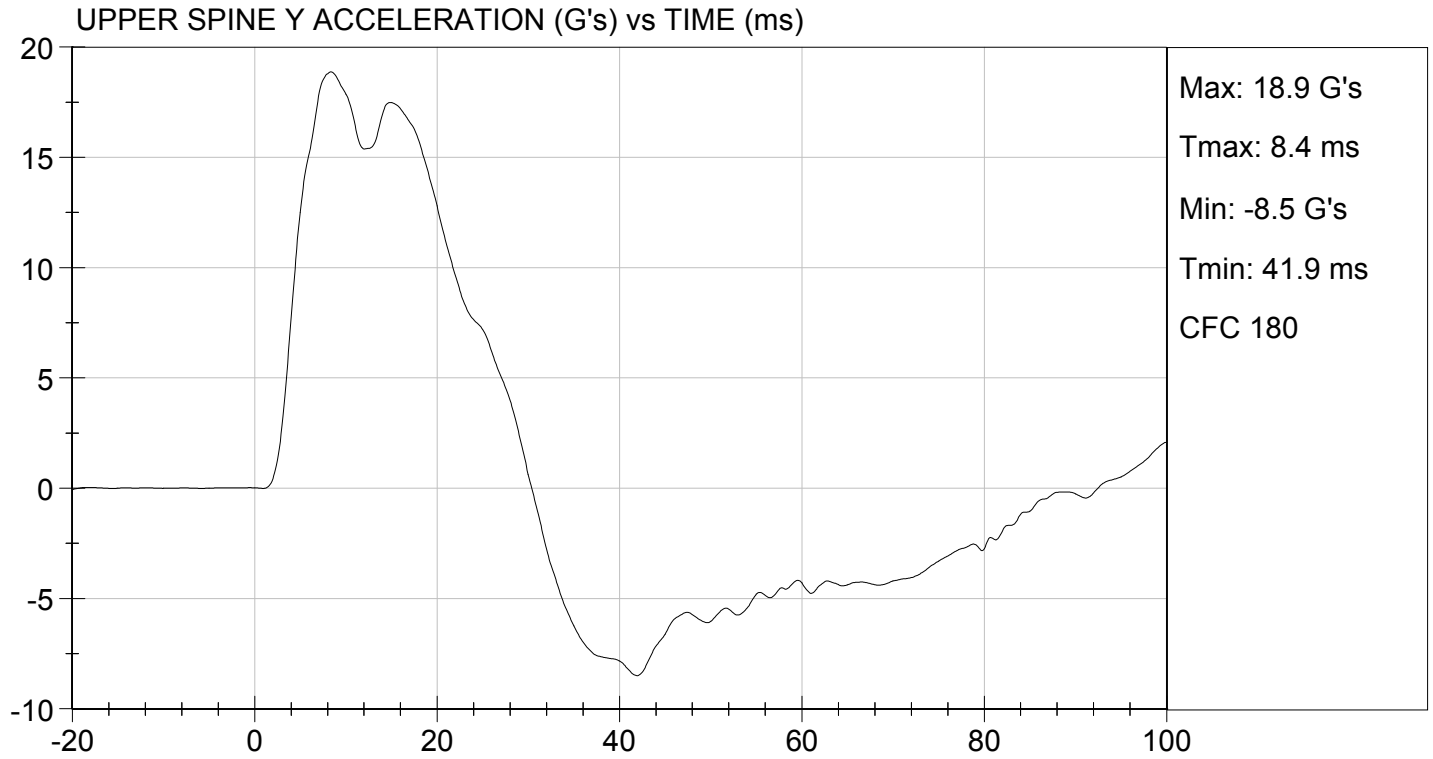
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	36	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	29	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	19	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

12/08/2015
 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.: D154074

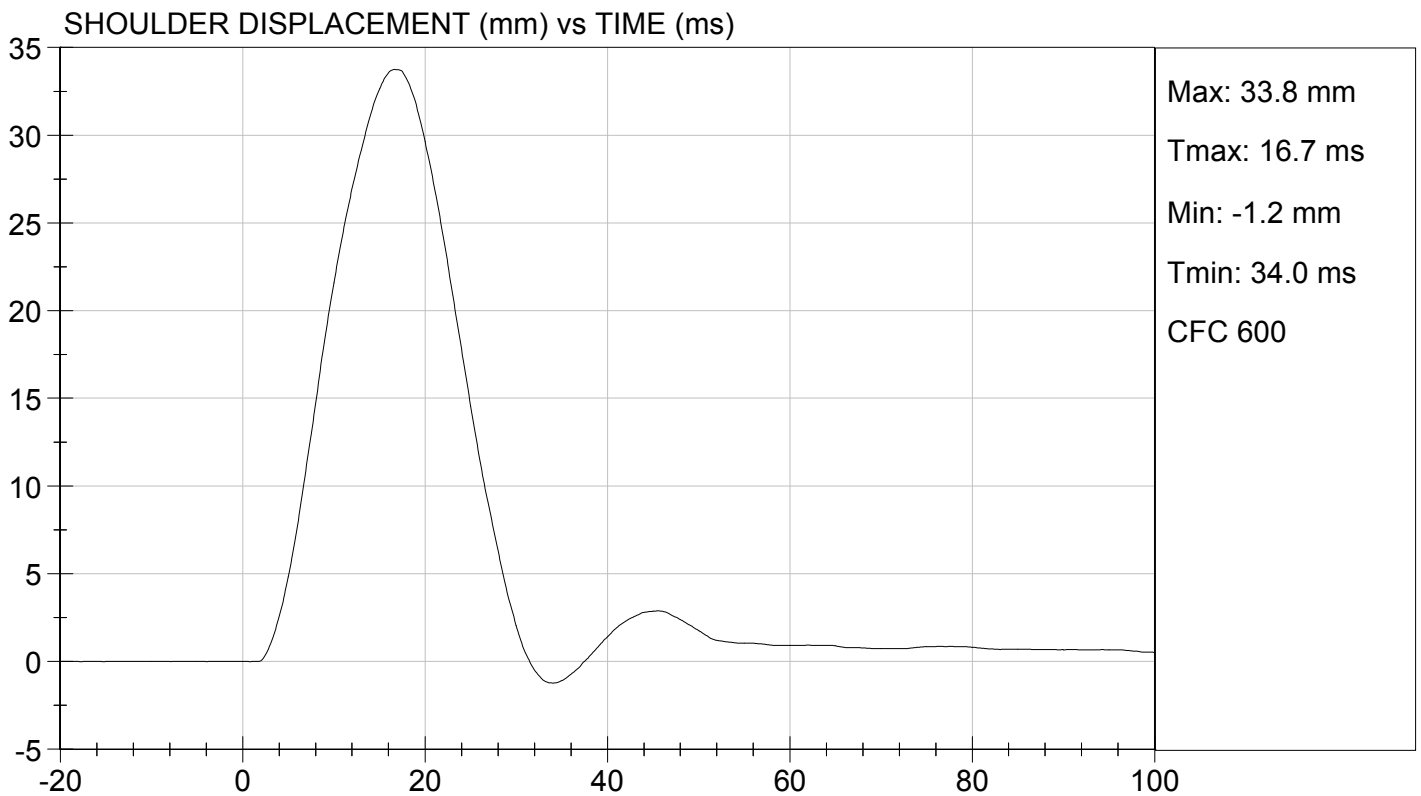
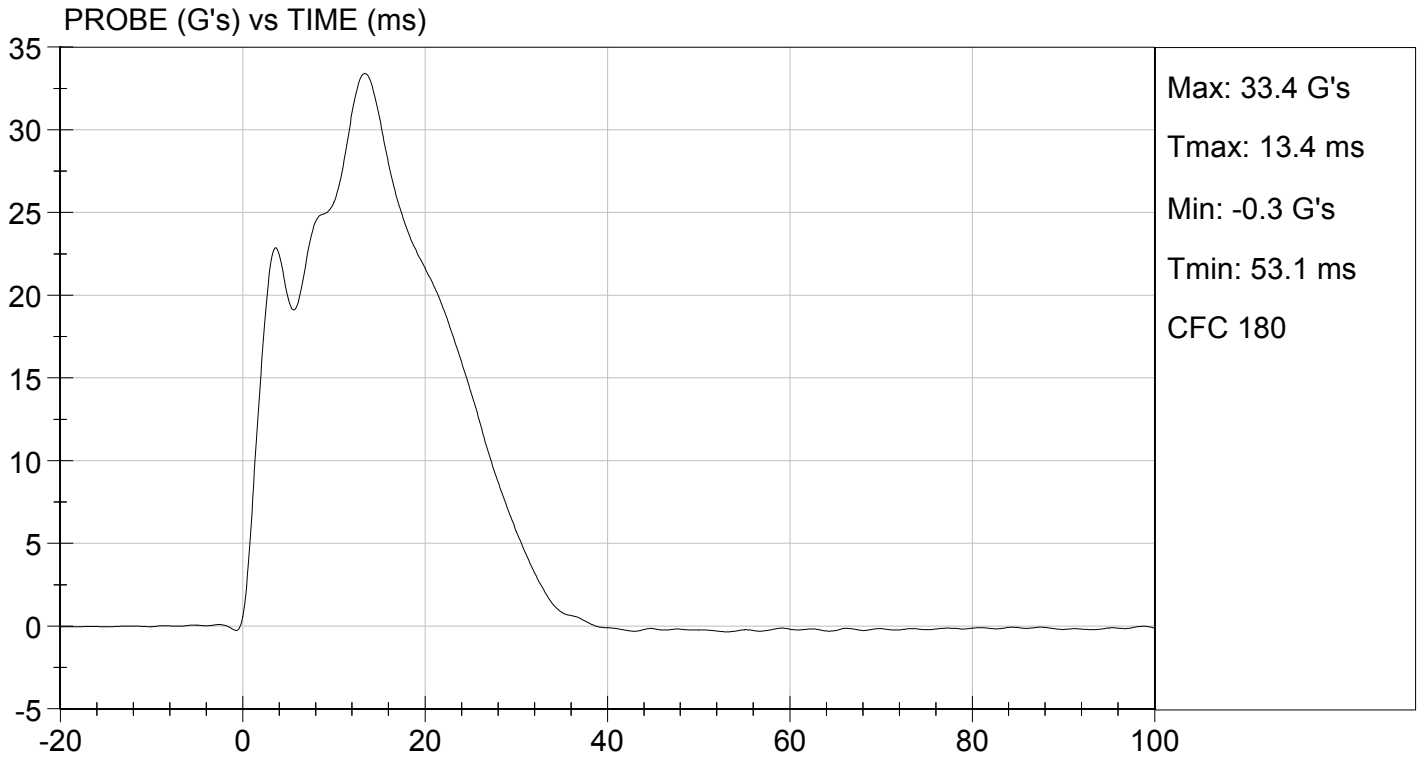
Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.5	Pass
Humidity	%	10 to 70	36	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	30 to 36	33	Pass
Shoulder Displacement	mm	31 to 40	34	Pass
Upper Rib Displacement	mm	25 to 32	28	Pass
Middle Rib Displacement	mm	30 to 36	32	Pass
Lower Rib Displacement	mm	32 to 38	35	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	38	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	34	Pass
Overall Test Results				Pass

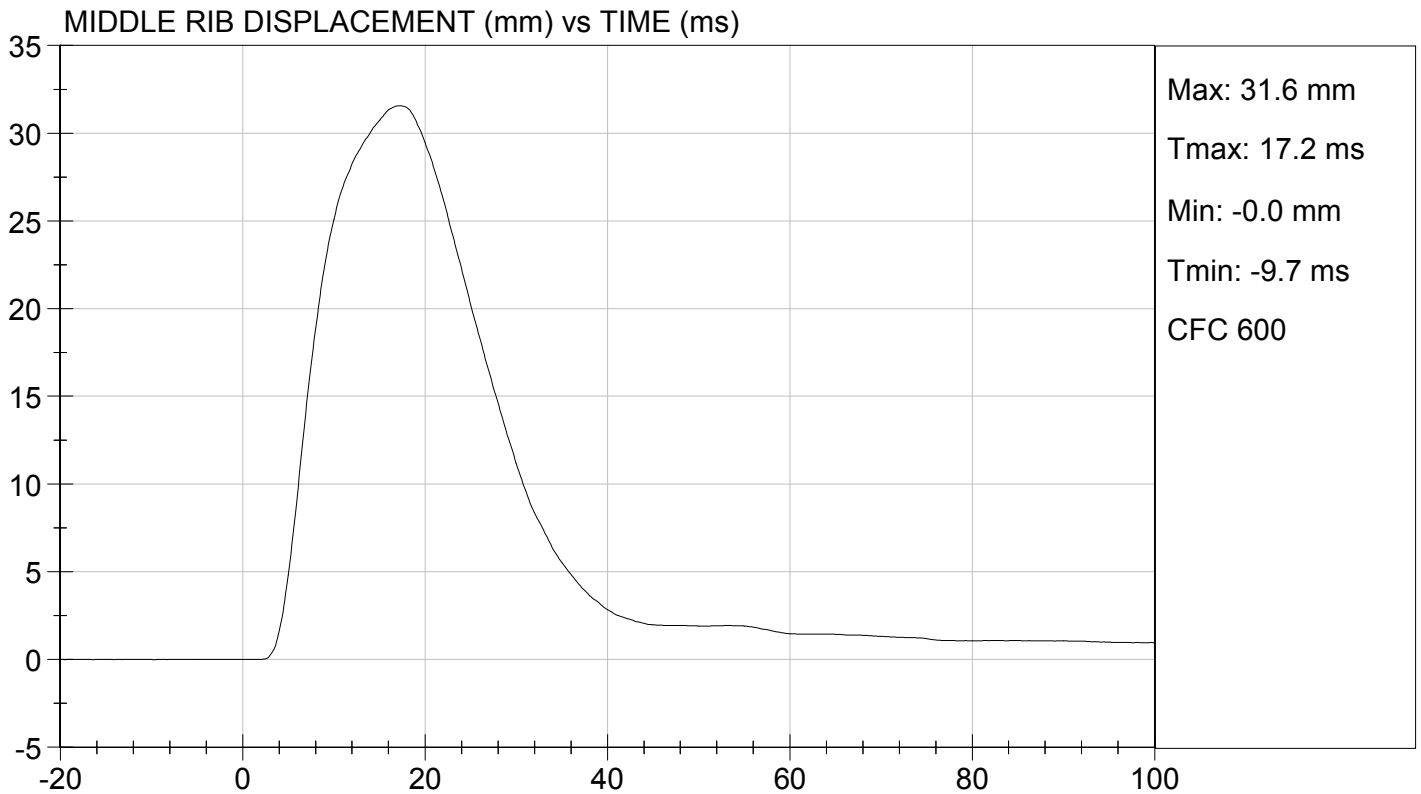
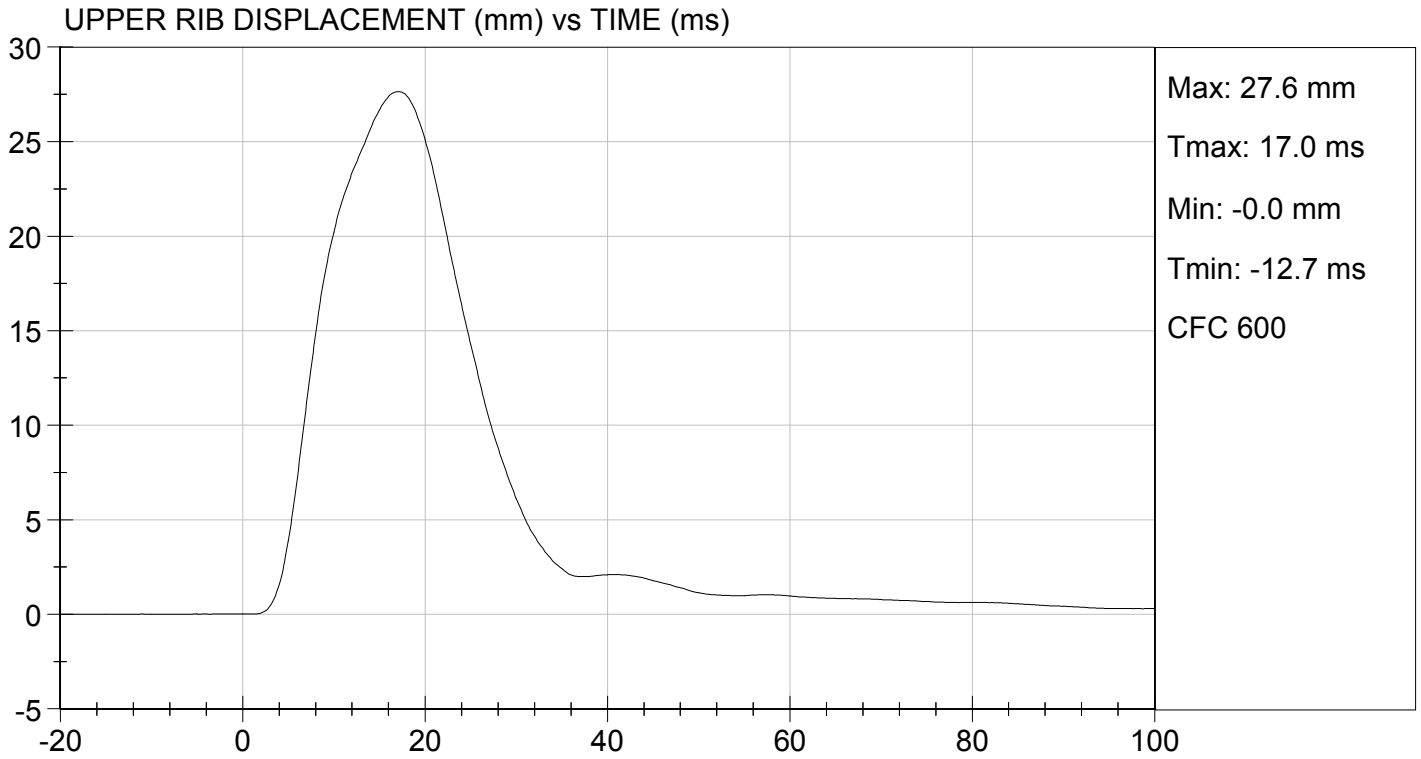
David Schoedel
Laboratory Technician

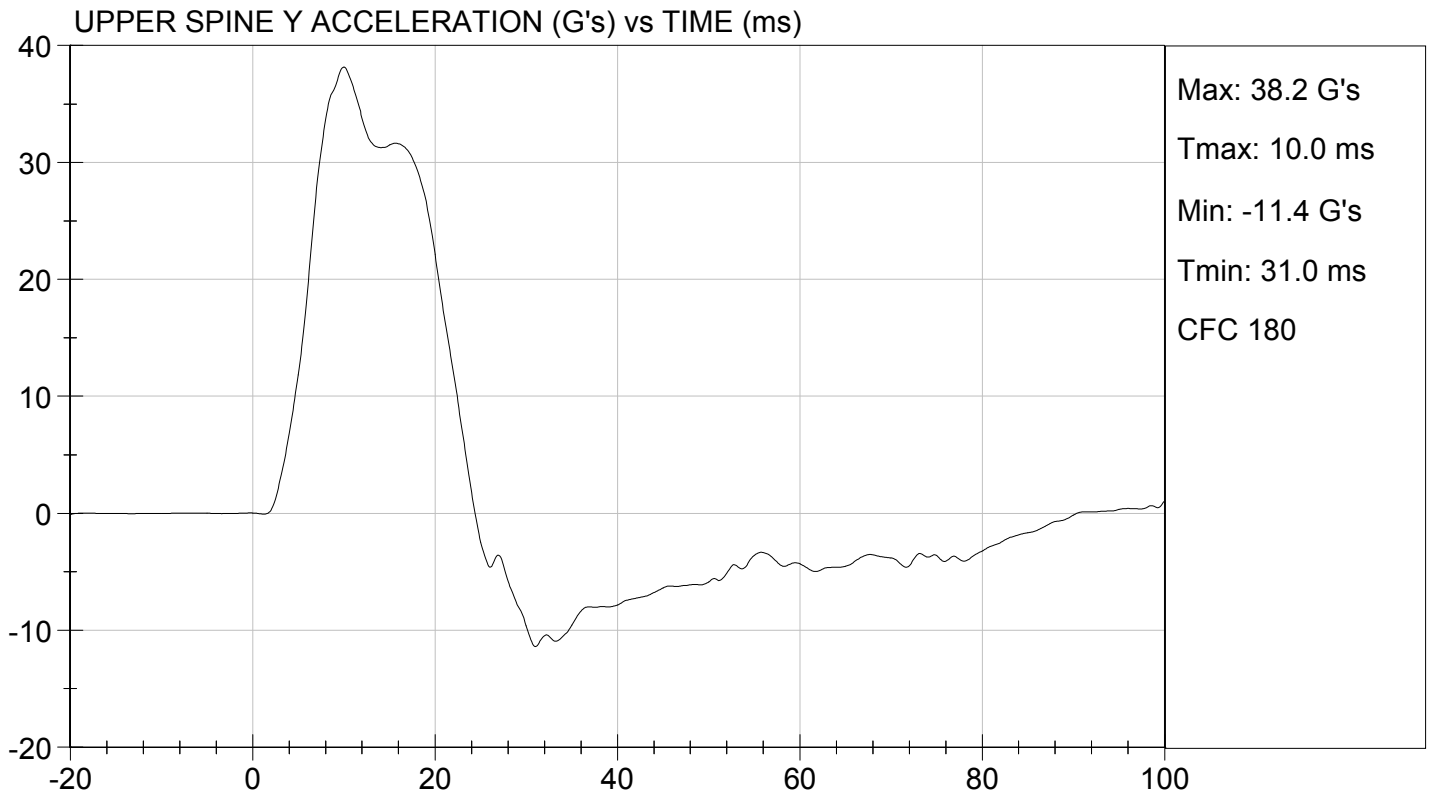
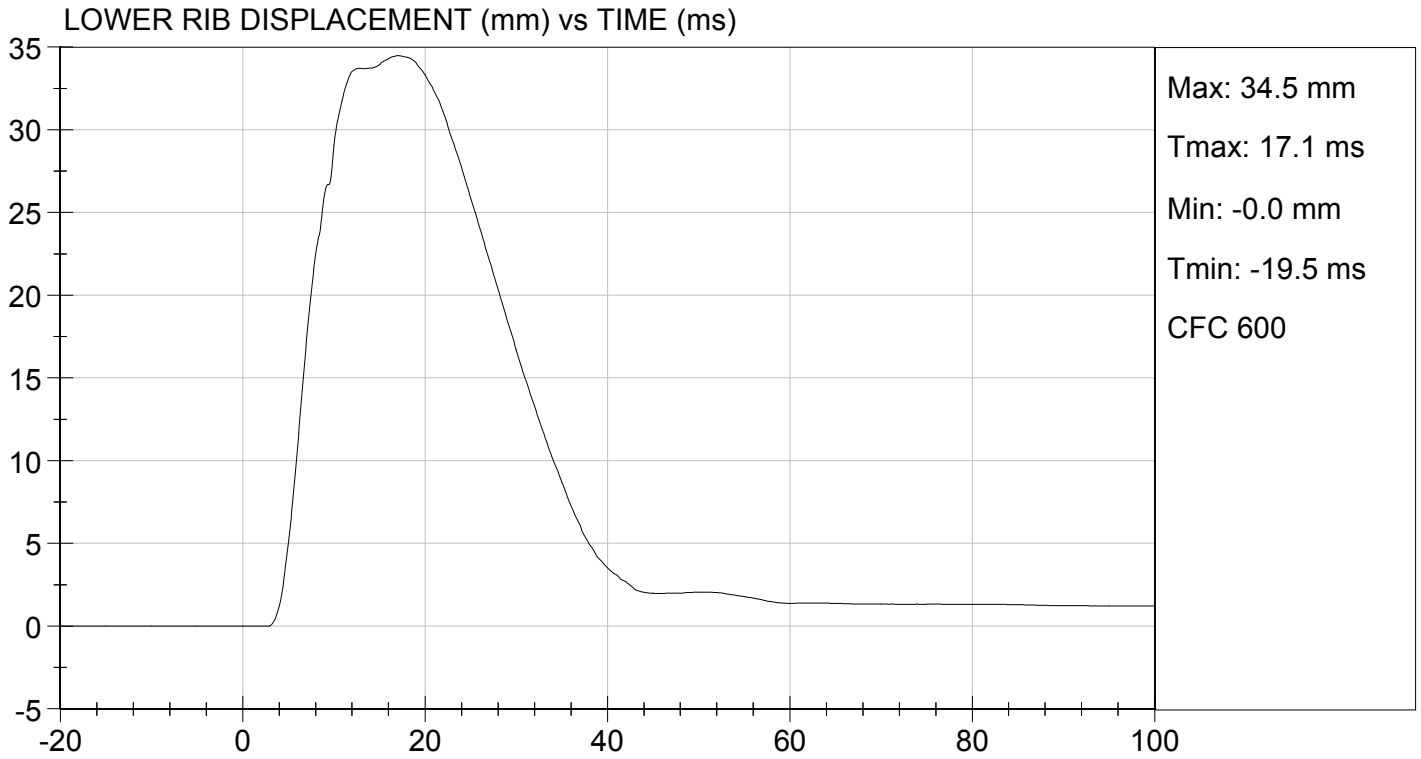
12/09/2015

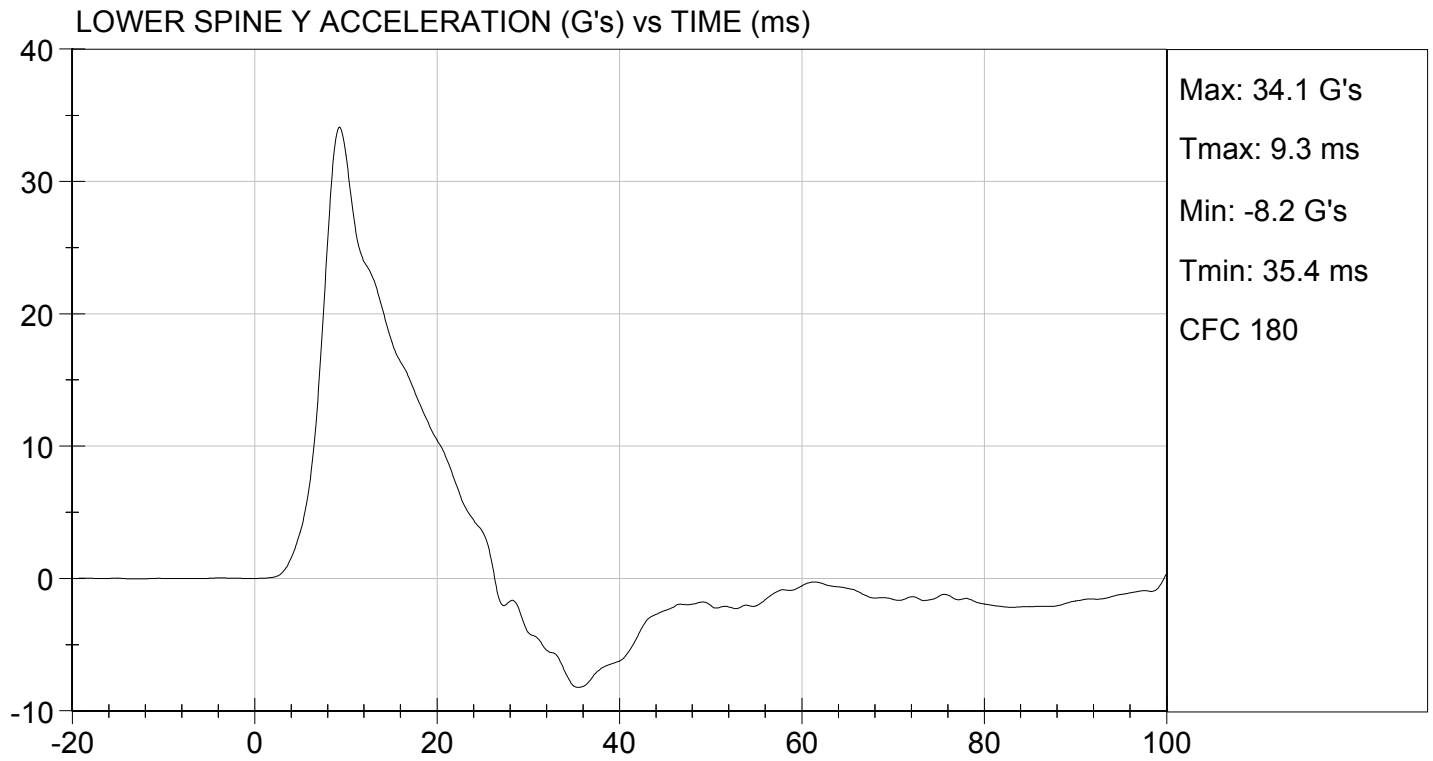
Test Date

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: D154075

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	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	37	Pass
Middle Rib Displacement	mm	39 to 45	42	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
Overall Test Results				Pass

David Schoedel

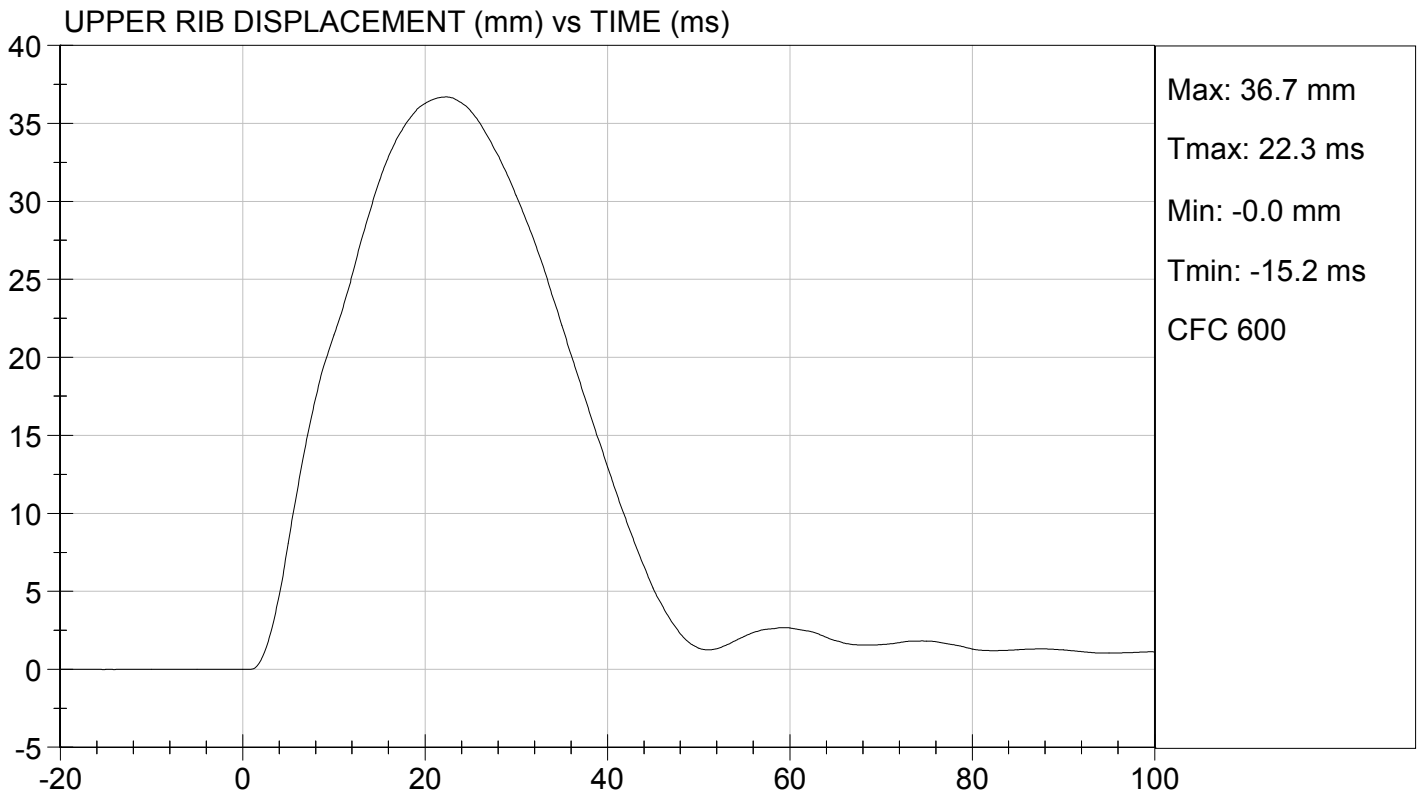
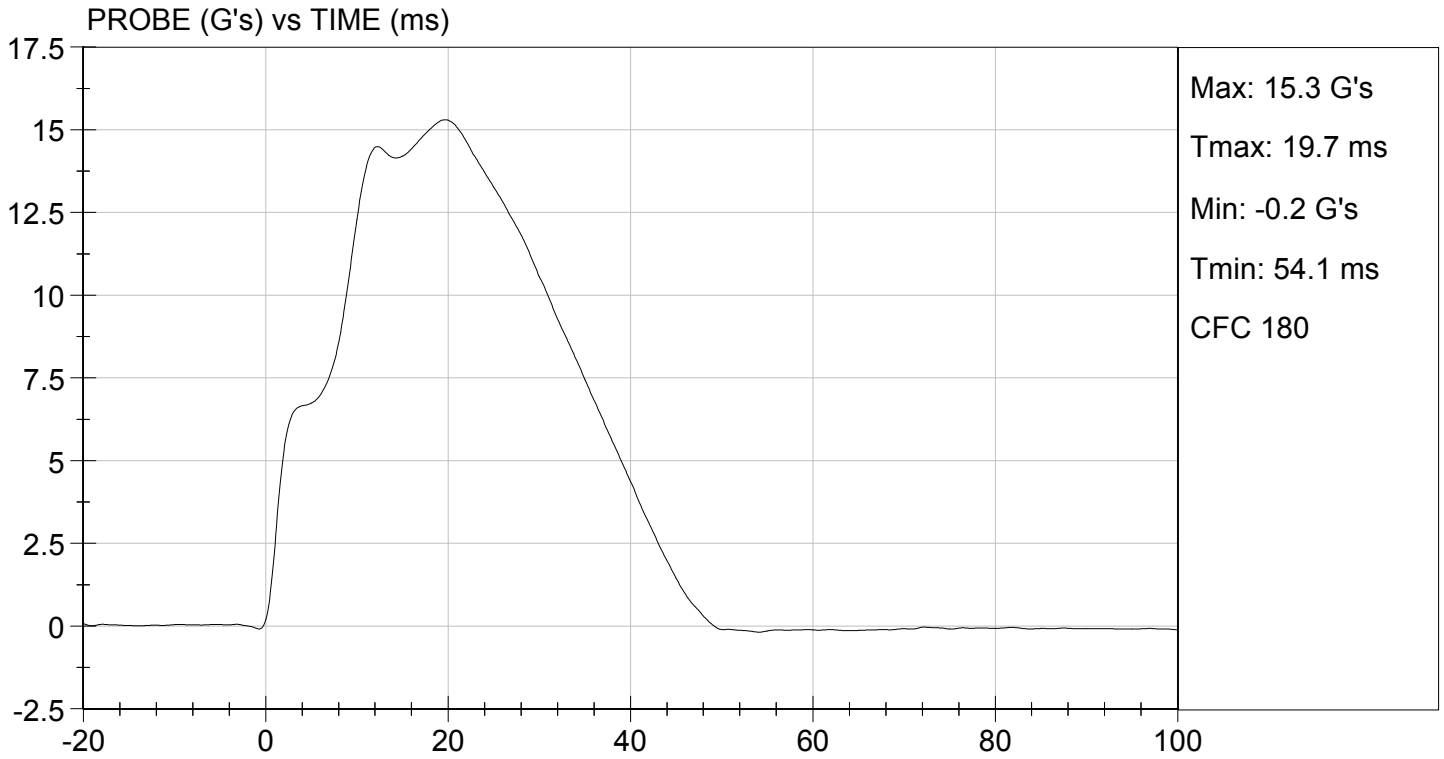
 Laboratory Technician

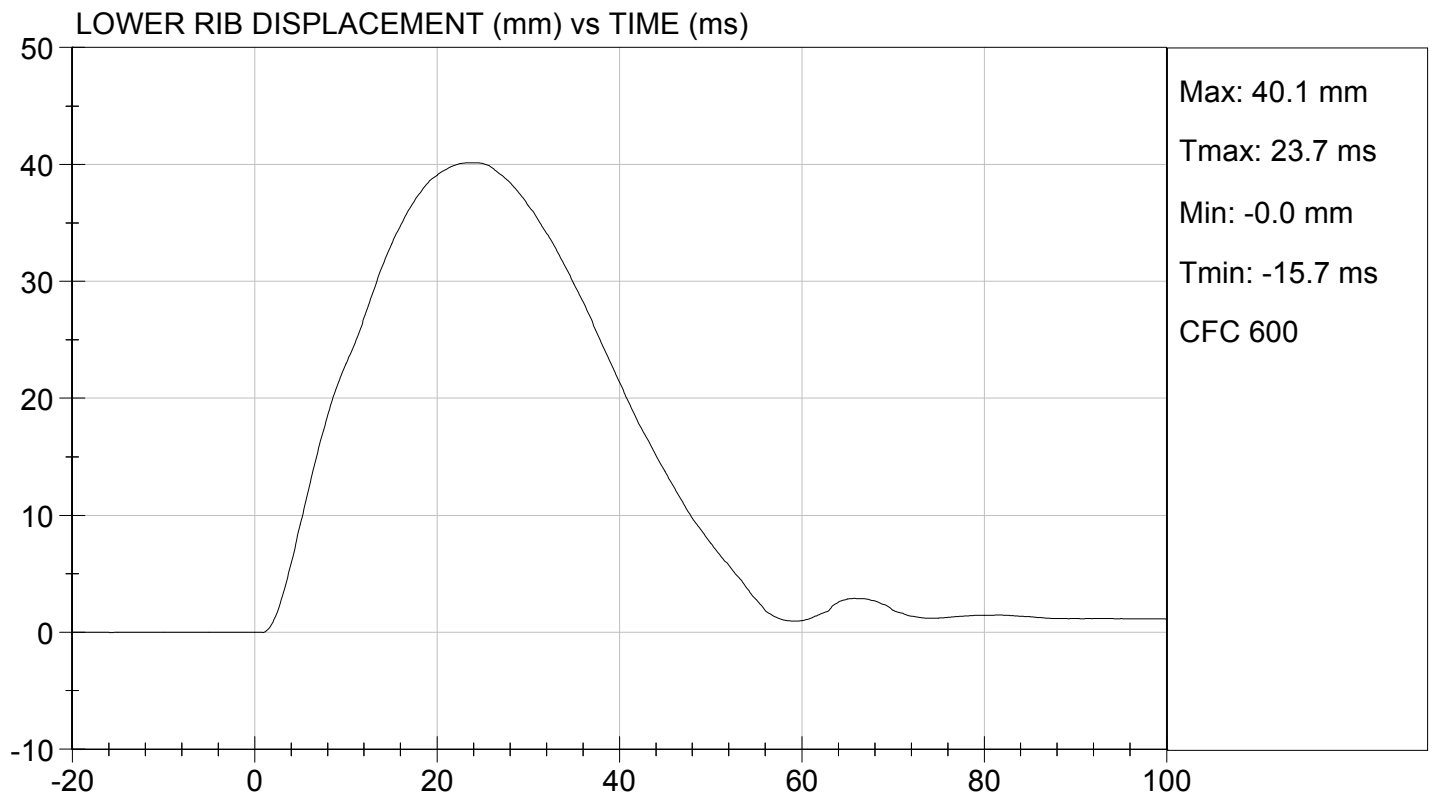
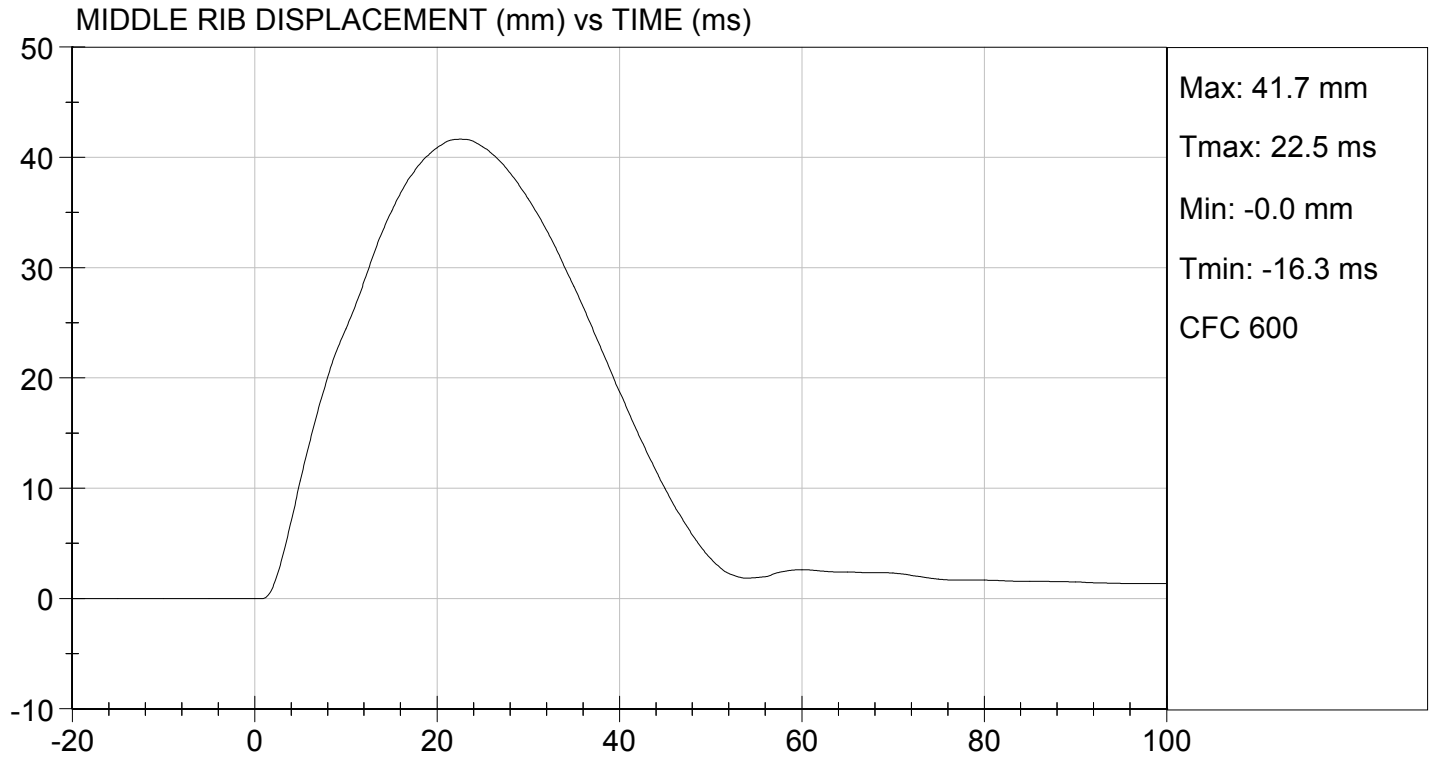
12/09/2015

 Test Date

Jessica Hall

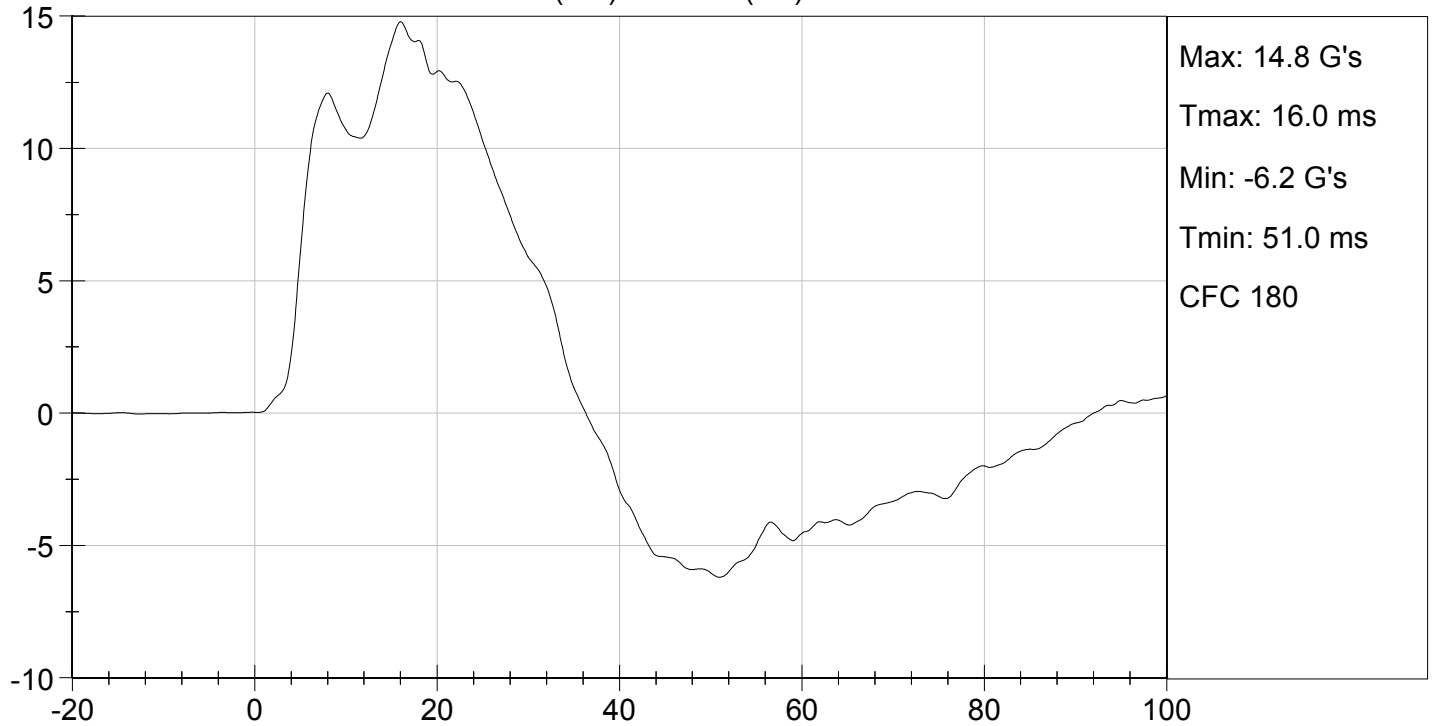
 Approved By



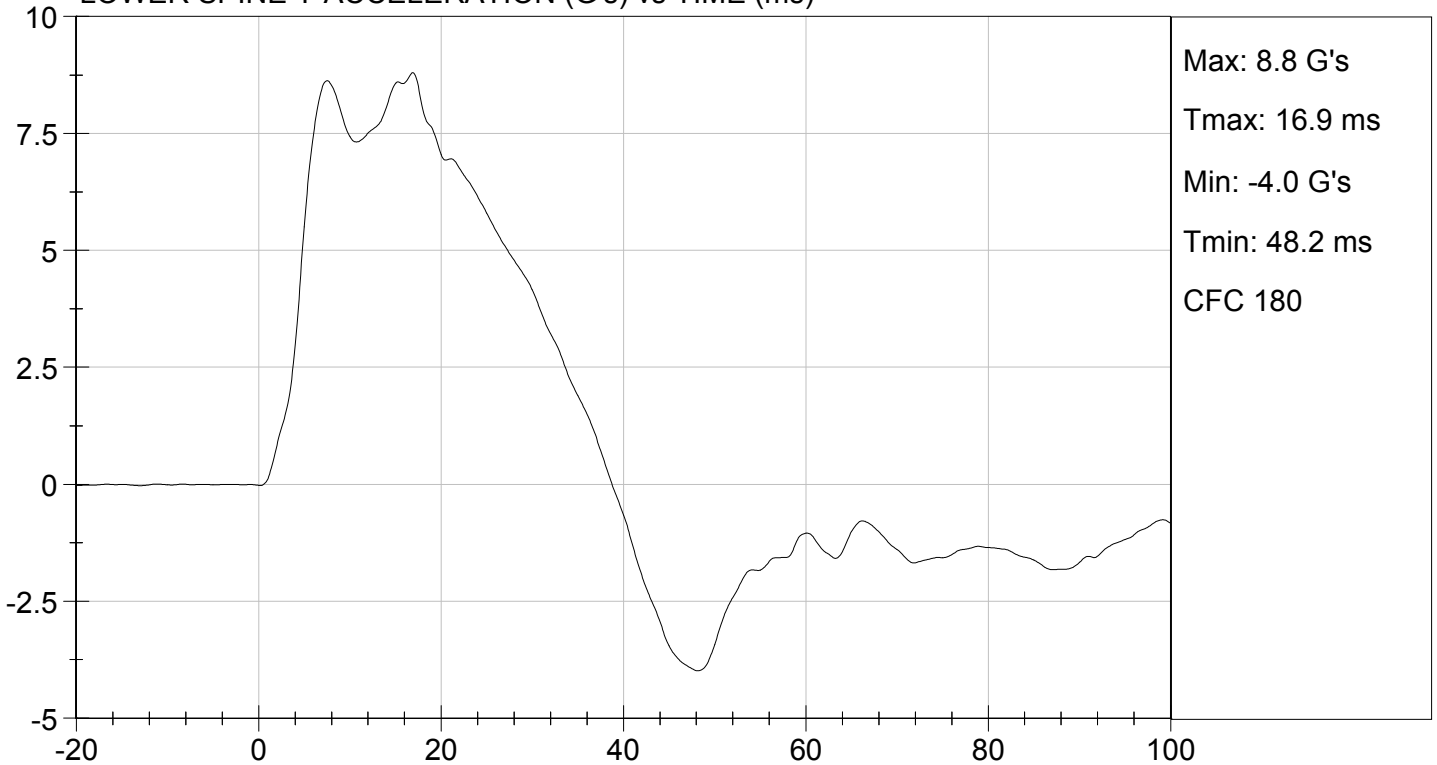




UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)



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

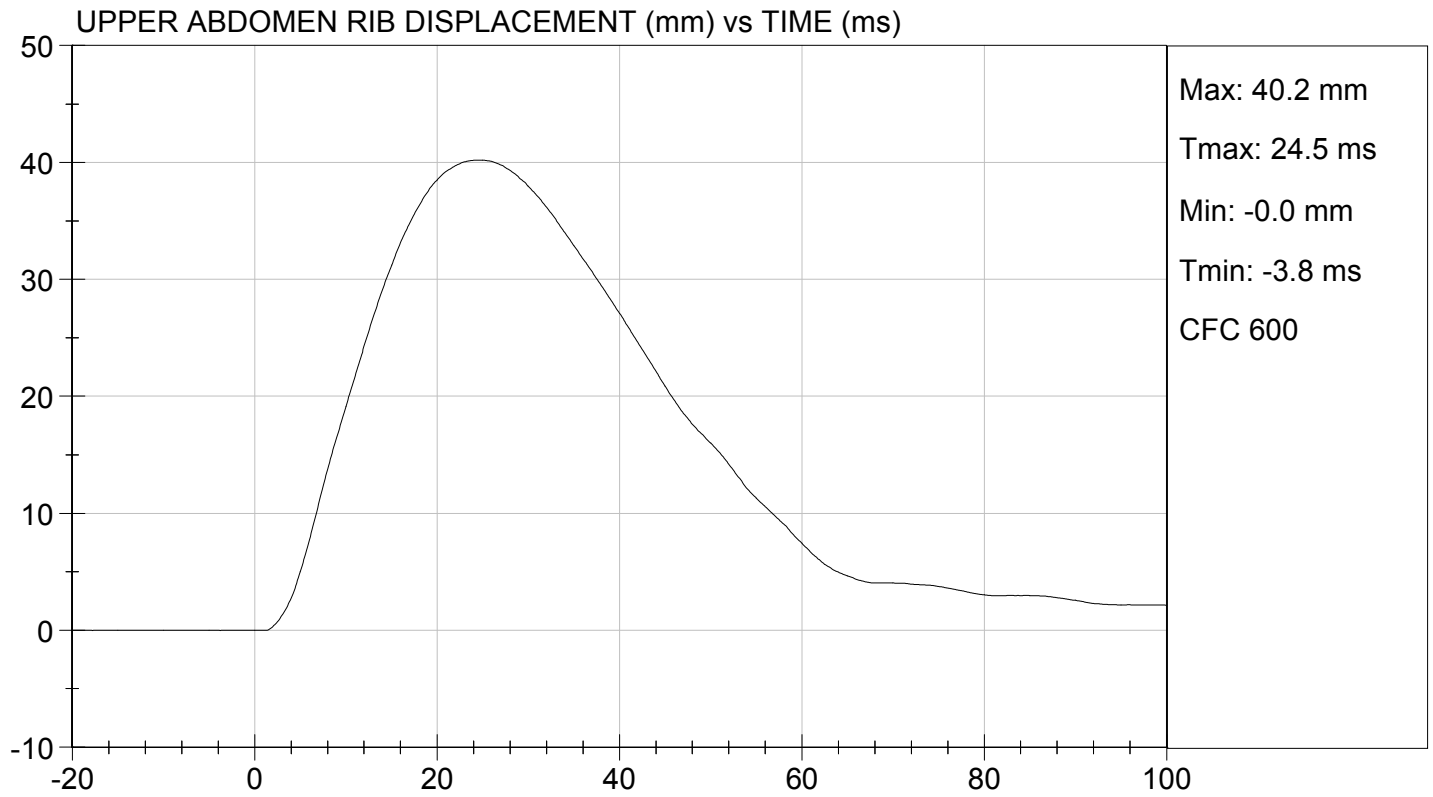
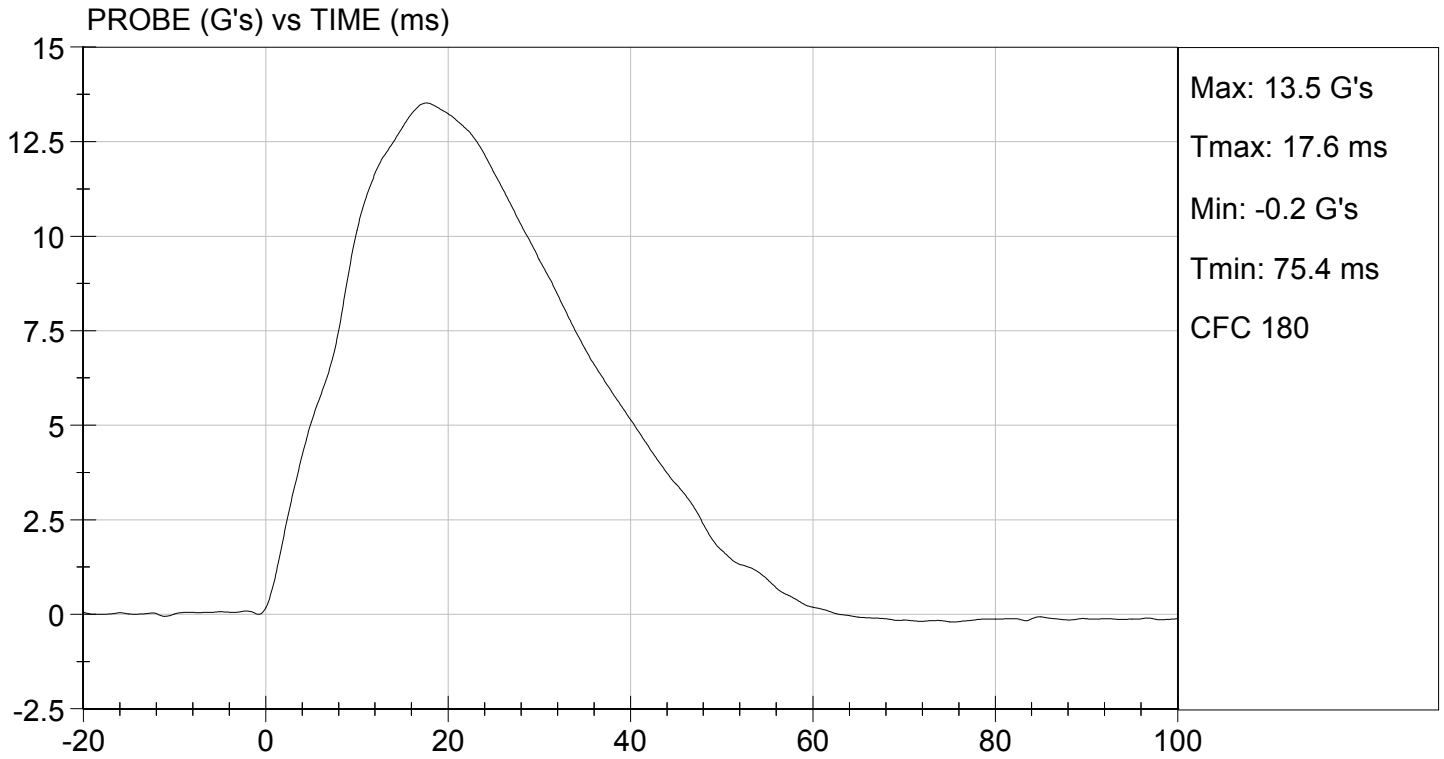
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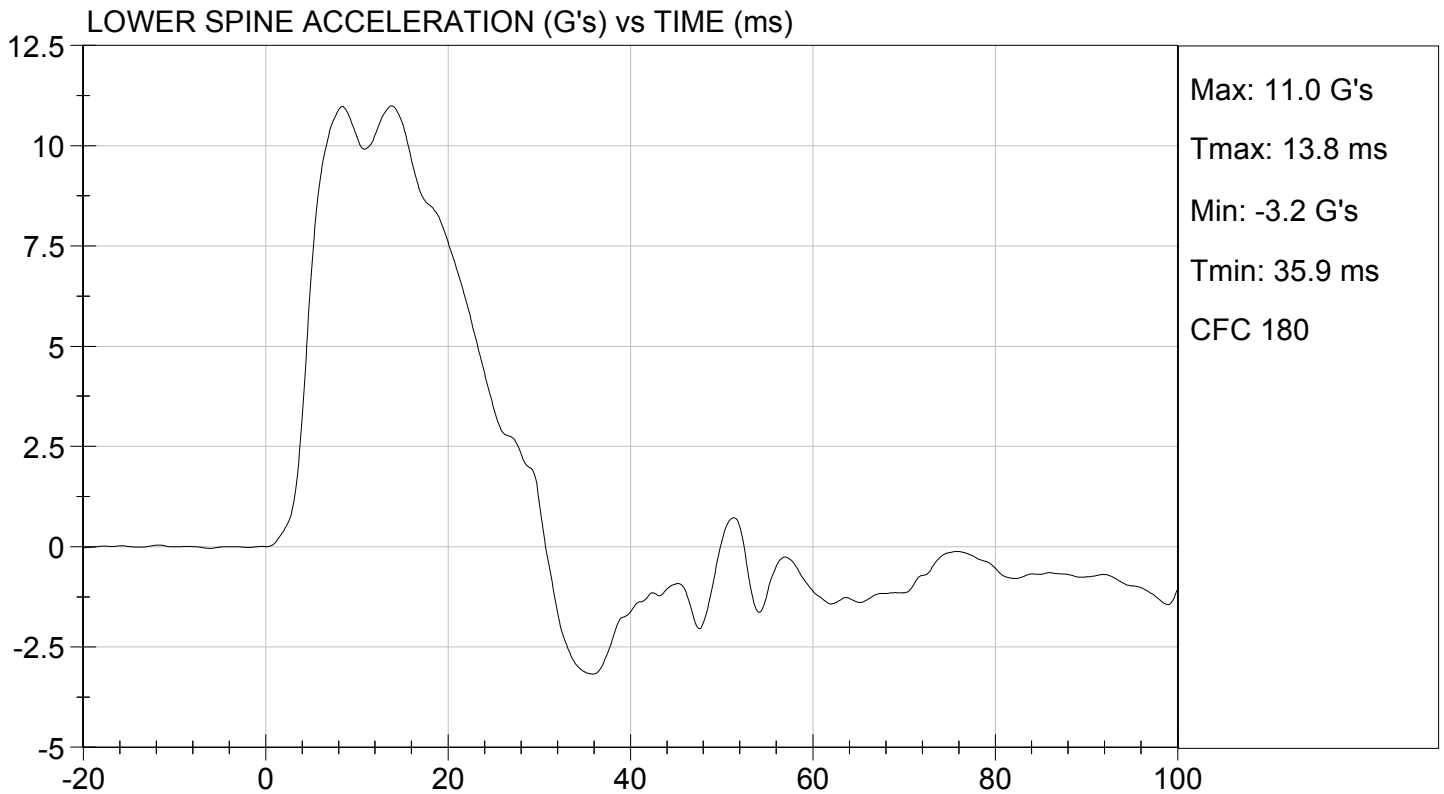
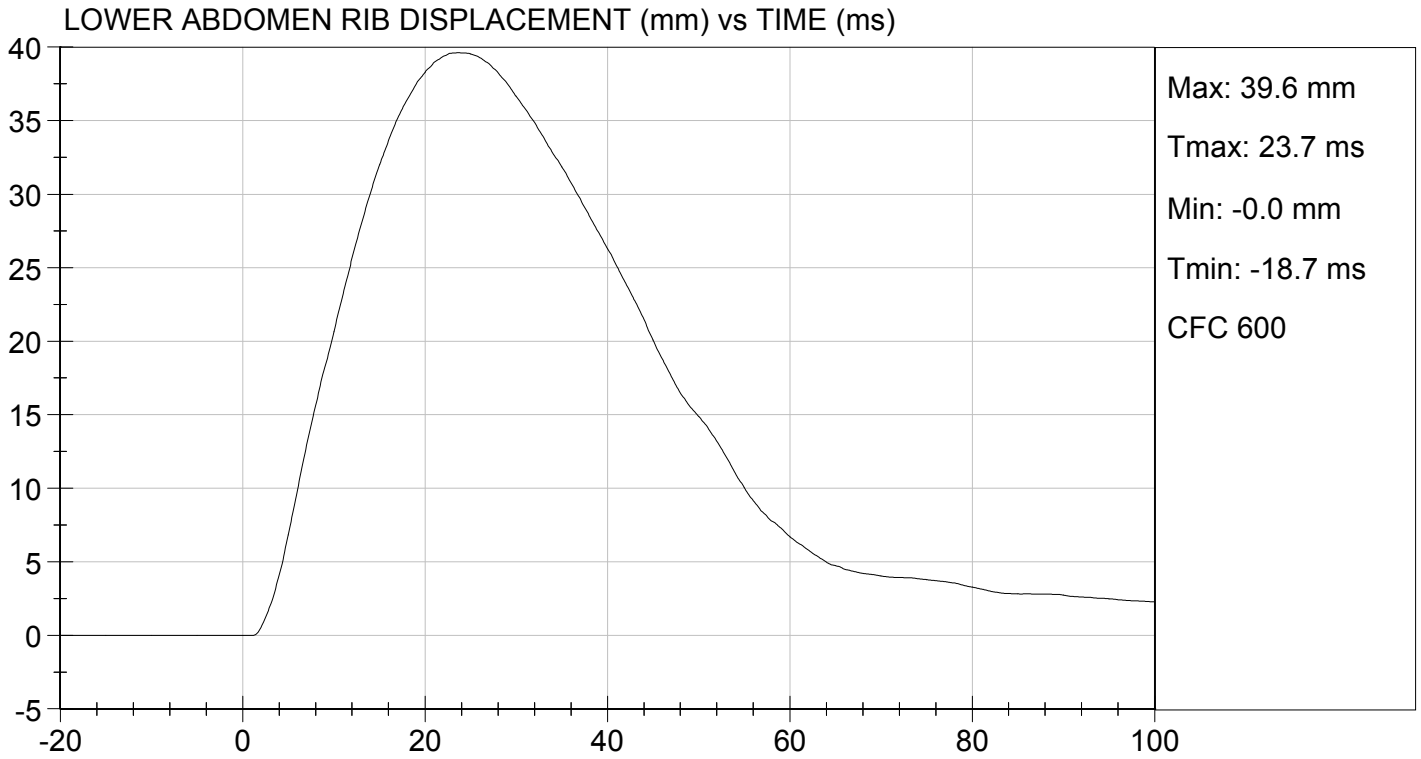
Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.5	Pass
Humidity	%	10 to 70	36	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	12 to 16	14	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	40	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	40	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

12/09/2015
 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: D154077

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	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	38 to 47	47	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	42	Pass
Peak Acetabulum Force	N	3600 to 4300	4,167	Pass
Overall Test Results				Pass

David Schoedel

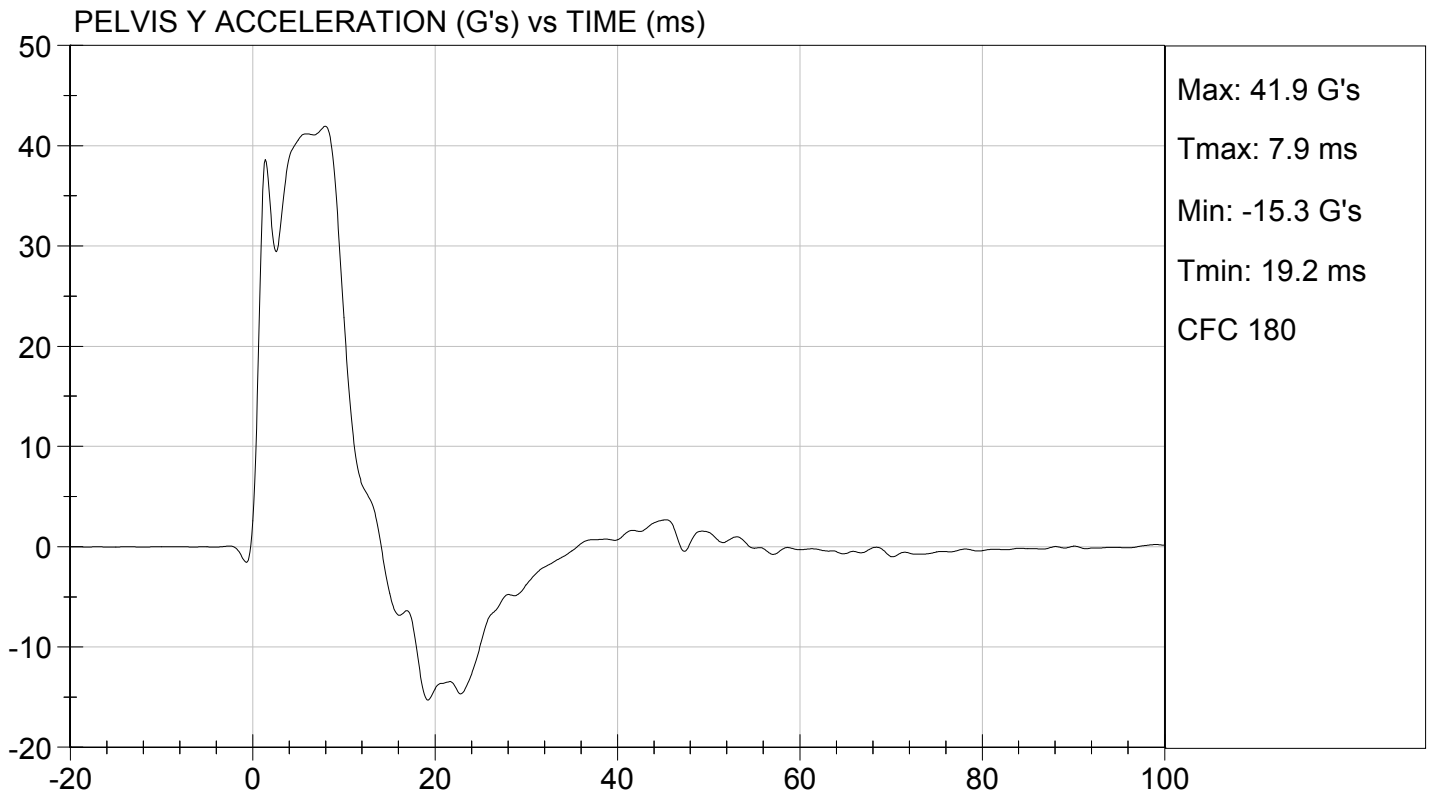
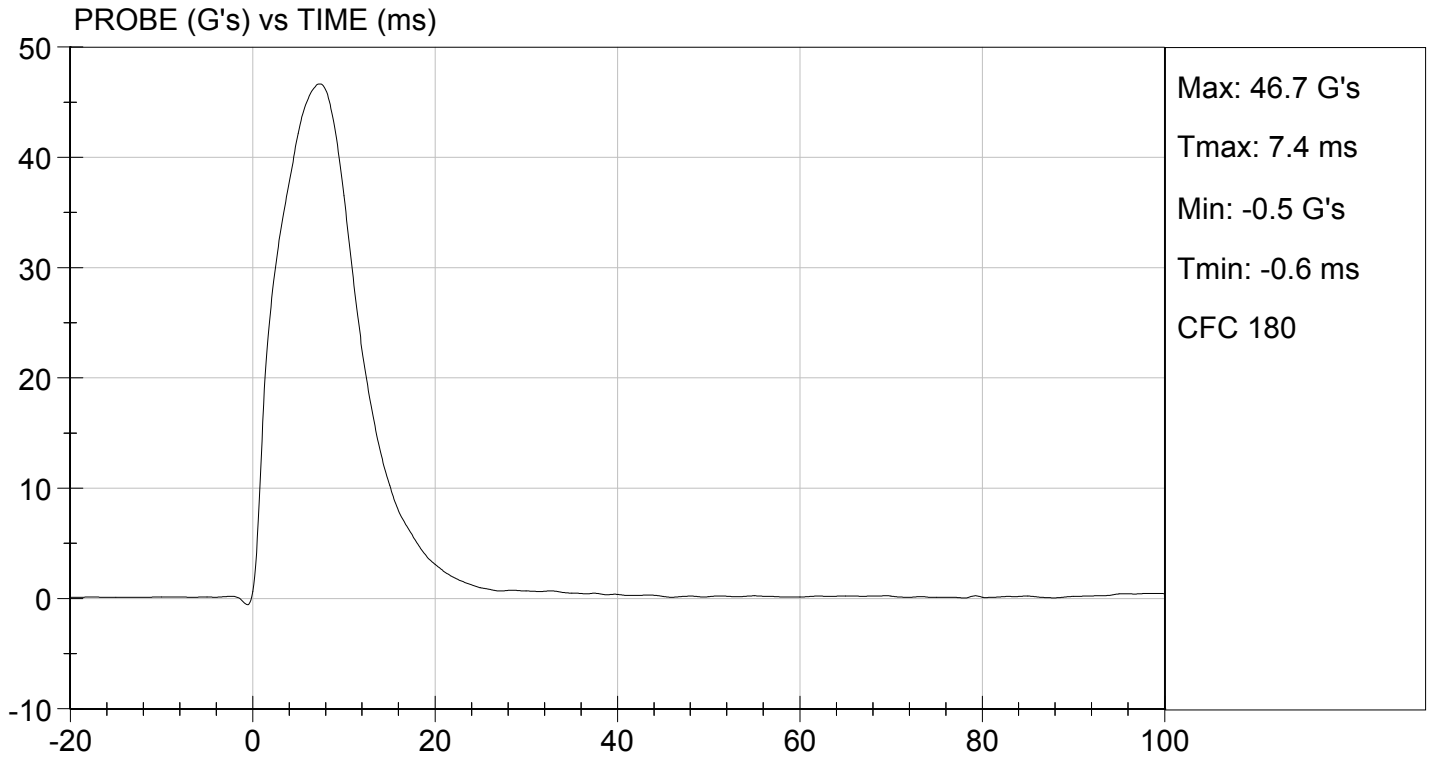
Laboratory Technician

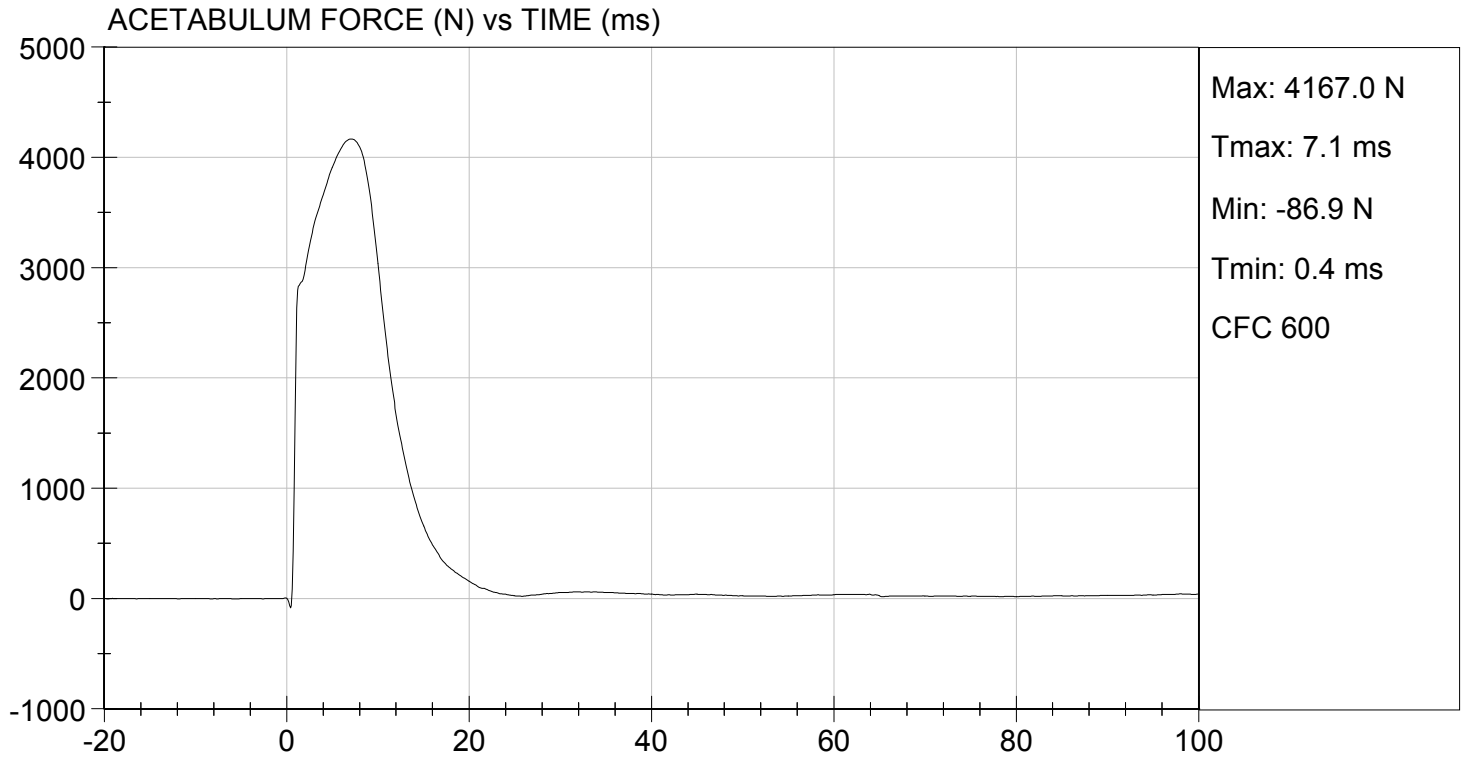
12/09/2015

Test Date

Jessica Hall

Approved By





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

ATD Serial No: 306

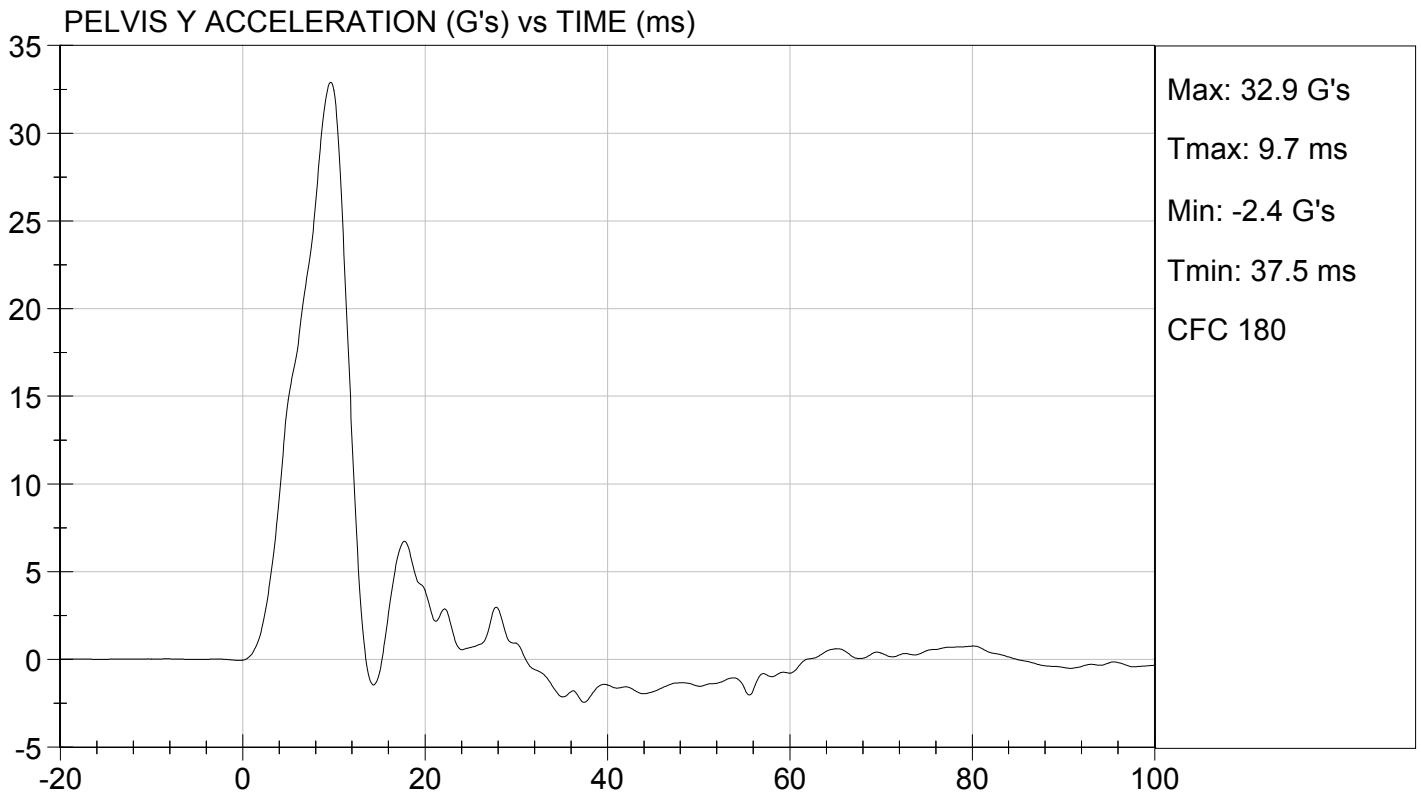
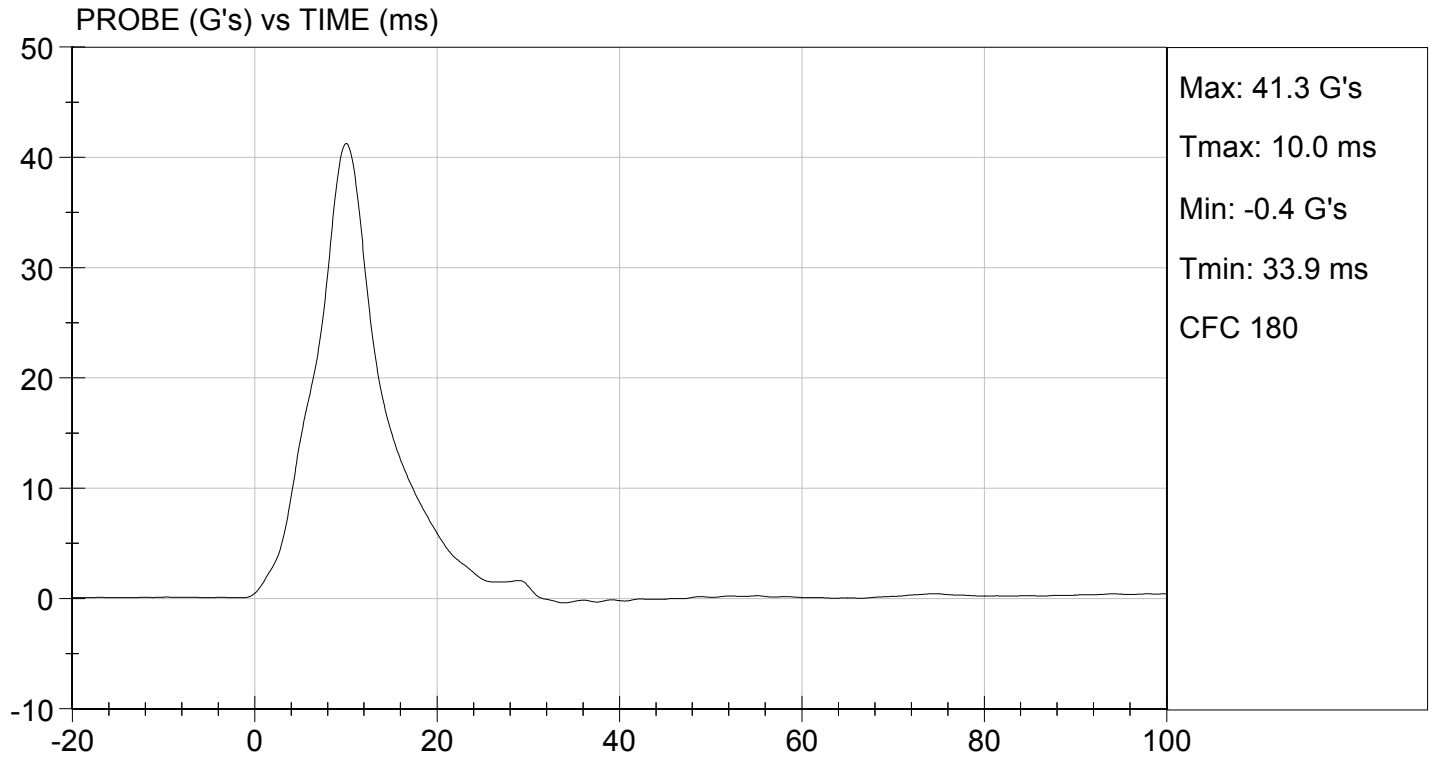
Test I.D: D154078

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	4.20 to 4.40	4.23	Pass
Maximum Probe Acceleration	G's	36 to 45	41	Pass
Pelvis Y Acceleration	G's	28 to 39	33	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,718	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

12/09/2015
 Test Date

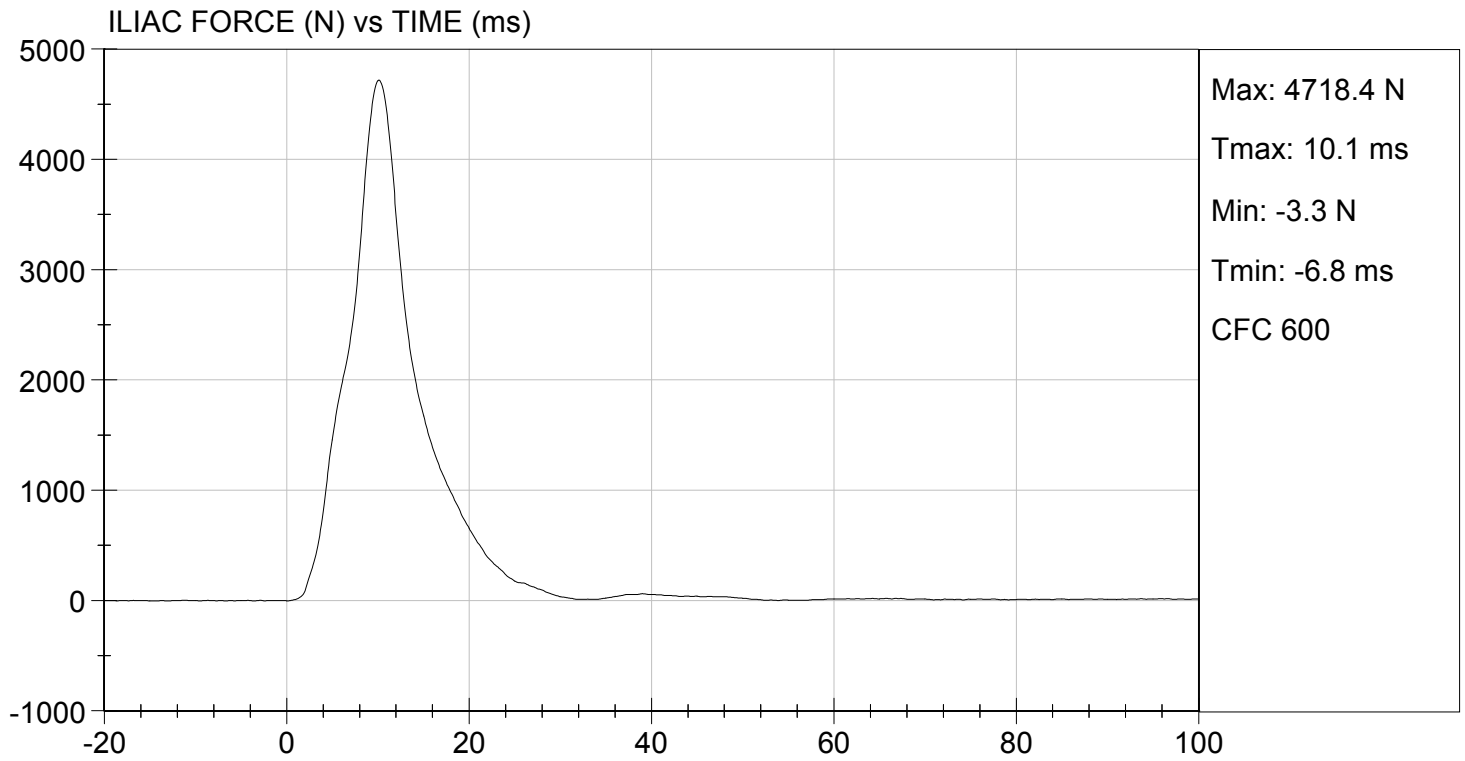
Jessica Hall
 Approved By



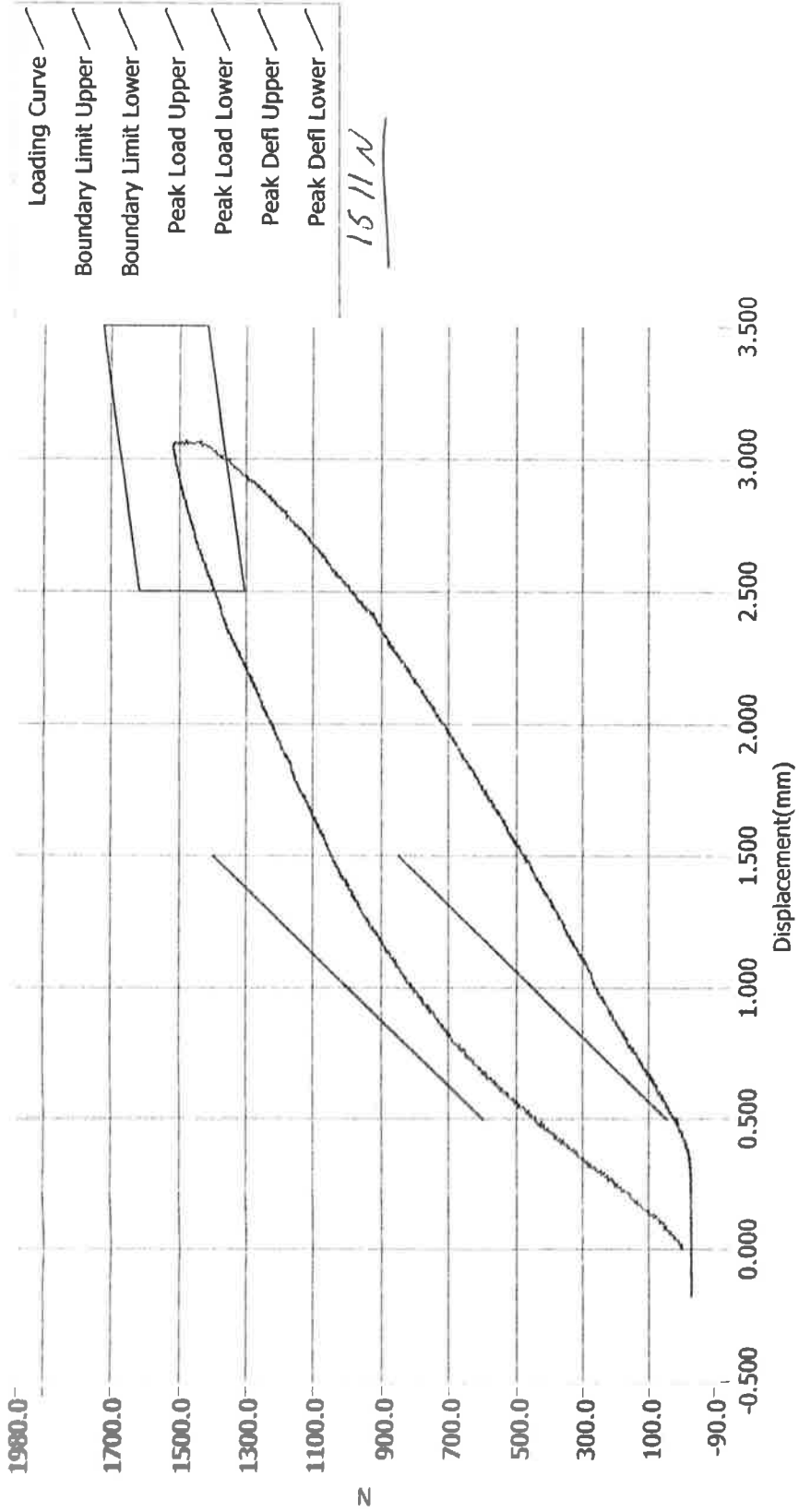


TEST DESC: ILLIAC
VELOCITY: 13.89 ft/s, 4.23 m/s

TEST DATE: 12/09/2015
TEST #: D154078



Resultant Data - SIDIIs Plug Compression



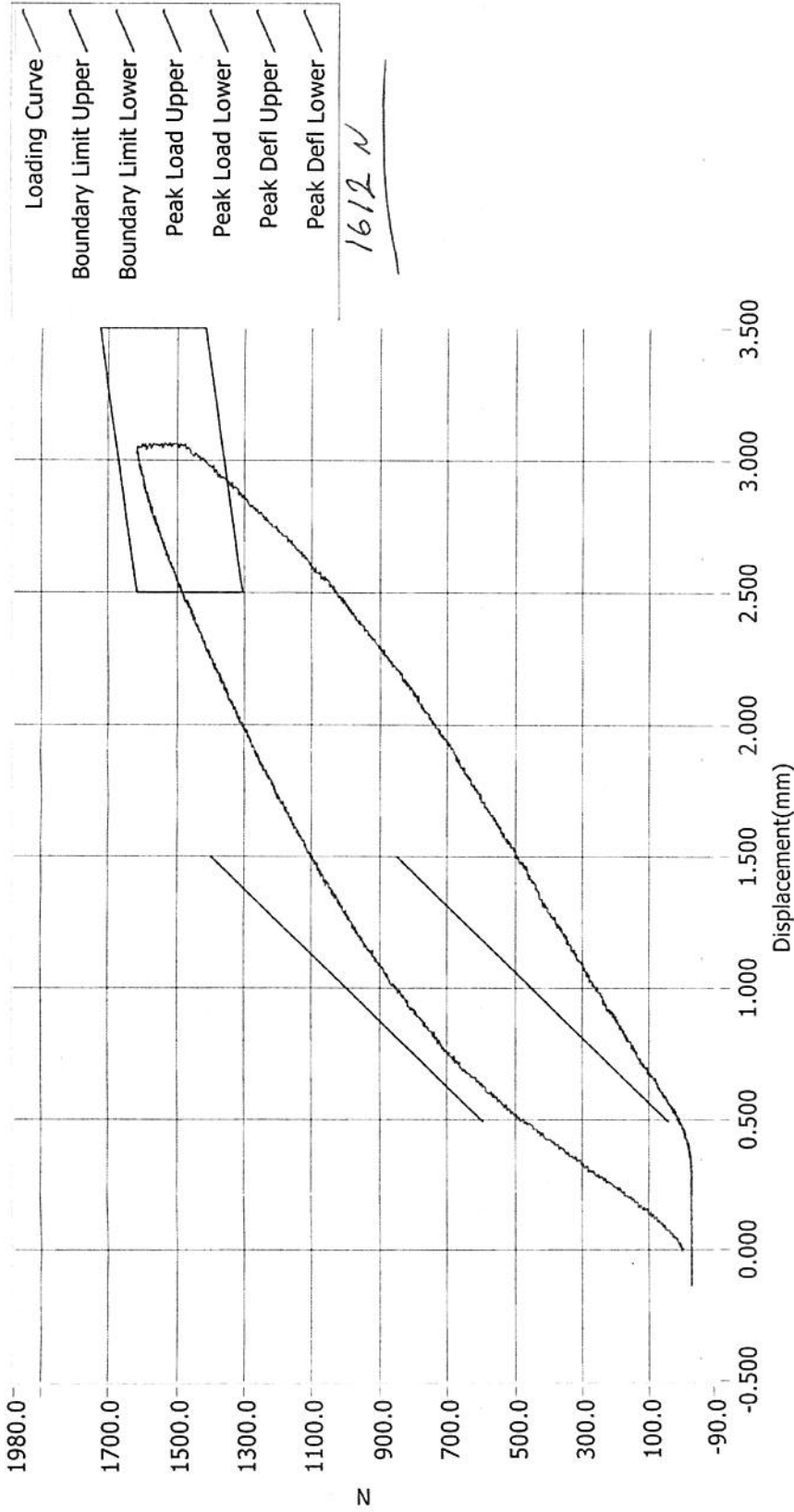
- Loading Curve
- Boundary Limit Upper
- Boundary Limit Lower
- Peak Load Upper
- Peak Load Lower
- Peak Defl Upper
- Peak Defl Lower

ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	70759	12/13/2013	3:41 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 12/13/2013 Current Time : 15:42:11

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

<u>Test ID</u>	<u>Part Serial Number</u>	<u>Test Date</u>	<u>Test Time</u>
	71028	12/13/2013	11:42 PM
<u>Cert ID</u>	<u>ATD Serial Number</u>	<u>ATD Type</u>	
	N/A	SIDIIs	

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	P79414	Endevco	10/05/15
			Y	P79409	Endevco	10/05/15
			Z	P79422	Endevco	10/05/15
			Xr	P79640	Endevco	10/05/15
			Yr	P79639	Endevco	10/05/15
			Zr	P79641	Endevco	10/05/15
Head Angular Rate Sensors			X	ARS7416	DTS	07/15/14
			Y	ARS7442	DTS	07/15/14
			Z	ARS7475	DTS	07/08/14
Displacement Potentiometers	Thoracic Rib	Upper	Y	G033	FTSS	10/06/15
		Middle	Y	G1261	FTSS	10/06/15
		Lower	Y	G1270	FTSS	10/06/15
	Abdominal Rib	Upper	Y	G032	FTSS	10/06/15
		Lower	Y	G1304	FTSS	10/06/15
Lower Spine Accelerometers (T12)			X	P82310	Endevco	09/23/15
			Y	P82113	Endevco	09/23/15
			Z	P82114	Endevco	09/23/15
Acetabulum Load Cell			Y	ACG111	FTSS	04/08/15
Iliac Wing Load Cell			Y	IWG226	FTSS	04/08/15
Pelvis Plug (struck side)				70759	FTSS	12/13/13
Pelvis Plug (non-struck side)				71028	FTSS	12/13/13

Table 2 – Vehicle Instrumentation

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P87520	Endevco	07/06/15
Vehicle Center of Gravity	Y	P87521	Endevco	07/06/15
Vehicle Center of Gravity	Z	P87519	Endevco	07/06/15
Left Floor Sill	Y	P77637	Endevco	11/16/15
A-Pillar Sill	Y	P78718	Endevco	12/03/15
A-Pillar Low	Y	P88766	Endevco	07/07/15
A-Pillar Mid	Y	P88765	Endevco	07/09/15
B-Pillar Sill	Y	P82294	Endevco	12/03/15
Driver Seat	Y	P85131	Endevco	09/10/15
Engine Top	X	P90607	Endevco	09/21/15
Engine Top	Y	P90606	Endevco	09/21/15
Firewall	Y	P86964	Endevco	12/03/15
Right Roof	Y	P78751	Endevco	12/03/15
Right Floor Sill	Y	P78748	Endevco	12/03/15
Rear Floorpan	X	P90631	Endevco	10/07/15
Rear Floorpan	Y	P90632	Endevco	10/07/15

Table 3 – Pole Instrumentation

	Serial Number	Manufacturer	Calibration Date
Load Cell 1	DG6277	FTSS	07/22/15
Load Cell 2	DG6278	FTSS	07/22/15
Load Cell 3	DG6279	FTSS	07/22/15
Load Cell 4	DG6280	FTSS	07/22/15
Load Cell 5	DG6281	FTSS	07/22/15
Load Cell 6	DG6283	FTSS	07/22/15
Load Cell 7	DG6284	FTSS	07/22/15
Load Cell 8	DG6582	FTSS	07/22/15