REPORT NUMBER: SPNCAP-MGA-2013-033

NEW CAR ASSESSMENT PROGRAM (NCAP)
Side Impact Pole Test

NISSAN MOTOR CO., LTD.
2013 Infiniti JX35 SUV
NHTSA No.: ND5204

MGA RESEARCH CORPORATION
5000 Warren Road
Burlington, WI 53105

Test Date: November 15, 2012

Final Report Date: January 3, 2013

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: 
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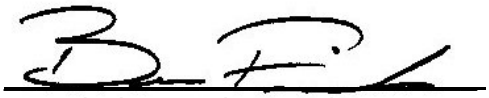
Approved by: 
Ben Fischer, Project Engineer

Approval Date: January 3, 2013

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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9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-09-D-00124
12. Sponsoring Agency Name and Address 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		*13. Type of Report and Period Covered:* Final Test Report November 15, 2012 to January 3, 2013 *14. Sponsoring Agency Code* NVS-111
15. Supplementary Notes		

16. Abstract

A 32.20 km/h, 75° oblique impact Side NCAP Test was conducted on the subject 2013 Infiniti JX35 SUV 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 November 15, 2012.

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 20.8°C. The test vehicle post-test maximum crush was 449 mm at level 3. The test vehicle's performance was as follows:

	Driver ATD (SID-IIs)		
Measurement Description	**Units**	**Threshold**	**Result**
Head Injury Criteria (HIC_{36})	N/A	1000	260
Resultant Lower Spine Acceleration	Gs	82	31
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2853
Maximum Thoracic Rib Deflection	mm	38*	20
Maximum Abdomen Rib Deflection	mm	45*	16

*Proposed IARV

The two 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 2013 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 2013 Infiniti JX35 SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated September 2012.

SECTION 2
SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2013 Infiniti JX35 SUV. 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 November 15, 2012. 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 2012. 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	260
Resultant Lower Spine Acceleration	Gs	82	31
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2853
Maximum Thoracic Rib Deflection	mm	38*	20
Maximum Abdominal Rib Deflection	mm	45*	16

*Proposed IARV

Supplemental restraint information is given below:

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Abdomen/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	
Other				

The test data can be found on the NHTSA website at www.nhtsa.dot.gov

GENERAL COMMENTS

There was no valid data collected for:
Left Floor Sill Y after 67ms
Driver Seat Track Y after 37ms

Left Lower A-Post Y is questionable from 106-110ms
Left Mid A-Post Y is questionable from 34-40ms and 106-110ms

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	ND5204
Model Year	2013
Make	Infiniti
Model	JX35
Body Style	MPV
VIN	5N1AL0MN2DC322897
Body Color	Diamond Slate
Odometer Reading (km/mi)	121 / 75
Engine Displacement (L)	3.5
Type/No. Cylinders	6
Engine Placement	Lateral
Transmission Type	Automatic
Transmission Speeds	CVT
Overdrive	Yes
Final Drive	Front
Roof Rack	No
Sunroof/T-Top	Yes
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes

Traction Control System (TCS)	Yes
Auto-Leveling System	No
Automatic Door Locks (ADL)	Yes
Power Window Auto-Reverse	Yes
Other Optional Feature	N/A
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	No
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Rear Pass. Curtain Airbag	Yes
Rear Pass. Head/Torso Airbag	No
Rear Pass. Torso Airbag	No
Rear Pass. Torso/Pelvis Airbag	No
Rear Pass. Pelvis Airbag	No
Driver Seat Belt Pretensioner	Yes
Rear Pass. Seat Belt Pretensioner	No
Driver Load Limiter	Yes
Rear Pass. Load Limiter	No
Other Safety Restraint	N/A

Does owner's manual provide instructions to turn off automatic door locks?	No

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Co., Ltd.
Date of Manufacture	09/12
Vehicle Type	MPV

GVWR (kg)	2715
GAWR Front (kg)	1325
GAWR Rear (kg)	1415

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3	2	7	
Capacity Weight (VCW) (kg)				521	(A)
DSC x 68.04 kg				476	(B)
Rated Cargo and Luggage Weight (RCLW) (kg)				45	(A-B)

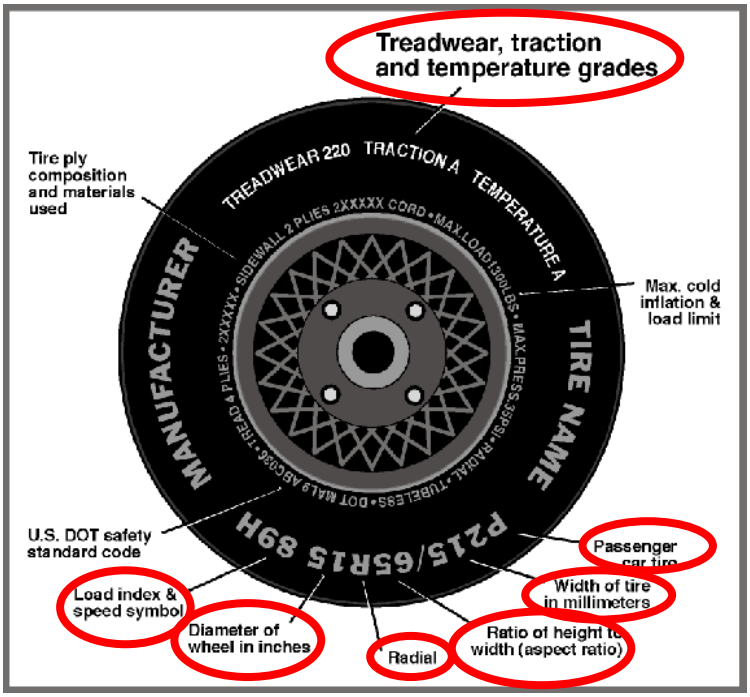
VEHICLE SEAT TYPE

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/lever	
Third Row Seat			X			w/lever	

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

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012

VEHICLE TIRE INFORMATION



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	230	230
Recommended Tire Size	235/65R18	235/65R18
Tire Size on Vehicle	235/65R18	235/65R18
Tire Manufacturer	Michelin	Michelin
Tire Model	Latitude	Latitude
Treadwear	620	620
Traction	A	A
Temperature Grade	B	B
Tire Plies Sidewall	2	2
Tire Plies Body	5	5
Load Index/Speed Symbol	106T	106T
Tire Material	Rubber	Rubber
DOT Safety Code Left	B9MB 002X	B9MB 002X
DOT Safety Code Right	B9MB 002X	B9MB 002X

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

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012

TEST PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kpa	230	230	230	230
Tire Placard	kpa	230	230	230	230
Owner's Manual	kpa				
As Tested	kpa	230	230	230	230

TEST VEHICLE WEIGHTS

		As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
	Units	Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	568.8	430.9		579.7	482.2		584.2	478.5	
Right	kg	538.0	425.0		528.9	461.7		537.1	460.0	
Ratio	%	56.4	43.6		54.0	46.0		54.4	45.6	
Totals	kg	1106.8	855.9	1962.7	1108.6	943.9	2052.5	1121.3	938.5	2059.8

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1962.7	(A)
Actual Weight of 1 P572V ATD (SID-IIs) ATD Used	kg	52.2	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	45	(C)
Calculated Vehicle Target Weight (TVTW)	kg	2059.9	(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	-0.3	-0.2	0.0	Yes
Front Pass. Sill Angle (front-to-rear)*	deg	-0.4	-0.3	0.0	Yes
Front Bumper Angle (left-to-right)**	deg	0.0	-0.1	-0.2	Yes
Rear Bumper Angle (left-to-right)**	deg	0.3	0.3	0.3	Yes
Vehicle CG (Aft of Front Axle)	mm	1265	1334	1322	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	16	29	26	

*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)	47.2
Right taillight, 3rd row seats, 3rd row floor mat, first aid kit, cargo bin, jack & tools, rear sill plastic, rear HVAC vent.	56.7

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

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012

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	16.9	8.9	12.9
Front Passenger Seat	2.0	0.0	1.0
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	12.9	19	Max	38	38	38
	12.9	19	Mid	19	19	19
	12.9	19	Min	0	0	0
Front Passenger Seat	1.0	Fixed	Max	Fixed	Fixed	Fixed
	1.0	Fixed	Mid	Fixed	Fixed	Fixed
	1.0	Fixed	Min	Fixed	Fixed	Fixed
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed

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

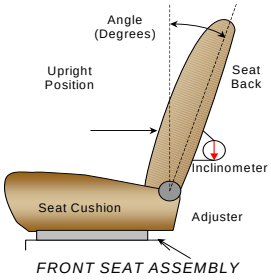
Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	240		0	
Front Passenger Seat	240		0	
Front Center Seat				
Struck Side Rear Seat	140	15 (1st as 1)	140	14 (1st as 0)
Non-Struck Side Rear Seat	140	15 (1st as 1)	140	14 (1st as 0)
Rear Center Seat	140	15 (1st as 1)	140	14 (1st as 0)

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	68.9		-10.3	
Front Passenger Seat	64.4		-10.3	
Front Center Seat				
Struck Side Rear Seat	20.0		11.1	4 (1st as 0)
Non-Struck Side Rear Seat	20.0		11.1	4 (1st as 0)
Rear Center Seat	20.0		11.1	4 (1st as 0)

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	5 detents (1st 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

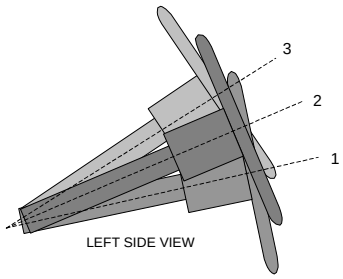
DATA SHEET NO. 2 (CONTINUED)
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012

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.

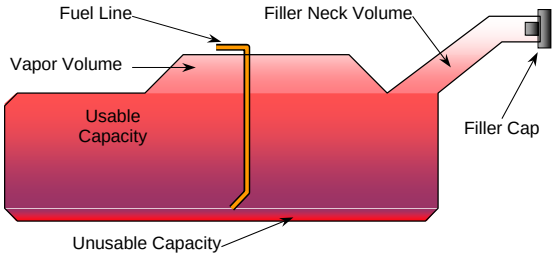
	Degrees	Fore/Aft Position (mm)
Lowermost, Position 1	68.2	215
Geometric Center, Position 2	63.7	190
Uppermost, Position 3	59.2	165
Telescoping Steering Wheel Travel		50
Test Position	63.7	190



STEERING COLUMN ASSEMBLY

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 fuel pump will pump fuel for 1.0 seconds after the ignition is switched to "ON", while the engine is running, and for 1.5 seconds after the engine stops running. The fuel pipe is on the left side.



VEHICLE FUEL TANK ASSEMBLY

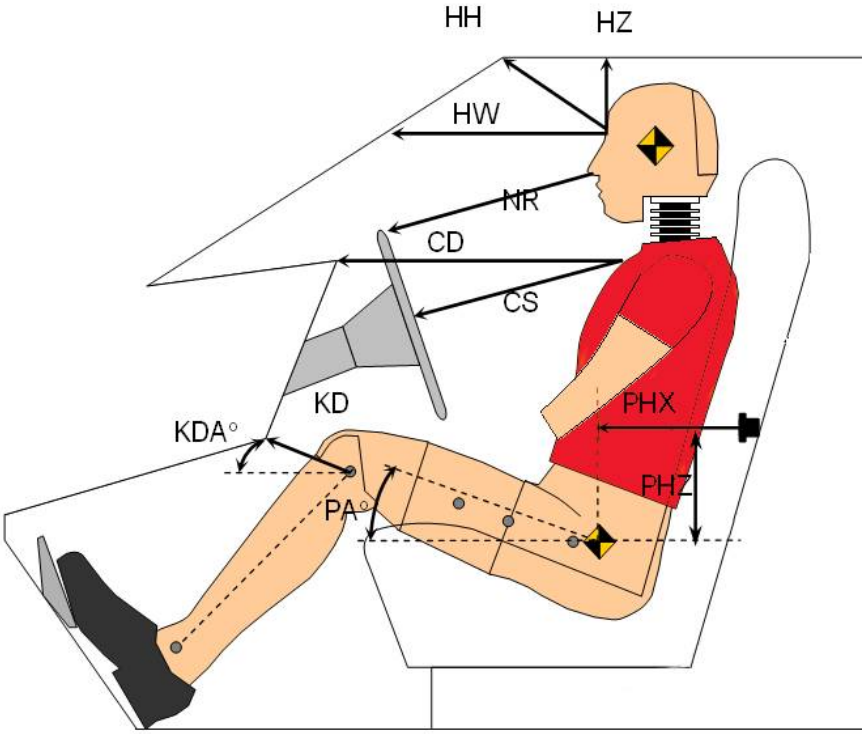
FUEL TANK CAPACITY DATA

	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	73.1
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	74.0
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	68.0
Actual Amount of Solvent Used	67.9
1/3 of Usable Capacity	24.4

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: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012



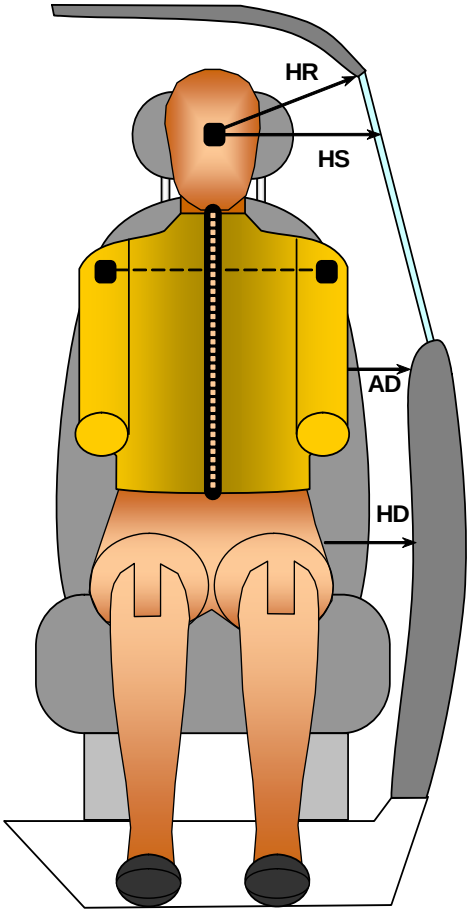
LEFT SIDE VIEW

Code	Measurement Description	Driver S/N 306	
		Length (mm)	Angle (°)
HH	Head to Header	256	
HW	Head to Windshield	649	
HZ	Head to Roof Liner	195	
NR	Nose to Rim	228	
CD	Chest to Dashboard	402	
CS	Chest to Steering Wheel	147	
KDL/KDAL°	Left Knee to Dash	76	35.3
KDR/KDAR°	Right Knee to Dash	80	33.1
PAX°	Pelvic Tilt Angle (X-Axis)		18.0
PAY°	Pelvic Tilt Angle (Y-Axis)		-0.6
PHX	Hip Point to Striker (X-Axis)	398	
PHZ	Hip Point to Striker (Z-Axis)	108	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2013 Infiniti JX35 SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No. ND5204
Test Date: 11/15/2012

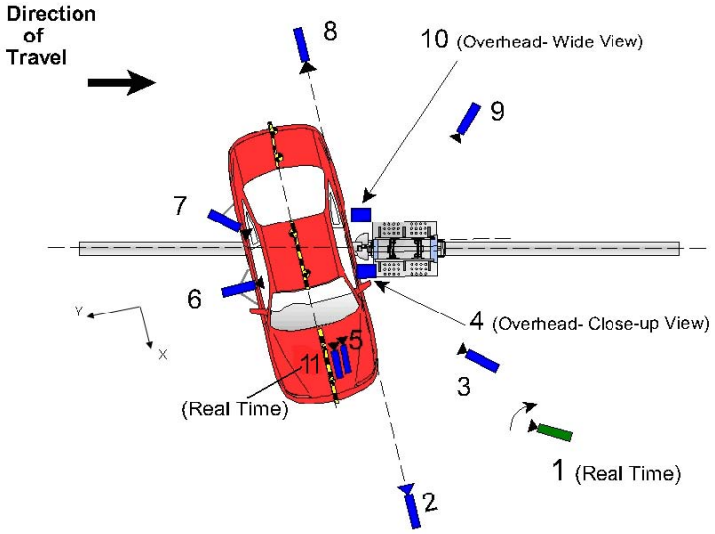


FRONT VIEW OF DUMMY

Code	Measurement Description	Driver S/N 306 Length (mm)
HR	Head to Side Header	270
HS	Head to Side Window	382
AD	Arm to Door	163
HD	Hip Point to Door	164

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012



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	-80	5880	-1760	24	1000
3	Impact Side 45° Forward	-2520	5120	-1850	20	1000
4	Overhead Closeup	100	0	-4460	50	1000
5	Onboard – Driver Front				16	
6	Onboard – Driver Side				8	
7	Onboard – Driver Rear				8	
8	Rear Ground Level	-70	-6300	-1750	24	1000
9	Impact Side 45° Rearward	-4050	-3670	-1900	20	1000
10	Overhead Wide View	290	0	-4640	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: Not Applicable

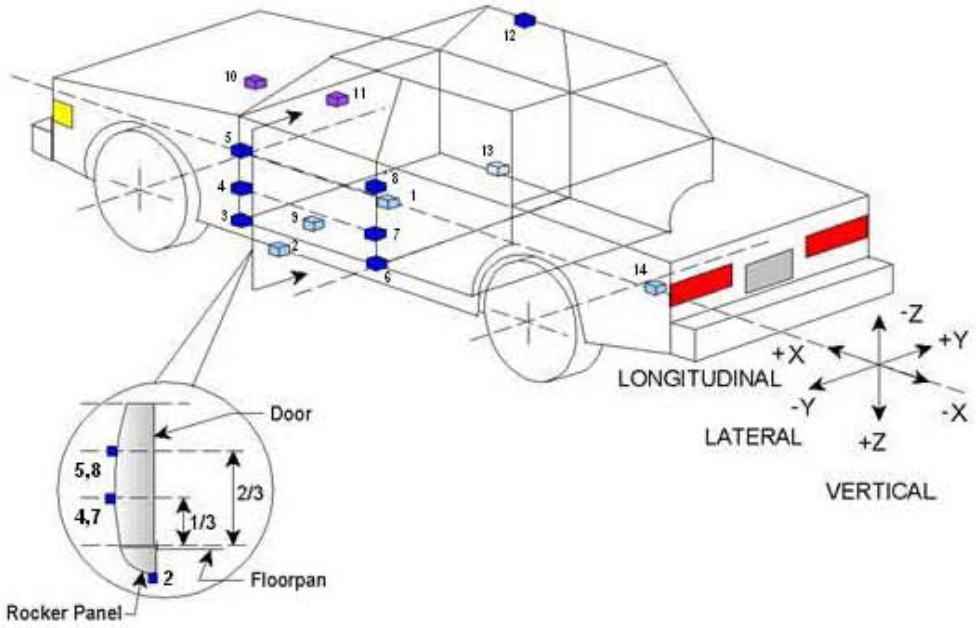
INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Vehicle Structure	18
Pole Load Cells	8
TOTAL	42

DATA SHEET NO. 6

VEHICLE ACCELEROMETER DATA

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012



	Accelerometer Location			
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2566	0	-410
2	Left Floor Sill	2957	-783	-305
3	A Pillar Sill	3450	-784	-306
4	A Pillar Low	3458	-867	-659
5	A Pillar Mid	3466	-859	-875
6	B Pillar Sill	2265	-783	-307
7	B Pillar Low	2228	-872	-745
8	B Pillar Mid	2219	-769	-1008
9	Driver Seat Track	2735	-578	-524
10	Engine Top	4049	10	-969
11	Firewall	4039	-18	-1029
12	Right Roof	2197	542	-1754
13	Right Floor Sill	2909	783	-313
14	Rear Floorpan	211	0	-596

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: 2013 Infiniti JX35 SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No. ND5204
Test Date: 11/15/2012

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: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012

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, Seatback
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

	Struck Side		Non-Struck Side	
Description	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 and Sunroof Broken
Other Notable Effects	None

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

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

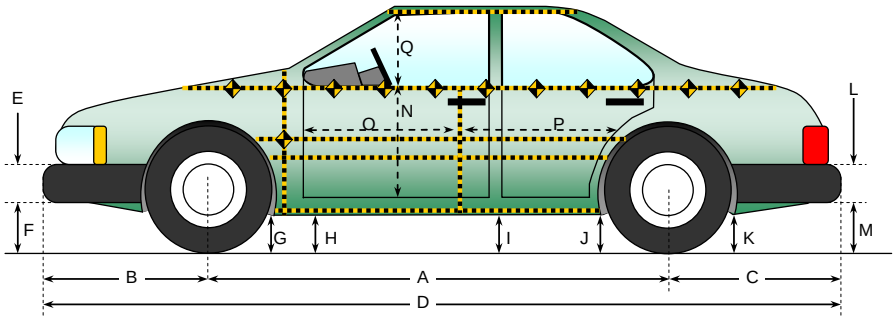
Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Abdomen/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	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		1113
Actual Impact Point (Aft of Front Axle)	mm		1108
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	32.1
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.3

DATA SHEET NO. 9
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012



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

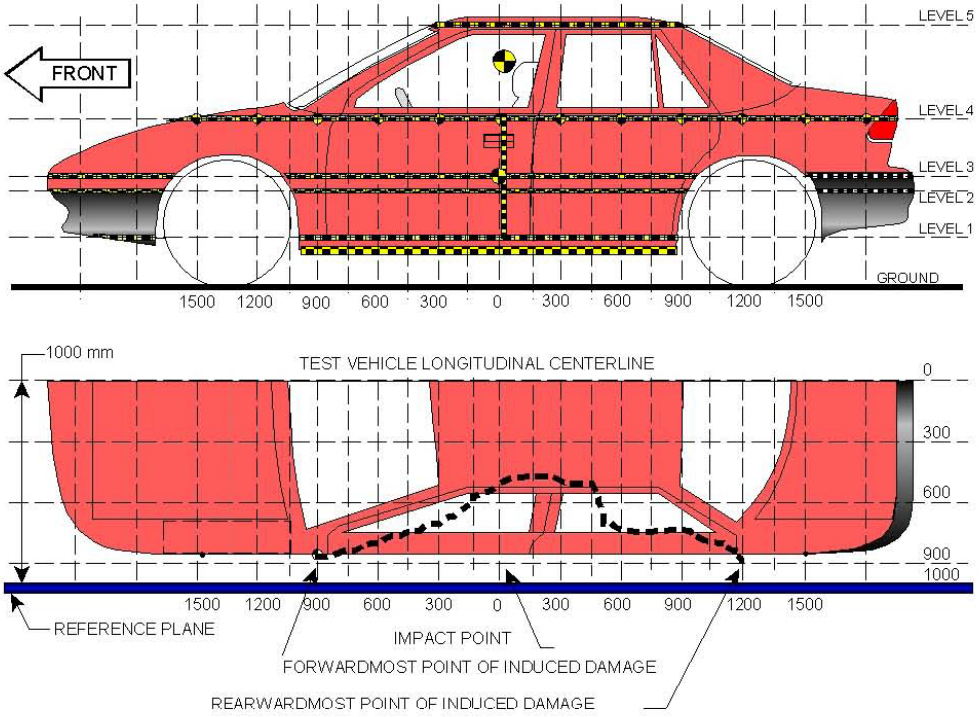
LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2901	2782	119
B	Front Axle to FSOV	980	980	0
C	Rear Axle to RSOV	1109	1109	0
D	Total Vehicle Length at Centerline	4990	4871	119
E	Front Bumper Thickness	135	135	0
F	Front Bumper Bottom to Ground	292	336	-44
G	Sill Height at Front Wheel Well	295	280	15
H	Sill Height at Front Door Leading Edge	296	271	25
I	Sill Height at B-Pillar	296	320	-24
J1	Sill Height at Rear Wheel Well	300	316	-16
J2	Pinch Weld Height at Rear Wheel Well	299	316	-17
K	Sill Height Aft of Rear Wheel Well	325	341	-16
L	Rear Bumper Thickness	70	70	0
M	Rear Bumper Bottom to Ground	440	415	25
N	Sill Height to Bottom of Front Window Sill	863	873	-10
O	Front Door Leading Edge to Impact CL	650	650	0
P	Rear Door Trailing Edge to Impact CL	1531	1570	-39
Q	Front Window Opening	427	385	42
R	Right Side Length	3686	3694	-8
S	Left Side Length	3686	3533	153
T	Vehicle Width at B-Pillars	1945	1812	133

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012



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)
1	Sill Top	392
2	Mid Door	728
3	Occupant Hip Point	751
4	Window Sill	1093
5	Window Top	1620

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

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012

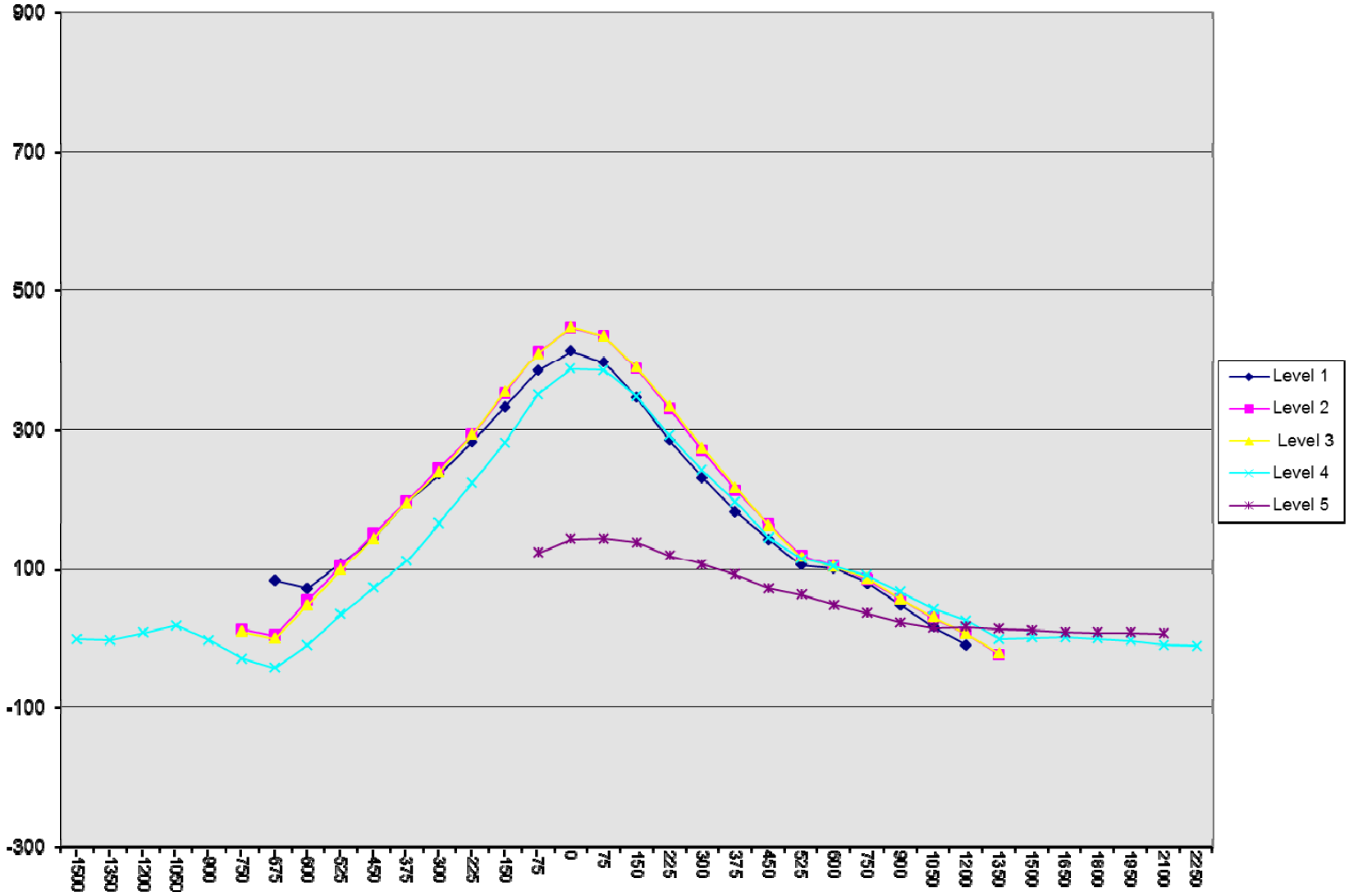
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1500				324					324					0	
-1350				294					293					-1	
-1200				270					279					9	
-1050				253					273					20	
-900				244					243					-1	
-750		121	122	238			135	133	210			14	11	-28	
-675	158	125	127	235		242	130	128	194		84	5	1	-41	
-600	161	130	132	230		234	186	181	222		73	56	49	-8	
-525	167	134	135	228		275	238	234	264		108	104	99	36	
-450	169	135	136	224		314	286	281	298		145	151	145	74	
-375	169	136	137	220		363	332	331	332		194	196	194	112	
-300	169	136	136	217		404	380	375	383		235	244	239	166	
-225	168	135	135	210		450	428	428	433		282	293	293	223	
-150	166	135	135	207		499	487	490	488		333	352	355	281	
-75	164	134	134	199	493	549	547	545	550	617	385	413	411	351	124
0	163	134	133	194	473	578	582	582	582	617	415	448	449	388	144
75	162	133	133	189	458	560	569	569	575	603	398	436	436	386	145
150	161	132	133	184	451	508	521	524	532	590	347	389	391	348	139
225	160	132	132	178	445	444	462	466	469	565	284	330	334	291	120
300	159	131	131	175	440	389	400	405	416	547	230	269	274	241	107
375	158	131	130	172	439	339	343	346	367	531	181	212	216	195	92
450	158	130	130	169	438	301	294	293	315	511	143	164	163	146	73
525	158	130	130	165	438	264	250	247	280	502	106	120	117	115	64
600	157	130	130	162	437	258	234	233	266	486	101	104	103	104	49
750	157	130	128	159	437	237	215	215	250	474	80	85	87	91	37
900	158	129	128	156	437	207	187	186	224	461	49	58	58	68	24
1050	159	128	127	159	438	177	158	159	203	454	18	30	32	44	16
1200	157	125	125	164	441	149	133	133	191	459	-8	8	8	27	18
1350		120	120	170	444		98	100	170	459		-22	-20	0	15
1500				176	450				178	463				2	13
1650				181	457				184	467				3	10
1800				186	465				187	474				1	9
1950				191	478				189	487				-2	9
2100				198	491				190	499				-8	8
2250				211					201					-10	

NOTE: 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 profile 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: 2013 Infiniti JX35 SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No. ND5204
Test Date: 11/15/2012



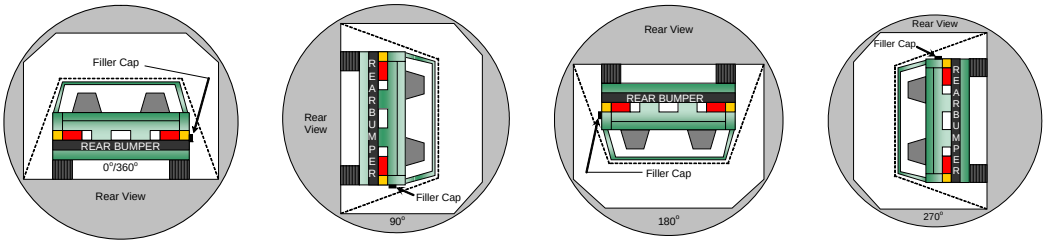
DATA SHEET NO. 11
FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012

Test Time: 10:08 am Temperature: 20.8 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



0°/360° 90° 180° 270°

ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	113	300	413
90° to 180°	111	300	411
180° to 270°	111	300	411
270° to 360°	114	300	414

FMVSS 301 ROLLOVER SPILLAGE TABLE (units in ounces)

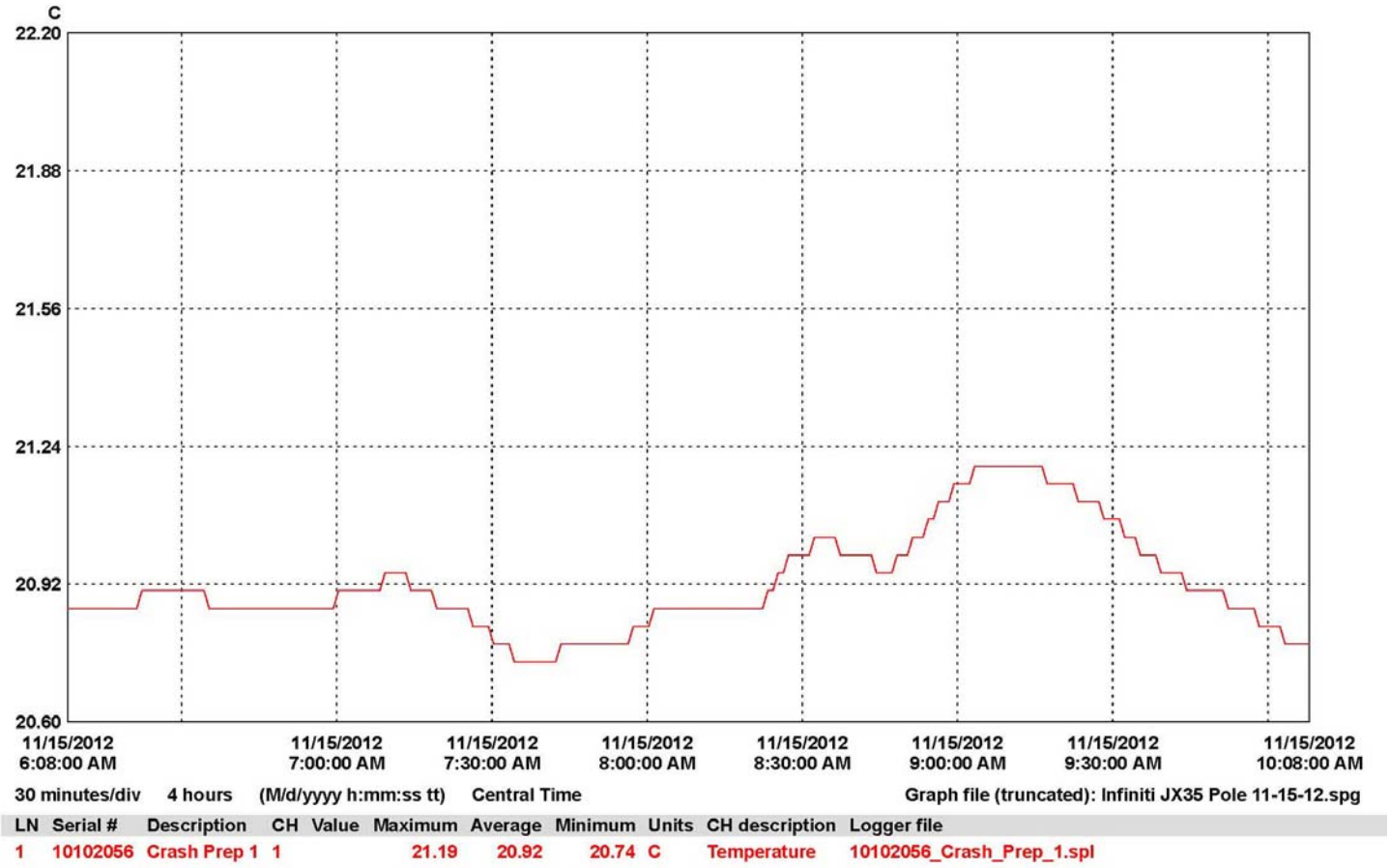
Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eight Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 12
DUMMY/VEHICLE TEMPERATURE STABILIZATION DATA

Test Vehicle: 2013 Infiniti JX35 SUV NHTSA No. ND5204
Test Program: NCAP Side Pole Impact Test Test Date: 11/15/2012



LN	Serial #	Description	CH	Value	Maximum	Average	Minimum	Units	CH description	Logger file
1	10102056	Crash Prep 1	1		21.19	20.92	20.74	C	Temperature	10102056_Crash_Prep_1.spl

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

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 ¾ View of Test Vehicle

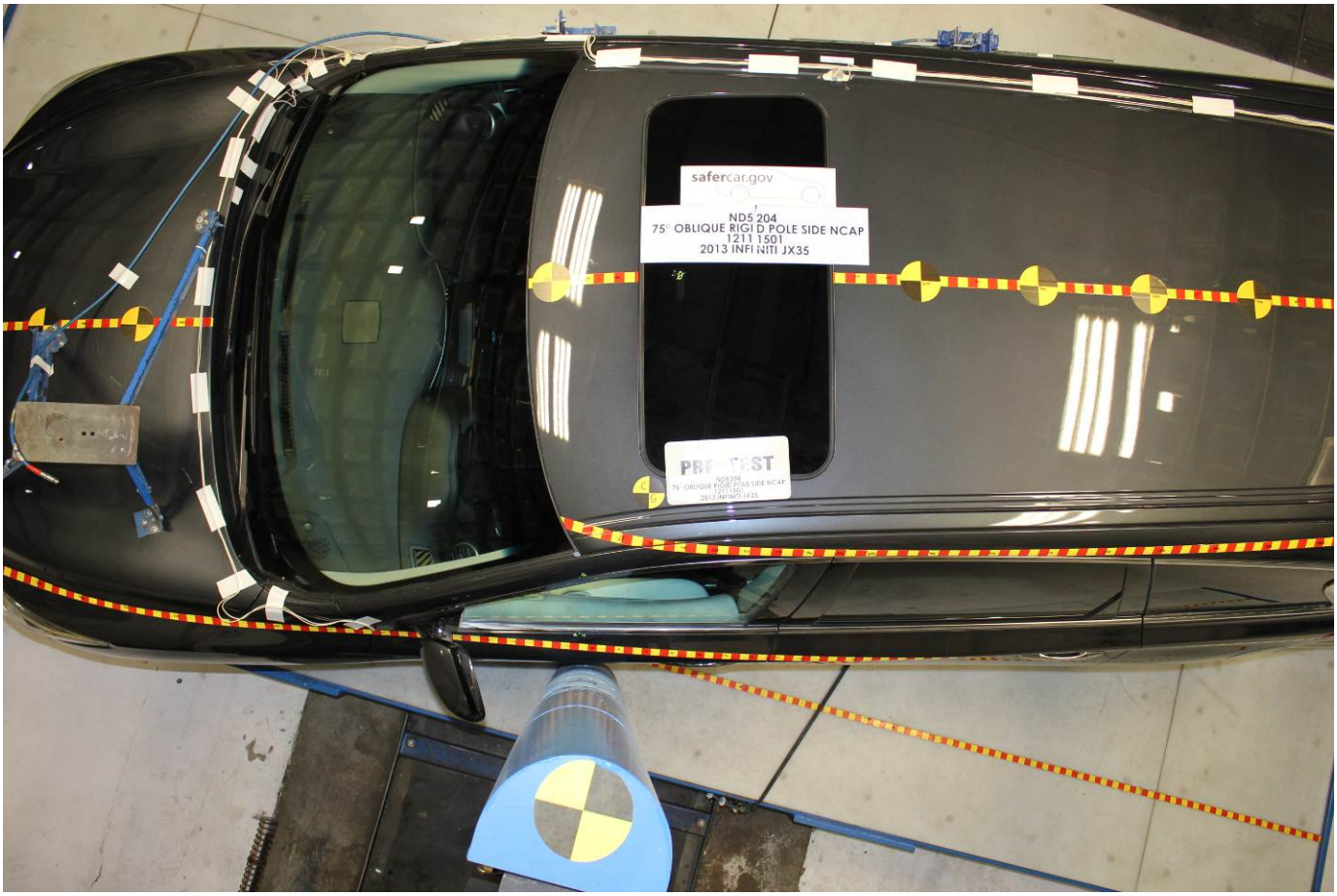
Post-Test Left Rear ¾ View of Test Vehicle

Pre-Test Rear View of Test Vehicle

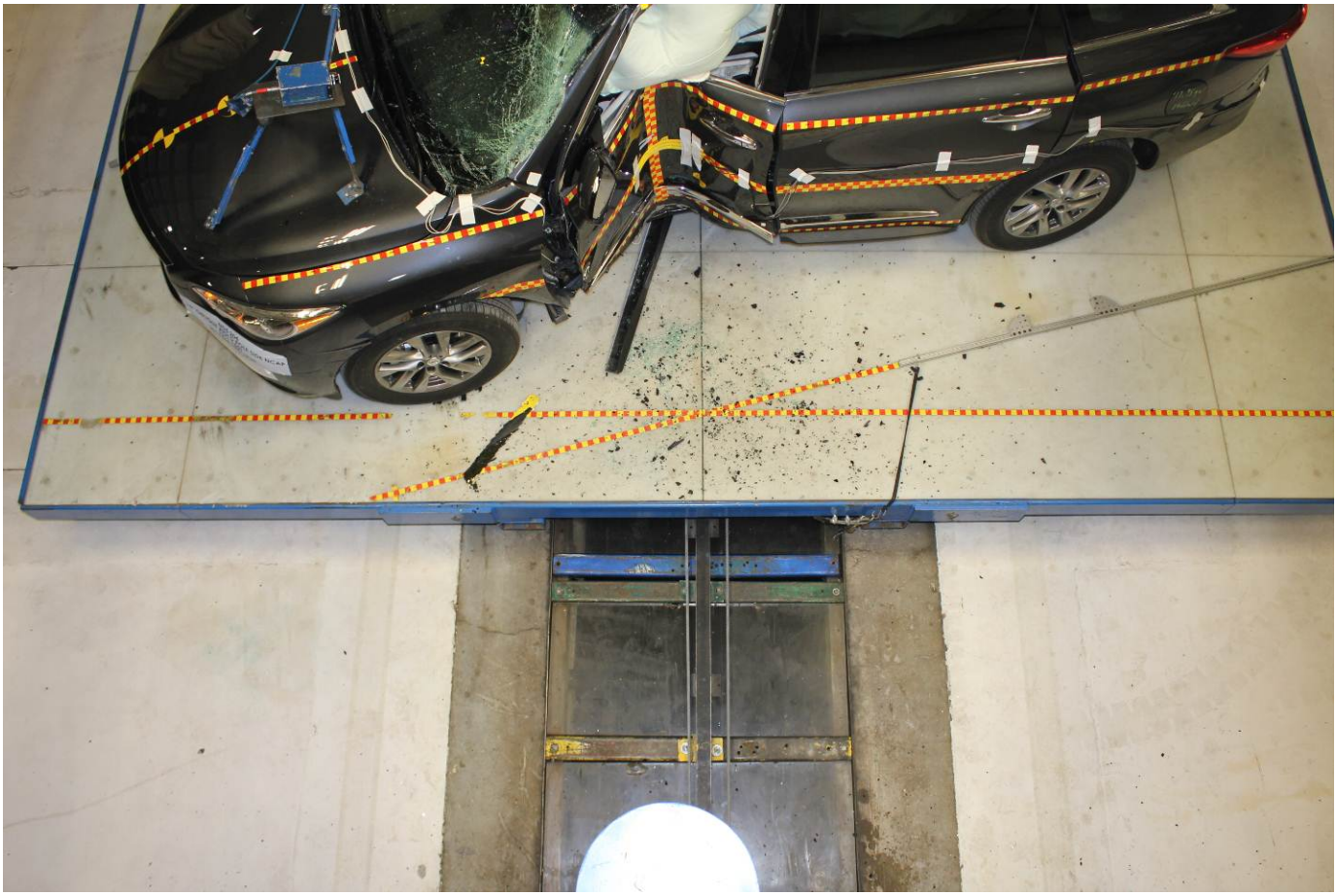
Post-Test Rear View of Test Vehicle

Pre-Test Right Side View of Test Vehicle

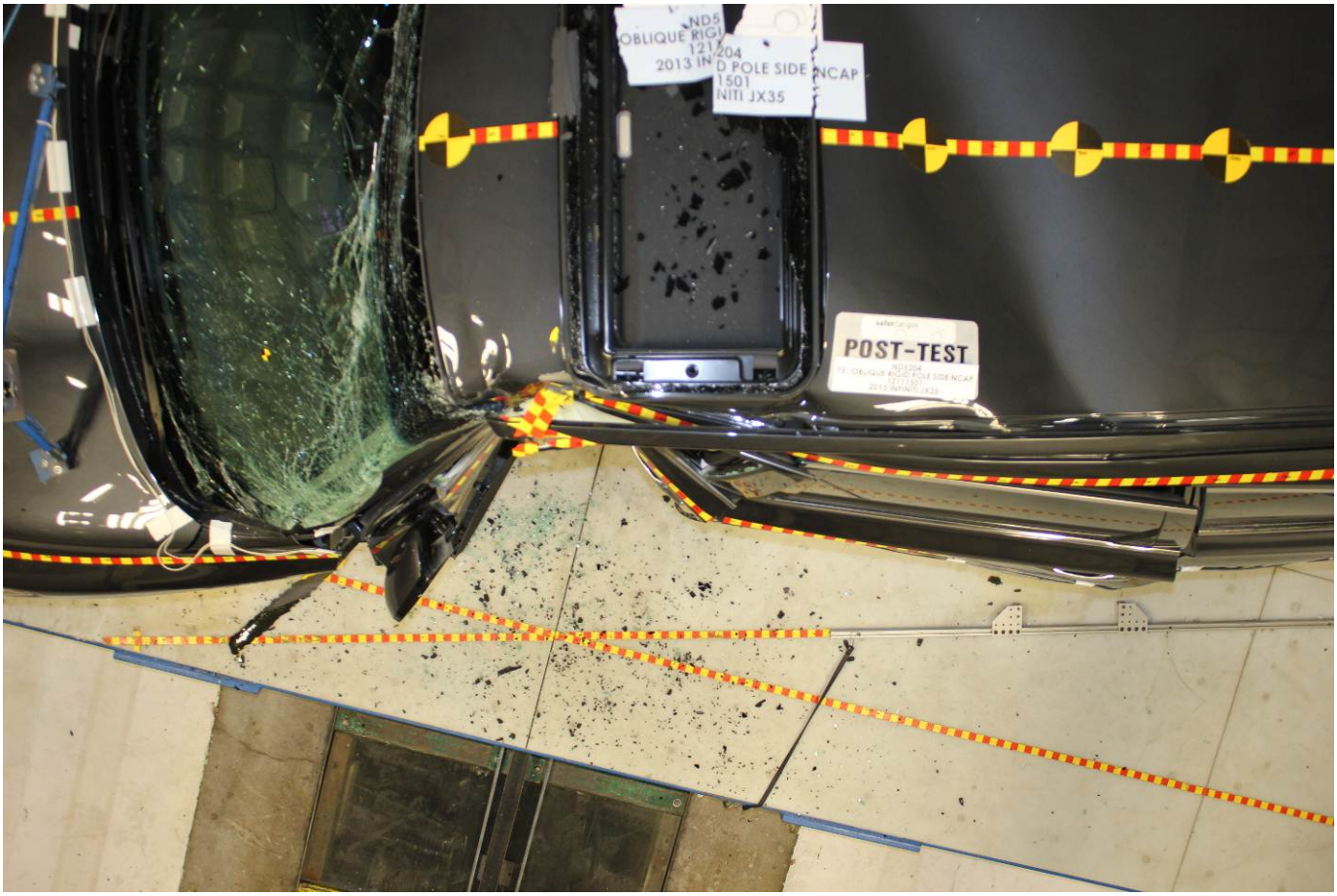
Post-Test Right Side View of Test Vehicle



Pre-Test Overhead View of Test Area



Post-Test Overhead View of Test Area

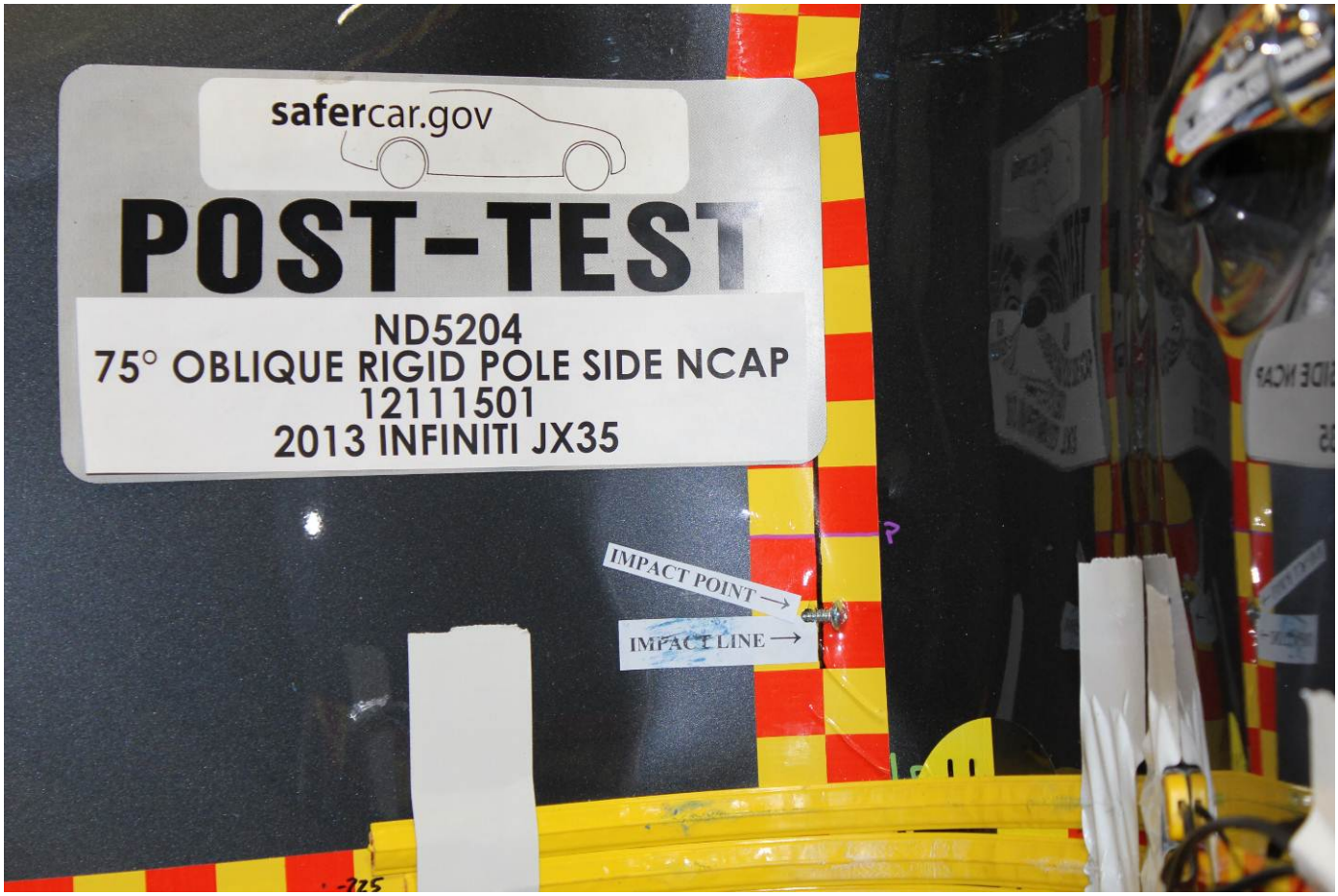


Post-Test Overhead View of Test Area

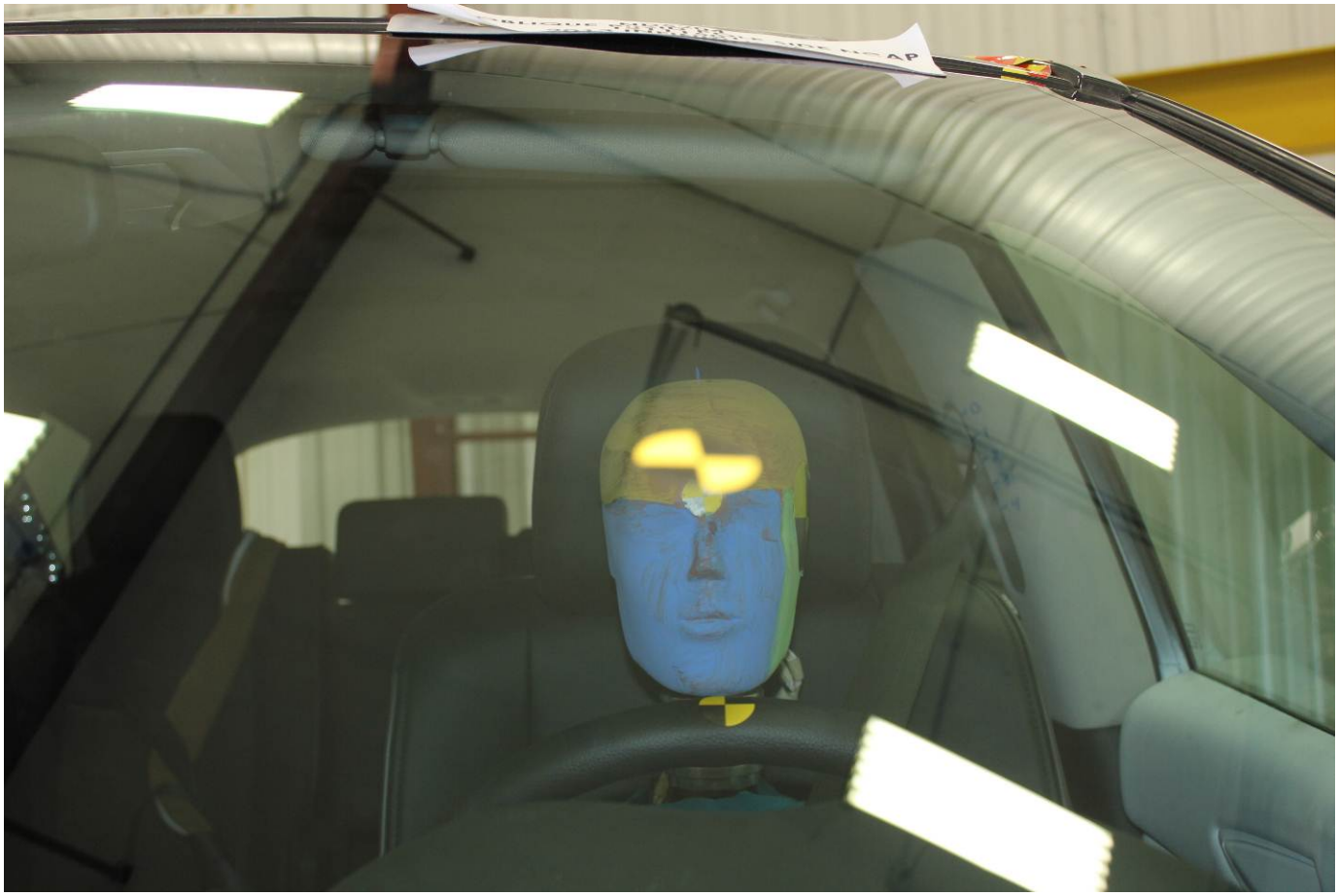
Pre-Test Left Side View of Pole Positioned Against Side of Vehicle

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

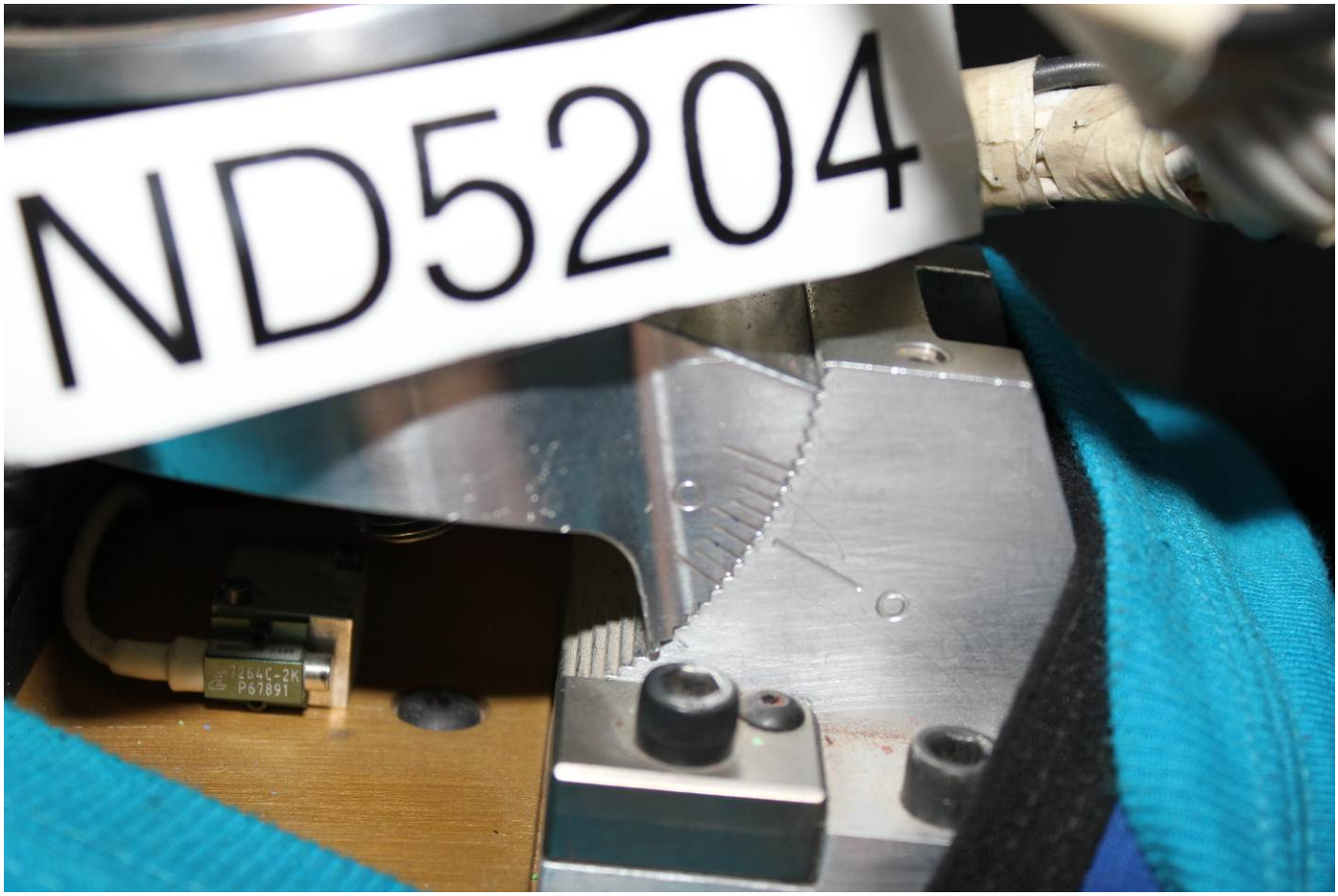
Pre-Test Front View of Seat Back Prior to Dummy Positioning


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

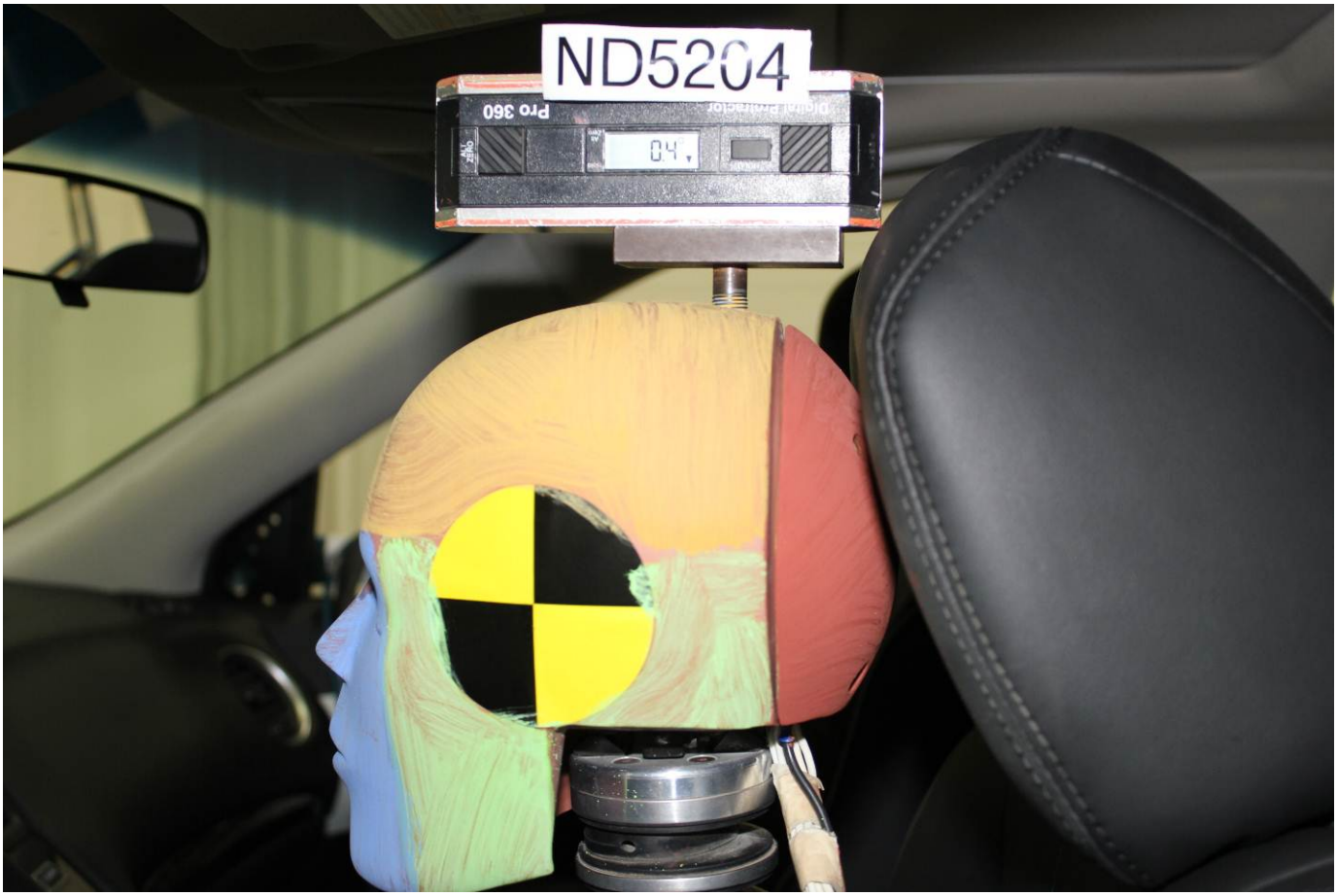
Pre-Test Front Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint

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

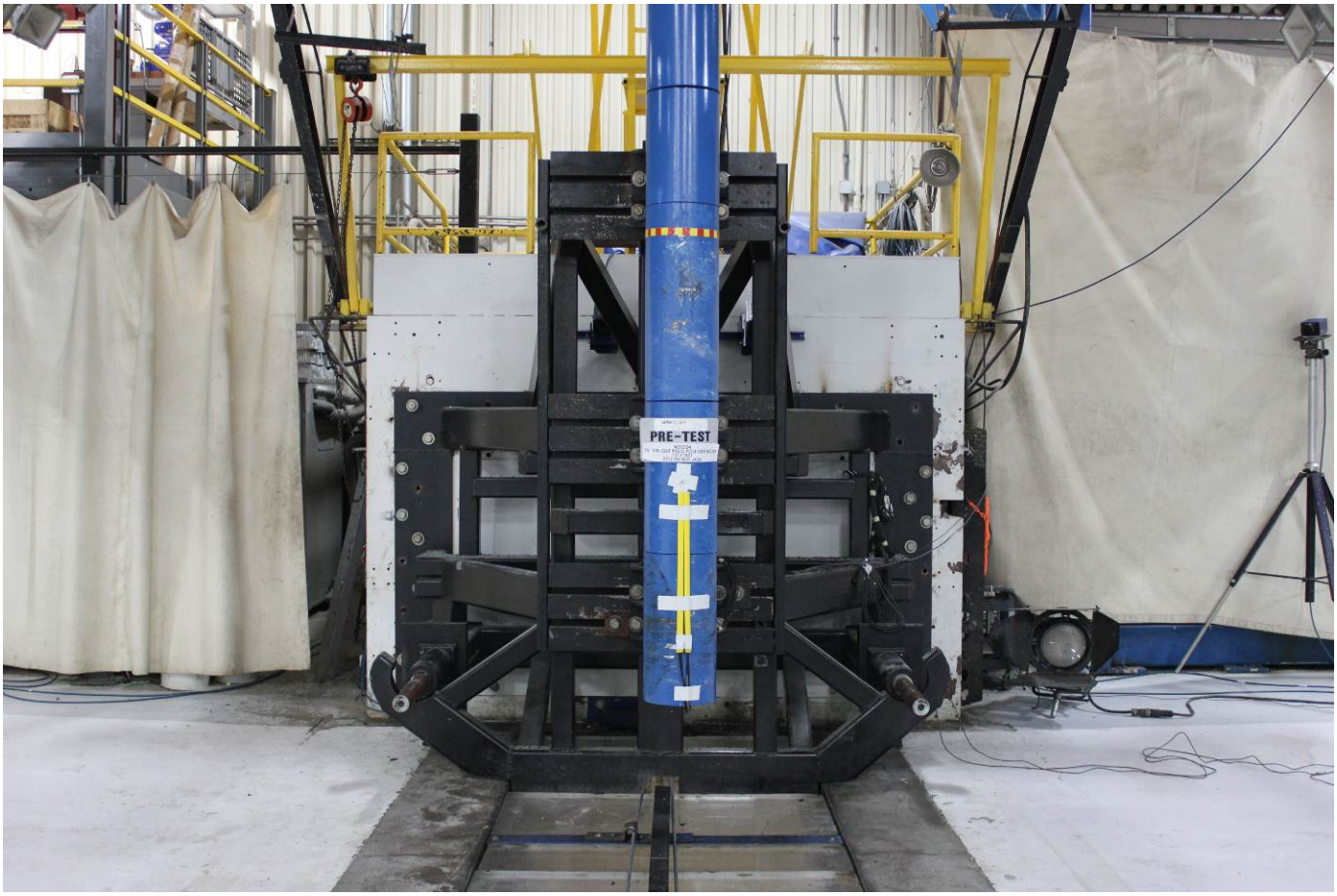
Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View

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

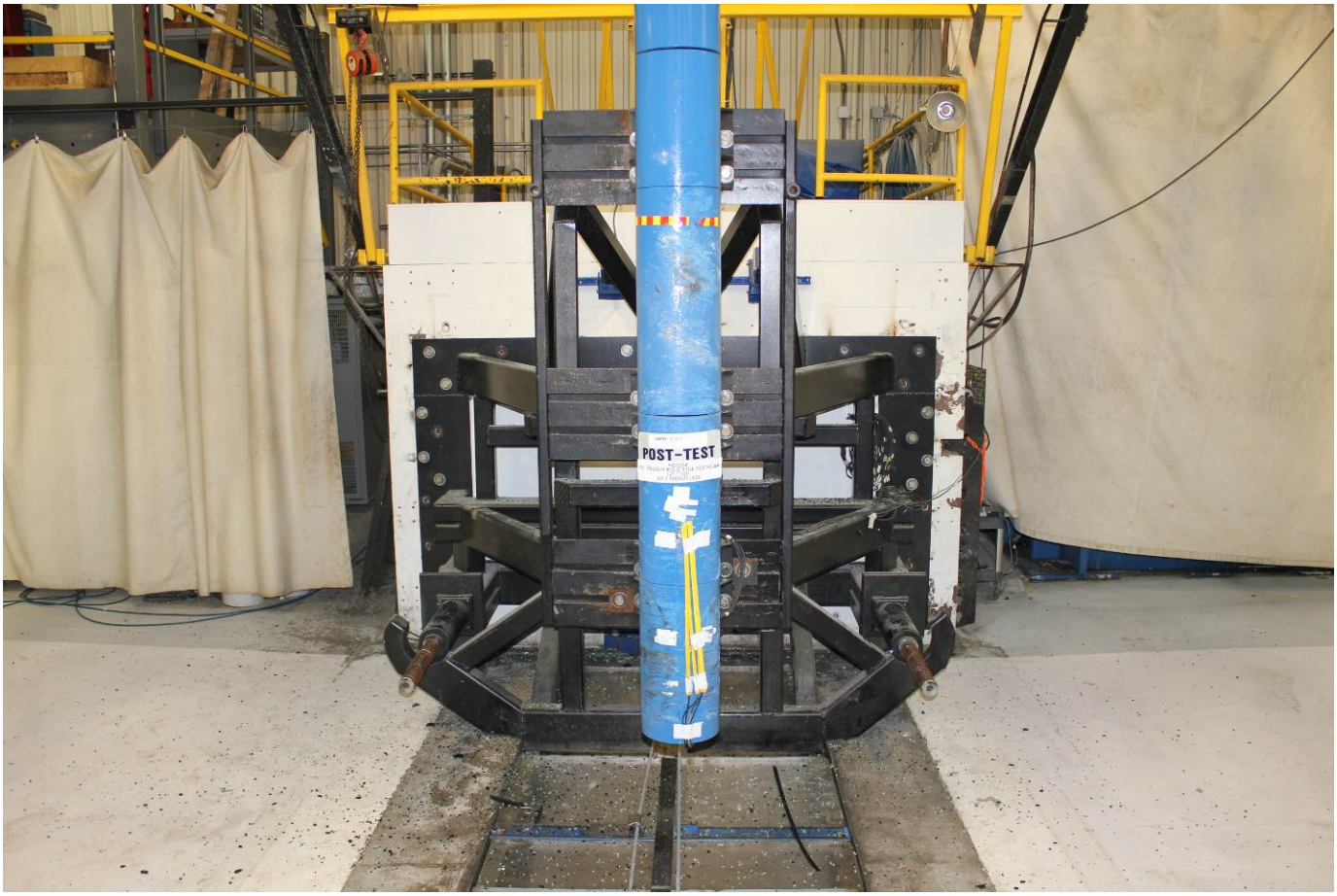
Post-Test View of Fuel Filler Cap or Fuel Filler Neck

Close-Up View of Vehicle's Certification Label

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

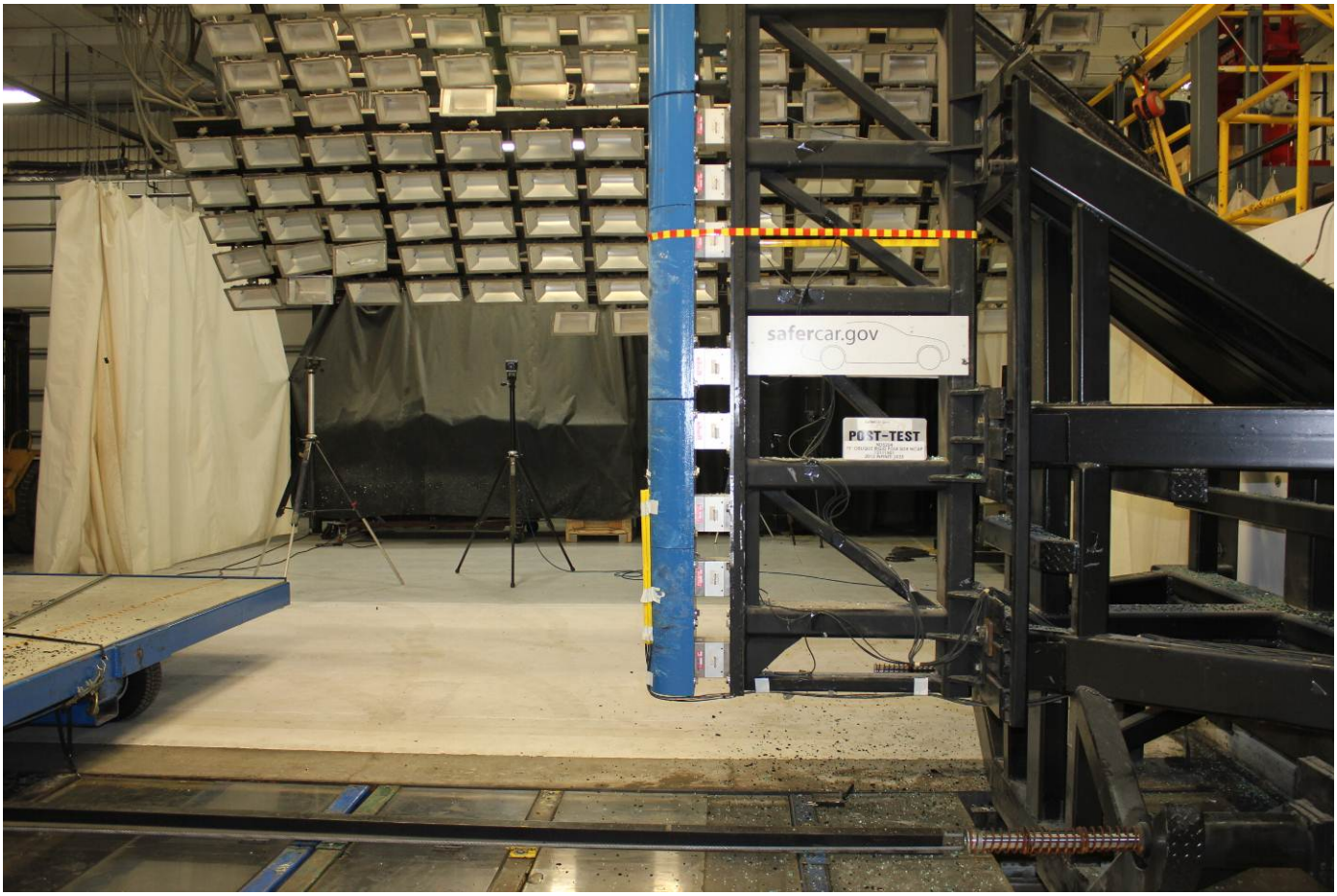


Pre-Test Pole Barrier Front View

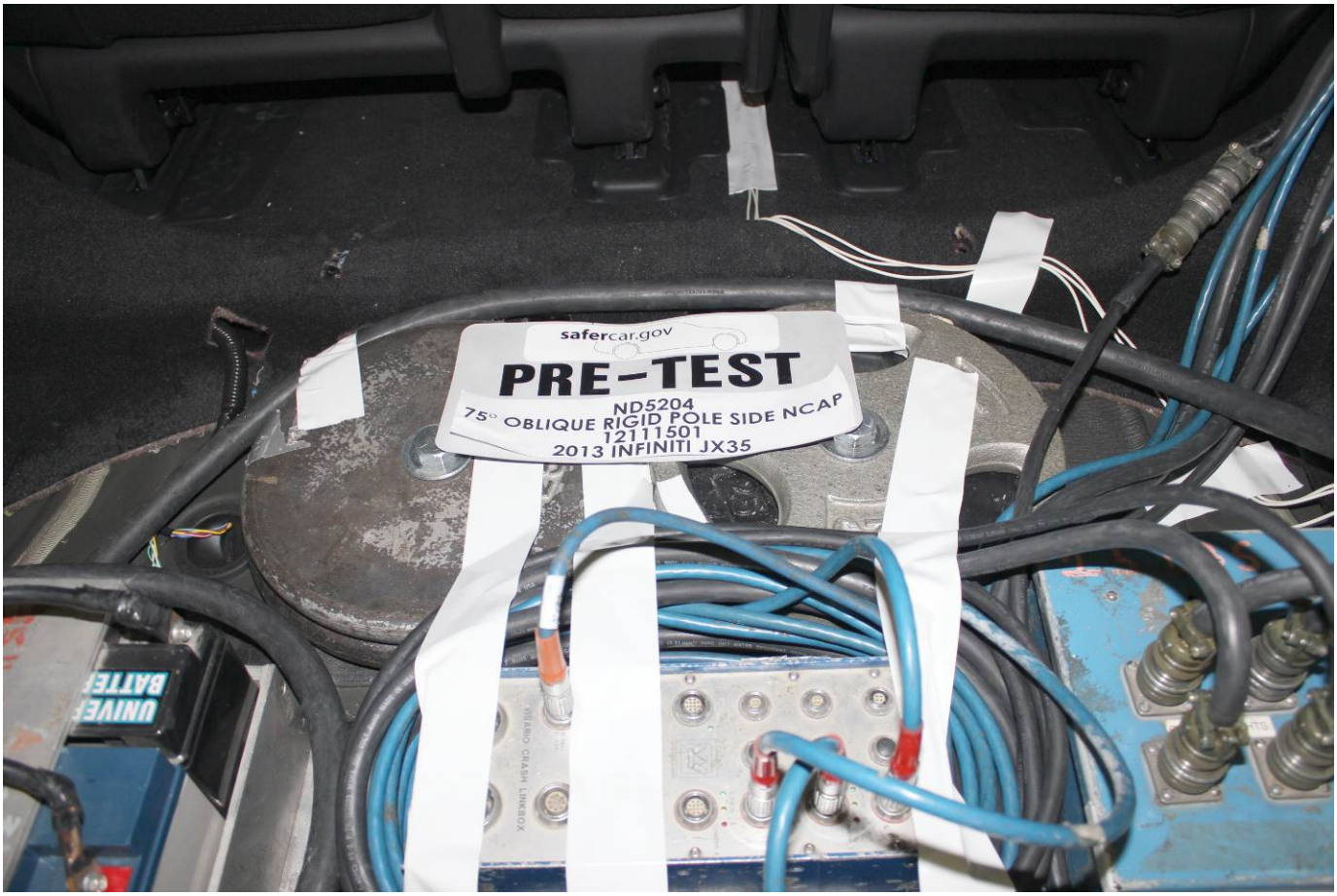


Post-Test Pole Barrier Front View

Pre-Test Pole Barrier Side View

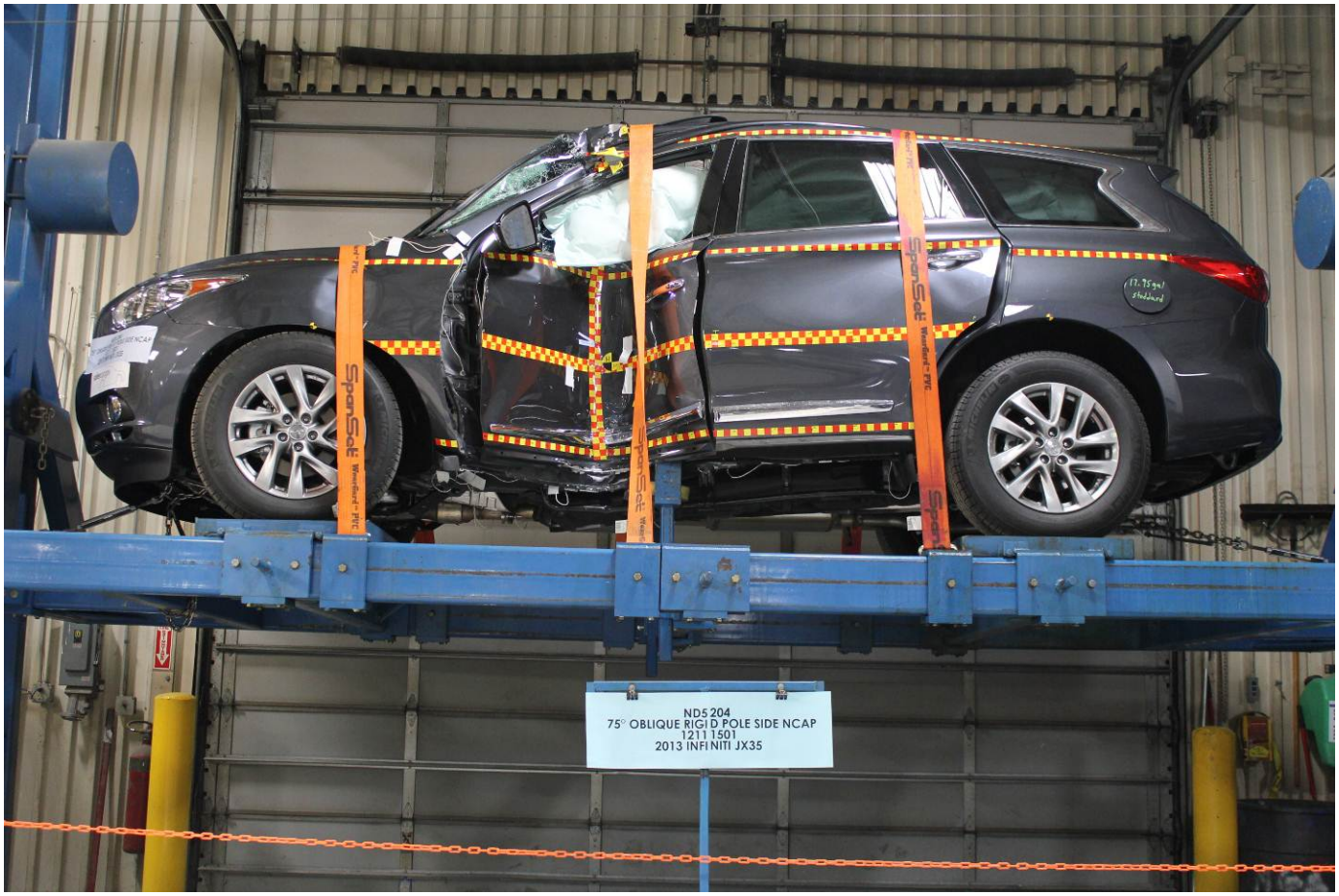


Post-Test Pole Barrier Side View

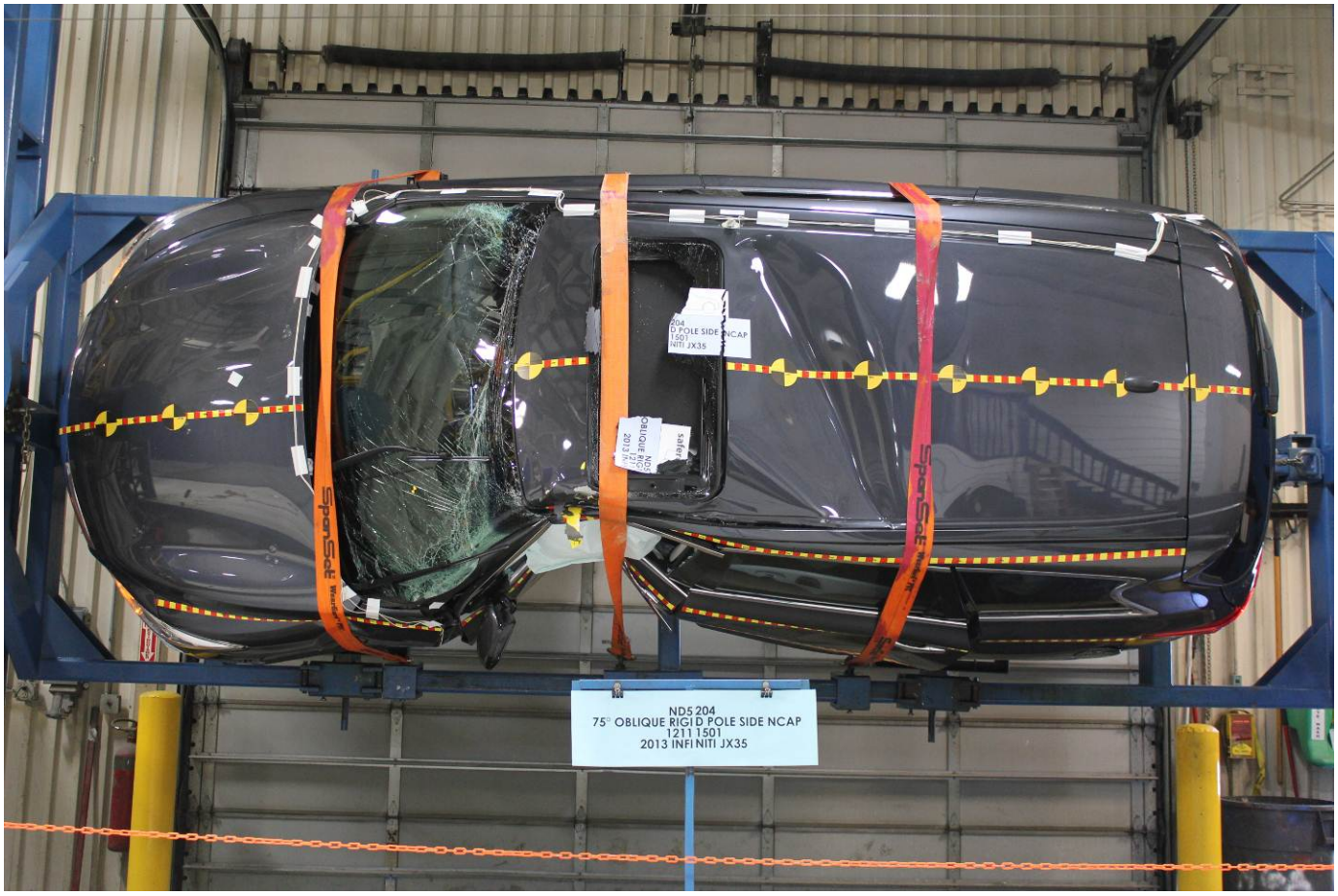


Pre-Test Ballast View

Post-Test Primary and Redundant Speed Trap Read-Out



FMVSS No. 301 Static Rollover 0 Degrees

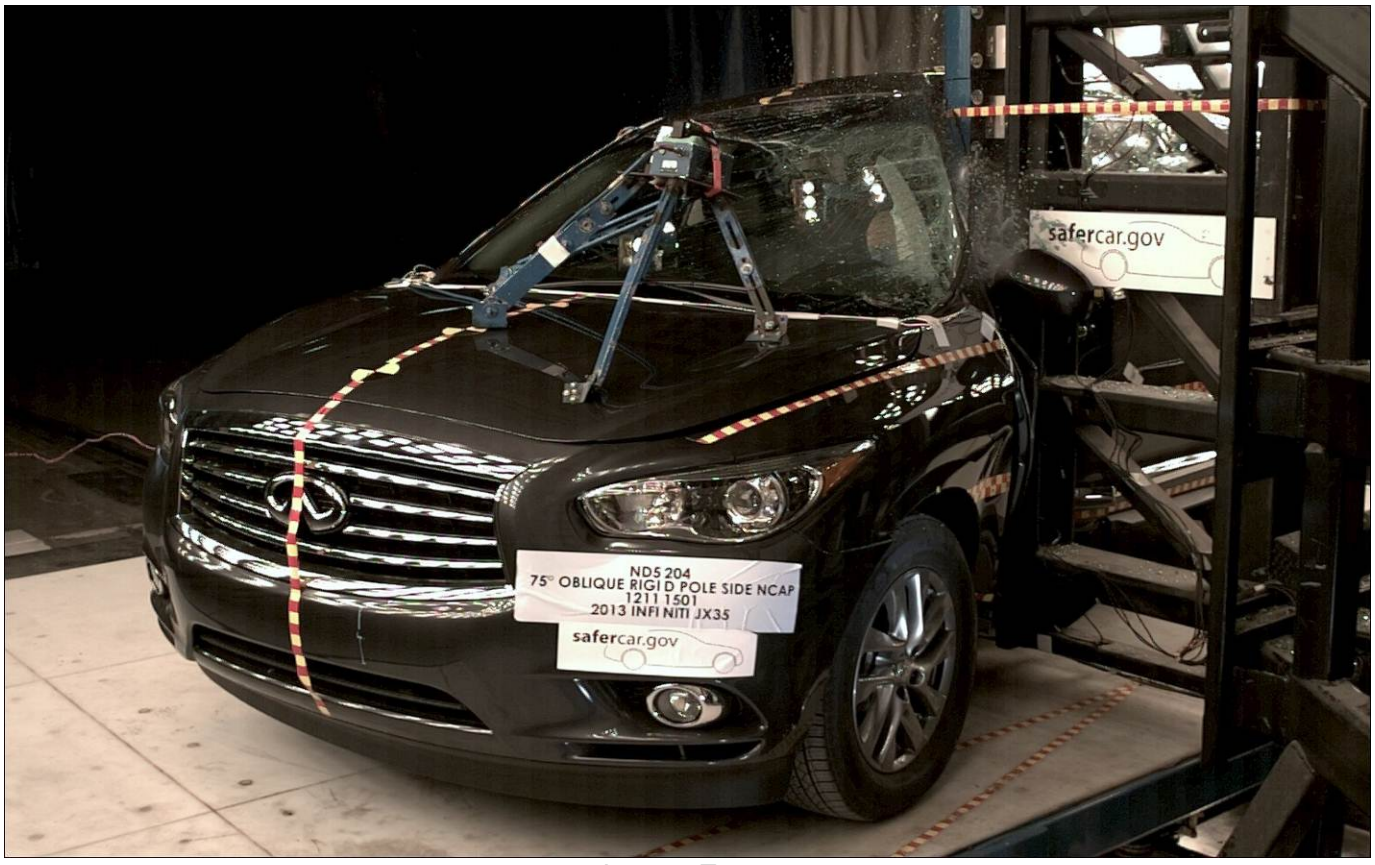


FMVSS No. 301 Static Rollover 90 Degrees

FMVSS No. 301 Static Rollover 180 Degrees

FMVSS No. 301 Static Rollover 270 Degrees

FMVSS No. 301 Static Rollover 360 Degrees



Impact Event

INFINITI

2013 JX35 FWD

CHOOSE TO BE INSPIRED

Standard Equipment Included at No Extra Charge

PERFORMANCE:
3.5-liter V6 engine
265 horsepower
248 lb-ft torque
Front-wheel drive
Infiniti Drive Mode Selector with Standard, Sport, Snow, and Eco modes, controls throttle response and transmission mapping
Continuously Variable Transmission (CVT) with manual shift mode
18-inch, 5-spoke/split aluminum-alloy wheels with 235/65R18 all-season tires
Independent strut front and multi-link rear suspension
Front and rear stabilizer bars

LUXURY:
Leather-appointed seats
Heated 8-way power driver's seat
Heated 6-way power passenger front seat
Multi-mode second-row seat with easy third-row access
60/40-split folding/reclining/sliding second-row bench seat
50/50-split folding/reclining third-row seat
Kasane Washi interior trim
Automatic on/off High Intensity Discharge (HID) bi-functional xenon headlights
Front fog lights
Power sliding tinted glass moonroof with one-touch open/close, tilt feature and sliding sunshade
Tri-Zone Automatic Temperature Control
Rear-seat heater vents under first and second-row seats
Rear console-mounted and third-row side trim air vents
Sequential welcome lighting
Power remote rear liftgate
Power tilt/telescopic steering column
Power folding and heated outside mirrors

TECHNOLOGY:
RearView Monitor
7-inch color vehicle information display
Infiniti Intelligent Key
Illuminated Push Button Ignition
Bluetooth® Hands-free Phone System
6-speaker audio system with AM/FM/CD with MP3 playback capability
Infiniti Intelligent-View Display
USB connection port for iPod® interface and other compatible devices
SiriusXM™ Satellite Radio****
Auxiliary audio/video input jacks in center console

SAFETY AND SECURITY:
Driver and Front Passenger, Side-Impact, and Curtain Air Bags with rollover sensor
3-point height adjustable front seat belts with pretensioners and load limiters
Lower Anchors and Tethers for CHildren (LATCH)(second-row outboard only)
Child seat top tether anchor on second-row center seat, and third-row passenger's side seat
4-wheel Anti-lock Braking System (ABS)
Brake Assist
Electronic Brake force Distribution
Vehicle Dynamic Control (VDC) with Traction Control System (TCS)
Tire Pressure Monitoring System (TPMS) with Tire Inflation Indicator
Vehicle Security System
Infiniti Vehicle Immobilizer System

****3 months of SiriusXM™ Service included; subscription sold separately; not available to buyers in AK or HI; some features not available in all markets.

++ Optional equipment replaces standard equipment

Manufacturer's Suggested Retail Base Price:	$40,650.00
Options Included by Manufacturer	
CARGO PACKAGE	205.00
ILLUMINATED KICKPLATES	305.00
DESTINATION CHARGES	950.00
Total*	**$42,110.00**

***Does not include dealer installed options and accessories, local taxes or license fees. This label has been applied pursuant to federal law. Do not remove prior to delivery to the ultimate purchaser.**

EPA DOT Fuel Economy and Environment

Gasoline Vehicle

Fuel Economy
21 MPG
combined city/hwy
18 city
24 highway
4.8 gallons per 100 miles

Small SUVs range from 16 to 32 MPG. The best vehicle rates 112 MPGe.

You spend **$1,900** more in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost $2,700

Fuel Economy & Greenhouse Gas Rating (tailpipe only) 5 (1–10, Best)
Smog Rating (tailpipe only) 5 (1–10, Best)

This vehicle emits 432 grams CO2 per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also create emissions; learn more at fueleconomy.gov.

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 23 MPG and costs $11,600 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at $3.80 per gallon. MPGe is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fueleconomy.gov
Calculate personalized estimates and compare vehicles

Smartphone QR Code

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: Not Rated; 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: Not Rated; Rear seat: Not Rated
Based on the risk of injury in a side impact.

Rollover — Not Rated
Based on the risk of rollover in a single-vehicle crash.

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

TOTAL OWNERSHIP EXPERIENCE

Every Infiniti Vehicle includes Infiniti's:
- 4-Year/60,000 Mile Basic Limited Warranty Coverage **
- 6-Year/70,000 Mile Powertrain Limited Warranty Coverage **
- 7-Year/Unlimited Mileage Corrosion Limited Warranty Coverage **
- 24-hour Roadside Assistance **
- Complimentary Service Loan Car ***
- Infiniti Personnal Assistant ***

** Please see the Infiniti Warranty Information booklet for details.
*** Please ask your Infiniti retailer for details.

DELIVERY

VEHICLE COLORS:
EXT: DIAMOND SLATE
INT: GRAPHITE

FINAL ASSEMBLY POINT:
SMYRNA

TRANSPORT METHOD:
TRUCK

DEALER:
INFINITI OF CHARLOTTE
9103 E INDEPENDENCE BLVD
MATTHEWS NC
28105

VIN: 5N1AL0MN2DC322897
EMS: 50 STATE EMISSIONS
MDL: 84113-322897 K50-G
OPT: C-C03M92N92S55Z66

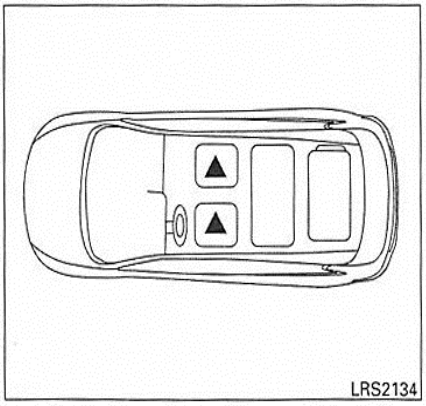
20120920014945RF71042

Monroney Label

HEAD RESTRAINTS (1st row only)

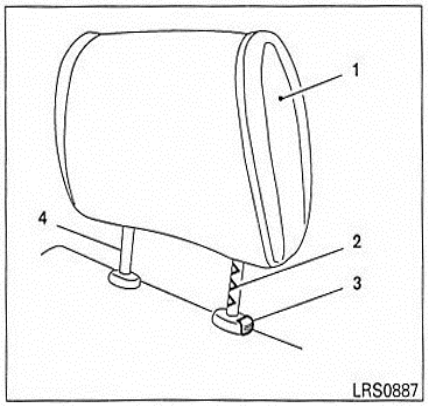
⚠ WARNING

Head restraints supplement the other vehicle safety systems. They may provide additional protection against injury in certain rear end collisions. Adjust the head restraints properly, as specified in this section. Check the adjustment after someone else uses the seat. Do not attach anything to the head restraint stalks or remove the head restraint. Do not use the seat if the head restraint has been removed. If the head restraint was removed, reinstall and properly adjust the head restraint before an occupant uses the seating position. Failure to follow these instructions can reduce the effectiveness of the head restraints. This may increase the risk of serious injury or death in a collision.



The illustration shows the seating positions equipped with head restraints. The first row head restraints are adjustable.

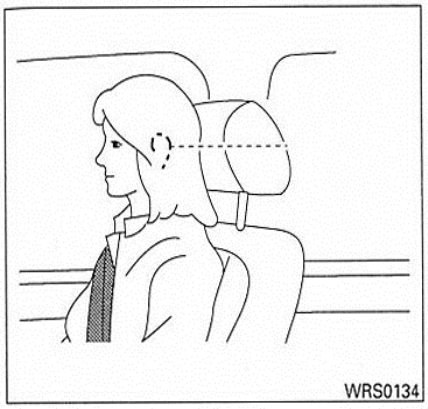
▲ Indicates the seating position is equipped with a head restraint.



Components

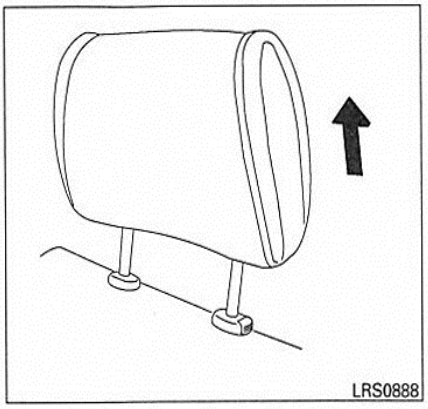
1. Head restraint
2. Adjustment notches
3. Lock knob
4. Stalks

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

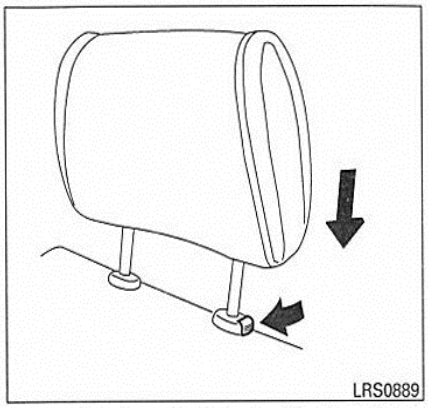


Adjustment

Adjust the head restraint so the center is level with the center of the seat occupant's ears.

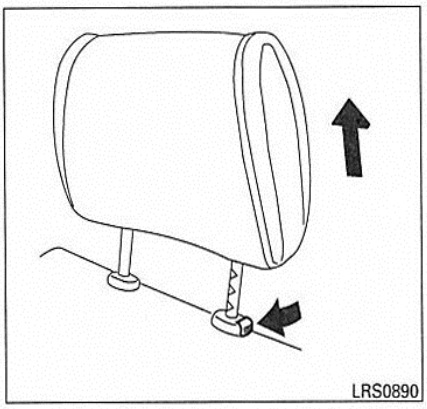


To raise the head restraint, pull it up.



To lower, push and hold the lock knob and push the head restraint down.

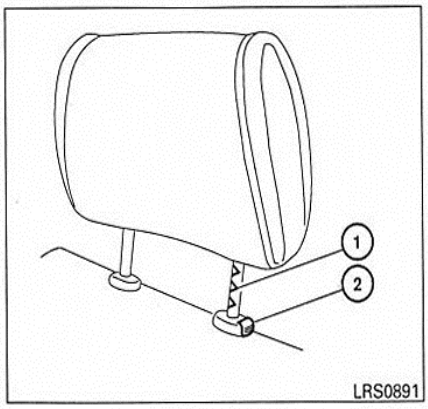
Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



Removal (head restraints without Dual head restraint DVD system only)

Use the following procedure to remove the adjustable head restraints.

1. Pull the head restraint up to the highest position.
2. Push and hold the lock knob.
3. Remove the head restraint from the seat.
4. Store the head restraint properly so it is not loose in the vehicle.
5. Reinstall and properly adjust the head restraint before an occupant uses the seating position.



Install

1. Align the head restraint stalks with the holes in the seat. Make sure the head restraint is facing the correct direction. The stalk with the adjustment notches ① must be installed in the hole with the lock knob ②.
2. Push and hold the lock knob and push the head restraint down.
3. Properly adjust the head restraint before an occupant uses the seating position.

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

Post-Test View of Shattered Vehicle Inner Door Panel

APPENDIX B

VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS
Driver Dummy Instrumentation Plots

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 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)

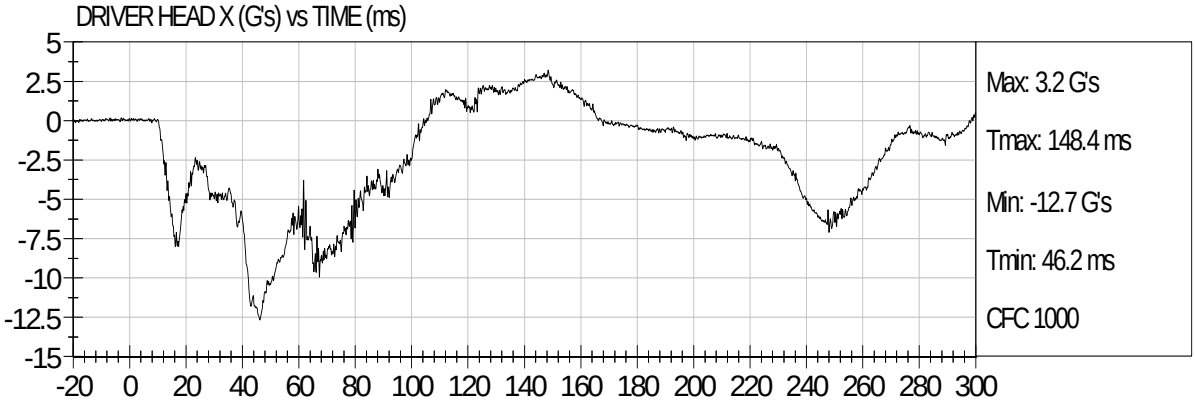
Load Cell Pole Barrier #6 Force (Y)

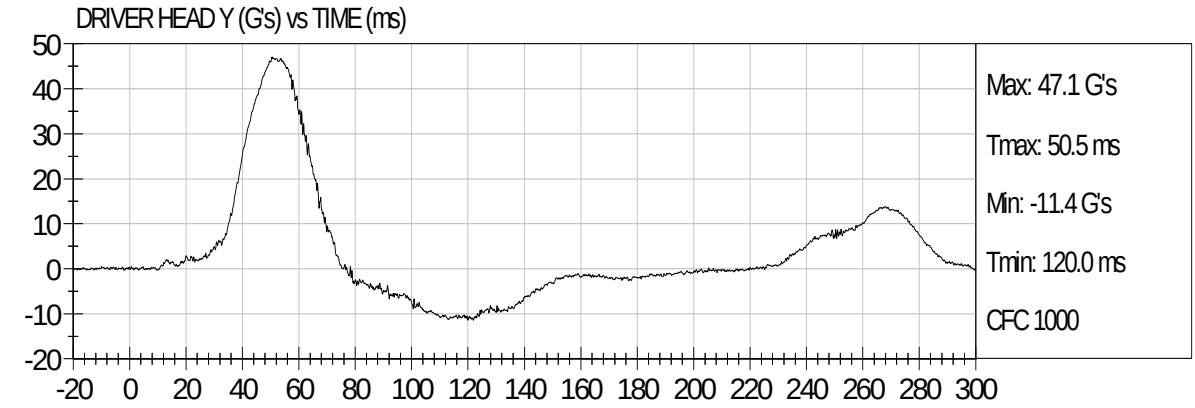
Load Cell Pole Barrier #7 Force (Y)

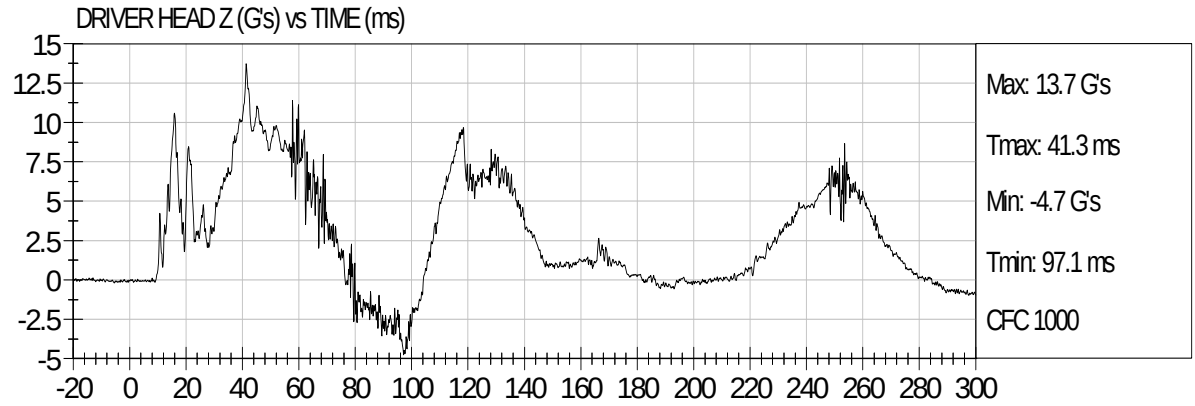
Load Cell Pole Barrier #8 Force (Y)

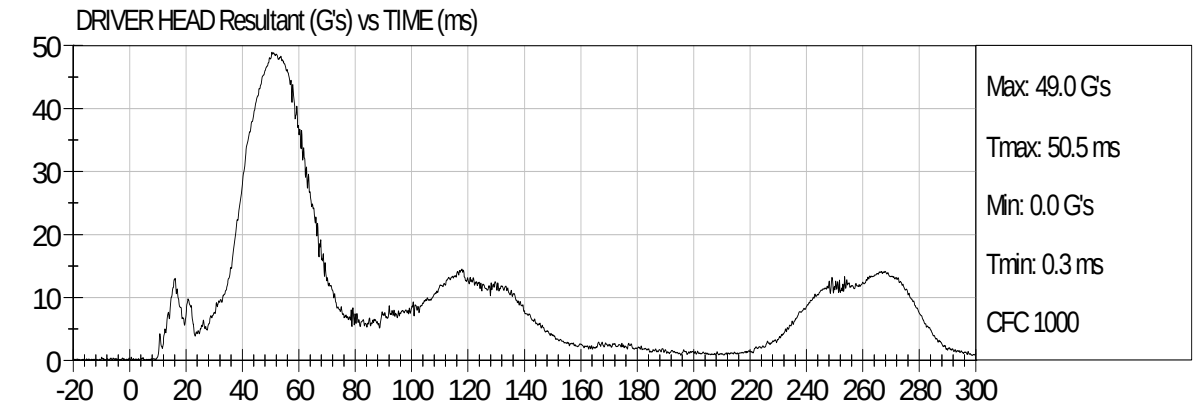
75° Oblique Rigid Pole Side NCAP
2013 Infiniti JX35 - ND5204

Test Date: 11/15/2012
Speed: 20.0 mph (32.1 km/h)

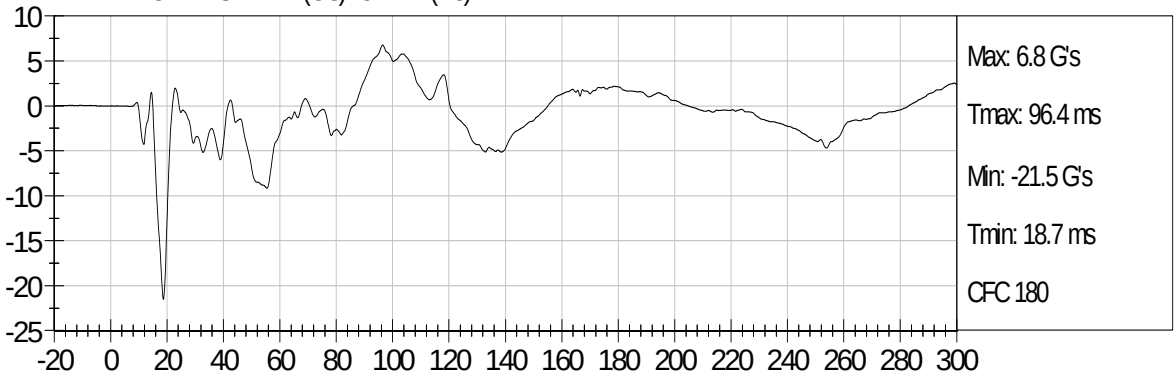




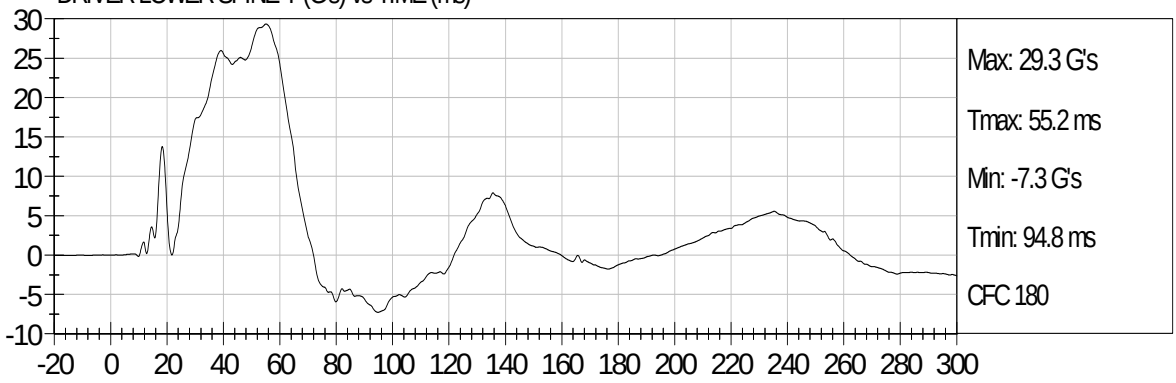




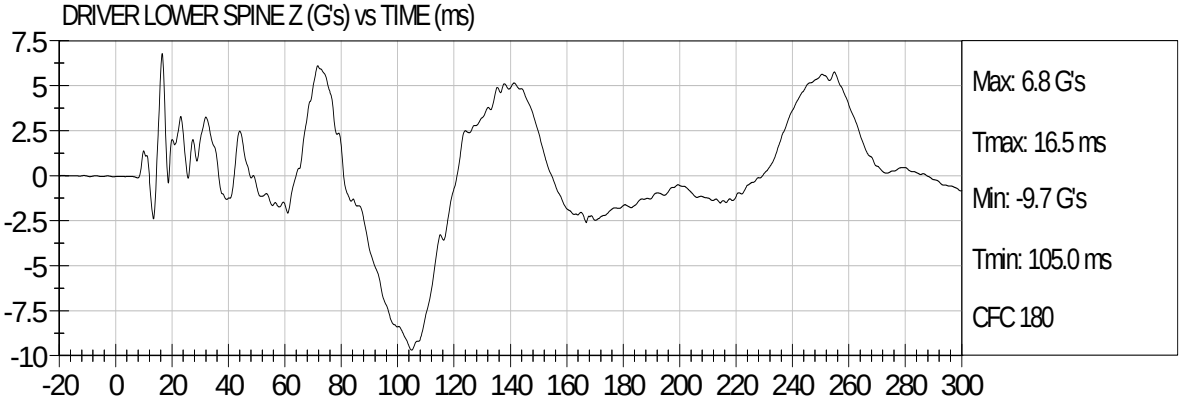
DRIVER LOWER SPINE X (G's) vs TIME (ms)



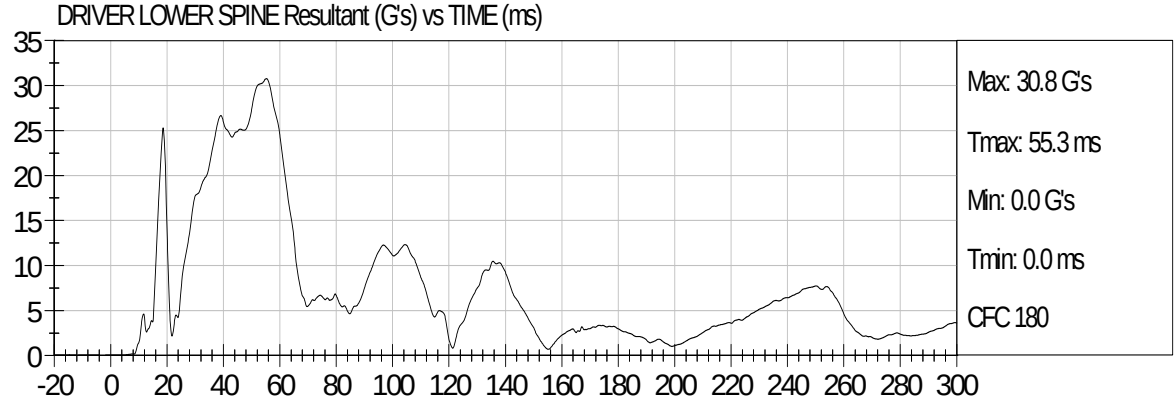
DRIVER LOWER SPINE Y (G's) vs TIME (ms)



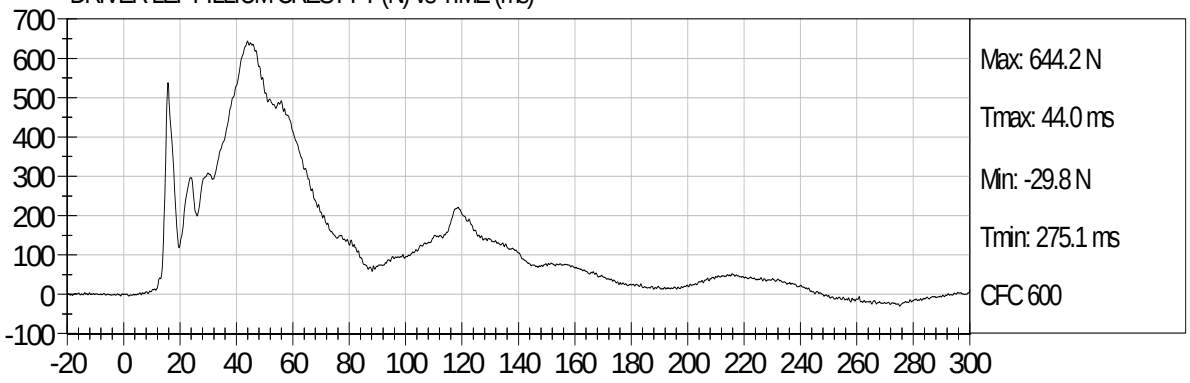
DRIVER LOWER SPINE Z (G's) vs TIME (ms)



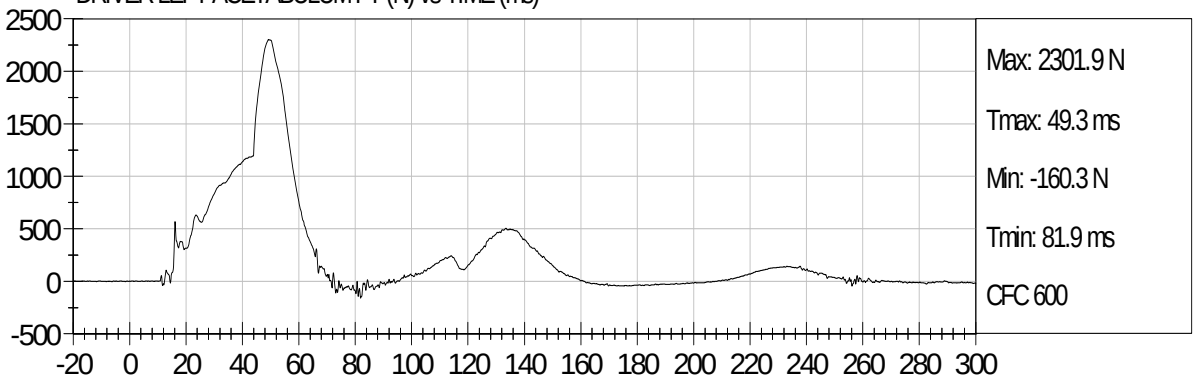
DRIVER LOWER SPINE Resultant (G's) vs TIME (ms)



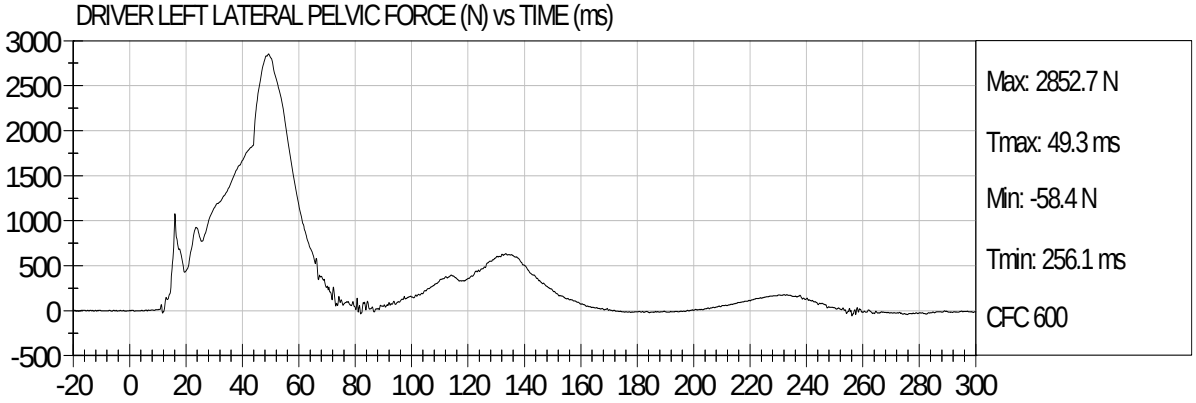
DRIVER LEFT ILLIUM CREST FY (N) vs TIME (ms)



DRIVER LEFT ACETABULUM FY (N) vs TIME (ms)



DRIVER LEFT LATERAL PELVIC FORCE (N) vs TIME (ms)



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:** D124301

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	32	Pass
Peak Resultant Acceleration	G's	115 to 137	117	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-6.8	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

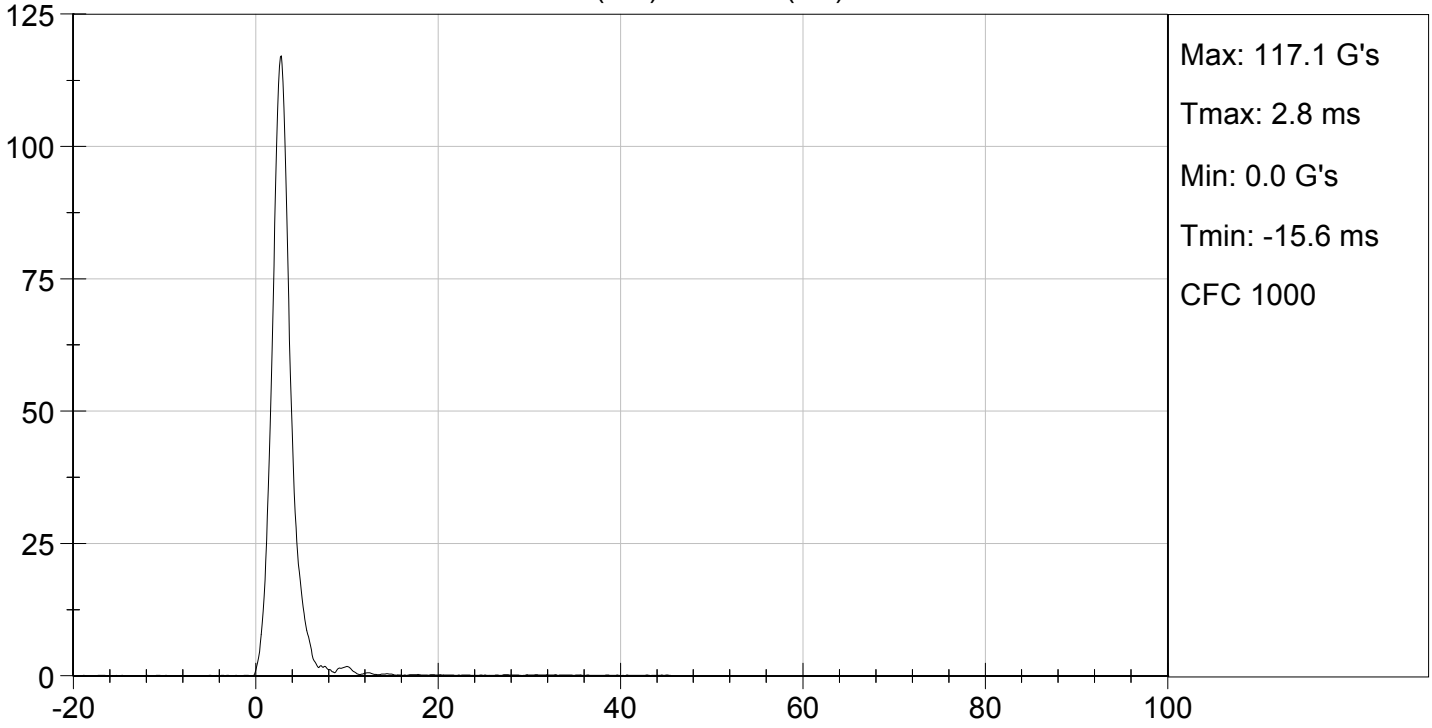
11/09/2012
Test Date

David Winkelbauer
Approved By

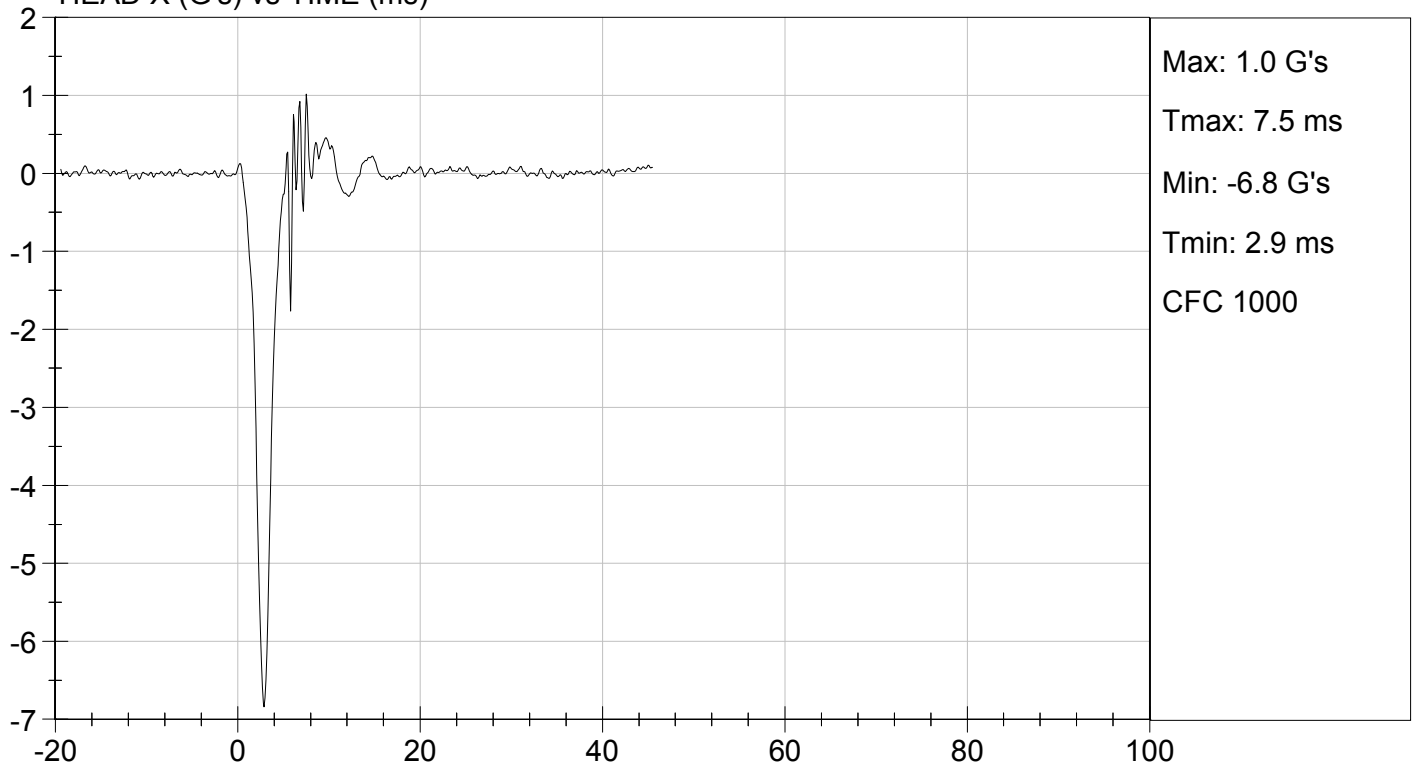
TEST DESC: HEAD DROP

TEST DATE: 11/09/2012
TEST #: D124301

HEAD RESULTANT ACCELERATION (G's) vs TIME (ms)



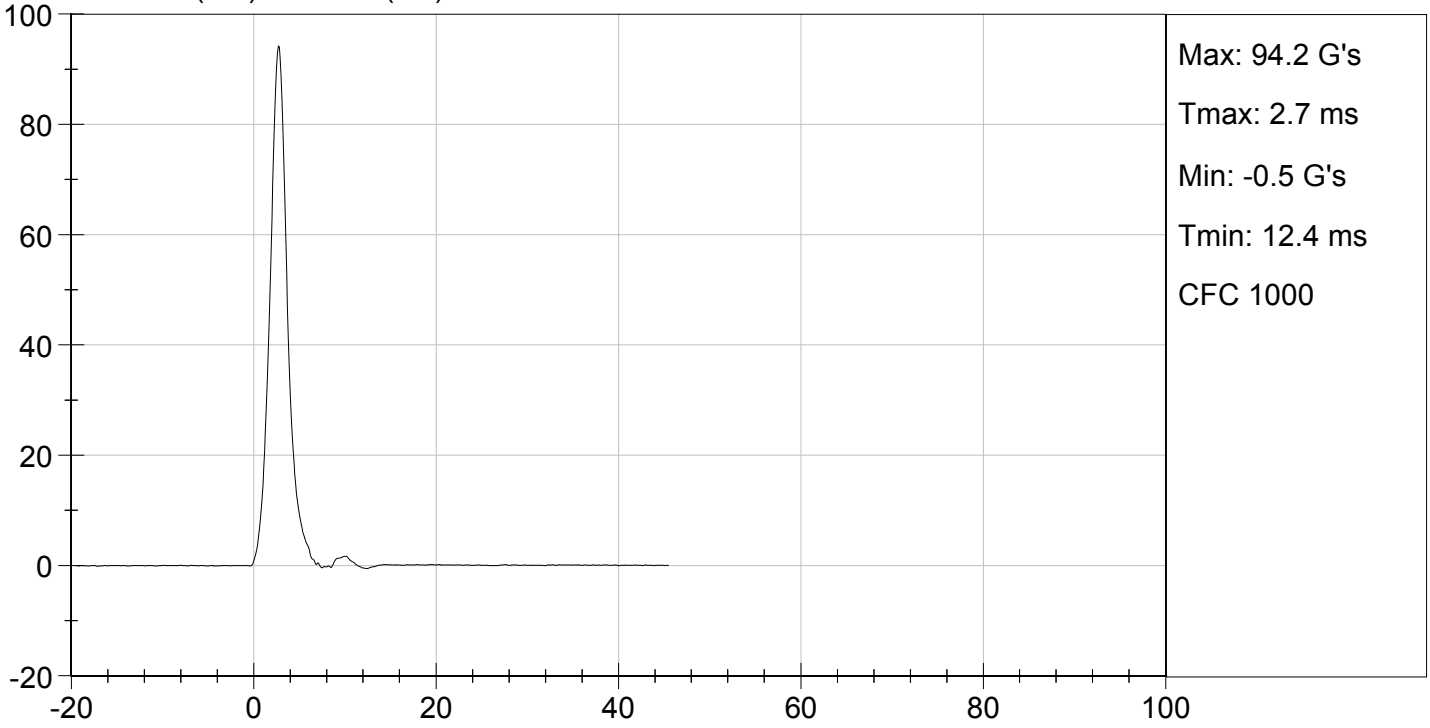
HEAD X (G's) vs TIME (ms)



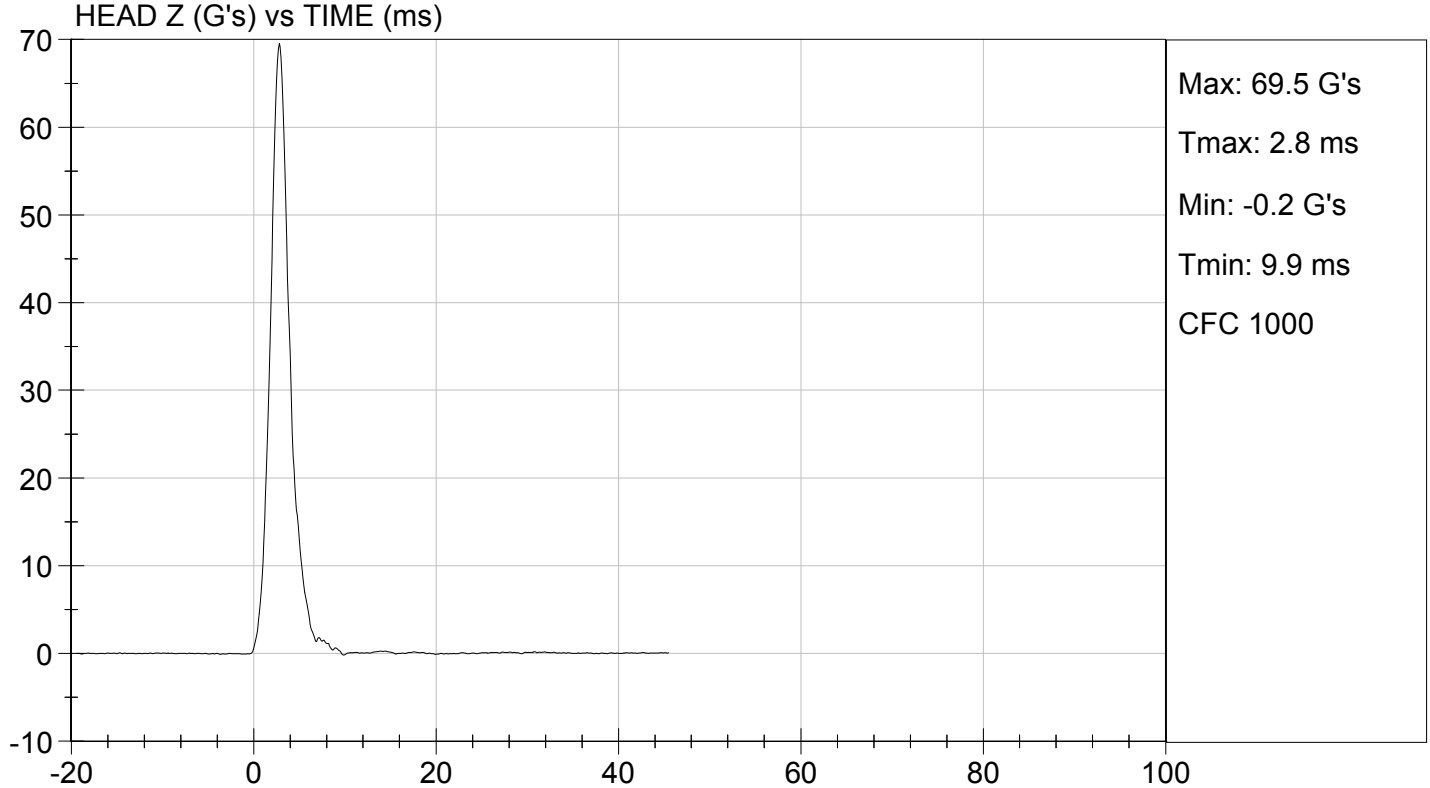
TEST DESC: HEAD DROP

TEST DATE: 11/09/2012
TEST #: D124301

HEAD Y (G's) vs TIME (ms)



HEAD Z (G's) vs TIME (ms)



MGA RESEARCH CORPORATION

LATERAL NECK PENDULUM TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D124302

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.8	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	2.76	Pass
	15 ms	m/s	3.30 to 4.10	3.85	Pass
	20 ms	m/s	4.40 to 5.40	5.14	Pass
	25 ms	m/s	5.40 to 6.10	5.42	Pass
	25-100 ms	m/s	5.50 to 6.20	5.77	Pass
Maximum D-Plane Rotation		deg	71 to 81	72	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	59	Pass
Maximum Occipital Condyle Moment		Nm	-44 to -36	-41	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	113	Pass
			Overall Test Results		Pass

Jessica Gall
Laboratory Technician

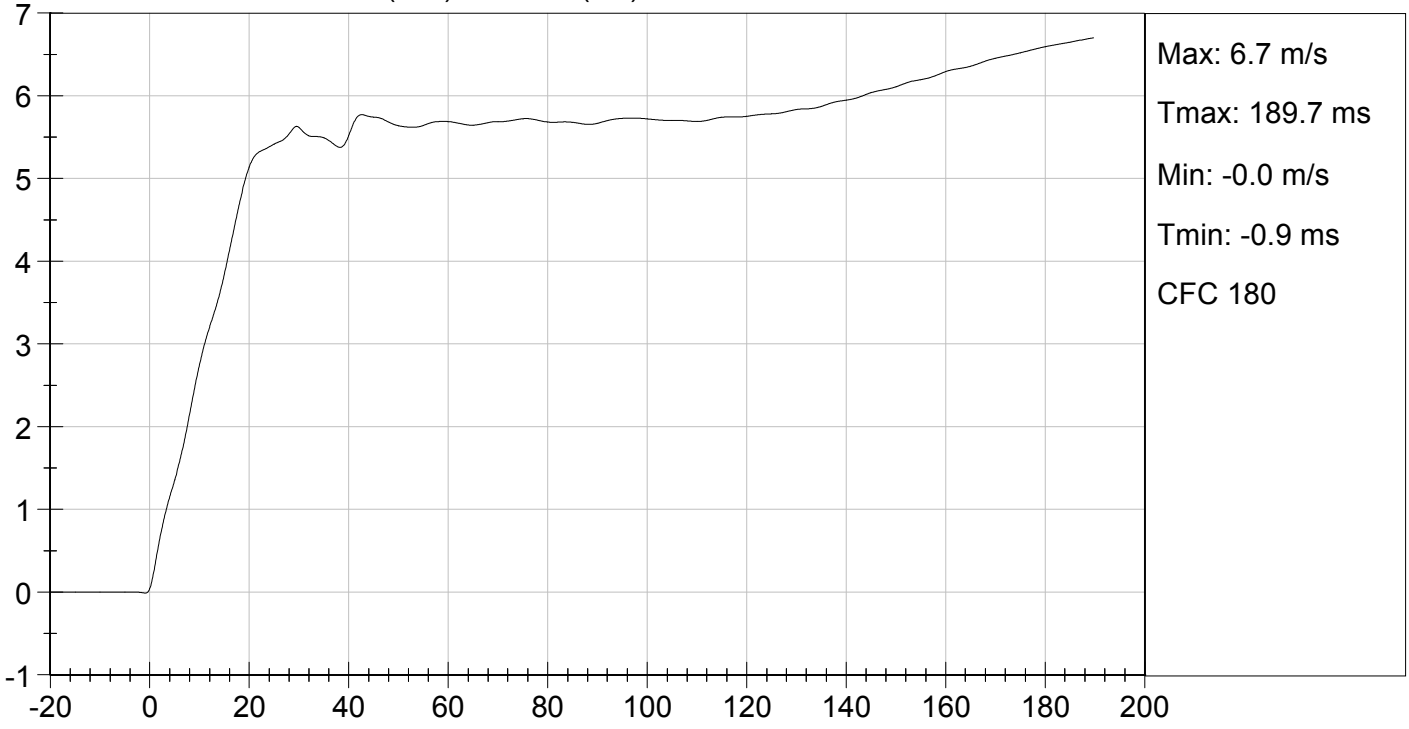
11/09/2012
Test Date

David Winkelbauer
Approved By

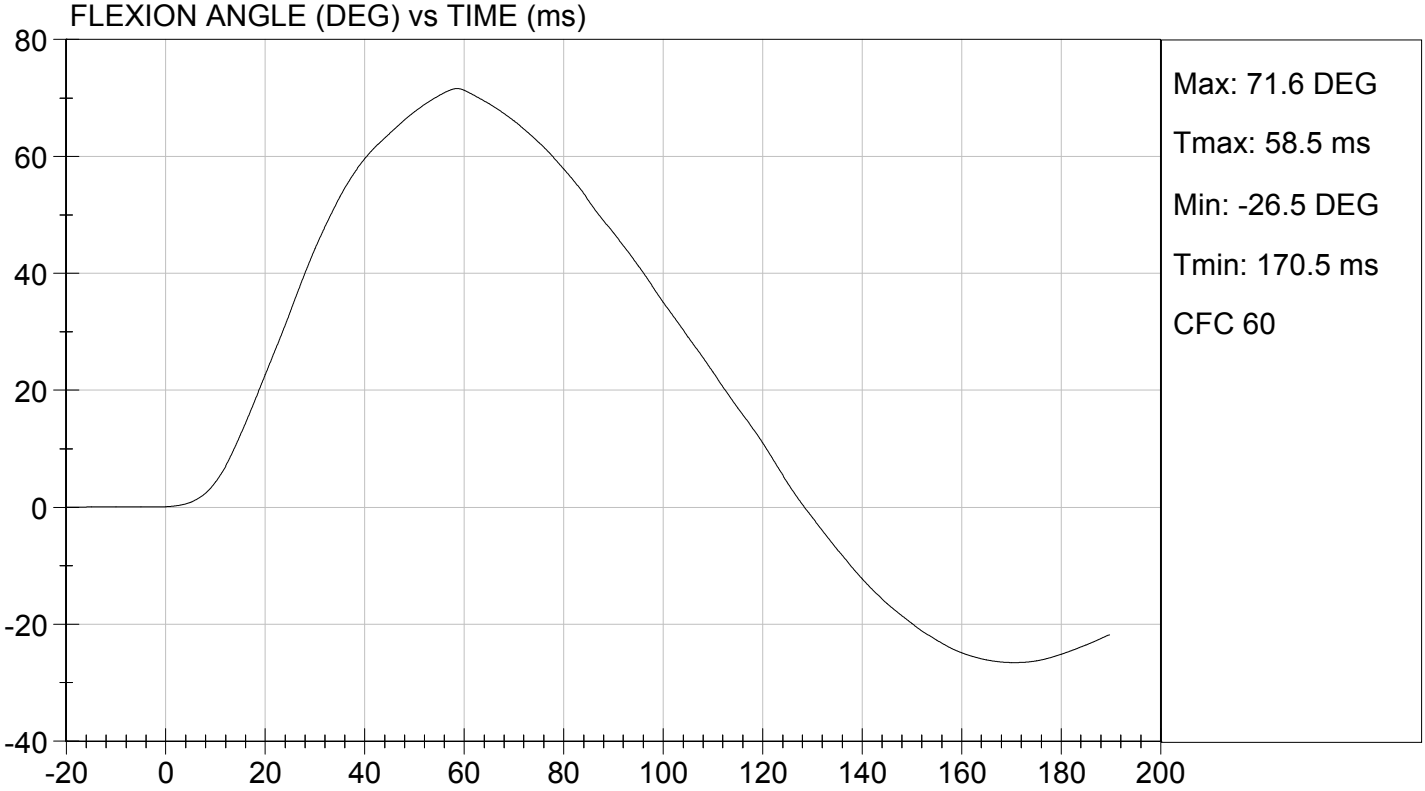
TEST DESC: NECK BENDING
VELOCITY: 18.31 ft/s, 5.58 m/s

TEST DATE: 11/09/2012
TEST #: D124302

PENDULUM VELOCITY (m/s) vs TIME (ms)

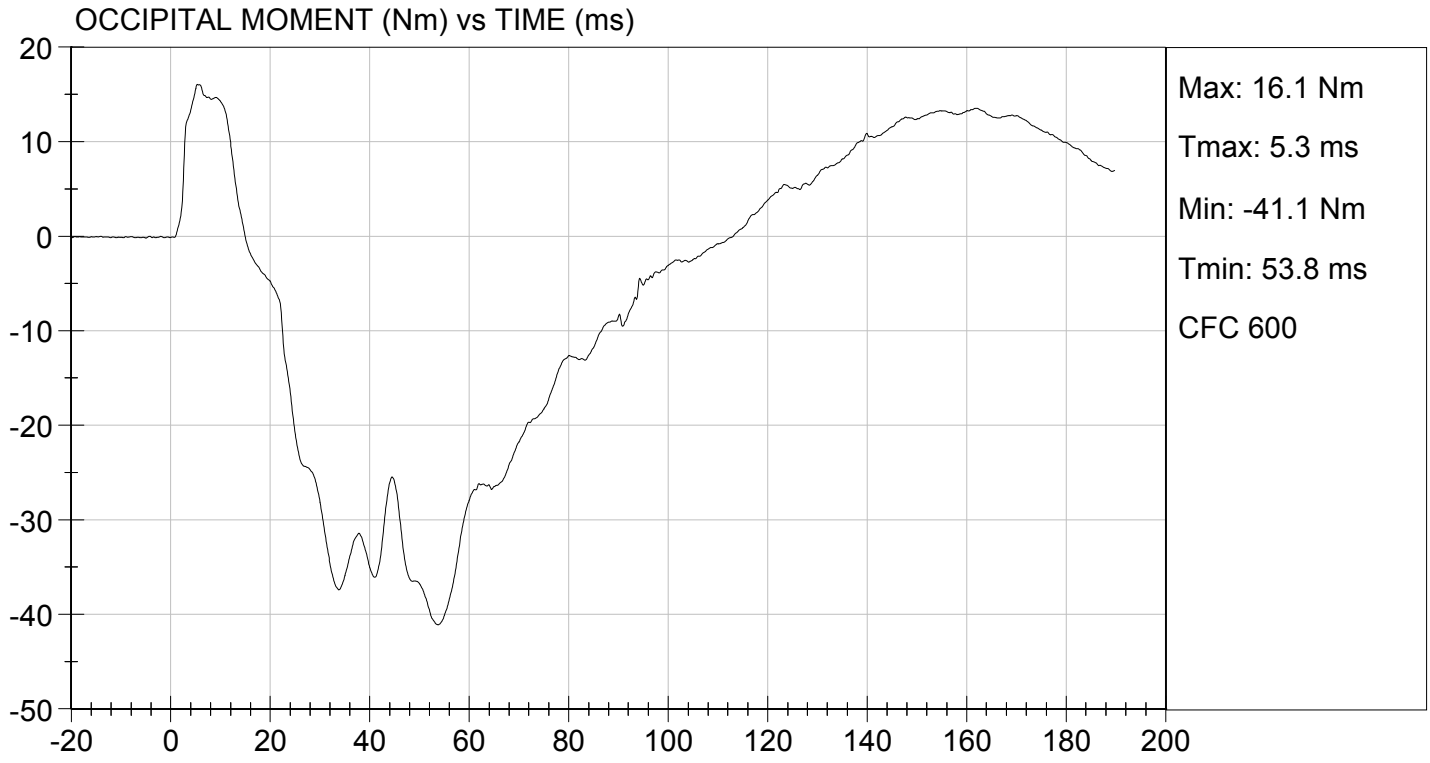


FLEXION ANGLE (DEG) vs TIME (ms)



TEST DESC: NECK BENDING
VELOCITY: 18.31 ft/s, 5.58 m/s

TEST DATE: 11/09/2012
TEST #: D124302



MGA RESEARCH CORPORATION

SHOULDER IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test ID:** D124303

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	32	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	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

Jessica Hall
Laboratory Technician

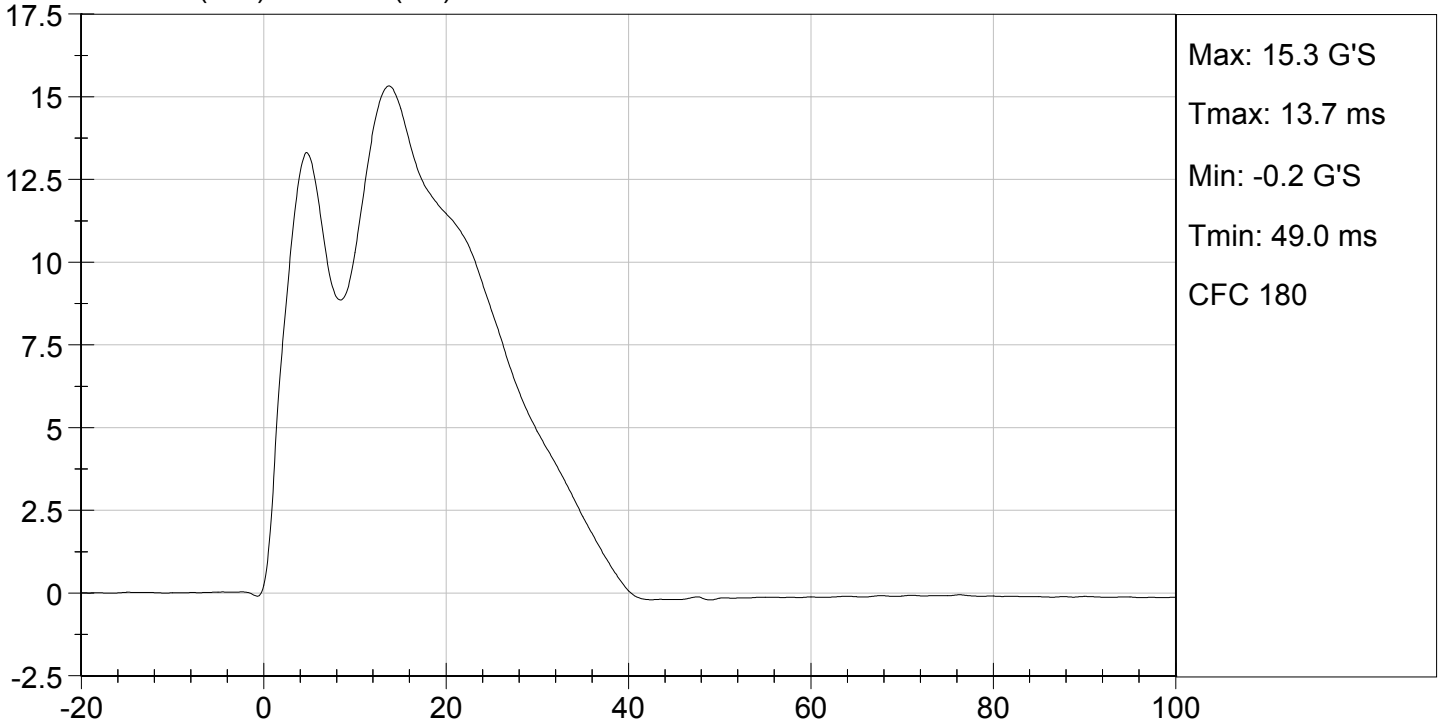
11/09/2012
Test Date

David Winkelbauer
Approved By

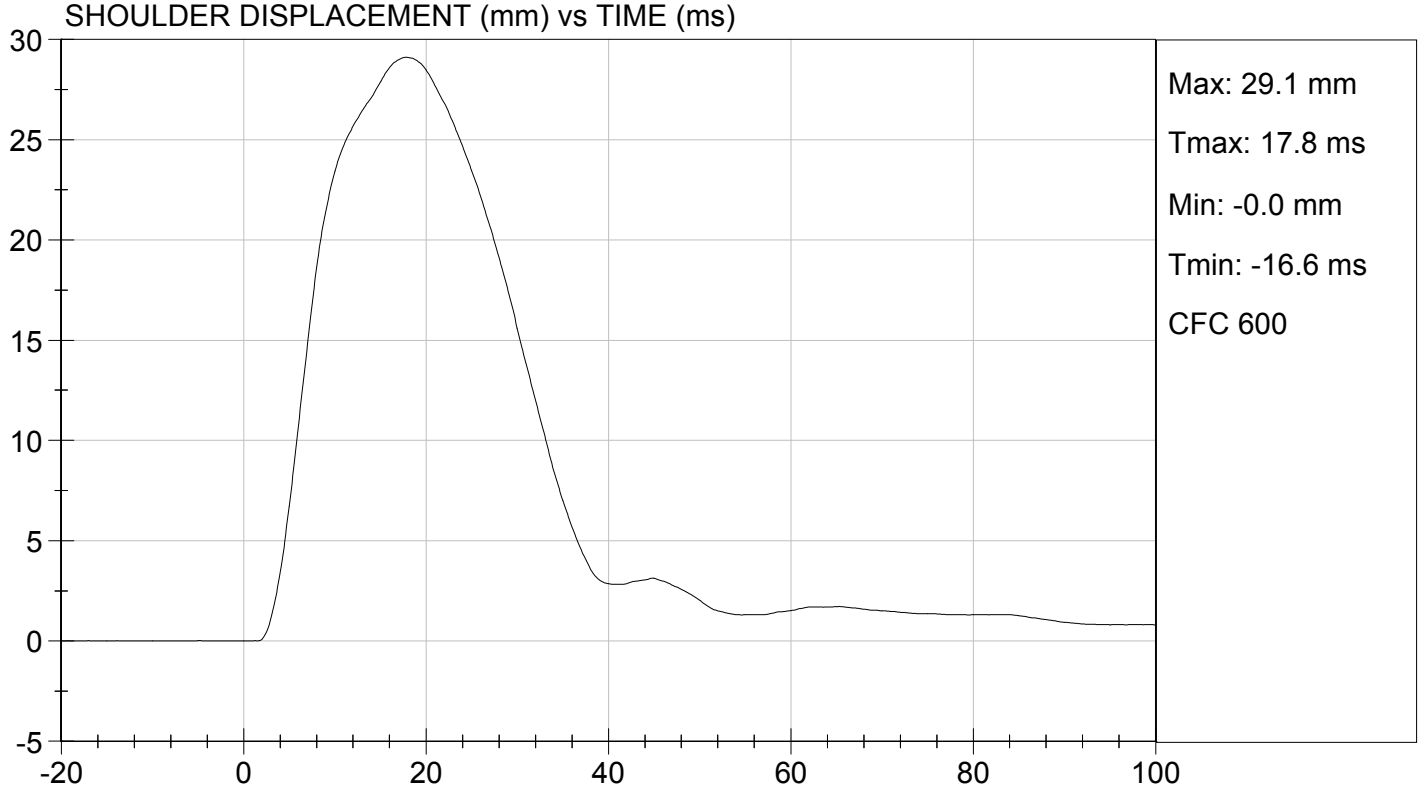
TEST DESC: SHOULDER IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/09/2012
TEST #: D124303

PROBE (G'S) vs TIME (ms)

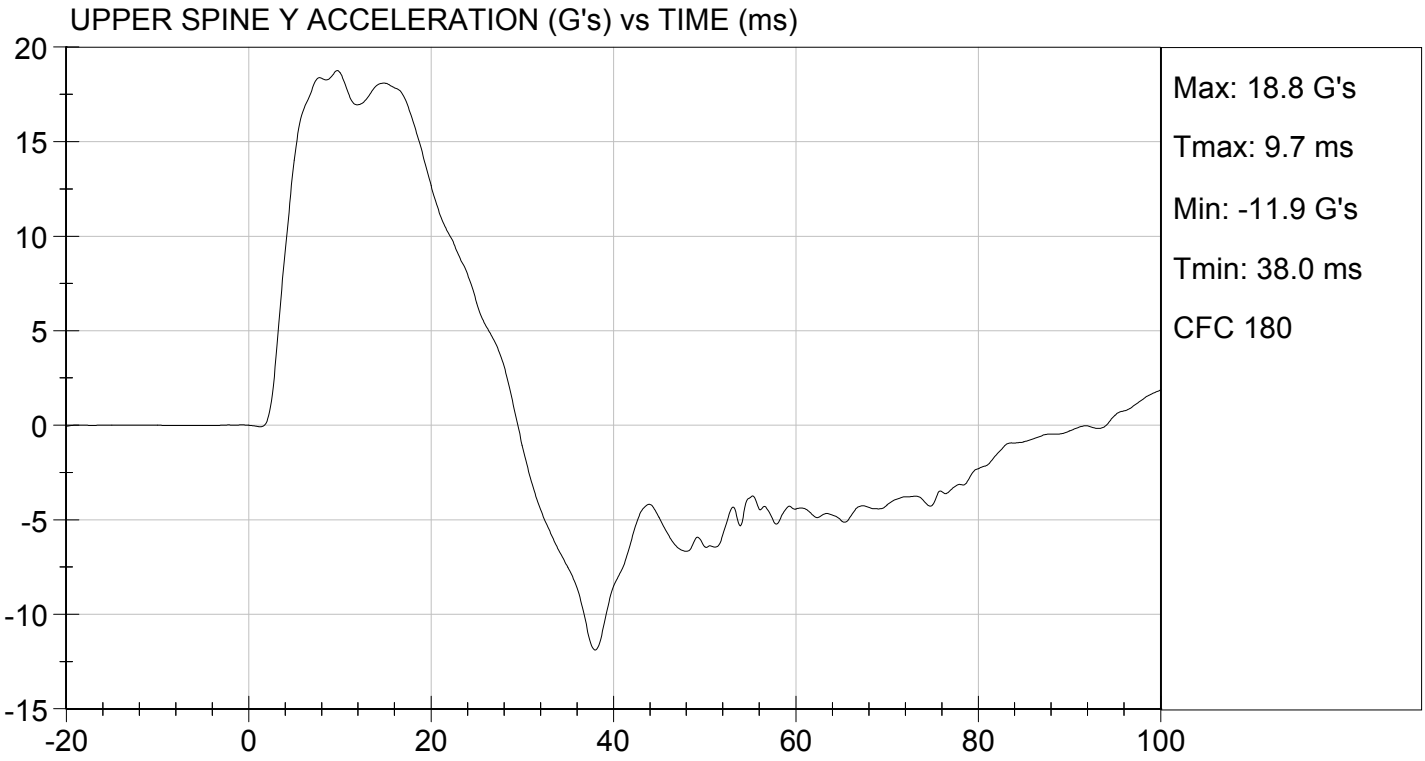


SHOULDER DISPLACEMENT (mm) vs TIME (ms)



TEST DESC: SHOULDER IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/09/2012
TEST #: D124303



MGA RESEARCH CORPORATION

THORAX (WITH ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D124304

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	32	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	34	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	39	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	33	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

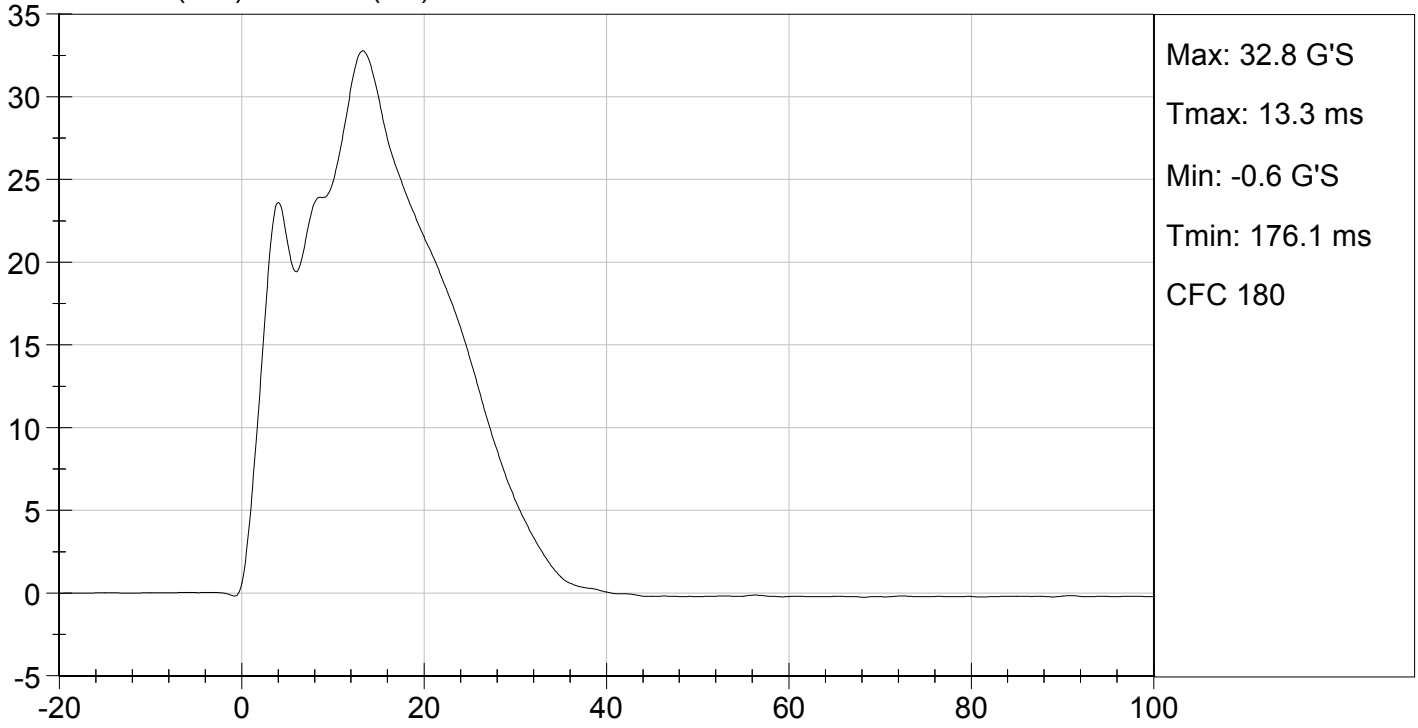
11/09/2012
Test Date

David Winkelbauer
Approved By

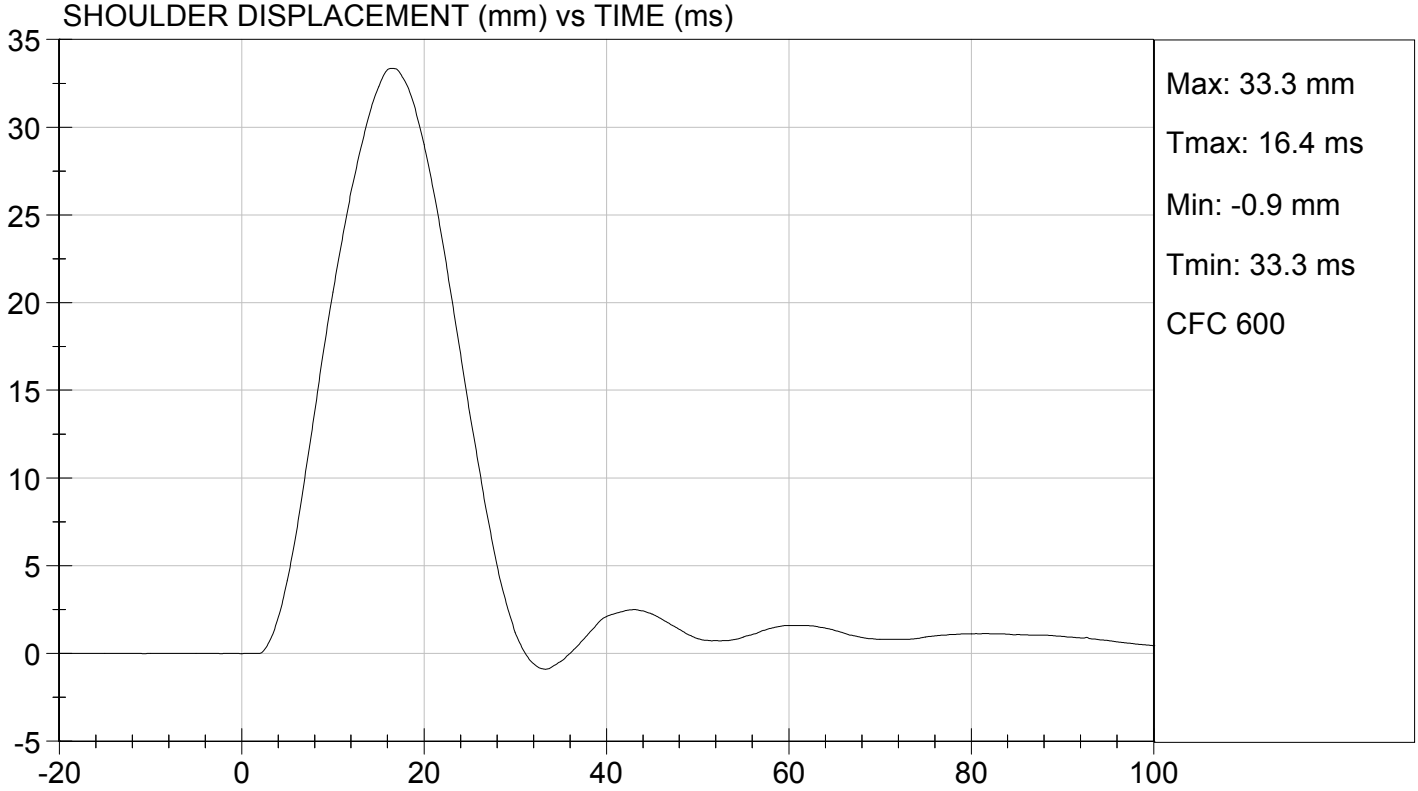
TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 11/09/2012
TEST #: D124304

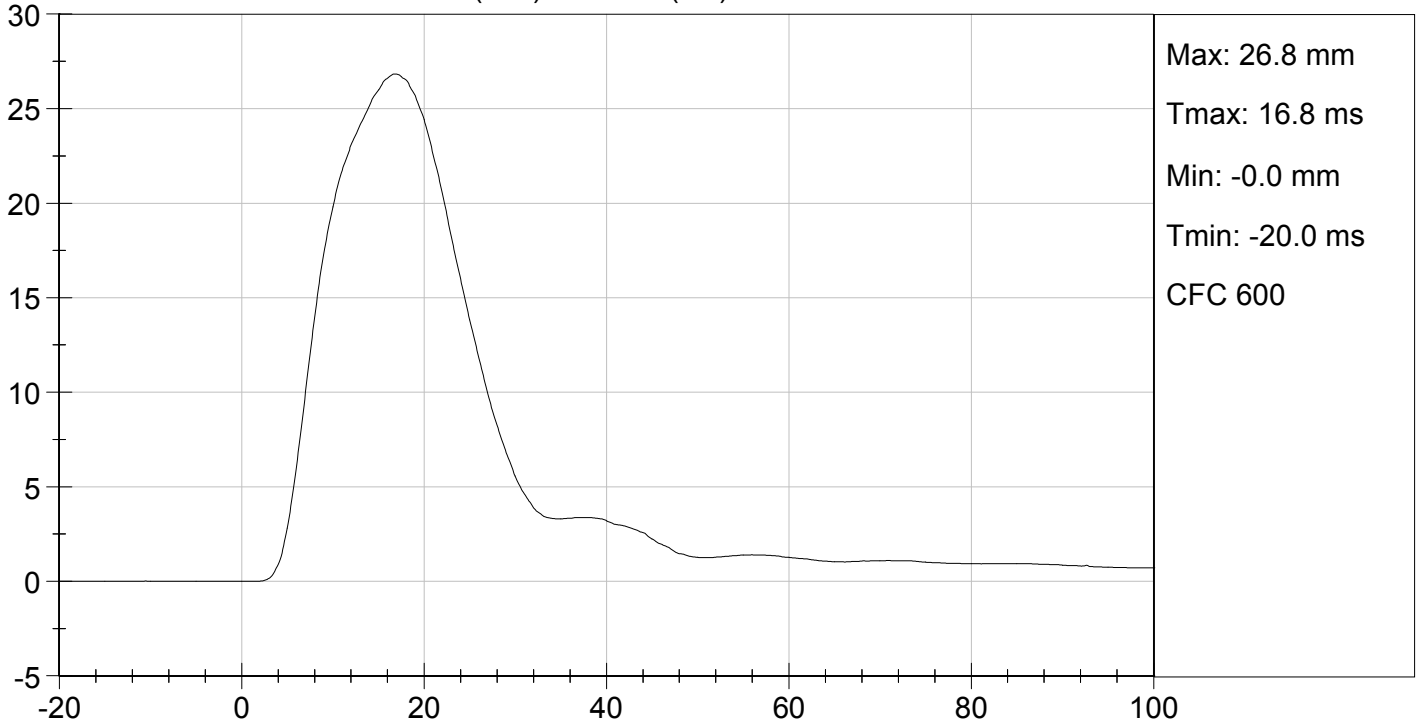
PROBE (G'S) vs TIME (ms)



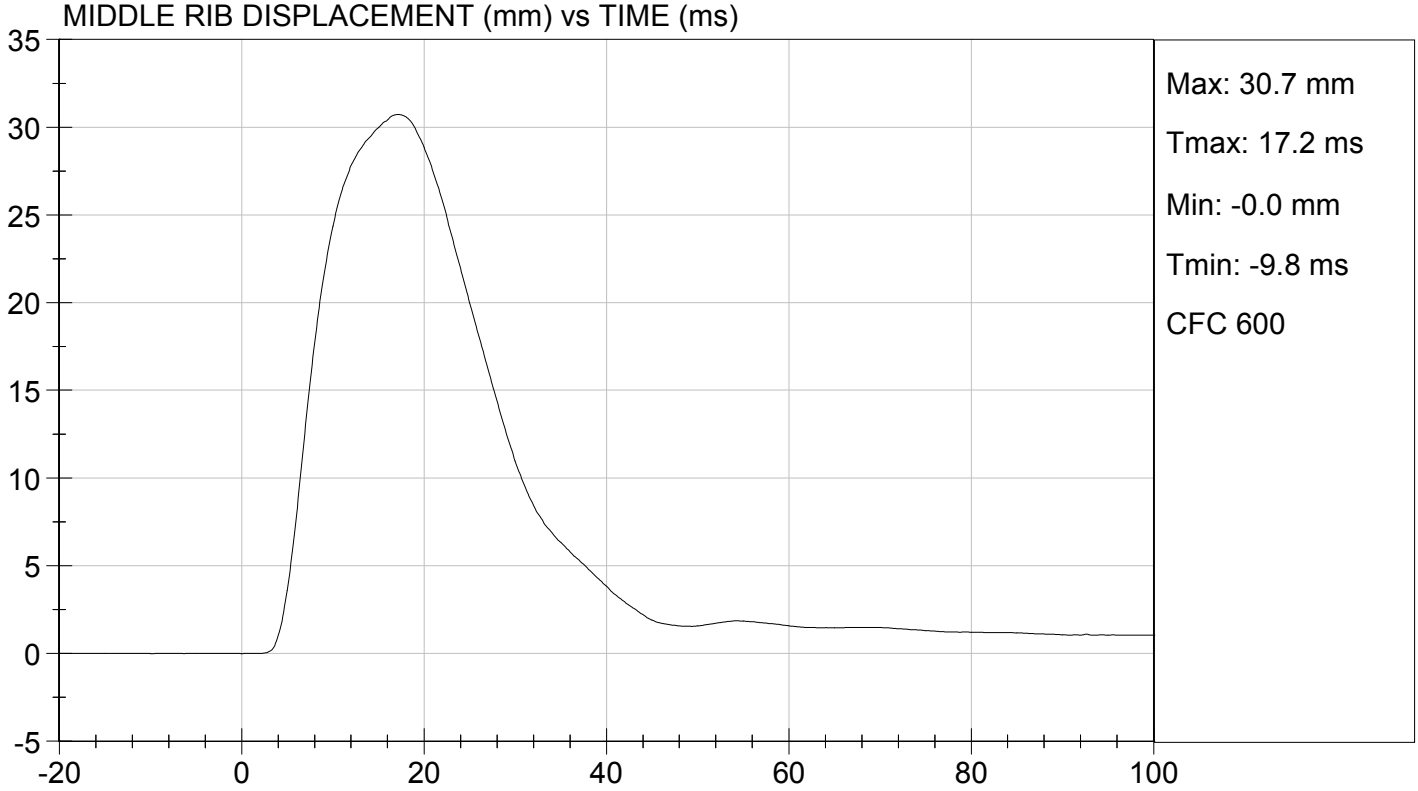
SHOULDER DISPLACEMENT (mm) vs TIME (ms)



UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



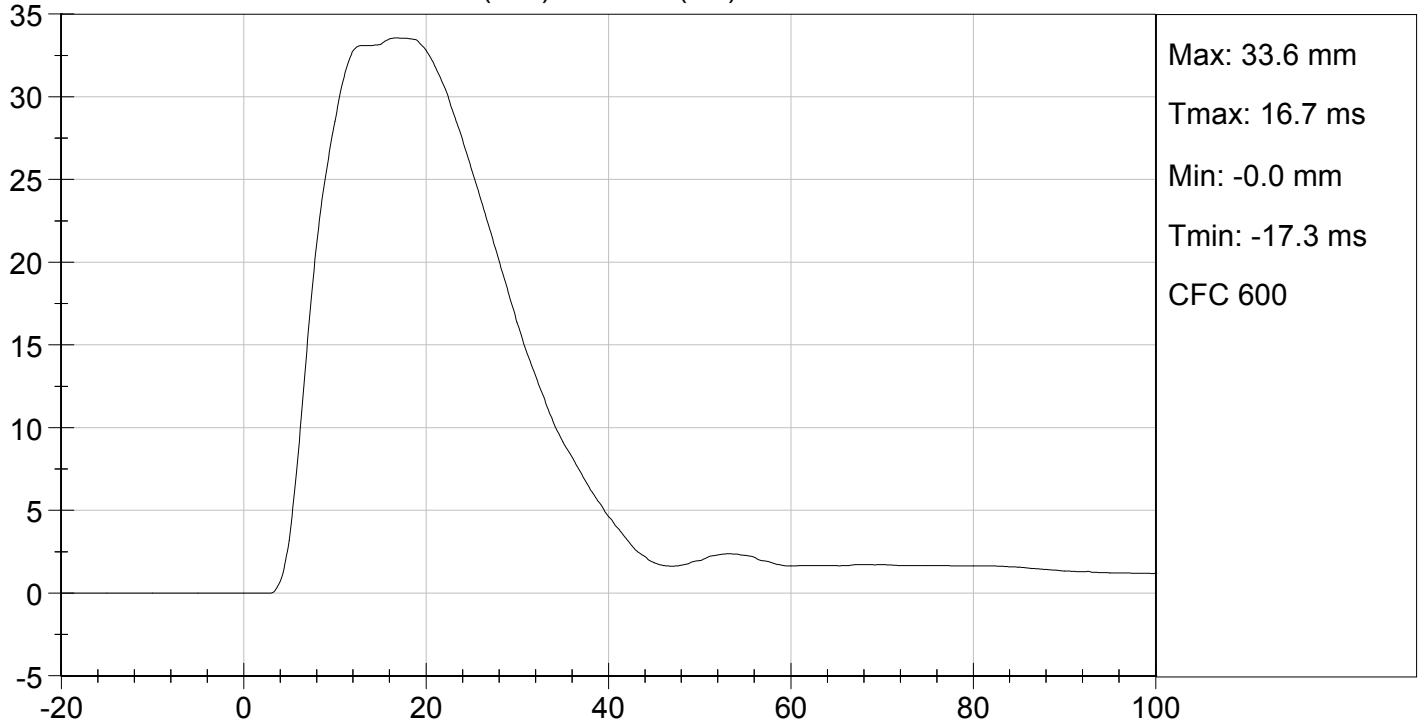
MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



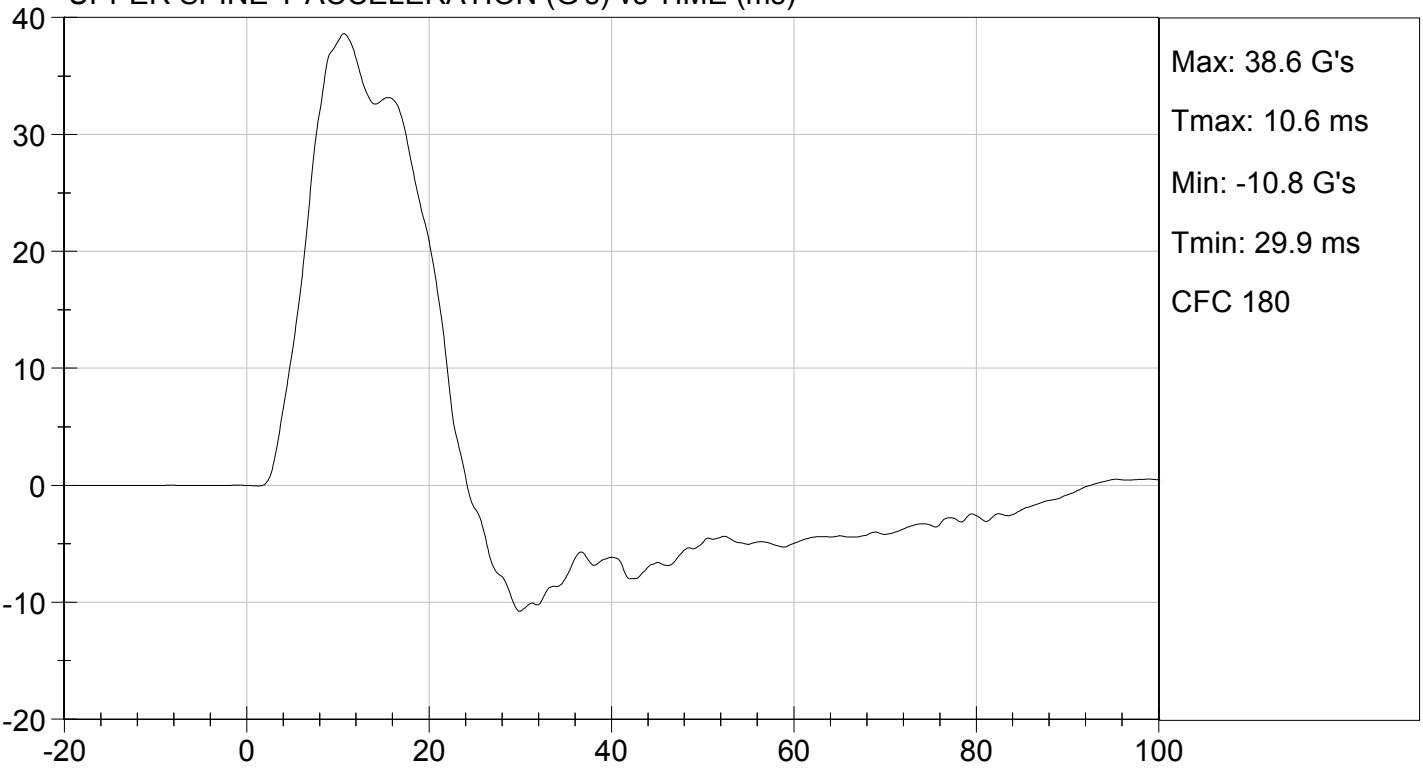
TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 11/09/2012
TEST #: D124304

LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



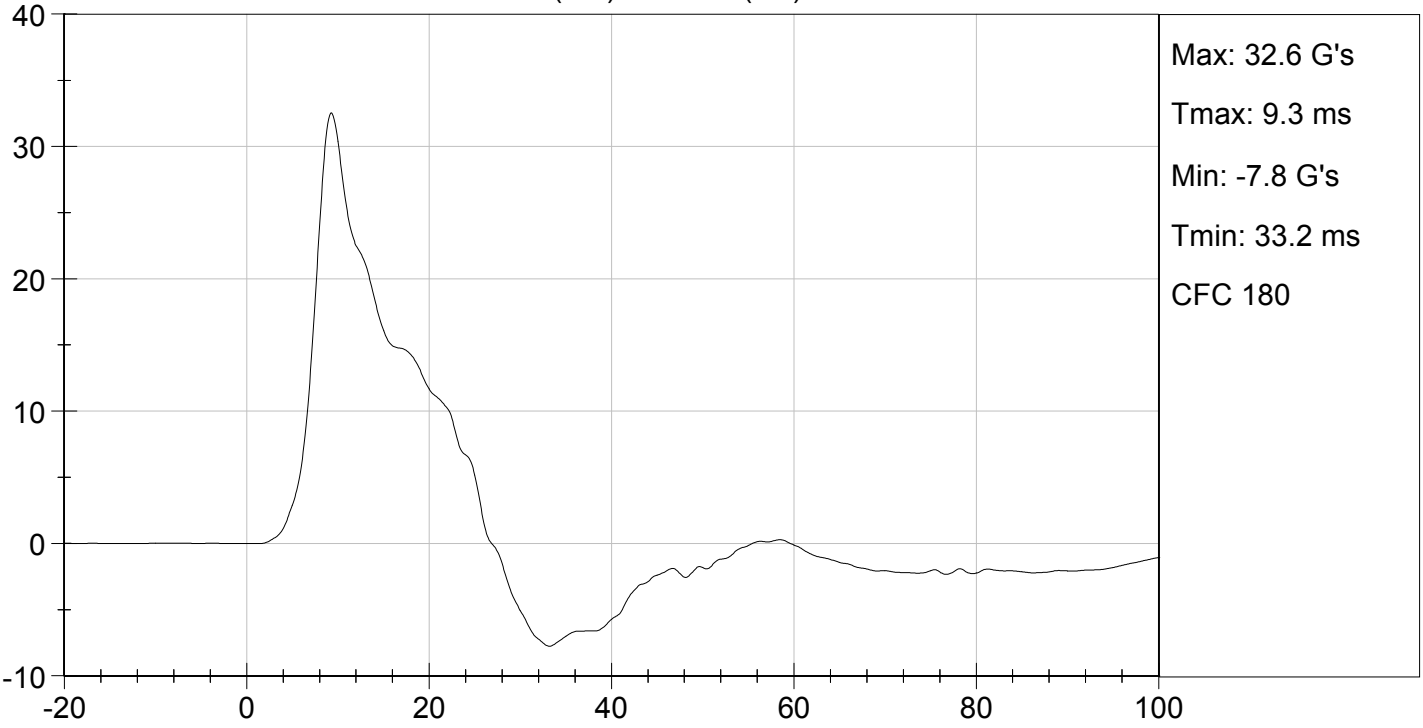
UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)



TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 11/09/2012
TEST #: D124304

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



MGA RESEARCH CORPORATION

THORAX (WITHOUT ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D124305

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	32	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	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	41	Pass
Lower Rib Displacement	mm	35 to 43	39	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

Jessica Hall
Laboratory Technician

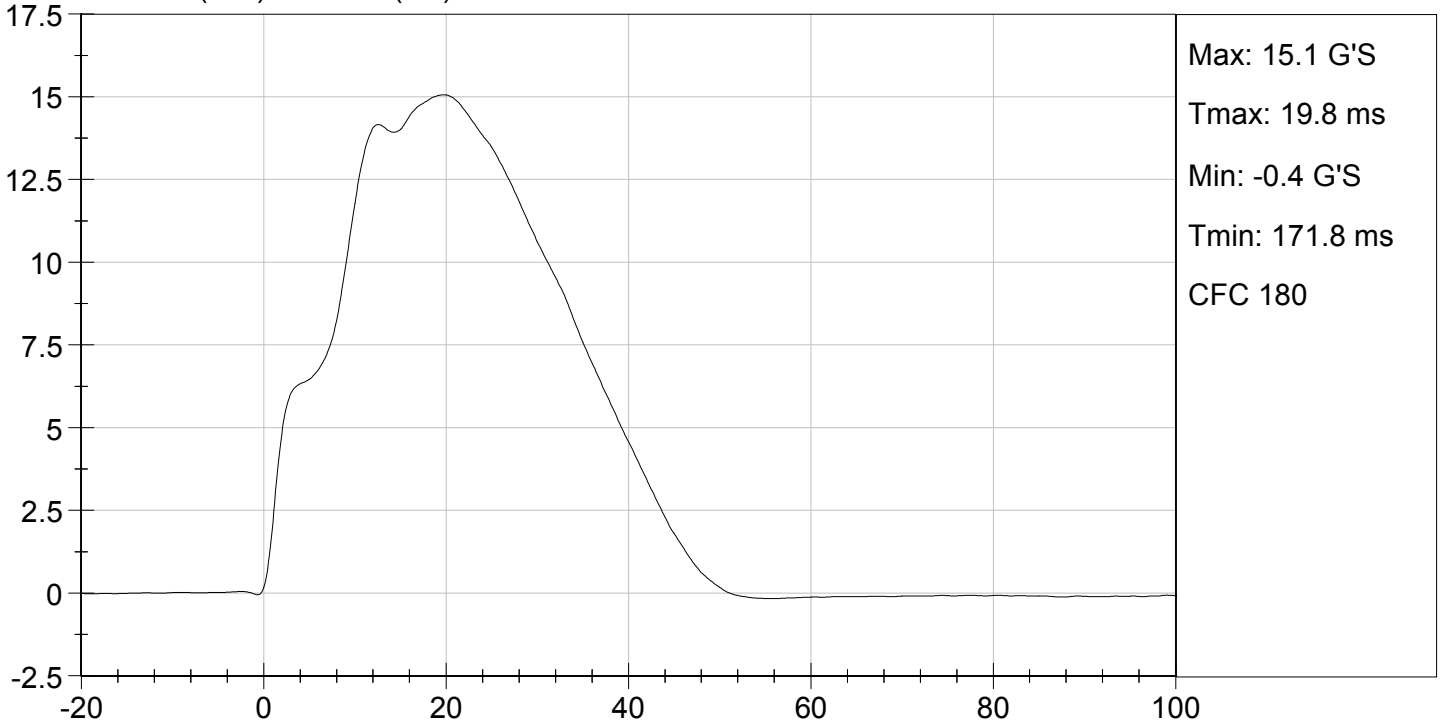
11/09/2012
Test Date

David Winkelbauer
Approved By

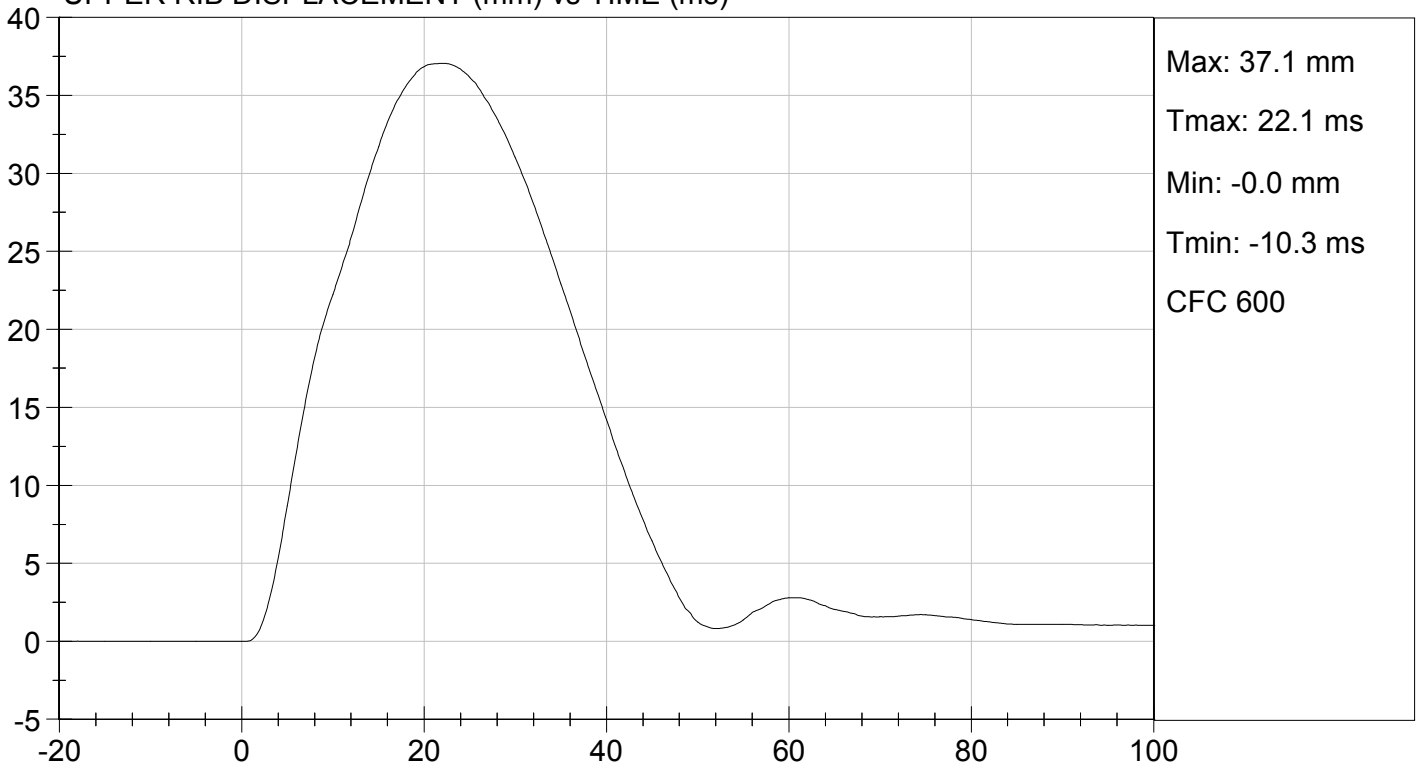
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/09/2012
TEST #: D124305

PROBE (G'S) vs TIME (ms)



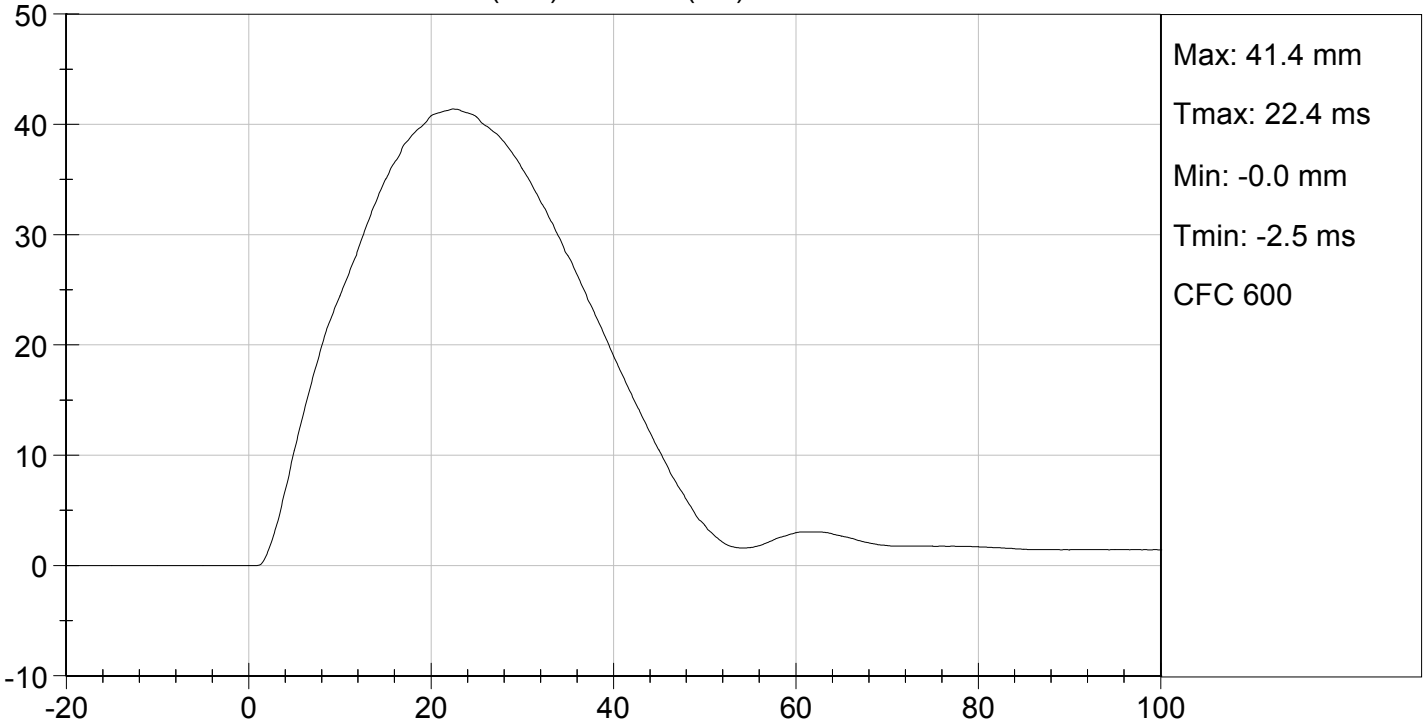
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



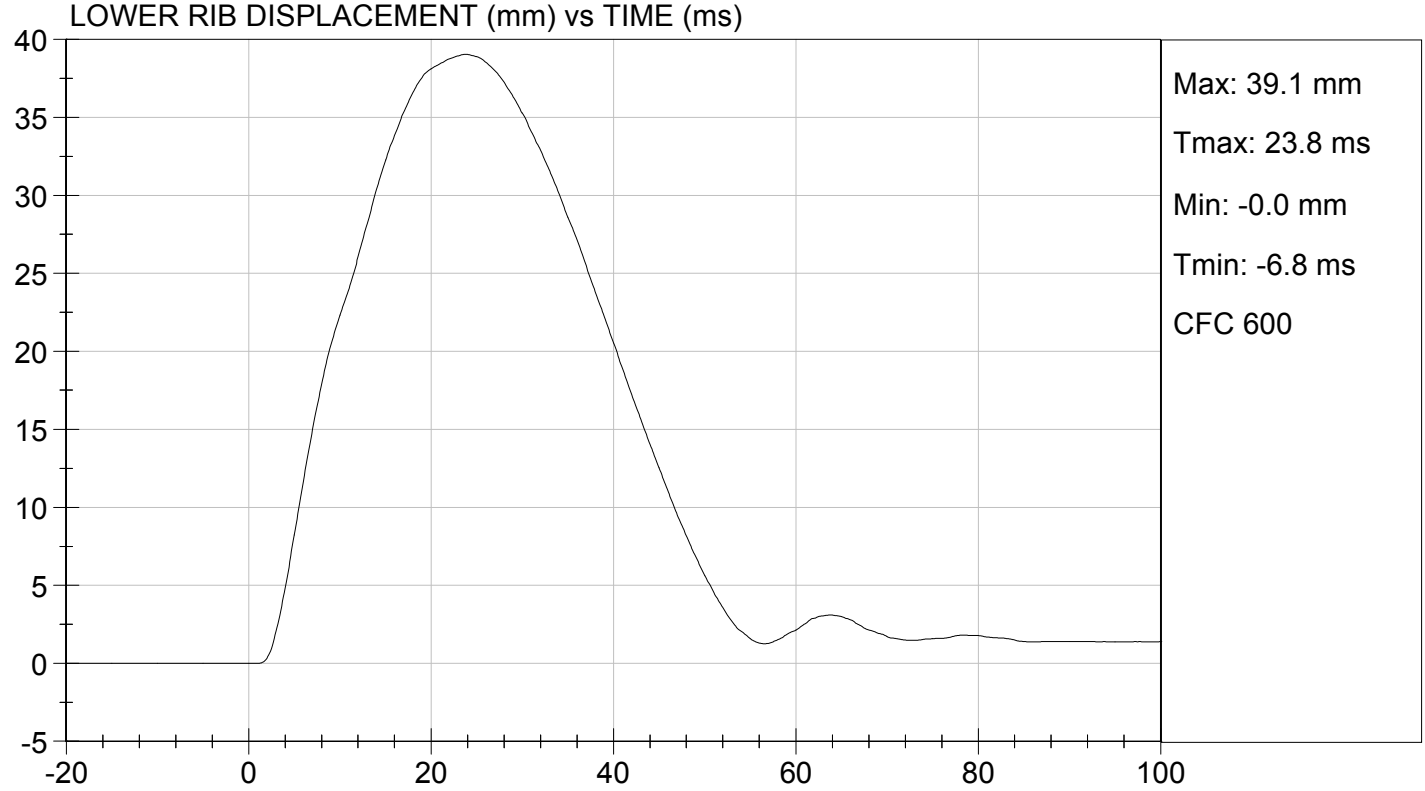
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/09/2012
TEST #: D124305

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



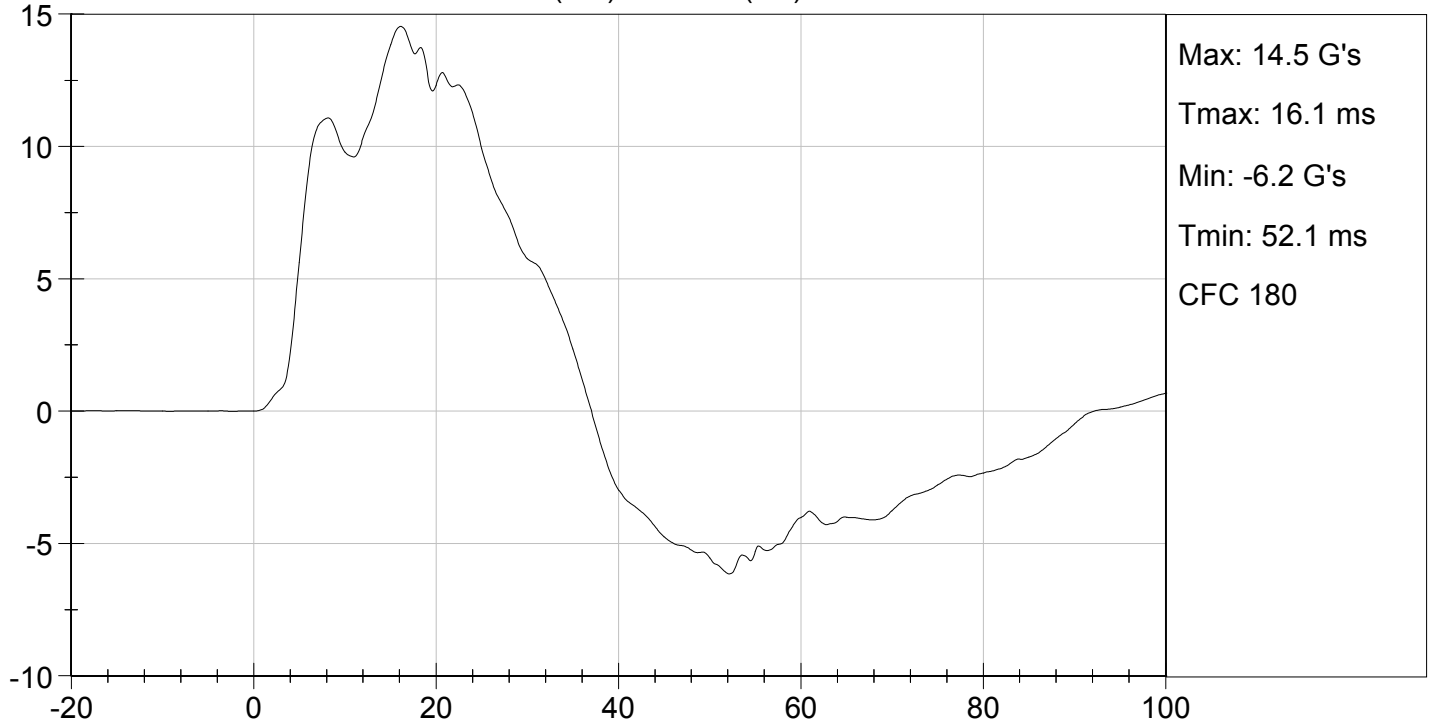
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



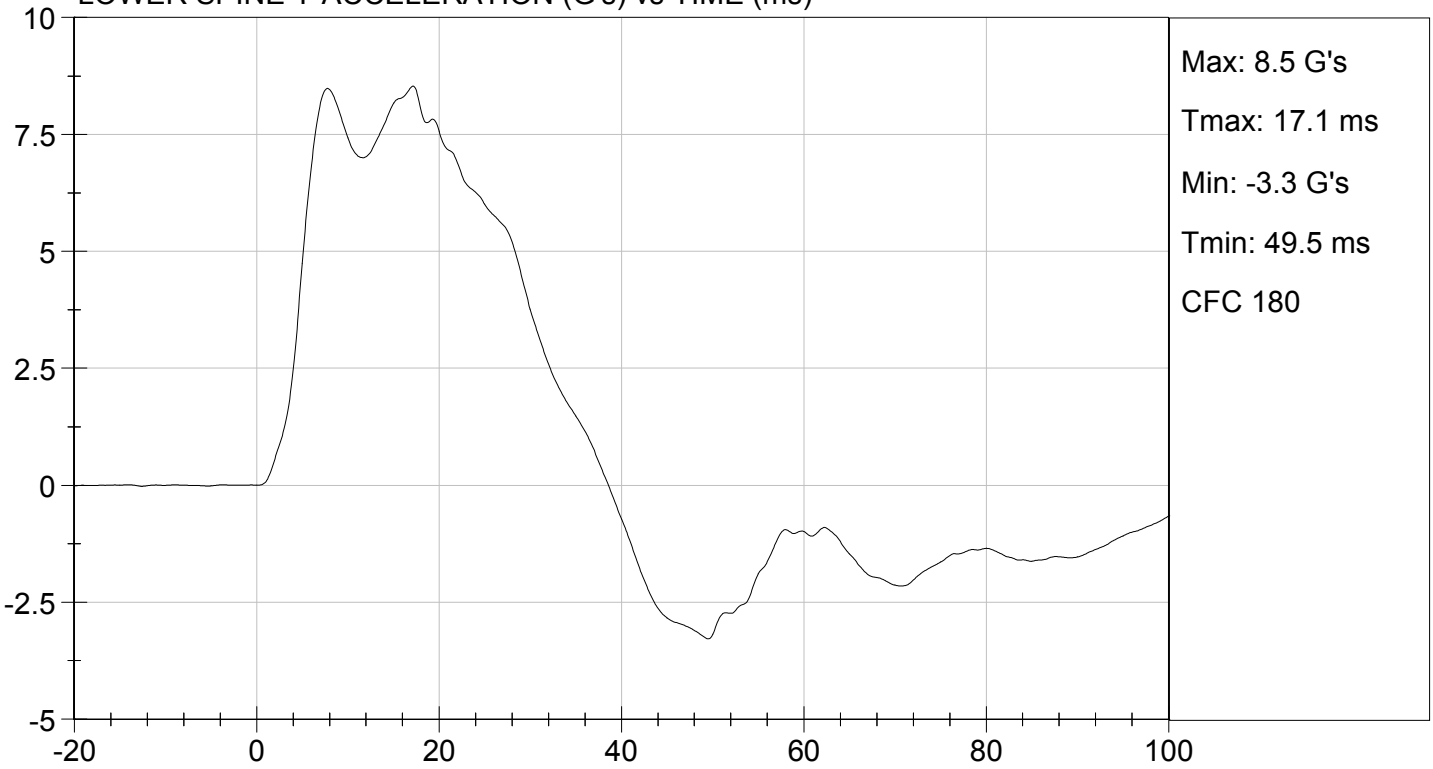
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/09/2012
TEST #: D124305

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:** D124306

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	32	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Maximum Probe Acceleration	G's	12 to 16	13	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	40	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	37	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

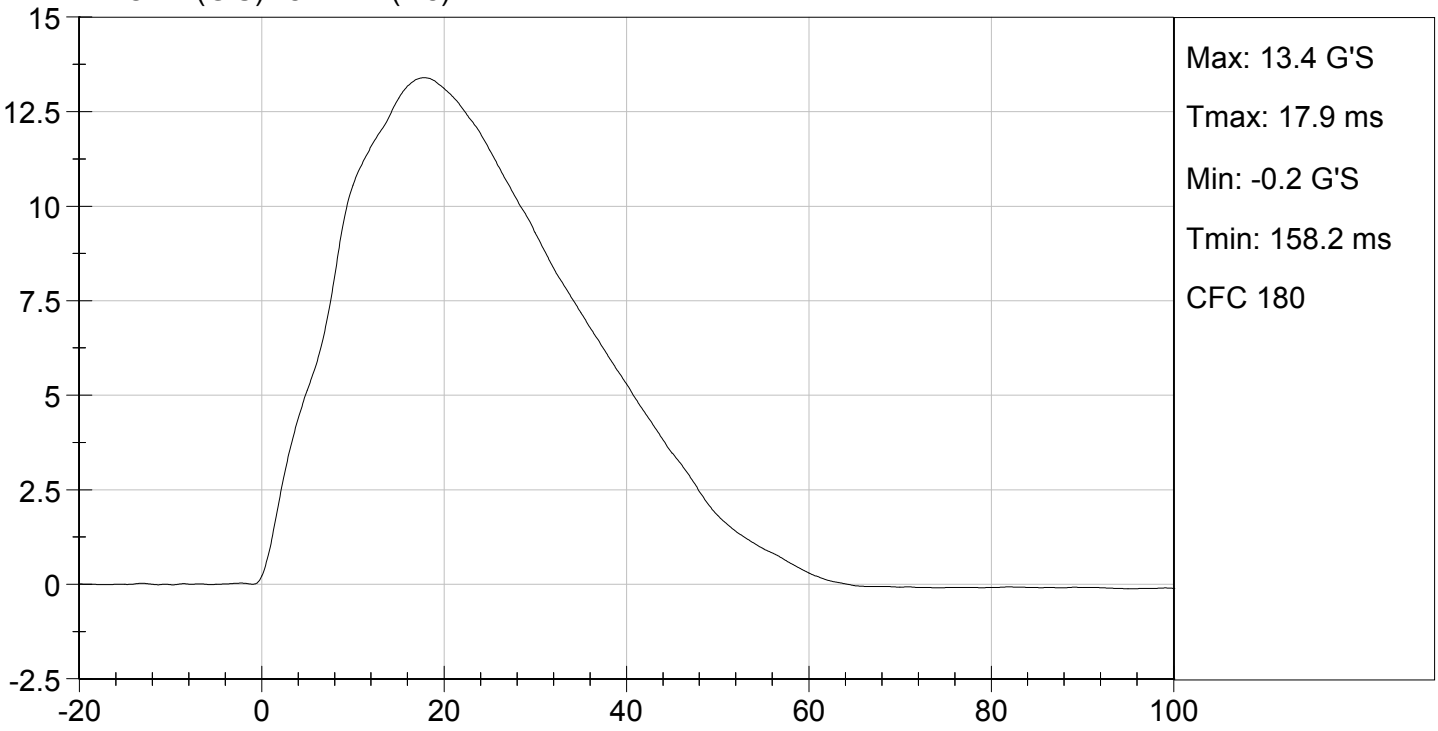
11/09/2012
Test Date

David Winkelbauer
Approved By

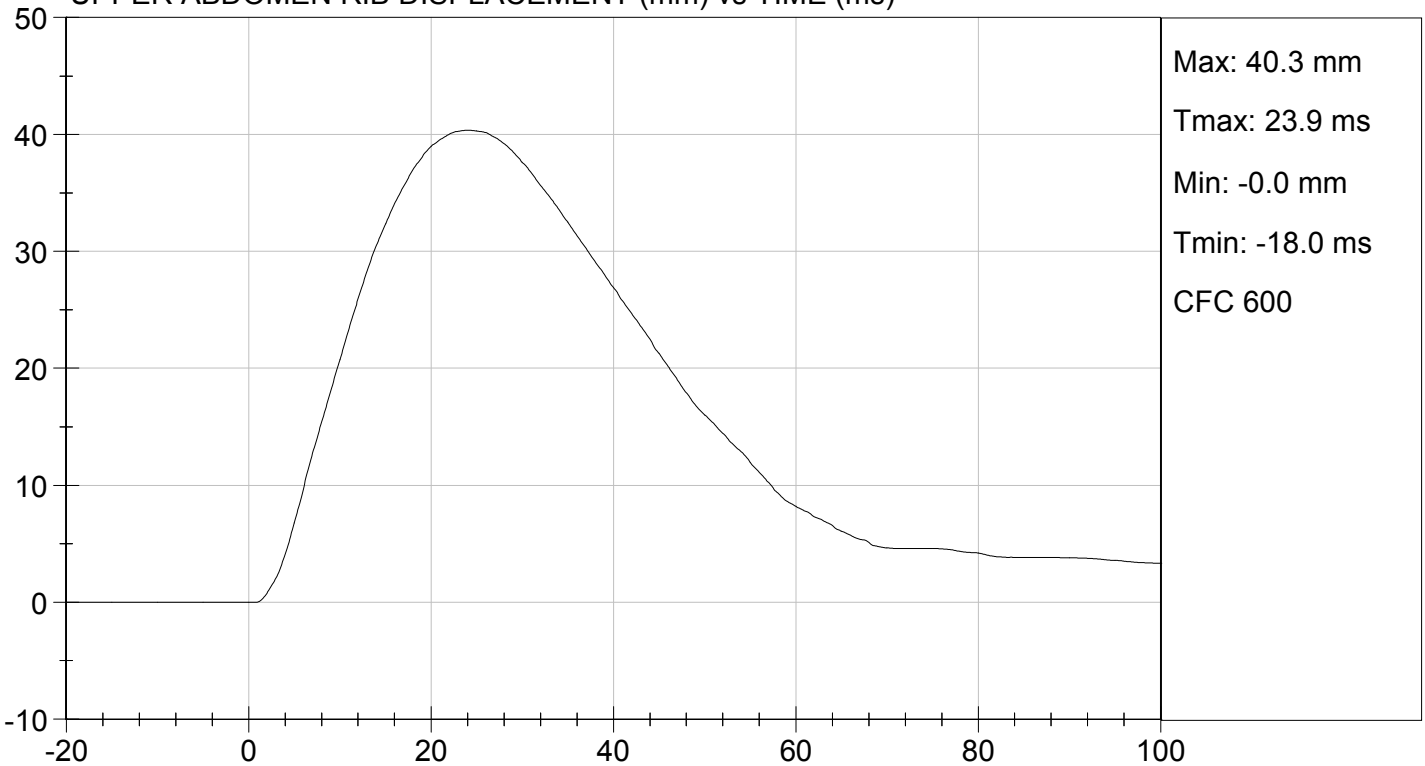
TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 11/09/2012
TEST #: D124306

PROBE (G'S) vs TIME (ms)



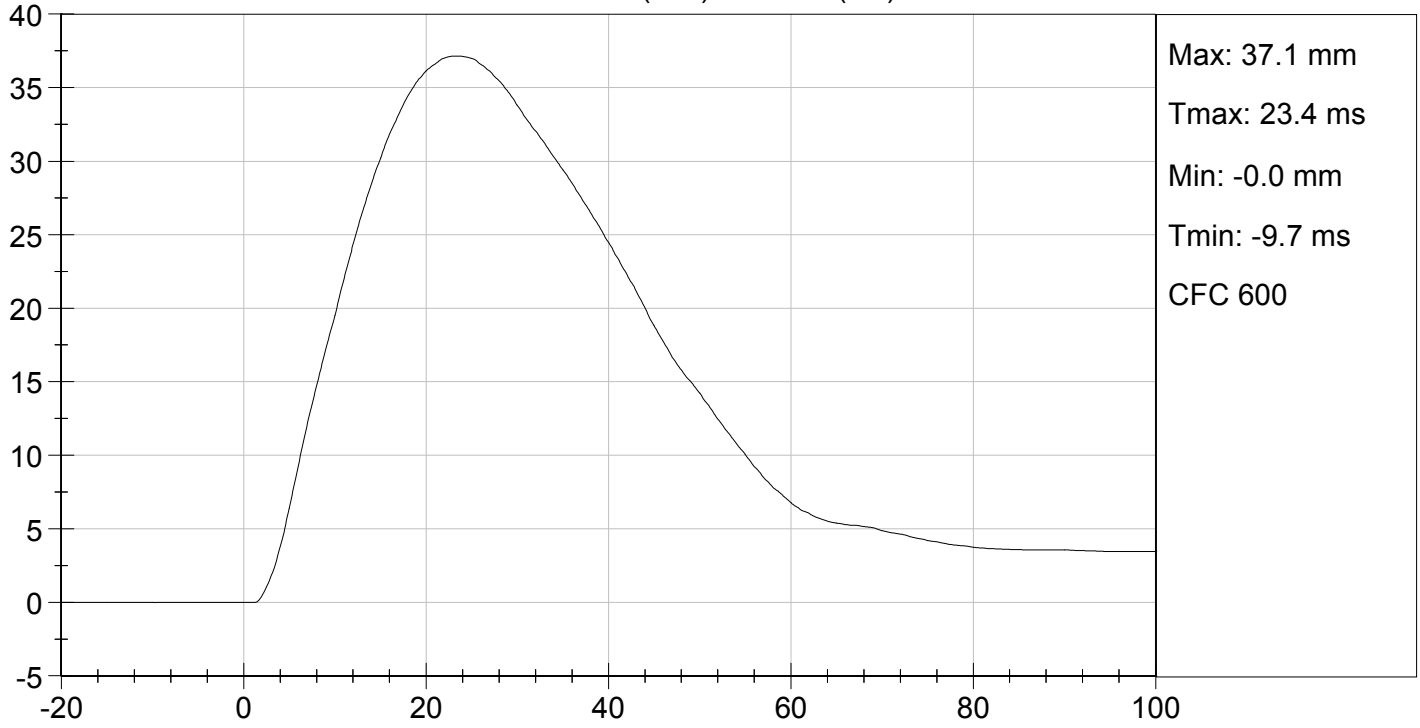
UPPER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



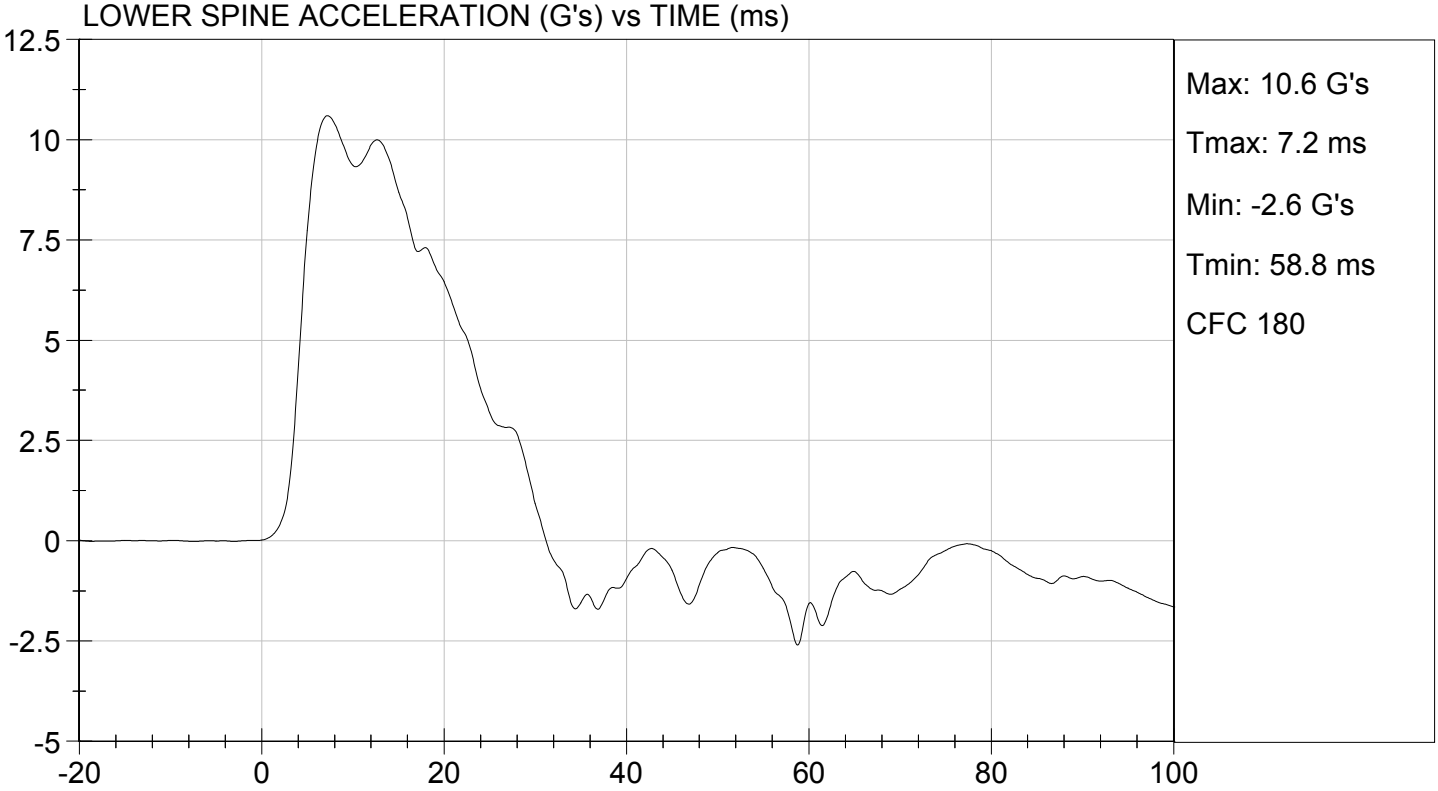
TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 11/09/2012
TEST #: D124306

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:** D124307

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	32	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	41	Pass
Peak Acetabulum Force	N	3600 to 4300	3,824	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

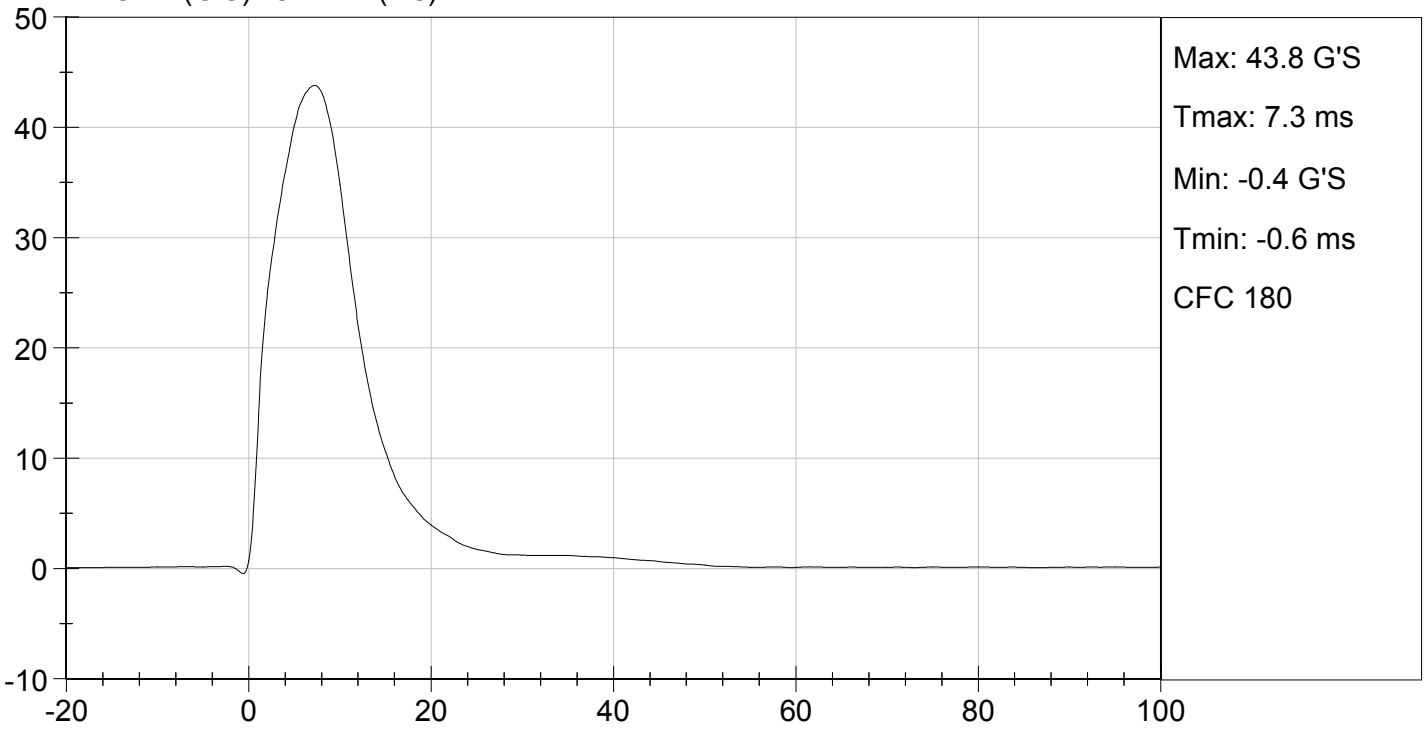
11/09/2012
Test Date

David Winkelbauer
Approved By

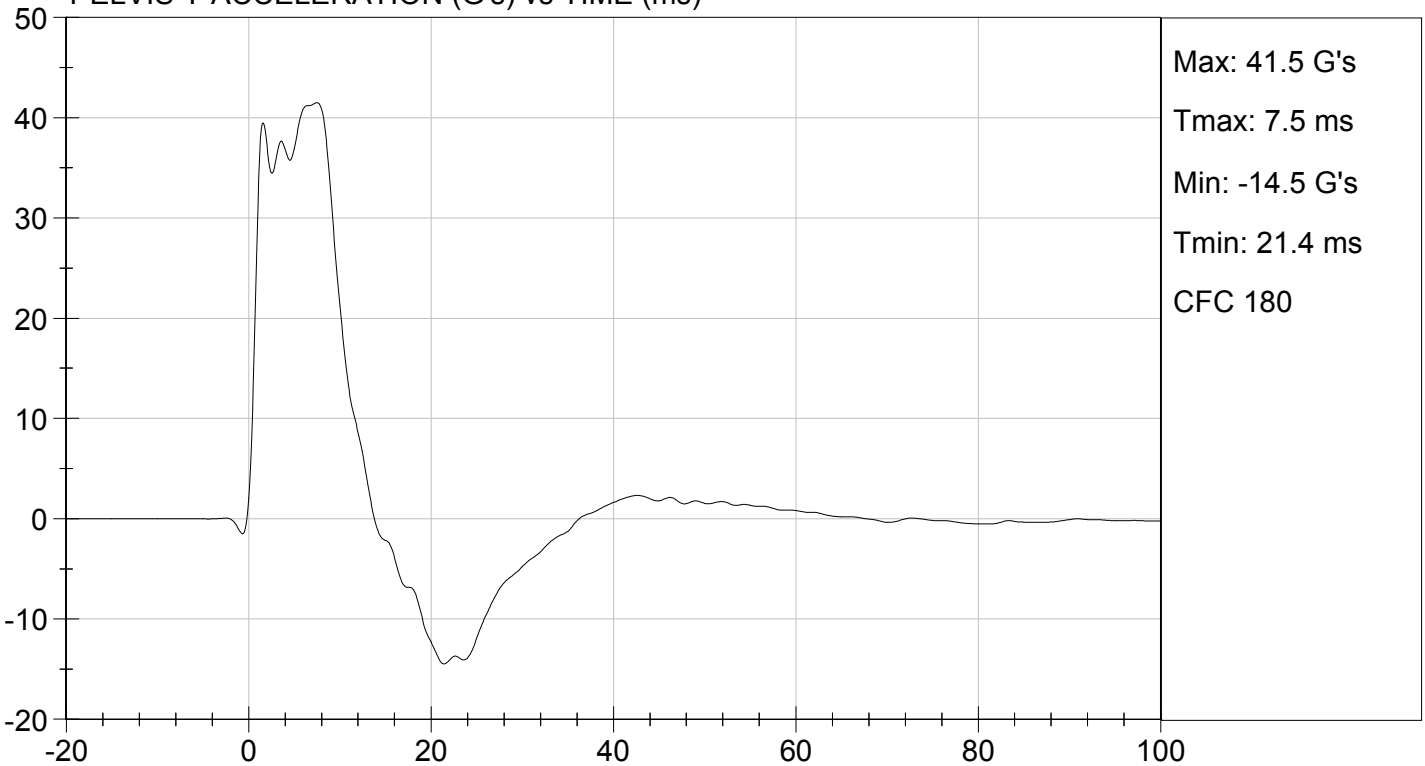
TEST DESC: PELVIS IMPACT
VELOCITY: 21.90 ft/s, 6.68 m/s

TEST DATE: 11/09/2012
TEST #: D124307

PROBE (G'S) vs TIME (ms)

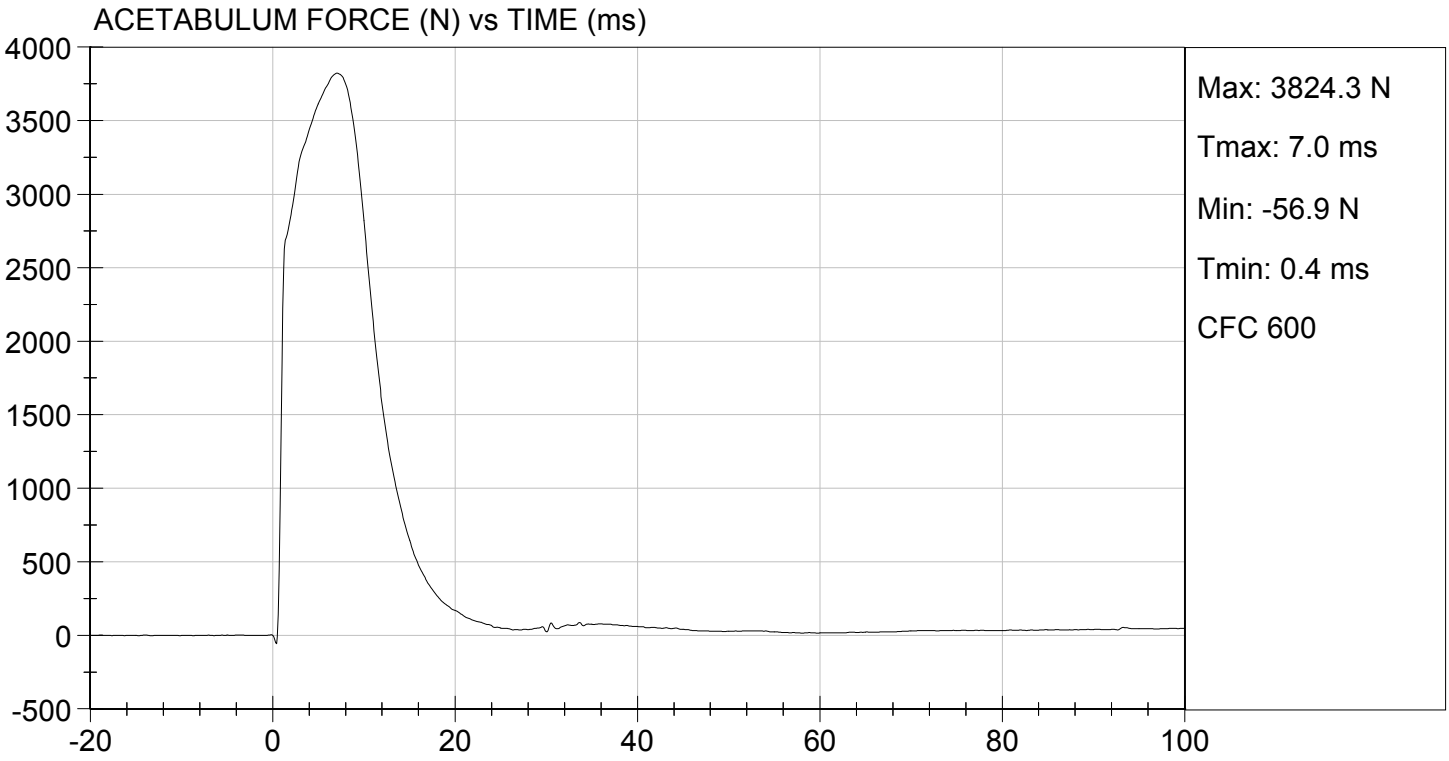


PELVIS Y ACCELERATION (G's) vs TIME (ms)



TEST DESC: PELVIS IMPACT
VELOCITY: 21.90 ft/s, 6.68 m/s

TEST DATE: 11/09/2012
TEST #: D124307



MGA RESEARCH CORPORATION

ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D124308

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	32	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	33	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,780	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

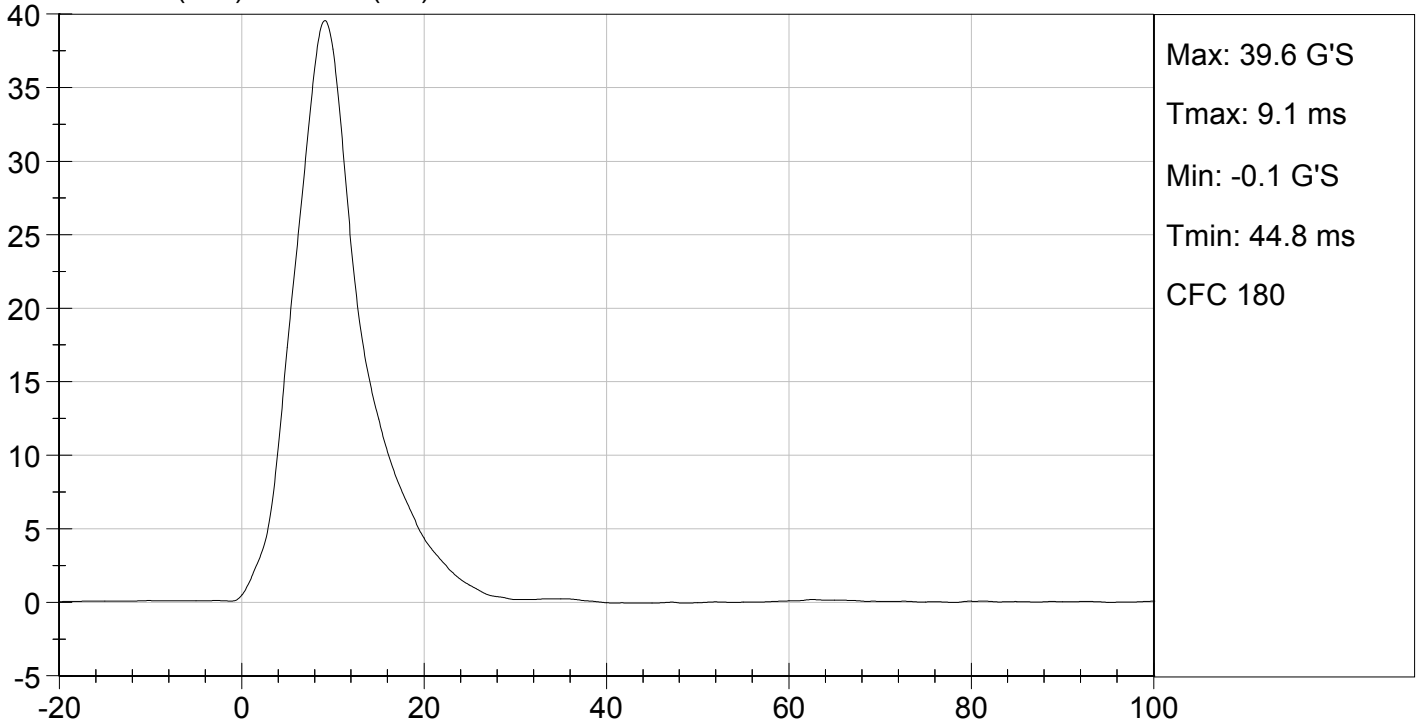
11/09/2012
Test Date

David Winkelbauer
Approved By

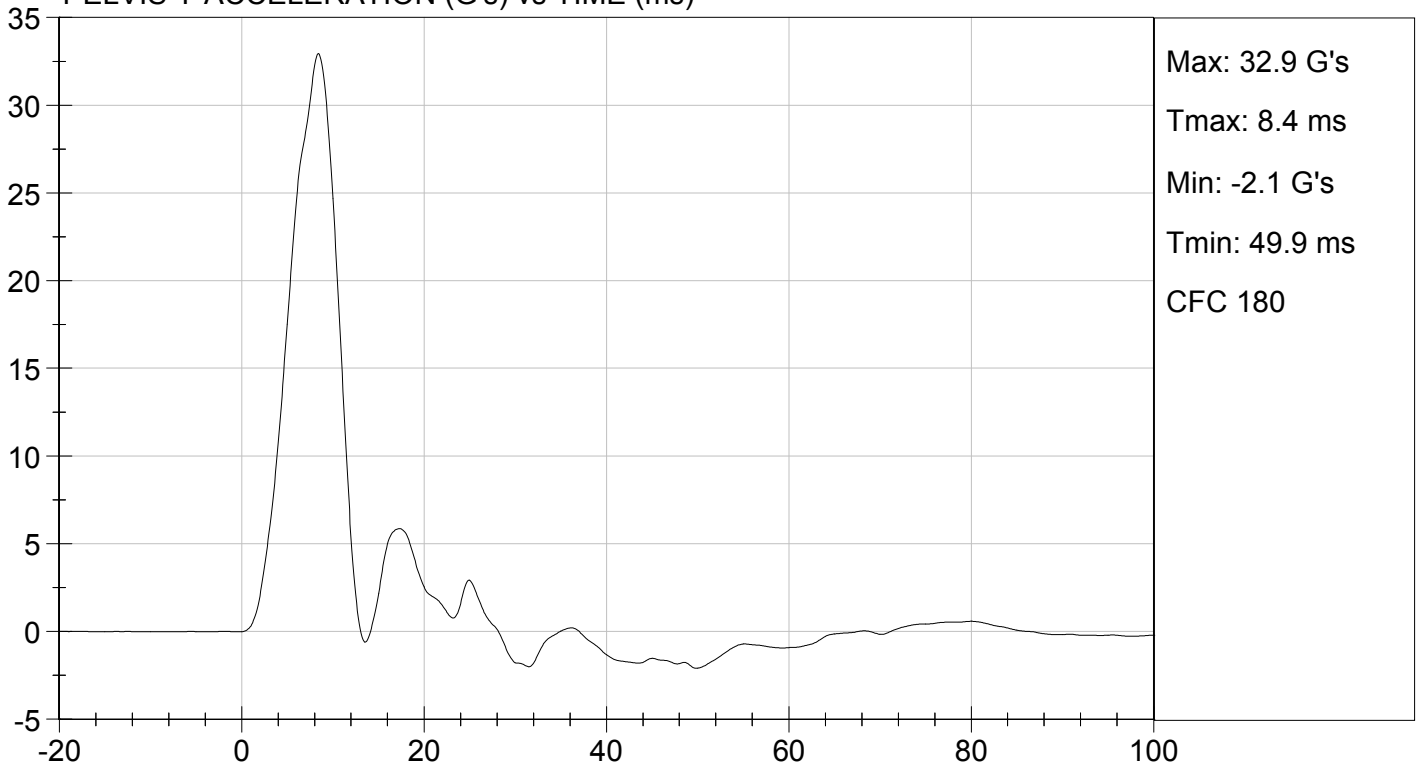
TEST DESC: ILLIAC
VELOCITY: 13.88 ft/s, 4.23 m/s

TEST DATE: 11/09/2012
TEST #: D124308

PROBE (G'S) vs TIME (ms)

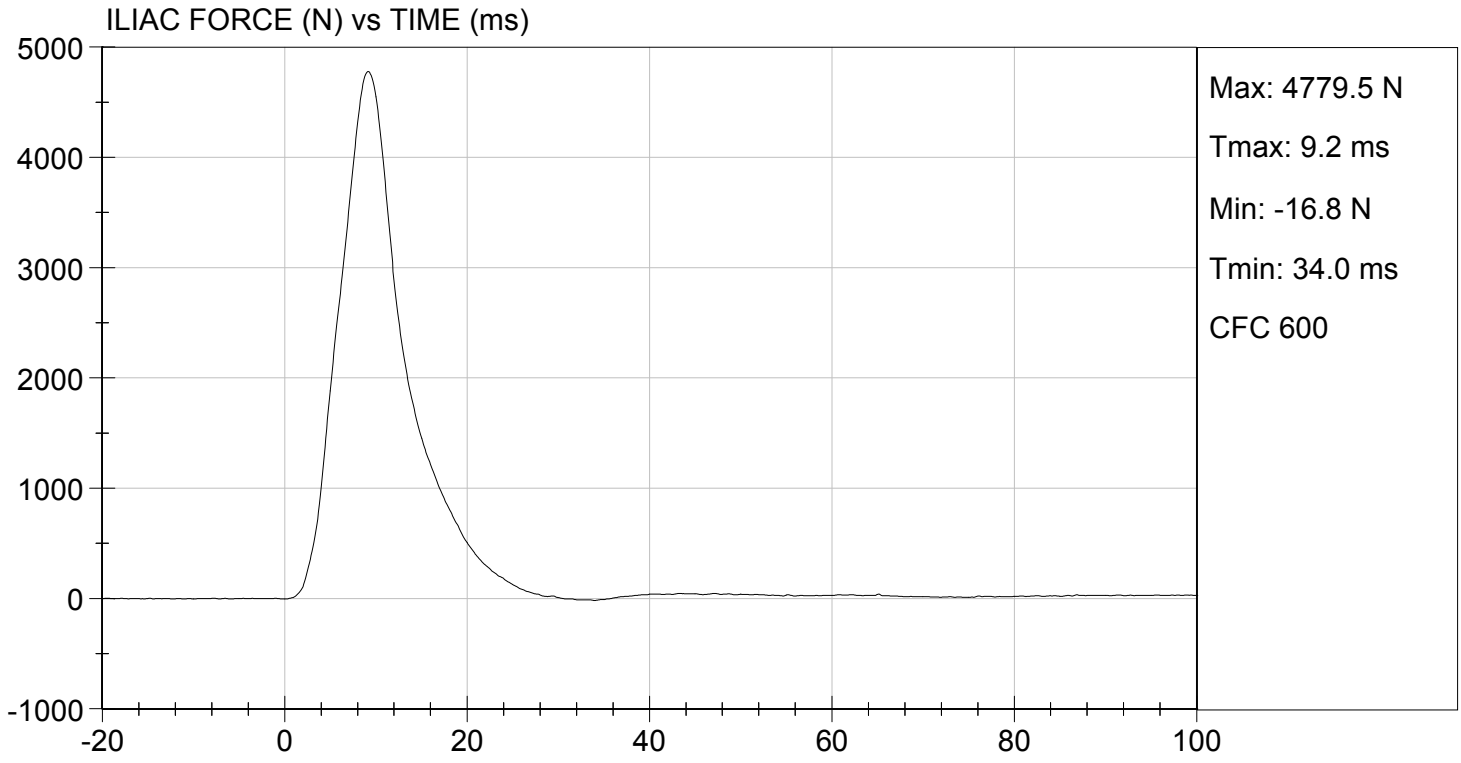


PELVIS Y ACCELERATION (G's) vs TIME (ms)



TEST DESC: ILLIAC
VELOCITY: 13.88 ft/s, 4.23 m/s

TEST DATE: 11/09/2012
TEST #: D124308



MGA RESEARCH CORPORATION

HEAD DROP TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test ID:** D124401

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	25	Pass
Peak Resultant Acceleration	G's	115 to 137	120	Pass
Peak Longitudinal Acceleration	G's	+/- 15	1.8	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

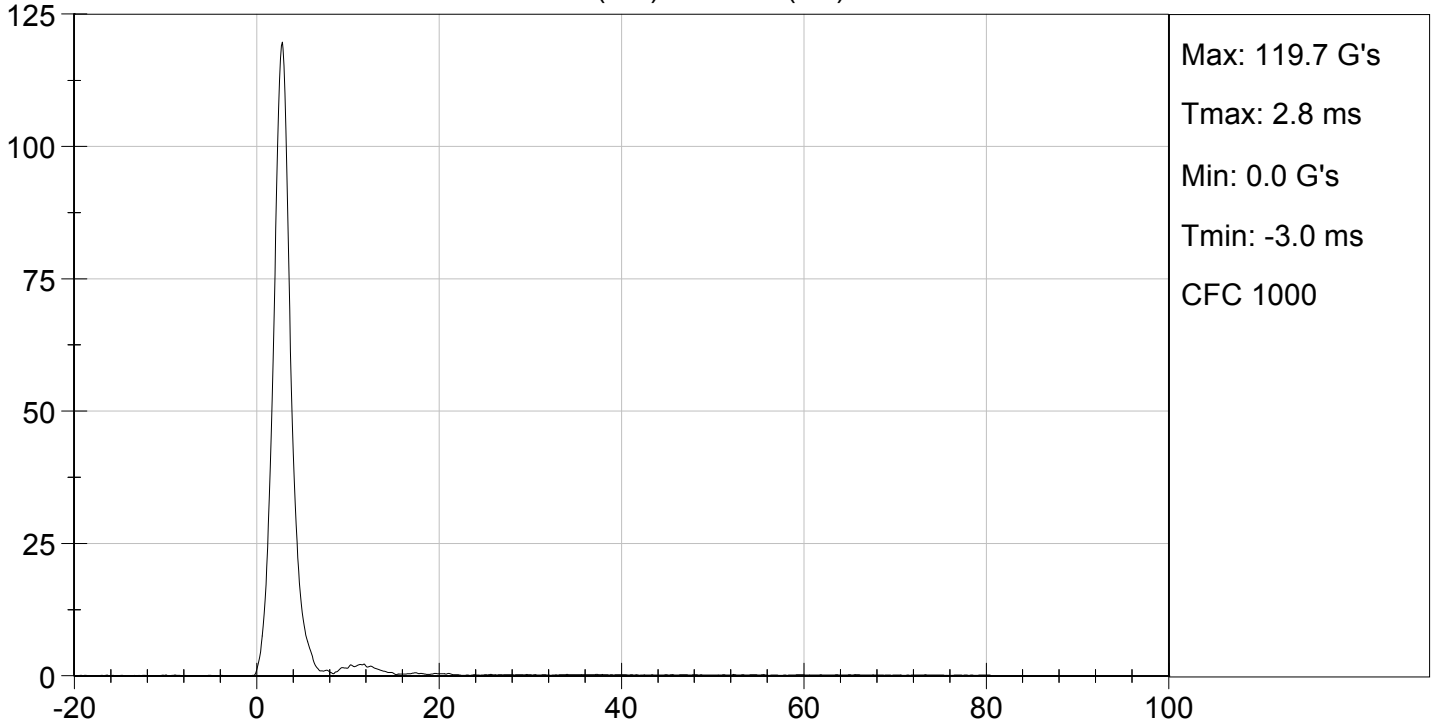
11/15/2012
Test Date

David Winkelbauer
Approved By

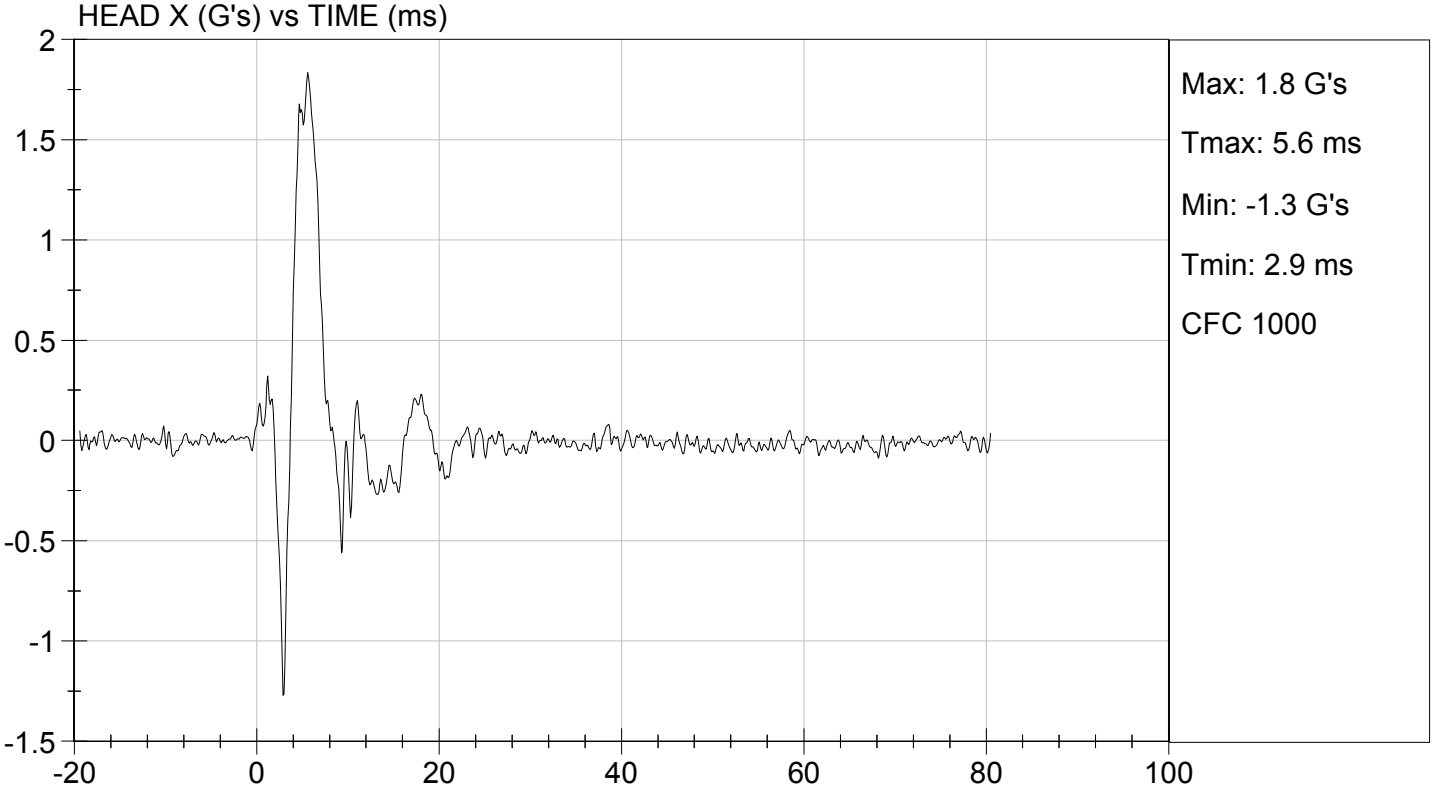
TEST DESC: HEAD DROP

TEST DATE: 11/15/2012
TEST #: D124401

HEAD RESULTANT ACCELERATION (G's) vs TIME (ms)



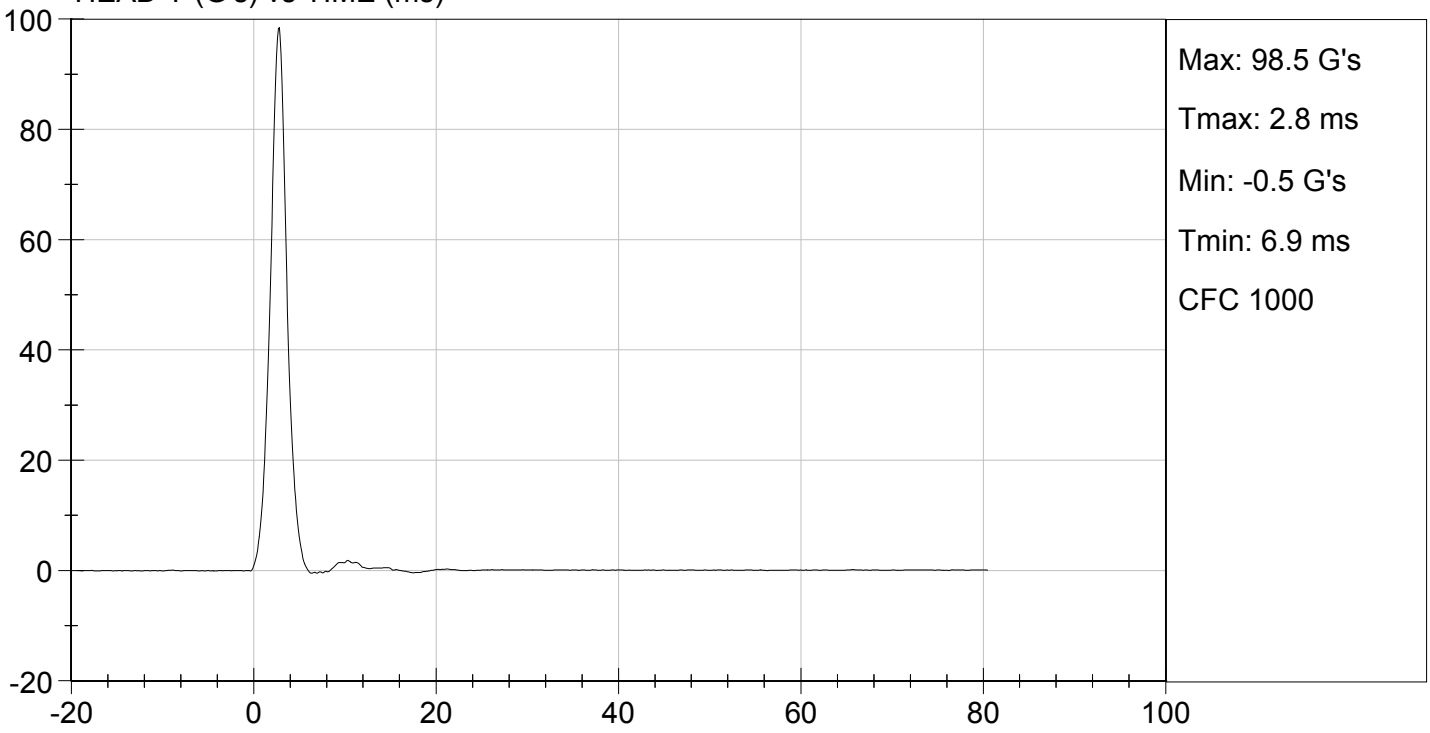
HEAD X (G's) vs TIME (ms)



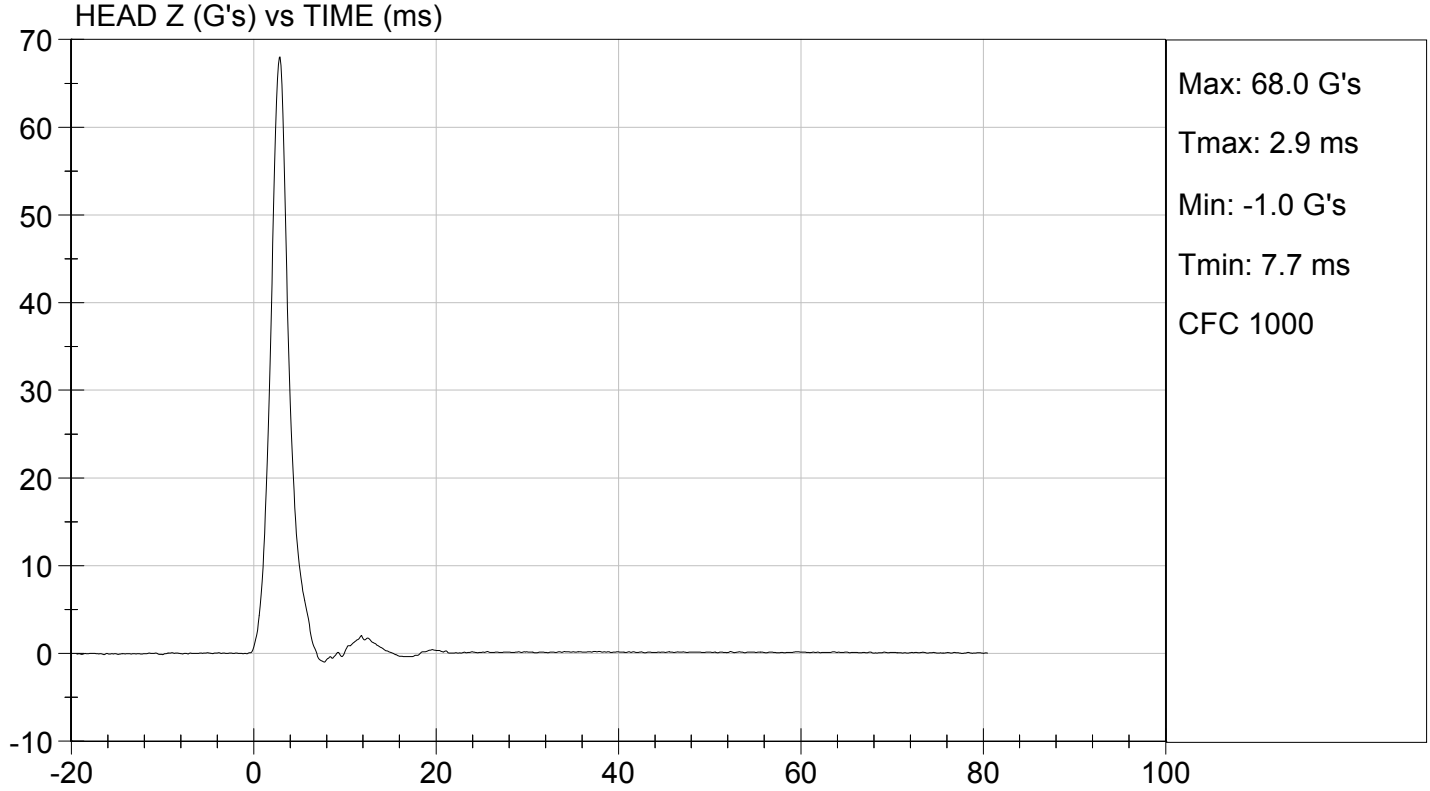
TEST DESC: HEAD DROP

TEST DATE: 11/15/2012
TEST #: D124401

HEAD Y (G's) vs TIME (ms)



HEAD Z (G's) vs TIME (ms)



MGA RESEARCH CORPORATION

LATERAL NECK PENDULUM TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D124402

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	22.0	Pass
Humidity		%	10 to 70	25	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.43	Pass
	15 ms	m/s	3.30 to 4.10	3.51	Pass
	20 ms	m/s	4.40 to 5.40	4.75	Pass
	25 ms	m/s	5.40 to 6.10	5.48	Pass
	25-100 ms	m/s	5.50 to 6.20	5.62	Pass
Maximum D-Plane Rotation		deg	71 to 81	72	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	60	Pass
Maximum Occipital Condyle Moment		Nm	-44 to -36	-41	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	118	Pass
			Overall Test Results		Pass

Jessica Gall
Laboratory Technician

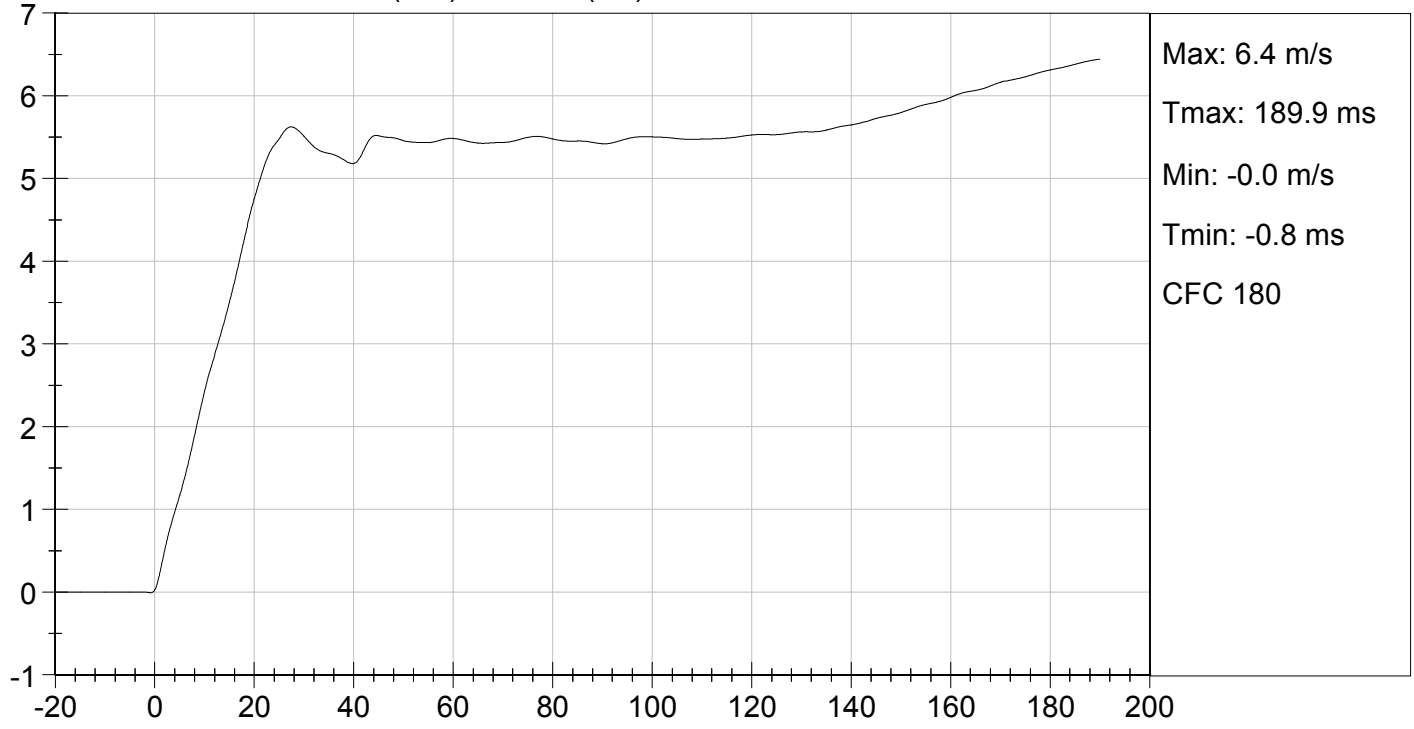
11/15/2012
Test Date

David Winkelbauer
Approved By

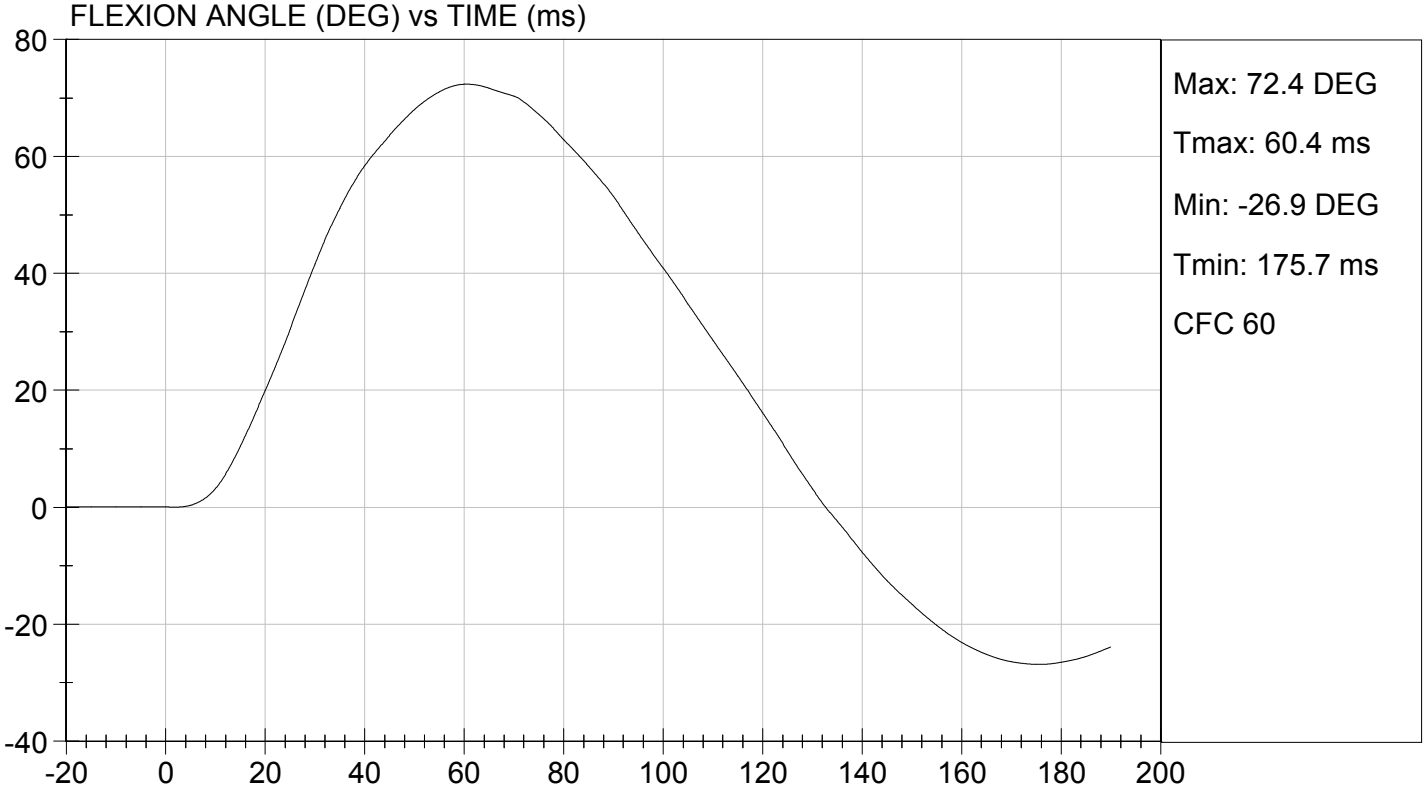
TEST DESC: NECK BENDING
VELOCITY: 18.32 ft/s, 5.58 m/s

TEST DATE: 11/15/2012
TEST #: D124402

PENDULUM VELOCITY (m/s) vs TIME (ms)

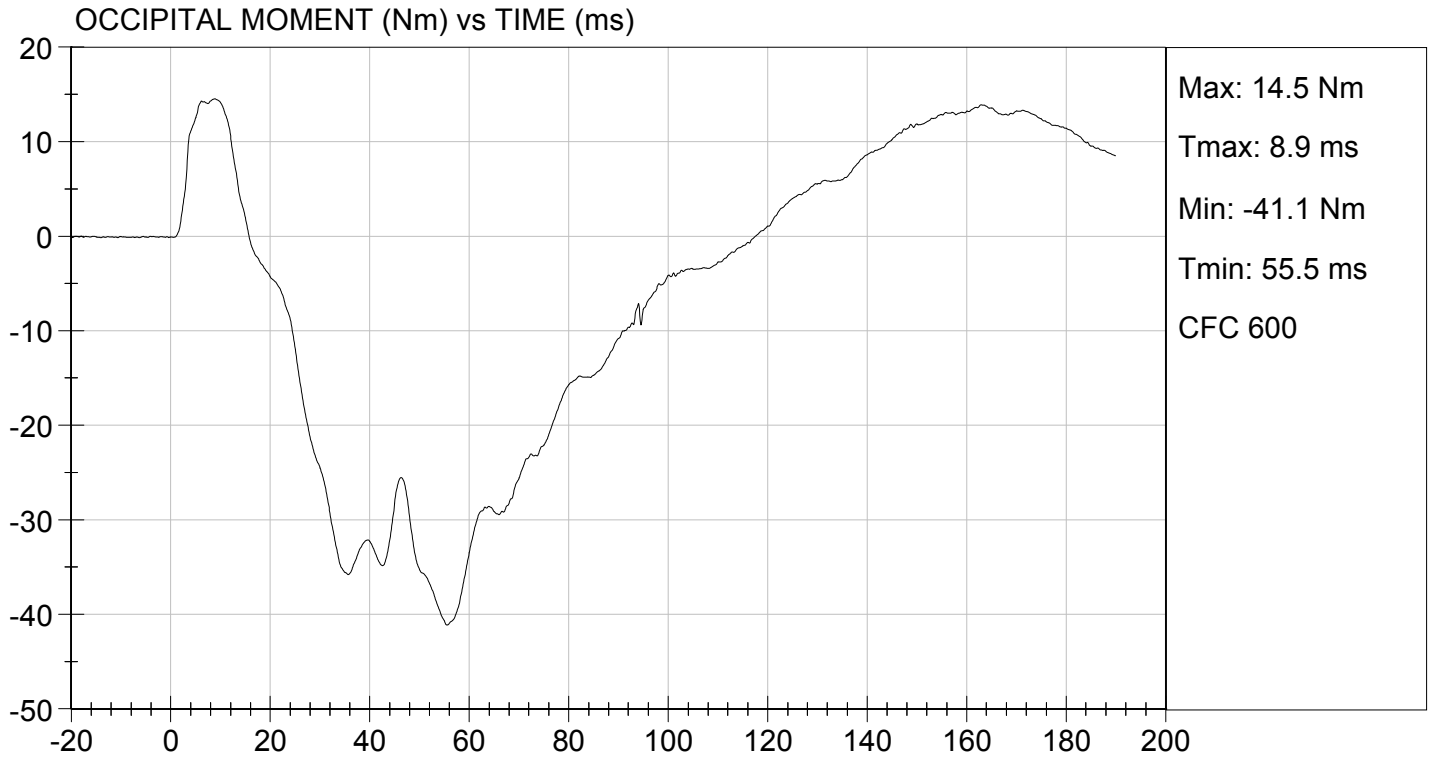


FLEXION ANGLE (DEG) vs TIME (ms)



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

TEST DATE: 11/15/2012
TEST #: D124402



MGA RESEARCH CORPORATION

SHOULDER IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test ID:** D124403

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	25	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	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

Jessica Gall
Laboratory Technician

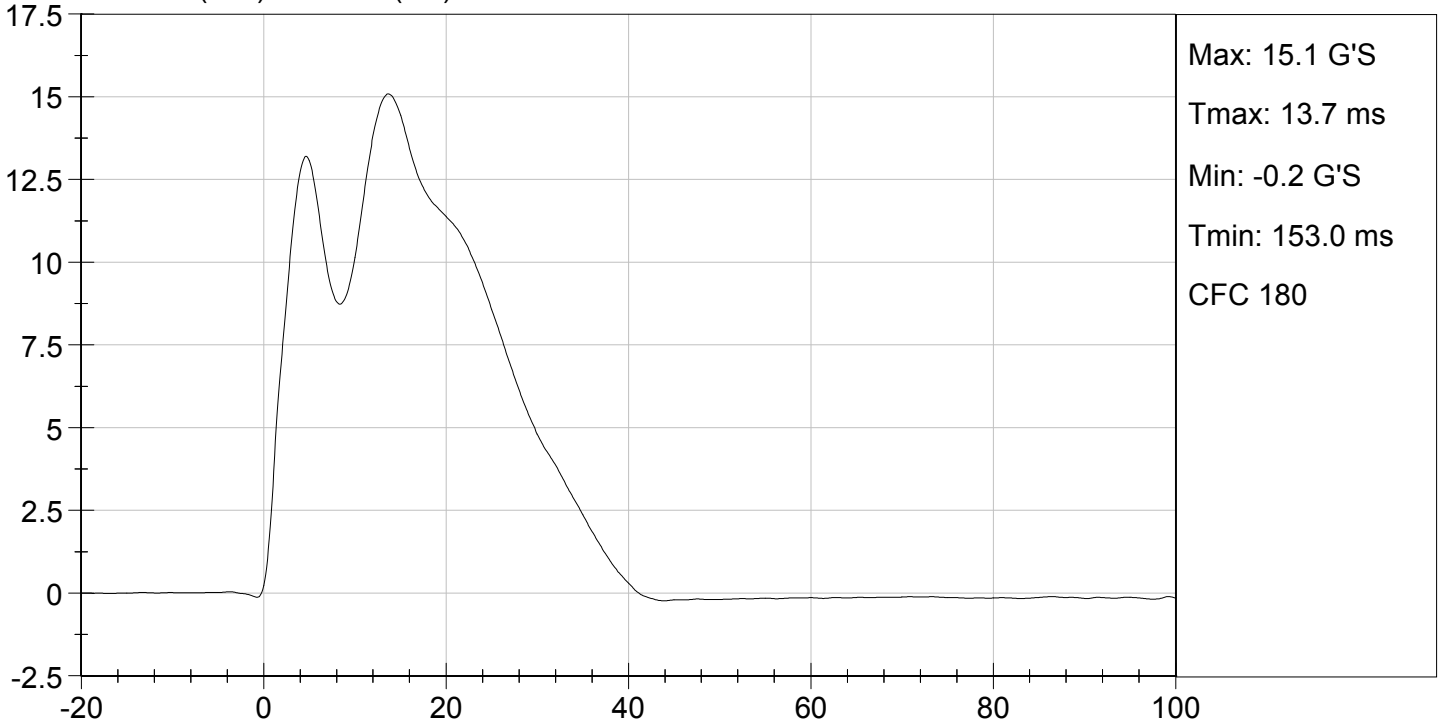
11/15/2012
Test Date

David Winkelbauer
Approved By

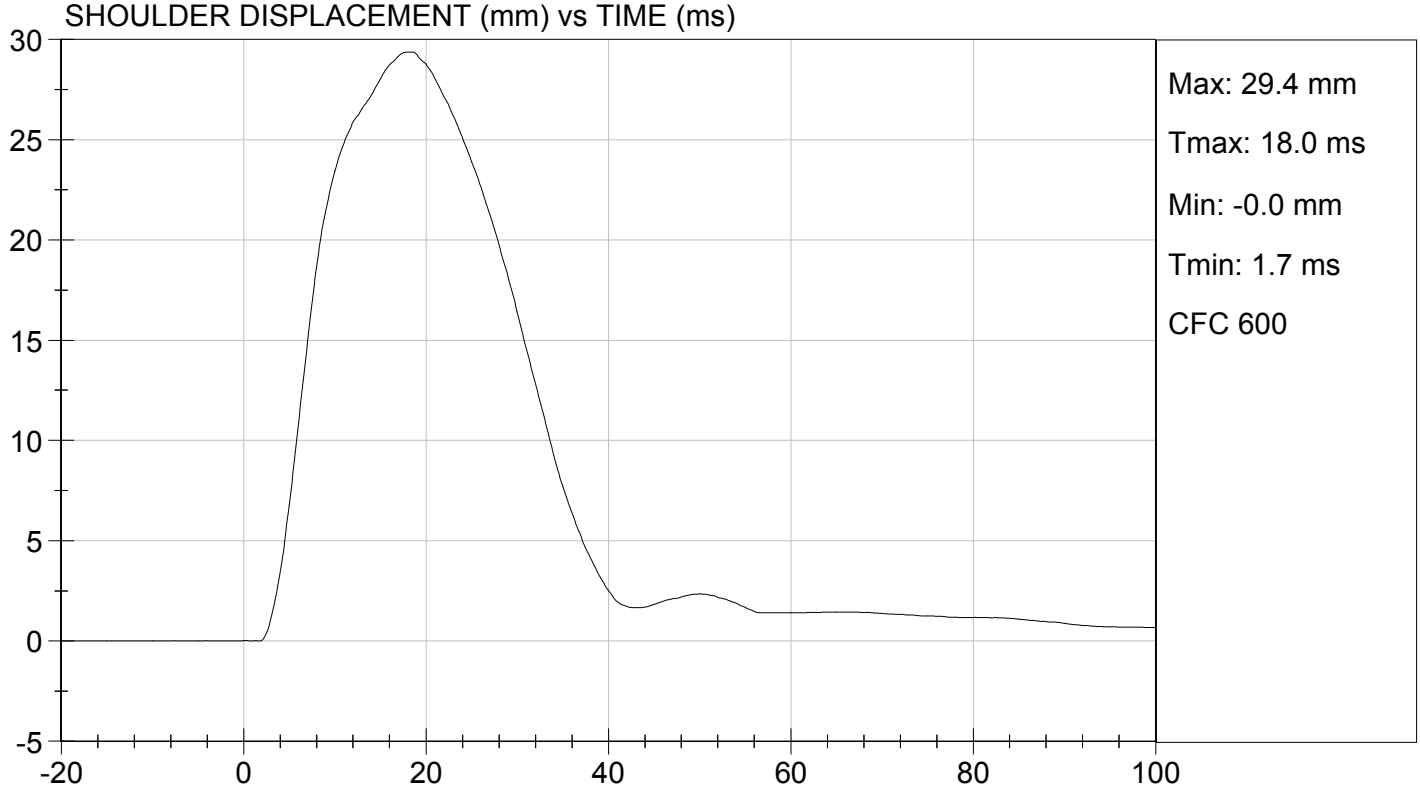
TEST DESC: SHOULDER IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/15/2012
TEST #: D124403

PROBE (G'S) vs TIME (ms)

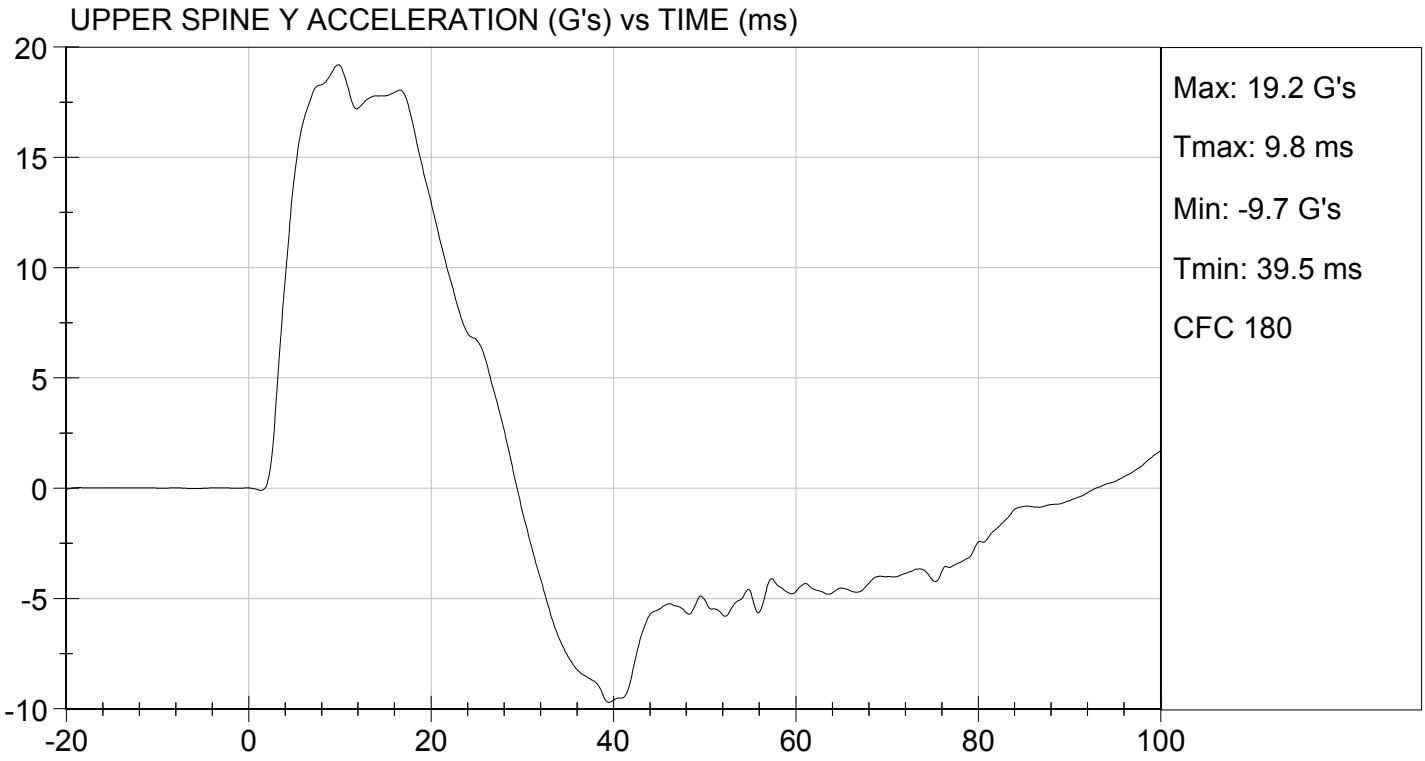


SHOULDER DISPLACEMENT (mm) vs TIME (ms)



TEST DESC: SHOULDER IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/15/2012
TEST #: D124403



MGA RESEARCH CORPORATION

THORAX (WITH ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D124404

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	25	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	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	34	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

Jessica Hall
Laboratory Technician

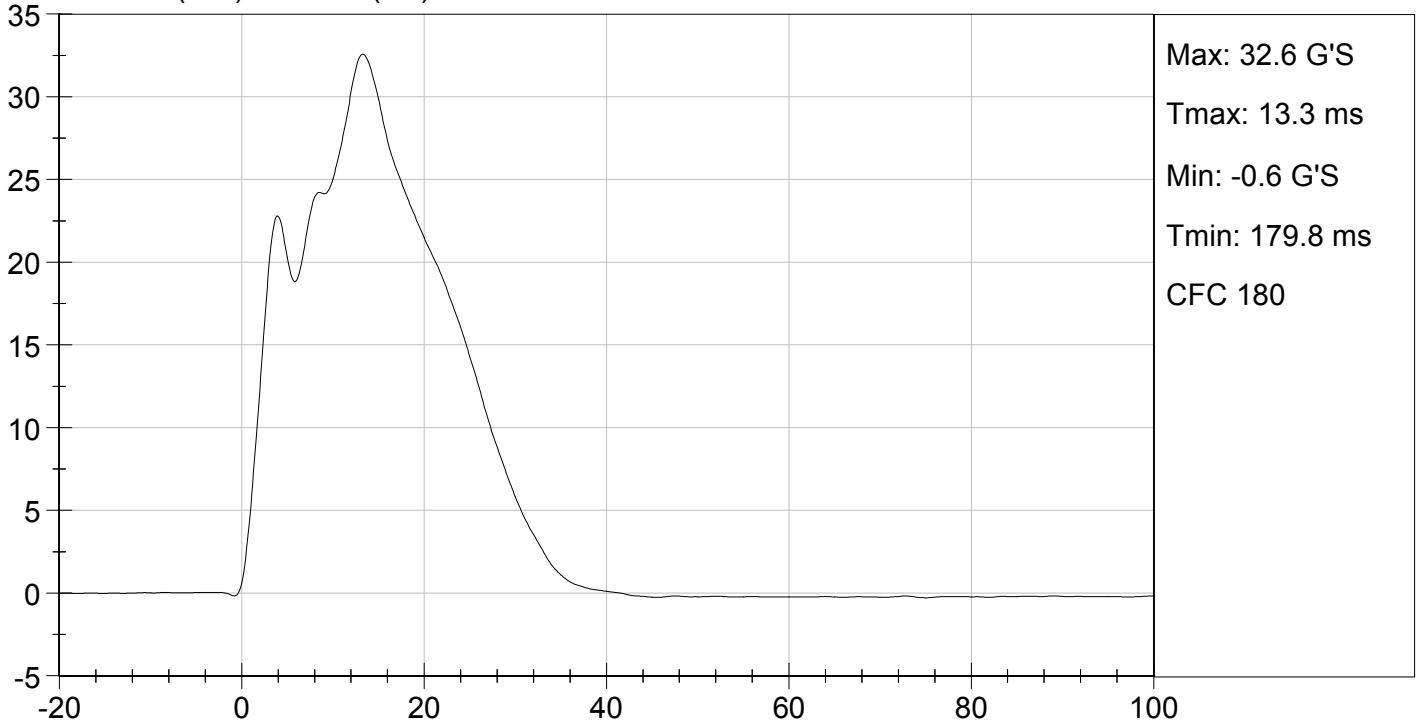
11/15/2012
Test Date

David Winkelbauer
Approved By

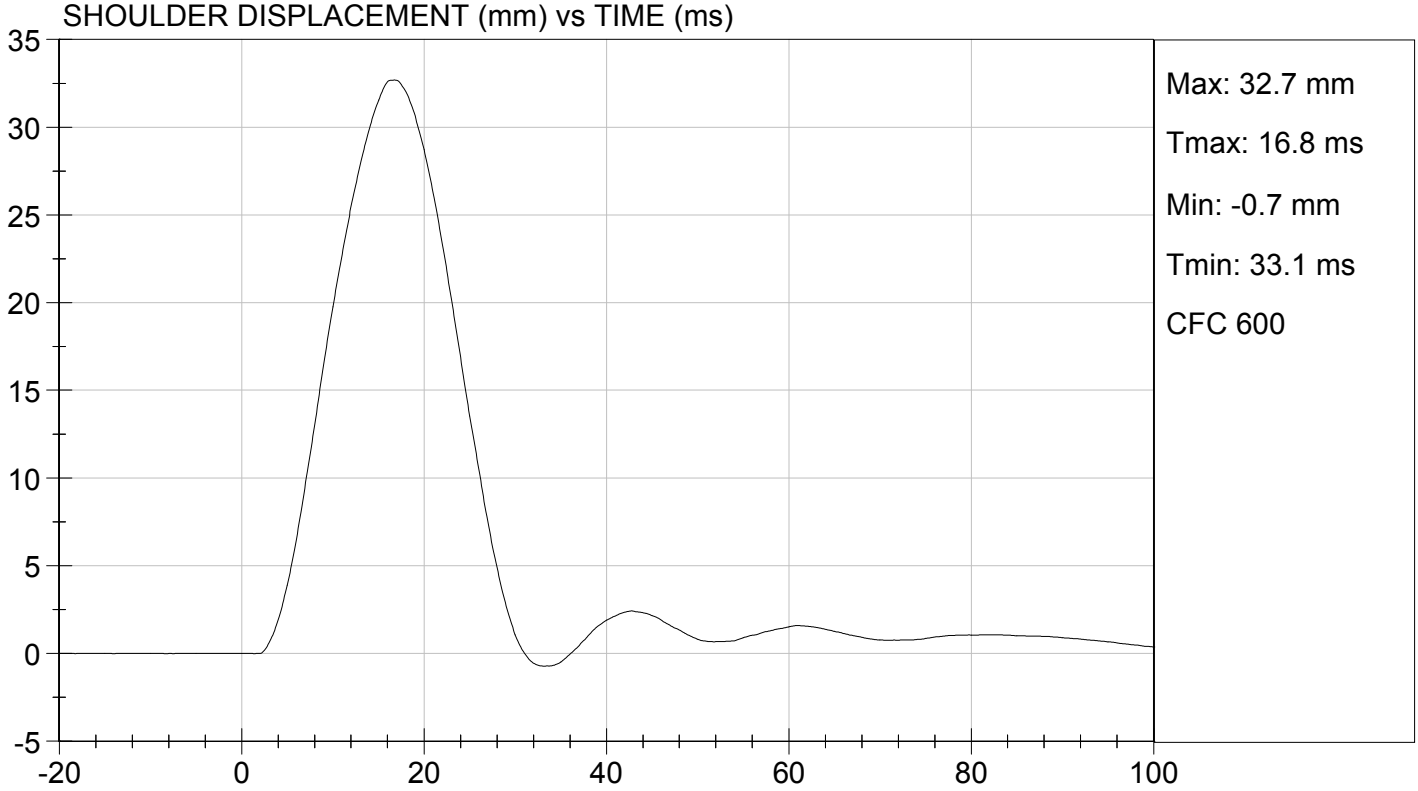
TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 11/15/2012
TEST #: D124404

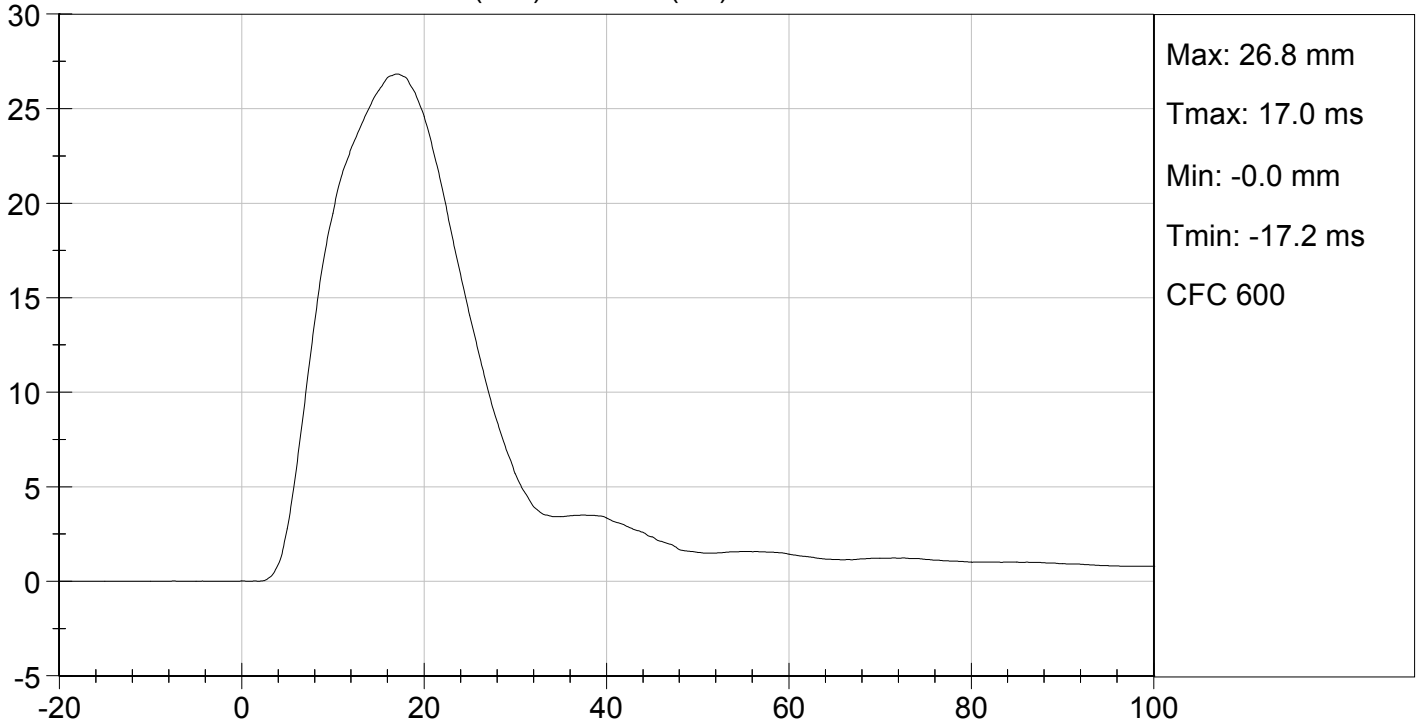
PROBE (G'S) vs TIME (ms)



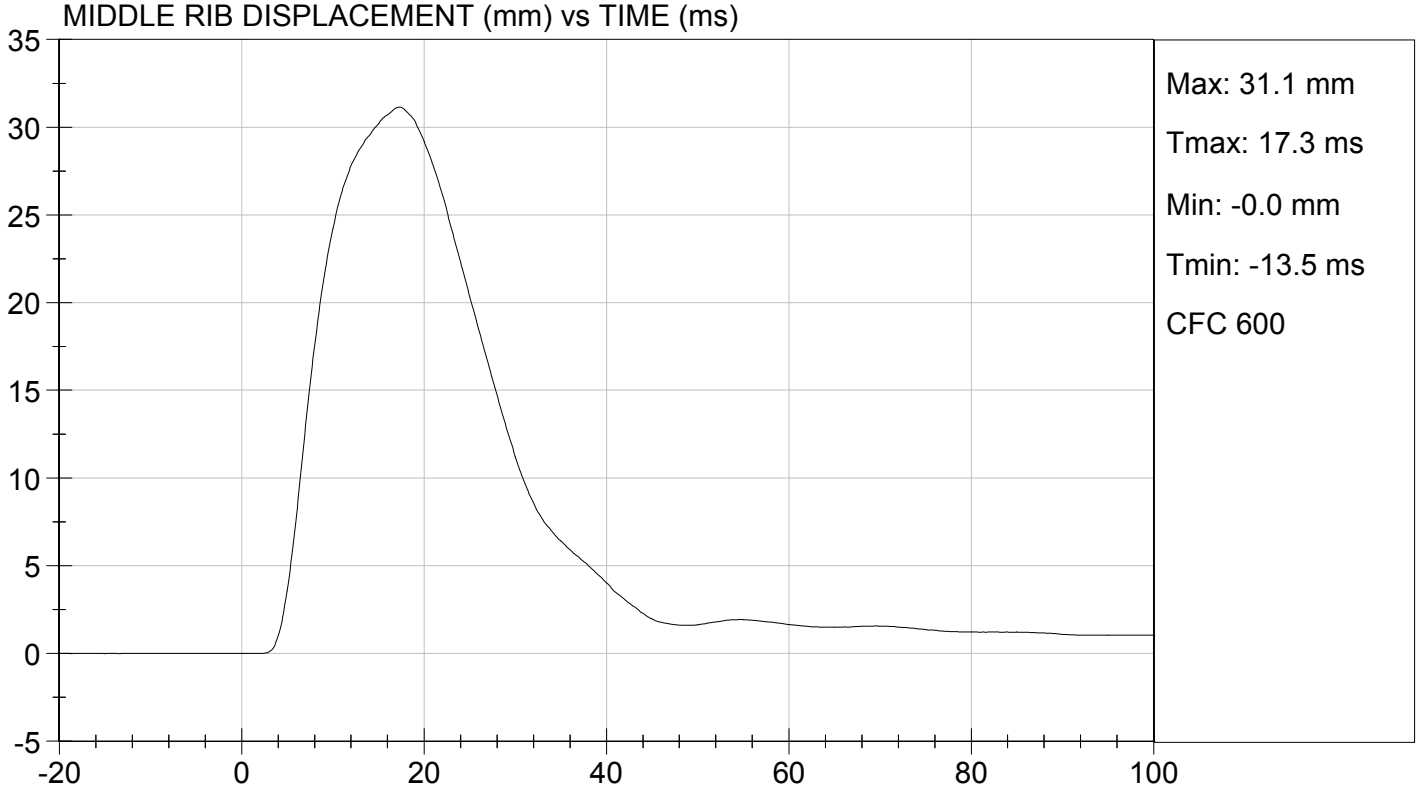
SHOULDER DISPLACEMENT (mm) vs TIME (ms)



UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



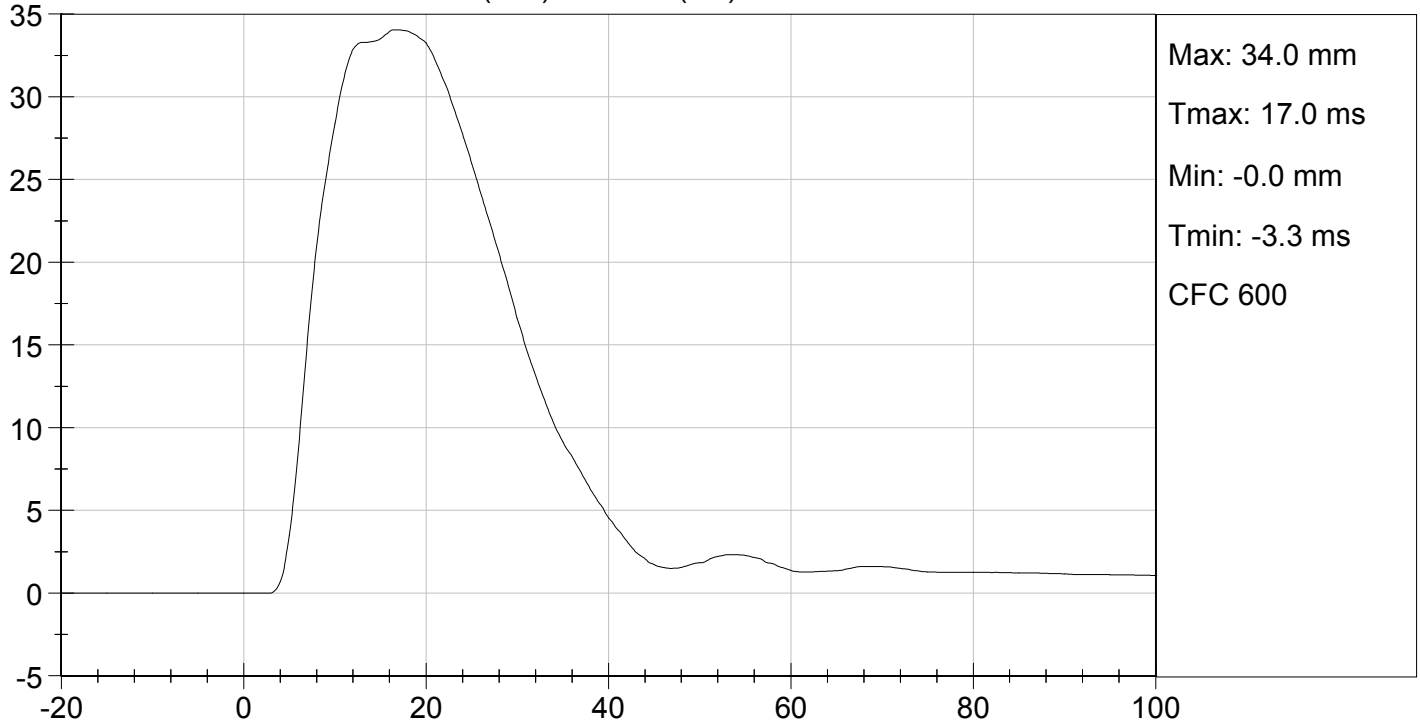
MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



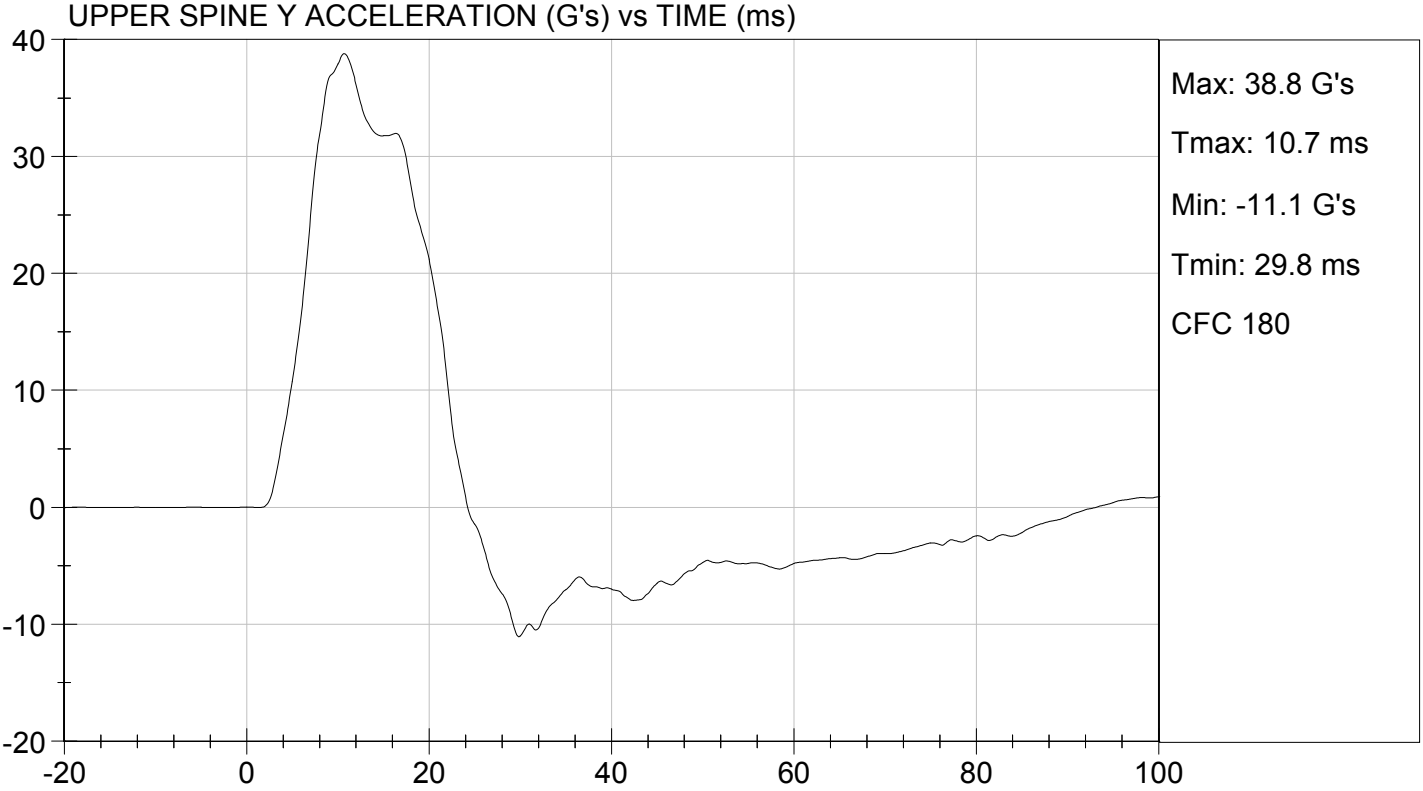
TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 11/15/2012
TEST #: D124404

LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



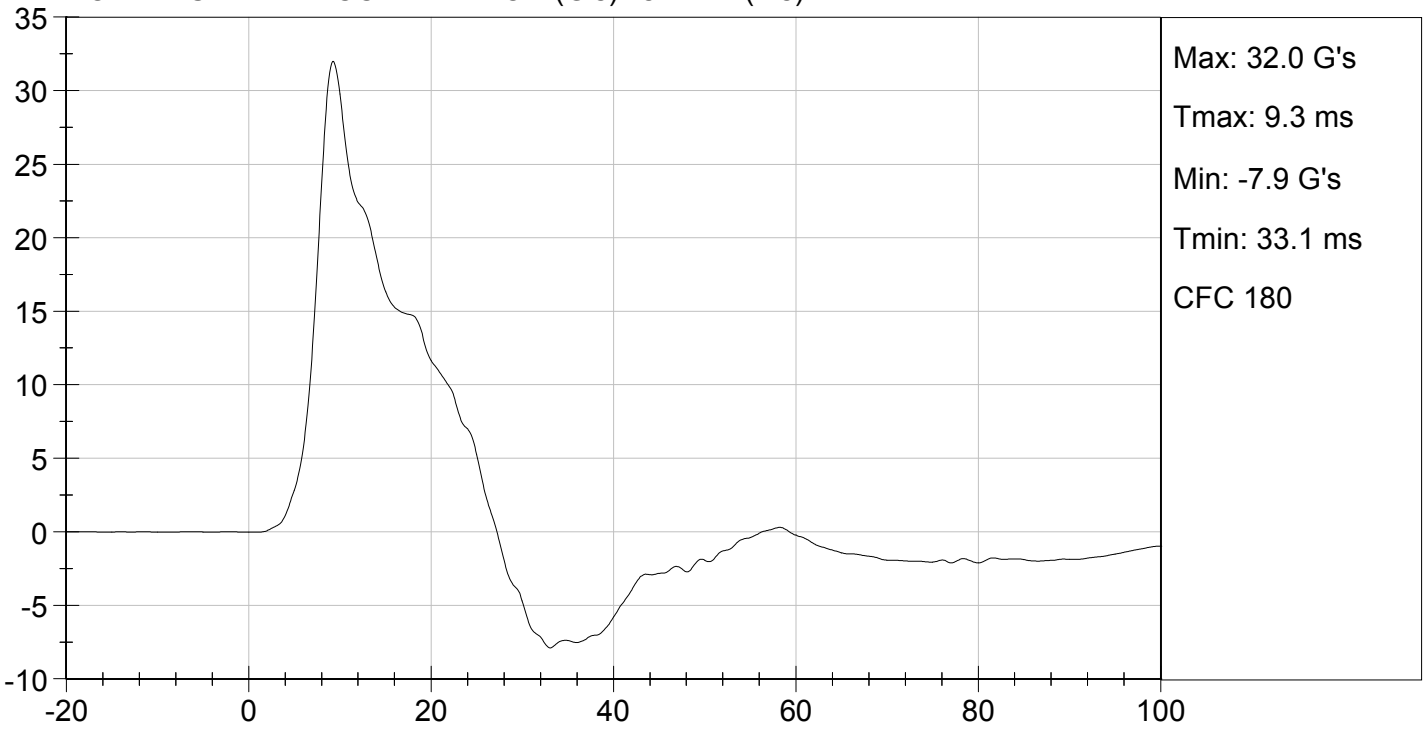
UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)



TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 11/15/2012
TEST #: D124404

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



MGA RESEARCH CORPORATION

THORAX (WITHOUT ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D124405

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	25	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	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	41	Pass
Lower Rib Displacement	mm	35 to 43	38	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	14	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	8	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

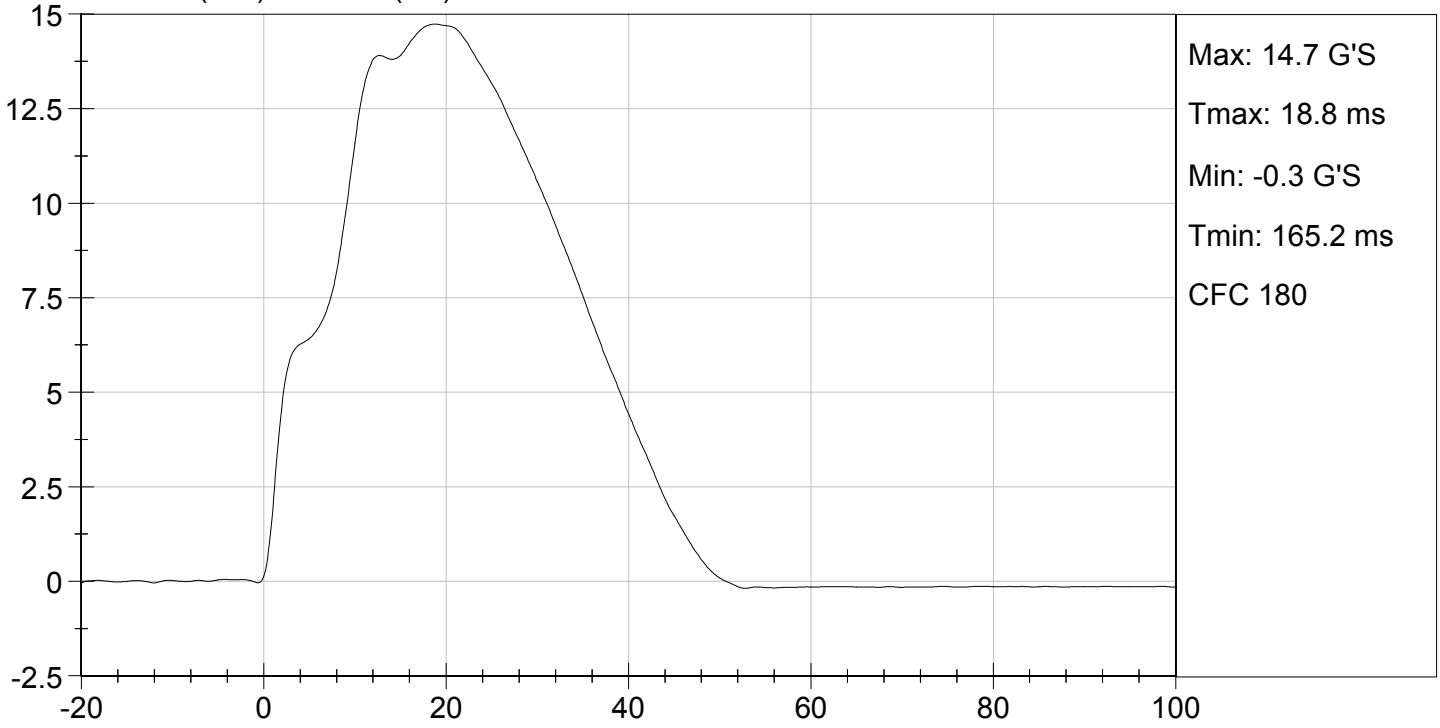
11/15/2012
Test Date

David Winkelbauer
Approved By

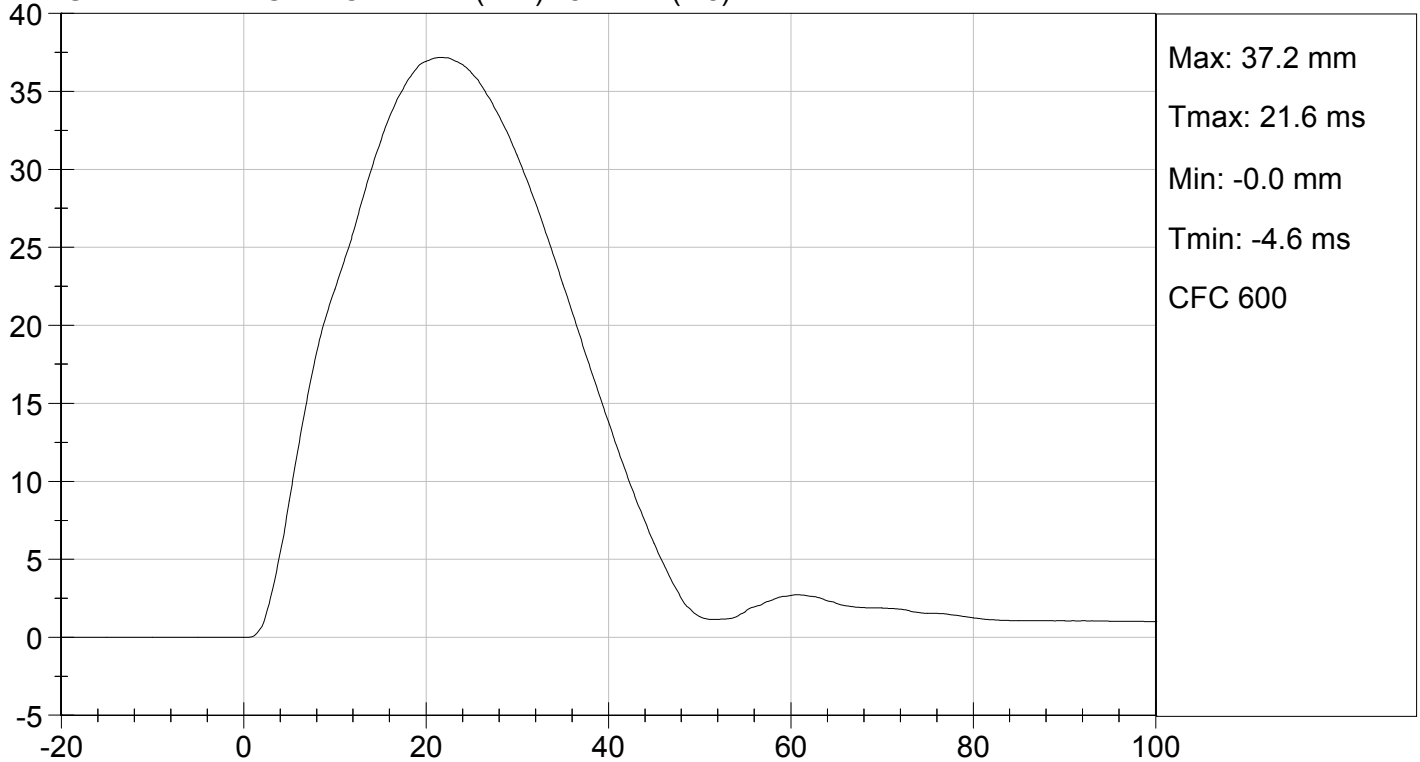
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/15/2012
TEST #: D124405

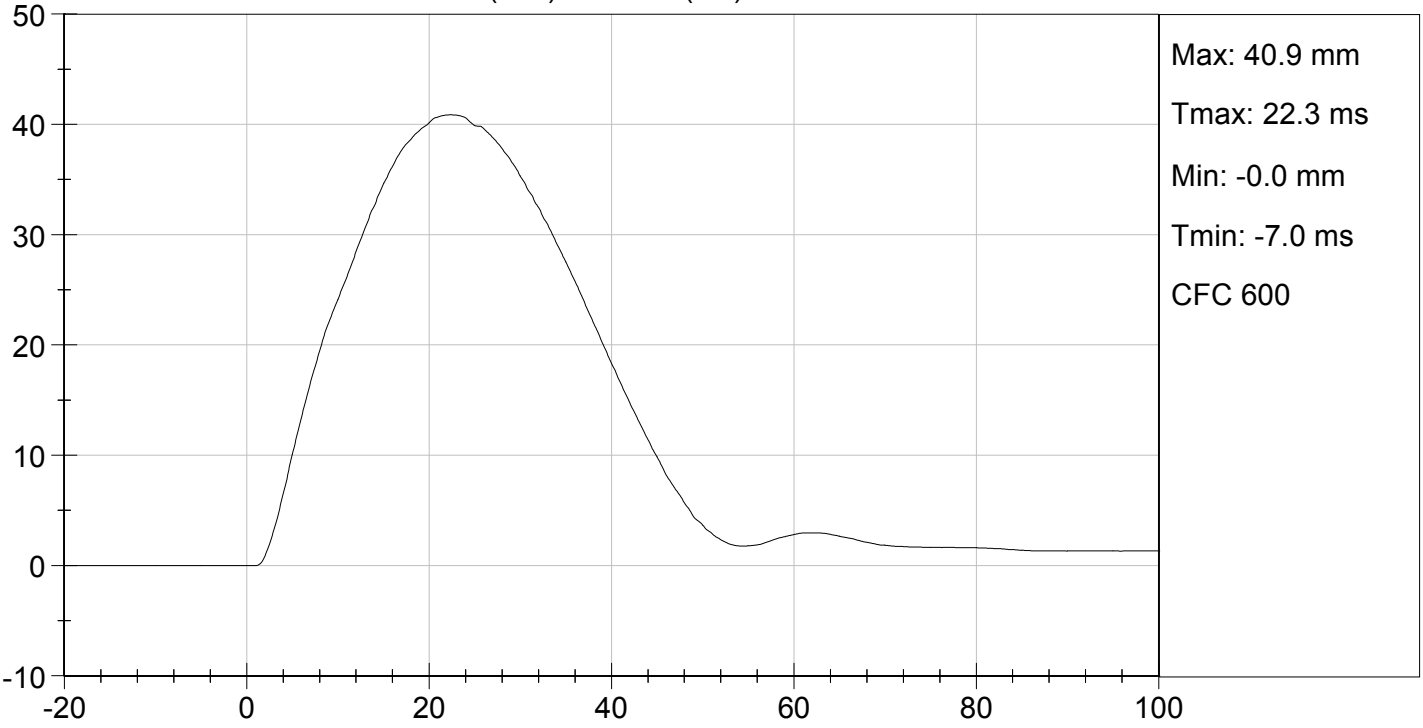
PROBE (G'S) vs TIME (ms)



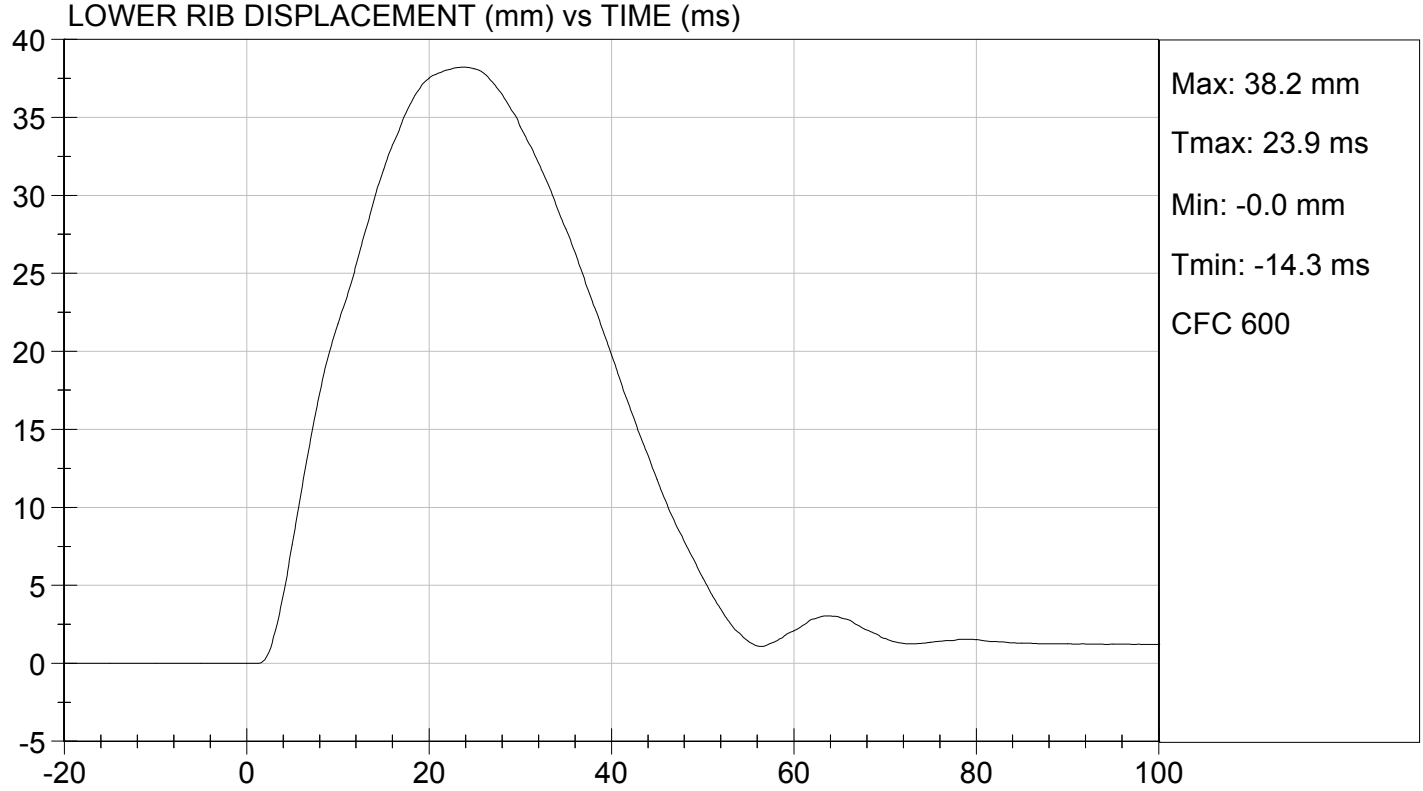
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



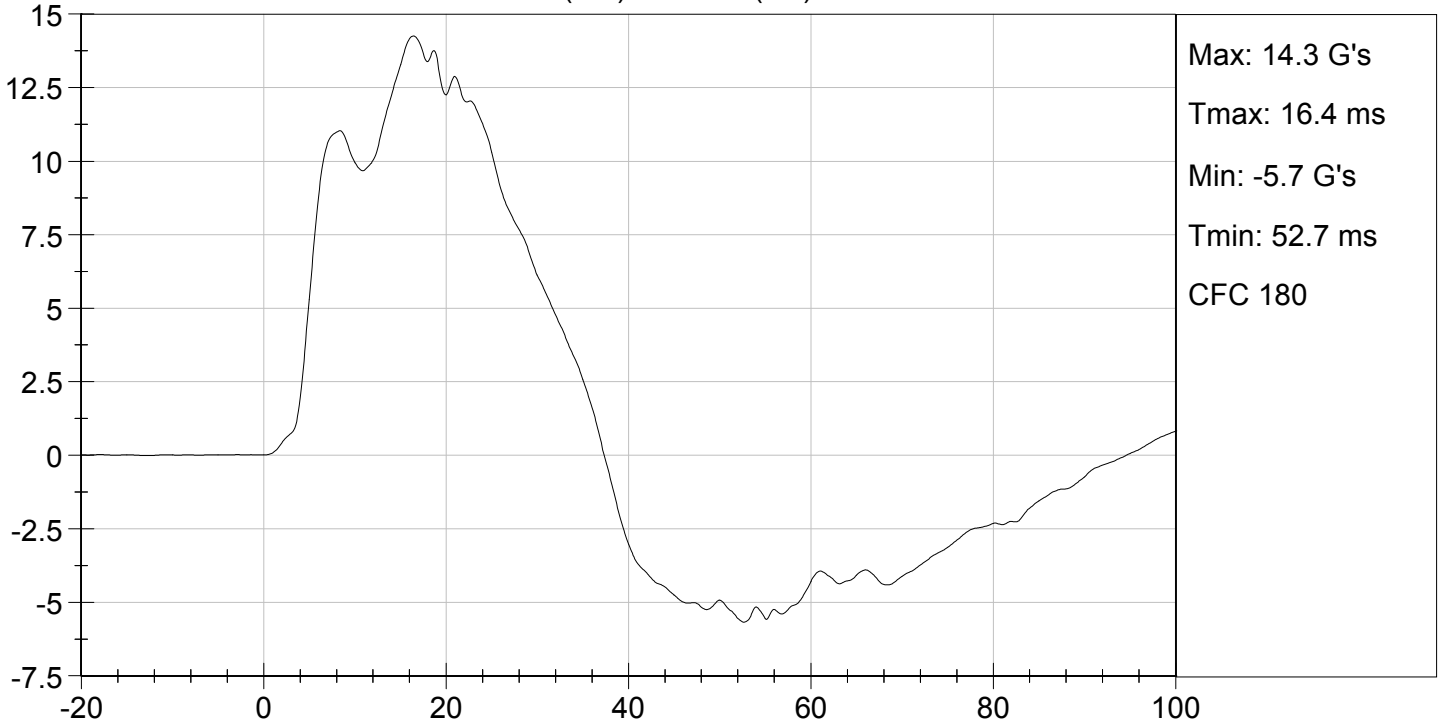
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



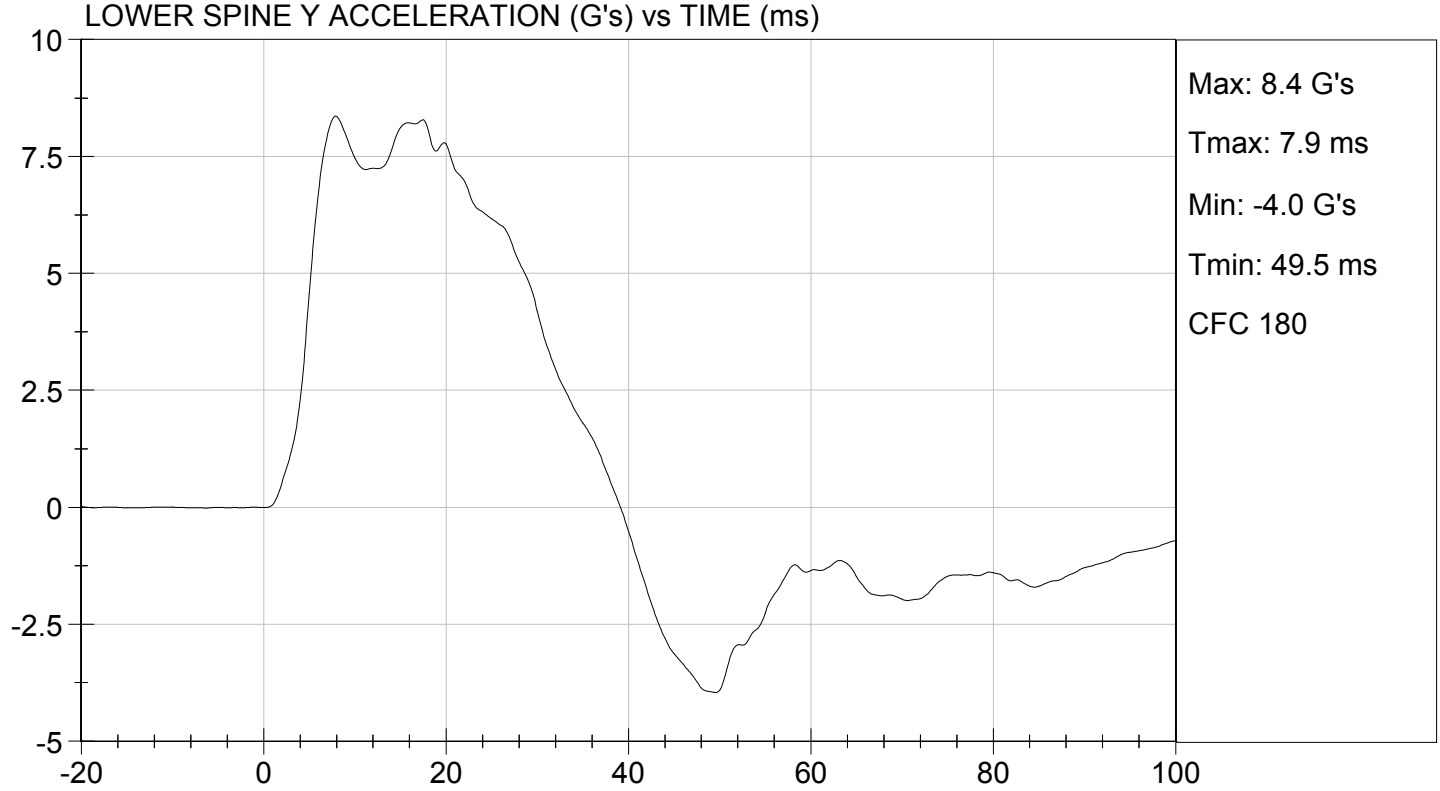
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/15/2012
TEST #: D124405

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:** D124406

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	25	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	38	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	37	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	10	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

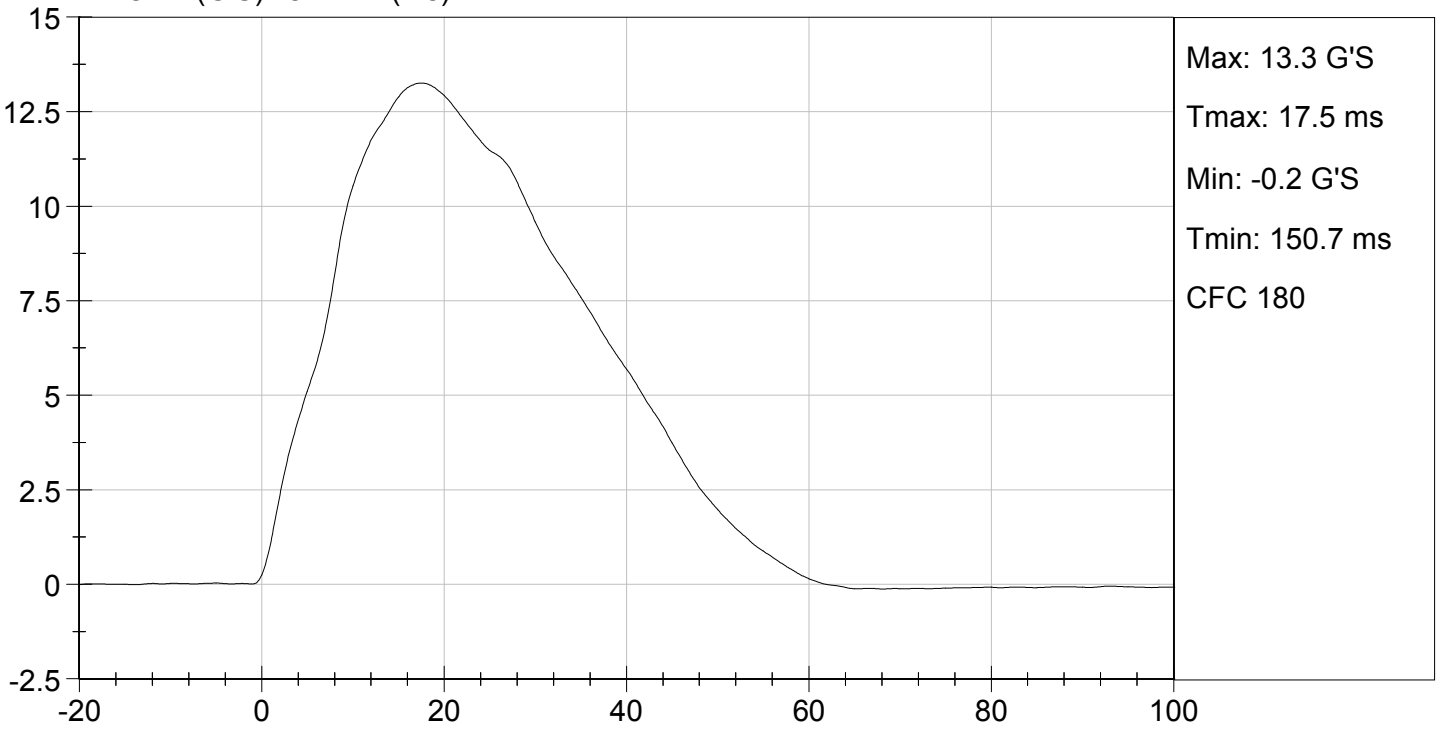
11/15/2012
Test Date

David Winkelbauer
Approved By

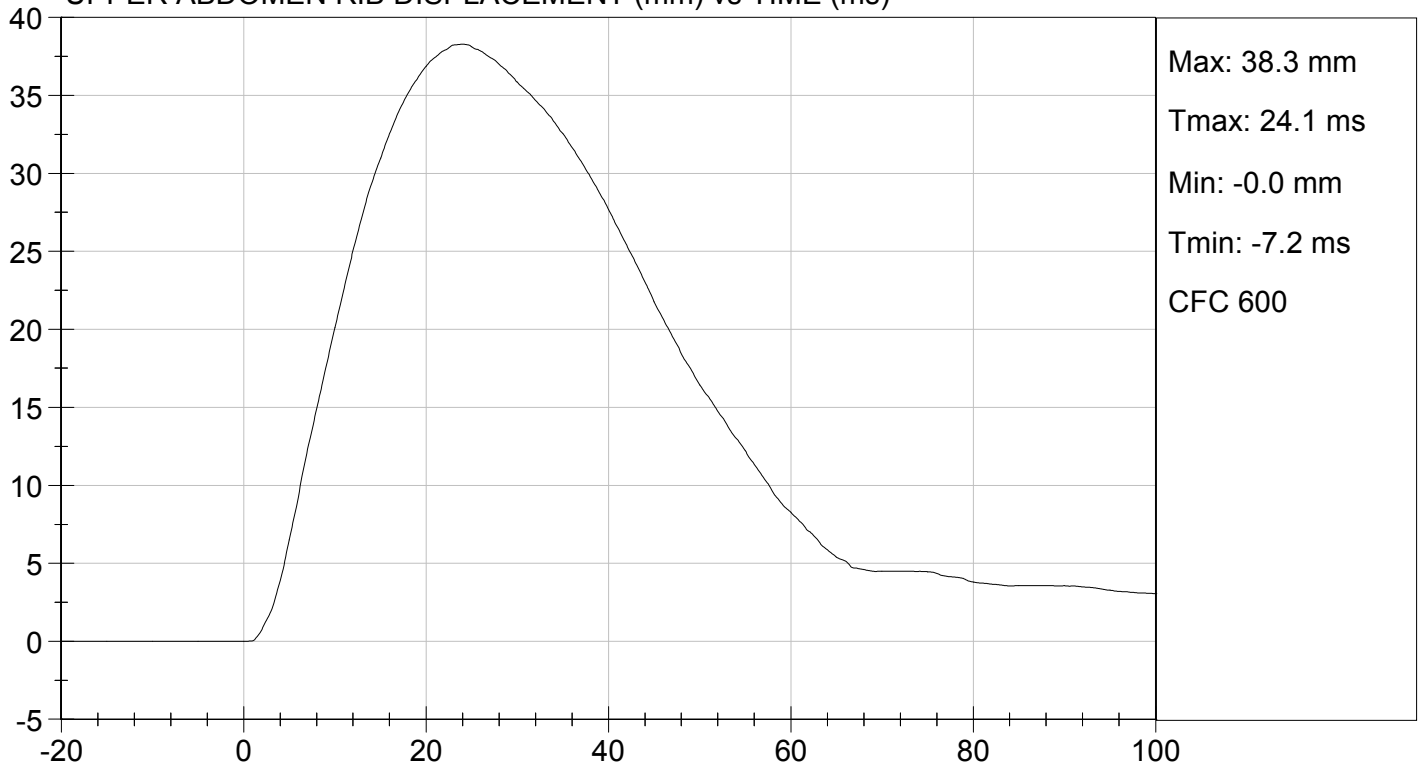
TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/15/2012
TEST #: D124406

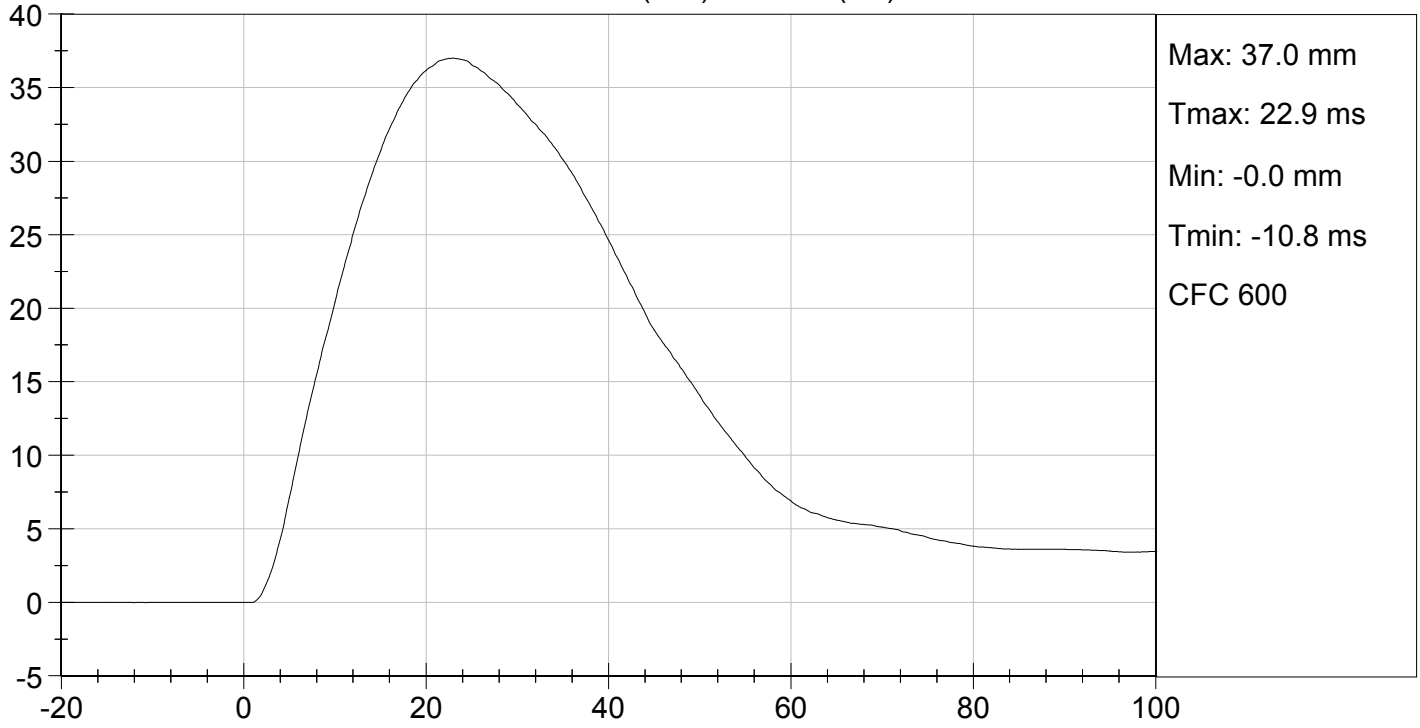
PROBE (G'S) vs TIME (ms)



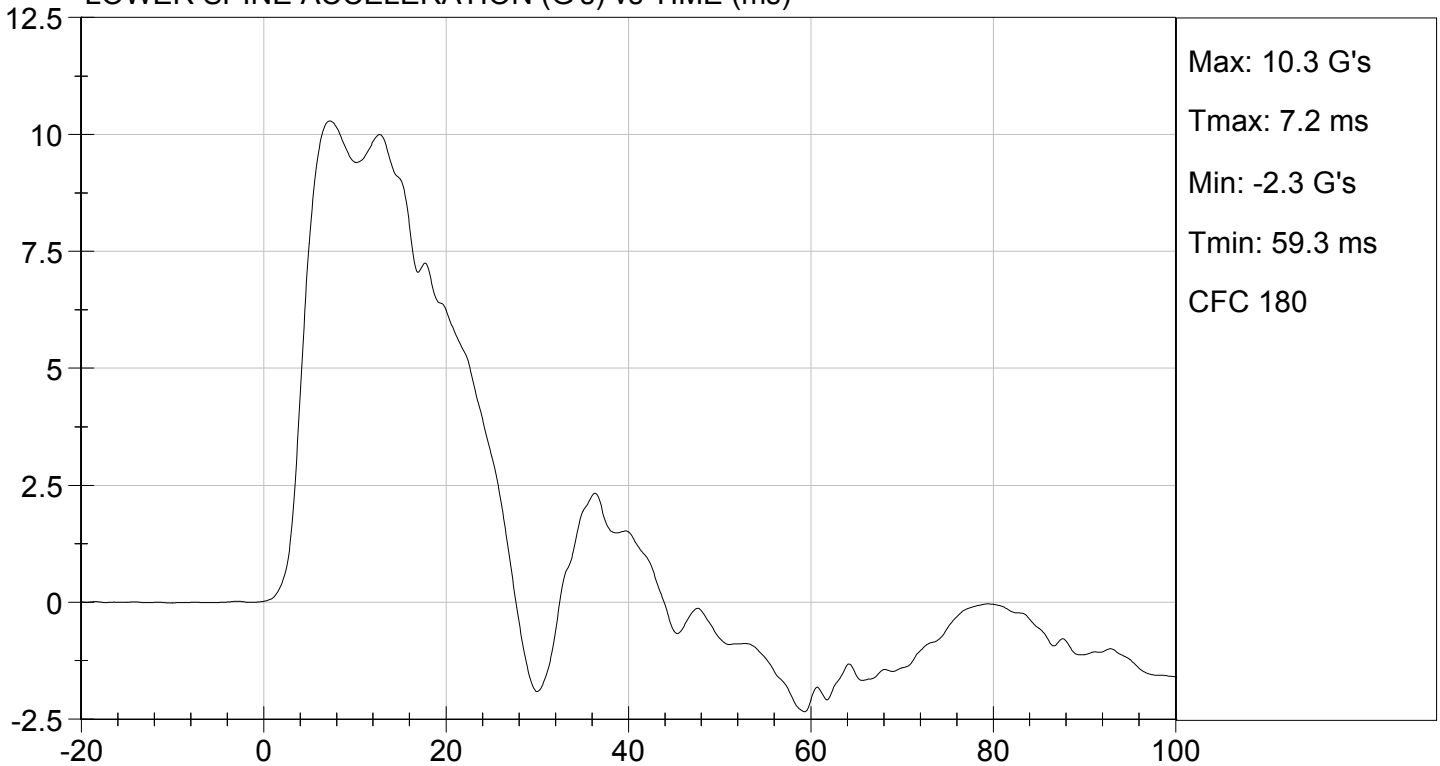
UPPER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



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:** D124407

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	25	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	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	3,945	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

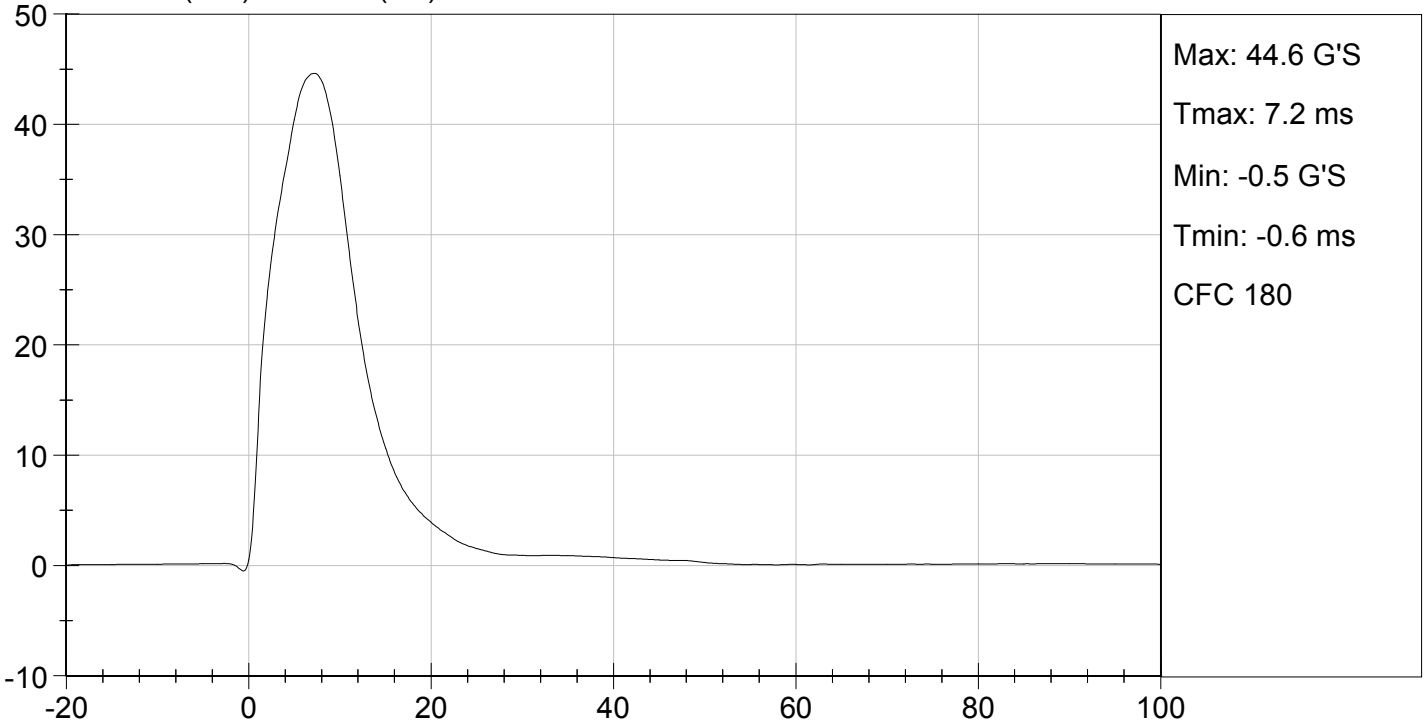
11/15/2012
Test Date

David Winkelbauer
Approved By

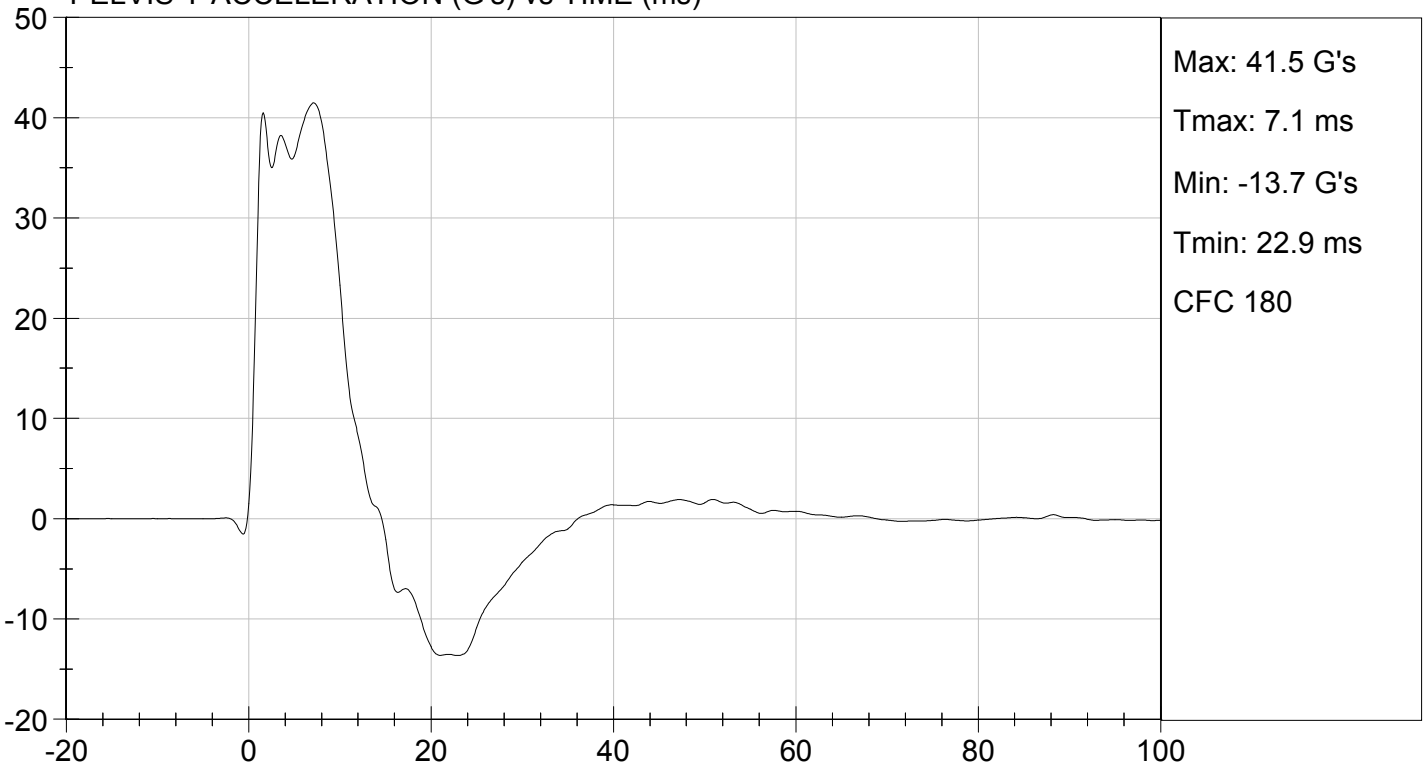
TEST DESC: PELVIS IMPACT
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 11/15/2012
TEST #: D124407

PROBE (G'S) vs TIME (ms)

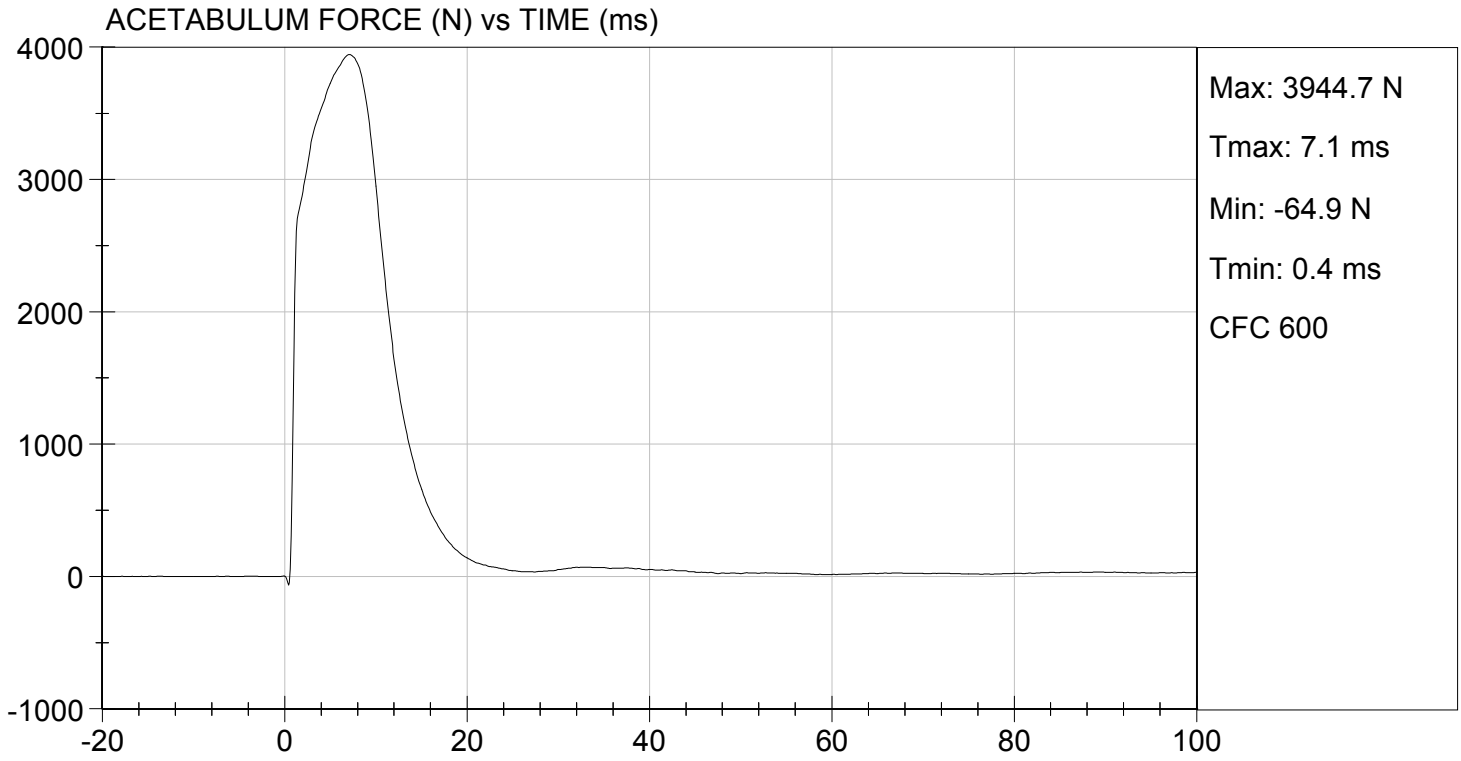


PELVIS Y ACCELERATION (G's) vs TIME (ms)



TEST DESC: PELVIS IMPACT
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 11/15/2012
TEST #: D124407



MGA RESEARCH CORPORATION

ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D124408

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	25	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	36 to 45	38	Pass
Pelvis Y Acceleration	G's	28 to 39	32	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,589	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

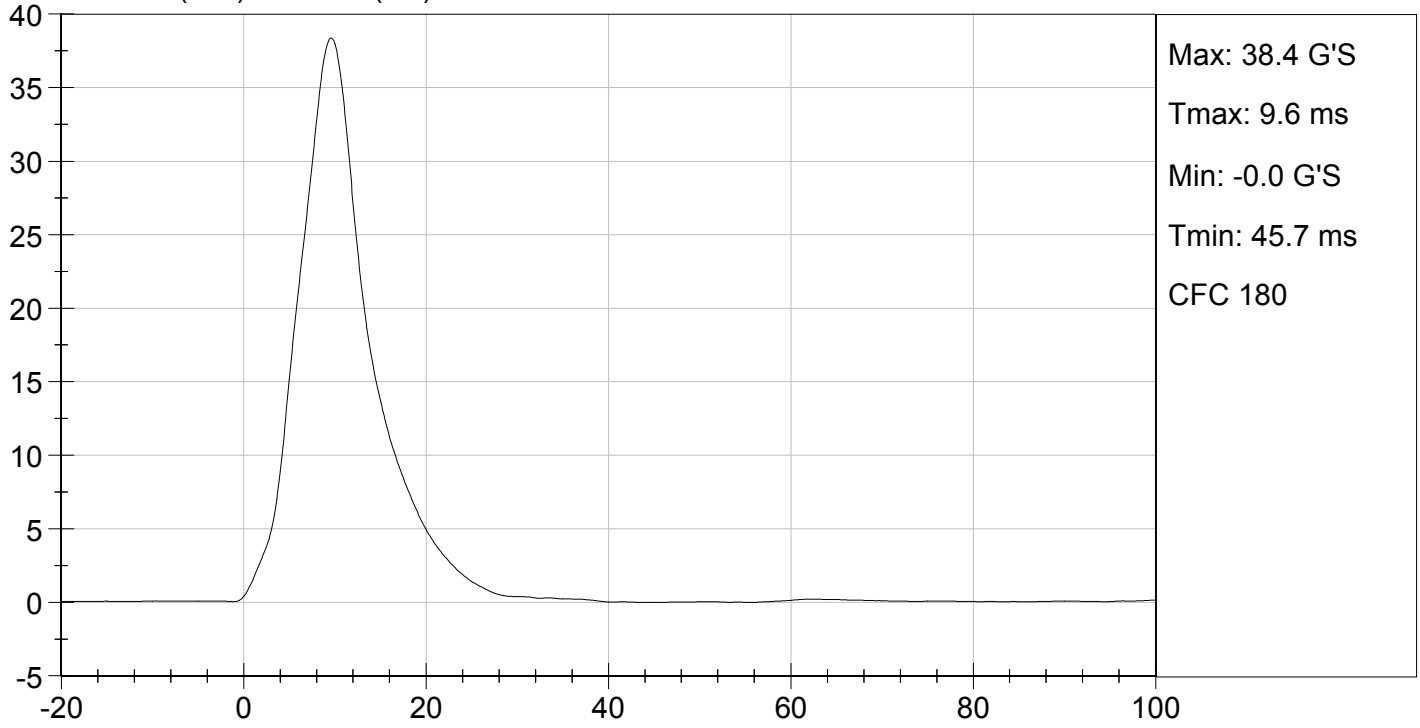
11/15/2012
Test Date

David Winkelbauer
Approved By

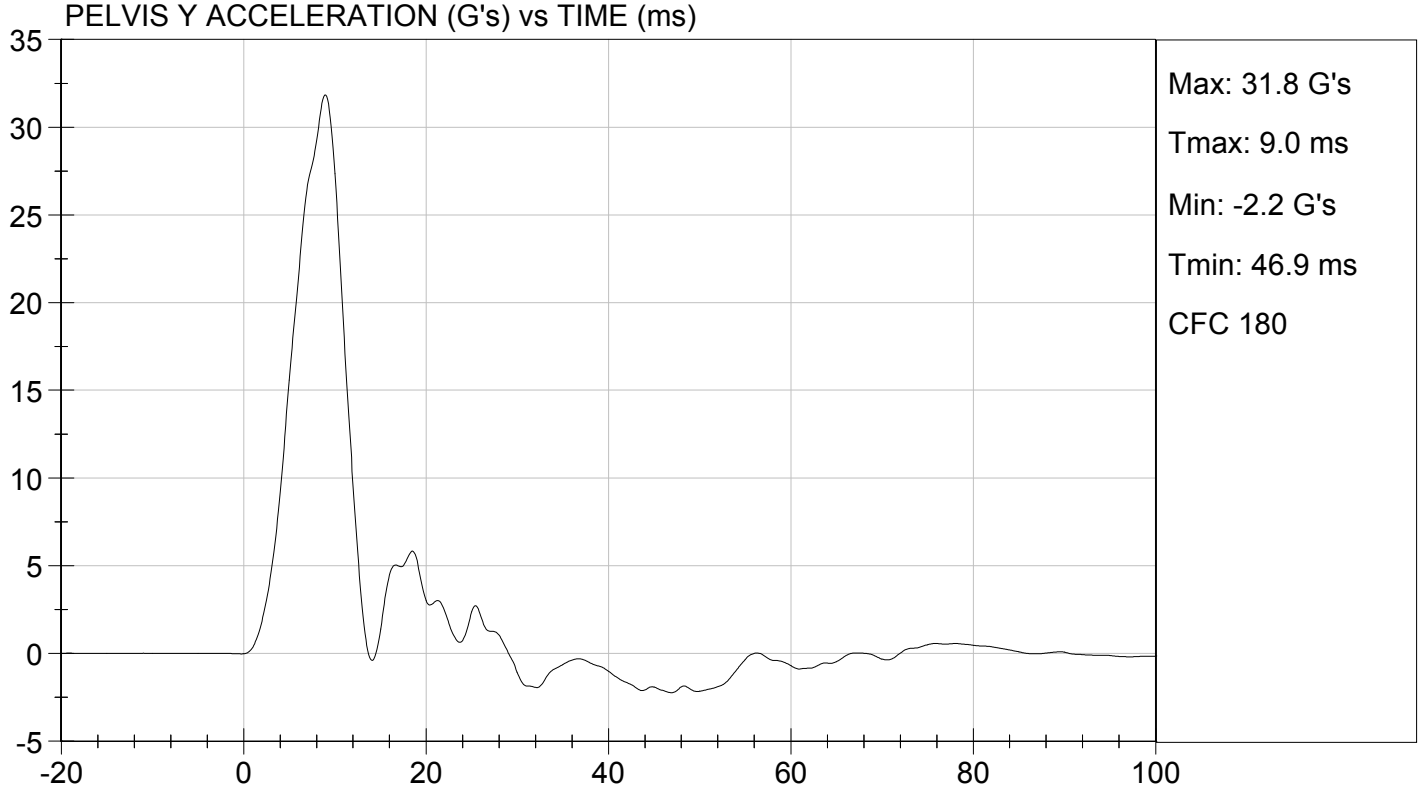
TEST DESC: ILLIAC
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 11/15/2012
TEST #: D124408

PROBE (G'S) vs TIME (ms)

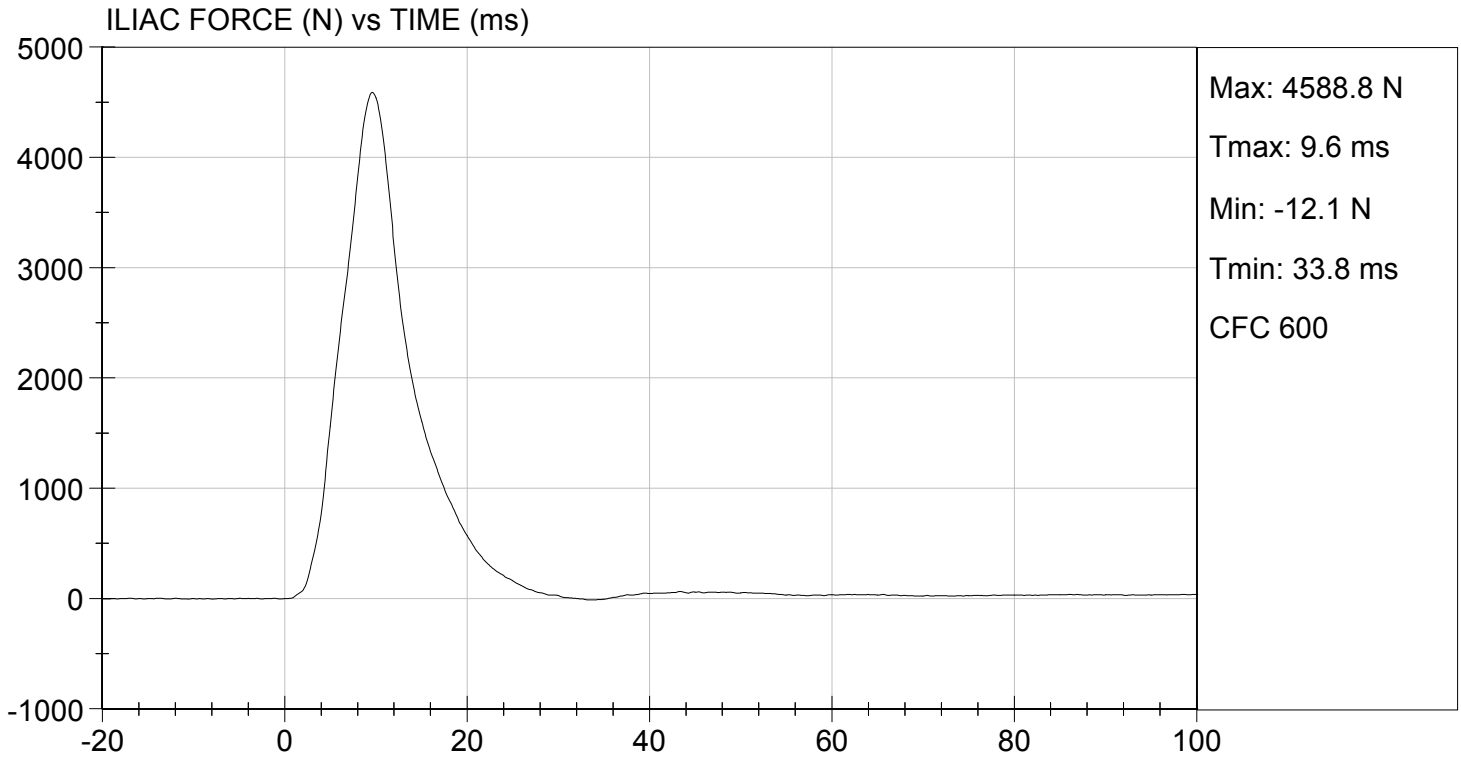


PELVIS Y ACCELERATION (G's) vs TIME (ms)

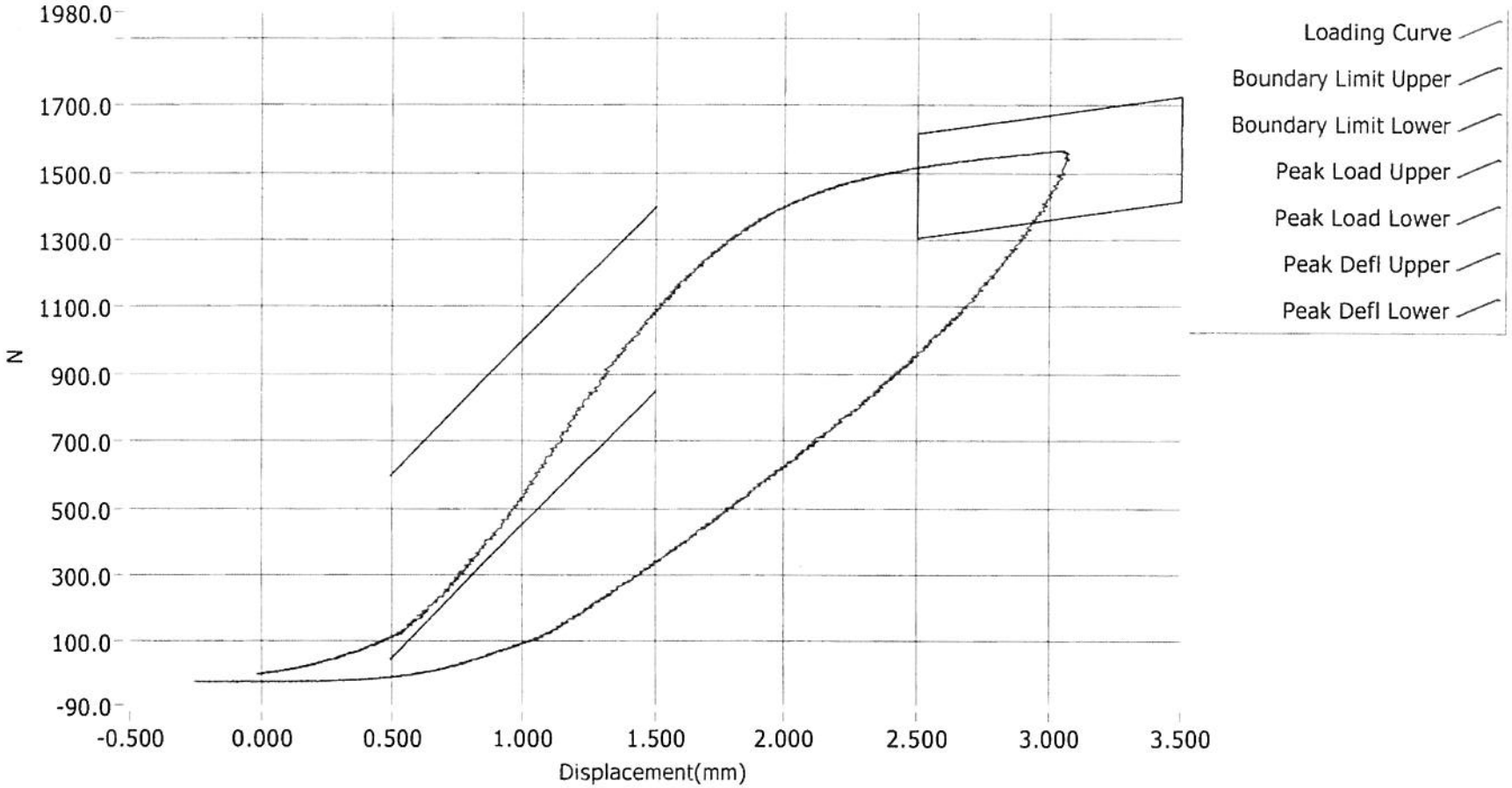


TEST DESC: ILLIAC
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 11/15/2012
TEST #: D124408



Resultant Data - SIDIIs Plug Compression

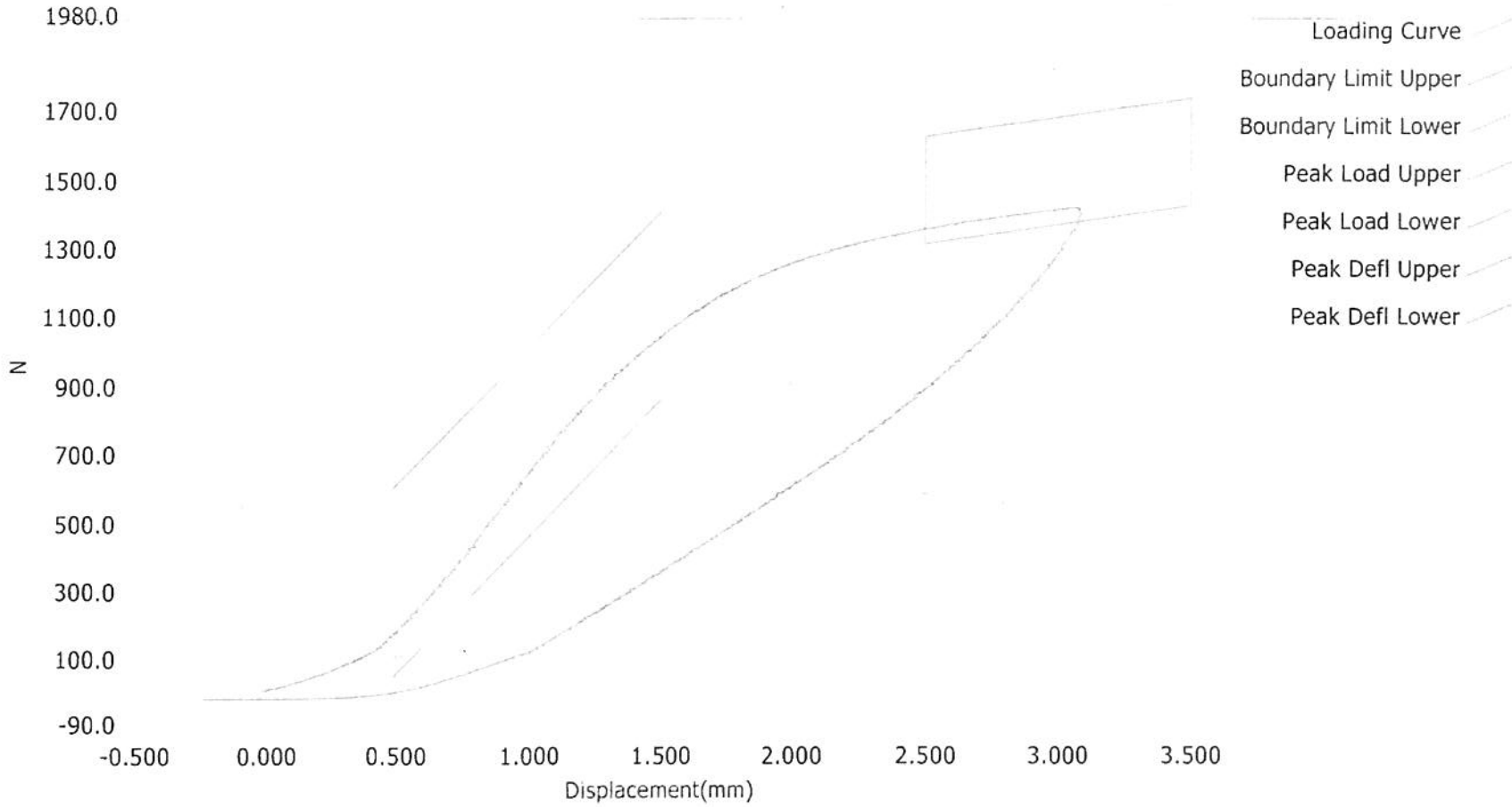


ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	48926	12/5/2011	9:17 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 12/5/2011 Current Time : 21:18:12

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	47677	10/27/2011	11:15 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 10/27/2011 Current Time : 23:16:13

APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 – Dummy Instrumentation

				SID-IIs S/N 306		
				Serial Number	Manufacturer	Calibration Date
Head Accelerometers			X	P67884	Endevco	05/23/12
			Y	P67886	Endevco	05/23/12
			Z	P67887	Endevco	05/23/12
Head Accelerometers			Xr	P67888	Endevco	05/23/12
			Yr	P67889	Endevco	05/23/12
			Zr	P67890	Endevco	05/23/12
Displacement Potentiometers	Thoracic Rib	Upper	Y	G1187	FTSS	05/23/12
		Middle	Y	G1261	FTSS	05/23/12
		Lower	Y	G1270	FTSS	05/23/12
	Abdominal Rib	Upper	Y	G1287	FTSS	05/23/12
		Lower	Y	G1304	FTSS	05/23/12
Lower Spine Accelerometers (T12)			X	P67508	Endevco	05/23/12
			Y	P67510	Endevco	05/23/12
			Z	P67511	Endevco	05/23/12
Acetabulum Load Cell			Y	ACG111	FTSS	05/09/12
Iliac Wing Load Cell			Y	IWG226	FTSS	05/14/12
Pelvis Plug (struck side)				48926	FTSS	12/05/11
Pelvis Plug (non-struck side)				47677	FTSS	10/27/11

Table 2 – Vehicle Instrumentation

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P73686	Endevco	07/21/12
Vehicle Center of Gravity	Y	P73687	Endevco	07/21/12
Vehicle Center of Gravity	Z	P73685	Endevco	07/21/12
Left Floor Sill	Y	P66635	Endevco	10/22/12
A-Pillar Sill	Y	P59277	Endevco	10/06/12
A-Pillar Low	Y	P63896	Endevco	10/18/12
A-Pillar Mid	Y	P67590	Endevco	11/02/12
B-Pillar Sill	Y	P49487	Endevco	11/02/12
B-Pillar Low	Y	P66627	Endevco	11/02/12
B-Pillar Mid	V	P63280	Endevco	11/02/12
Driver Seat	Y	P66762	Endevco	11/02/12
Engine Top	X	P63215	Endevco	10/31/12
Engine Top	Y	P63216	Endevco	10/31/12
Firewall	Y	P63282	Endevco	06/12/12
Right Roof	Y	P78894	Endevco	11/02/12
Right Floor Sill	Y	P63503	Endevco	11/02/12
Rear Floorpan	X	P66669	Endevco	11/02/12
Rear Floorpan	Y	P66668	Endevco	11/02/12

Table 3 – Pole Instrumentation

	Serial Number	Manufacturer	Calibration Date
Load Cell 1	DG6277	FTSS	09/05/12
Load Cell 2	DG6278	FTSS	09/05/12
Load Cell 3	DG6279	FTSS	09/05/12
Load Cell 4	DG6280	FTSS	09/05/12
Load Cell 5	DG6281	FTSS	09/05/12
Load Cell 6	DG6283	FTSS	09/05/12
Load Cell 7	DG6284	FTSS	09/05/12
Load Cell 8	DG6282	FTSS	09/05/12