REPORT NUMBER: SPNCAP-MGA-2012-057

NEW CAR ASSESSMENT PROGRAM (NCAP)
Side Impact Pole Test

NISSAN MOTOR CO., LTD.
2012 Nissan Juke S FWD SUV
NHTSA No.: MC5210

MGA RESEARCH CORPORATION
5000 Warren Road
Burlington, WI 53105

Test Date: January 20, 2012

Final Report Date: March 9, 2012

FINAL REPORT

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

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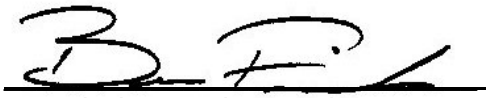
Prepared by: 
Donna Janovicz, Project Manager

Approved by: 
Ben Fischer, Project Engineer

Approval Date: March 9, 2012

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

1. Report No. SPNCAP-MGA-2012-057	*2. Government Accession No.*	*3. Recipient's Catalog No.*
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Pole Testing of a 2012 Nissan Juke S FWD SUV, NHTSA No.: MC5210		*5. Report Date* March 9, 2012 *6. Performing Organization Code* MGA
7. Author(s) Donna Janovicz, Project Manager Ben Fischer, Project Engineer		*8. Performing Organization Report No.* SPNCAP-MGA-2012-057
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 January 20 to March 9, 2012 *14. Sponsoring Agency Code* NVS-111
15. Supplementary Notes		

16. Abstract

A 32.2 km/h (20 mph), 75° oblique impact Side NCAP Test was conducted on the subject 2012 Nissan Juke S FWD 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 January 20, 2012.

The impact velocity was 32.0 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.5°C. The test vehicle post-test maximum crush was 412 mm at level 2. 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	164
Resultant Lower Spine Acceleration	Gs	82	36
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3512
Maximum Thoracic Rib Deflection	mm	38*	24
Maximum Abdomen Rib Deflection	mm	45*	21

* 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, Room E12-100 Washington, DC 20590 Email: tis@nhtsa.dot.gov FAX: 202-493-2833

19. Security Classification of Report Unclassified	*20. Security Classification of Page* Unclassified	*21. No. of Pages* 134	22. Price

TABLE OF CONTENTS

SECTION 1
TEST PURPOSE AND PROCEDURE

This side impact test is part of the MY 2012 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 2012 Nissan Juke S FWD SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated August 2011.

SECTION 2
SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2012 Nissan Juke S FWD SUV. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.0 km/h. The test was conducted by MGA Research Corporation in Burlington, Wisconsin, on January 20, 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 August 2011. 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
Chest Upper Rib, Middle Rib, and Lower Rib Y-Axis Displacement Potentiometers
Abdomen Upper Rib and Lower Rib Y-Axis Displacement Potentiometers
Lower Spine (T12) Triaxial Accelerometers
Acetabulum and Iliac Wing Y-Axis Load Cells

Appendix B contains the 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:

	Driver ATD (SID-IIs)		
Measurement Description	**Units**	**Threshold**	**Result**
Head Injury Criteria (HIC_{36})	N/A	1000	164
Resultant Lower Spine Acceleration	Gs	82	36
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3512
Maximum Thoracic Rib Deflection	mm	38*	24
Maximum Abdomen Rib Deflection	mm	45*	21

*Proposed IARV

Supplemental restraint information is given below:

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	Yes		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Abdomen/Pelvis Airbag	Yes	Yes		
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

There was no valid data collected for:

Left Floor Sill Y after 40 msec.
Left Lower A-Post Y after 10 msec.
Left Mid A-Post Y after 27 msec.

Left Mid B-Post Y is questionable from 2-16 msec.
Driver Seat Track Y is questionable from 24-36 msec.
Right Roof Y is questionable from 2-30 msec.

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2012 Nissan Juke S FWD SUV
Test Program: NCAP Side Pole Impact Test
NHTSA No. MC5210
Test Date: 1/20/2012

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	MC5210	Traction Control System (TCS)	Yes
Model Year	2012	Auto-Leveling System	No
Make	Nissan	Automatic Door Locks (ADL)	Yes
Model	Juke	Power Window Auto-Reverse	Yes
Body Style	SUV	Other Optional Feature	N/A
VIN	JN8AF5MR5CT102913	Driver Front Airbag	Yes
Body Color	Cayenne Red	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	64 / 40	Driver Head/Torso Airbag	No
Engine Displacement (L)	1.6	Driver Torso Airbag	No
Type/No. Cylinders	4	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Lateral	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	No
Transmission Speeds	CVT	Rear Pass. Curtain Airbag	Yes
Overdrive	No	Rear Pass. Head/Torso Airbag	No
Final Drive	Front	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	No	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	No
All Wheel Drive (AWD)	No	Other Safety Restraint	N/A
Does owner's manual provide instruction to turn off automatic door locks?			No

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Co., Ltd.	GVWR (kg)	1800
Date of Manufacture	10/11	GAWR Front (kg)	990
Vehicle Type	MPV	GAWR Rear (kg)	840

VEHICLE SEATING AND WEIGHT CAPACITY DATA

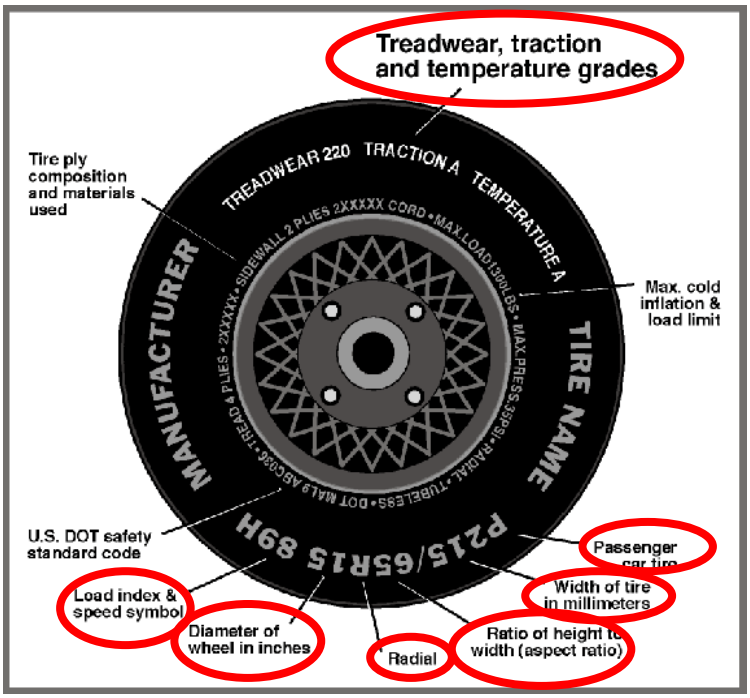
Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3		5	
Capacity Weight (VCW) (kg)				390	(A)
DSC x 68.04 kg				340	(B)
Rated Cargo and Luggage Weight (RCLW)				50	(A-B)

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					w/lever	
Rear or Second Row			X		X		
Third Row Seat							

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

Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012



TIRE PLACARD INFORMATION

Measured Parameter	Front	Rear
Recommended Cold Tire Pressure (kPa)	250	250
Recommended Tire Size	P215/55R17	P215/55R17

TIRE SIDEWALL INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Tire Size on Vehicle	P215/55R17	P215/55R17
Tire Manufacturer	Goodyear	Goodyear
Tire Name	Eagle RS-A	Eagle RS-A
Tire Type	Passenger	Passenger
Tire Width	215	215
Aspect Ratio	55	55
Radial	Yes	Yes
Wheel Diameter	17	17
Load Index/Speed Symbol	93V	93V
Treadwear	260	260
Traction Grade	A	A
Temperature Grade	A	A
Tire Material	Rubber	Rubber

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

Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012

TEST PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kpa	250	250	250	250
Tire Placard	kpa	250	250	250	250
Owner's Manual	kpa				
As Tested	kpa	250	250	250	250

TEST VEHICLE AXLE WEIGHTS

		As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
	Units	Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	427.3	246.7		451.4	285.7		455.4	293.1	
Right	kg	426.4	251.3		430.9	279.9		425.0	280.3	
Ratio	%	63.2	36.8		60.9	39.1		60.6	39.4	
Totals	kg	853.7	498.0	1351.7	882.3	565.6	1447.9	880.4	573.4	1453.8

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1351.7	(A)
Actual Weight of 1 P572V ATD (SID-IIs) ATD Used	kg	52.2	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	50	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1453.9	(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**

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Weight of Ballast, if any	0.0
Spare tire, jack & tools, right side mirror, right taillight, cargo holder, trunk carpet.	26.8

TEST VEHICLE ATTITUDES AND CG

	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	deg	-1.3	-0.9	-0.8	Yes
Front Pass. Sill Angle (front-to-rear)*	deg	-1.4	-1.2	-0.9	Yes
Front Bumper Angle (left-to-right)**	deg	-0.2	-0.2	-0.4	Yes
Rear Bumper Angle (left-to-right)**	deg	-0.5	-0.4	-0.1	Yes
Vehicle CG (Aft of Front Axle)	mm	934	990	1000	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	-2	13	22	

*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.

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

Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012

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	19.2	15.4	17.3
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	17.3	Fixed	Max	Fixed	Fixed	Fixed
	17.3	Fixed	Mid	Fixed	Fixed	Fixed
	17.3	Fixed	Min	Fixed	Fixed	Fixed
Front Passenger Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	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

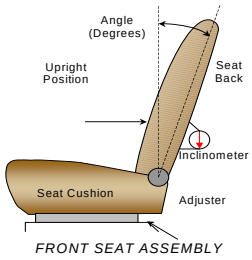
Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	240	24 (1st as 0)	0	0 (1st as 0)
Front Passenger Seat	240	24 (1st as 0)	0	0 (1st as 0)
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned such that the dummy's head is level. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck-side rear passenger seat back is positioned in accordance with the information provided by the manufacturer on Form No. 1 for the 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	Degrees	Detent
Driver Seat w/Seated Dummy	69.4		-8.9	3rd (1st as 0)
Front Passenger Seat	68.4		-9.1	3rd (1st as 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 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	3 (1st as 0)	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

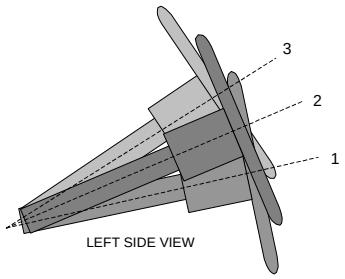
DATA SHEET NO. 2 (CONTINUED)
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012

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.

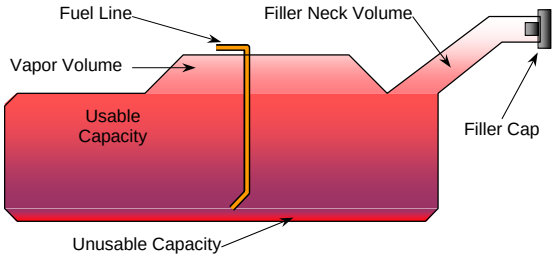
	Degrees	Fore/Aft Position (mm)
Lowermost, Position 1	66.4	
Geometric Center, Position 2	63.7	
Uppermost, Position 3	61.0	
Telescoping Steering Wheel Travel		
Test Position	63.7	



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 when the ignition key is in the "ON" position. The fuel pipe is on the right side.



VEHICLE FUEL TANK ASSEMBLY

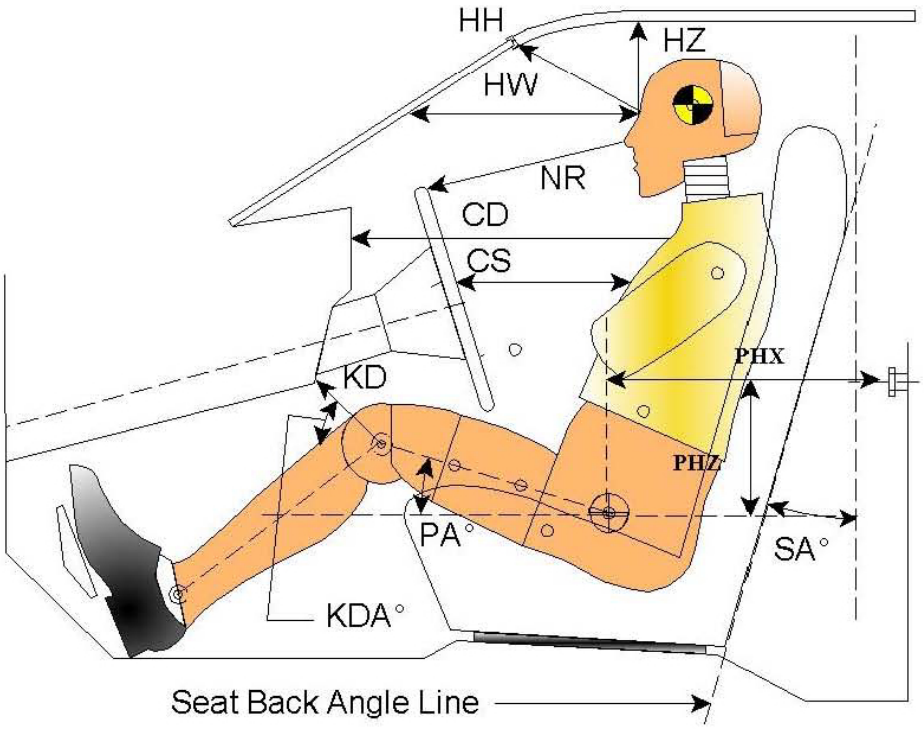
FUEL TANK CAPACITY DATA

	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	50.0
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	50.0
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	46.5
Actual Amount of Solvent Used	46.5
1/3 of Usable Capacity	16.7

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: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012

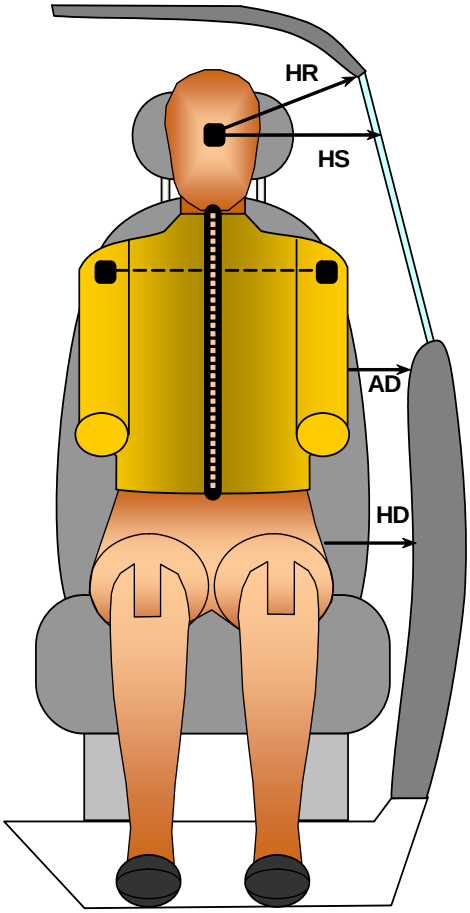


LEFT SIDE VIEW

Code	Measurement Description	Driver S/N 296	
		Length (mm)	Angle (°)
HH	Head to Header	223	
HW	Head to Windshield	513	
HZ	Head to Roof Liner	187	
NR	Nose to Rim	226	
CD	Chest to Dashboard	372	
CS	Chest to Steering Wheel	139	
KDL/KDAL°	Left Knee to Dash	83	25.1
KDR/KDAR°	Right Knee to Dash	81	28.2
PAX°	Pelvic Tilt Angle (X-Axis)		20.1
PAY°	Pelvic Tilt Angle (Y-Axis)		-0.4
PHX	Hip Point to Striker (X-Axis)	376	
PHZ	Hip Point to Striker (Z-Axis)	104	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012

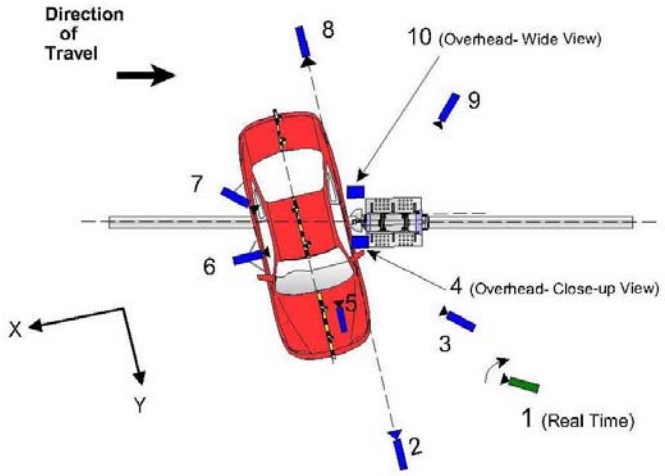


FRONT VIEW OF DUMMY

Code	Measurement Description	Driver S/N 296 Length (mm)
HR	Head to Side Header	218
HS	Head to Side Window	334
AD	Arm to Door	141
HD	Hip Point to Door	180

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012



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	-70	5730	-1830	24	1000
3	Impact Side 45° Forward	-2510	5130	-1930	20	1000
4	Overhead Closeup	190	0	-4420	50	1000
5	Onboard – Driver Front				16	1000
6	Onboard – Driver Side				8	1000
7	Onboard – Driver Rear				8	1000
8	Rear Ground Level	-80	-5880	-1830	24	1000
9	Impact Side 45° Rearward	-3920	-4240	-1940	20	1000
10	Overhead Wide View	430	0	-4610	14	1000
11	Real-Time Dummy Front View					30

* All measurements accurate to ± 6 mm
Note: Vehicle was at a 15° angle to the rigid pole.

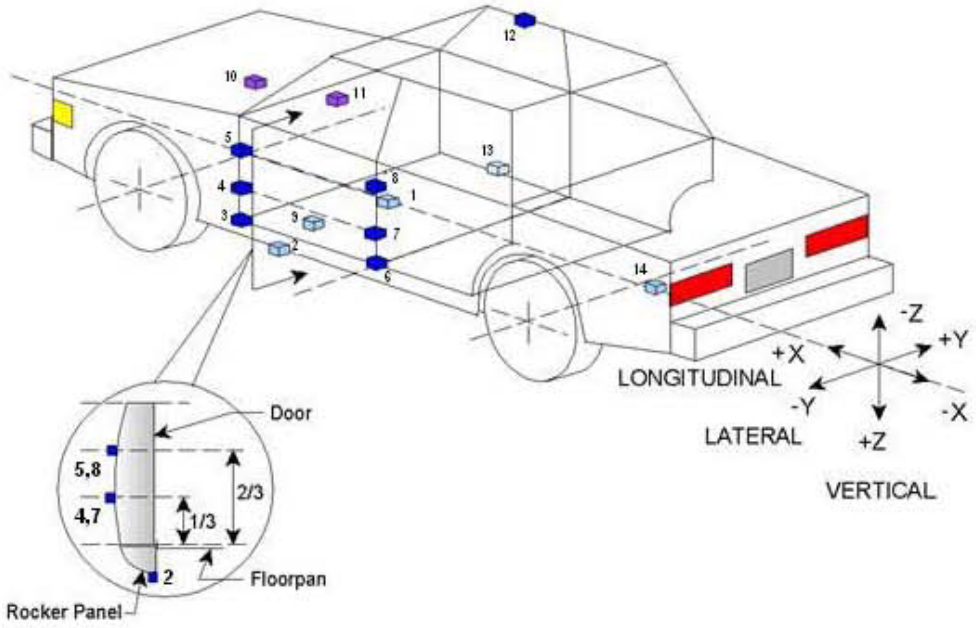
Explain why camera(s) did not operate as intended: Not Applicable

INSTRUMENTATION

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

DATA SHEET NO. 6
TEST VEHICLE ACCELEROMETER DATA

Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012



	Accelerometer Location			
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2170	-160	-240
2	Left Floor Sill	2384	-709	-236
3	A Pillar Sill	2745	-722	-232
4	A Pillar Low	2764	-652	-576
5	A Pillar Mid	2788	-739	-855
6	B Pillar Sill	1796	-710	-247
7	B Pillar Low	1675	-676	-677
8	B Pillar Mid	1700	-670	-953
9	Driver Seat Track	2045	-552	-350
10	Engine Top	3445	26	-888
11	Firewall	3230	-48	-944
12	Right Roof	1598	486	-1553
13	Right Floor Sill	2382	709	-240
14	Rear Floorpan	308	0	-386

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: 2012 Nissan Juke S FWD SUV
Test Program: NCAP Side Pole Impact Test
NHTSA No. MC5210
Test Date: 1/20/2012

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: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Driver SID-IIs Dummy
Face	Curtain Airbag, Front Airbag
Top of Head	Curtain Airbag
Left Side of Head	Curtain Airbag
Back of Head	Curtain Airbag, Headrest
Left Shoulder	Side Airbag
Upper Torso	Side Airbag, Seatback
Lower Torso	Side Airbag, Seatback
Left Hip	Side Airbag
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 Broke
Other Notable Effects	None

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

Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

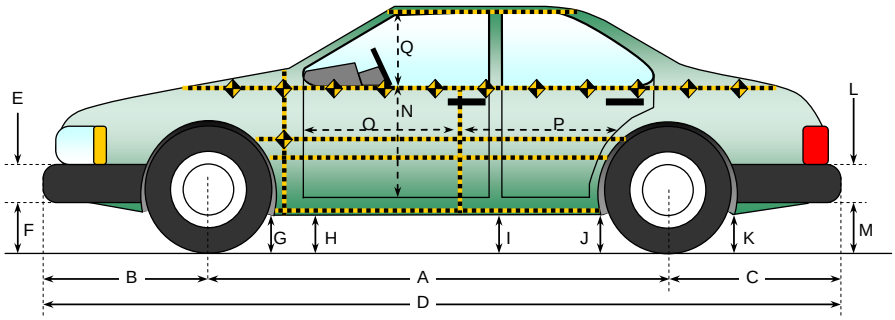
Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	Yes		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Abdomen/Pelvis Airbag	Yes	Yes		
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other				

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		1028
Actual Impact Point (Aft of Front Axle)	mm		1028
Horizontal Offset (+forward / -rearward)	mm	+/- 38 of Intended Impact Point	0
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	32.0
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.1

DATA SHEET NO. 9
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2012 Nissan Juke S FWD SUV
Test Program: NCAP Side Pole Impact Test
NHTSA No. MC5210
Test Date: 1/20/2012



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

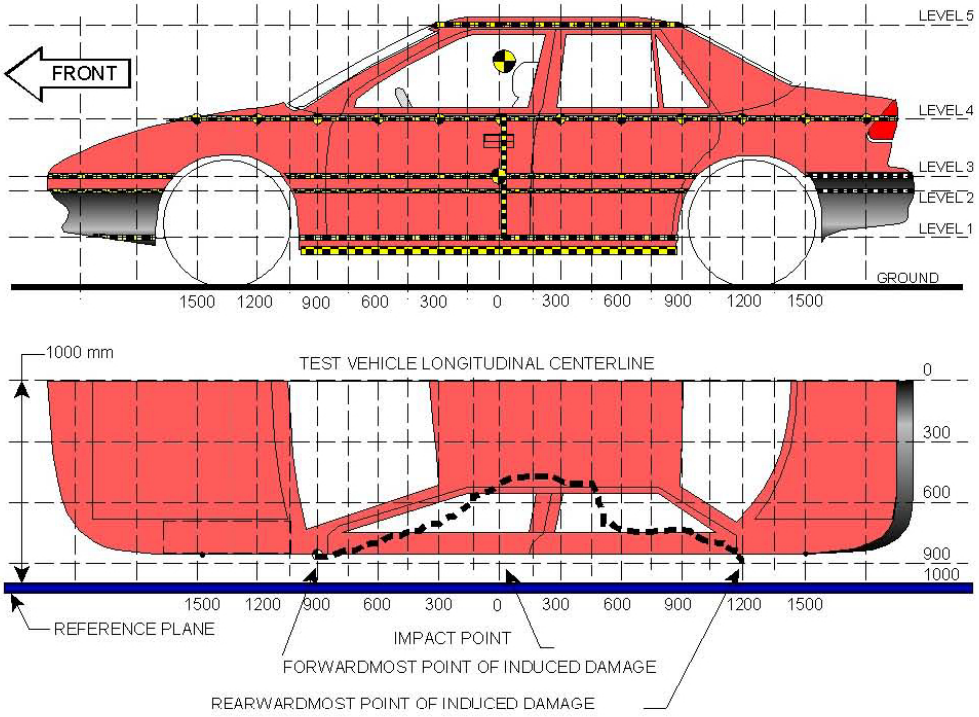
LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2535	2429	106
B	Front Axle to FSOV	836	845	-9
C	Rear Axle to RSOV	753	736	17
D	Total Vehicle Length at Centerline	4124	4010	114
E	Front Bumper Thickness	140	140	0
F	Front Bumper Bottom to Ground	292	306	-14
G	Sill Height at Front Wheel Well	220	205	15
H	Sill Height at Front Door Leading Edge	222	197	25
I	Sill Height at B Pillar	237	248	-11
J1	Sill Height at Rear Wheel Well	243	267	-24
J2	Pinch Weld Height at Rear Wheel Well	240	251	-11
K	Sill Height Aft of Rear Wheel Well	262	270	-8
L	Rear Bumper Thickness	165	165	0
M	Rear Bumper Bottom to Ground	368	360	8
N	Sill Height to Bottom of Front Window Sill	778	773	5
O	Front Door Leading Edge to Impact CL	610	606	4
P	Rear Door Trailing Edge to Impact CL	1195	1200	-5
Q	Front Window Opening	445	415	30
R	Right Side Length	3135	3134	1
S	Left Side Length	3135	3002	133
T	Vehicle Width at B-Pillars	1728	1611	117

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012



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	360
2	Occupant Hip Point	650
3	Mid Door	703
4	Window Sill	1046
5	Window Top	1483

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

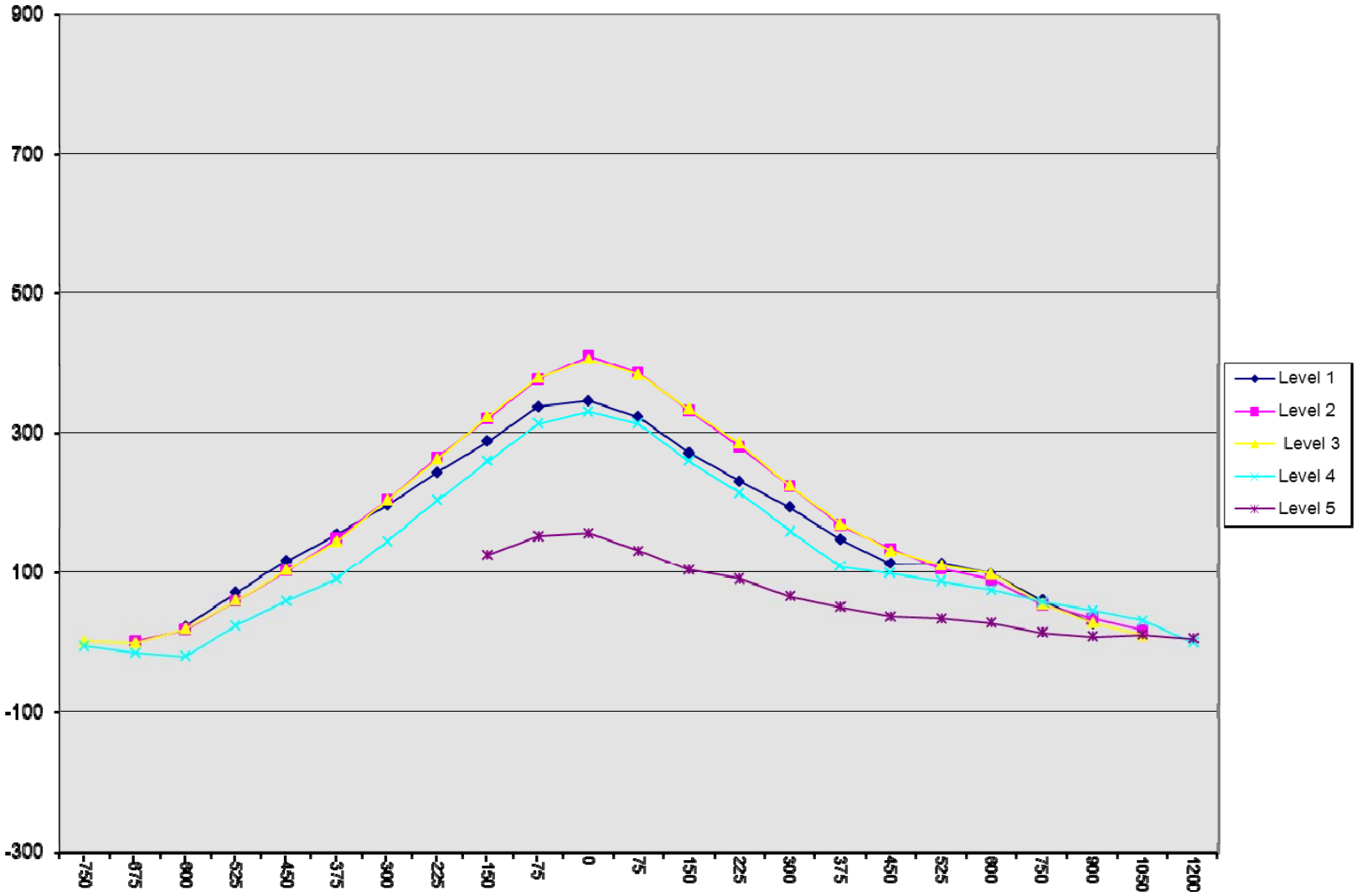
Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-750			235	360				238	356				3	-4	
-675		236	237	358			239	237	344			3	0	-14	
-600	260	241	243	354		284	260	263	335		24	19	20	-19	
-525	267	248	251	348		339	308	312	373		72	60	61	25	
-450	276	256	260	344		393	358	363	404		117	102	103	60	
-375	282	261	264	340		438	411	410	431		156	150	146	91	
-300	288	261	261	334		484	464	464	480		196	203	203	146	
-225	288	256	256	330		531	520	518	533		243	264	262	203	
-150	288	251	250	325	542	575	571	573	584	668	287	320	323	259	126
-75	286	247	245	321	530	623	623	623	633	683	337	376	378	312	153
0	285	243	241	319	524	630	655	647	649	681	345	412	406	330	157
75	285	241	239	314	523	607	626	622	626	655	322	385	383	312	132
150	286	239	236	312	523	557	570	569	571	627	271	331	333	259	104
225	286	237	235	309	522	516	516	519	522	613	230	279	284	213	91
300	287	236	234	308	523	480	459	458	468	590	193	223	224	160	67
375	286	236	234	305	523	434	404	404	414	574	148	168	170	109	51
450	290	238	235	304	525	403	373	367	403	563	113	135	132	99	38
525	290	241	239	304	526	404	346	350	392	561	114	105	111	88	35
600	294	245	242	304	529	392	335	340	380	558	98	90	98	76	29
750	295	252	251	311	535	356	307	307	370	550	61	55	56	59	15
900	280	246	247	315	542	308	281	276	361	551	28	35	29	46	9
1050		238	237	322	550		256	248	354	562		18	11	32	12
1200				310	561				311	567				1	6

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: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012



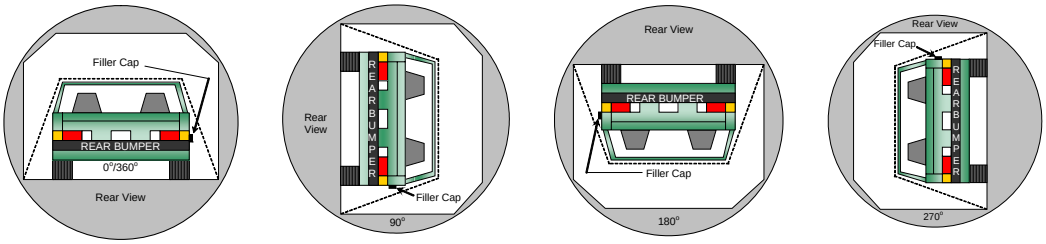
DATA SHEET NO. 11
FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012

Test Time: 11:38 am Temperature: 21.5° 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°	120	300	420
90° to 180°	114	300	414
180° to 270°	107	300	407
270° to 360°	116	300	416

FMVSS 301 ROLLOVER SPILLAGE TABLE (units in ounces)

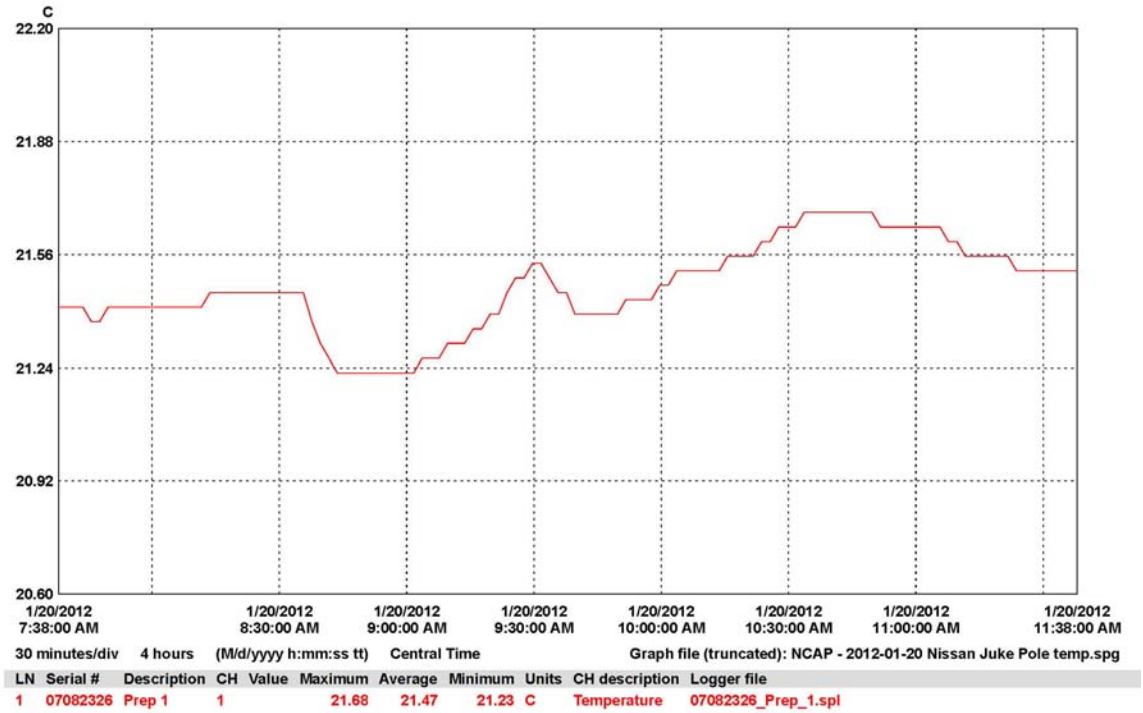
Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eight Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

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: 2012 Nissan Juke S FWD SUV NHTSA No. MC5210
Test Program: NCAP Side Pole Impact Test Test Date: 1/20/2012



LN	Serial #	Description	CH	Value	Maximum	Average	Minimum	Units	CH description	Logger file
1	07082326	Prep 1	1		21.68	21.47	21.23	C	Temperature	07082326_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

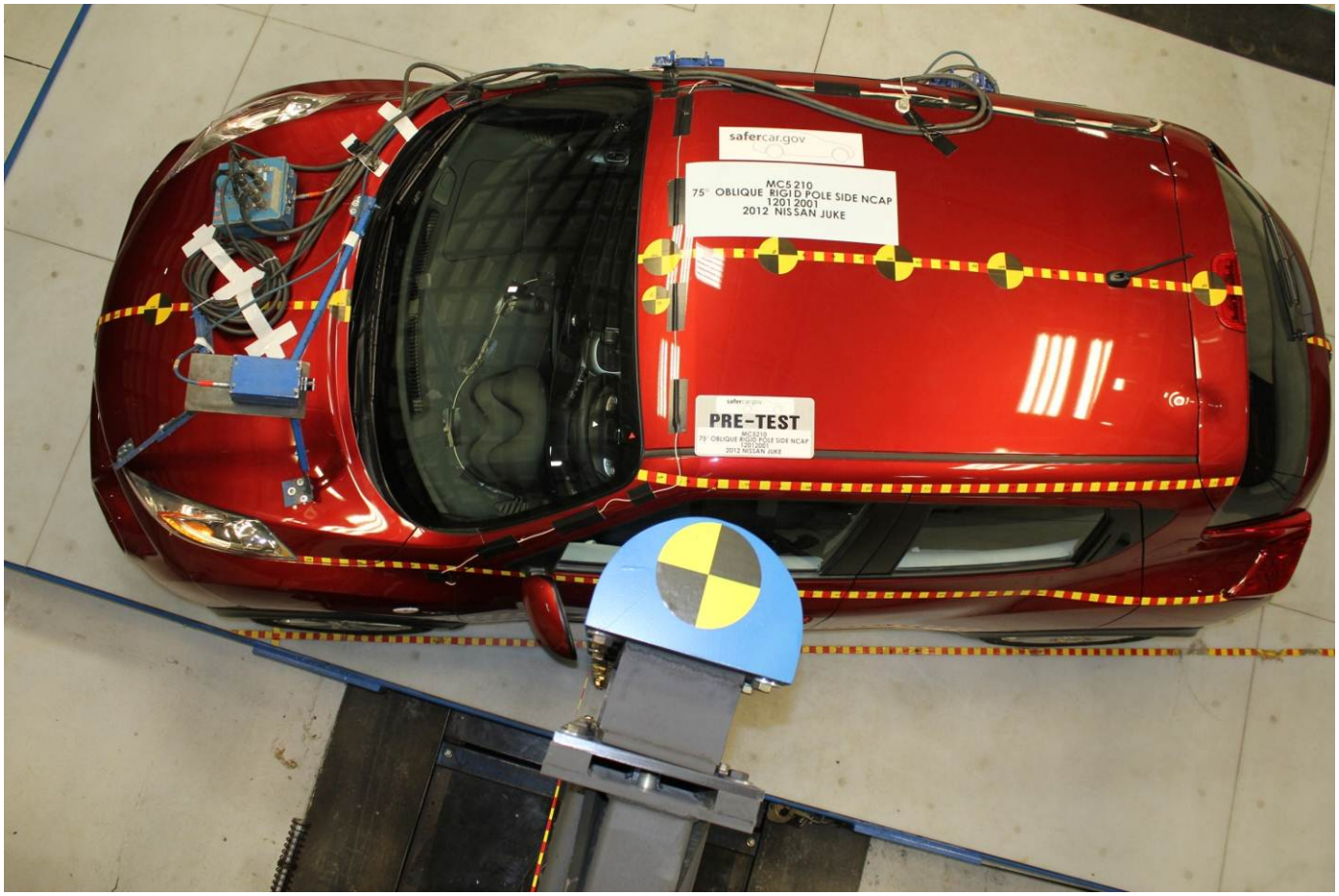
Post-Test Left Rear ¾ View of Test Vehicle

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

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

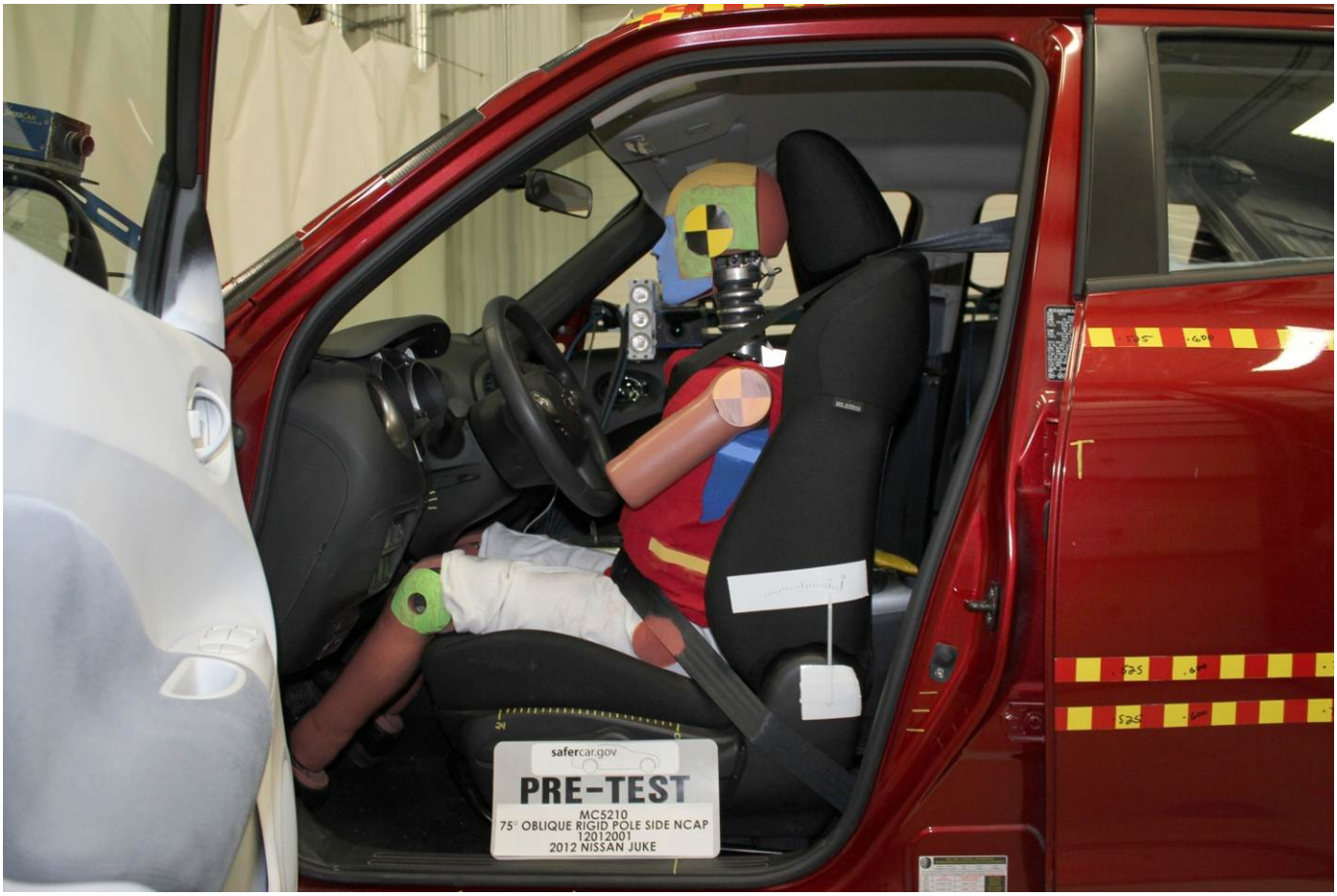
Pre-Test Right Side View of Pole Positioned Against Side of Vehicle

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

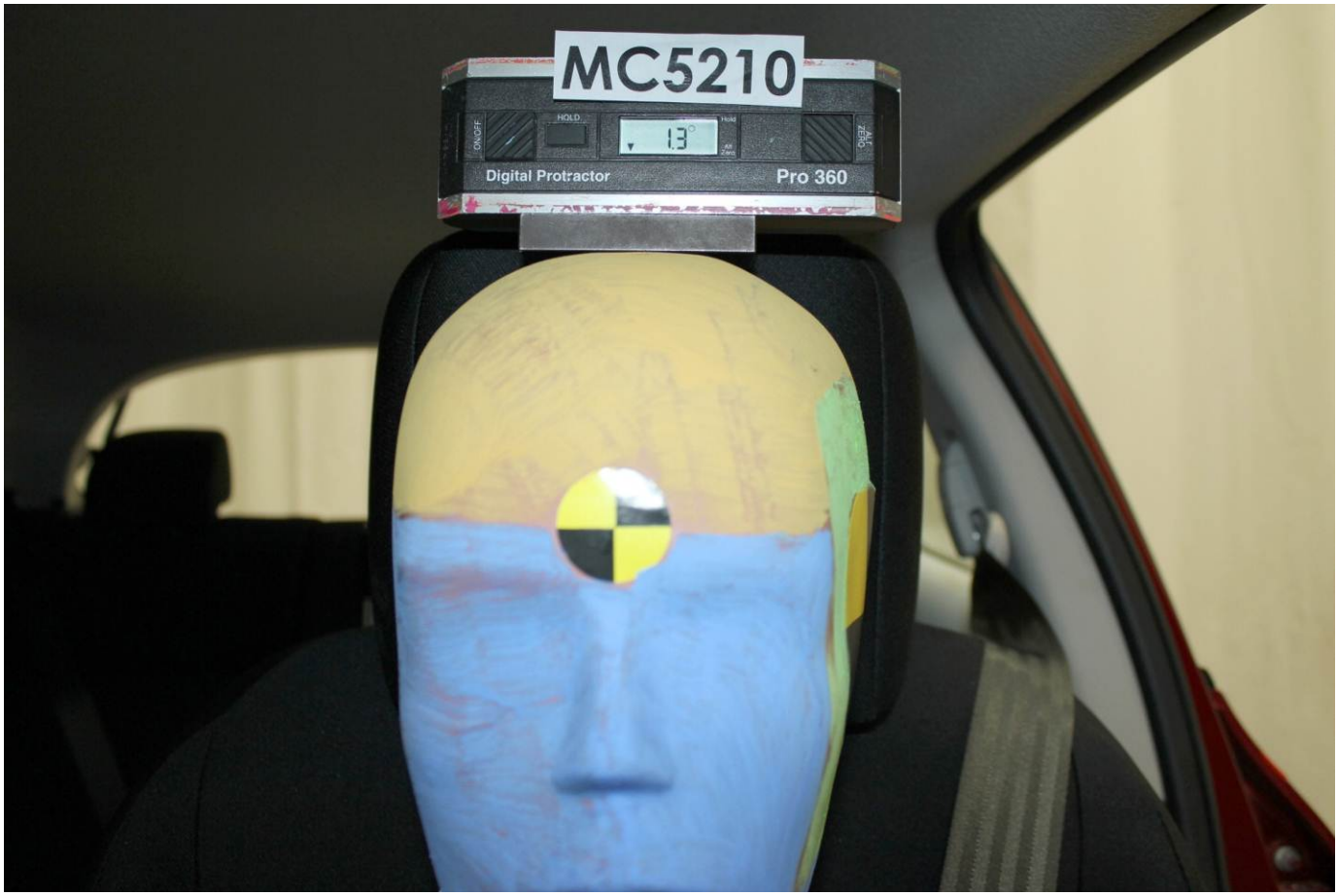


Pre-Test Left Side View of Dummy Showing Belt and Chalking

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 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 Vehicle Interior View

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

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

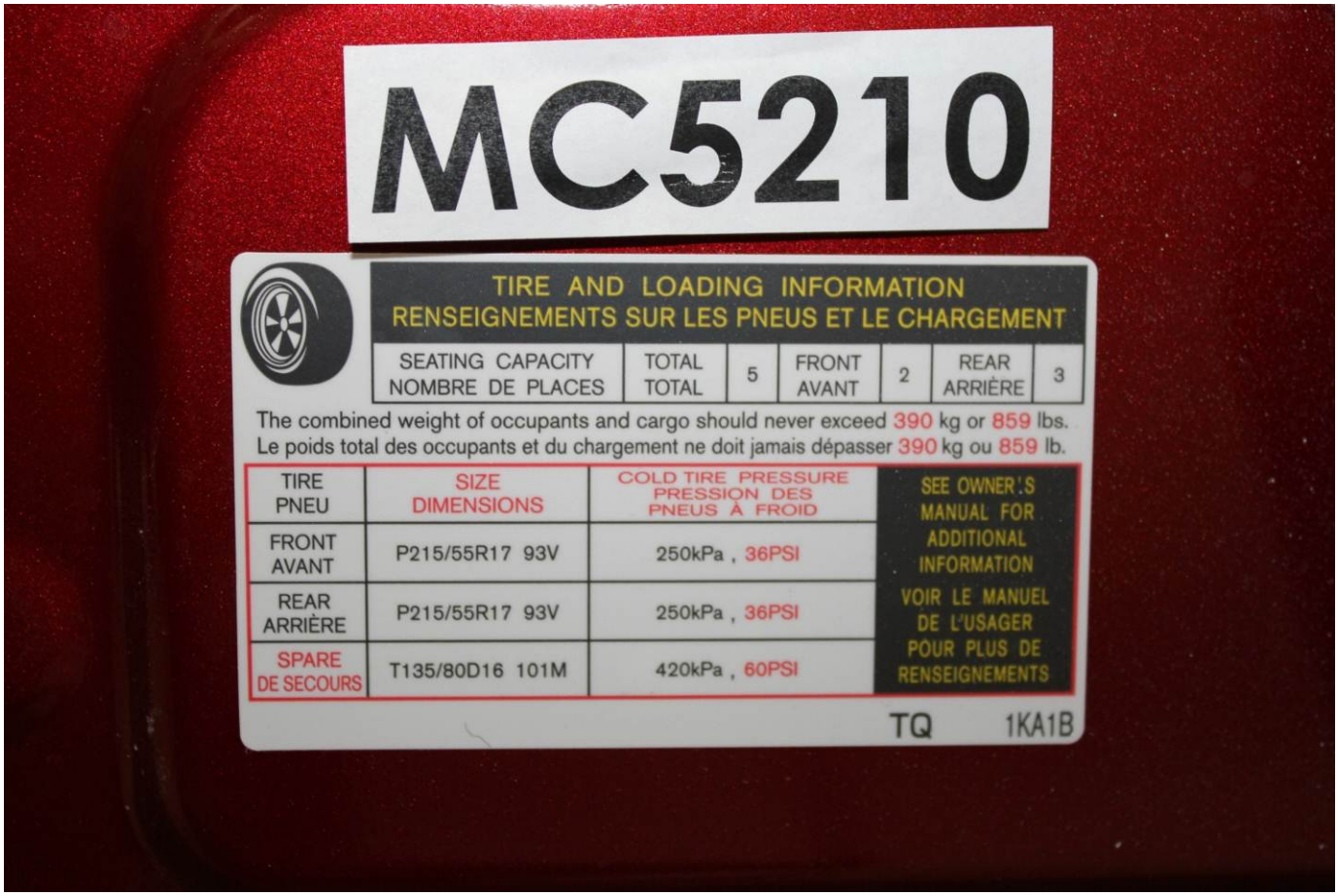
Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View

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

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

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

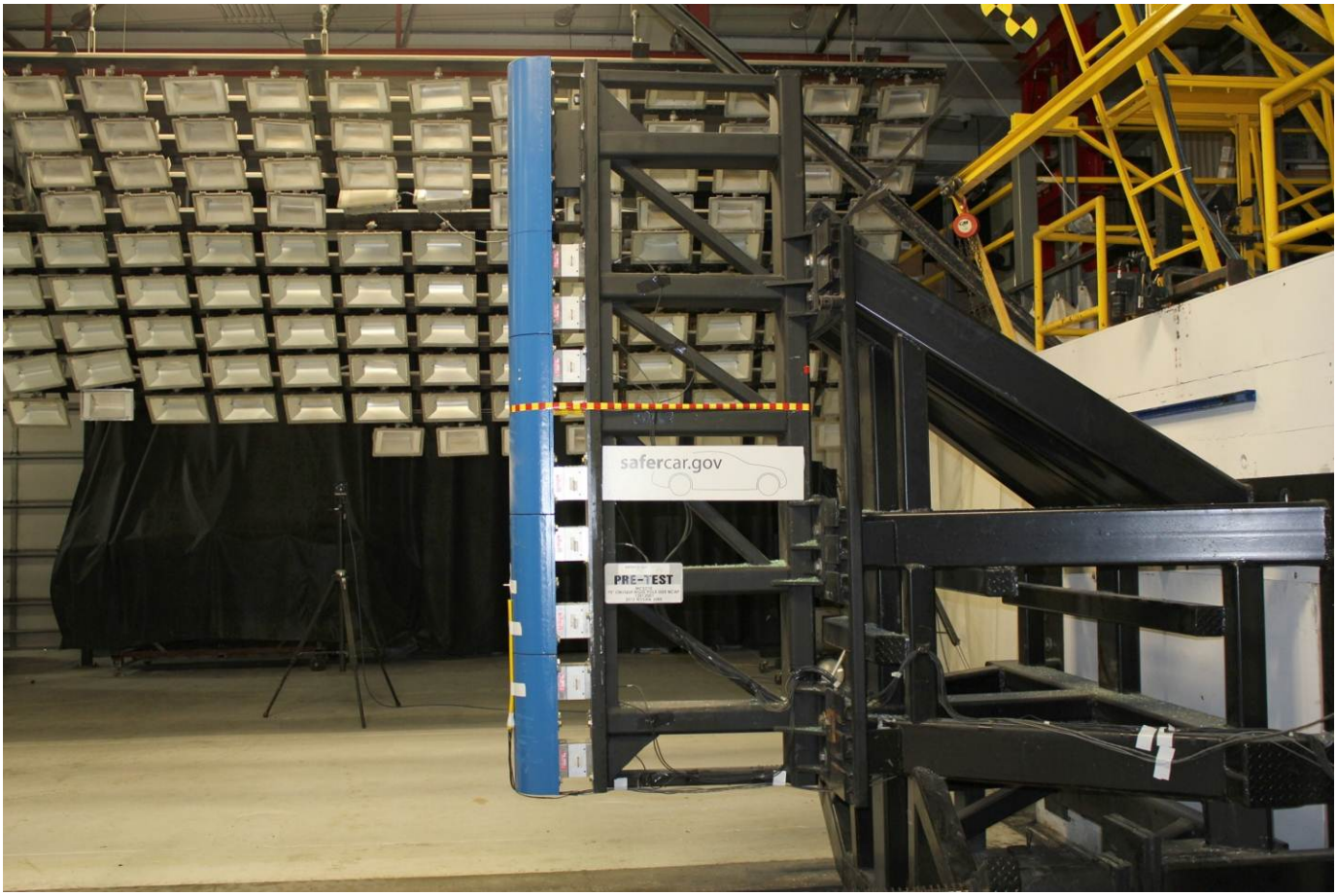
Close-Up View of Vehicle's Certification Label



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

PHOTOGRAPH NOT APPLICABLE

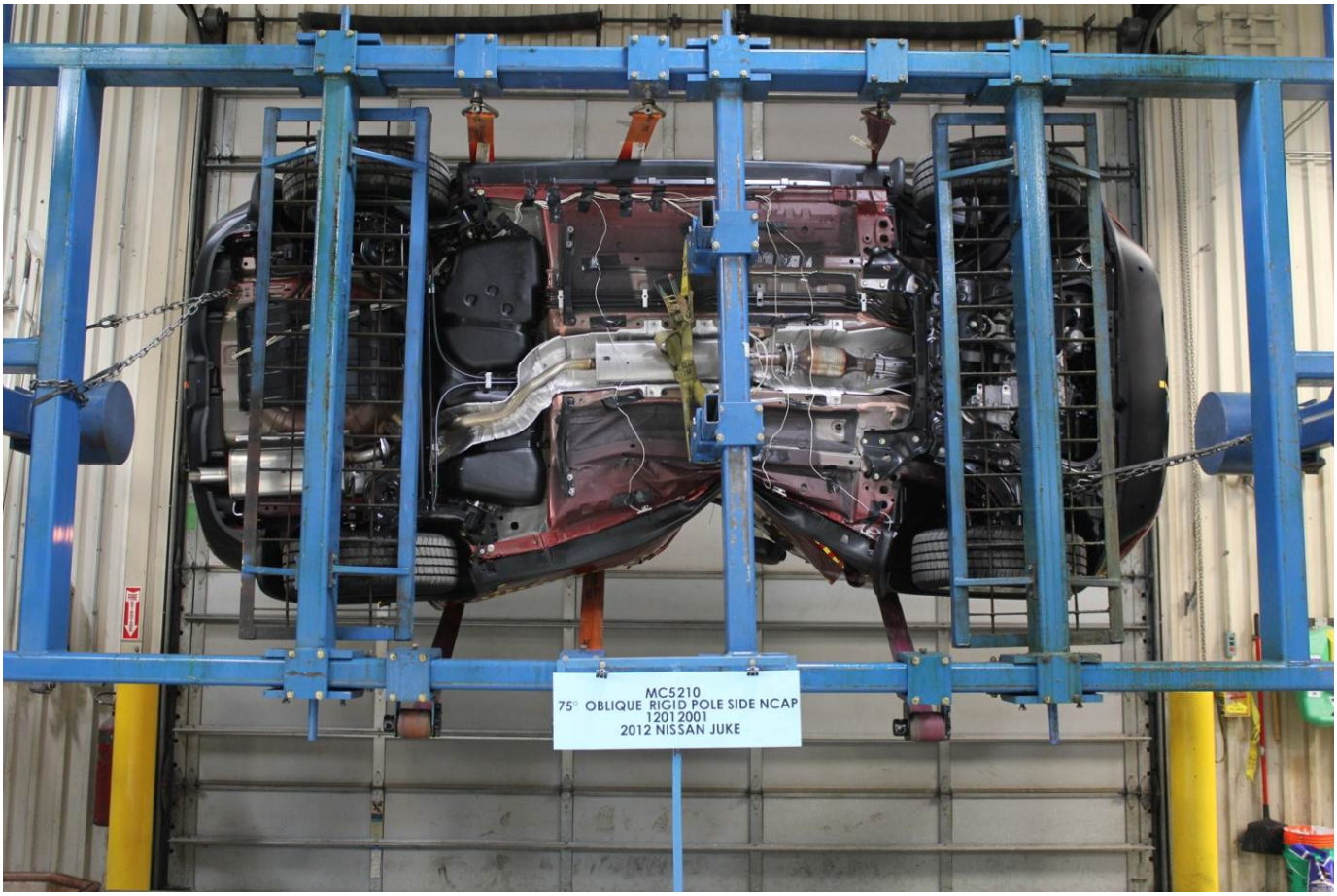
Pre-Test Ballast View

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

2012 JUKE S FWD CVT

The Bold Urban Sport Cross

Standard Equipment included at No Extra Charge

MECHANICAL & PERFORMANCE
1.6 Liter Direct Injection Gasoline (DIG™) Turbocharged 4-Cylinder Engine
188 Horsepower & 177 lb.-ft. Torque
Continuously Variable Transmission (CVT) w/ Sport Mode
Front-Wheel Drive (FWD)
17" Aluminum Alloy Wheels

SAFETY AND SECURITY
Driver & Front Passenger, Side Impact, & Curtain Air Bags
Front-Seat Active Head Restraints
Lower Anchors and Tethers for Children (LATCH)
4-Wheel Anti-Lock Braking System (ABS)
Vehicle Dynamic Control (VDC) w/ Traction Control System (TCS)
Tire Pressure Monitoring System (TPMS)
Electronic Brake-force Distribution (EBD) & Brake Assist (BA)
Vehicle Security System (VSS)
Nissan Vehicle Immobilizer System

COMFORT & CONVENIENCE
6-Way Manual Driver Seat
4-Way Manual Front Passenger Seat
60/40 Fold-Flat Second Row Seats
Steering Wheel Cruise/Audio Controls
6-Speaker AM/FM/CD Audio System w/ Auxiliary Audio Input & MP3 playback Interface System for iPod®
Bluetooth® Hands-Free Phone System
Power Door Locks w/ Auto Locking Feature
Cargo Area Under-Floor Storage
12 Volt DC Power Outlet

EXTERIOR FEATURES
Halogen Headlights w/ Auto Off Feature
Manual Folding Power Outside Mirrors

Manufacturer's Suggested Retail Base Price:	$19,770.00
Options Included by Manufacturer	
SPLASH GUARDS	125.00
CARPETED FLOOR MATS AND CARGO MAT	175.00
Destination Charges:	760.00
Total*	$20,830.00

N7272

6 Miles
10/11

*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 Fuel Economy Estimates

39

CITY MPG **27**
Expected range for most drivers **22** to **32** MPG

Estimated Annual Fuel Cost
$2,044
based on 15,000 miles at $3.95 per gallon

HIGHWAY MPG **32**
Expected range for most drivers **26** to **36** MPG

Combined Fuel Economy
This Vehicle **29**
14 — 34
All STATION WAGONS
SMALL STATION WAGONS

Your actual mileage will vary depending on how you drive and maintain your vehicle.

See the FREE Fuel Economy Guide at dealers or www.fueleconomy.gov

GOVERNMENT SAFETY RATINGS

Frontal Crash	Driver	To Be Rated
	Passenger	To Be Rated

Star ratings based on the risk of injury in a frontal impact. Frontal ratings should ONLY be compared to other vehicles of similar size and weight.

Side Crash	Front seat	To Be Rated
	Rear seat	To Be Rated

Star ratings based on the risk of injury in a side impact.

Rollover To Be Rated
Star ratings 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

This Vehicle qualifies for Nissan's
Security+Plus Vehicle Protection Plan
The only service agreement backed by Nissan!
Ask your dealer for details, or call 1-800-NISSAN-1 for more information

DELIVERY

VEHICLE COLORS:
EXT: CAYENNE RED
INT: BLACK

FINAL ASSEMBLY POINT:
LOS ANGELES

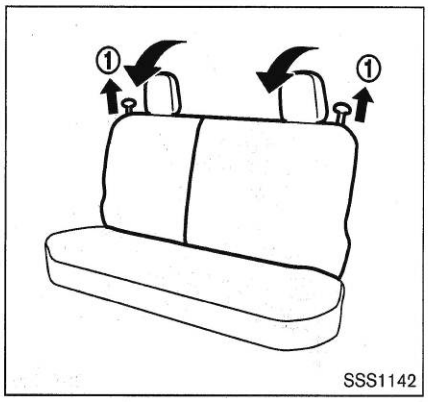
TRANSPORT METHOD:
TRUCK

DEALER:
ROSEN NISSAN OF GURNEE
7000 GRAND AVENUE
GURNEE IL
60031

VIN: JN8AF5MR5CT102913
EMS: 50 STATE EMISSIONS
MDL: 20112-102913 NAH-G
OPT: F-B92C03L92

20111106035657ZP5033

Monroney Label



REAR SEATS

Folding

Before folding the rear seats:

Secure the seat belts on the seat belt hooks on the side wall. (See "Seat belt hooks" (P.1-16).)

To fold the seat back, pull the adjusting knob ①.

To return the seatback to the seating position, lift up each seatback and push it to the upright position until it is latched.

CAUTION

When folding or returning the seatback(s) to the upright position, to avoid injury to yourself and others:

- Make sure that the seat path is clear before moving the seat.

WARNING

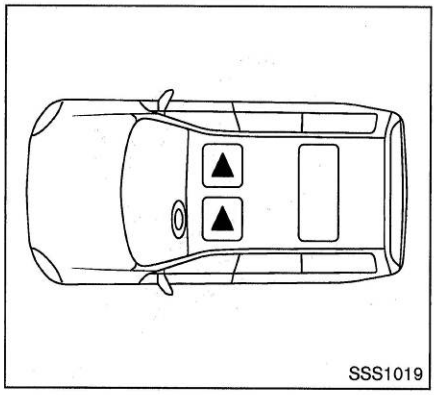
- Do not fold down the rear seats when occupants are in the rear seat area or any objects are on the rear seats.
- Never allow anyone to ride in the cargo area or on the rear seats when they are in the fold-down position. Use of these areas by passengers without proper restraints could result in serious injury in an accident or sudden stop.
- Properly secure all cargo with ropes or straps to help prevent it from sliding or shifting. Do not place cargo higher than the seatbacks. In a sudden stop or collision, unsecured cargo could cause personal injury.
- When returning the seatbacks to the upright position, be certain they are completely secured in the latched position. If they are not completely secured, passengers may be injured in an accident or sudden stop.

HEAD RESTRAINTS

WARNING

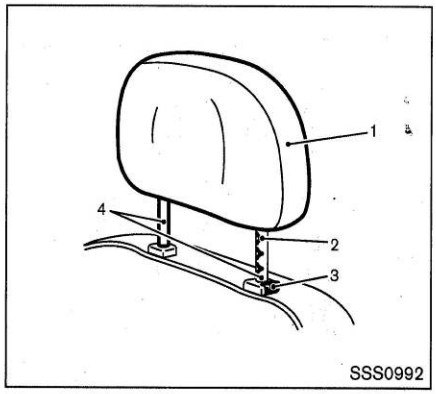
Head restraints supplement the other vehicle safety systems. They may provide additional protection against injury in certain rear end collisions. Adjust the head restraints properly, as specified in this section. Check the adjustment after someone else uses the seat. Do not attach anything to the head 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.

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



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

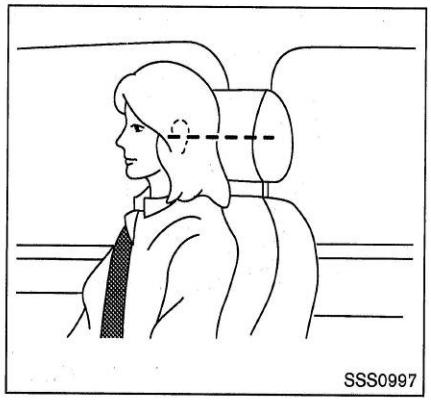
▲ Indicates the seating position is equipped with a head restraint.



Components.

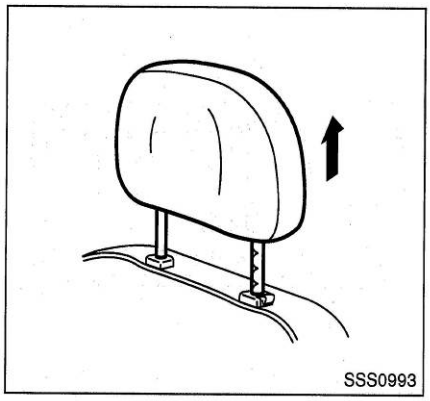
1. Head restraint
2. Adjustment notches
3. Lock knob
4. Stalks

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

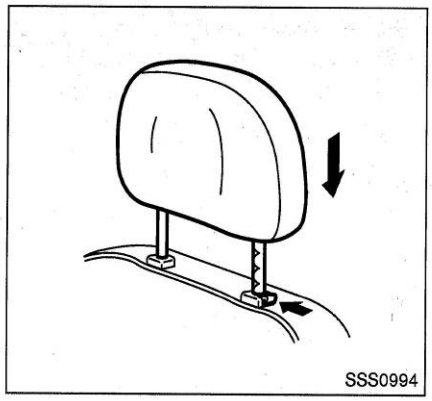


Adjustment

Adjust the head restraint so the center is level with the center of your ears.

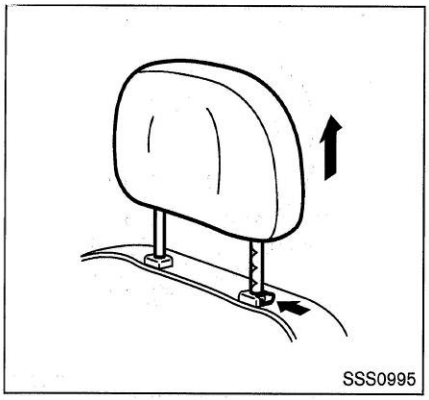


To raise the head restraint, pull it up.



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

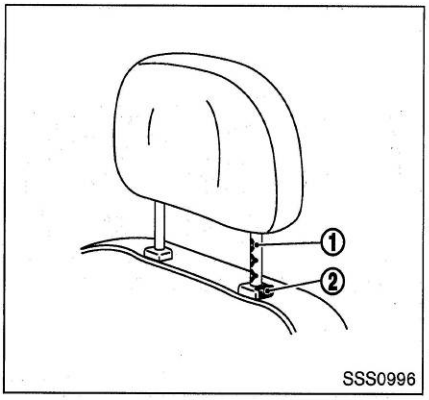
Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



Removal

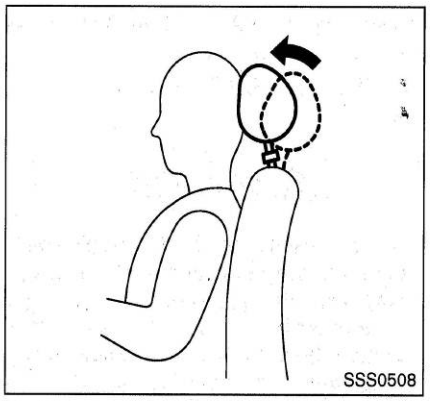
Use the following procedure to remove the adjustable head restraints.

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 in a secure place 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 that 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.



Front-seat Active Head Restraints

The Active Head Restraint moves forward utilizing the force that the seatback receives from the occupant in a rear-end collision. The movement of the head restraint helps support the occupant's head by reducing its backward movement and helping absorb some of the forces that may lead to whiplash-type injuries.

Active Head Restraints are effective for collisions at low to medium speeds in which it is said that whiplash injury occurs most.

Active Head Restraints operate only in certain rear-end collisions. After the collision, the head restraints return to their original positions.

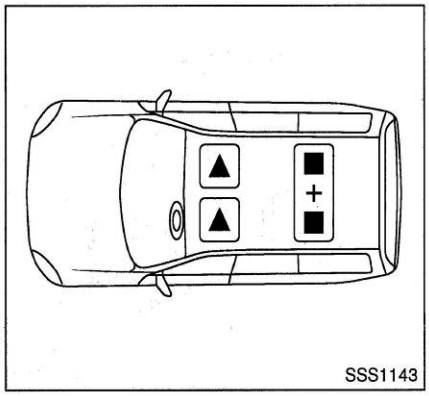
Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

Properly adjust the Active Head Restraints as described in this section.

ADJUSTABLE HEADRESTS (if so equipped)

WARNING

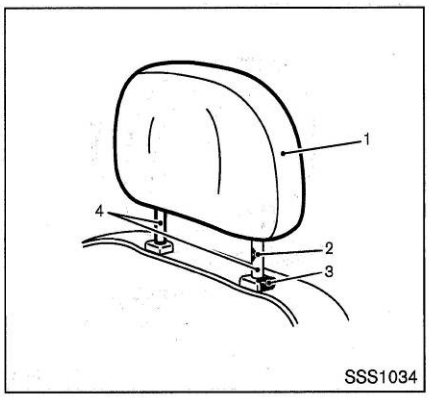
The adjustable headrests supplement the other vehicle safety systems. They may provide additional protection against injury in certain rear end collisions. Adjust the headrest properly, as specified in this section. Check the adjustment after someone else uses the seat. Do not attach anything to the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


SSS1143

The illustration shows the seating positions equipped with adjustable headrests.

■ Indicates the seating position is equipped with an adjustable headrest.

+ Indicates the seating position is not equipped with a head restraint or adjustable headrest.

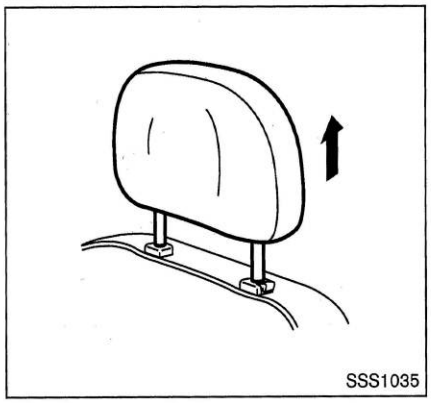


SSS1034

Components

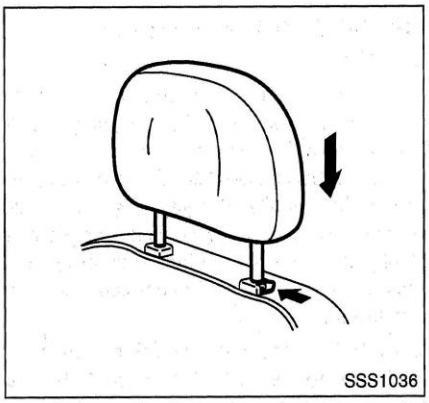
1. Adjustable headrest
2. Adjustment notch
3. Lock knob
4. Stalks

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

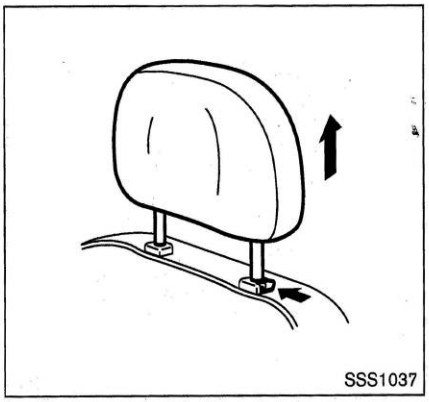

SSS1035

Adjustment

To raise the headrest, pull it up to the lock position.


SSS1036

To lower, push and hold the lock knob and push the headrest down.


SSS1037

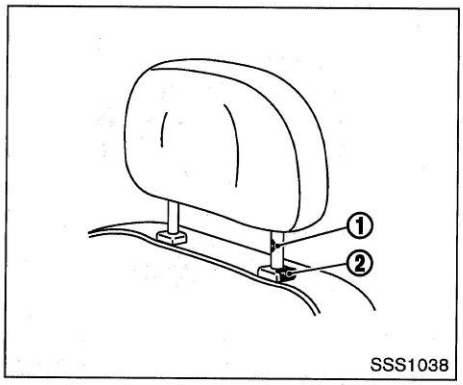
Removal

Use the following procedure to remove the adjustable headrests.

Before removing the headrests, fold down the seatback. (See "Rear seats" (P.1-4).)

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

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



Install

Before installing the headrests, fold down the seatback. (See "Rear seats" (P.1-4).)

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

PRECAUTIONS ON SEAT BELT USAGE

If you are wearing your seat belt properly adjusted, and you are sitting upright and well back in your seat with both feet on the floor, your chances of being injured or killed in an accident and/or the severity of injury may be greatly reduced. NISSAN strongly encourages you and all of your passengers to buckle up every time you drive, even if your seating position includes a supplemental air bag.

Most U.S. states and Canadian provinces or territories specify that seat belts be worn at all times when a vehicle is being driven.

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

Post-Test Dummy Knee Contact with Vehicle Interior View

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 Acceleration (X) Redundant

Driver Head Acceleration (Y) Redundant

Driver Head Acceleration (Z) Redundant

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)

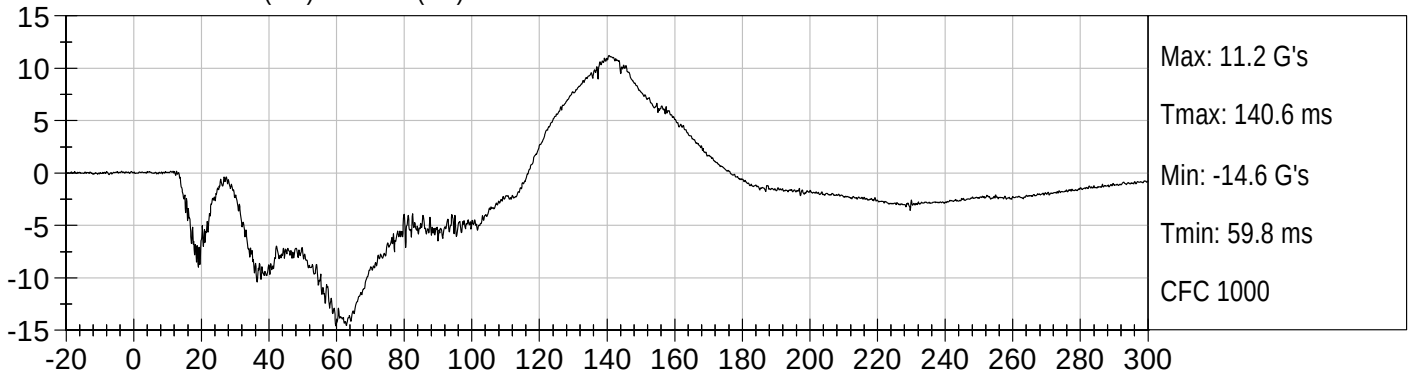
Load Cell Pole Barrier #7 Force (Y)

Load Cell Pole Barrier #8 Force (Y)

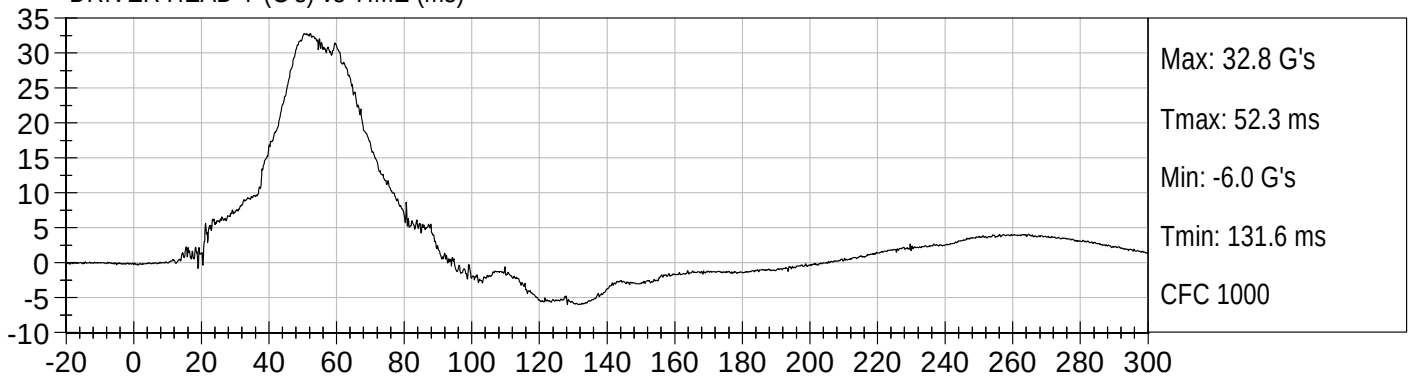
75° Oblique Rigid Pole Side NCAP
2012 Nissan Juke - MC5210

Test Date: 01/20/2012
Speed: 19.9 mph (32.0 km/h)

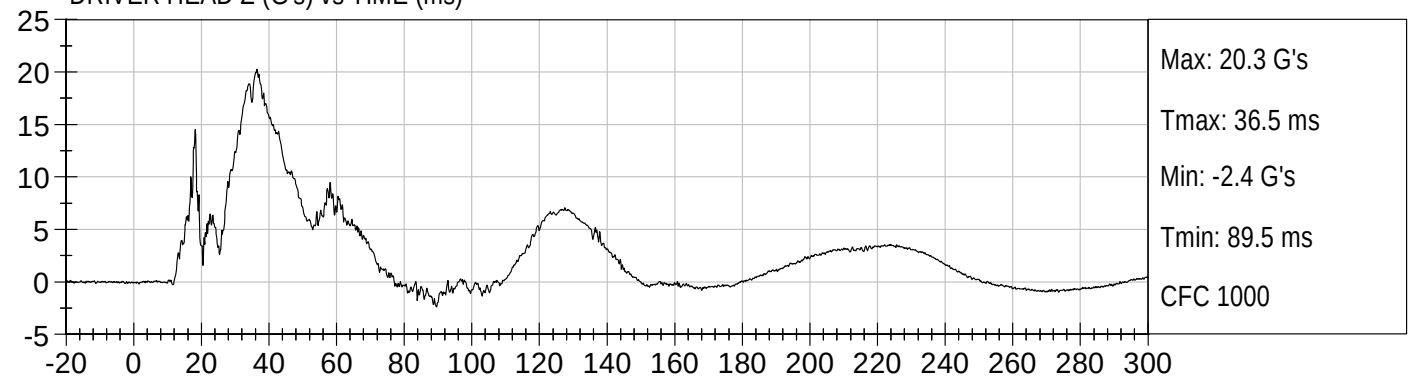
DRIVER HEAD X (G's) vs TIME (ms)



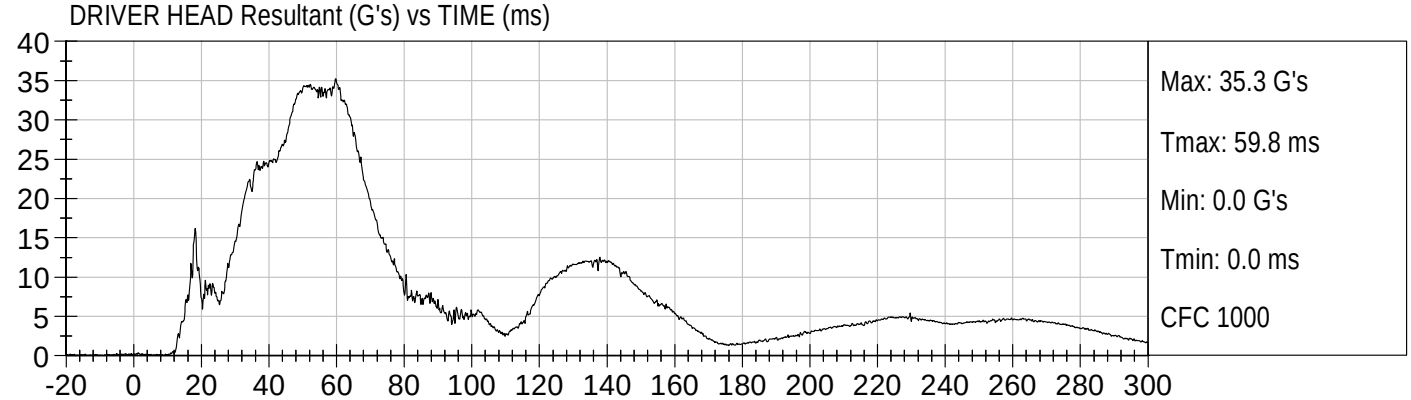
DRIVER HEAD Y (G's) vs TIME (ms)



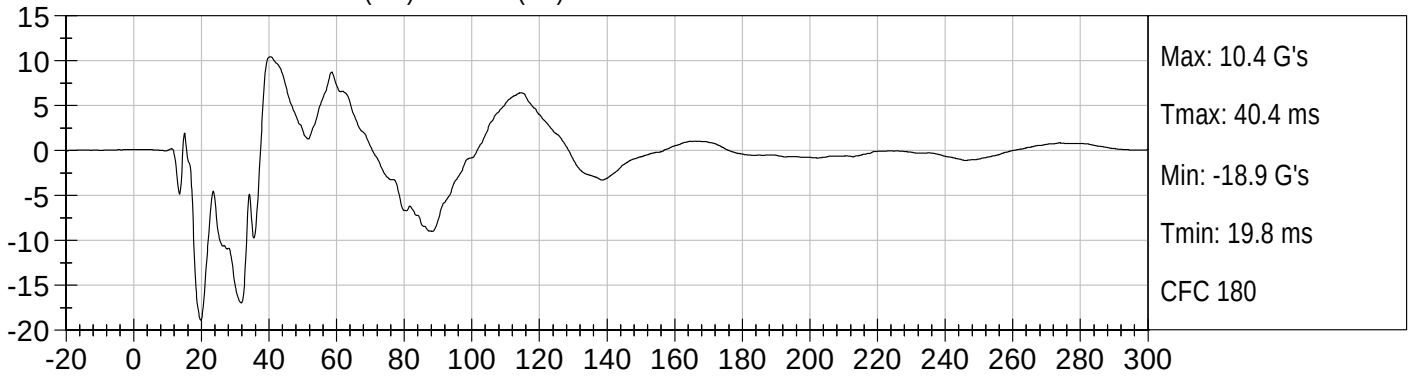
DRIVER HEAD Z (G's) vs TIME (ms)



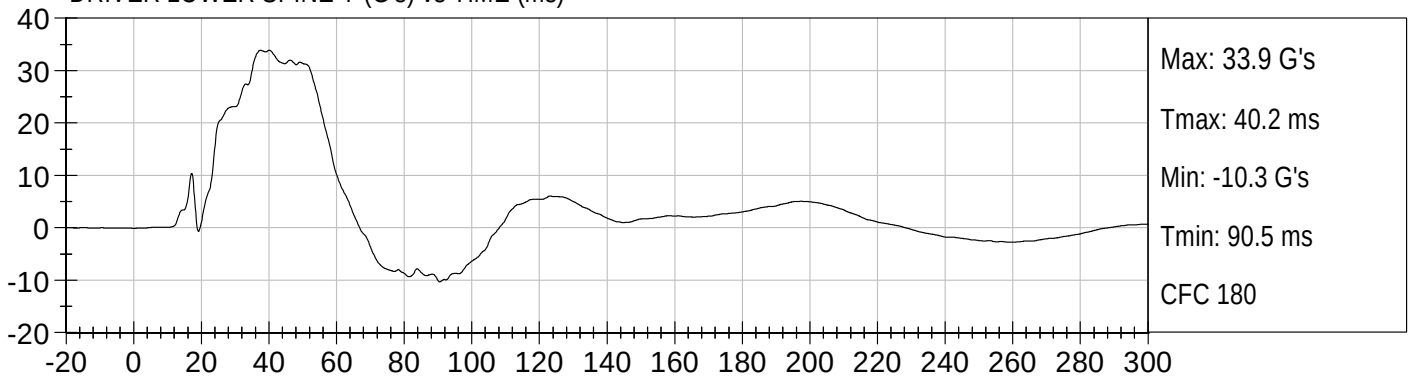
DRIVER HEAD Resultant (G's) vs TIME (ms)



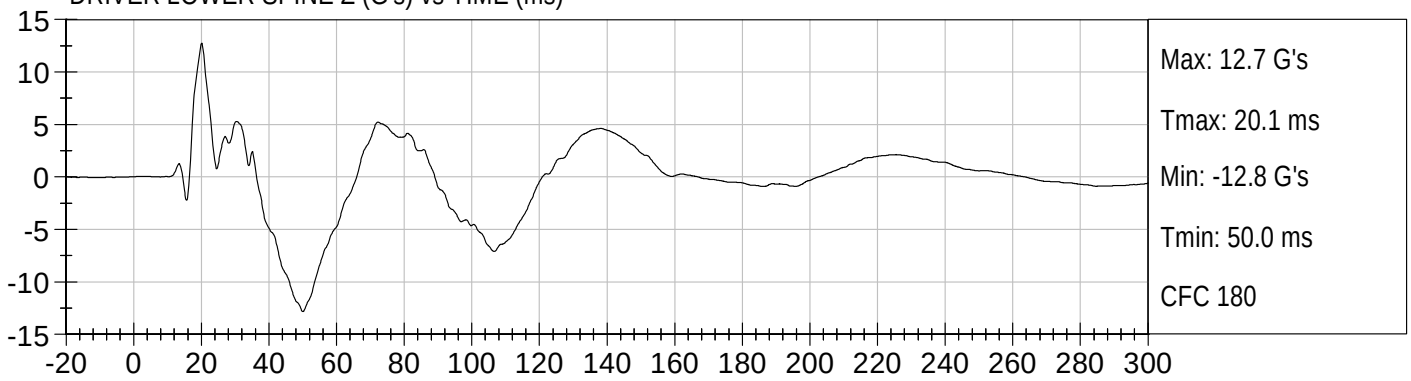
DRIVER LOWER SPINE X (G's) vs TIME (ms)



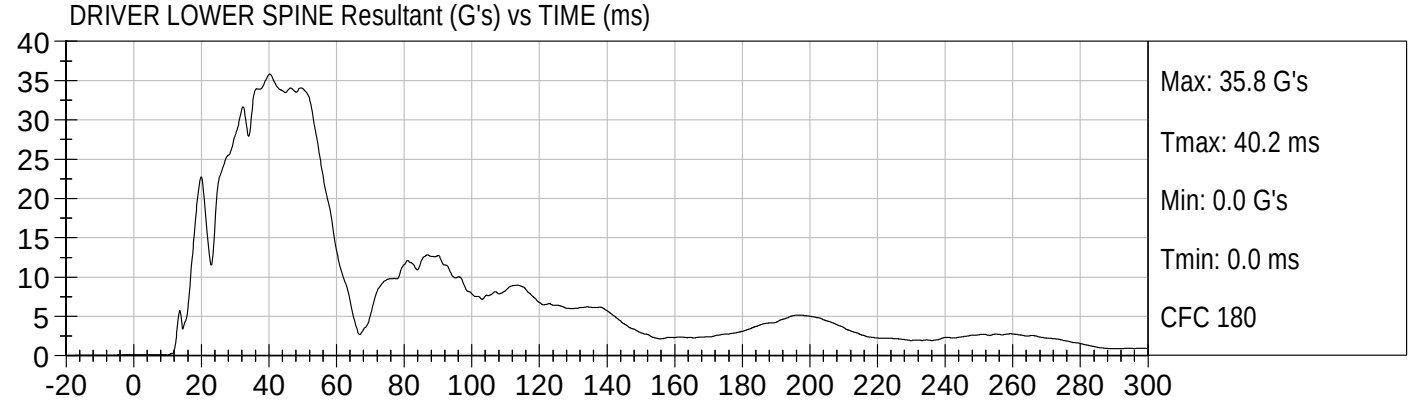
DRIVER LOWER SPINE Y (G's) vs TIME (ms)



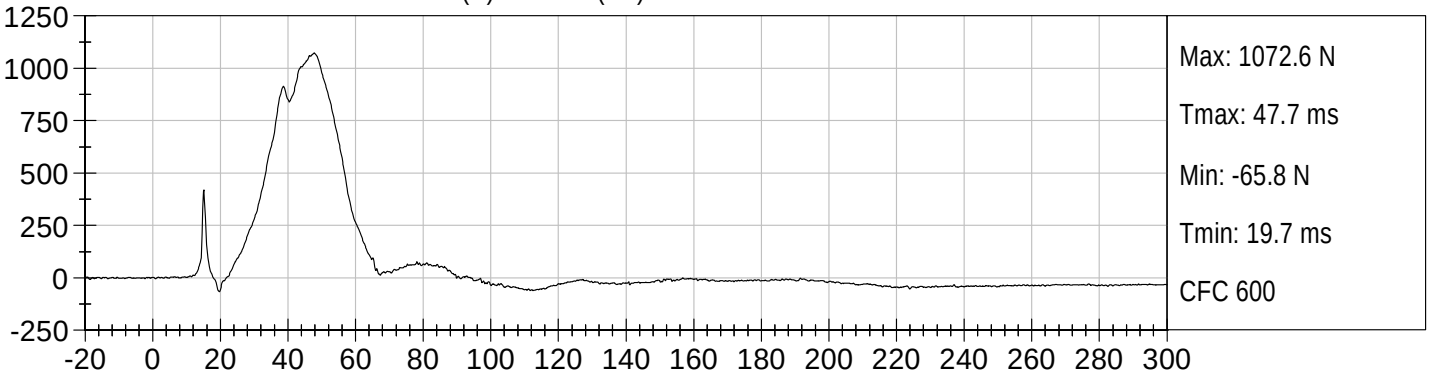
DRIVER LOWER SPINE Z (G's) vs TIME (ms)



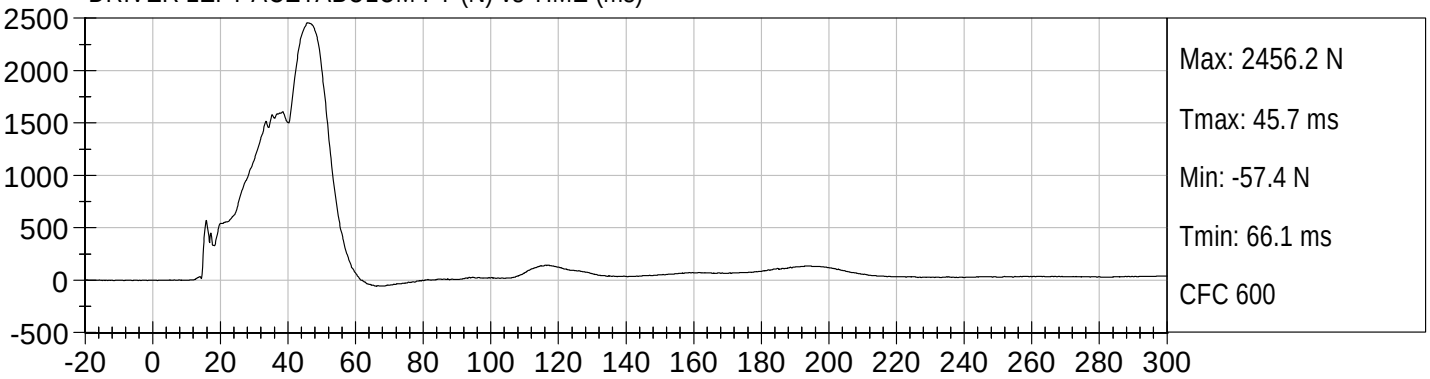
DRIVER LOWER SPINE Resultant (G's) vs TIME (ms)



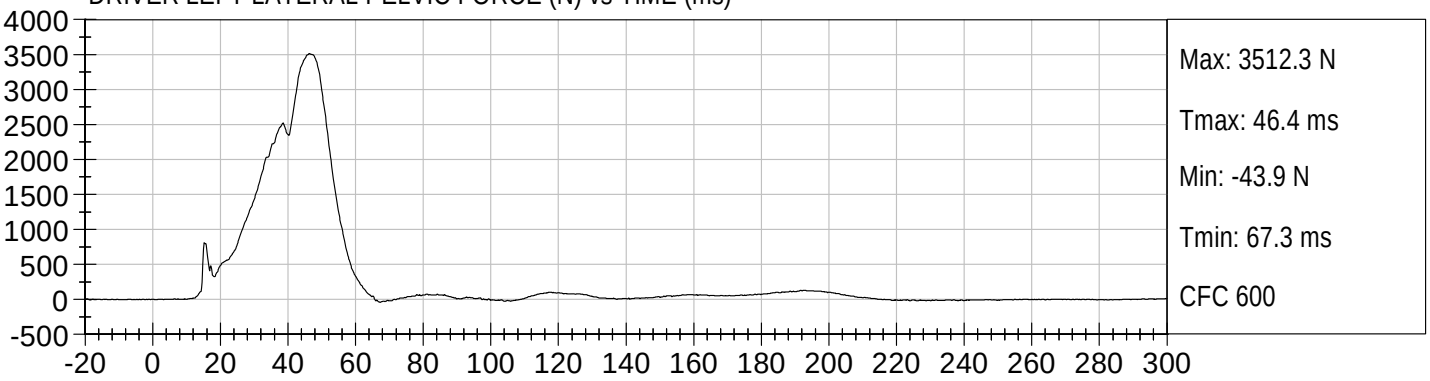
DRIVER LEFT ILLIUM CREST FY (N) vs TIME (ms)



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: 296

No.	Name	Spec. (mm)	Result	Pass/Fail
A	Sitting Height	772 - 788	784	Pass
B	Shoulder Pivot Height	437 - 453	442	Pass
C	H-point Height	79 - 89	83	Pass
D	H-point from Seatback	141 - 151	145	Pass
E	Shoulder Pivot from Backline	97 - 107	99	Pass
F	Thigh Clearance	119 -135	121	Pass
G	Head Breadth	140 - 148	142	Pass
H	Head Back from Backline	40 - 46	45	Pass
I	Head Depth	178 - 188	180	Pass
J	Head Circumference	541 - 551	548	Pass
K	Buttock to Knee Length	514 - 540	535	Pass
L	Popliteal Height	343 - 369	358	Pass
M	Knee Pivot to Floor Height	392 - 409	404	Pass
N	Buttock Popliteal Length	416 - 442	435	Pass
O	Chest Depth w/o Jacket	195 - 211	206	Pass
P	Foot Length	216 - 232	219	Pass
Q	Hip Breadth (w/ pelvic plugs)	313 - 323	316	Pass
R	Arm Length	249 - 259	250	Pass
S	Knee Joint to Seatback	477 - 493	481	Pass
V	Shoulder Width	341 - 357	346	Pass
W	Foot Width	78 - 94	85	Pass
Y	Chest Circumference w/ jacket	851 - 881	870	Pass
Z	Waist Circumference	761 - 791	772	Pass

MGA RESEARCH CORPORATION

HEAD DROP TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test ID:** D12081

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	23	Pass
Peak Resultant Acceleration	G's	115 to 137	124	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-2.6	Pass
Unimodal	N/A	<15%	Yes	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

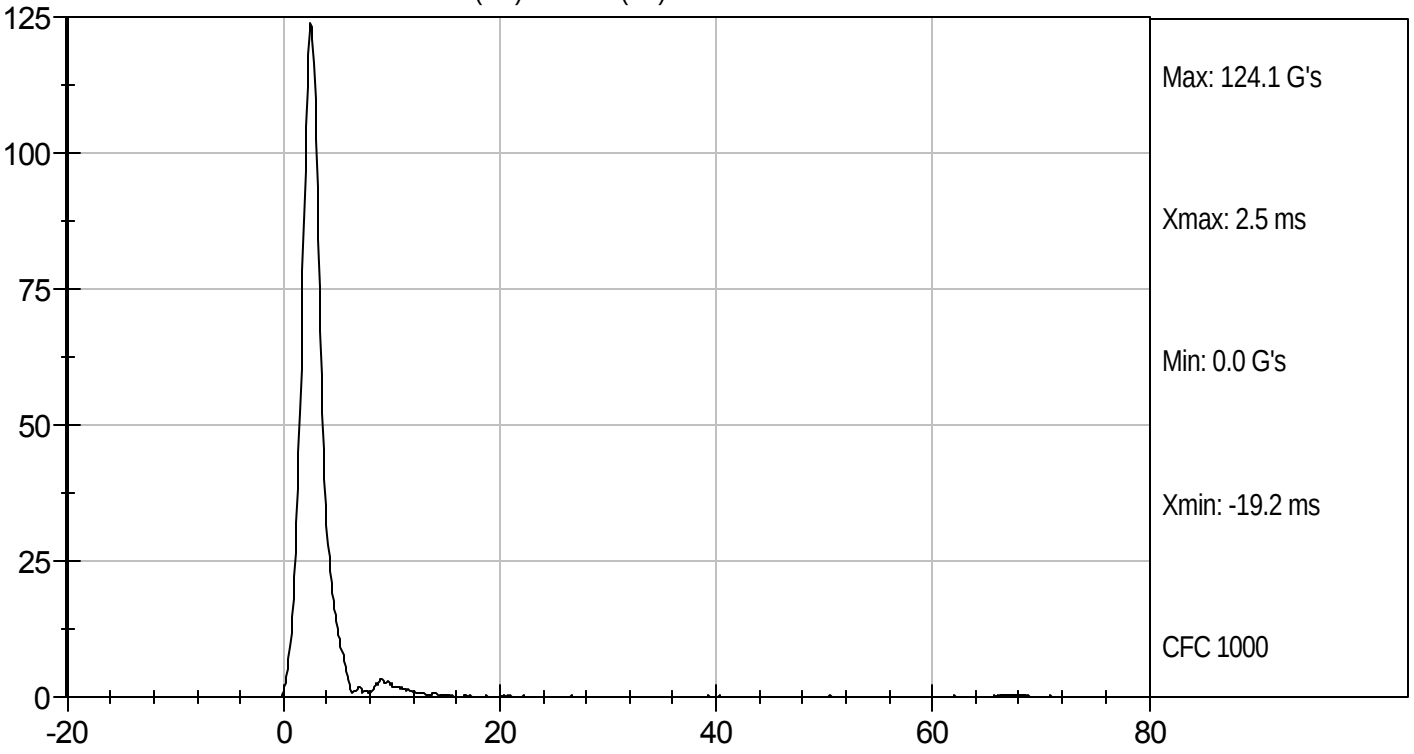
1/10/12
Test Date

David Winkelbauer
Approved By

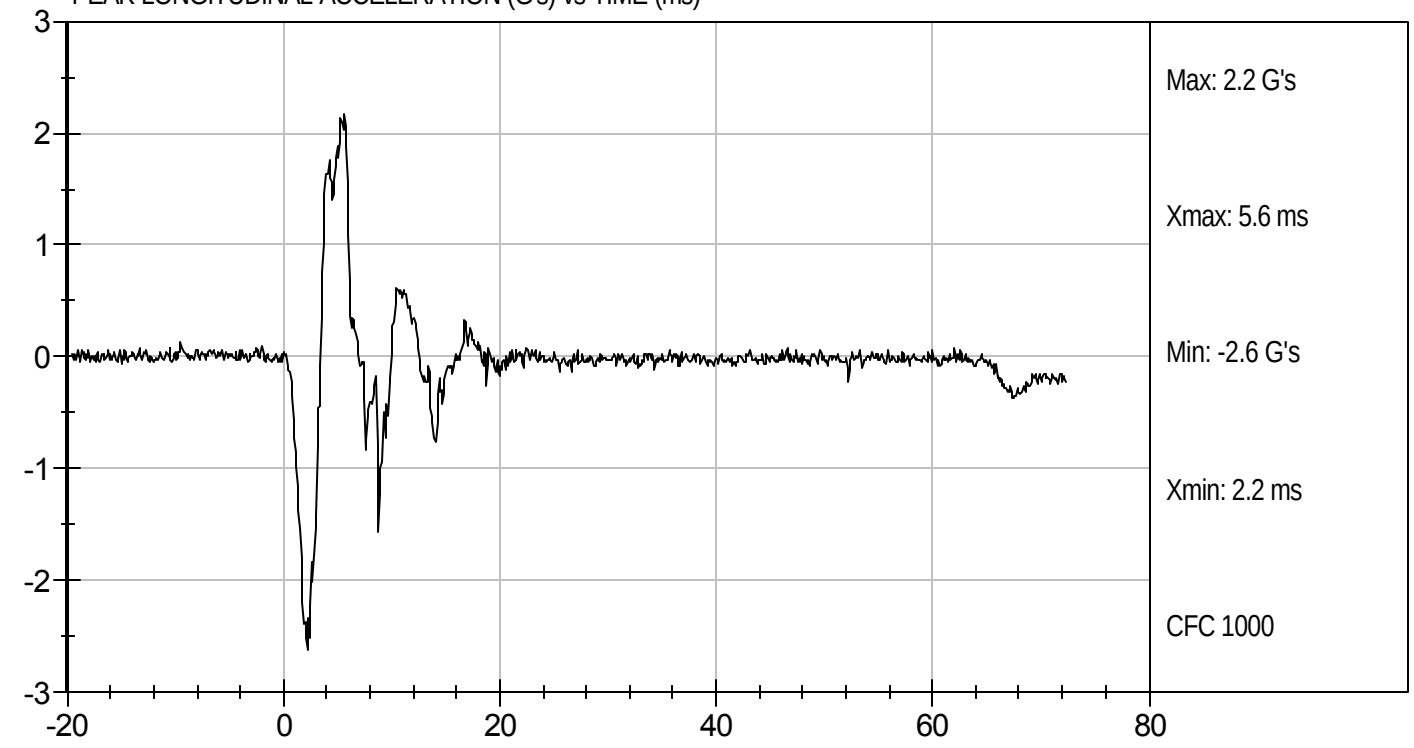
Test Desc: Head Drop
Component ID: D12081

Test Date: 1/10/12
Velocity: 0 ft/s, 0 m/s

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



PEAK LONGITUDINAL ACCELERATION (G's) vs TIME (ms)



MGA RESEARCH CORPORATION

LATERAL NECK PENDULUM TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D12082

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.4	Pass
Humidity		%	10 to 70	22	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.58	Pass
	15 ms	m/s	3.30 to 4.10	3.73	Pass
	20 ms	m/s	4.40 to 5.40	4.98	Pass
	25 ms	m/s	5.40 to 6.10	5.45	Pass
	25-100 ms	m/s	5.50 to 6.20	5.50	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 during Rotation Interval		Nm	-44 to -36	-42	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	117	Pass
			Overall Test Results		Pass

Jessica Hall
Laboratory Technician

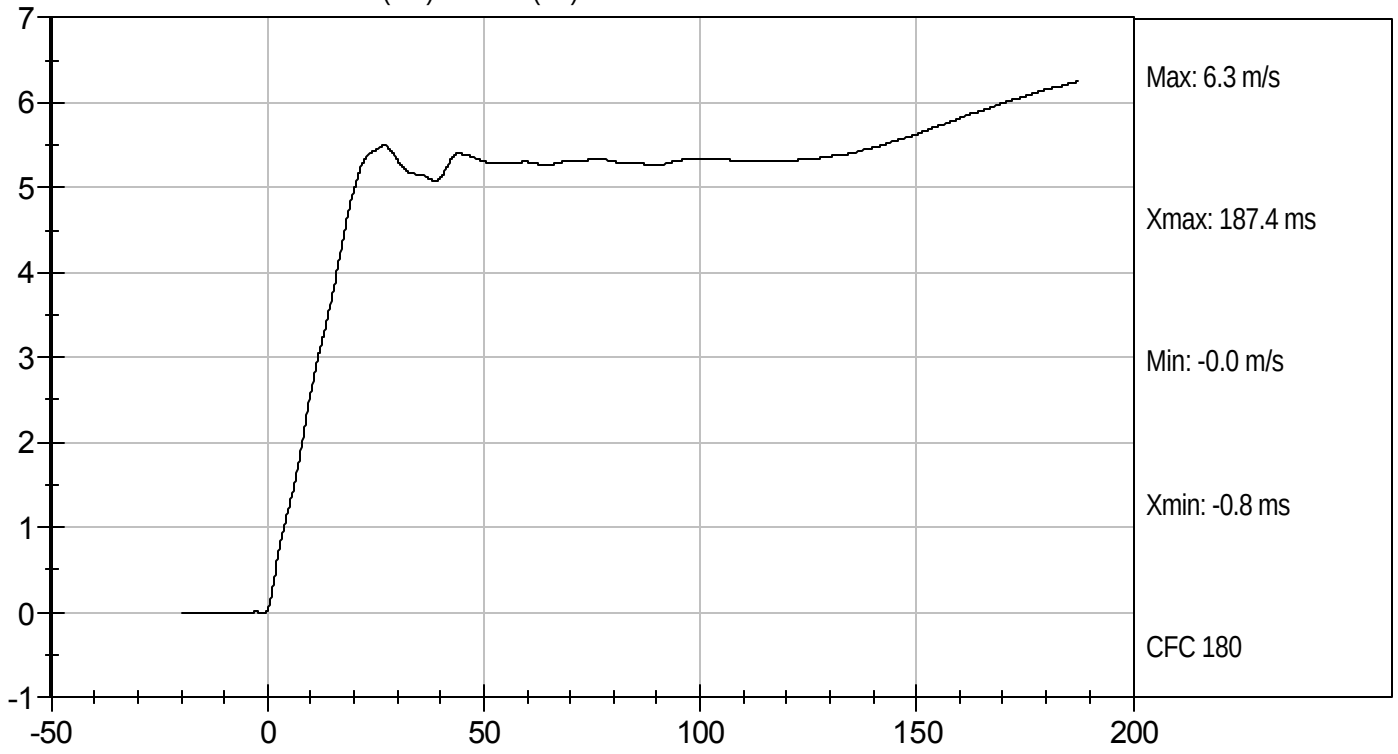
1/10/12
Test Date

David Winkelbauer
Approved By

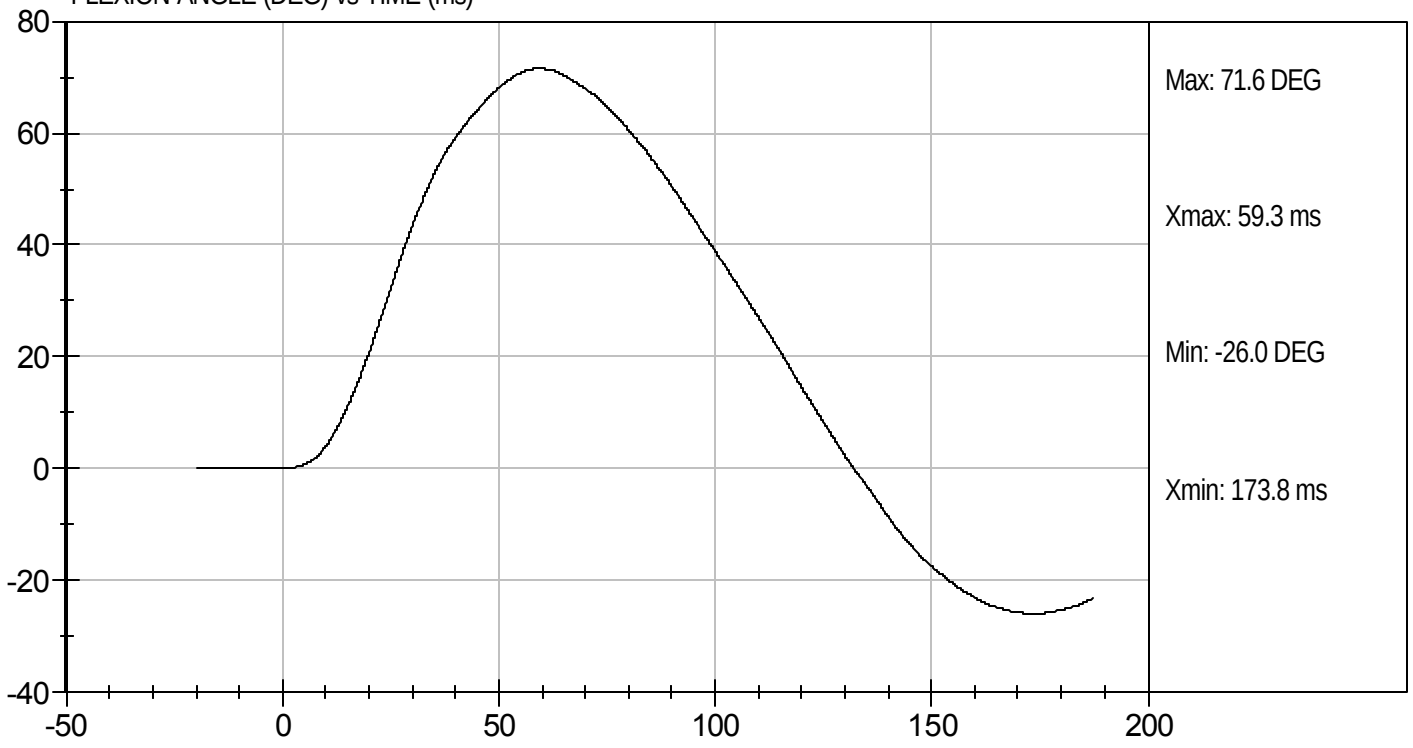
Test Desc: Neck Bending
Component ID: D12082

Test Date: 1/10/12
Velocity: 18.32 ft/s, 5.58 m/s

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

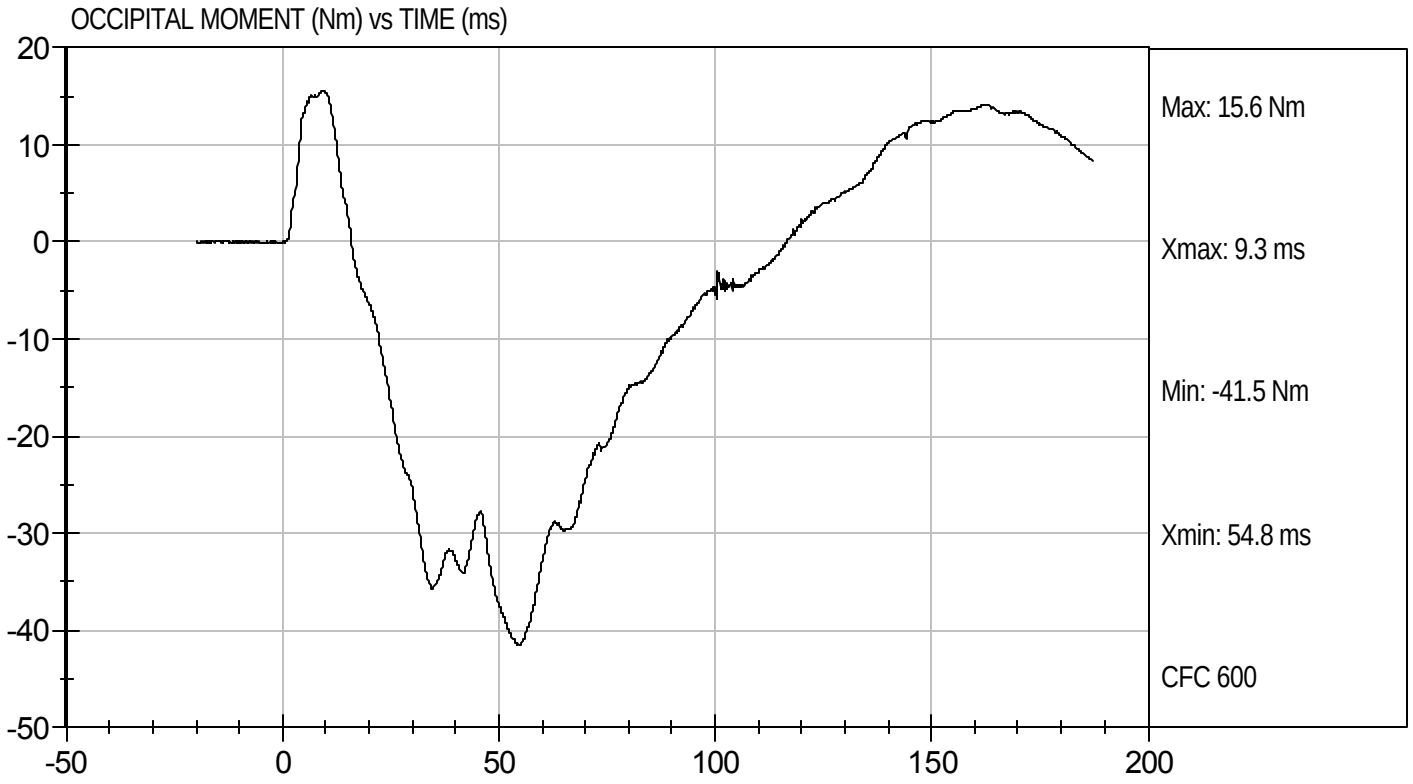


FLEXION ANGLE (DEG) vs TIME (ms)



Test Desc: Neck Bending
Component ID: D12082

Test Date: 1/10/12
Velocity: 18.32 ft/s, 5.58 m/s



MGA RESEARCH CORPORATION

SHOULDER IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test ID:** D12083

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	22.2	Pass
Laboratory Relative Humidity	%	10 to 70	23	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	31	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	19	Pass
		Overall Test Results		Pass

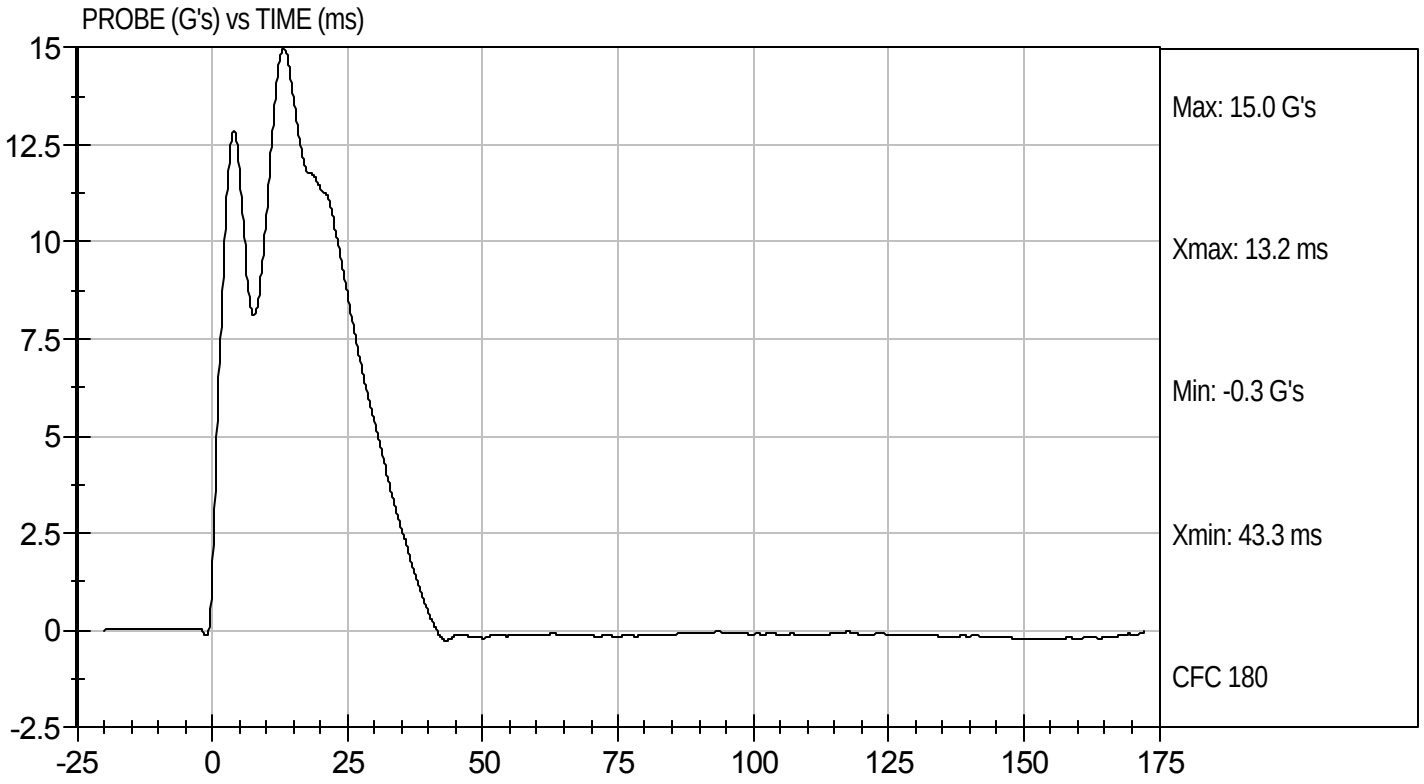
Jessica Hall
Laboratory Technician

1/10/12
Test Date

David Winkelbauer
Approved By

Test Desc: Shoulder Impact
Component ID: D12083

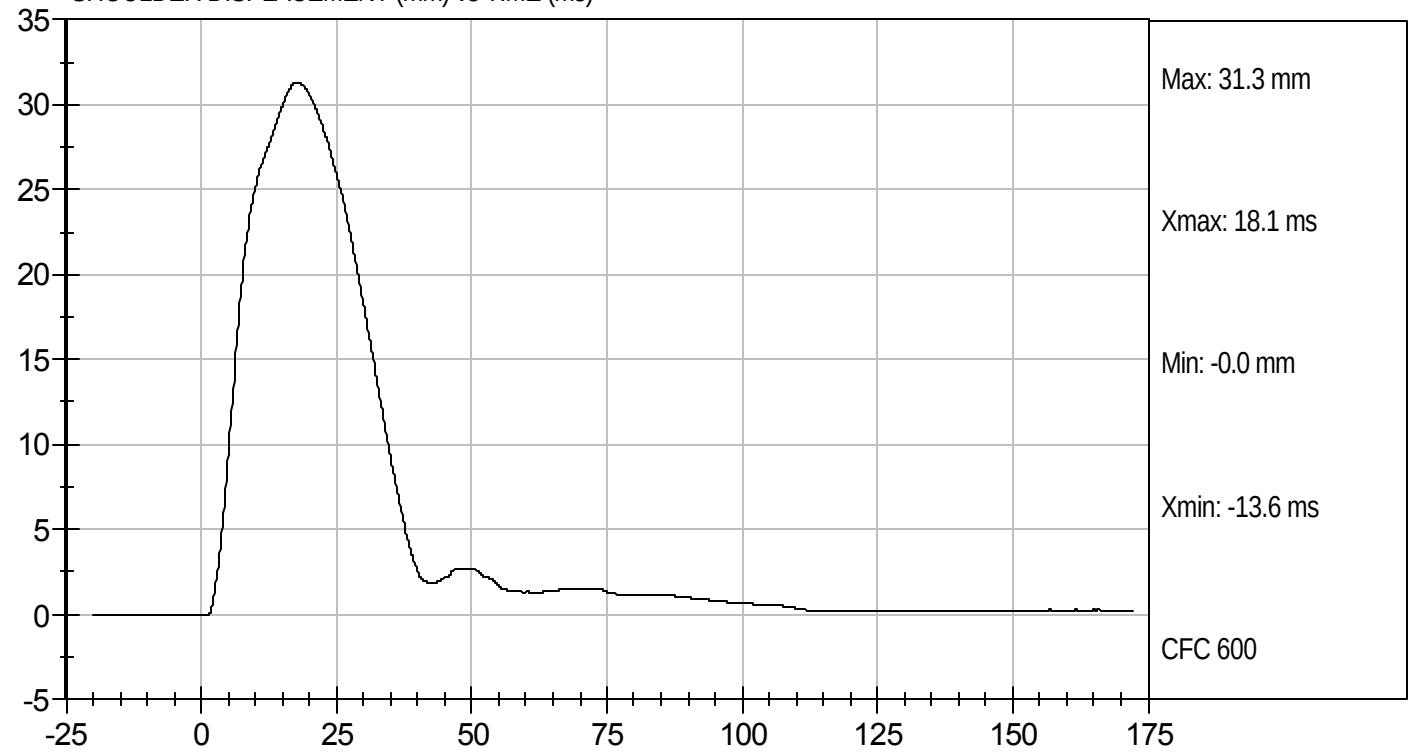
Test Date: 1/10/12
Velocity: 14.37 ft/s, 4.38 m/s



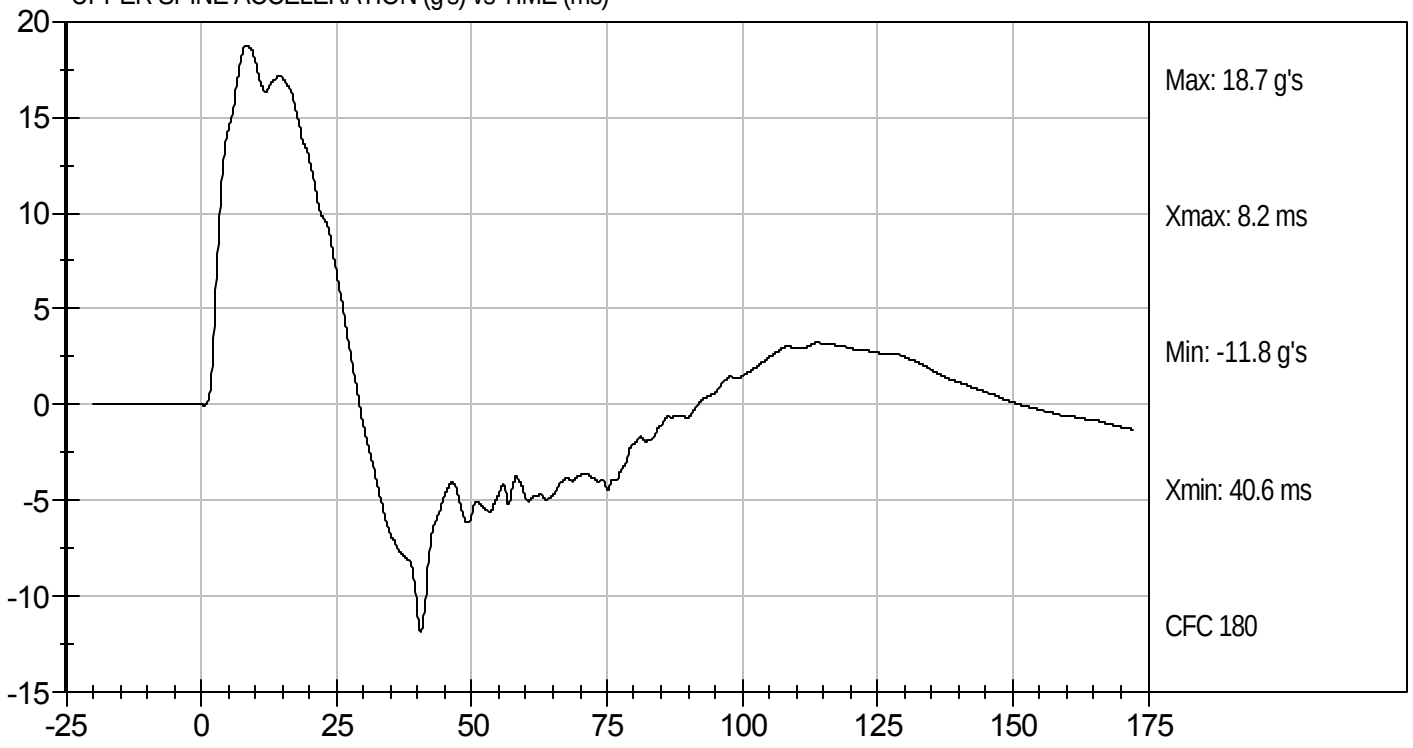
Test Desc: Shoulder Impact
Component ID: D12083

Test Date: 1/10/12
Velocity: 14.37 ft/s, 4.38 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (ms)



UPPER SPINE ACCELERATION (g's) vs TIME (ms)



MGA RESEARCH CORPORATION

THORAX (WITH ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D12084

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	23	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Peak Impactor Acceleration	G's	30 to 36	32	Pass
Shoulder Displacement	mm	31 to 40	36	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	33	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	38	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	32	Pass
		Overall Test Results		Pass

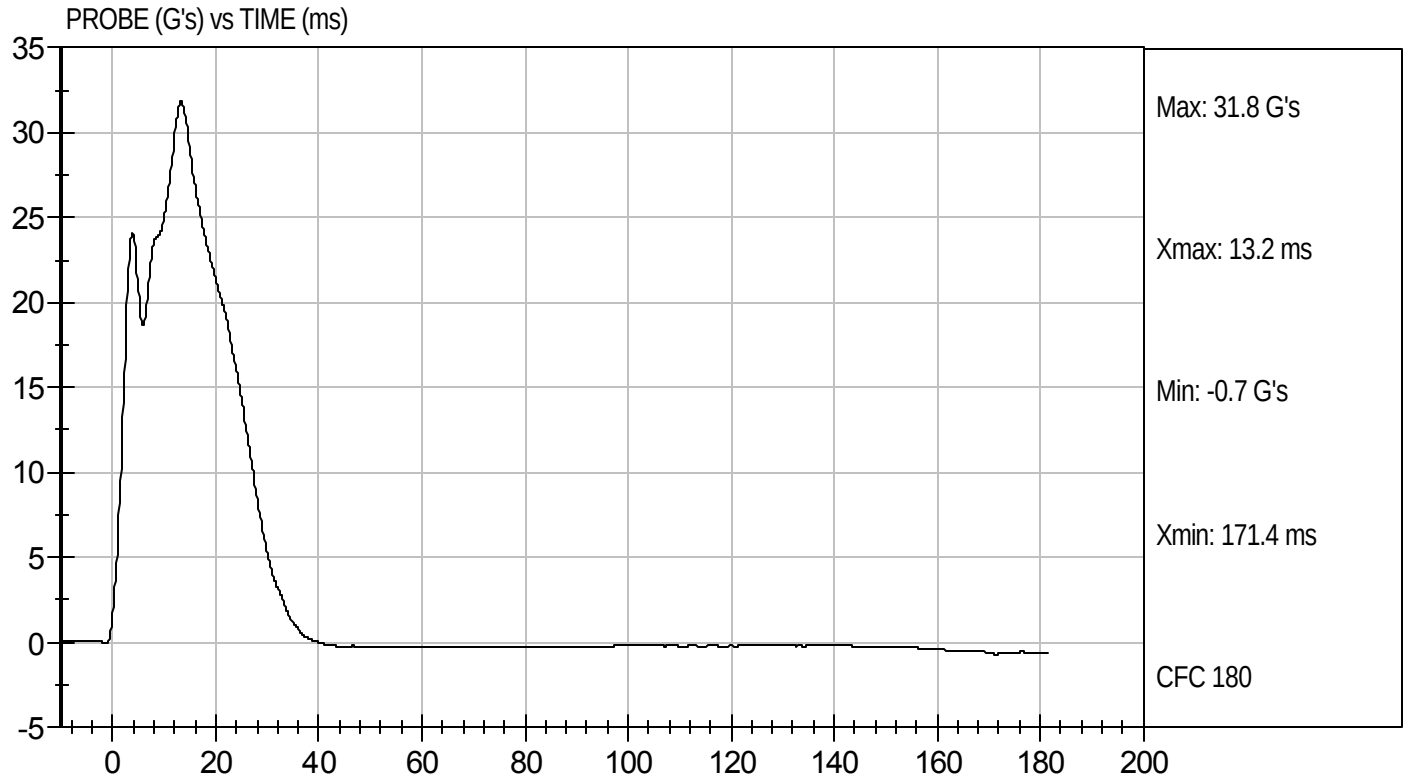
Jessica Gall
Laboratory Technician

1/10/12
Test Date

David Winkelbauer
Approved By

Test Desc: Thorax With Arm
Component ID: D12084

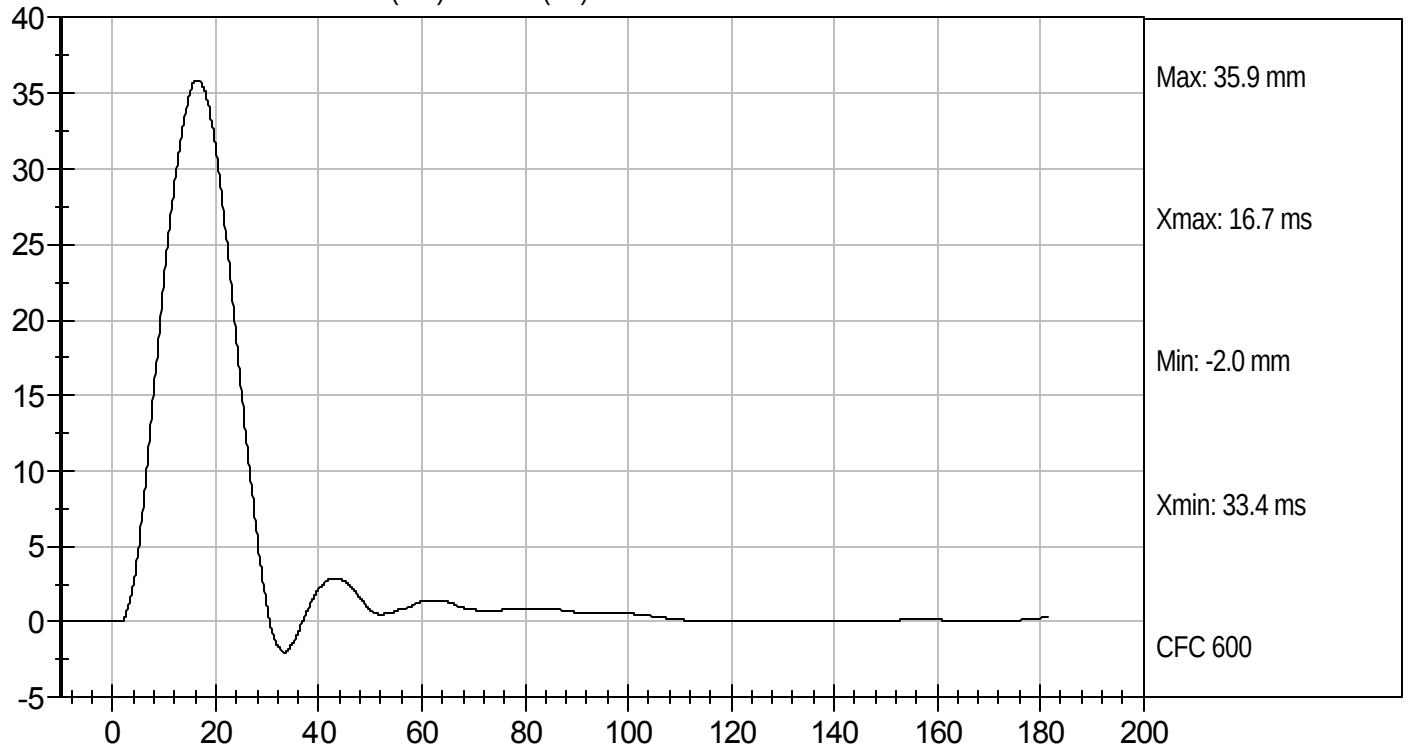
Test Date: 1/10/12
Velocity: 22.22 ft/s, 6.77 m/s



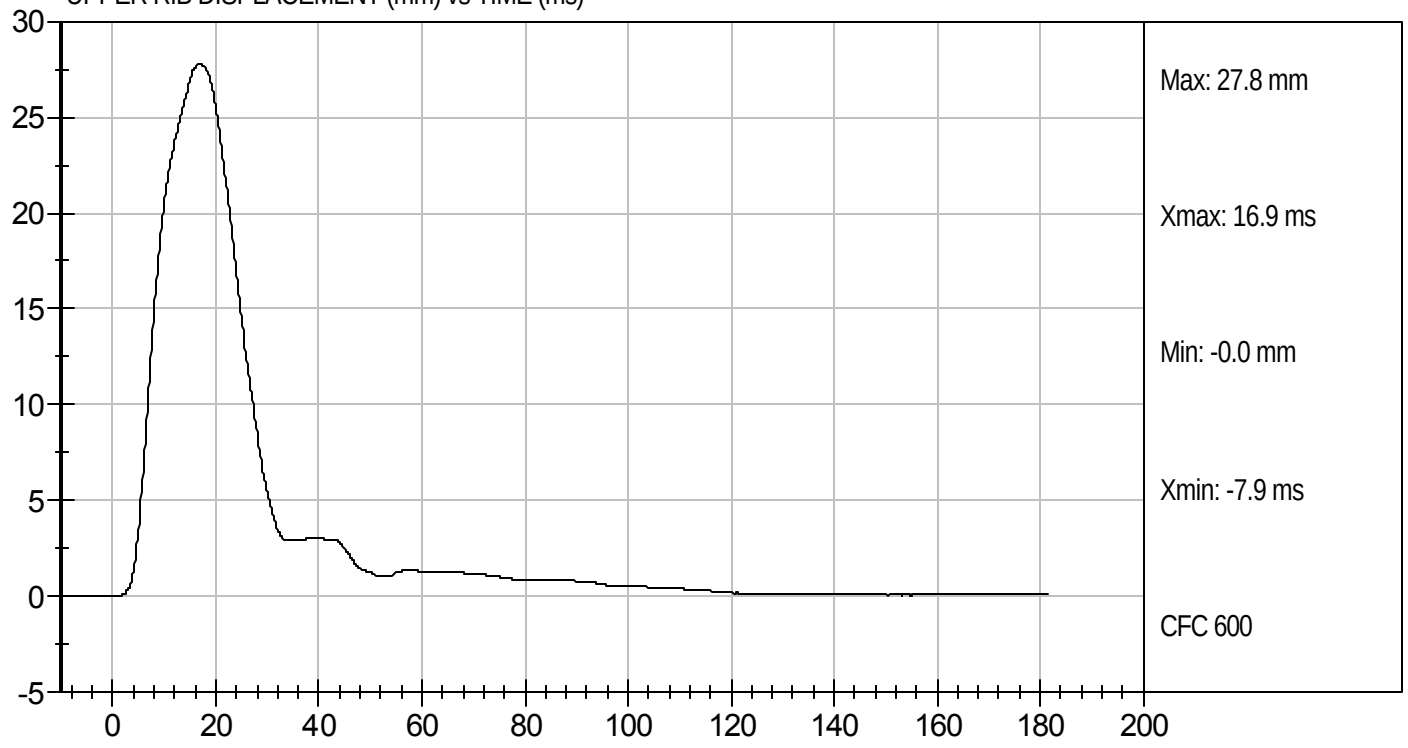
Test Desc: Thorax With Arm
Component ID: D12084

Test Date: 1/10/12
Velocity: 22.22 ft/s, 6.77 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (ms)



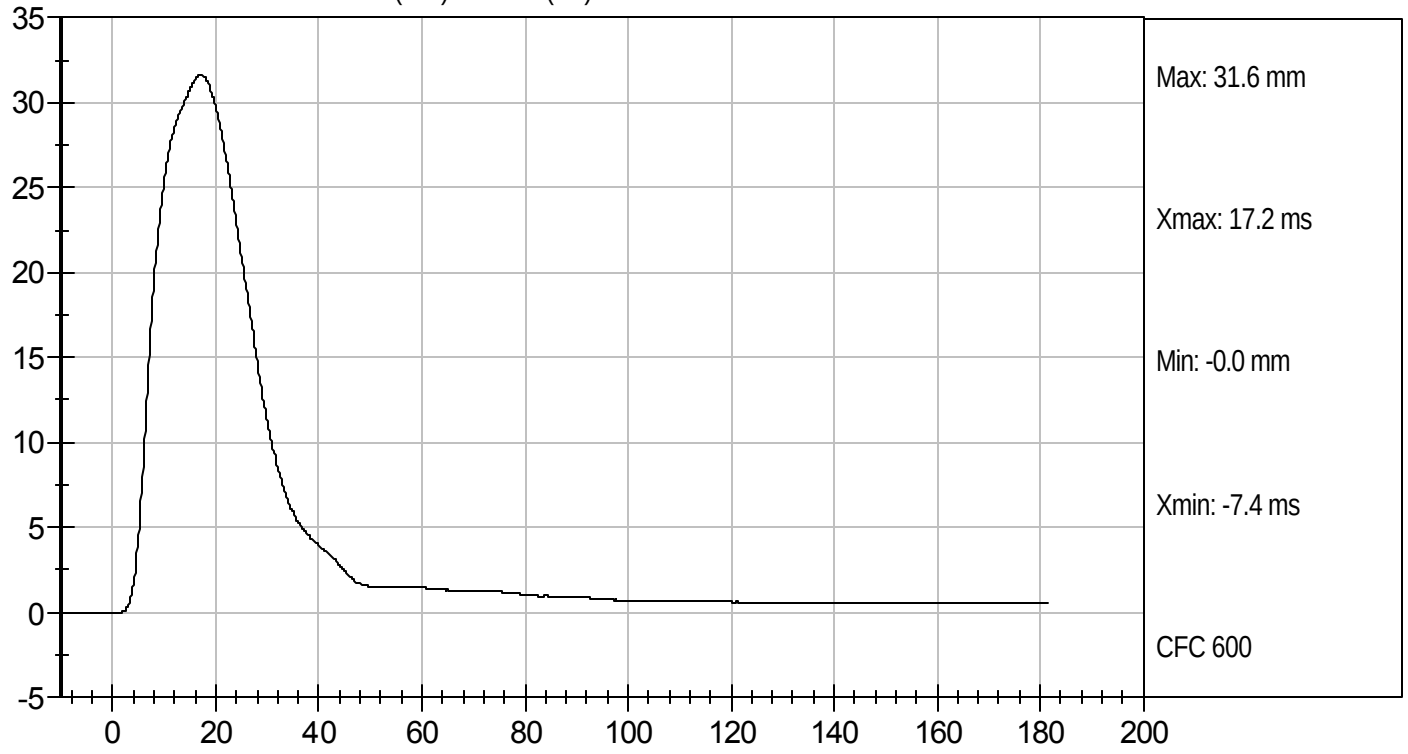
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



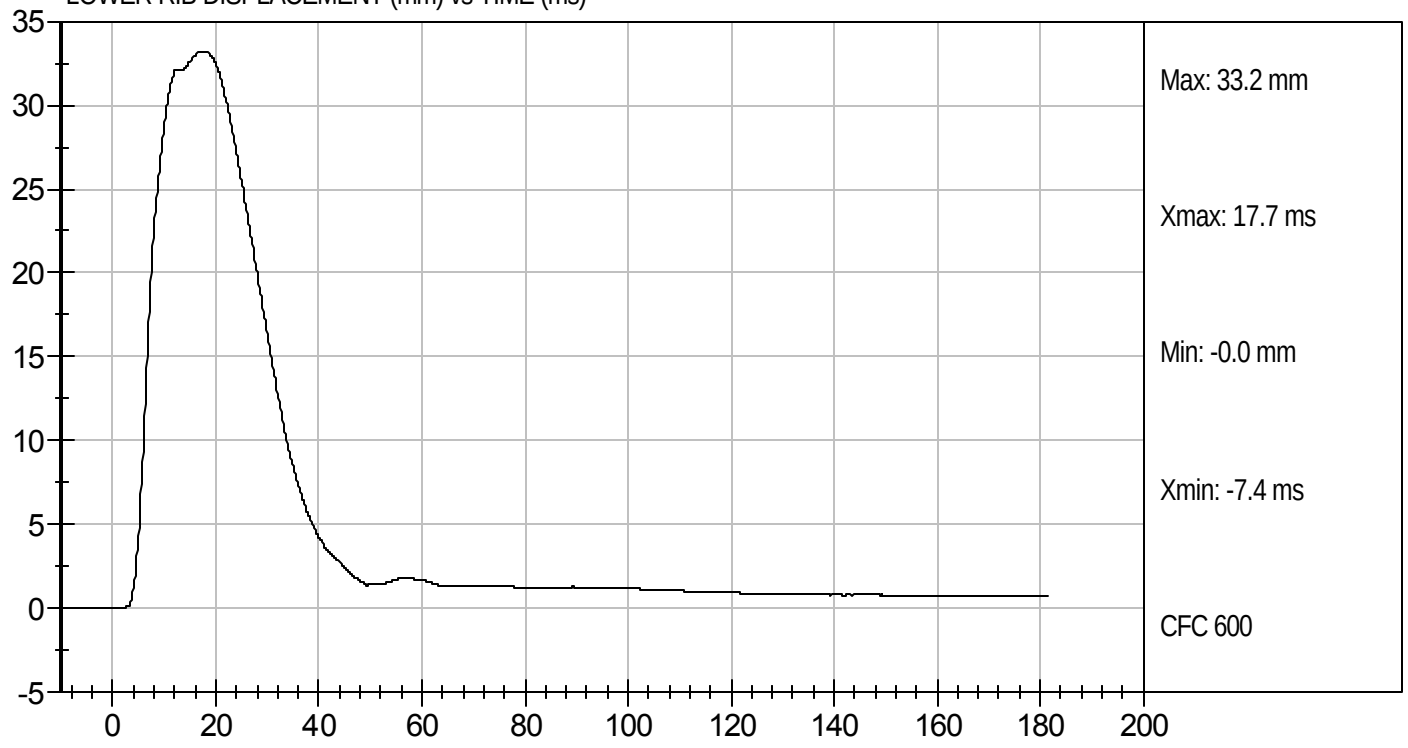
Test Desc: Thorax With Arm
Component ID: D12084

Test Date: 1/10/12
Velocity: 22.22 ft/s, 6.77 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



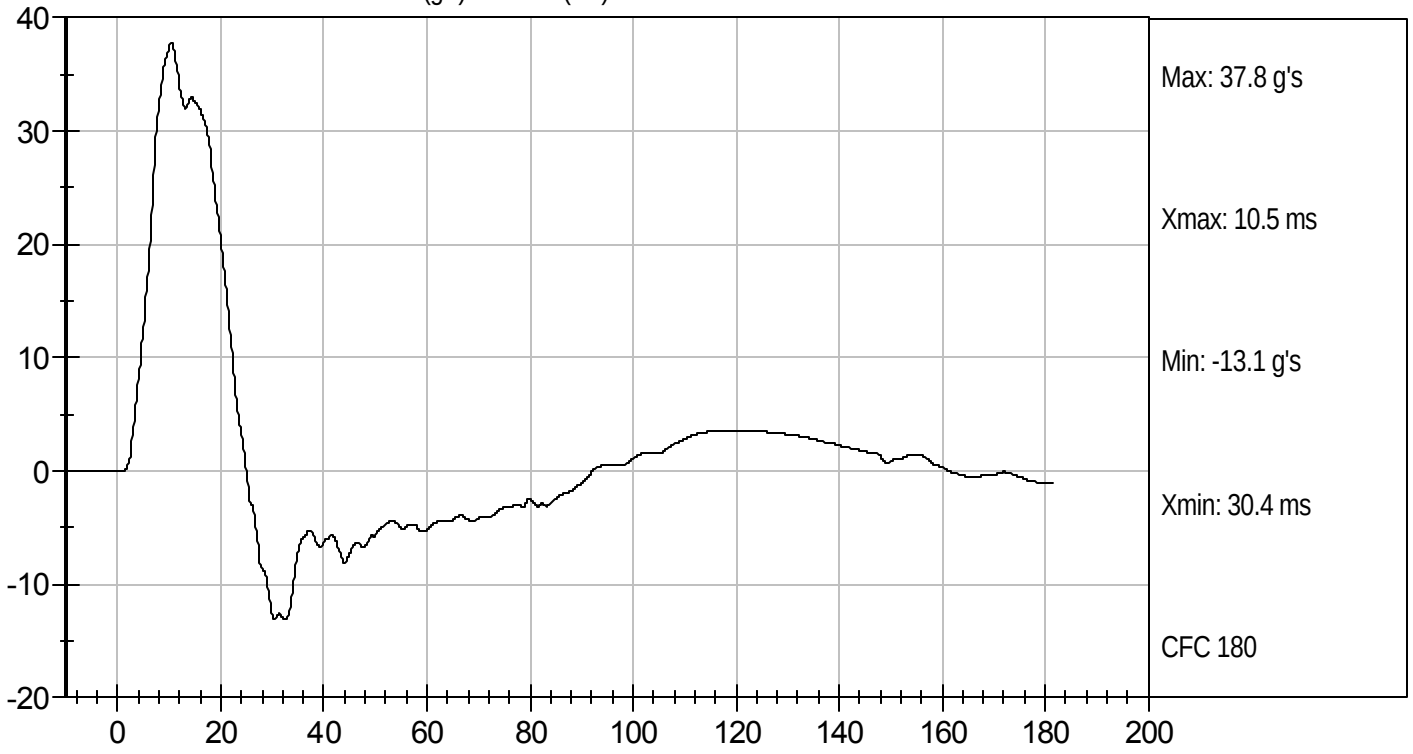
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



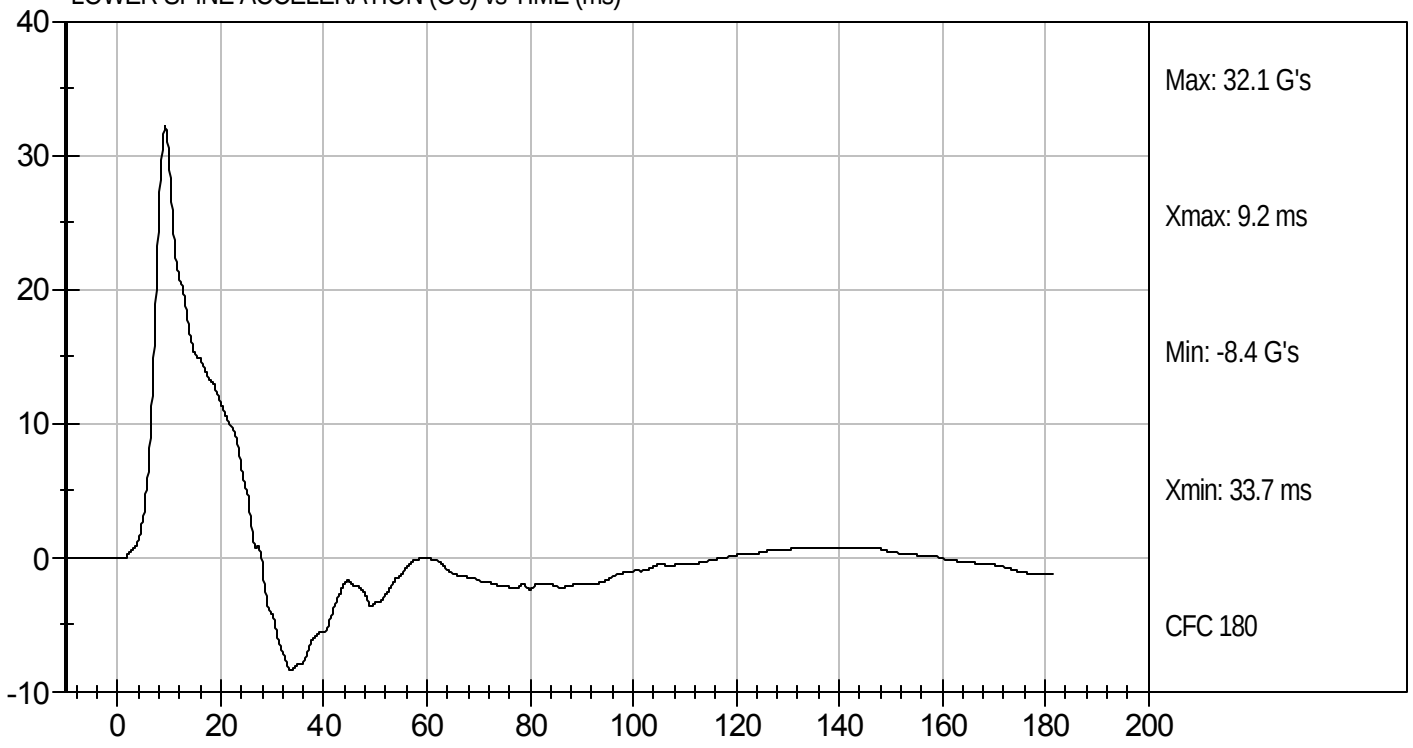
Test Desc: Thorax With Arm
Component ID: D12084

Test Date: 1/10/12
Velocity: 22.22 ft/s, 6.77 m/s

UPPER SPINE ACCELERATION (g's) vs TIME (ms)



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



MGA RESEARCH CORPORATION

THORAX (WITHOUT ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D12085

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	23	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Force	G's	14 to 18	15	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	39	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	13	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	8	Pass
		Overall Test Results		Pass

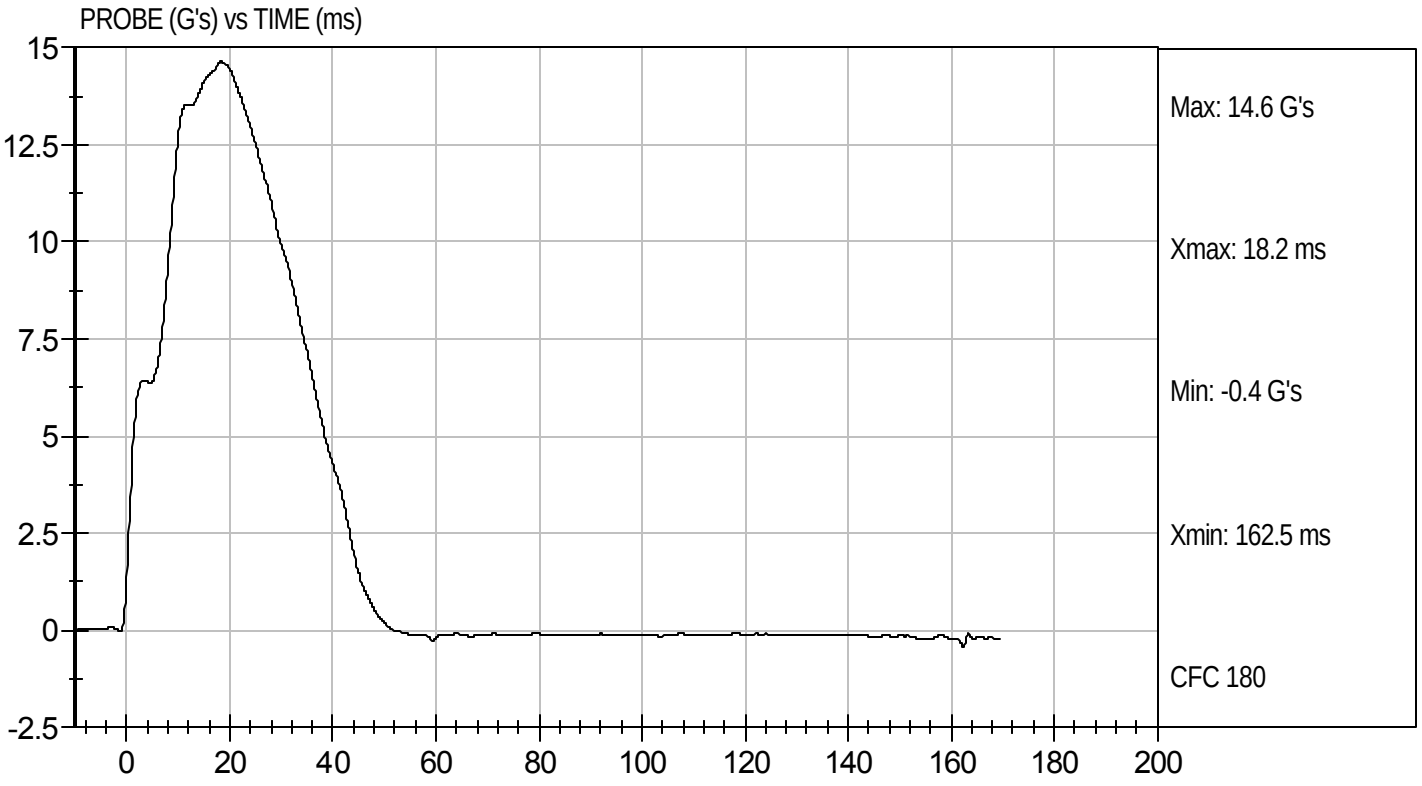
Jessica Hall
Laboratory Technician

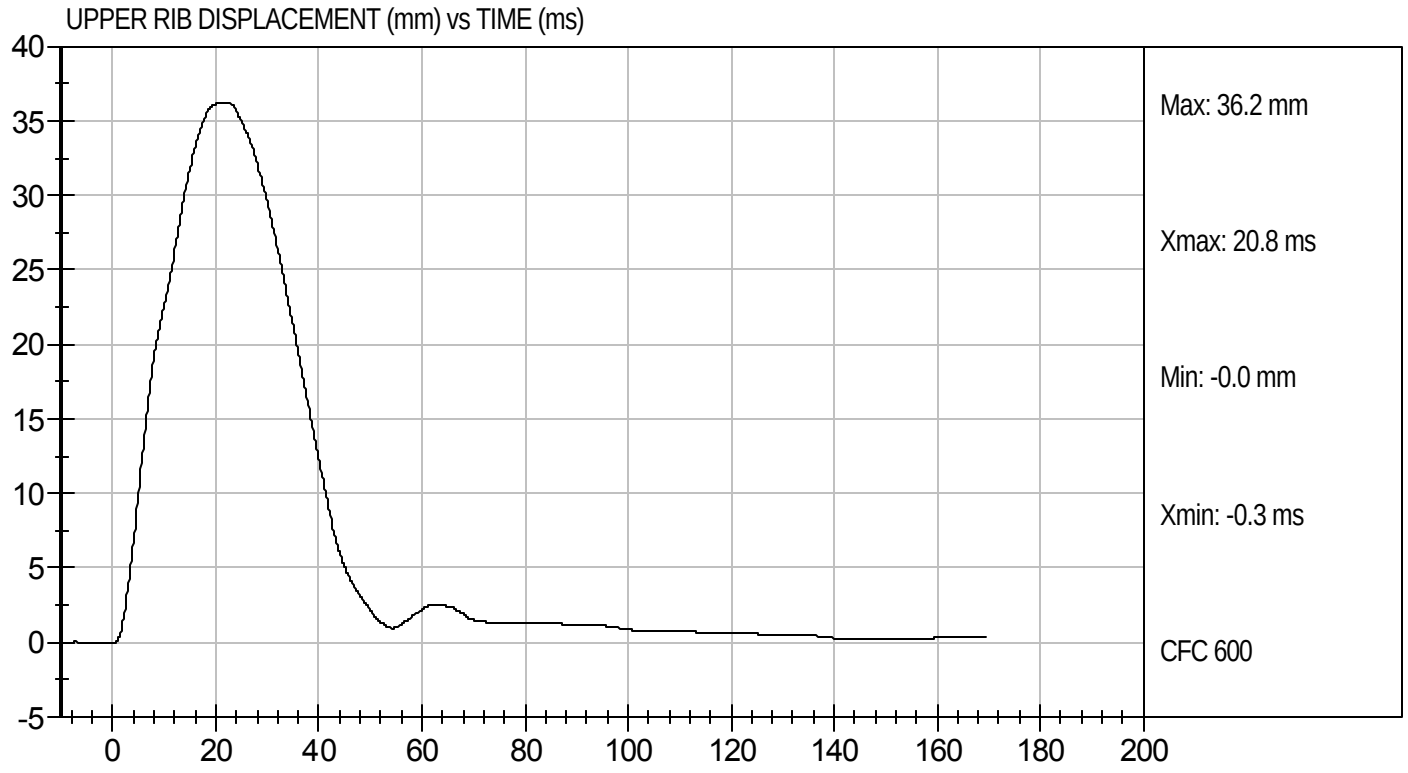
1/10/12
Test Date

David Winkelbauer
Approved By

Test Desc: Thorax Without Arm
Component ID: D12085

Test Date: 1/10/12
Velocity: 14.25 ft/s, 4.34 m/s

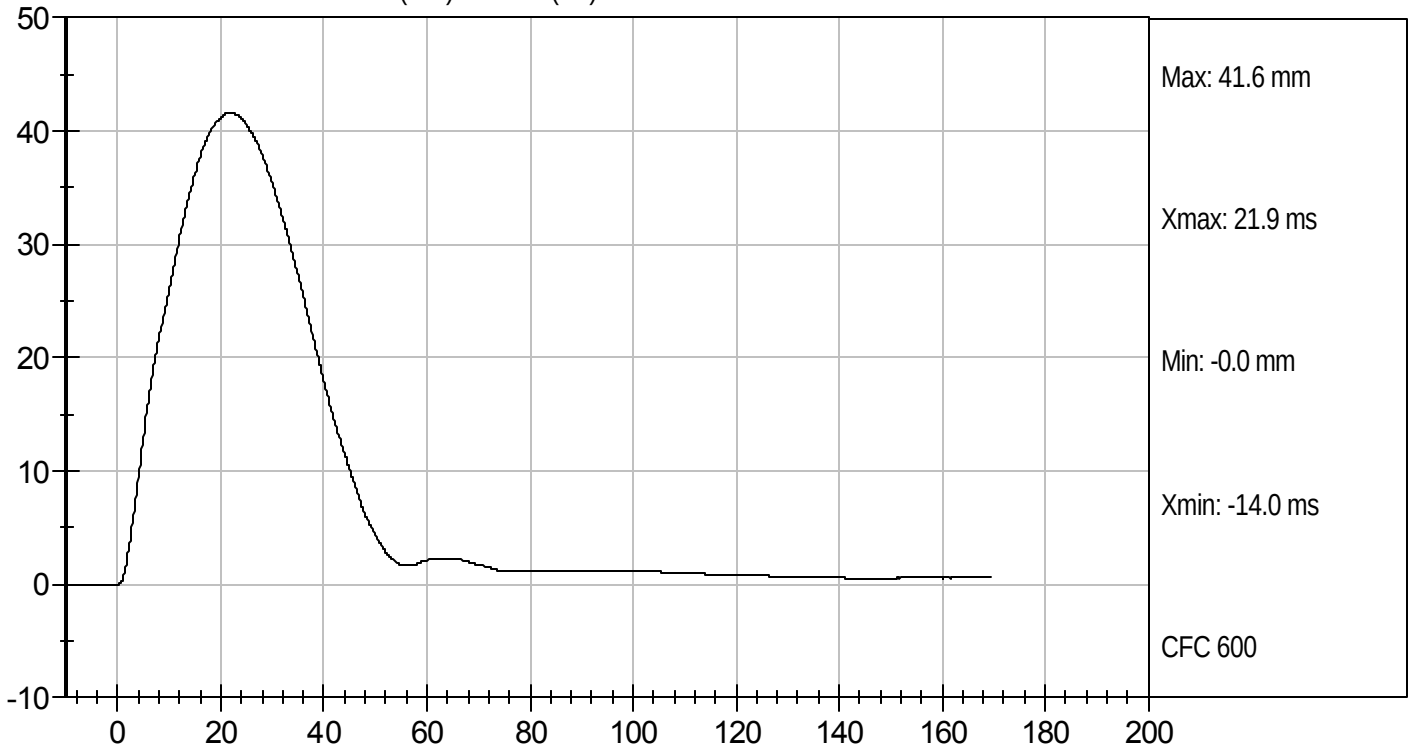




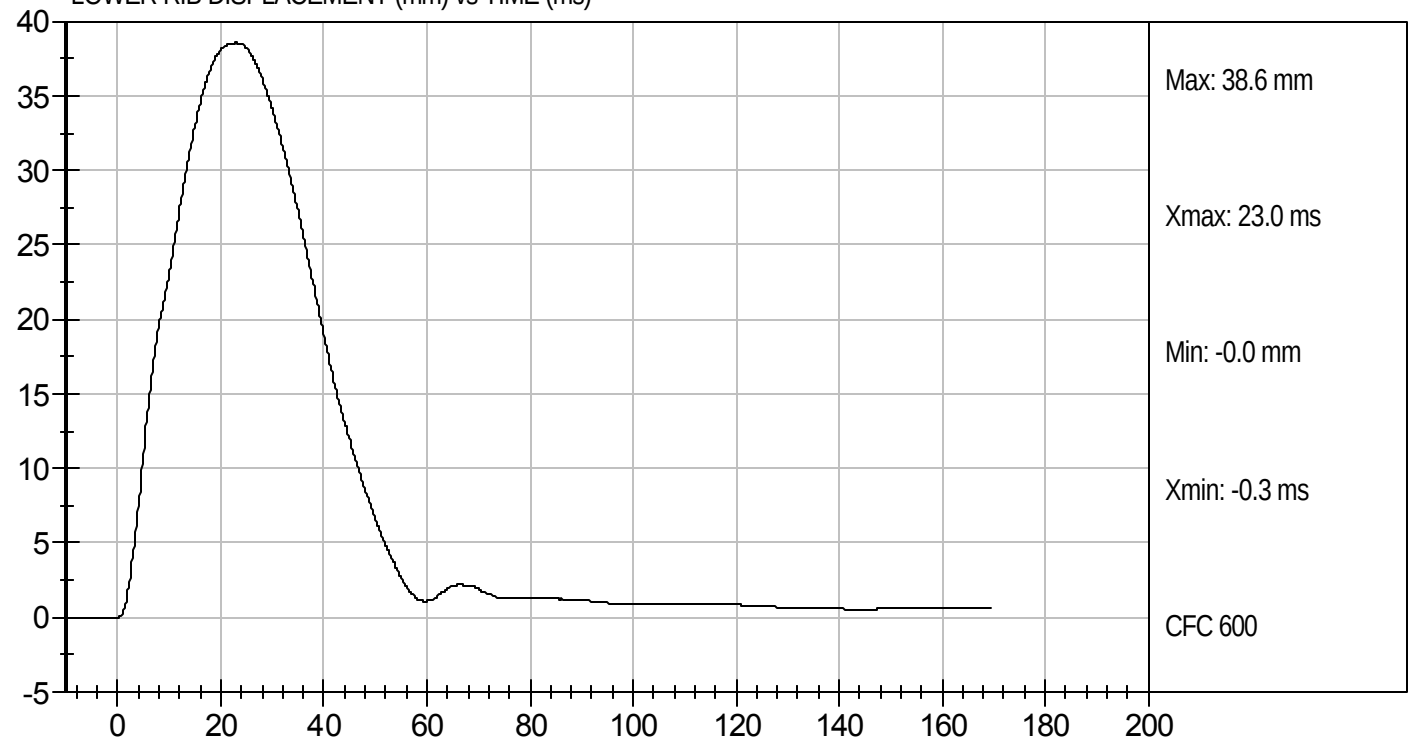
Test Desc: Thorax Without Arm
Component ID: D12085

Test Date: 1/10/12
Velocity: 14.25 ft/s, 4.34 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



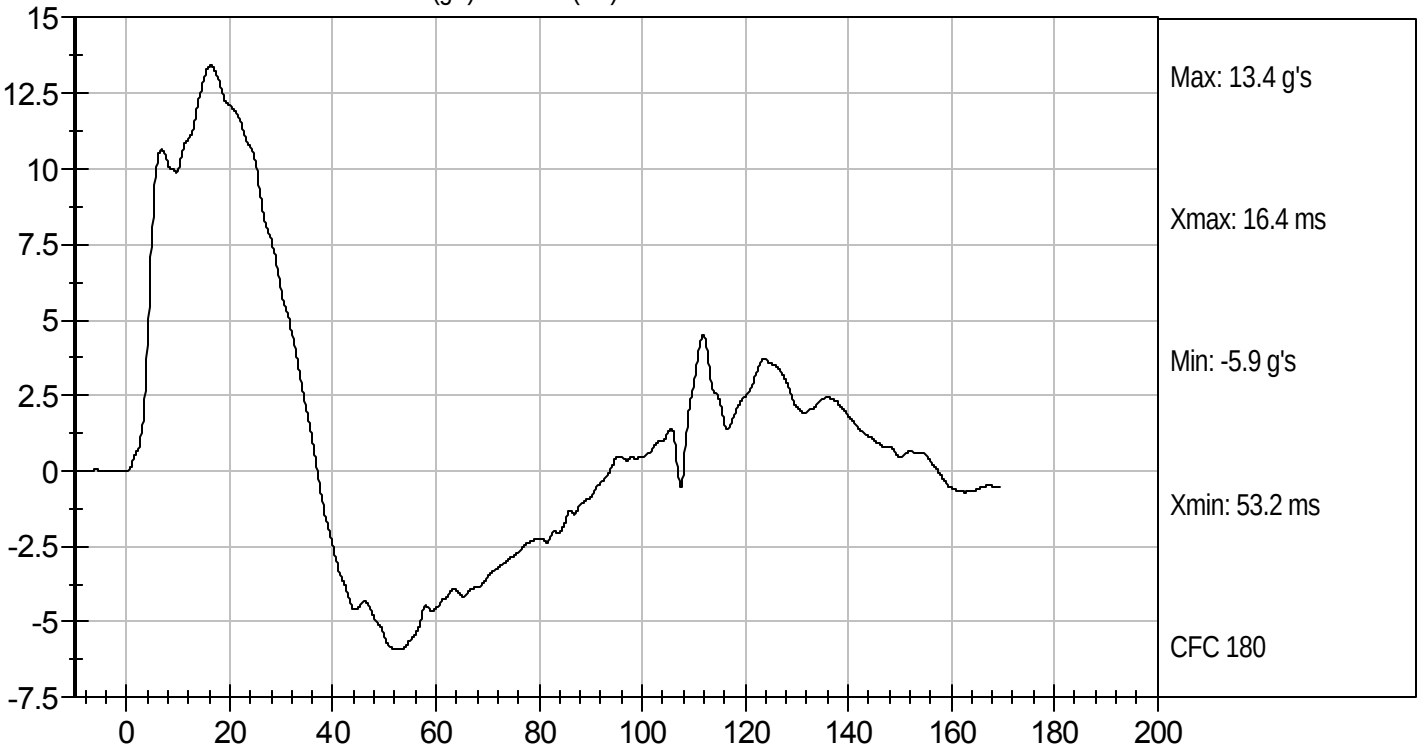
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



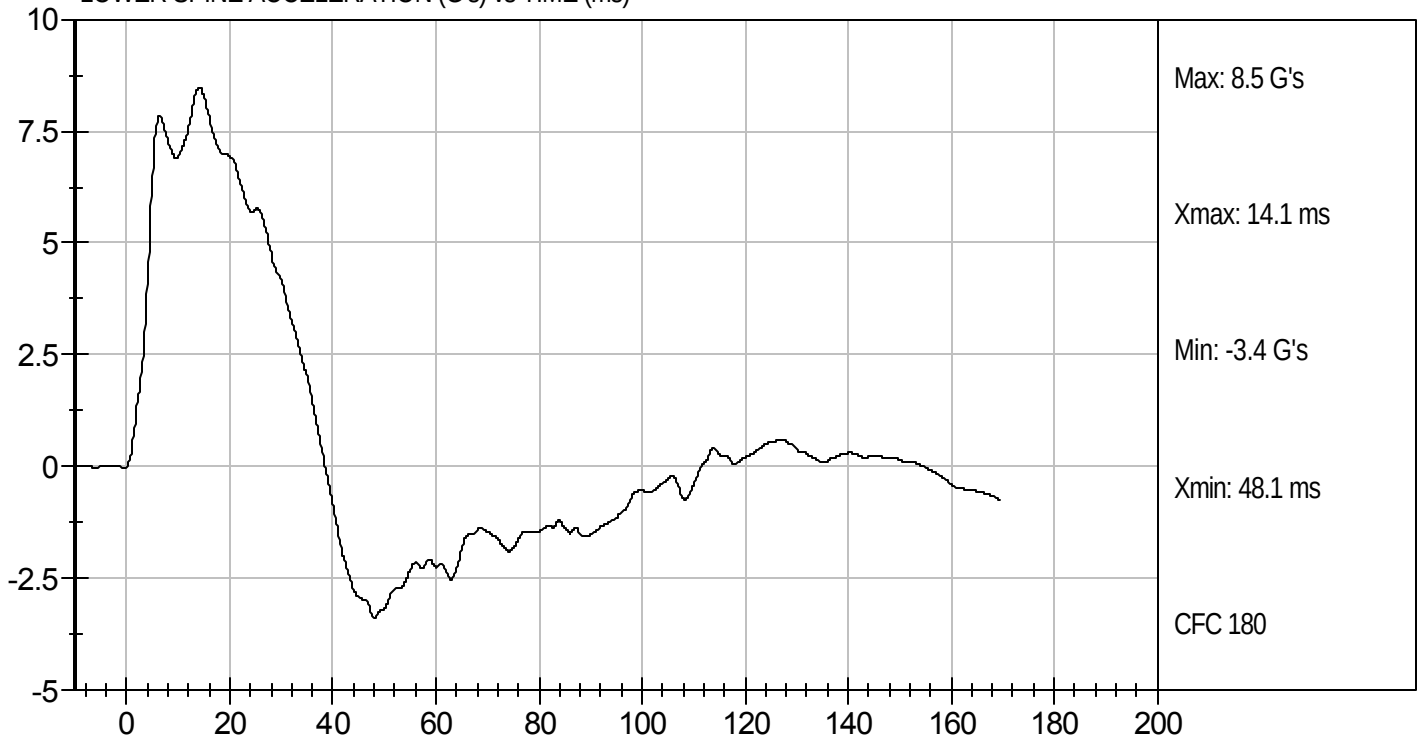
Test Desc: Thorax Without Arm
Component ID: D12085

Test Date: 1/10/12
Velocity: 14.25 ft/s, 4.34 m/s

UPPER SPINE ACCELERATION (g's) vs TIME (ms)



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



MGA RESEARCH CORPORATION

ABDOMINAL IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D12086

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	22	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Peak Impactor Acceleration	G's	12 to 16	14	Pass
Upper Rib Displacement	mm	36 to 47	40	Pass
Lower Rib Displacement	mm	33 to 44	37	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
		Overall Test Results		Pass

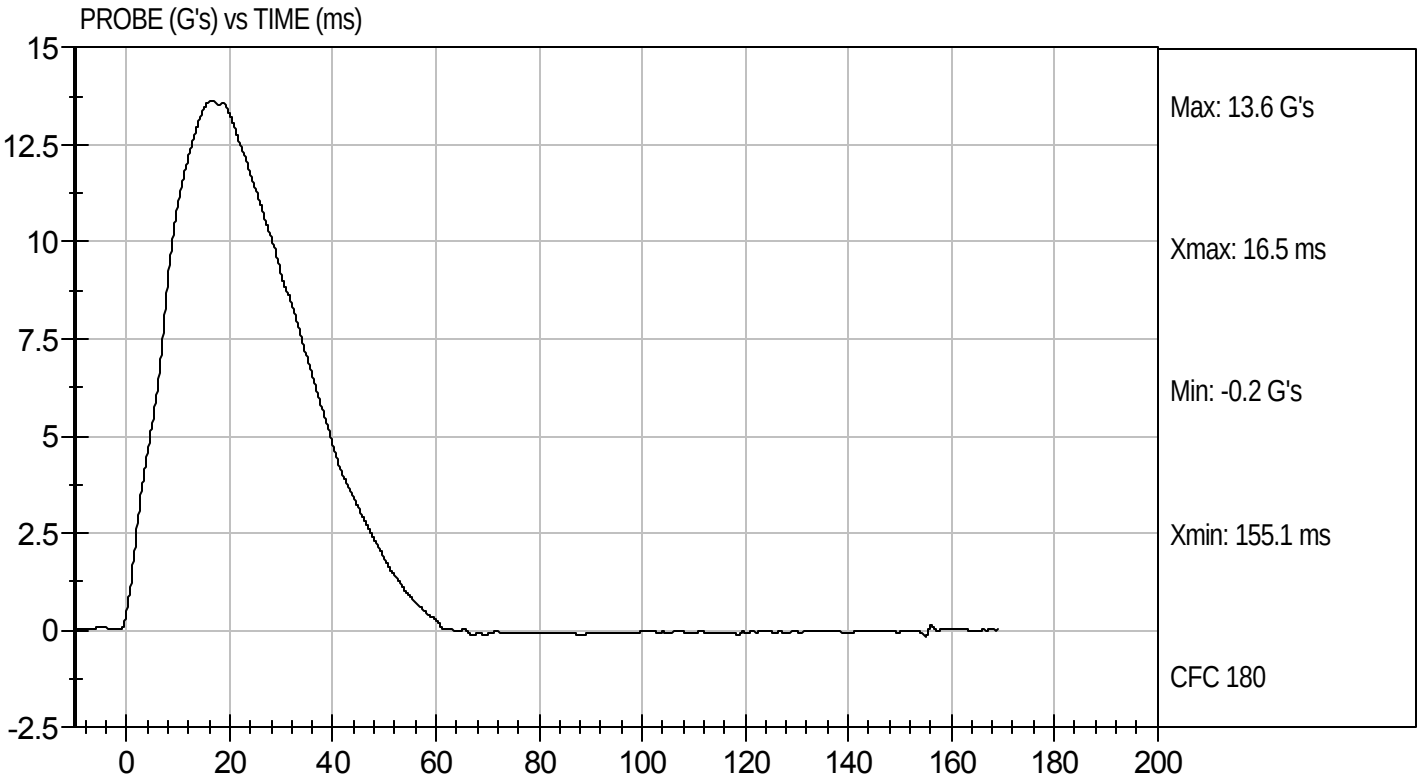
Jessica Gall
Laboratory Technician

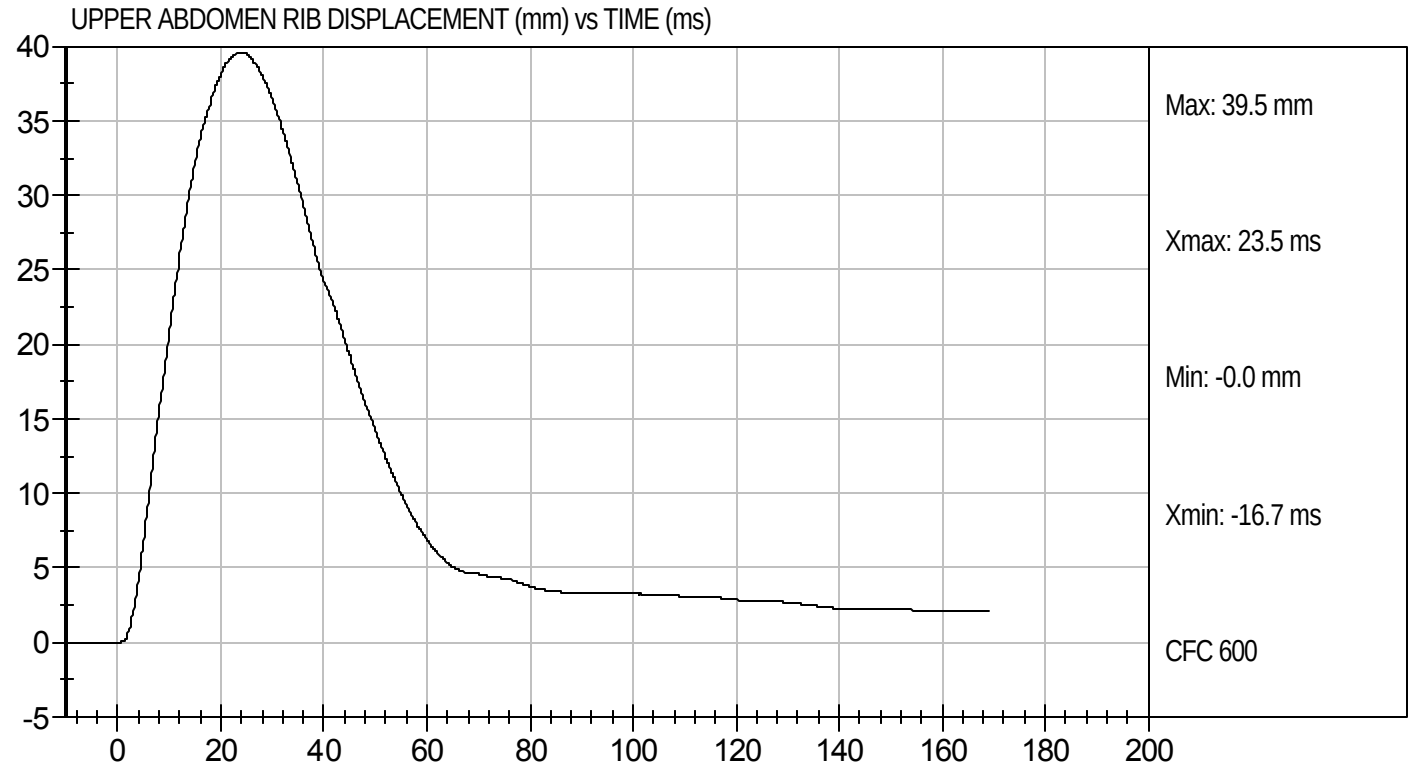
1/10/12
Test Date

David Winkelbauer
Approved By

Test Desc: Abdomen Impact
Component ID: D12086

Test Date: 1/10/12
Velocity: 14.37 ft/s, 4.38 m/s

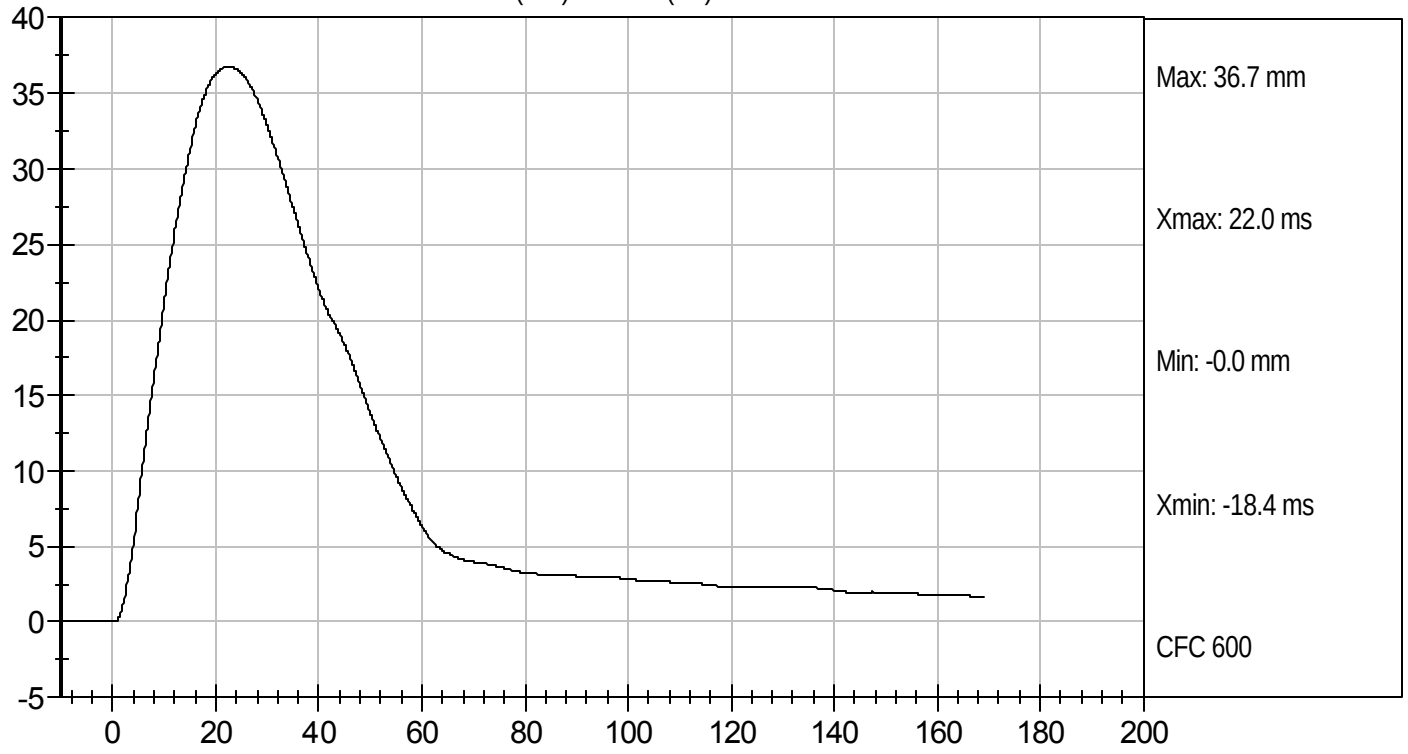




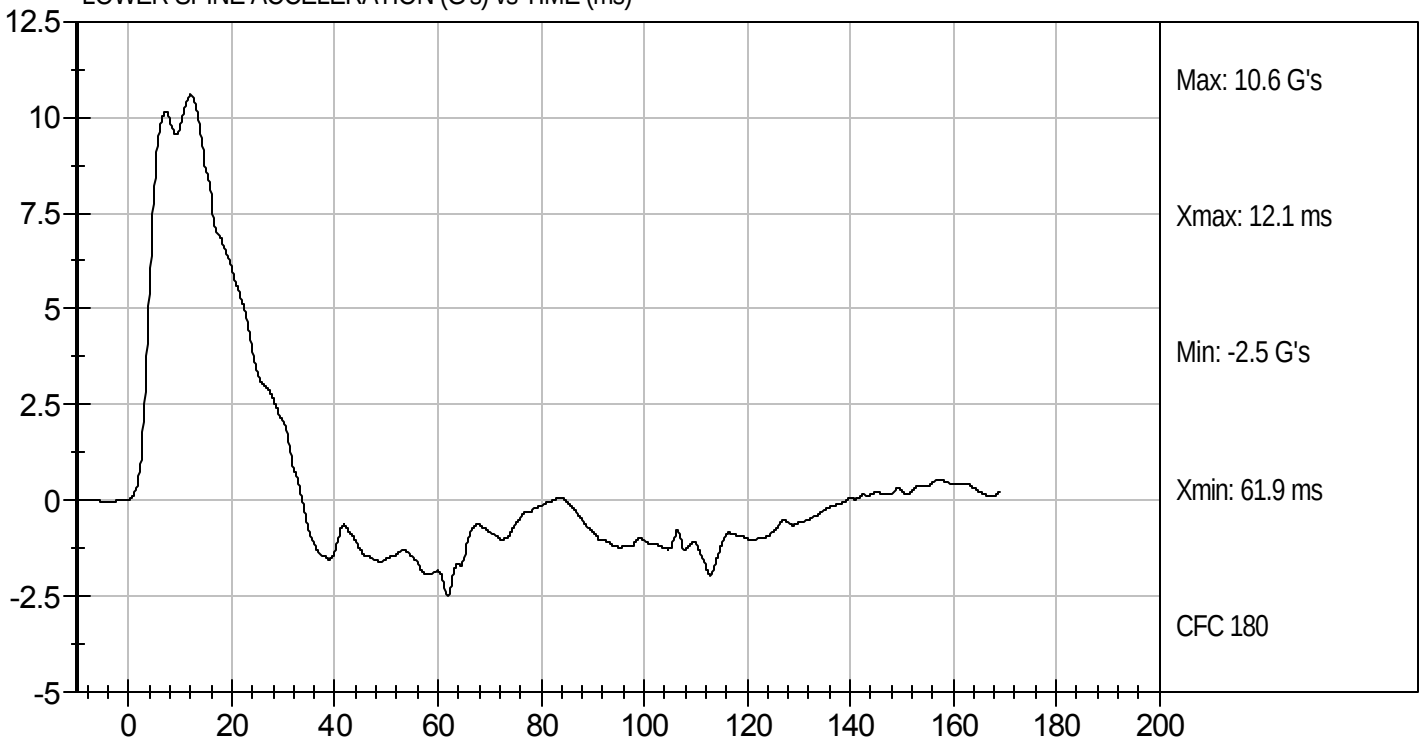
Test Desc: Abdomen Impact
Component ID: D12086

Test Date: 1/10/12
Velocity: 14.37 ft/s, 4.38 m/s

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: 296 **Test I.D:** D12087

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	22	Pass
Impact Velocity	m/s	6.60 to 6.80	6.74	Pass
Peak Impactor Acceleration	G's	38 to 47	43	Pass
Pelvis Y Acceleration after 6 ms	G's	34 to 42	41	Pass
Peak Acetabulum Force	N	3600 to 4300	4090	Pass
		Overall Test Results		Pass

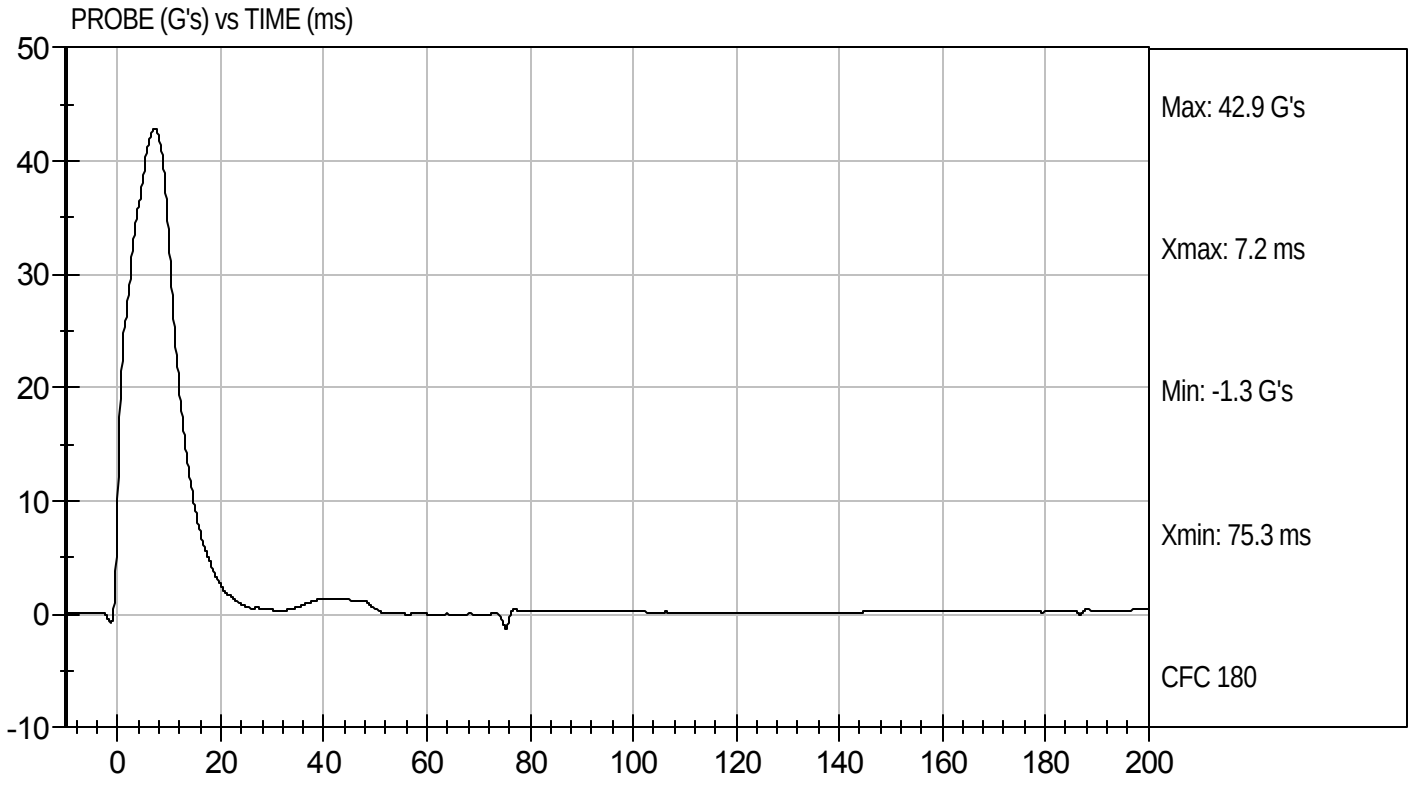
Jessica Gall
Laboratory Technician

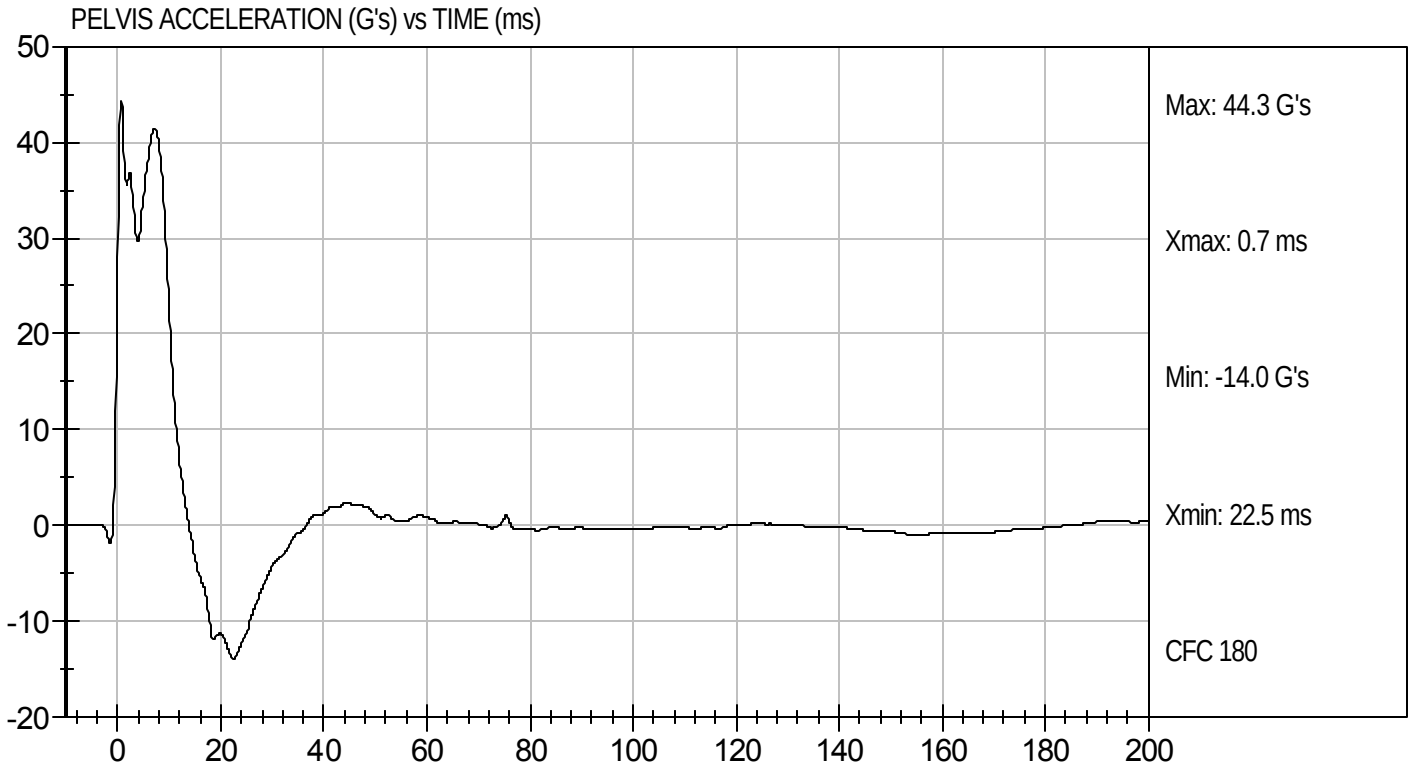
1/10/12
Test Date

David Winkelbauer
Approved By

Test Desc: Pelvis Impact
Component ID: D12087

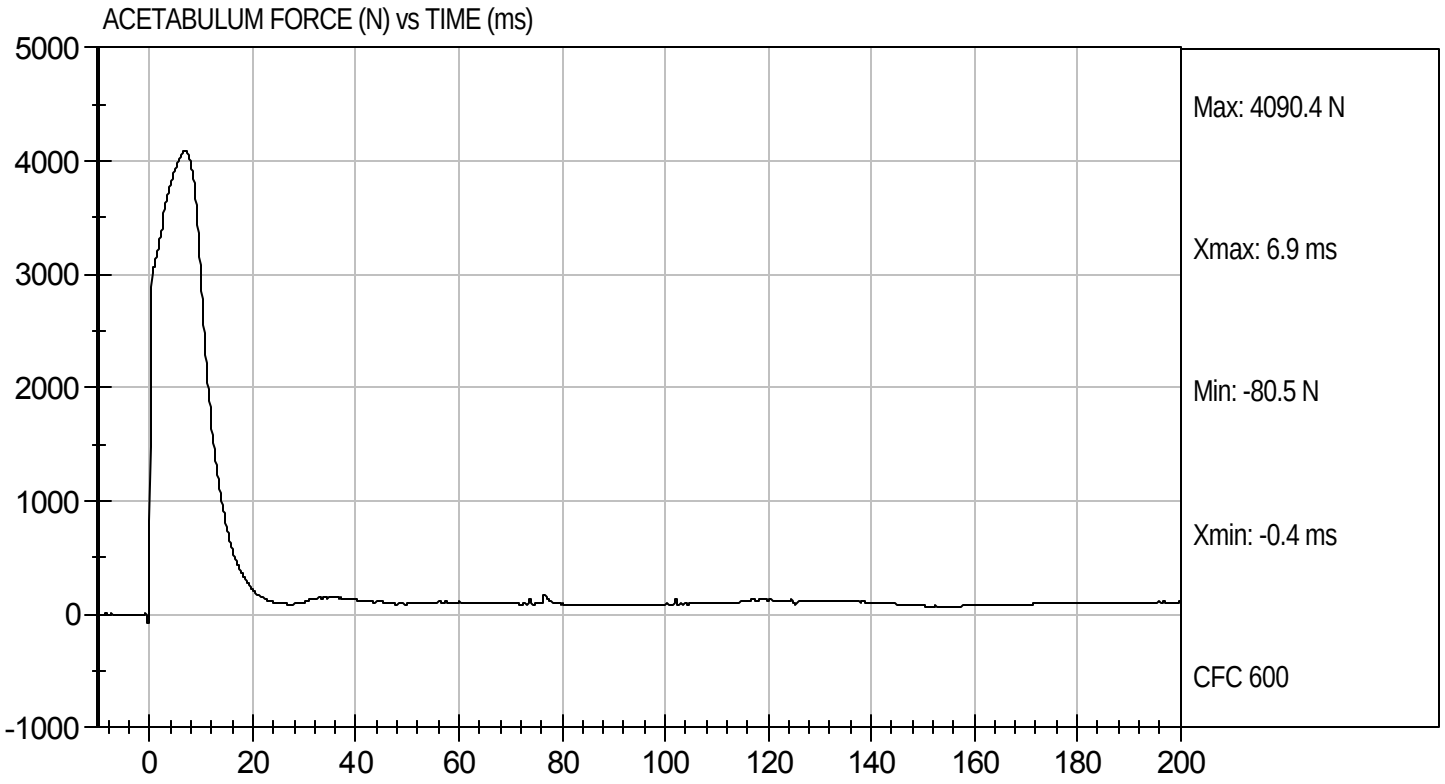
Test Date: 1/10/12
Velocity: 22.11 ft/s, 6.74 m/s





Test Desc: Pelvis Impact
Component ID: D12087

Test Date: 1/10/12
Velocity: 22.11 ft/s, 6.74 m/s



MGA RESEARCH CORPORATION

ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D12088

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	22	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Peak Impactor Acceleration	G's	36 to 45	37	Pass
Pelvis Y Acceleration	G's	28 to 39	29	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4498	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

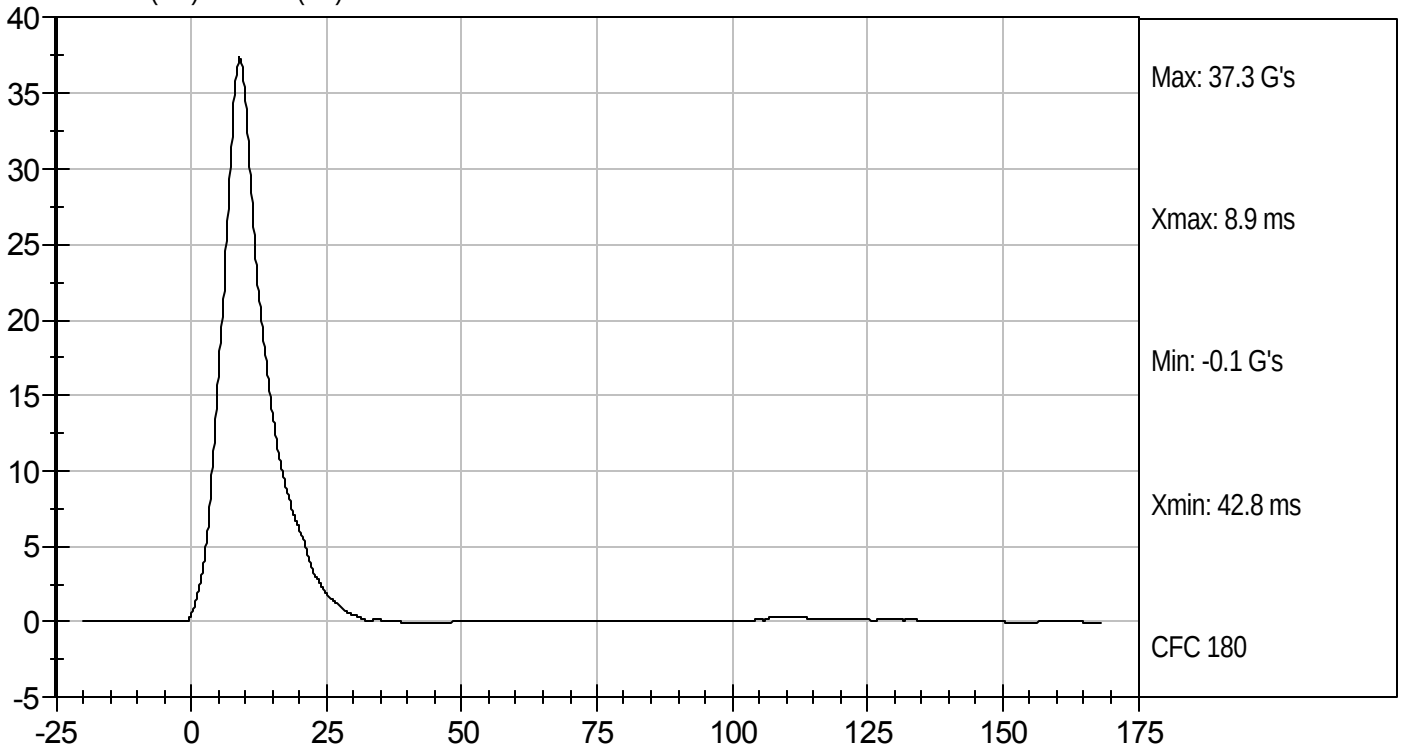
1/10/12
Test Date

David Winkelbauer
Approved By

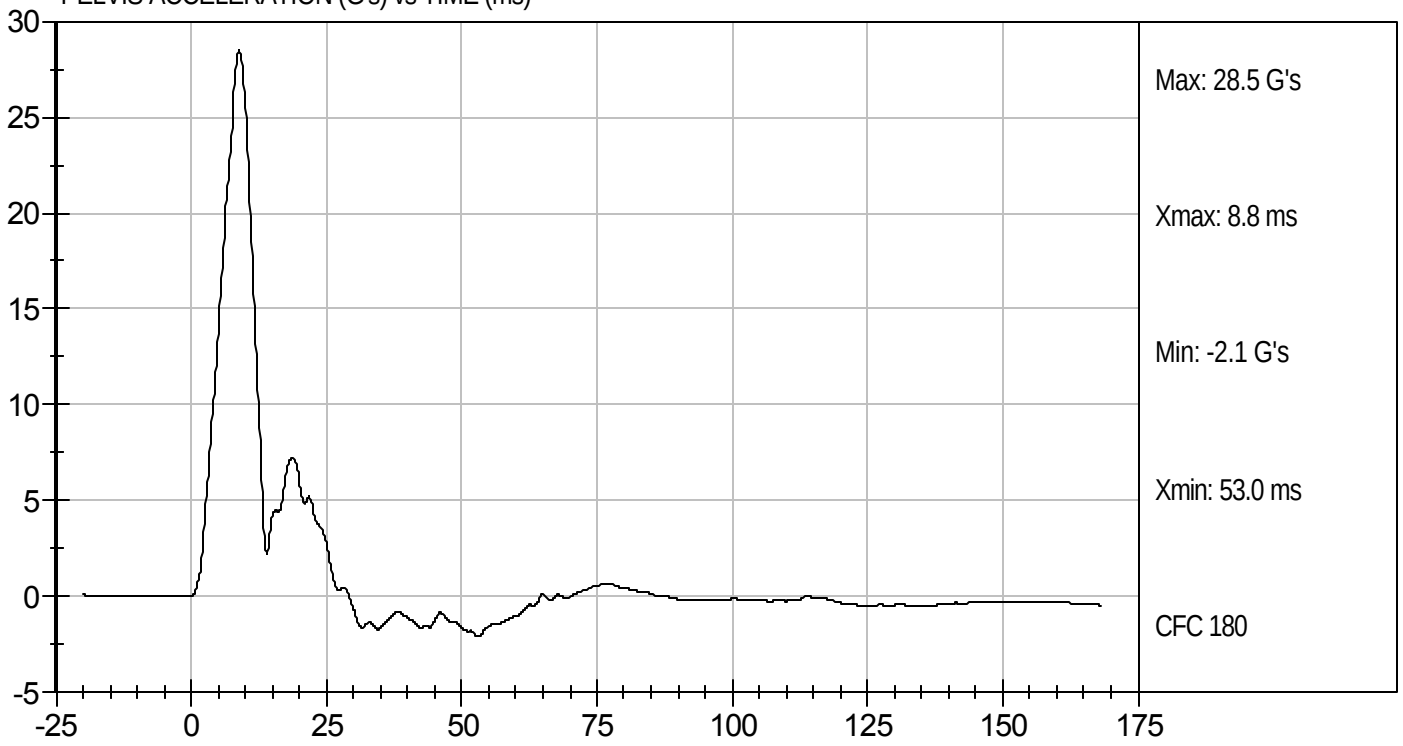
Test Desc: Iliac Impact
Component ID: D12088

Test Date: 1/10/12
Velocity: 14.37 ft/s, 4.38 m/s

PROBE (G's) vs TIME (ms)

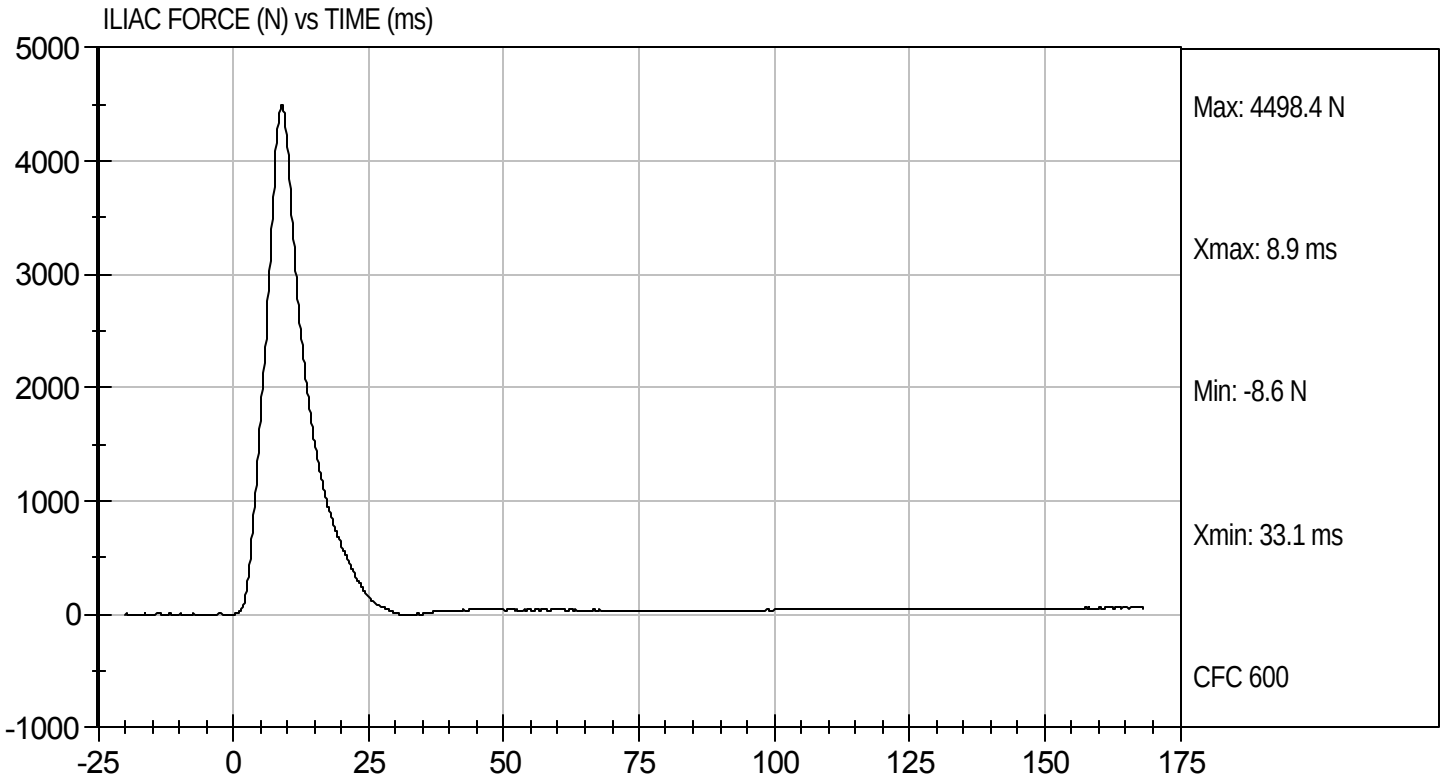


PELVIS ACCELERATION (G's) vs TIME (ms)



Test Desc: Iliac Impact
Component ID: D12088

Test Date: 1/10/12
Velocity: 14.37 ft/s, 4.38 m/s



MGA RESEARCH CORPORATION

HEAD DROP TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test ID:** D12261

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	15	Pass
Peak Resultant Acceleration	G's	115 to 137	117	Pass
Peak Longitudinal Acceleration	G's	+/- 15	2.7	Pass
Unimodal	N/A	<15%	Yes	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

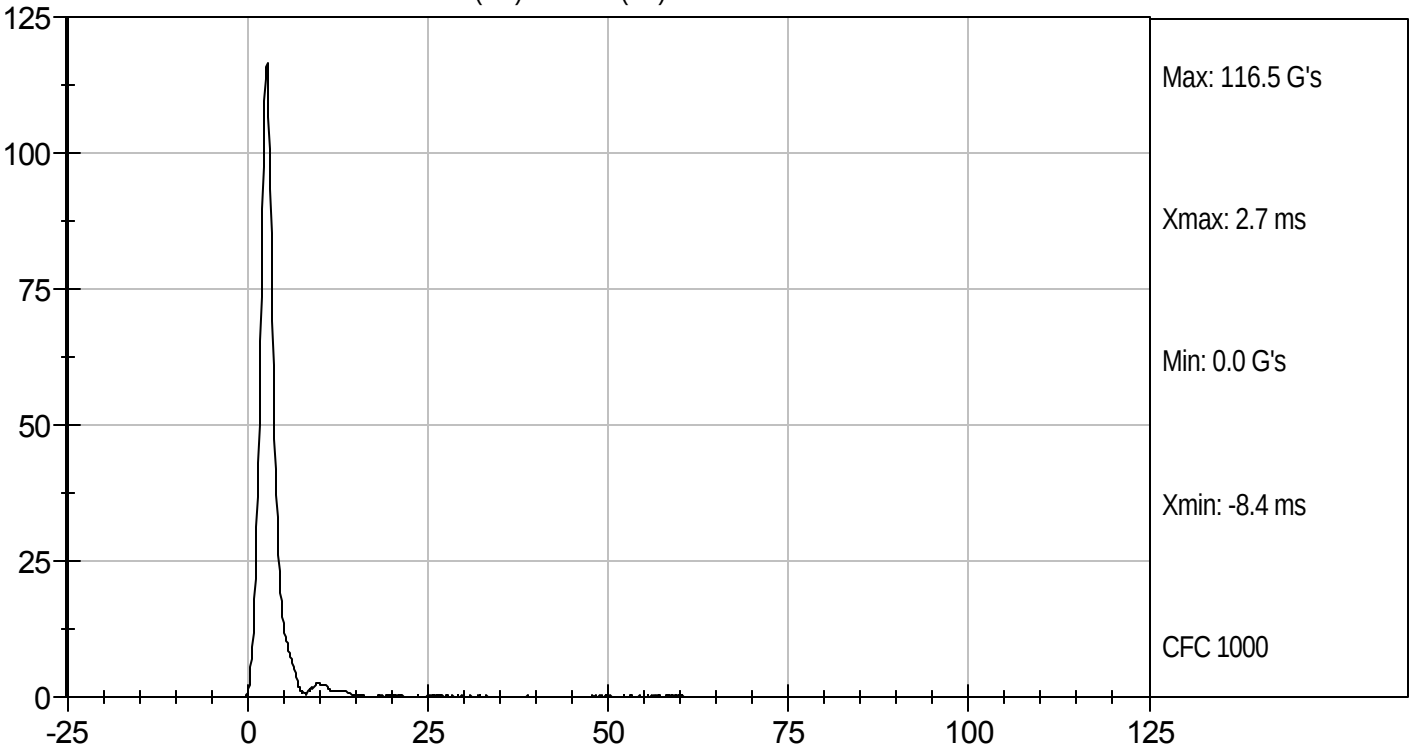
1/20/12
Test Date

David Winkelbauer
Approved By

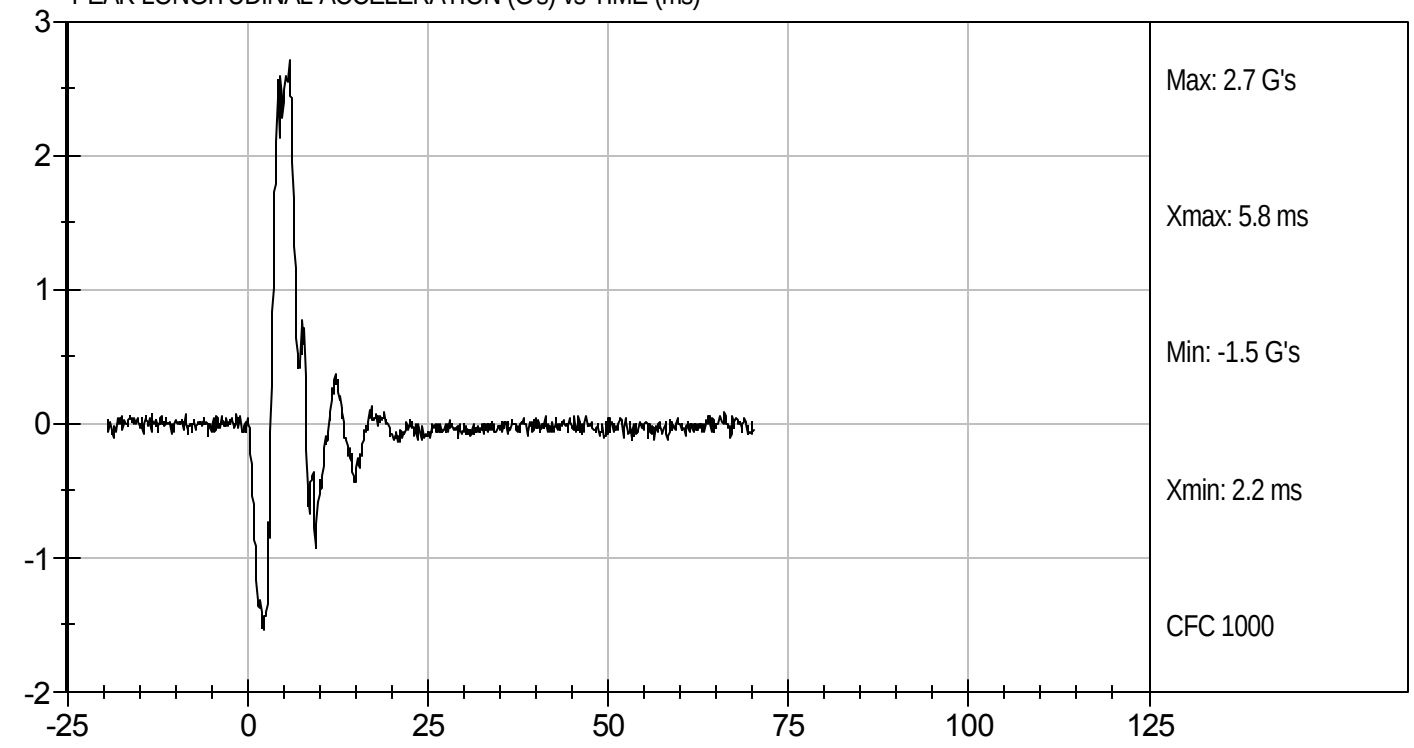
Test Desc: Head Drop
Component ID: D12261

Test Date: 1/20/12
Velocity: 0 ft/s, 0 m/s

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



PEAK LONGITUDINAL ACCELERATION (G's) vs TIME (ms)



MGA RESEARCH CORPORATION

LATERAL NECK PENDULUM TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D12262

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.6	Pass
Humidity		%	10 to 70	15	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.73	Pass
	15 ms	m/s	3.30 to 4.10	3.93	Pass
	20 ms	m/s	4.40 to 5.40	5.26	Pass
	25 ms	m/s	5.40 to 6.10	5.56	Pass
	25-100 ms	m/s	5.50 to 6.20	5.58	Pass
Maximum D-Plane Rotation		deg	71 to 81	74	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	60	Pass
Maximum Occipital Condyle Moment during Rotation Interval		Nm	-44 to -36	-39	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	116	Pass
			Overall Test Results		Pass

Jessica Gall
Laboratory Technician

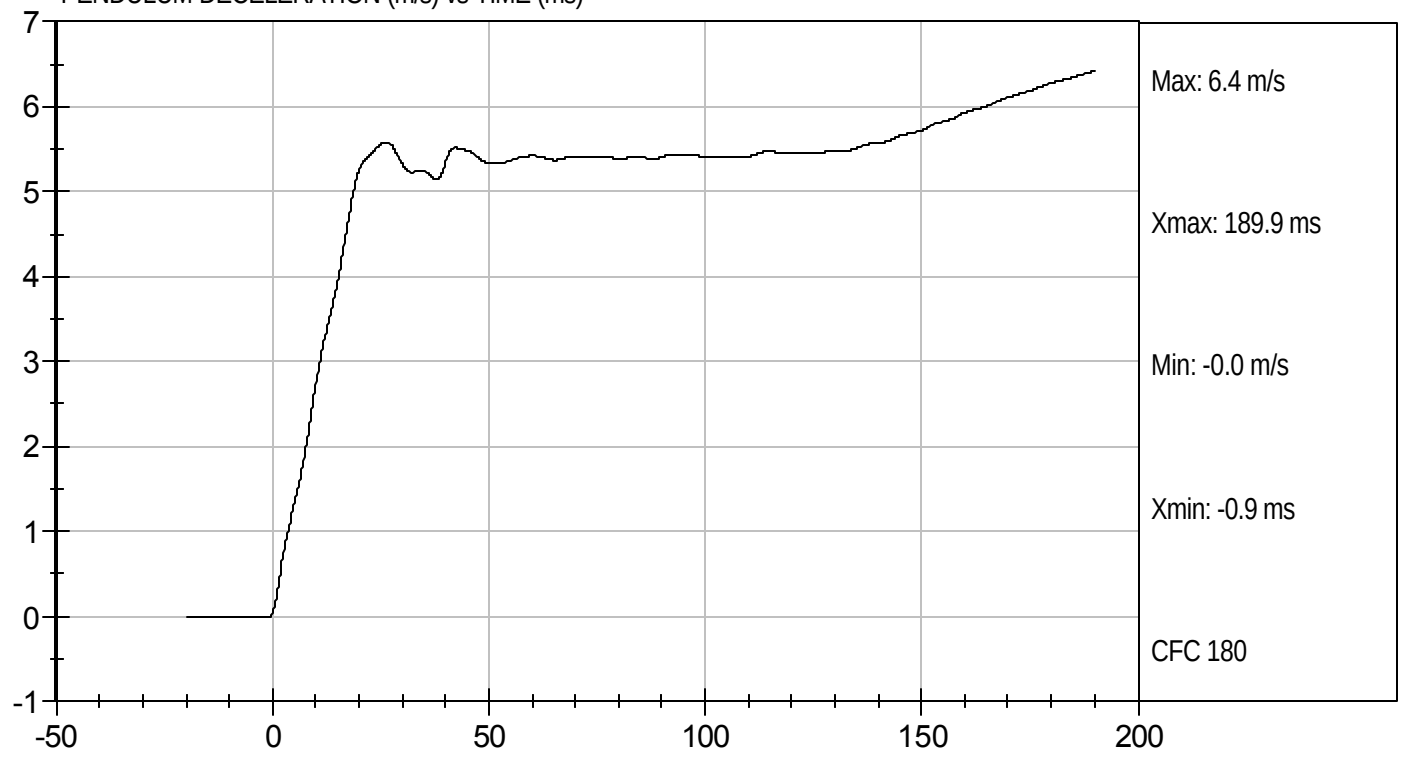
1/20/12
Test Date

David Winkelbauer
Approved By

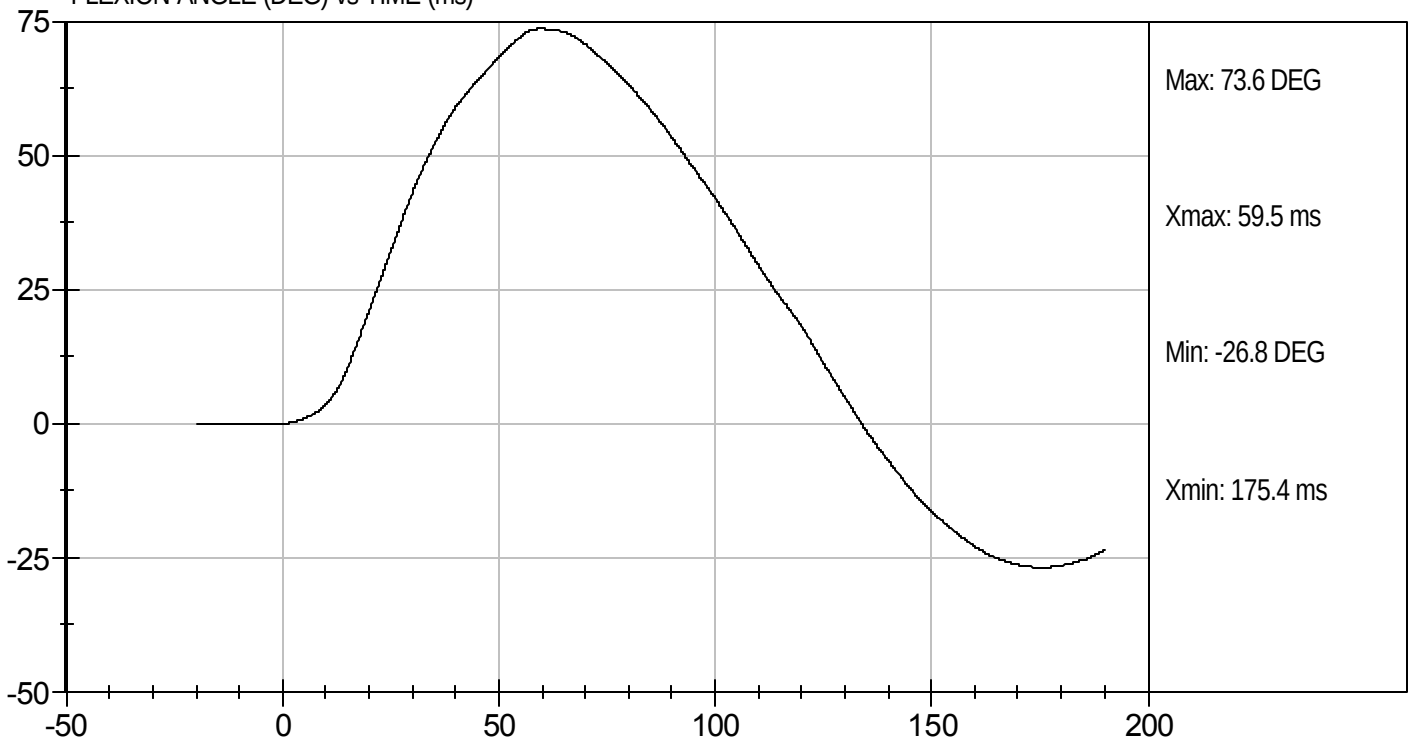
Test Desc: Neck Bending
Component ID: D12262

Test Date: 1/20/12
Velocity: 18.31 ft/s, 5.58 m/s

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

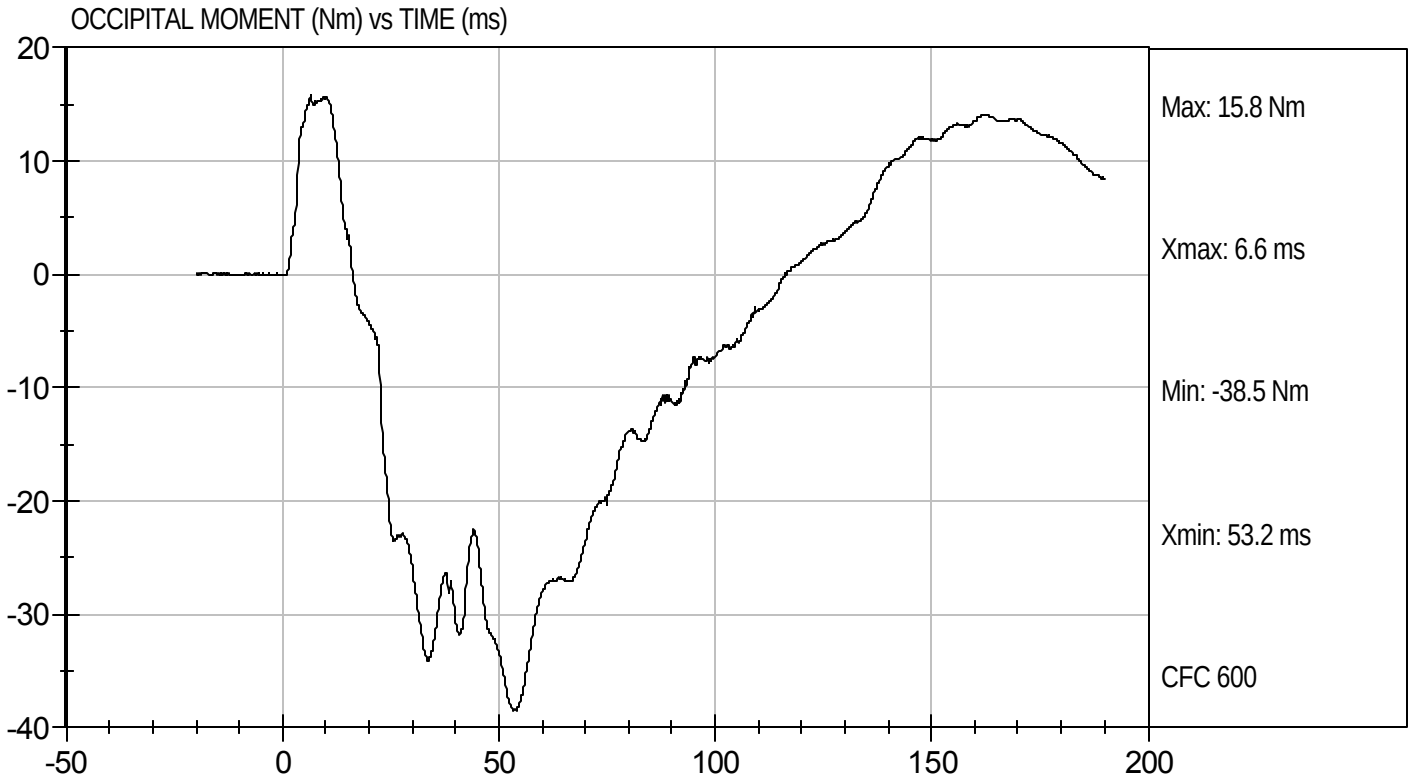


FLEXION ANGLE (DEG) vs TIME (ms)



Test Desc: Neck Bending
Component ID: D12262

Test Date: 1/20/12
Velocity: 18.31 ft/s, 5.58 m/s



MGA RESEARCH CORPORATION

SHOULDER IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test ID:** D12263

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	16	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	30	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	18	Pass
		Overall Test Results		Pass

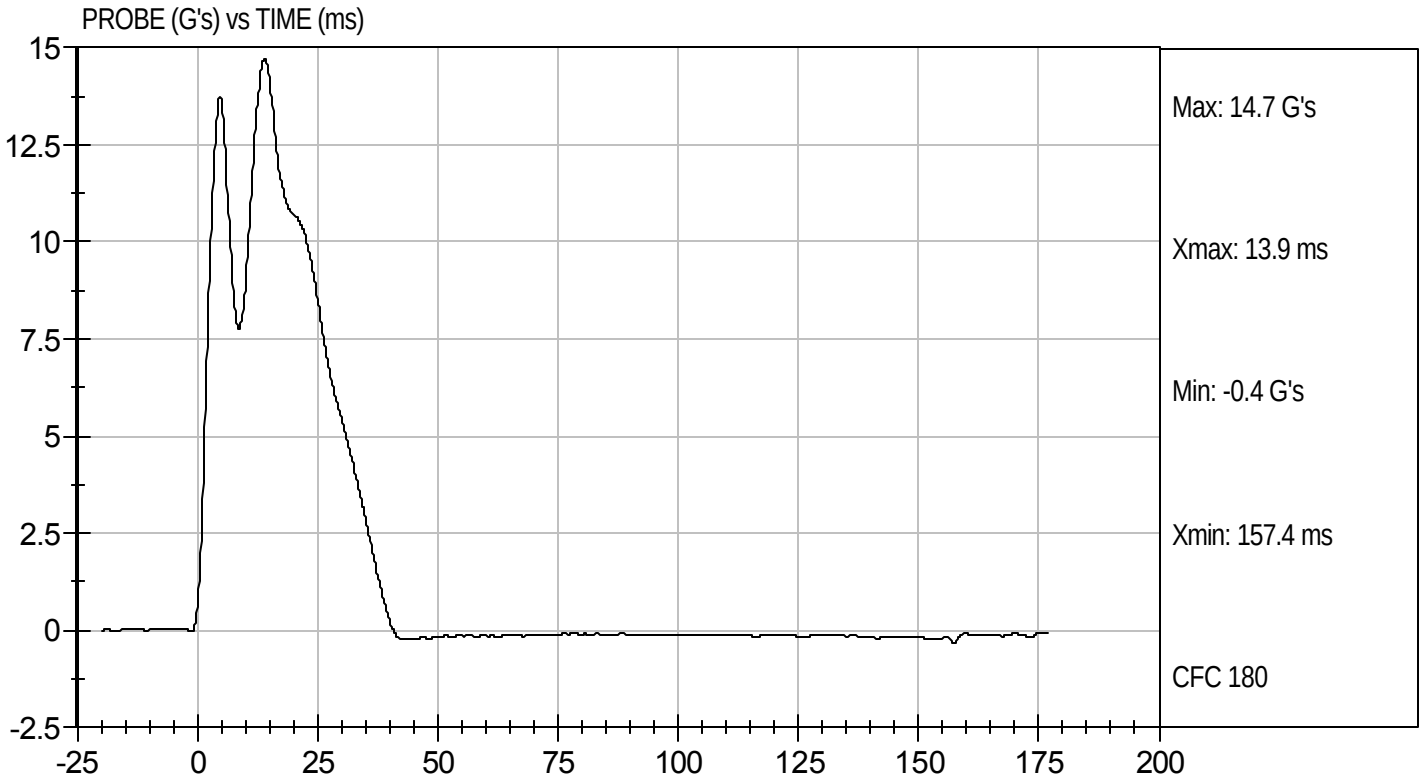
Jessica Hall
Laboratory Technician

1/20/12
Test Date

David Winkelbauer
Approved By

Test Desc: Shoulder Impact
Component ID: D12263

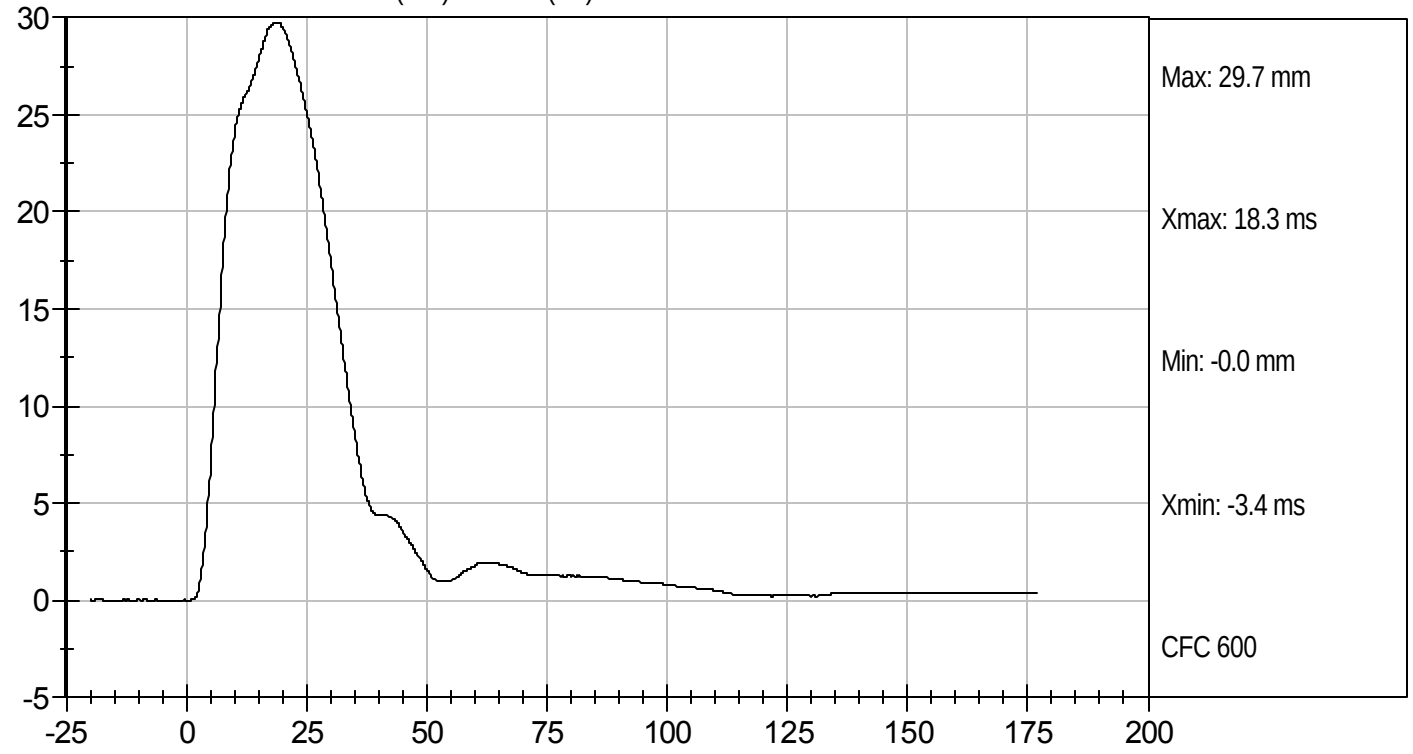
Test Date: 1/20/12
Velocity: 14.12 ft/s, 4.30 m/s



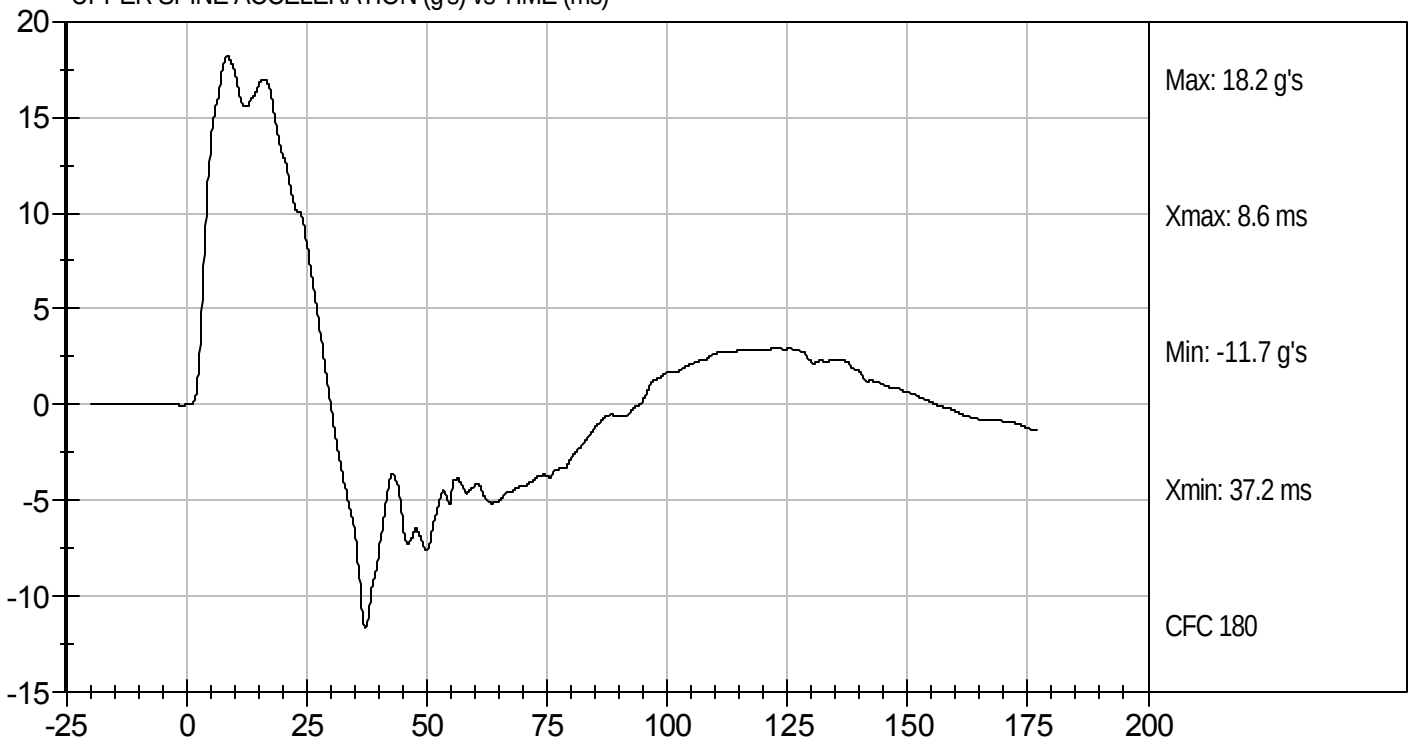
Test Desc: Shoulder Impact
Component ID: D12263

Test Date: 1/20/12
Velocity: 14.12 ft/s, 4.30 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (ms)



UPPER SPINE ACCELERATION (g's) vs TIME (ms)



MGA RESEARCH CORPORATION

THORAX (WITH ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D12264

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.6	Pass
Humidity	%	10 to 70	16	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Peak Impactor Acceleration	G's	30 to 36	32	Pass
Shoulder Displacement	mm	31 to 40	36	Pass
Upper Rib Displacement	mm	25 to 32	27	Pass
Middle Rib Displacement	mm	30 to 36	32	Pass
Lower Rib Displacement	mm	32 to 38	33	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	38	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	33	Pass
		Overall Test Results		Pass

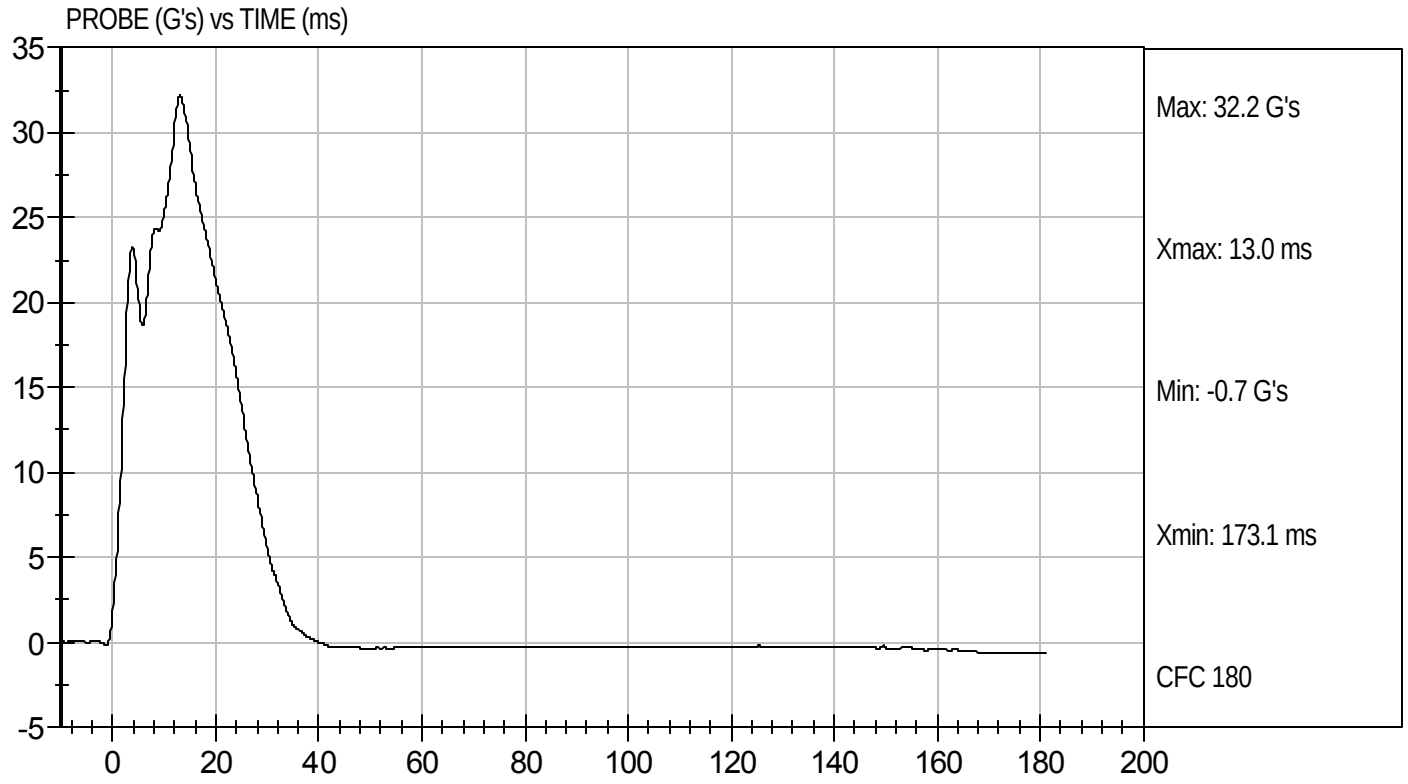
Jessica Gall
Laboratory Technician

1/20/12
Test Date

David Winkelbauer
Approved By

Test Desc: Thorax With Arm
Component ID: D12264

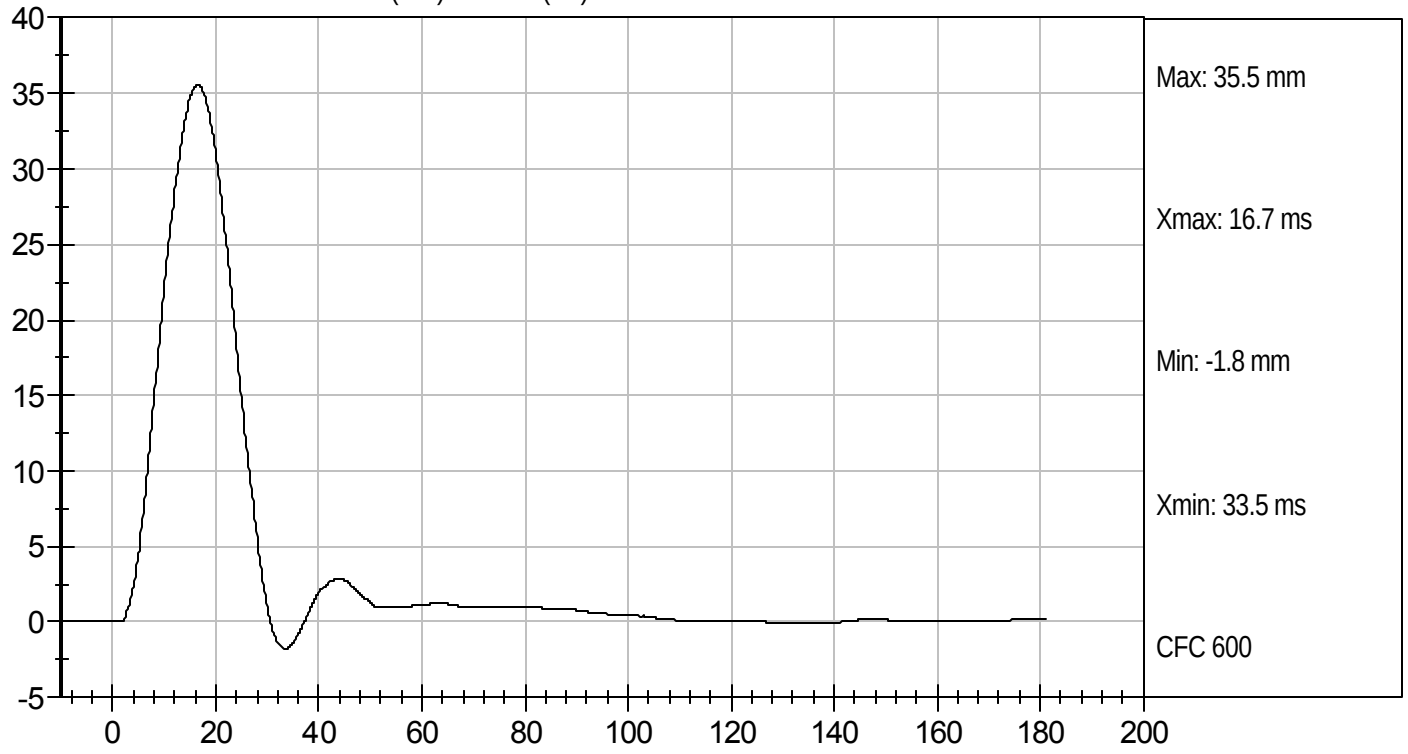
Test Date: 1/20/12
Velocity: 22.22 ft/s, 6.77 m/s



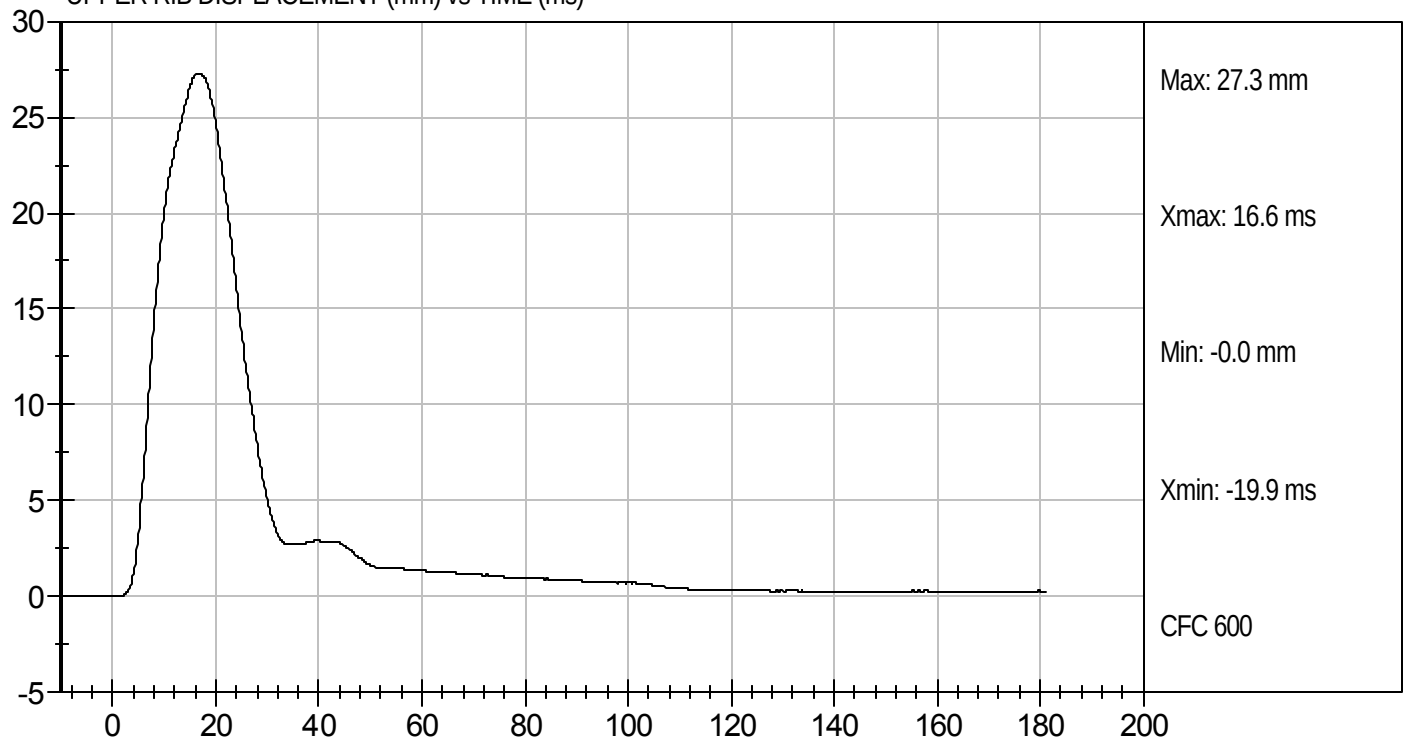
Test Desc: Thorax With Arm
Component ID: D12264

Test Date: 1/20/12
Velocity: 22.22 ft/s, 6.77 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (ms)



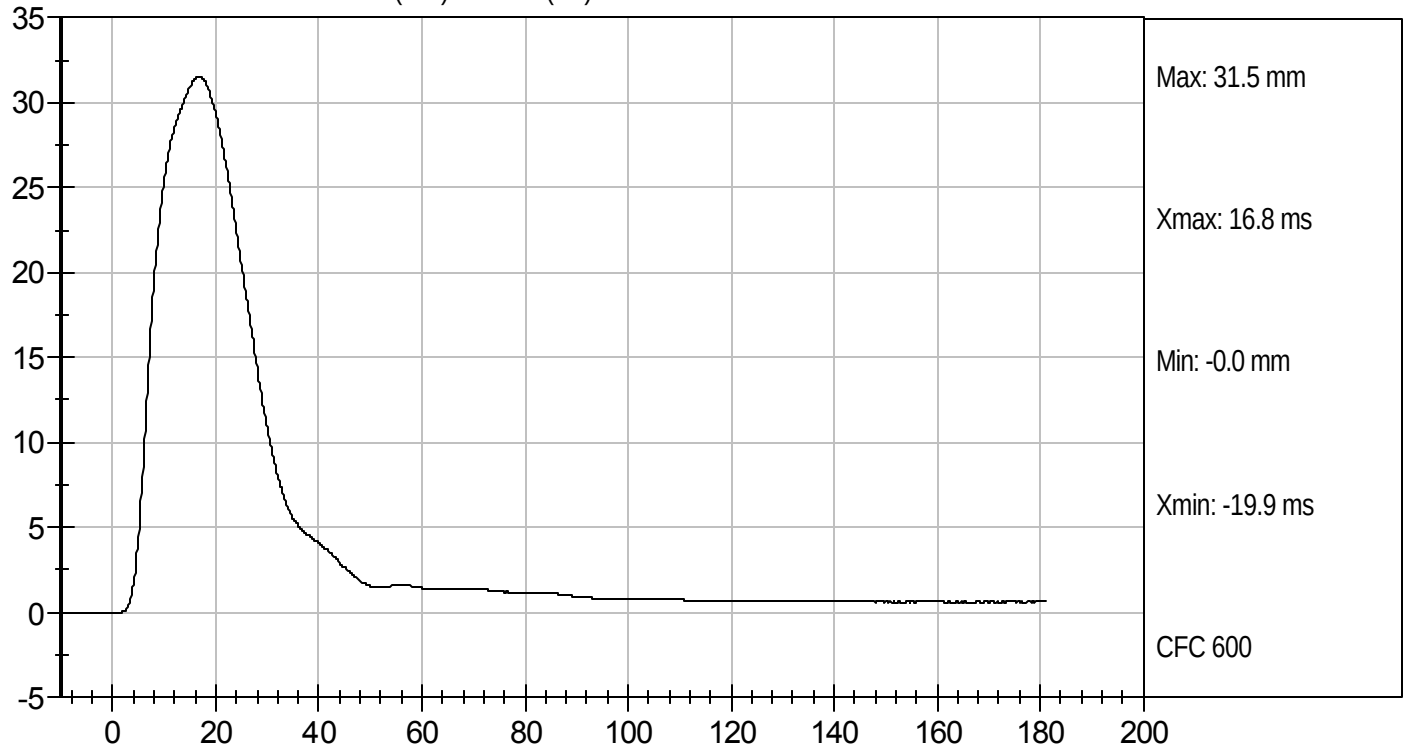
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



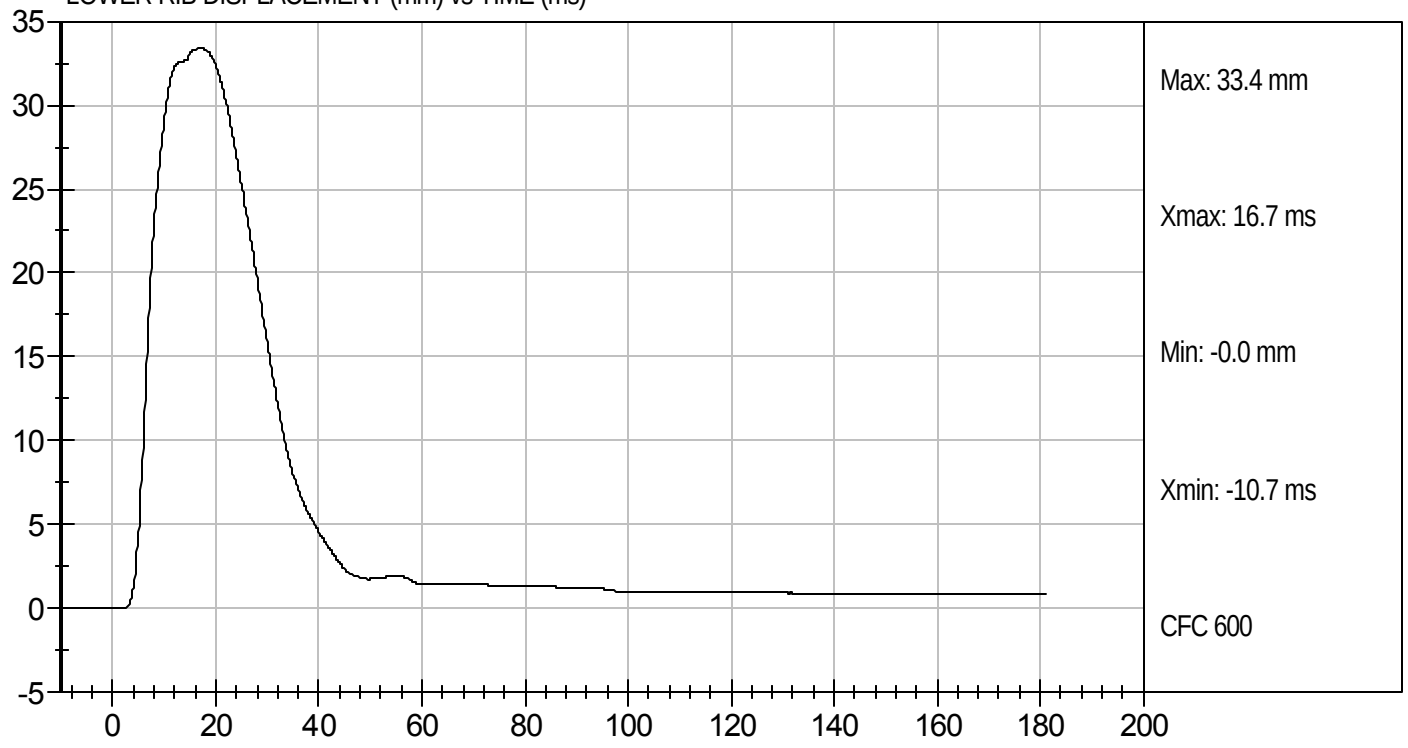
Test Desc: Thorax With Arm
Component ID: D12264

Test Date: 1/20/12
Velocity: 22.22 ft/s, 6.77 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



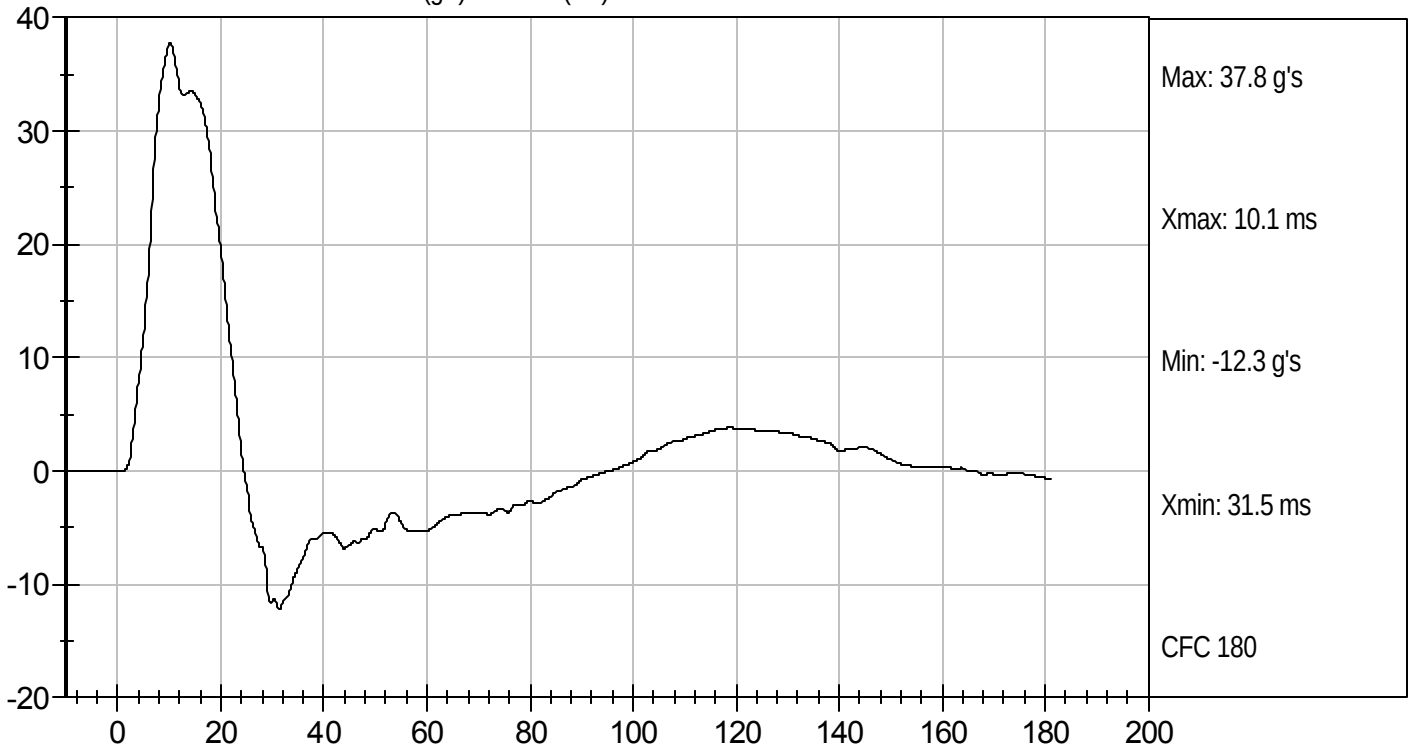
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



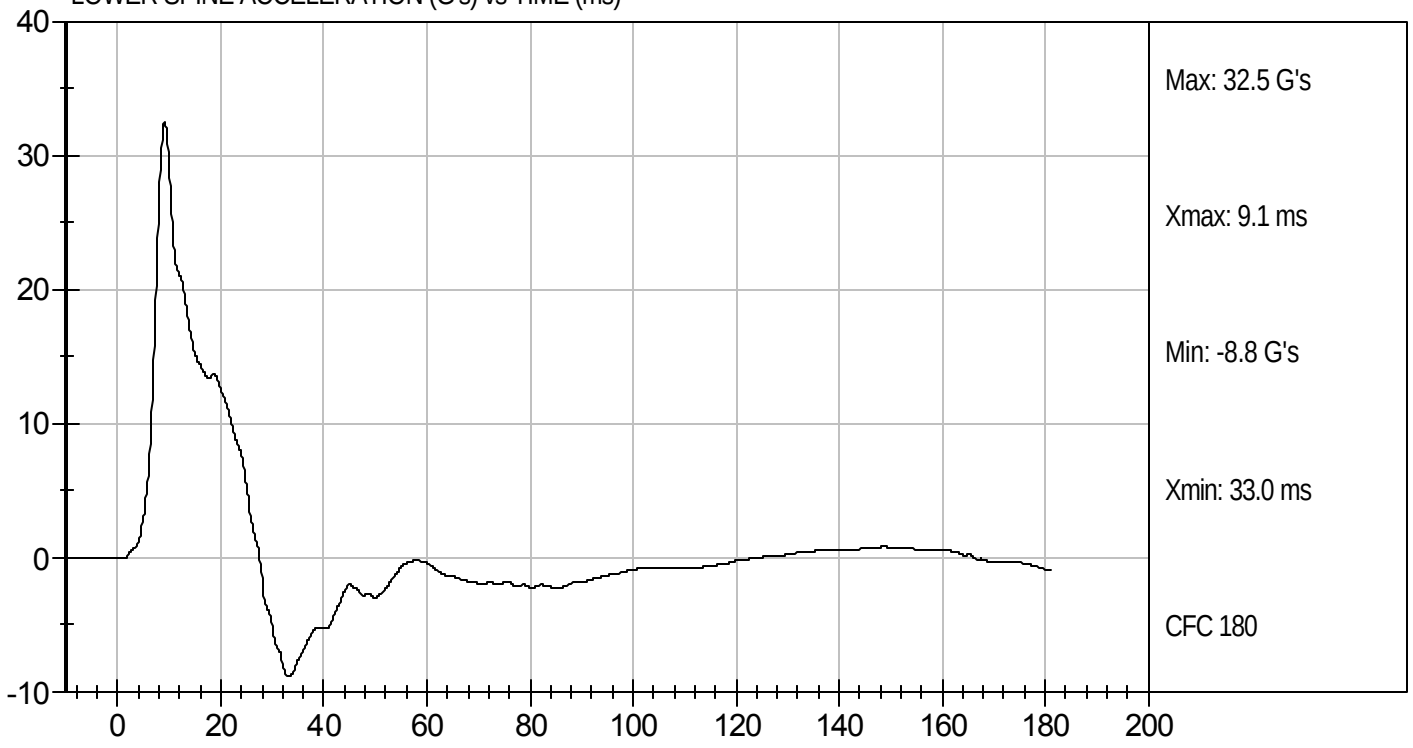
Test Desc: Thorax With Arm
Component ID: D12264

Test Date: 1/20/12
Velocity: 22.22 ft/s, 6.77 m/s

UPPER SPINE ACCELERATION (g's) vs TIME (ms)



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



MGA RESEARCH CORPORATION

THORAX (WITHOUT ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D12265

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.0	Pass
Humidity	%	10 to 70	29	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Force	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	34	Pass
Middle Rib Displacement	mm	39 to 45	40	Pass
Lower Rib Displacement	mm	35 to 43	38	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	14	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	9	Pass
		Overall Test Results		Pass

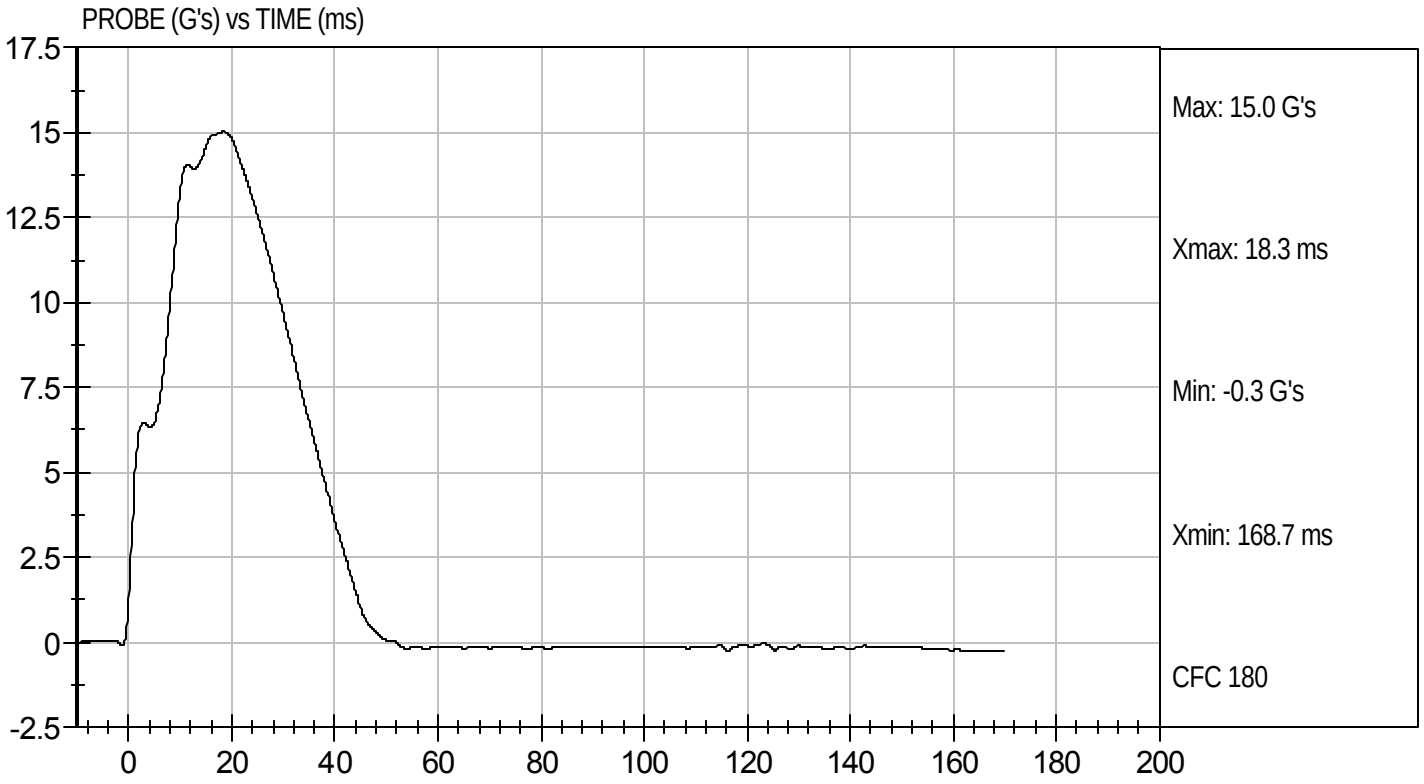
Jessica Gall
Laboratory Technician

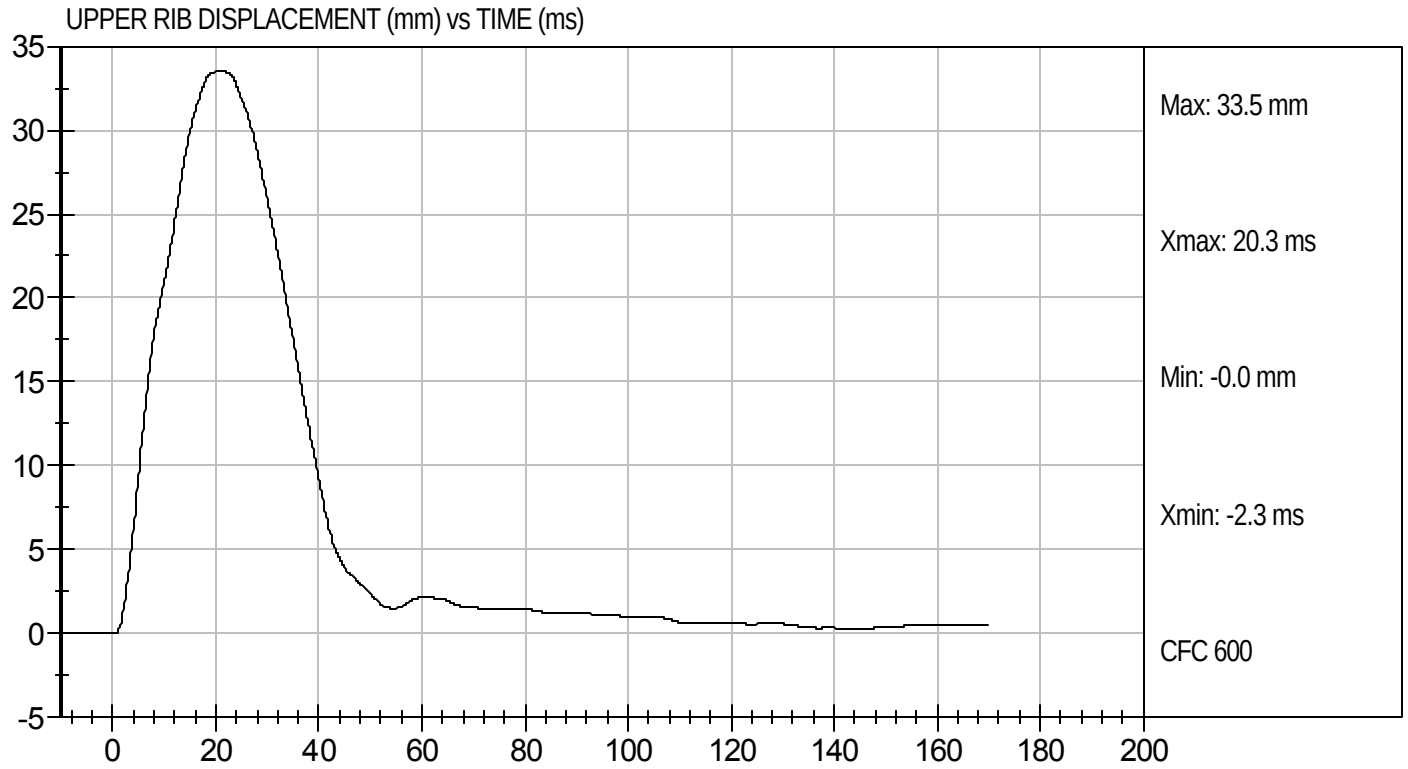
1/23/12
Test Date

David Winkelbauer
Approved By

Test Desc: Thorax Without Arm
Component ID: D12265

Test Date: 1/23/12
Velocity: 14.24 ft/s, 4.34 m/s

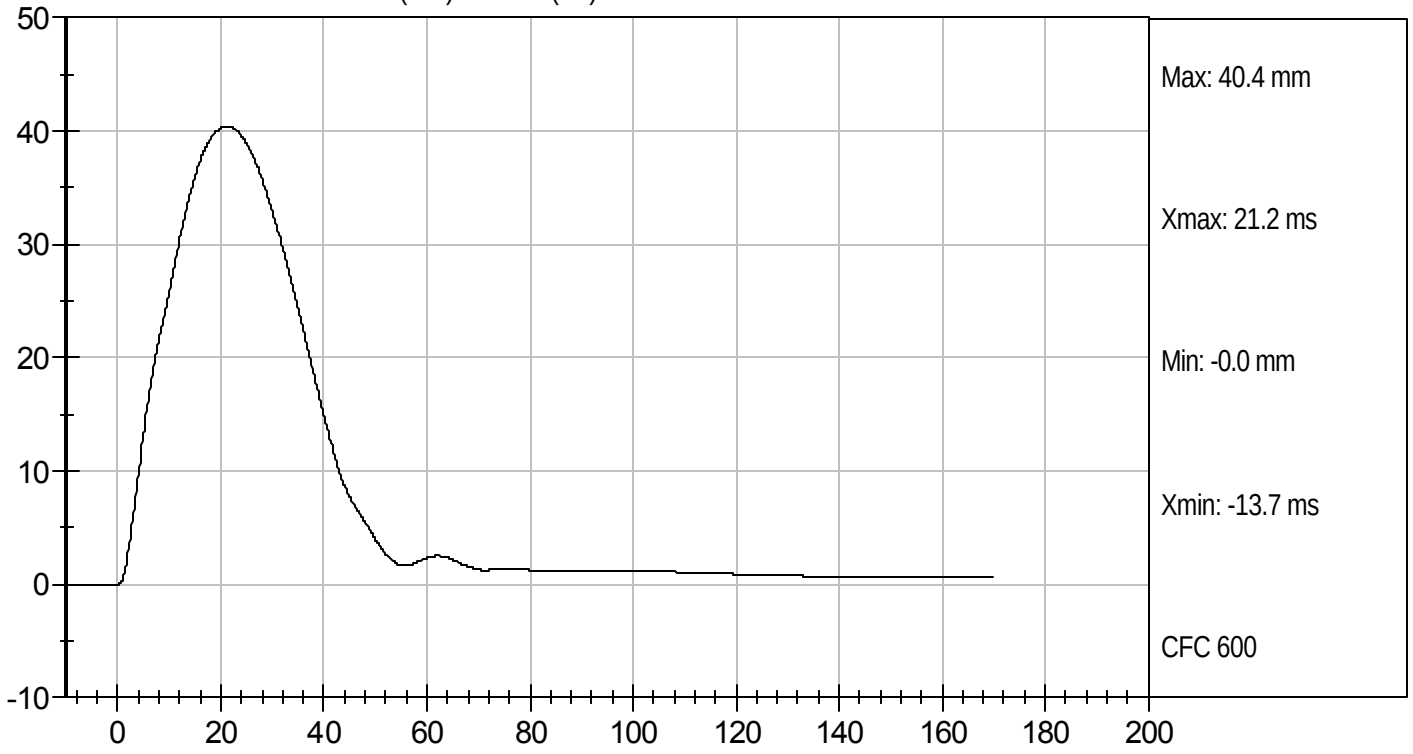




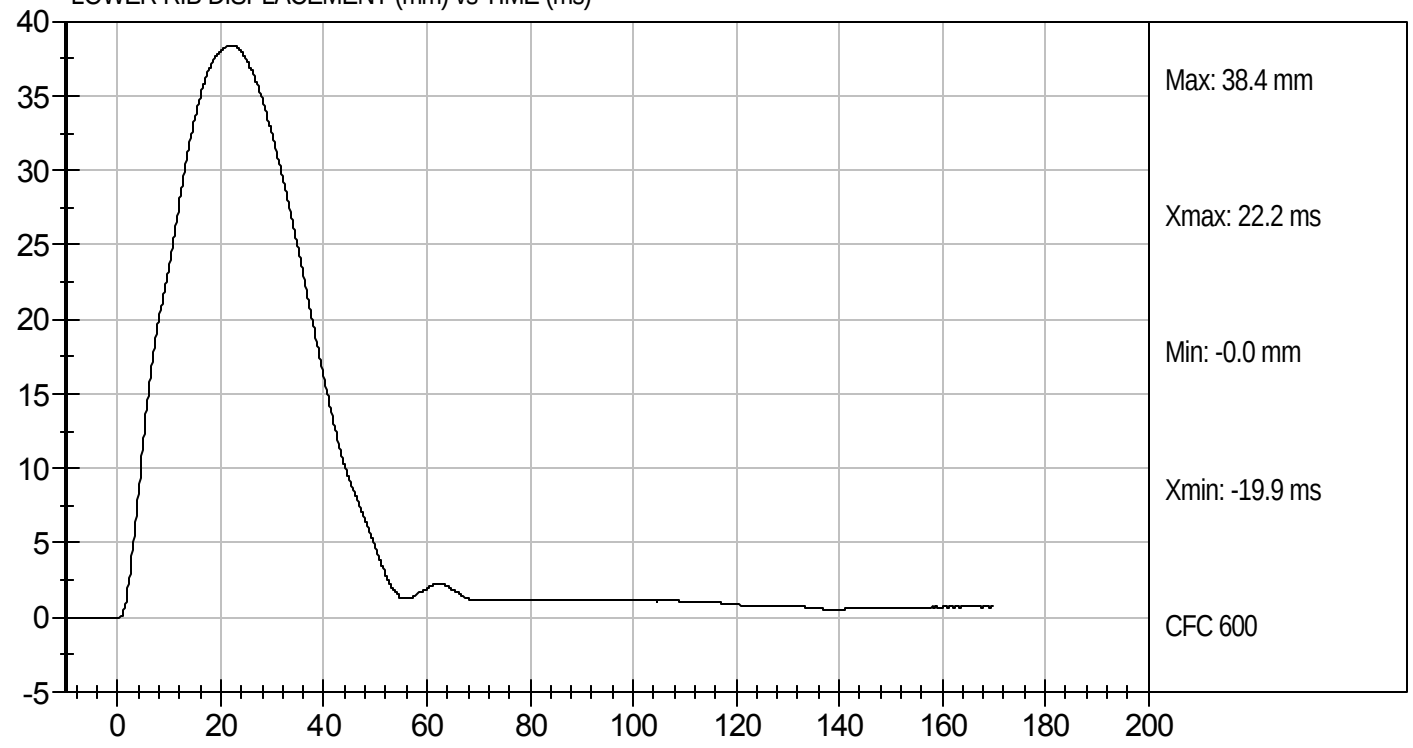
Test Desc: Thorax Without Arm
Component ID: D12265

Test Date: 1/23/12
Velocity: 14.24 ft/s, 4.34 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



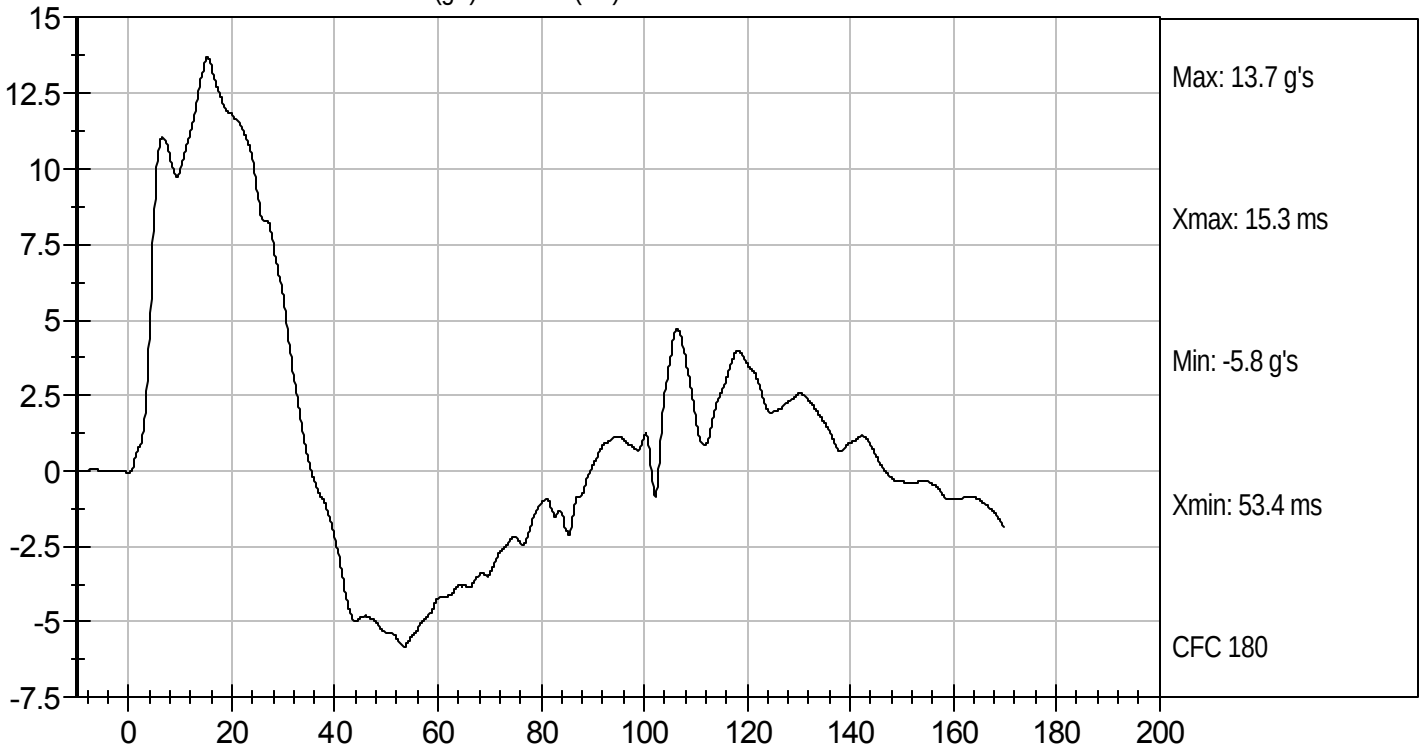
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



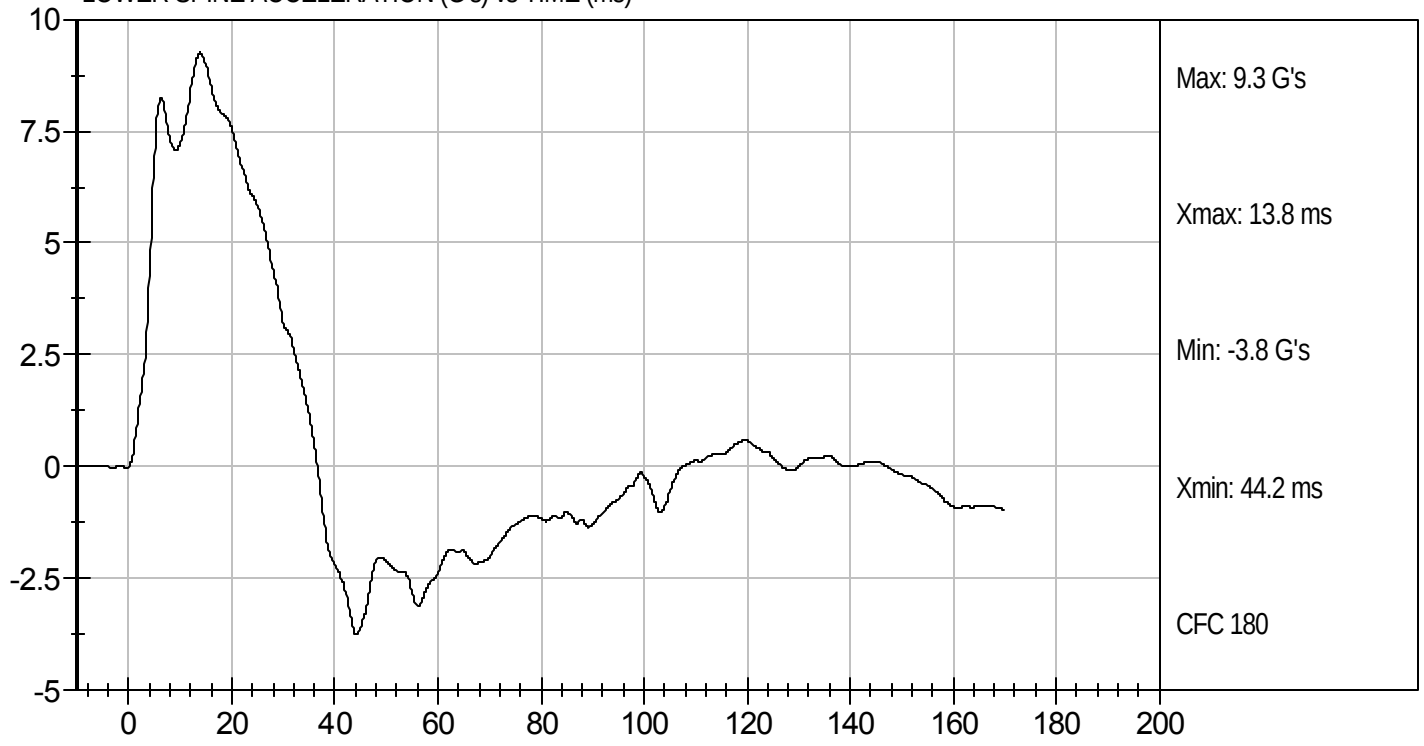
Test Desc: Thorax Without Arm
Component ID: D12265

Test Date: 1/23/12
Velocity: 14.24 ft/s, 4.34 m/s

UPPER SPINE ACCELERATION (g's) vs TIME (ms)



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



MGA RESEARCH CORPORATION

ABDOMINAL IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D12266

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.0	Pass
Humidity	%	10 to 70	29	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Peak Impactor Acceleration	G's	12 to 16	14	Pass
Upper Rib Displacement	mm	36 to 47	38	Pass
Lower Rib Displacement	mm	33 to 44	36	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

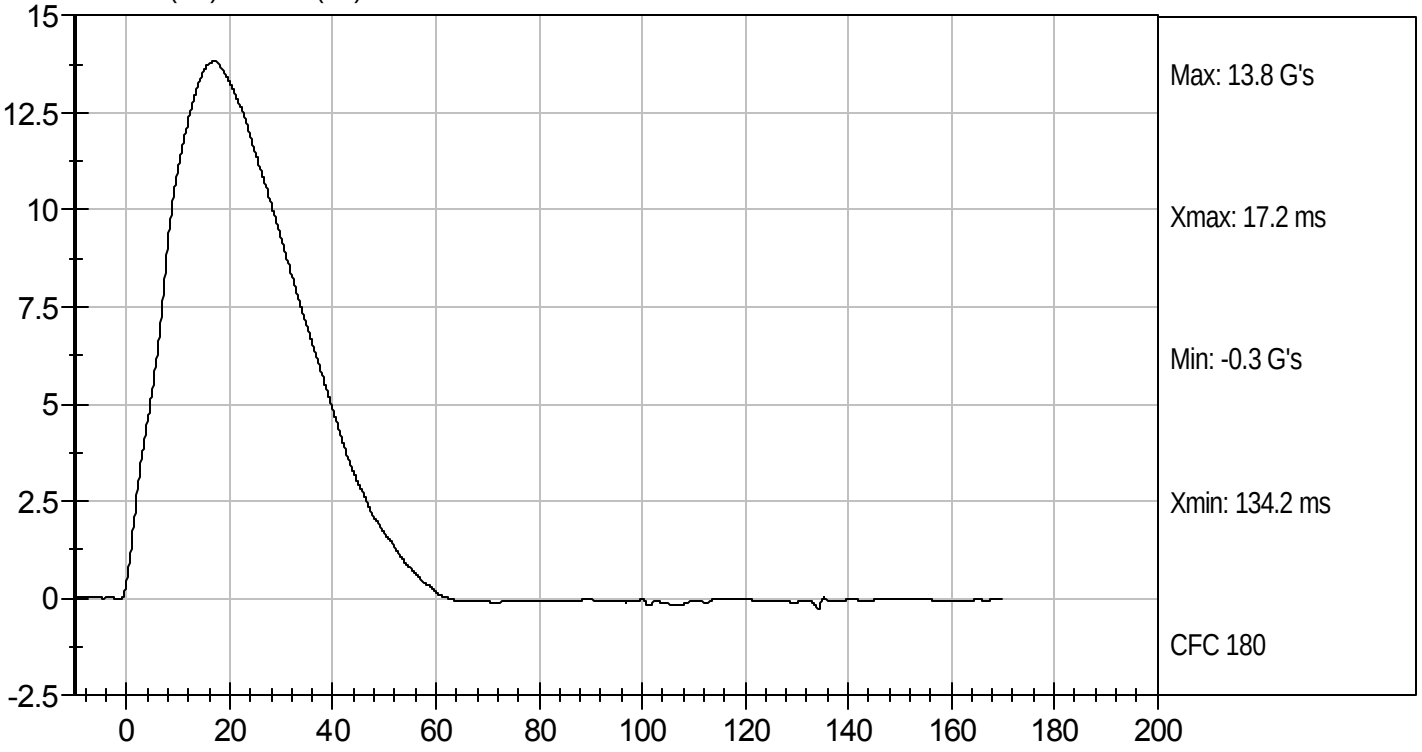
1/23/12
Test Date

David Winkelbauer
Approved By

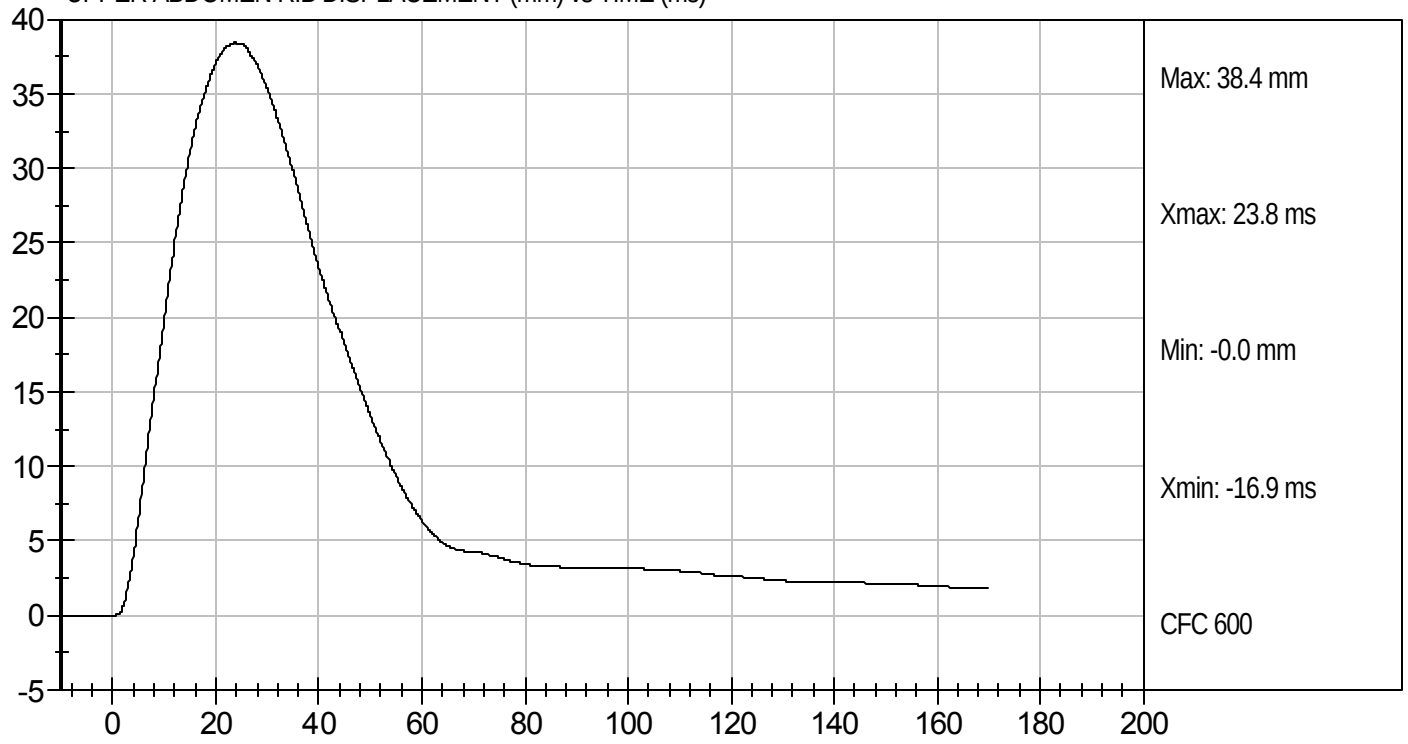
Test Desc: Abdomen Impact
Component ID: D12266

Test Date: 1/23/12
Velocity: 14.12 ft/s, 4.30 m/s

PROBE (G's) vs TIME (ms)



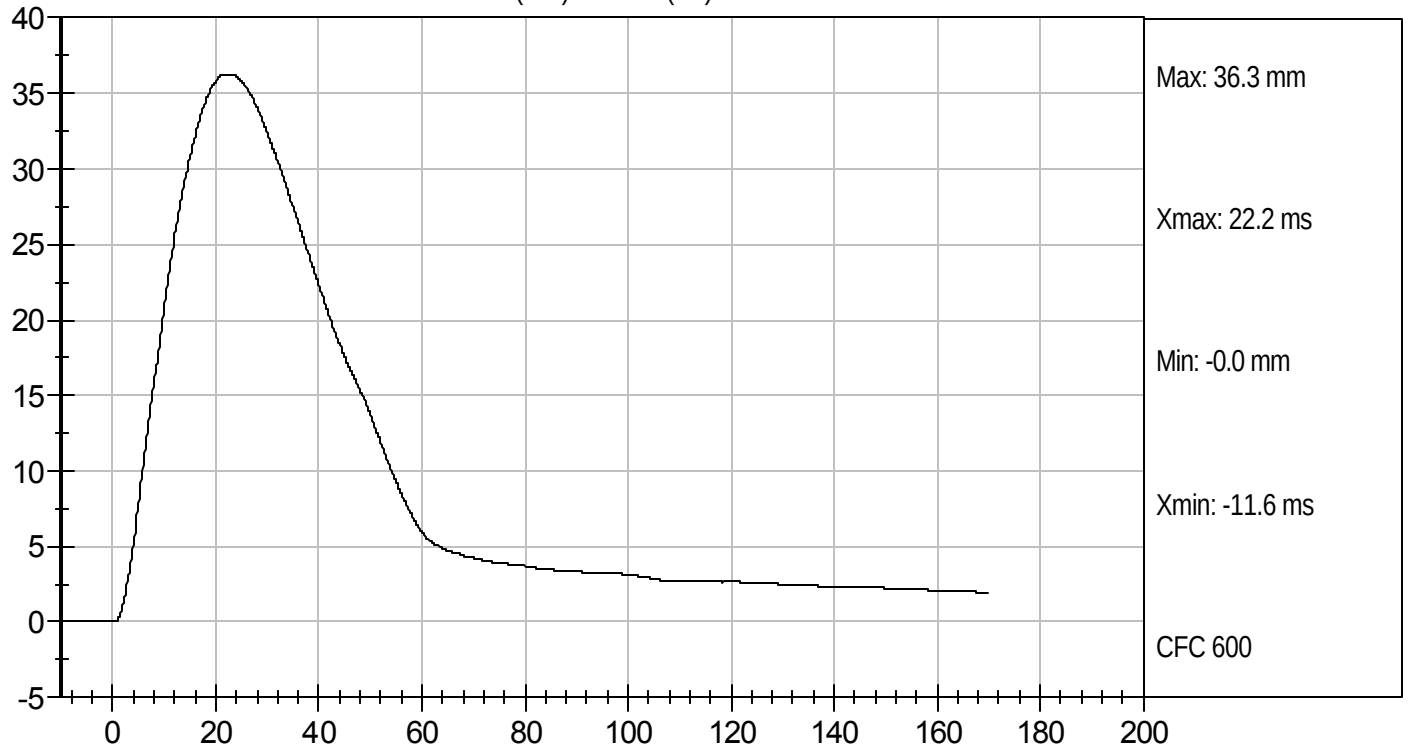
UPPER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



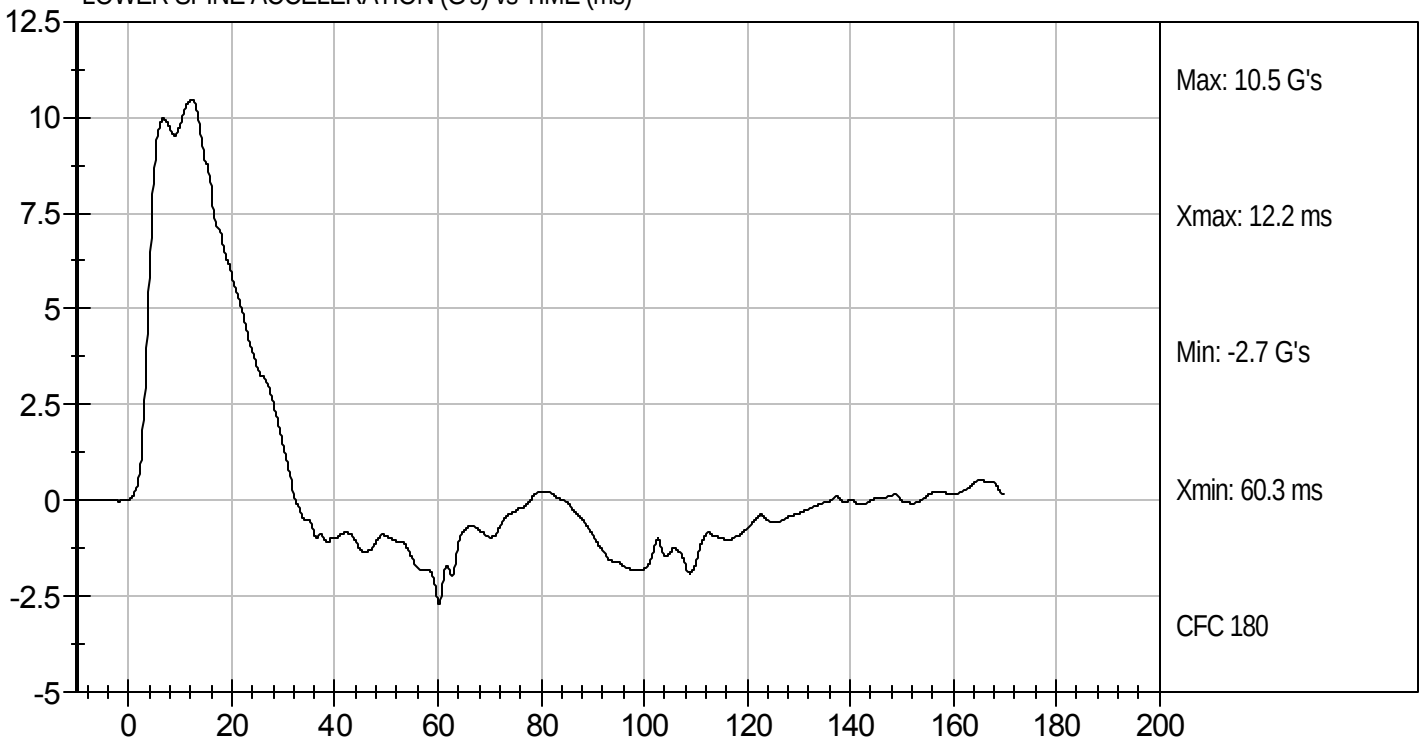
Test Desc: Abdomen Impact
Component ID: D12266

Test Date: 1/23/12
Velocity: 14.12 ft/s, 4.30 m/s

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: 296 **Test I.D:** D12267

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.0	Pass
Humidity	%	10 to 70	29	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Peak Impactor 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	3965	Pass
		Overall Test Results		Pass

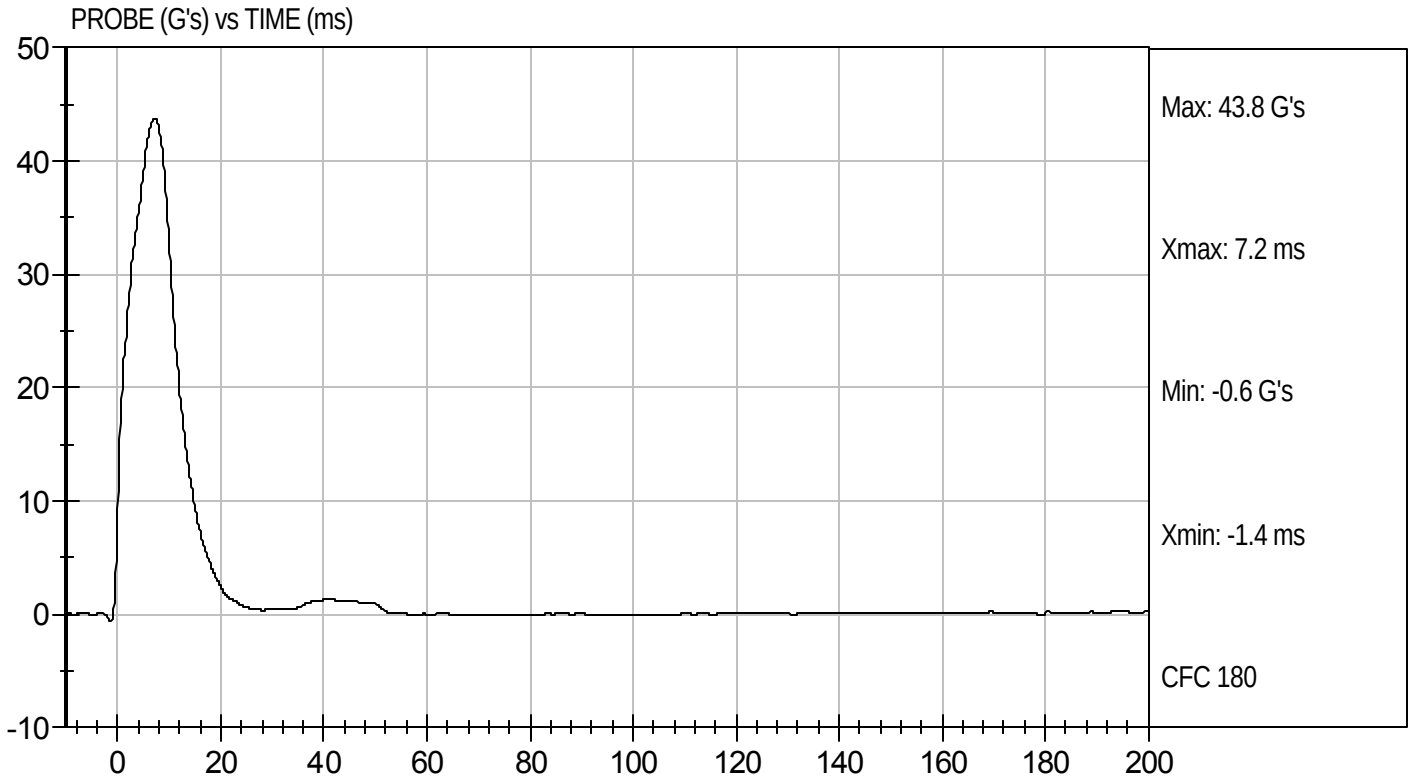
Jessica Hall
Laboratory Technician

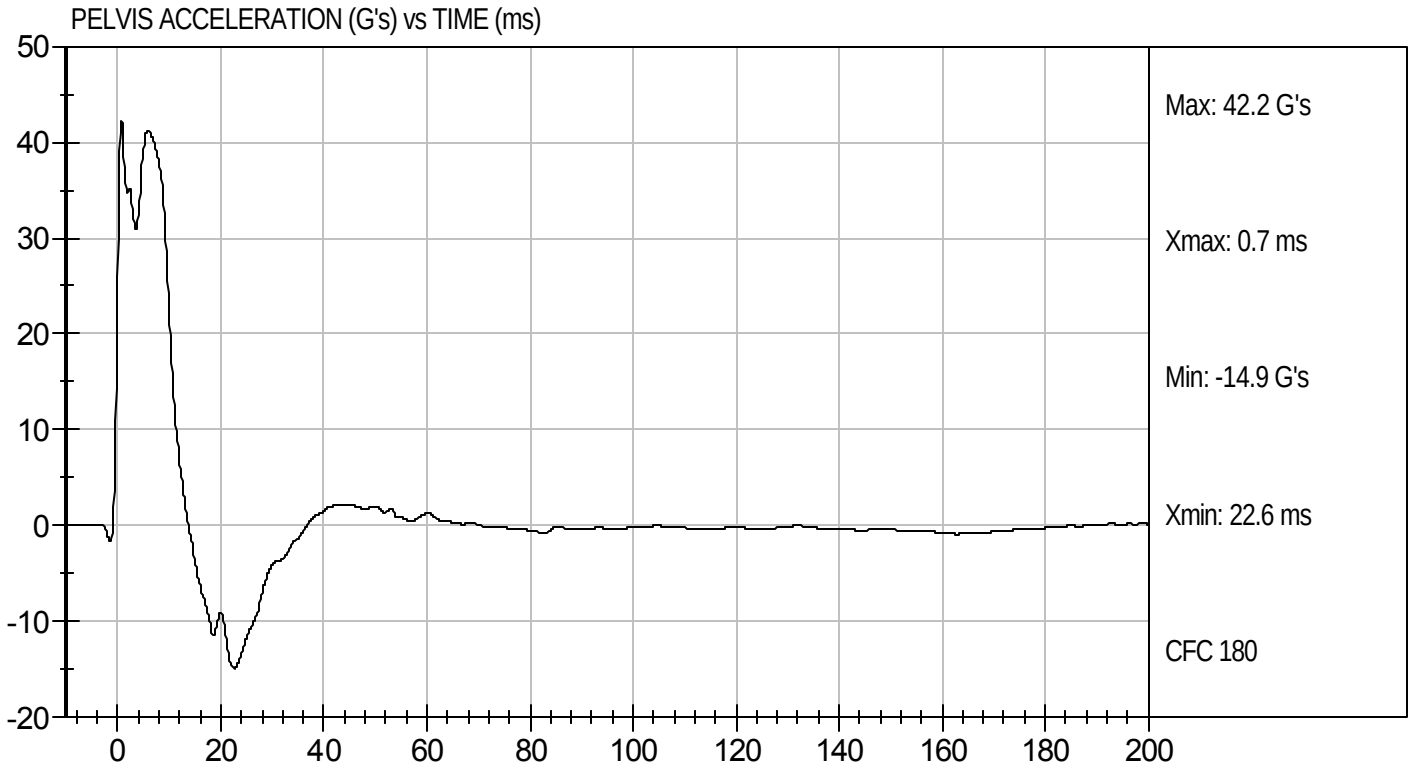
1/23/12
Test Date

David Winkelbauer
Approved By

Test Desc: Pelvis Impact
Component ID: D12267

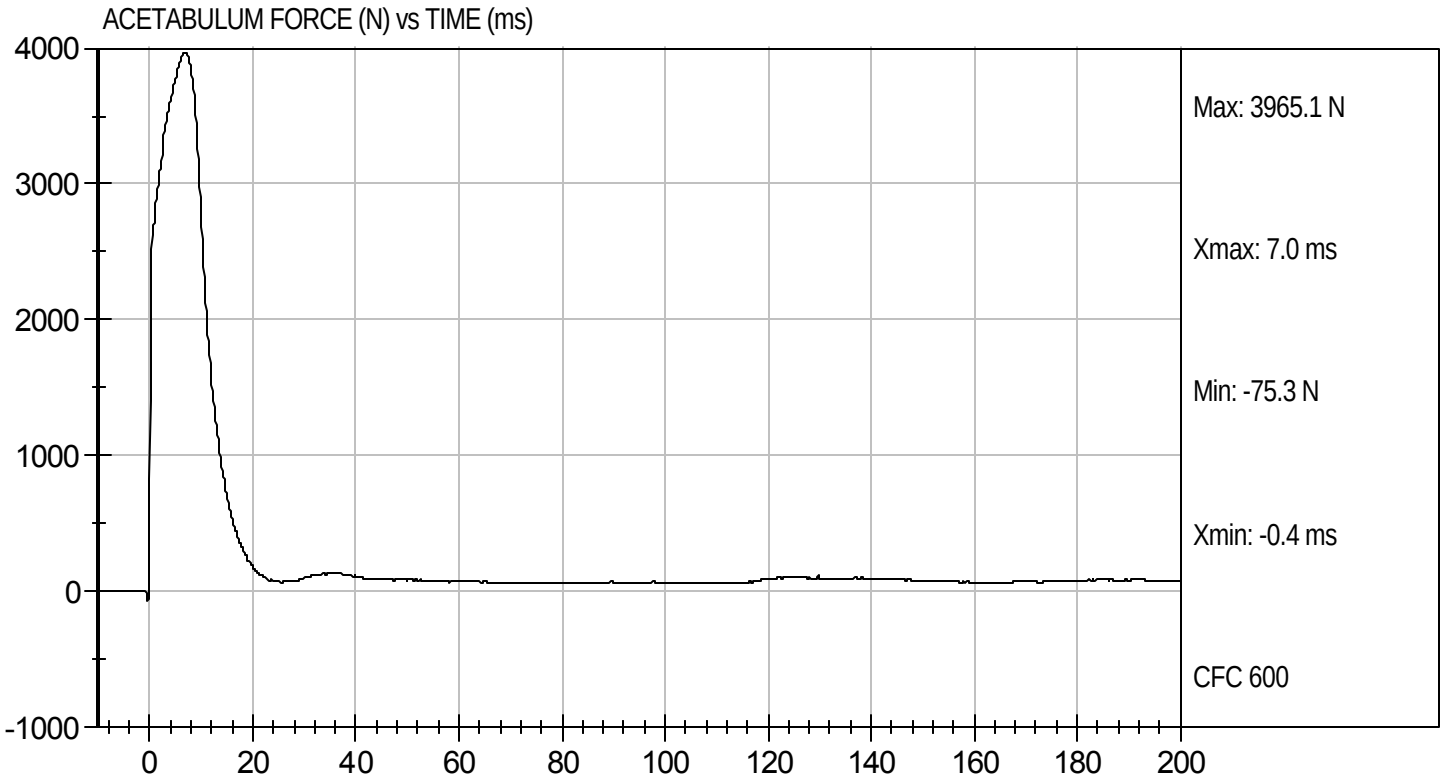
Test Date: 1/23/12
Velocity: 21.9 ft/s, 6.68 m/s





Test Desc: Pelvis Impact
Component ID: D12267

Test Date: 1/23/12
Velocity: 21.9 ft/s, 6.68 m/s



MGA RESEARCH CORPORATION

ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D12268

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.0	Pass
Humidity	%	10 to 70	29	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Peak Impactor Acceleration	G's	36 to 45	37	Pass
Pelvis Y Acceleration	G's	28 to 39	28	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4510	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

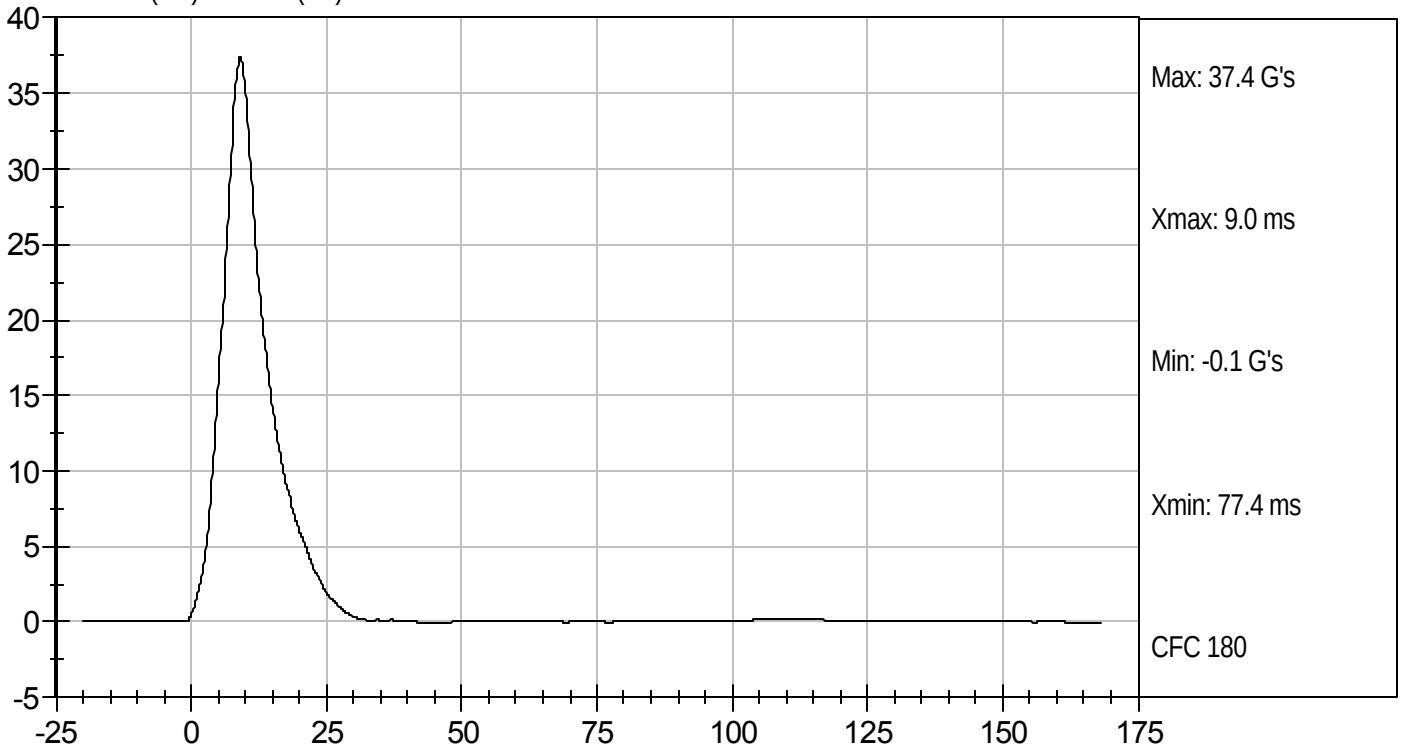
1/23/12
Test Date

David Winkelbauer
Approved By

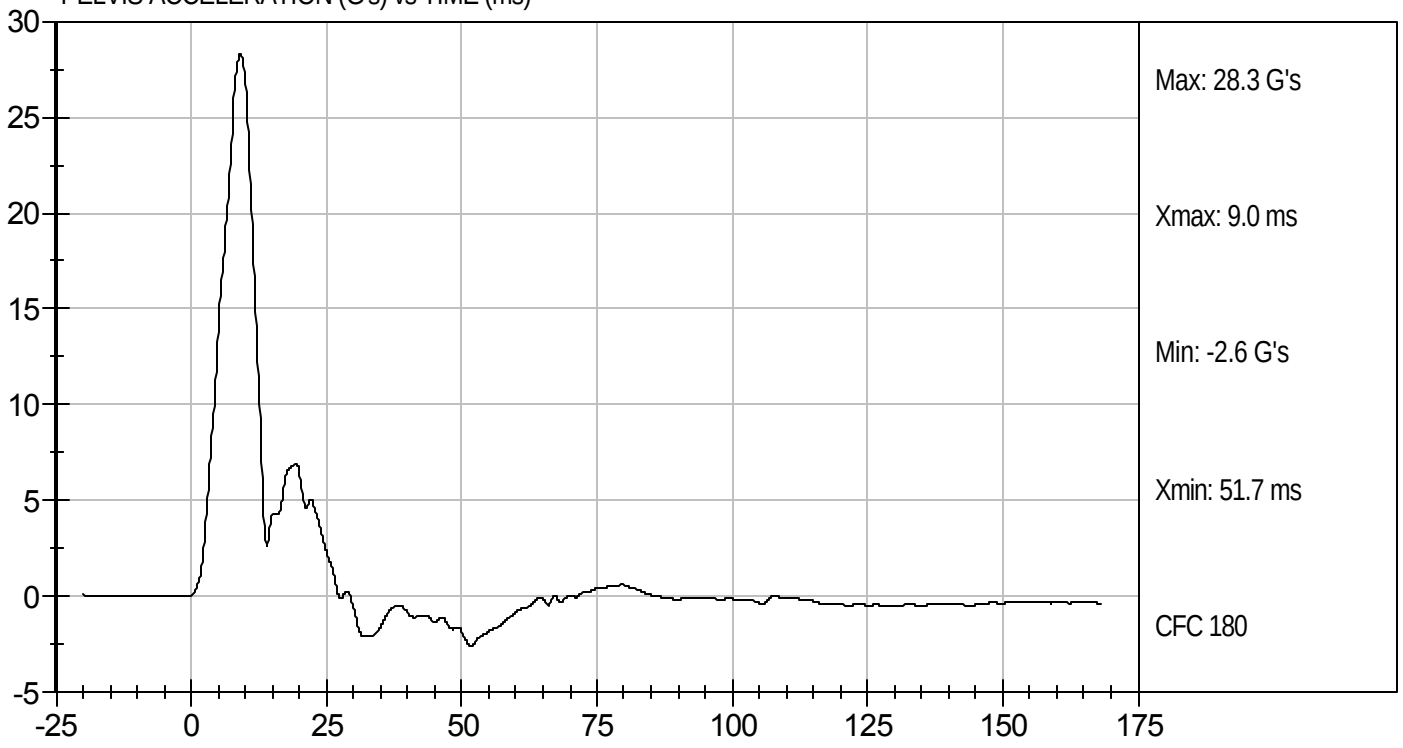
Test Desc: Iliac Impact
Component ID: D12268

Test Date: 1/23/12
Velocity: 13.88 ft/s, 4.23 m/s

PROBE (G's) vs TIME (ms)

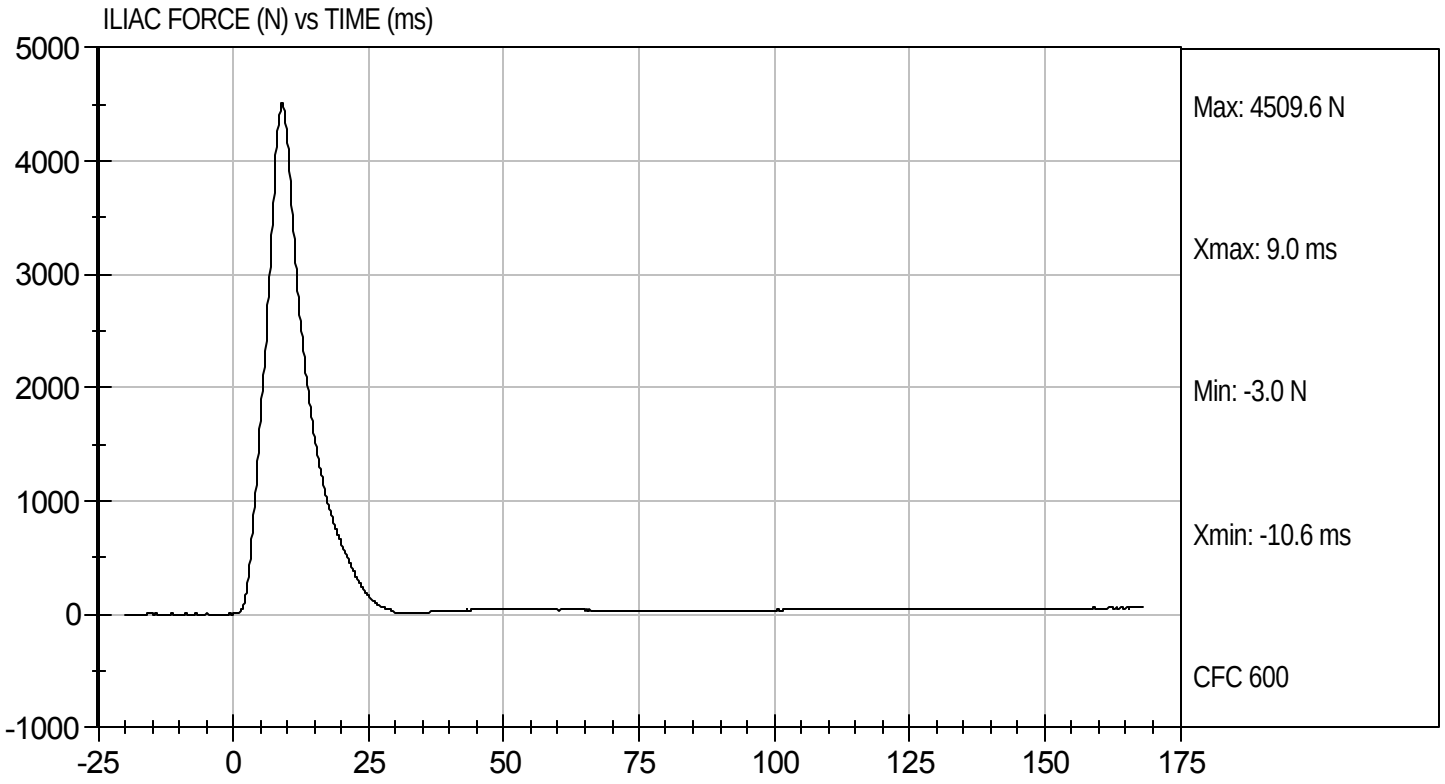


PELVIS ACCELERATION (G's) vs TIME (ms)



Test Desc: Iliac Impact
Component ID: D12268

Test Date: 1/23/12
Velocity: 13.88 ft/s, 4.23 m/s



APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 – Dummy Instrumentation

				SID-IIs S/N 296		
				Serial Number	Manufacturer	Calibration Date
Head Accelerometers			X	P67363	Endevco	10/13/11
			Y	P67364	Endevco	10/13/11
			Z	P67365	Endevco	10/13/11
Head Accelerometers			Xr	P64023	Endevco	10/13/11
			Yr	P66672	Endevco	10/13/11
			Zr	P66762	Endevco	10/13/11
Displacement Potentiometers	Thoracic Rib	Upper	Y	G1214	FTSS	10/18/11
		Middle	Y	G1163	FTSS	10/18/11
		Lower	Y	G1158	FTSS	10/18/11
	Abdominal Rib	Upper	Y	G1146	FTSS	10/18/11
		Lower	Y	G1126	FTSS	10/18/11
Lower Spine Accelerometers (T12)			X	P67286	Endevco	09/22/11
			Y	P67289	Endevco	09/22/11
			Z	P67291	Endevco	09/22/11
Acetabulum Load Cell			Y	ACG269	Denton	12/23/11
Iliac Wing Load Cell			Y	IWG282	Denton	12/23/11
Pelvis Plug (struck side)				47355	FTSS	10/18/11
Pelvis Plug (non-struck side)				46410	FTSS	09/22/11

Table 2 – Vehicle Instrumentation

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P59299	Endevco	12/14/11
Vehicle Center of Gravity	Y	P59300	Endevco	12/14/11
Vehicle Center of Gravity	Z	P59298	Endevco	12/14/11
Left Floor Sill	Y	P59347	Endevco	08/22/11
A-Pillar Sill	Y	P59345	Endevco	08/22/11
A-Pillar Low	Y	P59372	Endevco	09/13/11
A-Pillar Mid	Y	P63283	Endevco	08/22/11
B-Pillar Sill	Y	P59346	Endevco	08/22/11
B-Pillar Low	Y	P48390	Endevco	09/12/11
B-Pillar Mid	V	P48389	Endevco	09/12/11
Driver Seat	Y	P59373	Endevco	09/13/11
Engine Top	X	P63342	Endevco	11/04/11
Engine Top	Y	P63343	Endevco	11/04/11
Firewall	Y	P47083	Endevco	09/12/11
Right Roof	Y	P59374	Endevco	09/13/11
Right Floor Sill	Y	P63226	Endevco	10/20/11
Rear Floorpan	X	P59339	Endevco	11/04/11
Rear Floorpan	Y	P59338	Endevco	11/04/11

Table 3 – Pole Instrumentation

	Serial Number	Manufacturer	Calibration Date
Load Cell 1	DG6277	FTSS	09/15/11
Load Cell 2	DG6278	FTSS	09/15/11
Load Cell 3	DG6279	FTSS	09/15/11
Load Cell 4	DG6280	FTSS	09/15/11
Load Cell 5	DG6281	FTSS	09/15/11
Load Cell 6	DG6283	FTSS	09/15/11
Load Cell 7	DG6284	FTSS	09/15/11
Load Cell 8	DG6582	FTSS	09/15/11