

**REPORT NUMBER: SINCAP-CAL-16-002**

**NEW CAR ASSESSMENT PROGRAM (NCAP)  
MOVING DEFORMABLE BARRIER SIDE IMPACT TEST**

**Ford Motor Co.  
2016 Ford Explorer  
SUV**

**NHTSA No: M20160207**

**PREPARED BY:  
CALSPAN CORPORATION  
P.O. BOX 400  
BUFFALO, NEW YORK 14225**



**December 16, 2015**

**FINAL REPORT**

**PREPARED FOR:  
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, D.C. 20590**

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Prepared by: Vanessa Hansen  
Vanessa Hansen, Project Engineer

Date: December 16, 2015

Approved by: Edward Dutton  
Edward Dutton, Test Engineer  
Transportation Test Operations

Date: December 16, 2015

**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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<b>4. Title and Subtitle</b> Final Report of New Car Assessment Program Side Impact MDB Testing of a 2016 Ford Explorer SUV NHTSA No.: M20160207		<b>5. Report Date</b> December 16, 2015																												
		<b>6. Performing Organization Code</b> CAL																												
Vanessa Hansen, Test Engineer Edward Dutton, Senior Test Engineer		<b>8. Performing Organization Report No.</b> CAL-DOT-2016-002																												
<b>9. Performing Organization Name and Address</b> Calspan Corporation Transportation Test Operations P.O. Box 400 Buffalo, New York 14225		<b>10. Work Unit No.</b>																												
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<b>12. Sponsoring Agency Name and Address</b> U.S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NRM-110) 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		<b>13. Type of Report and Period Covered:</b> Final Test Report November 6, 2015 - December 16, 2015																												
		<b>14. Sponsoring Agency Code</b> NRM-110																												
<b>15. Supplementary Notes</b>																														
<b>16. Abstract</b> A 55/28, (61.90 kph / 38.5 mph), 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2016 Ford Explorer SUV in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at Calspan Corporation's Transportation Test Operations facility in Buffalo, New York on November 6, 2015.  The impact velocity of the Moving Deformable Barrier (MDB) was 61.56 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21°C. The target vehicle's maximum post-test static crush was 238mm located at level 3. The test vehicle's occupant performance data is as follows:																														
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<p>* Proposed IARV</p> <p>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.</p>																														
<b>17. Key Words</b> New Car Assessment Program (NCAP) Side Impact MDB ES-2re SID-IIs		<b>18. Distribution Statement</b> Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave. SE Washington, D.C. 20590 e-mail: <a href="mailto:tis@nhtsa.dot.gov">tis@nhtsa.dot.gov</a> FAX: 202-493-2833																												
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## **SECTION 1**

### **TEST PURPOSE AND PROCEDURE**

This moving deformable barrier side impact test is part of the MY 2016 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number DTNH22-14-D-00352. The purpose of this test is to generate comparative side impact performance in a 2016 Ford Explorer SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated October 2015.

## SECTION 2

### SUMMARY OF TEST RESULTS

A 2016 Ford Explorer SUV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.56 km/h. The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Calspan Corporation's Transportation Test Operations Center in Buffalo, New York on November 6, 2015. Pre-test and post-test photographs of the test vehicle, the MDB and the dummies (ES-2re and SID-IIs) are included in this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated October 2015. The side impact event was documented by 9 high-speed and 2 real-time cameras. Camera locations are included in this report.

The Dummies were instrumented in the following manner:

#### DRIVER ATD (ES-2re)

Primary and redundant head CG tri-axial accelerometers

Chest upper rib, middle rib, and lower rib y-axis displacement potentiometers

Abdomen forward, middle, and rear y-axis load cells

Lower spine (T12) tri-axial accelerometers

Public symphysis y-axis load cell

#### PASSENGER ATD (SID-IIs)

Primary and redundant head CG tri-axial 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) tri-axial accelerometers

Acetabulum and iliac wing y-axis load cells

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 of this report contains the test equipment and instrumentation calibration data.

### DUMMY INJURY VALUES

Measurement Description	Driver ATD (ES-2re)		
	Units	Threshold	Result
Head Injury Criteria (HIC36)		1000	73.100
Maximum Thorax Rib Deflection	mm	44	23.971
Combined Abdominal Force	N	2500	708.090
Pubic Symphysis Force	N	6000	952.288

Measurement Description	Passenger ATD (SID-IIs)		
	Units	Threshold	Result
Head Injury Criteria (HIC36)		1000	143.647
Lower Spine (T12) Resultant Acceleration	G	82	36.145
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3170.931
Maximum Thoracic Rib Deflection	mm	38*	17.886
Maximum Abdominal Rib Deflection	mm	45*	21.346

\*Proposed IARV

### SUPPLEMENTAL RESTRAINT 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	No		
Side Airbag 1 - Curtain	Yes	Yes	Yes	Yes
Side Airbag 2 – Torso/Pelvis Airbag	Yes	Yes	No	N/A
Seat Belt Pretensioner	Yes	Yes	No	N/A
Seat Belt Load Limiter	Yes	Yes	No	N/A
Other				

#### GENERAL COMMENTS:

1. P1 serial number – F034
2. P4 serial number – 303

#### Data Anomalies:

- Rear Passenger Upper Thorax Rib Y Displacement, Questionable data throughout

**SECTION 3**  
**OCCUPANT AND VEHICLE INFORMATION**

This section contains information reporting for the following Data Sheets:

Data Sheet No. 1 - General Test and Vehicle Parameter Data

Data Sheet No. 2 – Seat, Seat Belt, Steering Wheel Adjustment and Fuel System Data

Data Sheet No. 3 – Dummy Longitudinal Clearance Dimensions

Data Sheet No. 4 – Dummy Lateral Clearance Dimensions

Data Sheet No. 5 – Camera and Instrumentation Data

Data Sheet No. 6 – Test Vehicle Accelerometer Locations

Data Sheet No. 7 – MDB Accelerometer Locations

Data Sheet No. 8 – Post-Test Observations

Data Sheet No. 9 – MDB Summary of Results

Data Sheet No. 10 – Test Vehicle Profile Measurements

Data Sheet No. 11 – Test Vehicle Exterior Crush Measurements

Data Sheet No. 12 – MDB Exterior Static Crush Measurements

Data Sheet No. 13 – Vehicle and MDB Damage Profile Distances

Data Sheet No. 14 – FMVSS No. 301 Static Rollover Results

Data Sheet No. 15 – Dummy/Vehicle Temperature and Humidity Stabilization Data

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

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015

**TEST VEHICLE INFORMATION AND OPTIONS**

NHTSA No.	M20160207
Model Year	2016
Make	Ford
Model	Explorer
Body Style	SUV
VIN	1FM5K7B88GGA49925
Body Color	Blue
Odometer Reading (km/mi)	534 km / 332 mi
Engine Displacement (L)	3.5
Type/No. Cylinders	V6
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	6-Speed
Overdrive	Yes
Final Drive	Front Wheel Drive
Roof Rack	No
Sunroof/T-Top	No
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	No
Other Optional Feature	-
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 Pretensioners	Yes
Rear Pass. Seat Belt Pretensioners	No
Driver Load Limiter	Yes
Rear Pass. Load Limiter	No
Other Safety Restraint	-

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

**DATA FROM CERTIFICATION LABEL**

Manufactured By	Ford Motor Co.
Date of Manufacture	07/15
Vehicle Type	MPV

GVWR (kg)	2776
GAWR Front (kg)	1397
GAWR Rear (kg)	1497

**VEHICLE SEATING AND WEIGHT CAPACITY DATA**

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3	2	7	
Capacity Weight (VCW) (kg)				740	(A)
DSC X 68.04 kg				476.28	(B)
Cargo Weight (RCLW) (kg)				136	(A-B)

**VEHICLE SEAT TYPE**

Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						W/ Lever	W/ Knob
Front Seat	X						X
Rear or Second Row Seat			X			X	
Third Row seat			X		X		



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

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015

**TIRE PRESSURES**

	Units	LF	RF	LR	RR
As Delivered	kPa	212	218	210	216
Tire Placard	kPa	240	240	240	240
Owner's Manual	kPa	240	240	240	240
As Tested	kPa	240	240	240	240

**MDB TIRE SPECIFICATIONS**

	Units	Requirement	LF	RF	LR	RR
Tire Size		P205/75R15	P205/75R15	P205/75R15	P205/75R15	P205/75R15
Tire Pressure	kPa	200 ± 21	207	207	207	207

**TEST VEHICLE WEIGHTS**

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	557	459		614	555		591	587	
Right	kg	567	431		547	554		558	548	
Ratio	%	56%	44%		51%	49%		50%	50%	
Totals	kg	1124	890	2014	1161	1109	2270	1149	1135	2284

**TARGET TEST WEIGHT CALCULATION**

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	2014	(A)
Sum of Actual Weight of 2 P572 ATDS Used	kg	127	(B)
Rated Cargo / Luggage Weight (RCLW)	kg	136	(C)
Calculated Target Vehicle Test Weight (TVT <sub>W</sub> )	kg	2277	(A+B+C)

Does the measured As Test Vehicle Weight lie within the required weight range  
 (i.e. Calculated Test Vehicle Target Weight – 4.5 kg to – 9 kg)?  Yes  No

**TEST VEHICLE ATTITUDES AND CG**

Measurement Description	Units	Fully Loaded	As Tested	Meets Requirement**
LF	mm	876	873	Yes
RF	mm	884	877	Yes
RR	mm	887	892	Yes
LR	mm	881	881	Yes
Vehicle CG (Aft of Front Axle)	mm	1423	1399	
Vehicle CG (Left+)/Right(-) from Longitudinal Centerline)	mm	27	26	

\*\*\* The "As Tested" vehicle attitude measurements must be equal to or within ± 10mm of the "Fully Loaded" vehicle attitude measurements at each wheel well. Indicate "Yes" or "No" for "Meets Requirements".

Test height adjustable suspension setting, if applicable: N/A

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

Test Vehicle: 2016 Ford Explorer SUV  
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
Test Date: 11/6/2015

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

Component Description	Weight (kg)
Trunk Carpeting	9
Tail Light	2
Passenger Side Windows	10
Ballast / Equipment Added	82.5

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

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015

**SEAT POSITIONING**

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

**SCRL ANGLE RANGE**

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	16.6	7.2	11.9
Front Passenger Seat	-	Not Adjustable	-
Front Center Seat*			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat*	Fixed	Fixed	Fixed

*\*if applicable*

**SEAT HEIGHT AND ANGLE**

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid-Fore/Aft	Forward-Most
Driver Seat	11.9	6	Max	44	55	55
			Mid	20	27	30
			Min	0	4	10
Front Passenger Seat	Not Adjustable		Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Front Center Seat*	N/A	N/A	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Struck Side Rear Seat	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Non-Struck Side Rear Seat	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Rear Center Seat*	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-

*\*if applicable*

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

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015

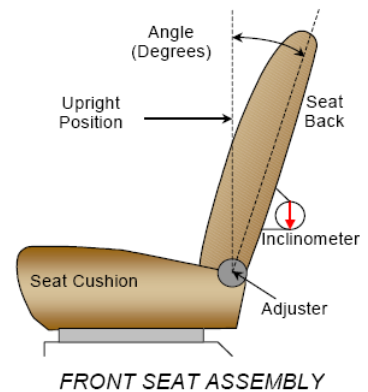
**SEAT FORE / AFT POSITION**

Seat	Total Fore / Aft Travel		Test Position from Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	250	N/A	125	N/A
Front Passenger Seat	180	N/A	90	N/A
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	100	10	100	10
Rear Center Seat*	Fixed	Fixed	Fixed	Fixed

*\*if applicable*

**SEAT BACK ANGLE ADJUSTMENT**

*The driver's seat back is positioned to the manufacturer's designated design angle. 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 seat back is positioned such that the dummy's head is level. The rear center and non-struck side rear outboard seat backs are positioned in a similar manner as the struck-side rear seat back.*



Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degrees	Detents*
Driver Seat w/ Seated Dummy	-13.6 to 37	N/A	3.2	N/A
Front Passenger Seat	-13.3 to 37.4	N/A	3.0	N/A
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat w/ Seated Dummy	16 to 33.9	N/A	16	N/A
Non-Struck Side Rear Seat	18.5 to 36	10 (0 – 9)	18.5	N/A
Rear Center Seat*	16 to 33.9	N/A	16	N/A

*\*if applicable*

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

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015

**SEAT BELT ANCHORAGE ADJUSTMENT**

*Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1. For this test zero is defined as the uppermost position.*

	Total # of Positions	Placed in Position #
Driver Seat	4 (0 – 3)	0 – Uppermost
Rear Seat	1	FIXED

**HEAD RESTRAINT ADJUSTMENT**

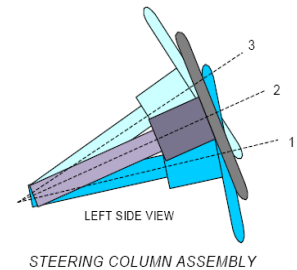
*The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.*

	Total # of Positions	Placed in Position #
Driver Seat	3 (0-2)	0 - Uppermost
Rear Seat	1	1 – Lowest

**STEERING COLUMN ADJUSTMENT**

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

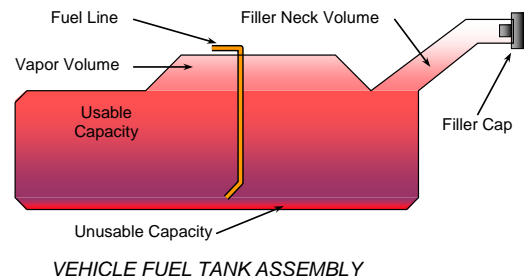
	Degrees	Fore/Aft Position (mm)
Lowermost – Position 1	24.6	
Geometric Center – Position 2	27.5	
Uppermost – Position 3	30.4	
Telescoping Steering Wheel Travel		50
Test Position	27.5	25



**FUEL PUMP**

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

The vehicle is equipped with an electric fuel pump. The fuel filler neck is on the right side of the vehicle. The pump creates positive pressure in the fuel lines, pushing the gasoline to the engine. See form 1 for more information.



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

Test Vehicle: 2016 Ford Explorer SUV  
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
Test Date: 11/6/2015

**FUEL TANK CAPACITY**

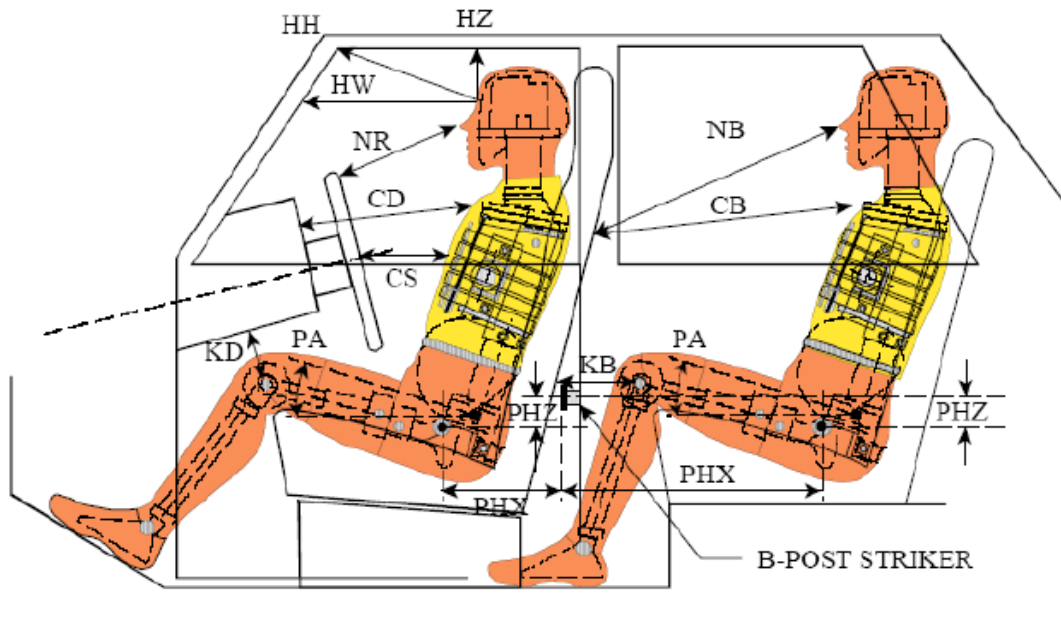
	<b>Liters</b>
Usable Capacity of "Standard Tank" (see Form No. 1)	70.4
Usable Capacity of "Optional Tank" (see Form No. 1)	N/A
Usable Capacity of Standard Tank (see Owner's Manual)	70.4
Usable Capacity of Optional Tank (see Owner's Manual)	N/A
93% of Usable Capacity	65.5
Actual Amount of Solvent Used in Test	65.5
1/3 of Usable Capacity	23.46

Is the Actual Amount of Solvent Used in the test equal to 93% ± 1% of the Usable Capacity stated in Form No. 1?     **Yes**         **No**

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

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015



**LEFT SIDE VIEW**

NOTE: 2-DOOR VEHICLE SHOWN.  
 REAR DUMMY PHX & PHZ  
 MEASUREMENTS FOR A 4-DOOR  
 VEHICLE WOULD USE THE C-POST  
 STRIKER AS A REFERENCE POINT

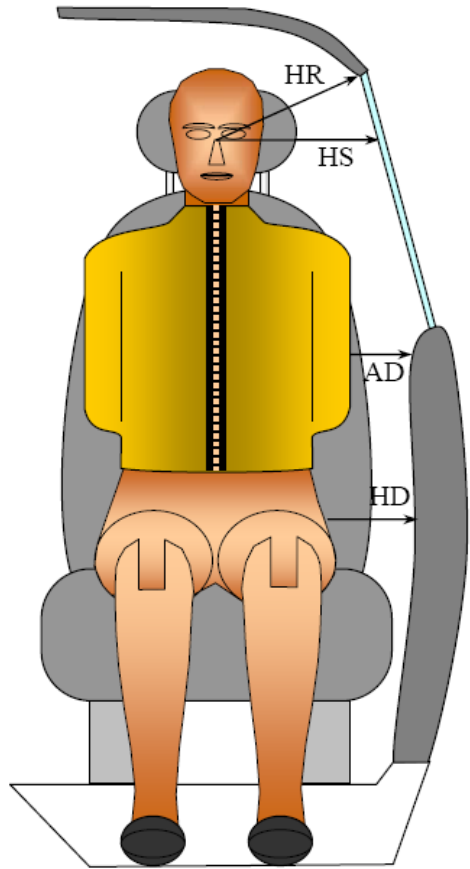
**DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION**

Driver Code	Pass. Code	Description	Driver (Serial No. F034)		Passenger (Serial No. 303)	
			Length (mm)	Angle	Length (mm)	Angle
HH		Header to Header	502			
HW		Header to Windshield	802			
HZ	HZ	Head to Roof Liner	263		311	
NR	NB	Nose to Rim/Seat Back	457		487	
CD	CB	Chest to Dash/Seat Back	605		492	
CS		Chest to Steering Wheel	385			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	200	26.7	261	7.4
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	208	27.4	263	7.0
PAX°	PAX°	Pelvic Tilt Angle X		18.4		0.2
	PAY°	Pelvic Tilt Angle Y				17.0
PHX	PHX	Hip Point to Striker (X-Axis)	192		401	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	118		258	

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

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015



*FRONT VIEW OF DUMMY*

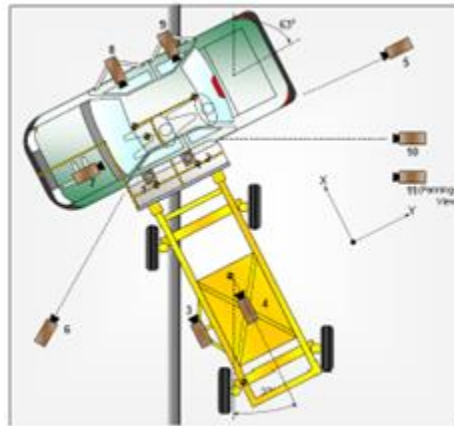
**DUMMY LATERAL CLEARANCE DIMENSION INFORMATION**

Code	Measurement Description	Units	Driver (Serial No. F034)	Passenger (Serial No. 303)
HR	Head to Side Header	mm	264	311
HS	Head to Side Window	mm	418	435
AD	Arm to Door	mm	138	178
HD	Hip Point to Door	mm	163	170

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

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015



**CAMERA LOCATIONS AND DATA**

No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Overhead Overall	99	839	-5326	14	1000
2	Overhead Close-up	593	839	-5326	28	1000
3	Left Impact Point (MDB)	-1470	0	-847	25	1000
4	Side Overall (MDB)	-1140	838	-1587	12.5	1000
5	Rear	0	10011	-1132	24	1000
6	Left Front	-3241	-4826	-1422	24	1000
7	Driver Front (OB)				25	1000
8	Driver Side (OB)				12.5	1000
9	Passenger Side (OB)				12.5	1000
10	Real-time Left Rear				Zoom	60
11	Real-time In run				Zoom	60

Notes: Reference: Impact Point projected to Ground  
 +X = To Front of MDB, +Y = To Right of MDB, +Z = Down  
 \*All measurements accurate to ± 6 mm.

If applicable, explain why camera(s) did not operate as intended: All cameras operated normally

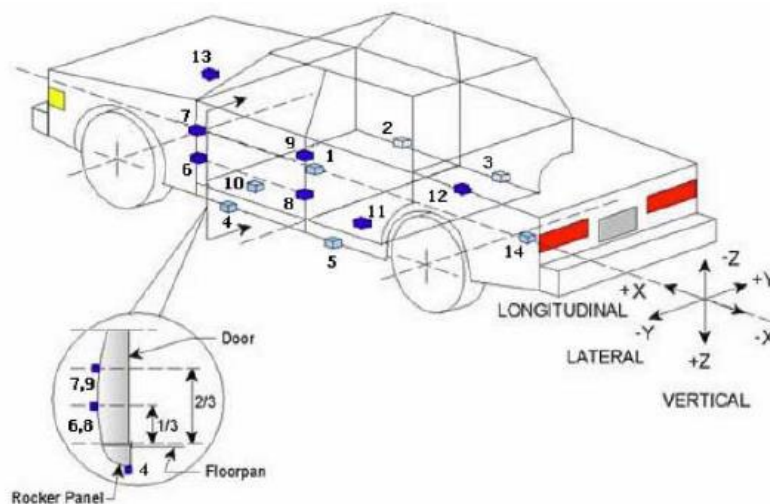
**INSTRUMENTATION**

Driver Dummy Channels	16
Passenger Dummy Channels	16
Vehicle Structure Accelerometers	23
MDB Accelerometers	7
<b>Total</b>	<b>62</b>

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

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015



**TEST VEHICLE ACCELEROMETER LOCATIONS**

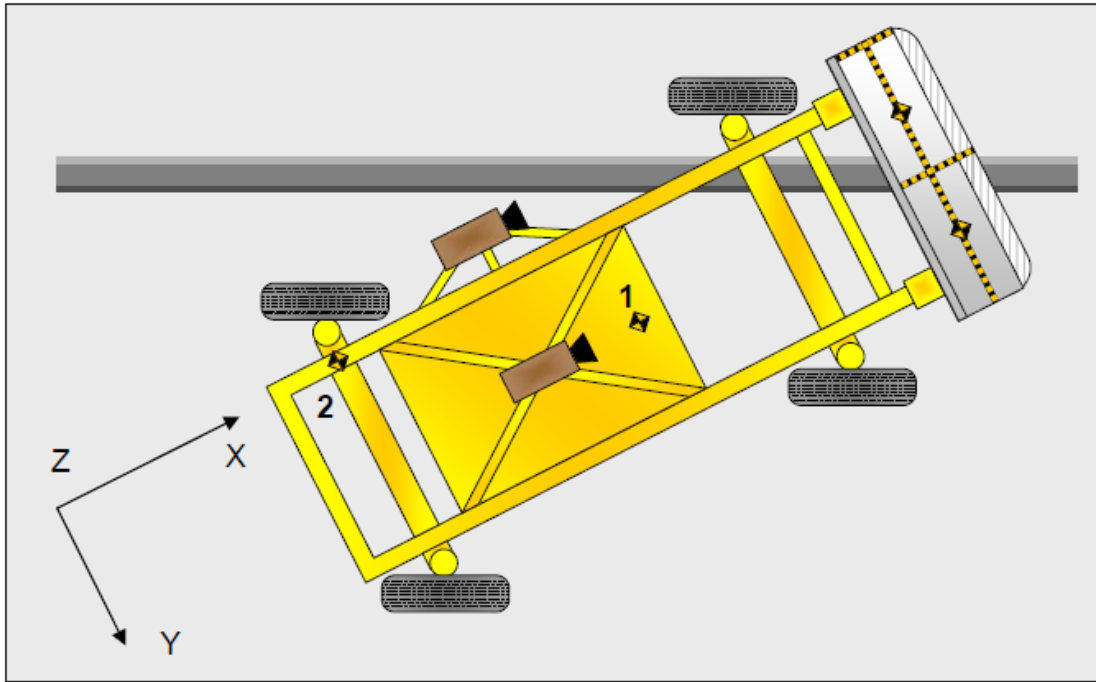
No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2899	53	185
2	Right Sill at Front Seat	3044	692	-93
3	Right Sill at Rear Seat	2225	704	-70
4	Left Sill at Front Door	3042	-699	-96
5	Left Sill at Rear Door	2233	-701	-73
6	A-Post Lower	3446	-689	108
7	A-Post Middle	3471	-678	629
8	B-Post Lower	2485	-728	125
9	B-Post Middle	2440	-727	410
10	Front Seat Track	2680	-584	-58
11	Rear Seat Structure	2082	-501	120
12	Rt. Rear Occ. Compartment	2393	398	-186
13	Engine Block	4301	-17	349
14	Rear Above Axle	986	9	-62

Reference: X – Rear surface of vehicle (+ forward)  
 Y – Vehicle centerline (+ to right)  
 Z – Ground plane (+ down)

**DATA SHEET NO. 7  
MDB ACCELEROMETER LOCATIONS**

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015



**MDB ACCELEROMETER LOCATIONS**

No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	MDB CG	1859	0	-330
2	MDB Rear	386	-660	-660

*Reference: X – Face of MDB (+ forward)  
 Y – MDB centerline (+ to right)  
 Z – Ground plane (+ down)*

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

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015

**TEST DUMMY INFORMATION AND CONTACT POINTS**

Dummy Body Part	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	No Contact	No Contact
Top of Head	Curtain Airbag	Curtain Airbag
Left Side of Head	Curtain Airbag	Curtain Airbag
Back of Head	Headrest	Curtain Airbag & Rear Center Seatback
Left Shoulder	Curtain Airbag, Driver Door & Driver Window	Passenger's Door
Upper Torso	Seatback & Torso/Pelvis Airbag	Passenger's Door
Lower Torso	Seatback & Torso/Pelvis Airbag	Passenger's Door
Left Hip	Torso/Pelvis Airbag	Passenger's Door
Left Knee	Driver's Door	Passenger's Door

**POST-TEST DOOR PERFORMANCE**

Description	Struck Side		Non-Struck Side		Rear Hatch/Other
	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, Width of Opening at Striker (mm)	0	0	0	0	0

**POST-TEST SEAT PERFORMANCE**

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

**POST-TEST STRUCTURAL OBSERVATIONS**

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Remained in good condition
Sill Separation	None
Windshield Damage	None
Side Window Damage	None
Other Notable Effects	None

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

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No	N/A		
Side Airbag 1 - Curtain	Yes	Yes	Yes	Yes
Side Airbag 2 - Torso/Pelvis Airbag	Yes	Yes	No	N/A
Seat Belt Pretensioner	Yes	Yes	No	N/A
Seat Belt Load Limiter	Yes	Yes	No	N/A
Other				

**IMPACT POINT LOCATION DATA**

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2864
Vertical Impact Reference Line (Aft of Front Axle - Intended Impact Point)	mm		489
Actual Impact Point (Aft of Frontal Axle)	mm		500
Horizontal Offset (+ forward / - rearward)	mm	+/- 50 of Intended Impact Point	-11
Vertical Offset (+ down / - up)	mm	+/- 20 of Intended Impact Point	-17

**DATA SHEET NO. 9  
MDB SUMMARY OF RESULTS**

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015

**MDB SPECIFICATIONS**

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1,250
Overall Length Including Honeycomb Frame	4,120
Wheelbase of Framework Carriage	2,600
CG Location of Front Axle	1,120

**MDB WEIGHTS**

	Units	Front Axle	Rear Axle	Total
Left	kg	392.5	297.5	690.0
Right	kg	386.0	291.5	677.5
Ratio	%	57.4%	42.6%	100.0%
Totals	kg	778.5	589.0	1367.5

**SPEED AND ANGLE AT IMPACT DATA**

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.10 to 62.70	61.56
Trap No. 2 Velocity (Redundant)	km/h	61.10 to 62.70	61.70
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.0
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63.0
MDB Crabbed angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.0

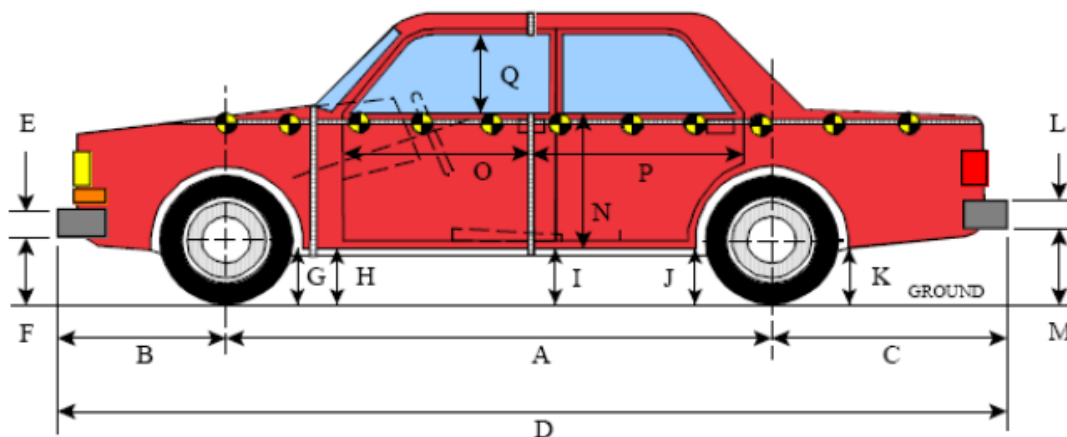
**MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE**

Vertical Location			From Centerline		Maximum Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	800	Left	265
B	Top of Bumper	533	800	Left	175
C	Mid-Level	686	800	Left	175
D	Top of Stack	813	800	Left	195

**DATA SHEET NO. 10  
TEST VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2016 Ford Explorer SUV  
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
Test Date: 11/6/2015



**LEFT SIDE VIEW**

All MEASUREMENTS IN (mm) WITH TOLERANCE OF  $\pm 3$ mm

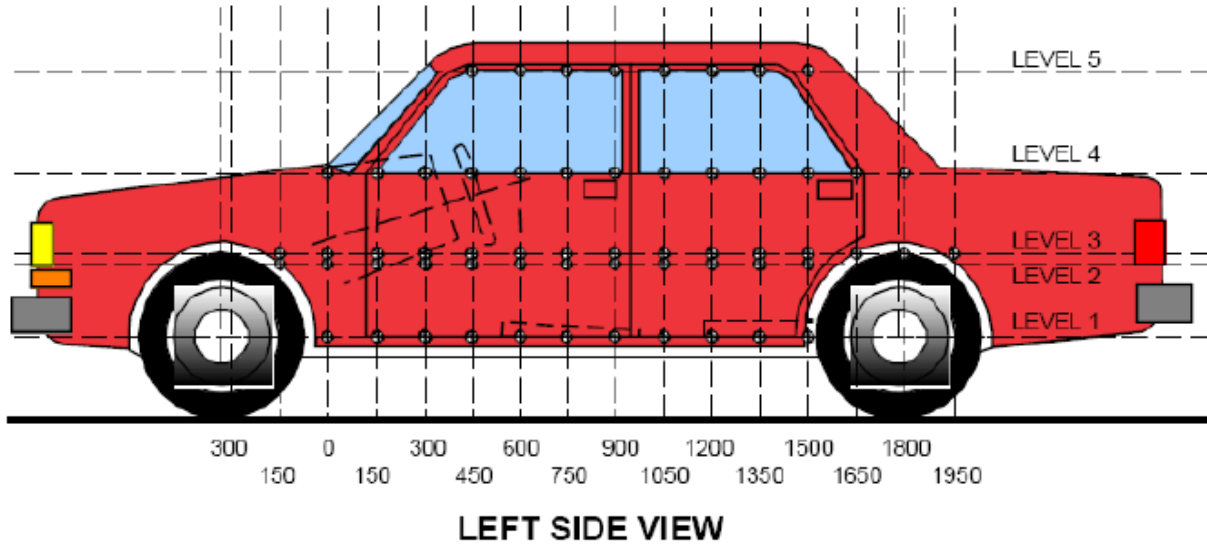
**VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION**

Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2864	2862	-2
B	Front Axle to FSOV	991	1002	11
C	Rear Axle to RSOV	1185	1175	-11
D	Total Length at Centerline	5043	5039	-4
E	Front Bumper Thickness	150	150	0
F	Front Bumper Bottom to Ground	513	498	-15
G	Sill Height at Front Wheel Well	271	272	1
H	Sill Height at Front Door Leading Edge	274	272	-2
I	Sill Height at B Pillar	254	265	11
J1	Sill Height at Rear Wheel Well	273	270	-3
J2	Pinch Weld Height at Rear Wheel Well	248	246	-2
K	Sill Height Aft of Rear Wheel Well	306	307	1
L	Rear Bumper Thickness	125	125	0
M	Rear Bumper Bottom to Ground	530	536	6
N	Sill Height to Window Bottom of Front Window Sill	905	836	-69
O	Front Door Leading Edge to Impact CL	785	783	-2
P	Rear Door Trailing Edge to Impact CL	1434	1414	-21
Q	Front Window Opening	453	451	-2
R	Right Side Length	4938	4934	-4
S	Left Side Length	4933	4932	-2
T	Maximum Vehicle Width	1974	1862	-112

**DATA SHEET NO. 11**  
**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015



**MAXIMUM EXTERIOR CRUSH MEASUREMENTS**

Level	Measurement Description	Units	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	mm	330	52	1050
2	Driver Hip Point	mm	717	231	1650
3	Mid-Door	mm	789	238	1500
4	Window Sill	mm	1149	79	1200
5	Window Top	mm	1677	9	2700

\*window top level bent outward from original position

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

**DATA SHEET NO. 11 ... (CONTINUED)**  
**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015

**EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL**

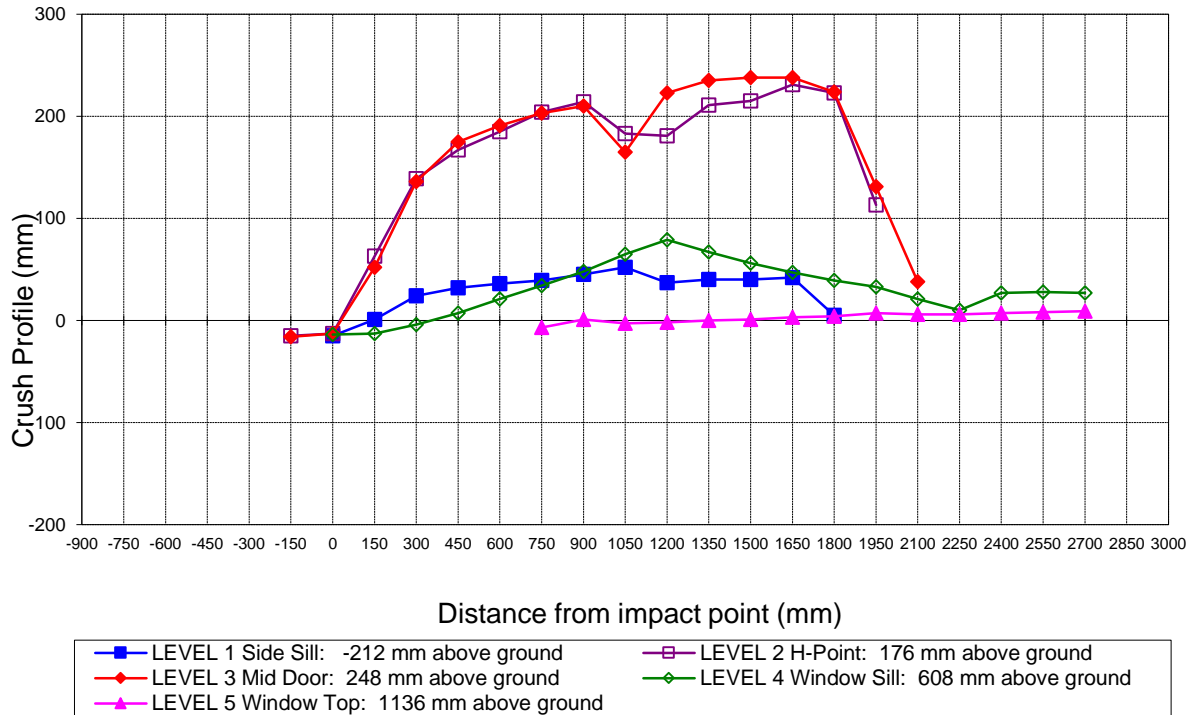
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300															
-150		1002	997				1017	1013				-15	-16		
0	935	989	989	889		950	1002	996	903		-15	-13	-7	-14	
150	927	975	975	904		926	912	923	917		1	63	52	-13	
300	924	974	977	918		900	835	841	922		24	139	136	-4	
450	924	976	979	929		892	809	804	922		32	167	175	7	
600	923	977	980	939		887	792	789	918		36	185	191	21	
750	922	977	981	946	661	883	773	778	912	668	39	204	203	34	-7
900	922	977	982	952	697	877	763	772	904	696	45	214	210	48	1
1050	921	976	981	956	697	869	793	816	891	700	52	183	165	65	-3
1200	916	974	979	955	699	879	793	756	876	701	37	181	223	79	-2
1350	914	974	978	956	702	874	763	743	889	702	40	211	235	67	0
1500	913	973	977	954	703	873	758	739	898	702	40	215	238	56	1
1650	913	972	975	953	703	871	741	737	906	700	42	231	238	47	3
1800	913	984	982	950	701	908	761	758	911	697	5	223	224	39	4
1950		1002	1000	947	699		889	869	914	692		113	131	33	7
2100			1007	944	697			969	923	691			38	21	6
2250				939	692				929	686				10	6
2400				933	685				906	678				27	7
2550				925	677				897	669				28	8
2700				916	666				889	657				27	9
2850															
3000															

**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 test based on an estimated impact point.

**DATA SHEET NO. 11 (CONTINUED)**  
**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015

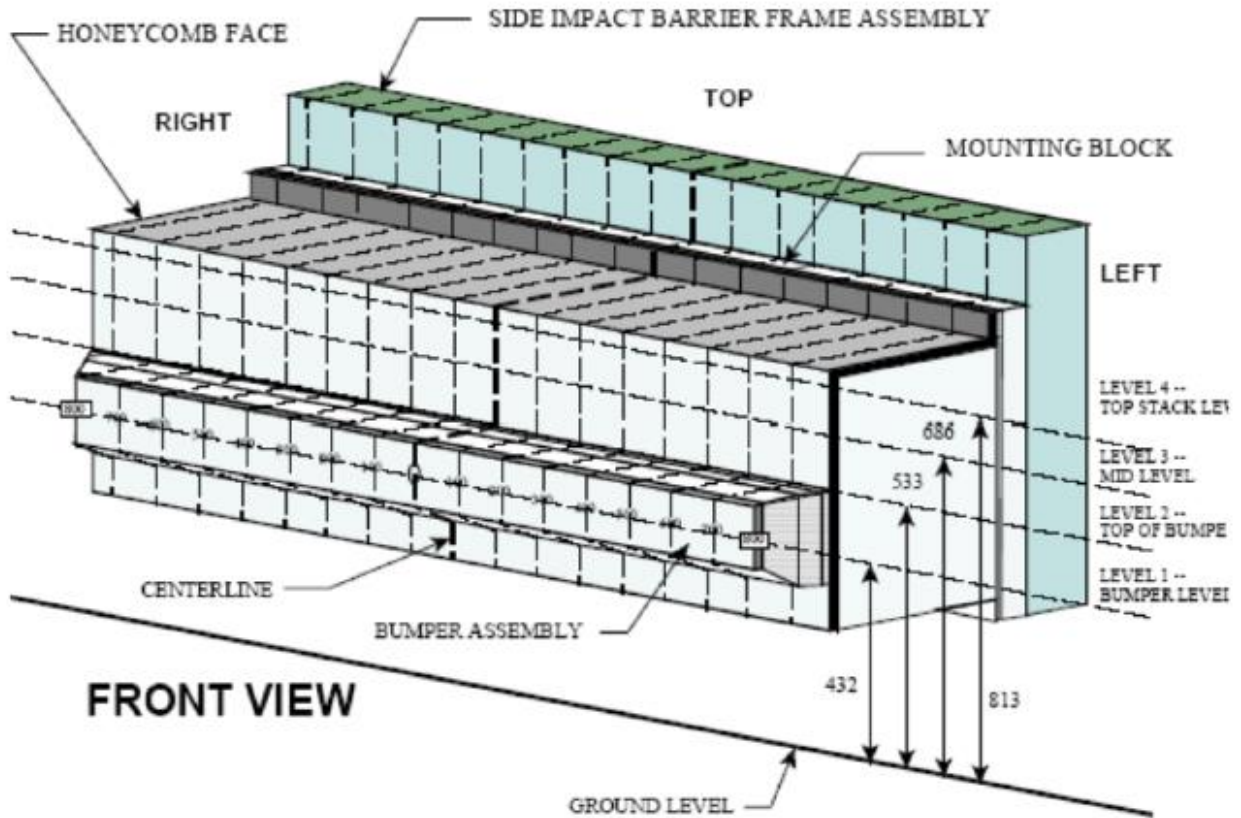


**Vehicle Exterior Crush Measurements - Visual Representation**

**DATA SHEET NO. 12  
MDB EXTERIOR STATIC CRUSH MEASUREMENTS**

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015



NOTE: Dimensions are shown in millimeters, mm

**DEFORMABLE BARRIER STATIC CRUSH**

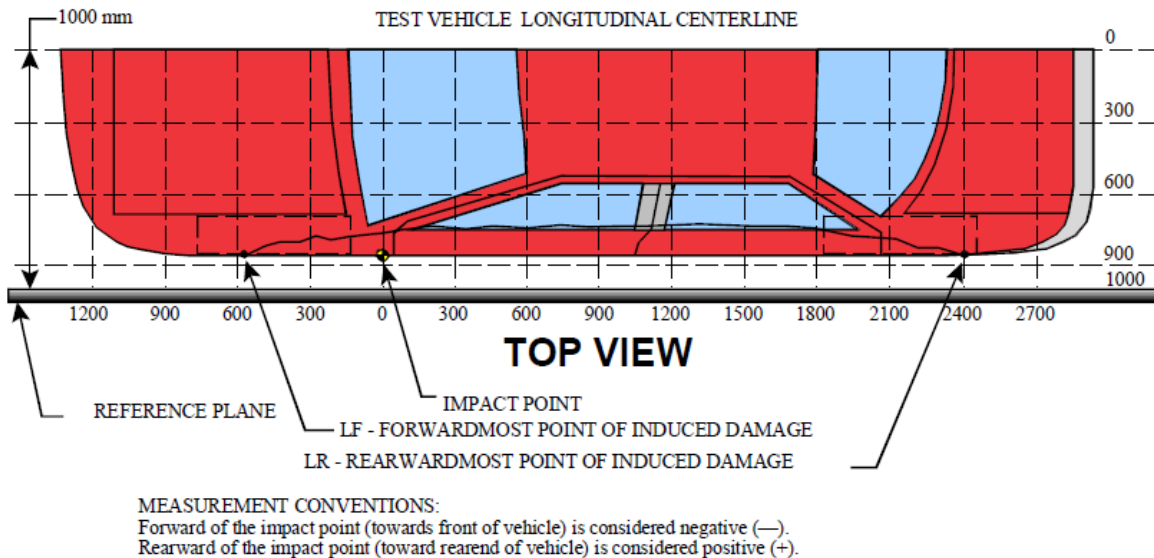
Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		0	100	200	300	400	500	600	700
1	247	234	232	233	234	234	235	236	236	231	230	230	230	230	232	240	265
2	160	162	165	164	165	164	157	157	159	156	156	155	156	154	156	159	175
3	73	58	63	62	68	75	104	97	68	60	58	62	72	86	97	118	175
4	66	53	47	44	43	59	81	102	100	74	83	78	91	104	118	141	195

**DATA SHEET NO. 13**  
**MDB EXTERIOR STATIC CRUSH MEASUREMENTS**

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015

For guidance regarding damage profile distance measurements, please refer to the latest version of the *NHTSA Test Reference Guide, Volume 1: Vehicle Tests*.



**VEHICLE DAMAGE PROFILE DISTANCES**

DPD	Distance From Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	-150	3	-13	3	-16
2	300	3	159	23	136
3	750	3	222	19	203
4	1200	3	244	21	223
5	1650	3	263	25	238
6	2100	3	31	-7	38

**MDB DAMAGE PROFILE DISTANCES**

DPD	Distance From Center of MDB	Level	Post-Test (mm)*
1	800 mm left of center	1	265
2	480 mm left of center	1	230
3	160 mm left of center	1	230
4	160 mm right of center	1	235
5	480 mm right of center	1	233
6	800 mm right of center	1	247

**DATA SHEET NO. 14  
FMVSS NO. 301 STATIC ROLLOVER RESULTS**

Test Vehicle:	<u>2016 Ford Explorer SUV</u>	NHTSA No.:	<u>M20160207</u>
Test Program:	<u>NCAP Side MDB Impact Test</u>	Test Date:	<u>11/6/2015</u>
Test Time:	<u>12:25 PM</u>	Temperature:	<u>21°C</u>

- |                                                                                 |                             |     |
|---------------------------------------------------------------------------------|-----------------------------|-----|
| A. From impact until vehicle motion ceases:<br>(Maximum allowable is 1 oz.)     | <u>0</u>                    | oz. |
| B. For the 5-minute period after motion ceases:<br>(Maximum allowable is 5 oz.) | <u>0</u>                    | oz. |
| C. For the following 25 minutes:<br>(Maximum allowable is 1 oz./minute)         | <u>0</u>                    | oz. |
| D. Spillage Details:                                                            | <u>No Spillage Occurred</u> |     |

**FMVSS NO. 301 STATIC ROLLOVER DATA**



**ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS**

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	69	300	369
90° to 180°	64	300	364
180° to 270°	63	300	363
270° to 360°	70	300	370

**FMVSS NO. 301 ROLLOVER SPILLAGE TABLE**

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

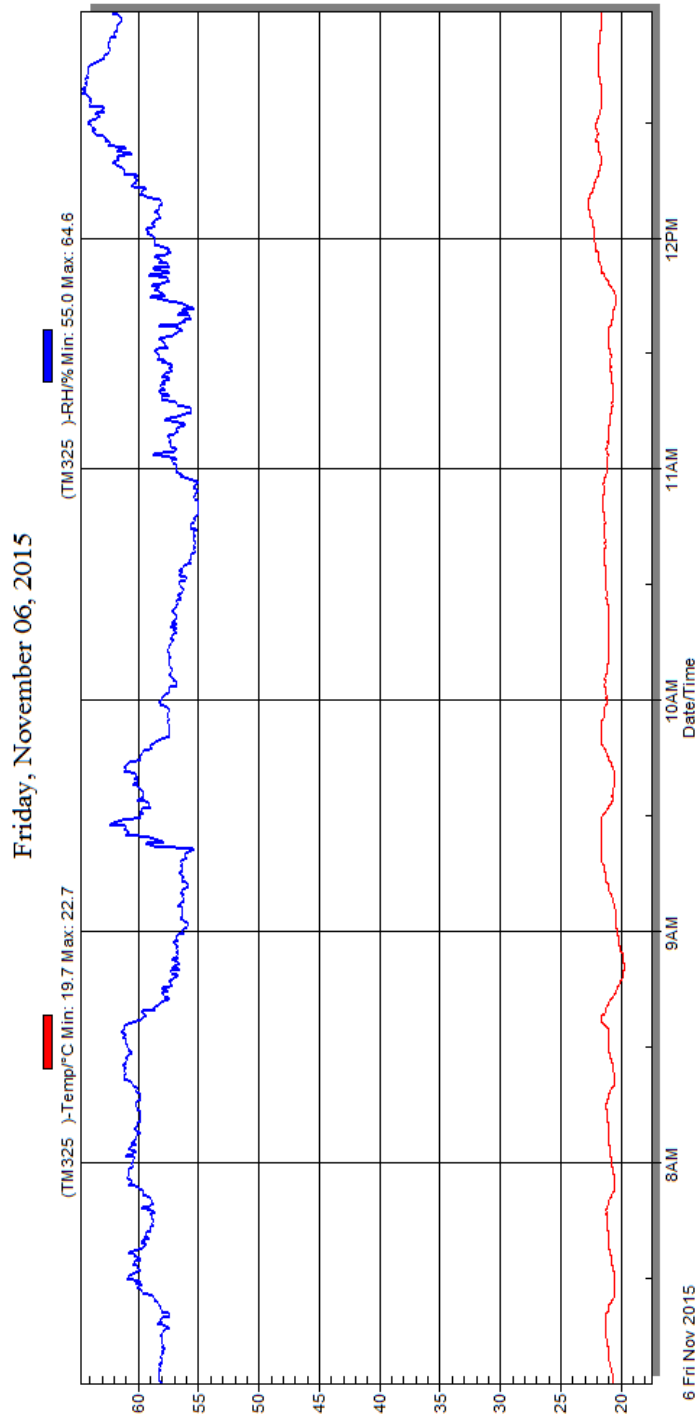
**ROLLOVER SOLVENT SPILLAGE LOCATION TABLE**

Test Phase	Spillage Location
0° to 90°	None
90° to 180°	None
180° to 270°	None
270° to 360°	None

**DATA SHEET NO. 15**  
**DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA**

Test Vehicle: 2016 Ford Explorer SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20160207  
 Test Date: 11/6/2015



**Temperature and Humidity Stabilization Chart/Data for Dummies and Test Vehicle**

**APPENDIX A**  
**PHOTOGRAPHS**

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32	Pre-Test Frontal View of Driver Seat Pan Prior to Dummy Positioning	A-20
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34	Pre-Test Placement of Driver Dummy's Feet	A-21

<b>Fig.</b>	<b>Description</b>	<b>Page</b>
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**Figure A-1: As-Delivered Right Front 3/4 View of Test Vehicle**



**Figure A-2: As-Delivered Left Rear 3/4 View of Test Vehicle**



**Figure A-3: Pre-Test Frontal View of Test Vehicle**



**Figure A-4: Post-Test Frontal View of Test Vehicle**



**Figure A-5: Pre-Test Left Front ¾ View of Test Vehicle**



**Figure A-6: Post-Test Left Front ¾ View of Test Vehicle**



**Figure A-7: Pre-Test Left Side View of Test Vehicle**



**Figure A-8: Post-Test Left Side View of Test Vehicle**



**Figure A-9: Pre-Test Left Rear  $\frac{3}{4}$  View of Test Vehicle**



**Figure A-10: Post-Test Left Rear  $\frac{3}{4}$  View of Test Vehicle**



**Figure A-11: Pre-Test Rear View of Test Vehicle**



**Figure A-12: Post-Test Rear Side View of Test Vehicle**



**Figure A-13: Pre-Test Right Side View of Test Vehicle**



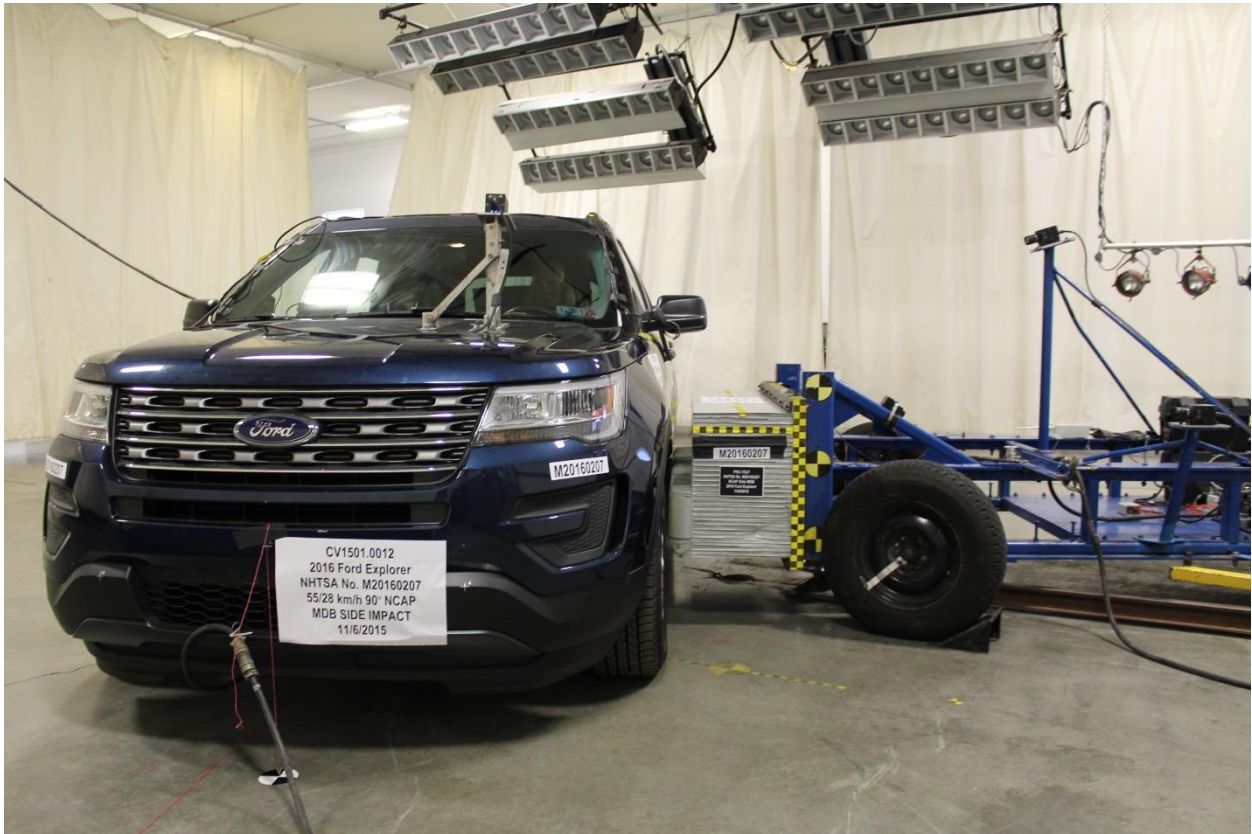
**Figure A-14: Post-Test Right Side View of Test Vehicle**



**Figure A-15: Pre-Test Overhead View of the Test Area**



**Figure A-16: Post-Test Overhead View of Test Area**



**Figure A-17: Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle**



**Figure A-18: Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle**

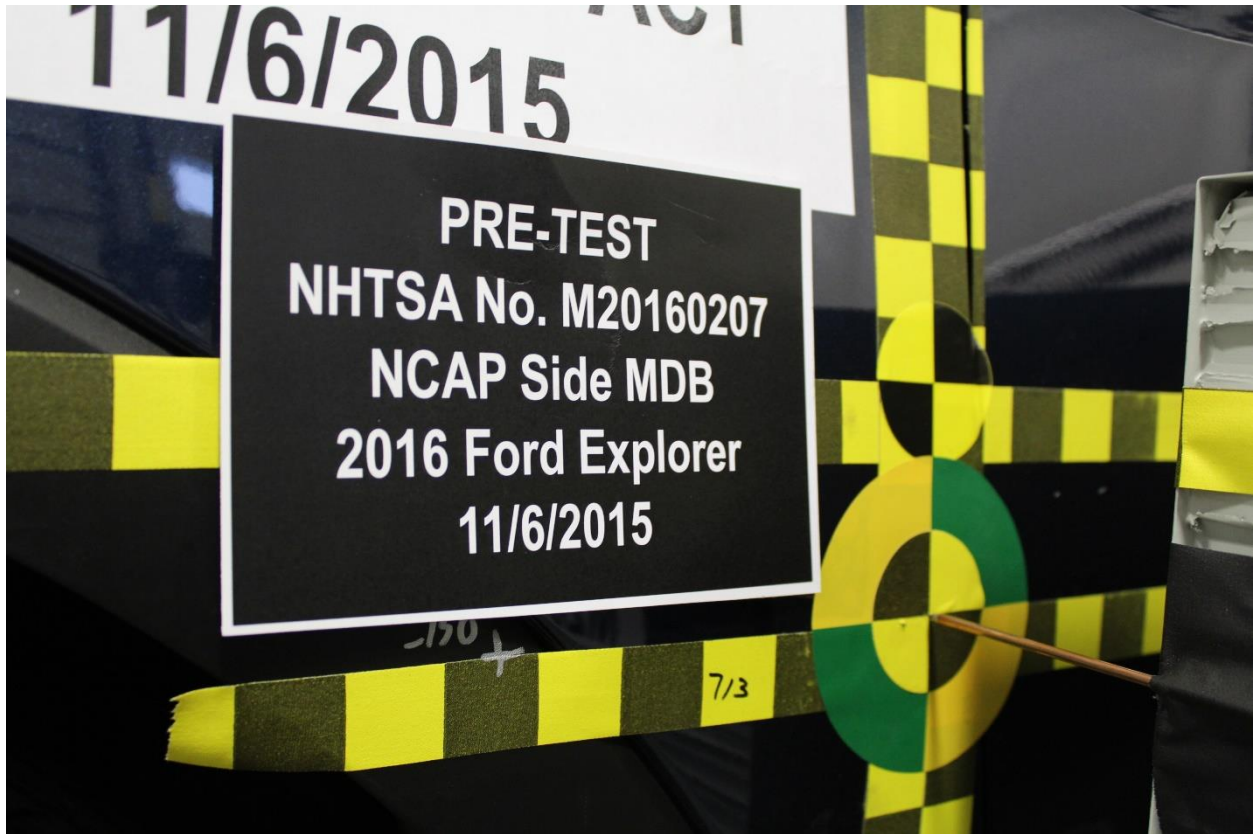


Figure A-19: Pre-Test Close-up View of Impact Point Target

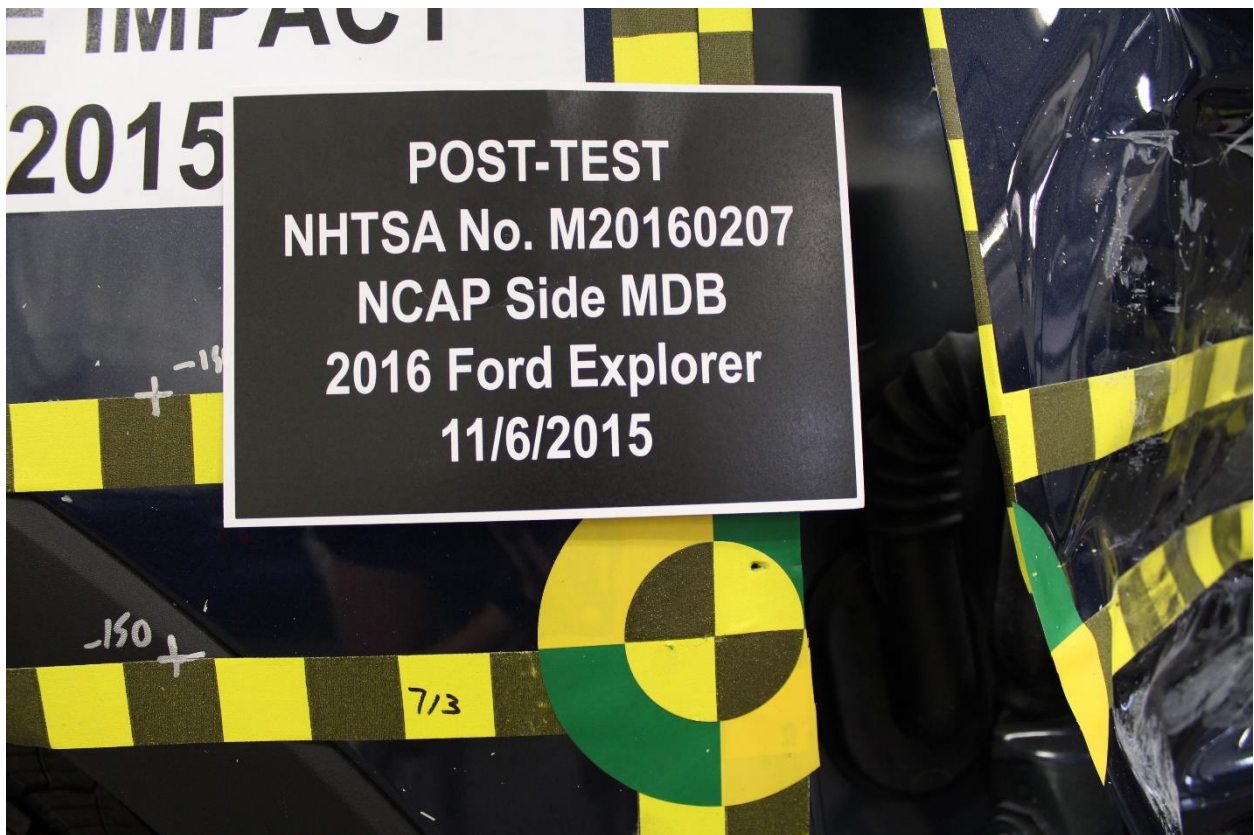


Figure A-20: Post-Test Close-up View of Impact Point Target



Figure A-21: Pre-Test Left Front Door Latch Close-Up



Figure A-22: Post-Test Left Front Door Latch Close-Up

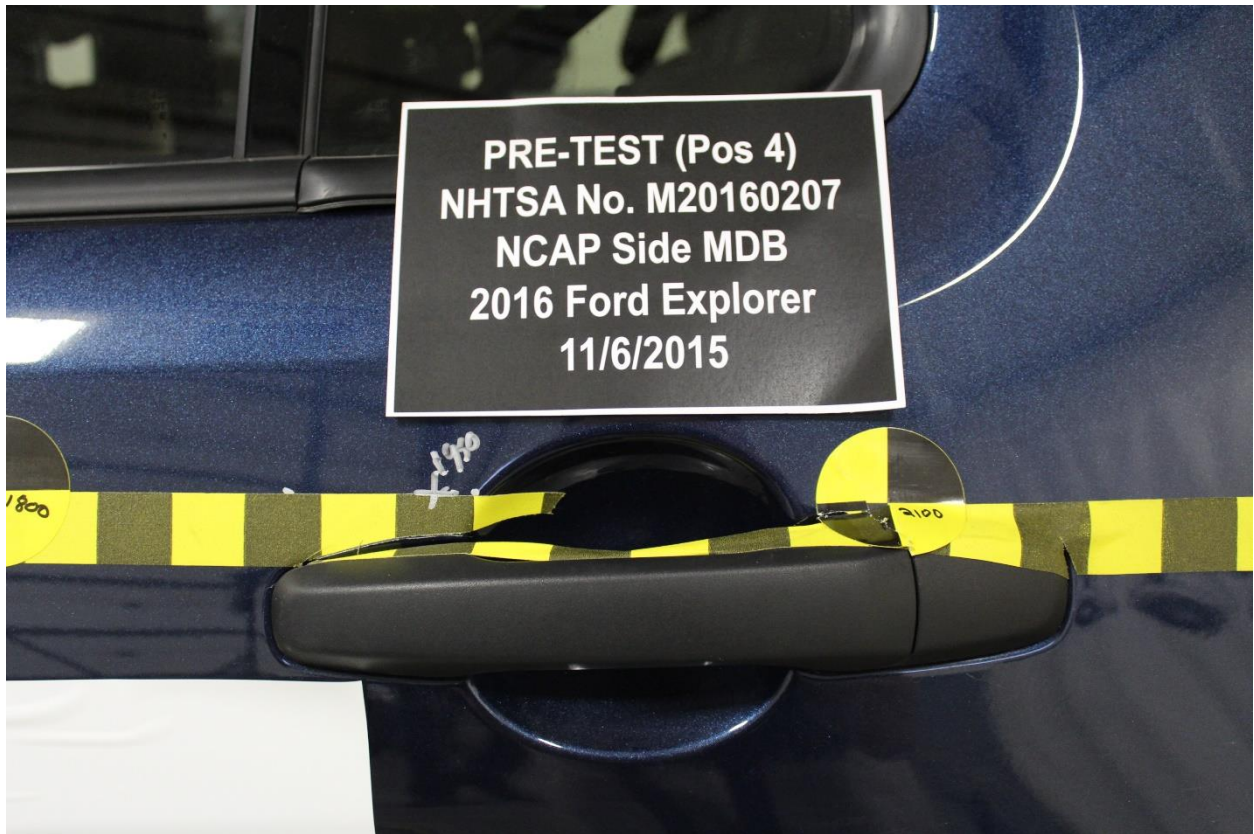


Figure A-23: Pre-Test Left Rear Door Latch Close-Up

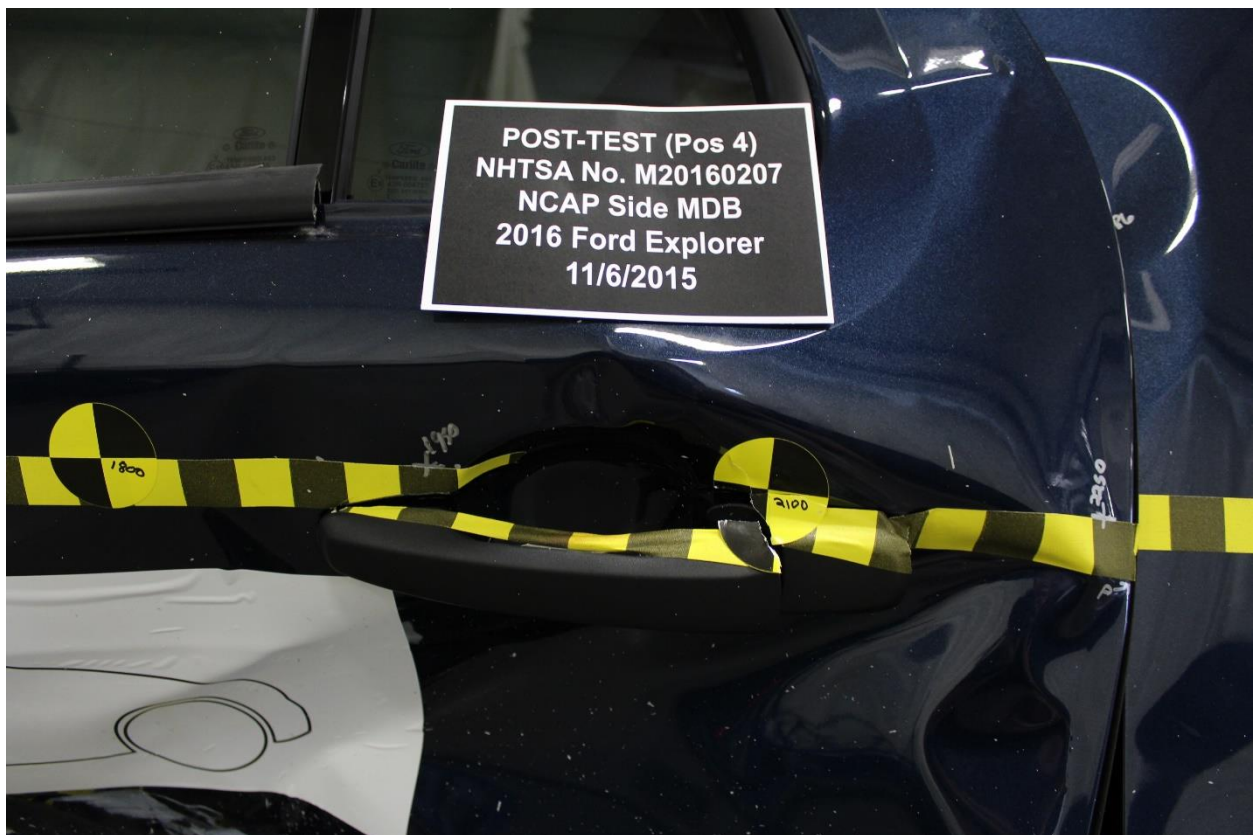
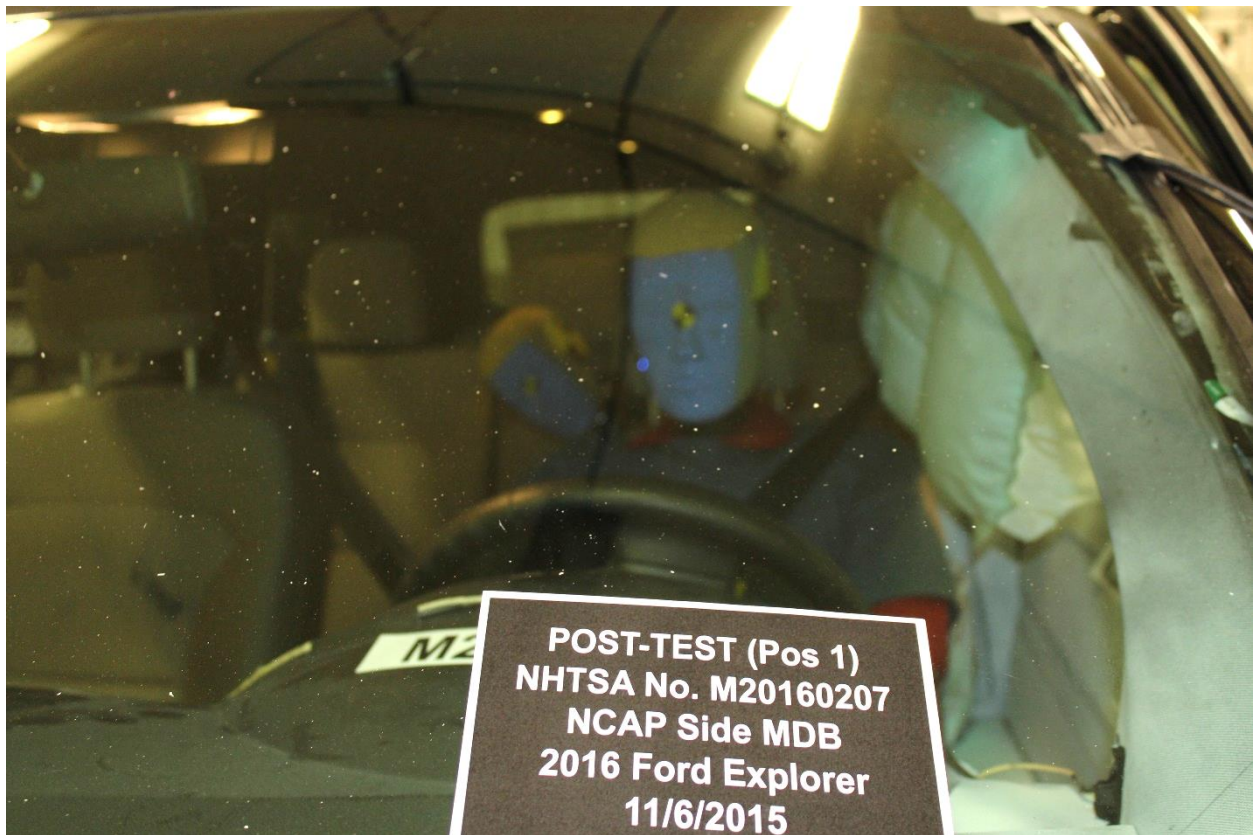


Figure A-24: Post-Test Left Rear Door Latch Close-Up



**Figure A-25: Pre-Test Front Close-up View of Driver Dummy**



**Figure A-26: Post-Test Front Close-up View of Driver Dummy**



**Figure A-27: Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking**



**Figure A-28: Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View**



Figure A-29: Post-Test Left Side View of Driver Dummy Shoulder and Door Top View



Figure A-30: Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



**Figure A-31: Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint**



**Figure A-32: Pre-Test Frontal View of Driver Seat Pan Prior to Dummy Positioning**



**Figure A-33: Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan**



**Figure A-34: Pre-Test Placement of Driver Dummy's Feet**



**Figure A-35: Pre-Test View of Belt Anchorage for Driver Dummy**



**Figure A-36: Pre-Test Left Side View of Steering Wheel**



Figure A-37: View of Disengaged Parking Brake



Figure A-38: Pre-Test View of Parking Brake



Figure A-39: Pre-test Close-Up Left Side View of Driver Seat Track

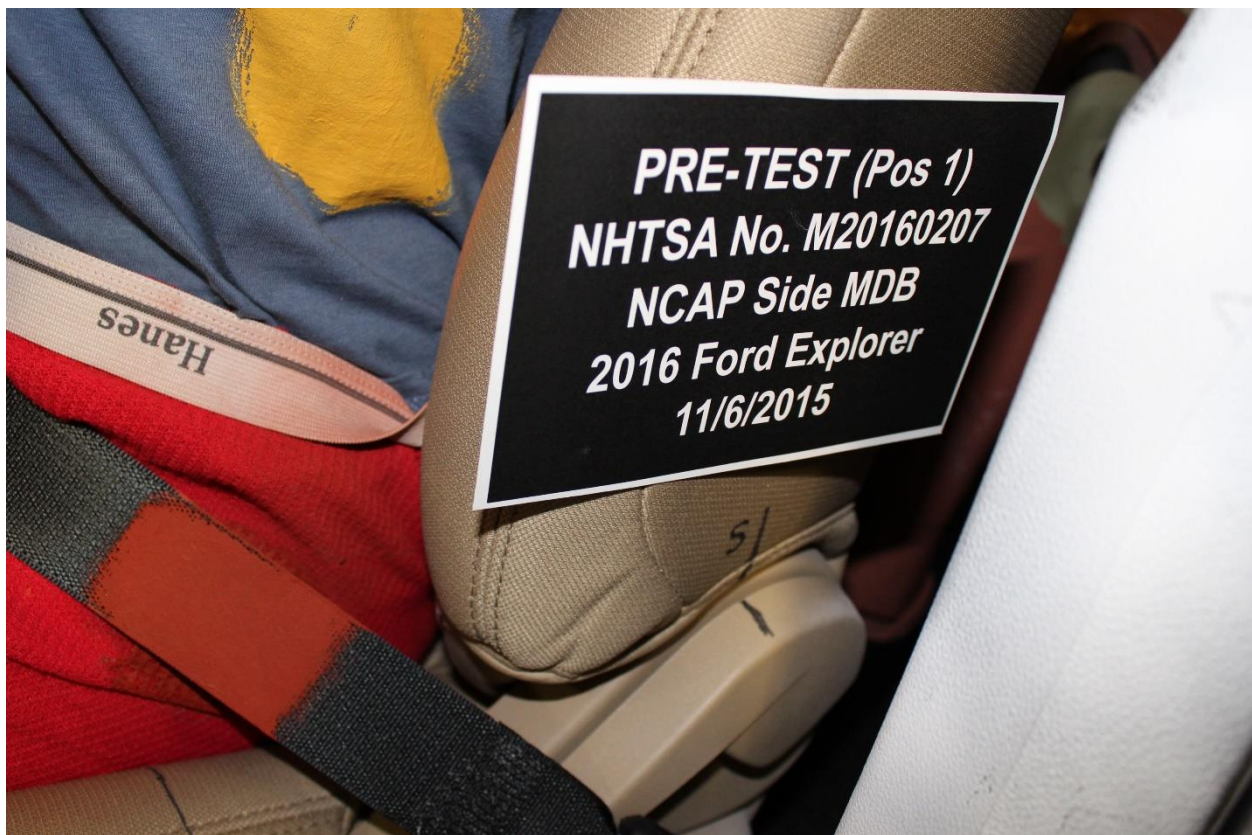


Figure A-40: Pre-Test Close-Up Left Side View of Driver Seat Back

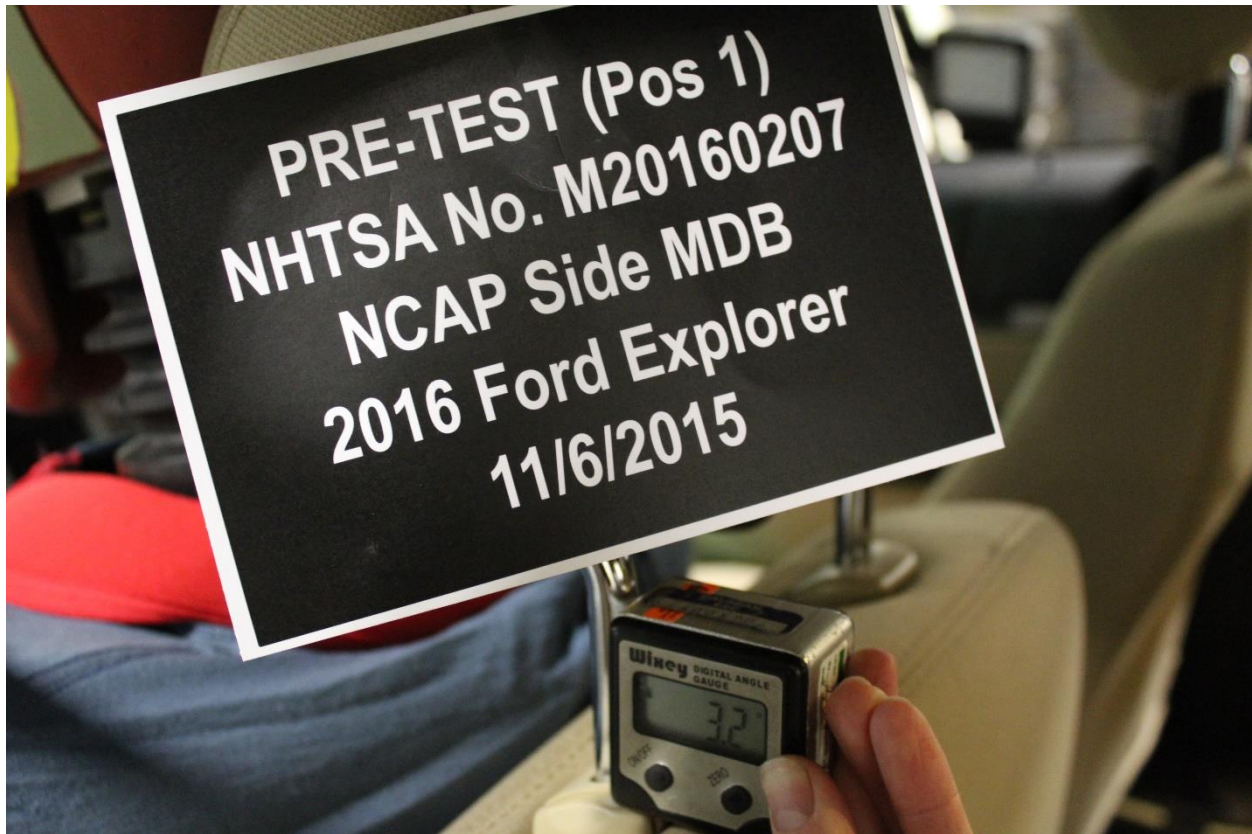


Figure A-41: Pre-Test Close-Up View of Driver Seat Back or Head Restraint



Figure A-42: Pre-Test Driver Dummy and Door Clearance View



**Figure A-43: Post-Test Driver Dummy and Door Clearance View**



**Figure A-44: Pre-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment**



**Figure A-45: Post-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment**



**Figure A-46: Pre-Test Driver Inner Door Panel View**



**Figure A-47: Post-Test Driver Inner Door Panel View**



**Figure A-48: Post-Test Driver Dummy Close-Up Head Contact with Vehicle View**



**Figure A-49: Post-Test Driver Dummy Close-Up Head Contact with Side Airbag View**



**Figure A-50: Post-Test Driver Dummy Close-Up Torso Contact with Vehicle Interior View**



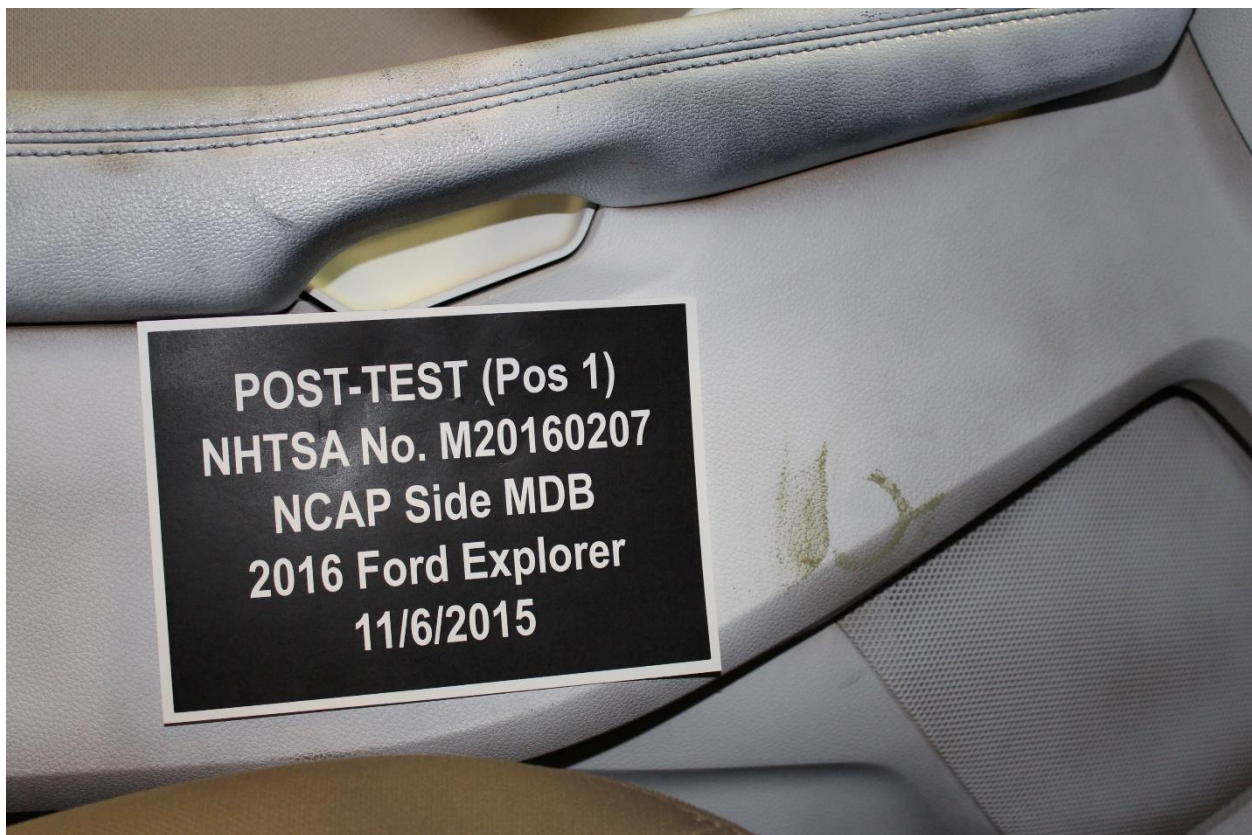
**Figure A-51: Post-Test Driver Dummy Close-Up Torso Contact with Side Airbag View**



**Figure A-52: Post-Test Driver Dummy Close-Up Pelvis Contact View**



**Figure A-53: Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View**



**Figure A-54: Post-Test Driver Dummy Close-Up Knee Contact View**



**Figure A-55: Pre-Test Left Side View of Passenger Dummy Showing Belt and Chalking**



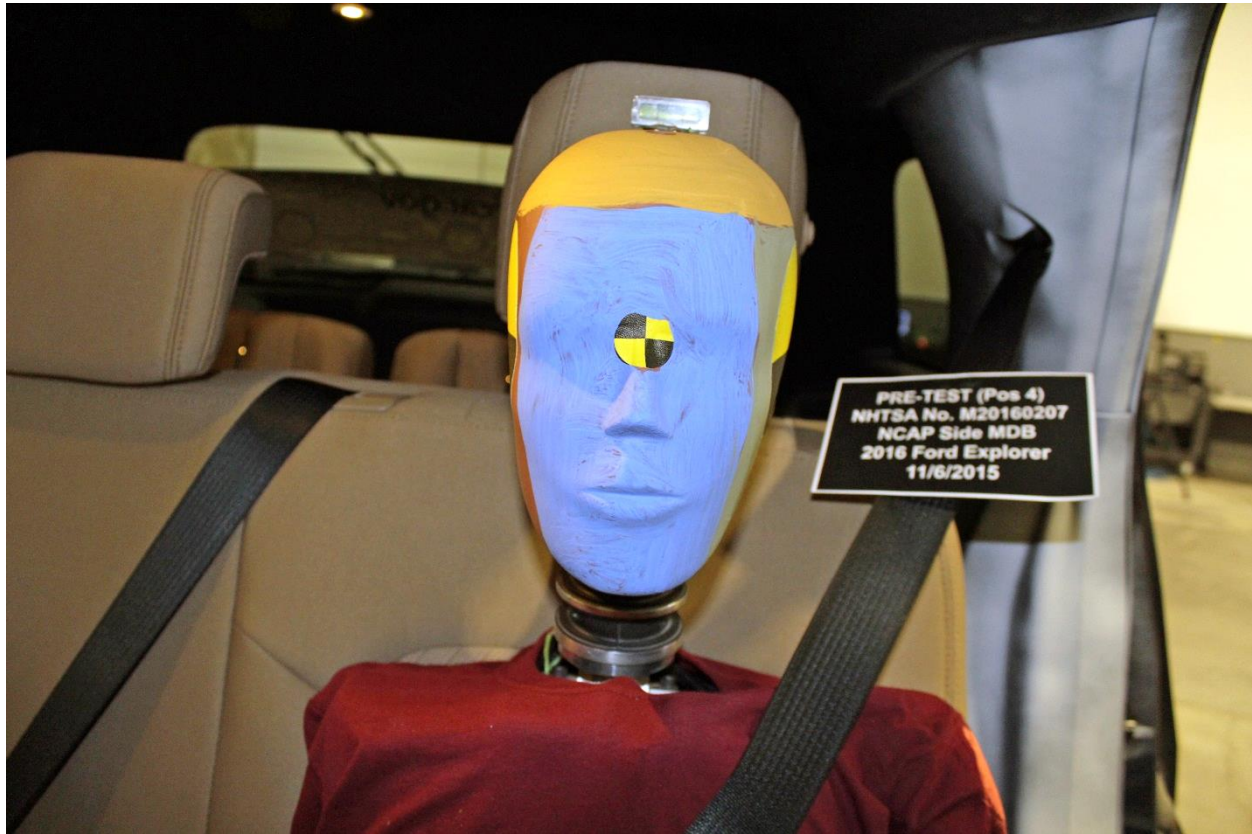
**Figure A-56: Pre-Test Left Side View of Passenger Dummy Shoulder and Door Top View**



**Figure A-57: Post-Test Left Side View of Passenger Dummy Shoulder and Door Top View**



**Figure A-58: Pre-Test Frontal View of Rear Passenger Seat Back Prior to Dummy Positioning**



**Figure A-59: Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head Restraint**



**Figure A-60: Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning**



**Figure A-61: Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan**



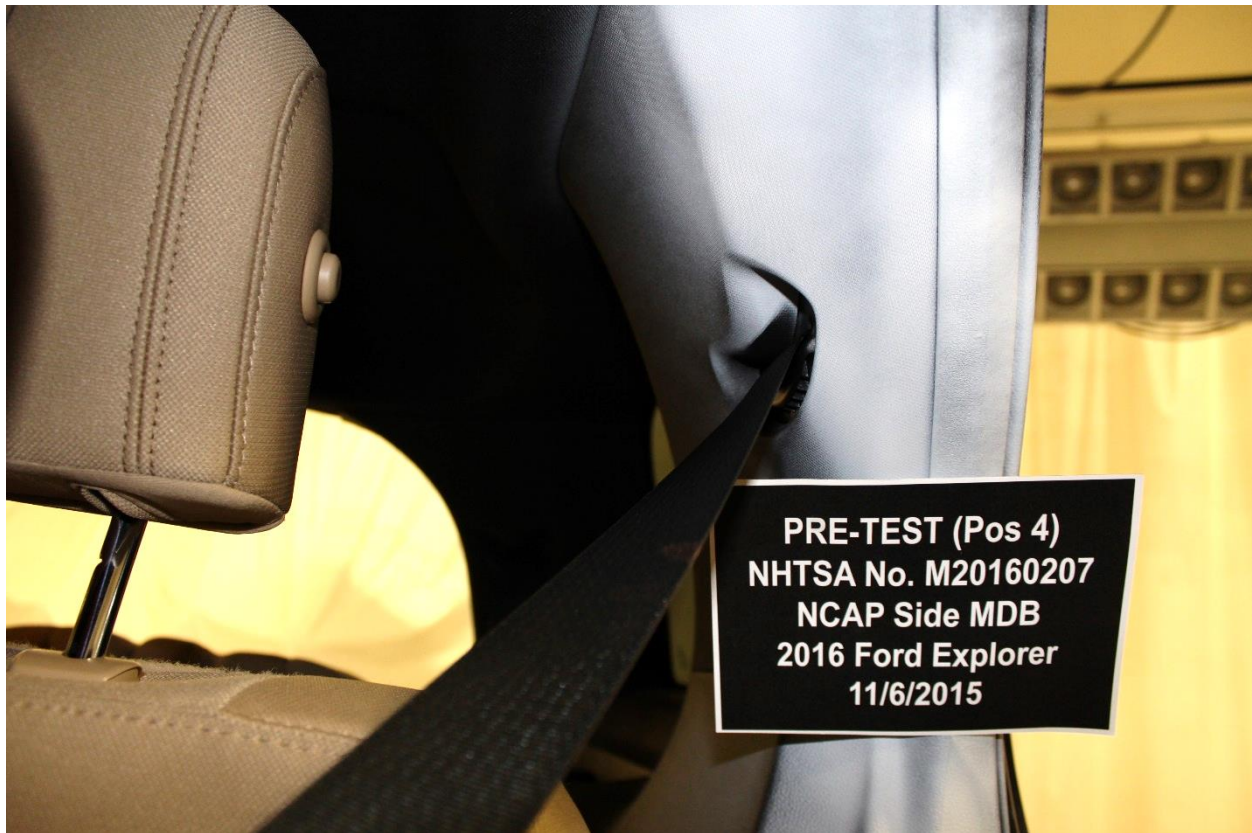
**Figure A-62: Pre-Test View of Rear Passenger Dummy's Neck Showing Position of Adjustable Neck Bracket**



**Figure A-63: Pre-Test View of Rear Passenger Dummy's Head Showing Dummy's Head is Level**



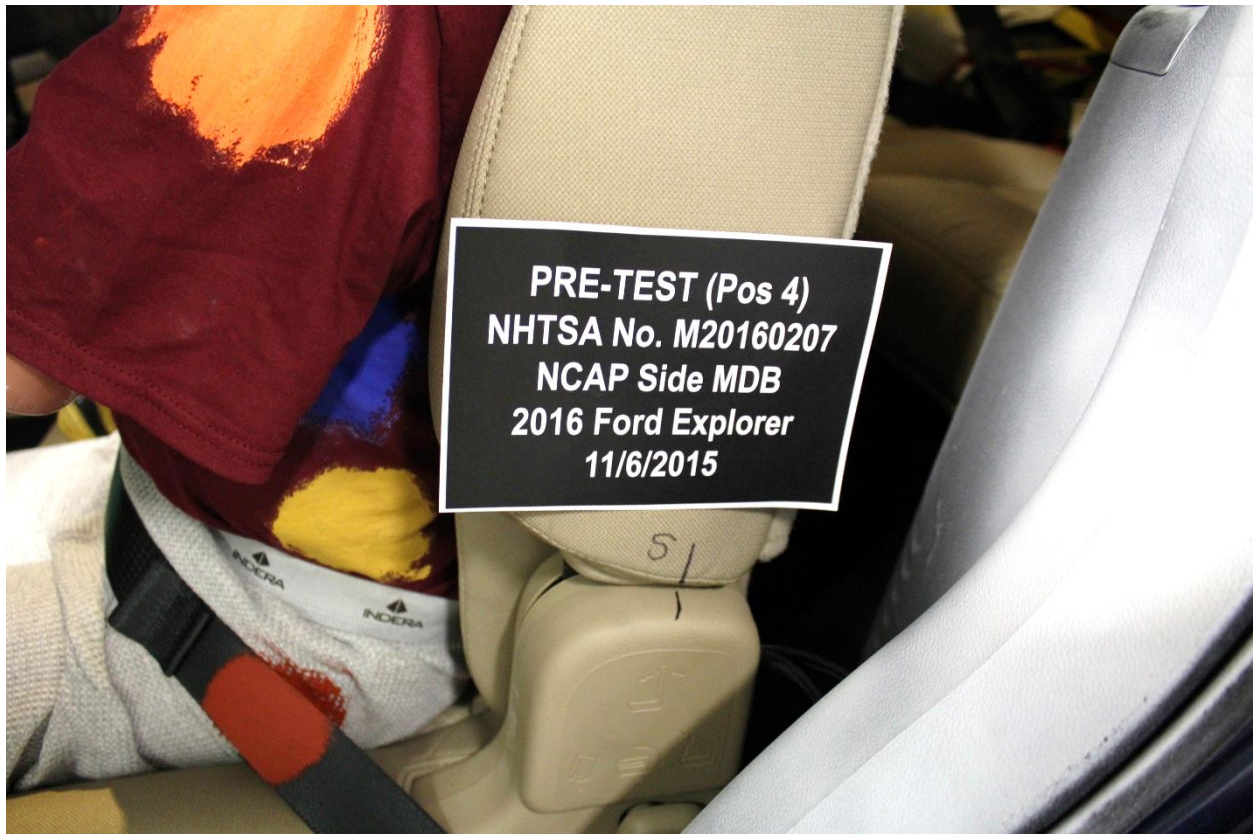
**Figure A-64: Pre-Test Placement of Rear Passenger Dummy's Feet**



**Figure A-65: Pre-Test View of Belt Anchorage for Rear Passenger Dummy**



**Figure A-66: Pre-Test Close-Up Left Side View of Rear Passenger Seat Track**



**Figure A-67: Pre-Test Close-Up Left Side View of Rear Passenger Seat Back**



**Figure A-68: Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint**



Figure A-69: Pre-Test Passenger Dummy and Door Clearance View



Figure A-70: Post-Test Passenger Dummy and Door Clearance View



**Figure A-71: Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment**



**Figure A-72: Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment**



**Figure A-73: Pre-Test Passenger Inner Door Panel View**



**Figure A-74: Post-Test Passenger Inner Door Panel View**



**Figure A-75: Post-Test Rear Passenger Dummy Close-Up Head Contact with Vehicle View**



**Figure A-76: Post-Test Rear Passenger Dummy Close-Up Head Contact with Side Airbag View**



**Figure A-77: Post-Test Rear Passenger Dummy Close-Up Torso Contact with Vehicle Interior View**

# Photo Not Applicable

**Figure A-78: Post-Test Rear Passenger Dummy Close-Up Torso Contact with Side Airbag View**



**Figure A-79: Post-Test Rear Passenger Dummy Close-Up Pelvis Contact View**

**Photo Not Applicable**

**Figure A-80: Post-Test Rear Passenger Dummy Close-Up Pelvis Contact with Side Airbag View**



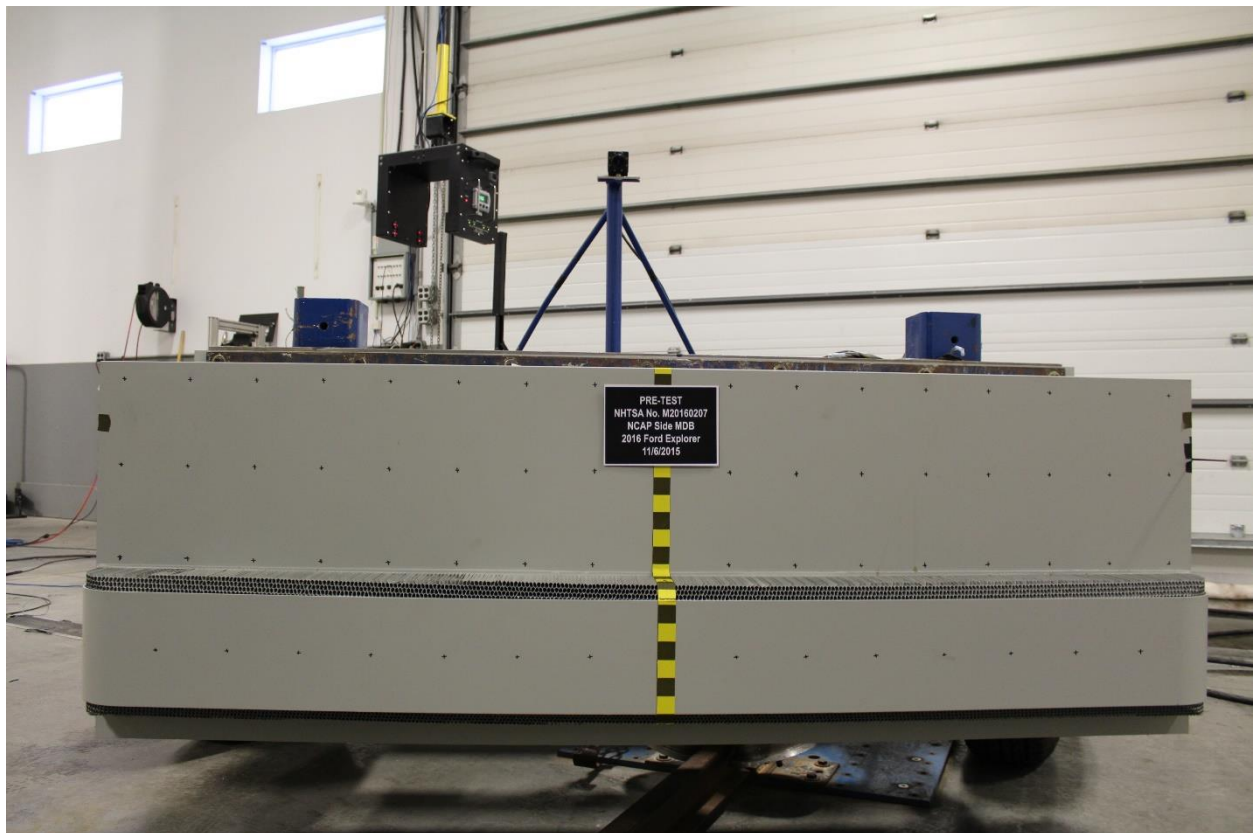
**Figure A-81: Post-Test Rear Passenger Dummy Close-Up Knee Contact View**



**Figure A-82: Pre-Test View of Fuel Filler Cap or Fuel Filler Neck**



**Figure A-83: Post-Test View of Fuel Filler Cap or Fuel Filler Neck**



**Figure A-84: Pre-Test Front View of MDB Impactor Face**



**Figure A-85: Post-Test Front View of MDB Impactor Face**



**Figure A-86: Pre-Test Top View of MDB Impactor Face**



Figure A-87: Post-Test Top View of MDB Impactor Face



Figure A-88: Pre-Test Left Side View of MDB Impactor Face



**Figure A-89: Post-Test Left Side View of MDB Impactor Face**



**Figure A-90: Pre-Test Right Side View of MDB Impactor Face**



Figure A-91: Post-Test Right Side View of MDB Impactor Face



Figure A-92: Close-Up View of Vehicle's Certification Label



Figure A-93: Close-Up View of Vehicle's Tire Information Placard or Label



Figure A-94: Pre-Test Ballast View

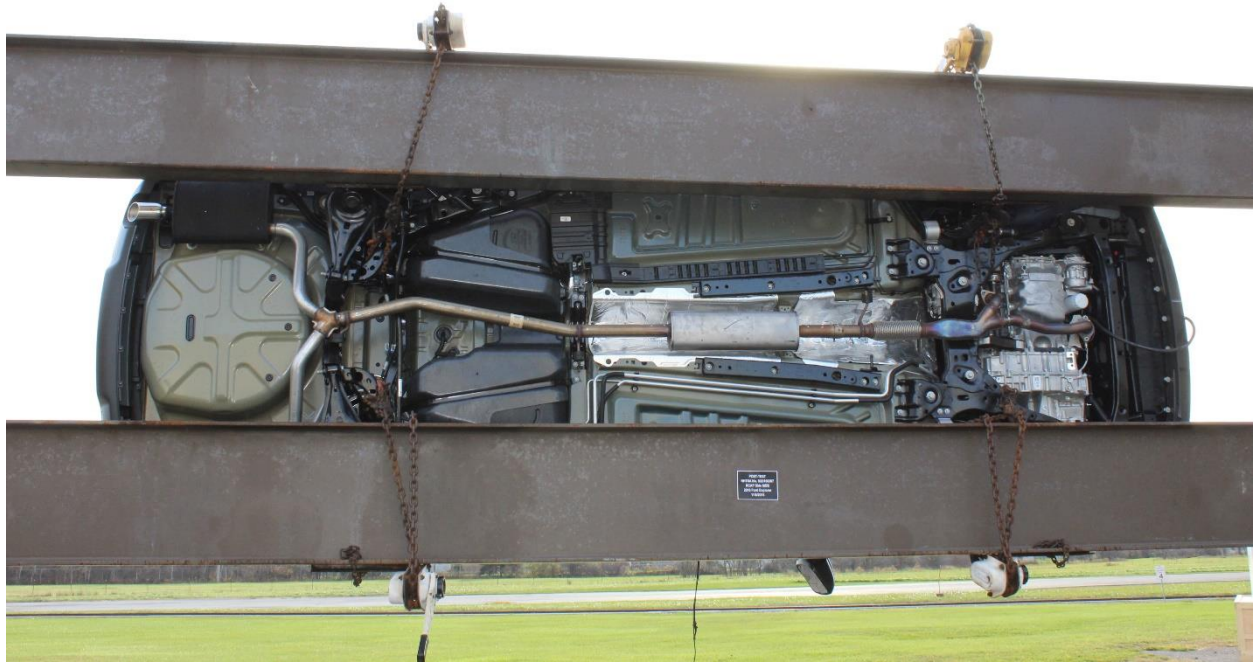


Figure A-95: Post-Test Primary and Redundant Speed Trap Read-Out



Figure A-96: FMVSS No. 301 Static Rollover 0 Degrees





**Figure A-99: FMVSS No. 301 Static Rollover 270 Degrees**



**Figure A-100: FMVSS No. 301 Static Rollover 360 Degrees**



Figure A-101: Impact Event

<b>EXPLORER</b> <small>Go Further</small> <small>ford.com</small>		<b>GG A49925</b> <small>EXTERIOR BLUE JEANS</small> <small>INTERIOR MEDIUM LIGHT CAMEL CLOTH</small>	<b>Fuel Economy and Environment</b> <small>EPA DOT</small>	<small>Gasoline Vehicle</small>
<b>VEHICLE DESCRIPTION</b> 2016 4DR EXPLORER FWD 112.0" WHEELBASE 3.5L V6 TIVCT ENGINE 6-SPEED AUTO TRANSMISSION			<b>Fuel Economy</b> <b>20</b> MPG <small>combined city/hwy</small> 17 city 24 highway 5.0 gallons per 100 miles	<b>You spend \$2,250</b> <small>more in fuel costs over 5 years compared to the average new vehicle.</small>
<b>STANDARD EQUIPMENT INCLUDED AT NO EXTRA CHARGE</b>			<b>Annual fuel cost \$2,250</b> <small>Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.</small>	<b>Fuel Economy &amp; Greenhouse Gas Rating</b> (EPA est.) <b>Smog Rating</b> (EPA est.) <small>This vehicle emits 451 grams CO<sub>2</sub> per mile. The best emits 0 grams per mile (tailpipe only). Producing and transporting fuel also creates emissions. Learn more at <a href="http://fuelconomy.gov">fuelconomy.gov</a>.</small>
<b>EXTERIOR</b> • AUTO HEADLAMPS • DOOR HANDLES - BLACK • EASY FUEL CAP/LESS FILLER • EXHAUST TIPS - CHROME • INTEGRATED BLIND SPOT MIRR • LED TAIL LAMPS • MANUAL FOLD POWER MIRRORS • MINI SPARE TIRE/WHEEL • PRIVACY GLASS (2ND/3RD ROW) • REAR SPOILER, BODY COLOR • ROOF RACK SIDE RAILS	<b>INTERIOR</b> • TOUCH UP/DOWN DRIP/SW VIN • 2ND ROW 60/40 FOLD FLAT • 3RD ROW - 50/50 FOLD FLAT • A.F. LDD-CTR STACK SCREEN • CARGO HOOKS • CARPETED FLOOR MATS • CENTER CONSOLE W/ARMREST • CLOTH SEATING SURFACES • CRUISE CONTROL • DUAL ILLUM VANITY MIRRORS • LEATHER SHIFT KNOB • OVERHEAD CONSOLE • POWER DRV SEAT - 8-WAY • STR WHEEL W/SPIDEE & AUDIO • TELESCOPE STR COLUMN	<b>FUNCTIONAL</b> • AIR CONDITIONING WITH AUXILIARY REAR CONTROLS • AM/FM SINGLE CD/MP3, 6SPKR • BRAKES, 4-WHEEL DISC/ABS • CURVE CONTROL • HILL START ASSIST • INTERMITTENT SPEED WIPERS • MYKEY • POWER LOCKS AND WINDOWS • POWER STEERING W/EPAS • POWERPOINTS (4) • REAR INT WIPER/WASH/DEFROST • REAR VIEW CAMERA • SYNC • TRAILER SWAY CONTROL	<b>SAFETY/SECURITY</b> • ADVANTRAC WITH RSC • AIRRINGS - DUAL STAGE FRONT • AIRBAGS - FRONT SEAT • MOUNTED SIDE IMPACT • AIRBAGS - SAFETY CANOPY • FRONT PASS. KNEE AIRRAG • ROLL-OVER PROTECT MOUNT SYS • LATCH CHILD SAFETY SYSTEM • SECURILOCK PASS ANTI-THEFT • SOS POST CRASH ALERT SYS <b>WARRANTY</b> • 3YR/50,000 BUMPER / BUMPER • 5YR/100,000 POWERTRAIN • 3YR/50,000 ROADSIDE ASSIST	<b>Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 25 MPG and costs \$9,000 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.00 per gallon, \$8000 in miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.</b>
<b>INCLUDED ON THIS VEHICLE</b> <b>EQUIPMENT GROUP 100A</b> 18" PAINTED ALUMINUM WHEELS P145/60R18 A/S BSW TIRES CALIFORNIA EMISSIONS SYSTEM SELECT SHIFT TRANSMISSION	<b>(MSRP)</b> NO CHARGE	<b>PRICE INFORMATION</b> BASE PRICE \$30,700.00 TOTAL OPTIONS/OTHER \$45.00 TOTAL VEHICLE & OPTIONS/OTHER \$30,700.00 DESTINATION & DELIVERY \$45.00	<b>GOVERNMENT 5-STAR SAFETY RATINGS</b> <b>Overall Vehicle Score Not Rated</b> <small>Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.</small> <b>Frontal Crash</b> Driver Passenger ★★★★★ <small>Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.</small> <b>Side Crash</b> Front seat Not Rated Rear seat Not Rated <small>Based on the risk of injury in a side impact.</small> <b>Rollover</b> ★★★★★ <small>Based on the risk of rollover in a single-vehicle crash.</small> Star ratings range from 1 to 5 stars (★★★★★) with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA), <a href="http://www.safercar.gov">www.safercar.gov</a> or 1-888-327-4236	 <b>Go Further</b>
<b>SOLD TO</b> Chapman Ford Sales, Inc. 8279 Roosevelt Blvd Philadelphia PA 19114	<b>RAMP ONE</b> CU2G	<b>DEALER NO.</b> 16F 019	<b>TOTAL MSRP \$31,645.00</b>	
<b>SHIP TO</b> (SHIP FROM SOLD TO) CHICAGO	<b>RAMP TWO</b> CONVVOY	<b>FINAL ASSEMBLY PLANT</b> CHICAGO	This label is affixed pursuant to the Federal Automobile Information Disclosure Act, Gasoline, License, and Title Fees, State and Local taxes are not included. Dealer installed options or accessories are not included unless listed above.	
<b>SHIP THROUGH</b>	<b>METHOD OF TRANSFER</b> CONVVOY	<b>ITEM #</b> 16-N010 O/T 2	<b>FG061 N RB 2X 620 000584 07 06 15</b>	

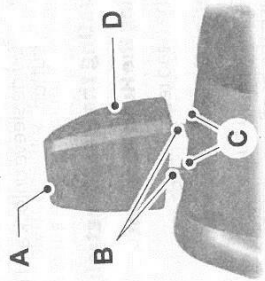
Figure A-102: Monroney Label

## Seats

### Installing the Head Restraint

Align the steel stems into the guide sleeves and push the head restraint down until it locks.

### Second-row outboard seat head restraints



E201128

The head restraints consist of:

- A An energy absorbing head restraint.
- B Two steel stems.
- C Guide sleeve unlock and remove button.
- D Fold button.

### Folding the Head Restraint

1. Press and hold button D.
2. Pull it back up to reset.

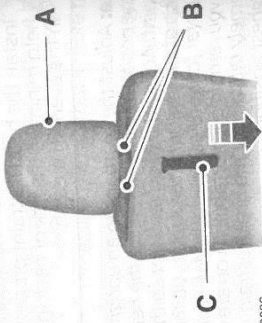
### Removing the Head Restraint

1. Fold the head restraint.
2. Press and hold both C buttons.
3. Pull the head restraint up.

### Installing the Head Restraint

Align the steel stems into the guide sleeves and push the head restraint down until it locks.

### Third-row head restraints



E190636

The head restraints consist of:

- A An energy absorbing head restraint.
- B Two steel stems.
- C Fold strap.

### Folding the Head Restraint

Pull the fold strap (C). Pull it back up to reset.

**Note:** Press the stop or fold button on the power folding seats to automatically fold the head restraint.

### Tilting Head Restraints (If Equipped)

The front head restraints tilt for extra comfort. To tilt the head restraint, do the following:

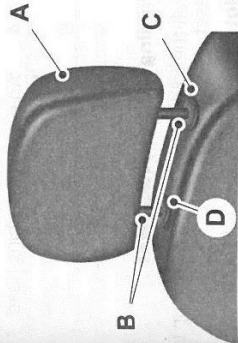
## Seats

### WARNINGS

Install the head restraint properly to help minimize the risk of neck injury in the event of a crash.

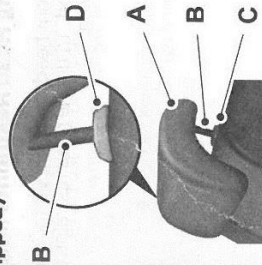
**Note:** Adjust the seatback to an upright driving position before adjusting the head restraint. Adjust the head restraint so that the top of it is level with the top of your head and as far forward as possible. Make sure that you remain comfortable. If you are extremely tall, adjust the head restraint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

### Front seat head restraints



E138642

### Second-row center seat head restraint (if equipped)



E138645

The head restraints consist of:

- A An energy absorbing head restraint.
- B Two steel stems.
- C Guide sleeve adjust and release button.
- D Guide sleeve unlock and remove button.

### Adjusting the Head Restraint

#### Raising the Head Restraint

Pull the head restraint up.

#### Lowering the Head Restraint

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

#### Removing the Head Restraint

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

Figure A-103: Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

Figure A-104: Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

## **APPENDIX B**

### VEHICLE AND DUMMY RESPONSE DATA PLOTS

## TABLE OF DATA PLOTS

### Driver & Passenger Dummy Instrumentation Plots

<b>Fig.</b>	<b>Description</b>	<b>Page</b>
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7	Driver Lower Thorax Rib Deflection (Y) vs. Time	B-6
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15	Passenger Head Acceleration (Y) vs. Time Primary	B-8
16	Passenger Head Acceleration (Z) vs. Time Primary	B-8
17	Passenger Head Resultant Acceleration Primary vs. Time	B-9
18	Passenger Lower Spine T12 Acceleration (X) vs. Time	B-9
19	Passenger Lower Spine T12 Acceleration (Y) vs. Time	B-9
20	Passenger Lower Spine T12 Acceleration (Z) vs. Time	B-9
21	Passenger Lower Spine T12 Resultant Acceleration vs. Time	B-10
22	Passenger Iliac Force on Impact Side (Y) vs. Time	B-10
23	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-10
24	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-10

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

#### **Additional Driver & Passenger Dummy Instrumentation Data**

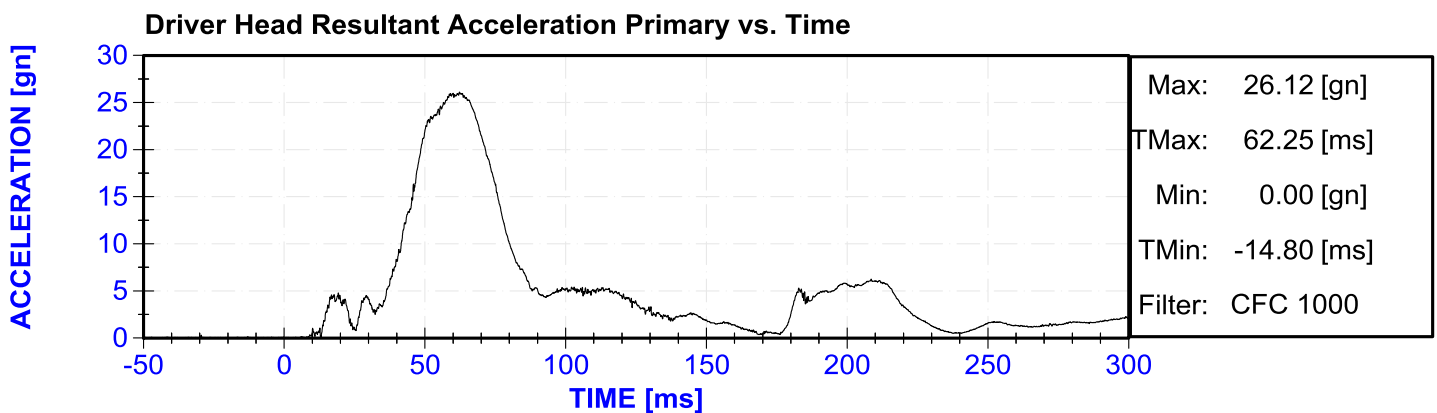
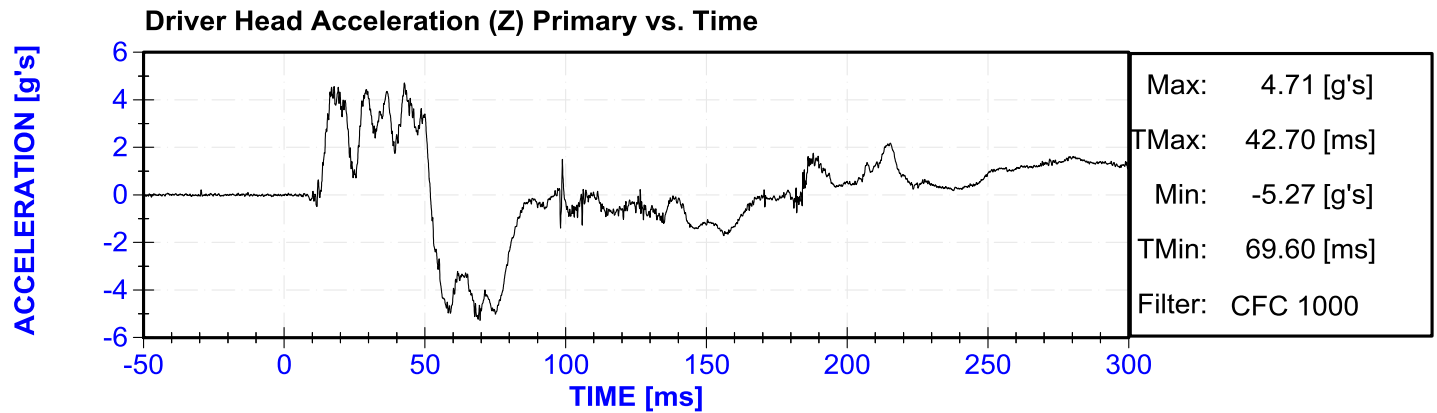
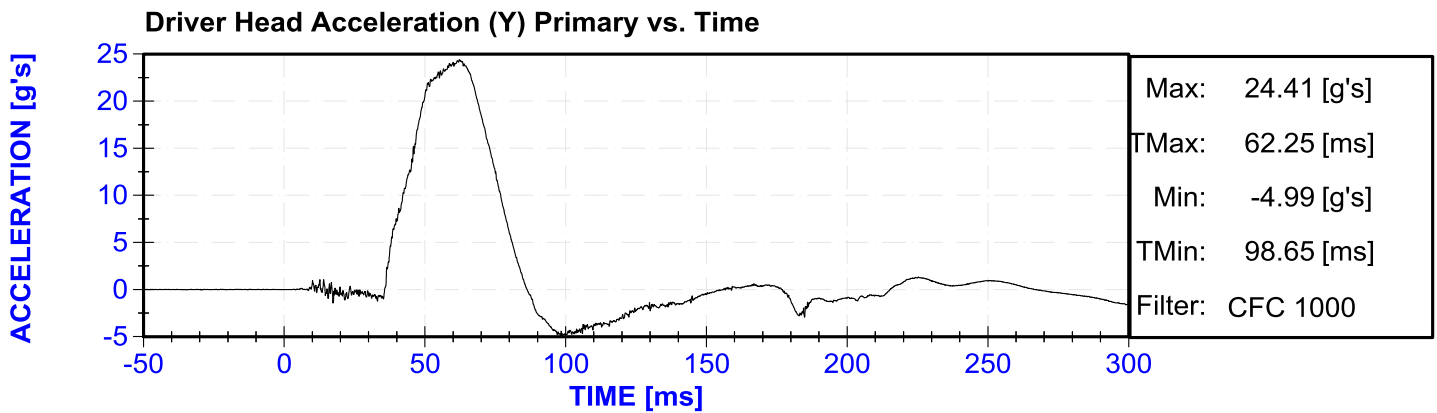
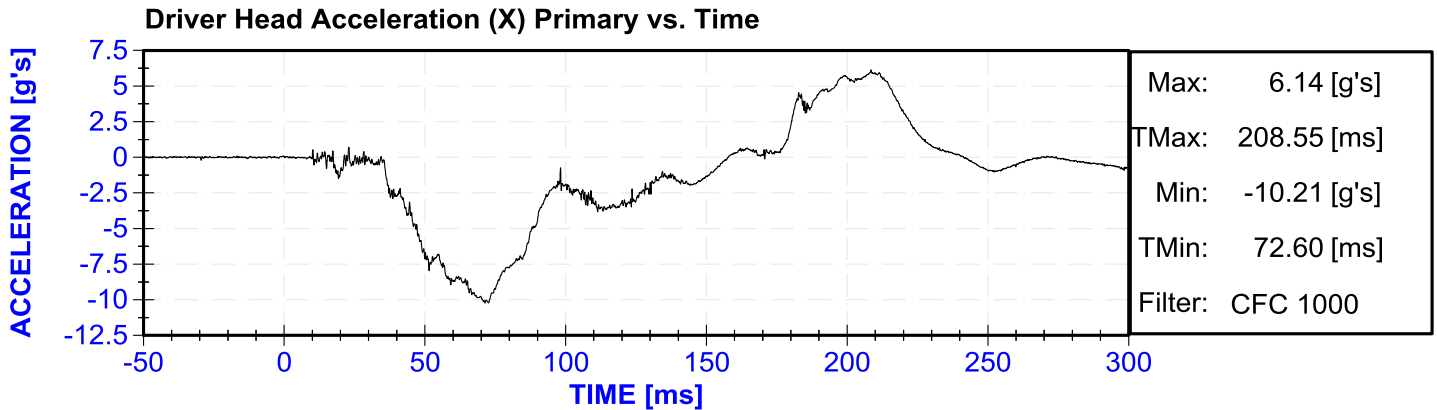
Driver Lower Spine T12 Acceleration (X)  
Driver Lower Spine T12 Acceleration (Y)  
Driver Lower Spine T12 Acceleration (Z)  
Passenger Upper Thorax Rib Deflection (Y)  
Passenger Middle Thorax Rib Deflection (Y)  
Passenger Lower Thorax Rib Deflection (Y)  
Passenger Upper Abdomen Rib Deflection (Y)  
Passenger Lower Abdomen Rib Deflection (Y)  
Driver Head Acceleration Redundant (X)  
Driver Head Acceleration Redundant (Y)  
Driver Head Acceleration Redundant (Z)  
Passenger Head Acceleration Redundant (X)  
Passenger Head Acceleration Redundant (Y)  
Passenger Head Acceleration Redundant (Z)

#### **Vehicle Instrumentation Data**

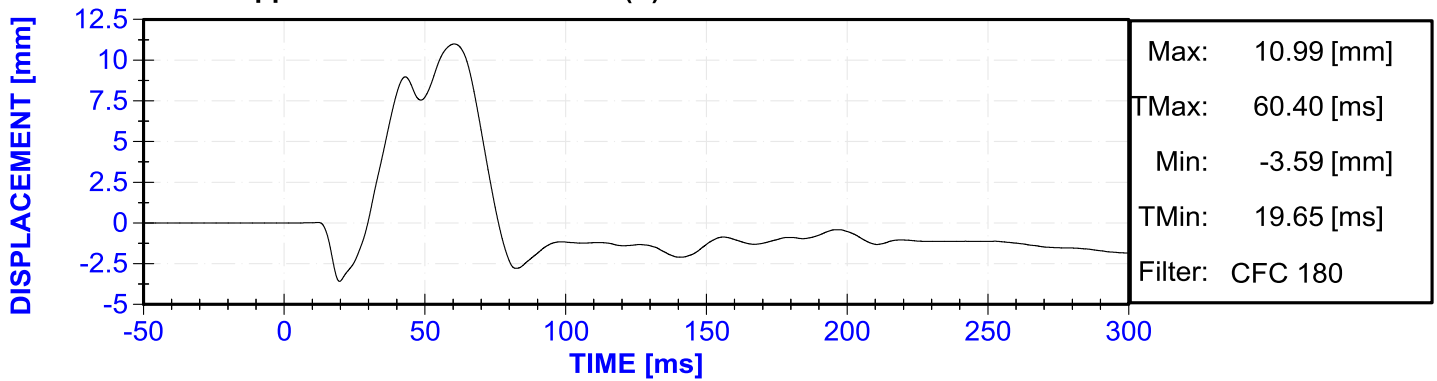
Vehicle Center of Gravity Acceleration (X)  
Vehicle Center of Gravity Acceleration (Y)  
Vehicle Center of Gravity Acceleration (Z)  
Right Side Sill at Front Seat Acceleration (X)  
Right Side Sill at Front Seat Acceleration (Y)  
Right Side Sill at Front Seat Acceleration (Z)  
Right Side Sill at Rear Seat Acceleration (X)  
Right Side Sill at Rear Seat Acceleration (Y)  
Right Side Sill at Rear Seat Acceleration (Z)  
Left Side Sill at Front Seat Acceleration (Y)  
Left Side Sill at Rear Seat Acceleration (Y)  
Lower A-Post Acceleration (Y)  
Middle A-Post Acceleration (Y)  
Lower B-Post Acceleration (Y)  
Middle B-Post Acceleration (Y)  
Front Seat Track Acceleration (Y)  
Rear Seat Structure Acceleration (Y)  
Right Rear Occupant Compartment Acceleration (Y)  
Engine Block (X)  
Engine Block (Y)  
Rear Floorpan Above Axle Acceleration (X)  
Rear Floorpan Above Axle Acceleration (Y)  
Rear Floorpan Above Axle Acceleration (Z)

## **MDB Instrumentation Data**

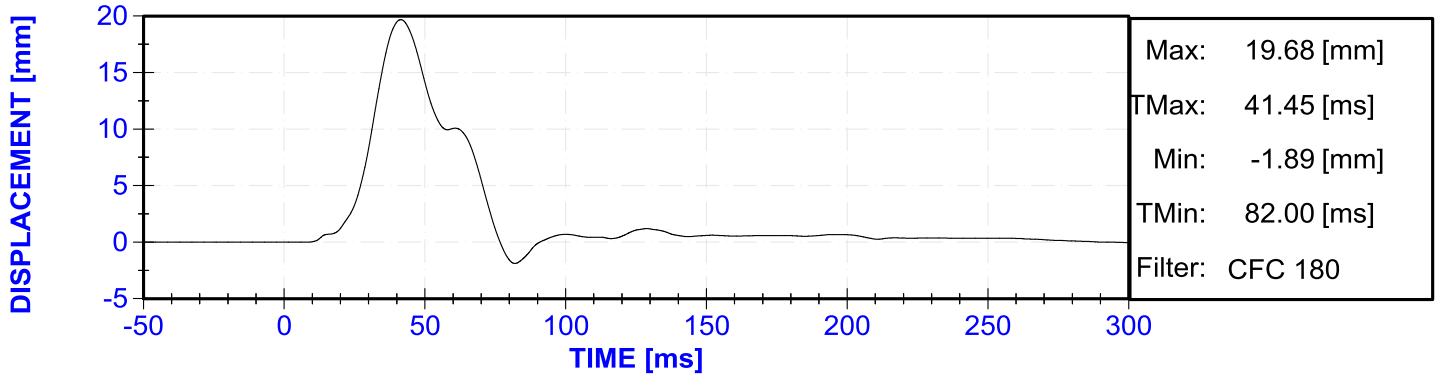
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MDB Center of Gravity Acceleration (Y)  
MDB Center of Gravity Acceleration (Z)  
MDB Rear Acceleration (X)  
MDB Rear Acceleration (Y)  
Left MDB Contact Switch  
Right MDB Contact Switch



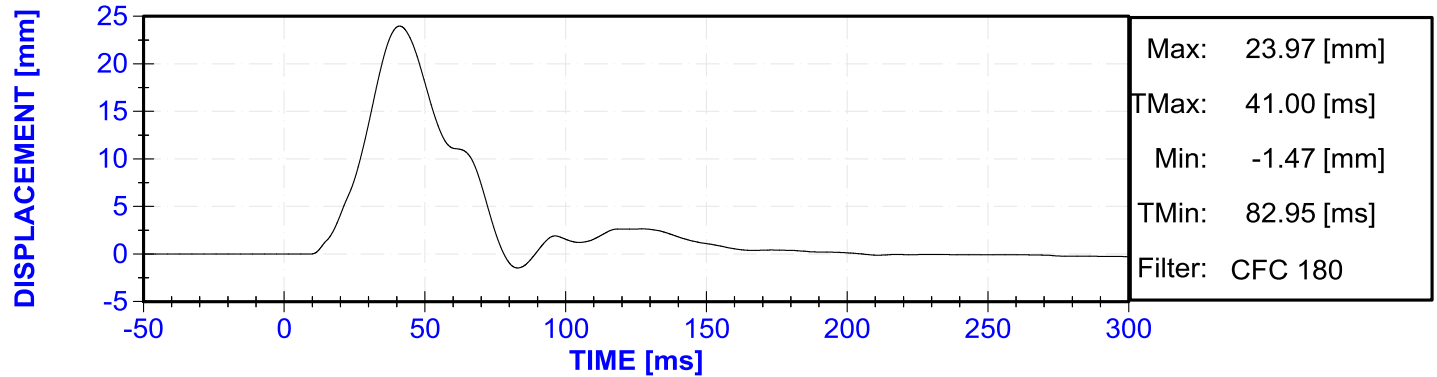
Driver Upper Thorax Rib Deflection (Y) vs. Time



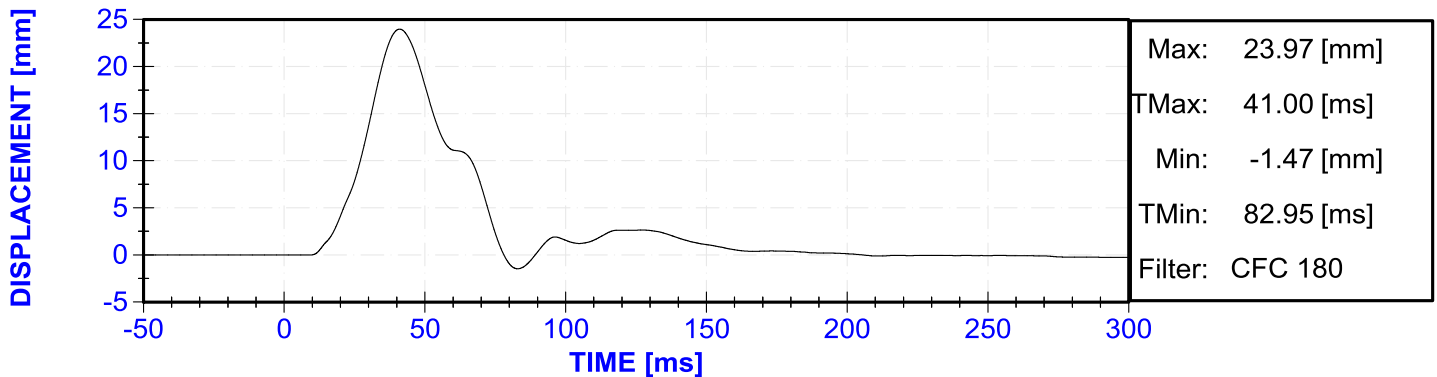
Driver Middle Thorax Rib Deflection (Y) vs. Time

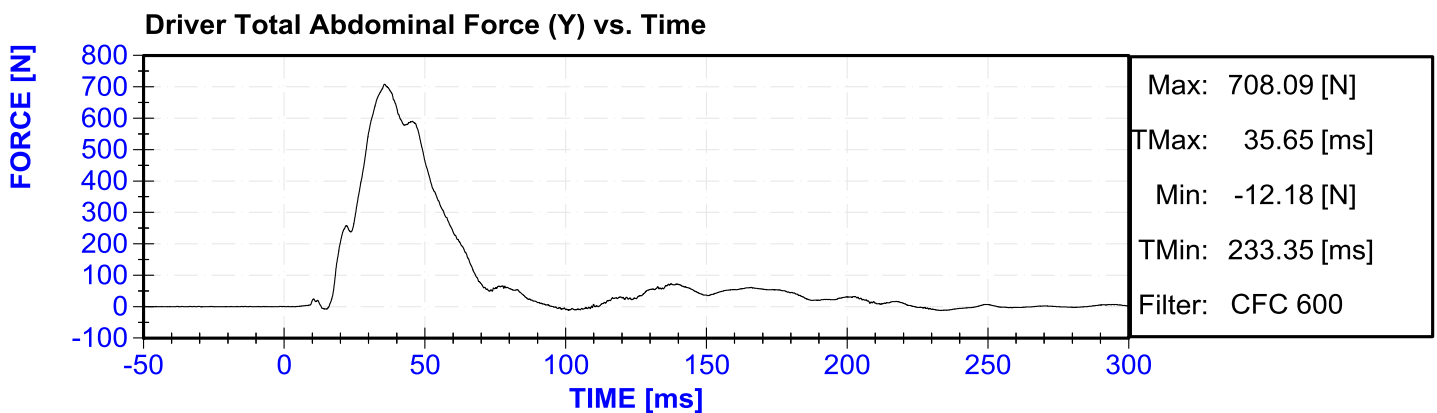
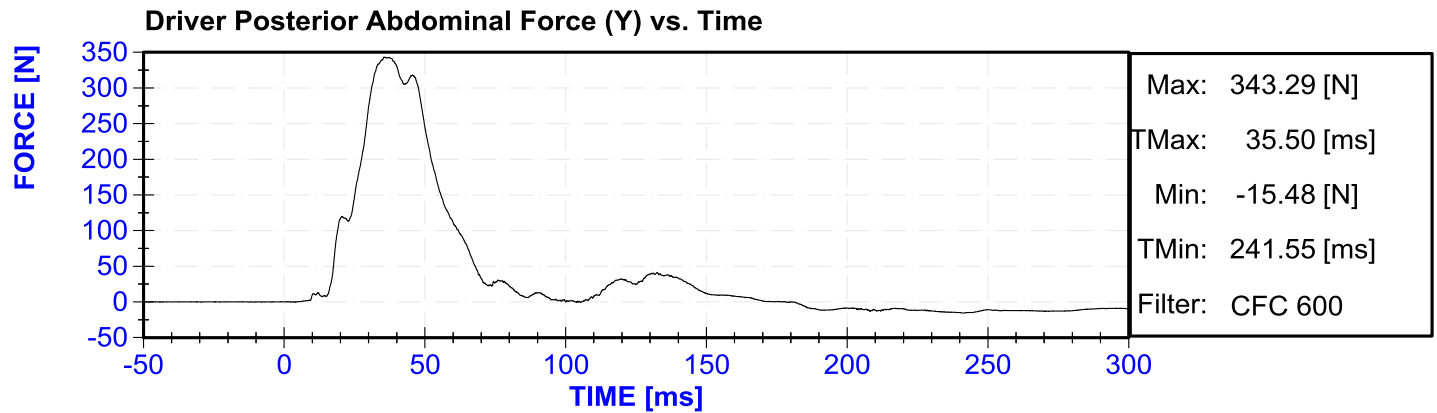
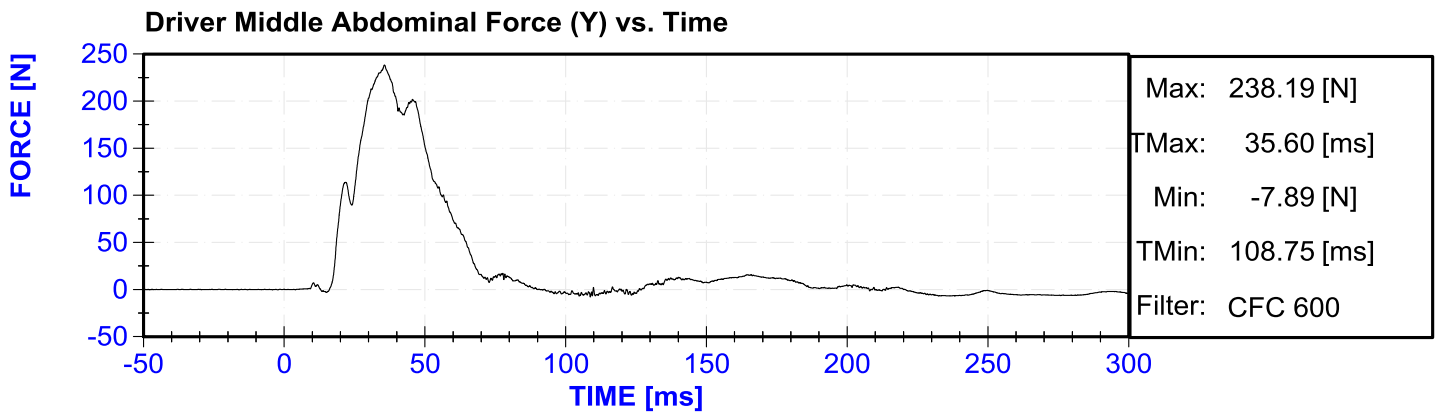
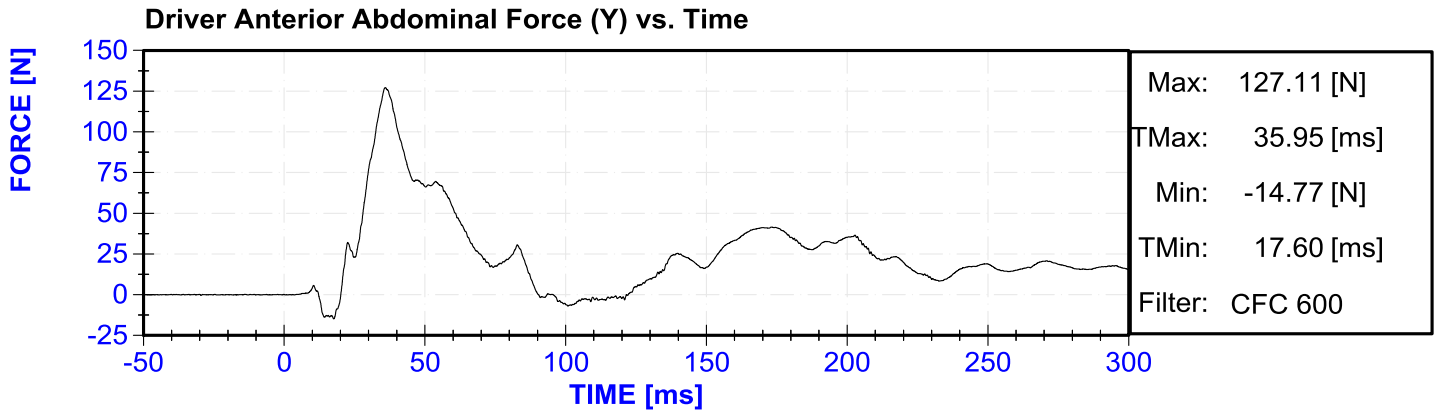


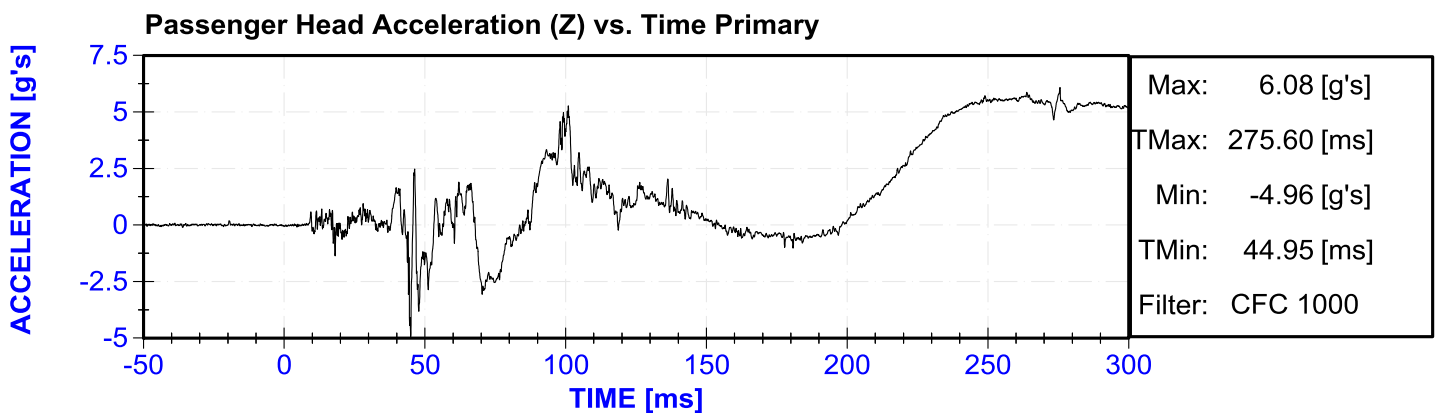
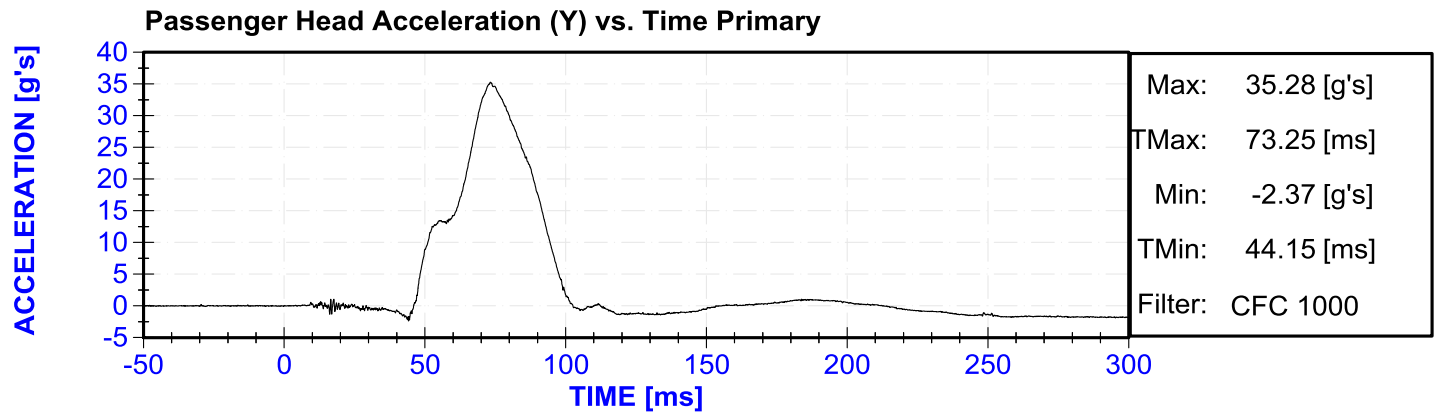
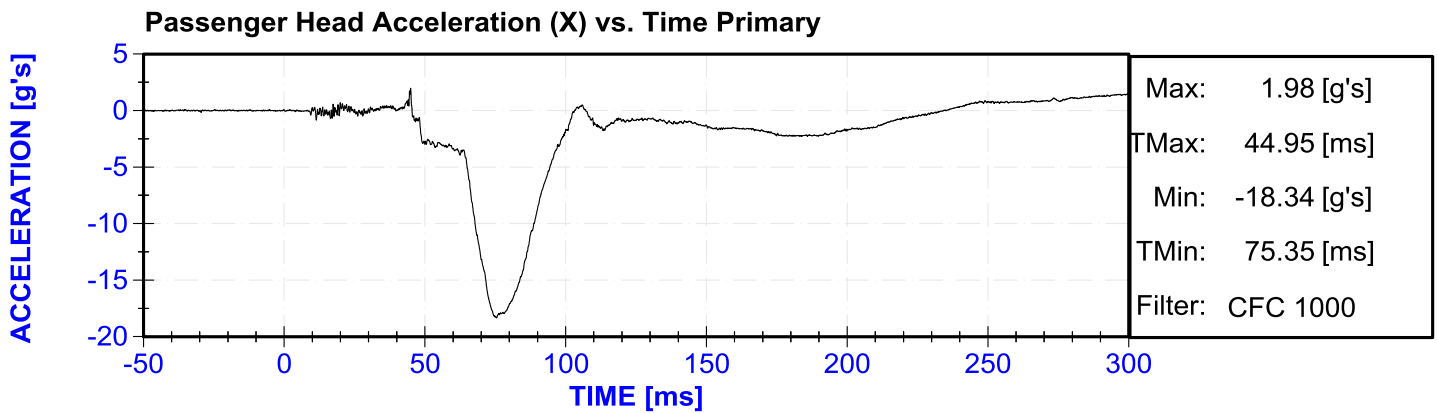
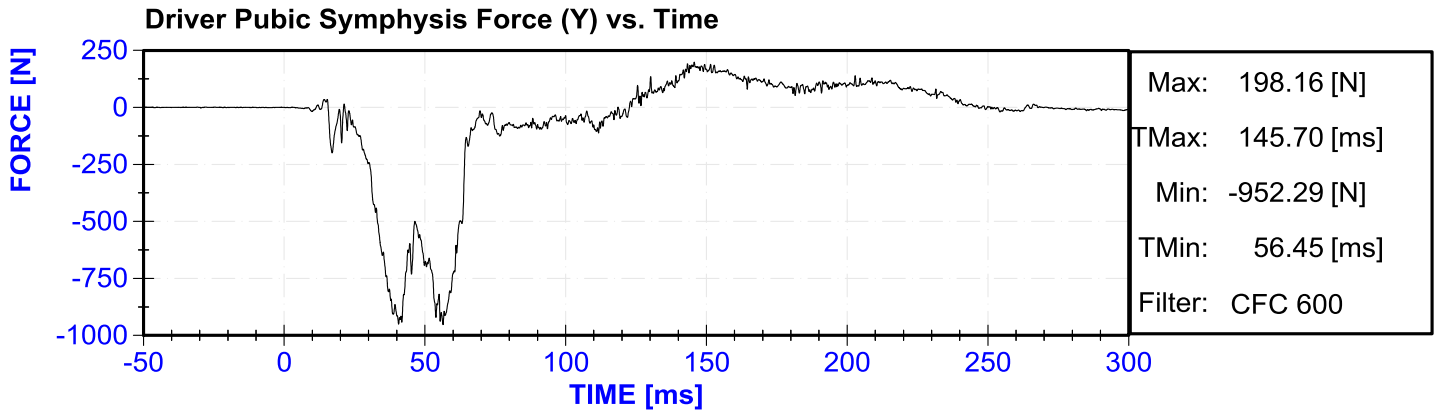
Driver Lower Thorax Rib Deflection (Y) vs. Time



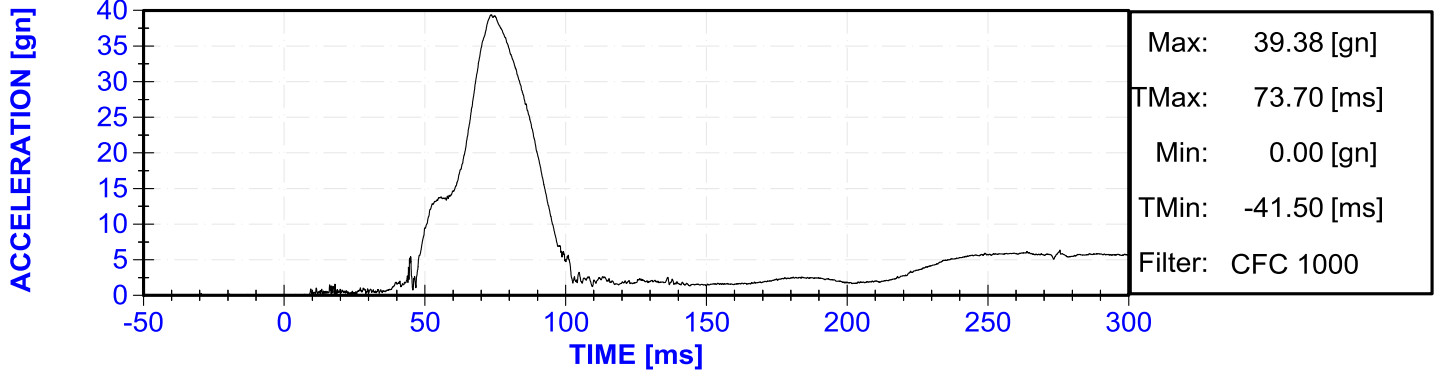
Driver Thorax Rib Deflection Maximum vs. Time



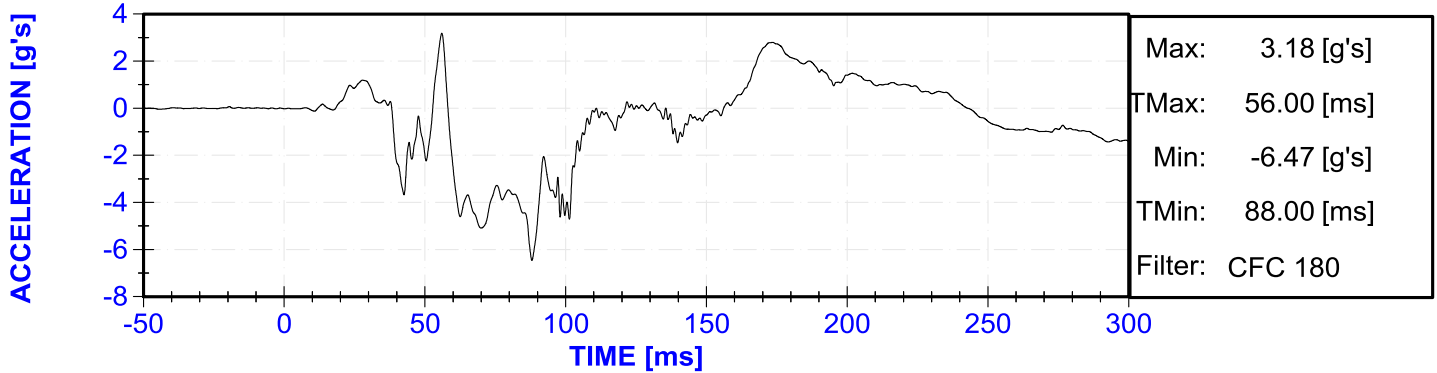




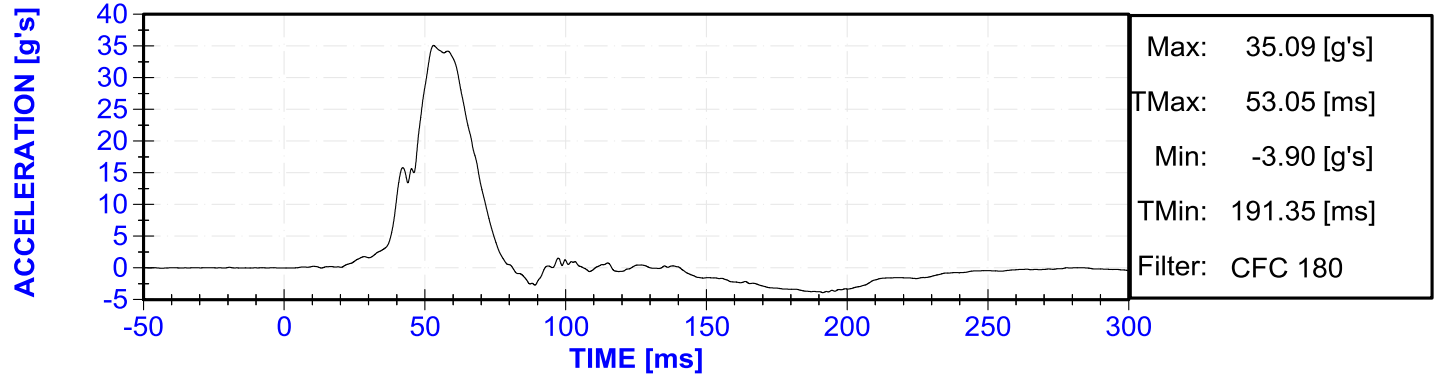
Passenger Head Resultant Acceleration Primary vs. Time



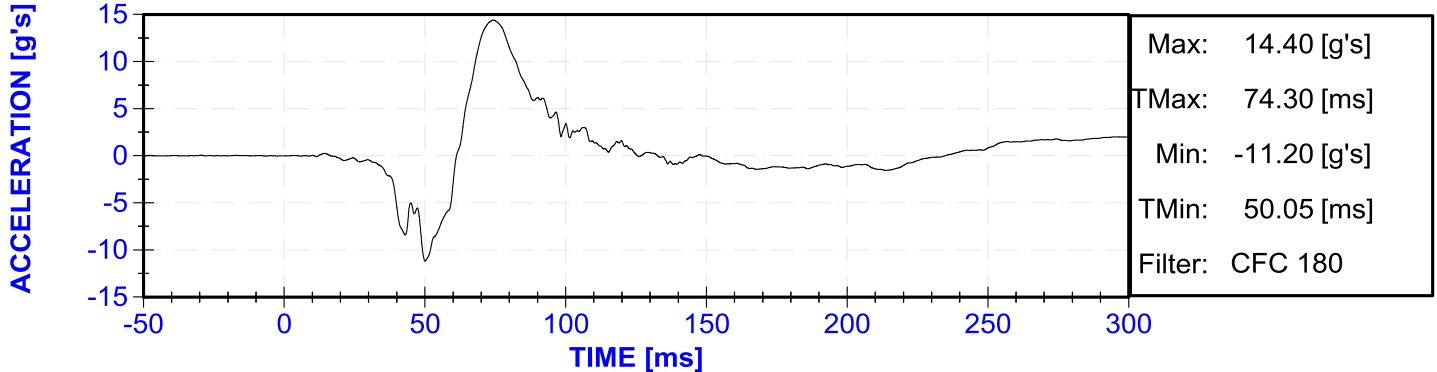
Passenger Lower Spine T12 Acceleration (X) vs. Time

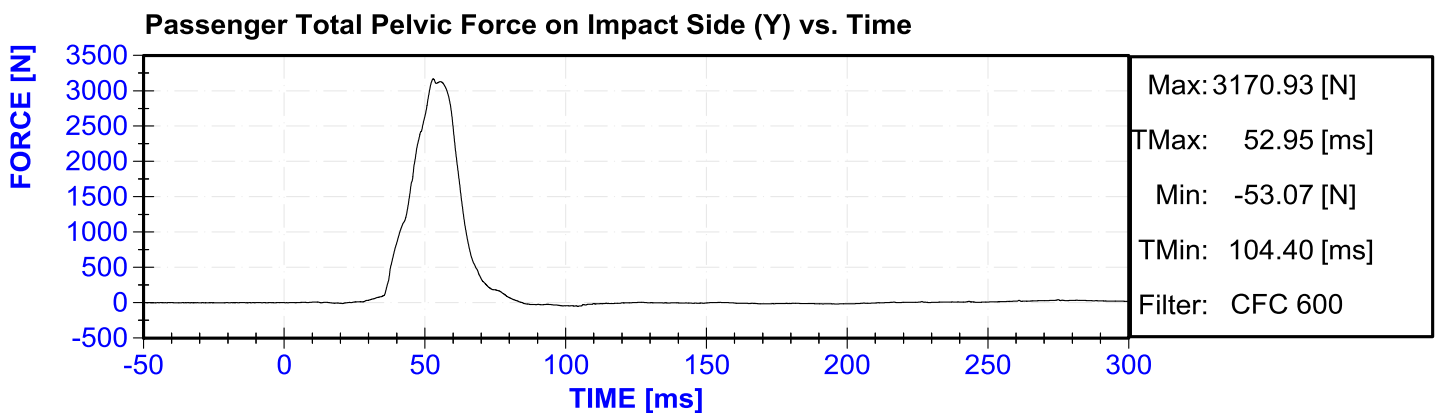
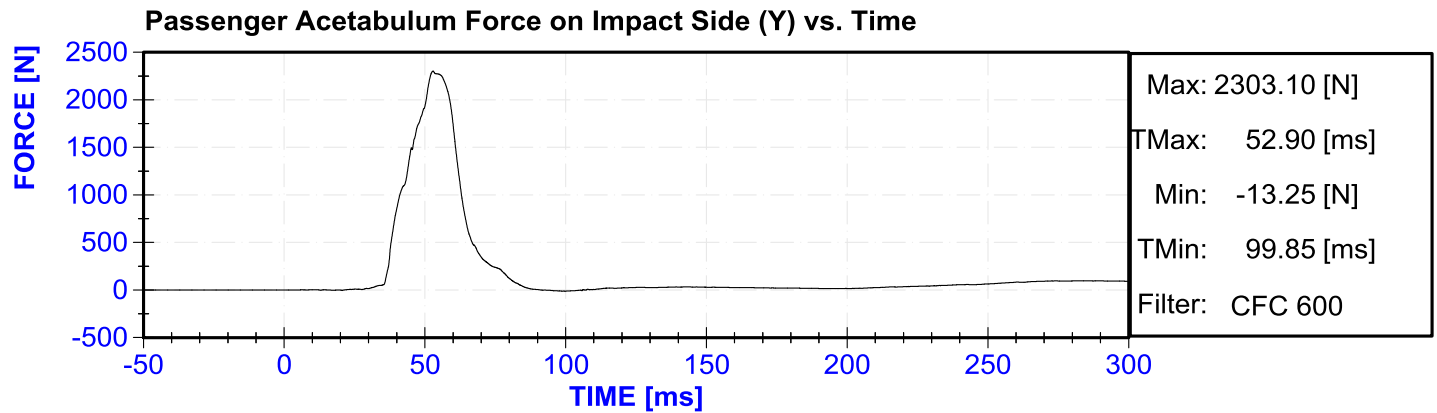
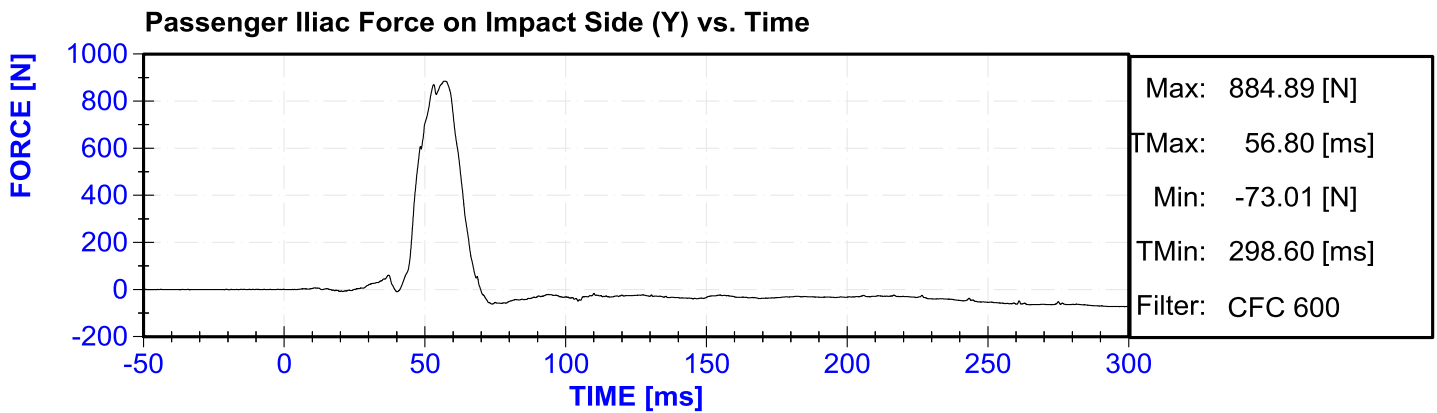
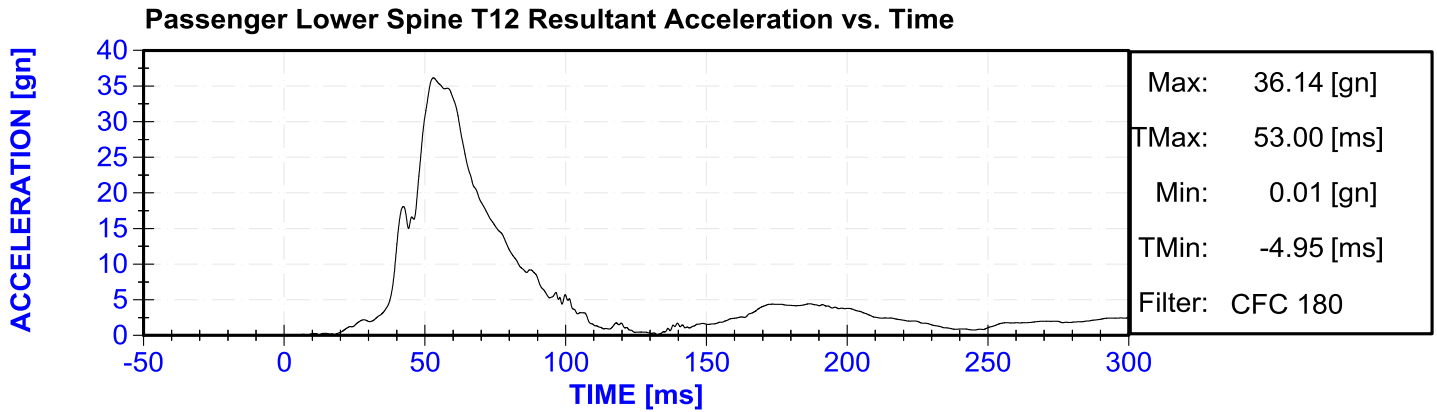


Passenger Lower Spine T12 Acceleration (Y) vs. Time



Passenger Lower Spine T12 Acceleration (Z) vs. Time





## APPENDIX C

### DUMMY PERFORMANCE CALIBRATION TEST DATA

**CALIBRATION TEST RESULTS**

**PRE-TEST**

**EUROSID 2 (ES-2RE) MALE – DRIVER ATD**

**SERIAL NO: F034**

**(CONFIGURED FOR LEFT SIDE IMPACT)**

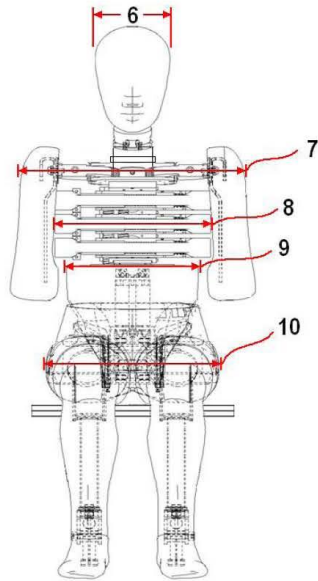


External Measurements - EuroSID-2re

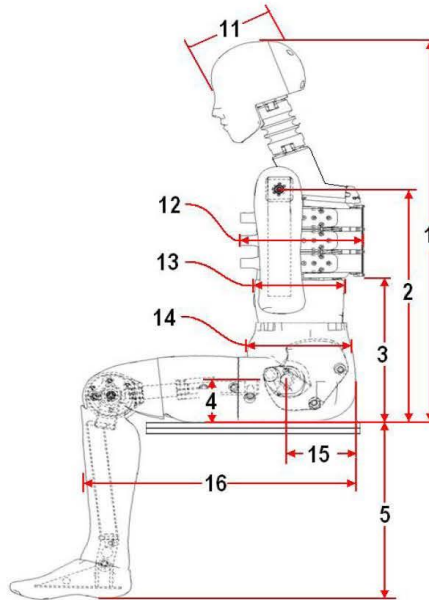
Technician: M.Hartung

Date: 10/29/2015

Dummy Serial Number: F034



FRONT VIEW



SIDE VIEW

Dim. No.	Description	Specification (mm)		Result (mm)	Pass/Fail
1	Sitting Height	900	918	911	Pass
2	Seat to Shoulder Joint	558	572	560	Pass
3	Seat to Lower Face of Thoracic Spine Box	346	356	350	Pass
4	Seat to Hip Joint (center of bolt)	97	103	99	Pass
5	Sole to Seat, Sitting	333	451	415	Pass
6	Head Width	152	158	155	Pass
7	Shoulder/Arm Width	461	479	477	Pass
8	Thorax Width	322	332	330	Pass
9	Abdomen Width	273	287	283	Pass
10	Pelvis Lap Width	359	373	366	Pass
11	Head Depth	196	206	200	Pass
12	Thorax Depth	262	272	265	Pass
13	Abdomen Depth	194	204	201	Pass
14	Pelvis Depth	235	245	239	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150	160	155	Pass
16	Back of Buttocks to Front Knee	597	615	600	Pass

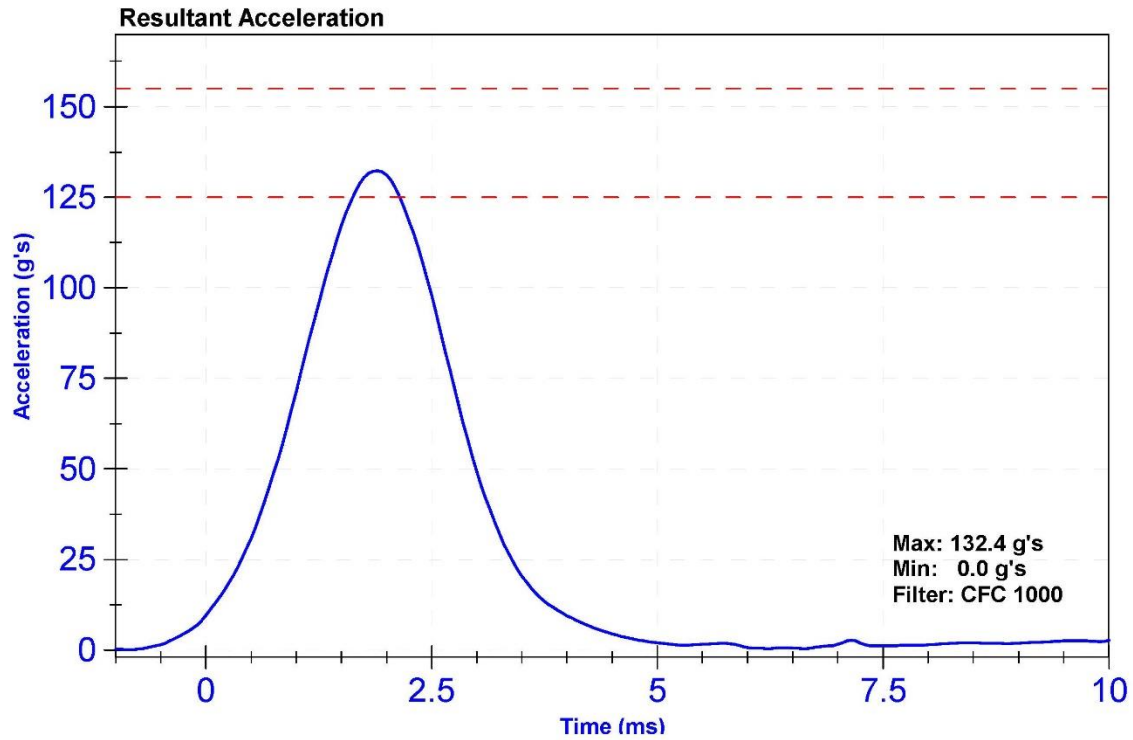
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

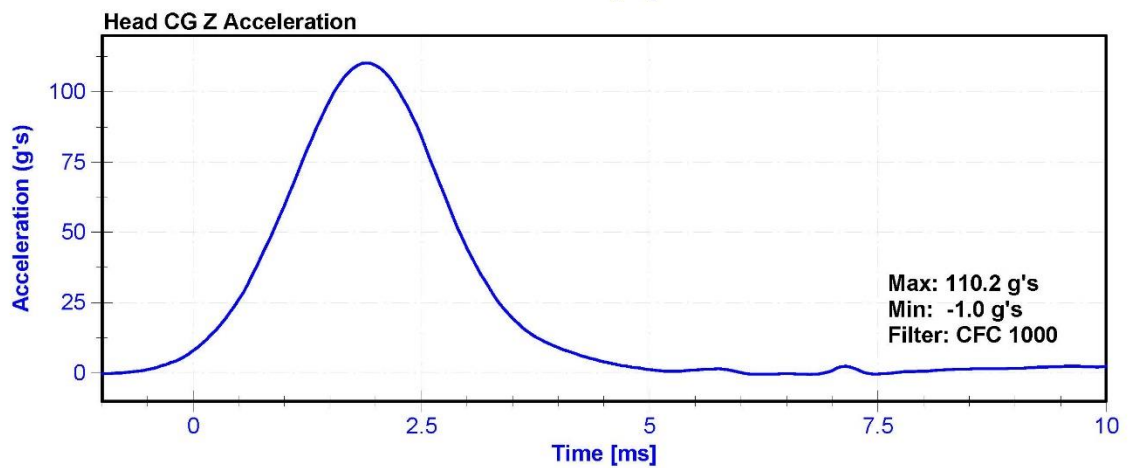
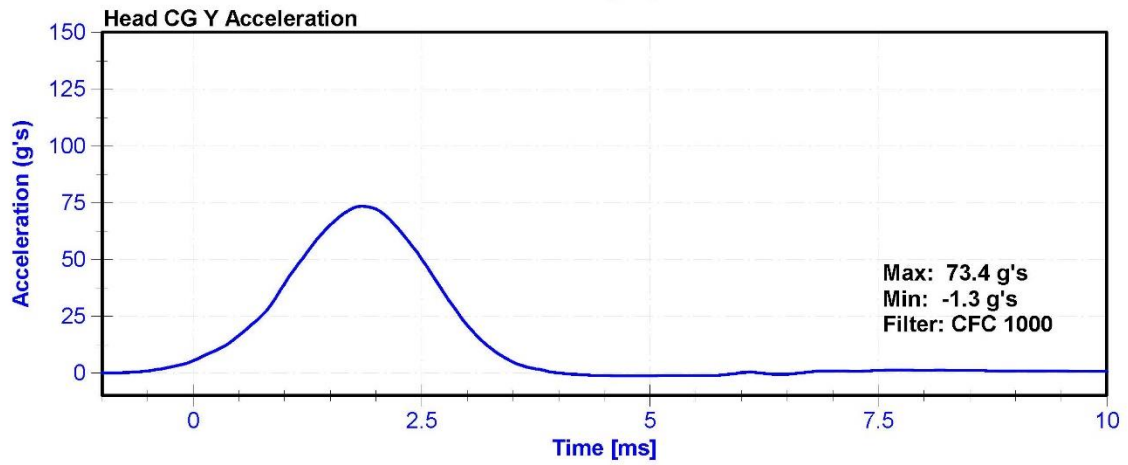
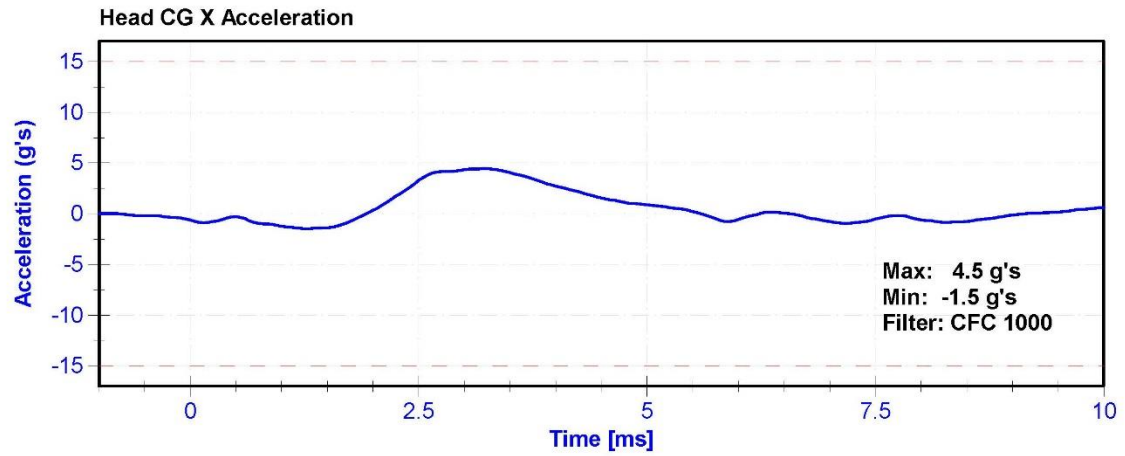
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	22.2	Pass
Humidity	10	70	%	29.6	Pass
Resultant Acceleration	125	155	g's	132.4	Pass
Oscillation	0	15	%	4.90	Pass
Fore-Aft Acceleration	-15	15	g's	4.5	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
X Accelerometer	ENDEVCO 7264CT	AC-P58904	10/19/2015	4/18/2016
Y Accelerometer	ENDEVCO 7264CT	AC-P58911	10/19/2015	4/18/2016
Z Accelerometer	ENDEVCO 7264CT	AC-P58776	10/19/2015	4/18/2016





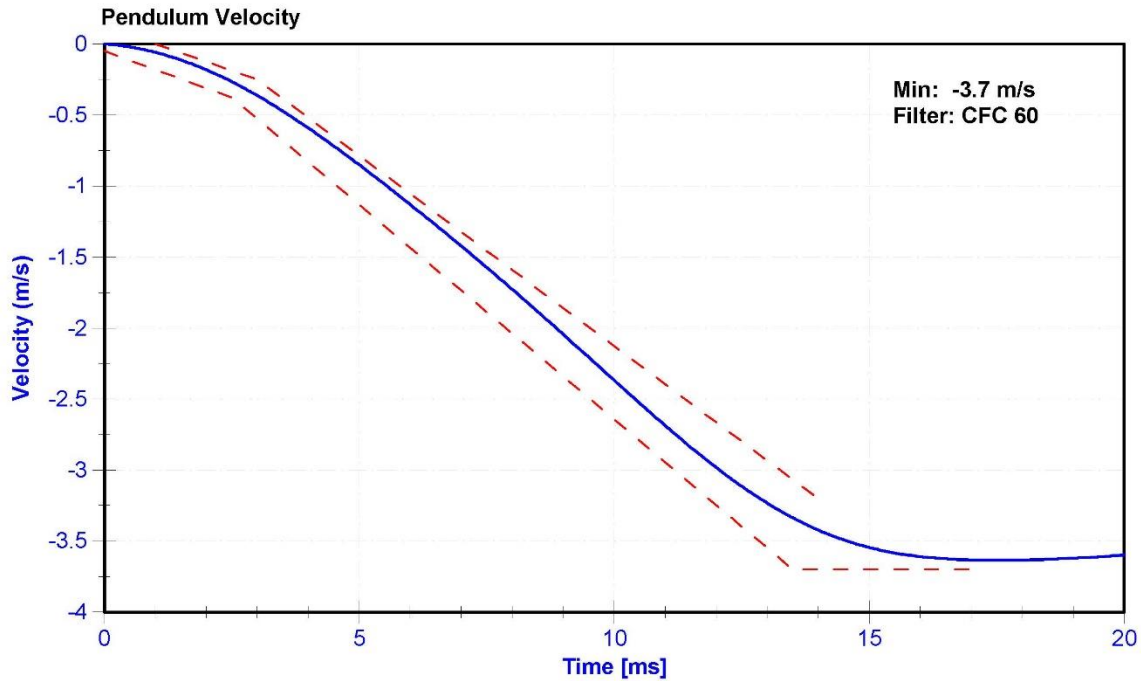
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

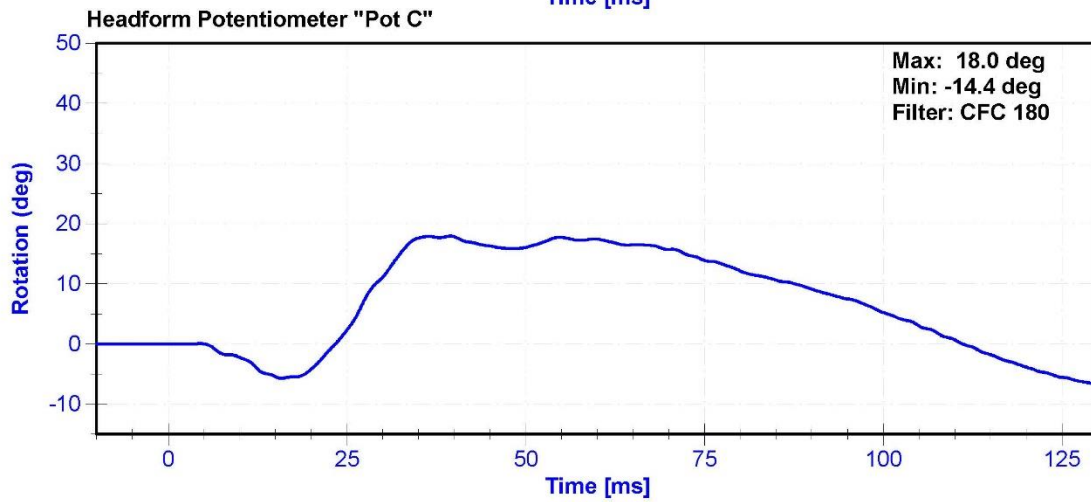
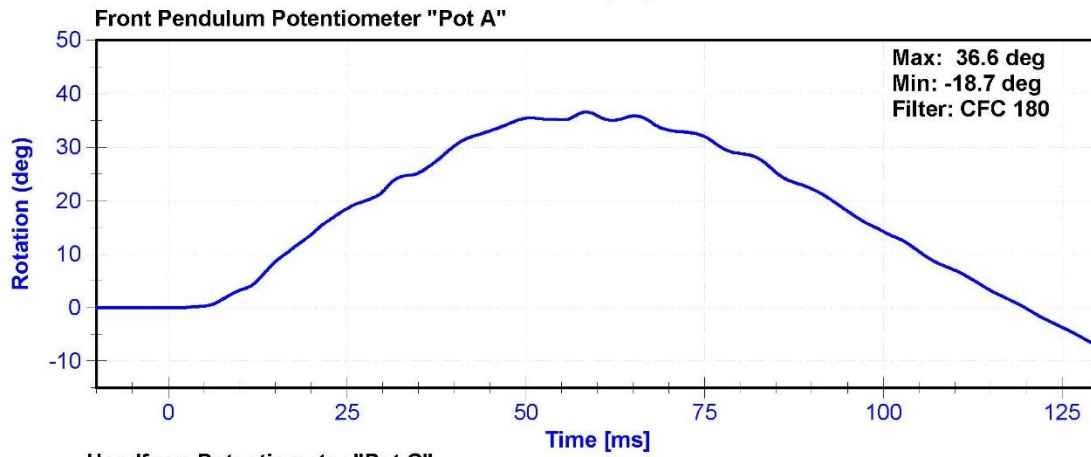
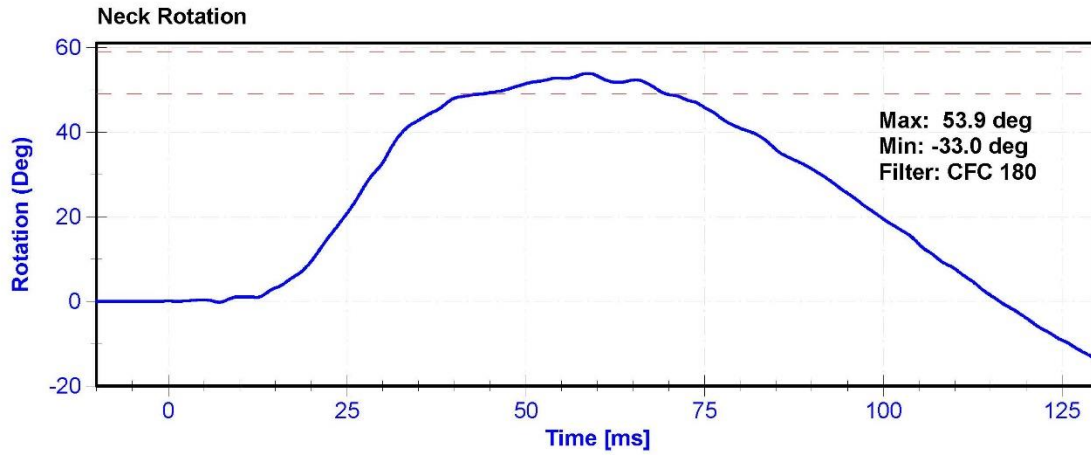
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	22.2	Pass
Humidity	10	70	%	27.8	Pass
Velocity	3.3	3.5	m/s	3.46	Pass
Lateral Neck Rotation	49	59	deg	53.9	Pass
Time at Maximum Rotation	54	66	ms	58.7	Pass
Time of Rotation Decay from Maximum	53	88	ms	57.5	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	11/7/2015
Front Pendulum Potentiometer	SP22G	DS-094	9/24/2015	9/23/2016
Headform Potentiometer	SP22G	DS-095	9/24/2015	9/23/2016





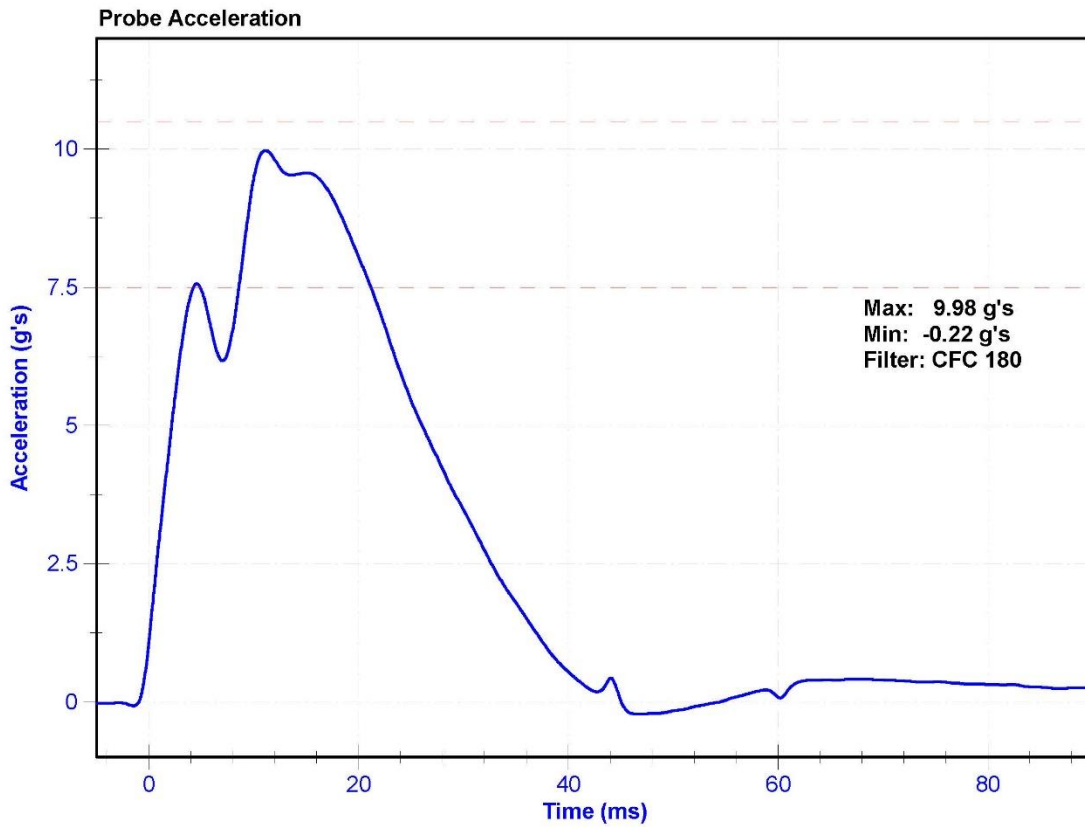
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	40.8	Pass
Velocity	4.2	4.4	m/s	4.22	Pass
Probe Acceleration	7.5	10.5	g's	9.98	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016



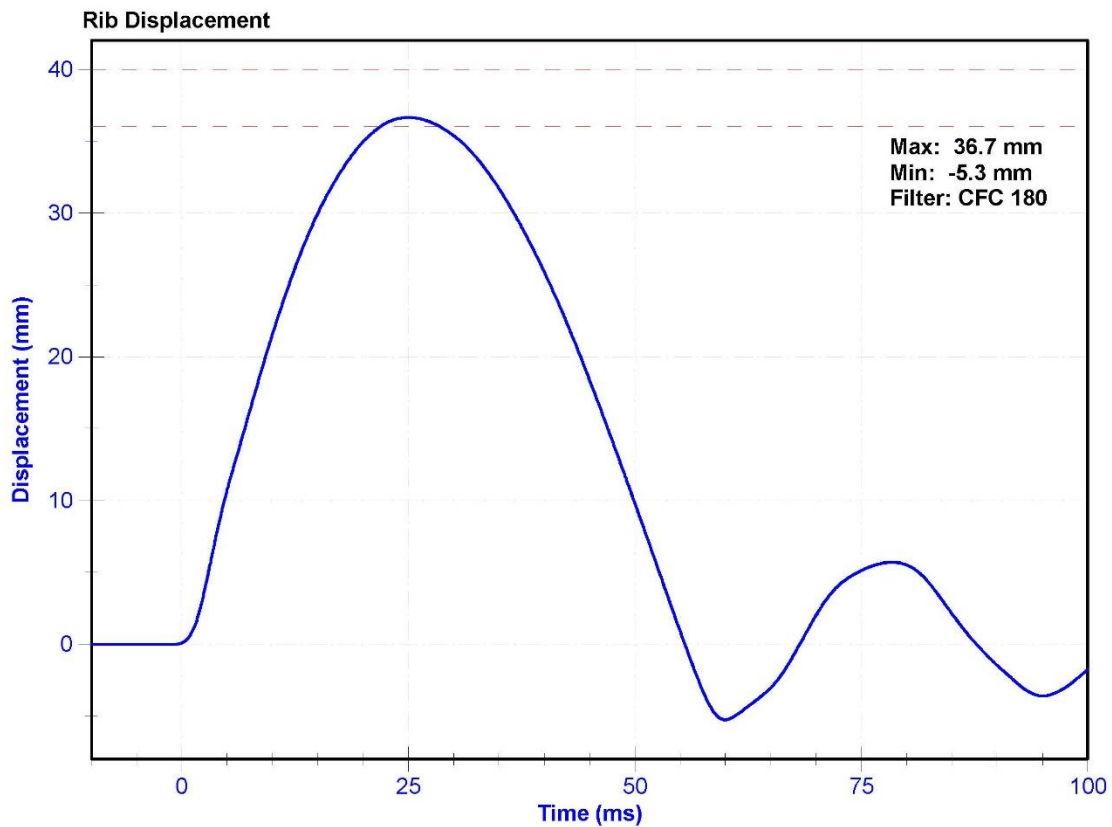
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	58.4	Pass
Rib Displacement	36	40	mm	36.7	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-183GFE	10/19/2015	10/18/2016



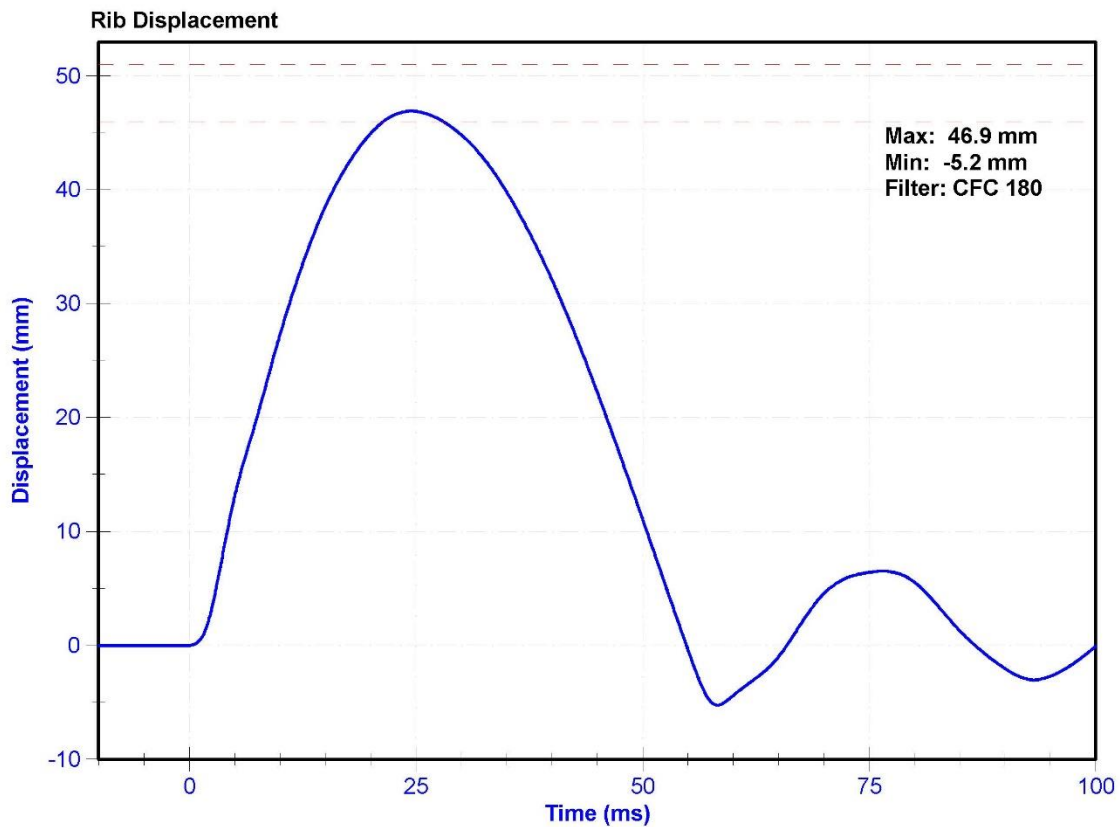
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	58.4	Pass
Rib Displacement	46	51	mm	46.9	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-183GFE	10/19/2015	10/18/2016



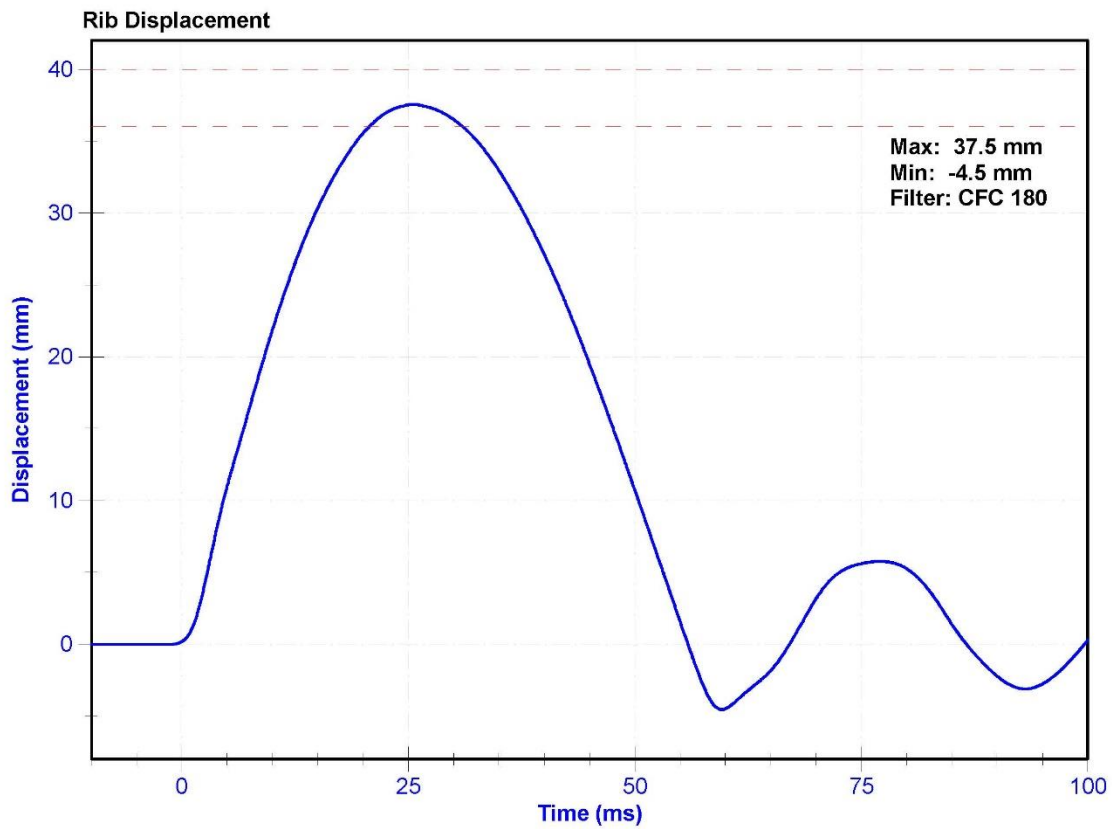
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	58.4	Pass
Rib Displacement	36	40	mm	37.5	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-184GFE	10/19/2015	10/18/2016



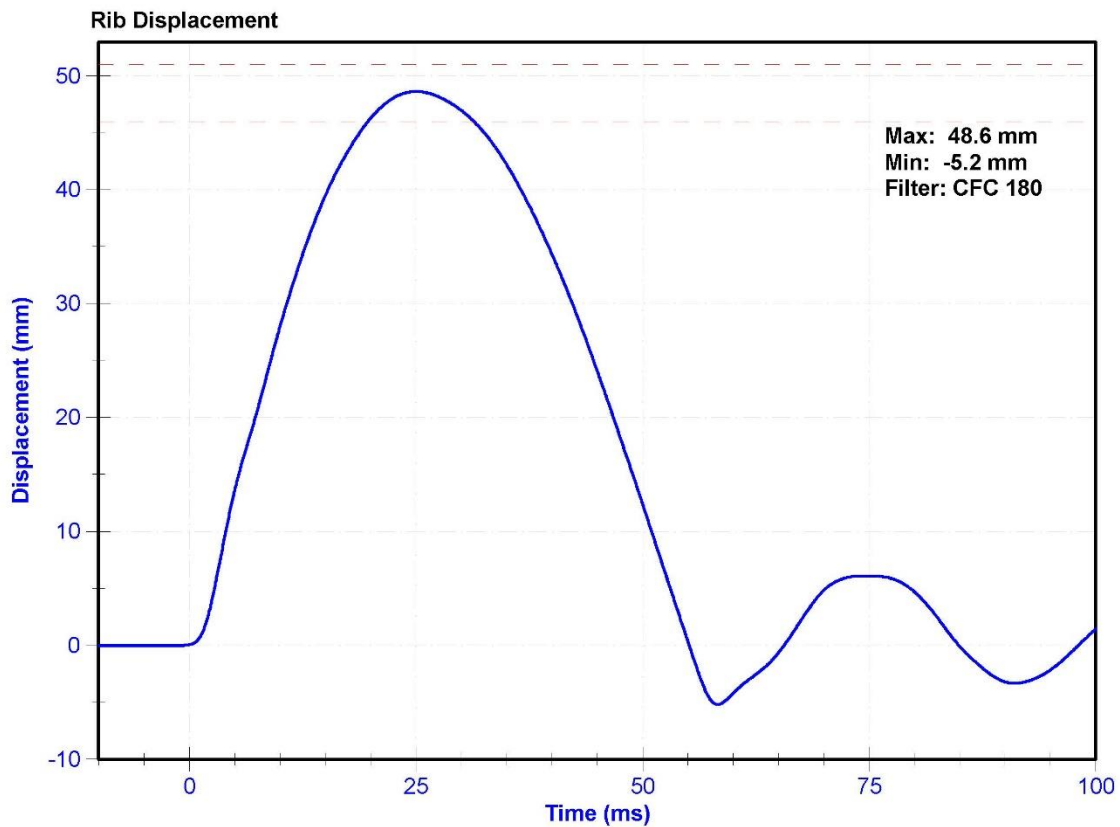
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	58.4	Pass
Rib Displacement	46	51	mm	48.6	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-184GFE	10/19/2015	10/18/2016



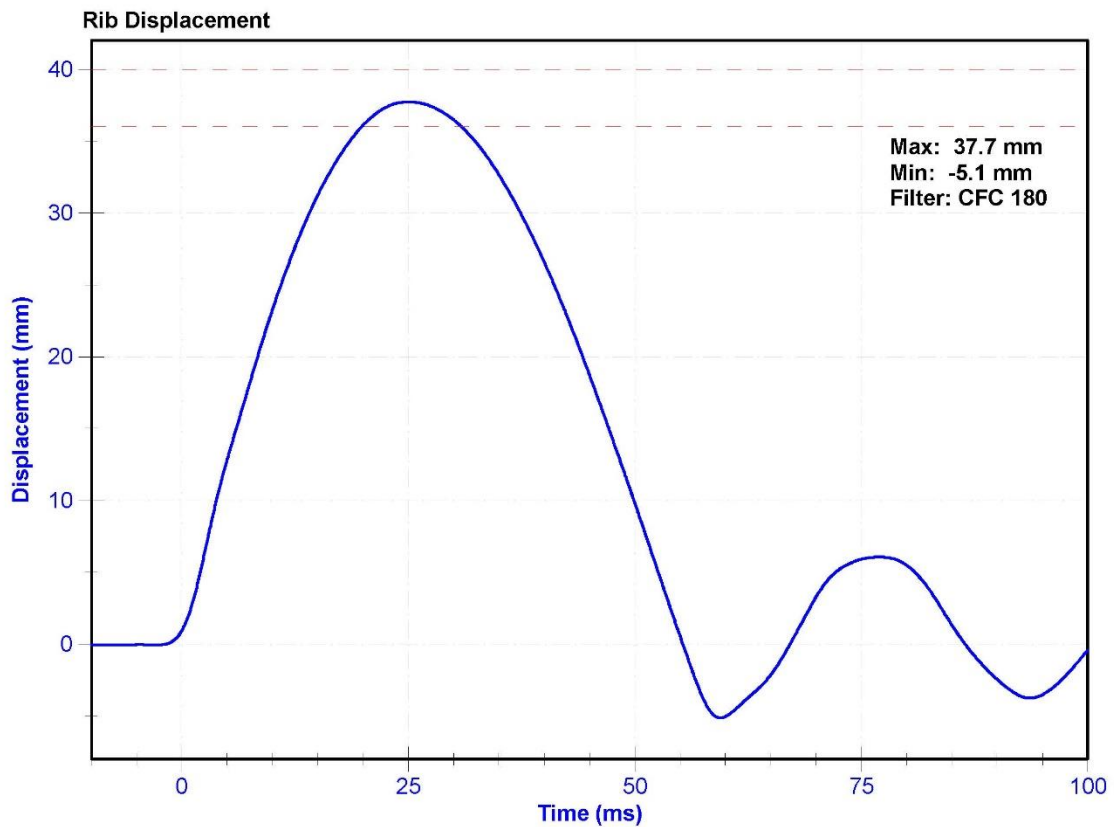
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.5	Pass
Humidity	10	70	%	45.0	Pass
Rib Displacement	36	40	mm	37.7	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-182GFE	10/19/2015	10/18/2016



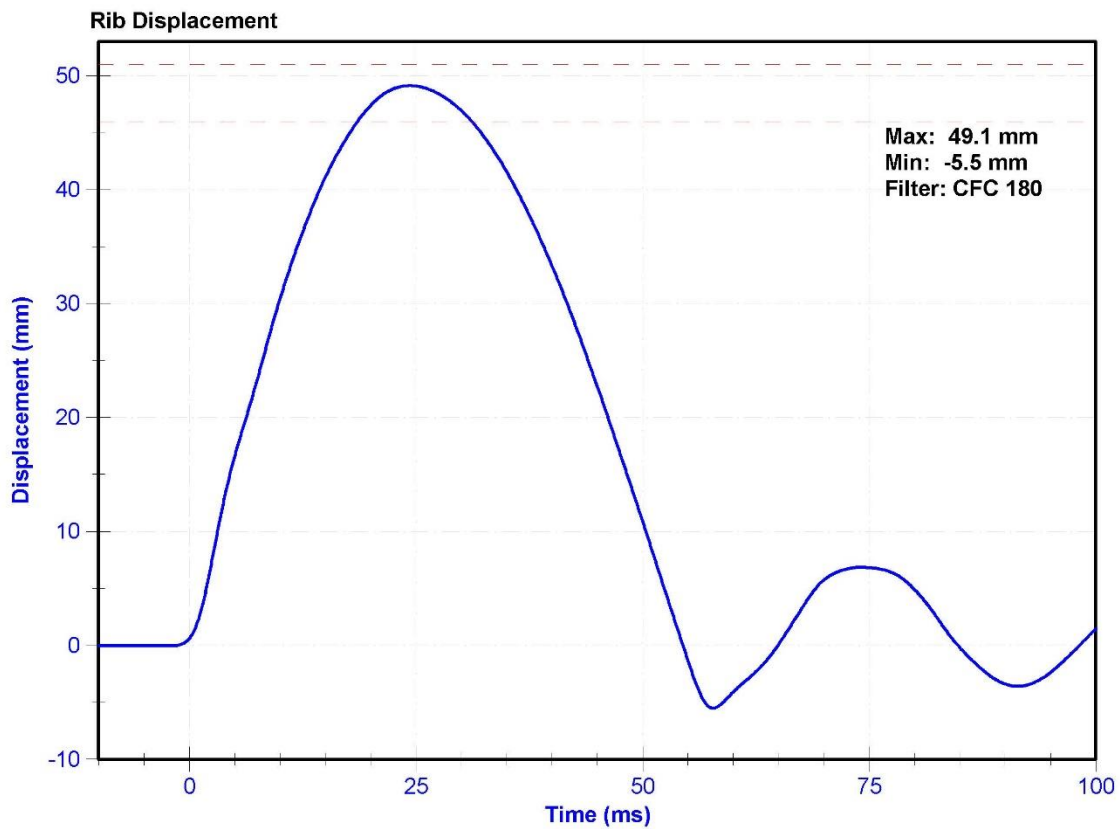
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	58.4	Pass
Rib Displacement	46	51	mm	49.1	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-182GFE	10/19/2015	10/18/2016



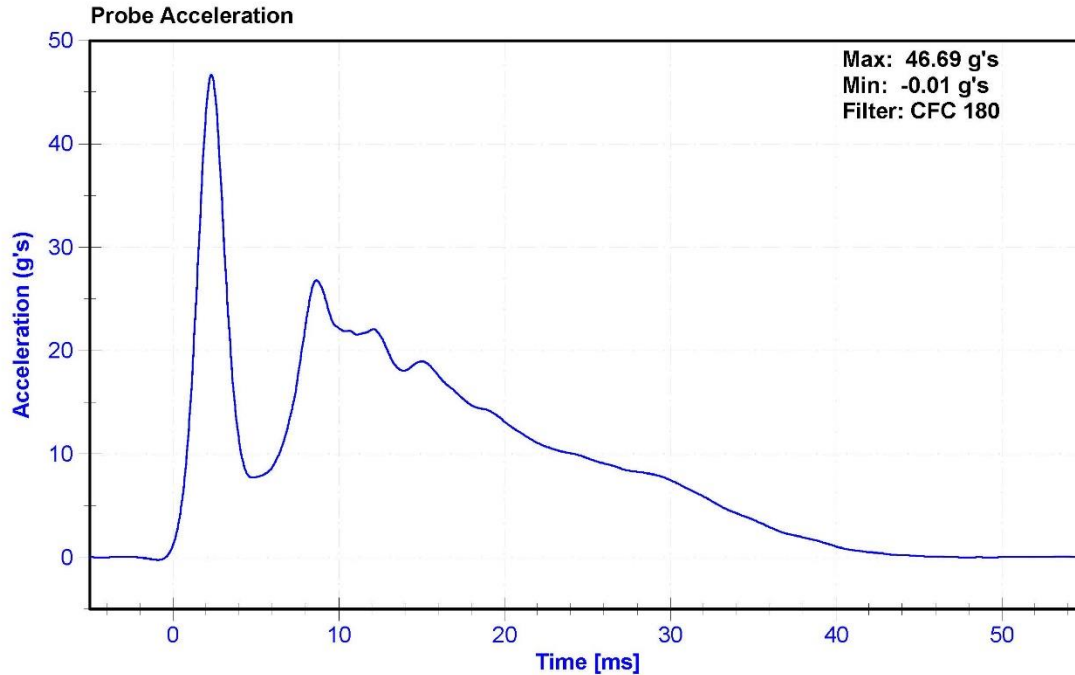
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

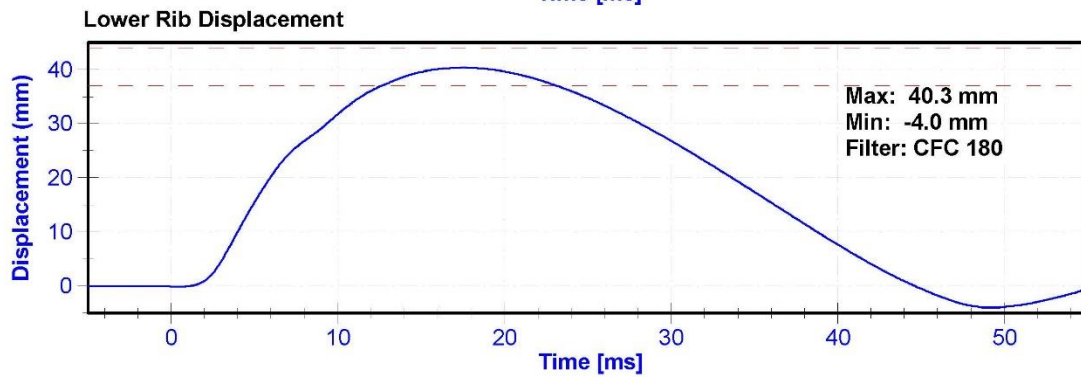
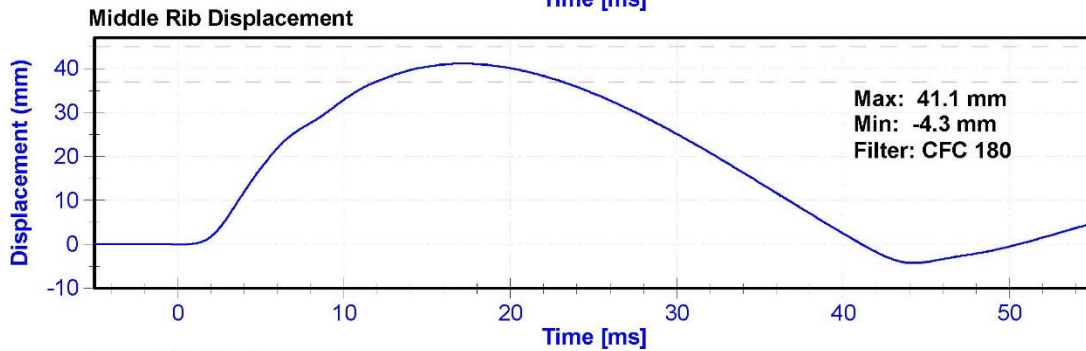
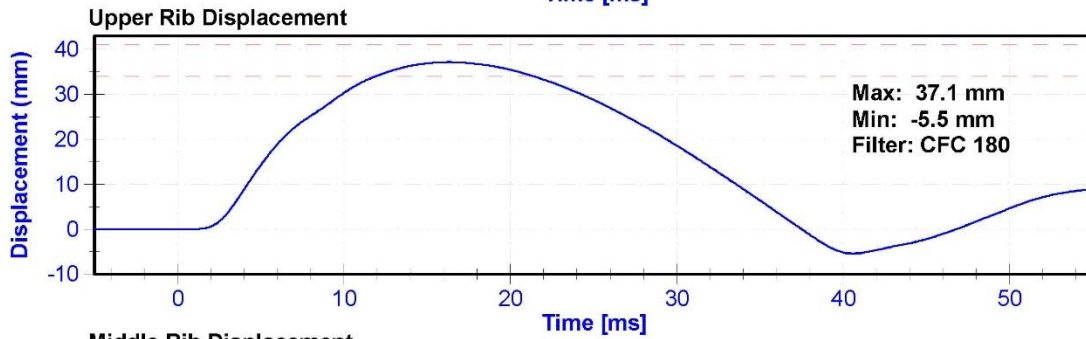
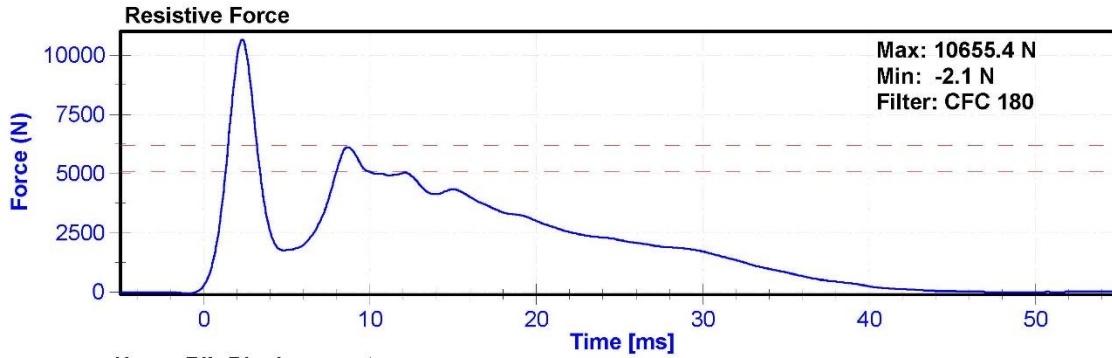
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	40.6	Pass
Velocity	5.4	5.6	m/s	5.45	Pass
Resistive Force after 6ms	5,100	6,200	N	6115.6	Pass
Upper Thorax Rib Deflection	34	41	mm	37.1	Pass
Mid Thorax Rib Deflection	37	45	mm	41.1	Pass
Lower Thorax Rib Deflection	37	44	mm	40.3	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Upper Thorax Rib Potentiometer	Honeywell MLT-38000203	DS-183GFE	10/19/2015	10/18/2016
Middle Thorax Rib Potentiometer	Honeywell MLT-38000203	DS-184GFE	10/19/2015	10/18/2016
Lower Thorax Rib Potentiometer	Honeywell MLT-38000203	DS-182GFE	10/19/2015	10/18/2016





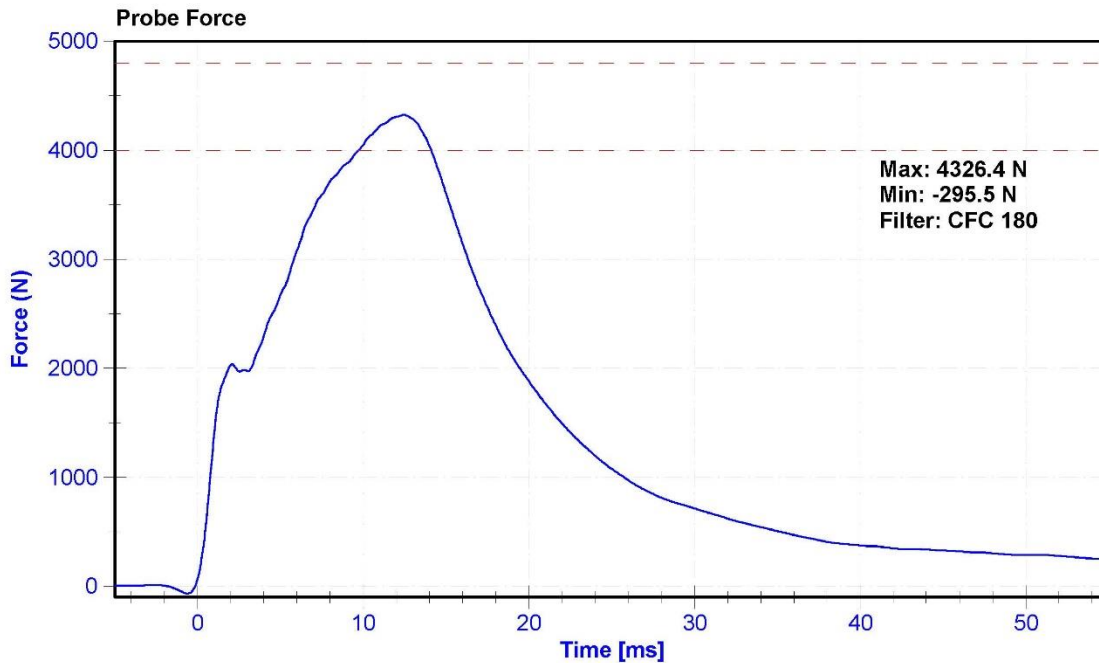
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

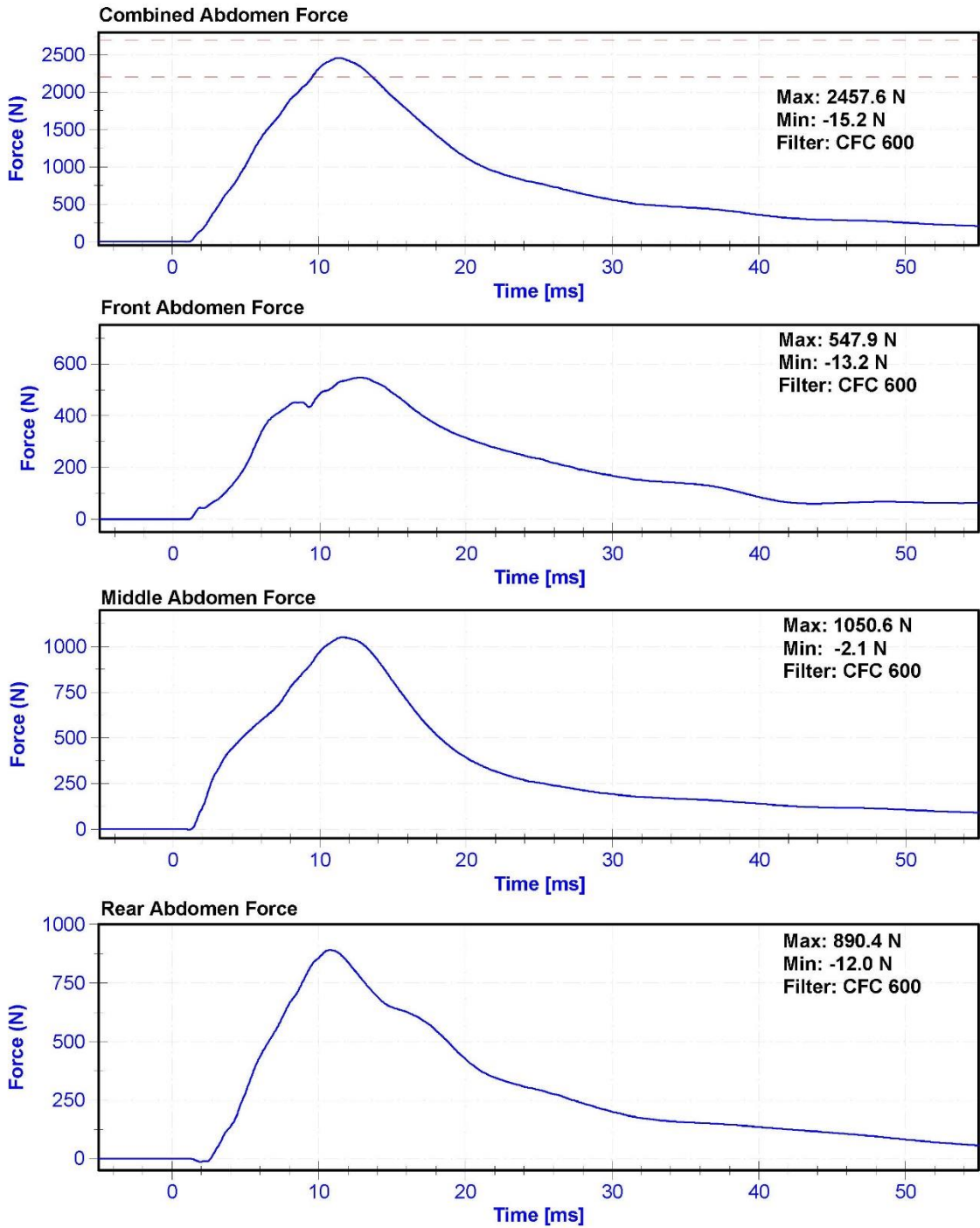
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.9	Pass
Humidity	10	70	%	37.8	Pass
Velocity	3.9	4.1	m/s	4.01	Pass
Combined Abdomen Force	2,200	2,700	N	2457.6	Pass
Time at Peak Abdomen Force	10.0	12.3	ms	11.35	Pass
Resistive Probe Force	4,000	4,800	N	4326.4	Pass
Time at Peak Resistive Force	10.6	13.0	ms	12.45	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Front Abdomen Load Cell	DENTON 2631	LC-1512	6/25/2015	6/24/2016
Middle Abdomen Load Cell	DENTON 2631	LC-1526	6/25/2015	6/24/2016
Rear Abdomen Load Cell	DENTON 2631	LC-1516	6/25/2015	6/24/2016





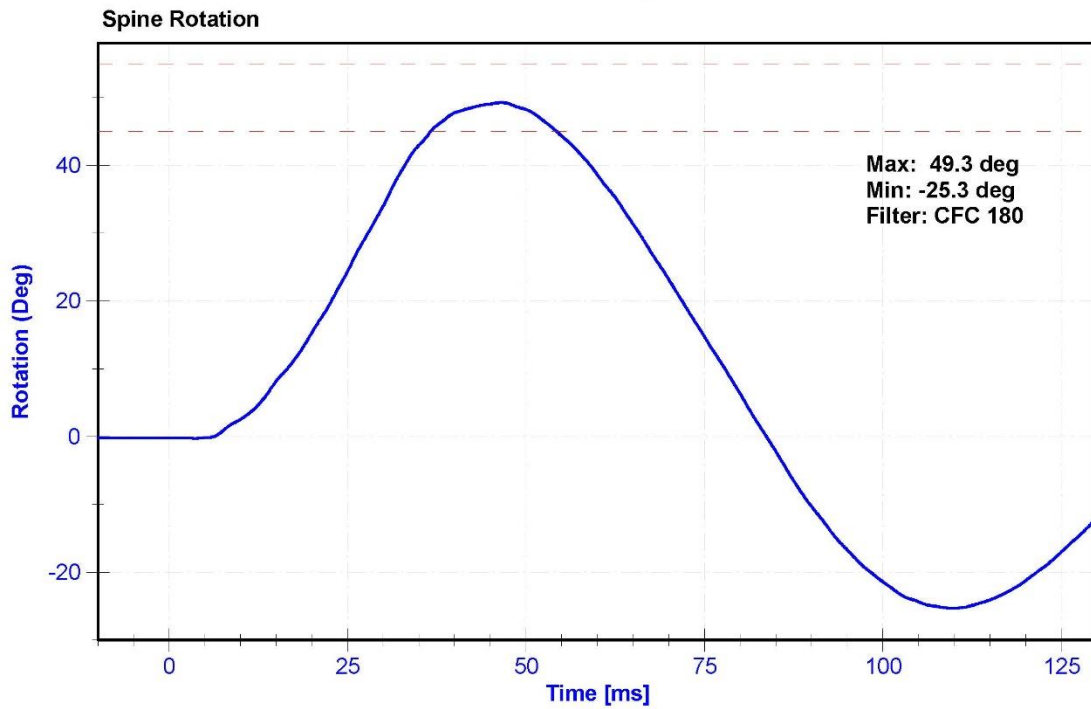
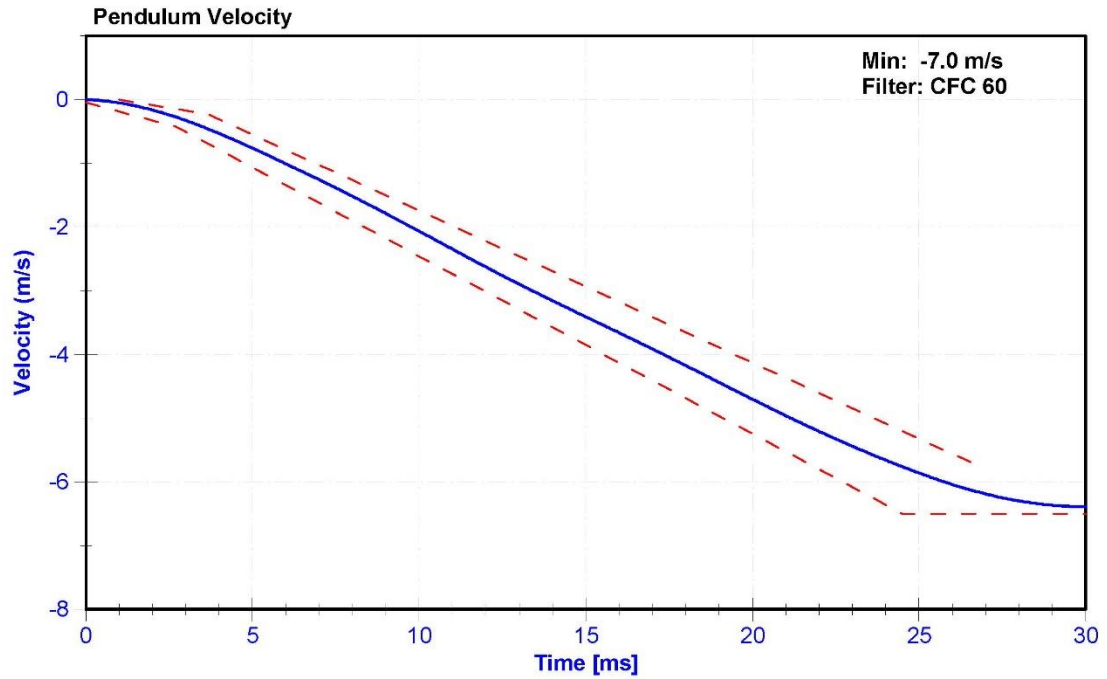
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

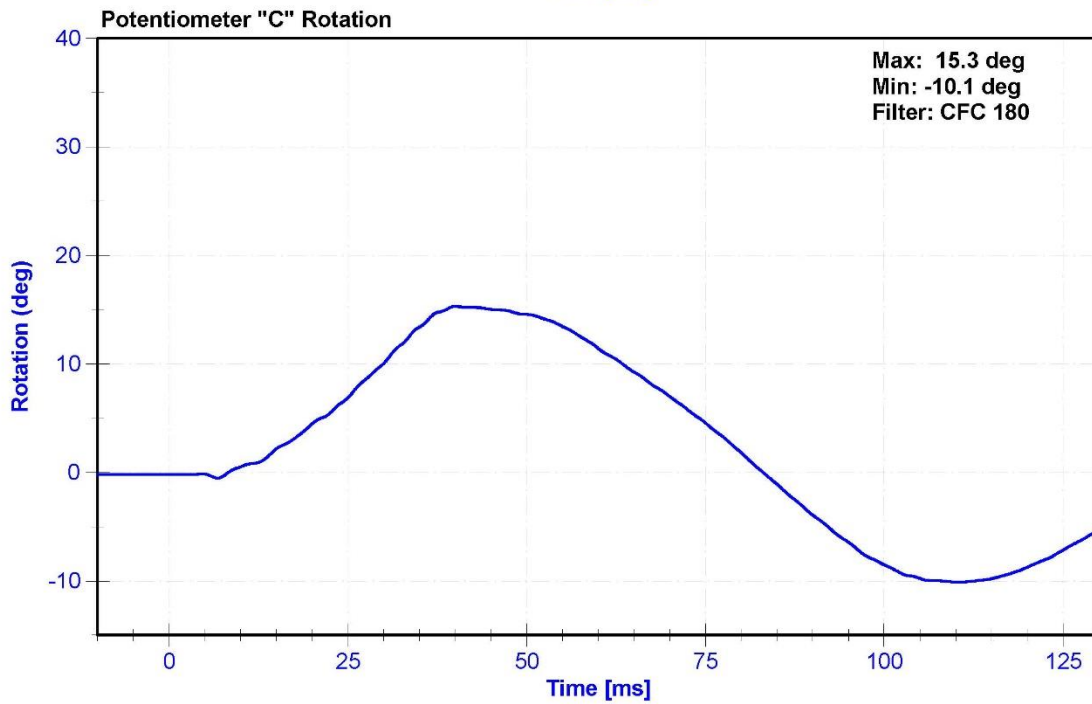
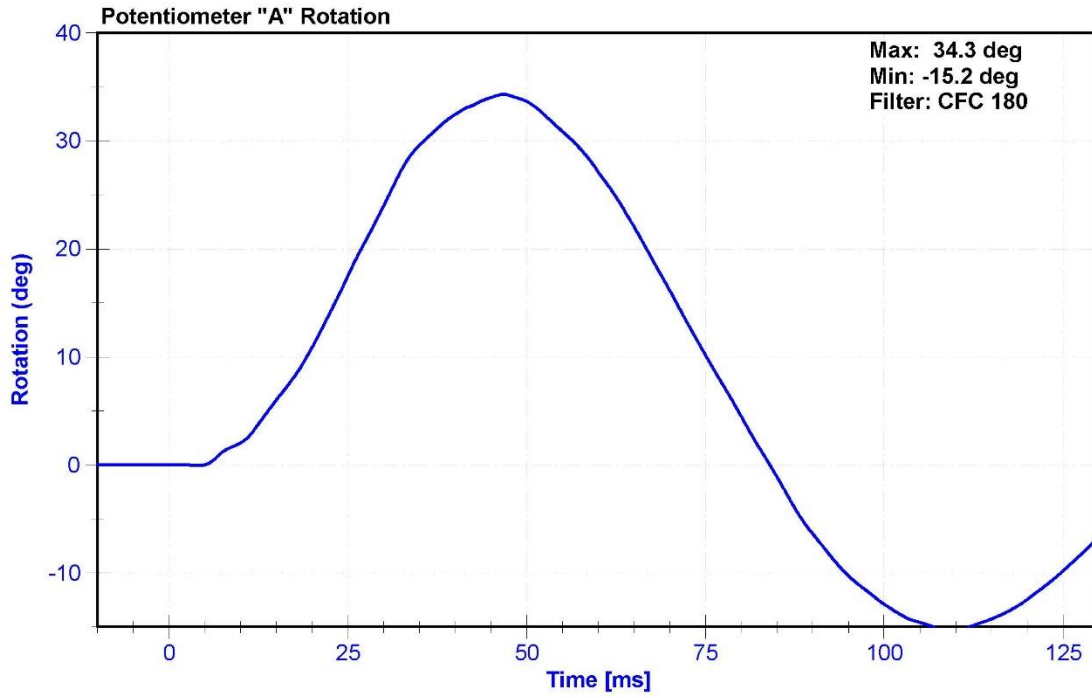
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	22.2	Pass
Humidity	10	70	%	47.2	Pass
Velocity	5.95	6.15	m/s	6.068	Pass
Lateral Spine Rotation	45	55	deg	49.3	Pass
Time at Maximum Rotation	39	53	ms	46.6	Pass
Time of Decay to Zero Degrees	37	57	ms	37.1	Pass
Pulse within Corridor?	-	-	-	Yes	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	11/7/2015
Pendulum "A" Potentiometer	SP22G	DS-094	9/24/2015	9/23/2016
Condyle "B" Potentiometer	SP22G	DS-095	9/24/2015	9/23/2016





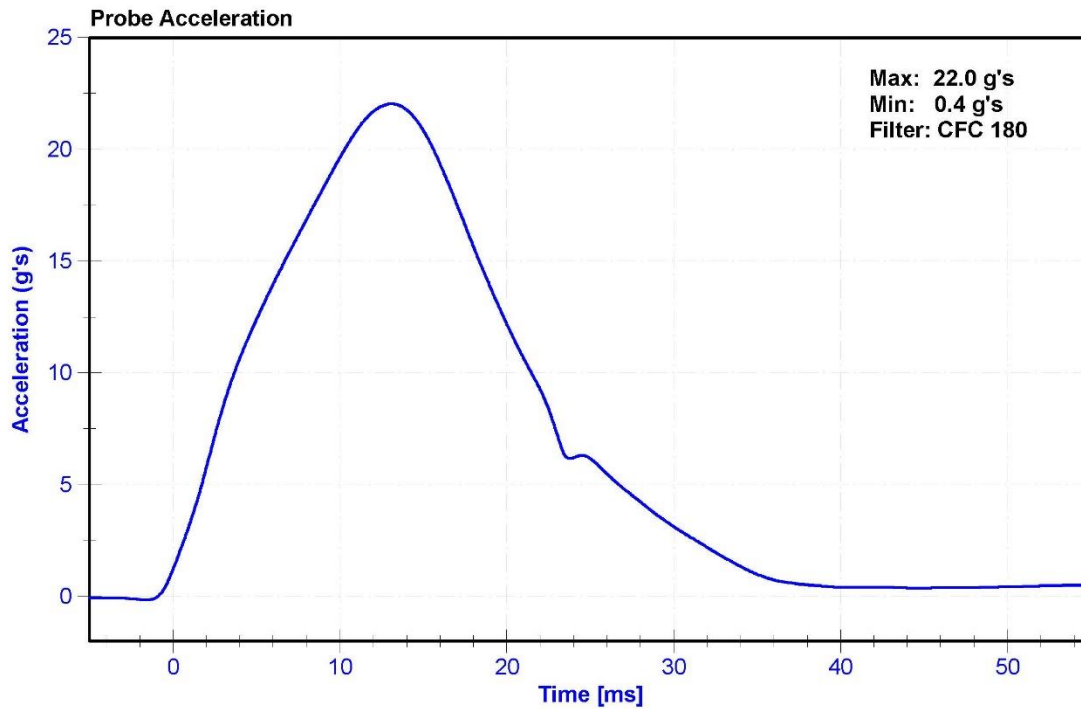
ATD Manufacturer	FTSS	Test Technician	M.Hartung
ATD Serial Number	F034	Laboratory Supervisor	M.Goehle

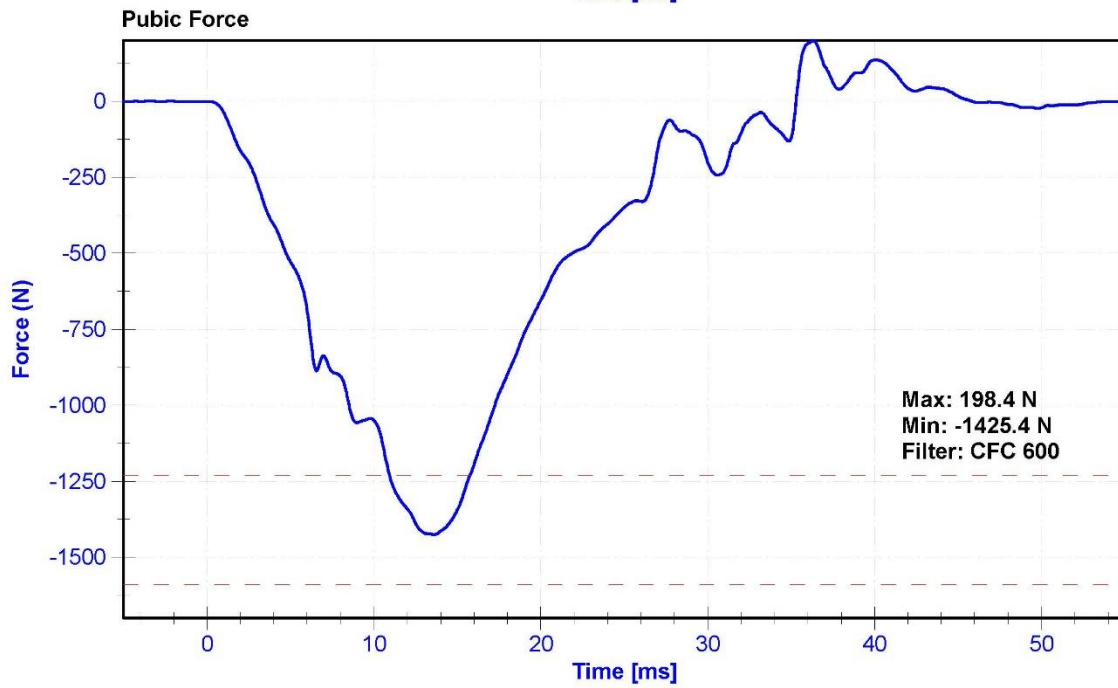
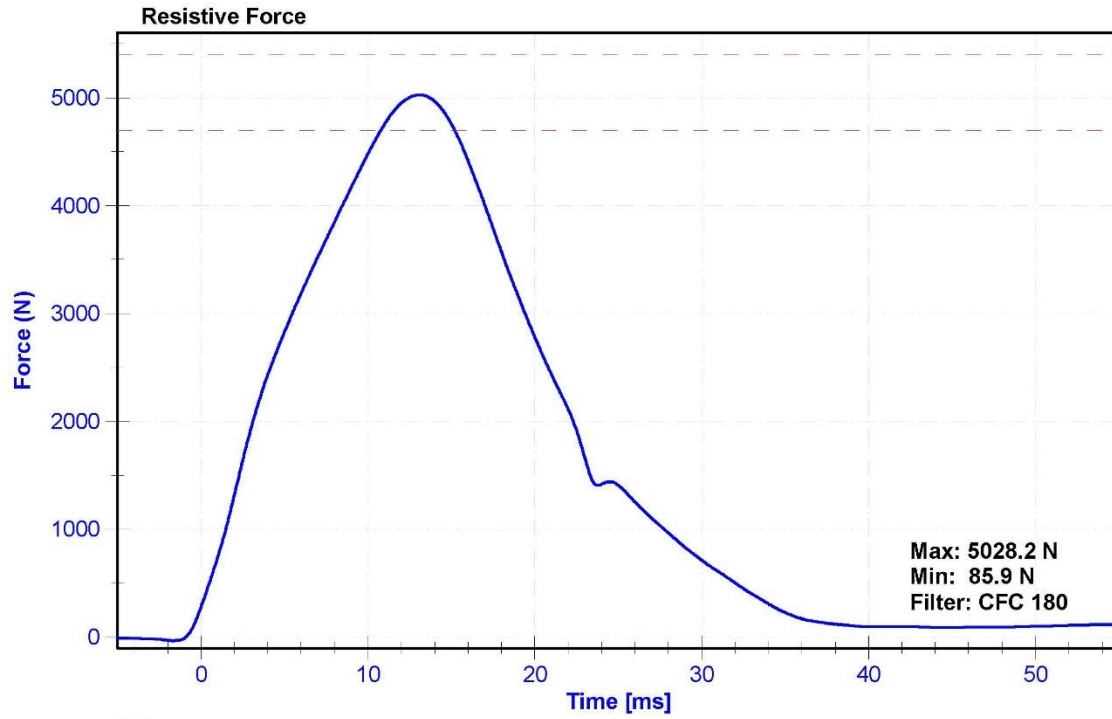
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	36.5	Pass
Velocity	4.2	4.4	m/s	4.30	Pass
Resistive Force	4,700	5,400	N	5028.2	Pass
Time at Peak Resistive Force	11.8	16.1	ms	13.10	Pass
Pubic Force	-1,590	-1,230	N	-1425.4	Pass
Time at Peak Pubic Force	12.2	17.0	ms	13.60	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Pubic Load Cell	Denton 3096JFL	LC-465Fy	6/25/2015	6/24/2016





**CALIBRATION TEST RESULTS**

**PRE-TEST**

**SID-IIS 5<sup>TH</sup> PERCENTILE FEMALE - PASSENGER ATD**

**SERIAL No: 303**

**(CONFIGURED FOR LEFT SIDE IMPACT)**

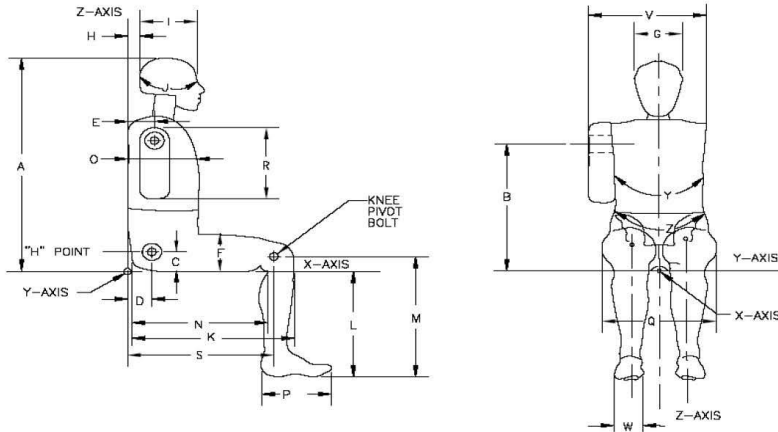


External Measurements - SID-IIs

Technician: M. Geesey

Date: 10/28/2015

Dummy Serial Number: 303



Symbol	Description	Specification (mm)		Result (mm)	Pass/Fail
A	Sitting Height	772	788	780	Pass
B	Shoulder Pivot Height	437	453	446	Pass
C	H-point Height	79	89	85	Pass
D	H-point from seatback	141	151	146	Pass
E	Shoulder Pivot from Backline	97	107	103	Pass
F	Thigh Clearance	119	135	130	Pass
G	Head Breadth	140	148	144	Pass
H	Head Back from Backline	40	46	43	Pass
I	Head Depth	178	188	182	Pass
J	Head Circumference	541	551	546	Pass
K	Buttock to Knee Length	514	540	530	Pass
L	Popliteal Height	343	369	356	Pass
M	Knee Pivot to floor height	392	409	405	Pass
N	Buttock Popliteal Length	416	442	437	Pass
O	Chest Depth w/o jacket	195	211	204	Pass
P	Foot Length	216	232	221	Pass
Q	Hip Breadth (w/pelvic plugs)	313	323	317	Pass
R	Arm Length	249	259	254	Pass
S	Knee Joint to seatback	477	493	486	Pass
V	Shoulder Width	341	357	351	Pass
W	Foot Width	78	94	85	Pass
Y	Chest Circumference w/jacket	851	881	870	Pass
Z	Waist Circumference	761	791	770	Pass

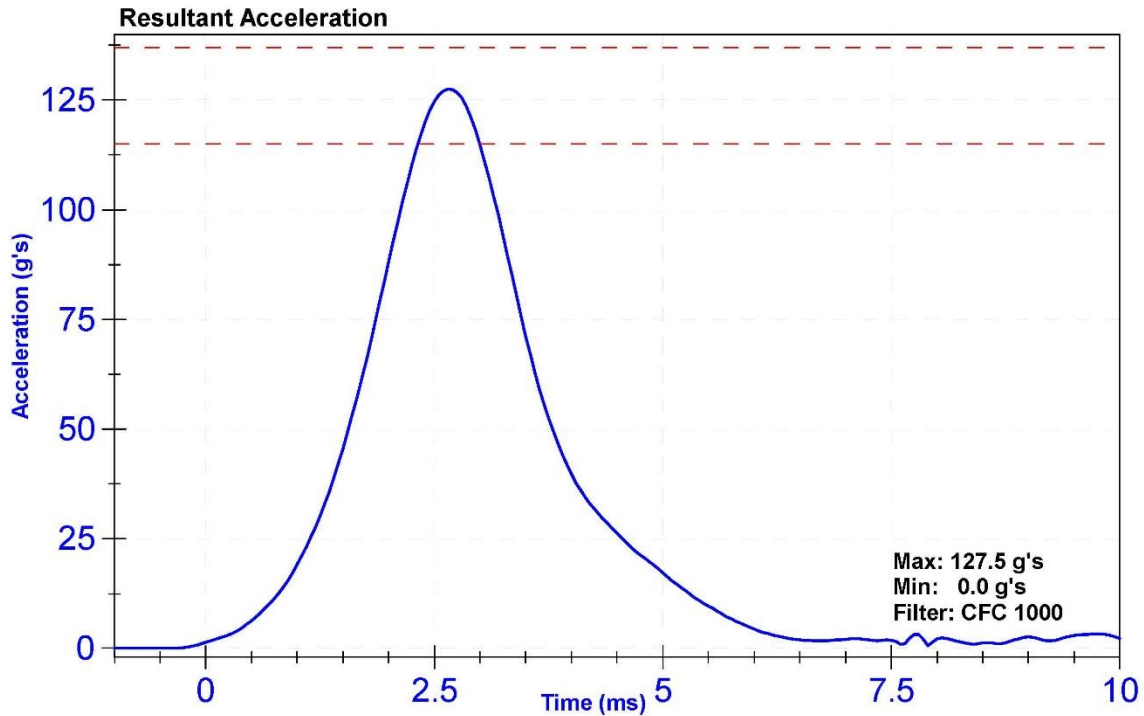
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

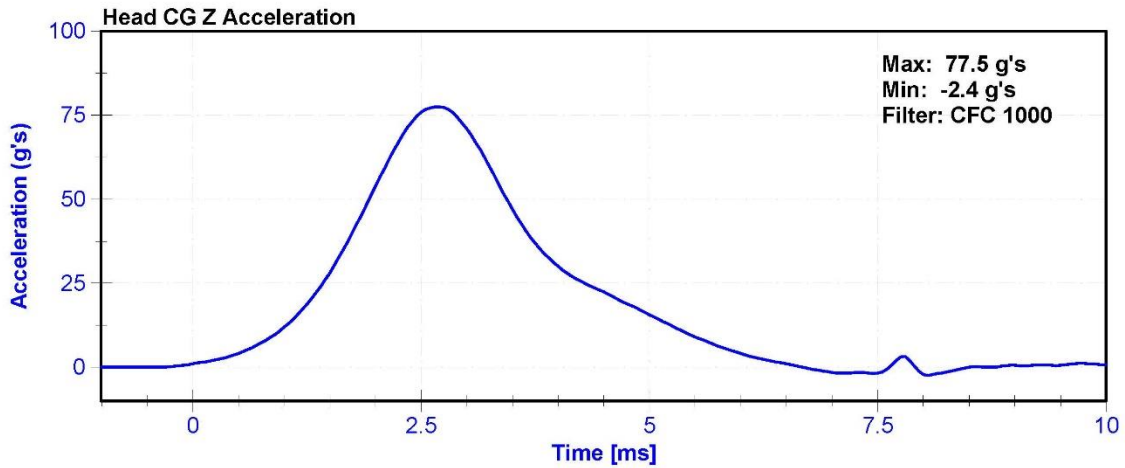
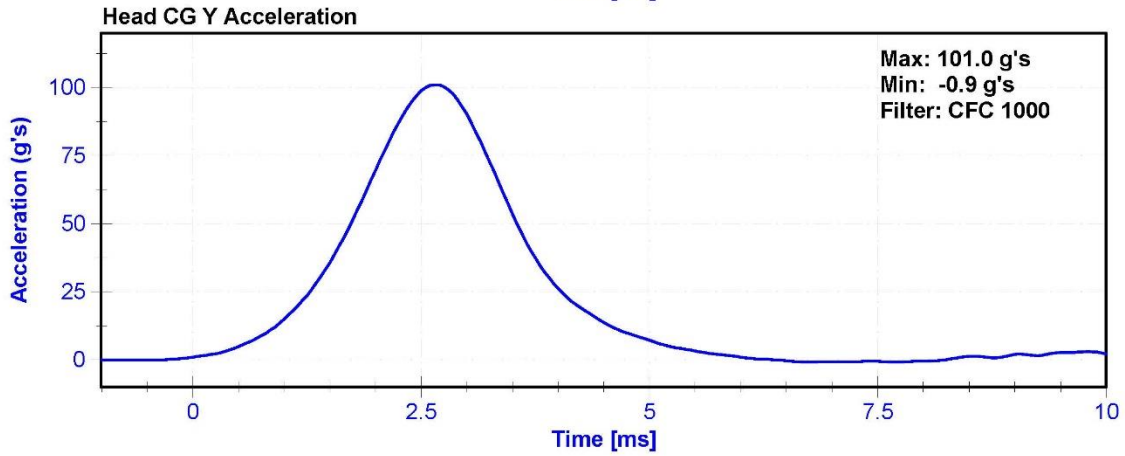
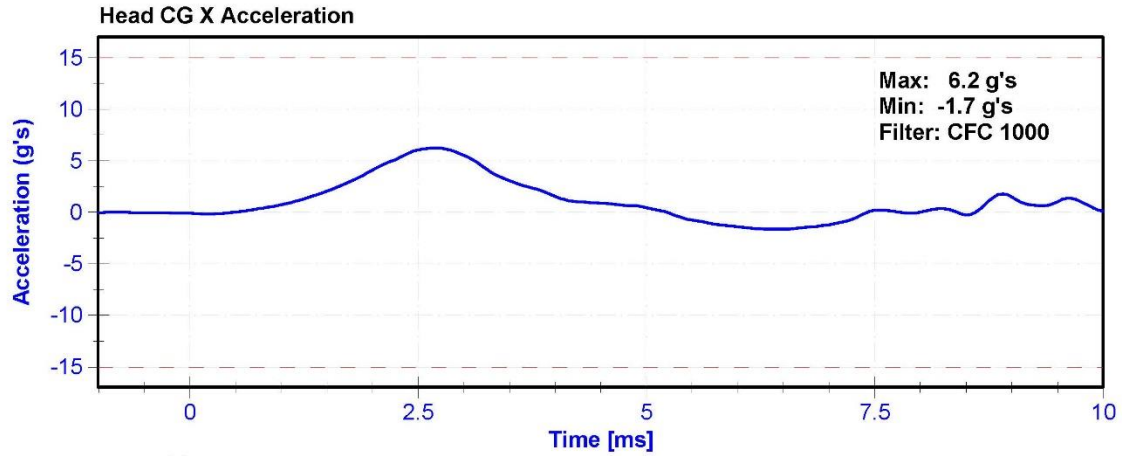
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	22.2	Pass
Humidity	10	70	%	28.1	Pass
Resultant Acceleration	115	137	g's	127.5	Pass
Oscillation	0	15	%	2.5	Pass
Fore-Aft Acceleration	-15	15	g's	6.2	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
X Accelerometer	ENDEVCO 7264	AC-P83420	10/16/2015	4/15/2016
Y Accelerometer	ENDEVCO 7264	AC-P52040	10/14/2015	4/13/2016
Z Accelerometer	ENDEVCO 7264CT	AC-P58737	10/14/2015	4/13/2016





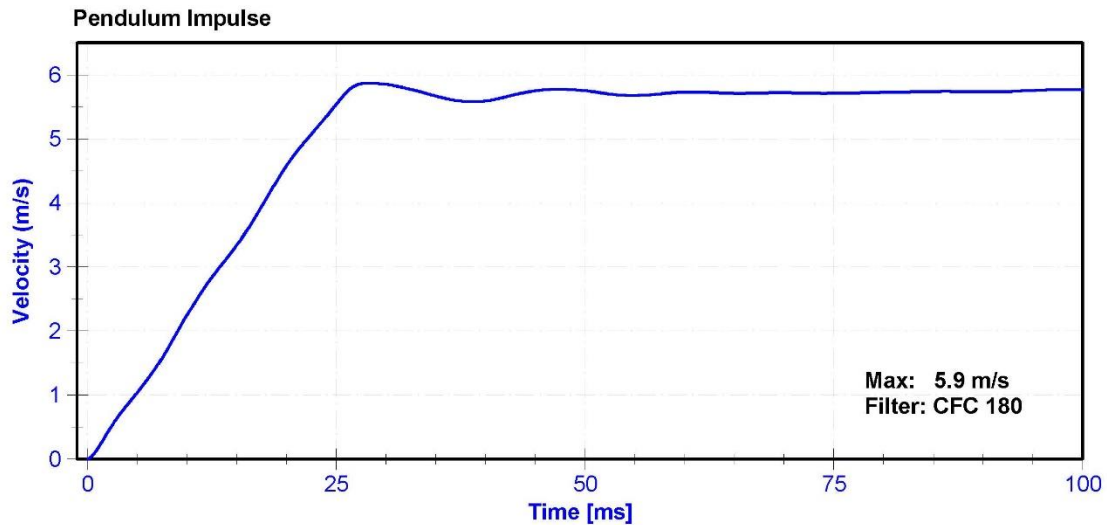
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

**Results**

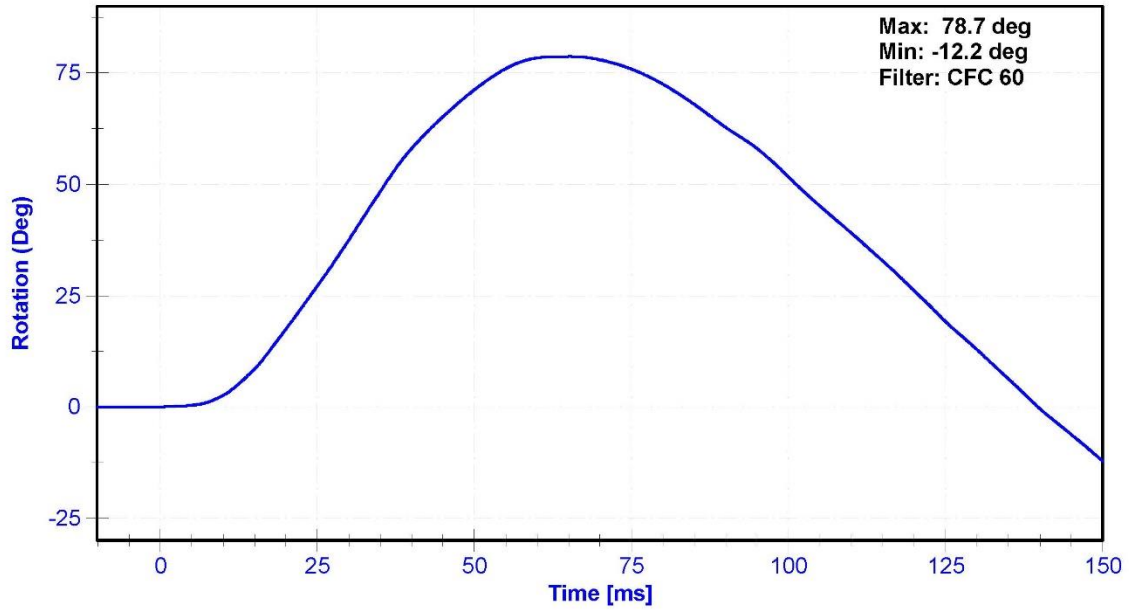
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.9	Pass
Humidity	10	70	%	40.2	Pass
Velocity	5.51	5.63	m/s	5.583	Pass
Pendulum Impulse at 10ms	2.2	2.8	m/s	2.25	Pass
Pendulum Impulse at 15ms	3.3	4.1	m/s	3.34	Pass
Pendulum Impulse at 20ms	4.4	5.4	m/s	4.58	Pass
Pendulum Impulse at 25ms	5.4	6.1	m/s	5.54	Pass
Pendulum Impulse from 25 to 100ms	5.5	6.2	m/s	5.87	Pass
Neck Rotation	71	81	deg	78.7	Pass
Time at Maximum Rotation	50	70	ms	65.2	Pass
Moment about the OC	36	44	Nm	40.8	Pass
Moment Decay to 0 Nm	102	126	ms	120.1	Pass

**Transducer Calibrations**

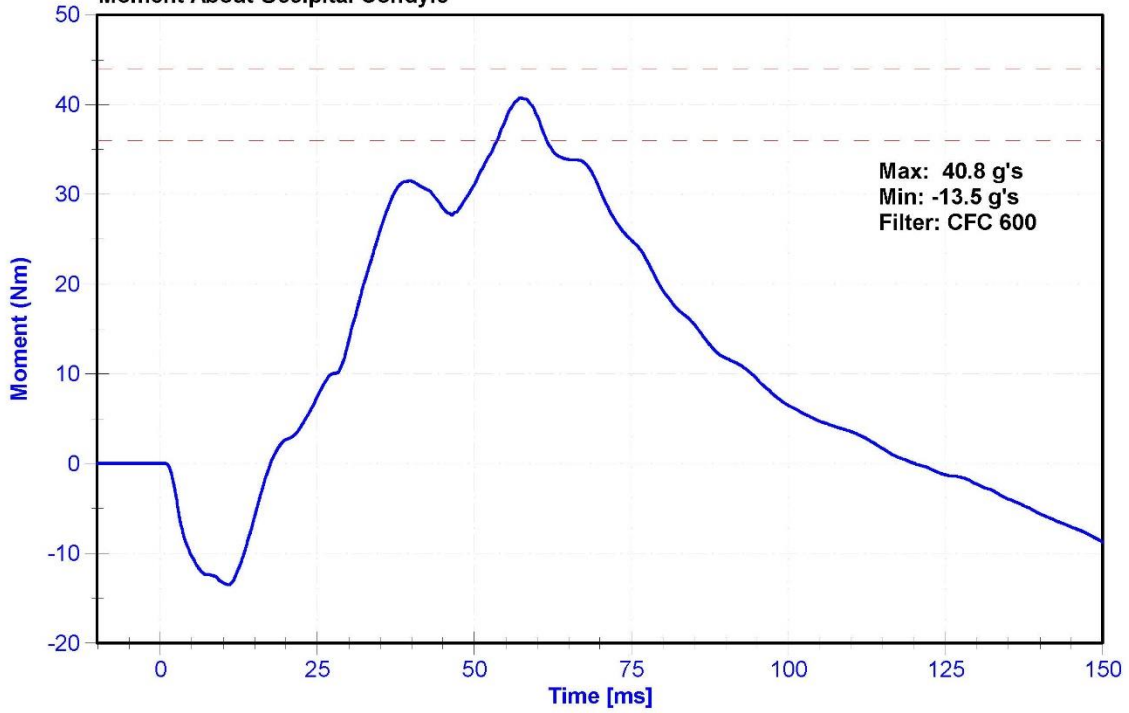
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	11/7/2015
Pendulum Potentiometer	Denton 78051-342	DS-184Pend	9/24/2015	9/23/2016
Condyle Potentiometer	Denton 78051-342	DS-185Pend	9/25/2015	9/24/2016
Upper Neck Load Cell	Denton 1716A	LC-2019Fy	6/29/2015	6/28/2016



Neck Rotation



Moment About Occipital Condyle



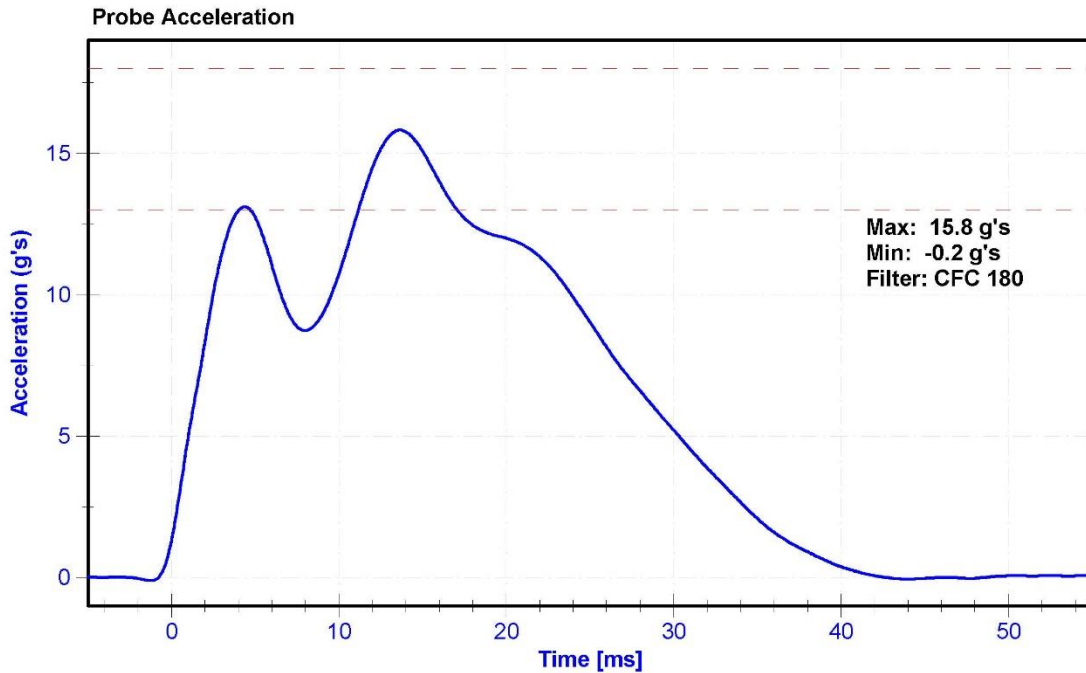
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

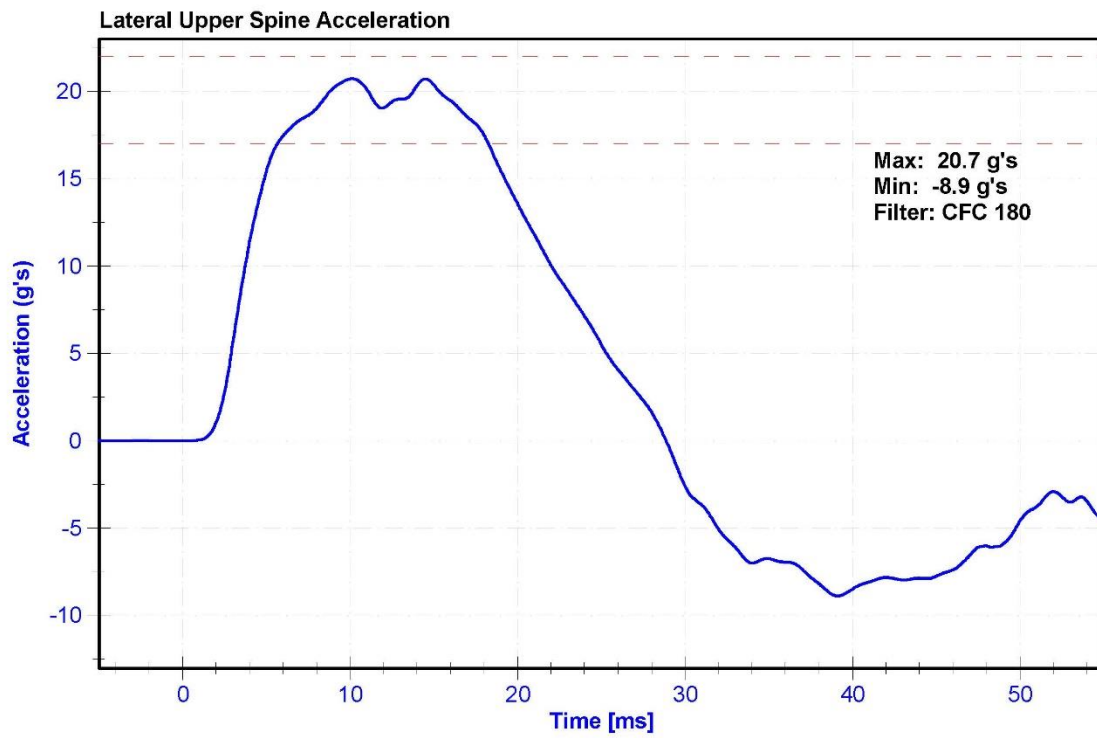
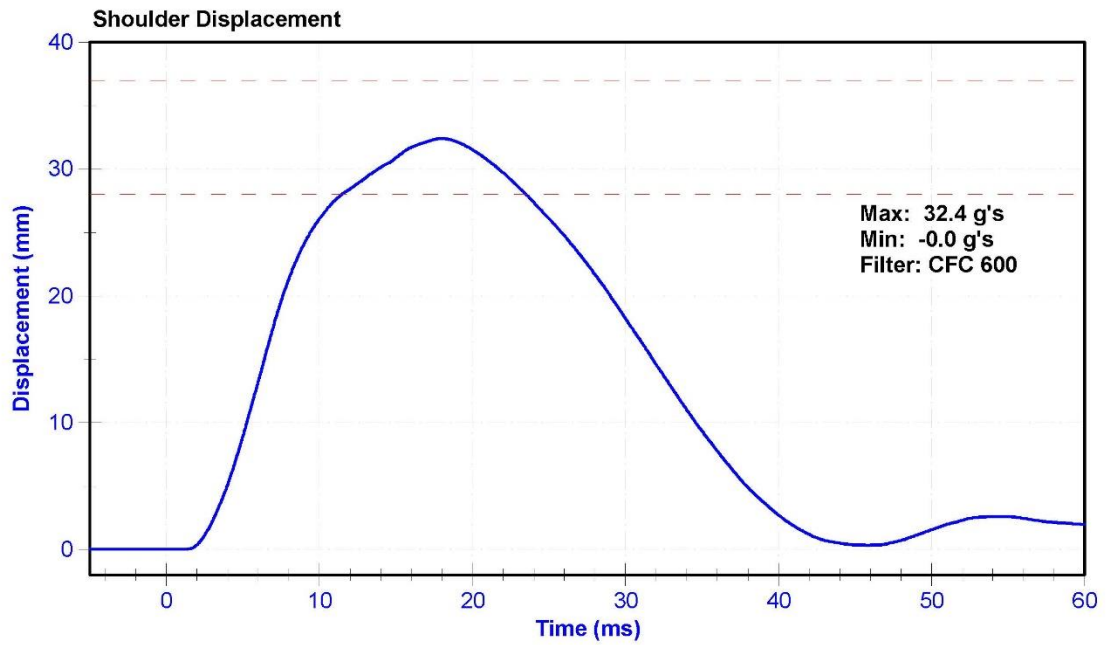
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	29.6	Pass
Velocity	4.2	4.4	m/s	4.35	Pass
Probe Acceleration	13	18	g's	15.8	Pass
Shoulder Deflection	28	37	mm	32.4	Pass
Lateral Upper Spine Acceleration	17	22	g's	20.7	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Shoulder Potentiometer	Servo 08TC1-3725	DS-008GFE	10/19/2015	10/18/2016
Upper Spine Y Accelerometer	ENDEVCO 7264CT	AC-P63315	10/19/2015	4/18/2016





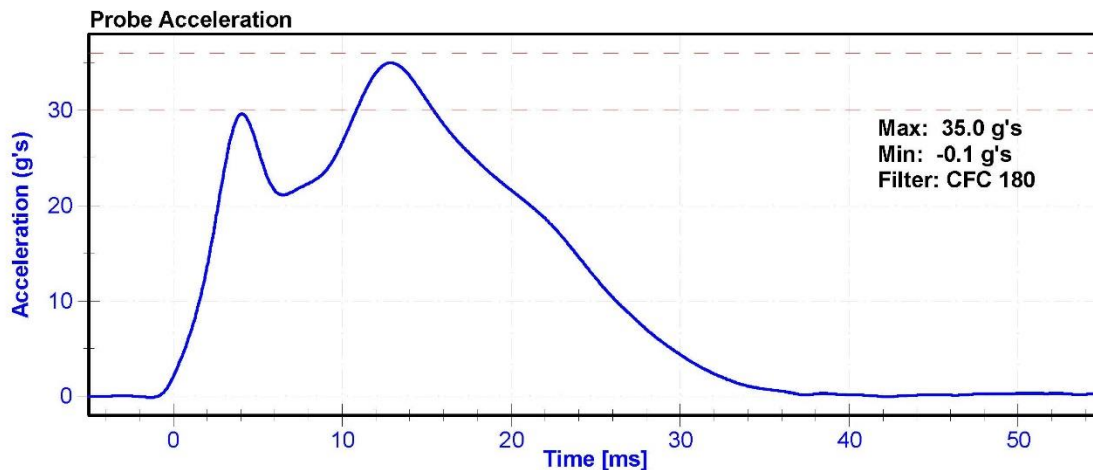
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

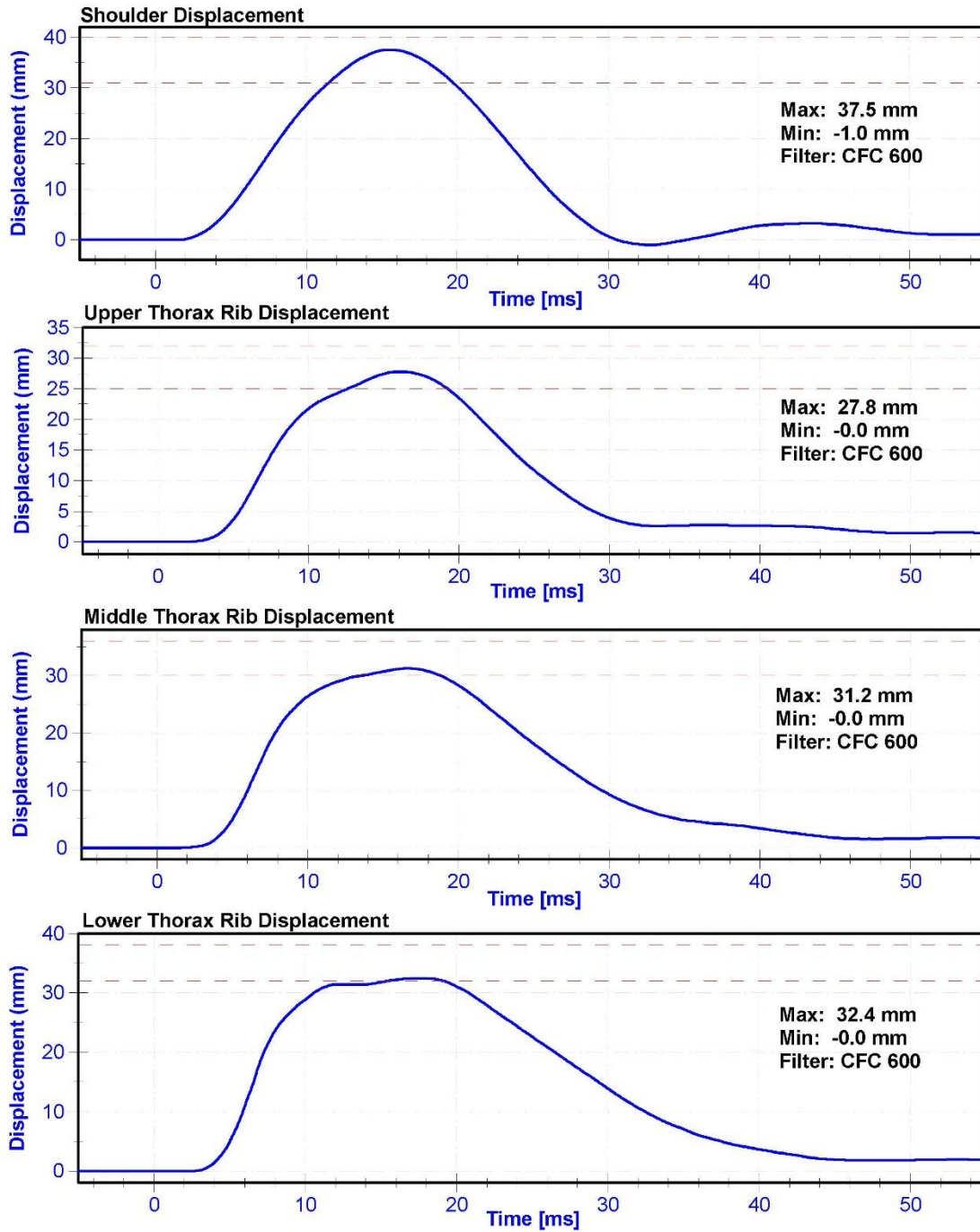
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	26.9	Pass
Velocity	6.6	6.8	m/s	6.70	Pass
Probe Acceleration after 5 ms	30	36	g's	35.0	Pass
Lateral Upper Spine Acceleration	34	43	g's	42.4	Pass
Lateral Lower Spine Acceleration	29	37	g's	36.7	Pass
Shoulder Deflection	31	40	mm	37.5	Pass
Upper Thorax Rib Deflection	25	32	mm	27.8	Pass
Mid Thorax Rib Deflection	30	36	mm	31.2	Pass
Lower Thorax Rib Deflection	32	38	mm	32.4	Pass

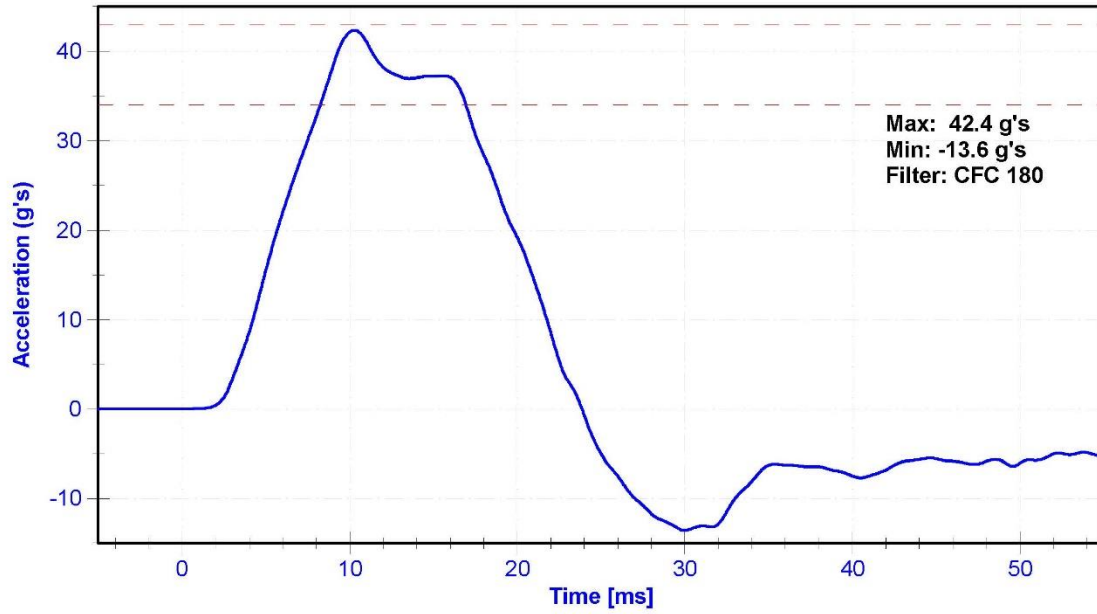
**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Upper Spine T1 Y Accelerometer	ENDEVCO 7264CT	AC-P63315	10/19/2015	4/18/2016
Upper Spine T12 Y Accelerometer	ENDEVCO 7264CT	AC-P51974	10/19/2015	4/18/2016
Shoulder Potentiometer	Servo 08TC1-3725	DS-008GFE	10/19/2015	10/18/2016
Upper Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1199GFE	10/19/2015	10/18/2016
Middle Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1246GFE	10/19/2015	10/18/2016
Lower Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1256GFE	10/19/2015	10/18/2016

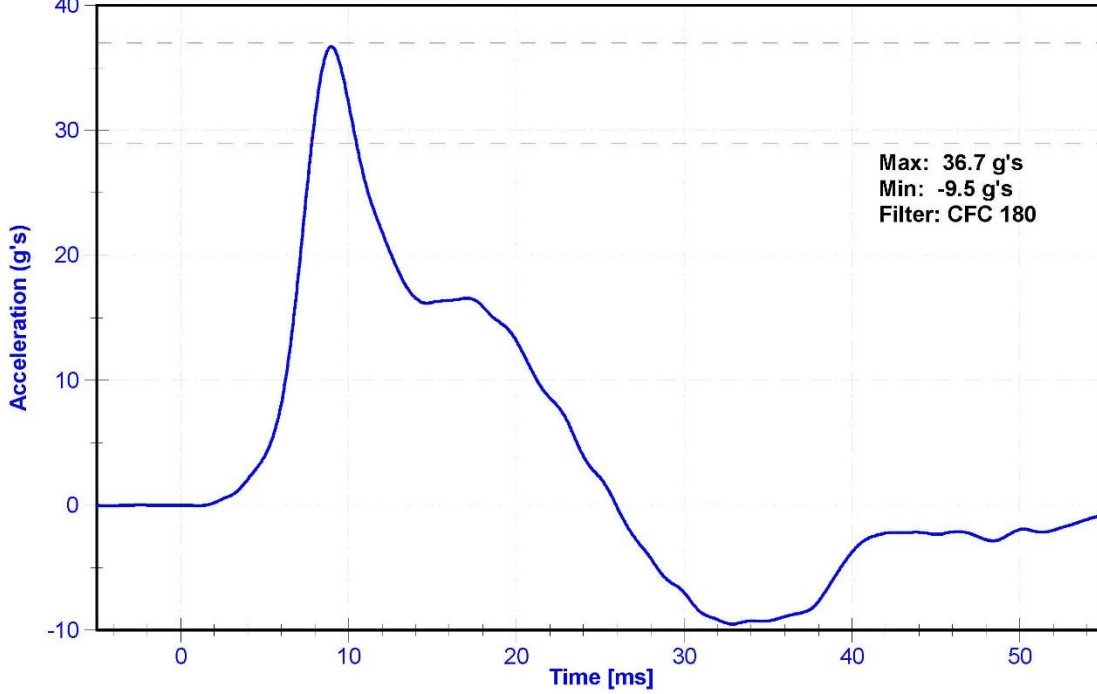




Lateral Upper Spine Acceleration



Lateral Lower Spine Acceleration



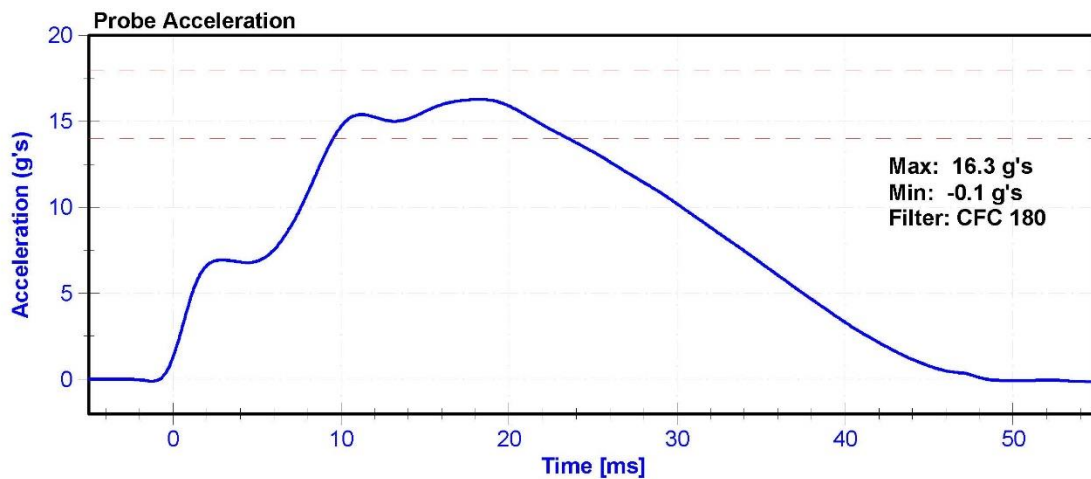
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

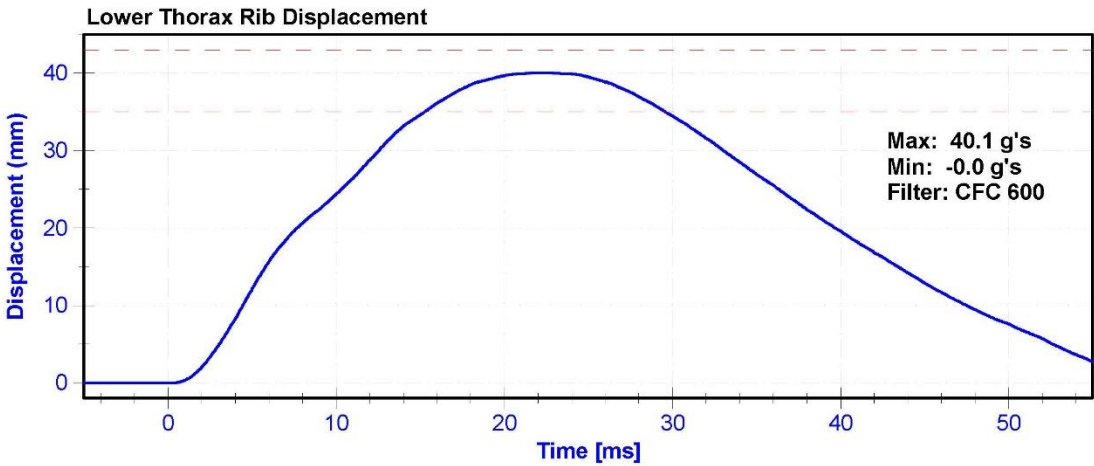
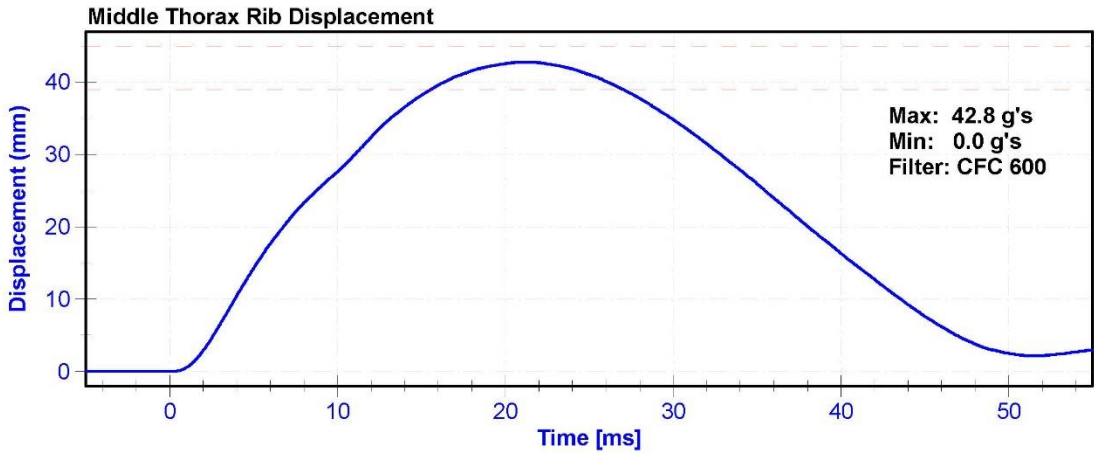
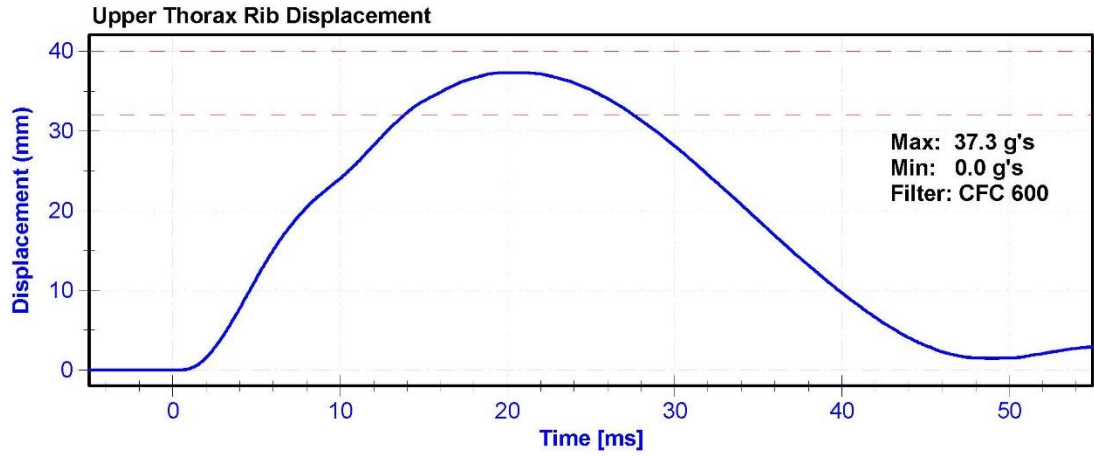
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	29.4	Pass
Velocity	4.2	4.4	m/s	4.35	Pass
Probe Acceleration	14	18	g's	16.3	Pass
Lateral Upper Spine Acceleration	13	17	g's	16.4	Pass
Lateral Lower Spine Acceleration	7	11	g's	9.8	Pass
Upper Thorax Rib Deflection	32	40	mm	37.3	Pass
Middle Thorax Rib Deflection	39	45	mm	42.8	Pass
Lower Thorax Rib Deflection	35	43	mm	40.1	Pass

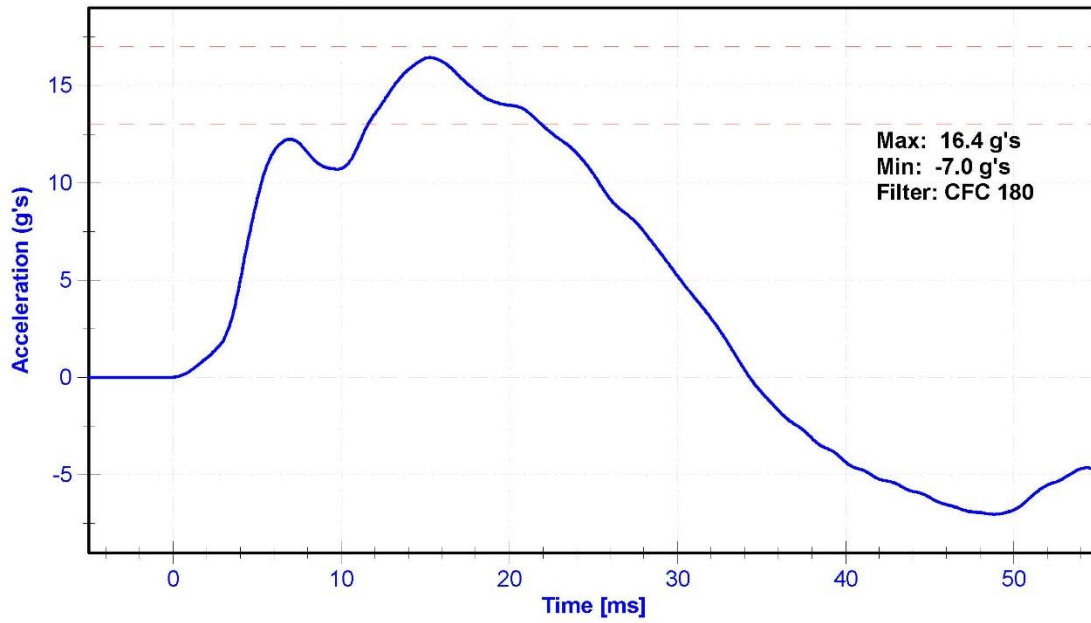
**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Upper Spine Y Accelerometer	ENDEVCO 7264CT	AC-P63315	10/19/2015	4/18/2016
Lower Spine Y Accelerometer	ENDEVCO 7264CT	AC-P51974	10/19/2015	4/18/2016
Upper Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1199GFE	10/19/2015	10/18/2016
Middle Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1246GFE	10/19/2015	10/18/2016
Lower Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1256GFE	10/19/2015	10/18/2016

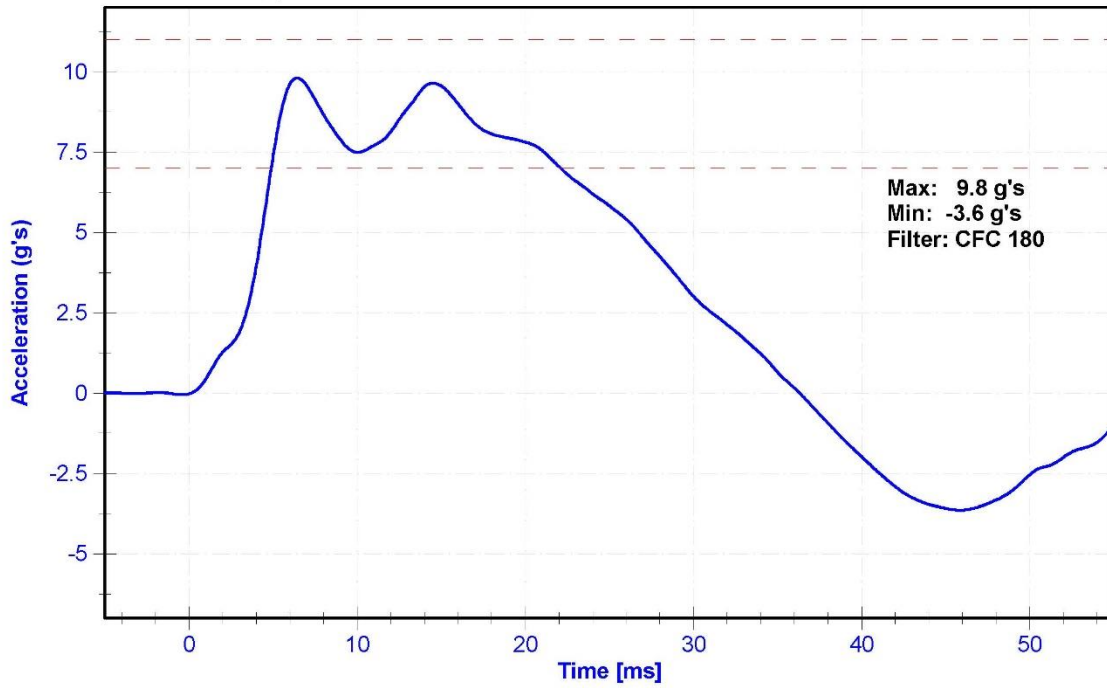




Lateral Upper Spine Acceleration



Lateral Lower Spine Acceleration



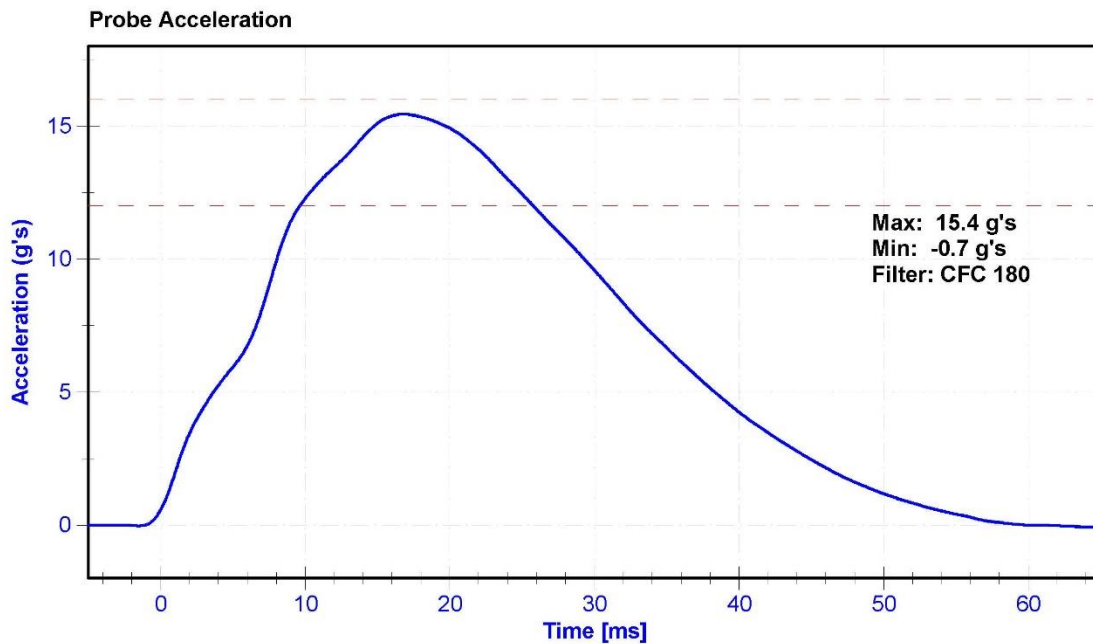
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

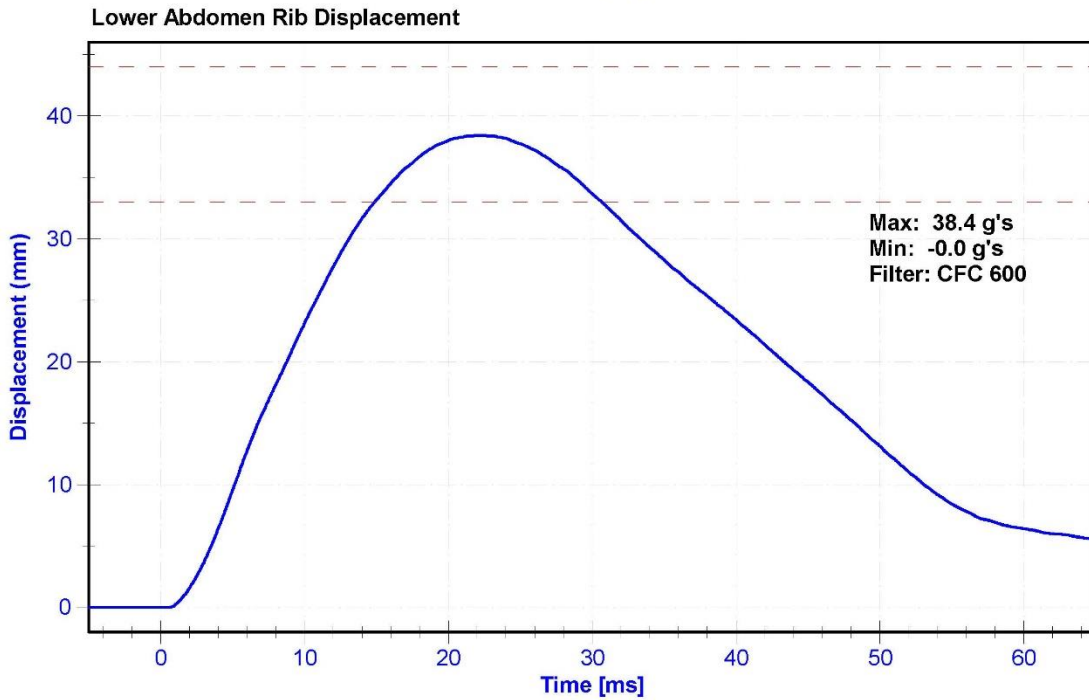
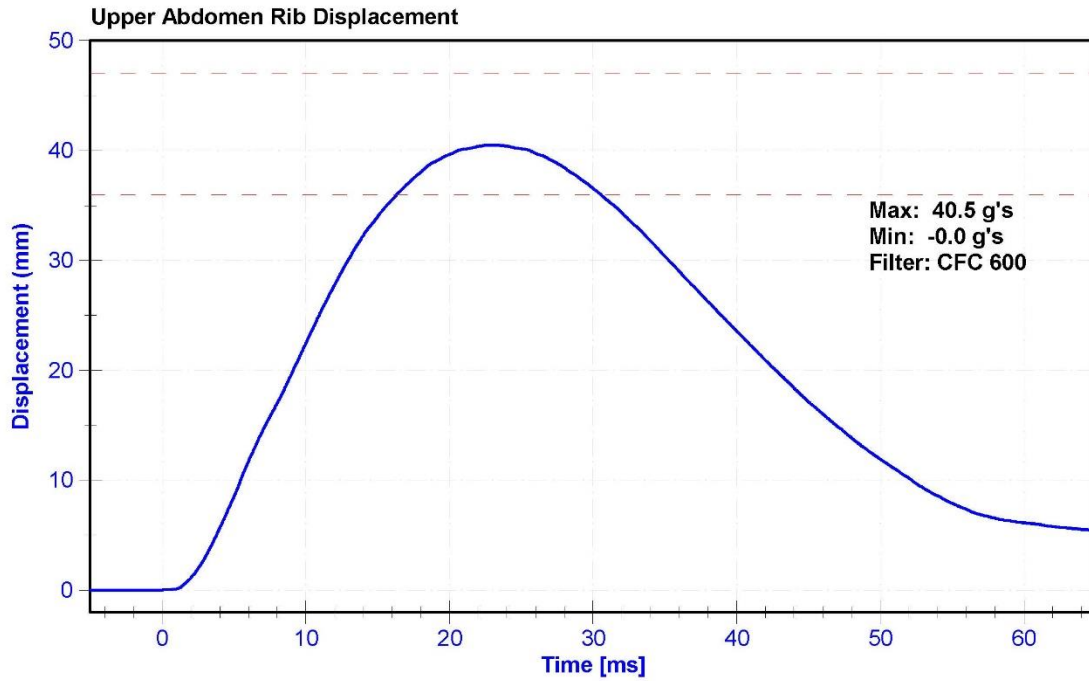
**Results**

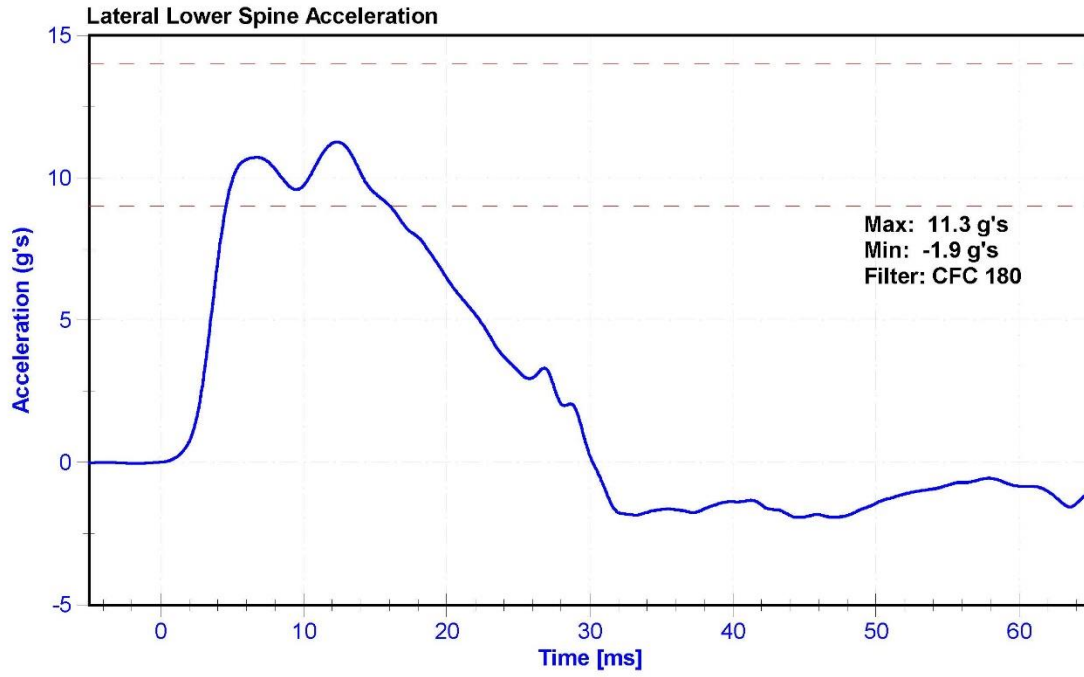
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	29.1	Pass
Velocity	4.2	4.4	m/s	4.35	Pass
Probe Acceleration	12	16	g's	15.4	Pass
Lateral Lower Spine Acceleration	9	14	g's	11.3	Pass
Upper Abdomen Rib Deflection	36	47	mm	40.5	Pass
Lower Abdomen Rib Deflection	33	44	mm	38.4	Pass

**Transducer Calibrations**

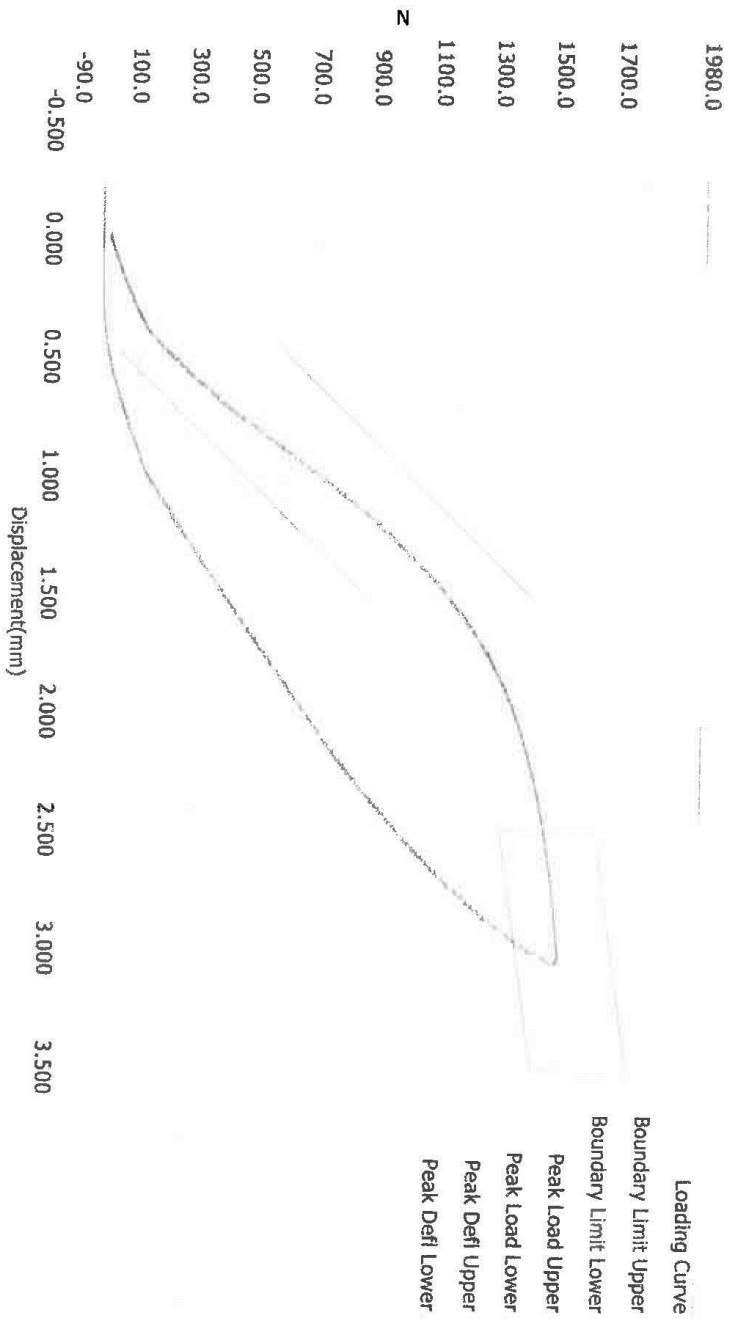
Channel	Manufacturer	Serial Number	Calibratio Date	Calibration Due Date
Probe Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Lower Spine Y Accelerometer	ENDEVCO 7264CT	AC-P51974	10/19/2015	4/18/2016
Upper Abdomen Rib Potentiometer	Servo 08CT1-3725	DS-1274GFE	10/19/2015	10/18/2016
Lower Abdomen Rib Potentiometer	Servo 08CT1-3725	DS-1285GFE	10/19/2015	10/18/2016







**Resultant Data - SIDIIS Plug Compression**



ATD Calibration Lab

CRASH  
10 Labels

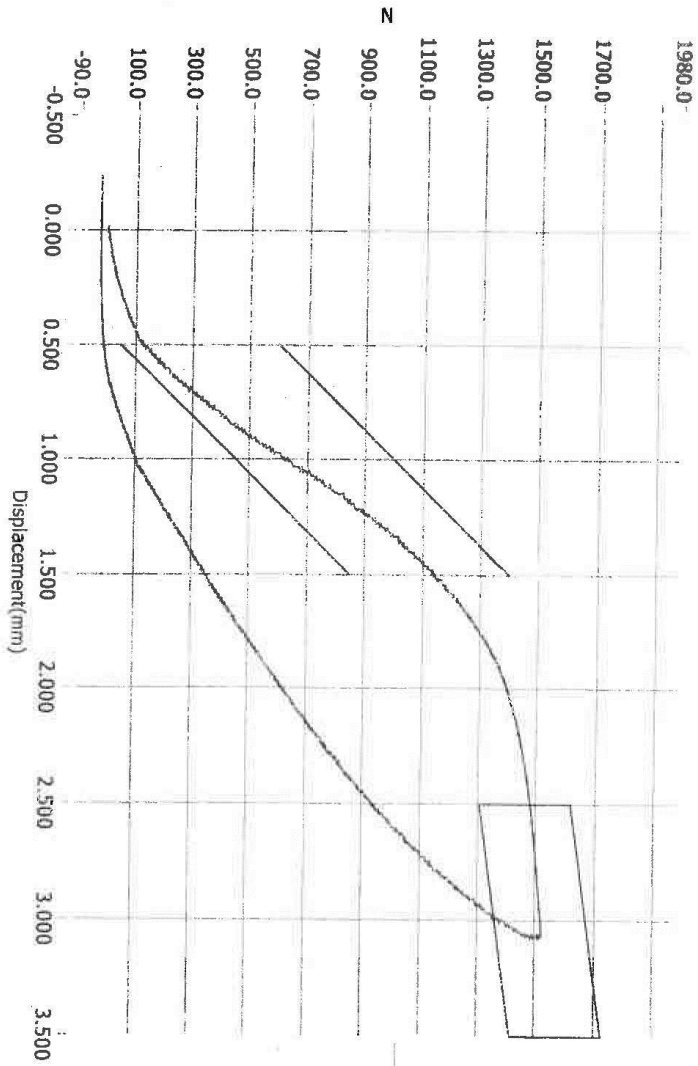
303

<u>Test ID</u>	<u>Part Serial Number</u>	<u>Test Date</u>	<u>Test Time</u>
	47096	10/15/2011	1:09 PM
<u>Cert ID</u>	<u>ATD Serial Number</u>	<u>ATD Type</u>	
	N/A	SIDIIS	

Current Date : 10/15/2011

Current Time : 13:10:06

### Resultant Data - SIDIIS Plug Compression



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

ATD Calibration Lab  
 CERTIFICATION  
 10/28/15  
 303

Test ID  
 Part Serial Number  
 48900  
 Test Date  
 12/5/2011  
 Test Time  
 7:45 PM  
 Cert ID  
 ATD Serial Number  
 N/A  
 ATD Type  
 SIDIIS

Current Date : 12/5/2011

Current Time : 19:45:39

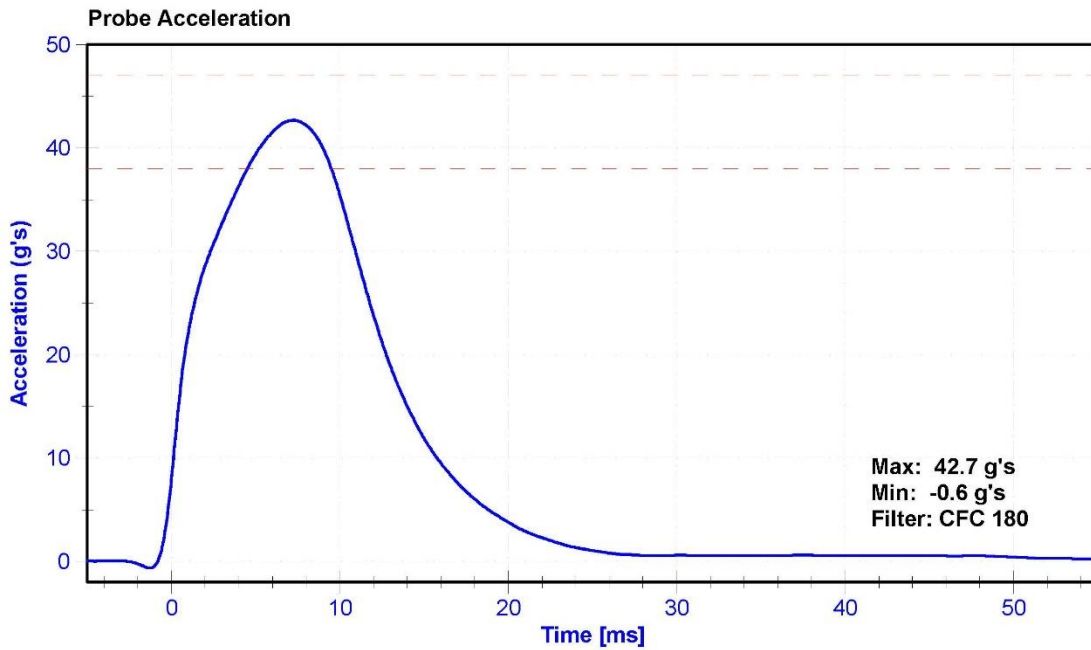
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

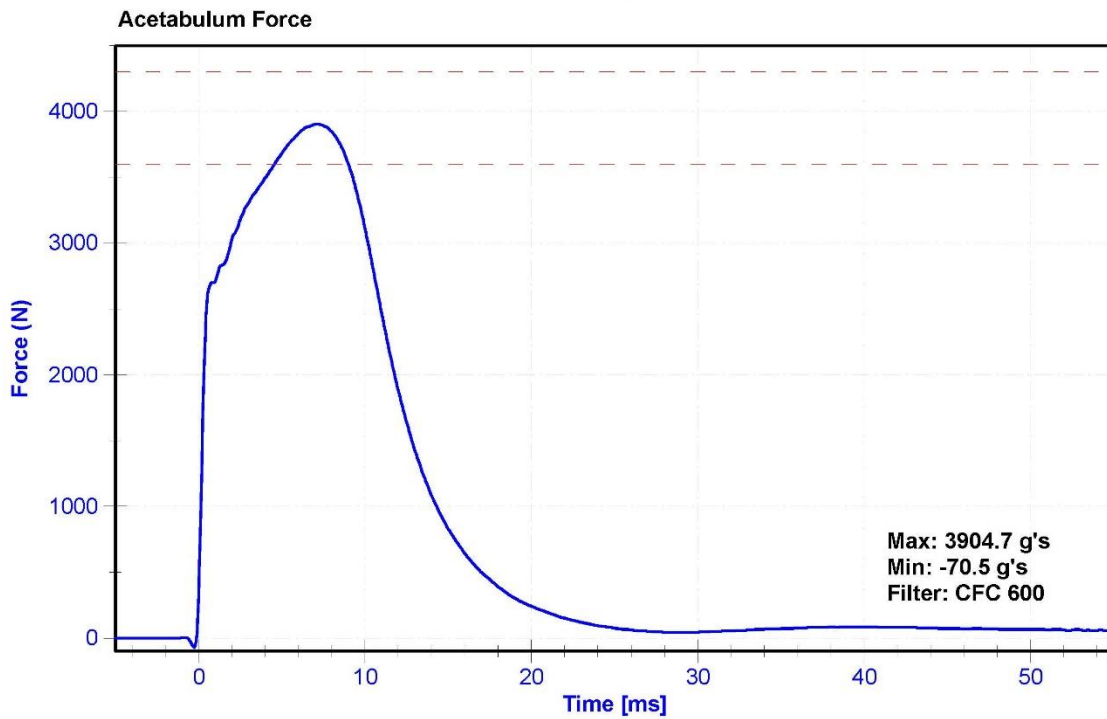
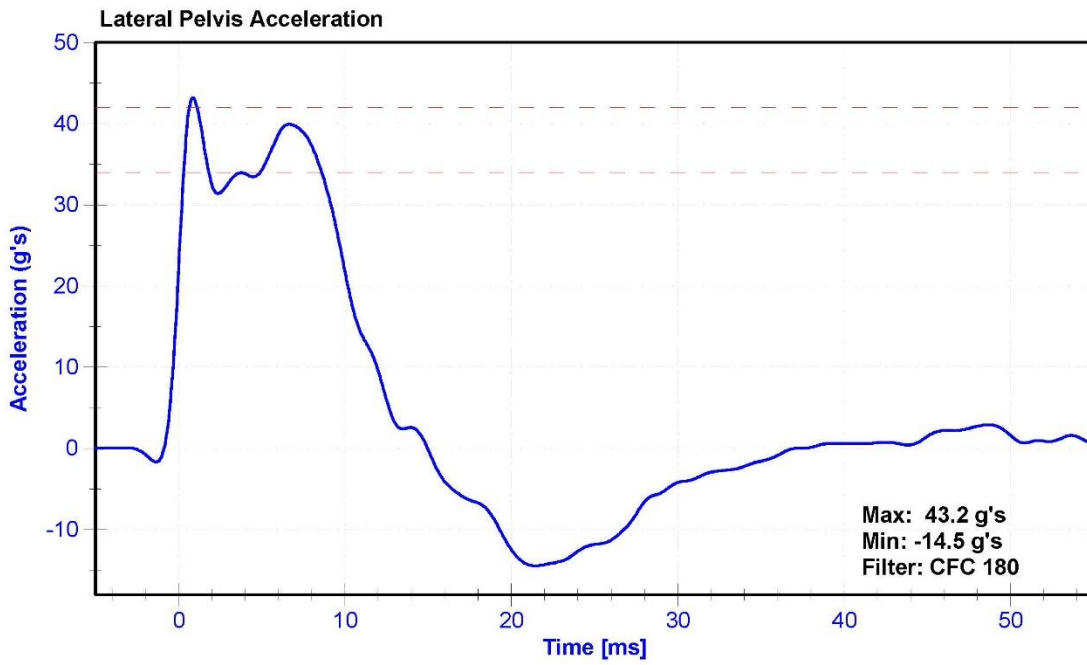
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.7	Pass
Humidity	10	70	%	43.8	Pass
Velocity	6.6	6.8	m/s	6.61	Pass
Probe Acceleration	38	47	g's	42.7	Pass
Lateral Pelvis Acceleration after 6ms	34	42	g's	39.9	Pass
Acetabulum Force	3,600	4,300	N	3904.7	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Pelvis Y Accelerometer	ENDEVCO 7264	AC-P51259	10/19/2015	4/18/2016
Acetabulum Load Cell	Denton IF-520	LC-236Fy	6/29/2015	6/28/2016
Certification Plug	Humanetics	48900	12/05/2011	N/A
Crash Test Plug	Humanetics	47096	10/15/2011	N/A





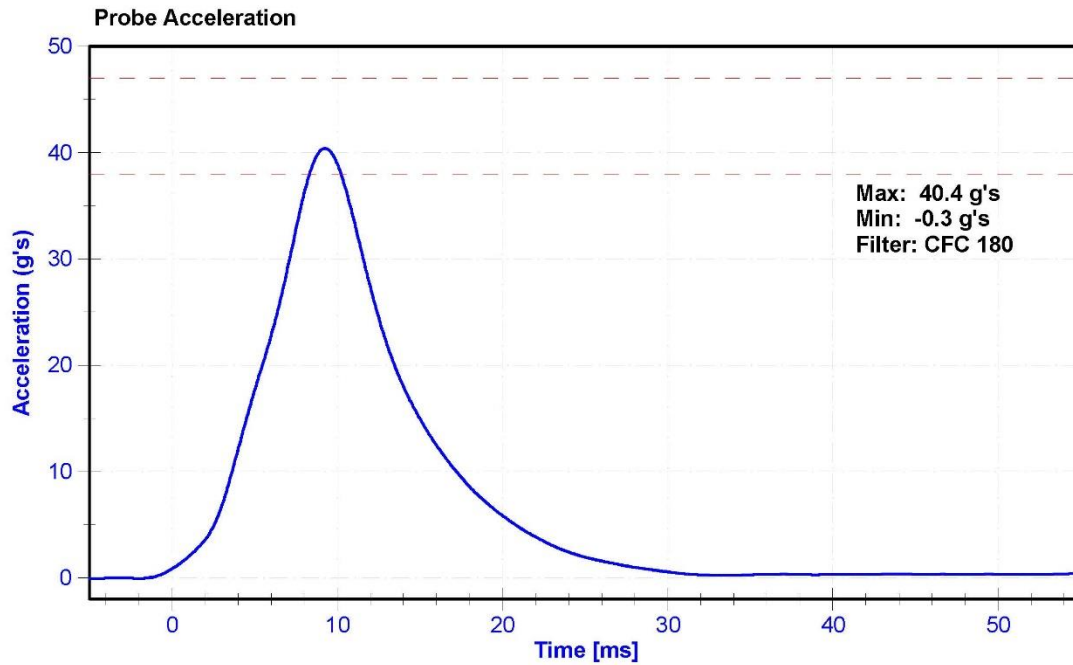
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

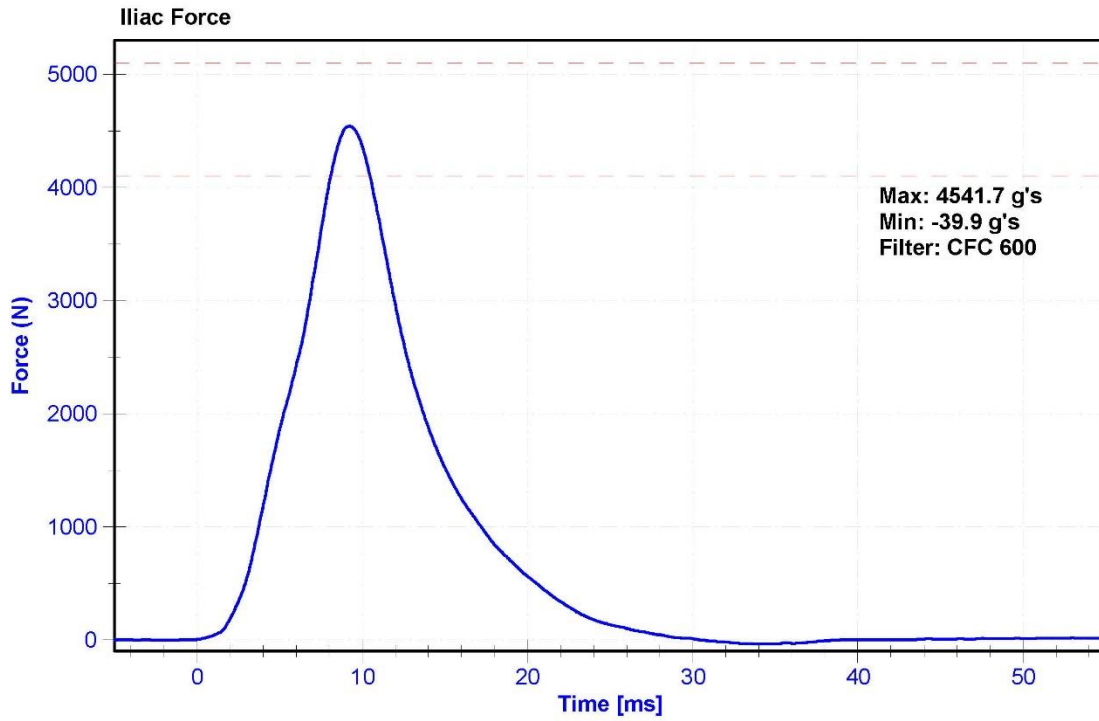
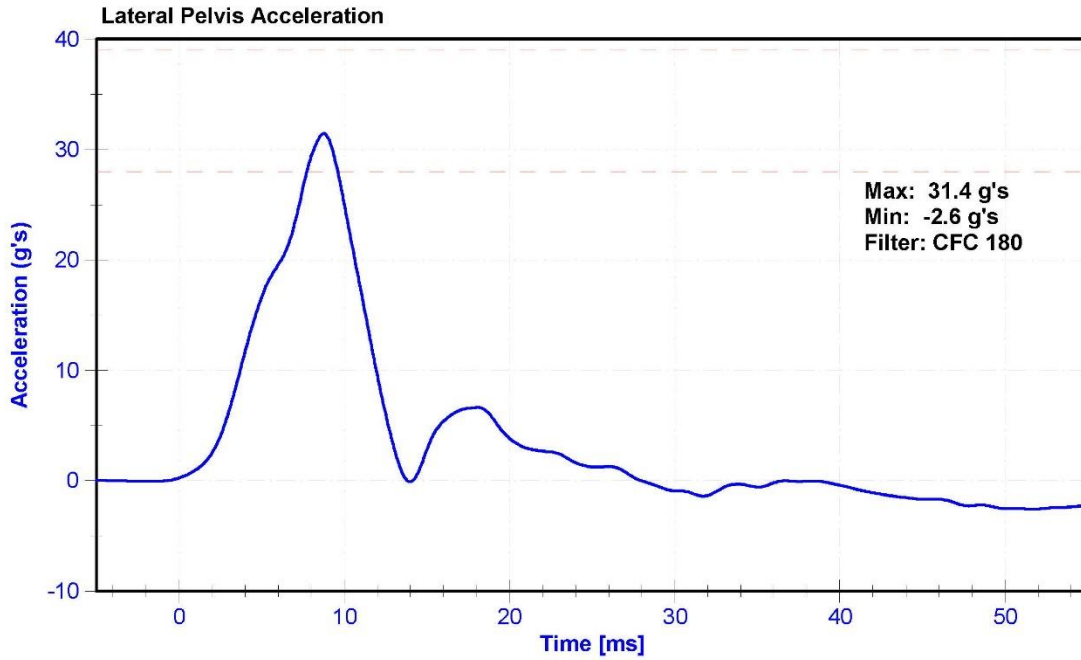
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.9	Pass
Humidity	10	70	%	29.2	Pass
Velocity	4.2	4.4	m/s	4.35	Pass
Probe Acceleration	36	45	g's	40.4	Pass
Lateral Pelvis Acceleration	28	39	g's	31.4	Pass
Iliac Force	4,100	5,100	N	4541.7	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Pelvis Y Accelerometer	ENDEVCO 7264	AC-P51259	10/19/2015	4/18/2016
Iliac Load Cell	DENTON 3228J	LC-285Fy	7/21/2015	7/20/2016





**CALIBRATION TEST RESULTS**

**POST-TEST**

**EUROSID 2 (ES-2RE) MALE – DRIVER ATD**

**SERIAL NO: F034**

**(CONFIGURED FOR LEFT SIDE IMPACT)**

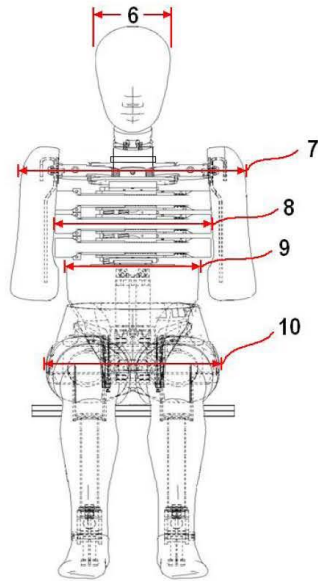


External Measurements - EuroSID-2re

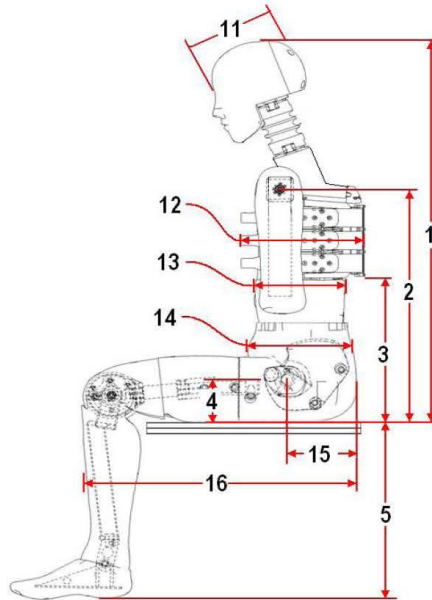
Technician: M. Geesey

Date: 11/12/2015

Dummy Serial Number: F034



FRONT VIEW



SIDE VIEW

Dim. No.	Description	Specification (mm)		Result (mm)	Pass/Fail
1	Sitting Height	900	918	910	Pass
2	Seat to Shoulder Joint	558	572	560	Pass
3	Seat to Lower Face of Thoracic Spine Box	346	356	349	Pass
4	Seat to Hip Joint (center of bolt)	97	103	100	Pass
5	Sole to Seat, Sitting	333	451	415	Pass
6	Head Width	152	158	154	Pass
7	Shoulder/Arm Width	461	479	478	Pass
8	Thorax Width	322	332	329	Pass
9	Abdomen Width	273	287	282	Pass
10	Pelvis Lap Width	359	373	369	Pass
11	Head Depth	196	206	201	Pass
12	Thorax Depth	262	272	267	Pass
13	Abdomen Depth	194	204	199	Pass
14	Pelvis Depth	235	245	239	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150	160	155	Pass
16	Back of Buttocks to Front Knee	597	615	603	Pass

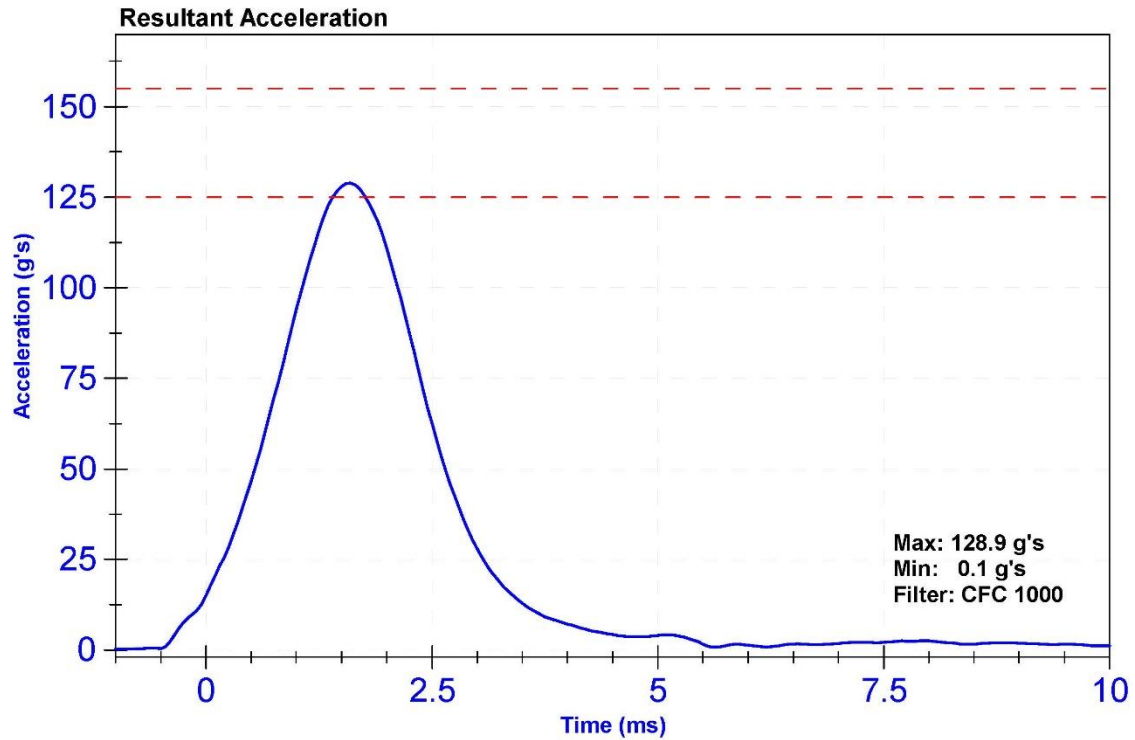
ATD Manufacturer	FTSS	Test Technician	R. Weil
ATD Serial Number	FO34	Laboratory Supervisor	M. Goehle

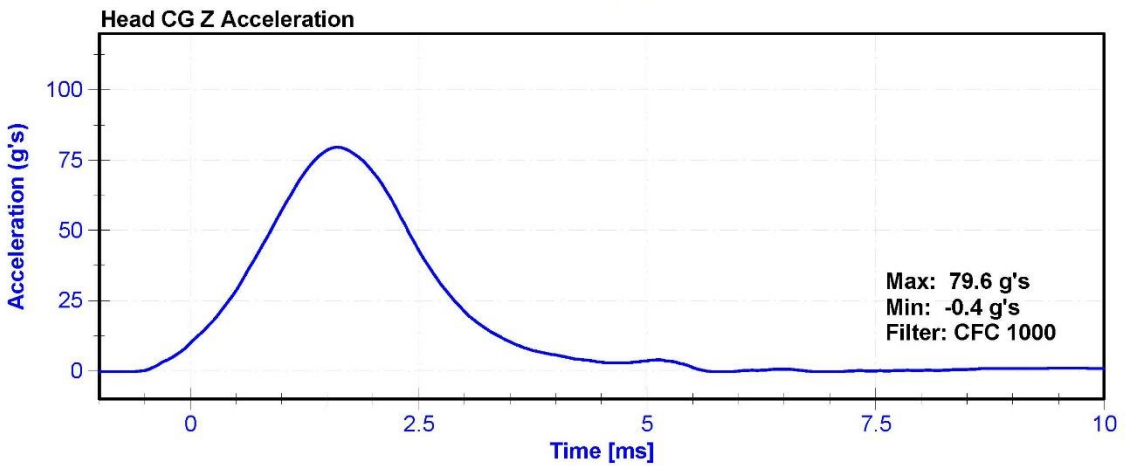
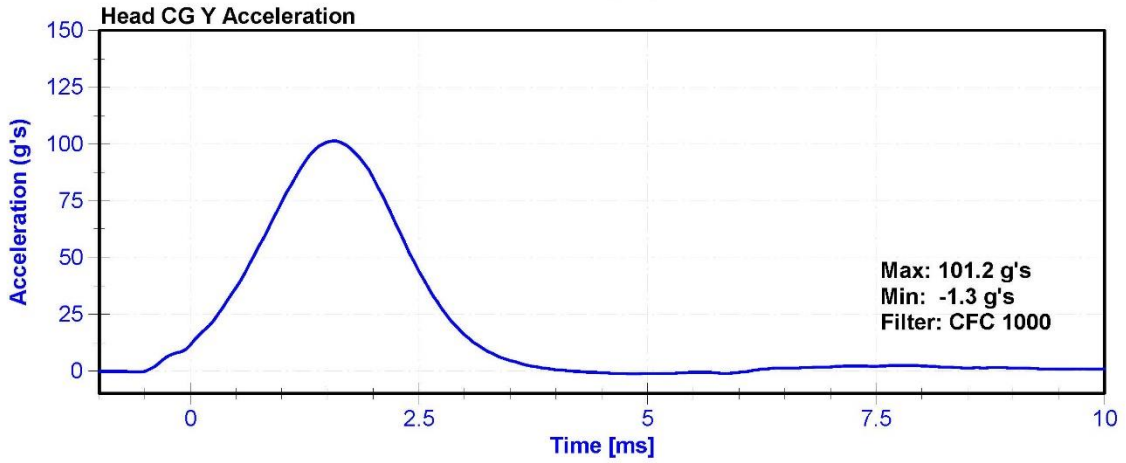
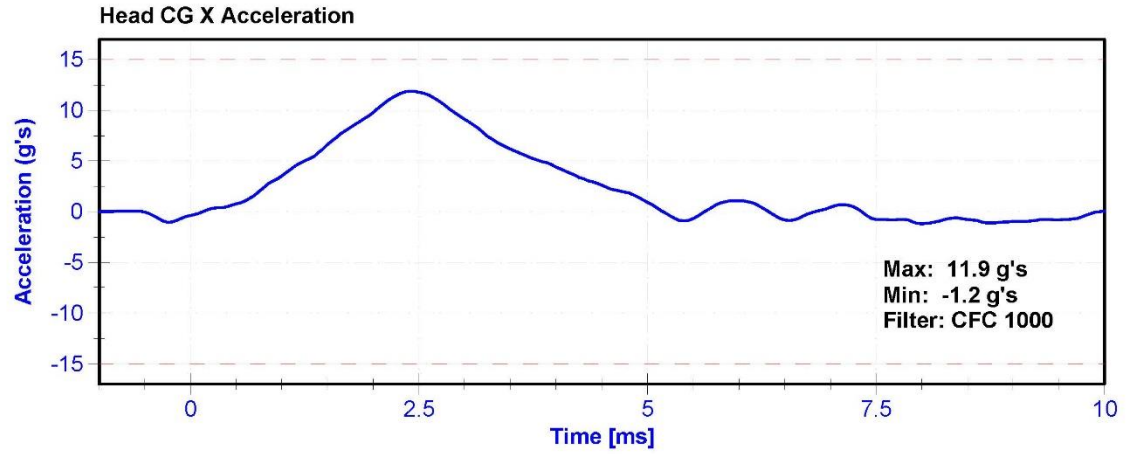
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.8	Pass
Humidity	10	70	%	29.5	Pass
Resultant Acceleration	125	155	g's	128.9	Pass
Oscillation	0	15	%	3.22	Pass
Fore-Aft Acceleration	-15	15	g's	11.9	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
X Accelerometer	ENDEVCO 7264CT	AC-P58904	10/19/2015	4/18/2016
Y Accelerometer	ENDEVCO 7264CT	AC-P58911	10/19/2015	4/18/2016
Z Accelerometer	ENDEVCO 7264CT	AC-P58776	10/19/2015	4/18/2016





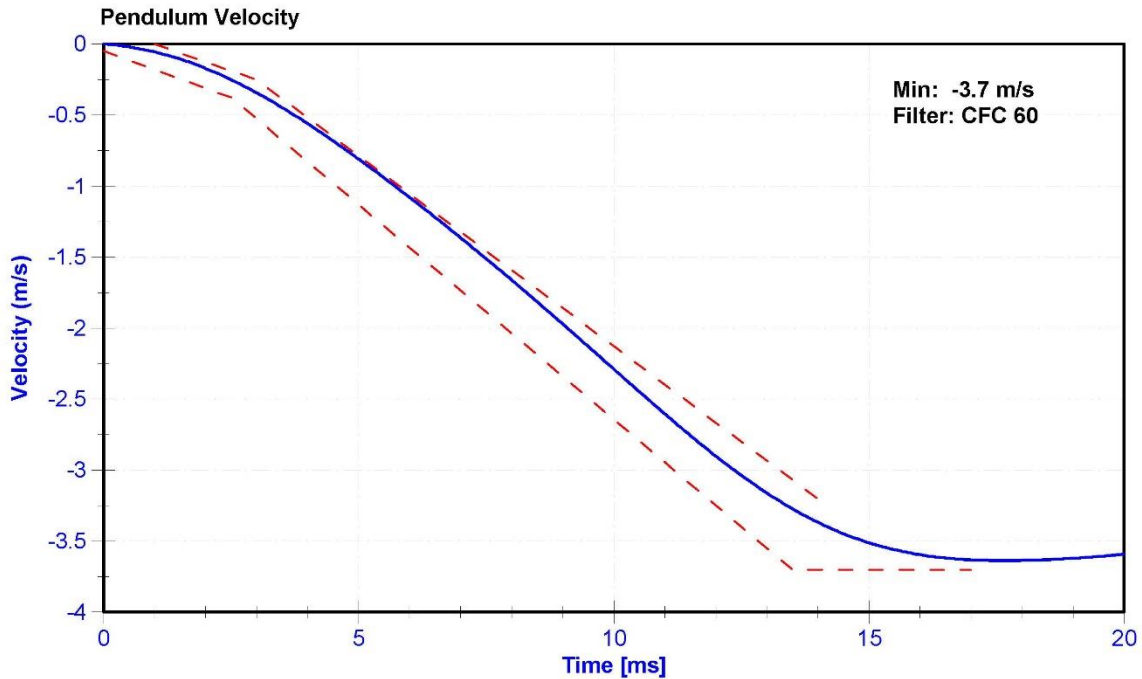
ATD Manufacturer	FTSS	Test Technician	R. Weil
ATD Serial Number	F034	Laboratory Supervisor	M. Goehle

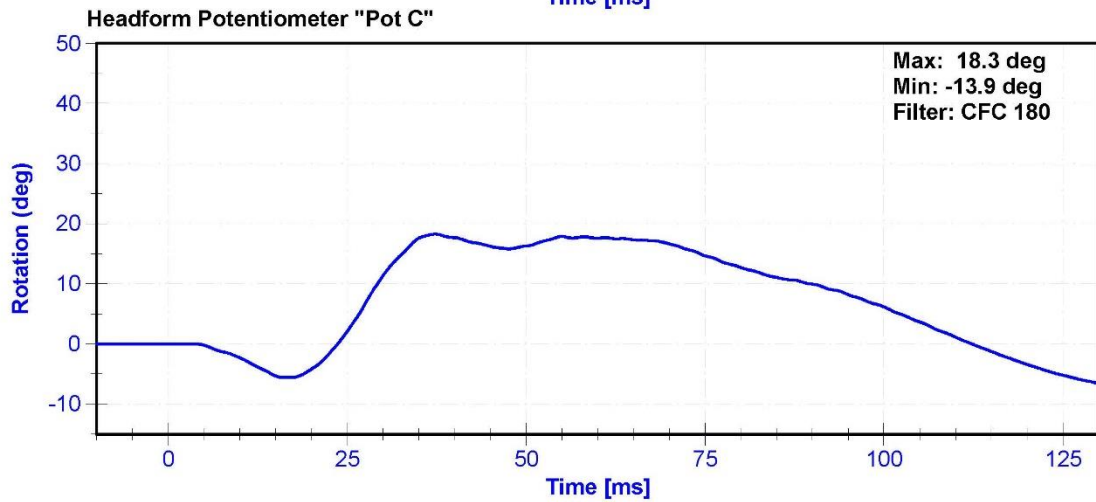
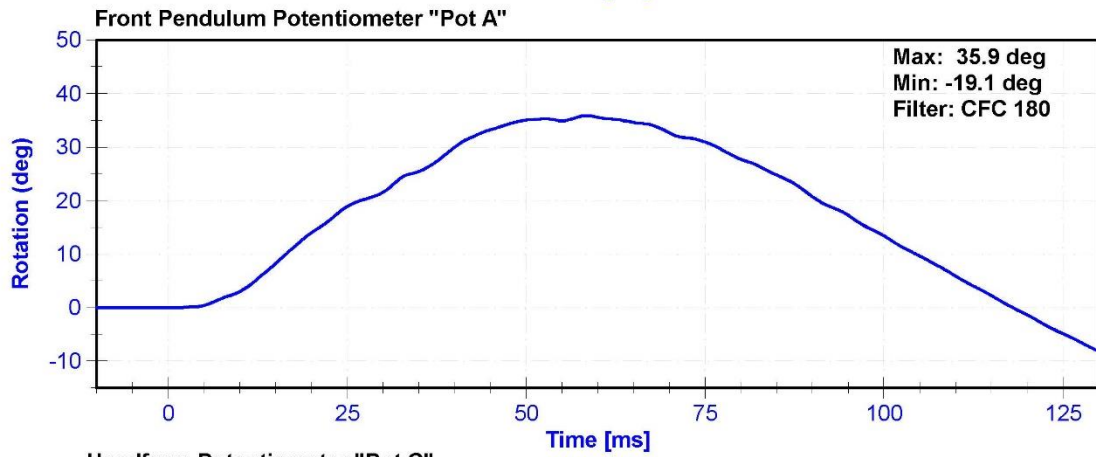
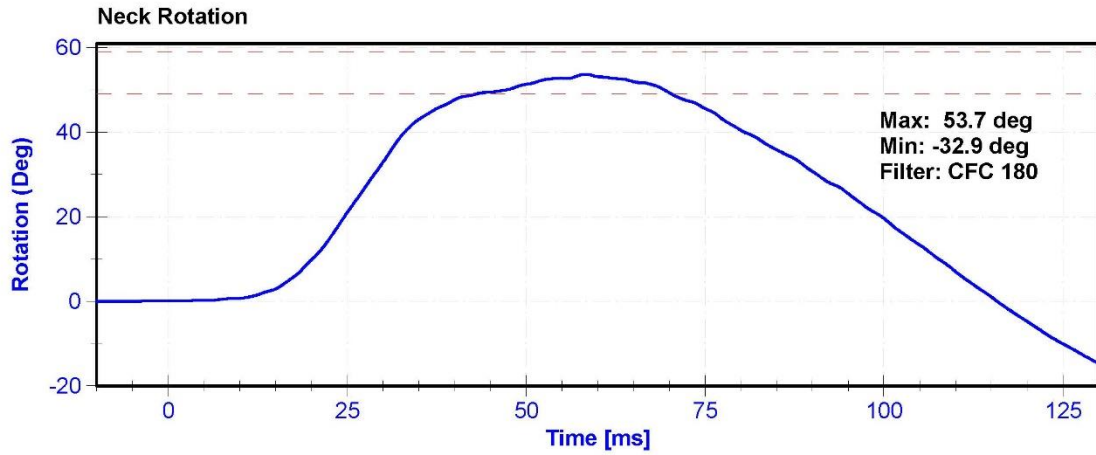
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.7	Pass
Humidity	10	70	%	30.5	Pass
Velocity	3.3	3.5	m/s	3.46	Pass
Lateral Neck Rotation	49	59	deg	53.7	Pass
Time at Maximum Rotation	54	66	ms	58.3	Pass
Time of Rotation Decay from Maximum	53	88	ms	57.5	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Front Pendulum Potentiometer	SP22G	DS-094	9/24/2015	9/23/2016
Headform Potentiometer	SP22G	DS-095	9/24/2015	9/23/2016





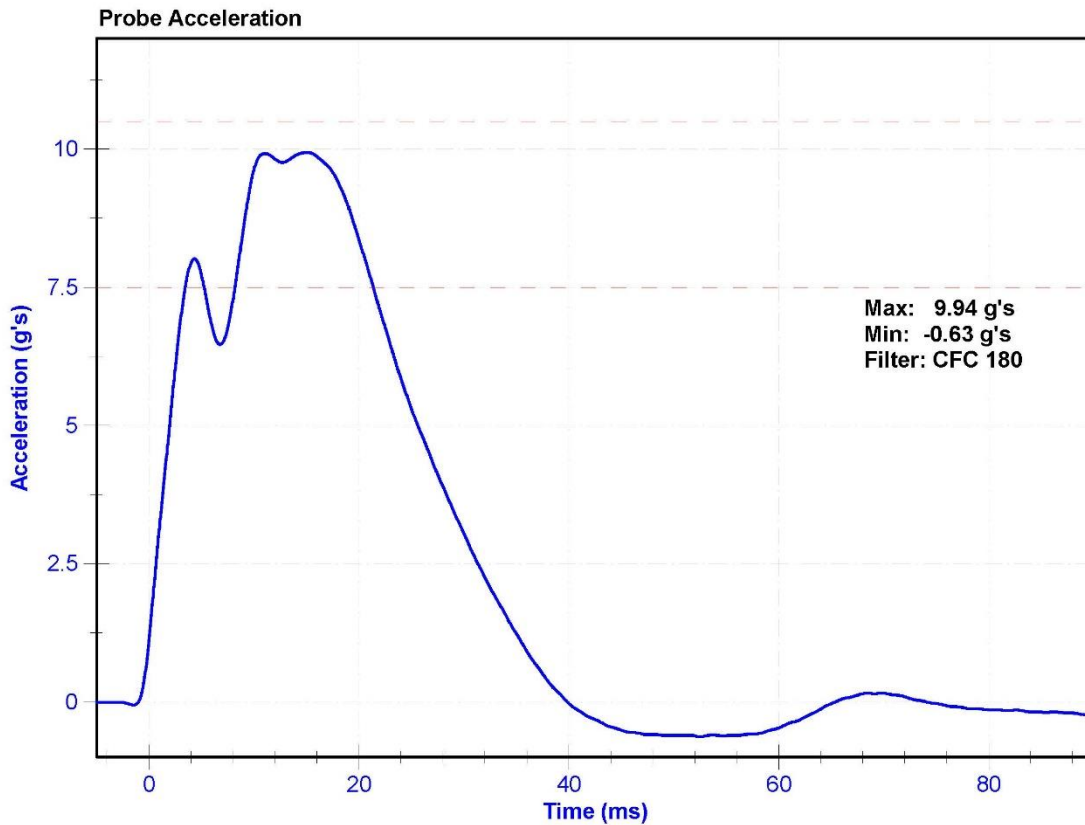
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	F034	Laboratory Supervisor	M. Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	44.7	Pass
Velocity	4.2	4.4	m/s	4.34	Pass
Probe Acceleration	7.5	10.5	g's	9.94	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016



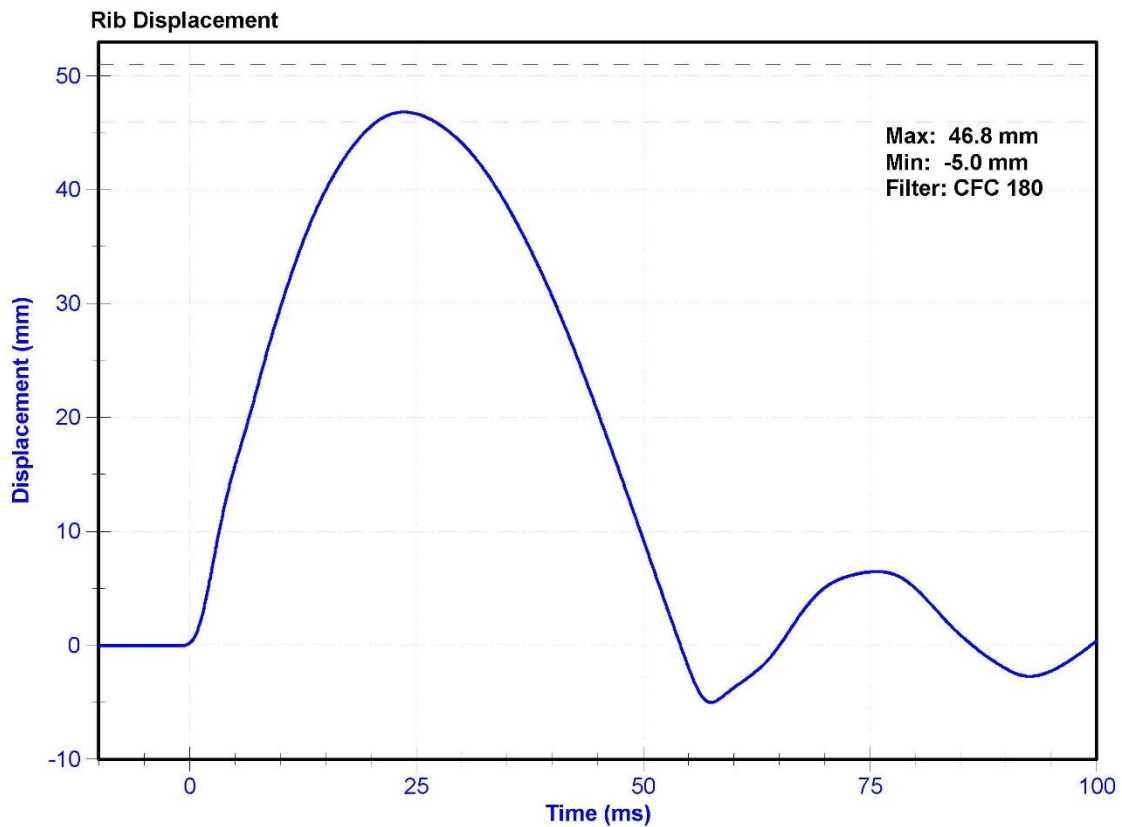
ATD Manufacturer	FTSS	Test Technician	R. Weil
ATD Serial Number	F034	Laboratory Supervisor	M. Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.6	Pass
Humidity	10	70	%	29.1	Pass
Rib Displacement	46	51	mm	46.8	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-183GFE	10/19/2015	10/18/2016



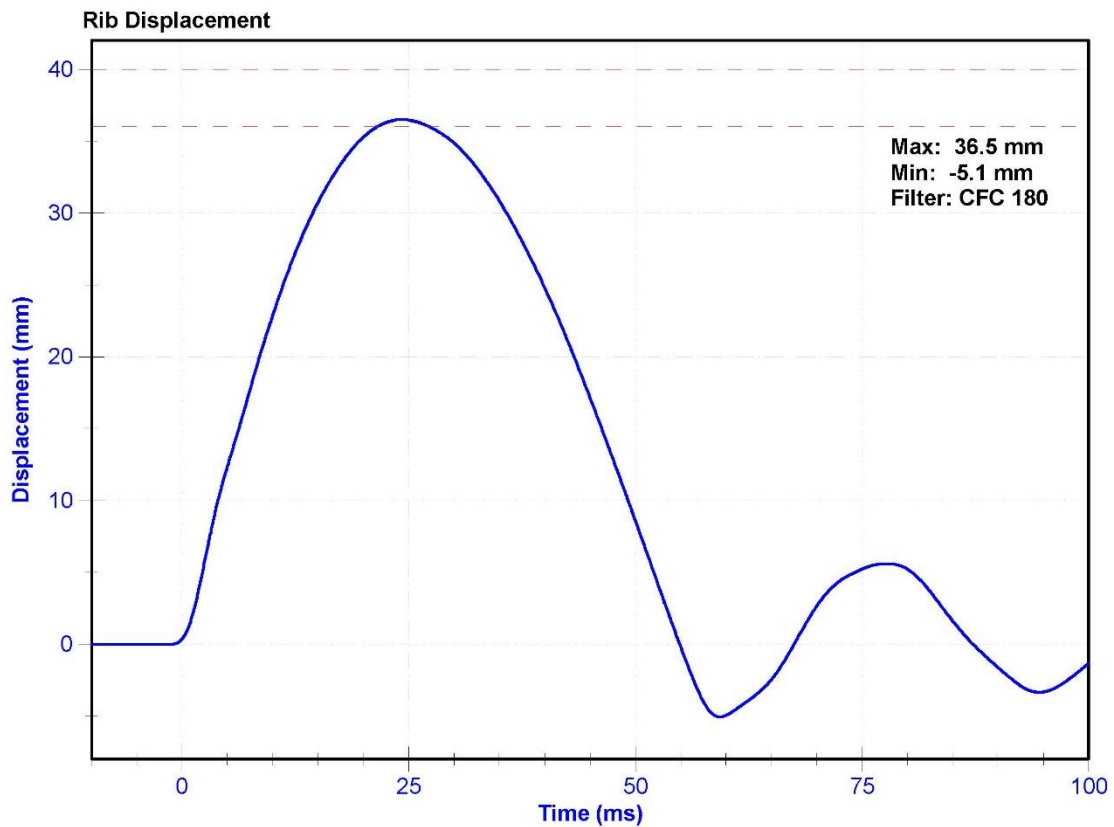
ATD Manufacturer	FTSS	Test Technician	R. Weil
ATD Serial Number	F034	Laboratory Supervisor	M. Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.6	Pass
Humidity	10	70	%	29.1	Pass
Rib Displacement	36	40	mm	36.5	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-183GFE	10/19/2015	10/18/2016



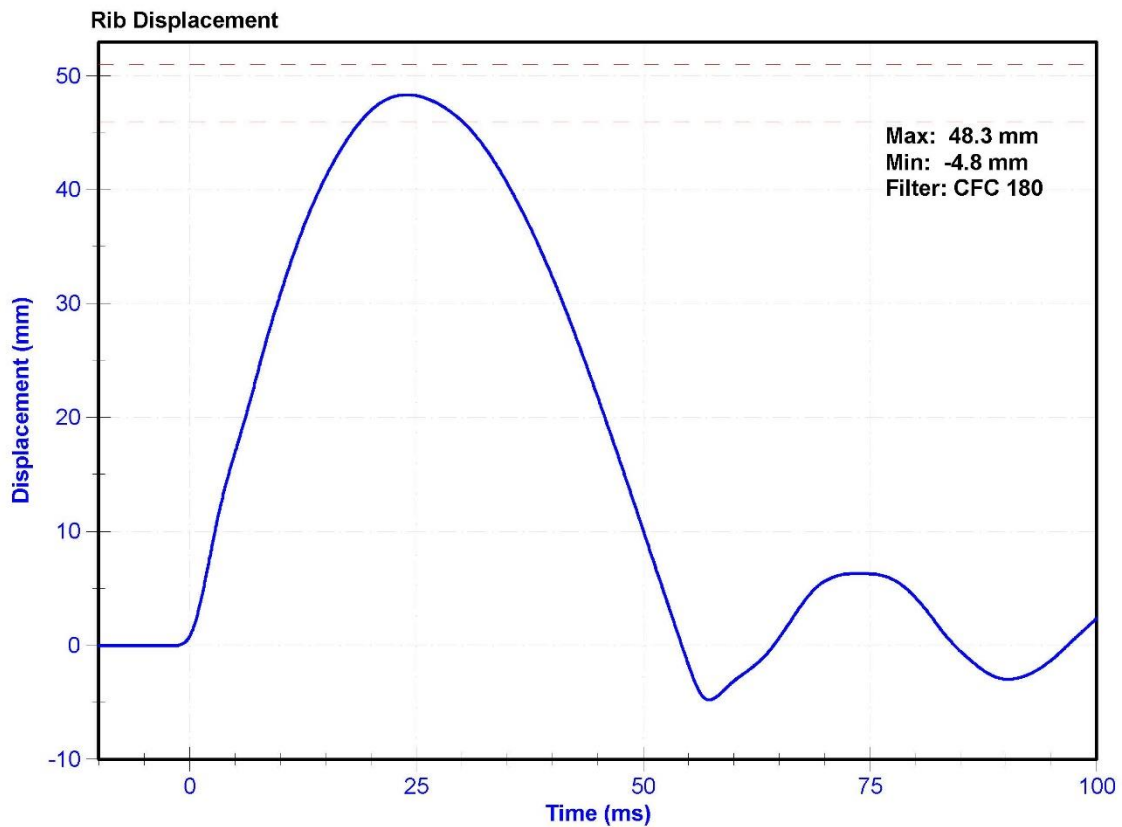
ATD Manufacturer	FTSS	Test Technician	R. Weil
ATD Serial Number	F034	Laboratory Supervisor	M. Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	37.6	Pass
Rib Displacement	46	51	mm	48.3	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-184GFE	10/19/2015	10/18/2016



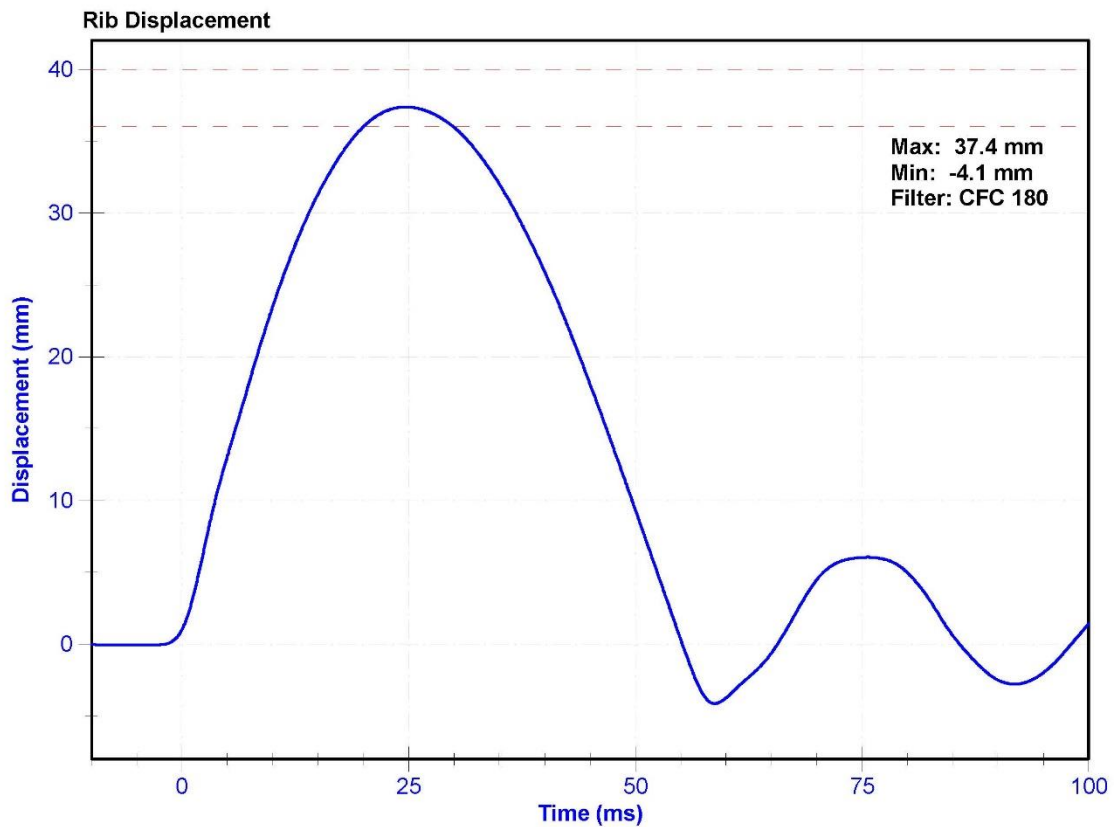
ATD Manufacturer	FTSS	Test Technician	R. Weil
ATD Serial Number	F034	Laboratory Supervisor	M. Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	37.6	Pass
Rib Displacement	36	40	mm	37.4	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-184GFE	10/19/2015	10/18/2016



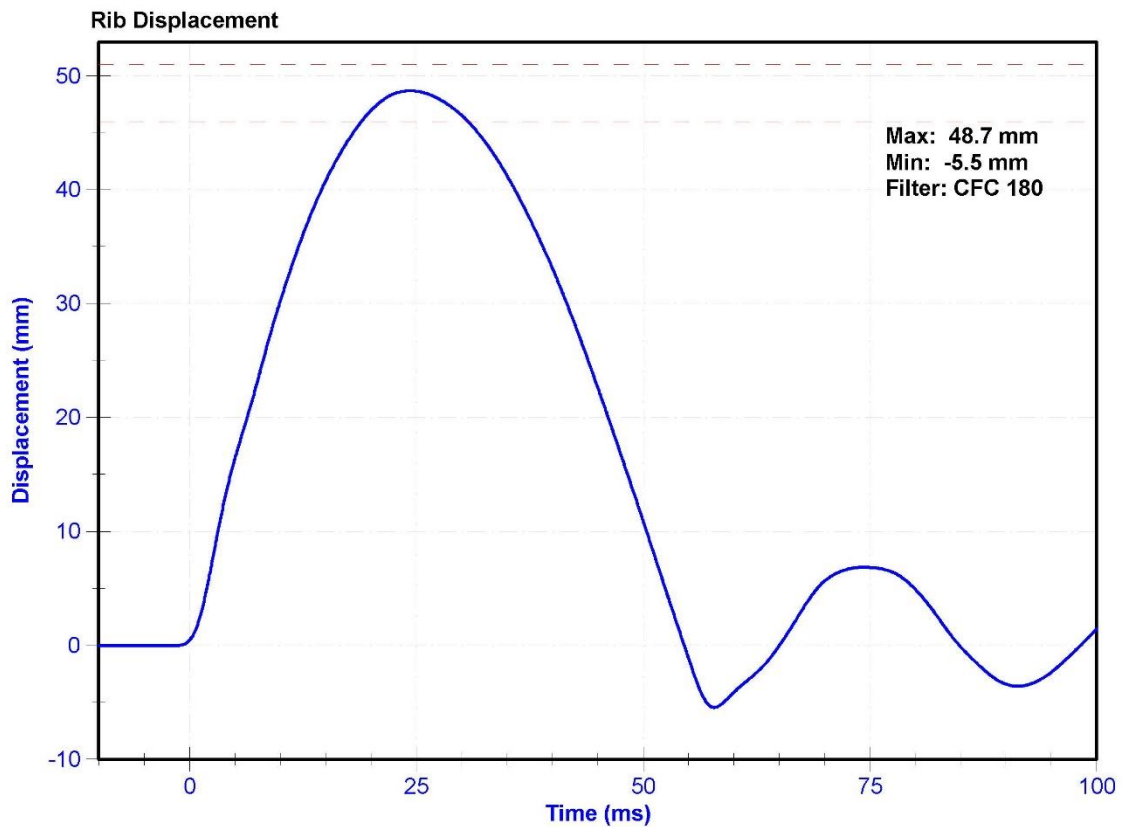
ATD Manufacturer	FTSS	Test Technician	R. Weil
ATD Serial Number	F034	Laboratory Supervisor	M. Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.3	Pass
Humidity	10	70	%	37.8	Pass
Rib Displacement	46	51	mm	48.7	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-182GFE	10/19/2015	10/18/2016



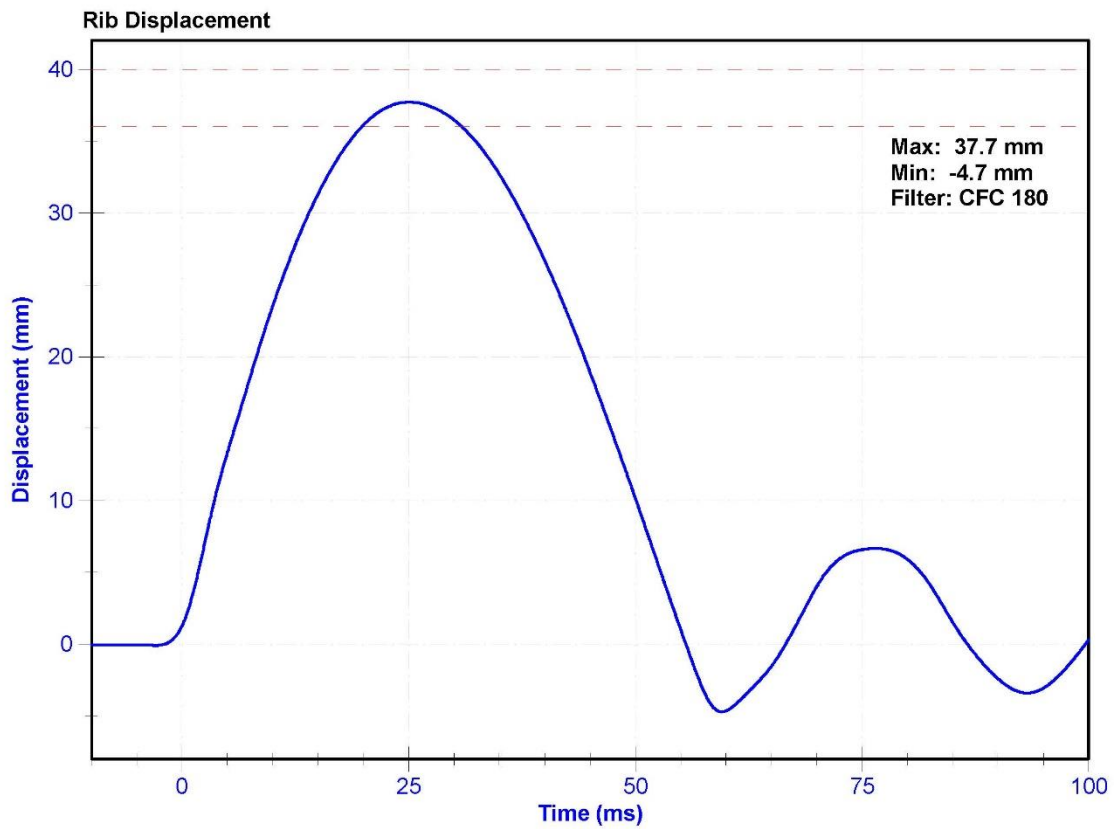
ATD Manufacturer	FTSS	Test Technician	R. Weil
ATD Serial Number	F034	Laboratory Supervisor	M. Goehle

**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.8	Pass
Humidity	10	70	%	36.1	Pass
Rib Displacement	36	40	mm	37.7	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell MLT-38000203	DS-182GFE	10/19/2015	10/18/2016



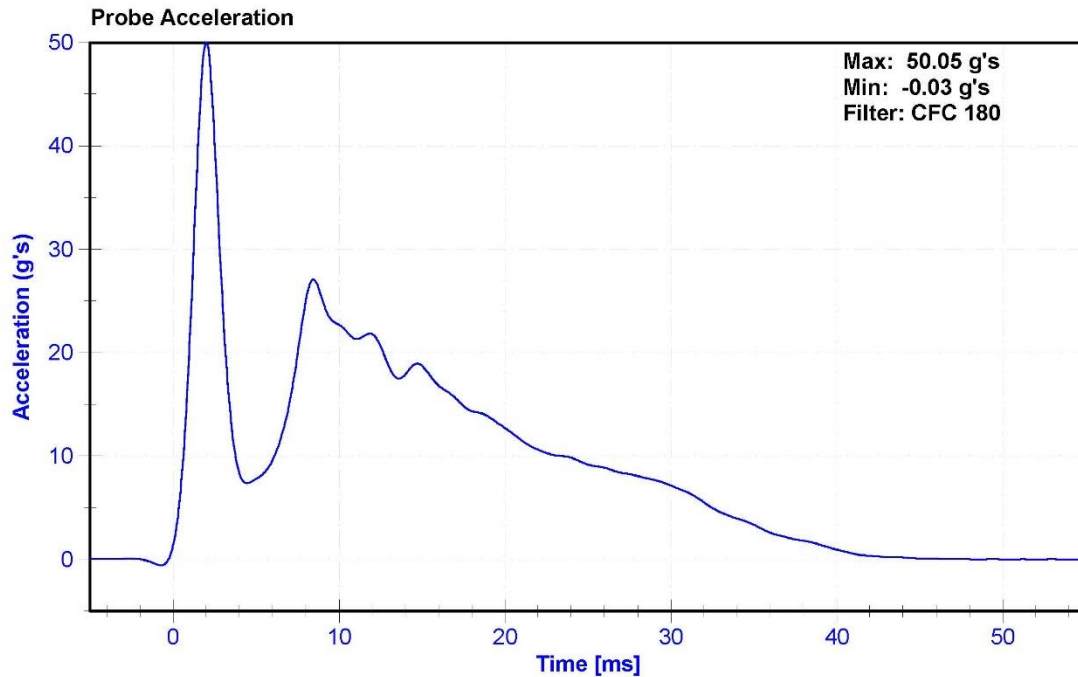
ATD Manufacturer	FTSS	Test Technician	R. Weil
ATD Serial Number	F034	Laboratory Supervisor	M. Goehle

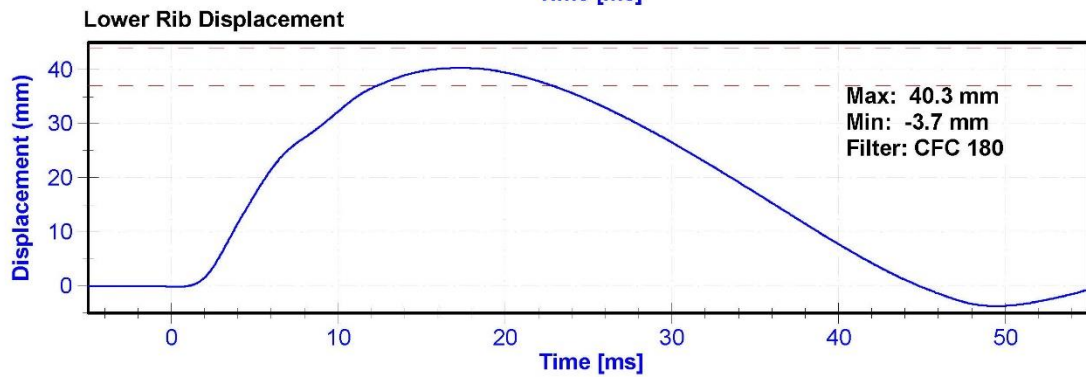
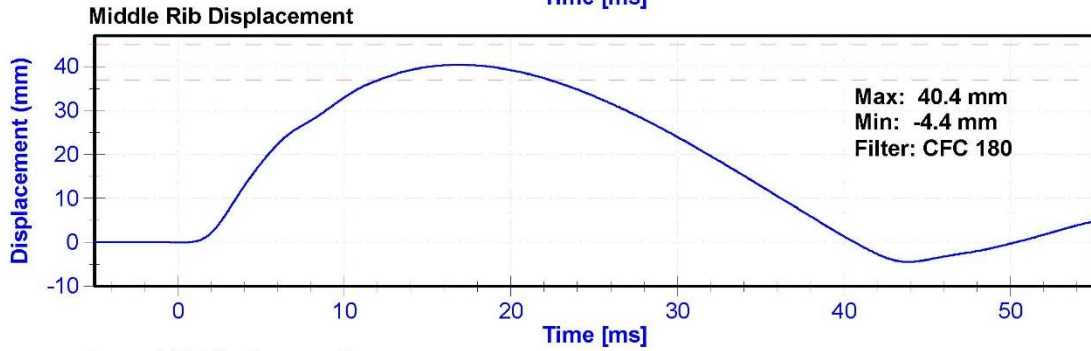
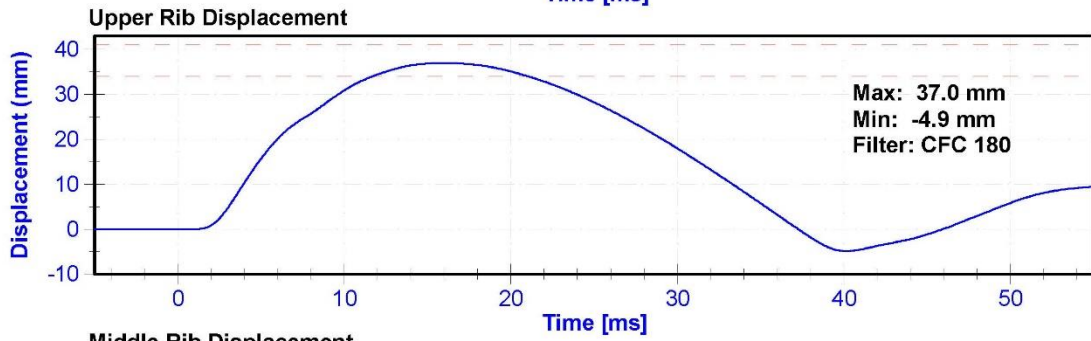
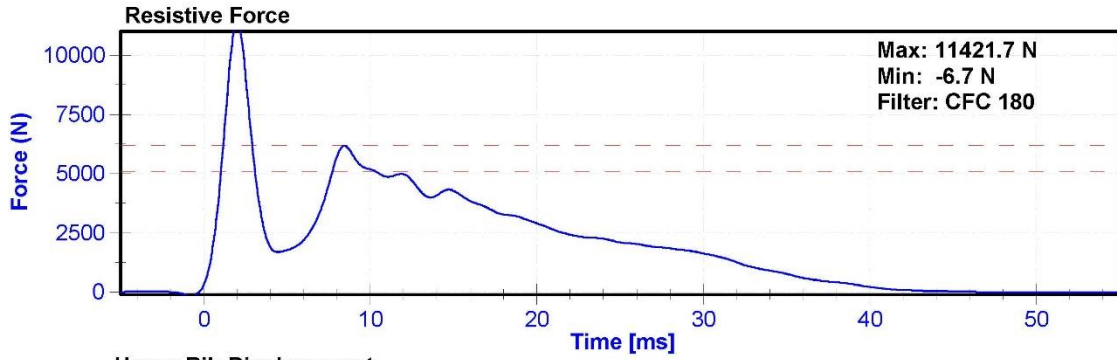
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.0	Pass
Humidity	10	70	%	43.1	Pass
Velocity	5.4	5.6	m/s	5.40	Pass
Resistive Force after 6ms	5,100	6,200	N	6178.1	Pass
Upper Thorax Rib Deflection	34	41	mm	37.0	Pass
Mid Thorax Rib Deflection	37	45	mm	40.4	Pass
Lower Thorax Rib Deflection	37	44	mm	40.3	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Upper Thorax Rib Potentiometer	Honeywell MLT-38000203	DS-183GFE	10/19/2015	10/18/2016
Middle Thorax Rib Potentiometer	Honeywell MLT-38000203	DS-184GFE	10/19/2015	10/18/2016
Lower Thorax Rib Potentiometer	Honeywell MLT-38000203	DS-182GFE	10/19/2015	10/18/2016





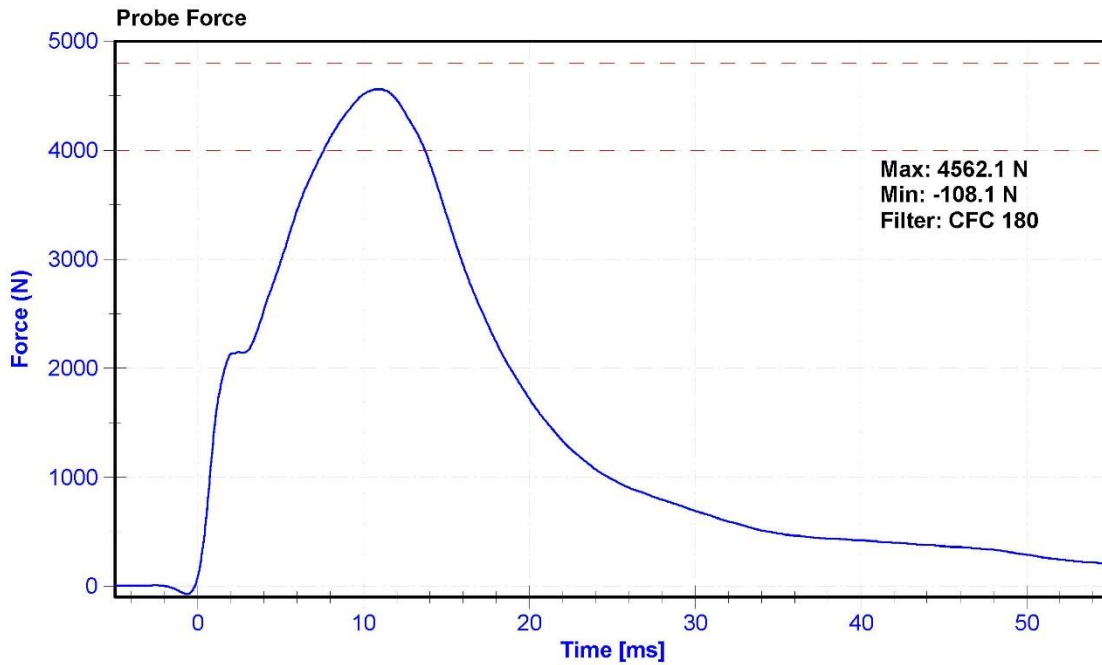
ATD Manufacturer	FTSS	Test Technician	R. Weil
ATD Serial Number	F034	Laboratory Supervisor	M. Goehle

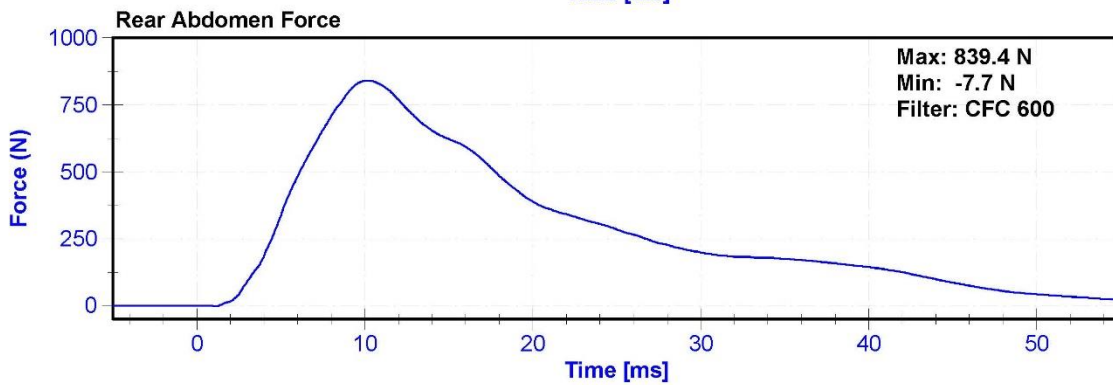
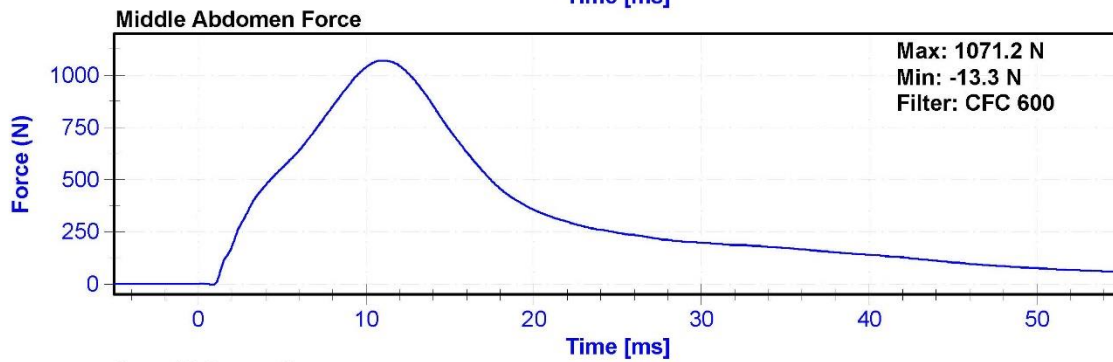
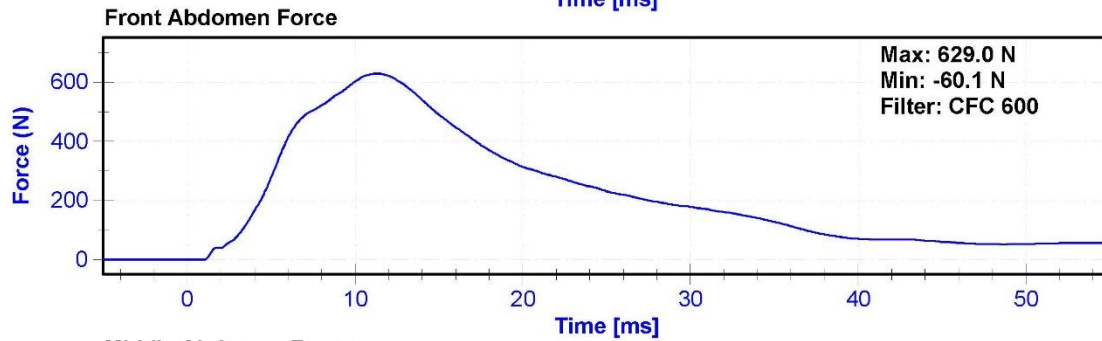
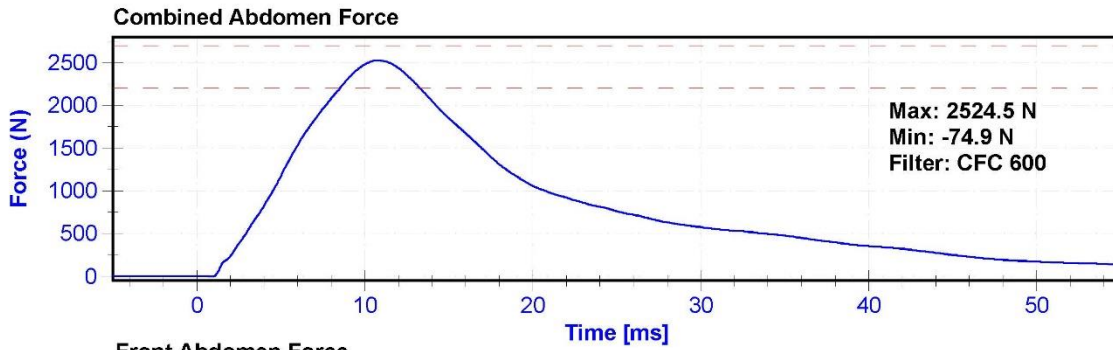
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	40	Pass
Velocity	3.9	4.1	m/s	4.00	Pass
Combined Abdomen Force	2,200	2,700	N	2524.5	Pass
Time at Peak Abdomen Force	10.0	12.3	ms	10.70	Pass
Resistive Probe Force	4,000	4,800	N	4562.1	Pass
Time at Peak Resistive Force	10.6	13.0	ms	10.80	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Front Abdomen Load Cell	DENTON 2631	LC-1512	6/25/2015	6/24/2016
Middle Abdomen Load Cell	DENTON 2631	LC-1526	6/25/2015	6/24/2016
Rear Abdomen Load Cell	DENTON 2631	LC-1516	6/25/2015	6/24/2016





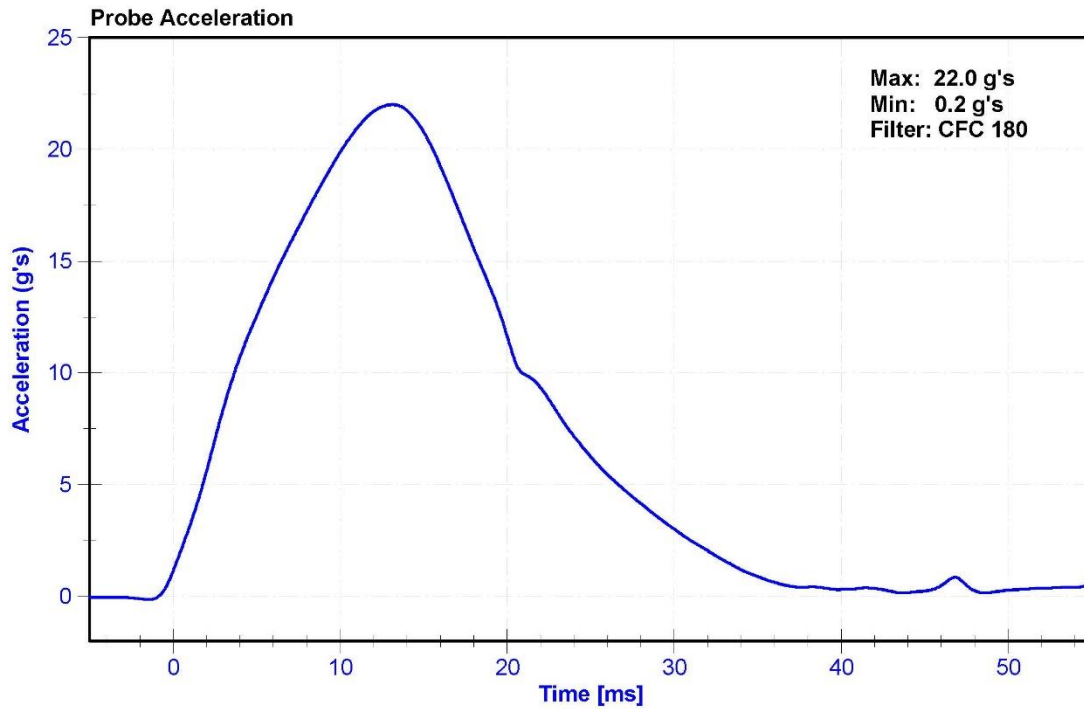
ATD Manufacturer	FTSS	Test Technician	R. Weil
ATD Serial Number	F034	Laboratory Supervisor	M. Goehle

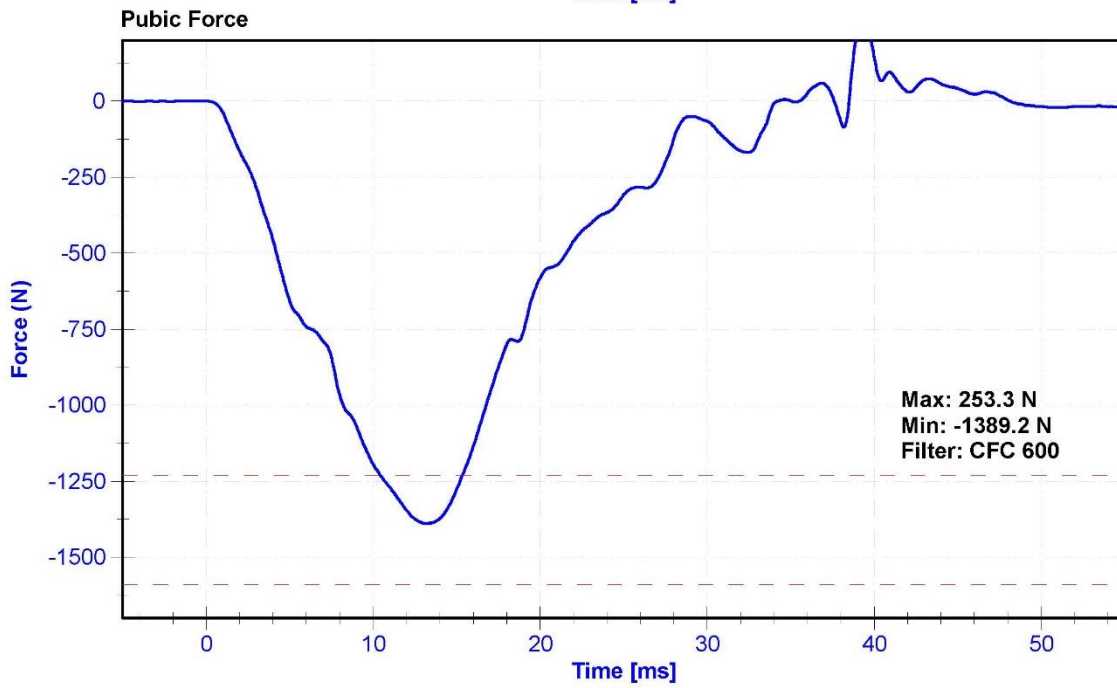
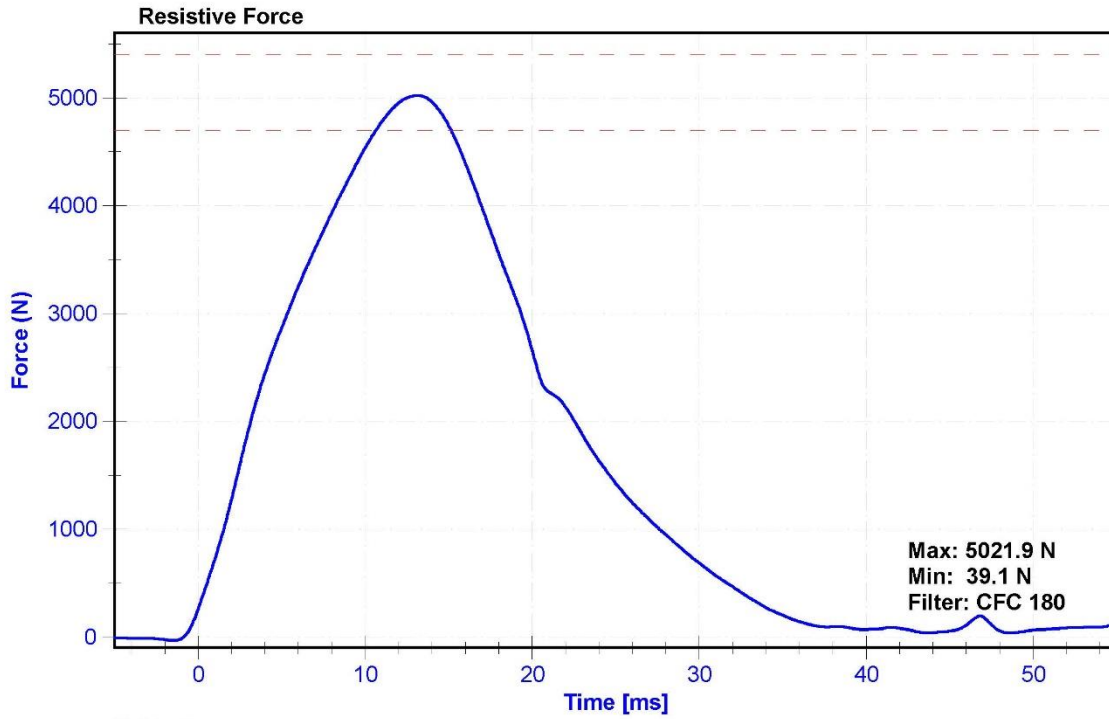
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	39.9	Pass
Velocity	4.2	4.4	m/s	4.30	Pass
Resistive Force	4,700	5,400	N	5021.9	Pass
Time at Peak Resistive Force	11.8	16.1	ms	13.15	Pass
Pubic Force	-1,590	-1,230	N	-1389.2	Pass
Time at Peak Pubic Force	12.2	17.0	ms	13.15	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Pubic Load Cell	Denton 3096JFL	LC-465Fy	6/25/2015	6/24/2016





**CALIBRATION TEST RESULTS**

**POST-TEST**

**SID-IIS 5<sup>TH</sup> PERCENTILE FEMALE - PASSENGER ATD**

**SERIAL No: 303**

**(CONFIGURED FOR LEFT SIDE IMPACT)**

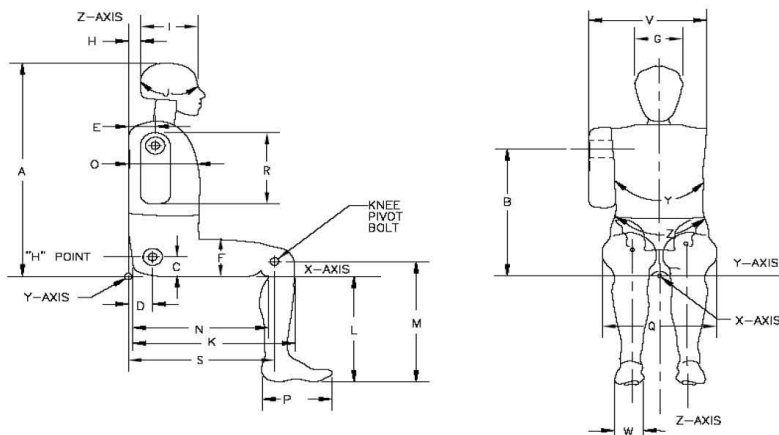


External Measurements - SID-IIs

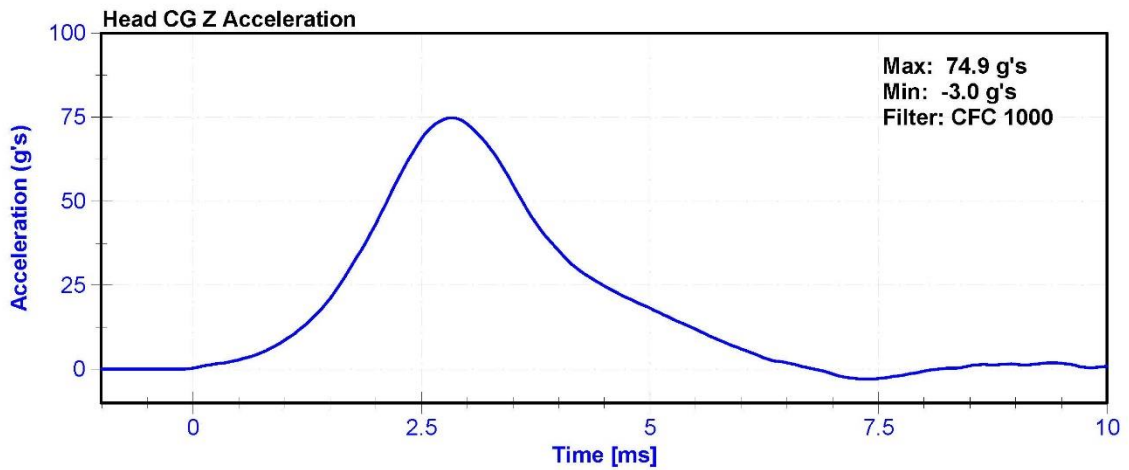
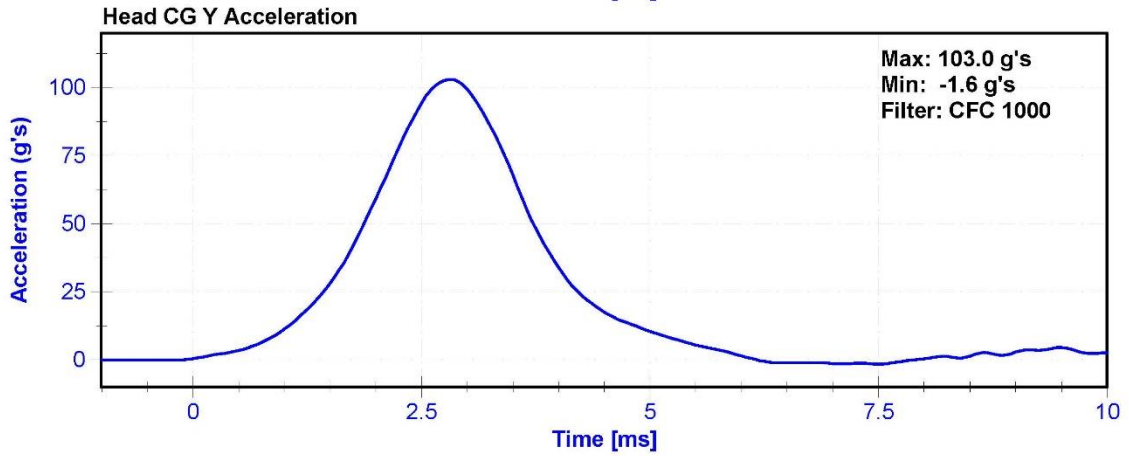
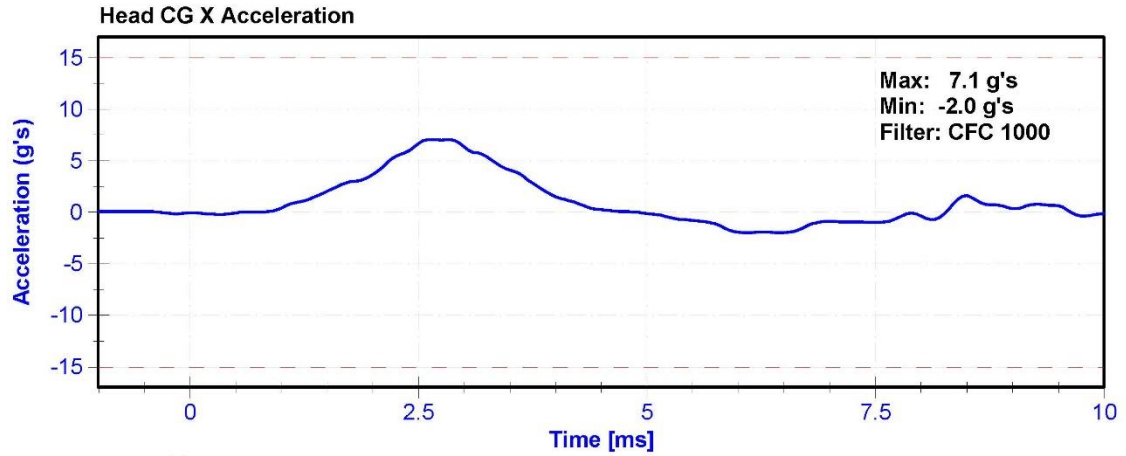
Technician: M. Geesey

Date: 11/11/2015

Dummy Serial Number: 303



Symbol	Description	Specification (mm)		Result (mm)	Pass/Fail
A	Sitting Height	772	788	780	Pass
B	Shoulder Pivot Height	437	453	445	Pass
C	H-point Height	79	89	85	Pass
D	H-point from seatback	141	151	147	Pass
E	Shoulder Pivot from Backline	97	107	102	Pass
F	Thigh Clearance	119	135	130	Pass
G	Head Breadth	140	148	144	Pass
H	Head Back from Backline	40	46	43	Pass
I	Head Depth	178	188	183	Pass
J	Head Circumference	541	551	545	Pass
K	Buttock to Knee Length	514	540	529	Pass
L	Popliteal Height	343	369	356	Pass
M	Knee Pivot to floor height	392	409	405	Pass
N	Buttock Popliteal Length	416	442	436	Pass
O	Chest Depth w/o jacket	195	211	203	Pass
P	Foot Length	216	232	222	Pass
Q	Hip Breadth (w/pelvic plugs)	313	323	318	Pass
R	Arm Length	249	259	254	Pass
S	Knee Joint to seatback	477	493	487	Pass
V	Shoulder Width	341	357	350	Pass
W	Foot Width	78	94	85	Pass
Y	Chest Circumference w/jacket	851	881	870	Pass
Z	Waist Circumference	761	791	770	Pass



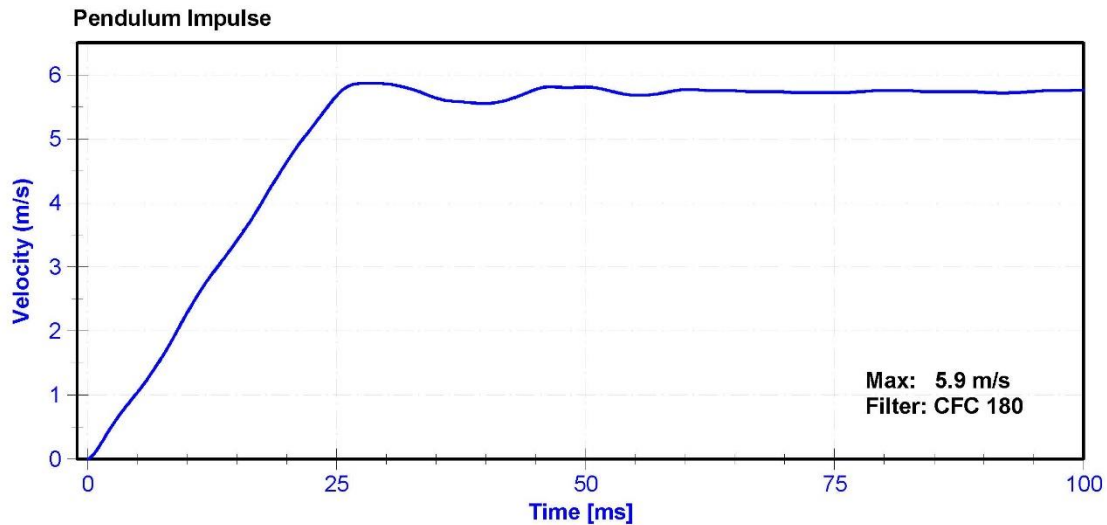
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

**Results**

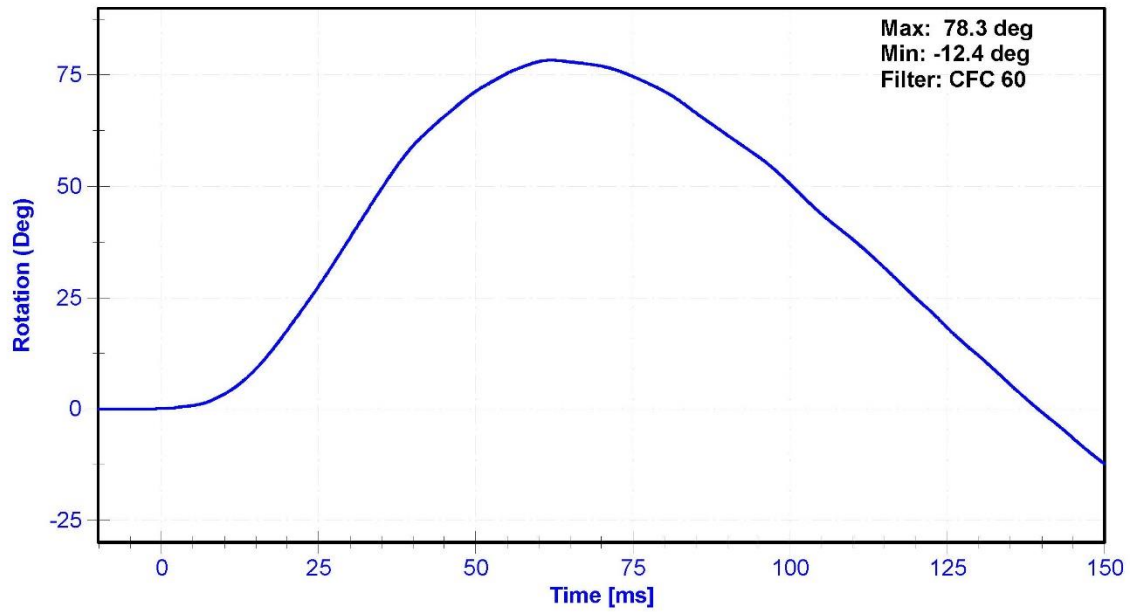
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.8	Pass
Humidity	10	70	%	29.5	Pass
Velocity	5.51	5.63	m/s	5.583	Pass
Pendulum Impulse at 10ms	2.2	2.8	m/s	2.28	Pass
Pendulum Impulse at 15ms	3.3	4.1	m/s	3.41	Pass
Pendulum Impulse at 20ms	4.4	5.4	m/s	4.64	Pass
Pendulum Impulse at 25ms	5.4	6.1	m/s	5.67	Pass
Pendulum Impulse from 25 to 100ms	5.5	6.2	m/s	5.87	Pass
Neck Rotation	71	81	deg	78.3	Pass
Time at Maximum Rotation	50	70	ms	61.9	Pass
Moment about the OC	36	44	Nm	43.0	Pass
Moment Decay to 0 Nm	102	126	ms	119.0	Pass

**Transducer Calibrations**

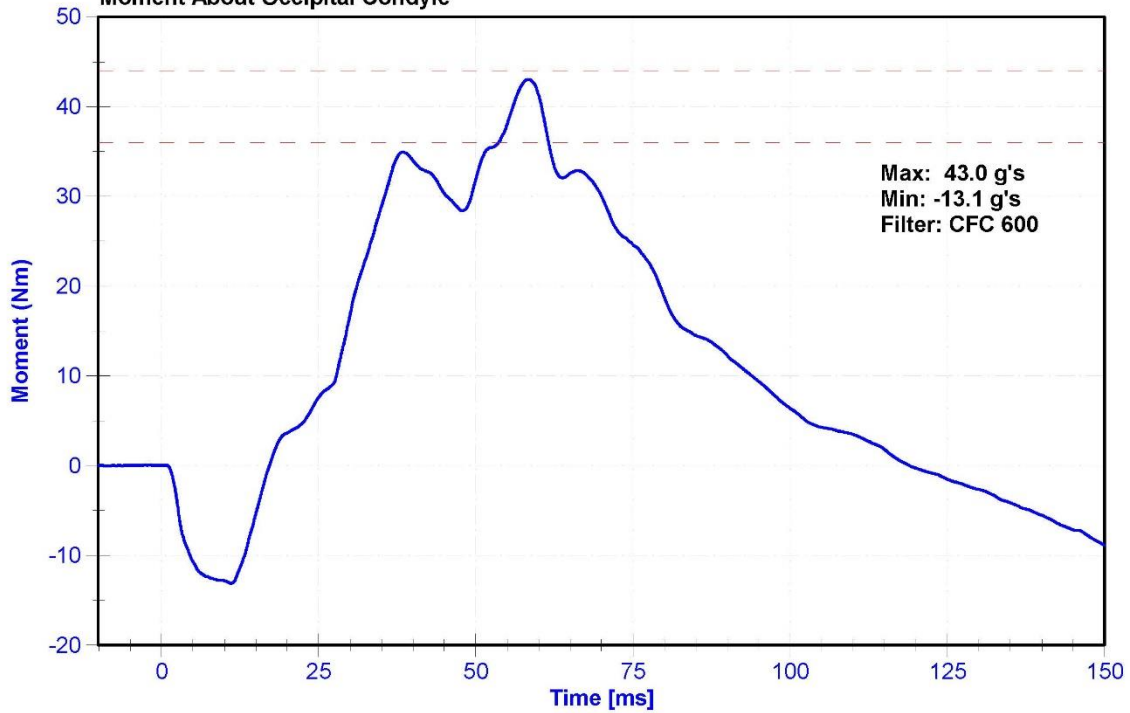
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Pendulum Potentiometer	Denton 78051-342	DS-184Pend	9/24/2015	9/23/2016
Condyle Potentiometer	Denton 78051-342	DS-185Pend	9/25/2015	9/24/2016
Upper Neck Load Cell	Denton 1716A	LC-2019Fy	6/29/2015	6/28/2016



### Neck Rotation



### Moment About Occipital Condyle



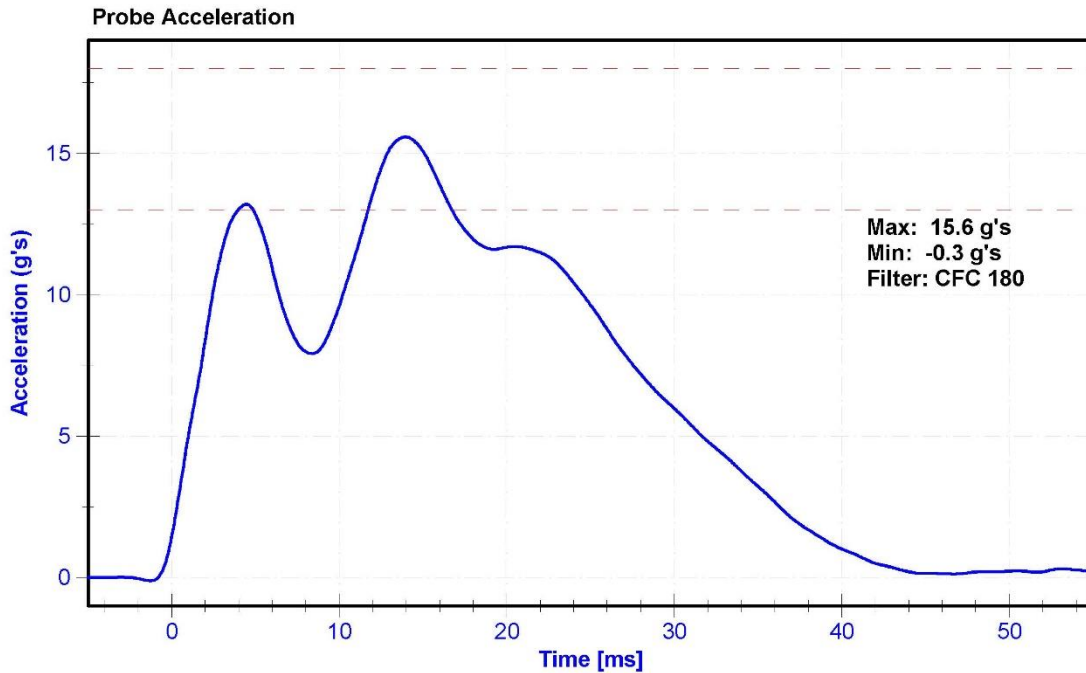
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

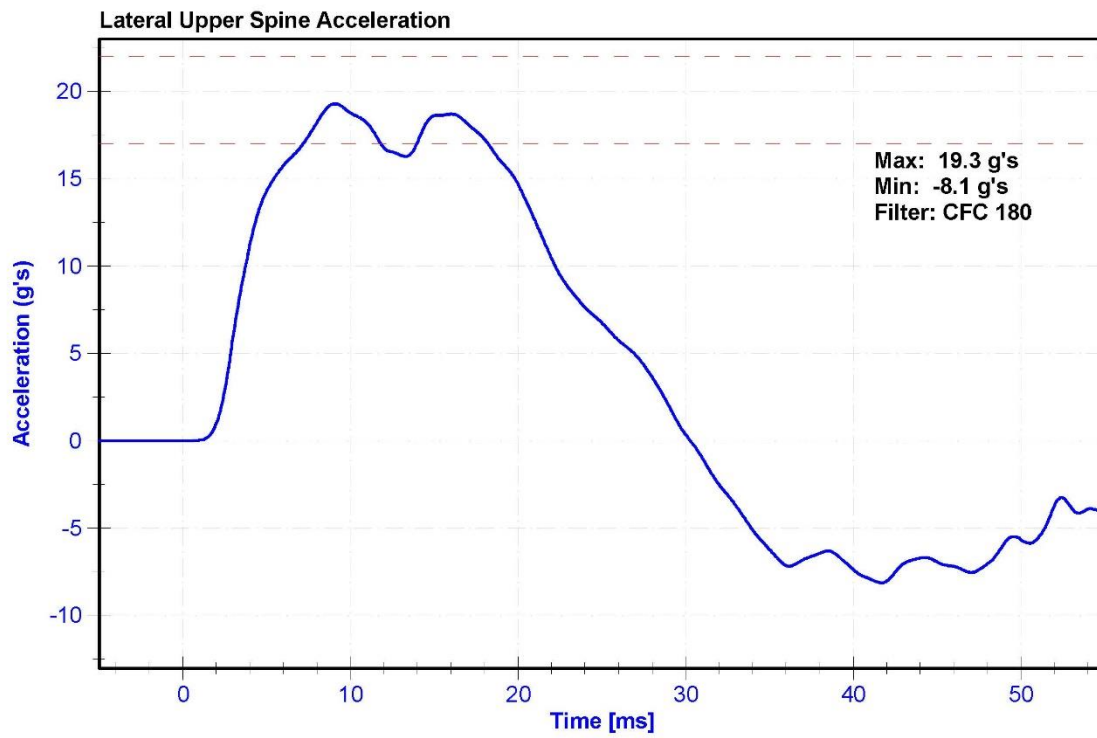
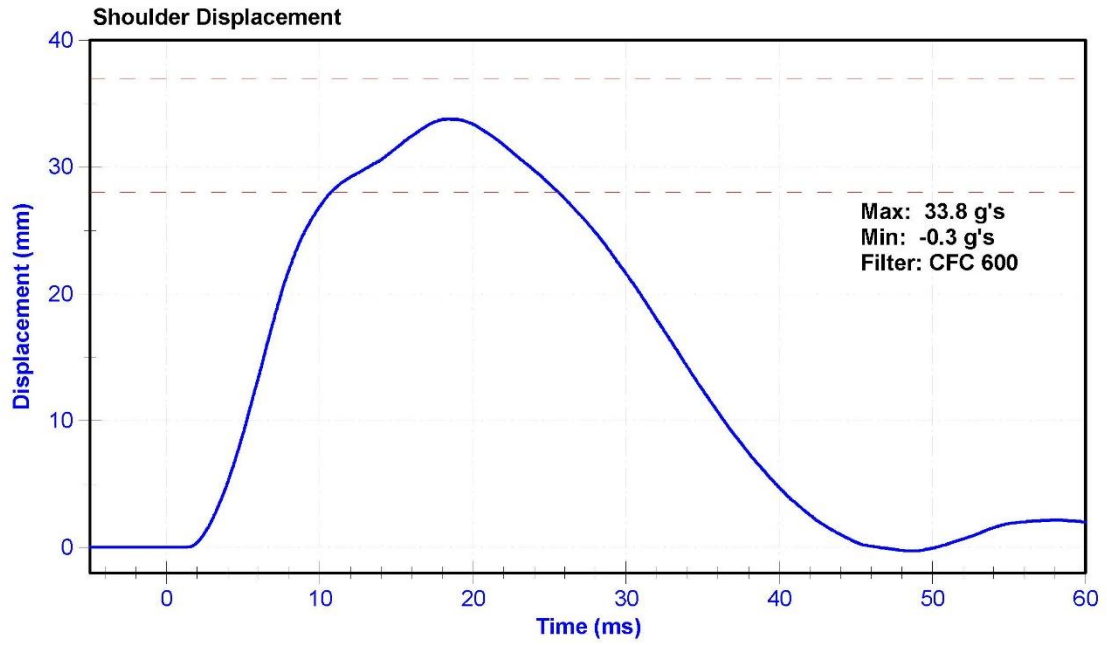
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.6	Pass
Humidity	10	70	%	44	Pass
Velocity	4.2	4.4	m/s	4.34	Pass
Probe Acceleration	13	18	g's	15.6	Pass
Shoulder Deflection	28	37	mm	33.8	Pass
Lateral Upper Spine Acceleration	17	22	g's	19.3	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Shoulder Potentiometer	Servo 08TC1-3725	DS-008GFE	10/19/2015	10/18/2016
Upper Spine Y Accelerometer	ENDEVCO 7264CT	AC-P63315	10/19/2015	4/18/2016





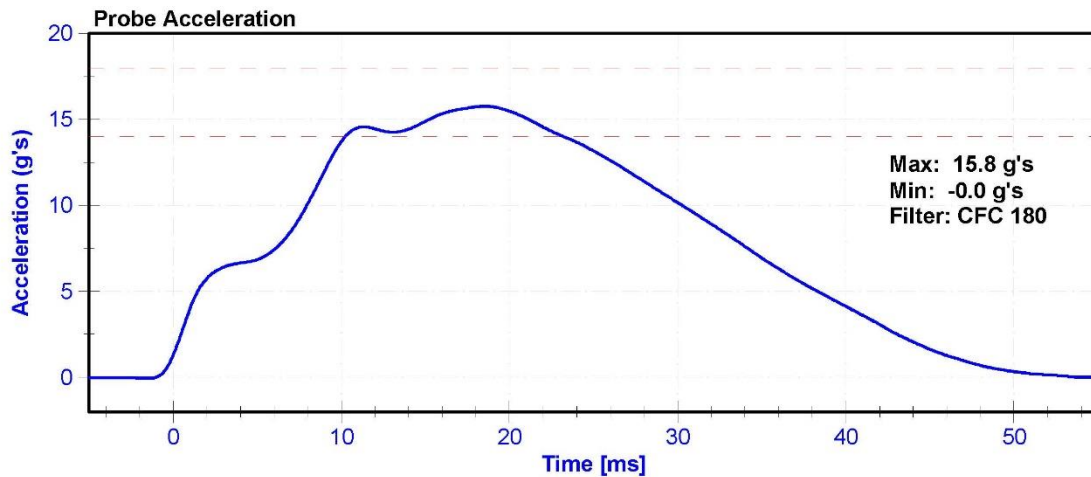
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

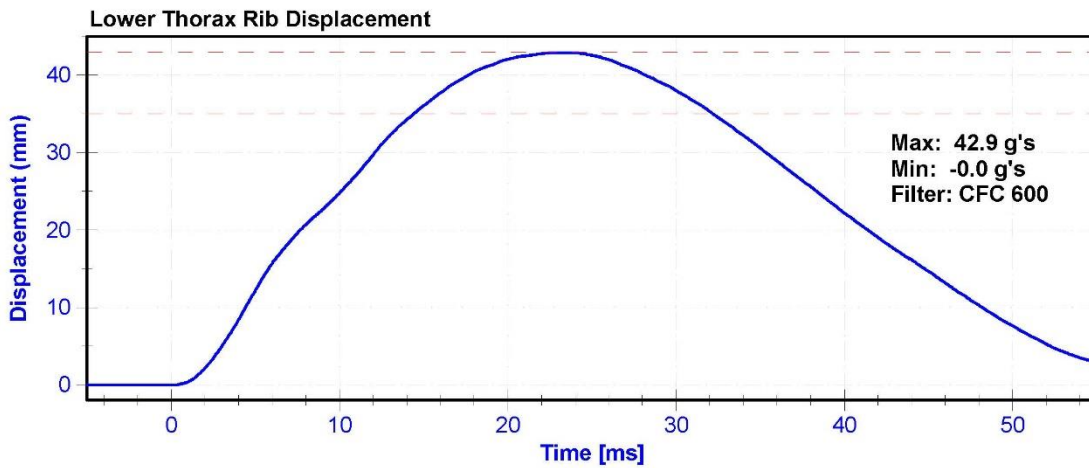
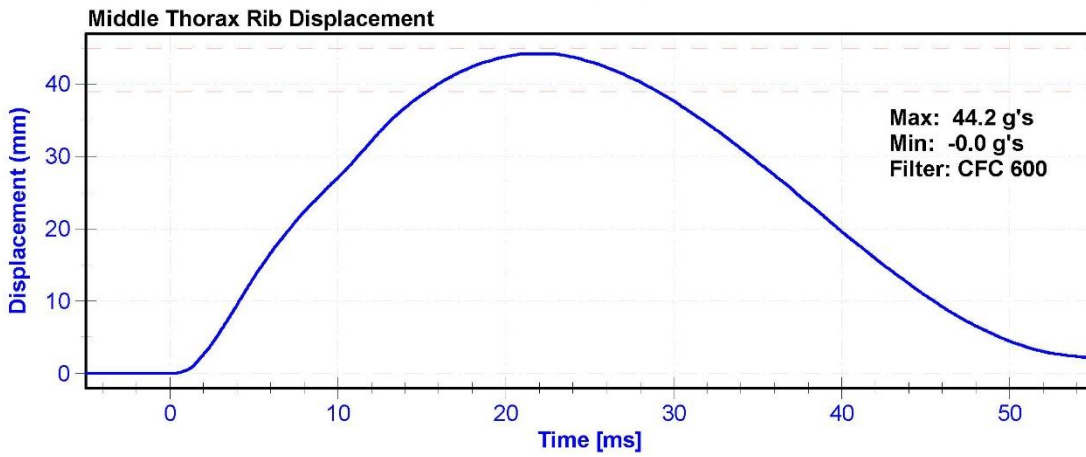
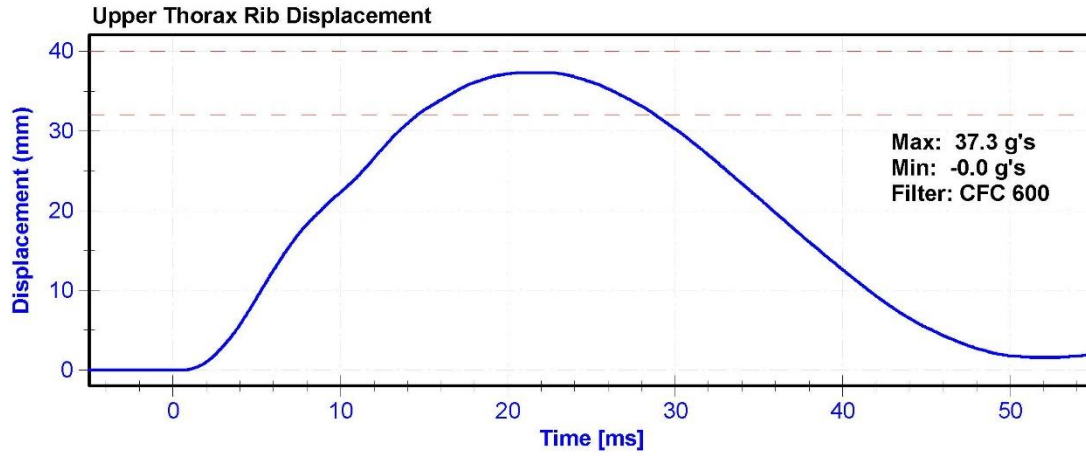
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.8	Pass
Humidity	10	70	%	43.6	Pass
Velocity	4.2	4.4	m/s	4.32	Pass
Probe Acceleration	14	18	g's	15.8	Pass
Lateral Upper Spine Acceleration	13	17	g's	14.6	Pass
Lateral Lower Spine Acceleration	7	11	g's	9.8	Pass
Upper Thorax Rib Deflection	32	40	mm	37.3	Pass
Middle Thorax Rib Deflection	39	45	mm	44.2	Pass
Lower Thorax Rib Deflection	35	43	mm	42.9	Pass

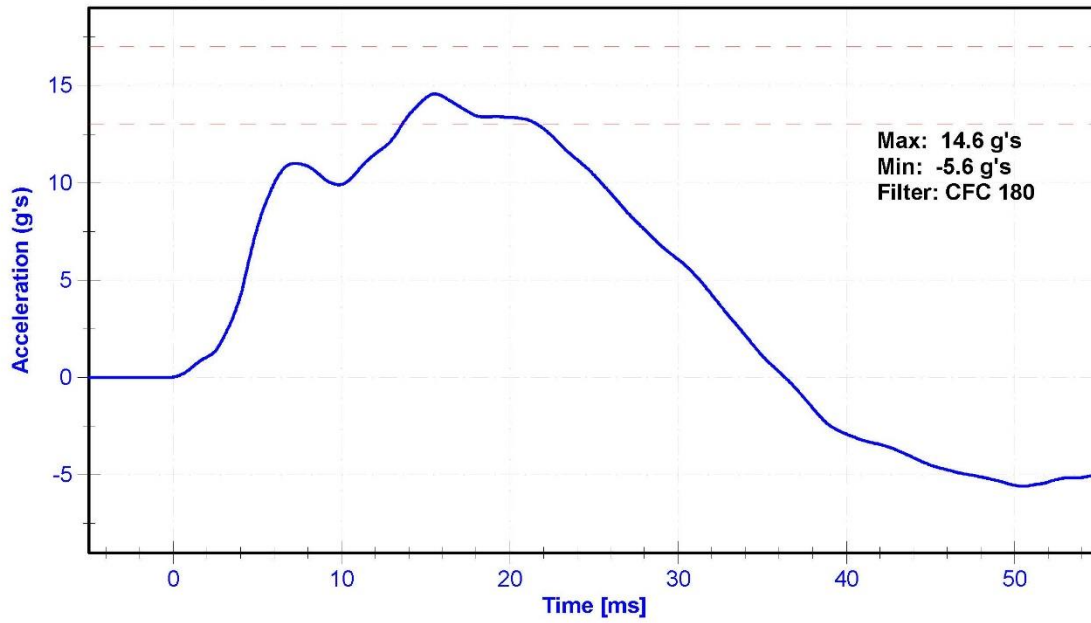
**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Upper Spine Y Accelerometer	ENDEVCO 7264CT	AC-P63315	10/19/2015	4/18/2016
Lower Spine Y Accelerometer	ENDEVCO 7264CT	AC-P51974	10/19/2015	4/18/2016
Upper Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1199GFE	10/19/2015	10/18/2016
Middle Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1246GFE	10/19/2015	10/18/2016
Lower Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1256GFE	10/19/2015	10/18/2016

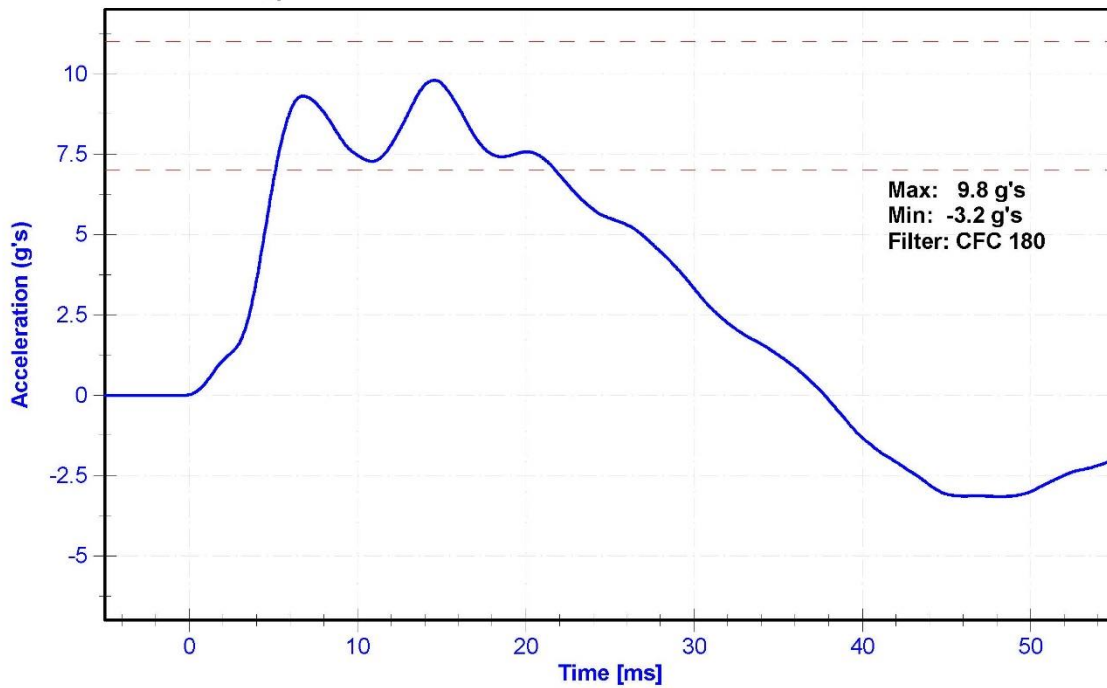




Lateral Upper Spine Acceleration



Lateral Lower Spine Acceleration



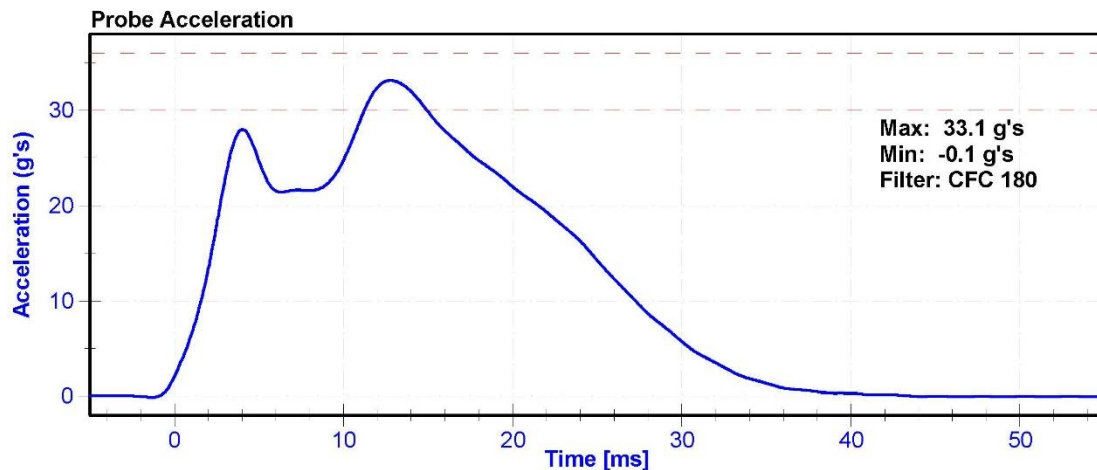
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

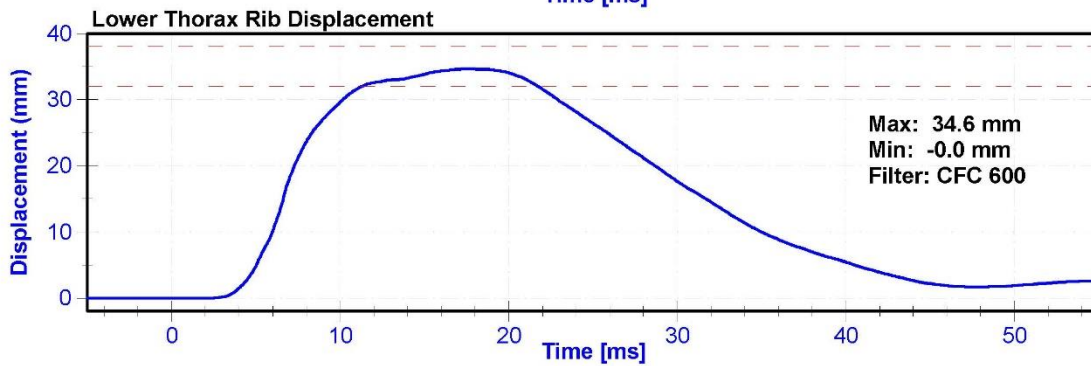
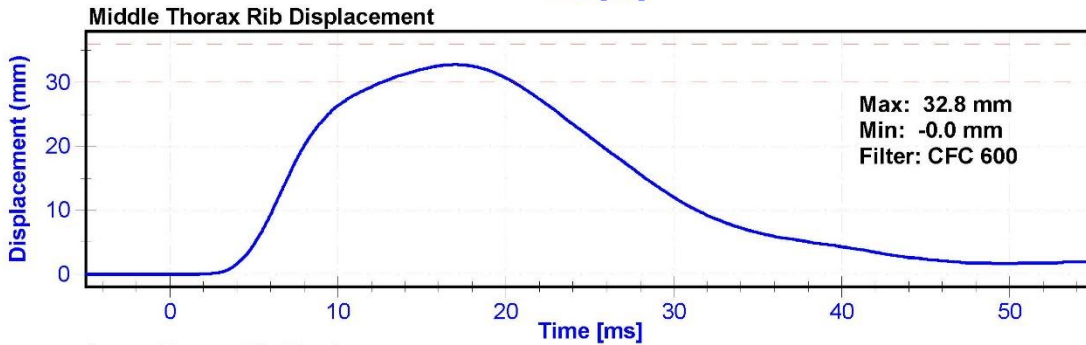
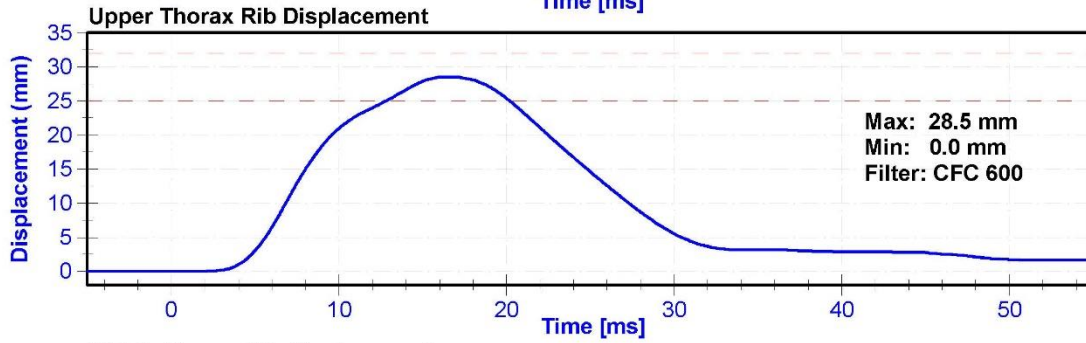
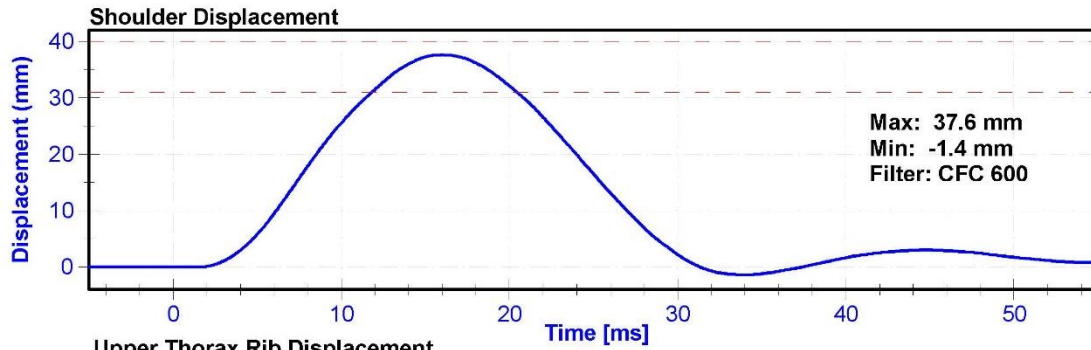
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.4	Pass
Humidity	10	70	%	44.1	Pass
Velocity	6.6	6.8	m/s	6.67	Pass
Probe Acceleration after 5 ms	30	36	g's	33.1	Pass
Lateral Upper Spine Acceleration	34	43	g's	40.0	Pass
Lateral Lower Spine Acceleration	29	37	g's	33.9	Pass
Shoulder Deflection	31	40	mm	37.6	Pass
Upper Thorax Rib Deflection	25	32	mm	28.5	Pass
Mid Thorax Rib Deflection	30	36	mm	32.8	Pass
Lower Thorax Rib Deflection	32	38	mm	34.6	Pass

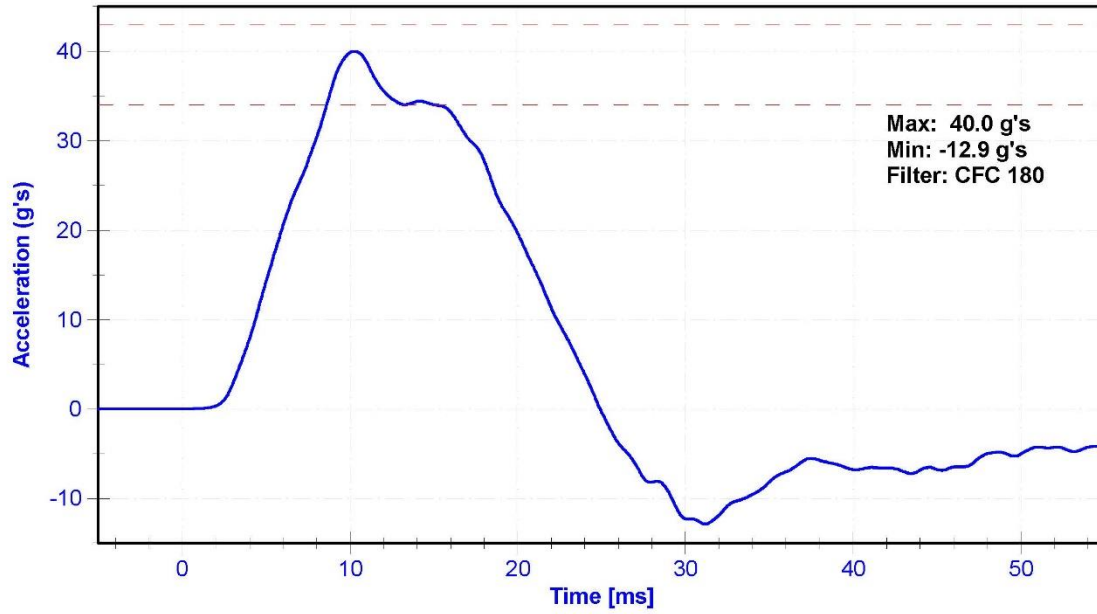
**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Upper Spine T1 Y Accelerometer	ENDEVCO 7264CT	AC-P63315	10/19/2015	4/18/2016
Upper Spine T12 Y Accelerometer	ENDEVCO 7264CT	AC-P51974	10/19/2015	4/18/2016
Shoulder Potentiometer	Servo 08TC1-3725	DS-008GFE	10/19/2015	10/18/2016
Upper Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1199GFE	10/19/2015	10/18/2016
Middle Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1246GFE	10/19/2015	10/18/2016
Lower Thorax Rib Potentiometer	Servo 08CT1-3725	DS-1256GFE	10/19/2015	10/18/2016

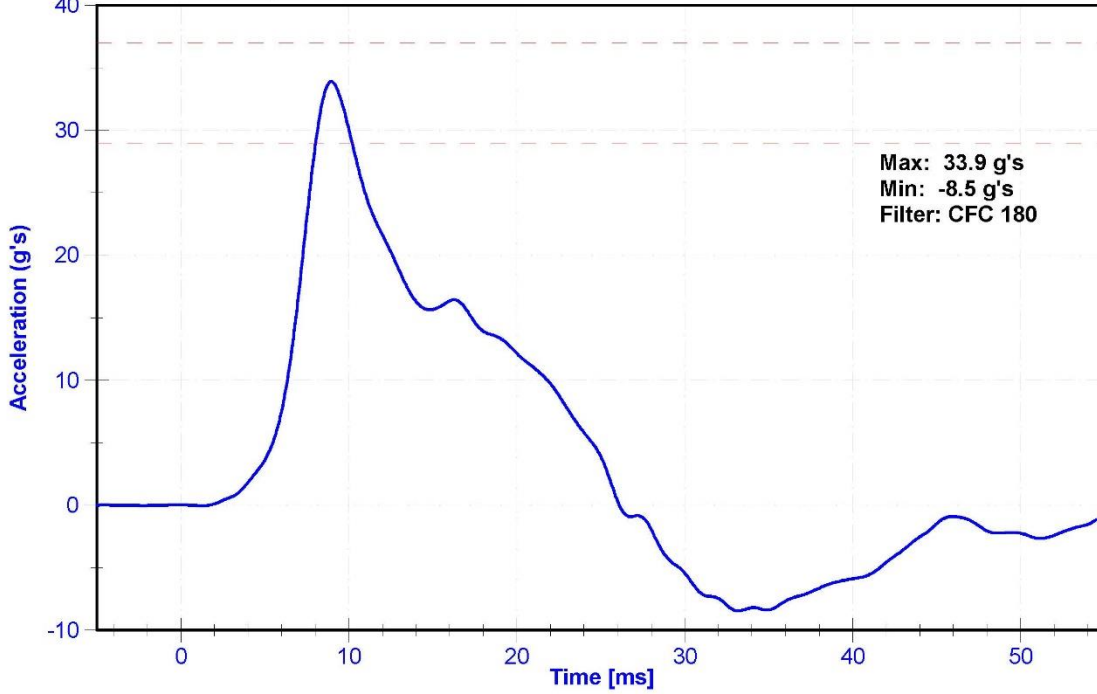




Lateral Upper Spine Acceleration



Lateral Lower Spine Acceleration



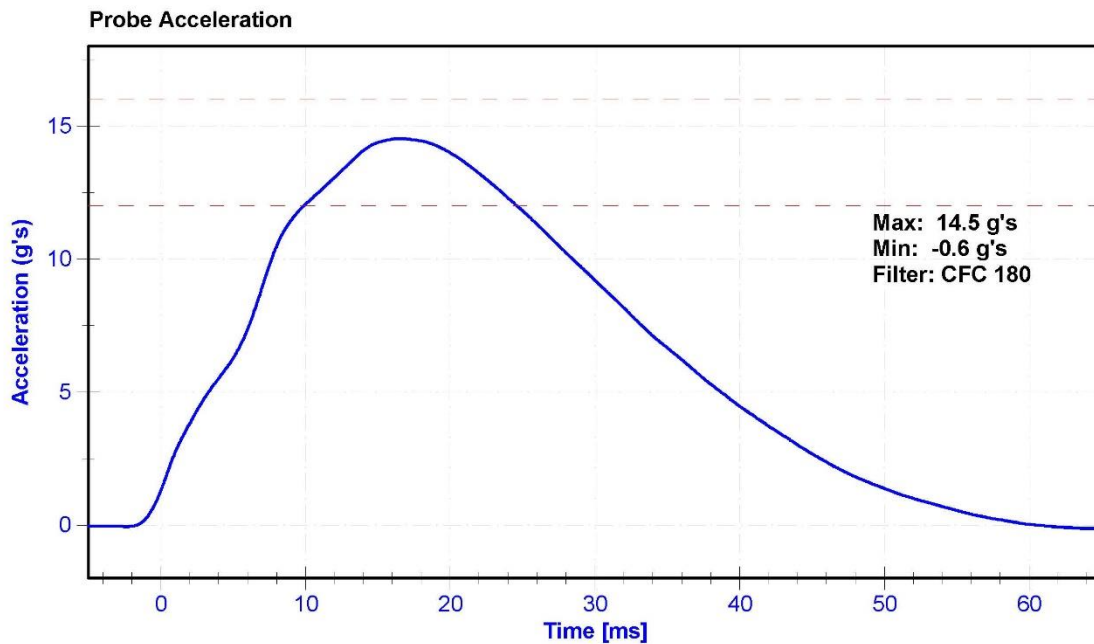
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

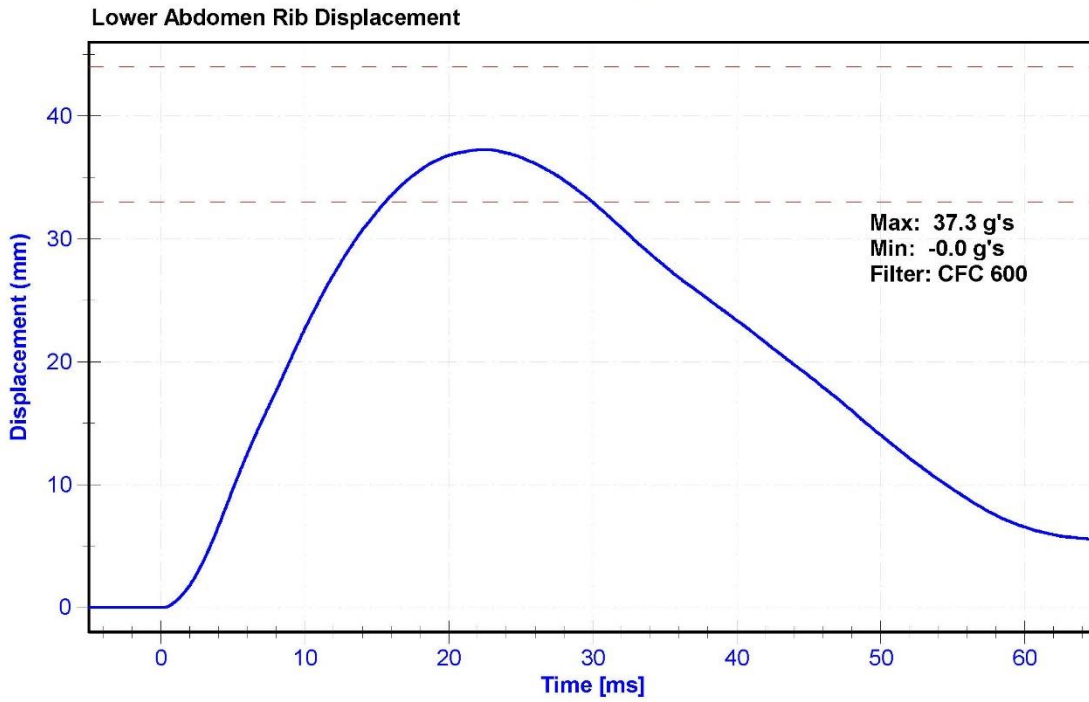
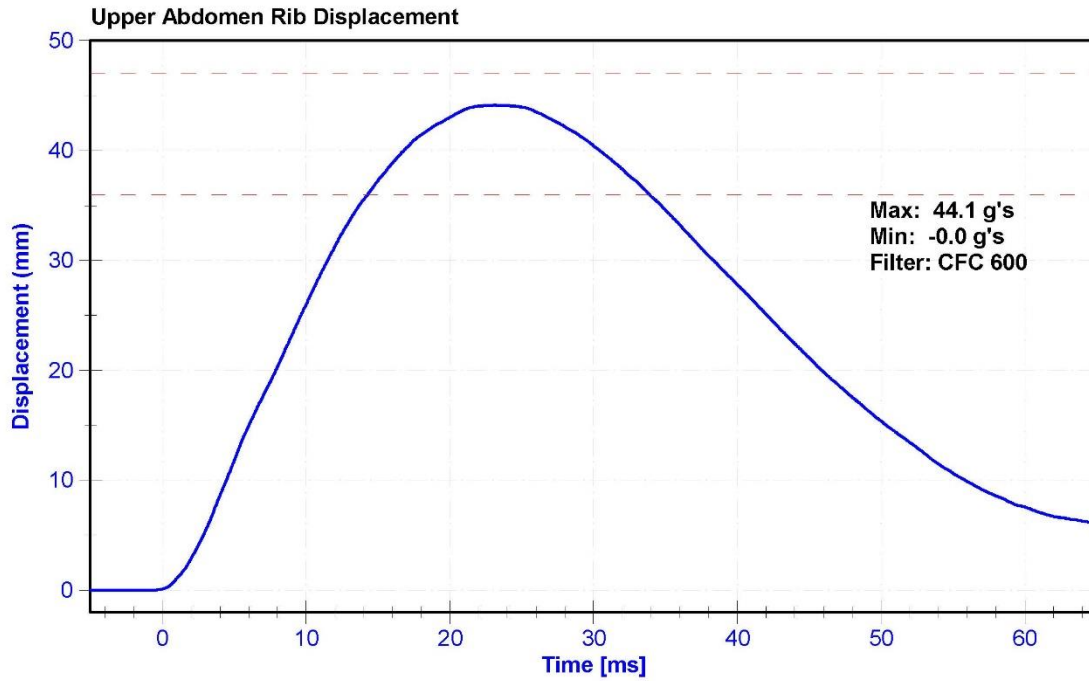
**Results**

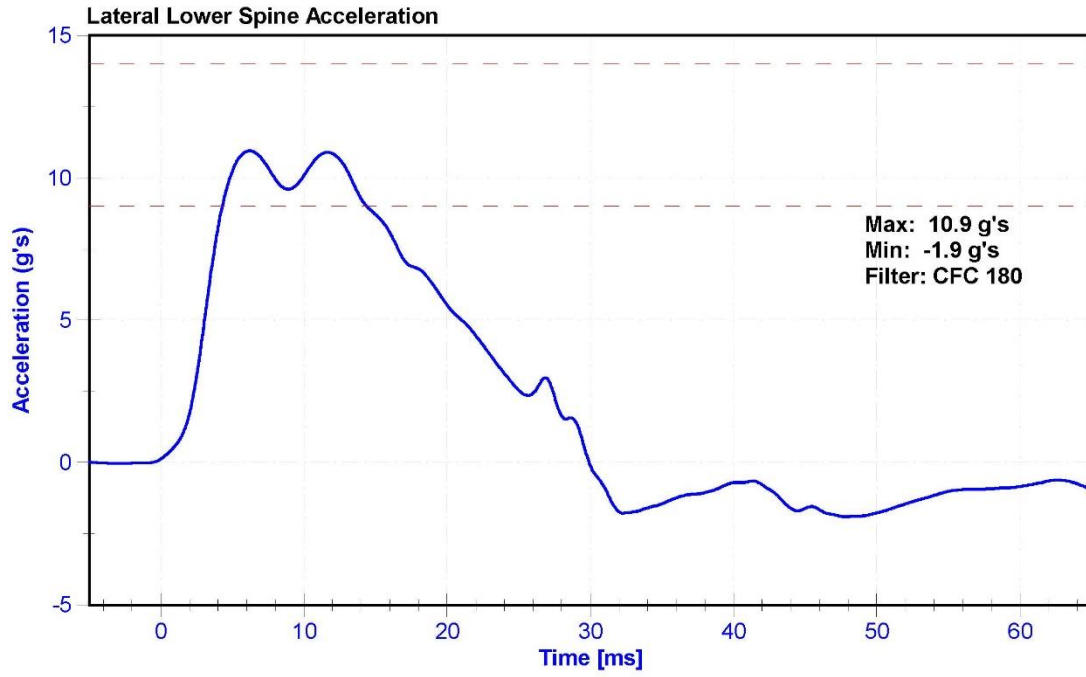
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.5	Pass
Humidity	10	70	%	44.0	Pass
Velocity	4.2	4.4	m/s	4.35	Pass
Probe Acceleration	12	16	g's	14.5	Pass
Lateral Lower Spine Acceleration	9	14	g's	10.9	Pass
Upper Abdomen Rib Deflection	36	47	mm	44.1	Pass
Lower Abdomen Rib Deflection	33	44	mm	37.3	Pass

**Transducer Calibrations**

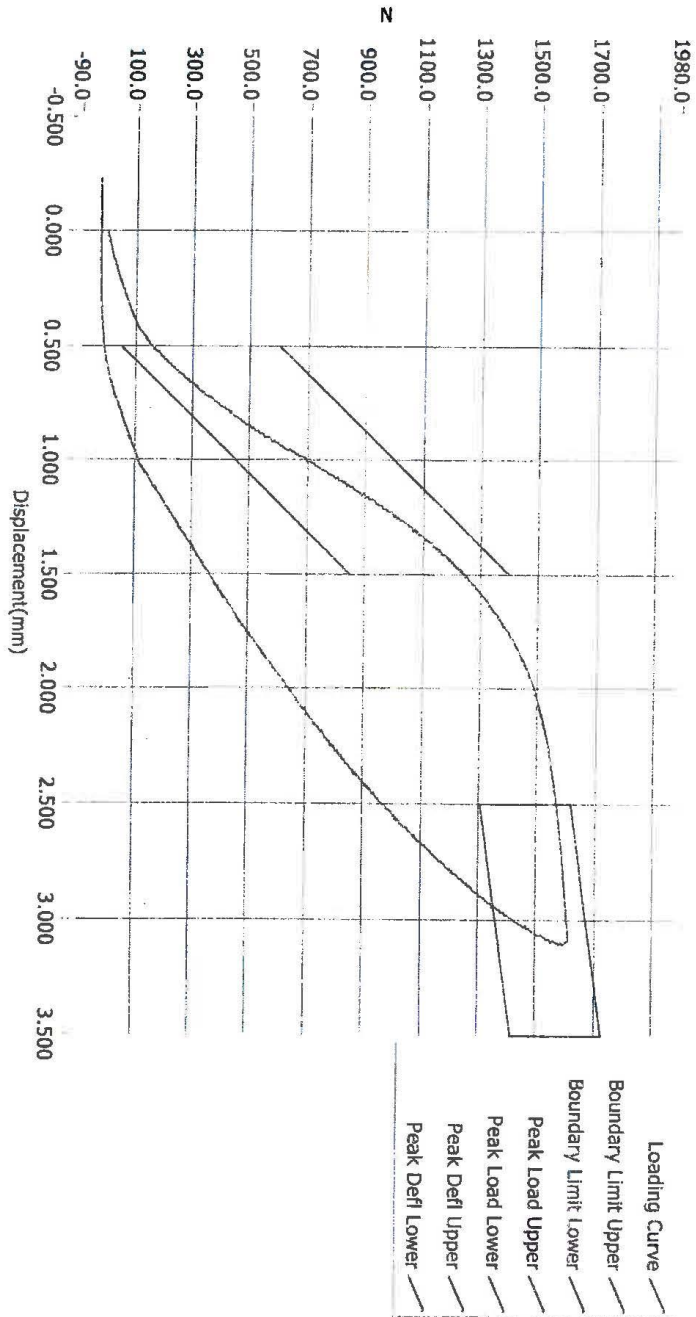
Channel	Manufacturer	Serial Number	Calibratio Date	Calibration Due Date
Probe Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Lower Spine Y Accelerometer	ENDEVCO 7264CT	AC-P51974	10/19/2015	4/18/2016
Upper Abdomen Rib Potentiometer	Servo 08CT1-3725	DS-1274GFE	10/19/2015	10/18/2016
Lower Abdomen Rib Potentiometer	Servo 08CT1-3745	DS-2316GFE	10/28/2015	10/27/2016







### Resultant Data - SIDIIS Plug Compression



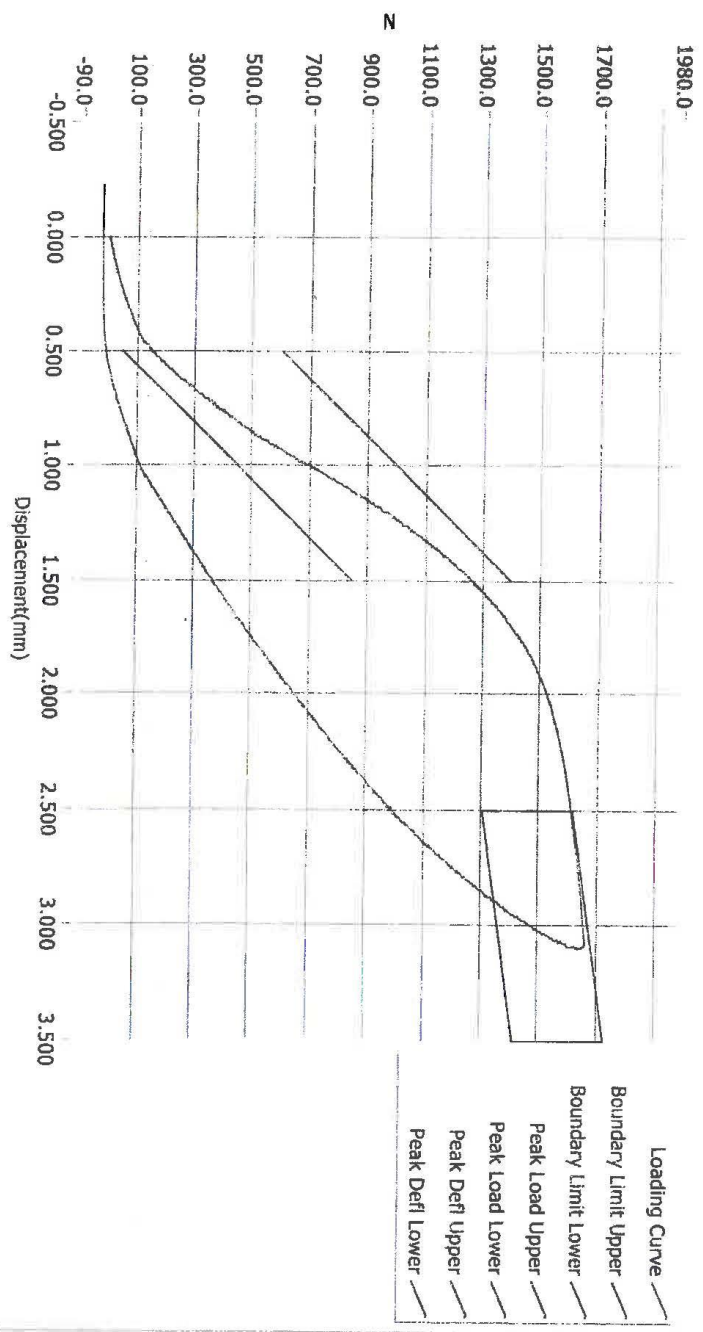
ATD Calibration Lab  
 CERTIFICATION  
 Mills Mkg

Test ID	Part Serial Number	Test Date	Test Time
Cert ID	49022	12/7/2011	1:13 AM
	ATD Serial Number	ATD Type	
	N/A	SIDIIS	

Current Date : 12/7/2011

Current Time : 01:13:51

### Resultant Data - SIDIIS Plug Compression



ATD Calibration Lab  
**CRASH**  
 Whittier Mfg

Test ID	Part Serial Number	Test Date	Test Time
Cert ID	48973	12/6/2011	10:09 PM
	ATD Serial Number	ATD Type	
	N/A	SIDIIS	

Current Date : 12/6/2011      Current Time : 22:10:07

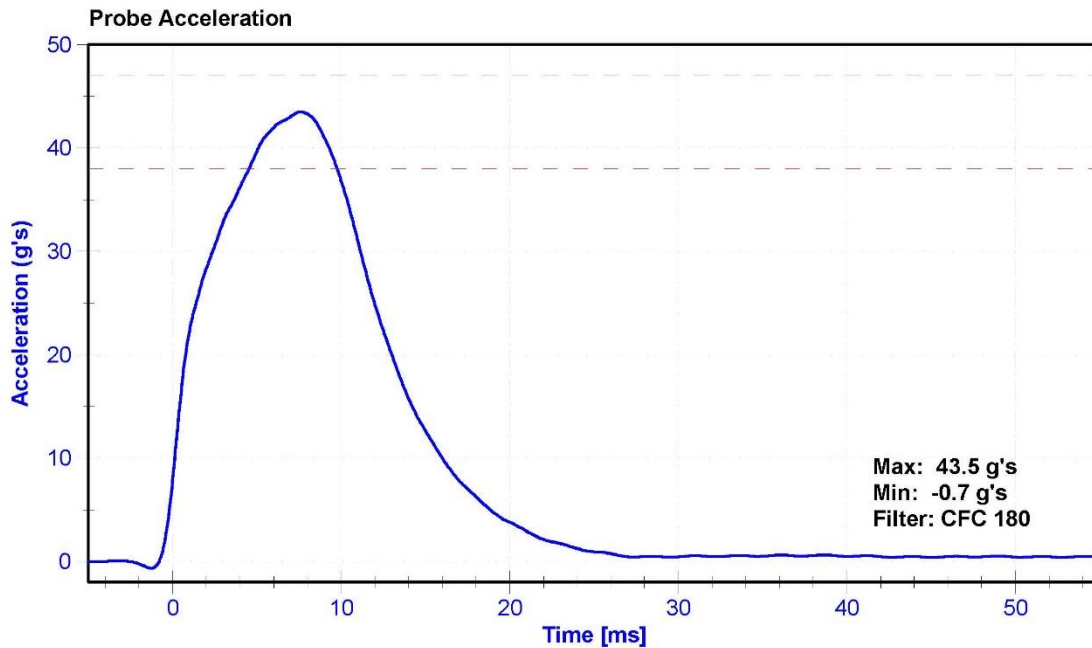
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

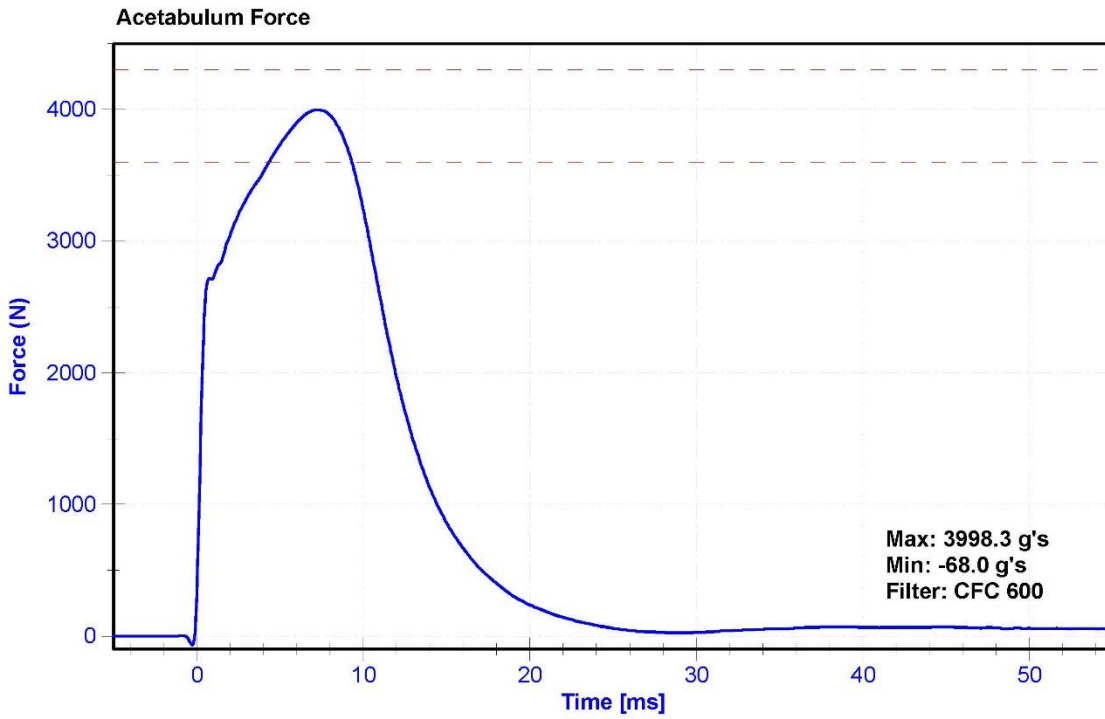
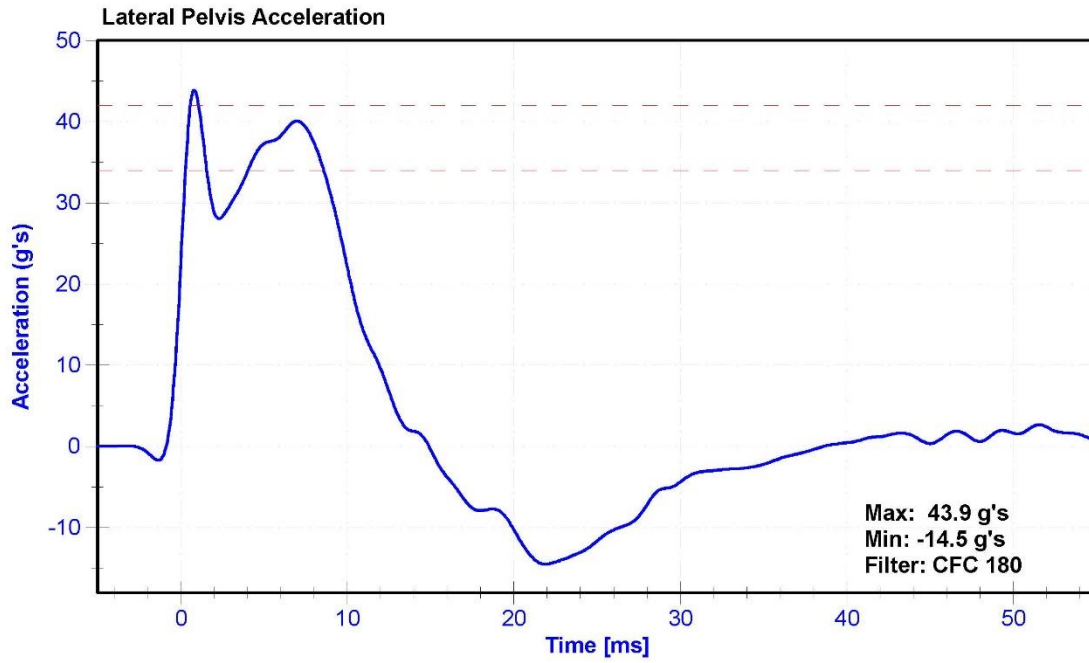
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.9	Pass
Humidity	10	70	%	47.3	Pass
Velocity	6.6	6.8	m/s	6.61	Pass
Probe Acceleration	38	47	g's	43.5	Pass
Lateral Pelvis Acceleration after 6ms	34	42	g's	40.1	Pass
Acetabulum Force	3,600	4,300	N	3998.3	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Pelvis Y Accelerometer	ENDEVCO 7264	AC-P51259	10/19/2015	4/18/2016
Acetabulum Load Cell	Denton IF-520	LC-236Fy	6/29/2015	6/28/2016
Certification Plug	Humanetics	49022	12/07/2011	N/A
Crash Test Plug	Humanetics	48973	12/06/2011	N/A





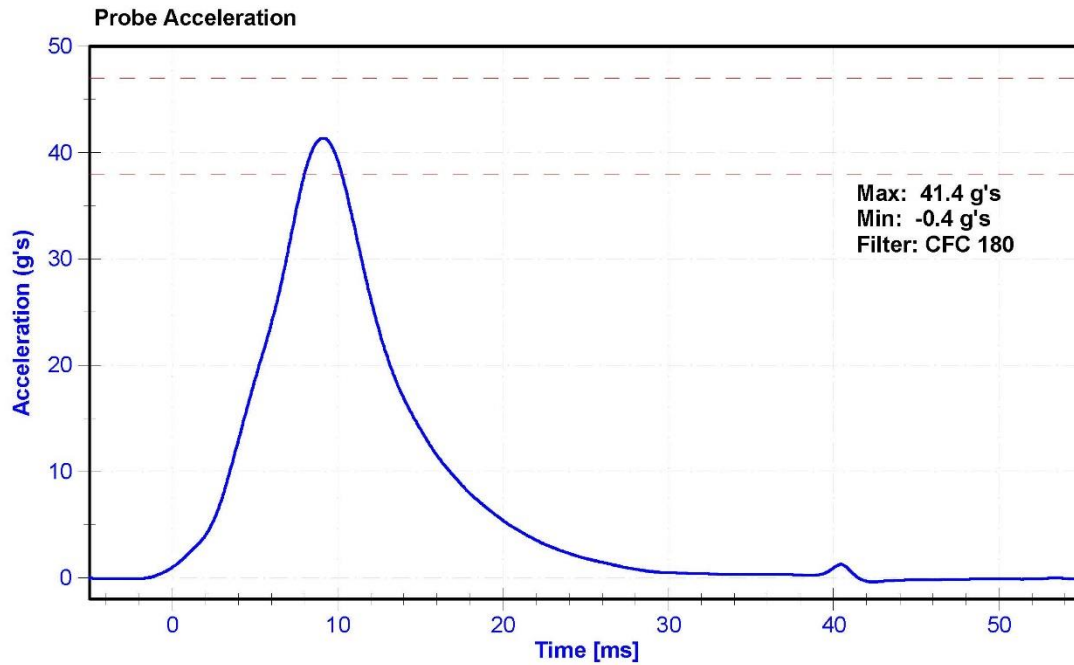
ATD Manufacturer	FTSS	Test Technician	M. Geesey
ATD Serial Number	303	Laboratory Supervisor	M. Goehle

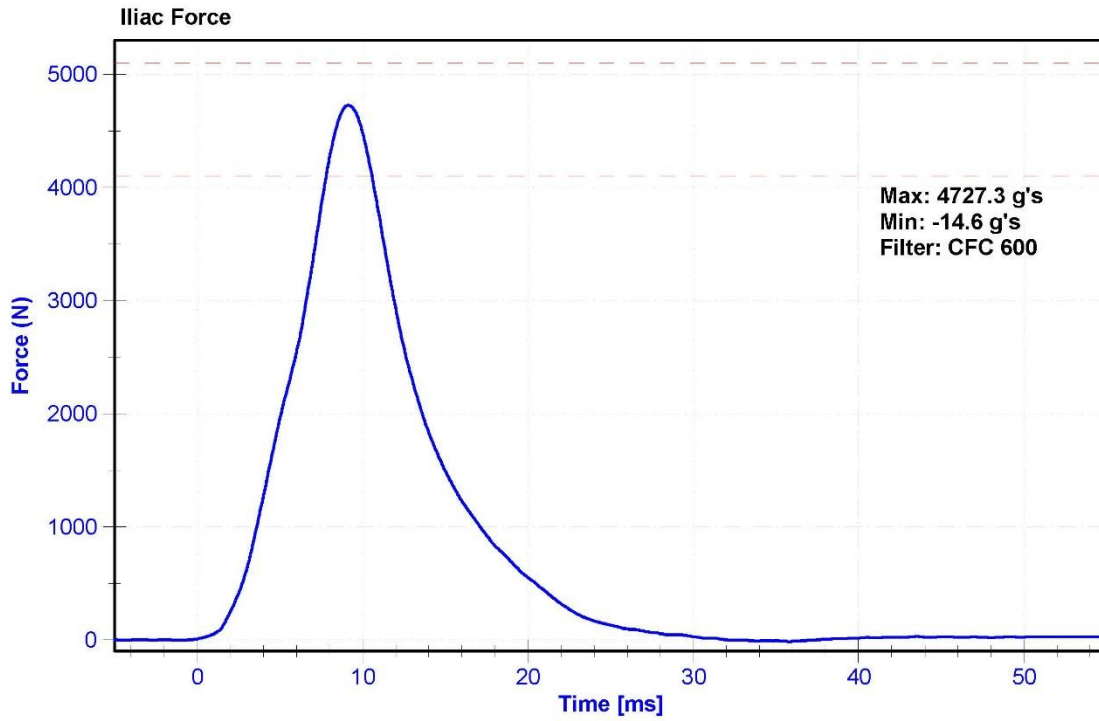
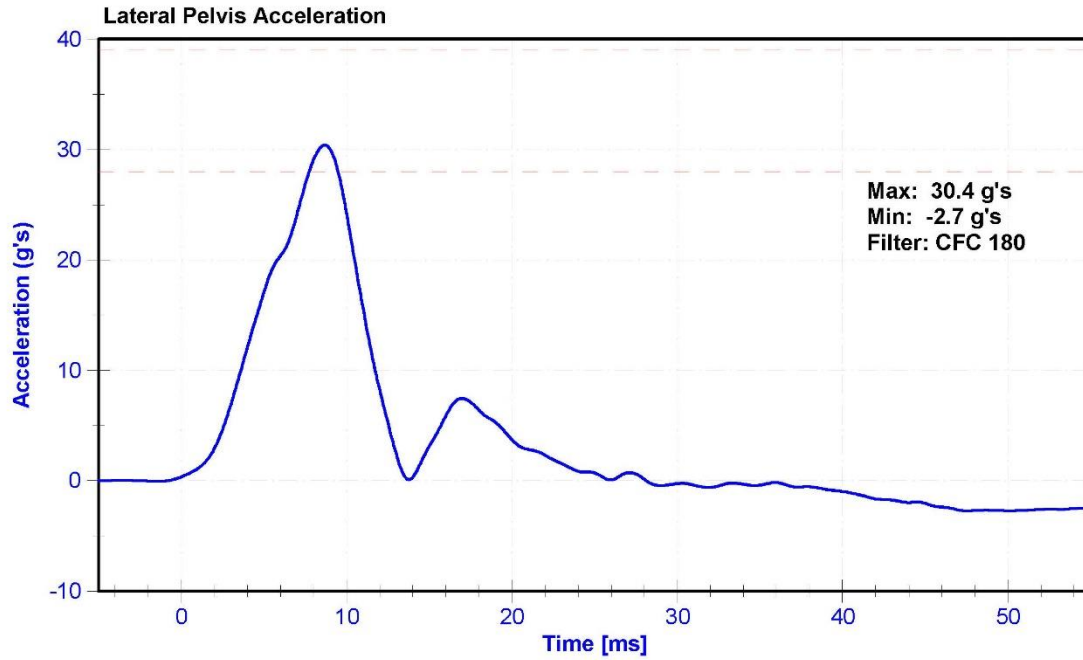
**Results**

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.3	Pass
Humidity	10	70	%	47.3	Pass
Velocity	4.2	4.4	m/s	4.37	Pass
Probe Acceleration	36	45	g's	41.4	Pass
Lateral Pelvis Acceleration	28	39	g's	30.4	Pass
Iliac Force	4,100	5,100	N	4727.3	Pass

**Transducer Calibrations**

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-C14972	8/13/2015	2/11/2016
Pelvis Y Accelerometer	ENDEVCO 7264	AC-P51259	10/19/2015	4/18/2016
Iliac Load Cell	DENTON 3228J	LC-285Fy	7/21/2015	7/20/2016





## APPENDIX D

### TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

**Table 1 – Dummy Instrumentation (ES-2re)**

			ES-2re S/N: F034		
			Serial Number	Manufacturer	Calibration Date
Head Accelerometers	Primary	X	AC-P58904	ENDEVCO	10/19/2015
		Y	AC-P58911	ENDEVCO	10/19/2015
		Z	AC-P58776	ENDEVCO	10/19/2015
	Redundant	X	AC-P58887	ENDEVCO	10/19/2015
		Y	AC-P58888	ENDEVCO	10/19/2015
		Z	AC-P51734	ENDEVCO	10/19/2015
Thorax Rib Displacement Potentiometers	Upper	Y	DS-183GFE	Honeywell	10/19/2015
	Middle	Y	DS-184GFE	Honeywell	10/19/2015
	Lower	Y	DS-182GFE	Honeywell	10/19/2015
Abdomen Load Cells	Forward	Y	LC-1512	DENTON	6/25/2015
	Middle	Y	LC-1526	DENTON	6/25/2015
	Rear	Y	LC-1516	DENTON	6/25/2015
Lower Spine Accelerometers (T12)		X	AC-P52079	ENDEVCO	10/16/2015
		Y	AC-P51948	ENDEVCO	10/16/2015
		Z	AC-P51269	ENDEVCO	10/16/2015
Pubic Symphysis Load Cell		Y	LC-465Fy	Denton	6/25/2015

**Table 2 – Dummy Instrumentation (SID-IIs)**

			SID-IIs S/N: 303			
			Serial Number	Manufacturer	Calibration Date	
Head Accelerometers	Primary	X	AC-P83420	Endevco	10/16/2015	
		Y	AC-P52040	ENDEVCO	10/14/2015	
		Z	AC-P58737	ENDEVCO	10/14/2015	
	Redundant	X	AC-P51668	ENDEVCO	10/14/2015	
		Y	AC-P51327	ENDEVCO	10/14/2015	
		Z	AC-P51695	ENDEVCO	10/14/2015	
Displacement Potentiometers	Thoracic Rib	Upper	Y	DS-1199GFE	Servo	10/19/2015
		Middle	Y	DS-1246GFE	Servo	10/19/2015
		Lower	Y	DS-1256GFE	Servo	10/19/2015
	Abdominal Rib	Upper	Y	DS-1274GFE	Servo	10/19/2015
		Lower	Y	DS-2316GFE	Servo	10/28/2015
Lower Spine Accelerometers (T12)		X	AC-P51945	ENDEVCO	10/19/2015	
		Y	AC-P51974	ENDEVCO	10/19/2015	
		Z	AC-P51946	ENDEVCO	10/19/2015	
Acetabulum Load Cell		Y	LC-236Fy	Denton	6/29/2015	
Iliac Wing Load Cell		Y	LC-285Fy	DENTON	7/21/2015	
Pelvis Plug (struck side)			49022	HUMANETICS	12/7/2011	
Pelvis Plug (non-struck side)			-	-	-	

**Table 3 – Vehicle Instrumentation**

Vehicle Instrumentation			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	AC-A112908	MSI 1201	10/9/2015
	Vehicle Center of Gravity	Y	AC-A156937	MSI 1201	10/9/2015
	Vehicle Center of Gravity	Z	AC-A156941	MSI 1201	10/9/2015
2	Right Sill at Front Seat	X	AC-A156928	MSI 1201	10/9/2015
	Right Sill at Front Seat	Y	AC-A156913	MSI 1201	10/9/2015
	Right Sill at Front Seat	Z	AC-A156934	MSI 1201	10/9/2015
3	Right Sill at Rear Seat	X	AC-A156923	MSI 1201	10/8/2015
	Right Sill at Rear Seat	Y	AC-A156939	MSI 1201	10/8/2015
	Right Sill at Rear Seat	Z	AC-A156917	MSI 1201	10/8/2015
4	Left Sill at Front Door	Y	AC-A156931	MSI 1201	10/19/2015
5	Left Sill at Rear Door	Y	AC-A156936	MSI 1201	10/15/2015
6	Left A-Post Lower	Y	AC-A081439	MSI 1201	10/19/2015
7	Left A-Post Middle	Y	AC-A126786	MSI 1201	10/19/2015
8	Left B-Post Lower	Y	AC-A127658	MSI 1201	10/15/2015
9	Left B-Post Middle	Y	AC-A127671	MSI 1201	10/15/2015
10	Front Seat Track	Y	AC-A156932	MSI 1201	10/19/2015
11	Rear Seat Track or Structure	Y	AC-A002369	MSI 1201	10/8/2015
12	Right Rear Occ. Compartment	Y	AC-A079084	MSI 1201	10/8/2015
13	Engine Block	X	AC-A127657	MSI 1201	8/21/2015
	Engine Block	Y	AC-A126818	MSI 1201	10/14/2015
14	Rear Floorpan Above Axle	X	AC-A120627	MSI 1201	10/8/2015
	Rear Floorpan Above Axle	Y	AC-A120613	MSI 1201	10/9/2015
	Rear Floorpan Above Axle	Z	AC-A126805	MSI 1201	10/9/2015

**TABLE 4 – MDB Instrumentation**

MDB Instrumentation		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	AC-C14901	ENDEVCO	6/15/2015
MDB Center of Gravity	Y	AC-CP30	ENDEVCO	6/15/2015
MDB Center of Gravity	Z	AC-C16680	ENDEVCO	6/15/2015
Left Frame at Rear Axle Centerline	X	AC-AH5M8	ENDEVCO	6/15/2015
Left Frame at Rear Axle Centerline	Y	AC-C16499	ENDEVCO	6/15/2015