

REPORT NUMBER: SNCAP-CAL-07-08

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

**FORD MOTOR COMPANY
2008 FORD ESCAPE
MPV**

NHTSA NUMBER: M80201

**PREPARED BY:
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P.O. BOX 400
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Test Date: March 9, 2007

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
RULEMAKING
OFFICE OF CRASHWORTHINESS STANDARDS
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Technical Report Documentation Page

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16. Abstract A 55/28 kph 90° Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2008 Ford Escape MPV 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 the Calspan Corporation Crash Test Facility in Buffalo, New York, on March 9, 2007. The impact velocity of the Moving Deformable Barrier (MDB) was 61.5 km/h, and the ambient temperature at the struck side (driver side) of the vehicle was 21°C. The target vehicle's maximum post test static crush was 277 mm at level 3. The test vehicle's occupant performance is as follows: <table style="margin-left: auto; margin-right: auto; border: none;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><u>DRIVER</u></th> <th style="text-align: center;"><u>PASS.</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td style="text-align: center;">31.0</td> <td style="text-align: center;">29.8</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td style="text-align: center;">34.1</td> <td style="text-align: center;">39.1</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td style="text-align: center;">30.7</td> <td style="text-align: center;">45.5</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td style="text-align: center;">32</td> <td style="text-align: center;">42</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td style="text-align: center;">75.2</td> <td style="text-align: center;">69.4</td> </tr> <tr> <td>HIC</td> <td style="text-align: center;">80.4</td> <td style="text-align: center;">721.0</td> </tr> </tbody> </table> <p>The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.</p>					<u>DRIVER</u>	<u>PASS.</u>	Left Upper Rib (LUR) Accel., g	31.0	29.8	Left Lower Rib (LLR) Accel., g	34.1	39.1	Lower Spine (T ₁₂) Accel., g	30.7	45.5	Thoracic Trauma Index (TTI)	32	42	Pelvis (PEV) Accel., g	75.2	69.4	HIC	80.4	721.0
	<u>DRIVER</u>	<u>PASS.</u>																						
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HIC	80.4	721.0																						
17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, Room 5111 (NAD-52) 400 Seventh Street, S.W. Washington, D.C. 20590																						
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SECTION 1
PURPOSE AND TEST PROCEDURE

PURPOSE

This side impact test was conducted as part of the FY' 2007 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-03-D-22005. The purpose of this test was to evaluate side impact protection in a 2008 Ford Escape MPV manufactured by Ford Motor Company. The side impact test was conducted in accordance with the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated July 1997.

SECTION 2

SUMMARY OF NCAP SIDE IMPACT TEST

A model year 2008 Ford Escape MPV 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 61.5 km/h. The specified impact velocity range is from 61.1 to 62.7 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 1903.0 kg and the test weight of the MDB was 1362.5 kg. The test was conducted at the Calspan Corporation Transportation Sciences Center on March 9, 2007.

One (1) real-time motion picture camera and ten (10) high-speed motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and Side Impact Dummies (SID/HIII's) can be found in Appendix A.

Two 50th percentile adult male SID/HIII's were placed in the driver (P1) and left rear passenger (P4) designated seating positions according to instructions specified in the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated July 1997. Each SID/HIII was instrumented in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y and Z axes primary and redundant)
- Upper Neck load cell (Fx, Fy, Fz, Mx, My, Mz)

The test vehicle was instrumented with twenty-one (21) structural accelerometers and the MDB was instrumented with five (5) accelerometers.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 277 mm at level 3, 1350 mm rearward of the left vertical impact point. The driver and passenger SID/HIII's, Serial Nos. 905 and 906 respectively, were calibrated just prior to this test.

Test data and observations are presented in this section of the report. Appendix A contains the still photograph prints. Appendix B contains the driver and passenger SID/HIII's, vehicle, and MDB response data traces. Appendix C contains the SID/HIII's configuration and performance verification data. Appendix D contains the test equipment information.

The occupant data is summarized below:

ATD position	HIC(36)	T ₁	T ₂	TTI (G's)	Peak Pelvis (G's)
Driver	80.4	34.8	70.8	32	75.2
Passenger	721.0	61.3	71.5	42	69.4

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	NA	NA
Side Torso Airbag	Yes	Yes	NA	NA
Side Head/Torso Combination Airbag	NA	NA	NA	NA
Curtain Airbag	Yes	Yes	Yes	Yes

The test instrumentation data listed in Appendix B can be found on the NHTSA website:
www.nhtsa.dot.gov.

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2008 Ford Escape	NHTSA No.	M80201
Test Program:	NCAP Side Impact	Test Date:	March 9, 2007

TEST VEHICLE INFORMATION AND VEHICLE OPTIONS

Make	Ford Motor Company	Driver Front Airbag	Yes
Model	Escape	Driver Side Curtain Airbag	Yes
Body Style	MPV	Driver Side Torso Airbag	Yes
NHTSA No.	M80201	Driver Pretensioners	Yes
VIN	1FMCU93198KA04392	Driver Load Limiters	Yes
Color	Blue	Driver Power Seats	Yes
Engine Disp.(L)	3.0	Rear Pass. Side Curtain Airbag	Yes
Engine Cylinders	6	Rear Pass. Side Torso Airbag	No
Engine Placement	Lateral	Rear Pass. Pretensioners	No
Transmission Type	Automatic	Rear Pass. Load Limiters	No
Transmission Speeds	4	Rear Pass. Power Seats	NA
Final Drive	4 Wheel	Tilt Wheel	Yes
Air Conditioning	Yes	Anti-lock Brakes	Yes
Power Steering	Yes	Traction Control	Yes
Power Brakes	Yes	Power Windows	Yes
Delivery Date	2/19/07	Power Door Locks	Yes
Odometer Reading (km)	50	Automatic Door Locks (ADL)	Yes
Dealer	West-Herr Ford, Inc.	Owner's Manual Details Instructions on Disabling ADLs	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Ford Motor Company	GVWR (kg)	2105
		GAWR Front (kg)	1107
Date of Manufacture	02/07	GAWR Rear (kg)	1057

VEHICLE CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench		
Number Of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				449.0
Cargo Wt. (RCLW) (kg)				108.8

DATA SHEET NO. 1 (continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2008 Ford Escape	NHTSA No.	M80201
Test Program:	NCAP Side Impact	Test Date:	March 9, 2007

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			Fully Loaded (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	474.5	372.0		513.0	500.0		538	457	
Right	kg	488.0	306.0		504.0	400.0		477	431	
Ratio	%	58.7	41.3		53.1	46.9		53.3	46.7	
Totals	kg	962.5	678.0	1640.5	1017.0	900.0	1917.0	1015.0	888.0	1903.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1640.5
Weight of 2 P572E ATDs (81.2 kg each)	kg	162.4
Rated Cargo/Luggage Weight (RCLW)	kg	108.8
Calculated Vehicle Target Weight (TVTW)	kg	1911.7

* Actual As Tested Weight (ATW) will be TVTW -4.5/-9.1 kg

Weight of Ballast (including instrumentation package and cameras):

**!Undefined
Bookmark,** kg
RCLW

TEST VEHICLE ATTITUDES

	Units	LF	RF	LR	RR
As Delivered	mm	818	827	862	871
Fully Loaded	mm	807	820	820	838
As Tested	mm	808	821	821	839

TEST VEHICLE VERTICAL IMPACT LINE AND CG

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2621
Target Impact Point Aft of Front Axle	mm	371
Actual Impact Point Aft of Front Axle	mm	373
As Tested CG (aft of front axle)	mm	1223

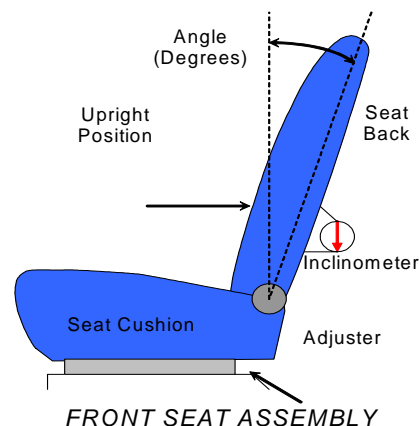
DATA SHEET NO. 3

TEST VEHICLE INFORMATION

Test Vehicle: 2008 Ford Escape NHTSA No. M80201
 Test Program: NCAP Side Impact Test Date: March 9, 2007

NORMAL DESIGN RIDING POSITION

The driver and passenger seat back is positioned to the manufacturer's designated angle.

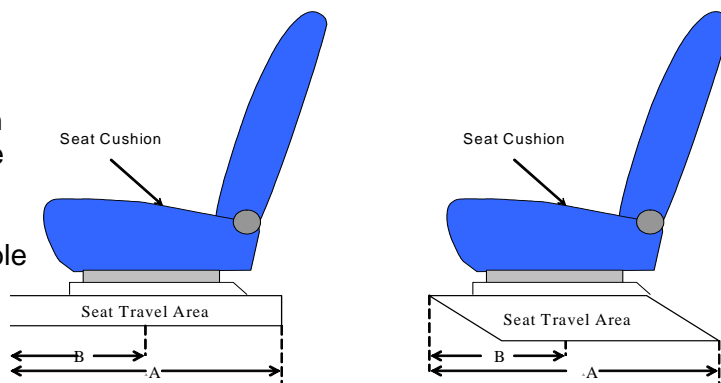


SEAT BACK POSITION

	Driver Seat	Rear Seat
Test Detent (forward-most detent defined as 0)	Detent 12	Not Adjustable
Angle (deg. from forward-most locking position)	17.5	Not Adjustable
Alternative Measurements to Verify Test Position	Recline 9.4 degrees from full upright on headpost	N/A

SEAT FORE/AFT POSITIONS

The total seat travel was measured from forward most position to rearmost position irrespective of vertical seat height in those positions. The seat was set at the longitudinal mid position with vertical adjustment at the lowest position obtainable for both the driver and passenger.



SEAT FORE/AFT POSITION

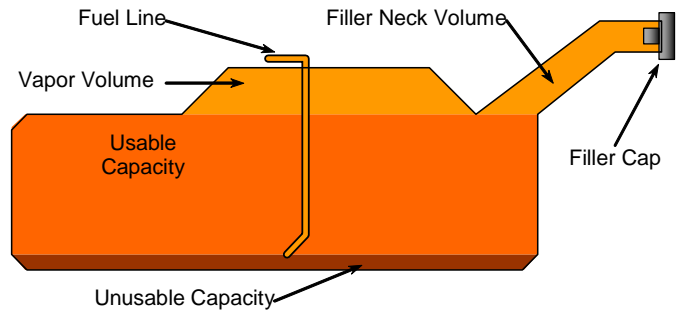
	Driver Seat	Rear Seat
Total Fore/Aft Travel (A) (mm)	286	N/A (fixed)
Test Position (B) (mm)	143	N/A
Test Detent (forward-most detent defined as 0)	Electronic	N/A (fixed)
Total Number of Detents (including 0)	Electronic	N/A (fixed)

DATA SHEET NO. 3 (CONTINUED)
TEST VEHICLE INFORMATION

Test Vehicle: 2008 Ford Escape NHTSA No. M80201
 Test Program: NCAP Side Impact Test Date: March 9, 2007

FUEL SYSTEM INFORMATION

The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies the area under the rear seat.



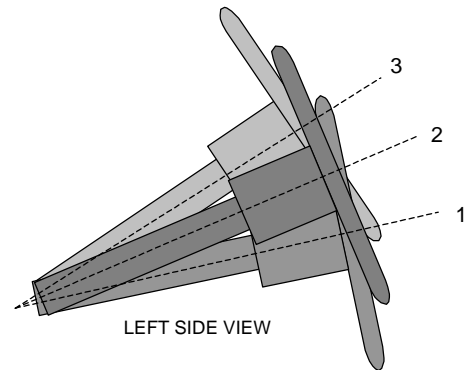
VEHICLE FUEL TANK ASSEMBLY

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard" Fuel Tank	62.5
Usable Capacity of "Optional" Fuel Tank	NA
Stoddard Used For Test (92%-94% of Fuel Tank Usable Capacity)	58.1

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITION

	Fore/Aft Position (mm)	Tilt (degrees)	Tilt (detent)
Lowermost Position No. 1	NA	22.6	NA
Geometric Center Position No. 2 *	NA	24.9	NA
Uppermost Position No. 3	NA	27.2	NA

* Test position

DATA SHEET NO. 4**MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS**

Test Vehicle:	2008 Ford Escape	NHTSA No.	M80201
Test Program:	NCAP Side Impact	Test Date:	March 9, 2007

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1250
Overall Length Including Honeycomb Face	4120
Wheel base of Framework Carriage	2590
Tread of Framework Carriage (front & rear)	1875
C.G. Location aft of Front Axle	1104

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	409.5	281.5	
Right	kg	372.5	299.0	
Ratio	%	57.4	42.6	
Totals	kg	782.0	580.5	1362.5

MDB SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.5
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.5

POST TEST OBSERVATIONS**MDB LEFT EDGE IMPACT POINT DATA**

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	2 mm rearward
Vertical Offset	mm	+/-20	0 mm

DATA SHEET NO. 5

POST TEST OBSERVATIONS

Test Vehicle:	2008 Ford Escape	NHTSA No.	M80201
Test Program:	NCAP Side Impact	Test Date:	March 9, 2007

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	SID/HIII / 905	SID/HIII / 906
Head Contact	Side of head to side curtain airbag	Side of head to side curtain airbag Top/side head to side riser & C-pillar
Upper Torso Contact	Side Torso Airbag	Side curtain airbag
Lower Torso Contact	Door trim	Door trim
Left Knee Contact	Door trim	Door trim
Right Knee Contact	Right knee to left knee	Right knee to left knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Locked/Unlocked Doors	Doors were unlocked	Doors were unlocked
Left Side Door Opening	Door remained closed and latched	Door remained closed and latched
Right Side Door Opening	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Seat Movement	0	0
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	None
Window Damage	None
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT INFORMATION

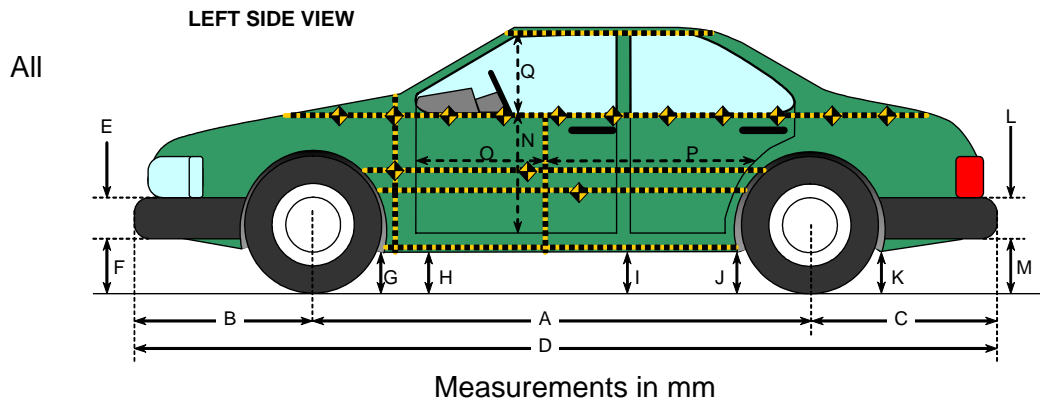
Restraint Type	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	NA	NA
Side Torso Airbag	Yes	Yes	NA	NA
Side Head/Torso Combination Airbag	NA	NA	NA	NA
Curtain Airbag*	Yes	Yes	Yes	Yes

* The right side curtain airbag deployed during impact

DATA SHEET NO. 6

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2008 Ford Escape NHTSA No. M80201
 Test Program: NCAP Side Impact Test Date: March 9, 2007

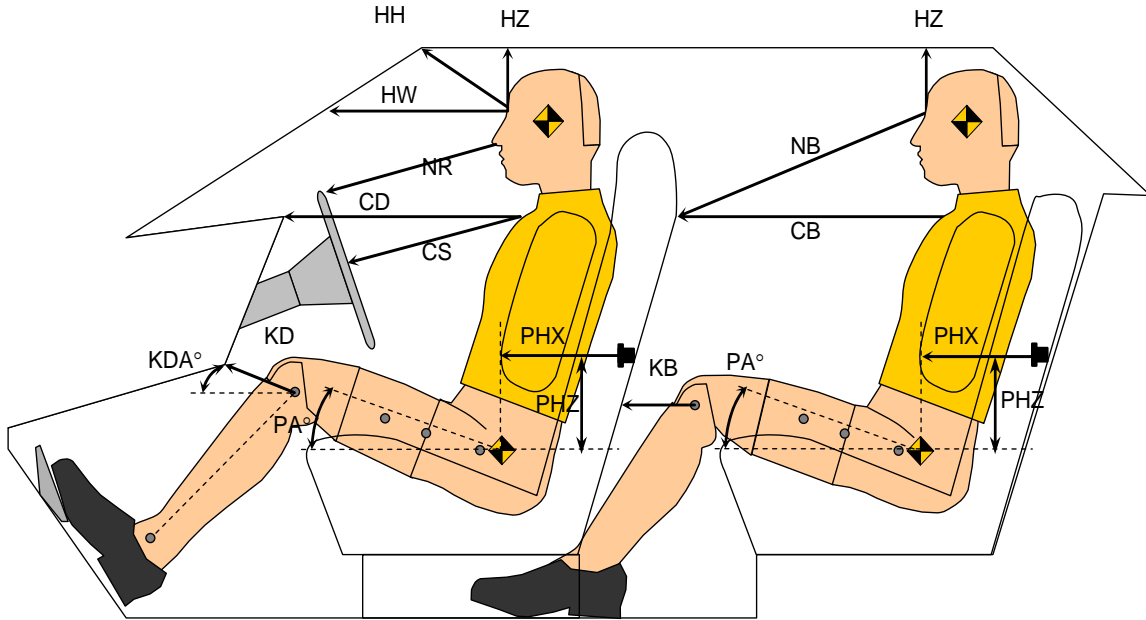


Code	Measurement Description	Pre-Test (delivered)	Pre-Test (as tested)	Post-Test (as tested)	Difference
A	Wheelbase	2621	2621	2614	7
B	Front Axle to FSOV	859	859	858	1
C	Rear Axle to RSOV	959	959	949	10
D	Total Length at Centerline	4438	4438	4421	17
E	Front Bumper Thickness	140	140	143	-3
F	Front Bumper Bottom to Ground	519	514	532	-18
G	Sill Height at Front Wheel Well	277	265	286	-21
H	Sill Height at Front Door Leading Edge	290	278	283	-5
I	Sill Height at "B" Pillar	313	284	276	8
J1	Sill Height at Rear Wheel Well	323	295	301	-6
J2	Pinch Weld Height at Rear Wheel Well	323	295	303	-8
K	Sill Height Aft of Rear Wheel Well	359	307	323	-16
L	Rear Bumper Thickness	180	180	181	-1
M	Rear Bumper Bottom to Ground	458	413	414	-1
N	Sill Height to Window Bottom Sill	716	716	666	50
O	Front Door Leading Edge to Impact CL	694	694	759	-65
P	Rear Door Trailing Edge to Impact CL	1141	1141	1007	134
Q	Front Window Opening	454	454	450	4
R	Right Side Length	4346	4346	4330	16
S	Left Side Length	4346	4346	4329	17
T	Vehicle Width at "B" Post	1724	1724	1520	204

DATA SHEET NO. 7

SID/HII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle:	2008 Ford Escape	NHTSA No.	M80201
Test Program:	NCAP Side Impact	Test Date:	March 9, 2007

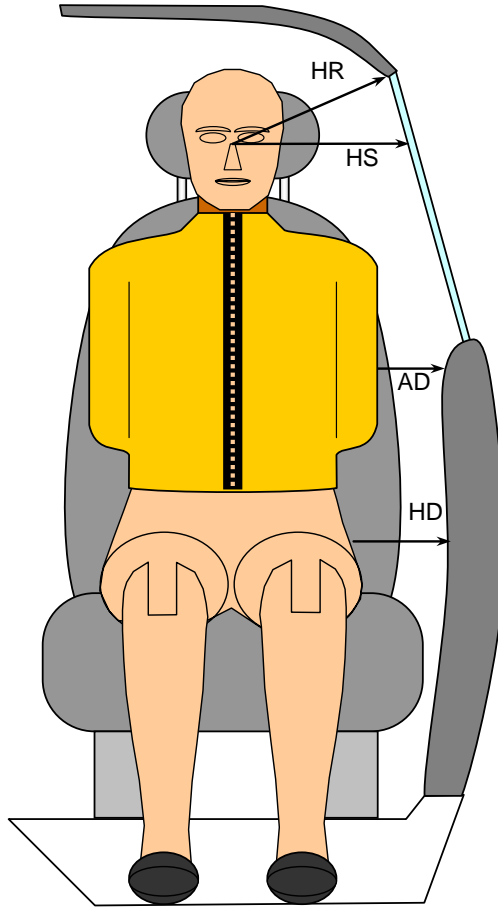


Driver Code	Pass. Code	Measurement Description	Driver S/N 905		Passenger S/N 906	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	411			
HW		Head to Windshield	578			
HZ	HZ	Head to Roof	155		160	
NR	NB	Nose to Rim/Nose to Seatback	454		696	
CD	CB	Chest to Dash or Seatback	557		599	
CS		Chest to Steering Wheel	321			
KDL	KBL	Left Knee to Dash or Seatback	132	20	207	19
KDR	KBR	Right Knee to Dash or Seatback	123	35	205	22
PA	PA	Pelvic Angle		23.2		23.3
PHX	PHX	H-Point to Striker (X-Axis)	203		246	
PHZ	PHZ	H-Point to Striker (Z-Axis)	105		264	

DATA SHEET NO. 8

SID/IIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle:	2008 Ford Escape	NHTSA No.	M80201
Test Program:	NCAP Side Impact	Test Date:	March 9, 2007



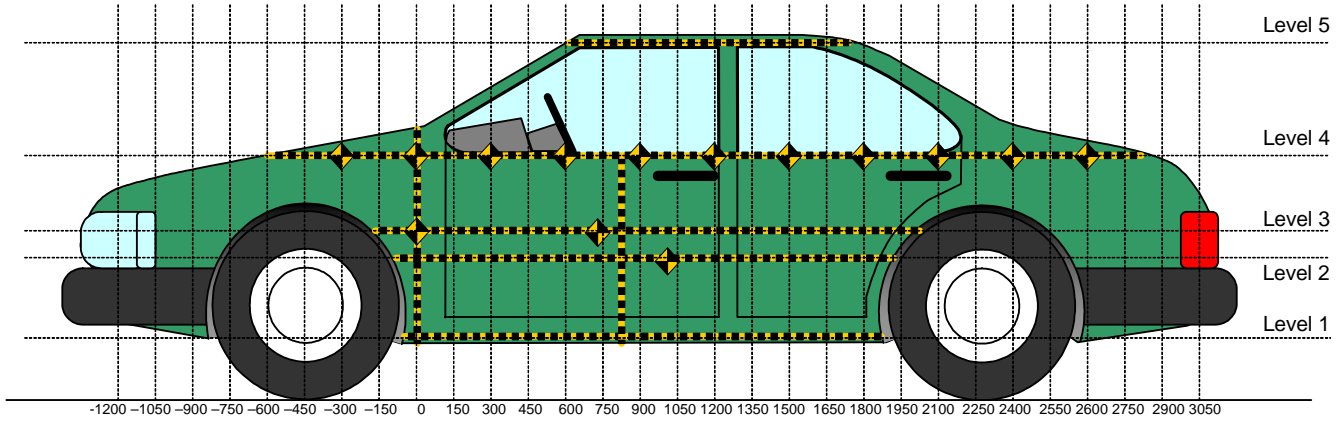
FRONT VIEW OF DUMMY

Code	Measurement Description	Units	Driver S/N 905	Passenger S/N 906
HR	Head to Side Header	mm	201	235
HS	Head to Side Window	mm	312	260
AD ₁	Arm to Door (at upper rib level)	mm	116	142
AD ₂	Arm to Door (at lower rib level)	mm	112	153
HD	H-Point to Door	mm	142	165

DATA SHEET NO. 9

VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2008 Ford Escape NHTSA No. M80201
 Test Program: NCAP Side Impact Test Date: March 9, 2007



All Measurements Shown in mm

LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.
 Measurements along the vertical 750 mm.
 All measurements below in mm.

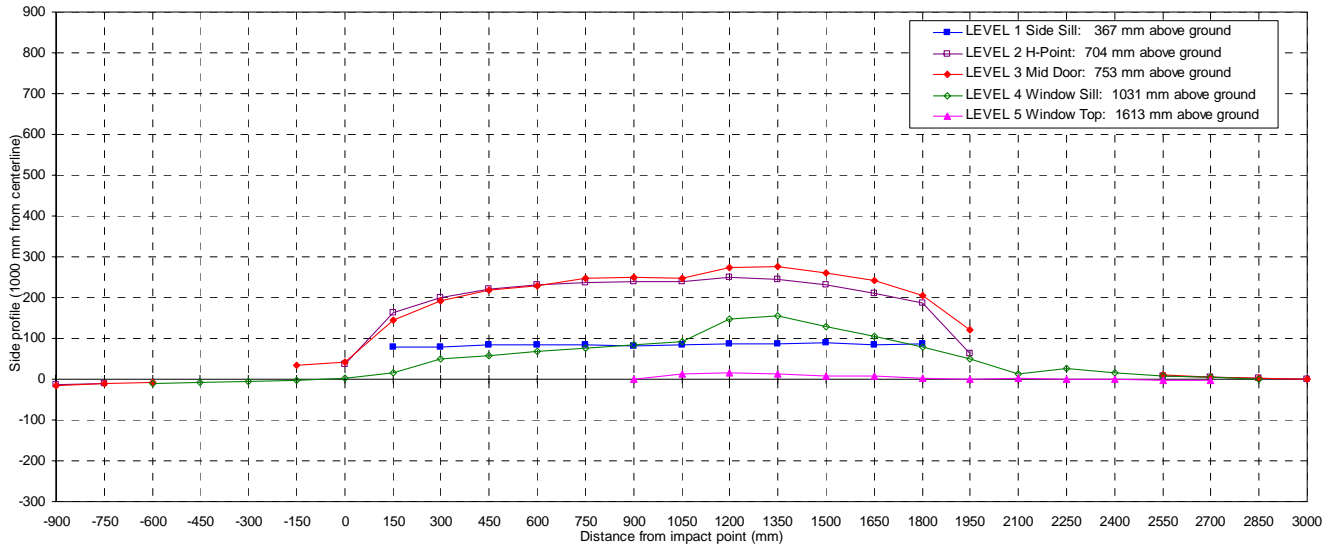
Level	Measurement Description	Maximum Exterior Static Crush	Height Above Ground	Distance From Impact
1	Sill Top	89	367	1500
2	Occupant H-Point	249	704	1200
3	Mid Door	277	753	1350
4	Window Sill	155	1031	1350
5	Window	15	1613	1200
	Maximum Penetration	277		

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2008 Ford Escape
 Test Program: NCAP Side Impact

NHTSA No. M80201
 Test Date: March 9, 2007



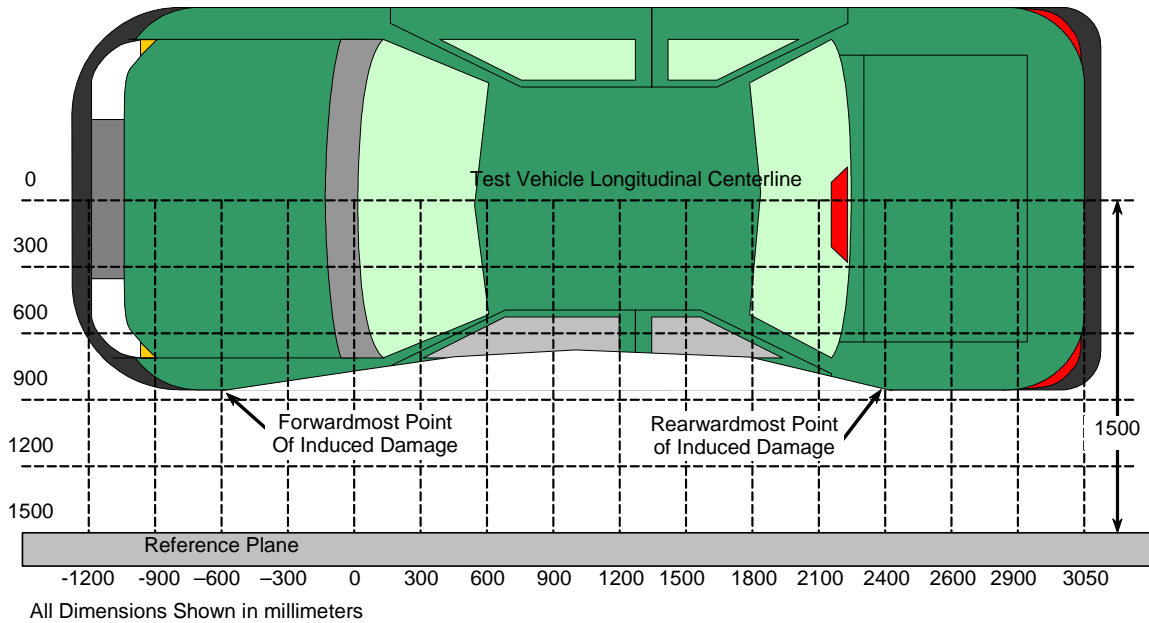
NOTE: All dimensions are in millimeters with a tolerance of ±3 mm

		DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																											
LEVEL	HEIGHT (mm)	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000	
LEVEL 1 SIDE SILL	PRE	--	--	--	--	--	--	--	148	184	182	176	180	175	180	179	175	179	176	159	--	--	--	--	--	--	--	--	
	POST	--	--	--	--	--	--	--	228	262	265	260	264	257	263	265	262	268	259	245	--	--	--	--	--	--	--	--	
	CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	80	78	83	84	84	82	83	86	87	89	83	86	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
LEVEL 2 H POINT	PRE	199	127	--	--	--	--	100	130	128	127	126	125	125	124	125	126	128	130	120	106	--	--	--	108	147	179	199	
	POST	185	116	--	--	--	--	137	294	329	347	357	363	365	364	374	372	359	341	308	170	--	--	--	117	151	182	200	
	CRUSH	-14	-11	N/A	N/A	N/A	N/A	37	164	201	220	231	238	240	240	249	246	231	211	188	64	N/A	N/A	N/A	9	4	3	1	
LEVEL 3 MID DOOR	PRE	206	149	109	--	--	96	109	129	127	125	124	123	123	123	124	126	128	124	102	--	--	--	108	158	175	203		
	POST	191	138	101	--	--	129	151	273	319	344	352	370	374	371	398	401	387	371	330	222	--	--	--	118	163	178	204	
	CRUSH	-15	-11	-8	N/A	N/A	33	42	144	192	219	228	247	251	248	275	277	261	243	206	120	N/A	N/A	N/A	10	5	3	1	
LEVEL 4 WINDOW SILL	PRE	--	--	255	214	193	180	168	160	153	149	145	143	142	140	139	139	140	141	142	146	146	149	157	161	170	180	--	
	POST	--	--	245	207	189	177	171	175	204	206	214	220	225	233	287	294	268	245	221	196	160	175	172	169	174	181	--	
	CRUSH	N/A	N/A	-10	-7	-4	-3	3	15	51	57	69	77	83	93	148	155	128	104	79	50	14	26	15	8	4	1	N/A	
LEVEL 5 WINDOW TOP	PRE	--	--	--	--	--	--	--	--	--	--	--	--	466	406	388	379	375	373	373	375	377	381	388	398	415	--	--	
	POST	--	--	--	--	--	--	--	--	--	--	--	--	466	418	403	391	383	380	376	375	379	382	387	396	413	--	--	
	CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	12	15	12	8	7	3	0	2	1	-1	-2	-2	N/A	N/A	

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2008 Ford Escape NHTSA No. M80201
 Test Program: NCAP Side Impact Test Date: March 9, 2007



TOP VIEW

DAMAGE PROFILE DISTANCES

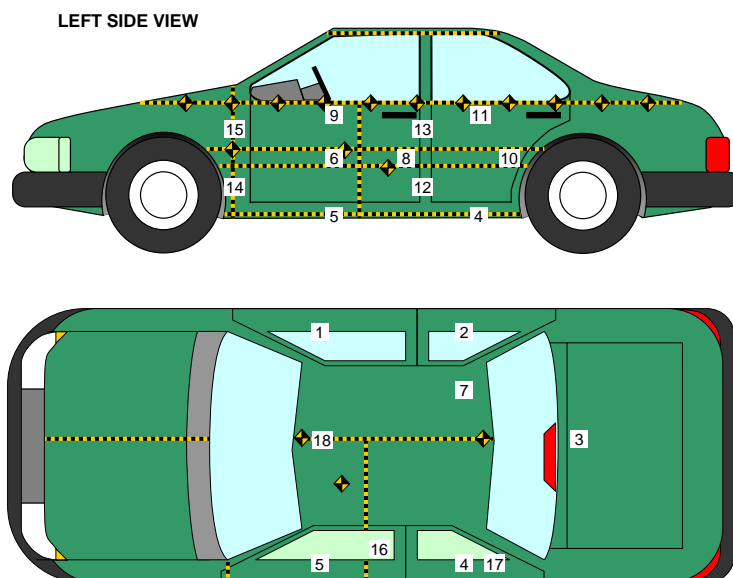
DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1 (LR)	2850	704	179	182	3
2	2220	1031	148	172	24
3	1590	753	127	377	250
4	960	753	123	373	250
5	330	704	128	333	205
6 (LF)	-300	1031	193	189	-4

Reference plane is parallel to test vehicle longitudinal centerline.
 Given dimensions = Reference plane to vehicle body.

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle:	2008 Ford Escape	NHTSA No.:	M80201
Test Program:	NCAP Side Impact	Test Date:	March 9, 2007



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2799	642	-414
2	Right Sill at Rear Seat	1893	637	-423
3	Rear Floorpan Above Axle	1129	37	-682
4	Left Sill at Rear Door	1874	-645	-411
5	Left Sill at Front Door	2796	-634	-395
6	Left Front Door C/L**	-	-	-
7	Rear Occupant Compartment	1911	394	-437
8	Left Front Door Mid-Rear**	-	-	-
9	Left Front Door Upper C/L**	-	-	-
10	Left Rear Door Mid-Rear**	-	-	-
11	Left Rear Door Upper C/L**	-	-	-
12	Left Lower B-Post	1996	-668	-582
13	Left Middle B-Post	1951	-686	-1065
14	Left Lower A-Post	2967	-663	-474
15	Left Middle A-Post	2967	-663	-1125
16	Front Seat Track	2153	-564	-477
17	Rear Seat Track or Structure	1213	-508	-603
18	Vehicle CG	2360	-10	-698

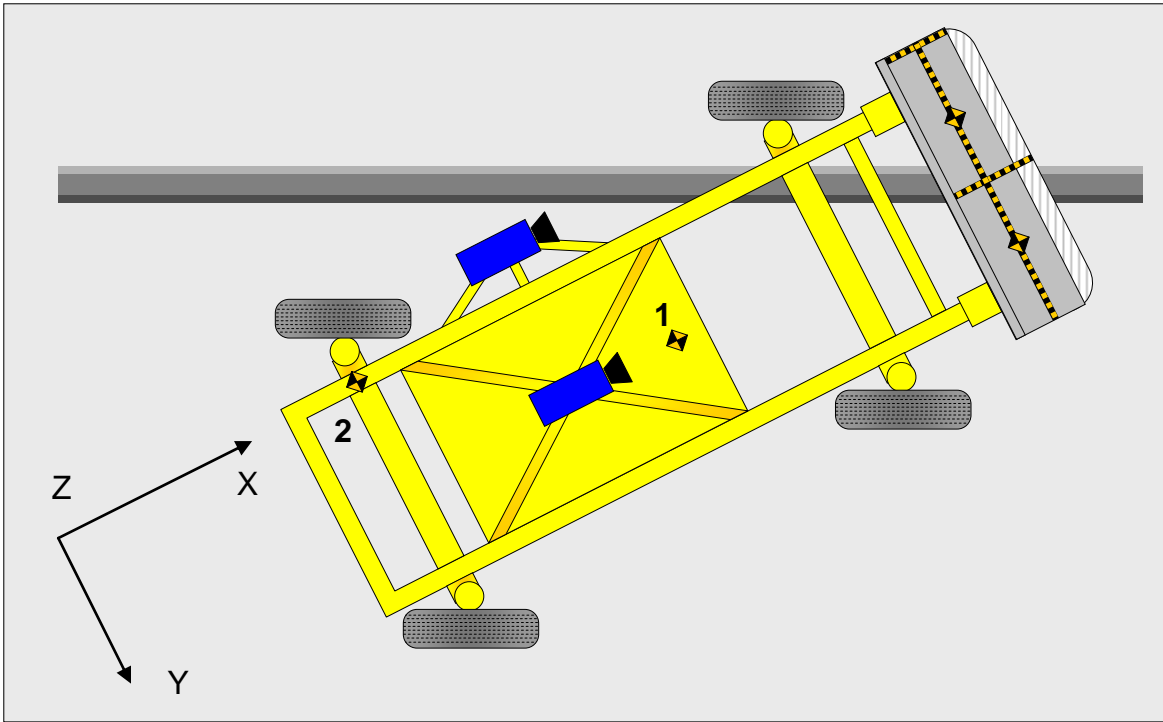
Reference Points X - Test Vehicle Rear Bumper (+ forward)
 Y - Test Vehicle Centerline (+ to right)
 Z - Ground Plane (+ down)

** Accelerometer was not requested by the COTR.

DATA SHEET NO. 14

MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2008 Ford Escape NHTSA No. M80201
 Test Program: NCAP Side Impact Test Date: March 9, 2007



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

Reference Points X - MDB Rear Bumper (+ forward)
 Y - MDB Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 15**VEHICLE STRUCTURAL MEASUREMENTS**

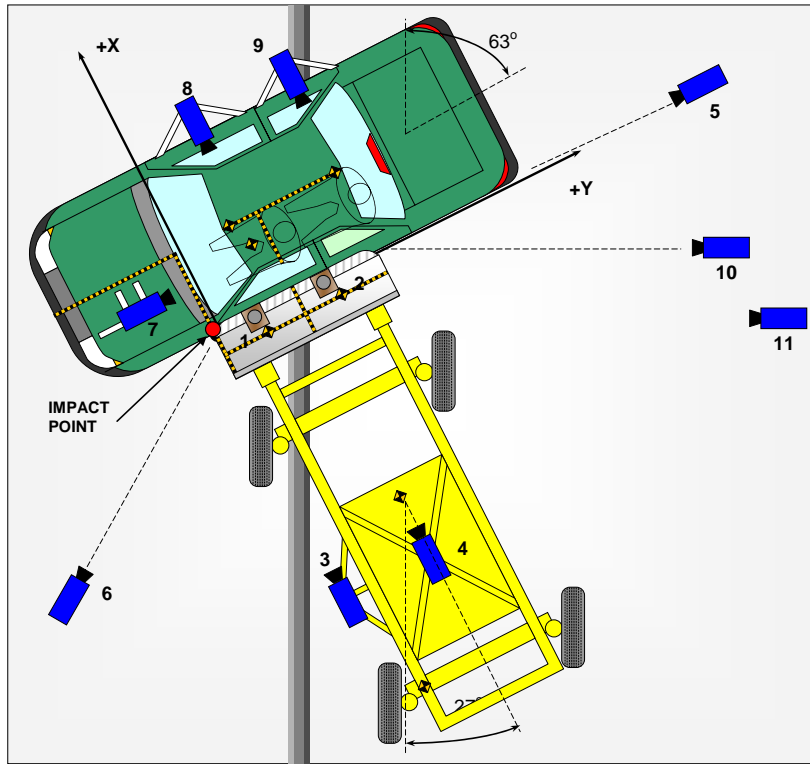
Test Vehicle: 2008 Ford Escape NHTSA No. M80201
Test Program: NCAP Side Impact Test Date: March 9, 2007

	Elements	Pre-Test (mm)
1	Total Length	4438
2	Total Width	1724
3	Bumper Top Height	634
4	Bumper Bottom Height	775
5	Longitudinal Member Top Height	677
6	Distance between Longitudinal Members	1105
7	Longitudinal Member Width	87
8	Engine Top Height	888
9	Engine Bottom Height	194
10	Engine and gearbox width	530
11	Front bumper-engine distance	368
12	Front shock absorber fixing height	582
13	Bonnet leading edge height	361
14	Front shock absorber fixing width	1335
15	Front bumper – front axle distance	859
16	Front axle – a pillar distance	507
17	A-pillar – B-pillar distance	1031
18	B-Pillar – rear axle distance	1083
19	B-pillar – C-pillar distance	972
20	Roof sill bottom height	1510
21	Roof sill top height	1601
22	Floor sill bottom height	284
23	Floor sill top height	453

DATA SHEET NO. 16

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2008 Ford Escape NHTSA No. M80201
 Test Program: NCAP Side Impact Test Date: March 9, 2007



No.	Camera View	Location (mm)			Angle (deg)	Lens (mm)	Film Speed (fps)
		X	Y	Z			
1	Overhead Overall	72	812	-4880	-90	8	500
2	Overhead Close-up	195	855	-4880	-90	28	1000
3	MDB Onboard, Impact Point Close-up	-1470	0	-847	0	13	500
4	MDB Onboard, Centerline of Impact	-1140	838	-1587	-17	7.5	500
5	Right Side, Ground Level, Overall	-550	10790	-900	-1.7	28	1000
6	Left Side, Ground Level, Overall	-2185	-1960	-960	-1.4	50	1000
7	Vehicle Onboard Front SID/HIII, Front	480	-270	-1450	-11.1	25	1000
8	Vehicle Onboard Front SID/HIII, Side	1680	850	-1220	-5.1	12.5	1000
9	Vehicle Onboard Rear SID/HIII, Side	1650	1670	-1270	-6.1	13	1000
10	Secondary Impact Point	-5530	2740	-1050	-1.8	50	500
11	Real Time Coverage						30

Reference Points X - Impact Line (Positive - Impact Point Forward)
 Y - MDB Left Edge Impact Point (Positive - To Right)
 Z - Ground Plane (Positive - down)

**DATA SHEET NO. 17
SUMMARY OF FMVSS 301 DATA**

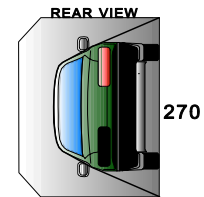
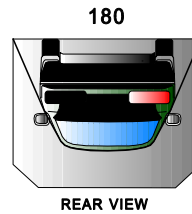
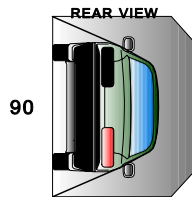
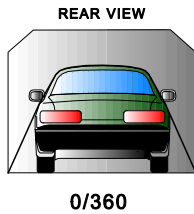
Test Vehicle: 2008 Ford Escape NHTSA No. M80201
 Test Program: NCAP Side Impact Test Date: March 9, 2007

FUEL SYSTEM INTEGRITY POST IMPACT DATA

Time Interval	FMVSS 301 Maximum Allowable Spillage	Spillage (g)
Impact Until Motion Ceases	28 g	0
First Five Minutes Following Impact	142 g	0
Next 25 Minutes	28 g / 1 minute	0

Spillage Location(s)	None
----------------------	------

STATIC ROLLOVER DATA



Rollover Stage	Rotation Time (spec. 1 -3 min)			FMVSS 301 Hold Time	Total Time			Next Whole Minute Interval
	minutes	seconds	seconds		minutes	seconds	seconds	
0° - 90°	1	10	5	5	6	10	7	
90° - 180°	1	01	5	5	6	1	7	
180°-270°	0	54	5	5	5	54	6	
270°-360°	1	08	5	5	6	8	7	

Rollover Stage	Spillage (g)			
	First 5 min. from onset of rotation	6 th min.	7 th min.	8 th min. (if required)
0° - 90°	0	0	0	0
90° - 180°	0	0	0	0
180°-270°	0	0	0	0
270°-360°	0	0	0	0
FMVSS 301 Maximum Allowable (for each 90° stage)	142	28	28	28

Rollover Stage	Spillage Location(s)
0° - 90°	None
90° - 180°	None
180°-270°	None
270°-360°	None

APPENDIX A
PHOTOGRAPHS

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Figure A-1: As Received Left Front $\frac{3}{4}$ View



Figure A-2: As Received Right Rear $\frac{3}{4}$ View



Figure A-3: Vehicle Certification Label



Figure A-4: Vehicle Tire Placard Label



Figure A-5: Pre-Test Front View



Figure A-6: Post-Test Front View



Figure A-7: Pre-Test Left Front $\frac{3}{4}$ View



Figure A-8: Post-Test Left Front $\frac{3}{4}$ View



Figure A-9: Pre-Test Left Side View



Figure A-10: Post-Test Left Side View



Figure A-11: Pre-Test Left Rear $\frac{3}{4}$ View



Figure A-12: Post-Test Left Rear $\frac{3}{4}$ View



Figure A-13: Pre-Test Rear View



Figure A-14: Post-Test Rear View

Figure A-15: Pre-Test Right Rear ¾ View



Figure A-16: Post-Test Right Rear ¾ View

Figure A-17: Pre-Test Right Side View



Figure A-18: Post-Test Right Side View

Figure A-19: Pre-Test Right Front ¾ View



Figure A-20: Post-Test Right Front ¾ View



Figure A-21: Pre-Test Frontal View of MDB Impactor Face



Figure A-22: Post-Test Frontal View of MDB Impactor Face



Figure A-23: Pre-Test Left Side View of MDB Impactor Face

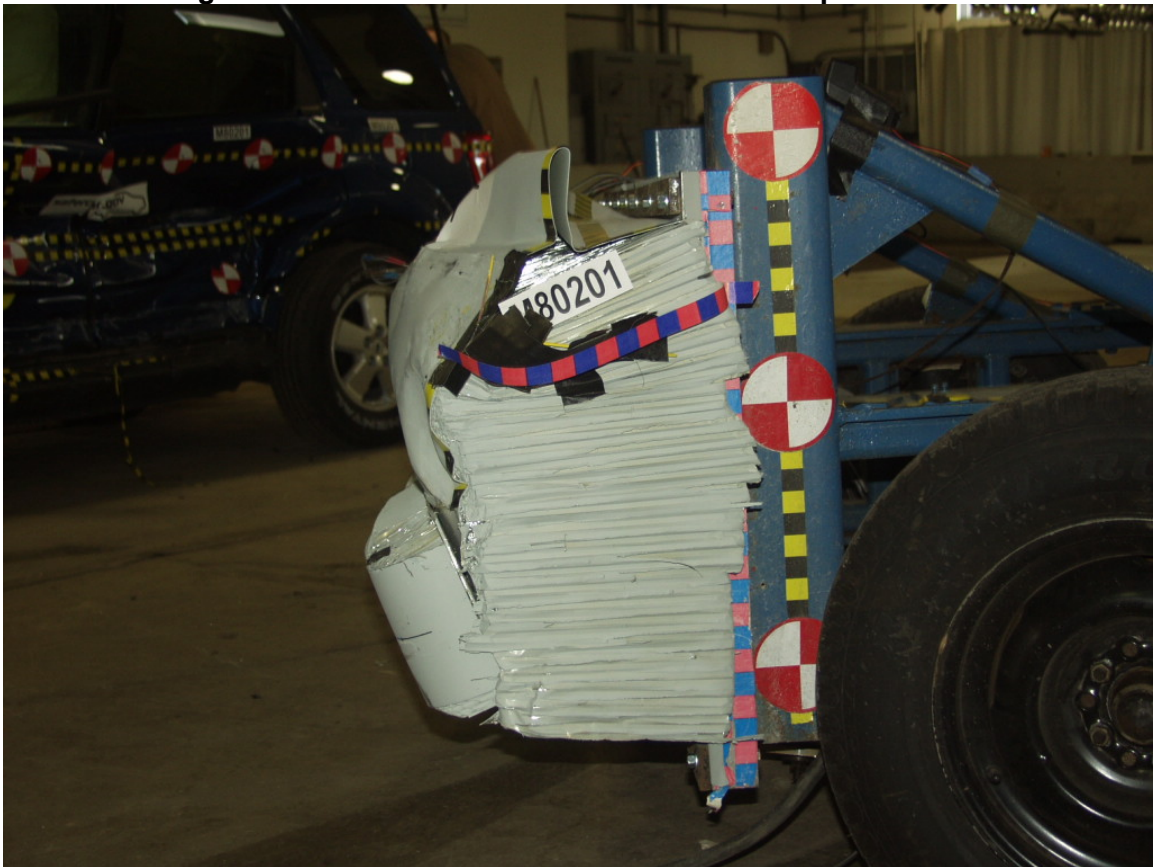


Figure A-24: Post-Test Left Side View of MDB Impactor Face



Figure A-25: Pre-Test Right Side View of MDB Impactor Face



Figure A-26: Post-Test Right Side View of MDB Impactor Face



Figure A-27: Pre-Test Top View of MDB Impactor Face



Figure A-28: Post-Test Top View of MDB Impactor Face



Figure A-29: Pre-Test Left Side View of Aligned MDB and Vehicle



Figure A-30: Pre-Test Right Side View of Aligned MDB and Vehicle

Figure A-31: Pre-Test Overhead View of Aligned MDB and Vehicle



Figure A-32: Post-Test Overhead View of MDB and Vehicle



Figure A-33: Pre-Test Close-Up View of Impact Point Target



Figure A-34: Post-Test Close-Up View of Impact Point Target



Figure A-35: Pre-Test Right Occupant Compartment View of Driver



Figure A-36: Post-Test Right Occupant Compartment View of Driver



Figure A-37: Pre-Test Right Occupant Compartment View of Passenger



Figure A-38: Post-Test Right Occupant Compartment View of Passenger



Figure A-39: Pre-Test Left Occupant Compartment View of Driver



Figure A-40: Post-Test Left Occupant Compartment View of Driver



Figure A-41: Pre-Test Left Occupant Compartment View of Passenger



Figure A-42: Post-Test Left Occupant Compartment View of Passenger



Figure A-43: Pre-Test Left Front Interior Trim



Figure A-44: Post-Test Left Front Interior Trim



Figure A-45: Pre-Test Left Rear Interior Trim



Figure A-46: Post-Test Left Rear Interior Trim



Figure A-47: Pre-Test Left Front 3/4 View of Left Side Doors



Figure A-48: Post-Test Left Front 3/4 View of Left Side Doors



Figure A-49: Pre-Test Left Rear $\frac{3}{4}$ View of Left Side Doors



Figure A-50: Post-Test Left Rear $\frac{3}{4}$ View of Left Side Doors

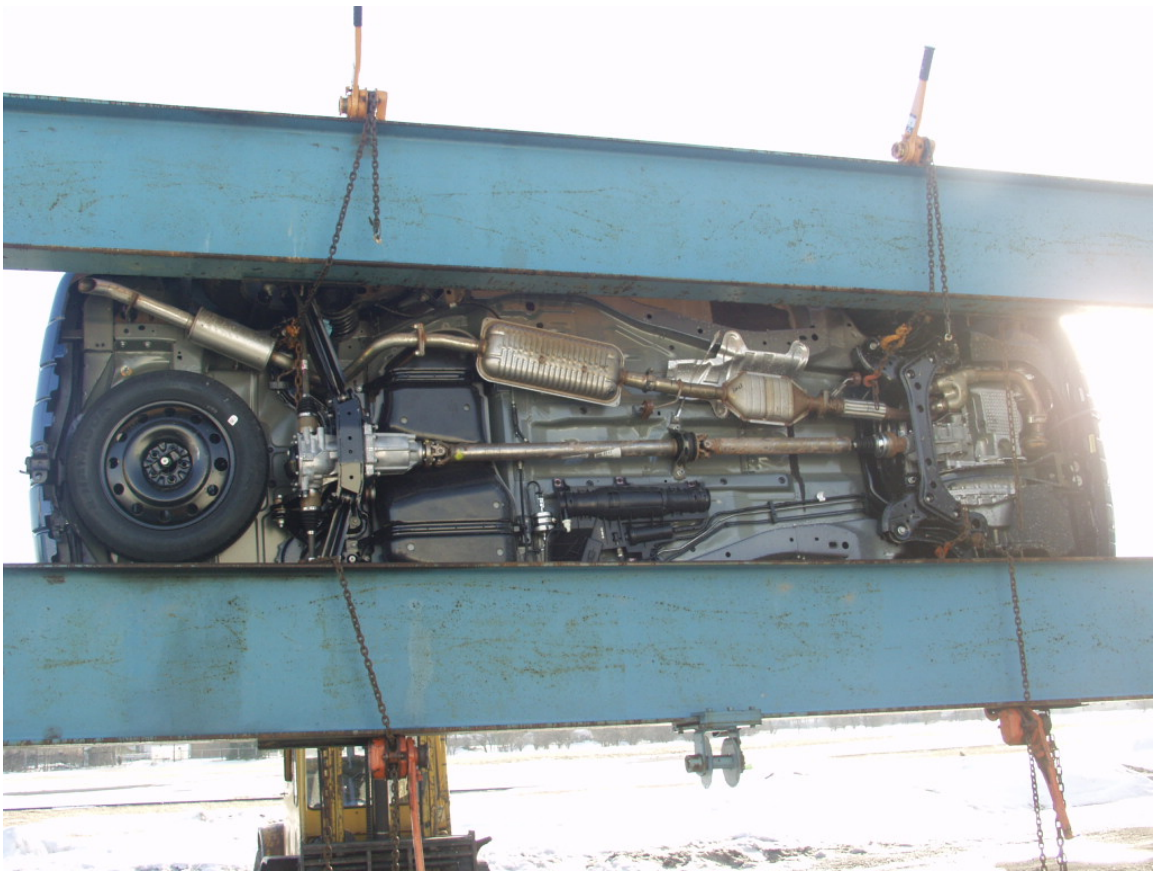


Figure A-51: Rollover 90 Degrees



Figure A-52: Rollover 180 Degrees



Figure A-53: Rollover 270 Degrees



Figure A-54: Rollover 360 Degrees



Figure A-55: Impact Photo

APPENDIX B
SID/HIII, VEHICLE AND MDB RESPONSE DATA
(SAE sign convention)

DATA CHANNEL FILTER CLASS SUMMARY

Data Type	SAE Filter Class
Dummy Head Accelerations	CFC 1000
Rib Accelerations	FIR 100
Spine Accelerations	FIR 100
Pelvis Accelerations	FIR 100

DATA CHANNEL TITLE KEY

Prefix	Suffix
V1 = Vehicle 1 (Moving Barrier)	Ax = Acceleration, X-direction
V2 = Vehicle 2 (Test Vehicle)	Ay = Acceleration, Y-direction
P1 = Left Front Seating Position (Driver)	Az = Acceleration, Z-direction
P4 = Left Second Row Seating Position (Passenger)	Fx = Force, X-direction
A1-A18 = Accelerometer Location Number	Fy = Force, Y-direction
	Fz = Force, Z-direction
	Mx = Moment about X
	My = Moment about Y
	Mz = Moment about Z

TABLE OF DATA PLOTS

PLOT	PLOT NAME[UNITS, CHANNEL FILTER CLASS]	PAGE
1	V2P1 Head Ax [g, CFC_1000]	B-5
2	V2P1 Head Ay [g, CFC_1000]	B-5
3	V2P1 Head Az [g, CFC_1000]	B-5
4	V2P1 Head Ar [g, CFC_1000]	B-5
5	V1P1 Upper Rib Ay [g, FIR_100]	B-6
6	V1P1 Lower Rib Ay [g, FIR_100]	B-6
7	V1P1 Lower Spine Ay [g, FIR_100]	B-6
8	V1P1 Pelvic Ay [g, FIR_100]	B-6
9	V2P4 Head Ax [g, CFC_1000]	B-7
10	V2P4 Head Ay [g, CFC_1000]	B-7
11	V2P4 Head Az [g, CFC_1000]	B-7
12	V2P4 Head Ar [g, CFC_1000]	B-7
13	V1P4 Upper Rib Ay [g, FIR_100]	B-8
14	V1P4 Lower Rib Ay [g, FIR_100]	B-8
15	V1P4 Lower Spine Ay [g, FIR_100]	B-8
16	V1P4 Pelvic Ay [g, FIR_100]	B-8

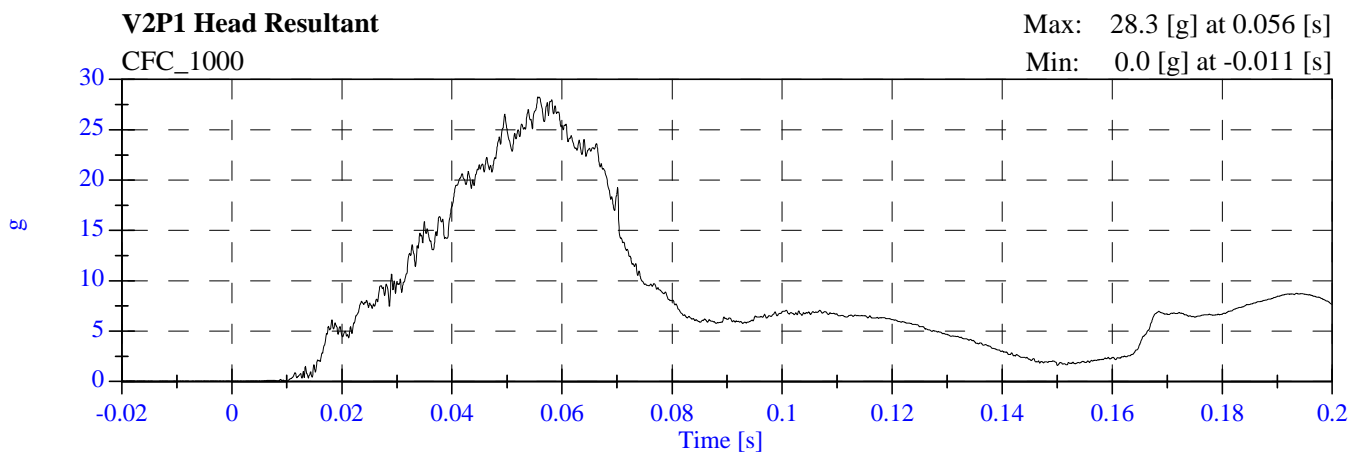
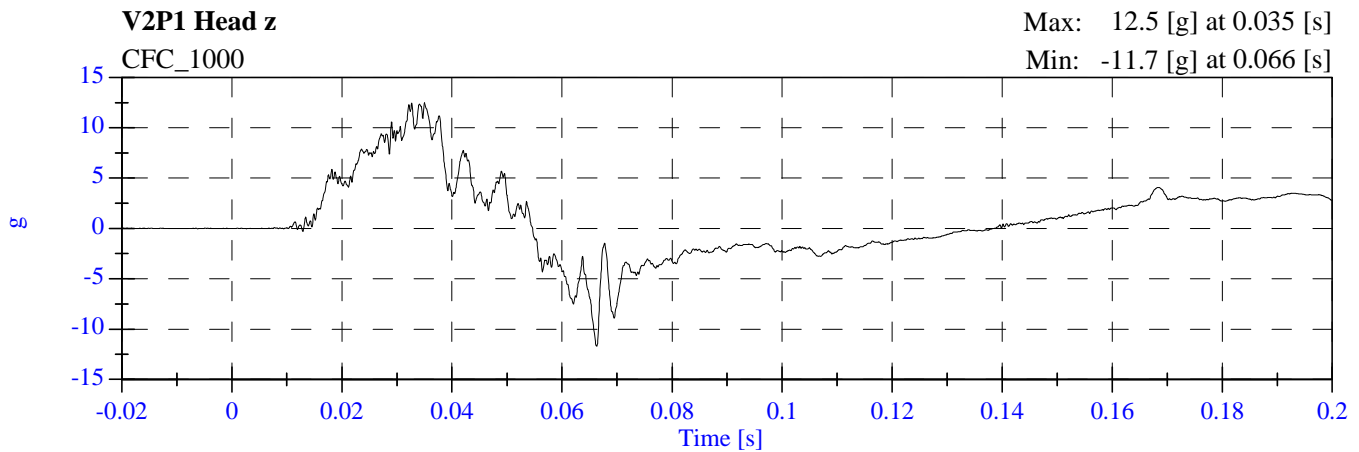
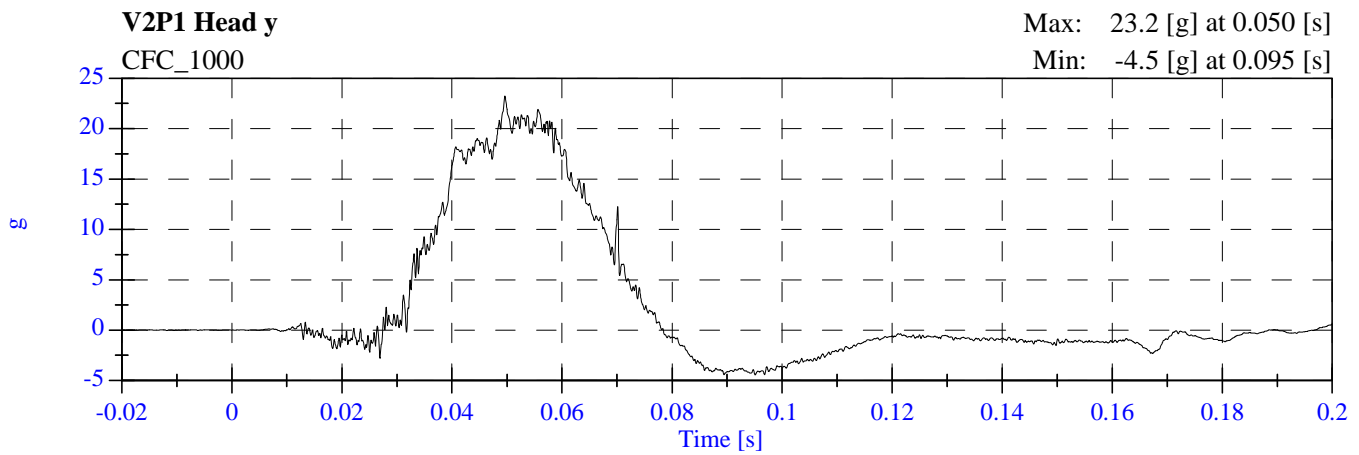
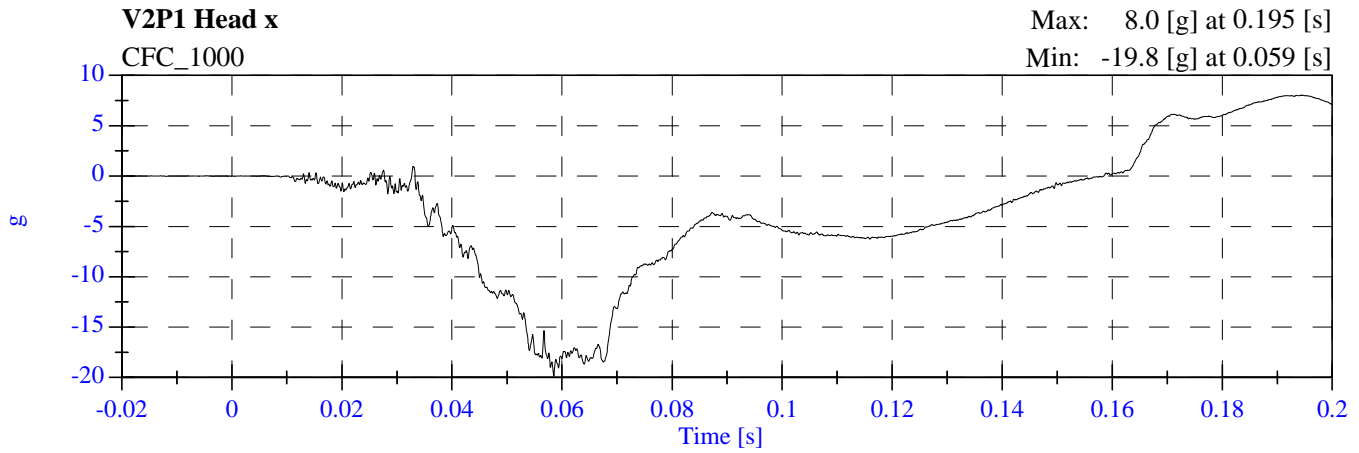
The following dummy, vehicle and load cell response data can be found in the research and development section of the NHTSA website at: www.nhtsa.dot.gov

V2P1 Head Ax	V2A1 Right Front Sill Ax
V2P1 Head Ay	V2A1 Right Front Sill Ay
V2P1 Head Az	V2A1 Right Front Sill Az
V2P1 Upper Neck Fx	V2A2 Right Rear Sill Ax
V2P1 Upper Neck Fy	V2A2 Right Rear Sill Ay
V2P1 Upper Neck Fz	V2A2 Right Rear Sill Az
V2P1 Upper Neck Mx	V2A3 Rear Floorpan Ax
V2P1 Upper Neck My	V2A3 Rear Floorpan Ay
V2P1 Upper Neck Mz	V2A3 Rear Floorplan Az
V2P1 Upper Rib Ay	V2A4 Left Rear Sill Ay
V2P1 Upper Rib Redundant Ay	V2A5 Left Front Sill Ay
V2P1 Lower Rib Ay	V2A7 Right Rear Compartment Ay
V2P1 Lower Rib Redundant Ay	V2A12 Left Lower B Post Ay
V2P1 Lower Spine Ay	V2A13 Left Mid B Post Ay
V2P1 Lower Spine Redundant Ay	V2A14 Left Lower A Post Ay
V2P1 Pelvic Ay	V2A15 Left Mid A Post Ay
V2P1 Pelvic Redundant Ay	V2A16 Front Seat Track Ay
V2P4 Head Ax	V2A17 Rear Seat Track Ay
V2P4 Head Ay	V2A18 Target CG Ax
V2P4 Head Az	V2A18 Target CG Ay
V2P4 Upper Neck Fx	V2A18 Target CG Az
V2P4 Upper Neck Fy	V1 Moving Barrier CG Ax
V2P4 Upper Neck Fz	V1 Moving Barrier CG Ay
V2P4 Upper Neck Mx	V1 Moving Barrier CG Az
V2P4 Upper Neck My	V1 Moving Barrier Left Rail Ax
V2P4 Upper Neck Mz	V1 Moving Barrier Left Rail Ay
V2P4 Upper Rib Ay	
V2P4 Upper Rib Redundant Ay	
V2P4 Lower Rib Ay	
V2P4 Lower Rib Redundant Ay	
V2P4 Lower Spine Ay	
V2P4 Lower Spine Redundant Ay	
V2P4 Pelvic Ay	
V2P4 Pelvic Redundant Ay	

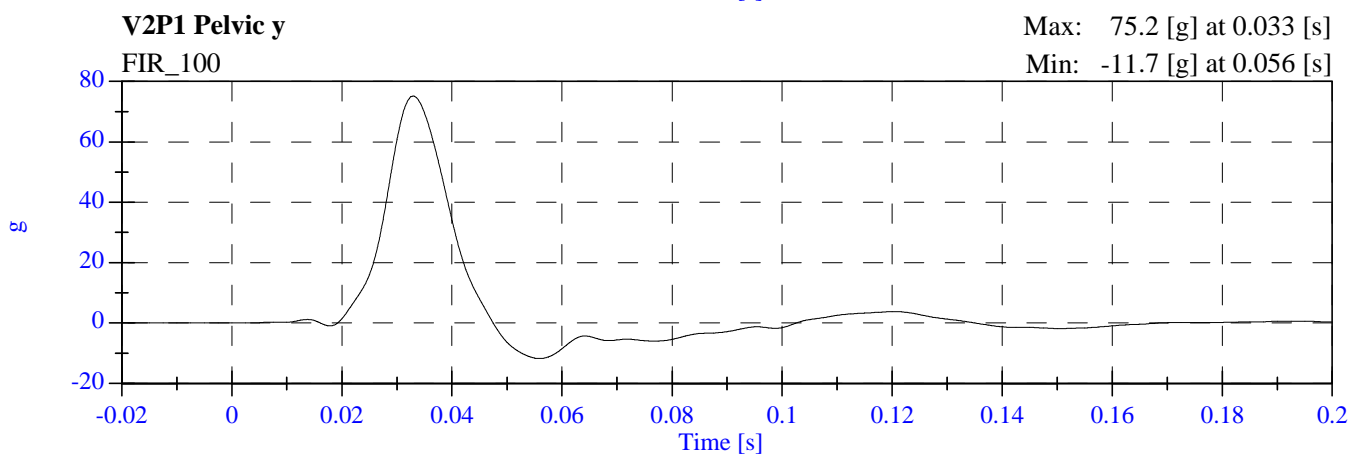
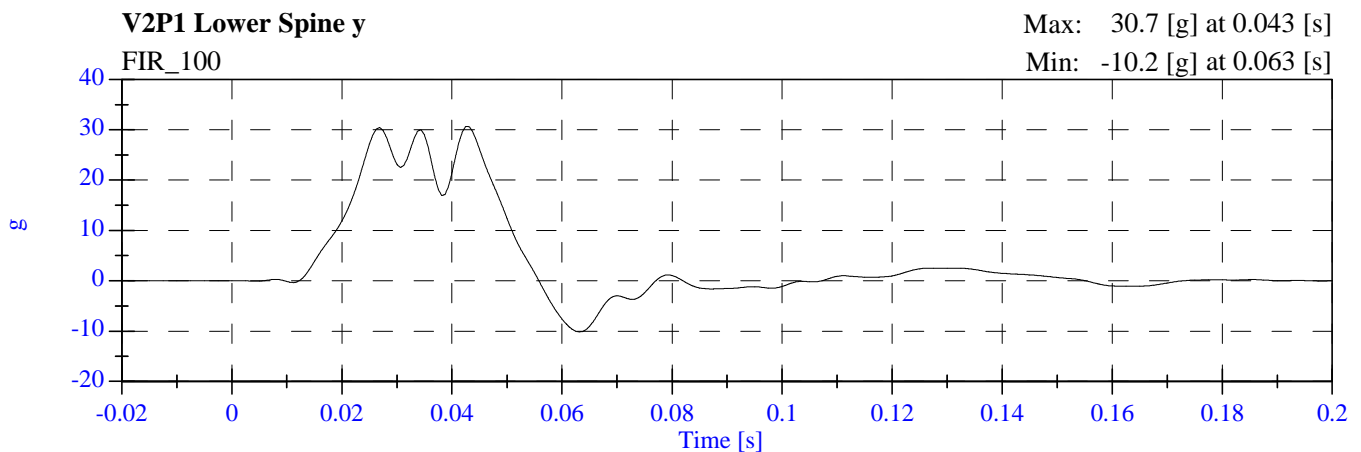
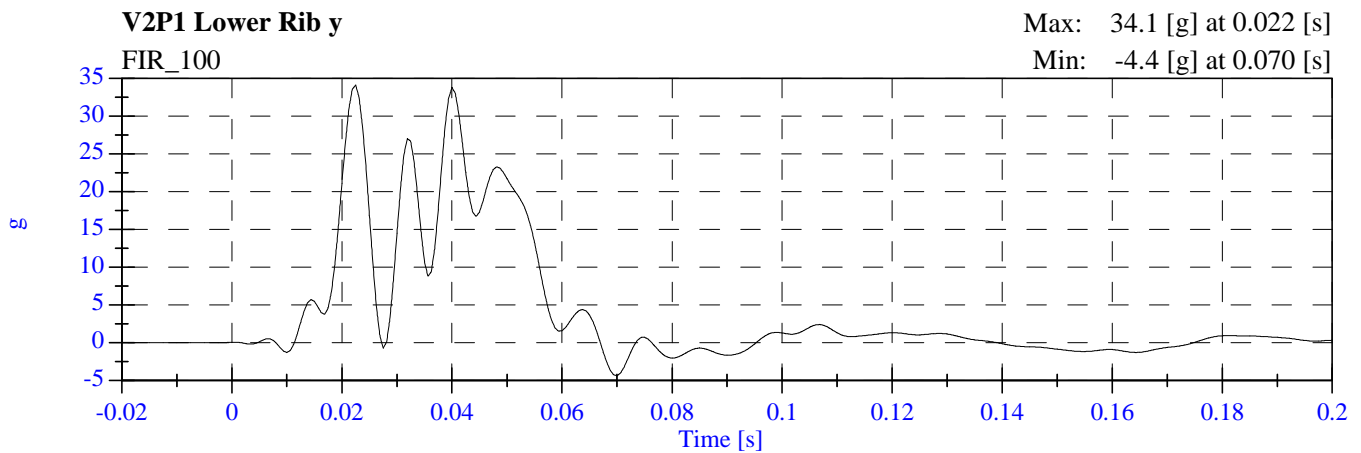
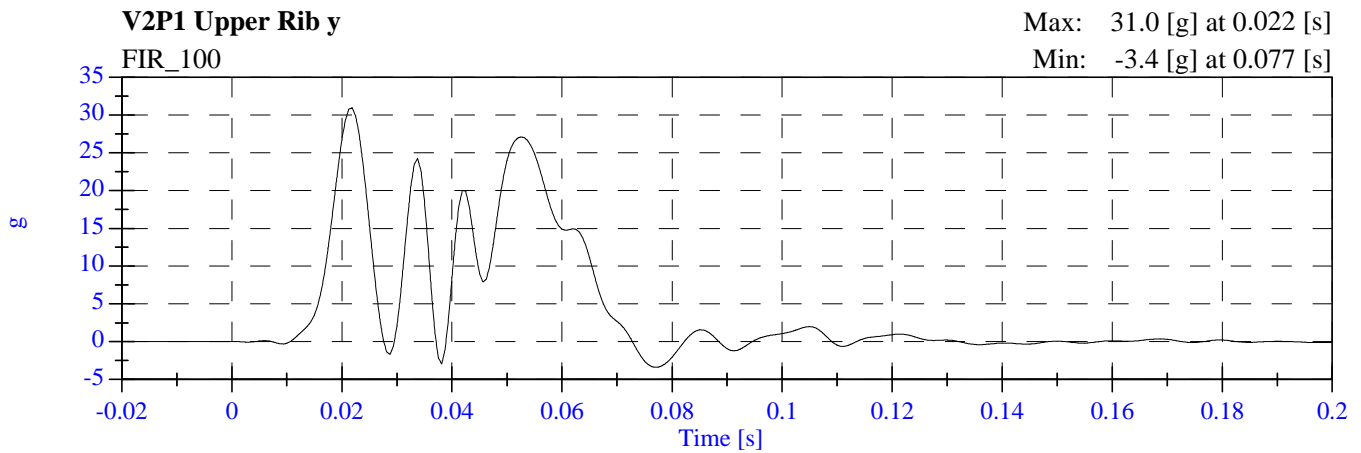
TEST NOTES

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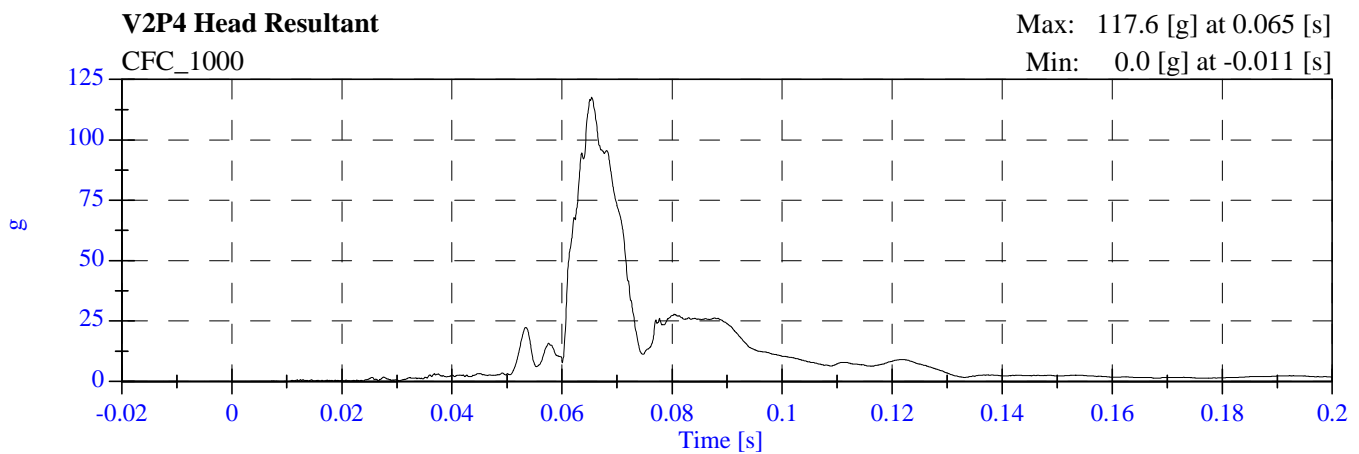
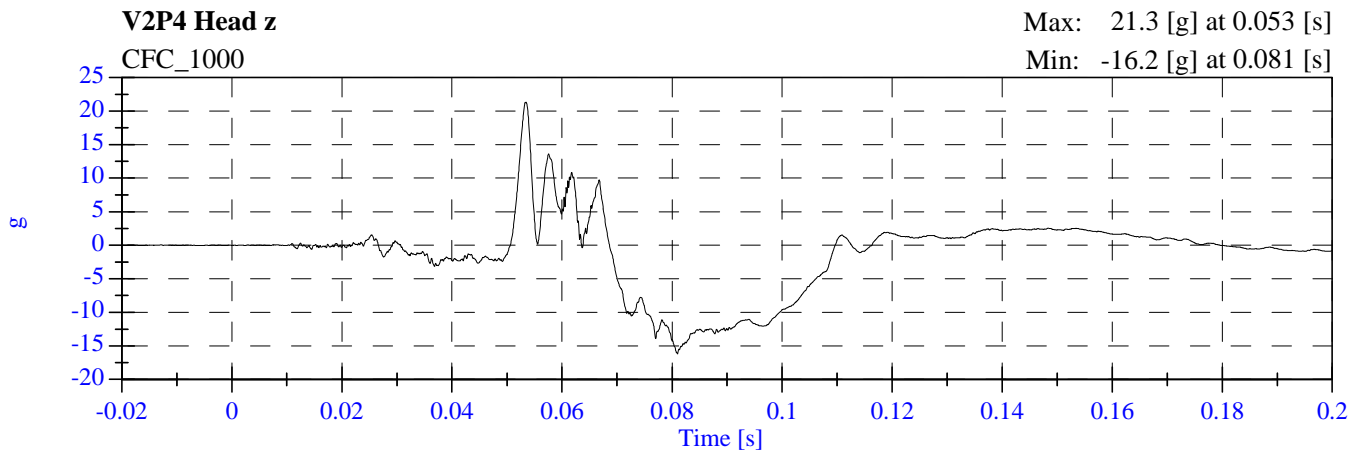
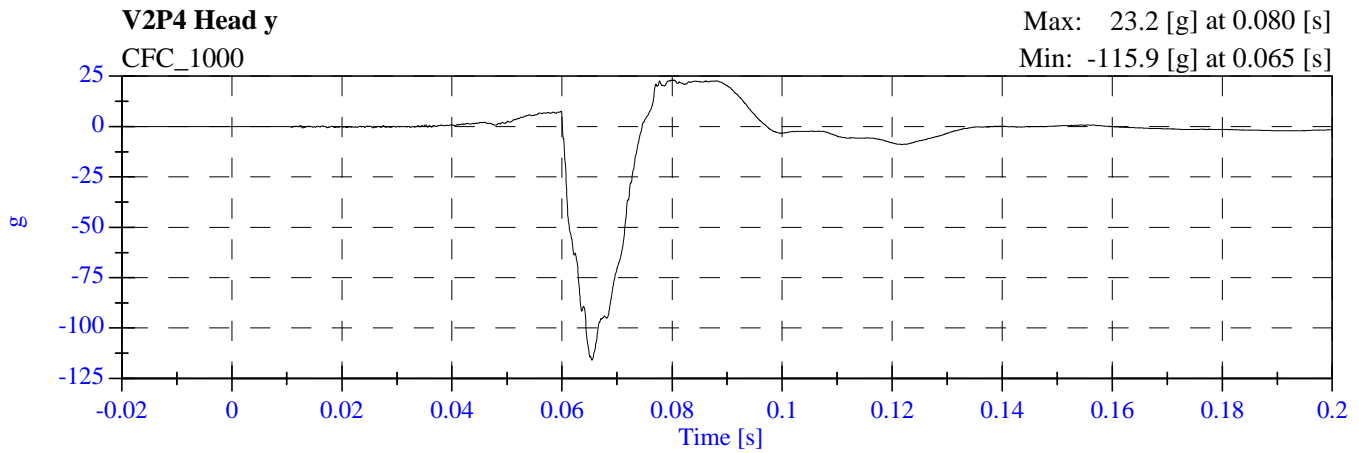
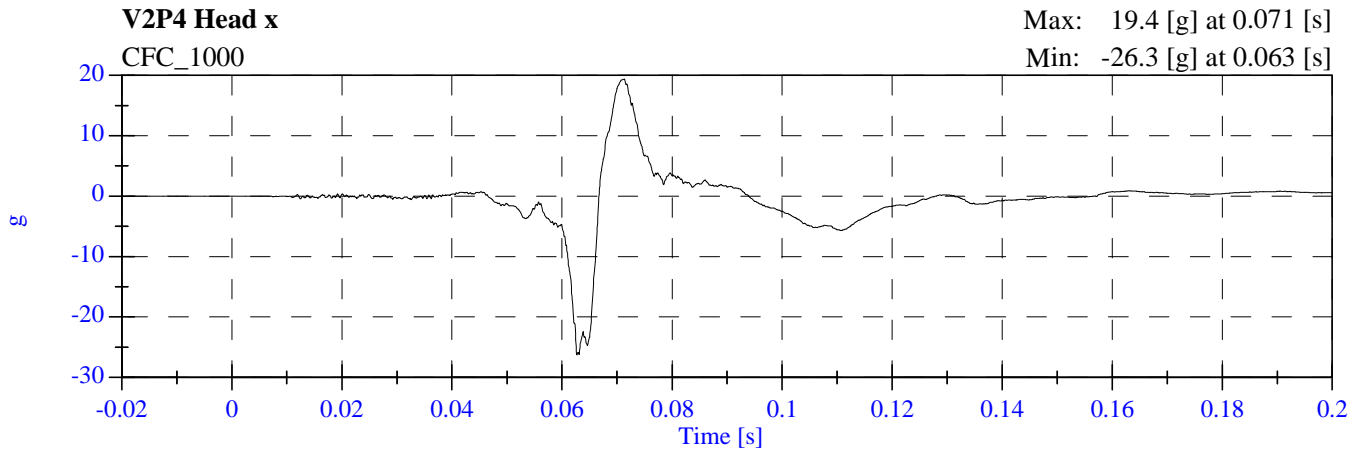
2007 SNCAP Test 8 2008 Ford Escape M80201 - March 09, 2007



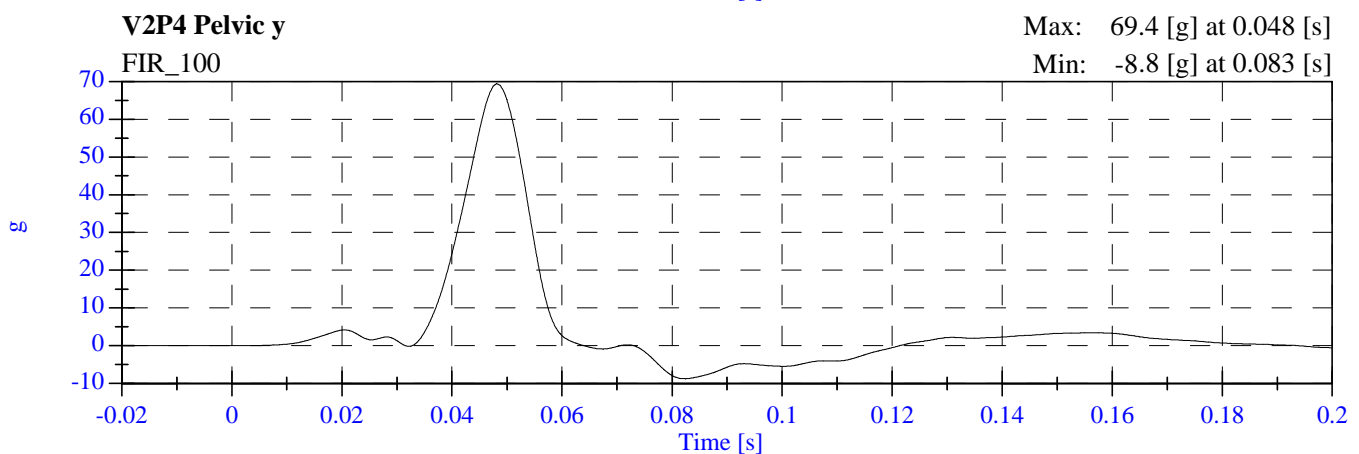
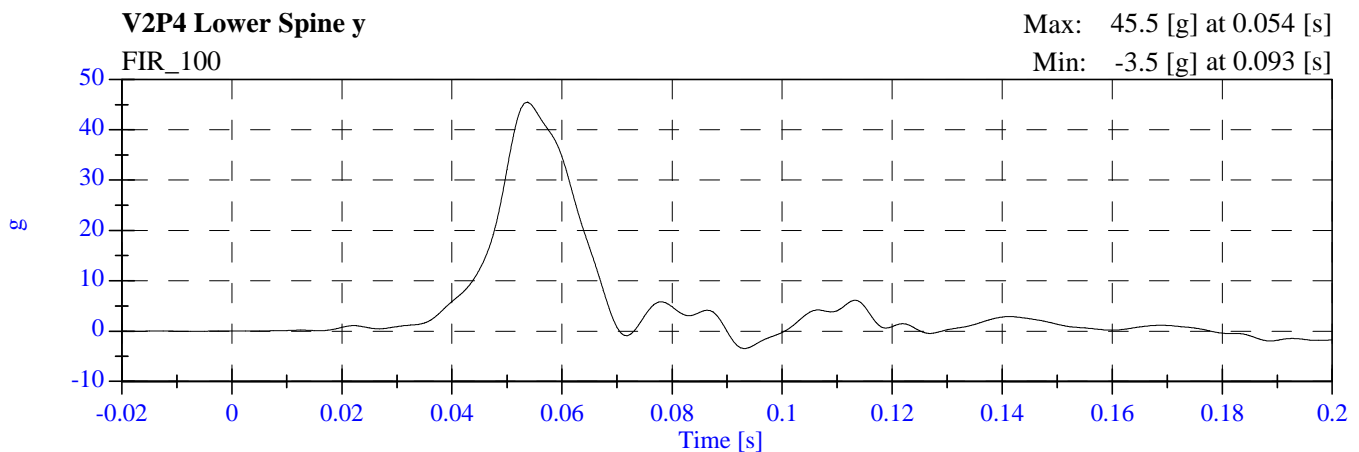
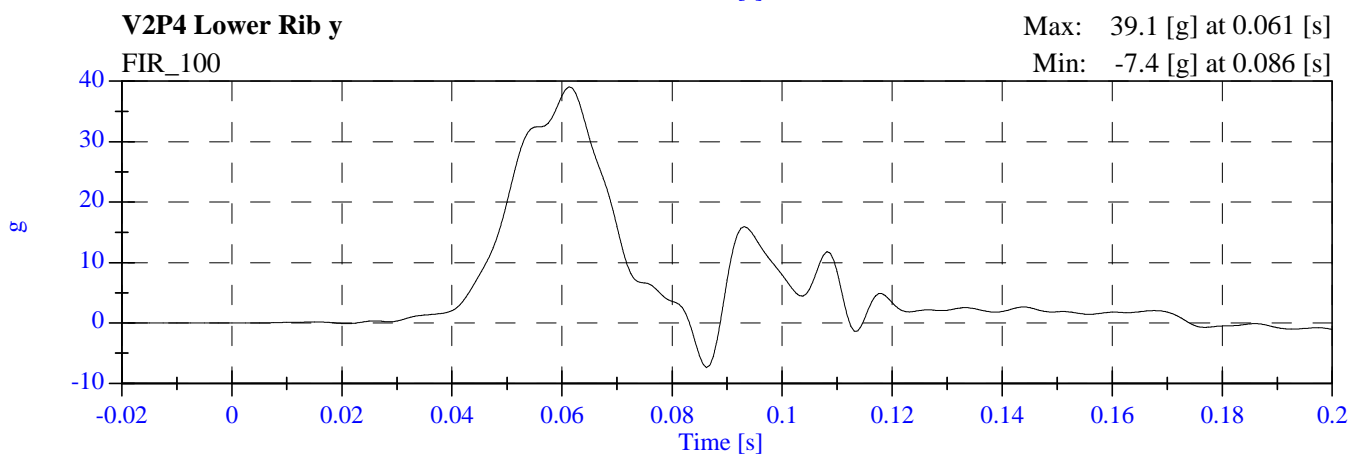
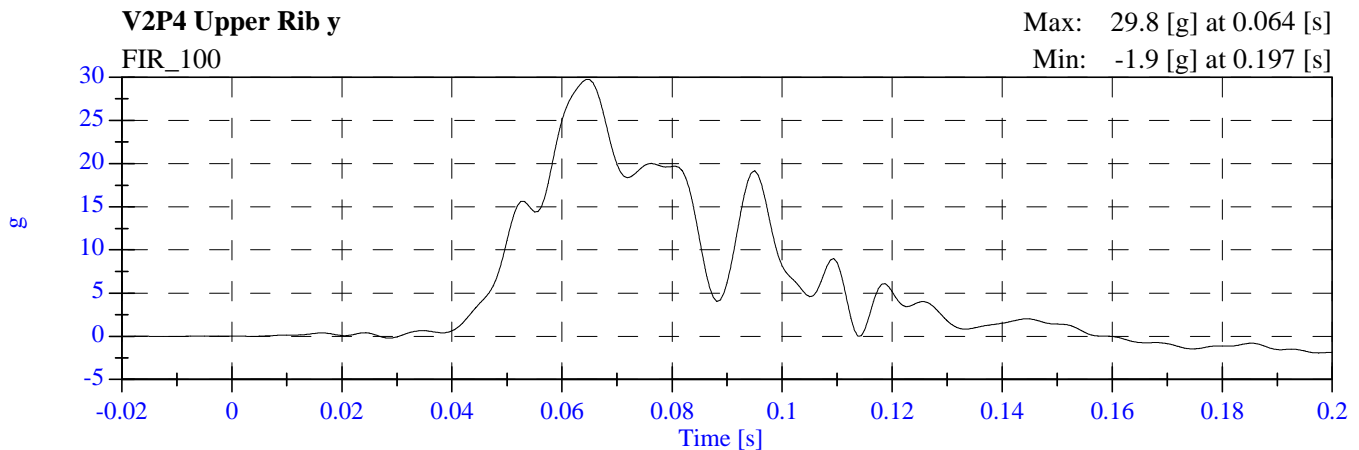
2007 SNCAP Test 8 2008 Ford Escape M80201 - March 09, 2007



2007 SNCAP Test 8 2008 Ford Escape M80201 - March 09, 2007



2007 SNCAP Test 8 2008 Ford Escape M80201 - March 09, 2007



APPENDIX C

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID H3 PRE & POST TEST CALIBRATION
CONFIGURED FOR LEFT SIDE IMPACT

Date: 2-12-07 Sequential Test Number: 1
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	SID H3 NO.: 905		SID H3 NO.: 906	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	902	902	905	904
RH- Rib Height (mm)	501 - 521	513	513	513	513
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	241	241	238	239
KH- Knee Pivot from Back Line (mm)	511 - 526	521	521	518	518
KV- Knee Pivot to Floor (mm)	490 - 505	493	492	492	493
HW- Hip Width (mm)	356 - 391	378	378	383	384
THORAX IMPACTS					
TEMPERATURE (C)	18.9 - 25.5	21.1	21.1	21.1	21.1
RELATIVE HUMIDITY (%)	10 - 70	33	33	31	33
PROBE SPEED (m/s)	4.27 - 4.33	4.31	4.31	4.32	4.31
UPPER RIB (g's)	37 - 46	43.88	38.43	37.71	39.85
LOWER RIB (g's)	37 - 46	42.41	38.28	37.72	37.97
LOWER SPINE (g's)	15 - 22	21.00	19.11	17.82	19.75
PELVIS IMPACT					
TEMPERATURE (C)	18.9 - 25.5	21.1	21.1	21.1	21.1
RELATIVE HUMIDITY (%)	10 - 70	33	33	33	33
PROBE SPEED (m/s)	4.27 - 4.33	4.29	4.30	4.33	4.31
PELVIS (g's)	40 - 60	40.77	41.32	47.15	45.15

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 905

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 1
Date: 2/12/07 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 1
Date: 2/12/07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 – 909	902
RH- Rib Height (mm)	502 – 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 – 241	241
KH- Knee Pivot from Back Line (mm)	511 – 526	521
KV- Knee Pivot to Floor (mm)	490 – 505	493
HW- Hip Width (mm)	356 - 391	378

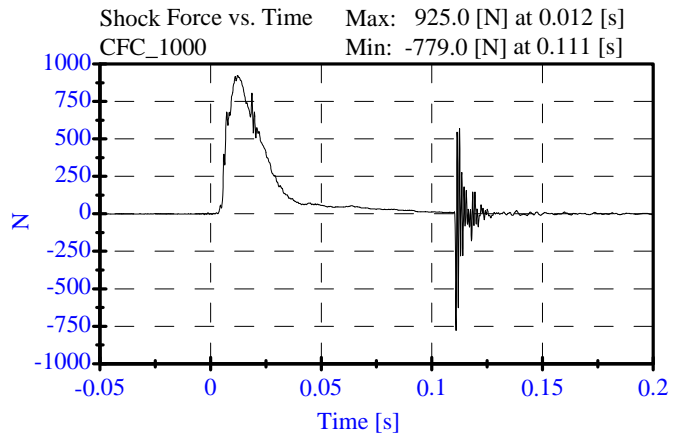
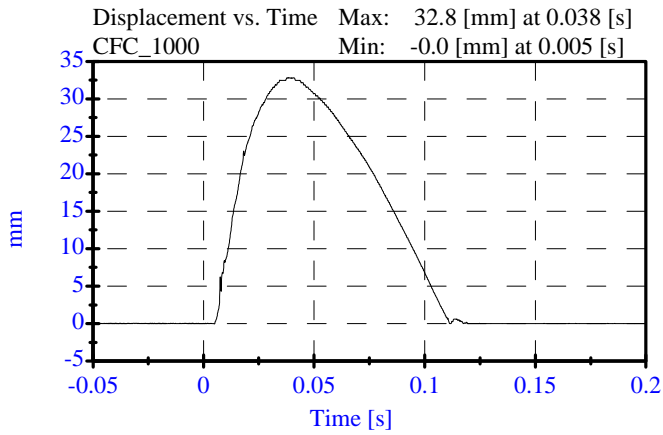
REMARKS: None

Shock Impact Low (3.05 m/s)
PRE TEST
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
 Date: 12-13-06

Sequential Test Number: 1 File: 905SL 12-13-06
 Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Displacement:	30.00-35.00 mm	32.81 mm	Passed
Maximum Force:	836.00-1125.00 N	924.95 N	Passed
Impact Test Velocity:	3.05 m/s		
Damper Identification:	905		
Damper Setting:	5		



Shock Impact Medium (4.27 m/s)

PRE TEST

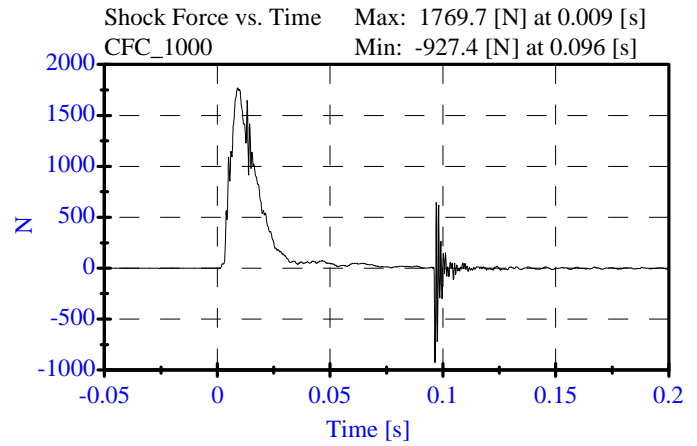
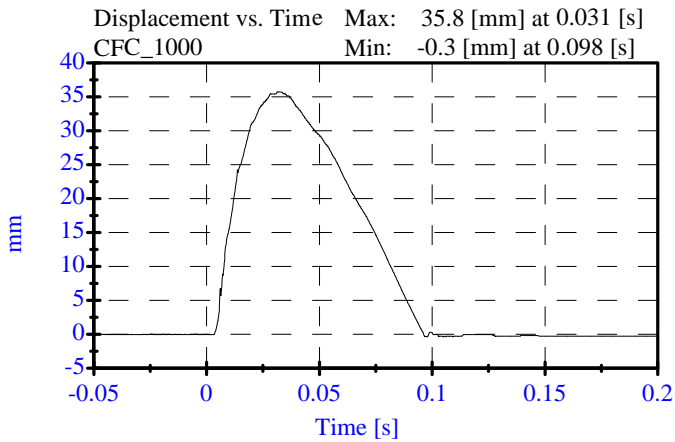
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 12-13-06

Sequential Test Number: 1 File: 905SM 12-13-06
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Displacement:	32.00-37.00 mm	35.77 mm	Passed
Maximum Force:	1730.00-2099.00 N	1769.71 N	Passed

Impact Test Velocity: 4.27 m/s
Damper Identification: 905
Damper Setting: 5



Shock Impact High (6.10 m/s)

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

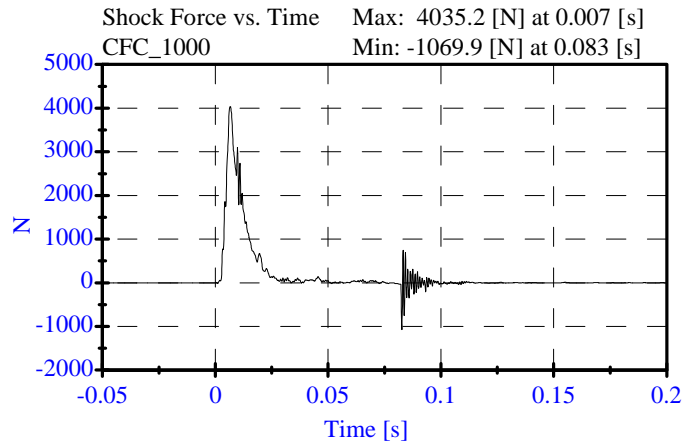
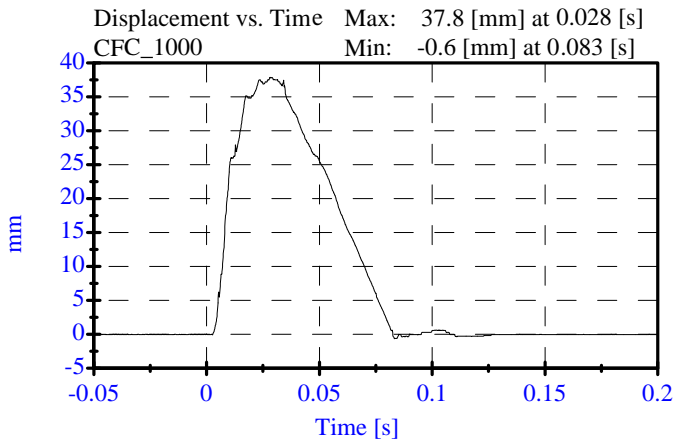
ATD Serial No: 905

Date: 12-13-06

Sequential Test Number: 1 File: 905SH 12-13-06

Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Displacement:	33.00-40.00 mm	37.84 mm	Passed
Maximum Force:	3741.00-4448.00 N	4035.21 N	Passed
Impact Test Velocity:	6.10 m/s		
Damper Identification:	905		
Damper Setting:	5		

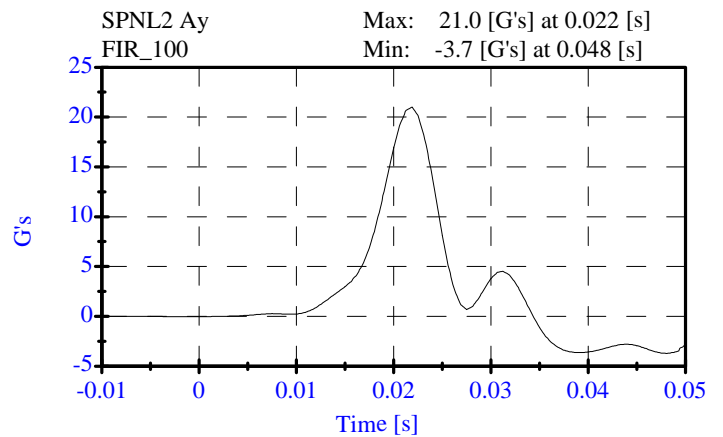
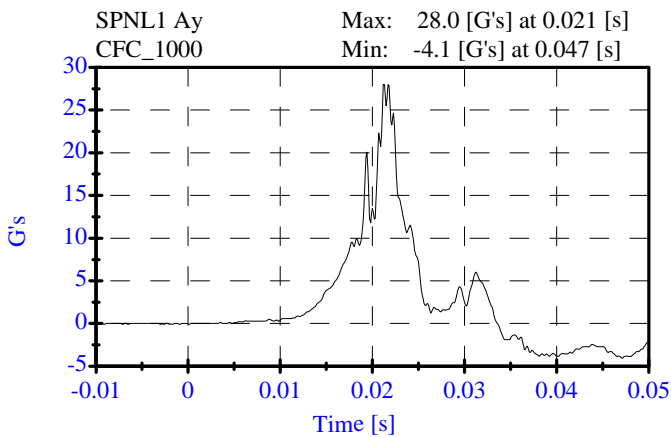
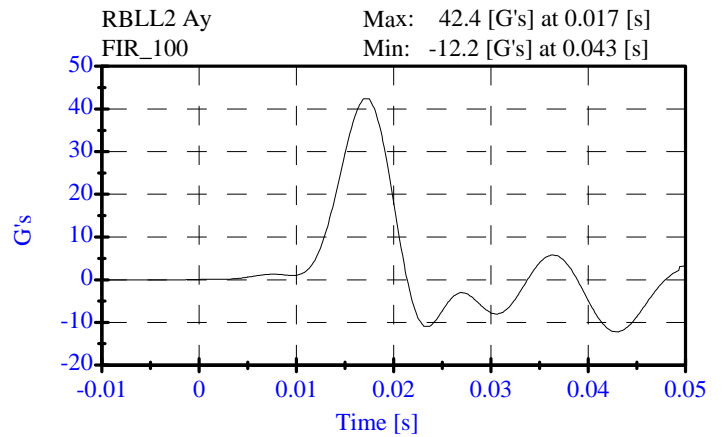
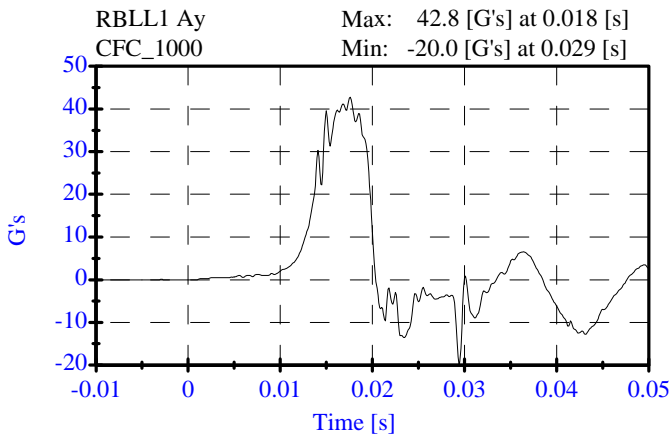
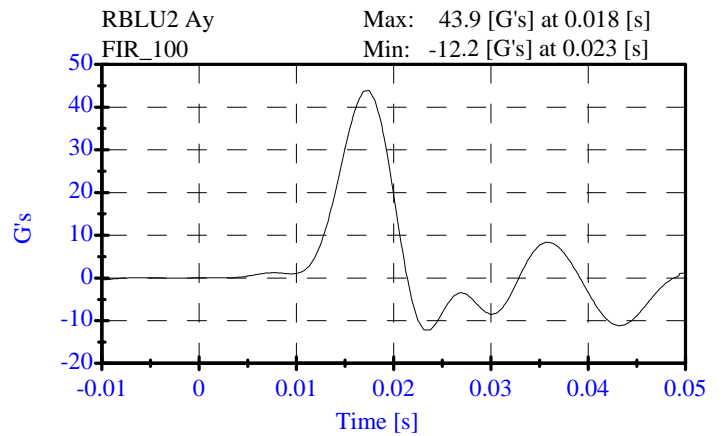
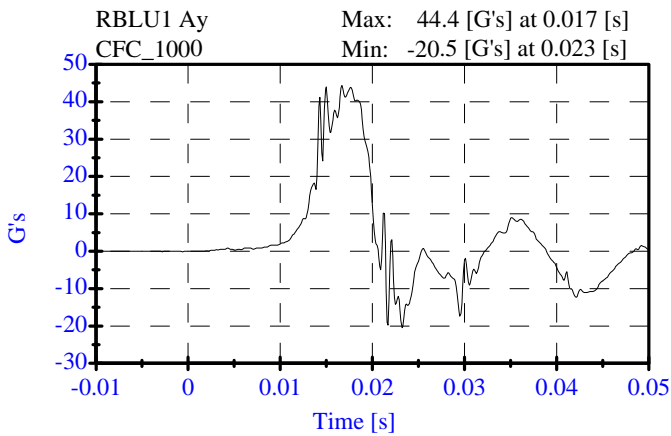


Thorax Impact
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
 Date: 02-12-07

Sequential Test Number: 1 File: 905T 02-12-07
 Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	43.88 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	42.41 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.00 G's	Passed



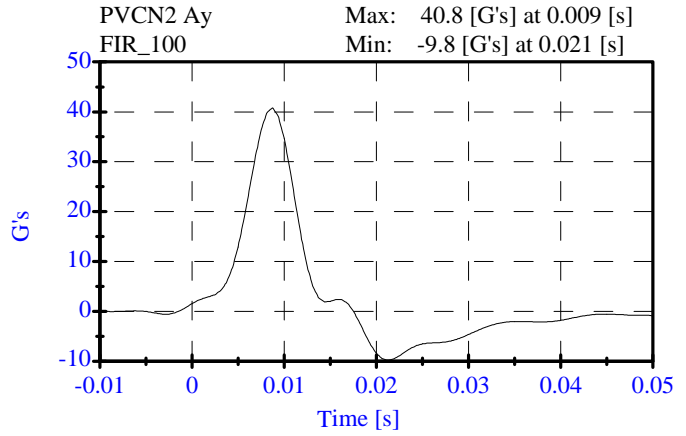
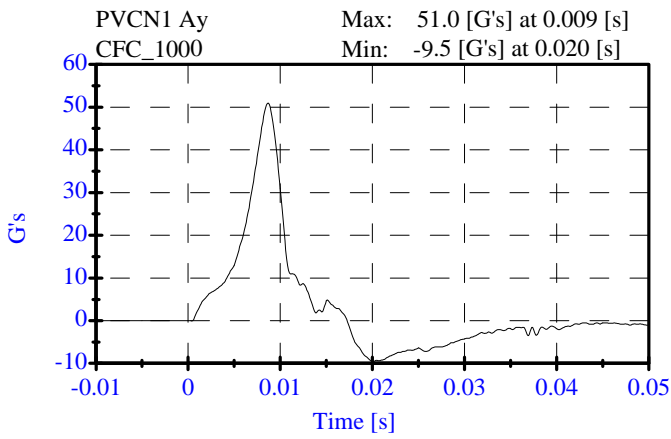
**Pelvic Impact
Pre-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 02-12-07

Sequential Test Number: 1 File: 905P2 02-12-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	40.77 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.6 ms	Passed



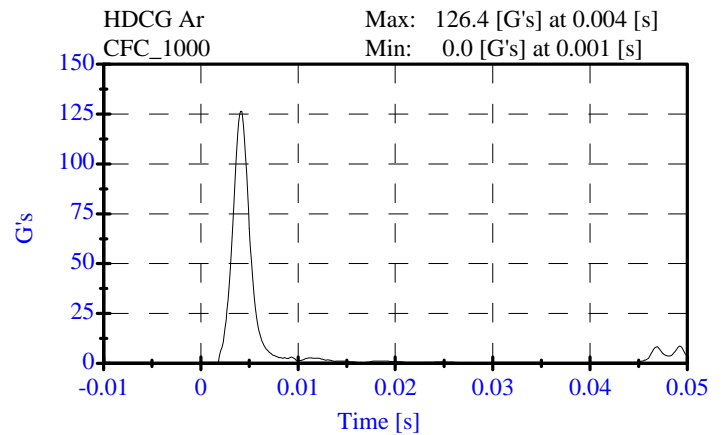
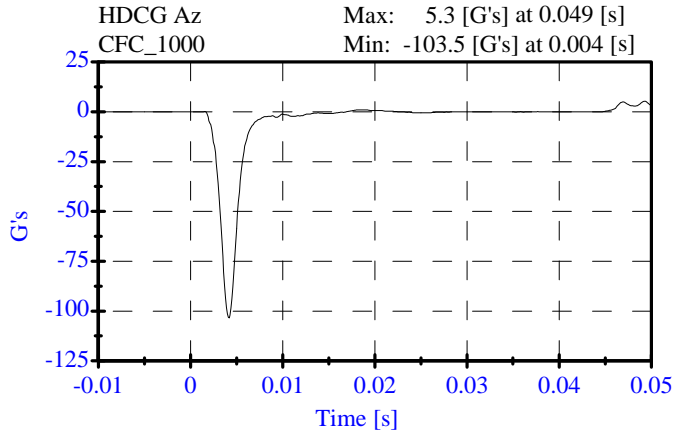
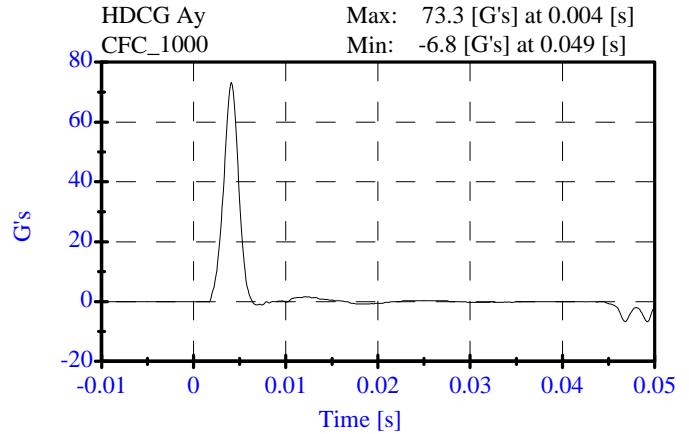
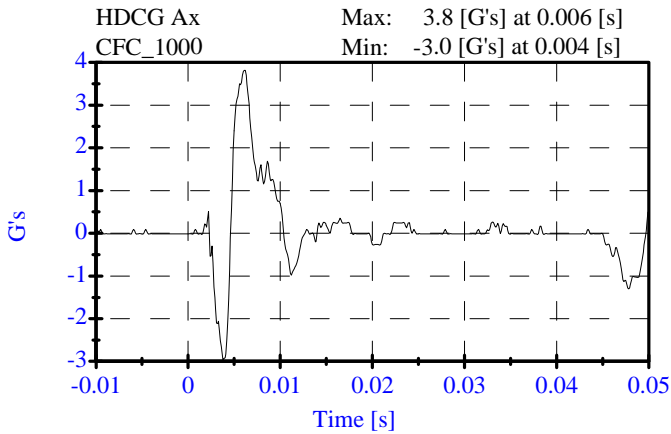
**Head Drop
Pre-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 02-08-07

Sequential Test Number: 1 File: 905HD 02-08-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Peak Resultant Accel.:	210-260 Gs	126.44 Gs	Failed
Peak Lateral Accel.:	10 Gs Max	73.26 Gs	Failed
Unimodal Criteria Above 100 Gs:	0.9-1.5 ms	1.04 ms	Passed
Curve PerCent NonModal:	< 10%	6.81 %	Passed



**Neck Test
Pre-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 02-08-07

Sequential Test Number: 1 File: 905Neck 02-08-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	6.98 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.01 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.20 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.03 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.04 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	68.45 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	60.00 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	86.50 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	54.80 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	9.20 ms	Passed

**Neck Test
Pre-Test**

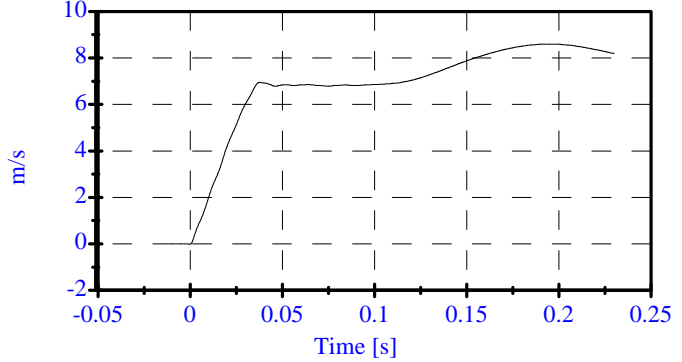
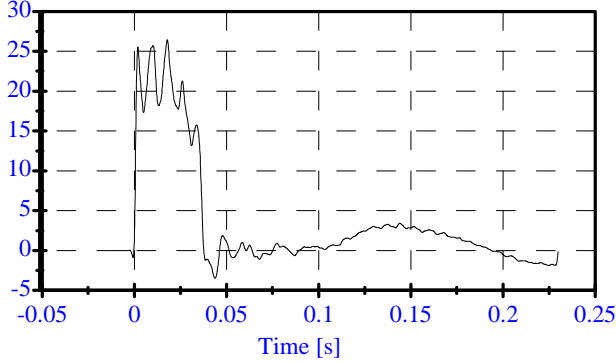
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 02-08-07

Sequential Test Number: 1 File: 905Neck 02-08-07
Laboratory Technician: B. Swiecicki

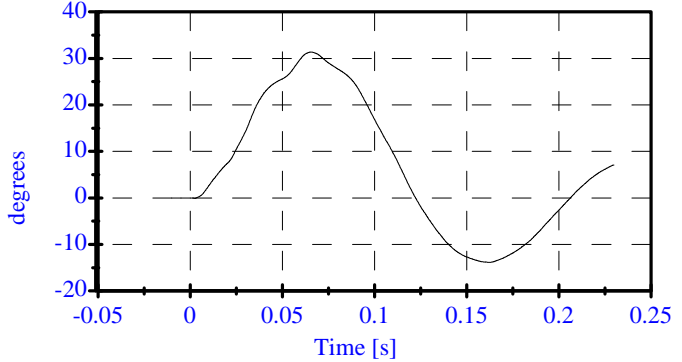
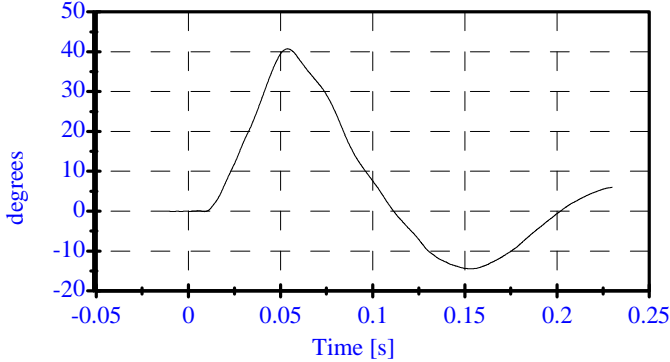
Pend Ax CFC_180 Max: 26.5 [] at 0.018 [s]
Min: -3.5 [] at 0.044 [s]

Pend Vx CFC_180 Max: 8.6 [m/s] at 0.194 [s]
Min: -0.0 [m/s] at -0.000 [s]



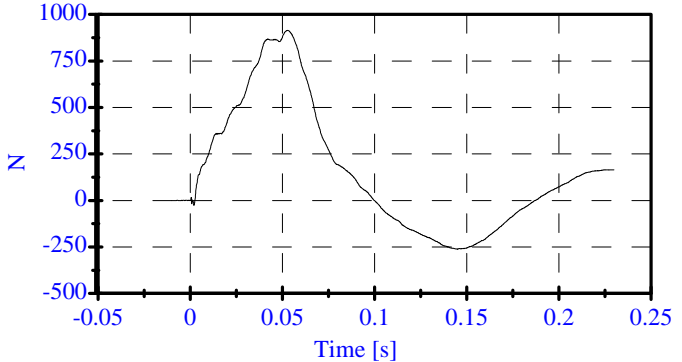
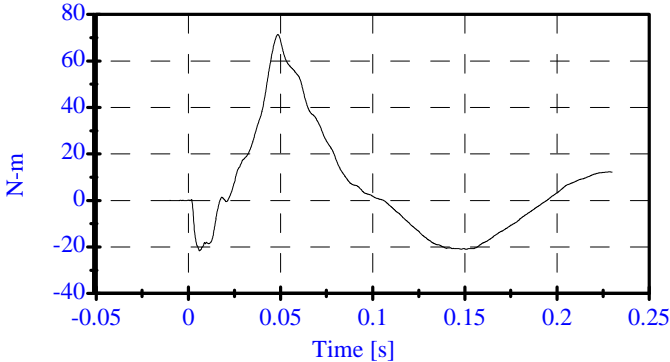
Head Rot CFC_180 Max: 40.8 [degrees] at 0.054 [s]
Min: -14.4 [degrees] at 0.153 [s]

Arm Rot CFC_180 Max: 31.4 [degrees] at 0.066 [s]
Min: -13.9 [degrees] at 0.162 [s]



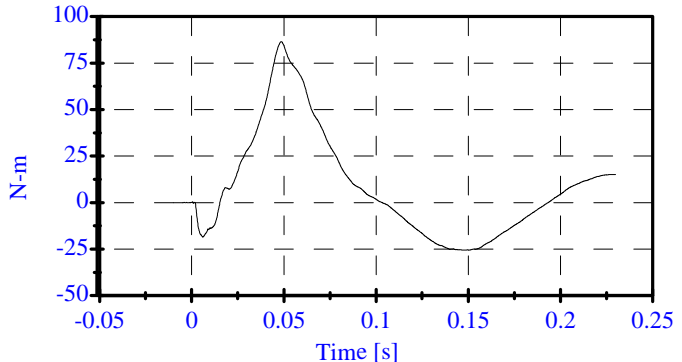
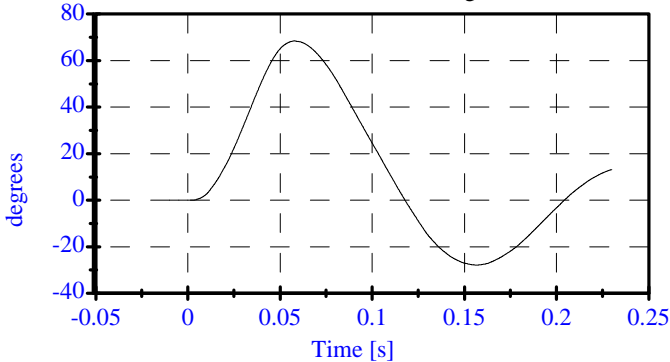
Neck Mx CFC_600 Max: 71.3 [N-m] at 0.049 [s]
Min: -21.7 [N-m] at 0.006 [s]

Neck Fy CFC_1000 Max: 913.7 [N] at 0.053 [s]
Min: -261.1 [N] at 0.145 [s]



Tot Rot CFC_180 Max: 68.4 [degrees] at 0.058 [s]
Min: -27.9 [degrees] at 0.157 [s]

MOCX Max: 86.5 [N-m] at 0.049 [s]
Min: -25.5 [N-m] at 0.148 [s]



Abdomen Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905

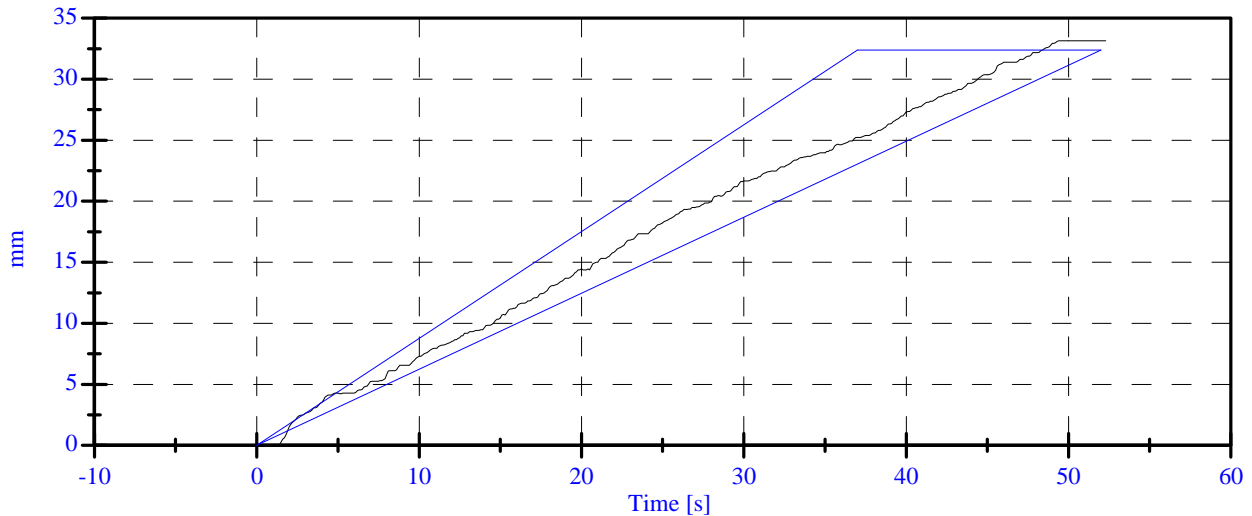
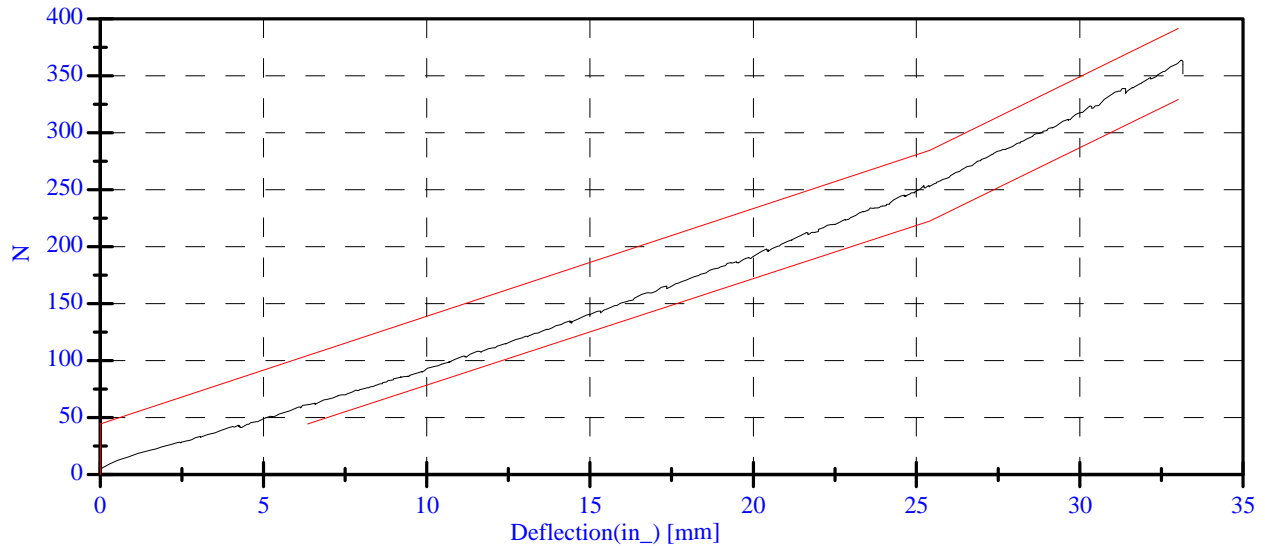
Date: 02-12-07

Sequential Test Number: 1 File: 905 Ab 02-12-07

Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	120.05 N	Passed
Force at 19.05 mm :	162.98-220.99 N	182.40 N	Passed
Force at 25.40 mm :	221.97-280.02 N	253.45 N	Passed
Force at 33.02 mm :	324.99-391.00 N	360.74 N	Passed

ABDOMINAL COMPRESSION TEST



**Spine Test
Pre-Test**

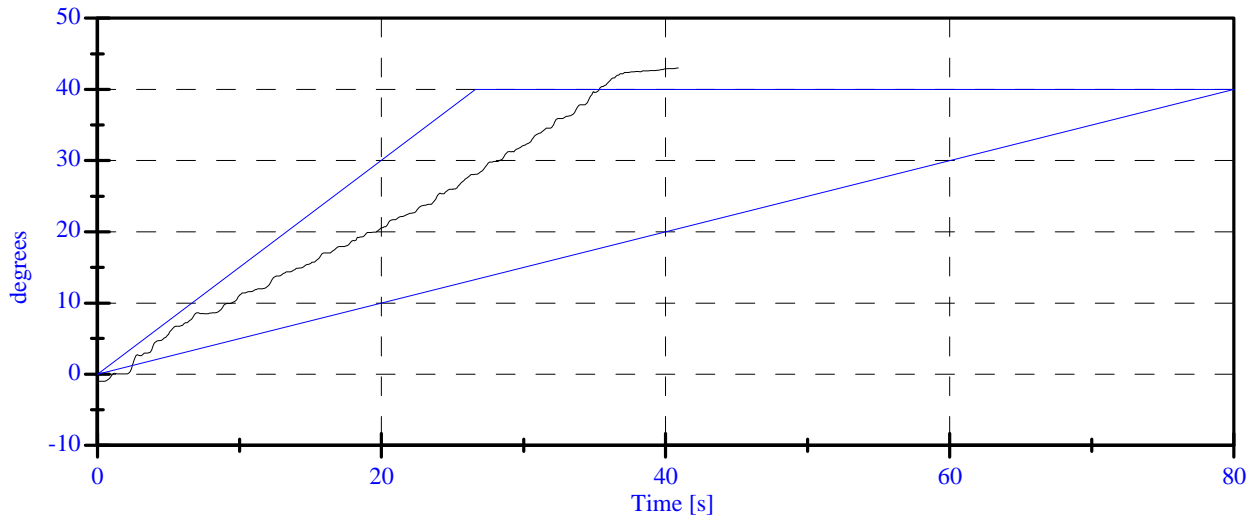
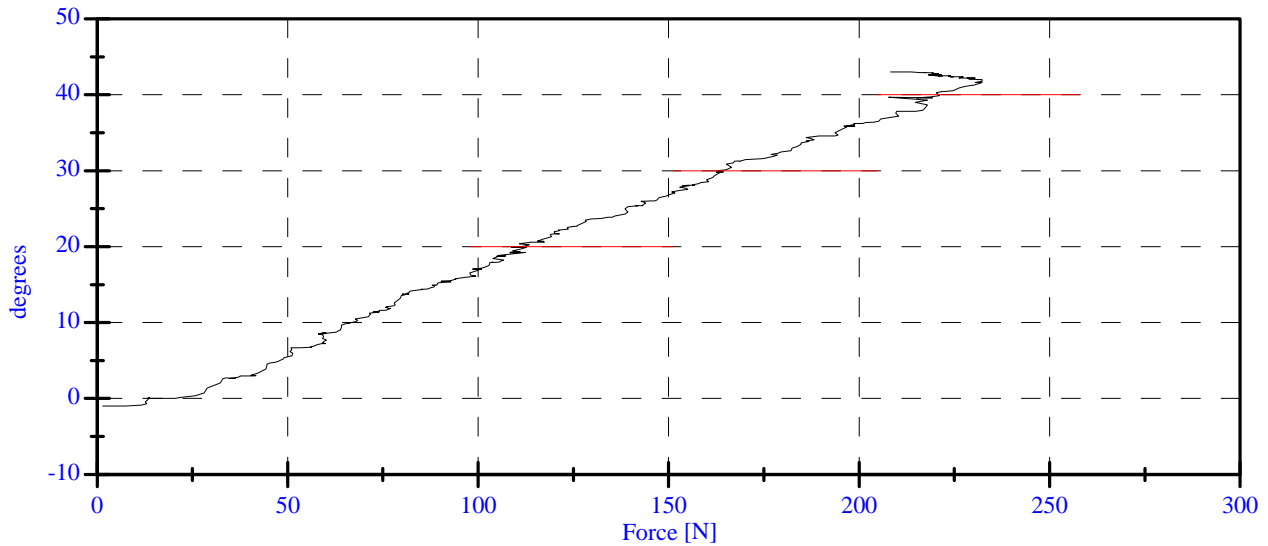
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 02-12-07

Sequential Test Number: 1 File: 905 Spine 02-12-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	13.71 N	Passed
Force at 20 Deg:	97.86-151.24 N	111.65 N	Passed
Force at 30 Deg:	151.24-204.62 N	163.10 N	Passed
Force at 40 Deg:	204.62-258.00 N	221.07 N	Passed
Return Angle	12 Deg Max	4.57 deg	Passed

LUMBAR SPINE FLEXION TEST



PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 1
 Date: 2/12/07 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 906

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 1
Date: 2/12/07 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 1
Date: 2/12/07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	905
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	238
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	492
HW- Hip Width (mm)	356 - 391	383

REMARKS: None

Shock Impact Low (3.05 m/s)

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

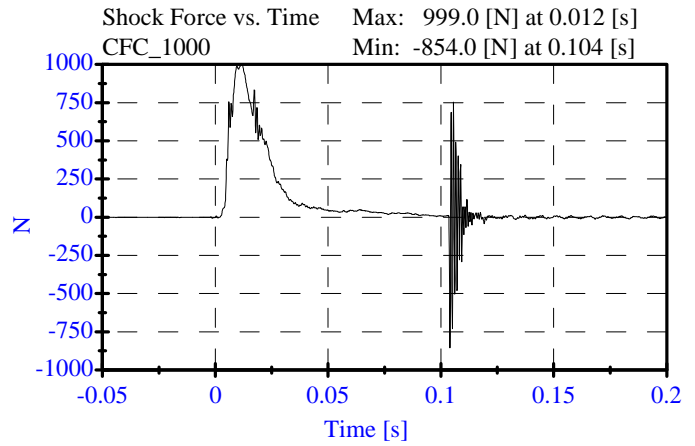
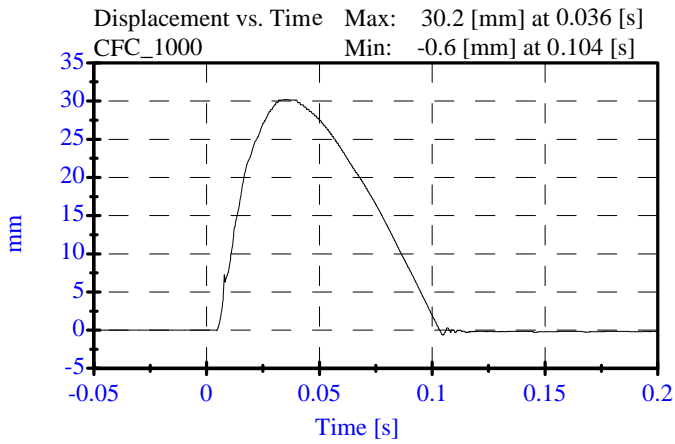
ATD Serial No: 906

Date: 12-13-06

Sequential Test Number: 1 File: 906SL 12-13-06

Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Displacement:	30.00-35.00 mm	30.18 mm	Passed
Maximum Force:	836.00-1125.00 N	998.98 N	Passed
Impact Test Velocity:	3.05 m/s		
Damper Identification:	906		
Damper Setting:	5		



Shock Impact Medium (4.27 m/s)

PRE TEST

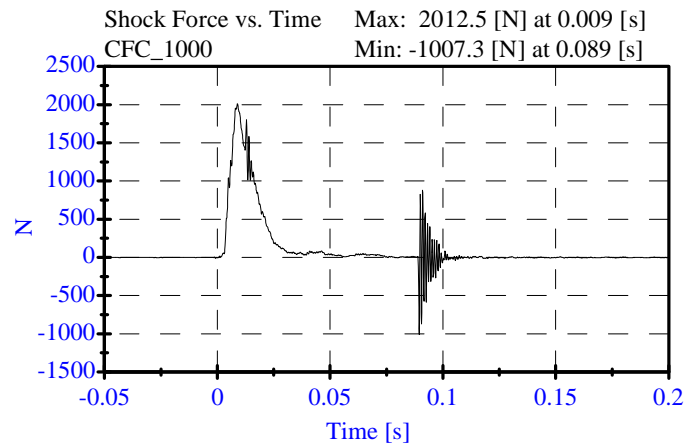
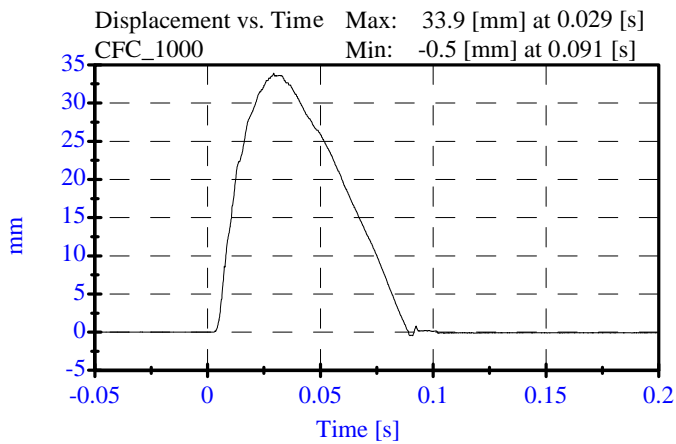
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 12-13-06

Sequential Test Number: 1 File: 906SM 12-13-06
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Displacement:	32.00-37.00 mm	33.91 mm	Passed
Maximum Force:	1730.00-2099.00 N	2012.54 N	Passed

Impact Test Velocity: 4.27 m/s
Damper Identification: 906
Damper Setting: 5



Shock Impact High (6.10 m/s)

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

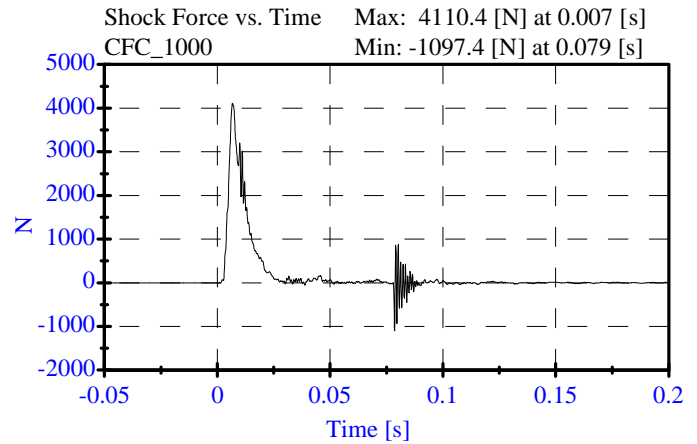
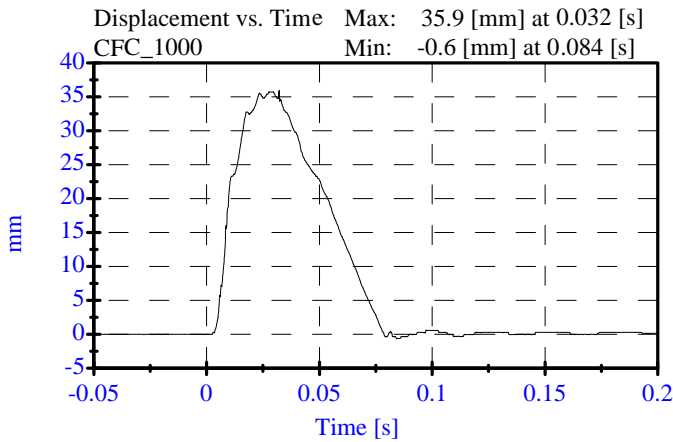
ATD Serial No: 906

Date: 12-13-06

Sequential Test Number: 1 File: 906SH 12-13-06

Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Displacement:	33.00-40.00 mm	35.95 mm	Passed
Maximum Force:	3741.00-4448.00 N	4110.43 N	Passed
Impact Test Velocity:	6.10 m/s		
Damper Identification:	906		
Damper Setting:	5		

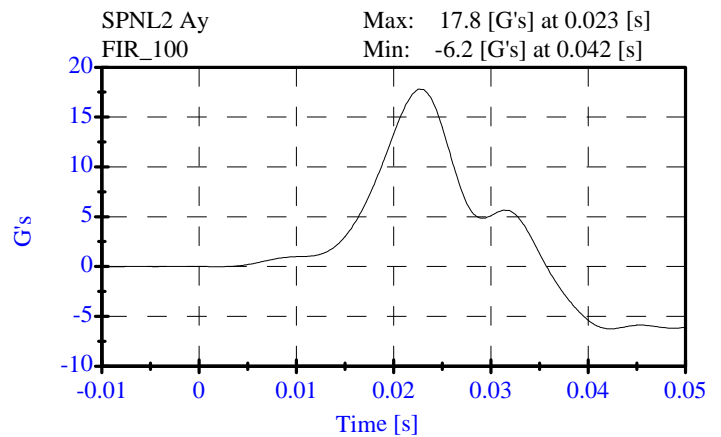
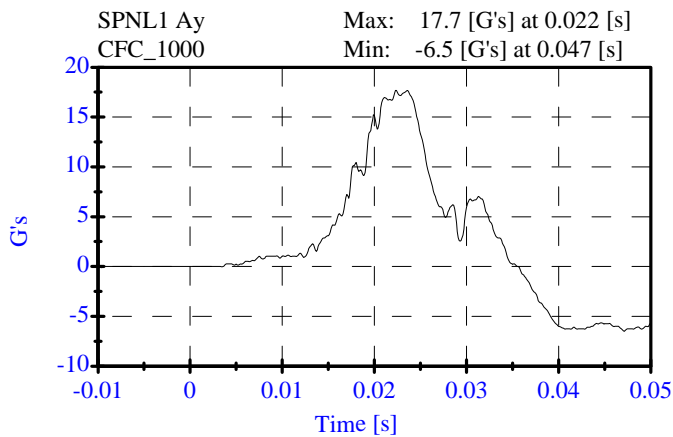
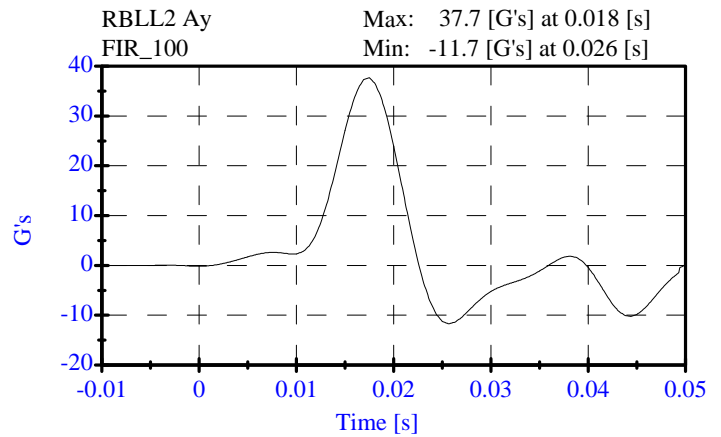
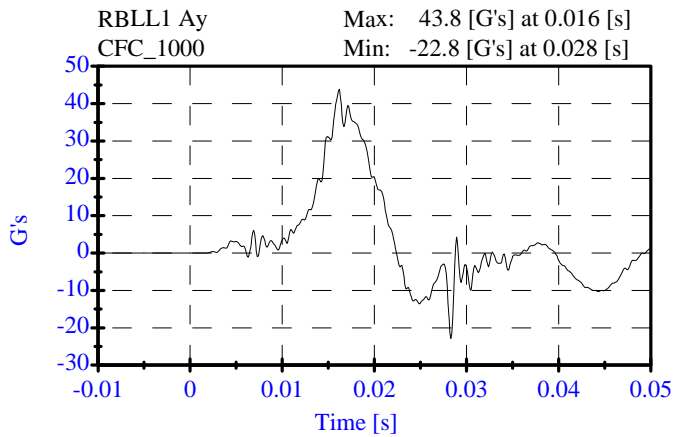
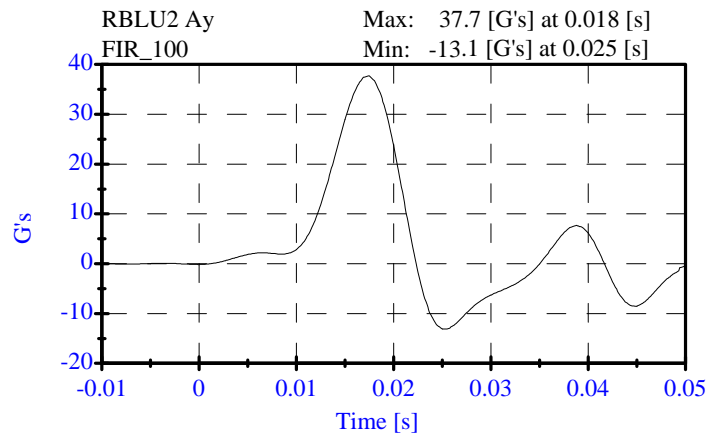
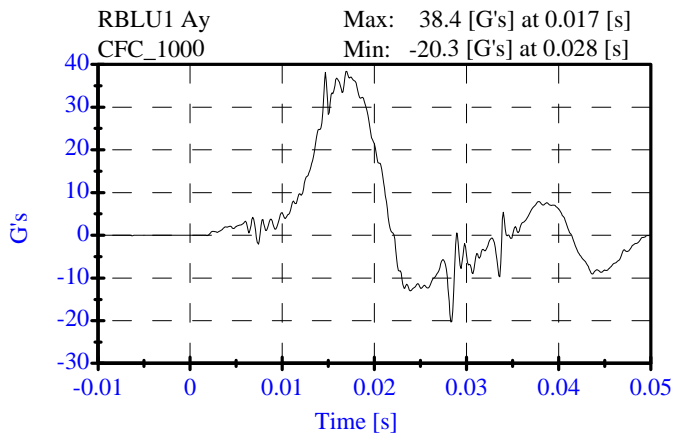


**Thorax Impact
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 906
Date: 02-09-07

Sequential Test Number: 1 File: 906T1 02-09-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.32 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	37.71 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	37.72 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	17.82 G's	Passed



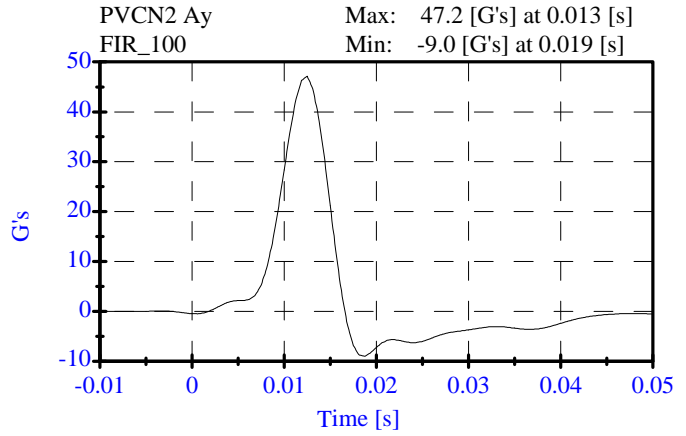
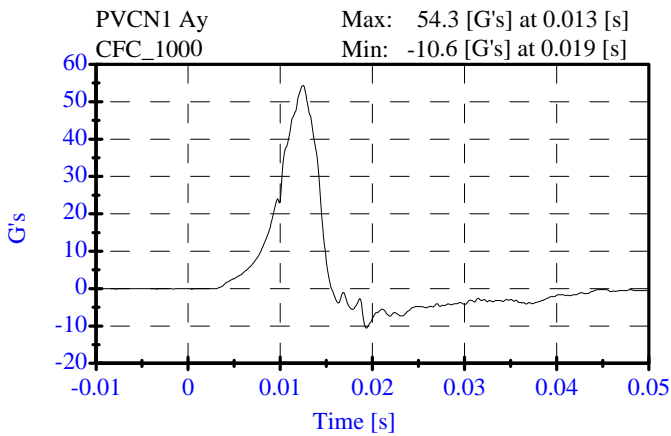
**Pelvic Impact
Pre-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 02-12-07

Sequential Test Number: 1 File: 906P 02-12-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.33 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	47.15 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.8 ms	Passed



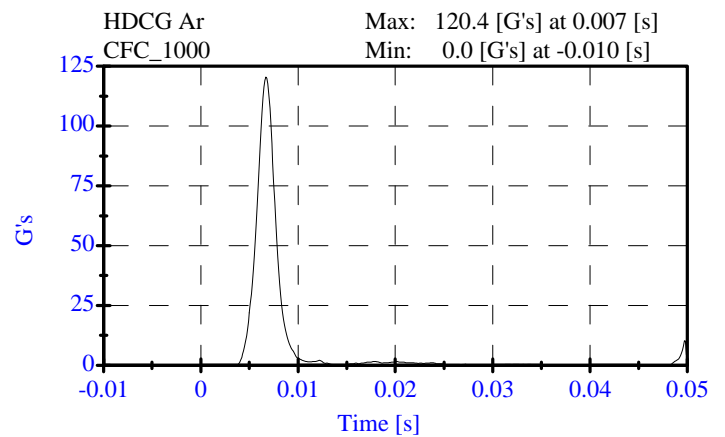
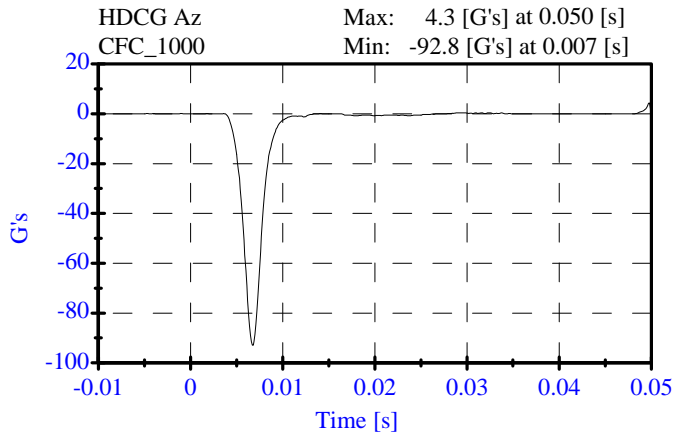
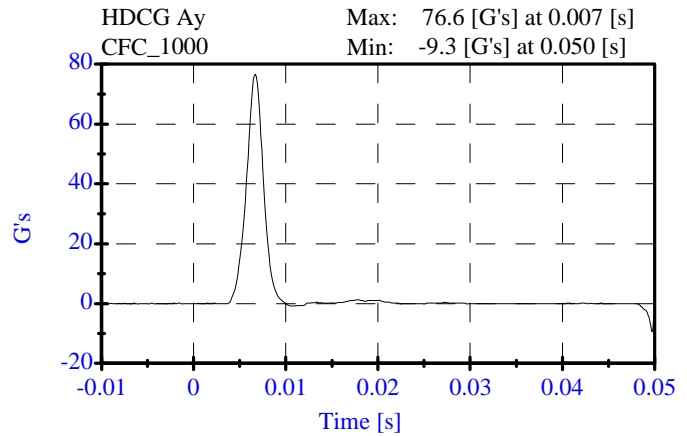
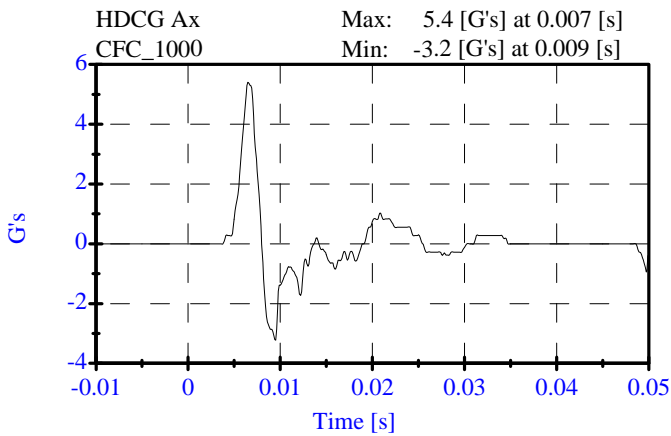
**Head Drop
Pre-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 02-08-07

Sequential Test Number: 1 File: 906HD2 02-08-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	120.43 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	5.39 Gs	Passed
Curve PerCent NonModal:	< 15%	8.53 %	Passed



**Neck Test
Pre-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 02-09-07

Sequential Test Number: 1 File: 906Neck 02-08-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	6.99 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.13 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.36 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.34 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.08 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	67.58 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.30 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	85.00 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	55.00 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	8.90 ms	Passed

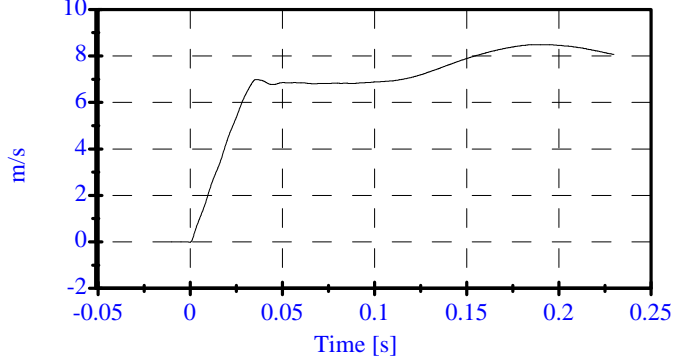
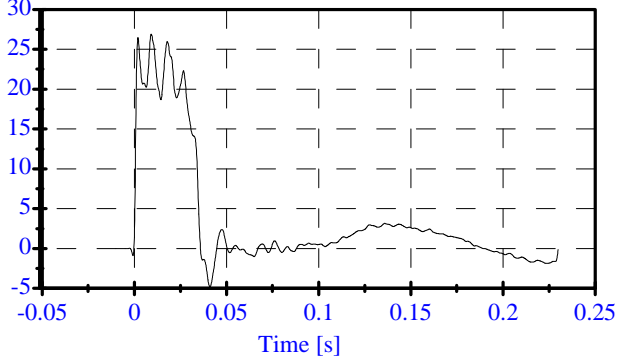
**Neck Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 906
Date: 02-09-07

Sequential Test Number: 1 File: 906Neck 02-08-07
Laboratory Technician: B. Swiecicki

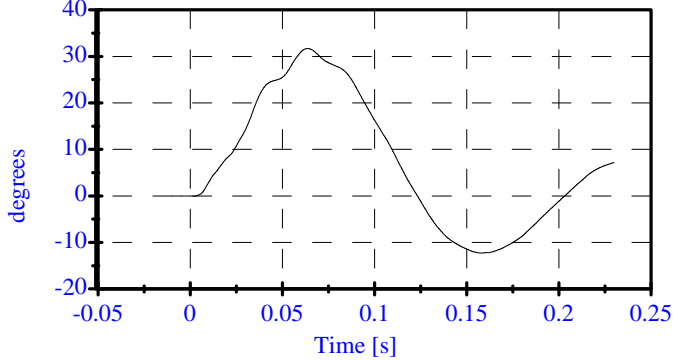
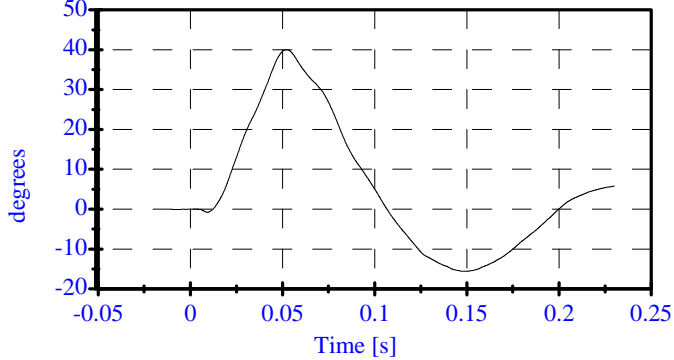
Pend Ax CFC_180 Max: 26.9 [] at 0.009 [s]
Min: -4.8 [] at 0.041 [s]

Pend Vx CFC_180 Max: 8.5 [m/s] at 0.189 [s]
Min: -0.0 [m/s] at -0.000 [s]



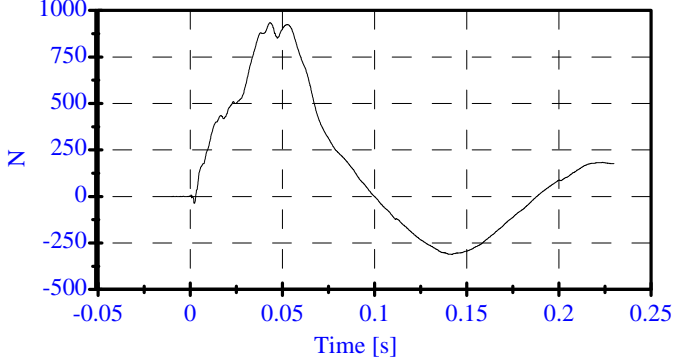
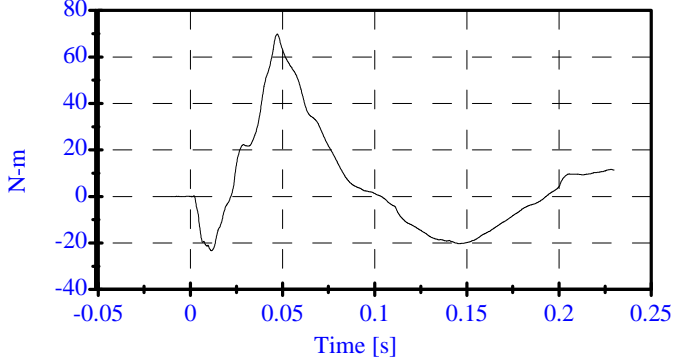
Head Rot CFC_180 Max: 40.0 [degrees] at 0.052 [s]
Min: -15.6 [degrees] at 0.149 [s]

Arm Rot CFC_180 Max: 31.7 [degrees] at 0.064 [s]
Min: -12.3 [degrees] at 0.158 [s]



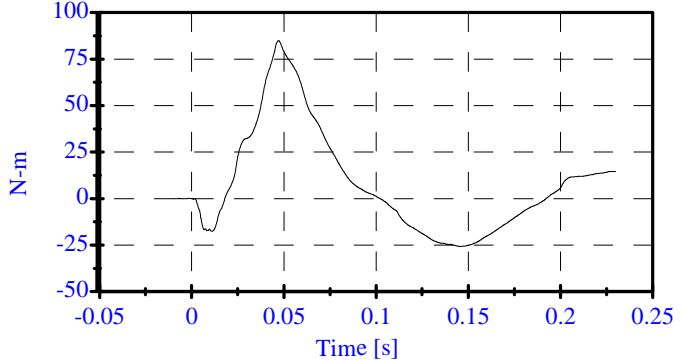
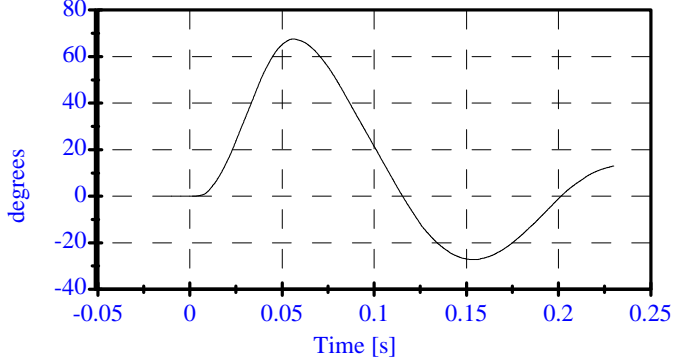
Neck Mx CFC_600 Max: 69.9 [N-m] at 0.047 [s]
Min: -23.4 [N-m] at 0.012 [s]

Neck Fy CFC_1000 Max: 934.8 [N] at 0.043 [s]
Min: -312.0 [N] at 0.142 [s]



Tot Rot CFC_180 Max: 67.6 [degrees] at 0.056 [s]
Min: -27.3 [degrees] at 0.154 [s]

MOCX Max: 85.0 [N-m] at 0.047 [s]
Min: -25.7 [N-m] at 0.146 [s]



Abdomen Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906

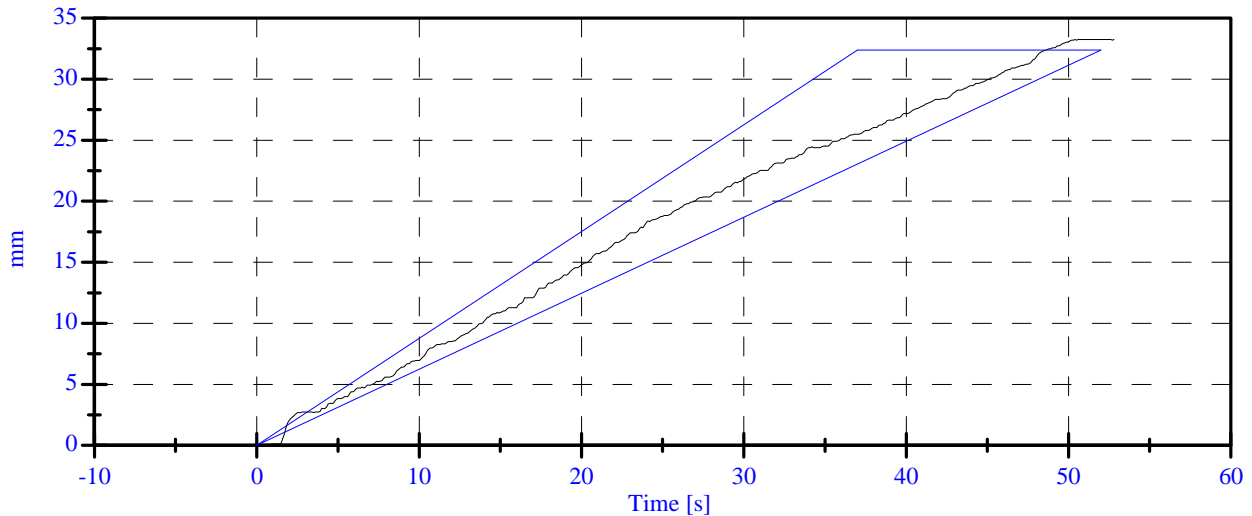
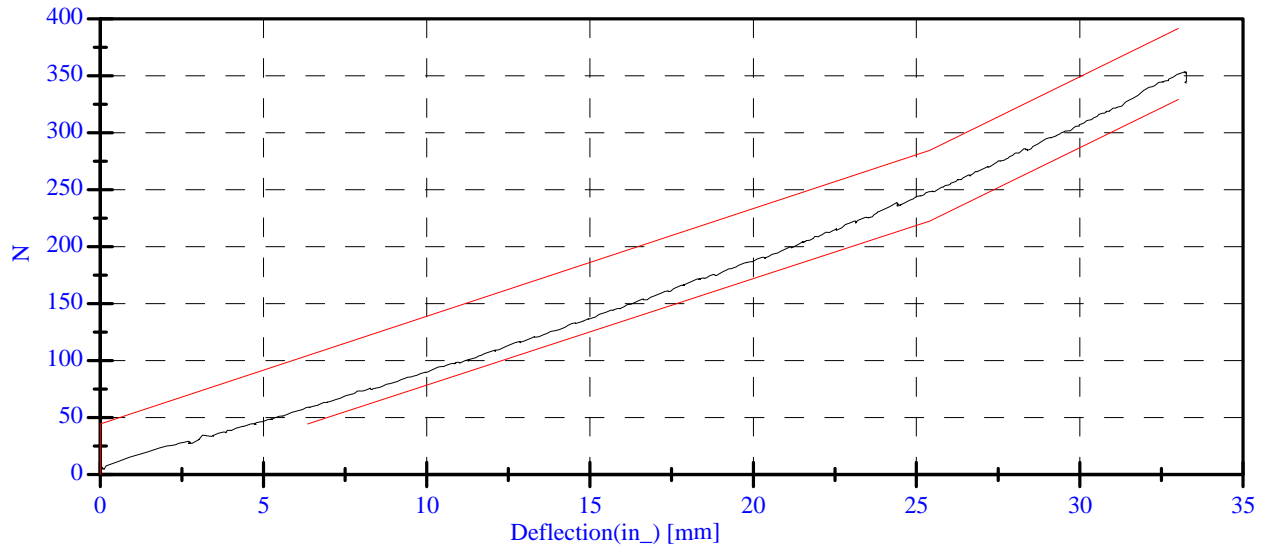
Date: 02-12-07

Sequential Test Number: 1 File: 906 Ab 02-12-07

Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	117.15 N	Passed
Force at 19.05 mm :	162.98-220.99 N	178.41 N	Passed
Force at 25.40 mm :	221.97-280.02 N	248.37 N	Passed
Force at 33.02 mm :	324.99-391.00 N	351.68 N	Passed

ABDOMINAL COMPRESSION TEST



**Spine Test
Pre-Test**

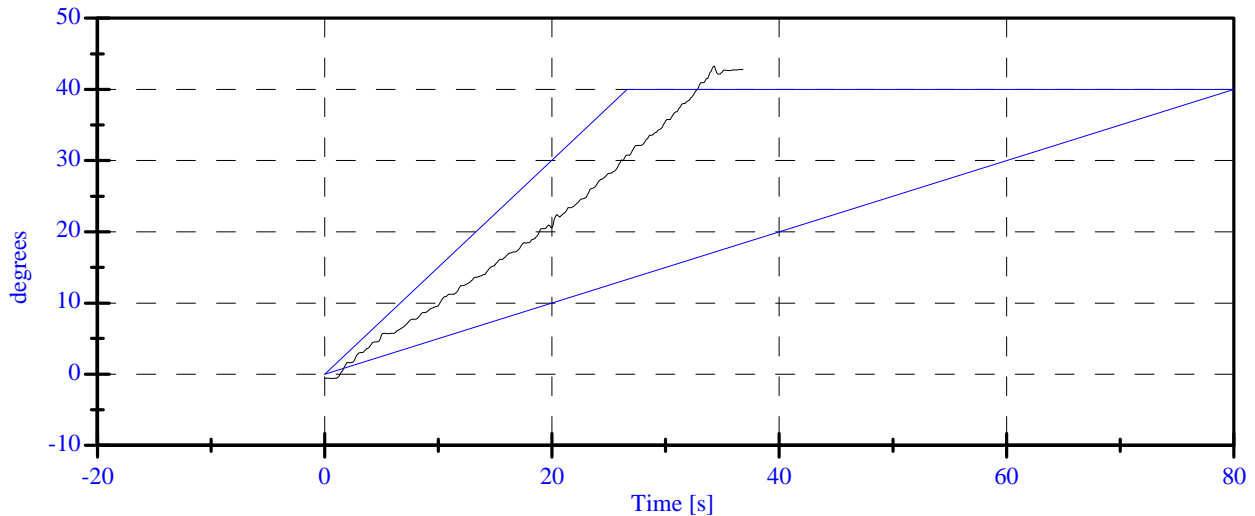
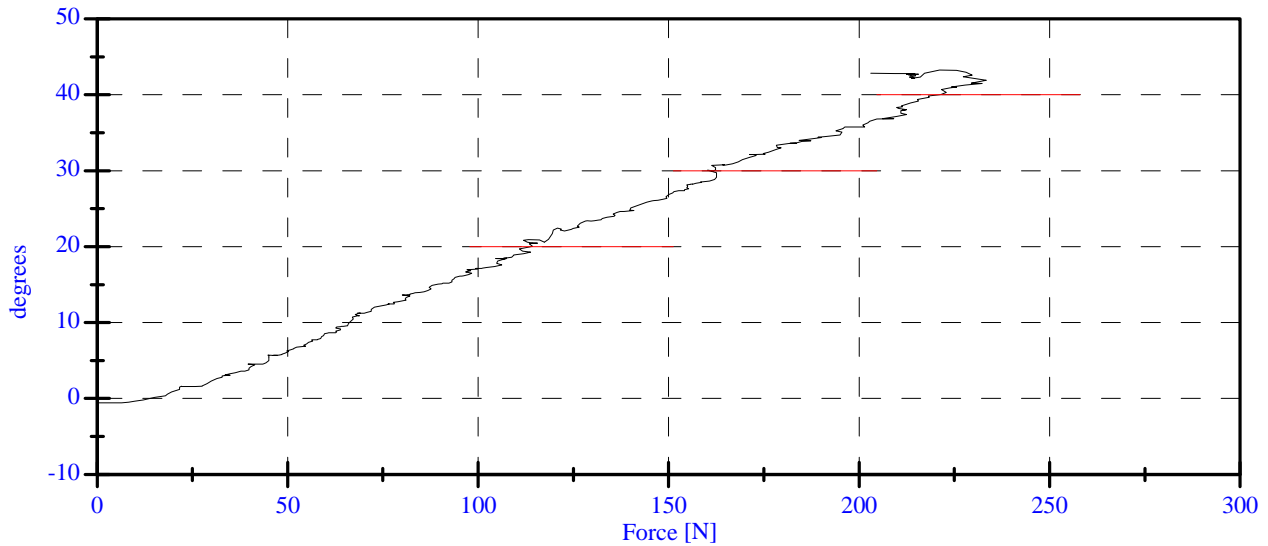
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 02-12-07

Sequential Test Number: 1 File: 906 Spine 02-12-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	15.02 N	Passed
Force at 20 Deg:	97.86-151.24 N	114.26 N	Passed
Force at 30 Deg:	151.24-204.62 N	161.79 N	Passed
Force at 40 Deg:	204.62-258.00 N	221.33 N	Passed
Return Angle	12 Deg Max	1.33 deg	Passed

LUMBAR SPINE FLEXION TEST



PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 1
 Date: 2/12/07 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 905

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 1
Date: 4/9/07 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 1
Date: 4/9/07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	241
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	492
HW- Hip Width (mm)	356 - 391	378

REMARKS: None

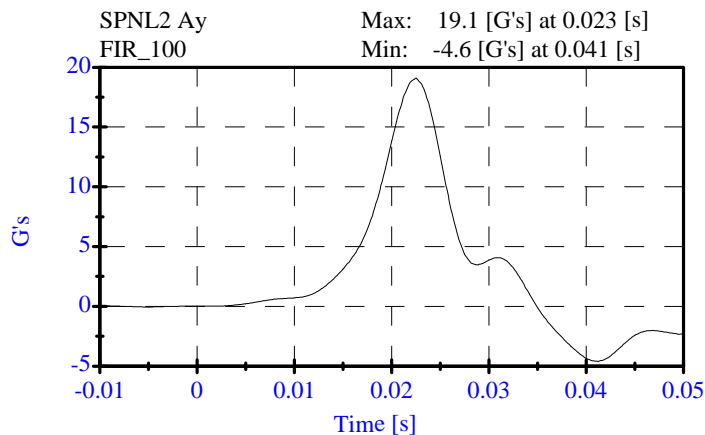
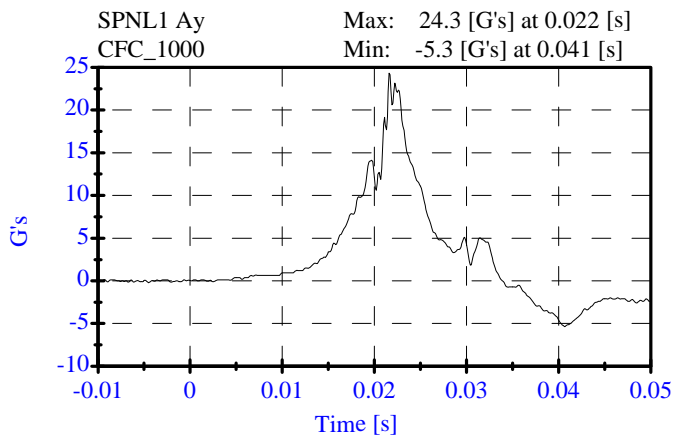
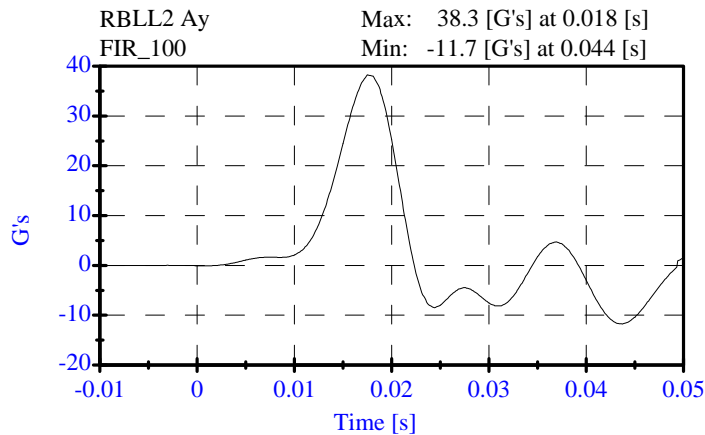
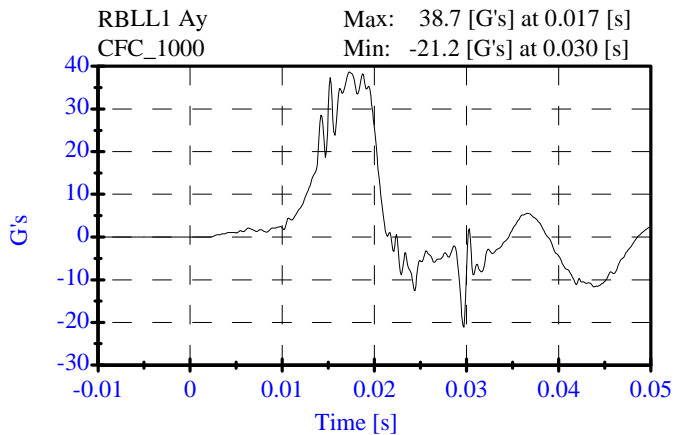
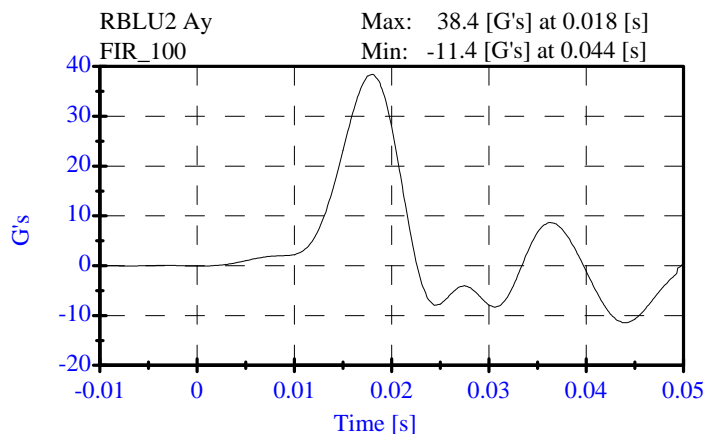
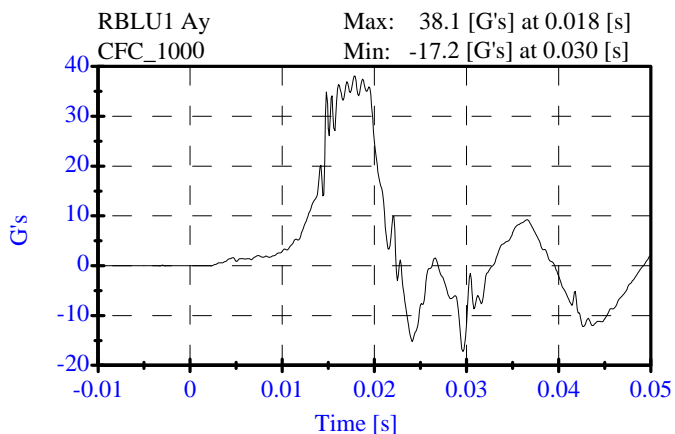
**Thorax Impact
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 04-09-07

Sequential Test Number: 1 File: 905T 04-09-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	38.43 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	38.28 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	19.11 G's	Passed



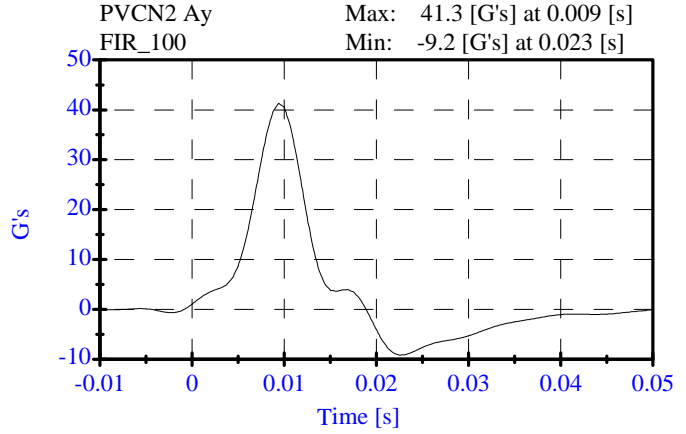
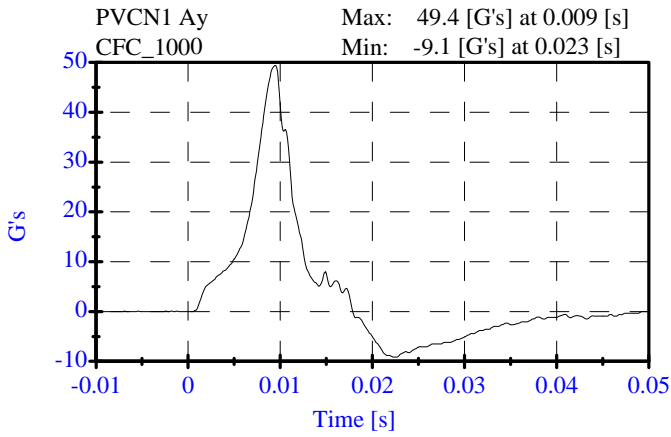
**Pelvic Impact
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 04-09-07

Sequential Test Number: 1 File: 905P 04-09-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.30 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	41.32 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.8 ms	Passed



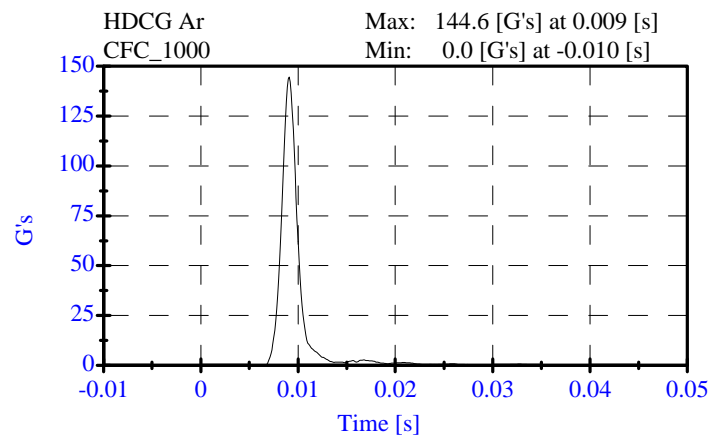
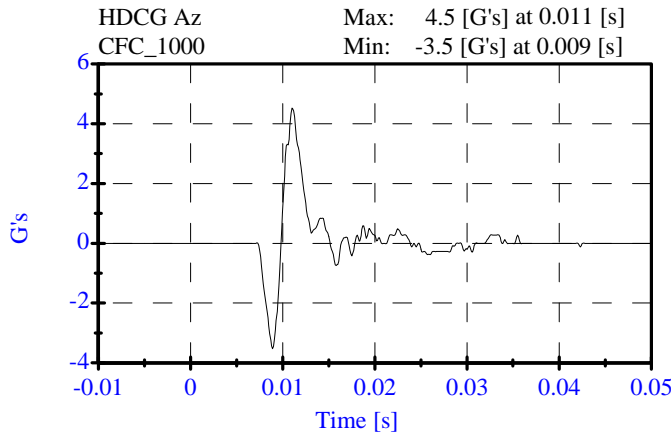
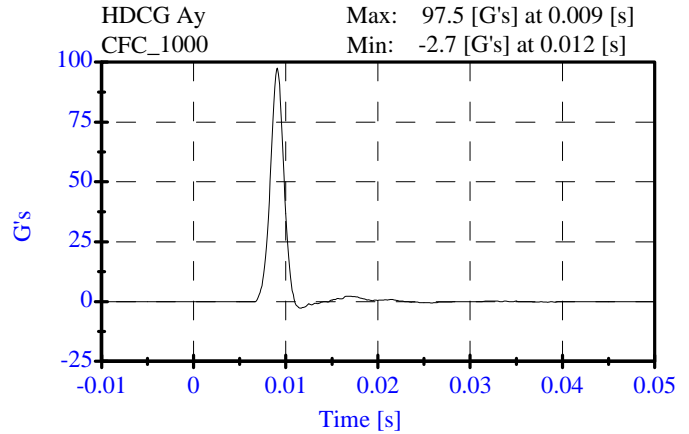
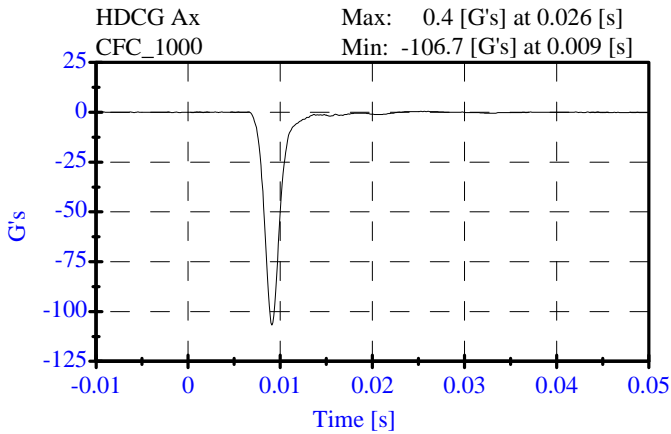
**Head Drop
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 04-04-07

Sequential Test Number: 1 File: 905H 04-04-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	144.58 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	0.44 Gs	Passed
Curve PerCent NonModal:	< 15%	1.89 %	Passed



**Neck Test
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 04-09-07

Sequential Test Number: 1 File: 905N 04-09-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	6.99 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.12 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.42 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.31 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.11 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	69.98 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.30 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	83.04 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	55.60 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	9.80 ms	Passed

Neck Test
Post-Test

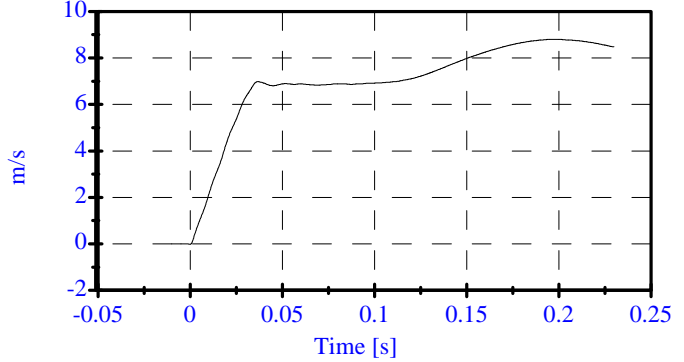
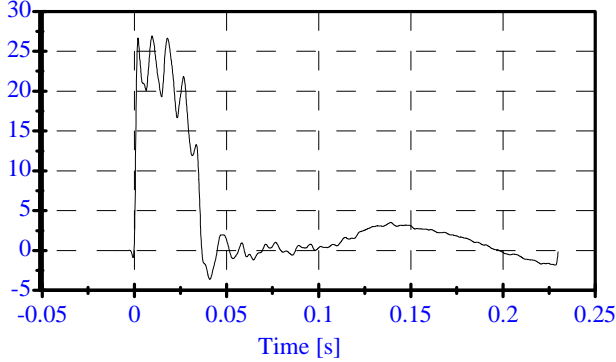
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 04-09-07

Sequential Test Number: 1 File: 905N 04-09-07
Laboratory Technician: B. Swiecicki

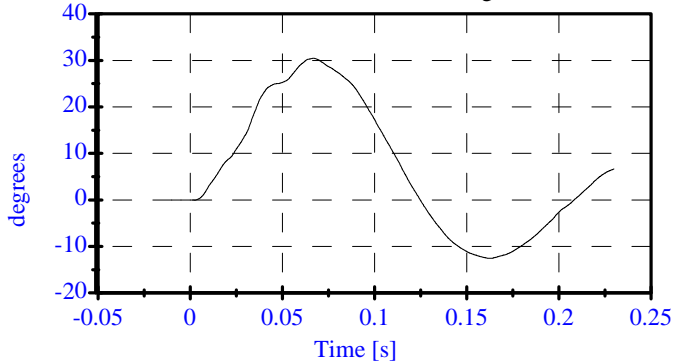
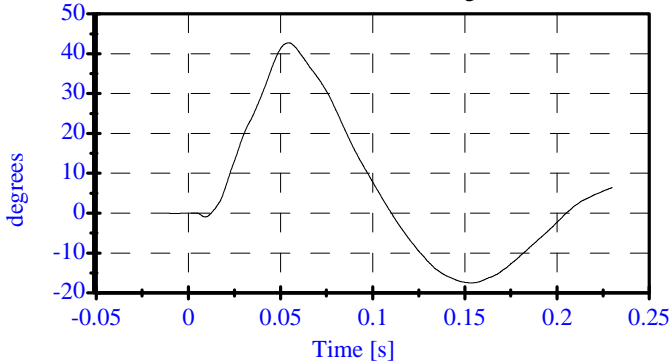
Pend Ax
CFC_180 Max: 26.9 [] at 0.010 [s]
Min: -3.6 [] at 0.041 [s]

Pend Vx
CFC_180 Max: 8.8 [m/s] at 0.198 [s]
Min: -0.0 [m/s] at -0.000 [s]



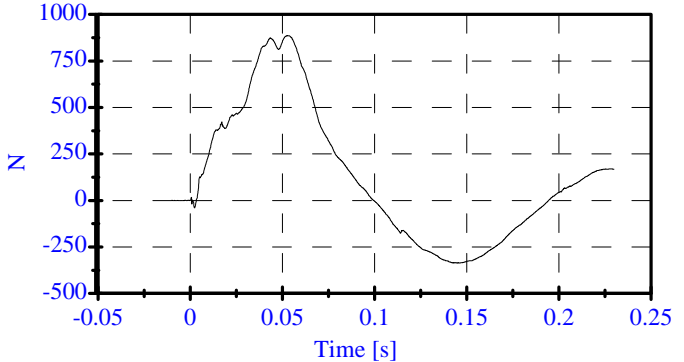
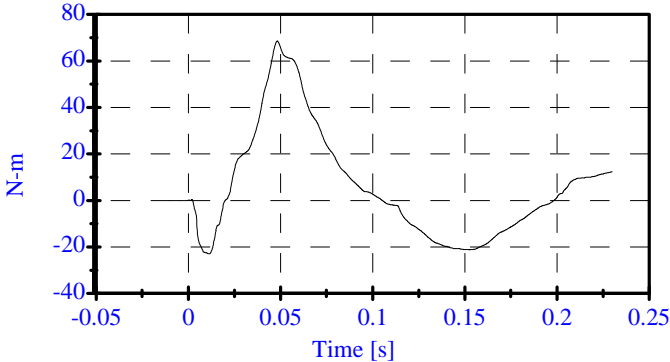
Head Rot
CFC_180 Max: 42.8 [degrees] at 0.054 [s]
Min: -17.5 [degrees] at 0.153 [s]

Arm Rot
CFC_180 Max: 30.5 [degrees] at 0.067 [s]
Min: -12.6 [degrees] at 0.163 [s]



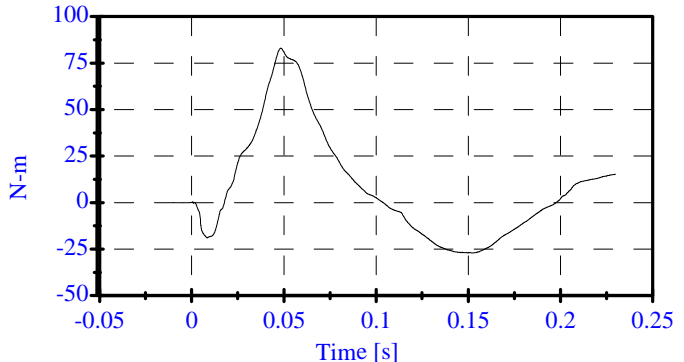
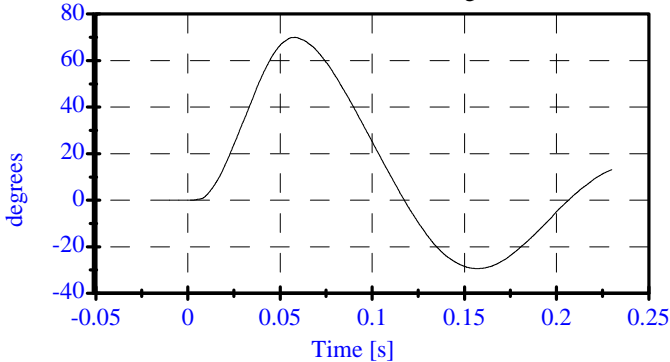
Neck Mx
CFC_600 Max: 68.6 [N-m] at 0.048 [s]
Min: -23.0 [N-m] at 0.011 [s]

Neck Fy
CFC_1000 Max: 886.4 [N] at 0.053 [s]
Min: -337.1 [N] at 0.146 [s]



Tot Rot
CFC_180 Max: 70.0 [degrees] at 0.058 [s]
Min: -29.4 [degrees] at 0.157 [s]

MOCX
Max: 83.0 [N-m] at 0.048 [s]
Min: -27.0 [N-m] at 0.153 [s]



Abdomen Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905

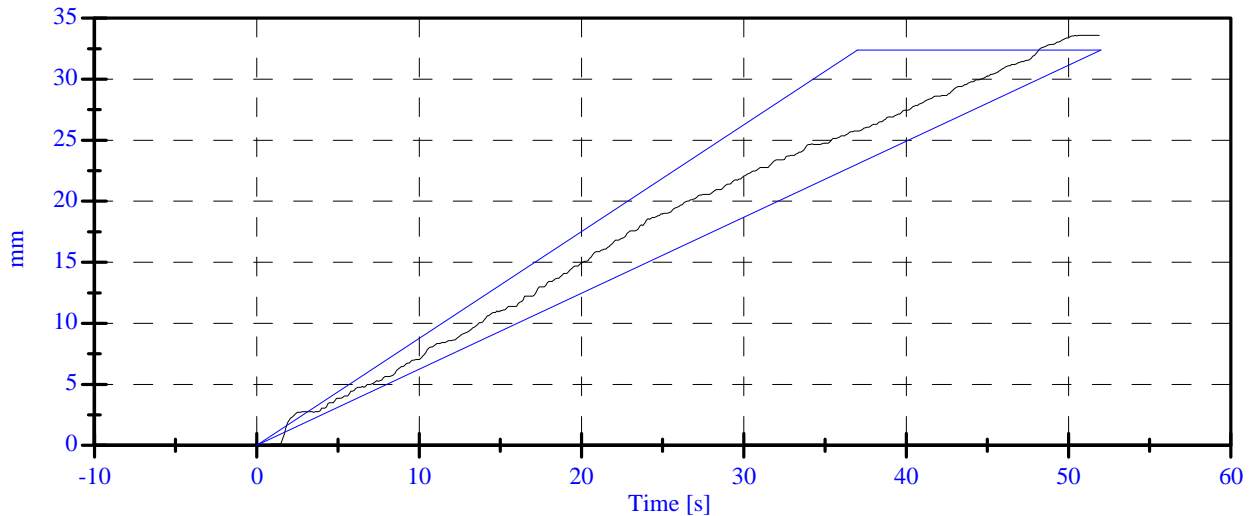
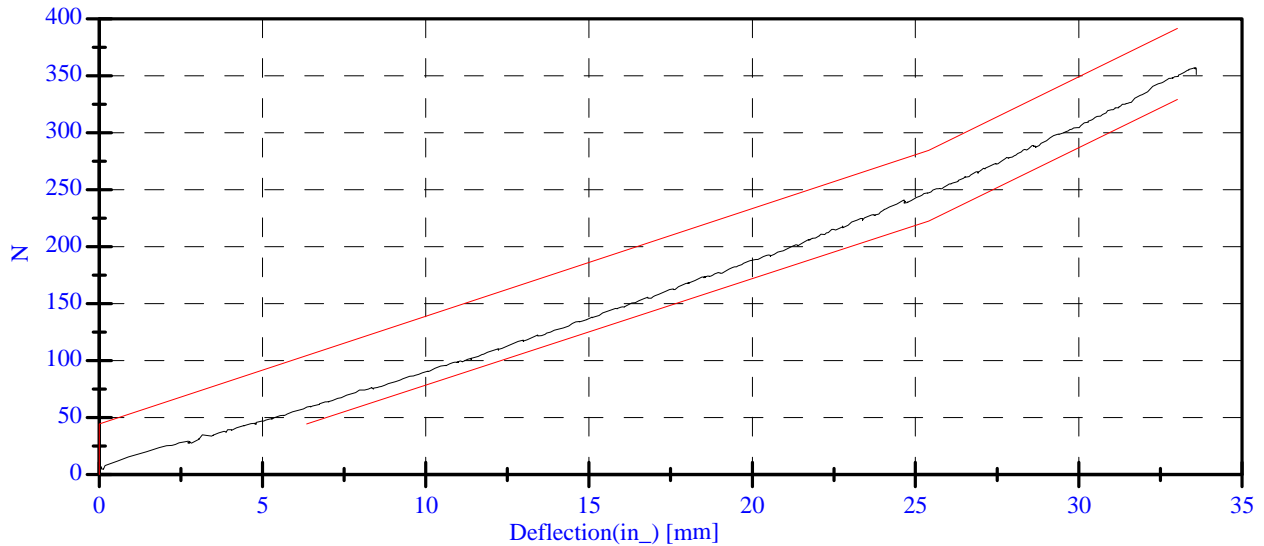
Date: 04-09-07

Sequential Test Number: 1 File: 905Ab 04-09-07

Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	117.96 N	Passed
Force at 19.05 mm :	162.98-220.99 N	176.54 N	Passed
Force at 25.40 mm :	221.97-280.02 N	247.20 N	Passed
Force at 33.02 mm :	324.99-391.00 N	349.34 N	Passed

ABDOMINAL COMPRESSION TEST



Lumbar Spine

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905

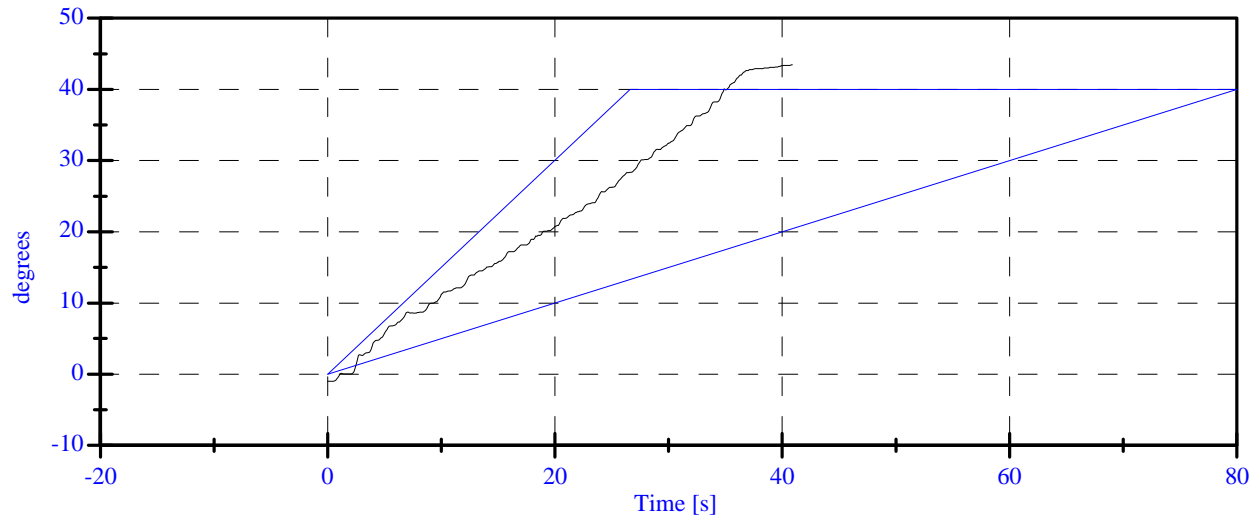
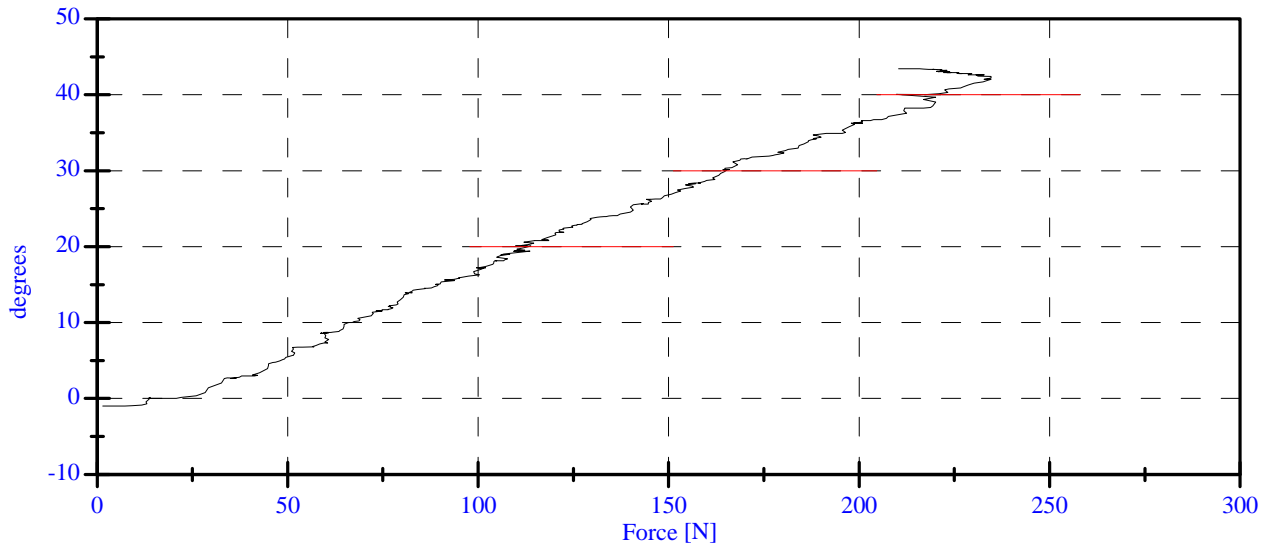
Date: 04-09-07

Sequential Test Number: 1 File: 905SP 04-09-07

Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	13.85 N	Passed
Force at 20 Deg:	97.86-151.24 N	112.50 N	Passed
Force at 30 Deg:	151.24-204.62 N	164.73 N	Passed
Force at 40 Deg:	204.62-258.00 N	221.44 N	Passed
Return Angle	12 Deg Max	4.57 deg	Passed

LUMBAR SPINE FLEXION TEST



POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 1
 Date: 4/9/07 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 906

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 1
Date: 4/9/07 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 1
Date: 4/9/07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	904
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	384

REMARKS: None

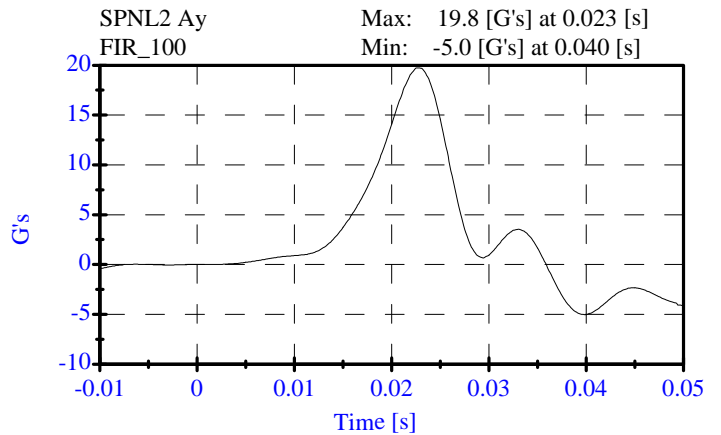
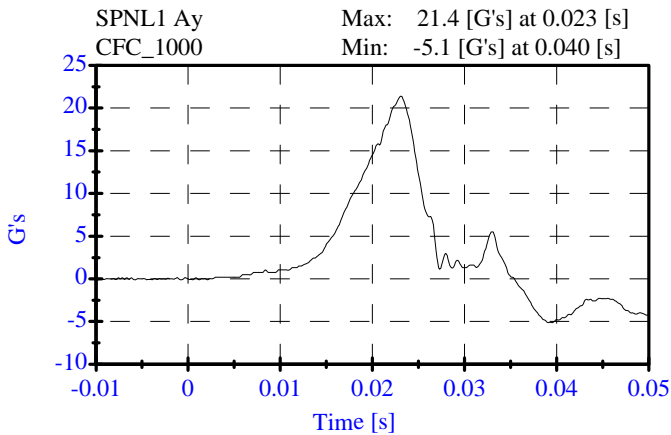
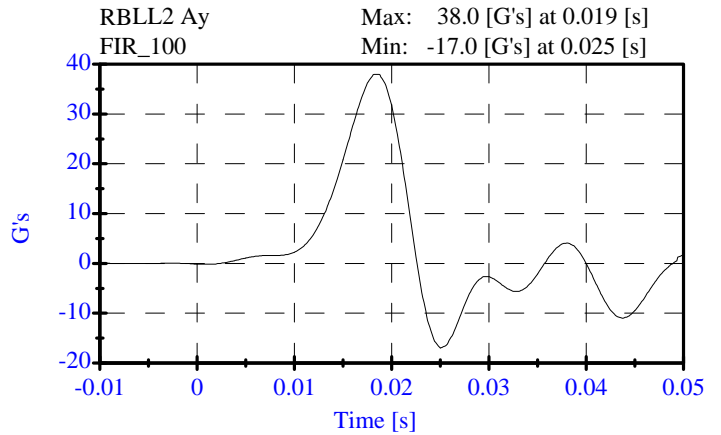
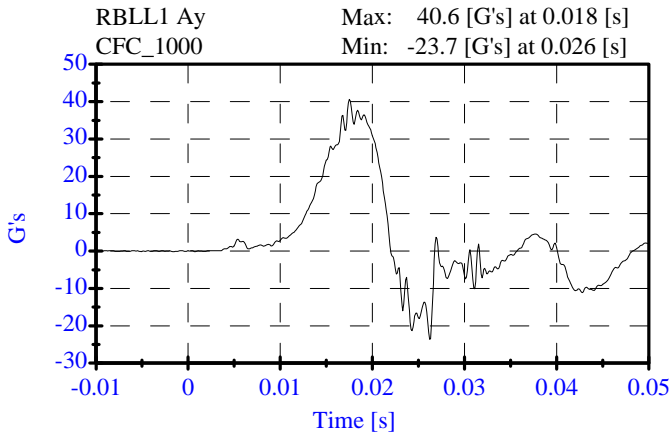
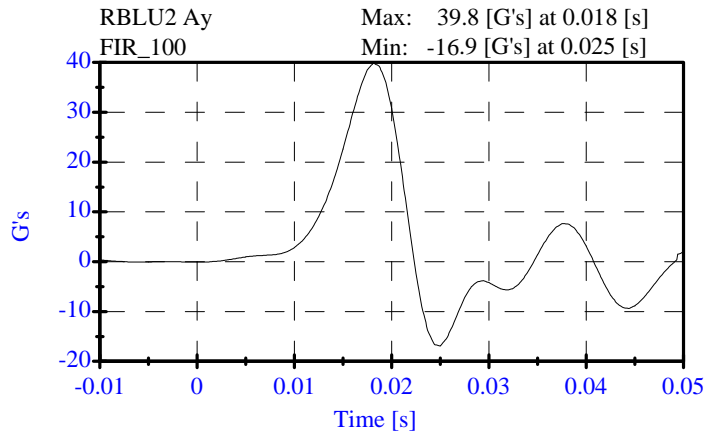
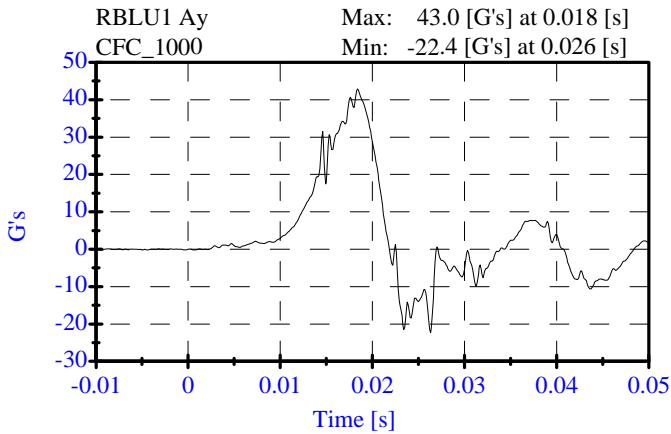
**Thorax Impact
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 04-09-07

Sequential Test Number: 1 File: 906T 04-09-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	39.85 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	37.97 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	19.75 G's	Passed



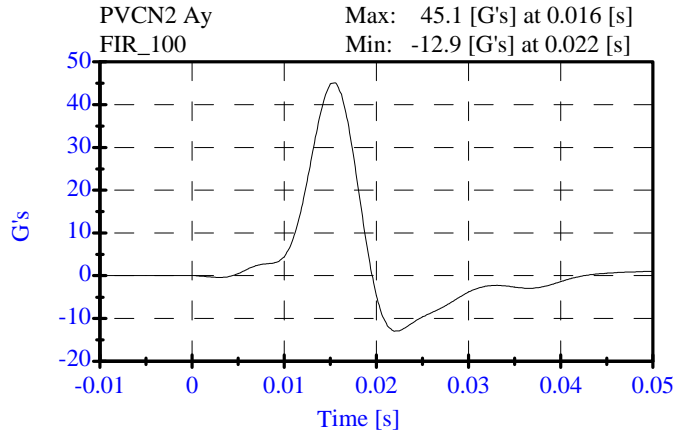
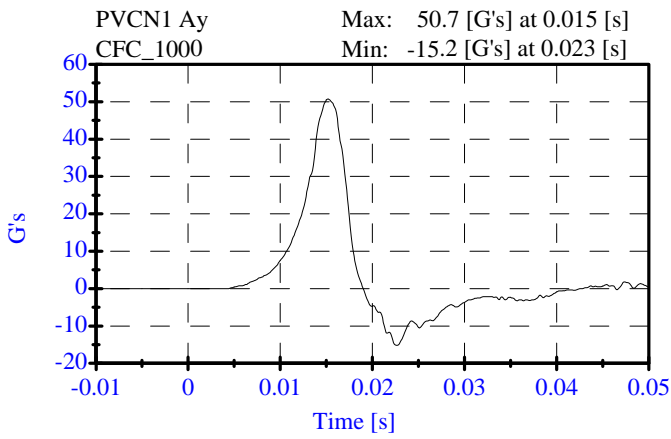
**Pelvic Impact
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 04-09-07

Sequential Test Number: 1 File: 906P 04-09-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	45.15 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.8 ms	Passed



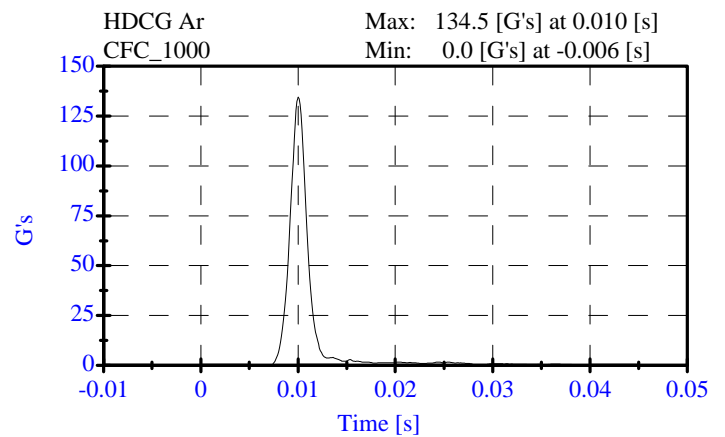
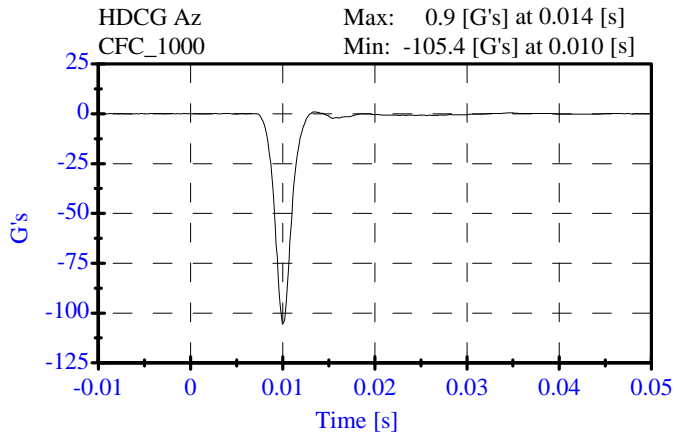
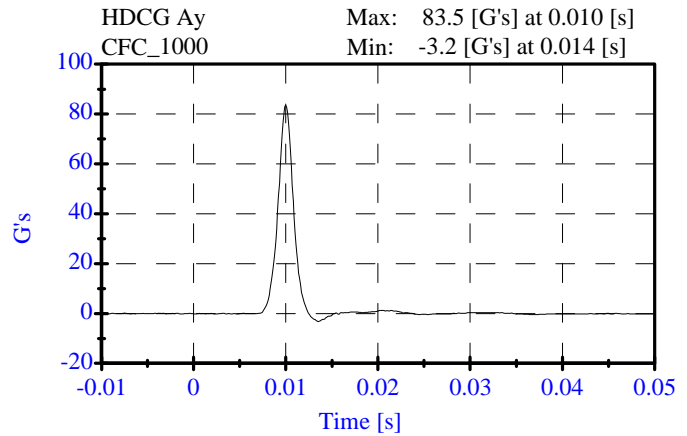
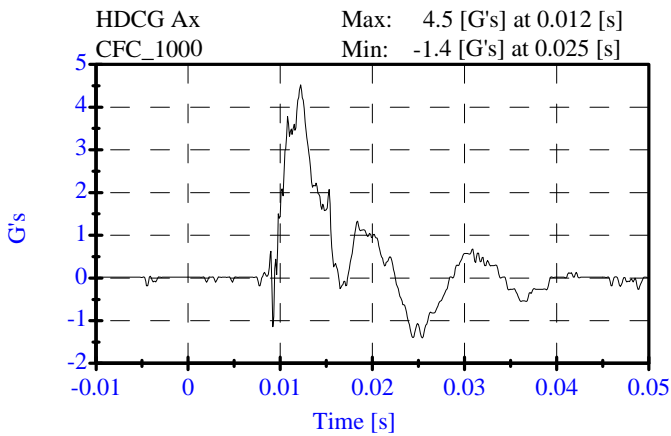
**Head Drop
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 04-04-07

Sequential Test Number: 1 File: 906H1 04-04-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	134.50 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	4.52 Gs	Passed
Curve PerCent NonModal:	< 15%	2.91 %	Passed



**Neck Test
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 04-09-07

Sequential Test Number: 1 File: 906N 04-09-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.00 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.03 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.16 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	5.99 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	6.98 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	66.35 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.80 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	80.62 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	53.10 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	6.60 ms	Passed

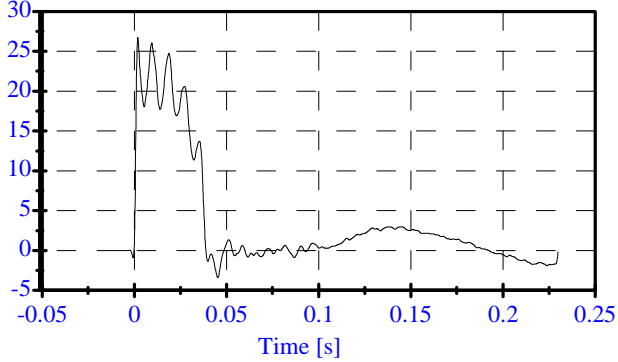
Neck Test
Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

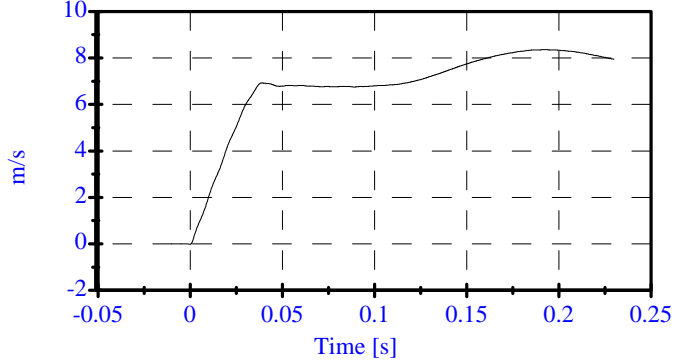
ATD Serial No: 906
Date: 04-09-07

Sequential Test Number: 1 File: 906N 04-09-07
Laboratory Technician: B. Swiecicki

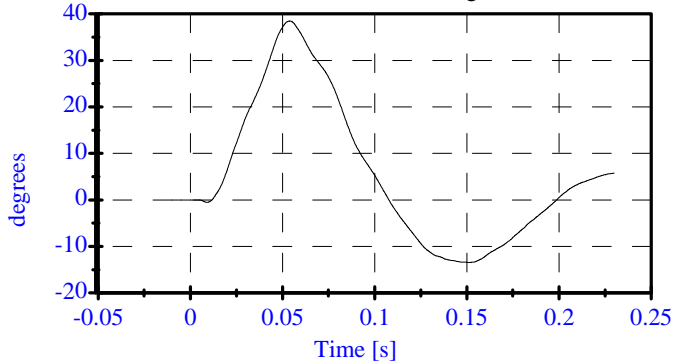
Pend Ax CFC_180 Max: 26.8 [] at 0.002 [s]
Min: -3.4 [] at 0.045 [s]



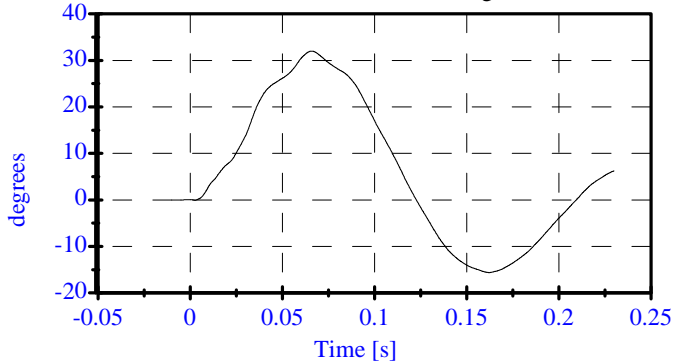
Pend Vx CFC_180 Max: 8.4 [m/s] at 0.192 [s]
Min: -0.0 [m/s] at -0.000 [s]



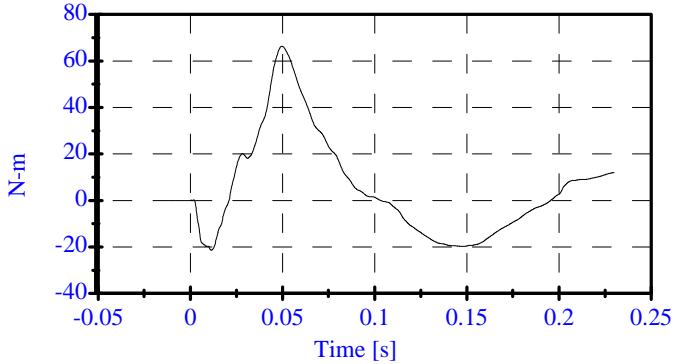
Head Rot CFC_180 Max: 38.5 [degrees] at 0.054 [s]
Min: -13.4 [degrees] at 0.151 [s]



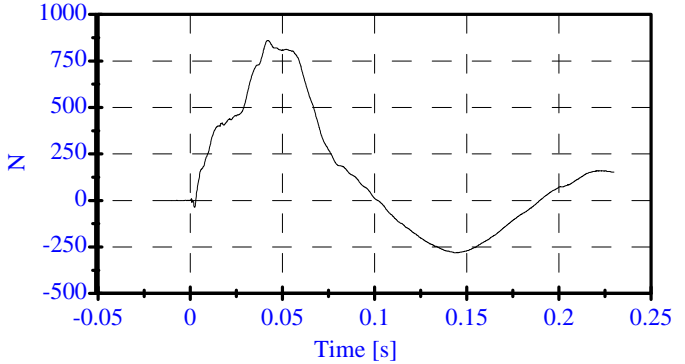
Arm Rot CFC_180 Max: 32.0 [degrees] at 0.066 [s]
Min: -15.6 [degrees] at 0.162 [s]



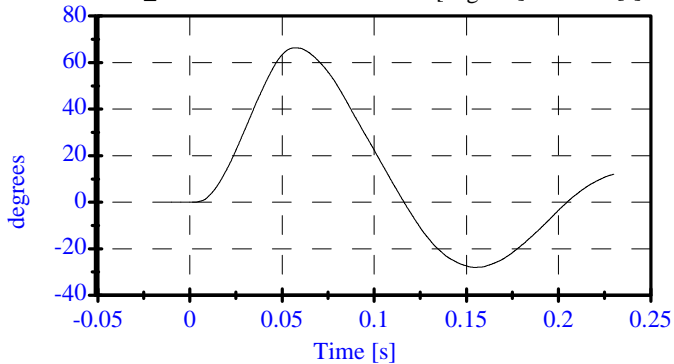
Neck Mx CFC_600 Max: 66.3 [N-m] at 0.050 [s]
Min: -21.4 [N-m] at 0.012 [s]



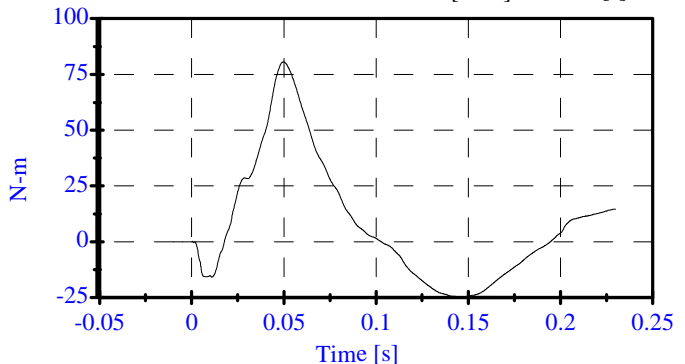
Neck Fy CFC_1000 Max: 860.6 [N] at 0.042 [s]
Min: -282.0 [N] at 0.144 [s]



Tot Rot CFC_180 Max: 66.3 [degrees] at 0.056 [s]
Min: -28.1 [degrees] at 0.155 [s]



MOCX Max: 80.6 [N-m] at 0.050 [s]
Min: -24.7 [N-m] at 0.148 [s]



Abdomen Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906

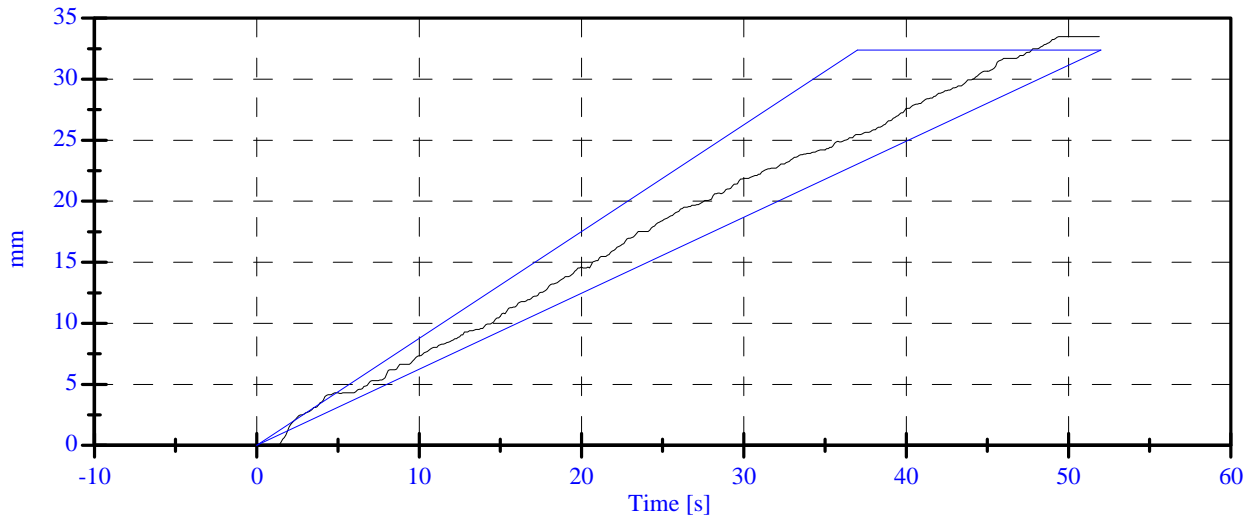
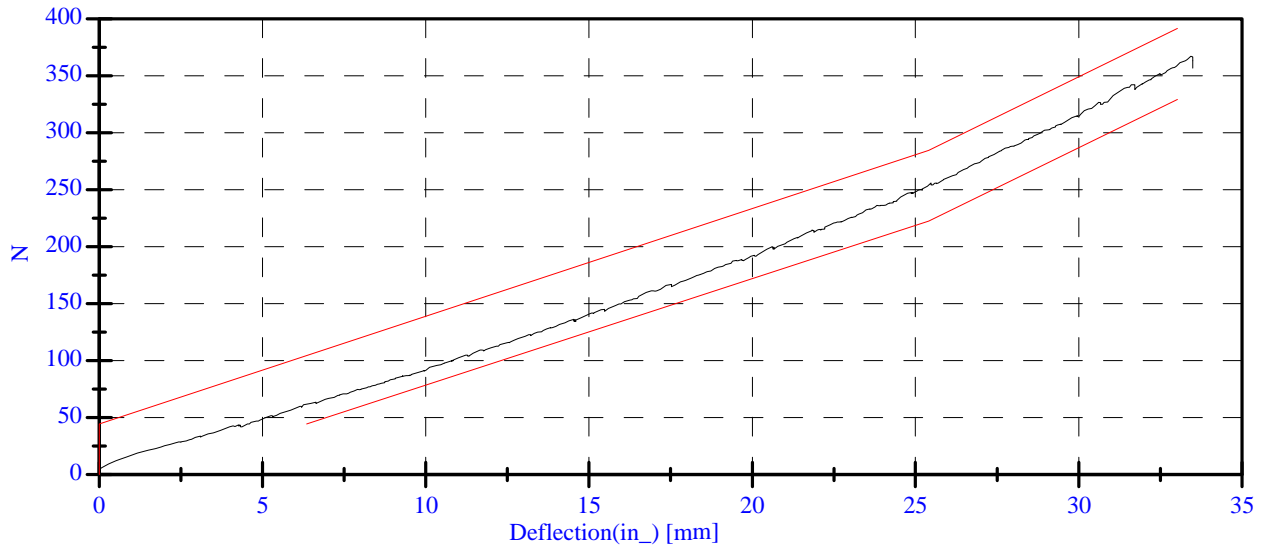
Date: 04-09-07

Sequential Test Number: 1 File: 906Ab 04-09-07

Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	121.26 N	Passed
Force at 19.05 mm :	162.98-220.99 N	182.76 N	Passed
Force at 25.40 mm :	221.97-280.02 N	253.05 N	Passed
Force at 33.02 mm :	324.99-391.00 N	358.49 N	Passed

ABDOMINAL COMPRESSION TEST



**Lumbar Spine
Post-Test**

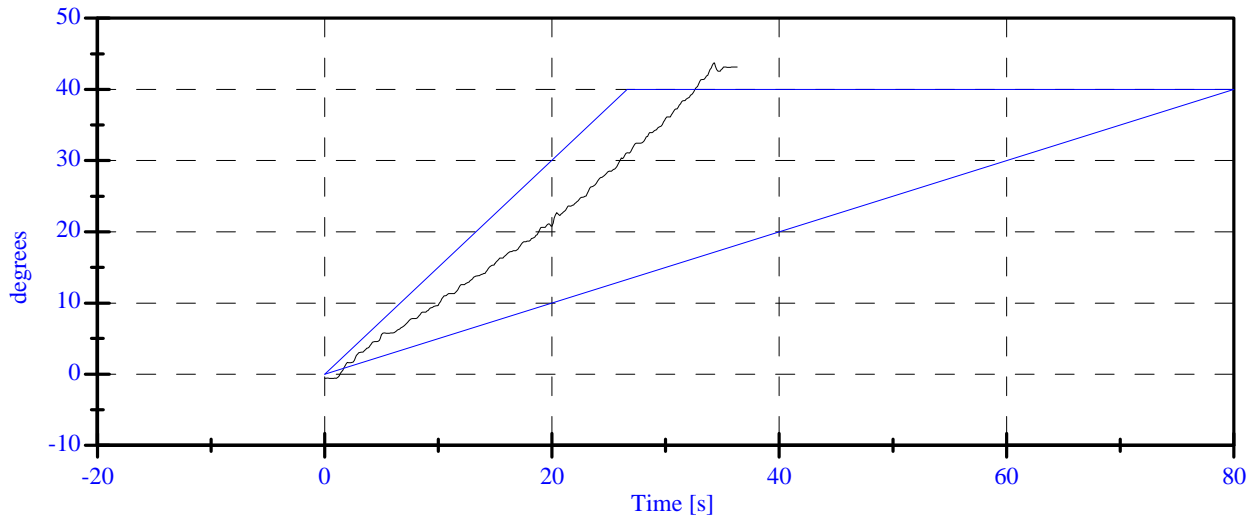
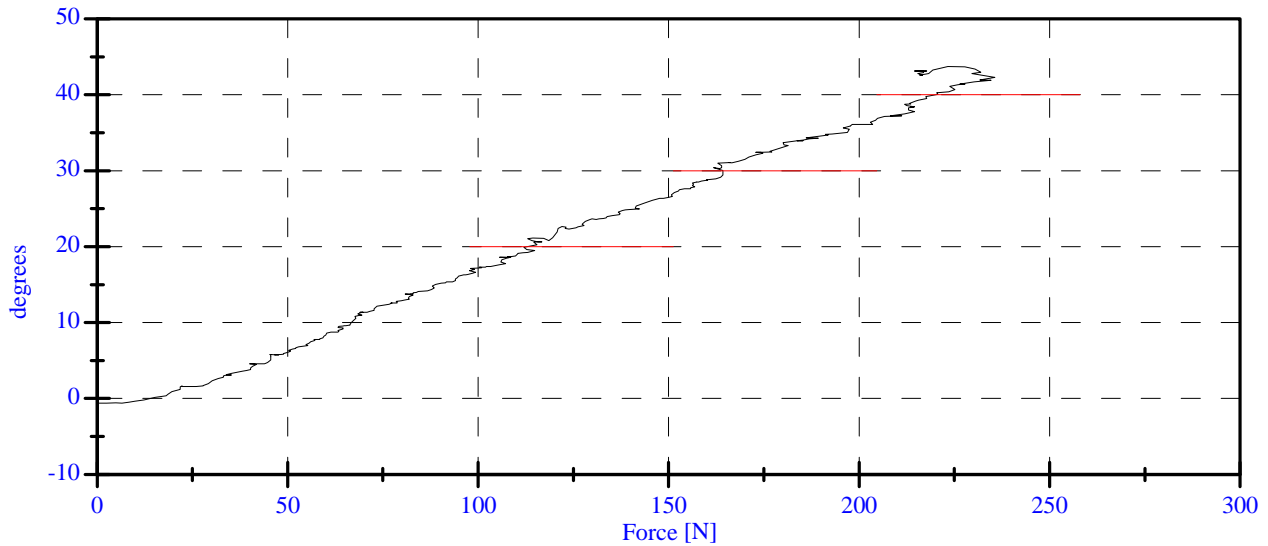
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 04-09-07

Sequential Test Number: 1 File: 906SP 04-09-07
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	15.17 N	Passed
Force at 20 Deg:	97.86-151.24 N	111.97 N	Passed
Force at 30 Deg:	151.24-204.62 N	164.20 N	Passed
Force at 40 Deg:	204.62-258.00 N	220.64 N	Passed
Return Angle	12 Deg Max	1.33 deg	Passed

LUMBAR SPINE FLEXION TEST



POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

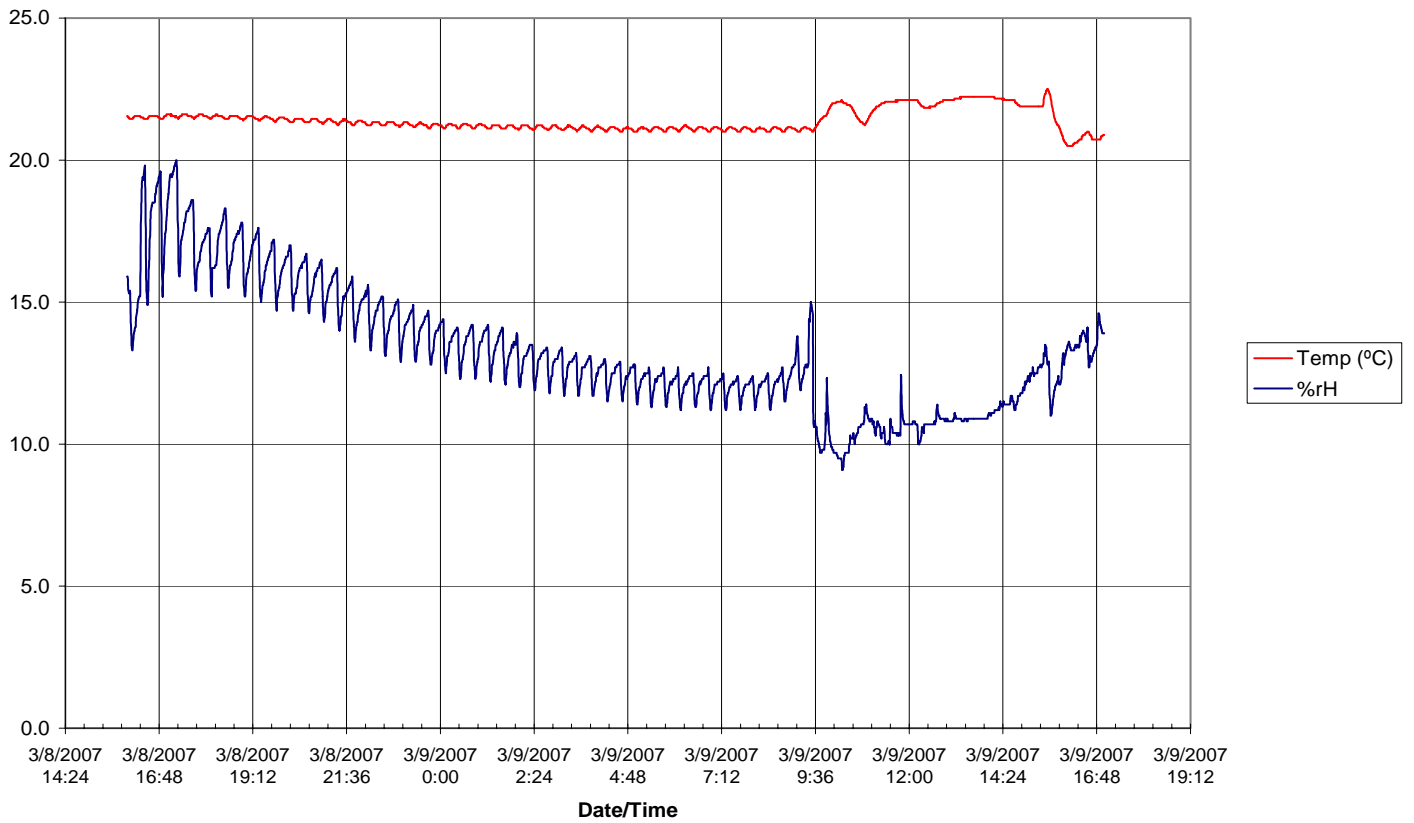
SID H3 Serial No.: 906 Sequential Test Number: 1
 Date: 4/9/07 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

TEMPERATURE TRACE

2008 Ford Escape M80201 Environmental Conditions



APPENDIX D
TEST EQUIPMENT AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID/HIII INSTRUMENTATION

FRONT SID/HIII NO.: 905			
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P21373	ENDEVCO	25-Jan-07
HEAD AY	AC-P23128	ENDEVCO	25-Jan-07
HEAD AZ	AC-P21297	ENDEVCO	25-Jan-07
UPPER NECK FX	LC-1626Fx	DENTON	06-Jul-06
UPPER NECK FY	LC-1626Fy	DENTON	06-Jul-06
UPPER NECK FZ	LC-1626Fz	DENTON	06-Jul-06
UPPER NECK MX	LC-1626Mx	DENTON	06-Jul-06
UPPER NECK MY	LC-1626My	DENTON	06-Jul-06
UPPER NECK MZ	LC-1626Mz	DENTON	06-Jul-06
UPPER RIB	AC-P15736	ENDEVCO	26-Jan-07
LOWER RIB	AC-P16289	ENDEVCO	26-Jan-07
LOWER SPINE	AC-P16761	ENDEVCO	26-Jan-07
PELVIS	AC-P35804	ENDEVCO	16-Jan-07
UPPER RIB REDUNDANT	AC-P16593	ENDEVCO	26-Jan-07
LOWER RIB REDUNDANT	AC-P23142	ENDEVCO	26-Jan-07
LOWER SPINE REDUNDANT	AC-P21516	ENDEVCO	26-Jan-07
PELVIS REDUNDANT	AC-P32221	ENDEVCO	26-Jan-07

REAR SID/HIII NO.: 906			
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P35764	ENDEVCO	24-Jan-07
HEAD AY	AC-P39736	ENDEVCO	24-Jan-07
HEAD AZ	AC-P39729	ENDEVCO	24-Jan-07
UPPER NECK FX	LC-798Fx	DENTON	06-Jul-06
UPPER NECK FY	LC-798Fy	DENTON	06-Jul-06
UPPER NECK FZ	LC-798Fz	DENTON	06-Jul-06
UPPER NECK MX	LC-798Mx	DENTON	06-Jul-06
UPPER NECK MY	LC-798My	DENTON	06-Jul-06
UPPER NECK MZ	LC-798Mz	DENTON	06-Jul-06
UPPER RIB	AC-P39575	ENDEVCO	16-Jan-07
LOWER RIB	AC-P16866	ENDEVCO	24-Jan-07
LOWER SPINE	AC-P16645	ENDEVCO	24-Jan-07
PELVIS	AC-P23139	ENDEVCO	24-Jan-07
UPPER RIB REDUNDANT	AC-P15526	ENDEVCO	16-Jan-07
LOWER RIB REDUNDANT	AC-P16656	ENDEVCO	24-Jan-07
LOWER SPINE REDUNDANT	AC-P19343	ENDEVCO	24-Jan-07
PELVIS REDUNDANT	AC-P17539	ENDEVCO	25-Jan-07

REMARKS: None

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL (X)	AC-P18948	ENDEVCO	15-Jan-07
RIGHT FRONT SILL (Y)	AC-P17563	ENDEVCO	15-Jan-07
RIGHT FRONT SILL (Z)	AC-P14965	ENDEVCO	15-Jan-07
RIGHT REAR SILL (X)	AC-J31101	ENDEVCO	15-Jan-07
RIGHT REAR SILL (Y)	AC-P23174	ENDEVCO	15-Jan-07
RIGHT REAR SILL (Z)	AC-J31059	ENDEVCO	15-Jan-07
REAR FLOORPAN ABOVE AXLE (X)	AC-P23993	ENDEVCO	15-Jan-07
REAR FLOORPAN ABOVE AXLE (Y)	AC-P23939	ENDEVCO	15-Jan-07
REAR FLOORPAN ABOVE AXLE (Z)	AC-P23999	ENDEVCO	15-Jan-07
LEFT REAR SILL (Y)	AC-P18532	ENDEVCO	19-Feb-07
LEFT FRONT SILL (Y)	AC-P23303	ENDEVCO	16-Jan-07
LEFT FRONT DOOR CENTERLINE (Y)	-	-	-
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-P23976	ENDEVCO	16-Jan-07
MID REAR OF LEFT FRONT DOOR (Y)	-	-	-
LEFT FRONT DOOR UPPER C/L (Y)	-	-	-
MID REAR OF LEFT REAR DOOR (Y)	-	-	-
LEFT REAR DOOR UPPER C/L (Y)	-	-	-
LOWER LEFT B- PILLAR (Y)	AC-P17299	ENDEVCO	19-Feb-07
MIDDLE LEFT B-PILLAR (Y)	AC-P16662	ENDEVCO	19-Feb-07
LOWER LEFT A-PILLAR (Y)	AC-P23155	ENDEVCO	16-Jan-07
UPPER LEFT A-PILLAR (Y)	AC-P19197	ENDEVCO	19-Feb-07
FRONT SEAT TRACK (Y)	AC-P23358	ENDEVCO	19-Feb-07
REAR SEAT TRACK (Y)	AC-P35758	ENDEVCO	16-Jan-07
VEHICLE CG (X)	AC-P23926	ENDEVCO	15-Jan-07
VEHICLE CG (Y)	AC-P18785	ENDEVCO	15-Jan-07
VEHICLE CG (Z)	AC-P32218	ENDEVCO	15-Jan-07
MDB CG (X)	AC-C15007	ENDEVCO	1/26/2007
MDB CG (Y)	AC-C16416	ENDEVCO	1/26/2007
MDB CG (Z)	AC-C16499	ENDEVCO	1/26/2007
MDB REAR FRAME MEMBER (X)	AC-C14948	ENDEVCO	1/26/2007
MDB REAR FRAME MEMBER (Y)	AC-C16680	ENDEVCO	1/26/2007

REMARKS: None