

REPORT NUMBER: TO11-MGA-2002-004

FULL SCALE SIDE IMPACT POLE TESTS OF BASELINE VEHICLES

**FORD MOTOR COMPANY
2002 FORD EXPLORER
NHTSA NUMBER: R21301**

**PREPARED BY:
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TEST DATE: SEPTEMBER 12, 2002

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
VOLPE NATIONAL TRANSPORTATION SYSTEM CENTER
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This final test report was prepared for the U.S. Department of Transportation, Volpe National Transportation System Center, in response to Contract Number DTRS57-98-D-00041.

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SECTION 1
PURPOSE AND TEST PROCEDURE

This Side Impact test is conducted as part of Contract No. DTRS57-98-D-00041, task order 11, sponsored by the U.S. Department of Transportation, Volpe National Transportation System Center. The purpose of this test is to evaluate the responses of the ES-2 and SID/HIII dummies in a 2002 Ford Explorer, when subjected to a rigid pole side impact at 285 degrees.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

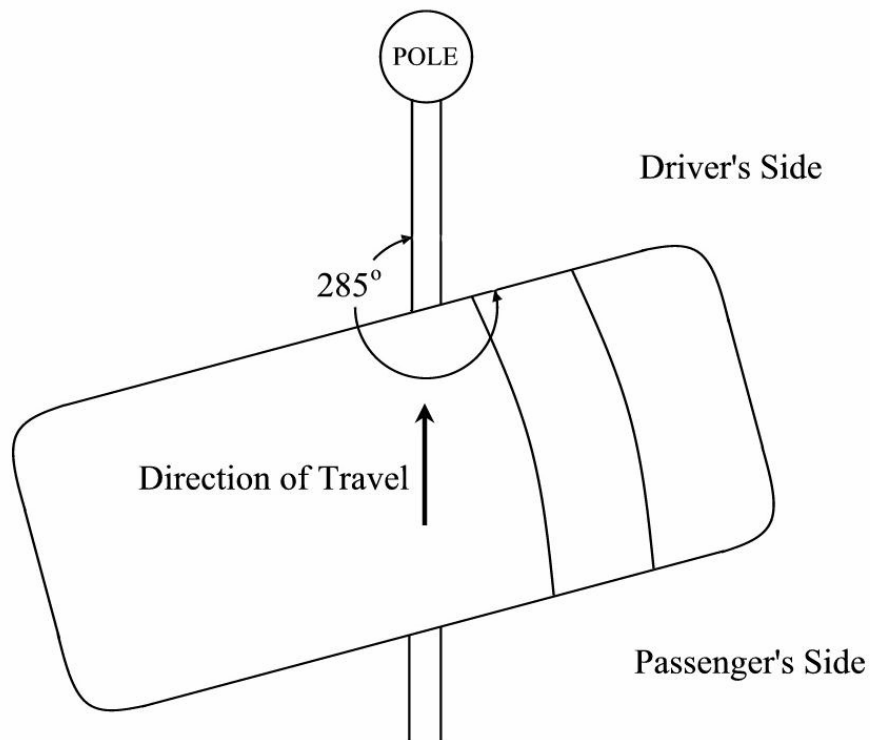
SECTION 2

SUMMARY OF SIDE IMPACT TEST

A rigid pole side impact test at 285 degrees was performed on a 2002 Ford Explorer. The subject vehicle was towed into a rigid pole at a velocity of 32.3 km/h. The weight of the vehicle as tested was 2219 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on September 12, 2002. Pre- and post-test photographs of the test vehicle and the dummies are included in Appendix A.

One SID/HIII side impact dummy was placed in the left front designated seating position according to instructions specified in the FMVSS 201P Laboratory Test Procedure which is dated April 21, 2000. The side impact event was documented by ten high speed cameras. Camera locations and other pertinent camera information can be found in this report.

Appendix B contains the vehicle and dummy response data traces. A summary of the dummy configuration and performance verification test data is shown in Appendix C. Dummy and vehicle calibration data can be found in Appendix D of this report. Appendix E contains the dummy peak responses.



SECTION 2...continued
SUMMARY OF SIDE IMPACT TEST

The following table summarizes the results of the Left Side Impact Test:

HIC		Left Front
	T1 (msec)	41.2
	T2 (msec)	66.7
	T2 – T1 (msec)	25.5
	HIC	330

Fir Filtered	Left Front
Upper Rib Y (g's)	101.4
Lower Rib Y (g's)	115.2
Upper Spine Y (g's)	77.7
Lower Spine Y (g's)	94.9
Pelvis Y (g's)	81.3
TTI (g's)	105

Contacts	Left Front
Rib (msec)	20.9
Pelvis (msec)	28.7

TEST NOTES

The following data channels were found to have Questionable Data:

Right Front Sill X Acceleration

SECTION 3
SIDE IMPACT DUMMY (SID/HIII) AND VEHICLE TEST DATA

DATA SHEET NO. 1**GENERAL TEST AND VEHICLE PARAMETER DATA**Test Vehicle: 2002 Ford Explorer SUVTest Date: September 12, 2002**TEST VEHICLE INFORMATION**

Make	Ford
Model	Explorer
Body Style	SUV
VIN	1FMDU74E32ZA24081
Color	Black
Odometer Reading (mile)	22863
Transmission	4 Sp Automatic
Final Drive	4 WD
Number of Cylinders	6
Engine Displacement (L)	4.0
Engine Placement	Longitudinal

TEST VEHICLE OPTIONS

Front Airbag	Yes
Side Airbags	Curtain
Power Windows	Yes
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	Yes
Air Conditioning	Yes
Power Brakes	Yes
Anti-lock Brakes	No
AM/FM/CD	Yes
Cruise Control	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Ford Motor Co.	GVWR (kg)	2649
Date of Manufacture	3/01	GAWR Front (kg)	1241
		GAWR Rear (kg)	1508

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	241	241
Recommended Tire Size	P245/70R16	P245/70R16
Tire Size on Vehicle	P245/70R16	P245/70R16
Tire Manufacturer	Goodyear	Goodyear

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket	Bench	
Number Of Occupants x 68.04 kg.	136.1	204.1	136.1	476.3
Capacity Wt. (VCW) (kg)				405.1
Cargo Wt. (RCLW) (kg)				36.7

DATA SHEET NO. 1... (continued)**GENERAL TEST AND VEHICLE PARAMETER DATA**Test Vehicle: 2002 Ford Explorer SUVTest Date: September 12, 2002**TEST VEHICLE WEIGHTS**

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	562.9	505.3		596.0	535.2	
Right	kg	531.2	536.6		564.3	523.9	
Ratio	%	51.2	48.8		52.2	47.8	
Totals	kg	1094.1	1041.9	2136.0	1160.3	1059.1	2219.4

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Calculated Vehicle Target Weight (TVTW)	kg	2219

TEST VEHICLE ATTITUDES

	Unit	As Delivered	Fully Loaded	Ready for Test
Right Door Sill Angle	Deg	1.1 ND	0.8 ND	0.9 ND
Left Door Sill Angle	Deg	0.5 ND	0.2 ND	0.2ND
Front Bumper Angle	Deg	0.3 RD	0.2 RD	0.2 RD
Rear Bumper Angle	Deg	0.2 RD	0.2 RD	0.2 RD

ND=Nose down, BD = Back Down, LD = Left Down, RD = Right Down

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2885
Total Vehicle Length at Left Side	mm	4020
Total Vehicle Length at Centerline	mm	4868
Total Vehicle Length at Right Side	mm	4020
Total Vehicle Width	mm	1818
Weight of Ballast in Cargo Area	kg	0
Amount of water in Fuel Tank	liters	0

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Actual Impact Point	mm	18 Rear

DATA SHEET NO. 1... (continued)

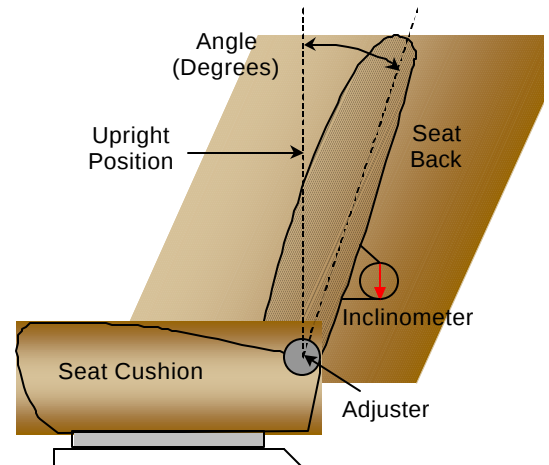
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002

NORMAL DESIGN RIDING POSITION

Driver seat back angle: 11.7 degrees



FRONT SEAT ASSEMBLY

SEAT FORE/AFT POSITIONS

The driver's seat is electronically operated.

The fore/aft is set to the middle position for the driver's seat.

Driver seat fore/aft total travel: 250 mm

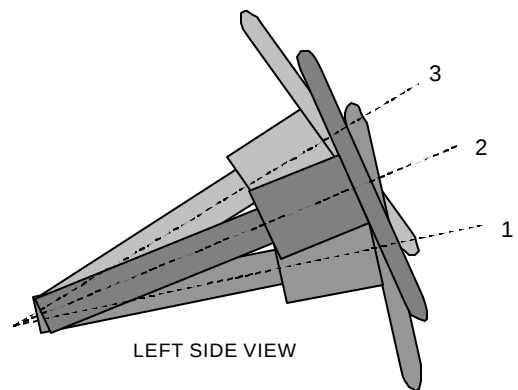
Driver seat fore/aft position: 125 mm

SEAT BELT UPPER ANCHORAGE

The test vehicle "D" ring anchorage for the driver's seat position was placed in the 3rd position or mid.

STEERING COLUMN ADJUSTMENT

The steering column was placed in the mid position of travel.



STEERING COLUMN ASSEMBLY

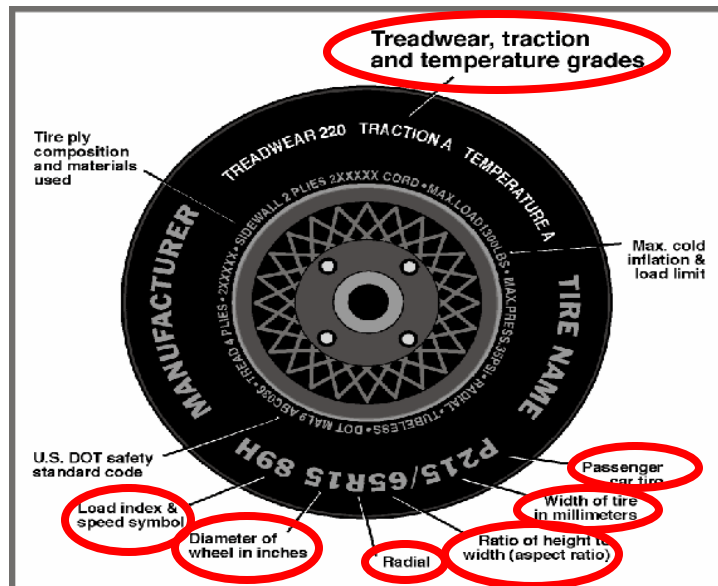
DATA SHEET NO. 2

TEST VEHICLE TIRE INFORMATION

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002

Vehicle Year	2002	Vehicle Make	Ford
Vin	1FMDU74E32ZA24081	Vehicle Model	Explorer



	Front	Rear
Tire Manufacturer	Goodyear	Goodyear
Tire Name	Wrangler AP	Wrangler AP
Tire Type	Passenger	Passenger
Tire Width (mm)	245	245
Ratio of Height to Width (aspect ratio)	70	70
Radial	Radial	Radial
Wheel Diameter	16	16
Load Index & Speed Symbol	106S	106S
Treadwear	340	340
Traction Grade	A	A
Temperature Grade	B	B

DATA SHEET NO. 3
POST TEST OBSERVATIONS

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Left Front
Dummy Type	SID III
Head Contact	Curtain airbag
Upper Torso Contact	Bottom edge curtain
Lower Torso Contact	Mid door
Left Knee Contact	Lower door panel
Right Knee Contact	Left knee

POST TEST DOOR OPENING

Description	Left Front	Left Rear
Left Side Door Opening	Remained latched and closed	Remained latched and closed
Right Side Door Opening	Remained latched and closed	Remained latched and closed

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No failures
Sill Separation	None
Windshield Damage	Left side shattered
Window Damage	Left side windows down for test
Other Notable Effects	None

AIRBAG DEPLOYMENT

	Driver
Front	No
Side	None
Curtain	Yes

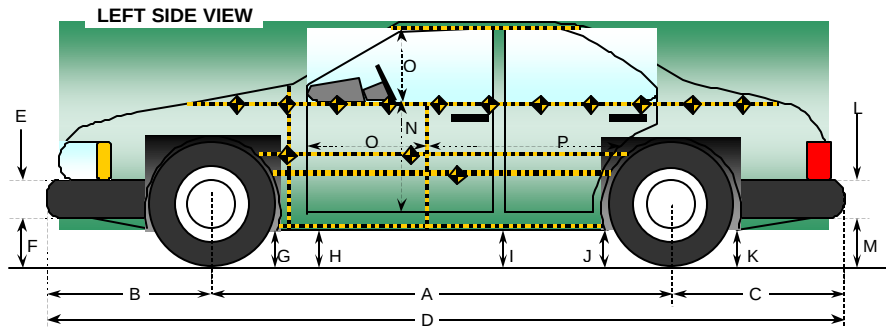
SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 4

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002



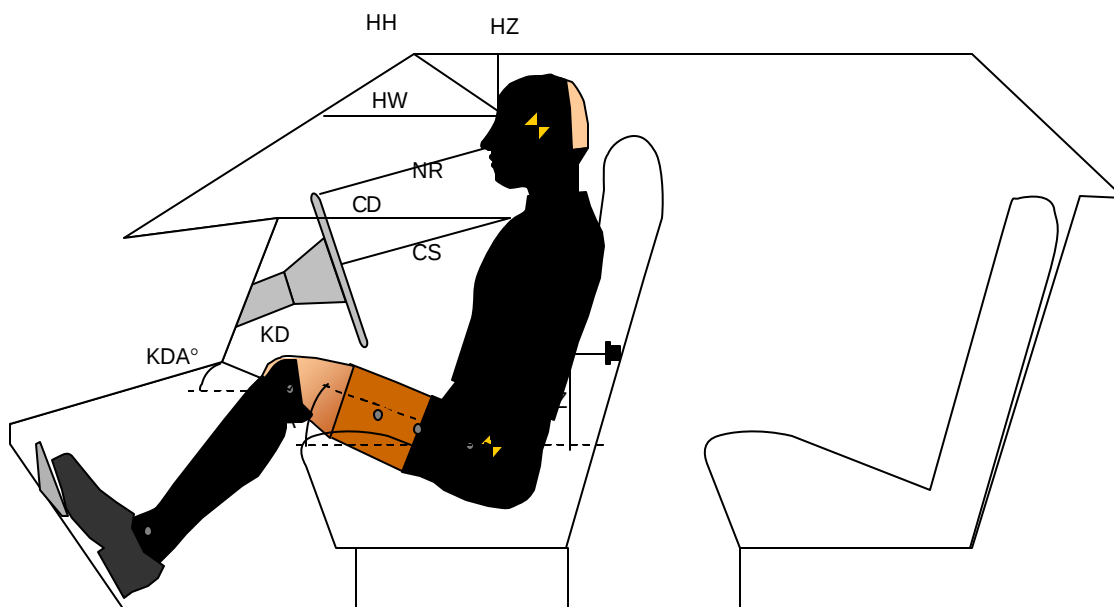
All Measurements in mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2885	2802	-83
B	Front Axle to FSOV	765	742	-23
C	Rear Axle to RSOV	1218	1135	-82
D	Total Length at Centerline	4868	4679	-189
E	Front Bumper Thickness	65	65	0
F	Front Bumper Bottom to Ground	750	755	5
G	Sill Height at Front Wheel Well	350	369	19
H	Sill Height at Front Door Leading Edge	352	350	-2
I	Sill Height at "B" Pillar	366	318	-48
J1	Sill Height at Rear Wheel Well	375	436	61
J2	Pinch Weld Height at Rear Wheel Well	371	433	62
K	Sill Height Aft of Rear Wheel Well	495	524	29
L	Rear Bumper Thickness	180	180	0
M	Rear Bumper Bottom to Ground	543	572	29
N	Sill Height to Window Bottom Sill	775	776	1
O	Front Door Leading Edge to Impact CL	775	774	-1
P	Rear Door Trailing Edge to Impact CL	1375	1335	-40
Q	Front Window Opening	505	469	-36
R	Right Side Length	4020	4037	17
S	Left Side Length	4020	3868	-152
T	Vehicle Width at "B" Post	1818	1614	-204

DATA SHEET NO. 5
SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002

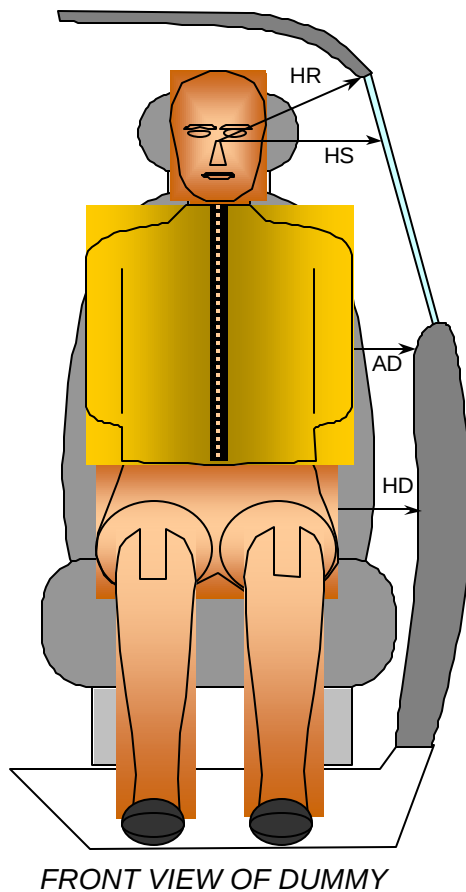


Driver Code	Measurement Description	Left Front	
		Length(mm)	Angle(°)
HH	Head to Header	366	
HW	Head to Windshield	490	
HZ	Head to Roof	173	
NR	Nose to Rim	366	
CD	Chest to Dash	491	
CS	Chest to Steering Wheel	285	
KDL	Left Knee to Dash	180	0
KDR	Right Knee to Dash	181	0
PA	Pelvic Angle (Longitudinal)		23.4
PHX	H-Point to Striker (X-Axis)	196	
PHZ	H-Point to Striker (Z-Axis)	52	

DATA SHEET NO. 6
SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002



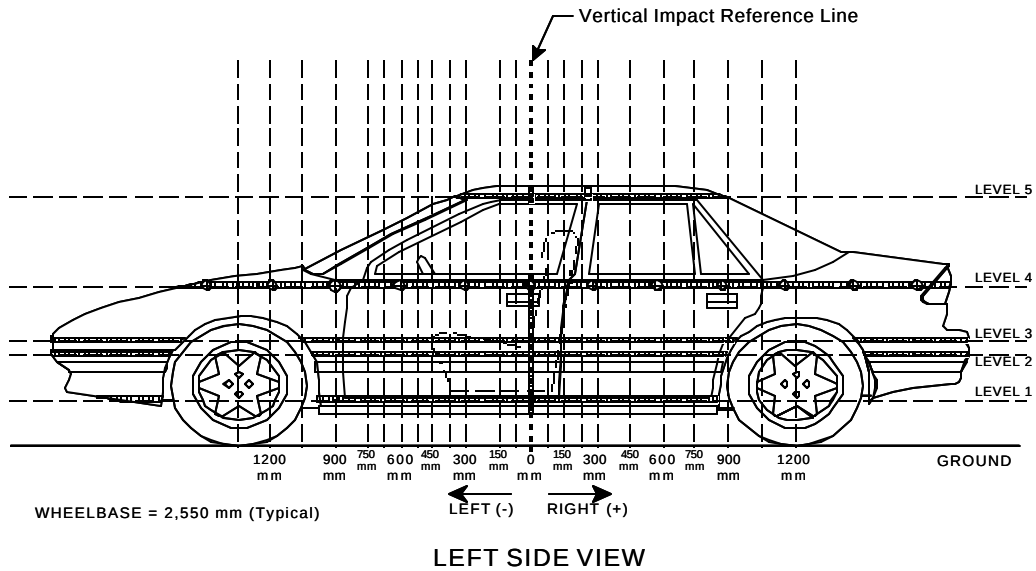
Code	Measurement Description	Units	Left Front
HR	Head to Side Header	mm	265
HS	Head to Side Window	mm	330
AD	Arm to Door	mm	115
HD	H-Point to Door	mm	150

DATA SHEET NO. 7 **VEHICLE SIDE MEASUREMENTS**

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002

PRETEST AND POST TEST EXTERIOR PROFILE MEASUREMENTS



Measurements are taken with vehicle in the as tested condition.
Measurements along the vertical 0 mm.
All measurements below in mm.

Level	Measurement Description	Height Above Ground
5	Window	1660
4	Window Sill	1120
3	Mid Door	825
2	Occupant H-Point	762
1	Sill Top	435

DATA SHEET NO. 8
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1950															
-1800				308					308					0	
-1650				291					296					5	
-1500				281					285					4	
-1350				272					278					6	
-1200				265					275					10	
-1050			198	260				213	280				15	20	
-900	233	212	216	257		263	251	252	285		30	39	36	28	
-825	232	218	215	254		269	258	255	287		37	40	40	33	
-750	229	218	215	252		269	249	244	255		40	31	29	3	
-675	238	217	214	252		305	280	277	280		67	63	63	28	
-600	232	216	213	252		326	314	313	308		94	98	100	56	
-525	230	215	212	251		347	344	344	337		117	129	132	86	
-450	229	214	211	250		366	367	367	369		137	153	156	119	
-375	228	213	210	248		395	398	398	409		167	185	188	161	
-300	228	212	209	248		419	430	431	444		191	218	222	196	
-225	228	211	209	248	480	454	475	474	189	536	226	264	265	236	56
-150	228	211	209	248	467	488	514	414	531	538	260	303	298	283	71
-75	227	211	209	247	463	535	562	565	586	609	308	351	356	339	146
0	226	211	208	246	462	585	608	612	634	656	359	397	404	388	194
75	228	210	208	245	462	605	632	640	660	685	377	422	432	415	223
150	227	211	208	246	463	578	632	638	657	683	351	421	430	411	220
225	226	211	208	246	466	520	581	588	608	647	294	370	380	362	181
300	226	211	208	247	466	457	541	486	560	596	231	330	278	313	130
375	239	212	209	250	470	377	409	417	499	544	138	197	208	249	74
450	230	212	209	250	473	350	389	389	471	539	120	177	180	221	66
600	234	214	210	253	474	312	350	347	425	524	78	136	137	172	50
750	237	216	212	254	474	269	304	300	375	507	32	88	88	121	33
900	240	217	214	257	476	230	268	263	327	488	-10	51	49	70	12
1050	242	215	216	260	477	205	244	244	298	489	-37	29	28	38	12
1200		187	193	262	477		160	181	266	469		-27	-12	4	-8
1350				266	485				268	488				2	3
1500				269	483				277	496				8	13
1650				273	487				287	505				14	18
1800		192	193	277	490		201	203	292	509		9	10	15	19
1950		225	229	281	498		231	235	290	513		6	6	9	15
2100		236	236	287			254	254	309			18	18	22	
2250				297					310					13	
2400				340					346					6	

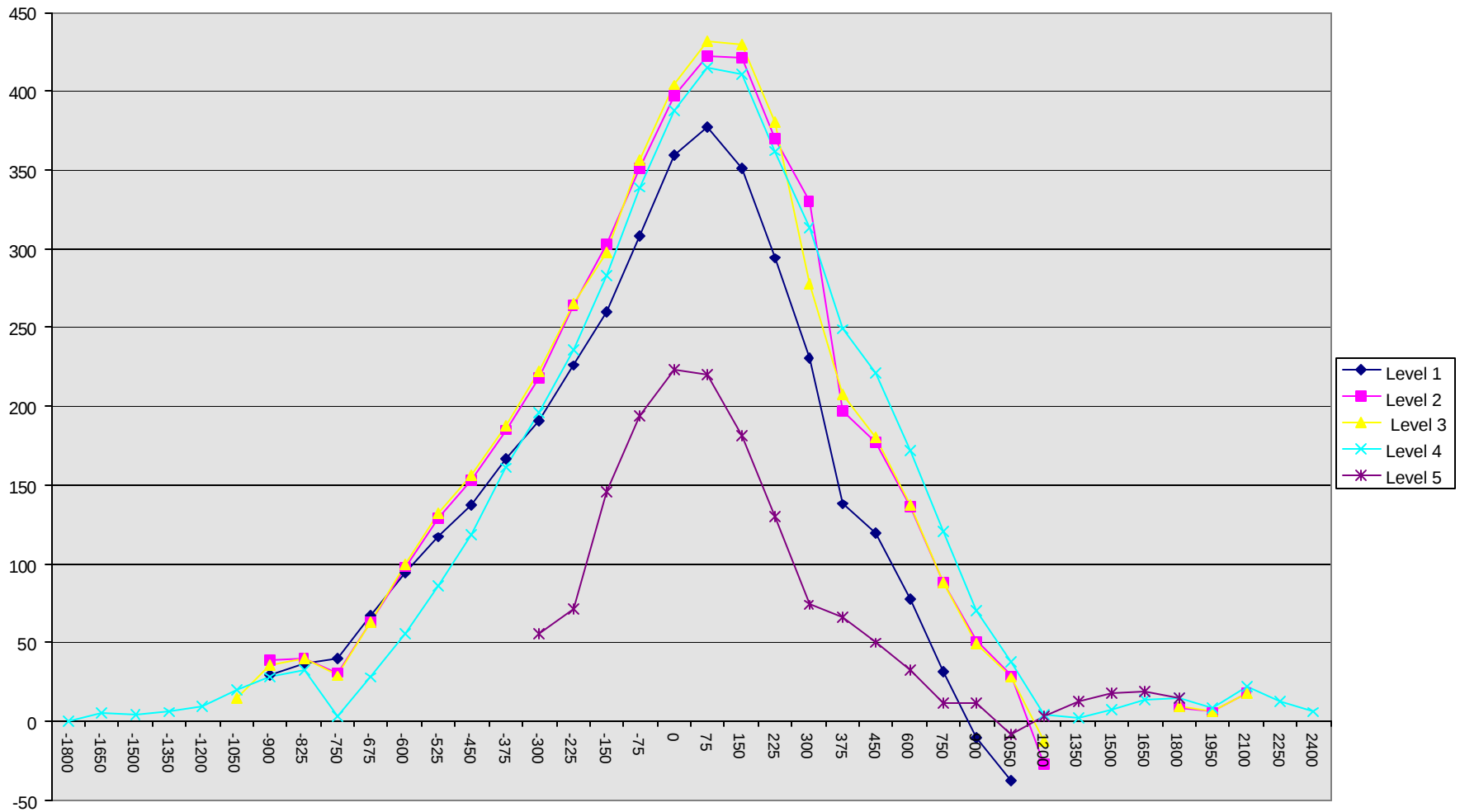
Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body. Measurements in mm.

DATA SHEET NO. 8... (continued)
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002

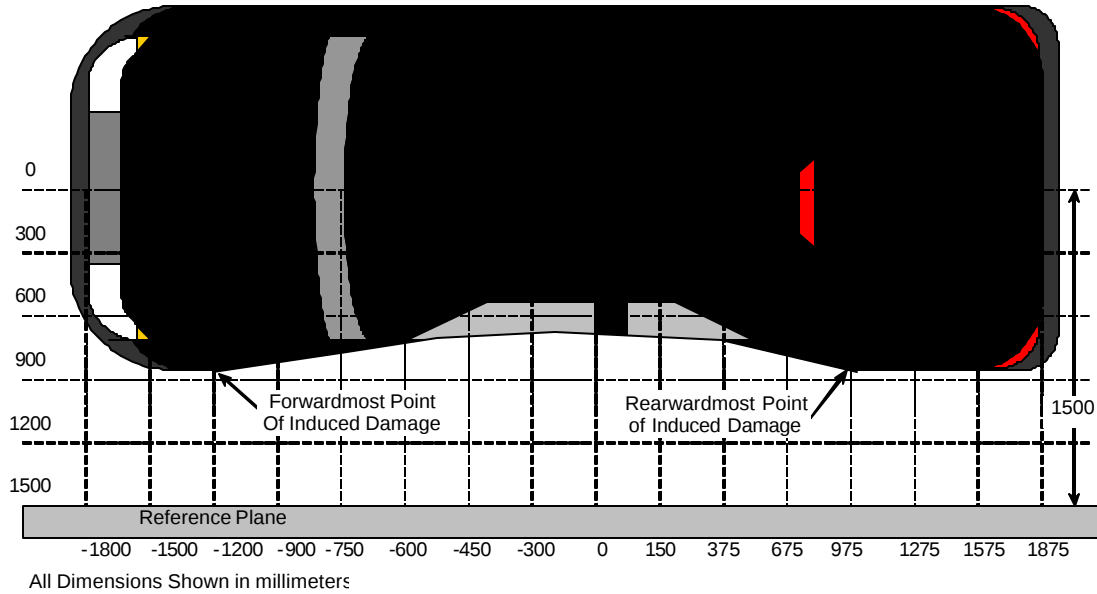


Measurement in mm.

DATA SHEET NO. 9
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002



TOP VIEW

Damage Profile Distances

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	2400 mm	4	340	346	6
2	1590 mm	4	271	315	44
3	785 mm	4	255	445	190
4	-140 mm	4	248	655	407
5	-990 mm	4	259	341	82
6	-1800 mm	4	308	327	19

Reference plane is parallel to test vehicle longitudinal centerline.

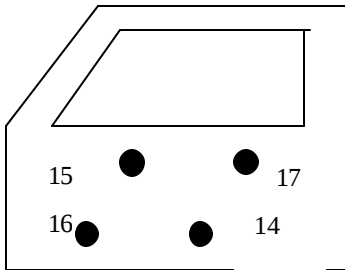
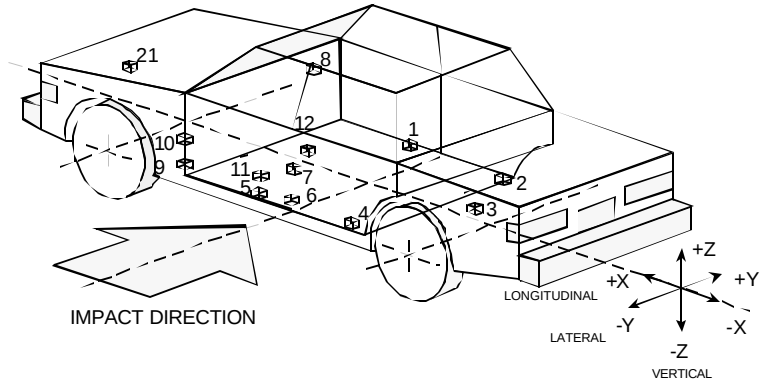
Given dimensions = Reference plane to car body.

DATA SHEET NO. 10

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002



No.	Location
1	Right Side Sill at Front Seat
2	Right Side Sill at Rear Seat
3	Rear Floorpan Above Axle
4	Left Side Sill at Rear Door
5	Left Side Sill at Front Door
6	Left Lower B-Post
7	Left Mid B-Post
8	Left Upper B-Post
9	Left Lower A-Post
10	Left Mid A-Post
11	Driver Seat Track

No.	Location
12	Vehicle CG
13	Left A-Pillar @ Roof
14	Left Front Door @ Pelvis
15	Left Front Door @ Arm
16	Left Front Door @ Knee
17	Left Front Door @ Rib
19	Left Driver Seat Frame
20	Right Driver Seat Frame
21	Lower Center Radiator Support

DATA SHEET NO. 10... (continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Long (X) Maximums (g's) (CFC 60)		Lat. (Y) Maximums (g's) (CFC 60)		Vert. (Z) Maximums (g's) (CFC 60)		Resultant (g's) (CFC 60)
		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Max.
1	Right Side Sill at Front Seat	**	**	23.2	0.9	3.9	6.7	**
2	Right Side Sill at Rear Seat	7.1	5.8	18.7	6.8	5.7	7.9	19.6
3	Rear Floorpan Above Axle	1.7	4.4	17.0	1.1	4.7	6.9	17.5
4	Left Side Sill at Rear Door			30.2	11.4			
5	Left Side Sill at Front Door			53.5	23.2			
6	Left Lower B-Post			40.9	19.0			
7	Left Mid B-Post			44.1	12.3			
8	Left Upper B-Post*							
9	Left Lower A-Post			38.1	23.8			
10	Left Mid A-Post			15.8	2.5			
11	Driver Left Seat Track			73.9	88.9			
12	Vehicle CG	35.2	12.5	50.3	19.8	18.4	27.5	51.1
13	Left A- Pillar at Roof*							
14	Left Front Door at Pelvis			155.9	68.8			
15	Left Front Door at Arm			74.6	13.0			
16	Left Front Door at Knee			62.3	28.7			
17	Left Front Door at Rib			117.9	34.8			
19	Left Driver Seat Frame			65.7	24.8			
20	Right Driver Seat Frame			46.5	31.5			
21	Lower Center Radiator Support	4.9	8.9	12.1	2.1	4.7	5.0	14.5

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

*= Not used to avoid interference with restraint system.

**=No valid data collected after 40 msec.

DATA SHEET NO. 10... (continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002

VEHICLE ACCELEROMETER COORDINATES

Loc. No.	Description	Coordinates (mm)		
		X	Y	Z
1	Right Side Sill at Front Seat	2568	616	420
2	Right Side Sill at Rear Seat	1594	616	473
3	Rear Floorpan Above Axle	1134	0	734
4	Left Side Sill at Rear Door	1612	-652	383
5	Left Side Sill at Front Door	2538	-652	365
6	Left Lower B-Post	2240	-720	608
7	Left Mid B-Post	2262	-738	1158
8	Left Upper B-Post	*	*	*
9	Left Lower A-Post	3208	-732	574
10	Left Mid A-Post	3324	-828	1213
11	Driver Left Seat Track	2495	-559	603
12	Vehicle CG	2512	0	833
13	Left A-Pillar @ Roof	*	*	*
14	Left Door @ Pelvis	2455	-779	854
15	Left Door @ Arm	2792	-769	1094
16	Left Door @ Knee	2222	-574	1104
17	Left Door @ Rib	2222	-193	1109
19	Left Driver Seat Frame	4268	0	246
20	Right Driver Seat Frame	2568	616	420
21	Lower Center Radiator Support	1594	616	473

Sign Convention X – Rear Bumper (+ forward)

Y – Vehicle Centerline (+ to right)

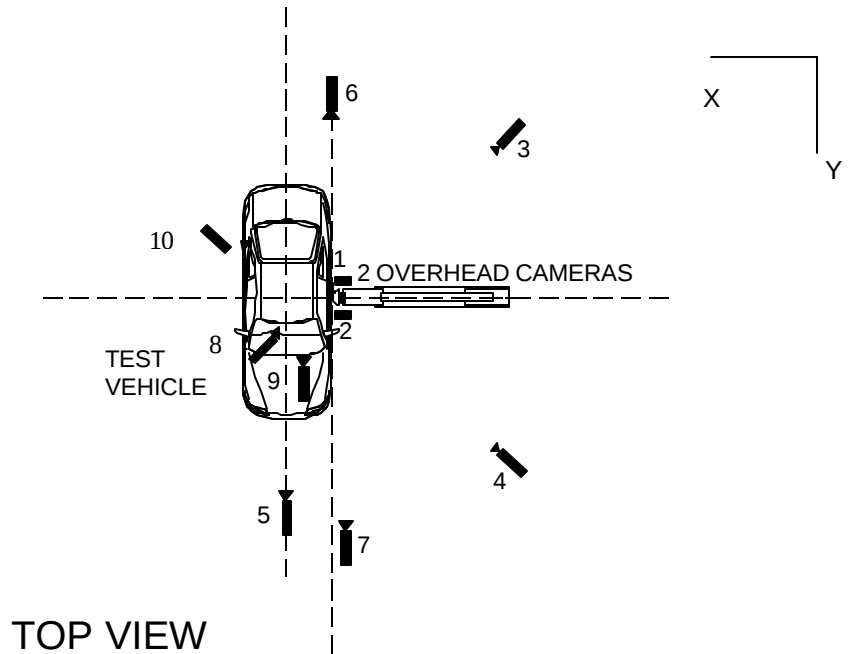
Z – Ground Plane (+ up)

* = Not used to avoid interference with restraint system.

DATA SHEET NO. 11
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2002 Ford Explorer SUV

Test Date: September 12, 2002



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Overall	820	0	500	8	1010
2	Overhead Close-up	0	0	5000	13	1005
3	Left Side 45 deg. Rearward Pole View	-3140	-6500	1590	50	1026
4	Left Side 45 deg. Forward Pole View	-3480	440	1570	50	1015
5	Real Time					
6	Left Side Rear Pole View	570	-9260	1620	25	1015
7	Front Ground Level Vehicle/Pole Impact	700	9200	1560	25	1000
8	Test Vehicle Onboard Driver Side View				13	510
9	Test Vehicle Onboard Driver Front View				13	503
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Reference Points X - + Forward of Impact
Y - + Right of Impact
Z - + Up from Ground

APPENDIX A
PHOTOGRAPHS

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Pre-Test Front View of Test Vehicle and Pole



Post-Test Front View of Test Vehicle and Pole



Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle and Pole



Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle and Pole



Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle and Pole



Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle and Pole



Pre-Test Rear View of Test Vehicle and Pole



Post-Test Rear View of Test Vehicle and Pole



Pre-Test Right Rear $\frac{3}{4}$ View of Test Vehicle and Pole



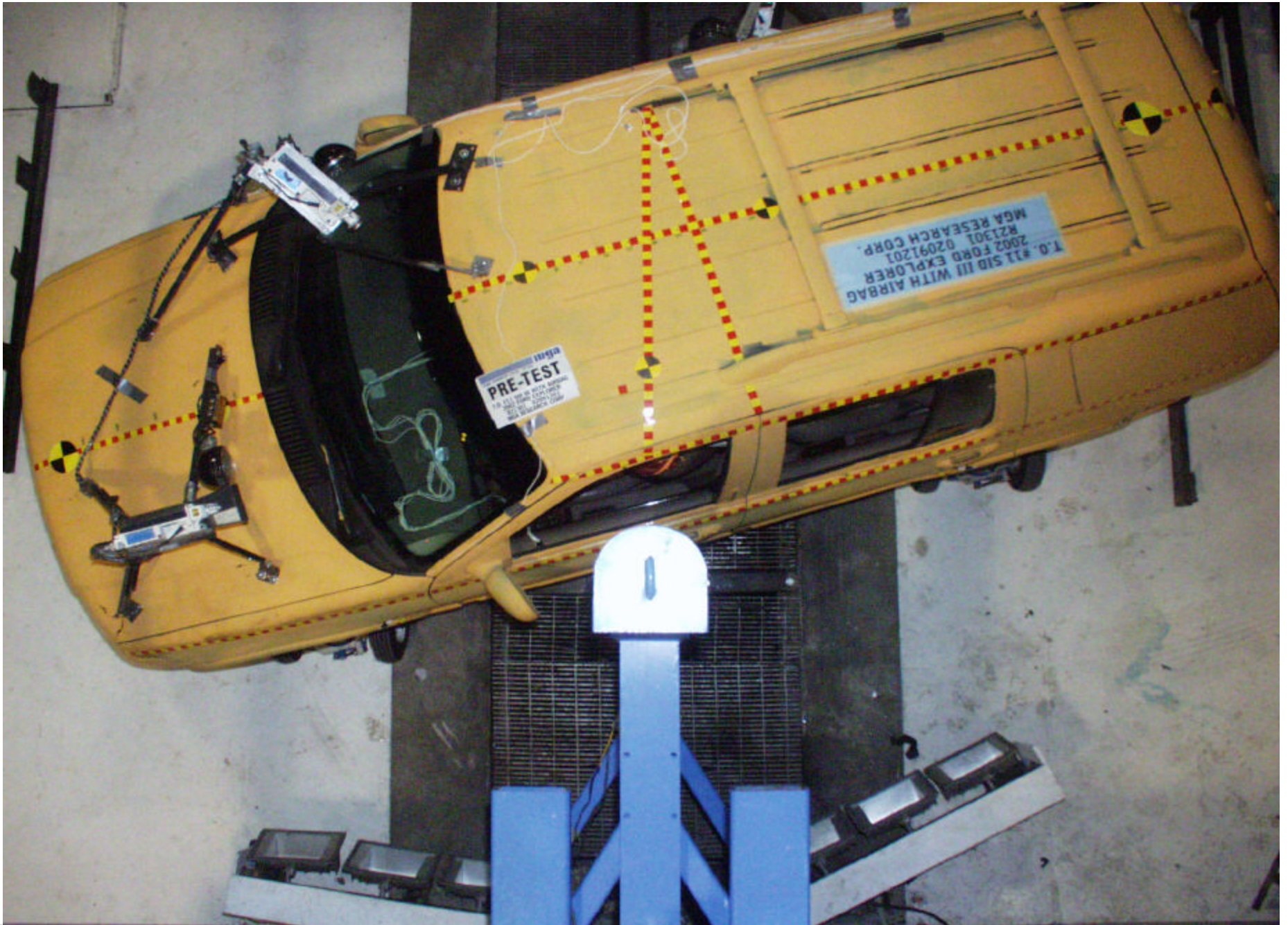
Post-Test Right Rear ¾ View of Test Vehicle and Pole



Pre-Test Right Front $\frac{3}{4}$ View of Test Vehicle and Pole



Post-Test Right Front ¾ View of Test Vehicle and Pole



Pre-Test Vehicle and Pole Overhead View



Post-Test Vehicle and Pole Overhead View



Pre-Test Driver Seat Position



Pre-Test Driver Dummy Left Side View



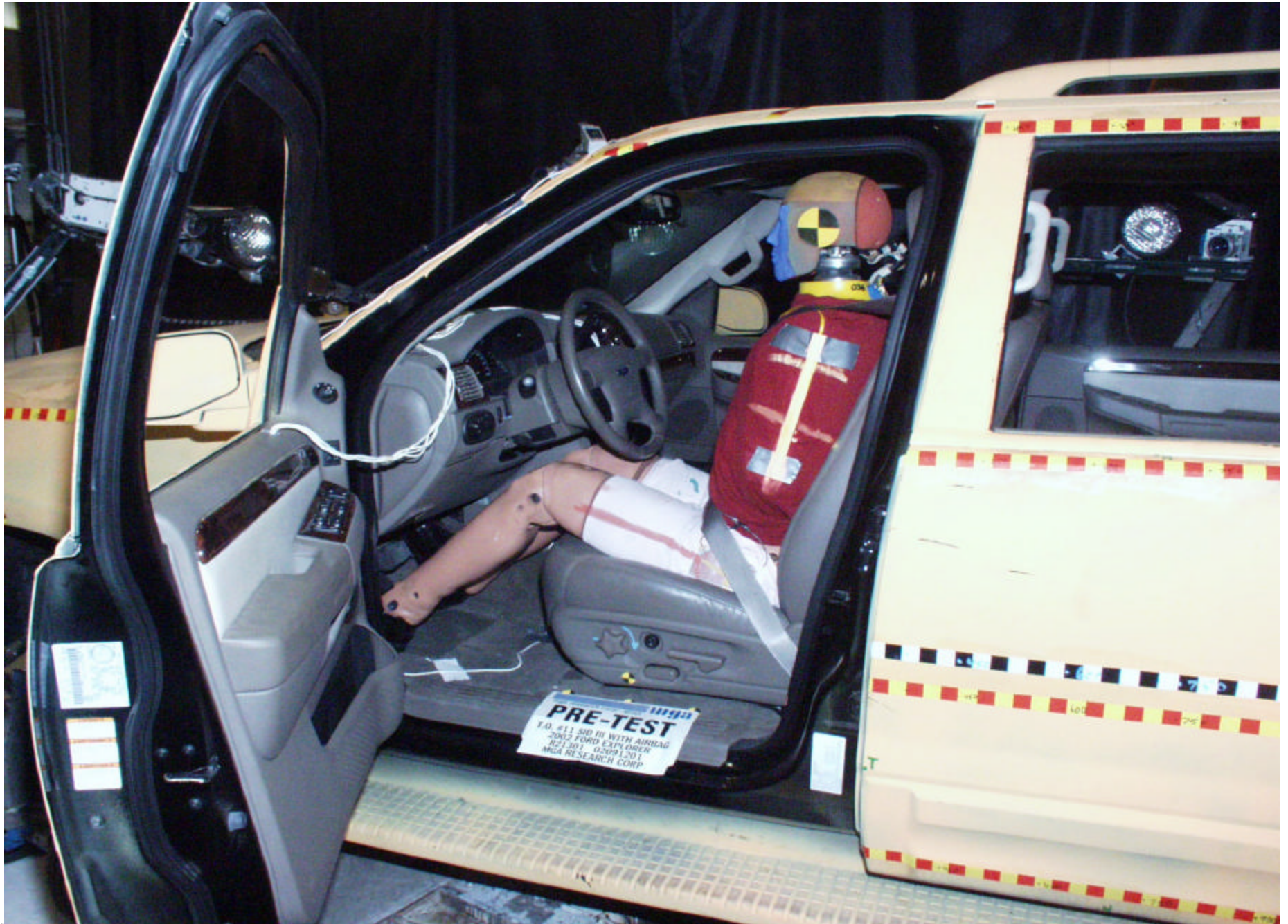
Post-Test Driver Dummy Left Side View



Pre-Test Driver Dummy Right Side View



Post-Test Driver Dummy Right Side View



Pre-Test Driver Dummy Left Side View (Door Open)



Pre-Test Driver Dummy Shoulder and Door Top View



Post-Test Driver Dummy Shoulder and Door Top View



Post-Test Driver Dummy Contact



Post-Test Driver Dummy Head Contact



Pre-Test Impact Point on Vehicle



Post-Test Impact Point on Vehicle



Impact

MFD. BY FORD MOTOR CO. IN U.S.A.

DATE: 03/01

GVWR/PNBV: 5840LB / 2648KG

FRONT GAWR / REAR GAWR
PNBE AV / PNBE AR
2735LB / 3325LB
1240KG / 1508KG

WITH/AVEC TIRES/PNEUS
P245/70R16SL/P245/70R16SL
16X7.0J RIMS/JANTES 16X7.0J
207/30 COLD/A FROID 241/35
/JUMEELES

AT/A kPa/PSI/LPC

VIN: 1FMDU74E32ZA24081
TYPE: MPV/VTUM

COMPLIES: ICES-2

F0050
T0039

EXT PNT: UA AQ RC: A1 DSO:
WB BRK INT TR TP/PS R AXLE TR SPR 1U51B
114 4 3P 1 D4 R DB GOA
1200103222668 UCT ▼ F85B-1520472-AB

WARNING

TO AVOID SERIOUS INJURY OR
DEATH FROM LOSS OF VEHICLE
CONTROL: REPLACE YOUR TIRES
ONLY WITH THOSE SPECIFIED ON
THE TIRE INSTRUCTIONS LABEL OR
THE CERTIFICATION LABEL.

AVERTISSEMENT

POUR ÉVITER DES BLESSURES
GRAVES OU MORTELLES
IL FAUT REMPLACER VOS PNEUS
UNIQUEMENT PAR CEUX PRÉCONISÉS SUR
L'ÉTIQUETTE D'INSTRUCTIONS DES PNEUS
OU L'ÉTIQUETTE D'ATTESTATION.

Vehicle Certification Label

MANUFACTURED BY FORD MOTOR COMPANY
IMPORTED BY A J IMPORT LLC
DATE OF MANUFACTURE 03/2001

GWR 2649 KG (5840 LB)

GAWR FRONT WITH TIRES
1241 KG (2735 LB) P245/70R16

AT COLD PRESSURE RIMS
241KPA (35PSI) SINGLE 16

GAWR REAR WITH TIRES
1508 KG (3325 LB) P245/70R16

AT COLD PRESSURE RIMS
241KPA (35PSI) SINGLE 16

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY AND
THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE

VIN 1FMDU74E32ZA24081

TYPE MPV



Pre-Test Fuel Filler Cap



Left Front Attitude Point



Right Front Attitude Point



Left Rear Attitude Point



Right Rear Attitude Point

APPENDIX B

DUMMY AND VEHICLE RESPONSE DATA TRACES

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* = Questionable Data after 40 msec.

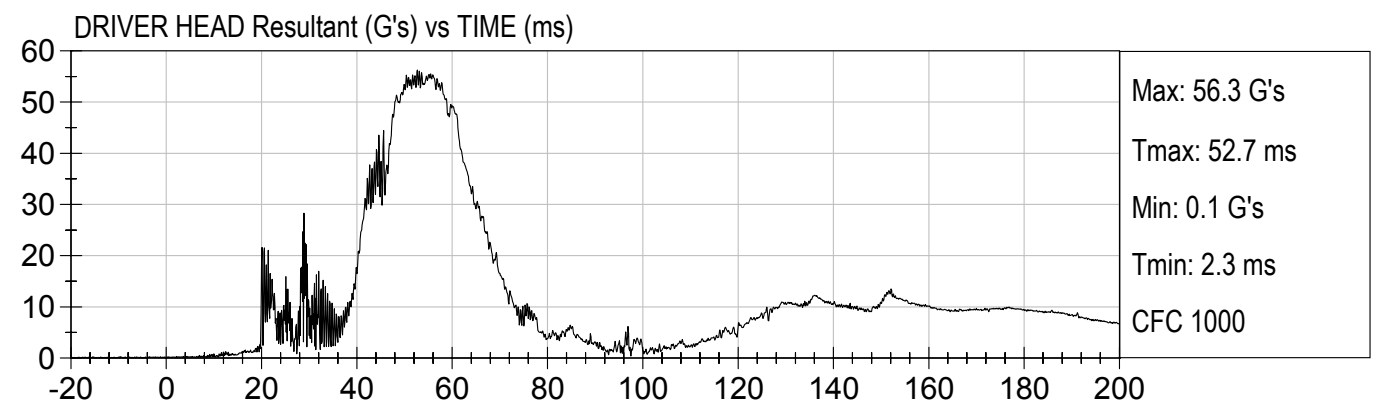
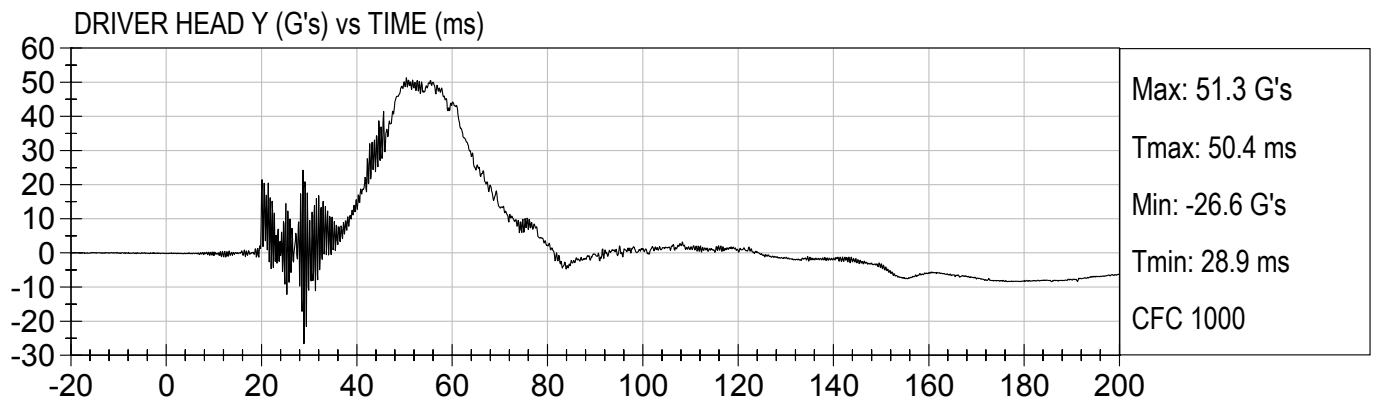
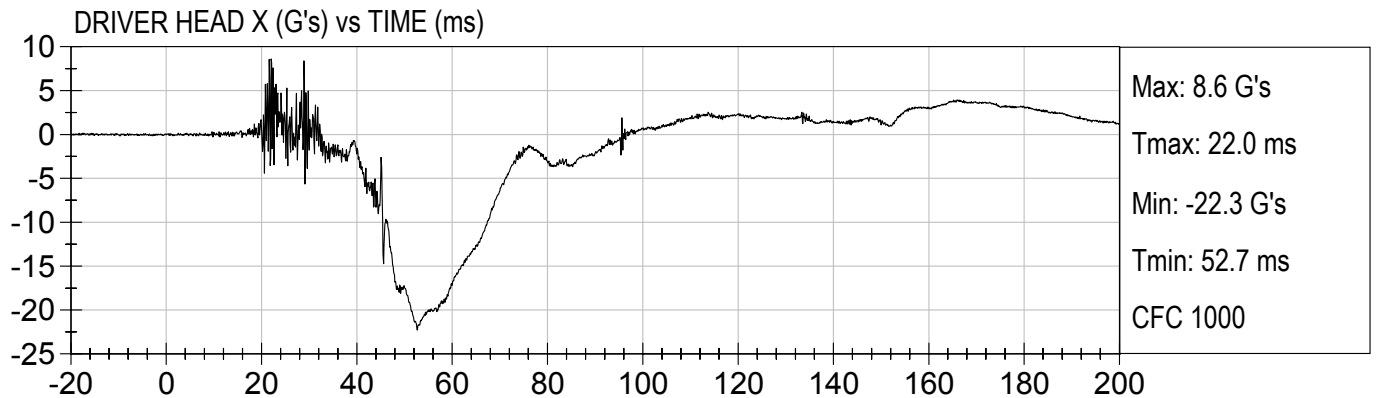
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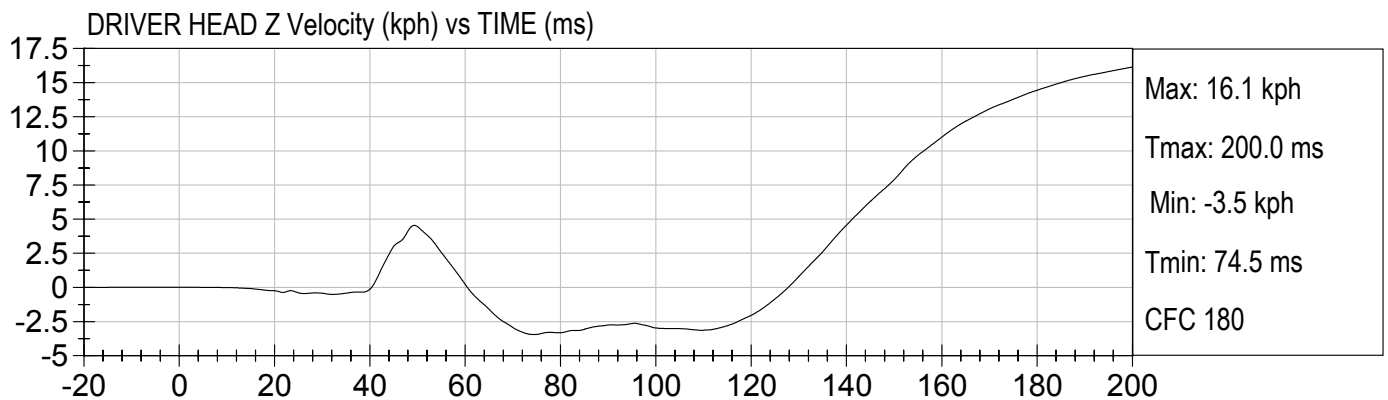
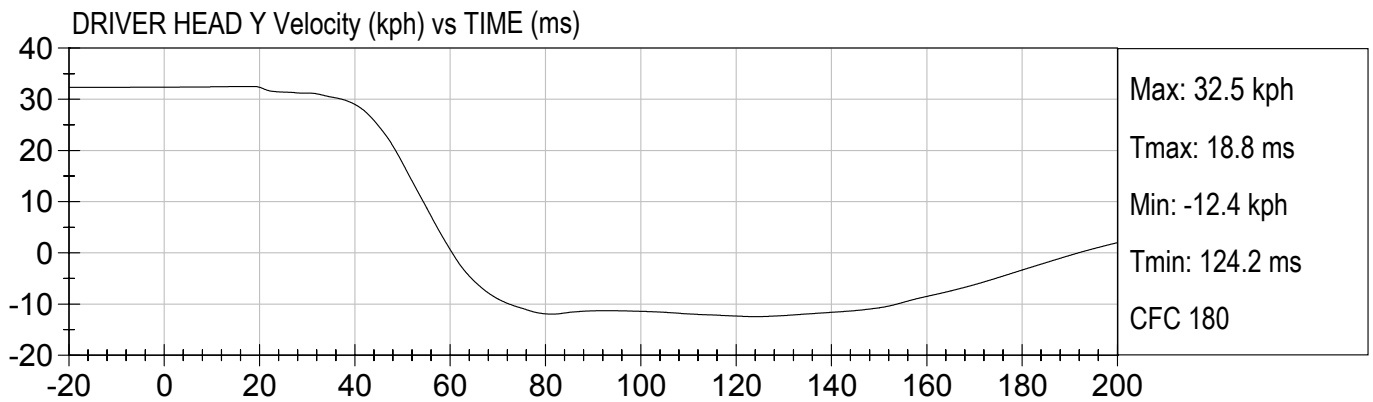
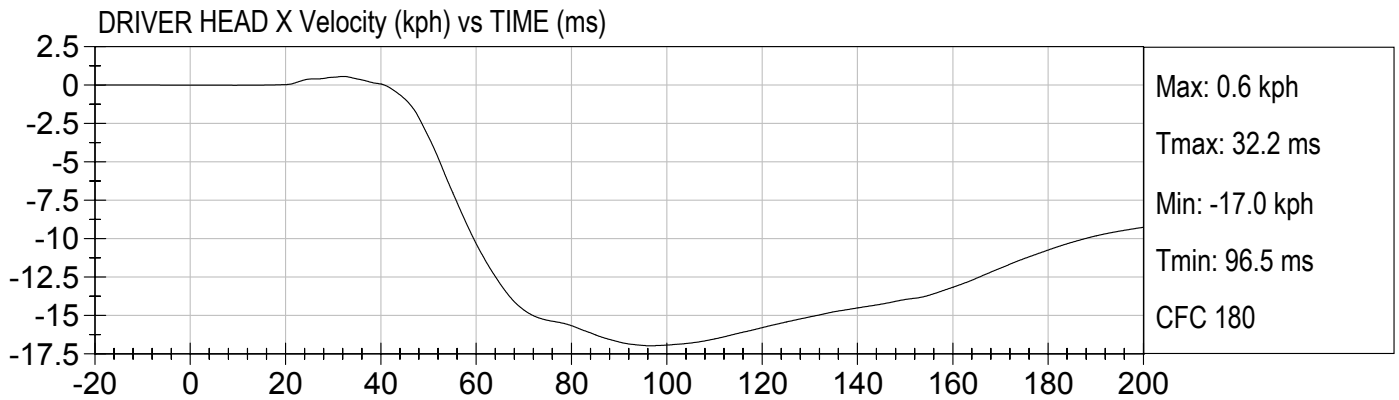
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20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
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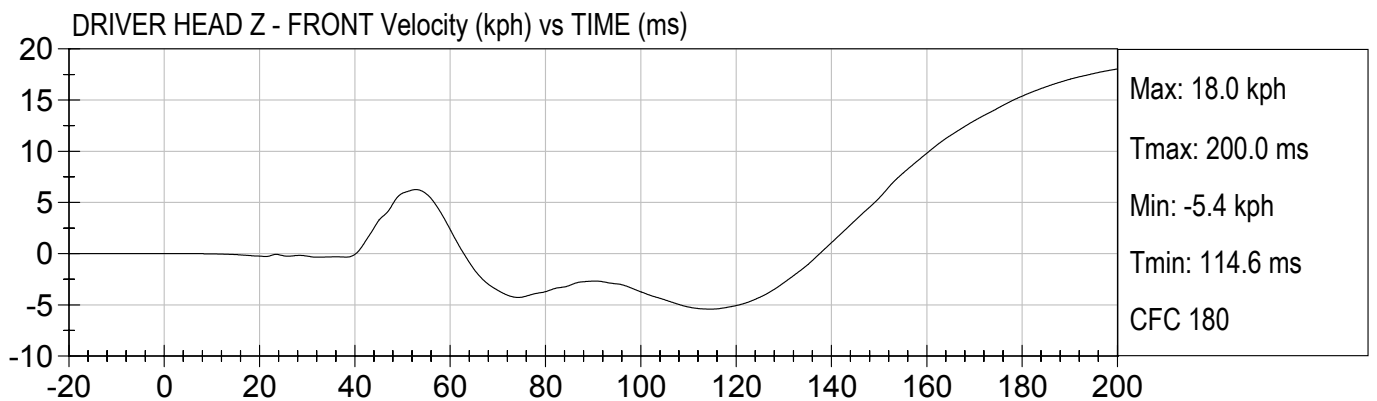
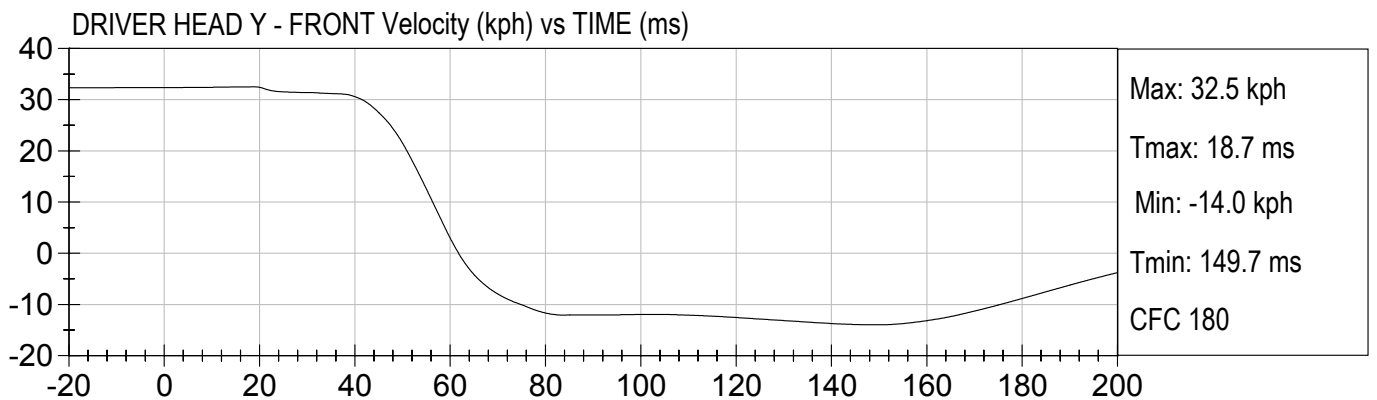
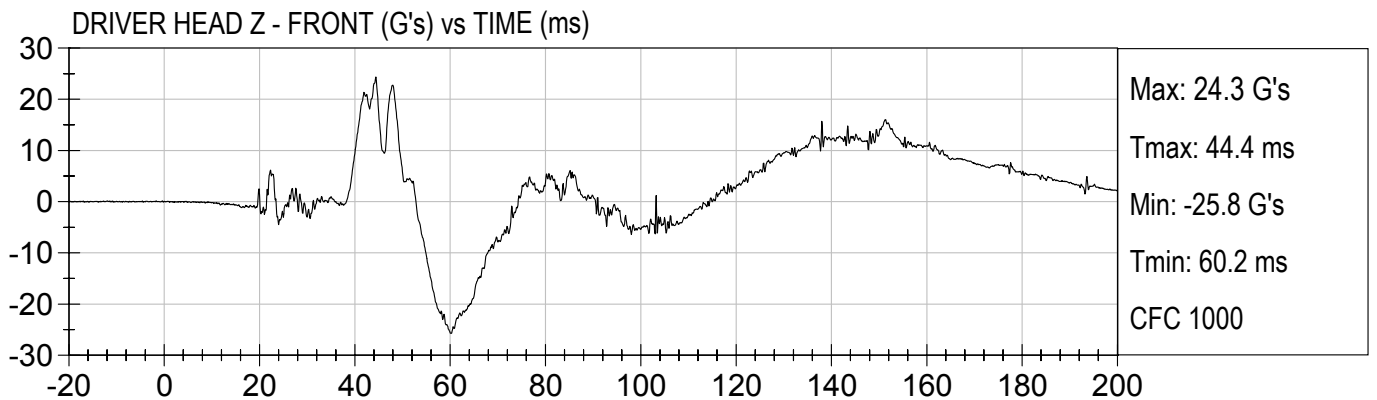
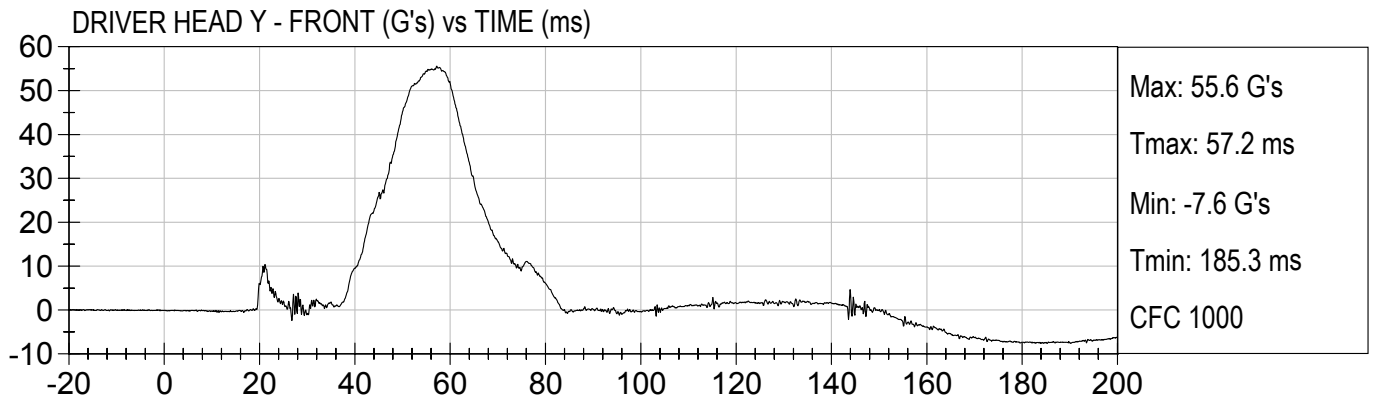






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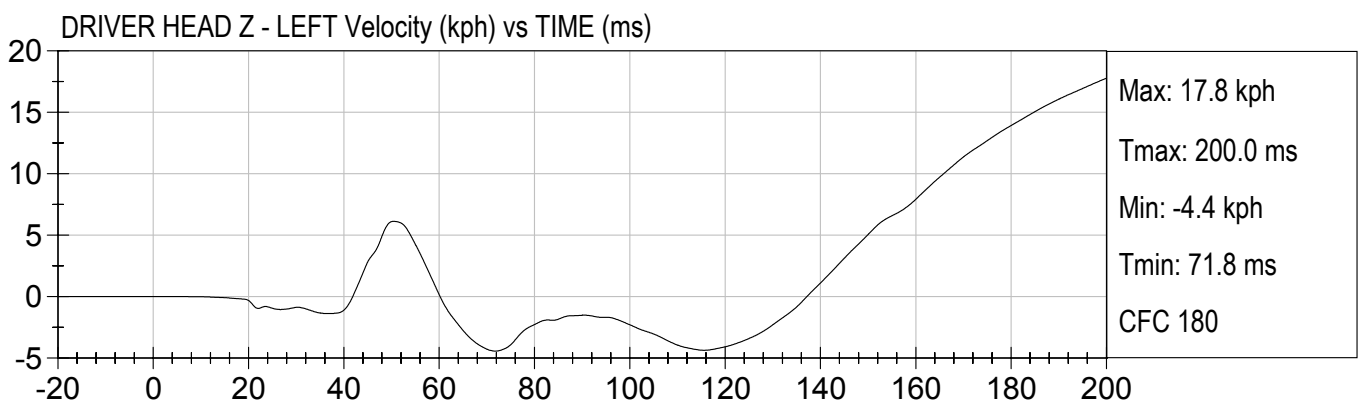
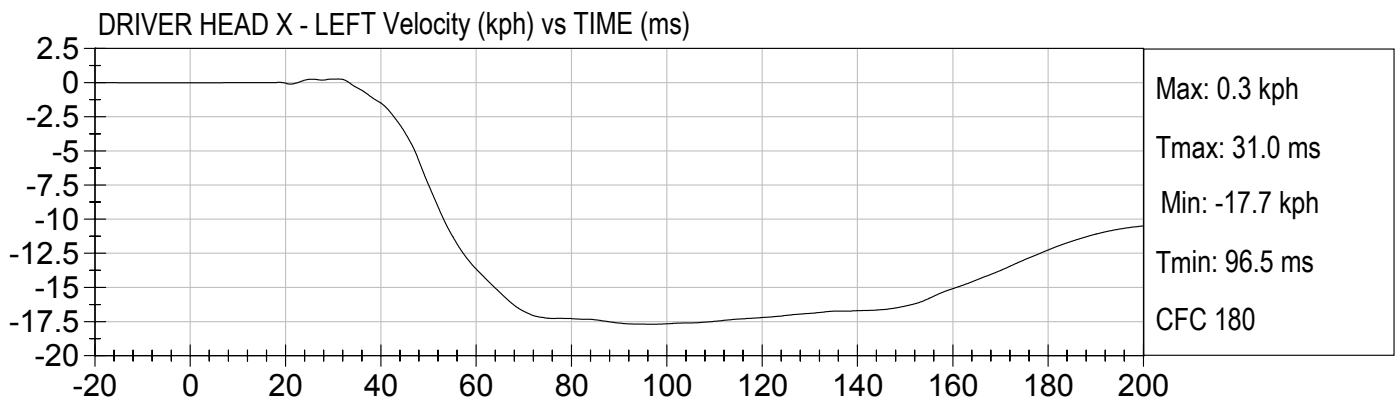
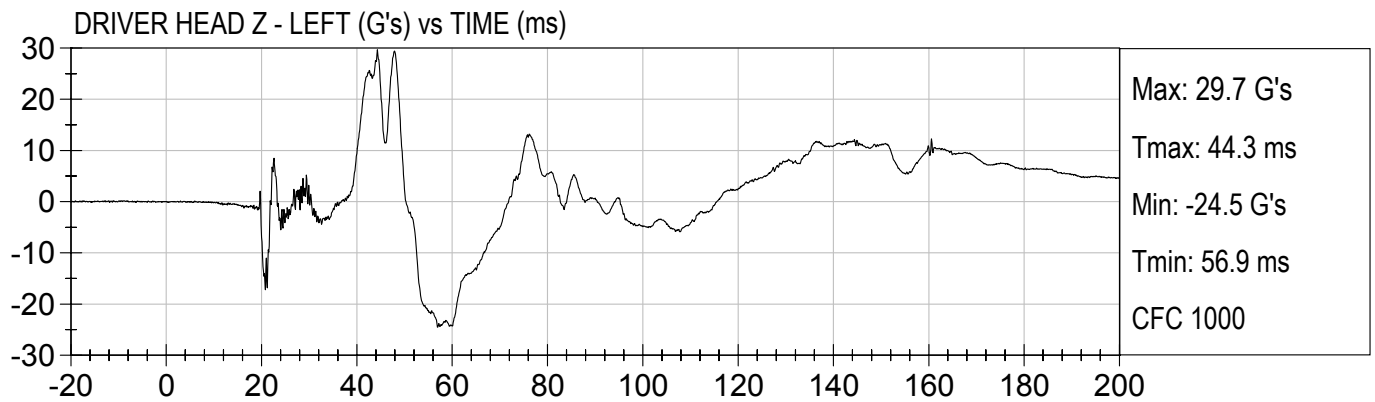
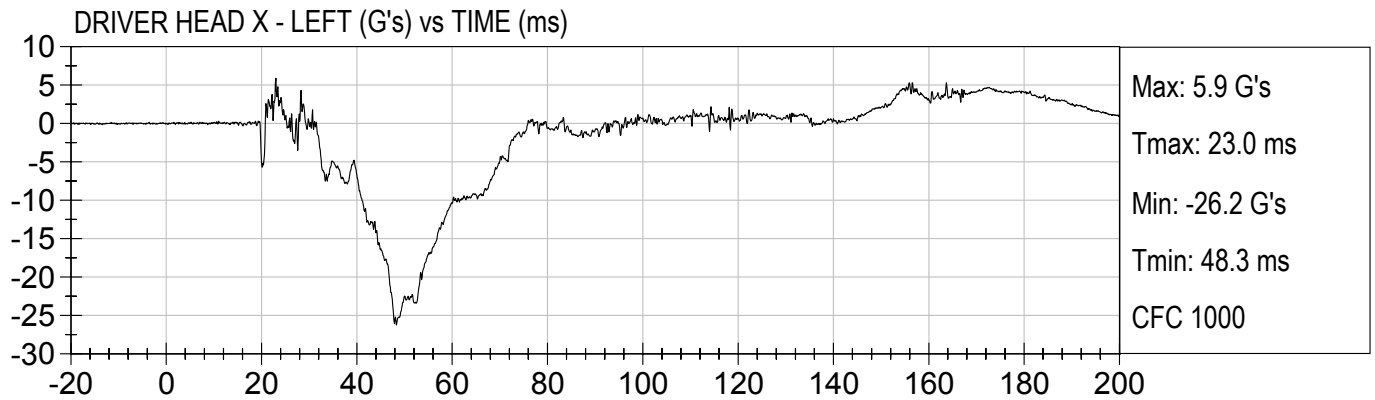
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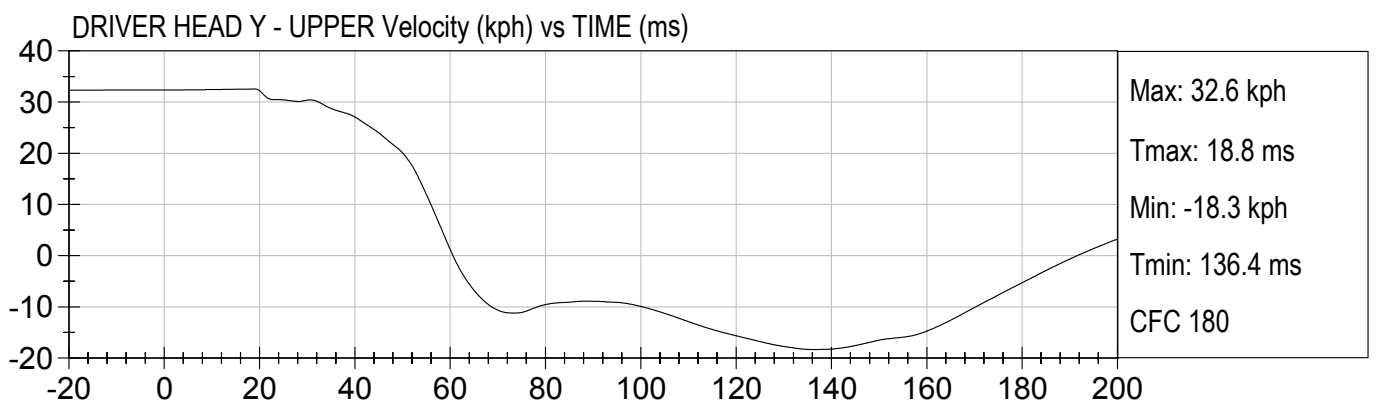
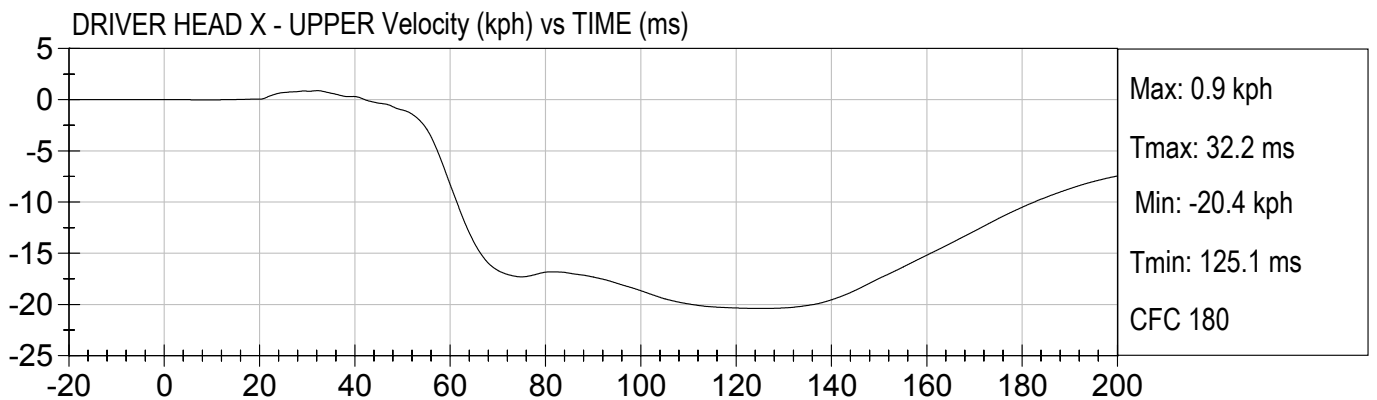
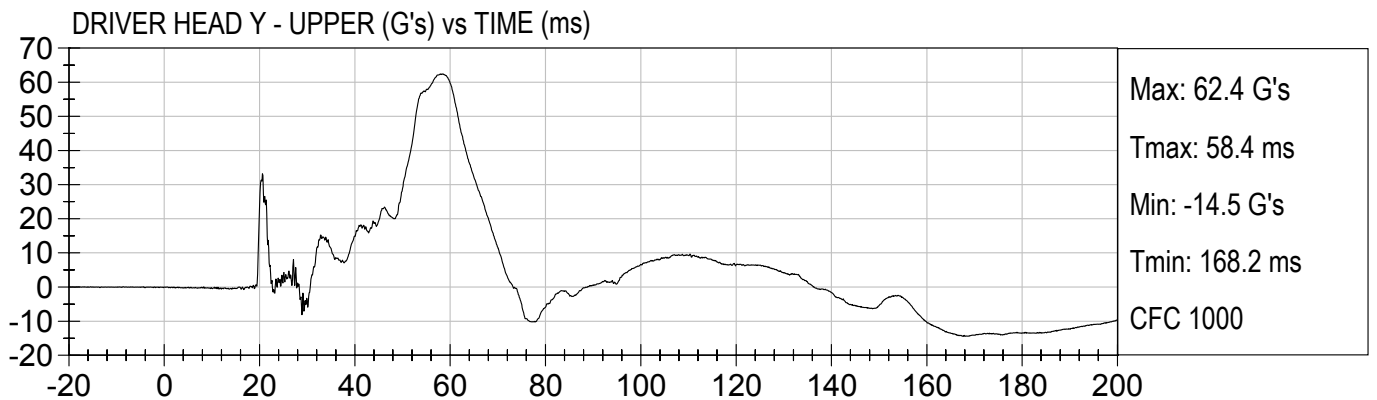
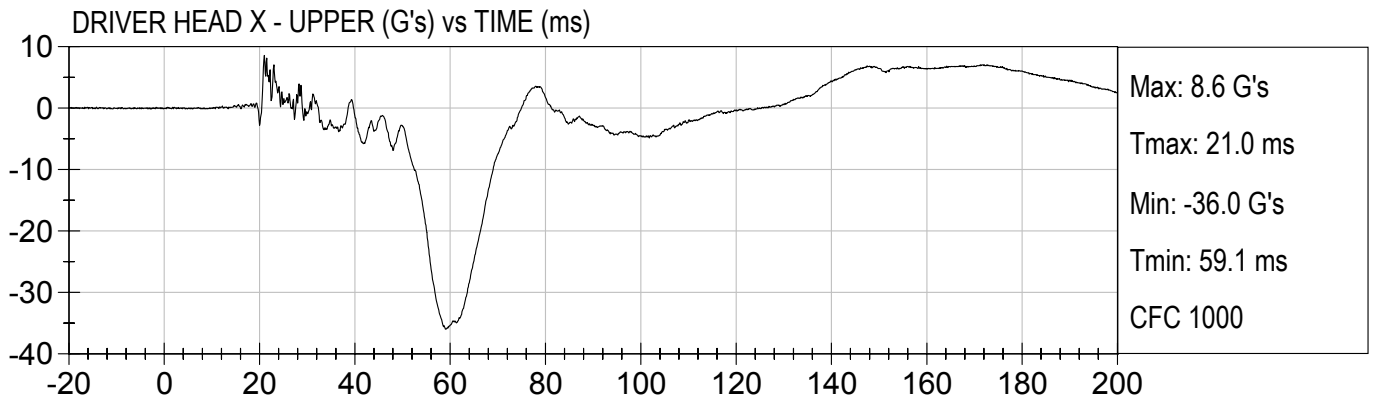
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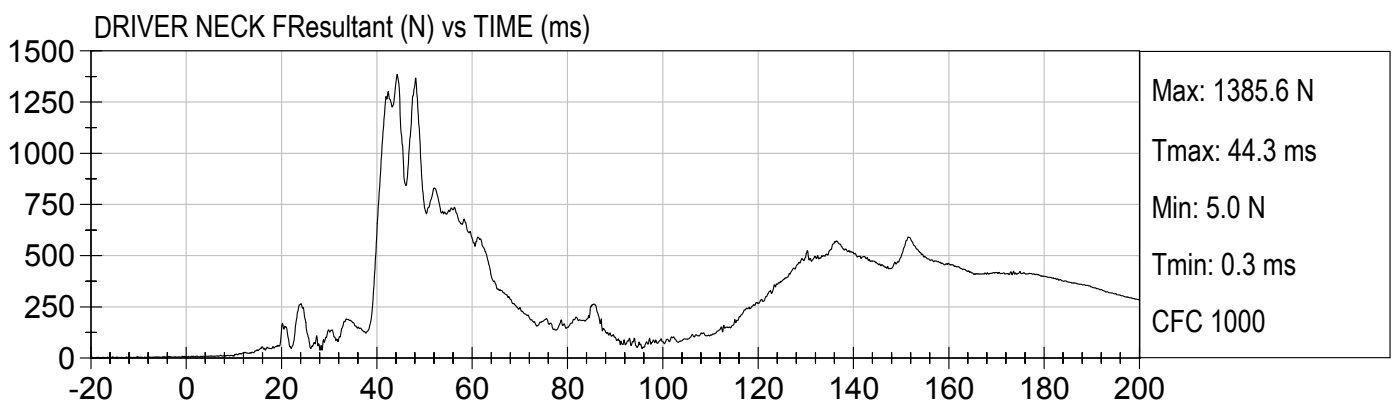
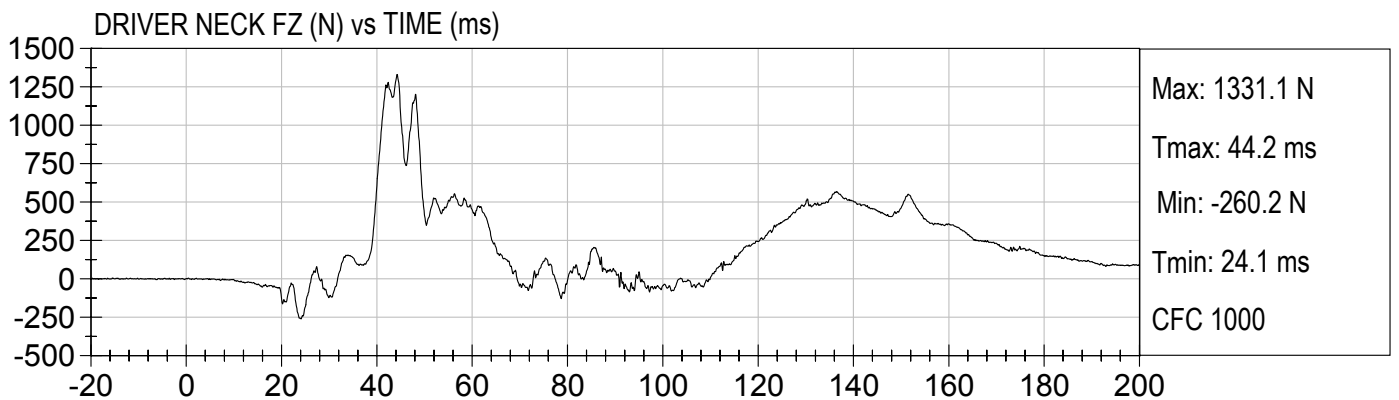
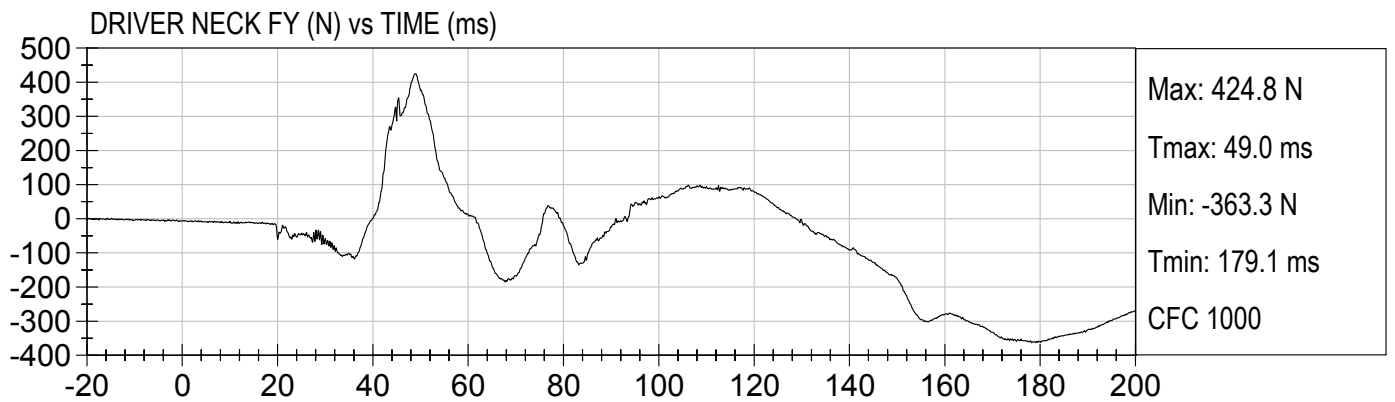
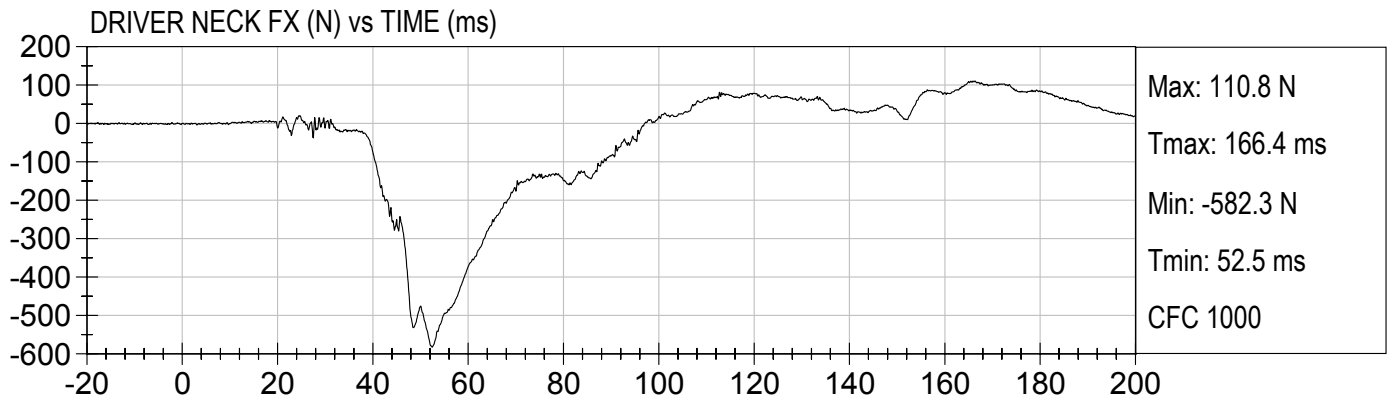
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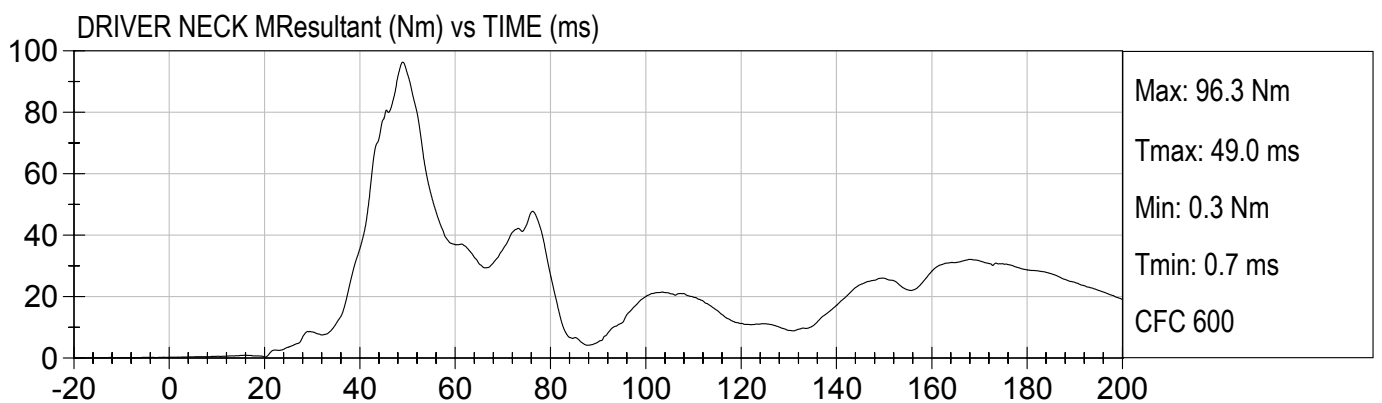
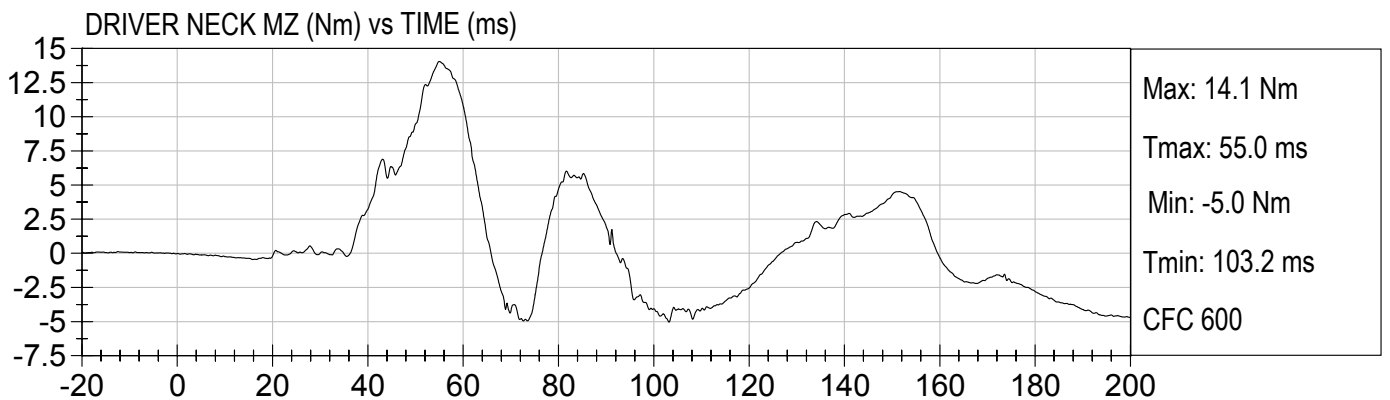
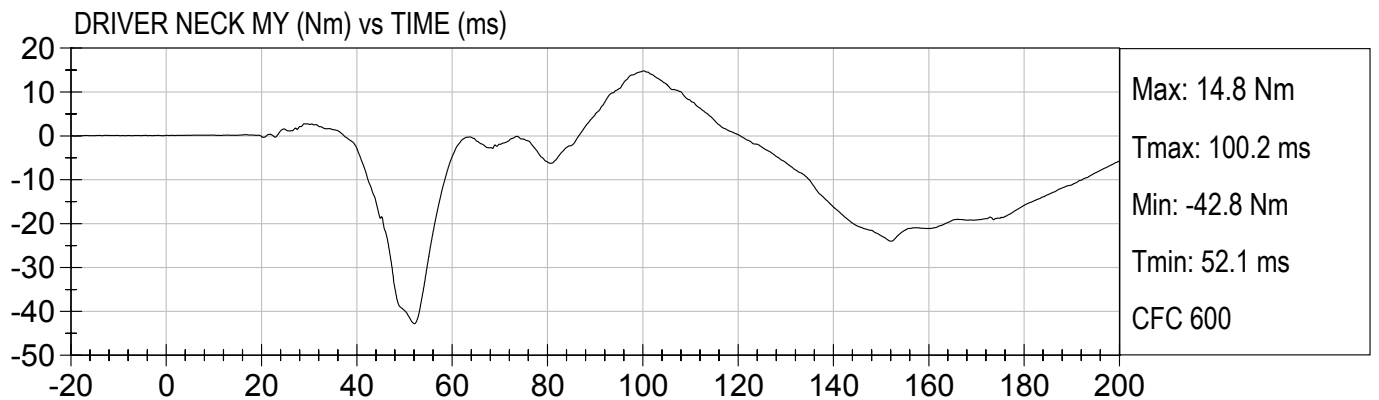
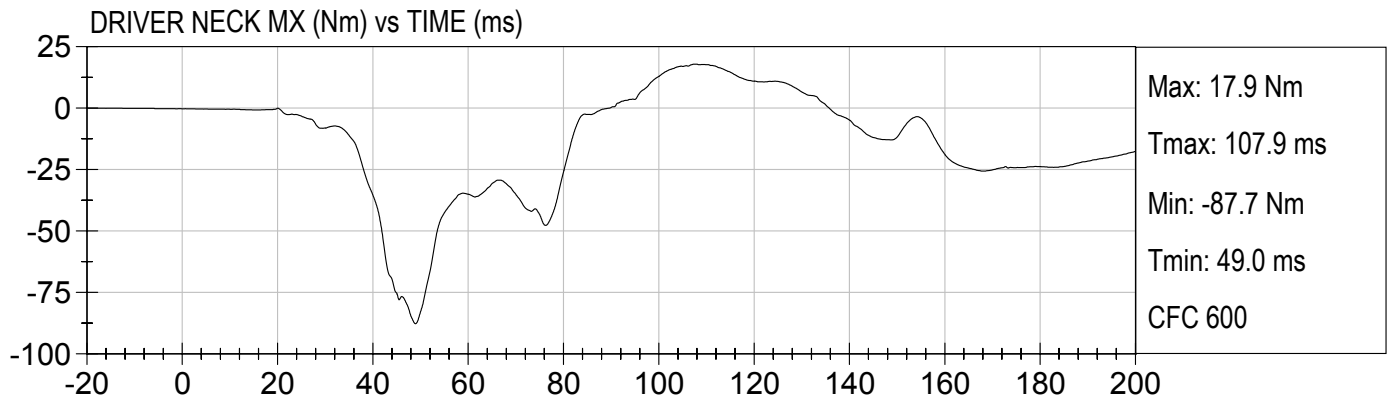
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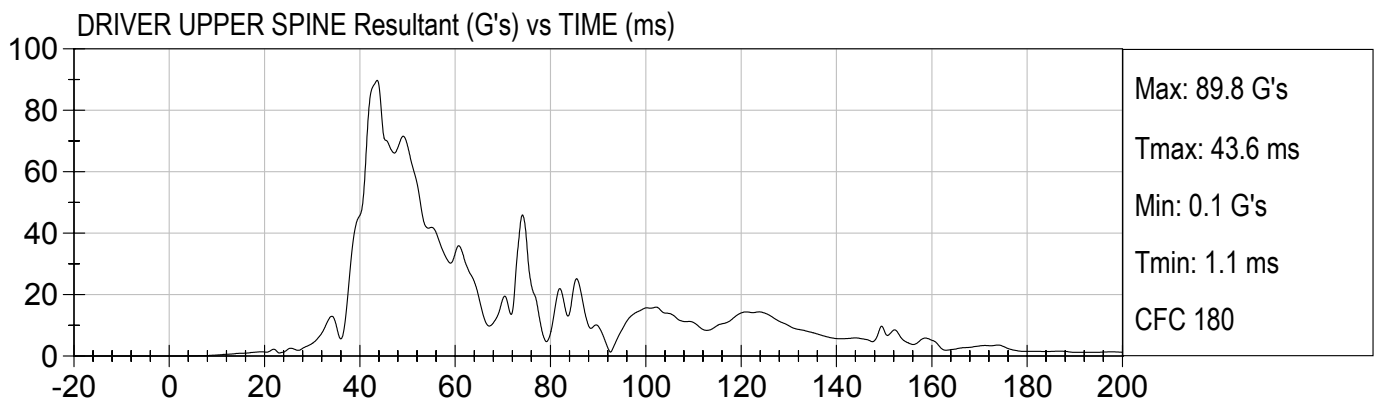
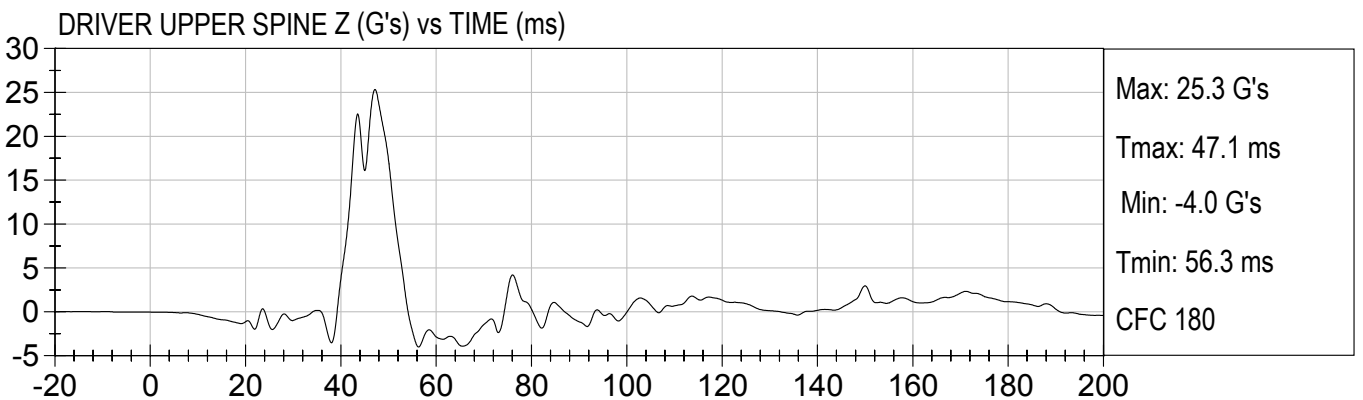
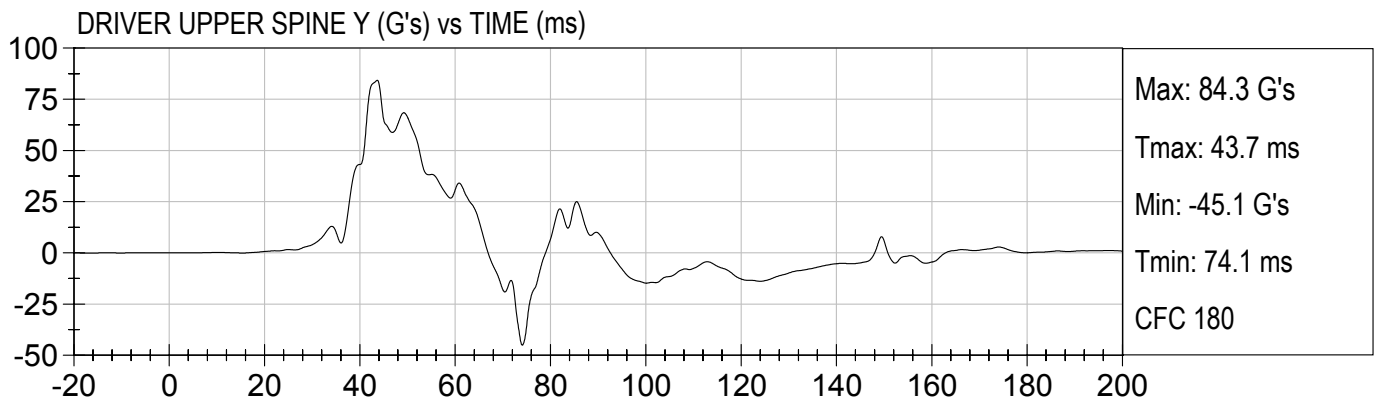
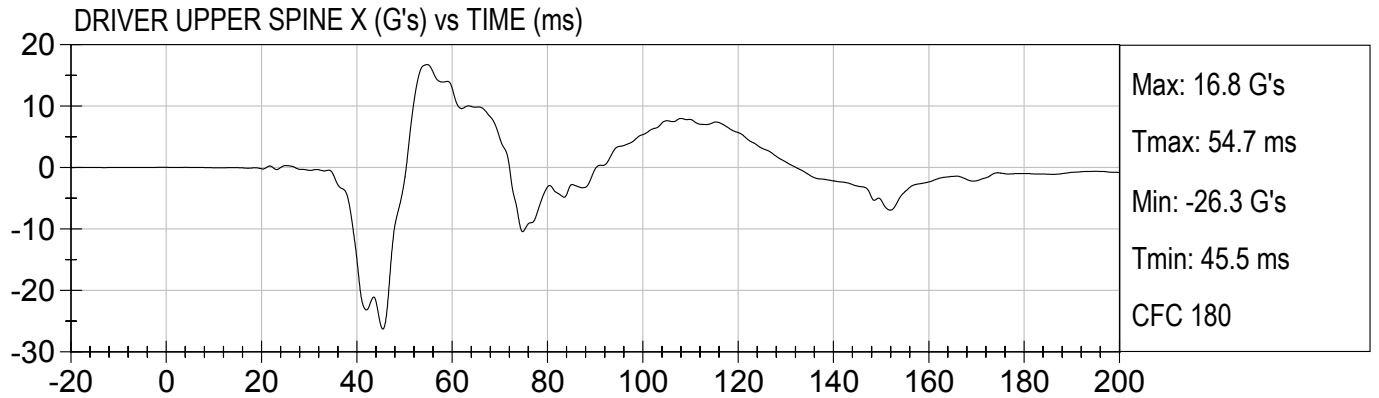
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

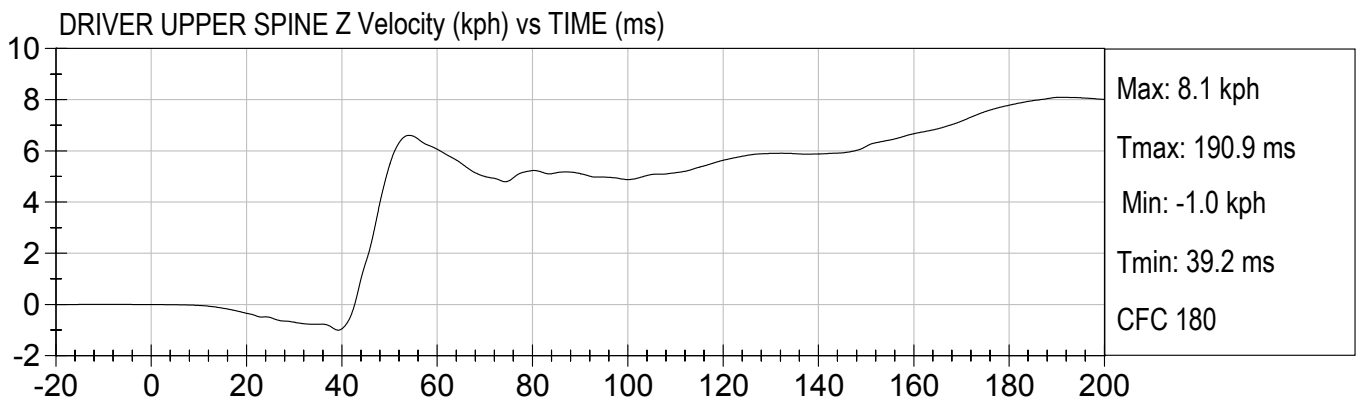
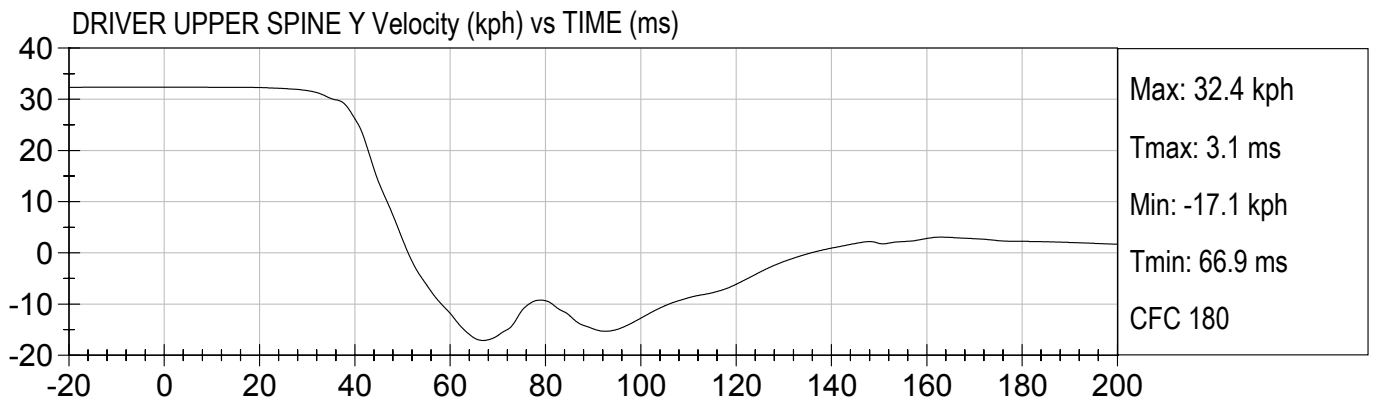
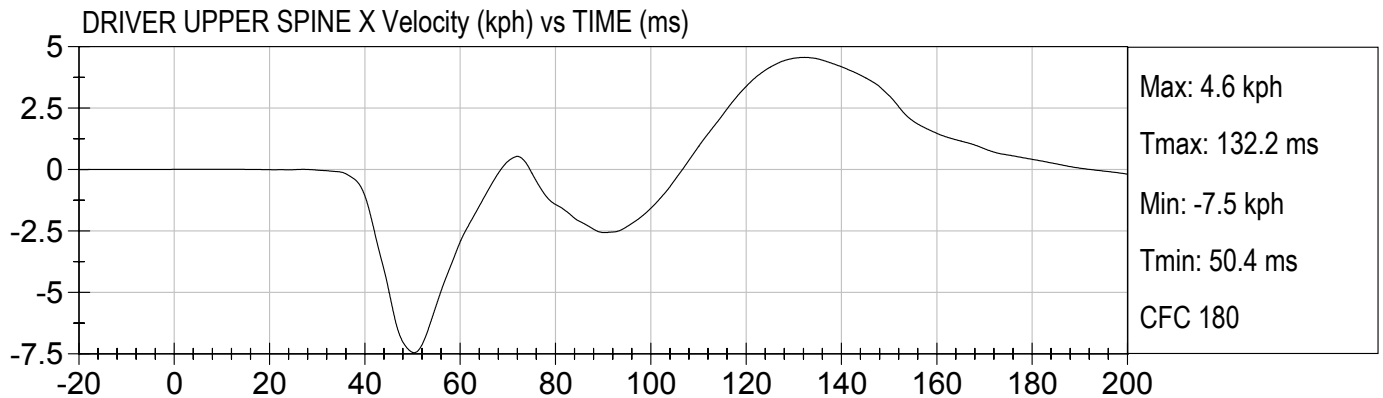
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

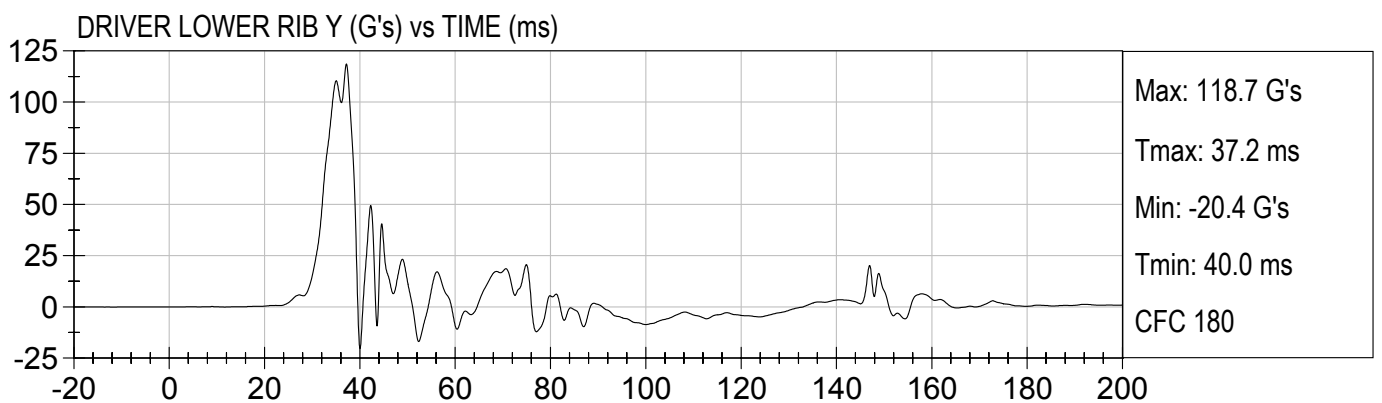
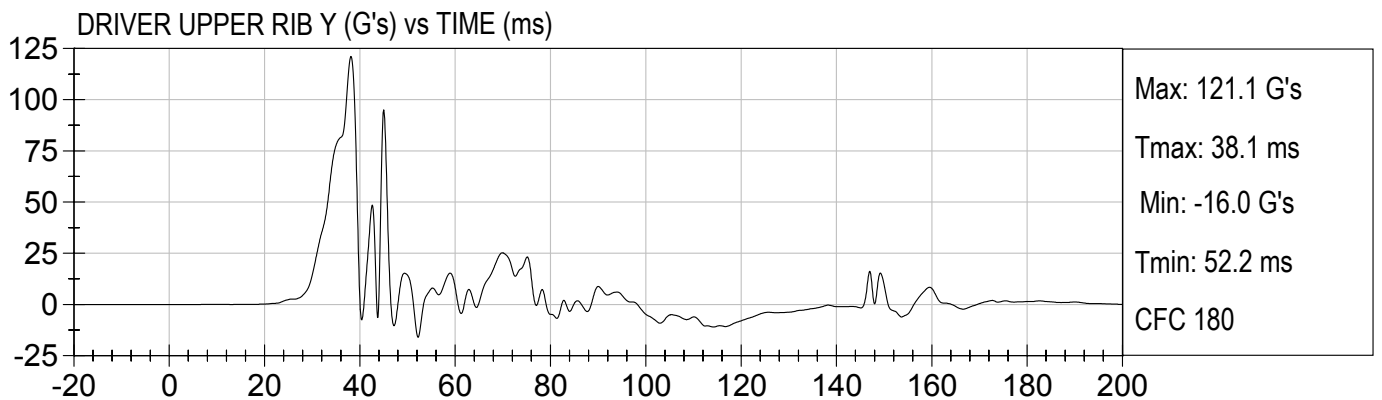
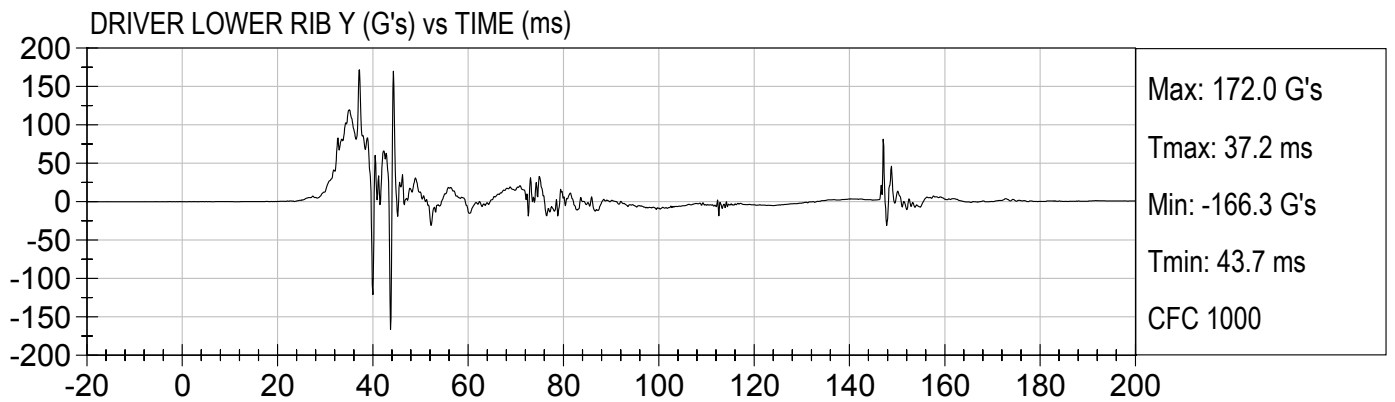
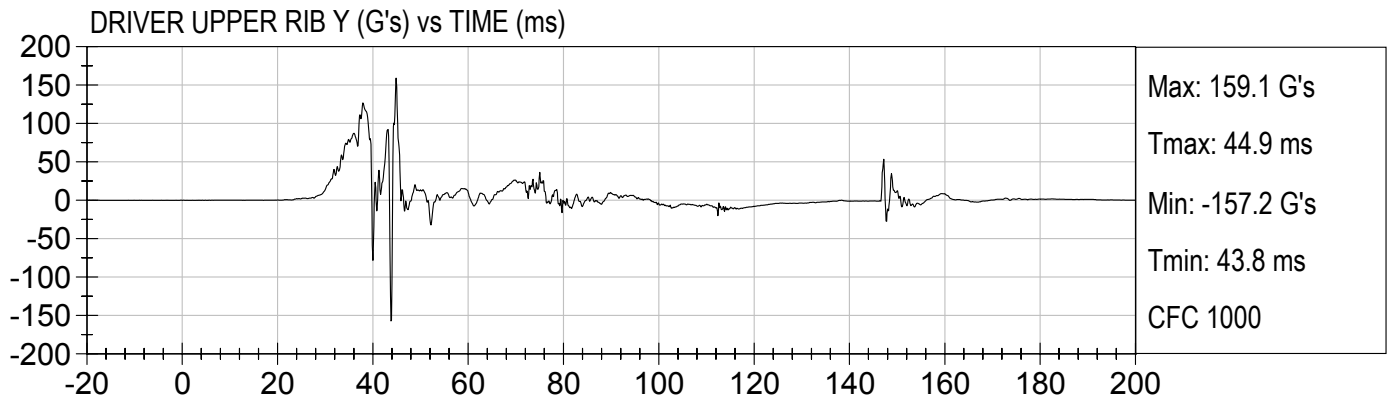
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

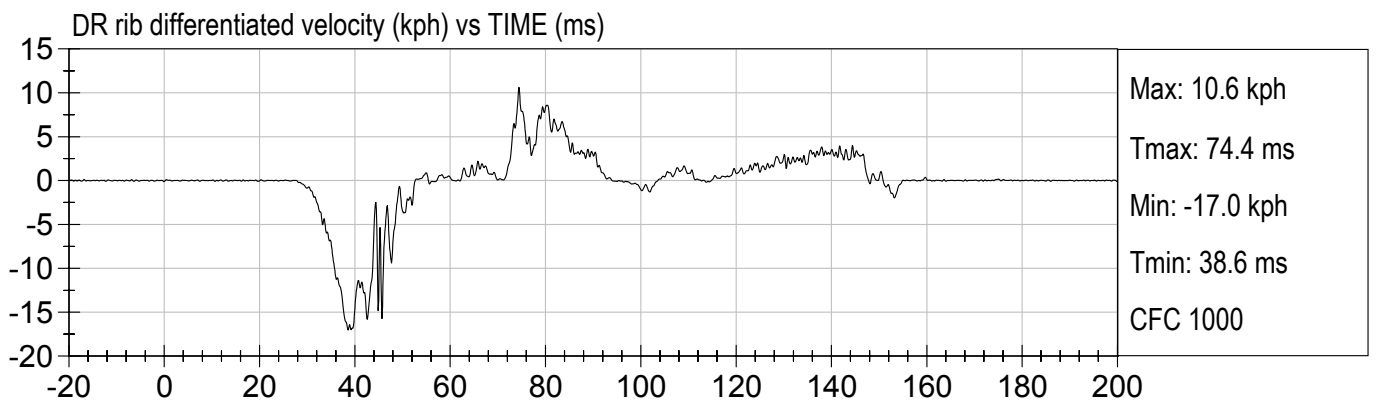
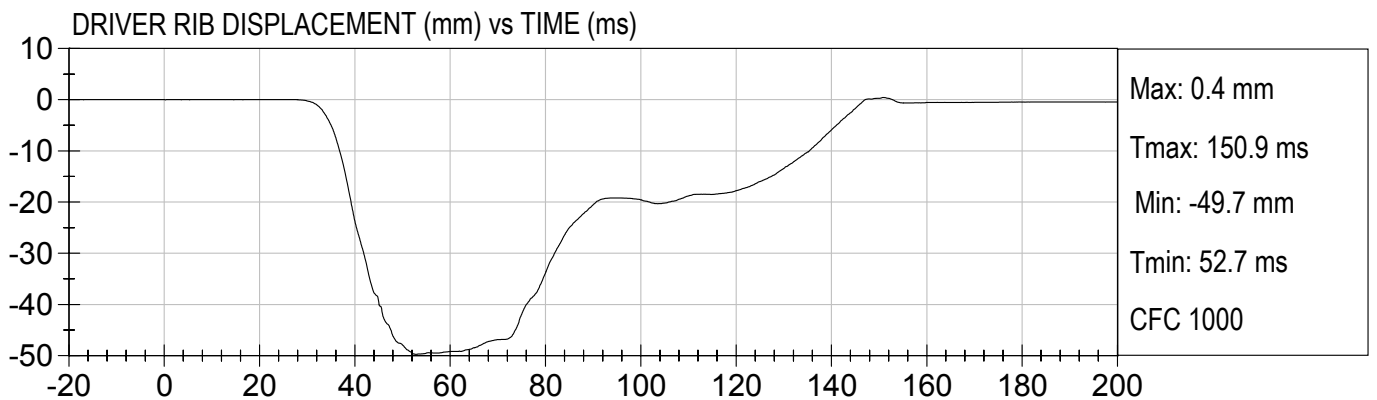
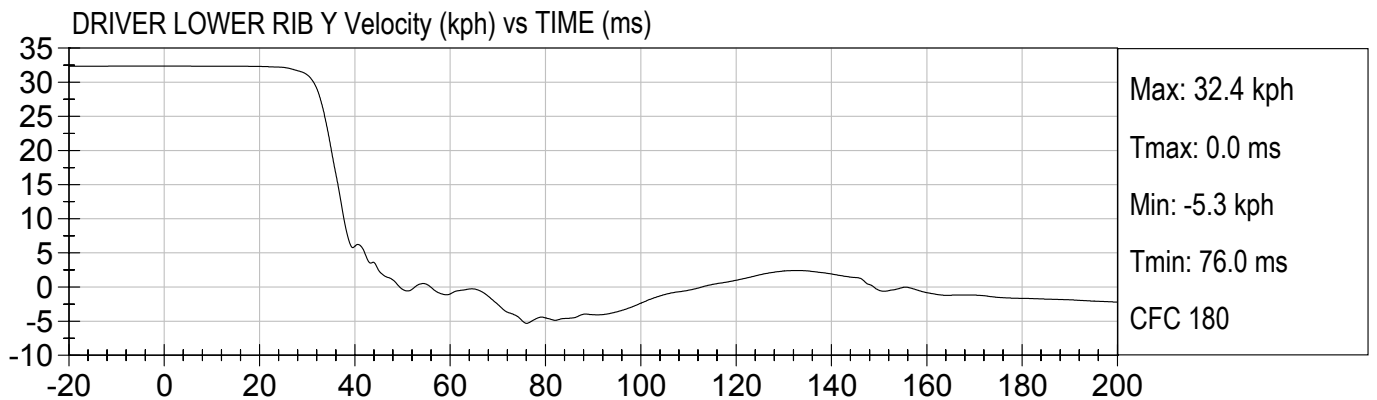
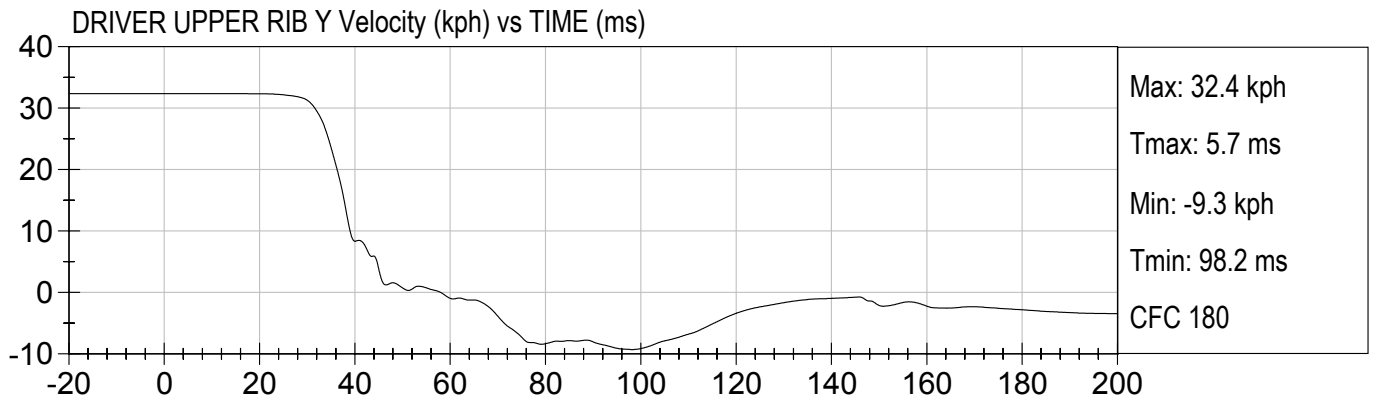




20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

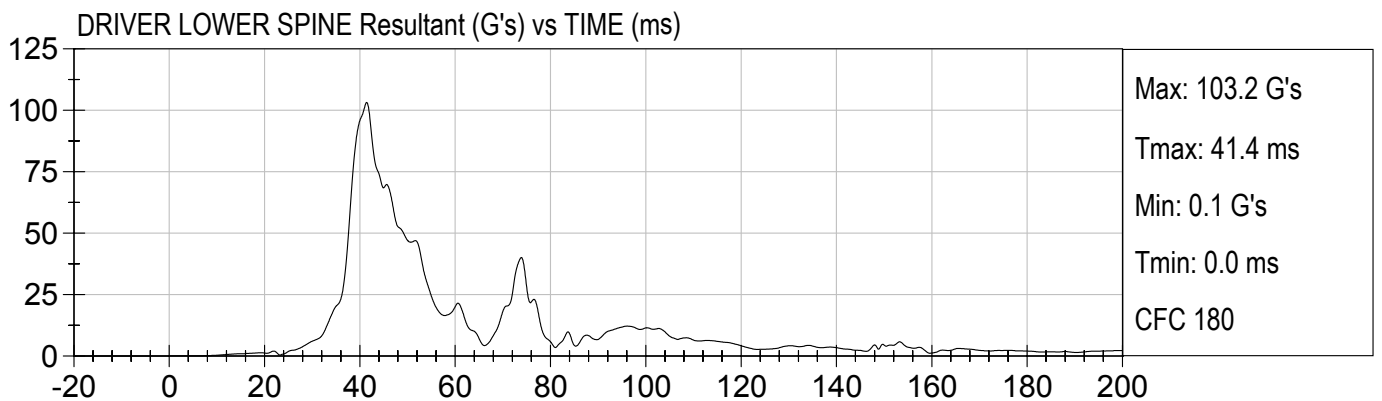
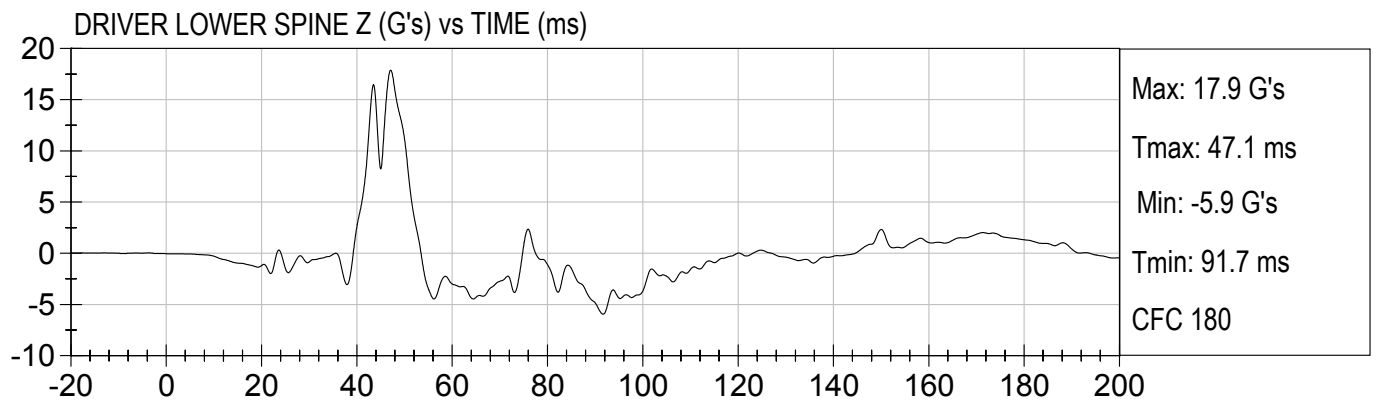
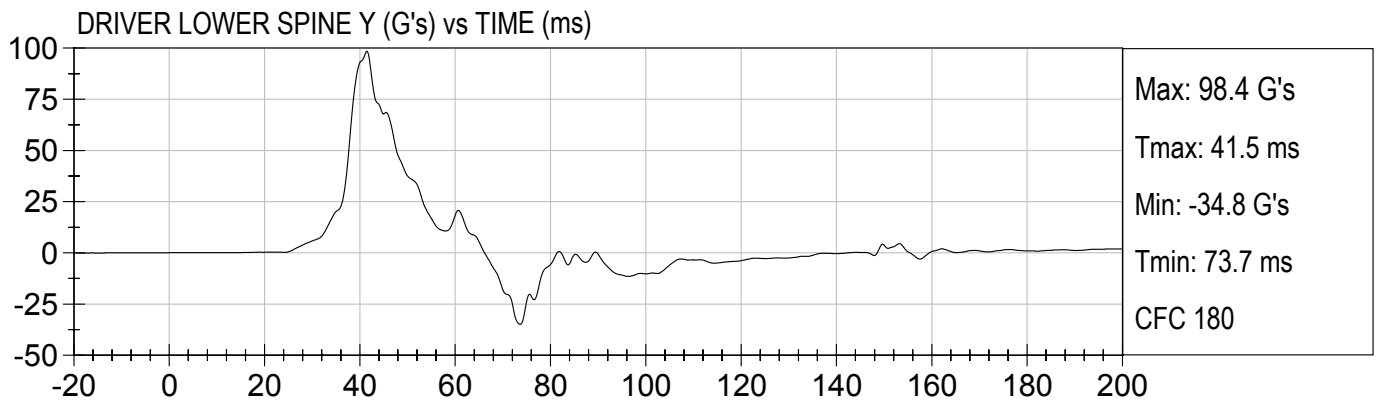
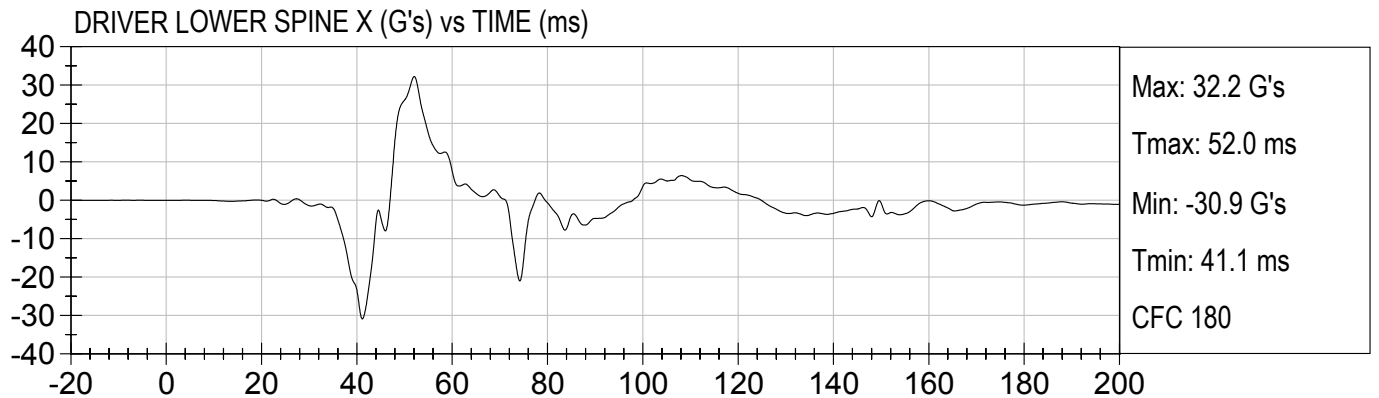






20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

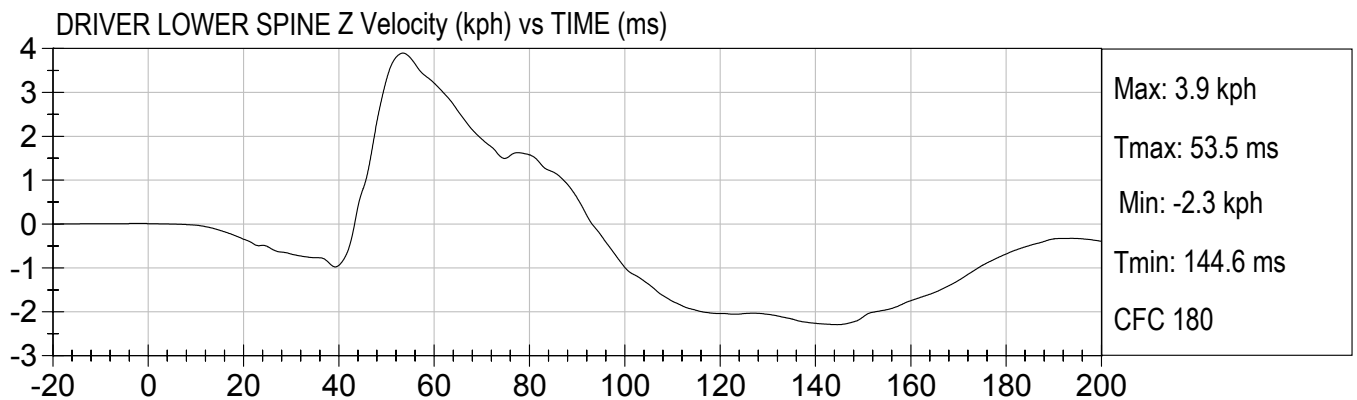
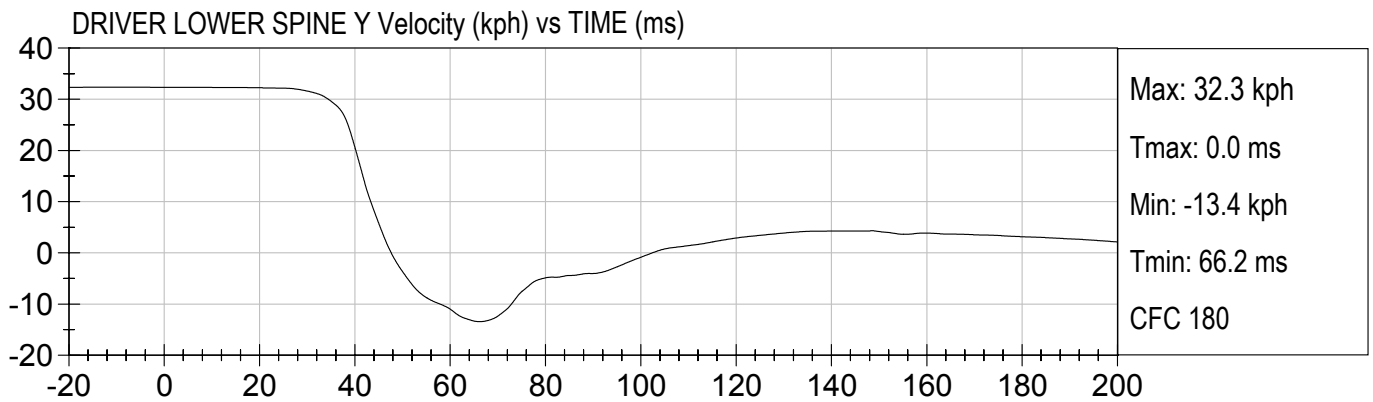
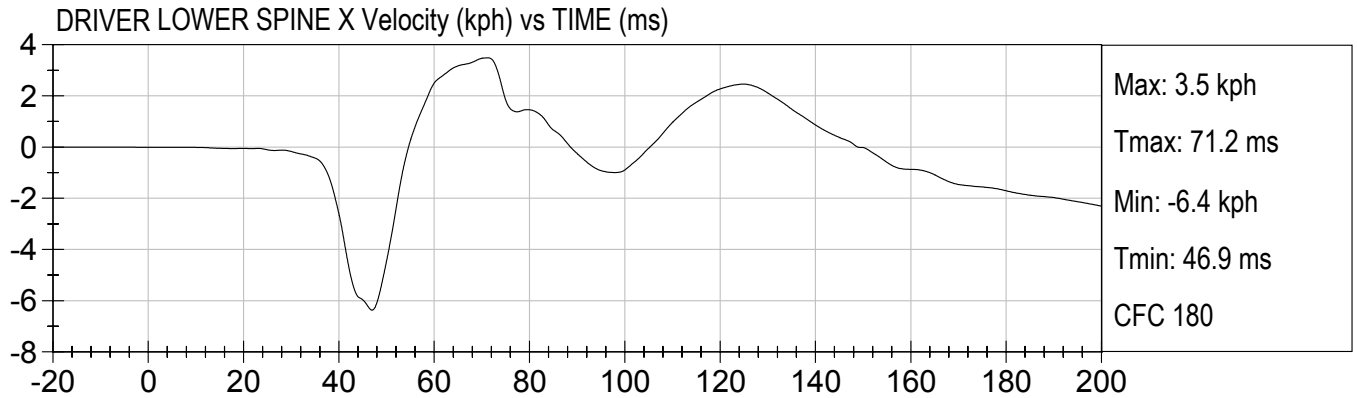
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

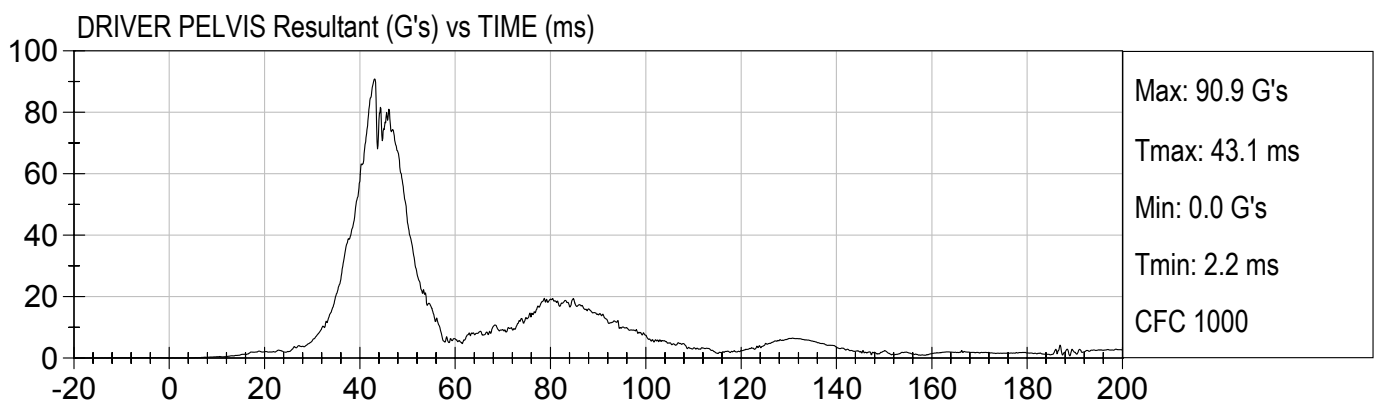
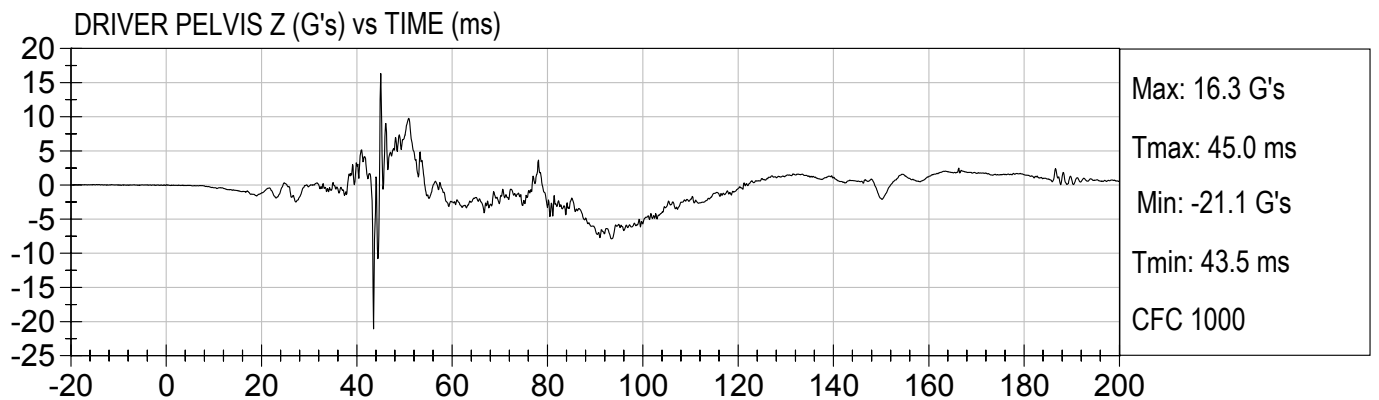
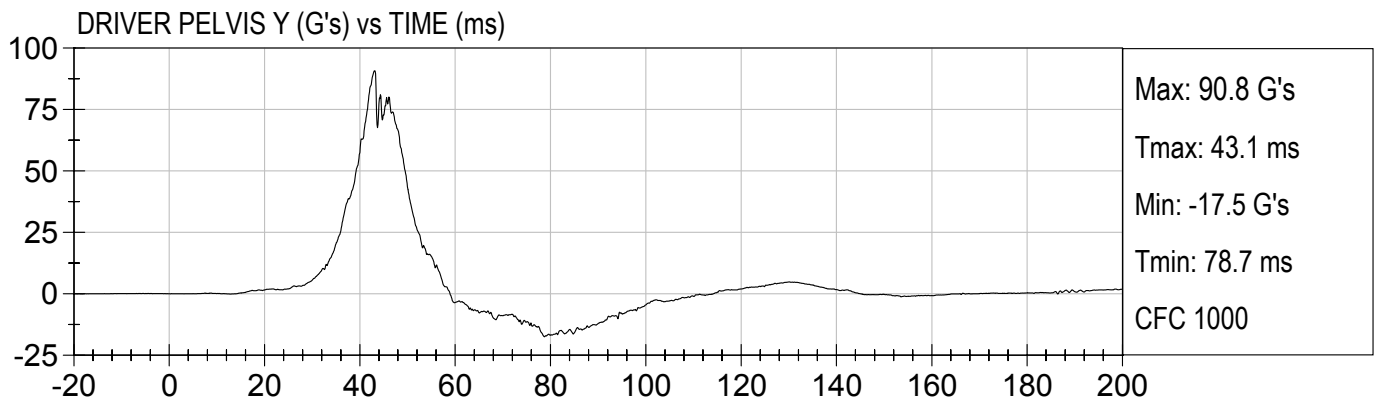
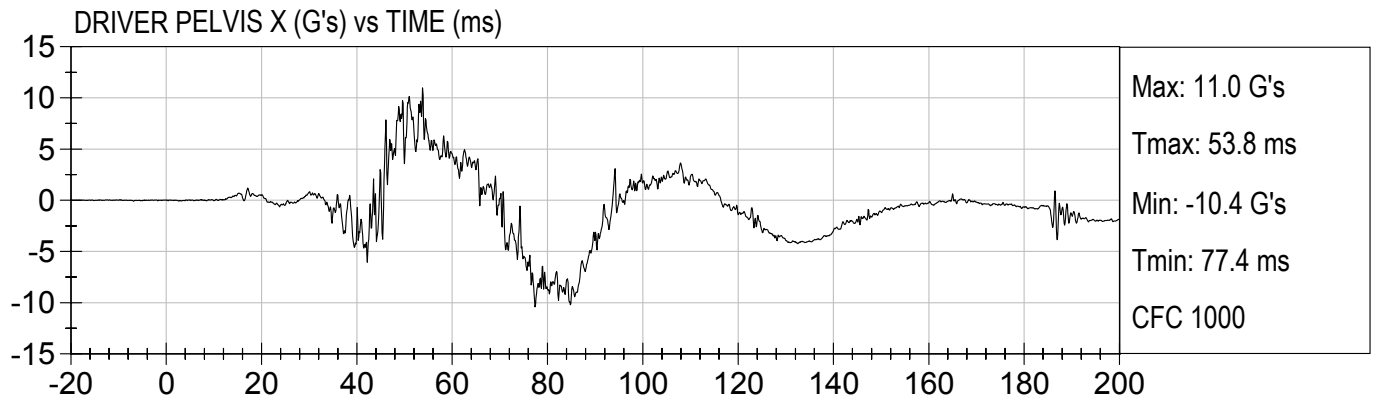
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

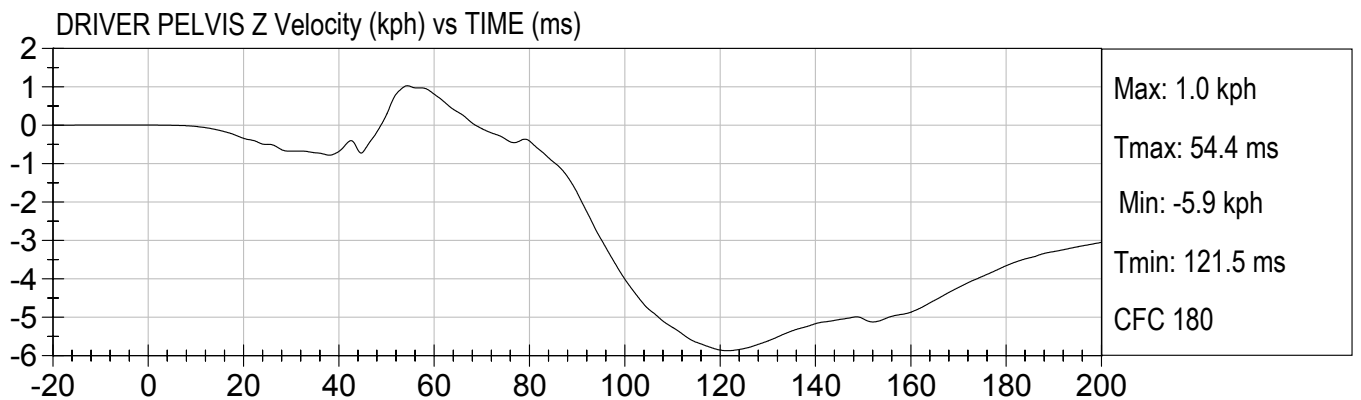
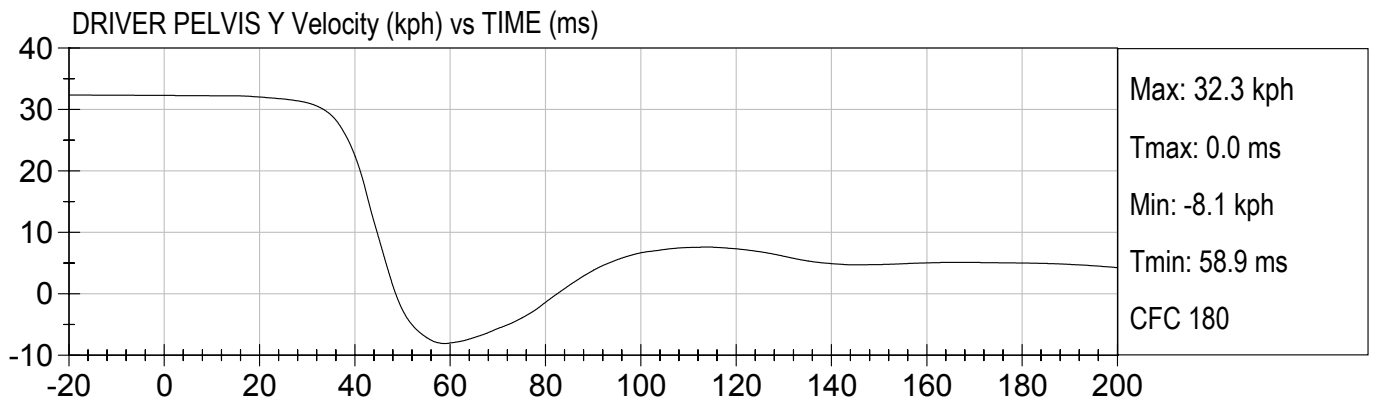
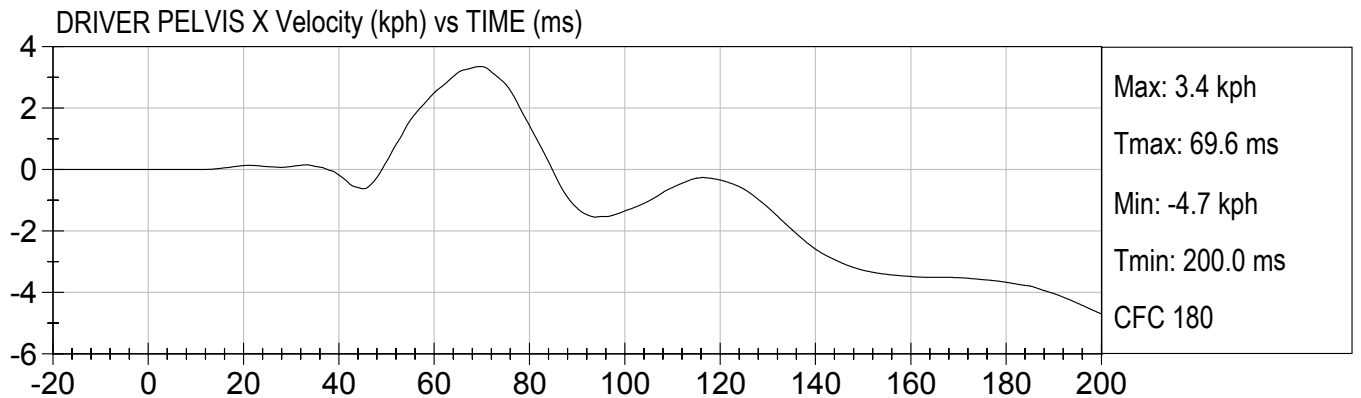




20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

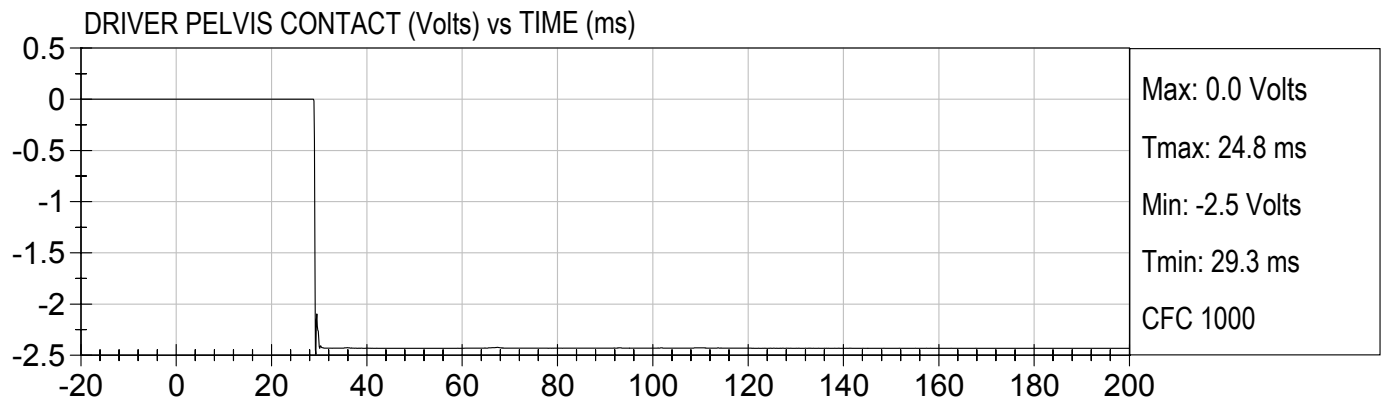
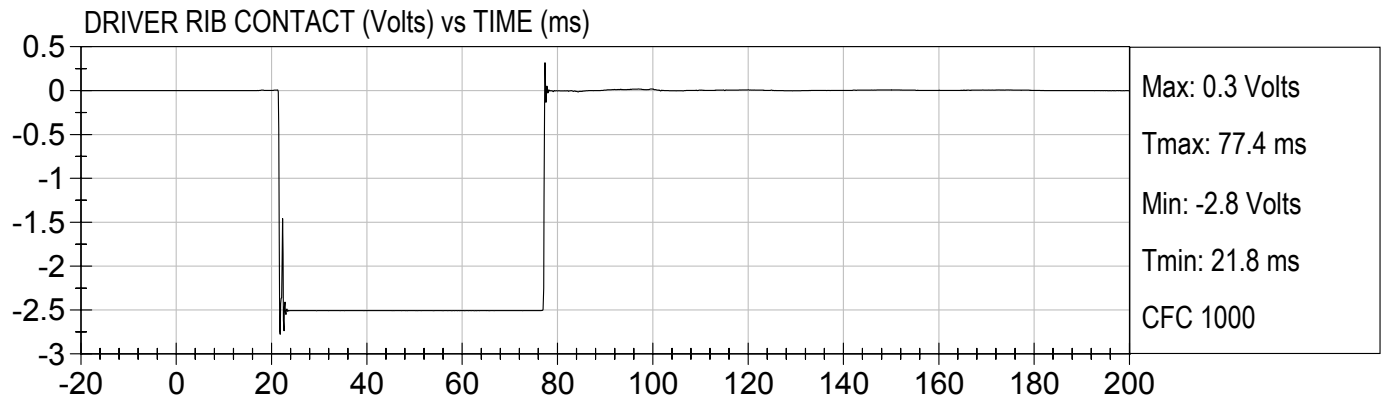






20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

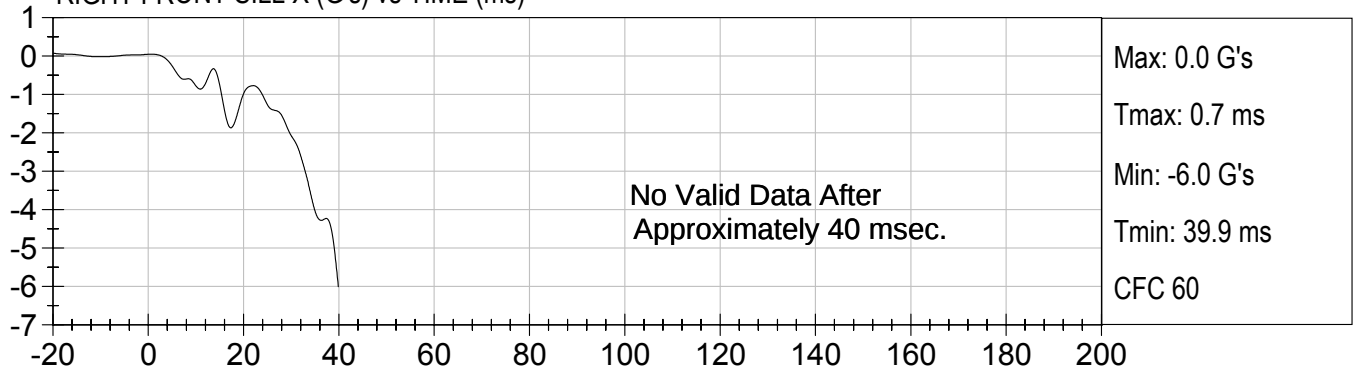




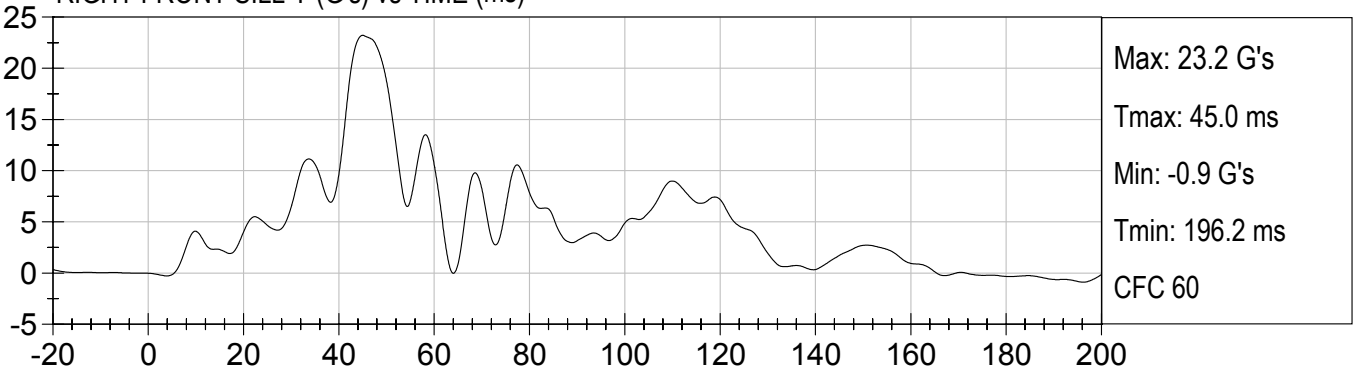
20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/23/2002
Speed: 20.1 mph (32.3 km/h)

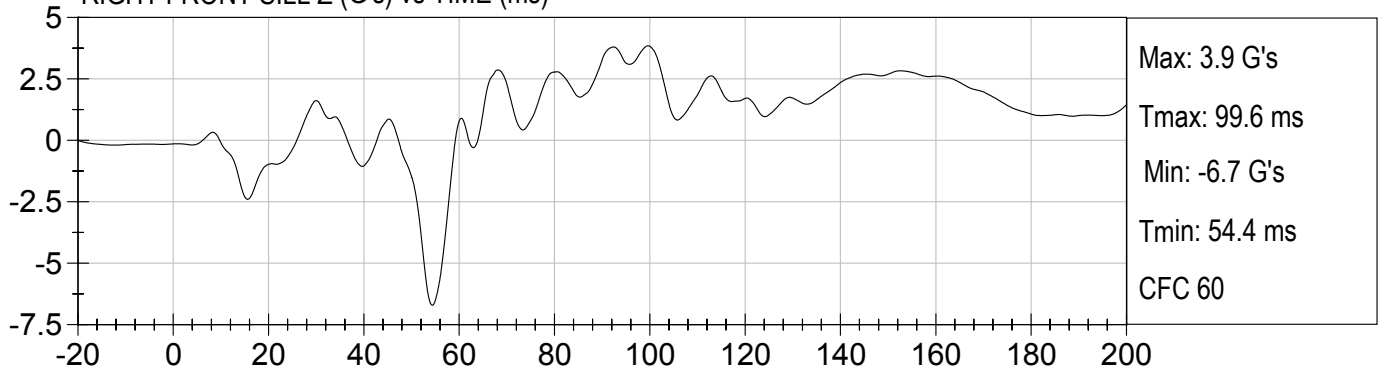
RIGHT FRONT SILL X (G's) vs TIME (ms)



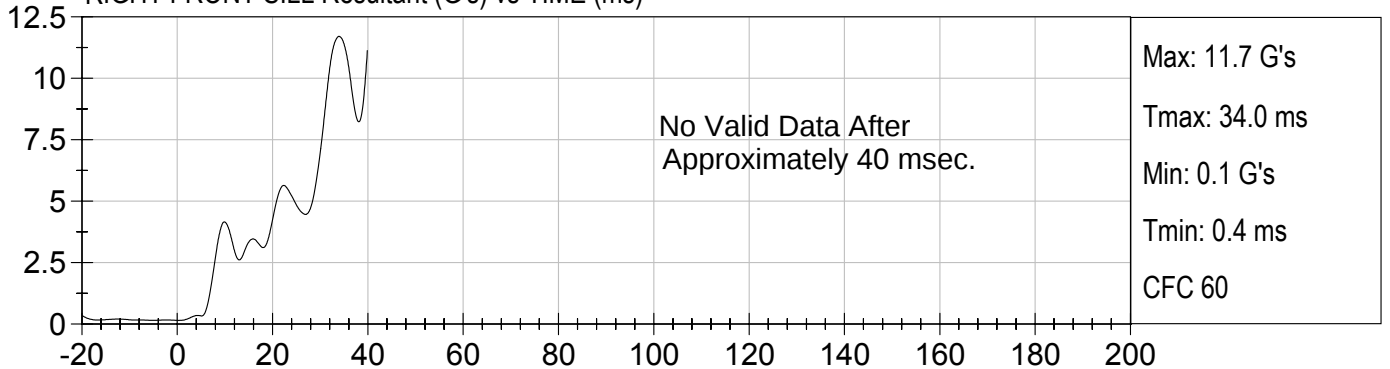
RIGHT FRONT SILL Y (G's) vs TIME (ms)

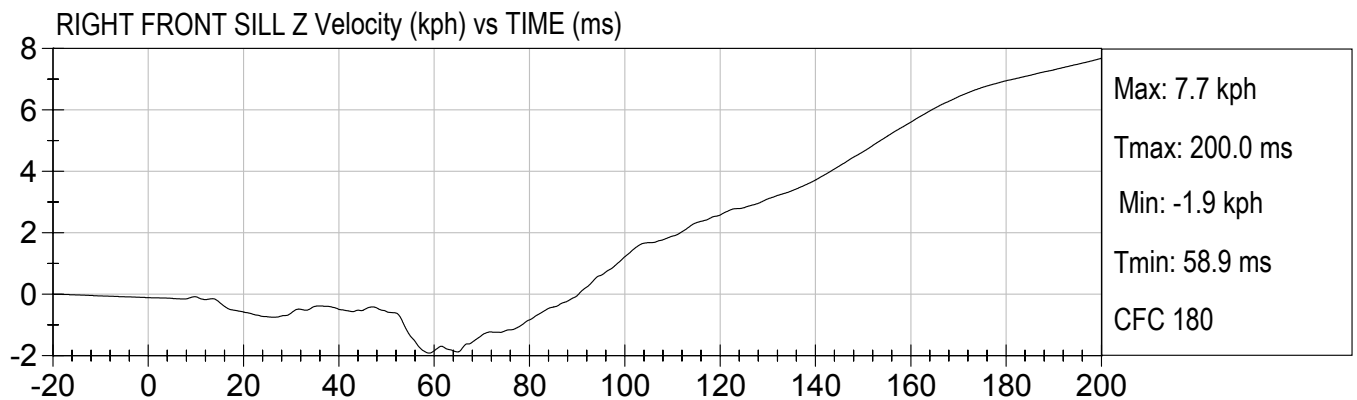
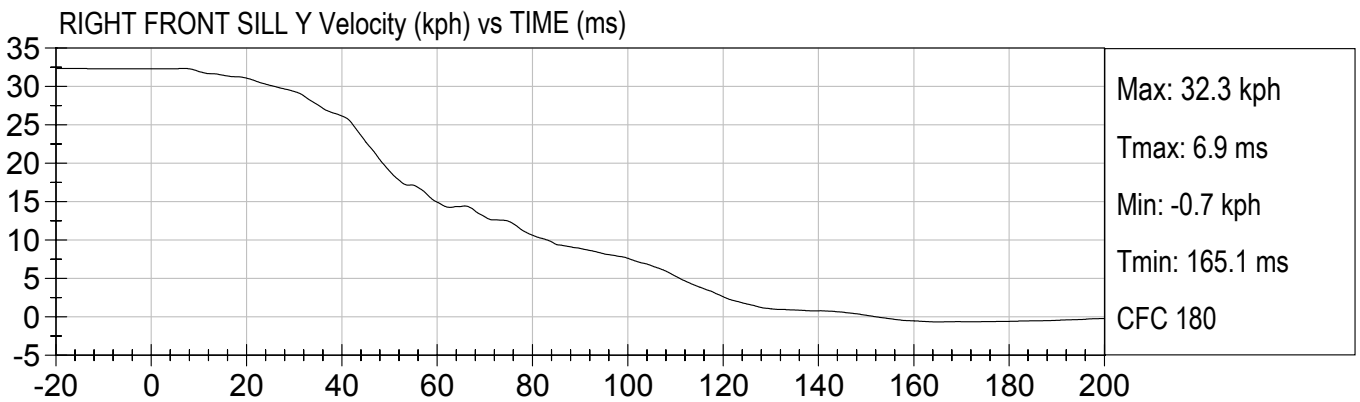
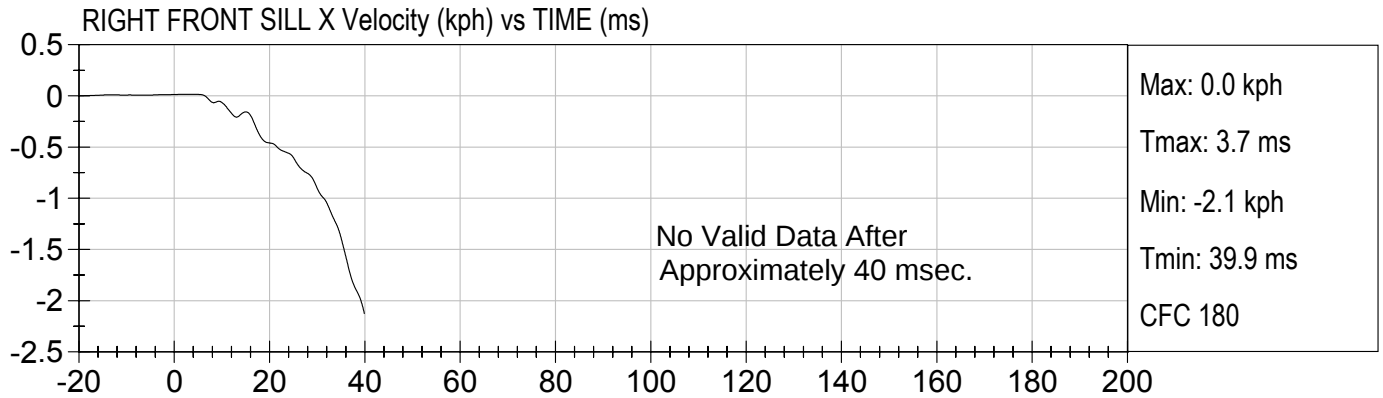


RIGHT FRONT SILL Z (G's) vs TIME (ms)



RIGHT FRONT SILL Resultant (G's) vs TIME (ms)

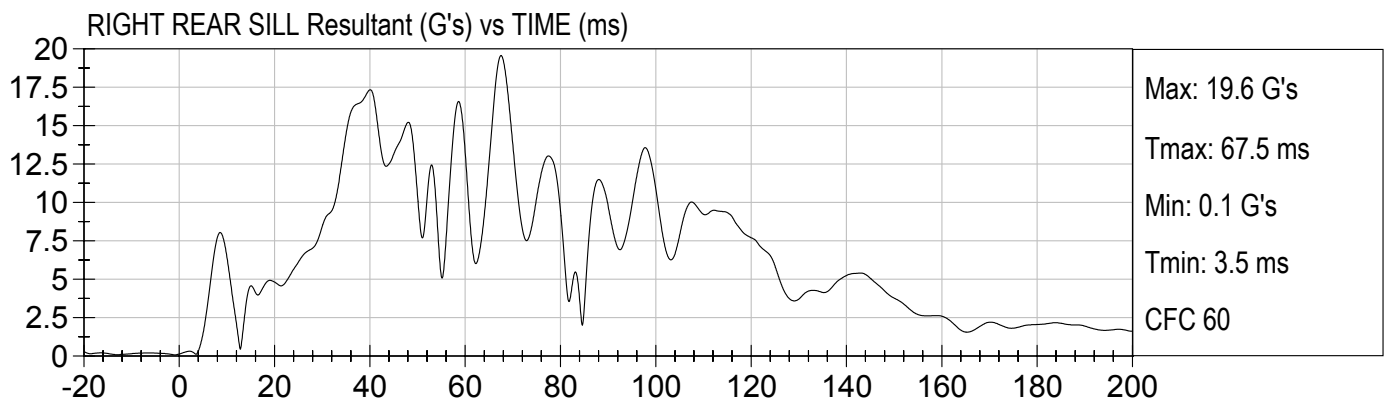
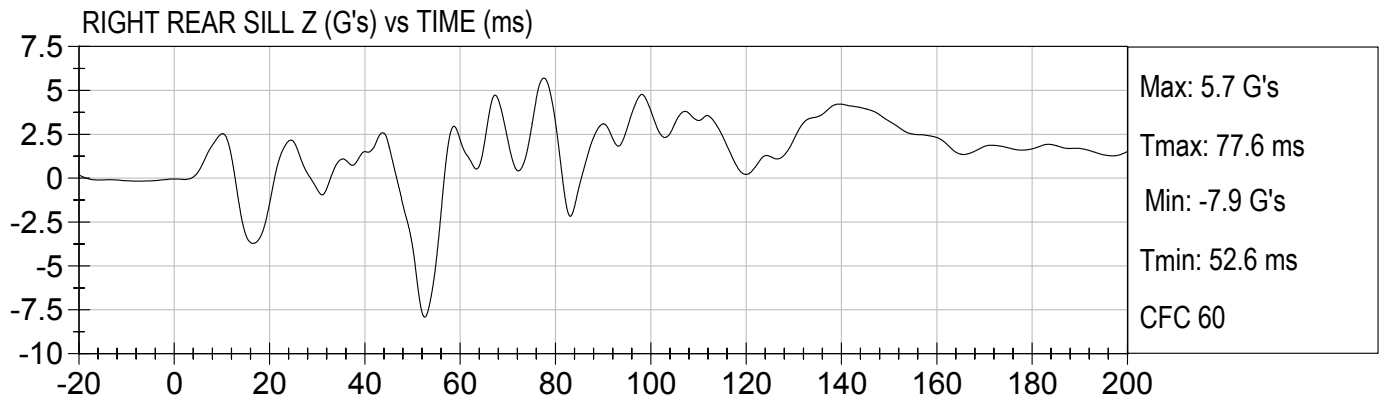
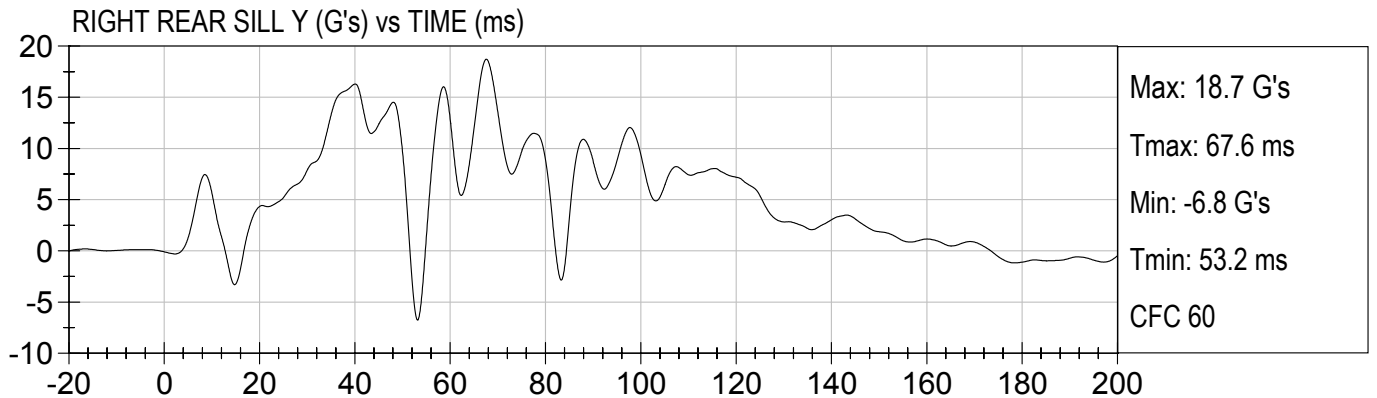
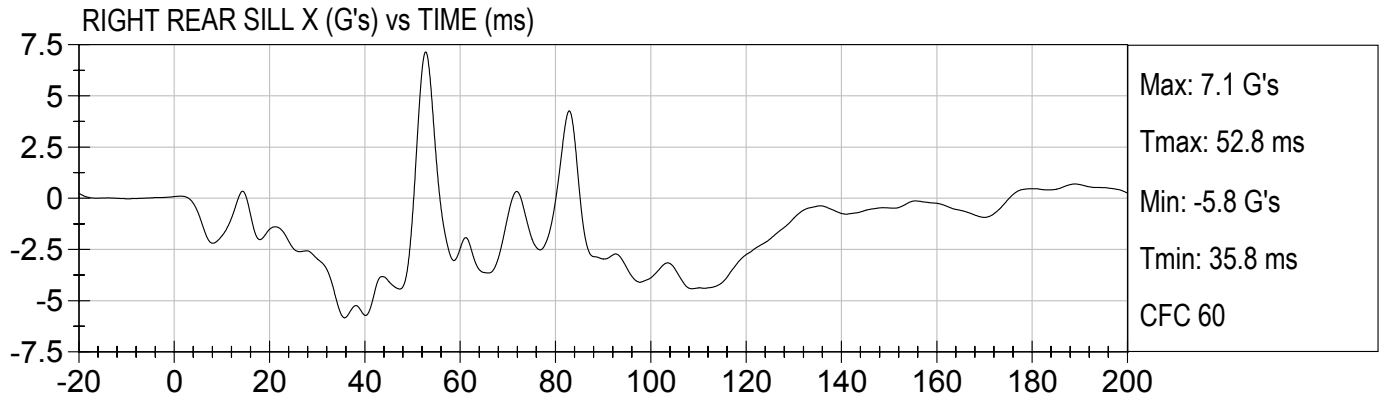






20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

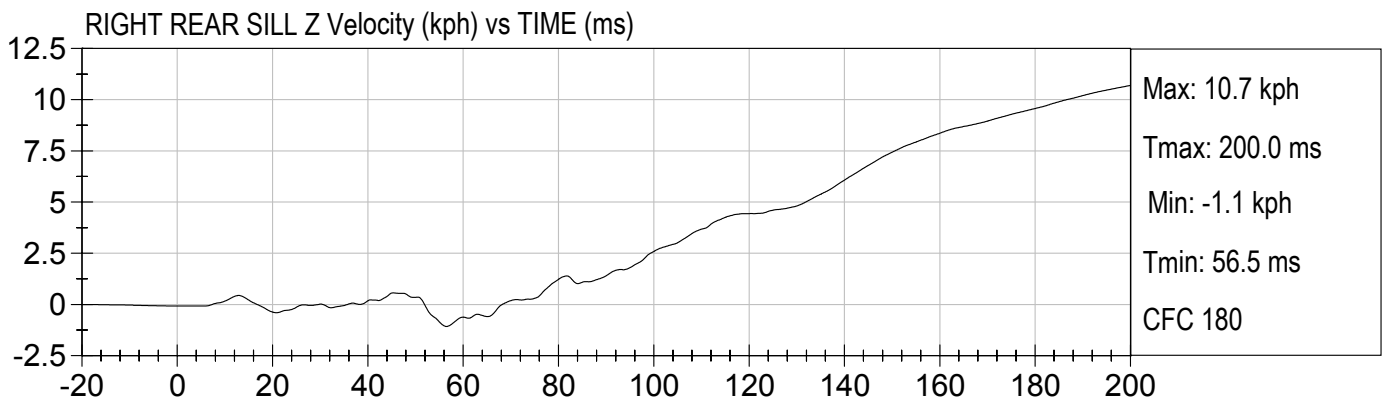
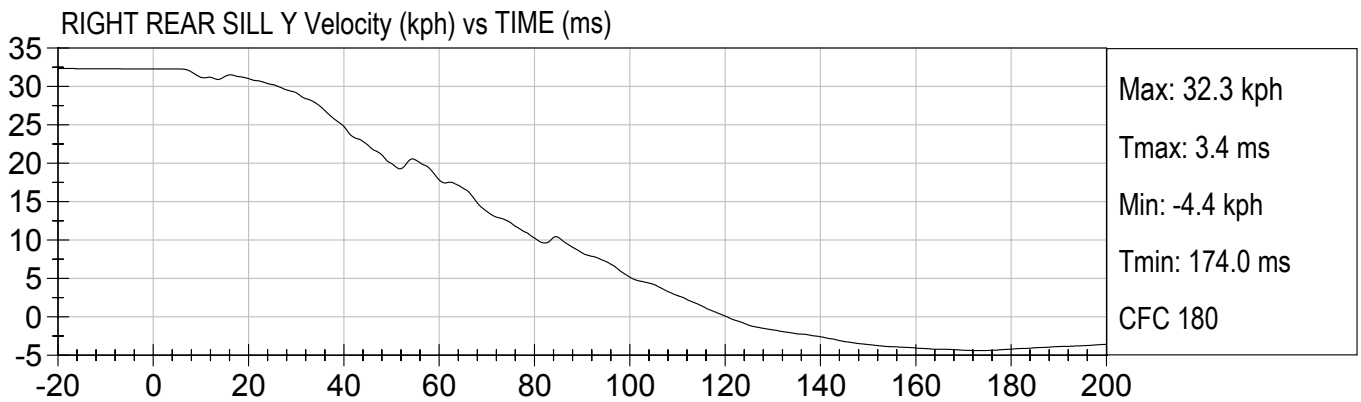
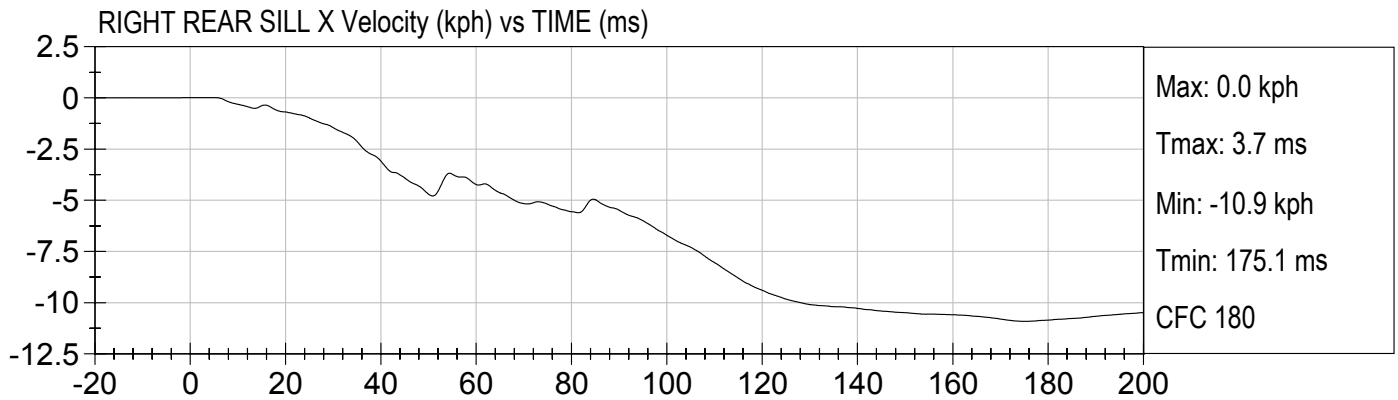
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

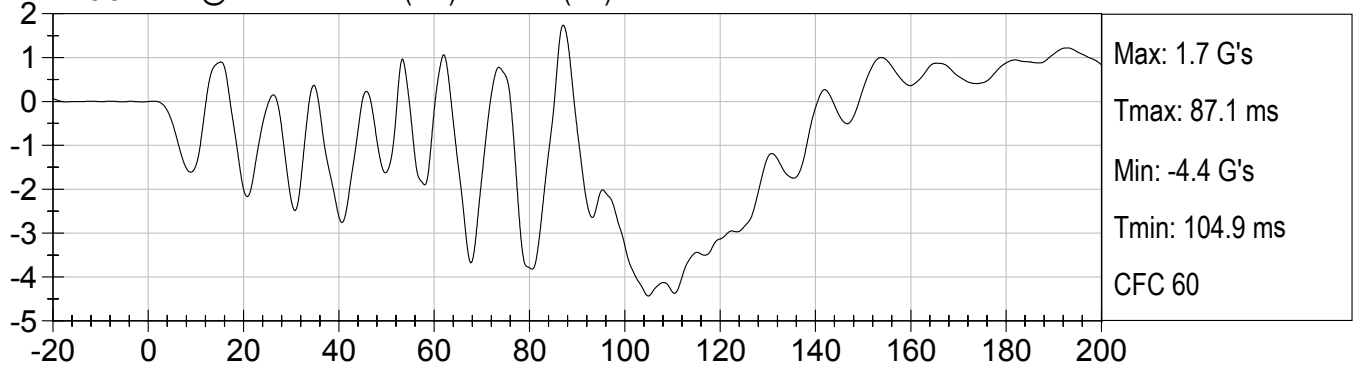




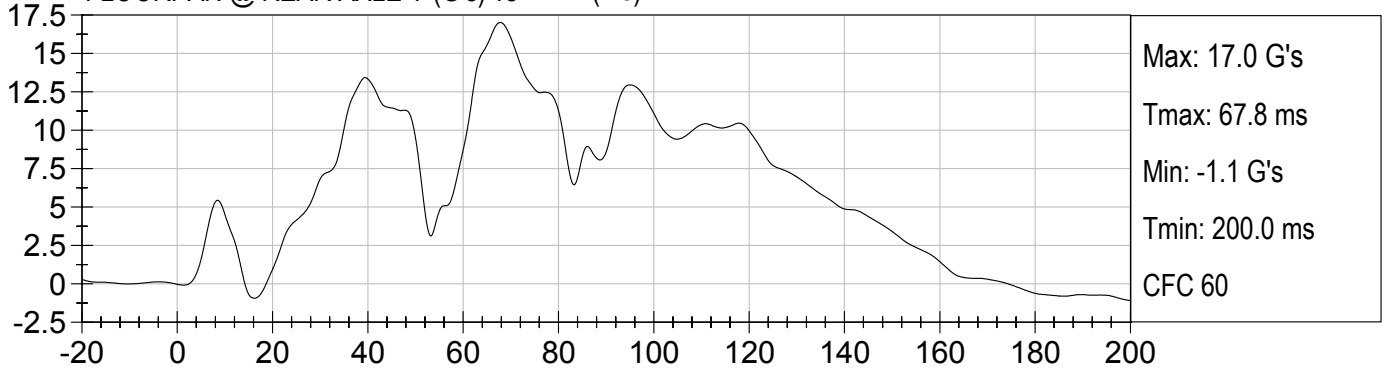
20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

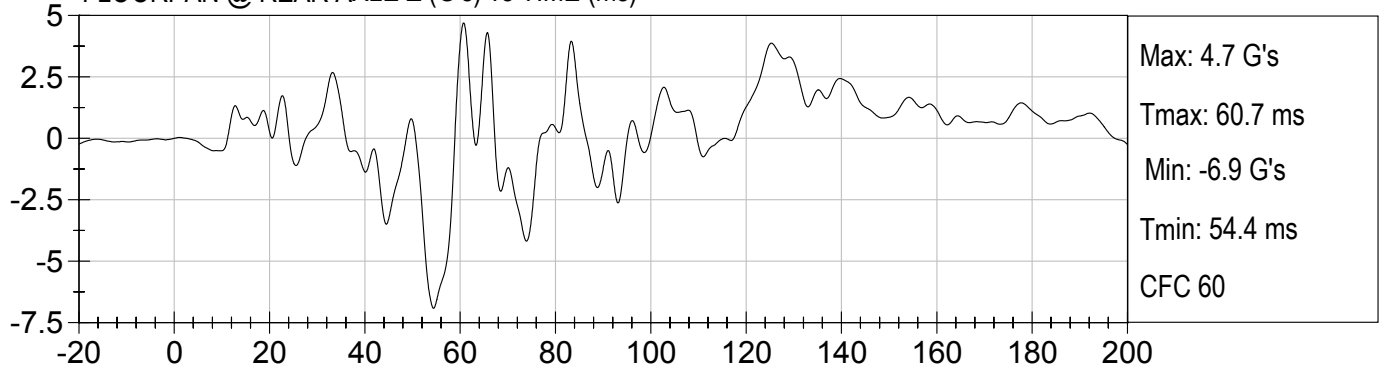
FLOORPAN @ REAR AXLE X (G's) vs TIME (ms)



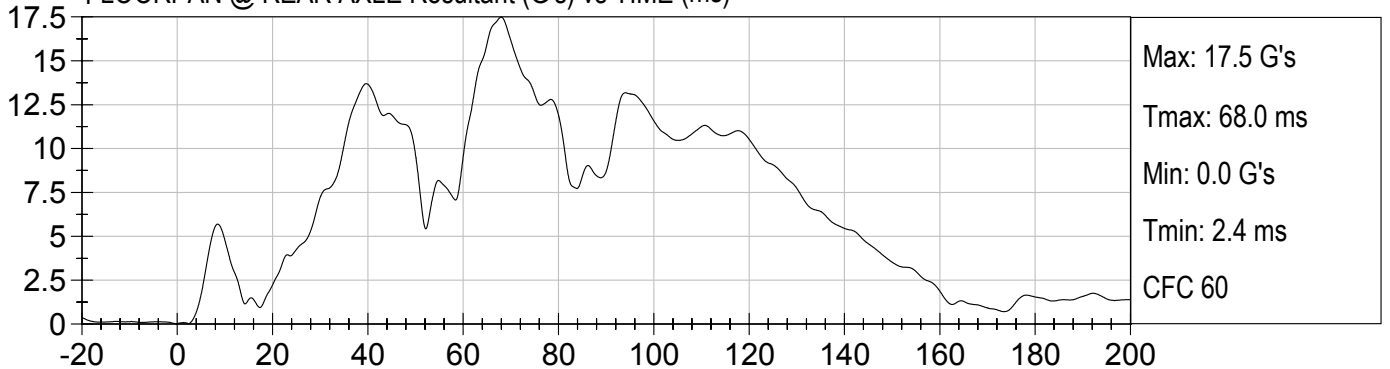
FLOORPAN @ REAR AXLE Y (G's) vs TIME (ms)



FLOORPAN @ REAR AXLE Z (G's) vs TIME (ms)

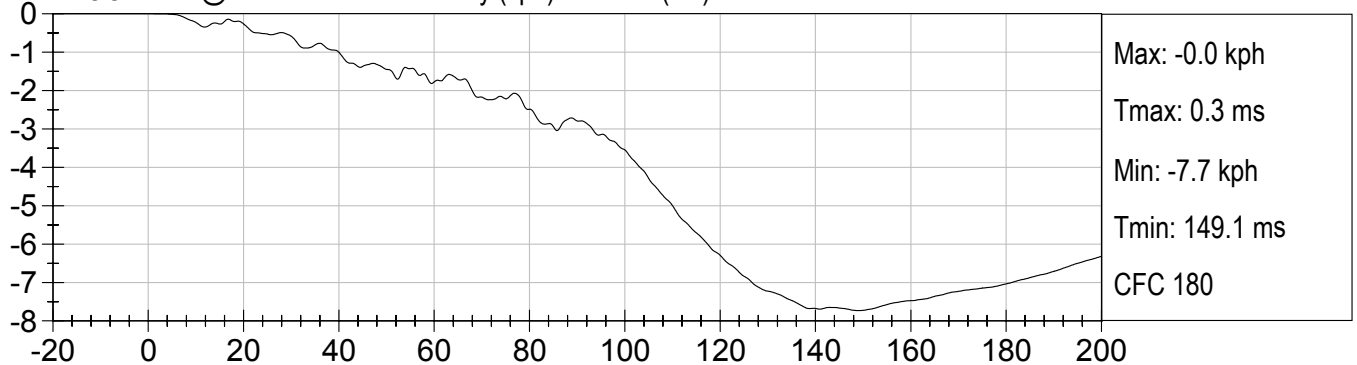


FLOORPAN @ REAR AXLE Resultant (G's) vs TIME (ms)

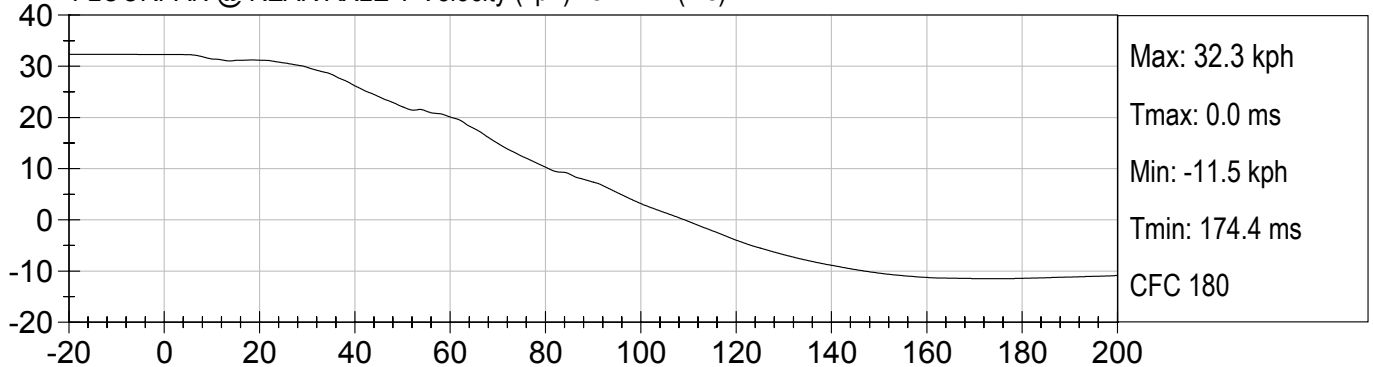




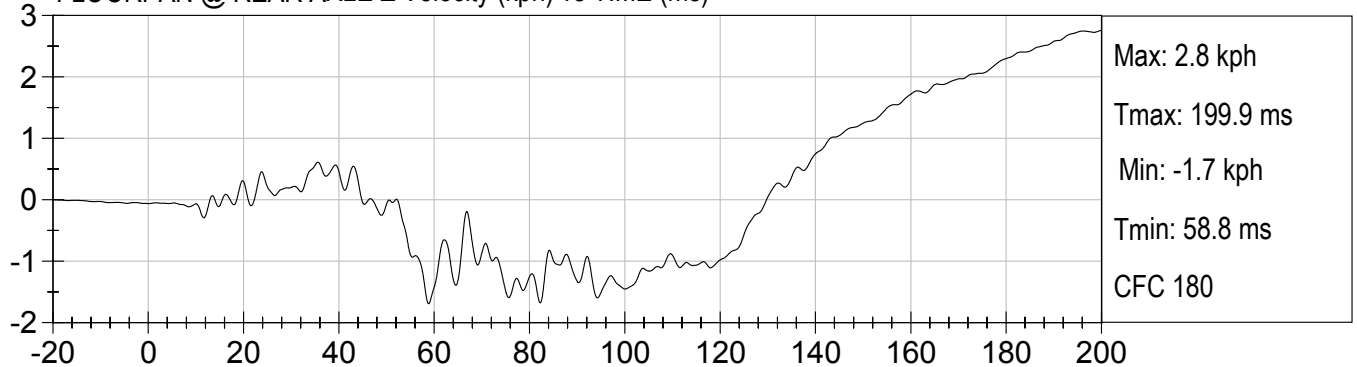
FLOORPAN @ REAR AXLE X Velocity (kph) vs TIME (ms)



FLOORPAN @ REAR AXLE Y Velocity (kph) vs TIME (ms)



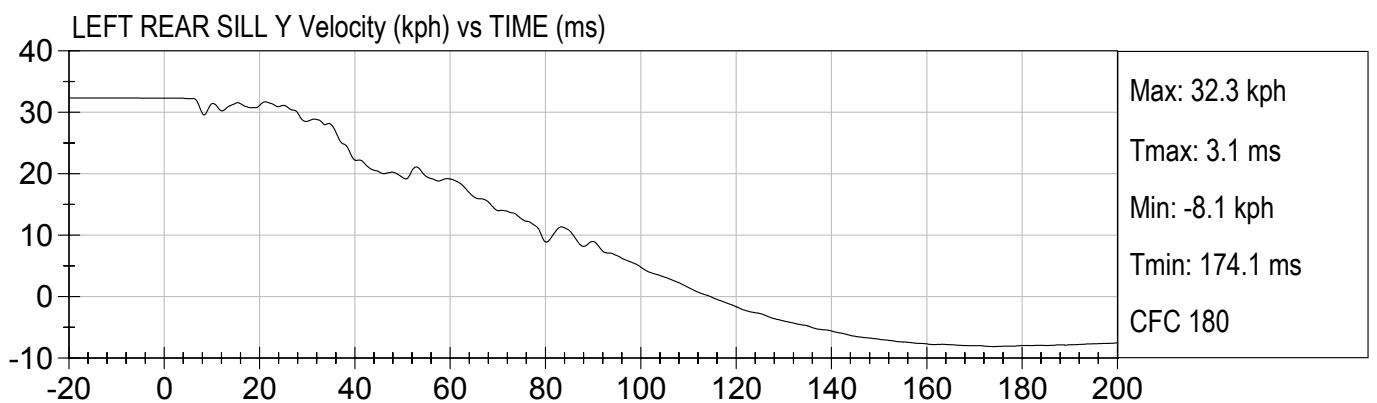
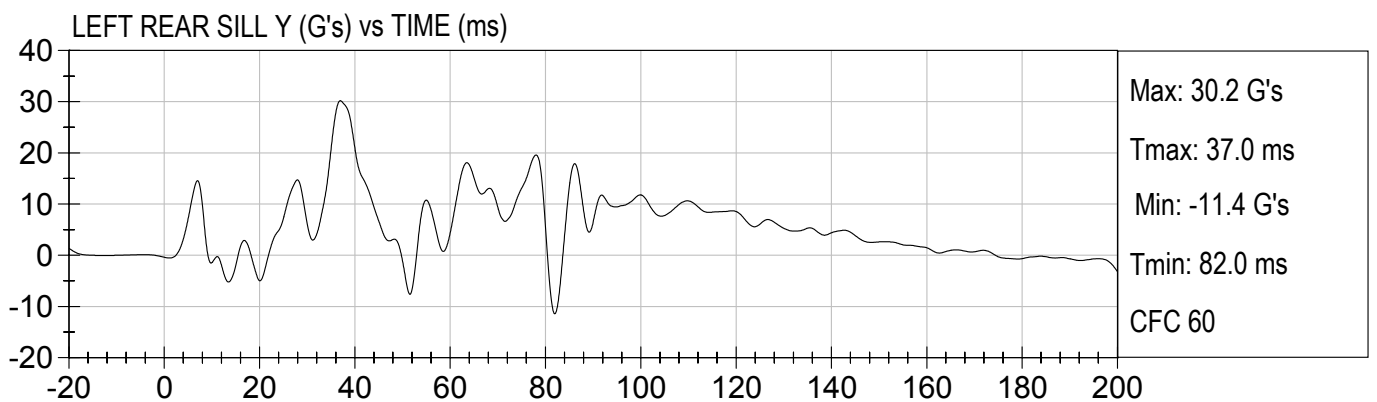
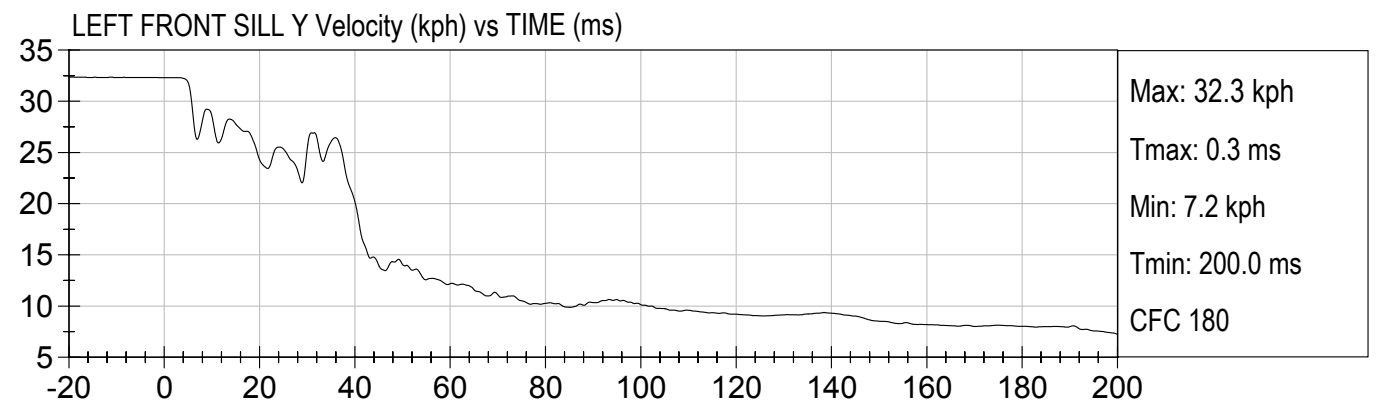
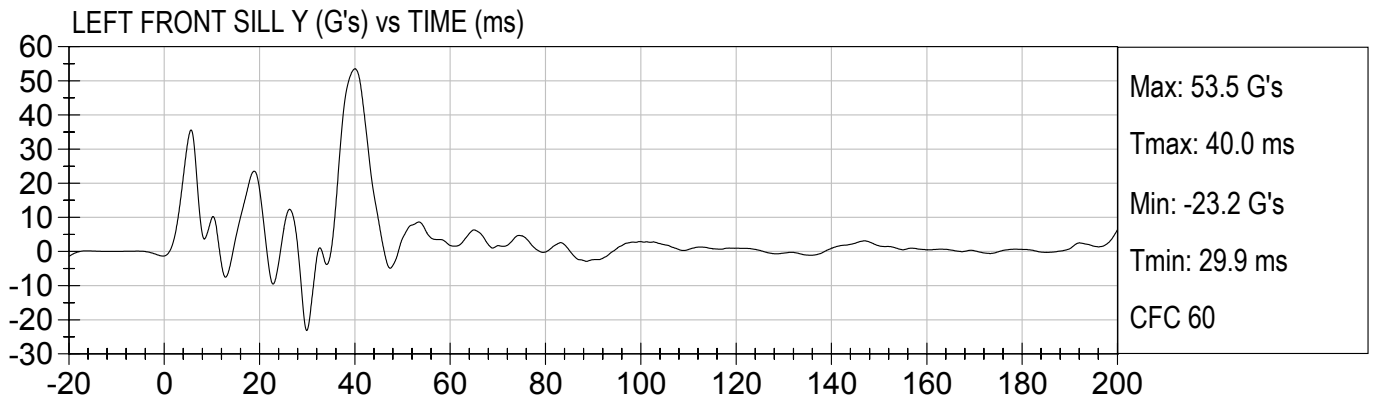
FLOORPAN @ REAR AXLE Z Velocity (kph) vs TIME (ms)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

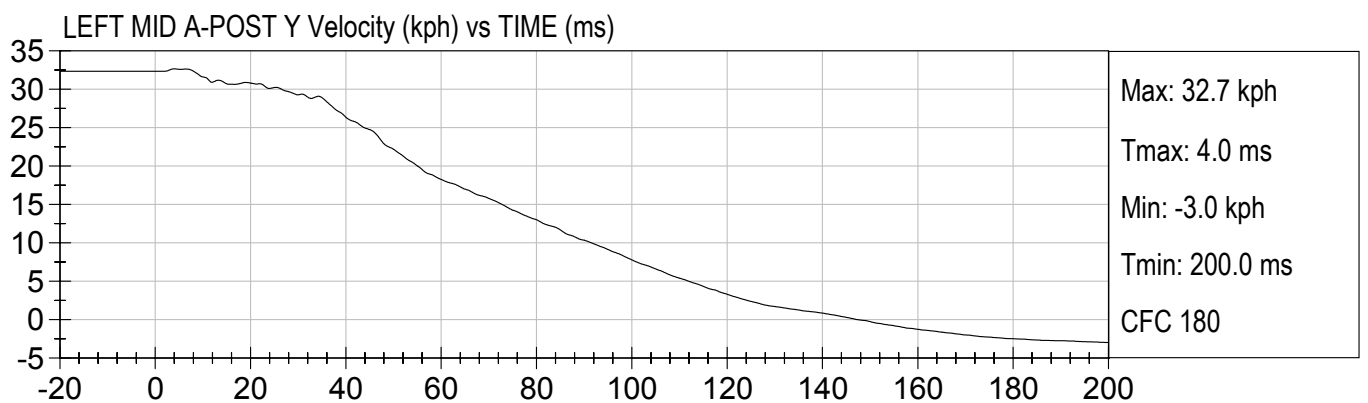
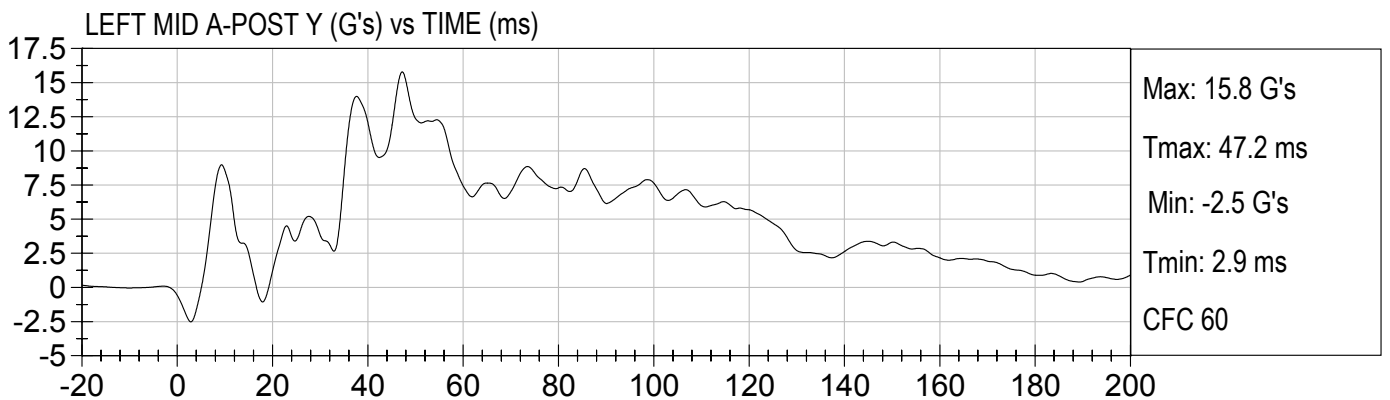
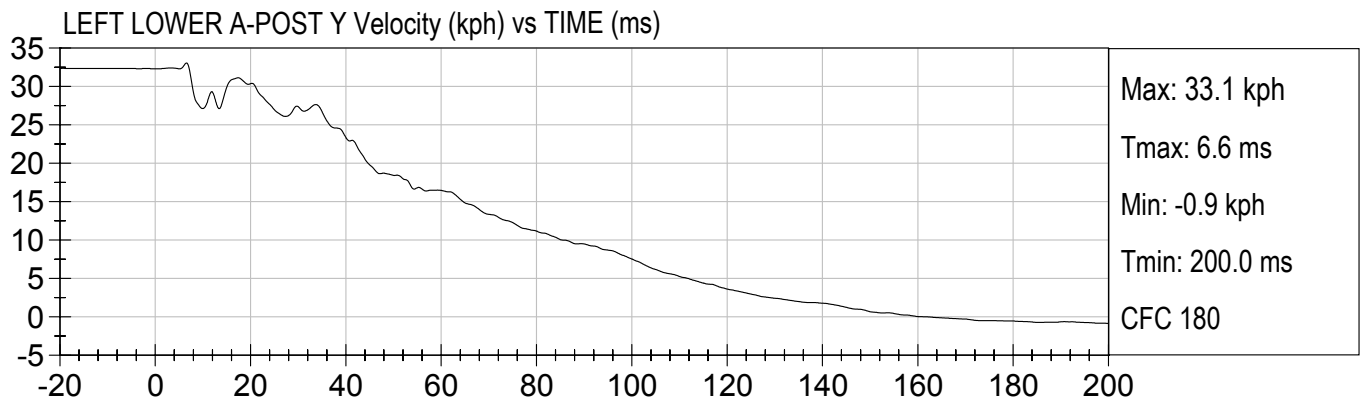
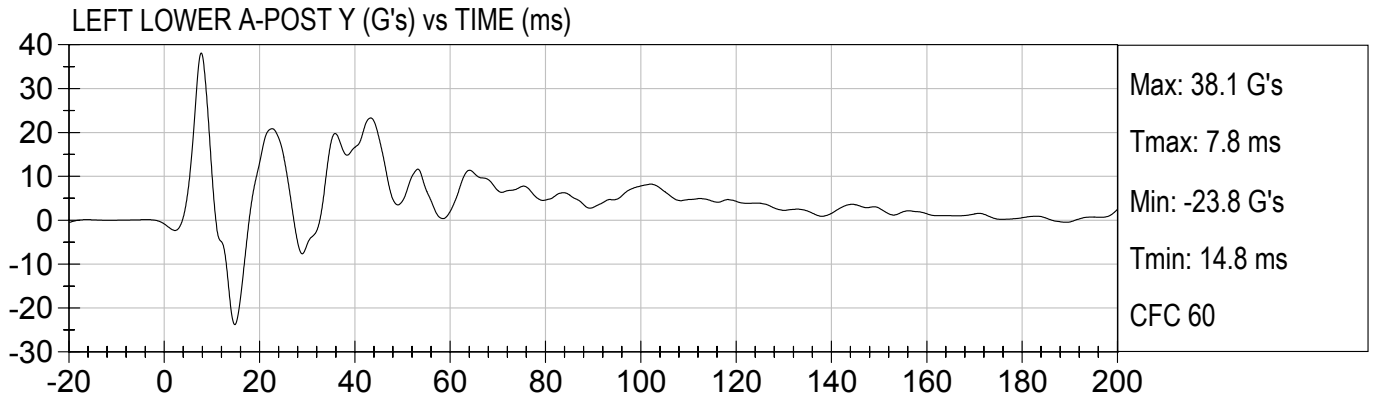
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

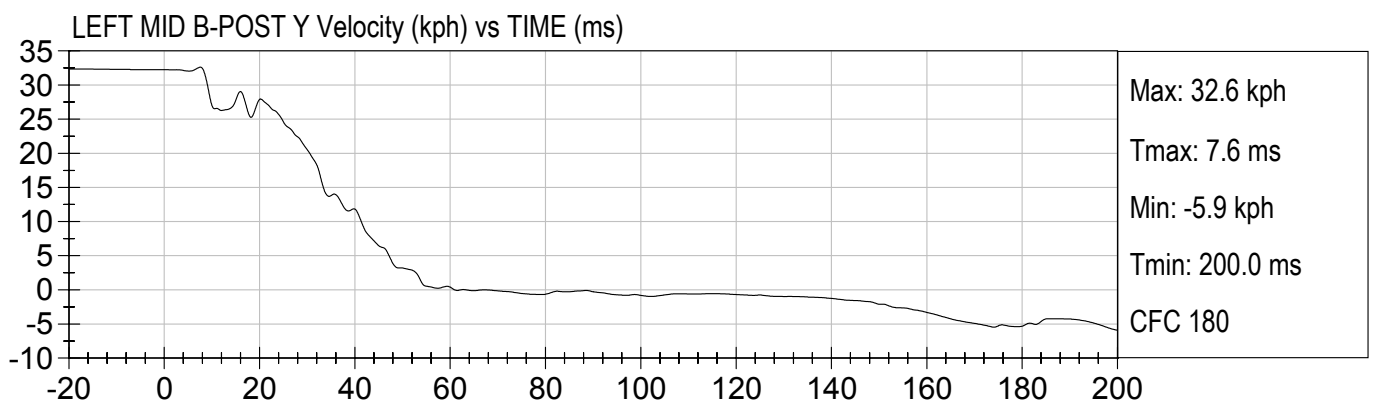
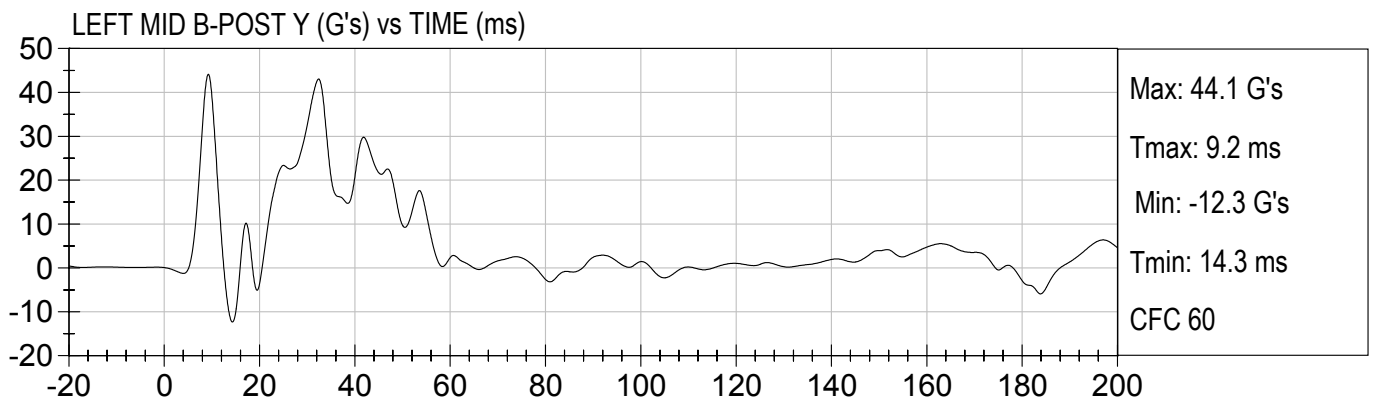
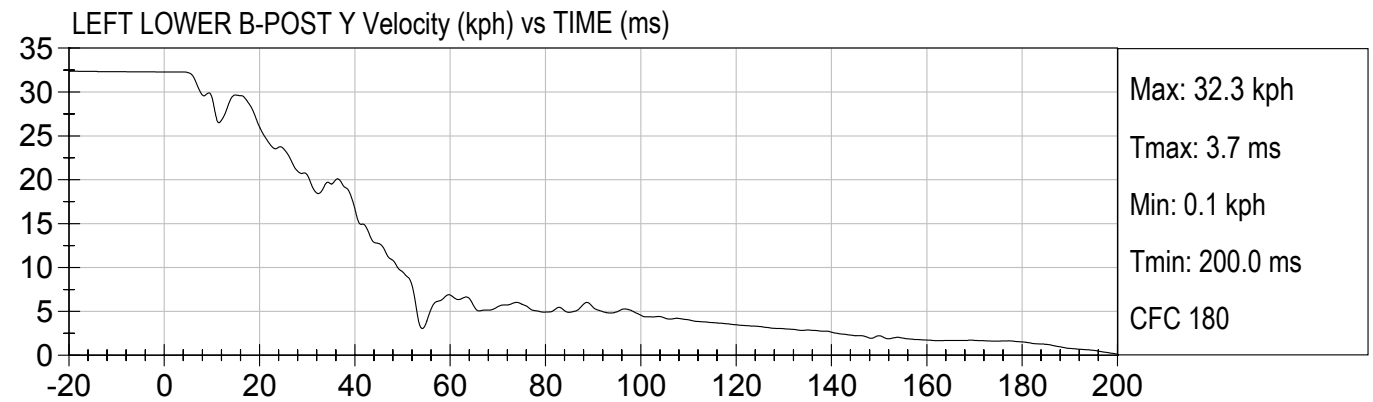
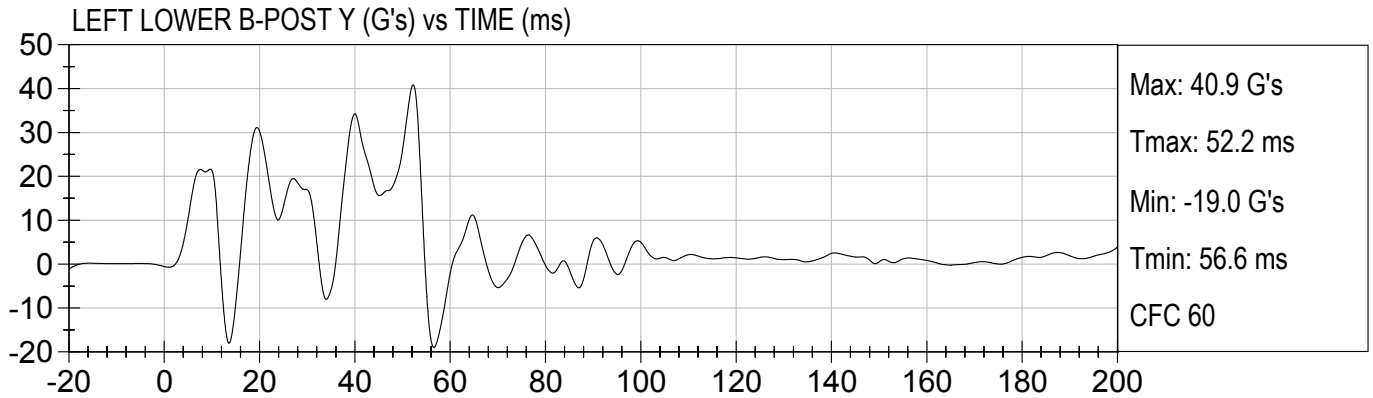
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

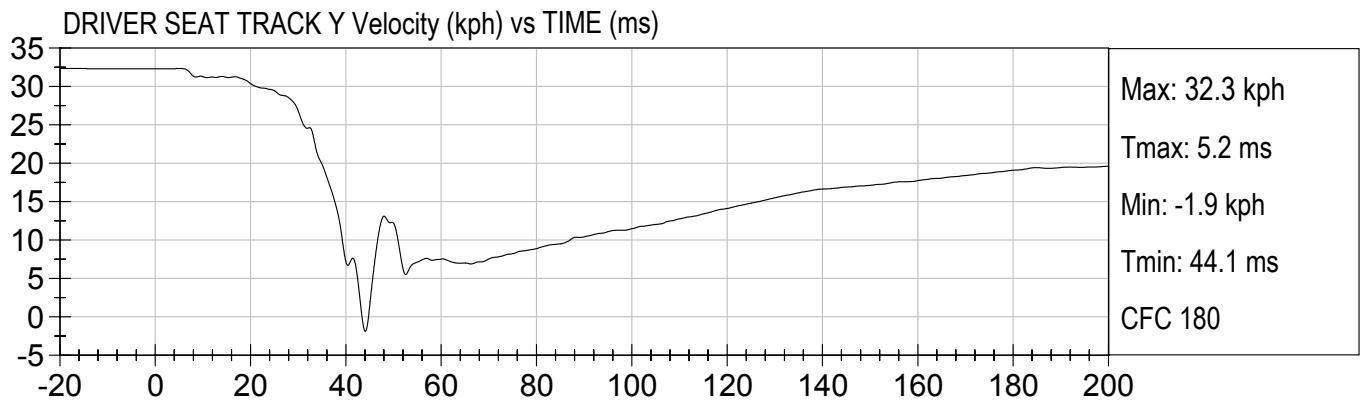
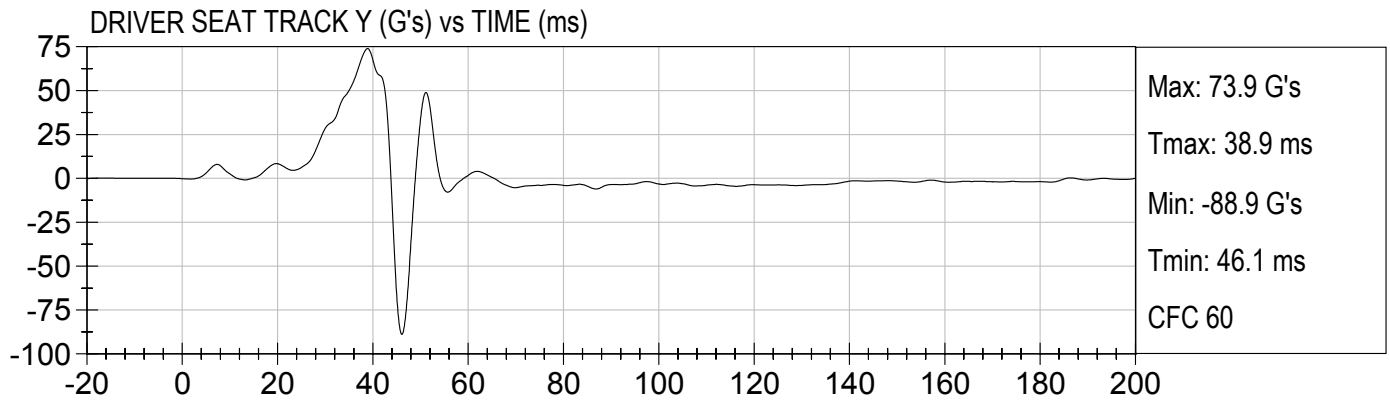
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

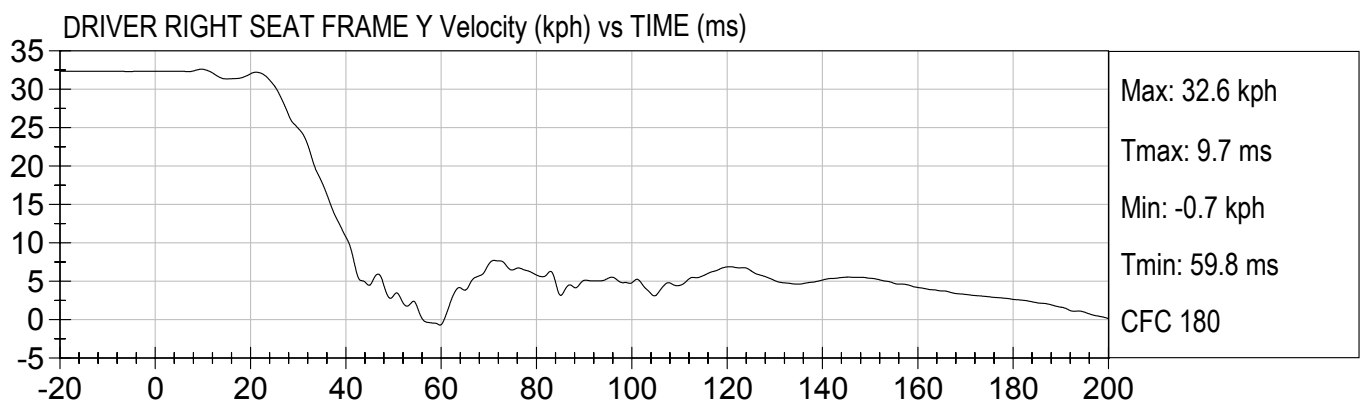
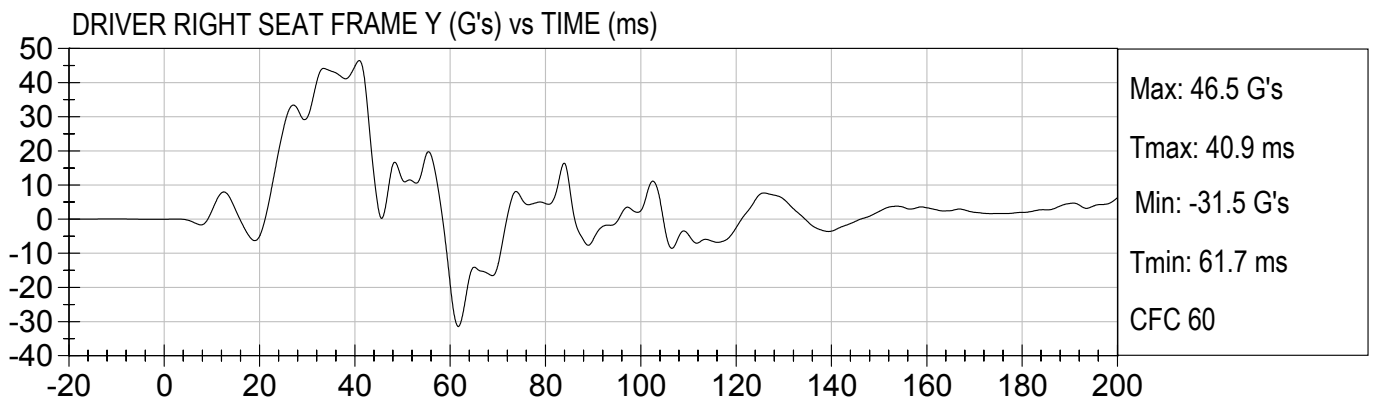
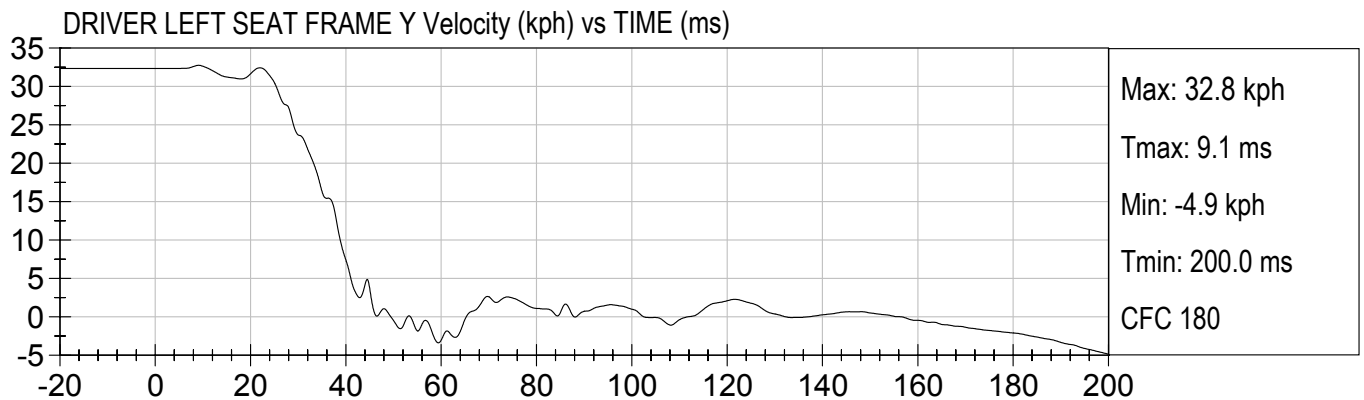
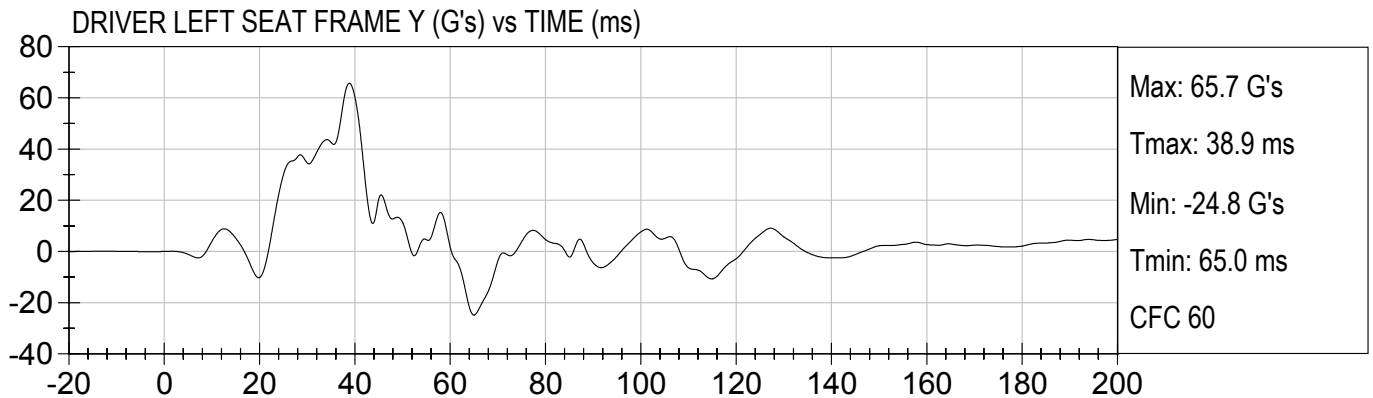
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

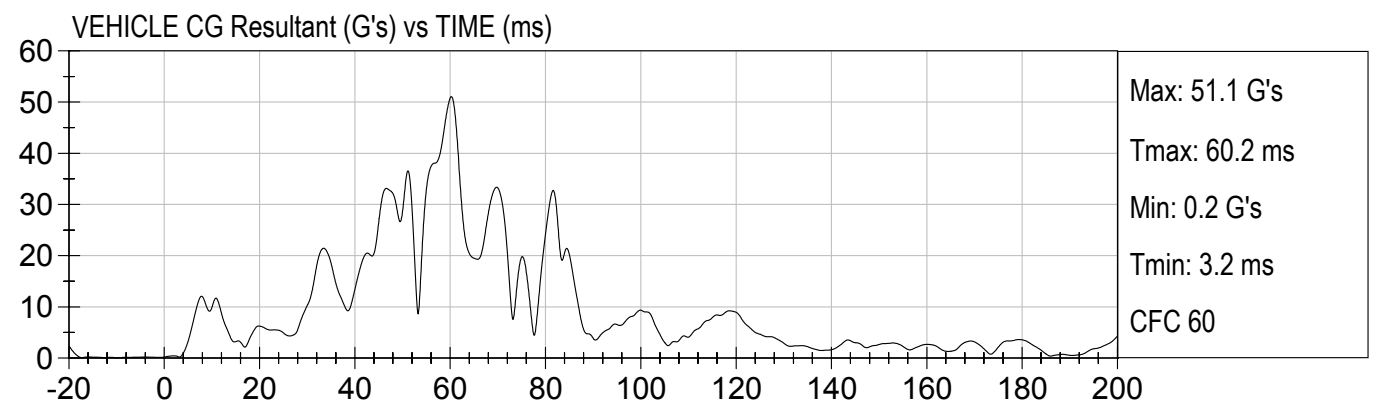
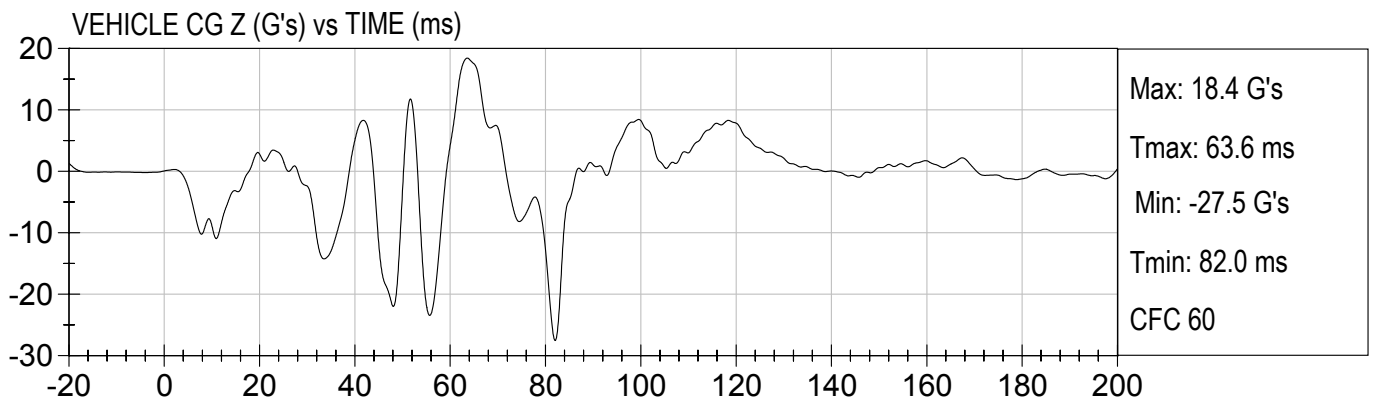
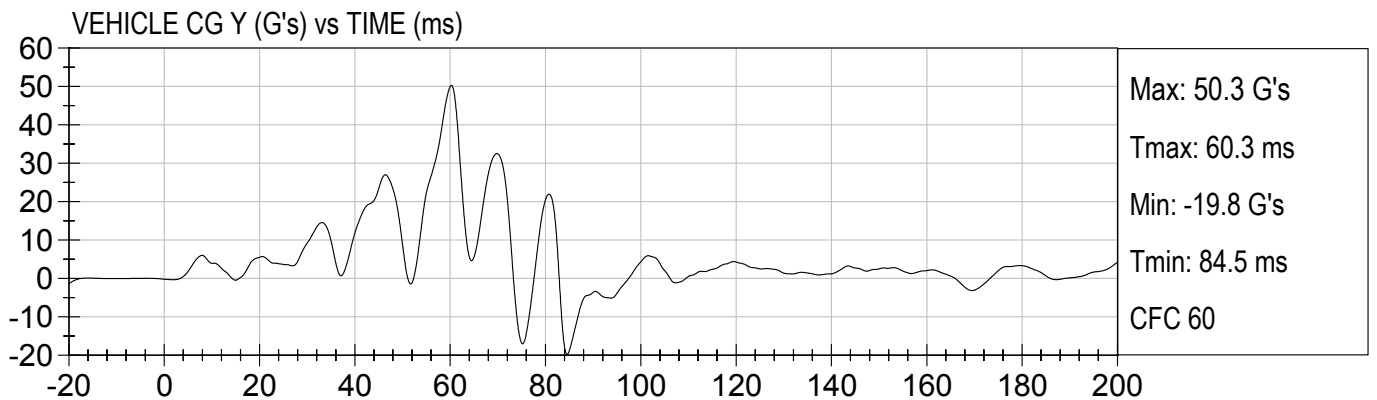
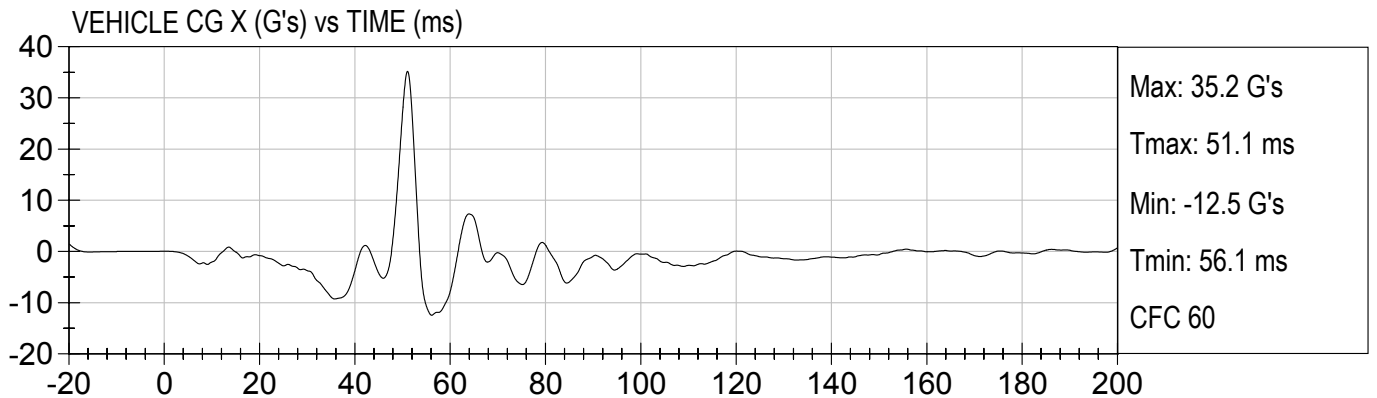
Test Date: 9/23/2002
Speed: 20.1 mph (32.3 km/h)





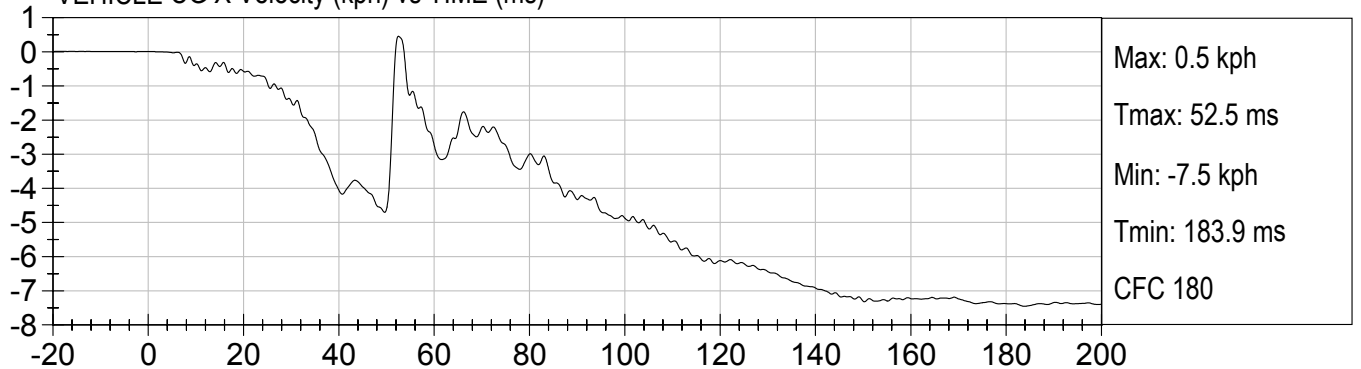
20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

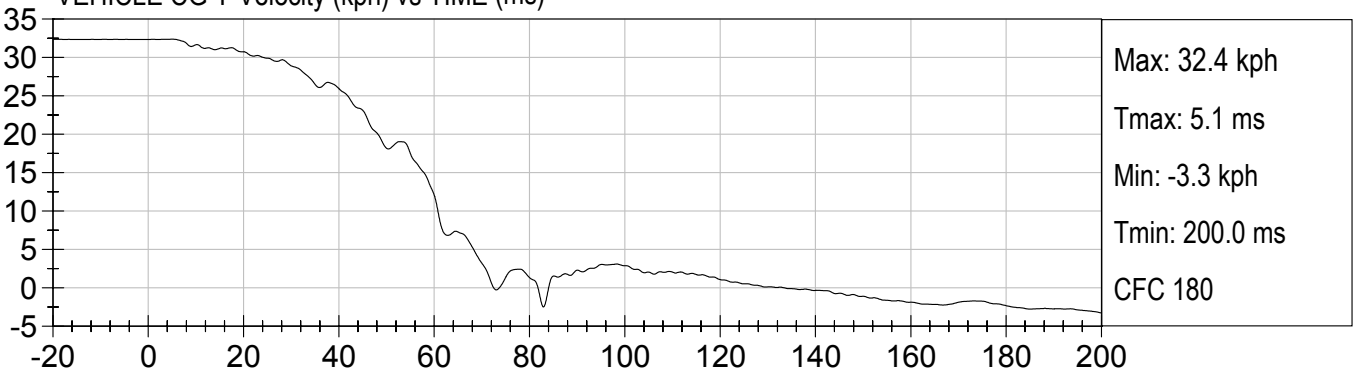




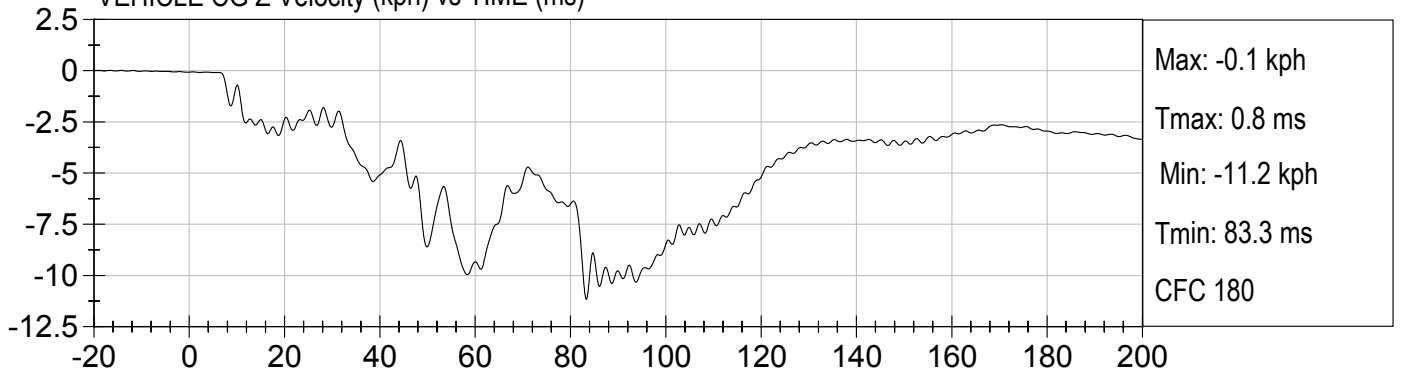
VEHICLE CG X Velocity (kph) vs TIME (ms)



VEHICLE CG Y Velocity (kph) vs TIME (ms)



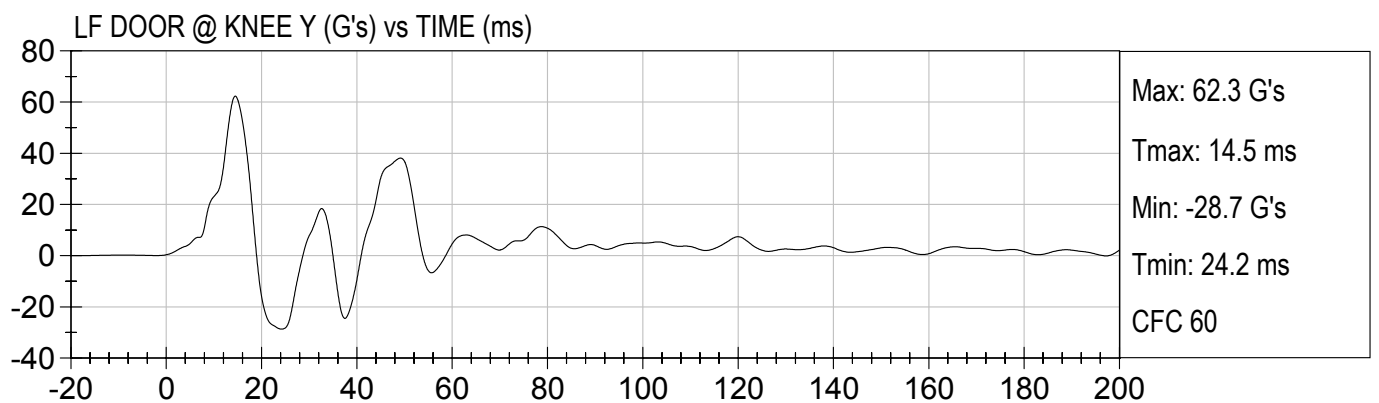
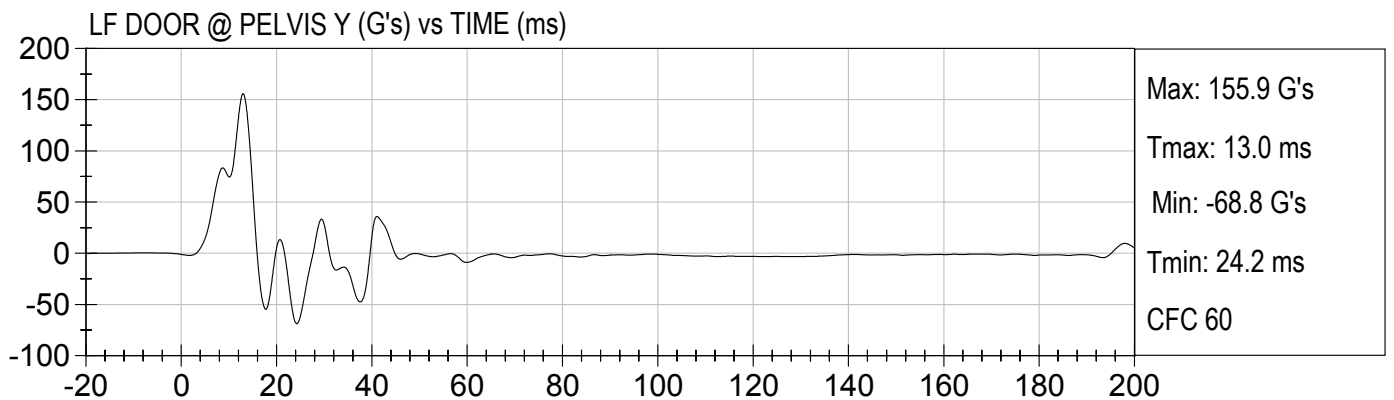
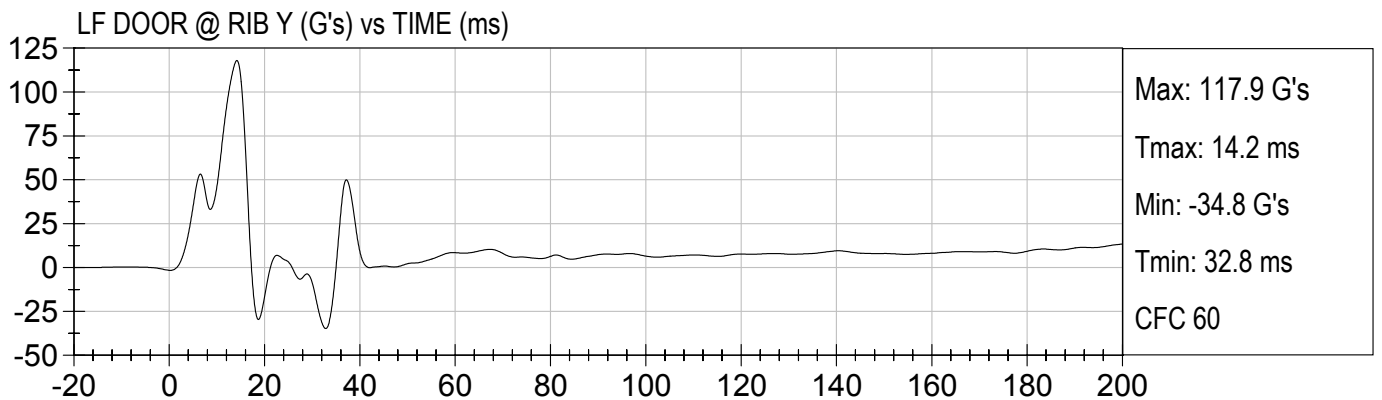
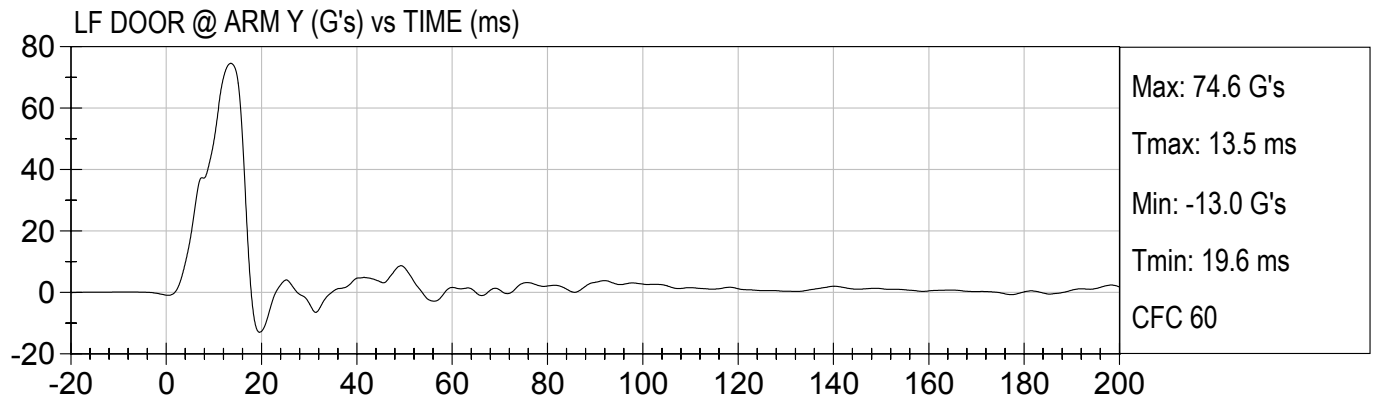
VEHICLE CG Z Velocity (kph) vs TIME (ms)





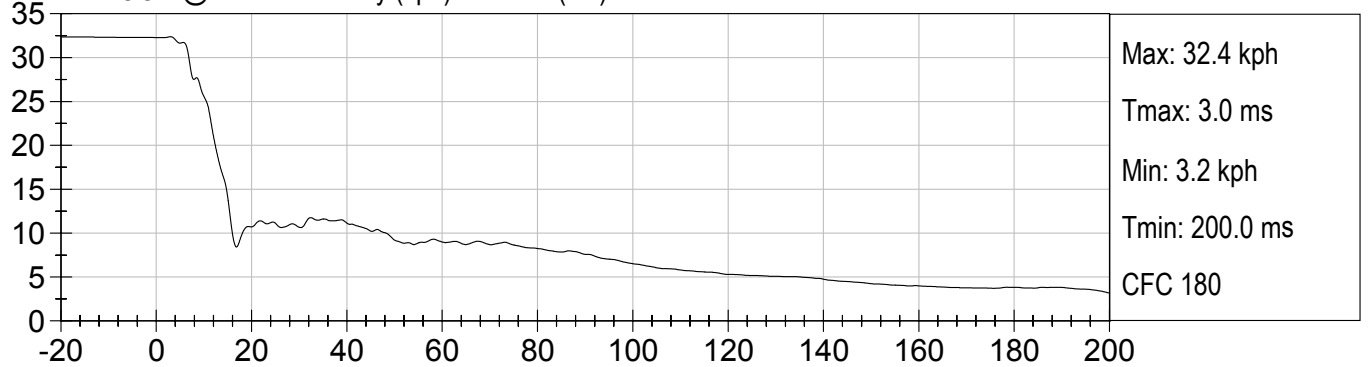
20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

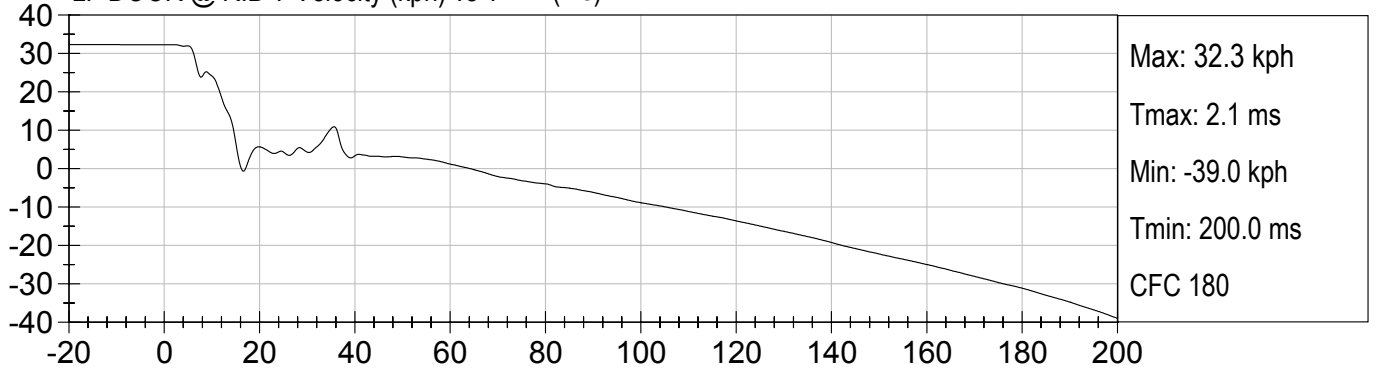




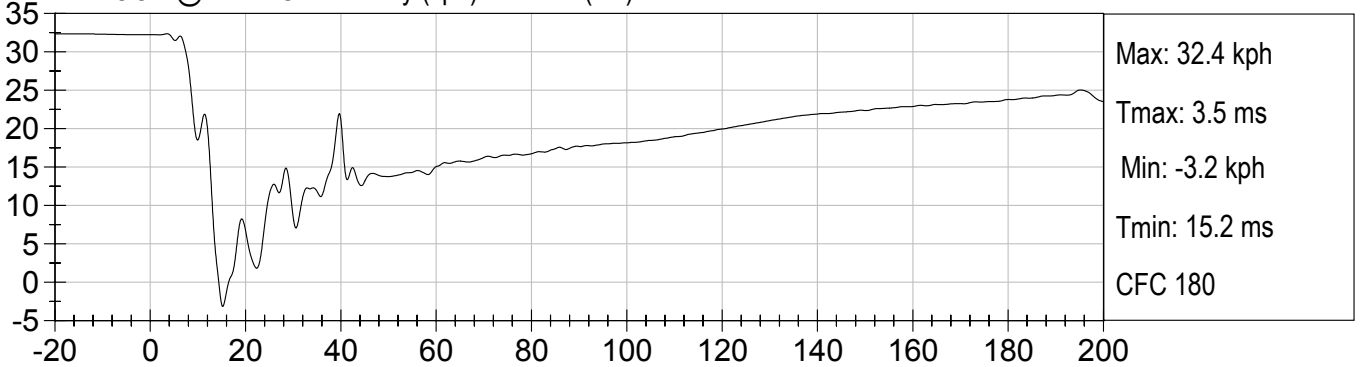
LF DOOR @ ARM Y Velocity (kph) vs TIME (ms)



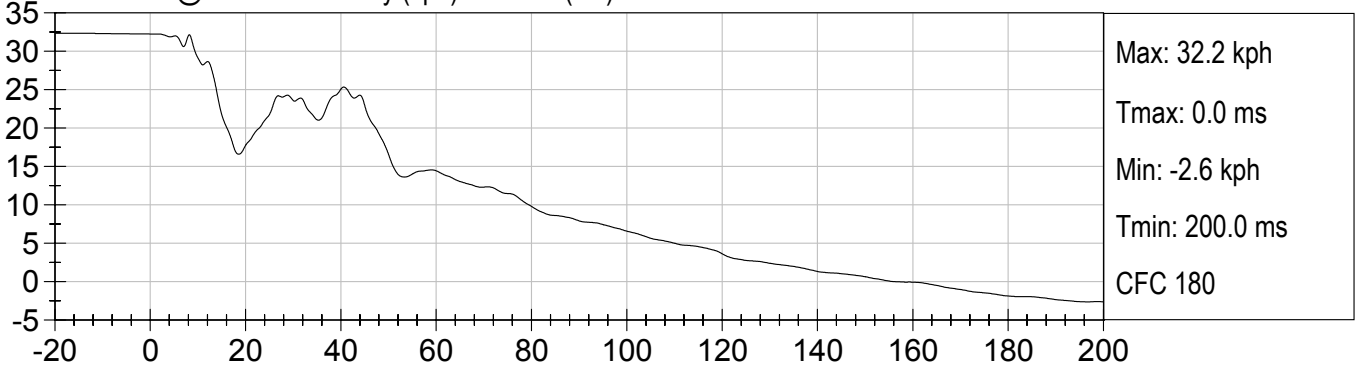
LF DOOR @ RIB Y Velocity (kph) vs TIME (ms)



LF DOOR @ PELVIS Y Velocity (kph) vs TIME (ms)



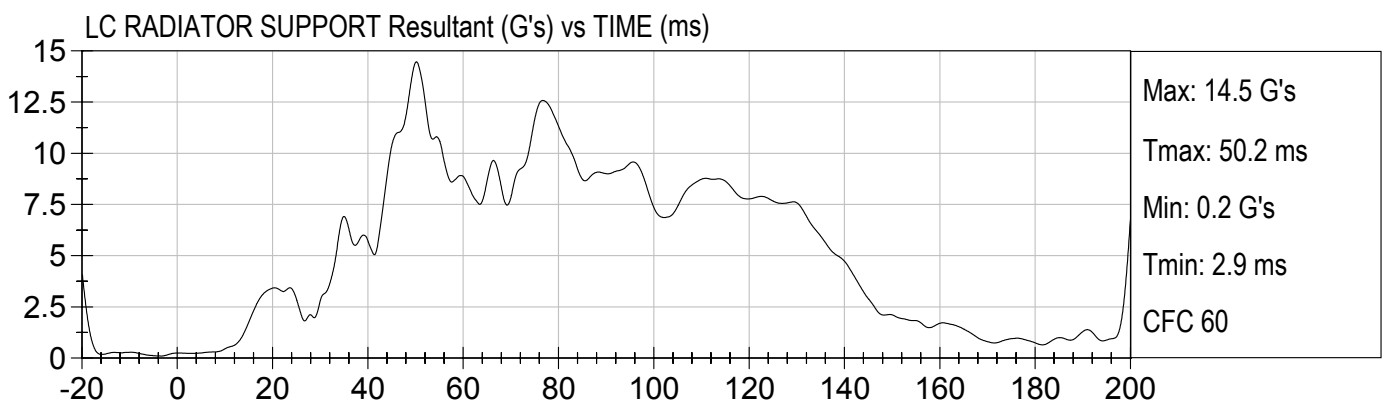
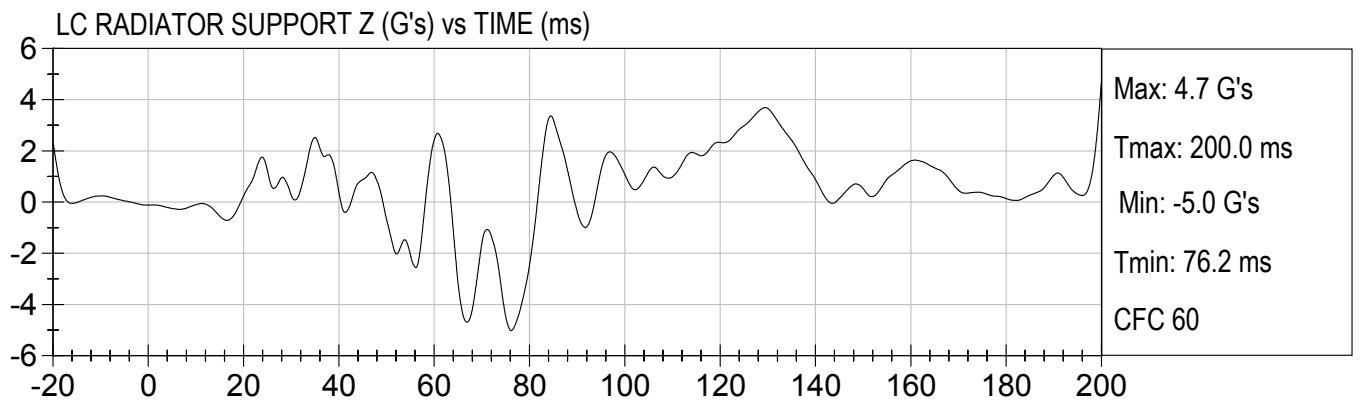
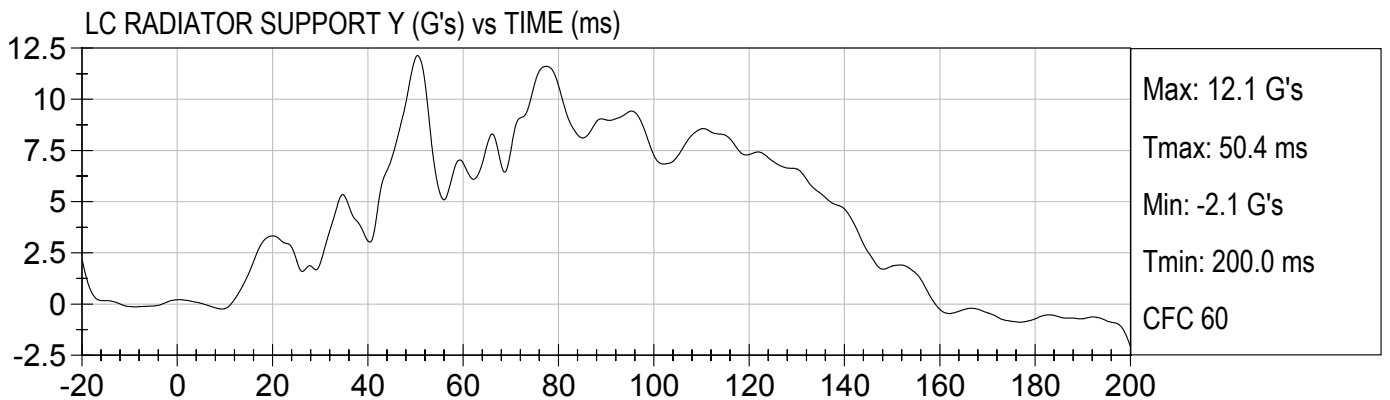
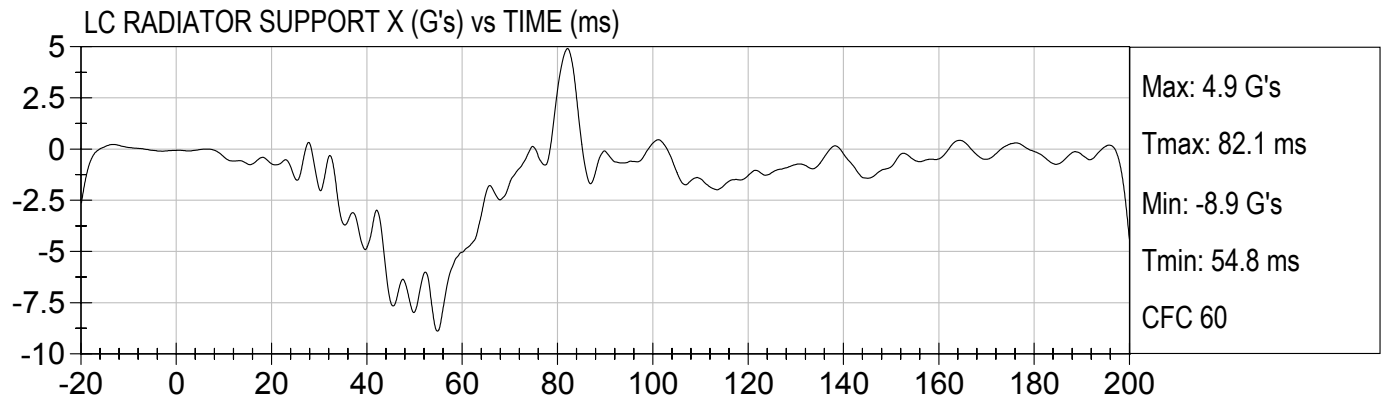
LF DOOR @ KNEE Y Velocity (kph) vs TIME (ms)

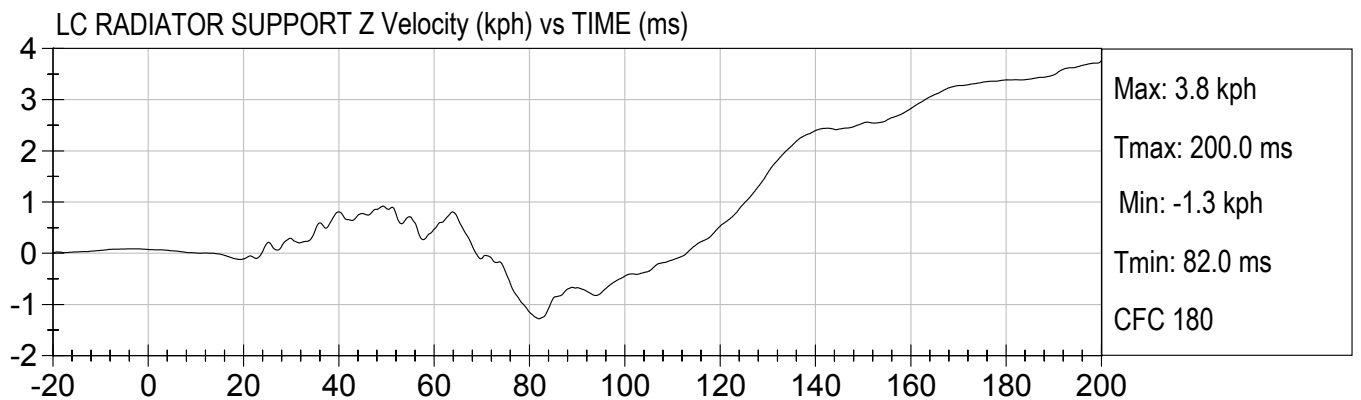
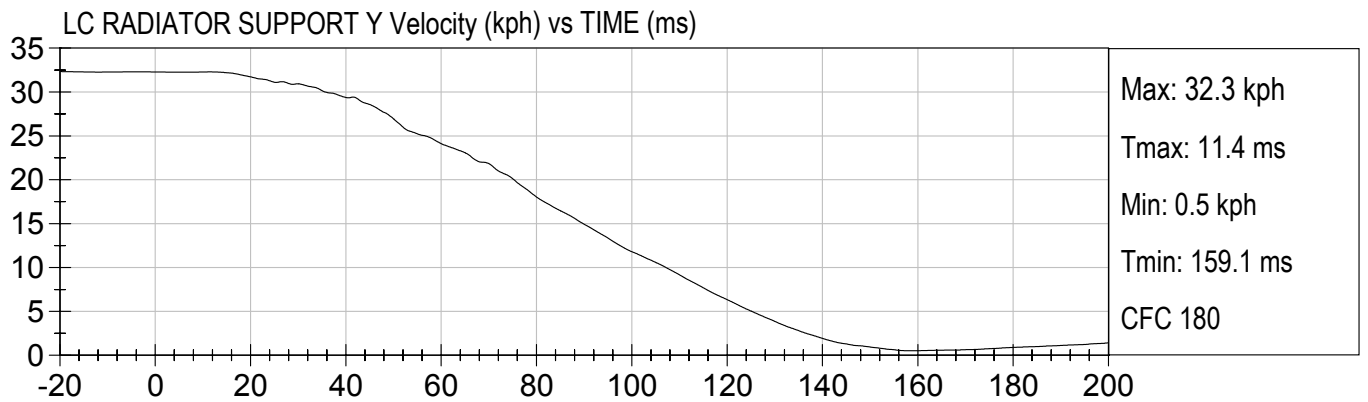
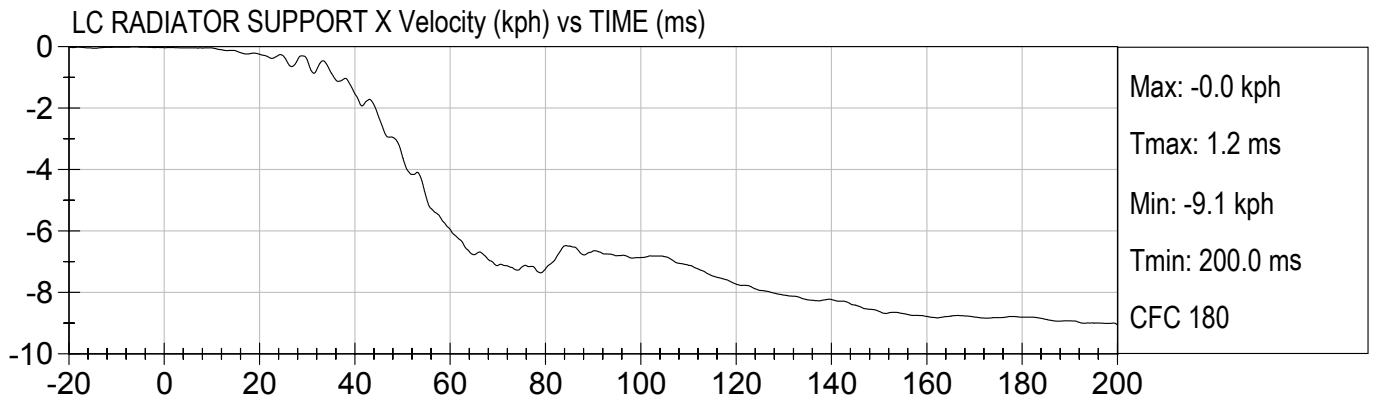




20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

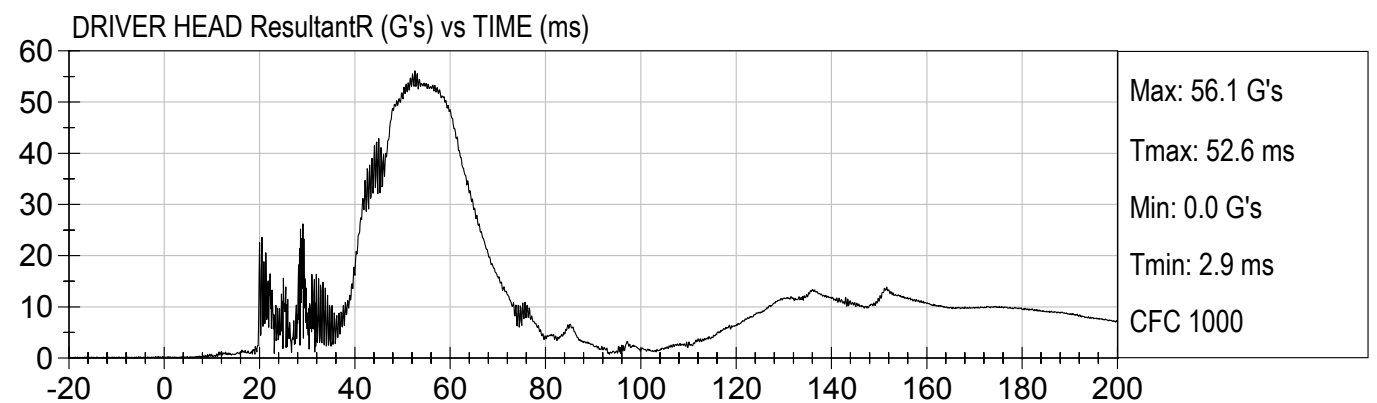
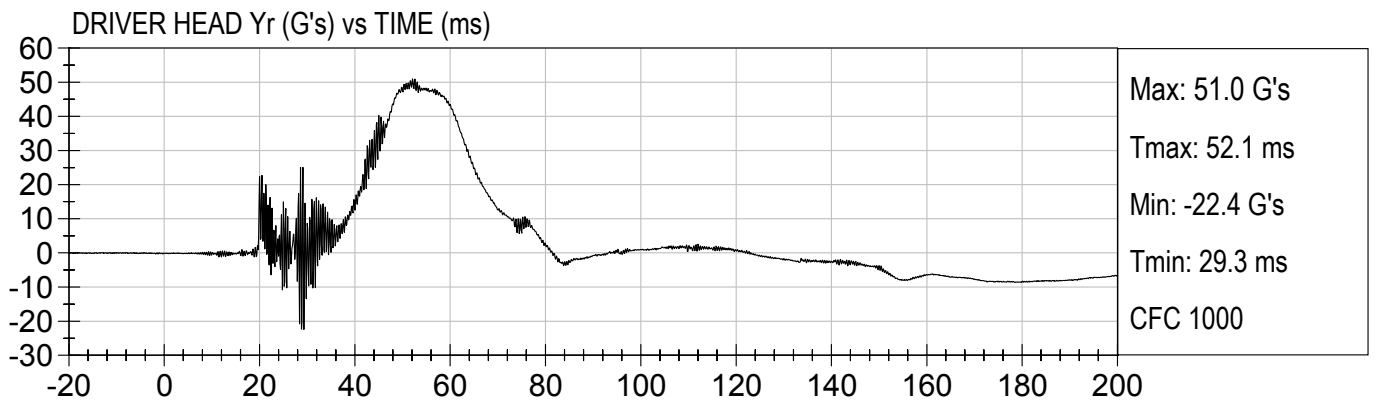
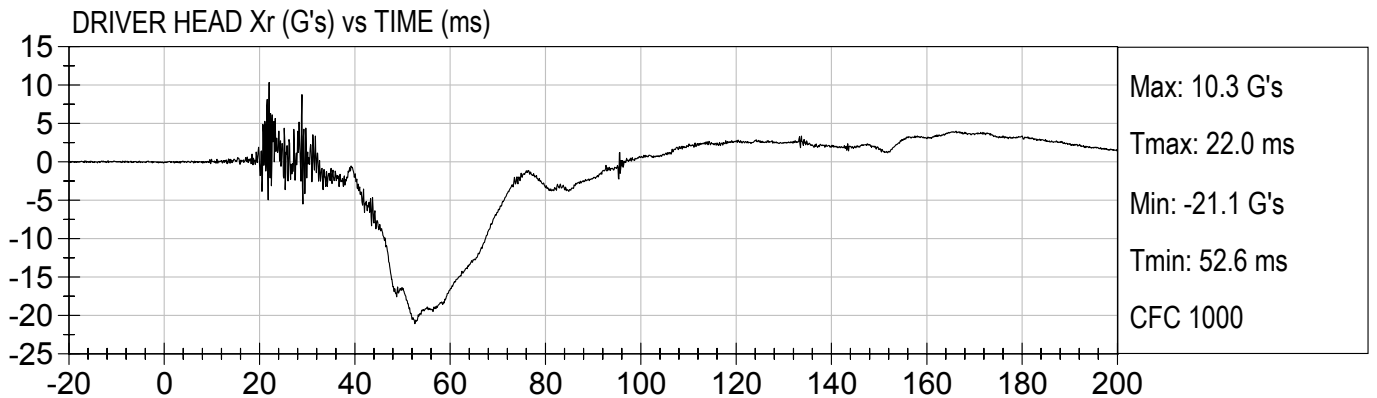


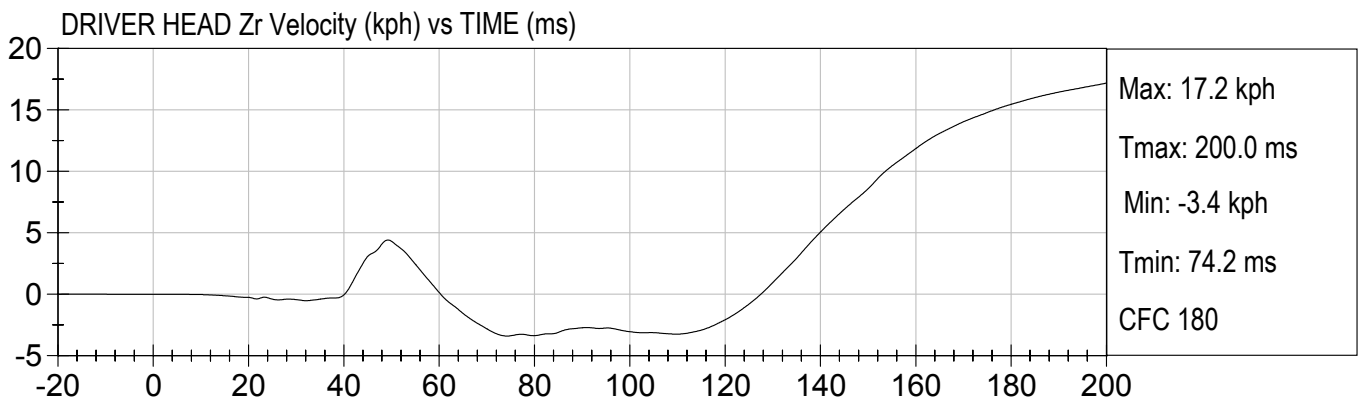
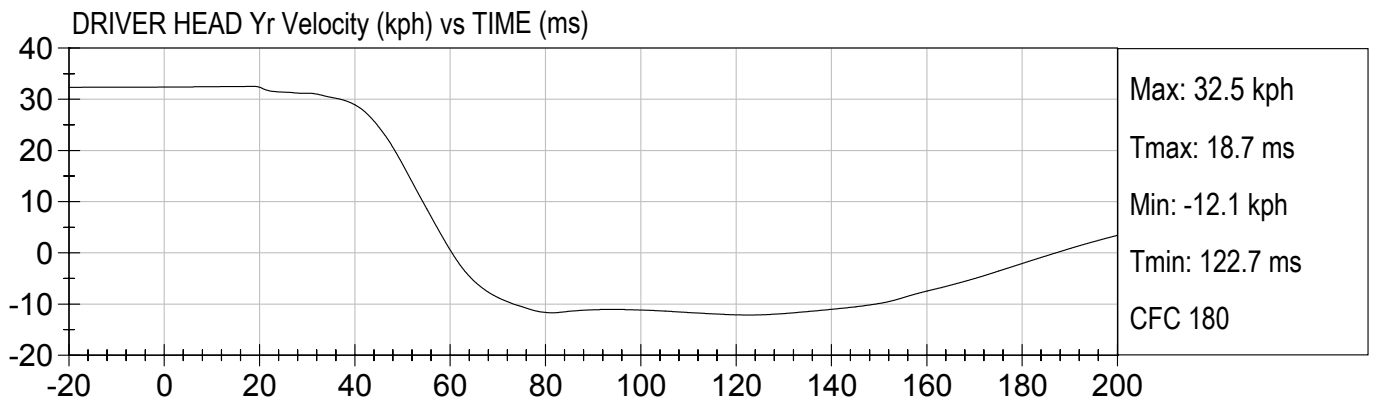
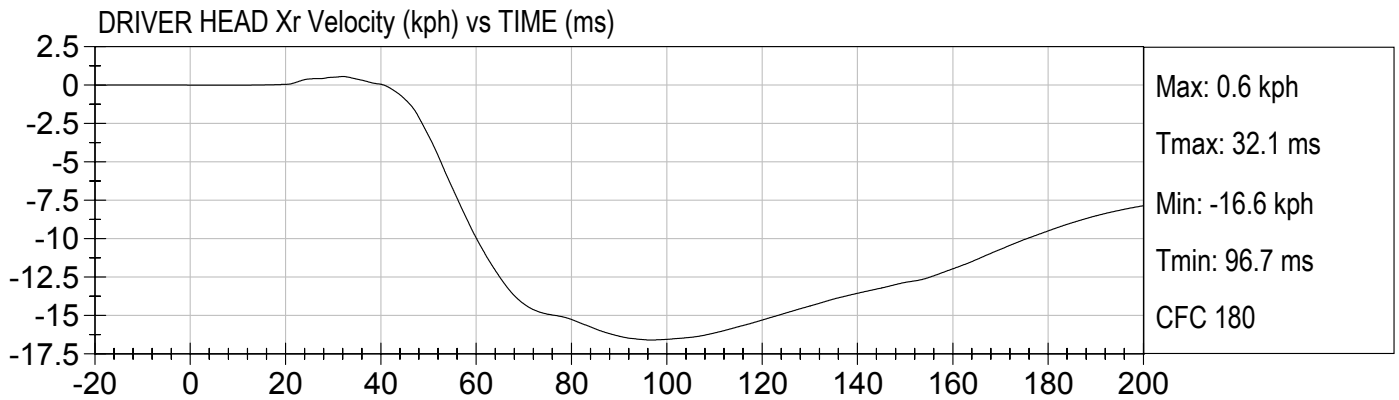




20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

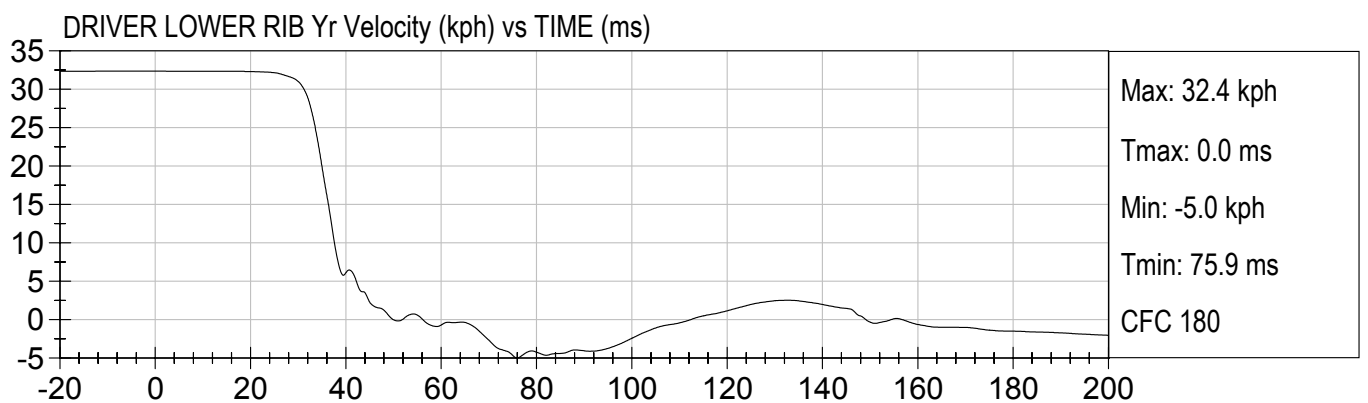
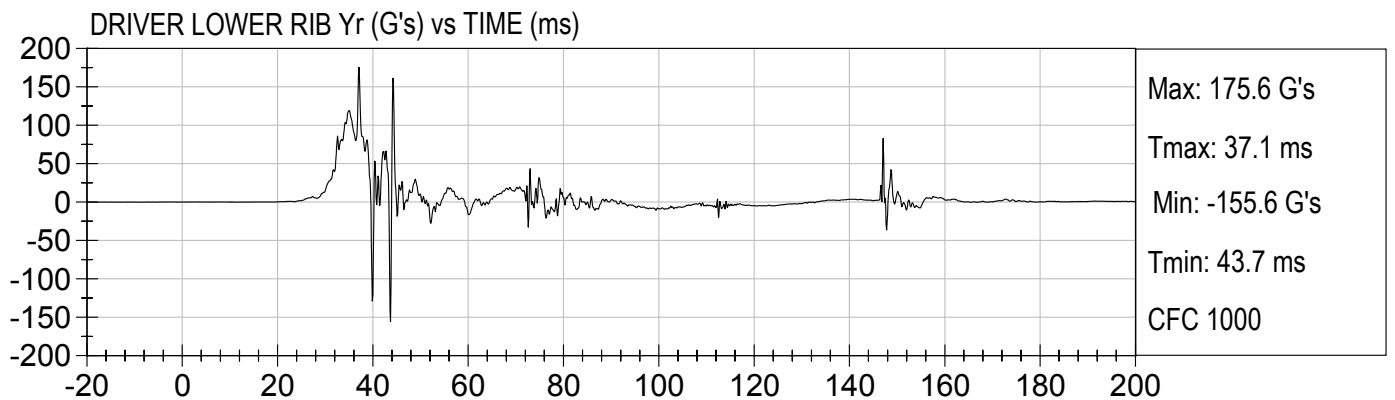
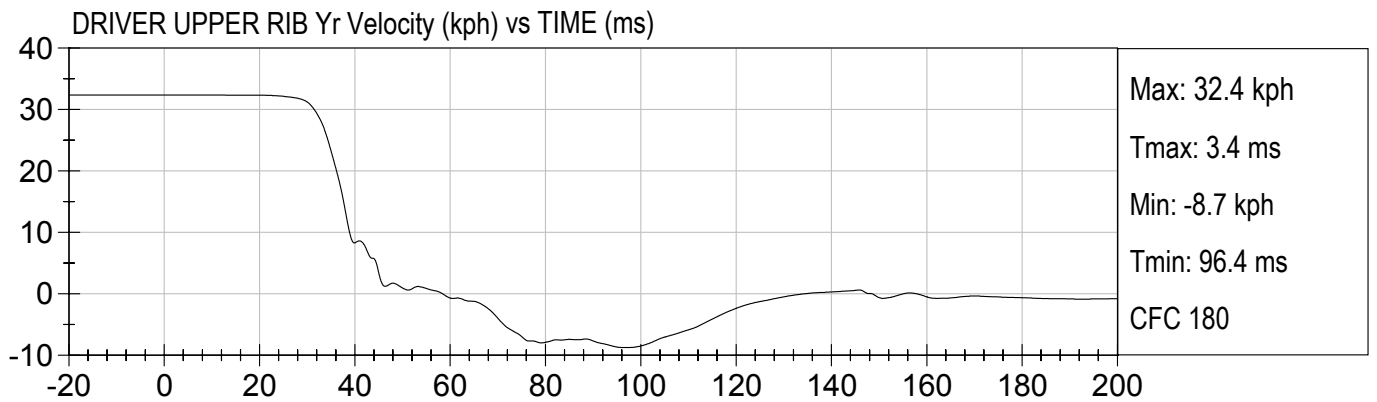
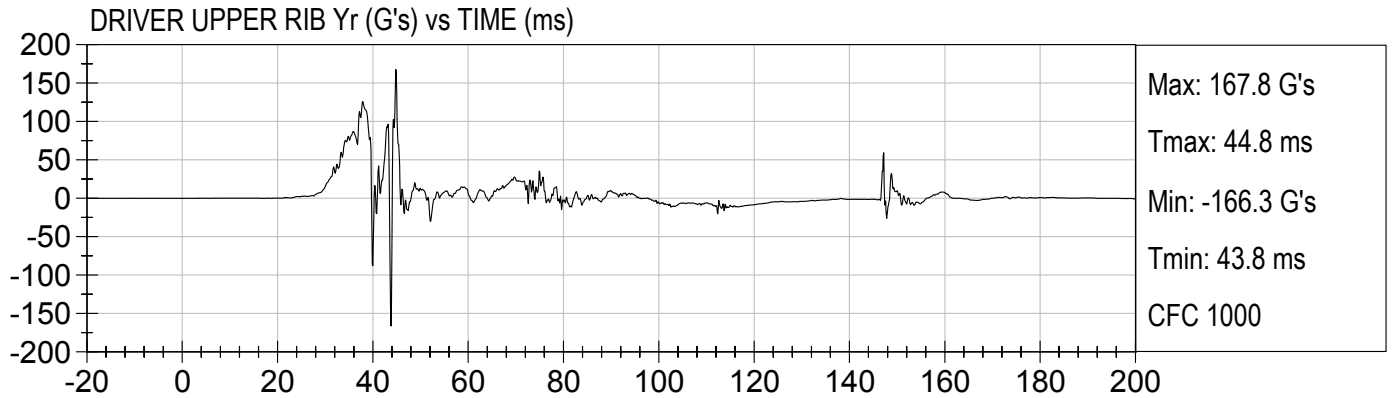






20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

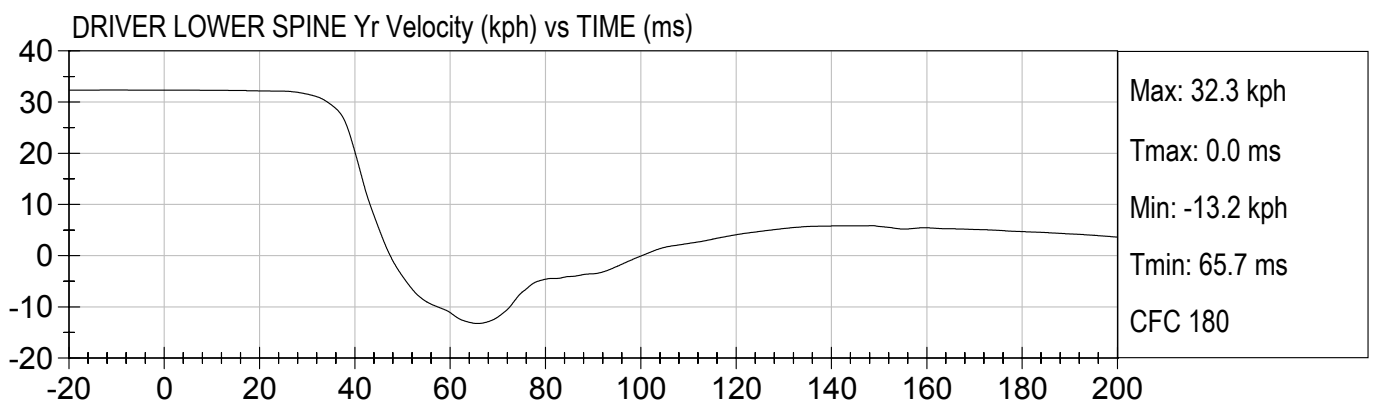
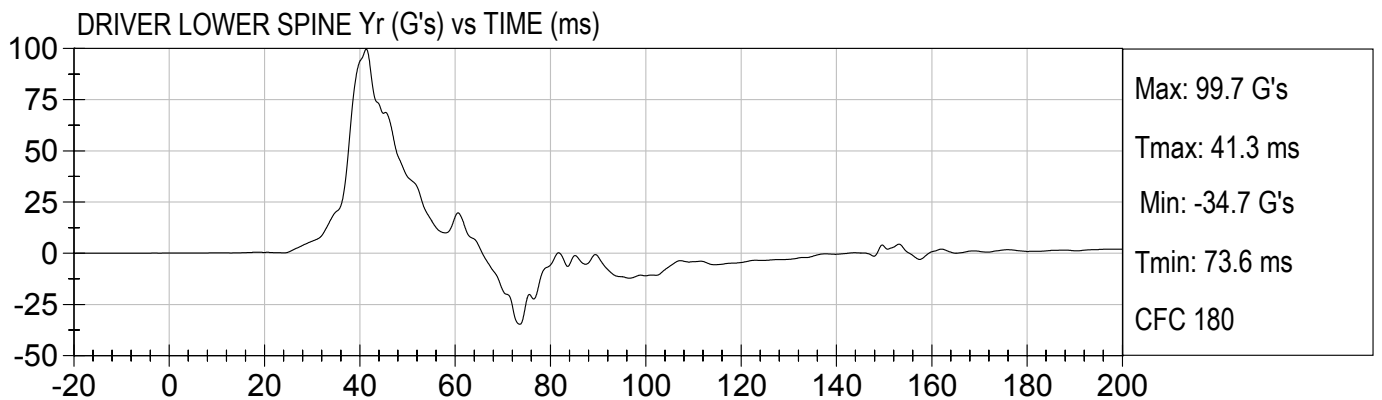
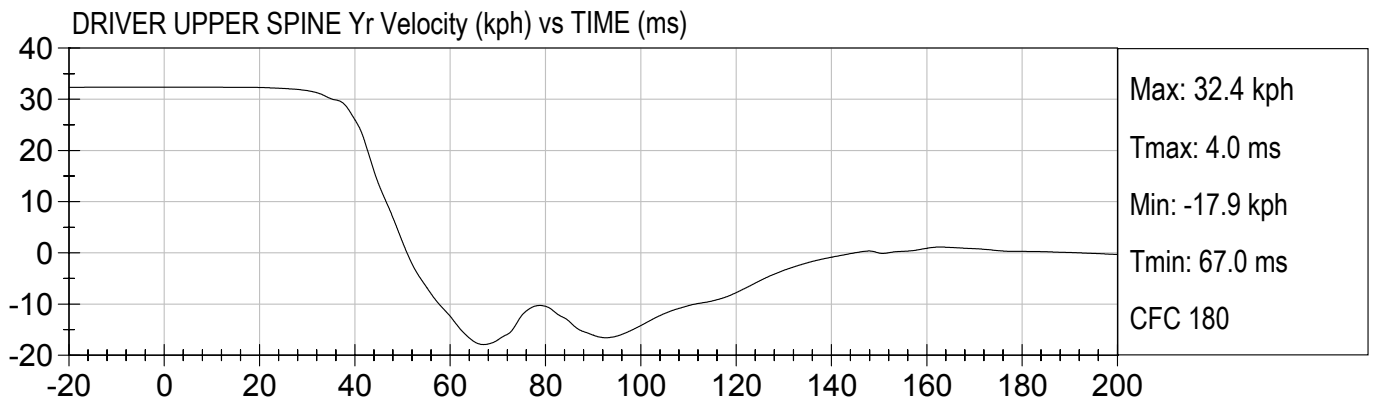
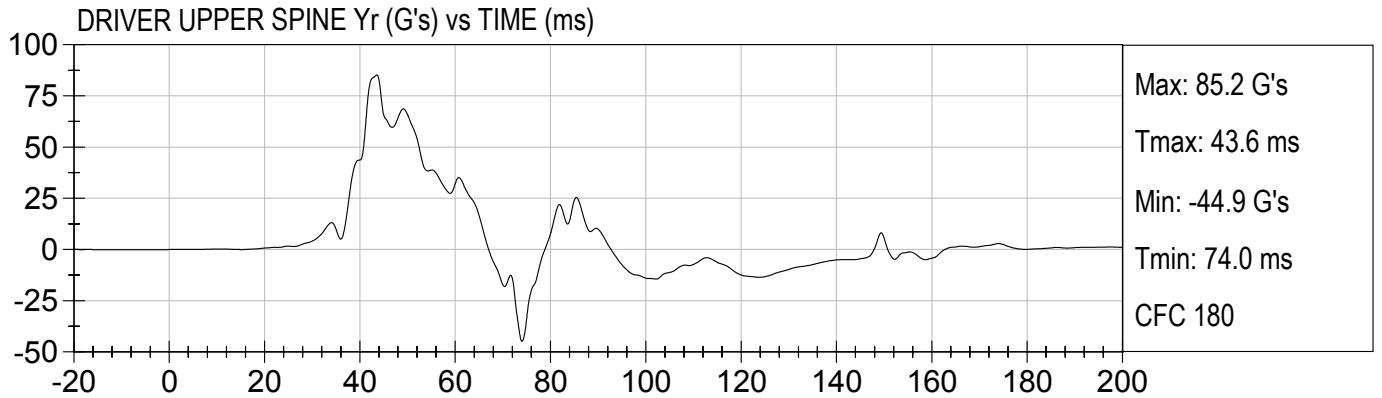
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

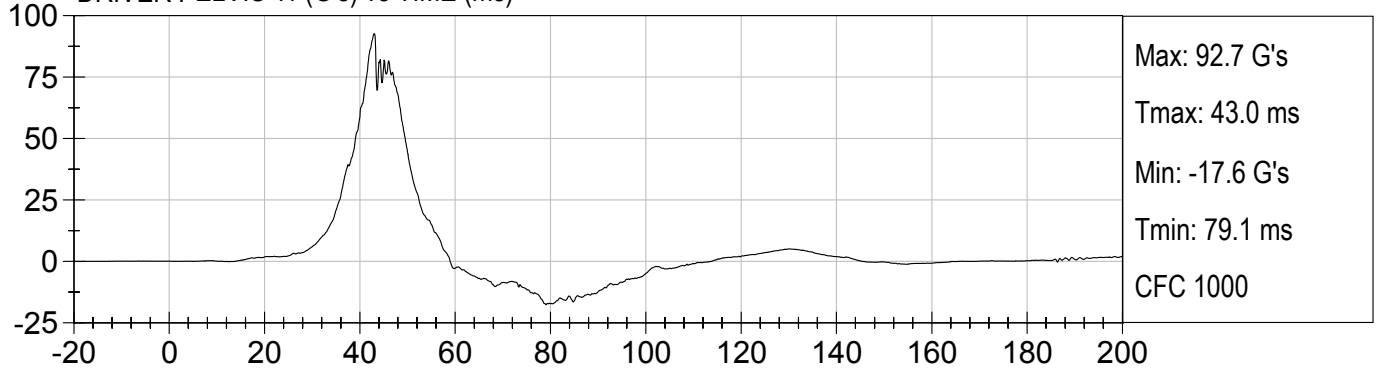




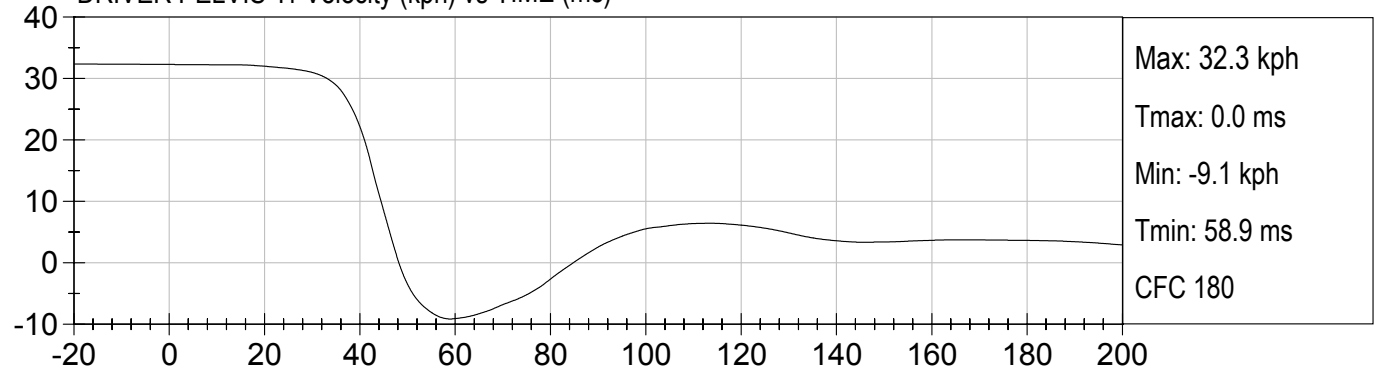
20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

DRIVER PELVIS Yr (G's) vs TIME (ms)



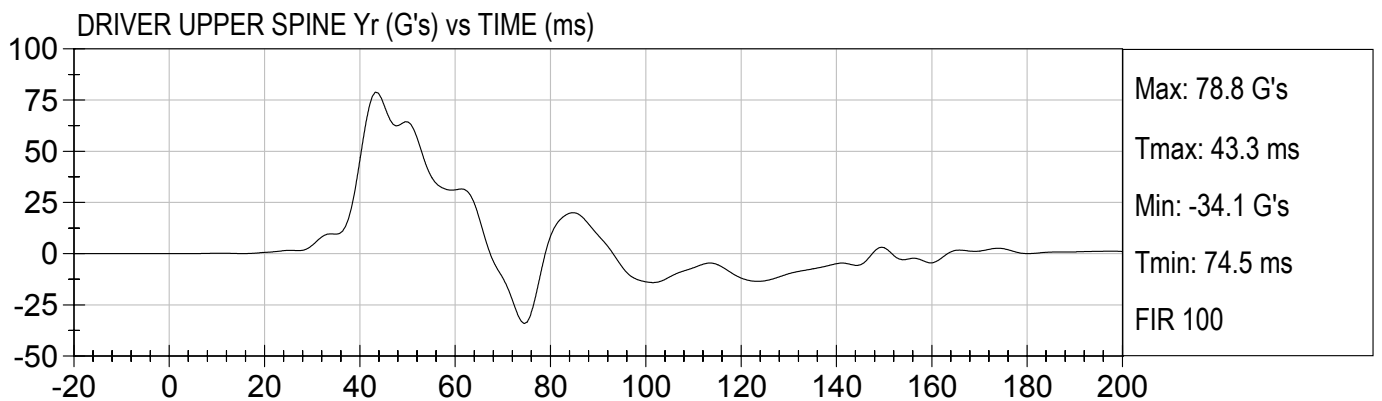
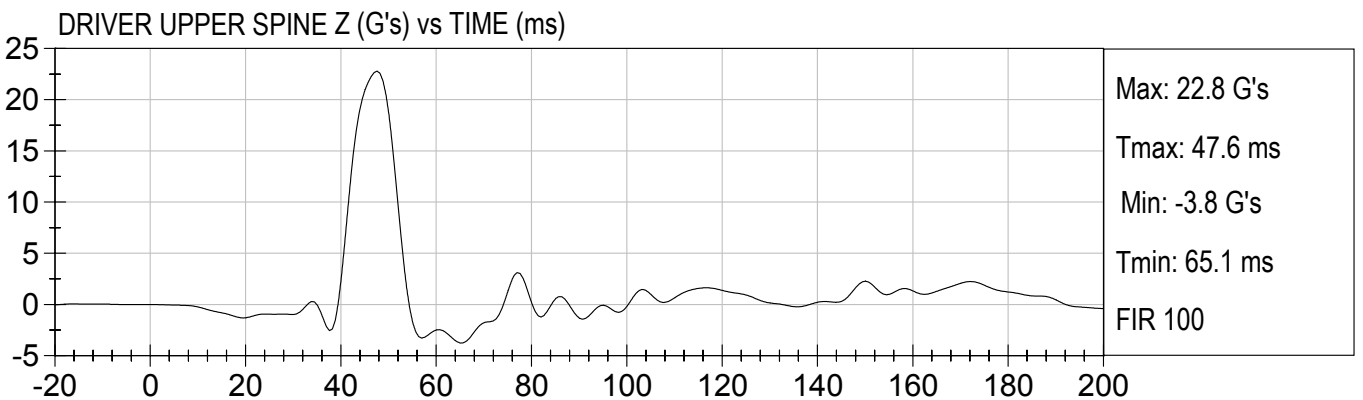
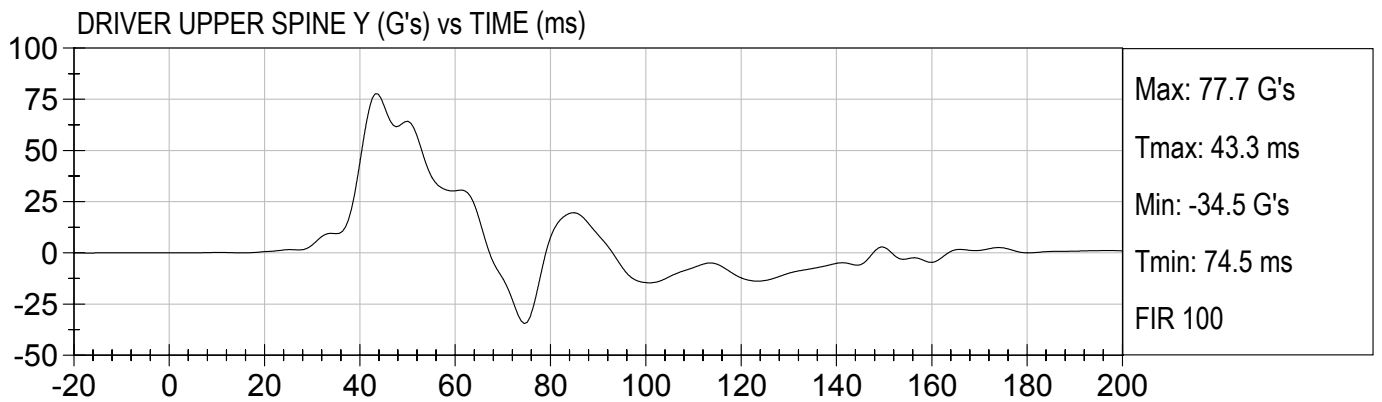
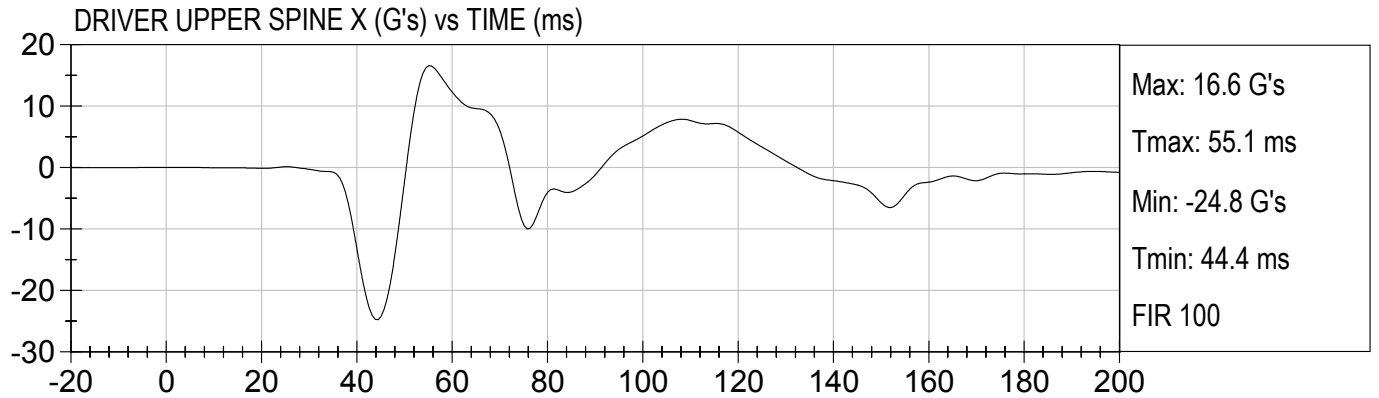
DRIVER PELVIS Yr Velocity (kph) vs TIME (ms)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

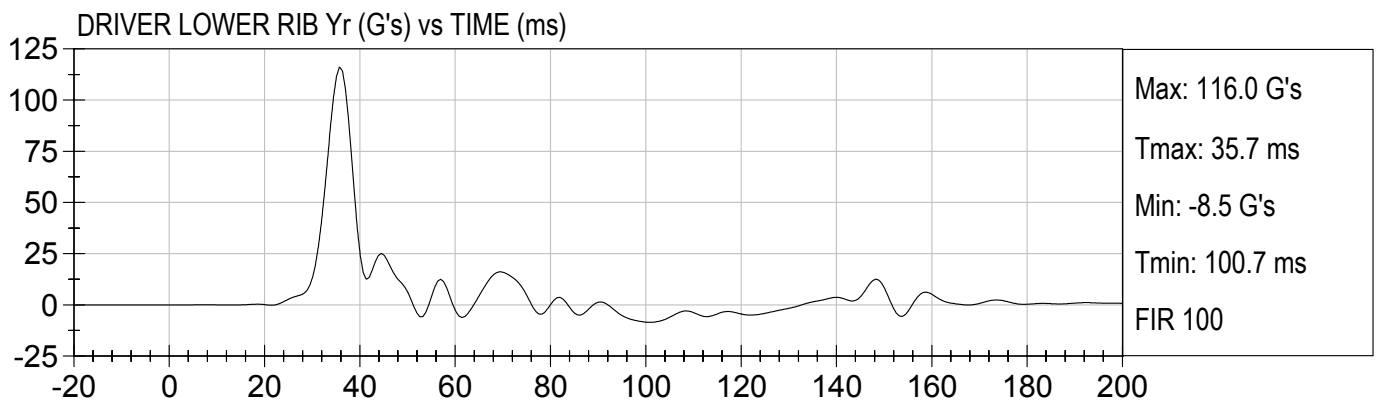
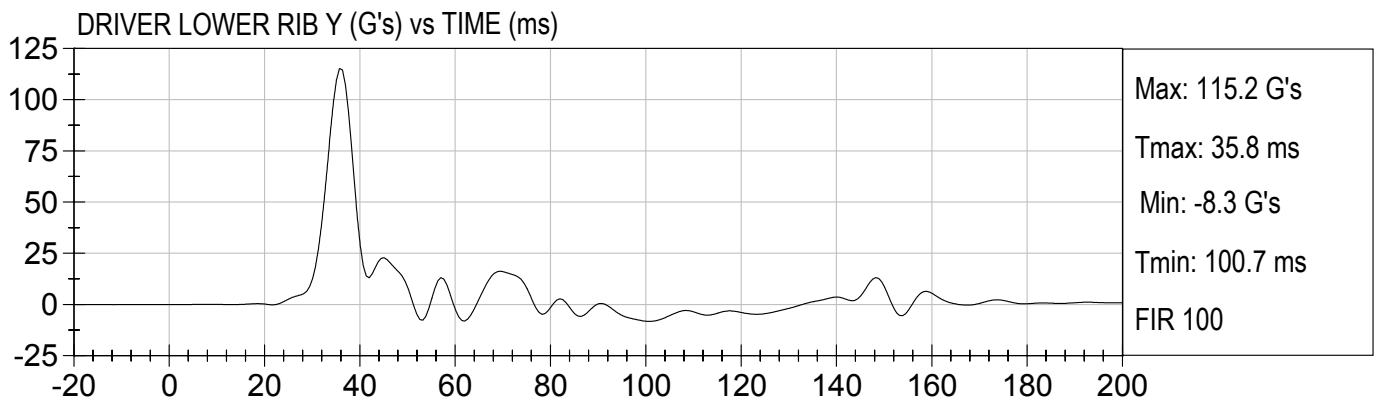
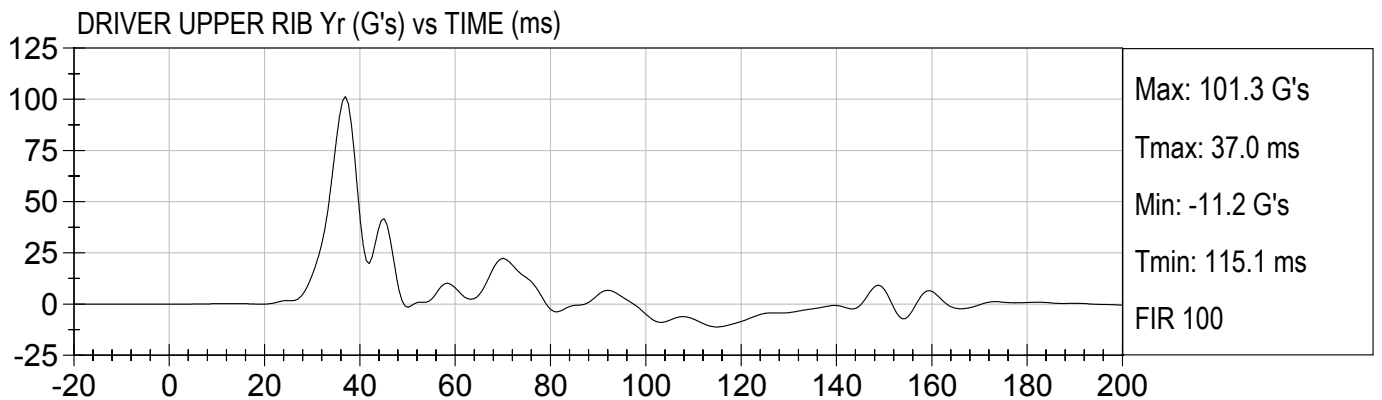
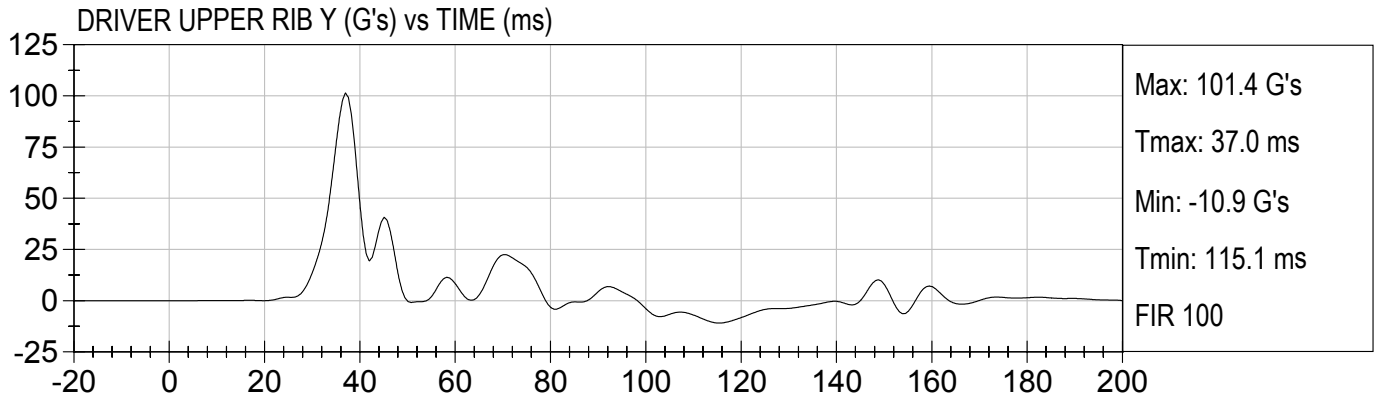
Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

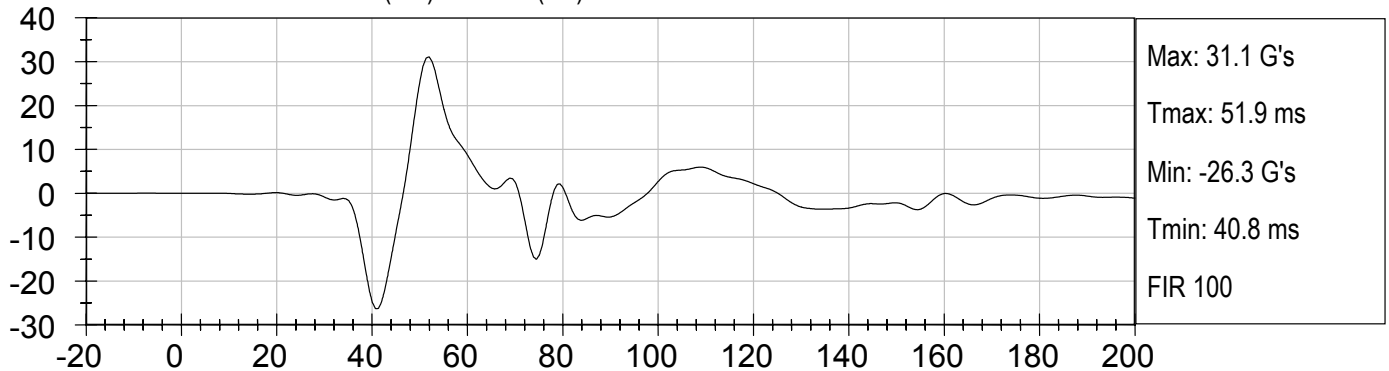




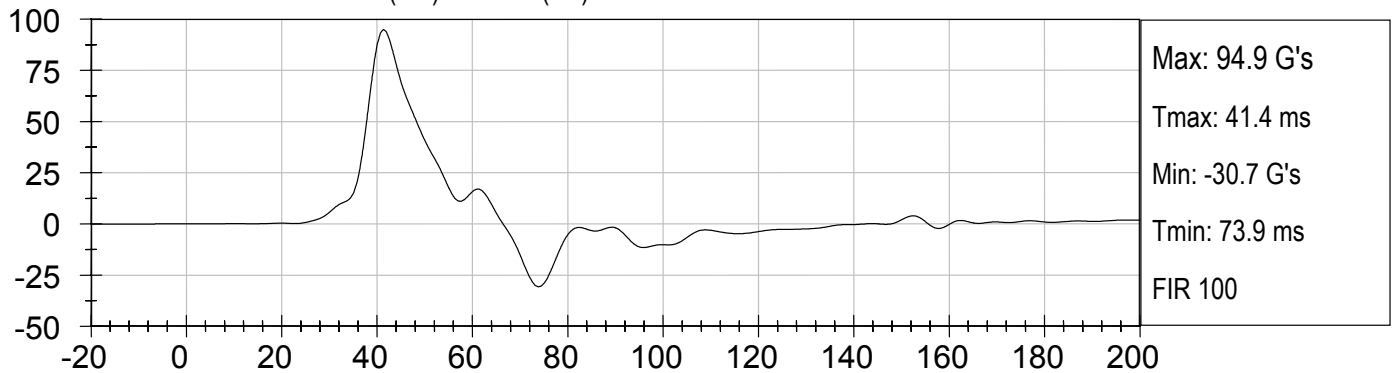
20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)

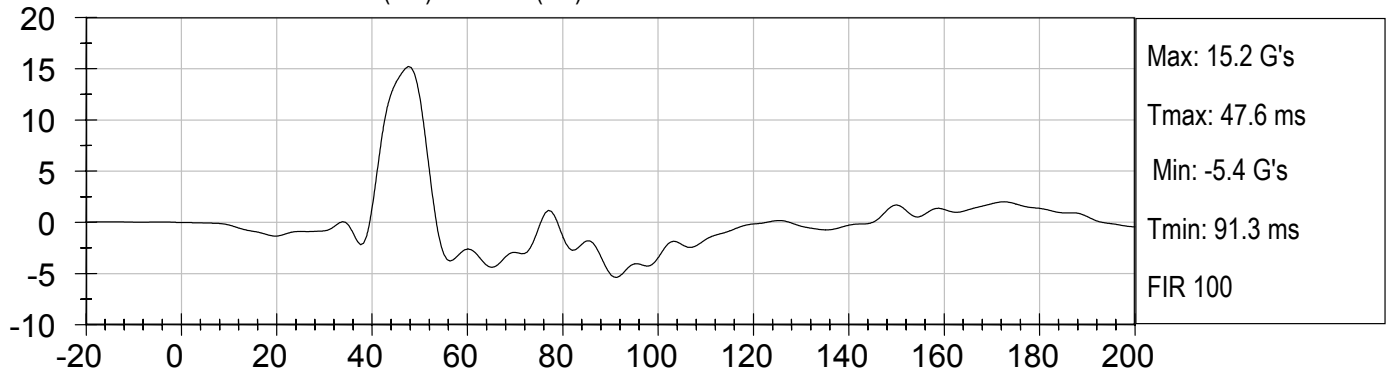
DRIVER LOWER SPINE X (G's) vs TIME (ms)



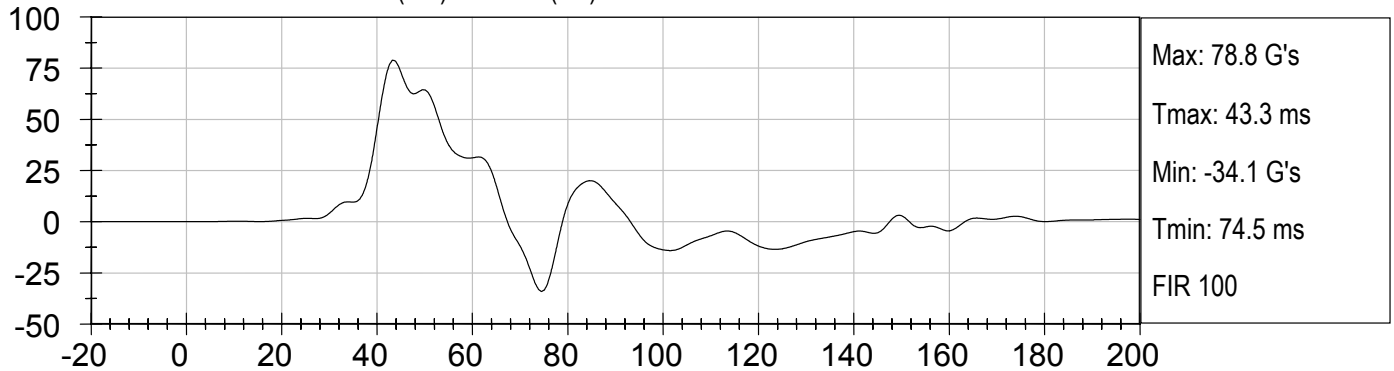
DRIVER LOWER SPINE Y (G's) vs TIME (ms)



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



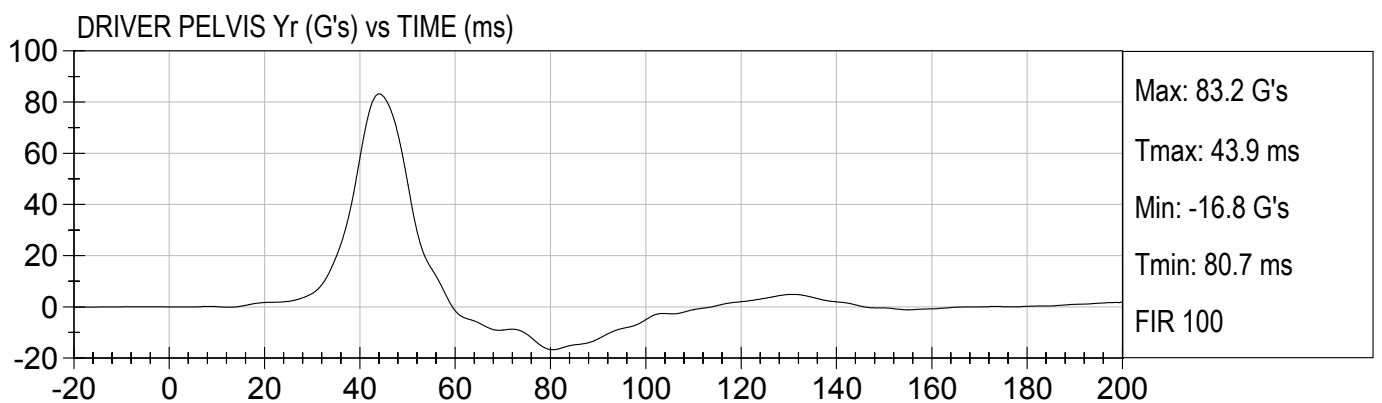
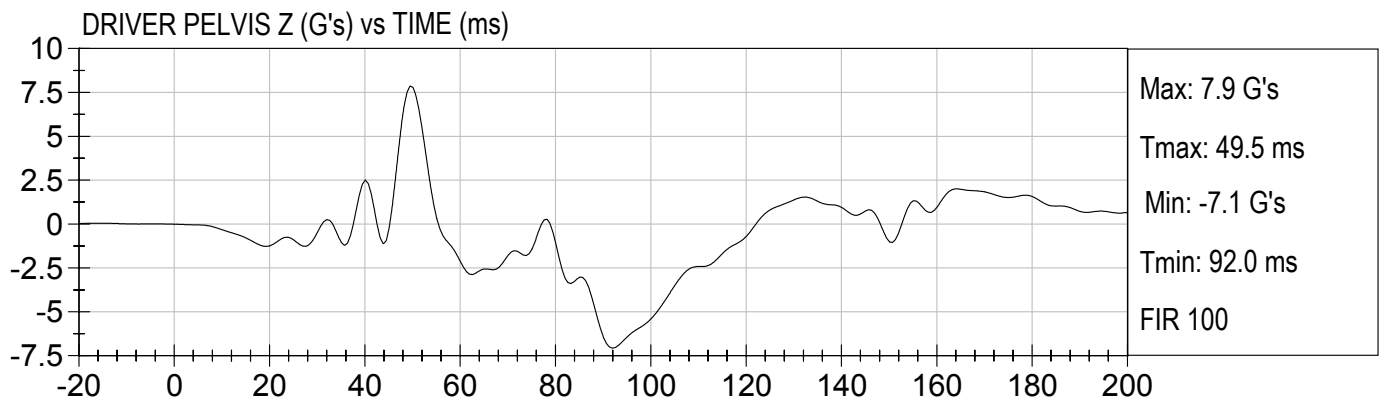
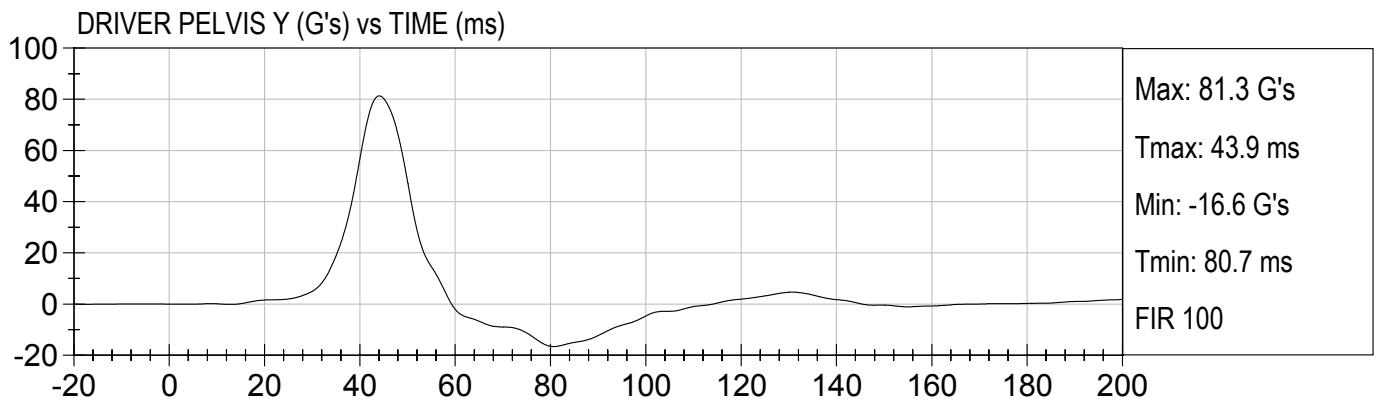
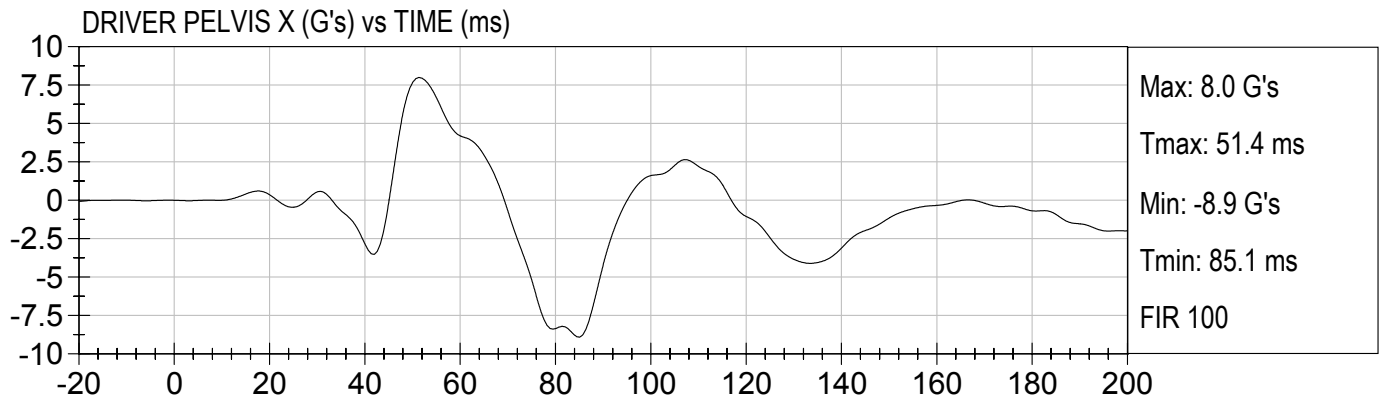
DRIVER LOWER SPINE Yr (G's) vs TIME (ms)





20 MPH SIDE POLE
2002 FORD EXPLORER (R21301)

Test Date: 9/12/2002
Speed: 20.1 mph (32.3 km/h)



APPENDIX C

SID-HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SID Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 036

Test I.D: D021211

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.5	Pass
Laboratory Relative Humidity	%	10 to 70	52	Pass
Peak Resultant Acceleration	G's	120 to 150	132	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-14	Pass
Overall Test Results				Pass

Laboratory Technician

09/11/2002
Test Date

Approved By



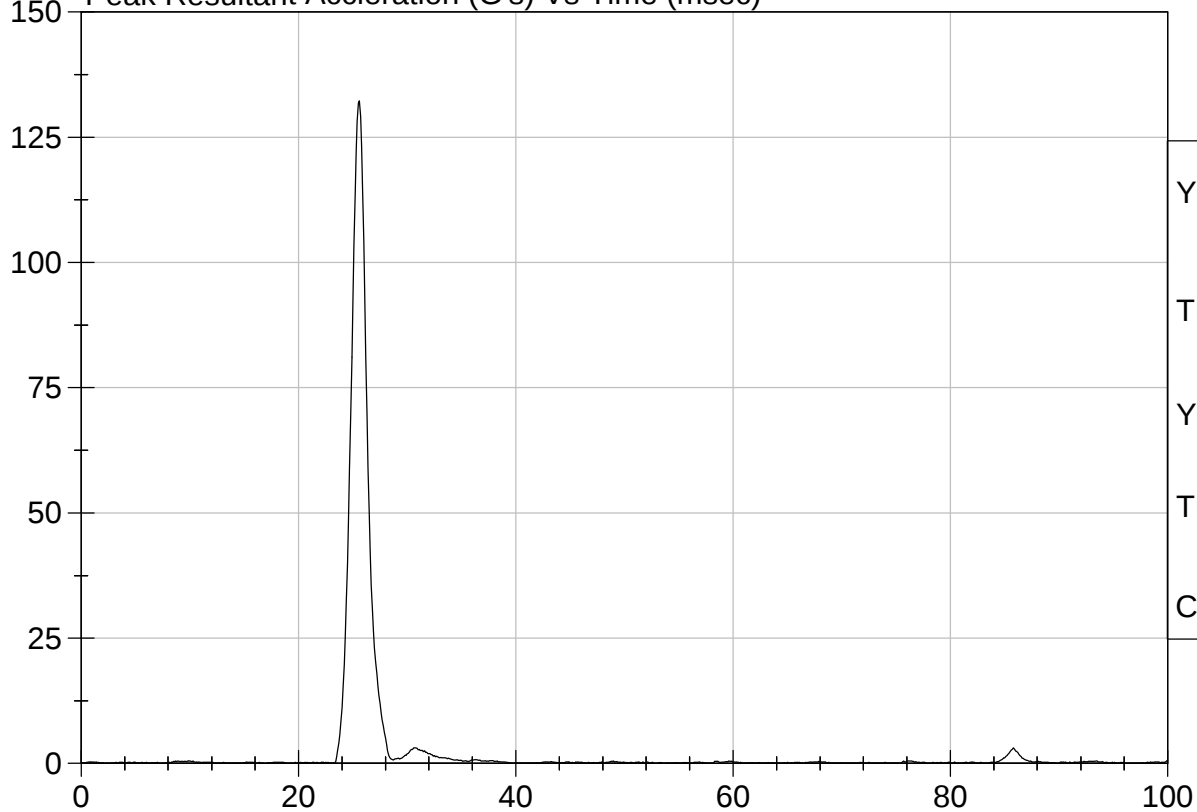
Test Description: Head Drop

Test Date: 09/11/2002

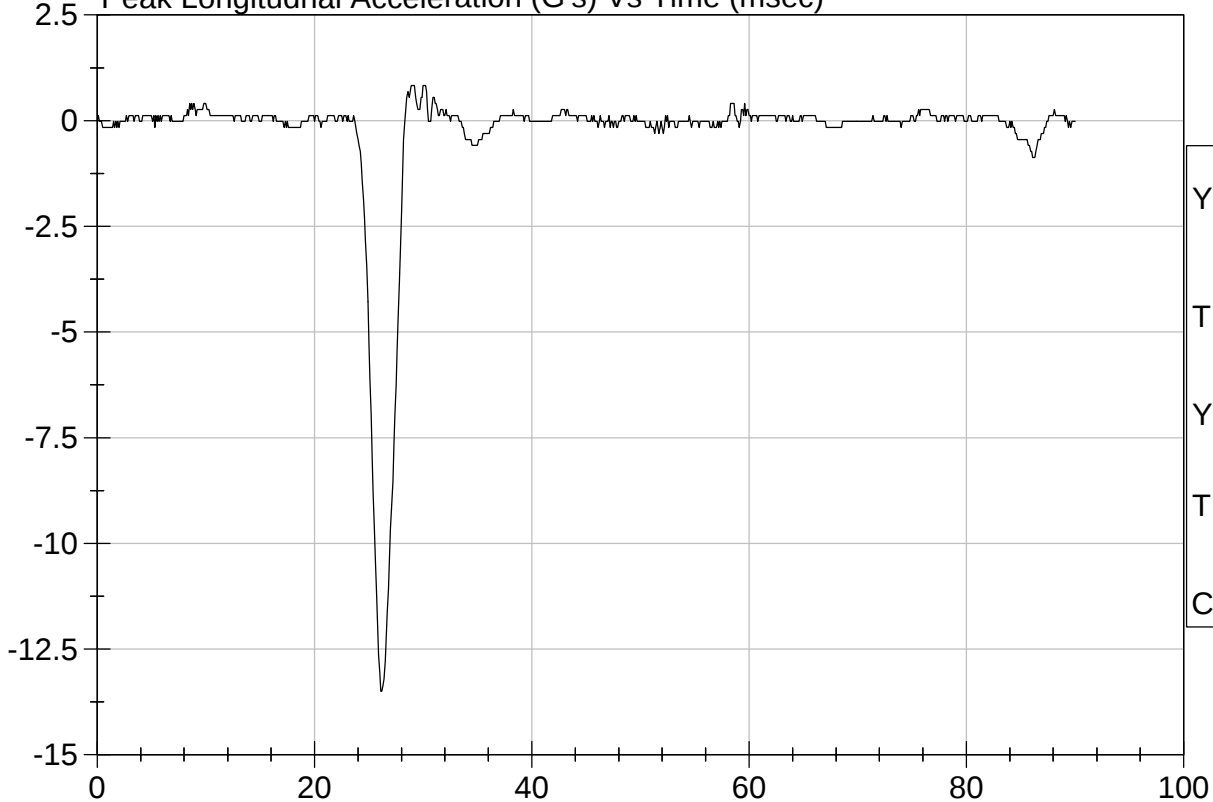
Component: D021211

Speed: 0 ft/s, 0.00 m/s

Peak Resultant Acceleration (G's) Vs Time (msec)



Peak Longitudnal Acceleration (G's) Vs Time (msec)



SID Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 036

Test I.D: D021219

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	18.9 to 25.5	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	54	Pass
Impact Velocity		m/s	6.89 to 7.13	6.96	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.44	Pass
	20 msec	m/s	4.12 to 5.10	4.82	Pass
	30 msec	m/s	5.73 to 7.01	6.73	Pass
	40 to 70 msec	m/s	6.27 to 7.64	6.95	Pass
Midsaggital Plane Max Rotation		deg	66 to 82	71	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	60	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	76	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	57	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	13	Pass

Laboratory Technician

09/09/2002

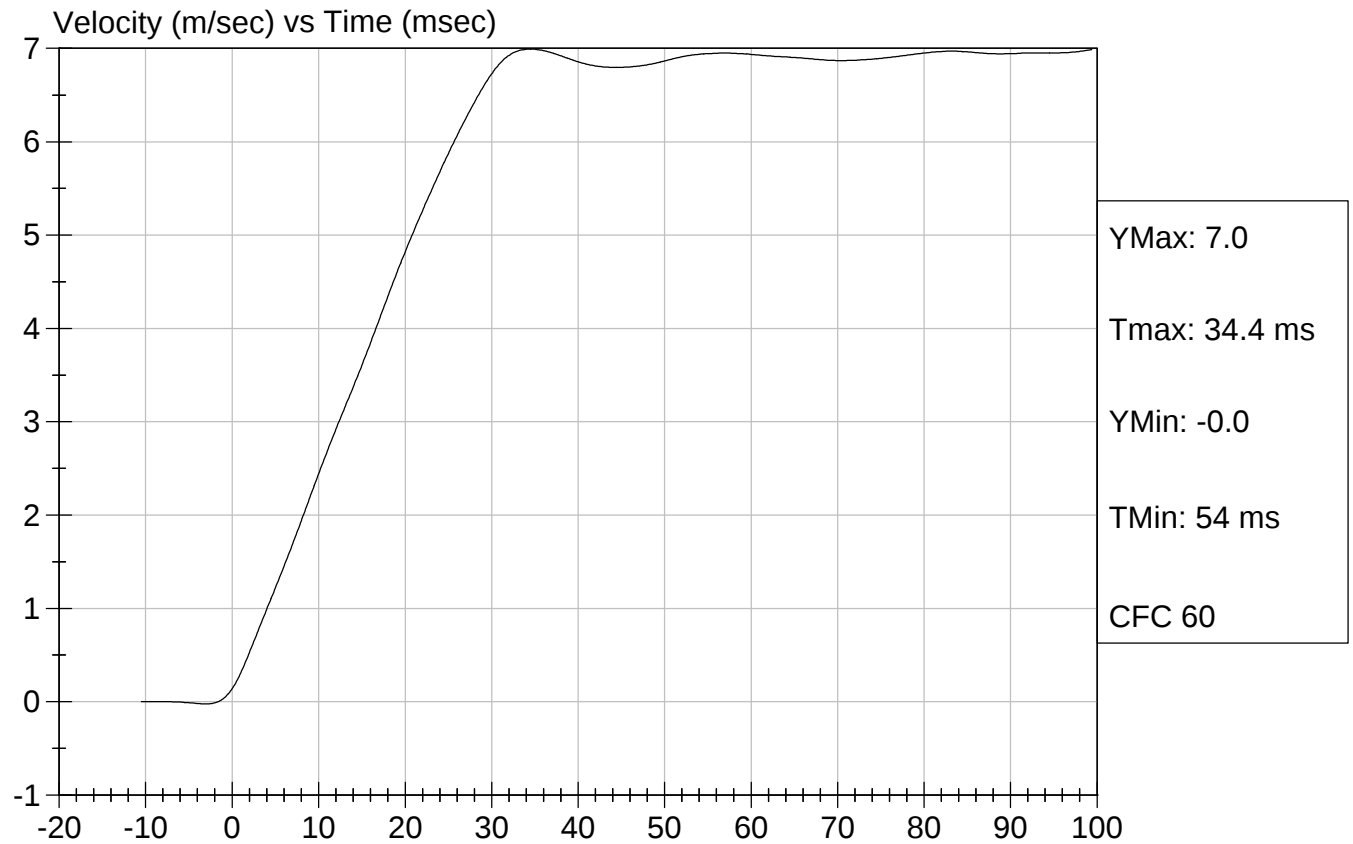
Test Date

Approved By



Test Desc: Neck Bending
Component ID: D021219

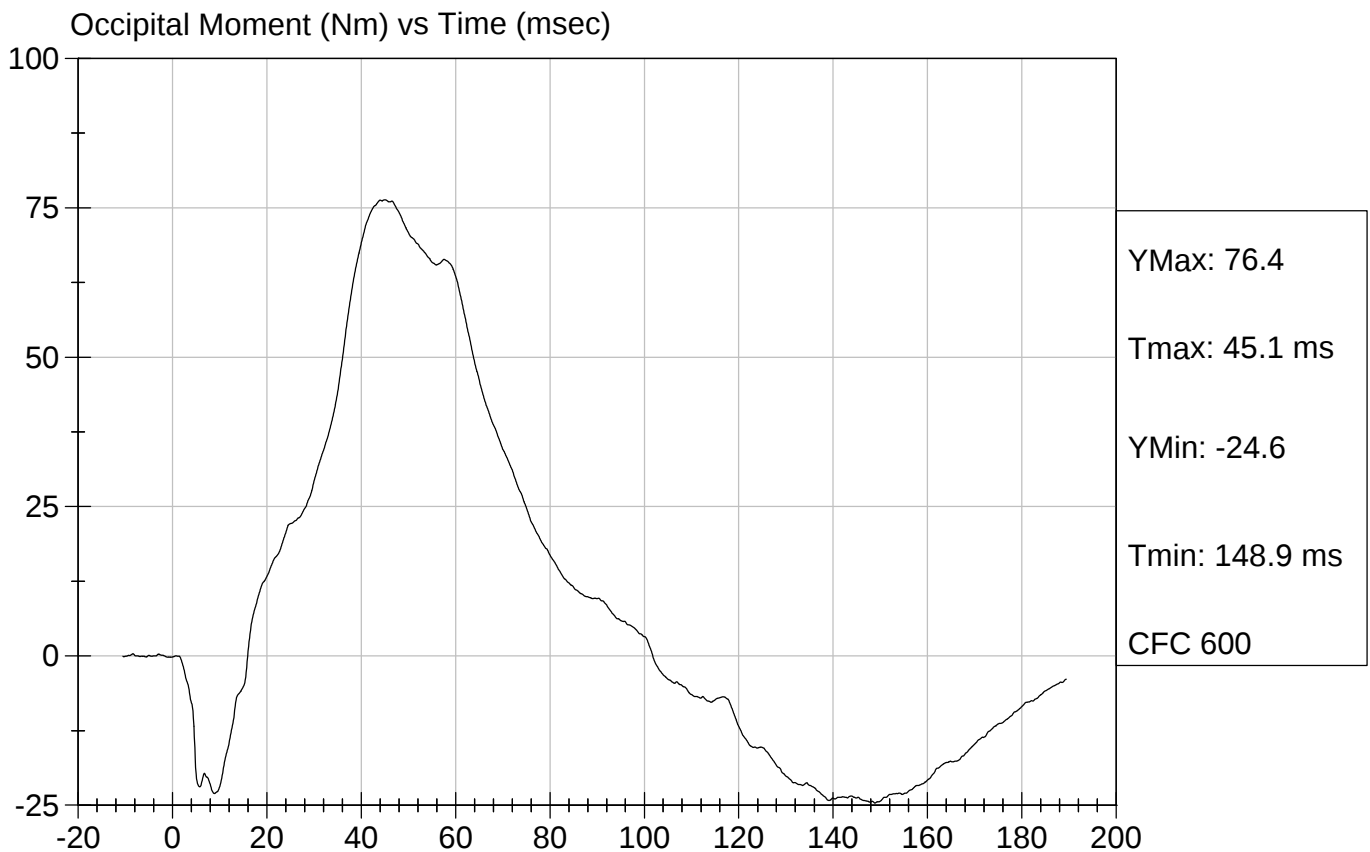
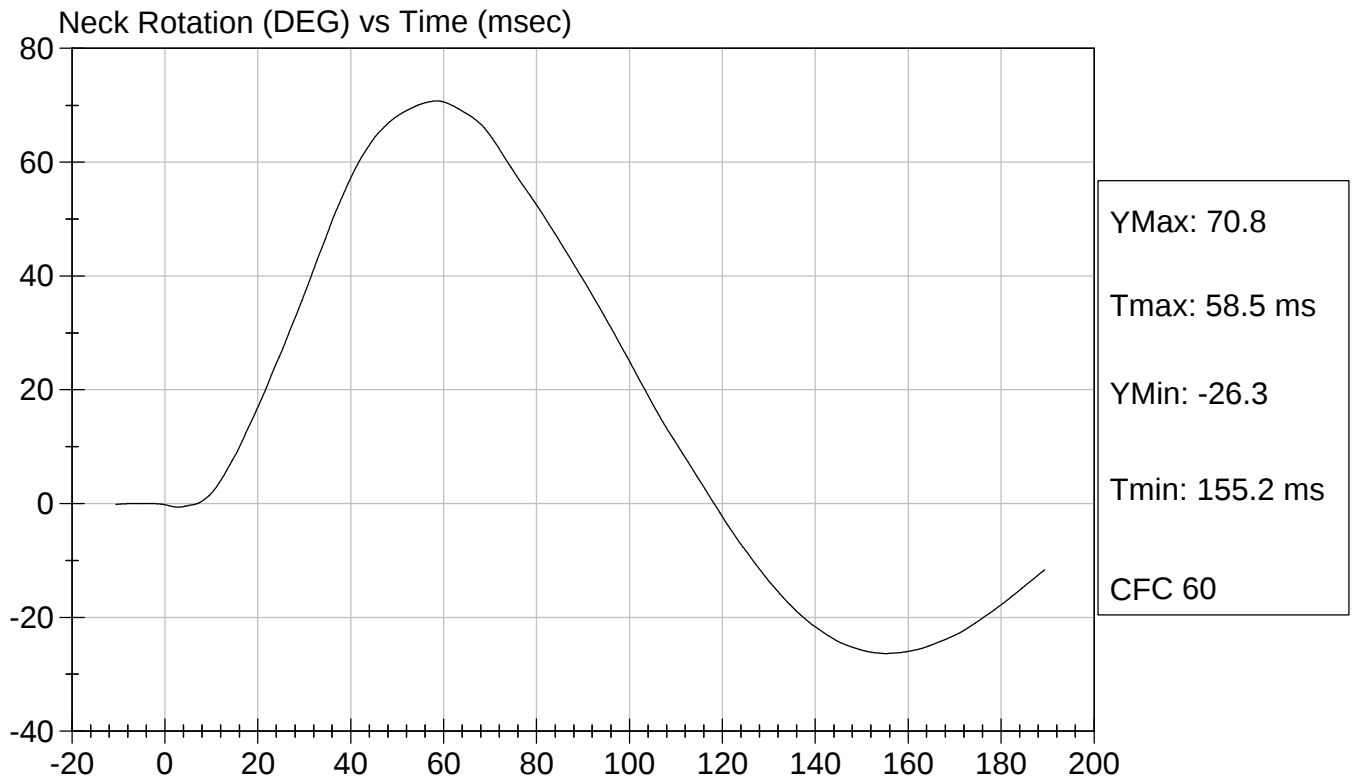
Test Date: 09/09/2002
Speed: 22.83 ft/sec, 6.96 m/sec





Test Desc: Neck Bending
Component ID: D021219

Test Date: 09/09/2002
Speed: 22.83 ft/sec, 6.96 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Thoracic Shock Absorber Calibration

ATD Serial No: 036

Test I.D: D021216/7/8

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	18.9 to 25.5	20.4	Pass
Laboratory Relative Humidity		%	10 to 70	54	Pass
Velocity 3.05 m/s	Force	N	836 - 1125	1,028	Pass
	Displacement	mm	30 - 35	31	Pass
Velocity 4.27 m/s	Force	N	1730 - 2099	1,809	Pass
	Displacement	mm	32 - 37	35	Pass
Velocity 6.1 m/s	Force	N	3741 - 4448	3,974	Pass
	Displacement	mm	33 - 40	37	Pass
Overall Test Results					Pass

Laboratory Technician

09/10/2002

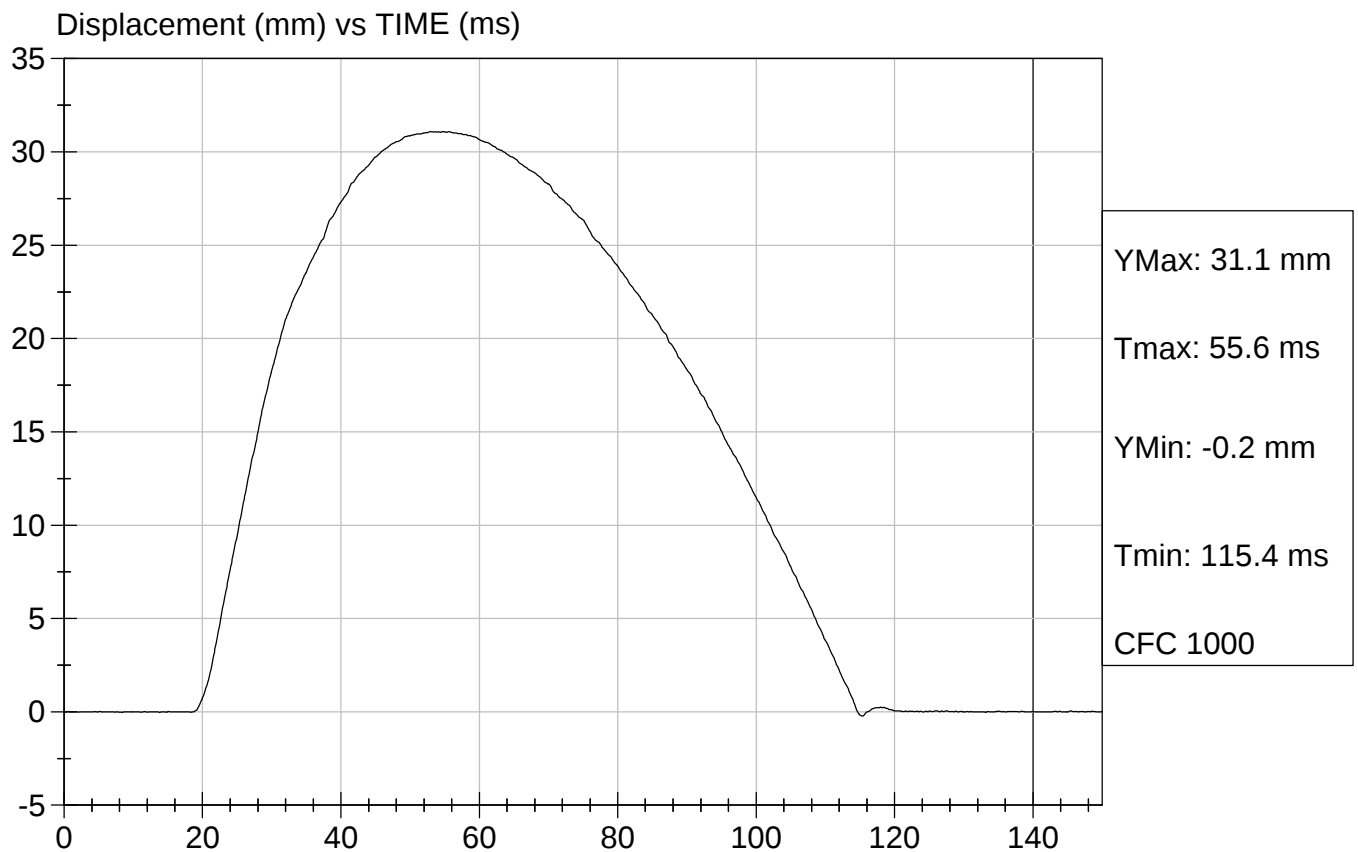
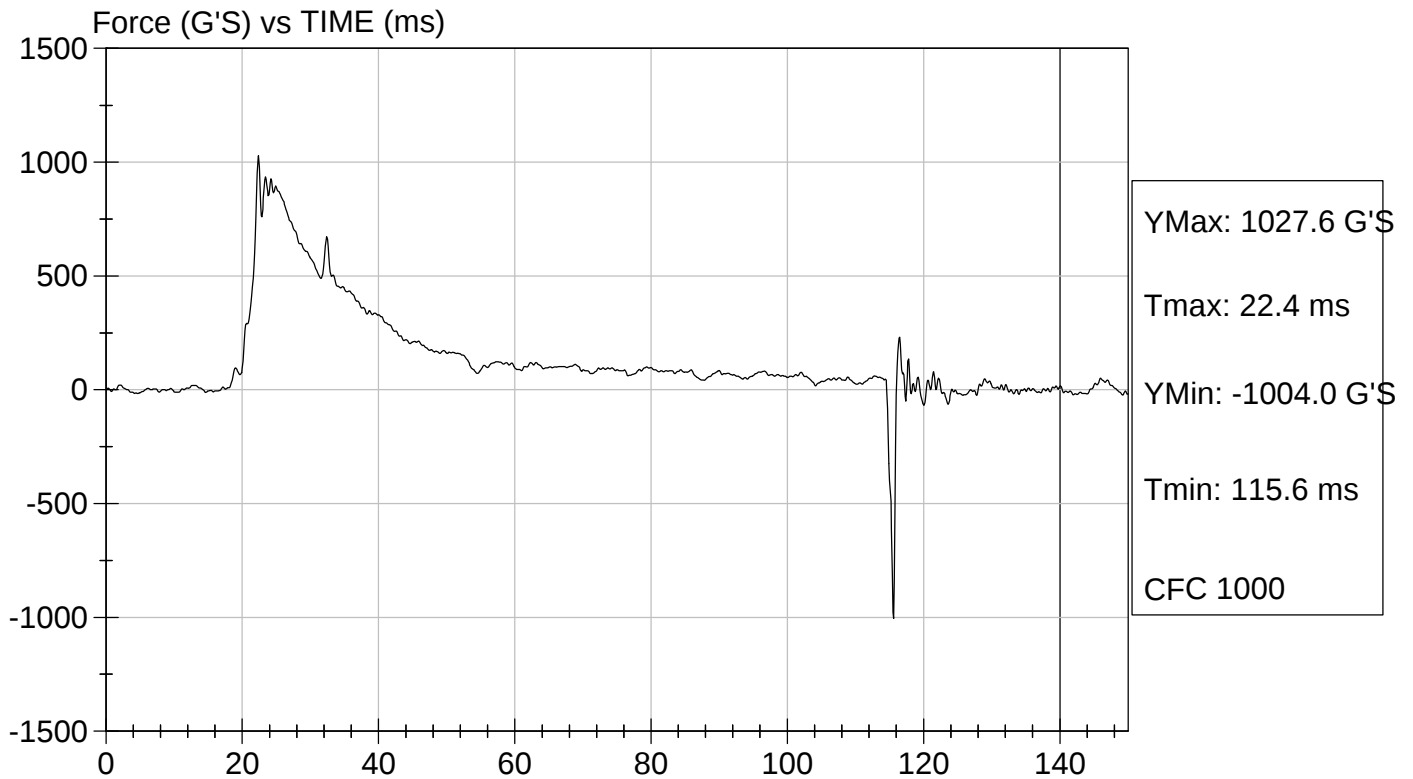
Test Date

Approved By



Test Desc: Dampener Impact
Component ID: D021216

Test Date: 09/10/2002
Speed: 10 ft/sec, m/sec

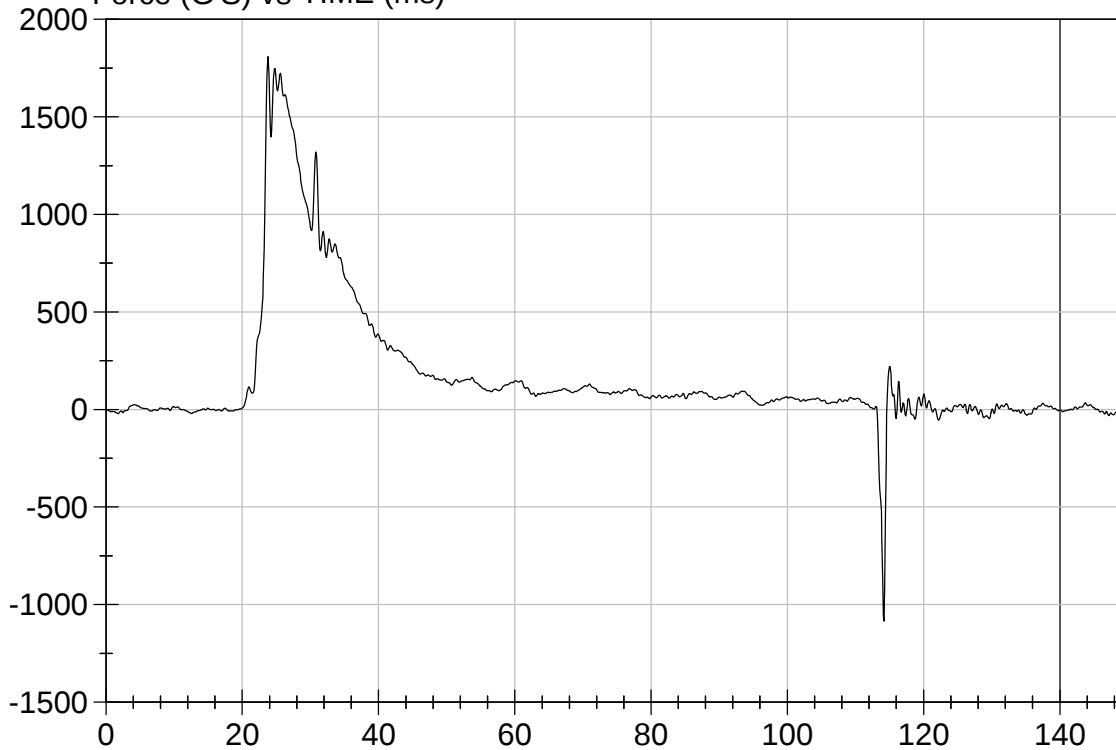




Test Desc: Dampener Impact
Component ID: D021217

Test Date: 09/10/2002
Speed: 14 ft/sec, m/sec

Force (G'S) vs TIME (ms)



YMax: 1808.7 G'S

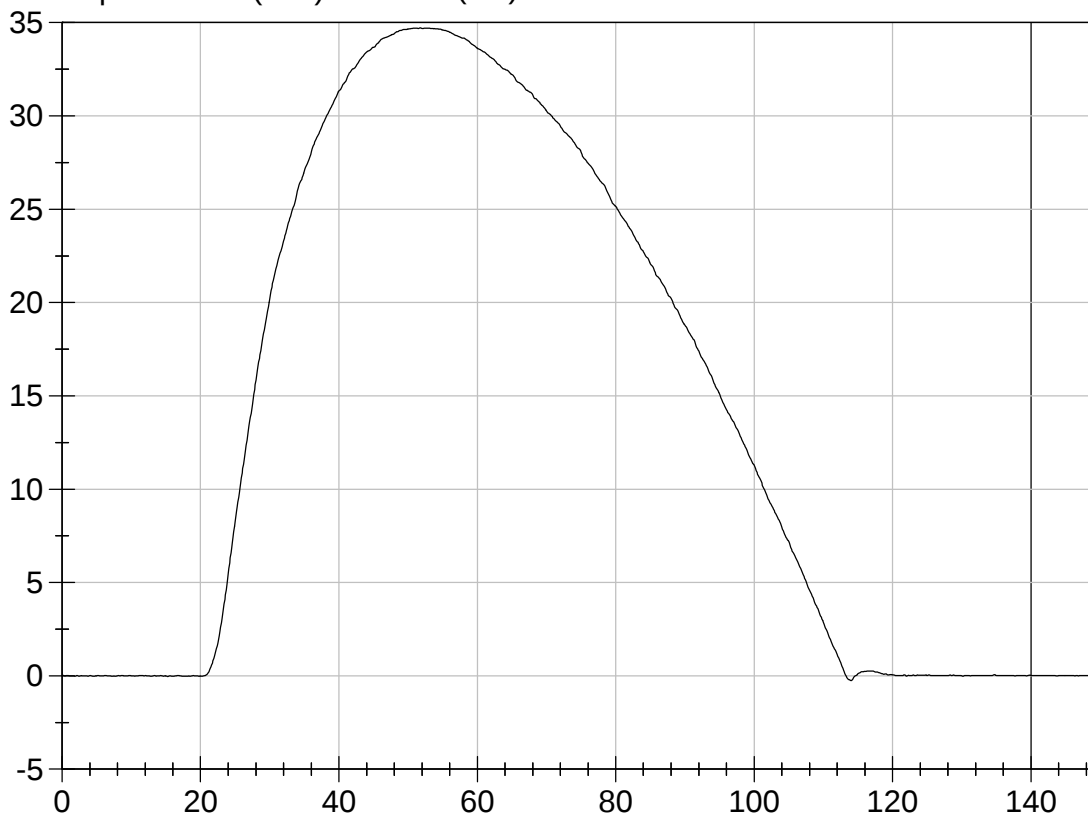
Tmax: 23.8 ms

YMin: -1084.0 G'S

Tmin: 114.2 ms

CFC 1000

Displacement (mm) vs TIME (ms)



YMax: 34.7 mm

Tmax: 51.7 ms

YMin: -0.3 mm

Tmin: 114.0 ms

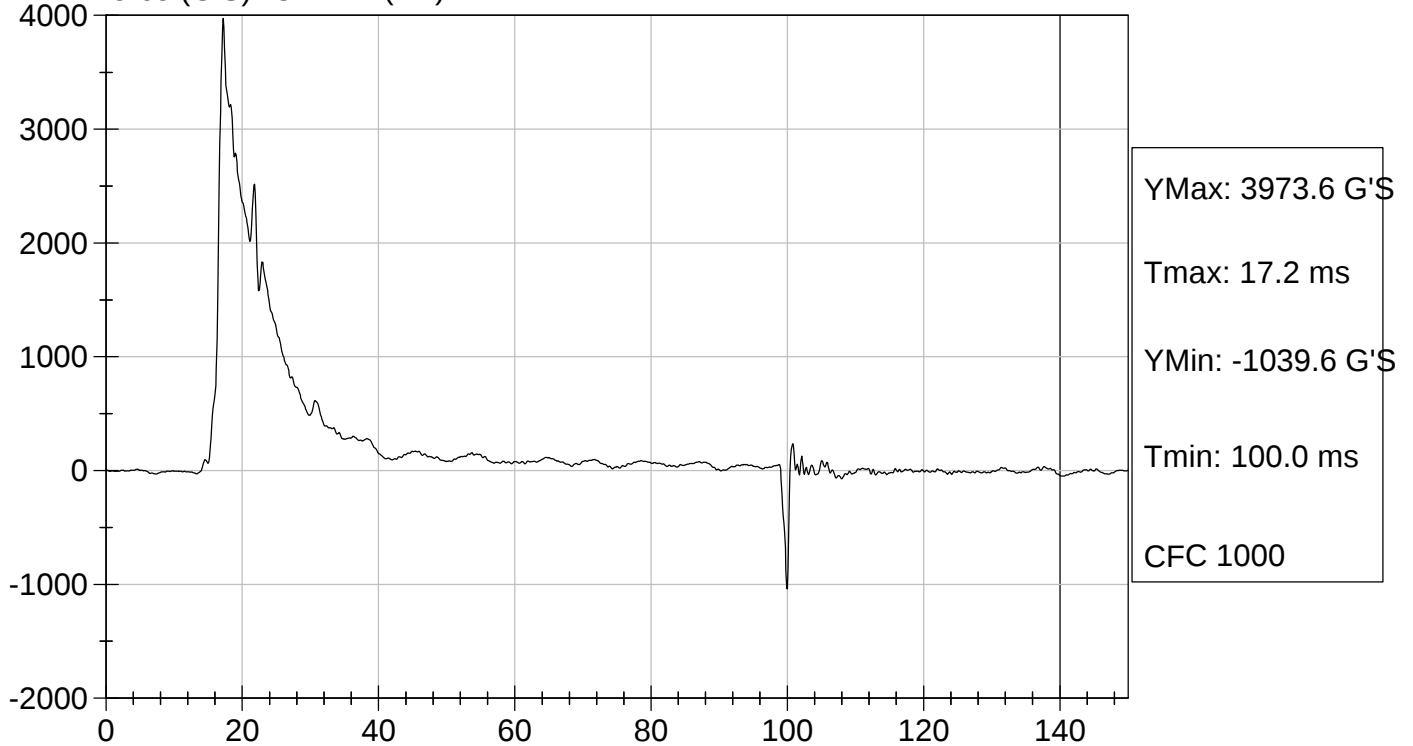
CFC 1000



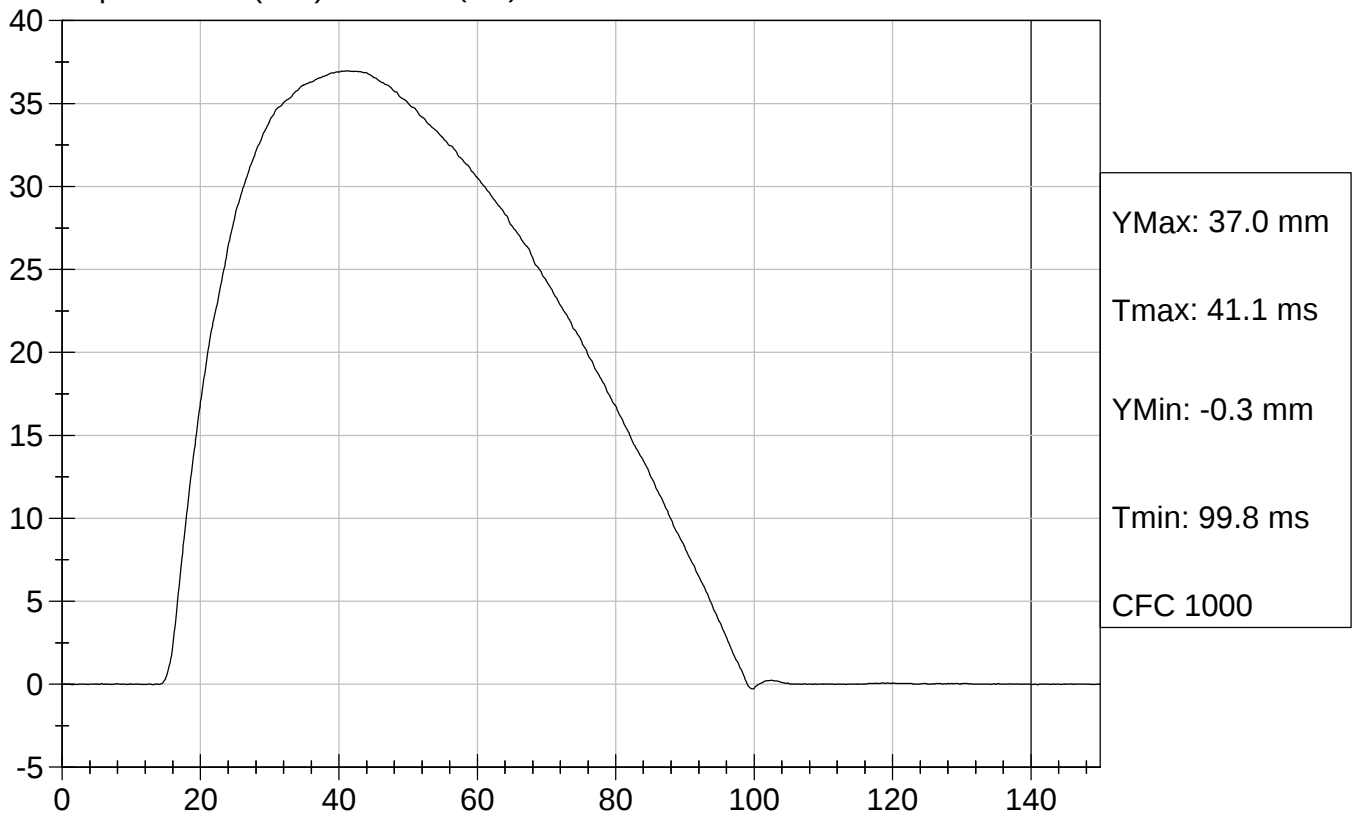
Test Desc: Dampener Impact
Component ID: D021218

Test Date: 09/10/2002
Speed: 0 ft/sec, m/sec

Force (G'S) vs TIME (ms)



Displacement (mm) vs TIME (ms)



SID Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 036

Test I.D: D021212

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	48	Pass
Probe Velocity	m/s	4.27 - 4.33	4.27	Pass
Upper Rib	G's	37 - 46	43	Pass
Lower Rib	G's	37 - 46	44	Pass
Lower Spine	G's	15 - 22	17	Pass
Overall Test Results				Pass

Laboratory Technician

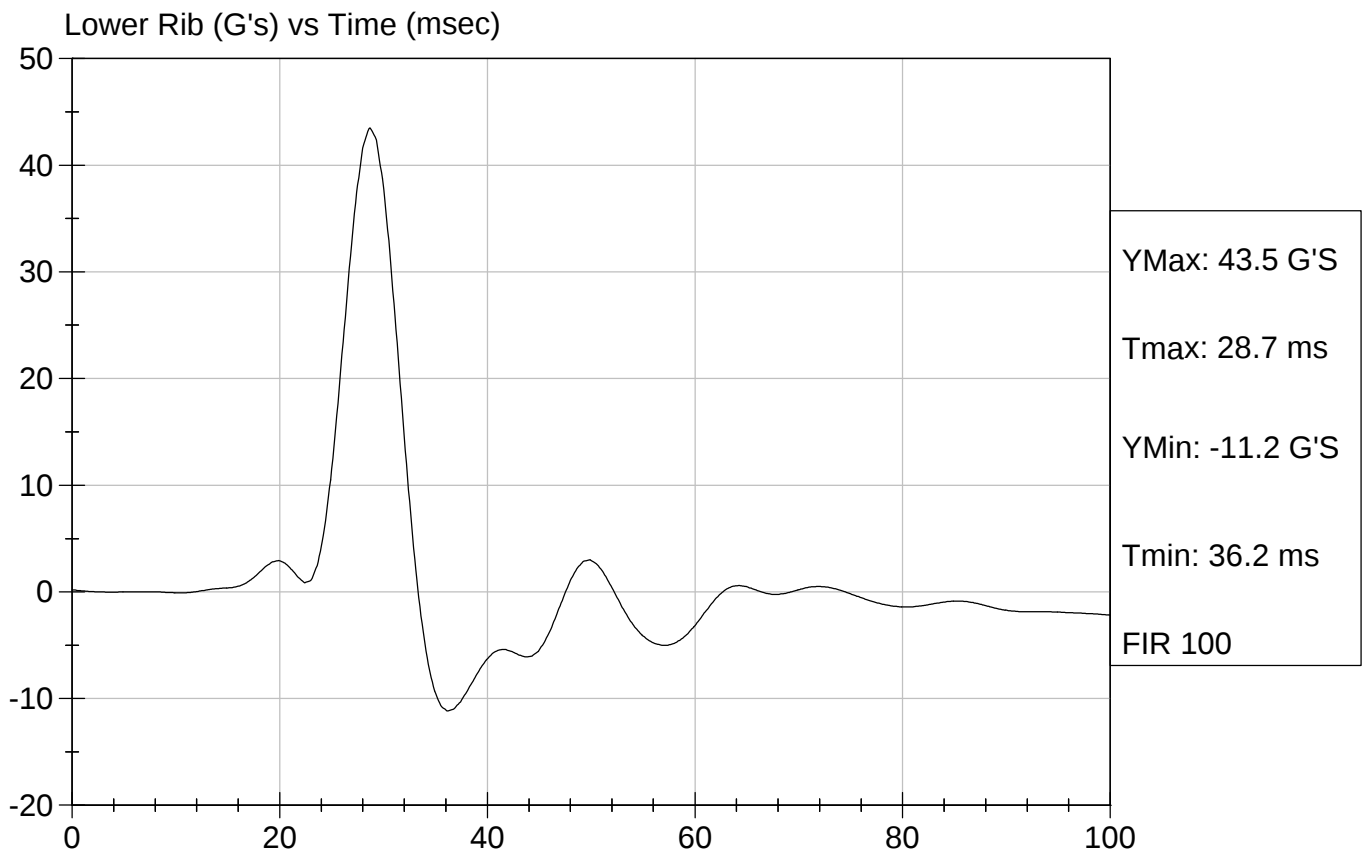
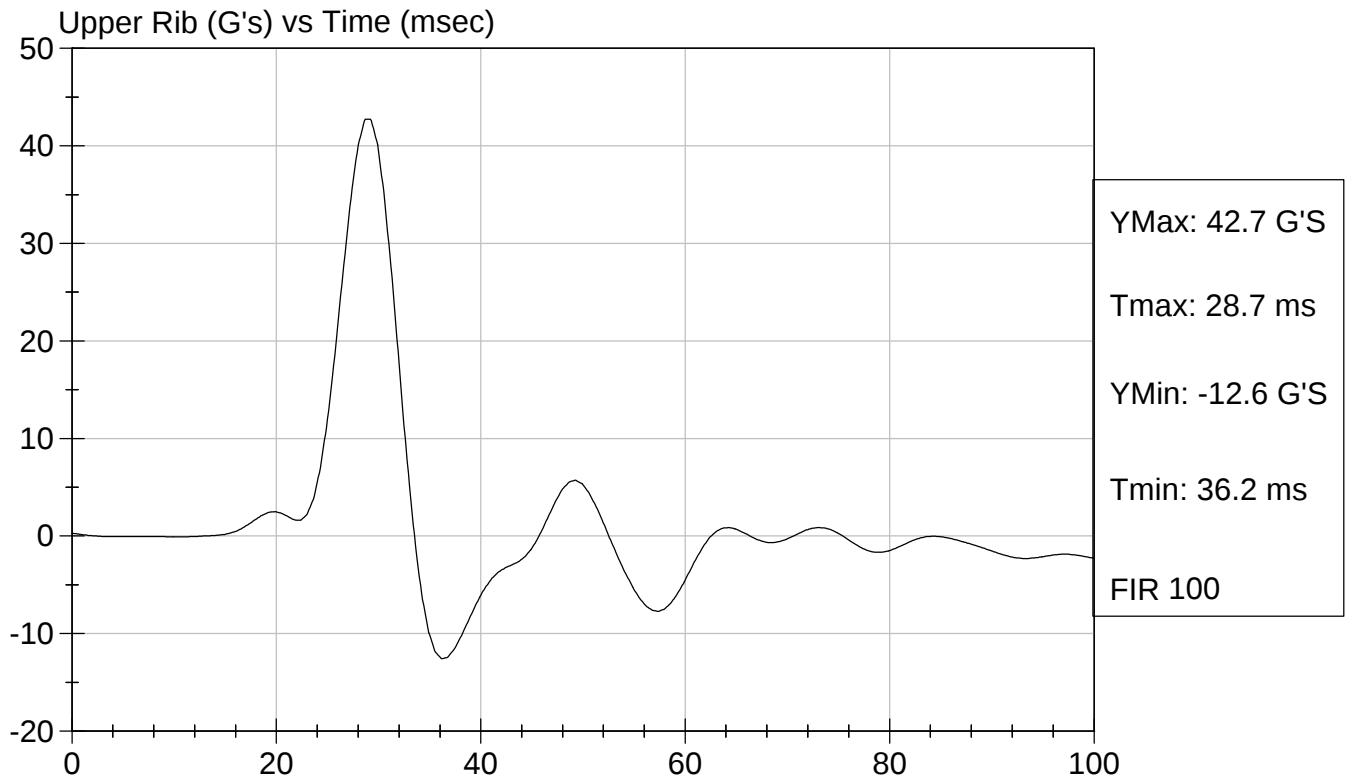
09/11/2002
Test Date

Approved By



Test Desc: Thorax Impact
Component ID: D021212

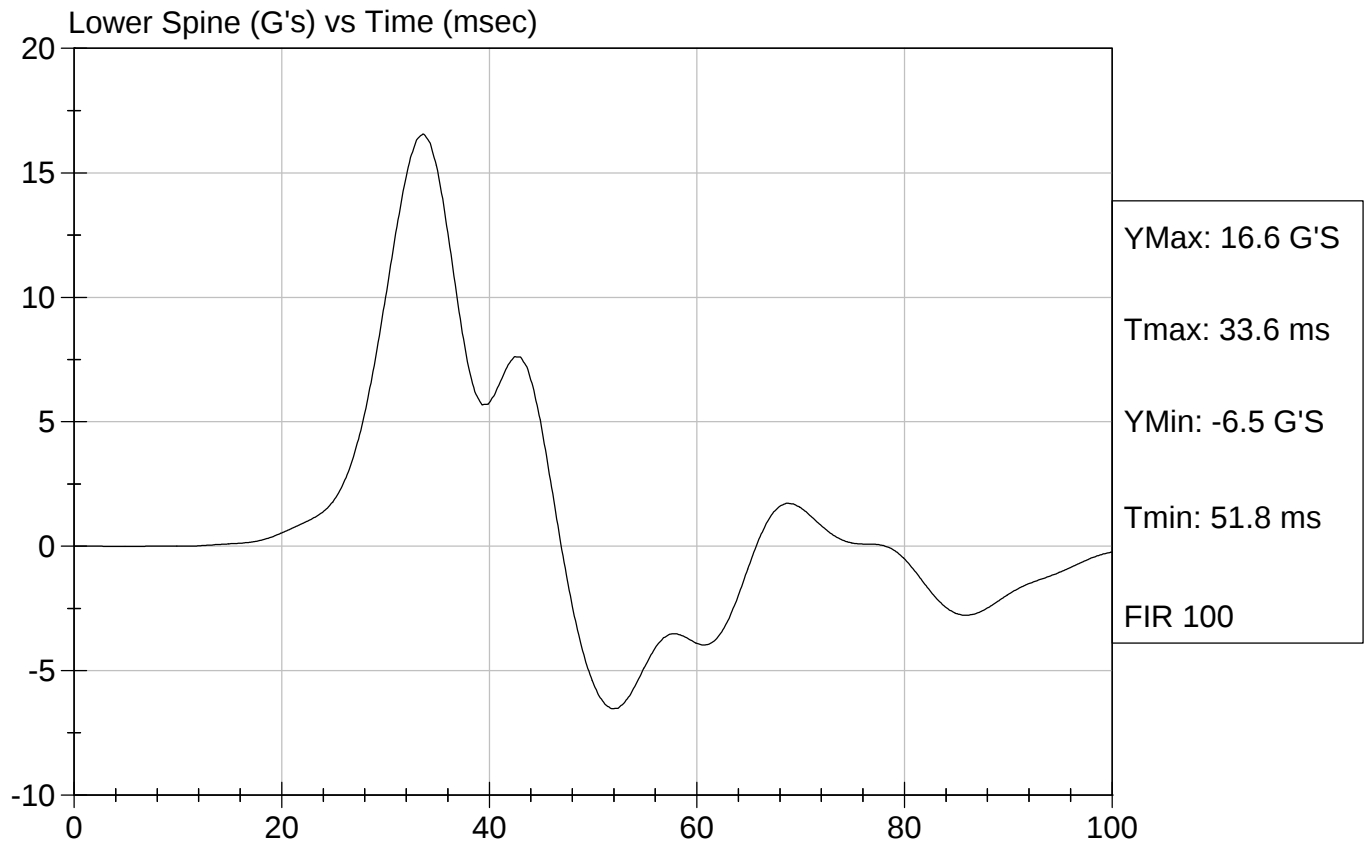
Test Date: 09/11/2002
Speed: 14.01 ft/sec, 4.27 m/sec





Test Desc: Thorax Impact
Component ID: D021212

Test Date: 09/11/2002
Speed: 14.01 ft/sec, 4.27 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 036

Test I.D: D021213

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	48	Pass
Probe Velocity	m/s	4.27 - 4.33	4.27	Pass
Pelvis Acceleration	G's	40 - 60	43	Pass
Overall Test Results				Pass

Laboratory Technician

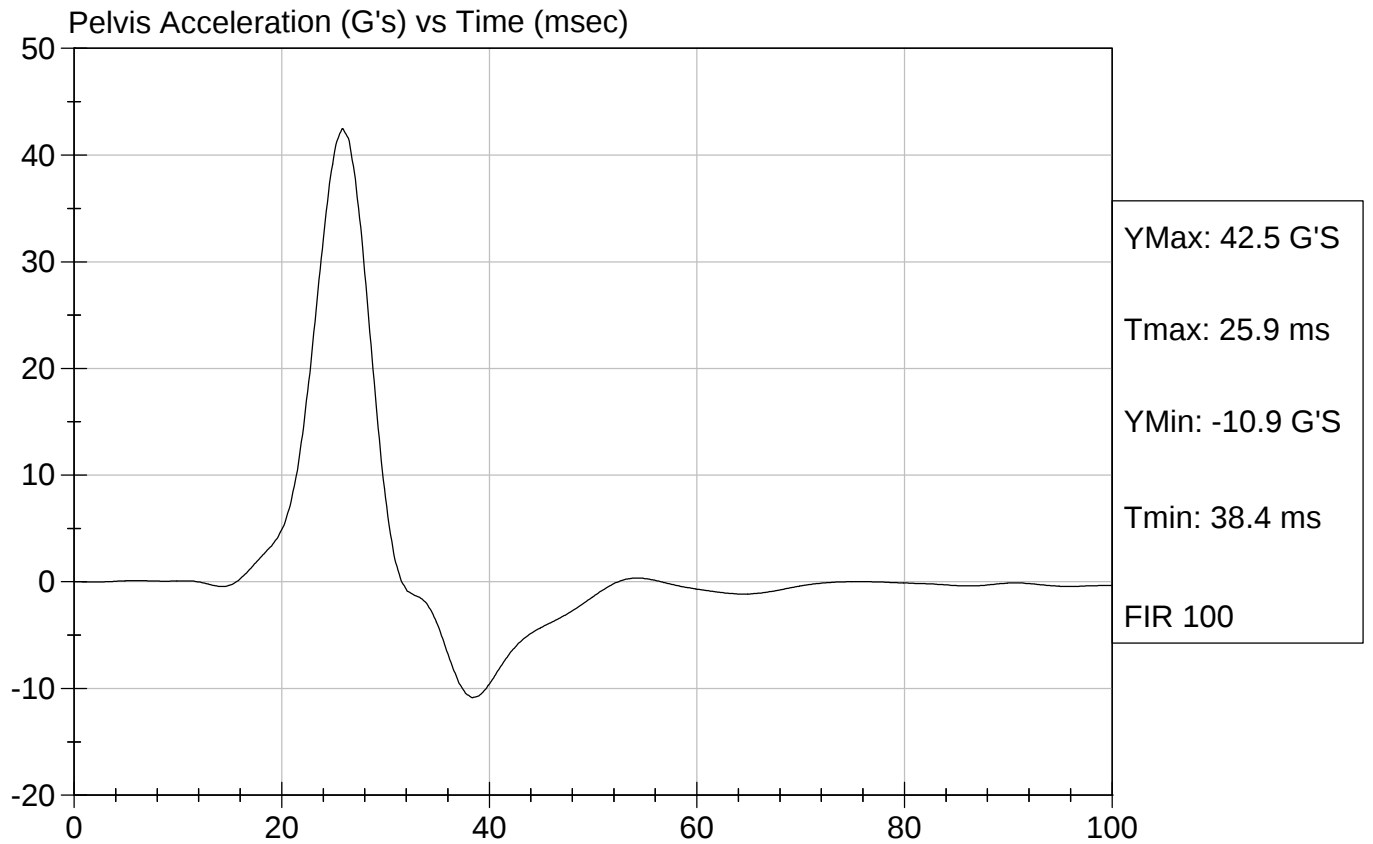
09/11/2002
Test Date

Approved By



Test Desc: Pelvis Impact
Component ID: D021213

Test Date: 09/11/2002
Speed: 14.02 ft/sec, 4.27 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 036

Test I.D: D021214

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	54	Pass
Force At 12.7 mm	N	104 -162	139	Pass
Force At 19 mm	N	163 - 222	190	Pass
Force At 25.4 mm	N	222 - 280	255	Pass
Force At 33 mm	N	325 - 391	361	Pass
Overall Test Results				Pass

Laboratory Technician

09/10/2002
Test Date

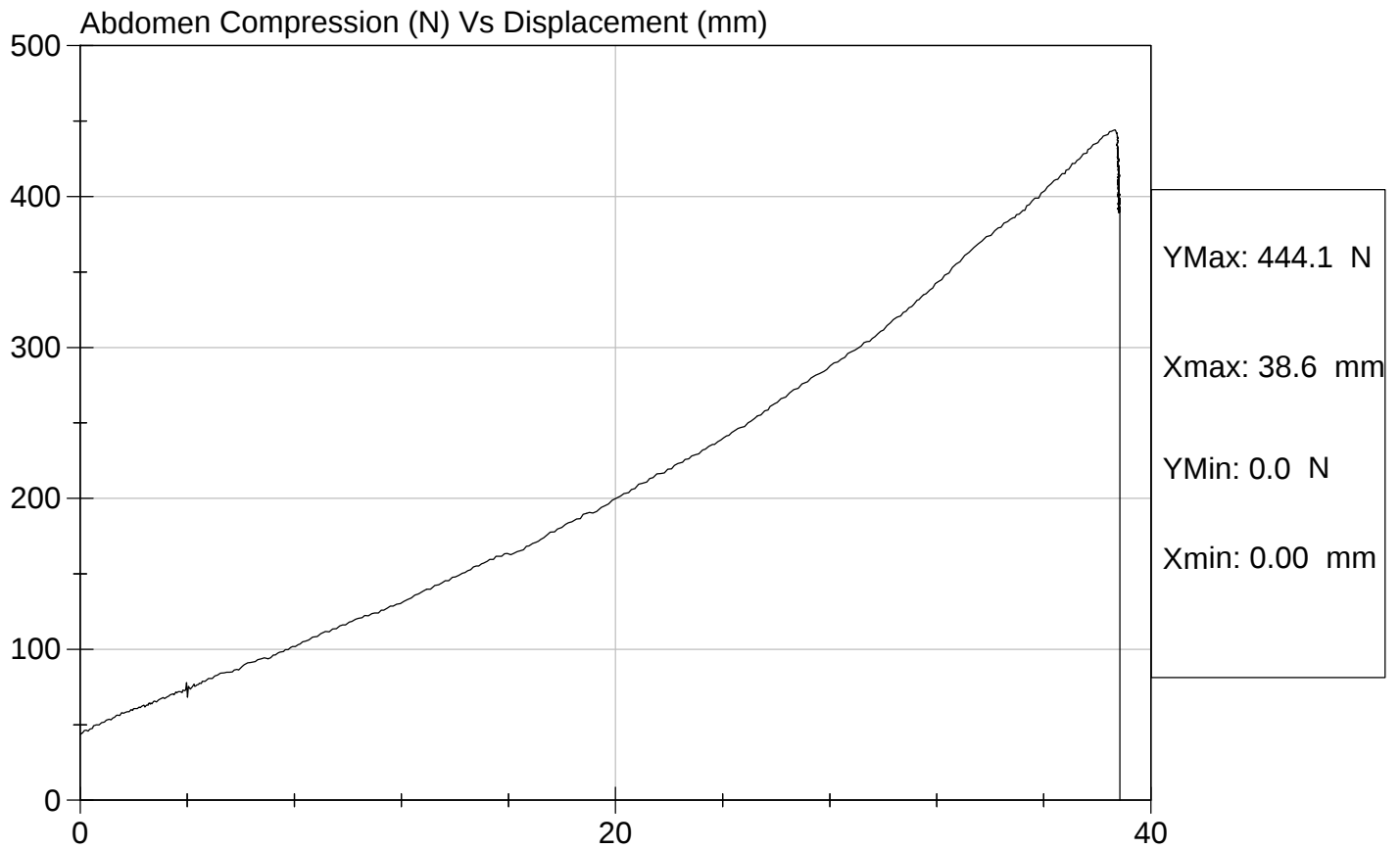
Approved By



Test Description: Abdomen Compression Test Date: 09/10/2002

Component: D021214

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 036

Test I.D: D021215

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	54	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	98.1	Pass
Force At 30 deg	N	151.2 - 204.6	182.6	Pass
Force At 40 deg	N	204.6 - 258.0	243.0	Pass
Return Angle	Deg	12 Maximum	6	Pass
Overall Test Results			Pass	

Laboratory Technician

09/11/2002
Test Date

Approved By

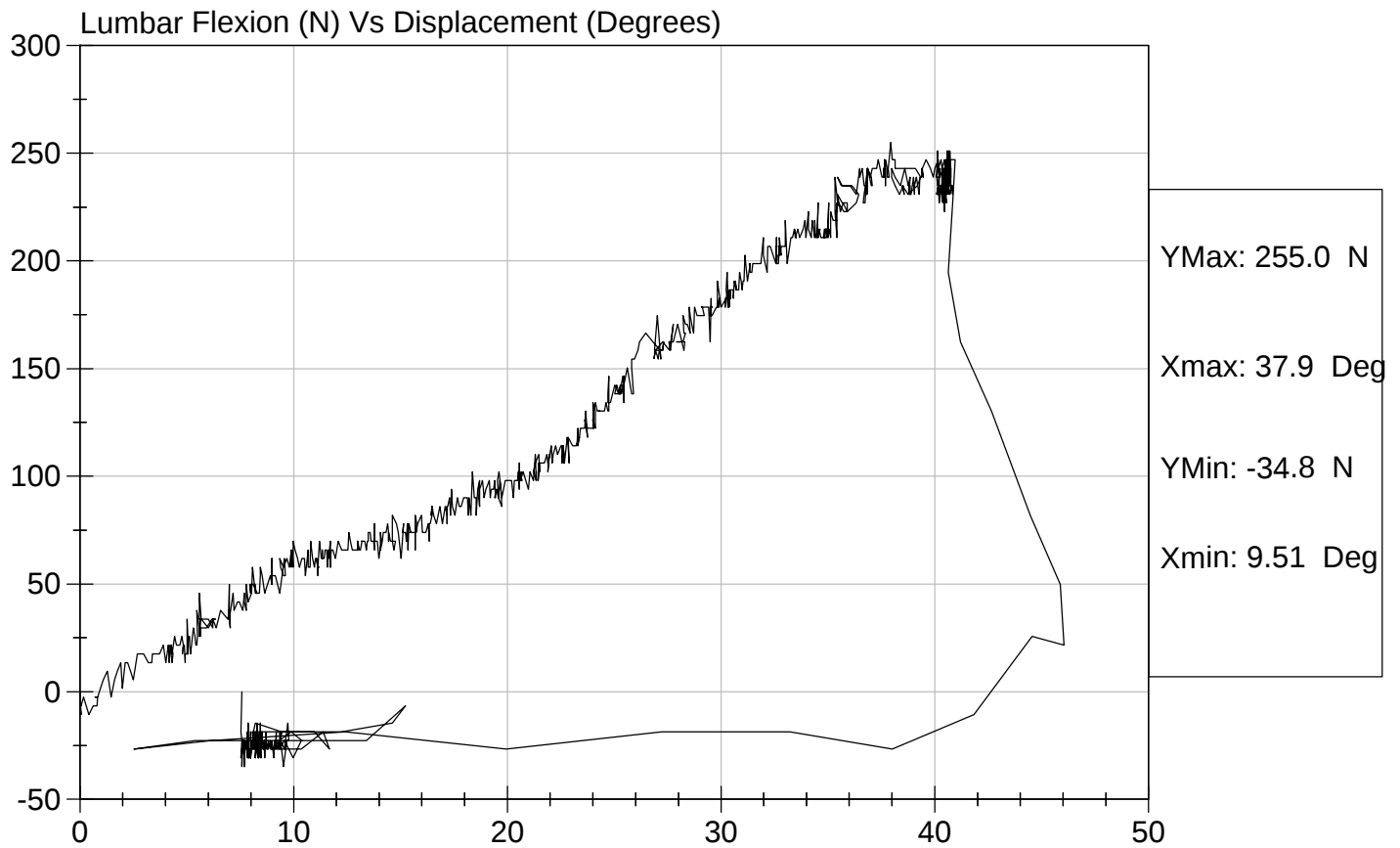


Test Description: Lumbar Flexion

Test Date: 09/11/2002

Component: D021215

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 036

Test I.D: D021231

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	56	Pass
Peak Resultant Acceleration	G's	120 to 150	145	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-10	Pass
Overall Test Results				Pass

Laboratory Technician

09/18/2002
Test Date

Approved By



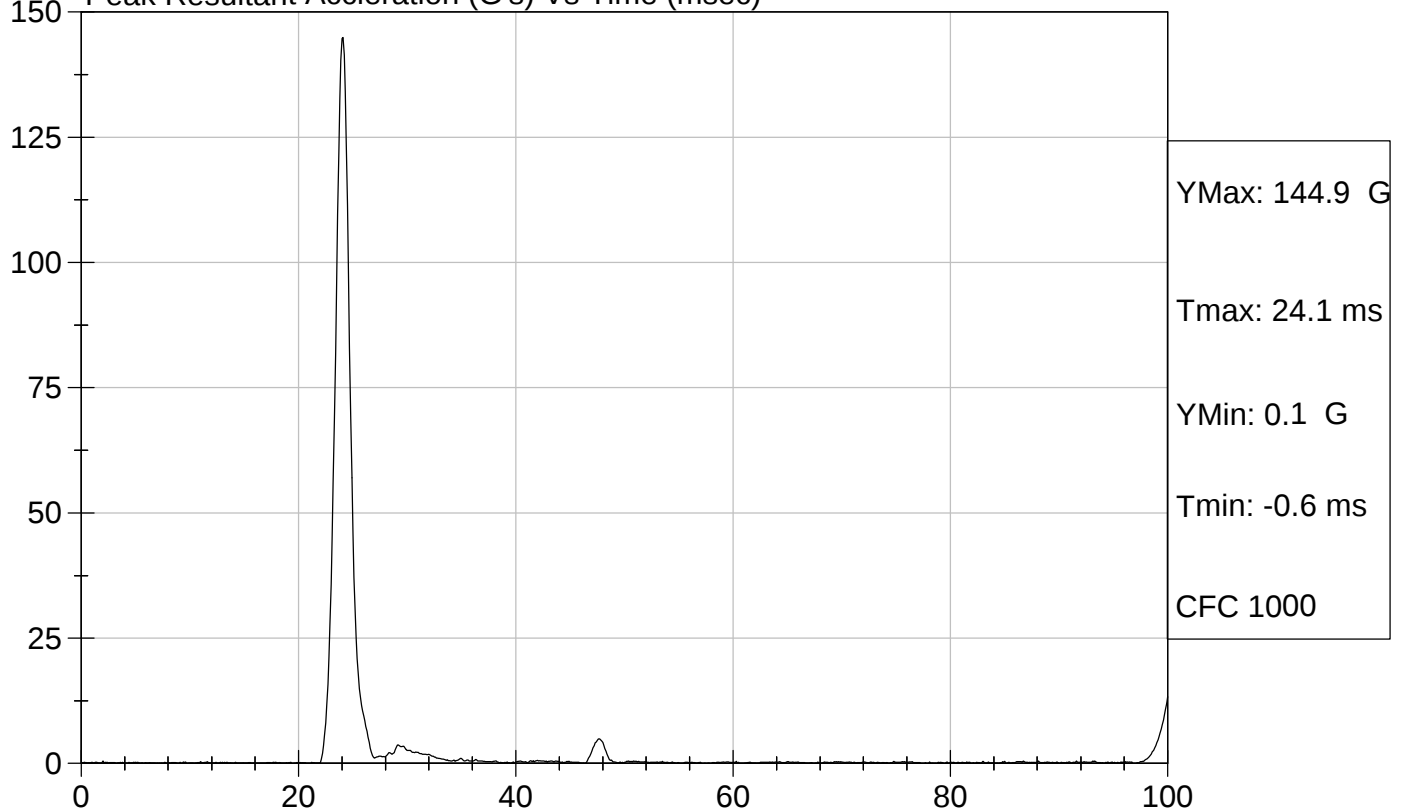
Test Description: Head Drop

Test Date: 09/18/2002

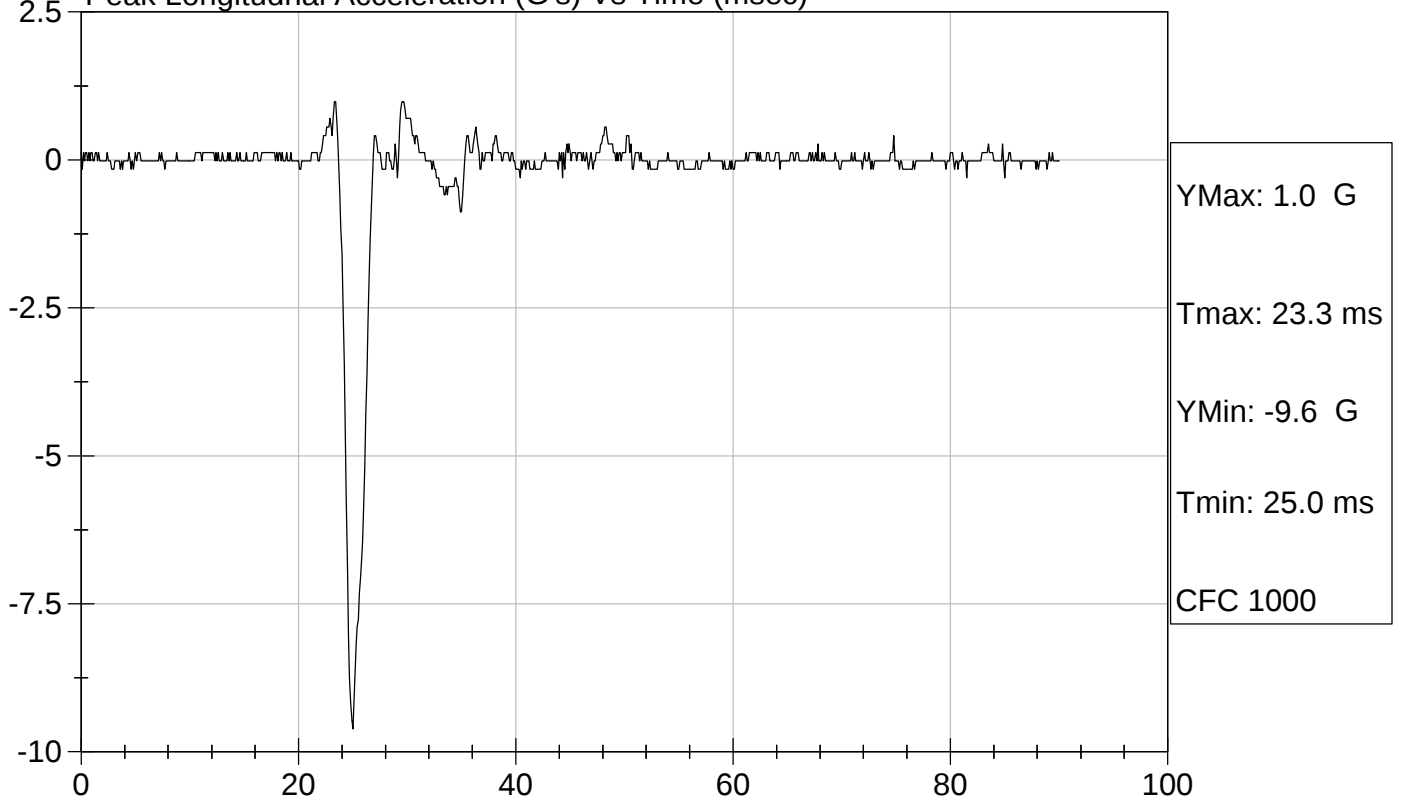
Component: D021231

Speed: 0 ft/s, 0.00 m/s

Peak Resultant Acceleration (G's) Vs Time (msec)



Peak Longitudnal Acceleration (G's) Vs Time (msec)



SID Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 036

Test I.D: D021239

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	18.9 to 25.5	20.8	Pass
Laboratory Relative Humidity		%	10 to 70	51	Pass
Impact Velocity		m/s	6.89 to 7.13	7.05	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.24	Pass
	20 msec	m/s	4.12 to 5.10	4.46	Pass
	30 msec	m/s	5.73 to 7.01	6.24	Pass
	40 to 70 msec	m/s	6.27 to 7.64	6.93	Pass
Midsaggital Plane Max Rotation		deg	66 to 82	72	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	61	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	77	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	56	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	11	Pass

Laboratory Technician

09/18/2002

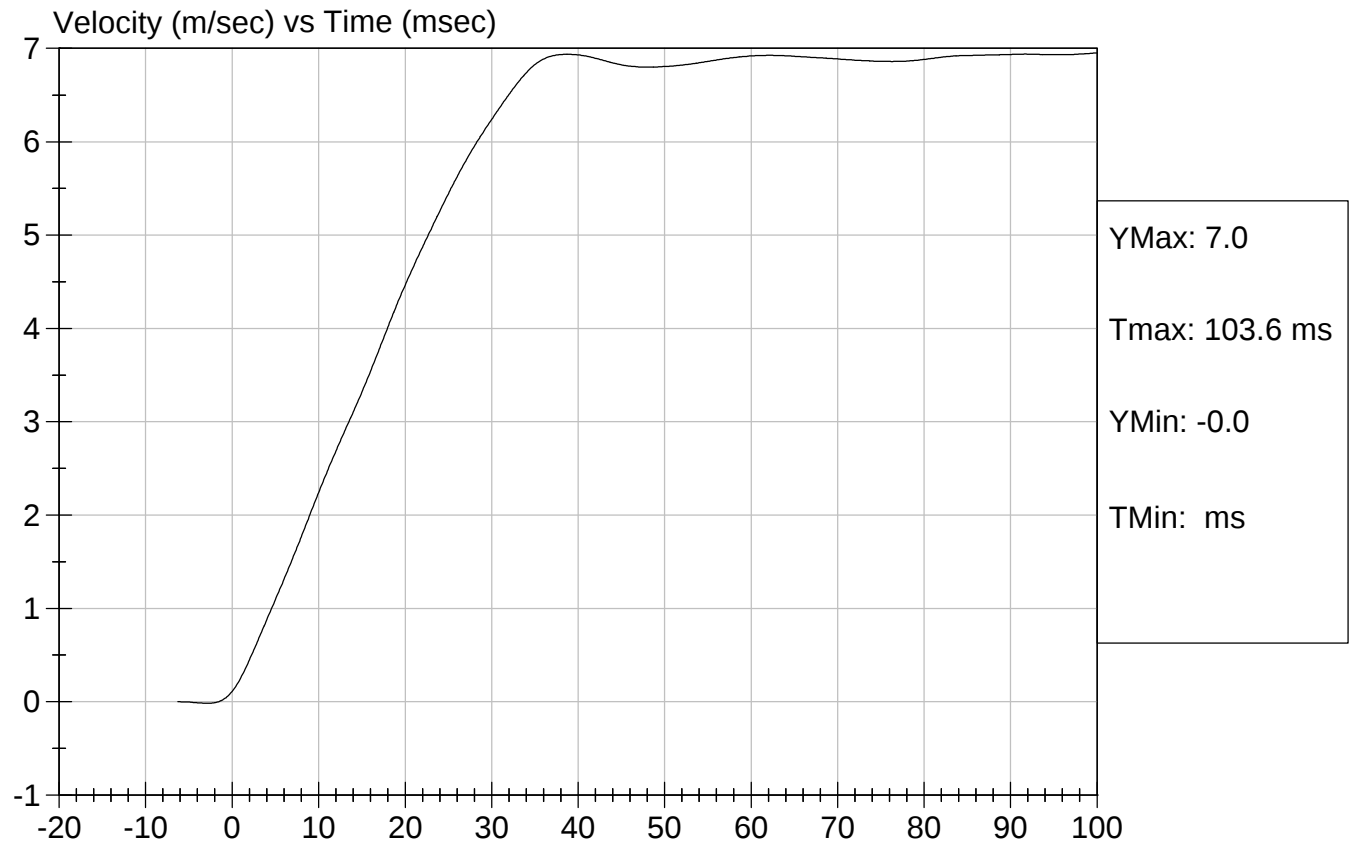
Test Date

Approved By



Test Desc: Neck Bending
Component ID: D021239

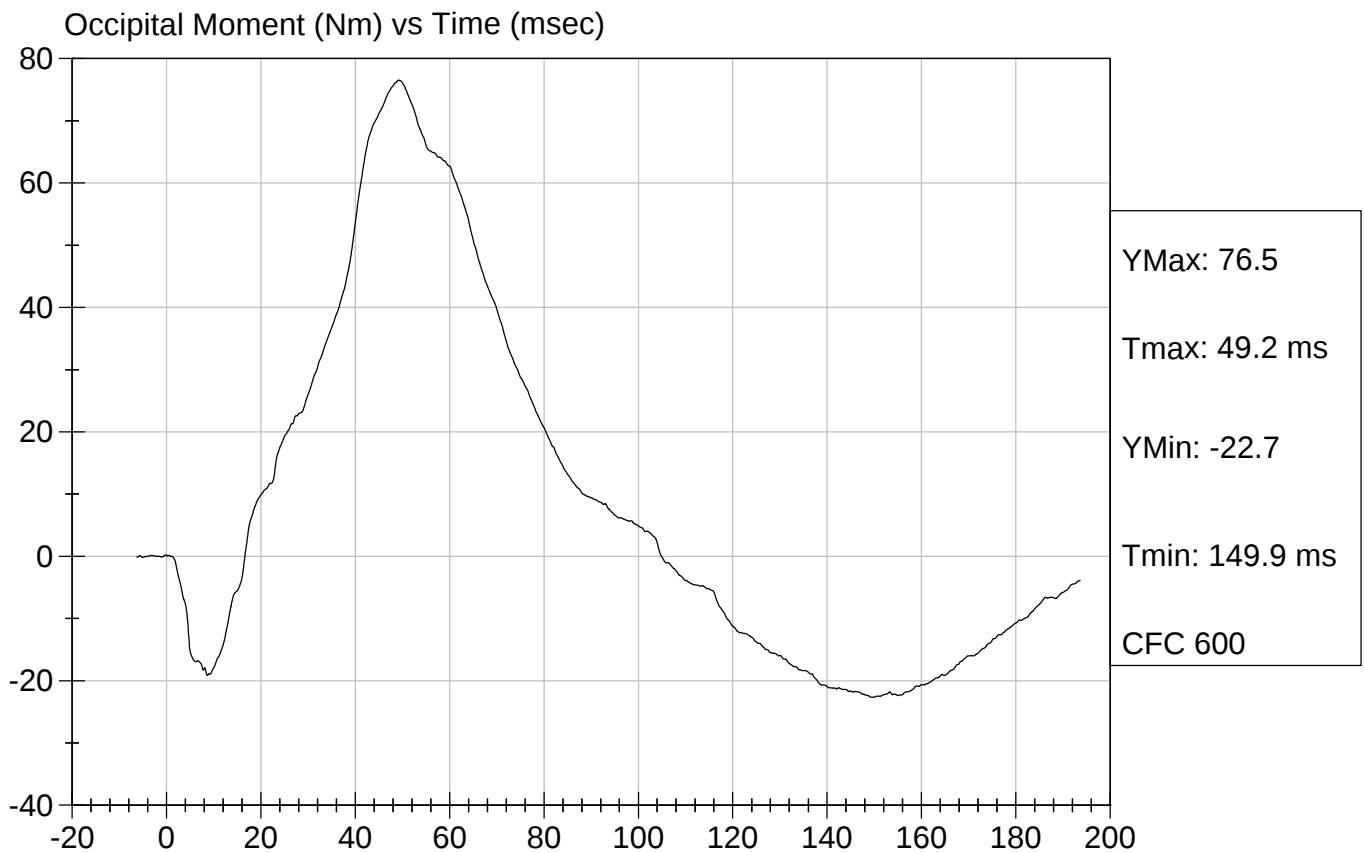
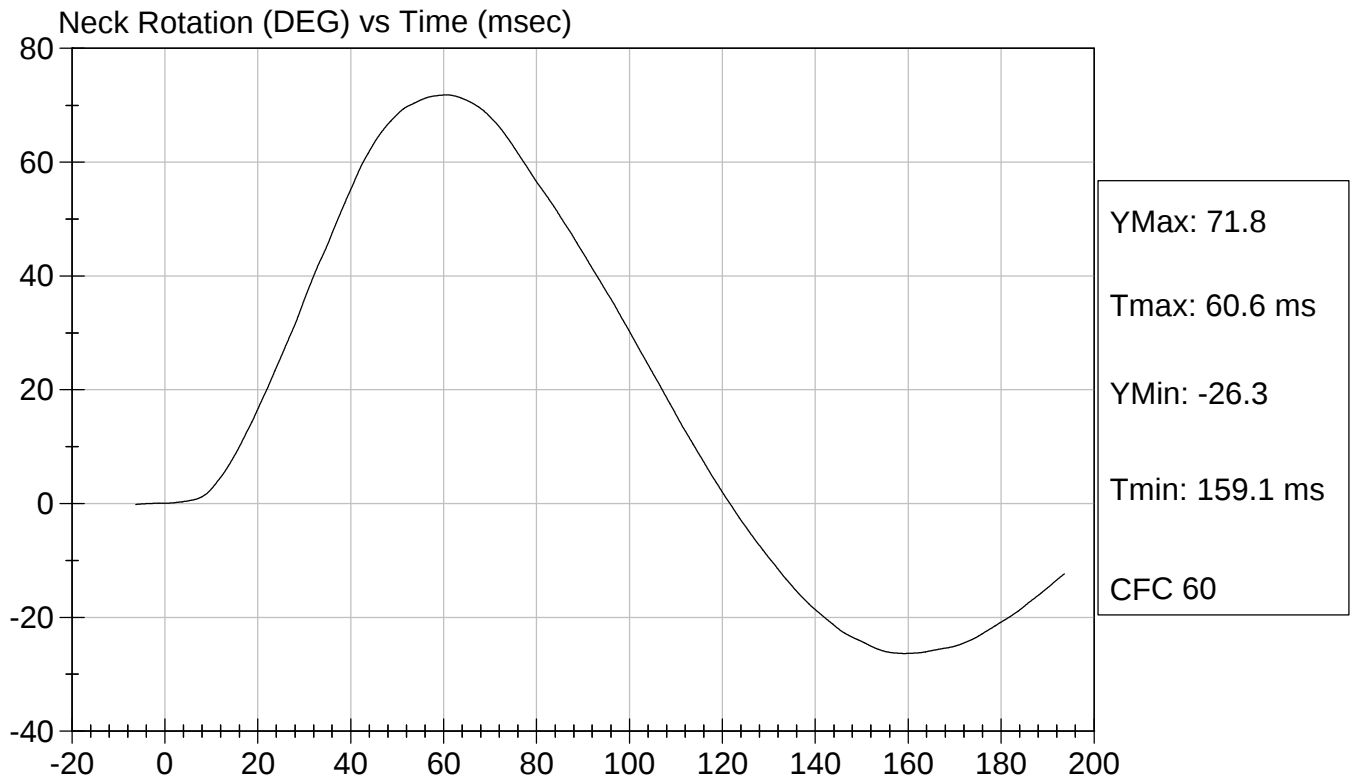
Test Date: 09/18/2002
Speed: 23.13 ft/sec, 7.05 m/sec





Test Desc: Neck Bending
Component ID: D021239

Test Date: 09/18/2002
Speed: 23.13 ft/sec, 7.05 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 036

Test I.D: D021232

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Probe Velocity	m/s	4.27 - 4.33	4.28	Pass
Upper Rib	G's	37 - 46	43	Pass
Lower Rib	G's	37 - 46	46	Pass
Lower Spine	G's	15 - 22	18	Pass
Overall Test Results				Pass

Laboratory Technician

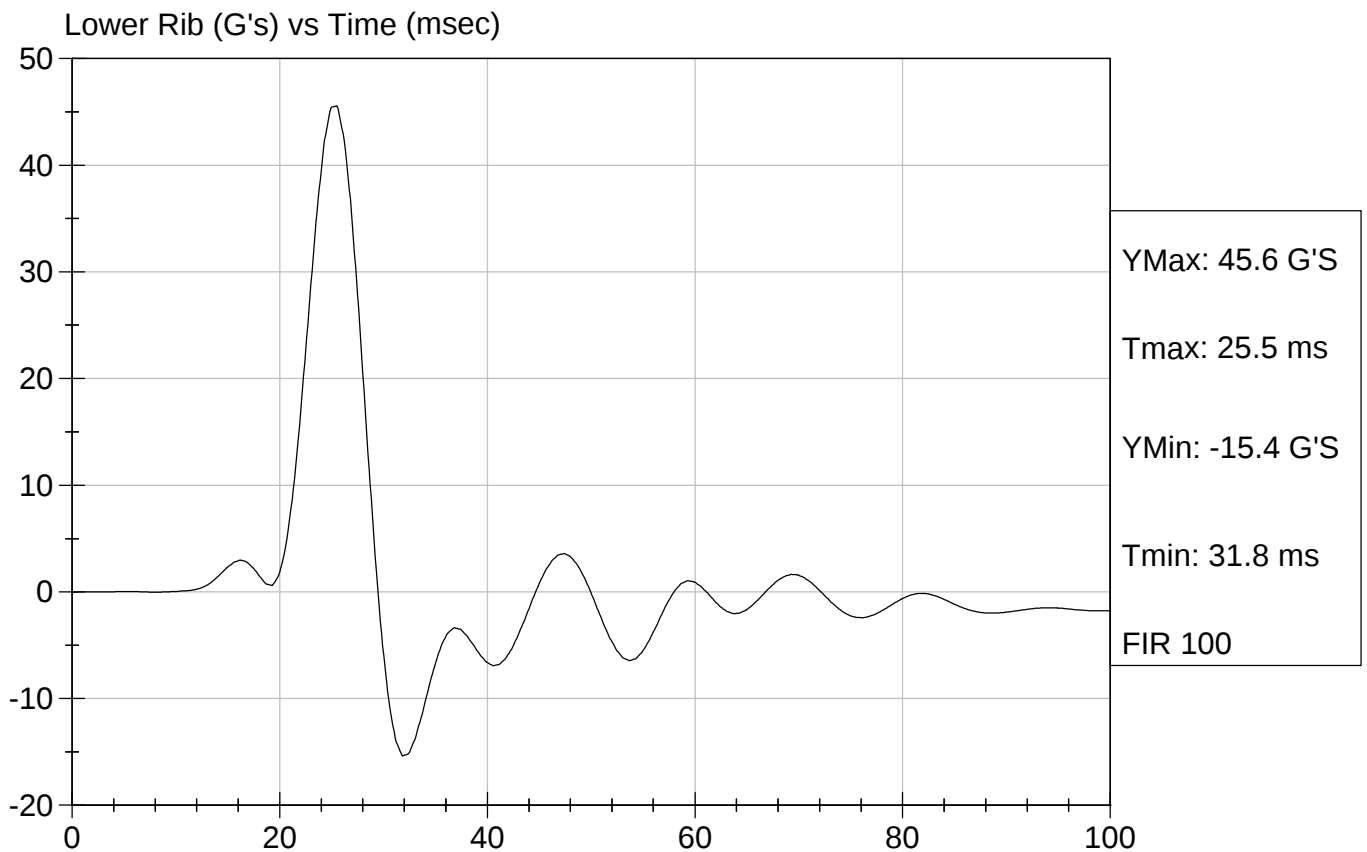
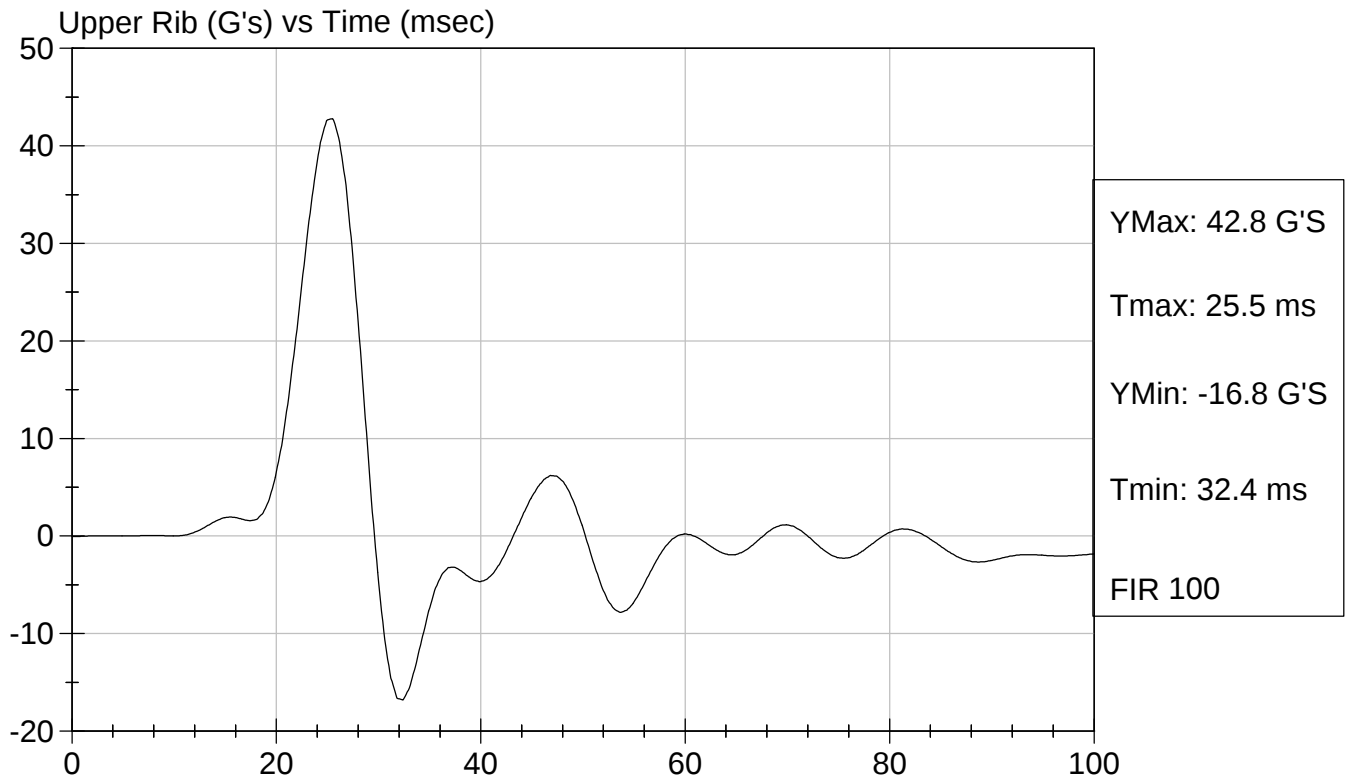
09/17/2002
Test Date

Approved By



Test Desc: Thorax Impact
Component ID: D021232

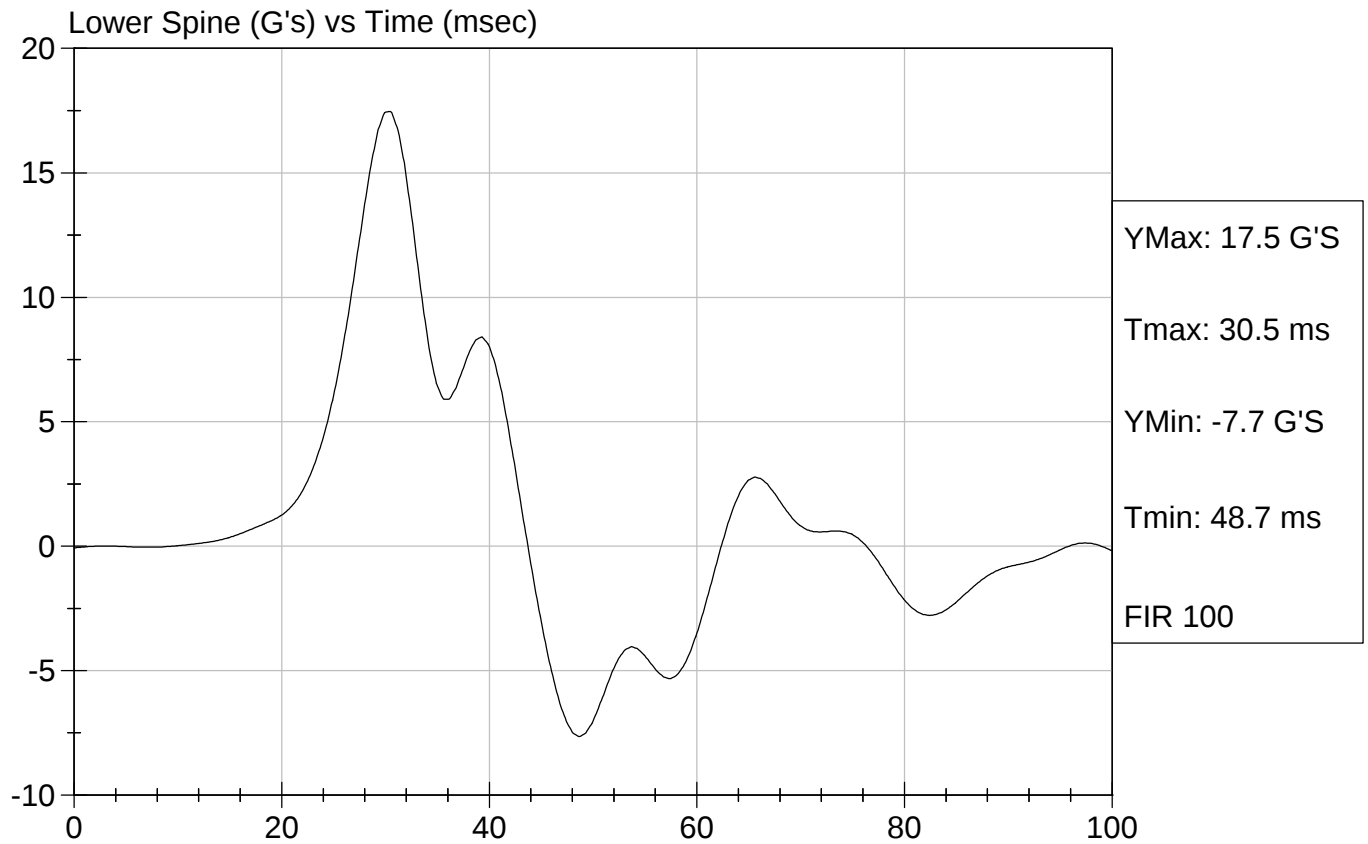
Test Date: 09/17/2002
Speed: 14.05 ft/sec, 4.28 m/sec





Test Desc: Thorax Impact
Component ID: D021232

Test Date: 09/17/2002
Speed: 14.05 ft/sec, 4.28 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 036

Test I.D: D021233

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Probe Velocity	m/s	4.27 - 4.33	4.29	Pass
Pelvis Acceleration	G's	40 - 60	50	Pass
Overall Test Results				Pass

Laboratory Technician

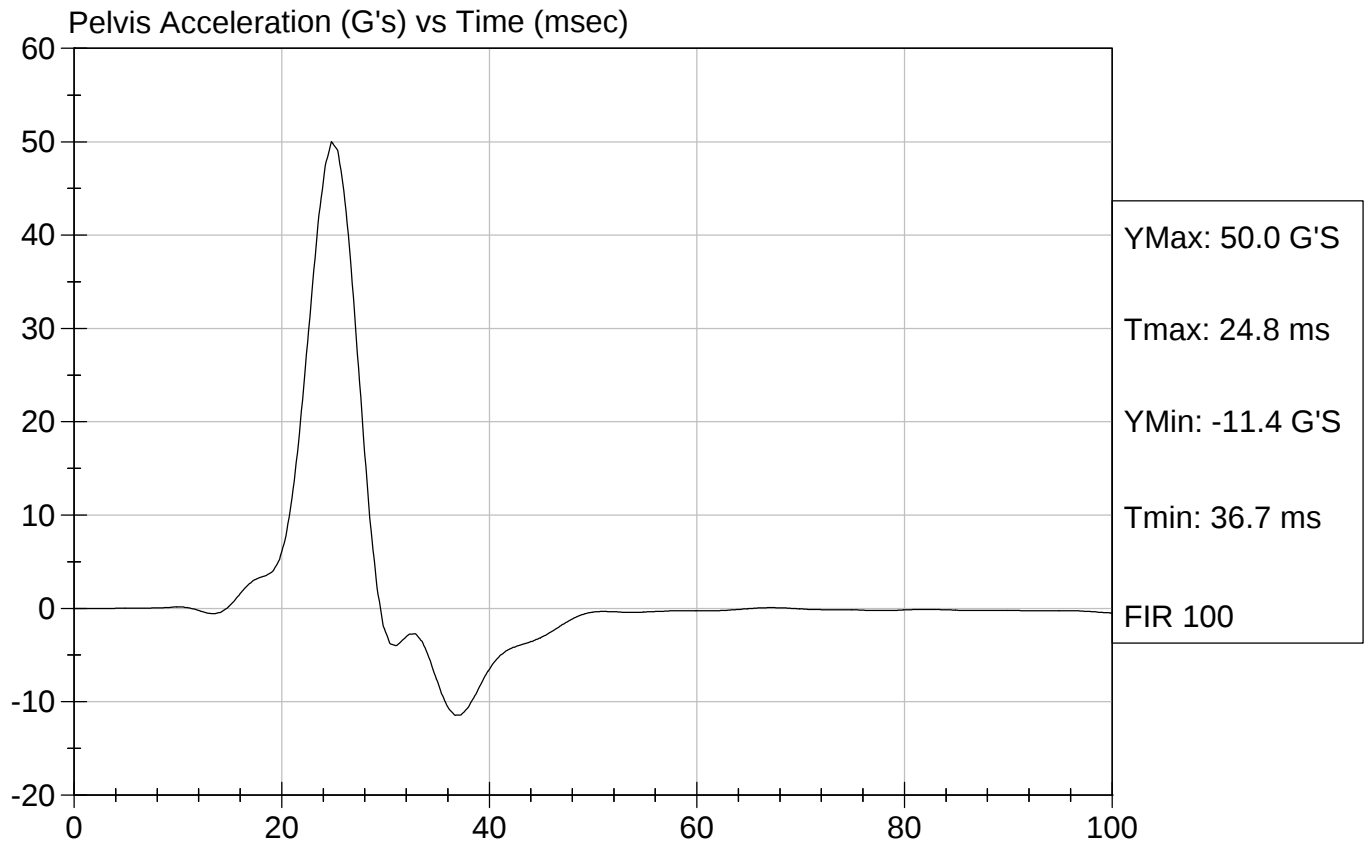
09/17/2002
Test Date

Approved By



Test Desc: Pelvis Impact
Component ID: D021233

Test Date: 09/17/2002
Speed: 14.06 ft/sec, 4.29 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 036

Test I.D: D021234

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	54	Pass
Force At 12.7 mm	N	104 -162	150	Pass
Force At 19 mm	N	163 - 222	206	Pass
Force At 25.4 mm	N	222 - 280	273	Pass
Force At 33 mm	N	325 - 391	380	Pass
Overall Test Results				Pass

Laboratory Technician

09/18/2002
Test Date

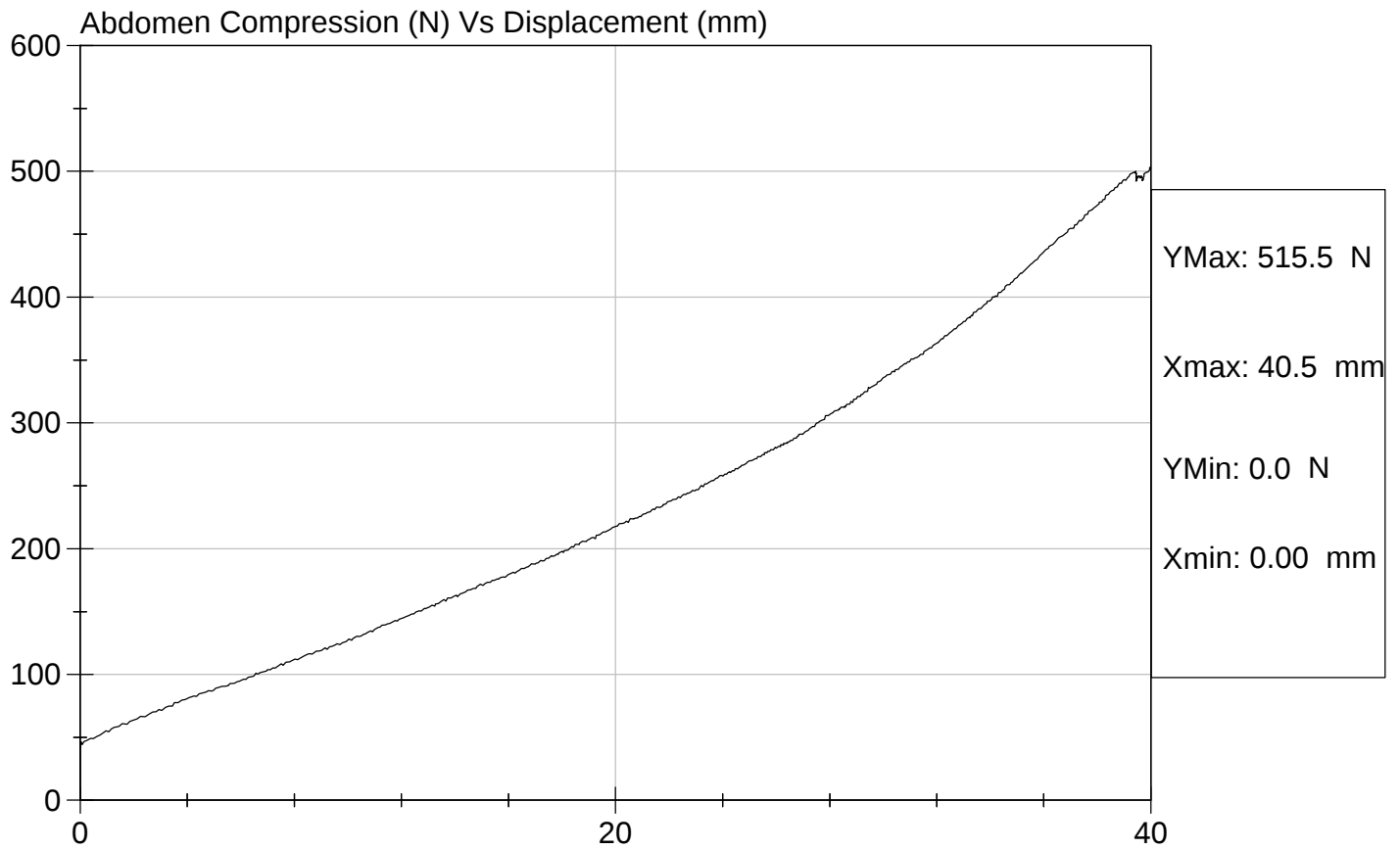
Approved By



Test Description: Abdomen Compression Test Date: 09/18/2002

Component: D021234

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 036

Test I.D: D021235

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	53	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	103.1	Pass
Force At 30 deg	N	151.2 - 204.6	163.5	Pass
Force At 40 deg	N	204.6 - 258.0	231.9	Pass
Return Angle	Deg	12 Maximum	5	Pass
Overall Test Results			Pass	

Laboratory Technician

09/18/2002
Test Date

Approved By

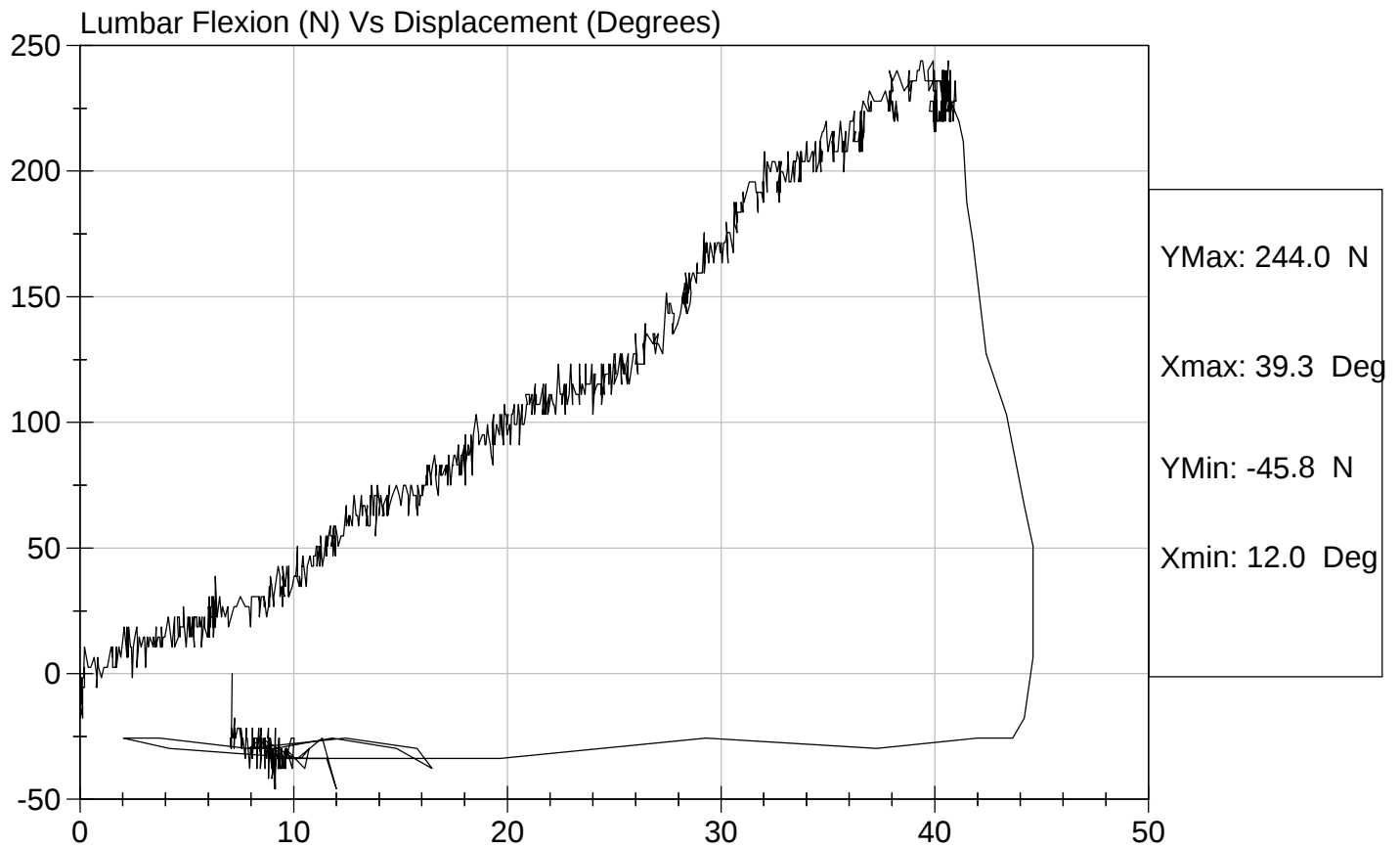


Test Description: Lumbar Flexion

Test Date: 09/18/2002

Component: D021235

Speed: 0 ft/sec, 0 m/sec



APPENDIX D
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA

	INSTRUMENTS FOR LEFT FRONT DUMMY NO.		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X Accelerometer	ALDC3	Endevco	9/9/02
Head Y Accelerometer	ALA92	Endevco	9/9/02
Head Z Accelerometer	ALDM8	Endevco	9/9/02
Head Y-Front Accelerometer	AP122	Endevco	8/7/02
Head Z-Front Accelerometer	J18925	Endevco	8/7/02
Head X-Left Accelerometer	AGP28	Endevco	9/9/02
Head Z-Left Accelerometer	AN8D5	Endevco	9/9/02
Head X-Upper Accelerometer	J12465	Endevco	9/9/02
Head Y-Upper Accelerometer	J11361	Endevco	9/9/02
Driver Neck Force X	N442FX	Denton	3/15/02
Driver Neck Force Y	N442FY	Denton	3/15/02
Driver Neck Force Z	N442FZ	Denton	3/15/02
Driver Neck Moment X	N442MX	Denton	3/15/02
Driver Neck Moment Y	N442MY	Denton	3/15/02
Driver Neck Moment Z	N442MZ	Denton	3/15/02
Upper Spine X Accelerometer	AP2A4	Endevco	9/6/02
Upper Spine Y Accelerometer	AP2D8	Endevco	9/6/02
Upper Spine Z Accelerometer	AP1T8	Endevco	9/6/02
Upper Rib Y Accelerometer	AHT20	Endevco	9/9/02
Lower Rib Y Accelerometer	J10420	Endevco	9/9/02
Rib Displacement	036	Servo	9/9/02
Lower Spine X Accelerometer	AGM41	Endevco	9/9/02
Lower Spine Y Accelerometer	J13984	Endevco	9/9/02
Lower Spine Z Accelerometer	ACCH1	Endevco	9/9/02
Pelvis X Accelerometer	AMP12	Endevco	9/9/02
Pelvis Y Accelerometer	AGWA4	Endevco	9/9/02
Pelvis Z Accelerometer	ANAP1	Endevco	9/9/02
Head Xr Accelerometer	AMR94	Endevco	9/9/02
Head Yr Accelerometer	AMTB1	Endevco	9/9/02
Head Zr Accelerometer	AC9B7	Endevco	9/9/02
Upper Rib Yr Accelerometer	AH0N9	Endevco	9/9/02
Lower Rib Yr Accelerometer	AKAF2	Endevco	9/9/02
Upper Spine Yr Accelerometer	AP2D7	Endevco	9/6/02
Lower Spine Yr Accelerometer	J14774	Endevco	9/9/02
Pelvis Yr Accelerometer	J13422	Endevco	9/6/02

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Mid A-Post Y	K21-N29	ENTRAN	9/6/02
Left Lower A-Post Y	G01-N04	ENTRAN	7/23/02
Left Mid B-Post Y	K21-N08	ENTRAN	6/25/02
Left Lower B-Post Y	99F251	ENTRAN	4/22/02
Rear Floorpan Above Axle X	AJ9D6	ENDEVCO	5/10/02
Rear Floorpan Above Axle Y	AJ9D8	ENDEVCO	5/10/02
Rear Floorpan Above Axle Z	I12-F01	ENTRAN	5/29/02
Driver Seat Track Y	I12-F10	ENTRAN	5/29/02
Driver Left Seat Frame	C25-A25	ENTRAN	9/6/02
Driver Right Seat Frame	K21-N10	ENTRAN	9/6/02
Right Side Sill at Front Seat X	I25-F02	ENTRAN	6/24/02
Right Side Sill at Front Seat Y	L23-A03	ENTRAN	5/30/02
Right Side Sill at Front Seat Z	I12-F09	ENTRAN	6/17/02
Right Side Sill at Rear Seat X	K21-N11	ENTRAN	6/25/02
Right Side Sill at Rear Seat Y	H14-N07	ENTRAN	5/30/02
Right Side Sill at Rear Seat Z	H14-N11	ENTRAN	5/30/02
Left Side Sill at Front Seat Y	G01-N09	ENTRAN	7/24/02
Left Side Sill at Rear Seat Y	G01-N06	ENTRAN	7/23/02
Vehicle CG X	G03-N06	ENTRAN	7/31/02
Vehicle CG Y	G01-N01	ENTRAN	7/31/02
Vehicle CG Z	K21-N18	ENTRAN	8/7/02
Left Door @ Rib Y	G01-N18	ENTRAN	7/31/02
Left Door @ Pelvis Y	G01-N21	ENTRAN	7/23/02
Left Door @ Knee Y	G01-N20	ENTRAN	7/31/02
Left Door @ End of Arm Y	G01-N02	ENTRAN	7/31/02
Lower Center Radiator Support X	K21-N01	ENTRAN	6/25/02
Lower Center Radiator Support Y	K21-N17	ENTRAN	6/24/02
Lower Center Radiator Support Z	K21-N09	ENTRAN	6/25/02

Note: All Endevco accelerometers are Model No. 7264-2000
All Entran accelerometers are Model No. EGE-72

APPENDIX E
DUMMY PEAK RESPONSES

DRIVER (ES-2) PEAK RESPONSE TABLE

Location	Peak Response						
				2002 Explorer 12/18/01		2002 Explorer 9/12/02	
	Class	Axis	Units	Peak	Time	Peak	Time
Head	1000	X	G	-17.5	72	-22.5	52.7
	1000	Y	G	45.0	58	51.3	50.4
	1000	Z	G	-17.7	58	22.2	41.6
	1000	RES	G	49.1	58	56.3	52.7
Head Injury Criteria (HIC)				208		330	
t1				50.5		41.2	
t2				73.1		66.7	
Upper Neck Force	1000	X	N	2401	56	-582	52.5
	1000	Y	N	-793	55	425	49.0
	1000	Z	N	2103	67	1331	44.2
	1000	RES	N	2831	56	1386	44.3
Upper Neck Moment	600	X	Nm	-10.9	74	-87.7	49.0
	600	Y	Nm	7.5	54	-42.8	52.1
	600	Z	Nm	7.9	53	14.2	55.0
	600	RES	Nm	13.0	72	96.3	49.0
Lower Neck Force	1000	X	N	-578	74		
	1000	Y	N	853	55		
	1000	Z	N	813	52		
	1000	RES	N	1117	54		
Lower Neck Moment	600	X	Nm	50.1	55		
	600	Y	Nm	74.7	75		
	600	Z	Nm	23.3	65		
	600	RES	Nm	76.7	74		
Shoulder Force	600	X	N	2219	46		
	600	Y	N	3871	48		
	600	Z	N	-239	63		

DRIVER (ES-2) PEAK RESPONSE TABLE (CONTINUED)

Location	Peak Values						
				2002 Explorer 12/18/01		2002 Explorer 9/12/02	
	Class	Axis	Units	Peak	Time	Peak	Time
Upper Spine	180	X	G	-19.6	45	-26.3	45.5
	180	Y	G	52.9	49	84.3	43.7
	180	Z	G	5.4	61	25.3	47.1
	180	Res	G	53.4	49	89.8	43.6
Lower Spine	180	X	G	-7.5	53	32.2	52.0
	180	Y	G	65.0	53	98.4	41.5
	180	Z	G	4.5	77	17.9	47.1
	180	Res	G	65.5	63	103.2	41.4
Upper Rib	180	Y	G	145.2	48	121.1	38.1
Mid Rib	180	Y	G	143.2	45		
Lower Rib	180	Y	G	238.7	44	118.7	37.2
Upper Rib Deflection	180	Y	mm	25.6	64		
Mid Rib Deflection	180	Y	mm	45.9	58	-49.7	52.7
Lower Rib Deflection	180	Y	mm	43.1	60		
Upper Rib VC	180	Y	m/sec	0.38	52		
Mid Rib VC	180	Y	m/sec	0.88	47		
Lower Rib VC	180	Y	m/sec	0.74	49		
Torso Force	600	X	N	308	46		
	600	Y	N	-542	55		
Torso Moment	600	Y	Nm	-5.3	46		
	600	Z	Nm	10.6	52		
T12 Force	600	X	N	858	72		
	600	Y	N	1529	46		
T12 Moment	600	X	Nm				
	600	Y	Nm	119.6	75		

* No valid data collected

DRIVER (ES-2) PEAK RESPONSE TABLE (CONTINUED)

Location	Peak Values						
				2002 Explorer 12/18/01		2002 Explorer 9/12/02	
	Class	Axis	Units	Peak	Time	Peak	Time
Abdomen Front Force	600	Y	N	141	46		
Abdomen Mid Force	600	Y	N	637	52		
Abdomen Rear Force	600	Y	N	1372	52		
Abdomen Summed Force	600	Y	N	2074	52		
Pubic Symphysis Force	600	Y	N	1262	60		
Right Femur Force	600	X	N	277	71		
	600	Y	N	-913	74		
	600	Z	N	947	68		
	600	RES	N	1131	71		
Right Femur Moment	600	X	Nm	105.7	72		
	600	Y	Nm	-41.9	85		
	600	Z	Nm	-55.3	71		
	600	RES	Nm	118.0	72		
Left Femur Force	600	X	N	358	61		
	600	Y	N	896	135		
	600	Z	N	967	78		
	600	RES	N	990	78		
Left Femur Moment	600	X	Nm	-121	76		
	600	Y	Nm	46.8	65		
	600	Z	Nm	-33.2	62		
	600	RES	Nm	126.7	76		
Pelvis	1000	X	G	-14.7	75	11.0	53.8
	1000	Y	G	48.4	52	90.8	43.1
	1000	Z	G	6.2	77	-21.1	43.5