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REPORT NUMBER: 214-CAL-01-2

SAFETY COMPLIANCE TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION
INDICANT

GENERAL MOTORS CORPORATION
2001 OLDSMOBILE AURORA
4-DOOR SEDAN

NHTSA NUMBER: C10102

VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
P.O. BOX 400
BUFFALO, NEW YORK 14225

September 25, 2000

FINAL REPORT

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Compliance
400 Seventh Street, SW
Room 6115 (NSA-30)
Washington, DC 20590

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-97-C-01033. This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufactures' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

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Final Report of FMVSS 214 Compliance Side Impact Indicant Testing of a 2001 Oldsmobile Aurora 4-Door Sedan NHTSA No.: C10102	September 25, 2000
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16. Abstract

A 55/28 kph 90° Side Impact (Moving Deformable Barrier) Indicant Test was conducted on the subject 2001 Oldsmobile Aurora 4-Door Sedan. This test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-04, dated September 1, 1995). This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on September 25, 2000.

The impact velocity of the Moving Deformable Barrier (MDB) was 61.95 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21 °C. The target vehicle post-test maximum crush was 327 mm at level 2.

The test or target vehicle's performance is given below:

	Front SID		Rear SID	
Left Upper Rib Acceleration:	70	g's	54	g's
Left Lower Rib Acceleration:	66	g's	71	g's
Lower Spine Acceleration:	84	g's	74	g's
Thoracic Trauma Index (TTI):	77	g's	72	g's
Pelvis Acceleration (PEV):	64	g's	76	g's

The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

17. Key Words	18 Distribution Statement
Compliance Testing Side Impact Protection FMVSS 214 Side Impact Dummy (SID) New Car Assessment Program (NCAP)	Copies of this report are available from: National Highway Traffic Safety Administration Technical Reference Division Room 5108 (NAD-52) 400 Seventh st., S.W. Washington, D.C. 20590 Telephone No. (202) 366-4946 ATTN: Robert Hornicle

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SECTION 1

PURPOSE AND TEST PROCEDURE

This Side Impact Indicant Test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-97-C-01033. The purpose of this indicant test was to evaluate side impact protection in a 2001 Oldsmobile Aurora 4-Door Sedan when tested at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-04, dated September 1, 1995).

SECTION 2

SUMMARY OF SIDE IMPACT TEST

This Side Impact Protection Indicant Test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-04, dated September 1, 1995).

A 2001 Oldsmobile Aurora 4-Door Sedan was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 61.95 kph (38.5 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Veridian Engineering Transportation Sciences Center in Buffalo, New York on September 25, 2000. Pre- and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SIDs) are included in Appendix A.

Two restrained Side Impact Dummies (SIDs) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure. Both SIDs were certified prior to this test. The side impact test was documented by one real-time camera and 10 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SIDs were instrumented with the following accelerometers:

1. Head triaxial accelerometer (X,Y,Z-direction)
2. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
3. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
4. Lower Thoracic Spine (T_{12}) uniaxial and redundant accelerometer (Y-direction)
5. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)

A summary of the side impact dummy (SID) configuration and verification test data can be found in Appendix C. A total of 48 channels of data were recorded. Appendix B contains the vehicle, MDB and dummy response data traces.

The following table summarizes the results of the test.

Injury Criteria	Front SID	Rear SID
TTI (g)	77	72
PEV (g)	64	76

SECTION 3

SUMMARY OF TEST RESULTS

DATA SHEET 1

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2001 Oldsmobile Aurora 4-Door Sedan

Vehicle Body Color: Blue VIN: 1G3GR62H214104557

Vehicle NHTSA No.: C10102 Month & Year of Manufacture: 2/00

Engine Data: 6 Cylinders; - CID; 3.5 Liters; - cc

Engine Placement: - Longitudinal; or X Lateral

Transmission: 4 Speed; - Manual; X Automatic; X Overdrive

Final Drive: - Rear Wheel Drive; X Front Wheel Drive; - Four Wheel

Odometer Reading 163 km

Options: X A/C; X Power Steering; X Pwr.Brakes; X Pwr. Windows

DATA FROM TIRE PLACARD

Tire Pressure* (at capacity); 210 kPa FRONT

210 kPa REAR

Recommended Tire Size: P225/60R16

Tires on Test Vehicle: P225/60R16 ; Manufacturer: Goodyear

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; 0 3rd Seat; 5 Total

Type of Front Seats: X Bucket; - Bench; - Split Bench

Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob

Vehicle Max Capacity Loading = 408 kg (A)

No. of Occupants x 68.04 kg. = 340.2 kg (B)

Vehicle Cargo Capacity = 67.8 kg (A-B)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front	=	503.0 kg	Left Rear	=	320.0 kg
Right Front	=	513.0 kg	Right Rear	=	308.0 kg
TOTAL FRONT	=	1016.0 kg	TOTAL REAR	=	628.0 kg
% of Total Weight	=	61.8 %	% of Total Weight	=	38.2 %

TOTAL WEIGHT = 1644.0 kg

* Tire pressure used in test.

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max. Fluids	= 1644.0	kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	= 67.8	kg (B)
Weight of instrumented Side Impact Dummies	= 162.4	kg (C)
TEST VEHICLE TARGET WEIGHT:	= 1874.2	kg (A+B+C)

FULLY LOADED TEST VEHICLE (UDVW + 2 SIDs + CARGO):

Left Front	= 556.0	kg	Left Rear	= 430.0	kg
Right Front	= 513.0	kg	Right Rear	= 382.0	kg
TOTAL FRONT	= 1069.0	kg	TOTAL REAR	= 812.0	kg
% of Total Weight	= 56.8	%	% of Total Weight	= 43.2	%

TOTAL TEST WEIGHT = 1881.0 kg

AS TESTED WEIGHT OF TEST VEHICLE (2 SIDs + CARGO + EQUIPMENT & INSTRUMENTATION):

Left Front	= 553.5	kg	Left Rear	= 425.5	kg
Right Front	= 508.5	kg	Right Rear	= 378.5	kg
TOTAL FRONT	= 1062.0	kg	TOTAL REAR	= 804.0	kg
% of Total Weight	= 56.9	%	% of Total Weight	= 43.1	%

TOTAL TEST WEIGHT = 1866.0 kg

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED:

Left Front 748 Right Front 752 Left Rear 761 Right Rear 757

FULLY LOADED:

Left Front 730 Right Front 746 Left Rear 720 Right Rear 731

READY FOR TEST:

Left Front 735 Right Front 749 Left Rear 727 Right Rear 741

Test Vehicle Wheelbase: 2850 millimeters

C.G. = 1228.0 millimeters rearward of front wheel centerline

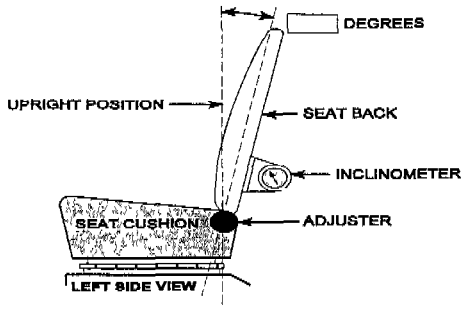
TOTAL VEHICLE LENGTH:

Right Side	= 4910	millimeters
Left Side	= 4910	millimeters
Centerline	= 5062	millimeters

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



FRONT SEAT ASSEMBLY

FRONT SEAT TRACK POSITION: Mid-Position

Total Length of Adjustment Travel: 220 millimeters

Total Number of Adjustment Positions or Detents: Electric Adjuster

FRONT SEAT BACK ADJUSTMENT POSITION: Unzip seat seam and place inclinometer in hole near sidebag

Seat Back Torso Angle: 18.5 degrees

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: Fixed millimeters

Seat Back Adjustment Position: Fixed

ADJUSTABLE STEERING COLUMN POSITION: Six total positions placed in third from uppermost

WINDOW POSITIONS: Left Front: Closed Left Rear: Closed

Right Front: Removed Right Rear: Removed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

70 liters (Fuel Tank Usable Capacity)

64.4 liters used for test (92%-94% of Fuel Tank Usable Capacity)

LOCATION OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED:

Wheelbase = 2850 millimeters

Impact Point is 485 millimeters rearward of front axle centerline

(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 476 millimeters rearward of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2001 Oldsmobile Aurora

Body Style: 4-Door Sedan VIN: 1G3GR62H21[illegible]104557

NHTSA No.: C10102 Test Date: September 25, 2000

Overall Length = 5062 millimeters; Overall Width = 1863 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front	=	553.5 kg	Left Rear	=	425.5 kg
Right Front	=	508.5 kg	Right Rear	=	378.5 kg
TOTAL FRONT	=	1062.0 kg	TOTAL REAR	=	804.0 kg

TOTAL VEHICLE WEIGHT 1866.0 kg

Wheelbase = 2850 millimeters

Longitudinal C.G. from Center of Front Axle = 1228.0 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 9 mm forward of nominal impact ref. line (Lateral)

Actual Impact Point is 5 mm below nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (	262 mm above ground)	=	161 millimeters
2. LEVEL 2 (	484 mm above ground)	=	327 millimeters
3. LEVEL 3 (	574 mm above ground)	=	318 millimeters
4. LEVEL 4 (	848 mm above ground)	=	300 millimeters
5. LEVEL 5 (	1349 mm above ground)	=	109 millimeters

Maximum Post-Test Intrusion = 327 millimeters

OCCUPANTS:	Front Passenger:	Rear Passenger:
Dummy Identification	015	016
Restraints Used	Seatbelt, Side Airbag	Seatbelt

INSTRUMENTATION:

Number of Vehicle Data Channels:		=	44
Number of Cameras:	Onboard	=	3
	Offboard	=	7
	TOTAL	=	10

DATA SHEET 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102

MDB FACE MANUFACTURER AND SERIAL NUMBER:

Plascore, Inc. 036A1299-2 017B1299 2814

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

Overall Width of Framework Carriage	=	1250	millimeters
Overall Length of MDB (incl. honeycomb impact face)	=	4120	millimeters
Wheelbase of Framework Carriage	=	2590	millimeters
Tread of Framework Carriage (Front & Rear)	=	1875	millimeters
C.G. Location Rearward of Front Axle	=	1104	millimeters

MDB WEIGHT:

Left Front	=	409.5	kg	Left Rear	=	281.5	kg
Right Front	=	372.5	kg	Right Rear	=	299.0	kg
TOTAL FRONT =		782.0	kg	TOTAL REAR	=	580.5	kg
TOTAL MDB WEIGHT =		1362.5	kg				

Impact Angle (MDB C/L to Target Vehicle C/L) = 90 degrees

Impact Speed = 61.95 kph

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A at Center of Bumper Level	=	131	millimeters
2. Row B at Top of Bumper Level	=	87	millimeters
3. Row C at Mid Level	=	104	millimeters
4. Row D at Top of Stack Level	=	139	millimeters

INSTRUMENTATION:

Number of MDB Data Channels = 5

DATA SHEET 4

POST-TEST OBSERVATIONS

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102

VISIBLE DUMMY CONTACT POINTS:

	LEFT FRONT SID	LEFT REAR SID
Head:	Side of the face to the left shoulder	Top of the head to the C-Pillar; The side of the face to the door sill trim panel.
Upper Torso:	Side Airbag	Door Interior Trim Panel
Lower Torso:	Side Airbag	Door Interior Trim Panel
Left Knee:	Door Interior Trim Panel	Door Interior Trim Panel
Right Knee:	Left Knee	Left Knee

DOOR OPENING:

	LEFT DOOR	RIGHT DOOR
Front:	Closed/Inoperable	Closed/Operable
Rear:	Closed/Inoperable	Closed/Operable

MDB DISTANCE FROM TARGET IMPACT POINT: Vertical: 5 mm below
Horizontal: 9 mm forward

ARM REST LOCATIONS:

Front: The armrest was moved inboard and rotated down after the event.

Rear: The armrest was moved inboard and rotated down after the event.

SEAT MOVEMENT:

Front: The front seat was moved inboard and rotated down during the event

Rear: The rear seat cushion was moved inboard during the event.

GLAZING DAMAGE:

Windshield: The windshield was cracked along the A-Pillar

Window: The side glass shattered during the impact

PILLAR PERFORMANCE:

The A- and B-Pillars were moved inboard during the event. There were no tears or separations apparent.

SILL SEPARATION:

The sill was rotated upward and inboard during the event. There were no visible tears or separations.

AIR BAG DEPLOYMENT STATUS:

	DRIVER	FRONT PASSENGER	REAR PASSENGER
FRONT	No	No	N/A
SIDE	Yes	No	N/A

OTHER NOTABLE IMPACT EFFECTS:

The barrier remained in contact with the vehicle after the event. The front and rear door skins separated along three edges during the event. The roof seam above the driver door opening separated during the event.

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID INSTRUMENTATION DATA

Vehicle: 2001 Oldsmobile Aurora

NHTSA No. C10102

	Front Dummy ID# 015				Rear Dummy ID# 016			
	Pos. Direction		Neg. Direction		Pos. Direction		Neg. Direction	
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
HEAD ACCELERATIONS:								
Longitudinal X	9.0	170.1	-21.2	72.8	5.0	160.7	-17.0	72.2
Lateral ..... Y	23.9	47.1	-8.3	171.3	121.6	57.3	-6.8	37.0
Vertical ..... Z	45.6	54.3	-4.2	72.4	29.2	57.7	-32.9	62.5
Resultant ..... R	47.7	54.3	0.0	-5.2	125.5	57.3	0.0	-11.3
HIC	264.4				710.2			
RIB ACCELERATIONS:								
Upper Rib Lateral .. Y	69.8	29.4	-12.0	72.5	53.8	35.0	-8.4	88.1
Upper Rib Lateral .. Y(R)	68.2	29.4	-12.5	72.5	54.8	46.3	-8.9	88.1
Lower Rib Latcral . Y	66.1	29.4	-17.6	99.4	71.1	35.6	-14.5	68.1
Lower Rib Lateral . Y(R)	67.6	29.4	-17.3	100.0	67.7	35.6	-15.3	68.1
SPINE ACCELERATIONS:								
Lower Lateral ..... Y	83.6	32.5	-19.7	85.6	73.8	44.4	-34.7	63.8
Lower Lateral ..... Y(R)	83.8	32.5	-20.1	85.6	73.6	43.8	-35.4	63.8
PELVIC ACCELERATIONS:								
Lateral ..... Y	64.2	29.4	-21.3	85.0	75.6	36.3	-13.8	65.0
Lateral ..... Y(R)	64.9	28.8	-21.9	85.0	76.1	36.3	-14.6	65.0

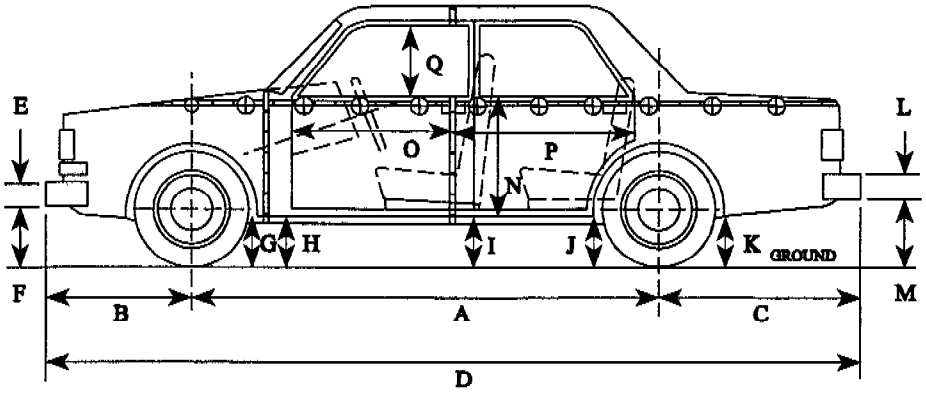
REFERENCE: Positive Direction - Longitudinal (X) = forward
Latcral (Y) = to right
Vertical (Z) = up
Negative Direction - Longitudinal (X) = rearward
Lateral (Y) = to left
Vertical (Z) = down

Note: Above data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.
Head Accelerations are filtered at SAE Class 1000.

DATA SHEET 6

VEHICLE SIDE MEASUREMENTS

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102



LEFT SIDE VIEW

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

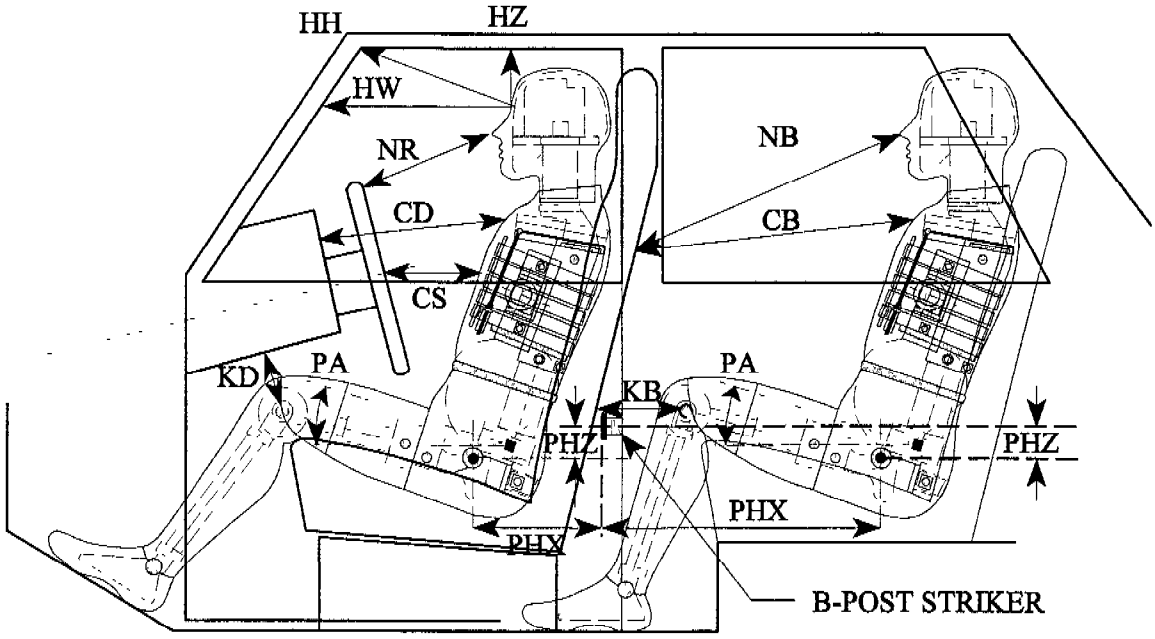
	PRE-TEST (as delivered)	PRE-TEST (as tested)	POST-TEST (as tested)	Δ CHANGE
A	2850	2850	2792	-58
B	1075	-	1081	6
C	1117	-	1157	40
D	5062	-	5030	-32
E	210	-	210	0
F	306	297	313	16
G	189	170	214	44
H	190	171	266	95
I	195	168	241	73
J1	197	165	166	1
J2	208	176	262	86
K	248	204	221	17
L	200	-	200	0
M	379	328	333	5
N	723	-	607	-116
O	839	-	790	-49
P	1391	-	1255	-136
Q	465	-	455	-10
R	4910	-	4893	-17
S	4910	-	4863	-47
T	1863	-	1677	-186

D = Length at Centerline
T = Width at B-Pillar
E&L = Bumper Thickness
J1 = To Pinch Weld
R = Right Side Length
J2 = To Sill
S = Left Side Length

DATA SHEET 7

SID LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102



LEFT SIDE VIEW

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

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

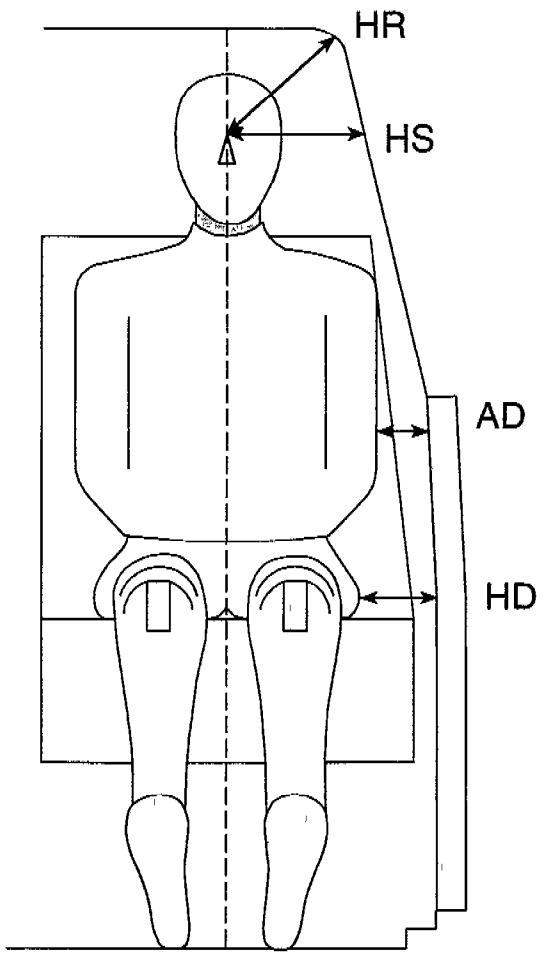
	DRIVER ID# 015	LEFT REAR PASS. ID# 016
HH	340	N/A
HW	680	N/A
HZ	178	175
NR/NB	385	625
CD/CB	498	565
CS	282	N/A
KDL(KDA°)/KBL(KDA°)	152 / (36 °)	247 / (23 °)
KDR(KBA°)/KBR(KBA°)	151 / (39 °)	252 / (23 °)
PA°	24.2 °	24.4 °
PHX	191	297
PHZ	133	295

Note: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

DATA SHEET 8

SID LATERAL CLEARANCE DIMENSIONS

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102



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

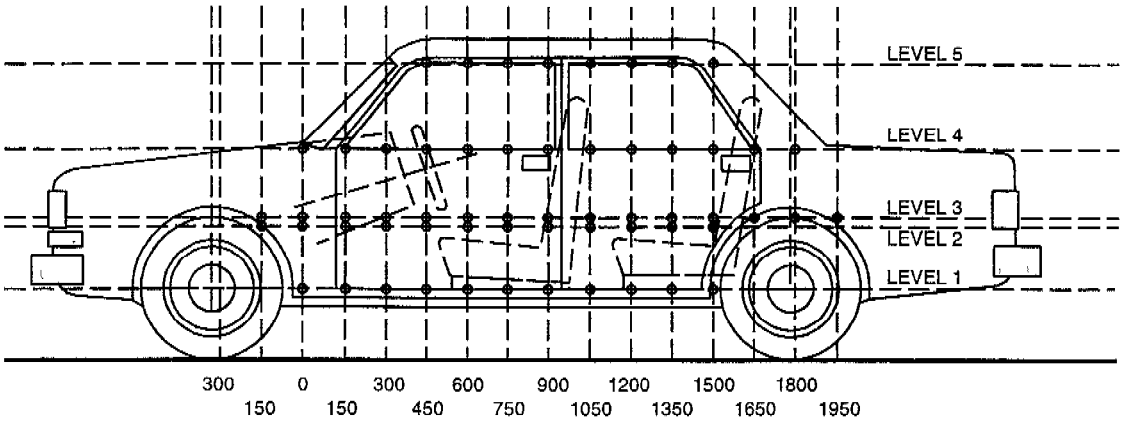
	DRIVER ID # 015	LEFT REAR PASS. ID # 016
HR	191	220
HS	329	334
AD*	LOWER: 122 UPPER: 125	LOWER: 128 UPPER: 131
HD	199 (in door pocket)	232 (door at interface)

* Lower measurement is taken laterally at the center of the lower rib accelerometer height from the SID arm segment to the closest part of the vehicle side.
Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102



LEFT SIDE VIEW

NOTE: All measurements are in millimeters (mm)

LEVEL 5 - WINDOW TOP
LEVEL 4 - WINDOW SILL
LEVEL 3 - MID-DOOR
LEVEL 2 - OCCUPANT H-POINT
LEVEL 1 - SILL TOP HEIGHT

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED" CONFIGURATION.
Measurements Along the Vertical 750 mm Line Shown Above:

Level 5 @ Window Top	=	1349	millimeters
Level 4 @ Window Sill	=	848	millimeters
Level 3 @ Mid Door	=	574	millimeters
Level 2 @ Occupant H-Point	=	484	millimeters
Level 1 @ Sill Top Height	=	262	millimeters

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Vehicle: 2001 Oldsmobile Aurora

NHTSA No. C10102

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

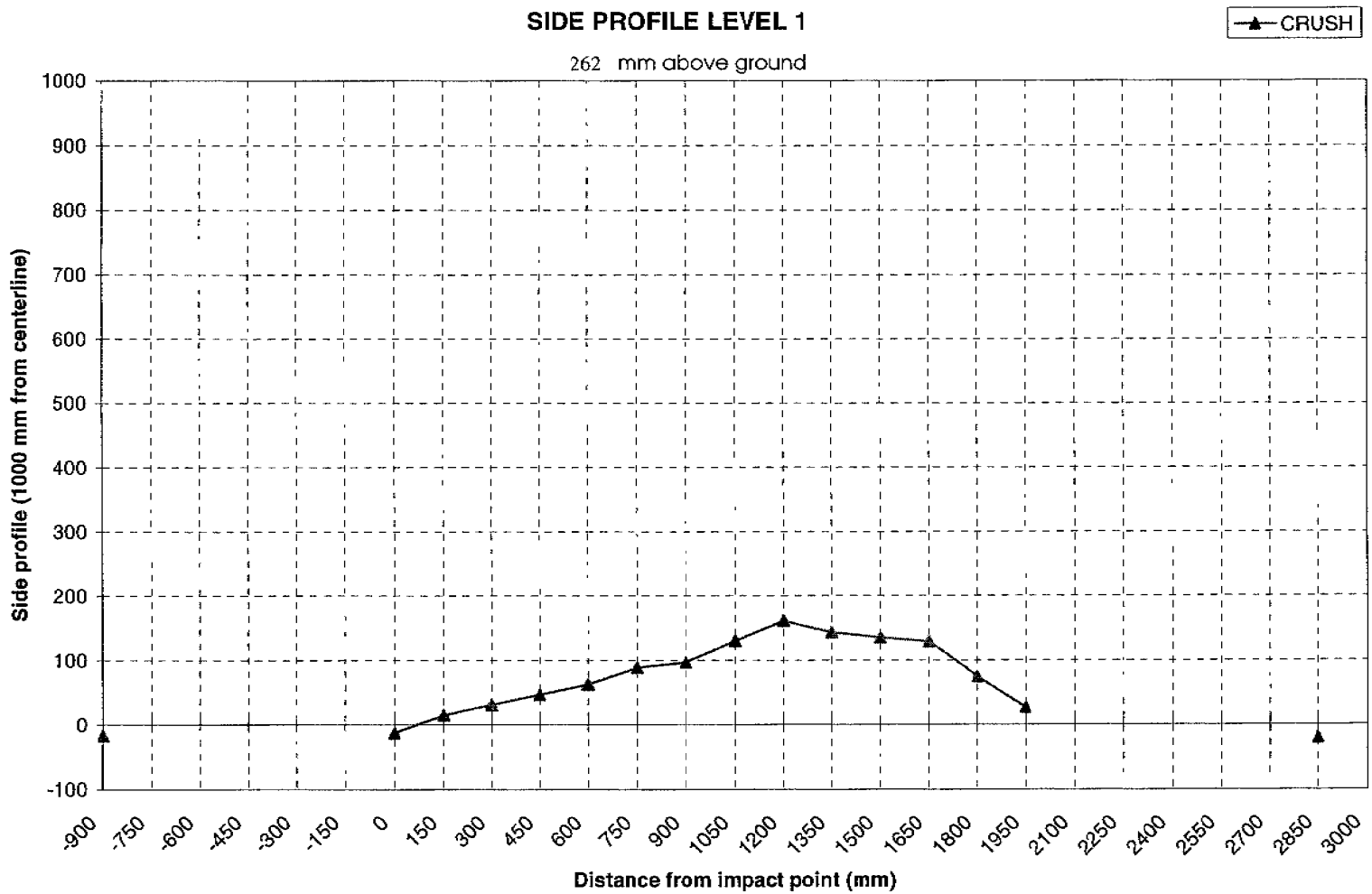
			DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																											
LEVEL	HEIGHT (mm)		-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000
LEVEL 1	262	PRE	-788	--	--	--	--	--	-811	-808	-800	-796	-784	-781	-769	-782	-785	-791	-800	-810	-825	-828	--	--	--	--	--	-765	--
SIDE		POST	-805	--	--	--	--	--	-824	-793	-769	-749	-721	-692	-672	-652	-624	-648	-665	-681	-750	-801	--	--	--	--	--	-785	--
SILL		CRUSH	-17	N/A	N/A	N/A	N/A	N/A	-13	15	31	47	63	89	97	130	161	143	135	129	75	27	N/A	N/A	N/A	N/A	N/A	-20	N/A
LEVEL 2	484	PRE	-811	--	--	--	--	--	-846	-847	-847	-850	-855	-858	-857	-853	-857	-857	-858	-856	-846	-859	--	--	--	--	--	-815	-788
H		POST	-827	--	--	--	--	--	-859	-692	-643	-618	-597	-573	-551	-543	-530	-530	-547	-572	-654	-781	--	--	--	--	--	-834	-806
POINT		CRUSH	-16	N/A	N/A	N/A	N/A	N/A	-13	155	204	232	258	285	306	310	327	327	311	284	192	78	N/A	N/A	N/A	N/A	N/A	-19	-18
LEVEL 3	574	PRE	-803	--	--	--	--	-864	-861	-859	-858	-854	-852	-851	-850	-846	-850	-850	-850	-851	-853	-849	--	--	--	--	--	-820	-794
MID		POST	-818	--	--	--	--	-866	-865	-719	-680	-653	-632	-607	-603	-582	-532	-534	-572	-596	-653	-760	--	--	--	--	--	-841	-811
DOOR		CRUSH	-15	N/A	N/A	N/A	N/A	-2	-4	140	178	201	220	244	247	264	318	316	278	255	200	89	N/A	N/A	N/A	N/A	N/A	-21	-17
LEVEL 4	848	PRE	-602	-673	-721	-750	-770	-781	-791	-800	-804	-812	-814	-822	-823	-826	-827	-826	-825	-832	-834	-843	-847	-844	-839	-834	-819	-801	-772
WINDOW		POST	-608	-676	-722	-746	-761	-767	-768	-749	-719	-688	-658	-635	-613	-596	-527	-528	-537	-565	-640	-766	-880	-821	-829	-831	-825	-812	-790
SILL		CRUSH	-6	-3	-1	4	9	14	23	51	85	124	156	187	210	230	300	298	288	267	194	77	-33	23	10	3	-6	-11	-18
LEVEL 5	1359	PRE	--	--	--	--	--	--	--	--	--	--	--	-380	-511	-528	-531	-532	-530	-522	-514	-397	--	--	--	--	--	--	--
WINDOW		POST	--	--	--	--	--	--	--	--	--	--	--	-346	-441	-426	-422	-450	-473	-492	-493	-383	--	--	--	--	--	--	--
TOP		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34	70	102	109	82	57	30	21	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2001 Oldsmobile Aurora

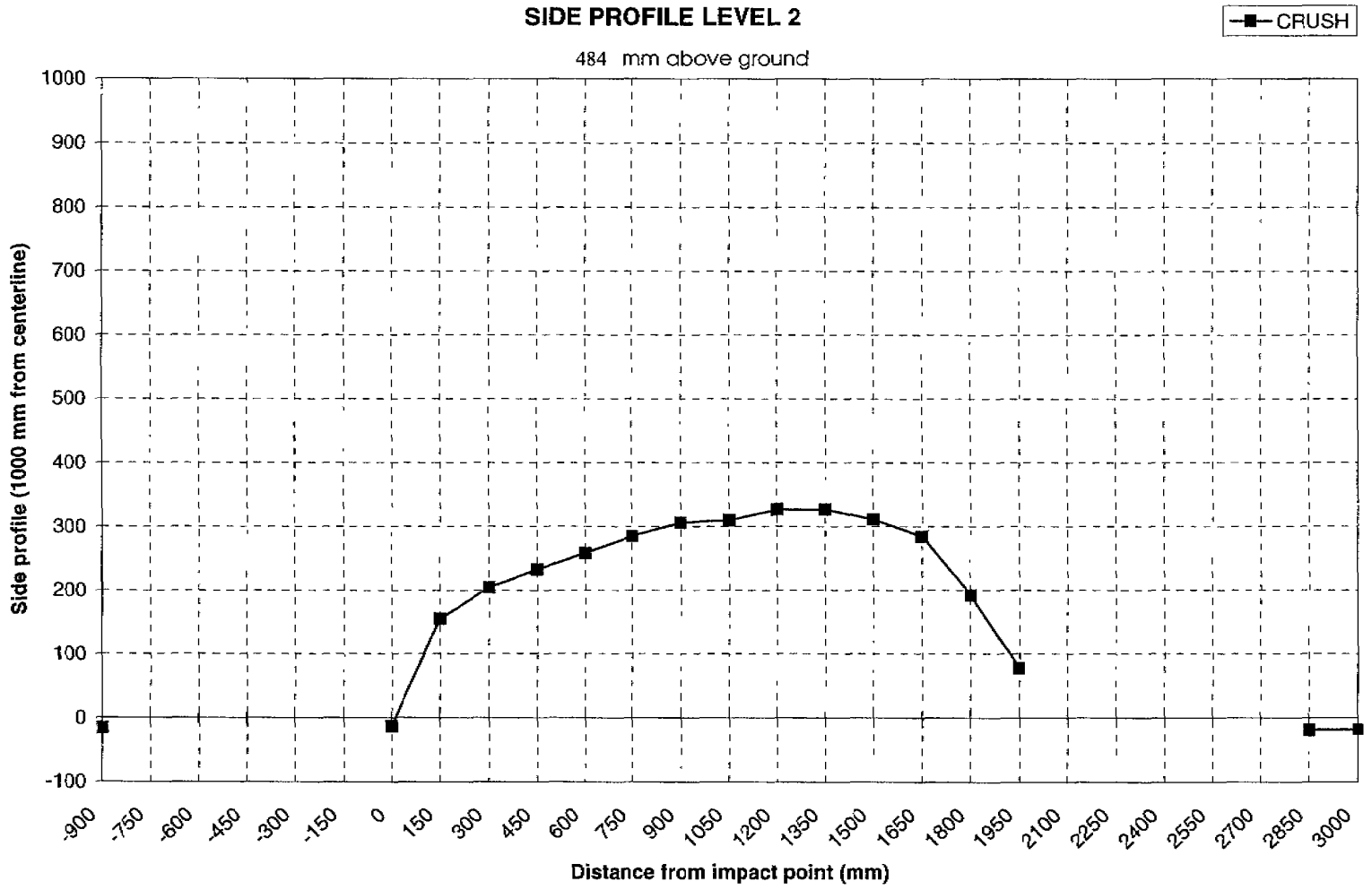
NHTSA No. C10102



DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102

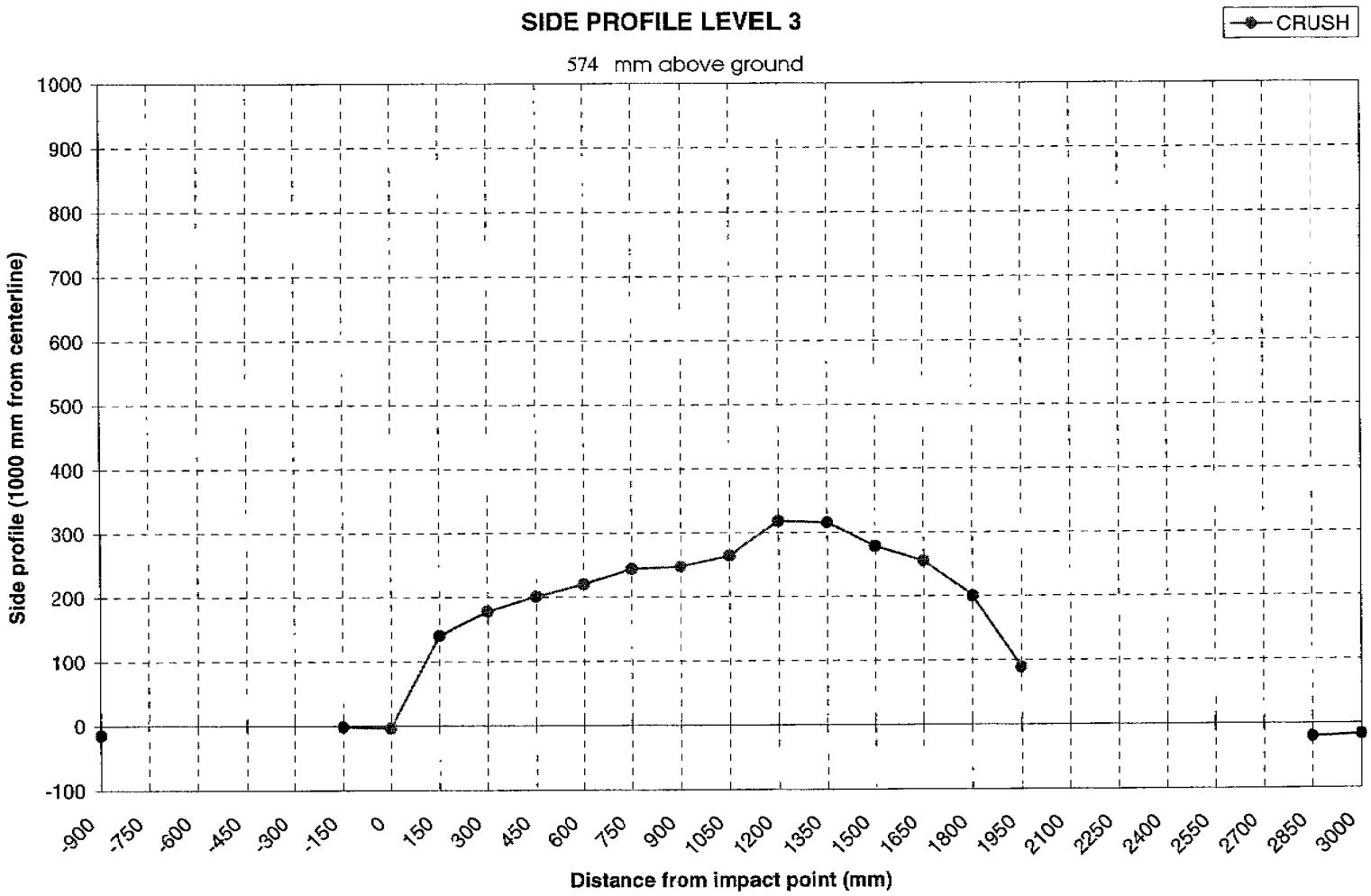


DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2001 Oldsmobile Aurora

NHTSA No. C10102

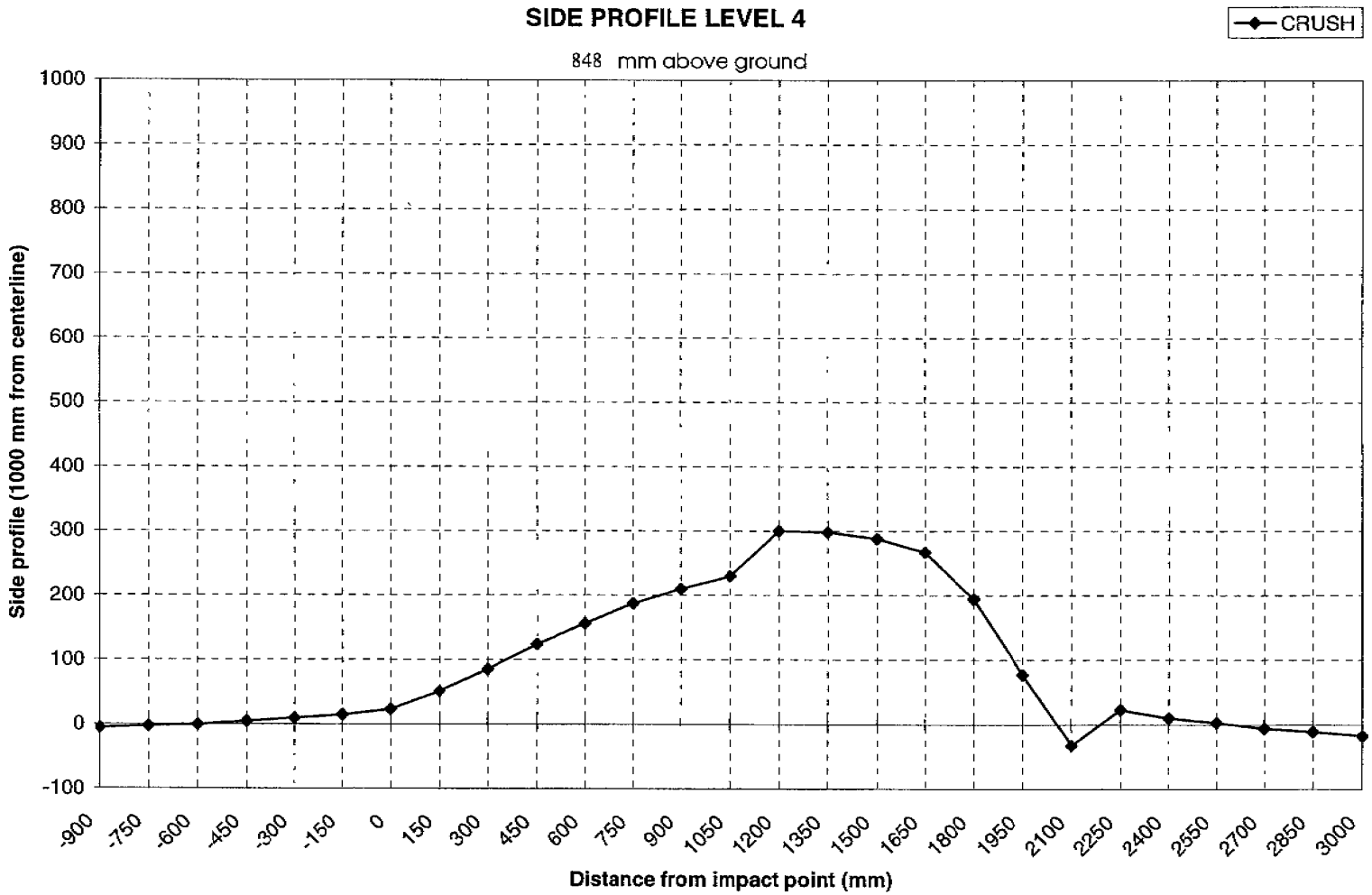


DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2001 Oldsmobile Aurora

NHTSA No. C10102

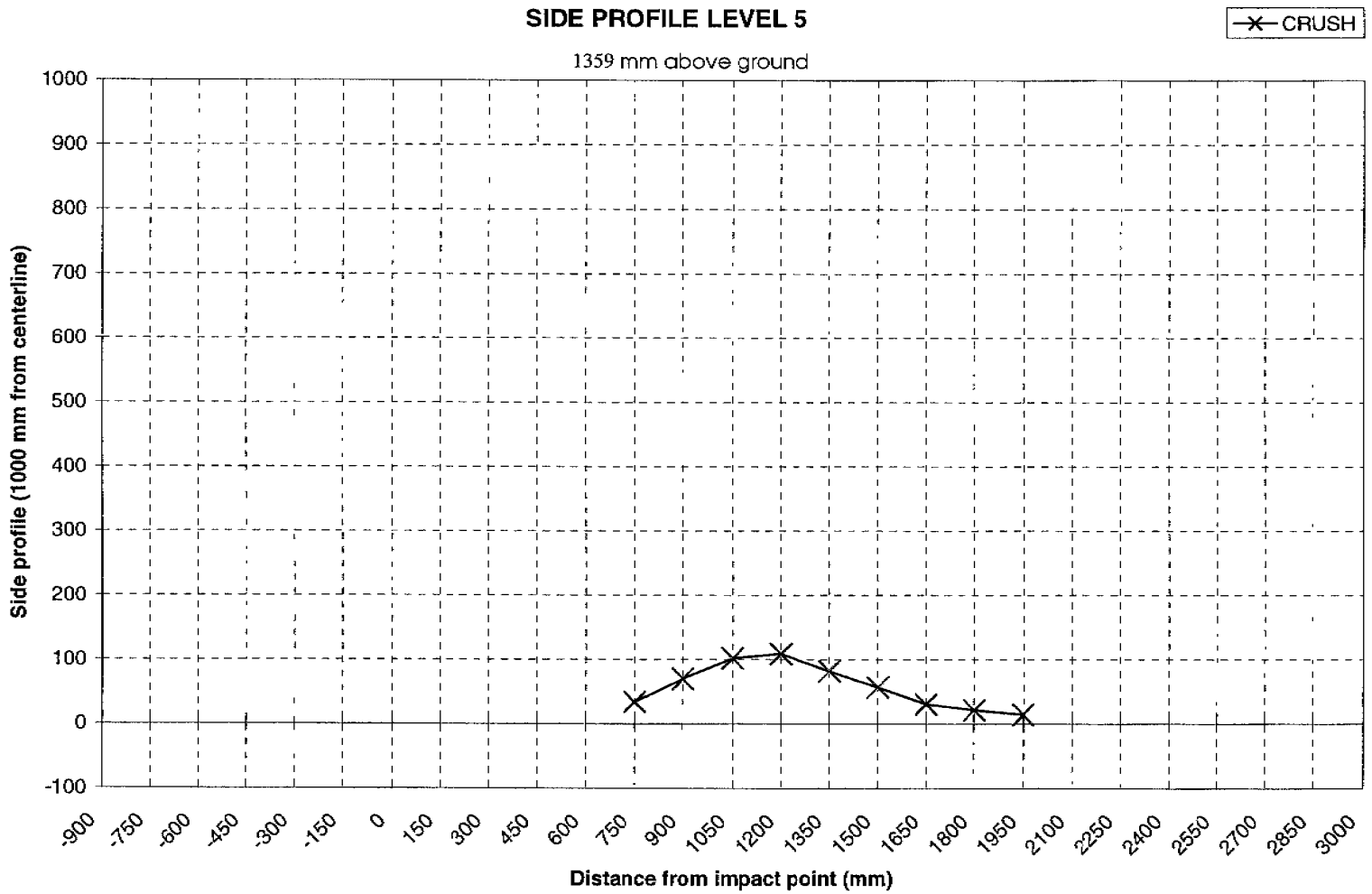


DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2001 Oldsmobile Aurora

NHTSA No. C10102

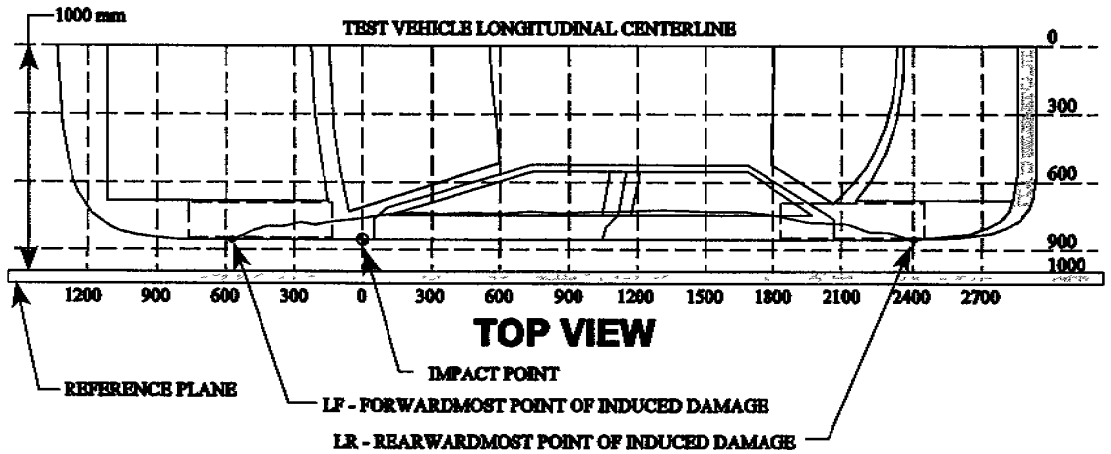


DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2001 Oldsmobile Aurora

NHTSA No. C10102



MEASUREMENT CONVENTIONS:
Forward of the impact point (towards front of vehicle) is considered negative (—).
Rearward of the impact point (toward rearend of vehicle) is considered positive (+).

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

DPD MEASUREMENTS		POST TEST (mm)	PRETEST (mm)	STATIC CRUSH (mm)
1	(LR = 2600 mm)	-829	-829	0
2	1960	-774	-843	69
3	1320	-530	-857	327
4	680	-584	-857	273
5	40	-826	-860	34
6	(LF = -600 mm)	-722	-721	-1

DATA SHEET 12

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE
(Grid as looking at MDB from front)

Vehicle: 2001 Oldsmobile Aurora

NHTSA No. C10102

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

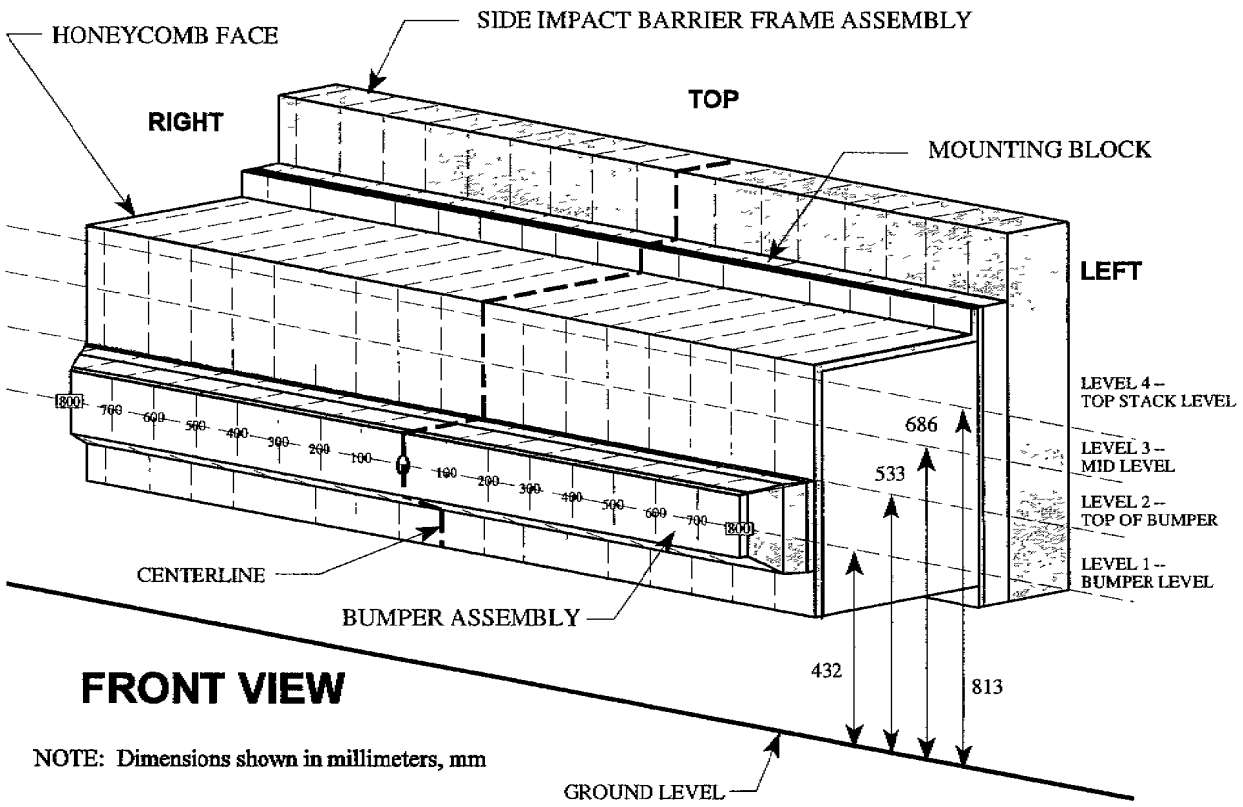
			DISTANCE RIGHT OF CENTER (mm)									DISTANCE LEFT OF CENTER (mm)							
LEVEL	HEIGHT AT CL (mm)*		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
LEVEL 4	813	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
TOP		POST	647	622	606	605	608	614	621	625	630	637	647	657	663	678	694	727	758
STACK		CRUSH	28	3	-13	-14	-11	-5	2	6	11	18	28	38	44	59	75	108	139
LEVEL 3	686	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
MID		POST	637	617	614	616	621	626	633	630	629	631	637	642	647	656	671	689	723
LEVEL		CRUSH	18	-2	-5	-3	2	7	14	11	10	12	18	23	28	37	52	70	104
LEVEL 2	533	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
TOP		POST	681	673	667	662	660	660	659	657	657	661	662	668	674	676	677	685	706
BUMPER		CRUSH	62	54	48	43	41	41	40	38	38	42	43	49	55	57	58	66	87
LEVEL 1	432	PRE	535	519	518	518	518	518	518	518	518	518	518	518	518	518	518	519	535
MID		POST	663	627	615	610	609	622	614	607	602	604	602	606	609	611	616	628	666
BUMPER		CRUSH	128	108	97	92	91	104	96	89	84	86	84	88	91	93	98	109	131

*Heights measured above ground level.

DATA SHEET 12 (continued)

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

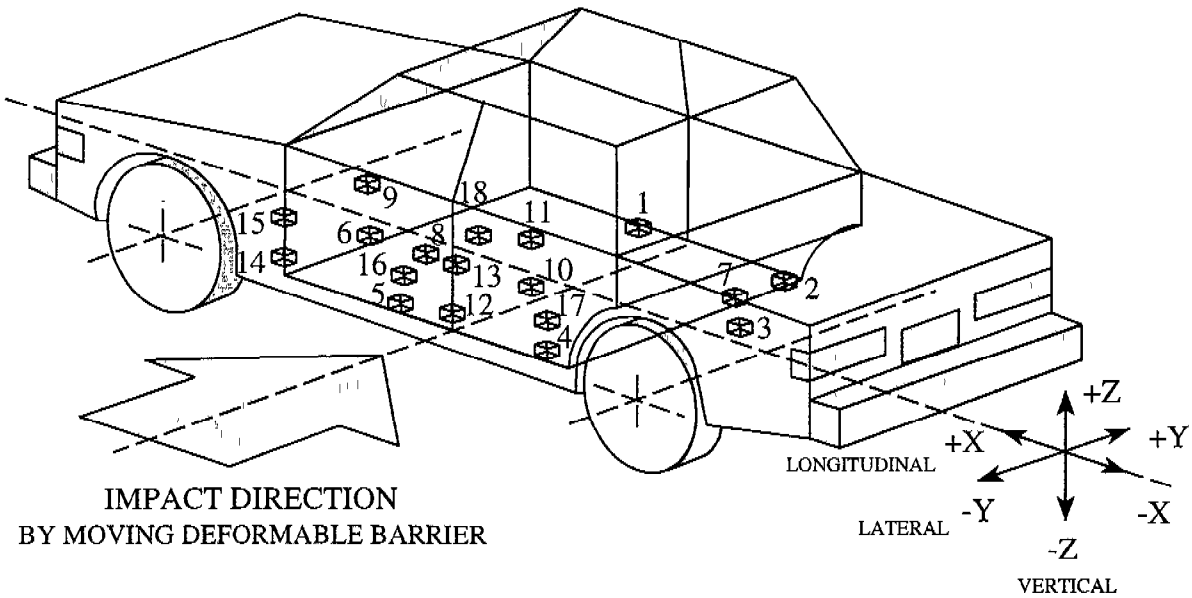
Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102



DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102



IMPACT DIRECTION
BY MOVING DEFORMABLE BARRIER

1-Right Side Sill @ Front Seat
2-Right Side Sill @ Rear Seat
3-Rear Floorpan Above Axle
4-Left Side Sill @ Rear Seat
5-Left Side Sill @ Front Seat
6-Left Front Door on Centerline
7-Right Rear Occupant Compartment
8-Midrear of Left Front Door
9-Left Front Door Upper Centerline
10-Midrear of Left Rear Door
11-Left Rear Door Upper Centerline
12-Left Lower B-Pillar
13-Left Middle B-Pillar
14-Left Lower A-Pillar
15-Left Middle A-Pillar
16-Front Seat Track
17-Rear Seat Track
18-Vehicle CG

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102

Accel. No.	Location	Coordinates (mm)±3 mm				Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
1	Right Side Sill at Front Seat	3315	705	339	pos.	2.1	37.7	24.0	9.4	5.4	61.0	24.4	9.4
					neg.	-3.3	23.4	-3.2	169.5	-4.4	10.6	0.0	-17.1
2	Right Side Sill at Rear Seat	2284	675	275	pos.	2.1	37.2	19.3	8.4	5.6	60.4	19.6	8.5
					neg.	-3.7	23.4	-2.9	194.4	-5.5	11.9	0.0	-14.6
3	Rear Floorpan Above Axle	1242	0	510	pos.	4.7	32.6	16.3	7.5	18.4	15.2	22.4	15.2
					neg.	-5.7	20.4	-4.3	121.1	-16.3	10.4	0.0	-18.6
4	Left Side Sill at Rear Seat	2284	-675	283	pos.	-	-	74.9	15.2	-	-	-	-
					neg.	-	-	-22.7	24.0	-	-	-	-
5	Left Side Sill at Front Seat	3312	-705	335	pos.	-	-	94.0	21.3	-	-	-	-
					neg.	-	-	-49.8	24.6	-	-	-	-
6	Left Front Door on Centerline	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
7	Right Rear Occupant Compartment	2209	330	181	pos.	-	-	18.0	30.6	-	-	-	-
					neg.	-	-	-2.7	194.0	-	-	-	-
8	Midrear of Left Front Door	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
9	Left Front Door Upper Centerline	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
10	Midrear of Left Rear Door	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
11	Left Rear Door Upper Centerline	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-

*Reference: X - Rear Bumper (+ Forward) Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Up)

**Accelerometer was not requested by COTR.

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102

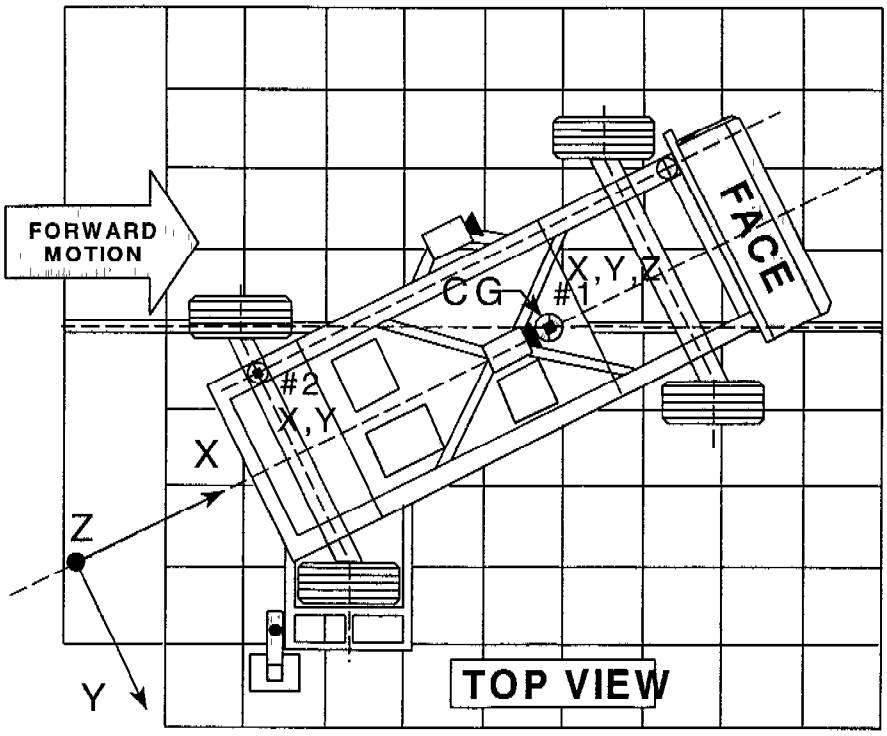
Accel. No.	Location	Coordinates (mm)±3 mm				Lat. (y)				Vert. (z)		Resultant	
		X*	Y*	Z*		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
12	Left Lower B-Pillar	2404	-675	279	pos.	-	-	54.5	4.8	-	-	-	-
					neg.	-	-	-28.1	25.4	-	-	-	-
13	Left Middle B-Pillar	2404	-703	520	pos.	-	-	C	C	-	-	-	-
					neg.	-	-	C	C	-	-	-	-
14	Left Lower A-Pillar	3533	-688	559	pos.	-	-	154.6	52.5	-	-	-	-
					neg.	-	-	-62.6	189.3	-	-	-	-
15	Left Middle A-Pillar	3967	-703	895	pos.	-	-	14.2	54.0	-	-	-	-
					neg.	-	-	-2.1	173.6	-	-	-	-
16	Front Seat Track	2524	-633	590	pos.	-	-	83.4	14.3	-	-	-	-
					neg.	-	-	-20.3	25.9	-	-	-	-
17	Rear Seat Track	1383	-593	558	pos.	-	-	15.6	6.9	-	-	-	-
					neg.	-	-	-2.5	191.6	-	-	-	-
18	Vehicle CG	2404	0	324	pos.	2.7	55.5	26.4	19.1	R	R	26.8	19.1
					neg.	-5.6	31.9	-3.2	58.8	R	R	0.0	-16.6

*Reference: X - Rear Bumper (+ Forward) Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Up) R - Did Not Record
C - Data is Clipped

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102



Accel. No.	Location	Coordinates (millimeters)			Pos. Direct.		Neg. Direct.	
		X*	Y*	Z*	Max (g)	Time (msec)	Max (g)	Time (msec)
1	MDB Center of Gravity							
	Longitudinal... X	1859	0	330	1.4	119.8	-20.5	38.9
	Lateral..... Y				1.5	60.4	-9.3	28.7
	Vertical..... Z				8.2	13.7	-11.2	20.5
	Resultant..... R				21.9	33.3	0.1	-6.8
2	Rear Frame Member							
	Longitudinal... X	386	-660	660	2.3	145.5	-20.6	30.3
	Lateral..... Y				5.1	28.8	-1.6	103.5

*Reference: X = Rear Bumper (+ Forward)

Y = Vehicle Centerline (+ To Right)

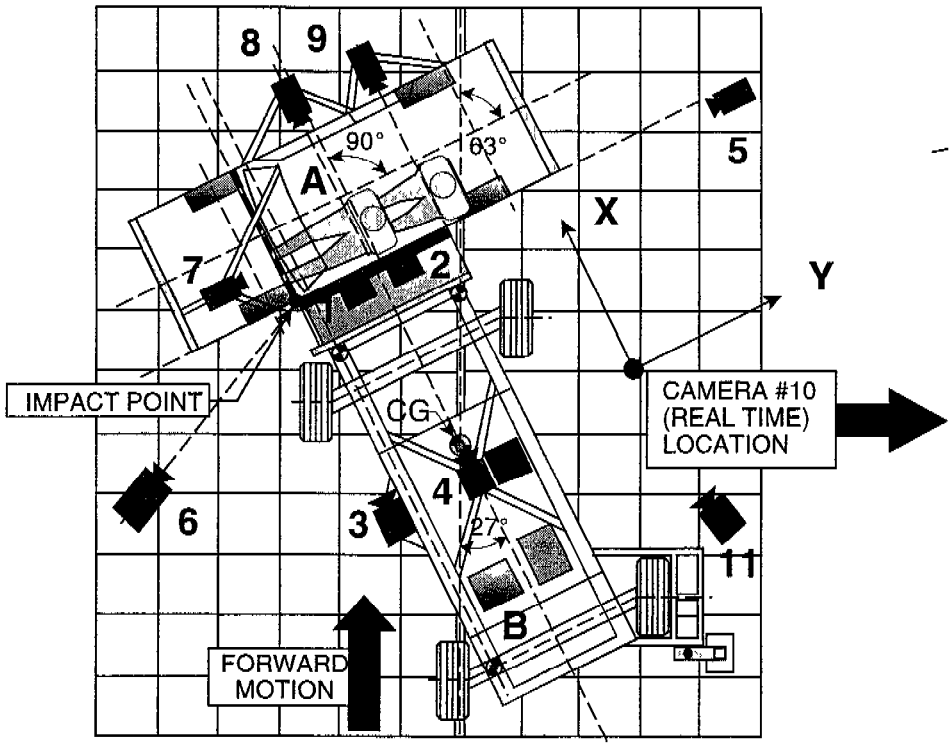
Z = Ground Level (+ Up)

All measurements accurate to within ±3 mm.

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead view of test vehicle	361	913	4880	-90	8	1000
2	Overhead closeup view of impact plane	12	753	4880	-90	12.5	1000
3	MDB onboard closeup view of impact point	-1470	0	847	0	13	1000
4	MDB onboard view of driver dummy	-1140	838	1586	-17	7.5	1000
5	Right side ground level overall view	-1946	-1765	1096	-2	25	1000
6	Left side ground level overall view	-94	9487	1065	-6	13	1000
7	Test vehicle onboard driver front view	501	457	1225	-13	13	1000
8	Test vehicle onboard driver side view	1810	723	965	-11	8	1000
9	Test vehicle onboard passenger side view	1785	1727	1040	-10	8	805
10	Real time film coverage of test	-	-	-	-	-	24

* Reference (from point of impact); all measurements accurate to within ±6 mm.

+X = Forward

+Y = To Right

+Z = Upward

SECTION 5

FUEL SYSTEM INTEGRITY

DATA SHEET 16

FMVSS 301 FUEL SYSTEM INTEGRITY DATA

NHTSA No.: C10102 TEST DATE: September 25, 2000

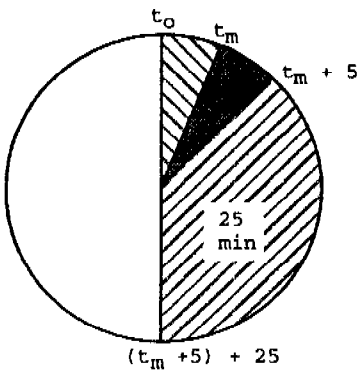
Vehicle Mfgr./Make/Model : 2001 Oldsmobile Aurora 4-Door Sedan

****

TEST VEHICLE IMPACT TYPE :

- _-_ Frontal (48.28 kph)
- _-_ Oblique (48.28 kph) with _-_ ° barrier face first contacting the _-_ side (driver/passenger)
- _-_ Rear Moving Barrier (48.28 kph)
- _-_ Lateral Moving Barrier (32.19 kph)
- _X_ Side Impact Moving Deformable Barrier (61.95 kph) contacting the driver side side (driver/passenger)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For five minute period after vehicle motion ceases
3. For next 25 minutes

ACTUAL	MAX ALLOWED
0 g	28 g
0 g	142 g
0 g	28 g/1 min.

SOLVENT SPILLAGE DETAILS :

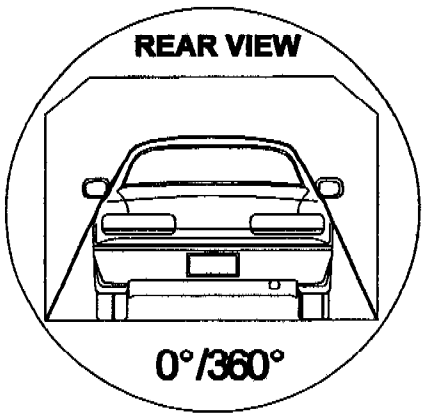
None

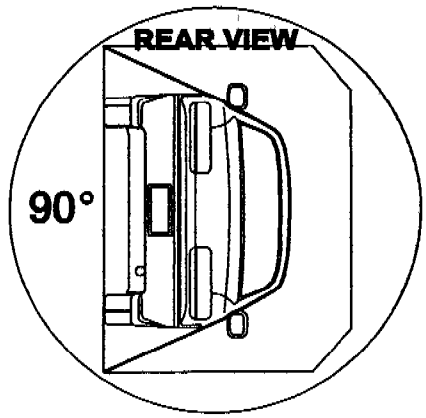
DATA SHEET 17

ROLLOVER DATA

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102

0 - 90 Degrees





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	1	minutes	13	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
TOTAL	6	minutes	13	seconds
Next whole minute interval	7	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0 g	0 g	0 g	N/A

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S) :

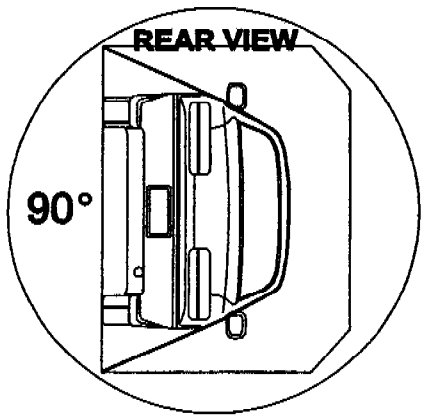
None

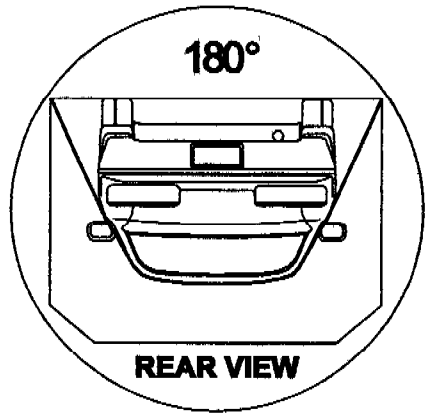
DATA SHEET 17 (continued)

ROLLOVER DATA

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102

90 - 180 Degrees





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	1	minutes	08	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
TOTAL	6	minutes	8	seconds
Next whole minute interval	7	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0 g	0 g	0 g	N/A

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S) :

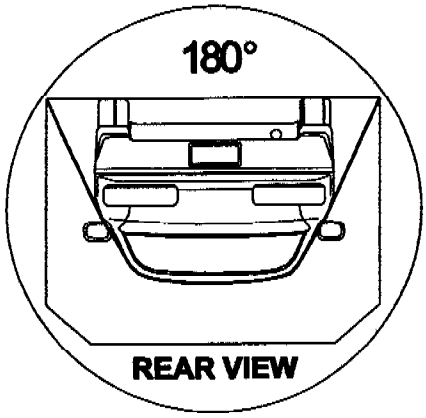
None

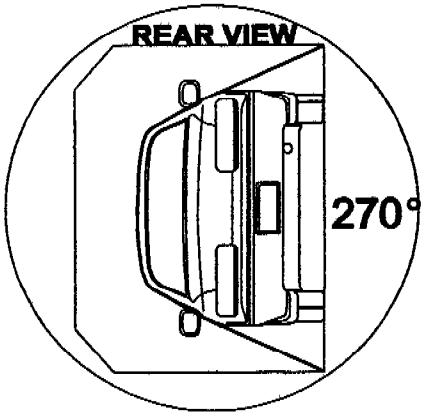
DATA SHEET 17 (continued)

ROLLOVER DATA

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102

180 - 270 Degrees





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	1	minutes	01	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
TOTAL	6	minutes	1	seconds
Next whole minute interval	7	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0 g	0 g	0 g	N/A

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S) :

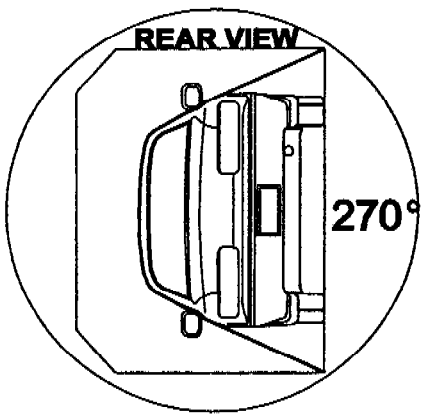
None

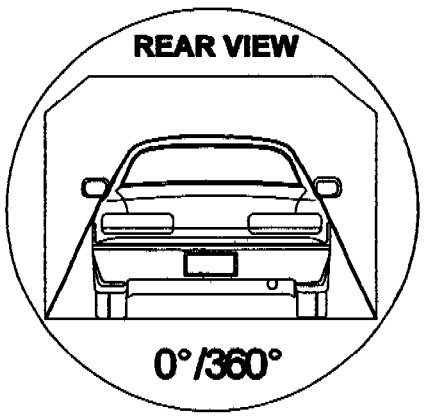
DATA SHEET 17 (continued)

ROLLOVER DATA

Vehicle: 2001 Oldsmobile Aurora NHTSA No. C10102

270 - 360 Degrees





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	1	minutes	13	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
TOTAL	6	minutes	13	seconds
Next whole minute interval	7	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0 g	0 g	0 g	N/A

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S) :

None

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

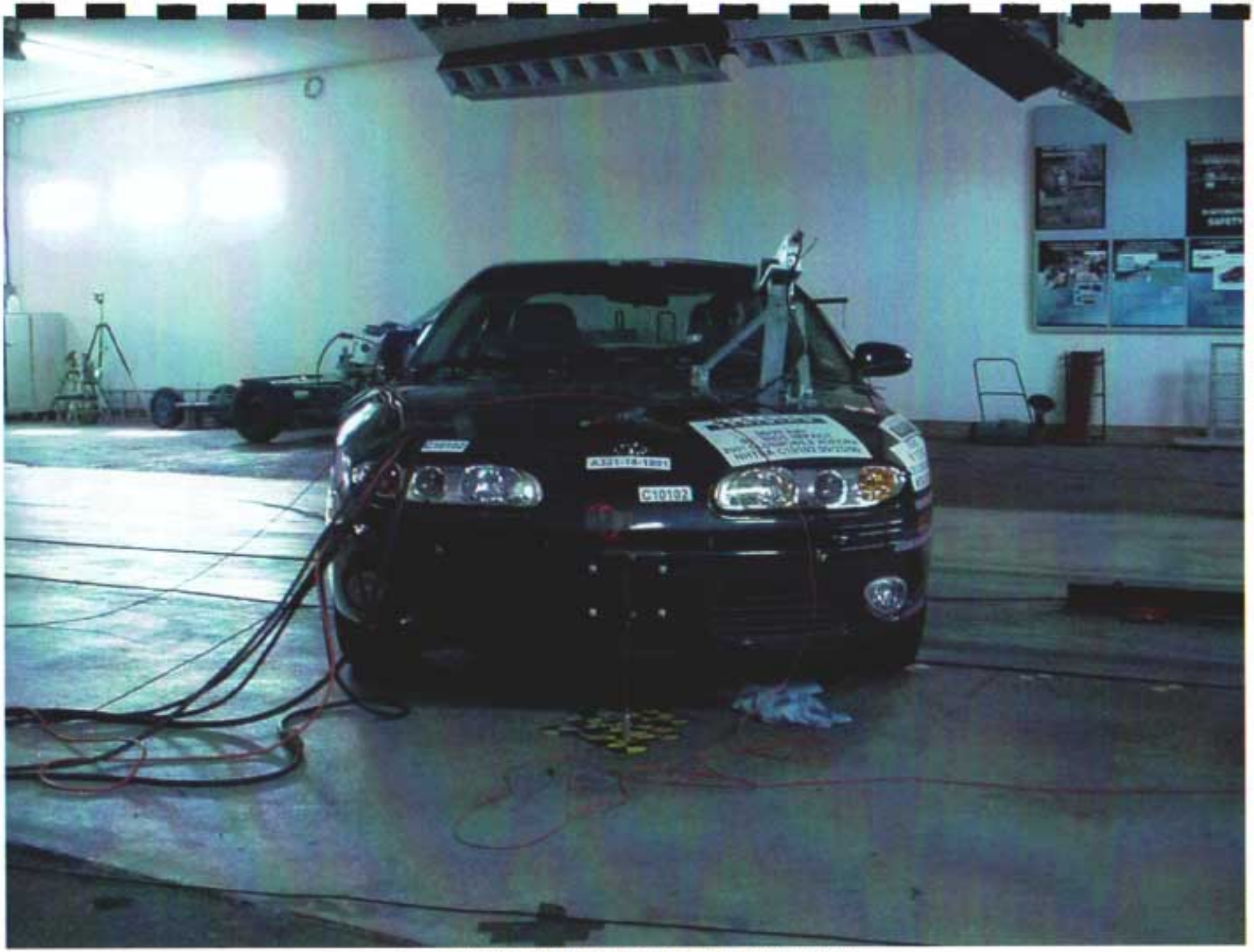


Figure A-1 PRE-TEST FRONTAL VIEW OF TEST VEHICLE

Figure A-2 POST-TEST FRONTAL VIEW OF TEST VEHICLE

Figure A-3 PRE-TEST REAR VIEW OF TEST VEHICLE

Figure A-4 POST-TEST REAR VIEW OF TEST VEHICLE

Figure A-5 PRE-TEST IMPACTED SIDE VIEW OF TEST VEHICLE

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Figure A-6 POST-TEST IMPACTED SIDE VIEW OF TEST VEHICLE

Figure A-7 PRE-TEST FRONTAL VIEW OF IMPACTOR FACE

Figure A-8 POST-TEST FRONTAL VIEW OF IMPACTOR FACE

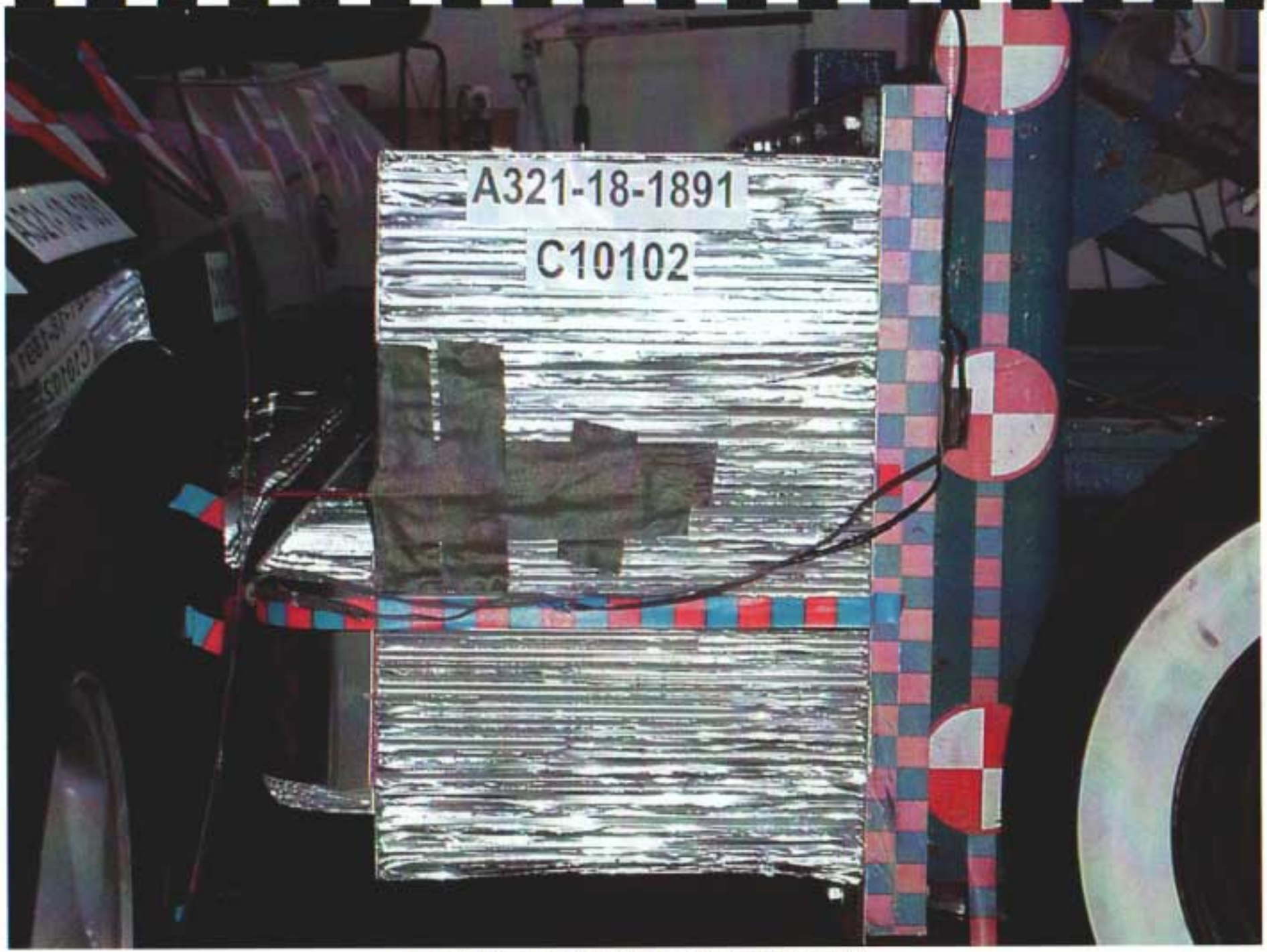

Figure A-9 PRE-TEST LEFT SIDE VIEW OF IMPACTOR FACE

Figure A-10 POST-TEST LEFT SIDE VIEW OF IMPACTOR FACE

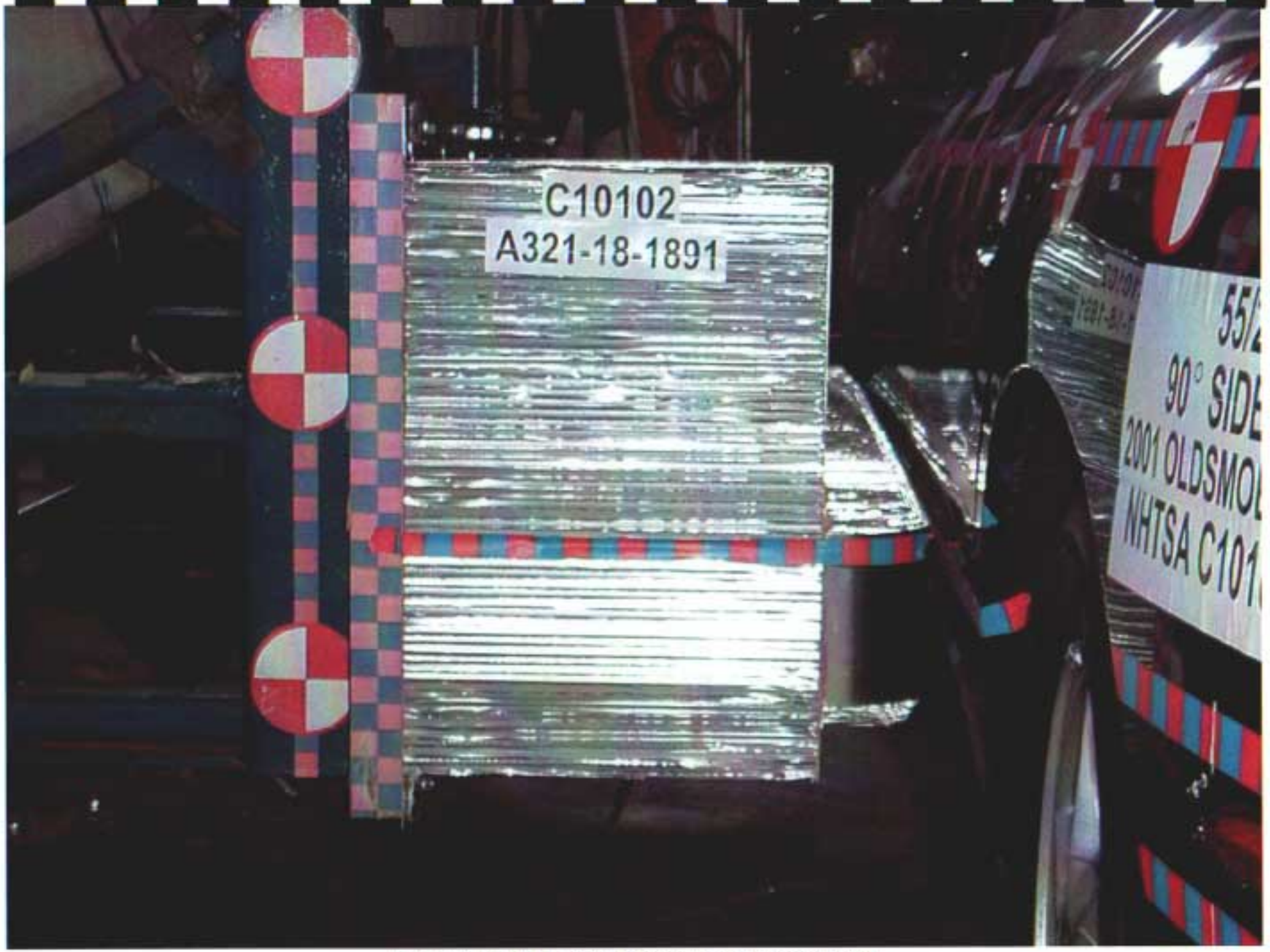

Figure A-11 PRE-TEST RIGHT SIDE VIEW OF IMPACTOR FACE

Figure A-12 POST-TEST RIGHT SIDE VIEW OF IMPACTOR FACE

Figure A-13 PRE-TEST TOP VIEW OF IMPACTOR FACE

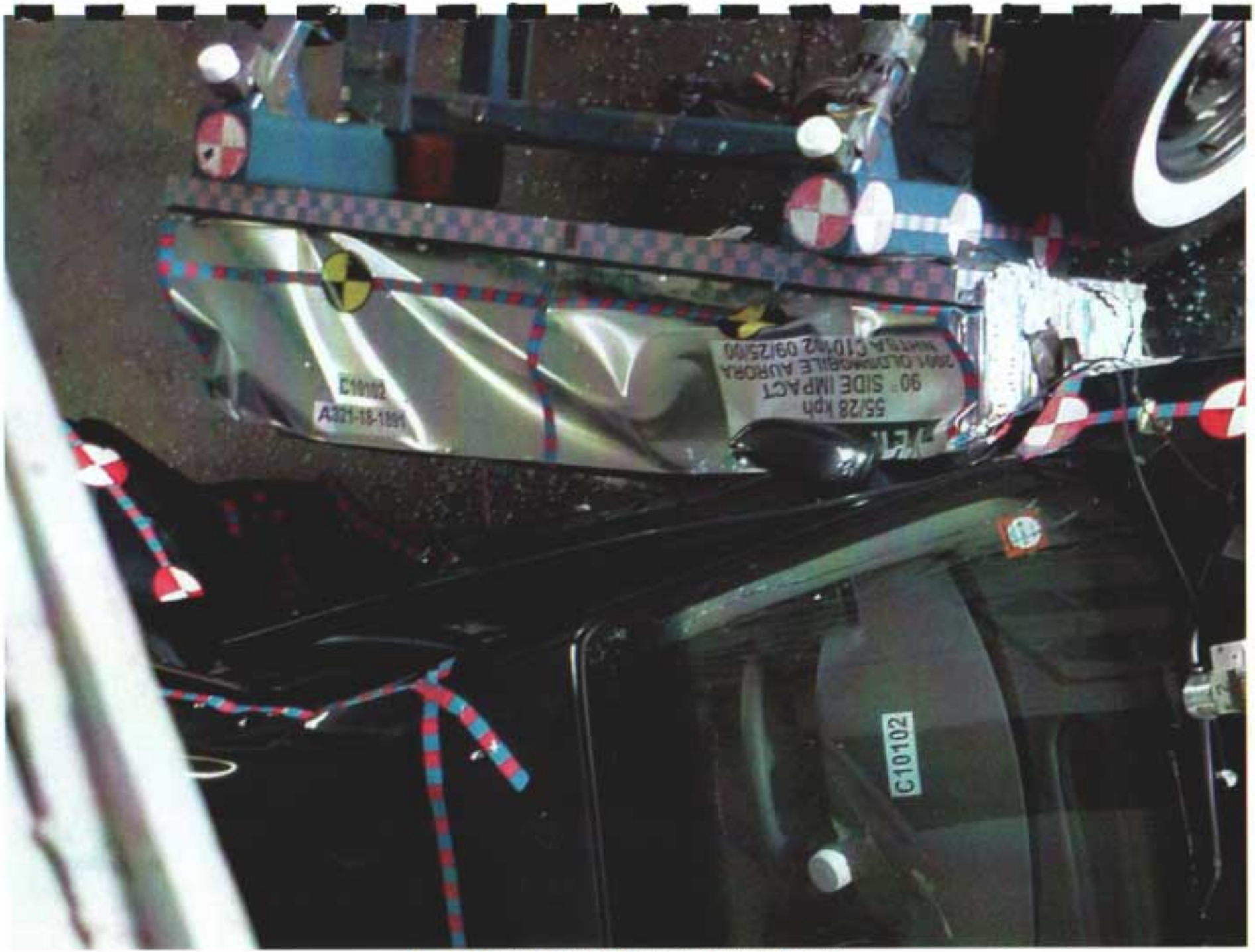

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Figure A-14 POST-TEST TOP VIEW OF IMPACTOR FACE

Figure A-15 PRE-TEST OVERHEAD VIEW OF ALIGNED MDB AND VEHICLE

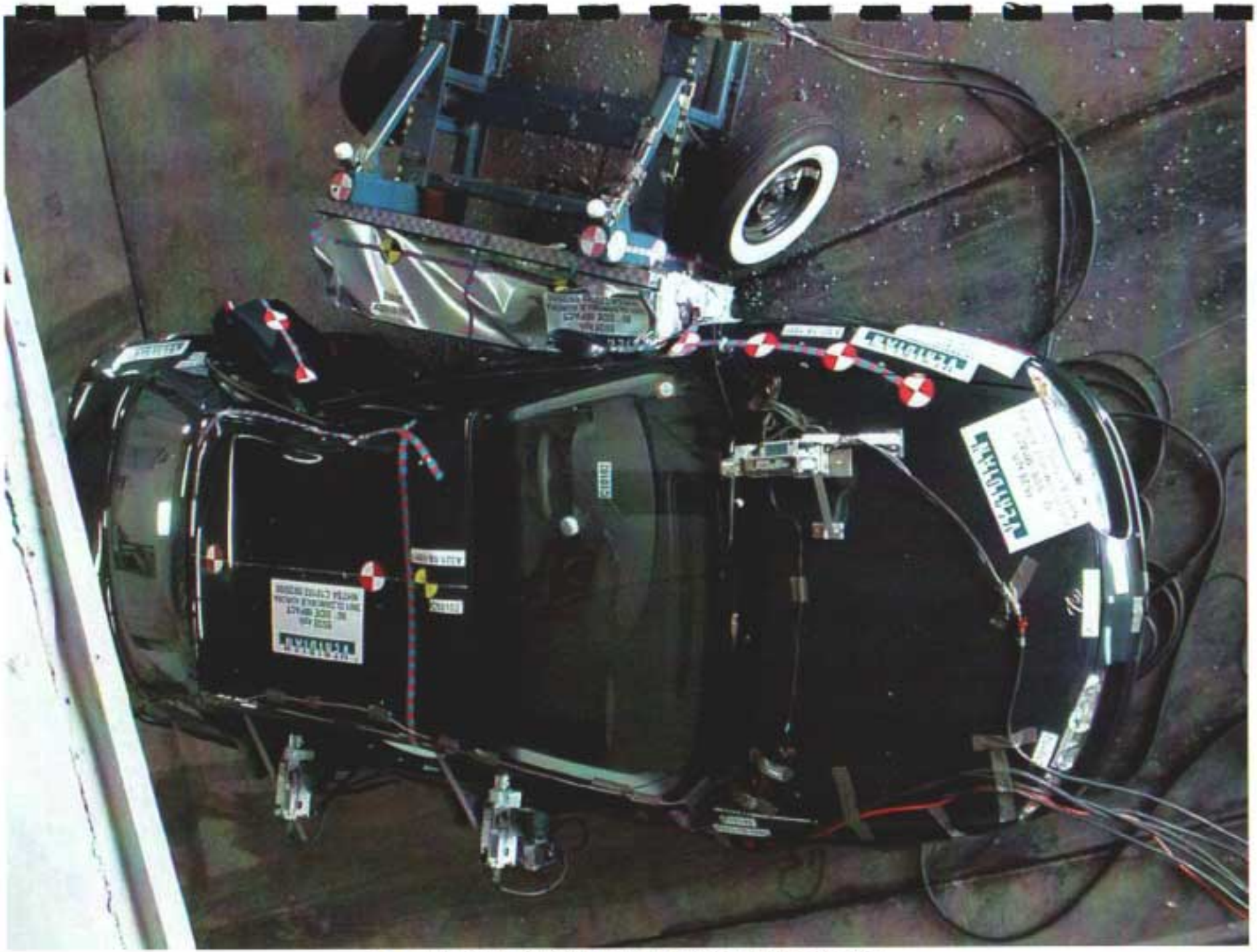


Figure A-16 POST-TEST OVERHEAD VIEW OF MDB AND VEHICLE

Figure A-17 PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID

Figure A-18 POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID

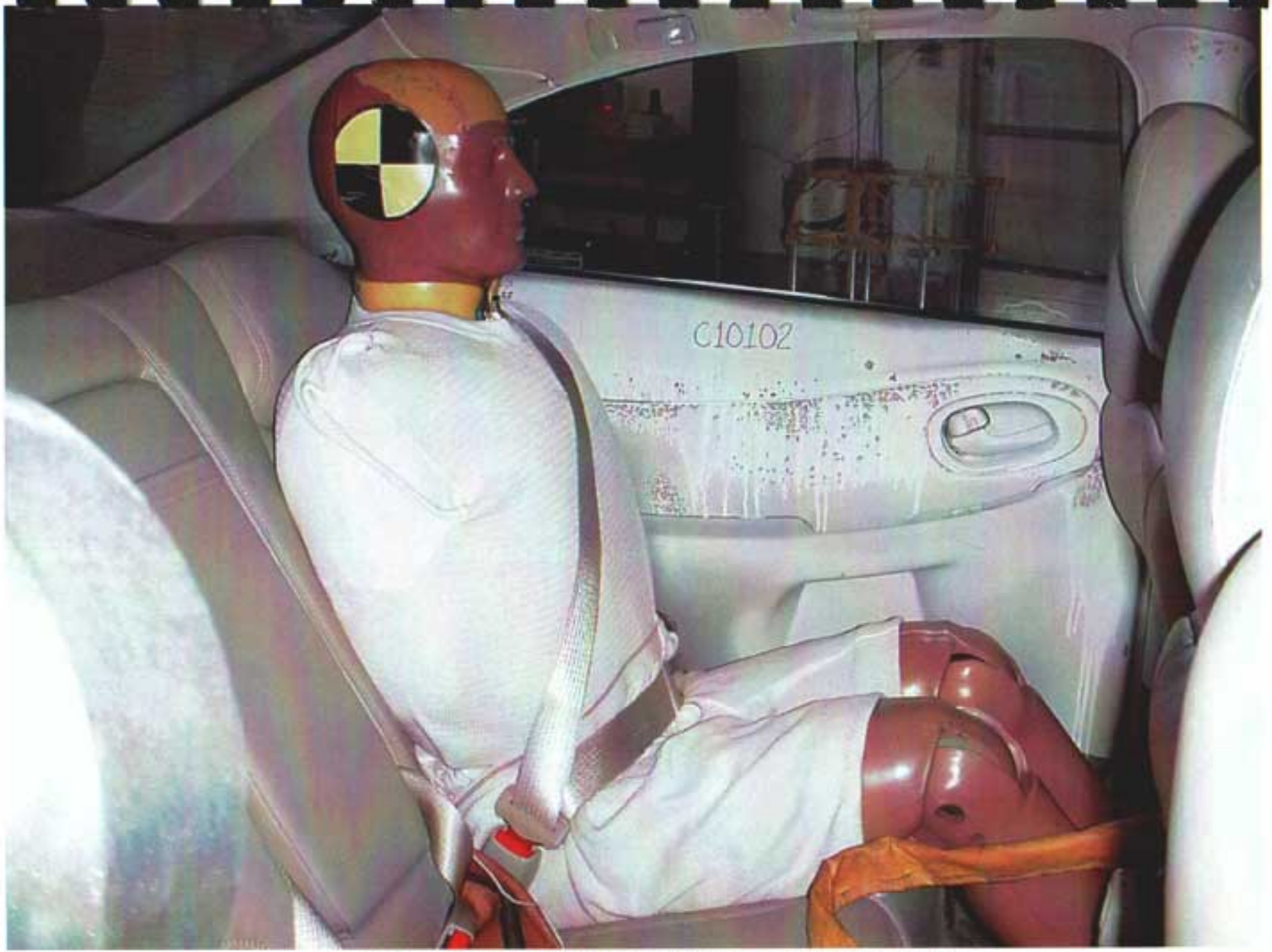


Figure A-19 PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID

Figure A-20 POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID

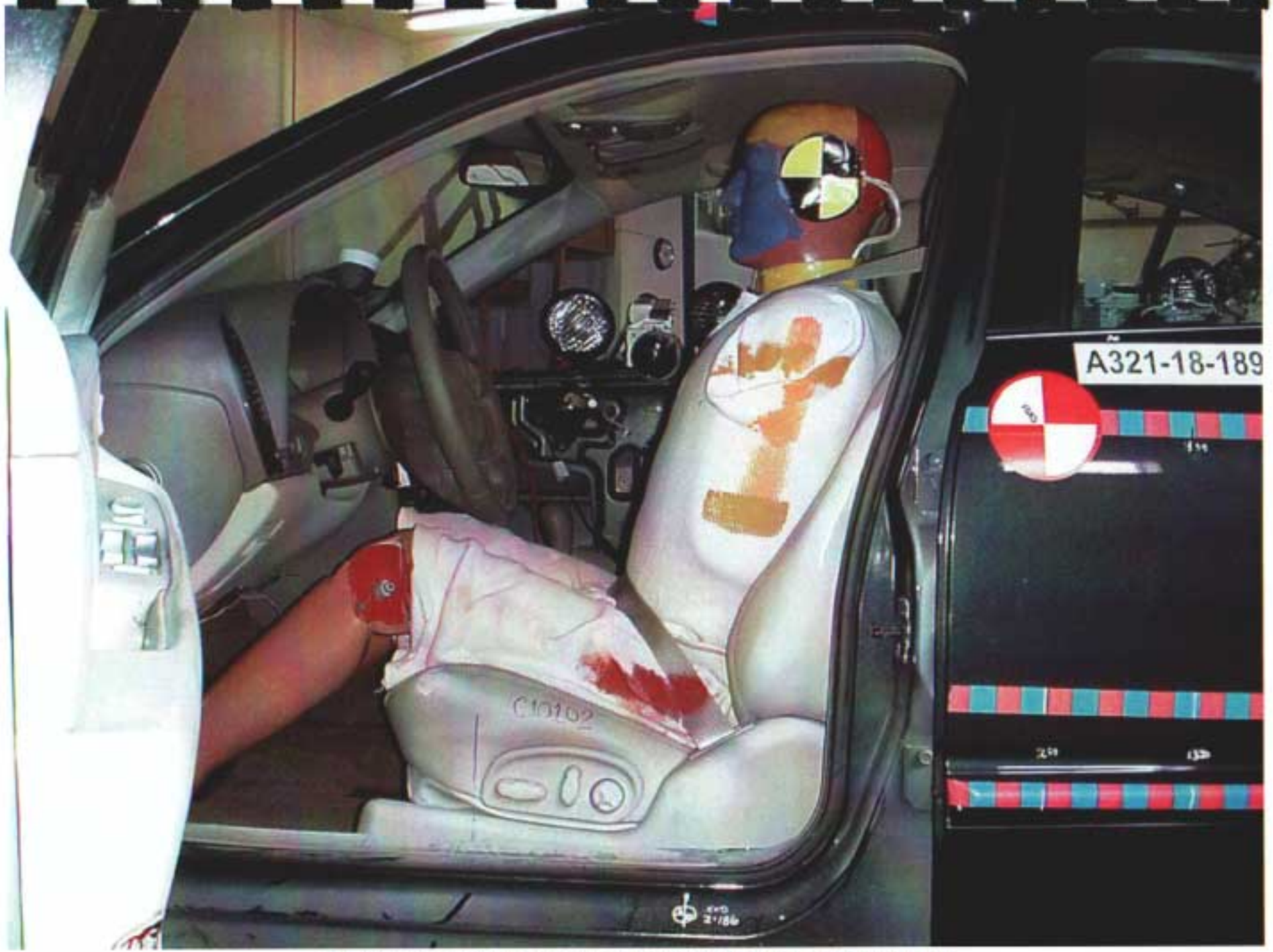


Figure A-21 PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID

Figure A-22 POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID

Figure A-23 PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID

Figure A-24 POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID

Figure A-25 PRE-TEST INTERIOR OF FRONT DOOR

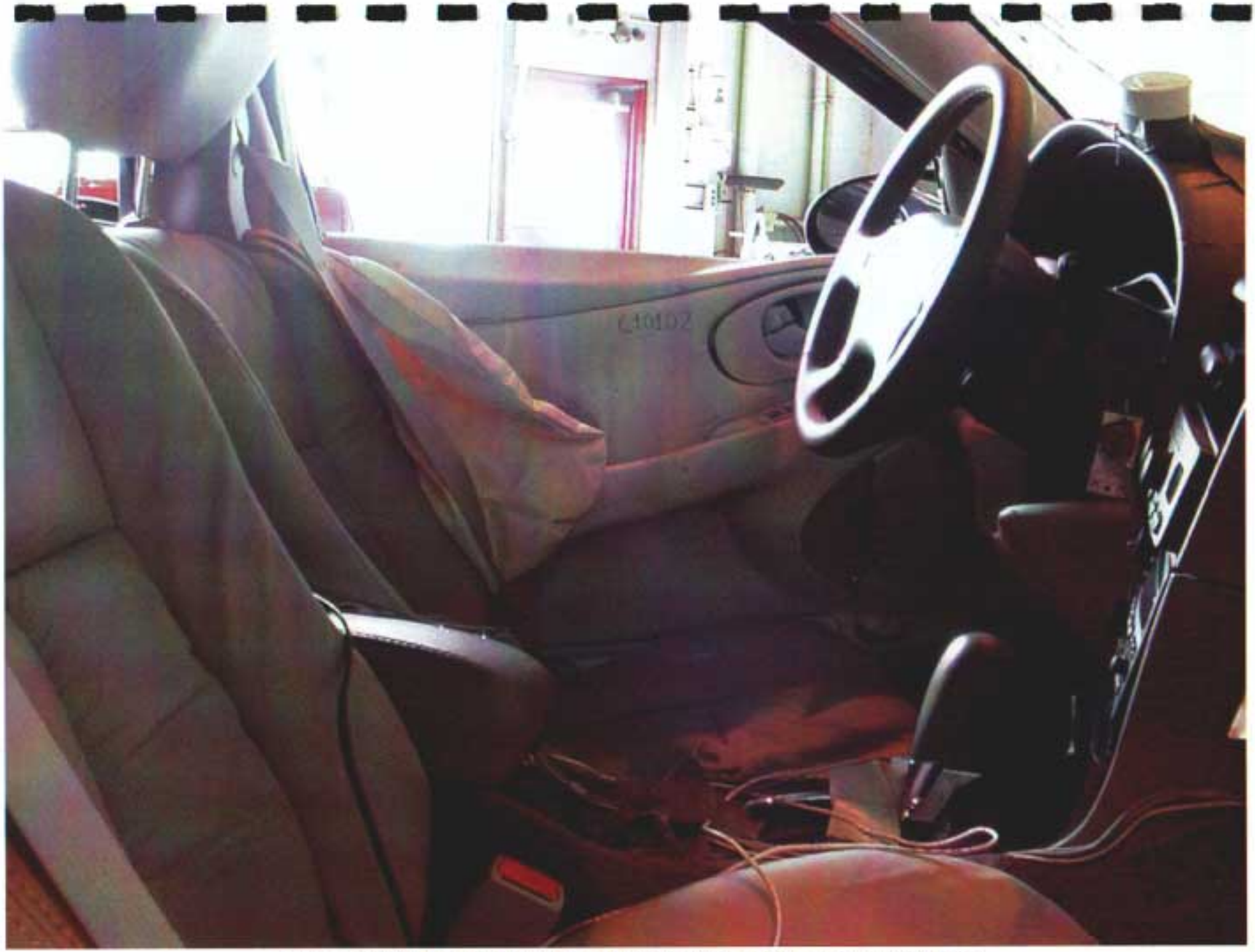


Figure A-26 POST-TEST INTERIOR OF FRONT DOOR SHOWING SID IMPACT LOCATIONS

Figure A-27 PRE-TEST INTERIOR OF REAR DOOR

Figure A-28 POST-TEST INTERIOR OF REAR DOOR SHOWING SID IMPACT LOCATIONS

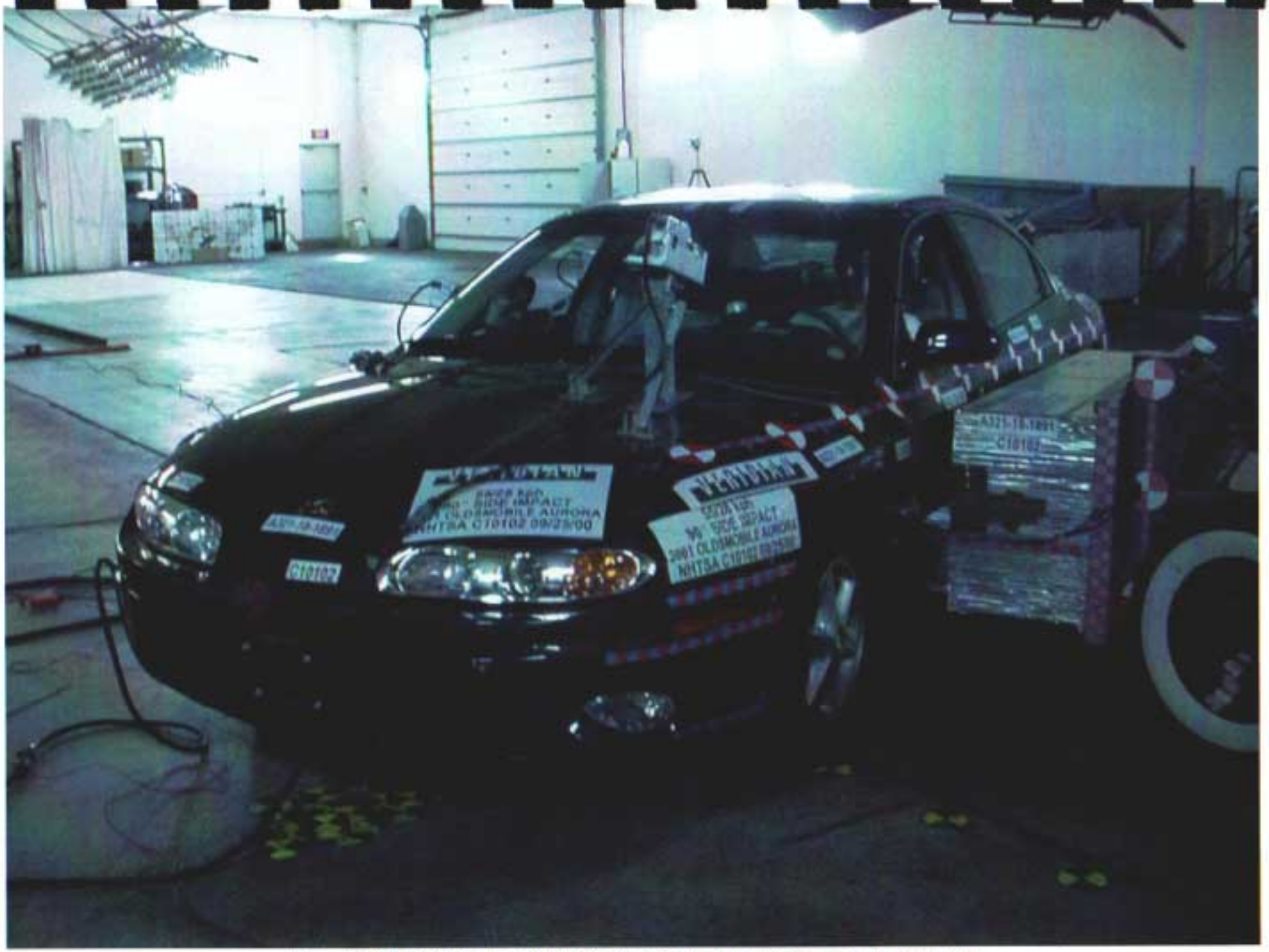


Figure A-29 PRE-TEST LEFT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

Figure A-30 PRE-TEST RIGHT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

Figure A-31 POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET

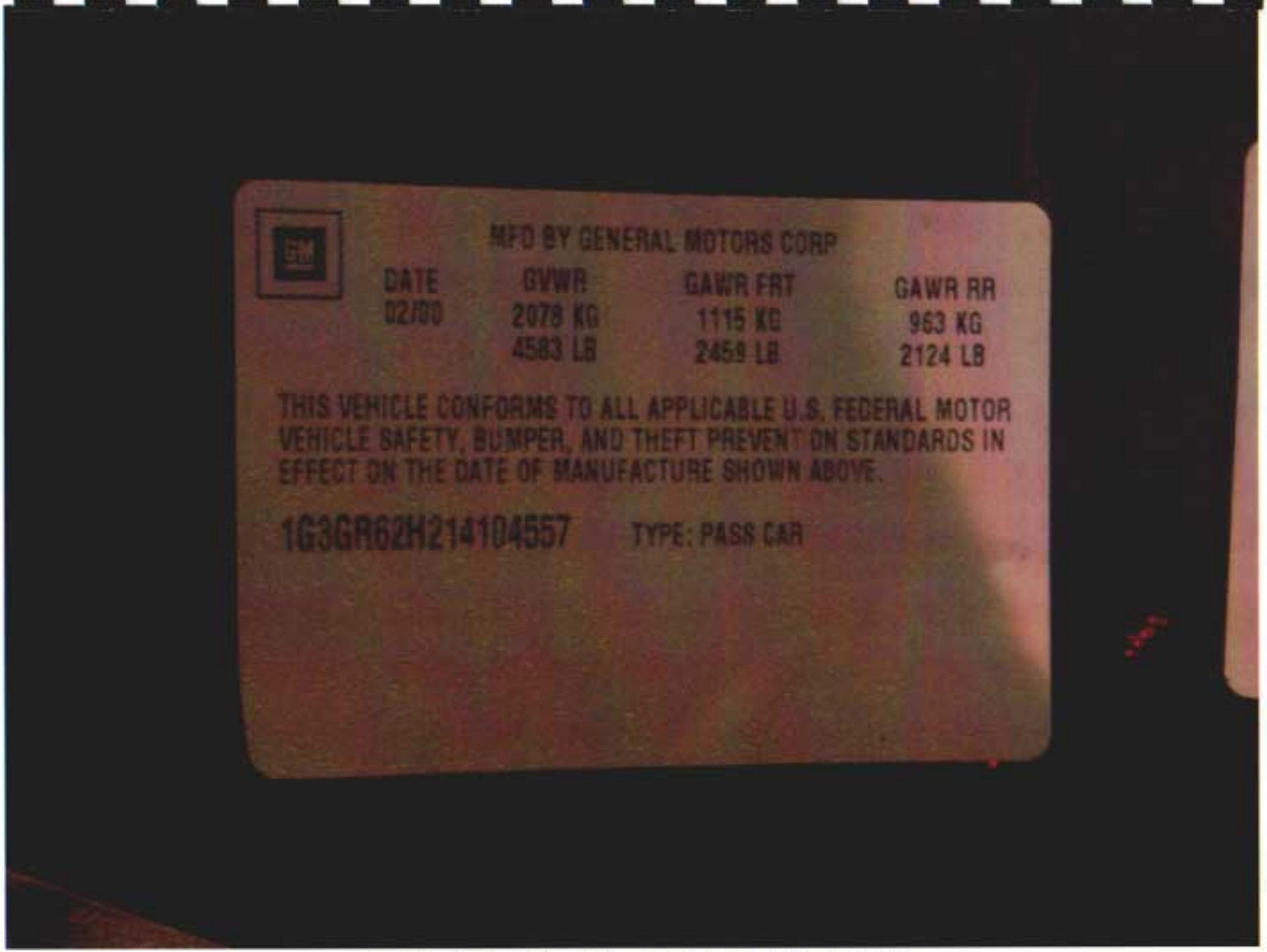


Figure A-32 CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION LABEL

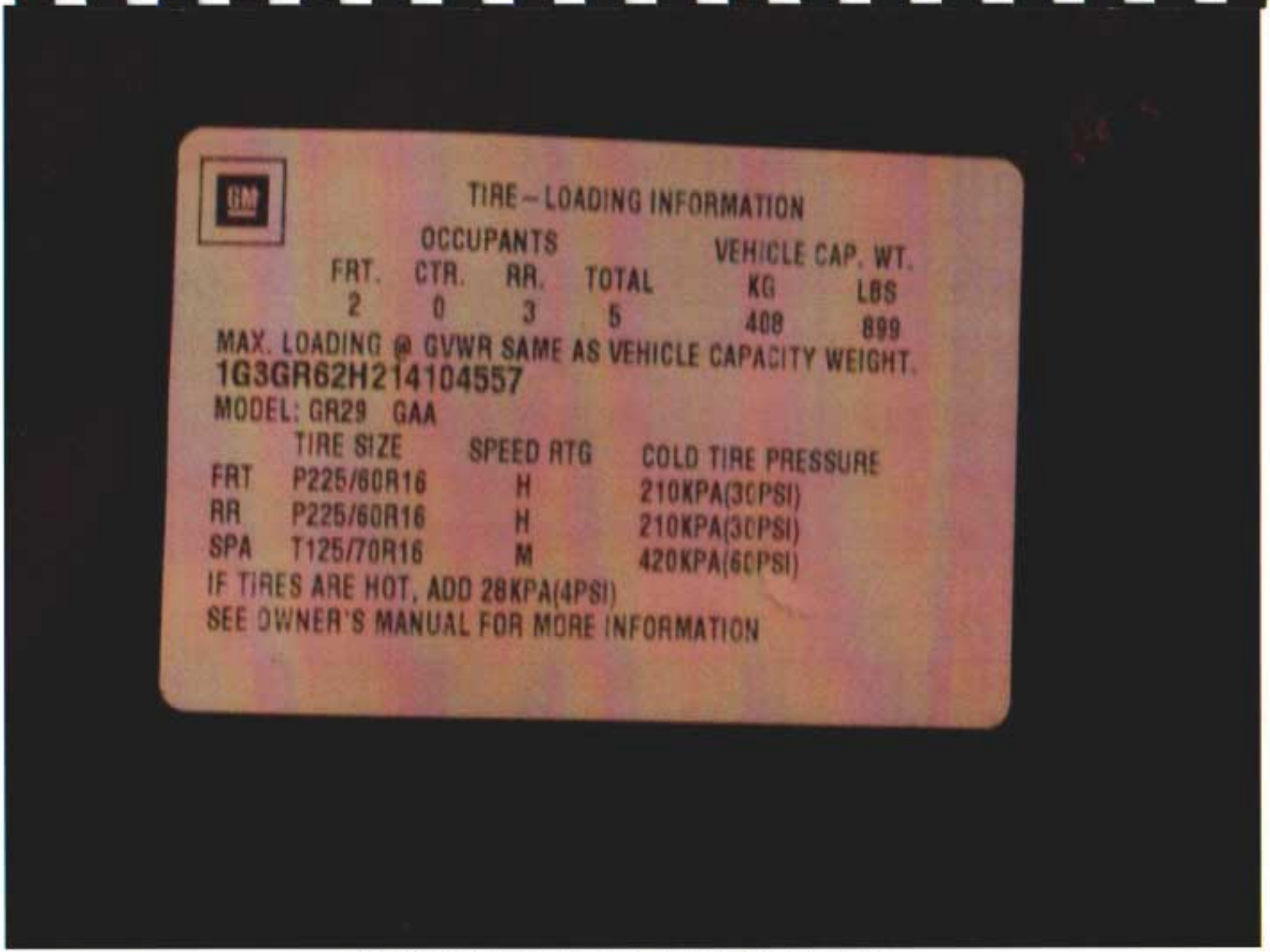


Figure A-33 CLOSE-UP VIEW OF VEHICLE'S TIRE PLACARD LABEL

Figure A-34 IMPACT PHOTO

Figure A-35 ROLLOVER 90 DEGREES

Figure A-36 ROLLOVER 180 DEGREES

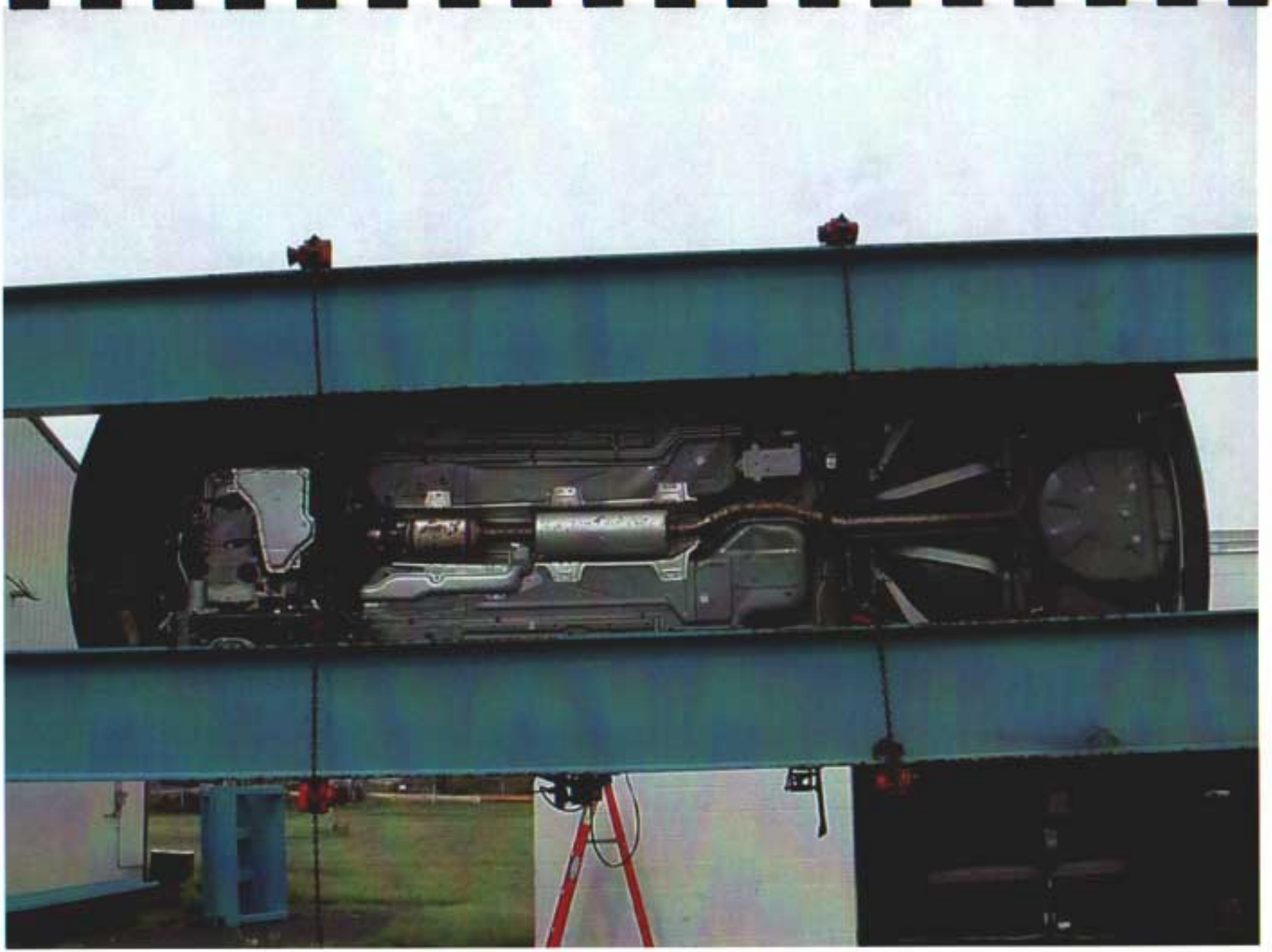


Figure A-37 ROLLOVER 270 DEGREES

Figure A-38 ROLLOVER 360 DEGREES

APPENDIX B

VEHICLE, MDB AND SID RESPONSE DATA

TABLE OF DATA PLOTS

DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 1000
INTEGRATION DATA - FILTER CLASS 180

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS
ACCELERATION DATA - FIR FILTERED

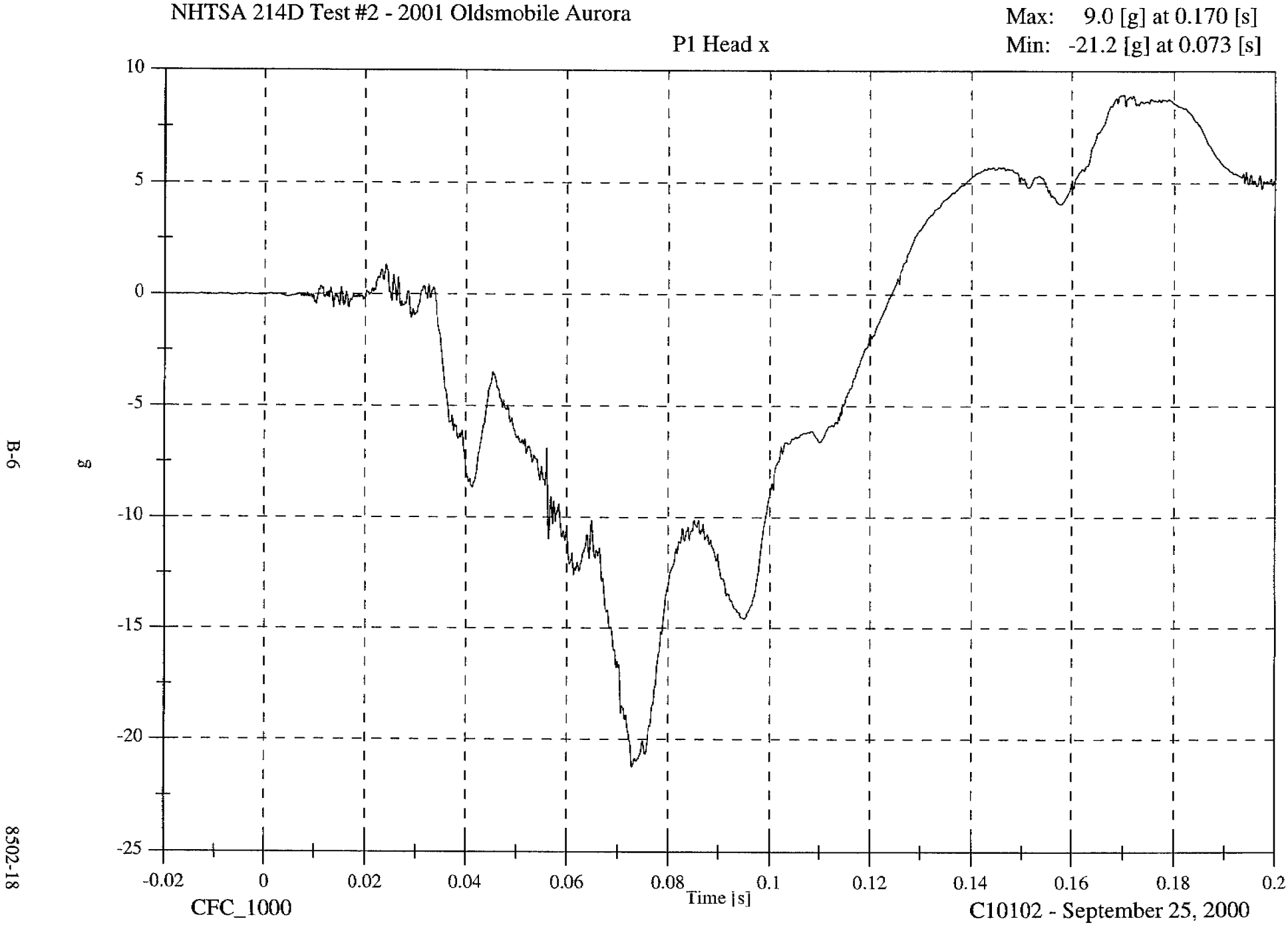
TEST VEHICLE INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

TEST VEHICLE INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

MDB INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
ACCELERATION DATA - FILTER CLASS 1000
INTEGRATION DATA - FILTER CLASS 180

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
ACCELERATION DATA - FIR FILTERED


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Head x
Max: 9.0 [g] at 0.170 [s]
Min: -21.2 [g] at 0.073 [s]
10
5
0
-5
-10
-15
-20
-25
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
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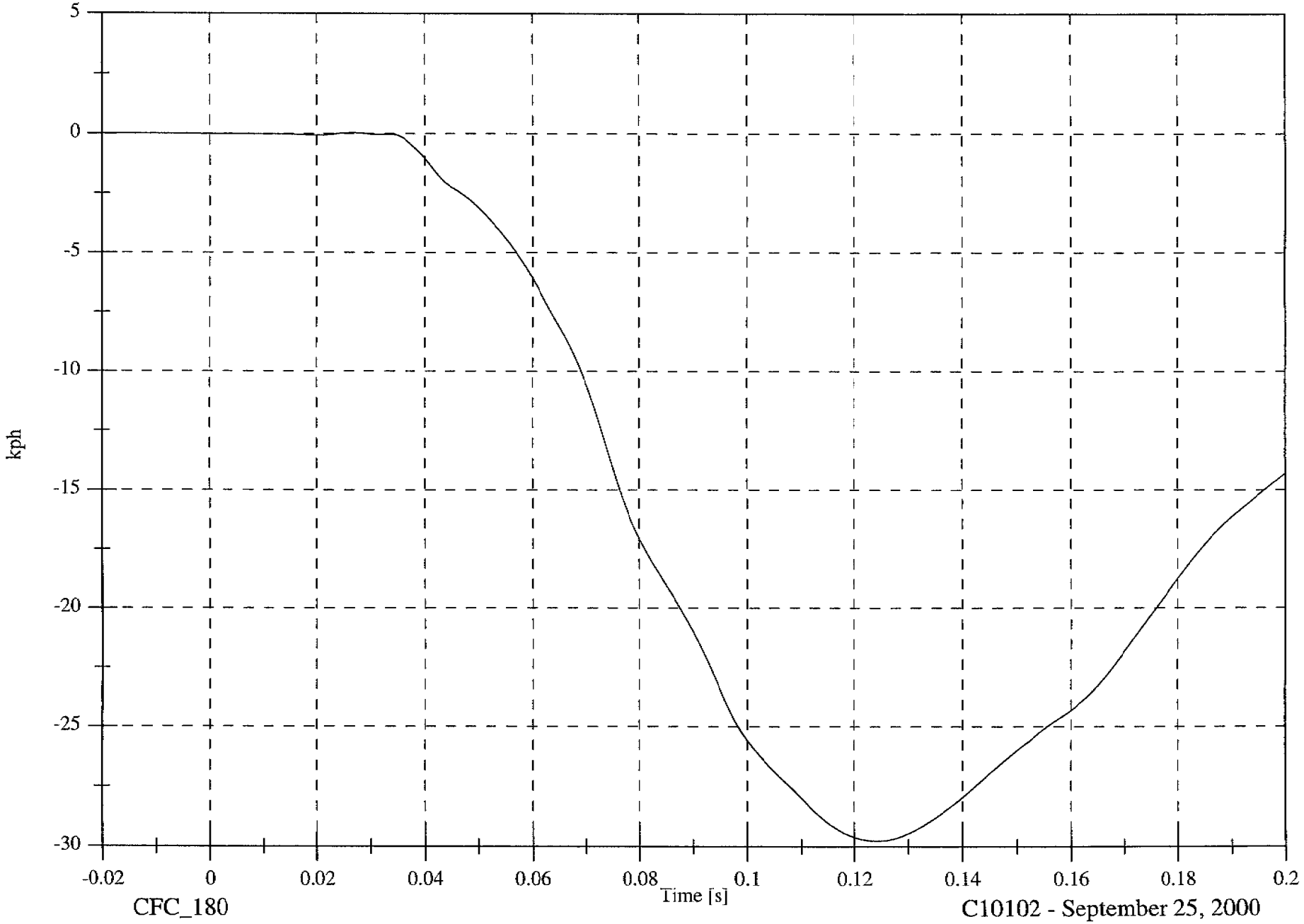
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P1 Head x Velocity

Max: 0.0 [kph] at 0.027 [s]

Min: -29.8 [kph] at 0.124 [s]



CFC_180

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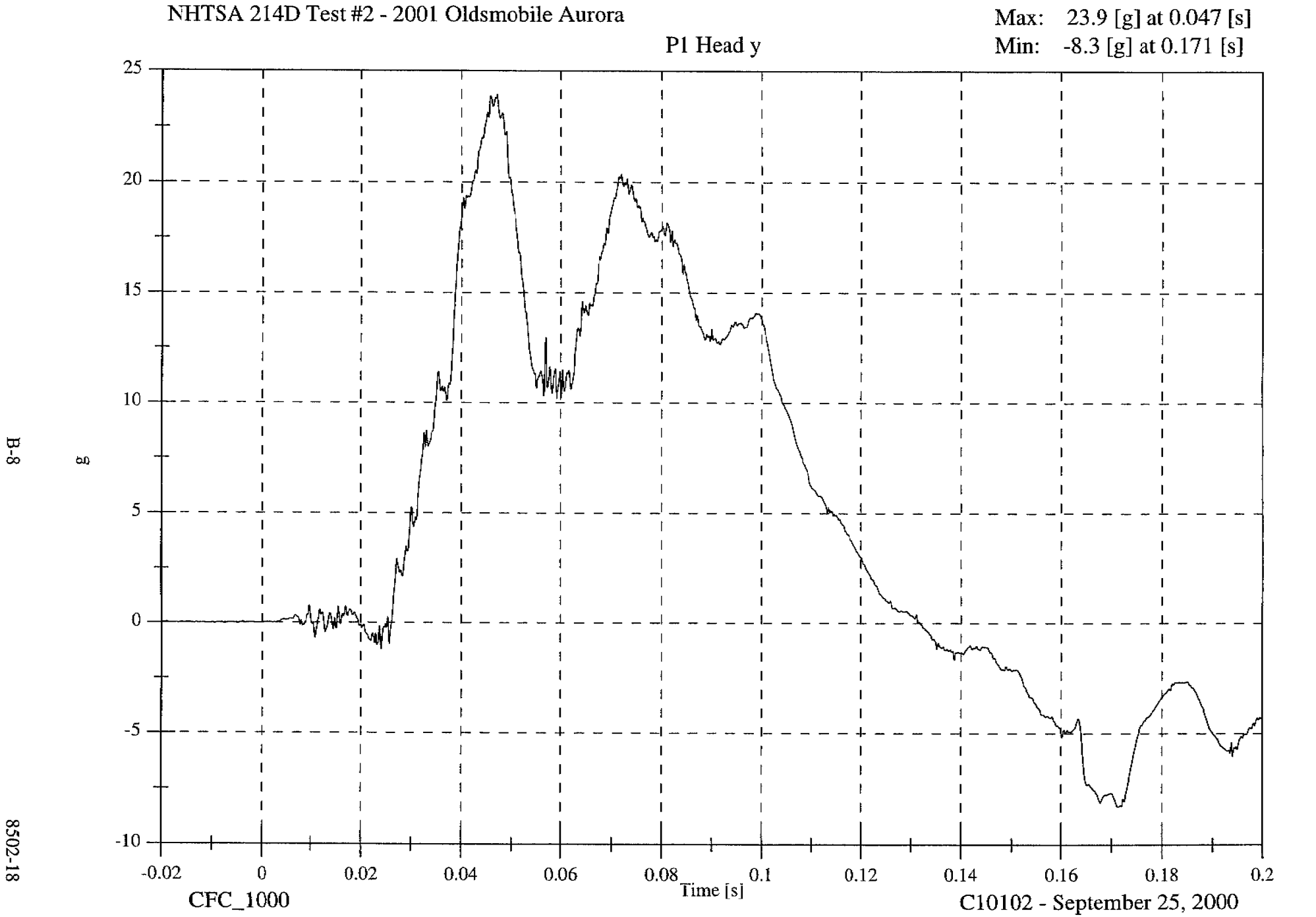
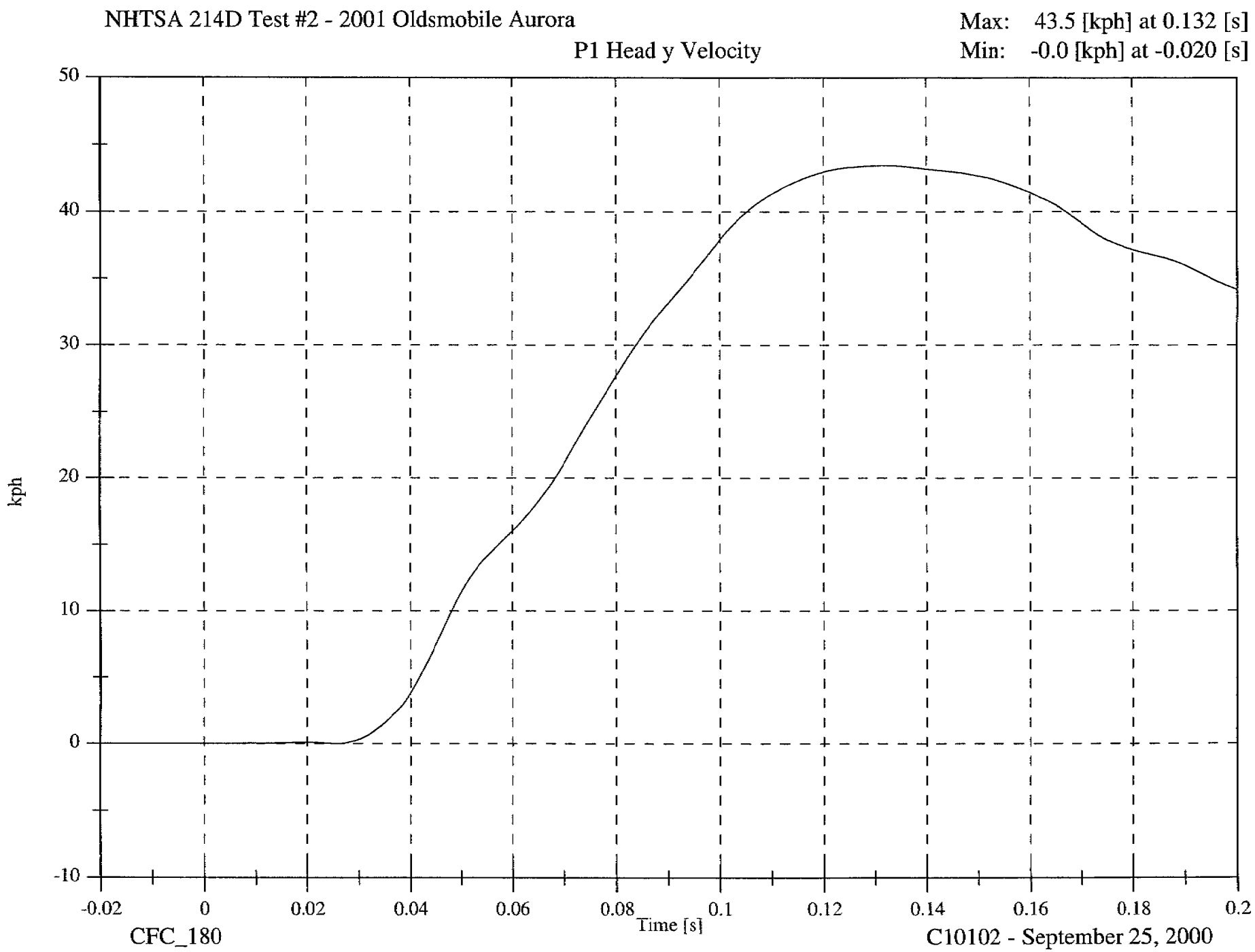
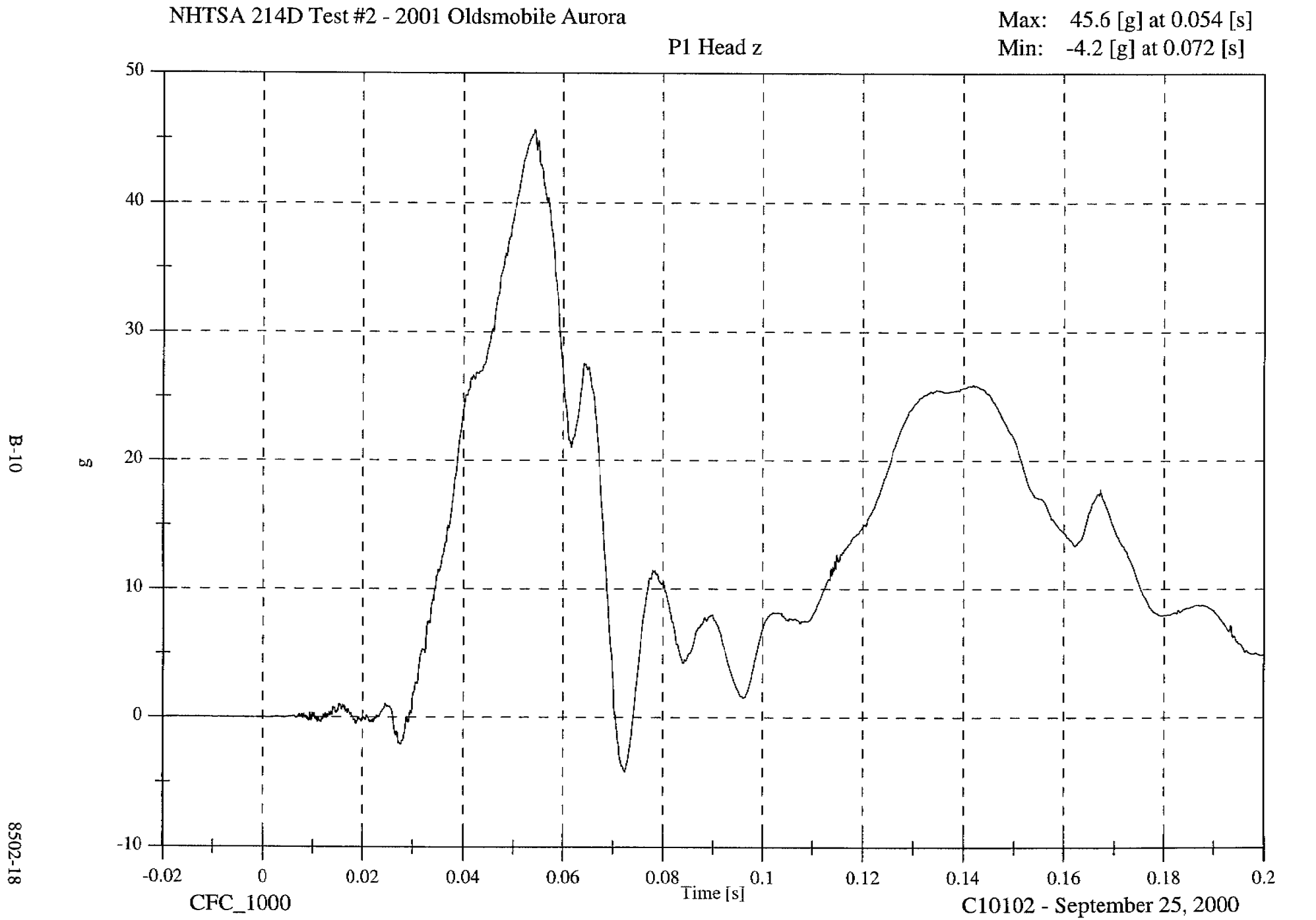
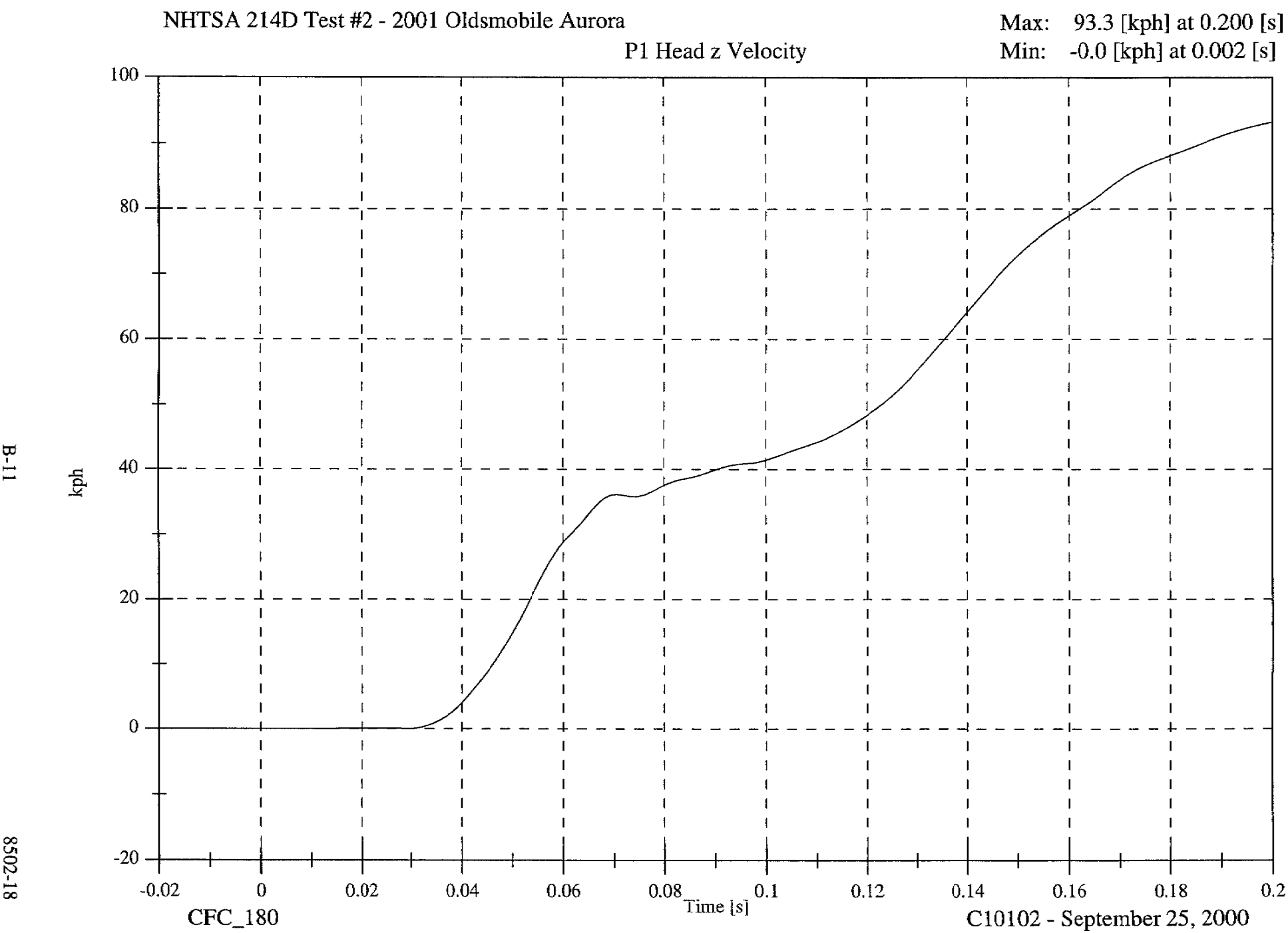

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Head y
Max: 23.9 [g] at 0.047 [s]
Min: -8.3 [g] at 0.171 [s]
25
20
15
10
5
0
-5
-10
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Head y Velocity
Max: 43.5 [kph] at 0.132 [s]
Min: -0.0 [kph] at -0.020 [s]
kph
50
40
30
20
10
0
-10
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

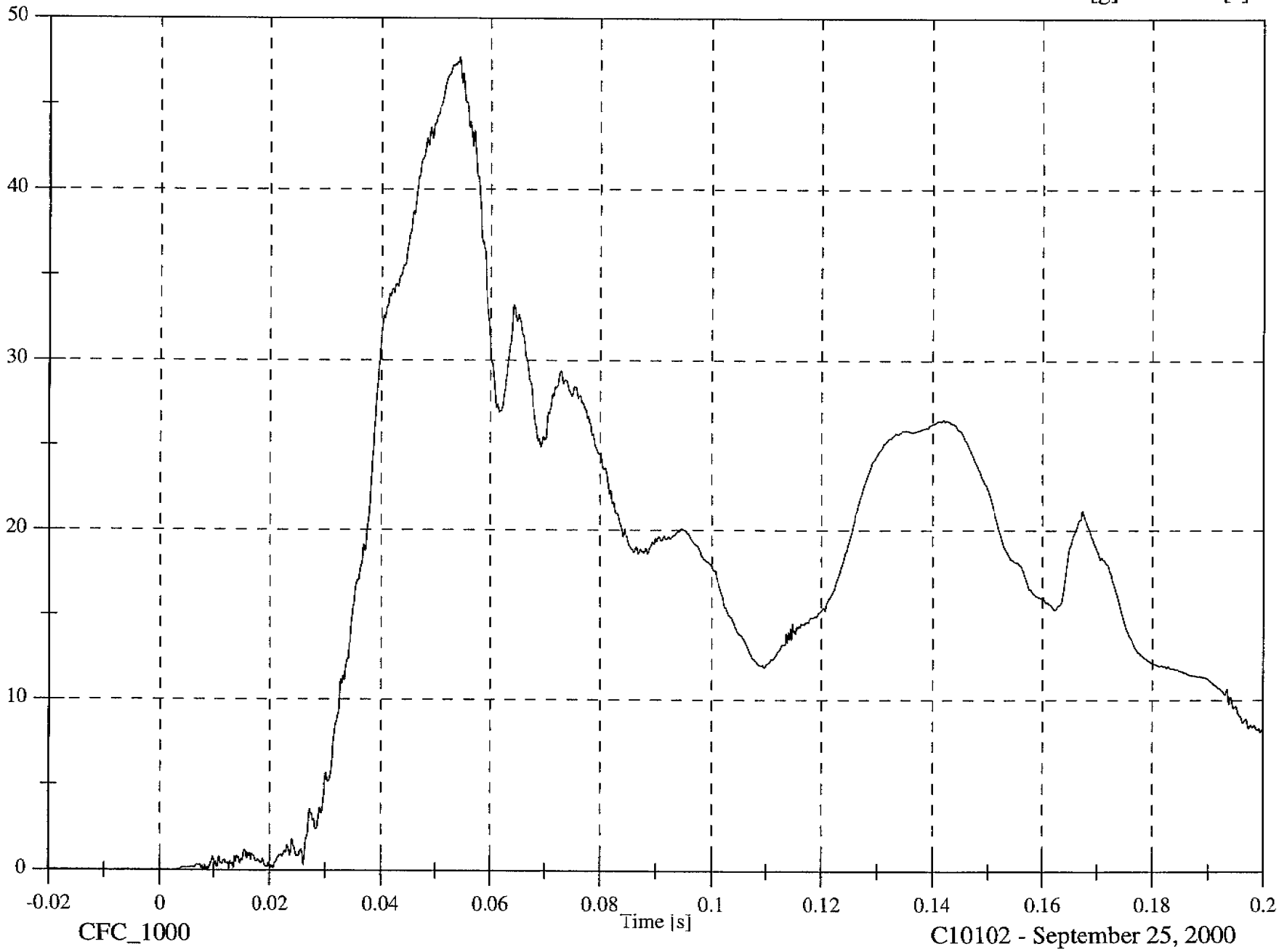

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Head z
Max: 45.6 [g] at 0.054 [s]
Min: -4.2 [g] at 0.072 [s]
50
40
30
20
10
0
-10
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Head z Velocity
Max: 93.3 [kph] at 0.200 [s]
Min: -0.0 [kph] at 0.002 [s]
kph
100
80
60
40
20
0
-20
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P1 Head Resultant

Max: 47.7 [g] at 0.054 [s]
Min: 0.0 [g] at -0.005 [s]



CFC_1000

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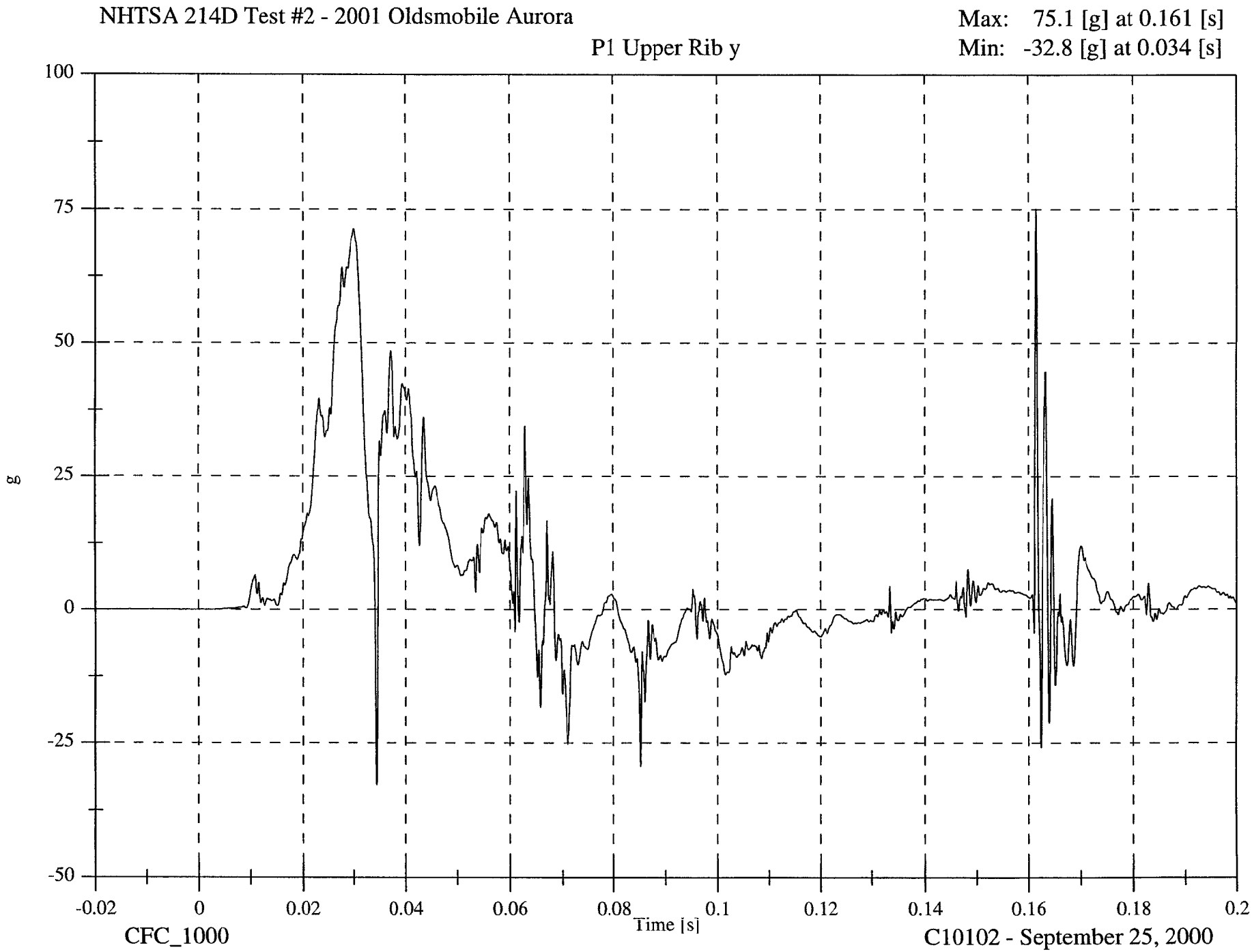
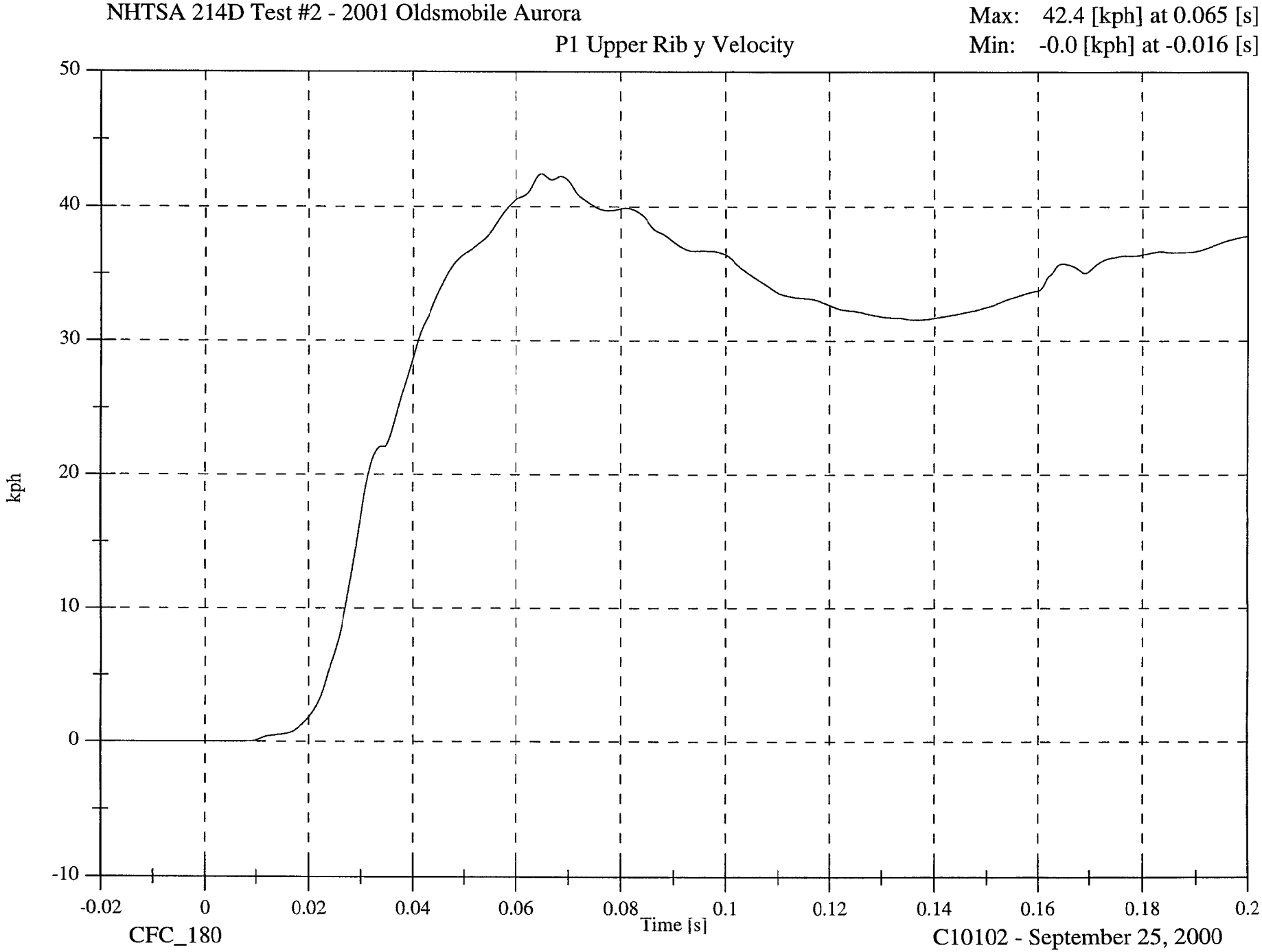
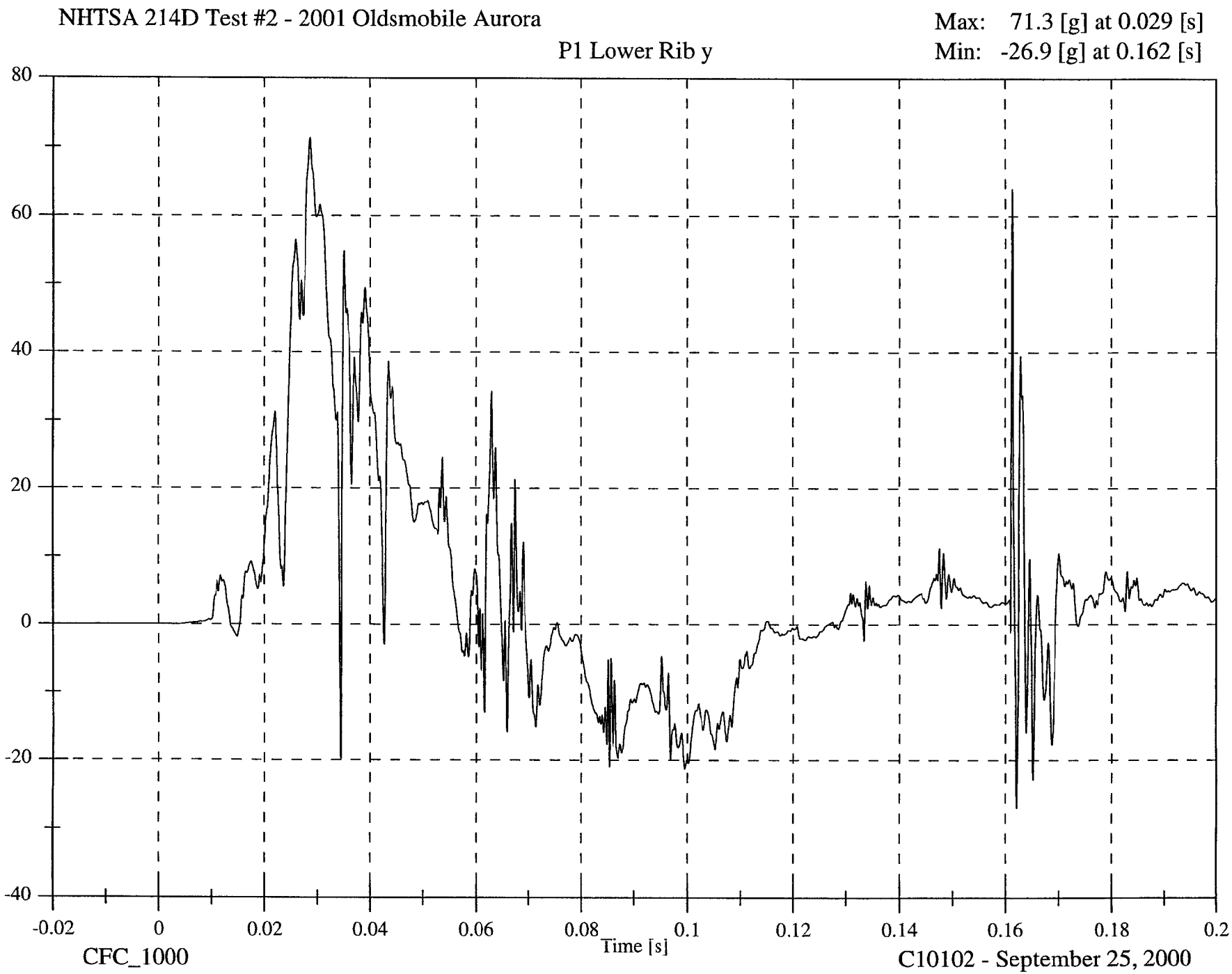

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Upper Rib y
Max: 75.1 [g] at 0.161 [s]
Min: -32.8 [g] at 0.034 [s]
100
75
50
25
0
-25
-50
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Upper Rib y Velocity
Max: 42.4 [kph] at 0.065 [s]
Min: -0.0 [kph] at -0.016 [s]
kph
50
40
30
20
10
0
-10
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

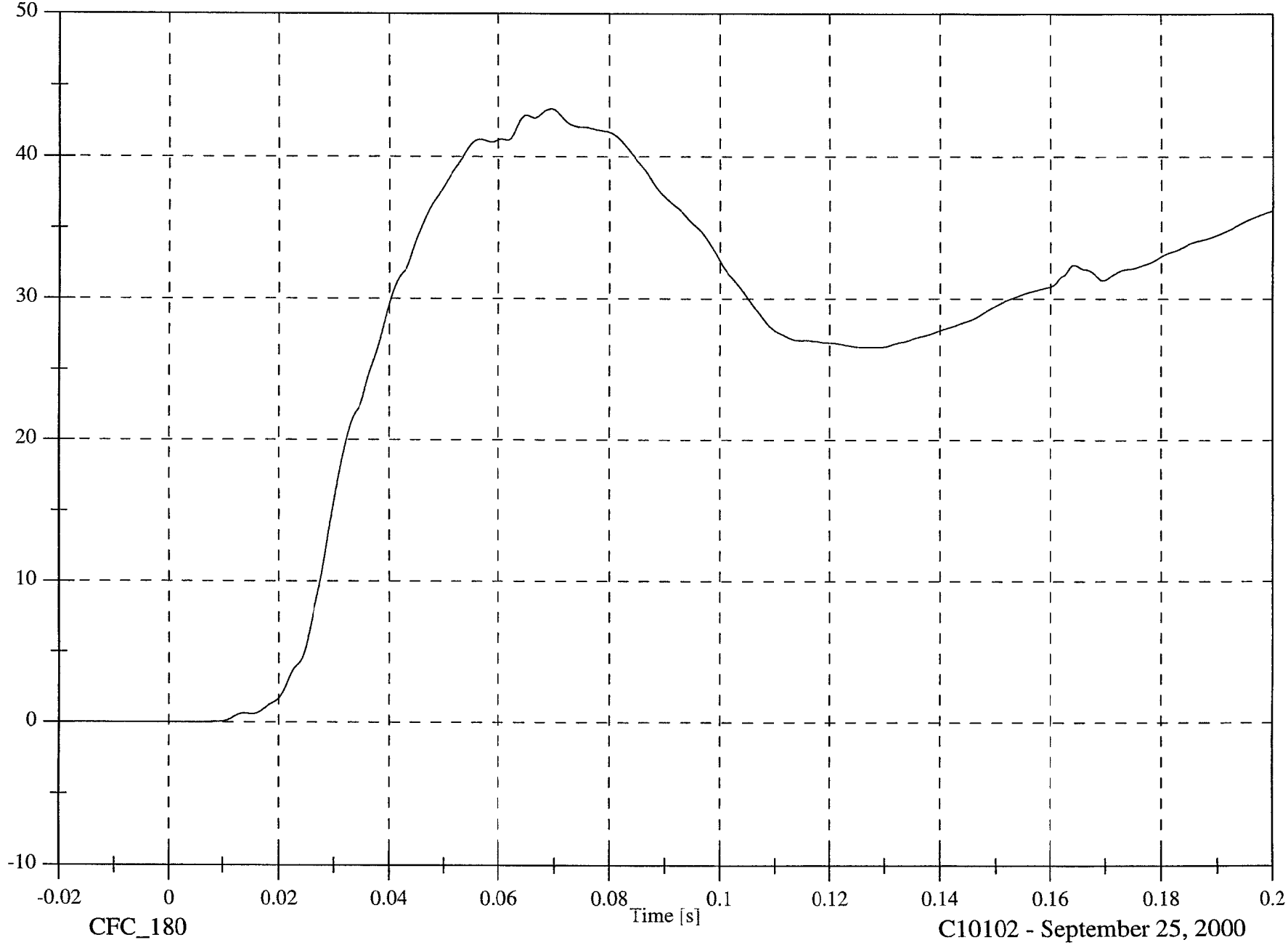

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Lower Rib y
Max: 71.3 [g] at 0.029 [s]
Min: -26.9 [g] at 0.162 [s]
80
60
40
20
0
-20
-40
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P1 Lower Rib y Velocity

Max: 43.3 [kph] at 0.069 [s]

Min: -0.0 [kph] at -0.014 [s]



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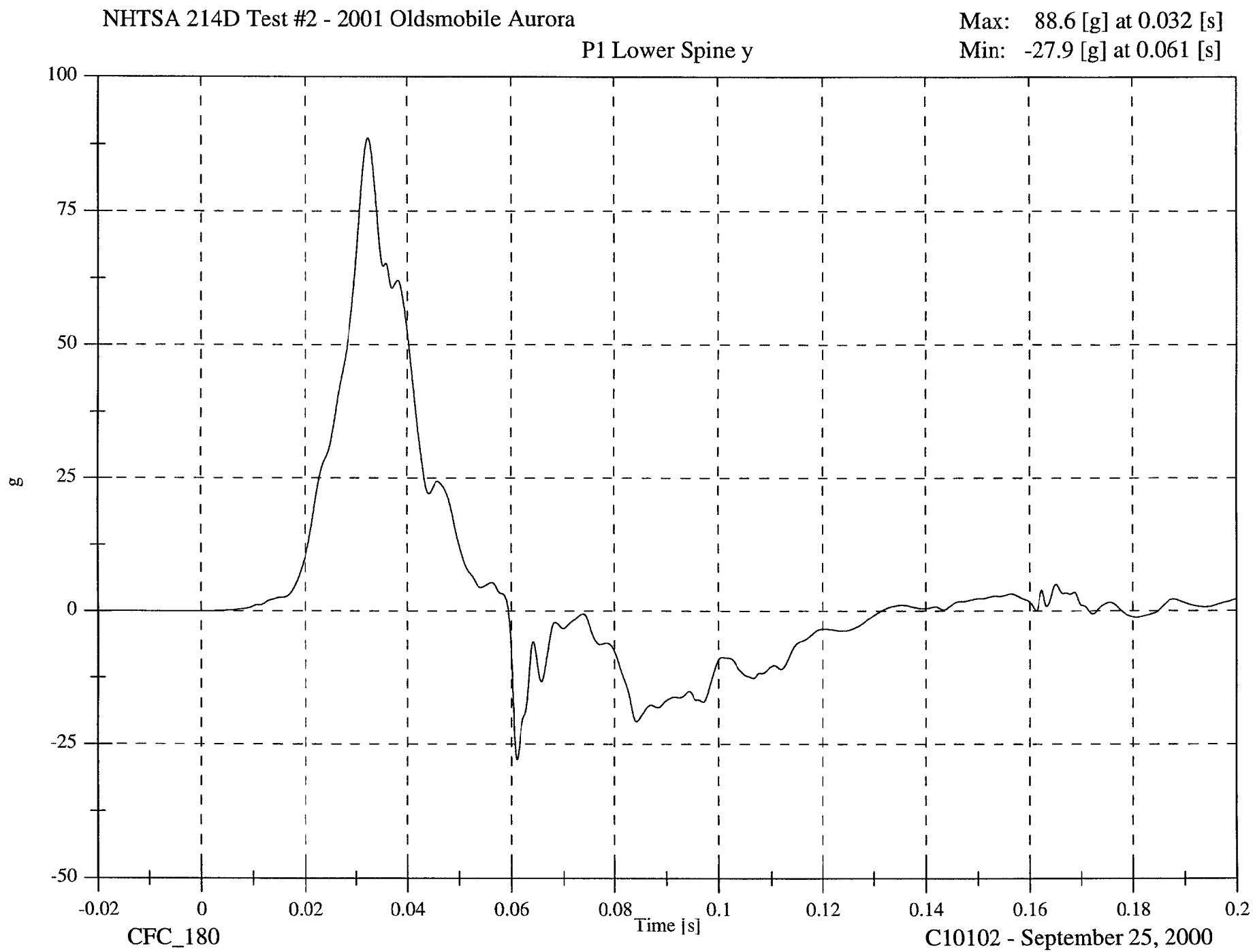
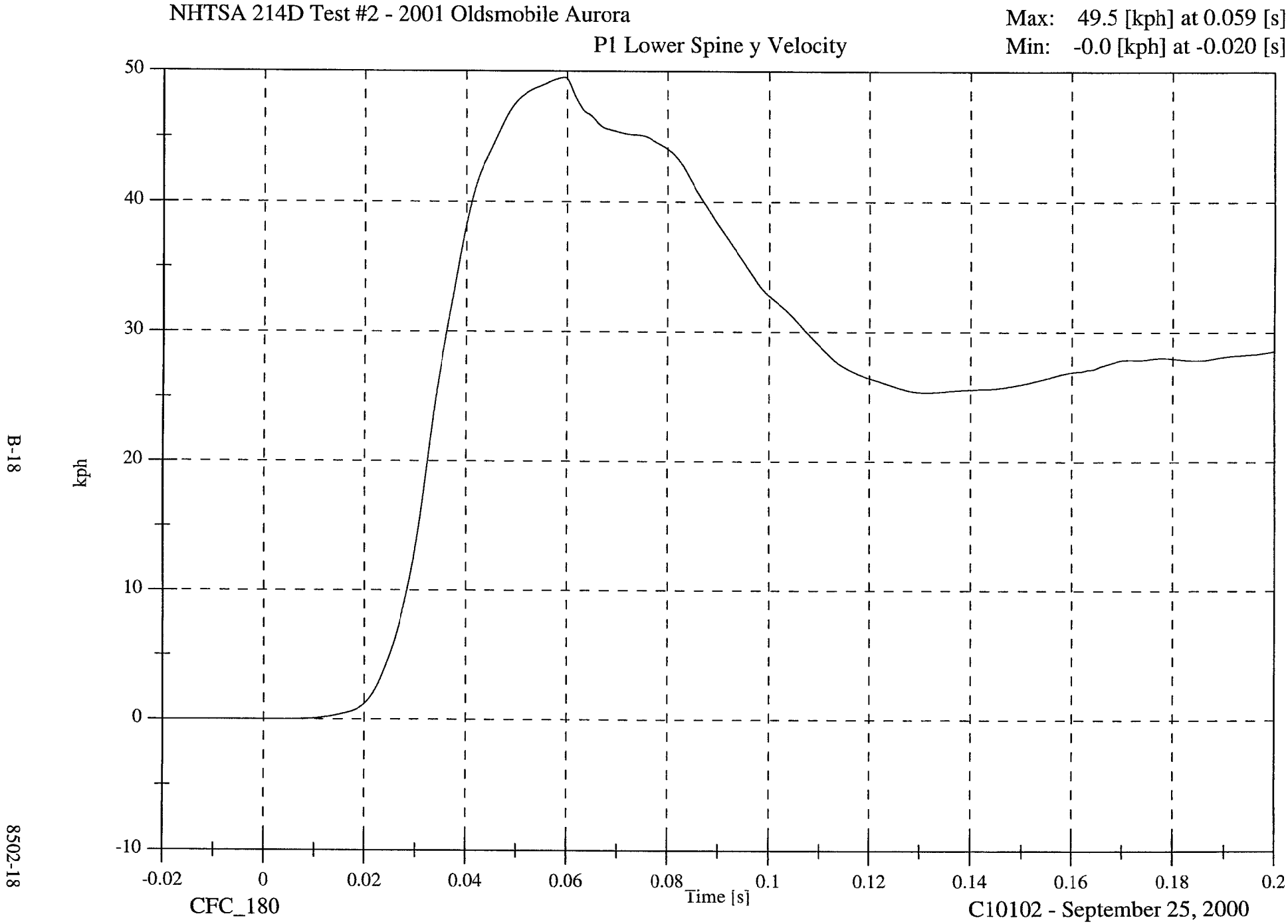
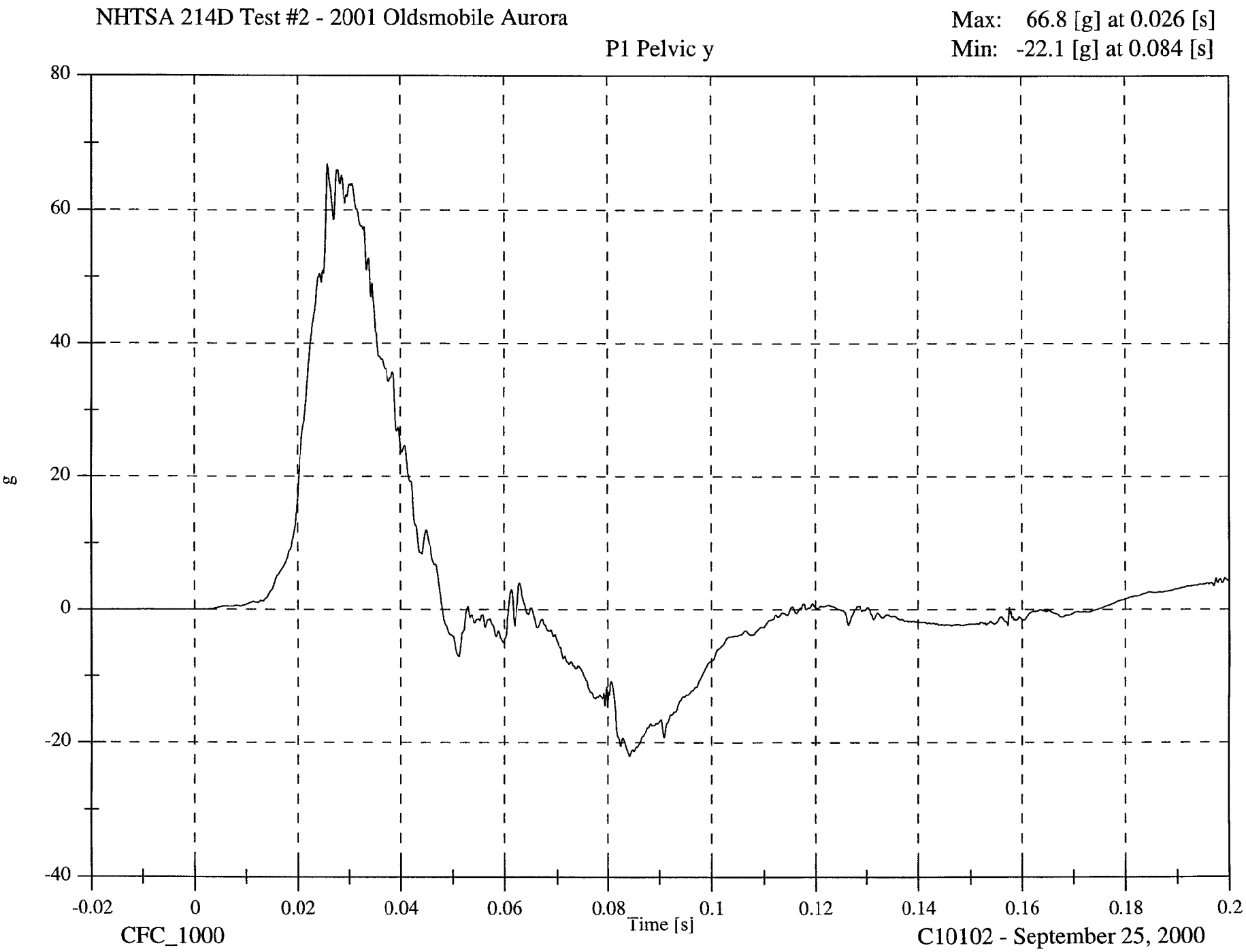
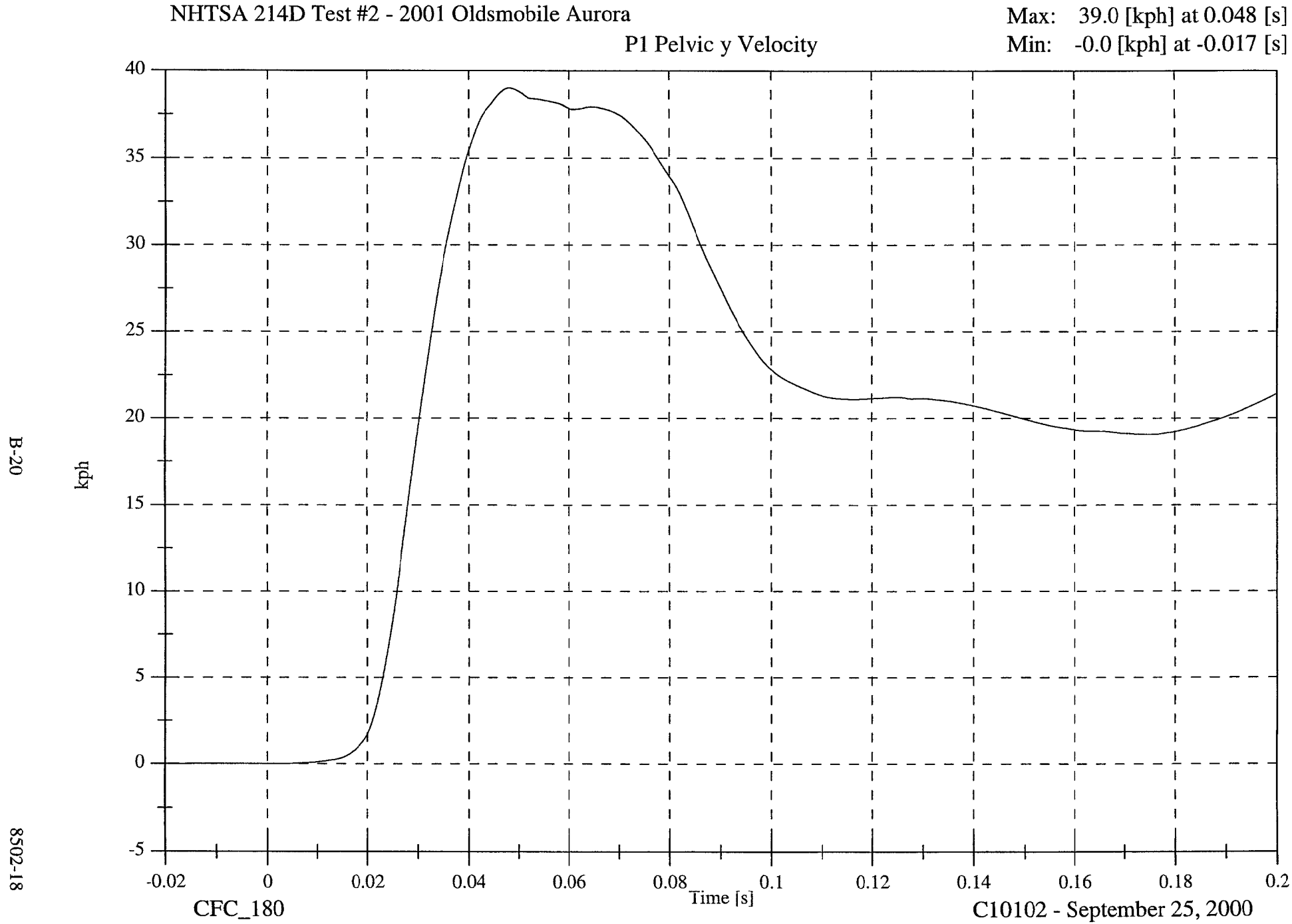
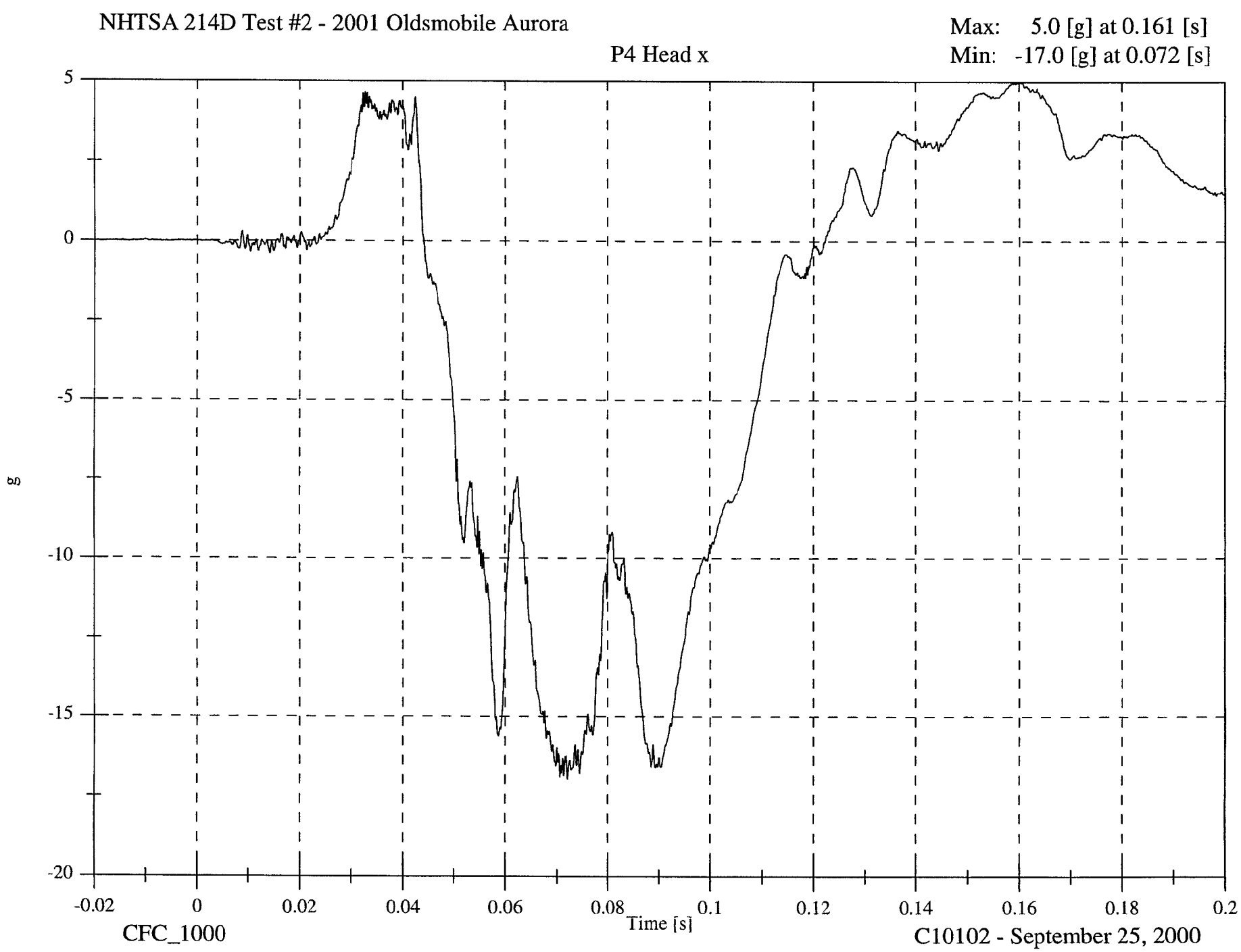

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Lower Spine y
Max: 88.6 [g] at 0.032 [s]
Min: -27.9 [g] at 0.061 [s]
100
75
50
25
0
-25
-50
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Lower Spine y Velocity
Max: 49.5 [kph] at 0.059 [s]
Min: -0.0 [kph] at -0.020 [s]
kph
50
40
30
20
10
0
-10
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Pelvic y
Max: 66.8 [g] at 0.026 [s]
Min: -22.1 [g] at 0.084 [s]
80
60
40
20
0
-20
-40
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Pelvic y Velocity
Max: 39.0 [kph] at 0.048 [s]
Min: -0.0 [kph] at -0.017 [s]
kph
40
35
30
25
20
15
10
5
0
-5
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

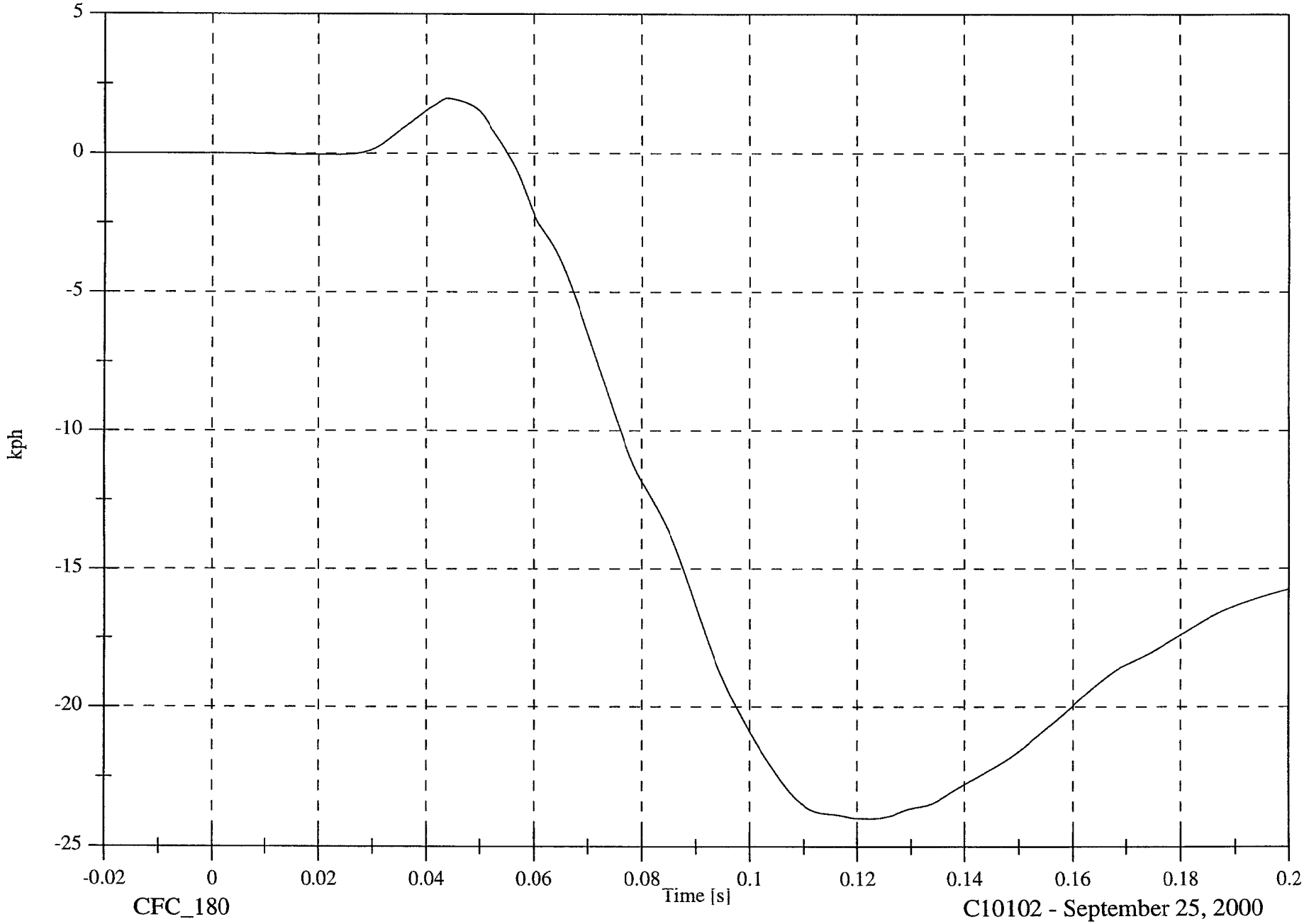

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Head x
Max: 5.0 [g] at 0.161 [s]
Min: -17.0 [g] at 0.072 [s]
5
0
-5
-10
-15
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P4 Head x Velocity

Max: 2.0 [kph] at 0.044 [s]

Min: -24.0 [kph] at 0.122 [s]



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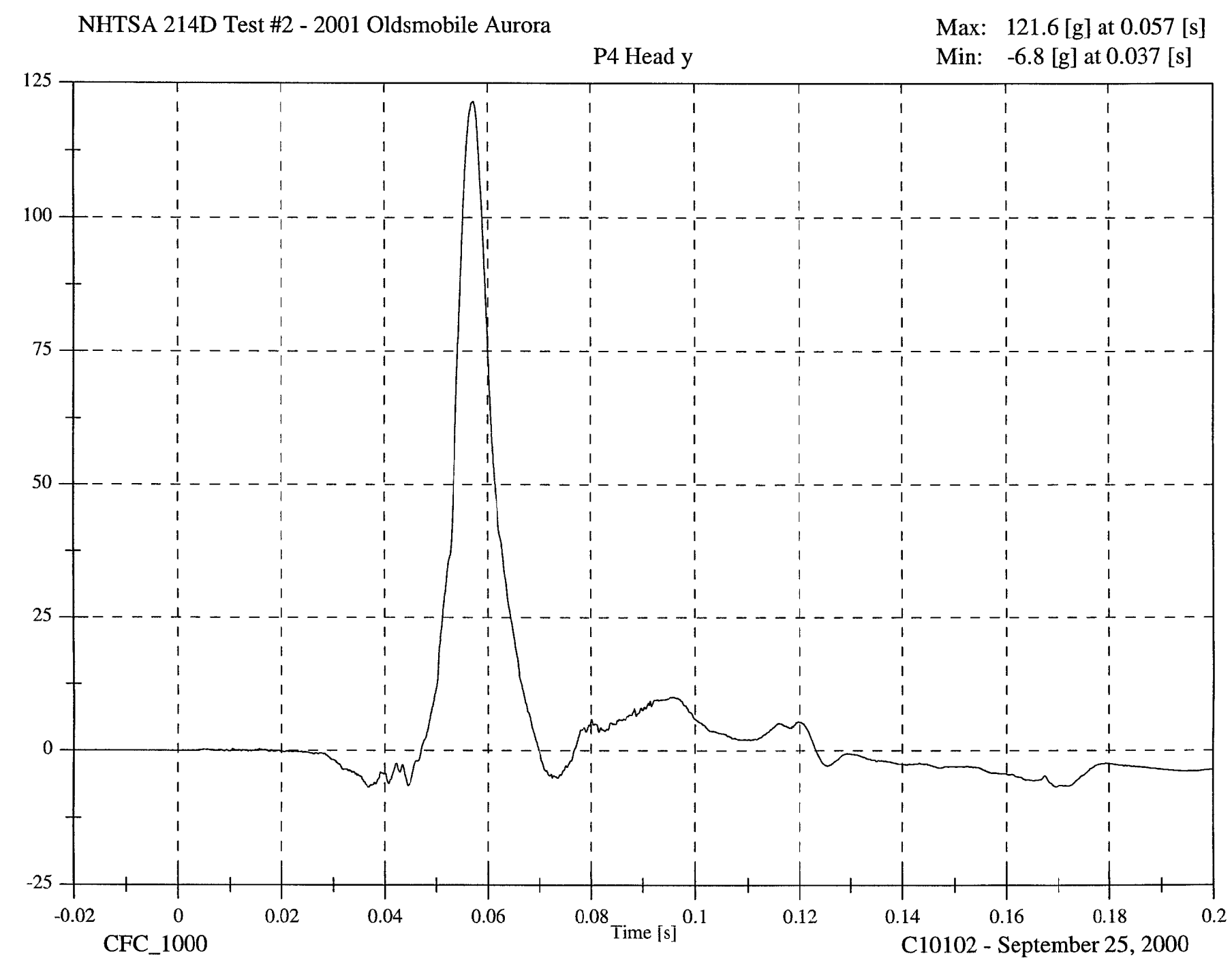
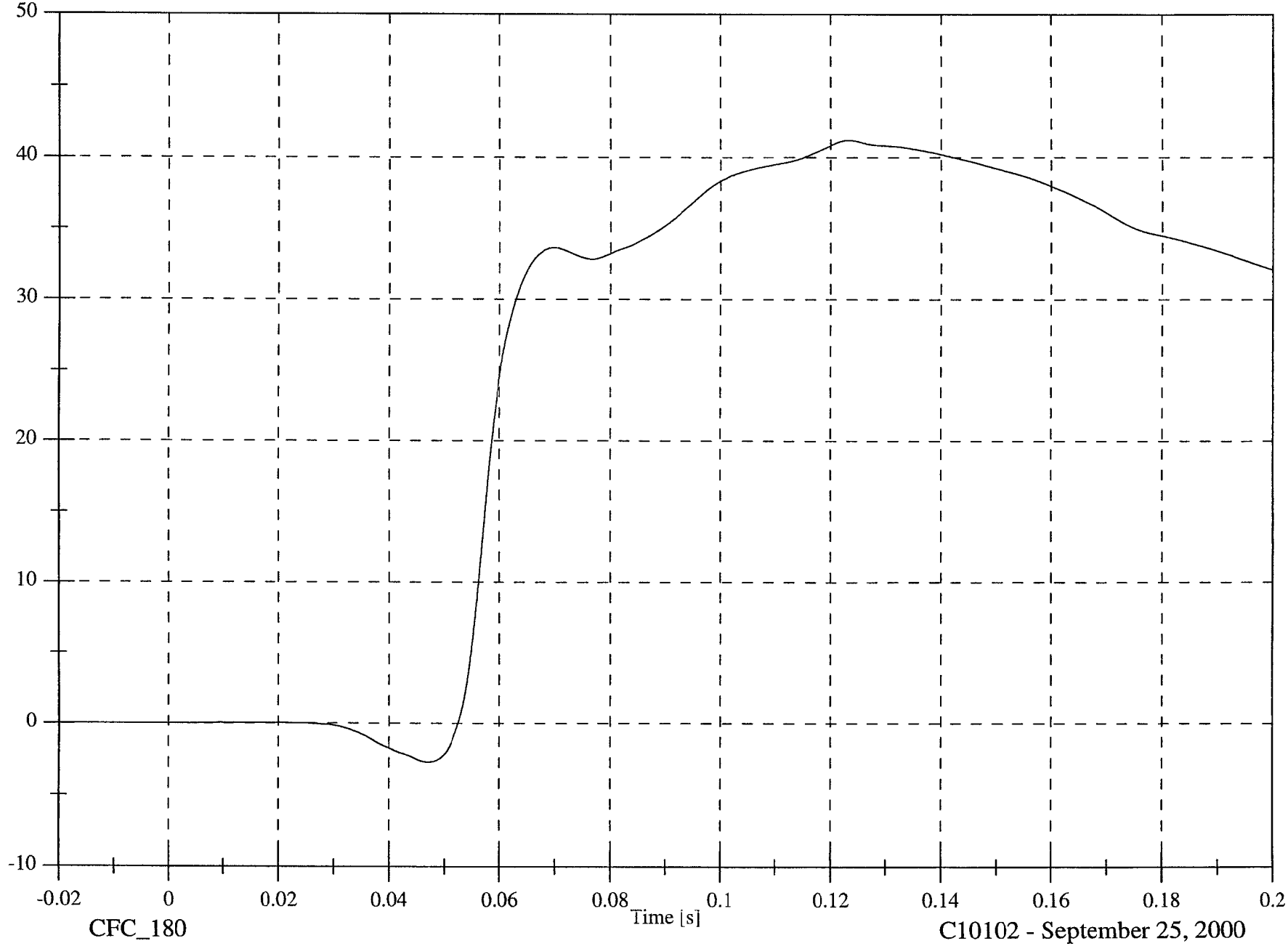

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Head y
Max: 121.6 [g] at 0.057 [s]
Min: -6.8 [g] at 0.037 [s]
125
100
75
50
25
0
-25
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P4 Head y Velocity

Max: 41.2 [kph] at 0.123 [s]
Min: -2.7 [kph] at 0.047 [s]



CFC_180

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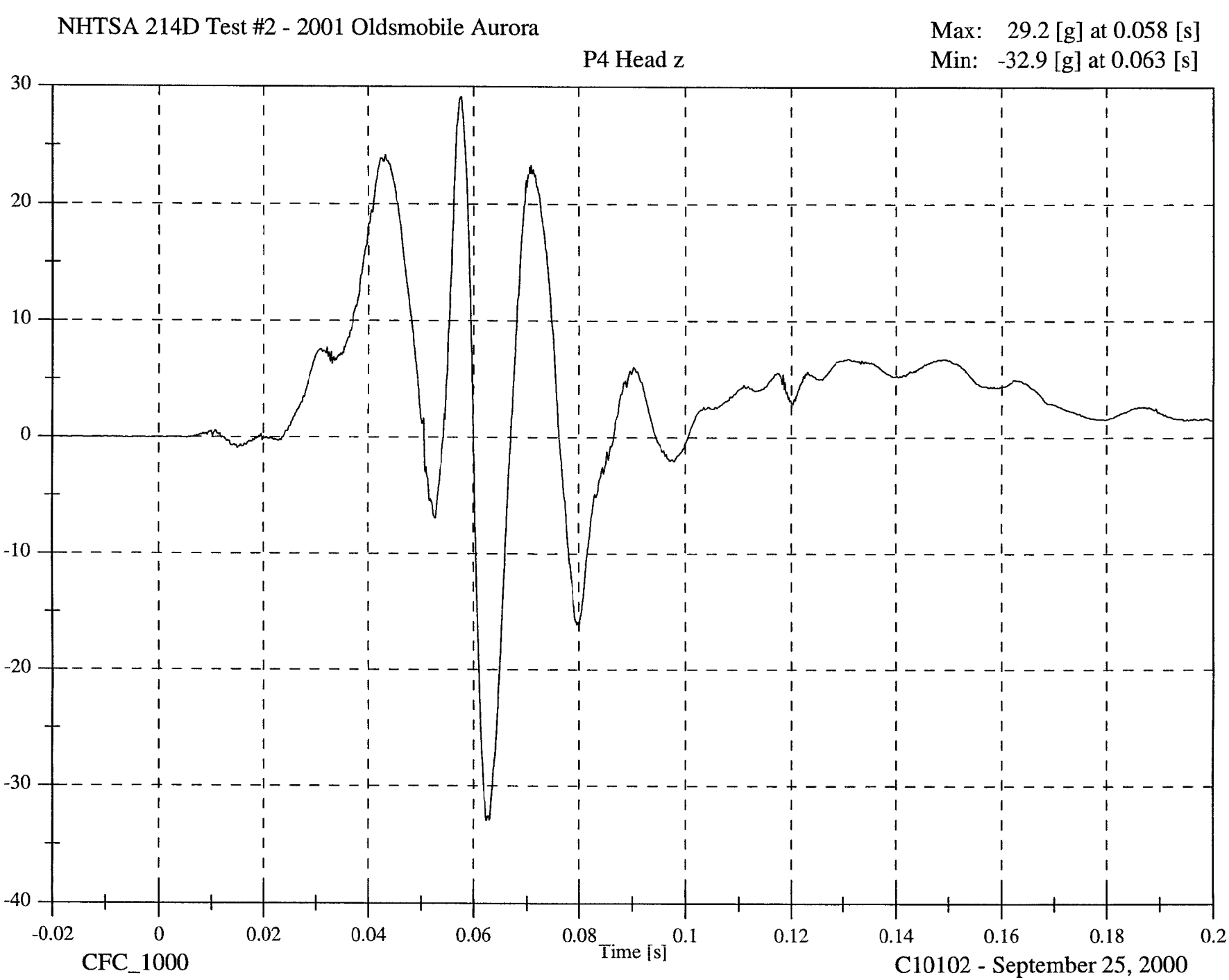
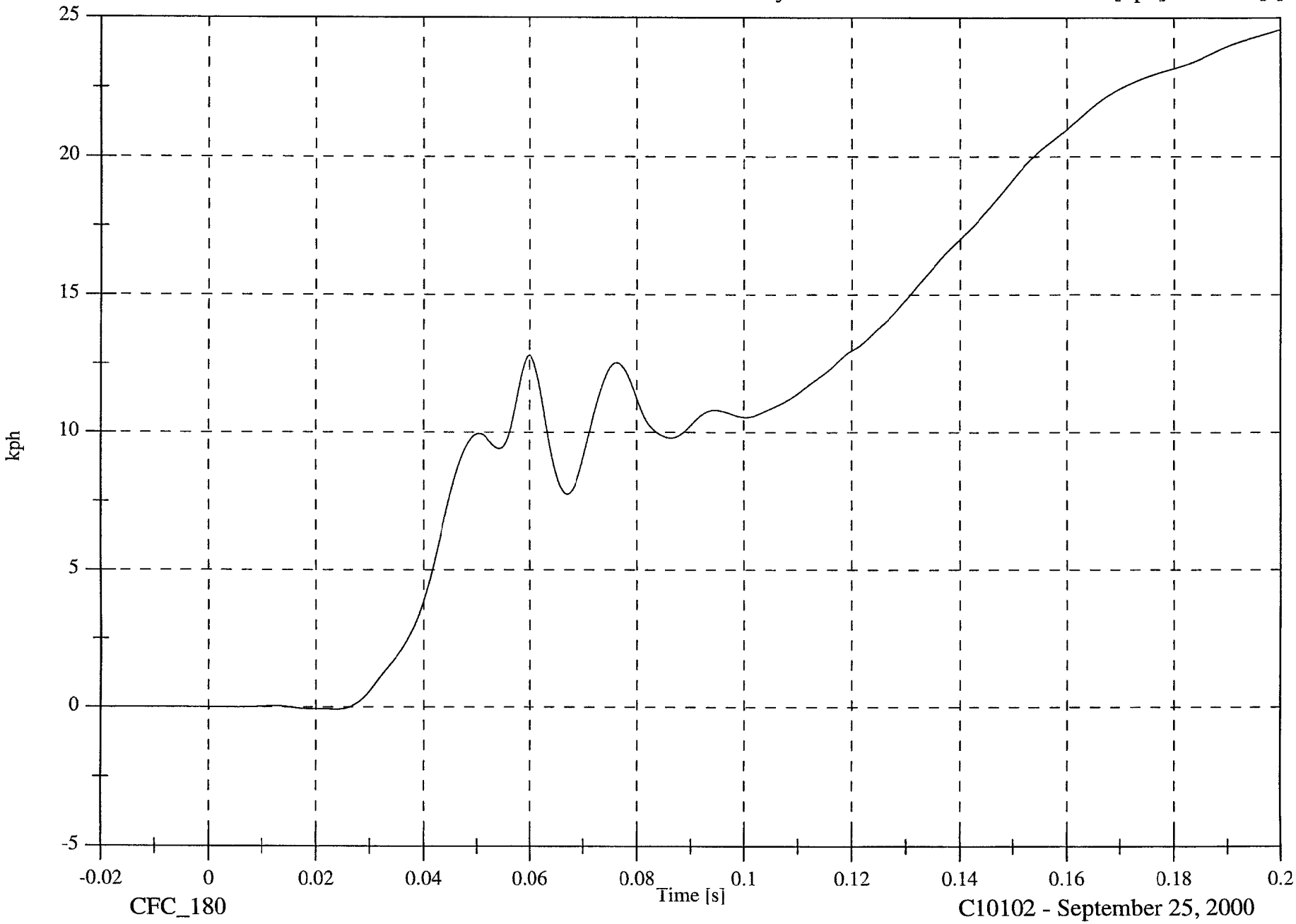

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Head z
Max: 29.2 [g] at 0.058 [s]
Min: -32.9 [g] at 0.063 [s]
30
20
10
0
-10
-20
-30
-40
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P4 Head z Velocity

Max: 24.6 [kph] at 0.200 [s]
Min: -0.1 [kph] at 0.024 [s]



CFC_180

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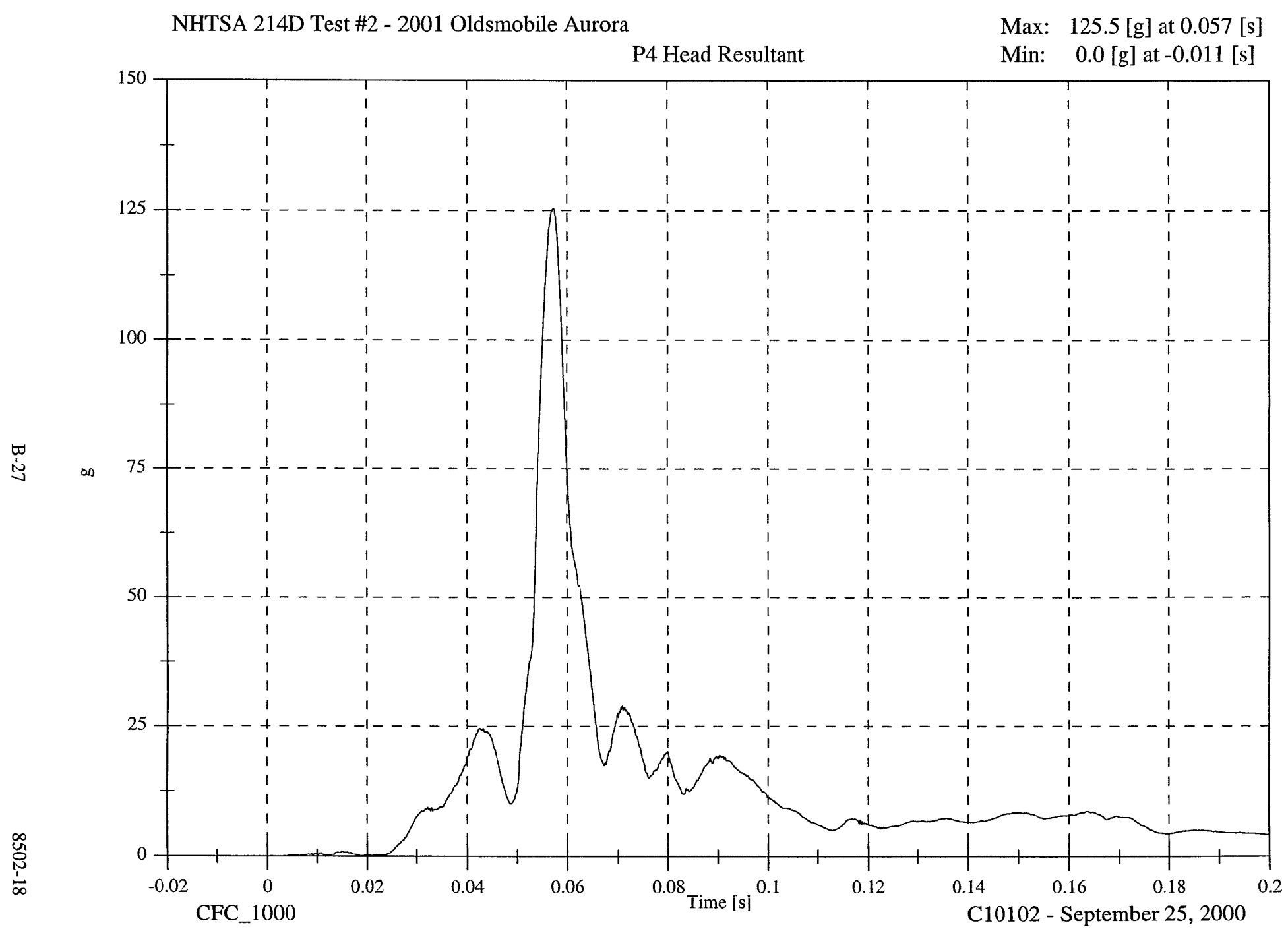
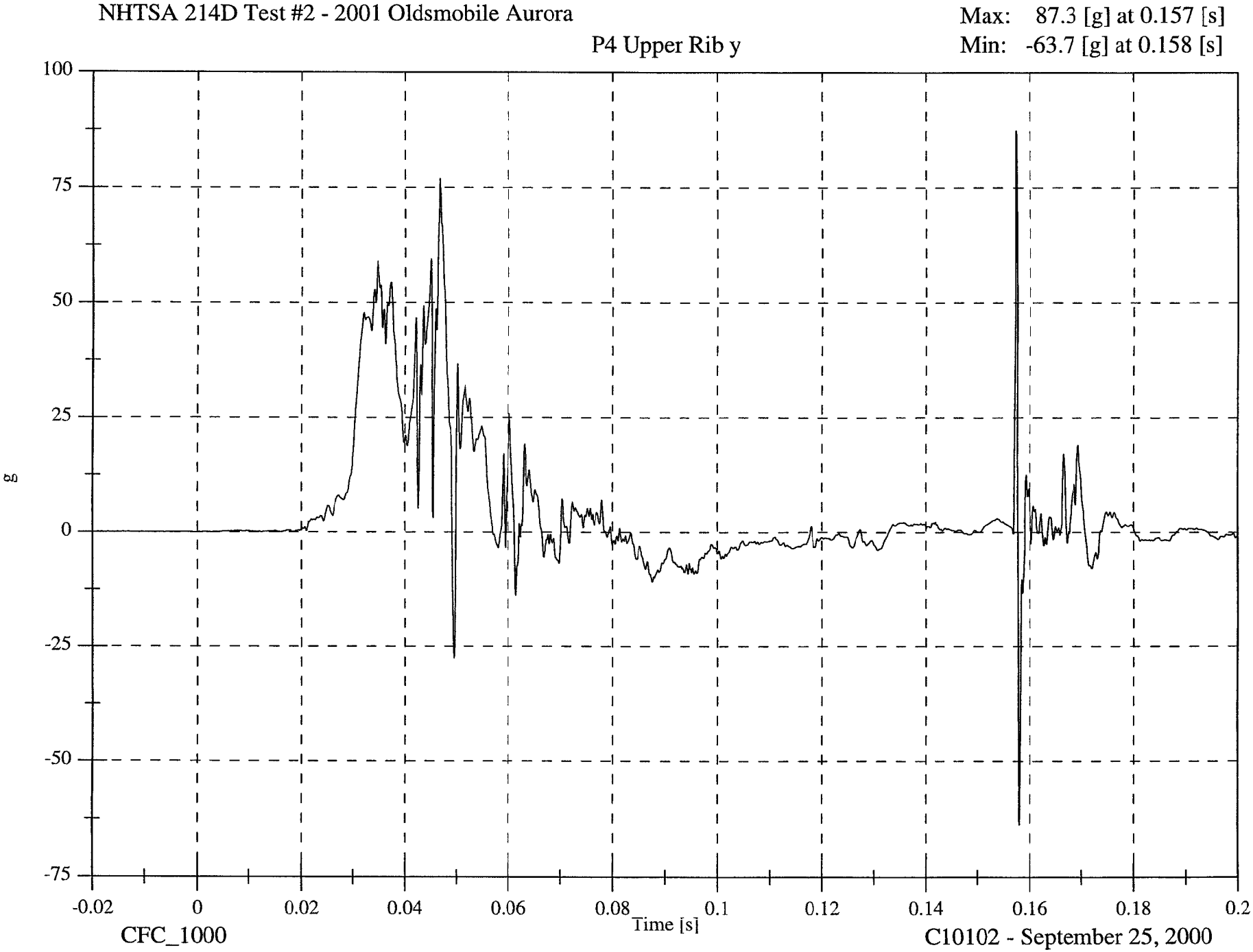
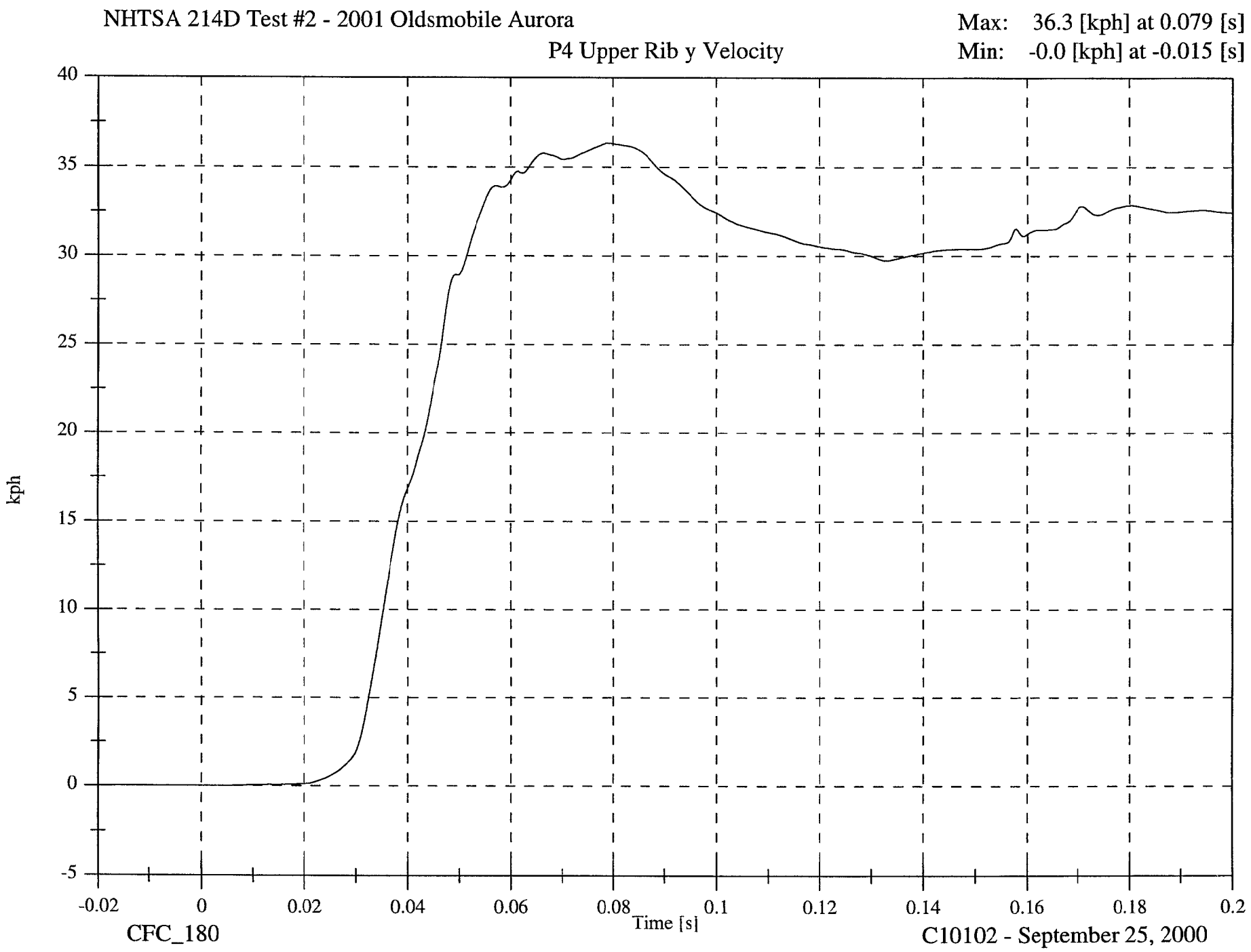
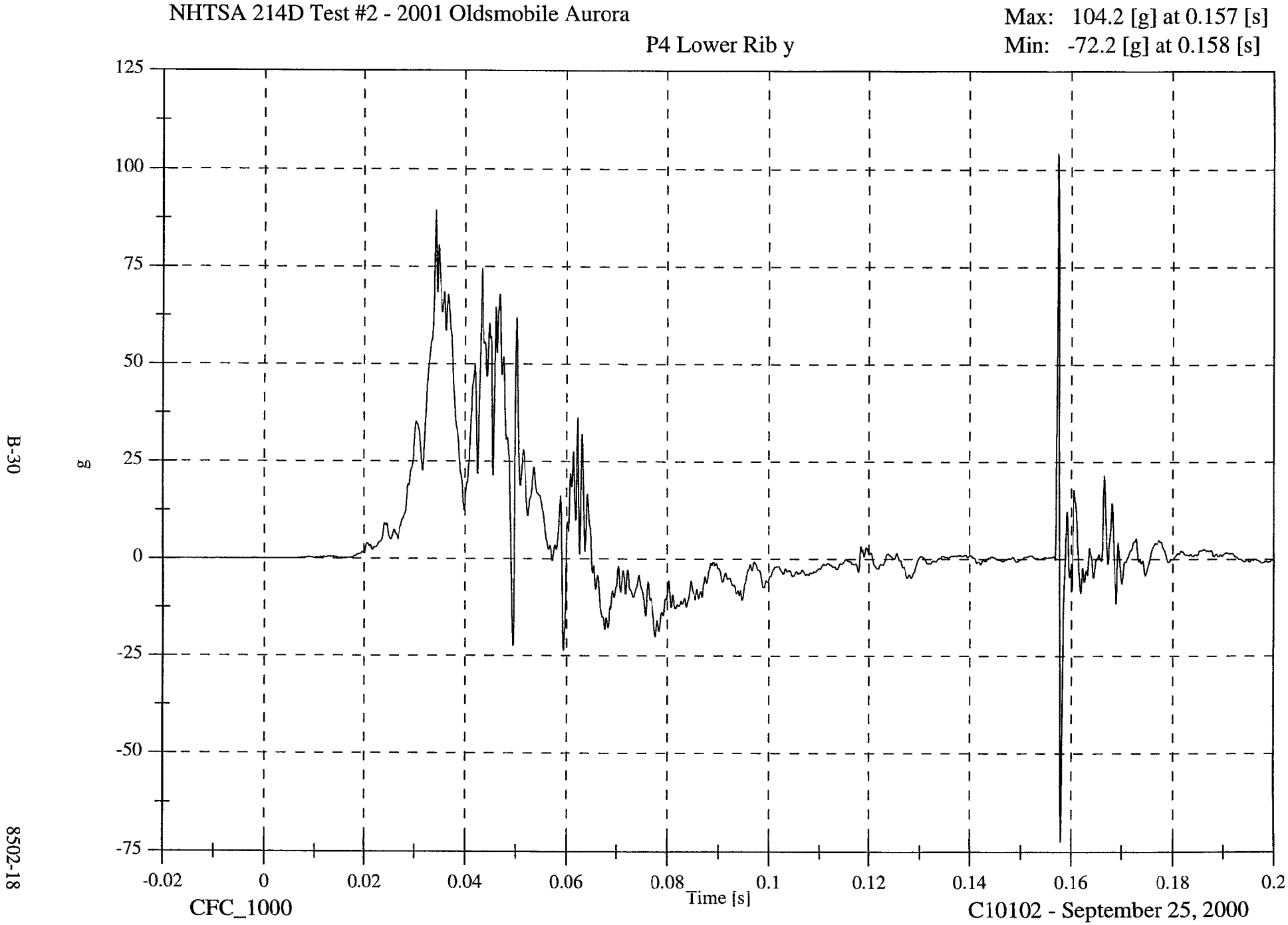
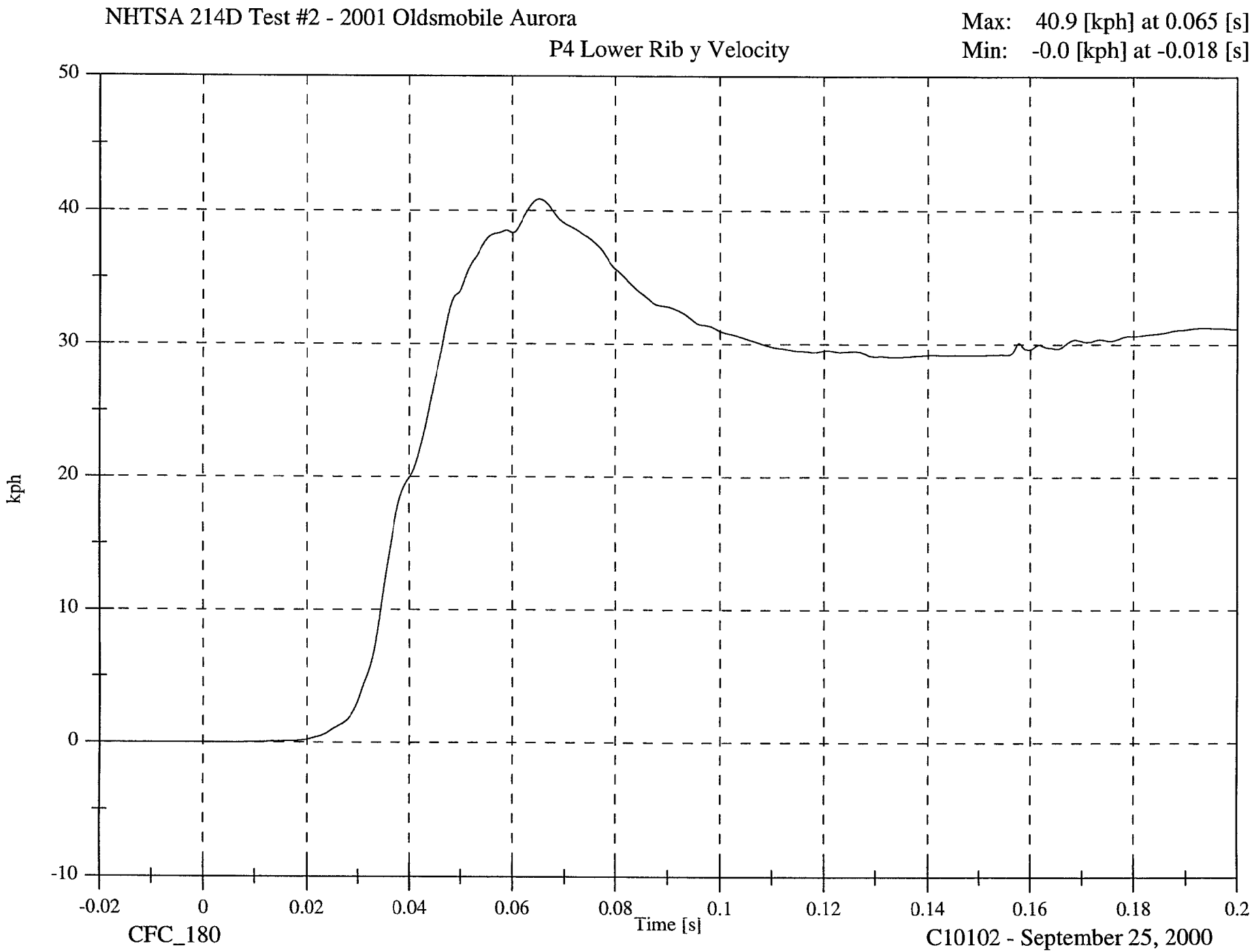
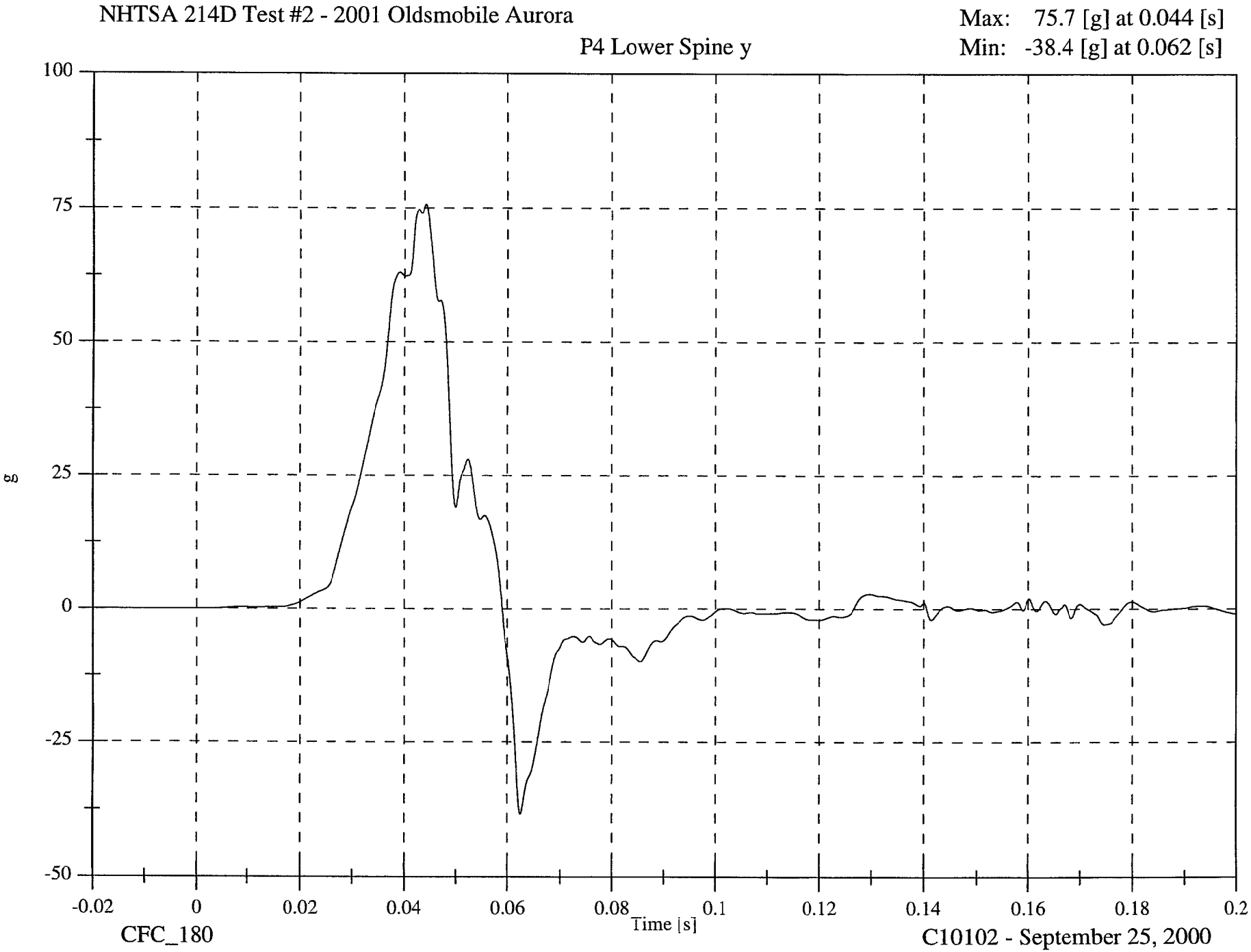

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Head Resultant
Max: 125.5 [g] at 0.057 [s]
Min: 0.0 [g] at -0.011 [s]
150
125
100
75
50
25
0
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000

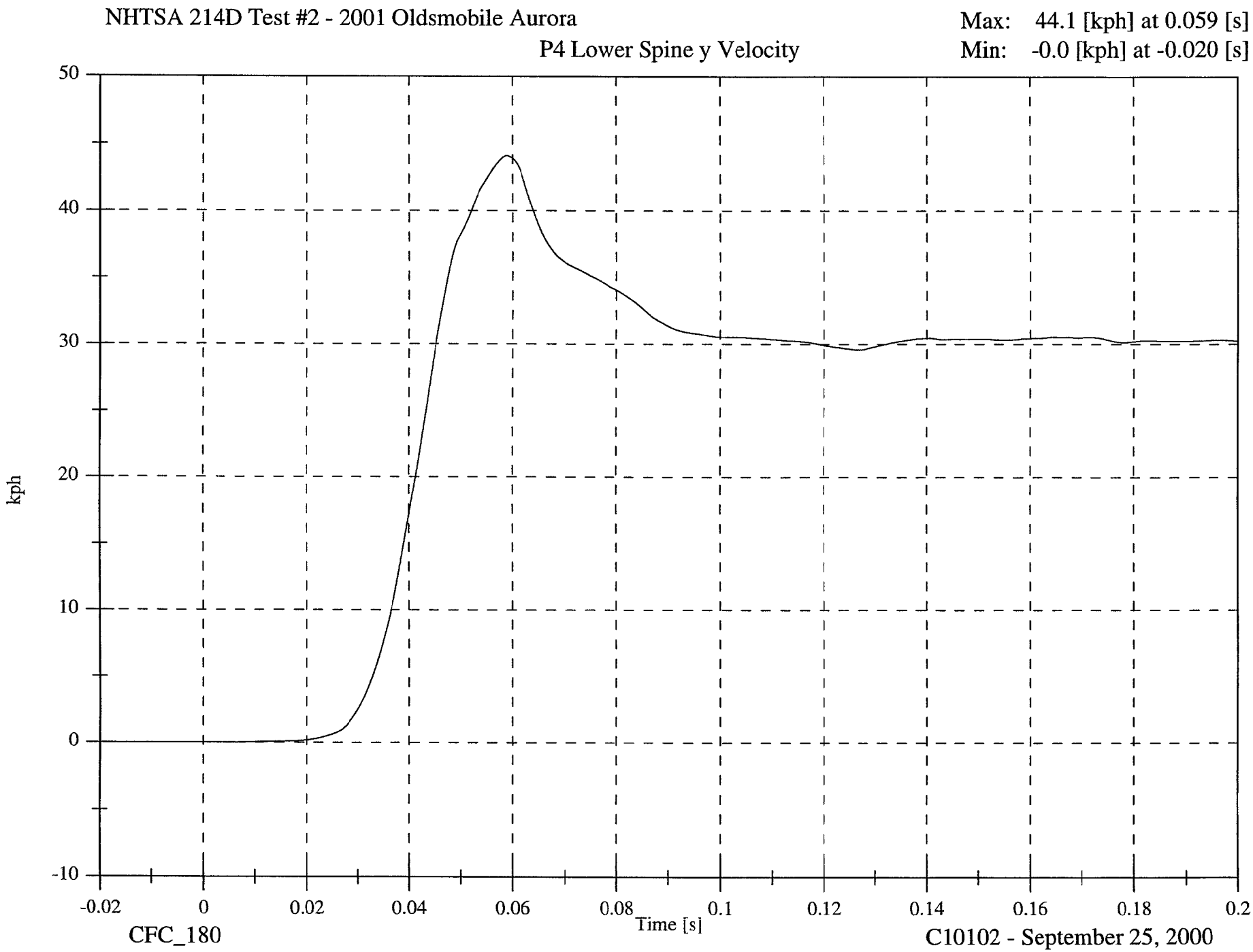

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Upper Rib y
Max: 87.3 [g] at 0.157 [s]
Min: -63.7 [g] at 0.158 [s]
100
75
50
25
0
-25
-50
-75
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000

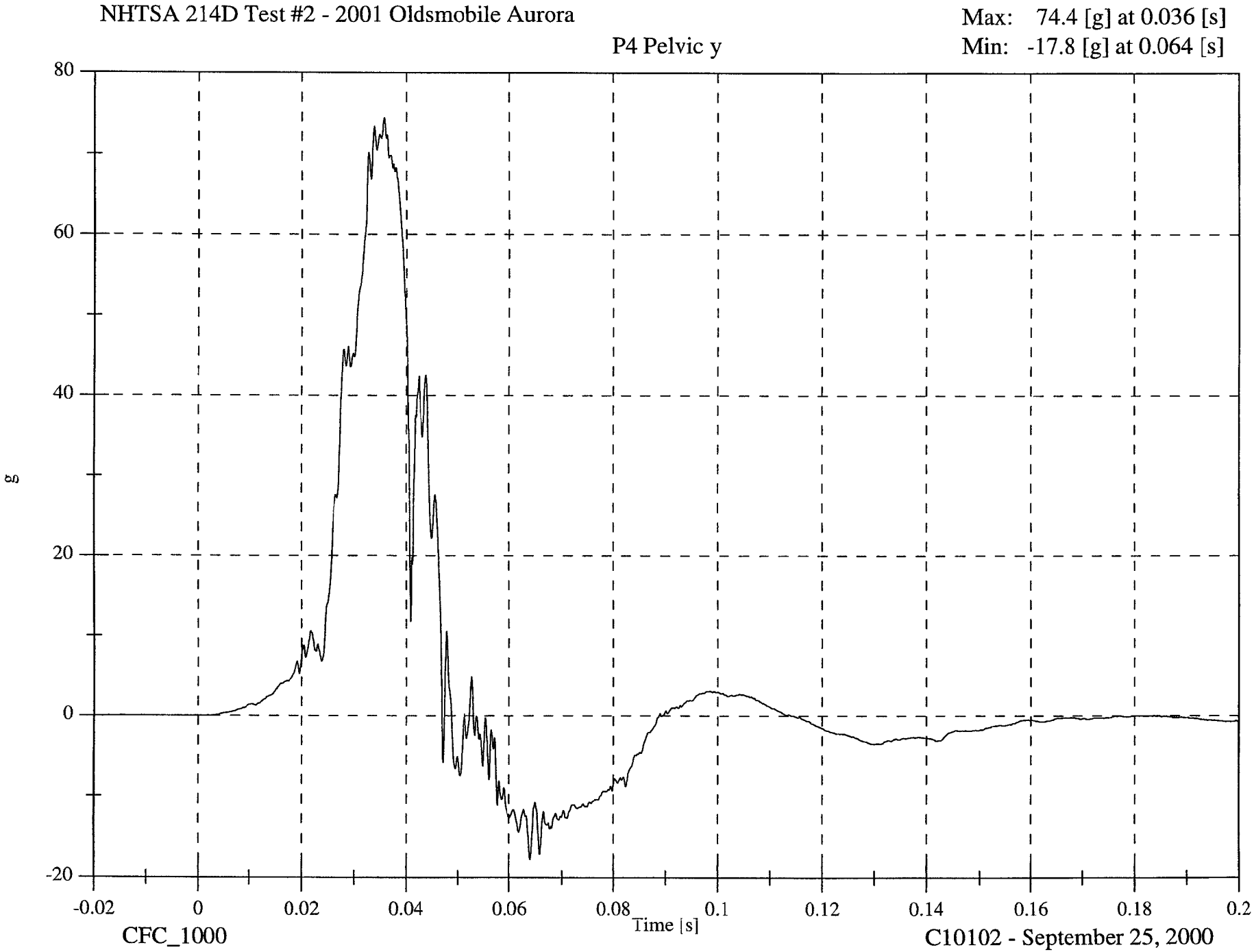

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Upper Rib y Velocity
Max: 36.3 [kph] at 0.079 [s]
Min: -0.0 [kph] at -0.015 [s]
kph
40
35
30
25
20
15
10
5
0
-5
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Lower Rib y
Max: 104.2 [g] at 0.157 [s]
Min: -72.2 [g] at 0.158 [s]
125
100
75
50
25
0
-25
-50
-75
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Lower Rib y Velocity
Max: 40.9 [kph] at 0.065 [s]
Min: -0.0 [kph] at -0.018 [s]
kph
50
40
30
20
10
0
-10
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Lower Spine y
Max: 75.7 [g] at 0.044 [s]
Min: -38.4 [g] at 0.062 [s]
100
75
50
25
0
-25
-50
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

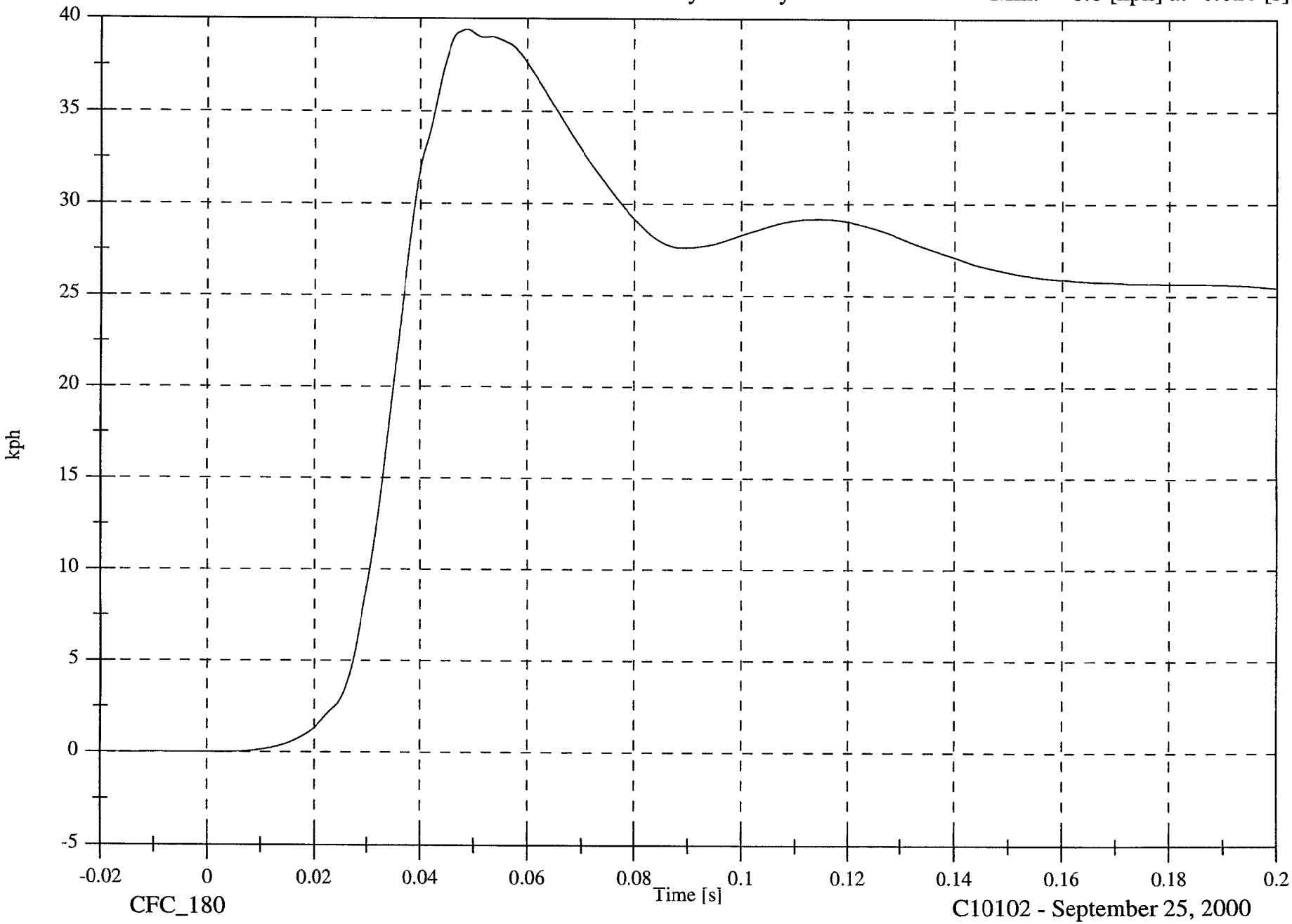

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Lower Spine y Velocity
Max: 44.1 [kph] at 0.059 [s]
Min: -0.0 [kph] at -0.020 [s]
kph
50
40
30
20
10
0
-10
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Pelvic y
Max: 74.4 [g] at 0.036 [s]
Min: -17.8 [g] at 0.064 [s]
80
60
40
20
0
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P4 Pelvic y Velocity

Max: 39.4 [kph] at 0.049 [s]
Min: -0.0 [kph] at -0.020 [s]



CFC_180

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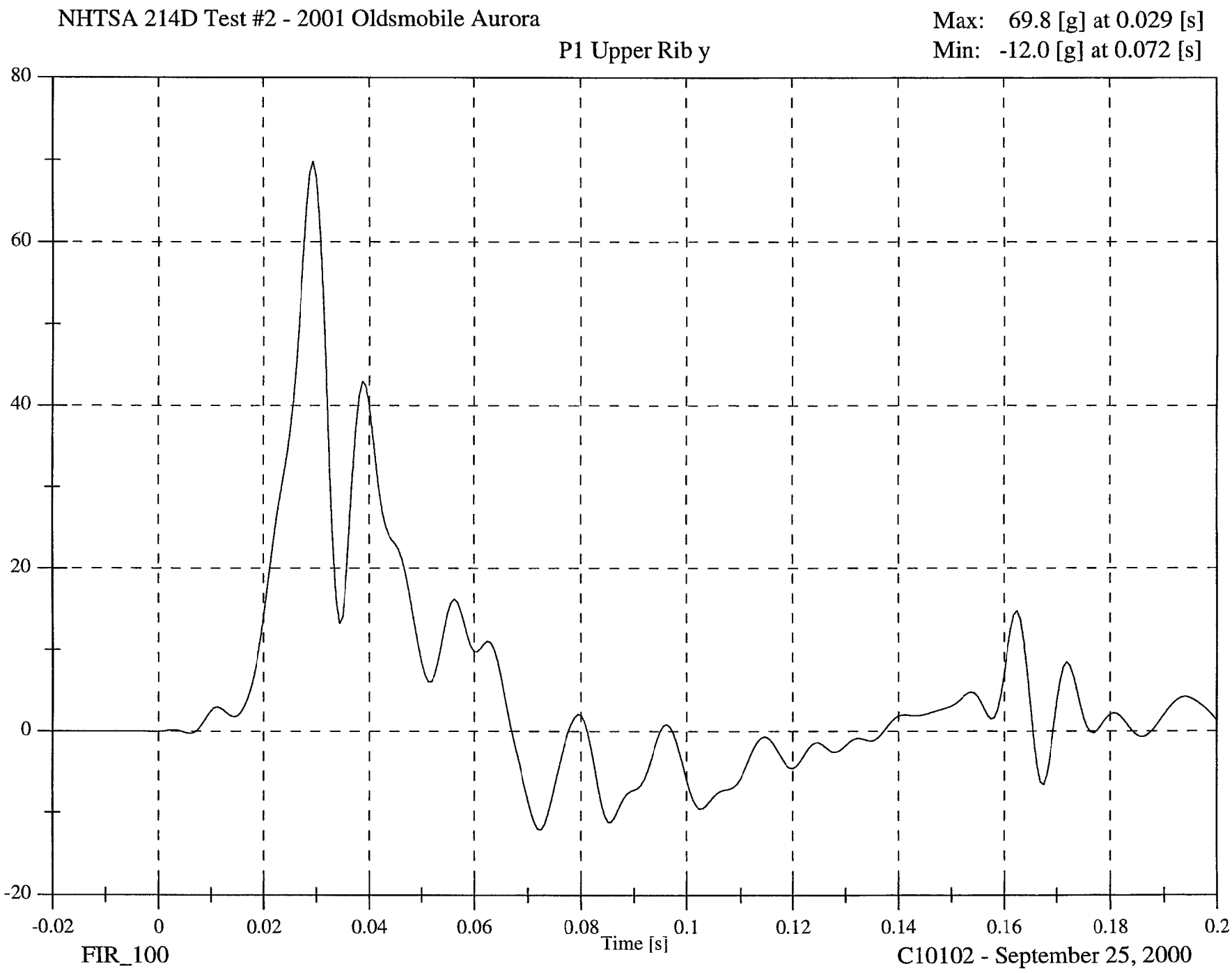
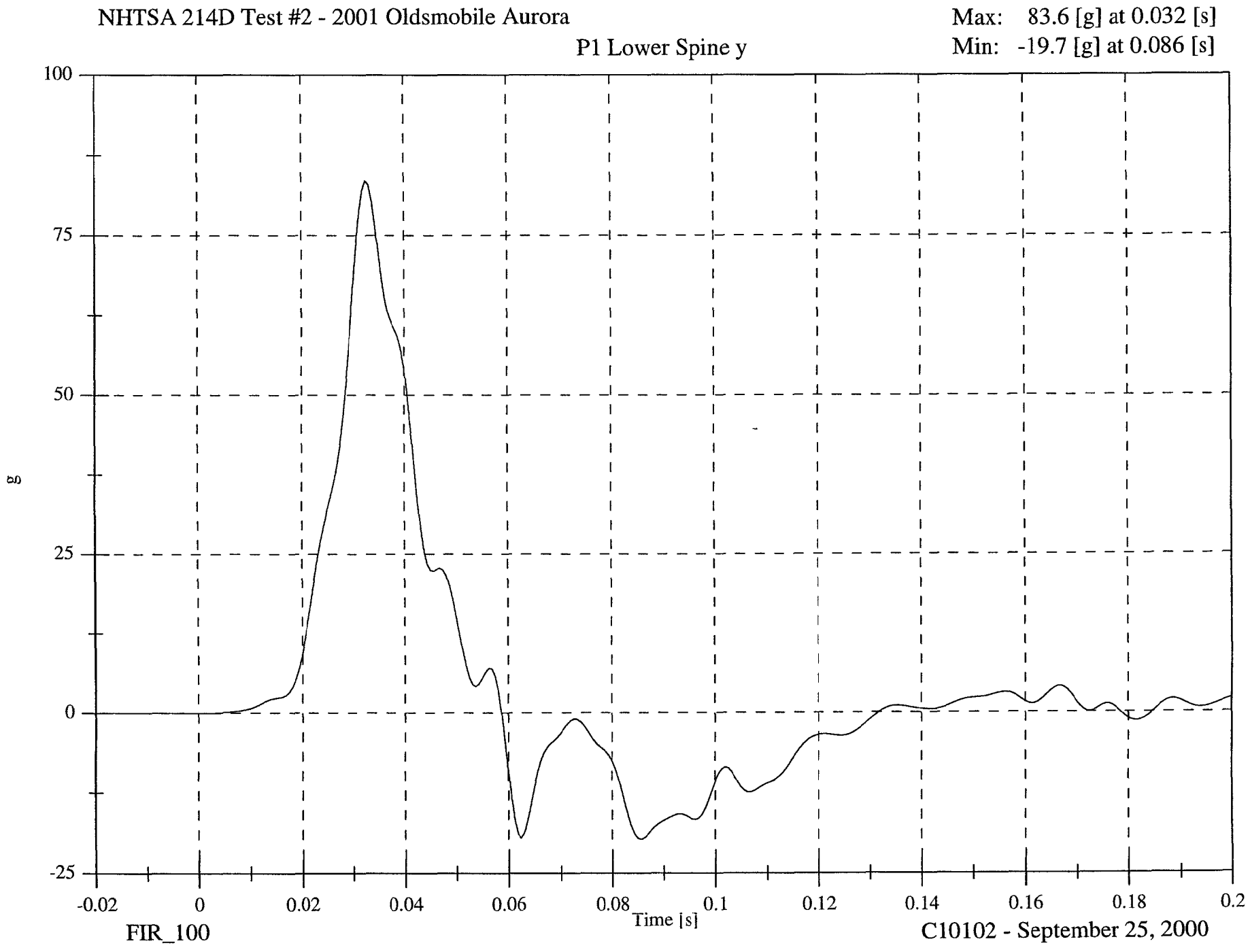
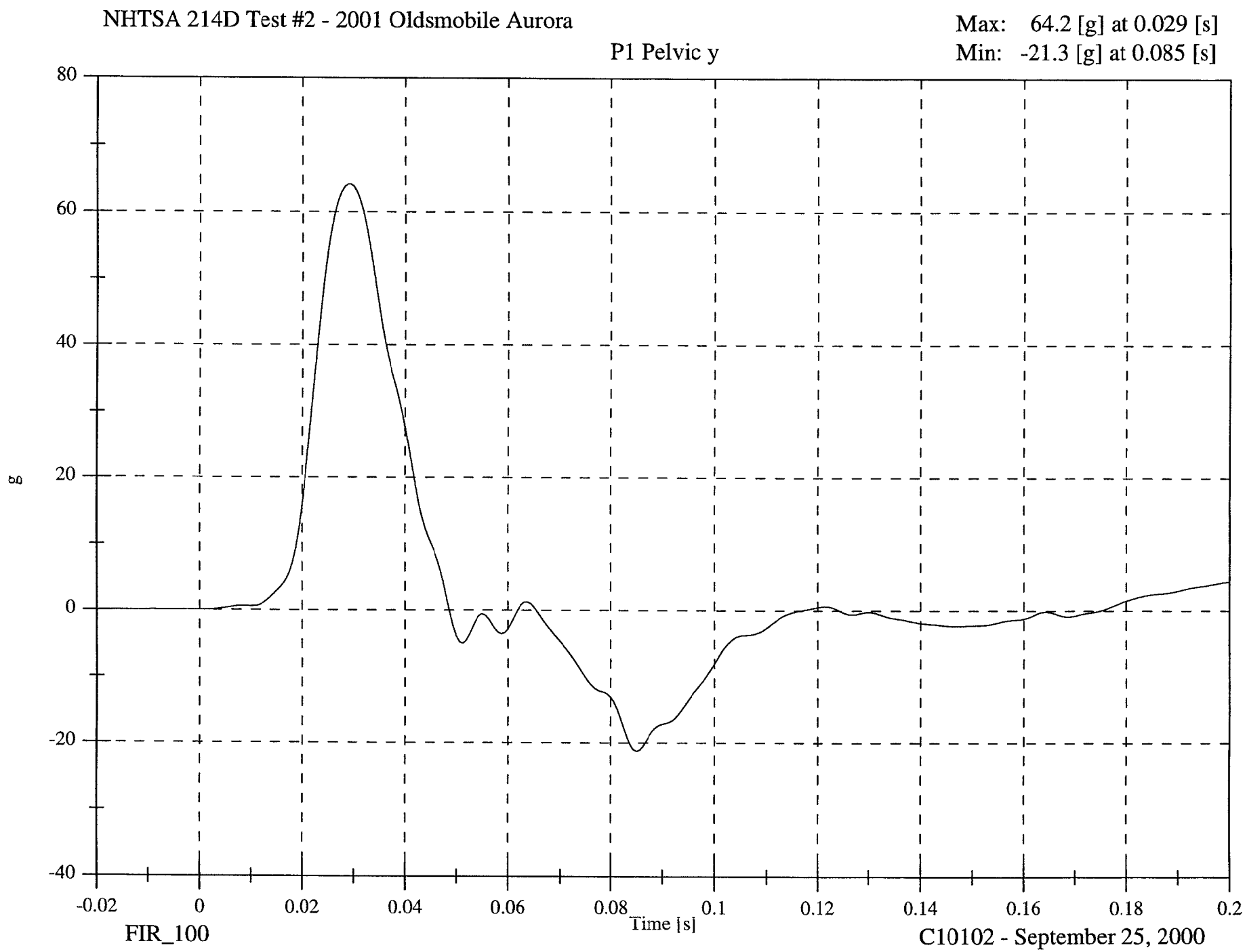
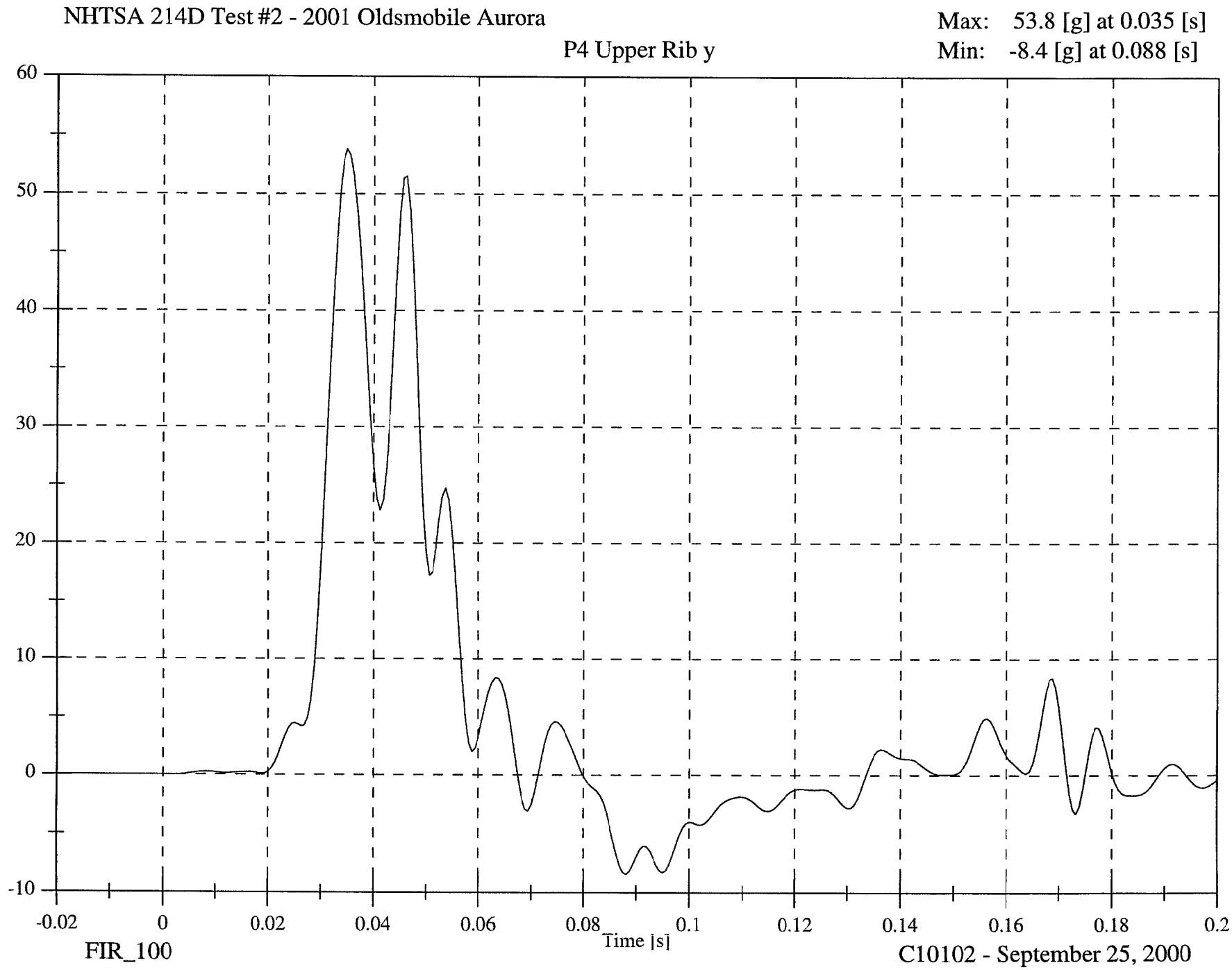
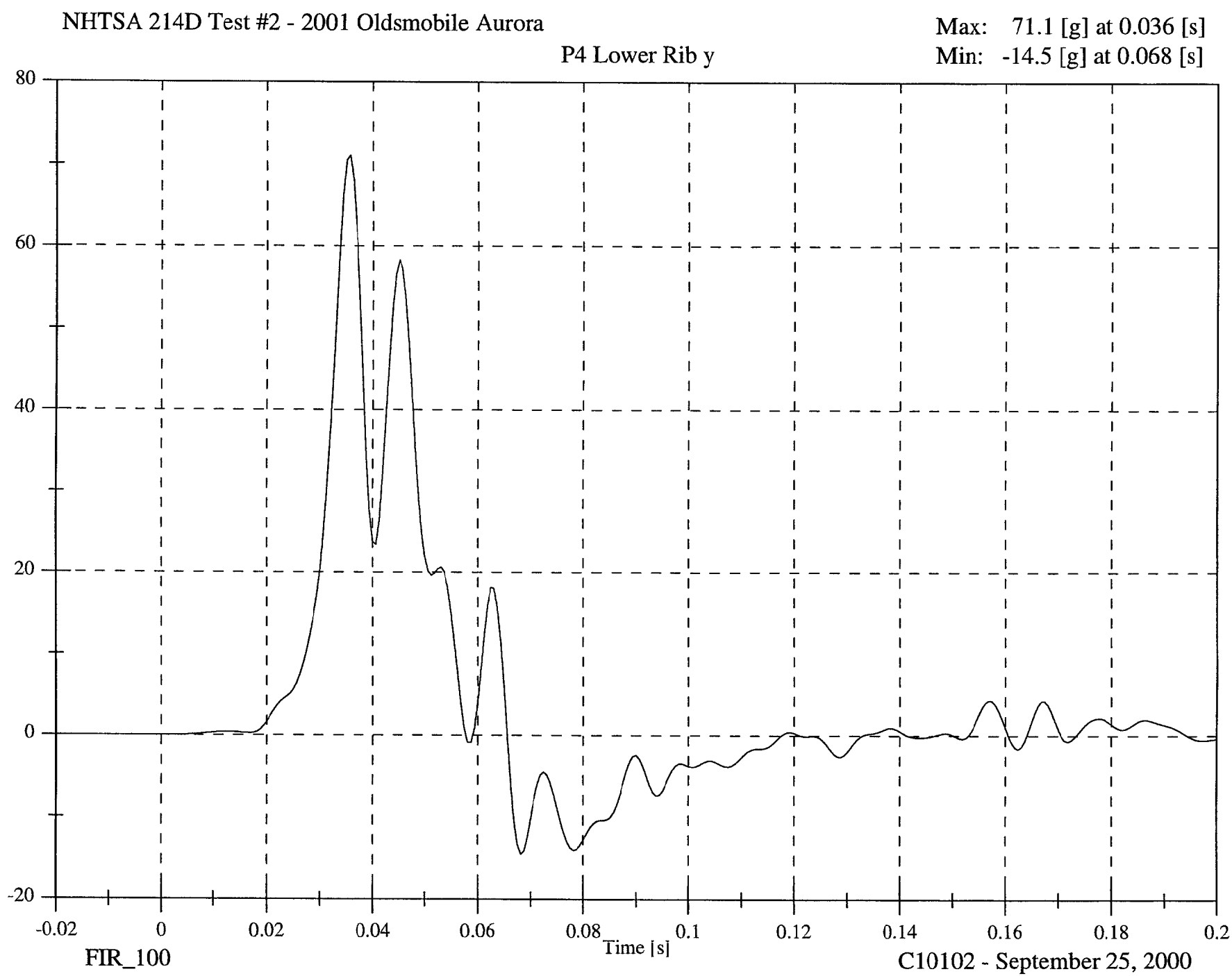

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Upper Rib y
Max: 69.8 [g] at 0.029 [s]
Min: -12.0 [g] at 0.072 [s]
80
60
40
20
0
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000

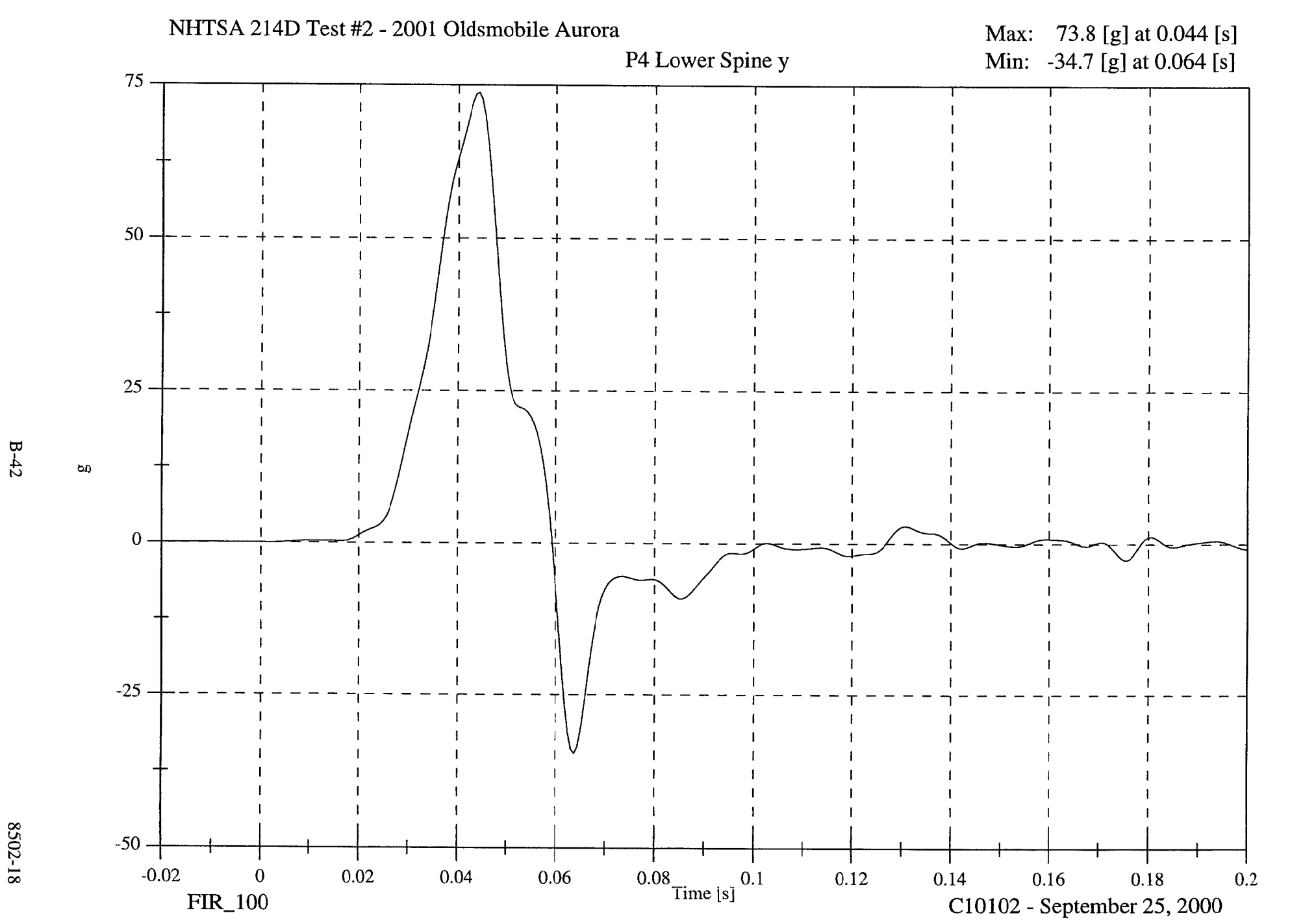

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Lower Rib y
Max: 66.1 [g] at 0.029 [s]
Min: -17.6 [g] at 0.099 [s]
80
60
40
20
0
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Lower Spine y
Max: 83.6 [g] at 0.032 [s]
Min: -19.7 [g] at 0.086 [s]
100
75
50
25
0
-25
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Pelvic y
Max: 64.2 [g] at 0.029 [s]
Min: -21.3 [g] at 0.085 [s]
80
60
40
20
0
-20
-40
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Upper Rib y
Max: 53.8 [g] at 0.035 [s]
Min: -8.4 [g] at 0.088 [s]
60
50
40
30
20
10
0
-10
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Lower Rib y
Max: 71.1 [g] at 0.036 [s]
Min: -14.5 [g] at 0.068 [s]
80
60
40
20
0
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Lower Spine y
Max: 73.8 [g] at 0.044 [s]
Min: -34.7 [g] at 0.064 [s]
75
50
25
0
-25
-50
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000

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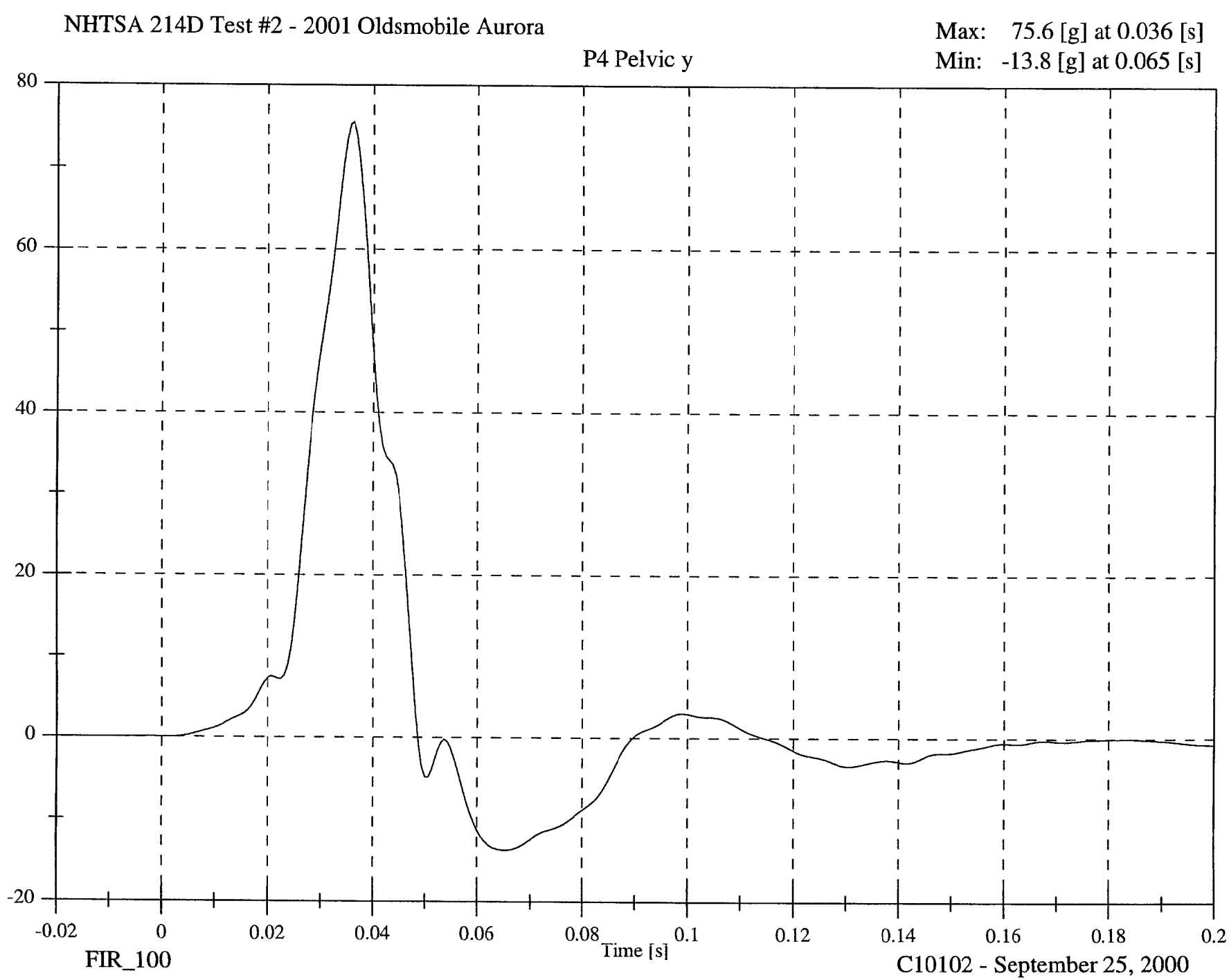
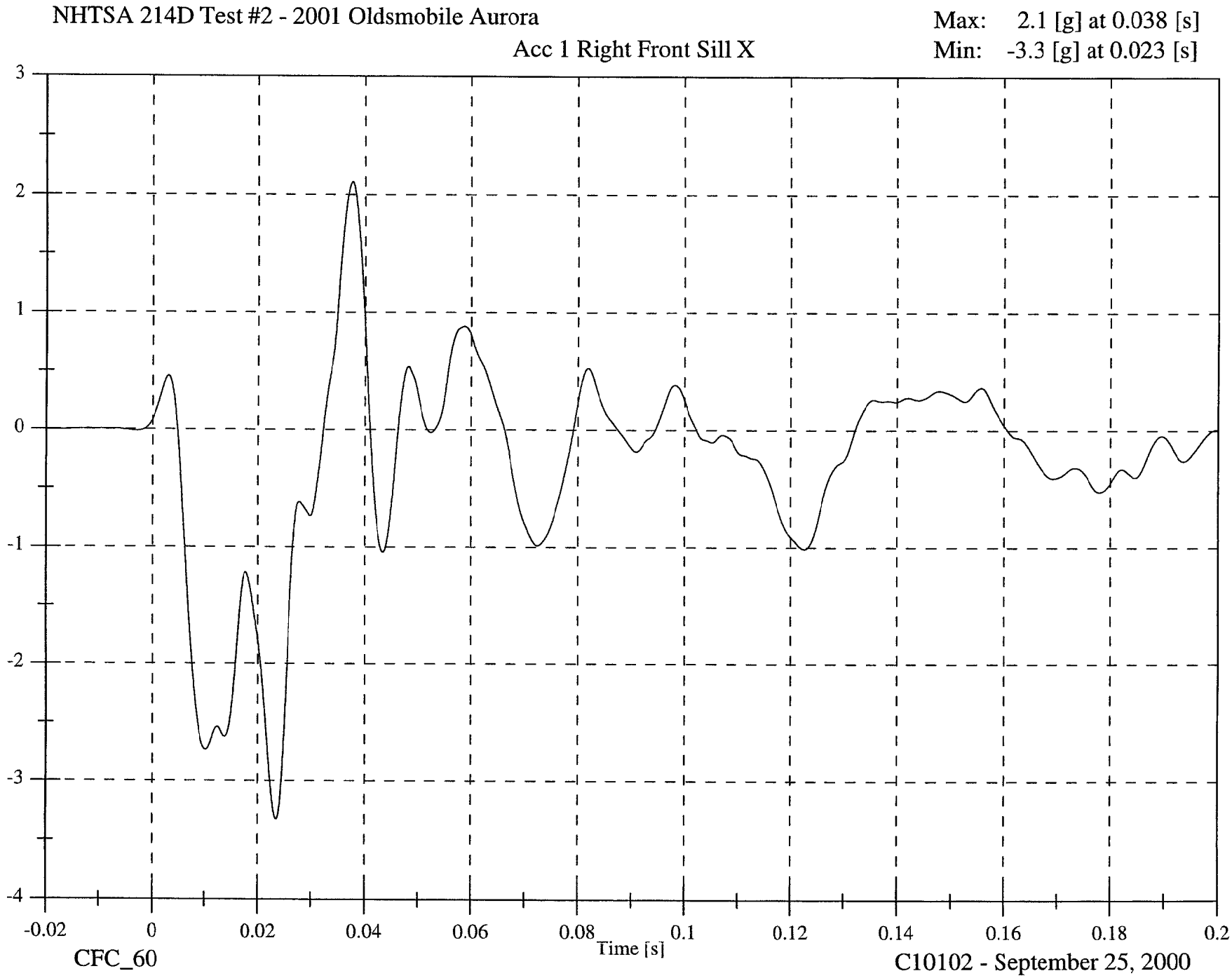
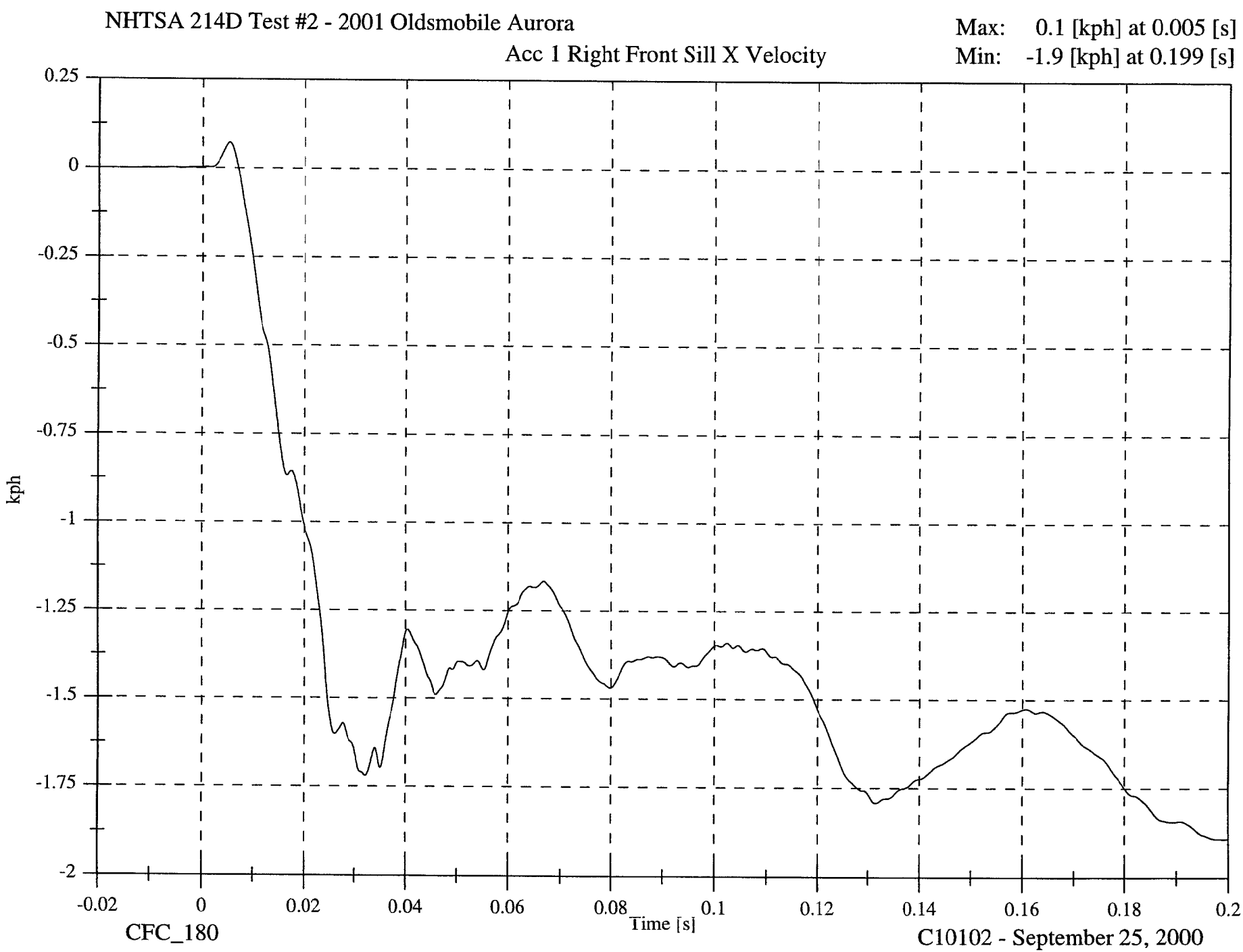
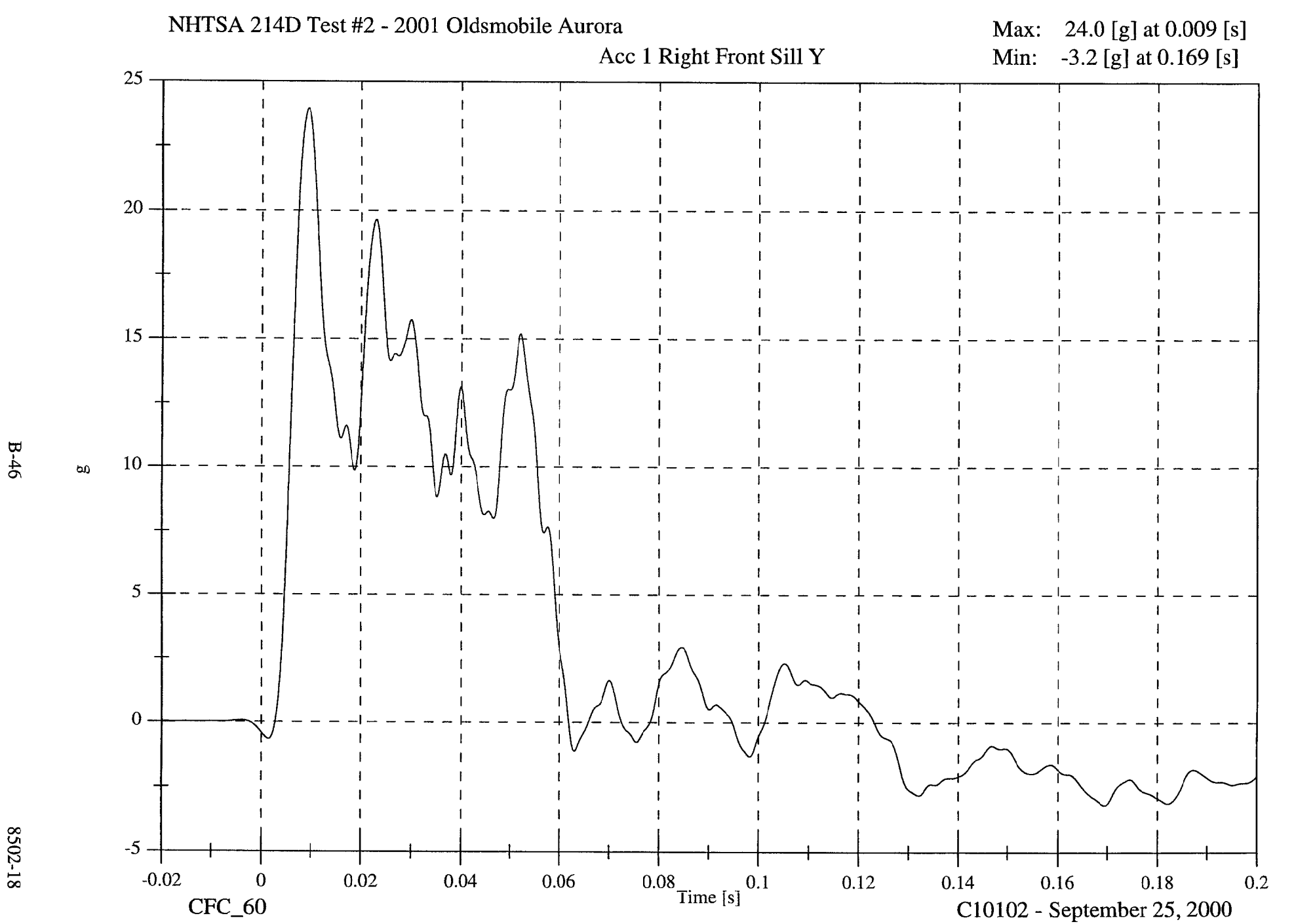

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Pelvic y
Max: 75.6 [g] at 0.036 [s]
Min: -13.8 [g] at 0.065 [s]
80
60
40
20
0
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 1 Right Front Sill X
Max: 2.1 [g] at 0.038 [s]
Min: -3.3 [g] at 0.023 [s]
g
3
2
1
0
-1
-2
-3
-4
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 1 Right Front Sill X Velocity
Max: 0.1 [kph] at 0.005 [s]
Min: -1.9 [kph] at 0.199 [s]
0.25
0
-0.25
-0.5
-0.75
-1
-1.25
-1.5
-1.75
-2
kph
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

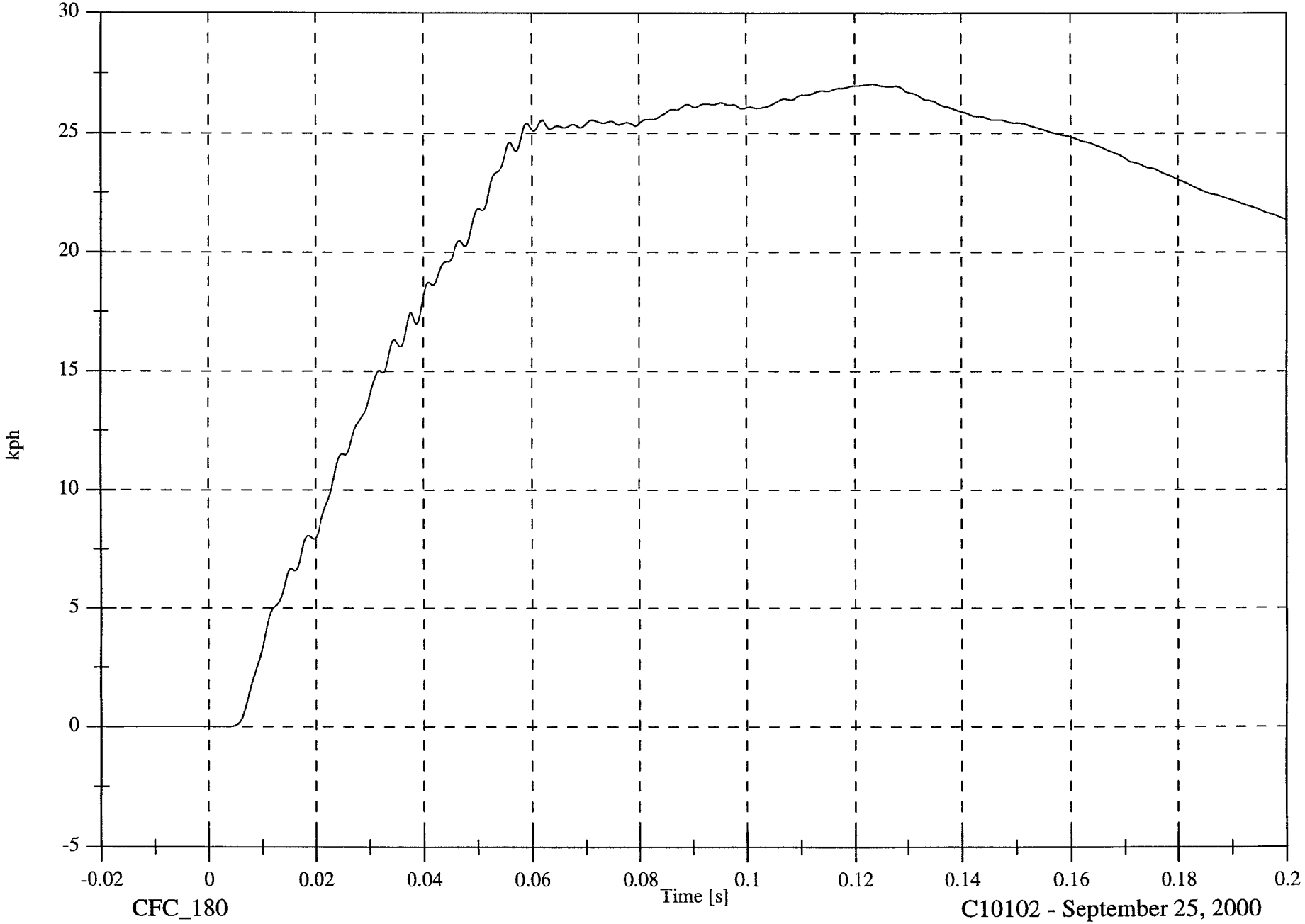

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 1 Right Front Sill Y
Max: 24.0 [g] at 0.009 [s]
Min: -3.2 [g] at 0.169 [s]
g
25
20
15
10
5
0
-5
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 1 Right Front Sill Y Velocity

Max: 27.1 [kph] at 0.123 [s]

Min: -0.0 [kph] at -0.017 [s]



CFC_180

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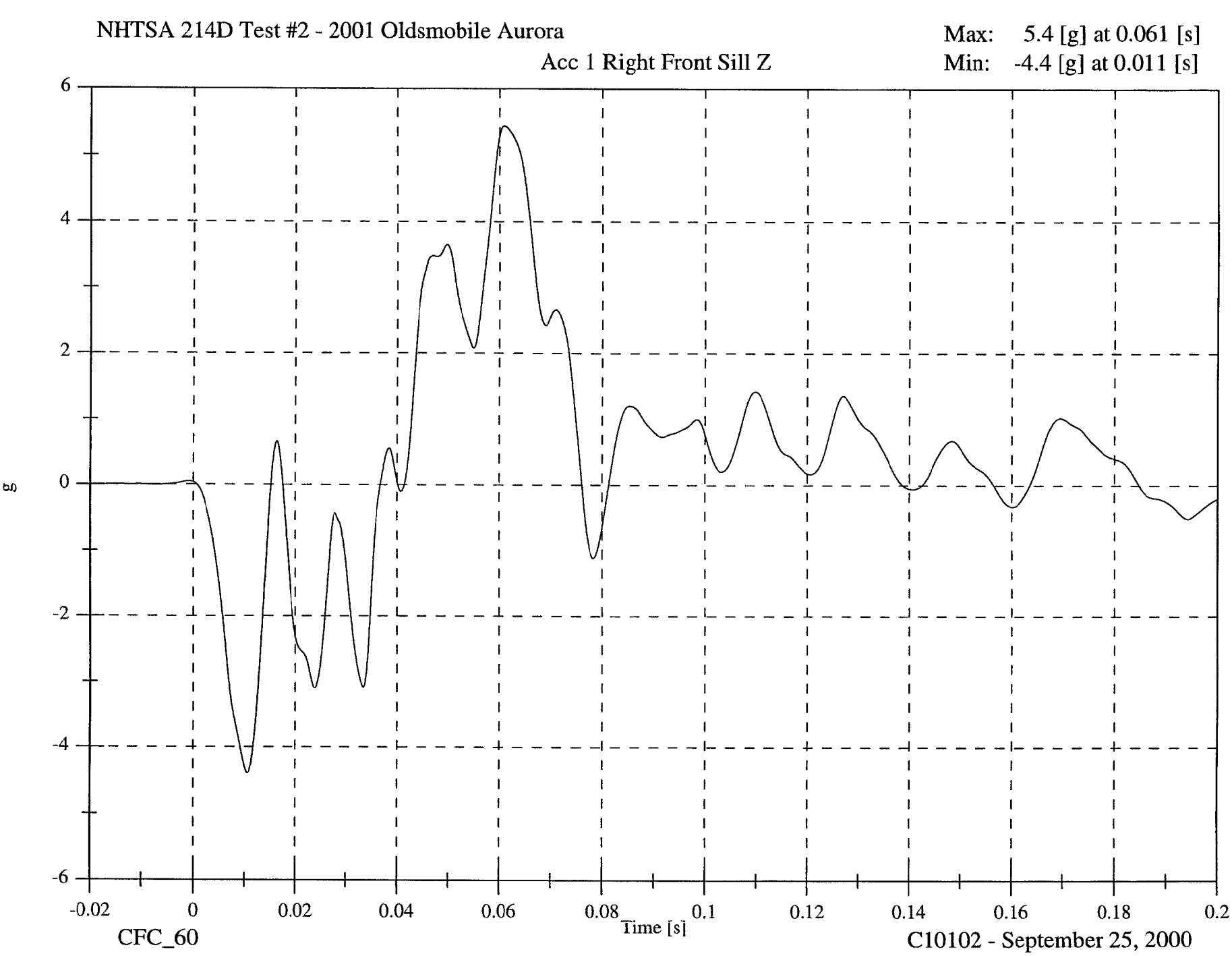
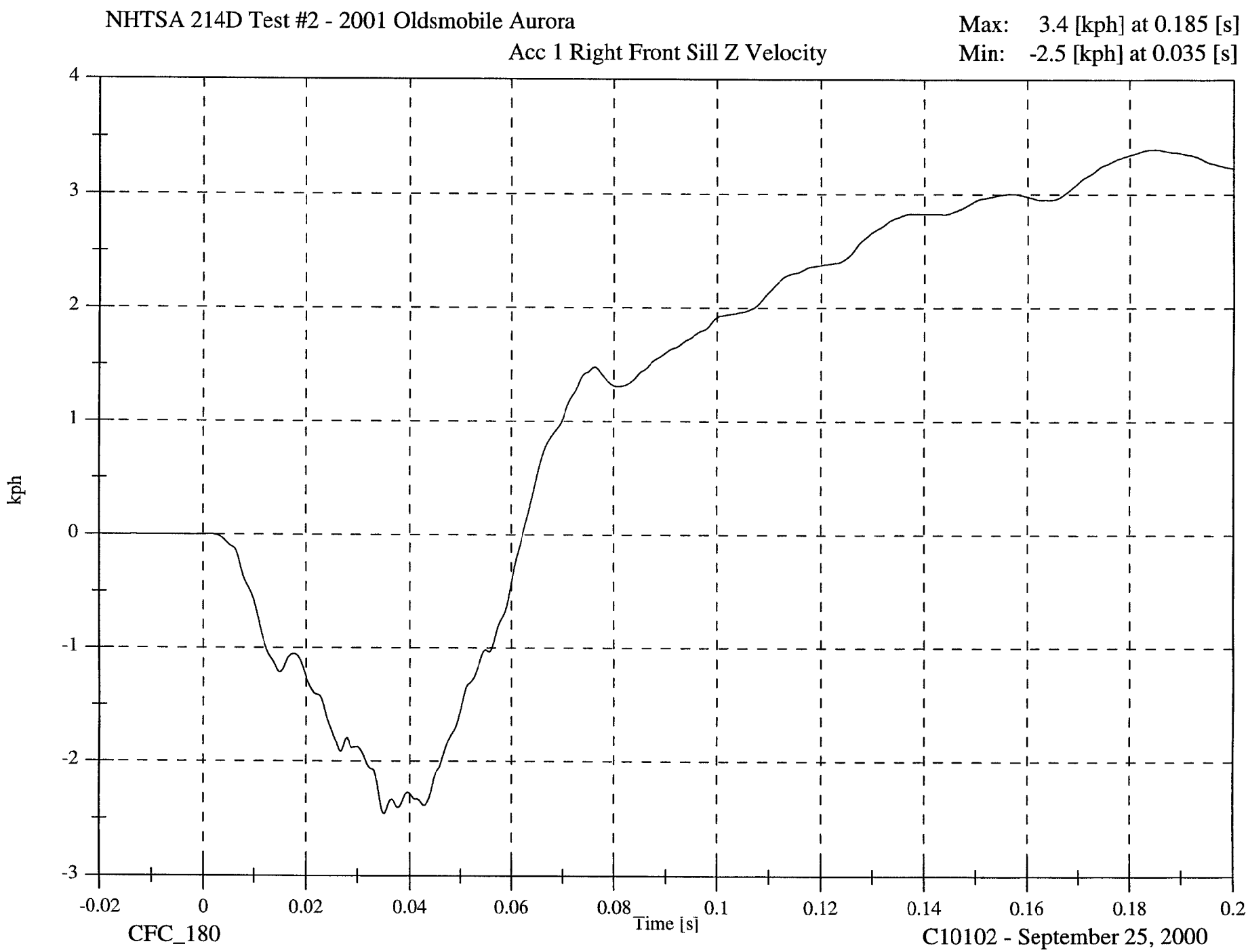

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 1 Right Front Sill Z
Max: 5.4 [g] at 0.061 [s]
Min: -4.4 [g] at 0.011 [s]
6
4
2
0
-2
-4
-6
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000

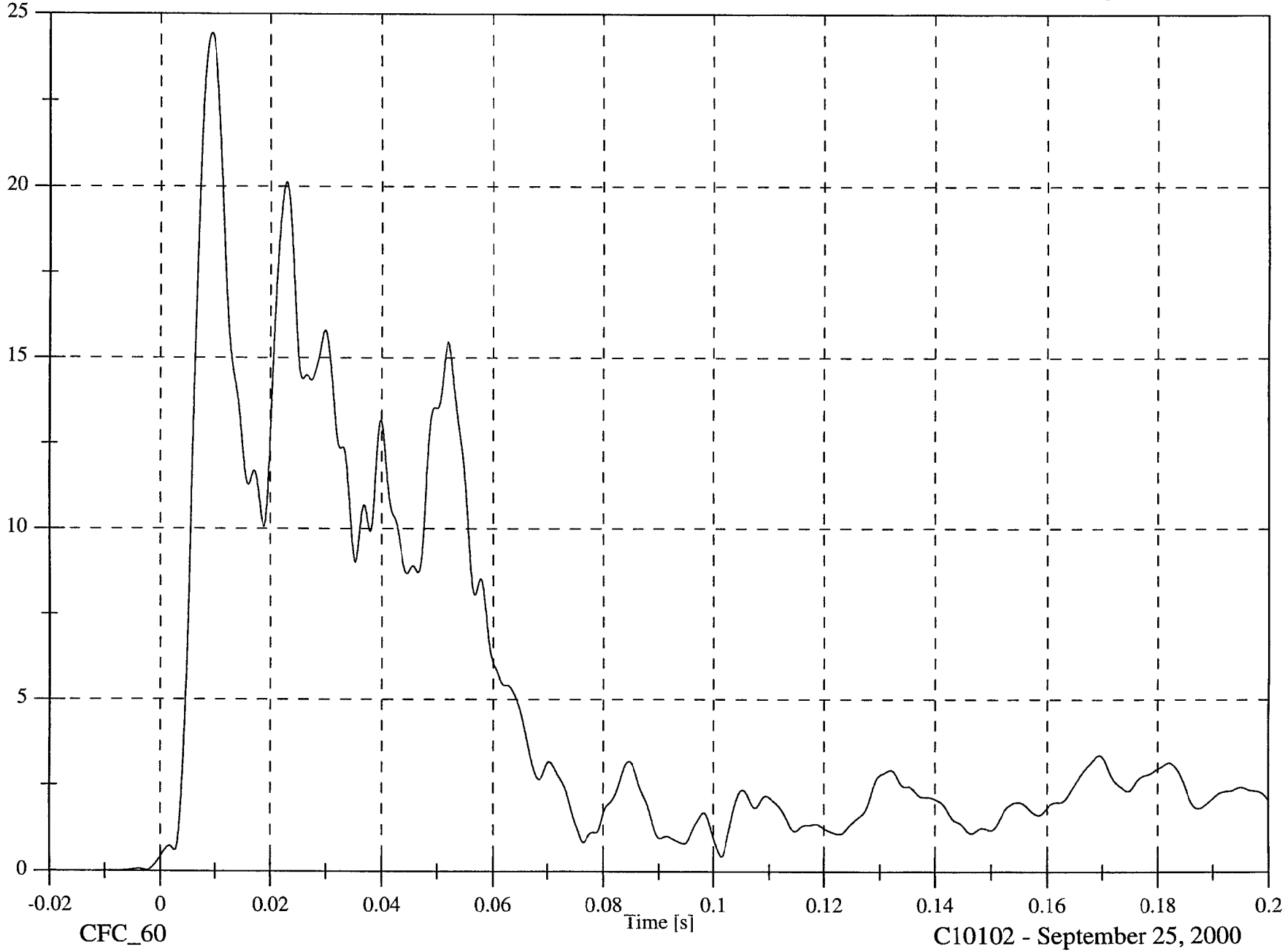

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 1 Right Front Sill Z Velocity
Max: 3.4 [kph] at 0.185 [s]
Min: -2.5 [kph] at 0.035 [s]
kph
4
3
2
1
0
-1
-2
-3
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 1 Right Front Sill Resultant

Max: 24.4 [g] at 0.009 [s]

Min: 0.0 [g] at -0.017 [s]



CFC_60

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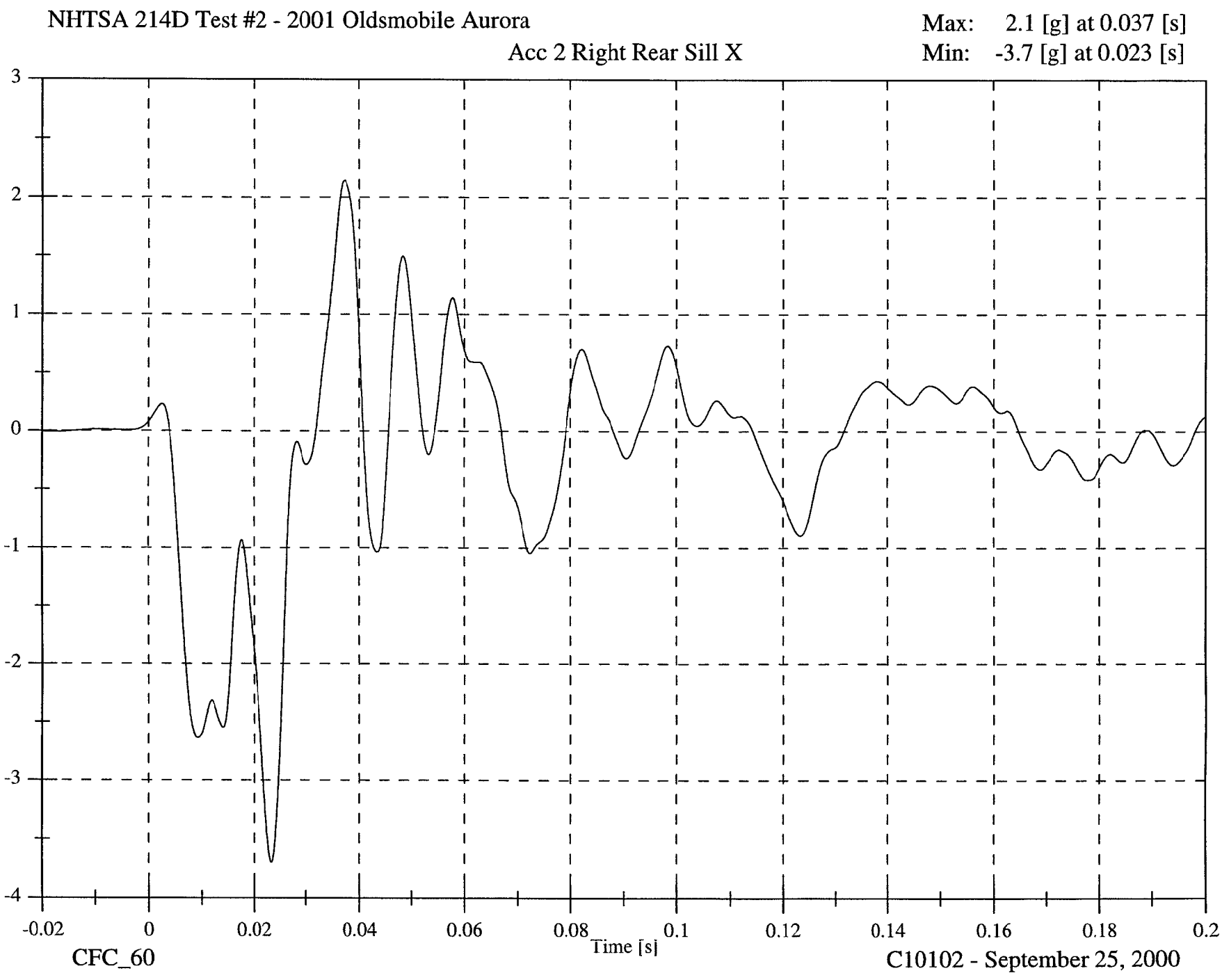
B-50

8502-18

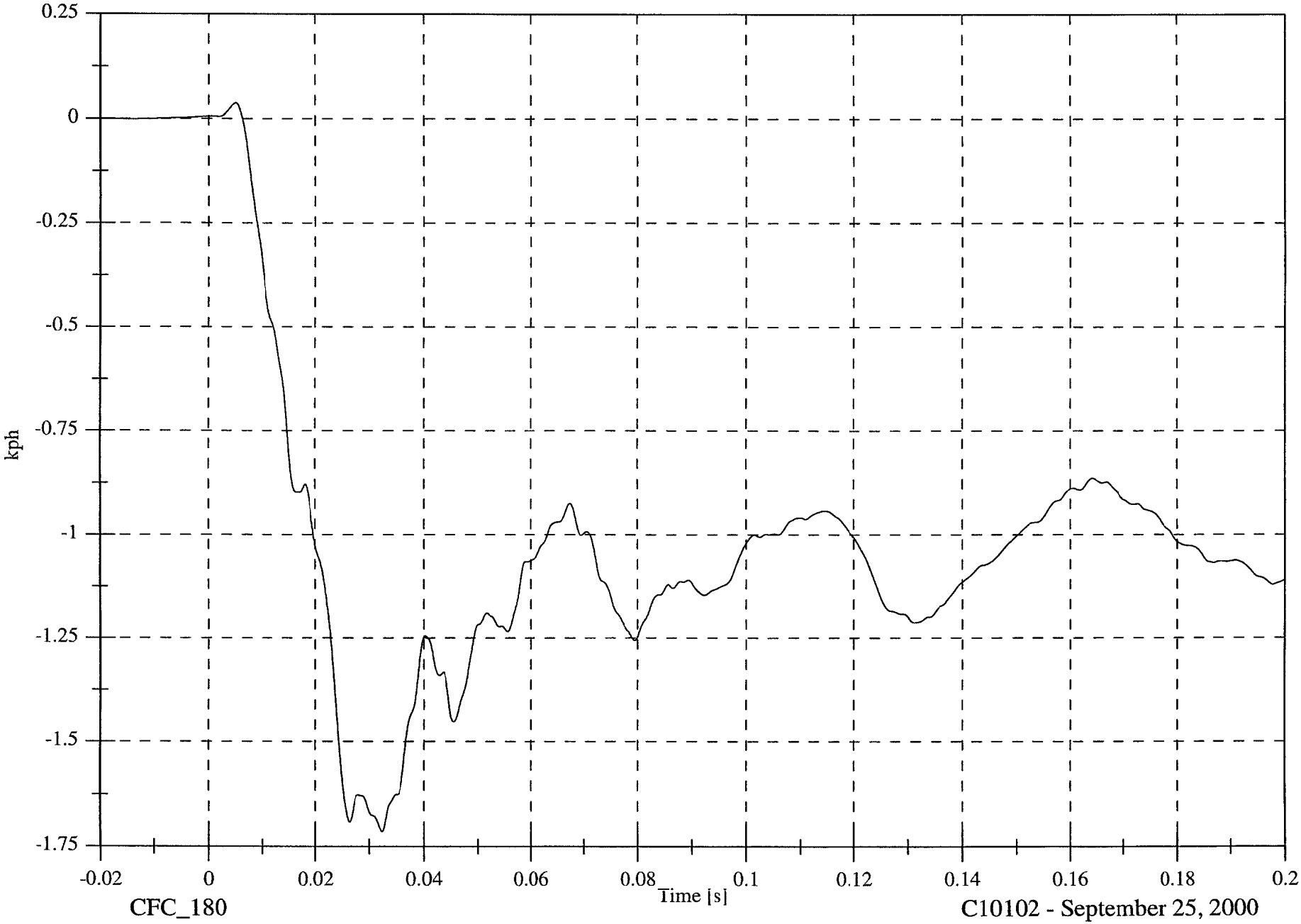

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 2 Right Rear Sill X
Max: 2.1 [g] at 0.037 [s]
Min: -3.7 [g] at 0.023 [s]
g
Time [s]
CFC_60
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 2 Right Rear Sill X Velocity

Max: 0.0 [kph] at 0.005 [s]

Min: -1.7 [kph] at 0.032 [s]



CFC_180

C10102 - September 25, 2000

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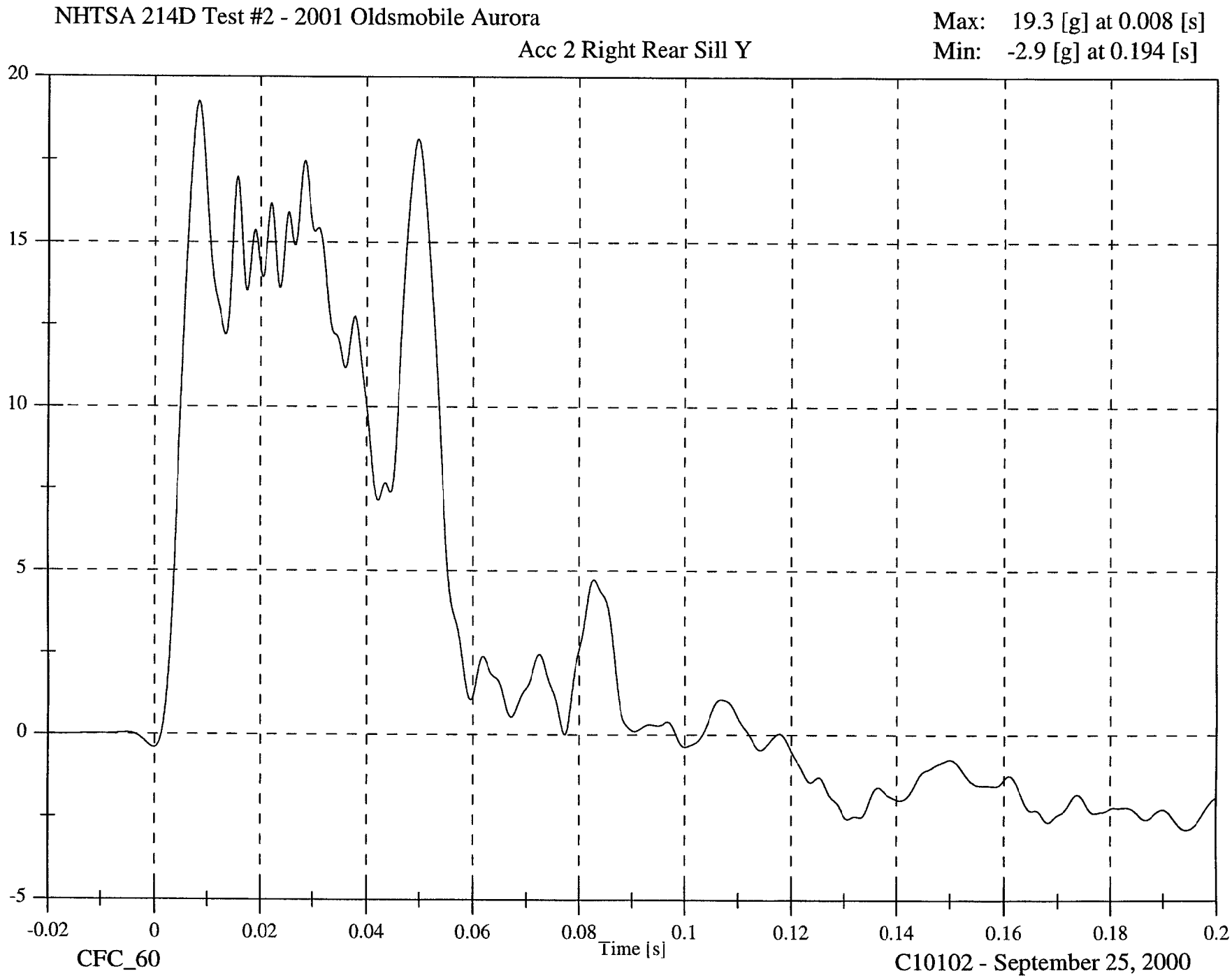
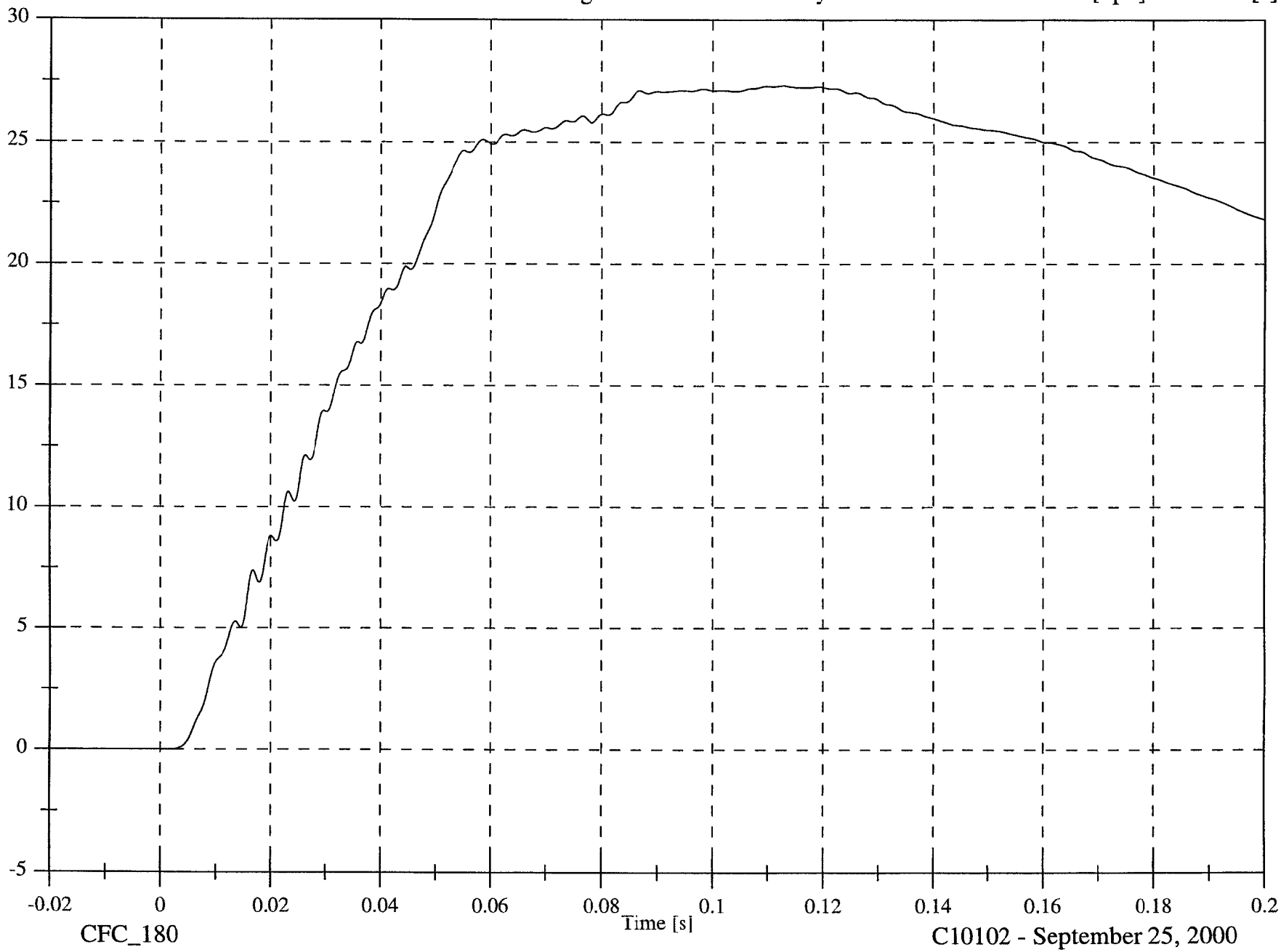

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 2 Right Rear Sill Y
Max: 19.3 [g] at 0.008 [s]
Min: -2.9 [g] at 0.194 [s]
20
15
10
5
0
-5
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 2 Right Rear Sill Y Velocity

Max: 27.3 [kph] at 0.113 [s]

Min: -0.0 [kph] at -0.016 [s]



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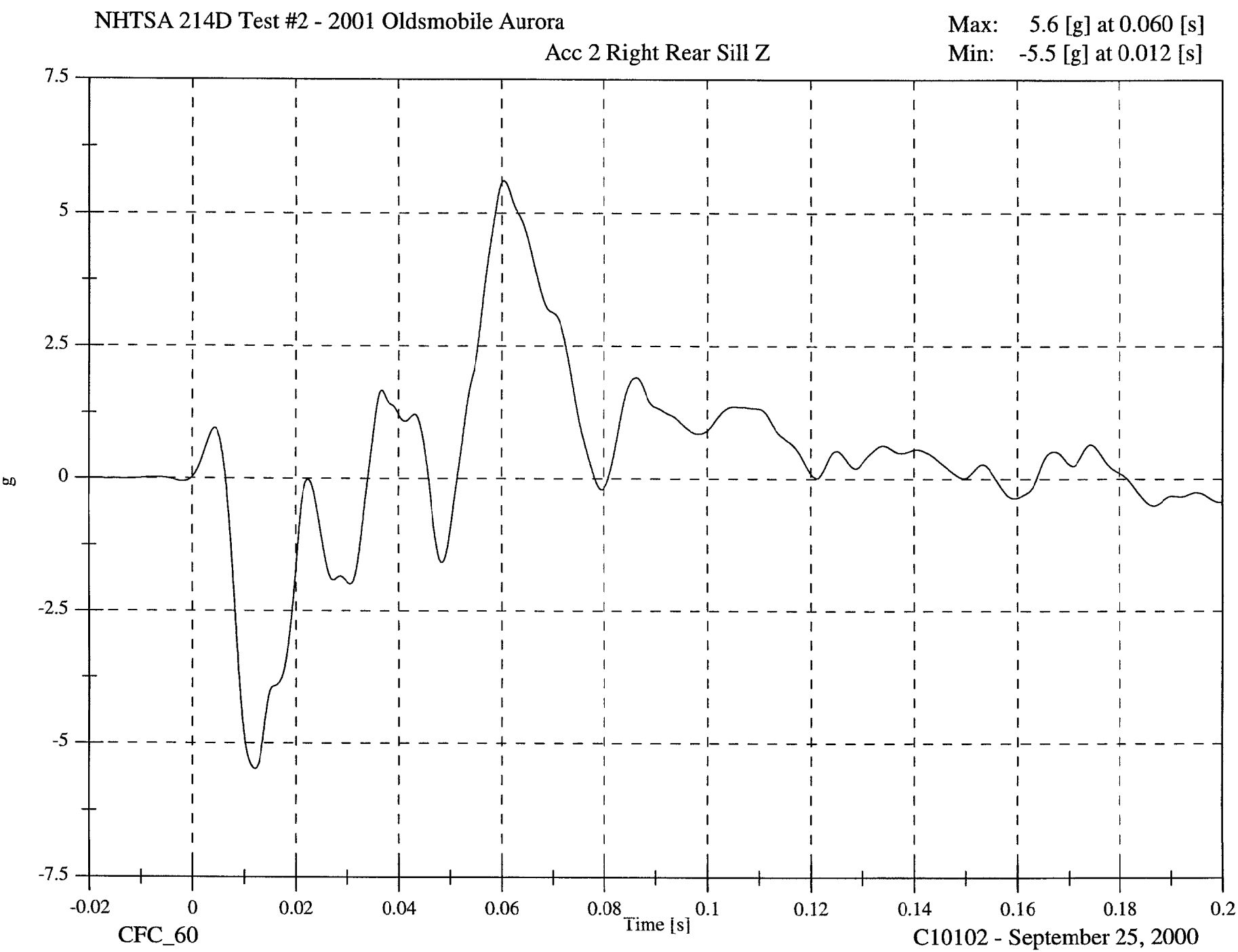
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 2 Right Rear Sill Z
Max: 5.6 [g] at 0.060 [s]
Min: -5.5 [g] at 0.012 [s]
7.5
5
2.5
0
-2.5
-5
-7.5
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
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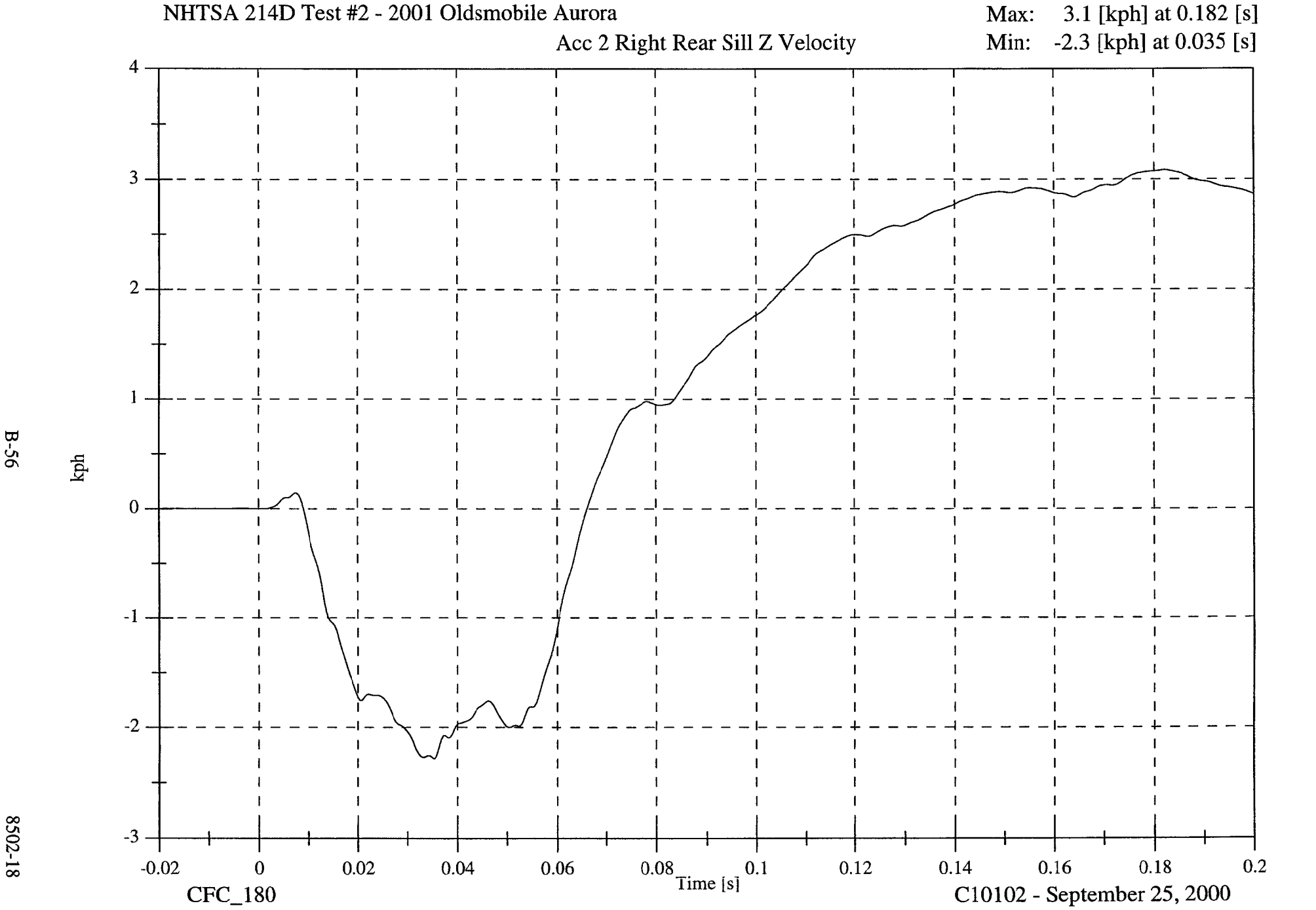
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 2 Right Rear Sill Z Velocity
Max: 3.1 [kph] at 0.182 [s]
Min: -2.3 [kph] at 0.035 [s]
kph
4
3
2
1
0
-1
-2
-3
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
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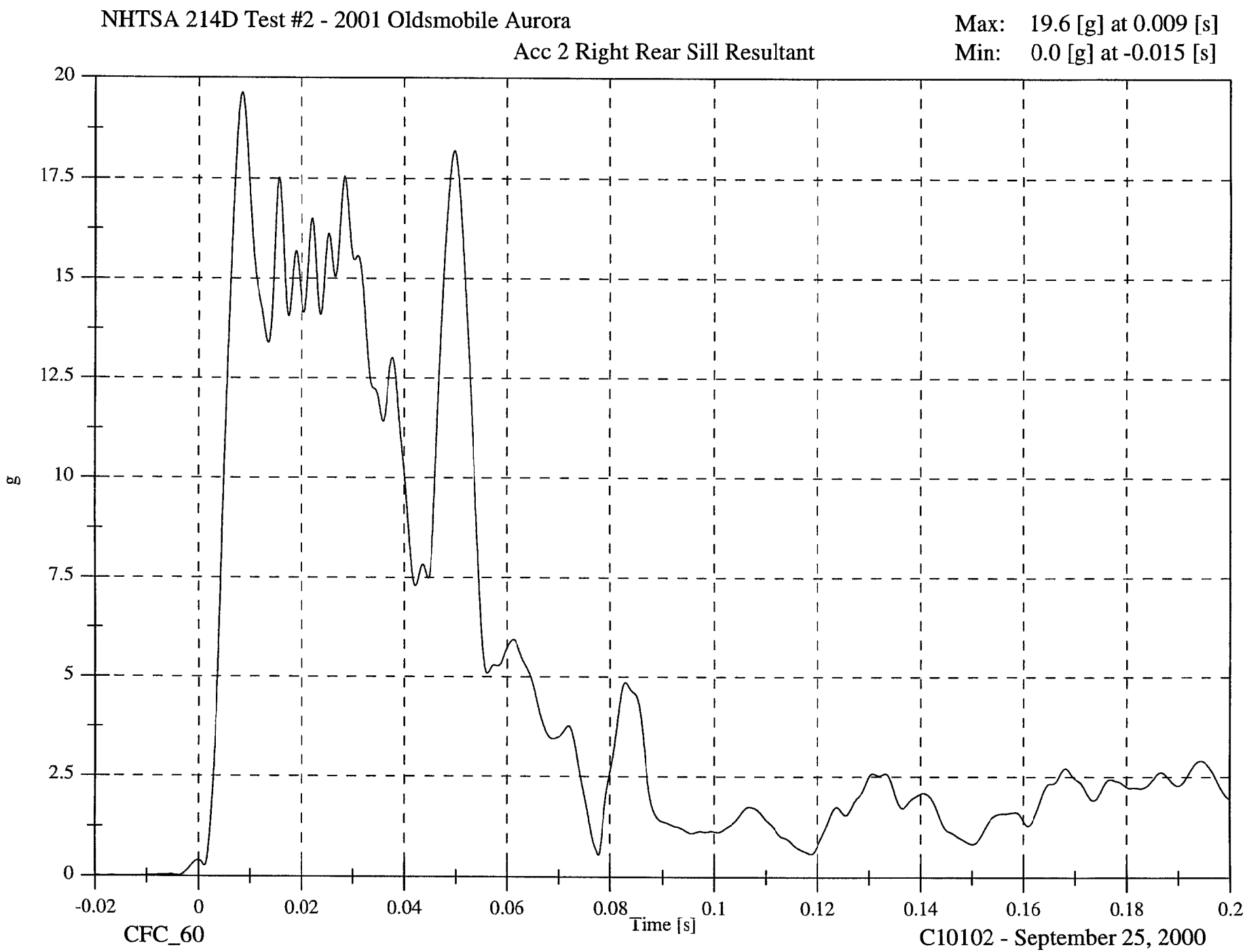
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 2 Right Rear Sill Resultant
Max: 19.6 [g] at 0.009 [s]
Min: 0.0 [g] at -0.015 [s]
20
17.5
15
12.5
10
7.5
5
2.5
0
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
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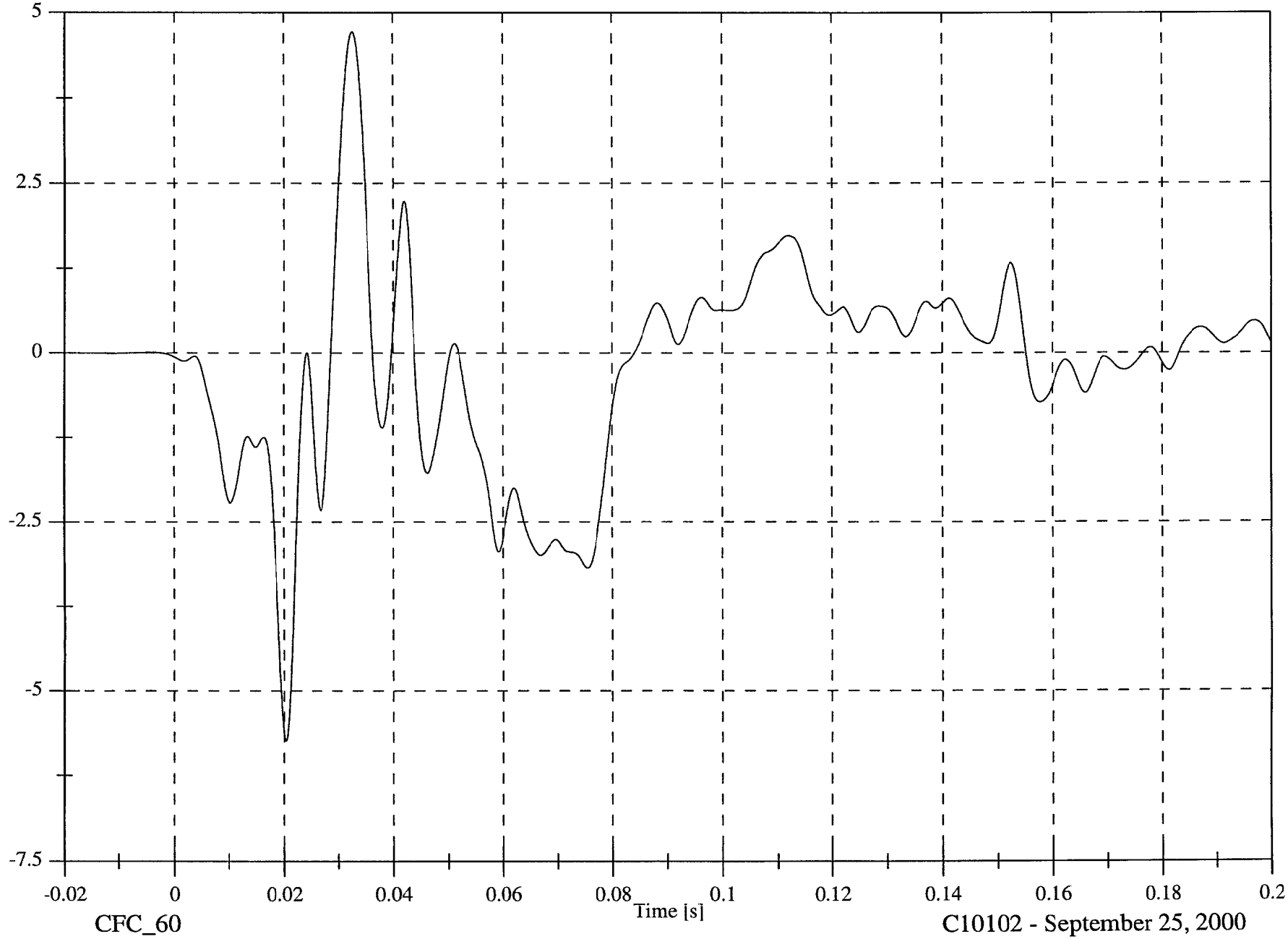
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 3 Rear Floorpan X

Max: 4.7 [g] at 0.033 [s]

Min: -5.7 [g] at 0.020 [s]



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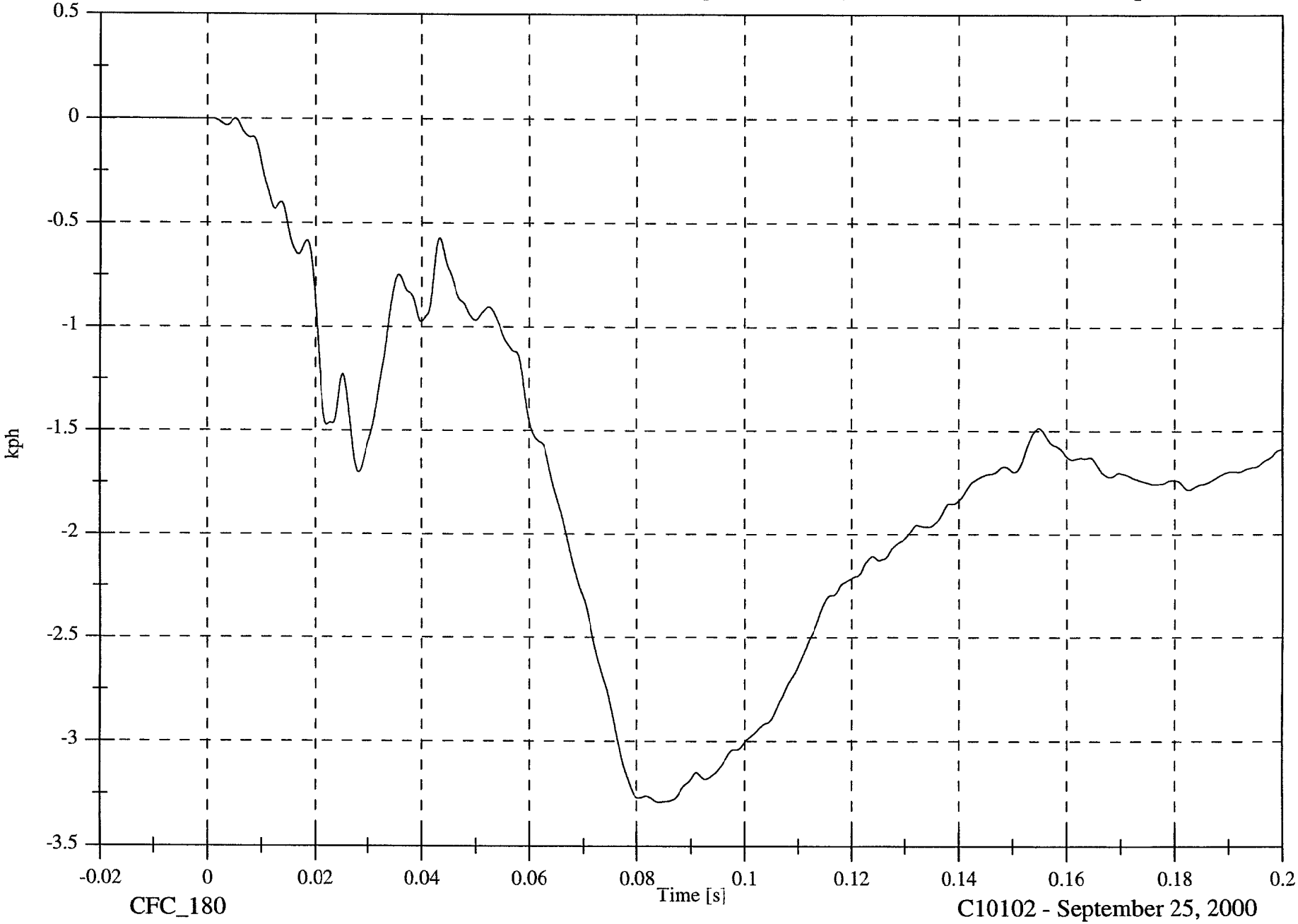
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 3 Rear Floorpan X Velocity

Max: 0.0 [kph] at -0.019 [s]

Min: -3.3 [kph] at 0.084 [s]



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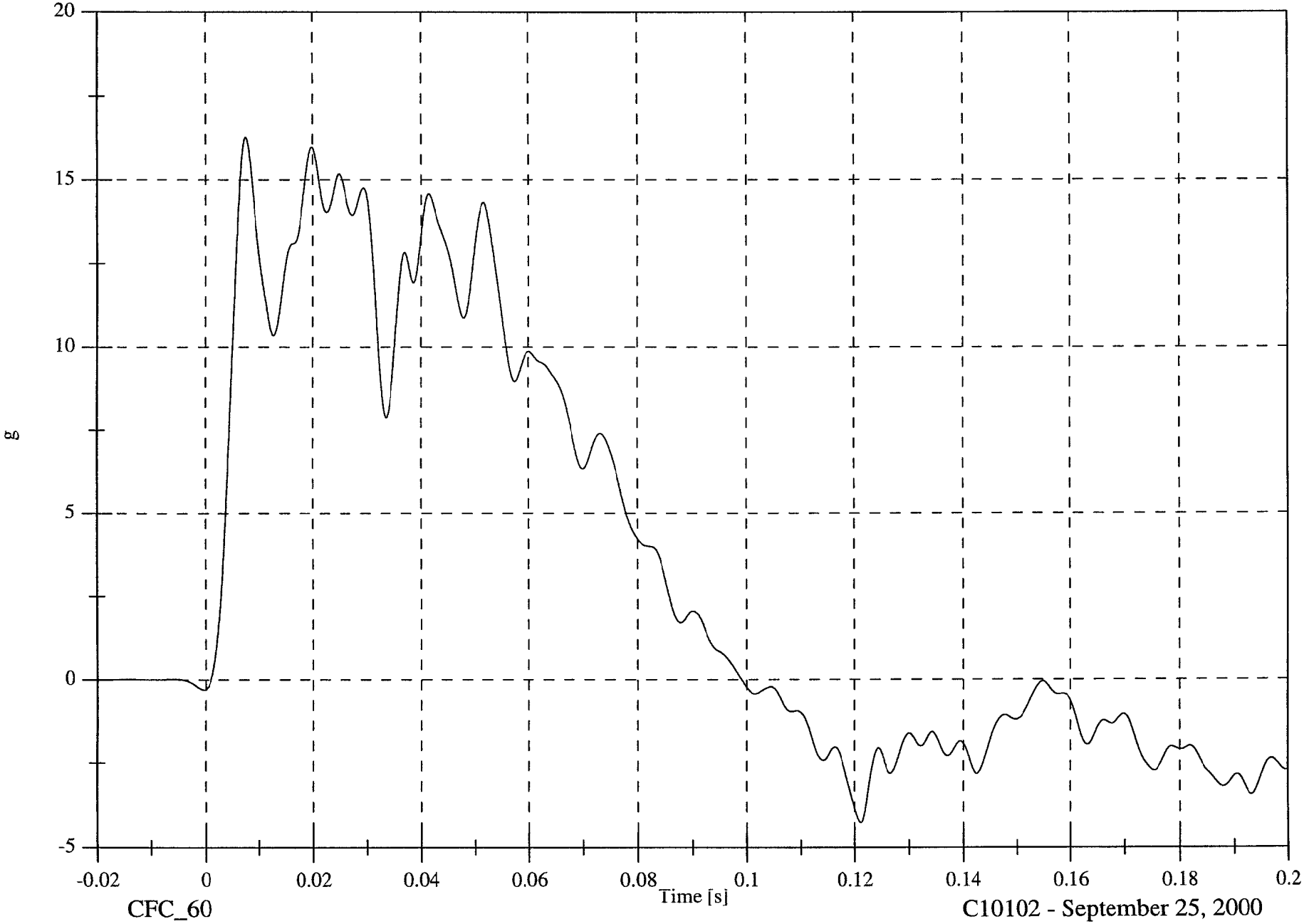
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 3 Rear Floorpan Y

Max: 16.3 [g] at 0.007 [s]

Min: -4.3 [g] at 0.121 [s]



CFC_60

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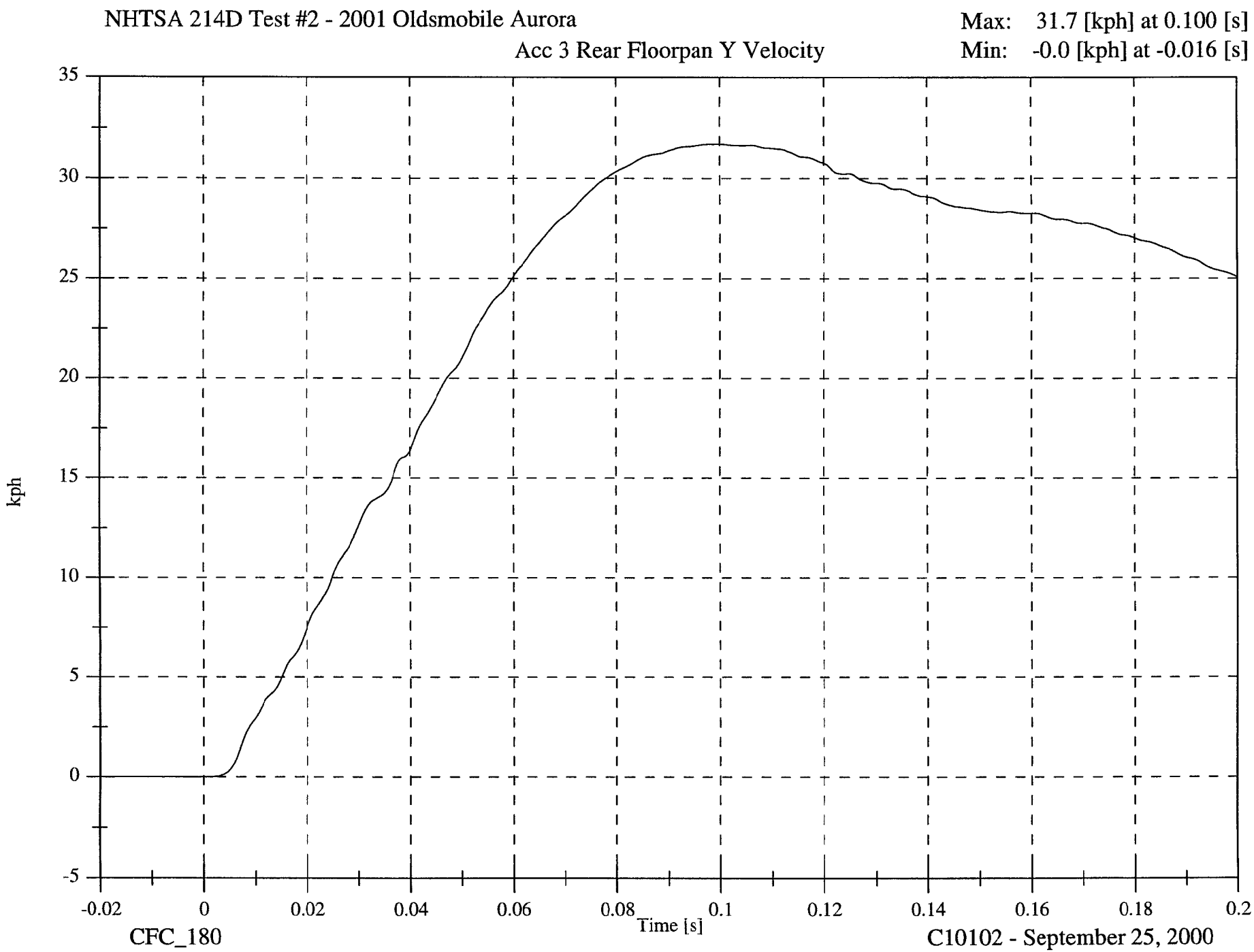
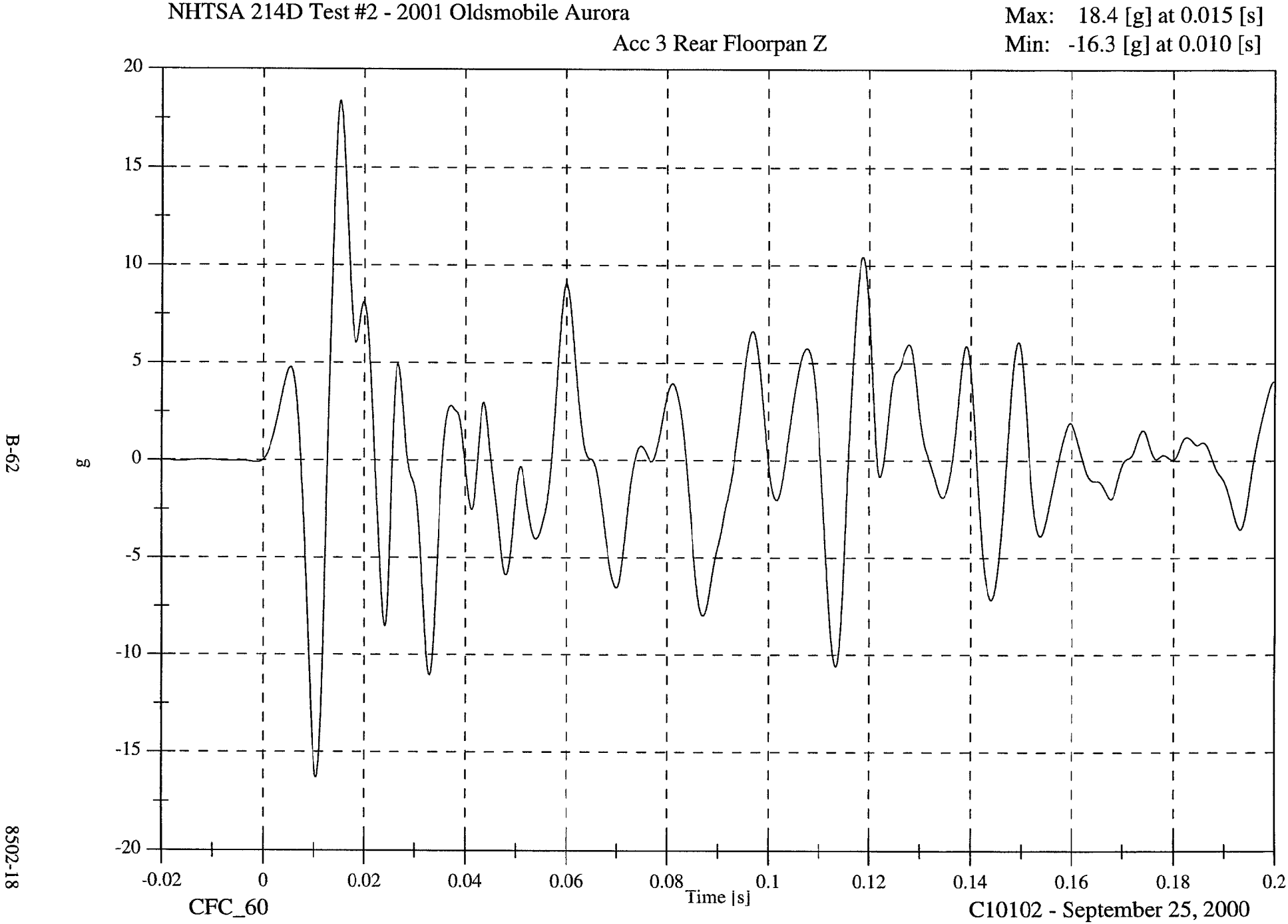
8502-18


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 3 Rear Floorpan Y Velocity
Max: 31.7 [kph] at 0.100 [s]
Min: -0.0 [kph] at -0.016 [s]
kph
35
30
25
20
15
10
5
0
-5
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 3 Rear Floorpan Z
Max: 18.4 [g] at 0.015 [s]
Min: -16.3 [g] at 0.010 [s]
20
15
10
5
0
-5
-10
-15
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
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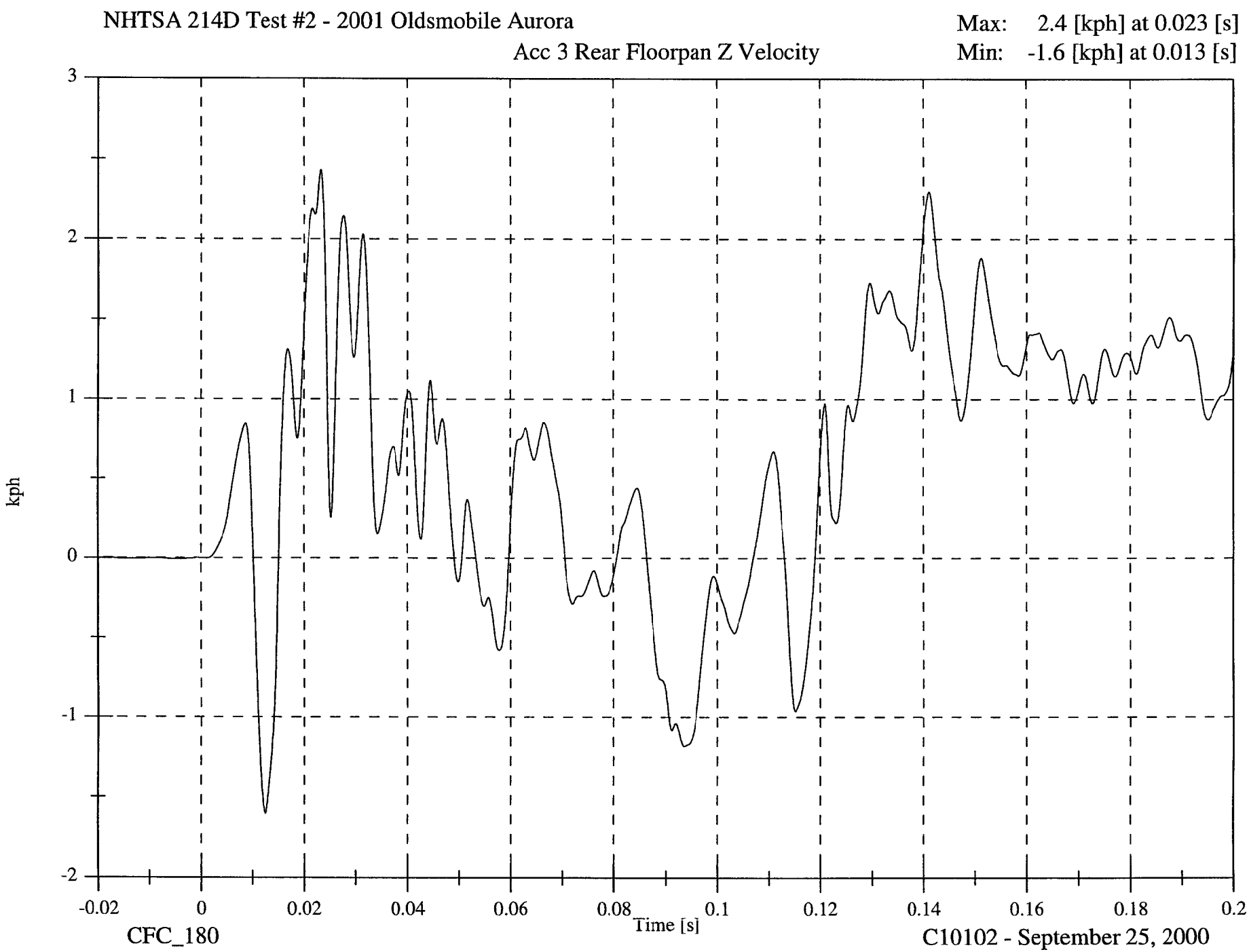
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 3 Rear Floorpan Z Velocity
Max: 2.4 [kph] at 0.023 [s]
Min: -1.6 [kph] at 0.013 [s]
kph
3
2
1
0
-1
-2
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
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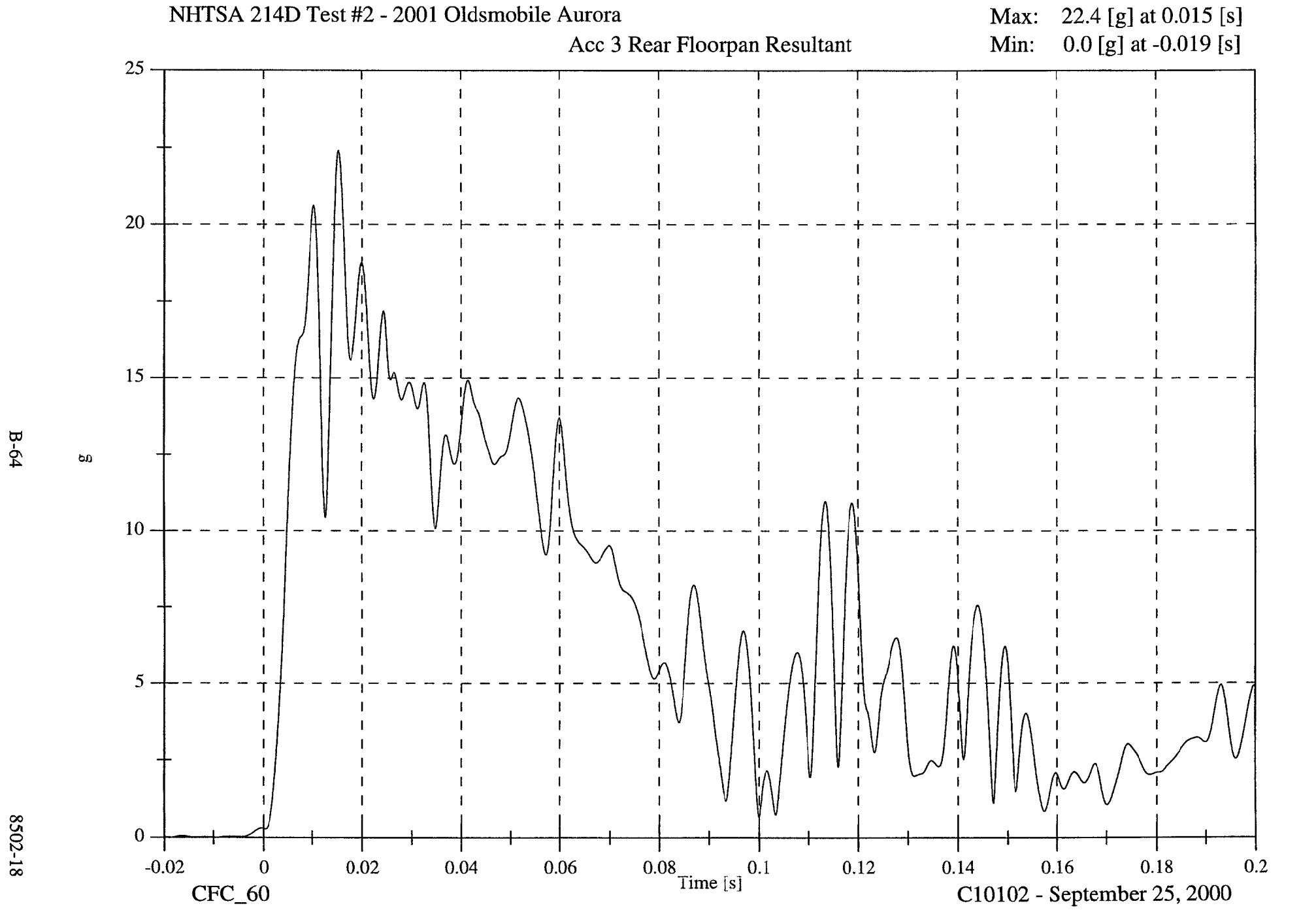
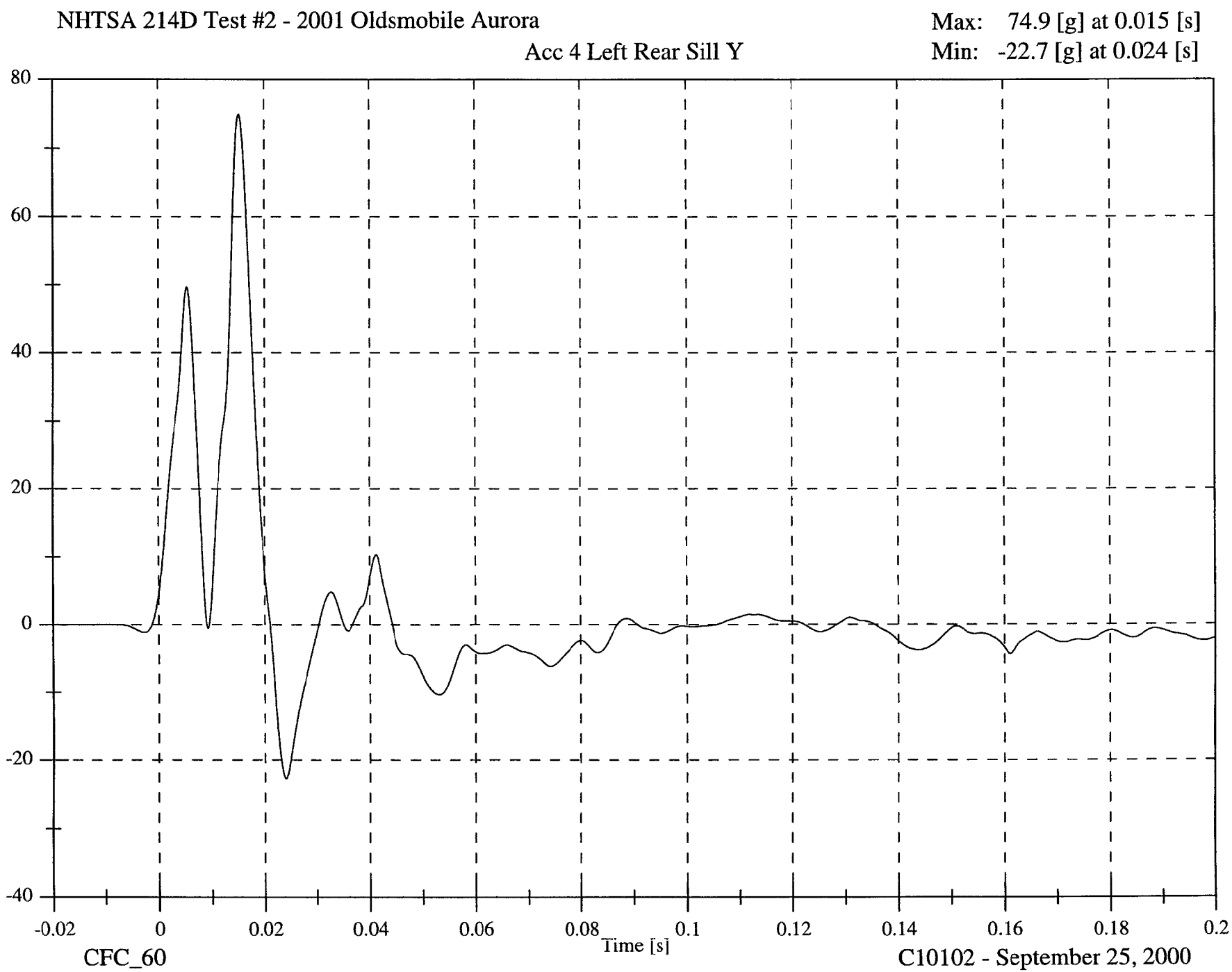

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 3 Rear Floorpan Resultant
Max: 22.4 [g] at 0.015 [s]
Min: 0.0 [g] at -0.019 [s]
25
20
15
10
5
0
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 4 Left Rear Sill Y
Max: 74.9 [g] at 0.015 [s]
Min: -22.7 [g] at 0.024 [s]
80
60
40
20
0
-20
-40
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
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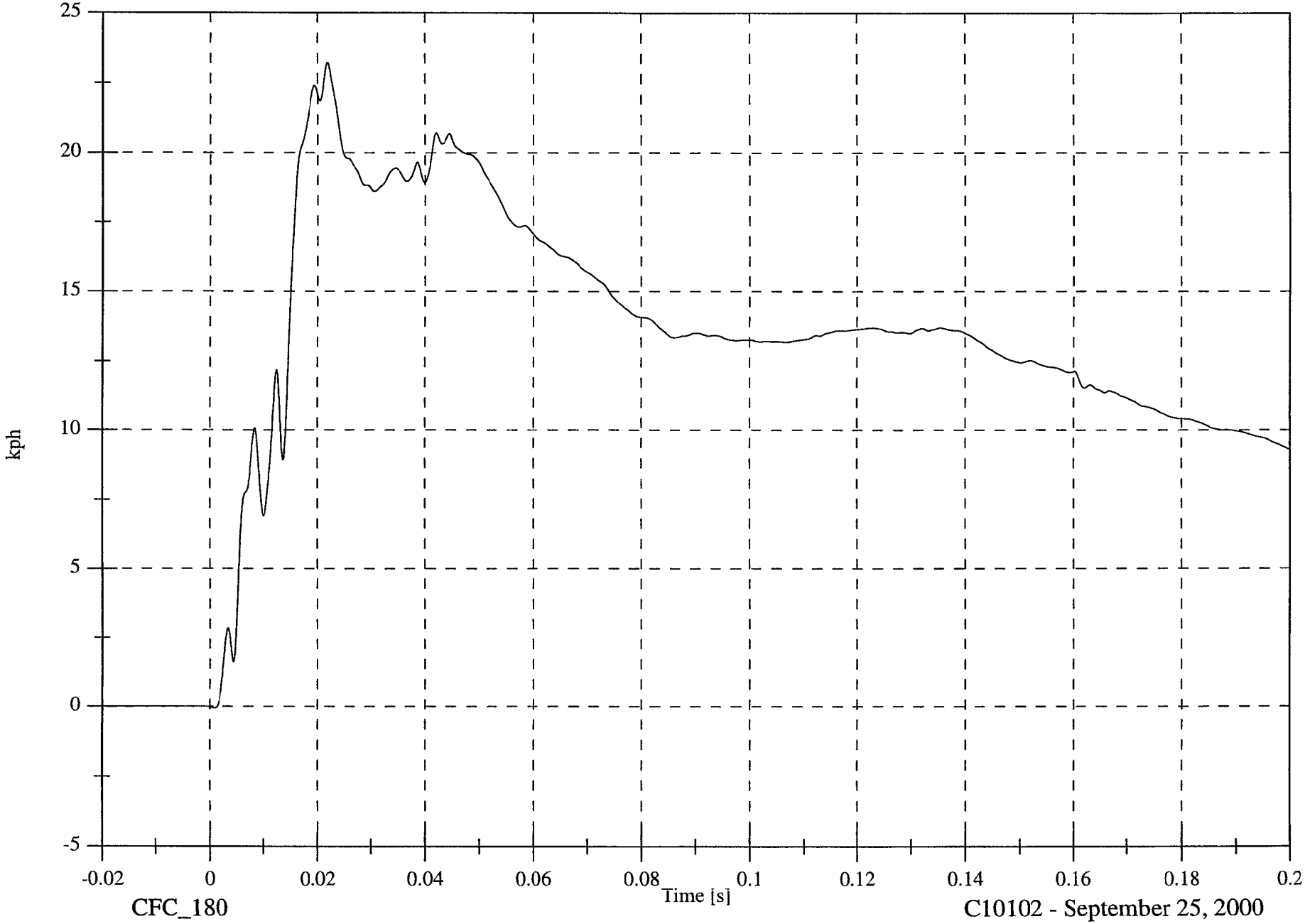
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 4 Left Rear Sill Y Velocity

Max: 23.2 [kph] at 0.022 [s]

Min: -0.1 [kph] at 0.001 [s]



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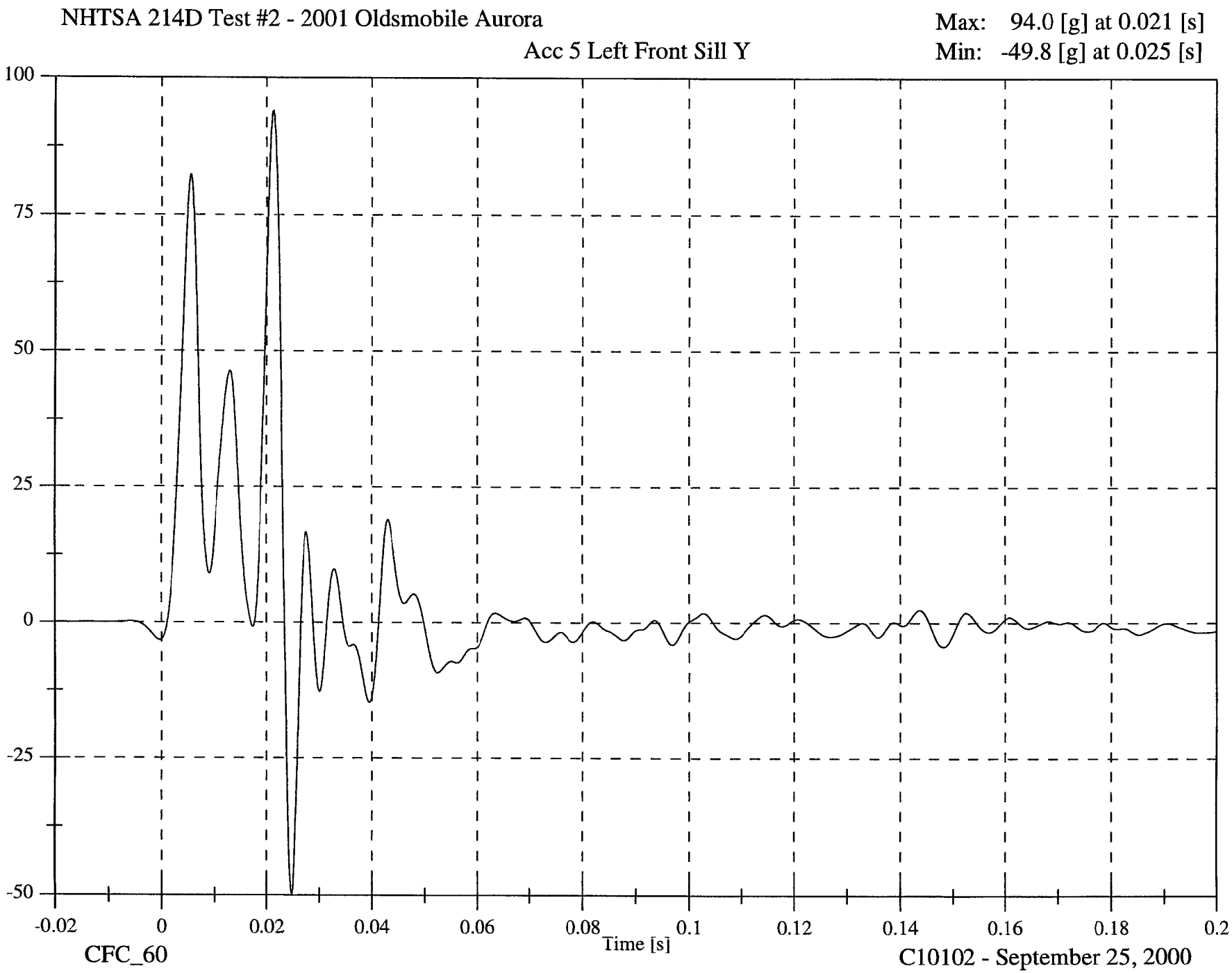
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 5 Left Front Sill Y
Max: 94.0 [g] at 0.021 [s]
Min: -49.8 [g] at 0.025 [s]
100
75
50
25
0
-25
-50
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
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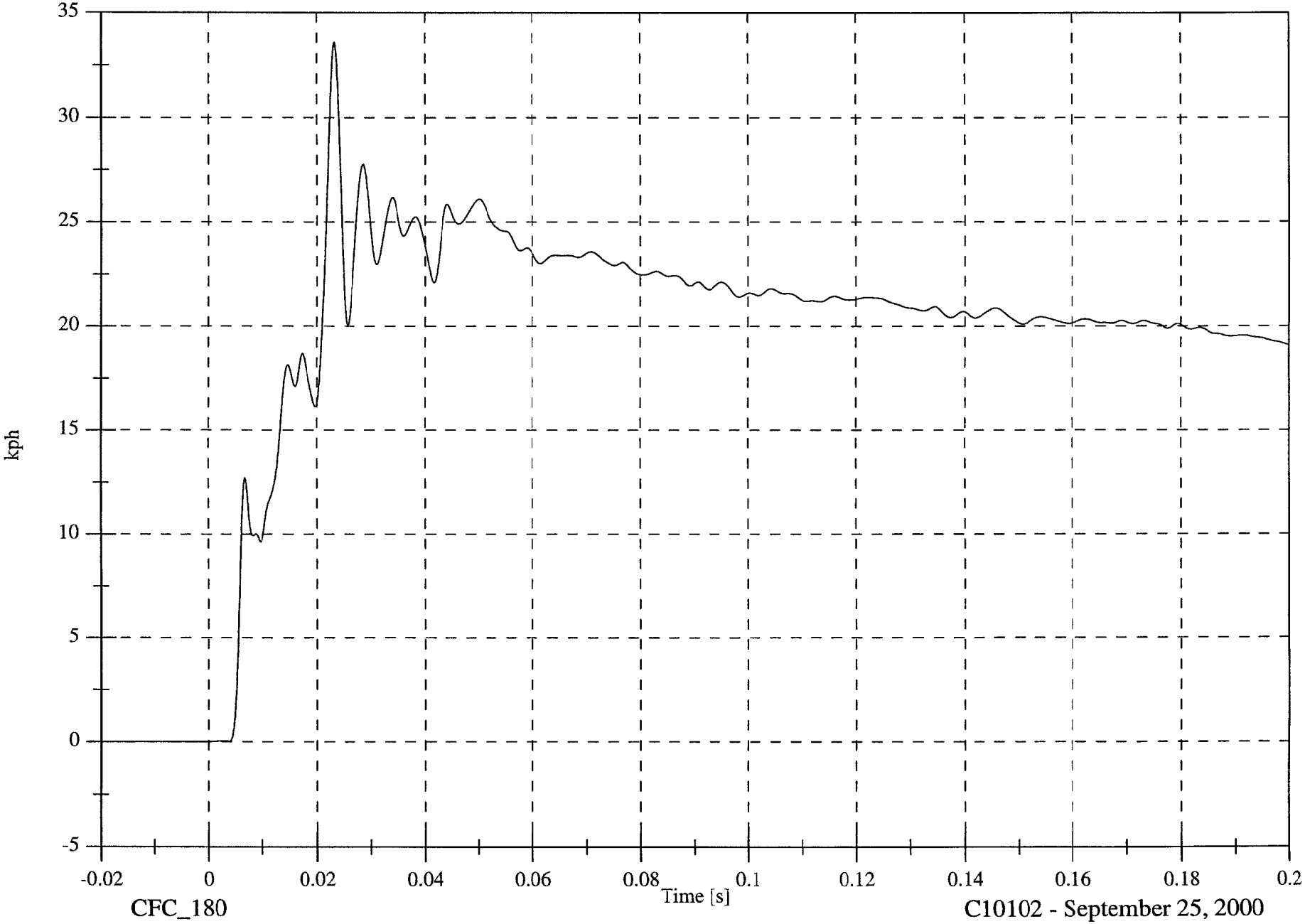
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 5 Left Front Sill Y Velocity

Max: 33.6 [kph] at 0.023 [s]
Min: -0.0 [kph] at -0.020 [s]



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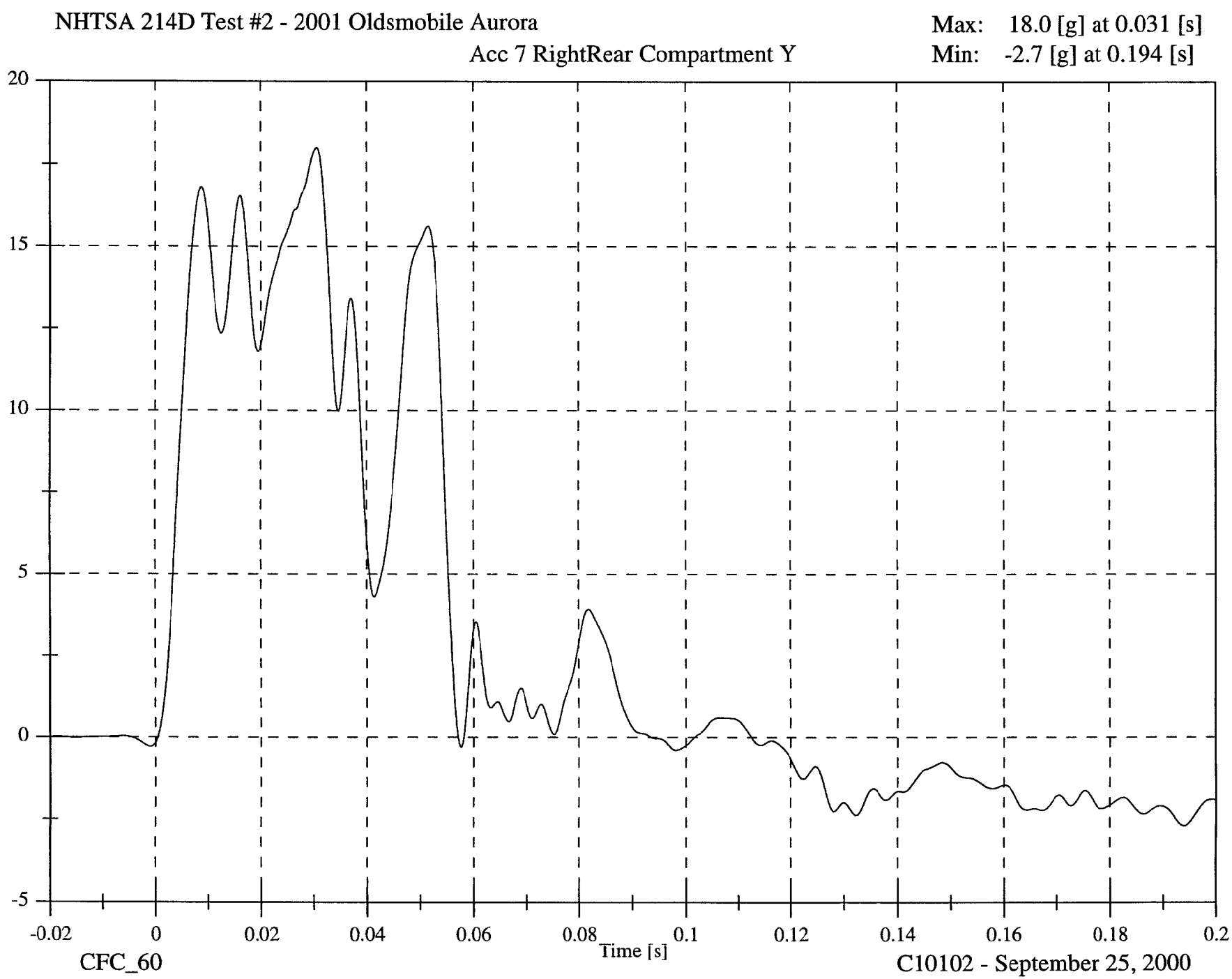
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 7 RightRear Compartment Y
Max: 18.0 [g] at 0.031 [s]
Min: -2.7 [g] at 0.194 [s]
20
15
10
5
0
-5
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
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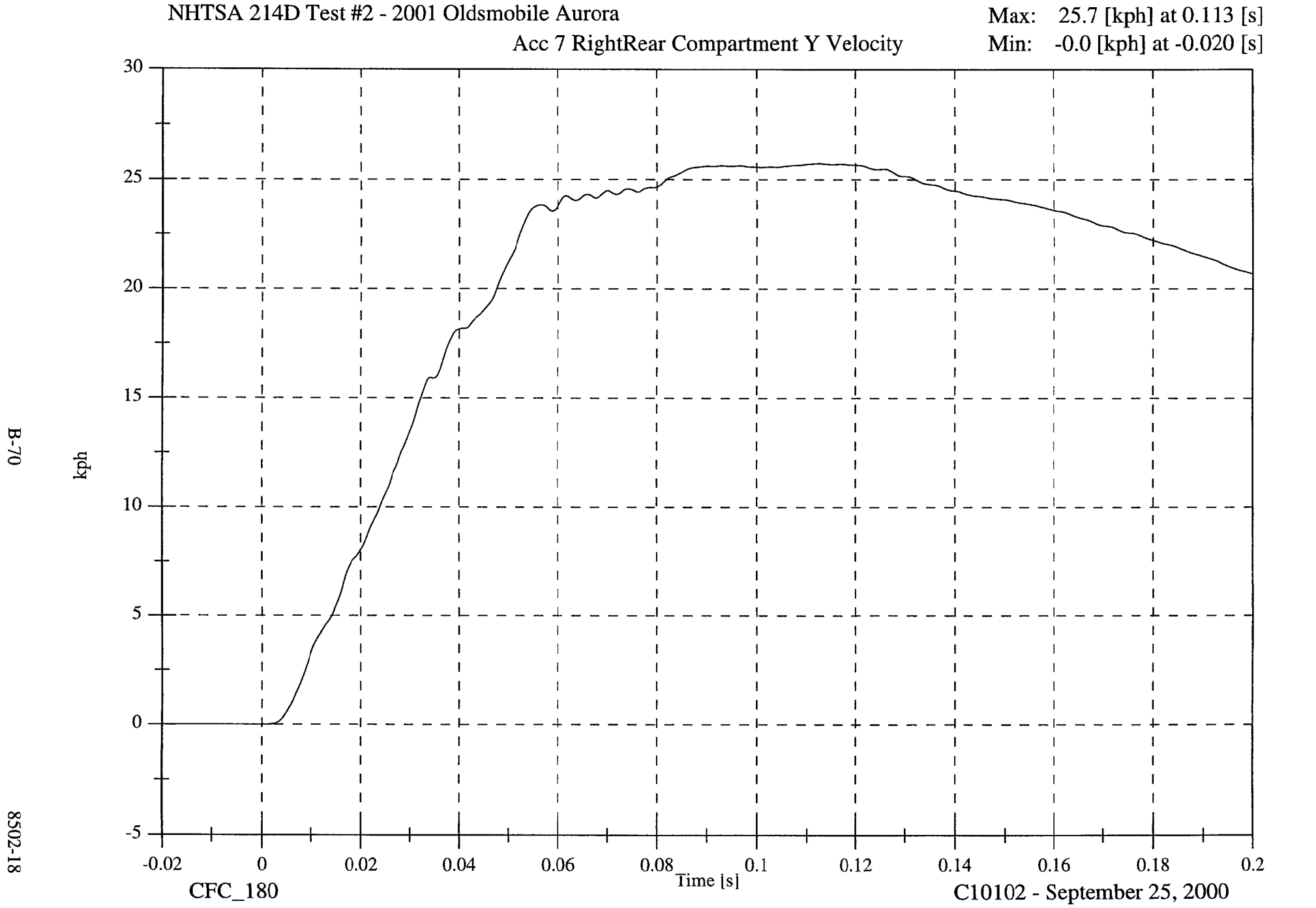
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 7 RightRear Compartment Y Velocity
Max: 25.7 [kph] at 0.113 [s]
Min: -0.0 [kph] at -0.020 [s]
kph
30
25
20
15
10
5
0
-5
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
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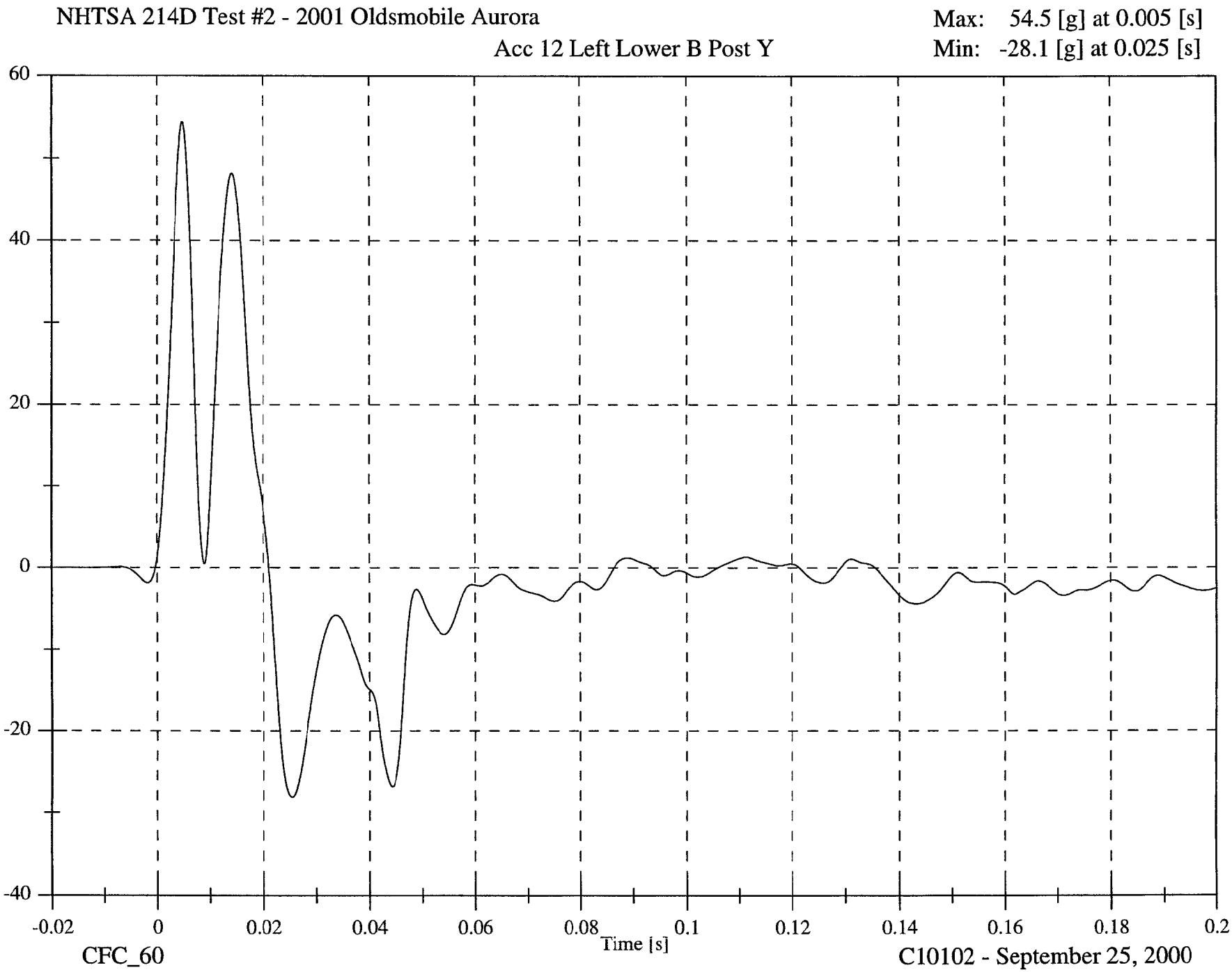
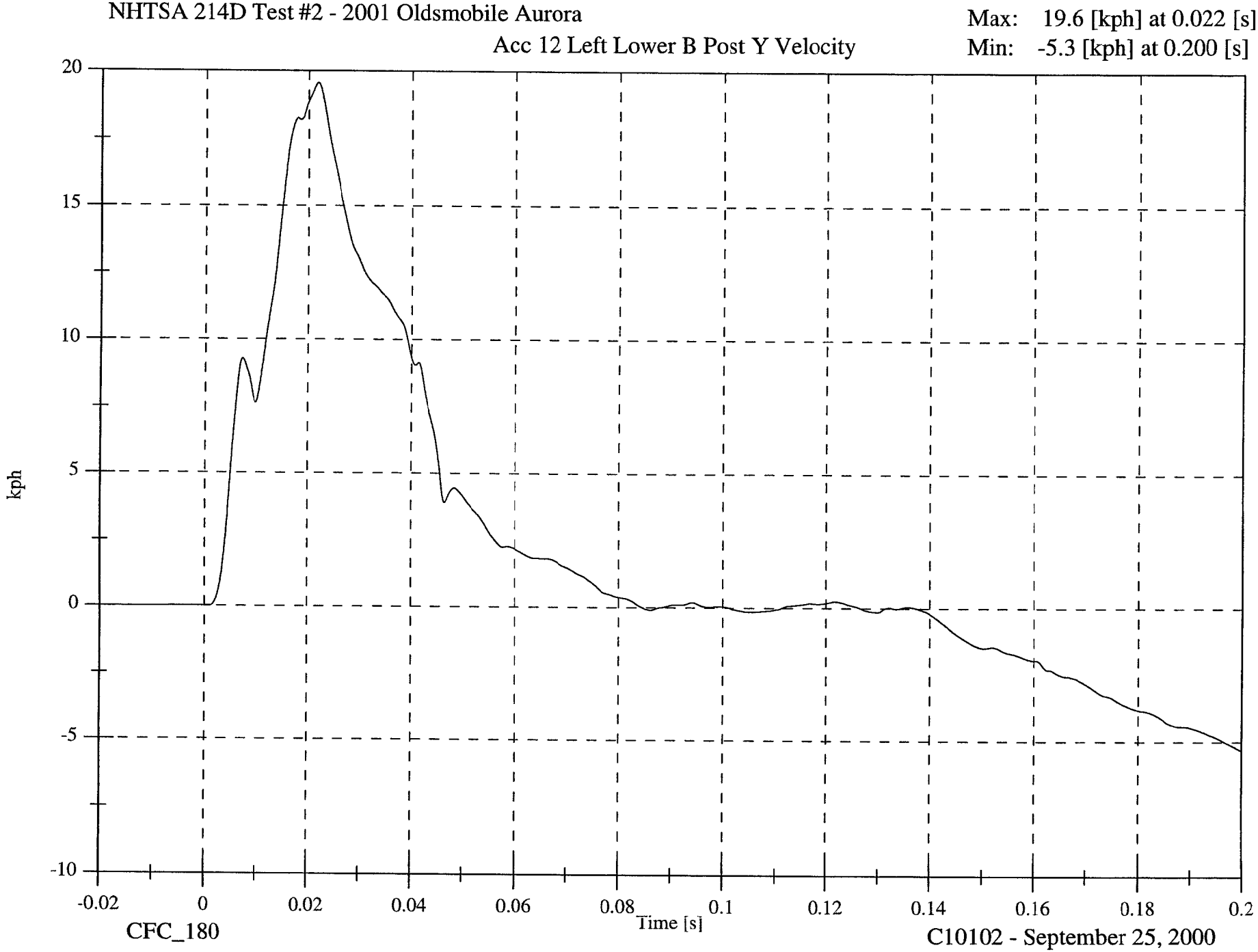
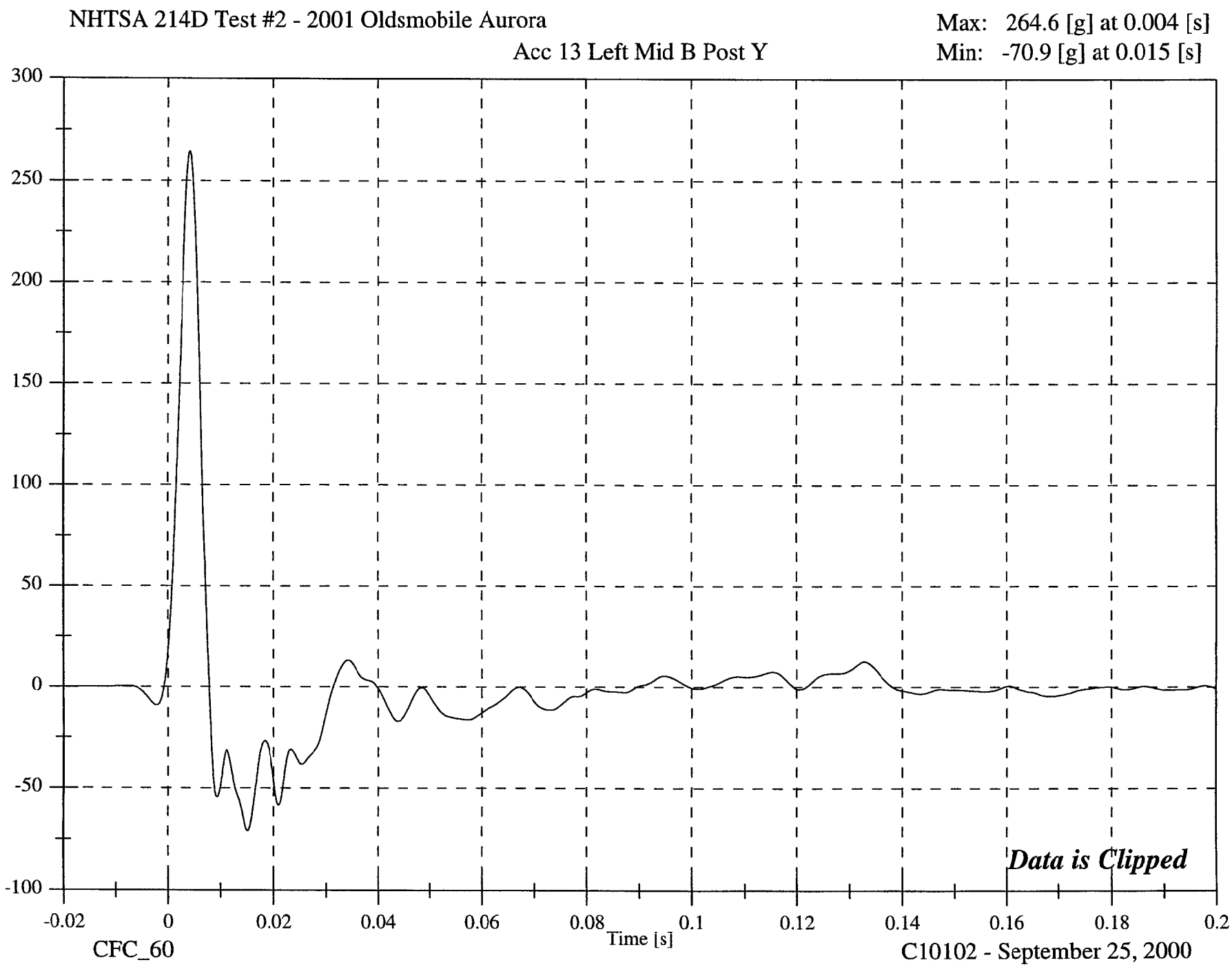
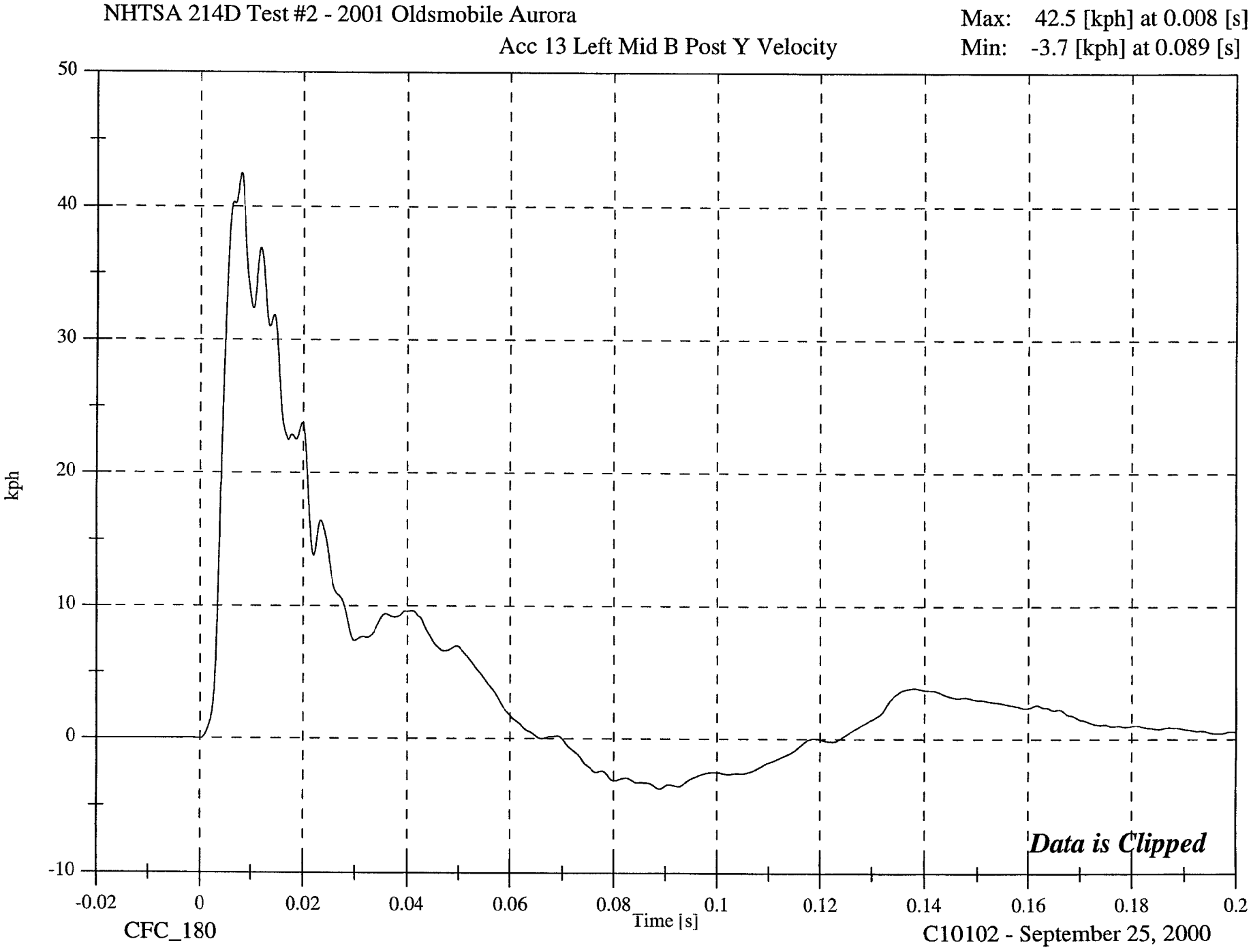

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 12 Left Lower B Post Y
Max: 54.5 [g] at 0.005 [s]
Min: -28.1 [g] at 0.025 [s]
60
40
20
0
-20
-40
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 12 Left Lower B Post Y Velocity
Max: 19.6 [kph] at 0.022 [s]
Min: -5.3 [kph] at 0.200 [s]
kph
20
15
10
5
0
-5
-10
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 13 Left Mid B Post Y
Max: 264.6 [g] at 0.004 [s]
Min: -70.9 [g] at 0.015 [s]
300
250
200
150
100
50
0
-50
-100
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
Data is Clipped
CFC_60
C10102 - September 25, 2000

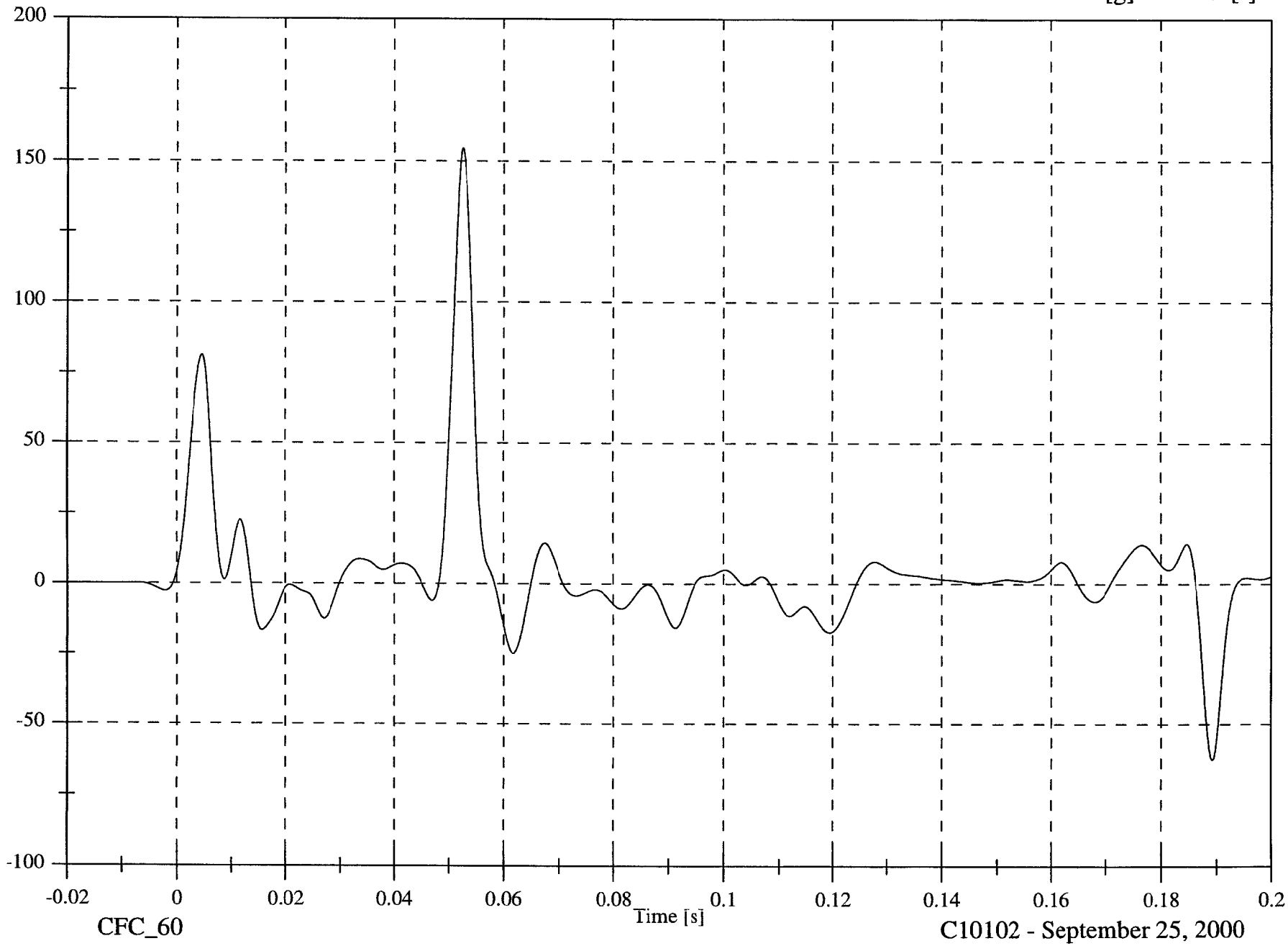

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 13 Left Mid B Post Y Velocity
Max: 42.5 [kph] at 0.008 [s]
Min: -3.7 [kph] at 0.089 [s]
kph
50
40
30
20
10
0
-10
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
Data is Clipped
CFC_180
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 14 Left Lower A Post Y

Max: 154.6 [g] at 0.053 [s]

Min: -62.6 [g] at 0.189 [s]



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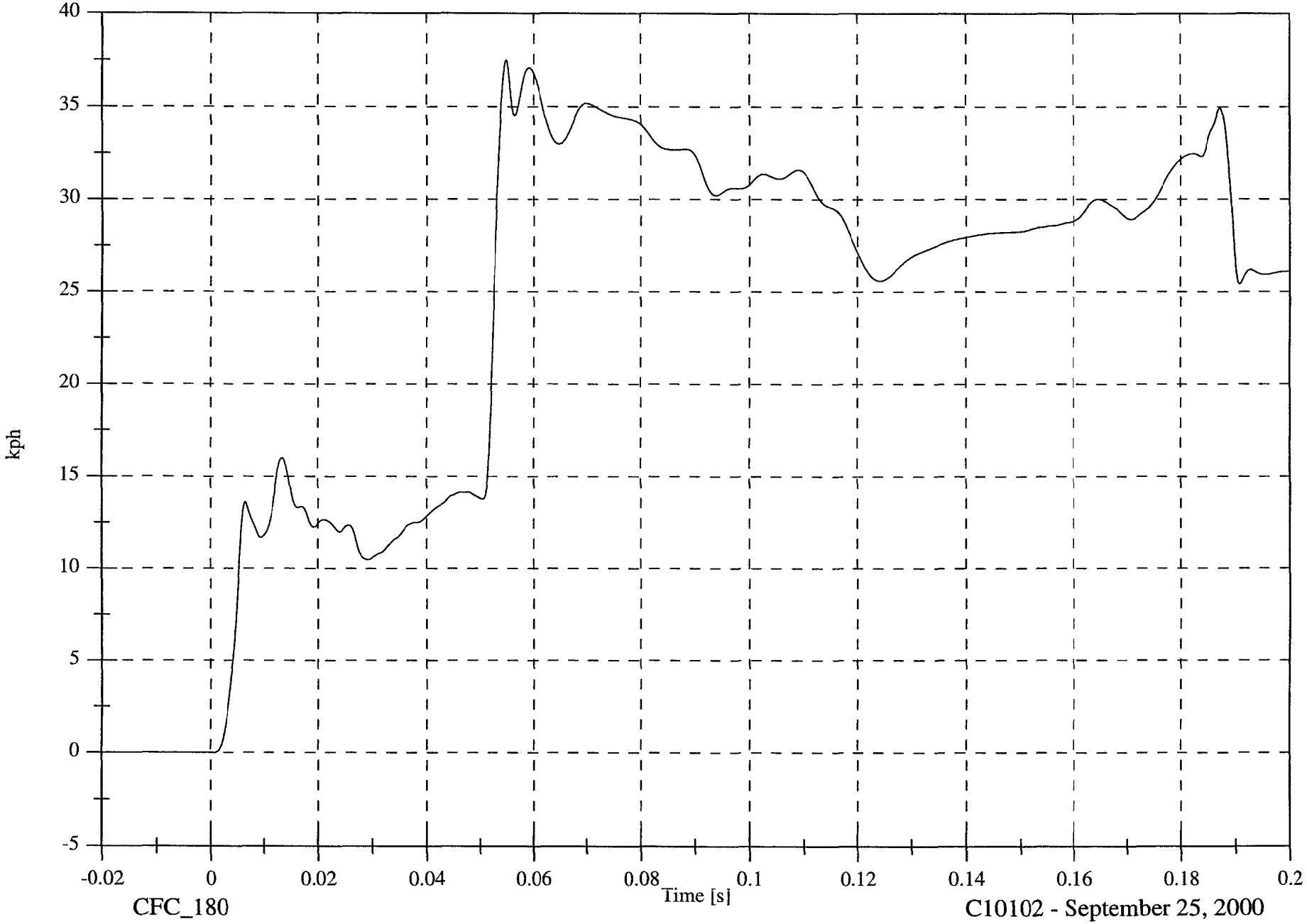
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 14 Left Lower A Post Y Velocity

Max: 37.5 [kph] at 0.055 [s]

Min: -0.0 [kph] at 0.000 [s]



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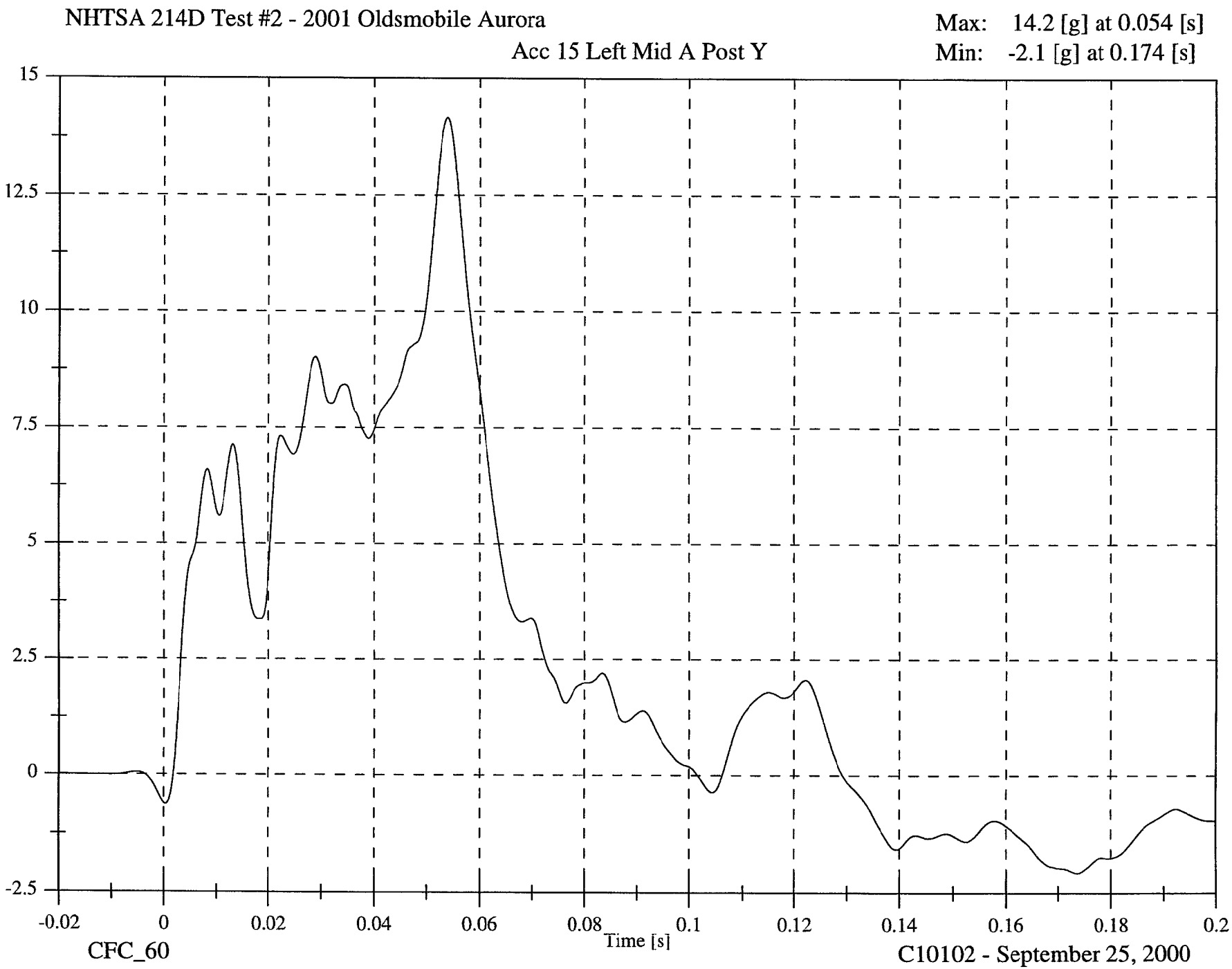
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 15 Left Mid A Post Y
Max: 14.2 [g] at 0.054 [s]
Min: -2.1 [g] at 0.174 [s]
15
12.5
10
7.5
5
2.5
0
-2.5
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
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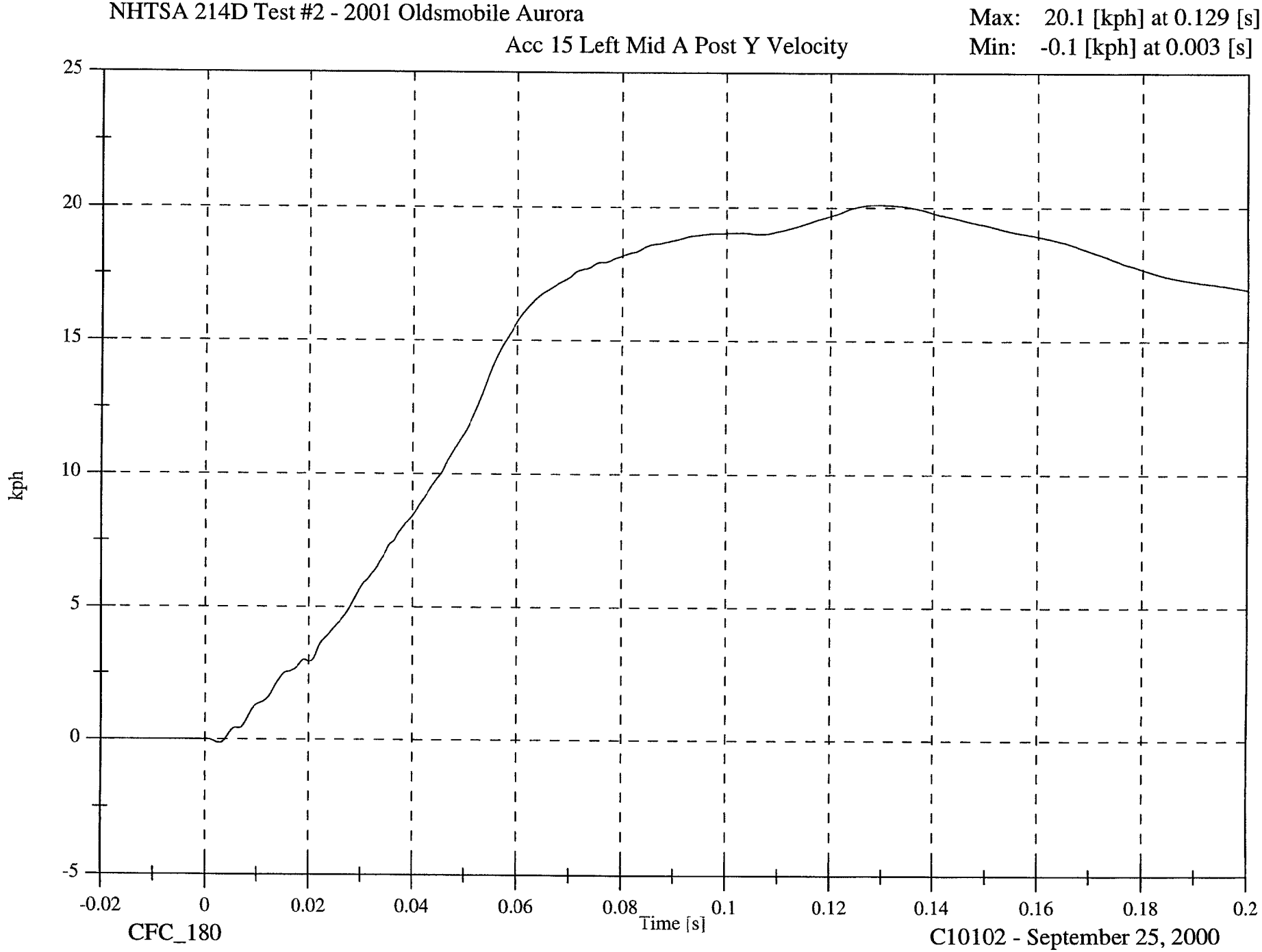
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 15 Left Mid A Post Y Velocity
Max: 20.1 [kph] at 0.129 [s]
Min: -0.1 [kph] at 0.003 [s]
kph
25
20
15
10
5
0
-5
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
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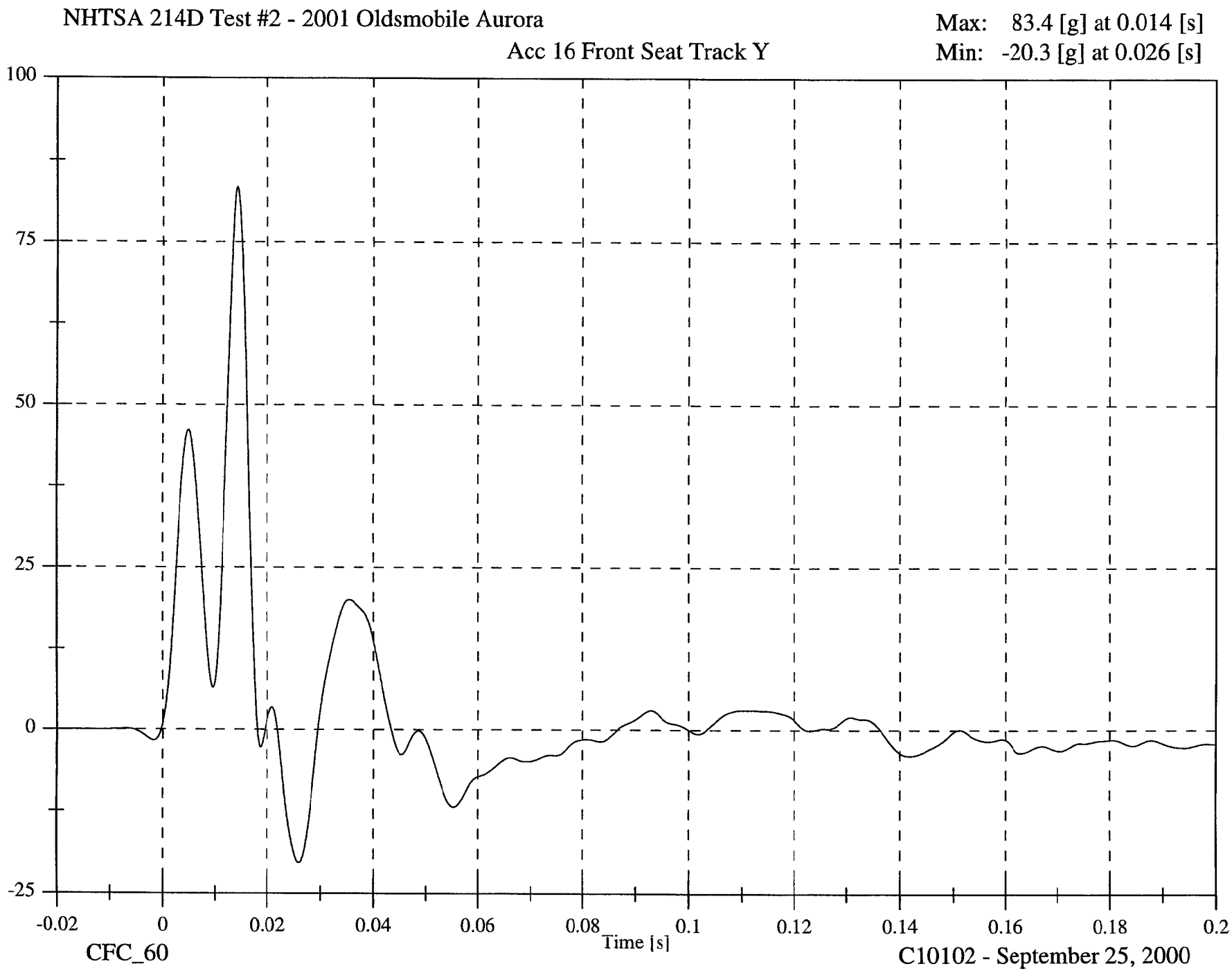
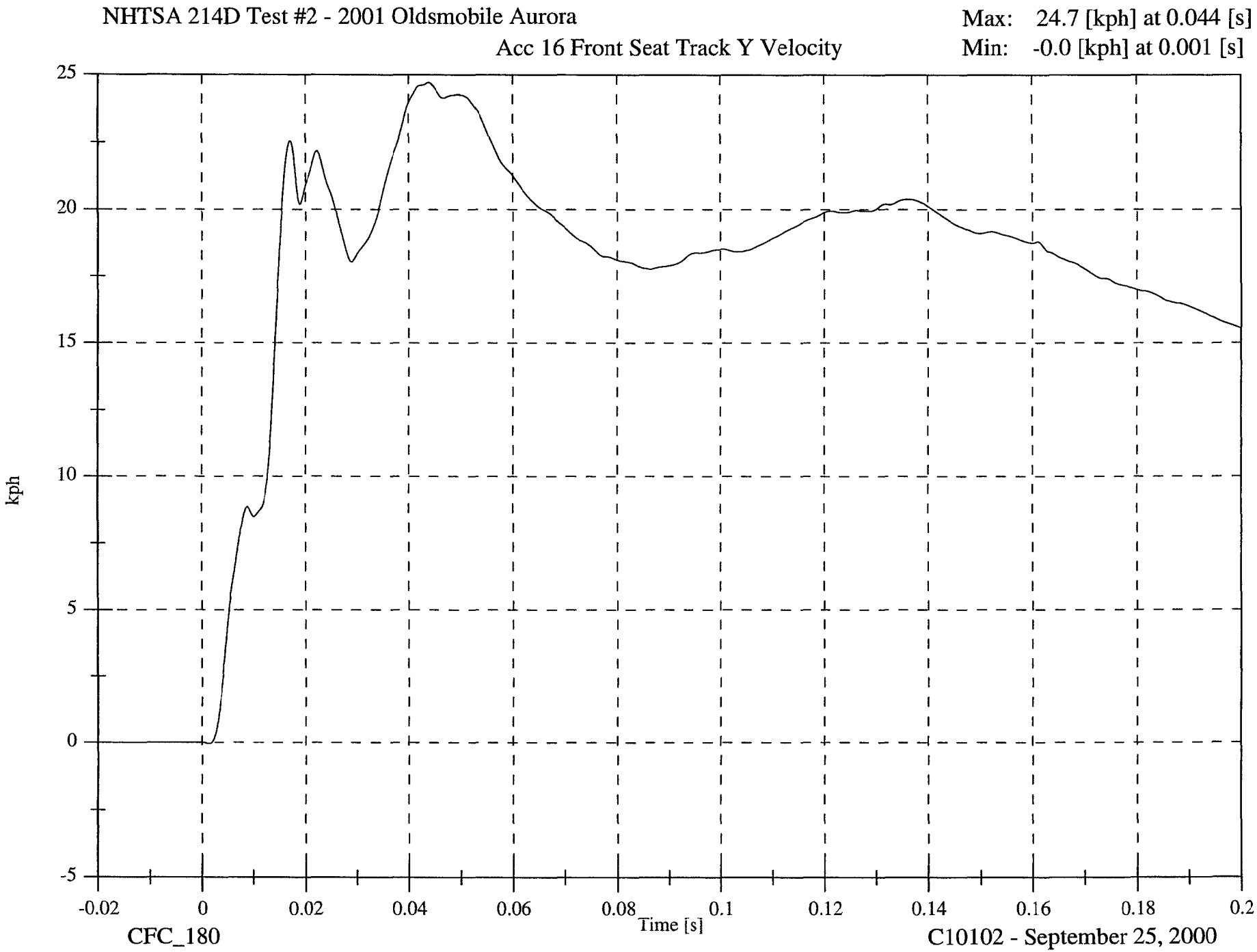

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 16 Front Seat Track Y
Max: 83.4 [g] at 0.014 [s]
Min: -20.3 [g] at 0.026 [s]
100
75
50
25
0
-25
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 16 Front Seat Track Y Velocity
Max: 24.7 [kph] at 0.044 [s]
Min: -0.0 [kph] at 0.001 [s]
kph
25
20
15
10
5
0
-5
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
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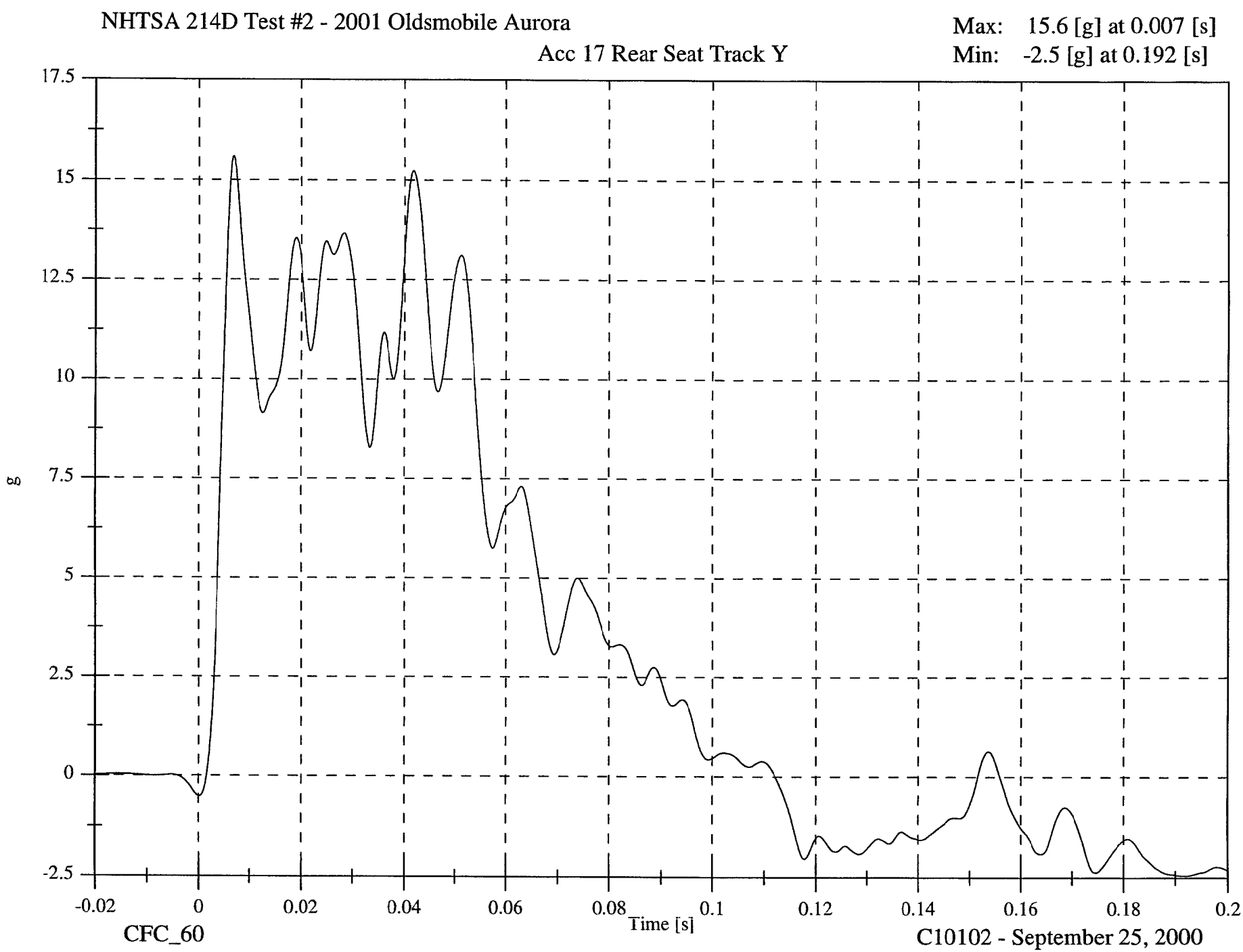
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 17 Rear Seat Track Y
Max: 15.6 [g] at 0.007 [s]
Min: -2.5 [g] at 0.192 [s]
17.5
15
12.5
10
7.5
5
2.5
0
-2.5
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
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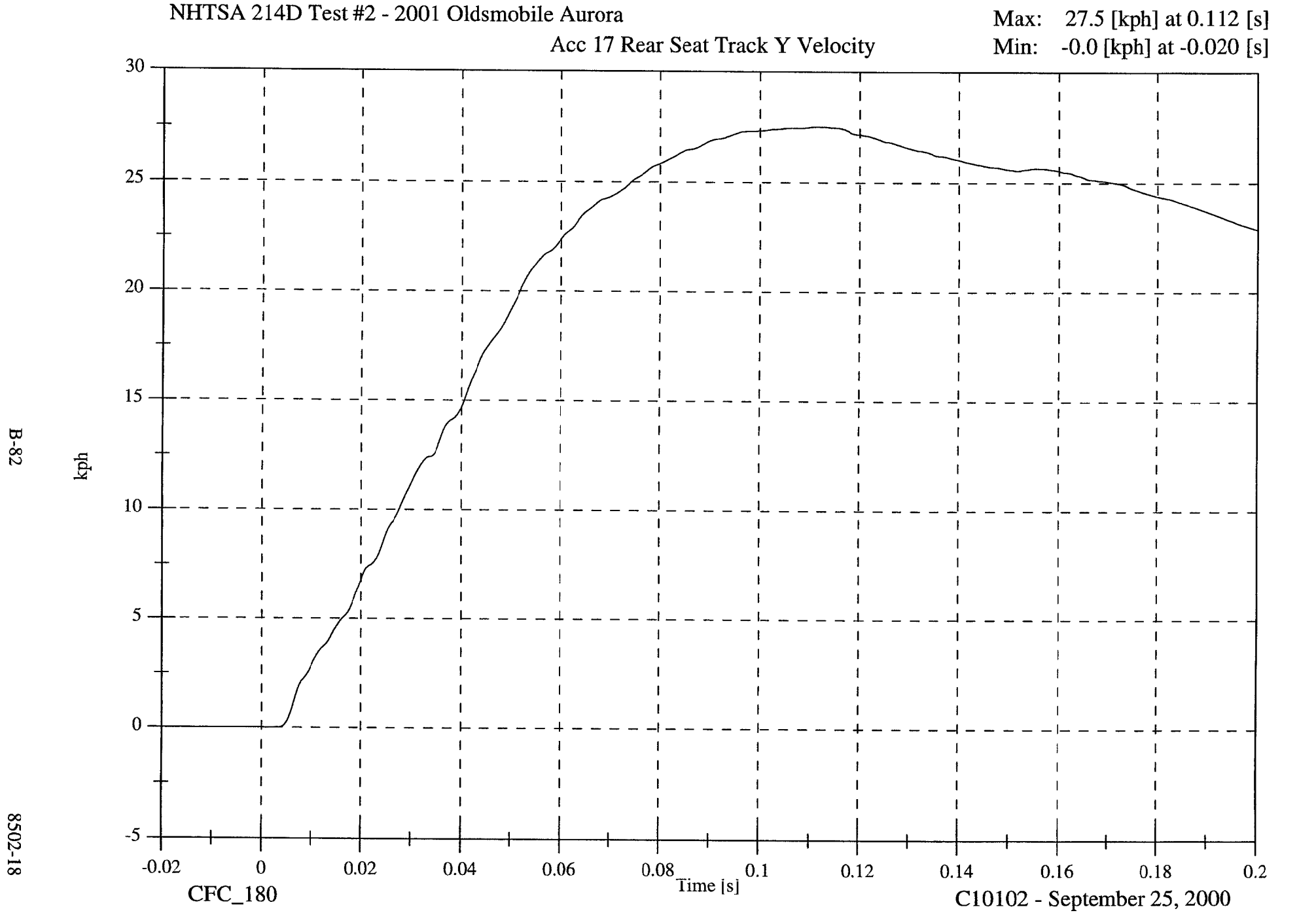
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 17 Rear Seat Track Y Velocity
Max: 27.5 [kph] at 0.112 [s]
Min: -0.0 [kph] at -0.020 [s]
kph
30
25
20
15
10
5
0
-5
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
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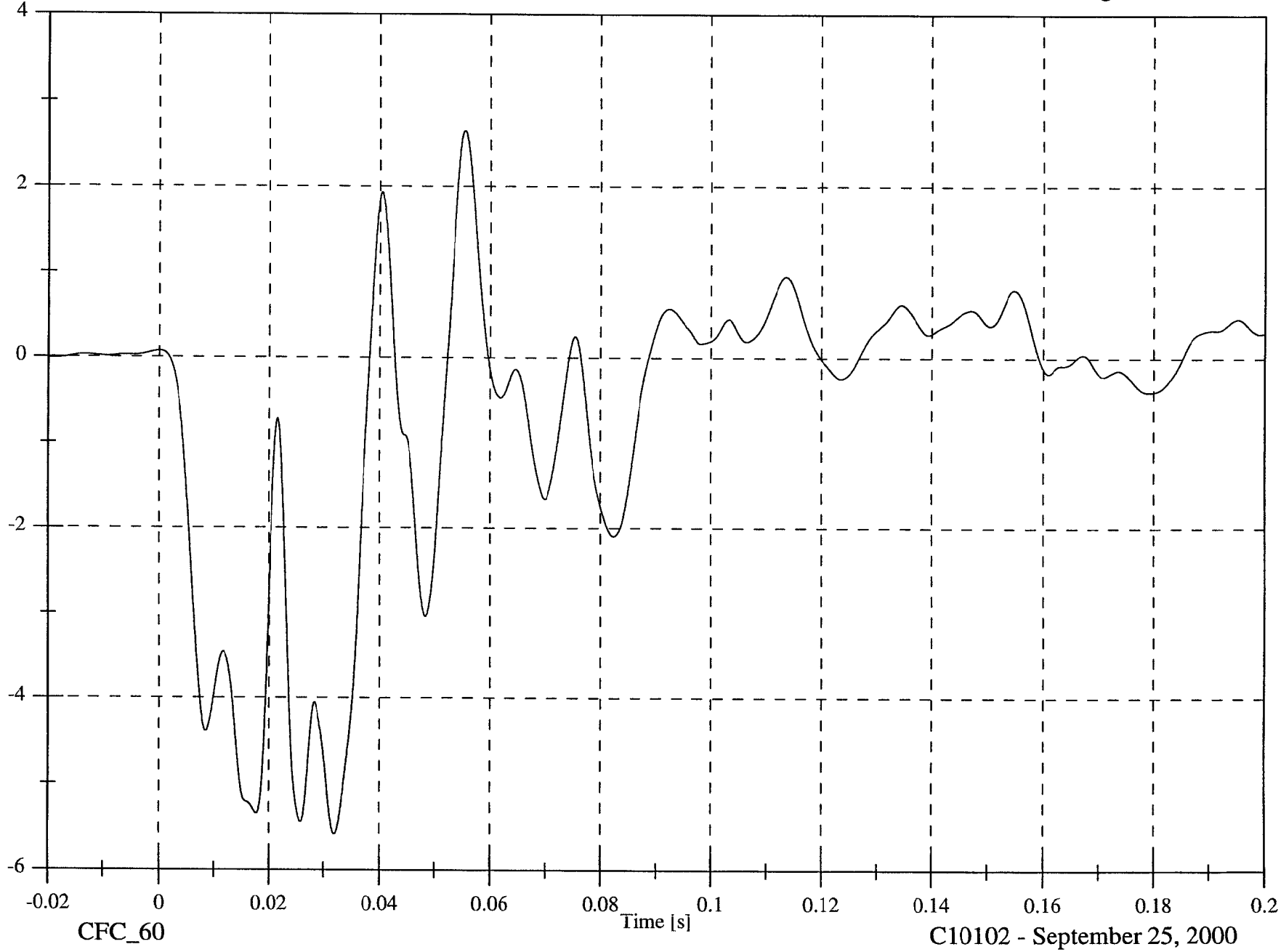
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Acc 18 Target CG X

Max: 2.7 [g] at 0.056 [s]
Min: -5.6 [g] at 0.032 [s]



CFC_60

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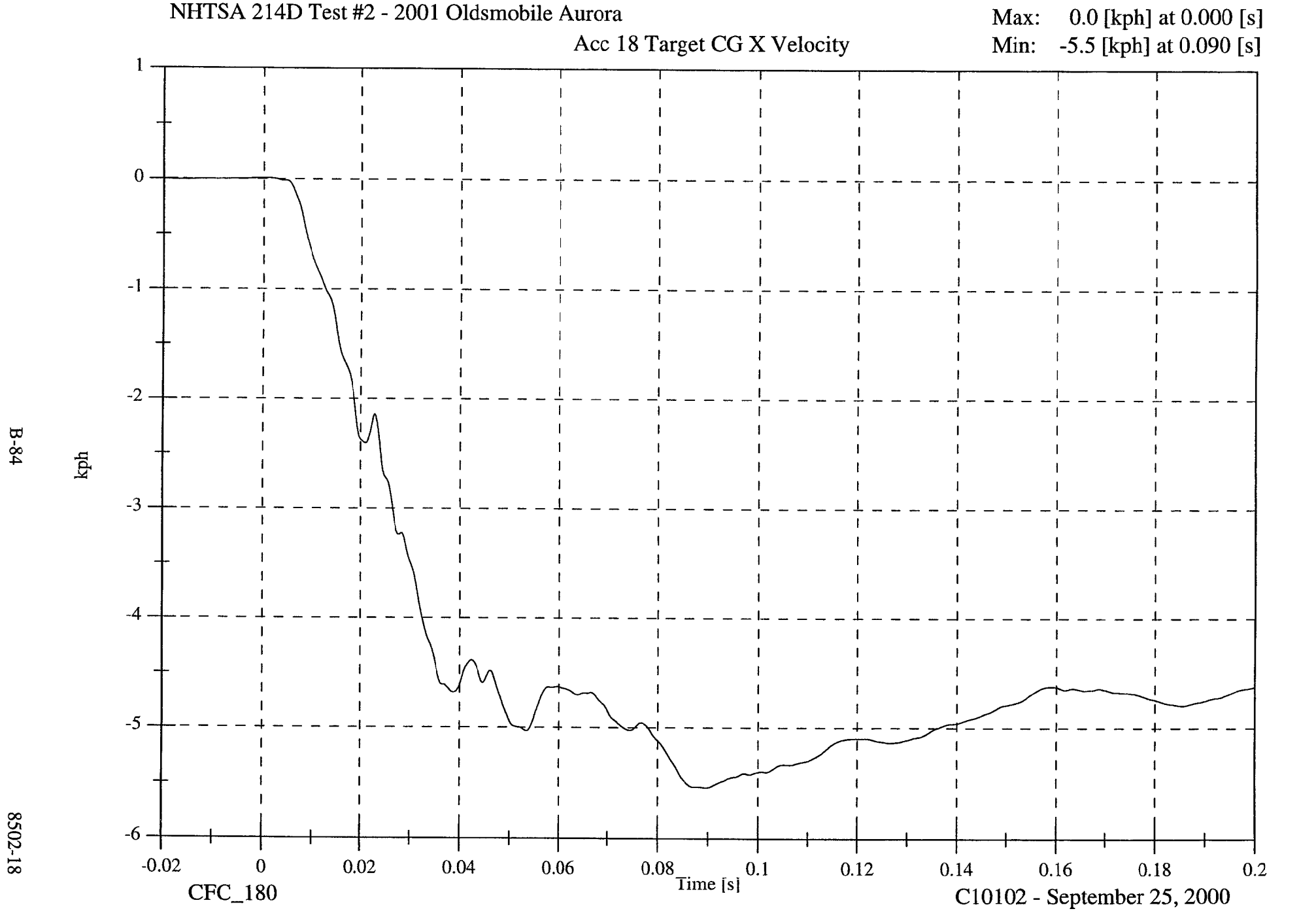
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 18 Target CG X Velocity
Max: 0.0 [kph] at 0.000 [s]
Min: -5.5 [kph] at 0.090 [s]
kph
1
0
-1
-2
-3
-4
-5
-6
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

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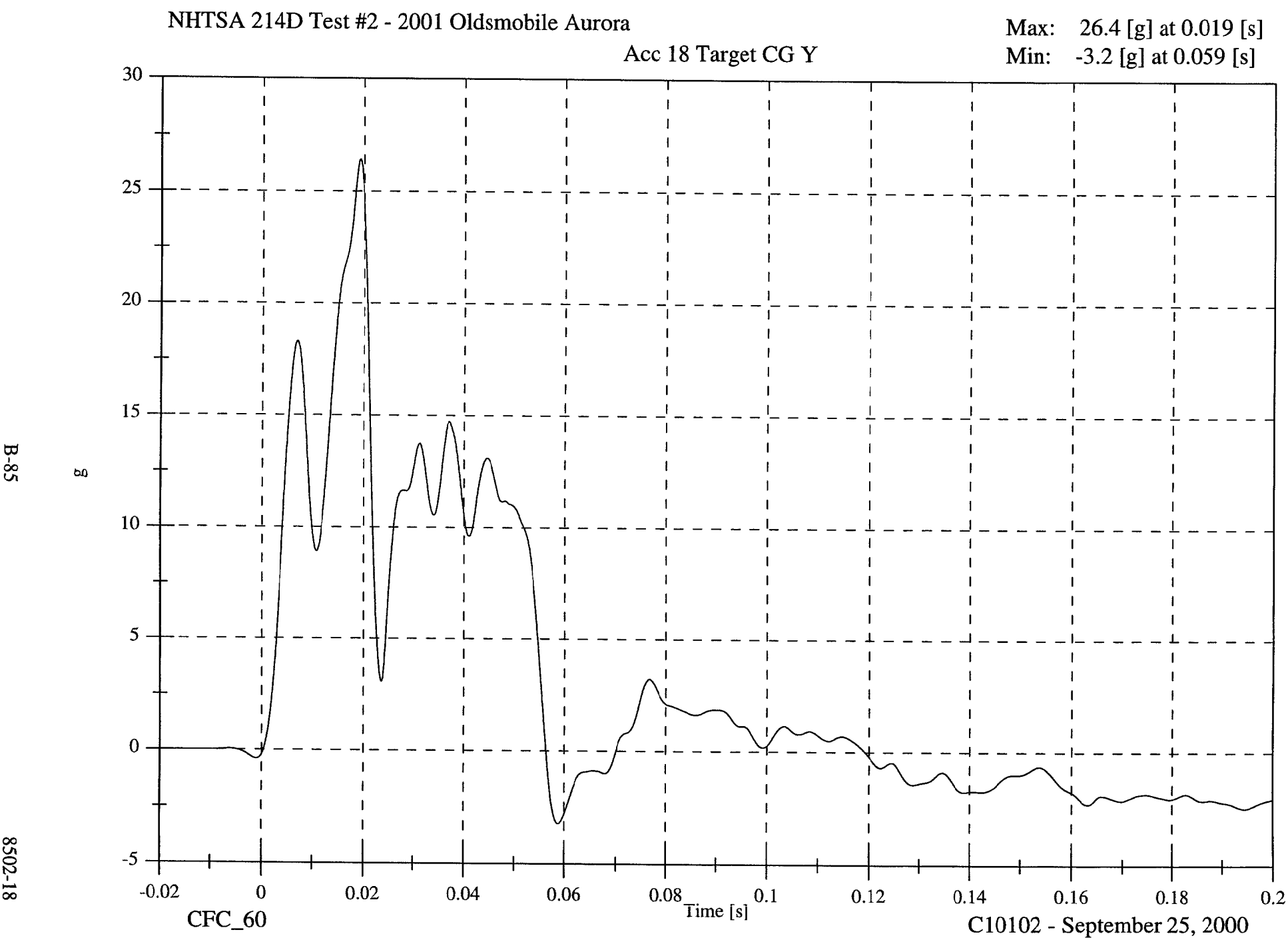
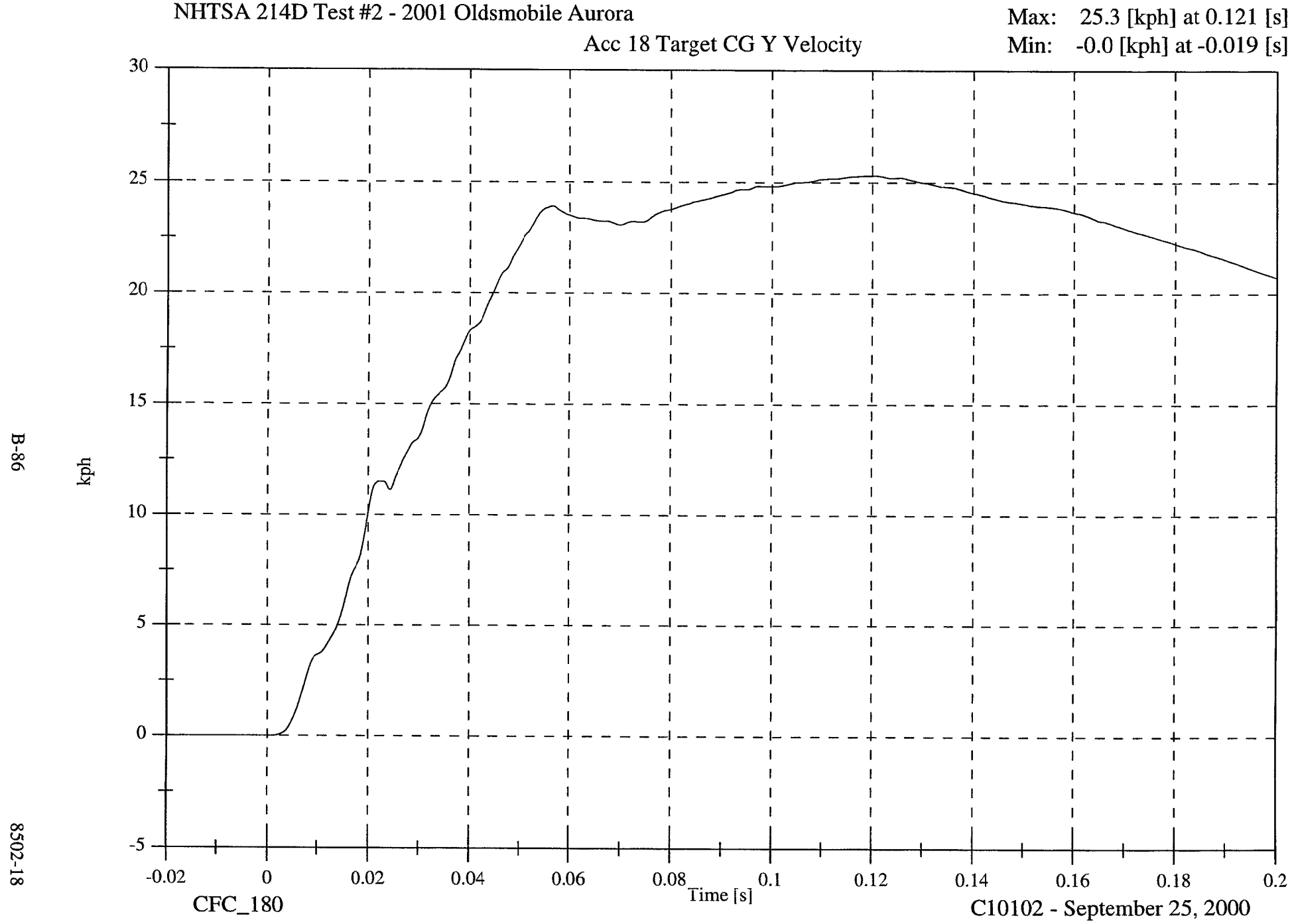
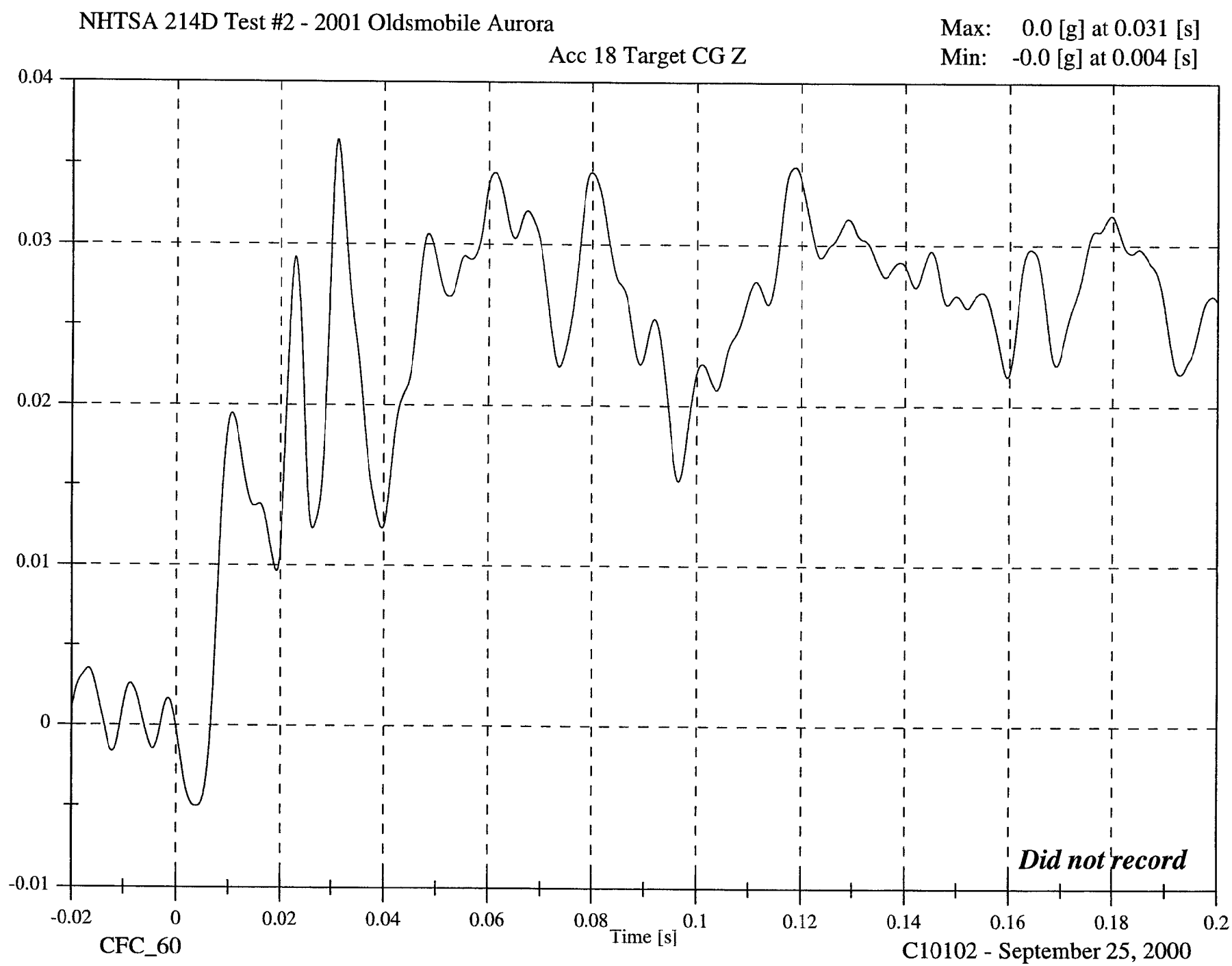
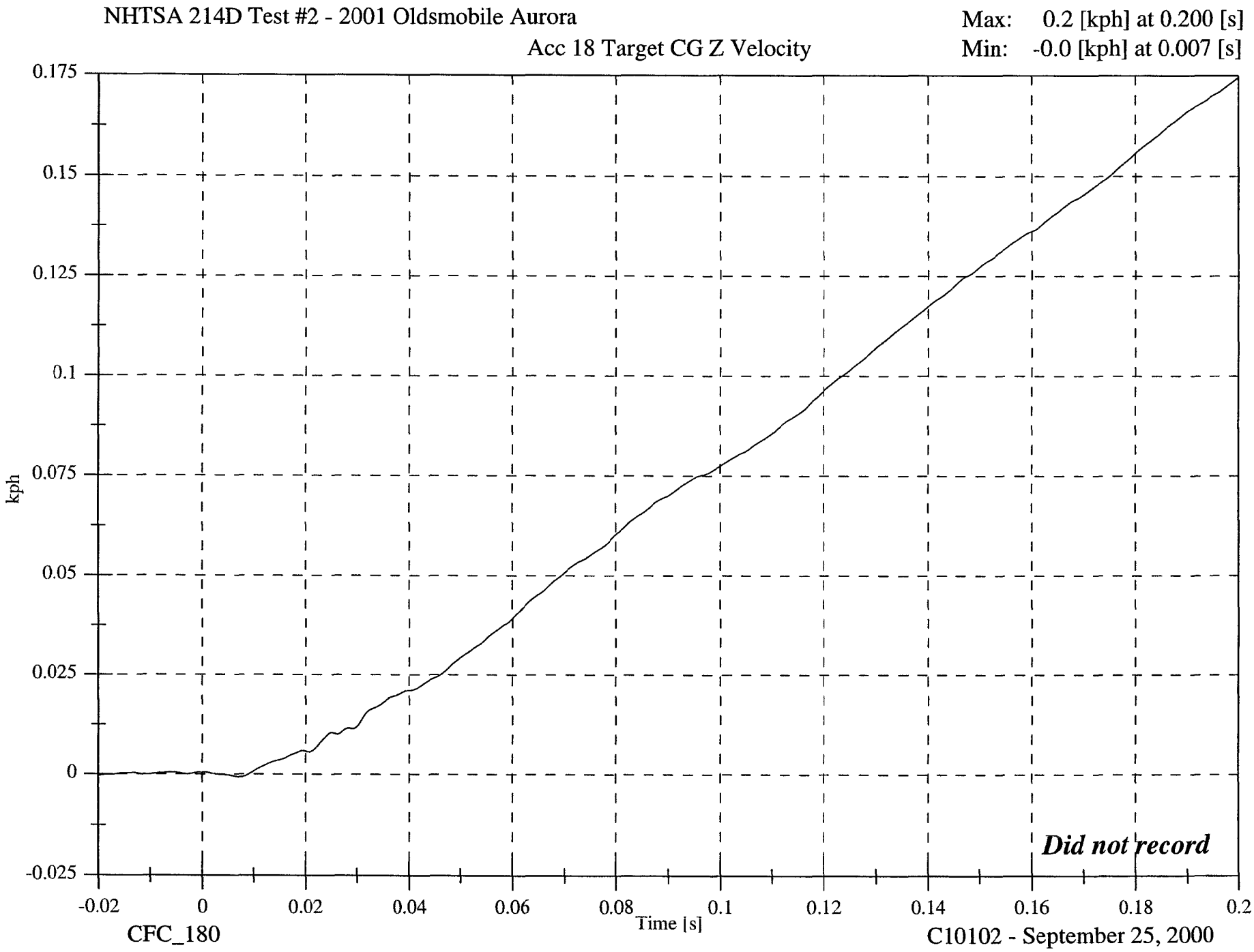

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 18 Target CG Y
Max: 26.4 [g] at 0.019 [s]
Min: -3.2 [g] at 0.059 [s]
30
25
20
15
10
5
0
-5
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 18 Target CG Y Velocity
Max: 25.3 [kph] at 0.121 [s]
Min: -0.0 [kph] at -0.019 [s]
kph
30
25
20
15
10
5
0
-5
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 18 Target CG Z
Max: 0.0 [g] at 0.031 [s]
Min: -0.0 [g] at 0.004 [s]
0.04
0.03
0.02
0.01
0
-0.01
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
Did not record
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 18 Target CG Z Velocity
Max: 0.2 [kph] at 0.200 [s]
Min: -0.0 [kph] at 0.007 [s]
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
-0.025
kph
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
Did not record
CFC_180
C10102 - September 25, 2000

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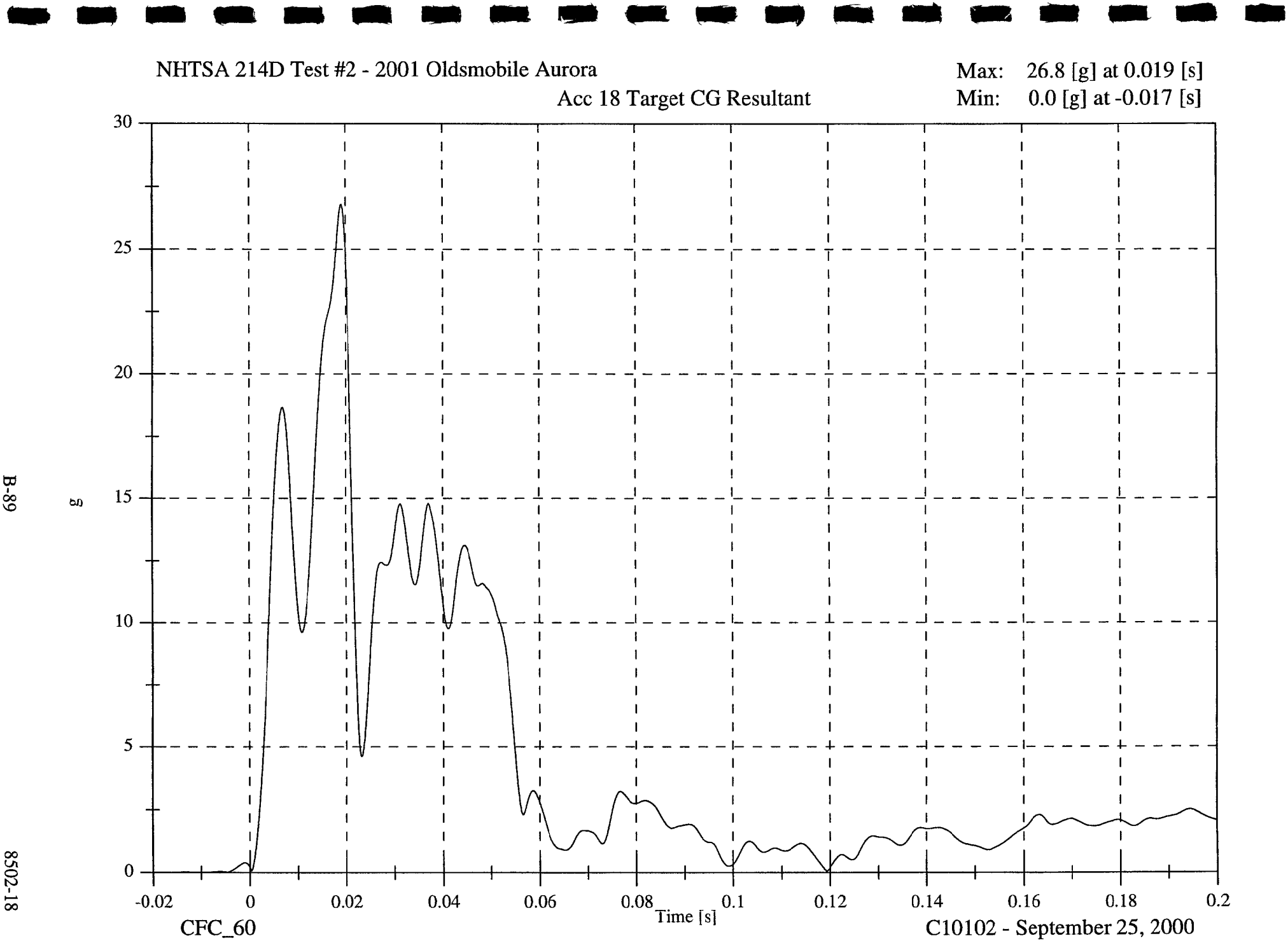
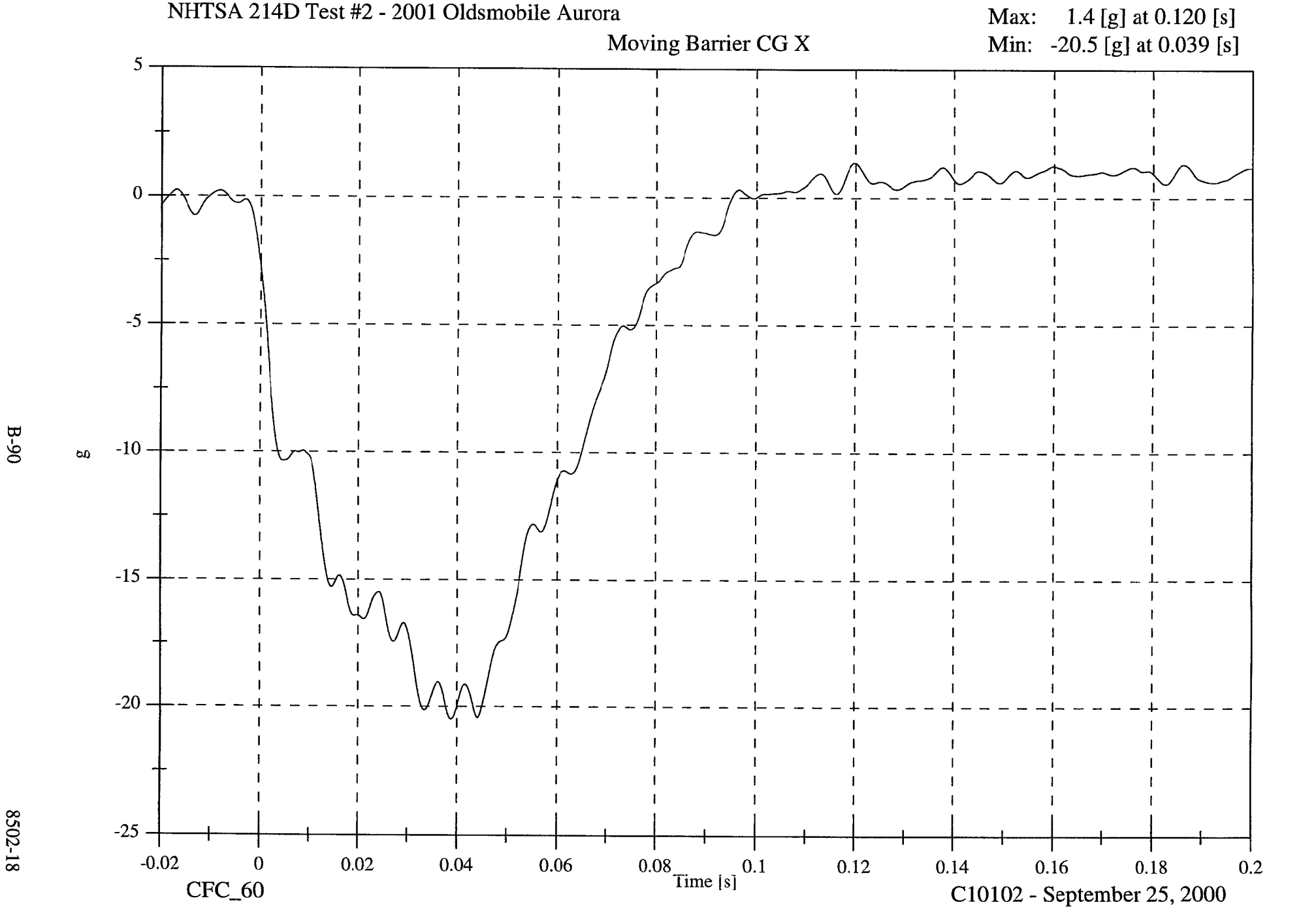
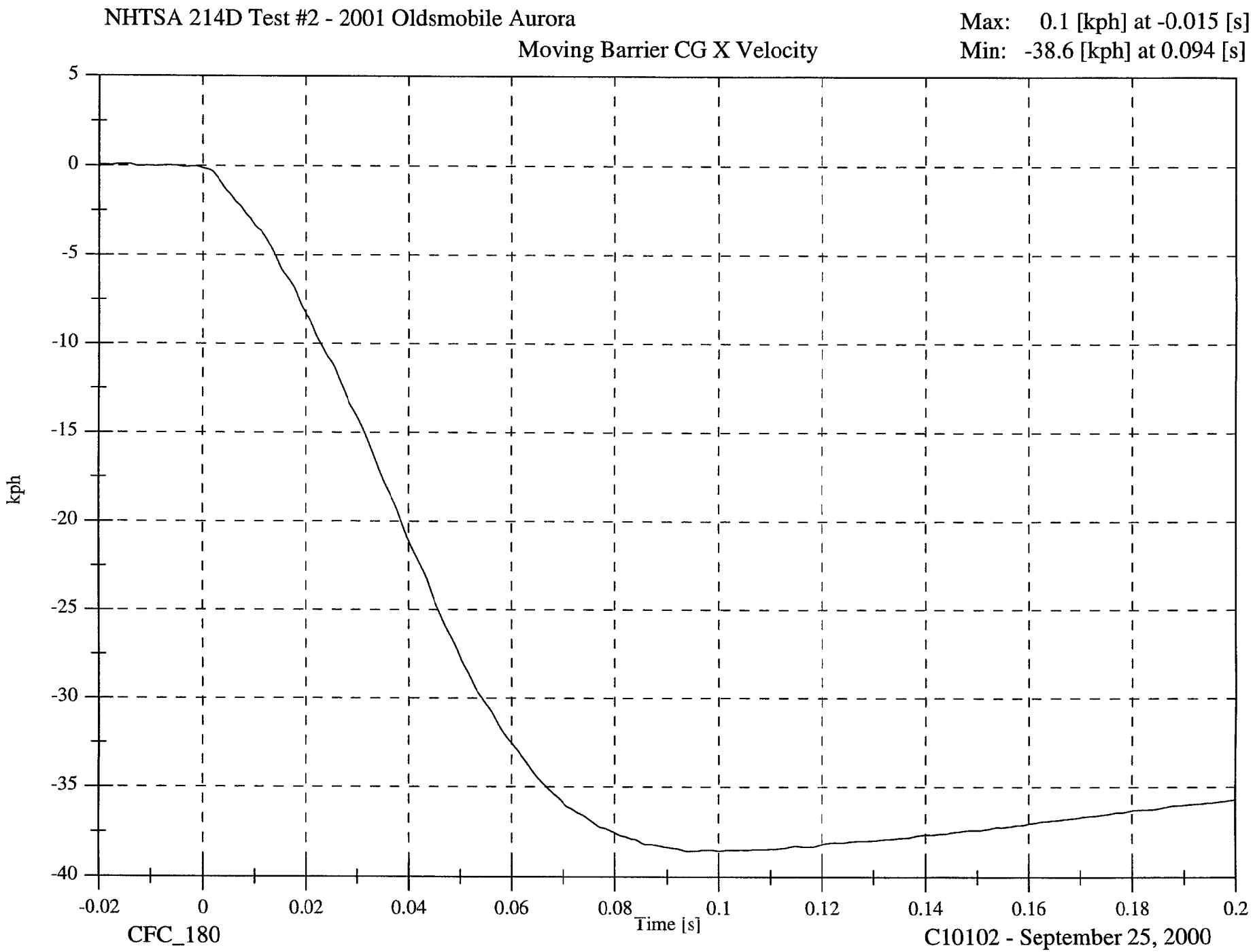
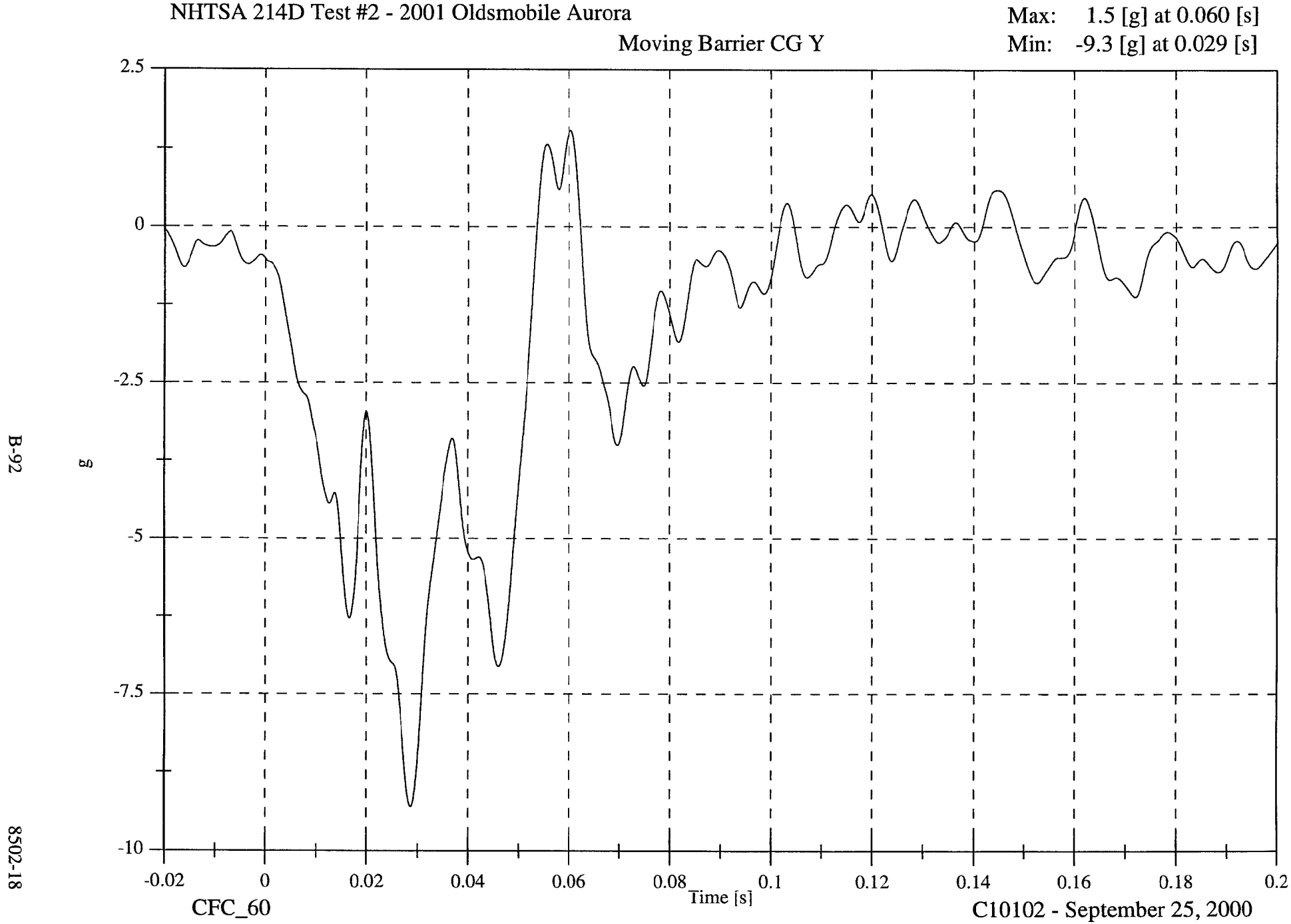

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Acc 18 Target CG Resultant
Max: 26.8 [g] at 0.019 [s]
Min: 0.0 [g] at -0.017 [s]
g
30
25
20
15
10
5
0
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Moving Barrier CG X
Max: 1.4 [g] at 0.120 [s]
Min: -20.5 [g] at 0.039 [s]
5
0
-5
-10
-15
-20
-25
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Moving Barrier CG X Velocity
Max: 0.1 [kph] at -0.015 [s]
Min: -38.6 [kph] at 0.094 [s]
kph
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

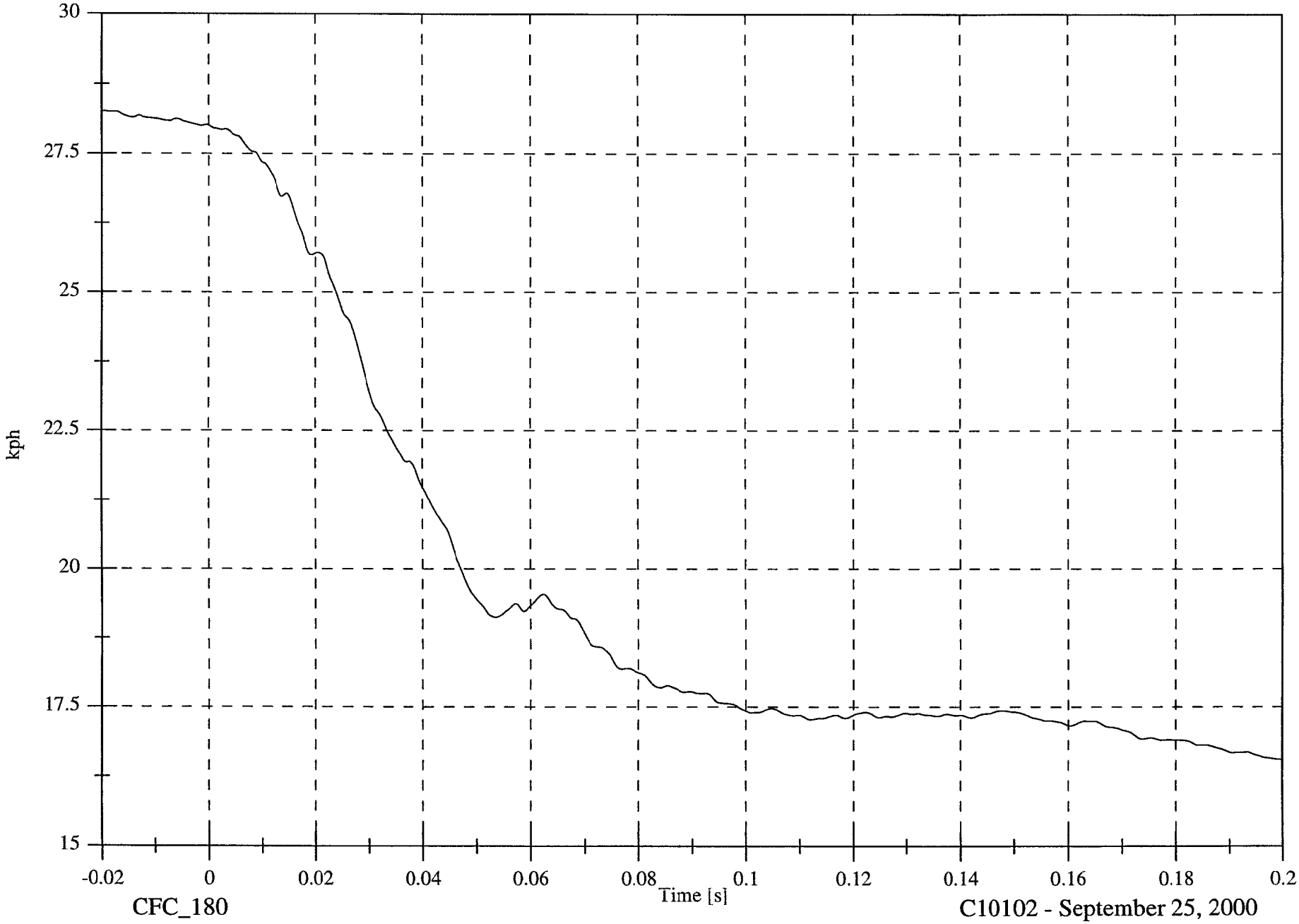

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Moving Barrier CG Y
Max: 1.5 [g] at 0.060 [s]
Min: -9.3 [g] at 0.029 [s]
2.5
0
-2.5
-5
-7.5
-10
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Moving Barrier CG Y Velocity

Max: 28.3 [kph] at -0.020 [s]

Min: 16.5 [kph] at 0.200 [s]



CFC_180

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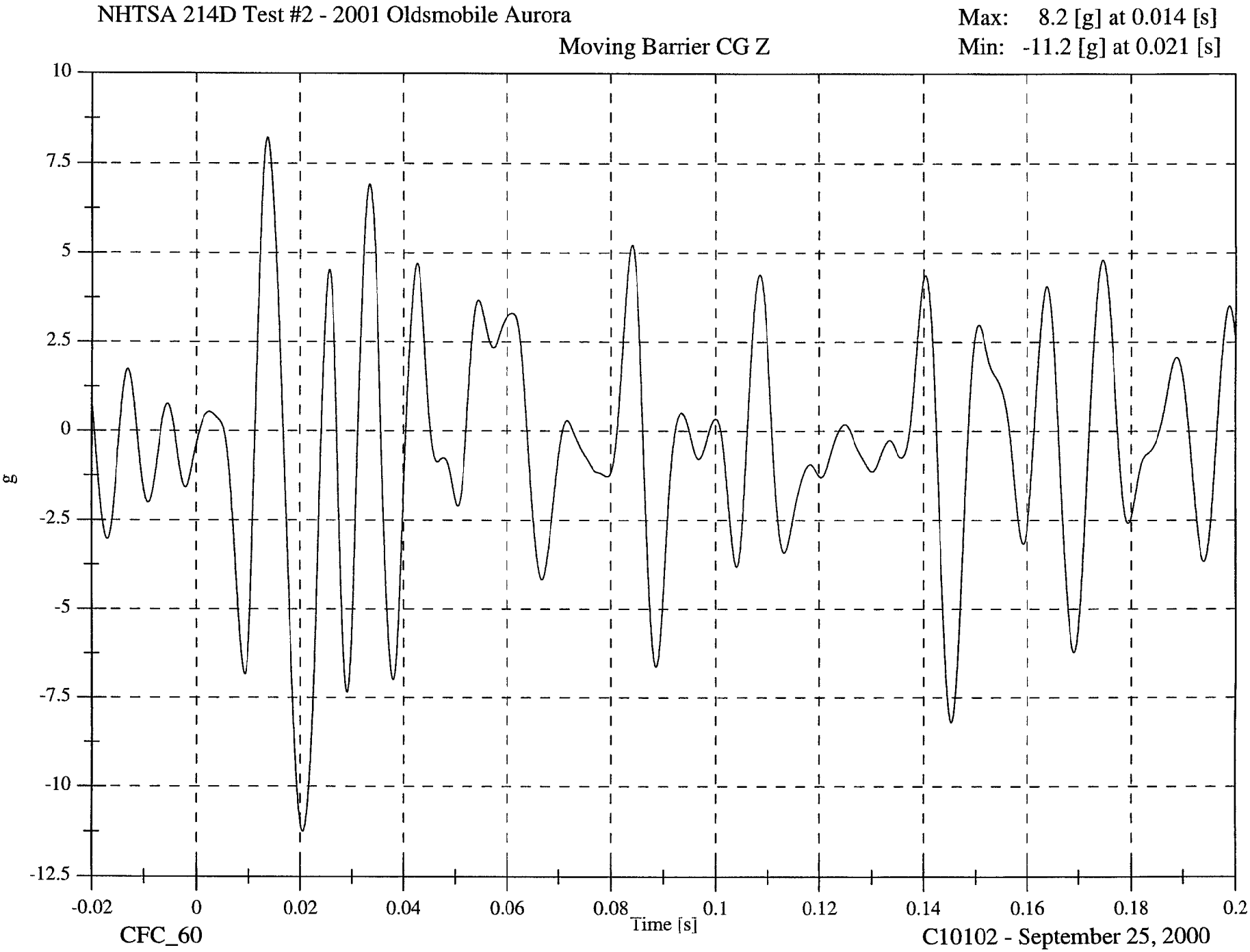
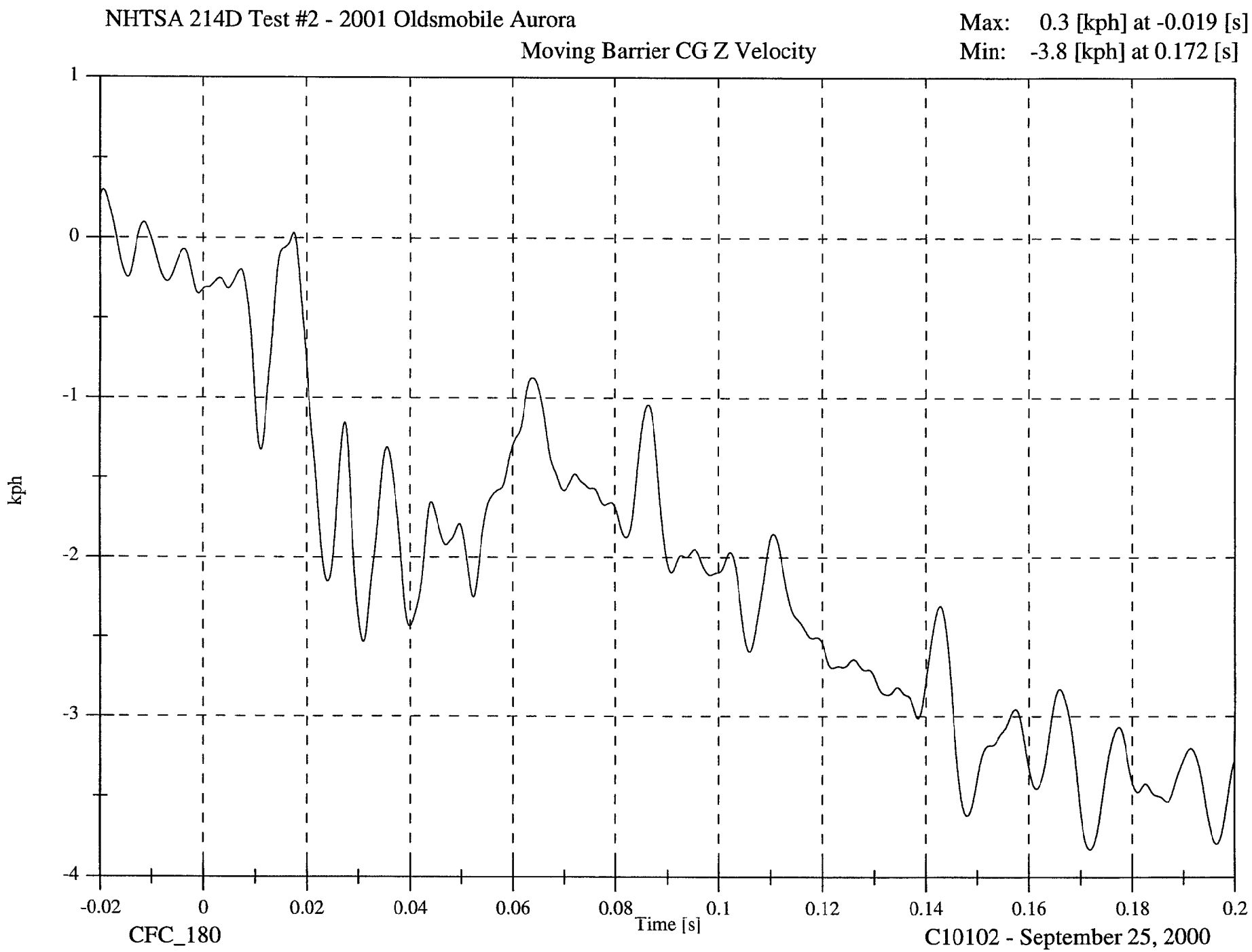
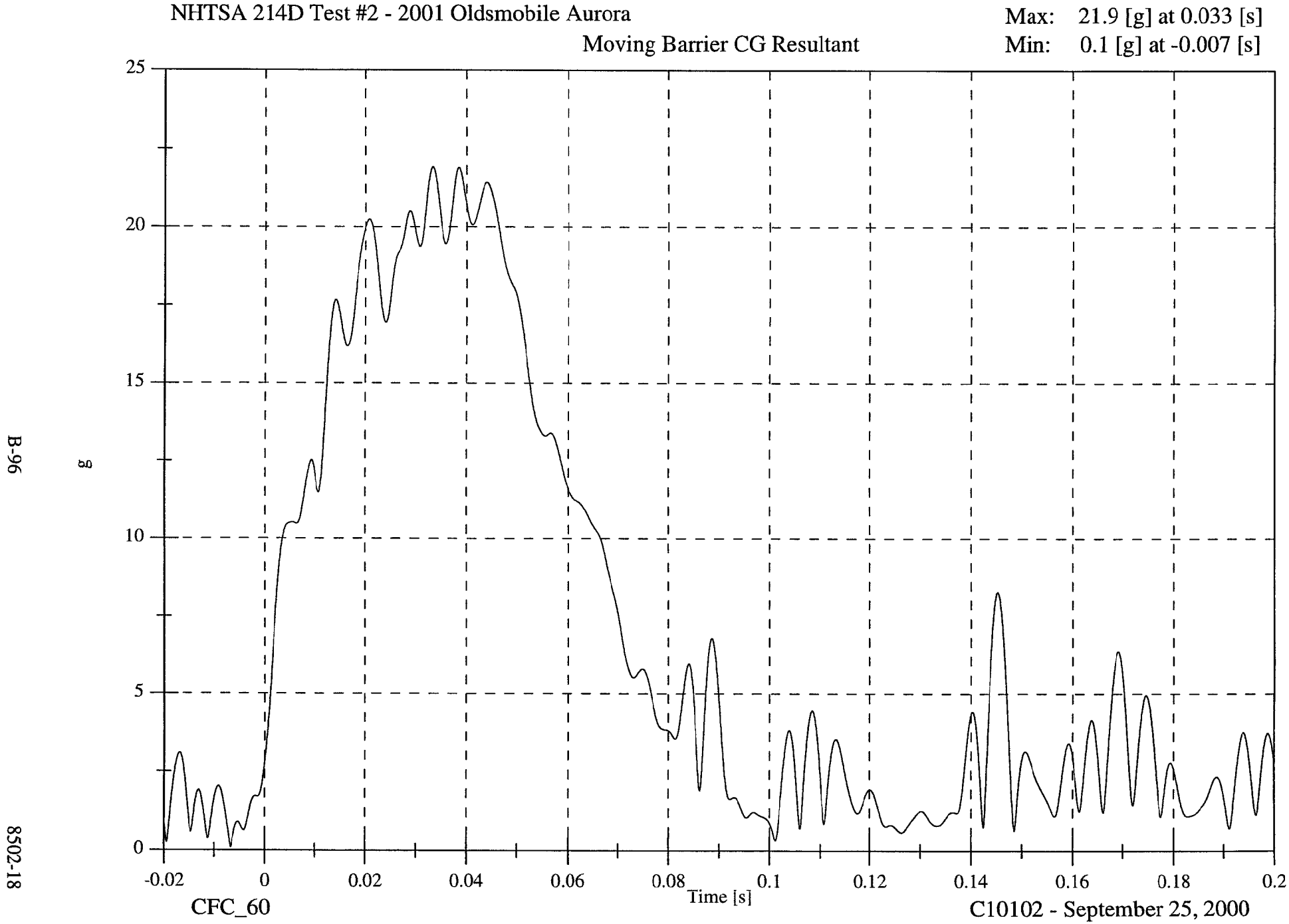
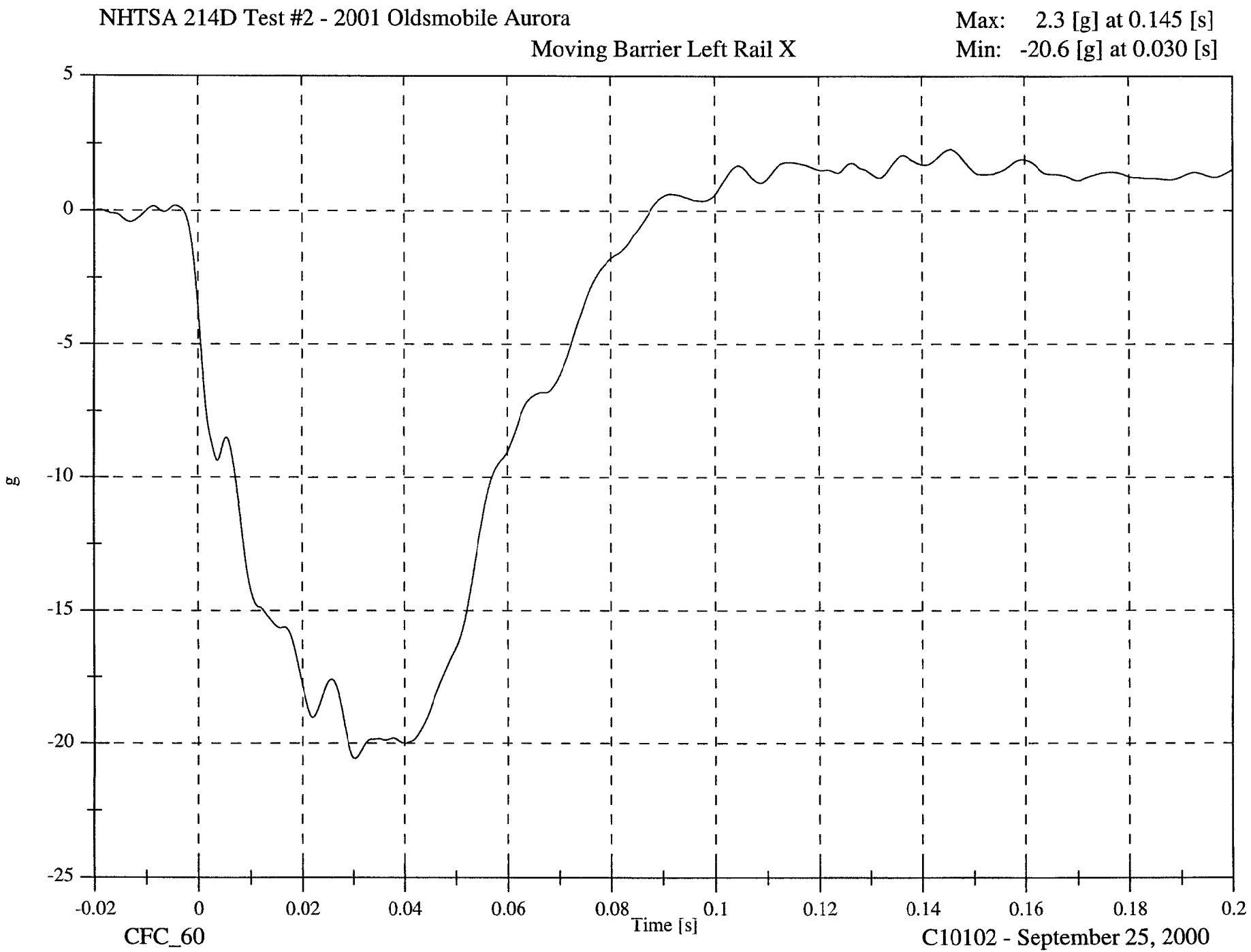

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Moving Barrier CG Z
Max: 8.2 [g] at 0.014 [s]
Min: -11.2 [g] at 0.021 [s]
10
7.5
5
2.5
0
-2.5
-5
-7.5
-10
-12.5
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Moving Barrier CG Z Velocity
Max: 0.3 [kph] at -0.019 [s]
Min: -3.8 [kph] at 0.172 [s]
kph
1
0
-1
-2
-3
-4
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Moving Barrier CG Resultant
Max: 21.9 [g] at 0.033 [s]
Min: 0.1 [g] at -0.007 [s]
25
20
15
10
5
0
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000

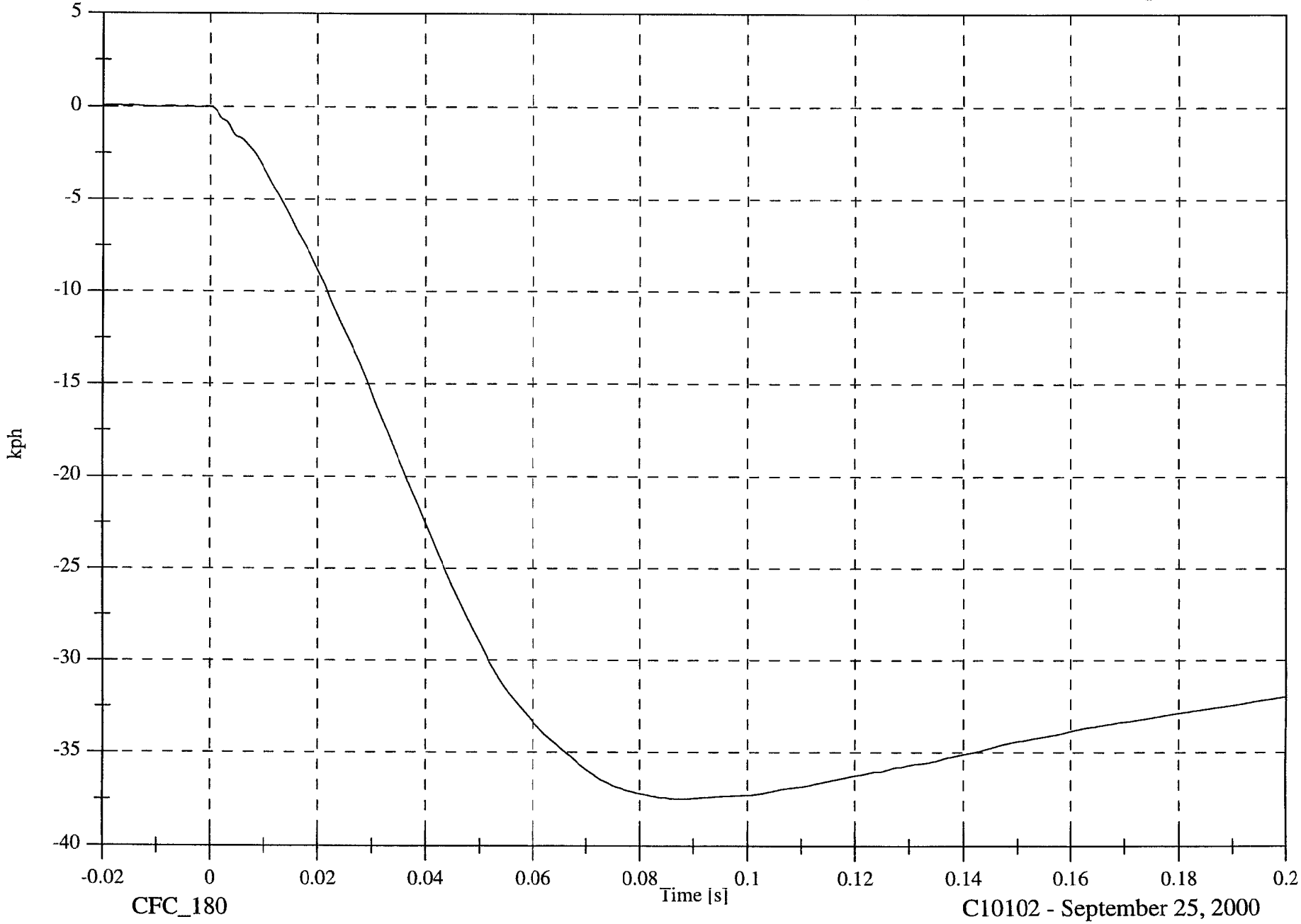

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Moving Barrier Left Rail X
Max: 2.3 [g] at 0.145 [s]
Min: -20.6 [g] at 0.030 [s]
5
0
-5
-10
-15
-20
-25
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_60
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Moving Barrier Left Rail X Velocity

Max: 0.1 [kph] at -0.018 [s]

Min: -37.5 [kph] at 0.087 [s]



CFC_180

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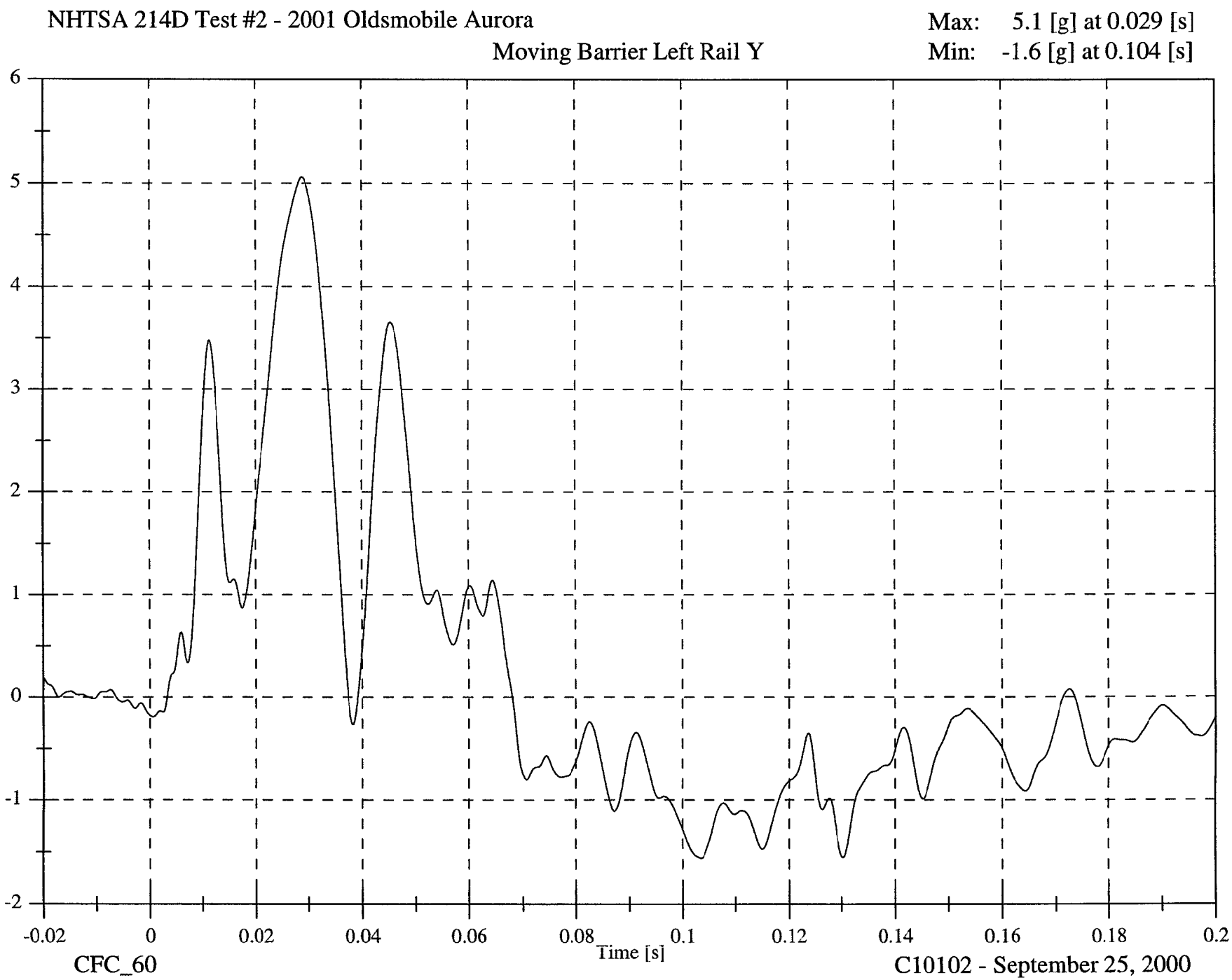
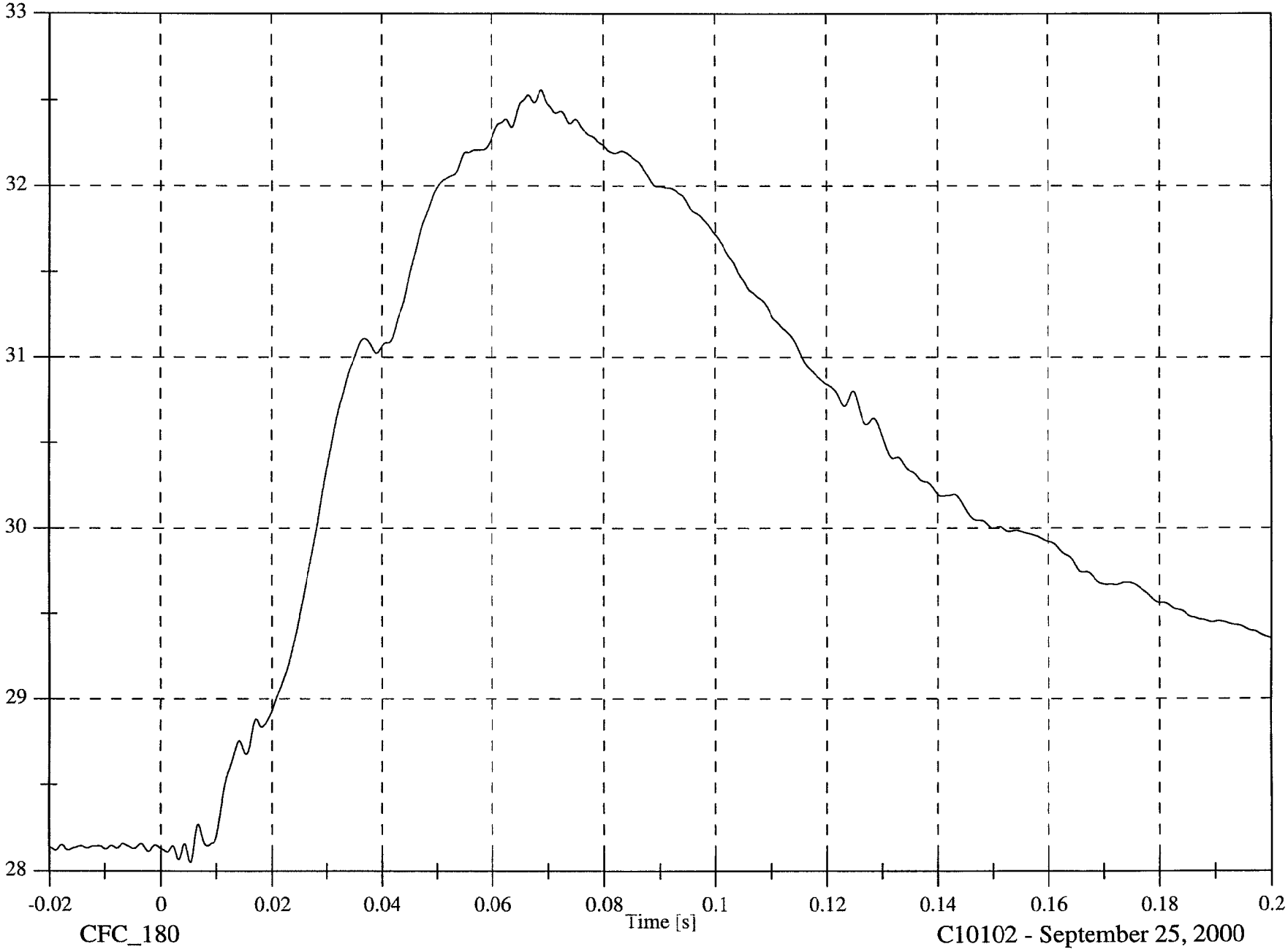

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
Moving Barrier Left Rail Y
Max: 5.1 [g] at 0.029 [s]
Min: -1.6 [g] at 0.104 [s]
g
Time [s]
CFC_60
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

Moving Barrier Left Rail Y Velocity

Max: 32.6 [kph] at 0.069 [s]

Min: 28.1 [kph] at 0.005 [s]



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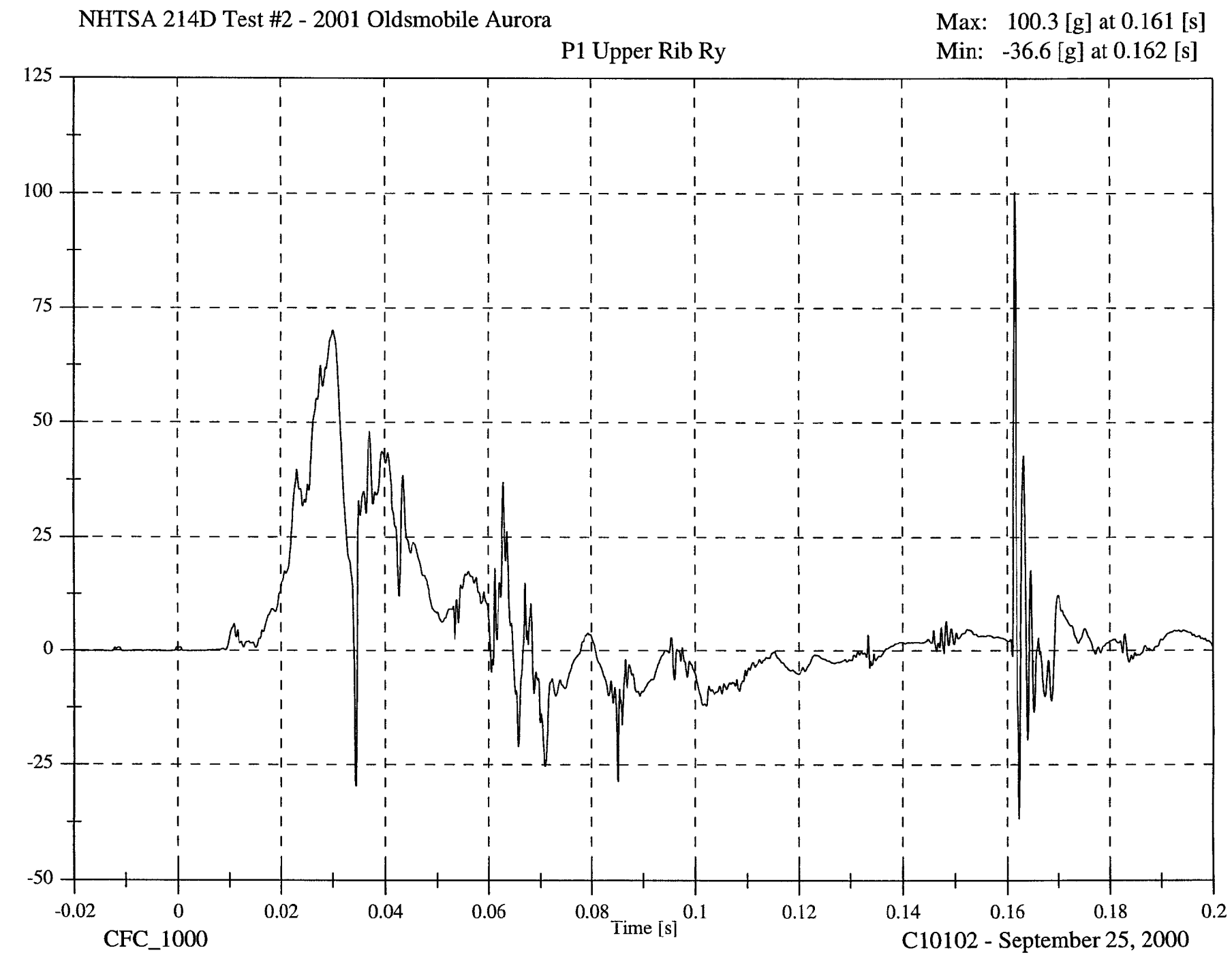
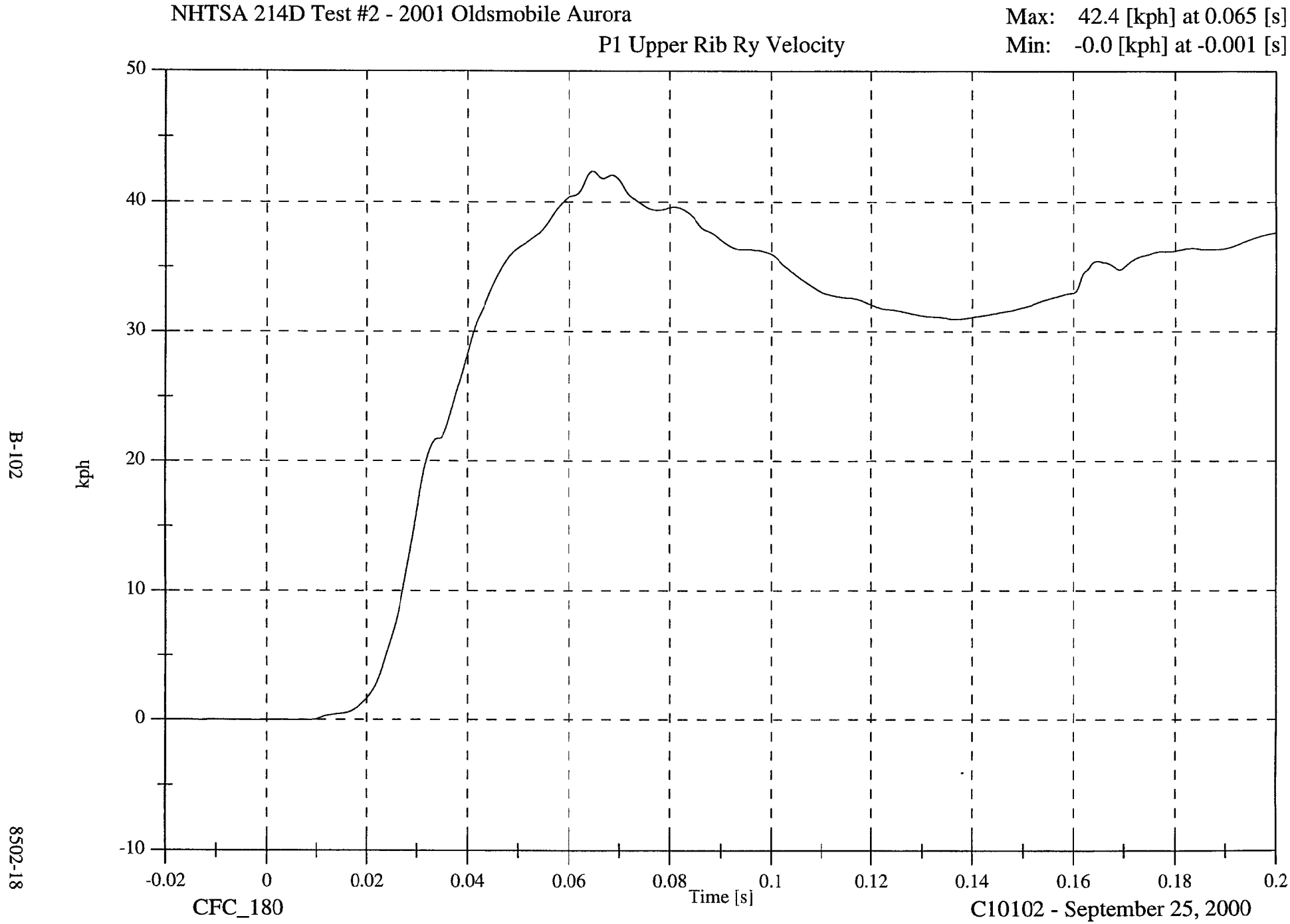

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Upper Rib Ry
Max: 100.3 [g] at 0.161 [s]
Min: -36.6 [g] at 0.162 [s]
125
100
75
50
25
0
-25
-50
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Upper Rib Ry Velocity
Max: 42.4 [kph] at 0.065 [s]
Min: -0.0 [kph] at -0.001 [s]
kph
50
40
30
20
10
0
-10
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

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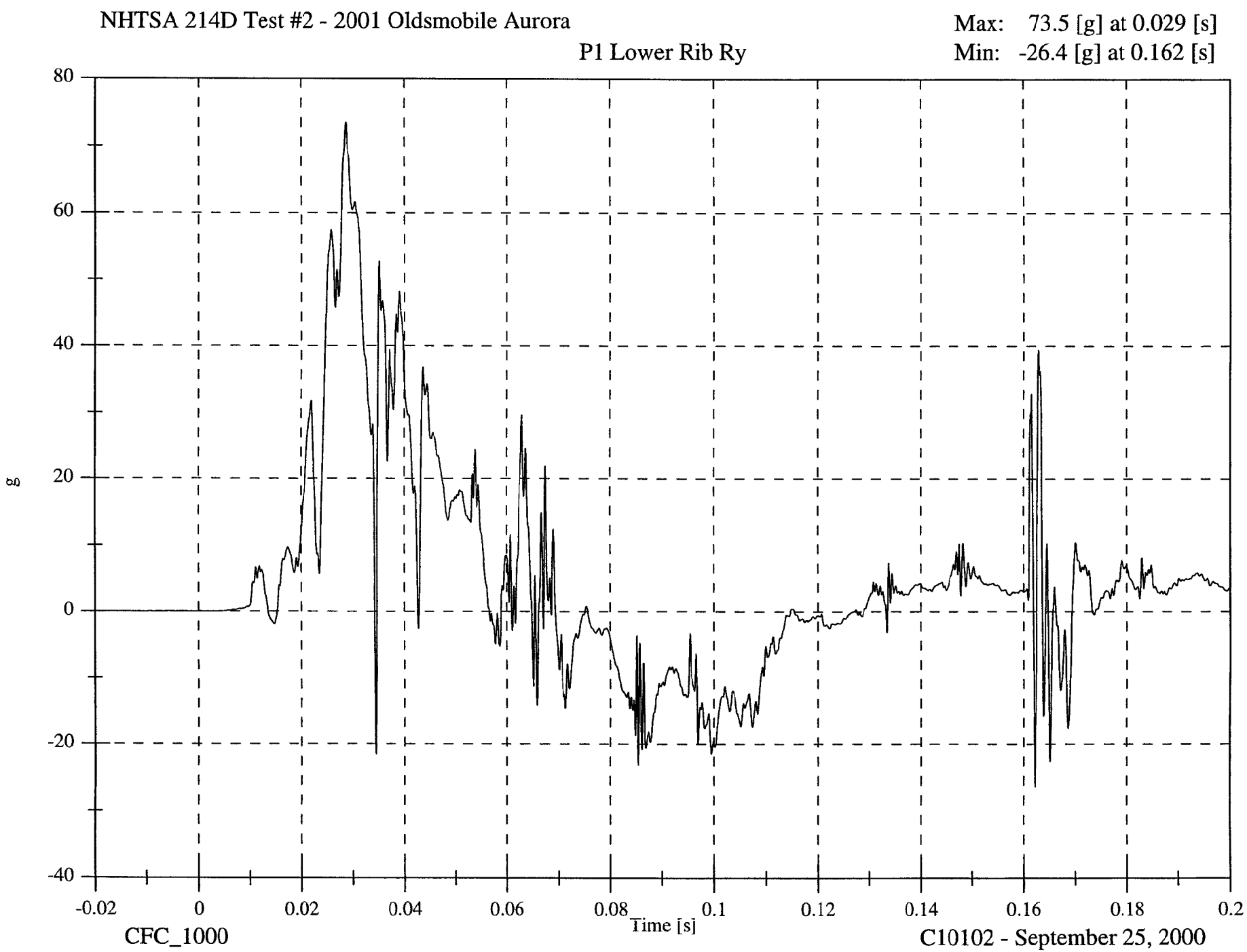
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Lower Rib Ry
Max: 73.5 [g] at 0.029 [s]
Min: -26.4 [g] at 0.162 [s]
80
60
40
20
0
-20
-40
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000

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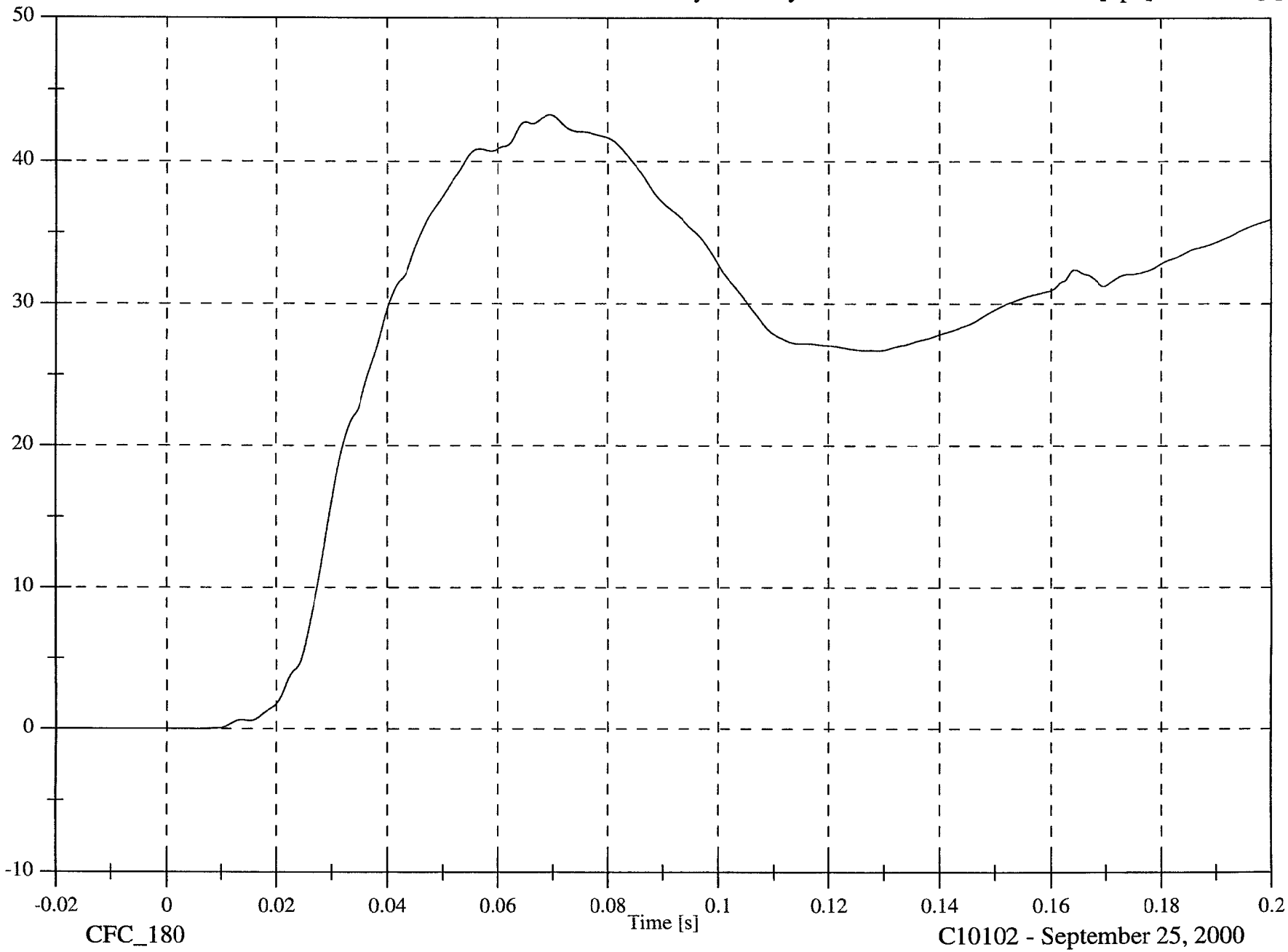
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P1 Lower Rib Ry Velocity

Max: 43.3 [kph] at 0.070 [s]
Min: -0.0 [kph] at -0.017 [s]



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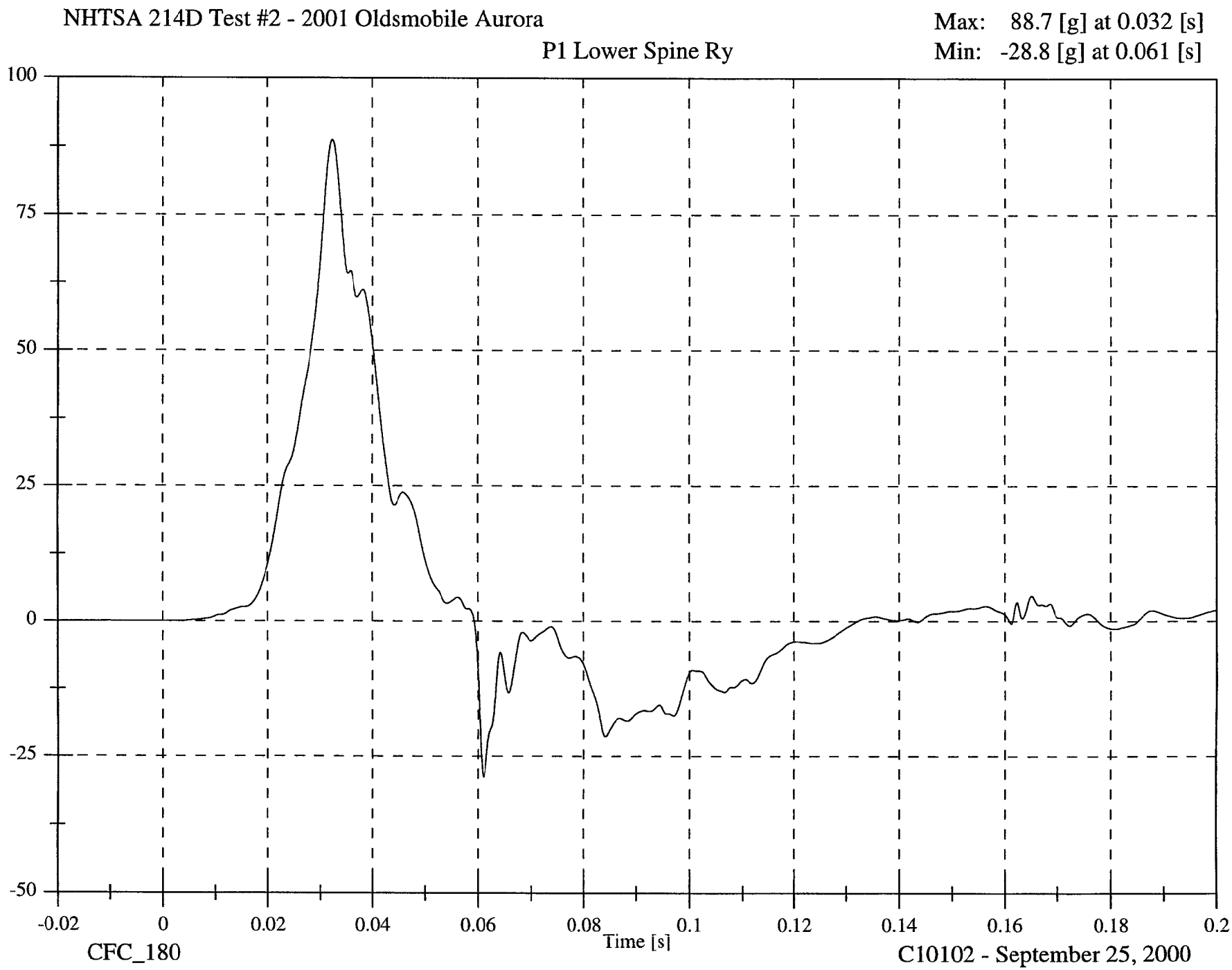
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Lower Spine Ry
Max: 88.7 [g] at 0.032 [s]
Min: -28.8 [g] at 0.061 [s]
100
75
50
25
0
-25
-50
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

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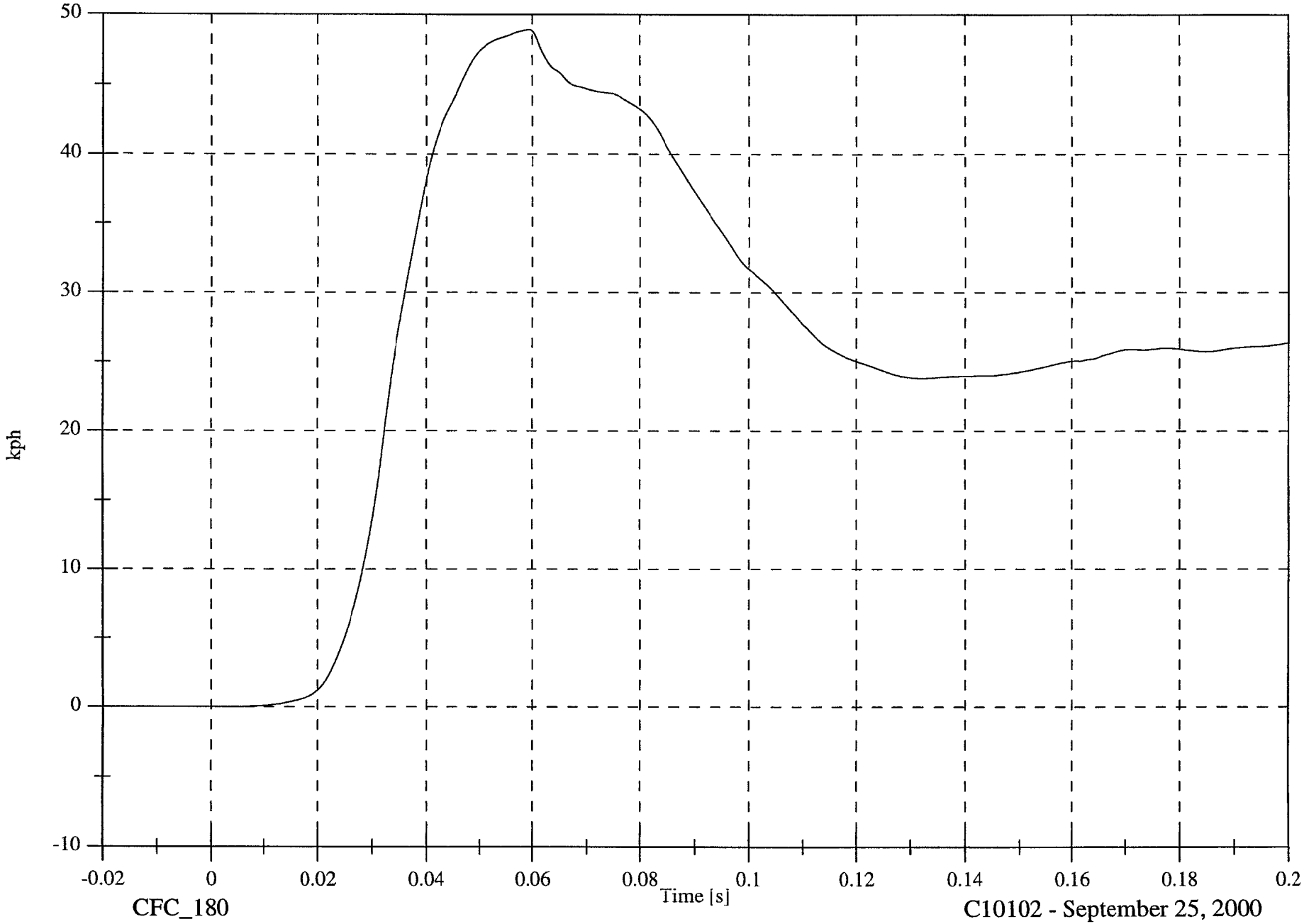
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P1 Lower Spine Ry Velocity

Max: 48.9 [kph] at 0.059 [s]

Min: -0.0 [kph] at -0.020 [s]



CFC_180

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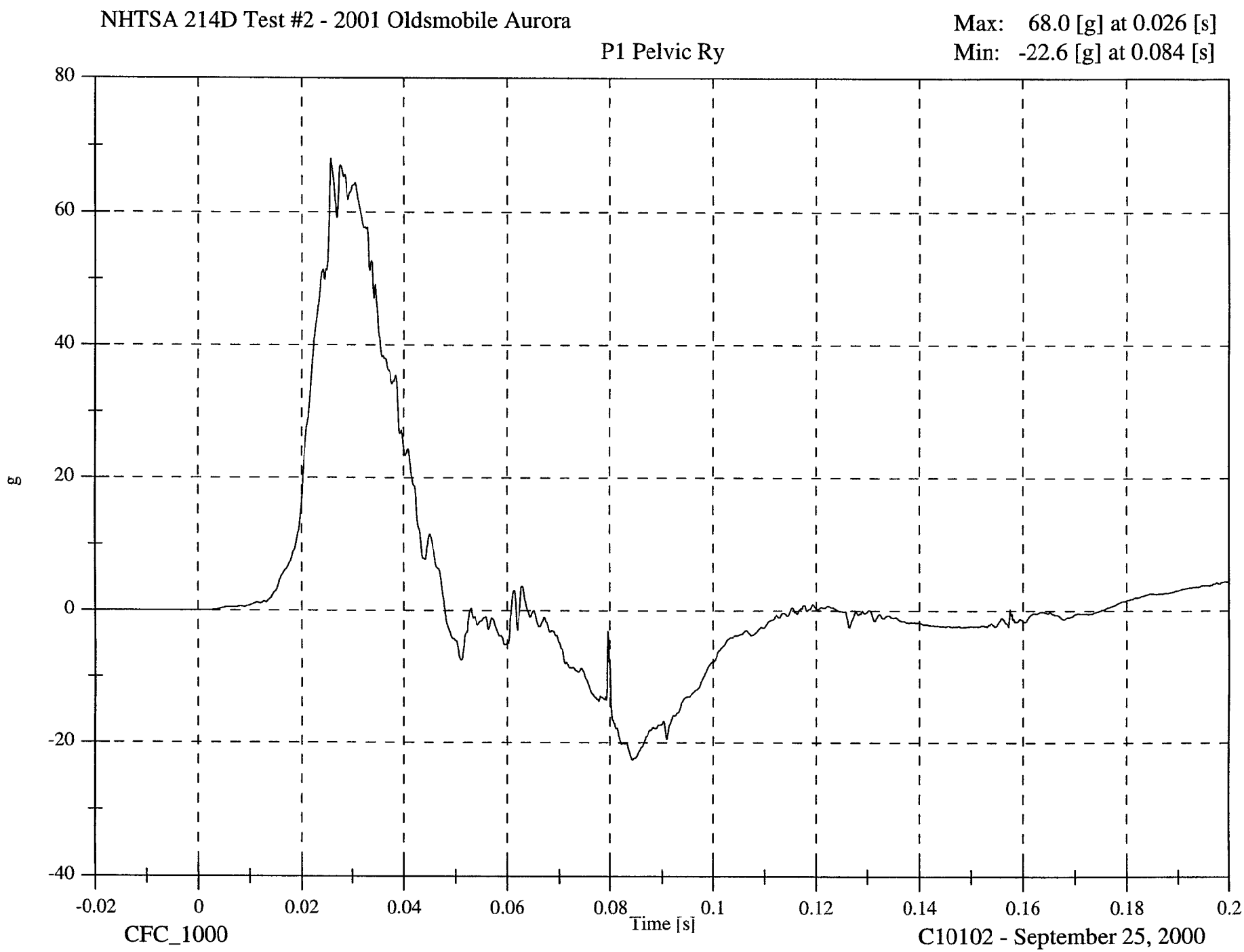
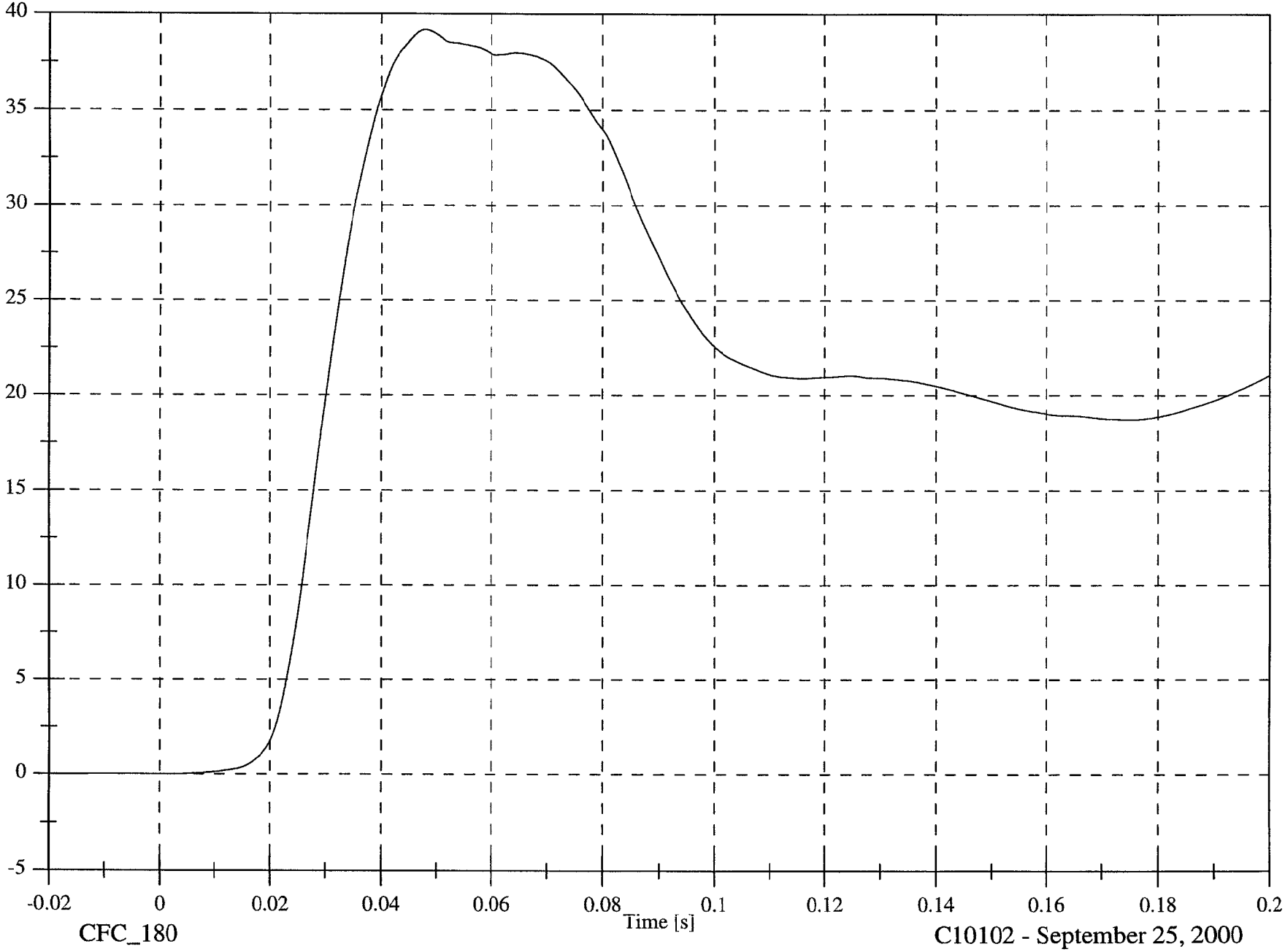

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Pelvic Ry
Max: 68.0 [g] at 0.026 [s]
Min: -22.6 [g] at 0.084 [s]
80
60
40
20
0
-20
-40
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P1 Pelvic Ry Velocity

Max: 39.2 [kph] at 0.048 [s]
Min: -0.0 [kph] at -0.020 [s]



CFC_180

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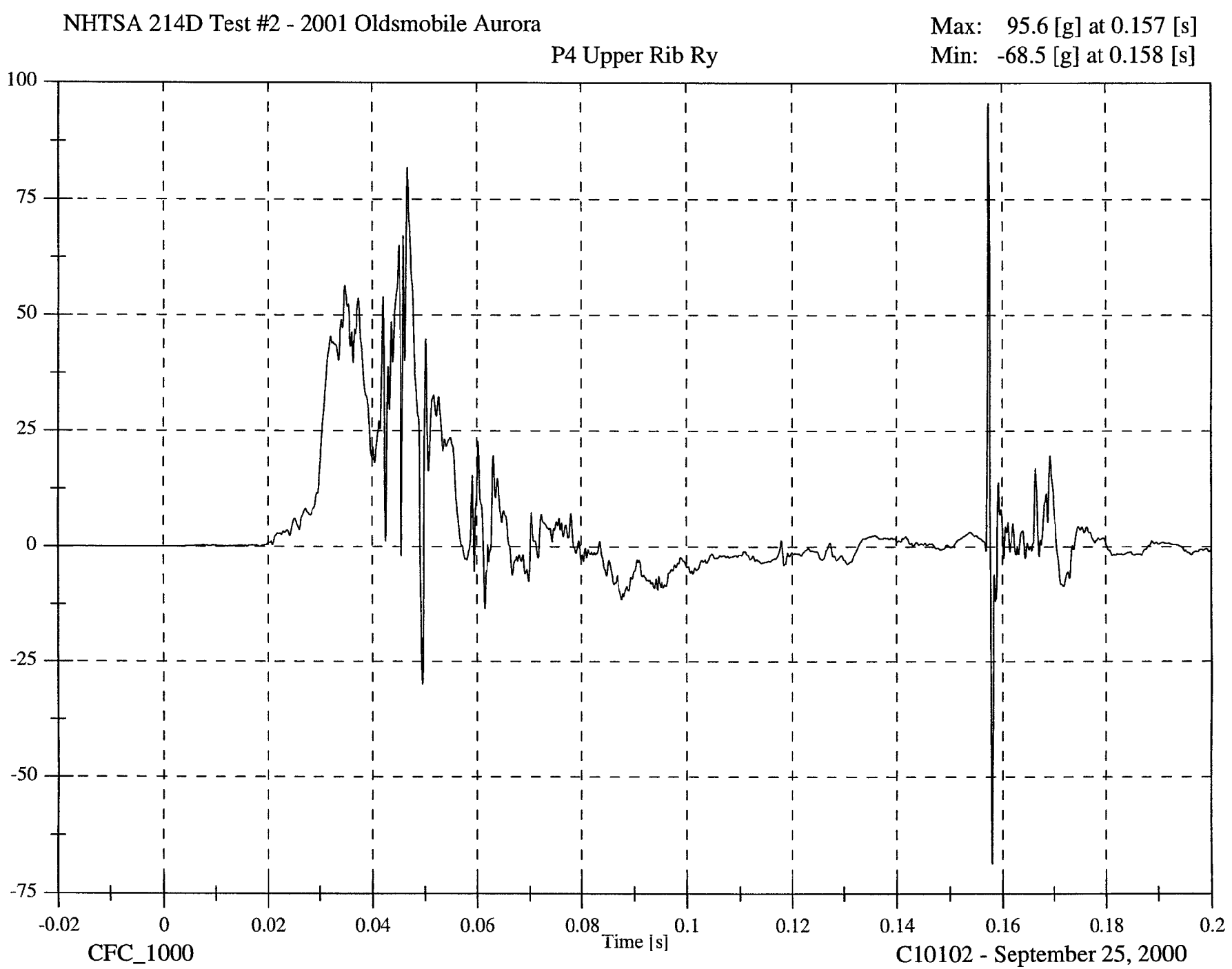
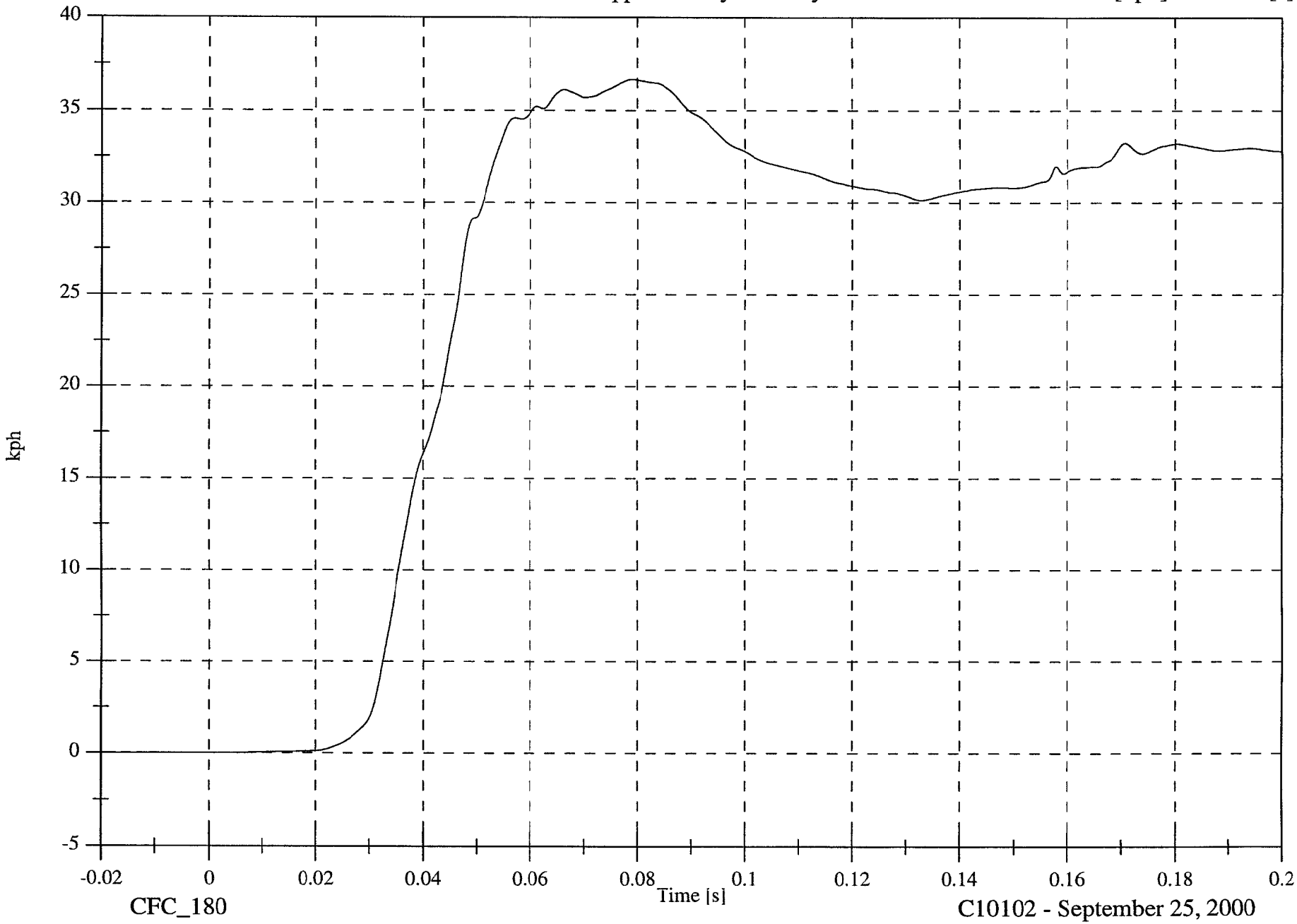

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Upper Rib Ry
Max: 95.6 [g] at 0.157 [s]
Min: -68.5 [g] at 0.158 [s]
100
75
50
25
0
-25
-50
-75
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P4 Upper Rib Ry Velocity

Max: 36.7 [kph] at 0.079 [s]
Min: -0.0 [kph] at -0.020 [s]



CFC_180

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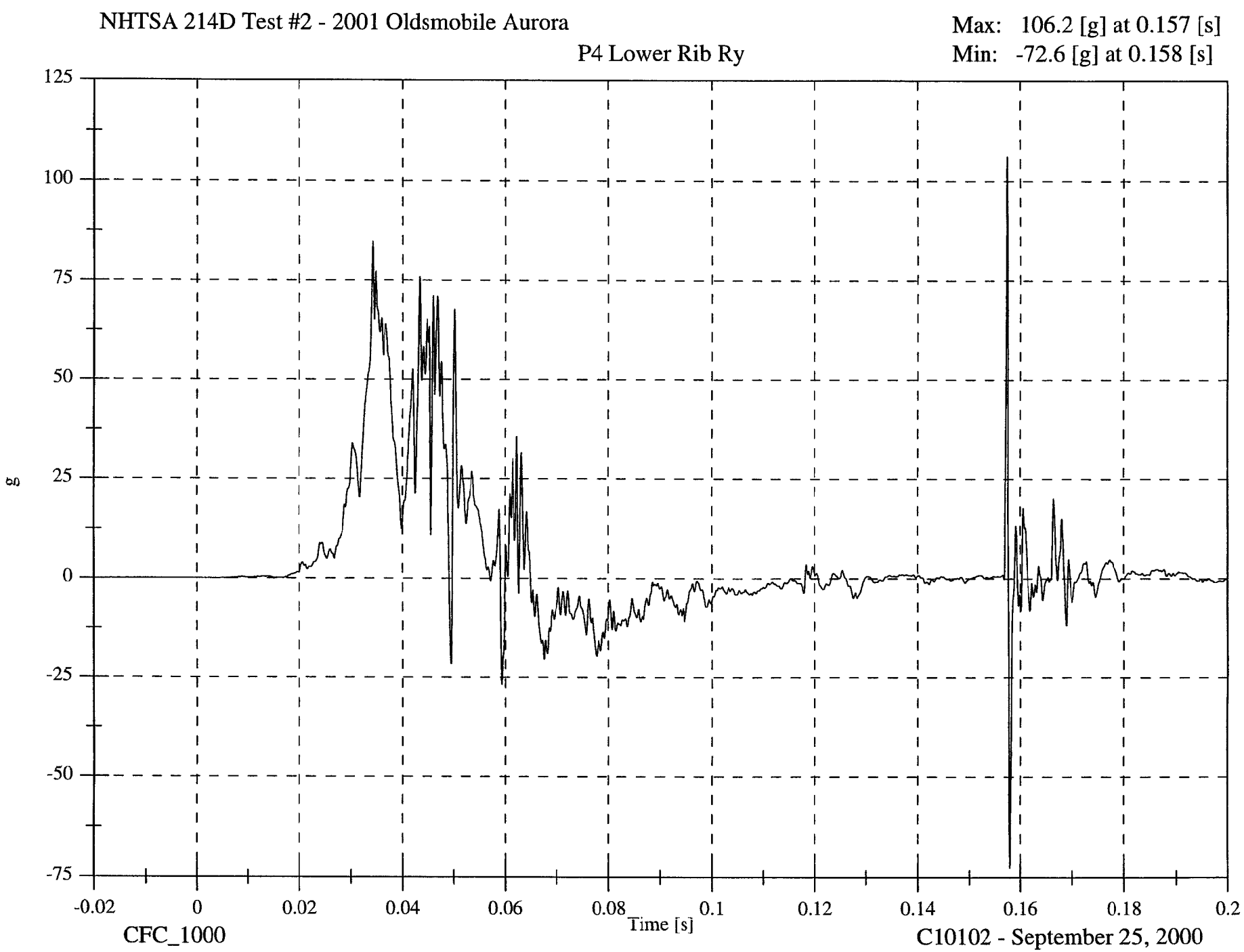
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Lower Rib Ry
Max: 106.2 [g] at 0.157 [s]
Min: -72.6 [g] at 0.158 [s]
125
100
75
50
25
0
-25
-50
-75
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_1000
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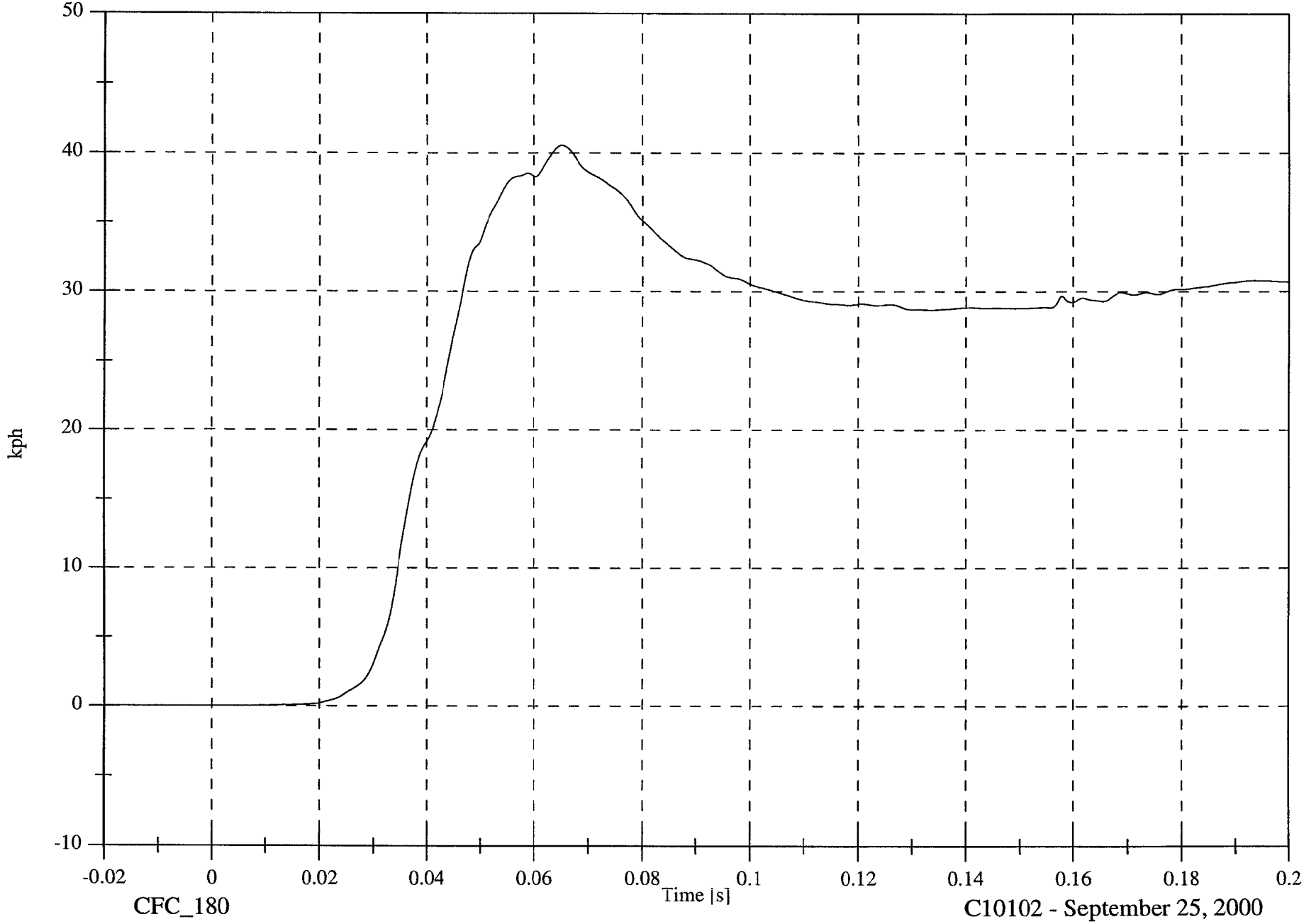
NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P4 Lower Rib Ry Velocity

Max: 40.5 [kph] at 0.065 [s]
Min: -0.0 [kph] at -0.017 [s]



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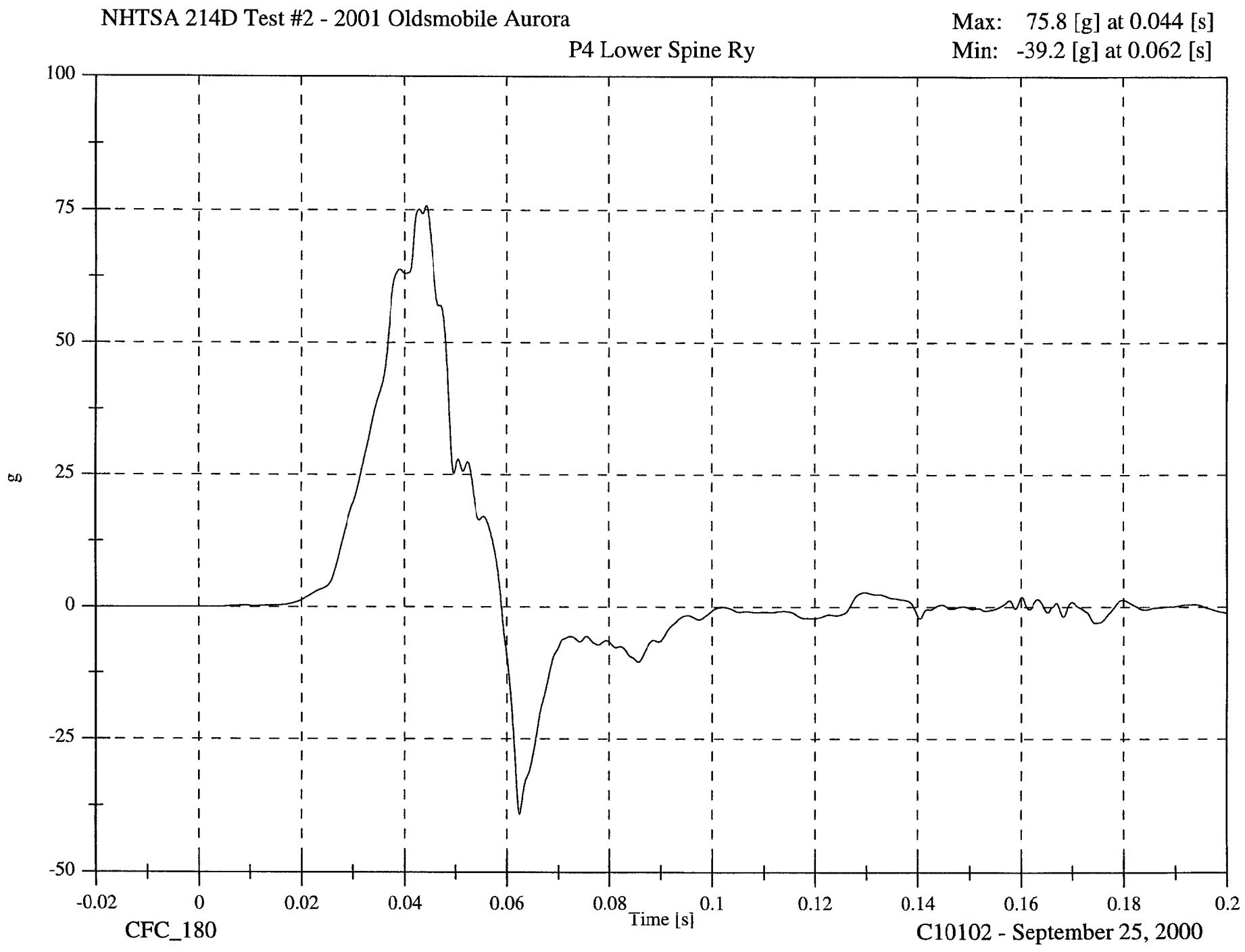
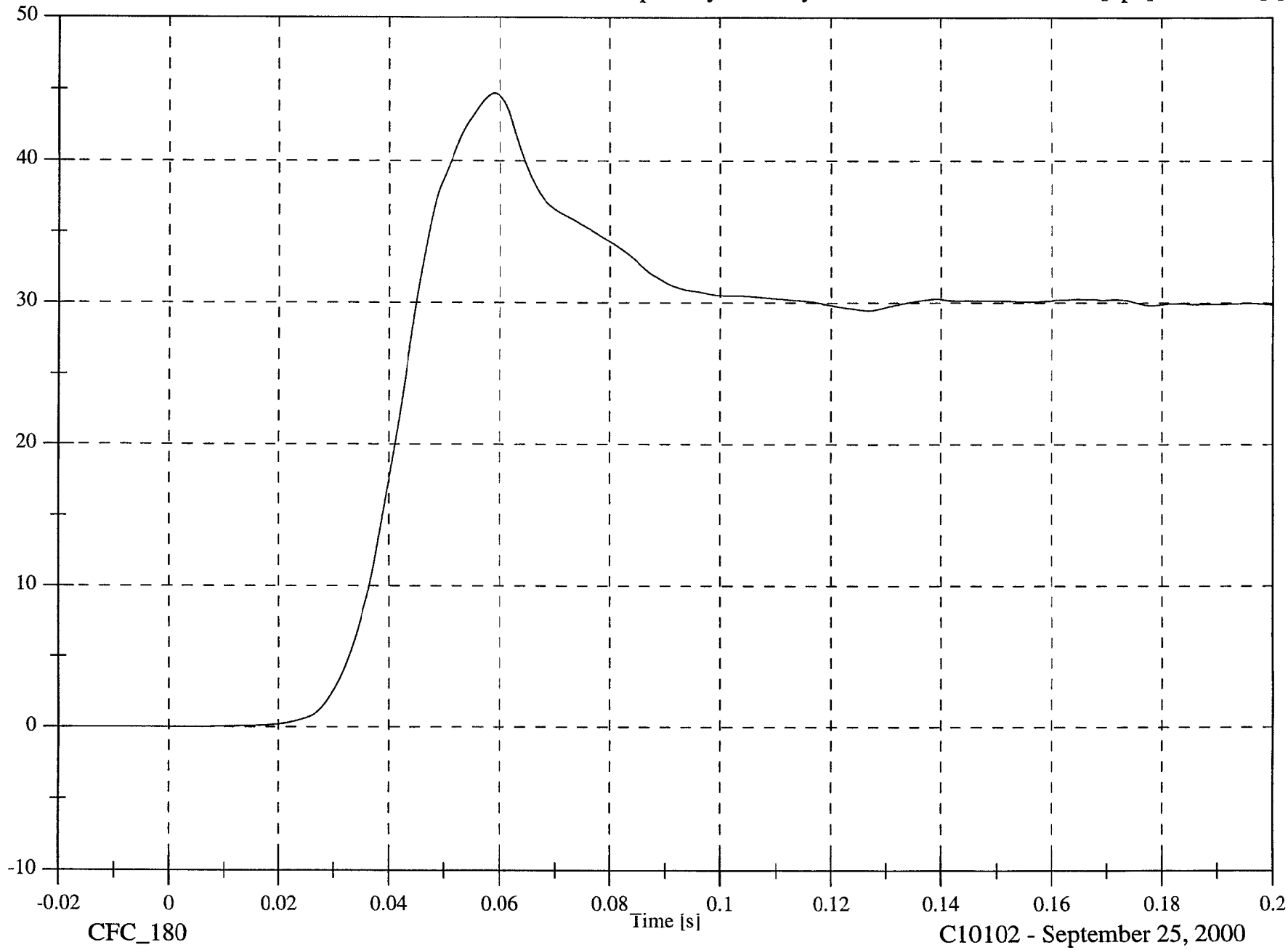

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Lower Spine Ry
Max: 75.8 [g] at 0.044 [s]
Min: -39.2 [g] at 0.062 [s]
100
75
50
25
0
-25
-50
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
CFC_180
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P4 Lower Spine Ry Velocity

Max: 44.7 [kph] at 0.059 [s]

Min: -0.0 [kph] at -0.020 [s]



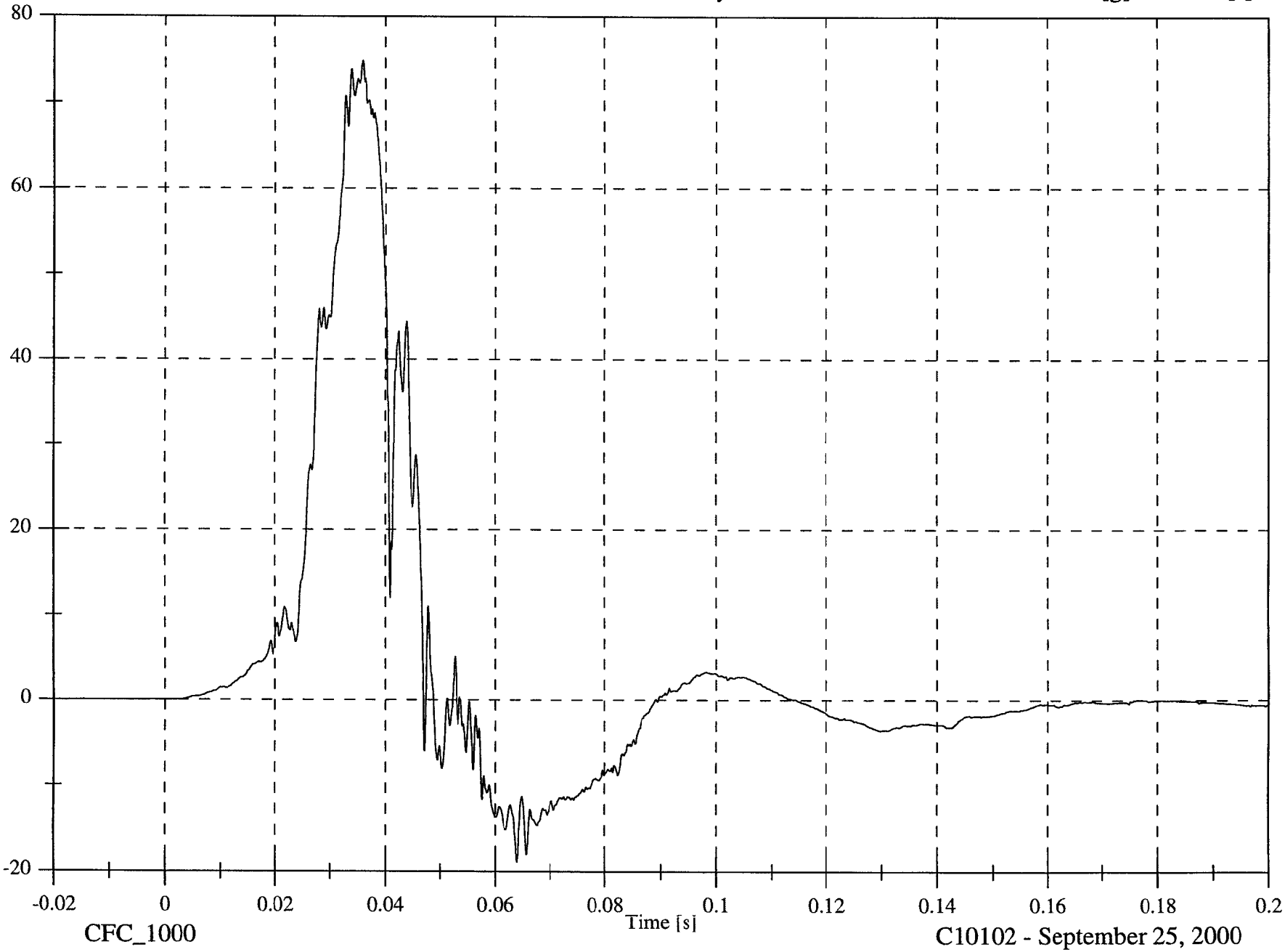
CFC_180

C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P4 Pelvic Ry

Max: 74.8 [g] at 0.036 [s]
Min: -18.9 [g] at 0.064 [s]



CFC_1000

C10102 - September 25, 2000

B-115

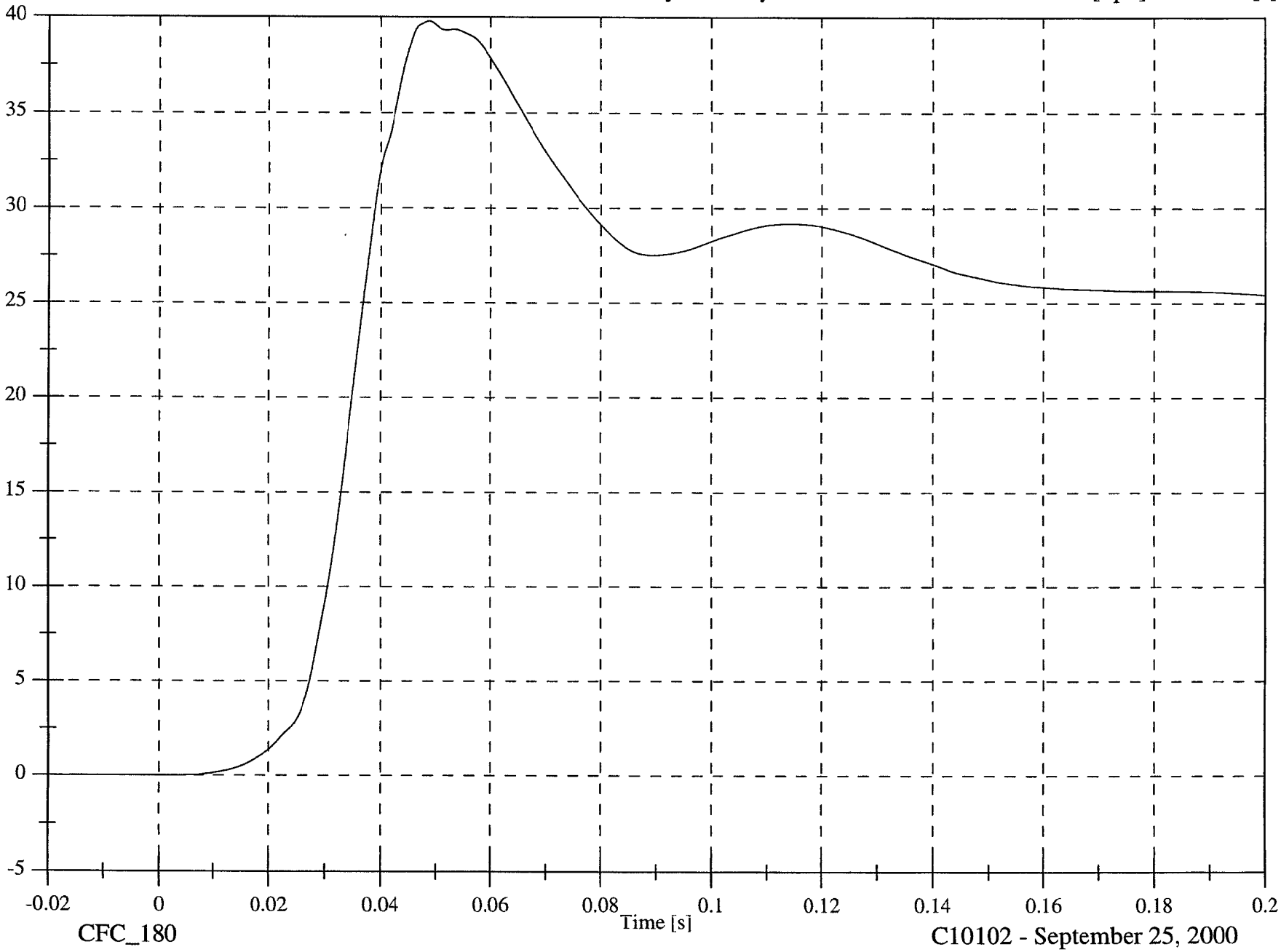
8502-18

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P4 Pelvic Ry Velocity

Max: 39.8 [kph] at 0.049 [s]

Min: -0.0 [kph] at -0.020 [s]

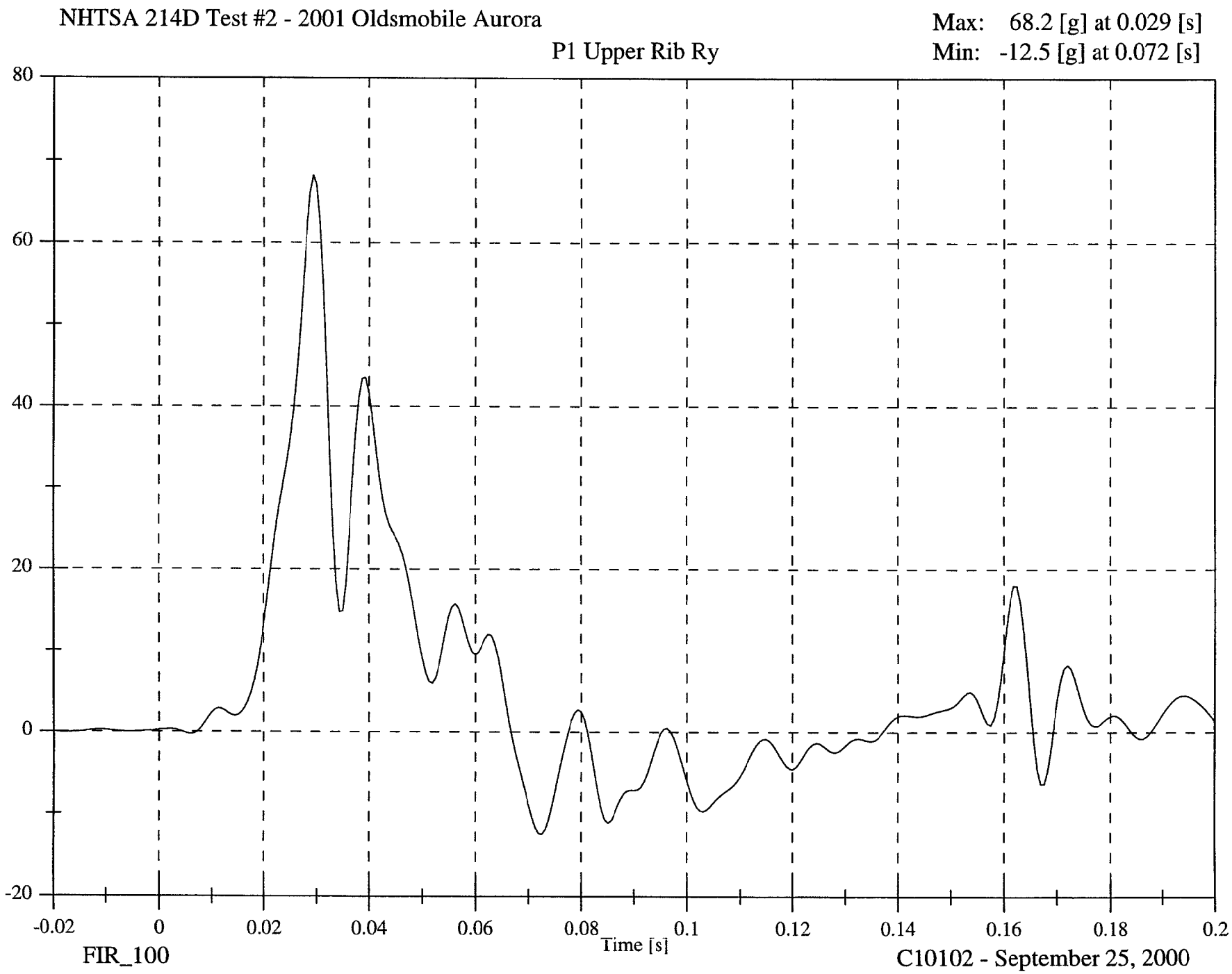


CFC_180

C10102 - September 25, 2000

B-116

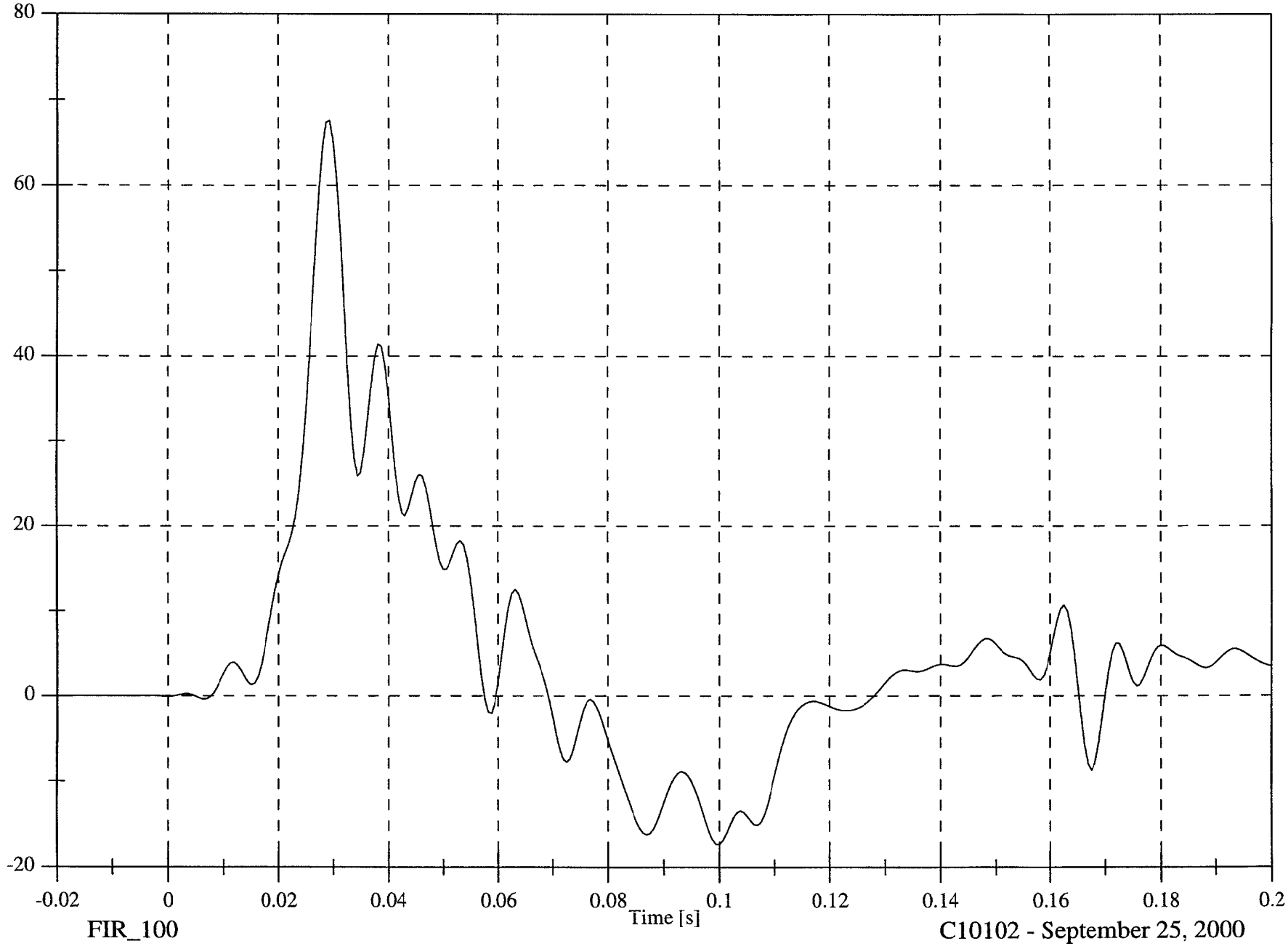
8502-18


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Upper Rib Ry
Max: 68.2 [g] at 0.029 [s]
Min: -12.5 [g] at 0.072 [s]
80
60
40
20
0
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora

P1 Lower Rib Ry

Max: 67.6 [g] at 0.029 [s]
Min: -17.3 [g] at 0.100 [s]

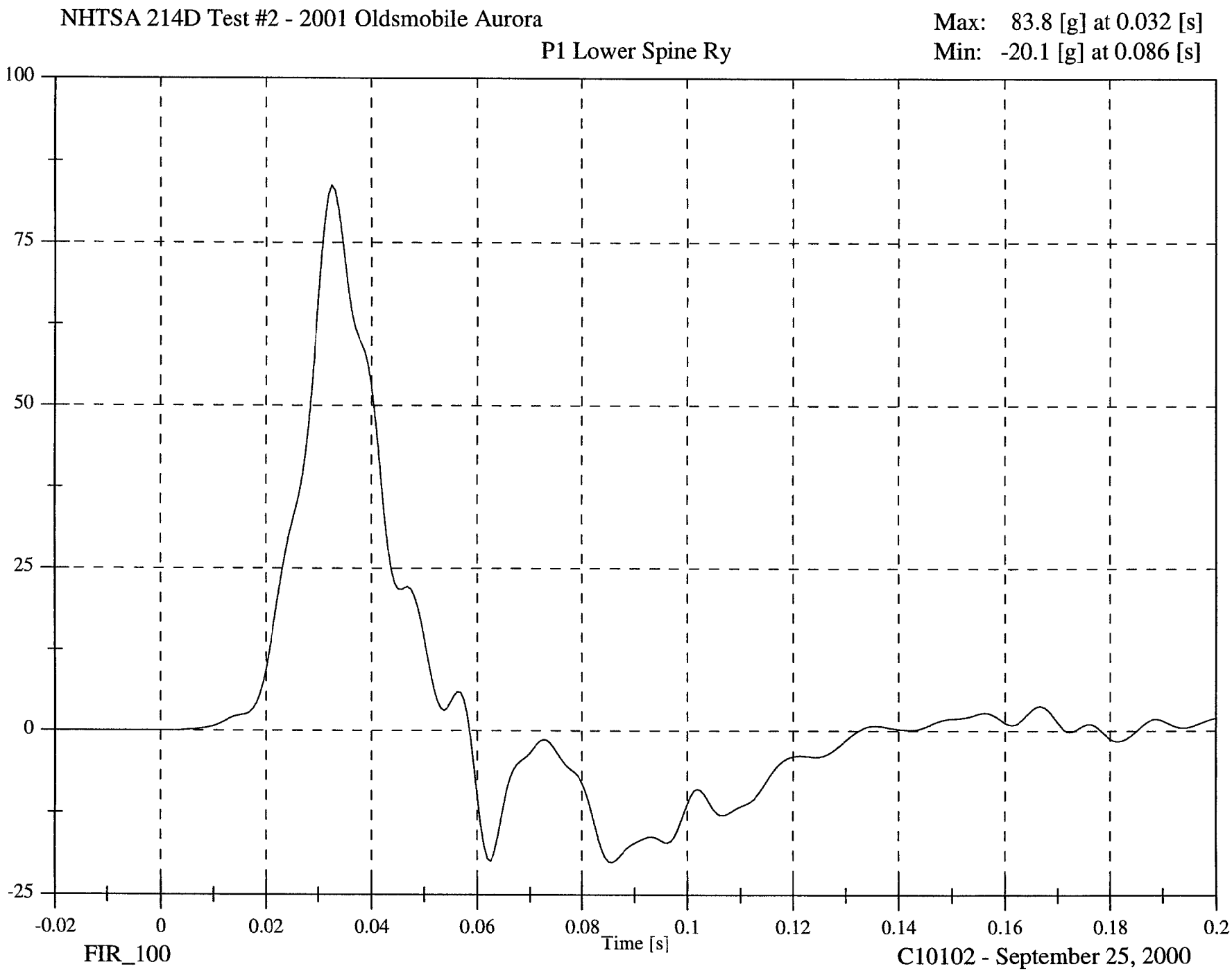


FIR_100

C10102 - September 25, 2000

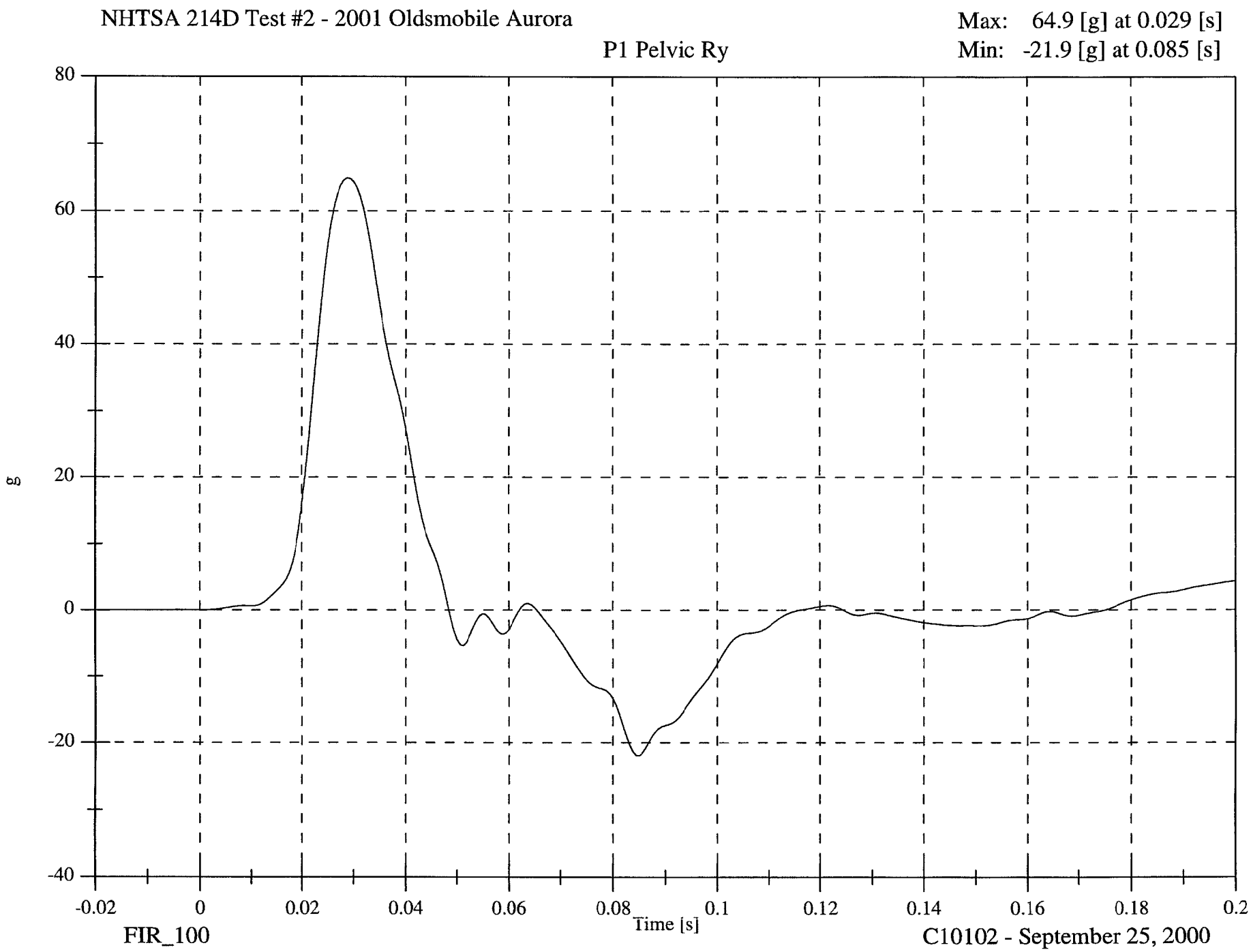
B-118

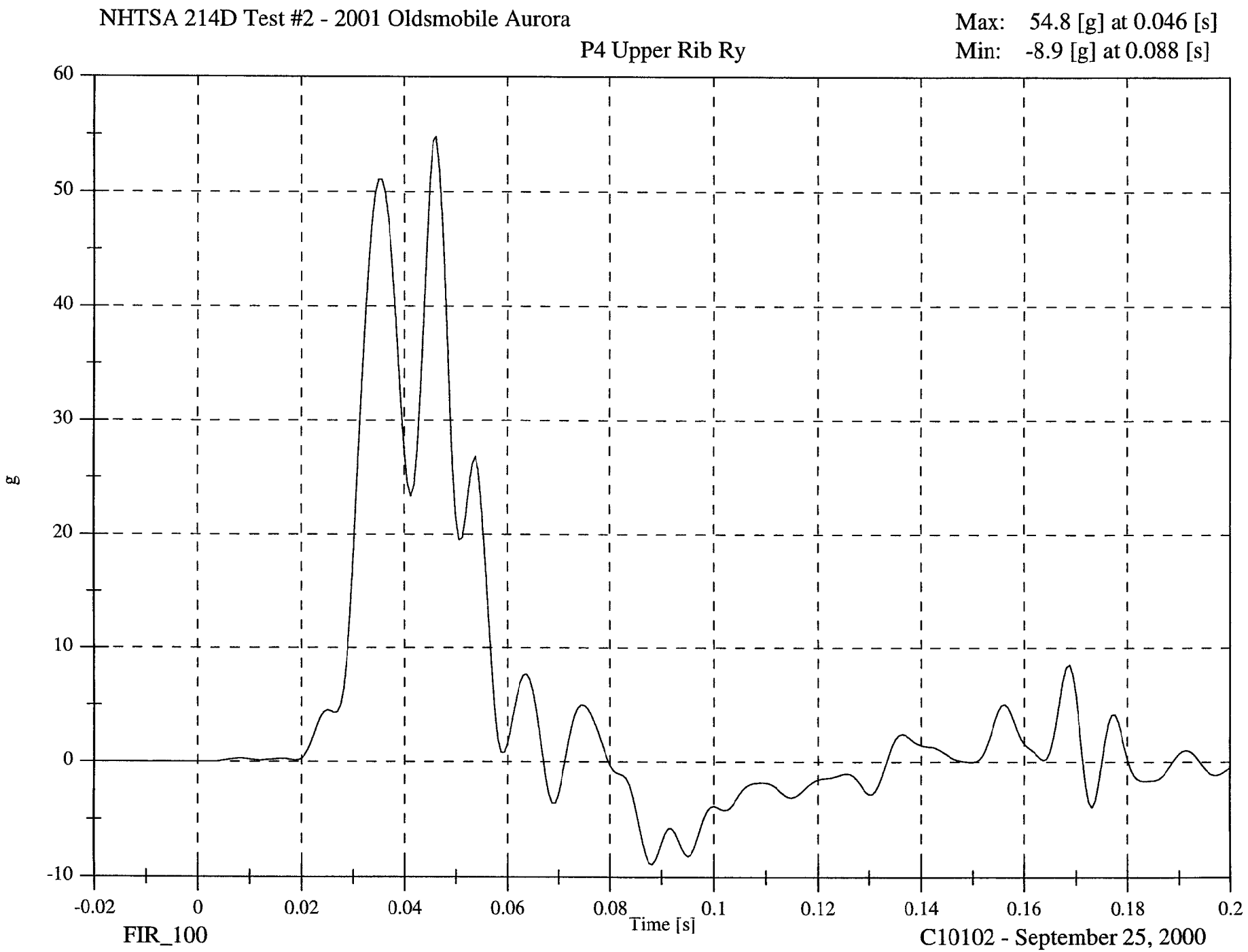
8502-18

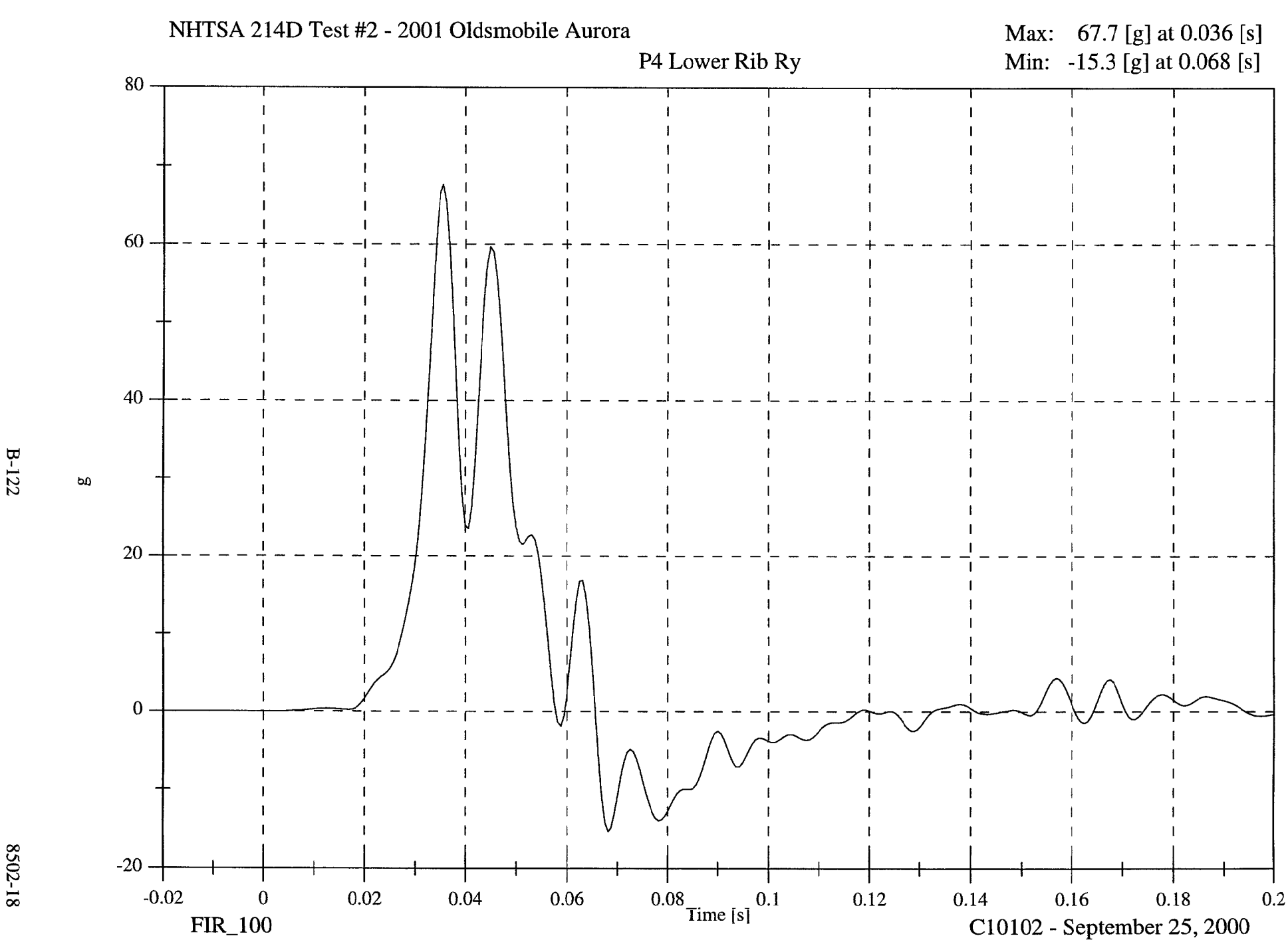

NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Lower Spine Ry
Max: 83.8 [g] at 0.032 [s]
Min: -20.1 [g] at 0.086 [s]
100
75
50
25
0
-25
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000

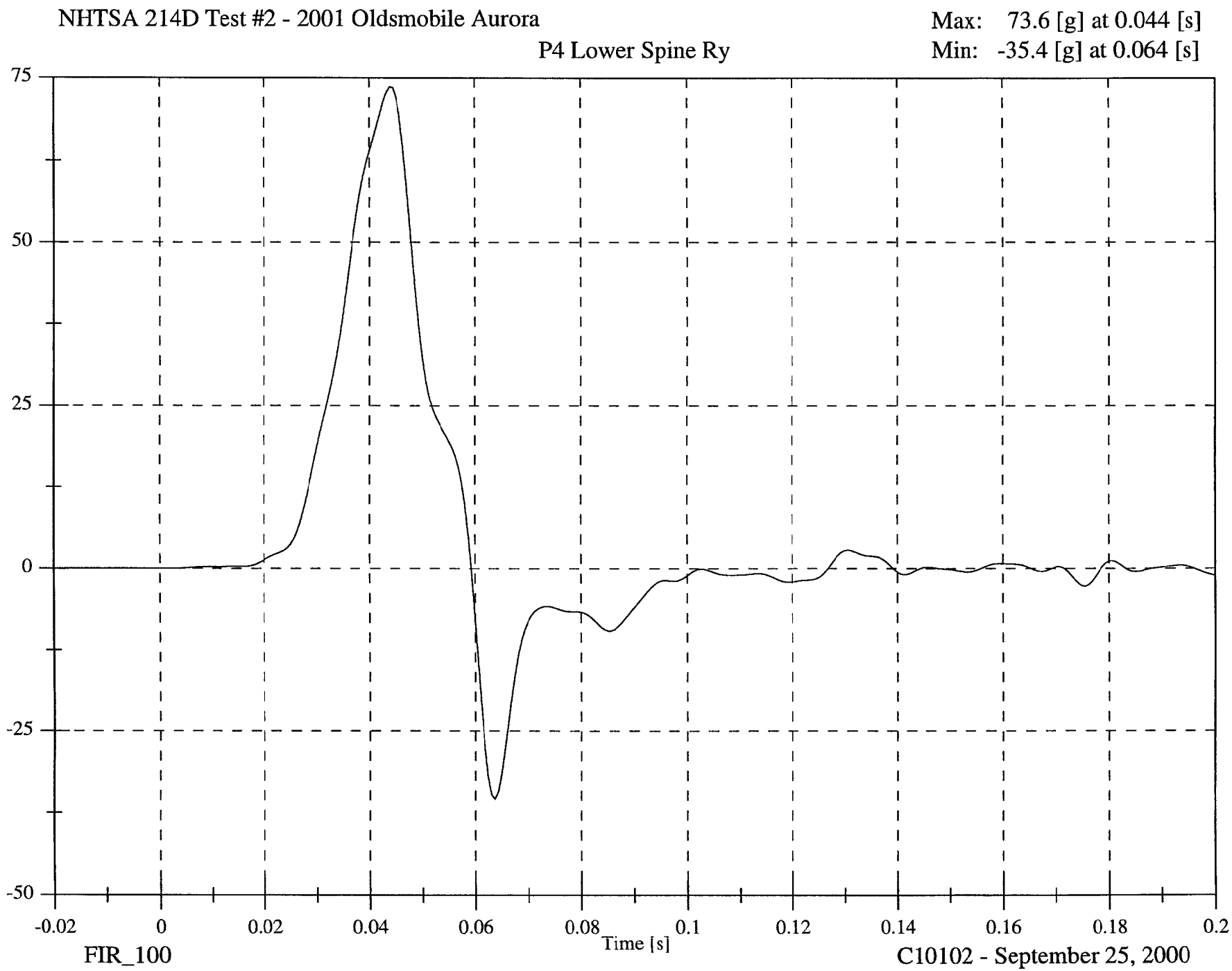
B-119

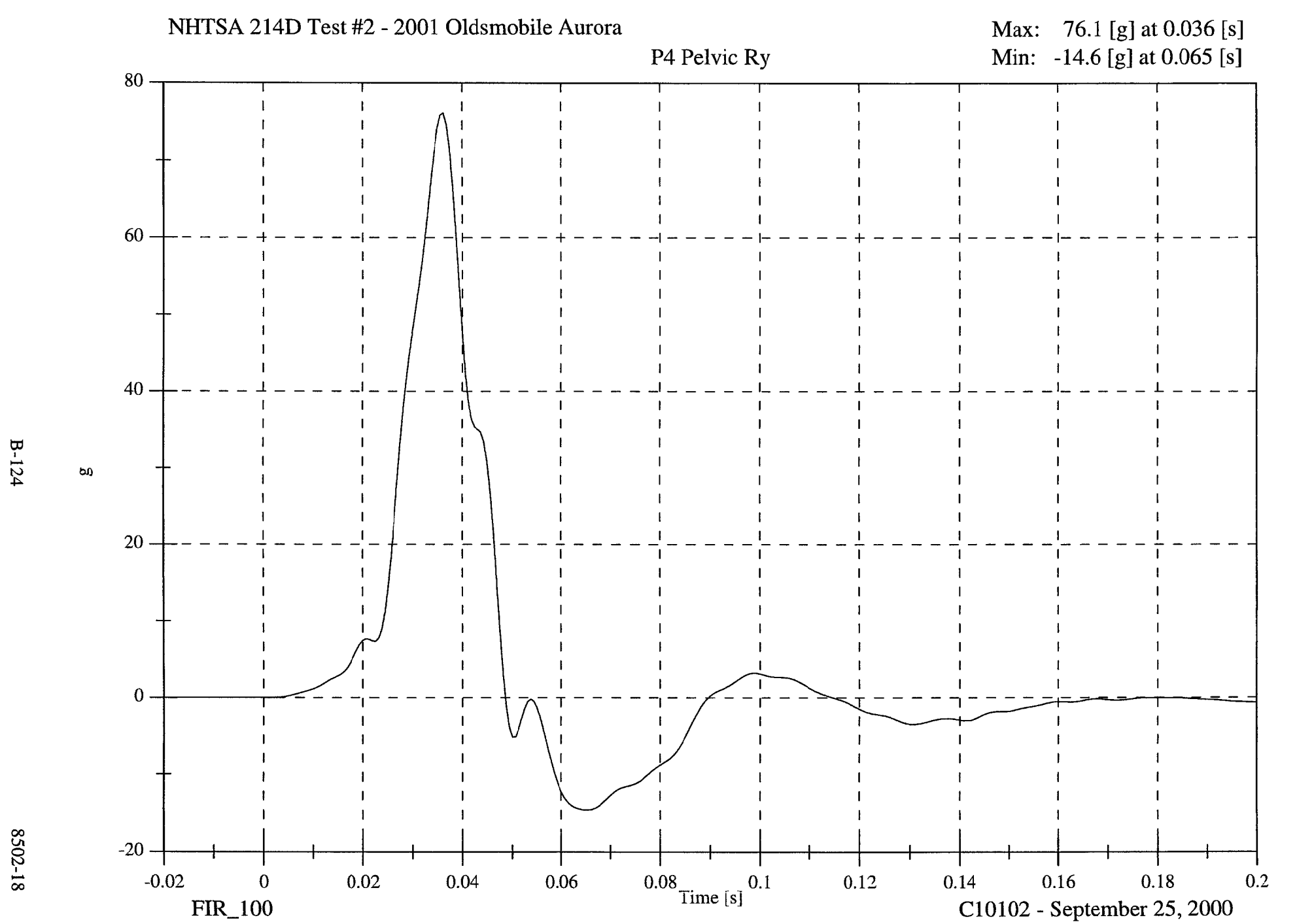
8502-18


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P1 Pelvic Ry
Max: 64.9 [g] at 0.029 [s]
Min: -21.9 [g] at 0.085 [s]
80
60
40
20
0
-20
-40
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Upper Rib Ry
Max: 54.8 [g] at 0.046 [s]
Min: -8.9 [g] at 0.088 [s]
60
50
40
30
20
10
0
-10
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Lower Rib Ry
Max: 67.7 [g] at 0.036 [s]
Min: -15.3 [g] at 0.068 [s]
80
60
40
20
0
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Lower Spine Ry
Max: 73.6 [g] at 0.044 [s]
Min: -35.4 [g] at 0.064 [s]
75
50
25
0
-25
-50
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000


NHTSA 214D Test #2 - 2001 Oldsmobile Aurora
P4 Pelvic Ry
Max: 76.1 [g] at 0.036 [s]
Min: -14.6 [g] at 0.065 [s]
80
60
40
20
0
-20
g
-0.02
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Time [s]
FIR_100
C10102 - September 25, 2000

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID PRE & POST TEST CALIBRATION

CONFIGURED FOR LEFT SIDE IMPACT

Date: September 20, 2000; October 16, 2000 Sequential Test Number: 1.2; 1.3
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	SID NO.: 015		SID NO.: 016	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	904	902	902	902
RH- Rib Height (mm)	501 - 521	511	511	513	512
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	236	236	239	239
KV- Knee Pivot from Back Line (mm)	511 - 526	521	521	526	526
SW- Knee Pivot to Floor (mm)	490 - 505	493	493	494	494
HW- Hip Width (mm)	356 - 391	371	372	366	366
THORAX IMPACTS					
TEMPERATURE (°C)	18.9 - 25.5	21.7	20.0	21.7	20.0
RELATIVE. HUMIDITY (%)	10 -70	30	30	31	30
PROBE SPEED (m/s)	4.27 - 4.33	4.29	4.30	4.29	4.29
UPPER RIB (g's)	37 - 46	42.3	39.1	40.5	38.7
LOWER RIB (g's)	37 - 46	40.7	40.4	38.2	38.7
LOWER SPINE (g's)	15 -22	21.8	20.0	19.2	20.8
PELVIS IMPACT					
TEMPERATURE (°C)	18.9 - 25.5	21.7	20.0	21.7	20.0
RELATIVE HUMIDITY (%)	10 - 70	30	30	31	30
PROBE SPEED (m/s)	4.27 - 4.33	4.30	4.28	4.30	4.29
PELVIS (g's)	40 -60	46.7	35.1	48.2	48.8

REMARKS: None

CALIBRATION TEST RESULTS
PRE-TEST

SID NO.: 015

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: September 20, 2000 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.
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 Serial No.: 015 Sequential Test Number: 1
Date: September 19, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	904
RH- Rib Height (mm)	502 - 520	511
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
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	371

REMARKS: None

THORACIC SHOCK ABSORBER TESTS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1.2
Date: April 19, 2000 Laboratory Technician: B. Swiecicki

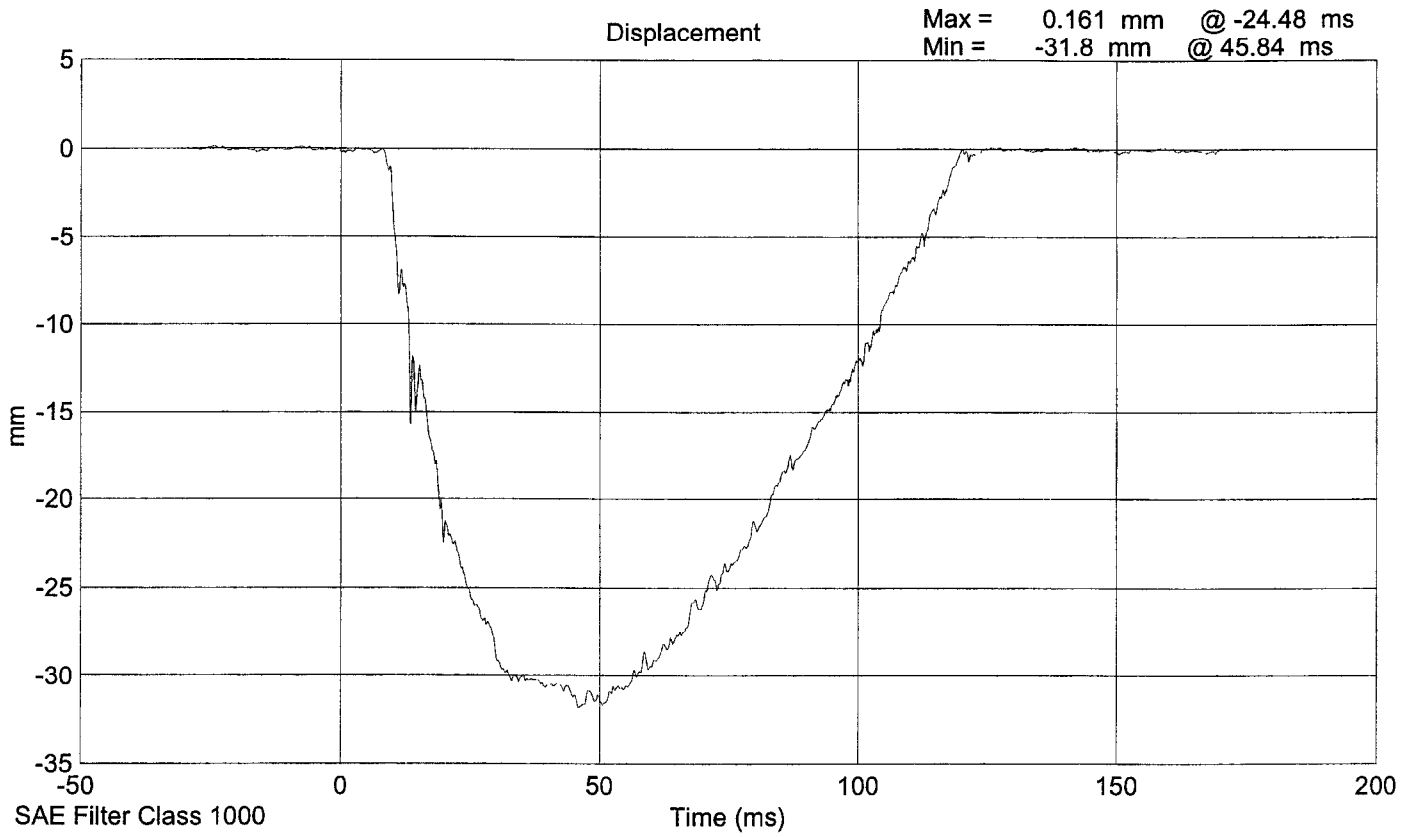
DAMPER IDENTIFICATION: 015

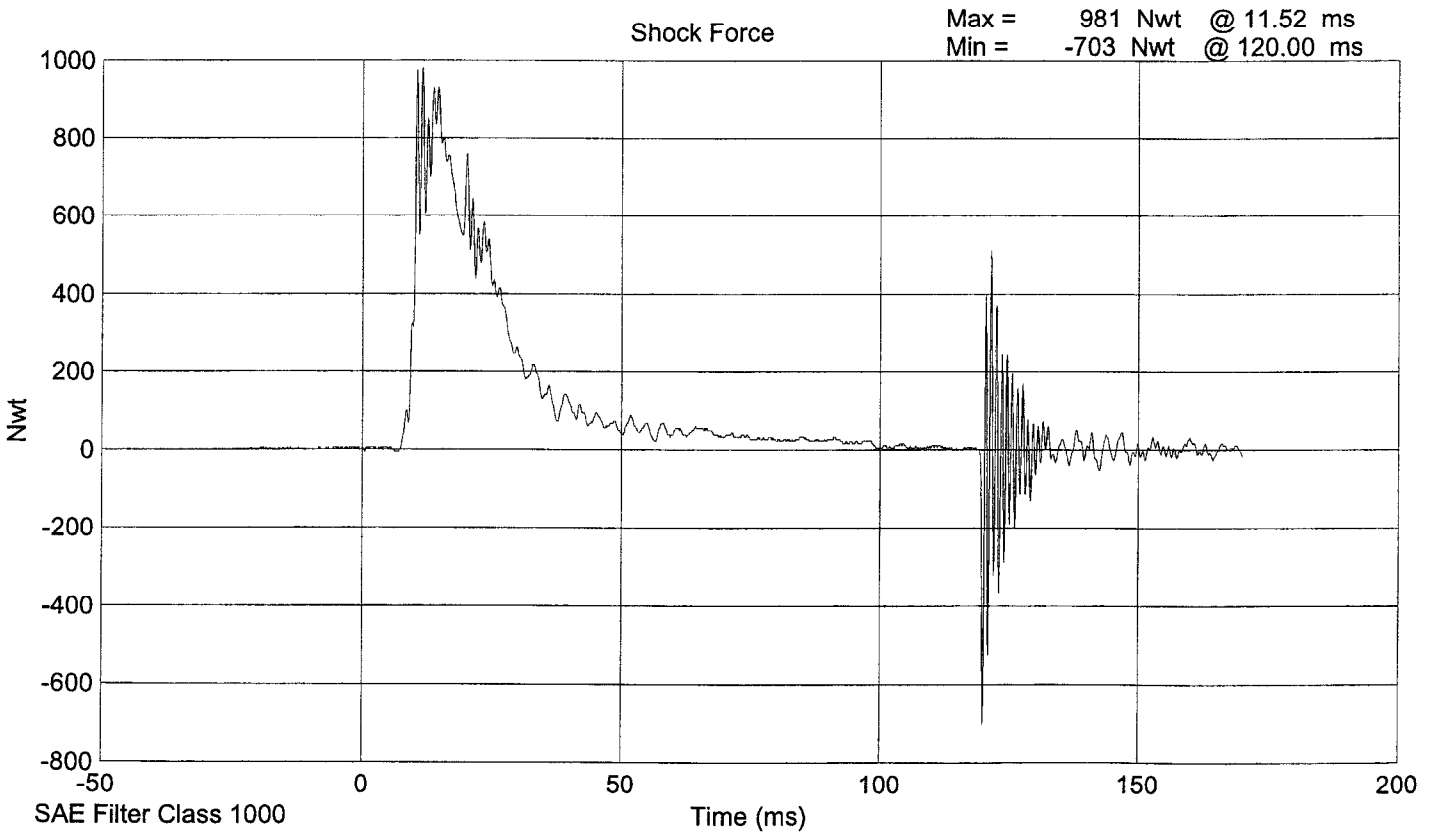
TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)		10 - 70	30
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	981.2
	DISPLACEMENT (mm)	30 - 35	31.8
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	1849.4
	DISPLACEMENT (mm)	32 - 37	34.7
VELOCITY 6.10 m/s	FORCE (N)	3741 - 4448	3925.0
	DISPLACEMENT (mm)	33 - 40	35.1

DAMPER SETTING: 5

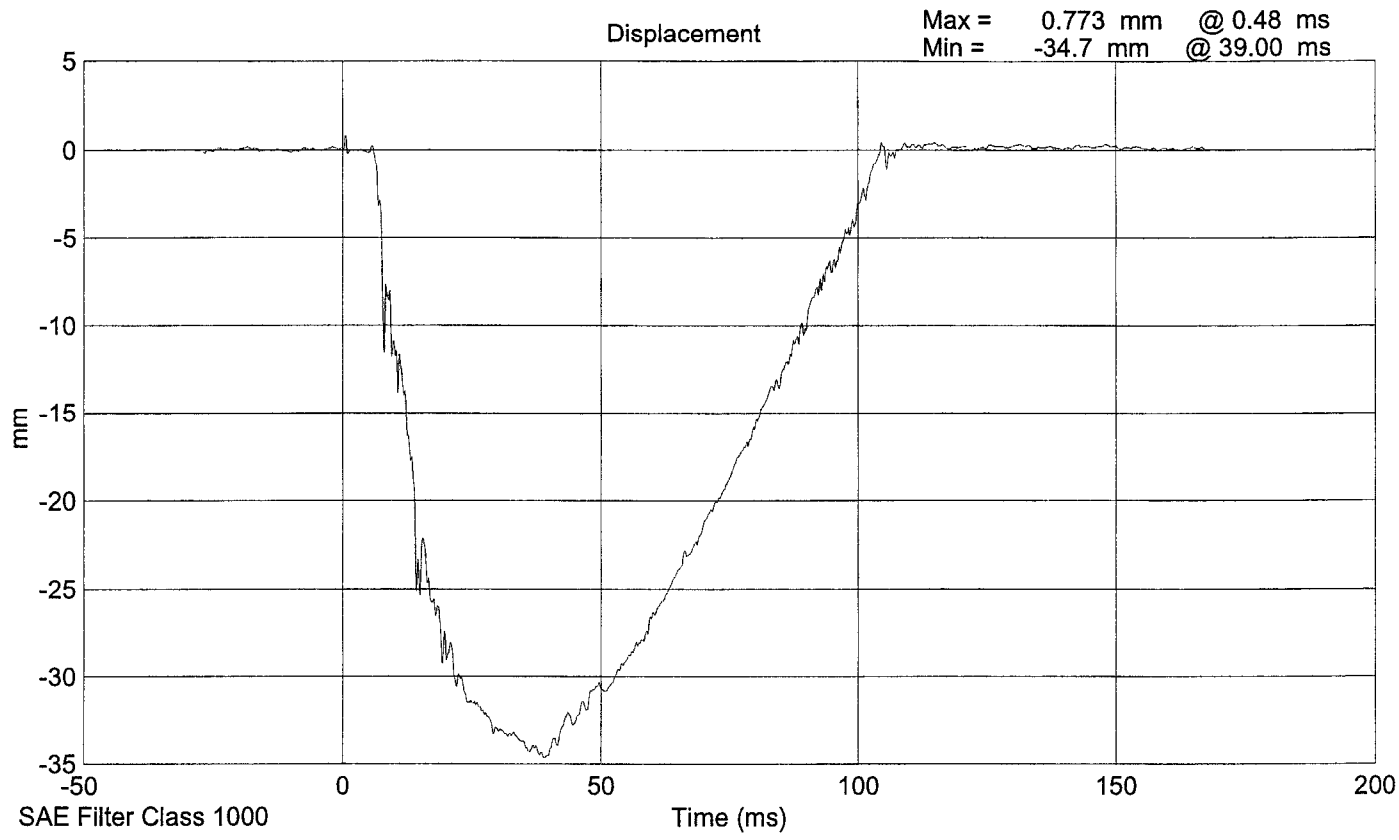
REMARKS: None

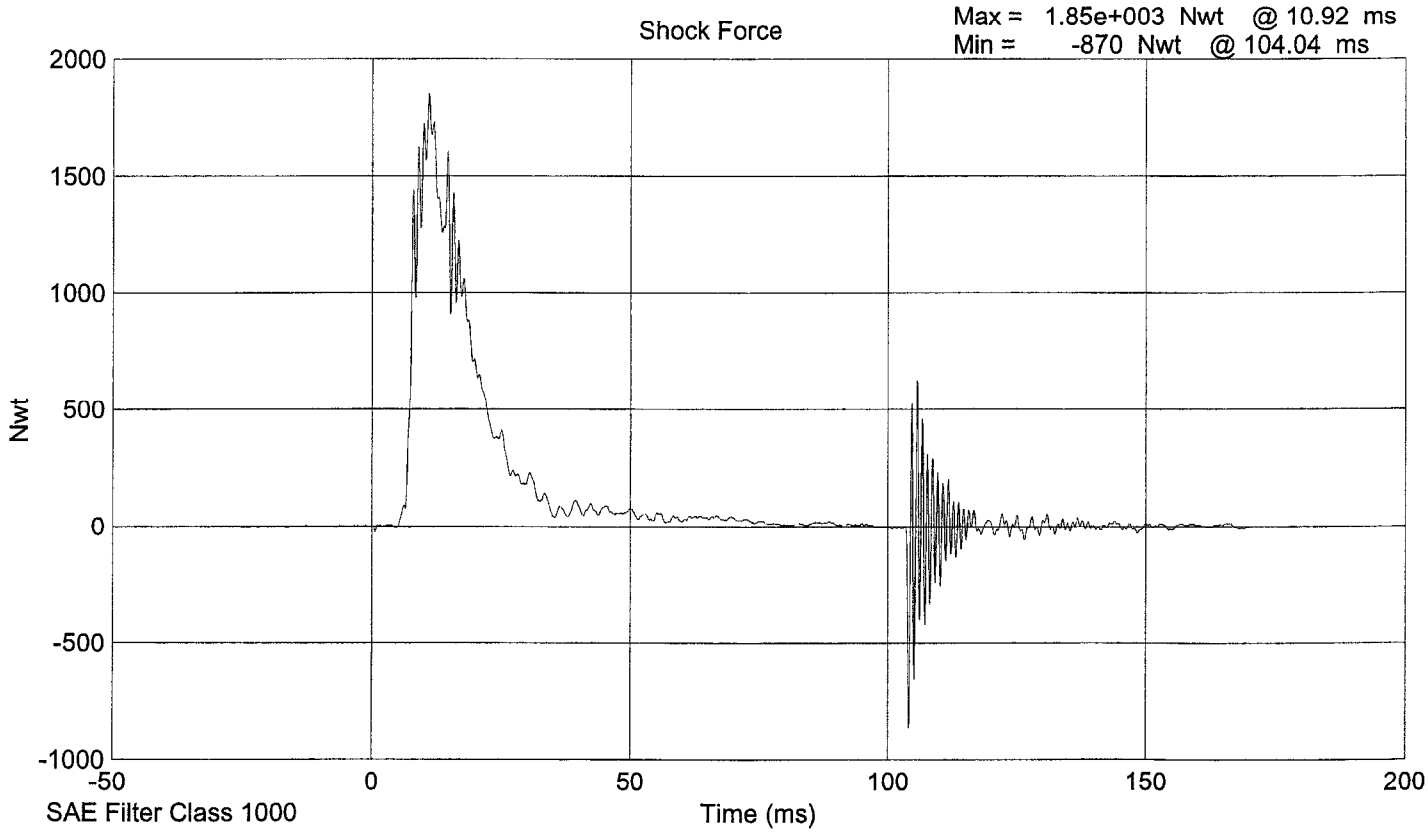
SID 015 Shock Absorber Impact Test @ 3.048 m/s



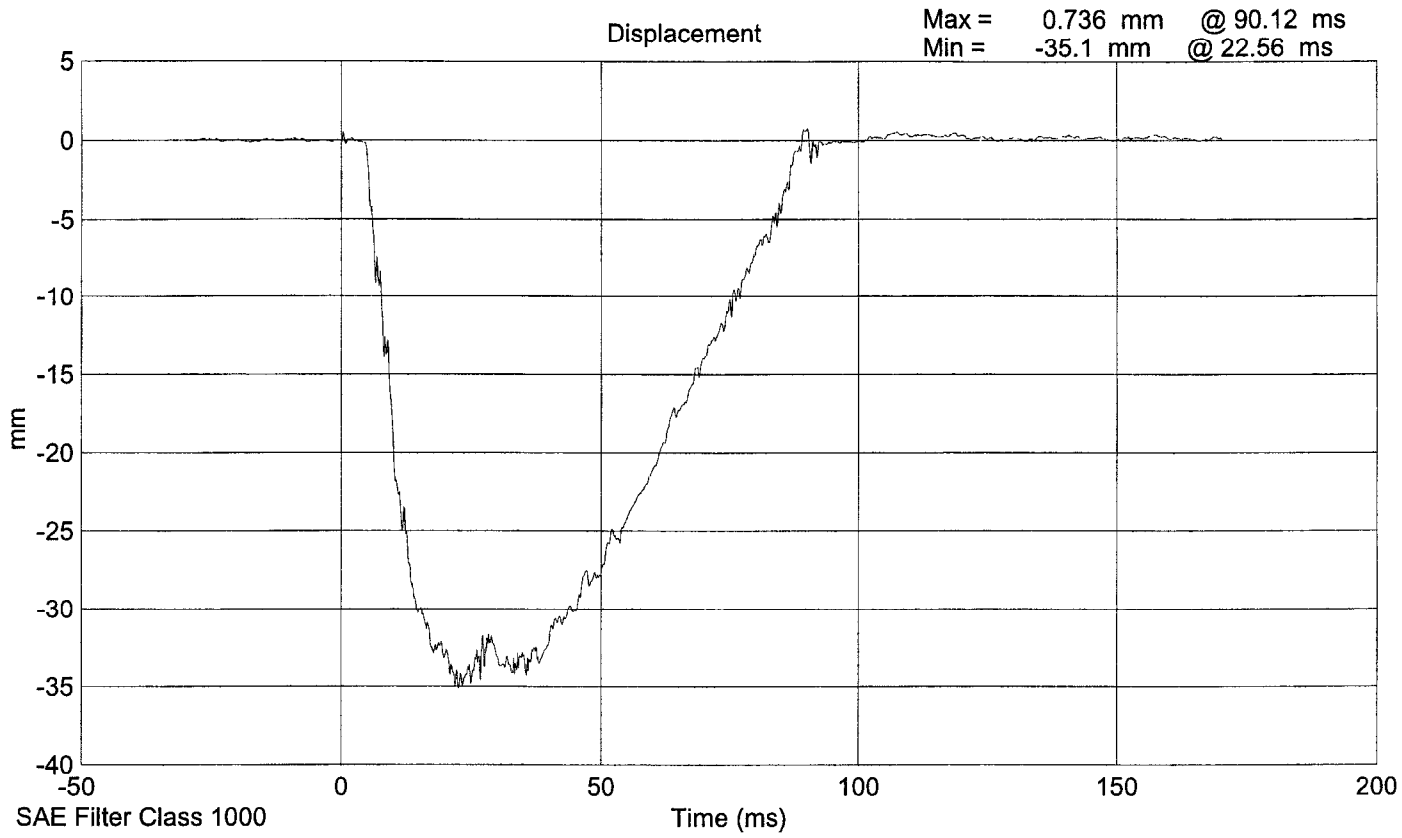


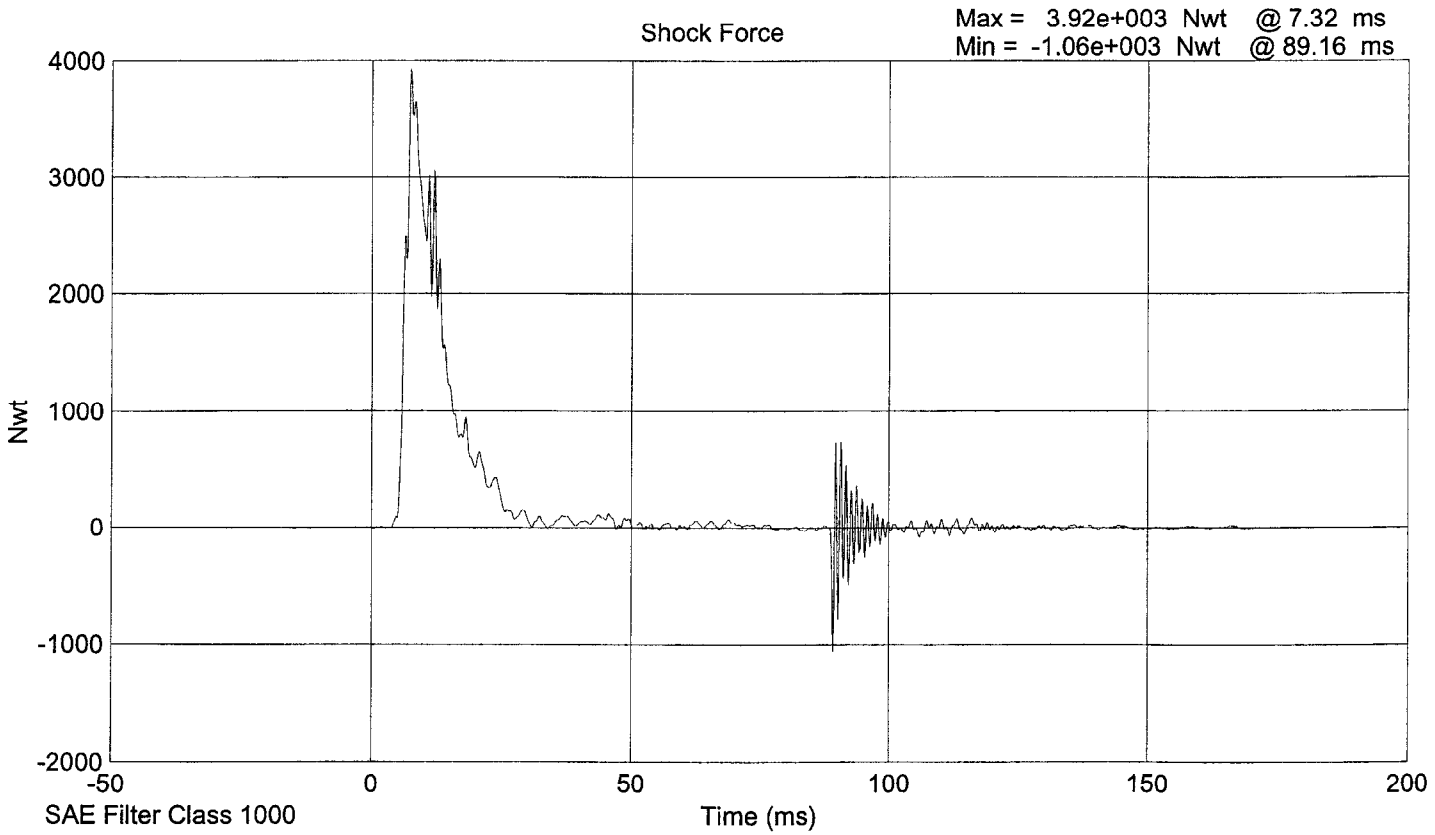
SID 015 Shock Absorber Impact Test @ 4.572 m/s





SID 015 Shock Absorber Impact Test @ 6.096 m/s





LATERAL THORAX IMPACT TEST
PRE-TEST

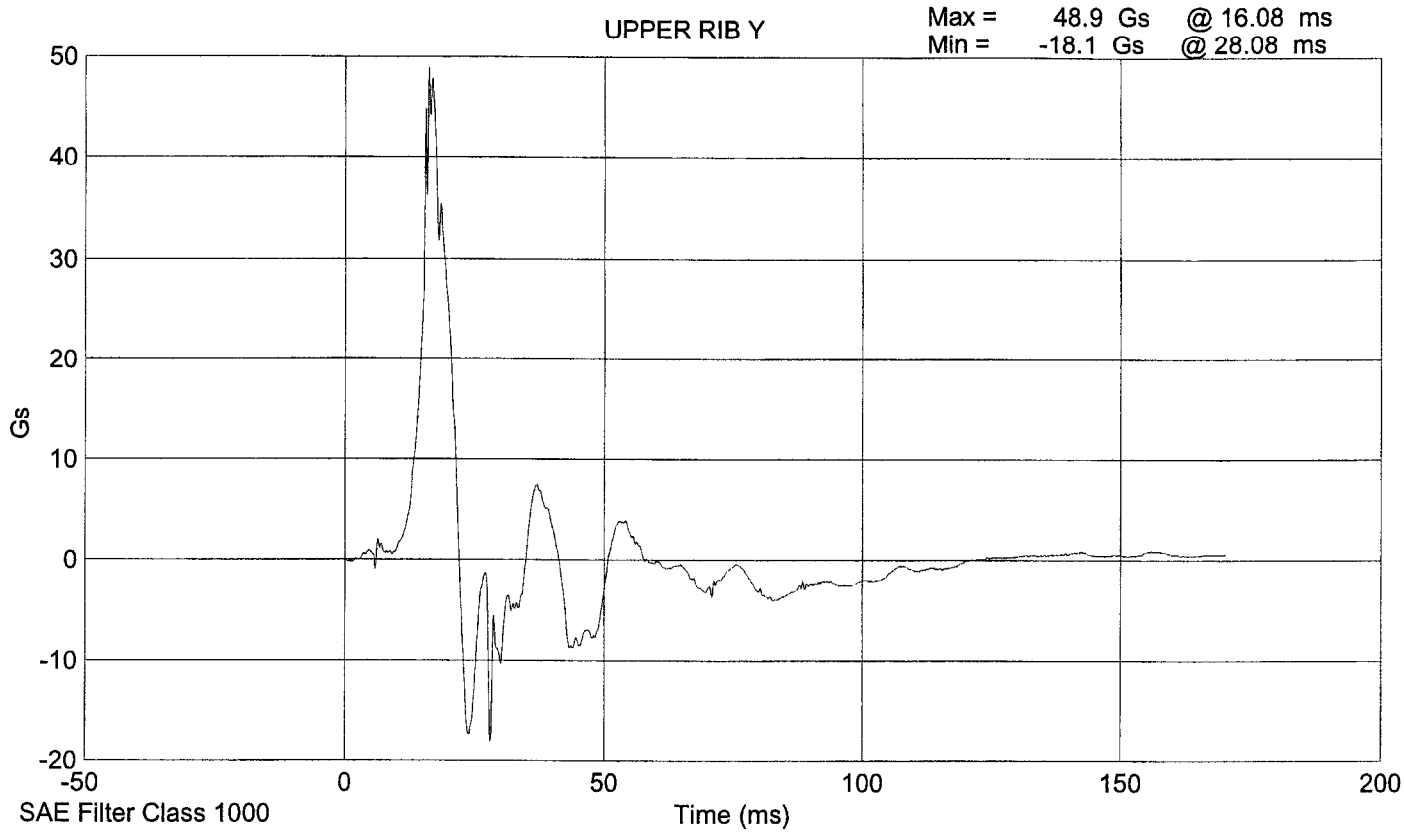
CONFIGURED FOR LEFT SIDE IMPACT

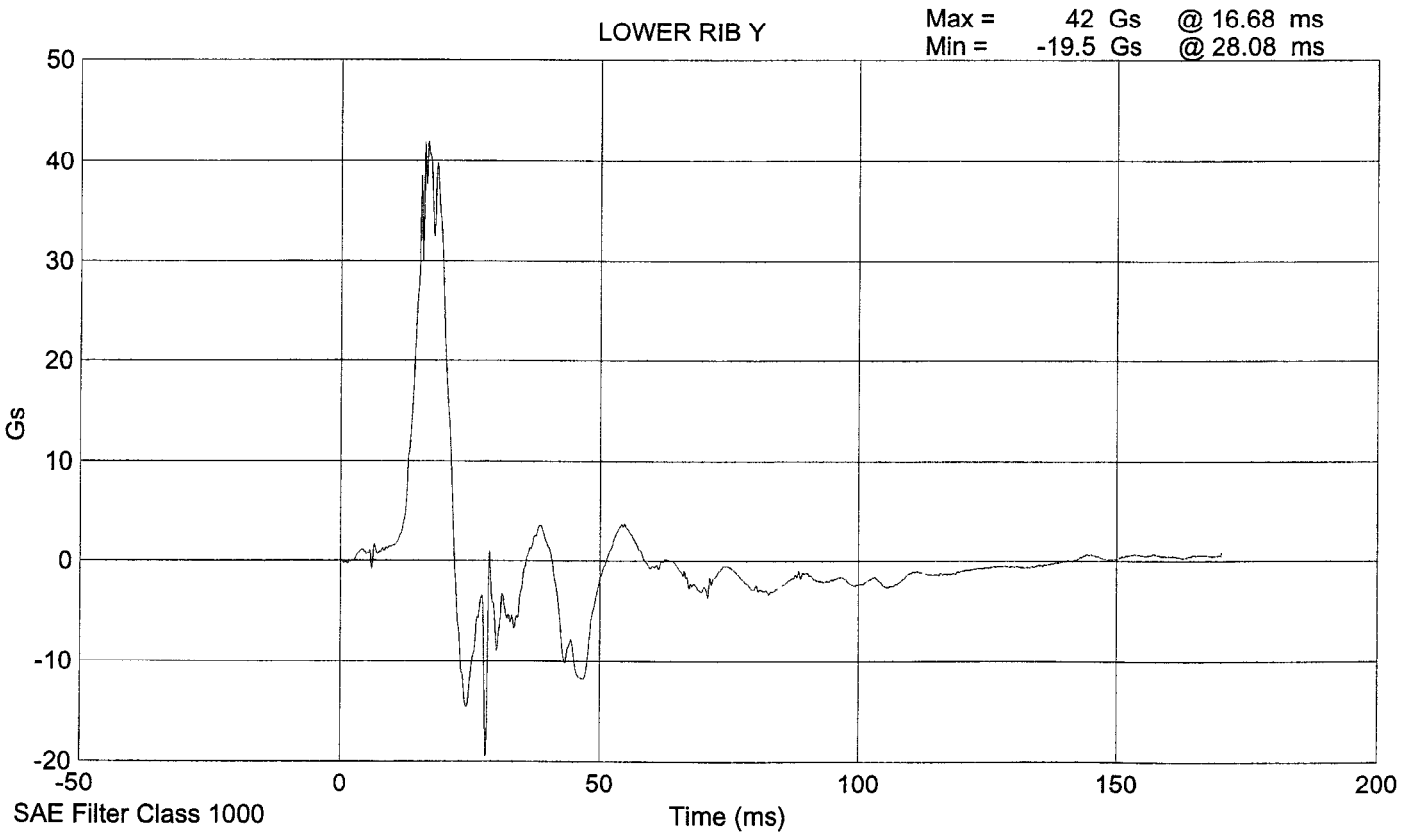
SID Serial No.: 015 Sequential Test Number: 1
Date: September 18, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE. HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.29
UPPER RIB (g's)	37 - 46	42.3
LOWER RIB (g's)	37 - 46	40.7
LOWER SPINE (g's)	15 - 22	21.8

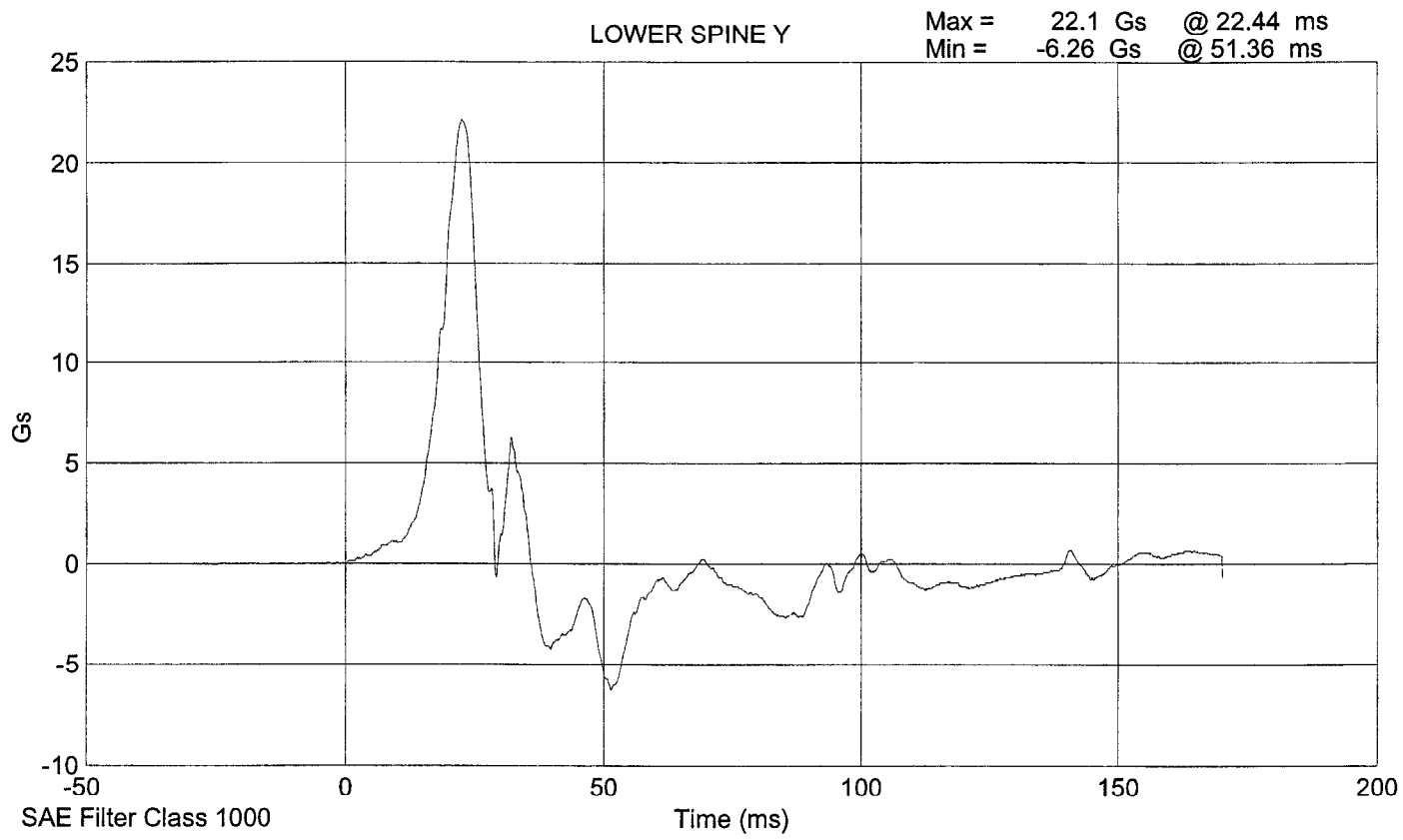
REMARKS: None

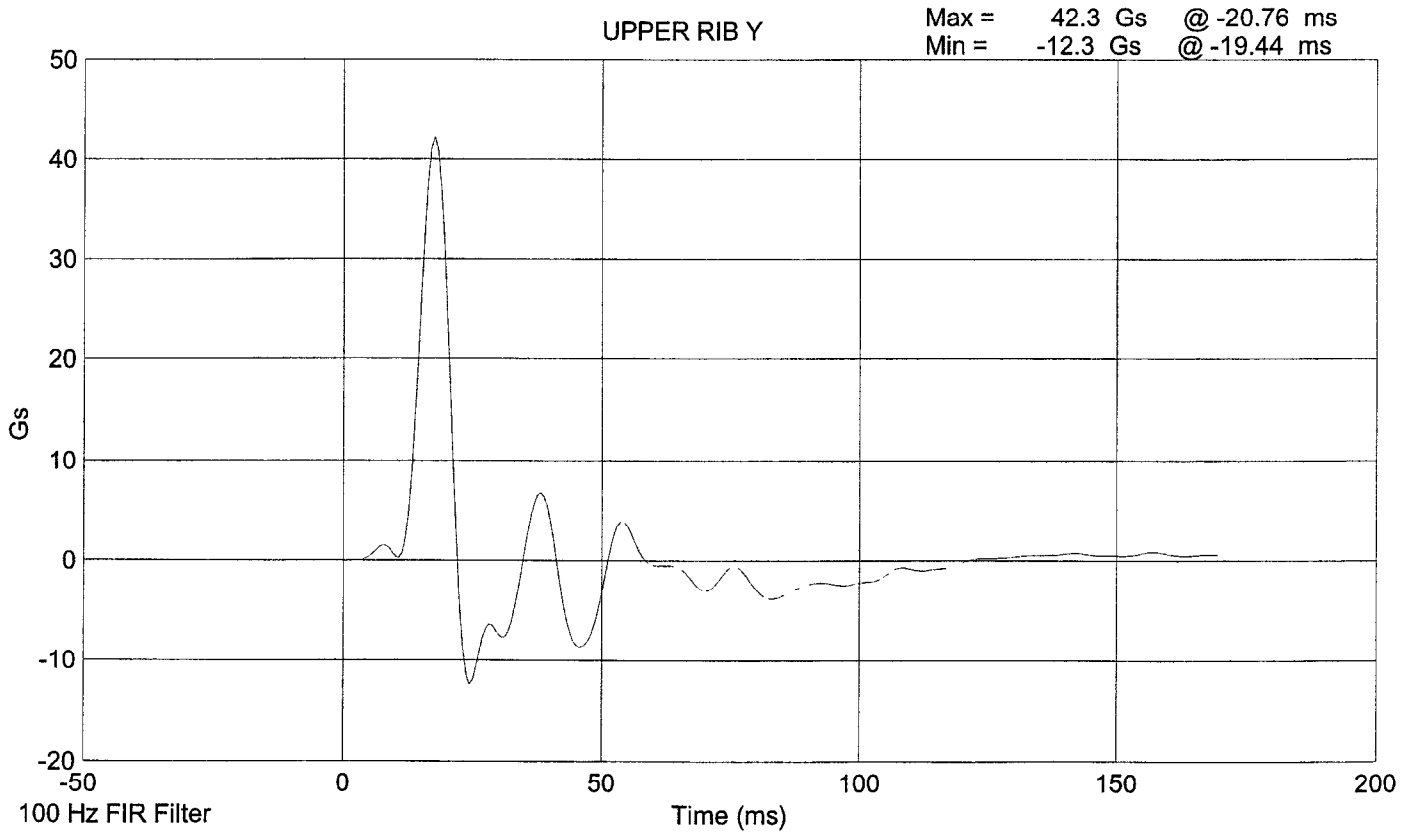
SID 15 Thorax Impact Test @ 4.2855 m/s



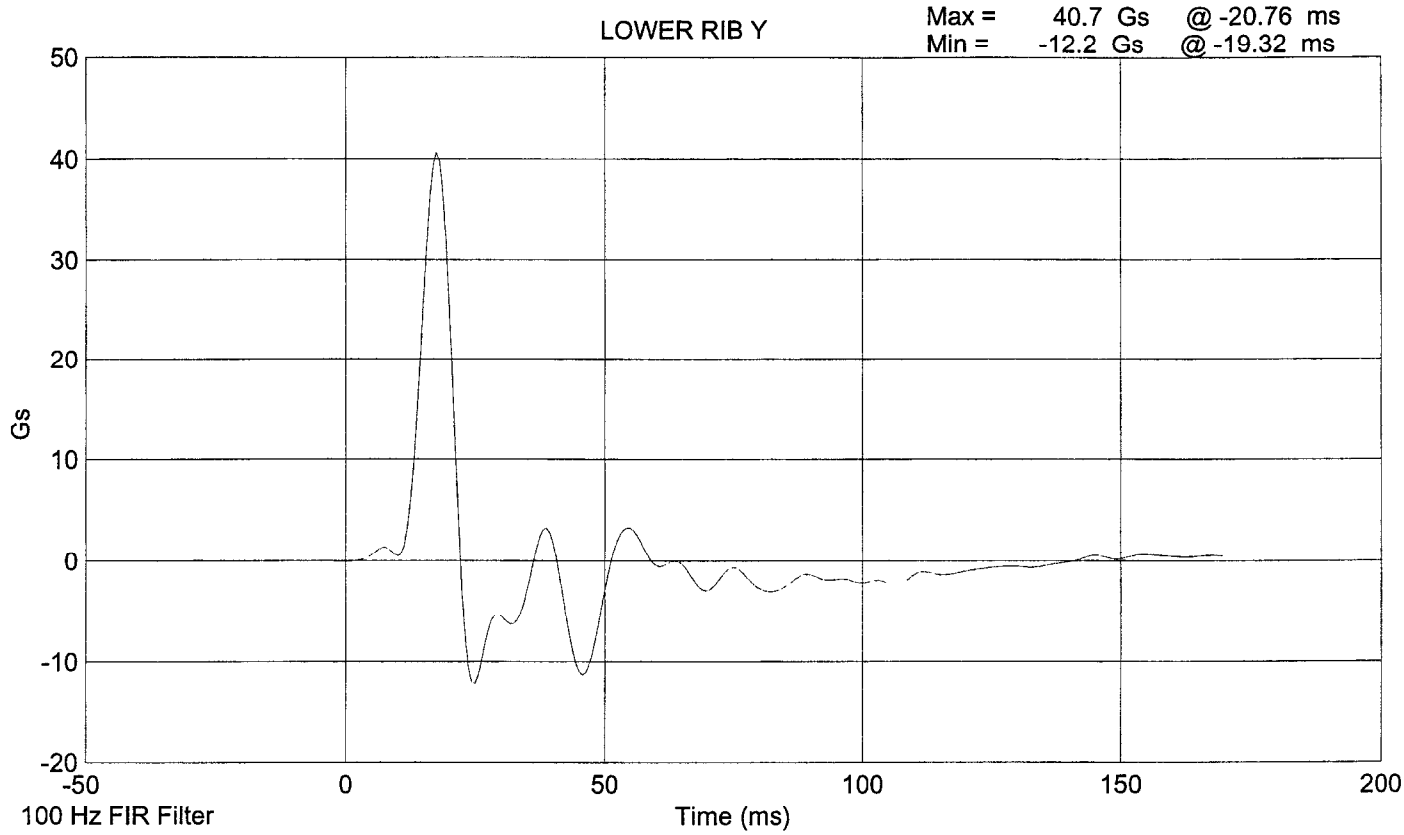


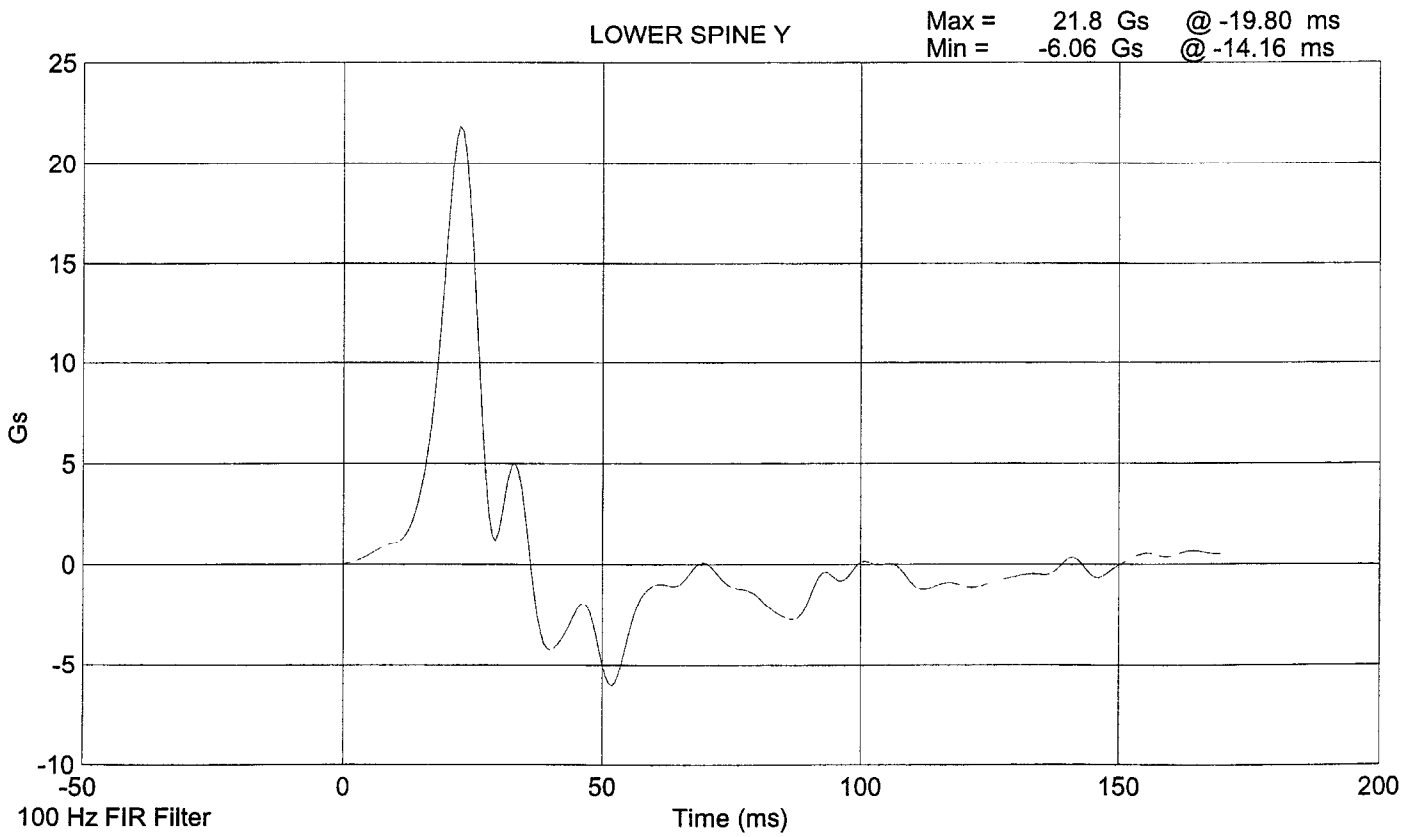
SID 15 Thorax Impact Test @ 4.2855 m/s





SID 15 Thorax Impact Test @ 4.2855 m/s





LATERAL PELVIS IMPACT TEST
PRE-TEST

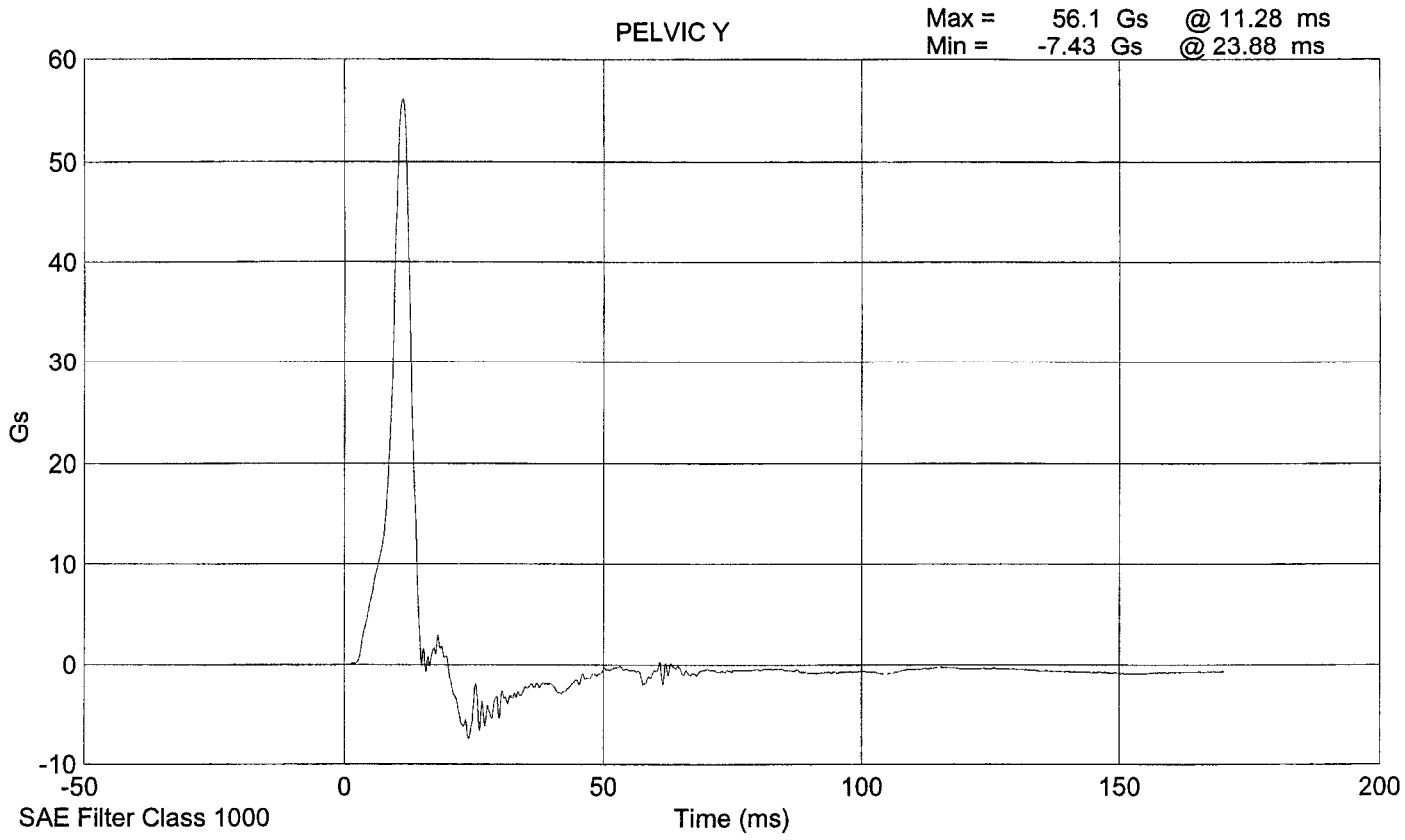
CONFIGURED FOR LEFT SIDE IMPACT

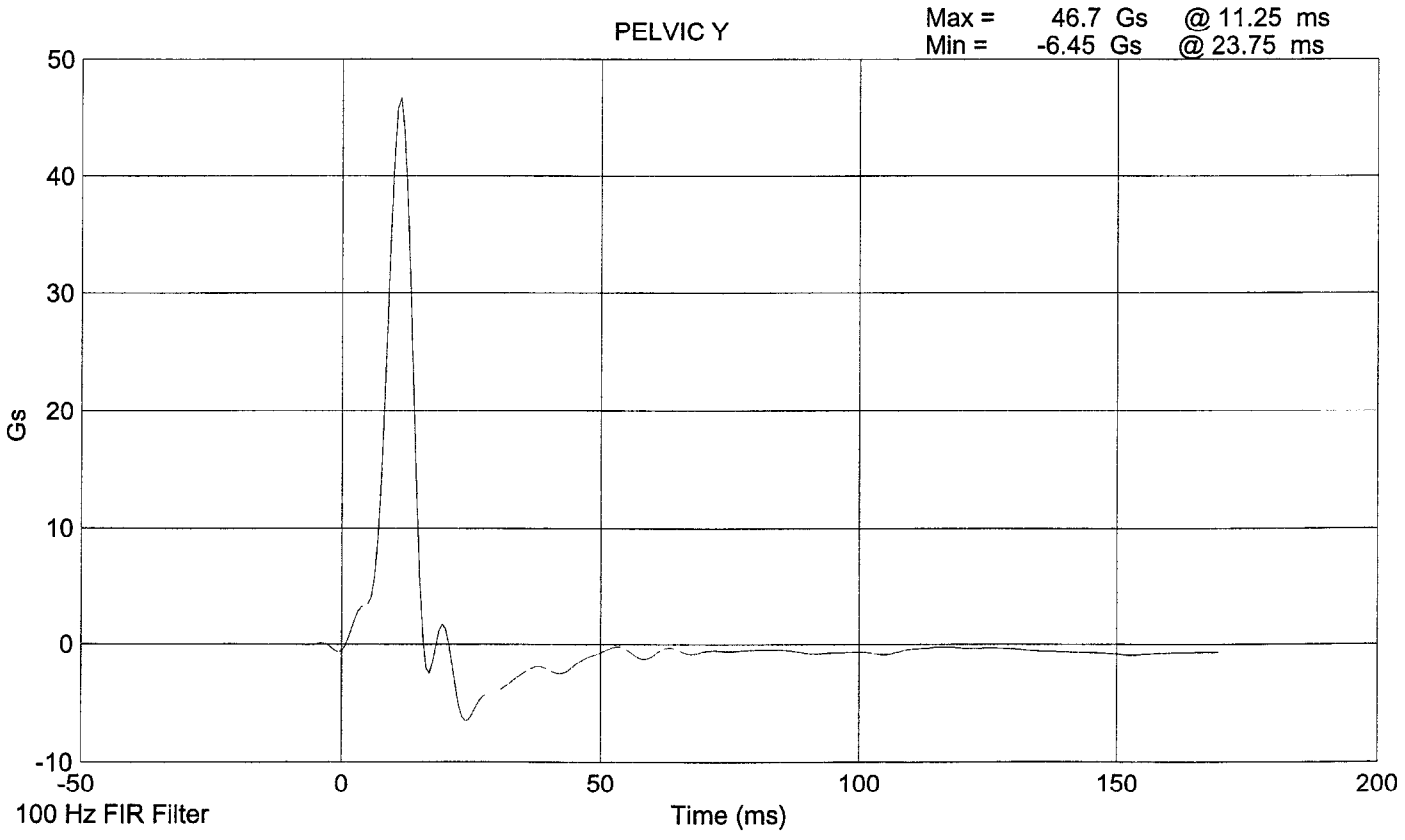
SID Serial No.: 015 Sequential Test Number: 1
Date: September 18, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE. HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.30
PELVIS ACCELERATION (g's)	40 - 60	46.7

REMARKS: None

SID 15 Pelvic Impact Test @ 4.3007 m/s





HEAD DROP TEST

PRE-TEST

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

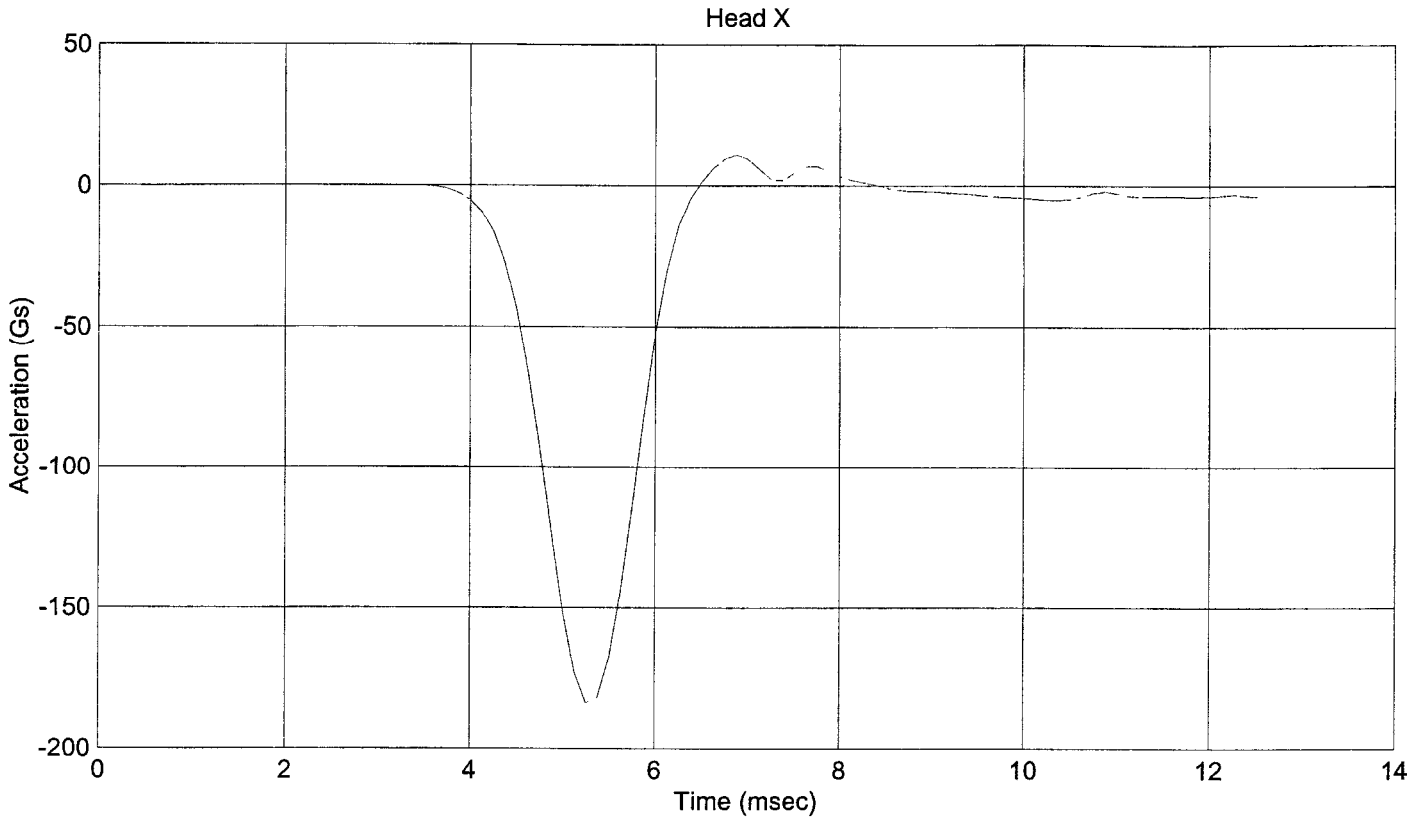
SID Serial No.: 015 Sequential Test Number: 1

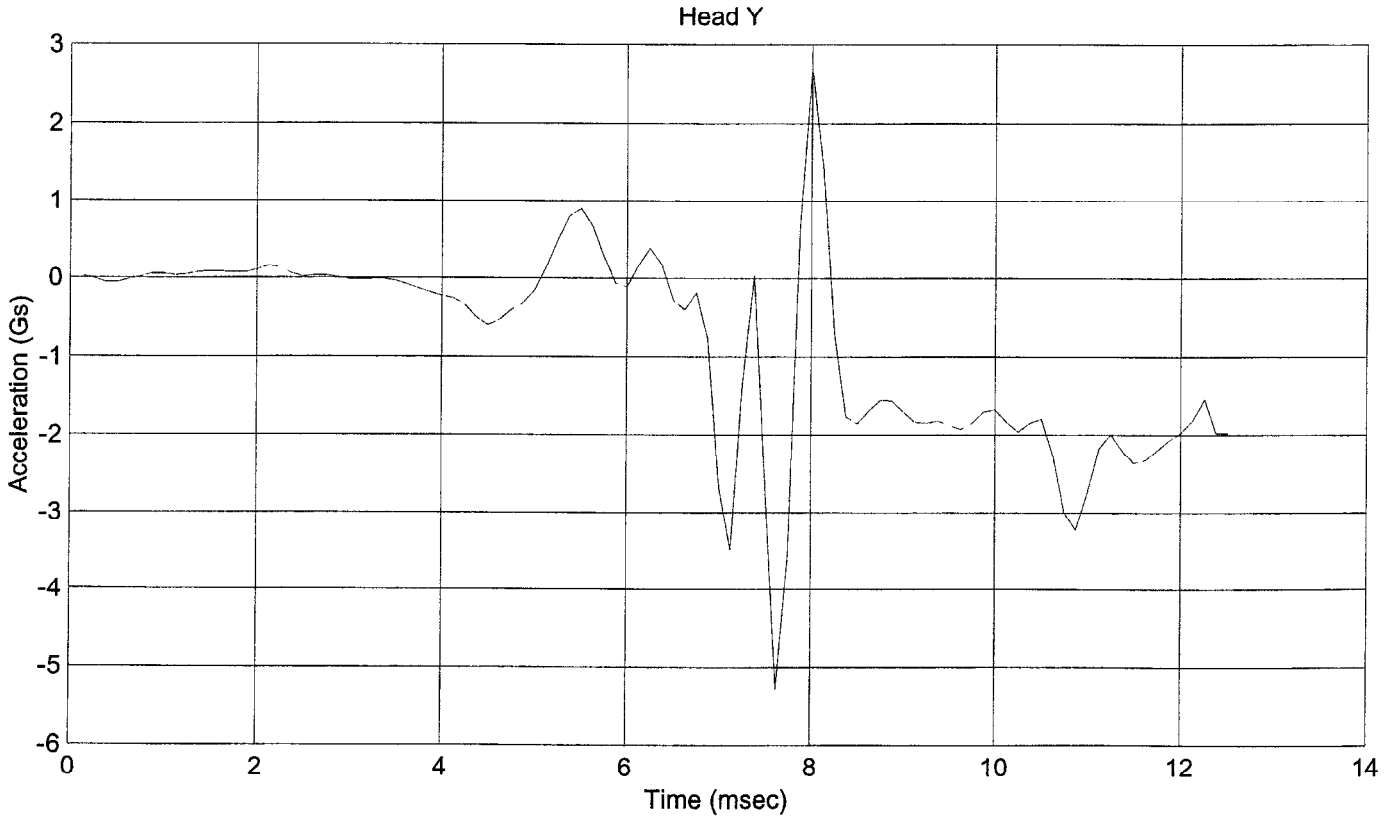
Date: September 15, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	232.3
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	5.3
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.25

REMARKS: None

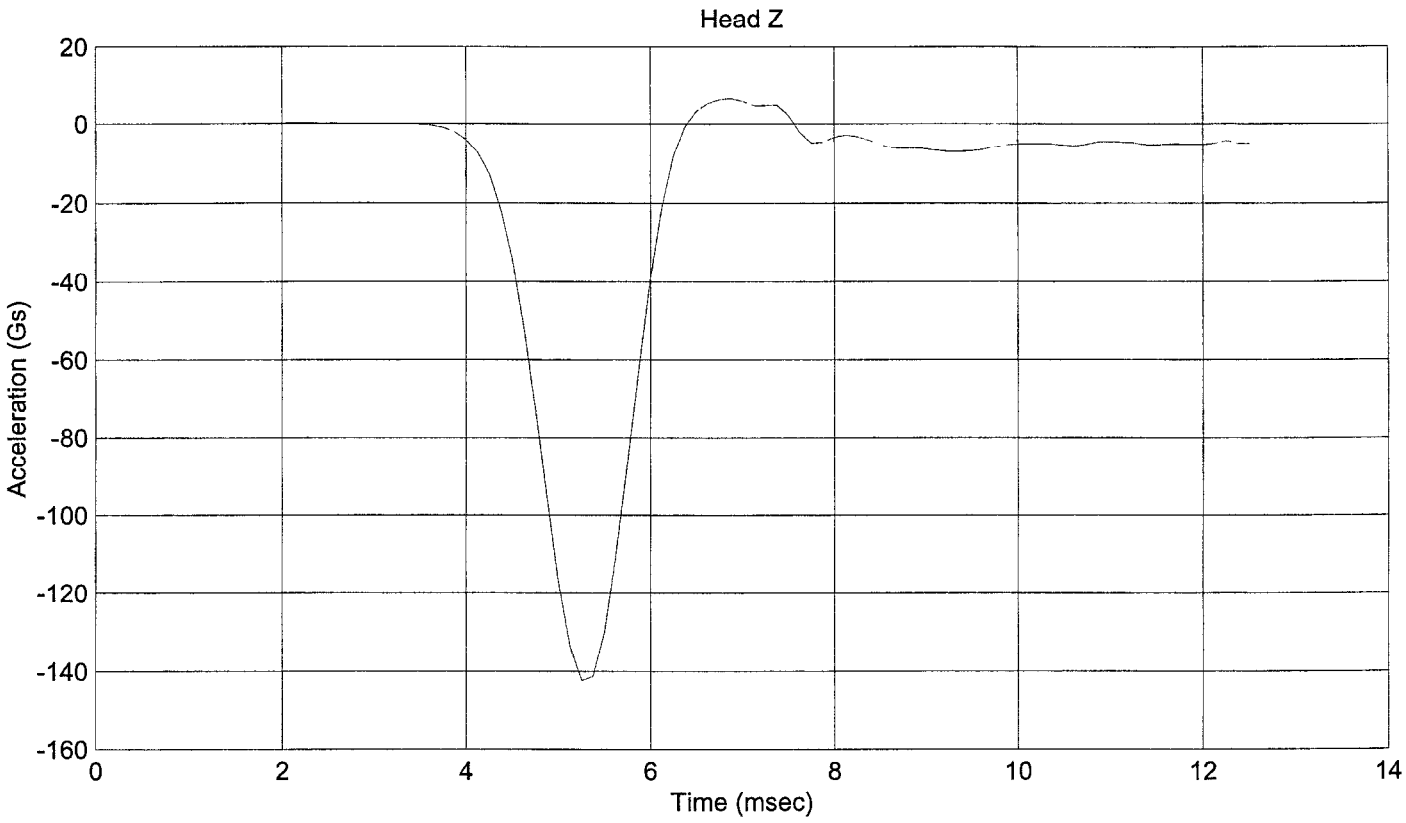
Hybrid II Head Drop Calibration 015600.hdp

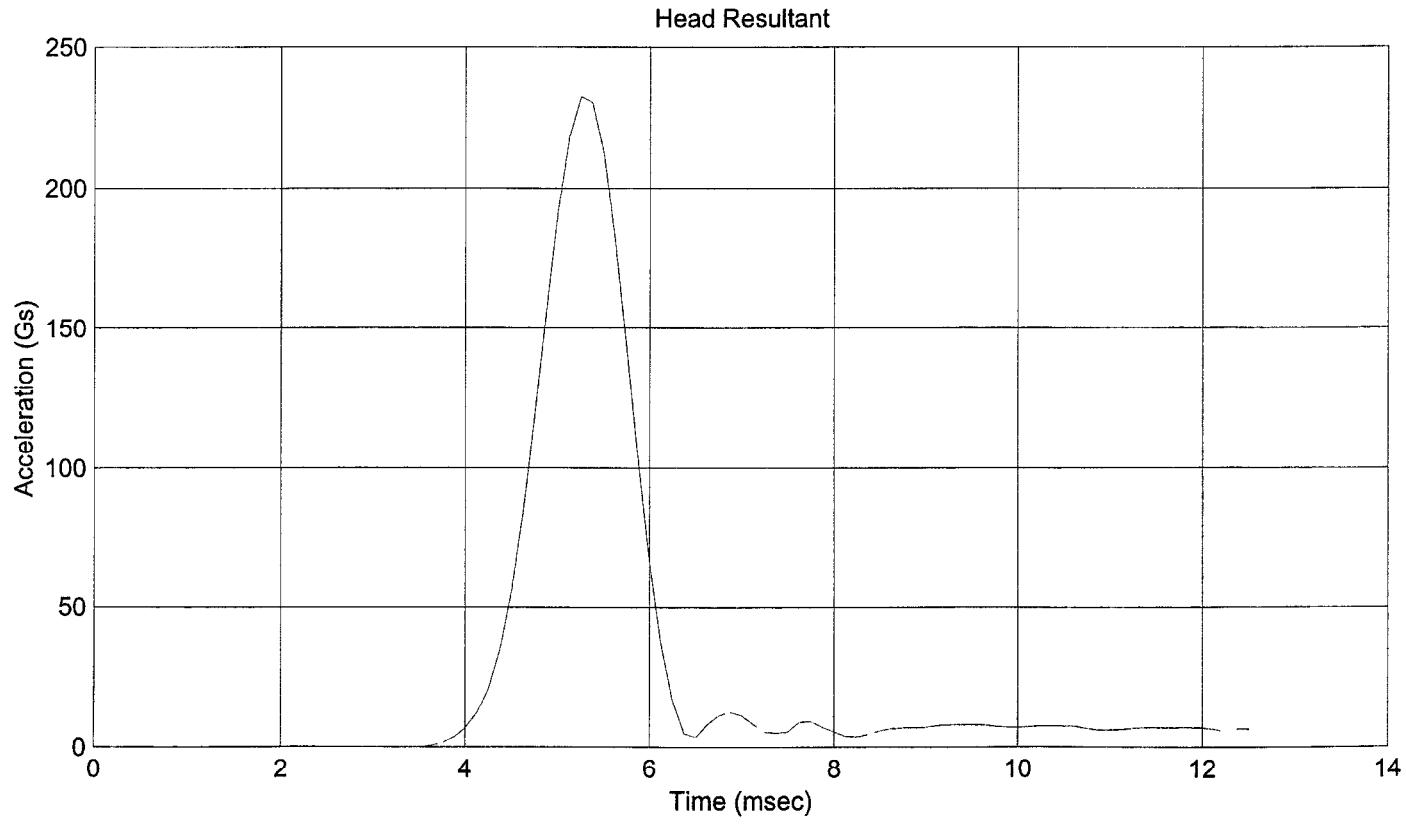




8502-18

Hybrid II Head Drop Calibration 015600.hdp





ABDOMINAL COMPRESSION TEST

PRE-TEST

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1

Date: September 20, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
FORCE @ 13 mm (N)	104 - 162	114
FORCE @ 19 mm (N)	163 - 221	178
FORCE @ 25 mm (N)	222 - 280	255
FORCE @ 33 mm (N)	325 - 391	380

REMARKS: None

Dummy S/N 015

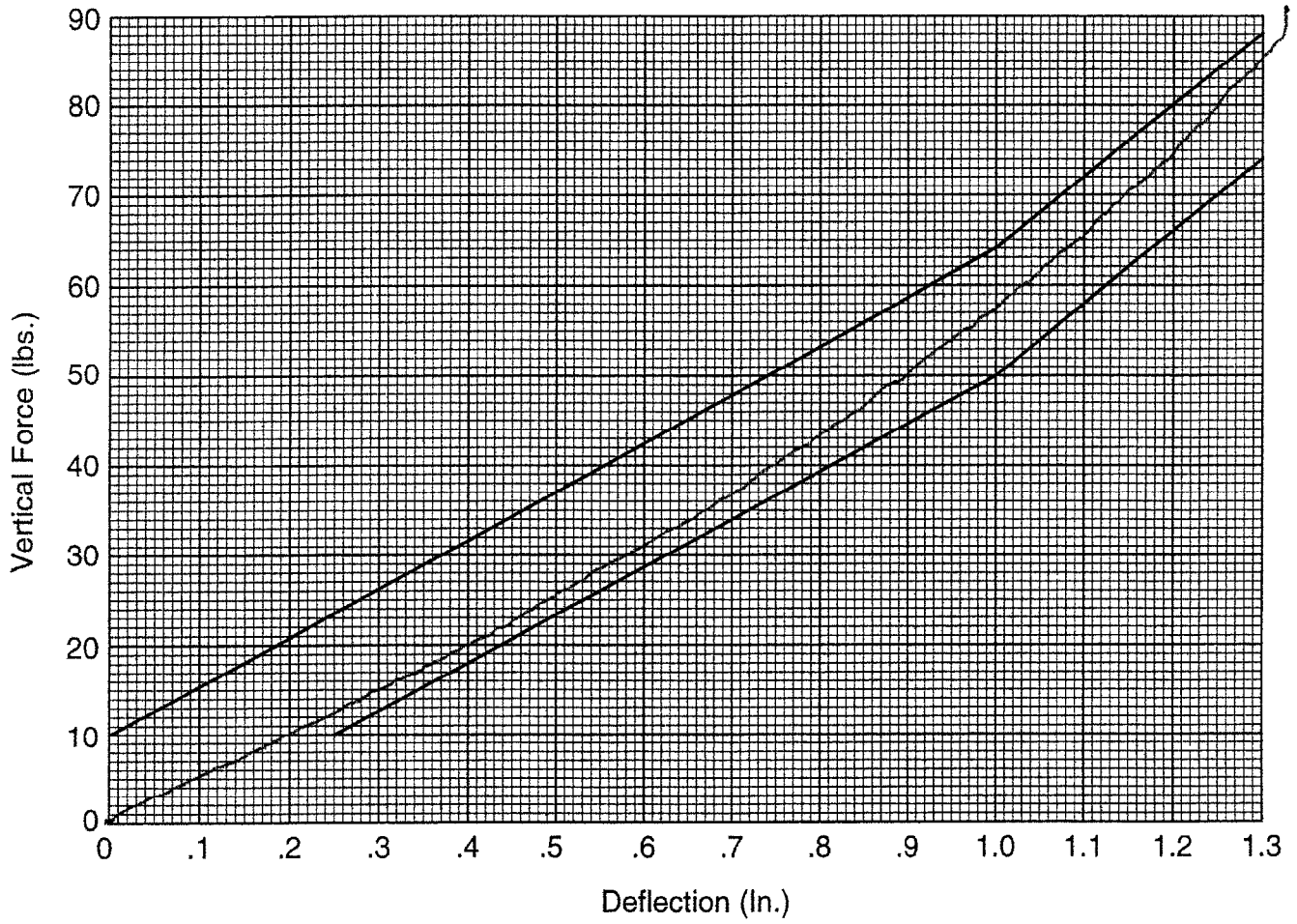
W/A _____

Date 9-20-2000

Performed By [signature]

Temp. 71°

Humidity 30%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST

PRE-TEST

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1

Date: September 20, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	127.9
FORCE @ 30° (N)	151.2 - 204.6	176.8
FORCE @ 40° (N)	204.6 - 258	233.5
RETURN ANGLE	12° max.	5.0°

REMARKS: None

Dummy S/N 015

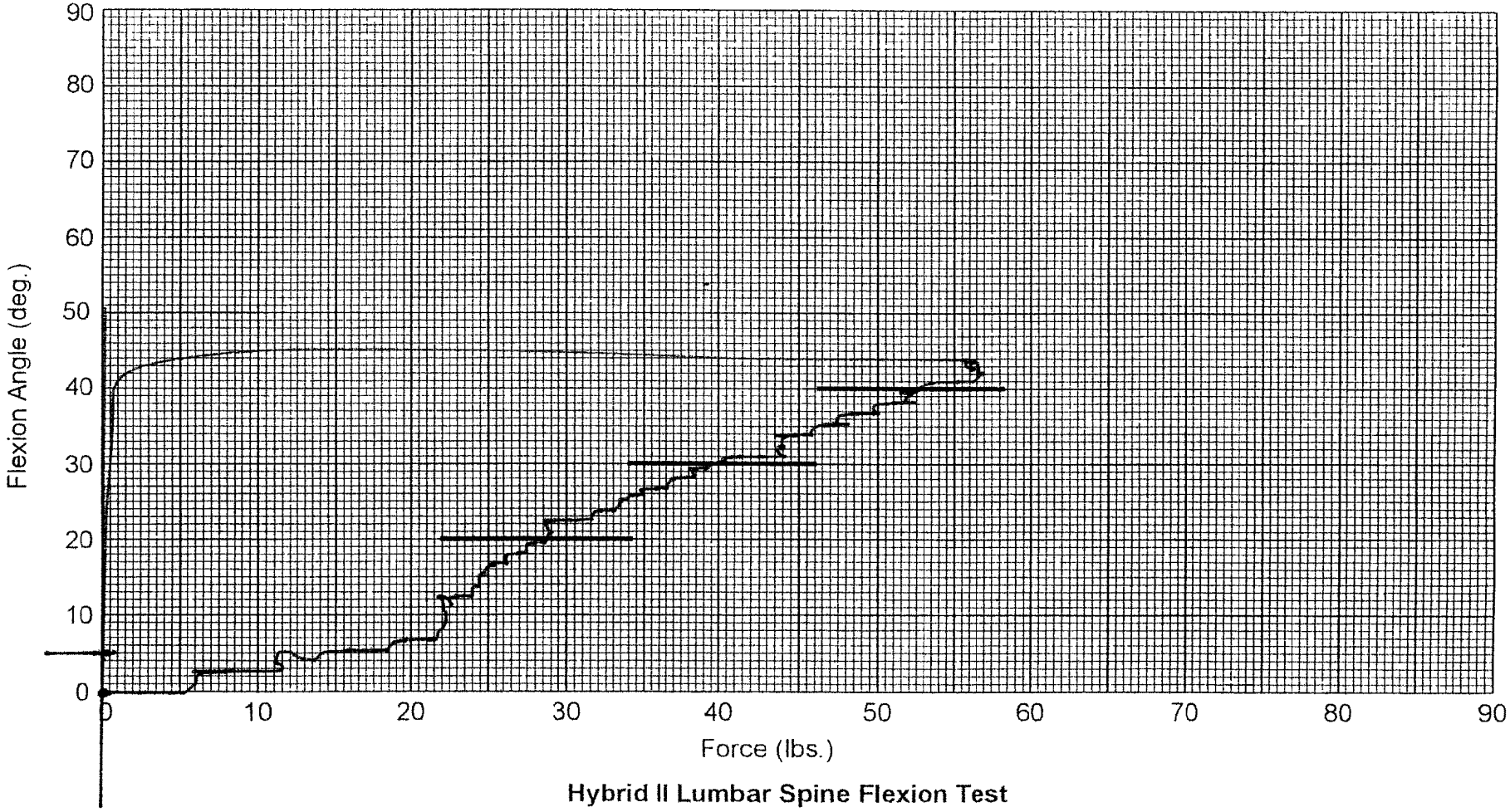
W/A

Date 9-20-2000

Performed By

Temp. 71°

Humidity 31 %



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: September 20, 2000 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 NO.: 016

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: September 20, 2000 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.
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 Serial No.: 016 Sequential Test Number: 1
Date: September 19, 2000 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	239
KH- Knee Pivot from Back Line (mm)	511 - 526	526
KV- Knee Pivot to Floor (mm)	490 - 505	494
HW- Hip Width (mm)	356 - 391	366

REMARKS: None

THORACIC SHOCK ABSORBER TESTS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1.2
Date: April 19, 2000 Laboratory Technician: B. Swiecicki

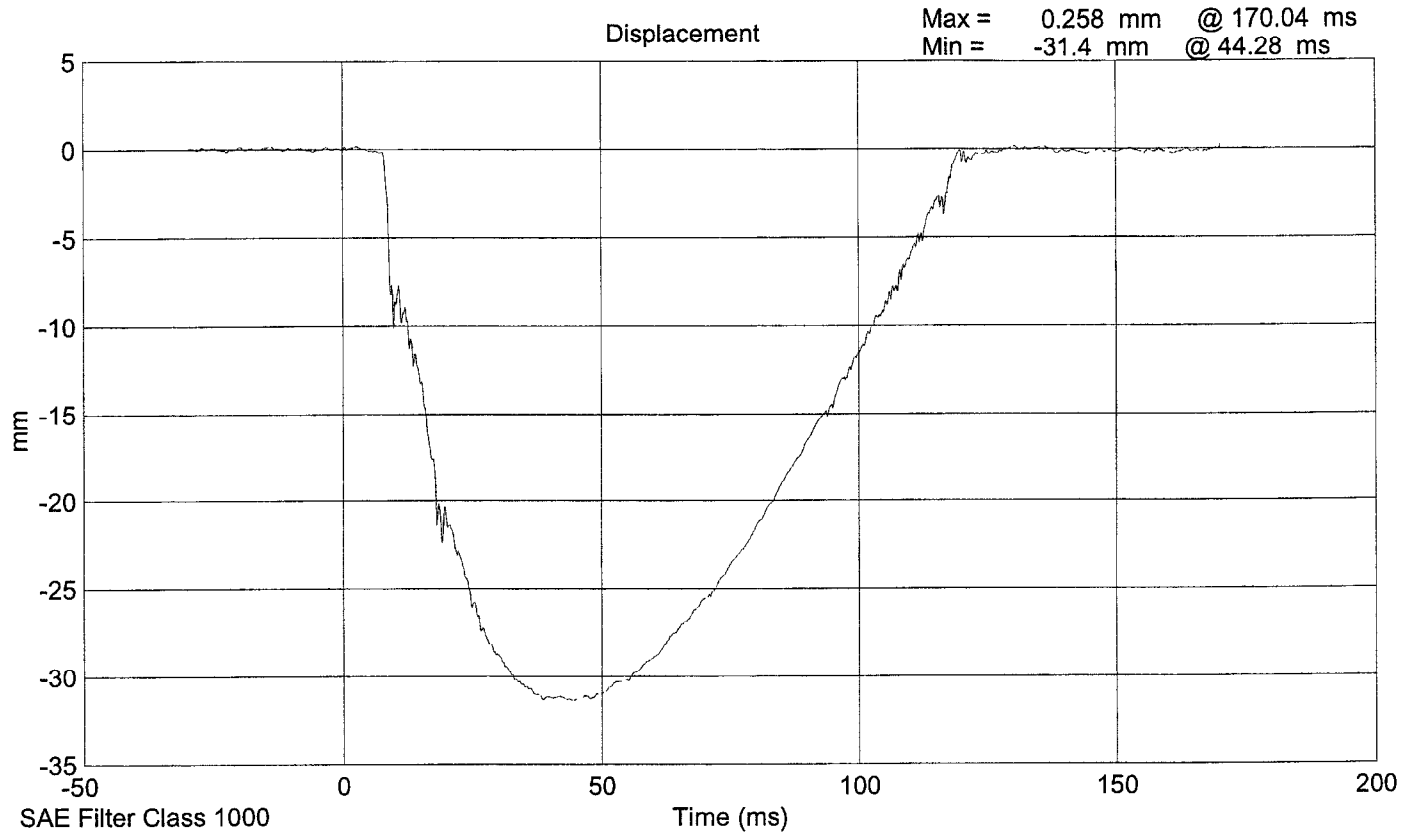
DAMPER IDENTIFICATION: 016

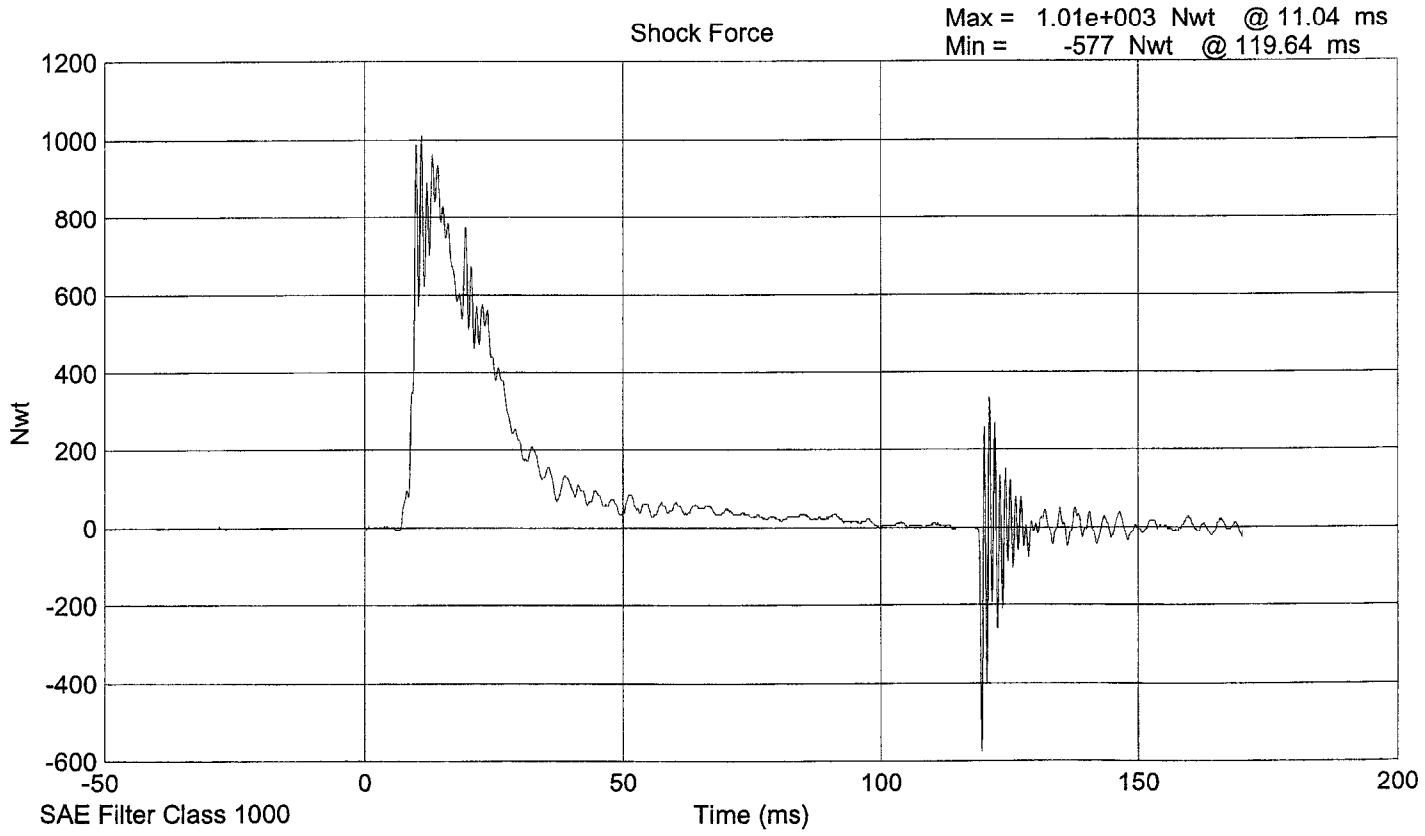
TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)		10 - 70	30
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	1010.8
	DISPLACEMENT (mm)	30 - 35	31.4
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	1821.6
	DISPLACEMENT (mm)	32 - 37	34.5
VELOCITY 6.10 m/s	FORCE (N)	3741 - 4448	3946.4
	DISPLACEMENT (mm)	33 - 40	37.1

DAMPER SETTING: 5

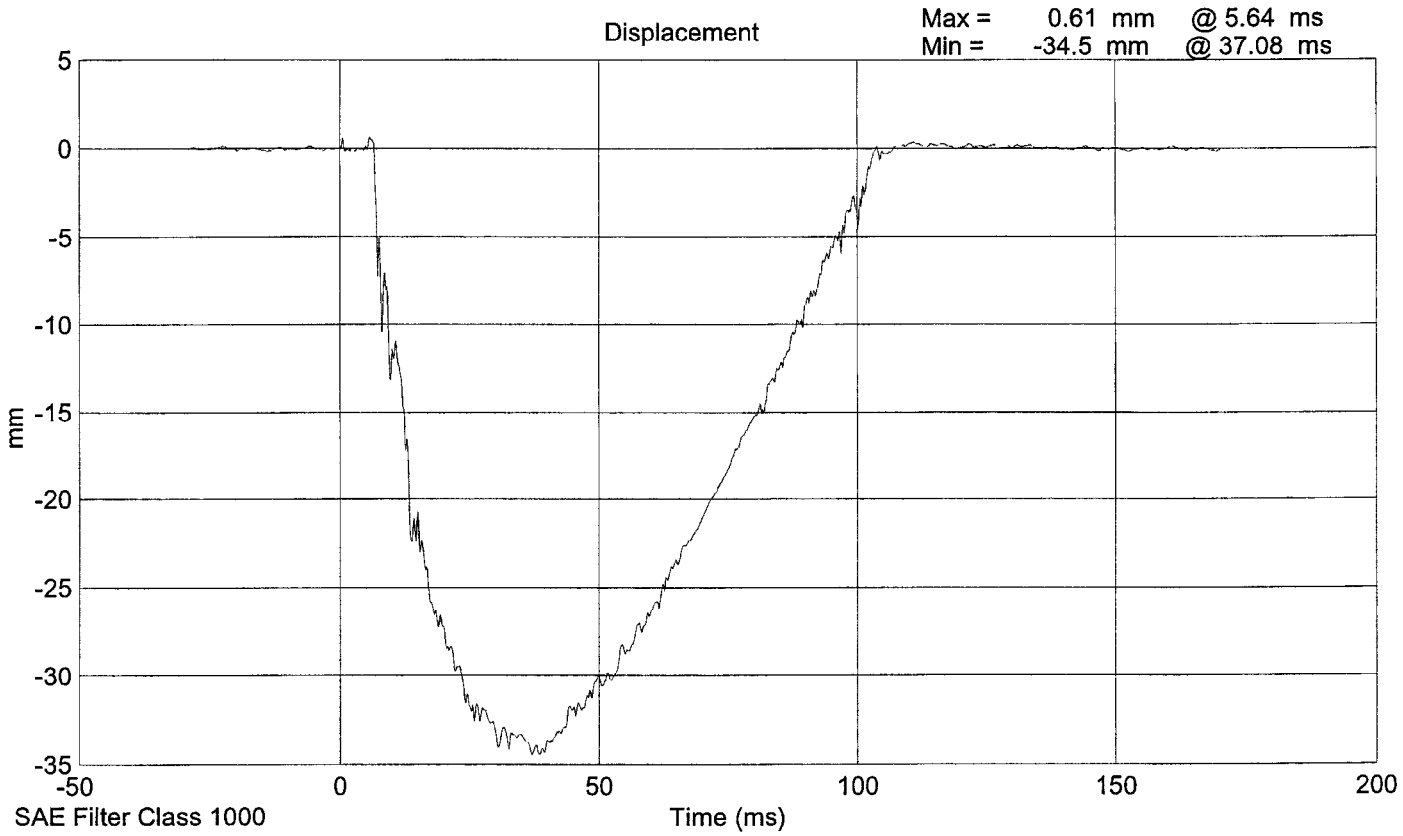
REMARKS: None

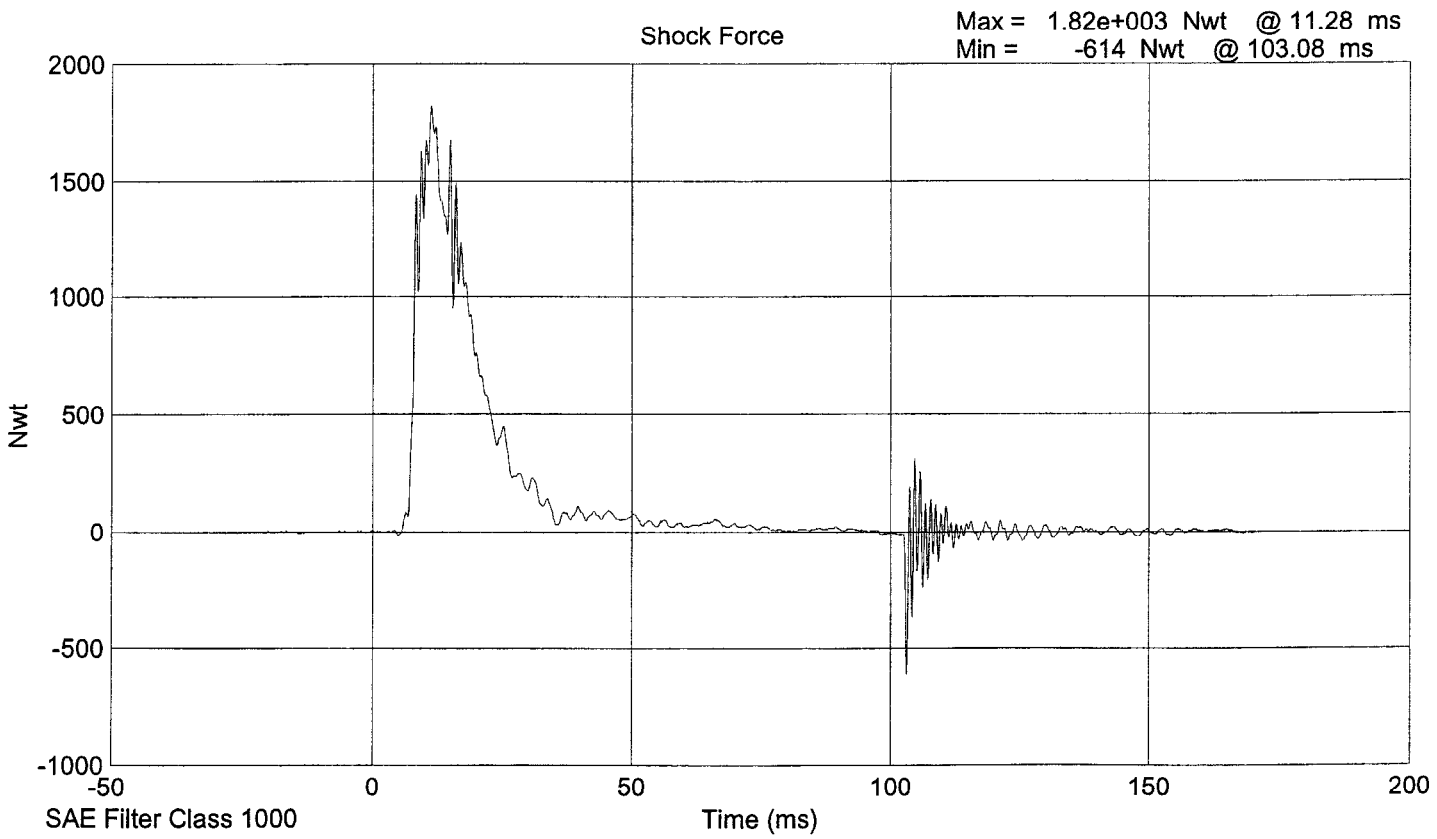
SID 016 Shock Absorber Impact Test @ 3.048 m/s



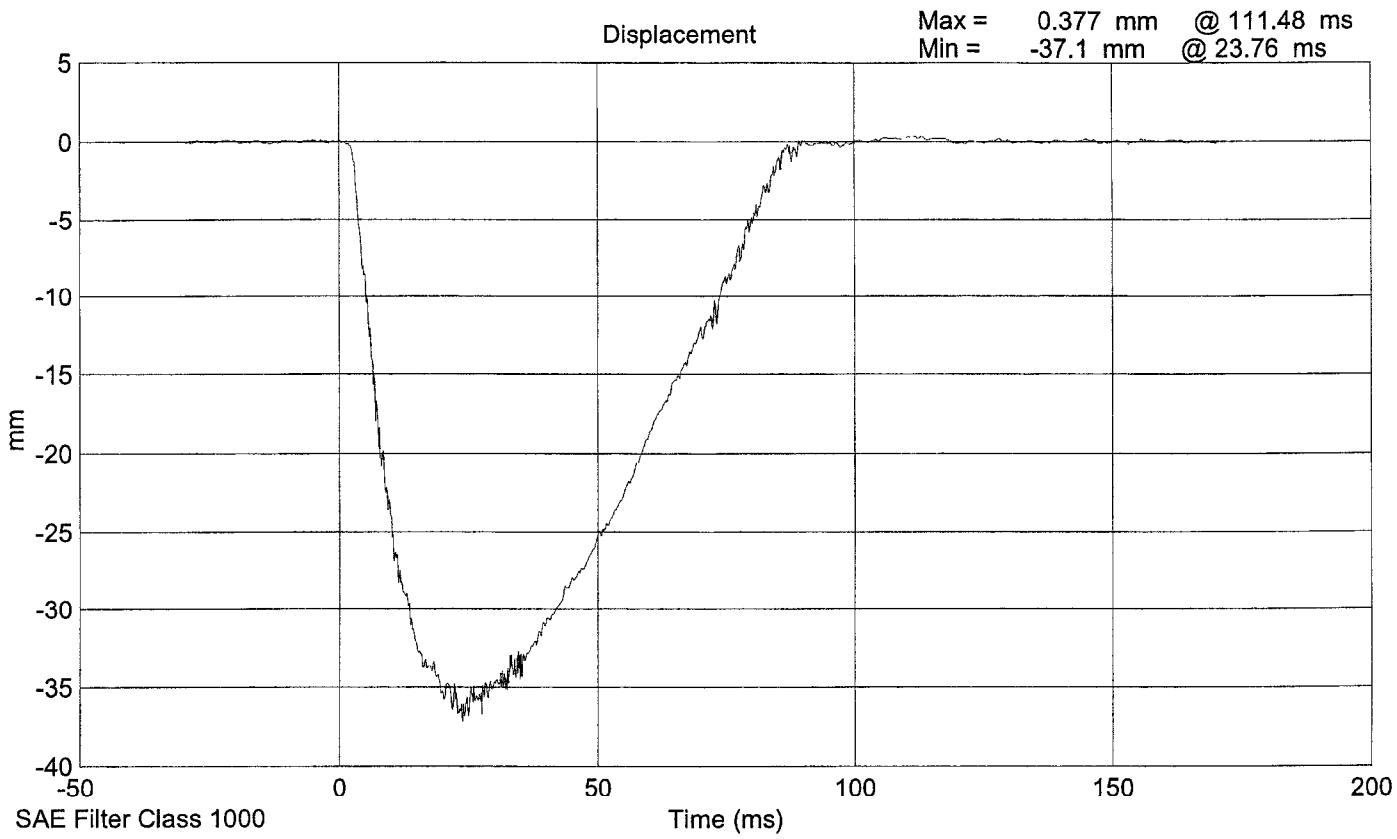


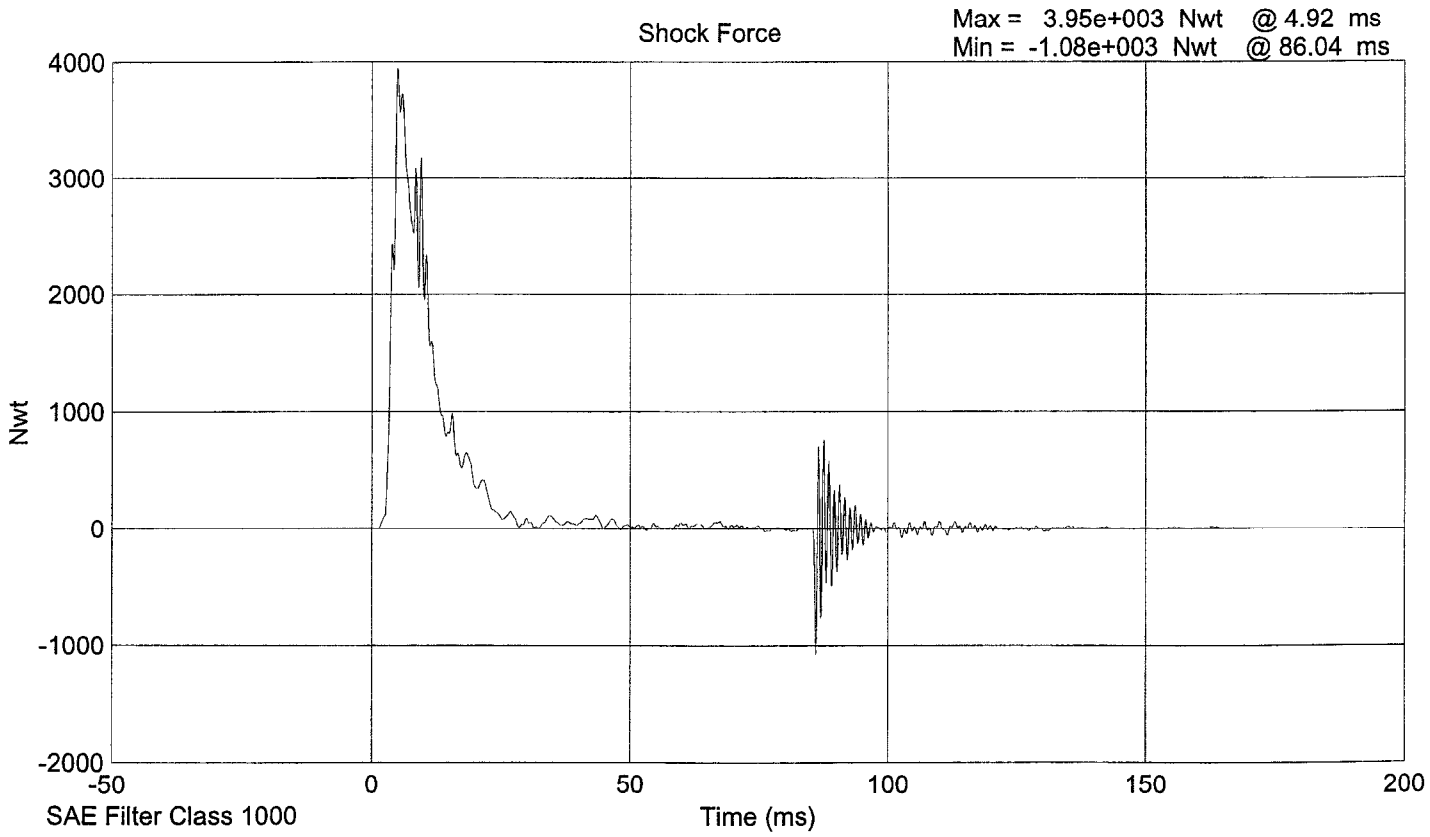
SID 016 Shock Absorber Impact Test @ 4.572 m/s





SID 016 Shock Absorber Impact Test @ 6.096 m/s





LATERAL THORAX IMPACT TEST
PRE-TEST

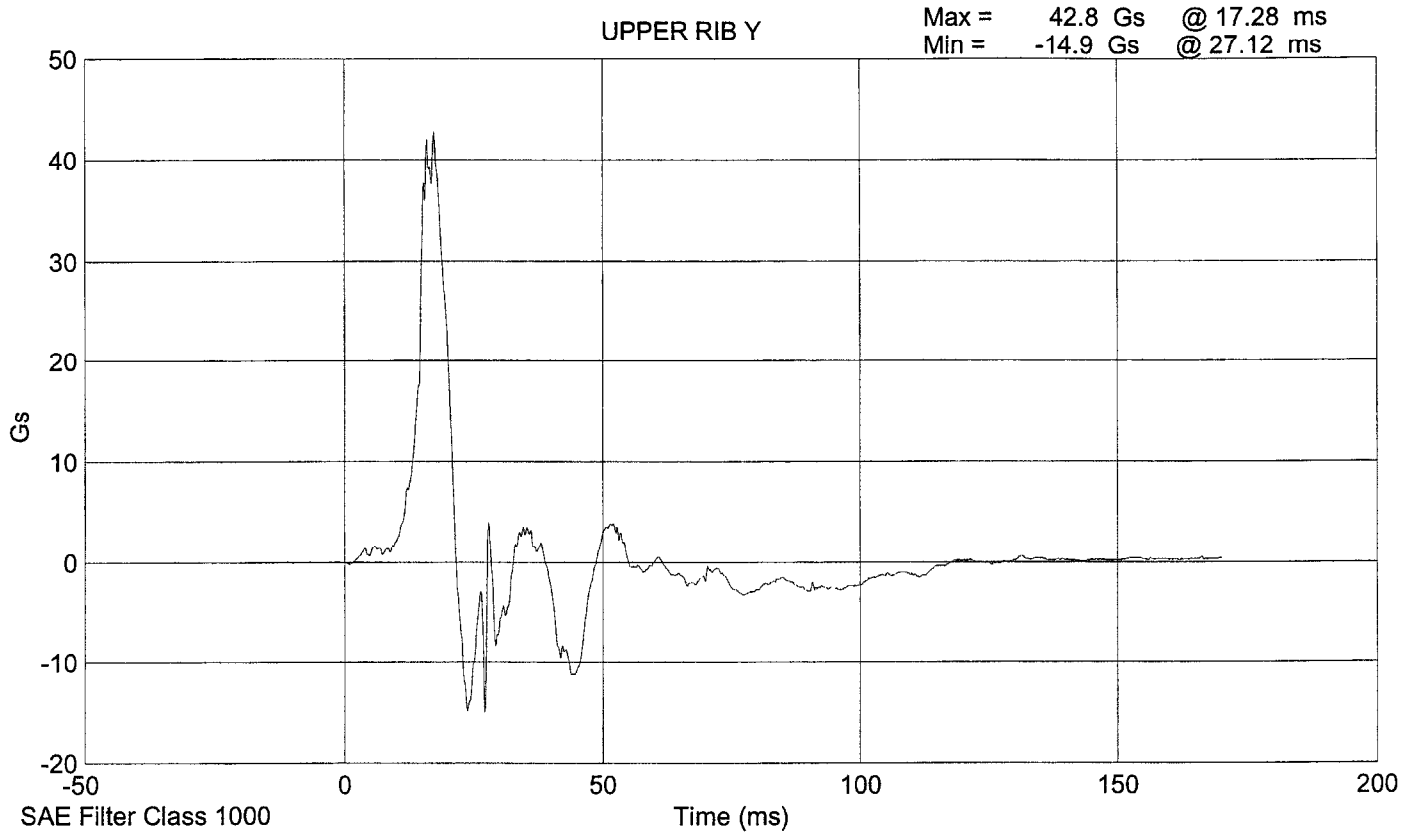
CONFIGURED FOR LEFT SIDE IMPACT

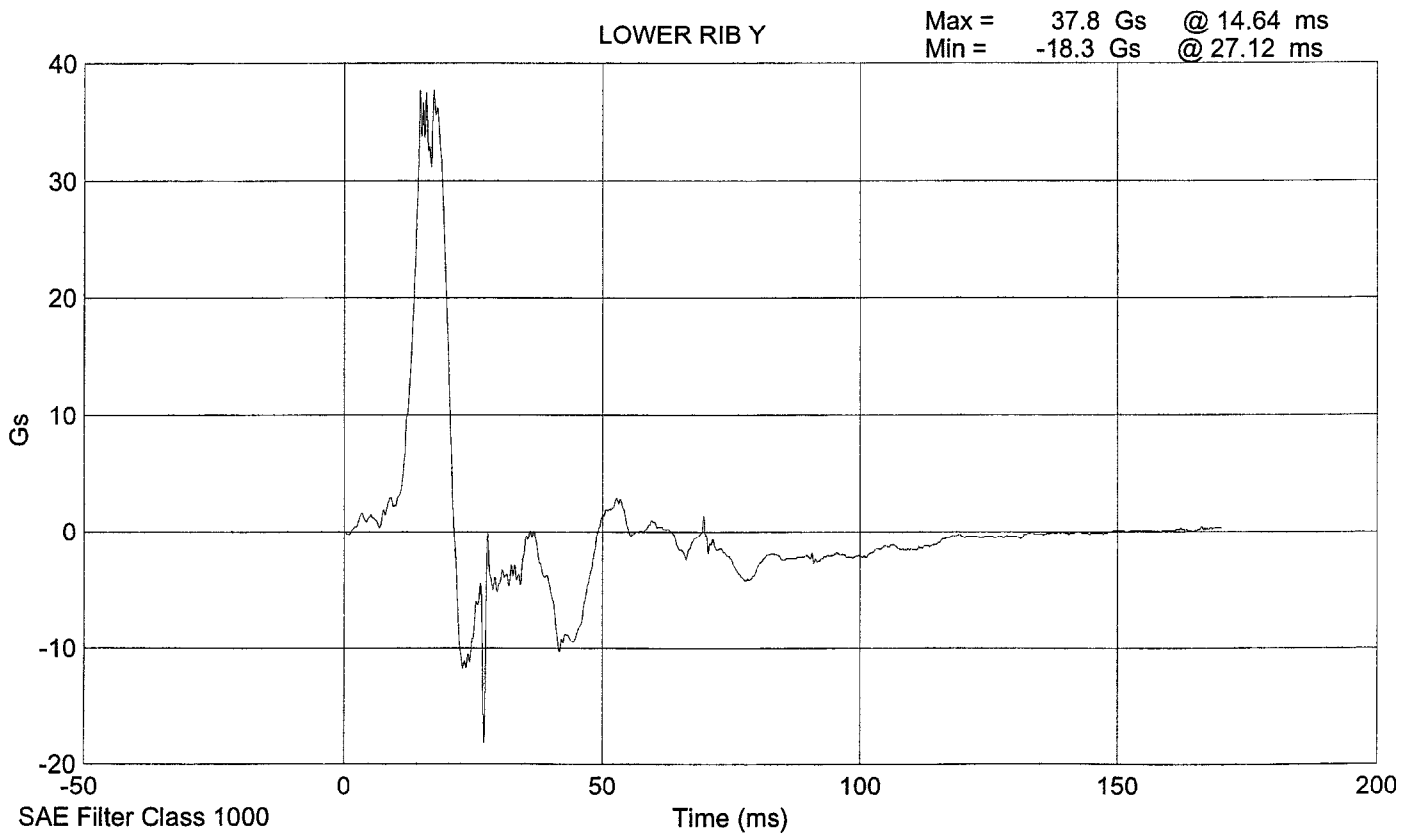
SID Serial No.: 016 Sequential Test Number: 1
Date: September 18, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE. HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.29
UPPER RIB (g's)	37 - 46	40.5
LOWER RIB (g's)	37 - 46	38.2
LOWER SPINE (g's)	15 - 22	19.2

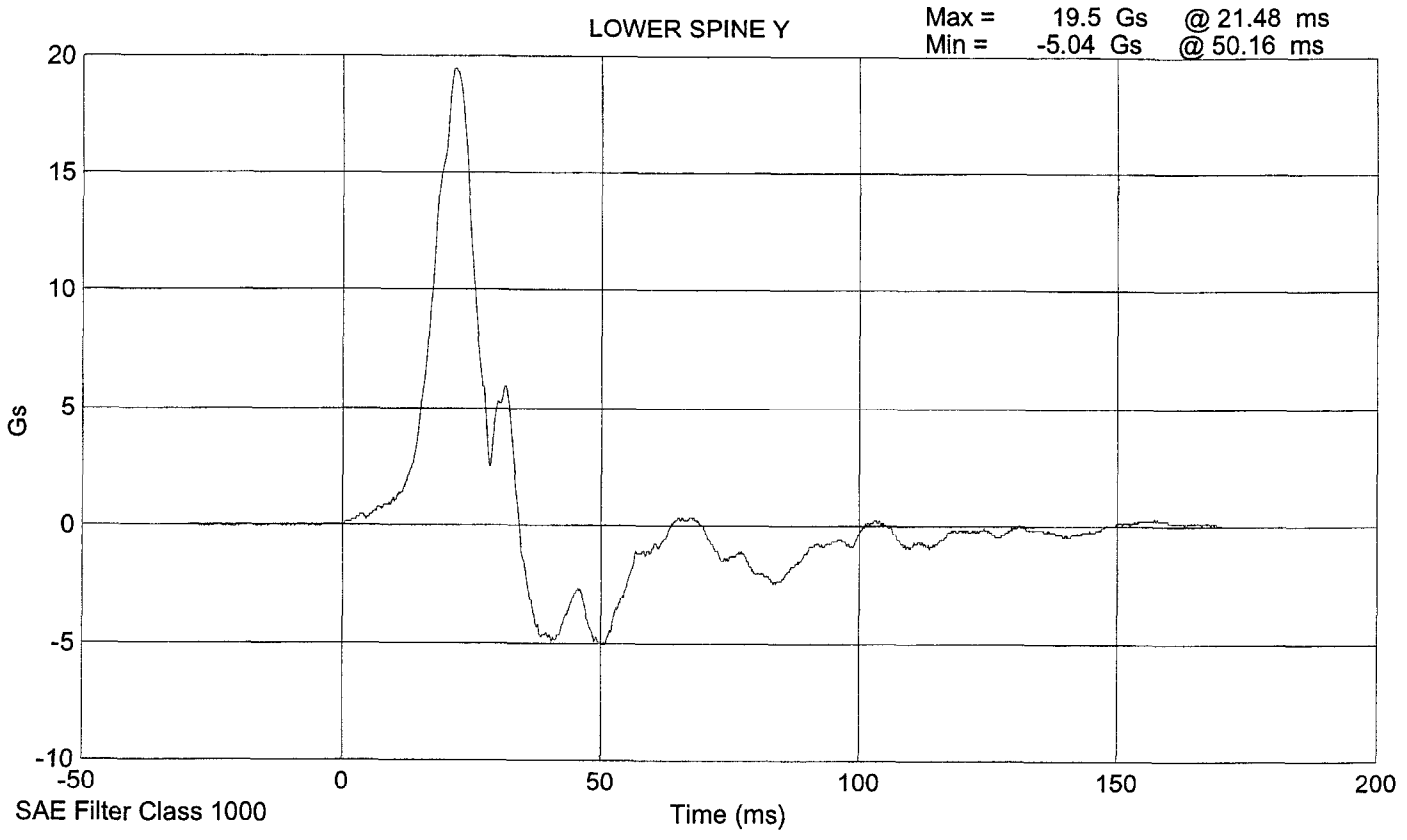
REMARKS: None

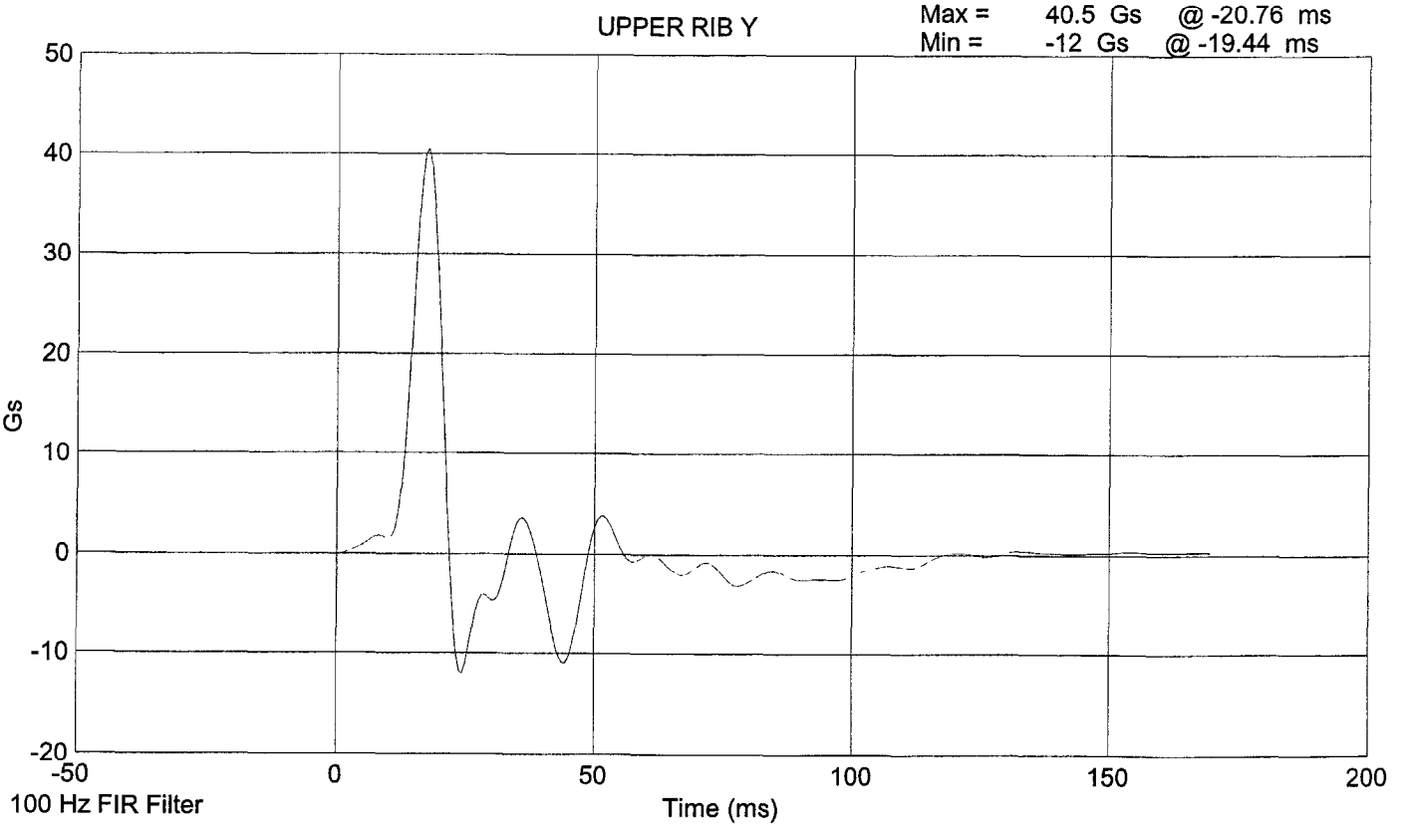
SID 16 Thorax Impact Test @ 4.2916 m/s



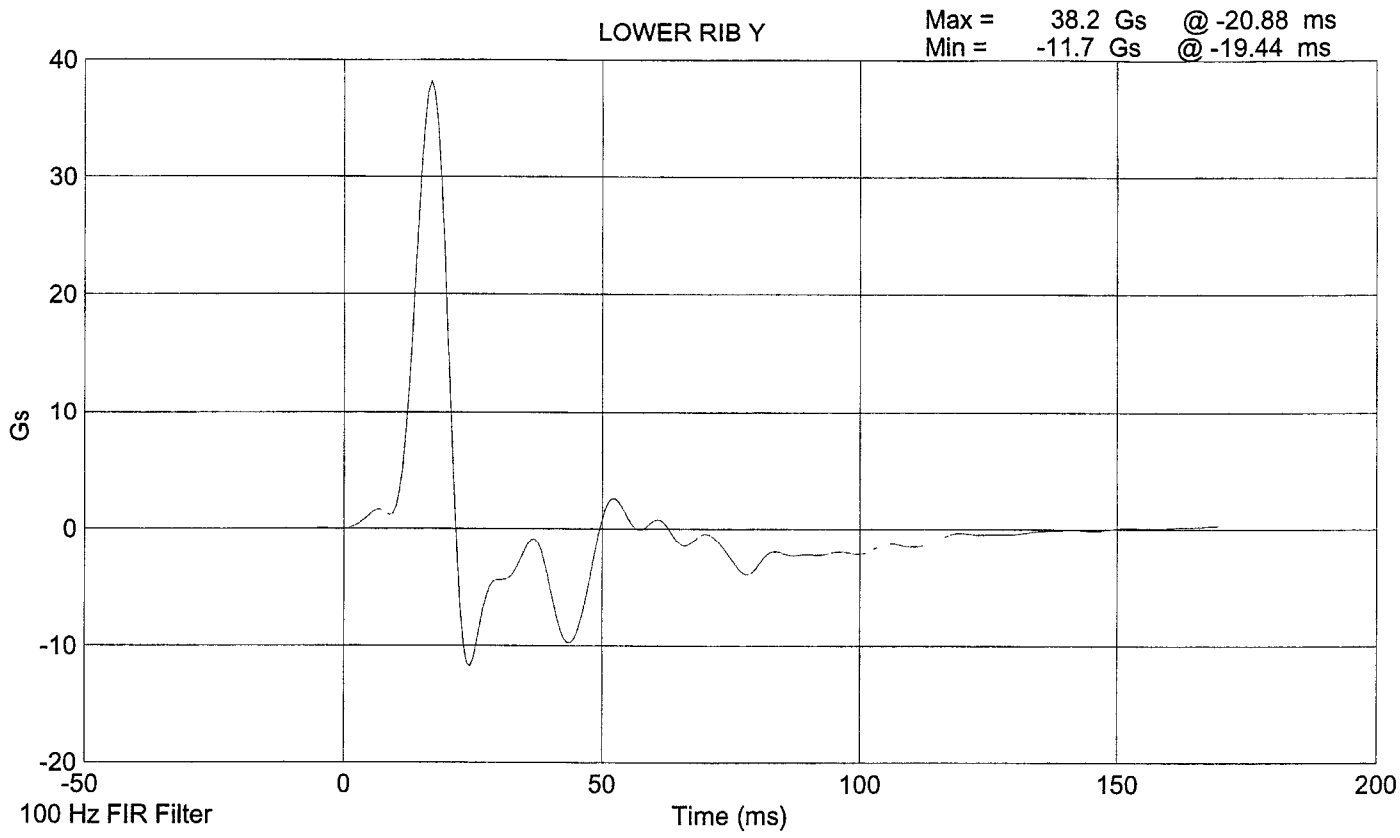


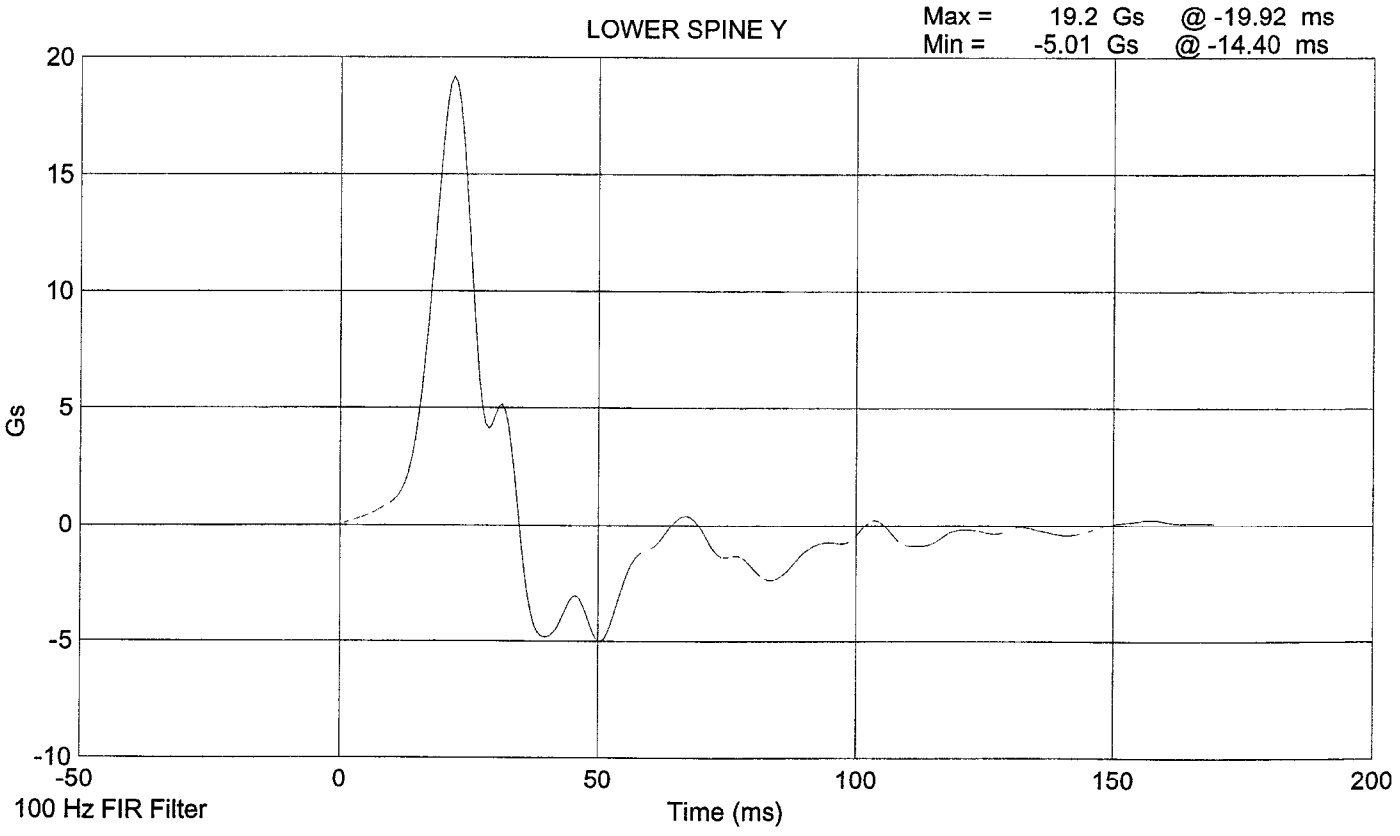
SID 16 Thorax Impact Test @ 4.2916 m/s





SID 16 Thorax Impact Test @ 4.2916 m/s





LATERAL PELVIS IMPACT TEST
PRE-TEST

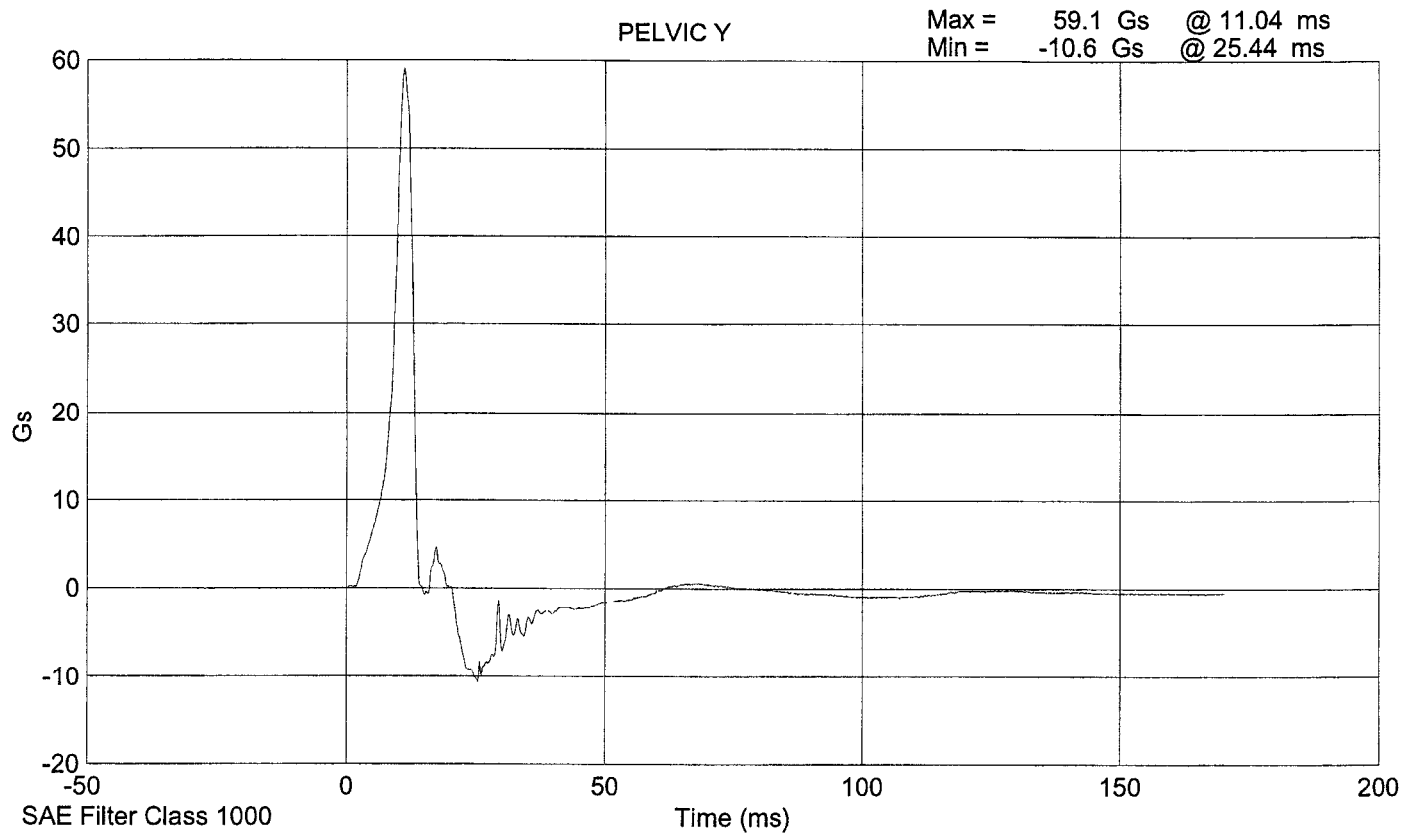
CONFIGURED FOR LEFT SIDE IMPACT

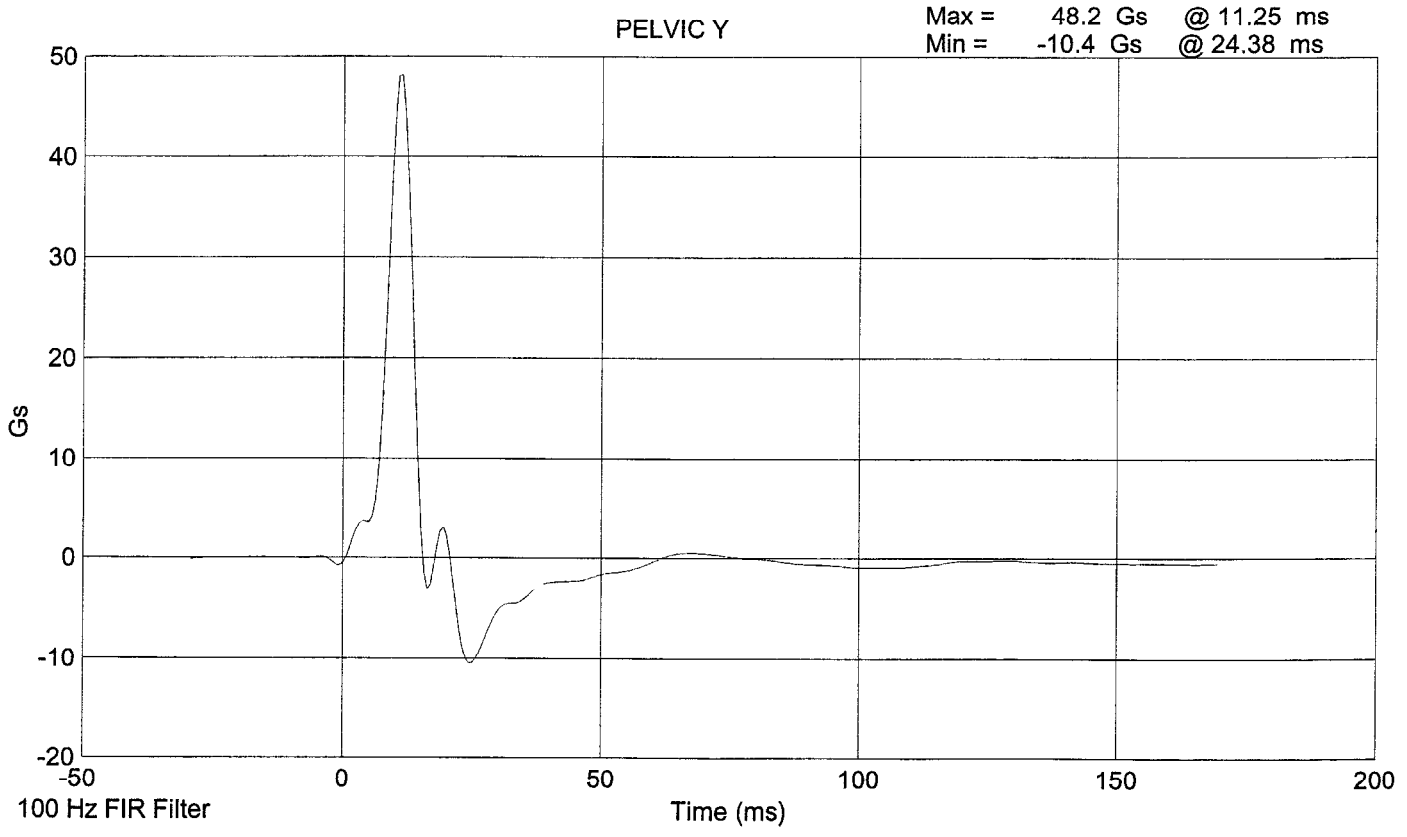
SID Serial No.: 016 Sequential Test Number: 1
Date: September 18, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE. HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.30
PELVIS ACCELERATION (g's)	40 - 60	48.2

REMARKS: None

SID 16 Pelvic Impact Test @ 4.2977 m/s





HEAD DROP TEST
PRE-TEST
(Test not required for SID certification)

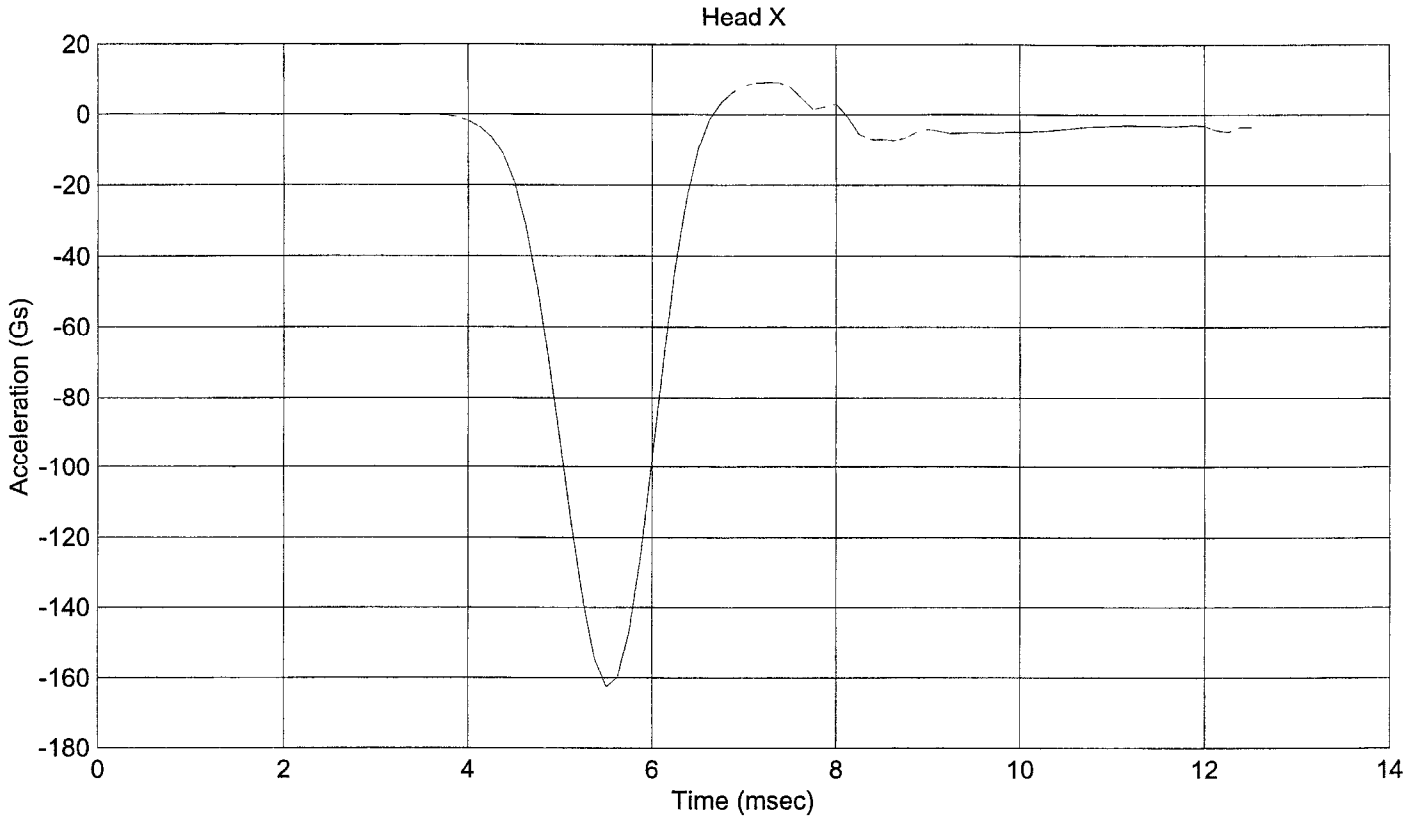
CONFIGURED FOR LEFT SIDE IMPACT

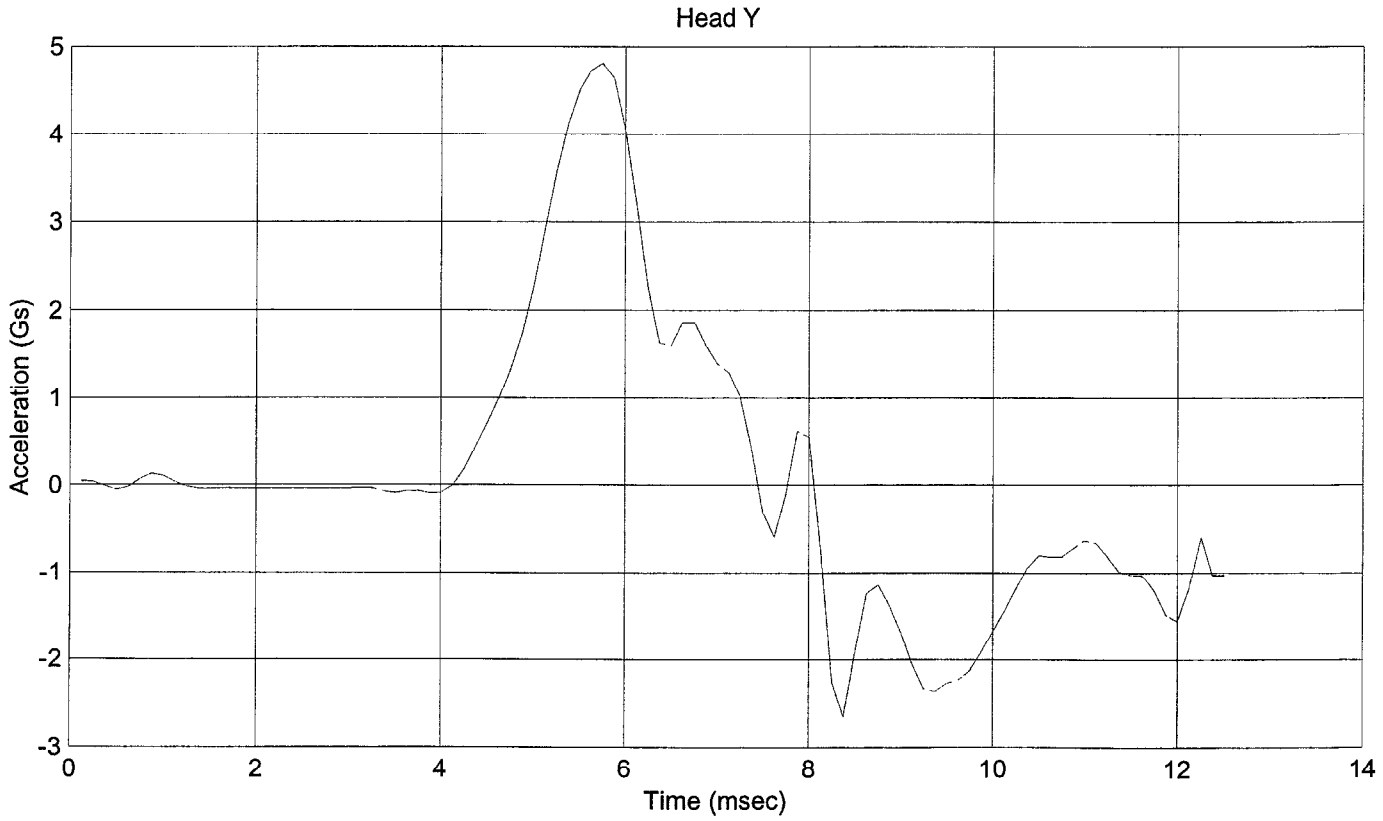
SID Serial No.: 016 Sequential Test Number: 1
Date: September 15, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	226.0
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	4.8
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.25

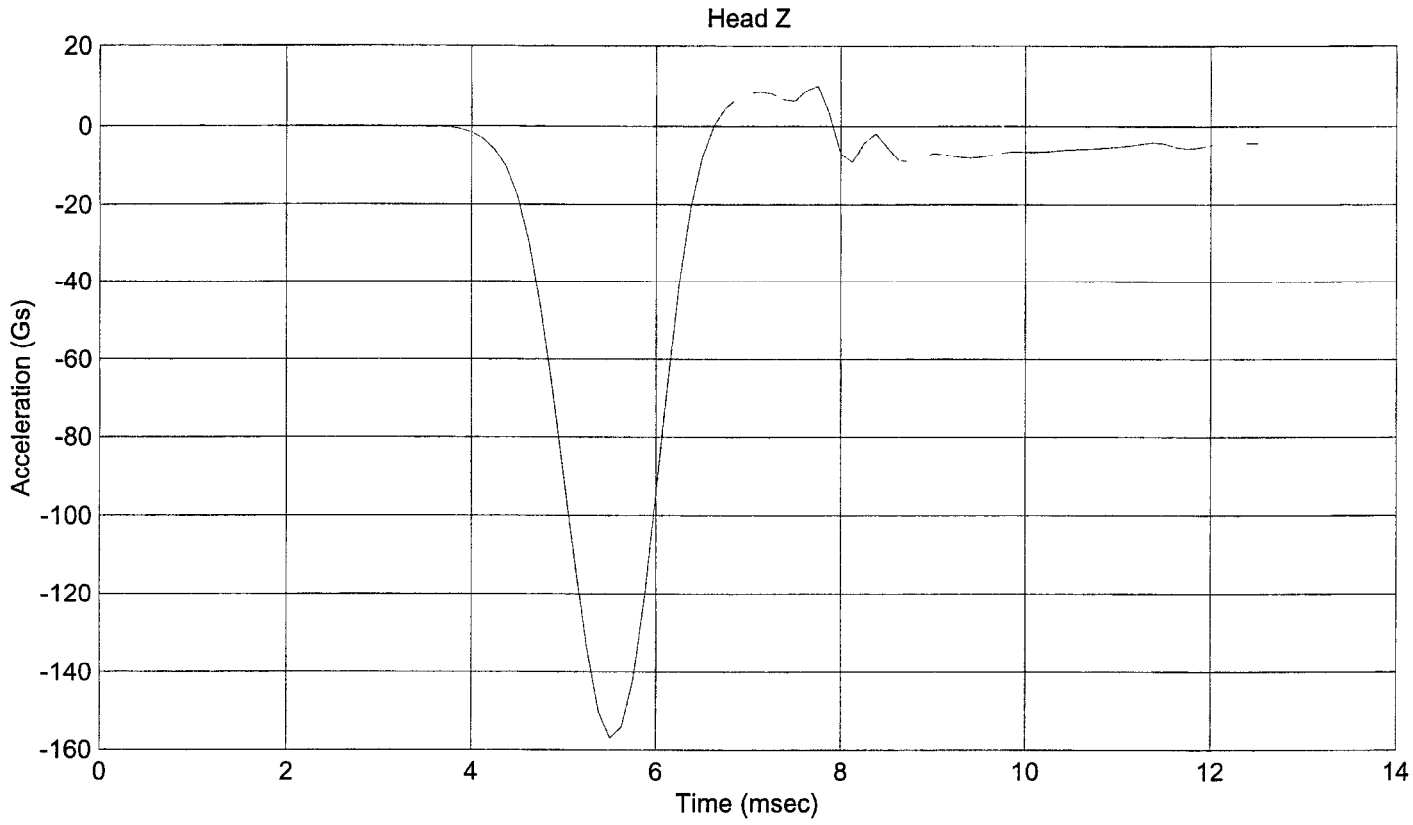
REMARKS: None

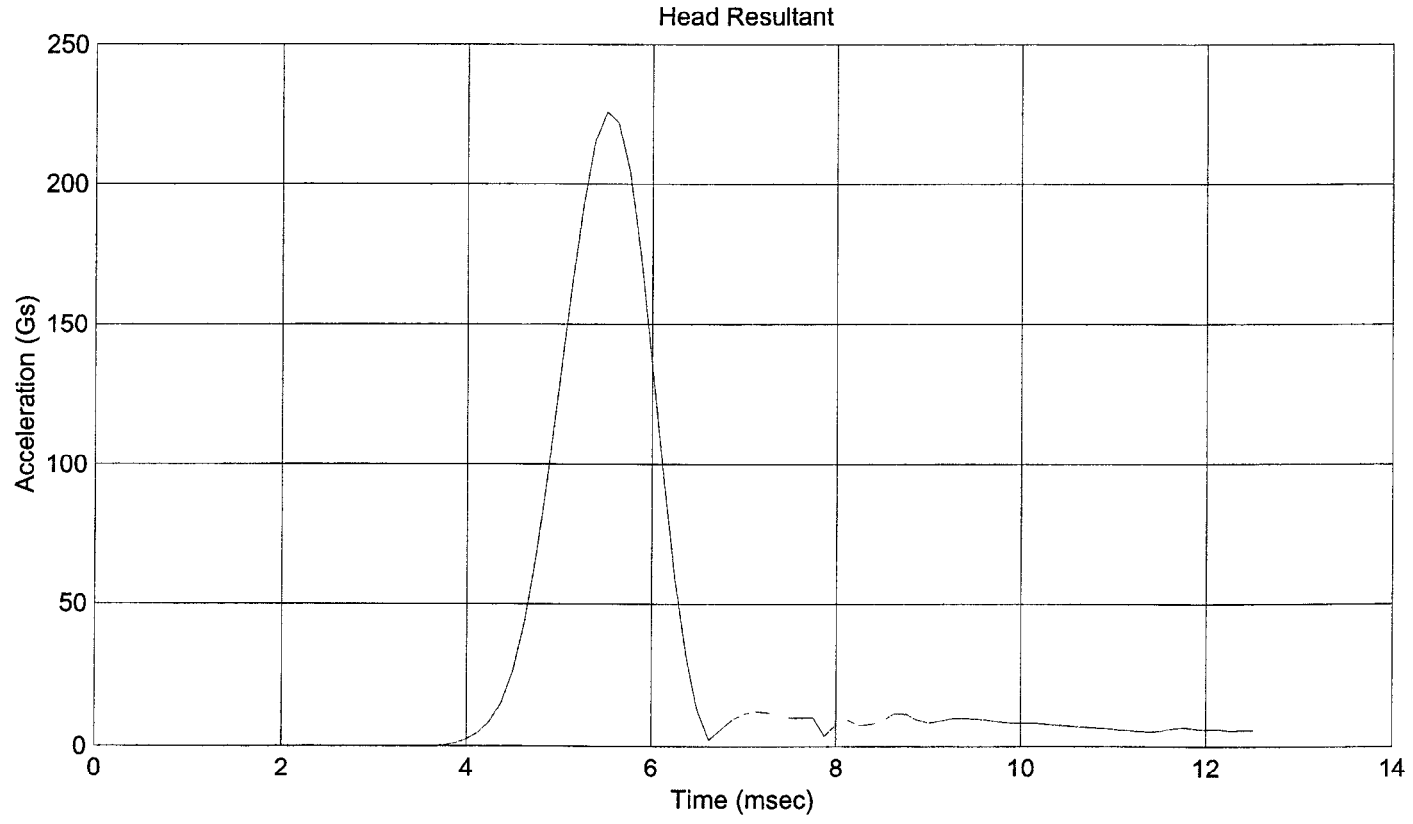
Hybrid II Head Drop Calibration 016800.hdp





Hybrid II Head Drop Calibration 016800.hdp





ABDOMINAL COMPRESSION TEST

PRE-TEST

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1

Date: September 20, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
FORCE @ 13 mm (N)	104 - 162	111
FORCE @ 19 mm (N)	163 - 221	177
FORCE @ 25 mm (N)	222 - 280	256
FORCE @ 33 mm (N)	325 - 391	375

REMARKS: None

Dummy S/N 016

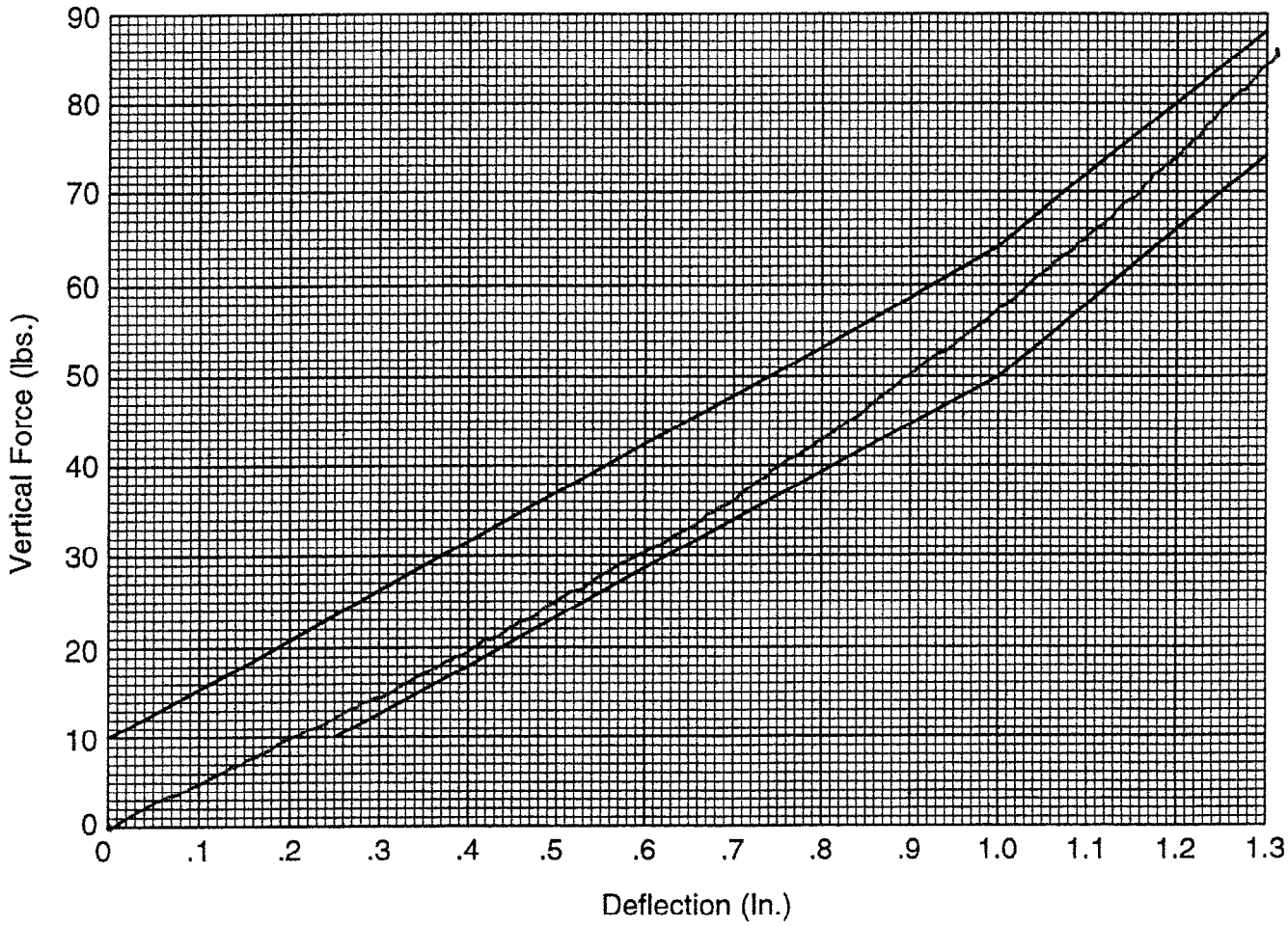
W/A _____

Date 9-20-2000

Performed By _____

Temp. 71°

Humidity 30%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST

PRE-TEST

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1

Date: September 20, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	114.5
FORCE @ 30° (N)	151.2 - 204.6	177.9
FORCE @ 40° (N)	204.6 - 258	234.9
RETURN ANGLE	12° max.	4.2°

REMARKS: None

Dummy S/N 016

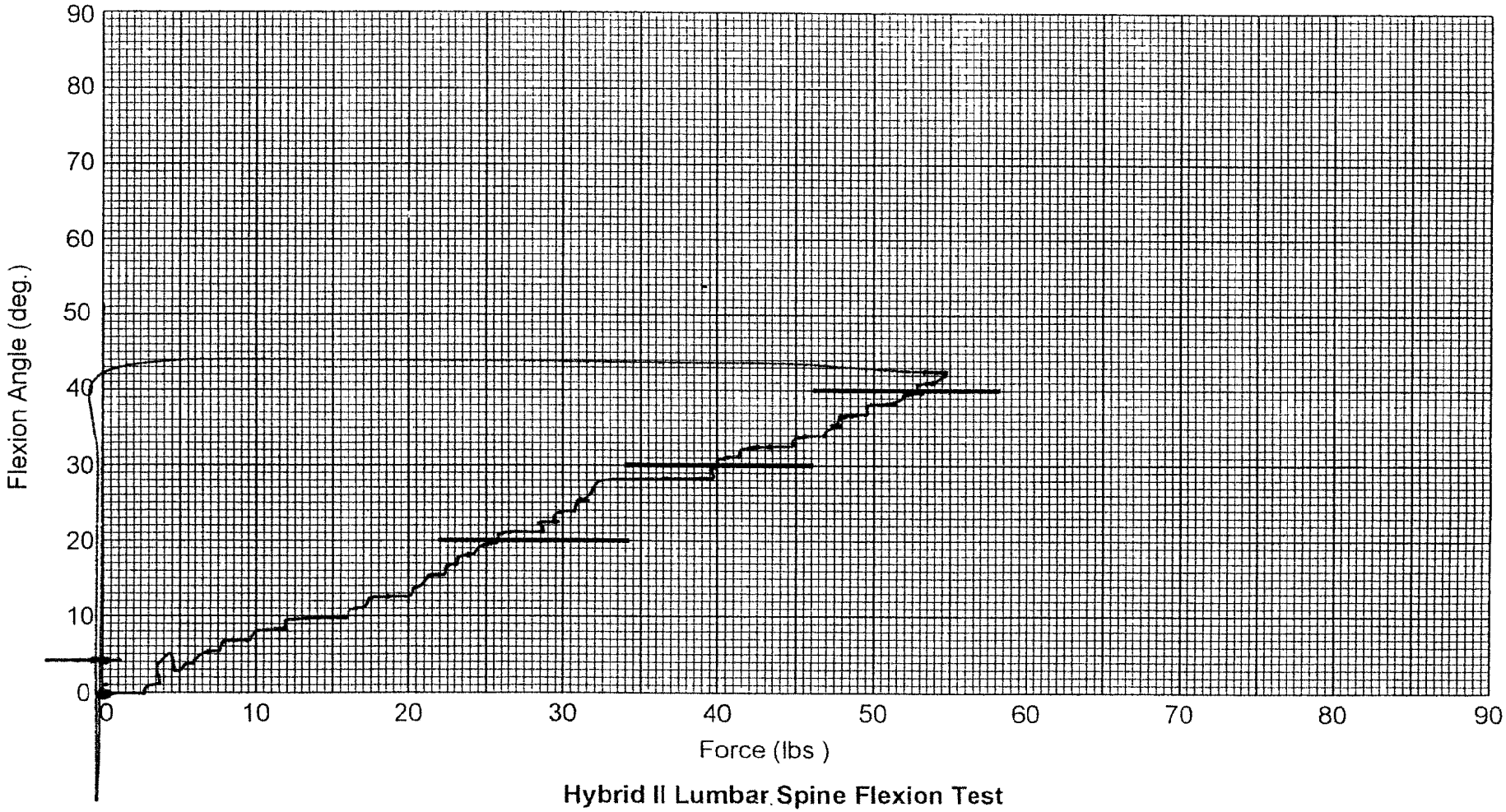
W/A

Date 9-20-2000

Performed By

Temp. 71°

Humidity 30%



Hybrid II Lumbar Spine Flexion Test

CALIBRATION TEST RESULTS
POST TEST

SID NO.: 015

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: October 16, 2000 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Failed acceleration requirement.
HEAD DROP 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 Serial No.: 015 Sequential Test Number: 1
Date: October 16, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	511
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
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	372

REMARKS: None

LATERAL THORAX IMPACT TEST
POST TEST

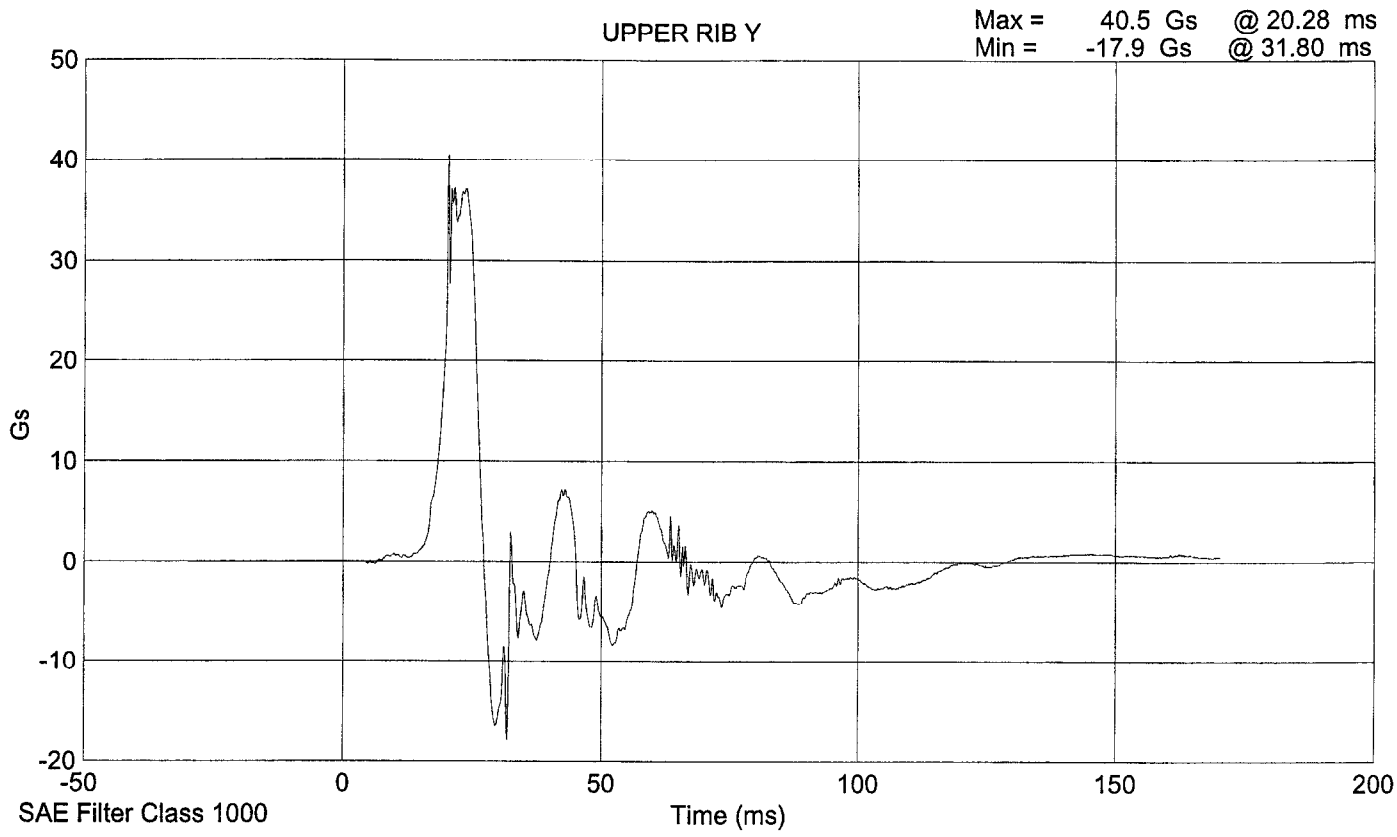
CONFIGURED FOR LEFT SIDE IMPACT

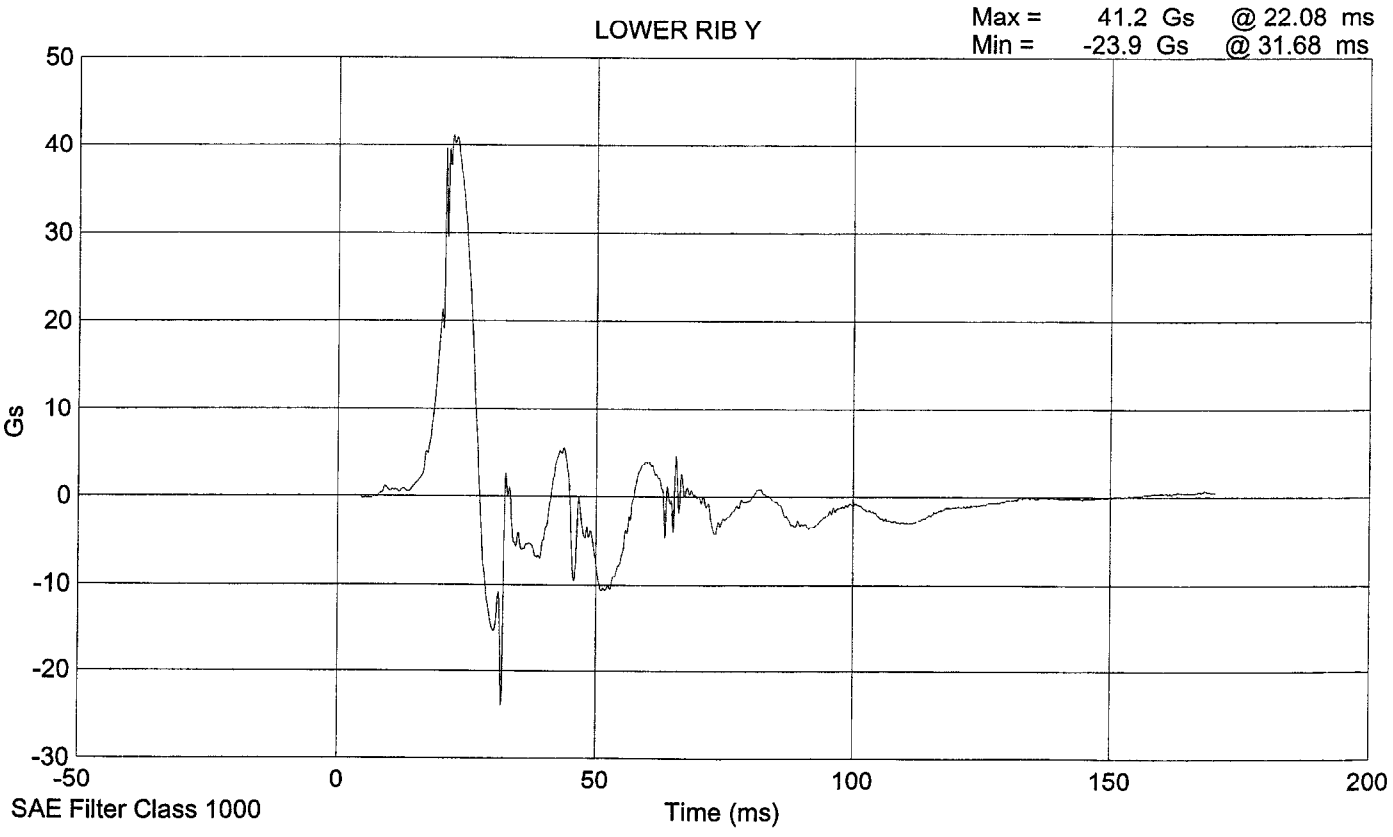
SID Serial No.: 015 Sequential Test Number: 1
Date: October 13, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	20
RELATIVE. HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.30
UPPER RIB (g's)	37 - 46	39.07
LOWER RIB (g's)	37 - 46	40.38
LOWER SPINE (g's)	15 - 22	21.75

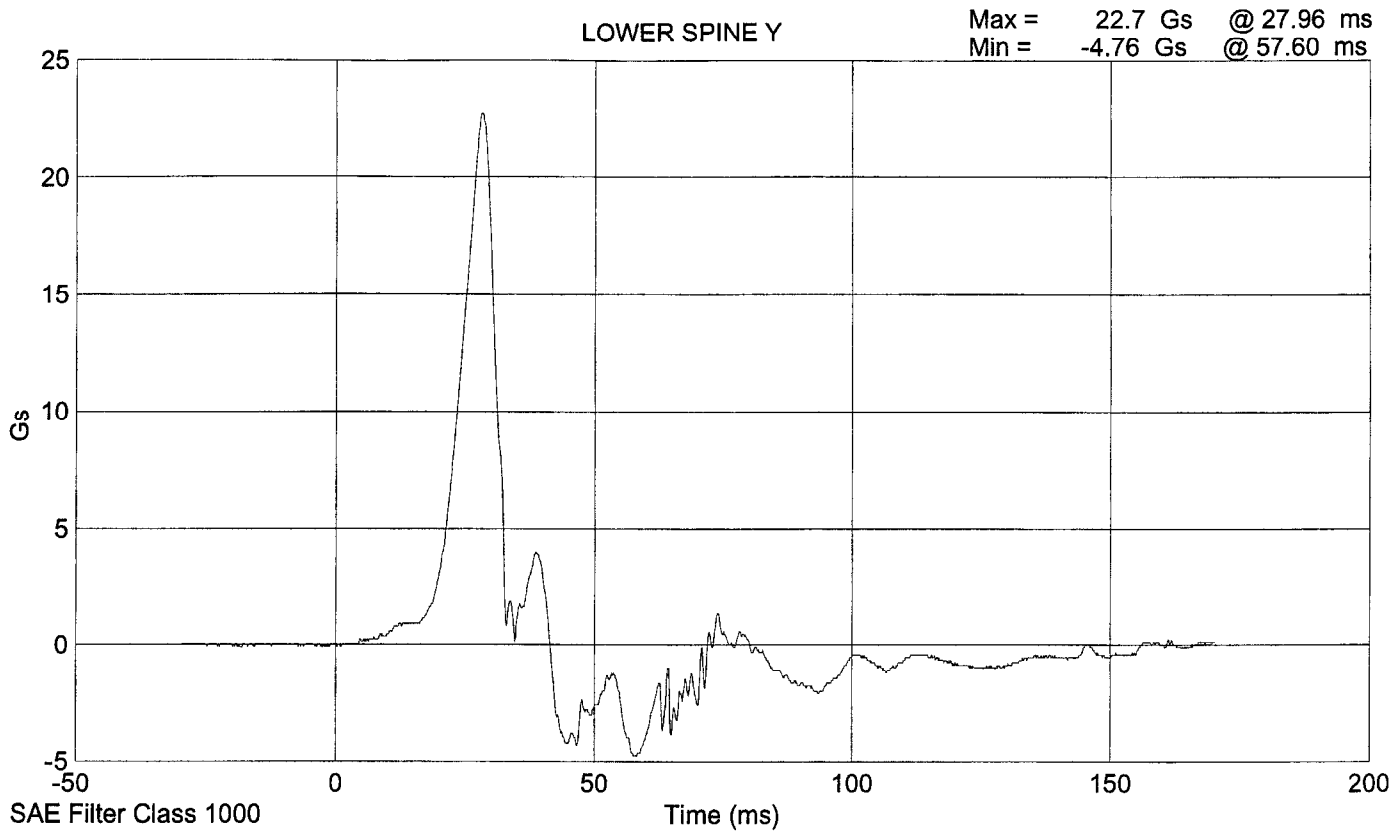
REMARKS: None

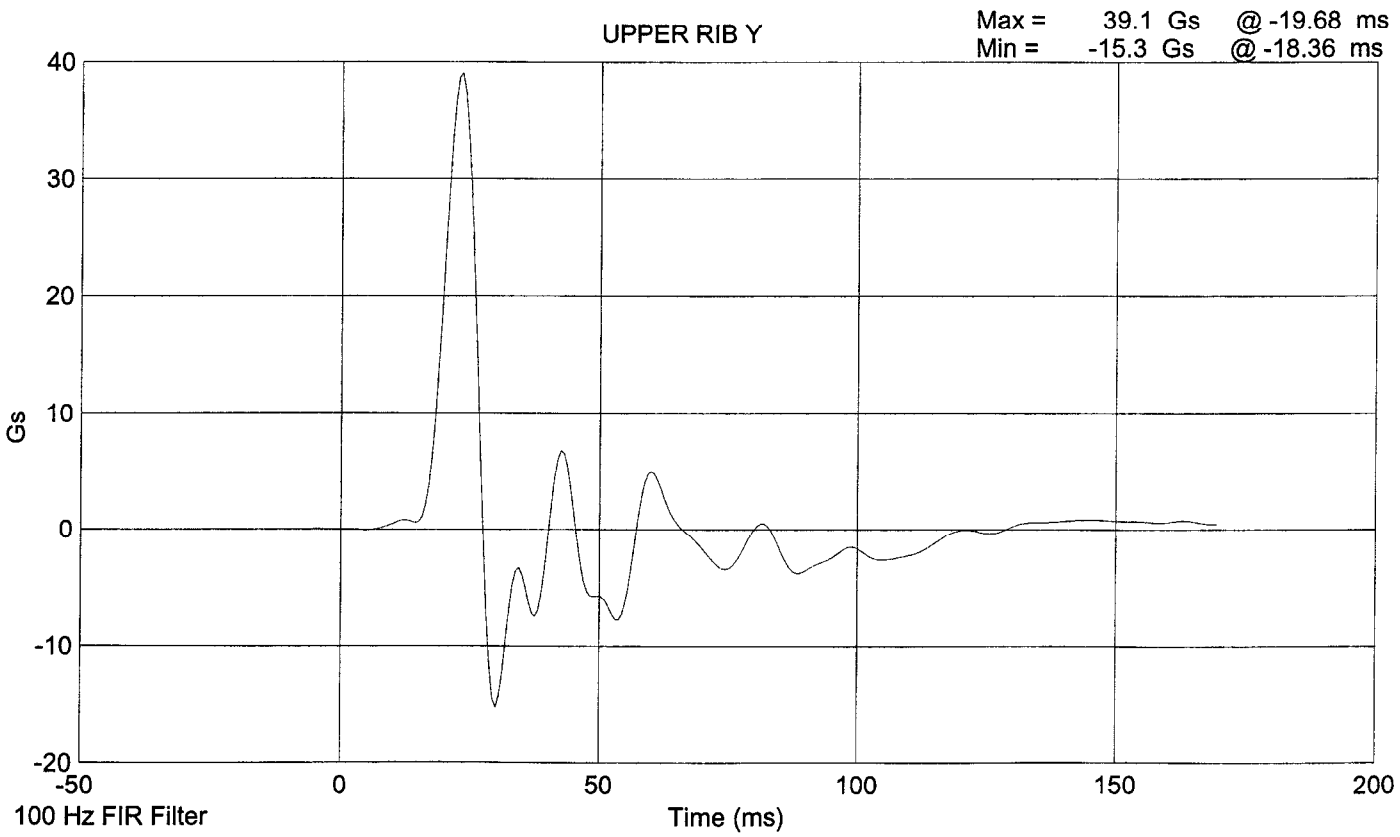
SID 015 Thorax Impact Test @ 4.3007 m/s



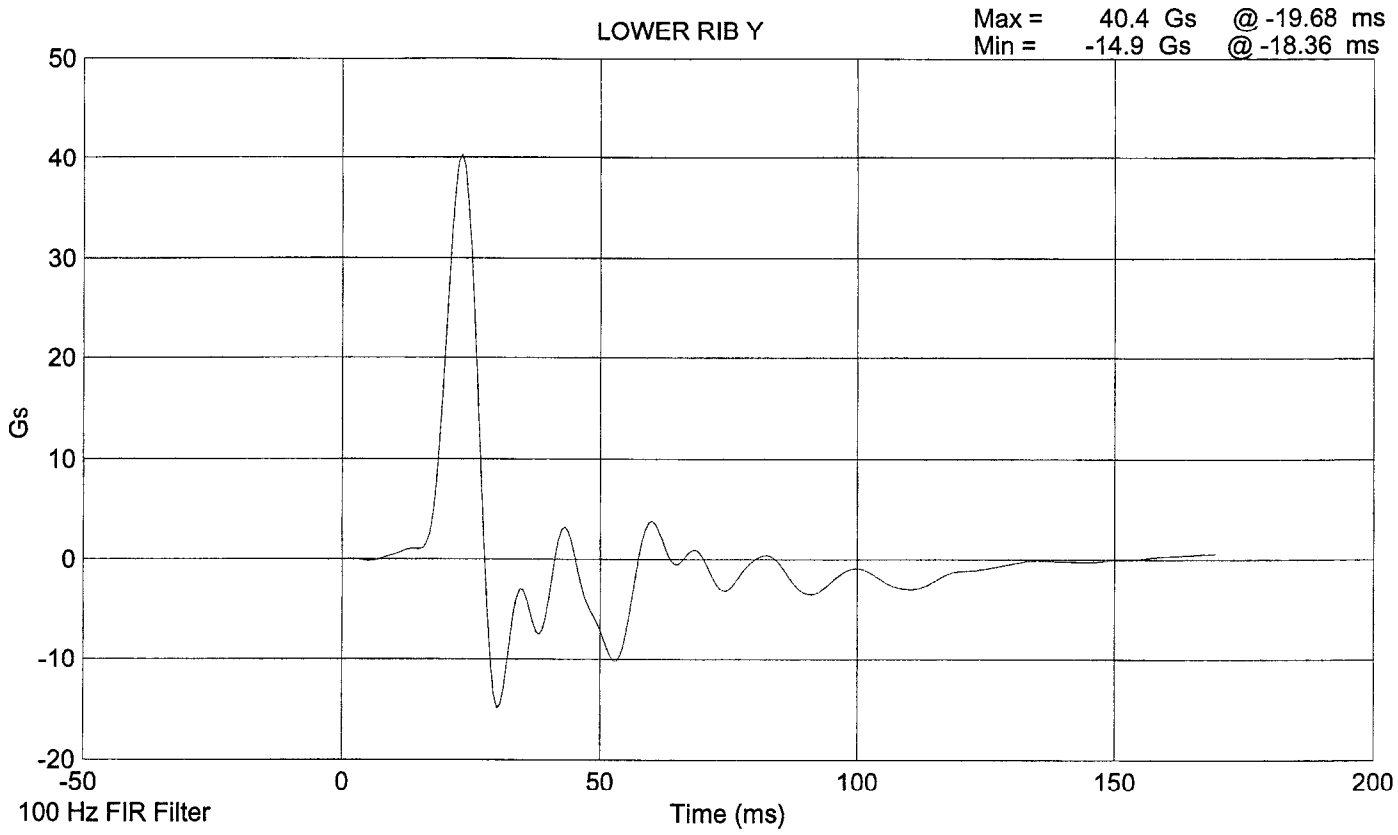


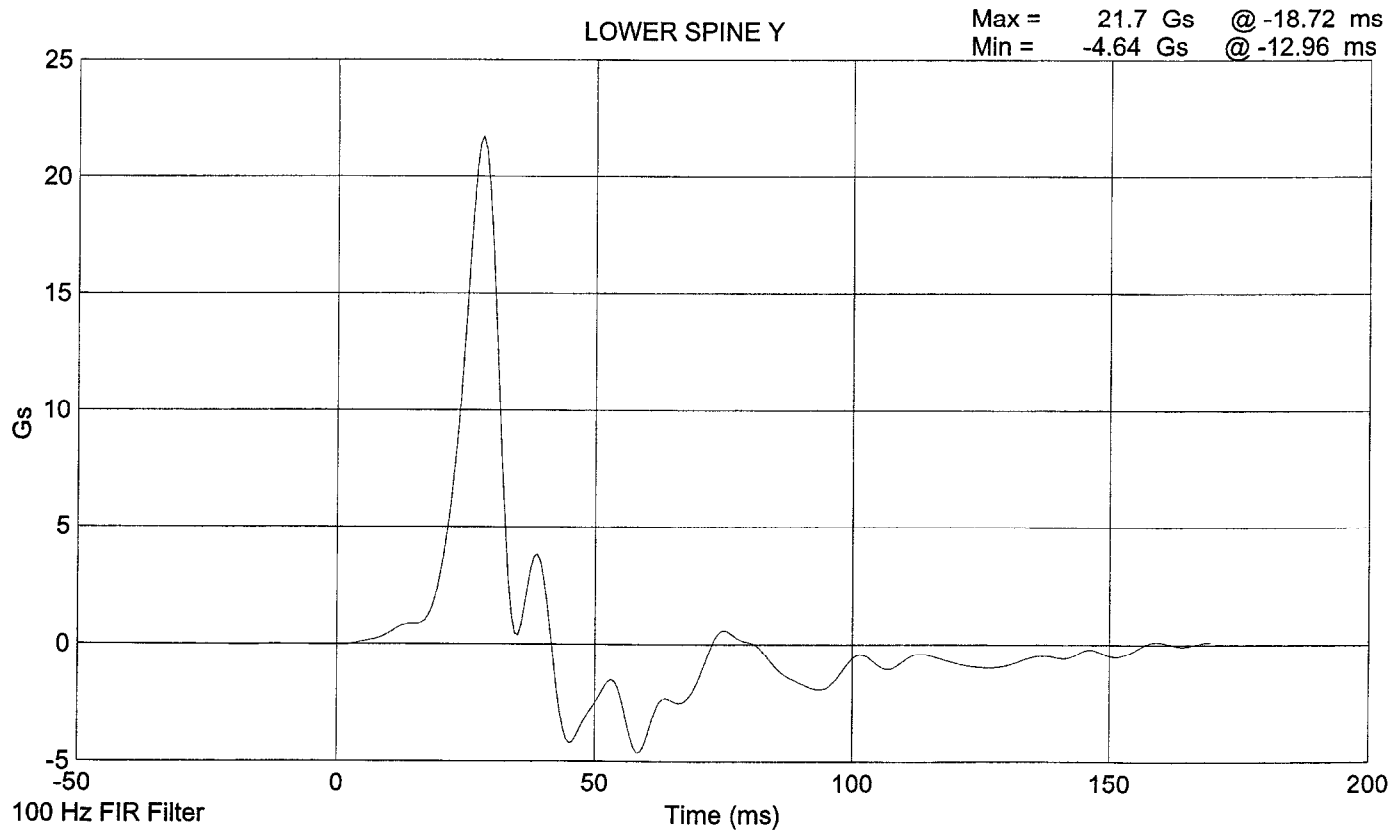
SID 015 Thorax Impact Test @ 4.3007 m/s





SID 015 Thorax Impact Test @ 4.3007 m/s





LATERAL PELVIS IMPACT TEST
POST TEST

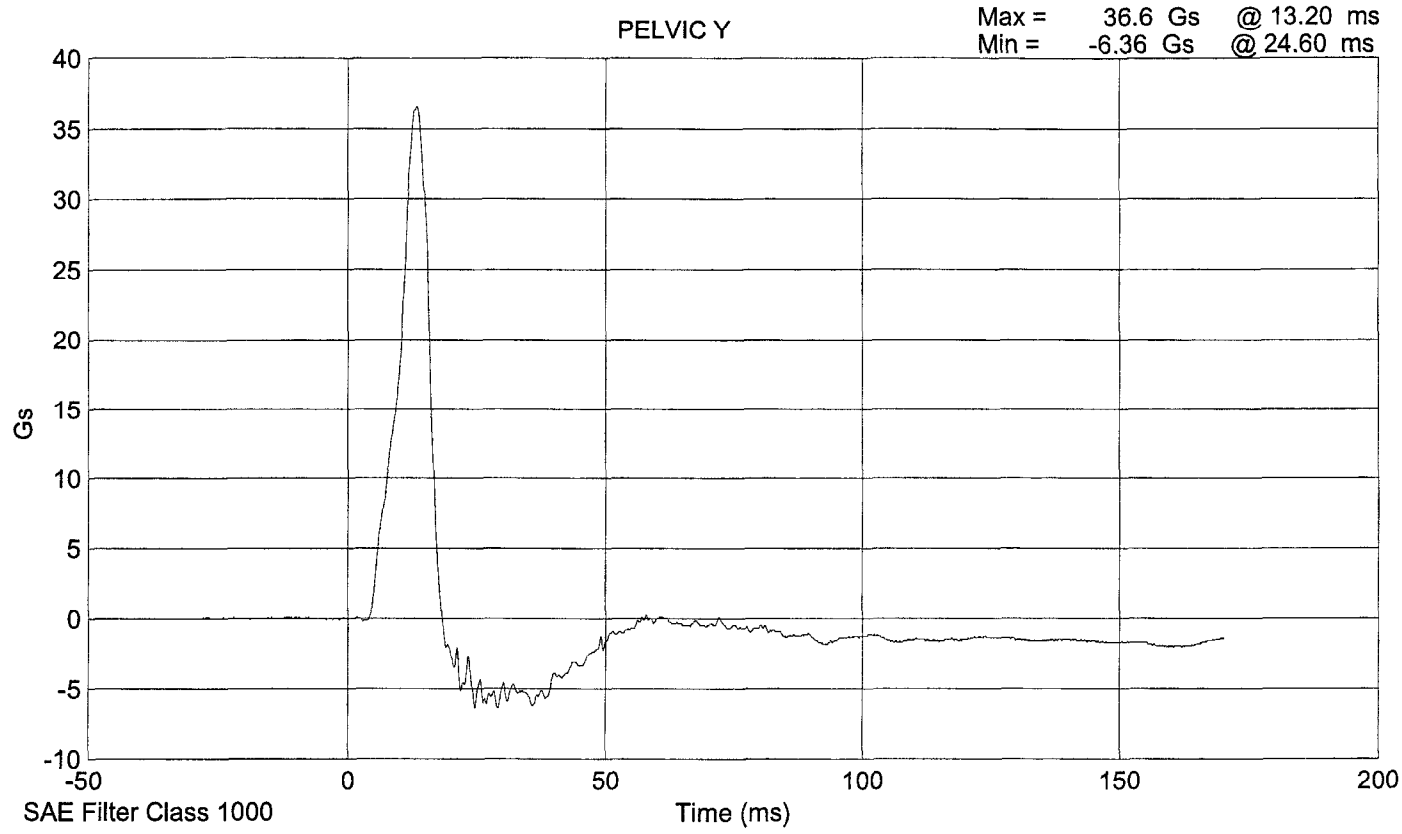
CONFIGURED FOR LEFT SIDE IMPACT

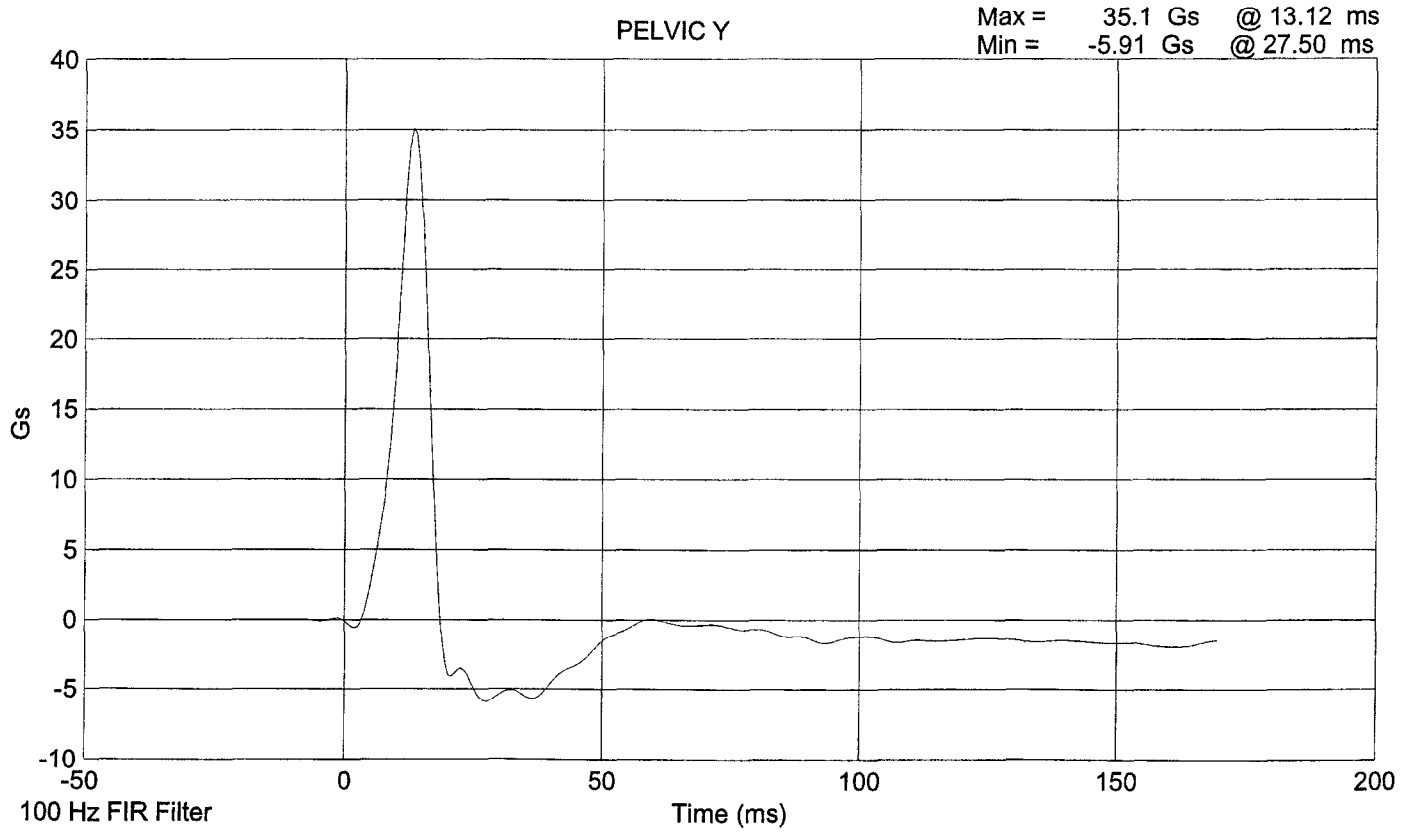
SID Serial No.: 015 Sequential Test Number: 1
Date: October 13, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	20
RELATIVE. HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.28
PELVIS ACCELERATION (g's)	40 - 60	35.10

REMARKS: None

SID 015 Pelvic Impact Test @ 4.2794 m/s





HEAD DROP TEST
POST-TEST
(Test not required for SID certification)

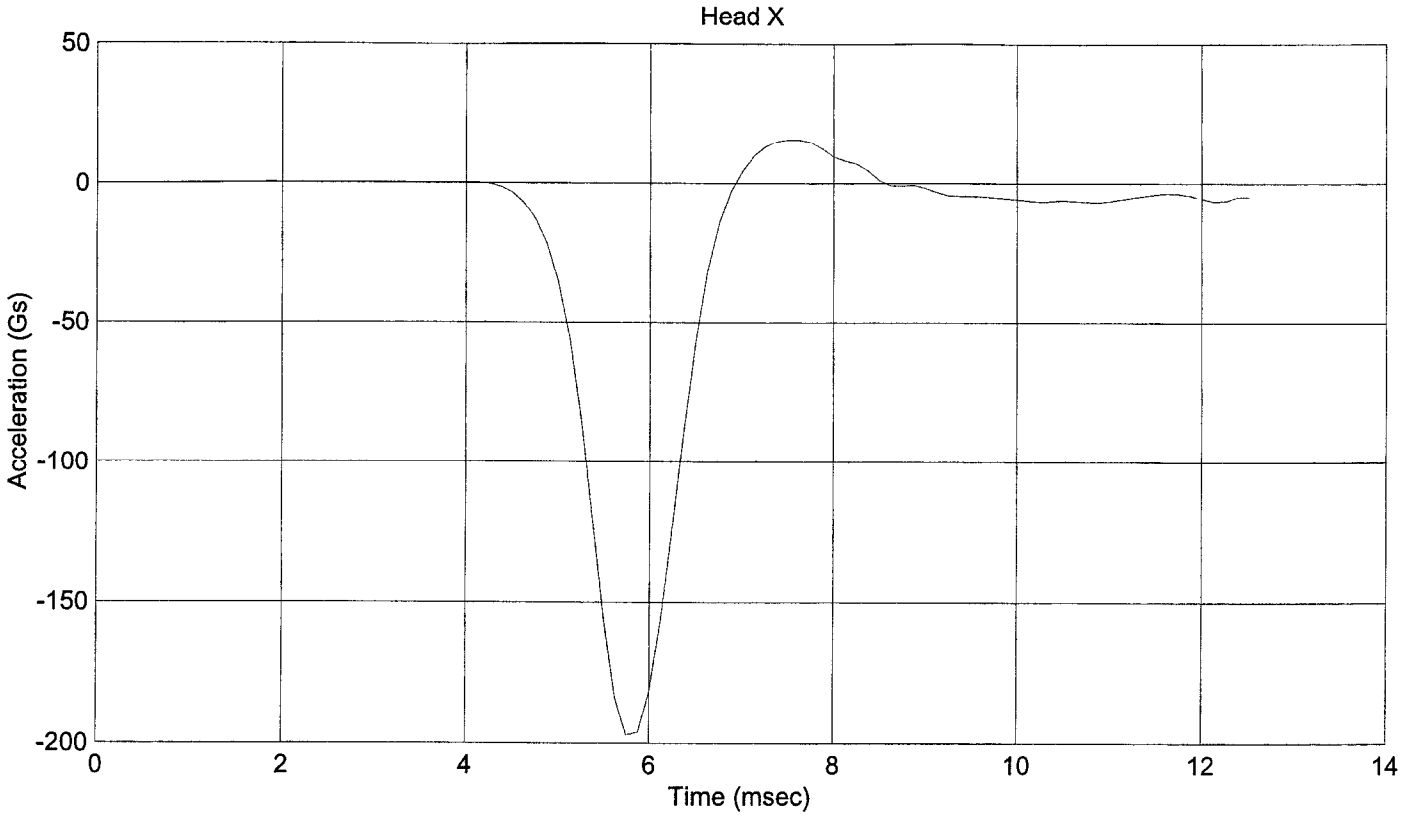
CONFIGURED FOR LEFT SIDE IMPACT

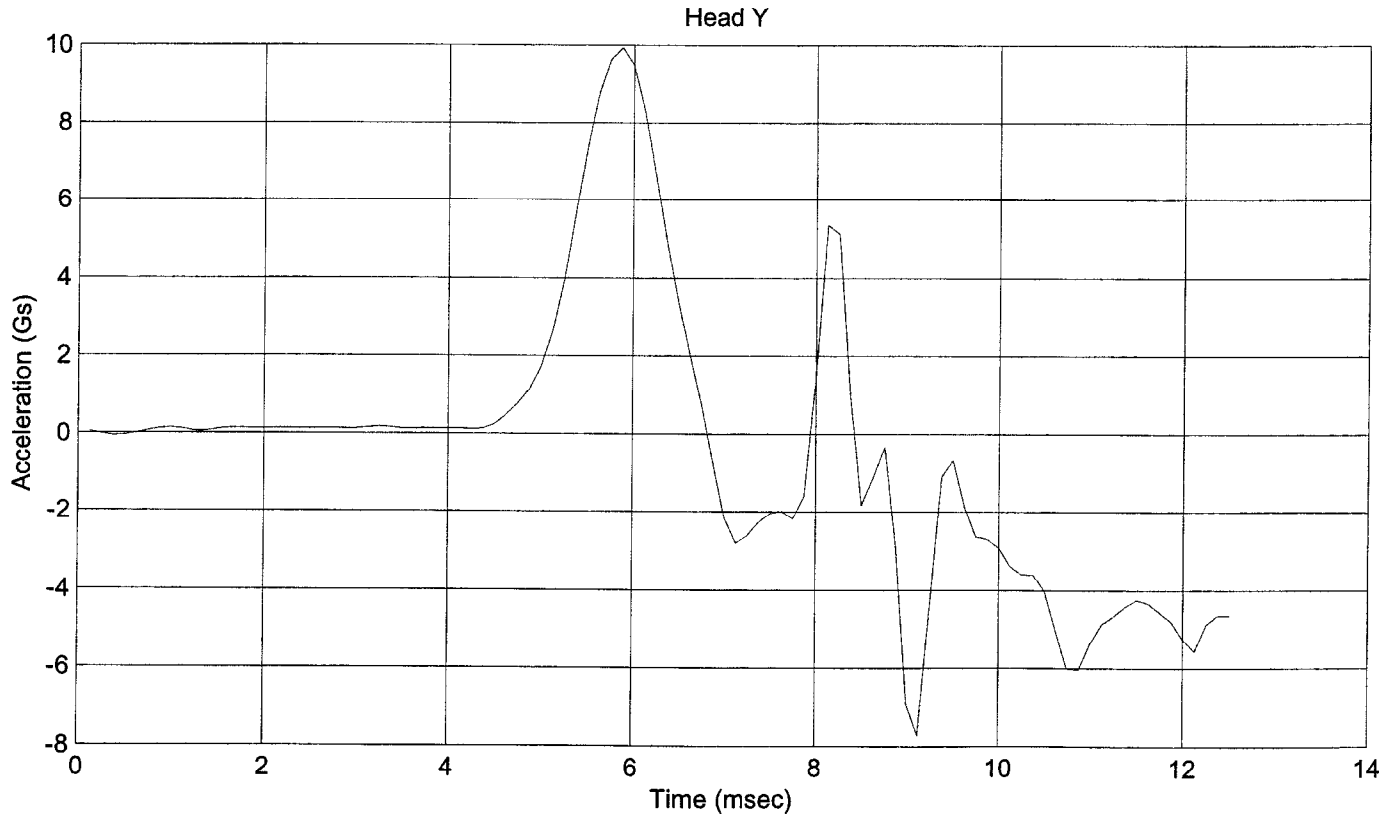
SID Serial No.: 015 Sequential Test Number: 1
Date: October 10, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	247.30
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	7.03
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.12

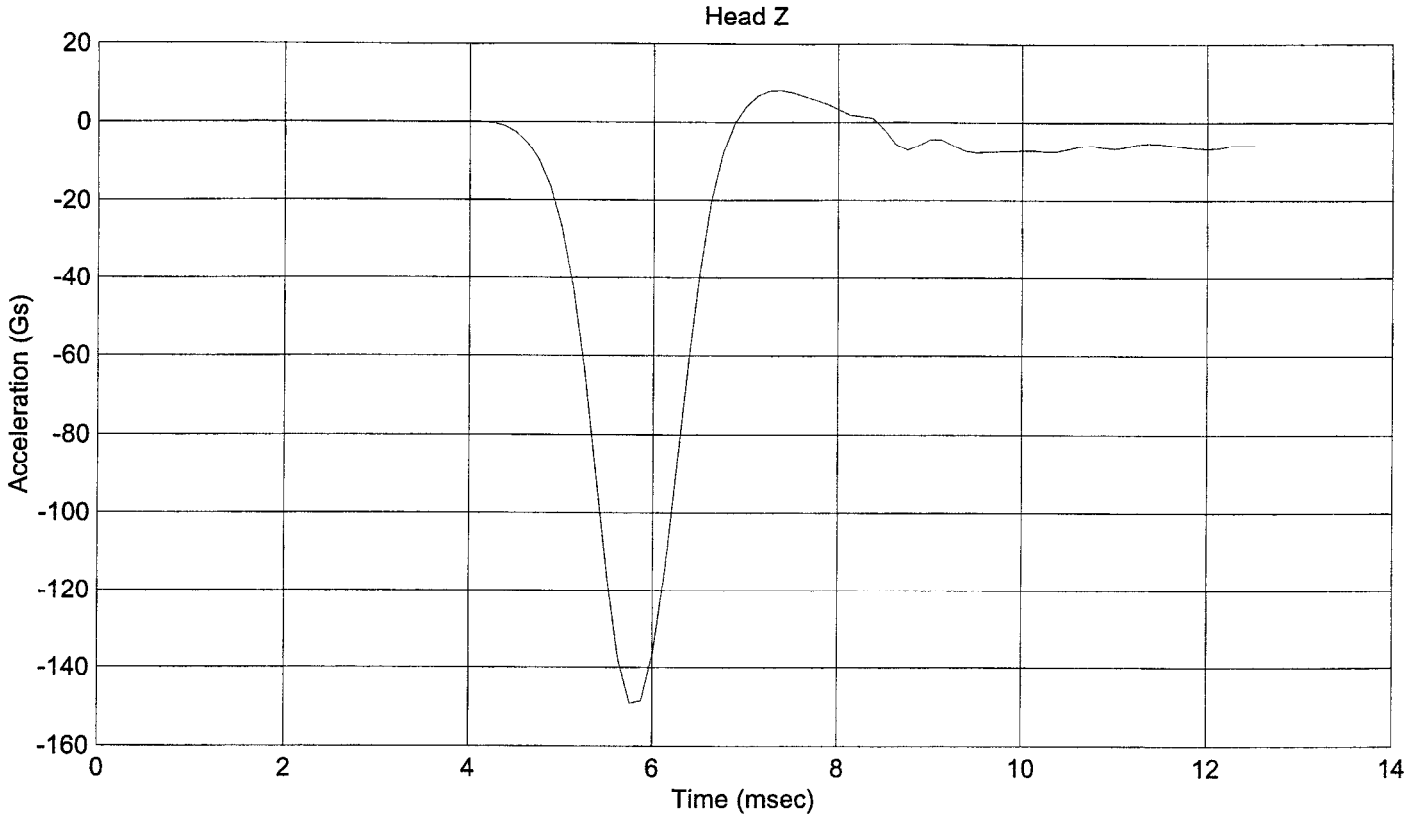
REMARKS: None

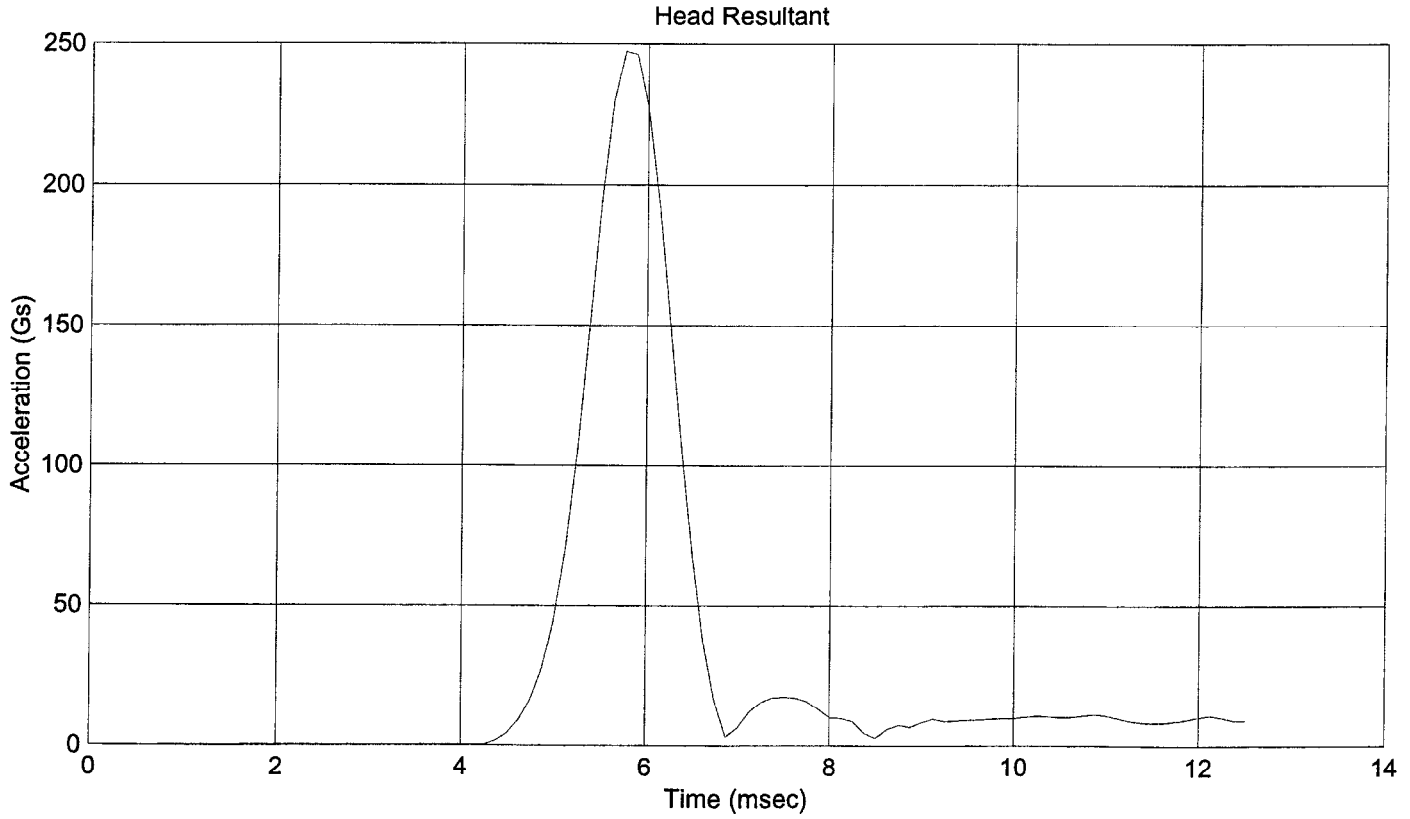
Hybrid II Head Drop Calibration 015700.hdp





Hybrid II Head Drop Calibration 015700.hdp





ABDOMINAL COMPRESSION TEST
POST TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: October 16, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 13 mm (N)	104 - 162	115.7
FORCE @ 19 mm (N)	163 - 221	178.37
FORCE @ 25 mm (N)	222 - 280	258.00
FORCE @ 33 mm (N)	325 - 391	382.55

REMARKS: None

Dummy S/N 15

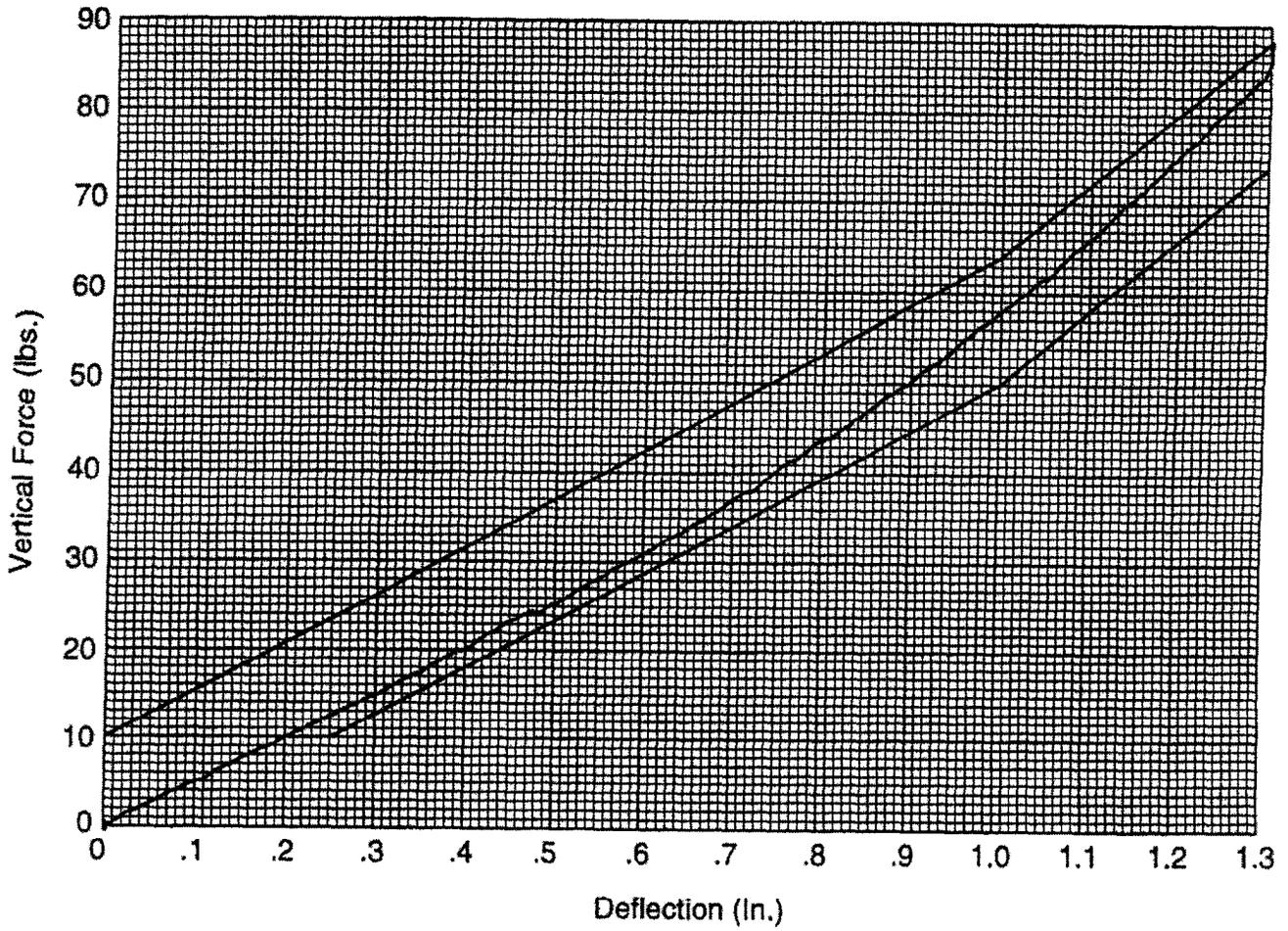
W/A

Date 10-16-2000

Performed By

Temp. 70°

Humidity 32%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: October 16, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 0° (N)	0 - 26.7	0
FORCE @ 20° (N)	97.8 - 151.2	117.88
FORCE @ 30° (N)	151.2 - 204.6	171.25
FORCE @ 40° (N)	204.6 - 258	220.19
RETURN ANGLE	12° max.	4°

REMARKS: None

Dummy S/N 15

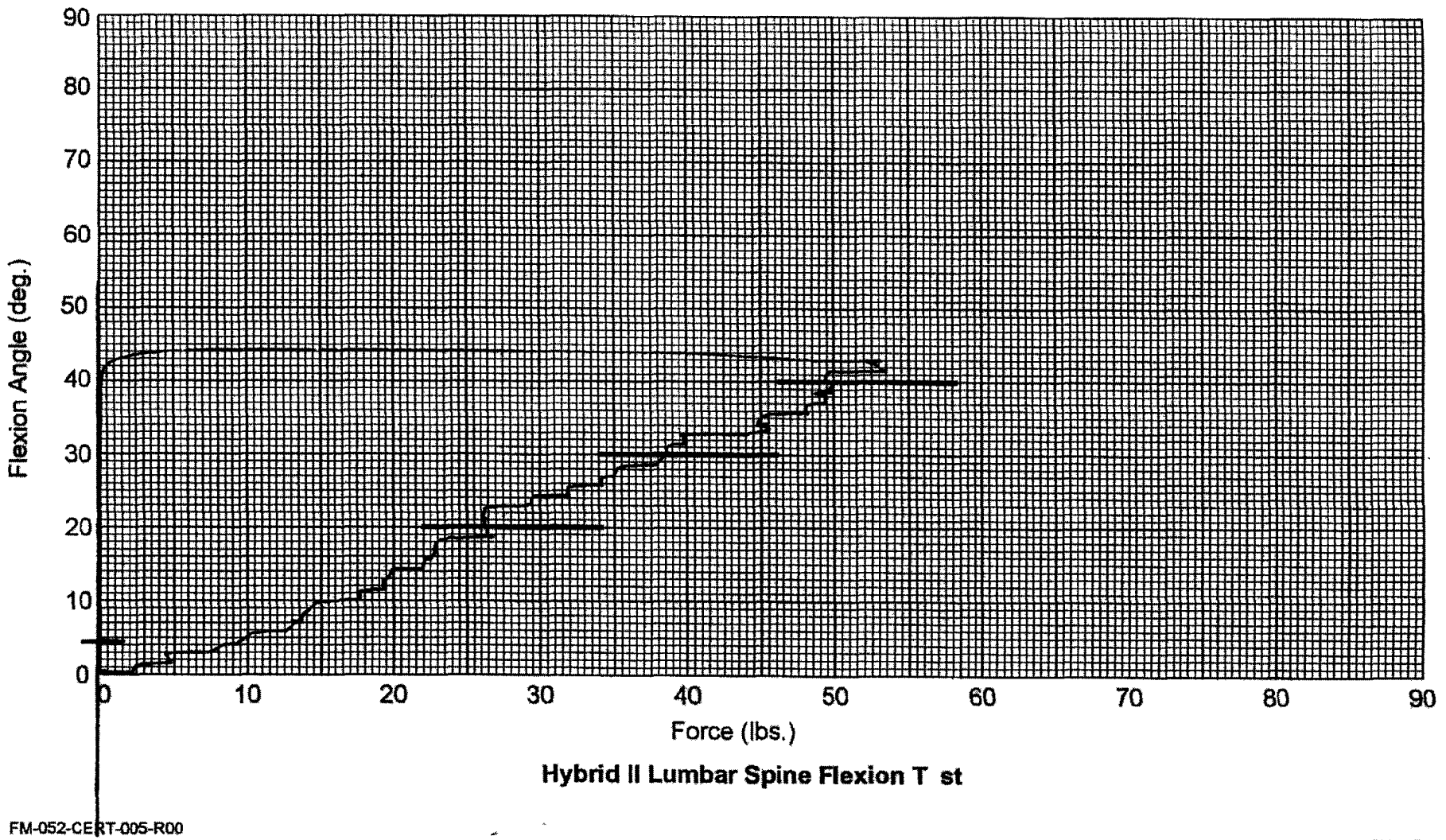
W/A ~~10~~

Date 10-16-2000

Performed By [signature]

Temp. 71°

Humidity 31%



Hybrid II Lumbar Spine Flexion T st

FM-052-CERT-005-R00

PC32/D52 ISO Forms

POST TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1

Date: October 16, 2000 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 NO.: 016

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: October 16, 2000 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.
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 Serial No.: 016 Sequential Test Number: 1
Date: October 16, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	512
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	526
KV- Knee Pivot to Floor (mm)	490 - 505	494
HW- Hip Width (mm)	356 - 391	366

REMARKS: None

LATERAL THORAX IMPACT TEST
POST TEST

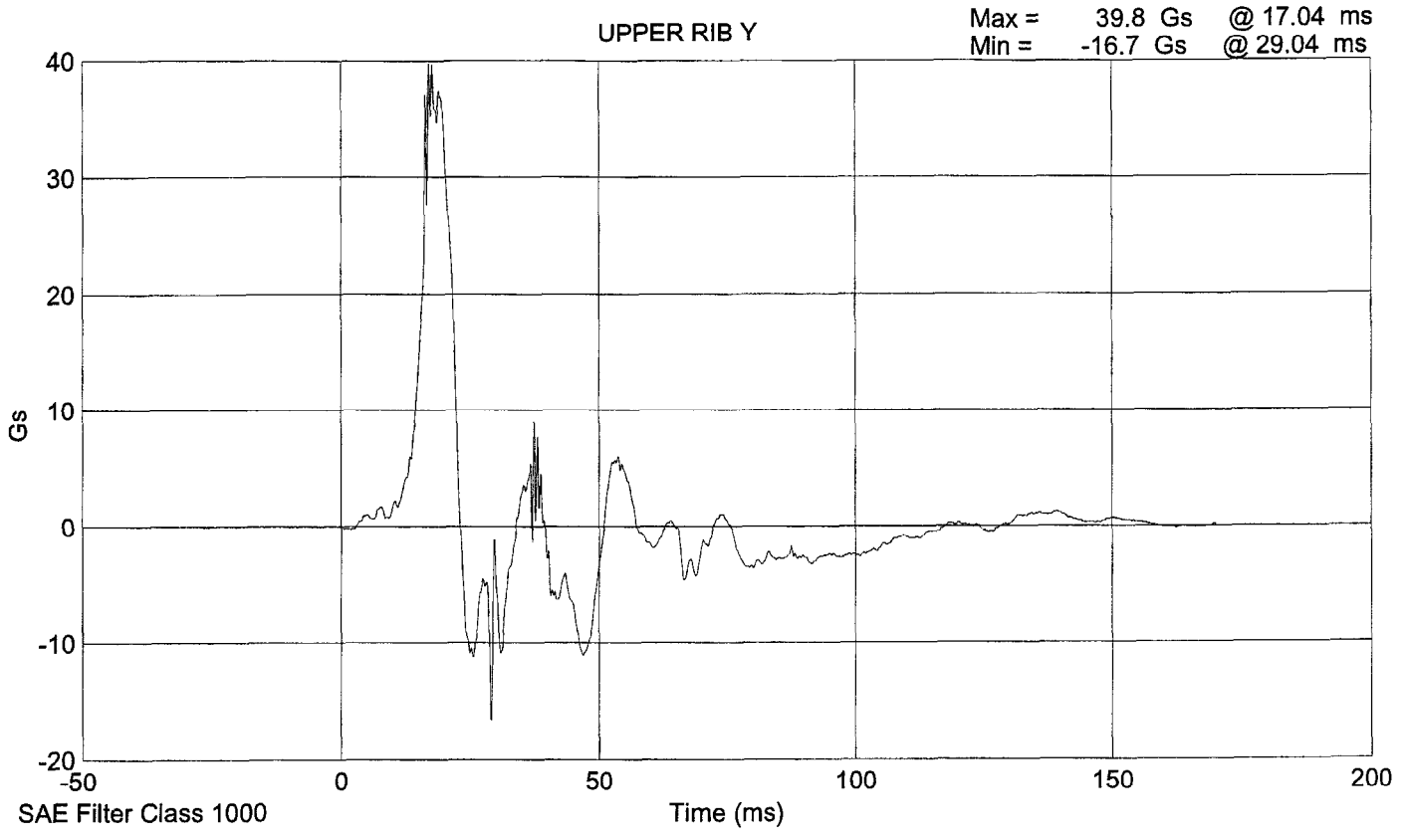
CONFIGURED FOR LEFT SIDE IMPACT

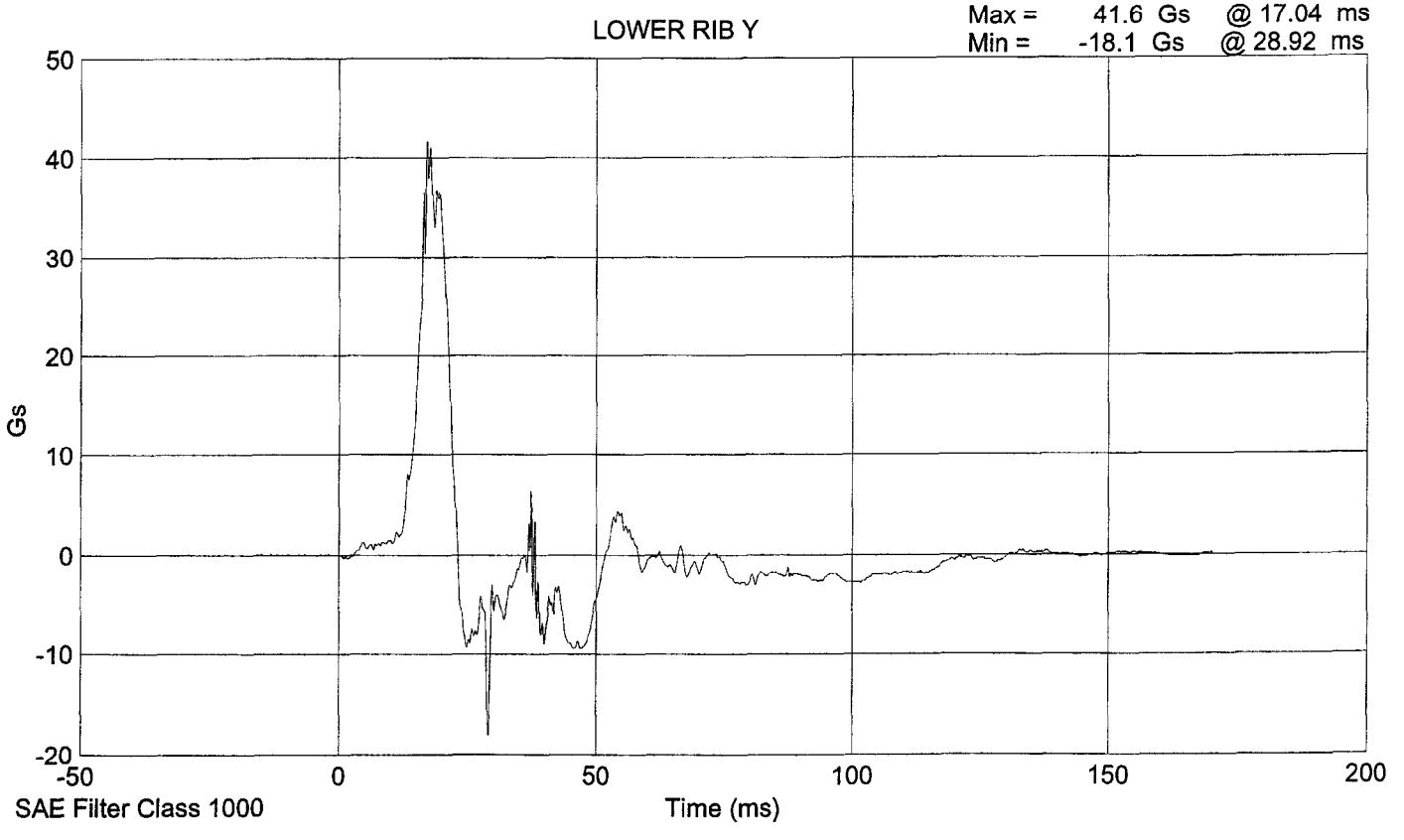
SID Serial No.: 016 Sequential Test Number: 1
Date: October 13, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	20
RELATIVE. HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.29
UPPER RIB (g's)	37 - 46	38.72
LOWER RIB (g's)	37 - 46	38.72
LOWER SPINE (g's)	15 - 22	20.81

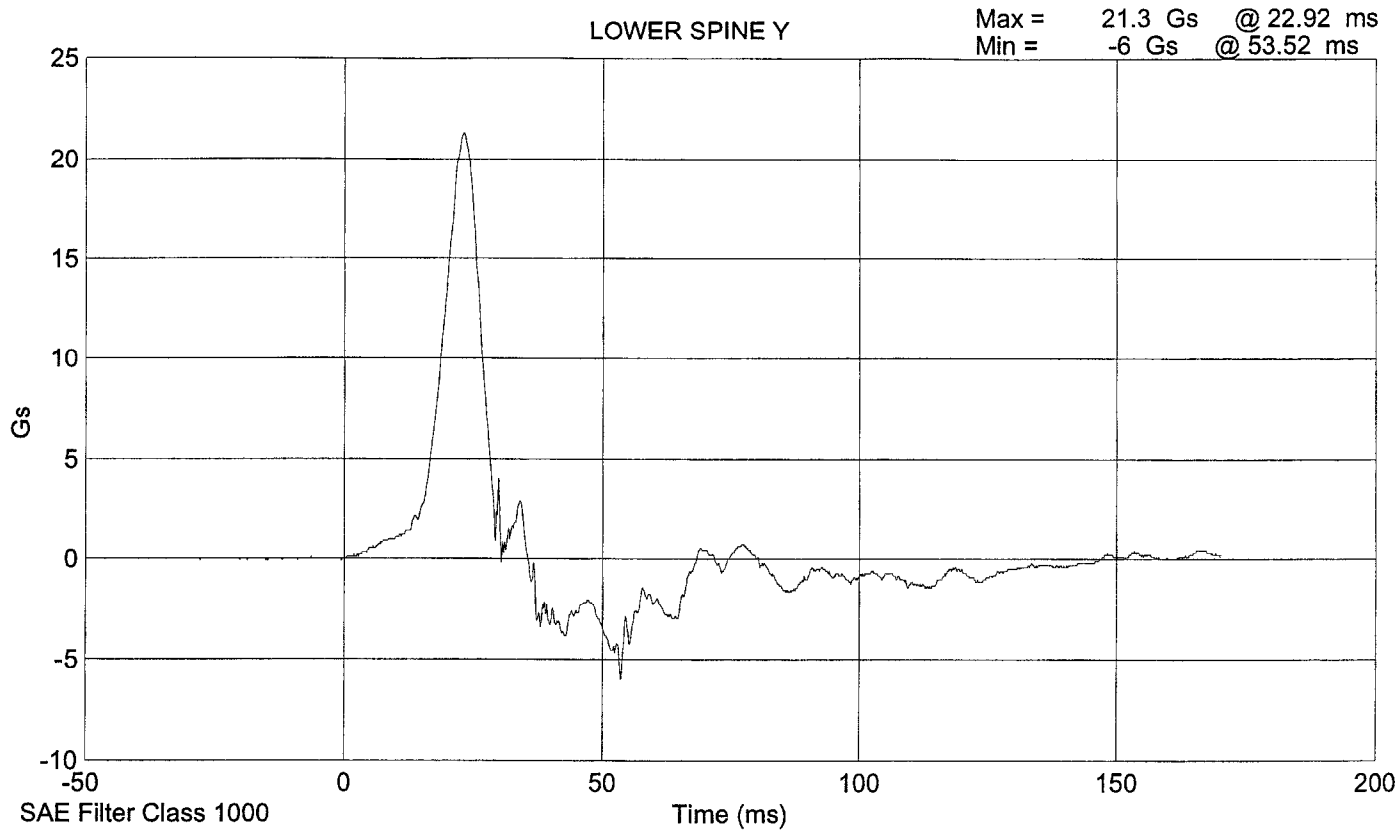
REMARKS: None

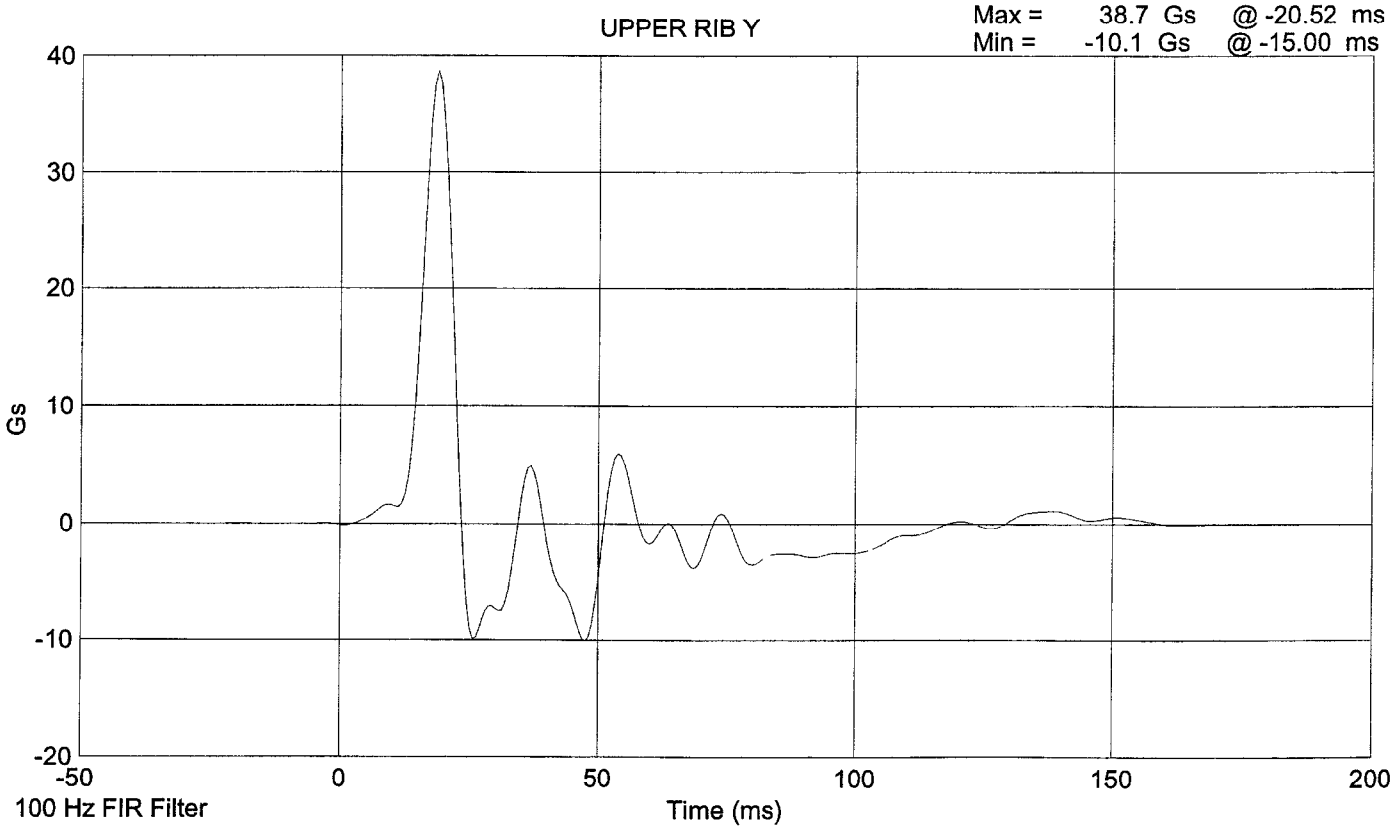
SID 016 Thorax Impact Test @ 4.2946 m/s



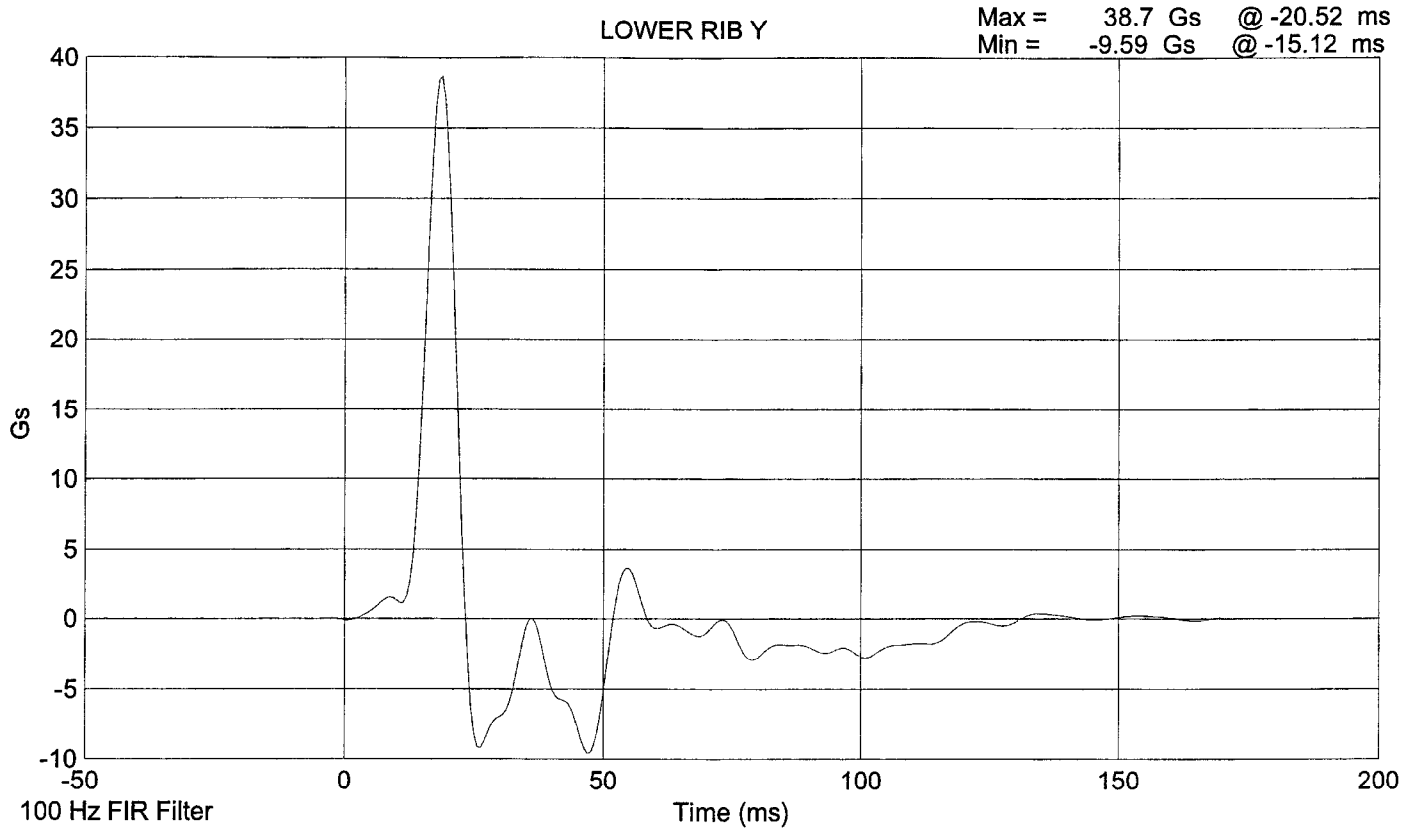


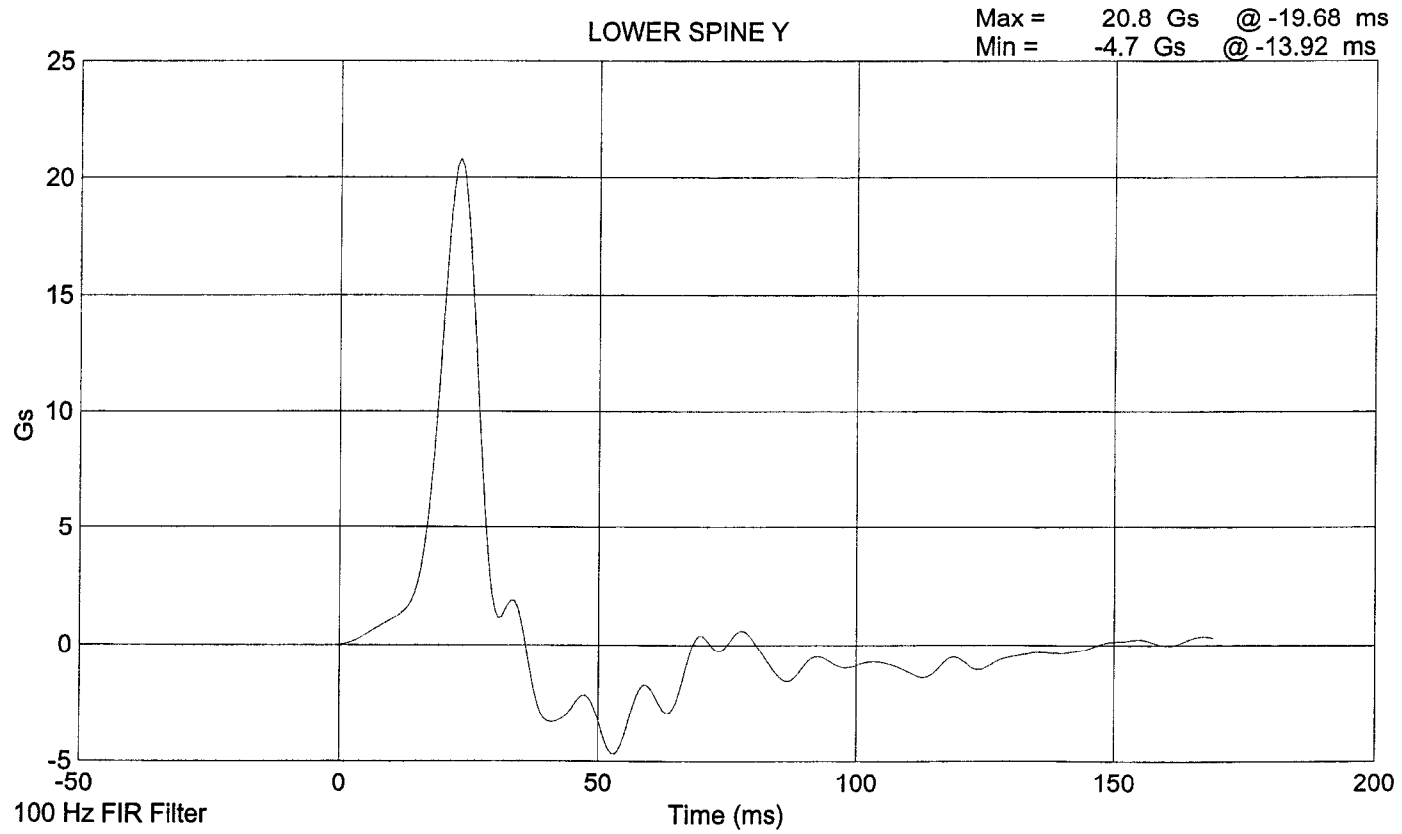
SID 016 Thorax Impact Test @ 4.2946 m/s





SID 016 Thorax Impact Test @ 4.2946 m/s





LATERAL PELVIS IMPACT TEST
POST TEST

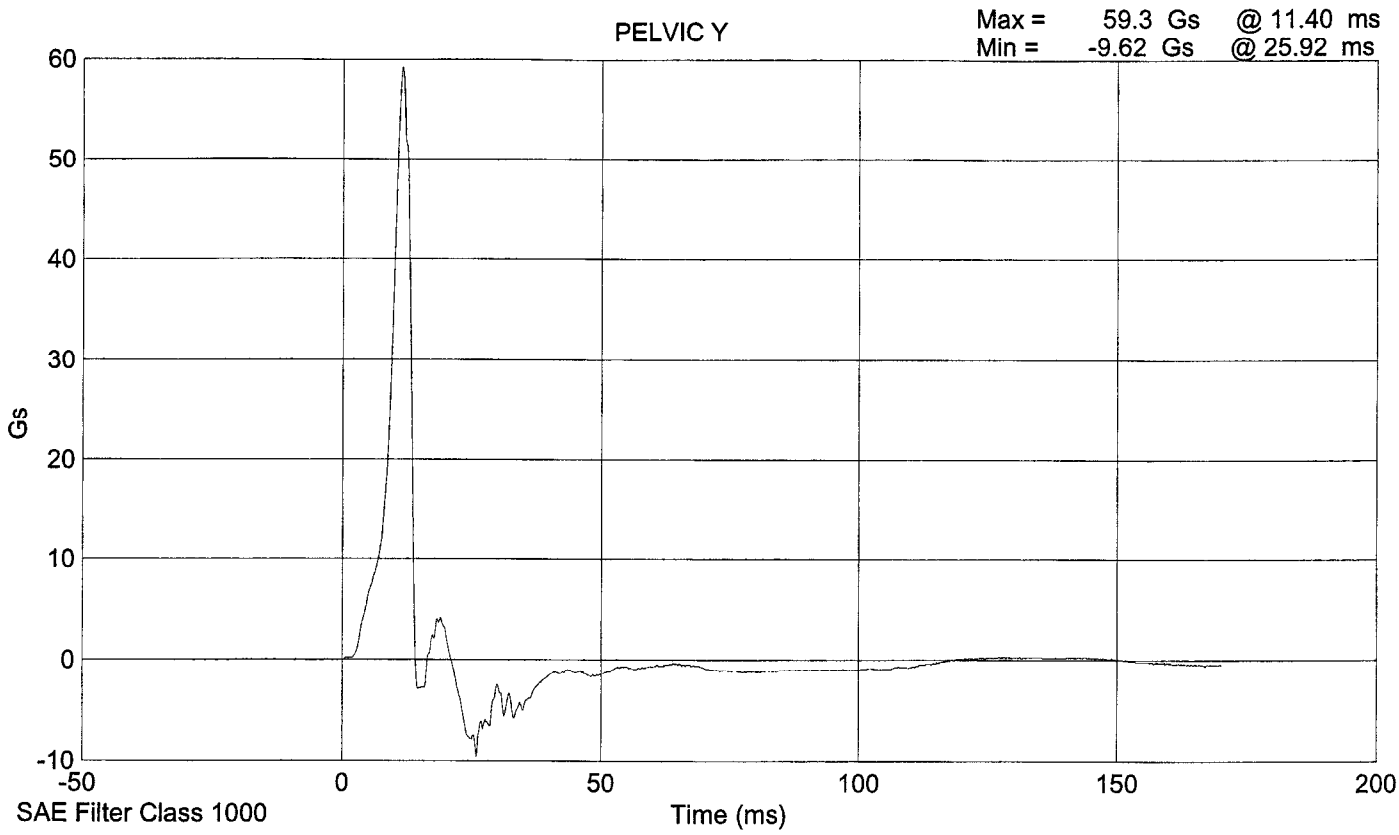
CONFIGURED FOR LEFT SIDE IMPACT

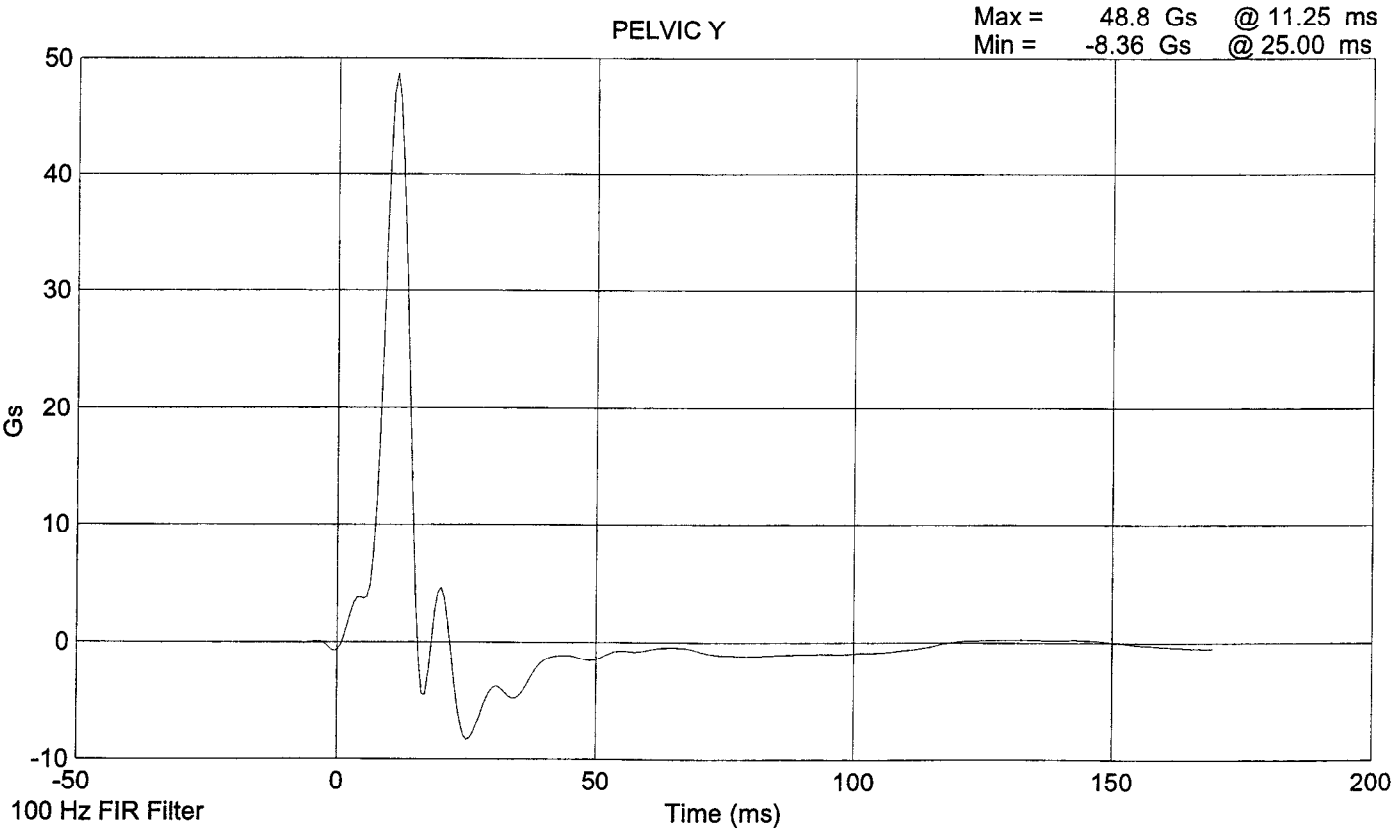
SID Serial No.: 016 Sequential Test Number: 1
Date: October 13, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	20
RELATIVE. HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.29
PELVIS ACCELERATION (g's)	40 - 60	48.76

REMARKS: None

SID 016 Pelvic Impact Test @ 4.2855 m/s





HEAD DROP TEST

POST-TEST

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

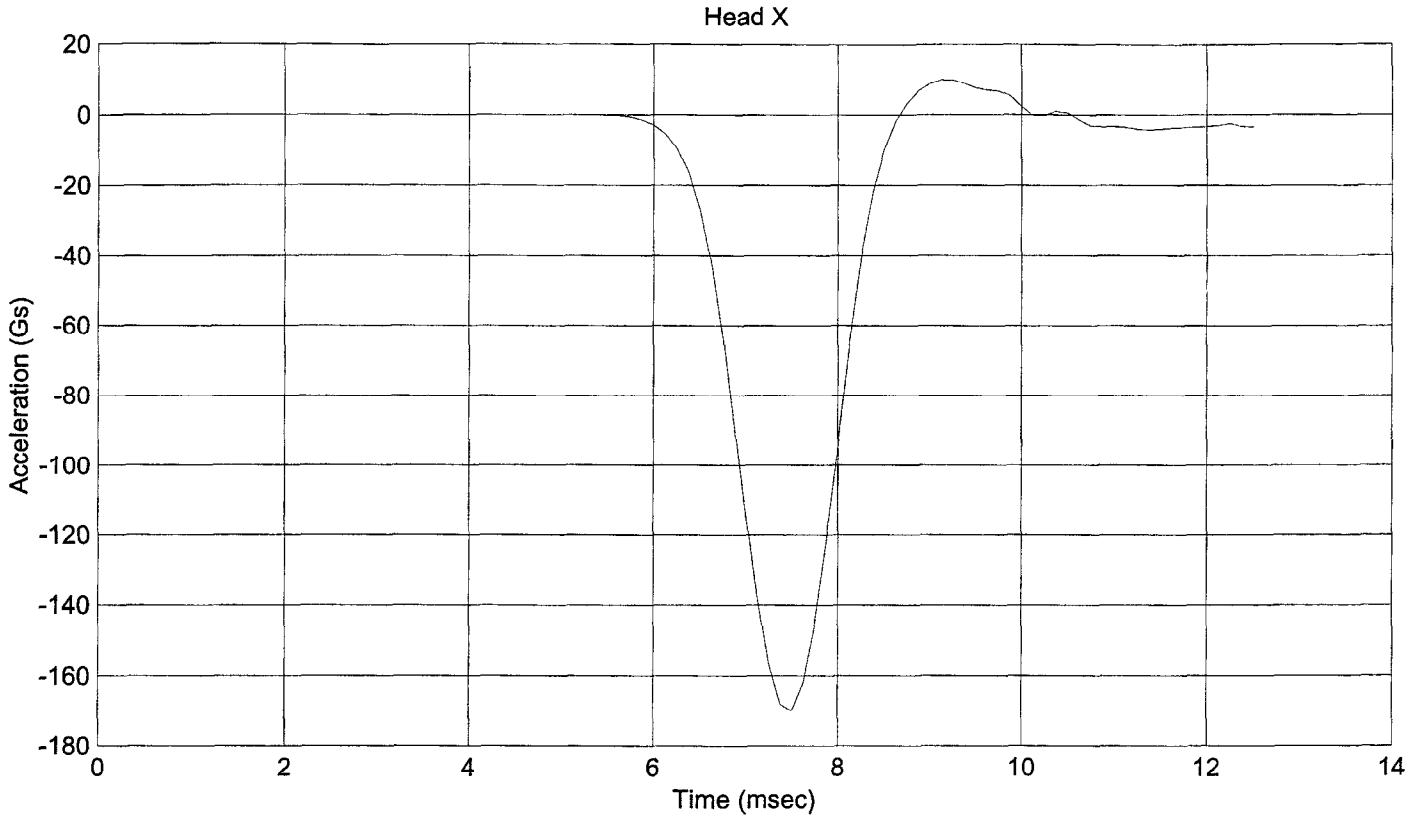
SID Serial No.: 016 Sequential Test Number: 1

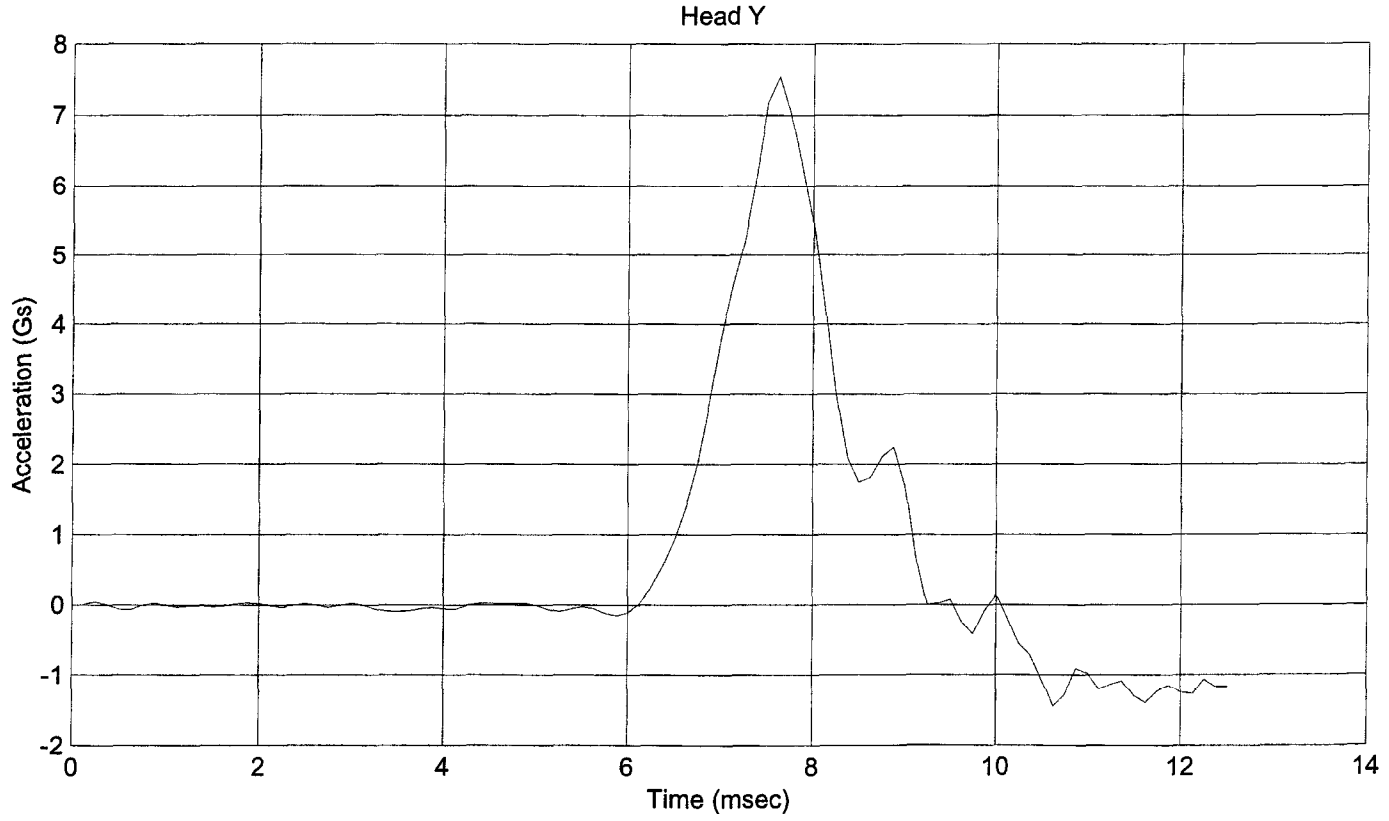
Date: October 10, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	20.1
RELATIVE HUMIDITY (%)	10 - 70	31
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	213.03
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	5.77
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.25

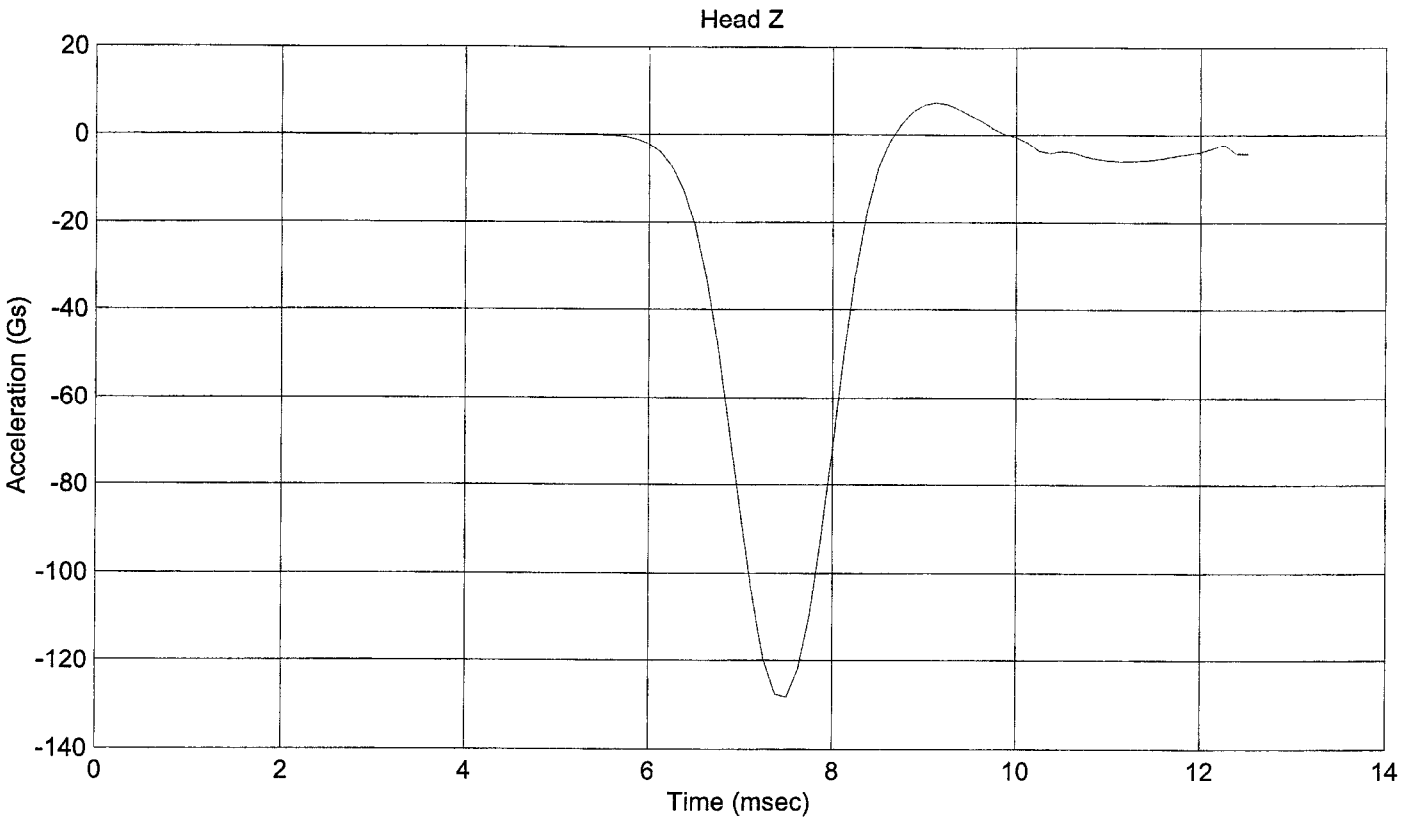
REMARKS: None

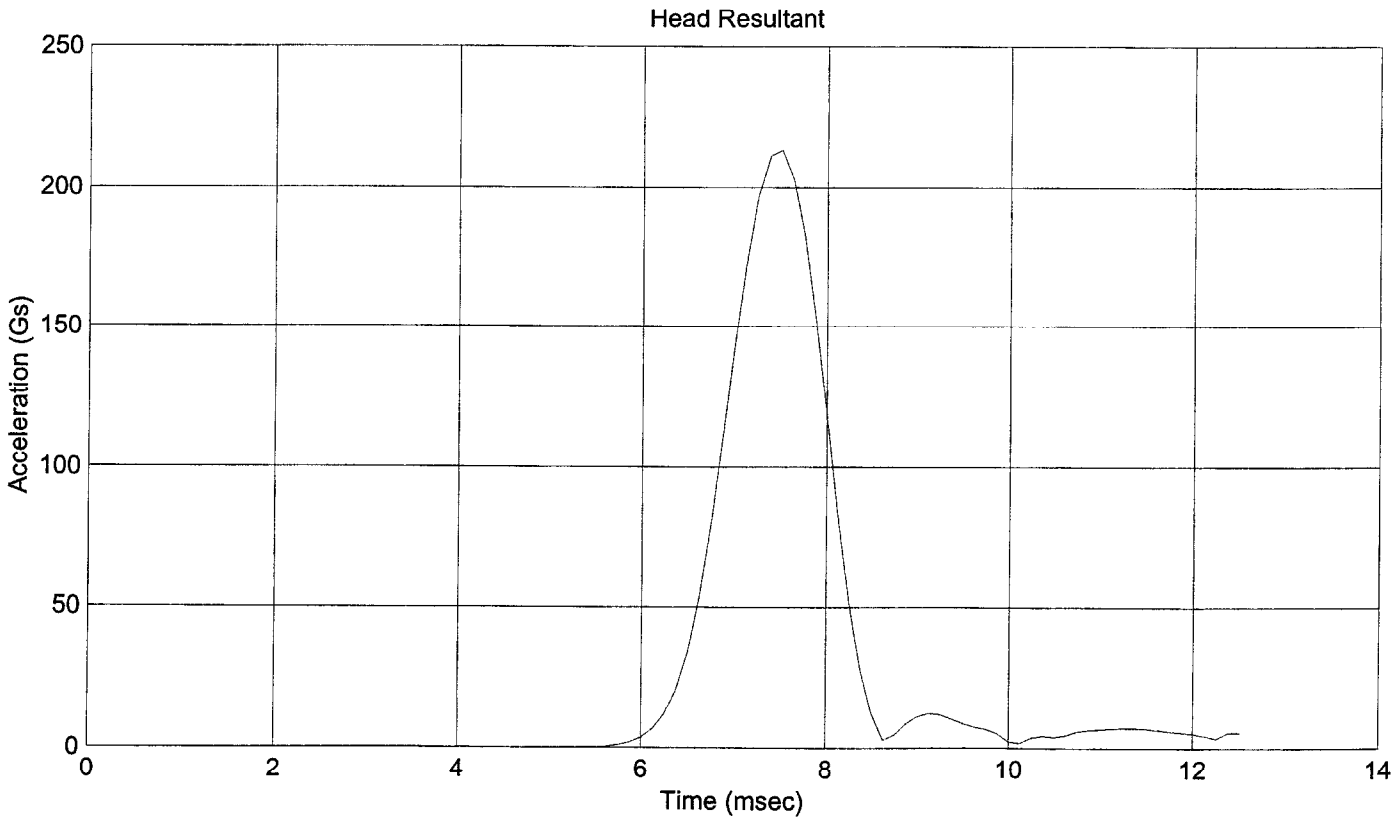
Hybrid II Head Drop Calibration 016900.hdp





Hybrid II Head Drop Calibration 016900.hdp





ABDOMINAL COMPRESSION TEST
POST TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: October 16, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 13 mm (N)	104 - 162	111.2
FORCE @ 19 mm (N)	163 - 221	173.93
FORCE @ 25 mm (N)	222 - 280	249.10
FORCE @ 33 mm (N)	325 - 391	380.32

REMARKS: None

Dummy S/N 16

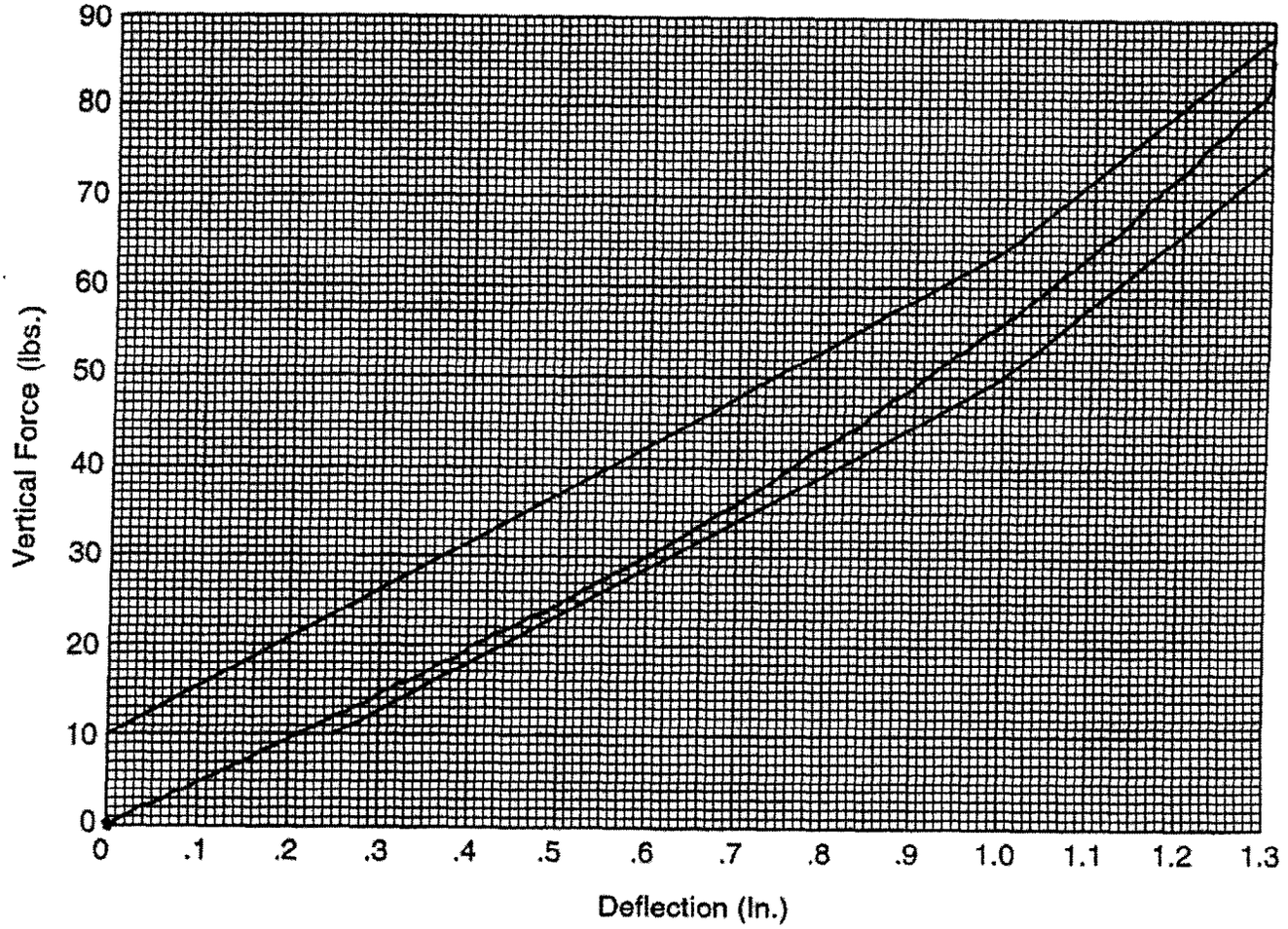
W/A

Date 10-16-2000

Performed By

Temp. 70°

Humidity 32%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: October 16, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 0° (N)	0 - 26.7	0
FORCE @ 20° (N)	97.8 - 151.2	113.43
FORCE @ 30° (N)	151.2 - 204.6	177.93
FORCE @ 40° (N)	204.6 - 258	226.86
RETURN ANGLE	12° max.	6°

REMARKS: None

Dummy S/N 16

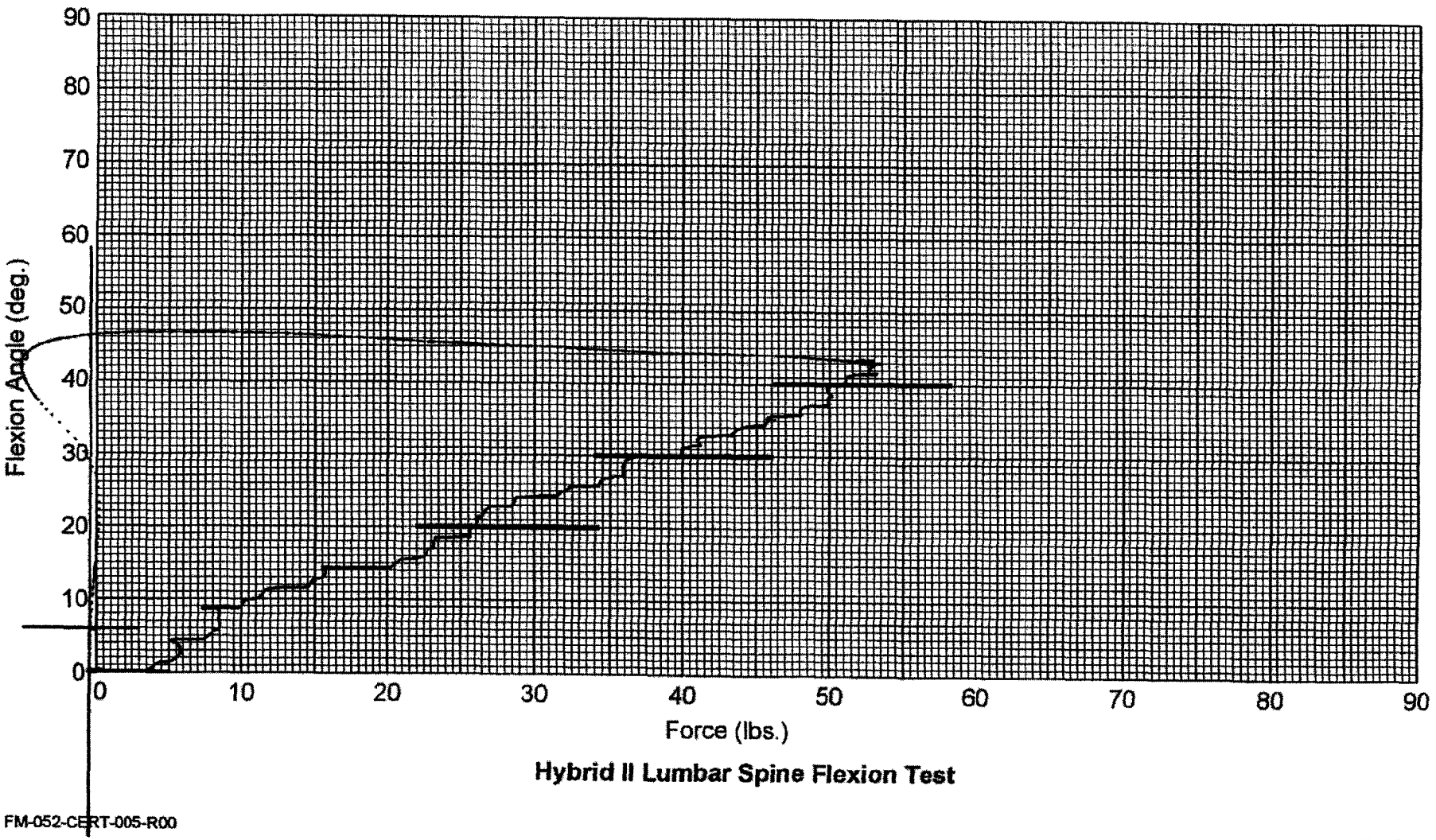
W/A

Date 10-16-2000

Performed By

Temp. 71°

Humidity 31%



Hybrid II Lumbar Spine Flexion Test

FM-052-CERT-005-R00

C-77

8502-18

PC32/DS2 ISO Forms

POST TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

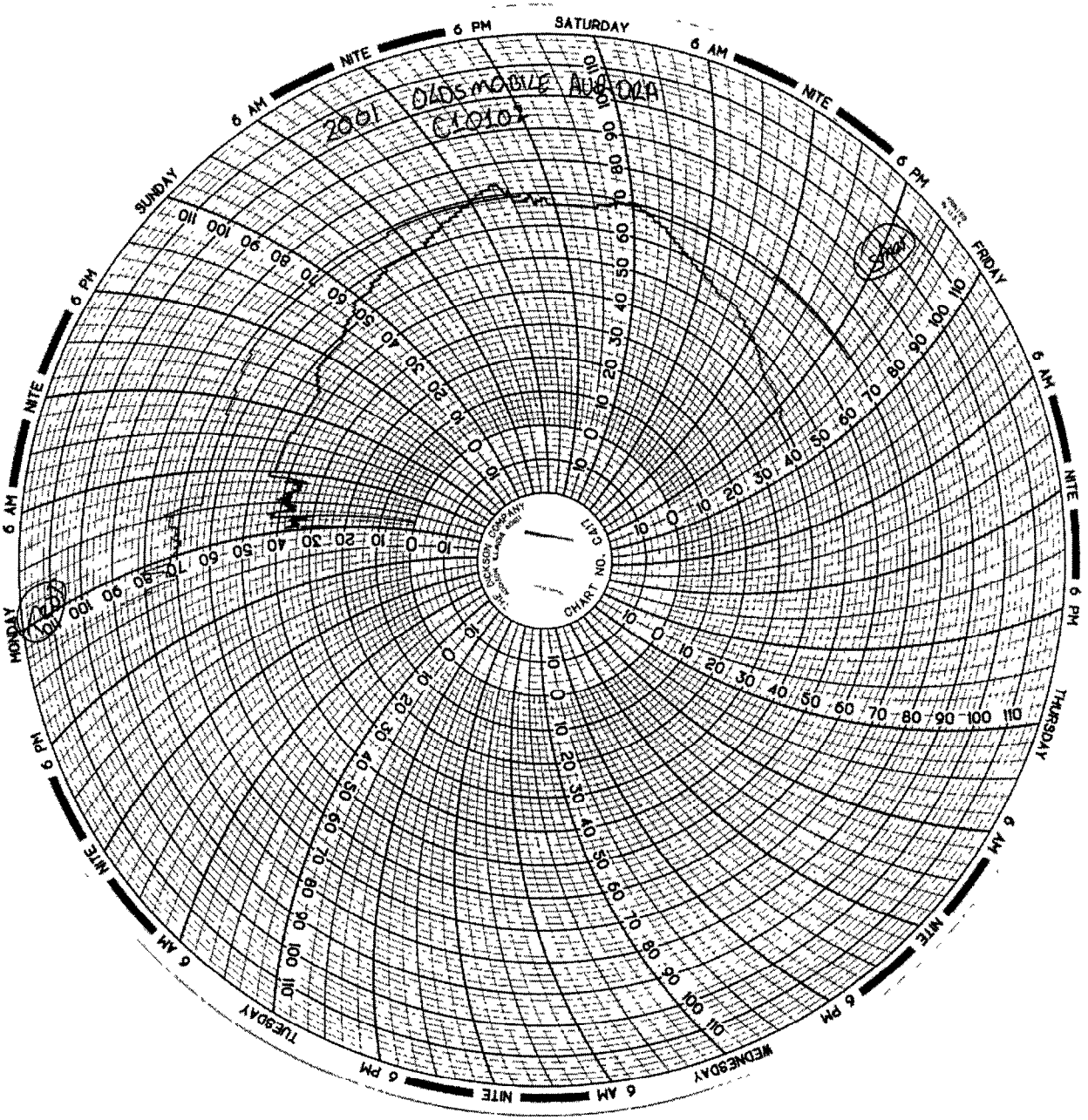
SID Serial No.: 016 Sequential Test Number: 1

Date: October 16, 2000 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



APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID INSTRUMENTATION

	FRONT SID NO.: 015		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD (X)	AC-J33030	ENDEVCO	21-Jun-00
HEAD (Y)	AC-J33032	ENDEVCO	19-Jun-00
HEAD (Z)	AC-J33021	ENDEVCO	19-Jun-00
UPPER RIB (Y)	AC-P16862	ENDEVCO	07-Sep-00
LOWER RIB (Y)	AC-P16656	ENDEVCO	07-Sep-00
LOWER SPINE (Y)	AC-P16866	ENDEVCO	06-Sep-00
PELVIS (Y)	AC-P16676	ENDEVCO	07-Sep-00
UPPER RIB REDUNDANT (Y)	AC-P16949	ENDEVCO	07-Sep-00
LOWER RIB REDUNDANT (Y)	AC-P16645	ENDEVCO	07-Sep-00
LOWER SPINE REDUNDANT (Y)	AC-P16823	ENDEVCO	13-Sep-00
PELVIS REDUNDANT (Y)	AC-P16843	ENDEVCO	07-Sep-00

	REAR SID NO.: 016		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD (X)	AC-P13331	ENDEVCO	26-May-00
HEAD (Y)	AC-P13356	ENDEVCO	26-May-00
HEAD (Z)	AC-P13323	ENDEVCO	26-May-00
UPPER RIB (Y)	AC-P16587	ENDEVCO	06-Sep-00
LOWER RIB (Y)	AC-P15747	ENDEVCO	06-Sep-00
LOWER SPINE (Y)	AC-P16576	ENDEVCO	06-Sep-00
PELVIS (Y)	AC-P16583	ENDEVCO	06-Sep-00
UPPER RIB REDUNDANT (Y)	AC-P16585	ENDEVCO	06-Sep-00
LOWER RIB REDUNDANT (Y)	AC-P14438	ENDEVCO	05-Sep-00
LOWER SPINE REDUNDANT (Y)	AC-P15534	ENDEVCO	06-Sep-00
PELVIS REDUNDANT (Y)	AC-P15526	ENDEVCO	06-Sep-00

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-ACC06	ENDEVCO	08-Sep-00
RIGHT FRONT SILL (Y)	AC-B10481	ENDEVCO	08-Sep-00
RIGHT FRONT SILL (Z)	AC-B11351	ENDEVCO	08-Sep-00
RIGHT REAR SILL (X)	AC-AP064	ENDEVCO	18-Sep-00
RIGHT REAR SILL (Y)	AC-B10955	ENDEVCO	18-Sep-00
RIGHT REAR SILL (Z)	AC-BB14	ENDEVCO	18-Sep-00
REAR FLOORPAN ABOVE AXLE (X)	AC-B11073	ENDEVCO	07-Sep-00
REAR FLOORPAN ABOVE AXLE (Y)	AC-J27941	ENDEVCO	31-Aug-00
REAR FLOORPAN ABOVE AXLE (Z)	AC-B10954	ENDEVCO	07-Sep-00
LEFT REAR SILL (Y)	AC-J18400	ENDEVCO	04-Feb-00
LEFT FRONT SILL (Y)	AC-D03	ENTRAN	31-Aug-00
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-Y13	ICS	25-Aug-00
LOWER LEFT B- PILLAR (Y)	AC-B10951	ENDEVCO	27-Mar-00
MIDDLE LEFT B-PILLAR (Y)	AC-APA30	ENDEVCO	06-Jul-00
LOWER LEFT A-PILLAR (Y)	AC-BA80	ENDEVCO	27-Mar-00
UPPER LEFT A-PILLAR (Y)	AC-J18436	ENDEVCO	31-Aug-00
FRONT SEAT TRACK (Y)	AC-J32831	ENDEVCO	06-Jul-00
REAR SEAT TRACK (Y)	AC-J31026	ENDEVCO	21-Sep-00
VEHICLE CG (X)	AC-Z02	ENTRAN	07-Jun-00
VEHICLE CG (Y)	AC-J18622	ENDEVCO	18-Sep-00
VEHICLE CG (Z)	AC-APBB6	ENDEVCO	18-Sep-00
MDB CG (X)	AC-CL60	ENDEVCO	31-Aug-00
MDB CG (Y)	AC-CJ54	ENDEVCO	31-Aug-00
MDB CG (Z)	AC-GK12	ENDEVCO	31-Aug-00
MDB REAR FRAME MEMBER (X)	AC-CX05	ENDEVCO	31-Aug-00
MDB REAR FRAME MEMBER (Y)	AC-A27F	ENDEVCO	31-Aug-00

REMARKS: None