

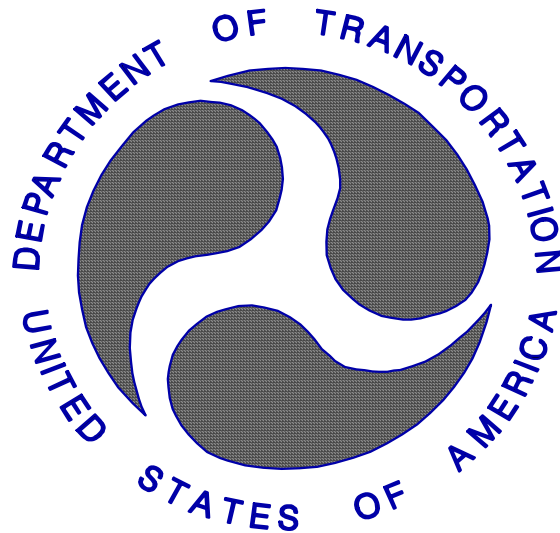
REPORT NO. MCW-DOT-05SN06

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TESTING**

HONDA MOTOR CORPORATION
2005 HONDA ELEMENT MPV

NHTSA NUMBER: M5 5301

MEDICAL COLLEGE OF WISCONSIN
5000 WEST NATIONAL AVENUE
MILWAUKEE, WI 53295



31-Jan-2005

FINAL REPORT

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
RULEMAKING
OFFICE OF CRASHWORTHINESS STANDARDS
ROOM 5307, NVS-111
400 SEVENTH STREET, SW
WASHINGTON, DC 20590

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16. Abstract A 55/28 km/h 90° Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2005 Honda Element in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for generation of consumer information on vehicle side crash protection. This test was conducted at the Medical College of Wisconsin Vehicle Crashworthiness Lab in Milwaukee, Wisconsin, on 31-Jan-2005. The impact velocity of the Moving Deformable Barrier (MDB) was 61.92 km/h, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 20° C. The target vehicle post-test maximum crush was 172 mm at Level 1. The test vehicle's performance follows: <table border="1"> <thead> <tr> <th></th><th><u>DRIVER</u></th><th><u>PASSENGER</u></th></tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration G</td><td>28.0</td><td>53.8</td></tr> <tr> <td>Left Lower Rib Acceleration G</td><td>29.7</td><td>52.6</td></tr> <tr> <td>Lower Spine Acceleration G</td><td>32.1</td><td>38.7</td></tr> <tr> <td>Thoracic Trauma Index TTI</td><td>31</td><td>46</td></tr> <tr> <td>Pelvis Acceleration G</td><td>41</td><td>62</td></tr> </tbody> </table> The doors on the struck side of the vehicle did not separate from the body at the hinges or latches, and the opposite doors did not open during the side impact event.					<u>DRIVER</u>	<u>PASSENGER</u>	Left Upper Rib Acceleration G	28.0	53.8	Left Lower Rib Acceleration G	29.7	52.6	Lower Spine Acceleration G	32.1	38.7	Thoracic Trauma Index TTI	31	46	Pelvis Acceleration G	41	62
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17. Key Words New Car Assessment Program (NCAP) Side Impact MDB Side Impact Dummy (SID H3) NHTSA No. M5 5301		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Rulemaking Office of Crashworthiness Standards Room 5307, NVS-111 400 Seventh Street, SW Washington, DC 20590																			
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SECTION 1**PURPOSE AND TEST PROCEDURE**

This side impact test was part of the FY05 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-03-D-42005. The purpose of this test was to evaluate side impact protection of a 2005 Honda Element MPV. This side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated November 2002.

The Medical College of Wisconsin does not endorse or certify products. The manufacturer's name appears solely for identification purposes only.

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 2005 Honda Element MPV was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) that was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.92 km/h (38.48 mph). The target vehicle was stationary and positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Medical College of Wisconsin in Milwaukee, Wisconsin, on 31-Jan-2005.

Two restrained Side Impact Hybrid III Dummies (SID H3's) were placed in the driver and left rear designated seating positions, according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated November 2002. The side impact event was documented by nine high-speed video cameras and one real-time camera. Camera locations and other pertinent camera information can be found in this report.

The SID H3s were instrumented with the following accelerometers.

1. Left Upper Rib (LUR) Primary and Redundant uniaxial accelerometers (Y-direction)
2. Left Lower Rib (LLR) Primary and Redundant uniaxial accelerometers (Y-direction)
3. Lower Thoracic Spine (T₁₂) Primary and Redundant uniaxial accelerometers (Y-direction)
4. Pelvic (PEV) section Primary and Redundant uniaxial accelerometers (Y-direction)
5. Head Center of Gravity triaxial accelerometers (X-, Y-, and Z-direction)
6. Upper Neck (NKU) six axis load cell (Fx, Fy, Fz, Mx, My, and Mz)

Pre- and post-test photographs of the test vehicle, the MDB, and the side impact dummies (SID H3s) are included in Appendix A. Appendix B contains the vehicle, MDB, and dummy response data traces. A summary of the side impact dummy configuration and performance verification test data is shown in Appendix C. Dummy and vehicle calibration data can be found in Appendix D of this report.

The following table summarizes the results of this test.

Injury Criteria	Front SID H3	Rear SID H3
TTI (G)	31	46
PELVIS (G)	41	62
HIC36	175.4	1035.3

The vehicle's airbag information is summarized in the following table

	Frontal	Side-Torso	Side-Torso/Head	Side-Head
Driver	Yes-Steering wheel	None	None	None
Front Passenger	Yes- Dashboard	None	None	None
Left Rear Passenger	None	None	None	None

SECTION 3
SUMMARY OF TEST RESULTS

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

Year/ Make/ Model/ Body Style		2005 Honda Element MPV	
Vehicle NHTSA No.	M5 5301	VIN	5J6YH28375L000597
Vehicle Body Color	Green	Build Date	December-04
Engine Data	<u>4</u> Cylinders	<u>CID</u>	<u>2.4</u> Liter <u>cc</u>
Placement	<u>Longitudinal</u>	<u>X</u> Lateral	
Transmission	<u>4</u> Speed	<u>Manual</u>	<u>X</u> Automatic <u>X</u> Overdrive
Final Drive	<u>Rear Wheel Drive</u>	<u>Front Wheel Drive</u>	<u>X</u> Four Wheel Drive
Odometer Reading	<u>13.0 Miles</u>	Date	<u>21-Jan-04</u>
Options	<u>X</u> A/C	<u>X</u> Power Steering	<u>X</u> Power Brakes <u>X</u> Power Windows
	<u>X</u> Cruise Control	<u>X</u> Tilt Wheel	<u>X</u> Power Locks <u>ADL's</u>

DATA FROM TIRE PLACARD:

Tire Pressure (at Capacity)	<u>32</u>	PSI Front
	<u>34</u>	PSI Rear
Recommended Tire Size	<u>P215 70 R16 99S</u>	
Tires on Test Vehicle	<u>P215 70 R16 99S</u>	Manufacturer <u>Goodyear Wrangler</u>

TEST VEHICLE AIRBAG INFORMATION:

	<u>Frontal</u>	<u>Side-Torso</u>	<u>Side-Torso/Head</u>	<u>Side-Head</u>
Driver	Yes-Steering wheel	None	None	None
Front Passenger	Yes- Dashboard	None	None	None
Left Rear Passenger	None	None	None	None

VEHICLE CAPACITY DATA:

Number of Occupants:	<u>2</u> Front	<u>2</u> Rear	<u>3rd</u> Seat	<u>4</u> Total
Type of Front Seats	<u>X</u> Bucket	<u>Bench</u>	<u>Split Bench</u>	
Type of Front Seat Back	<u>Fixed</u>	<u>X</u> Adjustable w/	<u>X</u> Lever	<u>X</u> Knob
Vehicle Max Capacity Loading	<u>308.0</u>		kg	(A)
No. of Occupants X 68.04 kg	<u>272.0</u>		kg	(B)
Cargo Capacity (A) – (B)	<u>36.0</u>		kg	

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front	=	<u>454.5</u>	kg	Left Rear	=	<u>358.3</u>	kg
Right Front	=	<u>426.8</u>	kg	Right Rear	=	<u>349.7</u>	kg
TOTAL FRONT	=	<u>881.3</u>	kg	TOTAL REAR	=	<u>708.0</u>	kg
% Total Weight	=	<u>55.4</u>	%	%Total Weight	=	<u>44.6</u>	%
TOTAL WEIGHT	=	<u>1589.3</u>	kg				

DATA SHEET 1 (continued)**GENERAL VEHICLE TEST PARAMETER DATA**CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max Fluids	=	<u>1589.3</u>	kg	(A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>36.0</u>	kg	(B)
Weight of (2) instrumented Side Impact Dummies	=	<u>161.0</u>	kg	(C)
TEST VEHICLE TARGET WEIGHT	=	<u>1786.3</u>	kg	(A+B+C)

FULLY LOADED TEST VEHICLE (UDVW + 1 OR 2 SID H3(s) + CARGO)

Left Front	=	<u>471.3</u>	kg	Left Rear	=	<u>462.2</u>	kg
Right Front	=	<u>450.9</u>	kg	Right Rear	=	<u>401.9</u>	kg
TOTAL FRONT	=	<u>922.2</u>	kg	TOTAL REAR	=	<u>864.1</u>	kg
% Total Weight	=	<u>51.6</u>	%	%Total Weight	=	<u>48.4</u>	%
TOTAL WEIGHT	=	<u>1786.3</u>	kg				

AS TESTED WEIGHT OF TEST VEHICLE (UDVW+ SID H3(s)+CARGO+EQUIPMENT & INSTRUMENTATION)

Left Front	=	<u>468.6</u>	kg	Left Rear	=	<u>460.8</u>	kg
Right Front	=	<u>450.0</u>	kg	Right Rear	=	<u>401.0</u>	kg
TOTAL FRONT	=	<u>918.6</u>	kg	TOTAL REAR	=	<u>861.8</u>	kg
% Total Weight	=	<u>51.6</u>	%	%Total Weight	=	<u>48.4</u>	%
TOTAL WEIGHT	=	<u>1780.4</u>	kg				

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED

Left Front	<u>809</u>	Right Front	<u>814</u>	Left Rear	<u>819</u>	Right Rear	<u>828</u>
------------	------------	-------------	------------	-----------	------------	------------	------------

FULLY LOADED

Left Front	<u>796</u>	Right Front	<u>805</u>	Left Rear	<u>790</u>	Right Rear	<u>802</u>
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AS TESTED

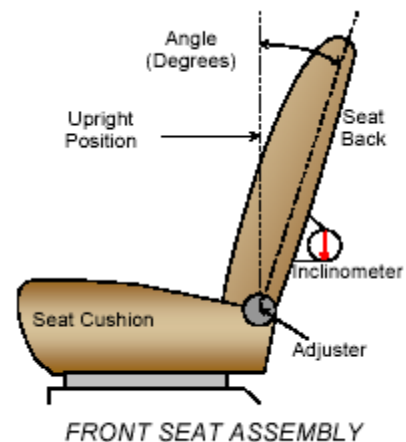
Left Front	<u>803</u>	Right Front	<u>808</u>	Left Rear	<u>795</u>	Right Rear	<u>803</u>
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Test Vehicle Wheelbase 2575 MmAs Tested CG = 1246 mm rearward of front wheel centerlineTOTAL VEHICLE LENGTH:

Right Side	=	<u>4015</u>	mm
Left Side	=	<u>4015</u>	mm
Centerline	=	<u>4293</u>	mm

DATA SHEET 1 (continued)**GENERAL TEST VEHICLE PARAMETER DATA**Nominal Design Riding Position

Seat travel was determined by measuring the distance between the full forward/up position and full rearward/down position. The seat travel for the test vehicle was 290 mm. The mid seat travel point was between the 13th and 14th notch from full forward, thus the seat was placed in the 14th notch.

FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel			290 mm
Total Number of Detents	29	Test Position	14th notch rearward from full forward

FRONT SEAT BACK ADJUSTMENT:

Seat Back Angle	6th notch rearward from full upright
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REAR SEAT POSITION:

Total Length Fore/Aft Adjustment	N/A
Seat Back Adjustment Position	2nd notch rearward from full upright

ADJUSTABLE STEERING COLUMN POSITION:

Mid-Position

WINDOW POSITIONS:

Left Front	Up	Right Front	Removed
Left Rear	Up	Right Rear	Removed

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel System usable Capacity	64.7 L	
Test Volume	60.2 L	93% usable capacity

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

Wheelbase	2575 mm	
Impact Point is	348 mm rearward	of front axle centerline
Actual Impact Point is	335 mm rearward	of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY

VEHICLE IDENTIFICATION:

Year/Make/Model/Body Style	2005 Honda Element MPV		
Body Color	Green	VIN	5J6YH28375L000597
NHTSA No.	M5 5301	Test Date	31-Jan-2005
Overall Length	4293 mm	Overall Width	1771 mm

VEHICLE TEST WEIGHT (Pre-Test):

Left Front	=	468.6	kg	Left Rear	=	460.8	kg
Right Front	=	450.0	kg	Right Rear	=	401.0	kg
TOTAL FRONT	=	918.6	kg	TOTAL REAR	=	861.8	kg
% Total Weight	=	51.6	%	%Total Weight	=	48.4	%
TOTAL WEIGHT	=	1780.4	kg				
Wheelbase	=				=	2575	mm
Longitudinal CG from Center of Front Axle	=				=	1246	mm
Impact Angle with Respect to Impactor	=				=	90°	

ACTUAL IMPACT POINT

Actual Impact Point is 13 mm forward and 3 mm below nominal impact point

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1	(310 mm above ground)	=	172	mm
2. LEVEL 2	(716 mm above ground)	=	154	mm
3. LEVEL 3	(776 mm above ground)	=	155	mm
4. LEVEL 4	(1151 mm above ground)	=	52	mm
5. LEVEL 5	(1693 mm above ground)	=	-11	mm

Maximum Post-Test intrusion at	Level 1	is	172	mm
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OCCUPANTS

	<u>Left Front Passenger</u>	<u>Left Rear Passenger</u>
Dummy Identification	SID H3/056	SID H3/058
Restraints Used	3-Point Belt	3-Point Belt

INSTRUMENTATION:

Number of Vehicle Data Channels		23
Number of Cameras	Onboard	4
	Off board	3
	MDB	2
	Real Time	1
	TOTAL	10

DATA SHEET NO. 3**MOVING DEFORMABLE BARRIER (MDB) SUMMARY****MDB FACE MANUFACTURER AND SERIAL NUMBER:**

Plascore Serial Number 039A0304 071A0404-3

POSITION OF IMPACT (MDB) ON TOW SYSTEM

Crabbed 27° to the left

MDB DETAILS:

Overall Width of Framework Carriage	=	<u>1250 mm</u>
Overall Length of MDB (incl. honeycomb impact face)	=	<u>4116 mm</u>
Wheelbase of Framework Carriage	=	<u>2578 mm</u>
Tread of Framework Carriage (Front & Rear)	=	<u>1880 mm</u>
C.G. Location Rearward of Front Axle	=	<u>1135 mm</u>
C.G. Location From Center Line	=	<u>-10 mm</u>
C.G. Location Above Ground Level	=	<u>480 mm</u>

MDB WEIGHT:

Left Front	=	<u>458.0</u>	kg	Left Rear	=	<u>228.9</u>	kg
Right Front	=	<u>307.2</u>	kg	Right Rear	=	<u>365.6</u>	kg
TOTAL FRONT	=	<u>765.2</u>	kg	TOTAL REAR	=	<u>594.5</u>	kg
% Total Weight	=	<u>56.3</u>	%	%Total Weight	=	<u>43.7</u>	%
TOTAL WEIGHT	=	<u>1359.7</u>	kg				

MDB IMPACT:

Impact Angle (MDB C/L to Target Vehicle)		<u>270°</u>	
Impact Speed	Primary	<u>61.92 km/h</u>	<u>38.48 mph</u>
	Secondary	<u>61.75 km/h</u>	<u>38.37 mph</u>

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A Center of Bumper	=	<u>189</u>	mm
2. Row B Top of Bumper	=	<u>152</u>	mm
3. Row C Mid-Level	=	<u>171</u>	mm
4. Row D Top of Stack	=	<u>196</u>	mm

INSTRUMENTATION:

Number of MDB Data Channels	=	<u>5</u>
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DATA SHEET NO. 4**POST-TEST OBSERVATIONS**VISIBLE DUMMY CONTACT POINTS:LEFT FRONT SID H3

Head	To driver's side window
Upper Torso	To left front door panel at window sill
Lower Torso	To Left front door panel at arm rest
Left Knee	To left front door panel 170 mm below arm rest
Left Leg	To left front door panel 90 mm below arm rest

LEFT REAR SID H3

To side header above left rear passenger side window
To left rear passenger side panel below window
To left rear passenger side panel at arm rest
To left rear passenger side panel 190 mm below arm rest
To left rear door above speaker

DOOR OPENING:LEFT DOOR

Front	Closed/latched/inoperable
Rear	Closed/latched/inoperable

RIGHT DOOR

Closed/latched/operable
Closed/latched/operable

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal	3 mm below	Vertical	13 mm forward
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ARM REST LOCATIONS:

Front	235 mm below window sill
Rear	150 mm below window sill

SEAT MOVEMENT:

Front	No measureable seat crush
Rear	No measureable seat crush

GLAZING DAMAGE

Windshield	None
Window	Left rear passenger window shattered on impact

PILLAR PERFORMANCE:

None noted

SILL SEPARATION

None noted

DOOR LOCK INFORMATION

Test vehicle was not equipped with Automatic Door Locks as standard equipment.

LEFT FRONT DOOR	Unlocked	RIGHT FRONT DOOR	Unlocked
LEFT REAR DOOR	Unlocked	RIGHT REAR DOOR	Unlocked

AIRBAG DEPLOYMENT STATUS:

	DRIVER	FRONT PASSENGER	REAR PASSENGER
FRONT	Did not deploy	Did not deploy	N/A
SIDE	N/A	N/A	N/A

OTHER NOTABLE IMPACT EFFECTS:

None noted

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5**SID H3 INSTRUMENTATION DATA**

	Front Dummy ID SID H3/056				Rear Dummy ID SID H3/058			
	Max		Min		Max		Min	
	G's	msec	G's	msec	G's	msec	G's	msec
HEAD ACCELERATIONS								
Longitudinal (X)	2.9	40.3	-21.9	84.2	15.2	79.1	-35.7	68.2
Lateral (Y)	62.9	83.8	-4.7	49.1	152.9	68.3	-12.7	79.5
Vertical (Z)	27.5	80.6	-2.3	39.4	26.2	64.3	-36.3	77.0
Resultant (R)	69.0	83.8			157.3	68.3		
HIC36	175.4				1035.3			
RIB ACCELERATIONS								
Upper Rib Lateral (Y)	28.0	55.0	-1.2	84.4	53.8	68.8	-2.5	154.4
Upper Rib Lateral (Y _R)	27.5	55.0	-1.3	84.4	54.1	68.1	-2.7	183.1
Lower Rib Lateral (Y)	29.7	53.1	-1.3	93.8	52.6	58.8	-3.2	183.1
Lower Rib Lateral (Y _R)	29.5	53.1	-1.5	93.8	51.8	58.8	-3.3	183.8
TTI	31				46			
SPINE ACCELERATIONS								
Lower Lateral (Y)	32.1	45.0	-3.2	91.2	38.7	60.6	-14.1	76.9
Lower Lateral (Y _R)	32.7	45.0	-3.4	90.6	37.0	60.6	-14.9	76.9
PELVIS ACCELERATIONS								
Lateral (Y)	40.8	39.4	-3.1	68.8	61.7	44.4	-19.4	67.5
Lateral (Y _R)	40.3	39.4	-3.2	69.4	60.9	44.4	-20.1	67.5

REFERENCE:

Positive Direction -	Anterior/Posterior	+(X) = anterior
	Lateral	+(Y)= right
	Superior/Inferior	+(Z)= inferior
Negative Direction	Anterior/Posterior	-(X) = posterior
	Lateral	-(Y)= left
	Superior/Inferior	-(Z)= superior

All the above data (except head accelerations) has been filtered using FIR (Version 1.0; July 16, 1990)

Head Accelerations have been filtered at SAE Class 1000

Y_R denotes redundant Y-direction accelerometer

DATA SHEET 5 (continued)**SID H3 INSTRUMENTATION DATA**

	Front Dummy ID SID H3/056				Front Dummy ID SID H3/058			
	Max		Min		Max		Min	
NECK FORCES								
	N	msec	N	msec	N	msec	N	msec
Longitudinal (X)	30.1	41.0	-537.6	71.9	673.6	78.7	-151.7	167.0
Lateral (Y)	454.2	86.1	-141.5	44.8	287.5	68.3	-1090.2	77.9
Vertical (Z)	1145.0	73.4	-638.4	85.0	441.0	62.6	-1611.1	72.2
NECK MOMENTS								
	Nm	msec	Nm	msec	Nm	msec	Nm	msec
Lateral Bending (X)	24.5	80.3	-32.4	58.8	18.8	135.0	-206.0	70.6
Flexion/Extension (Y)	24.2	101.8	-36.5	69.7	15.4	181.0	-39.8	87.1
Rotation (Z)	21.4	100.6	-9.0	60.4	9.9	122.1	-38.5	74.2

REFERENCE:

Upper neck load cell polarity follows the dummy manipulation table A-1 in the NHTSA Test Reference Guide version 5

Force

Fx positive response: Head rearward, chest forward
 Fy positive response: Head leftward, chest rightward
 Fz positive response: Head upward, chest downward

Moment

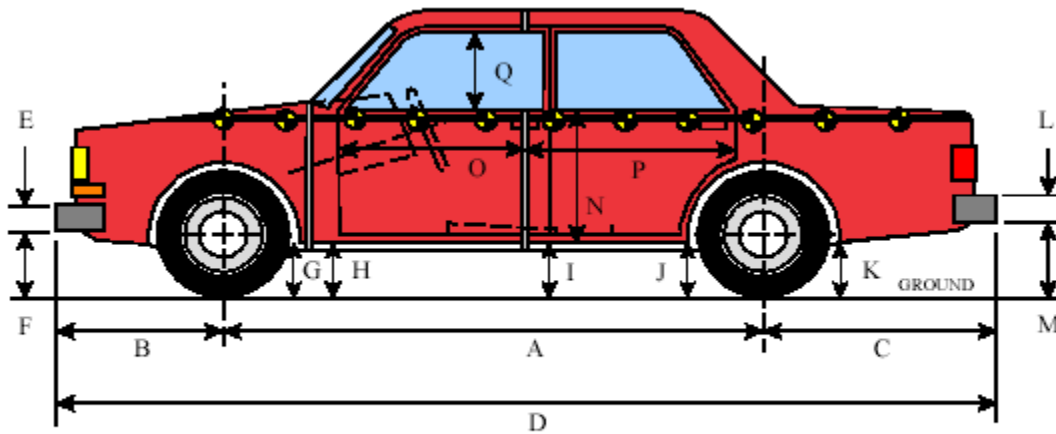
Mx positive response: Left ear to left shoulder
 My positive response: Chin to sternum
 Mz positive response: Chin to left shoulder

Neck forces have been filtered at SAE Class 1000

Neck moments have been filtered at SAE Class 600

DATA SHEET 6

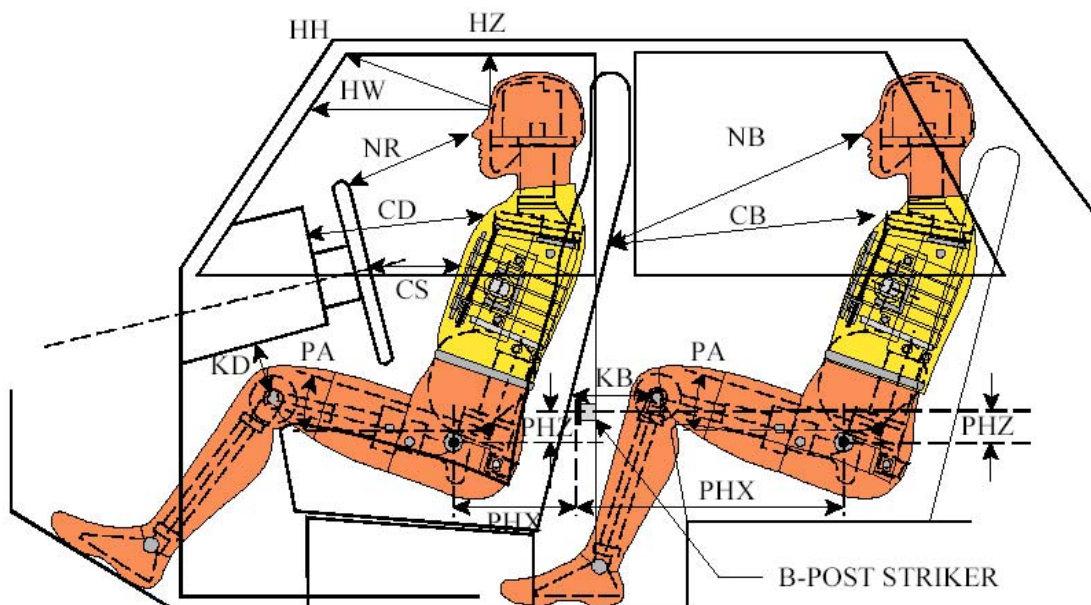
VEHICLE PRE- AND POST- MEASUREMENTS



	PRE-TEST As delivered (mm)	PRE-TEST As Tested (mm)	POST-TEST (mm)	Δ CHANGE (mm)
A	2575	-	2554	-21
B	605	-	610	5
C	835	-	834	-1
D	4293	-	4288	-5
E	147	-	147	0
F	308	302	314	12
G	290	279	259	-20
H	292	279	253	-26
I	295	282	270	-12
J1	285	265	263	-2
J2	297	275	260	-15
K	350	318	299	-19
L	125	-	125	0
M	393	353	339	-14
N	786	-	770	-16
O	1097	-	1080	-17
P	613	-	587	-26
Q	450	-	442	-8
R	4015	-	4022	7
S	4015	-	3998	-17
T	1771	-	1736	-35

DATA SHEET 7

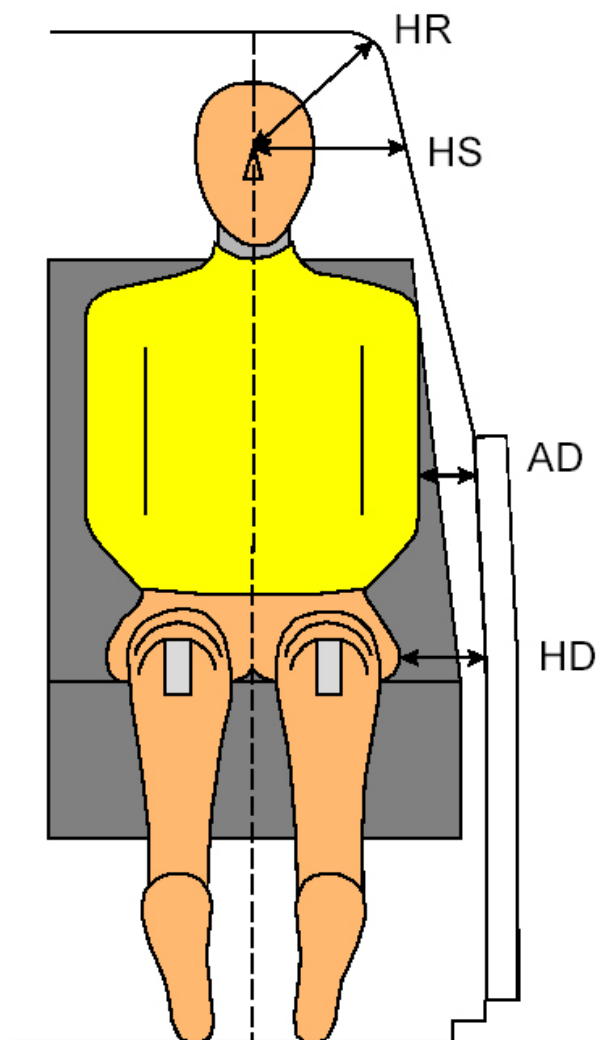
SID H3 LONGITUDINAL CLEARANCE DIMENSIONS



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

	DRIVER ID SID H3/056	LEFT REAR PASSENGER ID SID H3/058
HH	728	N/A
HW	879	N/A
HZ	286	210
NR/NB	474	858
CD/CB	629	774
CS	368	N/A
KDL(KDA°)/KBL(KDA°)	107/26	381/11.5
KDR(KDA°)/KBR(KDA°)	175/24.5	369/11.1
PA°	23.6	23.5
PHX	253	-1118
PHZ	171	326

PHX and PHZ referenced from front striker

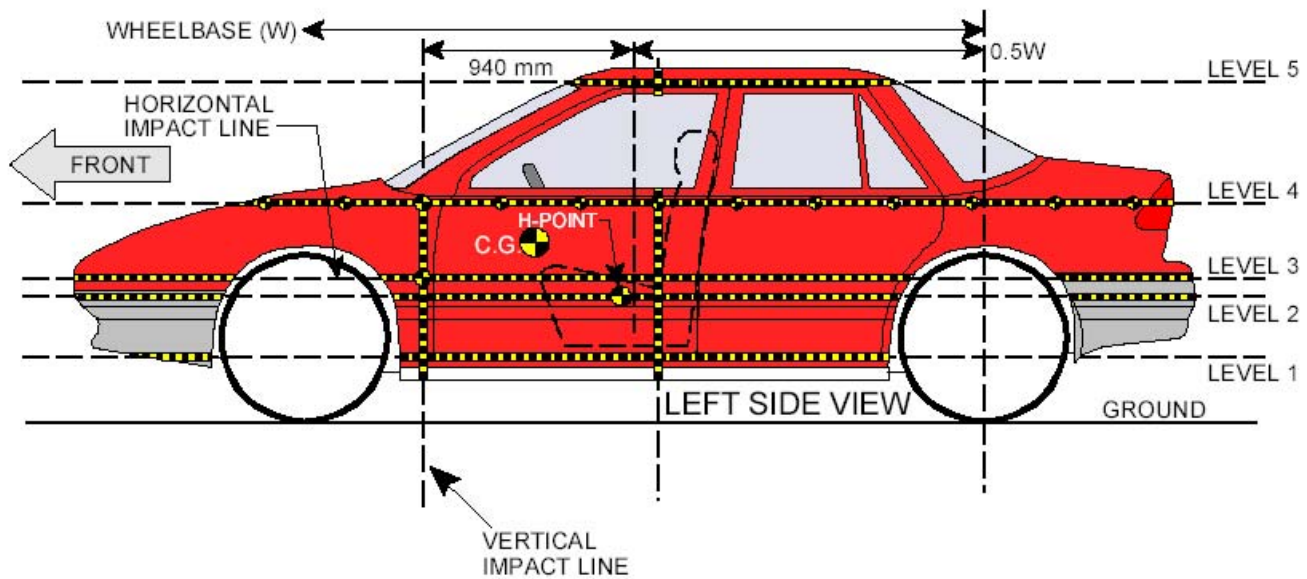
DATASHEET 8**SID H3 LATERAL CLEARANCE DIMENSIONS**

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

	DRIVER ID SID H3/056		LEFT REAR PASSENGER ID SID H3/058	
HR	295		274	
HS	351		415	
AD	Upper 105	Lower 69	Upper 243	Lower 135
HD	198		132	

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS



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

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED" CONFIGURATION
 Measurements along the Vertical 750 mm line as shown

Level 5 @ Window Top
 Level 4 @ Window Sill
 Level 3 @ Mid-Door
 Level 2 @ Occupant H-Point
 Level 1 @ Axle Centerline or Sill Top Height

1693 mm
1151 mm
776 mm
716 mm
310 mm

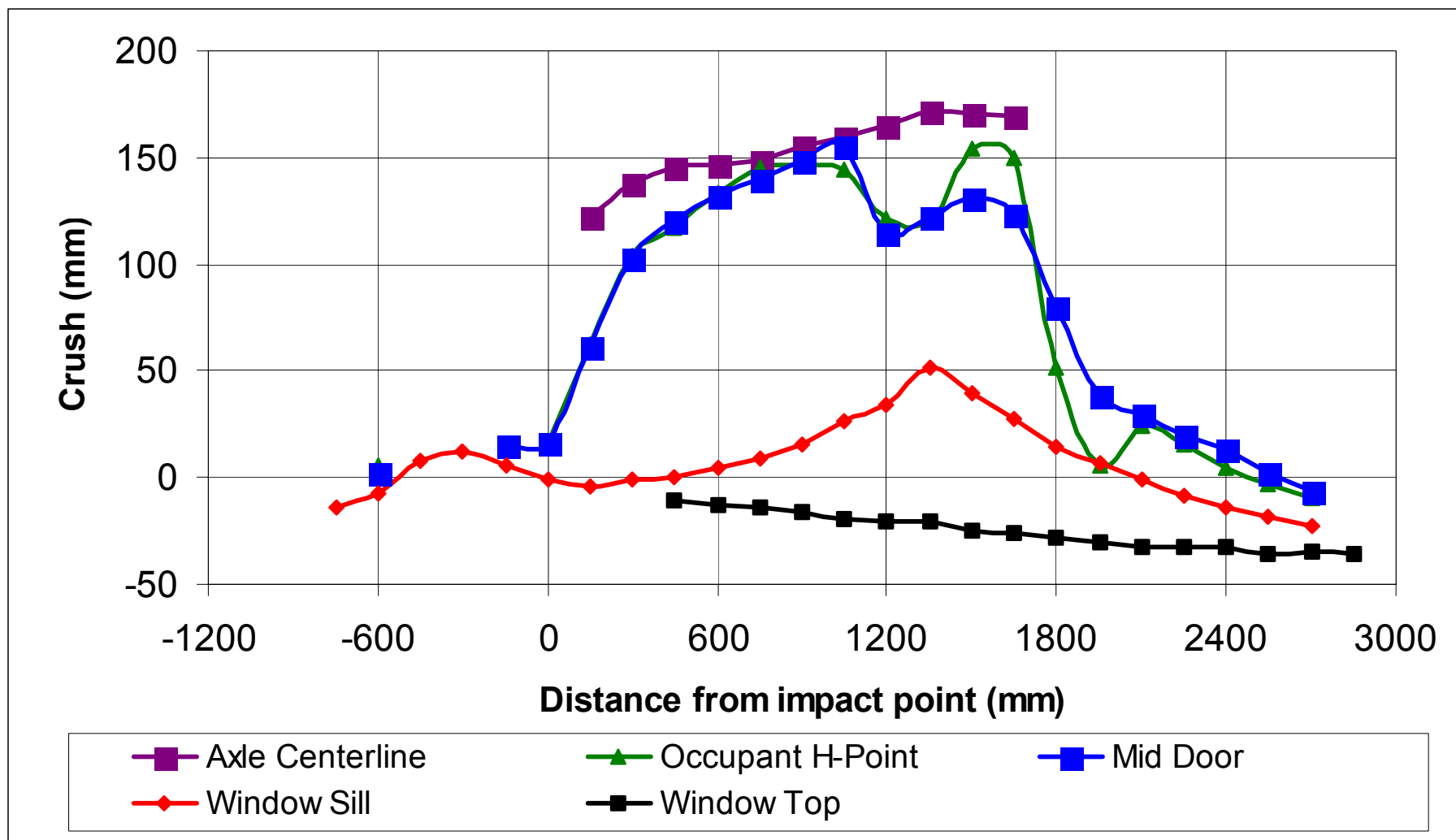
DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES – ALL LEVELS

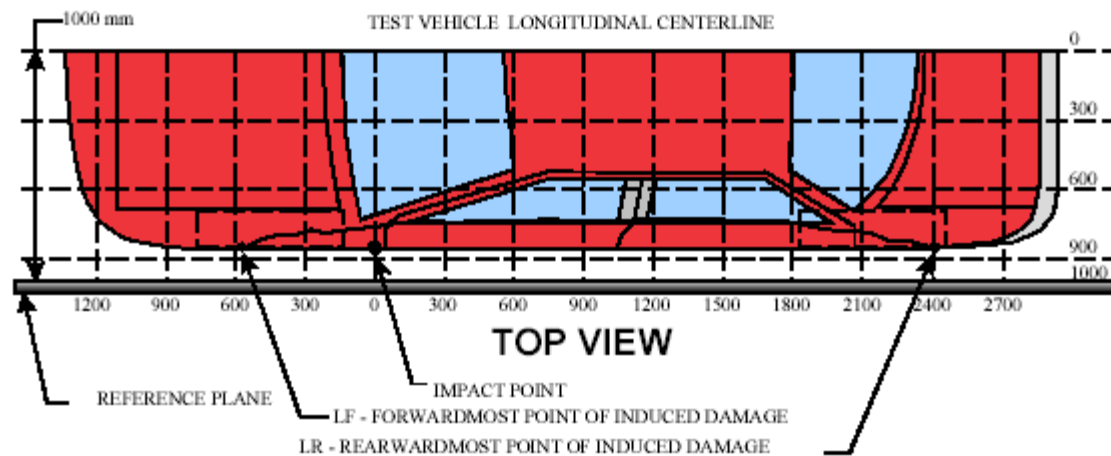
Note: All Dimensions are in millimeters with a tolerance of ± 3 mm

Level	1			2			3			4			5		
Height (mm)	310			716			776			1151			1693		
	Pre	Post	Crush	Pre	Post	Crush	Pre	Post	Crush	Pre	Post	Crush	Pre	Post	Crush
DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT	-1050														
	-900														
	-750									335	321	-14			
	-600			171	177	6	172	174	2	319	312	-7			
	-450									300	308	8			
	-300									290	302	12			
	-150						163	179	16	284	290	6			
	0			180	197	17	191	208	17	279	278	-1			
	150	222	345	123	198	260	62	196	257	61	275	271	-4		
	300	217	355	138	195	299	104	194	297	103	272	271	-1		
	450	215	360	145	194	311	117	192	312	120	268	268	0	400	389
	600	213	360	147	192	325	133	190	322	132	265	270	5	407	394
	750	211	360	149	191	336	145	189	329	140	262	271	9	412	398
	900	210	365	155	191	337	146	188	337	149	259	275	16	415	399
	1050	208	368	160	191	335	144	187	342	155	259	285	26	418	399
	1200	208	373	165	191	312	121	188	303	115	258	292	34	419	399
	1350	207	379	172	192	312	120	189	312	123	260	312	52	417	396
	1500	208	379	171	194	348	154	191	322	131	262	302	40	417	392
	1650	211	380	169	195	345	150	193	317	124	263	290	27	417	391
	1800				193	244	51	195	275	80	265	279	14	418	390
	1950				196	202	6	179	217	38	270	277	7	420	390
	2100				186	210	24	161	191	30	275	274	-1	423	390
	2250				185	200	15	161	181	20	281	273	-8	422	389
	2400				201	206	5	165	178	13	288	274	-14	423	390
	2550				214	211	-3	195	197	2	297	279	-18	426	390
	2700				224	214	-10	216	210	-6	309	286	-23	429	394
	2850										0			436	400
	3000										0				

DATA SHEET 10 (continued)
VEHICLE EXTERIOR CRUSH PROFILES ALL LEVELS



DATA SHEET 11 VEHICLE DAMAGE PROFILE DISTANCES



DPD MEASUREMENTS (mm)		POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1	-250	174	174	0
2	194	351	175	176
3	638	360	178	182
4	1082	369	181	188
5	1526	380	183	197
6	1970	185	185	0

DATA SHEET 12

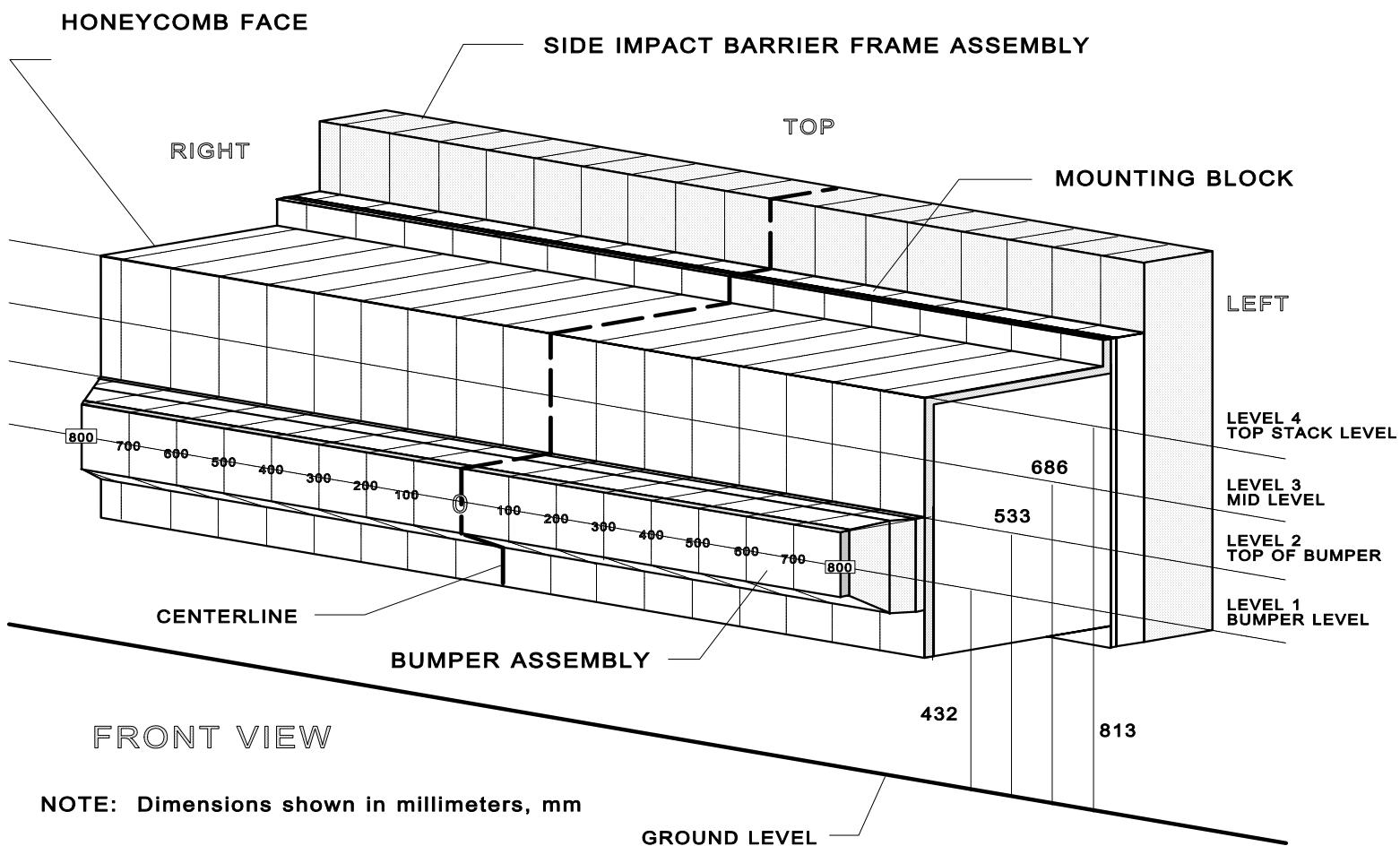
STATIC CRUSH OF IMPACTOR FACE (Grid as looking at MDB from front)

Note: All Dimensions are in millimeters with a tolerance of ± 3 mm

LEVEL	HEIGHT AT CL (mm)		DISTANCE LEFT OF CENTER								0	DISTANCE RIGHT OF CENTER							
			800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
LEVEL 4 TOP STACK	810	PRE-	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	529	529
		POST-	667	647	643	640	675	672	627	610	600	610	611	612	628	642	662	690	725
		CRUSH	137	117	113	110	145	142	97	80	70	80	81	82	98	112	132	161	196
LEVEL 3 MID- LEVEL	685	PRE-	527	528	528	528	529	529	529	529	528	528	528	529	529	529	529	529	529
		POST-	669	612	607	616	642	636	606	595	585	581	580	585	586	611	633	659	700
		CRUSH	142	84	79	88	113	107	77	66	57	53	52	56	57	82	104	130	171
LEVEL 2 TOP BUMPER	560	PRE-	524	525	525	525	525	526	526	526	527	526	526	526	526	526	526	526	526
		POST-	676	677	673	665	674	675	665	656	663	661	659	663	657	660	659	665	670
		CRUSH	152	152	148	140	149	149	139	130	136	135	133	137	131	134	133	139	144
LEVEL 1 MID- BUMPER	432	PRE-	434	422	422	422	423	423	423	423	423	422	423	423	423	423	423	423	435
		POST-	623	604	602	601	601	598	593	592	591	590	588	588	585	586	590	598	612
		CRUSH	189	182	180	179	178	175	170	169	168	168	165	165	162	163	167	175	177

Note: Top of Bumper static crush measurements made 560 mm above ground to avoid glue at bumper/barrier interface

DATA SHEET 12 (continued)
STATIC CRUSH OF IMPACTOR FACE

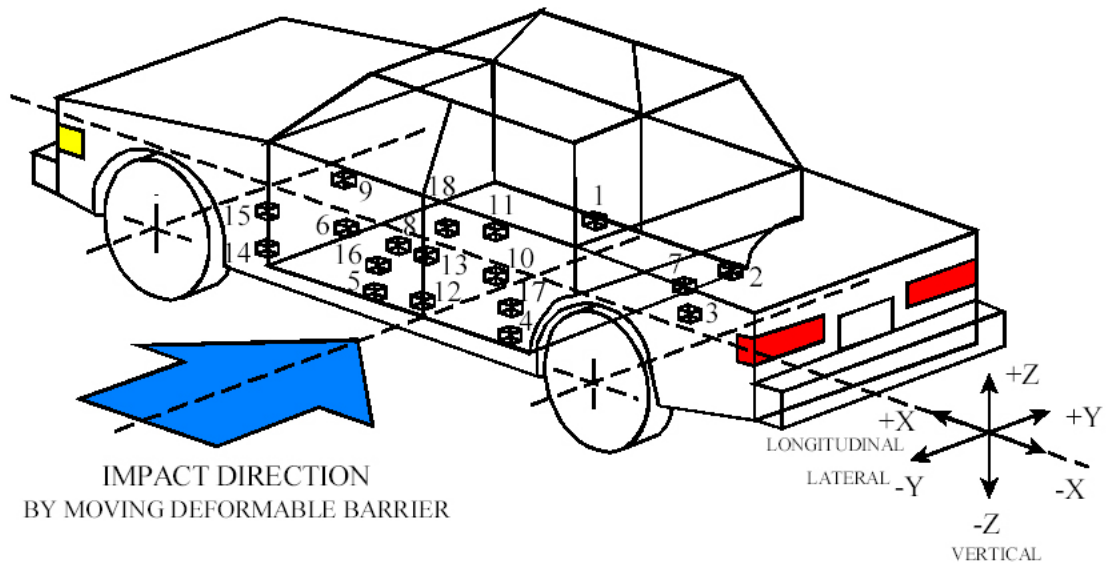


NOTE: Dimensions shown in millimeters, mm

Note: Top of Bumper static crush measurements made 560 mm above ground to avoid glue at bumper/barrier interface

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY



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

VEHICLE ACCELEROMETER LOCATIONS AND SUMMARY DATA

Axis Origin	X – Point L	Axis Orientation	+(X) Forward where x axis is the vector from middle of rear bumper to mid front bumper
	Y – Point L		+(Y) Right where y axis is parallel to ground reference plane
	Z – Point L		+(Z) Down where z axis is cross product of +(X) and +(Y)

DATASHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND SUMMARY DATA

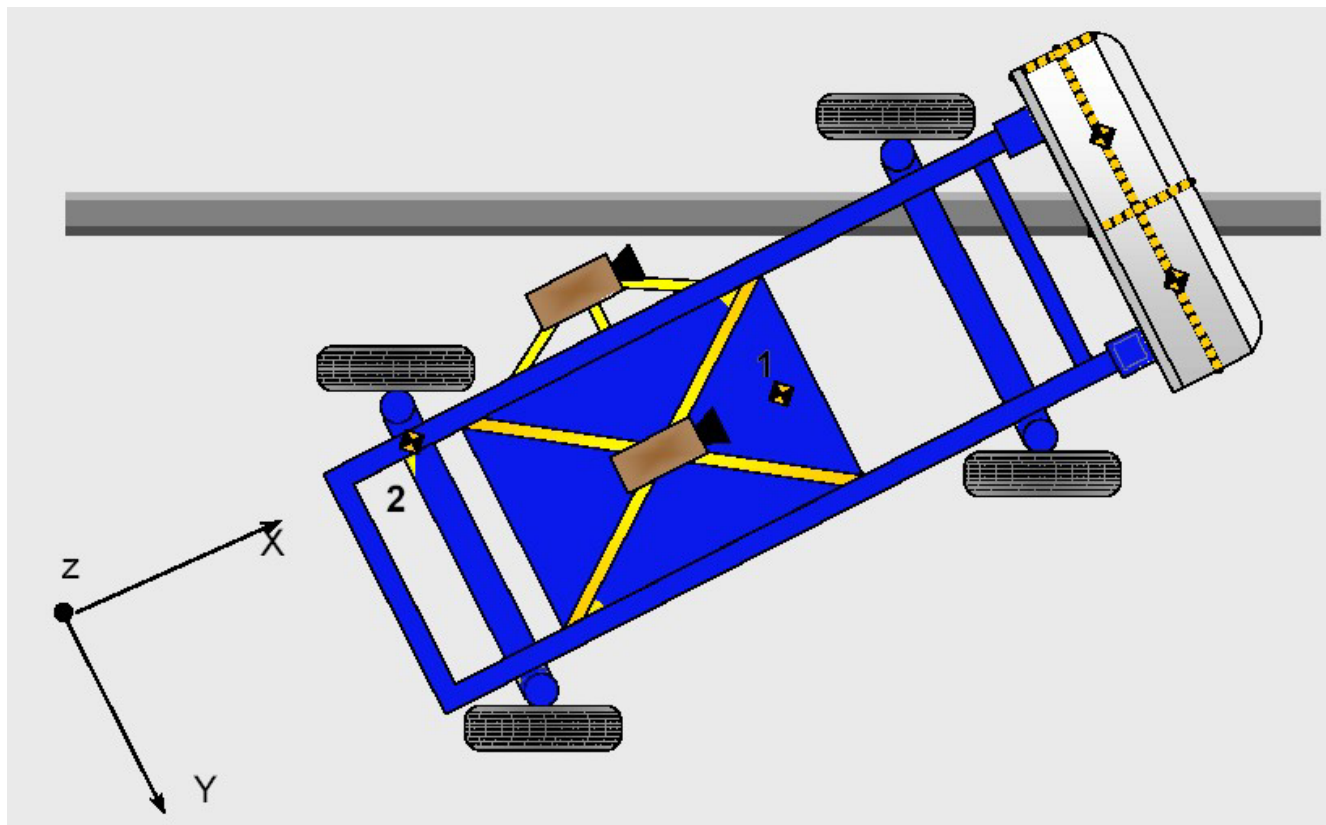
Location		Coordinates			Longitudinal (X)				Lateral (Y)				Vertical (Z)				Resultant	
		X mm	Y mm	Z mm	Max		Min		Max		Min		Max		Min		Max	
					G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec
11	Left Rear Door Upper Centerline	1757	-762	-323					87.0	1.8	-34.7	24.3						
12	Left Lower B- Pillar	1978	-726	-259					170.5	3.4	-46.3	8.2						
13	Left Middle B- Pillar	1952	-720	-475					91.2	11.5	-66.6	7.9						
14	Left Lower A- Pillar	2998	-821	-170					110.4	13.4	-10.0	24.5						
15	Left Middle A- Pillar	3010	-806	-438					33.7	7.4	-4.0	70.6						
16	Front Seat Track	2306	-616	45					86.4	15.9	-37.2	11.2						
17	Rear Seat Track	1208	-148	-4					75.5	16.3	-24.1	27.1						
18	Vehicle CG	2559	28	154	2.7	67.5	-17.2	15.9	32.8	5.1	-6.7	67.9	33.7	13.3	-29.9	8.3	45.7	13.6

Axis Origin X – Point L
 Y – Point L
 Z – Point L

Axis Orientation +(X) Forward where x axis is the vector from middle of rear bumper to mid front bumper
 +(Y) Right where y axis is parallel to ground reference plane
 +(Z) Down where z axis is cross product of +(X) and +(Y)

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY



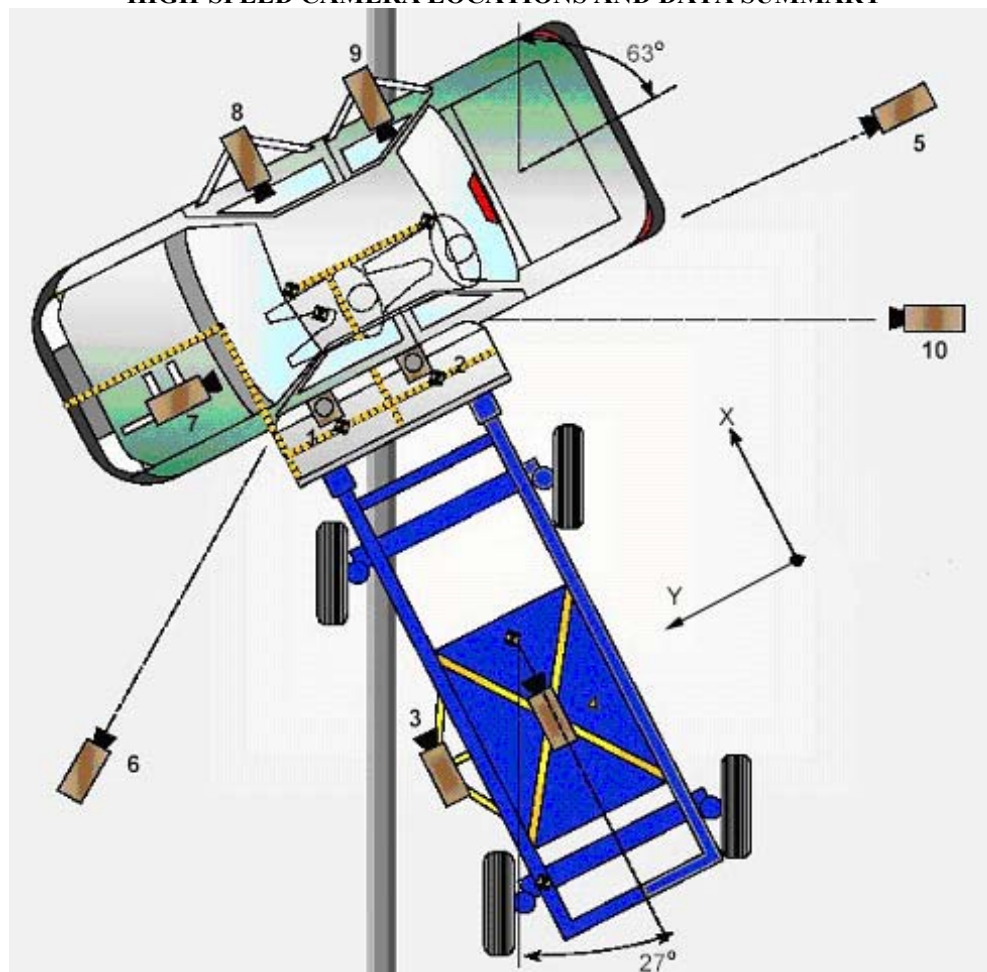
Location		Coordinates			Longitudinal (X)				Lateral (Y)				Vertical (Z)				Resultant	
		X mm	Y mm	Z mm	Max		Min		Max		Min		Max		Min		Max	
					G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec
1	MDB Center of Gravity	1113	-1	311	1.9	110.2	-25.8	16.2	2.9	54.3	-9.6	26.2	16.1	50.9	-13.1	21.3	26.4	16.0
2	MDB Rear Frame Member	2812	-614	585	2.9	77.0	-26.8	27.5	5.7	20.5	-2.2	140.4						

Axis Origin X – Rear Bumper
 Y – Vehicle Centerline
 Z – Middle of rear bumper

Axis Orientation +(X) Forward
 +(Y) Right
 +(Z) Down

DATA SHEET 15

HIGH-SPEED CAMERA LOCATIONS AND DATA SUMMARY



Camera No.	View	Coordinates (mm)*			Angle wrt Horiz.	Lens (mm)	Film Speed (fps)
		X	Y	Z			
1	Overhead view of test vehicle	-249	-640	4812	90	8	1000
2	Overhead close-up view of impact plane	-550	-125	4340	90	16	1000
3	MDB onboard close-up view of impact point	-1542	-1026	25	0	25	1000
4	MDB onboard view of driver dummy	-1415	-1891	780	5	13	1000
5	Right side ground level overall view	-668	-1184	879	7	25	1000
6	Left side ground level overall view	-2311	4575	848	10	35	1000
7	Test vehicle onboard driver front view	517	225	707	15	25	1000
8	Test vehicle onboard driver side view	1753	-991	520	10	12.5	1000
9	Test vehicle onboard passenger side view	1774	-1802	519	10	12.5	1000
10	Real-time film coverage of test	-	-	-	-	-	-

* Reference: Middle of rear bumper on test vehicle (Point L)

+ (X) Forward where x axis is the vector from middle of rear bumper to mid front bumper

+ (Y) Right where y axis is parallel to ground reference plane

+ (Z) Down where z axis is cross product of + (X) and + (Y)

SECTION 5
FUEL SYSTEM INTEGRITY

DATA SHEET 16**FUEL SYSTEM INTEGRITY DATA**TEST REQUIREMENTS:

Drain the test vehicle's fuel system and operate the engine until the fuel system is dry. Add Stoddard solvent, which has been dyed purple, until 92-94% of the stated usable capacity is reached. Operate the engine to assure the Stoddard solvent is present throughout the entire fuel system.

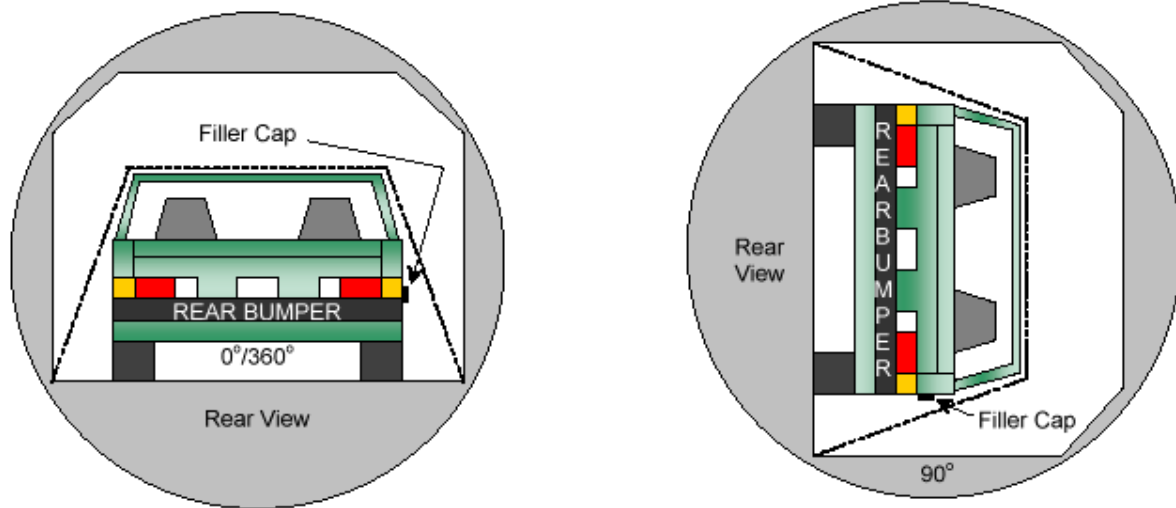
TEST VEHICLE IMPACT TYPE: Side impacting Moving Deformable Barrier contacting the driver side.

FUEL SPILLAGE MEASUREMENT:

POST IMPACT TEST	TEST RESULTS	MAXIMUM ALLOWABLE
1. From impact until vehicle motion ceases	0	1 oz.
2. For 5 minute period after vehicle motion ceases	0	5 oz.
3. For next 25 minutes	0	1 oz./minute

FUEL SPILLAGE LOCATION(S): None

DATA SHEET 17
ROLLOVER DATA



0° TO 90°

DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

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

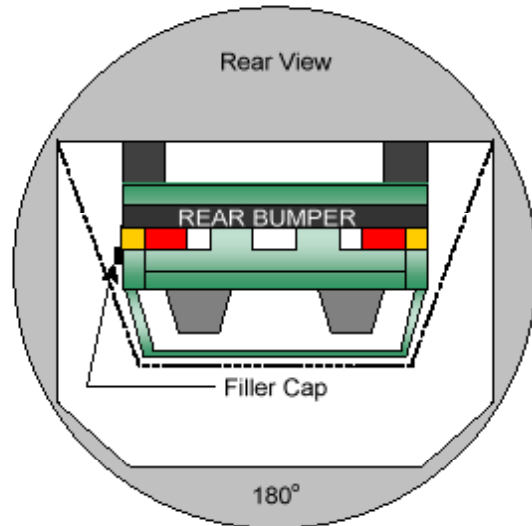
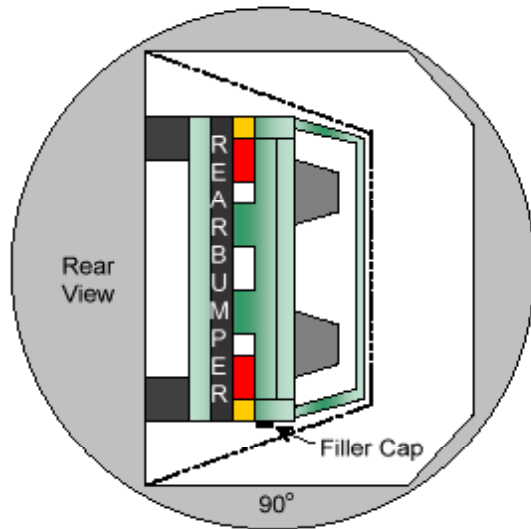
FUEL SPILLAGE MEASUREMENT:

0° TO 90° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0	5 oz.
2. Sixth Minute From Onset of Rotation	0	1 oz.
3. Seventh Minute From Onset of Rotation	0	1 oz.
4. Eighth Minute if Required	-	1 oz.

FUEL SPILLAGE LOCATION(S): None

DATA SHEET 17 (continued)

ROLLOVER VEHICLE



90° TO 180°

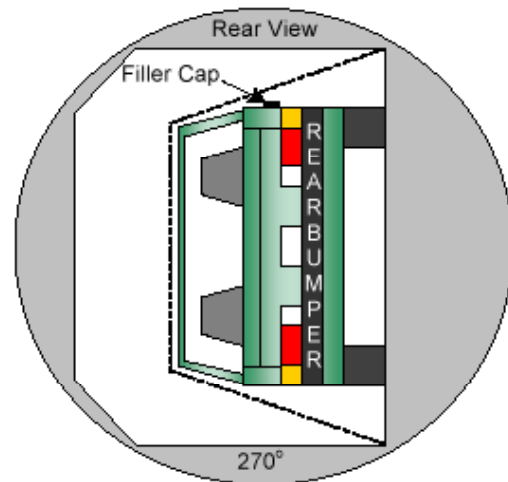
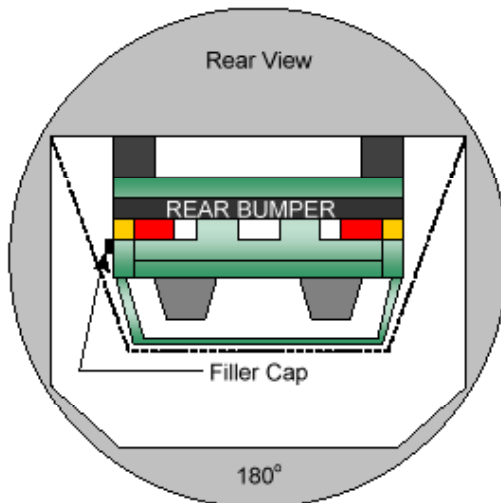
DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

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

FUEL SPILLAGE MEASUREMENT:

90° TO 180° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0	5 oz.
2. Sixth Minute From Onset of Rotation	0	1 oz.
3. Seventh Minute From Onset of Rotation	0	1 oz.
4. Eighth Minute if Required	-	1 oz.

FUEL SPILLAGE LOCATION(S): None

DATA SHEET 17 (continued)**ROLLOVER VEHICLE****180° TO 270°**DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time	<u>1</u> minutes	<u>2</u> seconds
(Spec Range =1 to 3 minutes)		
FMVSS 301 Position Hold Time	<u>5</u> minutes	<u>4</u> seconds
TOTAL	<u>6</u> minutes	<u>6</u> seconds
Next whole minute interval	<u>7</u> minutes	

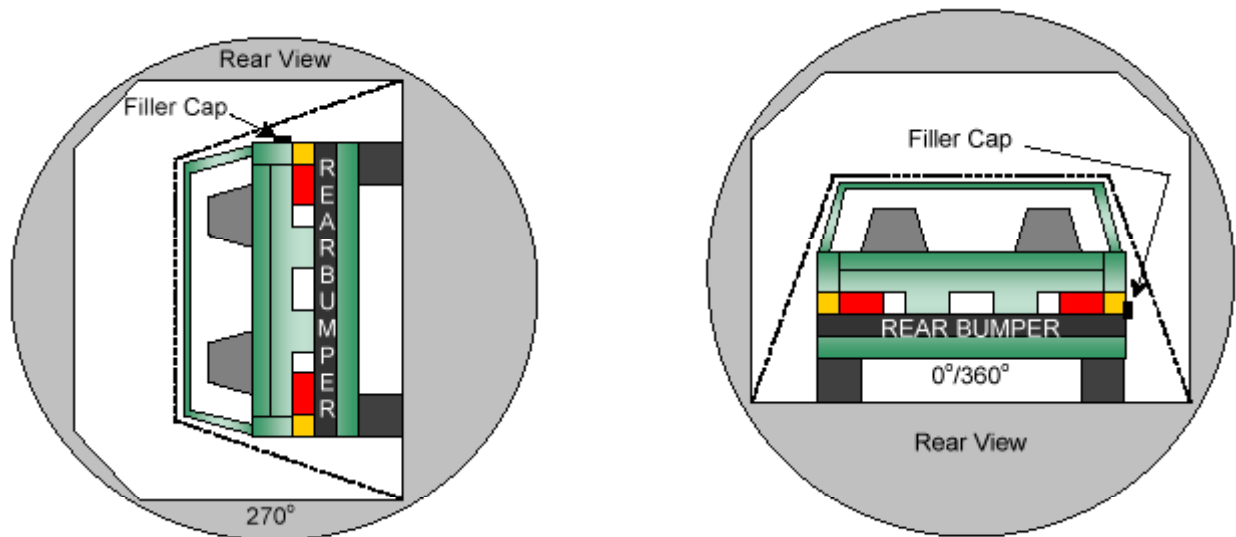
FUEL SPILLAGE MEASUREMENT:

180° TO 270° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0	5 oz.
2. Sixth Minute From Onset of Rotation	0	1 oz.
3. Seventh Minute From Onset of Rotation	0	1 oz.
4. Eighth Minute From Onset of Rotation	-	1 oz.

FUEL SPILLAGE LOCATION(S): None

DATA SHEET 17 (continued)

ROLLOVER VEHICLE



270° TO 360°

DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

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

FUEL SPILLAGE MEASUREMENT:

270° TO 360° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0	5 oz.
2. Sixth Minute From Onset of Rotation	0	1 oz.
3. Seventh Minute From Onset of Rotation	0	1 oz.
4. Eighth Minute if Required	-	1 oz.

FUEL SPILLAGE LOCATION(S): None

APPENDIX A
PHOTOGRAPHS

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

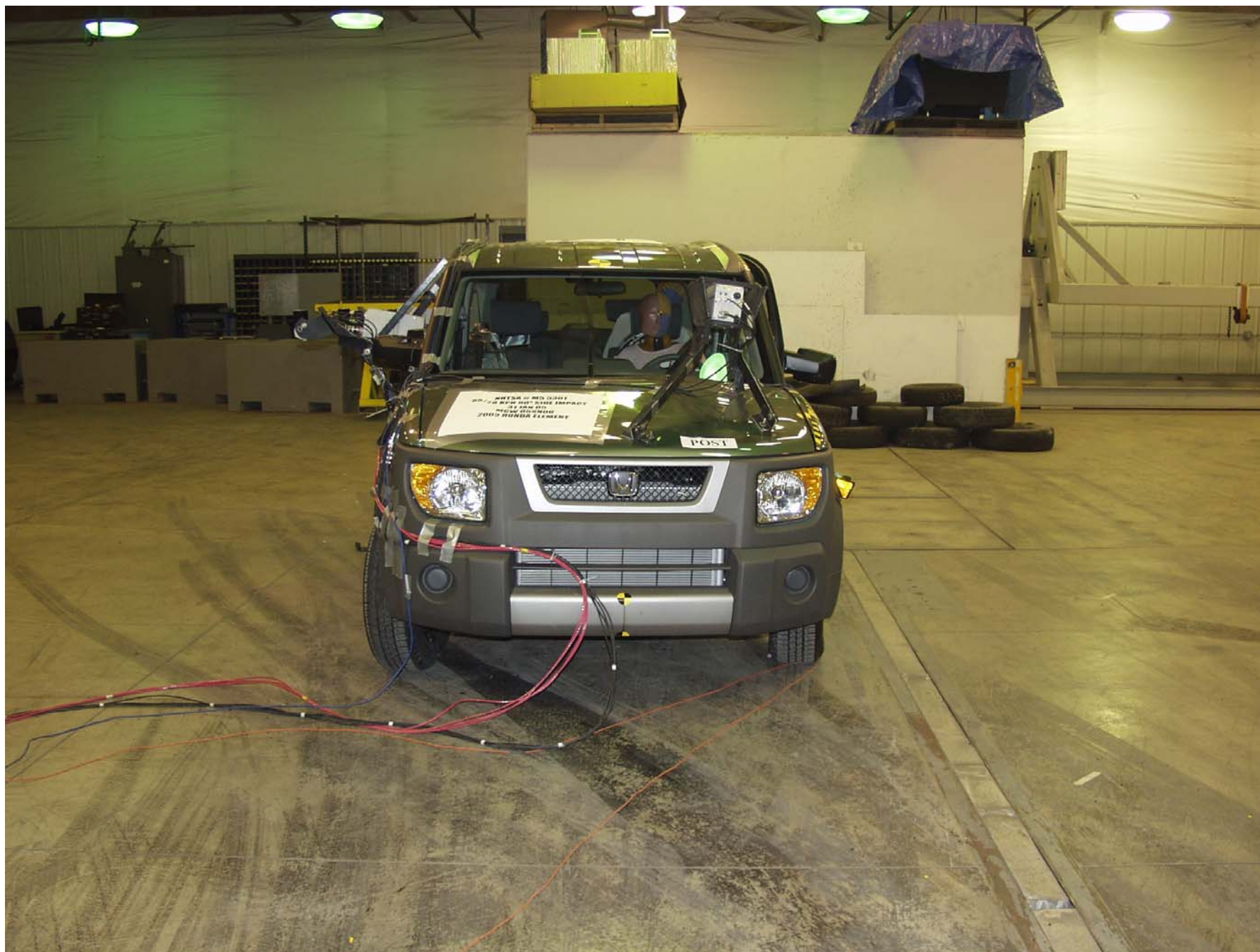


Figure A-2: POST-TEST FRONTAL VIEW OF TEST VEHICLE



Figure A-3: PRE-TEST LEFT FRONT VIEW OF TEST VEHICLE



Figure A-4: POST-TEST LEFT FRONT VIEW OF TEST VEHICLE



Figure A-5: PRE-TEST LEFT SIDE VIEW OF TEST VEHICLE



Figure A-6: POST-TEST LEFT SIDE VIEW OF TEST VEHICLE



Figure A-7: PRE-TEST LEFT REAR VIEW OF TEST VEHICLE



Figure A-8: POST-TEST LEFT REAR VIEW OF TEST VEHICLE



Figure A-9: PRE-TEST REAR VIEW OF TEST VEHICLE



Figure A-10: POST-TEST REAR VIEW OF TEST VEHICLE



Figure A-11 PRE-TEST RIGHT REAR VIEW OF TEST VEHICLE



Figure A-12 POST-TEST RIGHT REAR VIEW OF TEST VEHICLE



Figure A-13: PRE-TEST RIGHT SIDE VIEW OF TEST VEHICLE



Figure A-14: POST-TEST RIGHT SIDE VIEW OF TEST VEHICLE



Figure A-15: PRE-TEST FRONT RIGHT VIEW OF TEST VEHICLE



Figure A-16: POST-TEST FRONT RIGHT VIEW OF TEST VEHICLE



Figure A-17: PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID H3

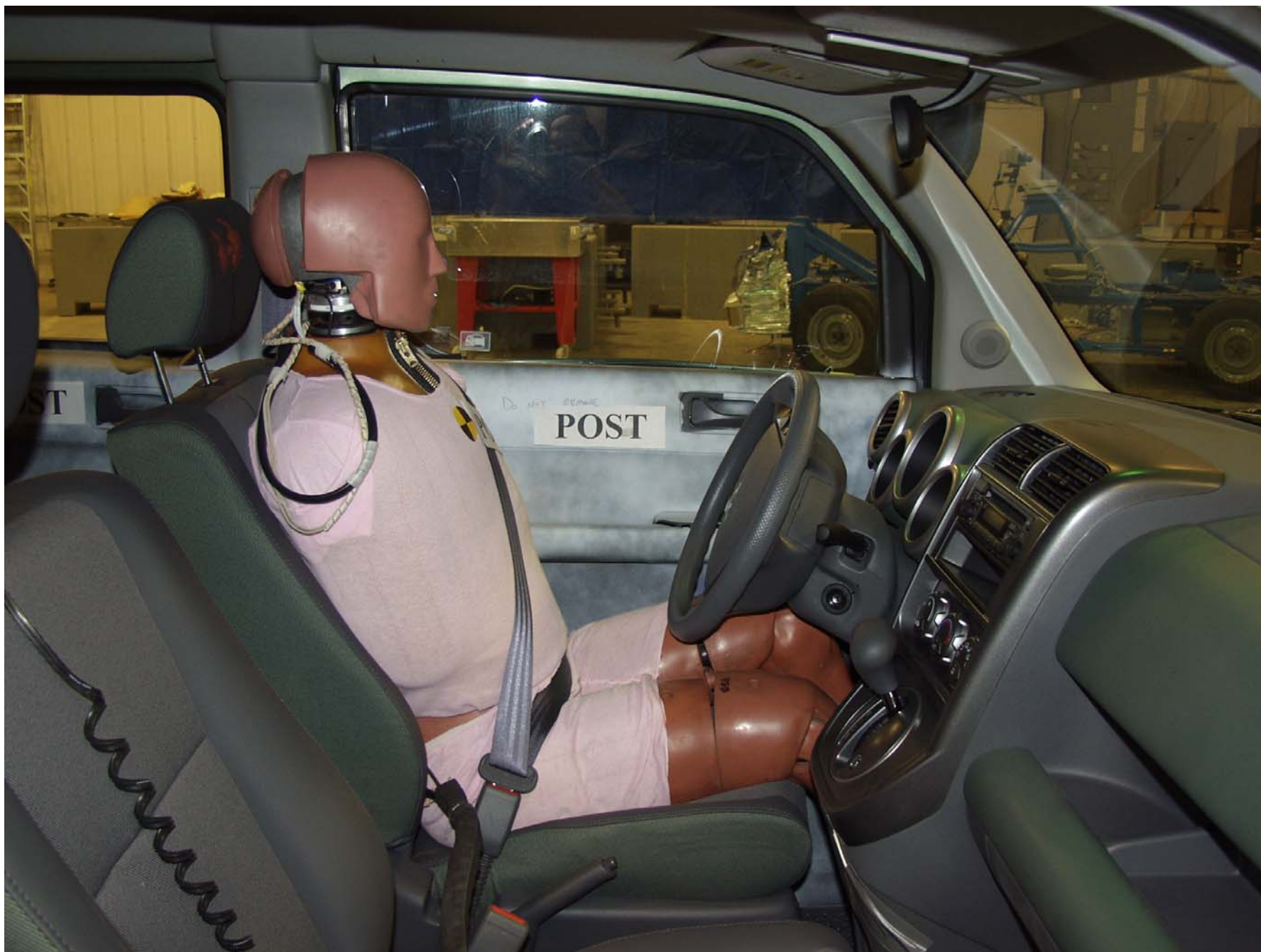


Figure A-18: POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID H3



Figure A-19: PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID H3



Figure A-20: POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID H3



Figure A-21: PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID H3



Figure A-22: POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID H3



Figure A-23: PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID H3



Figure A-24: POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID H3



Figure A-25: PRE-TEST INTERIOR OF FRONT DOOR



Figure A-26: POST-TEST INTERIOR OF FRONT DOOR SHOWING SID H3 IMPACT LOCATIONS



Figure A-27: POST-TEST INTERIOR OF FRONT DOOR SHOWING SID H3 IMPACT LOCATIONS 2



Figure A-28: PRE-TEST INTERIOR OF REAR PASSENGER COMPARTMENT



Figure A-29: POST-TEST INTERIOR OF REAR DOOR SHOWING SID H3 IMPACT LOCATIONS



Figure A-30: POST-TEST INTERIOR OF REAR DOOR SHOWING SID H3 IMPACT LOCATIONS 2



Figure A-31: PRE TEST LEFT SIDE VIEW OF MDB IN IMPACT POSITION



Figure A-32: POST TEST LEFT SIDE VIEW OF MDB



Figure A-33: PRE TEST RIGHT SIDE VIEW OF MDB IN IMPACT POSITION



Figure A-34: POST TEST RIGHT SIDE VIEW OF MDB



Figure A-35: PRE TEST OVERHEAD VIEW OF MDB IN IMPACT POSITION



Figure A-36: POST TEST OVERHEAD VIEW OF MDB



Figure A-37: PRE TEST CLOSE-UP OF IMPACT POINT TARGET SHOWING WELDING ROD



Figure A-38: POST TEST CLOSE-UP OF IMPACT POINT TARGET



Figure A-39: VEHICLE TIRE PLACARD

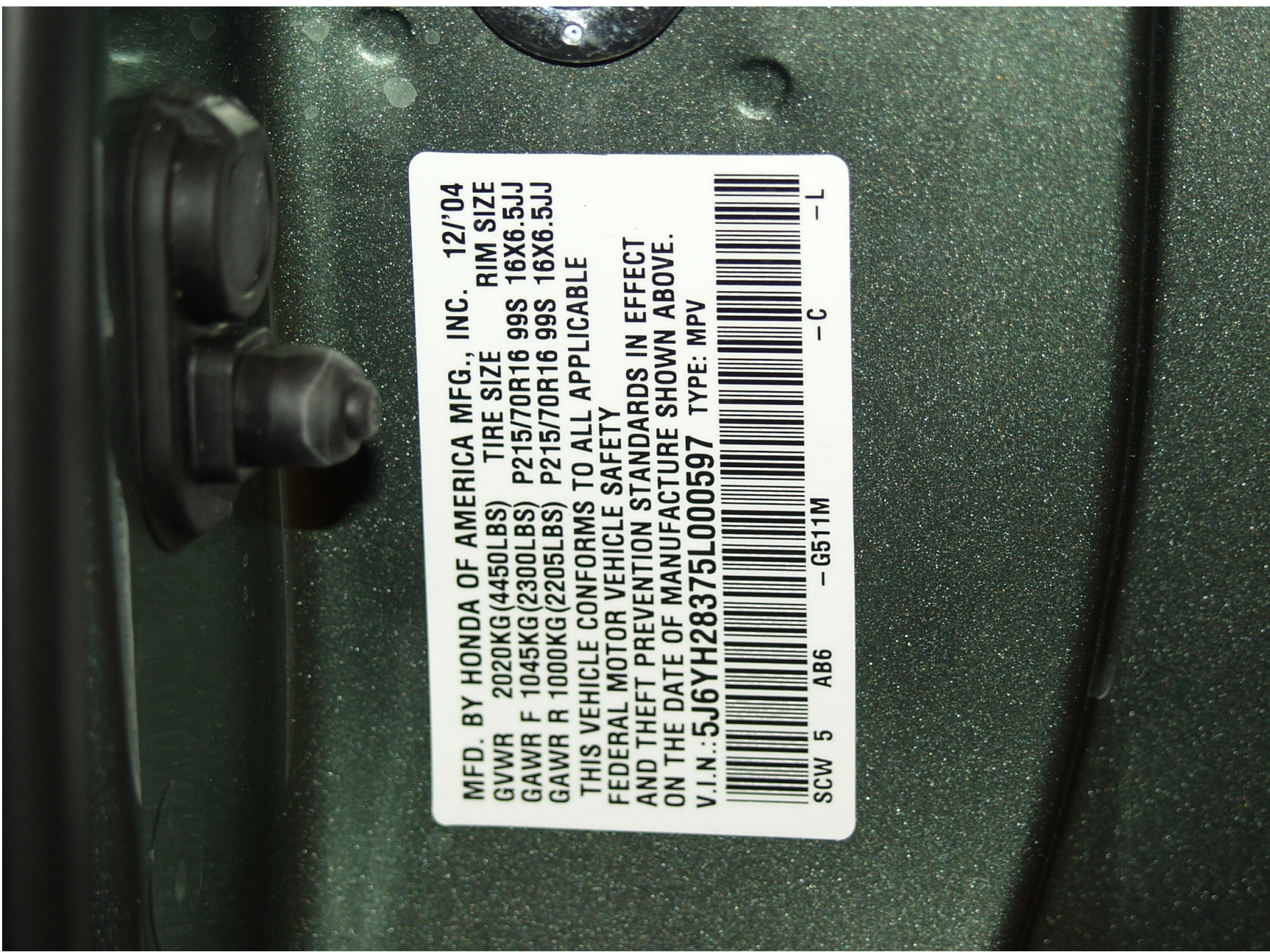


Figure A-40: VEHICLE CERTIFICATION LABEL

MFD. BY HONDA OF AMERICA MFG., INC. 12/04
 GVWR 2020KG(4450LBS) TIRE SIZE RIM SIZE
 GAWR F 1045KG(2300LBS) P215/70R16 99S 16X6.5JJ
 GAWR R 1000KG(2205LBS) P215/70R16 99S 16X6.5JJ

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

V.I.N.: 5J6YH28375L000597 TYPE: MPV



SCW 5 AB6 - G511M

- C

- L

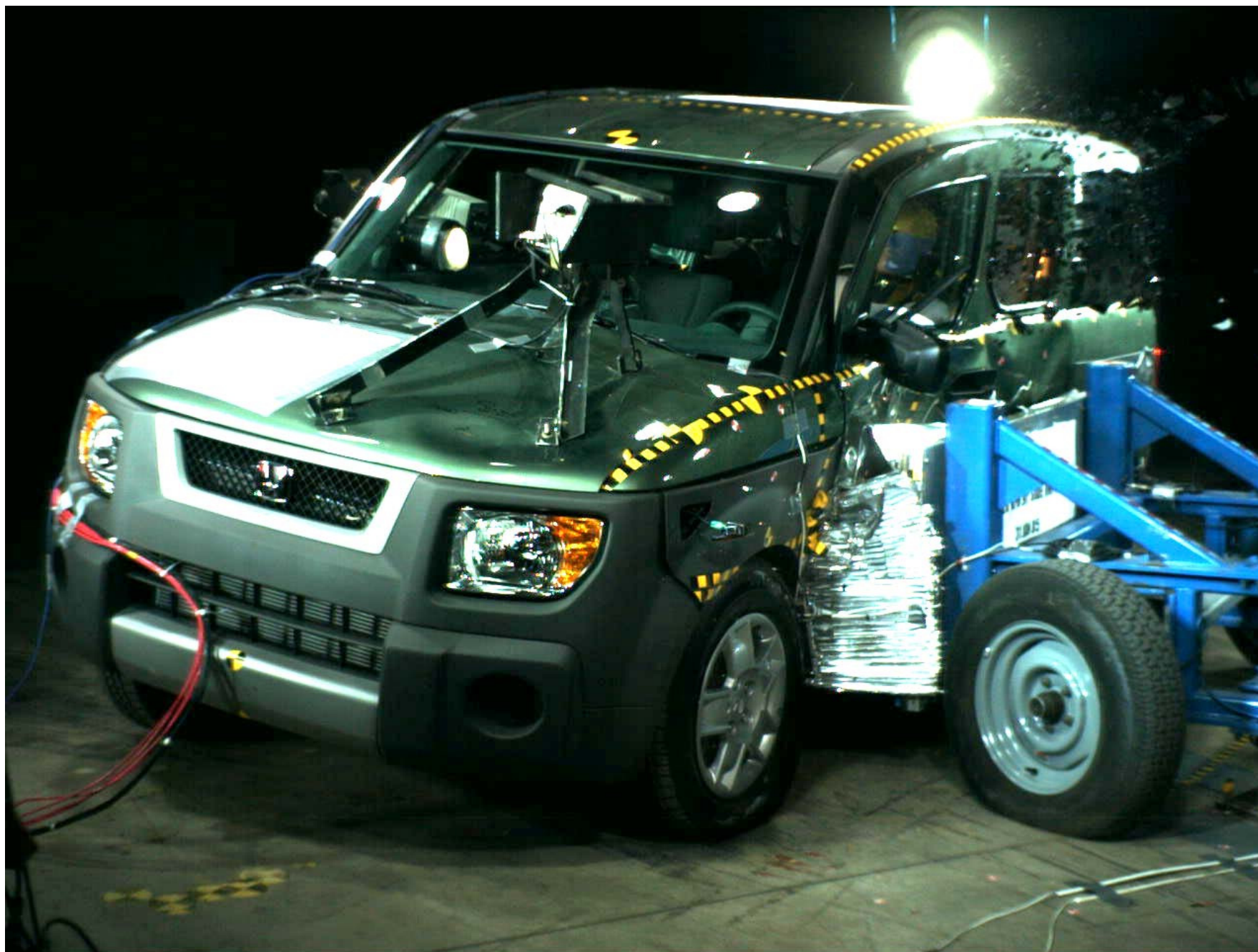


Figure A-41: IMPACT



Figure A-42: ROLLOVER 0 DEGREES



Figure A-43: ROLLOVER 90 DEGREES



Figure A-44: ROLLOVER 180 DEGREES



Figure A-45: ROLLOVER 270 DEGREES



Figure A-46: ROLLOVER 360 DEGREES



Figure A-47: PRE-TEST ALUMINUM BARRIER FRONT



Figure A-48: POST-TEST ALUMINUM BARRIER FRONT



Figure A-49: PRE-TEST ALUMINUM BARRIER LEFT SIDE



Figure A-50: POST-TEST ALUMINUM BARRIER LEFT SIDE



Figure A-51: PRE-TEST ALUMINUM BARRIER RIGHT SIDE



Figure A-52: POST-TEST ALUMINUM BARRIER RIGHT SIDE



Figure A-53: PRE-TEST ALUMINUM BARRIER TOP

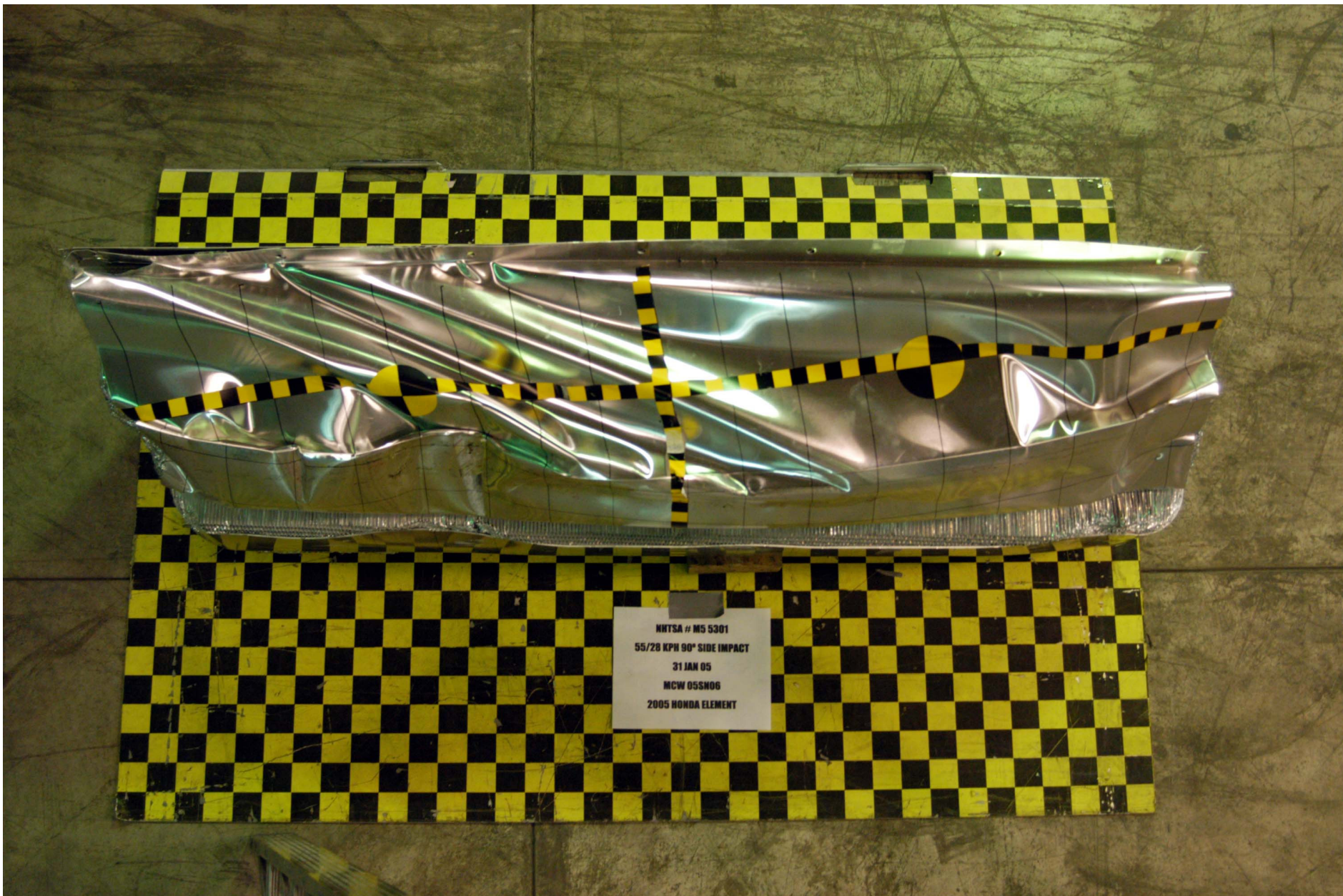


Figure A-54: POST-TEST ALUMINUM BARRIER TOP

APPENDIX B

VEHICLE, MDB, AND SID H3 RESPONSE DATA

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 INTEGRATION DATA FILTER CLASS 180

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DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOTS

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DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOT (REDUNDANT)
 ACCELERATION DATA – FIR FILTERED

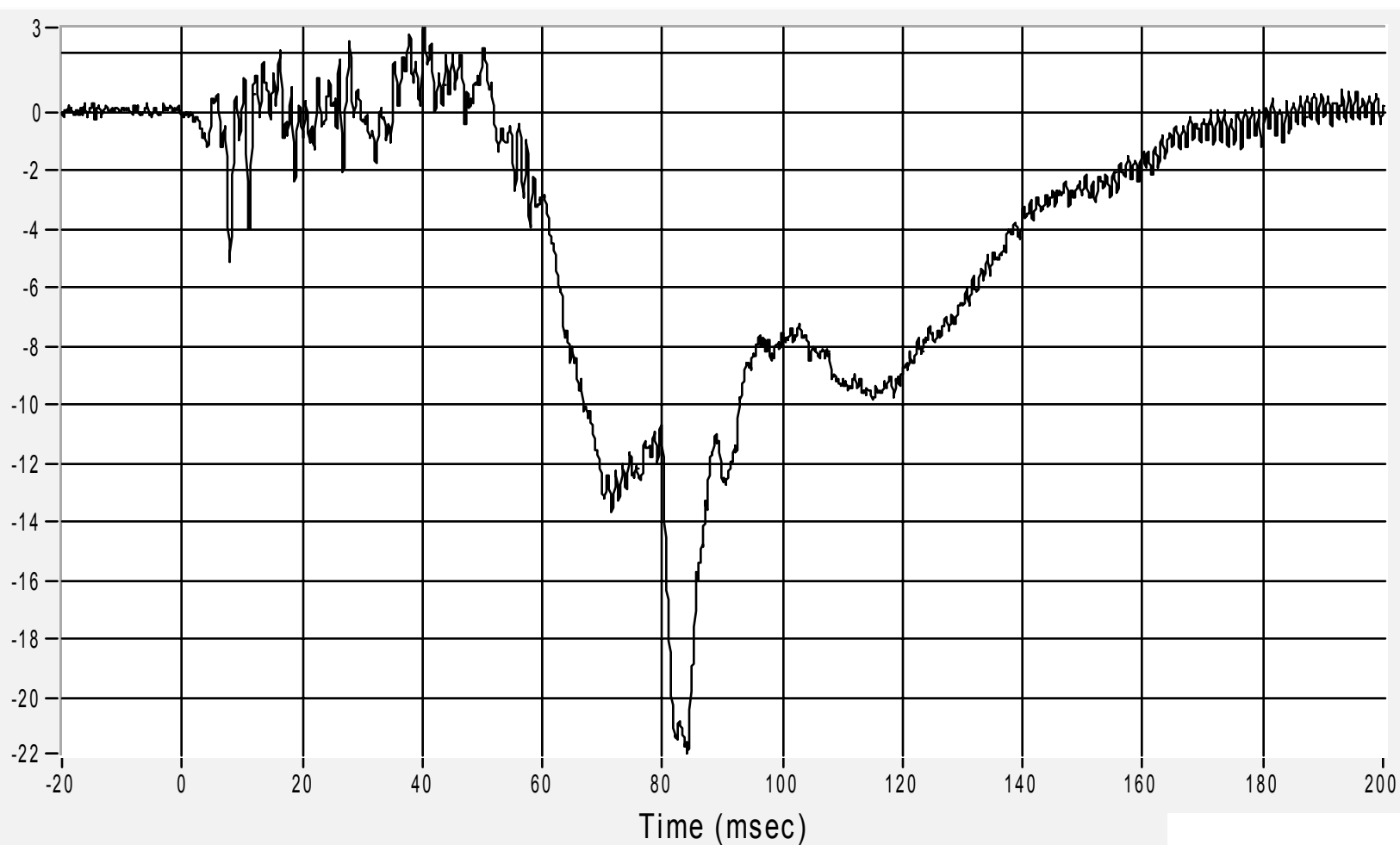
<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
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Driver Head CG (X) Acceleration

Acceleration (G's) CFC1000

Max 2.9 G at 40.3 msec

Min -21.9 G at 84.2 msec



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31 January 2005

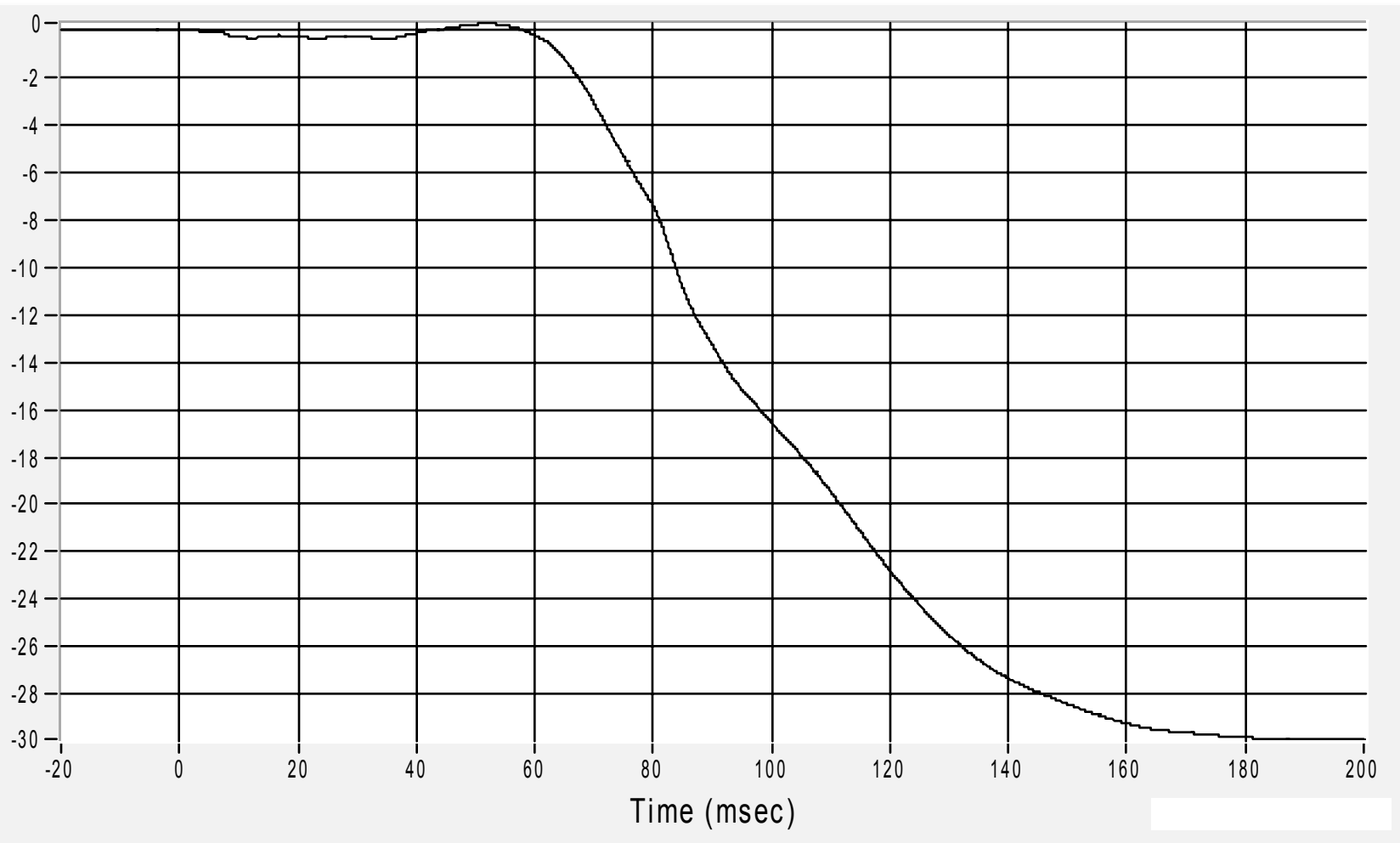
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Head CG (X) Velocity

Velocity (km/h) CFC180

Max 0.3 km/h at 51.8 msec

Min -29.9 km/h at 186.8 msec



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31 January 2005

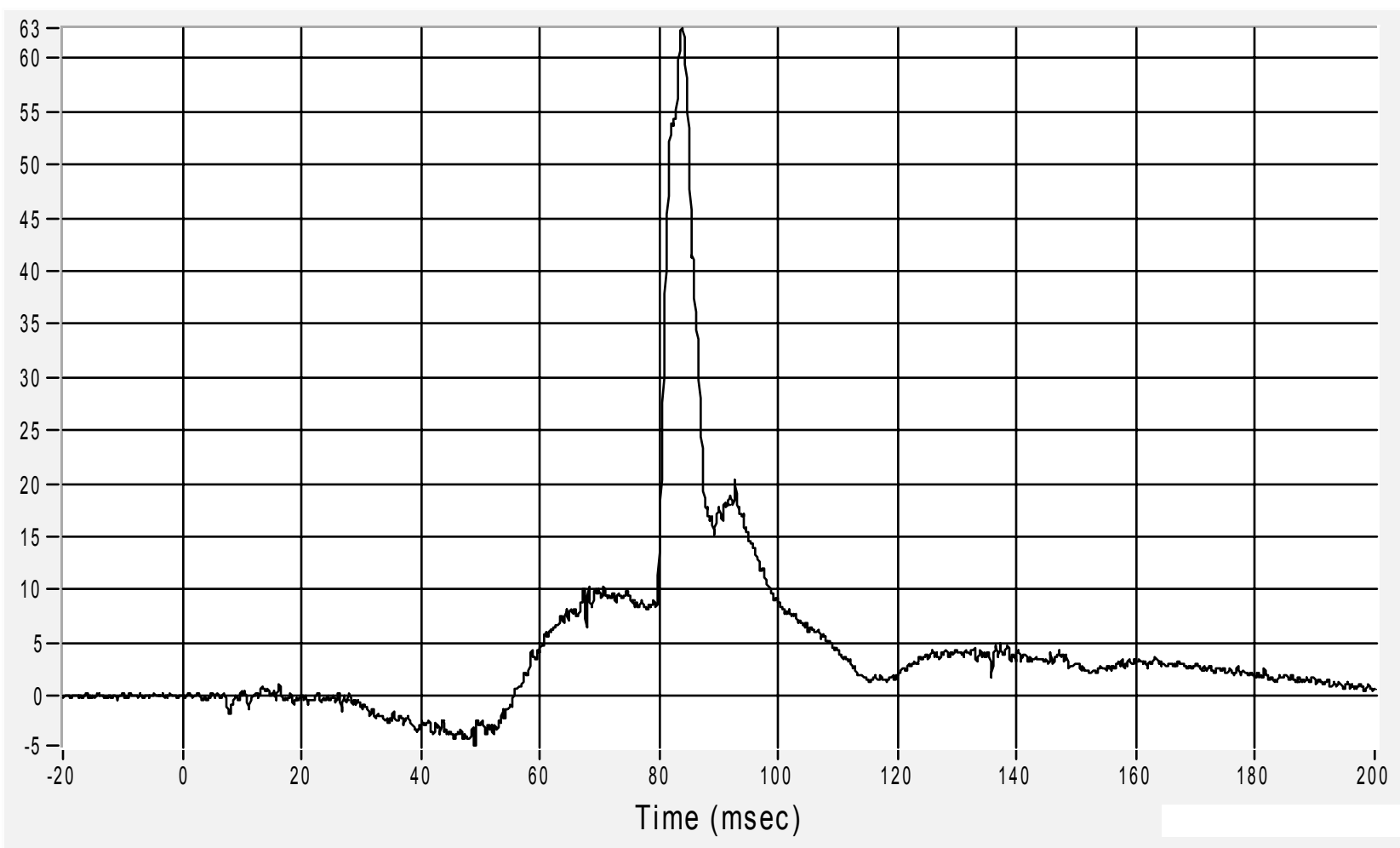
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Head CG (Y) Acceleration

Acceleration (G's) CFC1000

Max 62.9 G at 83.8 msec

Min -4.7 G at 49.1 msec



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31 January 2005

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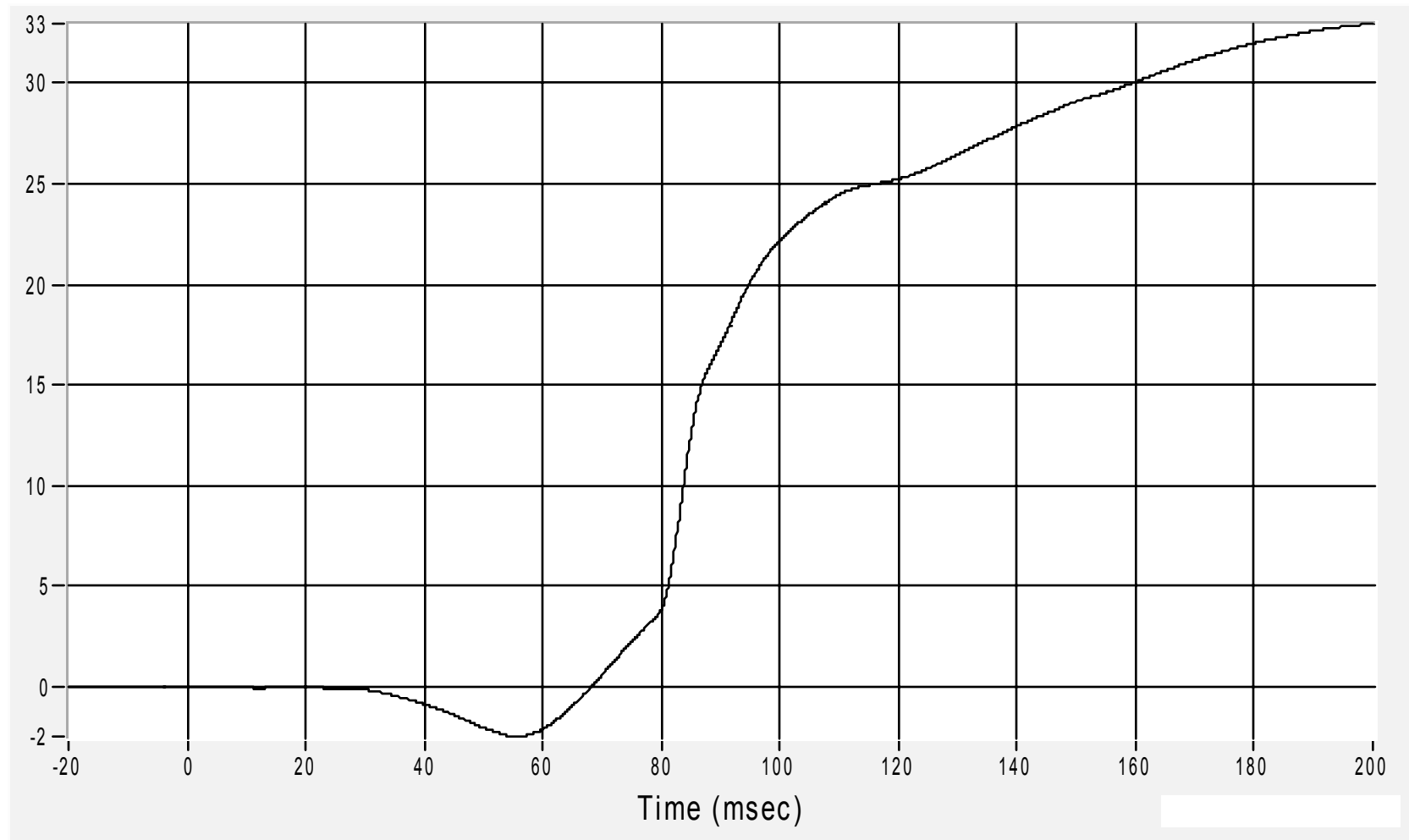
B-8

Driver Head CG (Y) Velocity

Velocity (km/h) CFC180

Max 32.9 km/h at 199.9 msec

Min -2.5 km/h at 55.6 msec



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31 January 2005

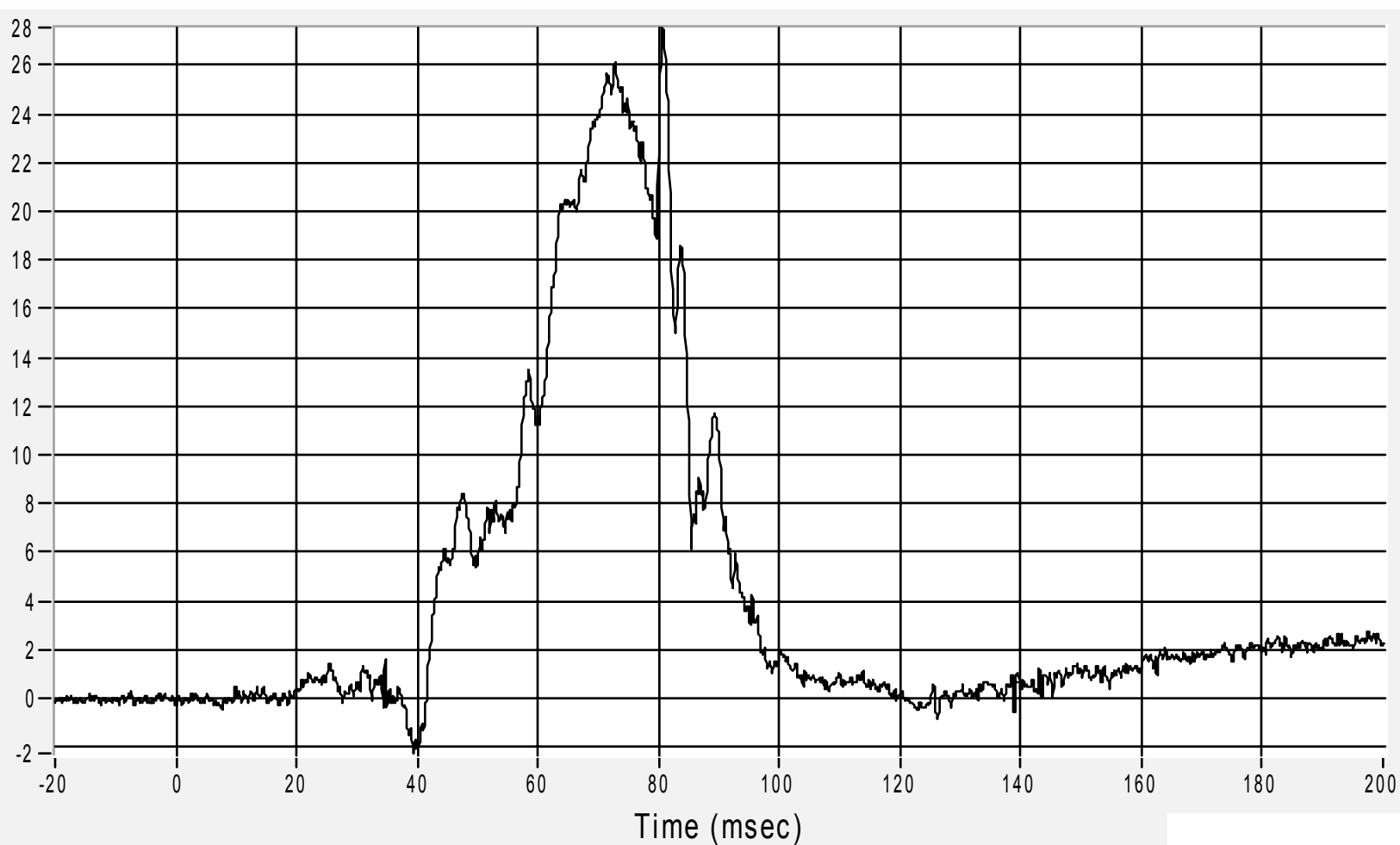
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Driver Head CG (Z) Acceleration

Acceleration (G's) CFC1000

Max 27.5 G at 80.6 msec

Min -2.3 G at 39.4 msec



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31 January 2005

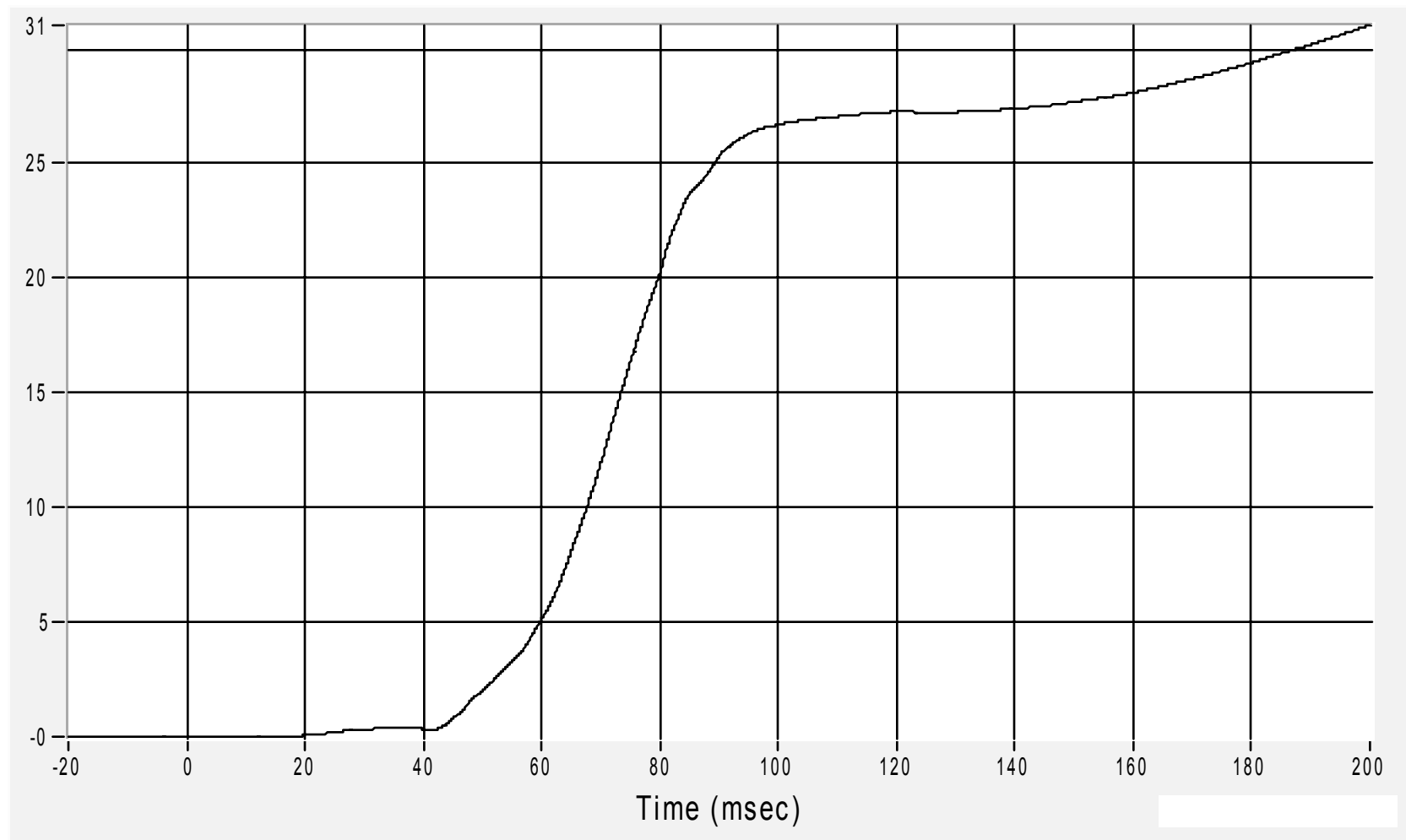
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Head CG (Z) Velocity

Velocity (km/h) CFC180

Max 31.0 km/h at 199.9 msec

Min 0.0 km/h at 8.8 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

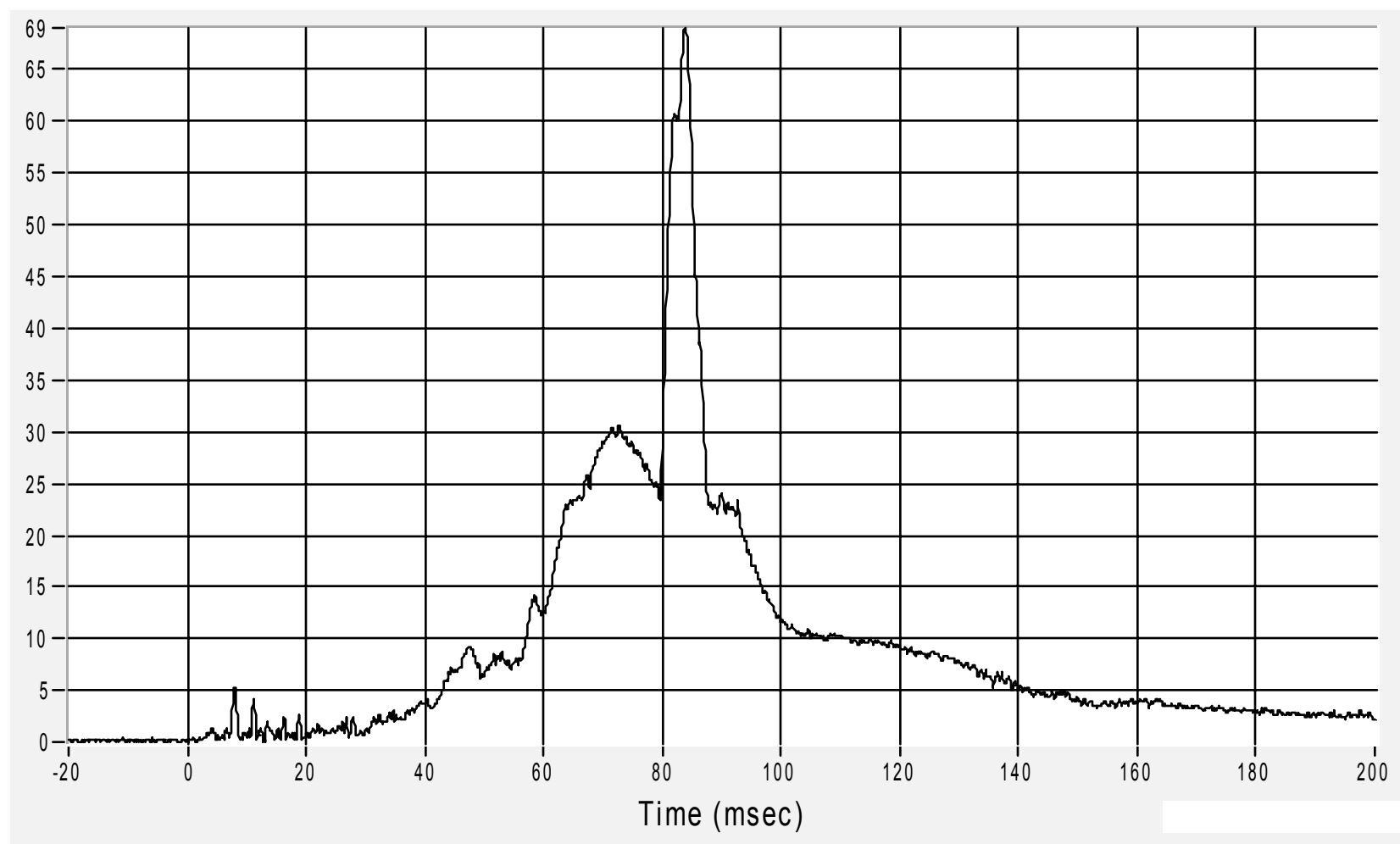
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Driver Head Resultant Acceleration

Acceleration (G's) CFC1000

Max 69.0 G's at 83.8 msec

Min 0.1 G's at 1.6 msec



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31 January 2005

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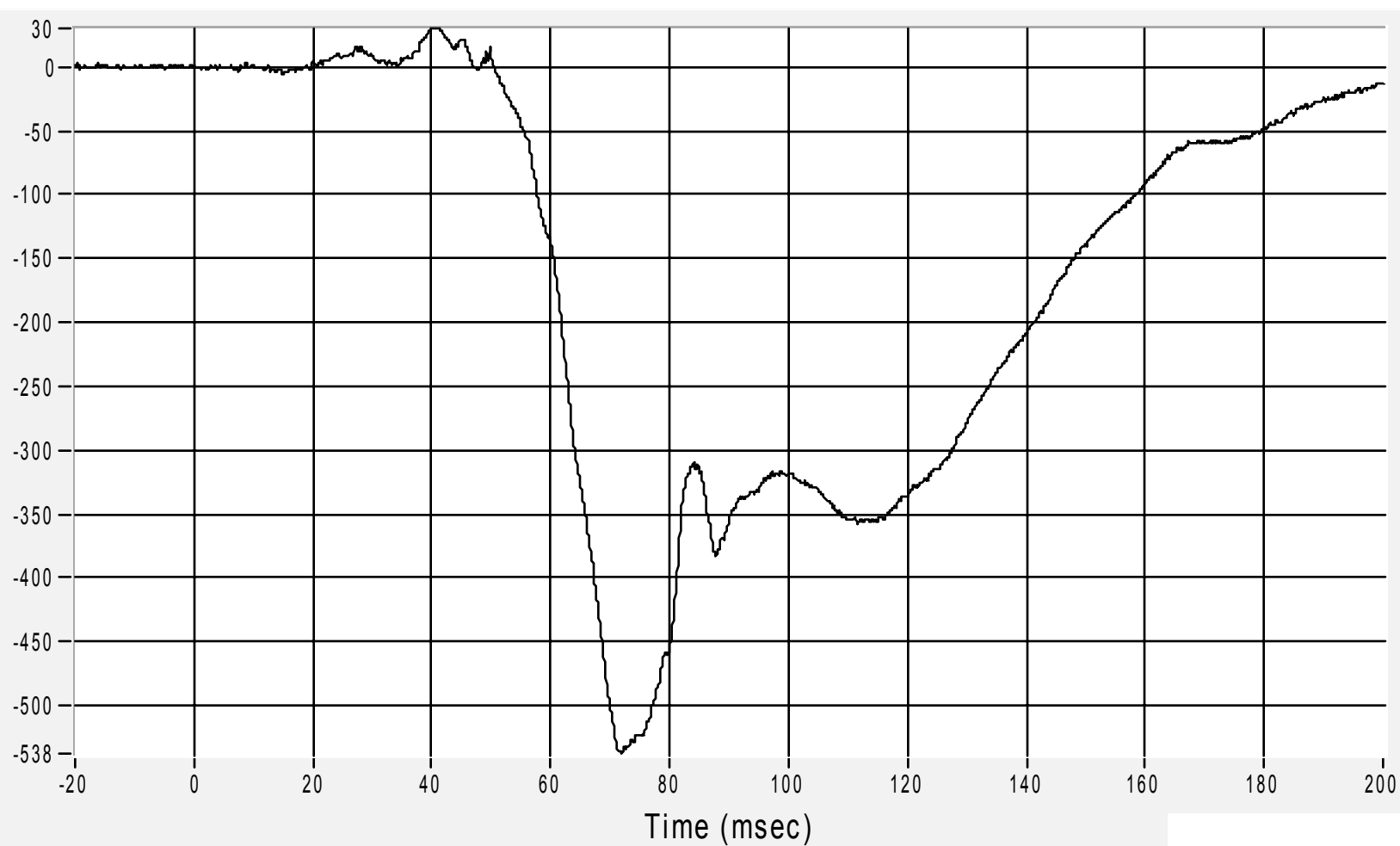
Driver Upper Neck (X) Force

Force (N)

CFC1000

Max 30.1 N at 41.0 msec

Min -537.6 N at 71.9 msec



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31 January 2005

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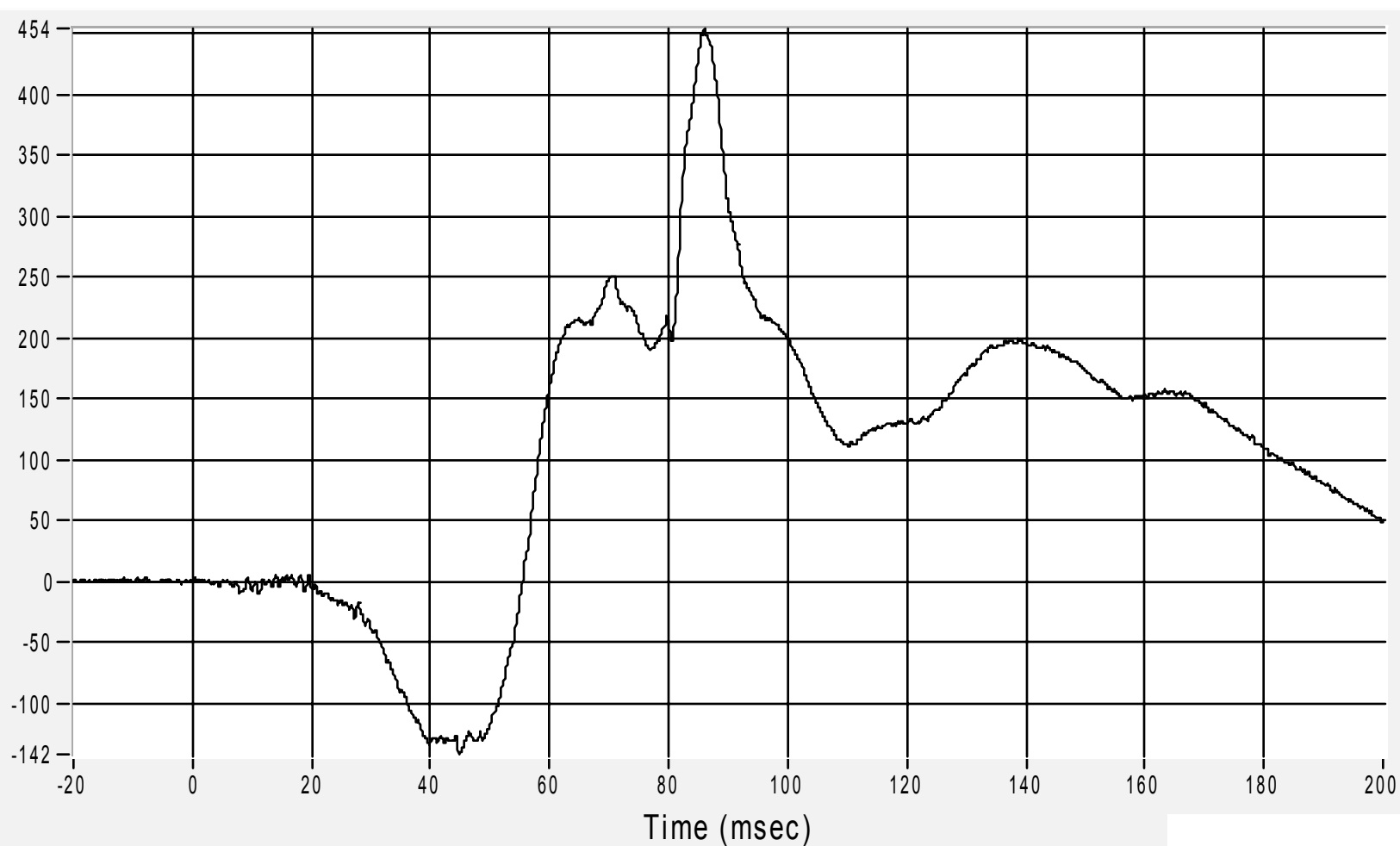
Driver Upper Neck (Y) Force

Force (N)

CFC1000

Max 454.2 N at 86.1 msec

Min -141.5 N at 44.8 msec



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31 January 2005

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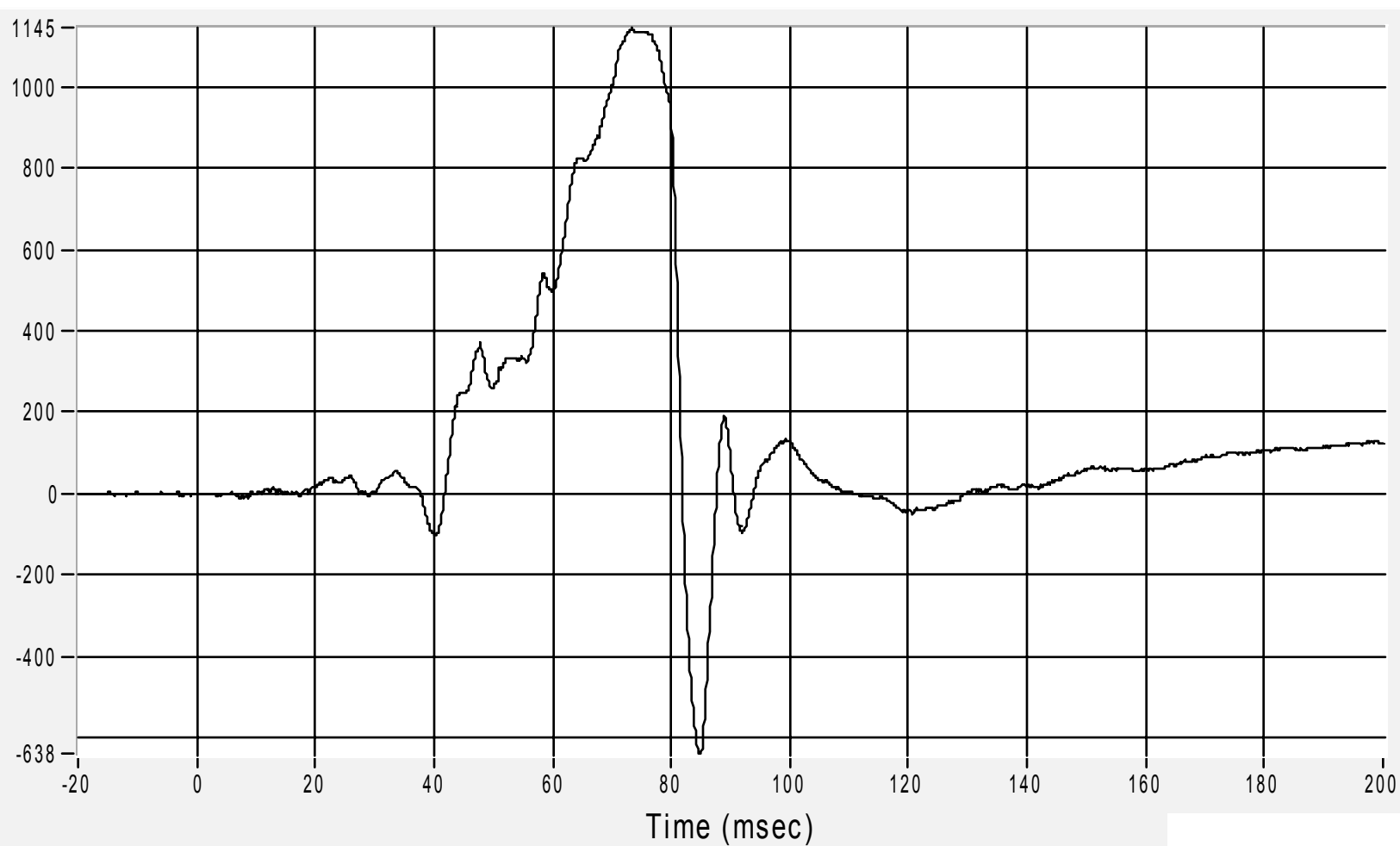
Driver Upper Neck (Z) Force

Force (N)

CFC1000

Max 1145.0 N at 73.4 msec

Min -638.4 N at 85.0 msec



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31 January 2005

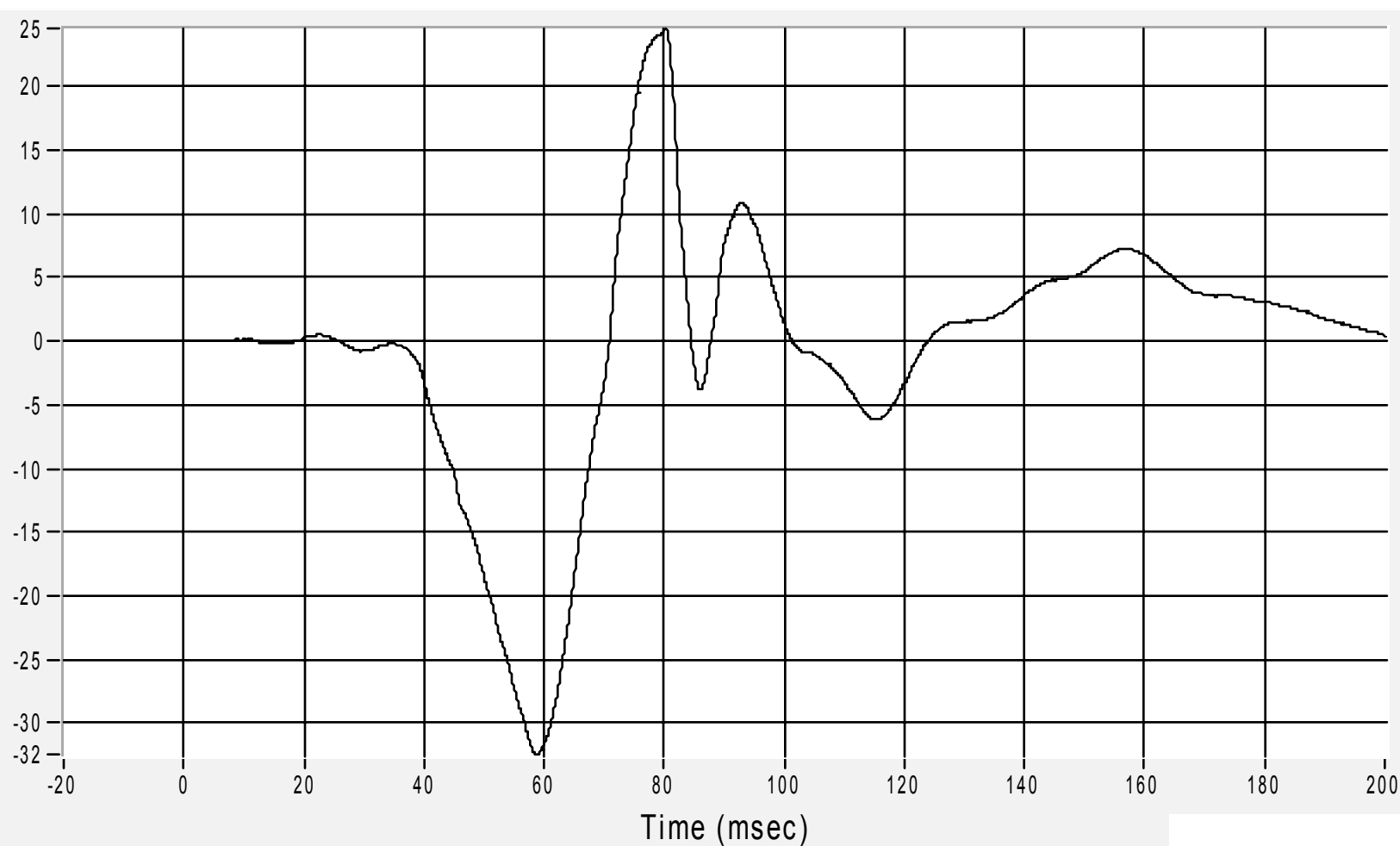
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Driver Upper Neck (X) Moment

Moment (Nm) CFC600

Max 24.5 Nm at 80.3 msec

Min -32.4 Nm at 58.8 msec



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31 January 2005

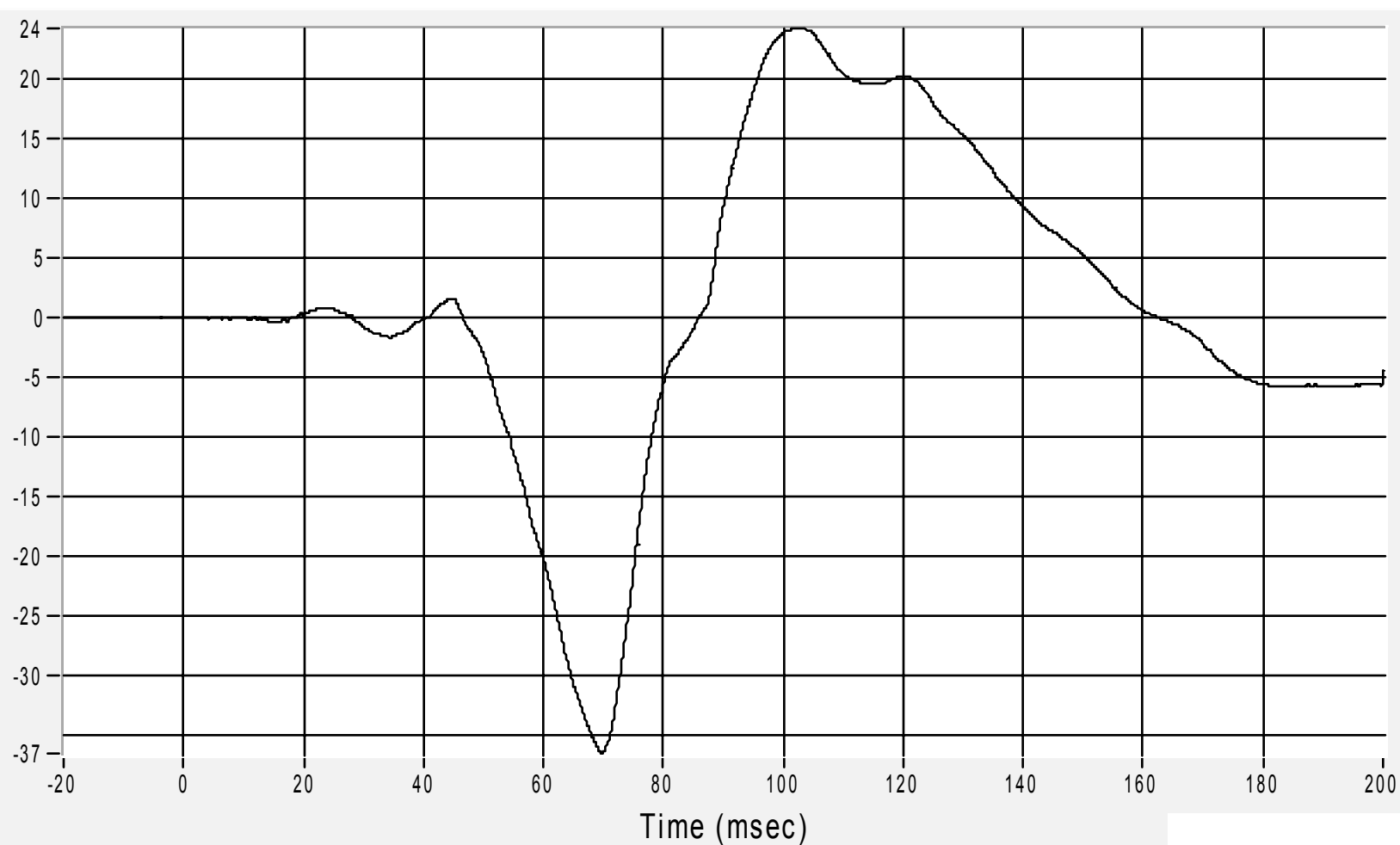
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Neck (Y) Moment

Moment (Nm) CFC600

Max 24.2 Nm at 101.8 msec

Min -36.5 Nm at 69.7 msec



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31 January 2005

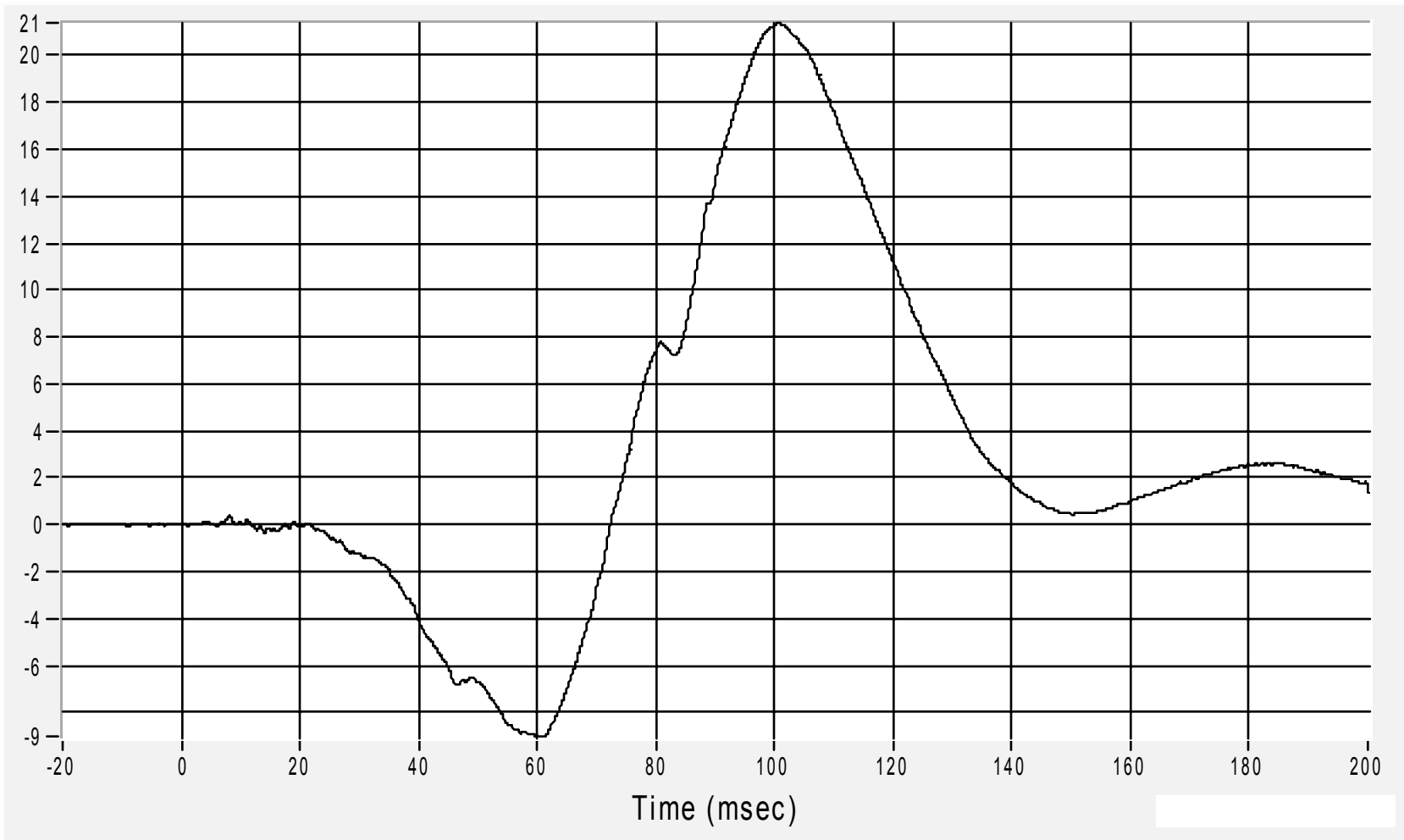
*Medical College of Wisconsin
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Driver Upper Neck (Z) Moment

Moment (Nm) CFC600

Max 21.4 Nm at 100.6 msec

Min -9.0 Nm at 60.4 msec



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31 January 2005

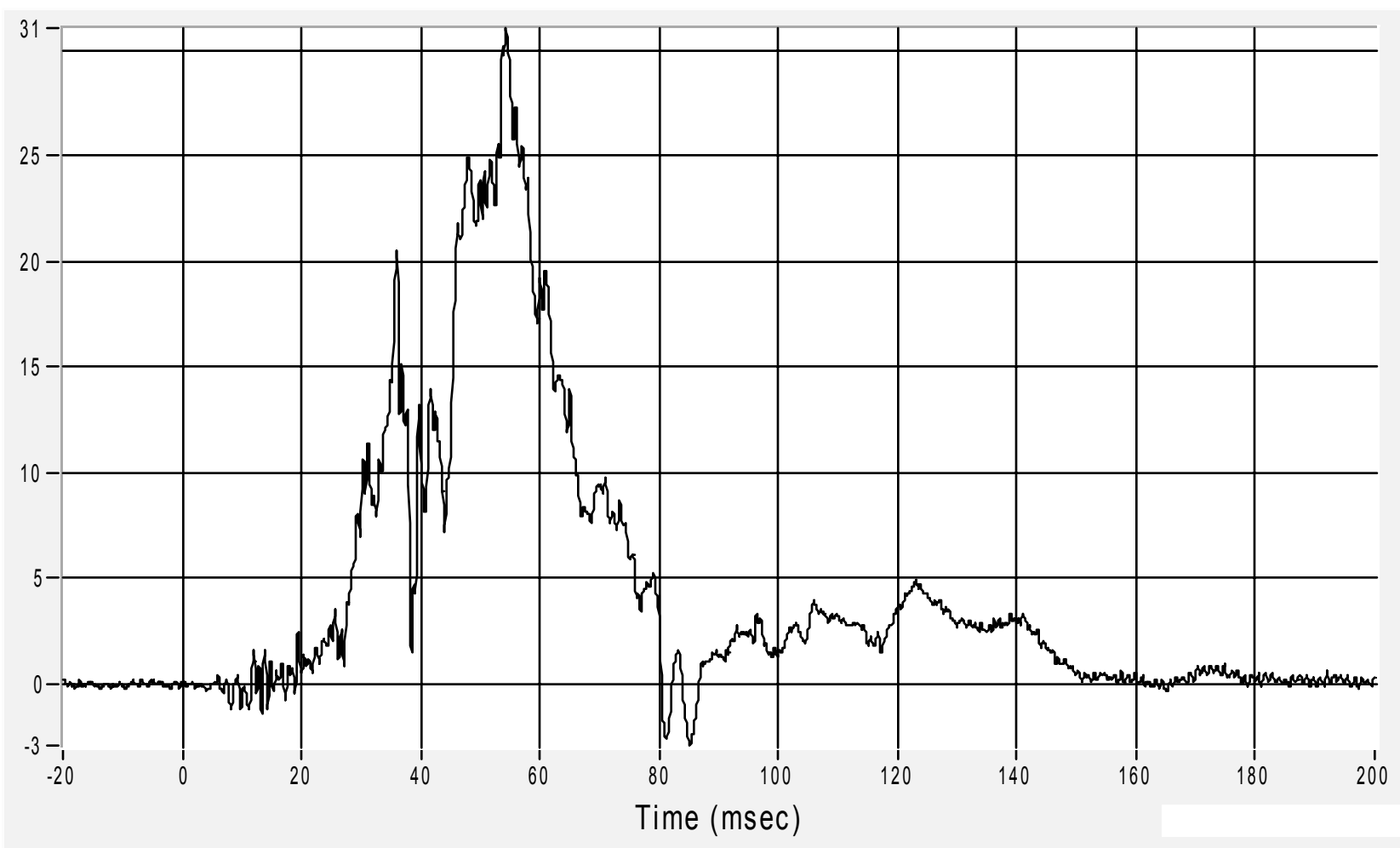
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Rib (Y) Acceleration

Acceleration (G's) CFC1000

Max 31.0 G at 54.3 msec

Min -2.9 G at 85.1 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

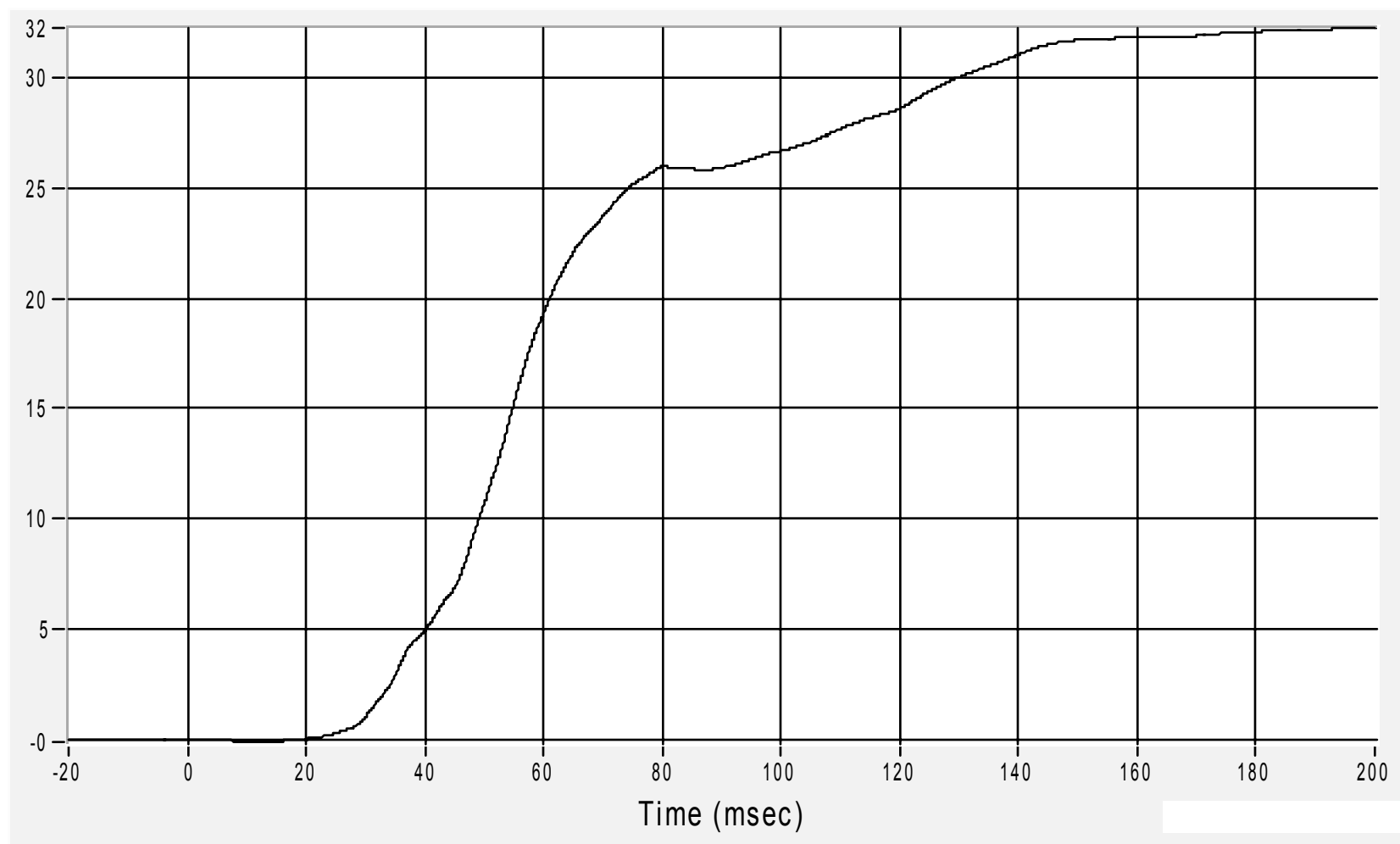
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Driver Upper Rib (Y) Velocity

Velocity (km/h) CFC180

Max 32.2 km/h at 199.9 msec

Min 0.0 km/h at 11.4 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

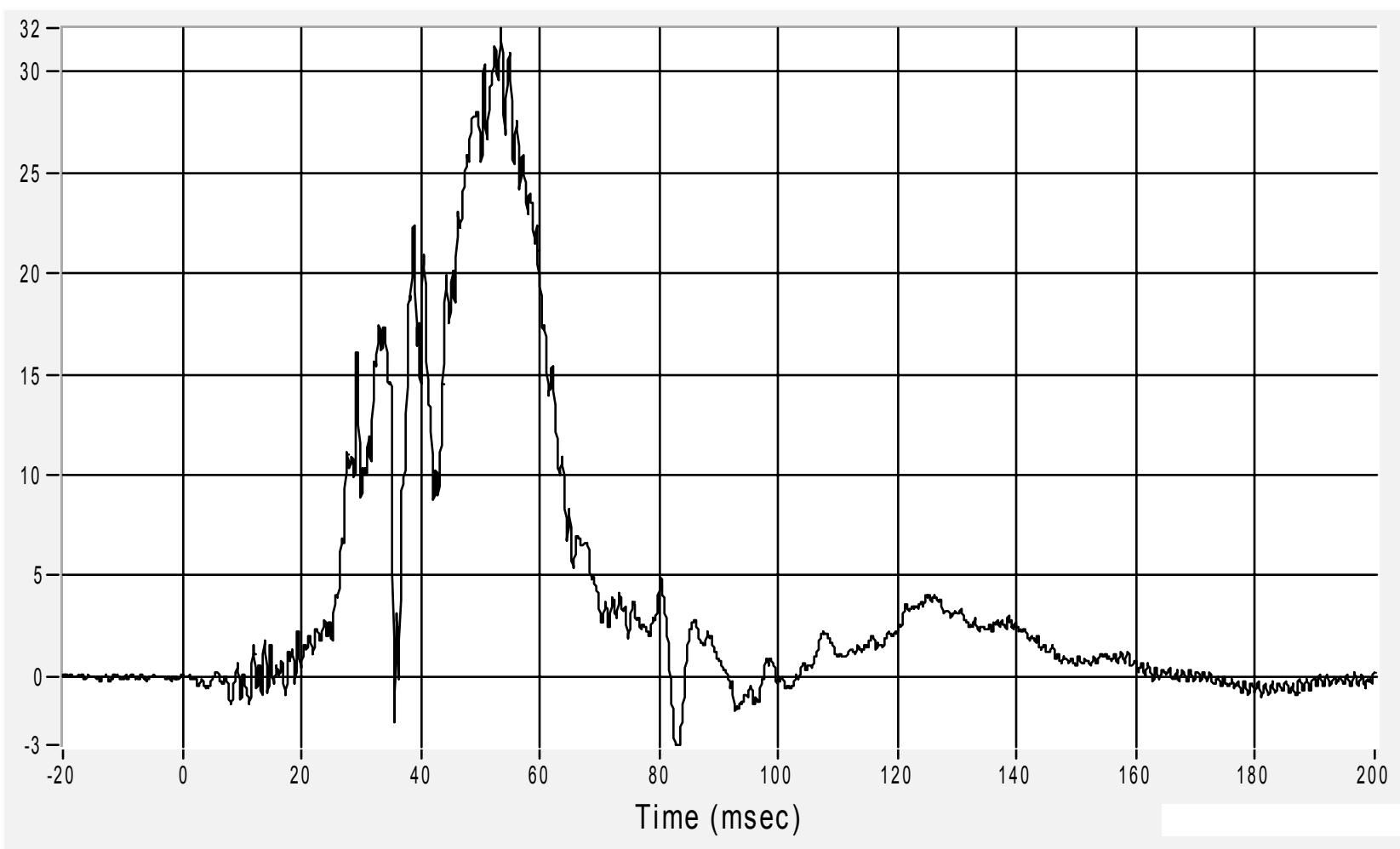
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Rib (Y) Acceleration

Acceleration (G's) CFC1000

Max 32.2 G at 53.4 msec

Min -3.4 G at 83.0 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

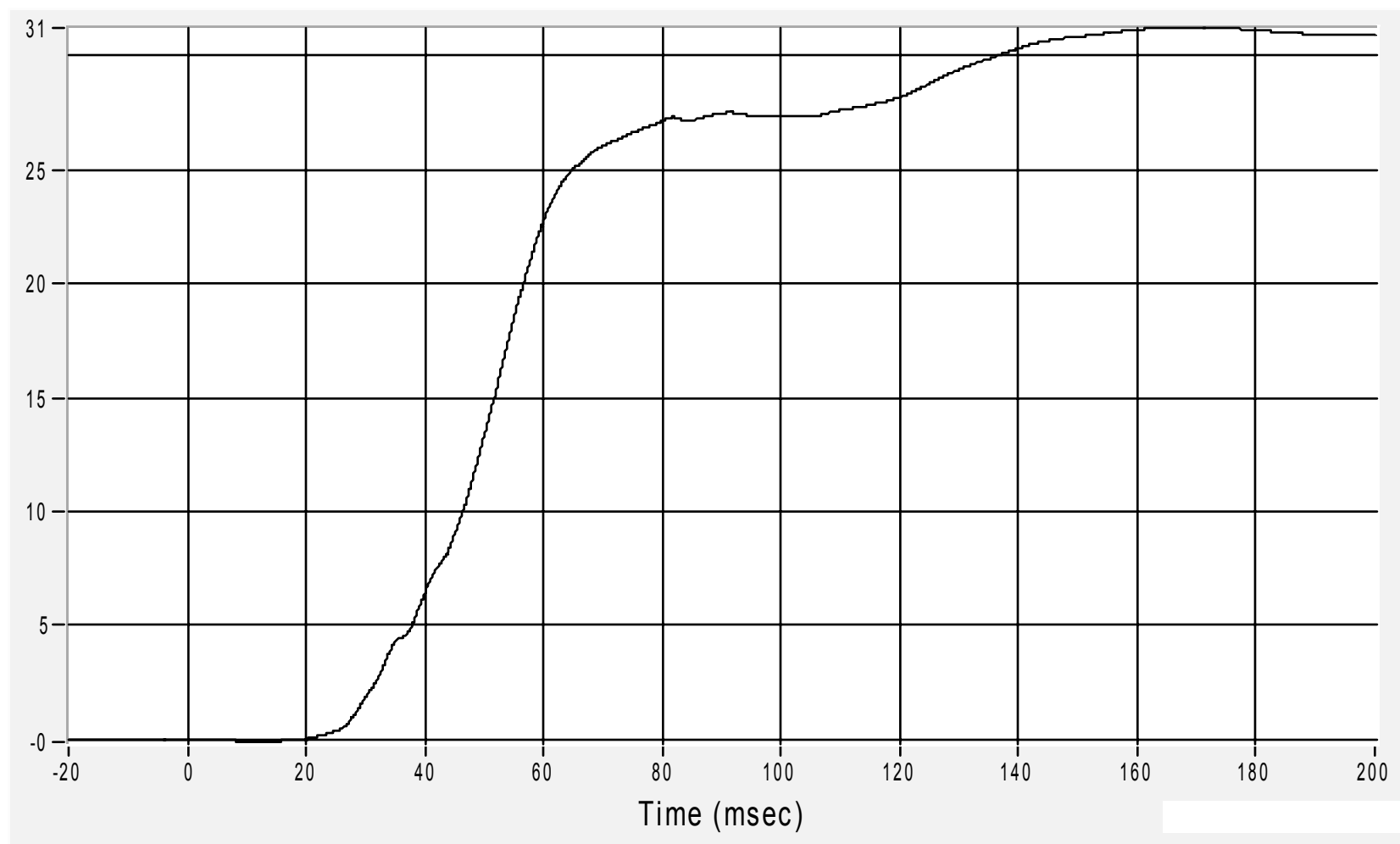
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Rib (Y) Velocity

Velocity (km/h) CFC180

Max 31.2 km/h at 171.7 msec

Min -0.1 km/h at 11.6 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

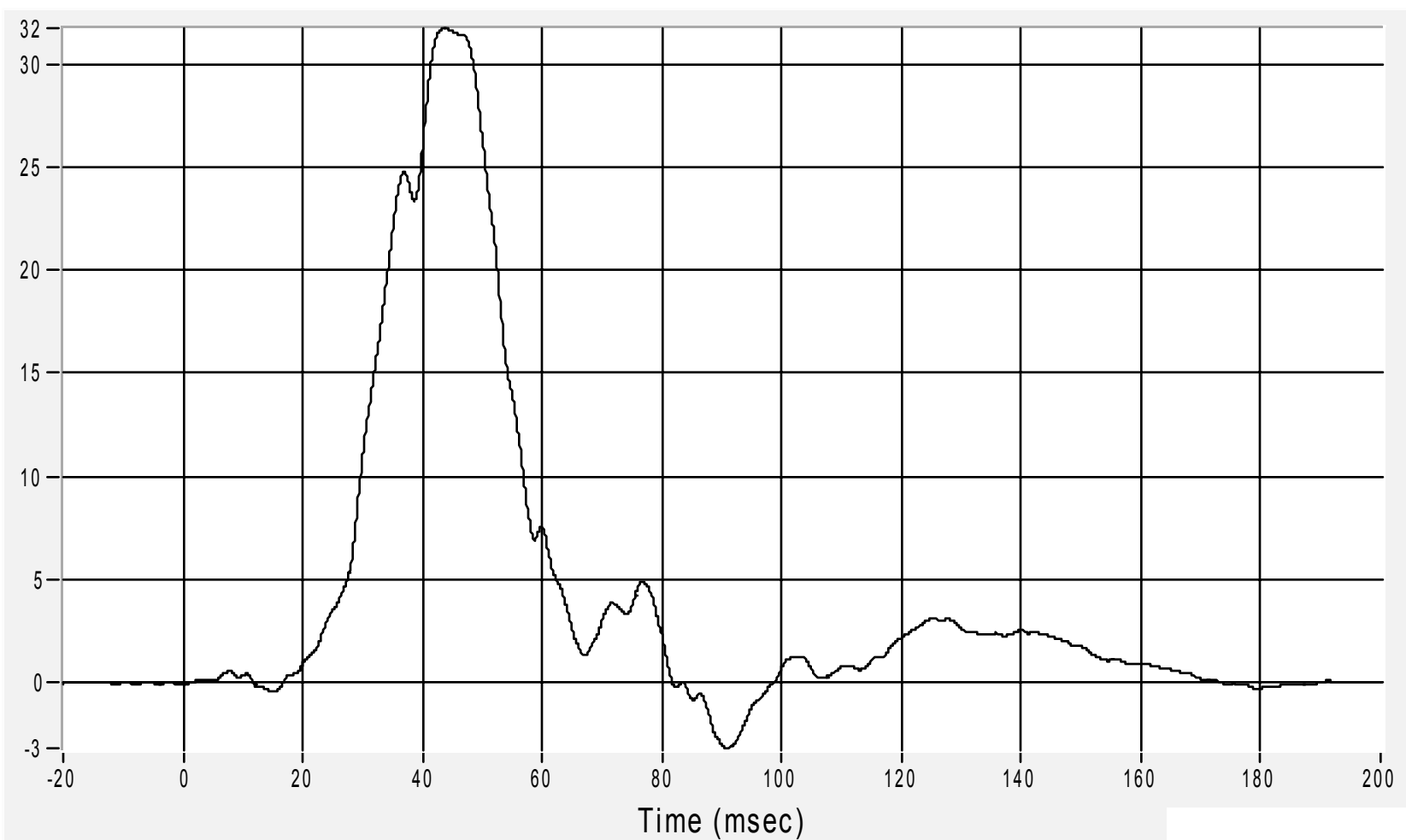
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Spine (Y) Acceleration

Acceleration (G's) CFC180

Max 31.7 G at 43.9 msec

Min -3.2 G at 90.9 msec



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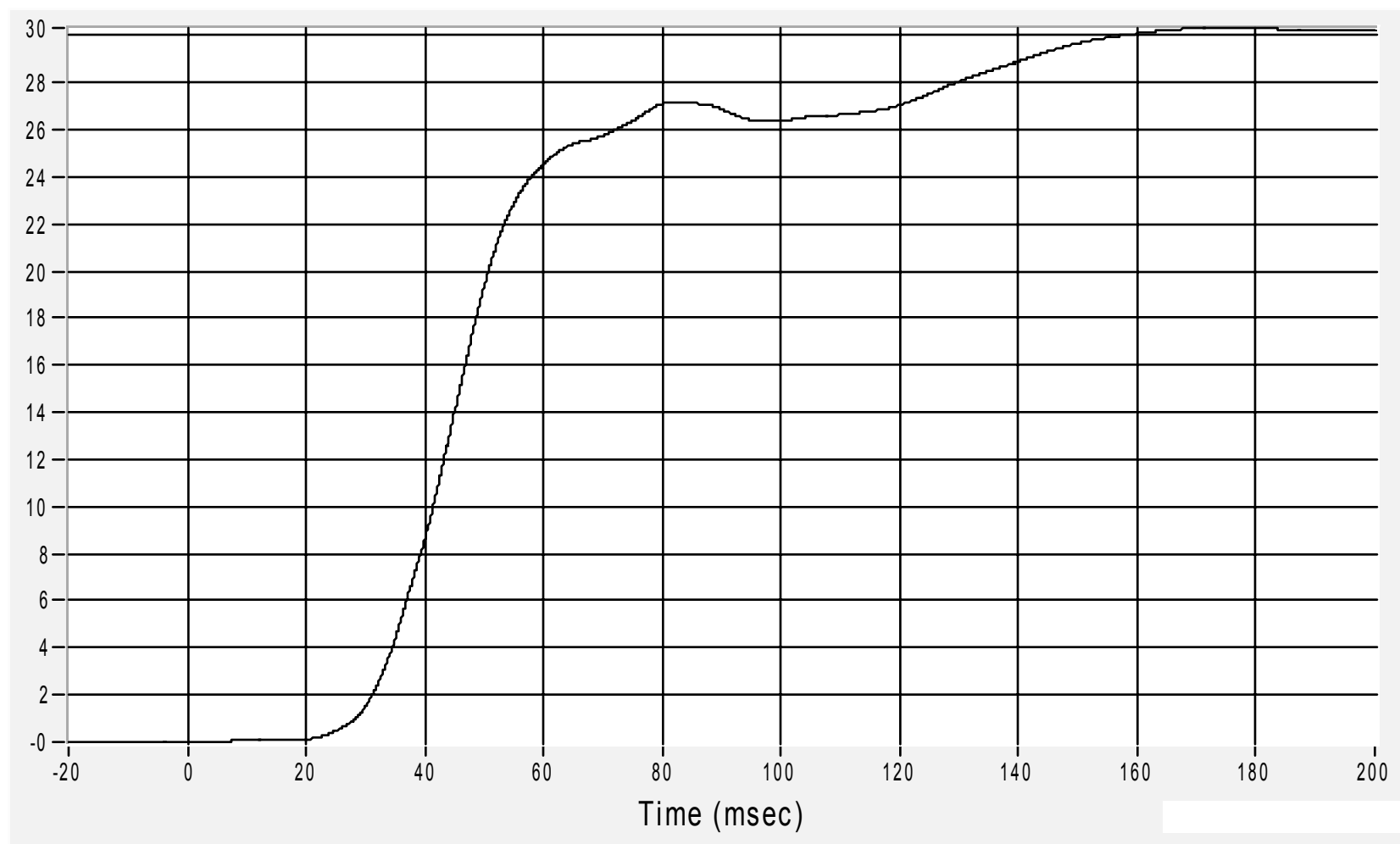
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Driver Lower Spine (Y) Velocity

Velocity (km/h) CFC180

Max 30.3 km/h at 173.4 msec

Min 0.0 km/h at 1.1 msec



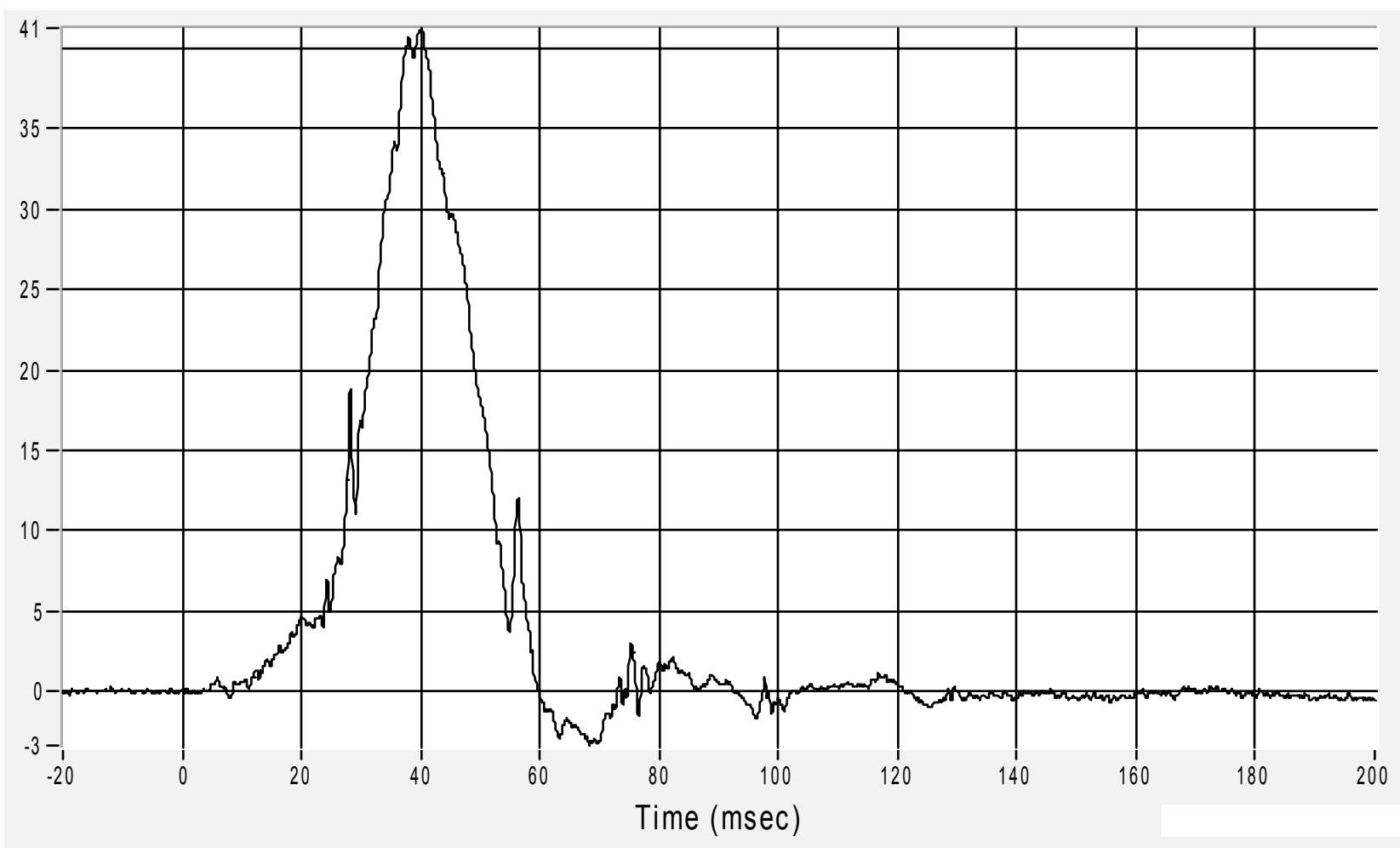
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Vehicle Crashworthiness Lab

Driver Pelvic (Y) Acceleration

Acceleration (G's) CFC1000

Max 41.3 G at 40.2 msec**Min -3.4 G at 68.2 msec**

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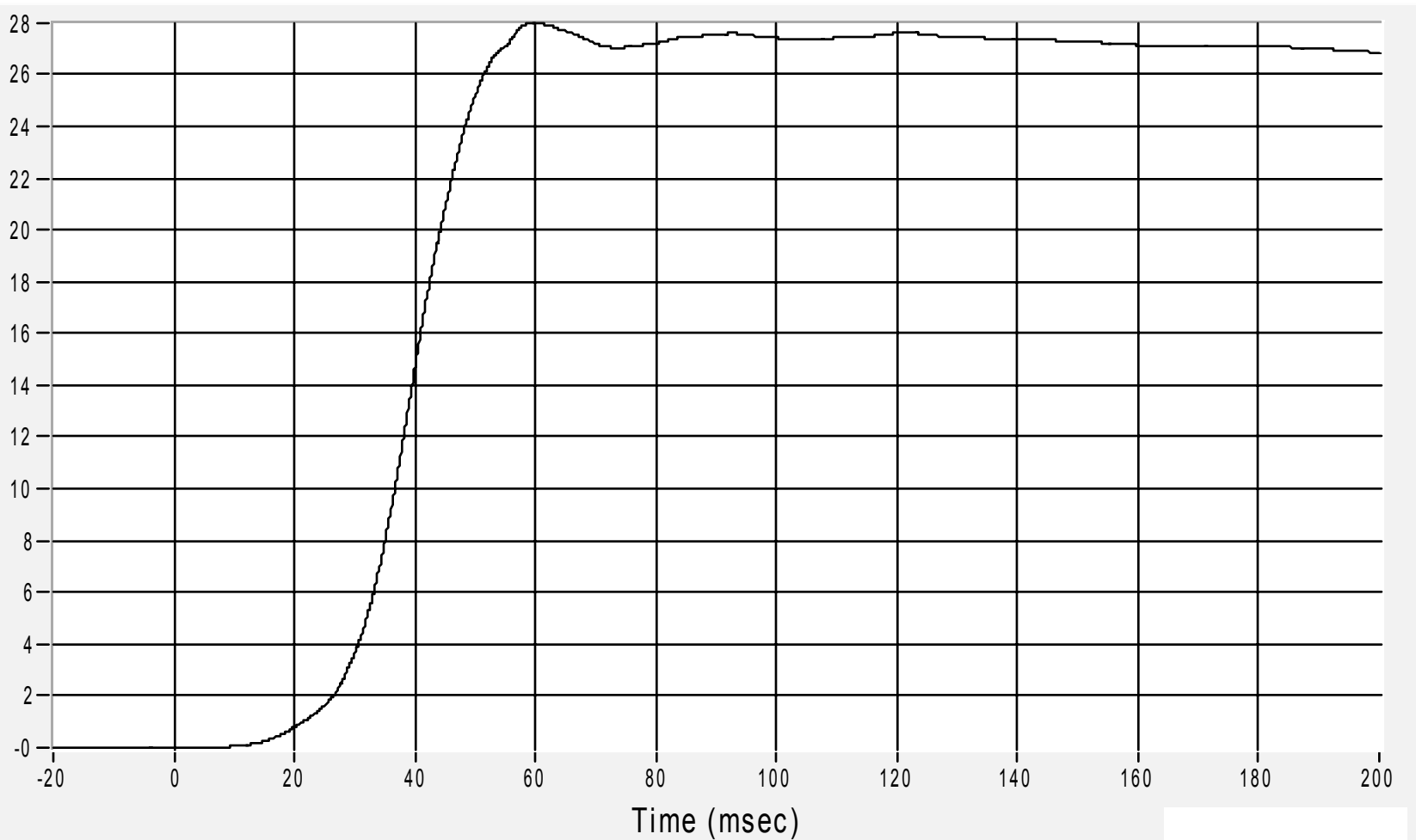
*Medical College of Wisconsin
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Driver Pelvic (Y) Velocity

Velocity (km/h) CFC180

Max 28.0 km/h at 59.6 msec

Min 0.0 km/h at 3.6 msec



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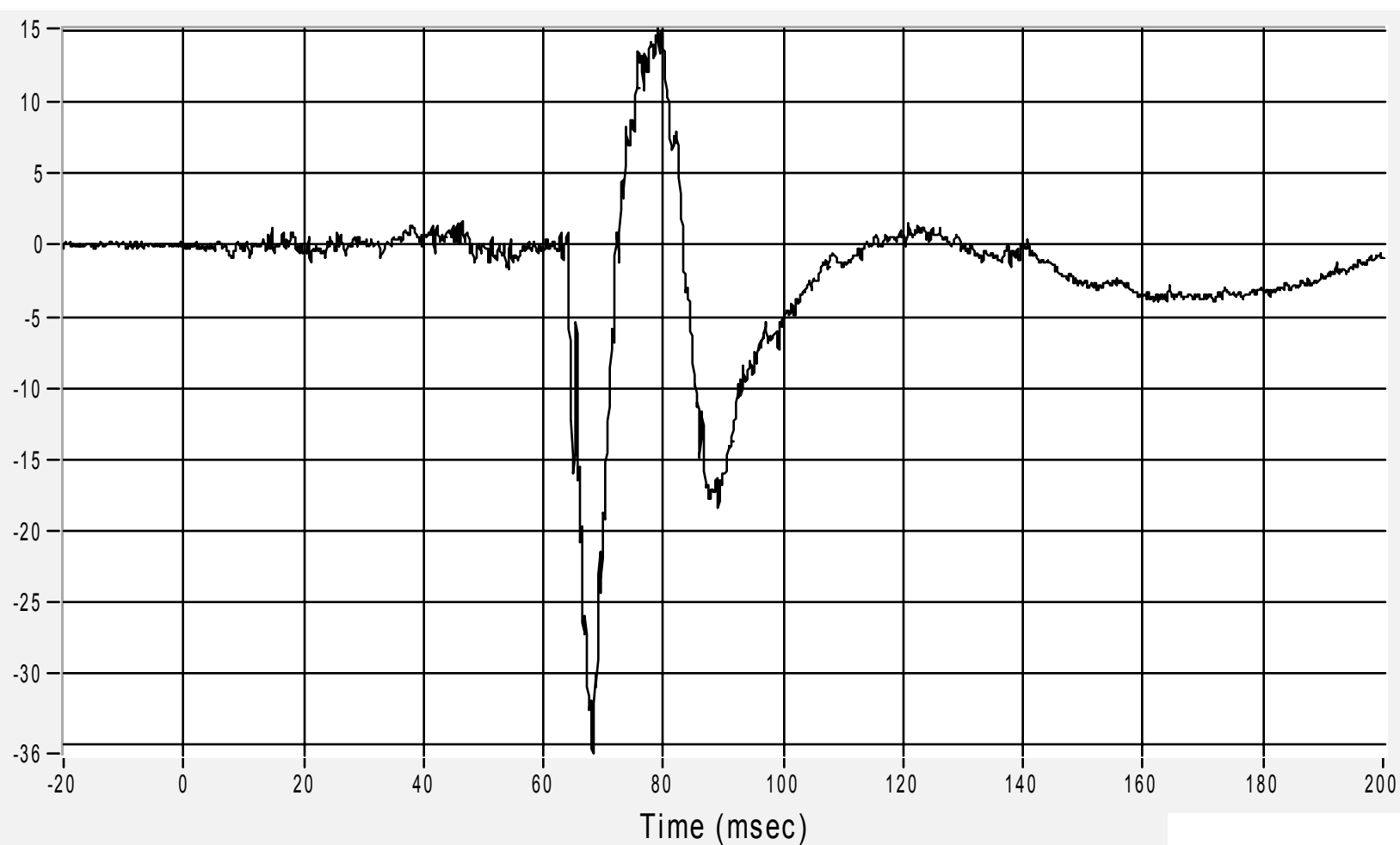
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Head CG (X) Acceleration

Acceleration (G's) CFC1000

Max 15.2 G at 79.1 msec

Min -35.7 G at 68.2 msec



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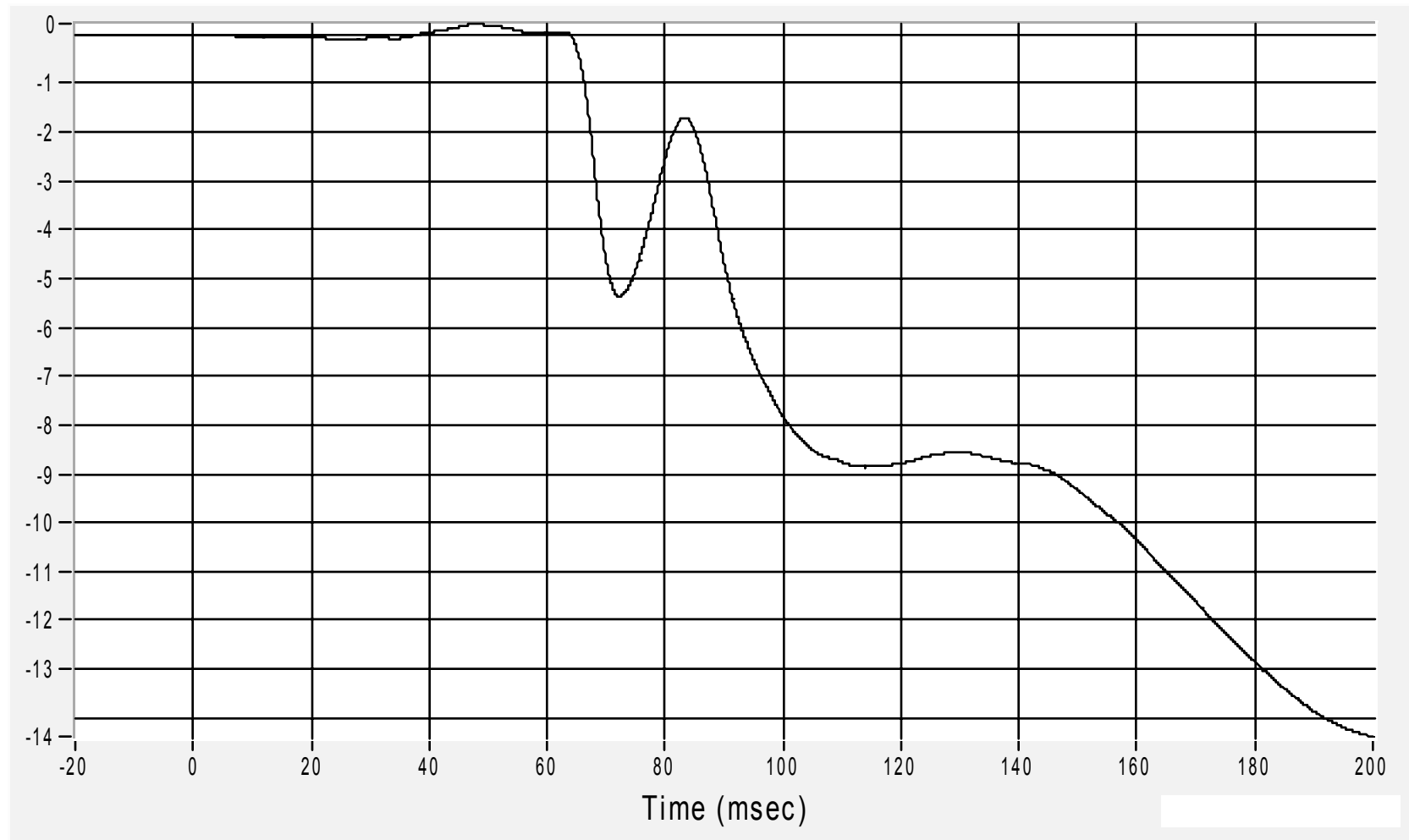
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Head CG (X) Velocity

Velocity (km/h) CFC180

Max 0.2 km/h at 47.6 msec

Min -14.4 km/h at 199.9 msec



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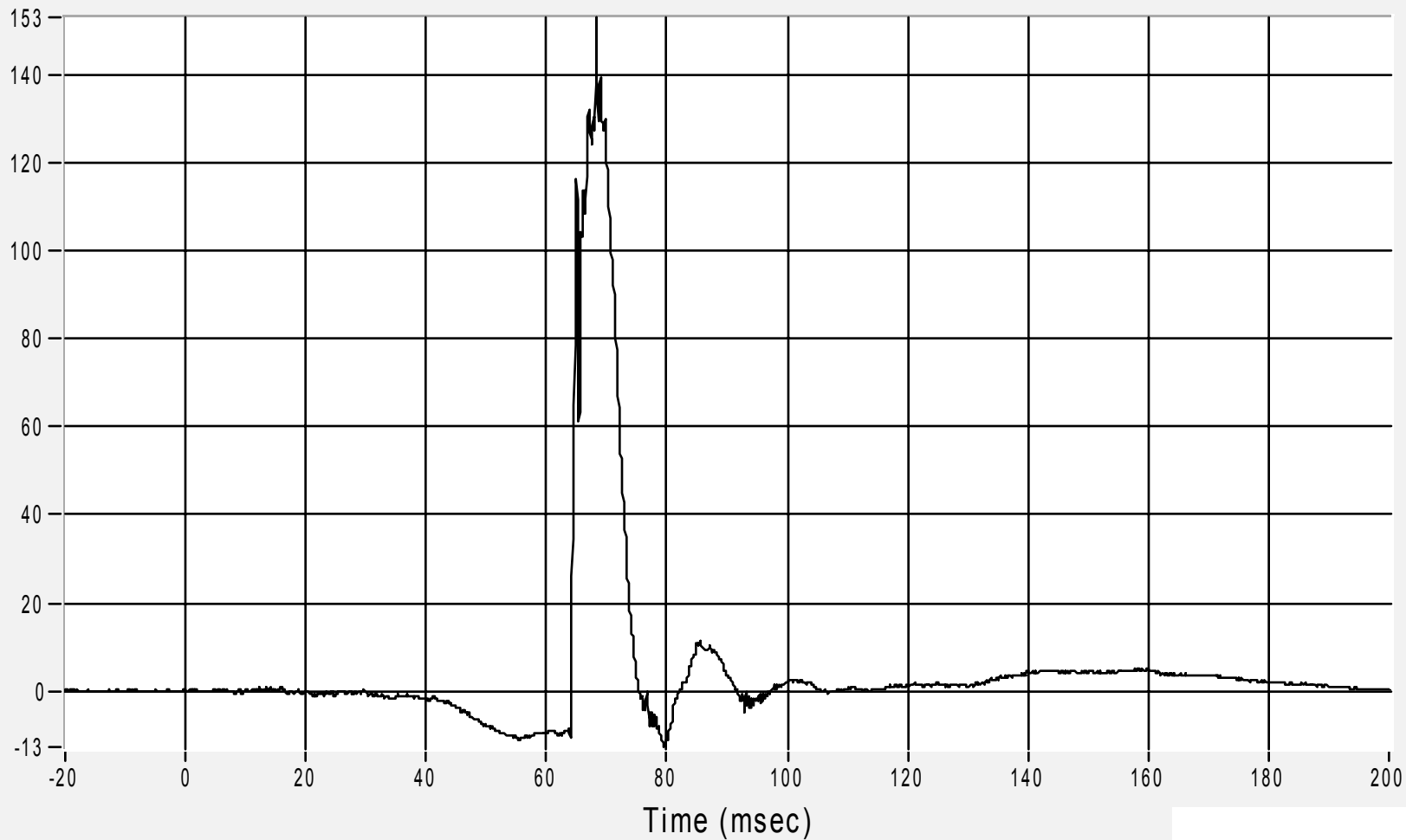
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Head CG (Y) Acceleration

Acceleration (G's) CFC1000

Max 152.9 G at 68.3 msec

Min -12.7 G at 79.5 msec



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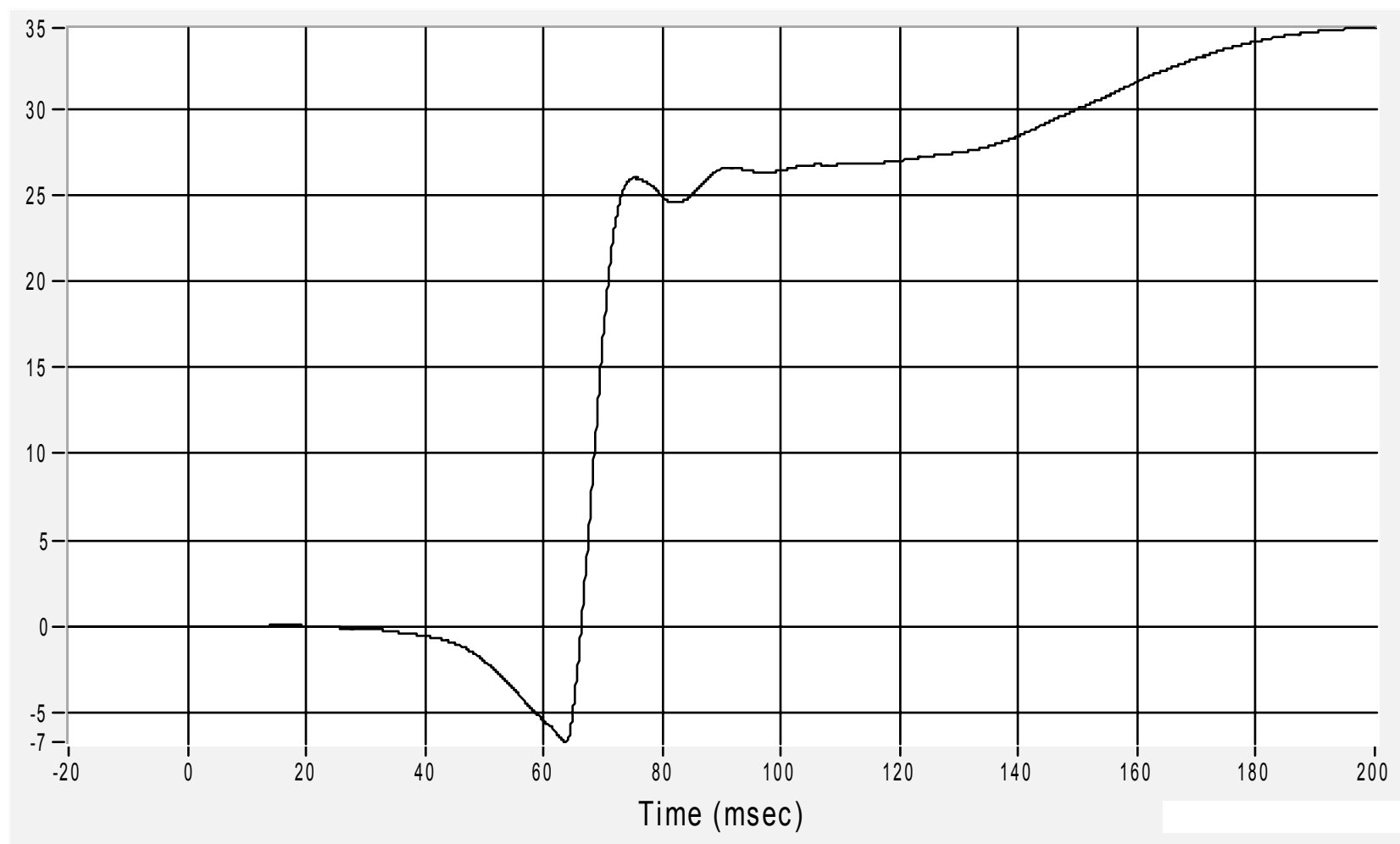
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Head CG (Y) Velocity

Velocity (km/h) CFC180

Max 34.7 km/h at 199.9 msec

Min -6.7 km/h at 63.7 msec



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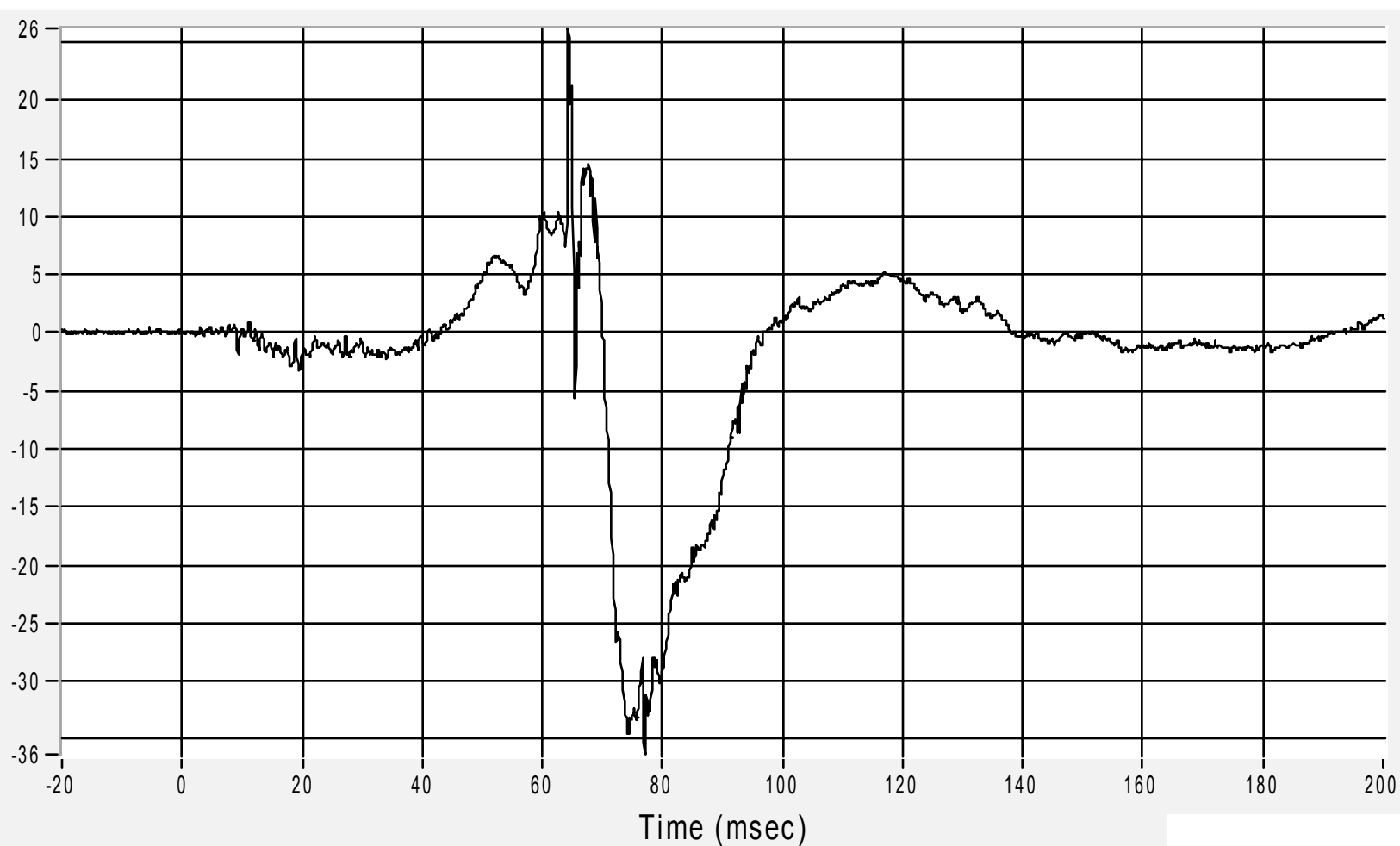
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Head CG (Z) Acceleration

Acceleration (G's) CFC1000

Max 26.2 G at 64.3 msec

Min -36.3 G at 77.0 msec



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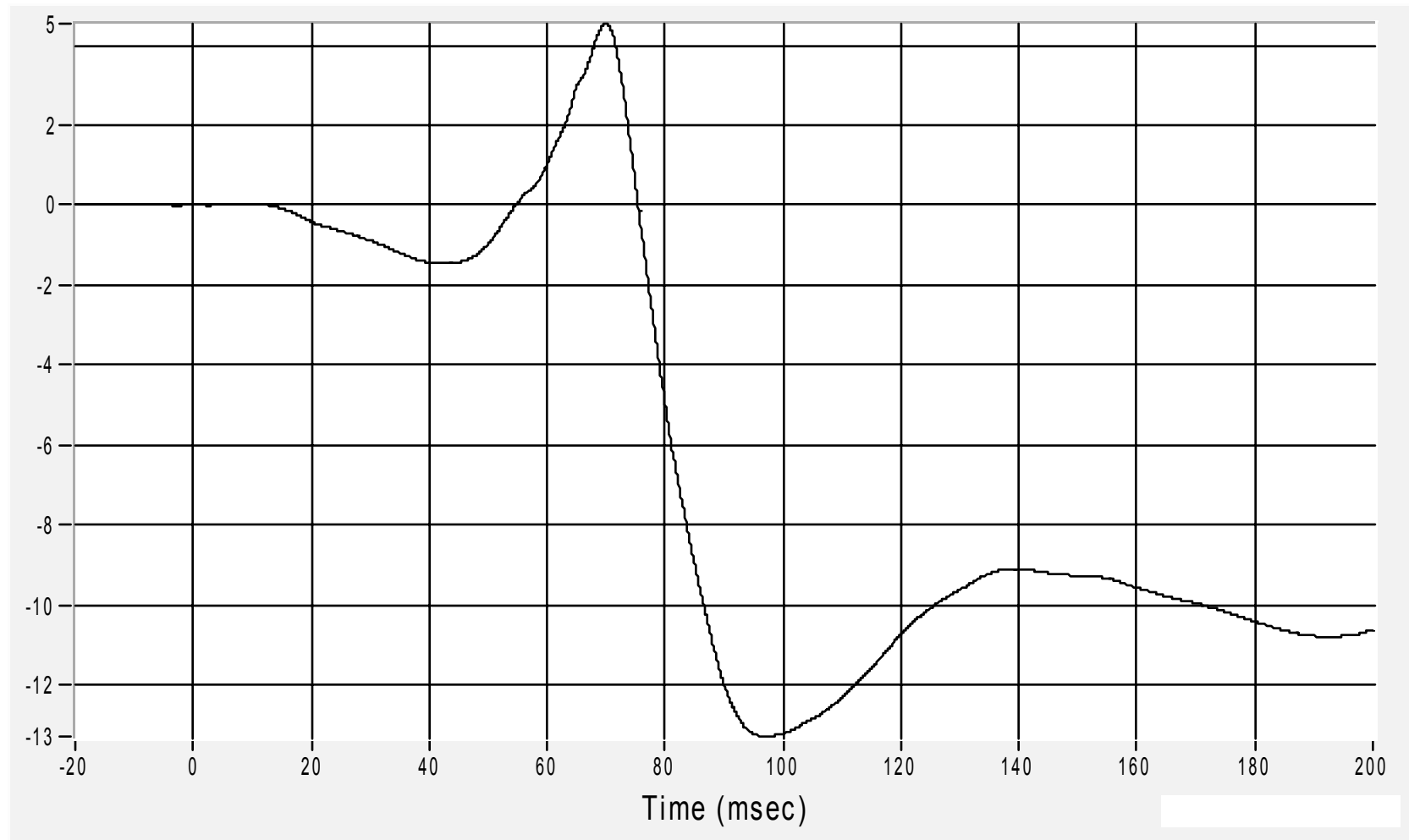
*Medical College of Wisconsin
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Passenger Head CG (Z) Velocity

Velocity (km/h) CFC180

Max 4.5 km/h at 69.9 msec

Min -13.3 km/h at 97.1 msec



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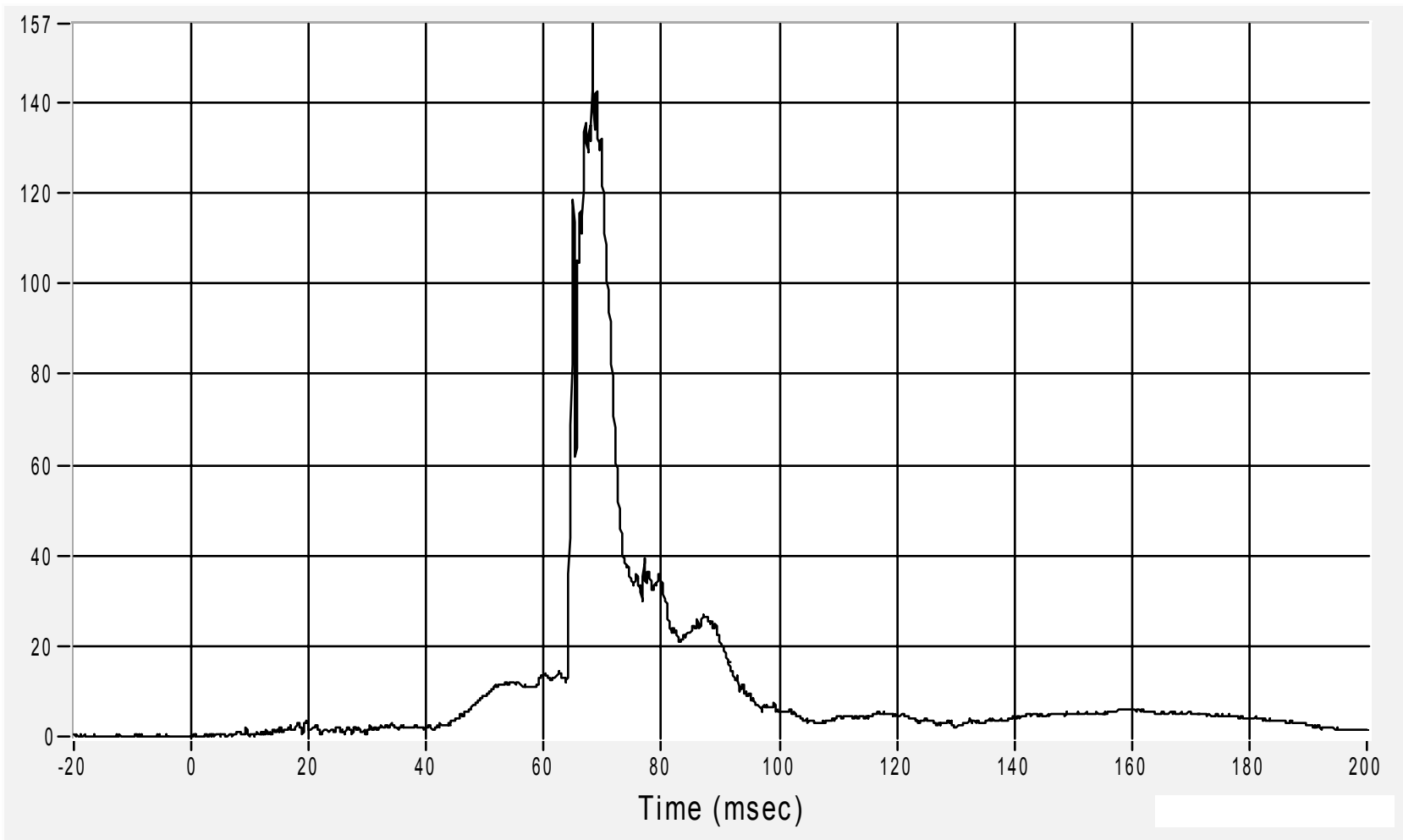
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Head Resultant Acceleration

Acceleration (G's) CFC1000

Max 157.3 G's at 68.3 msec

Min 0.1 G's at 1.9 msec



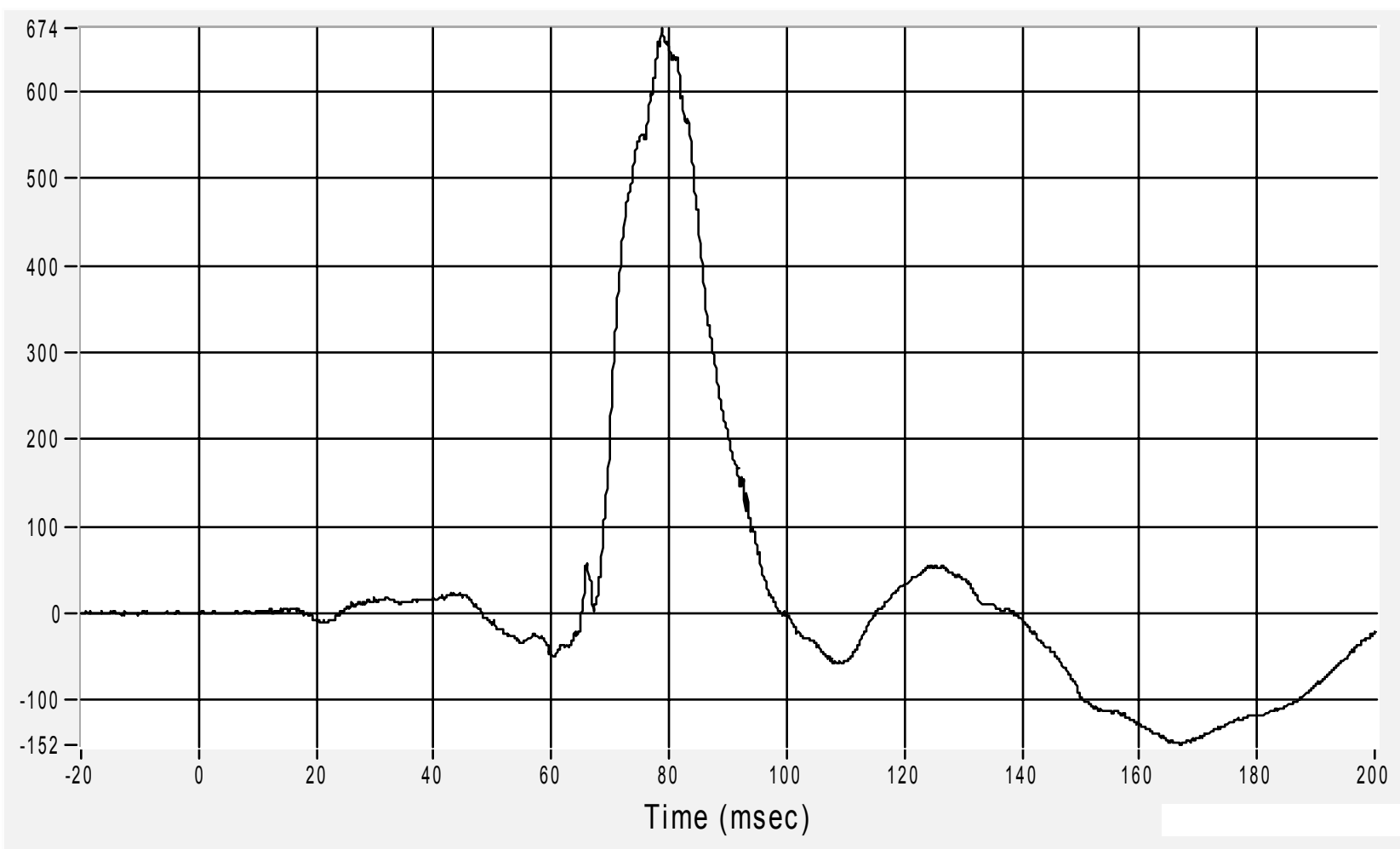
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Passenger Upper Neck (X) Force
Force (N) CFC1000

Max 673.6 N at 78.7 msec
Min -151.7 N at 167.0 msec

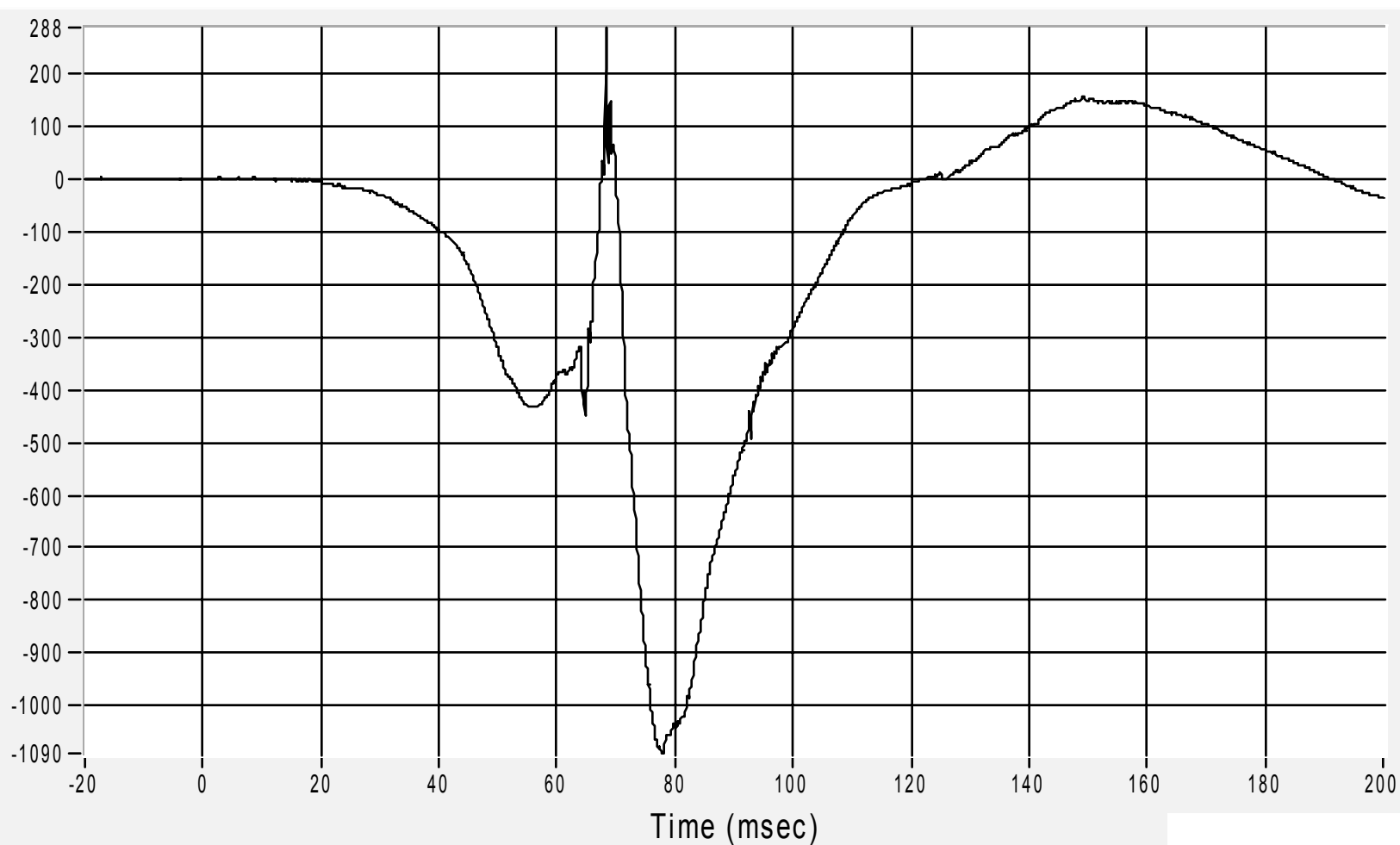


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Passenger Upper Neck (Y) Force
Force (N) CFC1000

Max 287.5 N at 68.3 msec
Min -1090.2 N at 77.9 msec

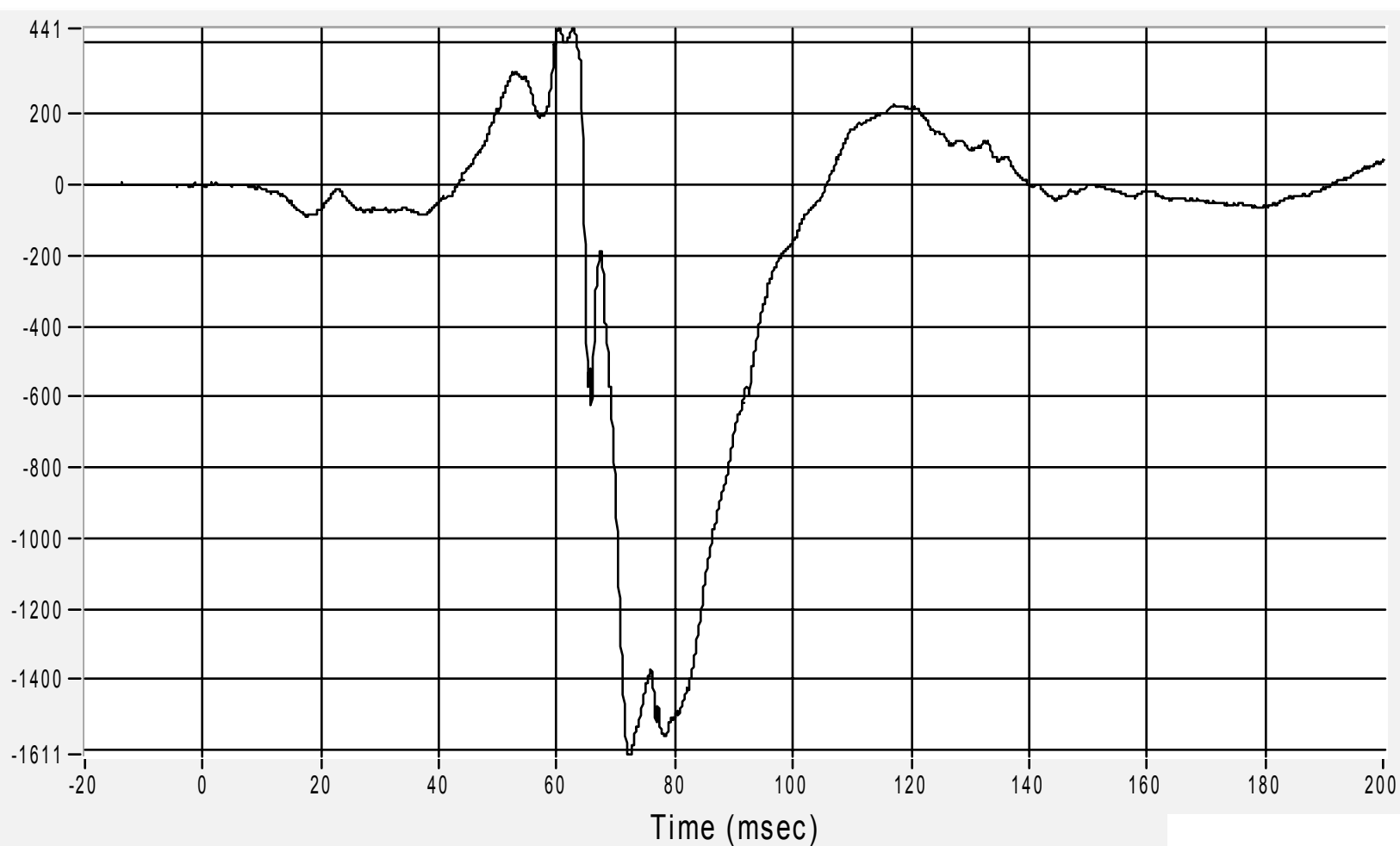


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Passenger Upper Neck (Z) Force
Force (N) CFC1000

Max 441.0 N at 62.6 msec
Min -1611.1 N at 72.2 msec



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Vehicle Crashworthiness Lab

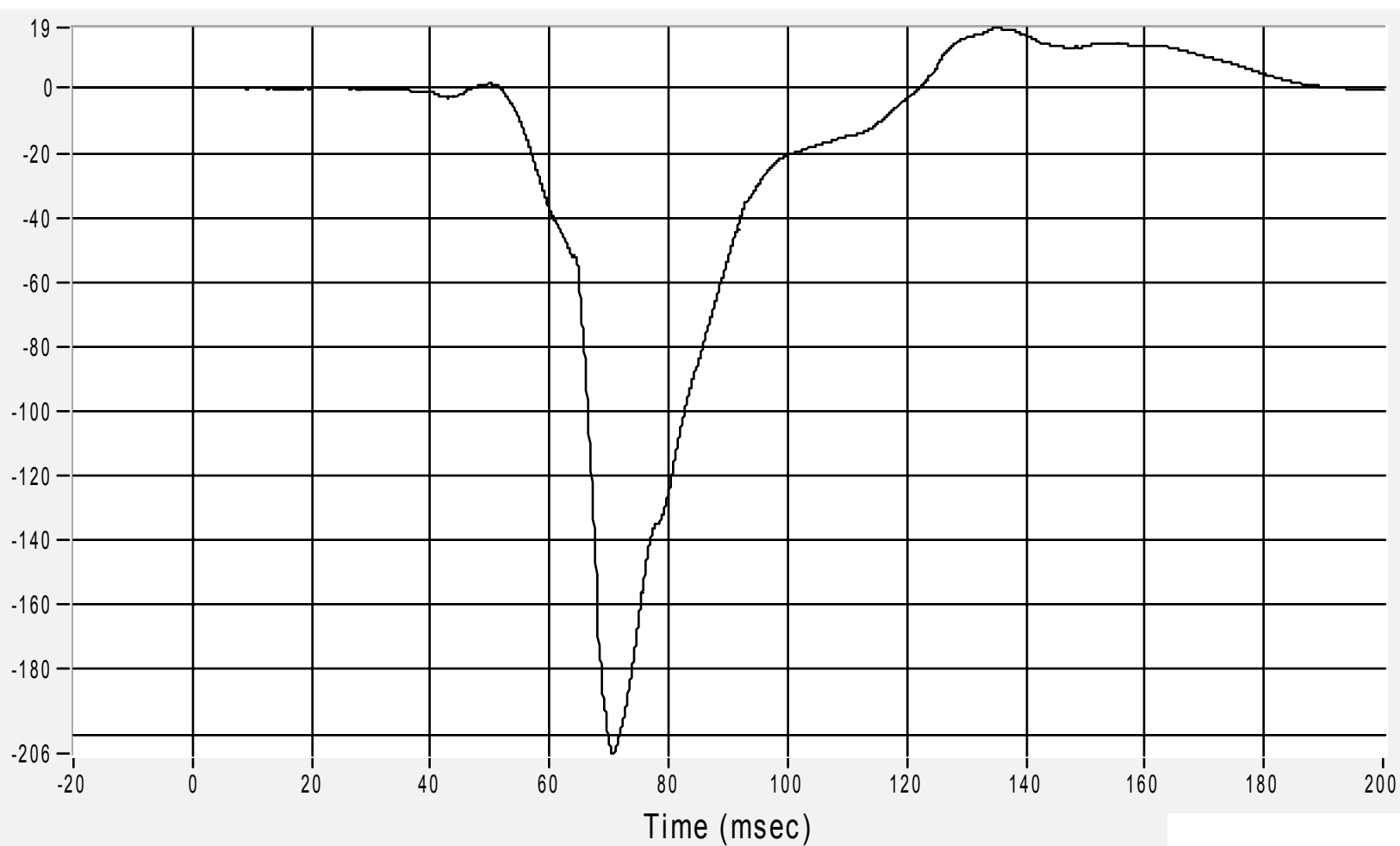
Passenger Upper Neck (X) Moment

Moment (Nm)

CFC600

Max 18.8 Nm at 135.0 msec

Min -206.0 Nm at 70.6 msec



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31 January 2005

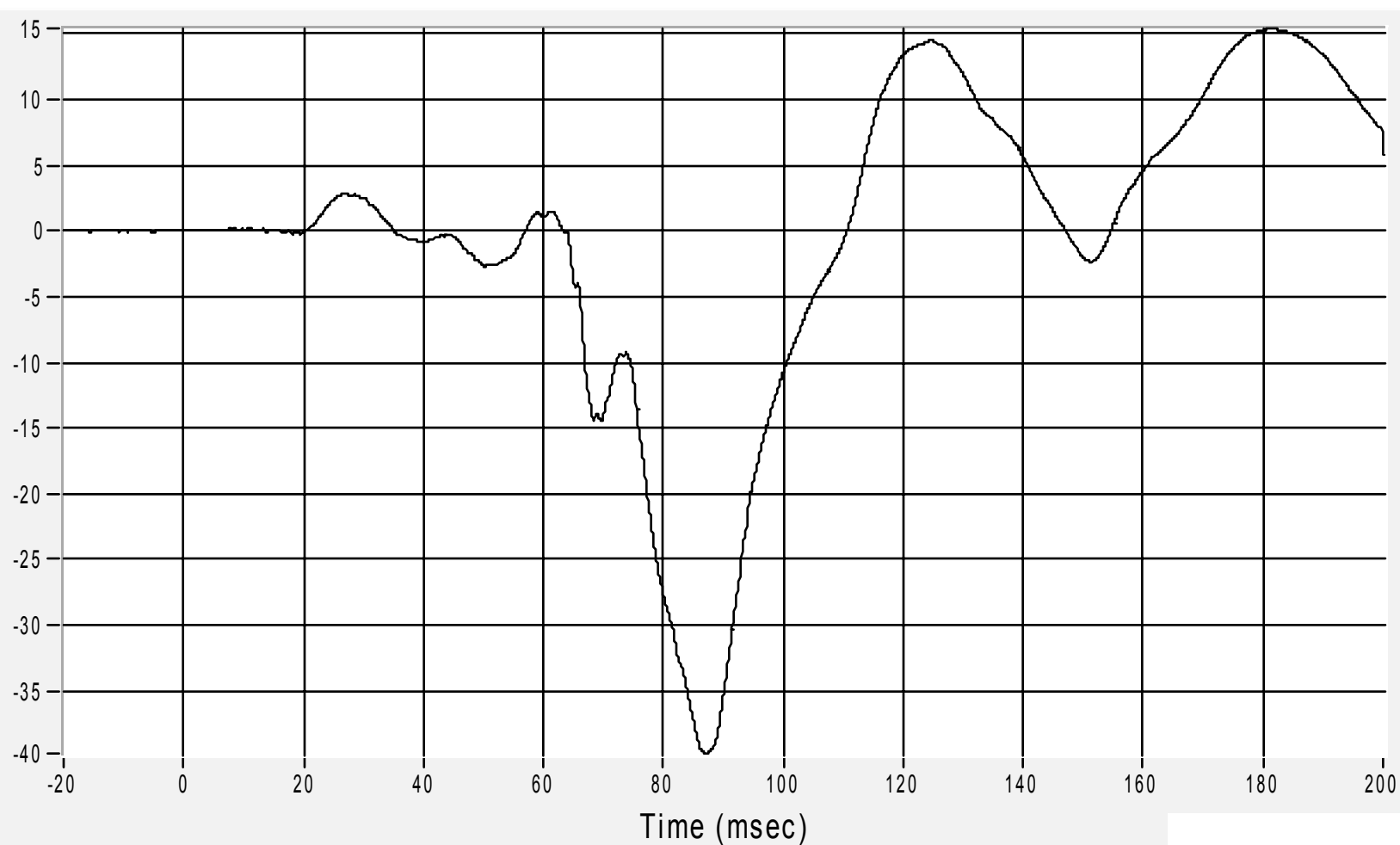
Medical College of Wisconsin
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Passenger Upper Neck (Y) Moment

Moment (Nm) CFC600

Max 15.4 Nm at 181.0 msec

Min -39.8 Nm at 87.1 msec



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31 January 2005

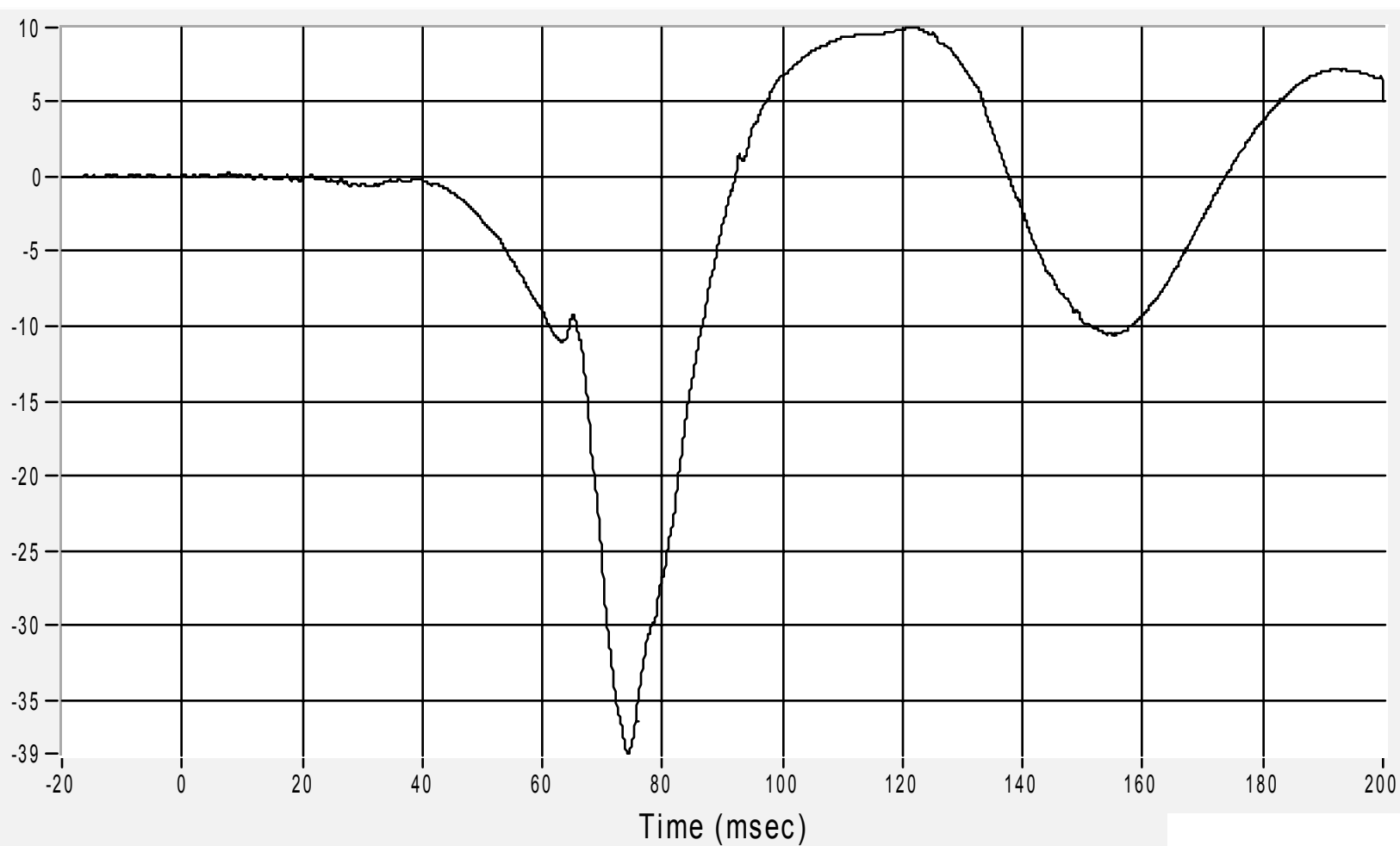
*Medical College of Wisconsin
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Passenger Upper Neck (Z) Moment

Moment (Nm) CFC600

Max 9.9 Nm at 122.1 msec

Min -38.5 Nm at 74.2 msec



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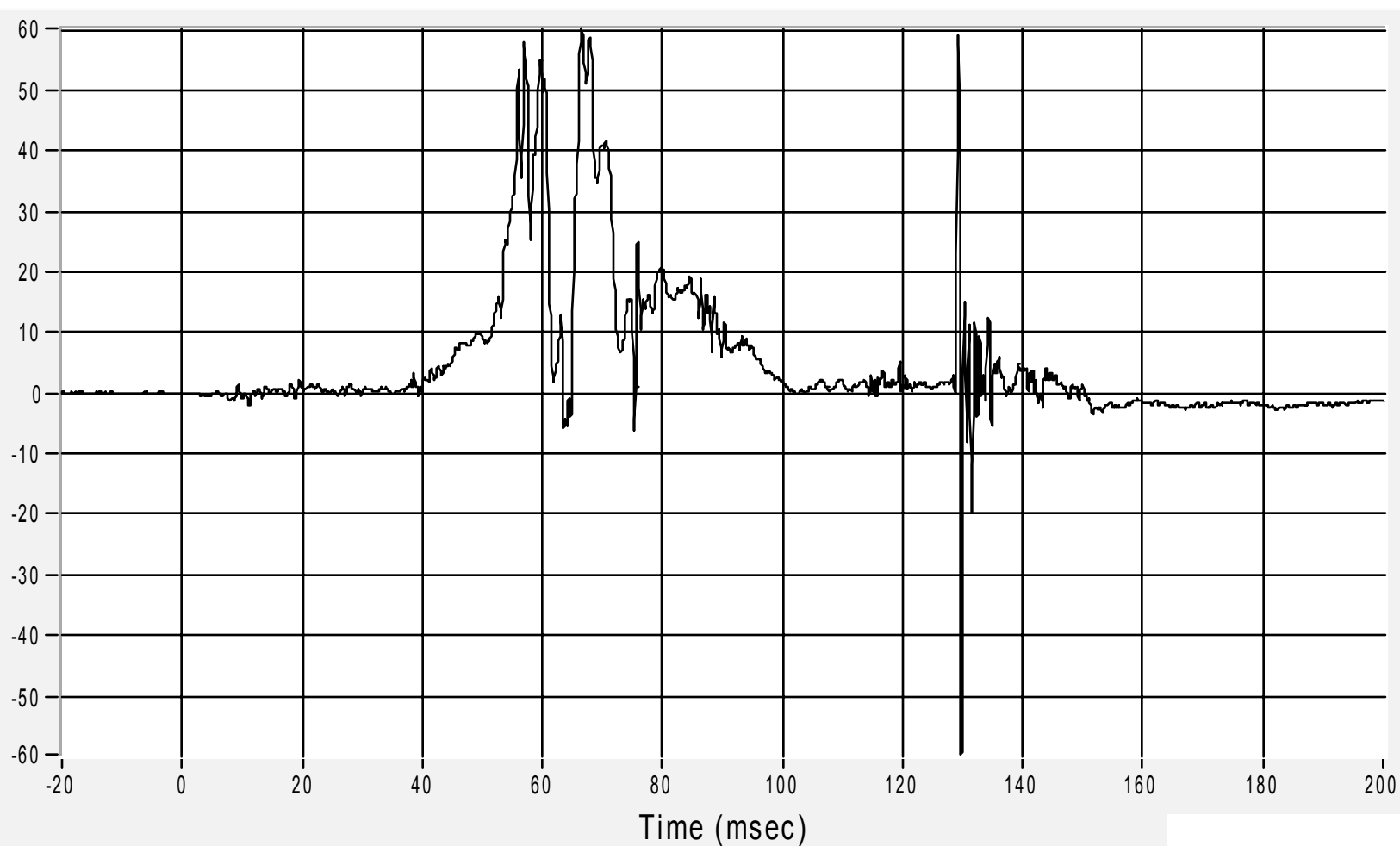
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Passenger Upper Rib (Y) Acceleration

Acceleration (G's) CFC1000

Max 60.2 G at 66.6 msec

Min -59.7 G at 129.8 msec



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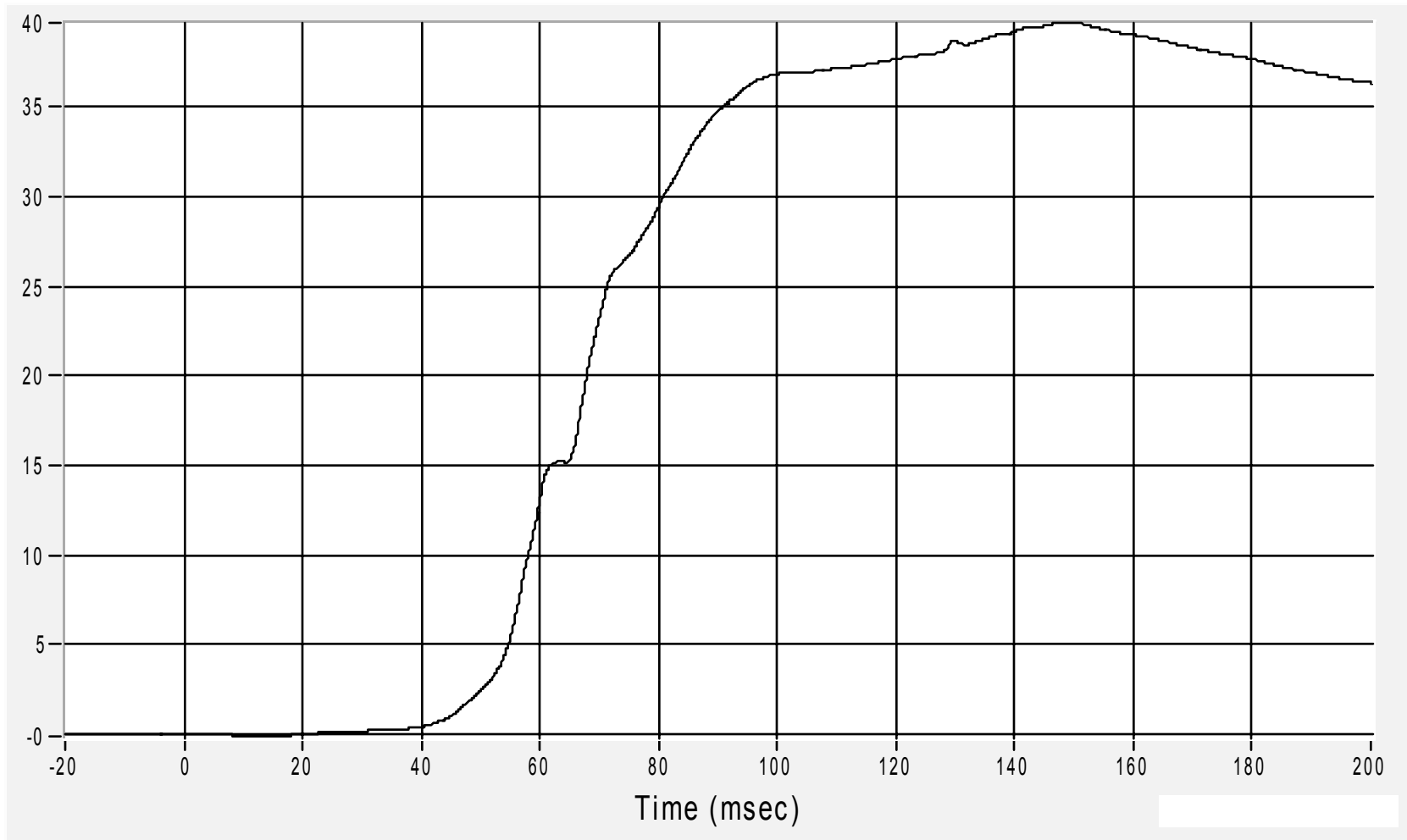
B-40

Passenger Upper Rib (Y) Velocity

Velocity (km/h) CFC180

Max 39.7 km/h at 150.1 msec

Min -0.1 km/h at 12.3 msec



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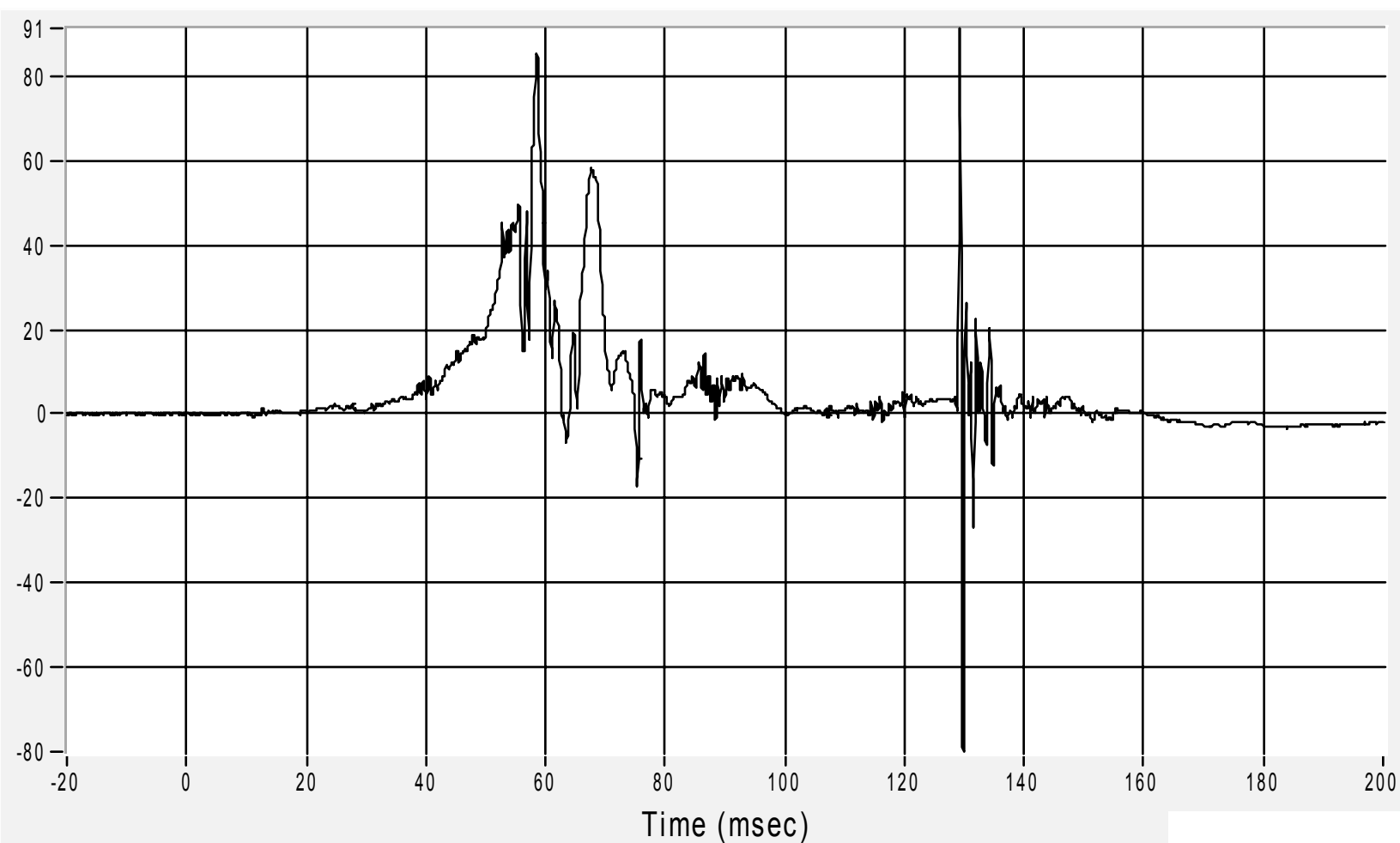
Medical College of Wisconsin
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Passenger Lower Rib (Y) Acceleration

Acceleration (G's) CFC1000

Max 91.4 G at 129.3 msec

Min -80.2 G at 129.8 msec



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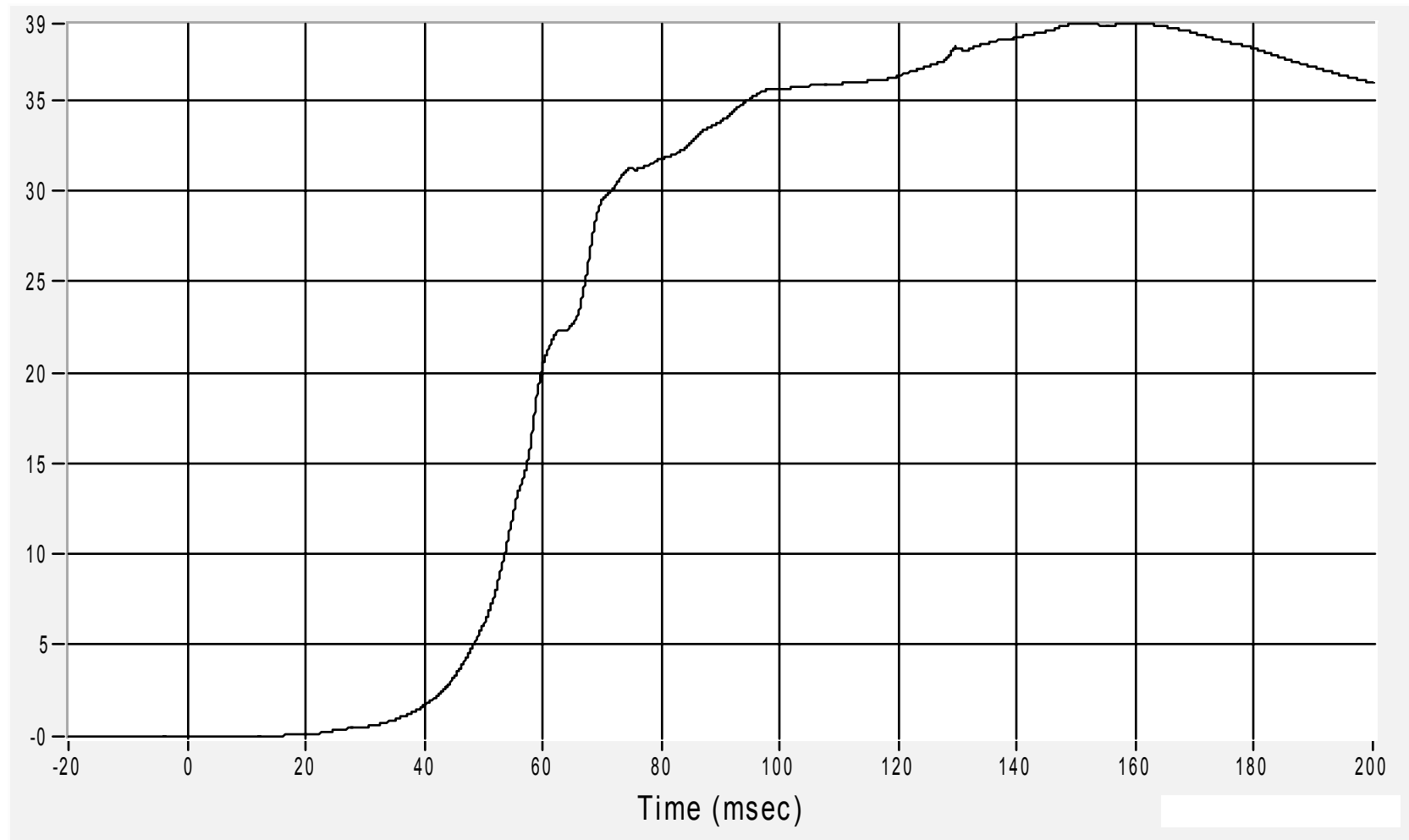
Medical College of Wisconsin
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Passenger Lower Rib (Y) Velocity

Velocity (km/h) CFC180

Max 39.2 km/h at 160.4 msec

Min 0.0 km/h at 12.1 msec



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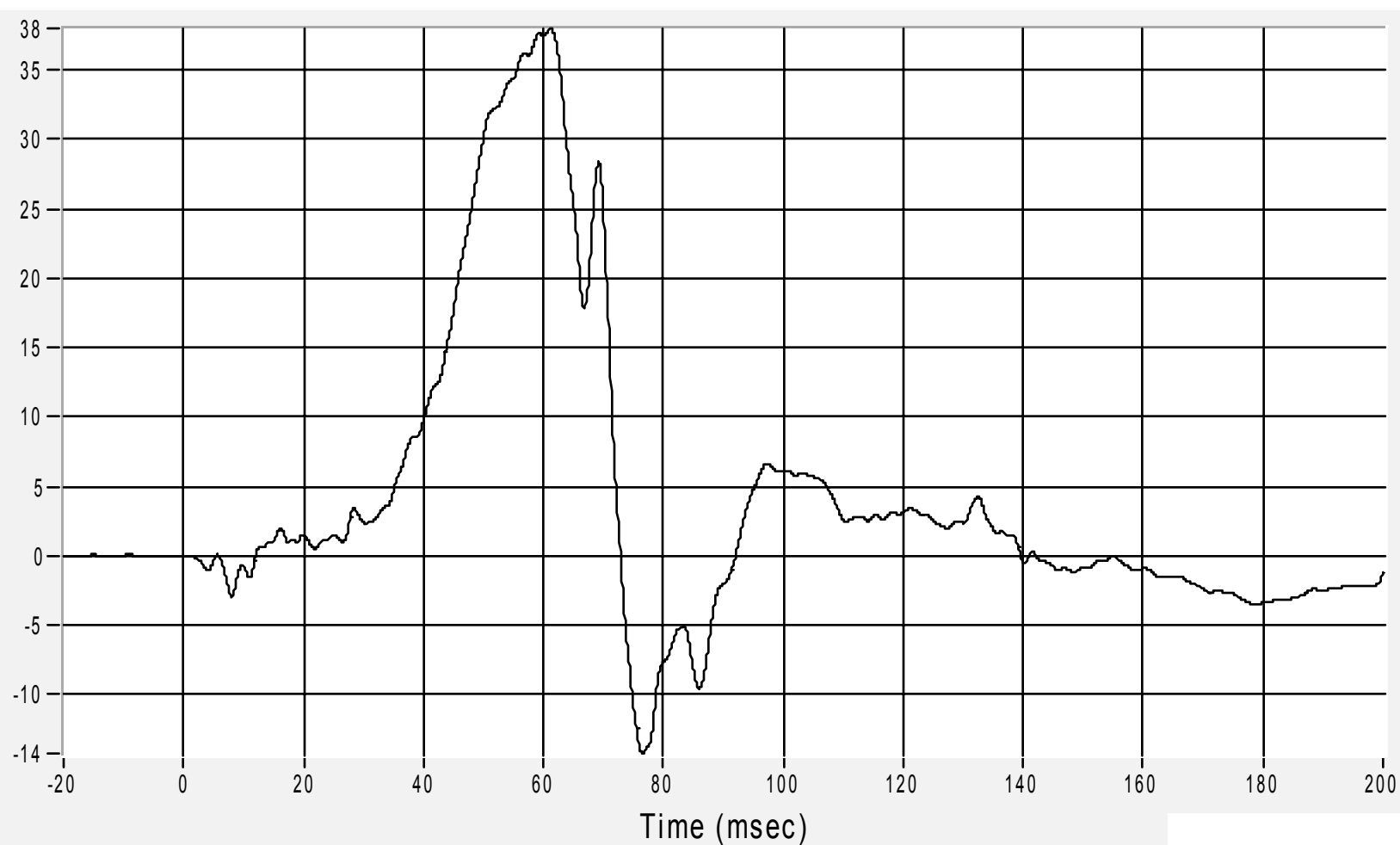
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Spine (Y) Acceleration

Acceleration (G's) CFC180

Max 38.0 G at 61.2 msec

Min -14.2 G at 76.5 msec



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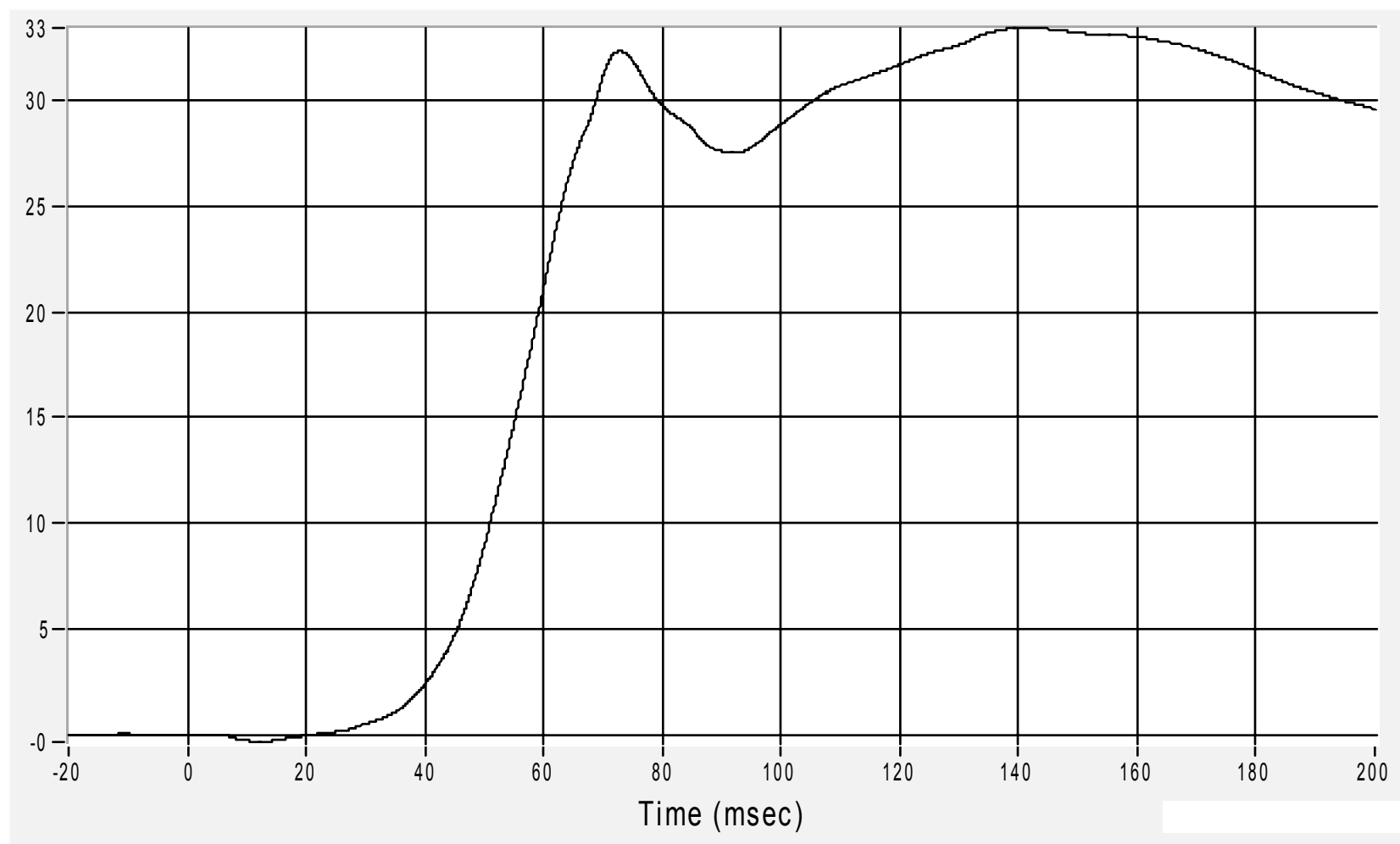
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Spine (Y) Velocity

Velocity (km/h) CFC180

Max 33.4 km/h at 139.5 msec

Min -0.4 km/h at 12.0 msec



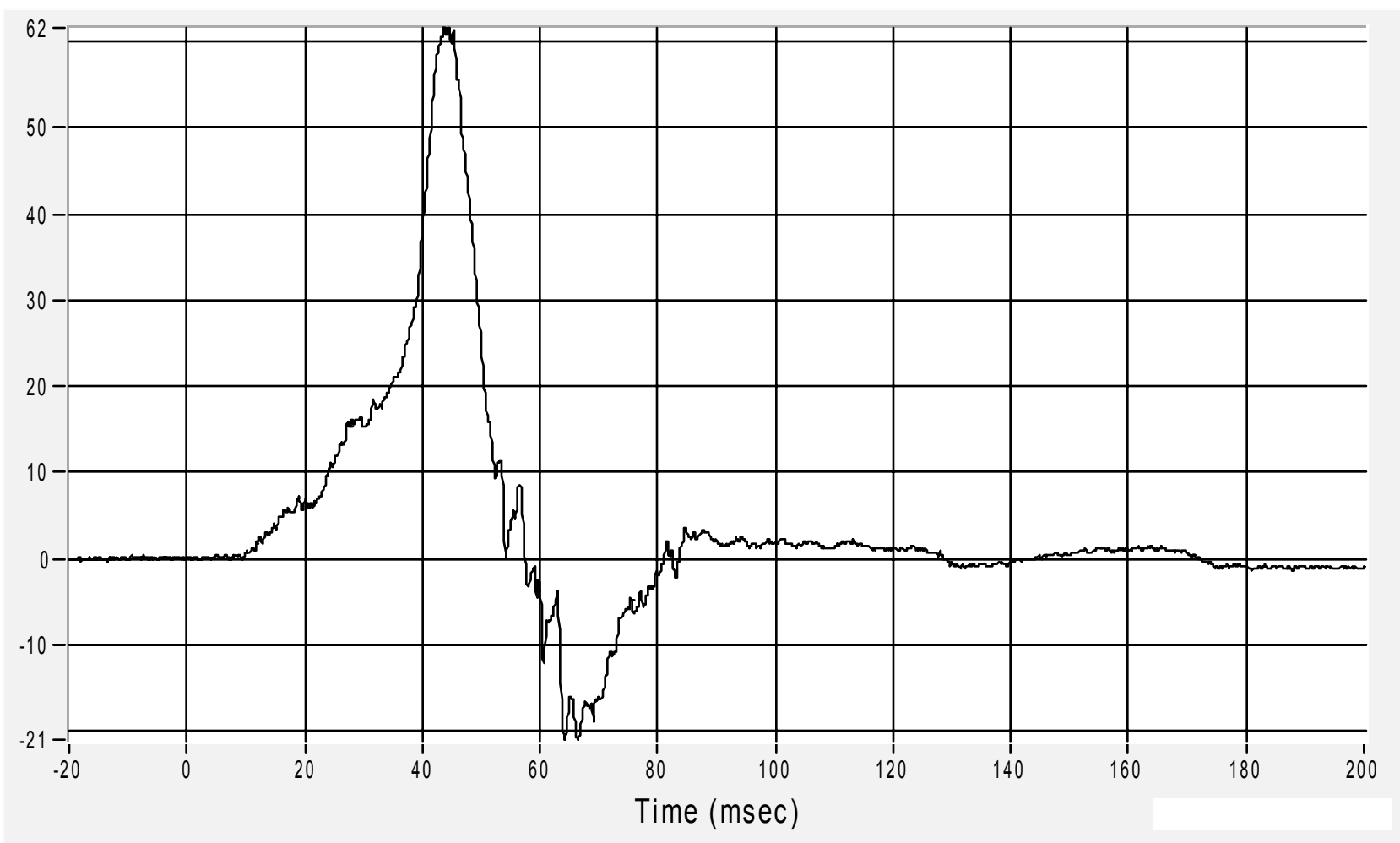
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31 January 2005

*Medical College of Wisconsin
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Passenger Pelvic (Y) Acceleration
Acceleration (G's) CFC1000

Max 61.6 G at 43.7 msec
Min -21.0 G at 66.5 msec



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31 January 2005

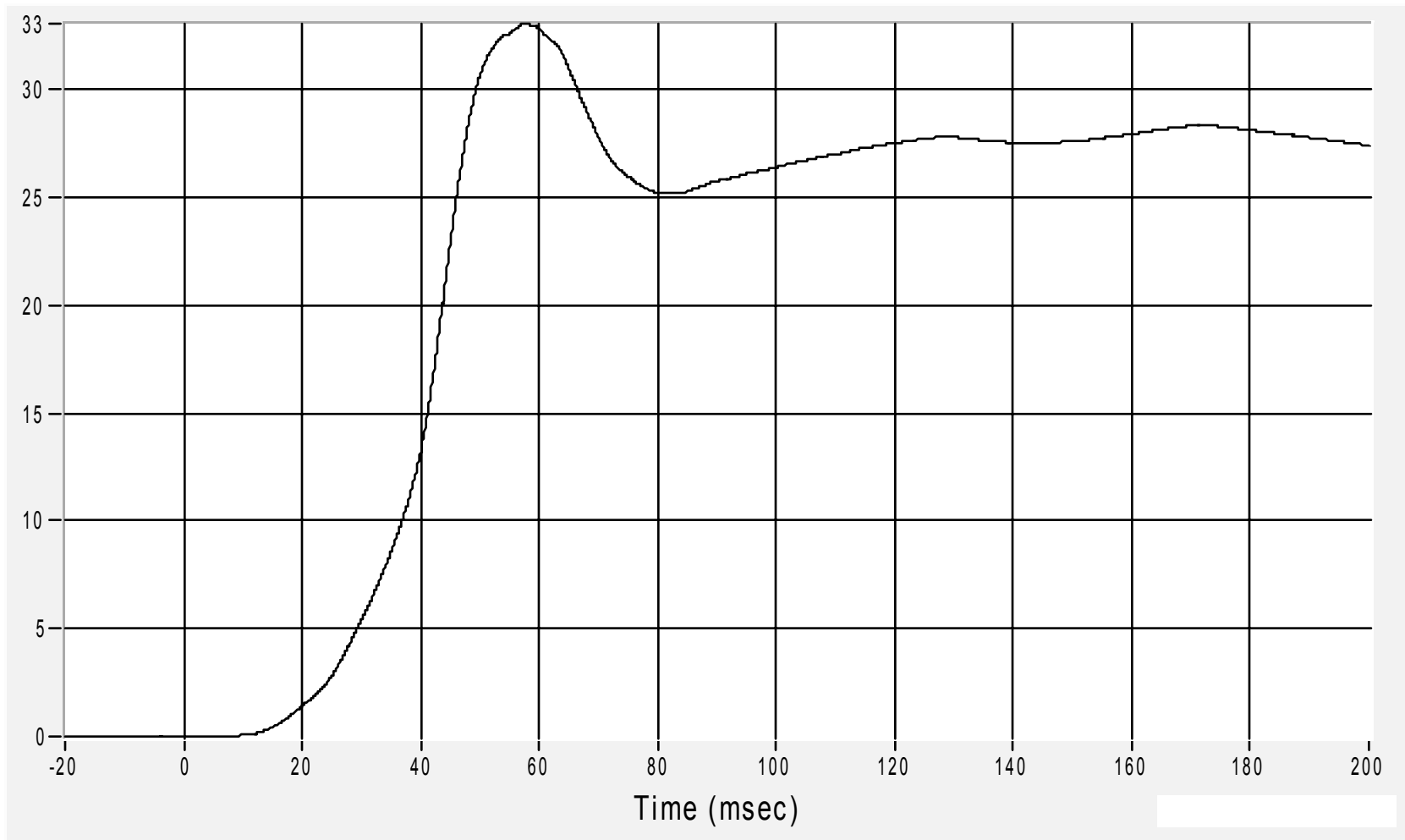
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Pelvic (Y) Velocity

Velocity (km/h) CFC180

Max 33.1 km/h at 57.6 msec

Min 0.0 km/h at 0.0 msec



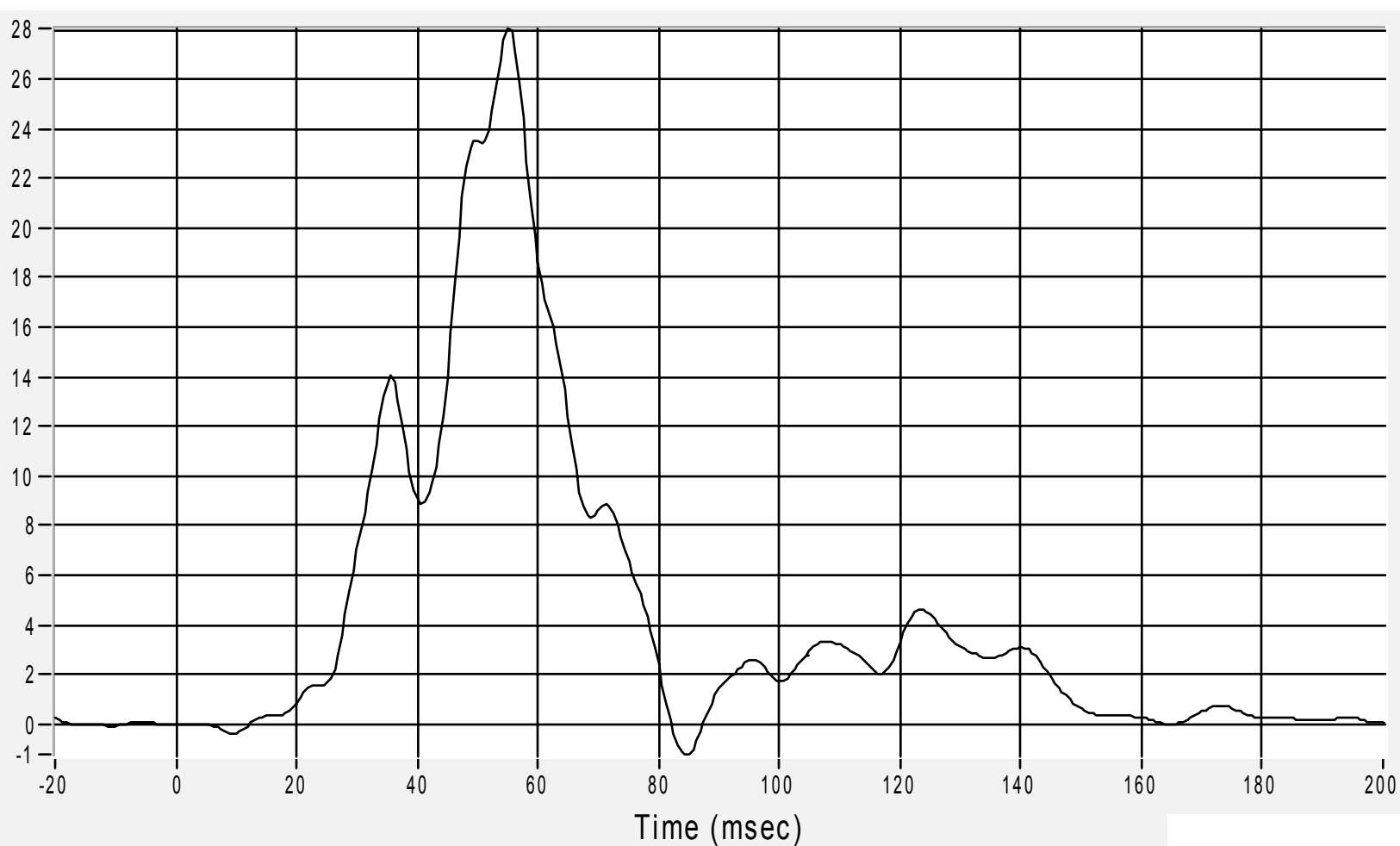
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Driver Upper Rib (Y) Acceleration

Acceleration (G's) FIR100

Max 28.0 G at 55.0 msec**Min -1.2 G at 84.4 msec**

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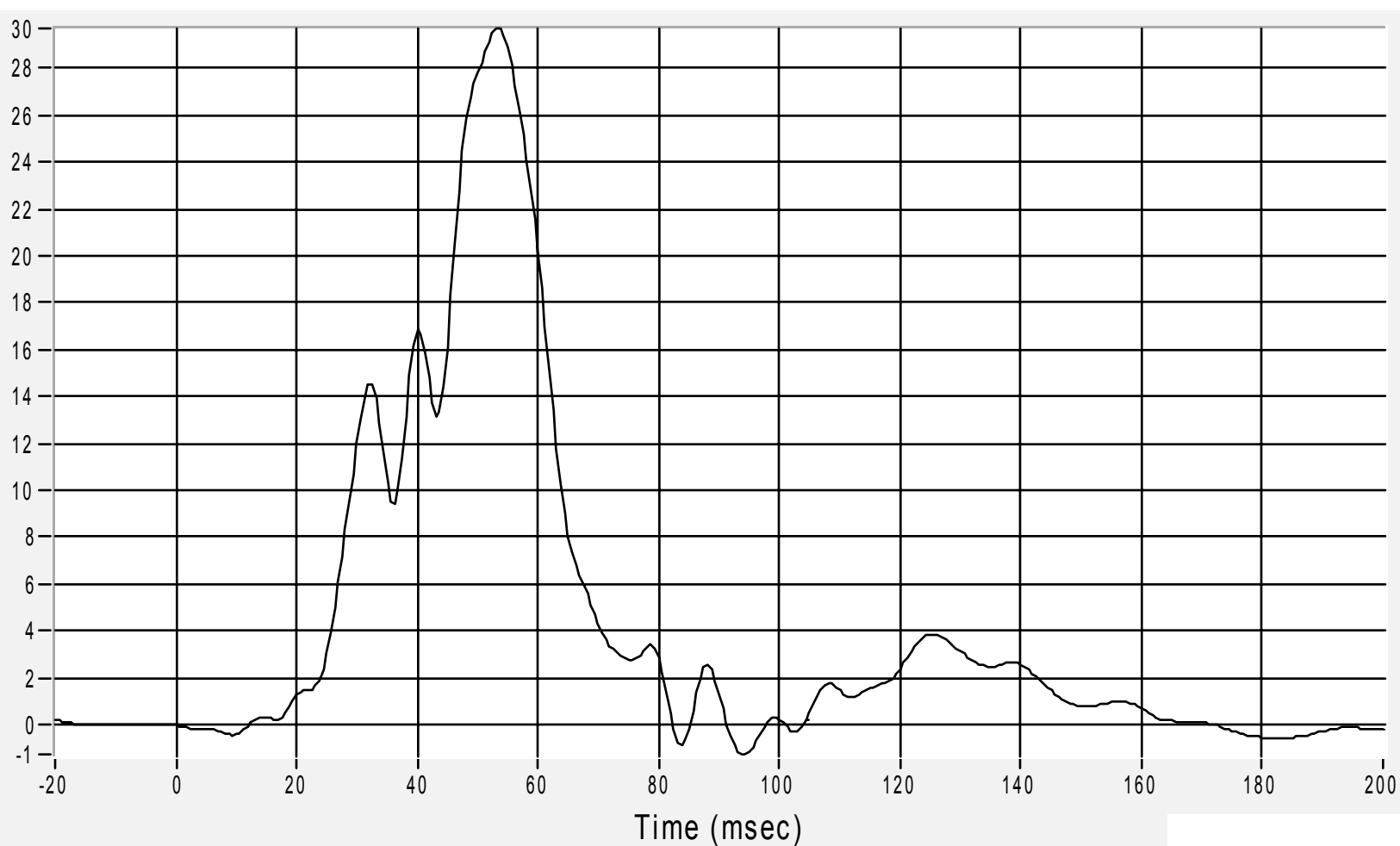
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Driver Lower Rib (Y) Acceleration

Acceleration (G's) FIR100

Max 29.7 G at 53.1 msec

Min -1.3 G at 93.8 msec



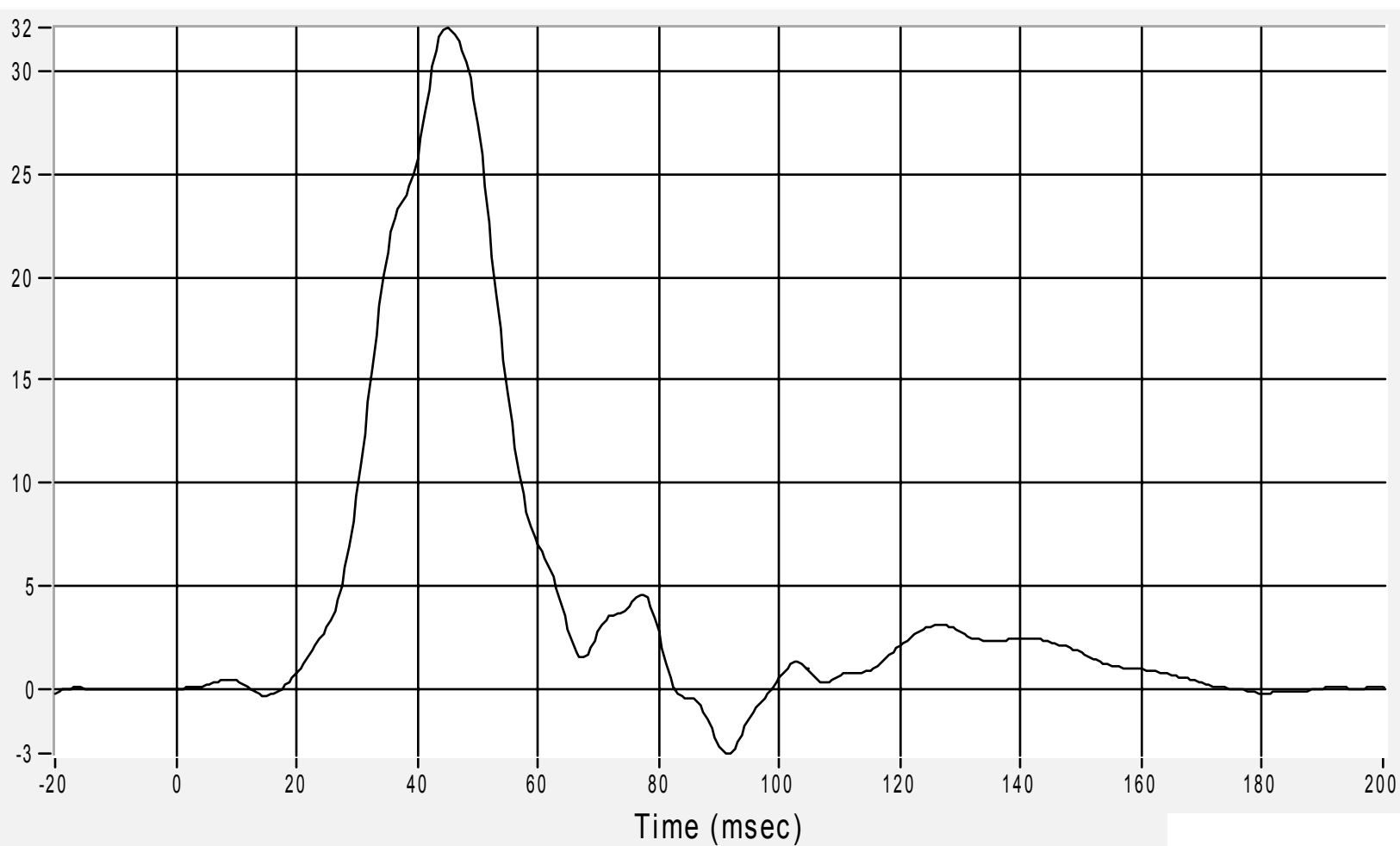
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*Medical College of Wisconsin
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Driver Lower Spine (Y) Acceleration

Acceleration (G's) FIR100

Max 32.1 G at 45.0 msec**Min -3.2 G at 91.2 msec**

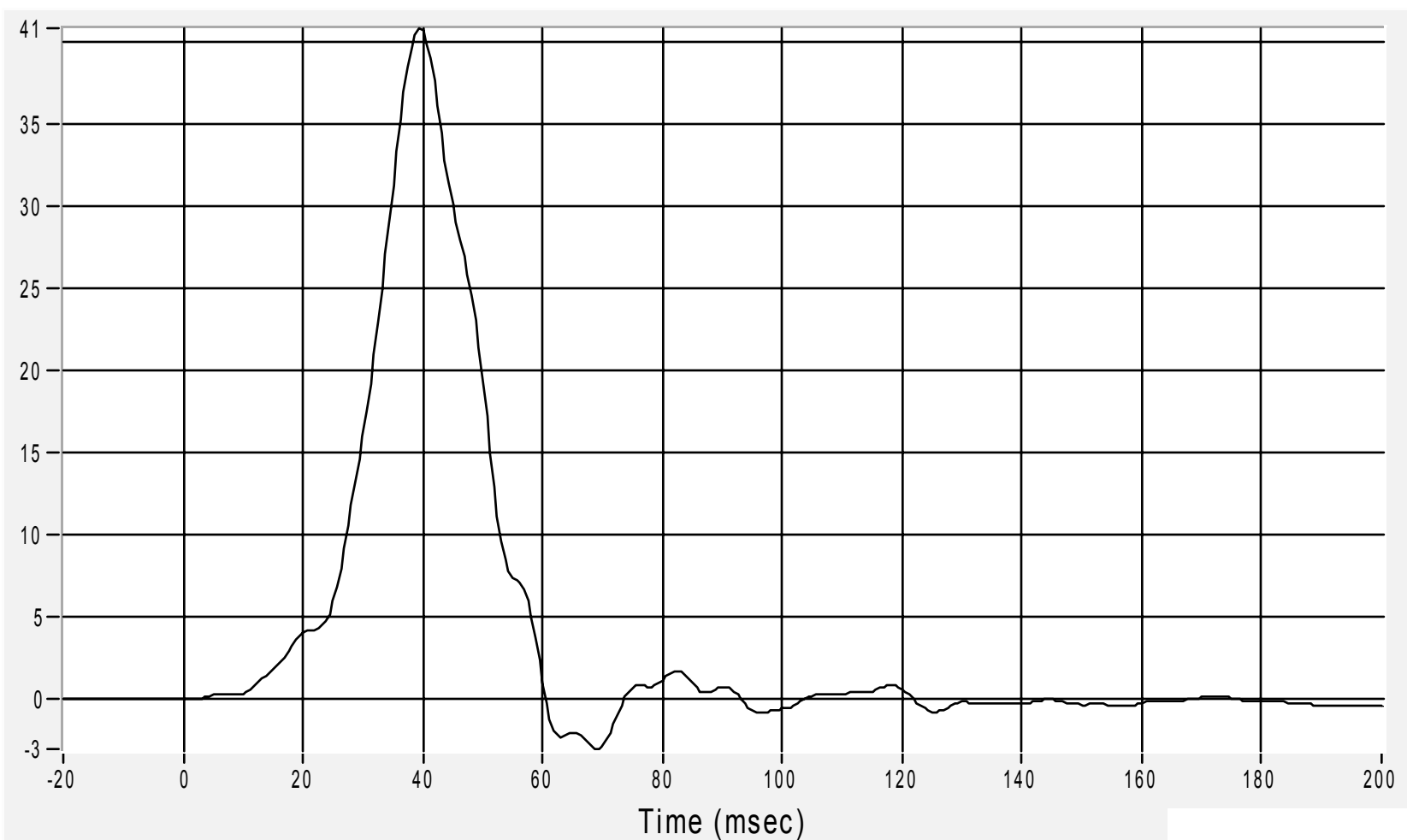
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Driver Pelvic (Y) Acceleration

Acceleration (G's) FIR100

Max 40.8 G at 39.4 msec**Min -3.1 G at 68.8 msec**

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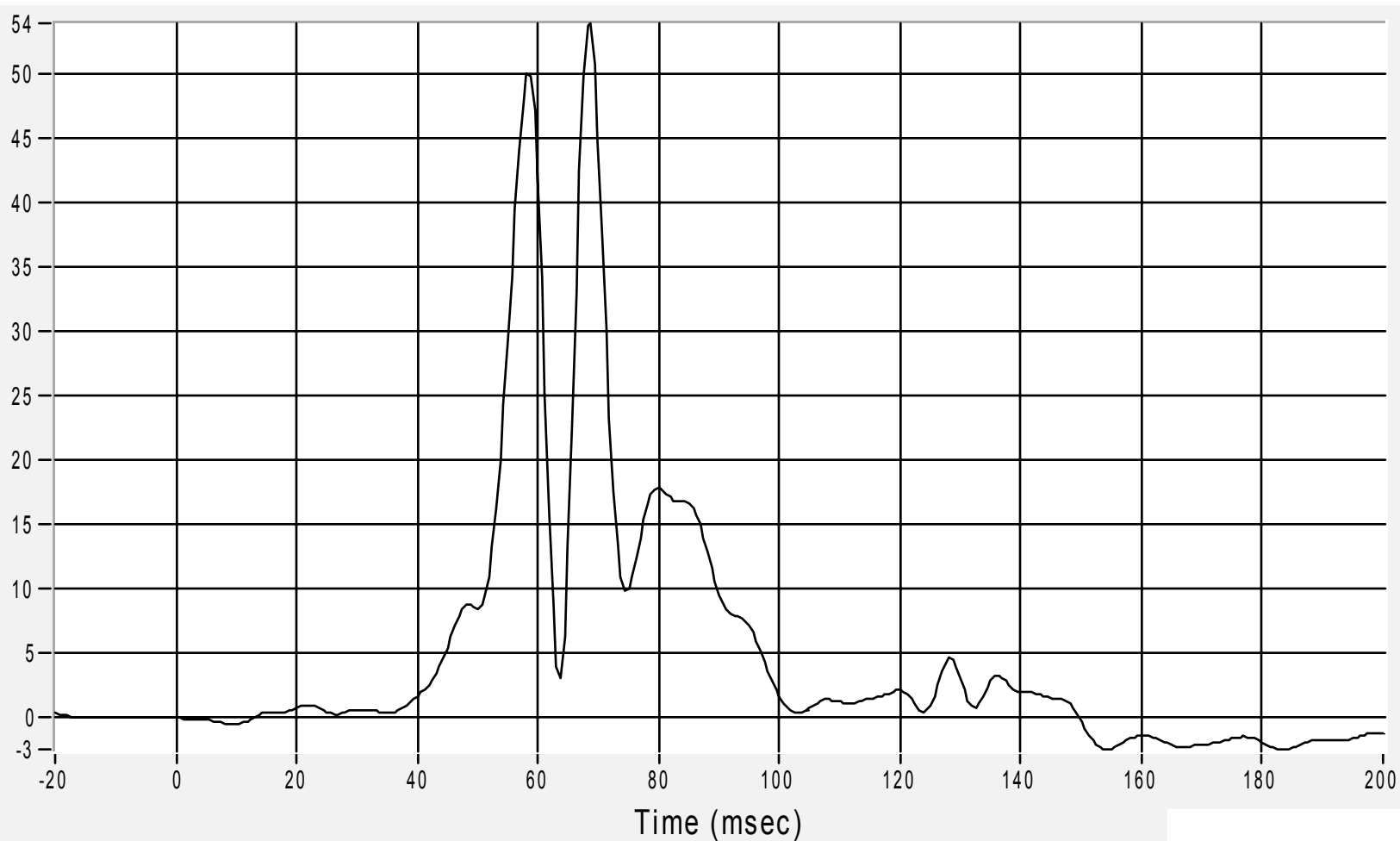
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Passenger Upper Rib (Y) Acceleration

Acceleration (G's) FIR100

Max 53.8 G at 68.8 msec

Min -2.5 G at 154.4 msec



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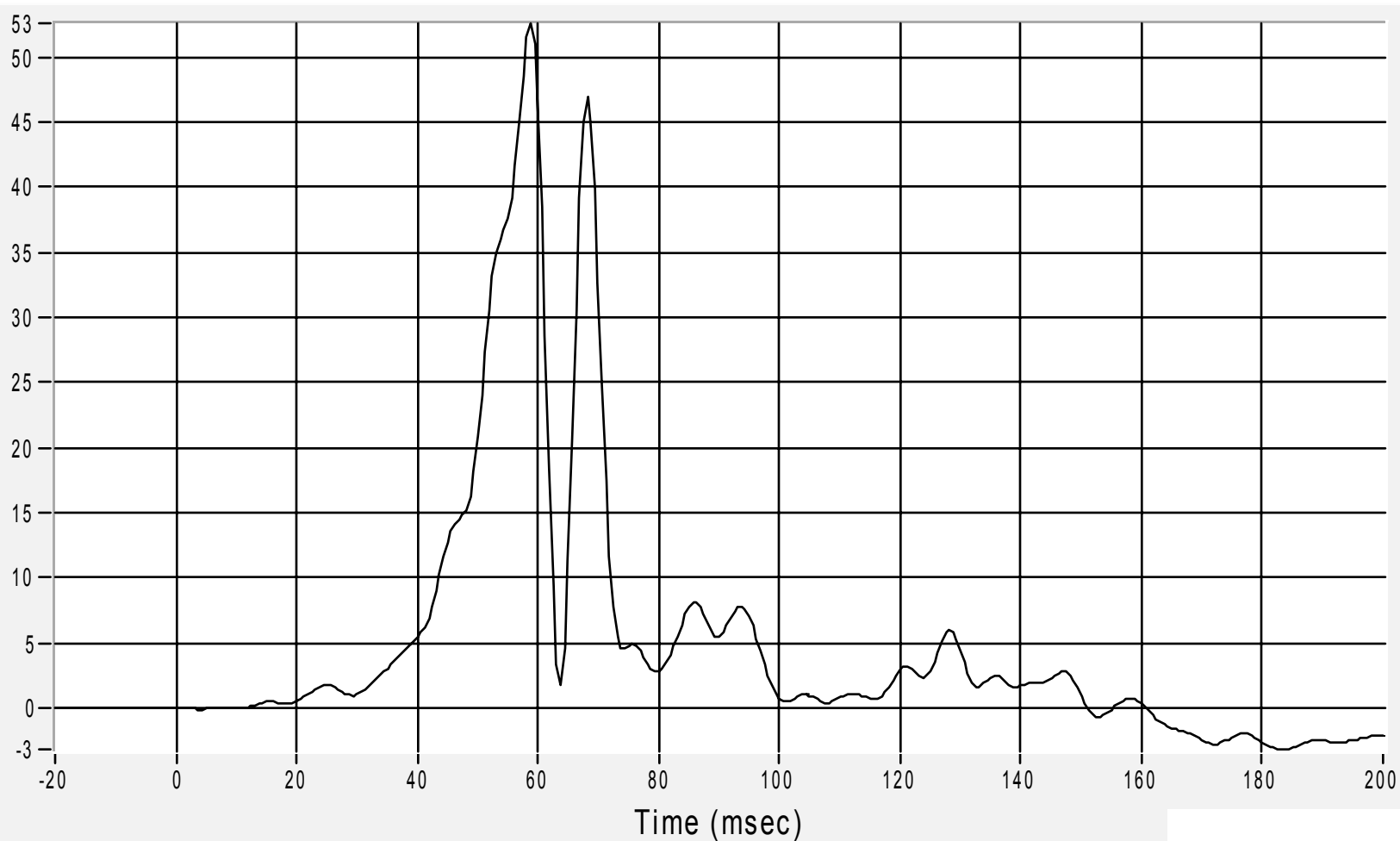
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Passenger Lower Rib (Y) Acceleration

Acceleration (G's) FIR100

Max 52.6 G at 58.8 msec

Min -3.2 G at 183.1 msec



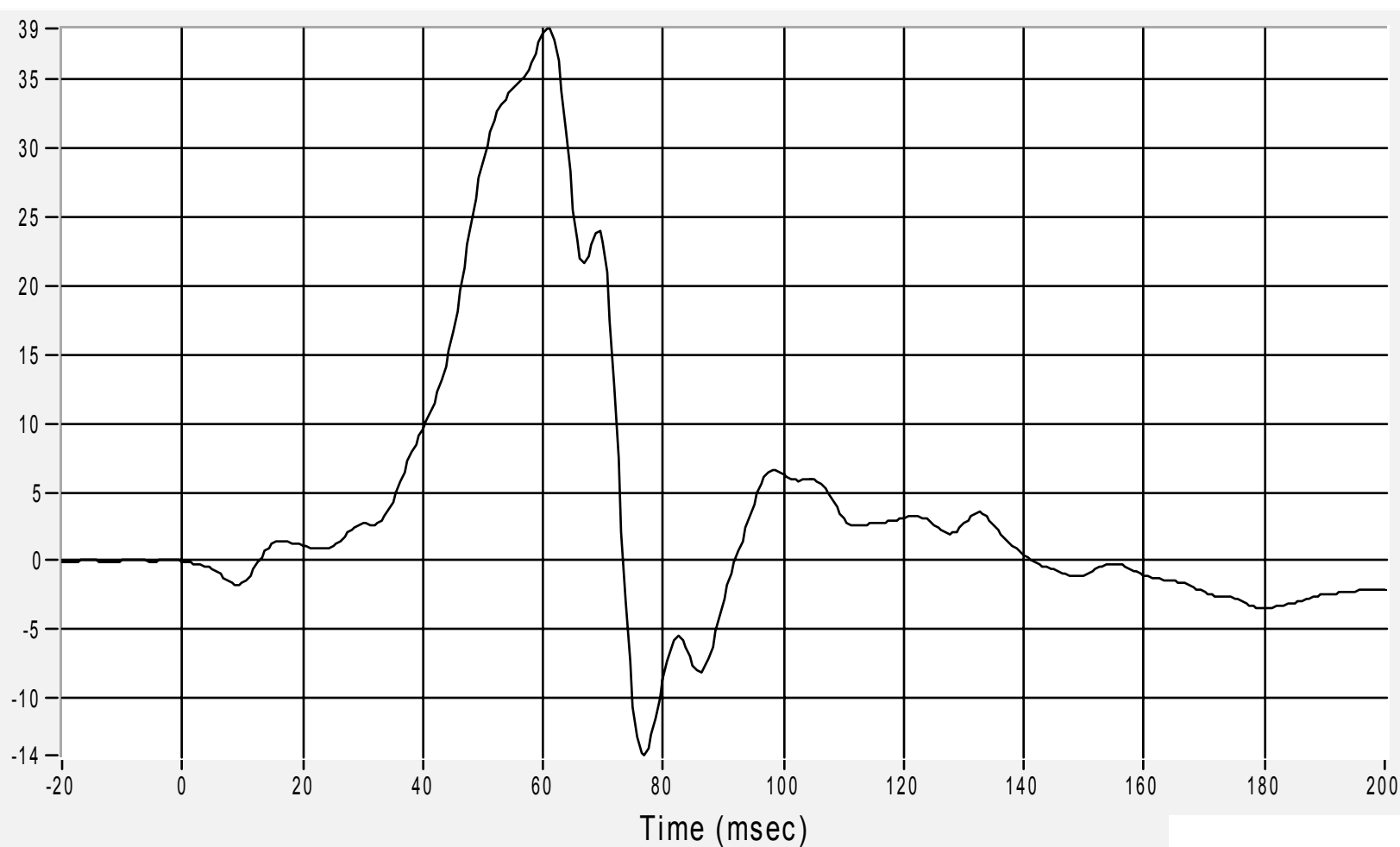
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Passenger Lower Spine (Y) Acceleration

Acceleration (G's) FIR100

Max 38.7 G at 60.6 msec**Min -14.1 G at 76.9 msec**

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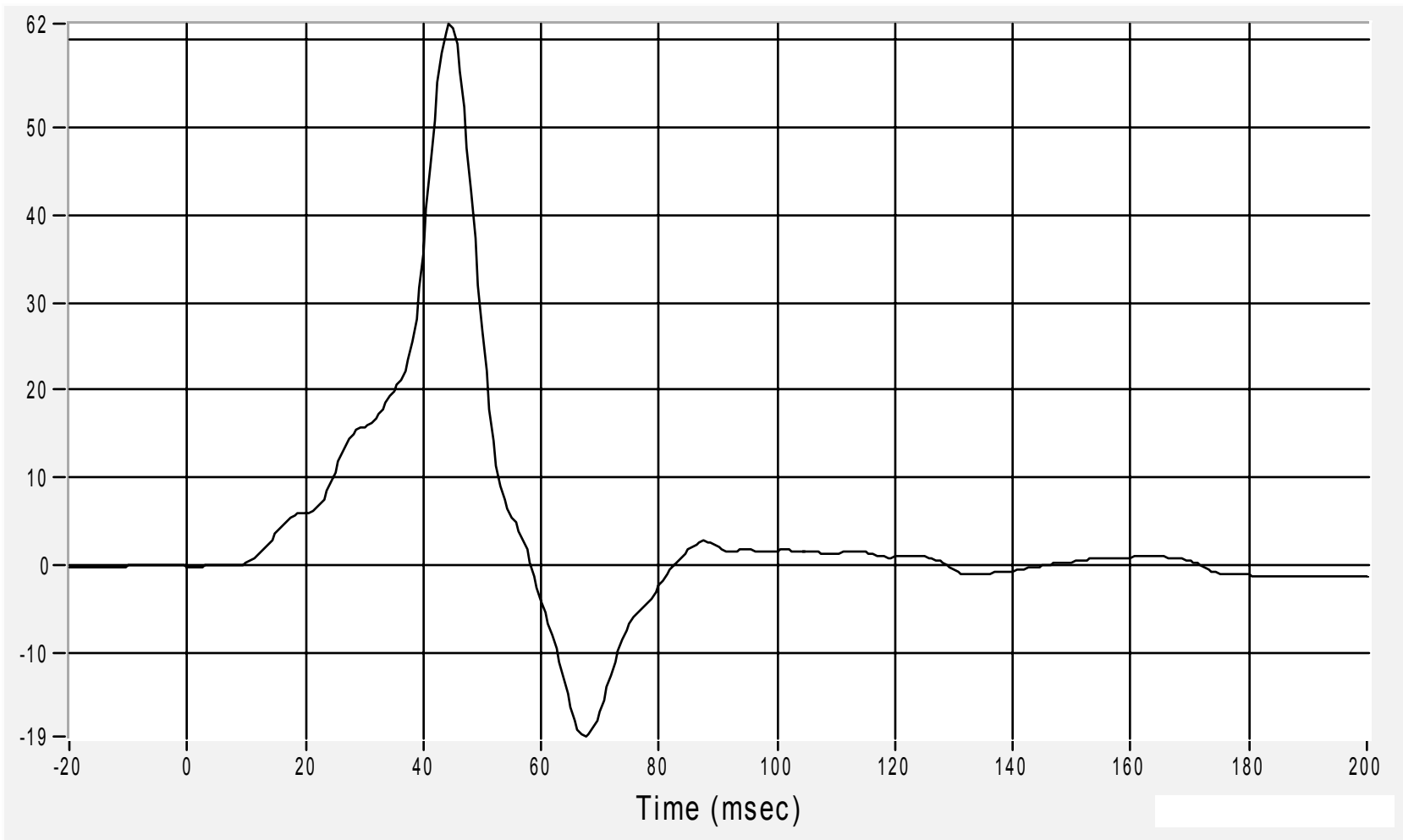
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Passenger Pelvic (Y) Acceleration

Acceleration (G's) FIR100

Max 61.7 G at 44.4 msec

Min -19.4 G at 67.5 msec



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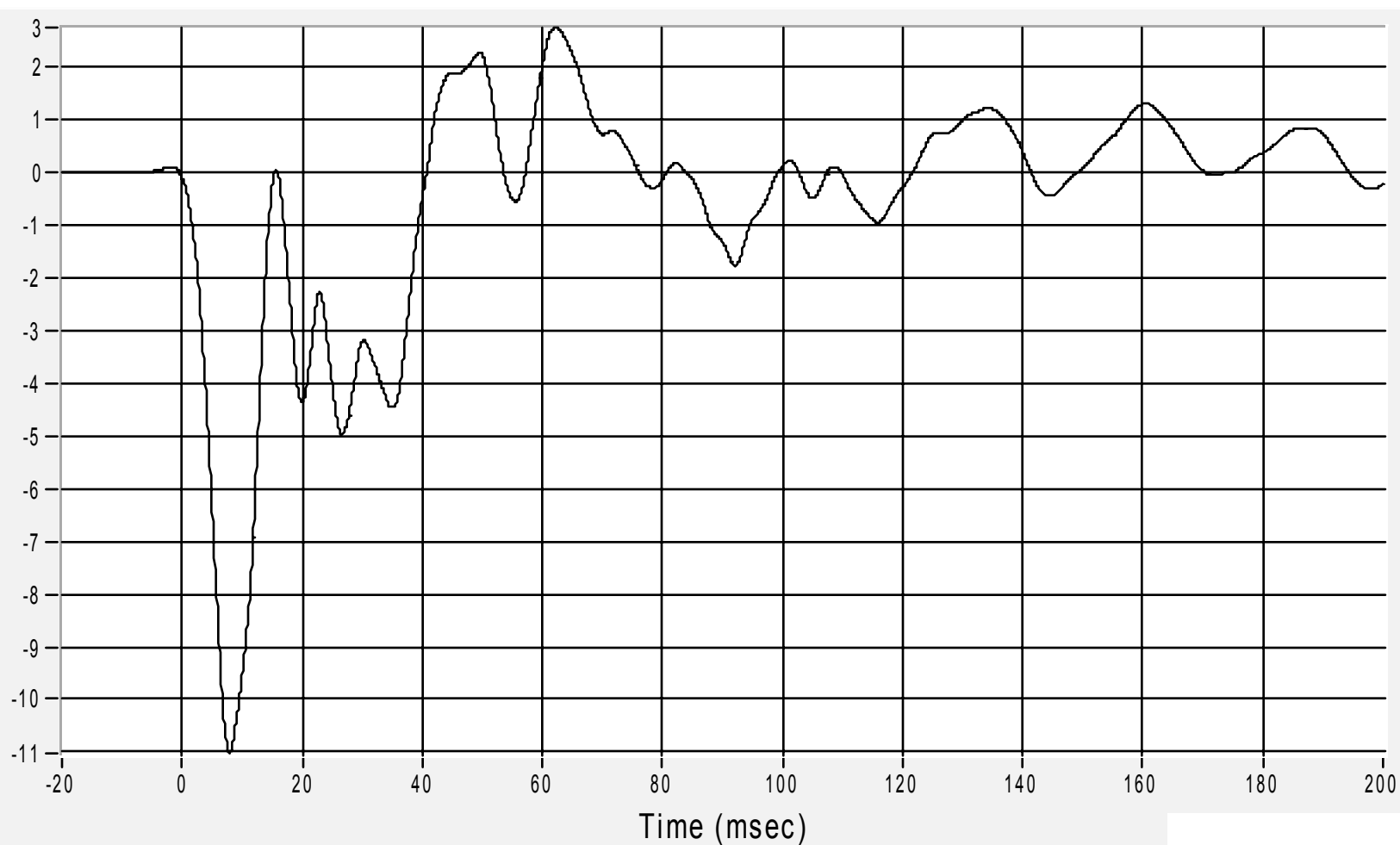
Medical College of Wisconsin
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Right Side Sill at Front Seat (X) Acceleration

Acceleration (G's) CFC60

Max 2.8 G at 62.2 msec

Min -11.0 G at 7.9 msec



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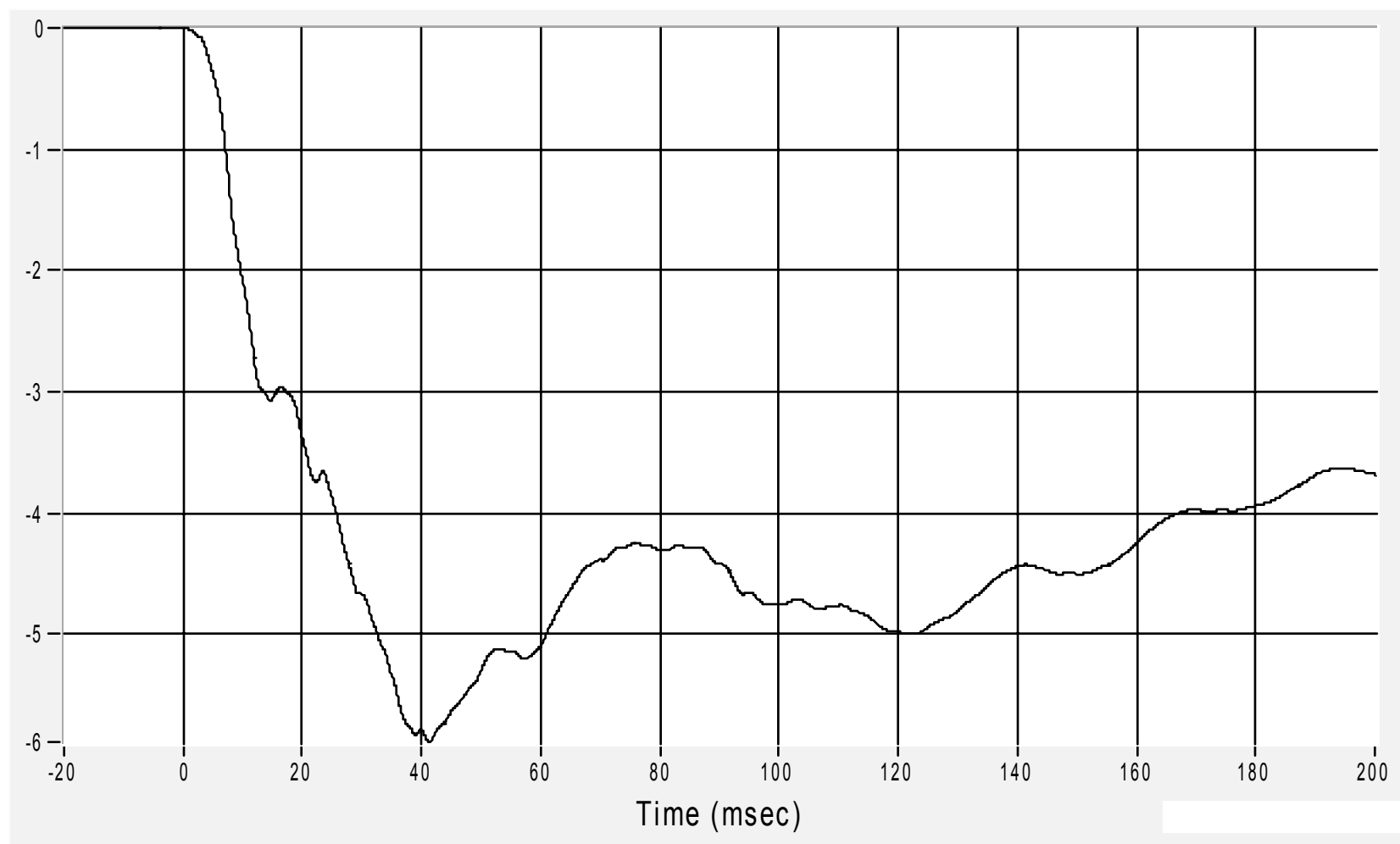
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Front Seat (X) Velocity

Velocity (km/h) CFC180

Max 0.0 km/h at 0.0 msec

Min -5.9 km/h at 41.3 msec



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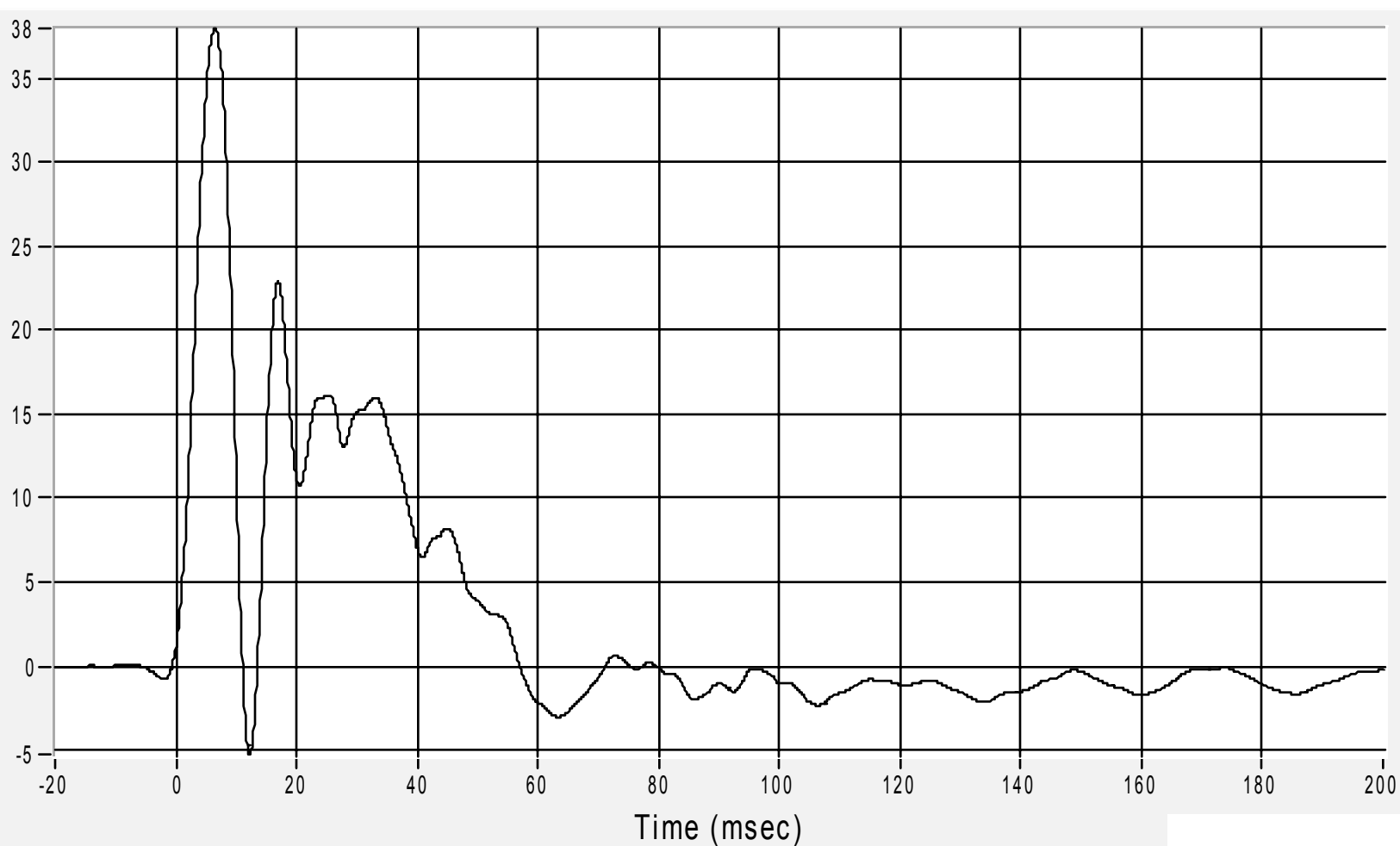
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Front Seat (Y) Acceleration

Acceleration (G's) CFC60

Max 38.0 G at 6.5 msec

Min -5.3 G at 12.2 msec



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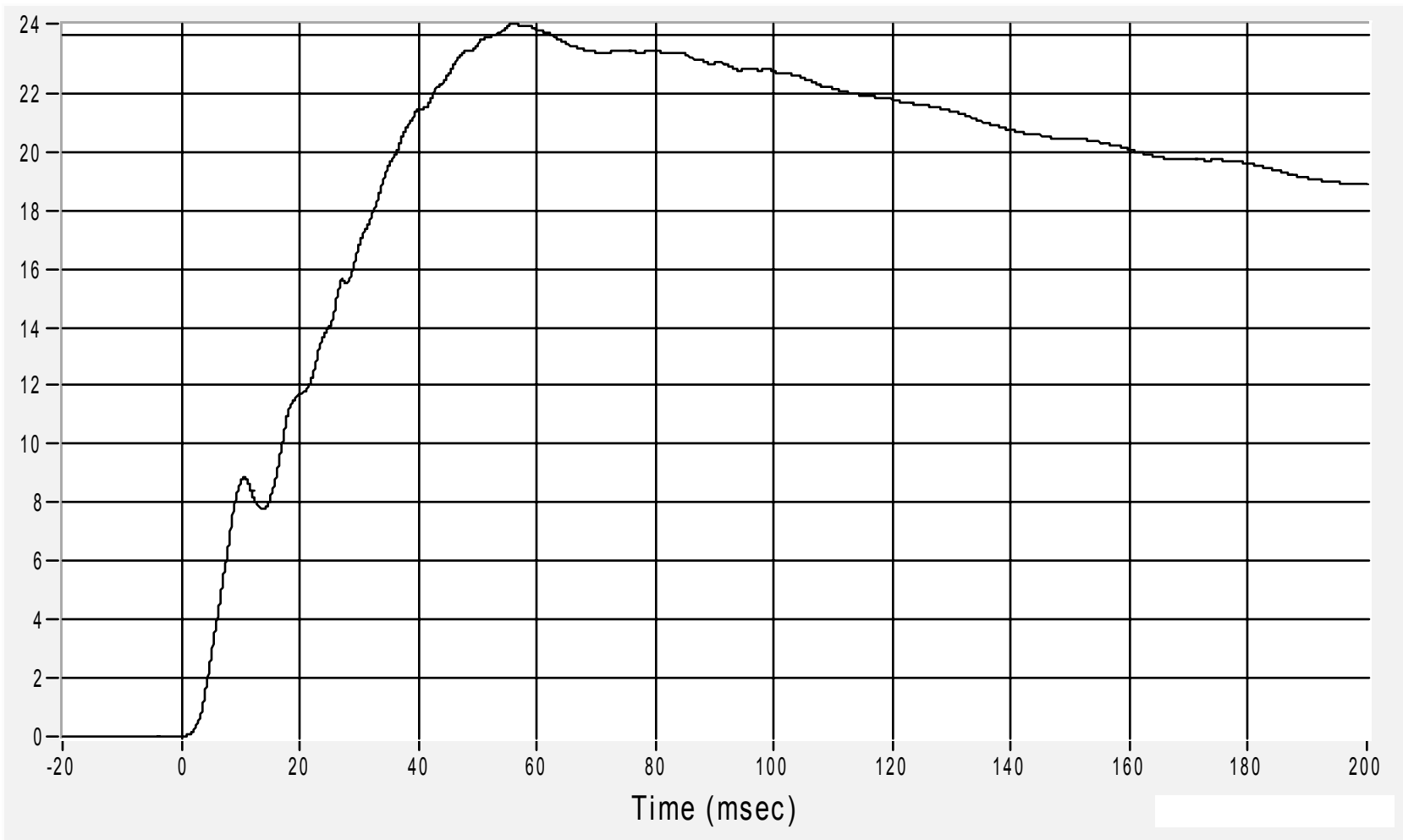
B-58

Right Side Sill at Front Seat (Y) Velocity

Velocity (km/h) CFC180

Max 24.4 km/h at 56.1 msec

Min 0.0 km/h at 0.0 msec



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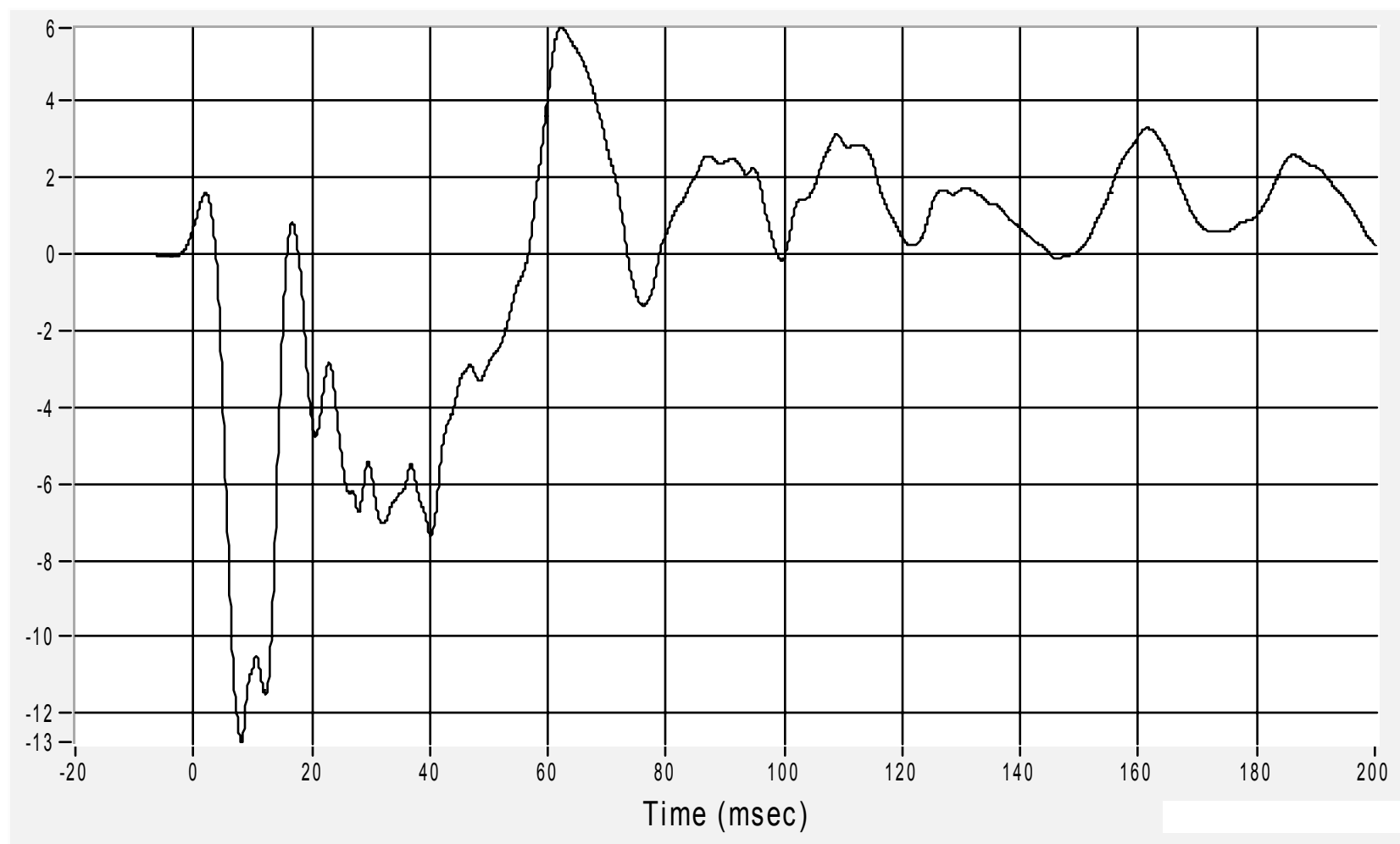
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Front Seat (Z) Acceleration

Acceleration (G's) CFC60

Max 5.9 G at 62.3 msec

Min -12.7 G at 8.1 msec



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Medical College of Wisconsin
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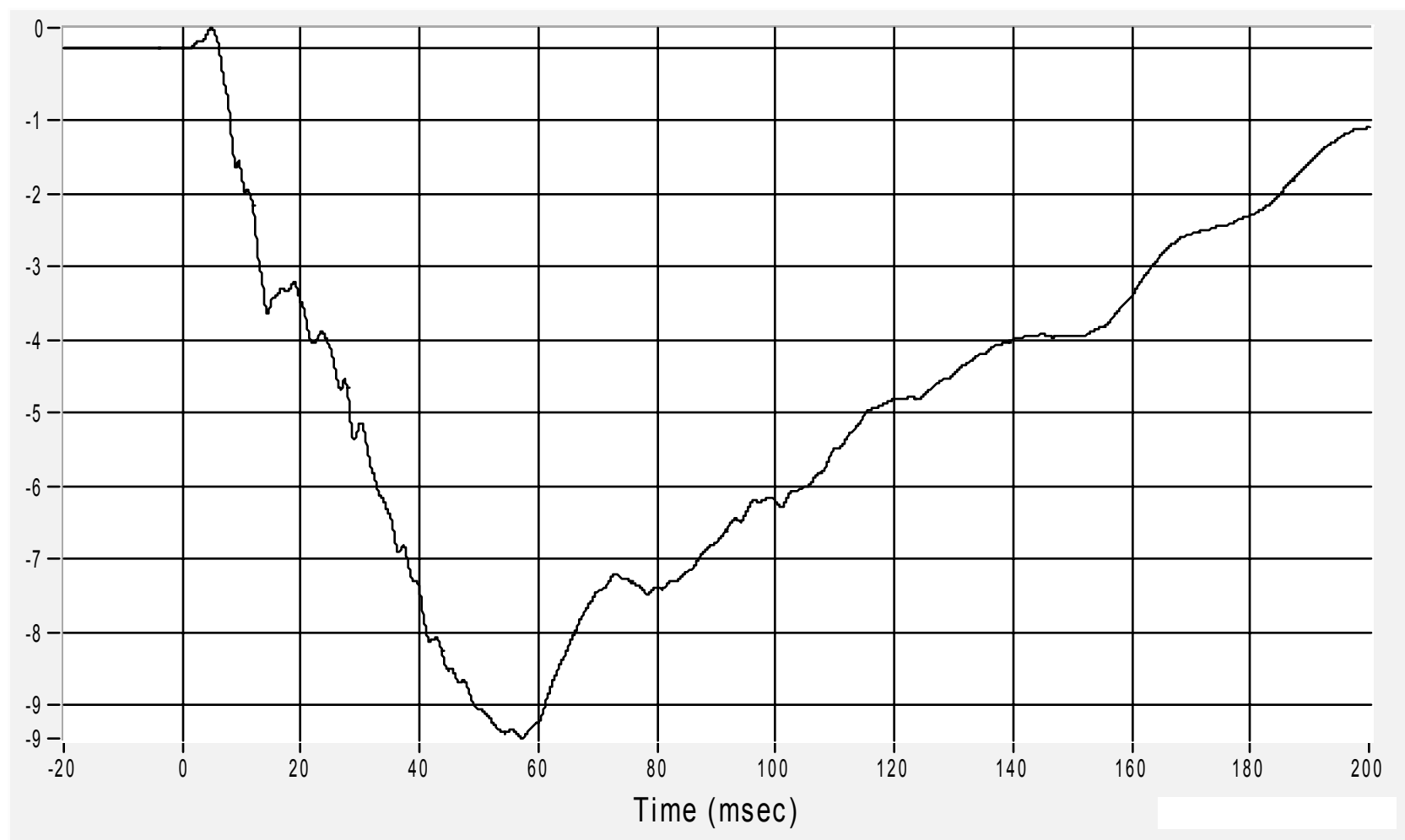
B-60

Right Side Sill at Front Seat (Z) Velocity

Velocity (km/h) CFC180

Max 0.3 km/h at 4.9 msec

Min -9.4 km/h at 57.2 msec



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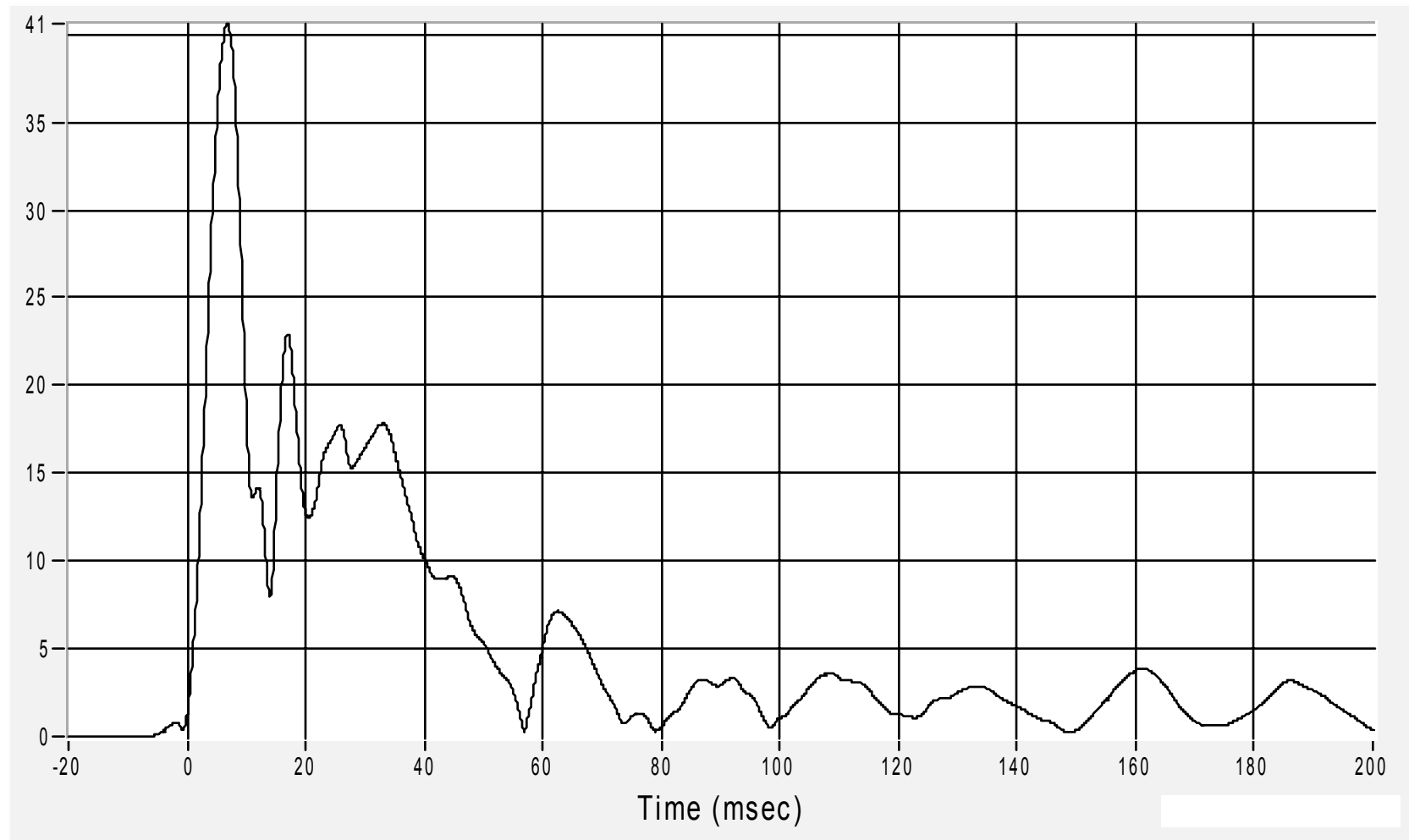
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Front Seat Resultant Acceleration

Acceleration (G's) CFC60

Max 40.6 G's at 6.8 msec

Min 0.2 G's at 148.9 msec



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31 January 2005

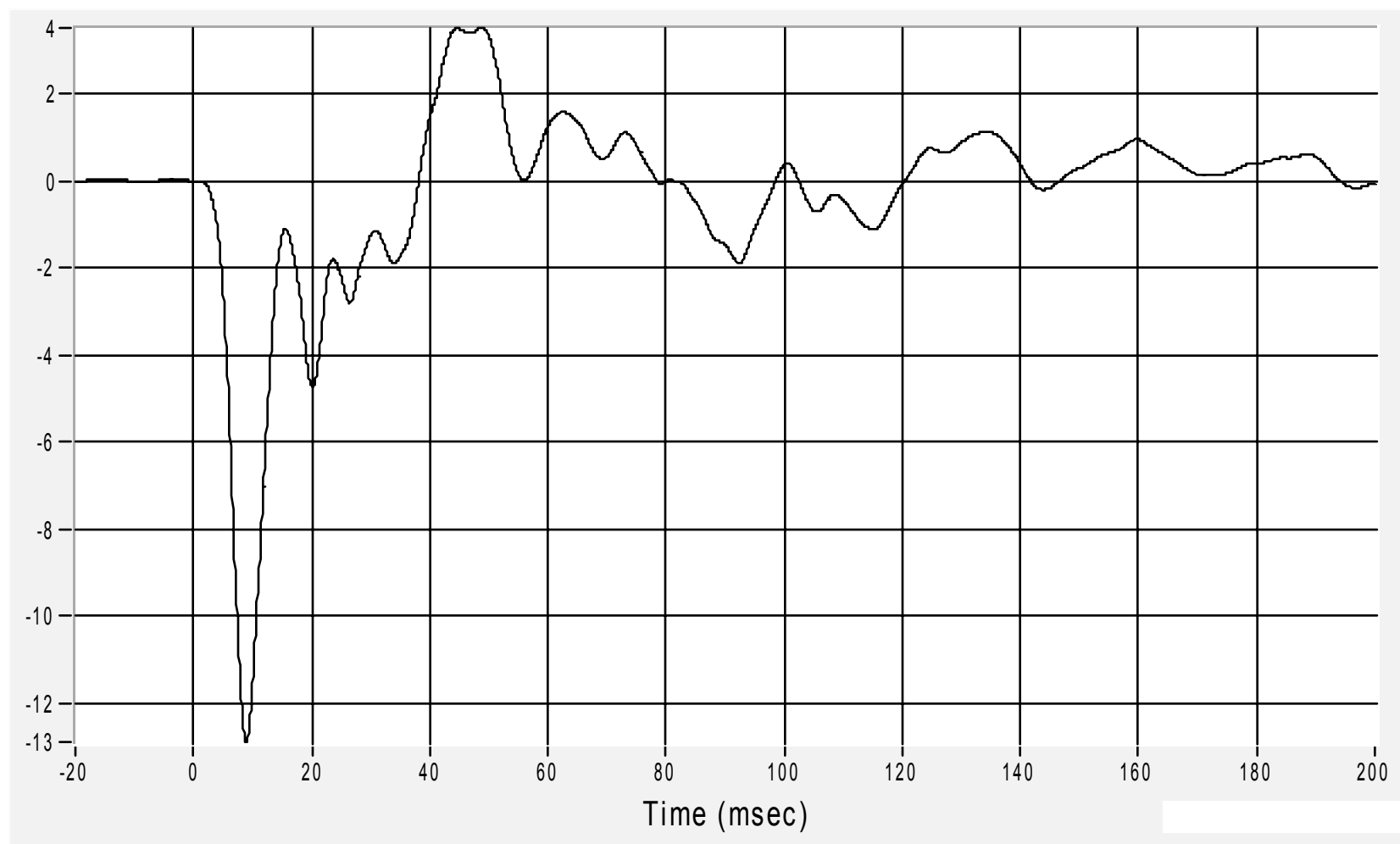
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (X) Acceleration

Acceleration (G's) CFC60

Max 3.5 G at 48.8 msec

Min -12.9 G at 8.9 msec



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31 January 2005

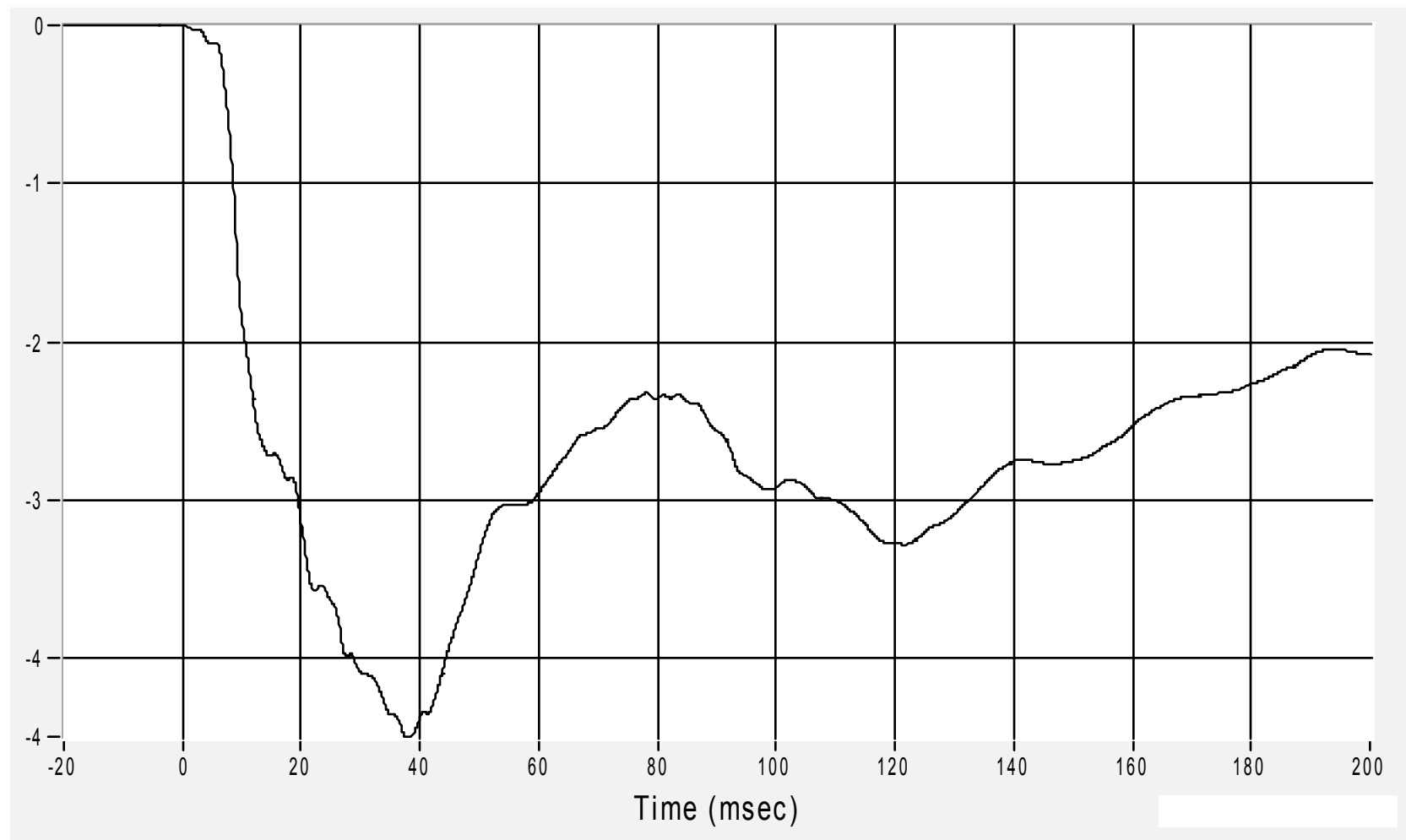
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (X) Velocity

Velocity (km/h) CFC180

Max 0.0 km/h at 0.0 msec

Min -4.5 km/h at 37.8 msec



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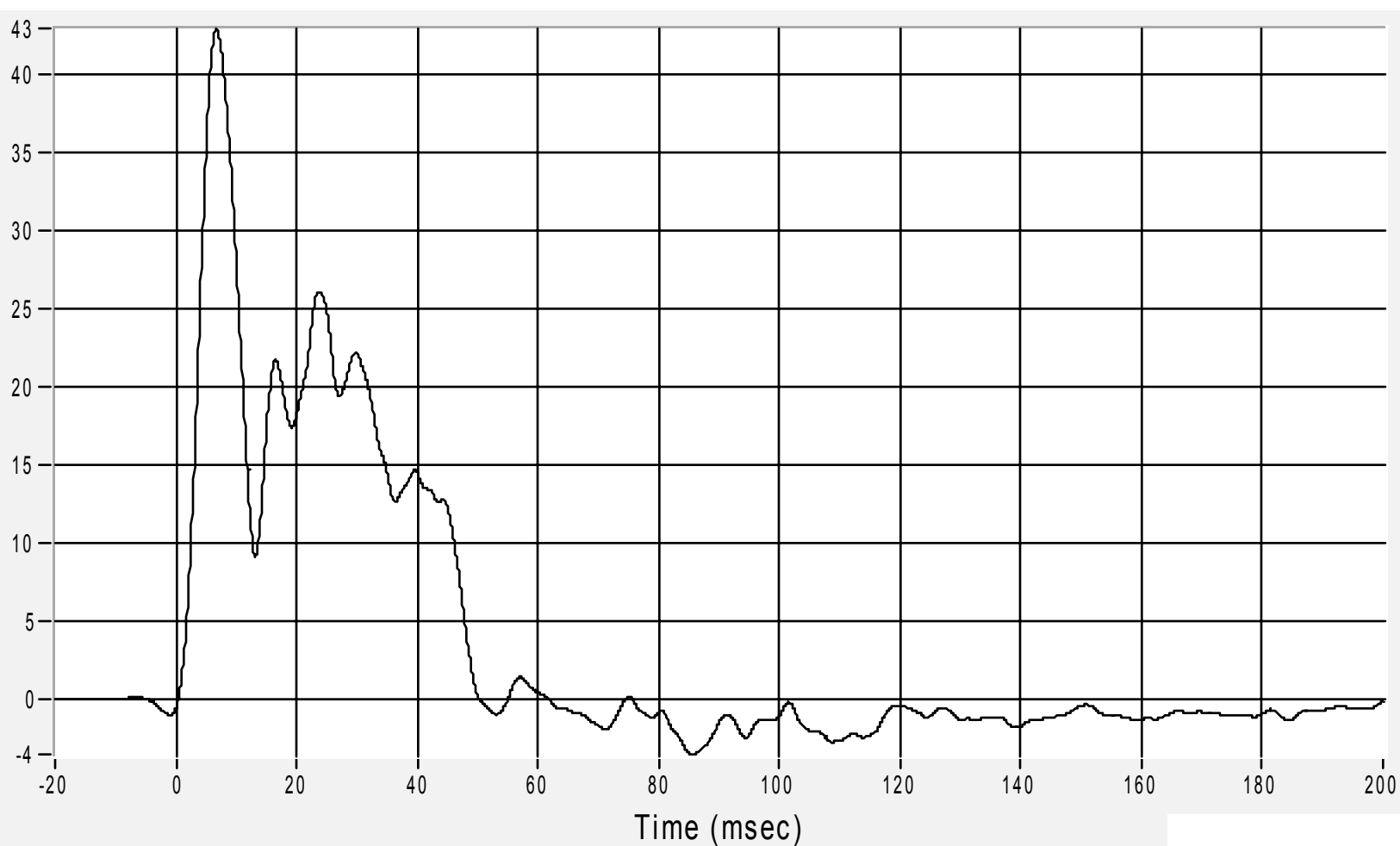
Medical College of Wisconsin
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Right Side Sill at Rear Seat (Y) Acceleration

Acceleration (G's) CFC60

Max 42.9 G at 6.7 msec

Min -3.6 G at 85.7 msec



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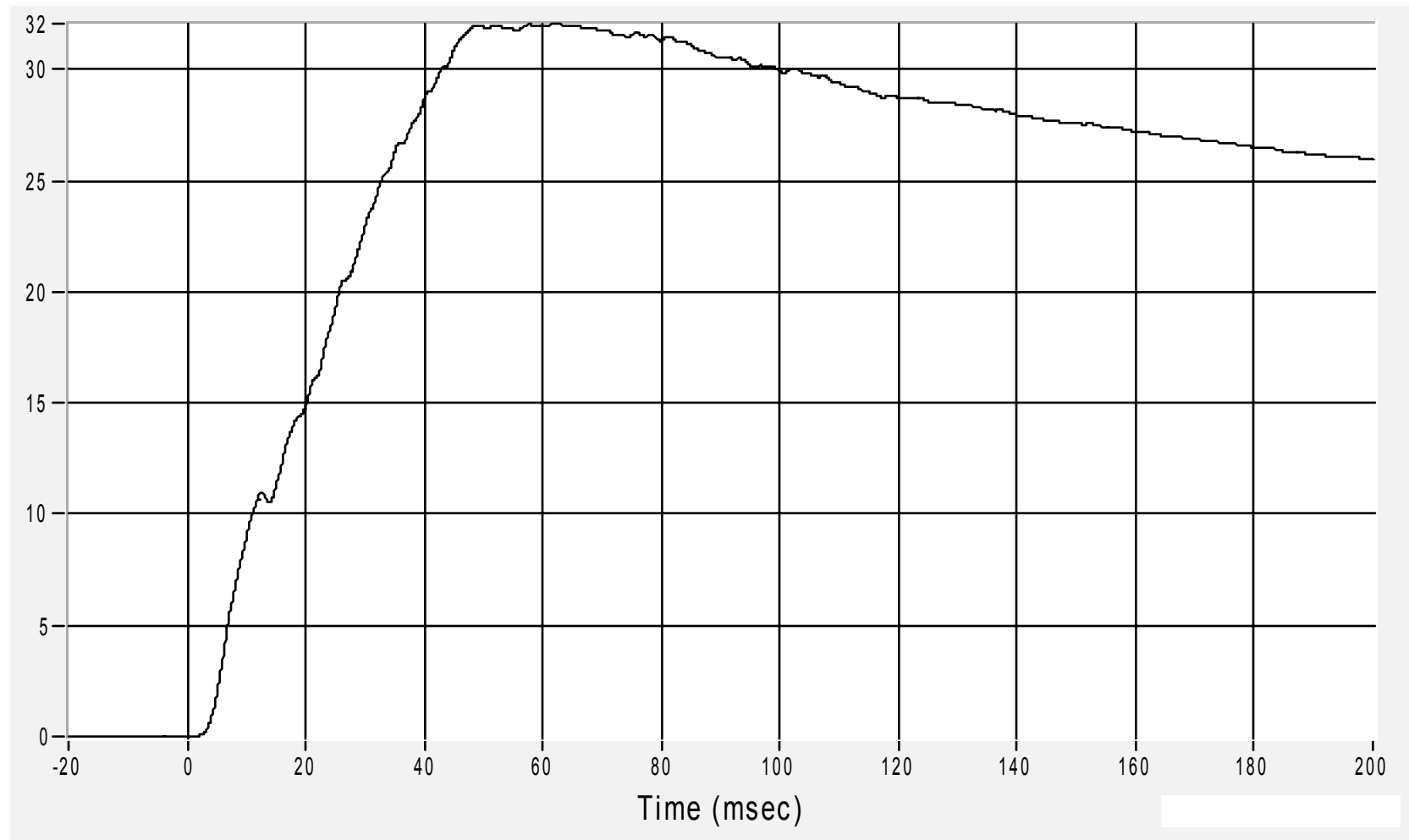
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (Y) Velocity

Velocity (km/h) CFC180

Max 32.1 km/h at 62.5 msec

Min 0.0 km/h at 0.0 msec



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31 January 2005

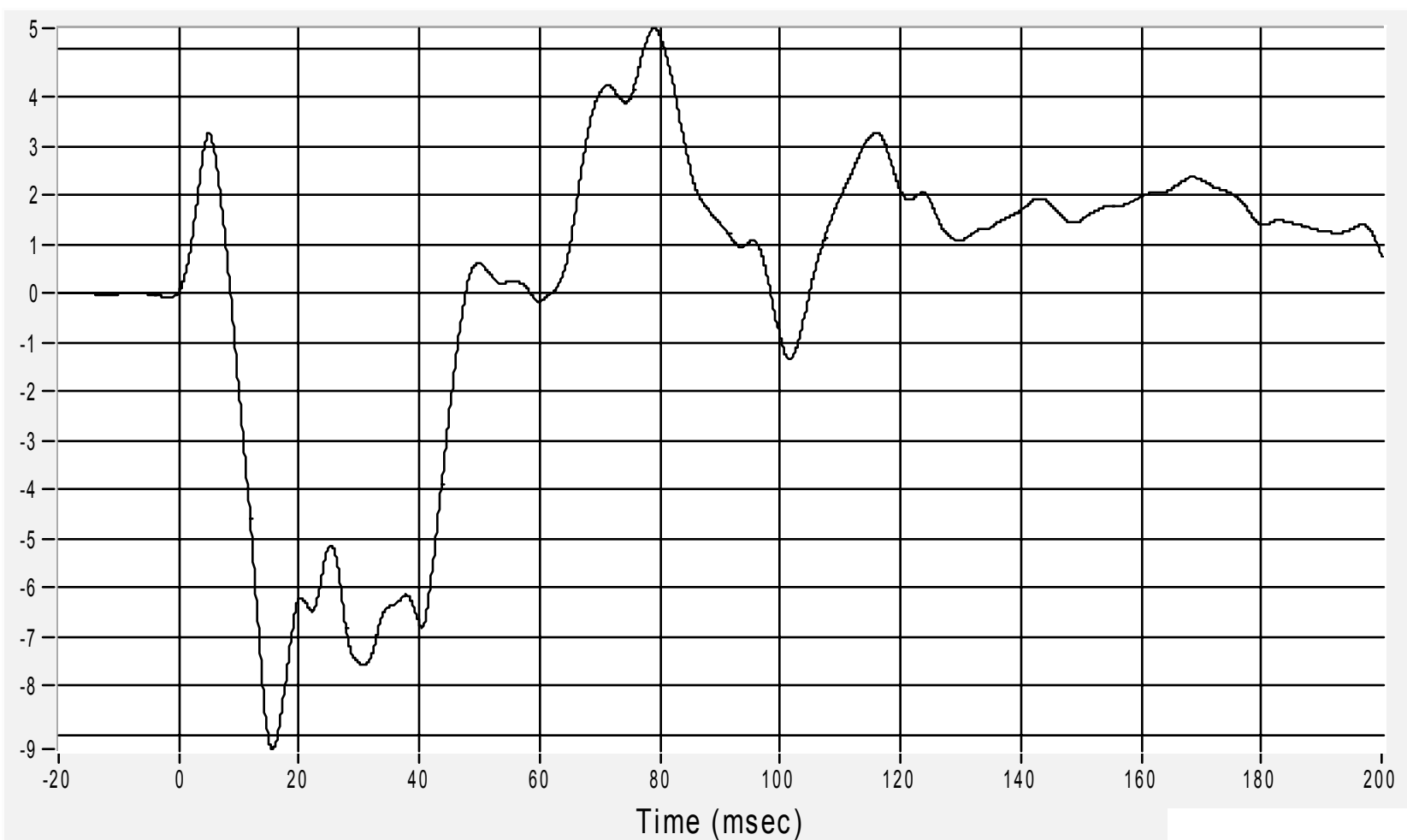
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (Z) Acceleration

Acceleration (G's) CFC60

Max 5.4 G at 79.0 msec

Min -9.3 G at 15.5 msec



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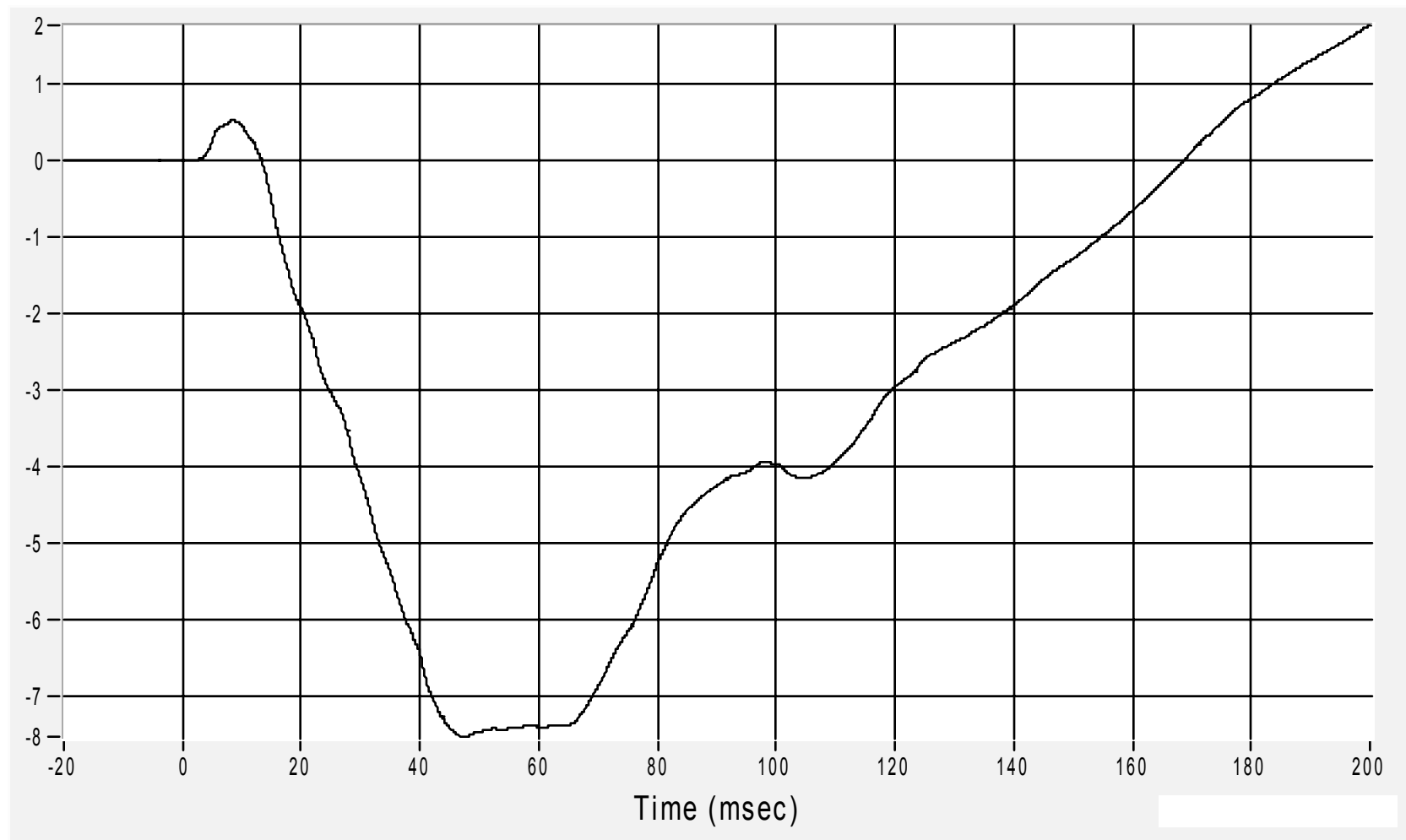
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (Z) Velocity

Velocity (km/h) CFC180

Max 1.8 km/h at 199.9 msec

Min -7.5 km/h at 47.5 msec



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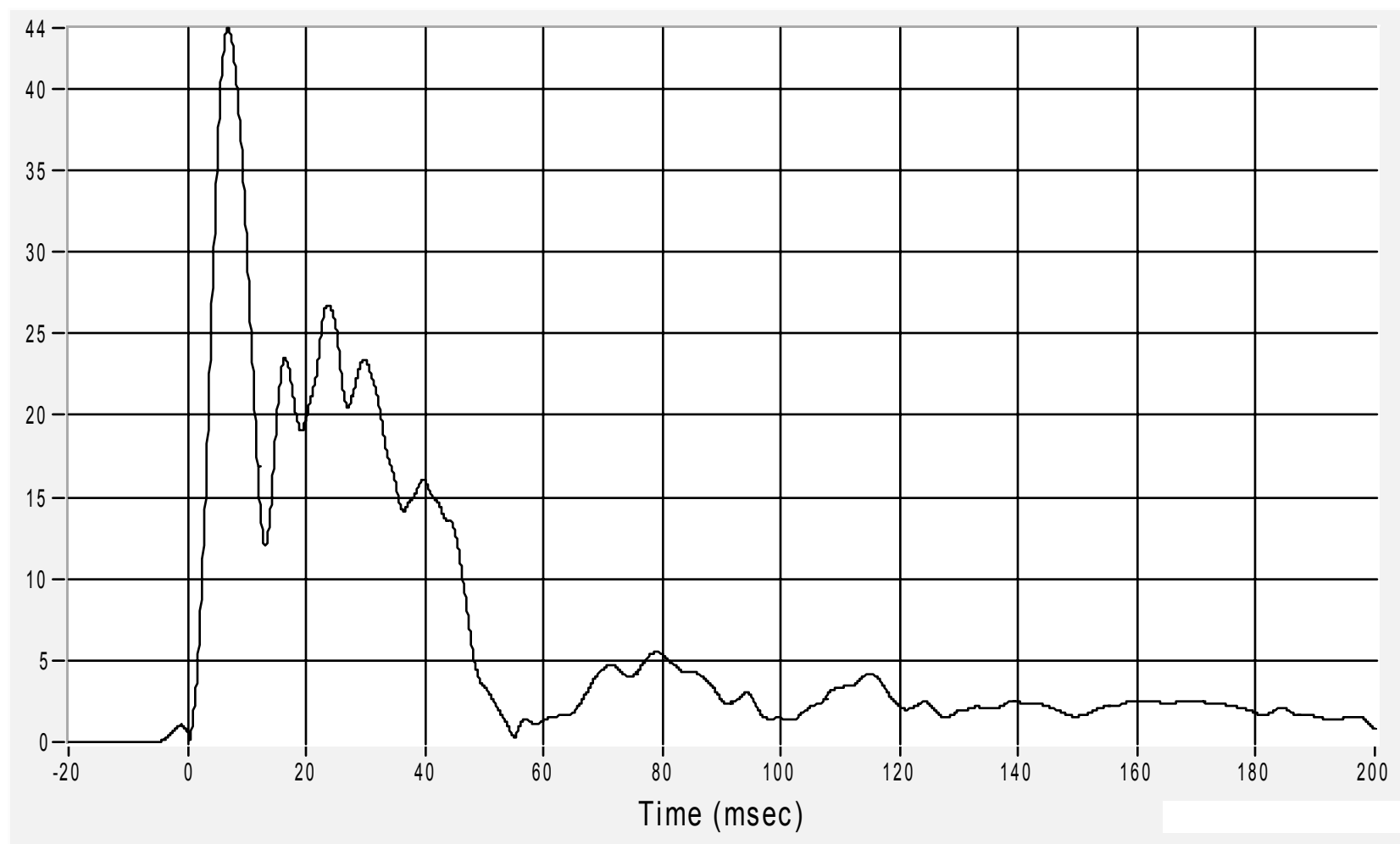
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat Resultant Acceleration

Acceleration (G's) CFC60

Max 43.7 G's at 6.8 msec

Min 0.2 G's at 0.4 msec



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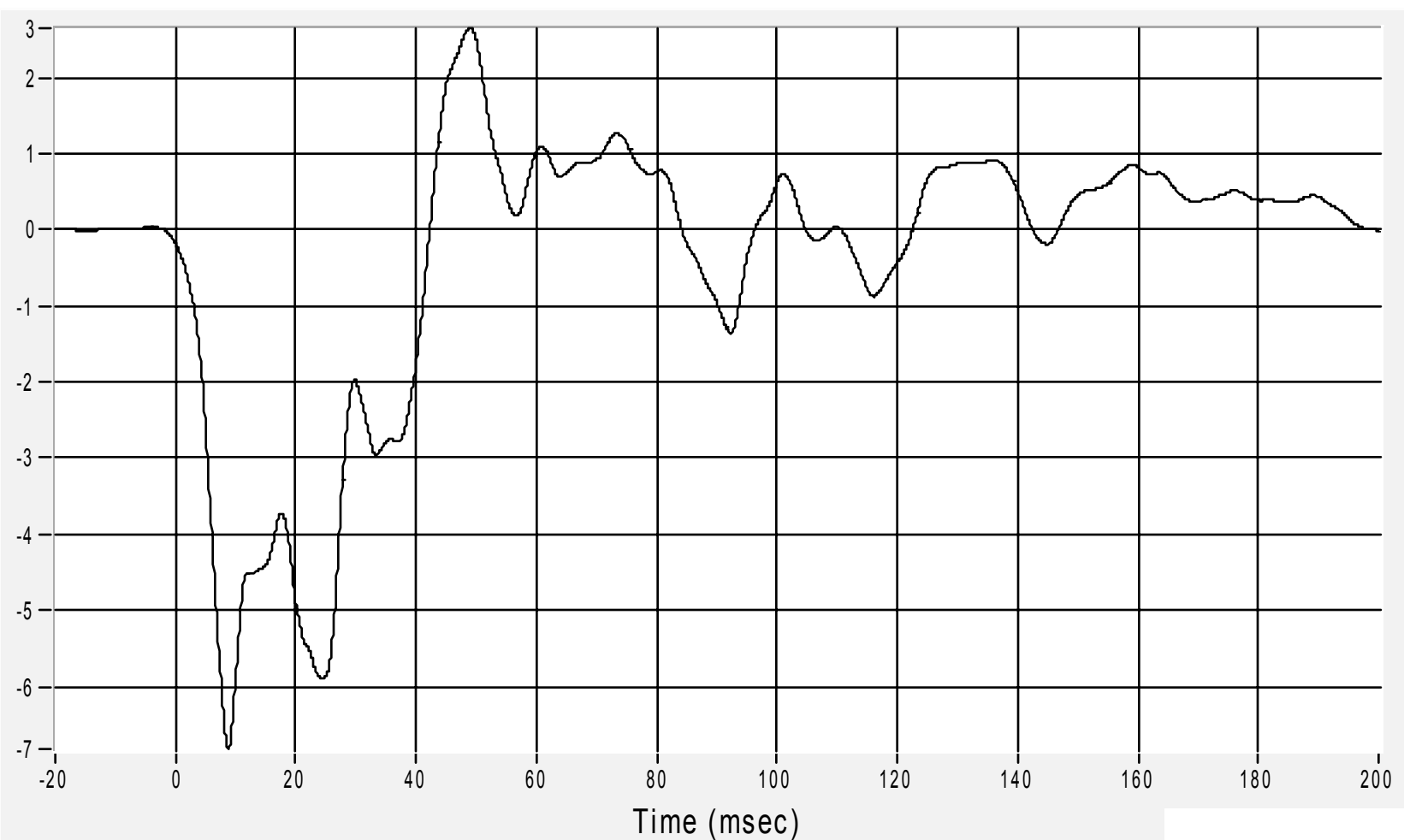
Medical College of Wisconsin
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Rear Floorpan Above Axle (X) Acceleration

Acceleration (G's) CFC60

Max 2.6 G at 49.0 msec

Min -6.8 G at 8.8 msec



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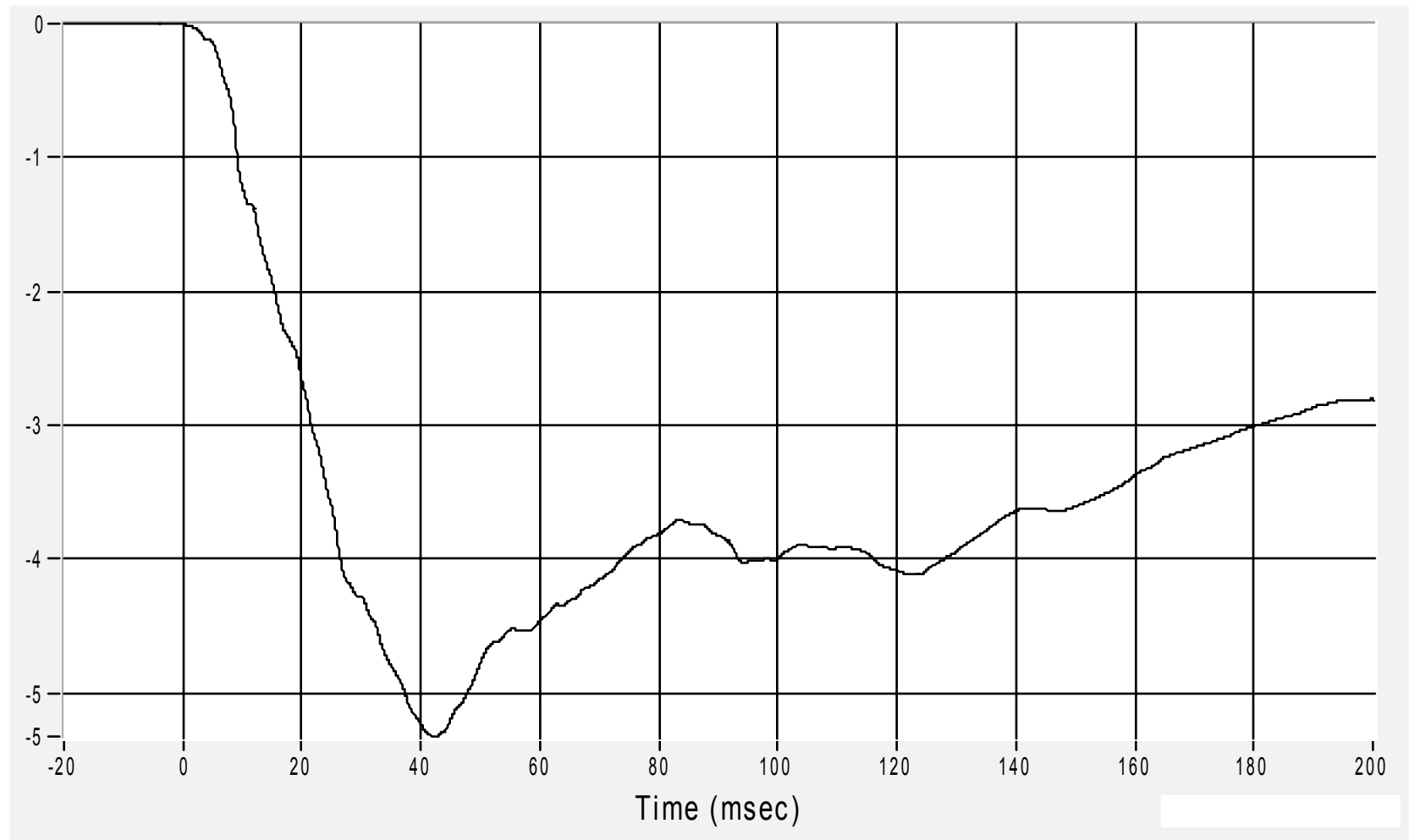
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Rear Floorpan Above Axle (X) Velocity

Velocity (km/h) CFC180

Max 0.0 km/h at 0.0 msec

Min -5.3 km/h at 42.3 msec



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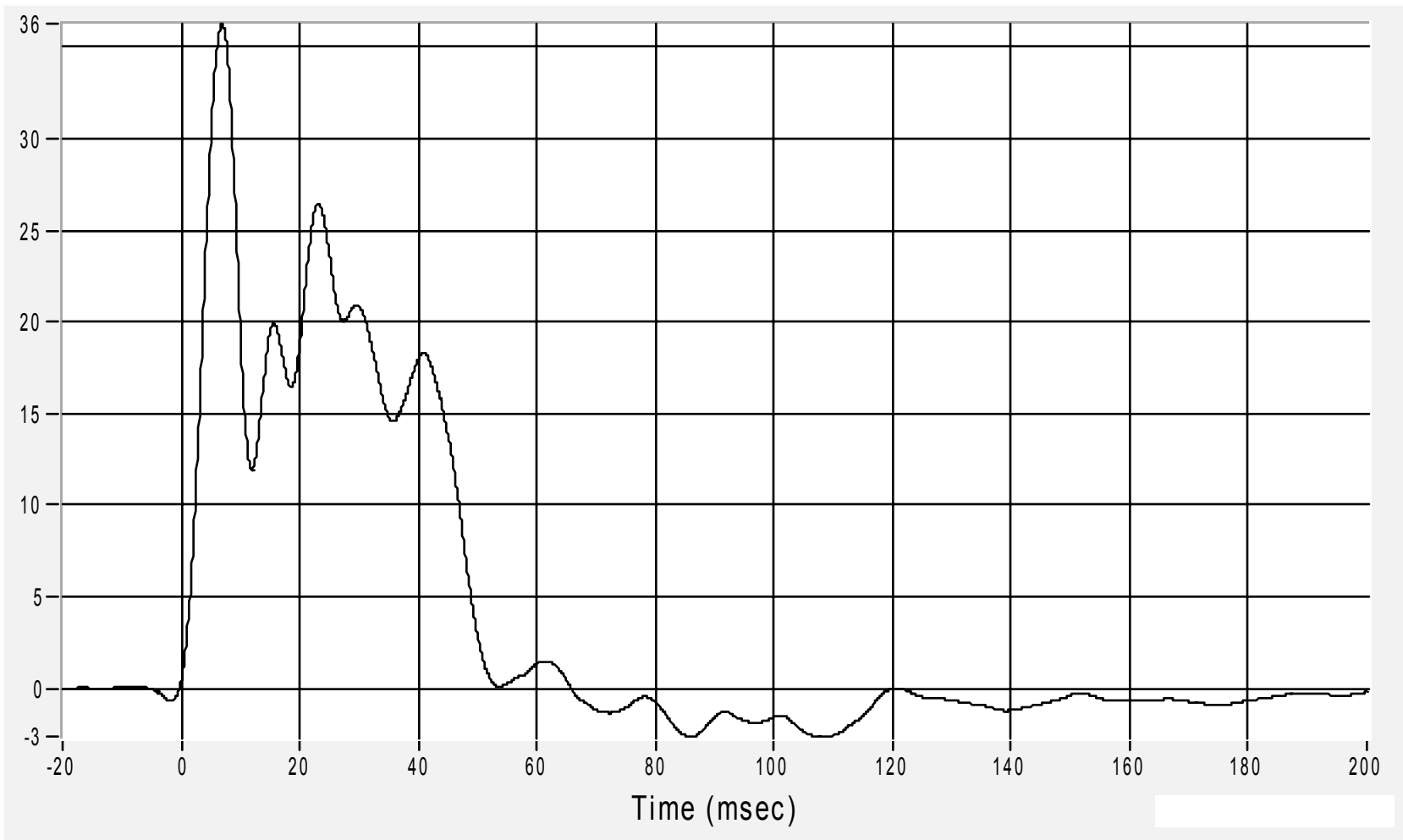
Medical College of Wisconsin
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Rear Floorpan Above Axle (Y) Acceleration

Acceleration (G's) CFC60

Max 36.3 G at 6.9 msec

Min -2.6 G at 85.9 msec



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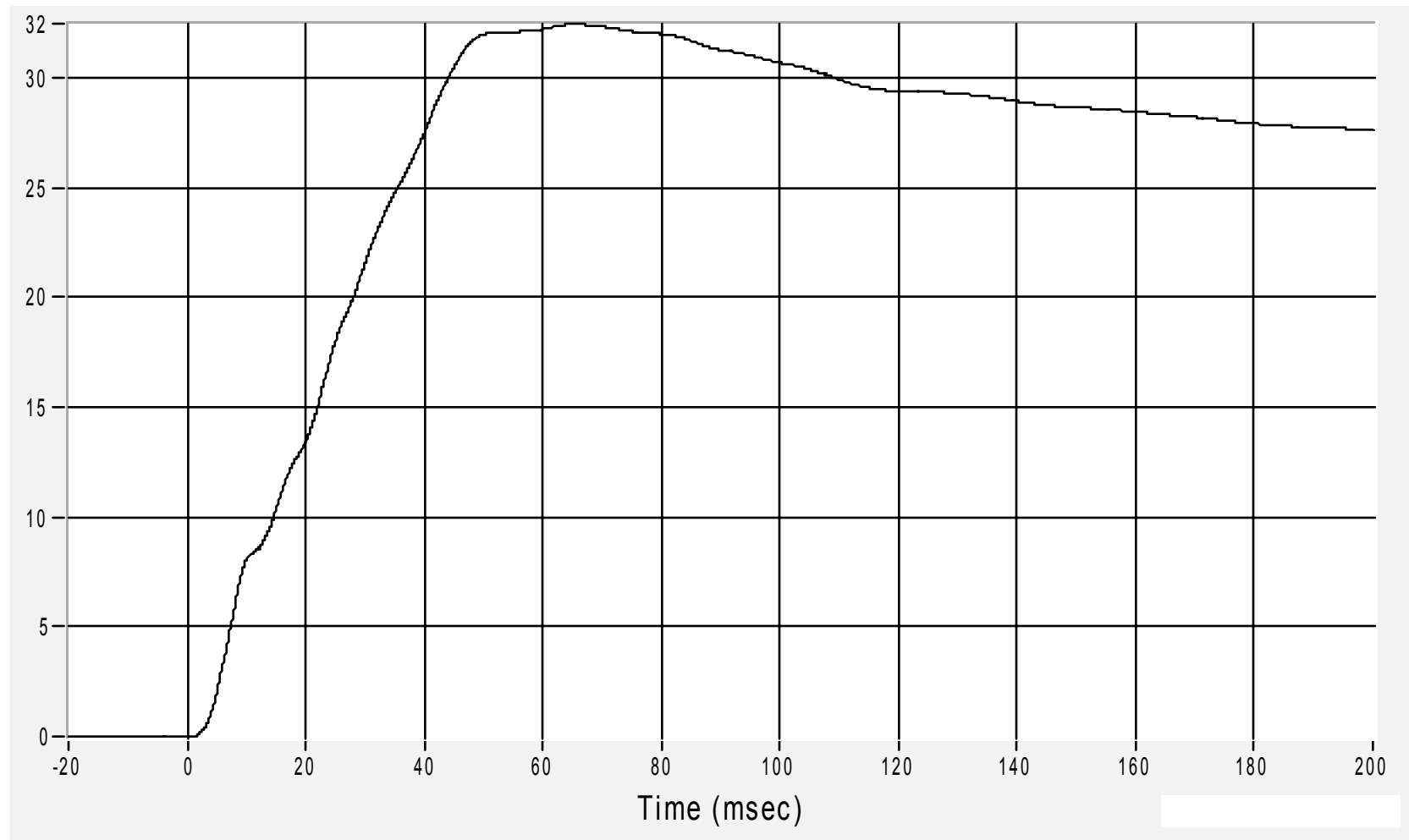
Medical College of Wisconsin
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Rear Floorpan Above Axle (Y) Velocity

Velocity (km/h) CFC180

Max 32.5 km/h at 65.8 msec

Min 0.0 km/h at 0.0 msec



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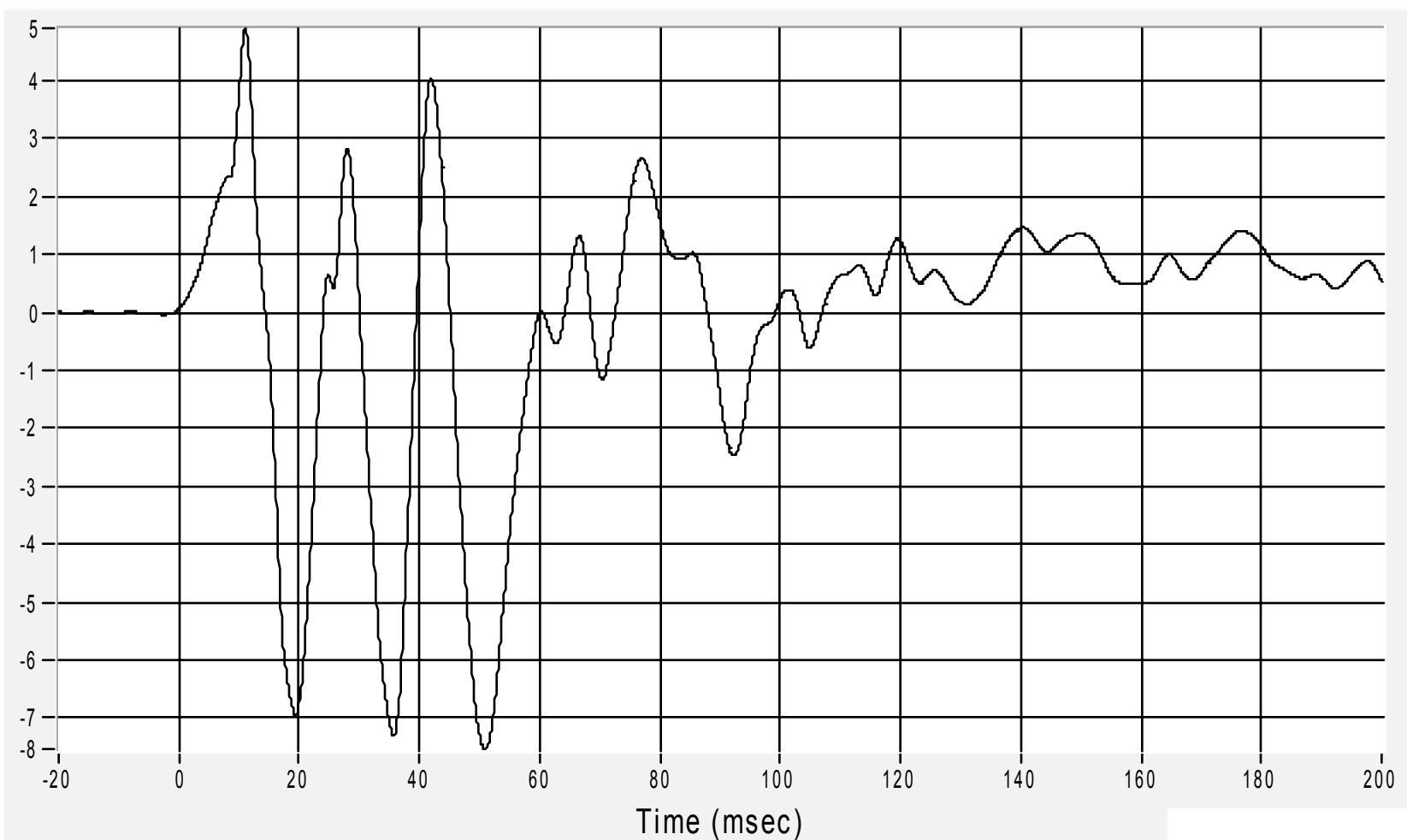
Medical College of Wisconsin
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Rear Floorpan Above Axle (Z) Acceleration

Acceleration (G's) CFC60

Max 4.9 G at 11.0 msec

Min -7.5 G at 50.9 msec



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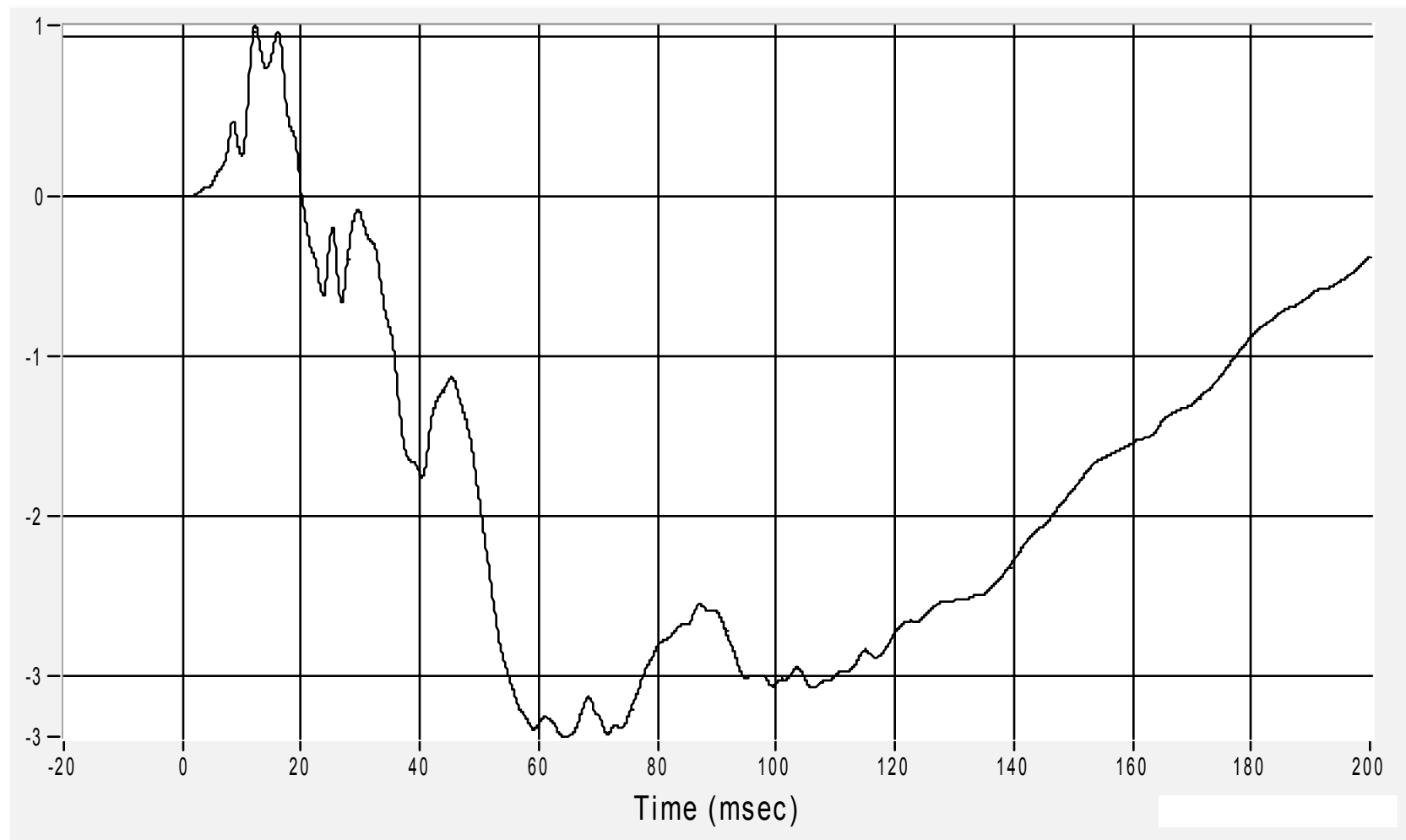
Medical College of Wisconsin
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Rear Floorpan Above Axle (Z) Velocity

Velocity (km/h) CFC180

Max 1.1 km/h at 12.2 msec

Min -3.4 km/h at 64.6 msec



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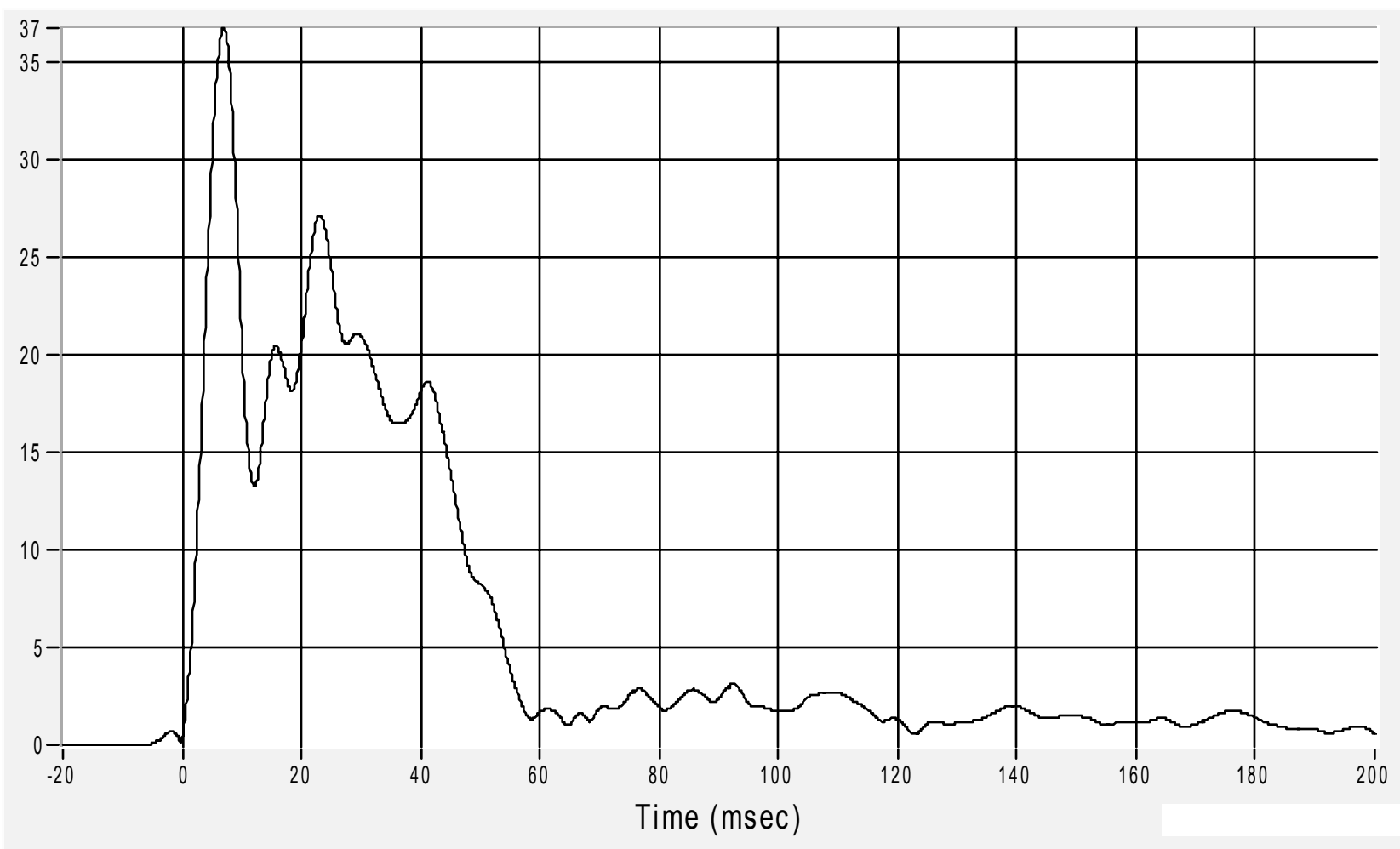
Medical College of Wisconsin
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Rear Floorpan Above Axle Resultant Acceleration

Acceleration (G's) CFC60

Max 36.7 G's at 7.0 msec

Min 0.5 G's at 0.0 msec



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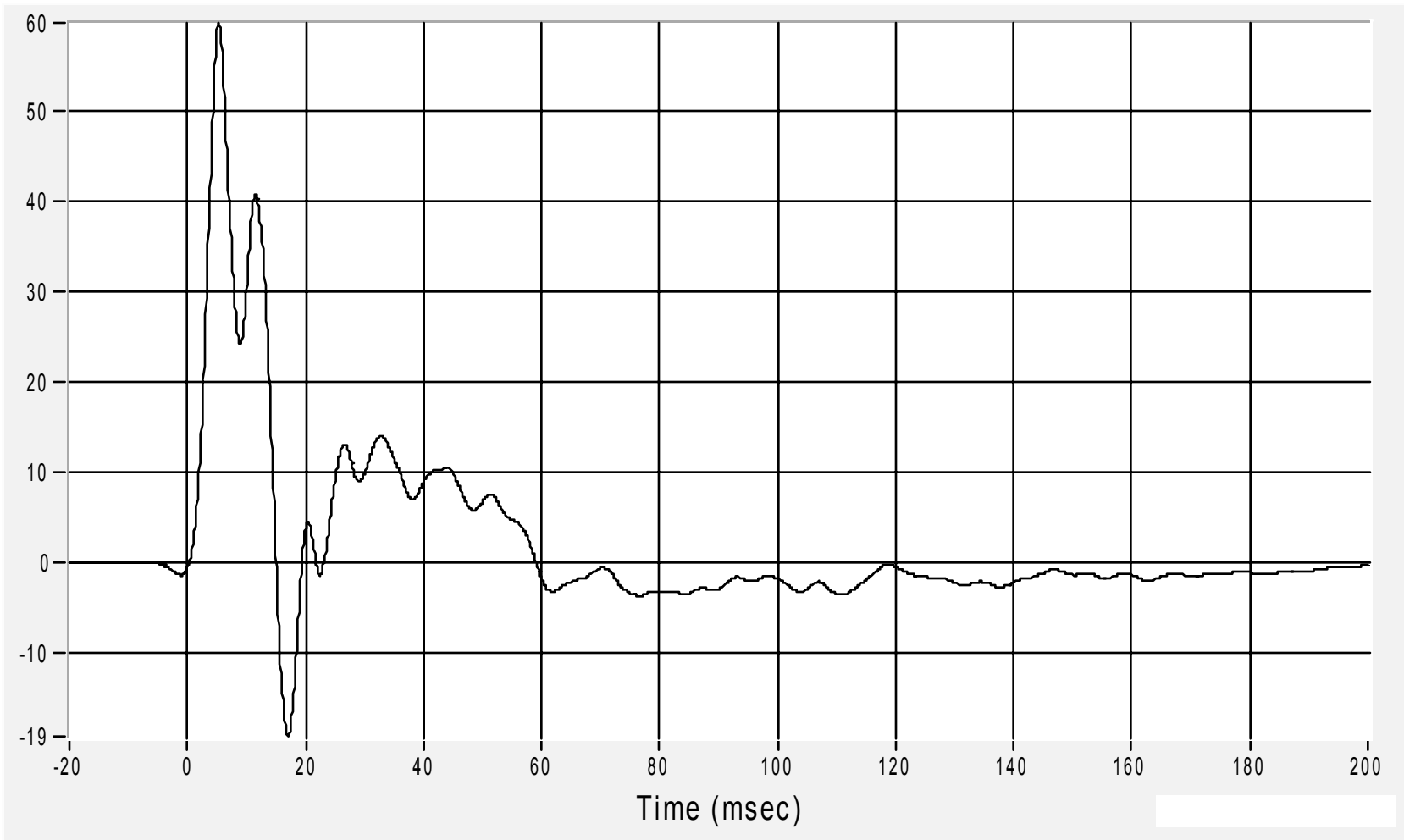
Medical College of Wisconsin
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Left Side Sill at Rear Seat (Y) Acceleration

Acceleration (G's) CFC60

Max 59.8 G at 5.3 msec

Min -19.2 G at 17.0 msec



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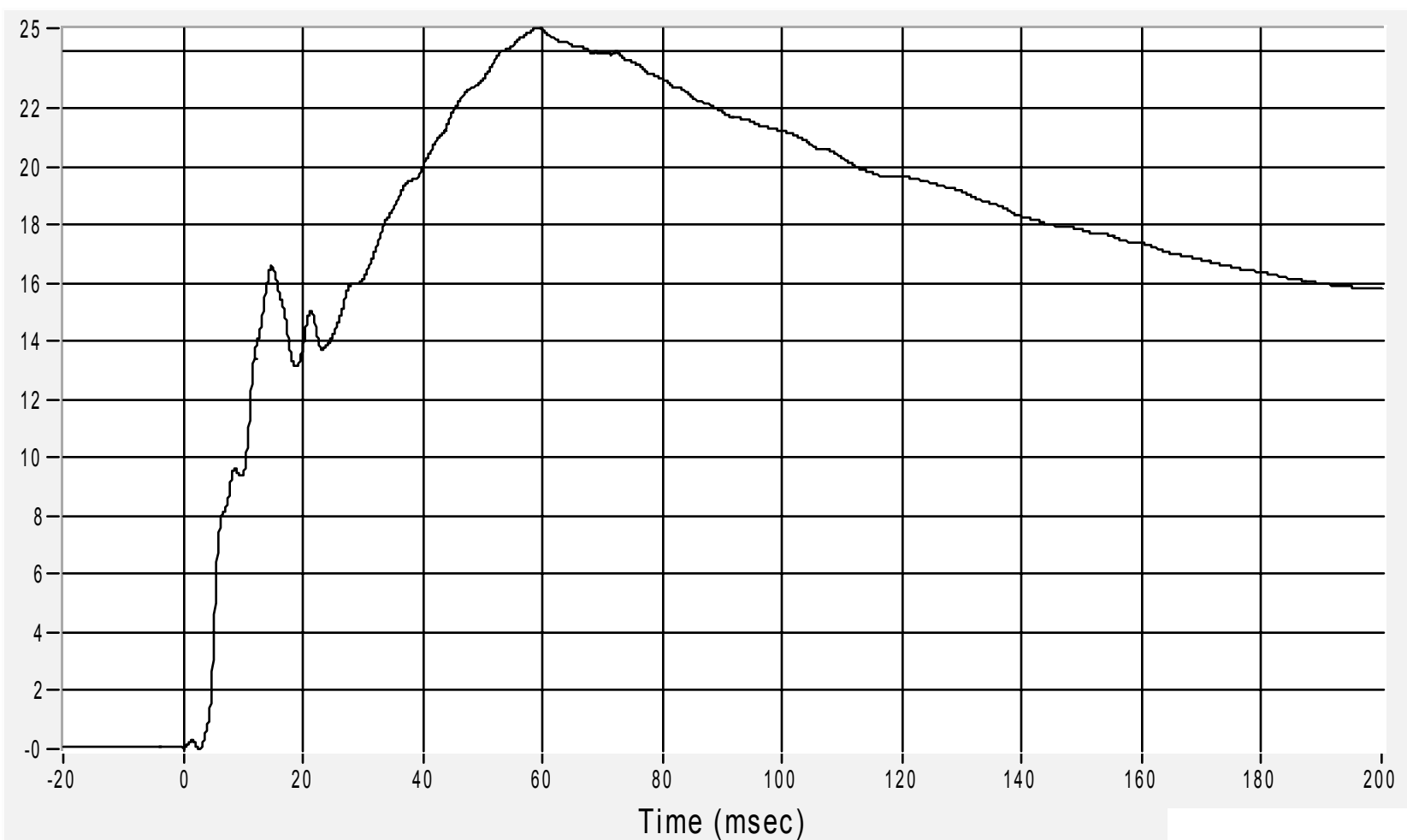
Medical College of Wisconsin
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Left Side Sill at Rear Seat (Y) Velocity

Velocity (km/h) CFC180

Max 24.8 km/h at 59.0 msec

Min 0.0 km/h at 2.7 msec



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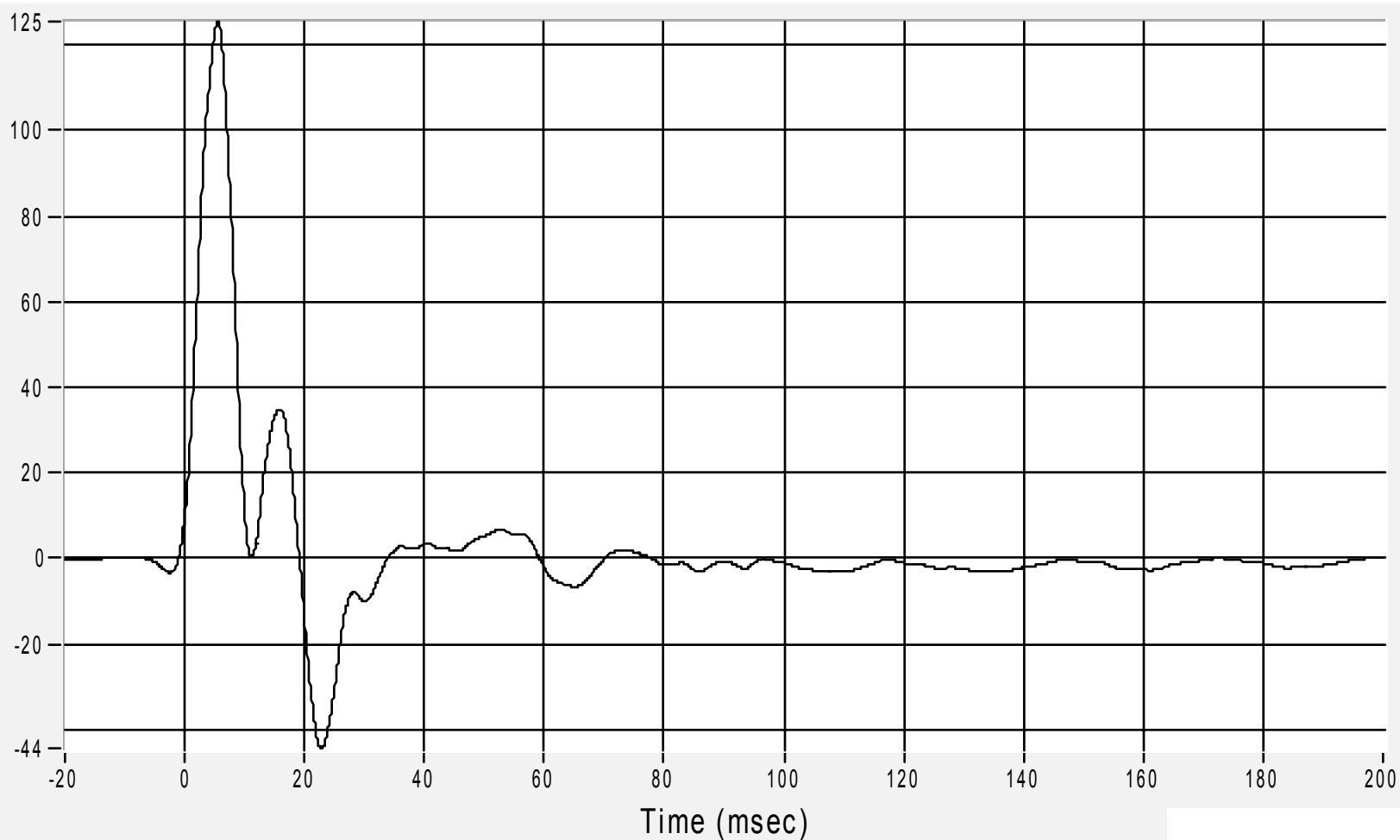
*Medical College of Wisconsin
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Left Side Sill at Front Seat (Y) Acceleration

Acceleration (G's) CFC60

Max 125.5 G at 5.5 msec

Min -44.4 G at 22.8 msec



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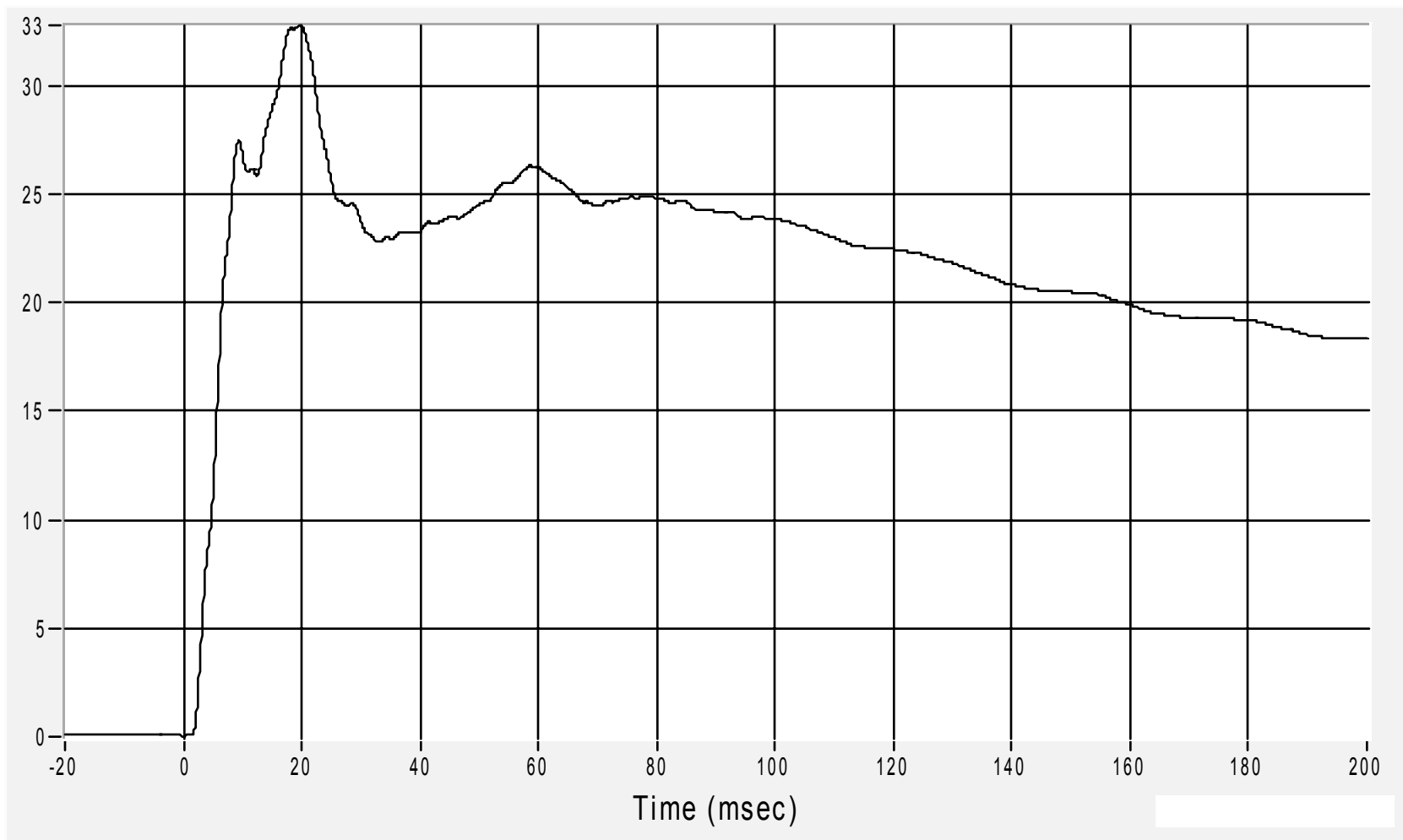
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Side Sill at Front Seat (Y) Velocity

Velocity (km/h) CFC180

Max 32.8 km/h at 19.8 msec

Min 0.0 km/h at 0.0 msec



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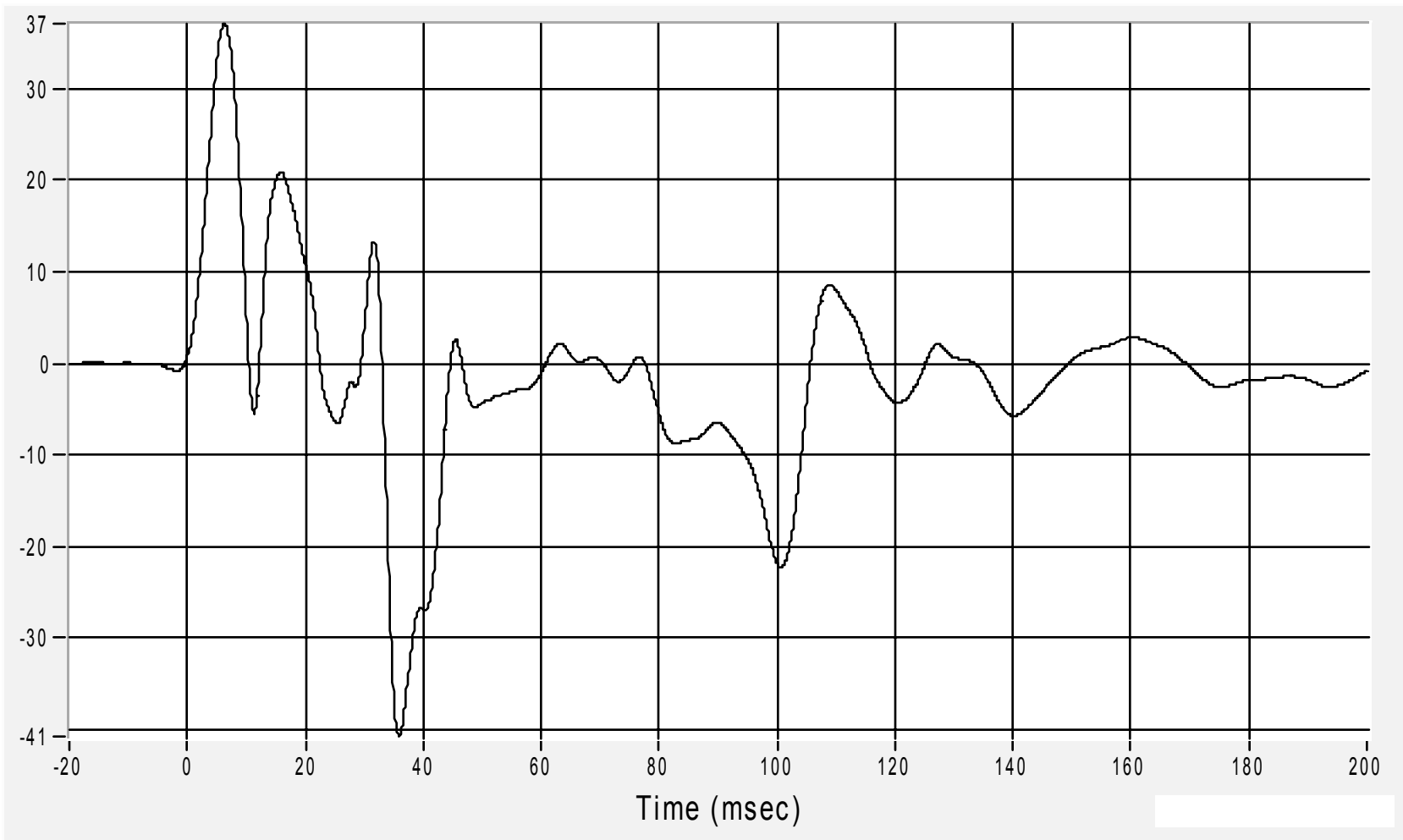
Medical College of Wisconsin
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Right Rear Occupant Compartment (Y) Acceleration

Acceleration (G's) CFC60

Max 37.1 G at 6.3 msec

Min -40.8 G at 35.9 msec



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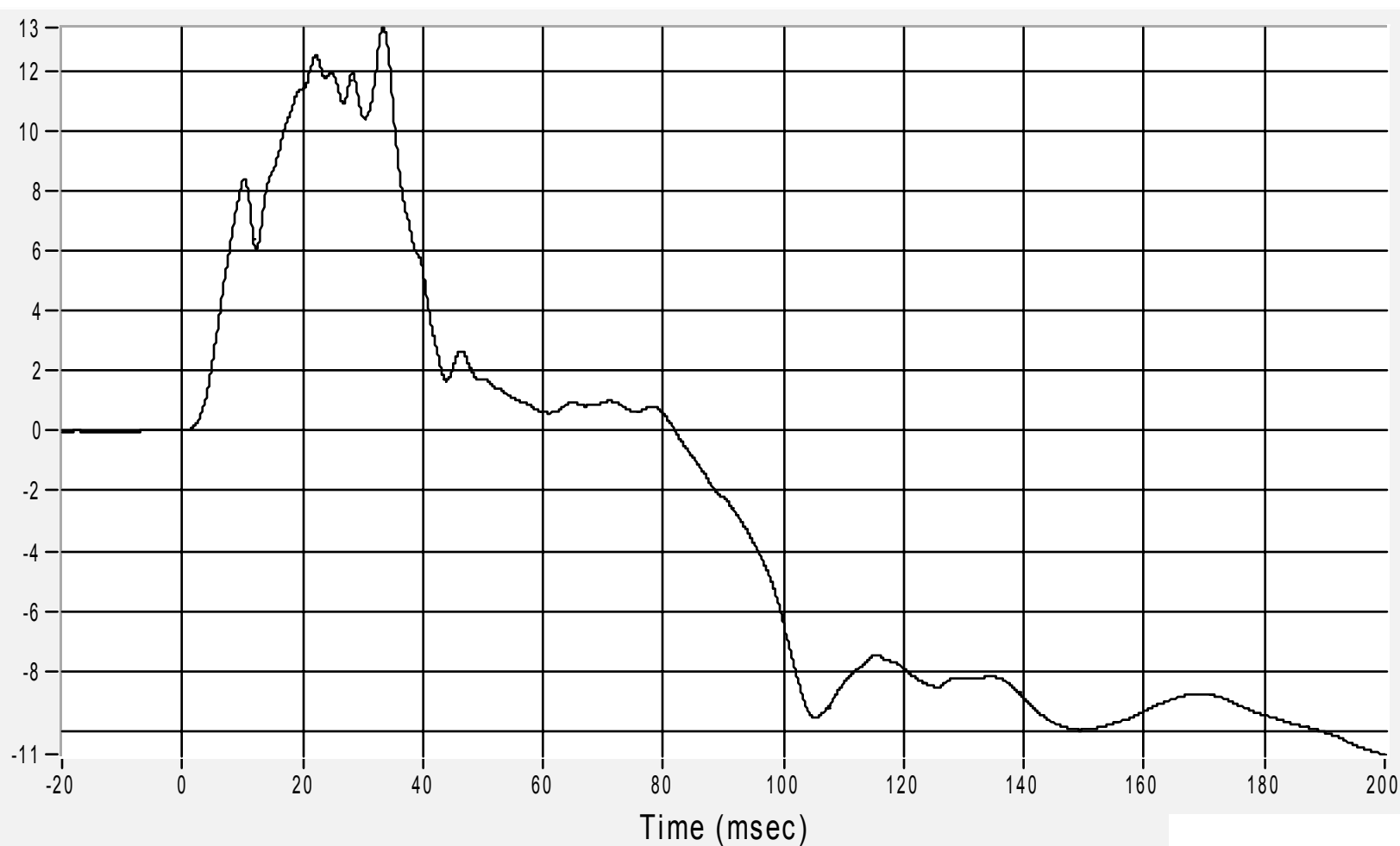
Medical College of Wisconsin
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Right Rear Occupant Compartment (Y) Velocity

Velocity (km/h) CFC180

Max 13.5 km/h at 33.4 msec

Min -10.8 km/h at 199.9 msec



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31 January 2005

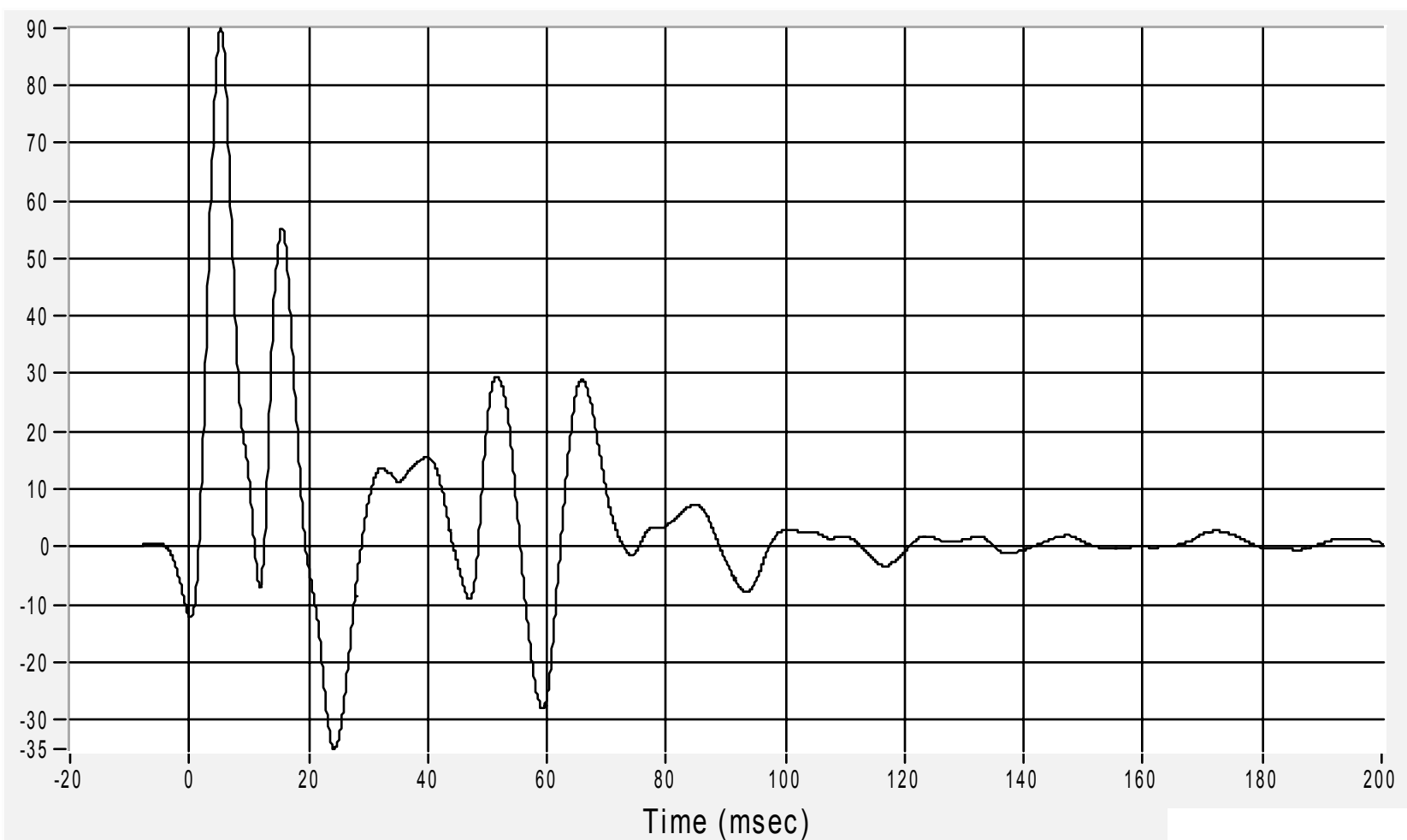
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Mid-Rear of Left Rear Door (Y) Acceleration

Acceleration (G's) CFC60

Max 89.9 G at 5.3 msec

Min -35.1 G at 24.3 msec



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31 January 2005

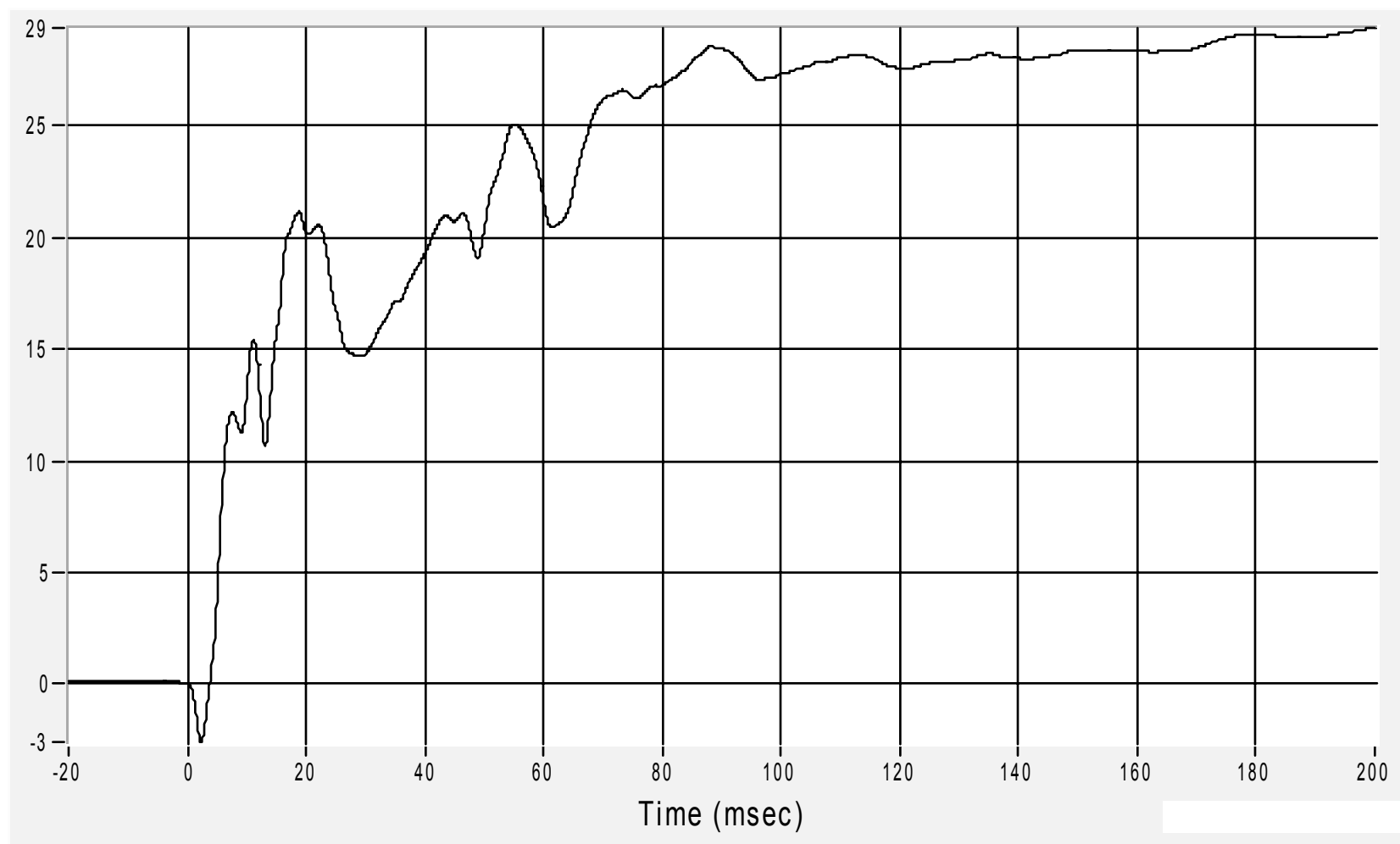
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Mid-Rear of Left Rear Door (Y) Velocity

Velocity (km/h) CFC180

Max 29.4 km/h at 199.9 msec

Min -2.6 km/h at 2.3 msec



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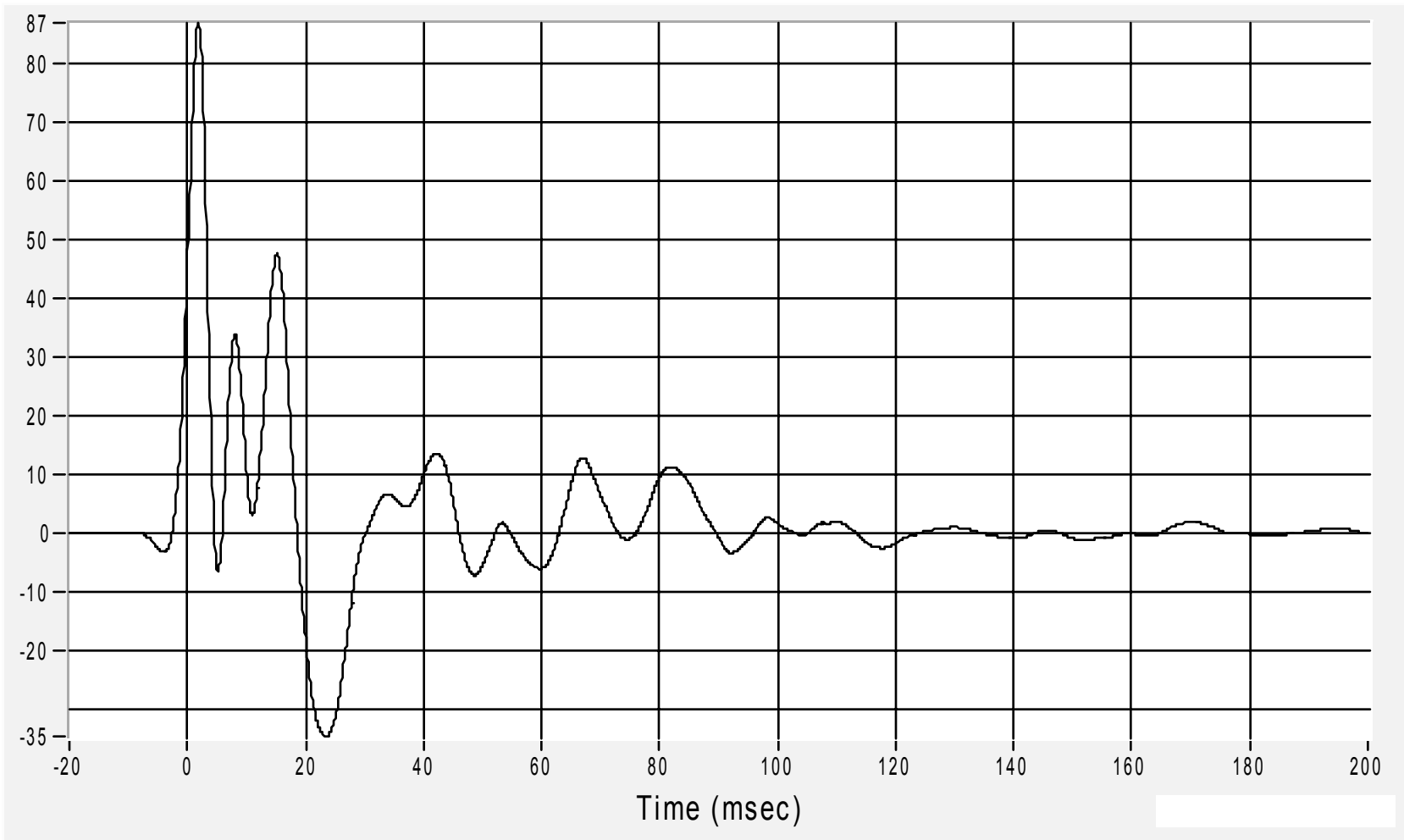
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Left Rear Door Upper Centerline (Y) Acceleration

Acceleration (G's) CFC60

Max 87.0 G at 1.8 msec

Min -34.7 G at 23.5 msec



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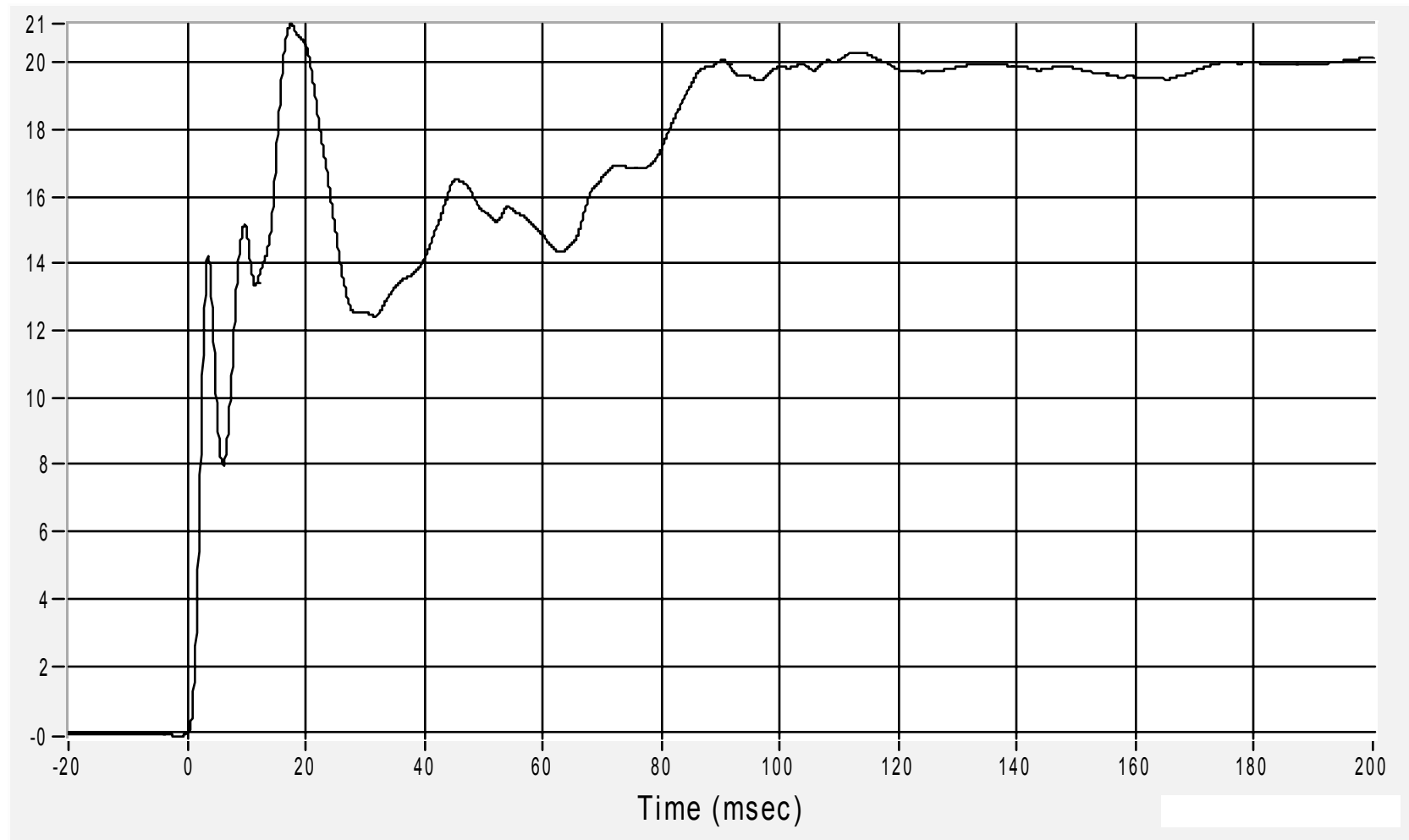
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Left Rear Door Upper Centerline (Y) Velocity

Velocity (km/h) CFC180

Max 21.2 km/h at 17.5 msec

Min 0.0 km/h at 0.1 msec



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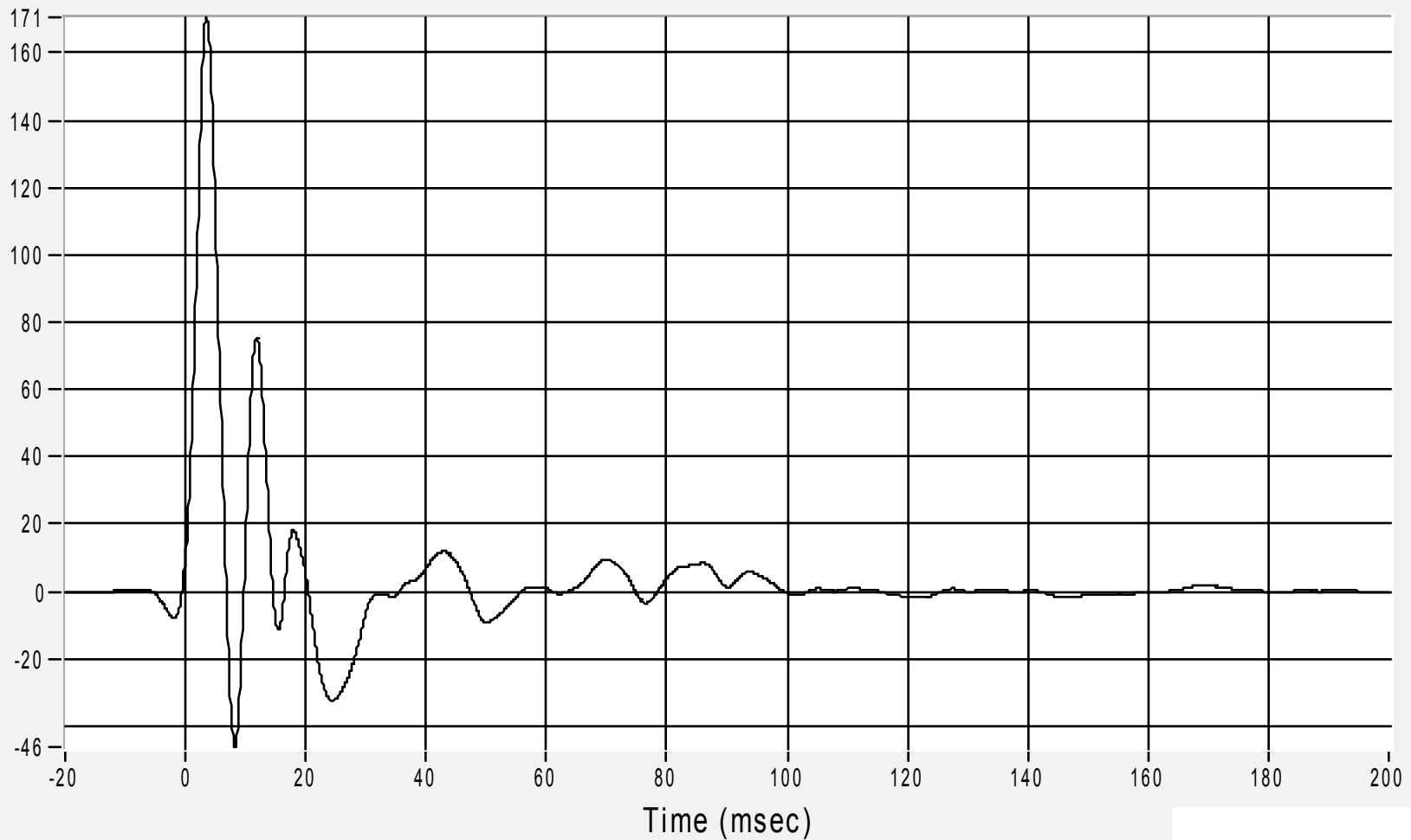
Medical College of Wisconsin
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Left Lower B-Pillar (Y) Acceleration

Acceleration (G's) CFC60

Max 170.5 G at 3.4 msec

Min -46.3 G at 8.2 msec



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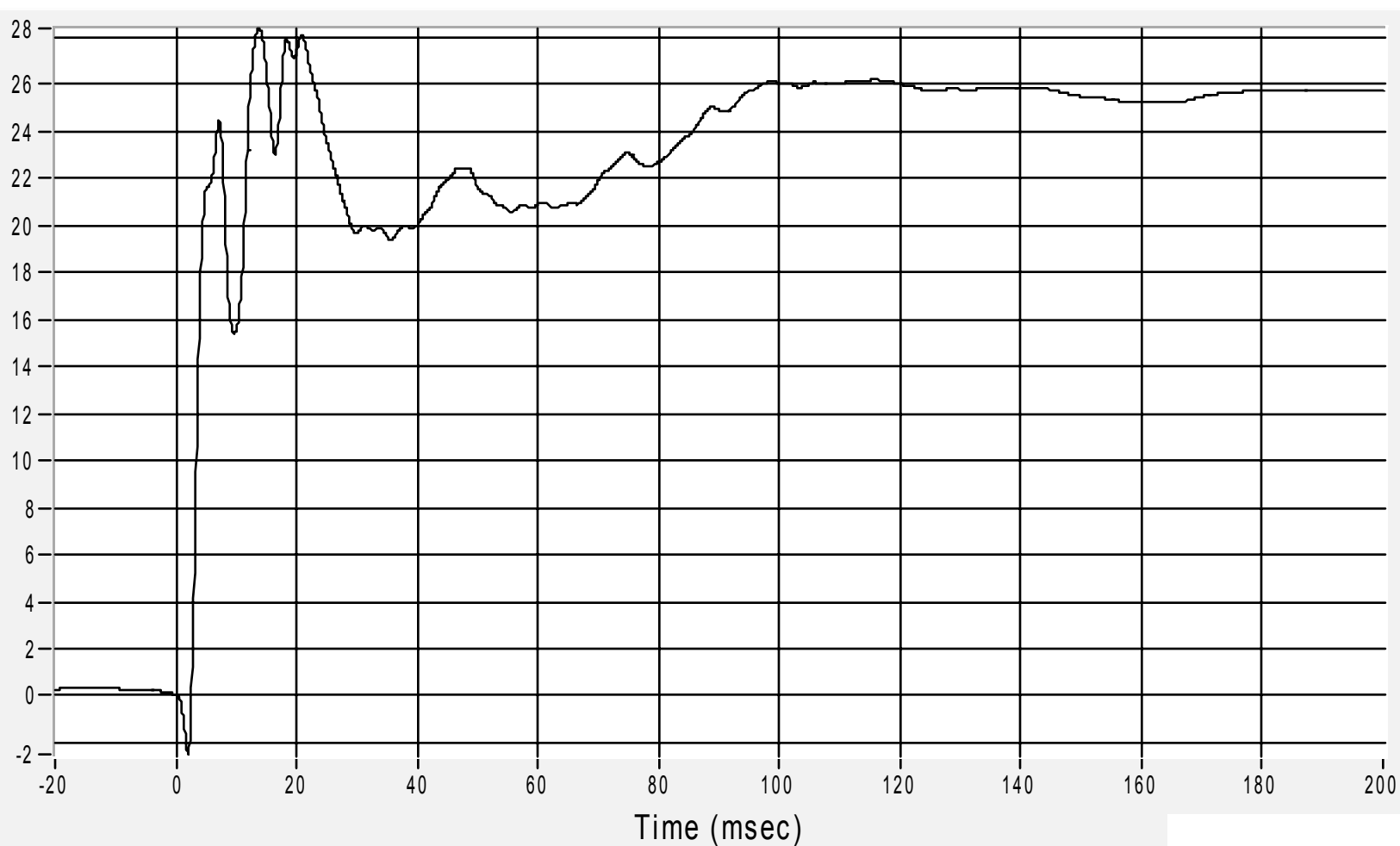
Medical College of Wisconsin
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Left Lower B-Pillar (Y) Velocity

Velocity (km/h) CFC180

Max 28.4 km/h at 13.8 msec

Min -2.5 km/h at 2.0 msec



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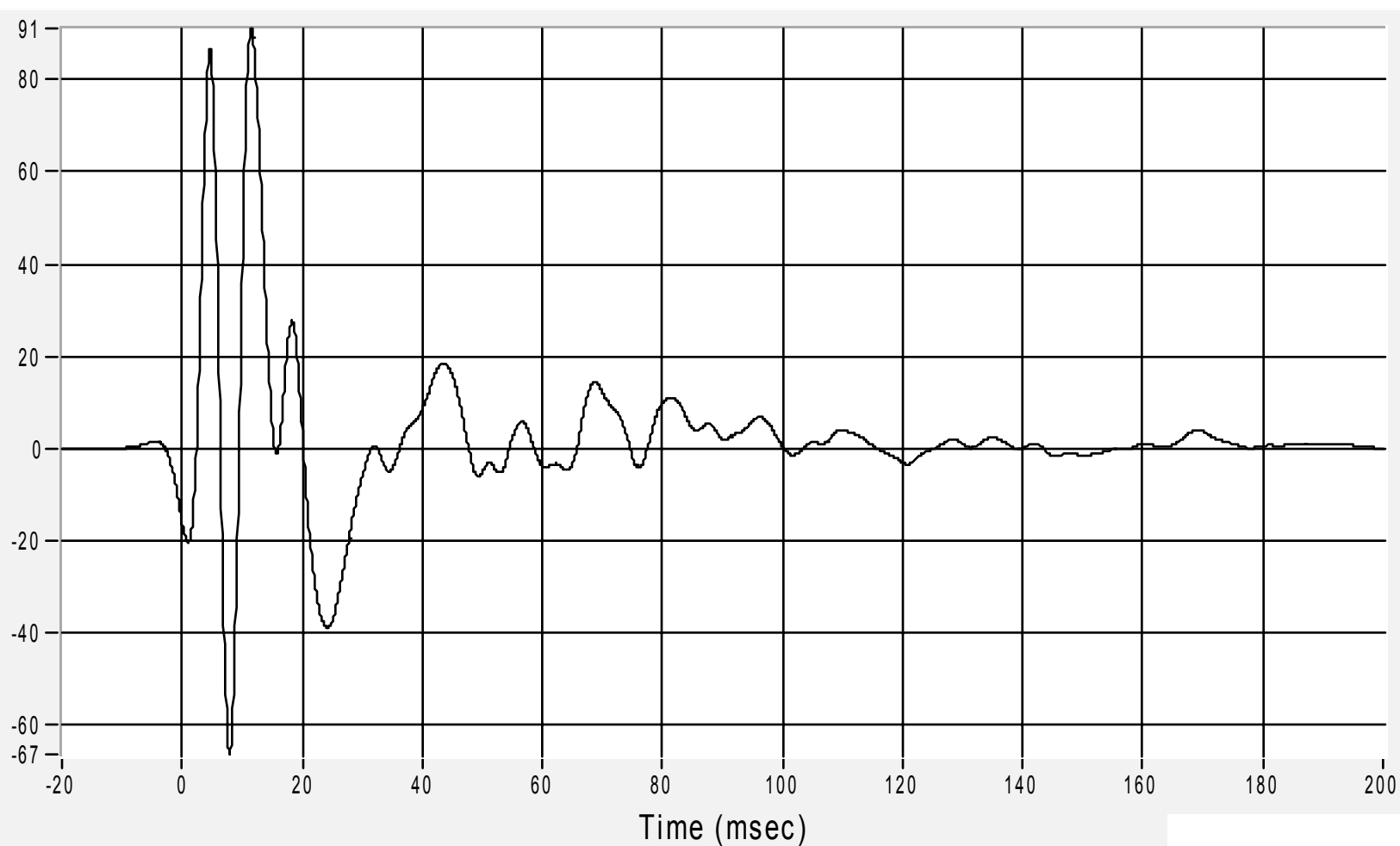
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Left Middle B-Pillar (Y) Acceleration

Acceleration (G's) CFC60

Max 91.2 G at 11.5 msec

Min -66.6 G at 7.9 msec



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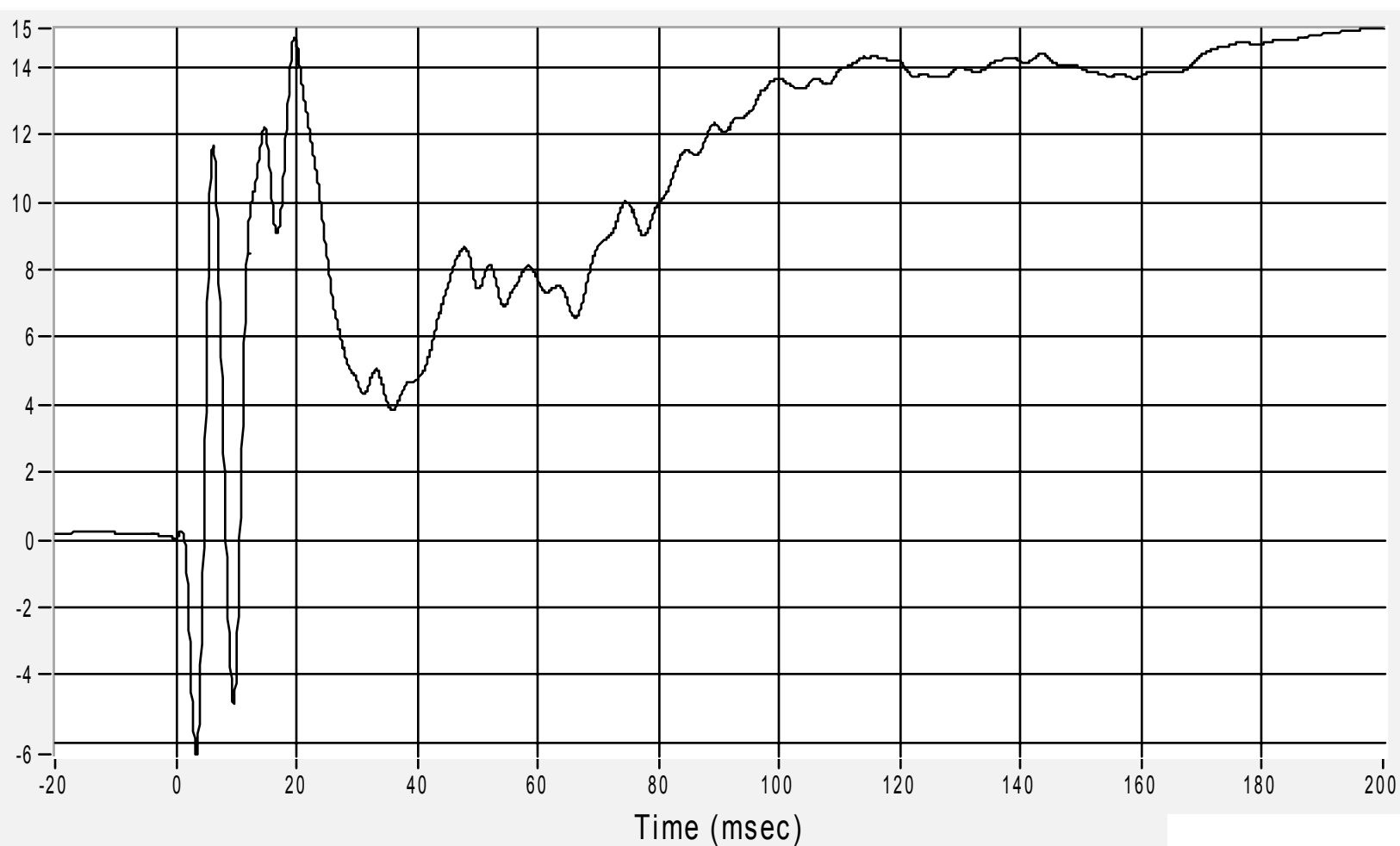
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Left Middle B-Pillar (Y) Velocity

Velocity (km/h) CFC180

Max 15.1 km/h at 198.2 msec

Min -6.4 km/h at 3.4 msec



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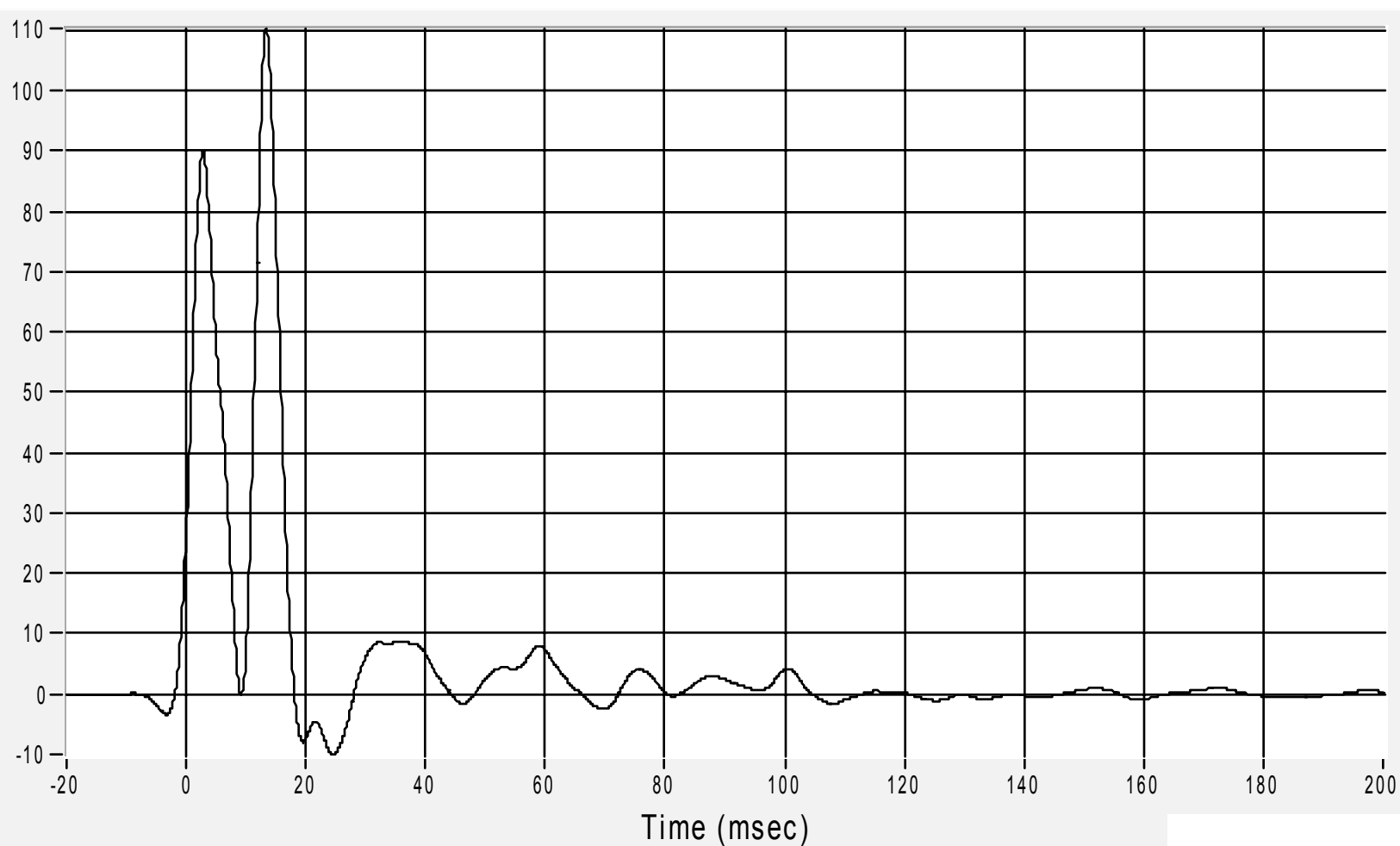
B-90

Left Lower A-Pillar (Y) Acceleration

Acceleration (G's) CFC60

Max 110.4 G at 13.4 msec

Min -10.0 G at 24.5 msec



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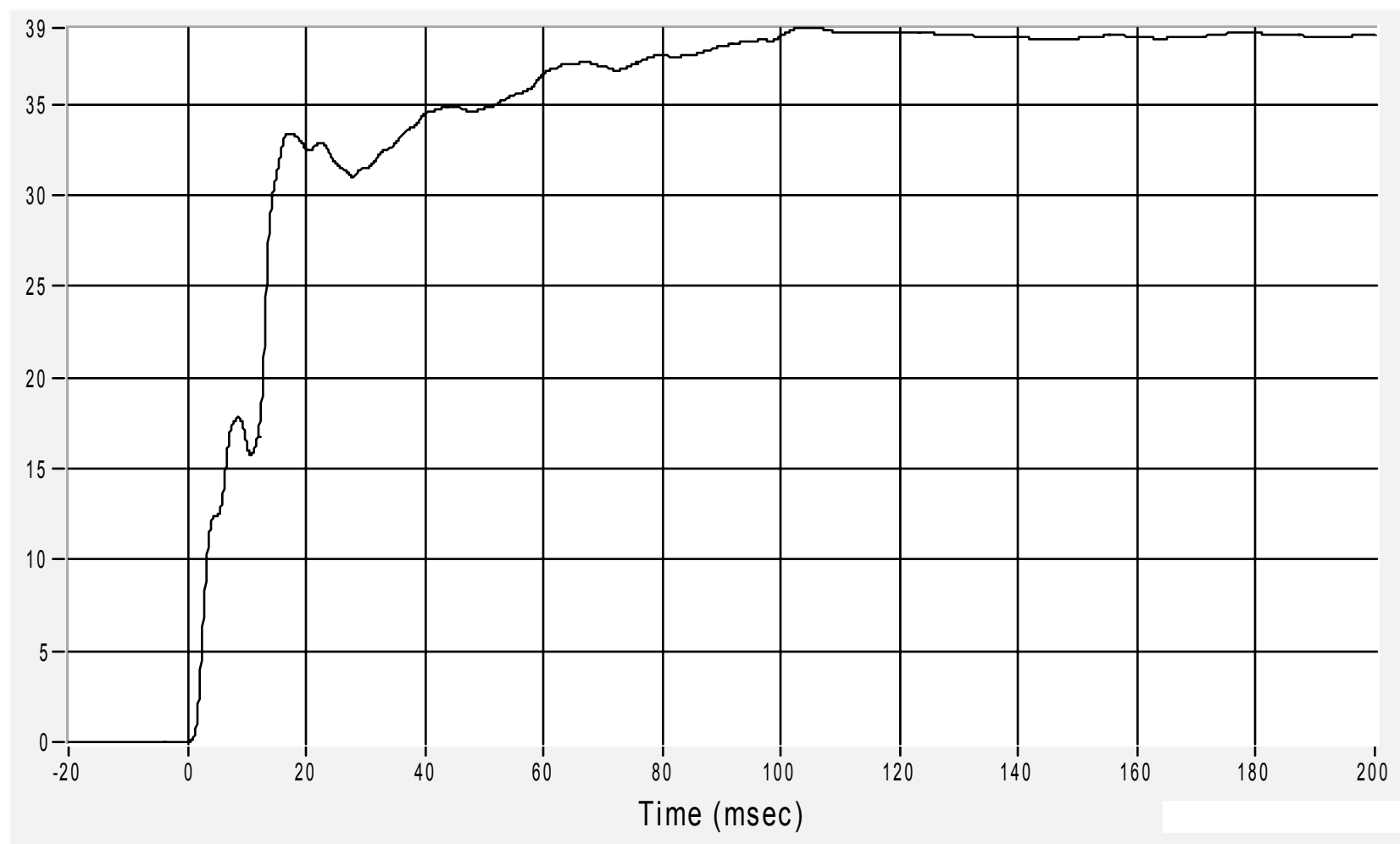
Medical College of Wisconsin
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Left Lower A-Pillar (Y) Velocity

Velocity (km/h) CFC180

Max 39.2 km/h at 103.0 msec

Min 0.0 km/h at 0.0 msec



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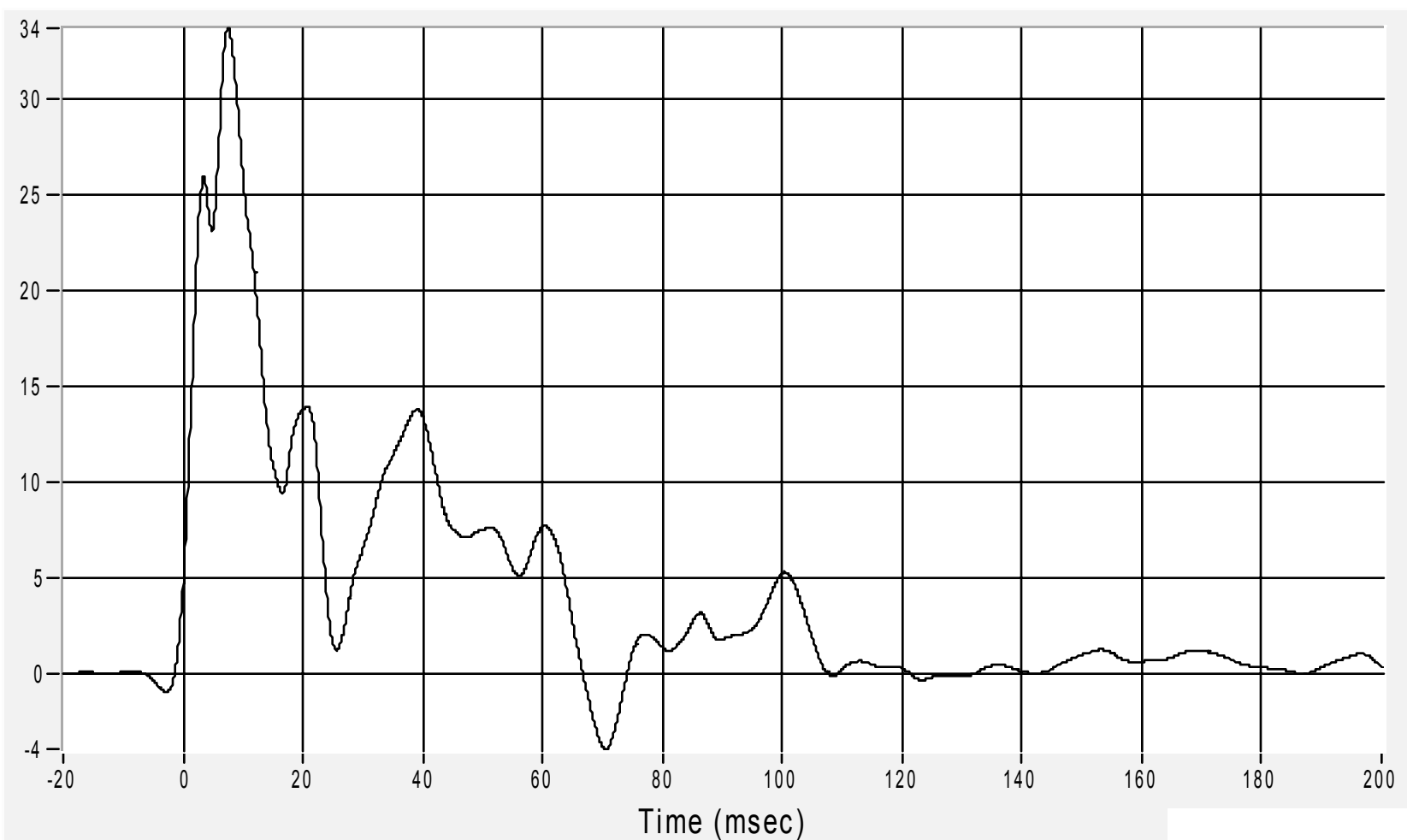
Medical College of Wisconsin
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Left Middle A-Pillar (Y) Acceleration

Acceleration (G's) CFC60

Max 33.7 G at 7.4 msec

Min -4.0 G at 70.6 msec



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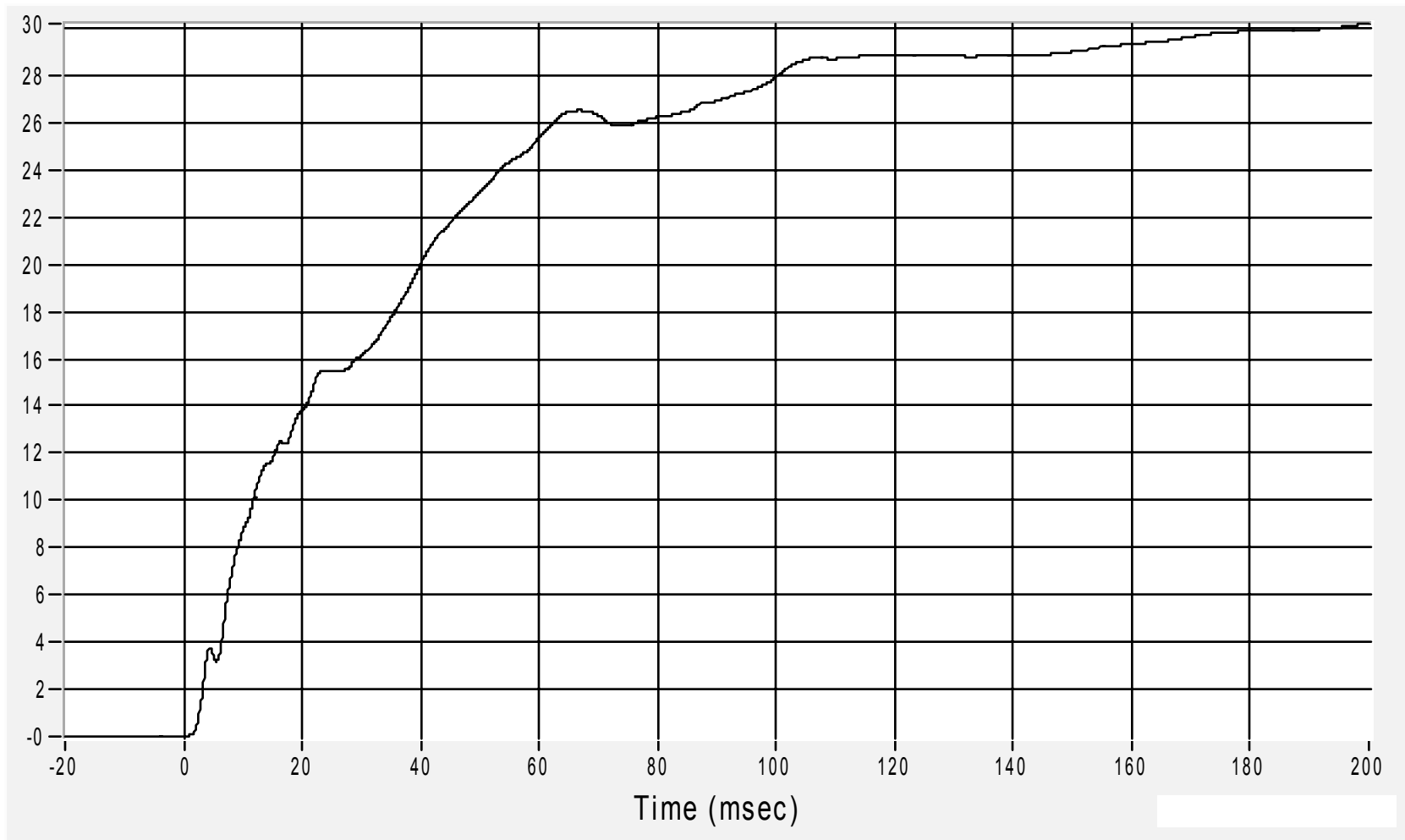
B-93

Left Middle A-Pillar (Y) Velocity

Velocity (km/h) CFC180

Max 30.2 km/h at 199.9 msec

Min 0.0 km/h at 0.0 msec



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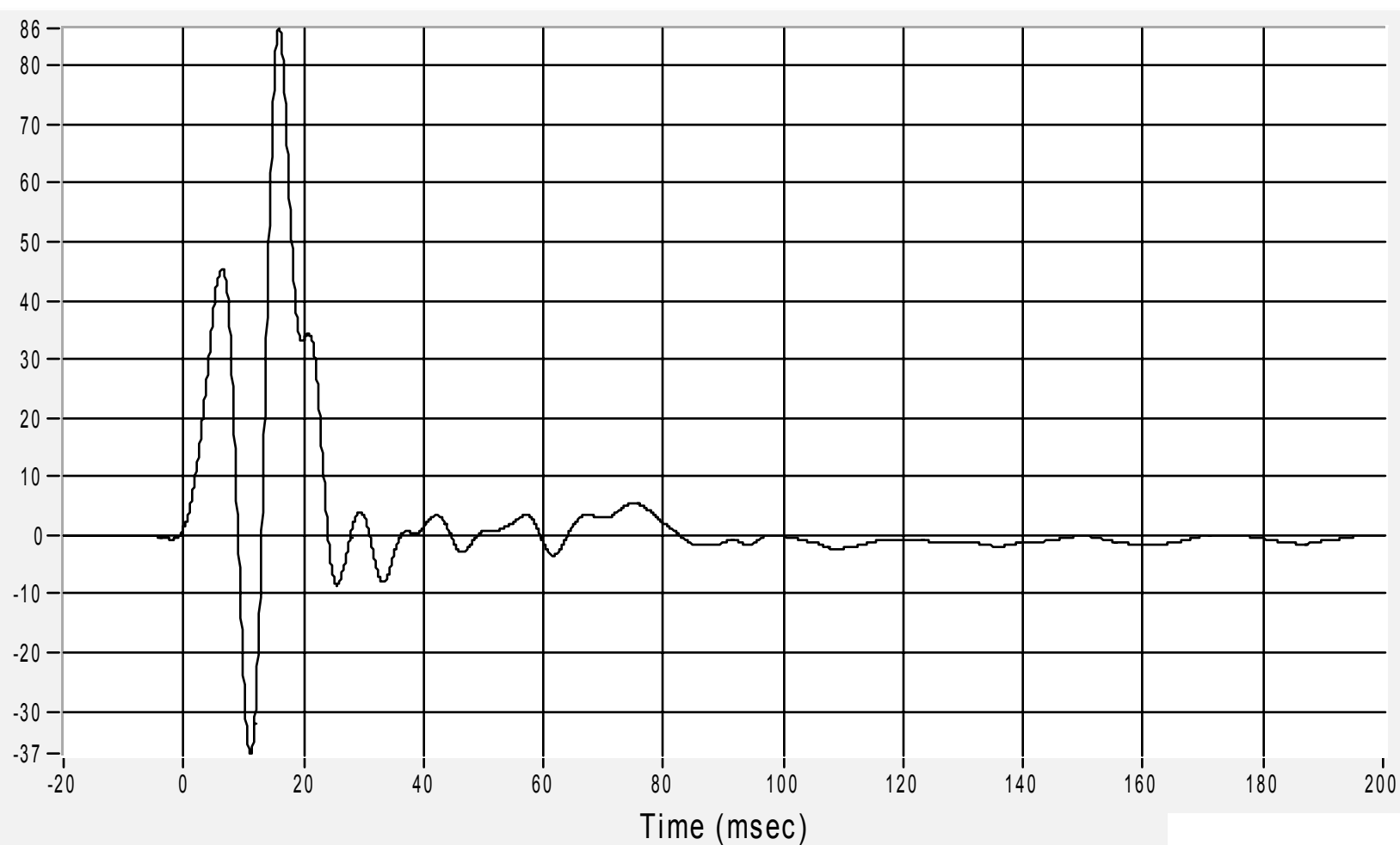
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Front Seat Track (Y) Acceleration

Acceleration (G's) CFC60

Max 86.4 G at 15.9 msec

Min -37.2 G at 11.2 msec



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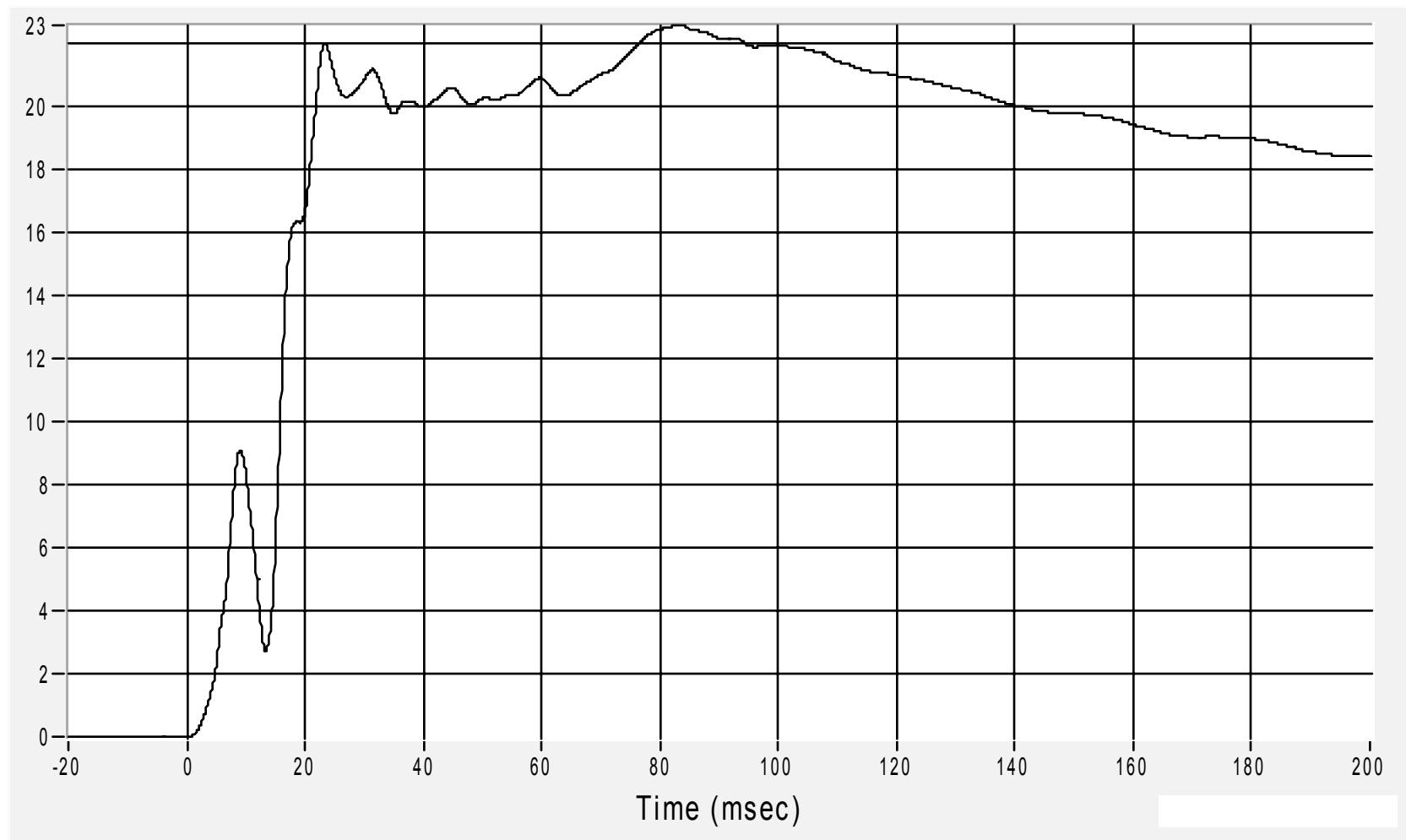
B-95

Front Seat Track (Y) Velocity

Velocity (km/h) CFC180

Max 22.6 km/h at 83.3 msec

Min 0.0 km/h at 0.0 msec



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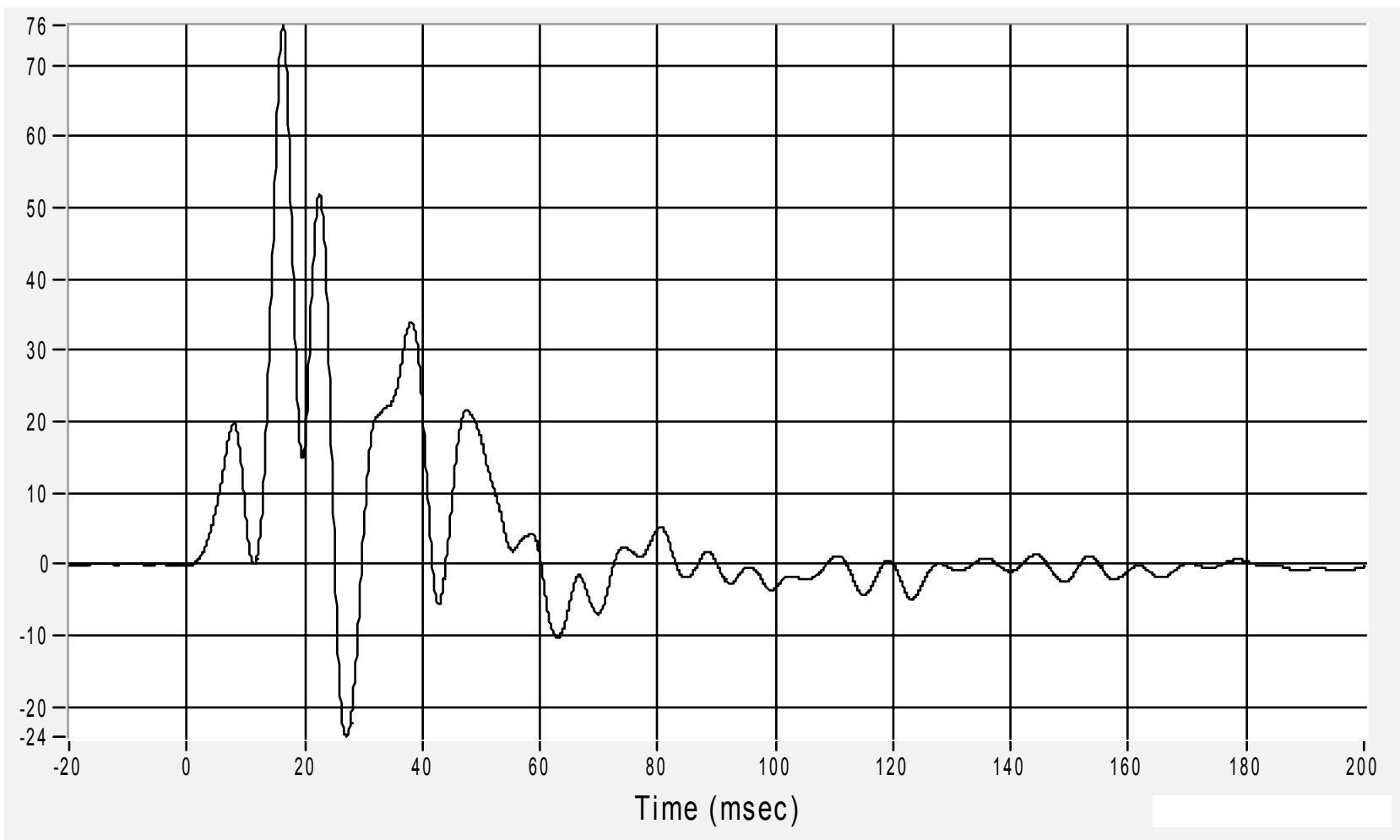
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Rear Seat Track (Y) Acceleration

Acceleration (G's) CFC60

Max 75.5 G at 16.3 msec

Min -24.1 G at 27.1 msec



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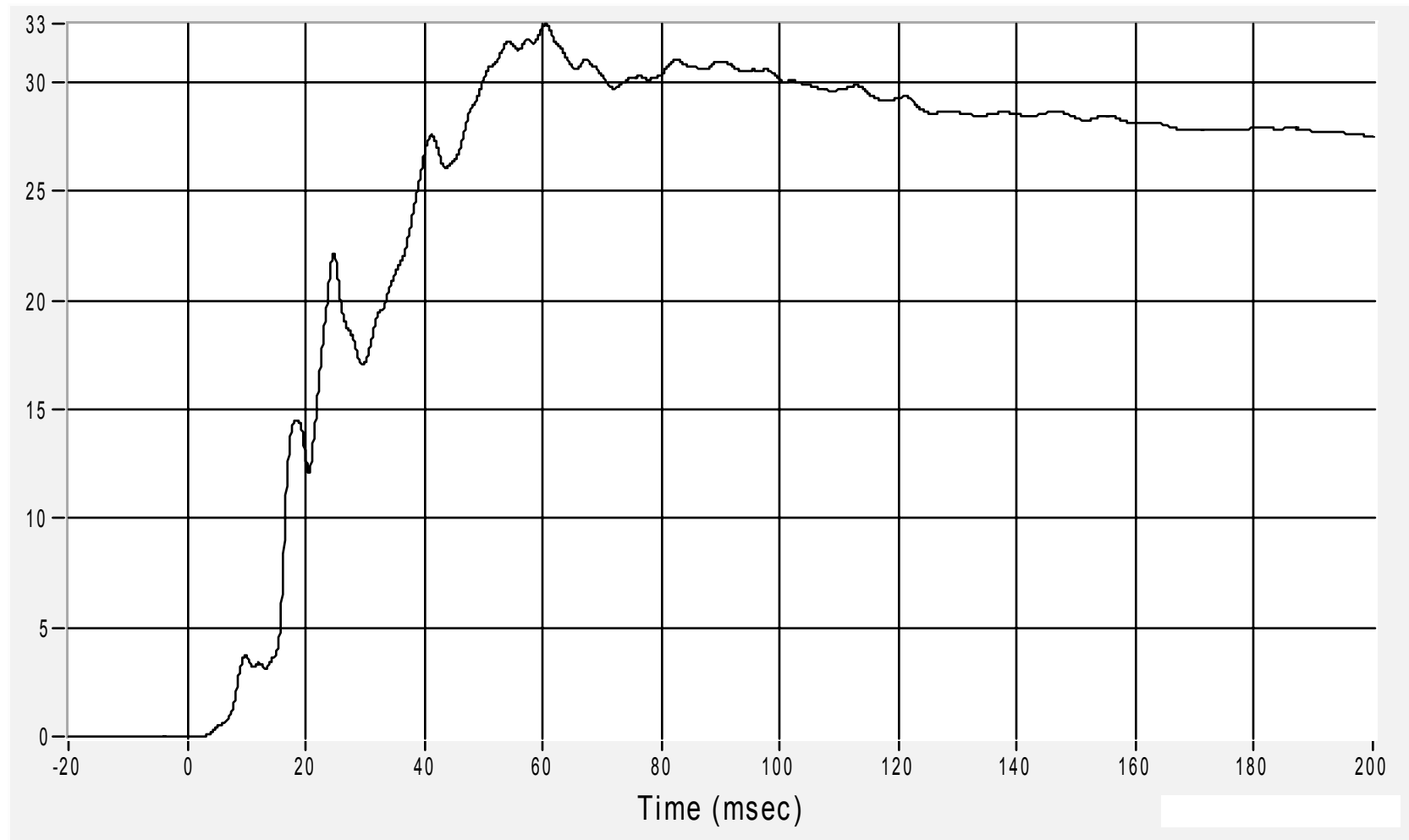
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Rear Seat Track (Y) Velocity

Velocity (km/h) CFC180

Max 32.7 km/h at 60.5 msec

Min 0.0 km/h at 0.0 msec



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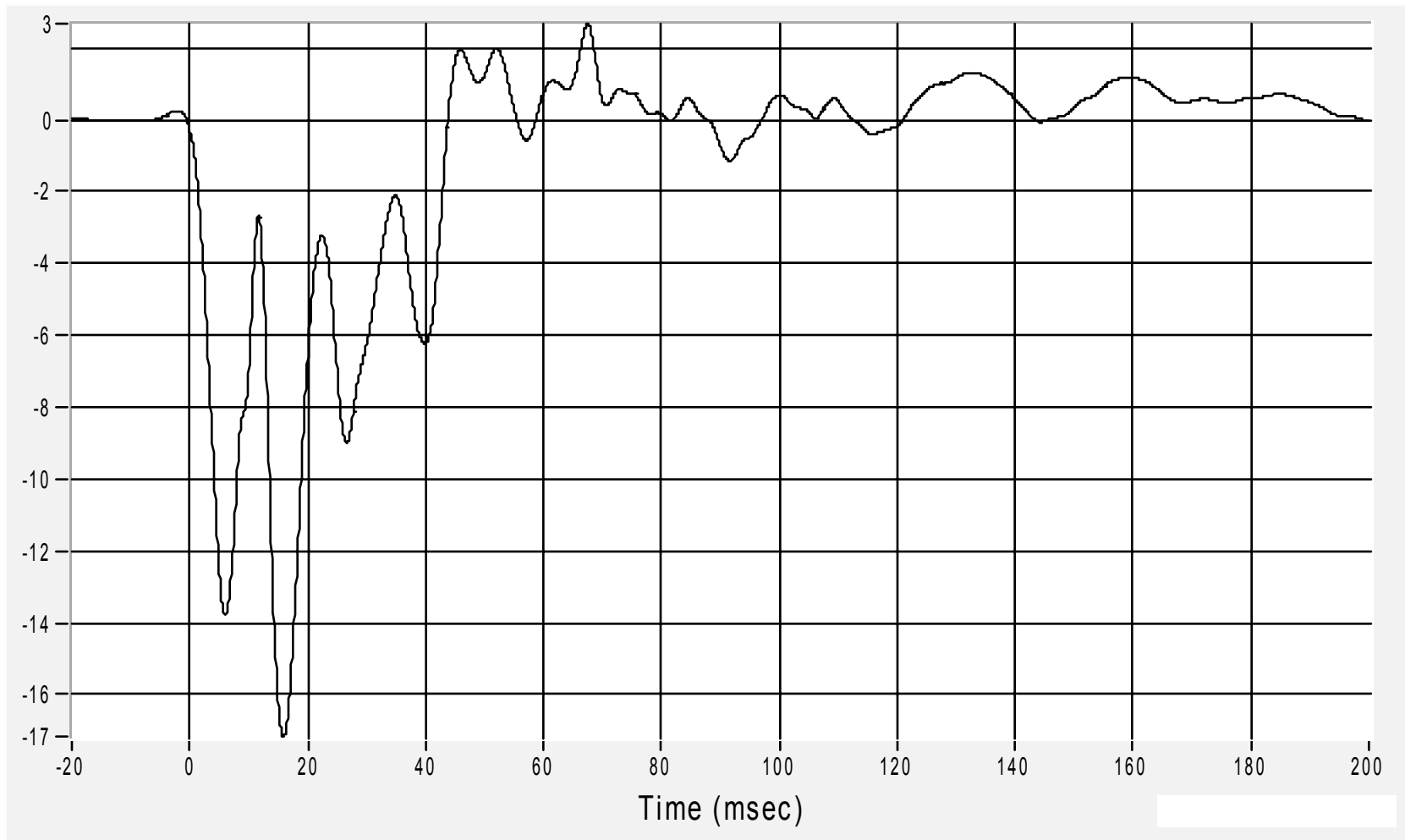
Medical College of Wisconsin
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Vehicle Center of Gravity (X) Acceleration

Acceleration (G's) CFC60

Max 2.7 G at 67.5 msec

Min -17.2 G at 15.9 msec



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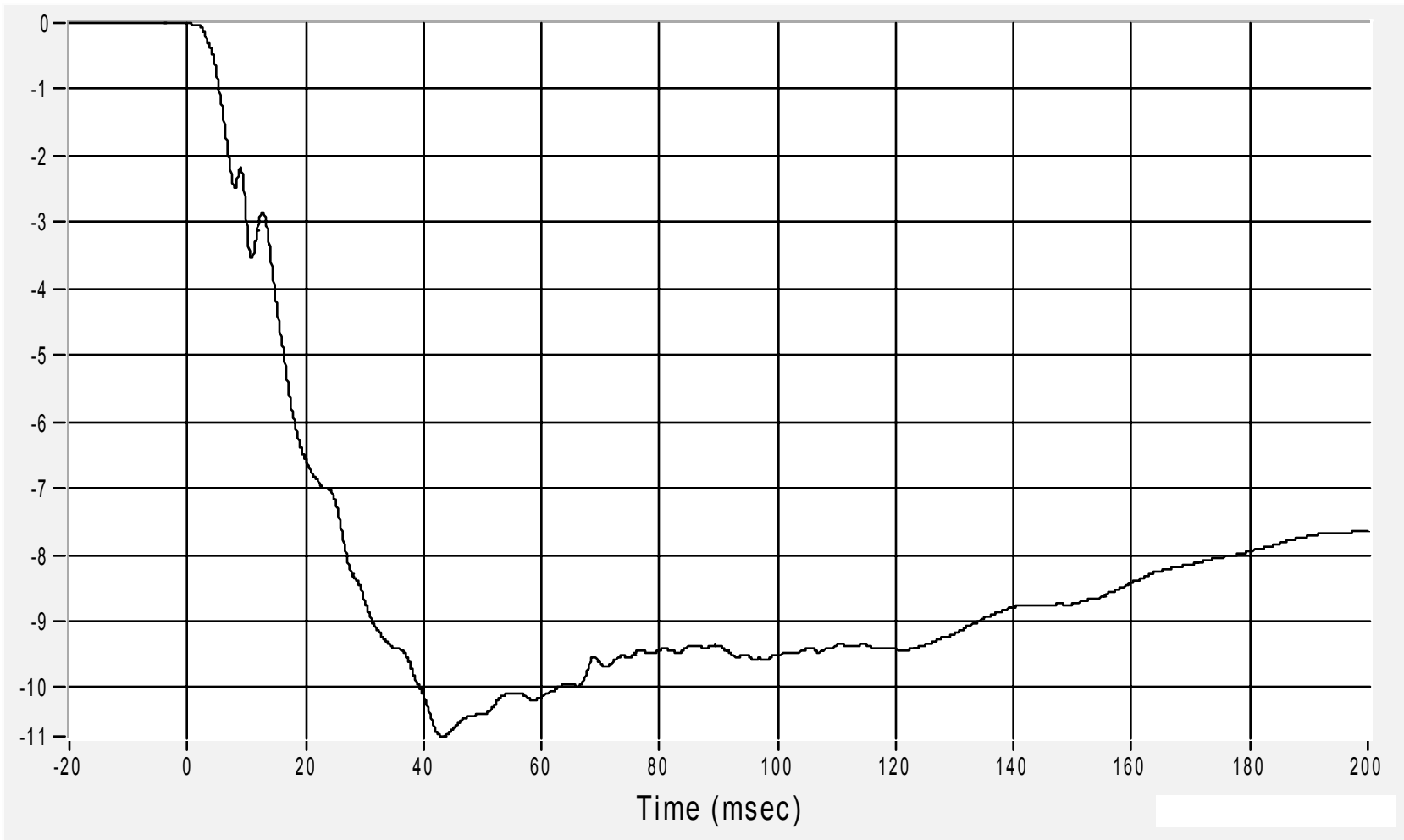
Medical College of Wisconsin
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Vehicle Center of Gravity (X) Velocity

Velocity (km/h) CFC180

Max 0.0 km/h at 0.0 msec

Min -10.7 km/h at 43.1 msec



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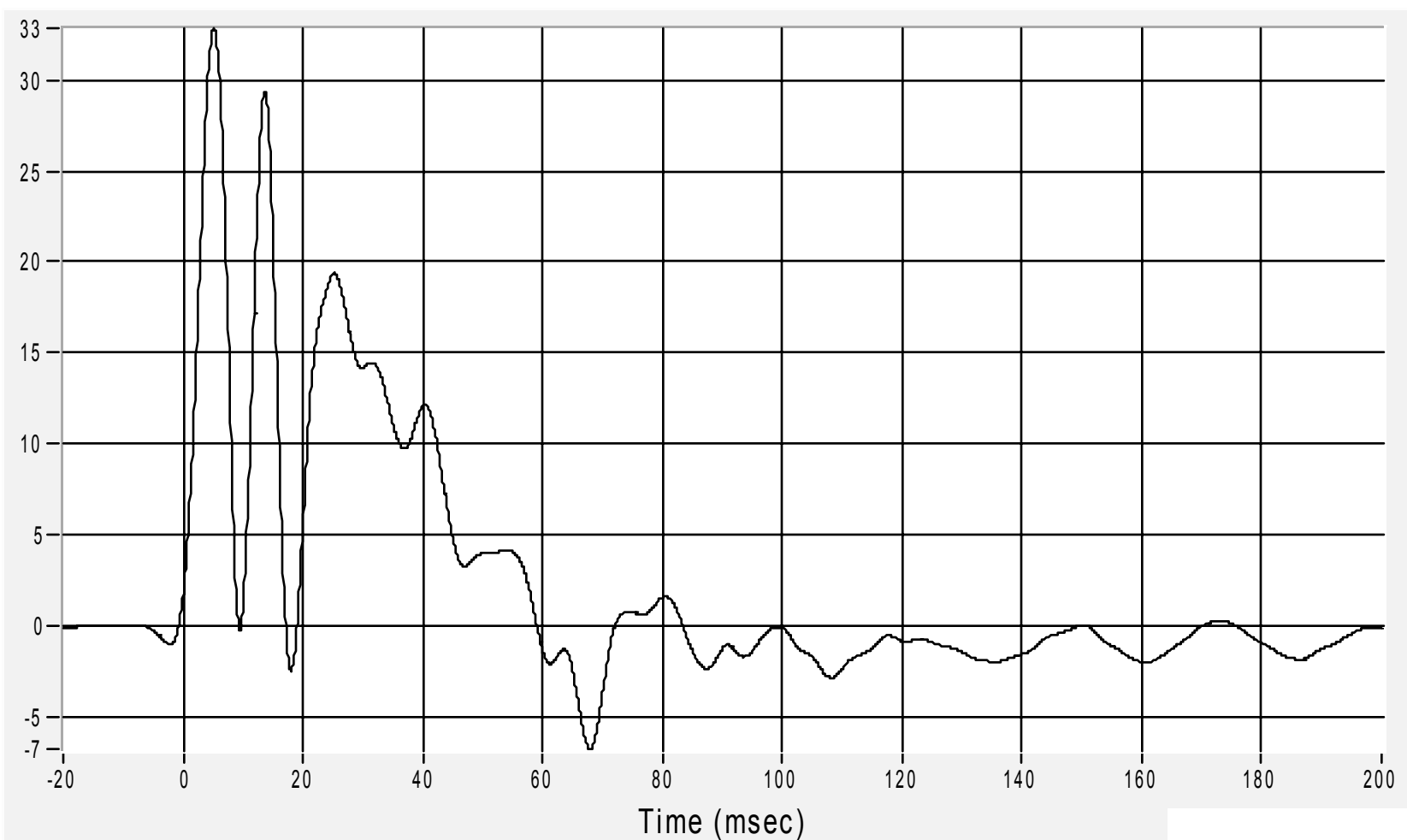
Medical College of Wisconsin
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Vehicle Center of Gravity (Y) Acceleration

Acceleration (G's) CFC60

Max 32.8 G at 5.1 msec

Min -6.7 G at 67.9 msec



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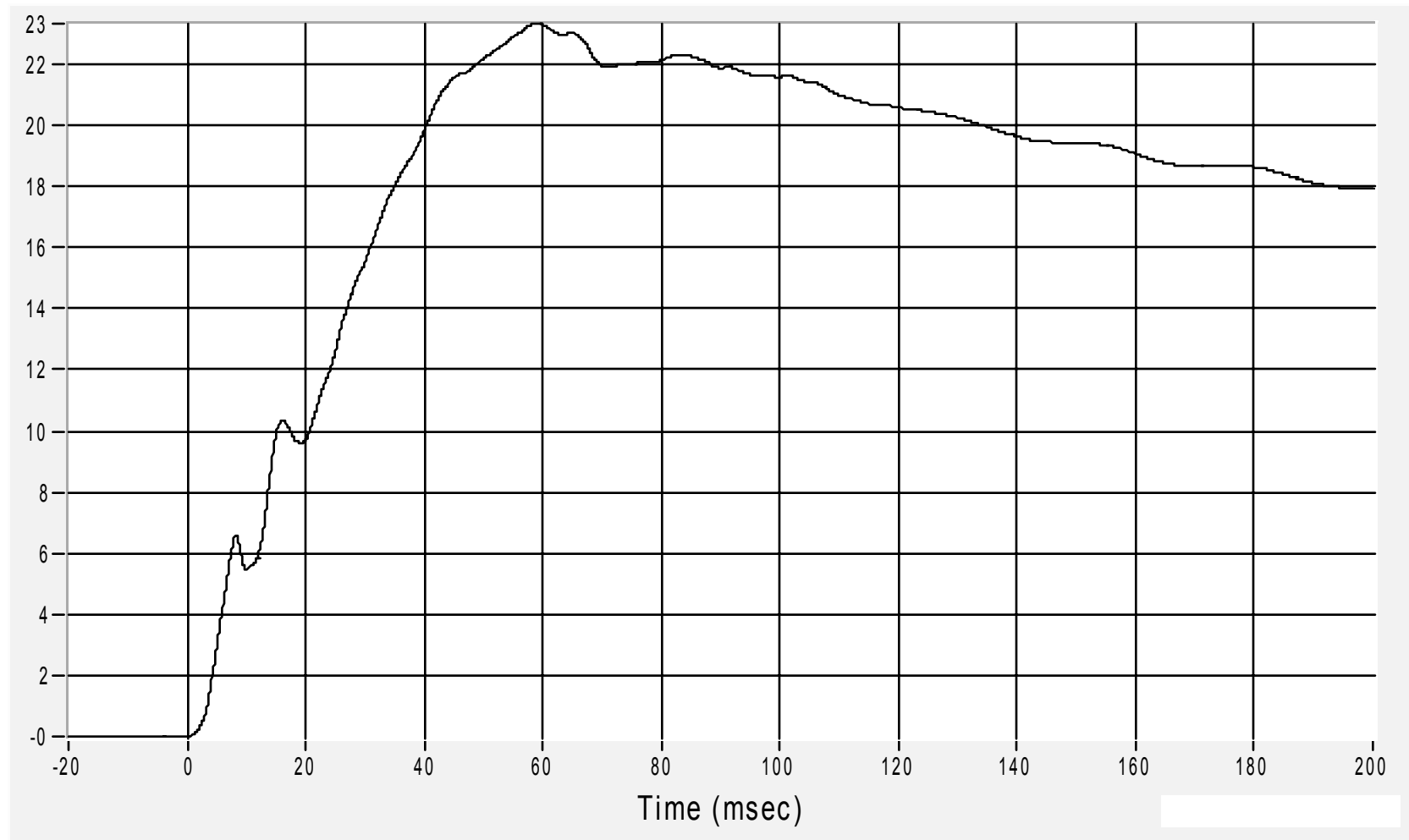
Medical College of Wisconsin
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Vehicle Center of Gravity (Y) Velocity

Velocity (km/h) CFC180

Max 23.3 km/h at 59.0 msec

Min 0.0 km/h at 0.0 msec



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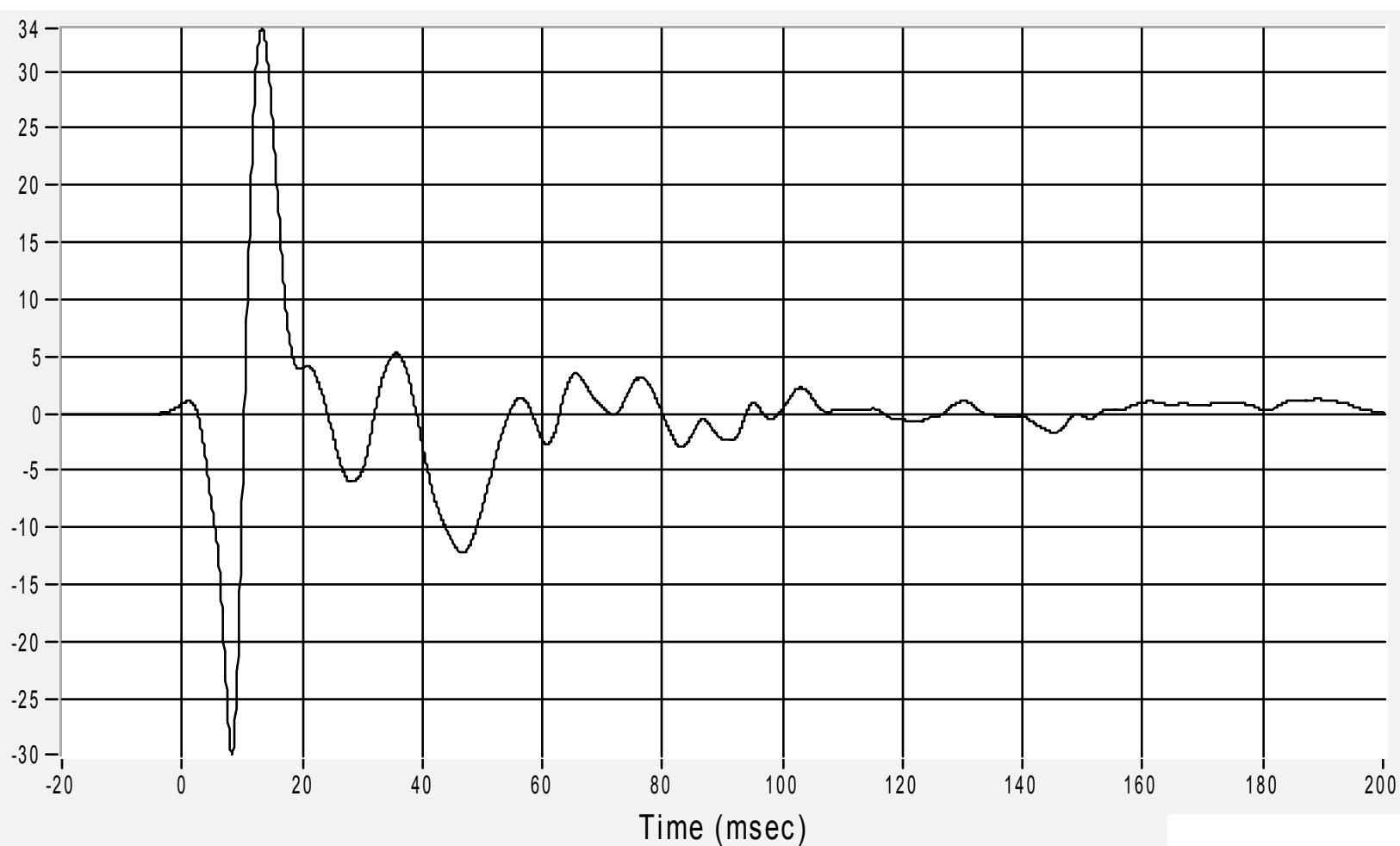
Medical College of Wisconsin
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Vehicle Center of Gravity (Z) Acceleration

Acceleration (G's) CFC60

Max 33.7 G at 13.3 msec

Min -29.9 G at 8.3 msec



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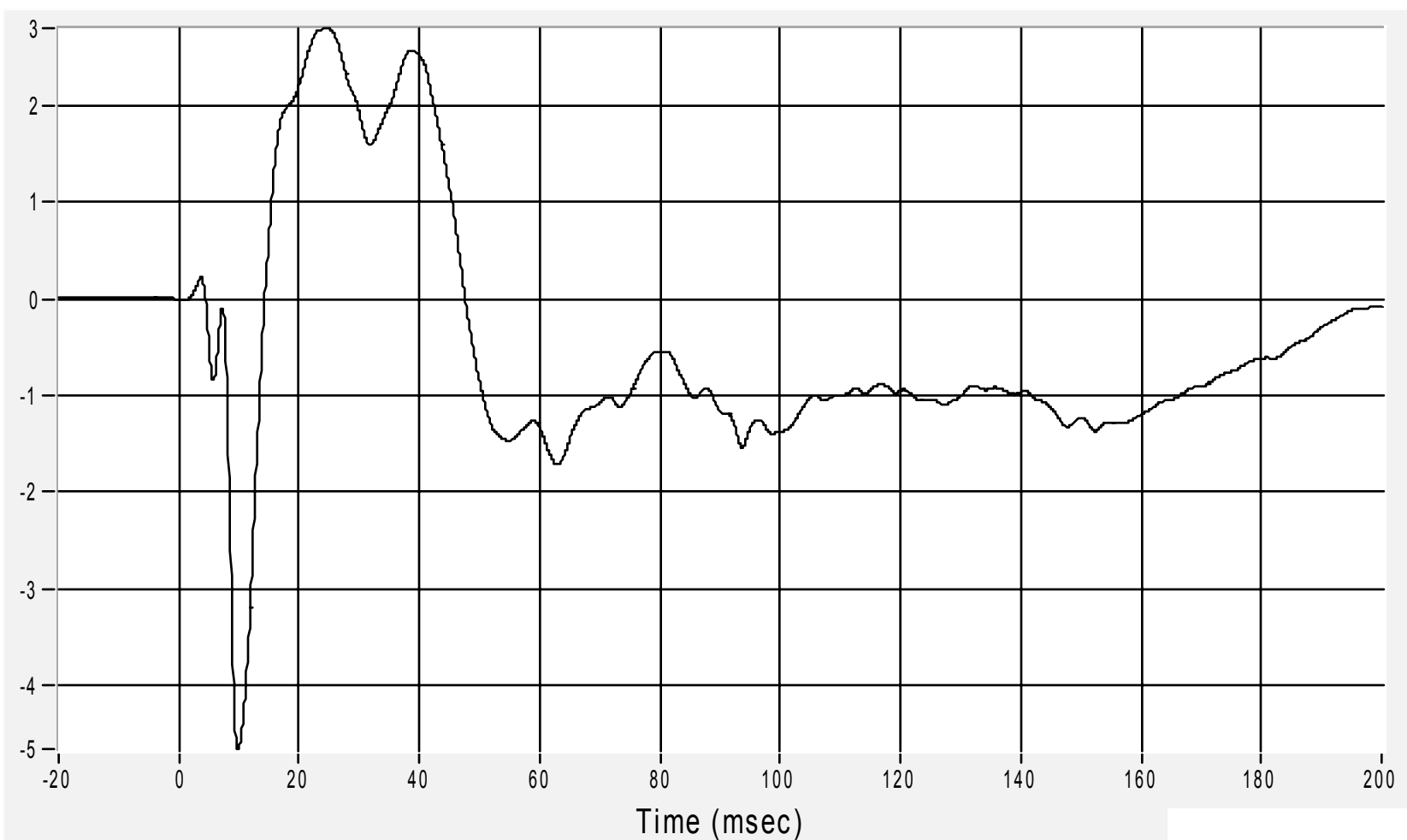
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Vehicle Center of Gravity (Z) Velocity

Velocity (km/h) CFC180

Max 2.8 km/h at 24.7 msec

Min -4.7 km/h at 9.8 msec



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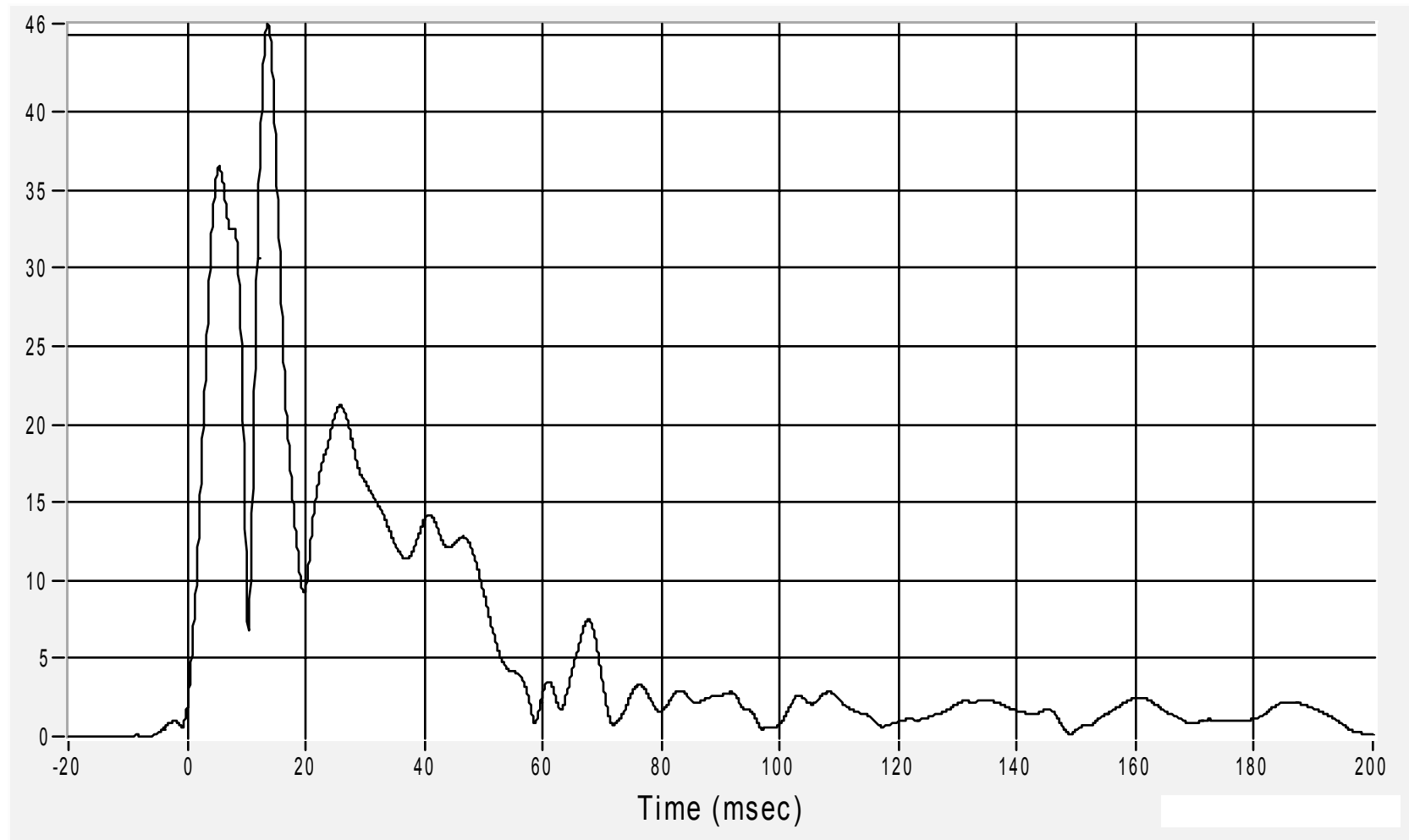
Medical College of Wisconsin
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Vehicle Center of Gravity Resultant Acceleration

Acceleration (G's) CFC60

Max 45.7 G's at 13.6 msec

Min 0.2 G's at 199.9 msec



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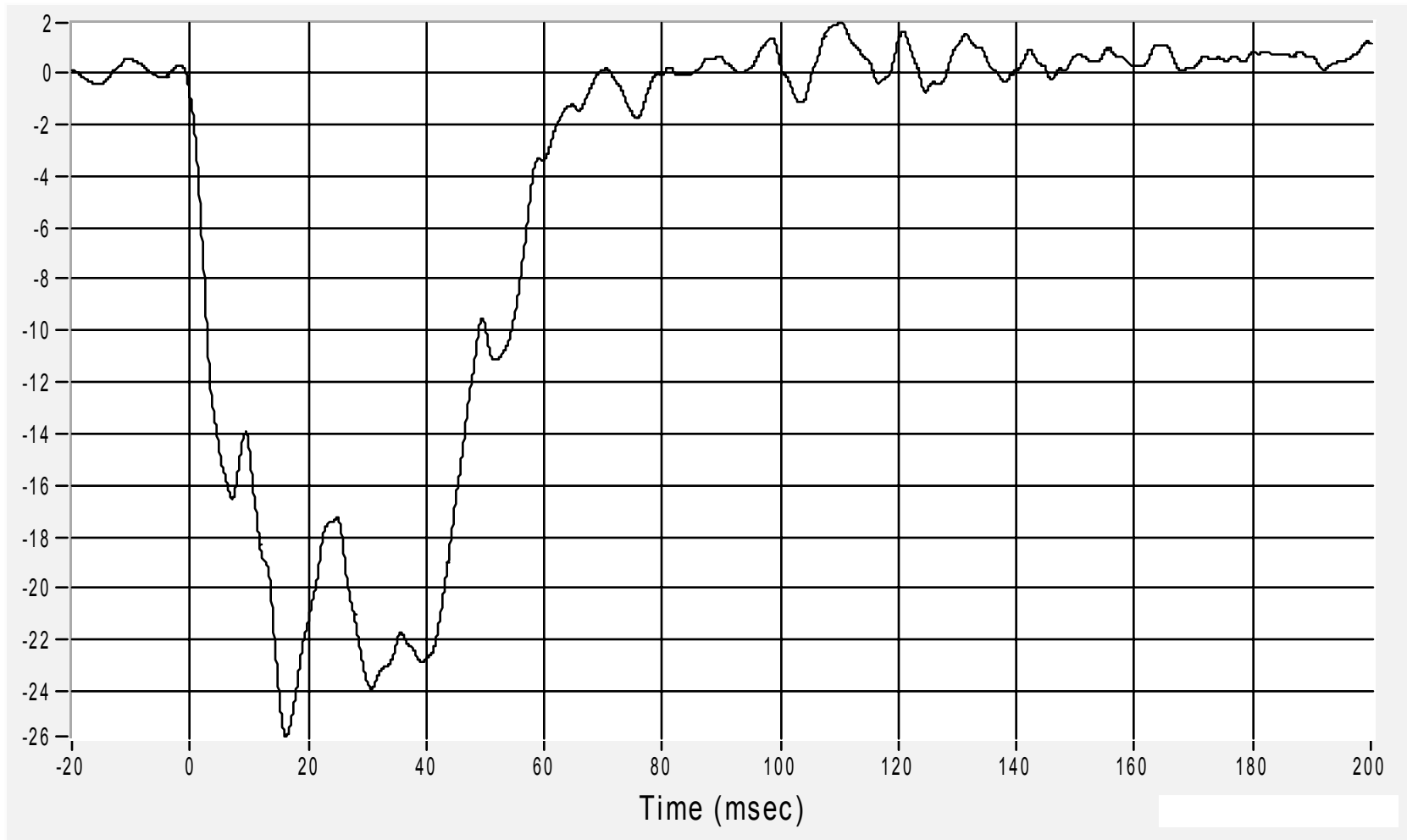
Medical College of Wisconsin
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MDB Center of Gravity (X) Acceleration

Acceleration (G's) CFC60

Max 1.9 G at 110.2 msec

Min -25.8 G at 16.2 msec



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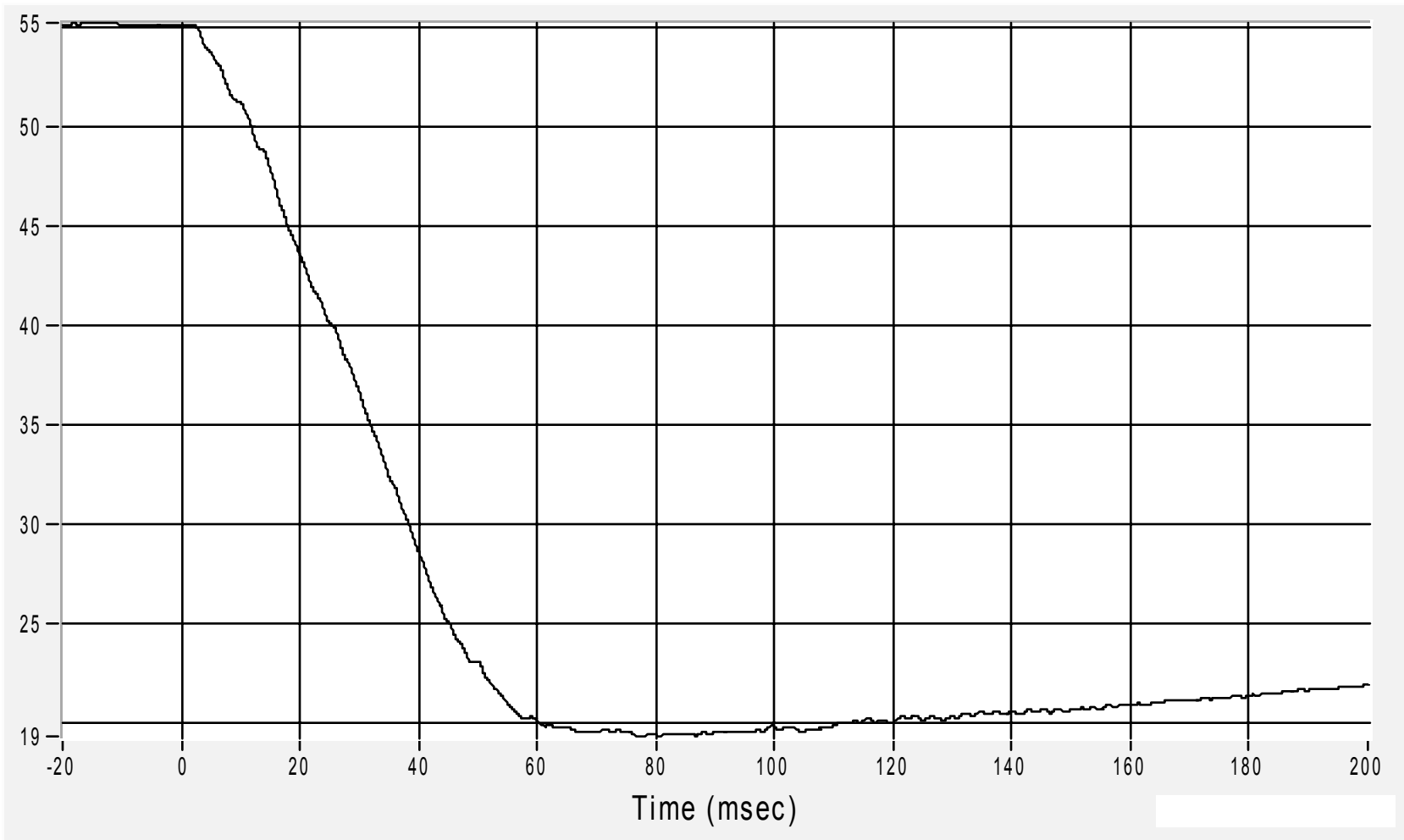
Medical College of Wisconsin
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MDB Center of Gravity (X) Velocity

Velocity (km/h) CFC180

Max 55.2 km/h at 0.0 msec

Min 19.4 km/h at 80.6 msec



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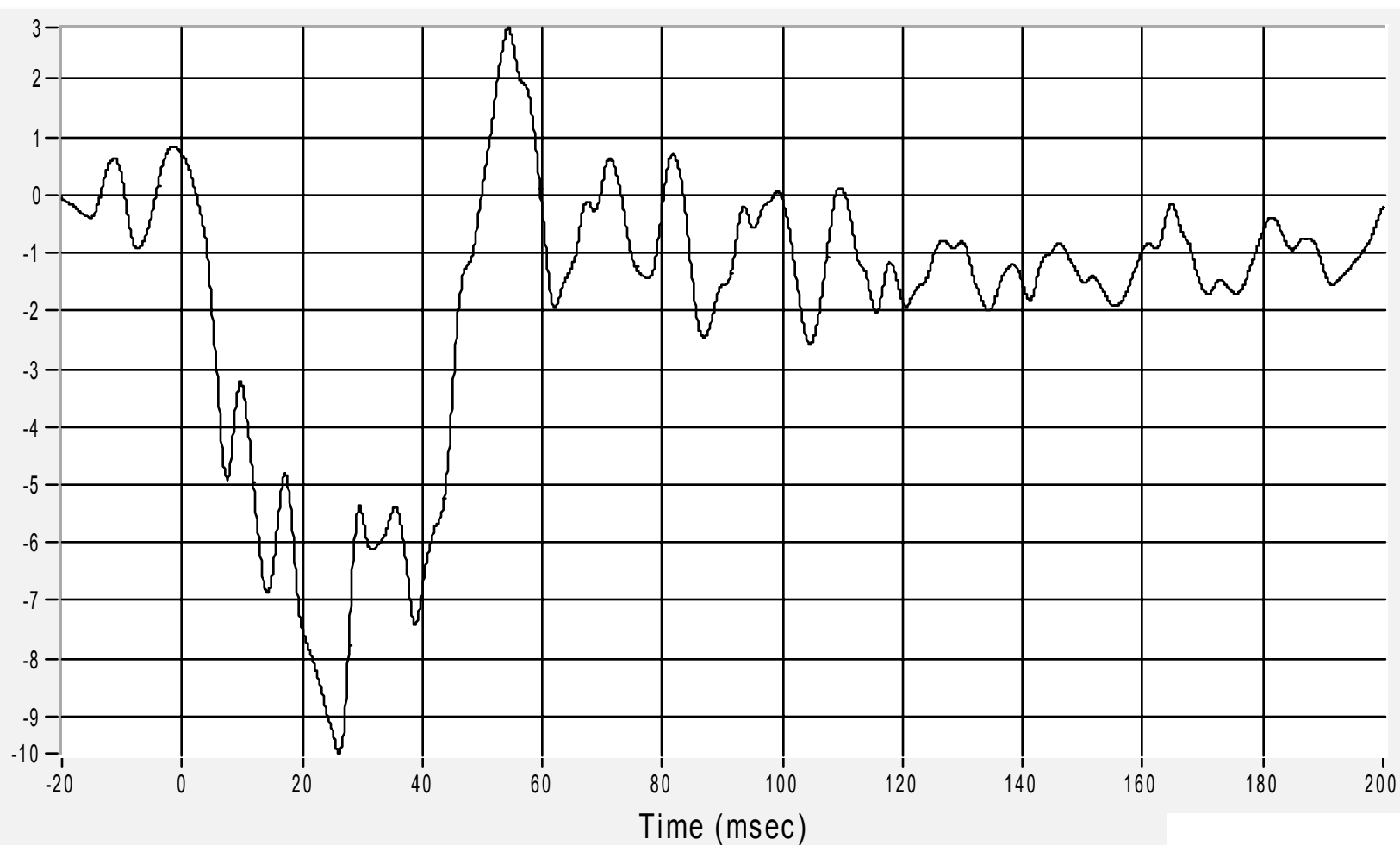
Medical College of Wisconsin
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MDB Center of Gravity (Y) Acceleration

Acceleration (G's) CFC60

Max 2.9 G at 54.3 msec

Min -9.6 G at 26.2 msec



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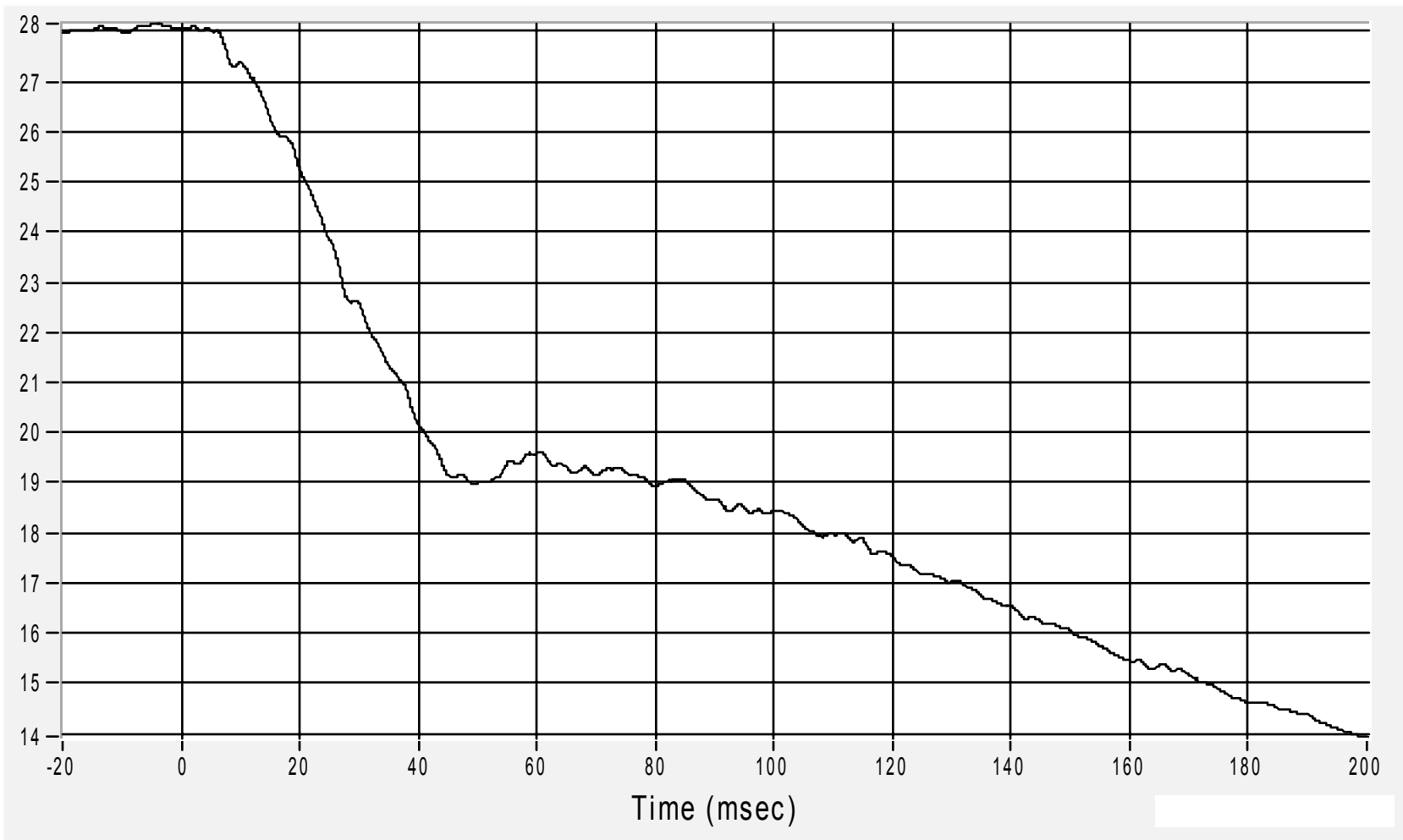
*Medical College of Wisconsin
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MDB Center of Gravity (Y) Velocity

Velocity (km/h) CFC180

Max 28.1 km/h at 2.1 msec

Min 13.9 km/h at 199.5 msec



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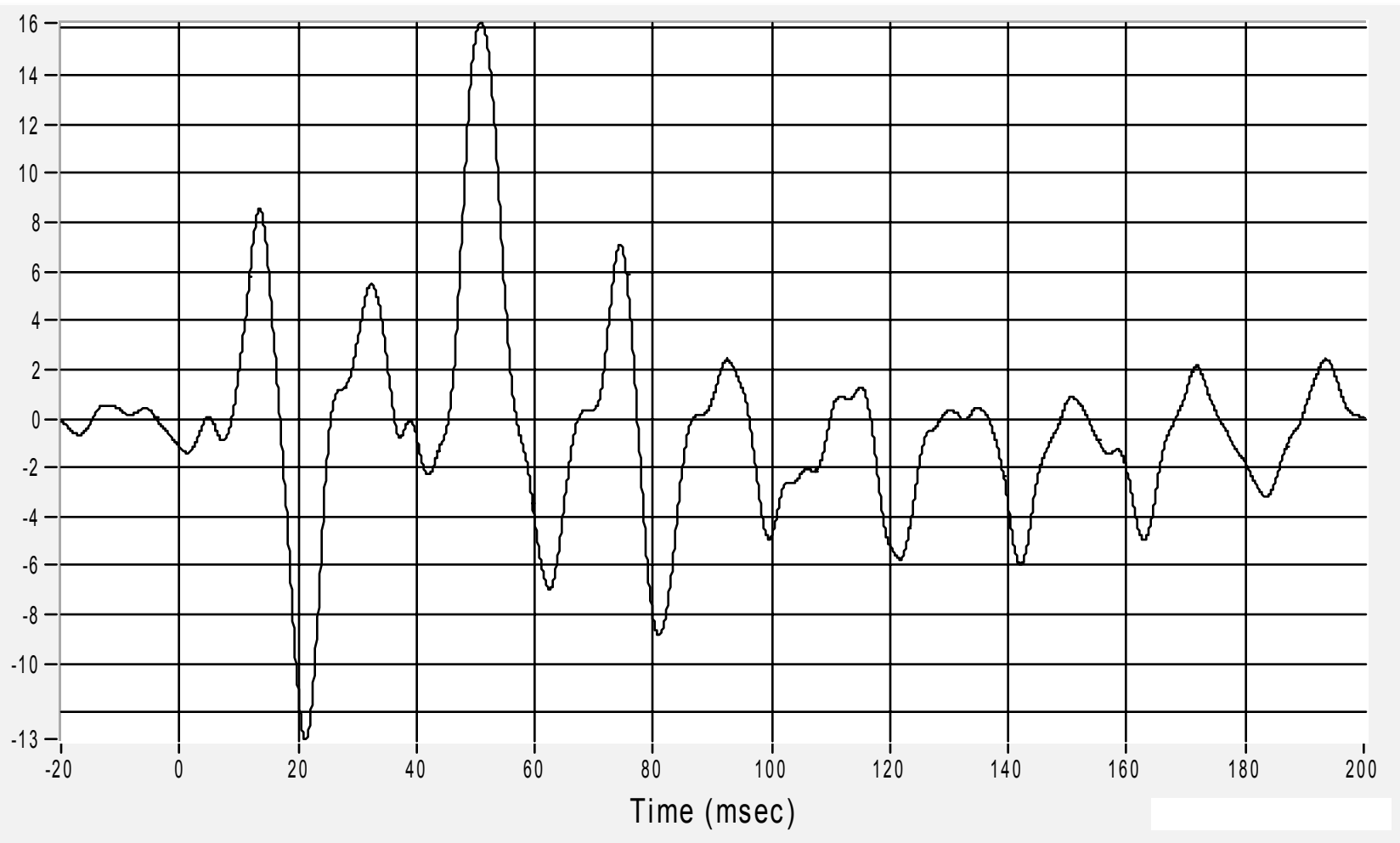
Medical College of Wisconsin
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MDB Center of Gravity (Z) Acceleration

Acceleration (G's) CFC60

Max 16.1 G at 50.9 msec

Min -13.1 G at 21.3 msec



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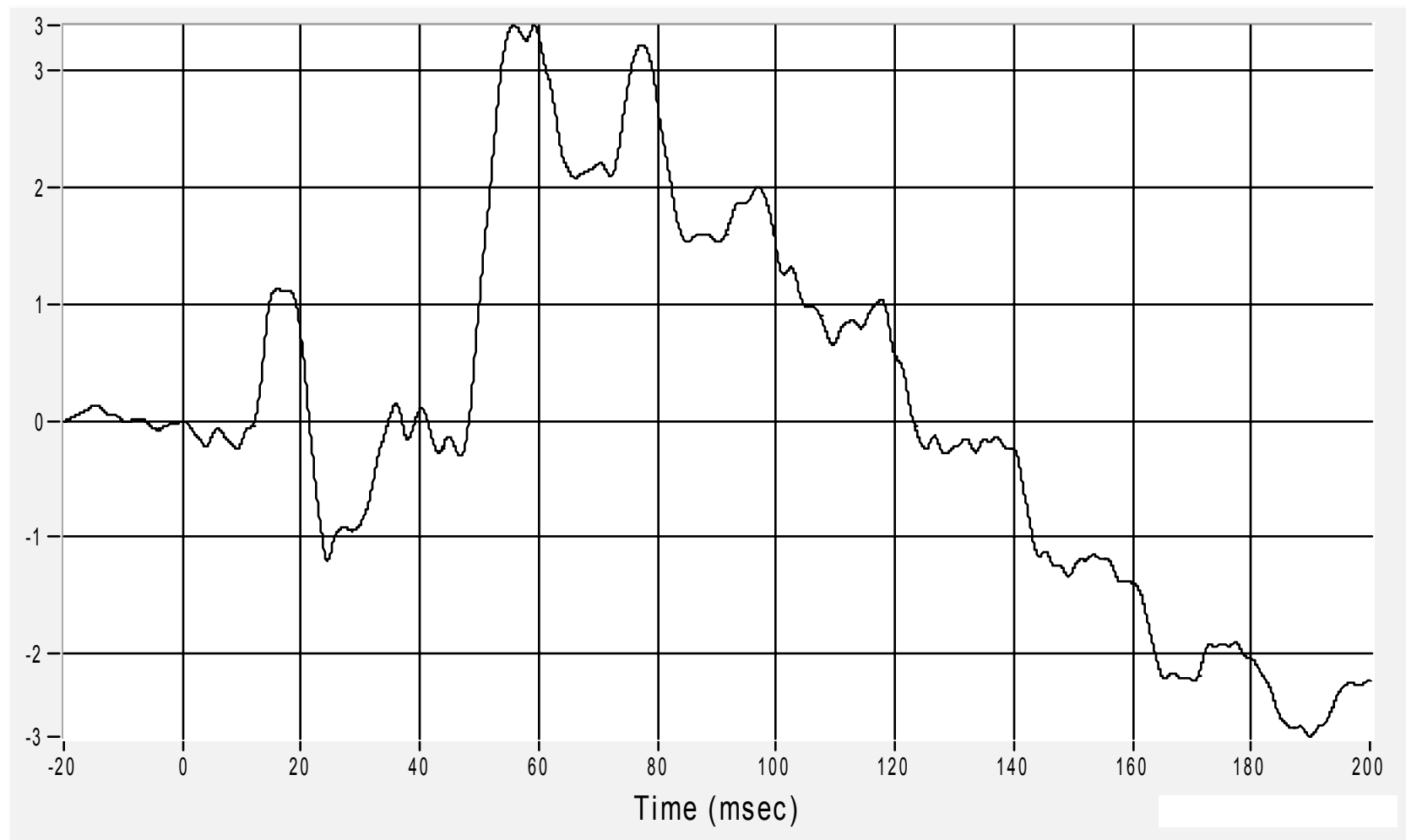
Medical College of Wisconsin
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MDB Center of Gravity (Z) Velocity

Velocity (km/h) CFC180

Max 3.4 km/h at 59.3 msec

Min -2.7 km/h at 189.9 msec



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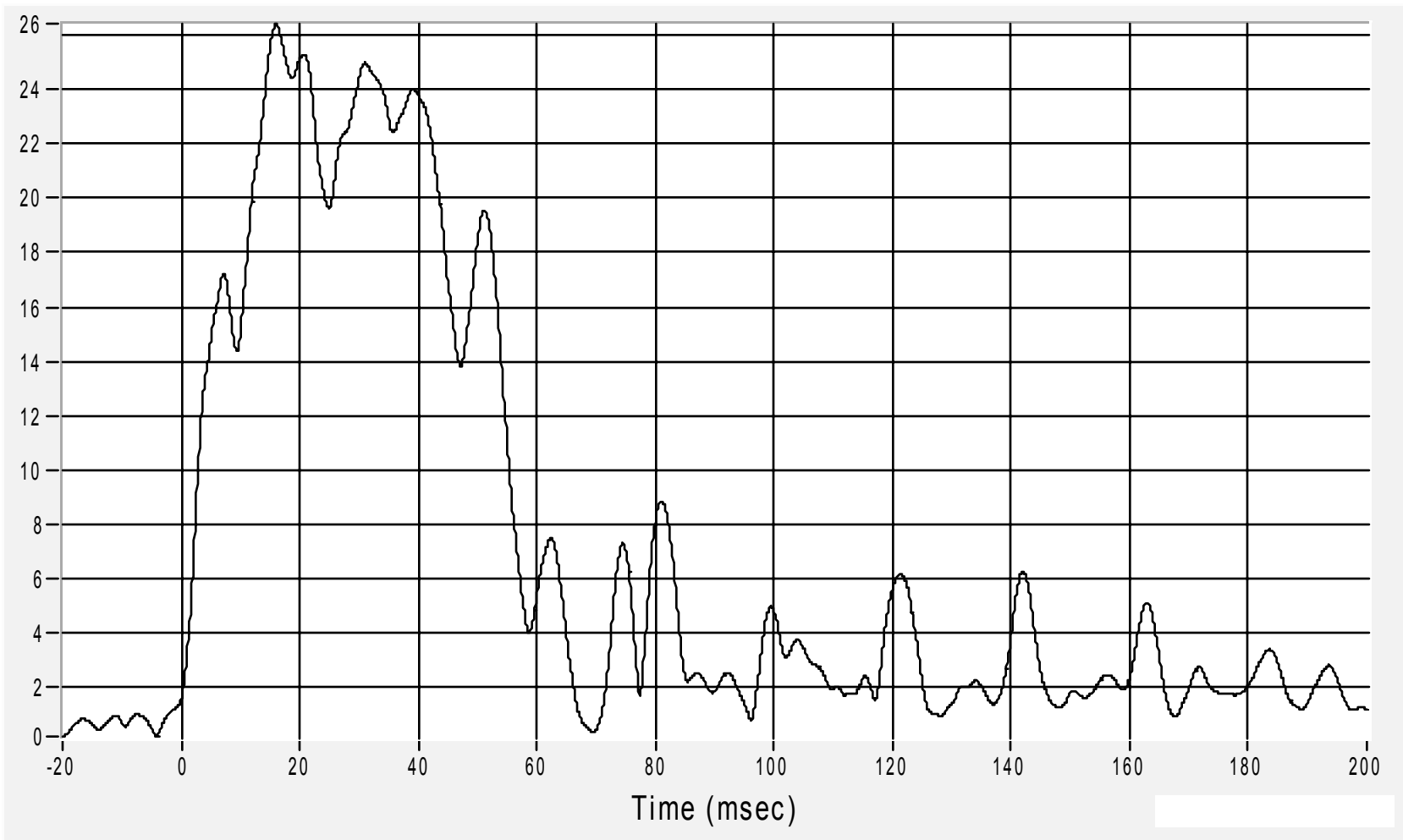
B-111

MDB Center of Gravity Resultant Acceleration

Acceleration (G's) CFC60

Max 26.4 G's at 16.0 msec

Min 0.3 G's at 69.6 msec



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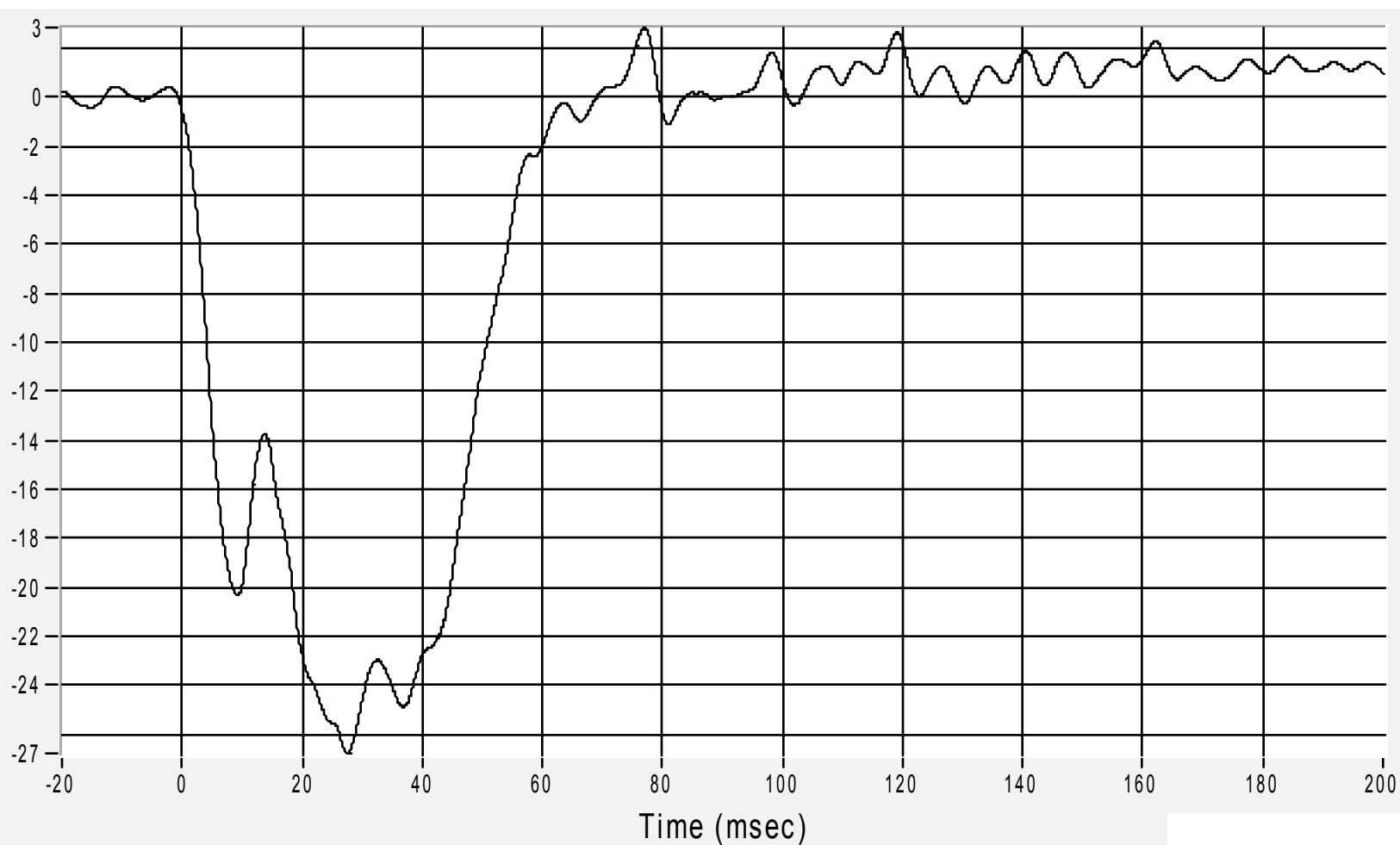
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Rear (X) Acceleration

Acceleration (G's) CFC60

Max 2.9 G at 77.0 msec

Min -26.8 G at 27.5 msec



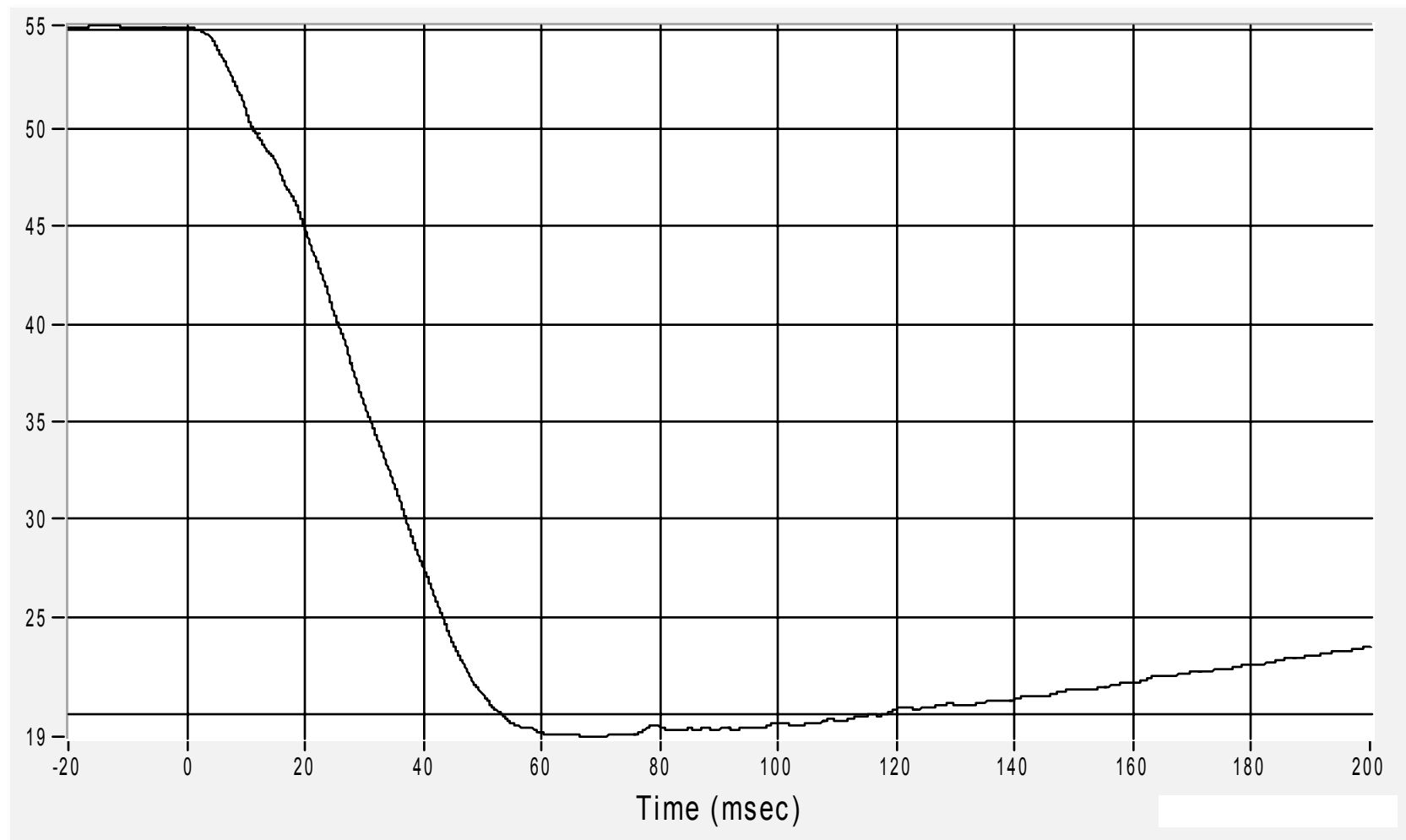
05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

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Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Rear (X) Velocity
 Velocity (km/h) CFC180

Max	55.2	km/h	at	0.0	msec
Min	18.9	km/h	at	68.1	msec

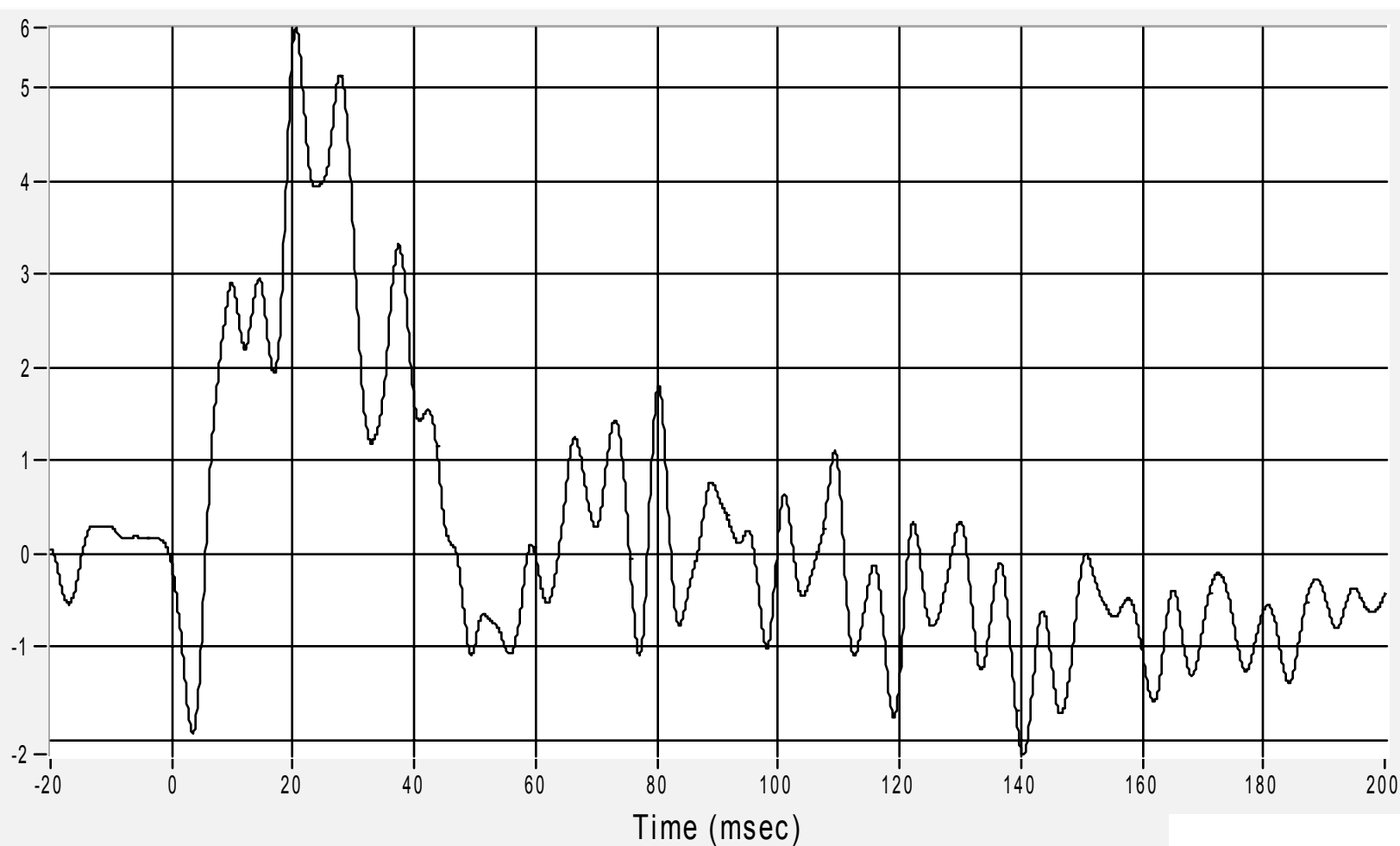


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Medical College of Wisconsin
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MDB Rear (Y) Acceleration

Acceleration (G's) CFC60

Max 5.7 G at 20.5 msec**Min -2.2 G at 140.4 msec**

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*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

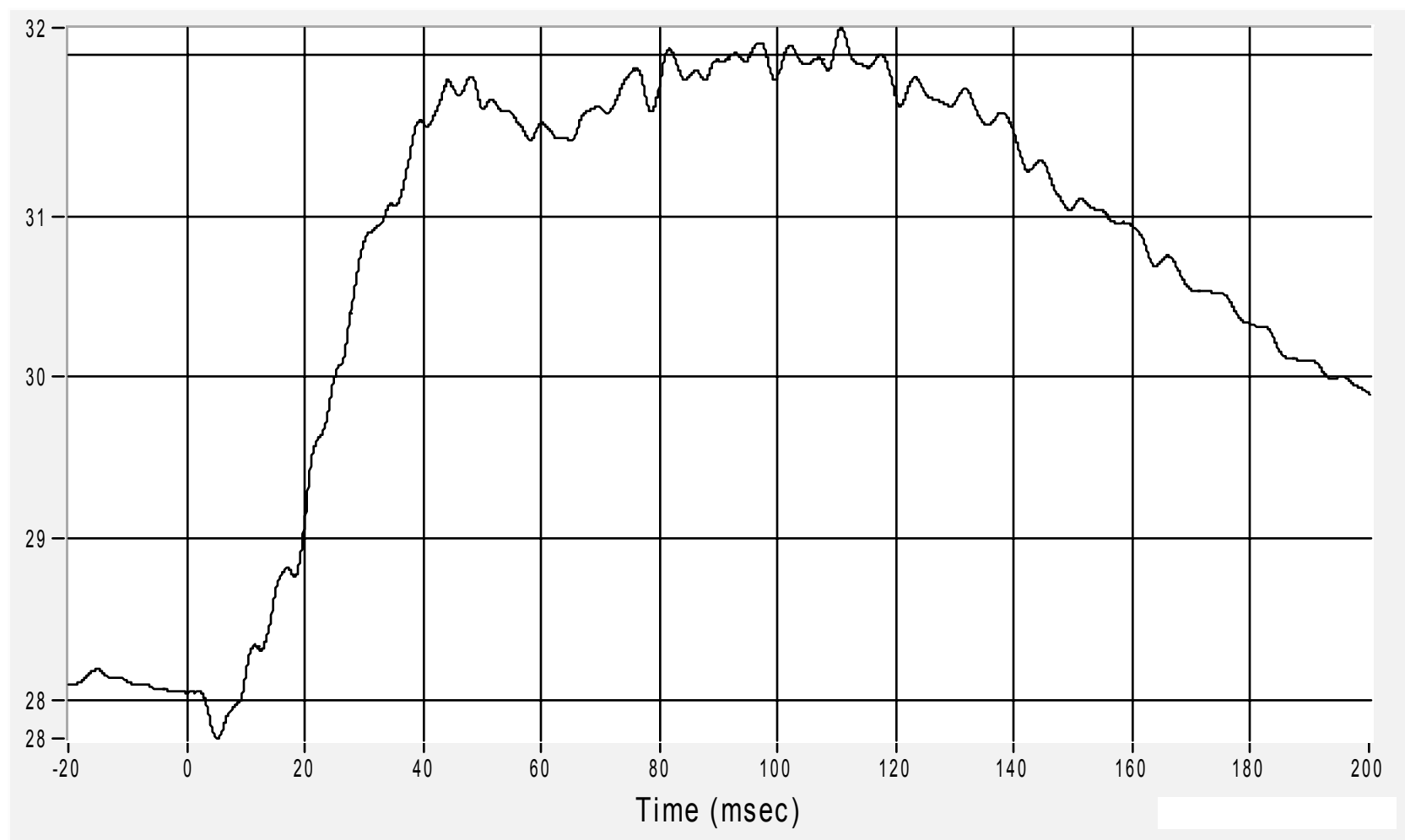
MDB Rear (Y) Velocity

Velocity (km/h)

CFC180

Max 32.2 km/h at 110.7 msec

Min 27.8 km/h at 5.2 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

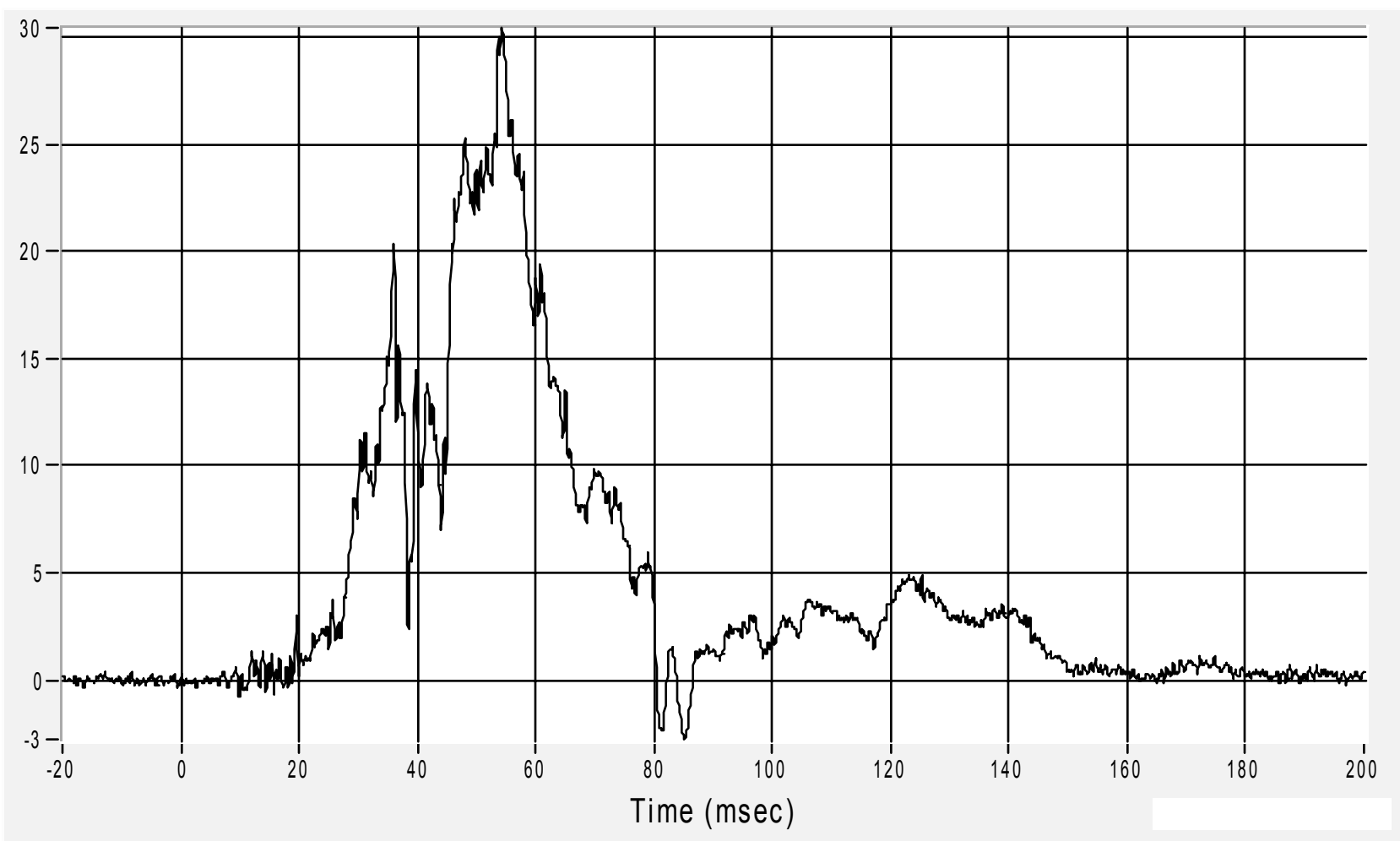
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Rib (Y) - Redundant Acceleration

Acceleration (G's) CFC1000

Max 30.4 G at 54.3 msec

Min -2.8 G at 85.1 msec



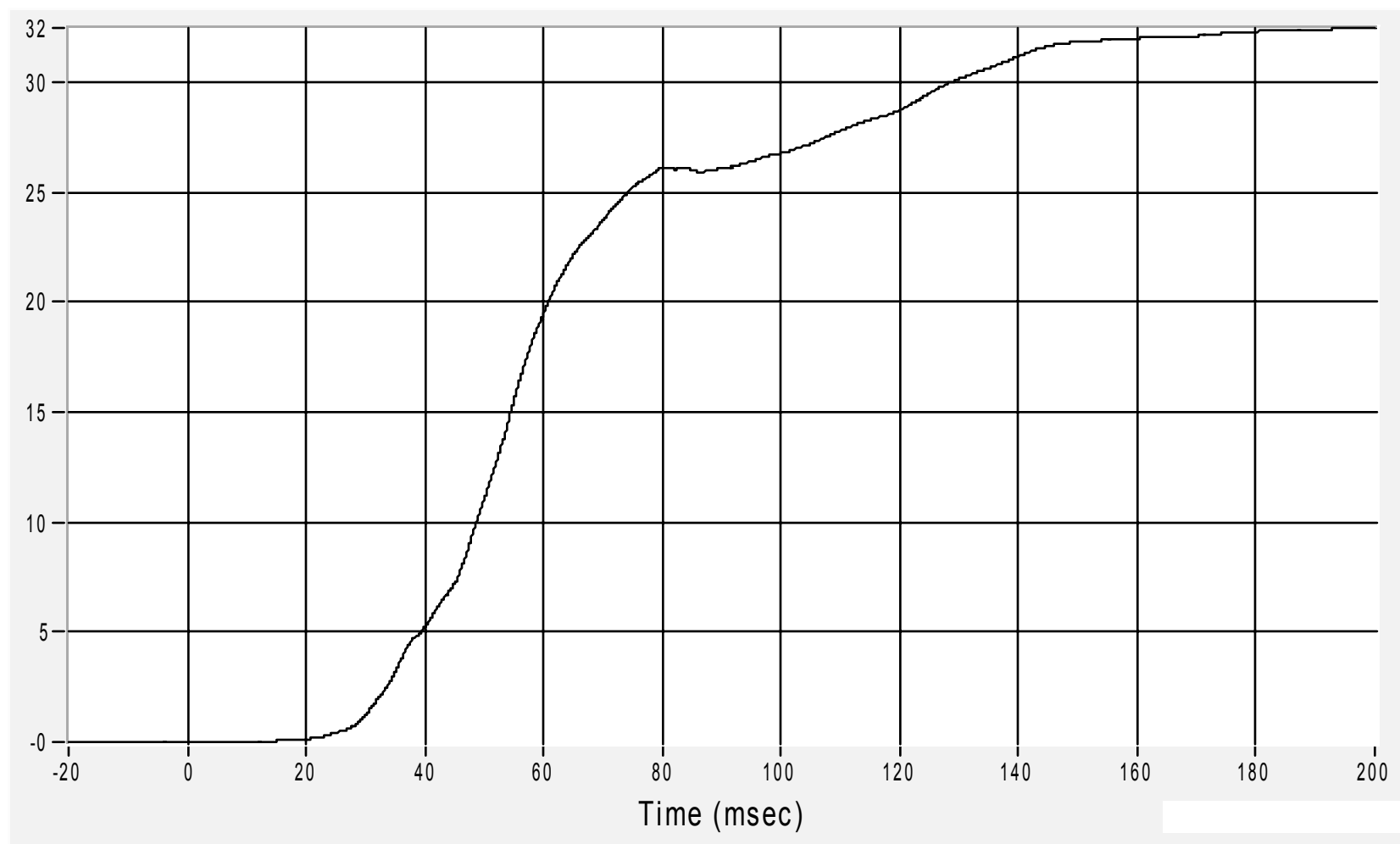
05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Driver Upper Rib (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 32.5 km/h at 199.9 msec**Min 0.0 km/h at 11.2 msec**

05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

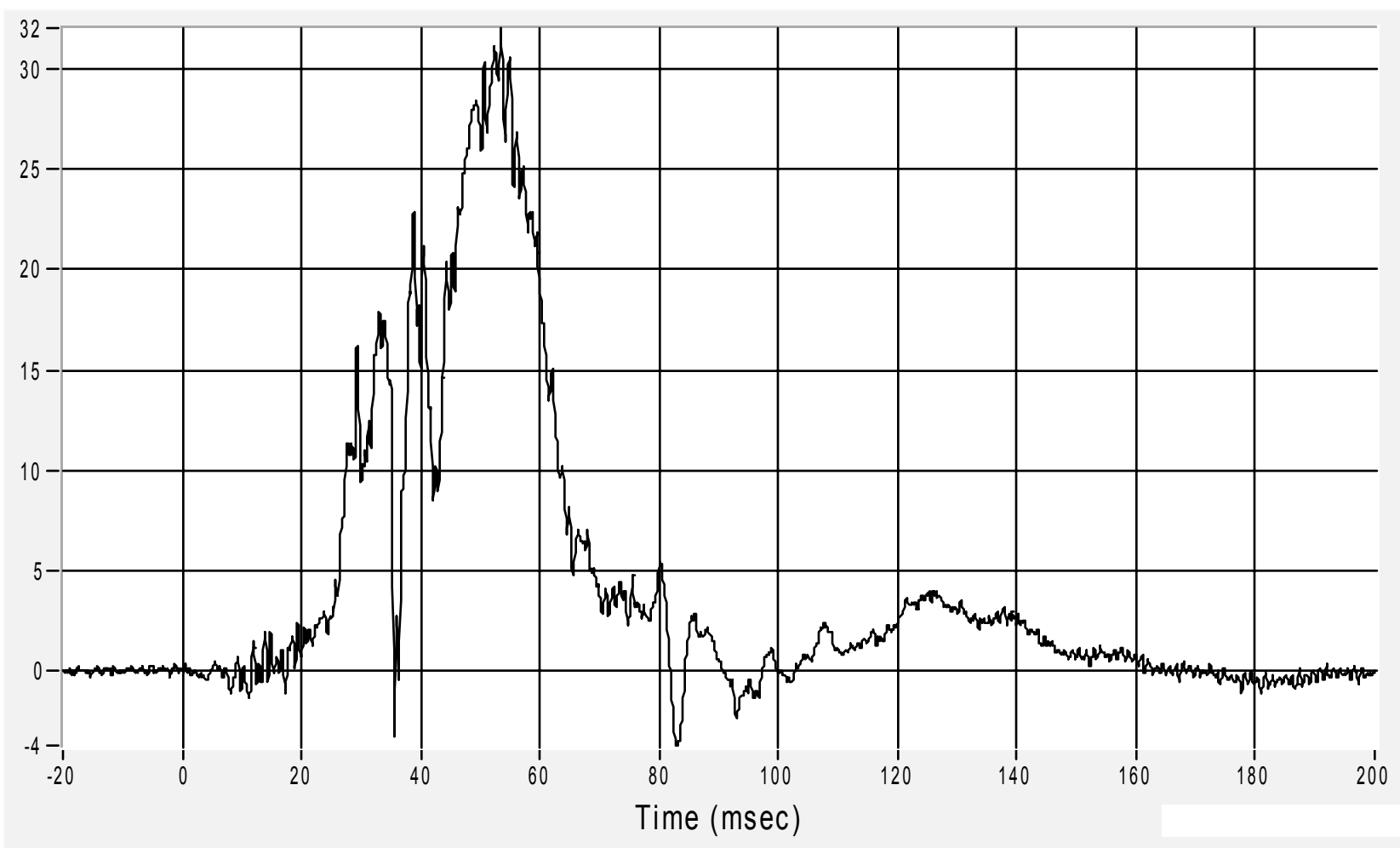
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Driver Lower Rib (Y) - Redundant Acceleration

Acceleration (G's) CFC1000

Max 32.0 G at 53.4 msec

Min -3.7 G at 82.9 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

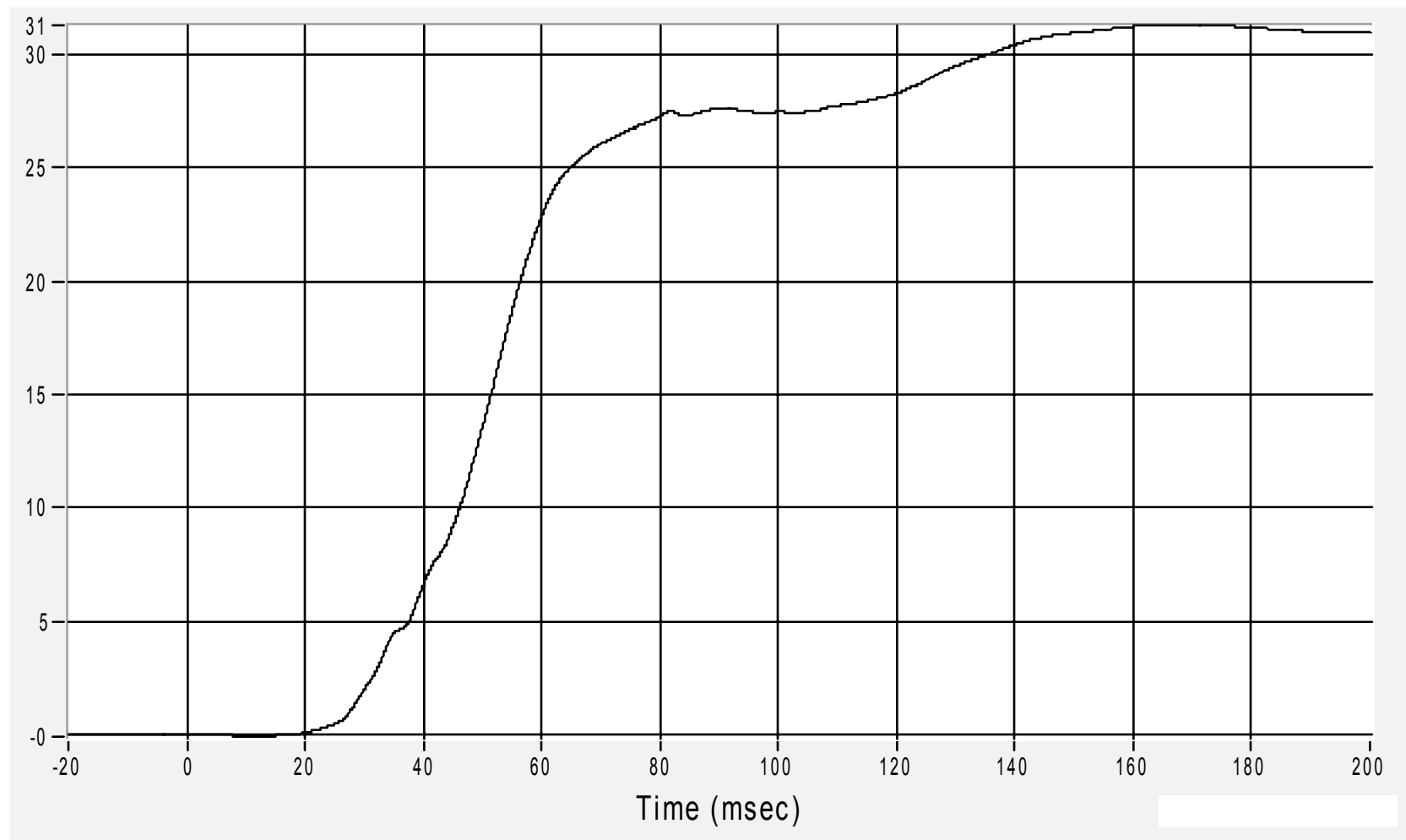
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Rib (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 31.3 km/h at 169.4 msec

Min 0.0 km/h at 11.8 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

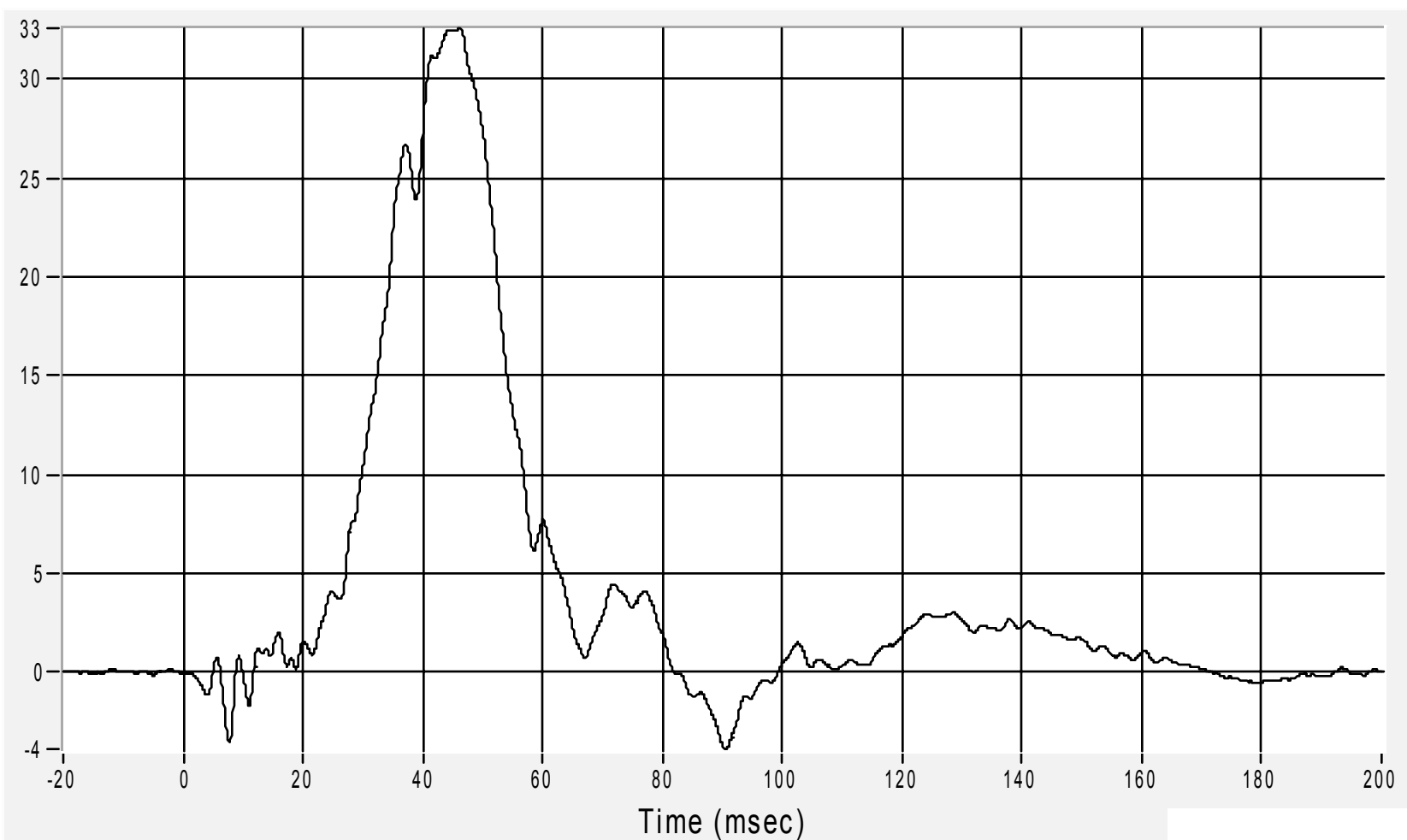
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Spine (Y) - Redundant Acceleration

Acceleration (G's) CFC180

Max 32.6 G at 46.2 msec

Min -3.9 G at 90.5 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

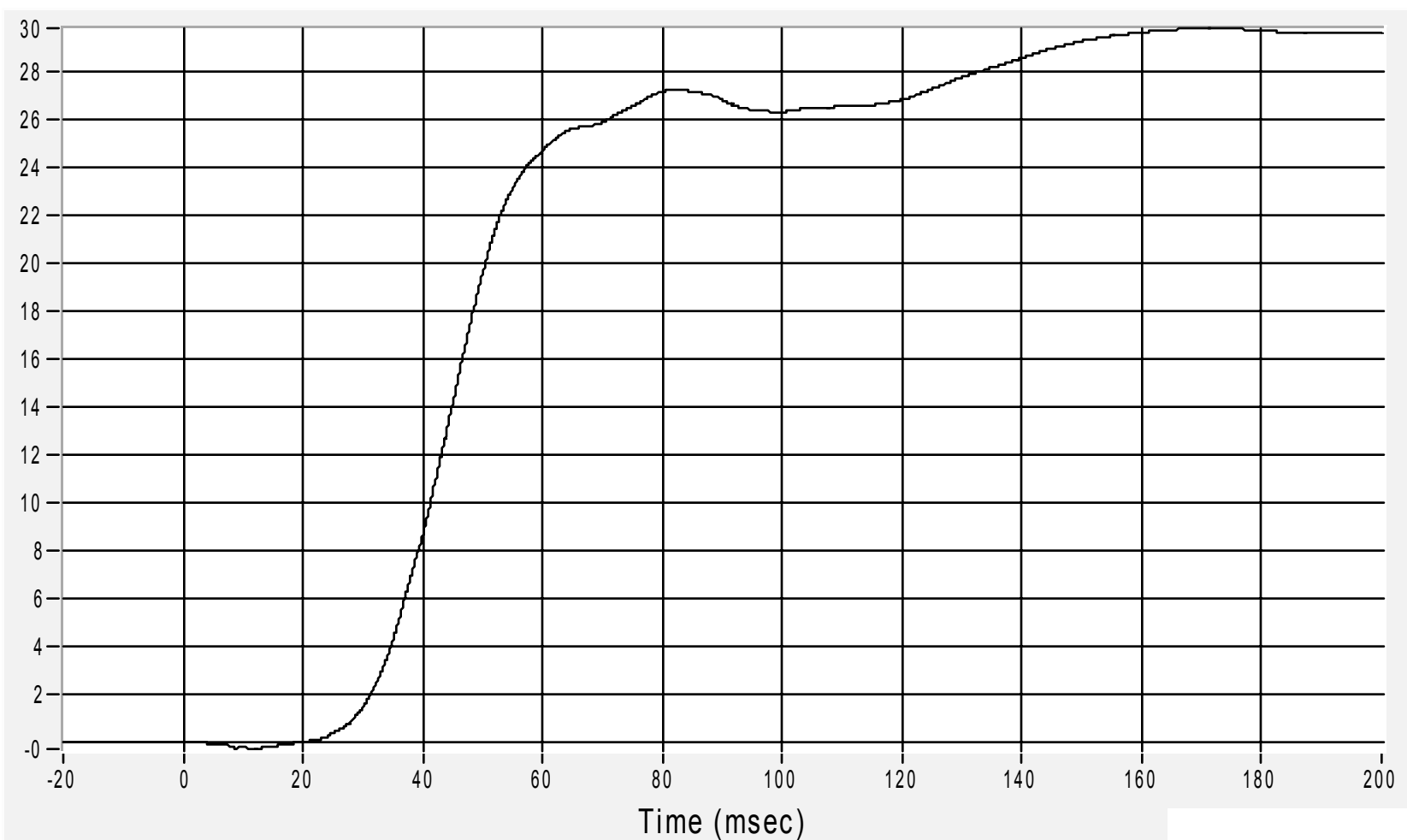
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Spine (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 29.8 km/h at 171.5 msec

Min -0.3 km/h at 11.8 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

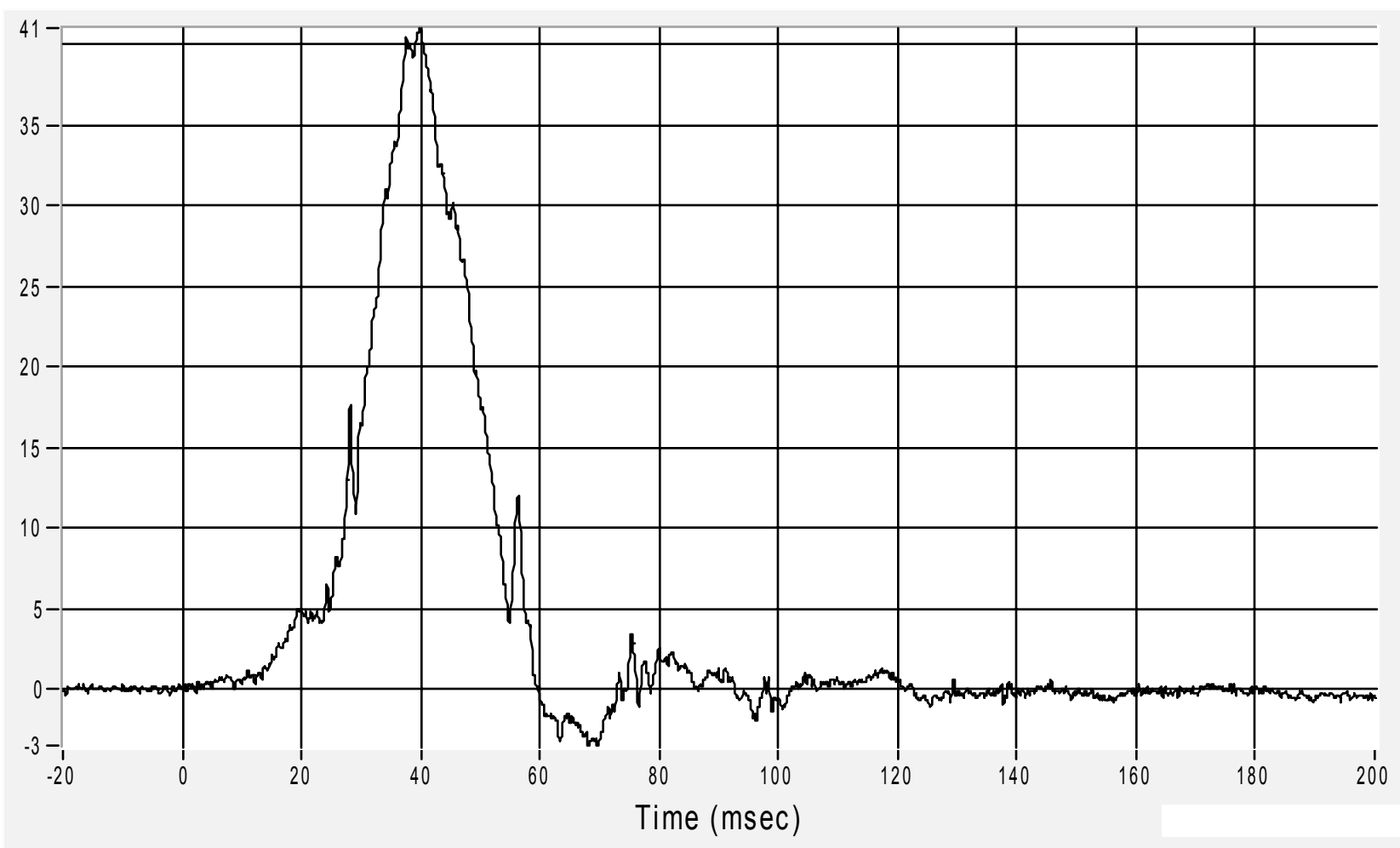
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Pelvic (Y) - Redundant Acceleration

Acceleration (G's) CFC1000

Max 41.0 G at 39.8 msec

Min -3.5 G at 69.6 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

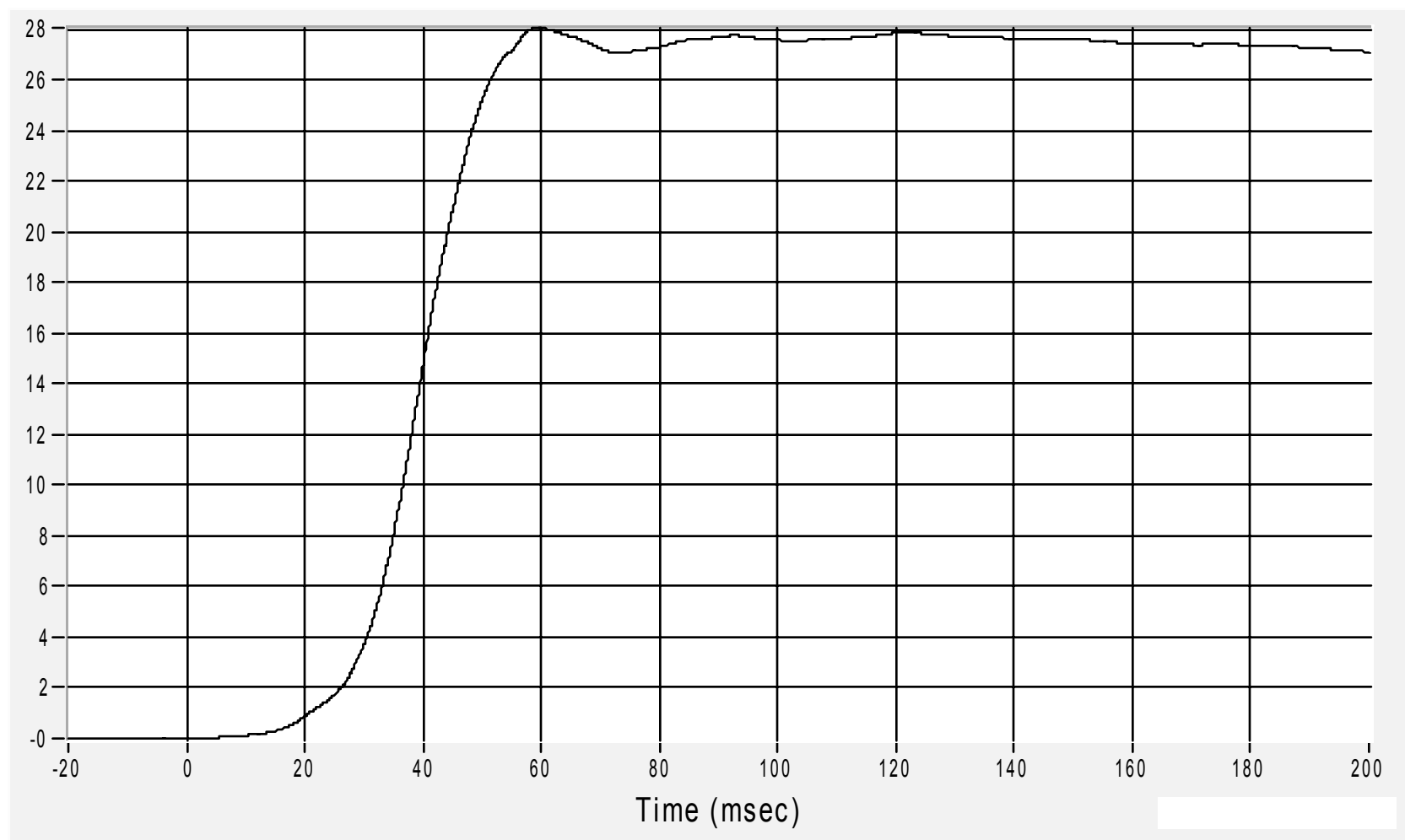
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Pelvic (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 28.1 km/h at 59.4 msec

Min 0.0 km/h at 0.0 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

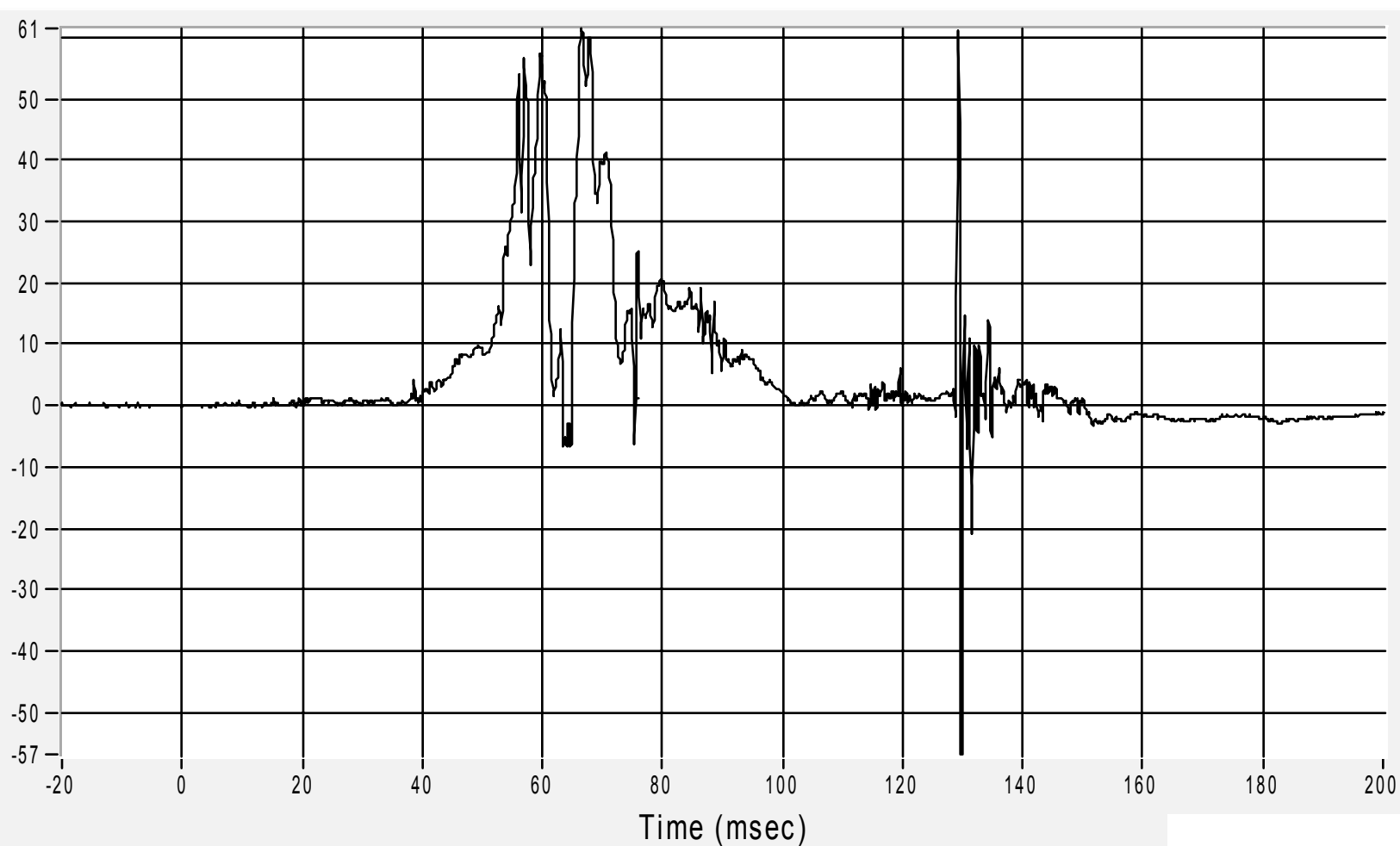
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Upper Rib (Y) - Redundant Acceleration

Acceleration (G's) CFC1000

Max 61.5 G at 66.6 msec

Min -56.8 G at 129.8 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

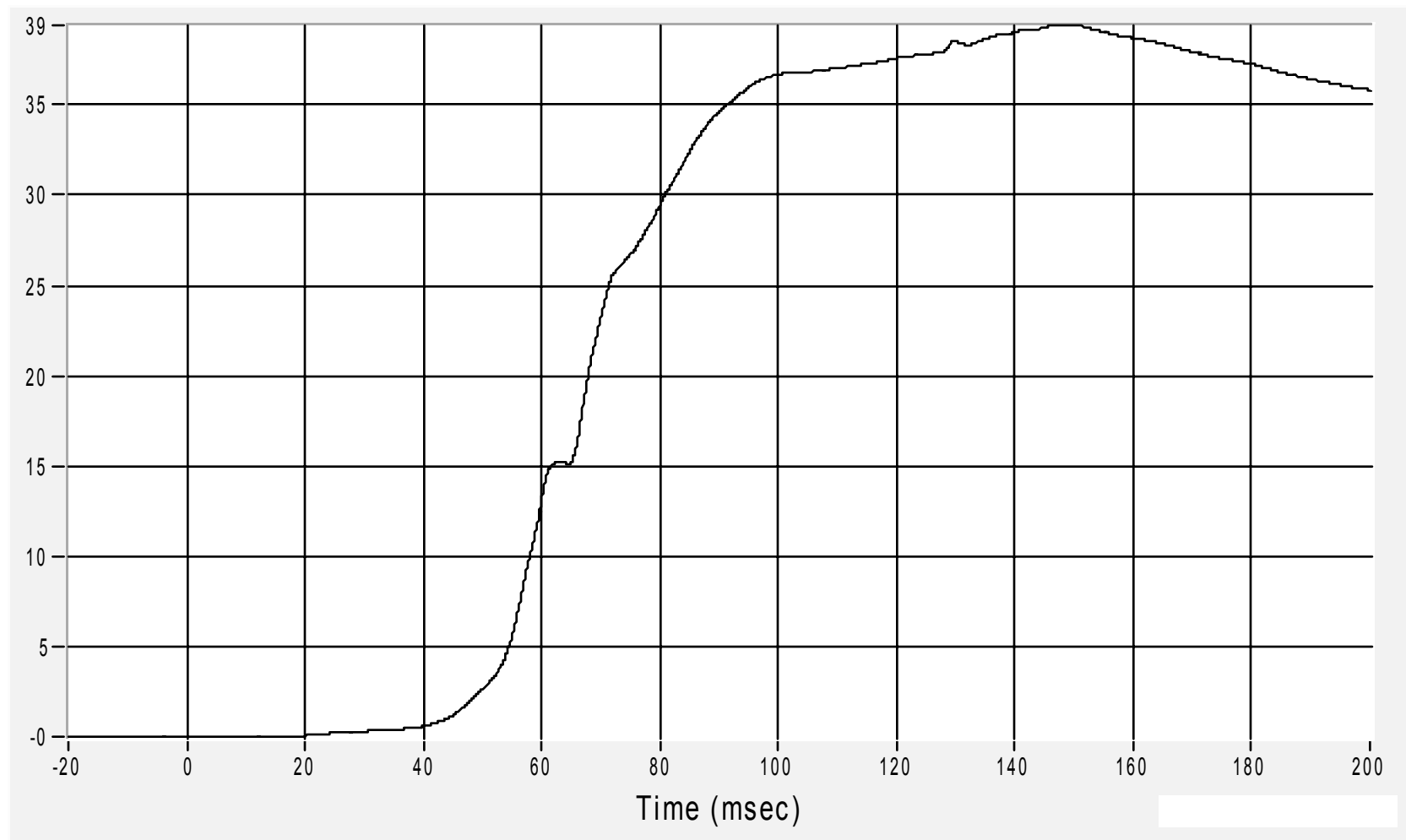
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Upper Rib (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 39.4 km/h at 150.0 msec

Min 0.0 km/h at 5.8 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

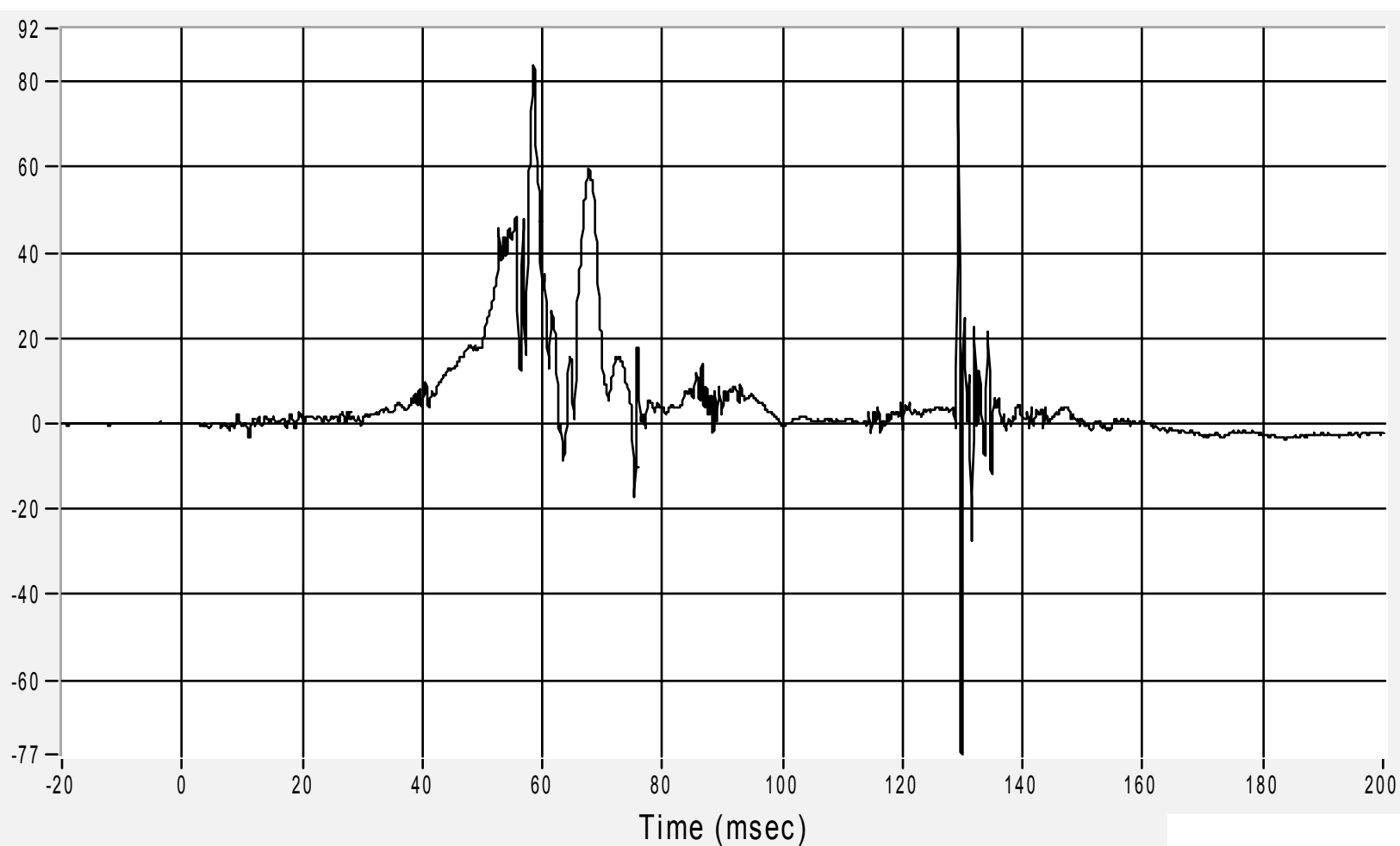
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Rib (Y) - Redundant Acceleration

Acceleration (G's) CFC1000

Max 92.5 G at 129.3 msec

Min -77.4 G at 129.8 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

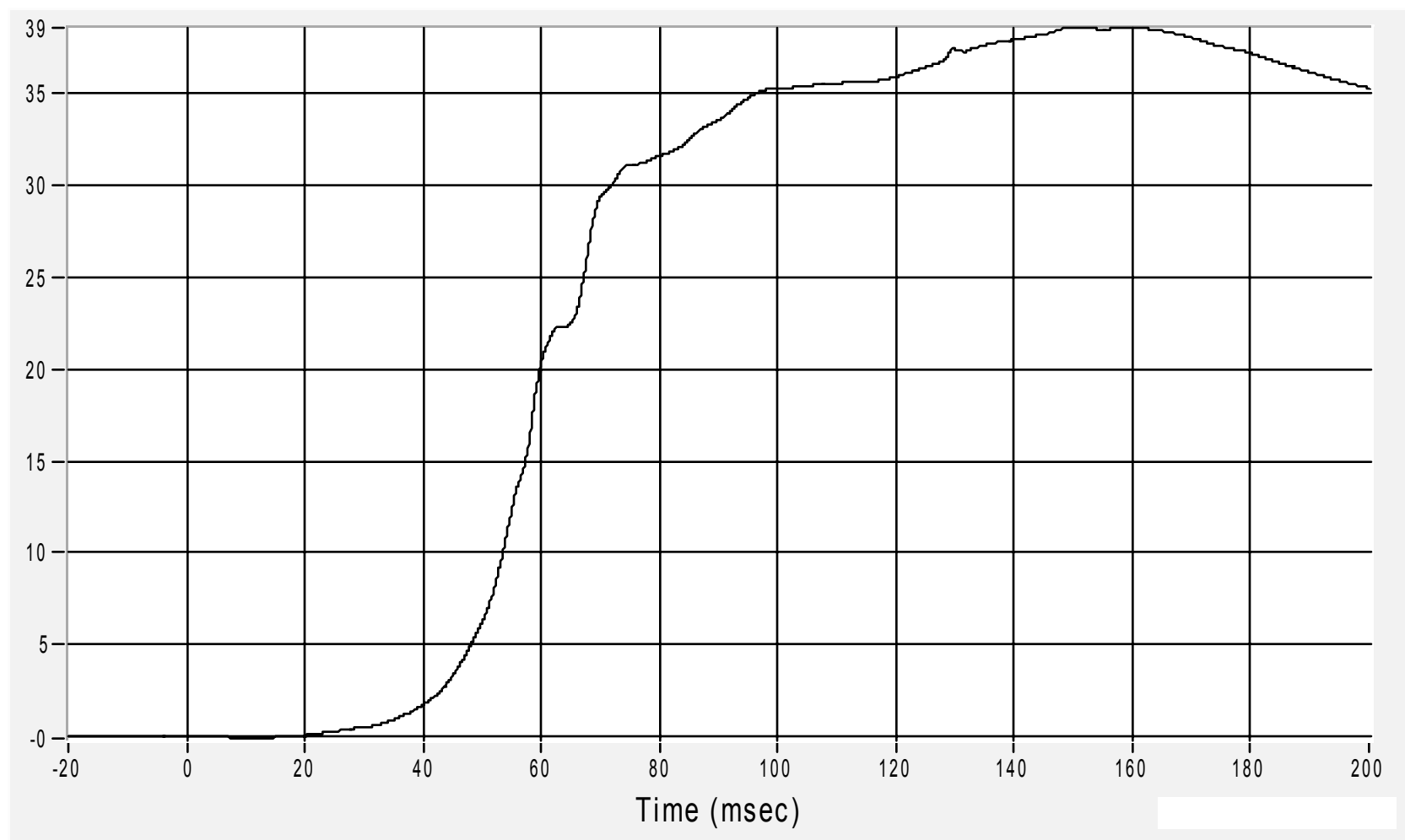
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Rib (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 38.6 km/h at 150.2 msec

Min -0.1 km/h at 12.0 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

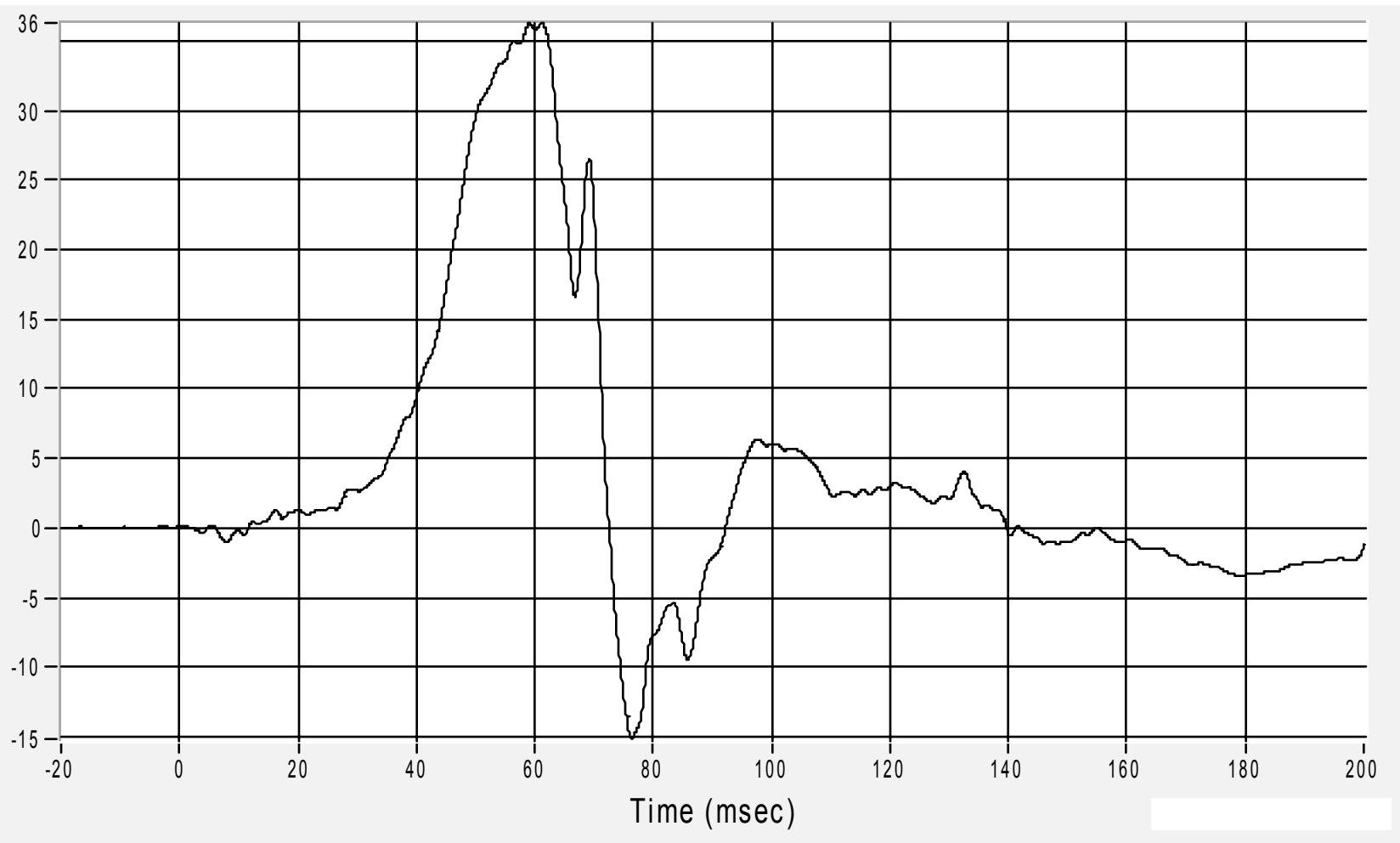
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Passenger Lower Spine (Y) - Redundant Acceleration

Acceleration (G's) CFC180

Max 36.3 G at 59.1 msec

Min -15.2 G at 76.4 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

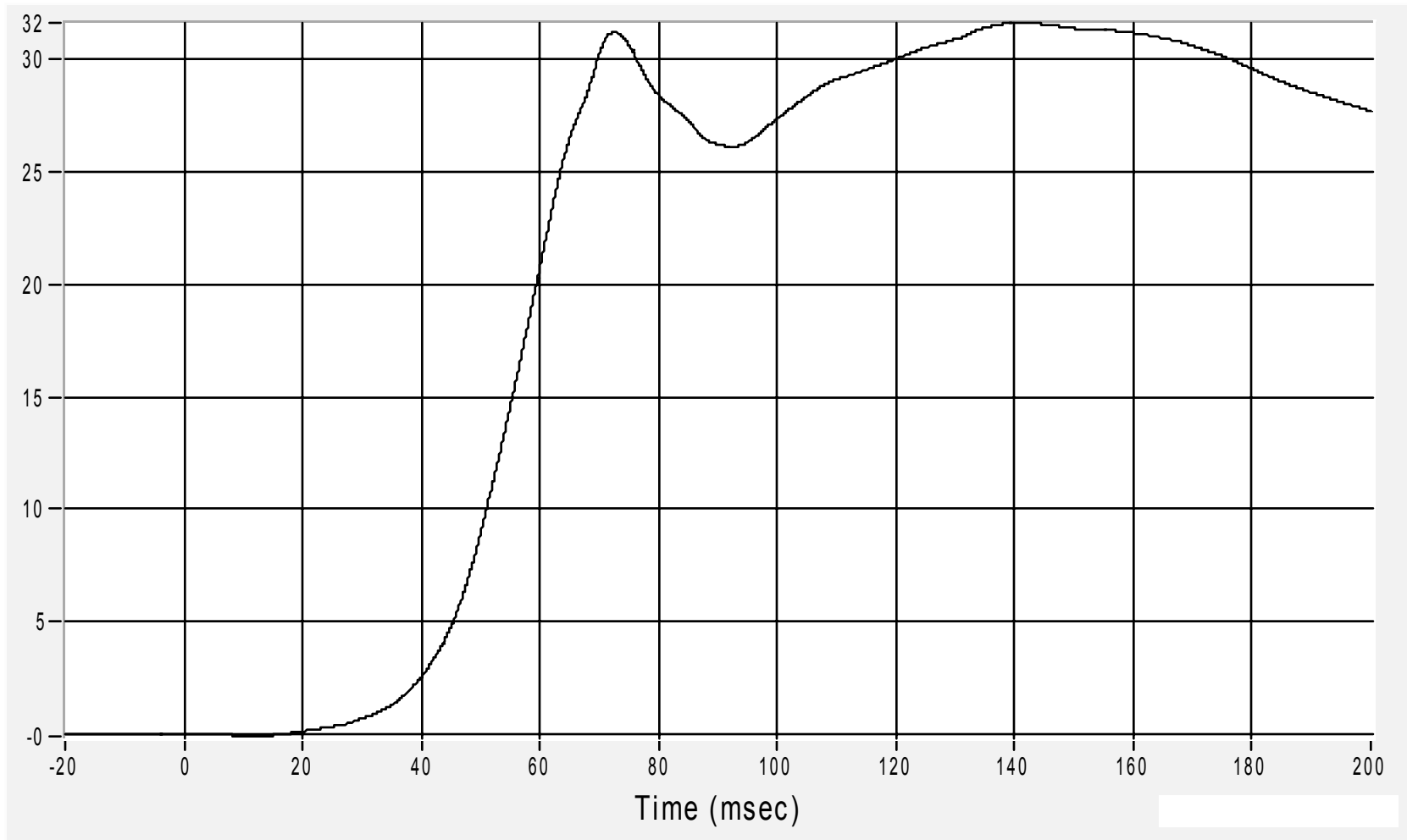
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Spine (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 31.7 km/h at 139.6 msec

Min -0.1 km/h at 11.6 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

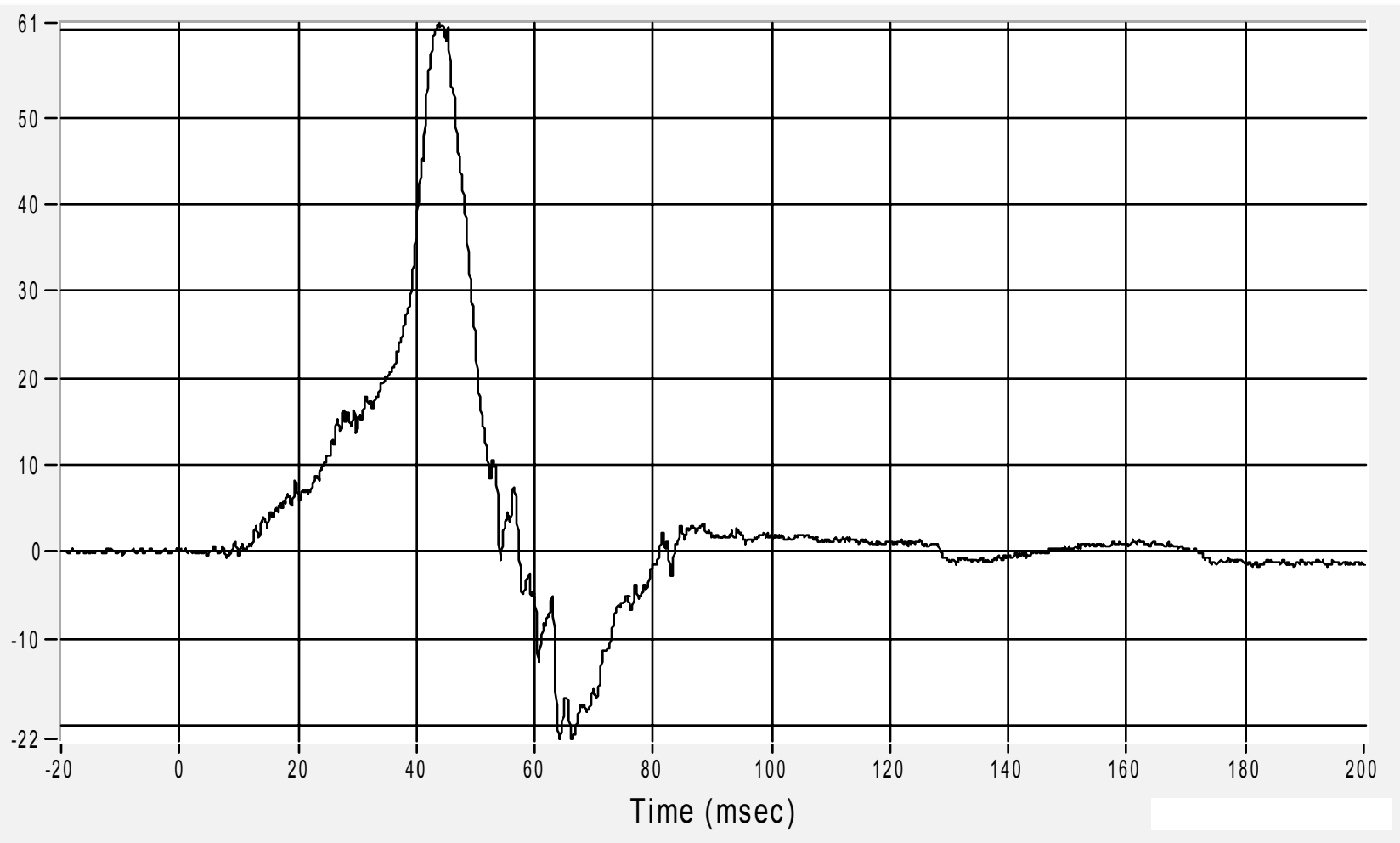
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Passenger Pelvic (Y) - Redundant Acceleration

Acceleration (G's) CFC1000

Max 60.9 G at 43.8 msec

Min -21.6 G at 64.2 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

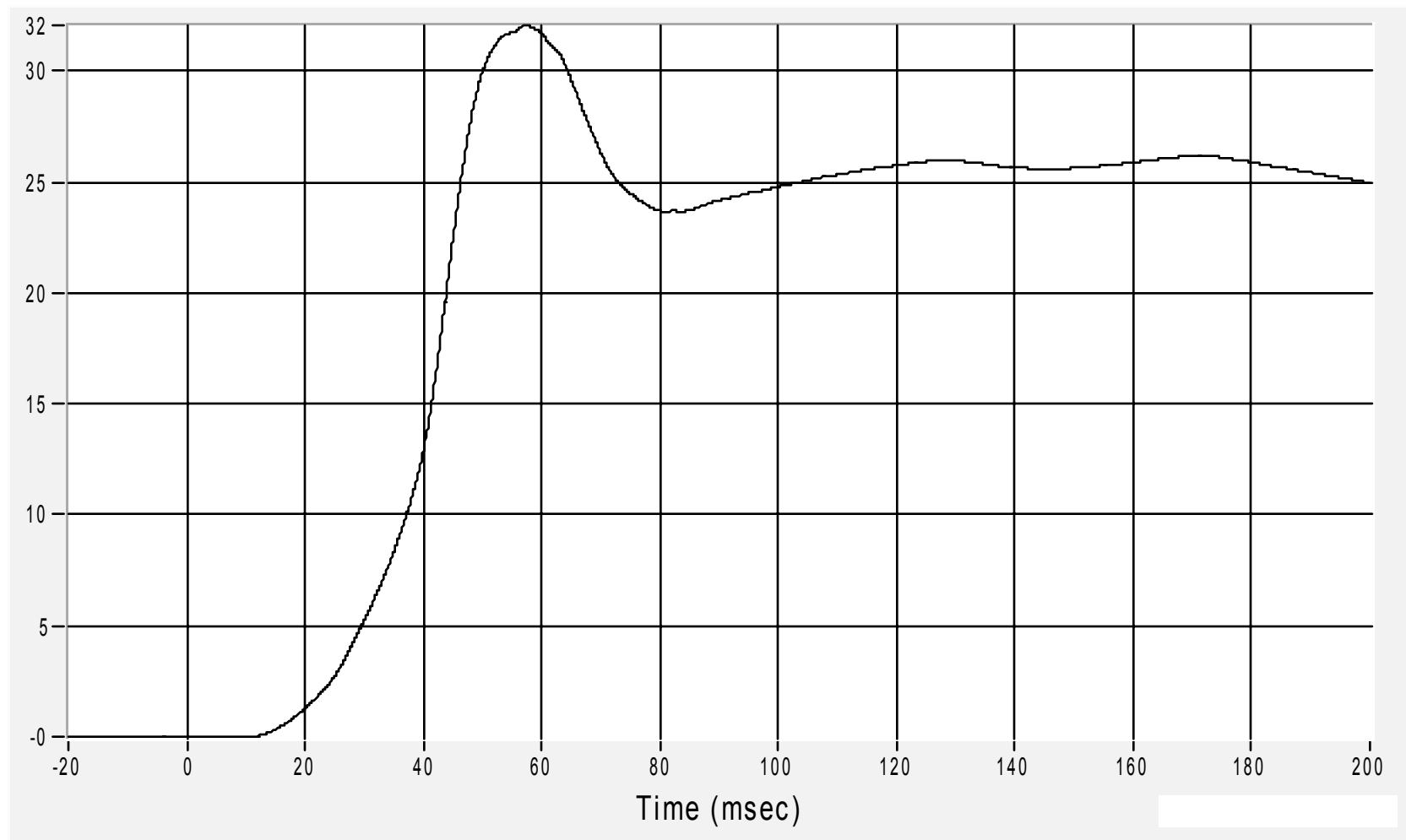
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Pelvic (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 32.1 km/h at 57.4 msec

Min 0.0 km/h at 8.6 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

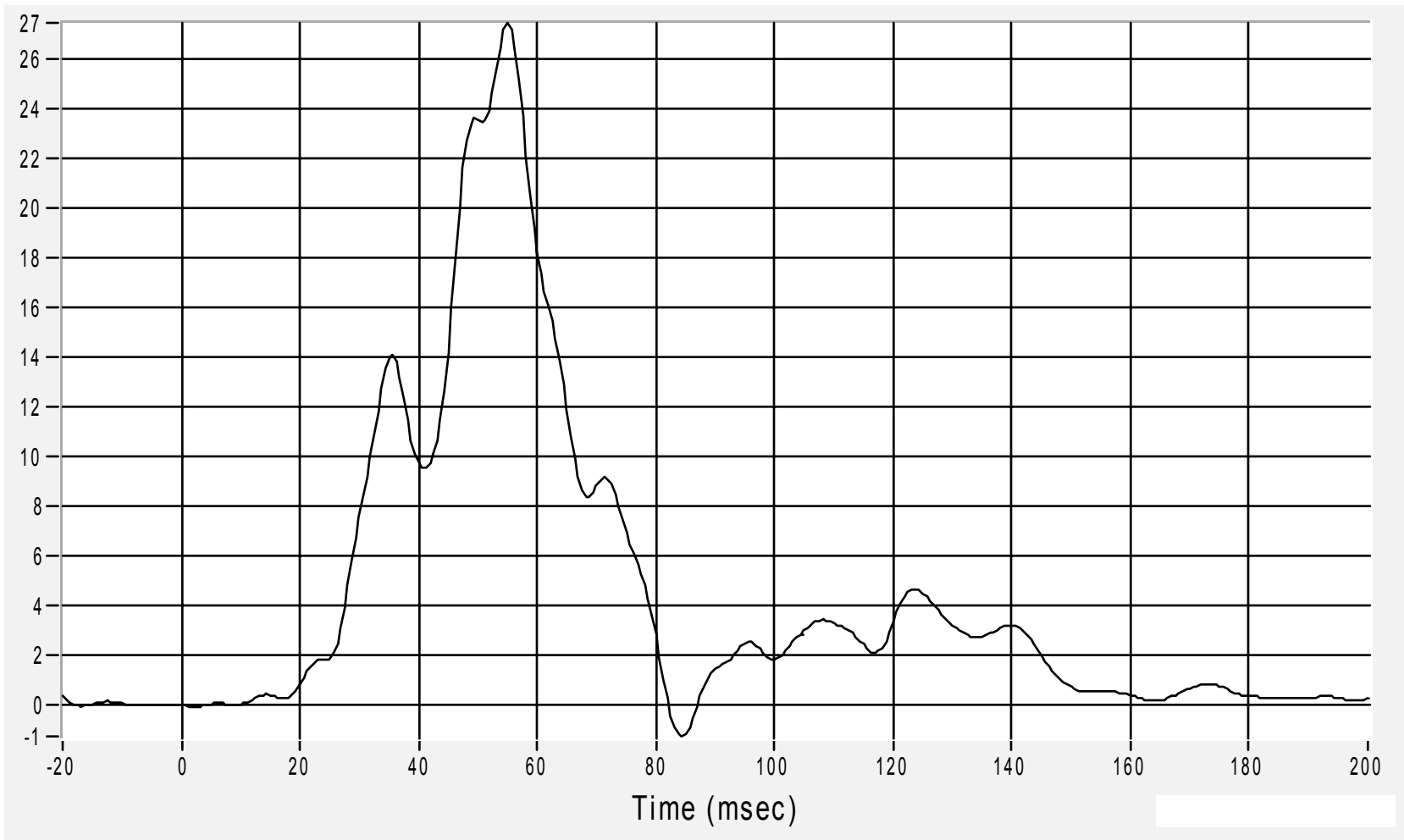
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Rib (Y) - Redundant Acceleration

Acceleration (G's) FIR100

Max 27.5 G at 55.0 msec

Min -1.3 G at 84.4 msec



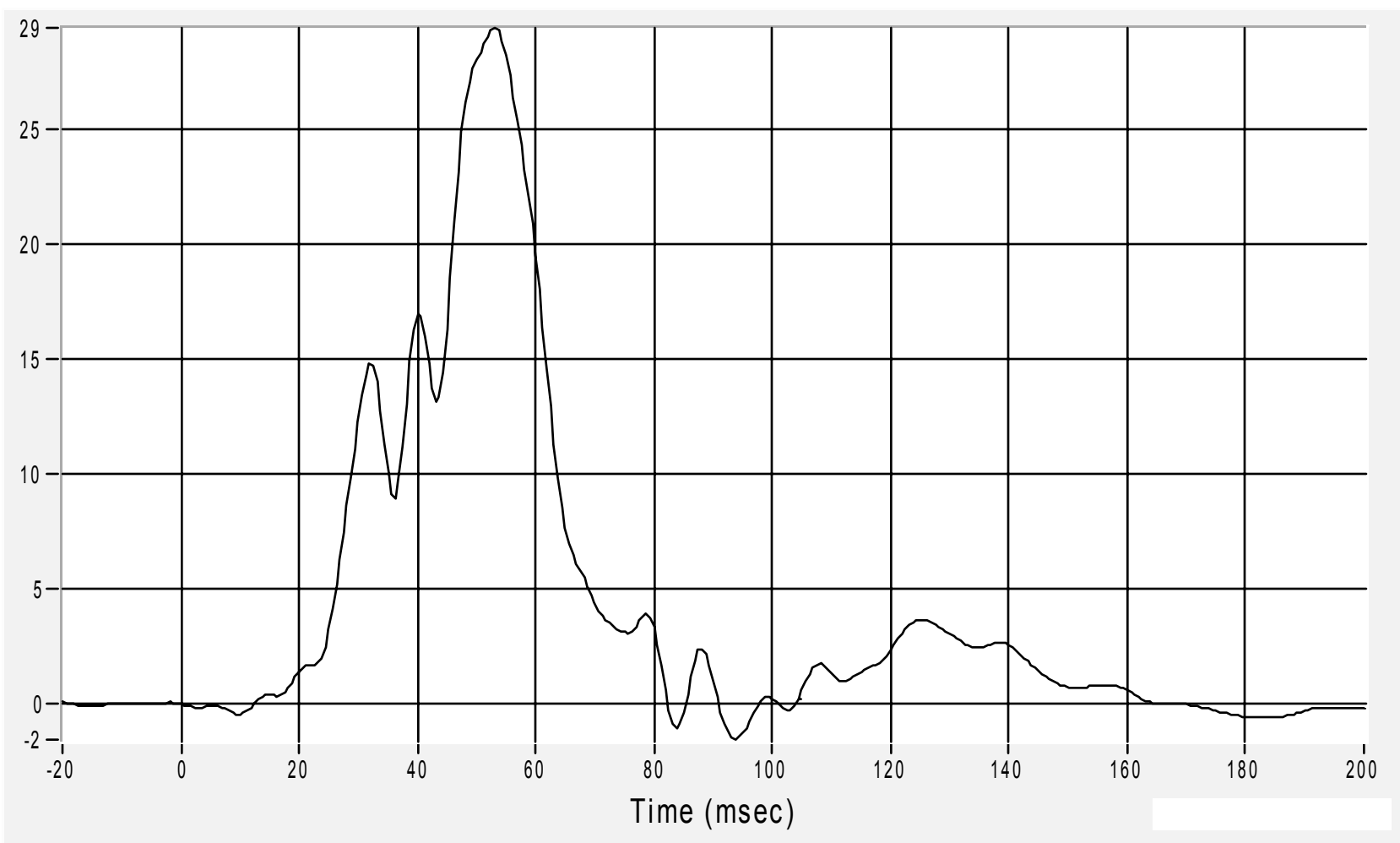
05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Rib (Y) - Redundant Acceleration

Acceleration (G's) FIR100

Max 29.5 G at 53.1 msec**Min -1.5 G at 93.8 msec**

05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

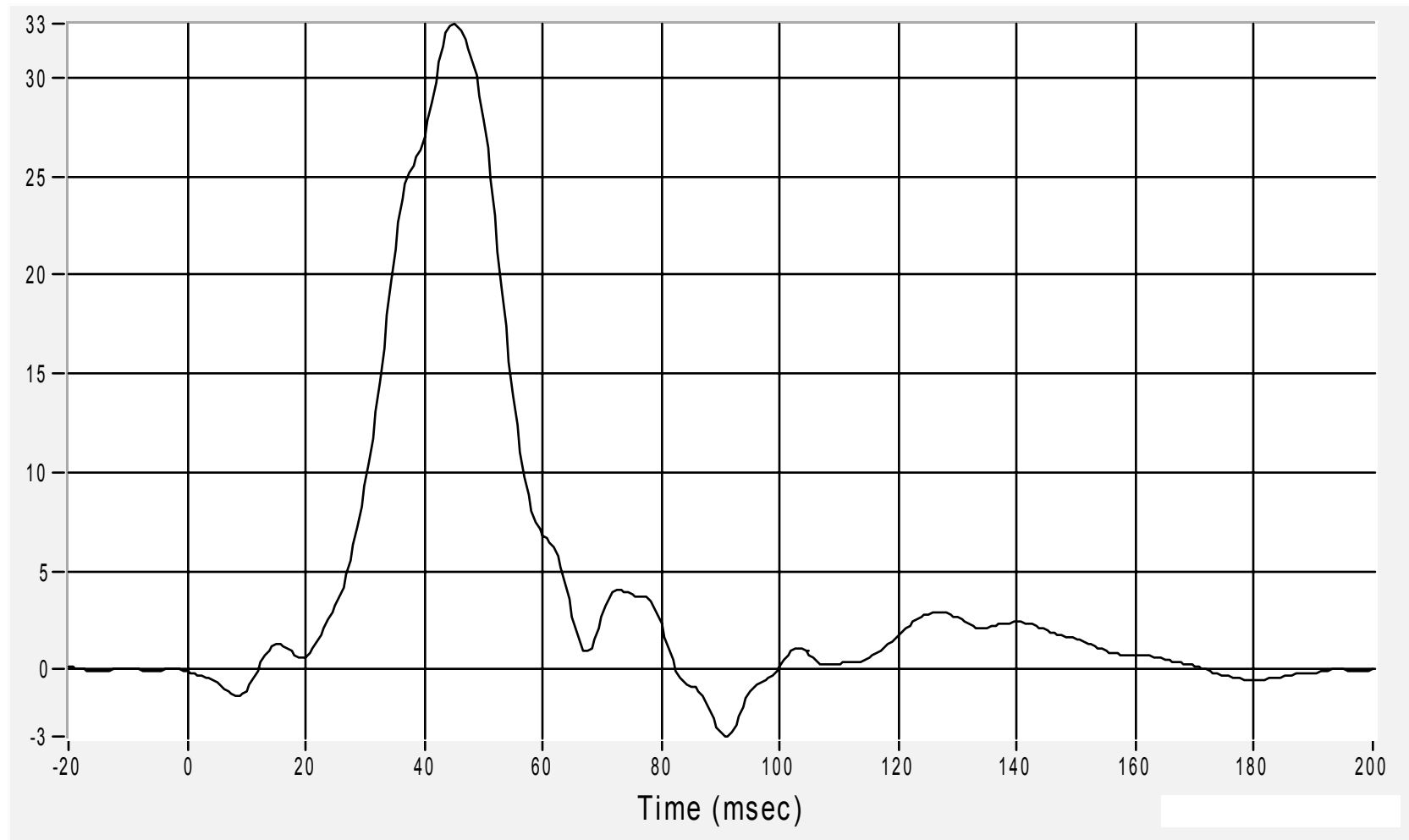
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Driver Lower Spine (Y) - Redundant Acceleration

Acceleration (G's) FIR100

Max 32.7 G at 45.0 msec

Min -3.4 G at 90.6 msec



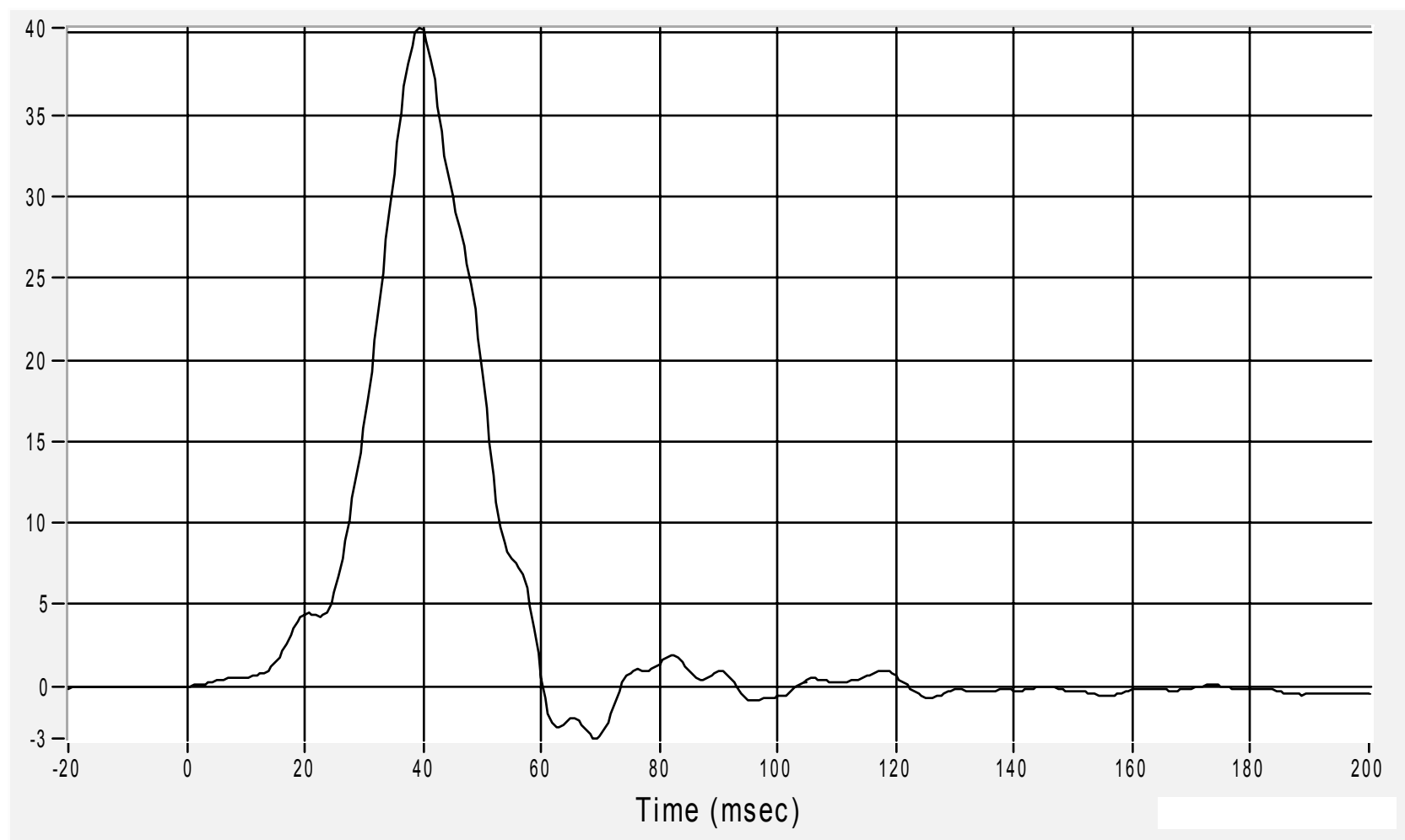
05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Pelvic (Y) - Redundant Acceleration

Acceleration (G's) FIR100

Max 40.3 G at 39.4 msec**Min -3.2 G at 69.4 msec**

05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

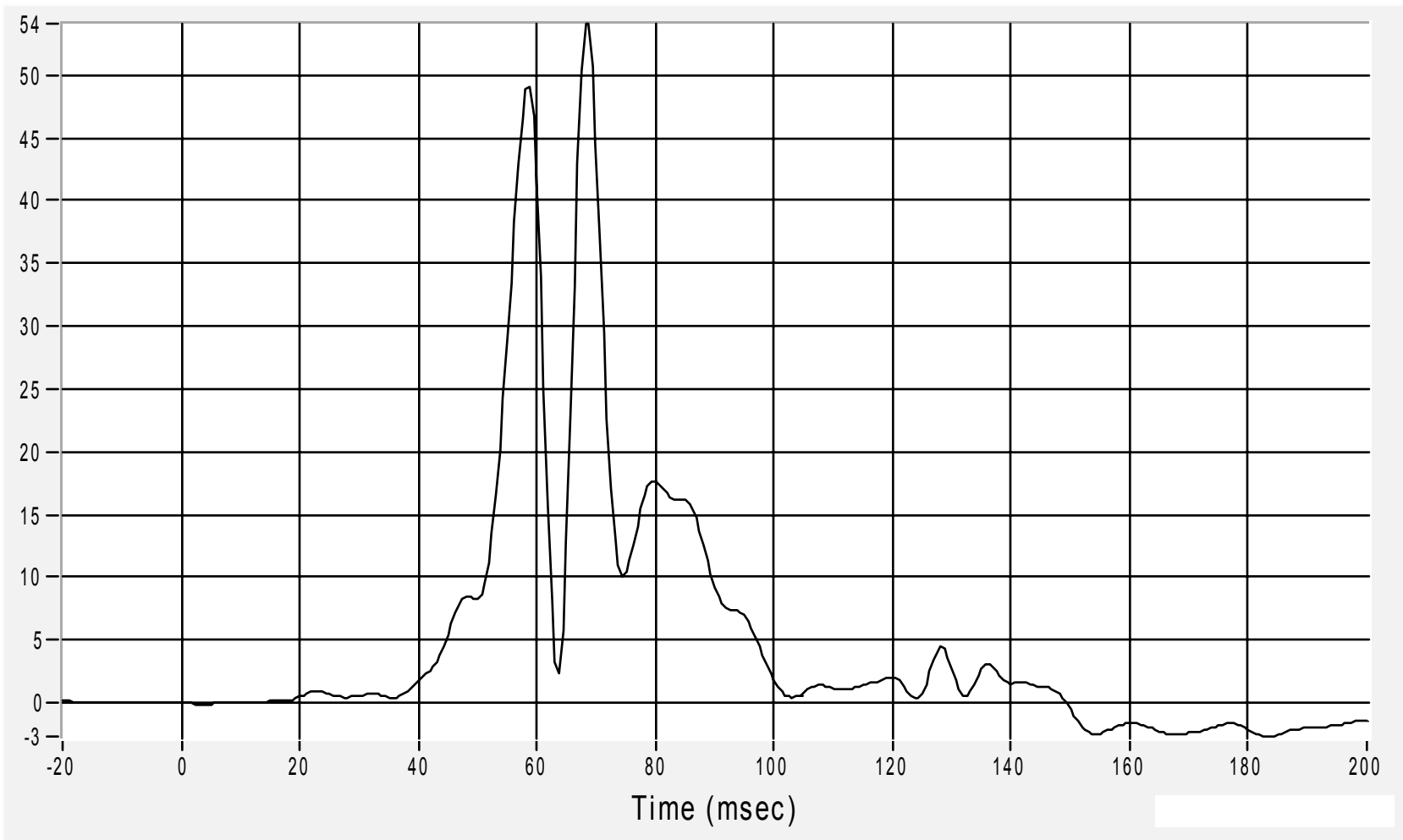
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Passenger Upper Rib (Y) - Redundant Acceleration

Acceleration (G's) FIR100

Max 54.1 G at 68.1 msec

Min -2.7 G at 183.1 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

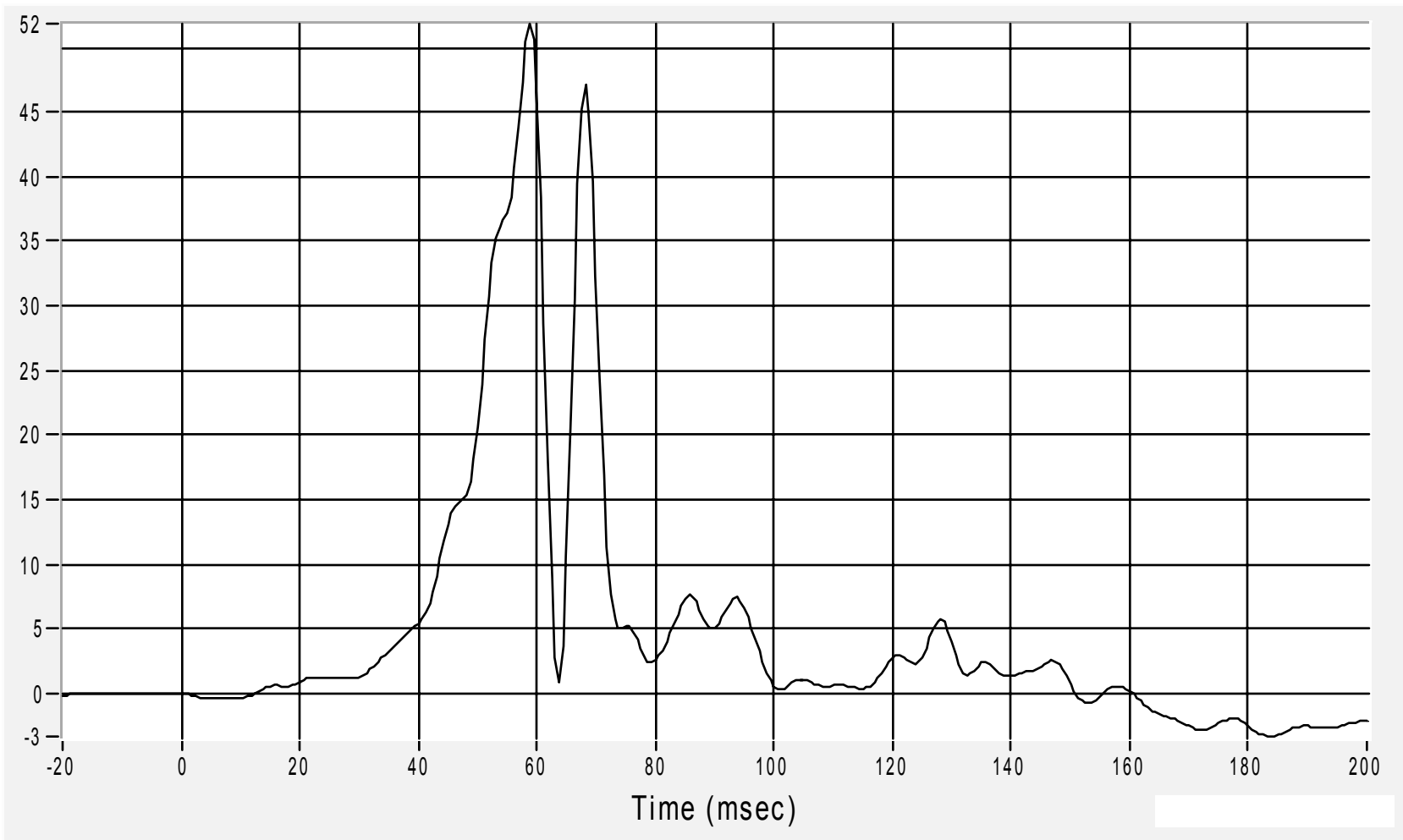
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Rib (Y) - Redundant Acceleration

Acceleration (G's) FIR100

Max 51.8 G at 58.8 msec

Min -3.3 G at 183.8 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

Medical College of Wisconsin
Vehicle Crashworthiness Lab

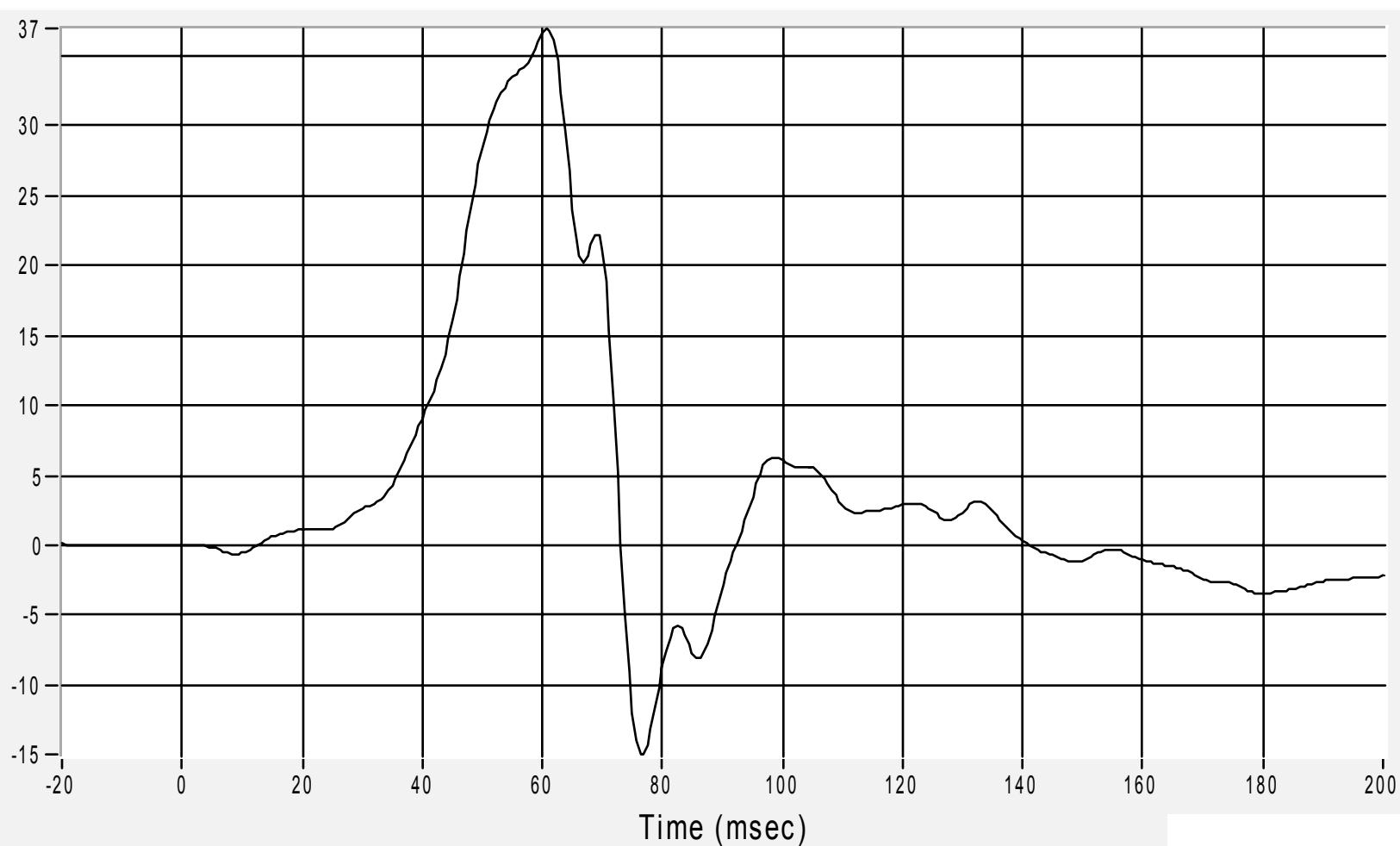
B-138

Passenger Lower Spine (Y) - Redundant Acceleration

Acceleration (G's) FIR100

Max 37.0 G at 60.6 msec

Min -14.9 G at 76.9 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

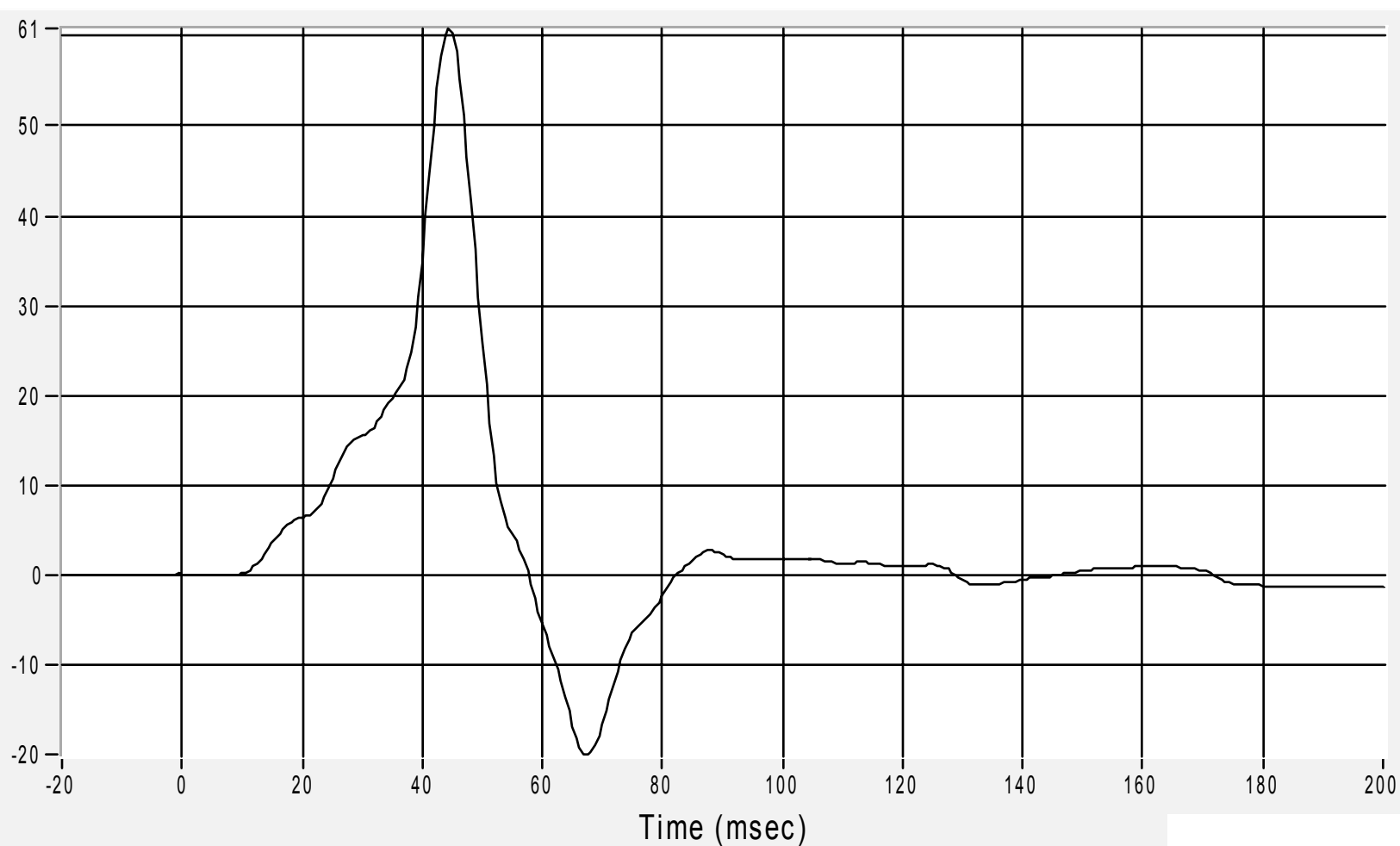
*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

Passenger Pelvic (Y) - Redundant Acceleration

Acceleration (G's) FIR100

Max 60.9 G at 44.4 msec

Min -20.1 G at 67.5 msec



05SN06 - 2005 HONDA ELEMENT 4-DOOR MPV

31 January 2005

*Medical College of Wisconsin
Vehicle Crashworthiness Lab*

APPENDIX C

SID H3 CONFIGURATION AND VERIFICATION RESULTS

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VERIFICATION TEST RESULTS SUMMARY PRE AND POST TEST	Page No.
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DUMMY INSPECTION LIST PRE AND POST TEST	C-4
	C-6

**VERIFICATION TEST RESULTS SUMMARY
PRE AND POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial Number SID H3 056

Test Sequences 06 and 07

TEST	PRE		POST	
	COMMENTS	BY	COMMENTS	BY
EXTERNAL DIMENSIONS	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
THORACIC SHOCK ABSORBER TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
LATERAL THORAX IMPACT TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
LATERAL PELVIS IMPACT TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
ABDOMINAL COMPRESSION	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
LUMBAR FLEXION	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
HYBRID III LATERAL NECK TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
HYBRID III LATERAL HEAD DROP	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer

SID Serial Number SID H3 058

Test Sequences 06 and 07

TEST	PRE		POST	
	COMMENTS	BY	COMMENTS	BY
EXTERNAL DIMENSIONS	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
THORACIC SHOCK ABSORBER TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
LATERAL THORAX IMPACT TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
LATERAL PELVIS IMPACT TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
ABDOMINAL COMPRESSION	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
LUMBAR FLEXION	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
HYBRID III LATERAL NECK TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
HYBRID III LATERAL HEAD DROP	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer

SUMMARY
SID H3 PRE AND POST VERIFICATION
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial Number

SID H3 056

Test Sequences

06 and 07 (SID H3 056)

SID H3 058

06 and 07 (SID H3 058)

TEST PARAMETER	SPECIFICATION	SID H3 056		SID H3 058	
		PRE	POST	PRE	POST
MEASUREMENTS					
Date	-	27Jan05	8Feb05	26Jan05	8Feb05
Sequential Test Number	-	6	7	6	7
Temperature (°C)	18.9-25.5	21.3	22.7	22.2	21.6
Relative Humidity (%)	10-70	21.0	22.3	24.2	22.7
SH – Seated Height (mm)	889-909	908	903	908	909
RH – Rib Height (mm)	501-521	506	502	511	512
HP – Hip Pivot Height (mm)	99	99/99	99/99	99/99	99/99
RD – Rib From Back Line (mm)	229-241	229	229	229	229
KH – Knee Pivot from Back Line (mm)	511-526	521/519	522/523	519/519	519/518
KV – Knee Pivot to Floor (mm)	490-505	500/501	503/503	499/500	503/500
HW – Hip Width (mm)	356-391	364	364	365	365
THORAX IMPACTS					
Date	-	27Jan05	8Feb05	26Jan05	8Feb05
Sequential Test Number	-	6	7	6	7
Temperature (°C)	18.9-25.5	20.4	21.6	22.6	23.4
Relative Humidity (%)	10-70	21.9	26.1	23.7	20.6
Probe Speed (m/s)	4.21-4.33	4.30	4.29	4.24	4.24
Upper Rib Acceleration (G)	37-46	41.9	38.9	44.4	43.8
Lower Rib Acceleration (G)	37-46	41.5	37.8	43.3	42.9
Lower Spine Acceleration (G)	15-22	20.7	19.4	20.6	21.0
PELVIS IMPACTS					
Date	-	27Jan05	8Feb05	26Jan05	8Feb05
Sequential Test Number	-	6	7	6	7
Temperature (°C)	18.9-25.5	22.0	21.6	22.6	23.0
Relative Humidity (%)	10-70	20.1	26.5	23.9	22.7
Probe Speed (m/s)	4.21-4.33	4.30	4.27	4.25	4.27
Pelvis Acceleration (G)	40-60	54.7	56.4	46.5	44.5
THORACIC SHOCK ABSORBER					
Shock Absorber ID Number	-	1746	1746	3130164	3130164
Damper Setting	1-10	6.25	6.25	5	5
Date	-	18Dec04	8Feb05	17Dec04	8Feb05
Sequential Test Number	-	2	3	2	3
Temperature	18.9-25.5	19.7	22.8	22.0	22.9
Relative Humidity	10-70	24.0	23.5	21.1	23.3
Probe Speed (m/s) Low	3.05	3.05	3.05	3.05	3.05
Force (N)	836 – 1125	983.2	992.0	1045.4	1107.4
Displacement (mm)	30 – 35	32.7	33.8	30.0	31.3
Probe Speed (m/s) Middle	4.27	4.27	4.27	4.27	4.27
Force (N)	1730 – 2099	1759.6	1763.7	1873.7	1802.2
Displacement (mm)	32 – 37	35.4	36.5	33.5	34.1
Probe Speed (m/s) High	6.10	6.10	6.10	6.10	6.10
Force (N)	3741 – 4448	3903.9	3853.9	4100.7	4182.3
Displacement (mm)	33 - 40	37.0	38.5	35.1	35.7

TEST PARAMETER	SPECIFICATION	SID H3 056		SID H3 058	
		PRE	POST	PRE	POST
ABDOMINAL COMPRESSION					
Date	-	24Jan05	4Feb05	25Jan05	4Feb05
Sequential Test Number	-	6	7	6	7
Temperature (°C)	18.9-25.5	20.6	21.5	22.6	21.6
Relative Humidity (%)	10-70	26.0	30.8	23.3	30.4
Force at 13 mm (N)	104-162	138.6	132.3	139.6	138.8
Force at 19 mm (N)	163-221	190.0	182.5	189.1	188.2
Force at 25 mm (N)	222-280	251.9	245.3	246.3	250.4
Force at 33 mm (N)	325-391	347.0	348.3	338.0	349.3
LUMBAR FLEXION					
Date	-	25Jan05	7Feb05	25Jan05	7Feb05
Sequential Test Number	-	6	7	6	7
Temperature (°C)	18.9-25.5	22.9	22.6	23.1	22.2
Relative Humidity (%)	10-70	23.9	31.5	23.2	33.0
Force at 0° (N)	0-26.7	0	0	0	0
Force at 0° (N)	97.8-151.2	126.1	134.2	120.6	102.2
Force at 0° (N)	151.2-204.6	159.3	169.2	170.3	163.1
Force at 0° (N)	204.6-258	220.4	236.4	209.0	216.7
Return Angle	12° Maximum	5.2	5.4	3.6	1.7
HYBRID III LATERAL NECK					
Date	-	25Jan05	07Feb05	26Jan05	04Feb05
Sequential Test Number	-	6	7	6	7
Temperature (°C)	18.9-25.5	20.0	22.3	20.0	22.2
Relative Humidity (%)	10-70	30.3	31.8	25.9	27.2
Pendulum Speed (m/s)	6.89-7.13	7.10	7.10	7.08	7.08
Pendulum Pulse 10ms (m/s)	1.96-2.55	2.02	2.00	2.17	2.31
Pendulum Pulse 20ms (m/s)	4.12-5.10	4.18	4.80	4.46	4.46
Pendulum Pulse 30ms (m/s)	5.73-7.01	5.94	6.99	6.49	6.40
Pendulum Pulse 40 –70 ms (m/s)	6.27-7.64	7.55	6.87	7.20	7.13
Max Head rotation (deg)	66-82	69.7	73.1	72.5	75.2
Head angle crosses zero (ms)	58-67	61.5	65.8	59.0	61.5
Peak Moment (Nm)	73-88	74.5	81.0	74.0	74.7
Moment crosses zero (ms)	49-64	51.8	49.0	53.8	55.6
Max rotation wrt peak moment (ms)	2-15	5.5	8.32	11.1	9.92
HYBRID III LATERAL HEAD DROP					
Date	-	24Jan05	4Feb05	24Jan05	4Feb05
Sequential Test Number	-	6	7	6	7
Temperature (°C)	18.9-25.5	21.0	22.6	21.3	23.8
Relative Humidity (%)	10-70	25.9	23.5	25.4	23.9
Resultant Max (G)	120-150	121.3	129.1	139.6	135.6
Longitudinal Max (G)	<15	1.3	13.0	9.3	10.8

**DUMMY INSPECTION LIST
PRE AND POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial Number

SID H3 056

SID H3 058

Test Sequences

06 and 07 (SID H3 056)

06 and 07 (SID H3 058)

		SID H3 056		SID H3 058	
		PRE	POST	PRE	POST
	Date	24Jan05	1Feb05	24Jan05	1Feb05
	Performed By	Mark Meyer	Mark Meyer	Mark Meyer	Mark Meyer
PART	INSPECTION				
Skin	Visual	Pass	Pass	Pass	Pass
Head	Visual, Ballast, Accelerometer Mount	Pass	Pass	Pass	Pass
Neck	Visual and Palpated, Cable Torque	Pass	Pass	Pass	Pass
Spine Box	Visual, Ballast, Weldment, Accelerometer Mount	Pass	Pass	Pass	Pass
Rib Cage	Visual, Palpated, Measured, Stiffness	Pass	Pass	Pass	Pass
Sternum	Visual	Pass	Pass	Pass	Pass
Lumbar Spine	Visual	Pass	Pass	Pass	Pass
Abdomen	Visual	Pass	Pass	Pass	Pass
Pelvis	Visual, Palpated, Accelerometer Mount	Pass	Pass	Pass	Pass
Upper Legs	Visual	Pass	Pass	Pass	Pass
Knees	Visual, Stops, Inserts	Pass	Pass	Pass	Pass
Lower Legs	Visual, Range of Motion	Pass	Pass	Pass	Pass
Ankles	Visual, Range of Motion	Pass	Pass	Pass	Pass
Feet	Visual, Range of Motion	Pass	Pass	Pass	Pass
Joints	1 to 2 G Range	Pass	Pass	Pass	Pass
Other		N/A	N/A	N/A	N/A

APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TABLE OF CONTENTS

Section	Page No.
SID INSTRUMENTATION	D-3
VEHICLE INSTRUMENTATION	D-4
MDB INSTRUMENTATION	D-4

SID INSTRUMENTATION**FRONT SID H3 NO. 056**

	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD X ACCELERATION	J43443	ENDEVCO	01Sep04
HEAD Y ACCELERATION	J22318	ENDEVCO	01Sep04
HEAD Z ACCELERATION	J36659	ENDEVCO	27Aug04
SIX AXIS UPPER NECK LOAD CELL (FX, FY, FZ, MX, MY, MZ)	1591	DENTON ATD	10Aug04
UPPER RIB ACCELERATION	J43512	ENDEVCO	27Aug04
LOWER RIB ACCELERATION	J43445	ENDEVCO	27Aug04
LOWER SPINE ACCELERATION	J44021	ENDEVCO	27Aug04
PELVIS ACCELERATION	J43810	ENDEVCO	27Aug04
UPPER RIB REDUNDANT ACCELERATION	J43798	ENDEVCO	27Aug04
LOWER RIB REDUNDANT ACCELERATION	J43434	ENDEVCO	26Aug04
LOWER SPINE REDUNDANT ACCELERATION	J43485	ENDEVCO	31Aug04
PELVIS REDUNDANT ACCELERATION	J43739	ENDEVCO	27Aug04

REAR SID H3 NO. 058

	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD X ACCELERATION	J35932	ENDEVCO	26Aug04
HEAD Y ACCELERATION	J43481	ENDEVCO	27Aug04
HEAD Z ACCELERATION	J43442	ENDEVCO	27Aug04
SIX AXIS UPPER NECK LOAD CELL (FX, FY, FZ, MX, MY, MZ)	0452	DENTON	10Aug04
UPPER RIB ACCELERATION	J43444	ENDEVCO	27Aug04
LOWER RIB ACCELERATION	J44018	ENDEVCO	27Aug04
LOWER SPINE ACCELERATION	J44022	ENDEVCO	27Aug04
PELVIS ACCELERATION	J43708	ENDEVCO	27Aug04
UPPER RIB REDUNDANT ACCELERATION	J43809	ENDEVCO	27Aug04
LOWER RIB REDUNDANT ACCELERATION	J43480	ENDEVCO	31Aug04
LOWER SPINE REDUNDANT ACCELERATION	J43468	ENDEVCO	27Aug04
PELVIS REDUNDANT ACCELERATION	J43441	ENDEVCO	27Aug04

VEHICLE INSTRUMENTATION

	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL X	P21689	ENDEVCO	27Aug04
RIGHT FRONT SILL Y	P24639	ENDEVCO	31Aug04
RIGHT FRONT SILL Z	P22350	ENDEVCO	26Aug04
RIGHT REAR SILL X	P21785	ENDEVCO	27Aug04
RIGHT REAR SILL Y	P21605	ENDEVCO	26Aug04
RIGHT REAR SILL Z	P24165	ENDEVCO	26Aug04
REAR FLOORPAN ABOVE AXLE X	P22366	ENDEVCO	26Aug04
REAR FLOORPAN ABOVE AXLE Y	P22311	ENDEVCO	27Aug04
REAR FLOORPAN ABOVE AXLE Z	P21898	ENDEVCO	26Aug04
LEFT REAR SILL Y	P21617	ENDEVCO	27Aug04
LEFT FRONT SILL Y	P12931	ENDEVCO	26Aug04
LEFT FRONT DOOR CENTERLINE Y	N/A	N/A	N/A
RIGHT REAR OCCUPANT COMP Y	P19387	ENDEVCO	31Aug04
MID-REAR OF LEFT FRONT DOOR Y	N/A	N/A	N/A
LEFT FRONT DOOR UPPER C/L Y	N/A	N/A	N/A
MID-REAR OF LEFT REAR DOOR Y	P13868	ENDEVCO	26Aug04
LEFT REAR DOOR UPPER C/L Y	P23025	ENDEVCO	27Aug04
LEFT LOWER B-PILLAR Y	P23020	ENDEVCO	31Aug04
LEFT MIDDLE B-PILLAR Y	P24562	ENDEVCO	26Aug04
LEFT LOWER A-PILLAR Y	P21788	ENDEVCO	27Aug04
LEFT UPPER A-PILLAR	P24562	ENDEVCO	30Aug04
FRONT SEAT TRACK Y	P25036	ENDEVCO	26Aug04
REAR SEAT TRACK Y	98G98E11-K02	ENTRAN	27Aug04
VEHICLE CG X	P22230	ENDEVCO	26Aug04
VEHICLE CG Y	P22298	ENDEVCO	26Aug04
VEHICLE CG Z	B13038	ENDEVCO	31Aug04

MDB INSTRUMENTATION

MDB CG X	P25041	ENDEVCO	07Sep04
MDB CG Y	P23595	ENDEVCO	07Sep04
MDB CG Z	P24733	ENDEVCO	03Sep04
MDB REAR FRAME MEMBER X	P21608	ENDEVCO	07Sep04
MDB REAR FRAME MEMBER Y	P24089	ENDEVCO	07Sep04