

REPORT NUMBER: 7880-1

**OPTIONAL NEW CAR ASSESSMENT PROGRAM
(OPTIONAL NCAP)
FRONTAL BARRIER IMPACT TEST**

**NISSAN MOTOR COMPANY
1991 NISSAN STANZA
4-DOOR SEDAN**

CALSPAN TEST NUMBER: J43-1-1054

CALSPAN CORPORATION
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FINAL REPORT OF OPTIONAL RETEST

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16. Abstract A frontal load cell barrier test of a 1991 Nissan Stanza 4-Door Sedan was performed at Calspan Advanced Technology Center crash test facility in Buffalo, New York on April 4, 1991. The impact speed was 35.1 mph and the ambient temperature at the barrier face at the time of impact was 71°F. The maximum post-test vehicle crush was 24.4 inches. With regard to FMVSS 208 "Occupant Crash Protection," injury criteria, the driver dummy appears to satisfy the head, chest, and femur requirements. The head and chest data for the passenger dummy is not available for this test. The passenger dummy does appear to satisfy the femur requirements.					
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Section 1

PURPOSE AND TEST PROCEDURE

This 35 mph frontal barrier impact test was conducted as part of the Optional New Car Assessment Program (Optional NCAP). The program provides manufacturers with an opportunity to retest any of their vehicles that were tested in the New Car Assessment Program (NCAP) and subsequently modified with production changes to improve occupant protection. These Optional NCAP test results will be published by NHTSA in a regular NCAP press release.

This Optional NCAP test was conducted in accordance with the current "Laboratory Indicant Test Procedures for the New Car Assessment Program" prepared by the Office of Market Incentives.

Section 2

SUMMARY OF TEST NUMBER J43-1-1054

A load cell barrier consisting of 36 load cells was impacted by a 1991 Nissan Stanza 4-Door Sedan at a velocity of 35.1 mph. The test was performed at the Calspan Corporation Advanced Technology center on April 4, 1991. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by one real-time camera and 13 high-speed cameras. Camera locations and other pertinent camera information can be found in this report.

Two Part 572-E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with head and chest triaxial accelerometers and right/left femur load cells. Seat belt load cells were also on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. The driver ATD (Serial No. 818) and the right-front passenger ATD (Serial No. 819) were calibrated previous to this test. Certification details, along with instrumentation calibration data, can be found in Appendices C and D.

The 67 channels of data were recorded on six 14-channel FM tape recorders. Appendix B contains the vehicle, load cell barrier and dummy response data traces. Head and chest accelerations for the passenger dummy are not available. Accelerometer #4, located on the bottom of engine block, did not record accurately during test. Velocity and displacement data curves have been removed from this report. Barrier load cell C1 did not record accurately during test. The data curve has been removed from this report and the load cell was not used in the load cell sums.

The driver's HIC was 546.2. The maximum chest deceleration over 3 milliseconds was 56.3 g's and femur loads were 1803.0 and 970.9 pounds.

The right front passenger's femur loads were 413.2 and 558.2 pounds.

Table 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Vehicle Year/Make/Model/Body Style: 1991 Nissan Stanza 4-Door Sedan

Test No.: J43-1-1054 VIN.: JN1FU21P6MX853234

Body Color: Blue Date Of Manufacture: December 1990

Engine: 4 Cylinders; - C.I.D.; 2.4 Liters; - CC
X Gas; - Diesel; - Turbocharged
- Longitudinal; X Transverse

Transmission: 5 Speed; X Manual; - Automatic; - Overdrive

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

Date Received: 3-15-91 Odometer Reading: 20 miles
- A/C; X P/S; X P/B; - P/wdo.; X Tilt Wheel
- P/seats; - Cruise Control

Type of Occupant Restraint: Manual lap belt and automatic torso belt.

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): Front 29 psi, Rear 26 psi

Recommended Tire Size: 195/65R14

Recommended Cold Tire Pressure: Front 29 psi, Rear 26 psi

Tires on Vehicle: 195/65R14; Manufacturer: Bridgestone

Number of Occupants: 2 Front; 3 Rear; - 3rd Seat; 5 TOTAL

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

Type of Front Seat Back: - Fixed X Adj. With X Lever - Rot. Knob

Vehicle Capacity Weight (VCW) = 900 lbs. (A)

No. of Occupants x 150 lbs. = 750 lbs. (B)

Rated Cargo and Luggage
Weight (RCLW) A-B = 150 lbs.

GVWR 3902 lbs. GAWR: Front 2140 lbs. Rear 1819 lbs.

Table 1

GENERAL TEST AND VEHICLE PARAMETER DATA (cont'd)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (WITH MAXIMUM FLUIDS) = UDW:

Right Front = 880 lbs. Right Rear = 490 lbs.
 Left Front = 860 lbs. Left Rear = 510 lbs.
 TOTAL FRONT WEIGHT = 1740 lbs. (63.5 % of Total Vehicle Weight)
 TOTAL REAR WEIGHT = 1000 lbs. (36.5 % of Total Vehicle Weight)
 TOTAL DELIVERY WEIGHT = 2740 lbs.

CALCULATION FOR TARGET TEST WEIGHT:

UDW = Unloaded Delivered Weight (2740 lbs.)
 VCW = Vehicle Capacity Weight (900 lbs.)
 DSC = Designated Seating Capacity (5)
 RCLW = VCW - 150 (DSC) = 150 lbs.
 Target Test Weight = UDW + RCLW + (2 dummies x 164 lbs./dummy)
 Target Test Weight = 3218 lbs.

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 142 POUNDS CARGO:

Right Front = 930 lbs. Right Rear = 710 lbs.
 Left Front = 900 lbs. Left Rear = 670 lbs.
 TOTAL FRONT WEIGHT = 1830 lbs. (57.0 % of Total Vehicle Weight)
 TOTAL REAR WEIGHT = 1380 lbs. (43.0 % of Total Vehicle Weight)
 TOTAL TEST WEIGHT = 3210 lbs.
 Weight of ballast secured in vehicle trunk area = 0 lbs.

VEHICLE ATTITUDE (all dimensions in inches):

Delivered Attitude: RF 27.1 LF 27.1 RR 26.6 LR 26.5
 Test Attitude: RF 26.6 LF 26.7 RR 24.2 LR 24.4
 Wheel Base: 101.5 in.; C.G. = 43.6 in. rearward of front wheel C/L.
 Remarks: 14.0 gallons of stoddard solution was placed in fuel tank.

Table 1

GENERAL TEST AND VEHICLE PARAMETER DATA (cont'd)

POST-IMPACT DATA:

Type of Test: Frontal Barrier Impact Angle: 0°
 Date of Test: April 4, 1991 Time of Test: 12:14 PM
 Ambient Temperature: 72 °F at impact area
 Temperature in Occupant Compartment: 72 °F
 Windshield Molding Temperature: 72 °F
 Required Impact Velocity Range: 34.5 to 35.5 mph
 Impact Velocity: primary = 35.1 mph, secondary = 35.1 mph
 Distance From Front Bumper to Barrier Face When
 Entering Speed Trap: 52 inches
 Exiting Speed Trap: 12 inches

VEHICLE REBOUND AND CRUSH (inches):

Vehicle Length: Pre-test = R 177.4 C 180.6 L 177.4
 Post-test = R 154.5 C 156.2 L 157.7
 Crush = R 22.9 C 24.4 L 19.7

Distance from front of test vehicle to point of impact:

R 21.1 C 22.0 L 21.8

VISIBLE DUMMY CONTACT POINTS:

	<u>Driver</u>	<u>Passenger</u>
Head	<u>No Contact</u>	<u>No Contact</u>
Chest	<u>No Contact</u>	<u>No Contact</u>
Abdomen	<u>No Contact</u>	<u>No Contact</u>
Left Knee	<u>Dash Panel</u>	<u>Glove Box</u>
Right Knee	<u>Dash Panel</u>	<u>Glove Box</u>

Table 1

GENERAL TEST AND VEHICLE PARAMETER DATA (cont'd)

	<u>Front</u>		<u>Rear</u>	
	<u>Left</u>	<u>Right</u>	<u>Left</u>	<u>Right</u>
Door Opening	<u>operable</u>	<u>operable</u>	<u>operable</u>	<u>operable</u>

	<u>Front</u>	
	<u>Left</u>	<u>Right</u>
<u>Seat Movement</u>		
Seat Back Failure	<u>None</u>	<u>None</u>
Seat Shift (in.)	<u>0.0</u>	<u>0.0</u>

Glazing Damage

Backlight/Windshield	<u>Windshield sustained stress fractures but remained intact.</u>
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Other Notable Impact Effects: Post test examination of the right front passenger dummy revealed that the left brass sternum strip was cracked at the second mounting hole from the bottom. The leather sternum also had a small tear at the same location.

Section 3
OMI FINAL DATA

Occupant and Vehicle Information

I. OMI DATA

1. Dummy Injury Criteria Data Summary
2. Dummy Positioning Data
3. Seat Belt Positioning Data
4. Seat Belt Performance Assessment Data
5. Driver Dummy to Steering Column Dimensions
6. Camera Locations
7. Vehicle Target Locations

II. OVR DATA

1. Load Cell Barrier Data
2. Vehicle Accelerometer Data
3. Test Vehicle Measurements

Table 2
DUMMY INJURY CRITERIA VALUES

Test No.: J43-1-1054

Vehicle: 1991 Nissan Stanza 4-Door Sedan

	MAXIMUM HEAD ACCELERATION (g's)			
	X	Y	Z	R
Position #1 - Driver	-33.0	-14.5	60.3	63.0

	MAXIMUM CHEST ACCELERATION (g's)			
	X	Y	Z	R
Position #1 - Driver	-57.8	-14.6	13.1	56.3

The maximum chest resultant acceleration is defined as the maximum acceleration which exceeds 0.003 seconds in duration.

	MAXIMUM FORCE - FEMUR LOAD (lbs.)	
	LEFT FEMUR	RIGHT FEMUR
Position #1 - Driver	1803.0	970.9
Position #2 - Passenger	413.2	558.2

	MAXIMUM FORCE - SEAT BELT LOADS (lbs.)		
	SHOULDER STRAP UPPER BELT LOAD	LAP STRAP RIGHT BELT LOAD	LAP STRAP LEFT BELT LOAD
Position #1 - Driver	2452.0	-	713.3
Position #2 - Passenger	2165.1	1366.2	-

	HEAD INJURY CRITERIA (HIC)			
	HIC	t ₁ (SEC)	t ₂ (SEC)	Average Acceleration t ₁ TO t ₂
Position #1 - Driver	546.2	.07284	.10872	47.1

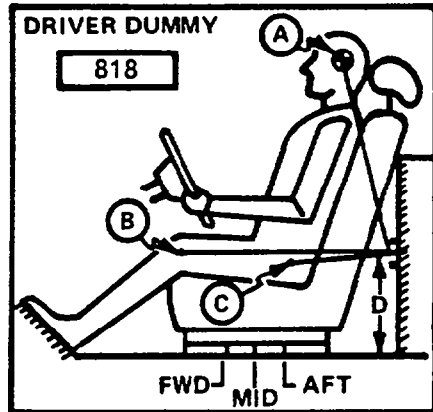
HIC is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 36 milliseconds.

Figure 1

PART 572 DUMMY IN-VEHICLE POSITION

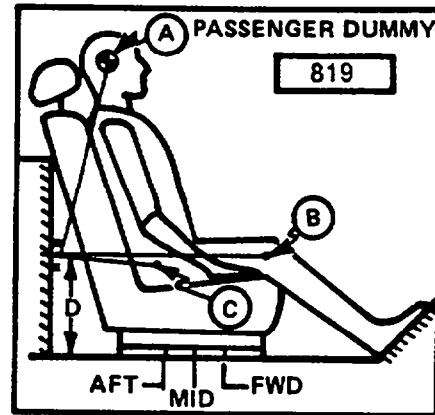
Test No.: J43-1-1054 Vehicle: 1991 Nissan Stanza 4-Dr. Sedan

<u>SEAT TYPE:</u>	<u>ADJUSTER TYPE:</u>	<u>SEAT BACK TYPE:</u>
<u>-</u> Bench	<u>X</u> Manual	<u>-</u> Fixed
<u>X</u> Bucket	<u>-</u> Power	<u>X</u> Adjustable Reclining
<u>-</u> Split Bench		



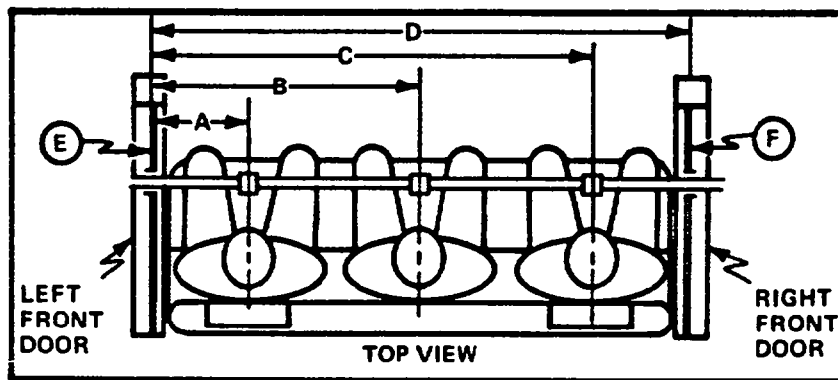
MEASUREMENT
LOCATION

- A - Head Target
- B - Knee Joint
- C - Approximate 'H' Point
- D - Sill to Reference Point



A = 21.2 in. -3 Degrees
 B = 21.2 in. 97 Degrees
 C = 7.3 in. 132 Degrees
 D = 13.0 in.

A = 21.3 in. -2 Degrees
 B = 21.8 in. 98 Degrees
 C = 8.0 in. 134 Degrees
 D = 13.0 in.



S/N 818

DUMMY ID

S/N 819

A =	Left Door to Driver Centerline	<u>11.7</u> in.
B =	Left Door to Center Passenger Centerline	<u>-</u> in.
C =	Left Door to Right Passenger Centerline	<u>40.0</u> in.
D =	Left Door to Right Door	<u>51.6</u> in.
E,F =	Window Glass Height (Right and Left Must Be Equal)	<u>11.0</u> in.

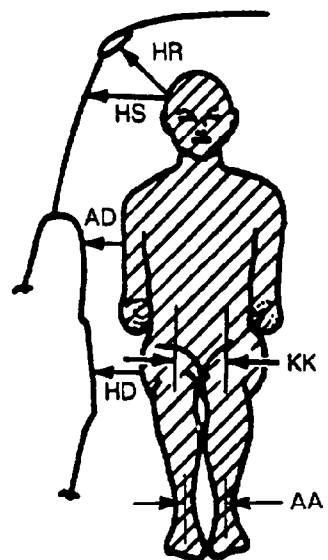
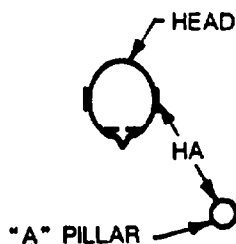
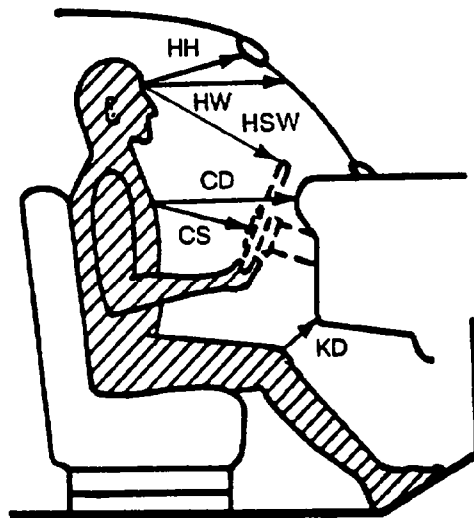
Figure 2

OCCUPANT CLEARANCE DIMENSIONS

	DRIVER	PASSENGER
HH	16.4	16.7
HW	22.4	22.1
CD	23.6	24.6
CS	16.0	-
KDL	6.6	6.5
KDR	6.6	6.2
SA	See Note	See Note
TA	25°	25°
HSW	23.3	-

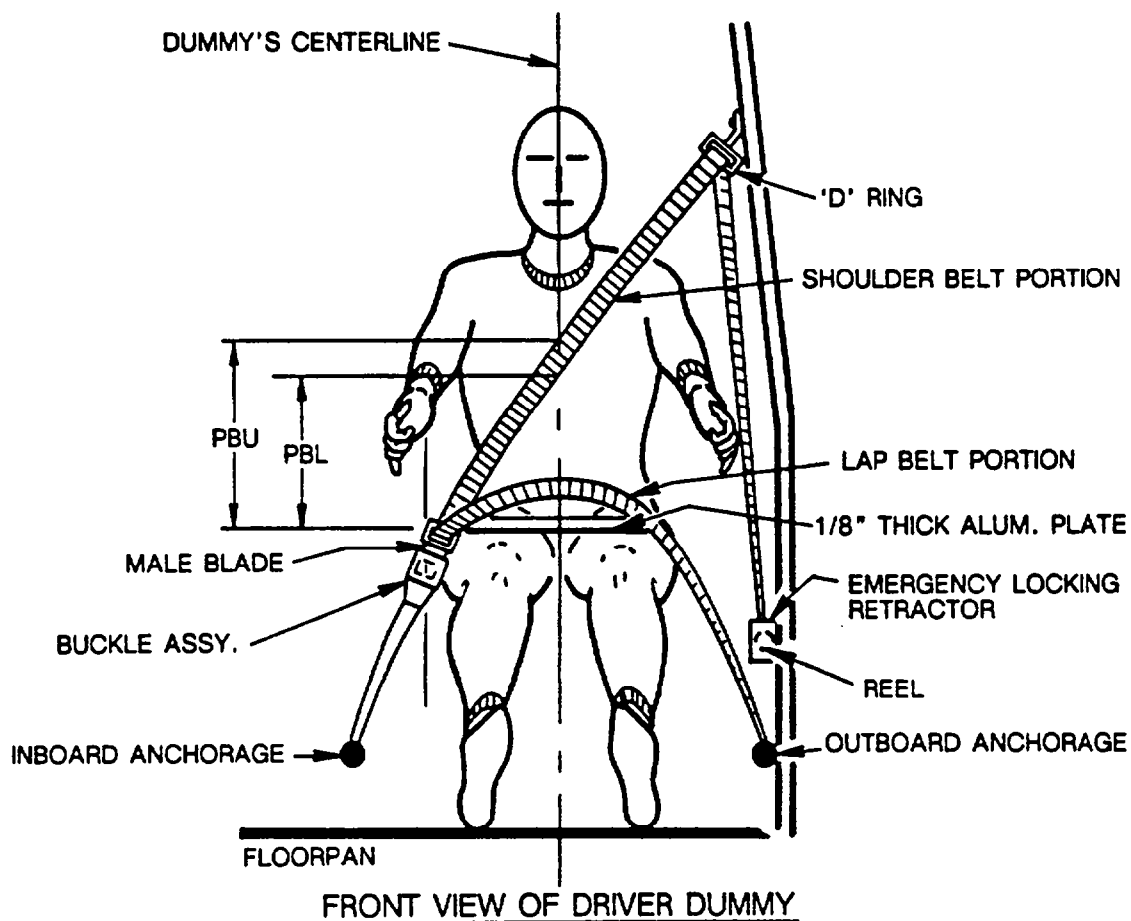
HH = Head to Windshield Header
 HW = Head to Windshield
 HSW = Head to Steering Wheel
 CD = Chest to Dash
 CS = Chest to Steering Wheel
 KD(L/R) = Knee to Dash (Left/Right)
 SA = Seat Back Angle
 TA = Torso Angle
 HA = Head Target to "A" Pillar
 HR = Head to Side Roof
 HS = Head to Side Window
 AD = Arm to Door
 HD = Hip to Door
 KK = Knee to Knee
 AA = Ankle to Ankle

	DRIVER	PASSENGER
HR	5.5	5.1
HS	8.9	9.3
AD	4.1	4.8
HD	6.7	6.6
KK	11.2	8.0
HA	23.7	24.1
AA	13.8	8.0



Note: Seat back was positioned according to manufacturer's specifications

Figure 3
SEAT BELT POSITIONING DATA

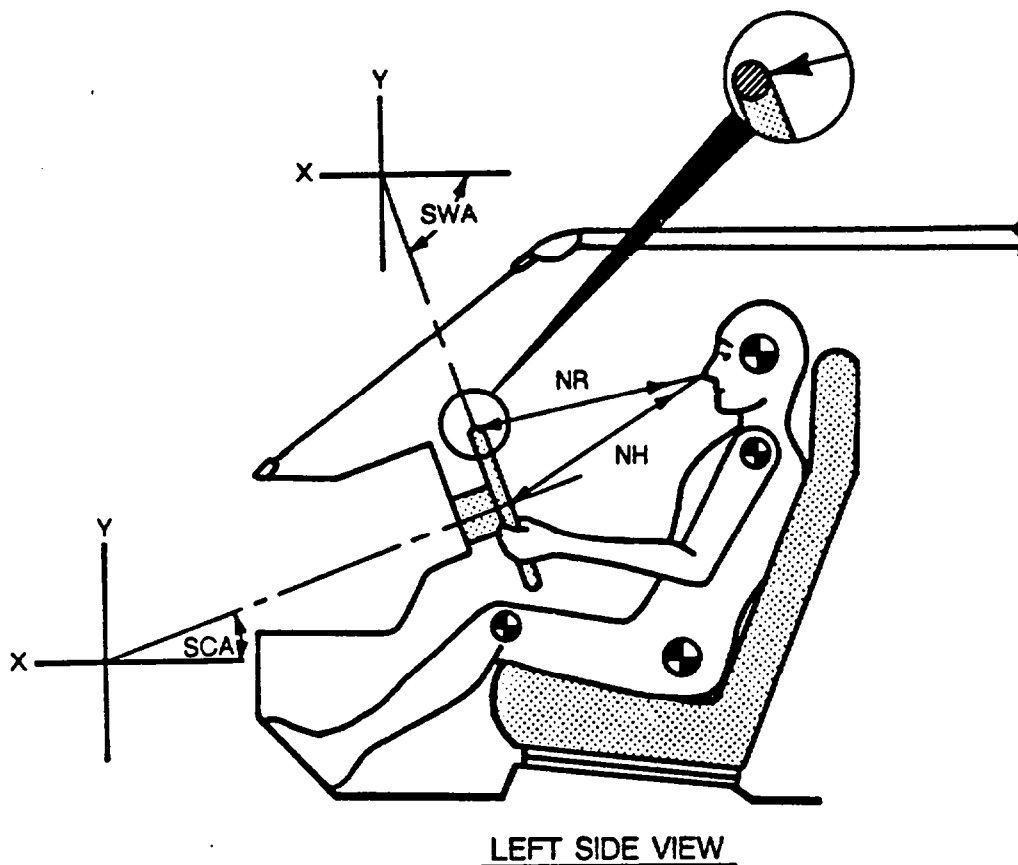


	DRIVER DUMMY (inches)	PASSENGER DUMMY (inches)
<u>PBU</u> -- Top surface of alum. plate to upper edge	9.0	9.0
<u>PBL</u> -- Top surface of alum. plate to belt lower edge	11.8	11.8
<u>LAP BELT TENSION</u>	—	—
<u>SHOULDER BELT TENSION</u>	—	—

Table 3
SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

<u>BELT LENGTH DATA:</u>	<u>Driver</u>	<u>Passenger</u>
Shoulder belt length as measured on Part 572 Dummy.	<u>36.0"</u>	<u>36.0"</u>
Lap belt length as measured on Part 572 Dummy.	<u>32.0"</u>	<u>32.0"</u>
<u>LAP BELT SPOOL-OFF DATA:</u>		
As determined mechanically.	<u>3.7"</u>	<u>3.4"</u>
<u>BELT STRETCH DATA:</u>		
Measured electronically between shoulder belt load cell and the "D" ring.	<u>1.8 in/ft</u>	<u>1.9 in/ft</u>
Measured mechanically	<u>0.1 in/ft</u>	<u>0.1 in/ft</u>

Figure 4
DRIVER DUMMY TO STEERING COLUMN/WHEEL ASSY. REFERENCE DIMENSIONS



		MEASUREMENTS	
<u>NR</u>	-- Distance from tip of dummy's nose to Top Rear surface of steering wheel rim	21.2	Inches
<u>NH</u>	-- Distance from tip of dummy's nose to center of steering column hub	21.3	Inches
<u>SCA</u>	-- Angle of steering column relative to the horizontal X axis	28.0	Degrees
<u>SWA</u>	-- Angle of steering wheel relative to the horizontal X axis	-62.0	Degrees

Figure 5
CAMERA POSITIONS FOR FRONTAL IMPACTS

NOTE: Camera Information Shown on Table 4

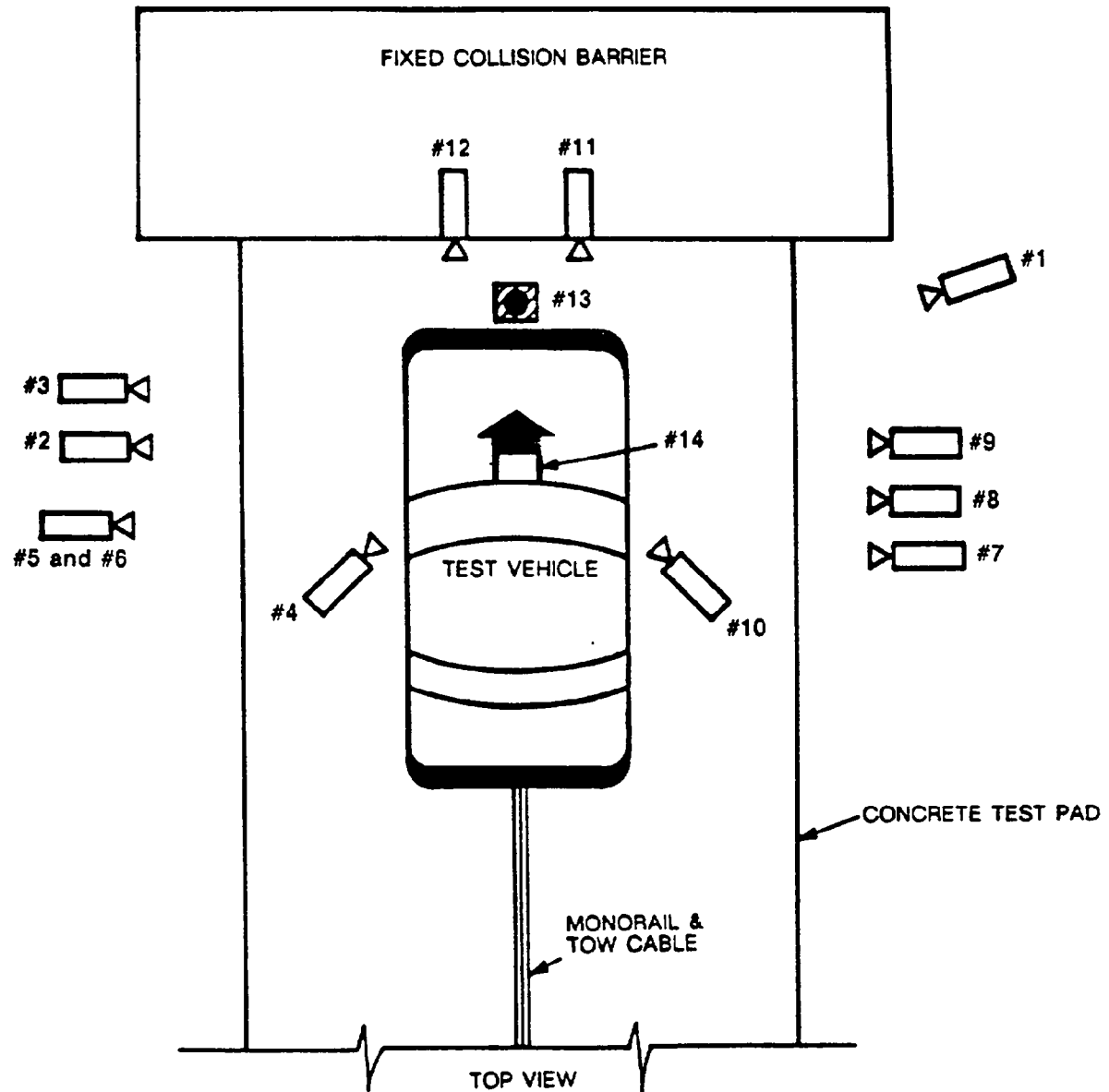


Table 4

HIGH-SPEED CAMERA LOCATIONS

Test No. J43-1-1054		Vehicle: 1991 Nissan Stanza 4-Door Sedan						
CAMERA NO.	VIEW	CAMERA POSITIONS (in)*			ANGLE** (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	219	57	41	-7	201.8	13	550
3	Left Side View	296	33	41	-4	278.8	25	570
4	Driver and Interior View	102	103	67	-21	84.8	13	655
5	Steering Column (Bottom)	273	74	46	-4	255.8	25	550
6	Steering Column (Top)	273	74	70	-11	255.8	25	525
7	Overall Right Side	223	71	42	-3	205.8	13	615
8	Right Side View	292	52	41	-2	274.8	25	635
9	Right Passenger View	284	72	54	-5	266.8	35	540
10	Passenger and Interior View	104	98	65	-23	86.8	25	540
11	Passenger Front View	24	-5	71	-39	-	13	530
12	Driver Front View	24	-5	71	-38	-	13	540
13	Windshield View	0	0	125	-47	-	13	550
14	Pit View of Engine	0	36	-120	90	-	13	720

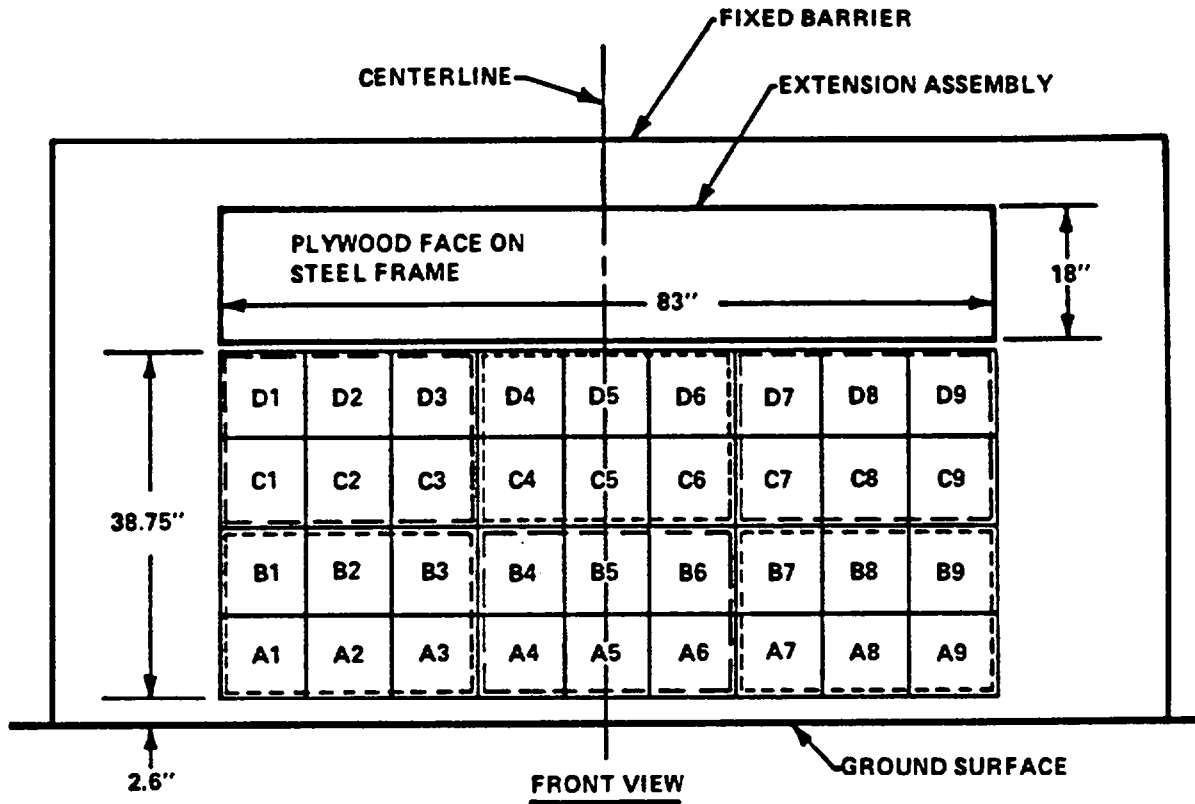
*X = film plane to monorail centerline
 Y = film plane to impact location
 Z = film plan to ground
 ** = referenced to horizontal plane

[illegible]

Figure 7

LOAD CELL LOCATIONS ON FIXED BARRIER

- 36 Load Cells
- 4 Rows
- 9 Columns
- 6 Groupings (6 cells/group)



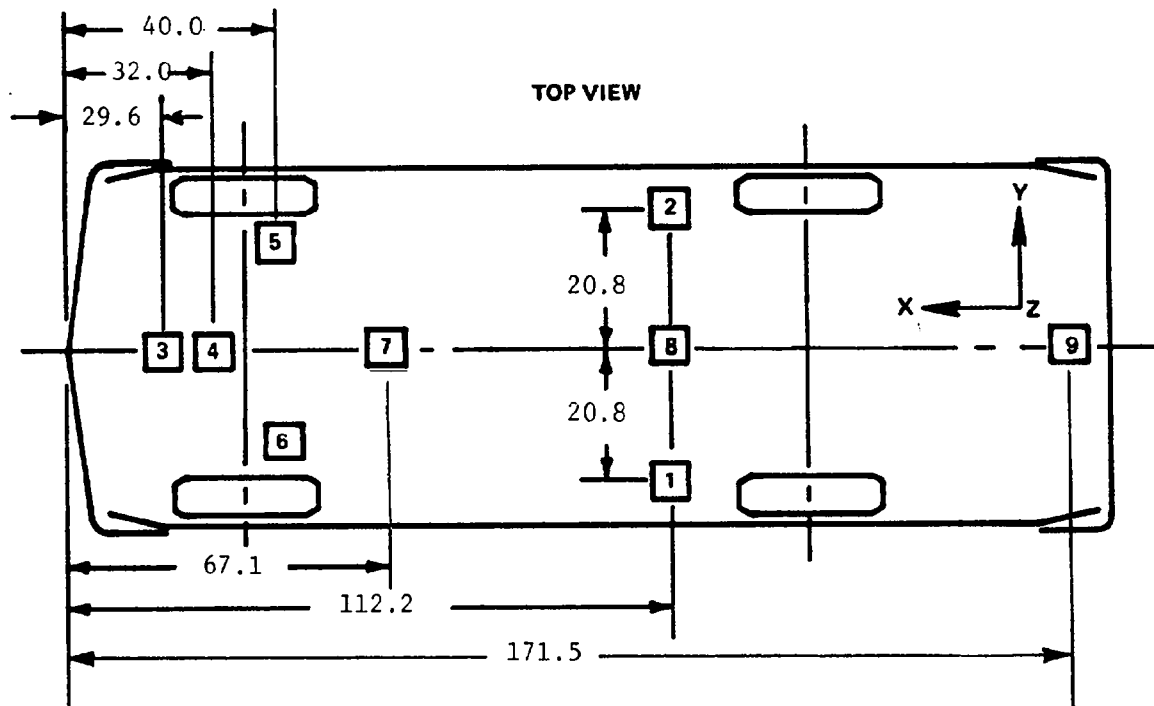
6 GROUPS OF 6 LOAD CELLS EACH

Group 4	Group 5	Group 6
C1 thru D3	C4 thru D6	C7 thru D9
Group 1	Group 2	Group 3
A1 thru B3	A4 thru B6	A7 thru B9

The following data is presented in Appendix B:

- (1) Data from 36 individual load cells
- (2) Total or Sum of 36 individual load cells
- (3) Data from 6 Groupings shown above (6 cells/group)

Figure 8
VEHICLE ACCELEROMETER LOCATIONS



(All Measurements in Inches)

ACCELEROMETER NUMBER*	ACCELEROMETER LOCATION	DIRECTION		
		X	Y	Z
1	Left Rear Seat Crossmember	X		
2	Right Rear Seat Crossmember	X		
3	Top of Engine	X		
4	Bottom of Engine	X		
5	Right Disc Brake Caliper	x		
6	Left Disk Brake Caliper	X		
7	Instrument Panel	X		
8	Center Rear Seat Crossmember			X
9	Rear Trunk Centerline			X

*The accelerometer pack number can be correlated with the vehicle response data traces found in Appendix B.

**Note: Due to location the top engine accelerometer was removed prior to test.

Figure 9

TEST VEHICLE MEASUREMENTS

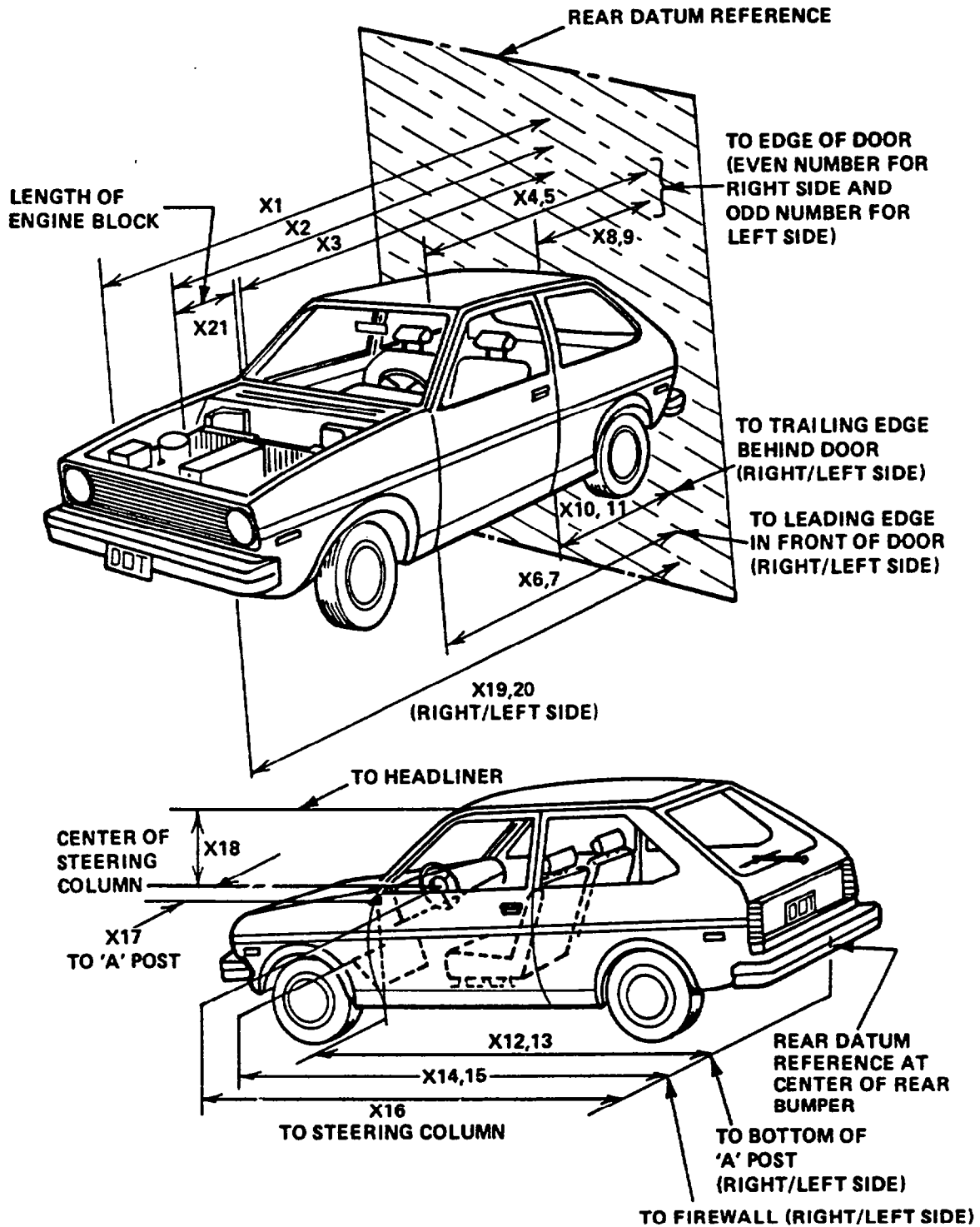


Table 5
VEHICLE MEASUREMENTS

No.		All Dimensions in Inches		
		Pre-Test	Post-Test	Differences
X1	Total Length of Vehicle at Centerline	180.6	156.2	24.4
X2	Rear Surface of Vehicle to Front of Engine	155.2	145.0	10.2
X3	Rear Surface of Vehicle to Firewall	133.2	129.5	3.7
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	123.0	122.4	0.6
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	122.6	122.5	0.1
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	122.5	121.5	1.0
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	121.9	121.8	0.1
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	82.6	81.8	0.8
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	82.2	81.9	0.3
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	81.8	81.3	0.5
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	81.3	81.2	0.1
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	123.3	122.5	0.8
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	122.9	123.0	-0.1
X14	Rear Surface of Vehicle to Firewall, Right Side	132.2	129.7	2.5
X15	Rear Surface of Vehicle to Firewall, Left Side	132.2	130.0	2.2
X16	Rear Surface of Vehicle to Steering Column	106.8	106.5	0.3
X17	Center of Steering Column to "A" Post	15.8	15.9	-0.1
X18	Center of Steering Column to Headliner	17.3	14.3	3.0
X19	Rear Surface of Vehicle to Right Side of Front Bumper	177.4	154.5	22.9
X20	Rear Surface of Vehicle to Left Side of Front Bumper	177.4	157.7	19.7
X21	Length of Engine Block	15.6	15.6	0.0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	114.3	113.8	0.5
CD	Rear Surface of Vehicle to Center of Dash Panel	114.2	113.2	1.0
LD	Rear Surface of Vehicle to Left Side of Dash Panel	113.5	113.2	0.3

Appendix A

PHOTOGRAPHS

PHOTOGRAPHS

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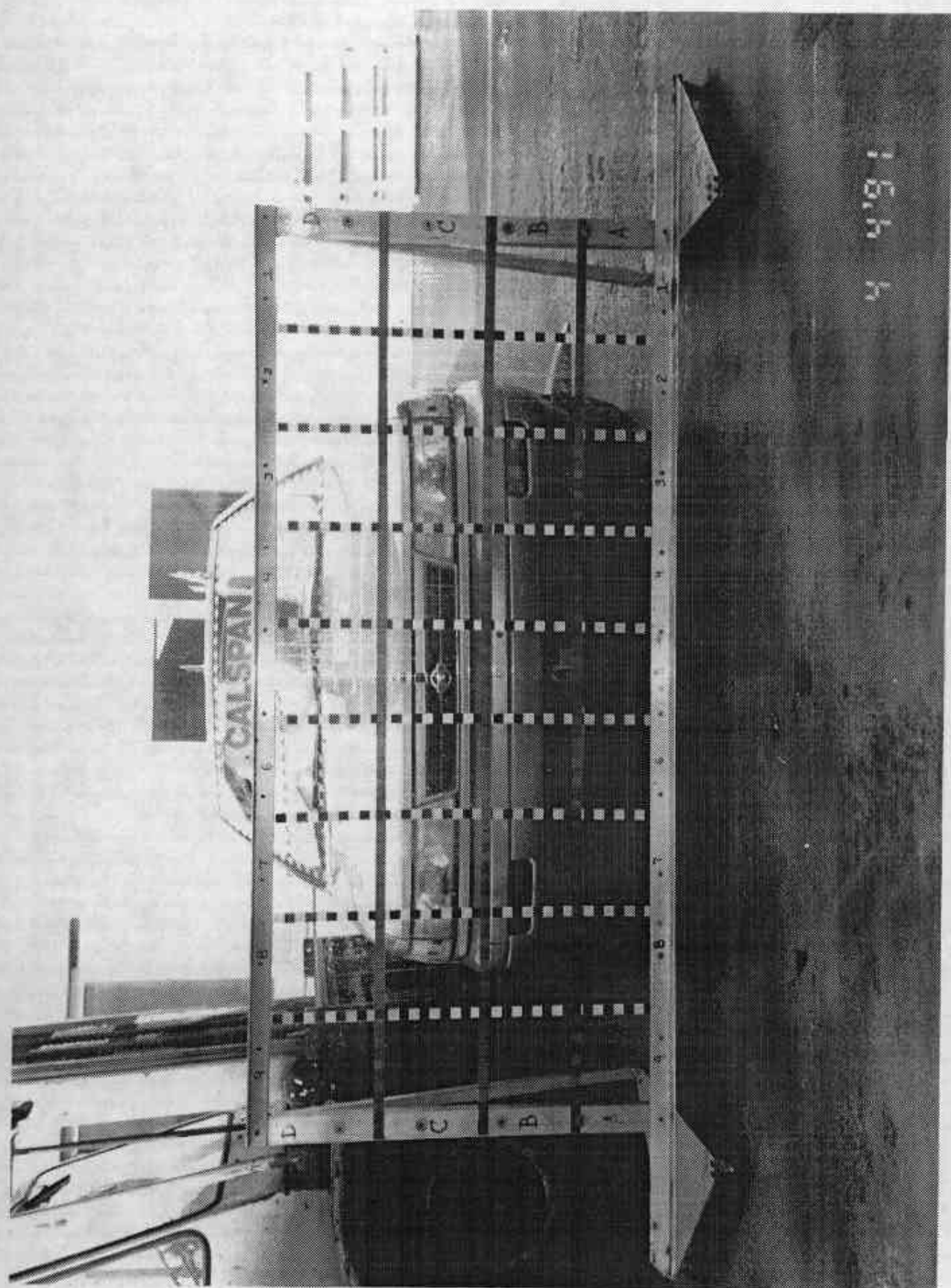


Figure A-1 LOAD CELL LOCATIONS

A-3

7880-1



Figure A-2 PRE-TEST FRONT VIEW

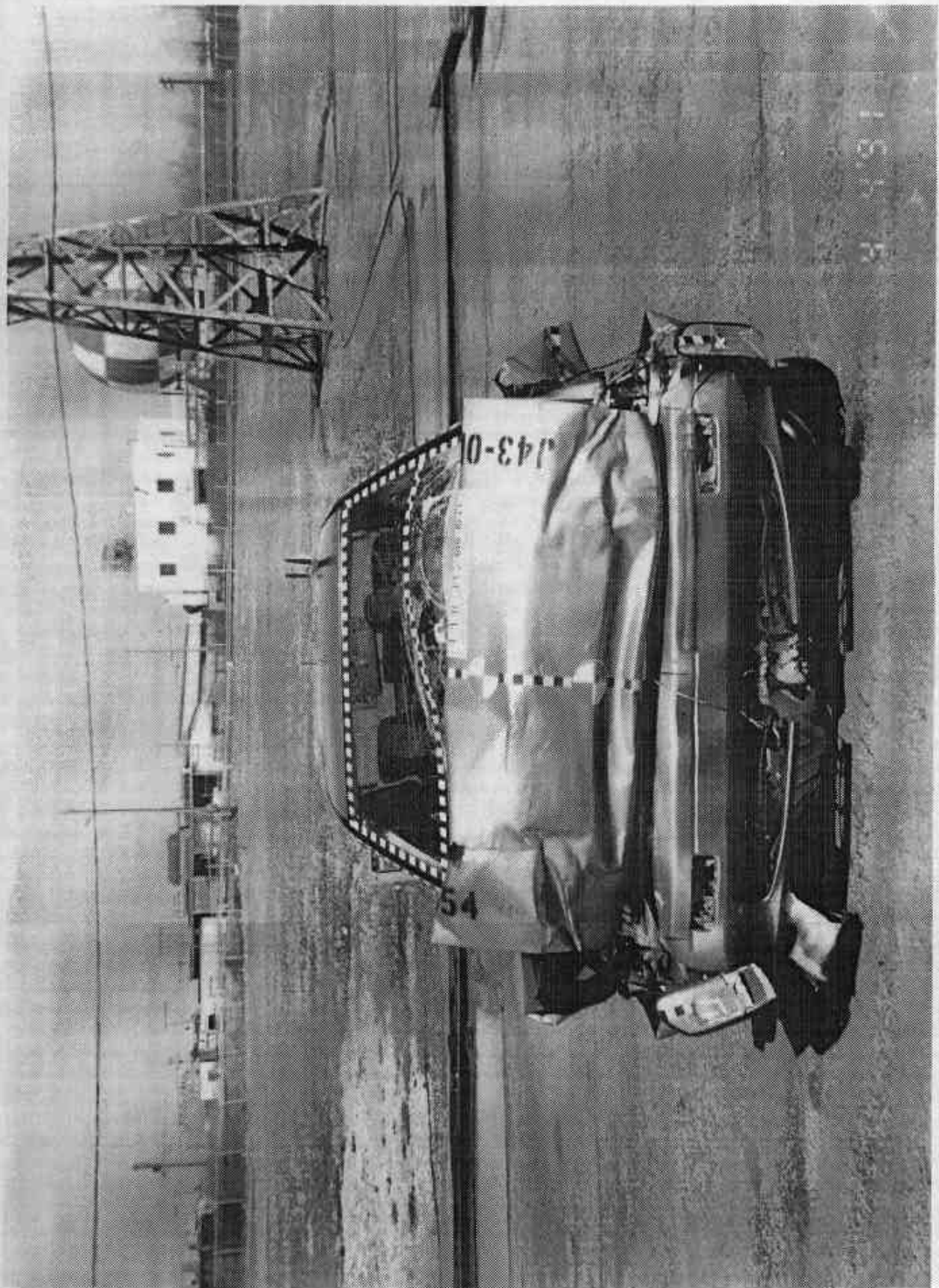


Figure A-3 POST TEST FRONT VIEW

A-5

7880-1

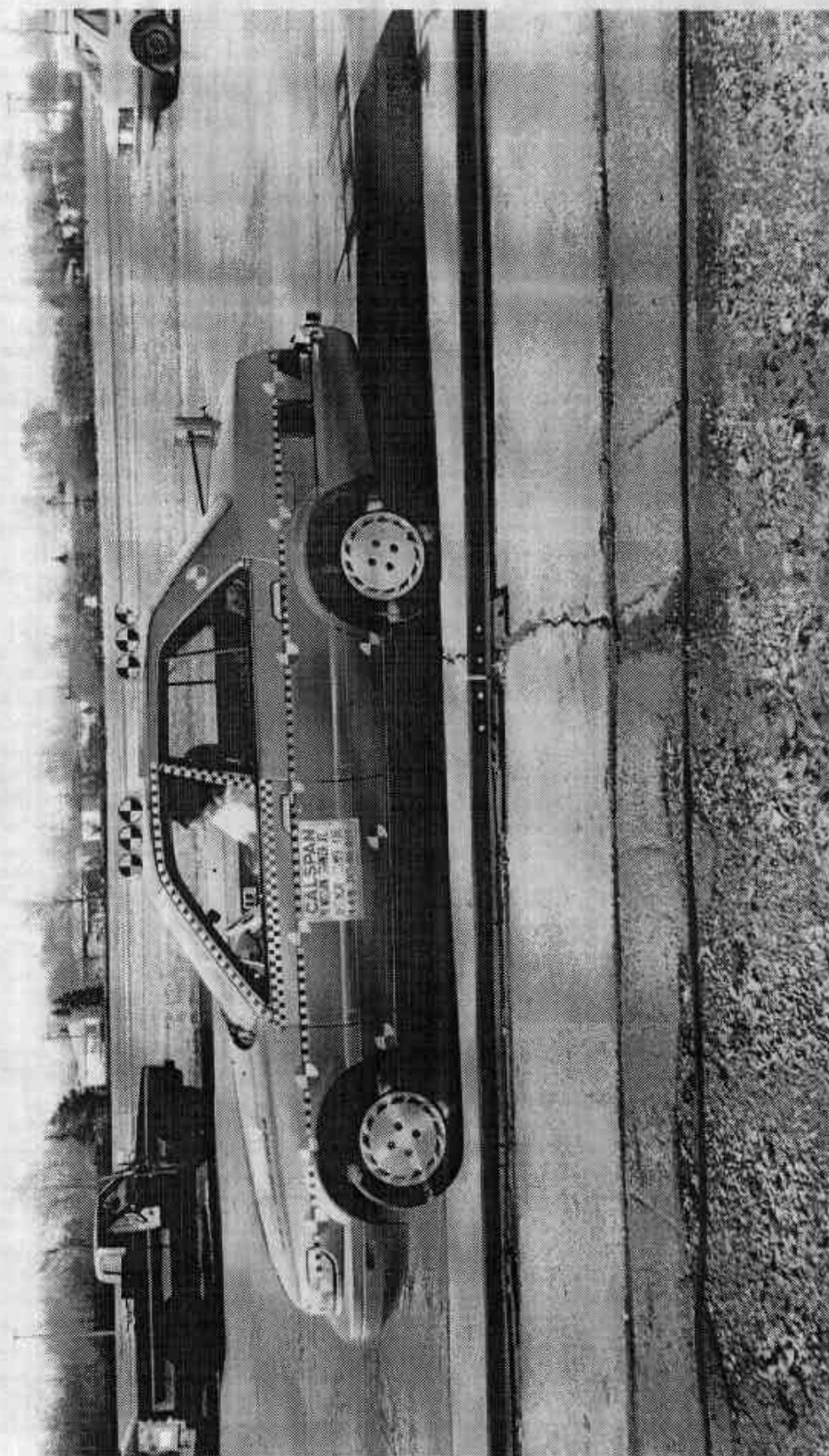


Figure A-4 PRE-TEST LEFT SIDE VIEW

A-6

7880-1

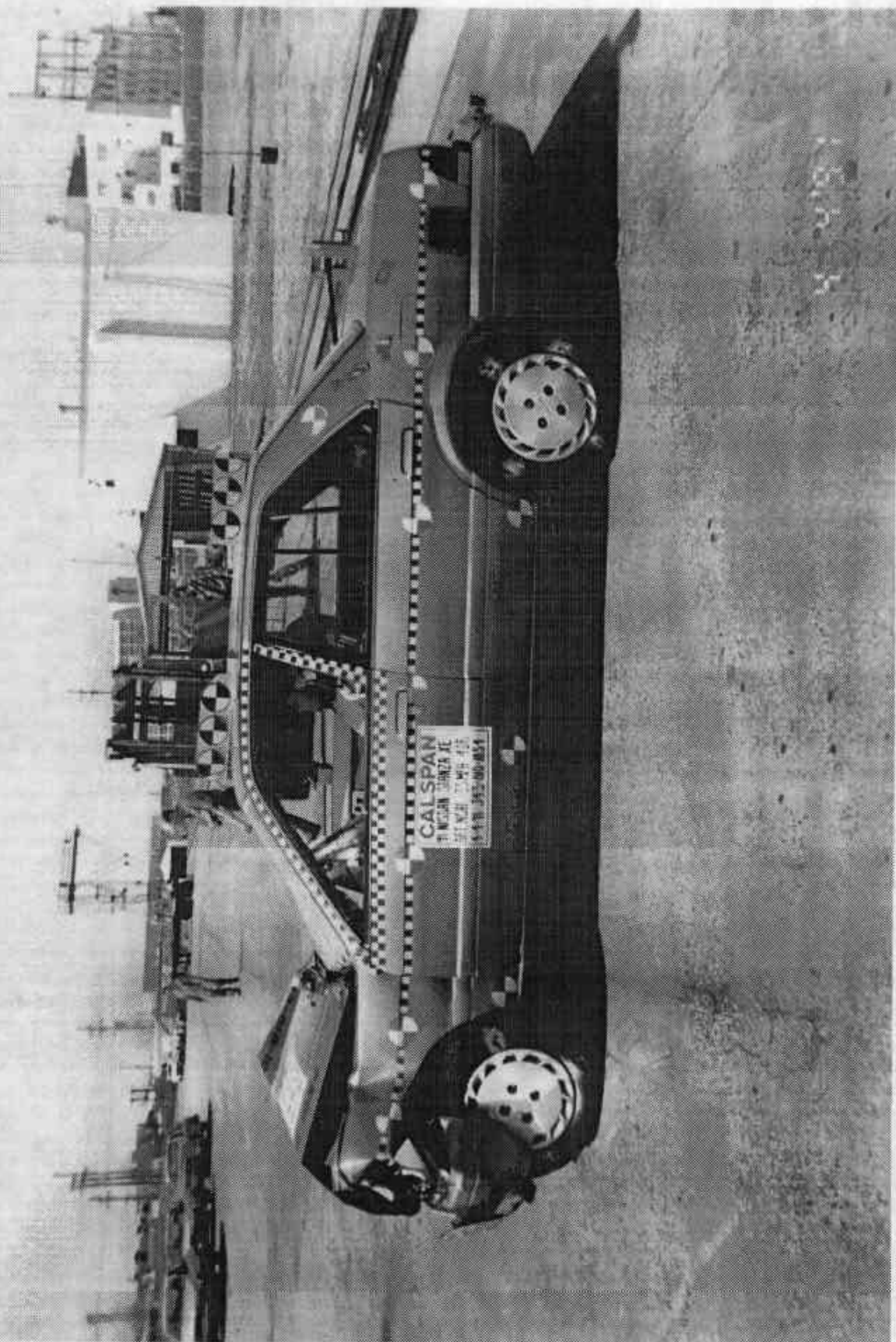


Figure A-5 POST TEST LEFT SIDE VIEW

A-7

7880-1

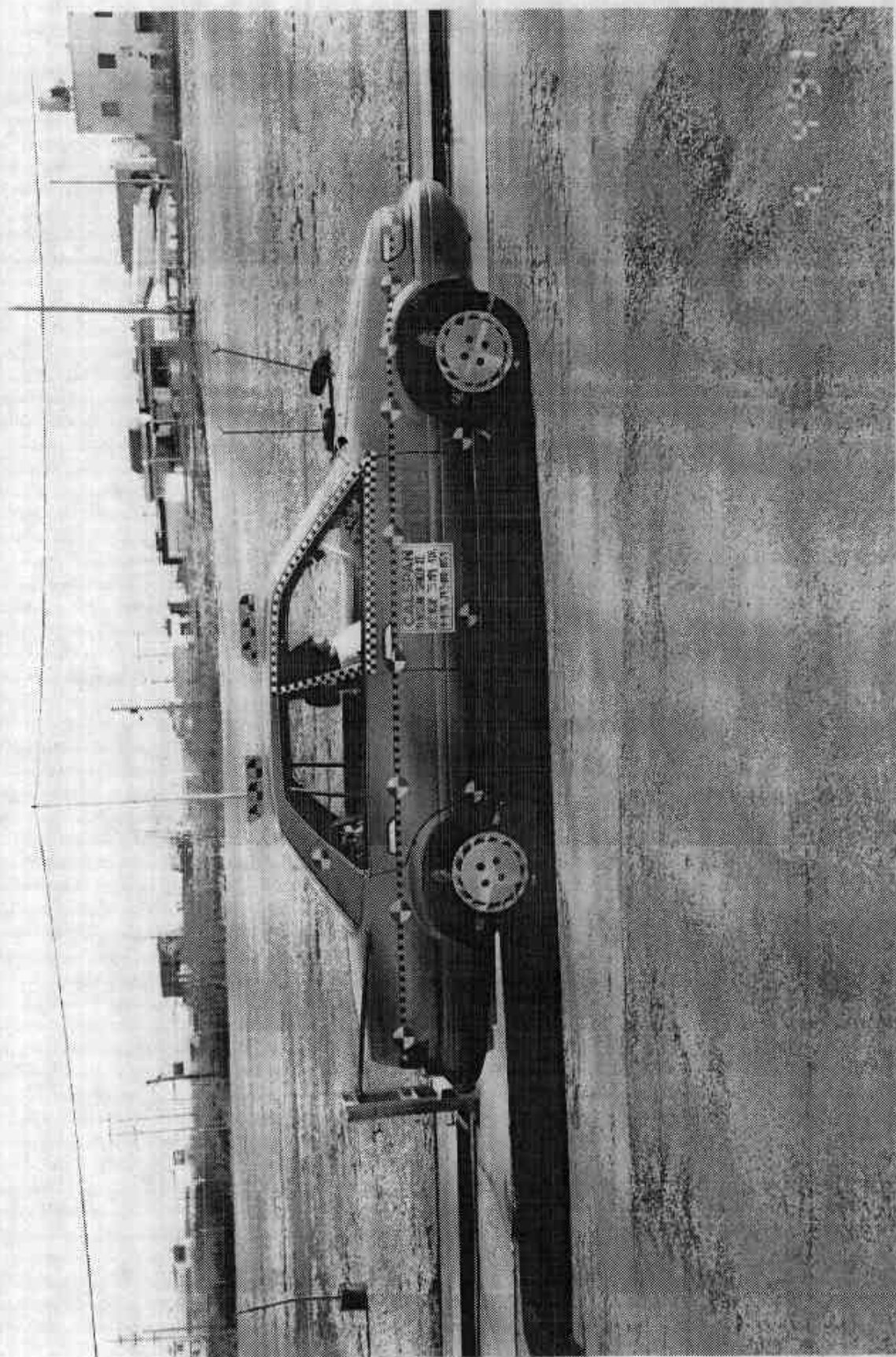


FIGURE A-8 PRE-TEST RIGHT SIDE VIEW

A-8

7880-1

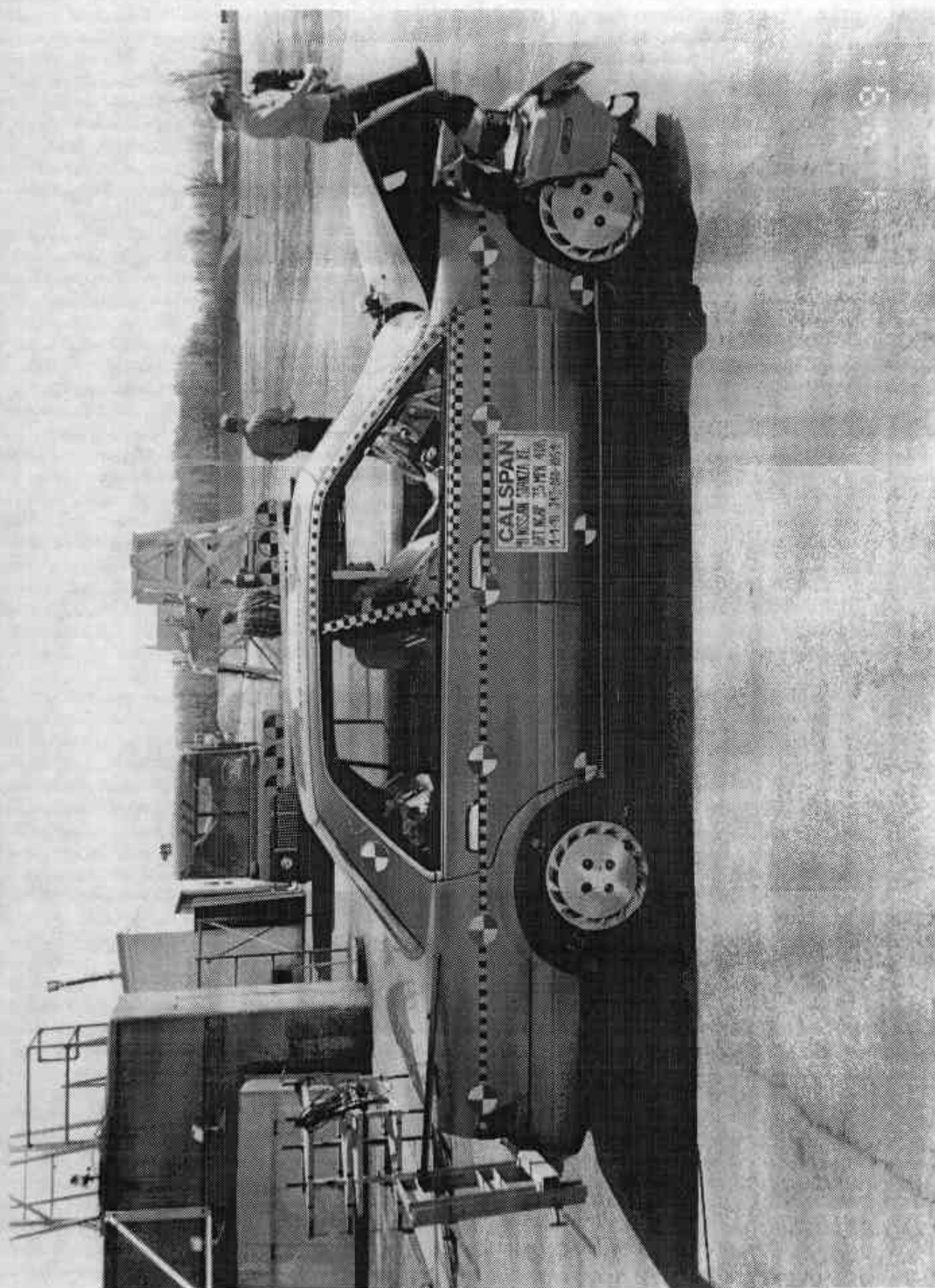


FIGURE A-7 POST-TEST RIGHT SIDE VIEW

A-9

7880-1



Figure A-8 PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



FIGURE A-9 POST-TEST RIGHT FRONT THREE-QUARTER VIEW

A-11

7880-1



Figure A-10 PRE-TEST LEFT REAR THREE-QUARTER VIEW

A-12

7880-1



Figure A-11 POST-TEST LEFT REAR THREE-QUARTER VIEW

A-13

7880-1

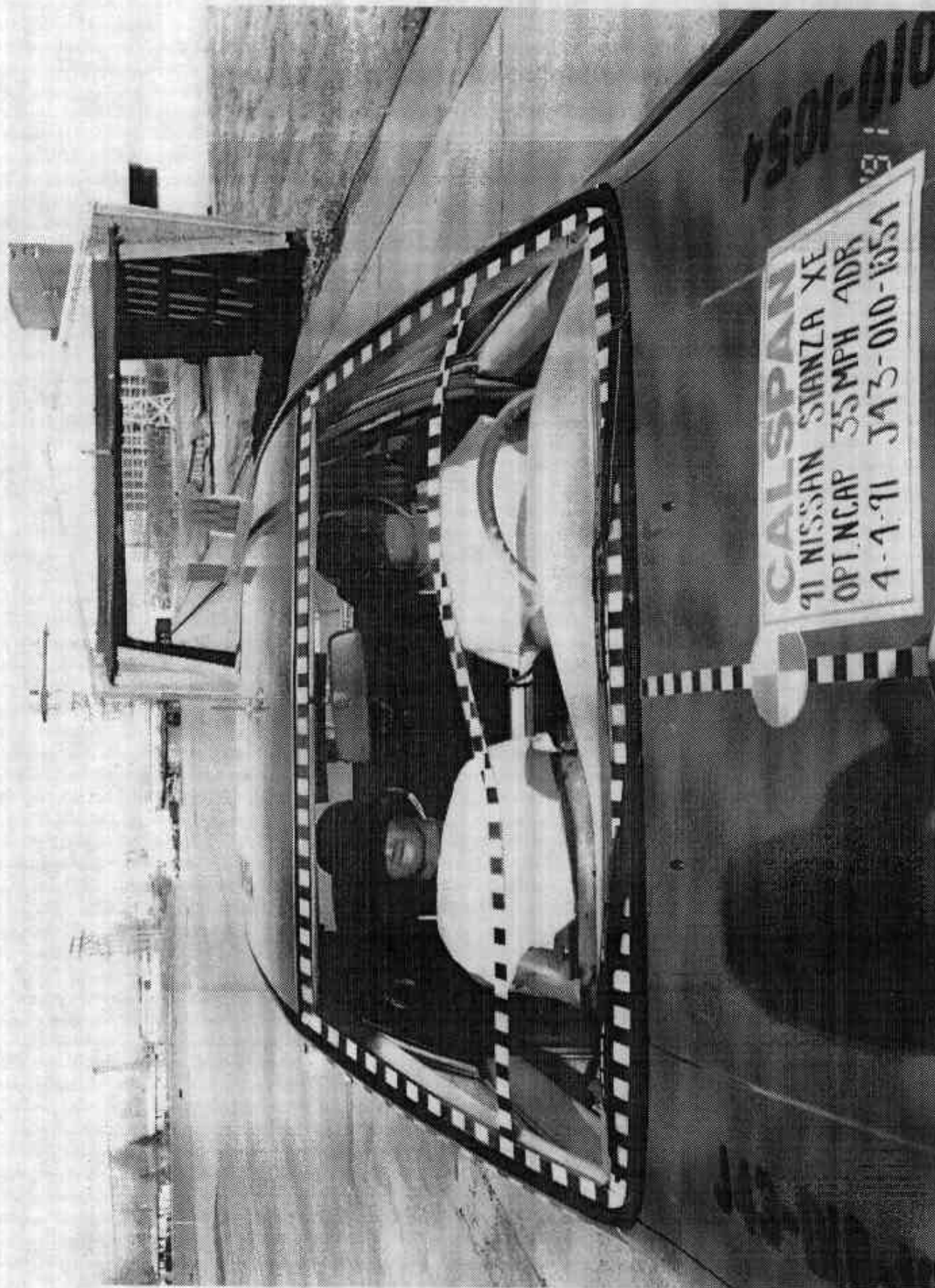


Figure A-12 PRE-TEST WINDSHIELD VIEW

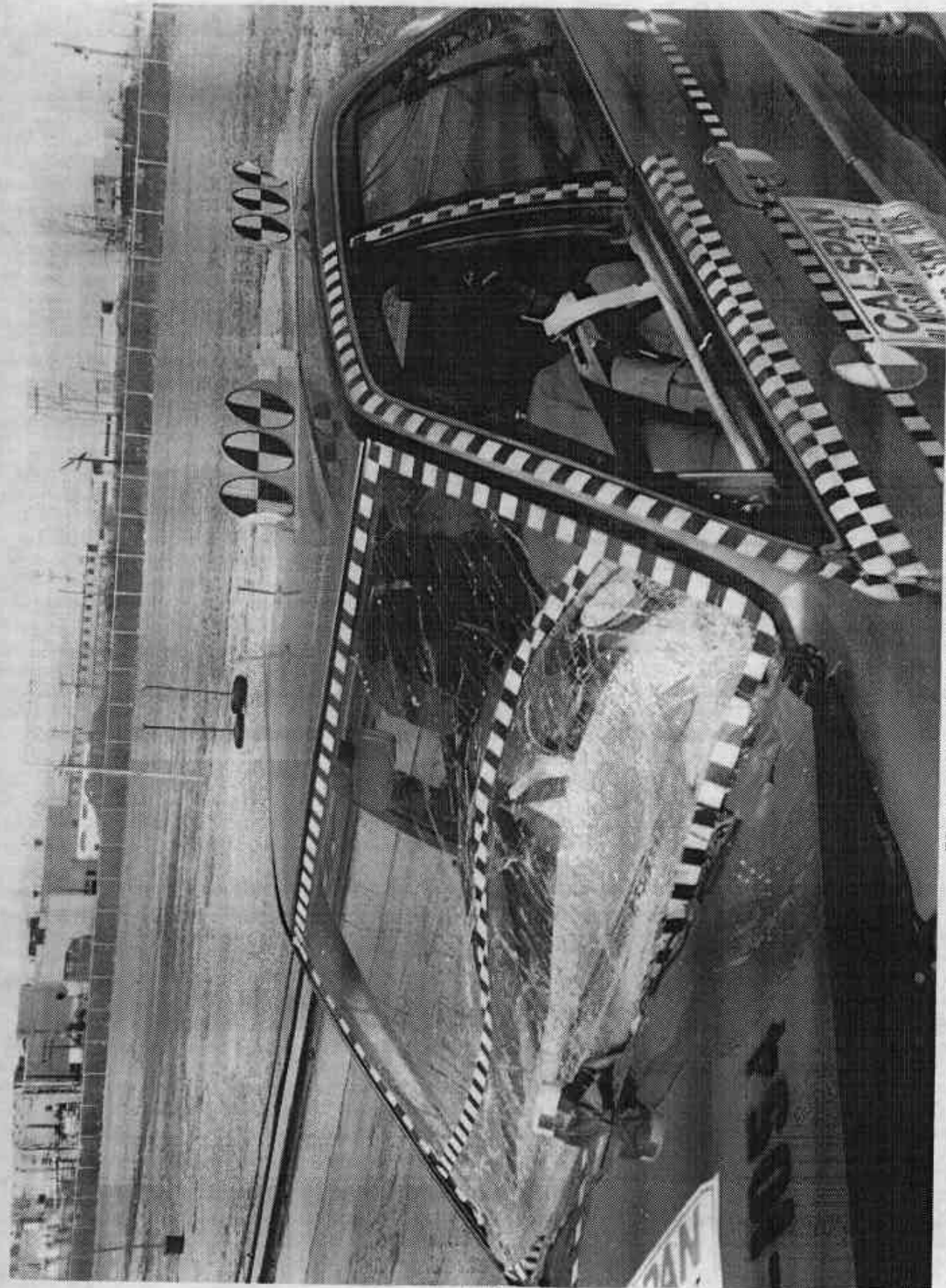


Figure A-13 POST-TEST WINDSHIELD VIEW

A-15

7880-1

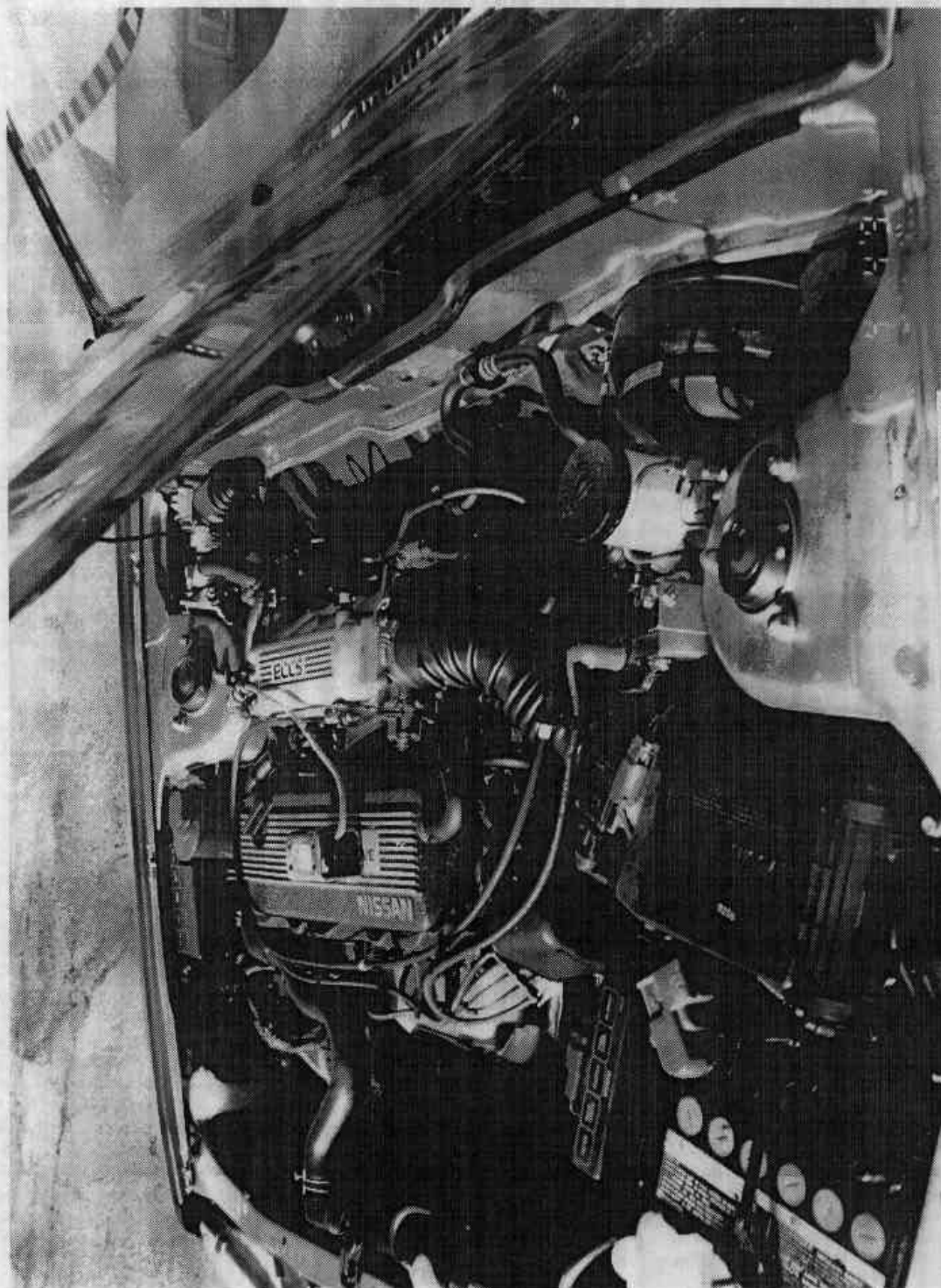


FIGURE A-14 PRE-TEST ENGINE COMPARTMENT VIEW

A-16

7880-1

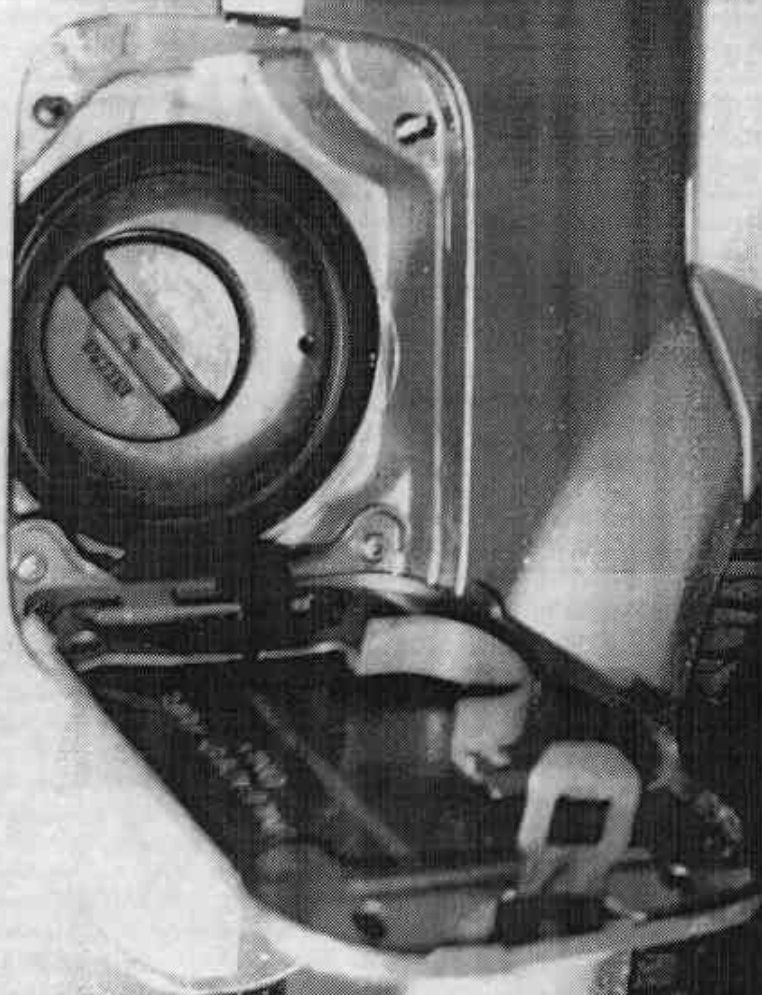
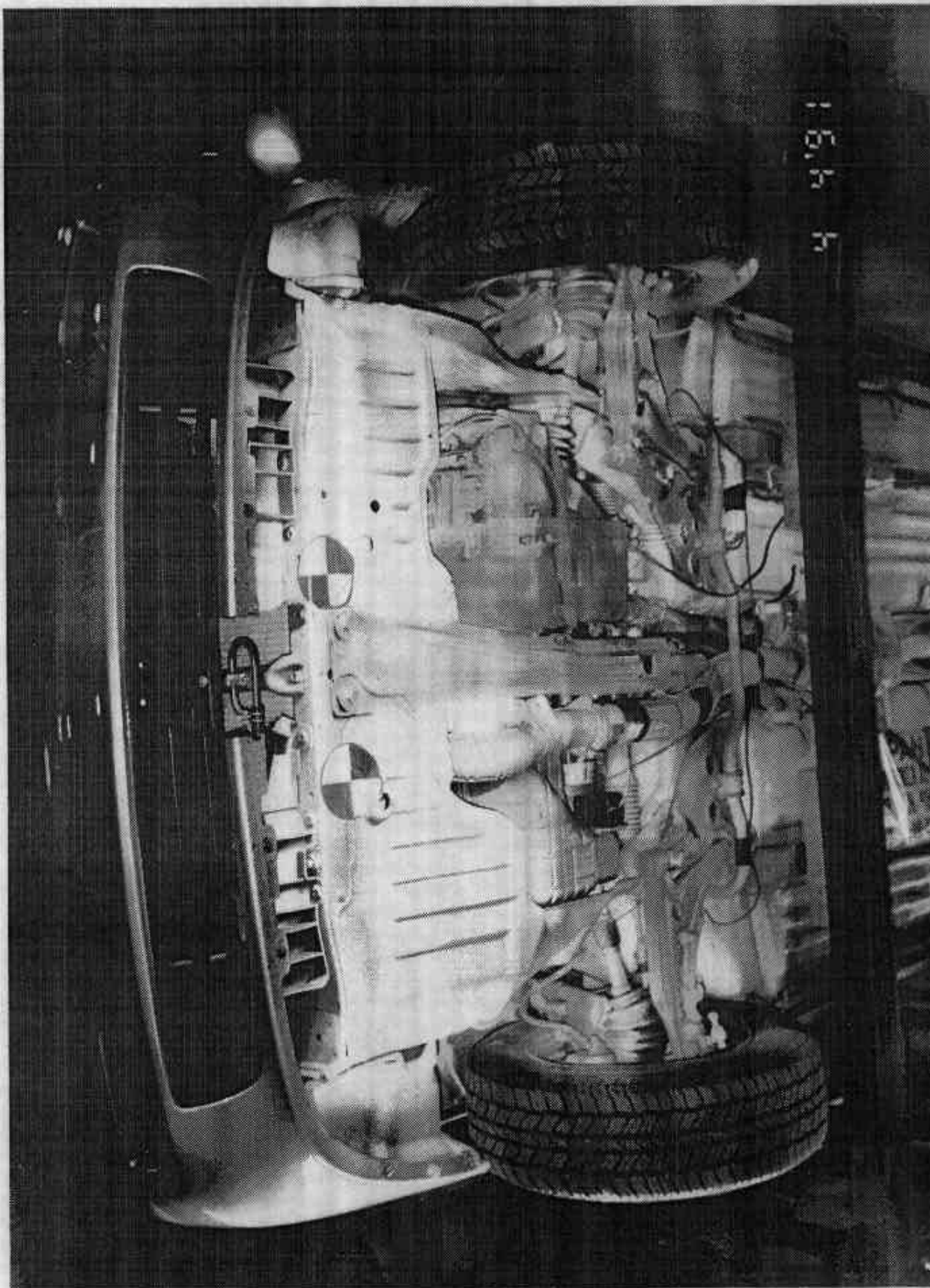


FIGURE A-15 FUEL CAP VIEW



16.6 4 4.91

FIGURE A-16 PRE-TEST FRONT UNDERBODY VIEW

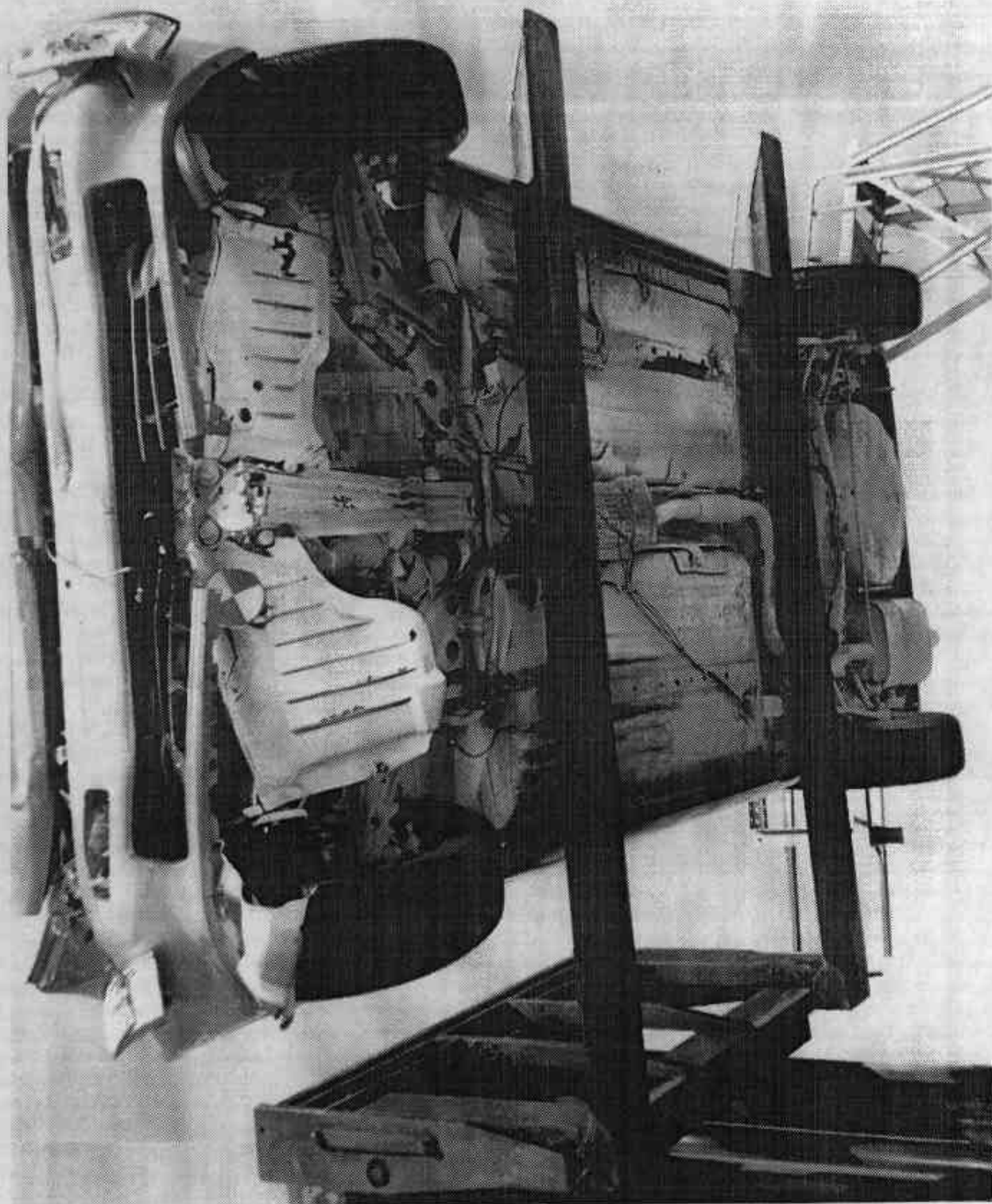


FIGURE A-17 POST-TEST FRONT UNDERBODY VIEW

A-19

7880-1

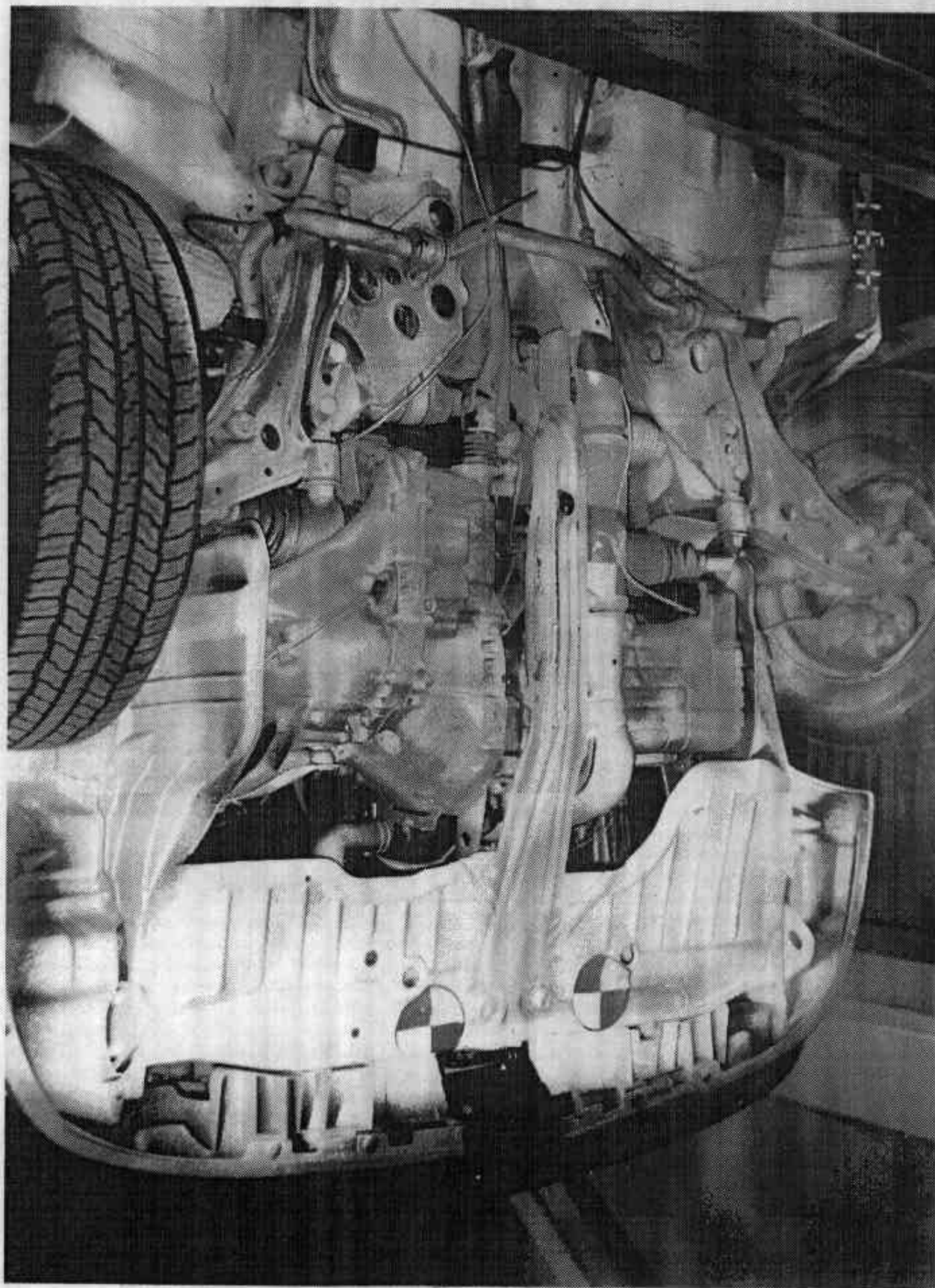


Figure A-18 PRE-TEST FRONT SIDE UNDERBODY VIEW

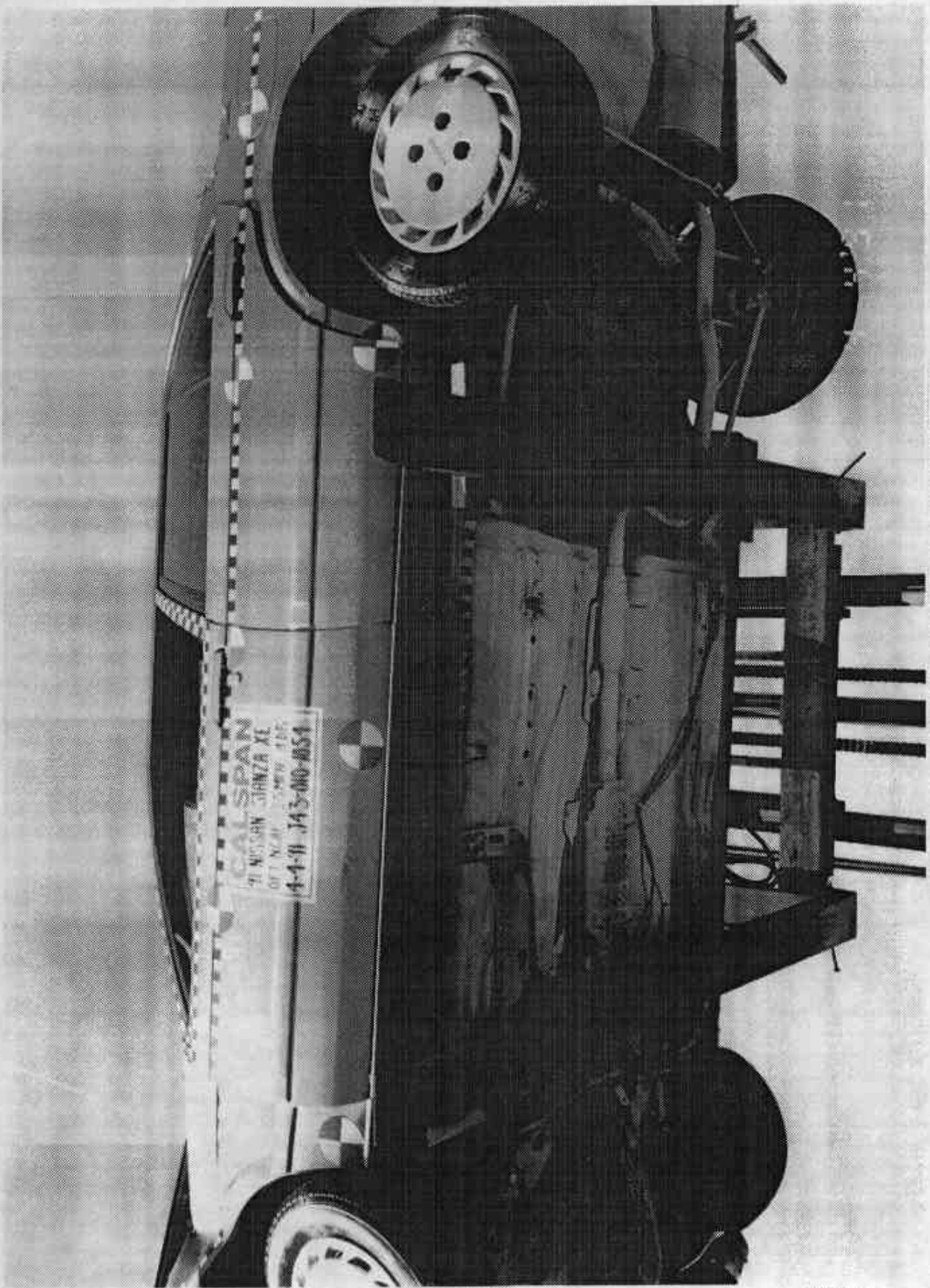


FIGURE A-10 POST-TEST FRONT SIDE UNDERBODY VIEW

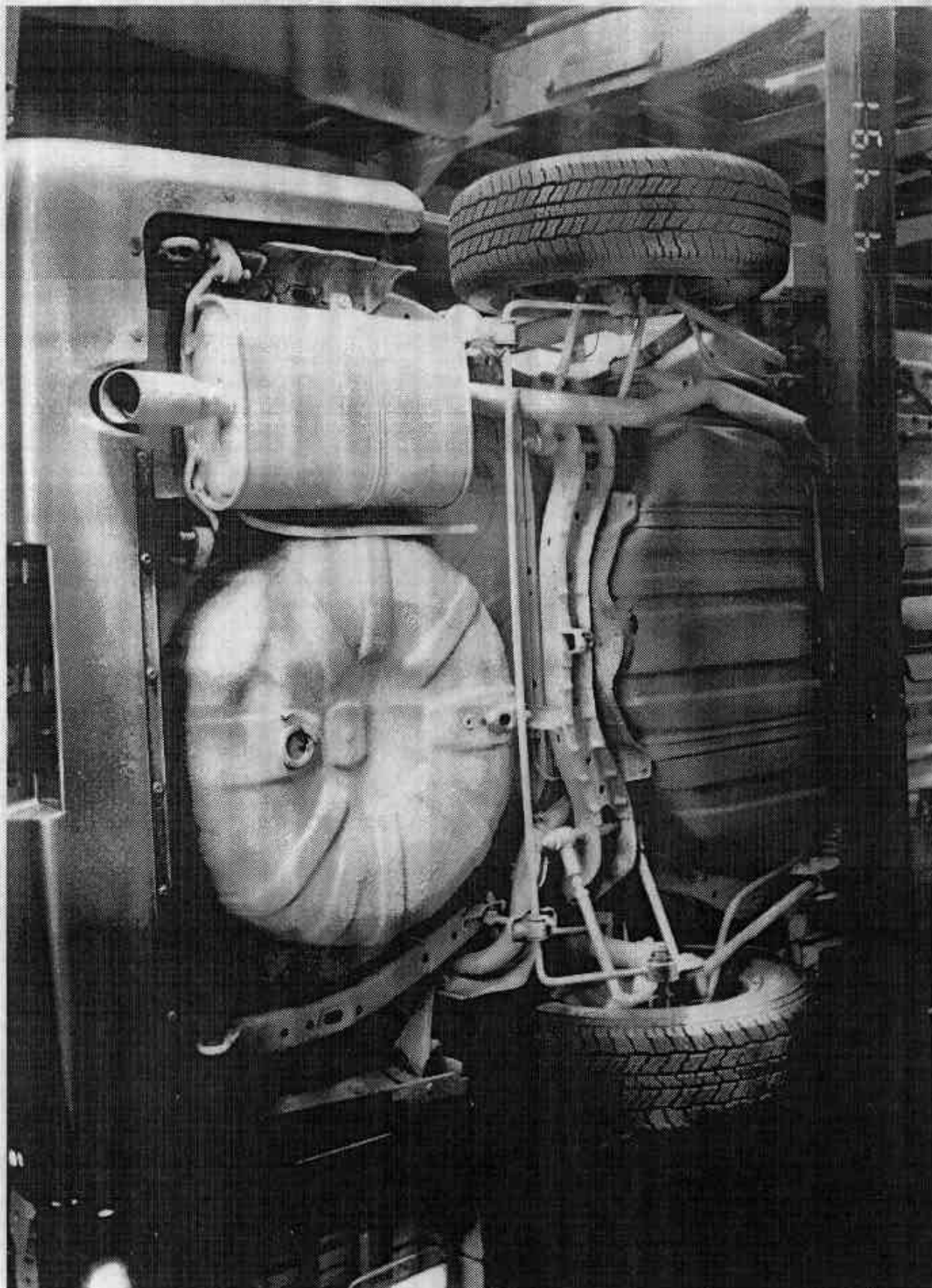


Figure A-20 PRE-TEST REAR UNDERBODY VIEW

A-22

7880-1

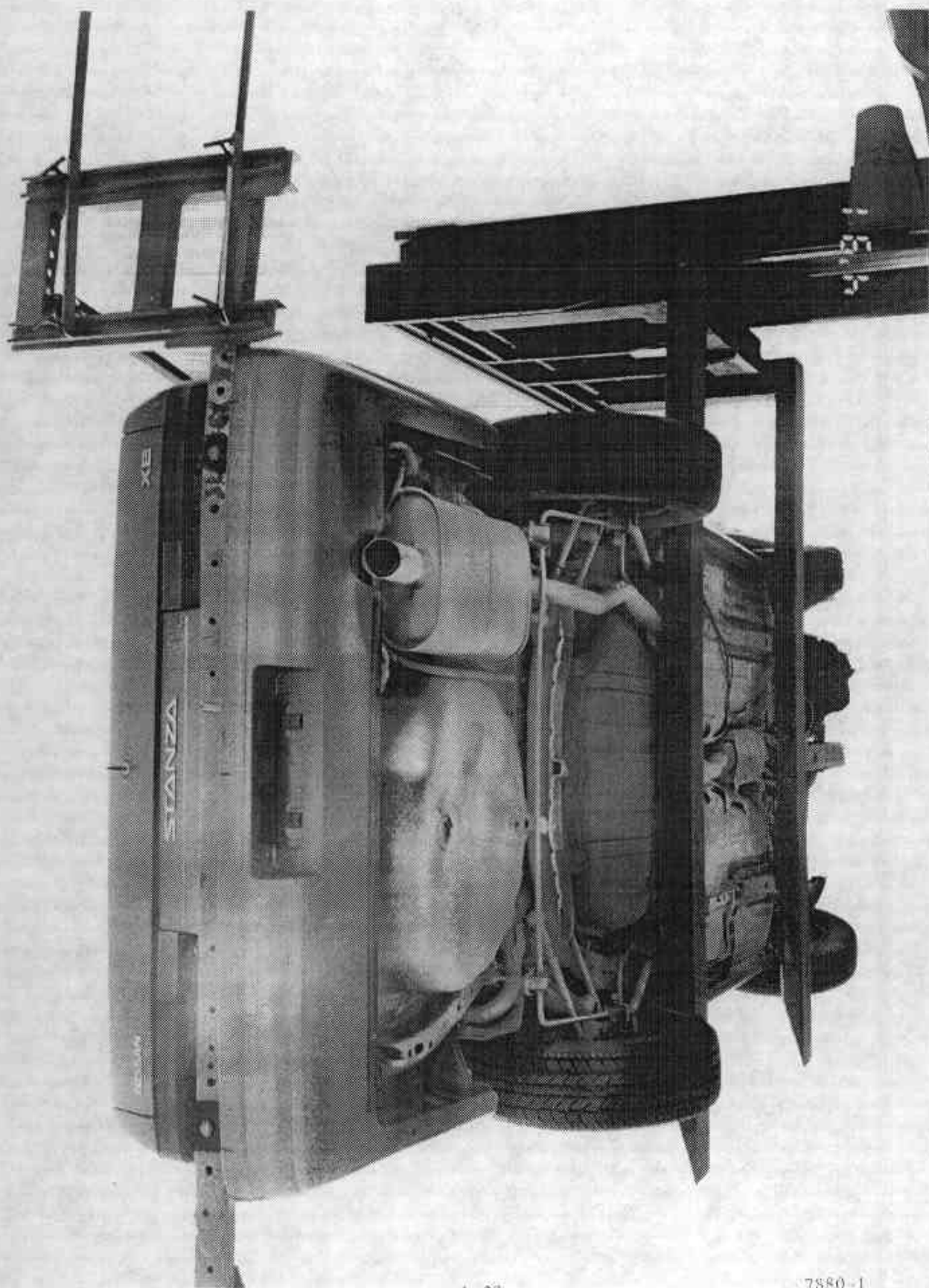


FIGURE A-21 POST-TEST REAR UNDERBODY VIEW

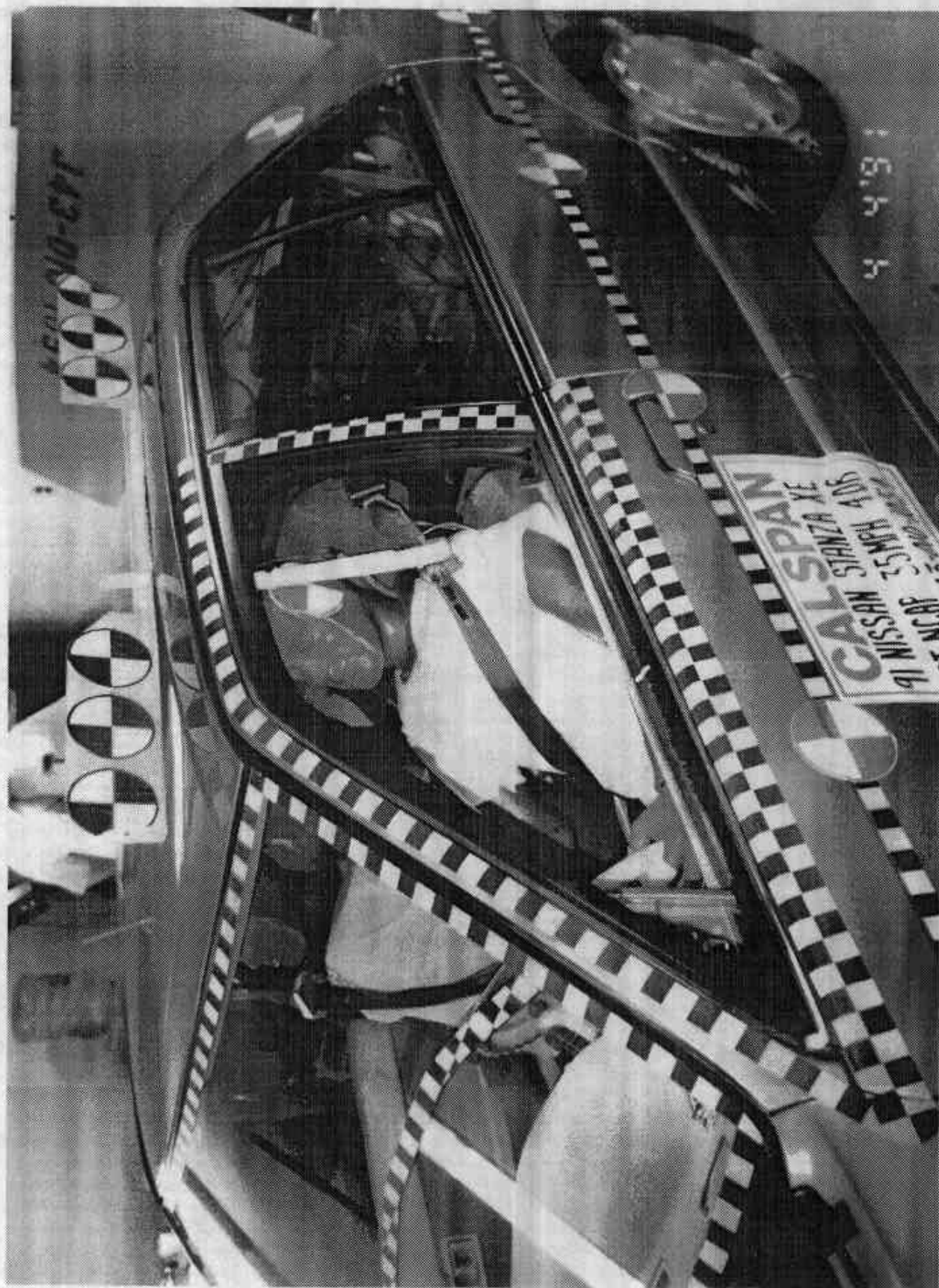


Figure A-22 PRE-TEST DRIVER POSITION VIEW

A-24

7880-1



Figure A-23 POST-TEST DRIVER POSITION VIEW



Figure A-24 PRE-TEST PASSENGER POSITION VIEW



Figure A-25. POST-TEST PASSENGER POSITION VIEW

A-27

7880-1



Figure A-26 PRE-TEST DRIVER AND INTERIOR VIEW

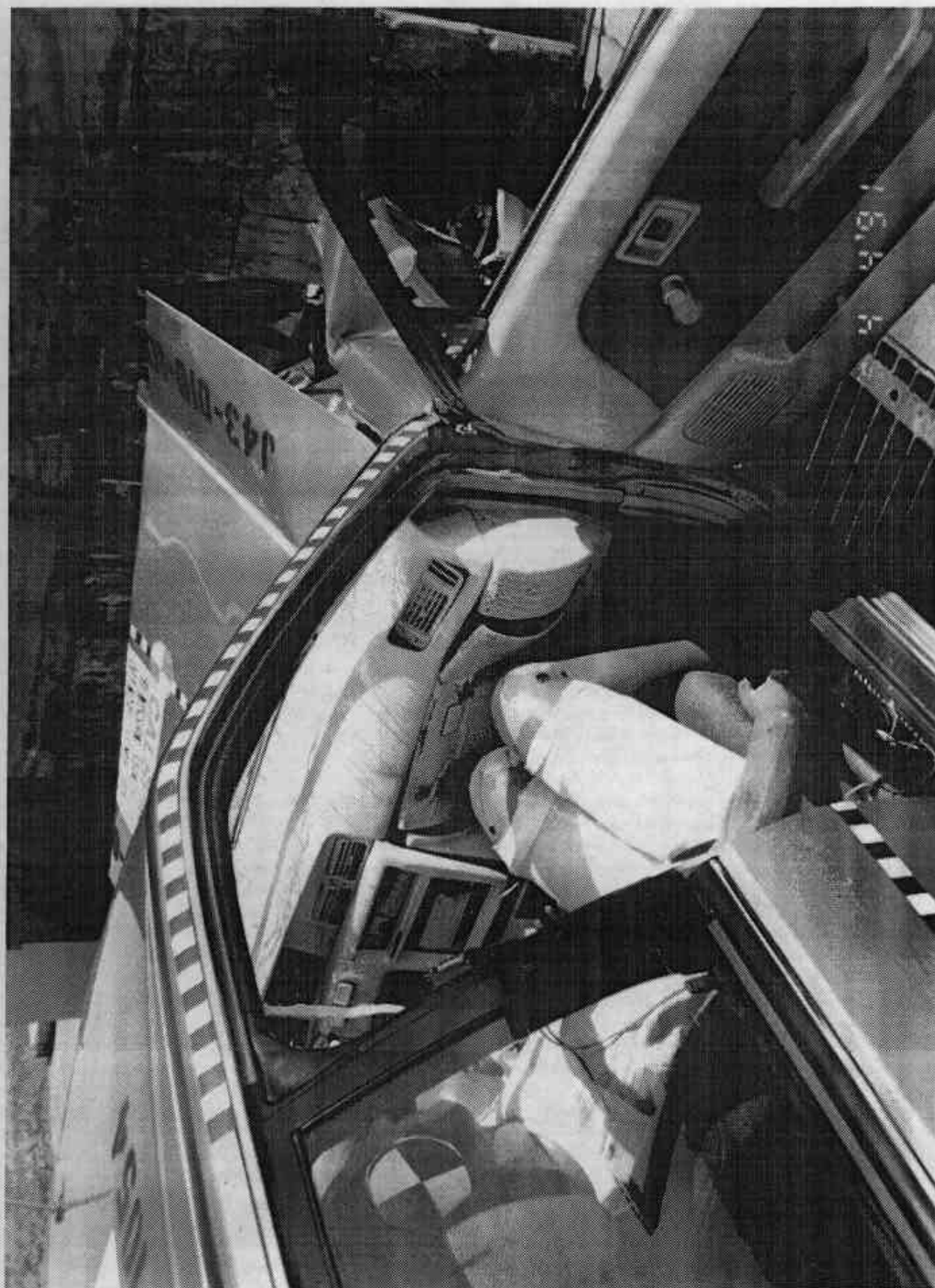


FIGURE A-20 POST-TEST PASSENGER AND INTERIOR VIEW

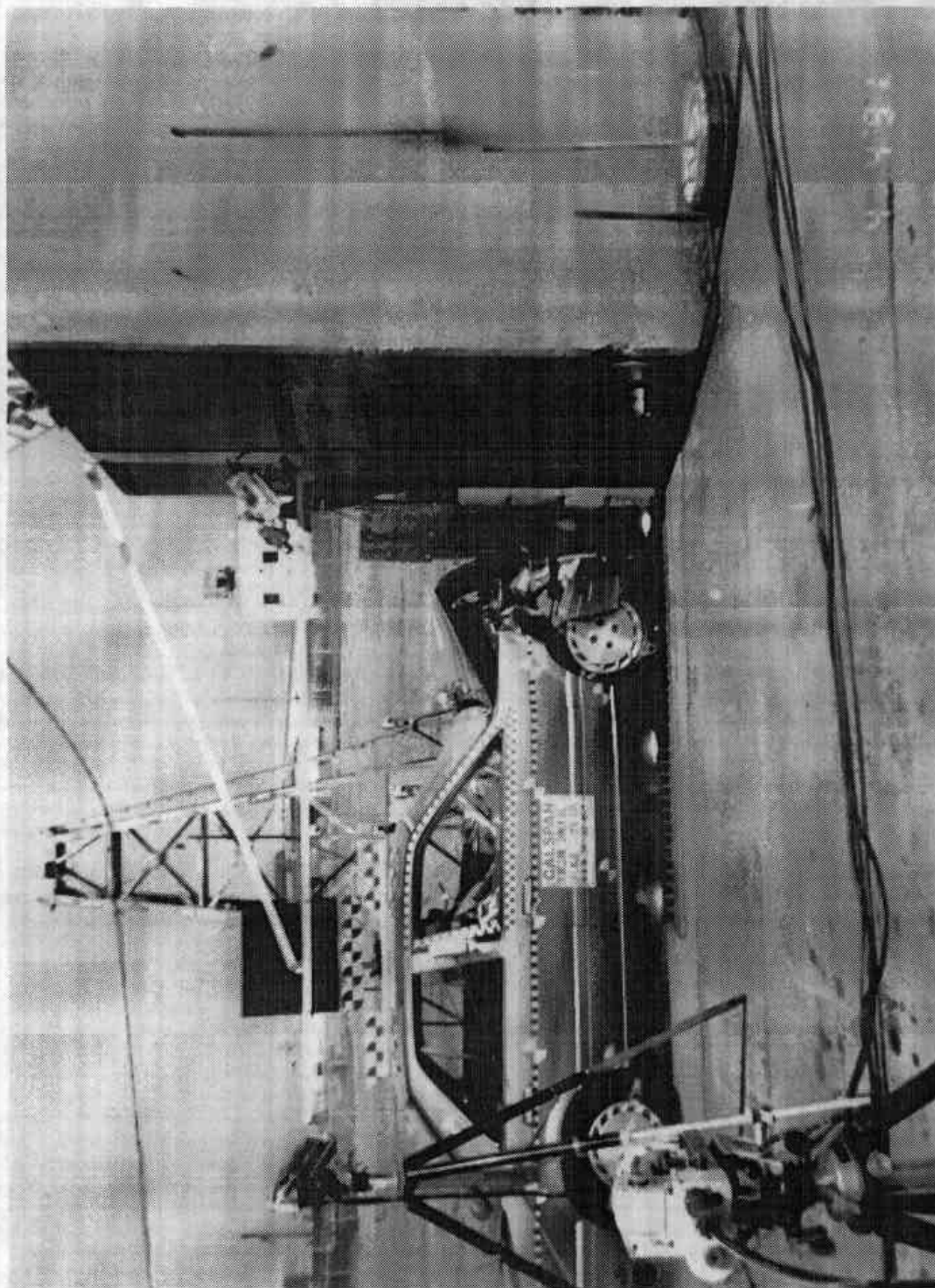


Figure A-80 IMPACT VIEW

A-32

7880-1

Appendix B

VEHICLE, LOAD CELL BARRIER AND DUMMY RESPONSE DATA

TEST NO. J43-1-1054

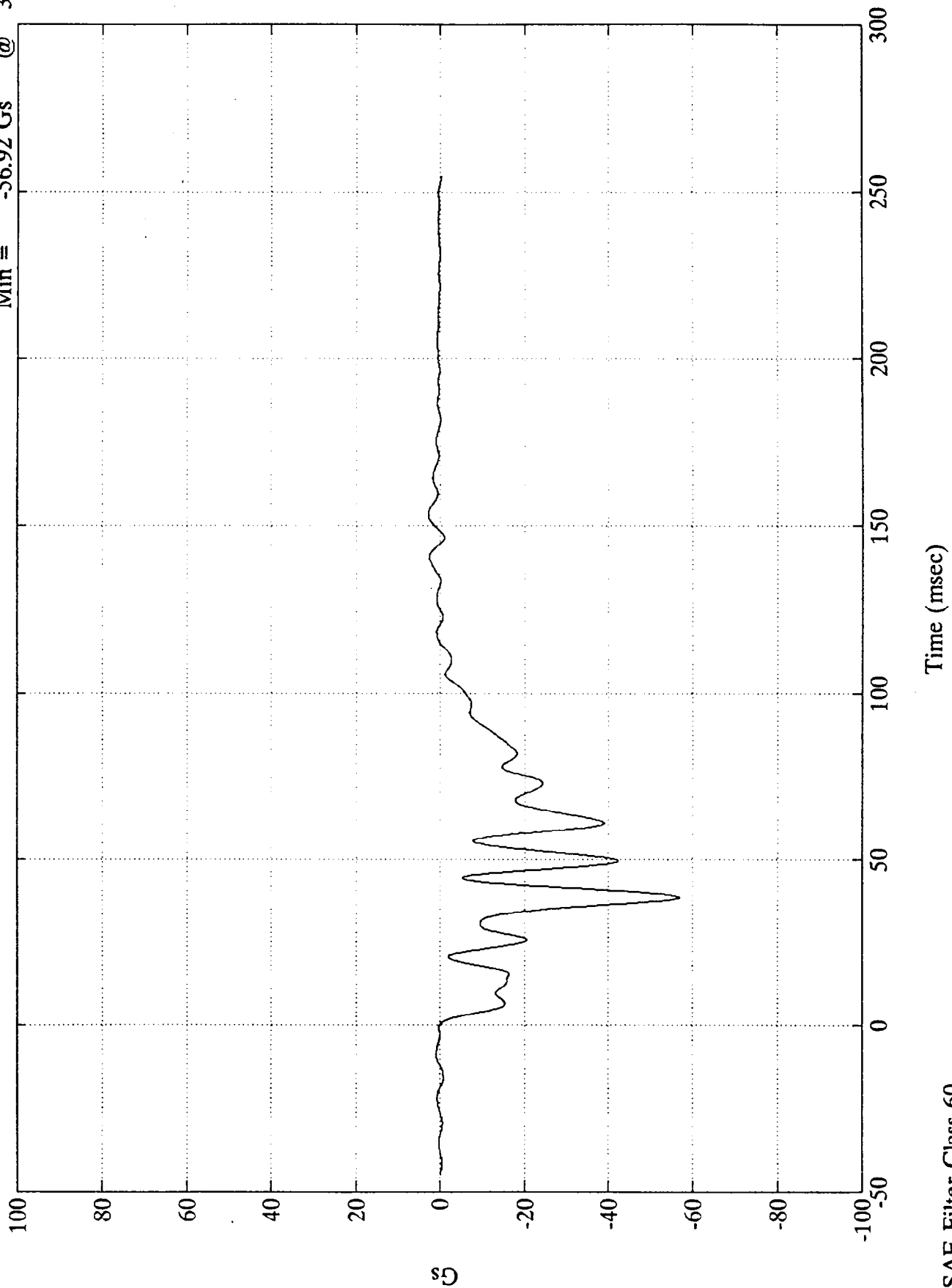
VEHICLE DATA

FILTER CHANNEL CLASS

60

NCAP OPT TEST 1 1991 NISSAN STANZA

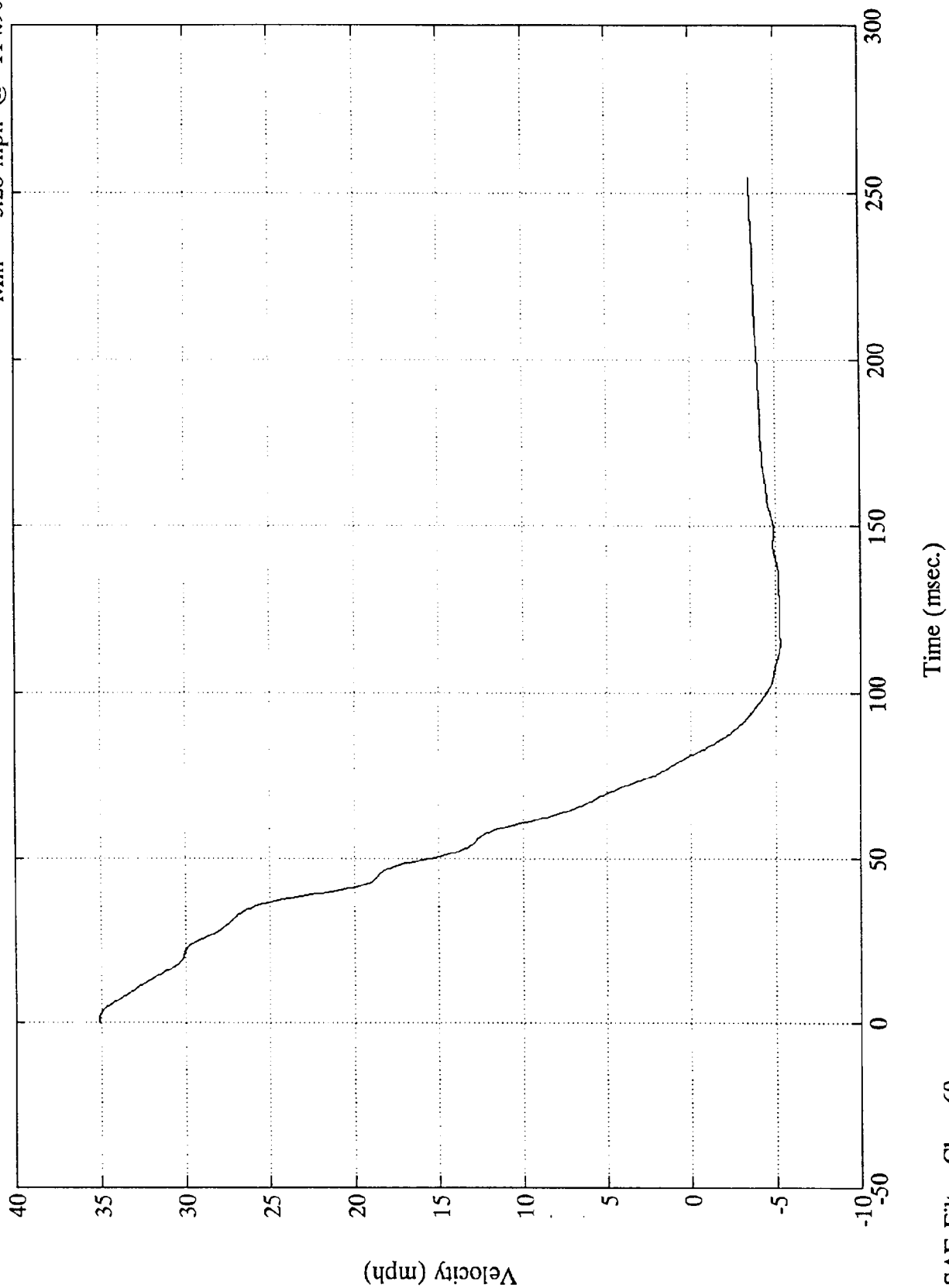
Acc. #1(x) Max = 2.75 Gs @ 153.36 msec
Min = -56.92 Gs @ 38.75 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

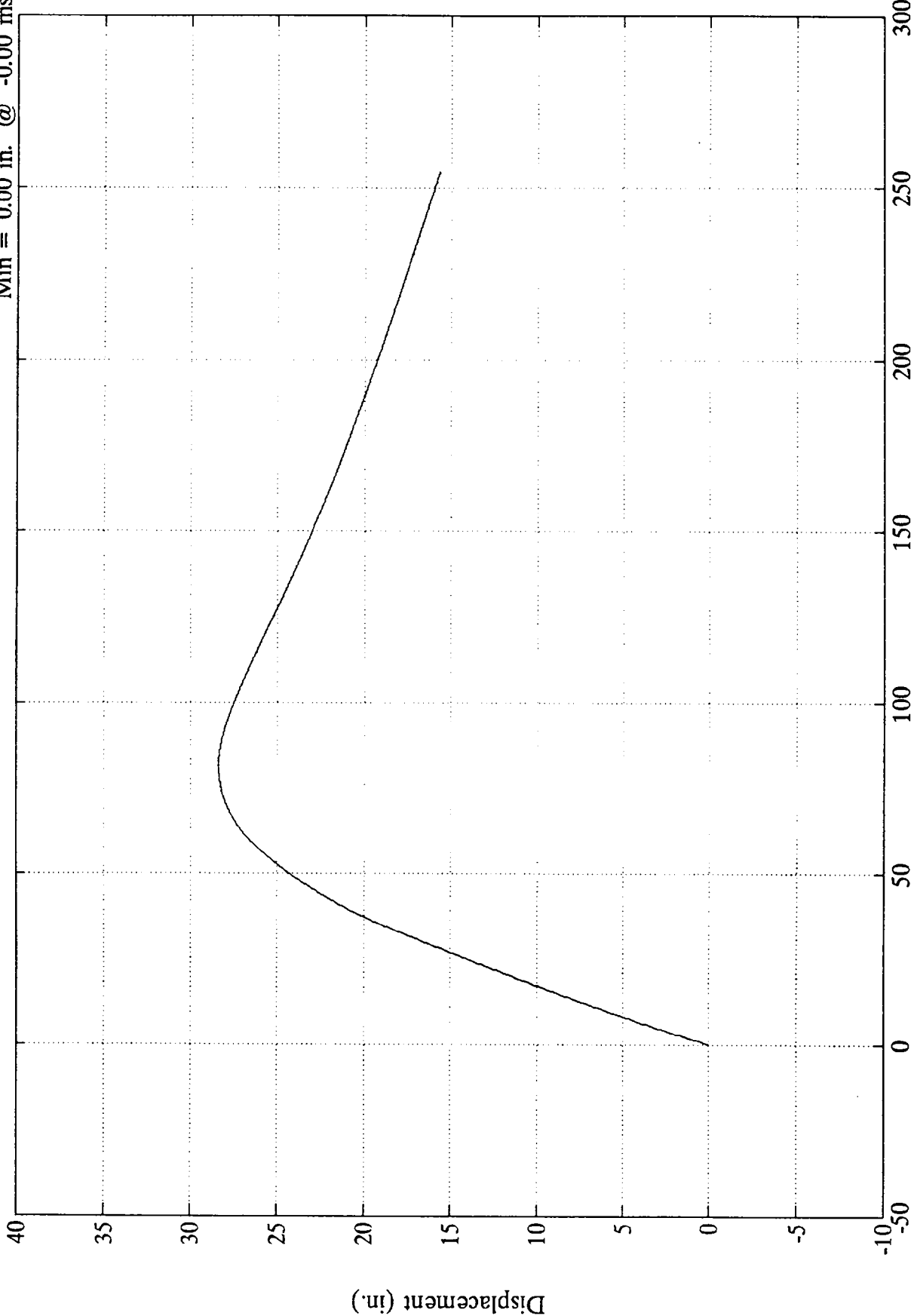
Max = 35.10 mph @ 0.48 msec
Min = -5.28 mph @ 114.96 msec

Acc. #1(x)



Max = 28.36 in. @ 82.80 msec
Min = 0.00 in. @ -0.00 msec

Acc. #1(x)

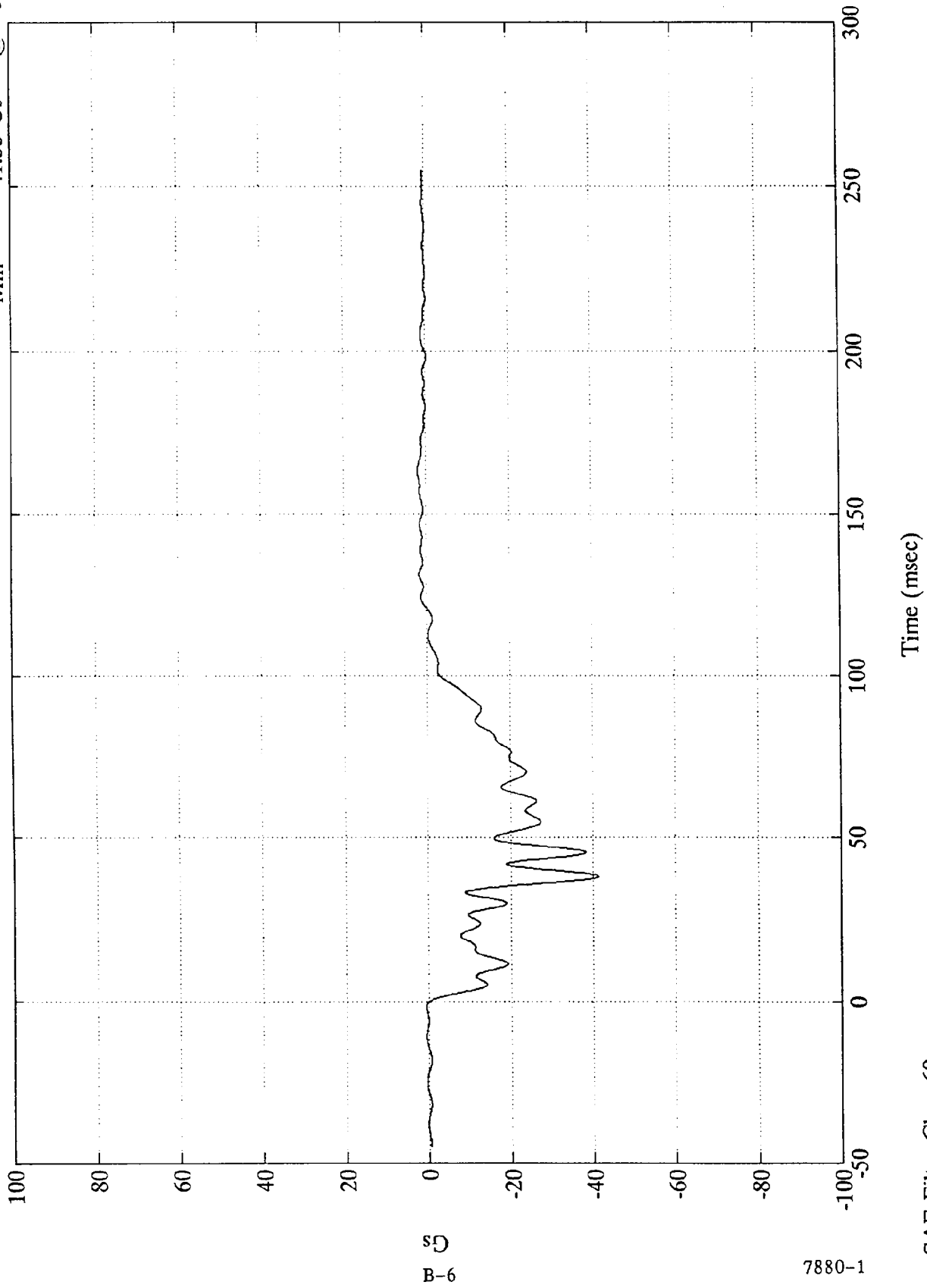


Time (msec.)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

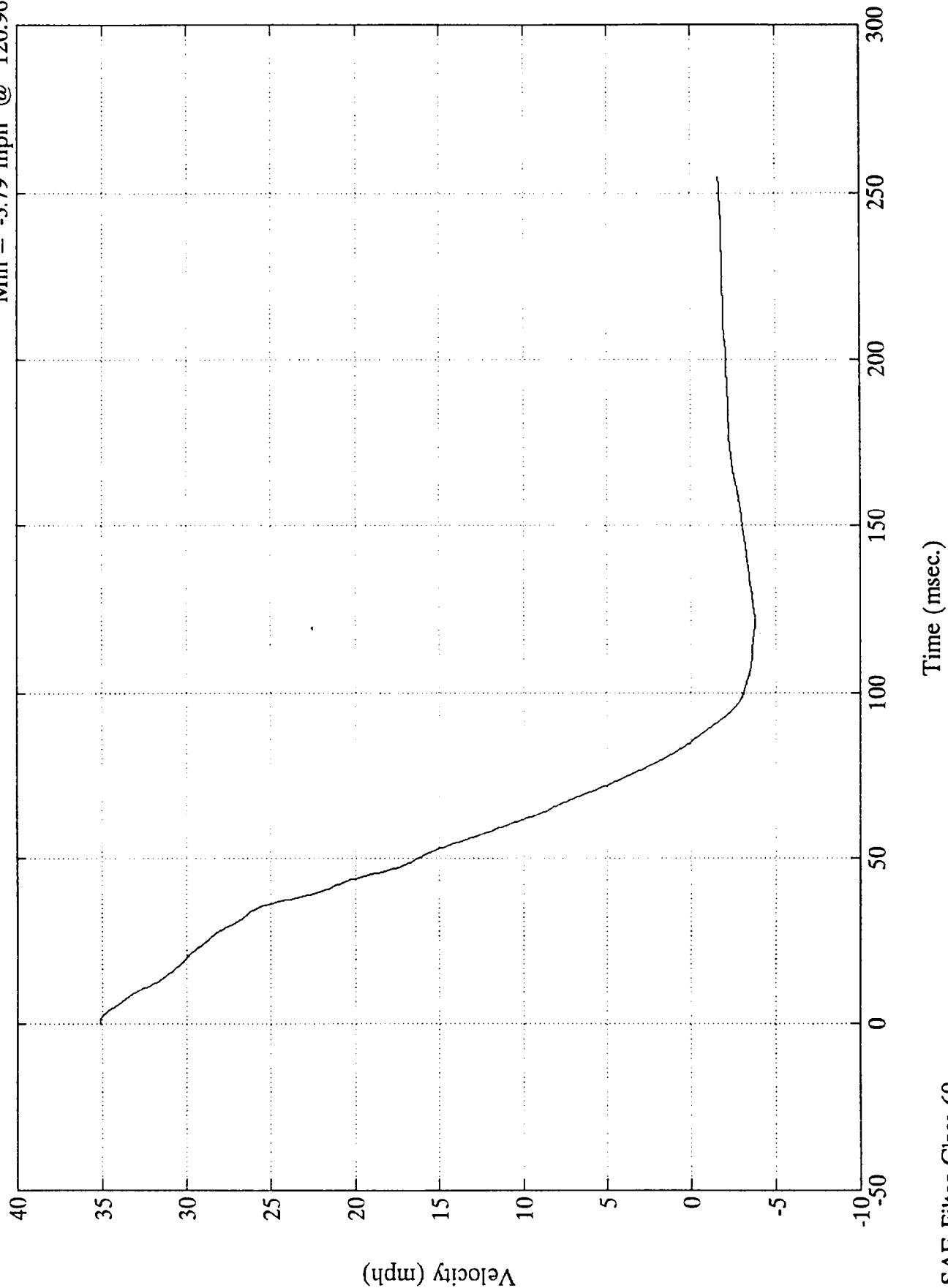
Acc. #2(x) Max = 2.08 Gs @ 163.44 msec
Min = -41.33 Gs @ 37.92 msec



SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

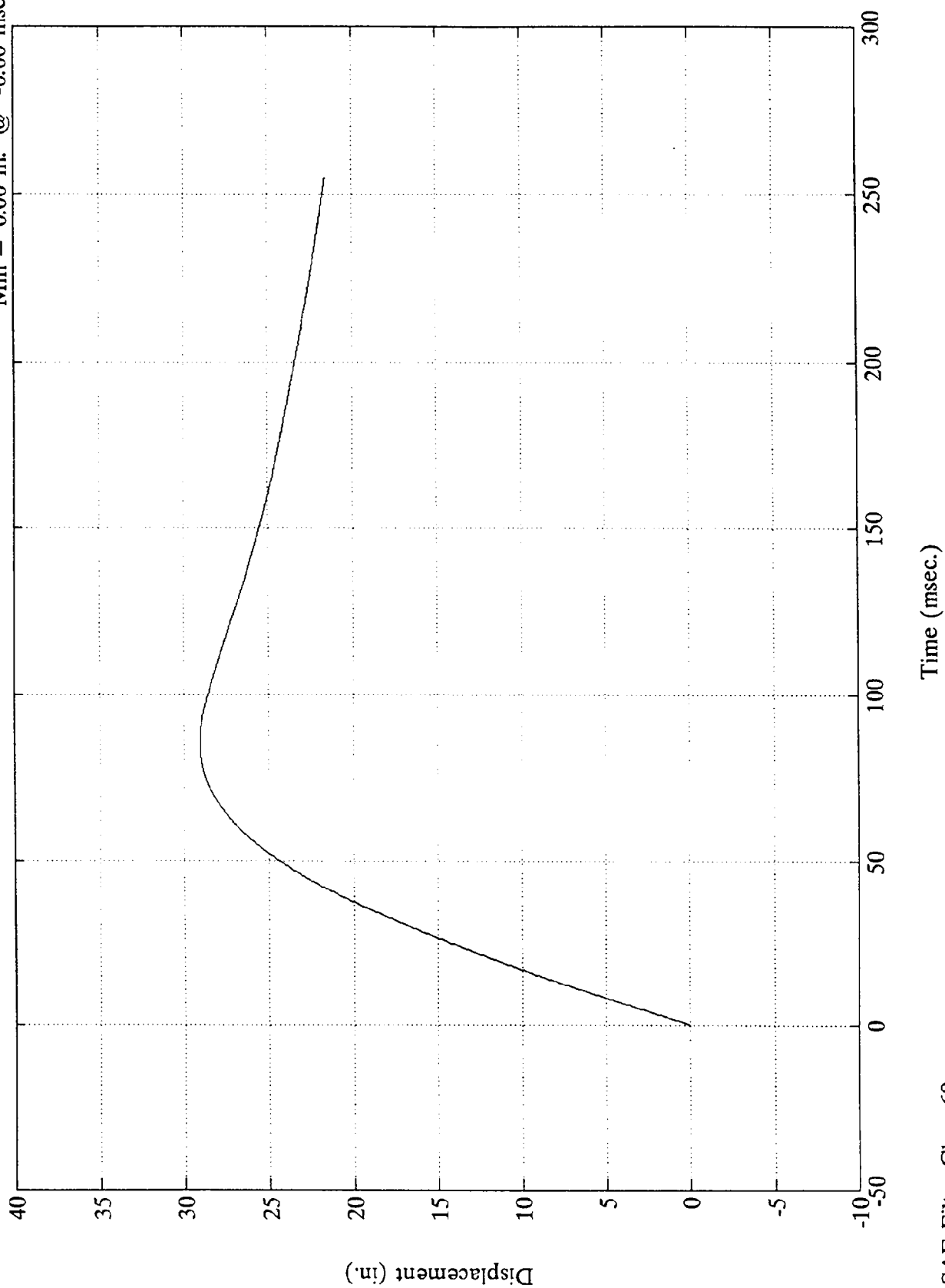
Acc. #2(x)
Max = 35.10 mph @ 0.24 msec
Min = -3.79 mph @ 120.96 msec



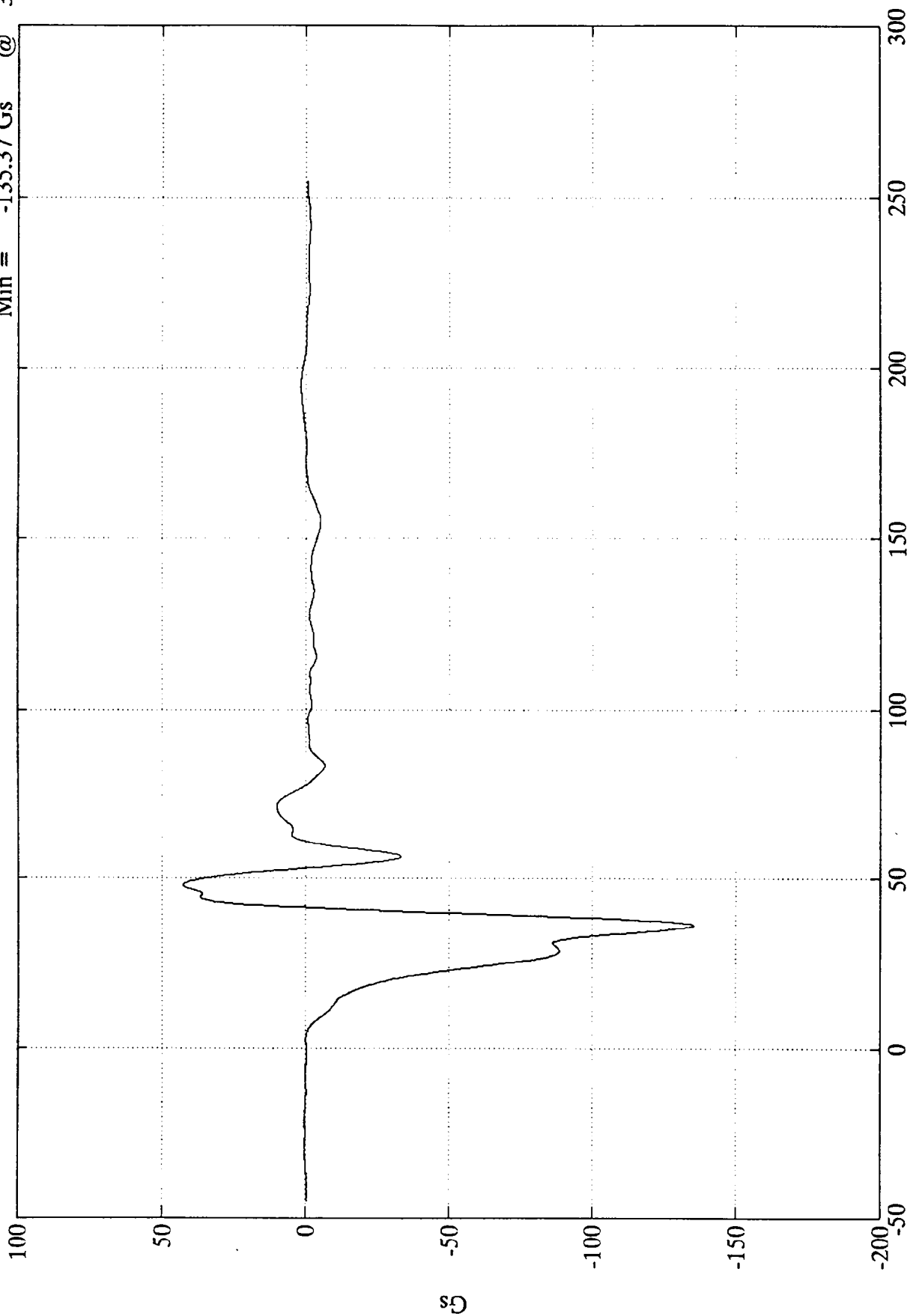
NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 29.07 in. @ 86.64 msec
Min = 0.00 in. @ -0.00 msec

Acc. #2(x)



Acc. #3(x) Max = 42.58 Gs @ 48.00 msec
Min = -135.37 Gs @ 36.24 msec



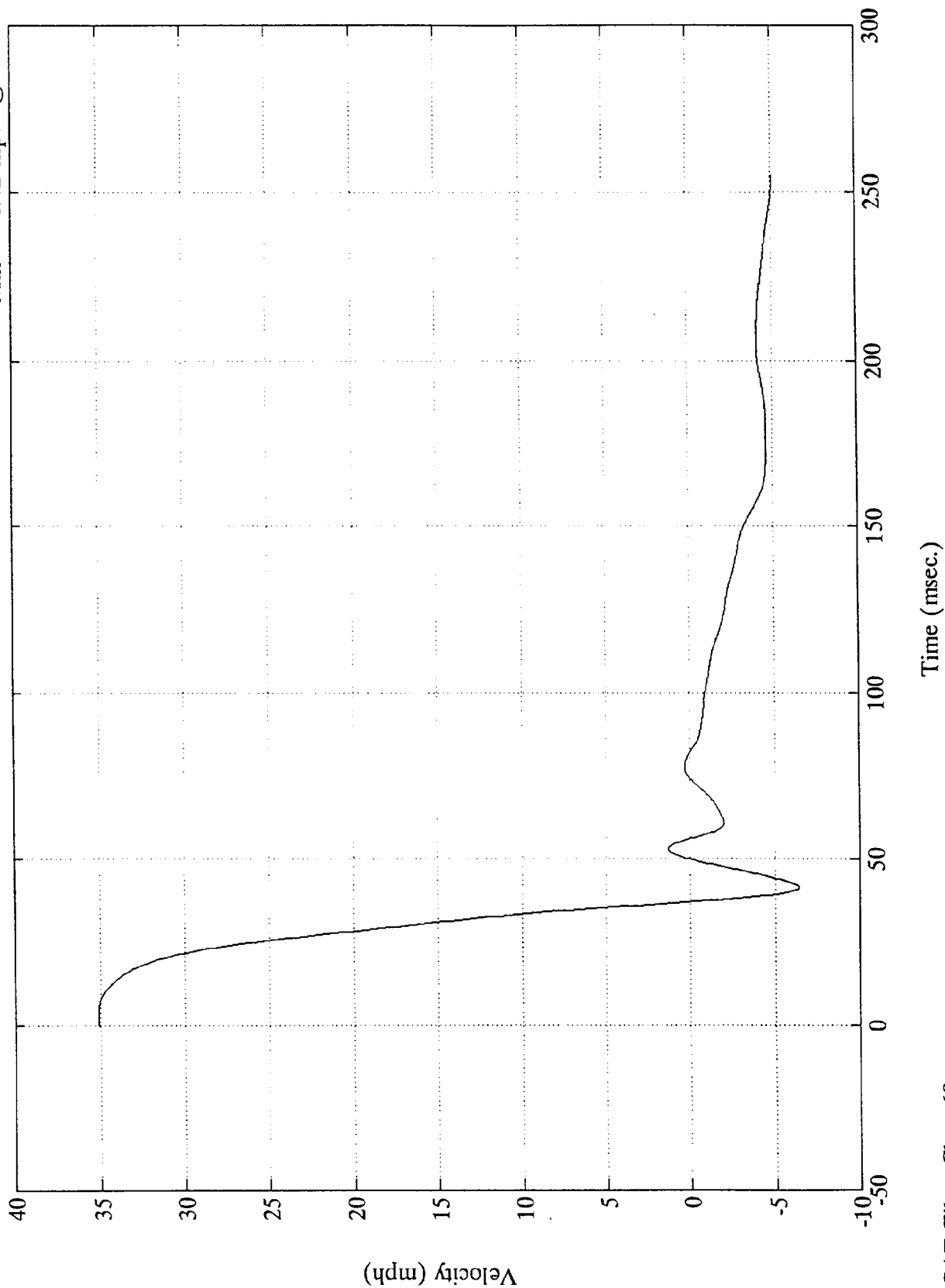
Time (msec)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

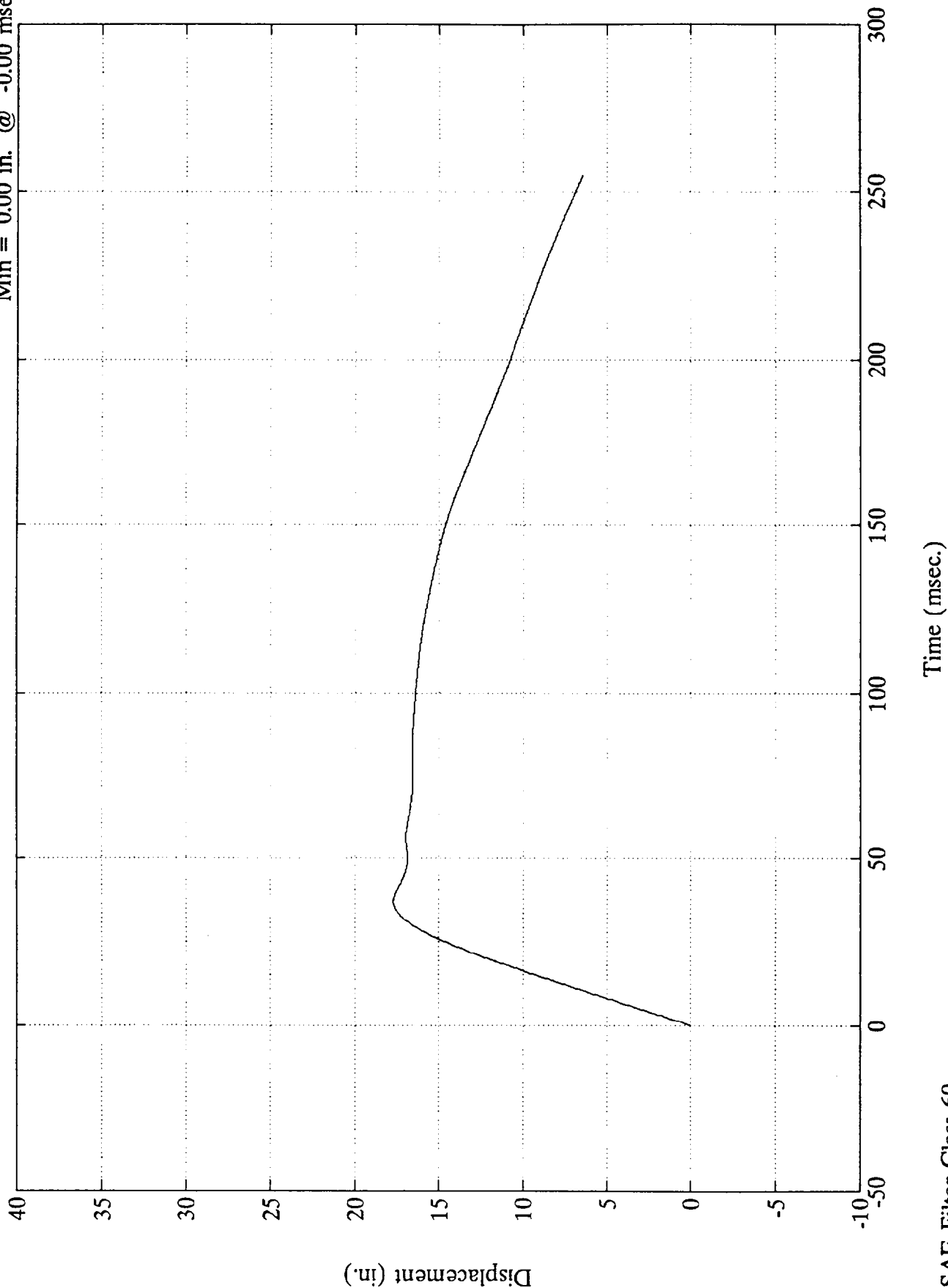
Max = 35.10 mph @ 0.48 msec
Min = -6.42 mph @ 41.28 msec

Acc. #3(x)



Max = 17.72 in. @ 37.44 msec
Min = 0.00 in. @ -0.00 msec

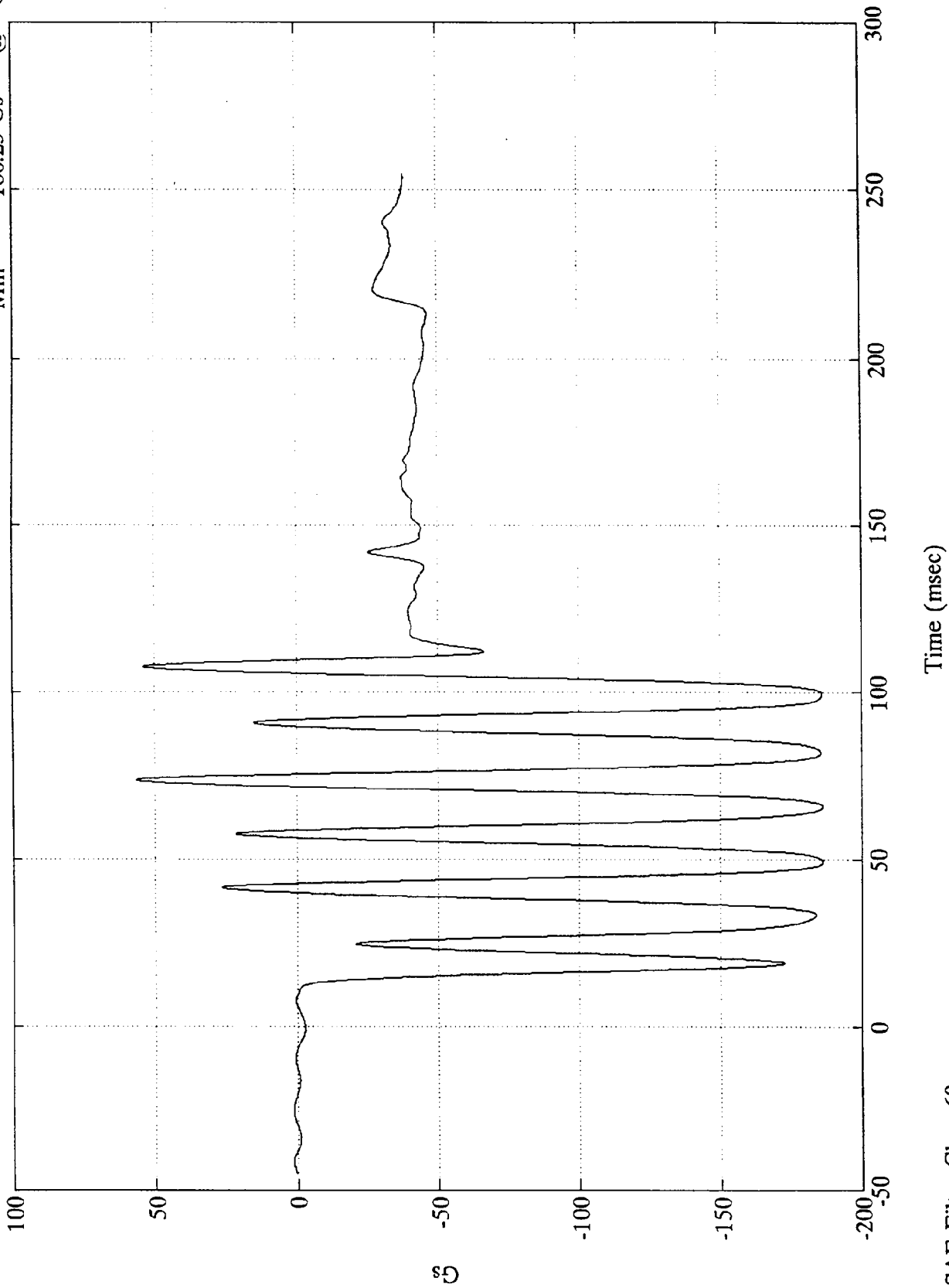
Acc. #3(x)



NCAP OPT TEST 1 1991 NISSAN STANZA

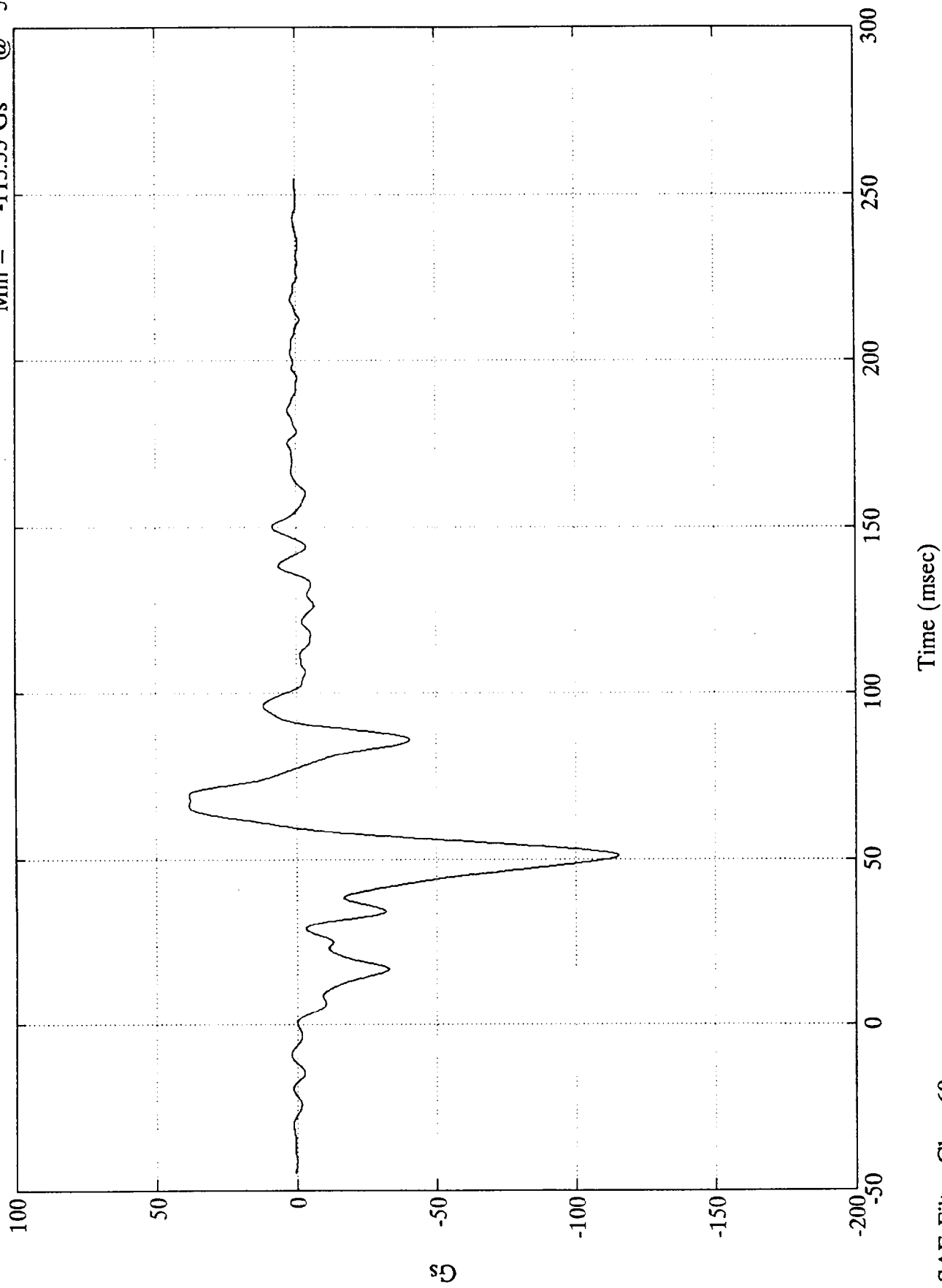
Max = 56.31 Gs @ 73.92 msec
 Min = -186.23 Gs @ 66.00 msec

Acc. #4(x)



SAE Filter Class 60

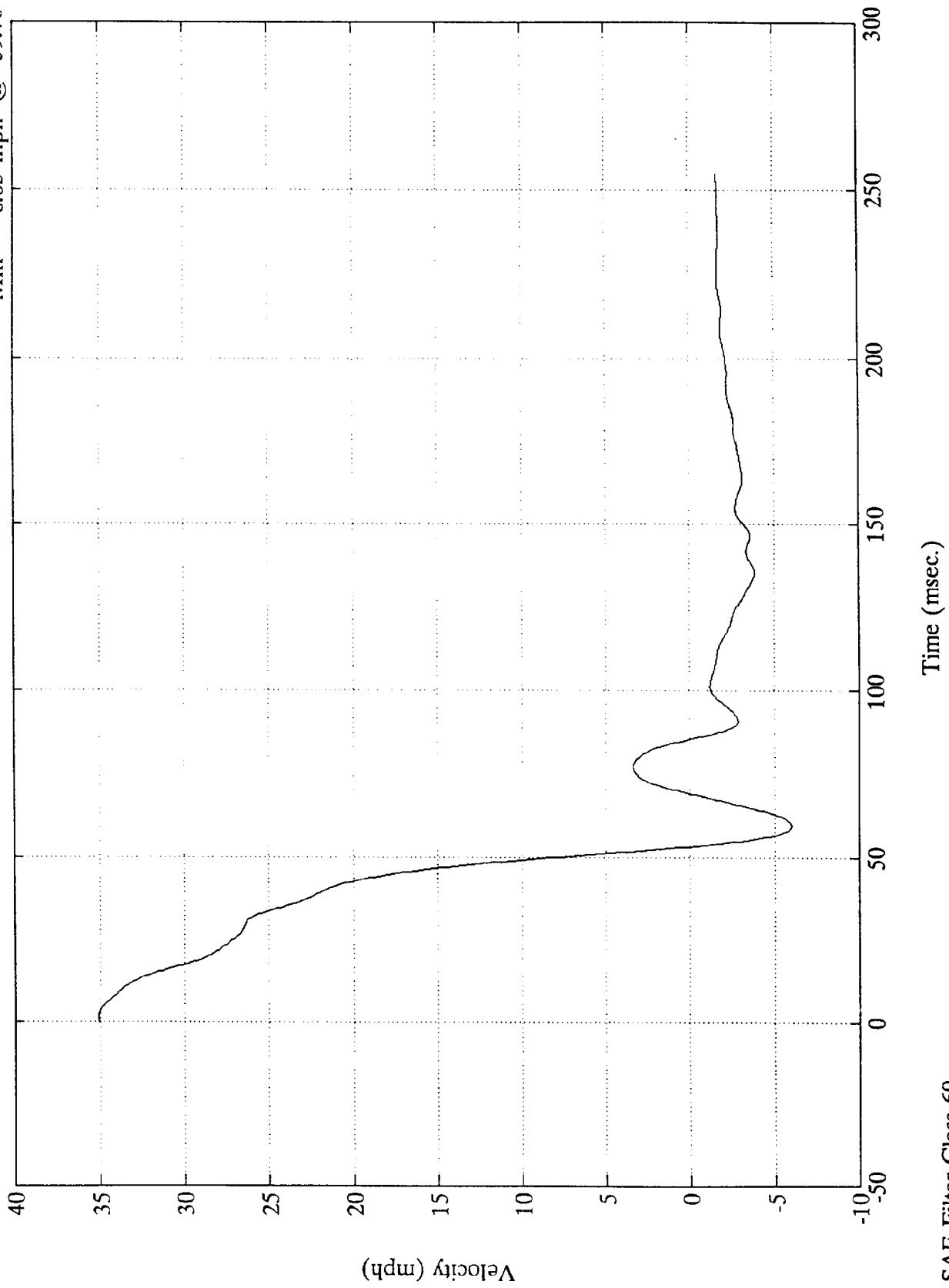
Acc. #5(x)
 Max = 38.44 Gs @ 69.48 msec
 Min = -115.55 Gs @ 51.12 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 35.10 mph @ 0.96 msec
Min = -6.03 mph @ 59.76 msec

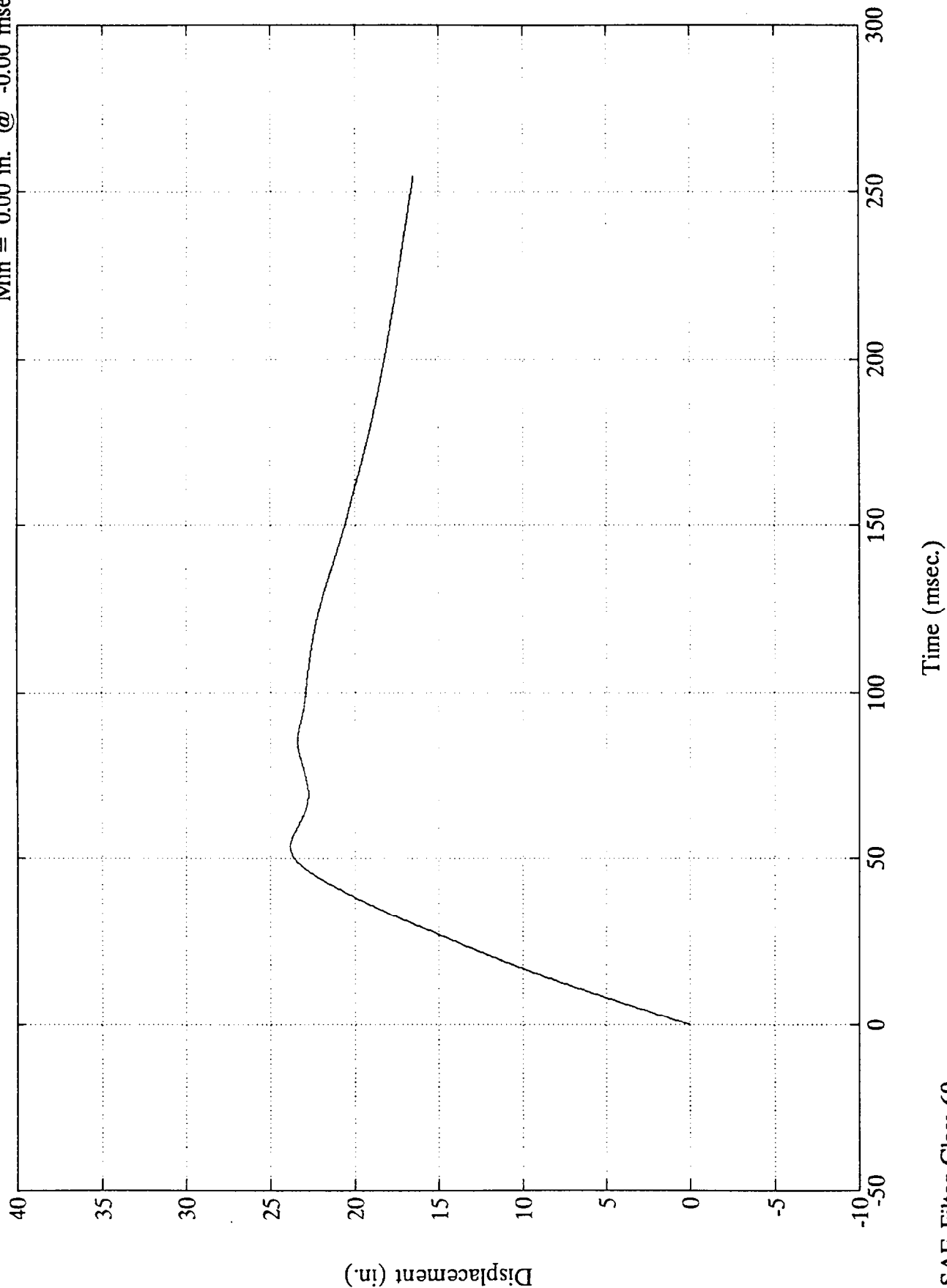
Acc. #5(x)



SAE Filter Class 60

Acc. #5(x)

Max = 23.83 in. @ 54.00 msec
Min = 0.00 in. @ -0.00 msec



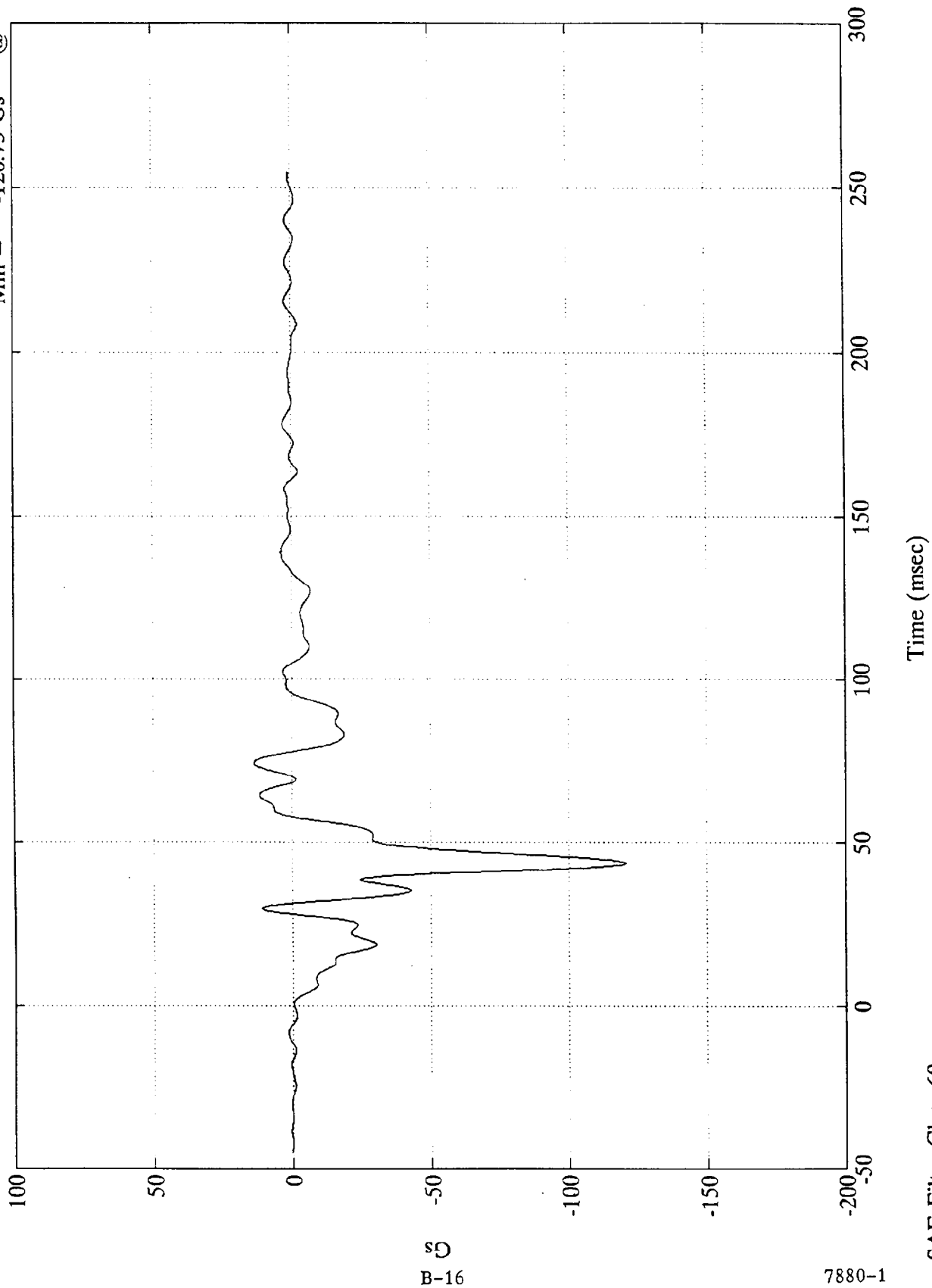
B-15

7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Acc. #6(x) Max = 13.88 Gs @ 74.27 msec
Min = -120.73 Gs @ 43.56 msec

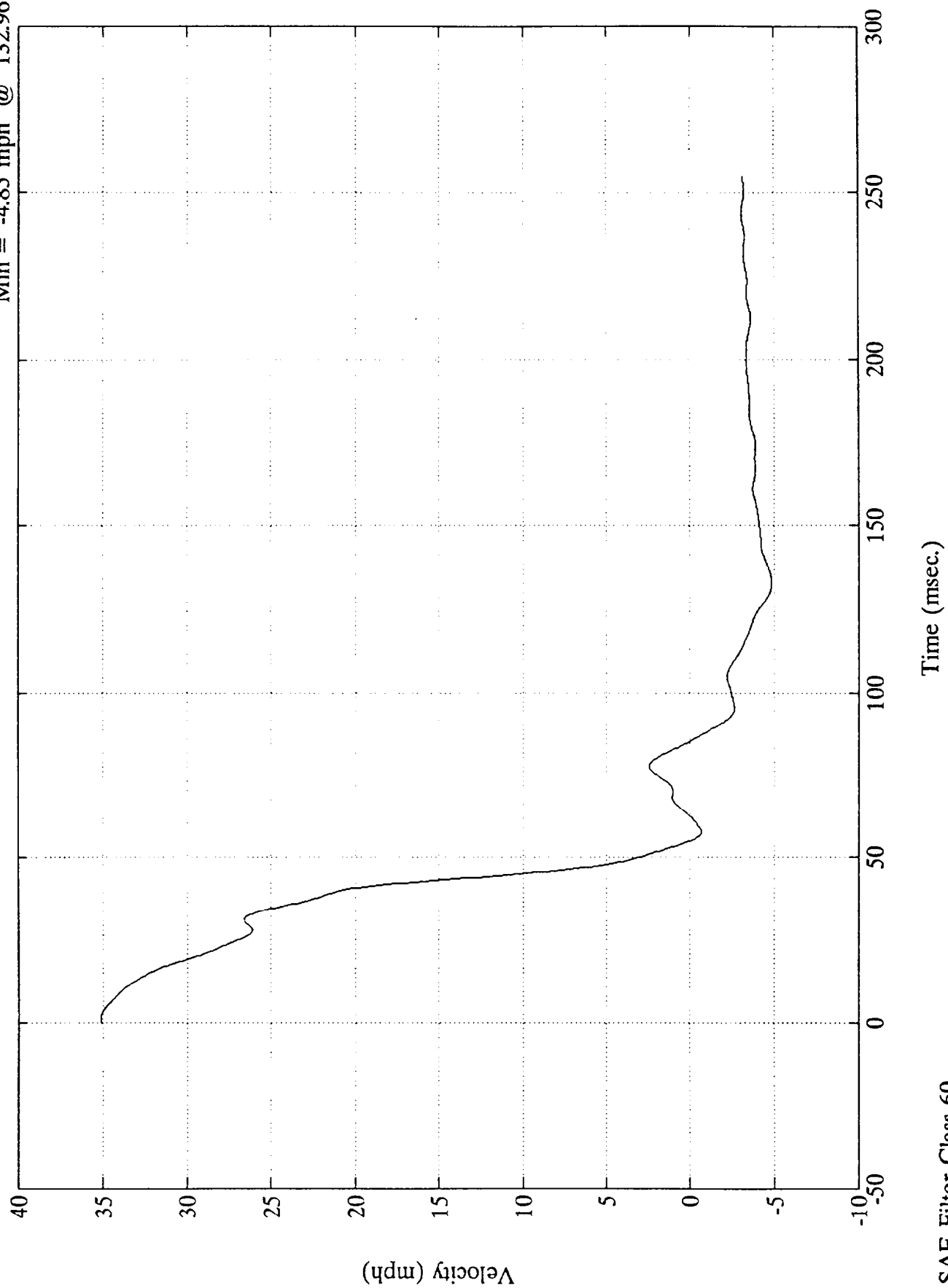


B-16

7880-1

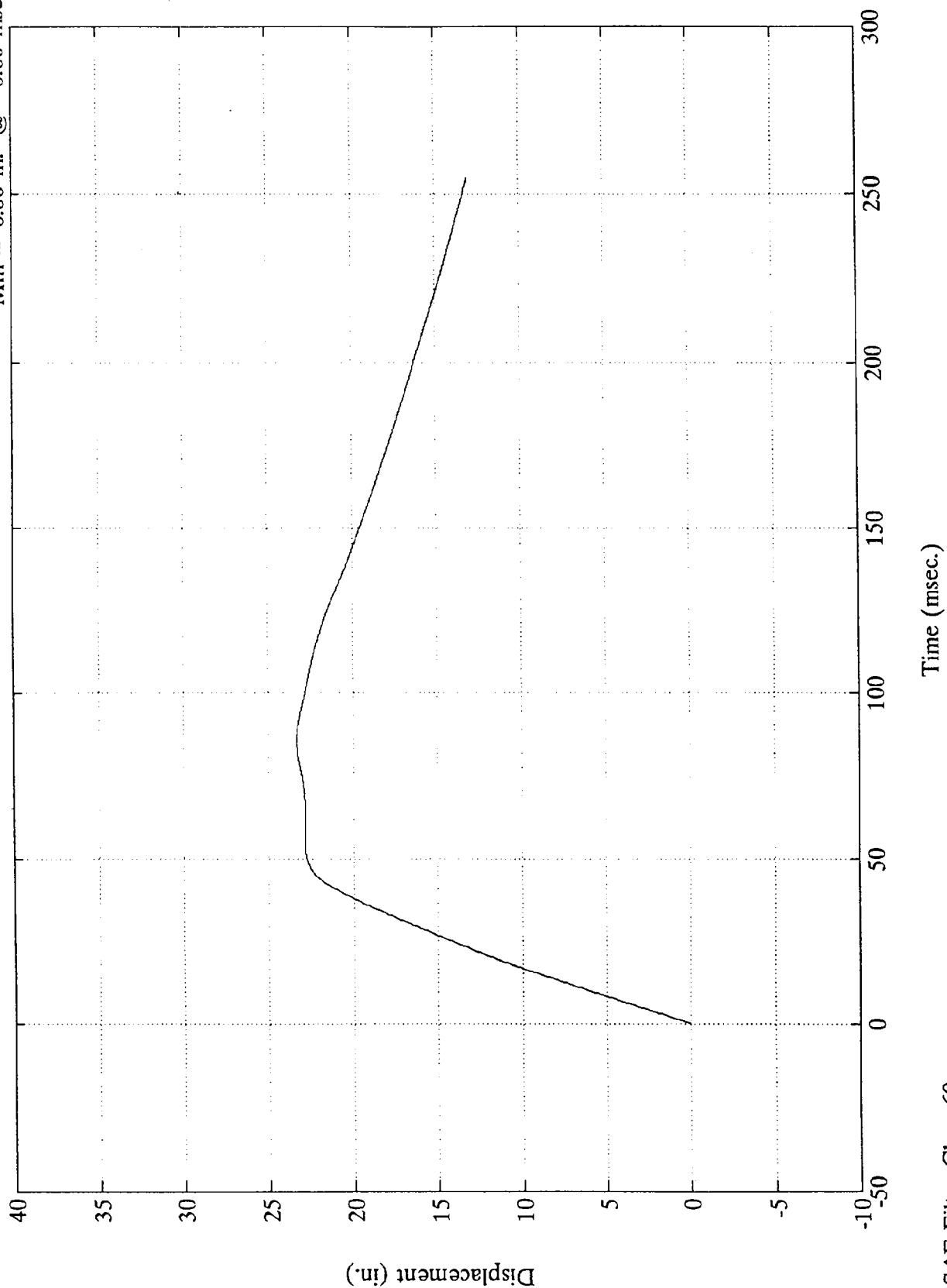
SAE Filter Class 60

Acc. #6(x)
Max = 35.10 mph @ 0.48 msec
Min = -4.85 mph @ 132.96 msec

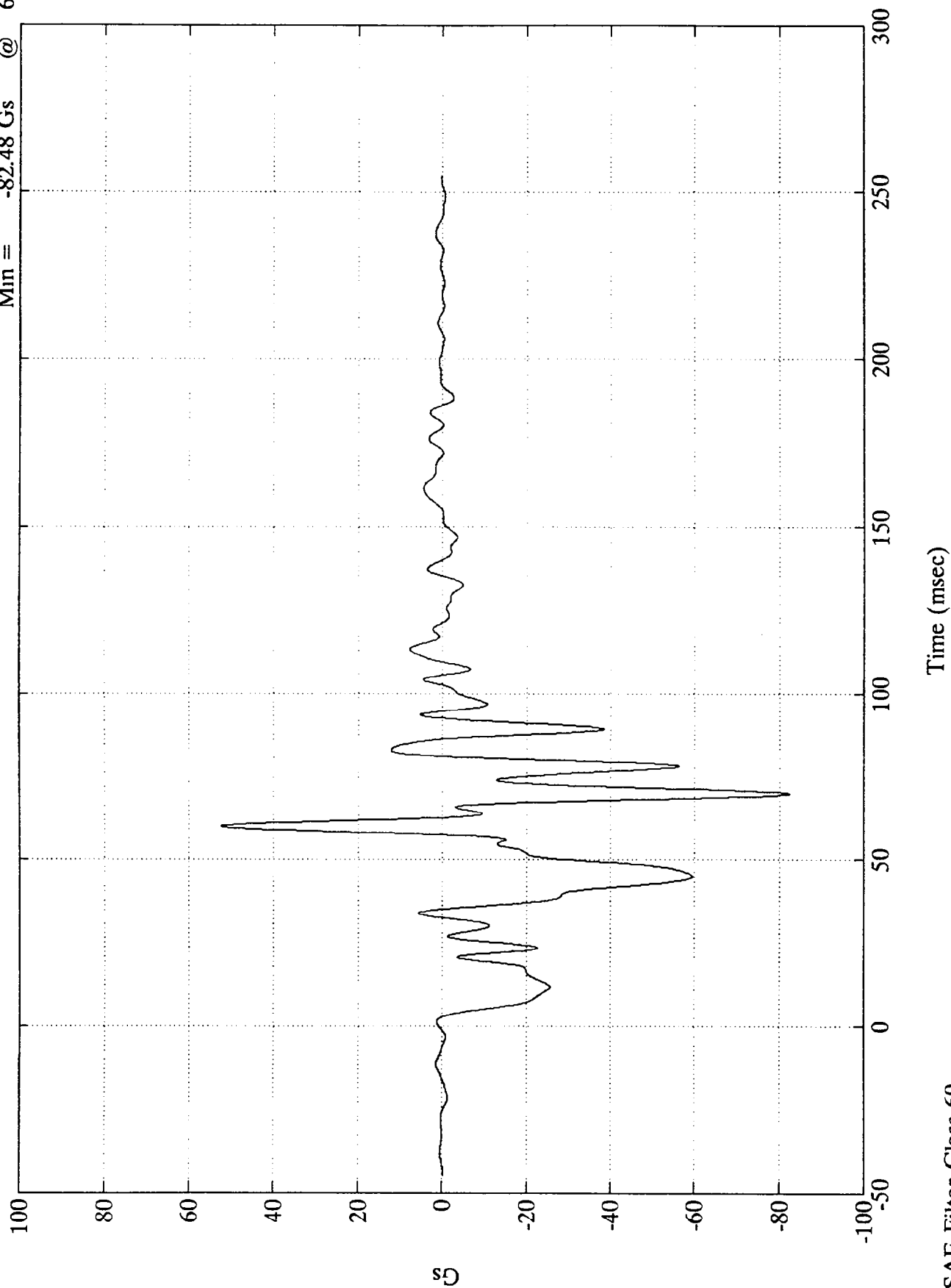


NCAP OPT TEST 1 1991 NISSAN STANZA

Acc. #6(x)
Max = 23.33 in. @ 85.92 msec
Min = 0.00 in. @ -0.00 msec



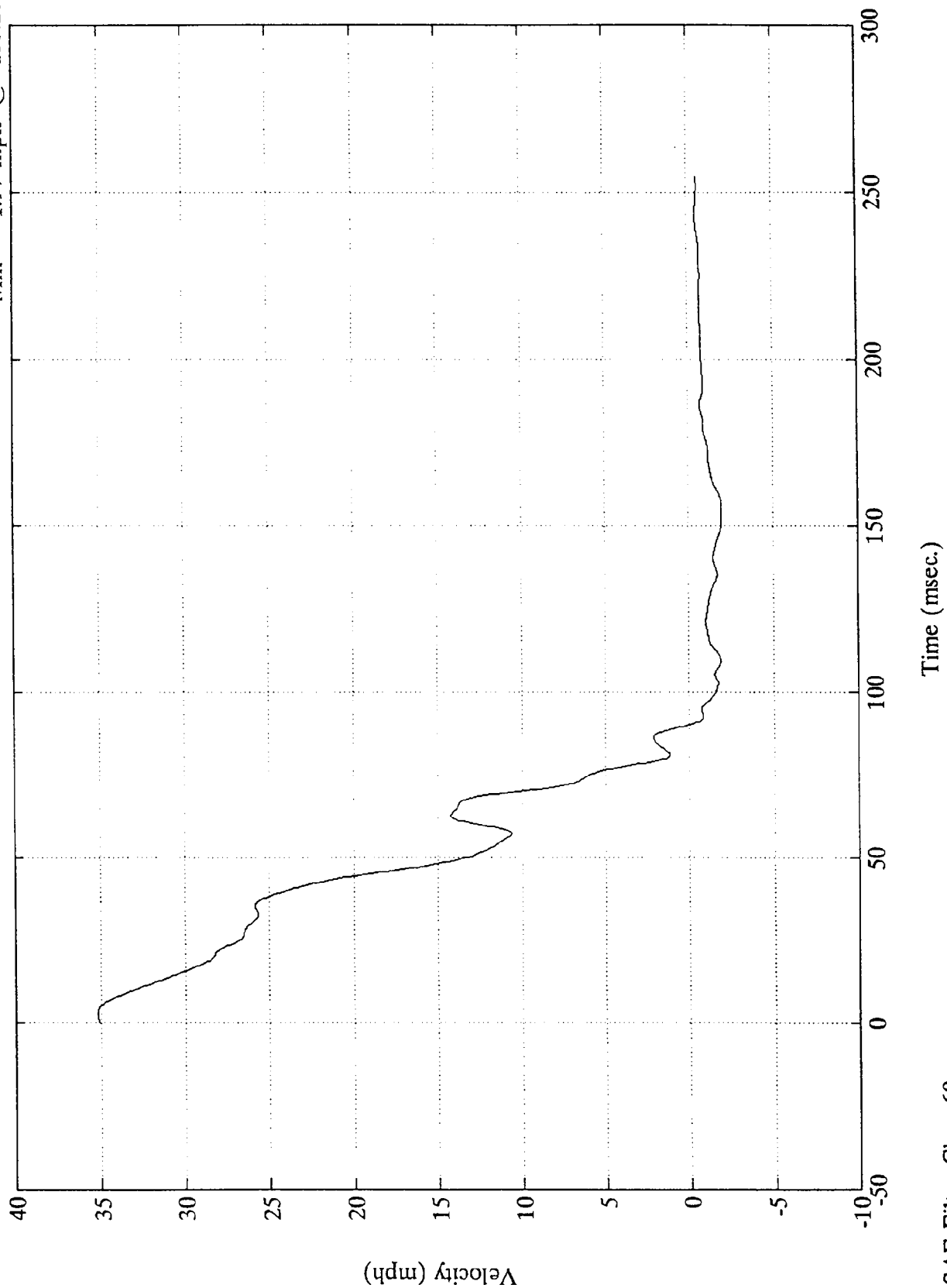
Acc. #7(x) Max = 52.42 Gs @ 59.88 msec
Min = -82.48 Gs @ 69.83 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

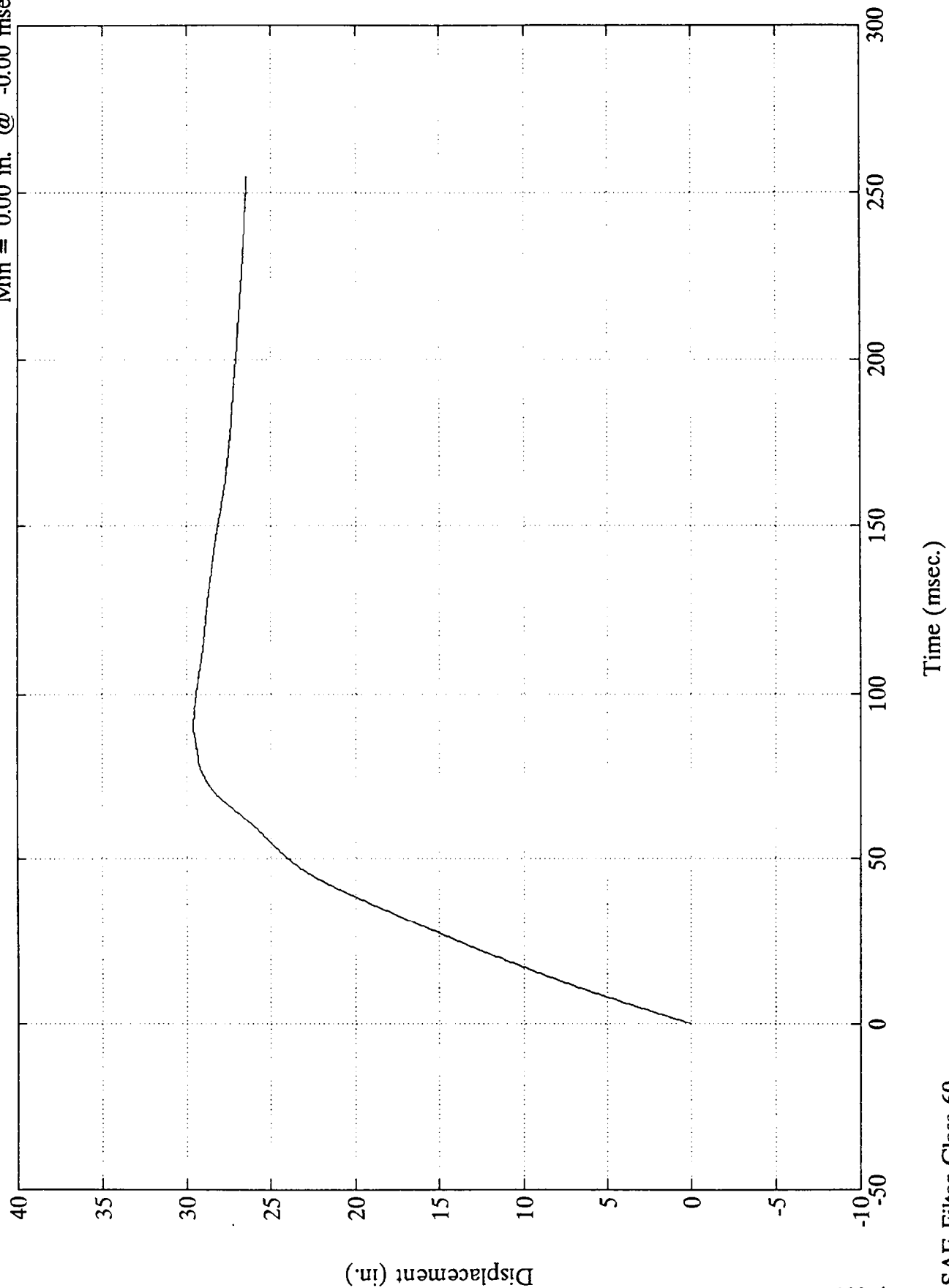
Acc. #7(x)

Max = 35.16 mph @ 2.64 msec
Min = -1.97 mph @ 155.28 msec



Acc. #7(x)

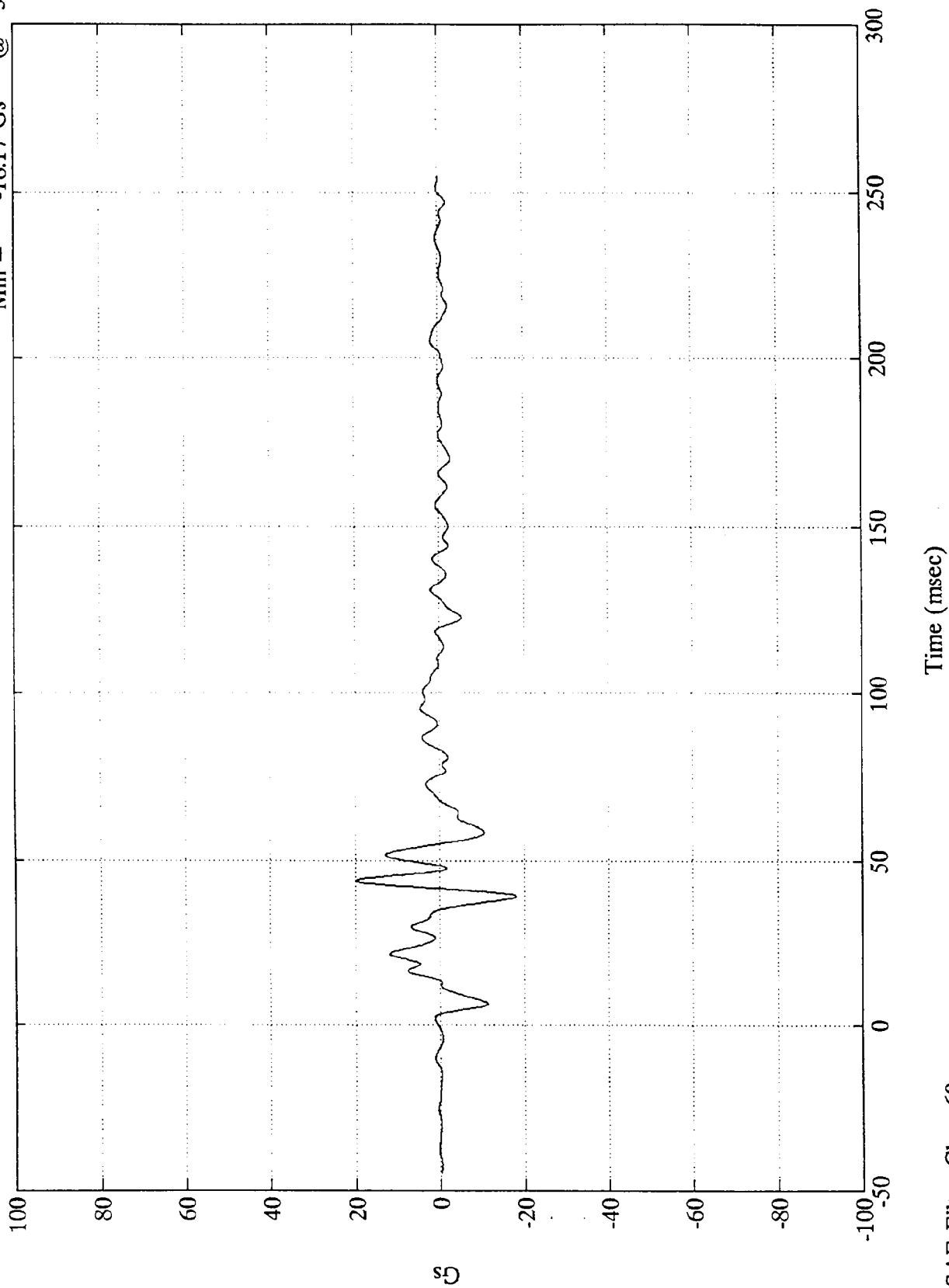
Max = 29.60 in. @ 90.96 msec
Min = 0.00 in. @ -0.00 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

Acc. #8(z)

Max = 19.92 Gs @ 43.79 msec
Min = -18.17 Gs @ 39.11 msec



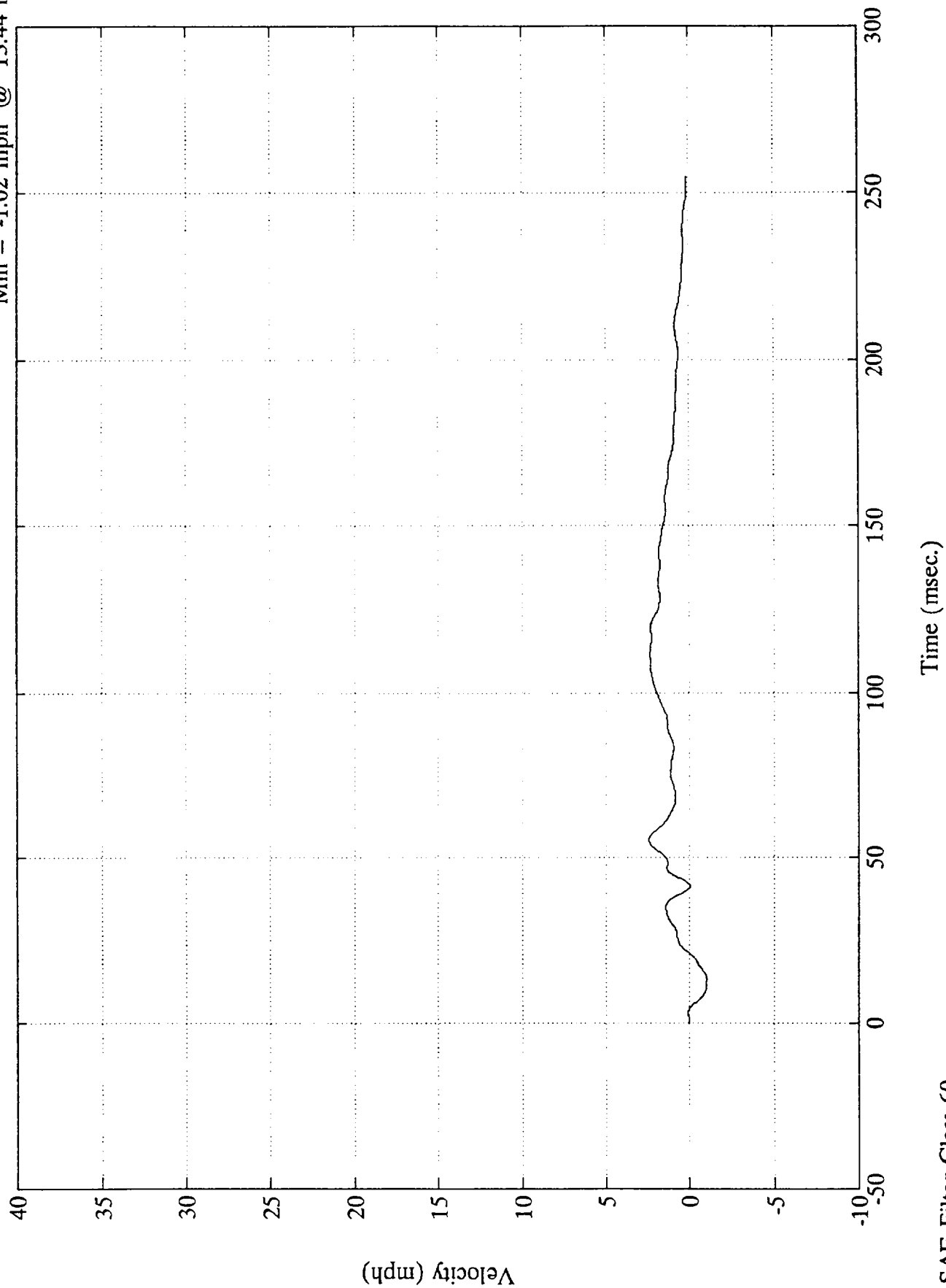
B-22

7880-1

SAE Filter Class 60

Acc. #8(z)

Max = 2.41 mph @ 55.20 msec
Min = -1.02 mph @ 13.44 msec

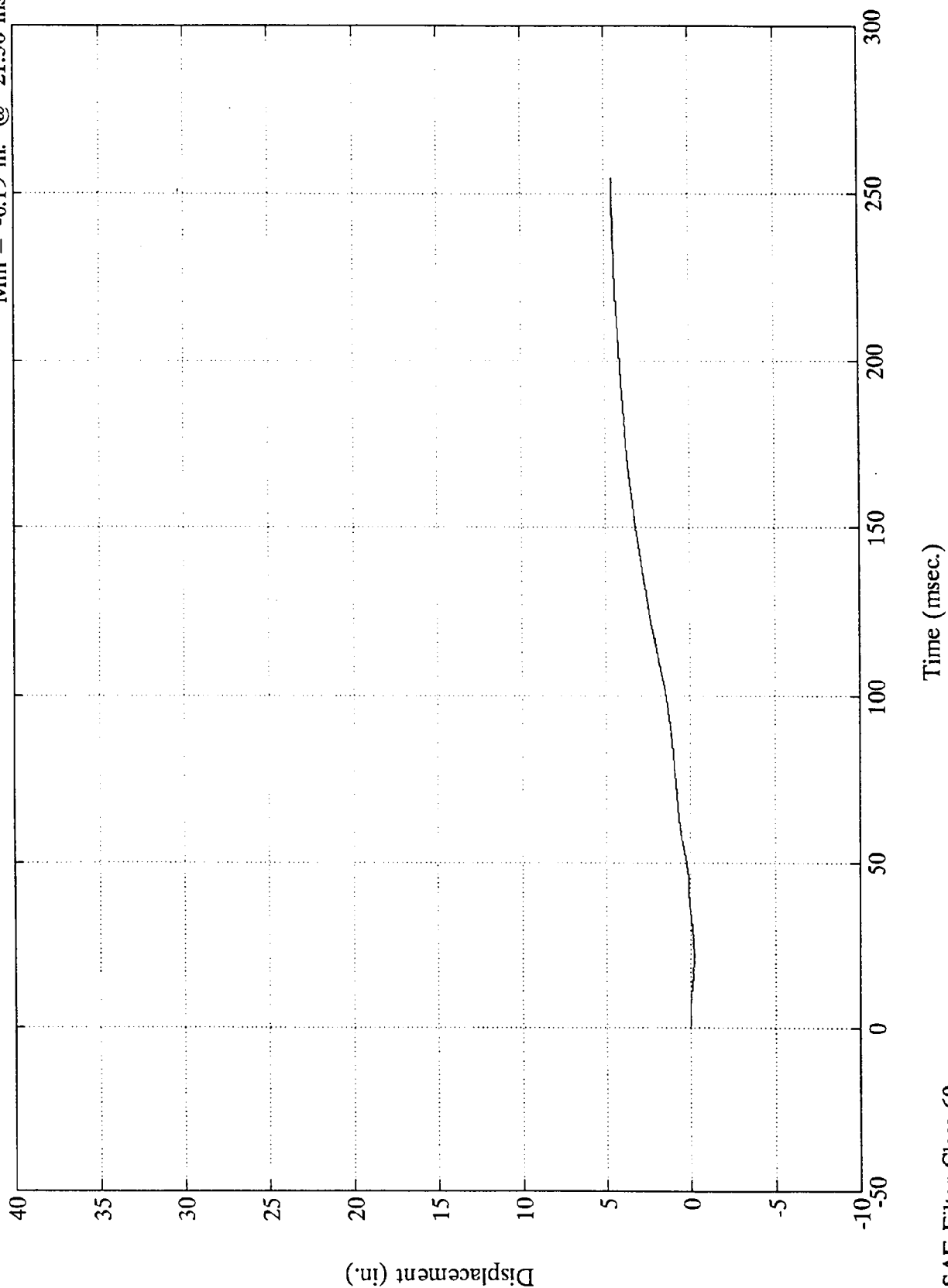


SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

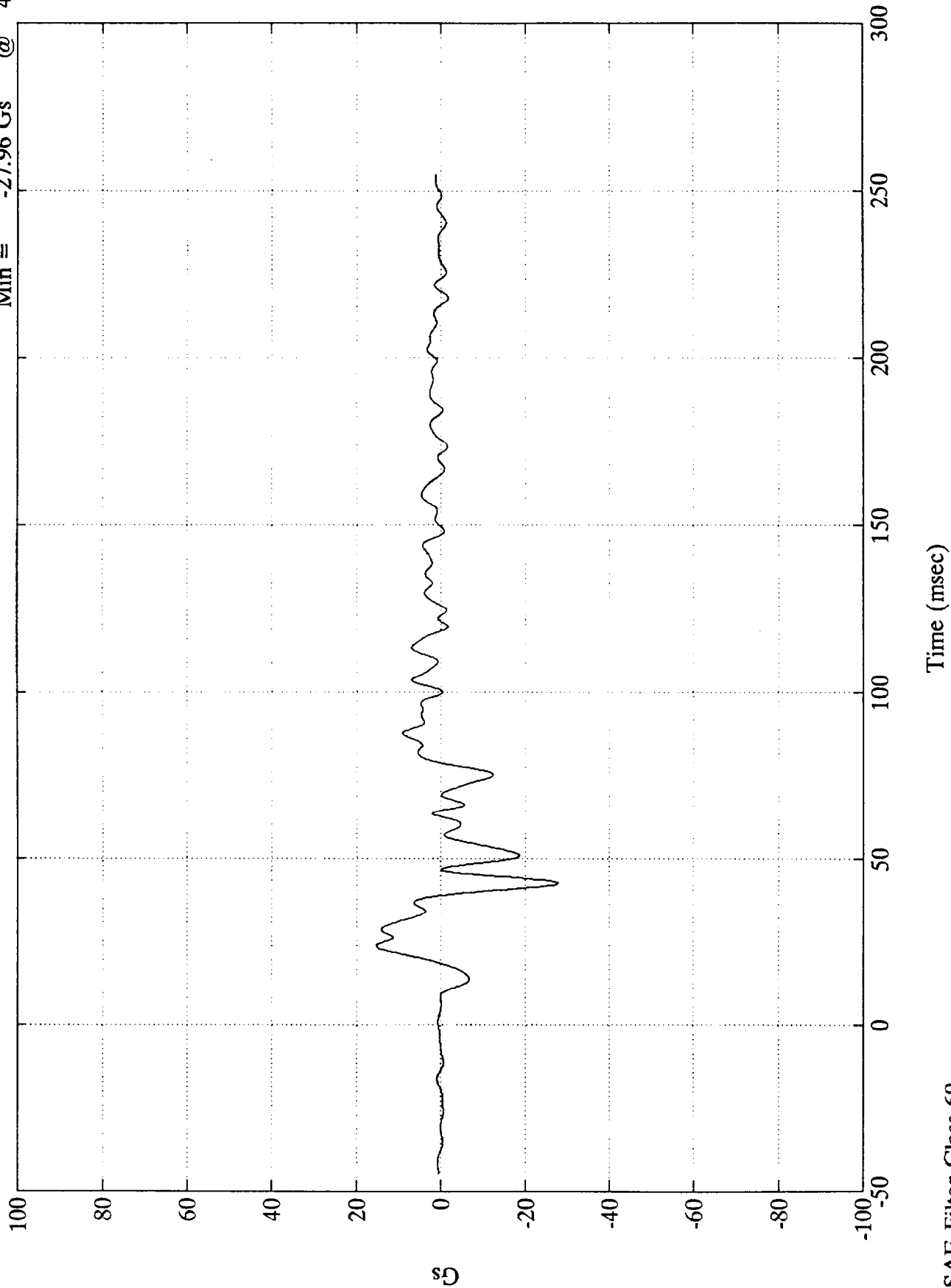
Max = 4.56 in. @ 254.88 msec
Min = -0.19 in. @ 21.36 msec

Acc. #8(z)



SAE Filter Class 60

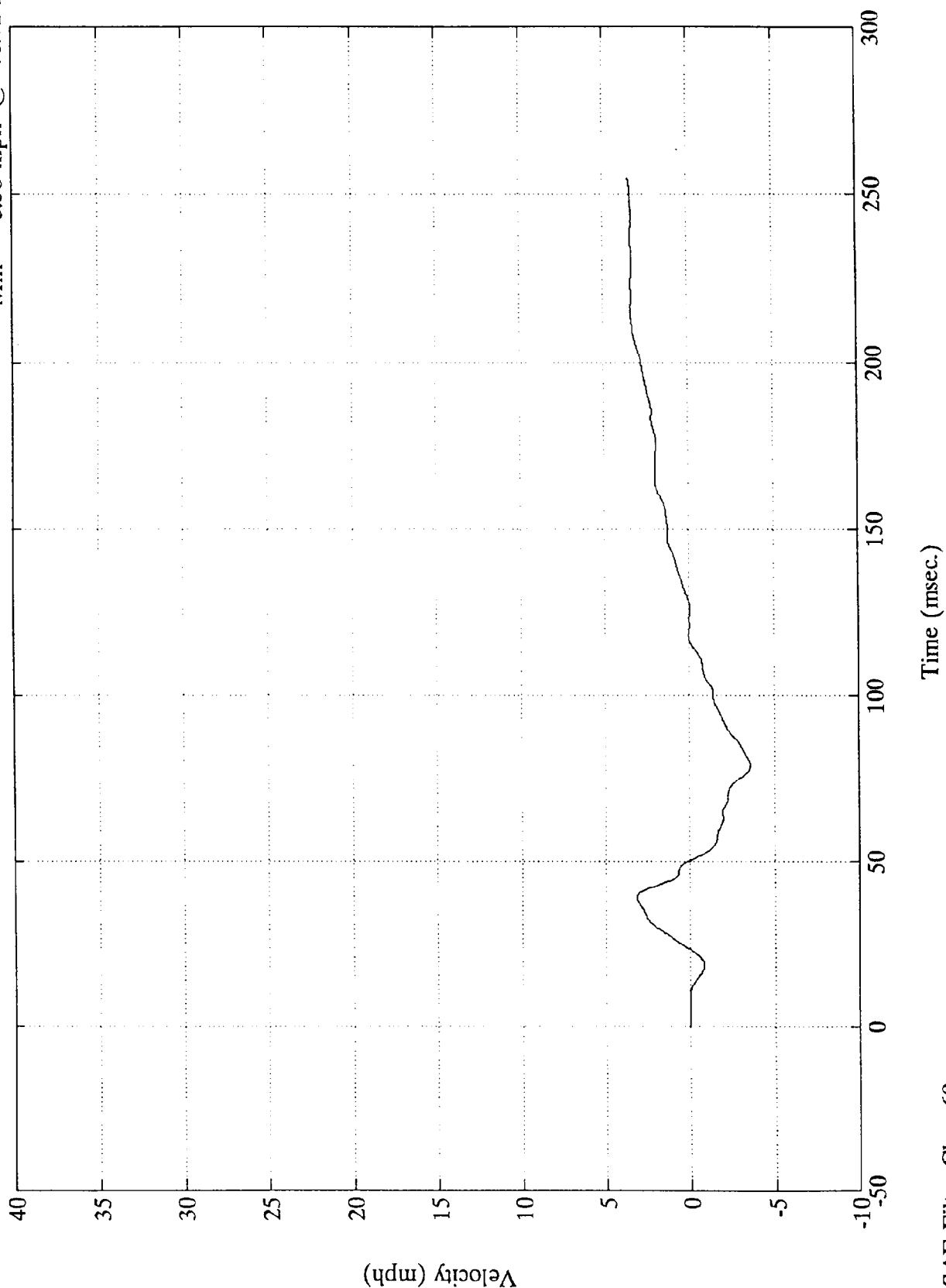
Acc. #9(z) Max = 15.34 Gs @ 23.52 msec
Min = -27.96 Gs @ 42.72 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 3.47 mph @ 254.88 msec
Min = -3.58 mph @ 78.72 msec

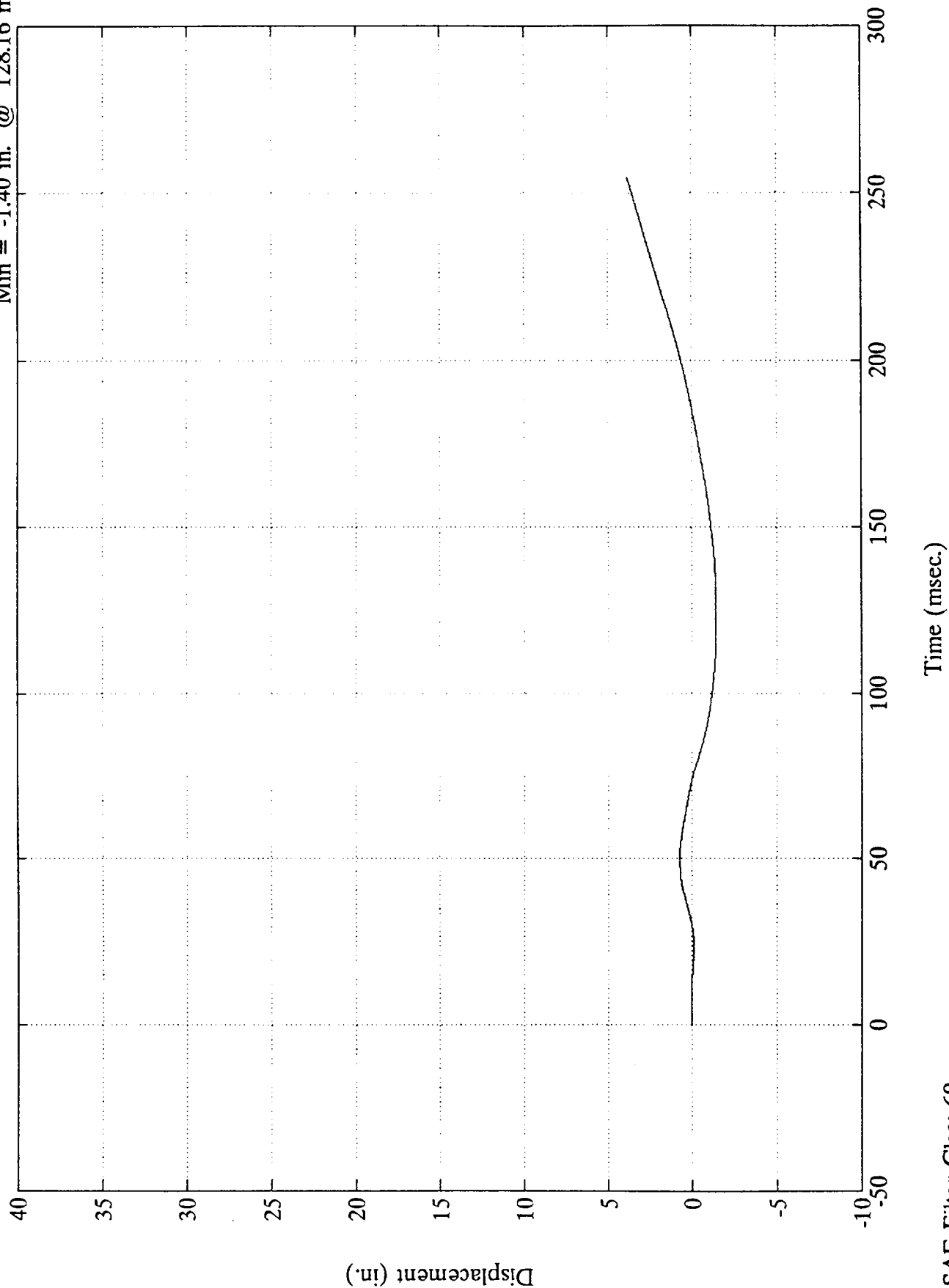
Acc. #9(z)



SAE Filter Class 60

Acc. #9(z)

Max = 3.83 in. @ 254.88 msec
Min = -1.40 in. @ 128.16 msec



TEST NO. J43-1-1054

LOAD CELL BARRIER DATA

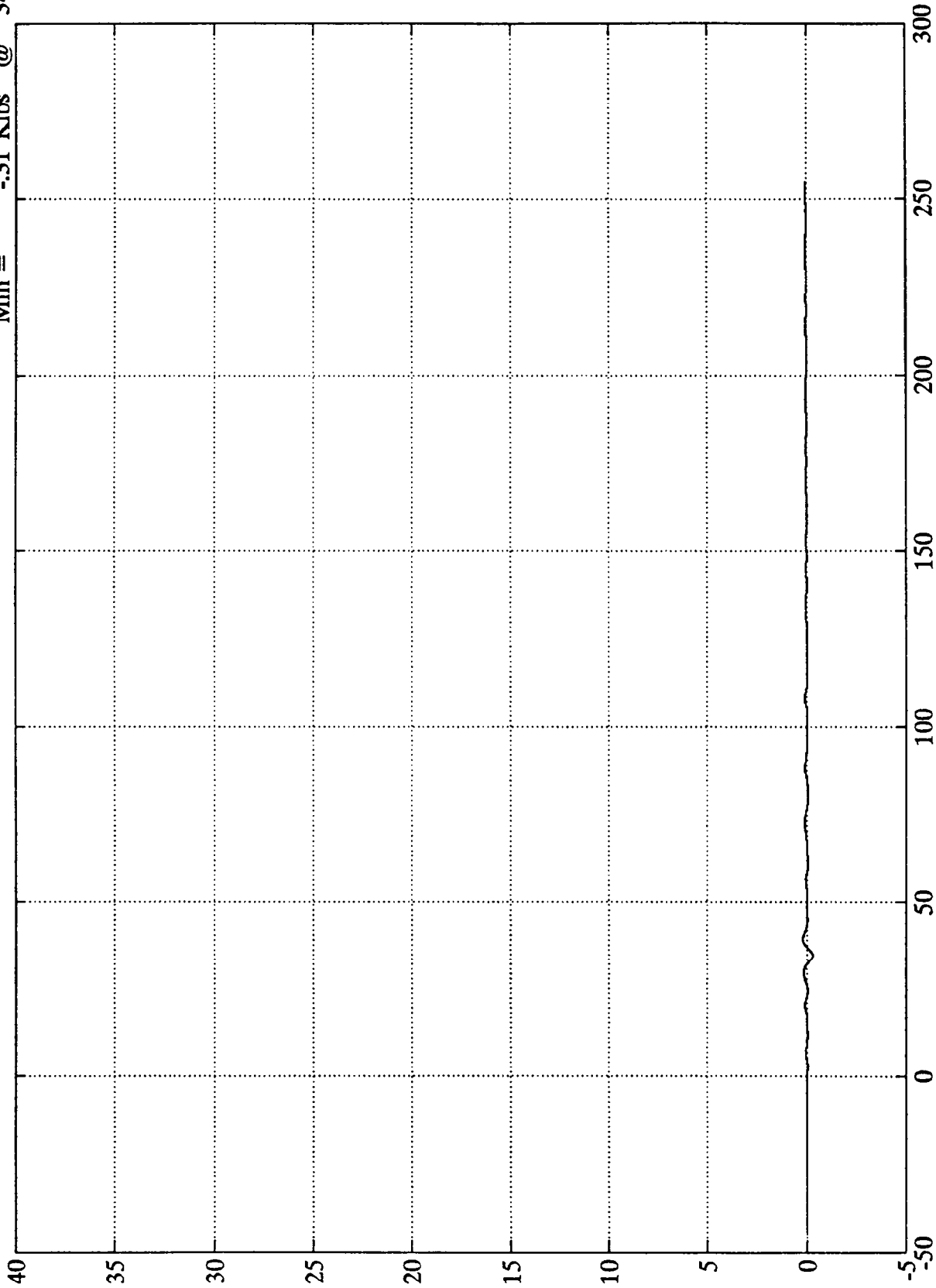
FILTER CHANNEL CLASS

60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell A1

Max = .19 Klbs @ 39.36 msec
Min = -.31 Klbs @ 34.79 msec



B-29

7880-1

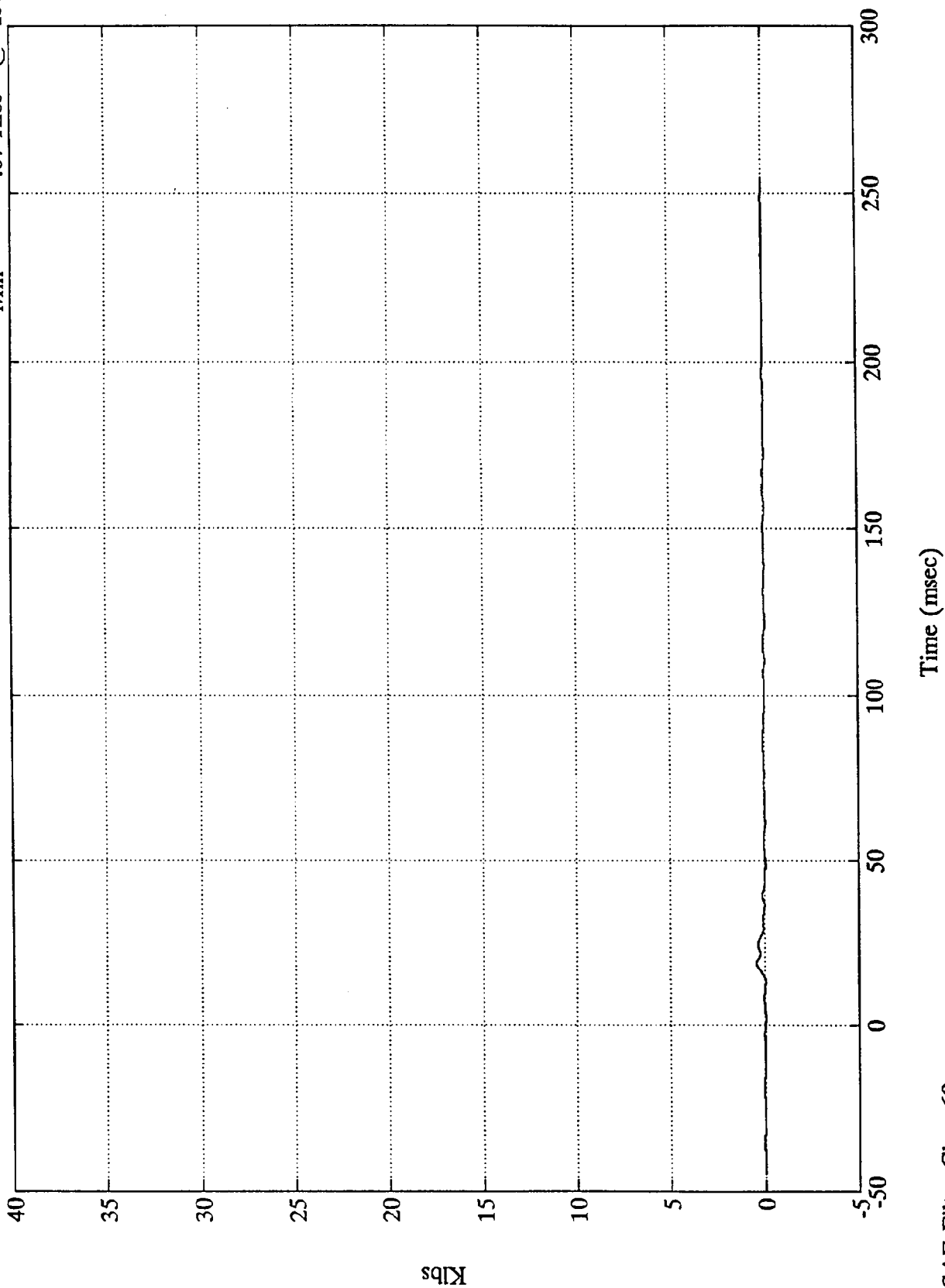
Time (msec)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = .42 Klbs @ 18.84 msec
Min = -.07 Klbs @ 156.11 msec

Barrier Load Cell A2



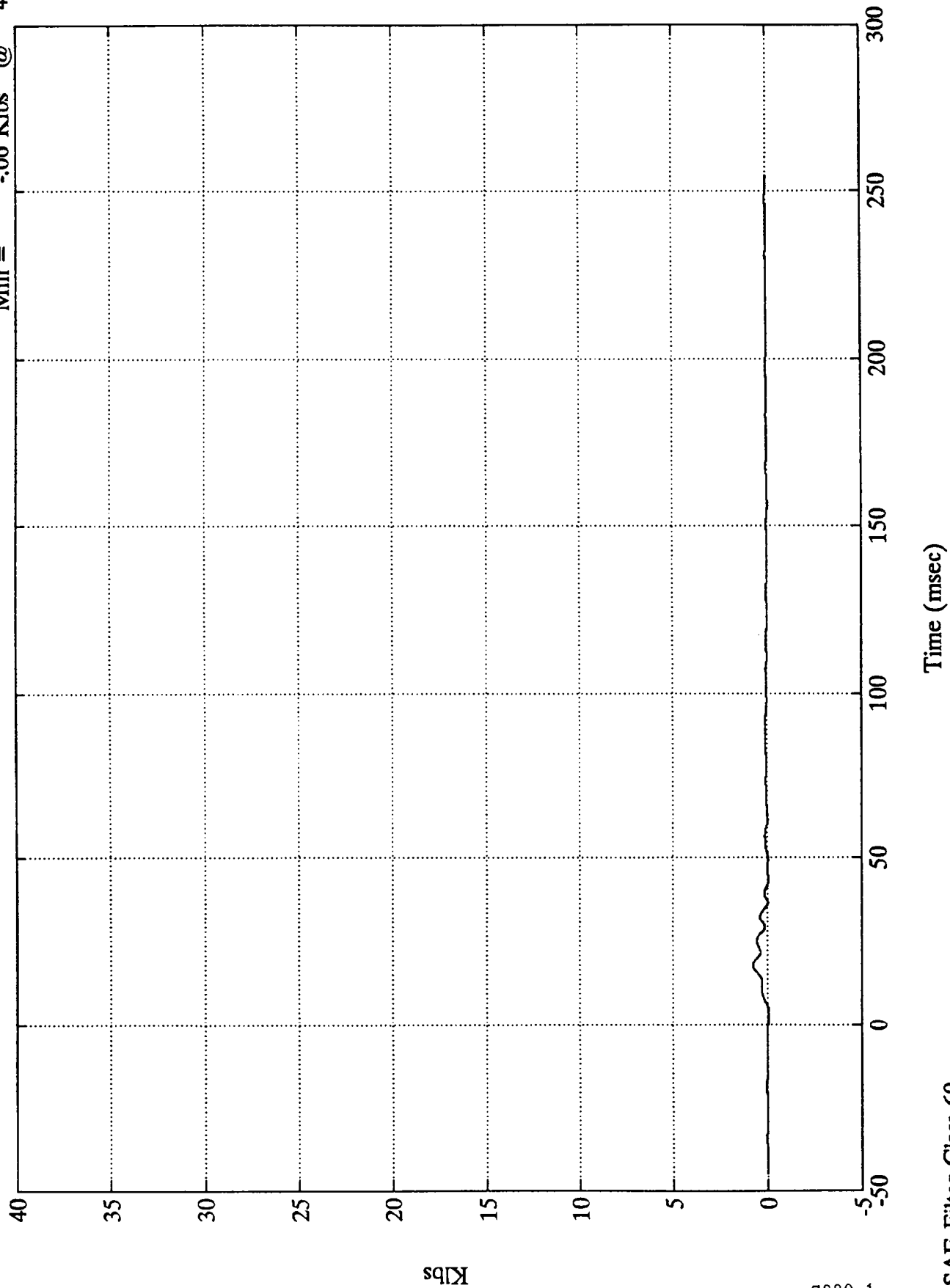
Klbs
B-30

7880-1

SAE Filter Class 60

Barrier Load Cell A3

Max =	.76 Klbs	@	17.88 msec
Min =	-.06 Klbs	@	4.19 msec



B-31

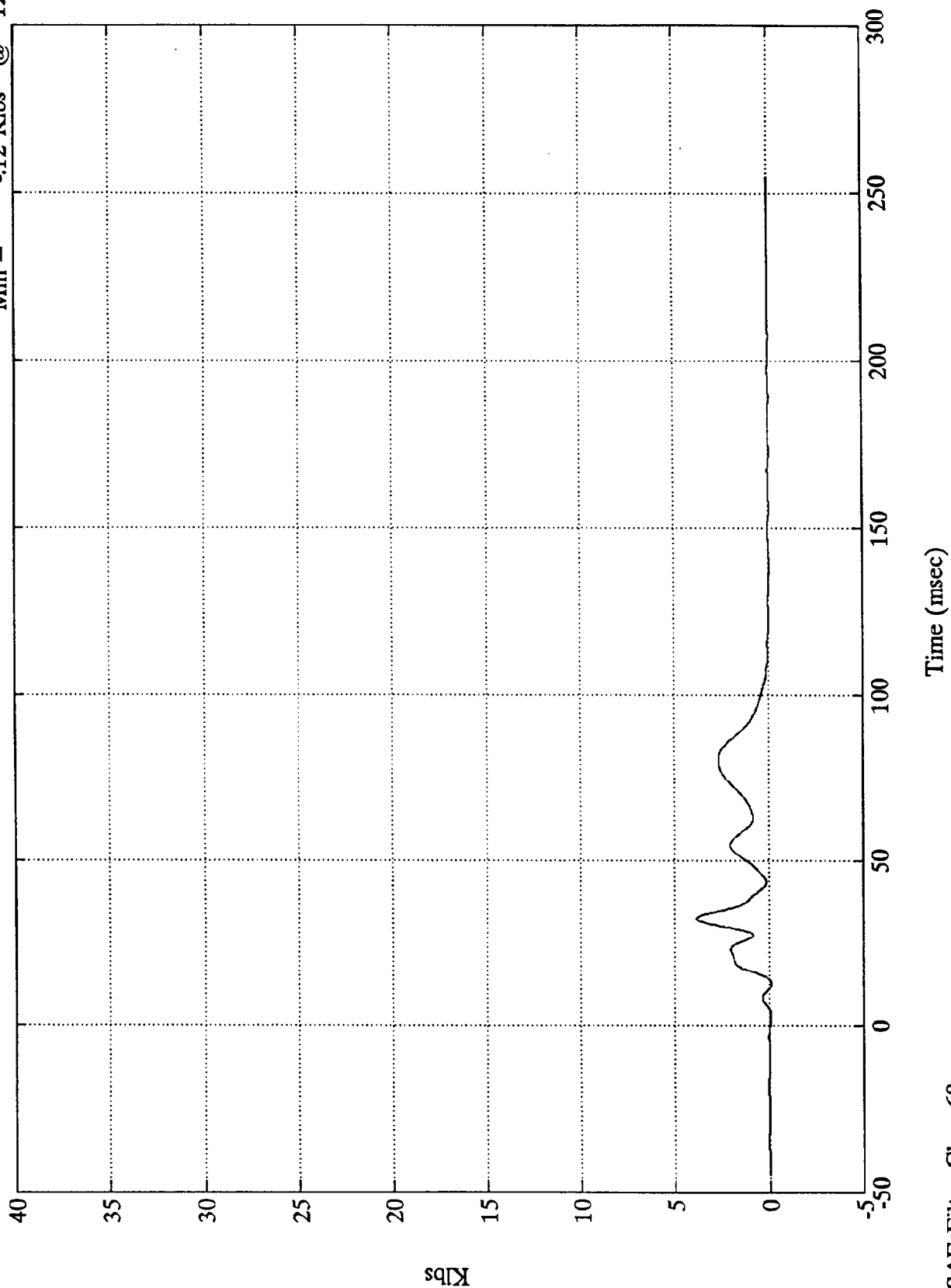
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

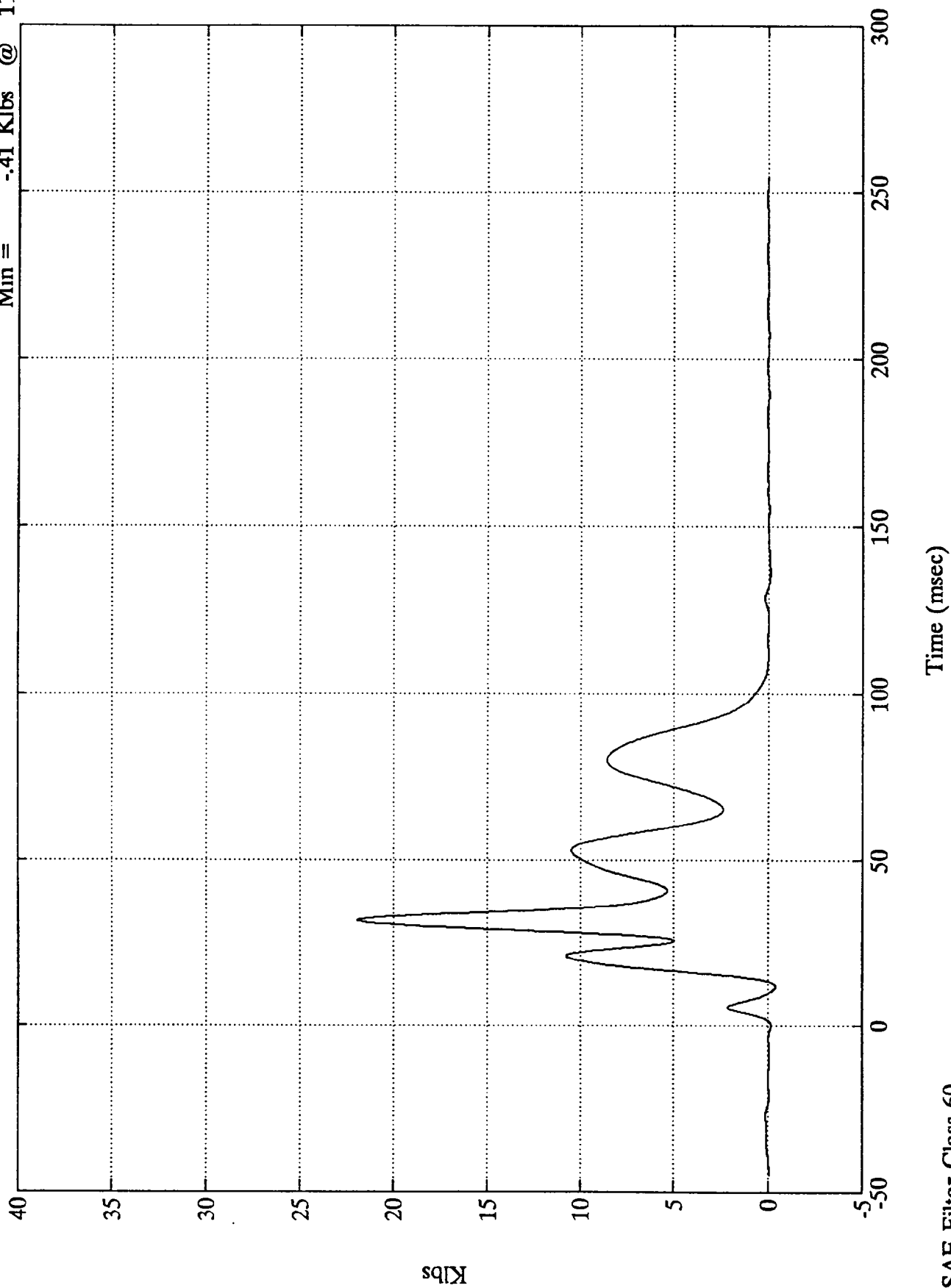
Max = 3.84 Klbs @ 32.15 msec
Min = -.12 Klbs @ 12.59 msec

Barrier Load Cell A4



Barrier Load Cell A5

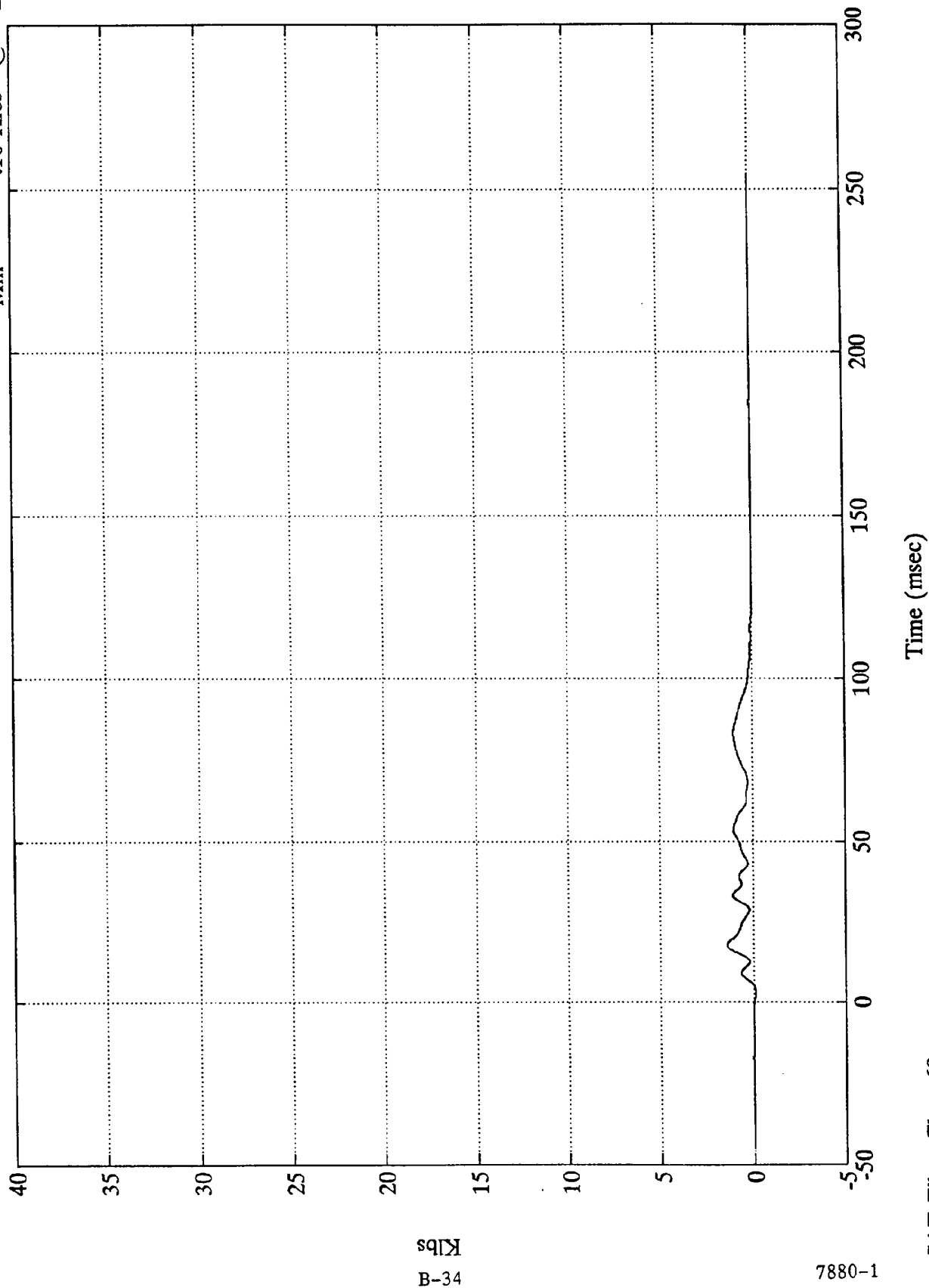
Max = 21.93 Klbs @ 31.55 msec
Min = -41 Klbs @ 11.63 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 1.41 Klbs @ 17.63 msec
Min = -10 Klbs @ 2.99 msec

Barrier Load Cell A6

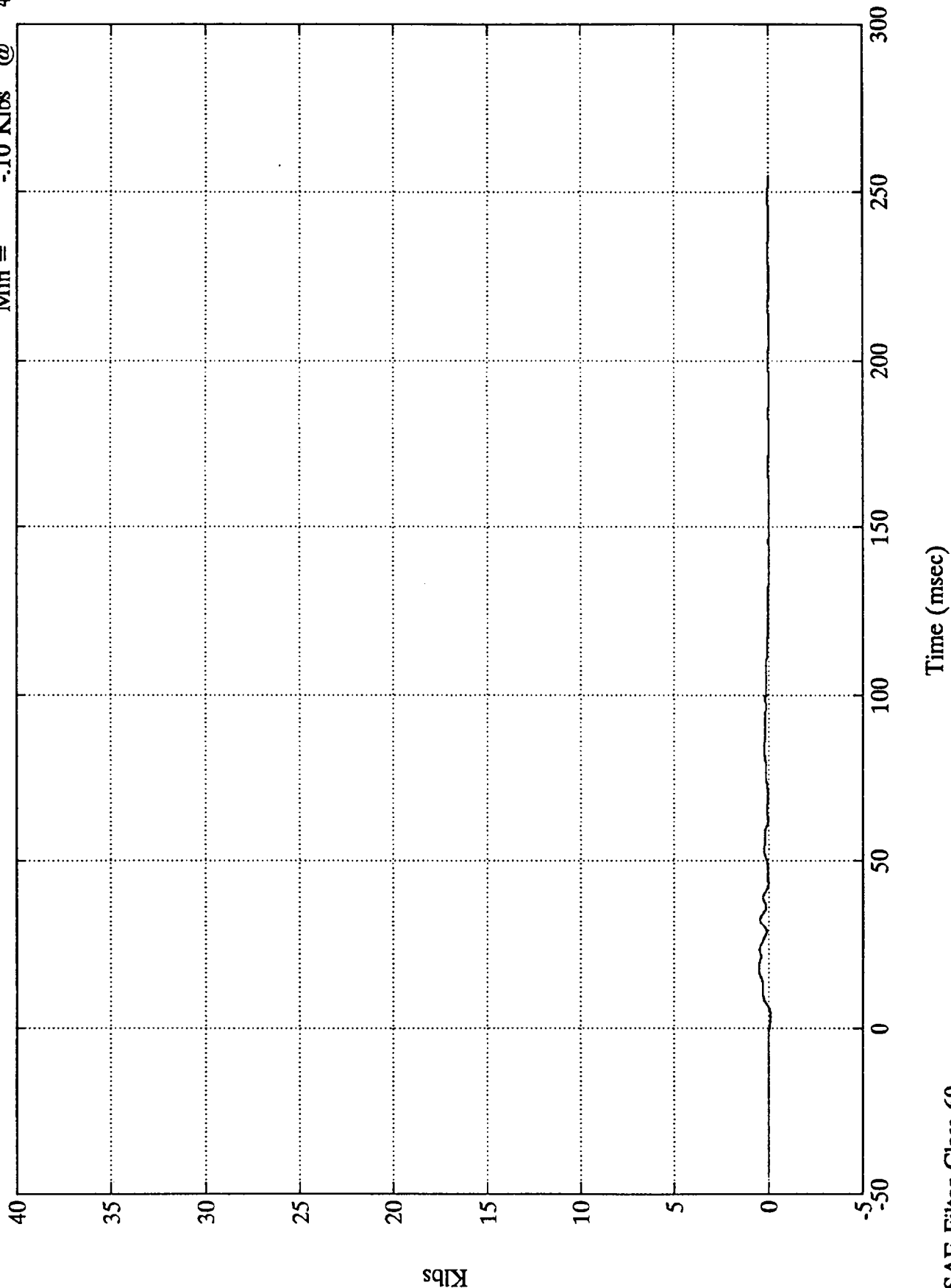


SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell A7

Max =	.51 Klbs	@	17.39 msec
Min =	-.10 Klbs	@	4.31 msec



B-35

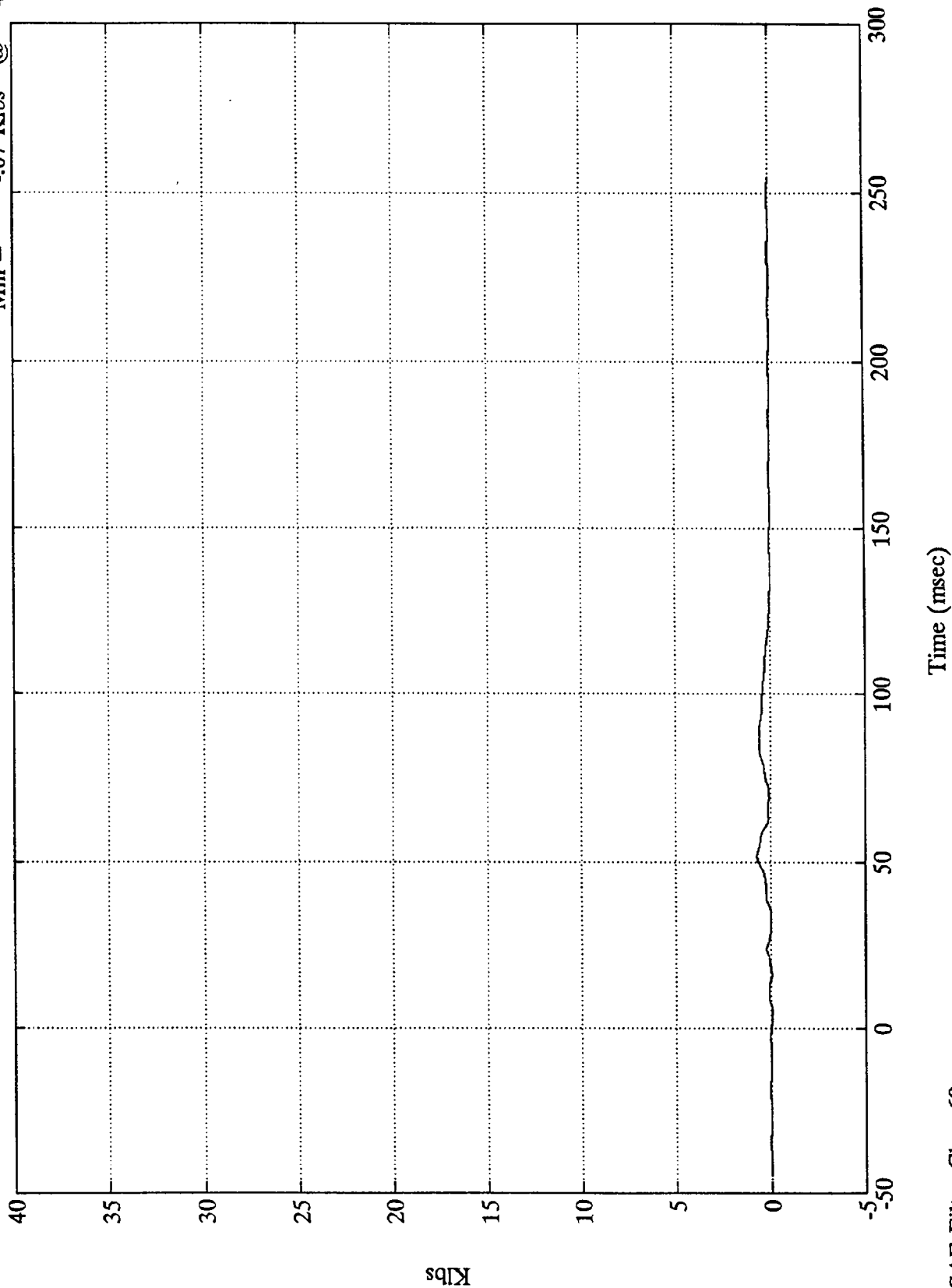
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = .72 Klbs @ 51.84 msec
Min = -.07 Klbs @ 4.31 msec

Barrier Load Cell A8



B-36

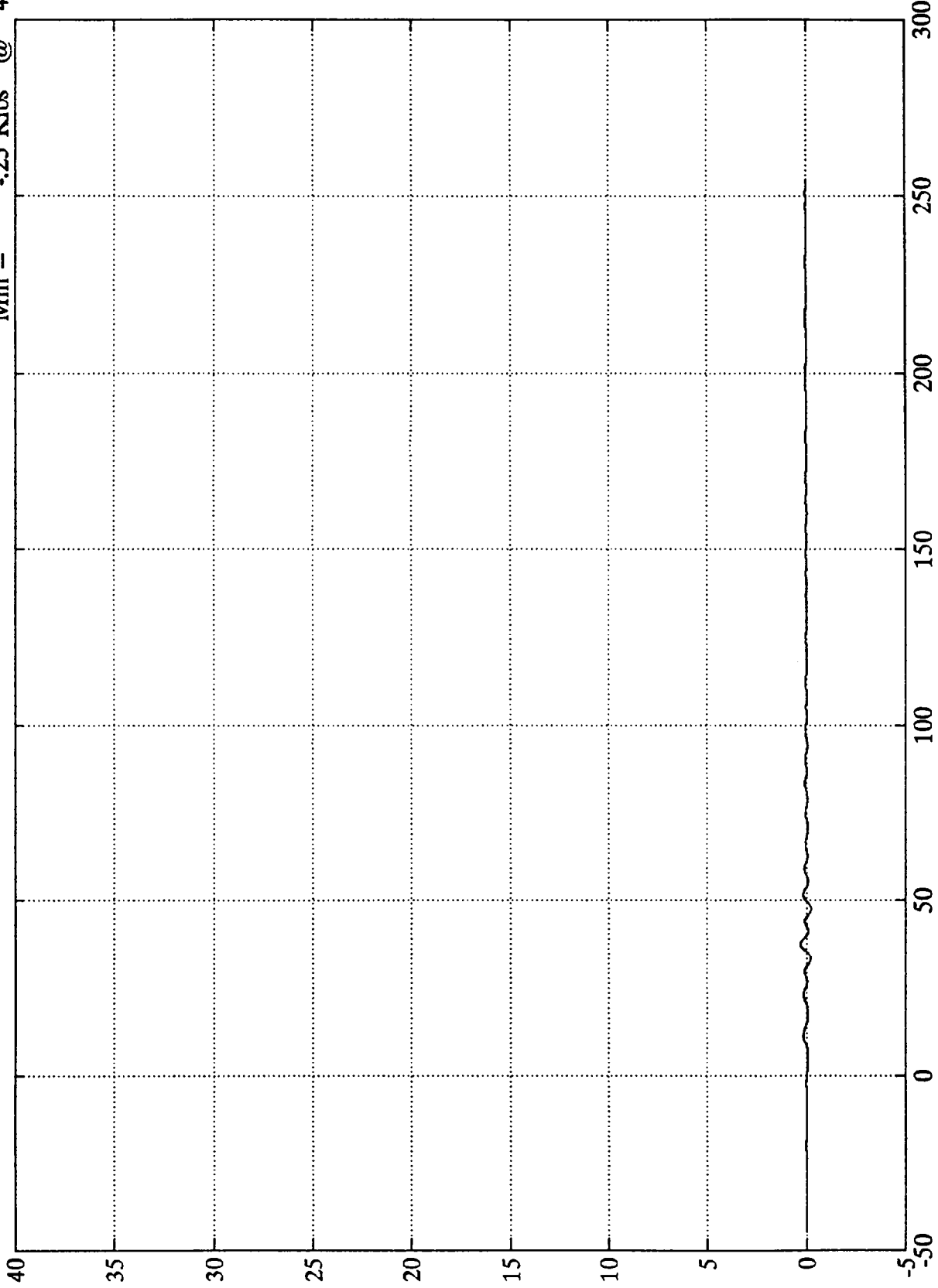
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell A9

Max =	.31 Klbs	@	37.79 msec
Min =	-.25 Klbs	@	47.63 msec



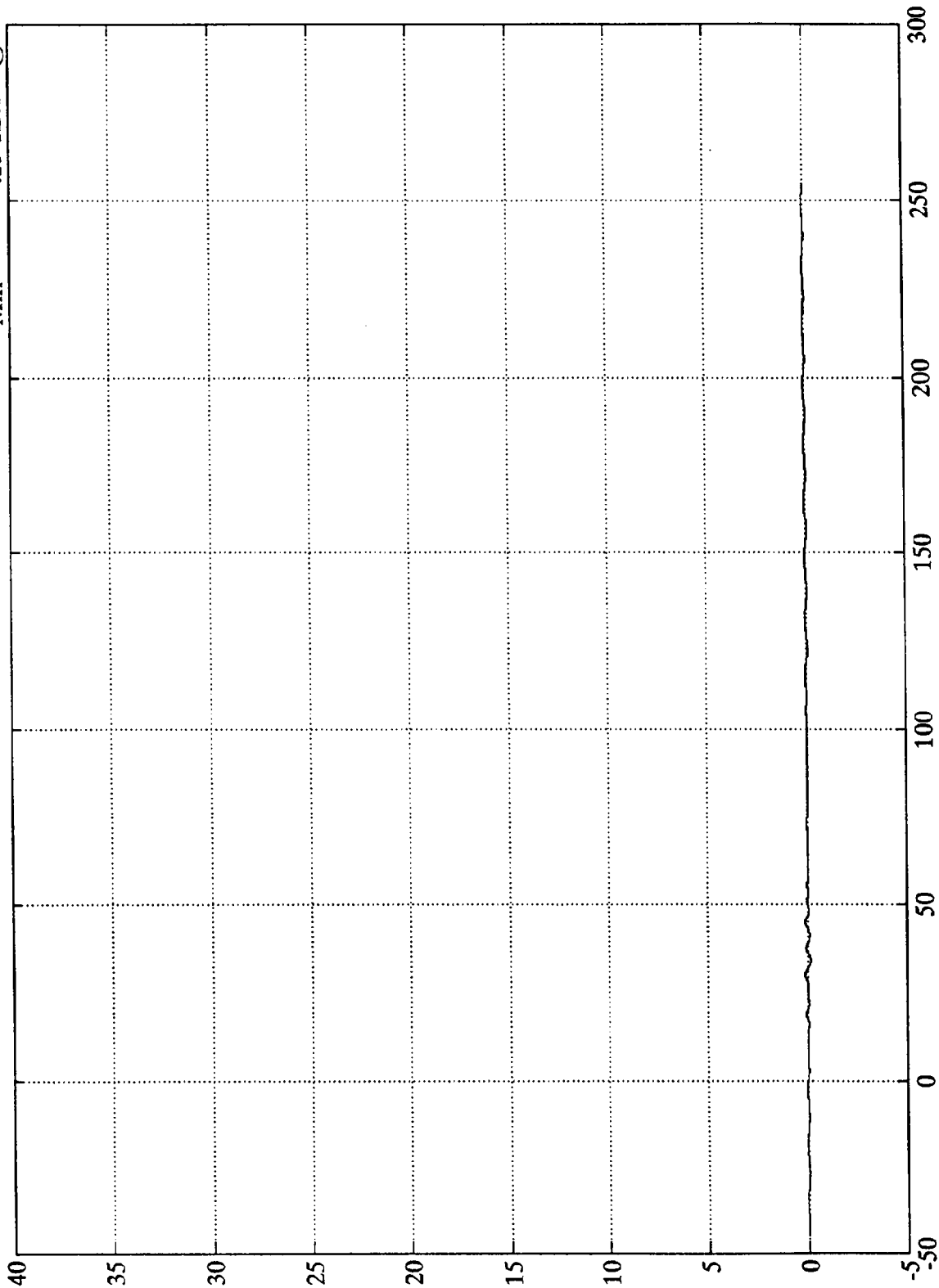
Time (msec)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = .13 Klbs @ 29.88 msec
Min = -.15 Klbs @ 33.95 msec

Barrier Load Cell B1



B-38

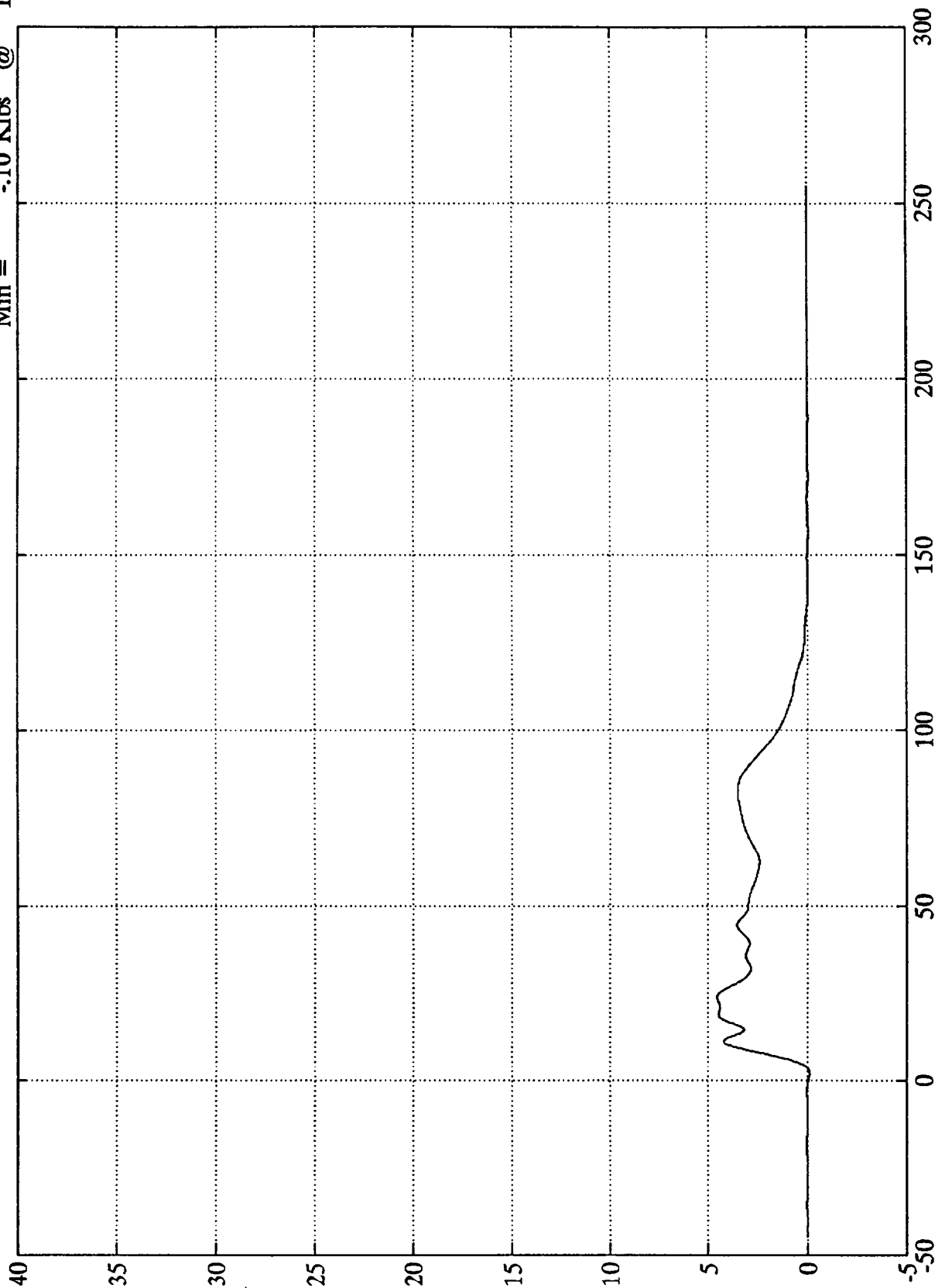
7880-1

Time (msec)

SAE Filter Class 60

Barrier Load Cell B2

Max =	4.56 Klbs	@	23.76	msec
Min =	-10 Klbs	@	1.91	msec



Klbs
B-39

7880-1

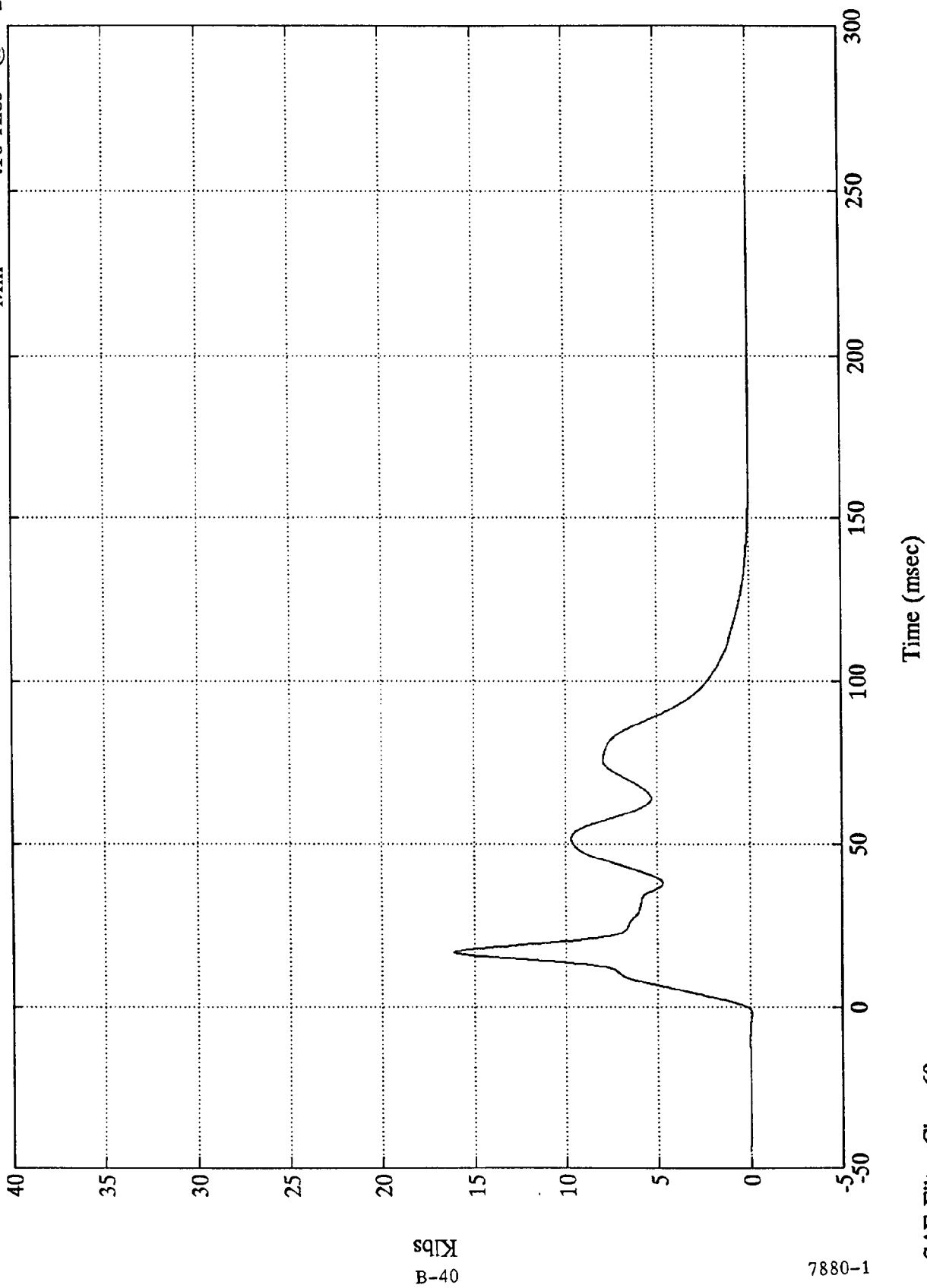
Time (msec)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 16.07 Klbs @ 16.79 msec
Min = -10 Klbs @ -2.28 msec

Barrier Load Cell B3



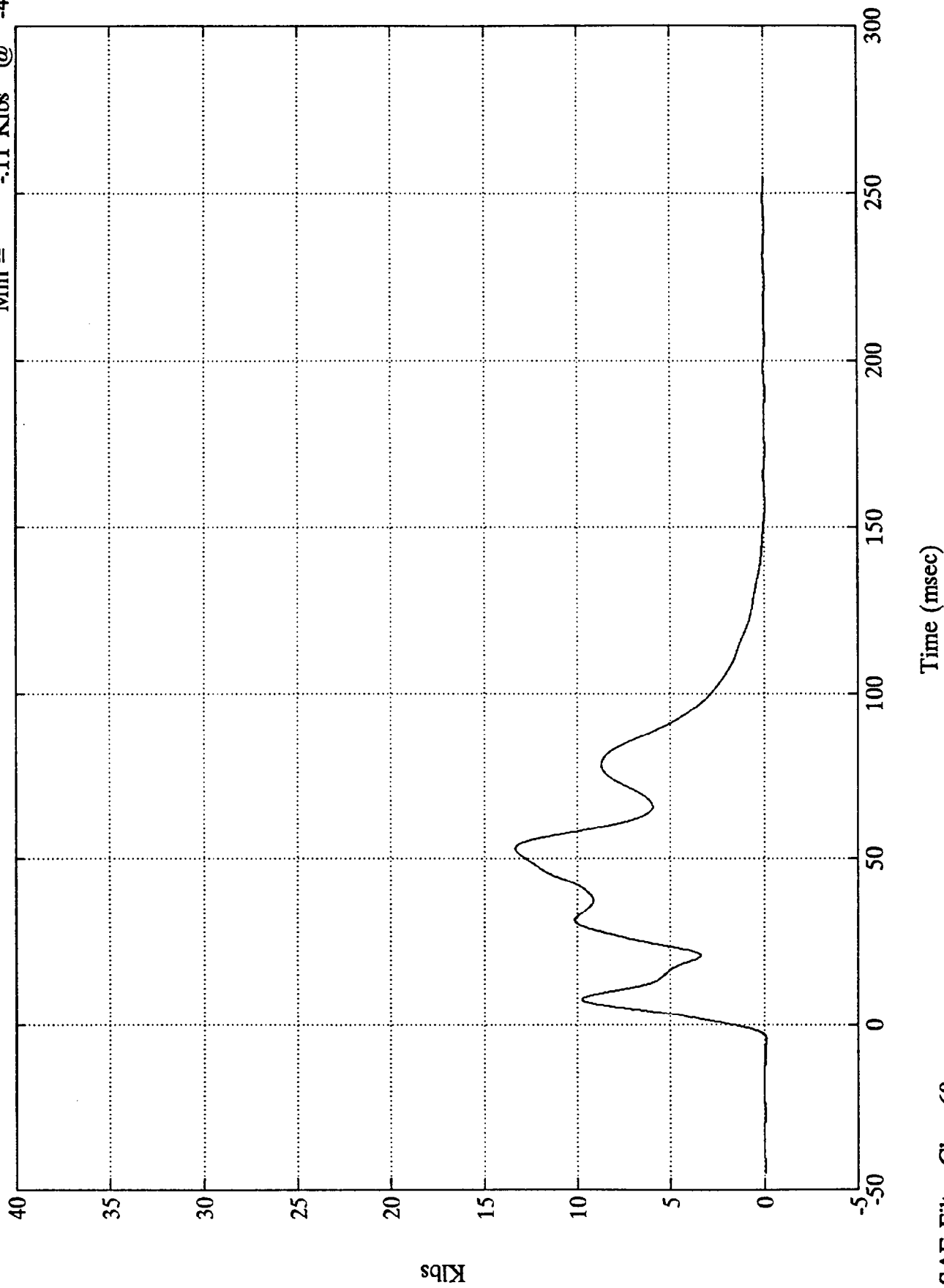
SAE Filter Class 60

7880-1

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell B4

Max =	13.31 Klbs	@	52.92 msec
Min =	-1.11 Klbs	@	-4.56 msec



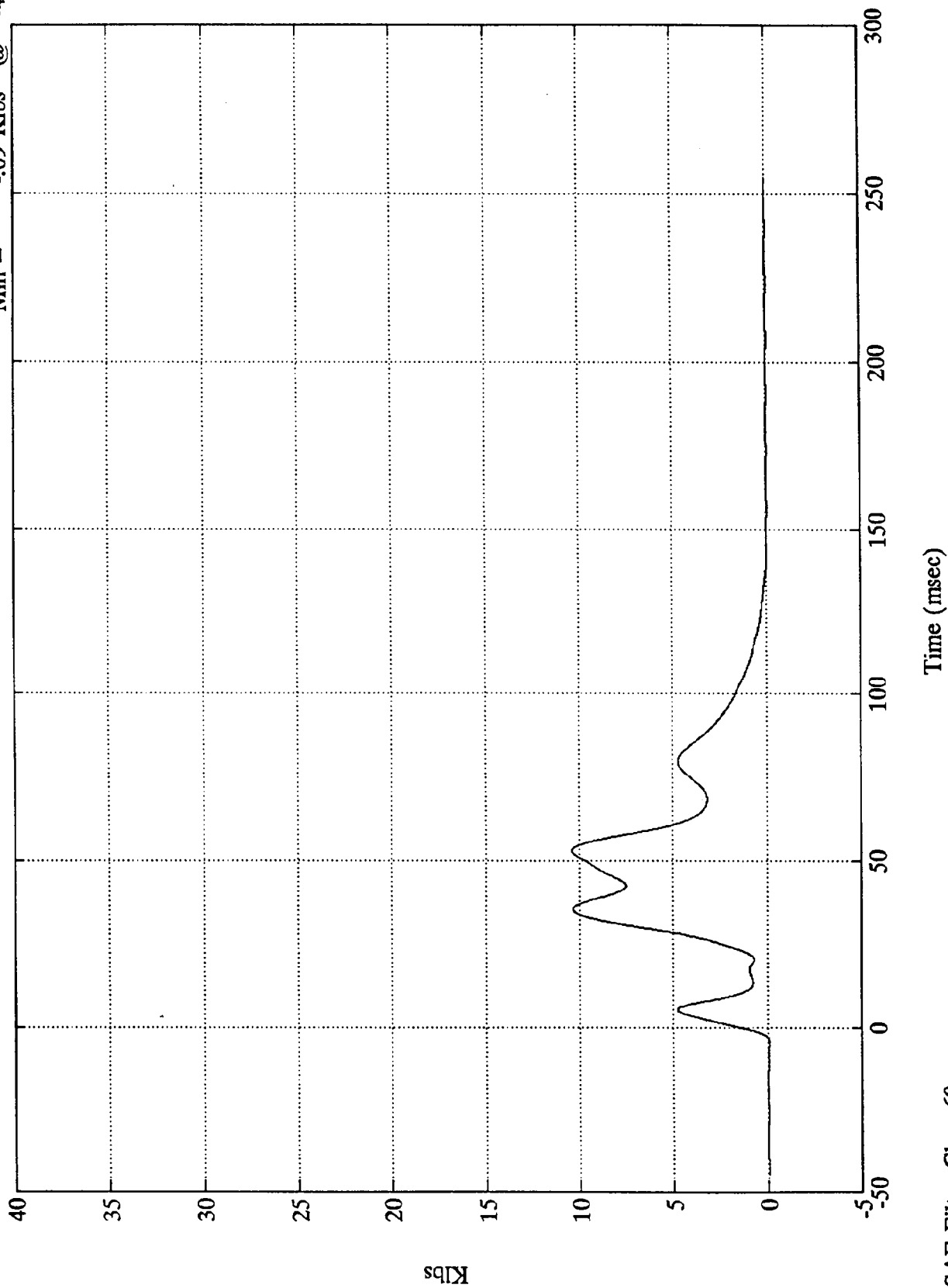
Klbs
B-41

7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell B5
Max = 10.40 Klbs @ 53.04 msec
Min = -0.09 Klbs @ -4.68 msec

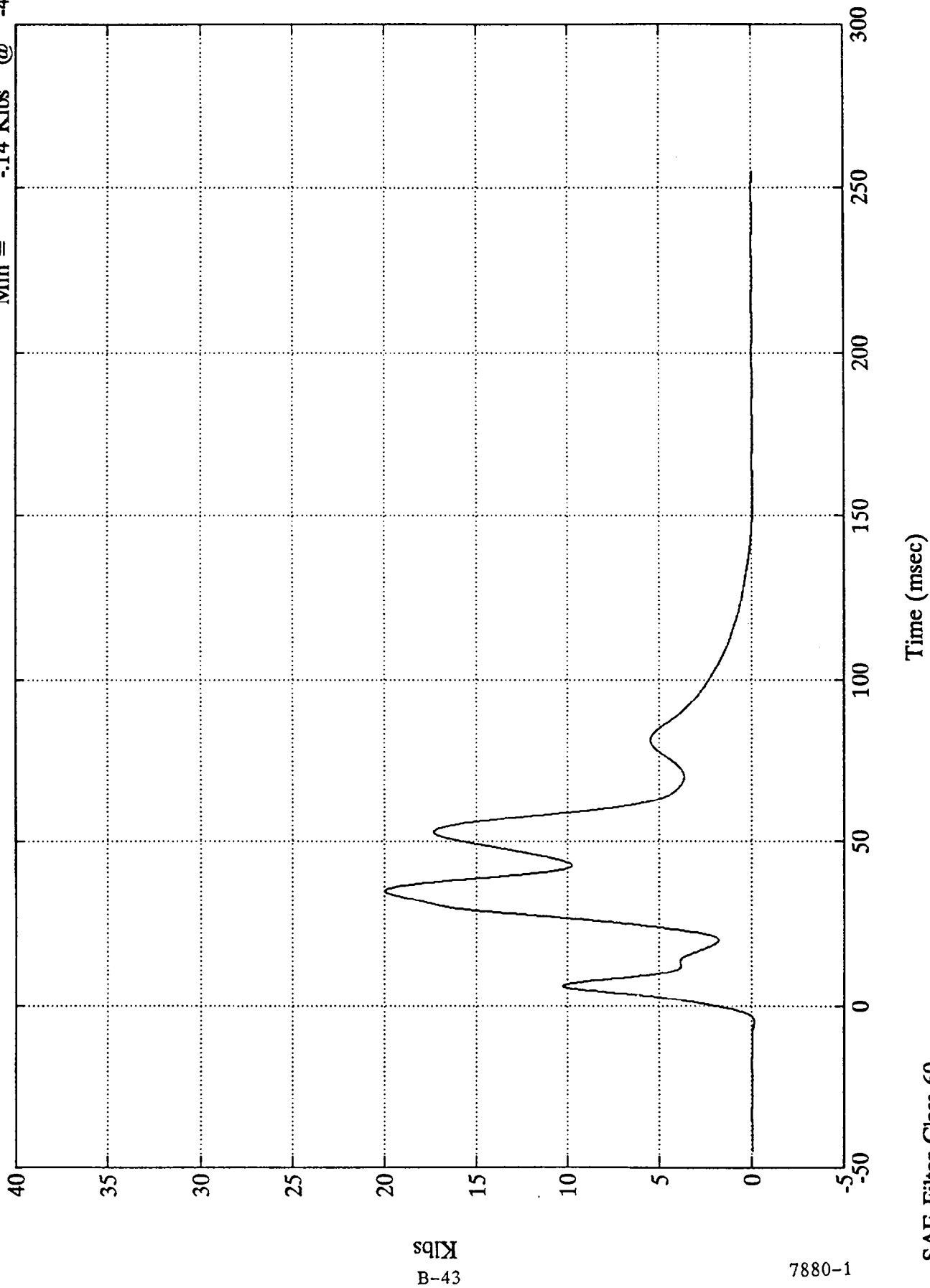


SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell B6

Max = 19.97 Klbs @ 35.15 msec
Min = -14 Klbs @ -4.80 msec



Klbs
B-43

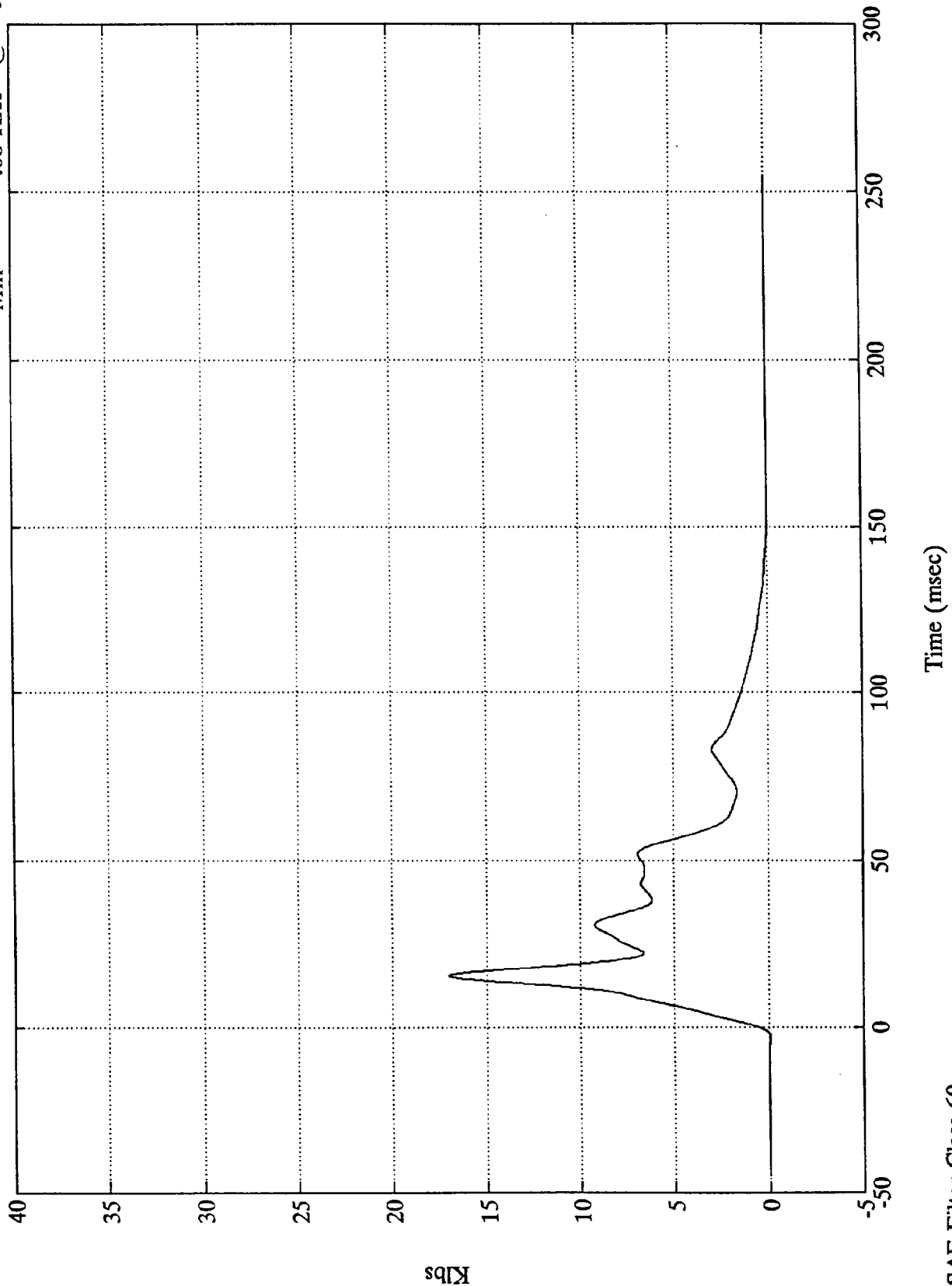
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell B7

Max = 16.98 Klbs @ 15.00 msec
Min = -0.08 Klbs @ -3.24 msec



B-44

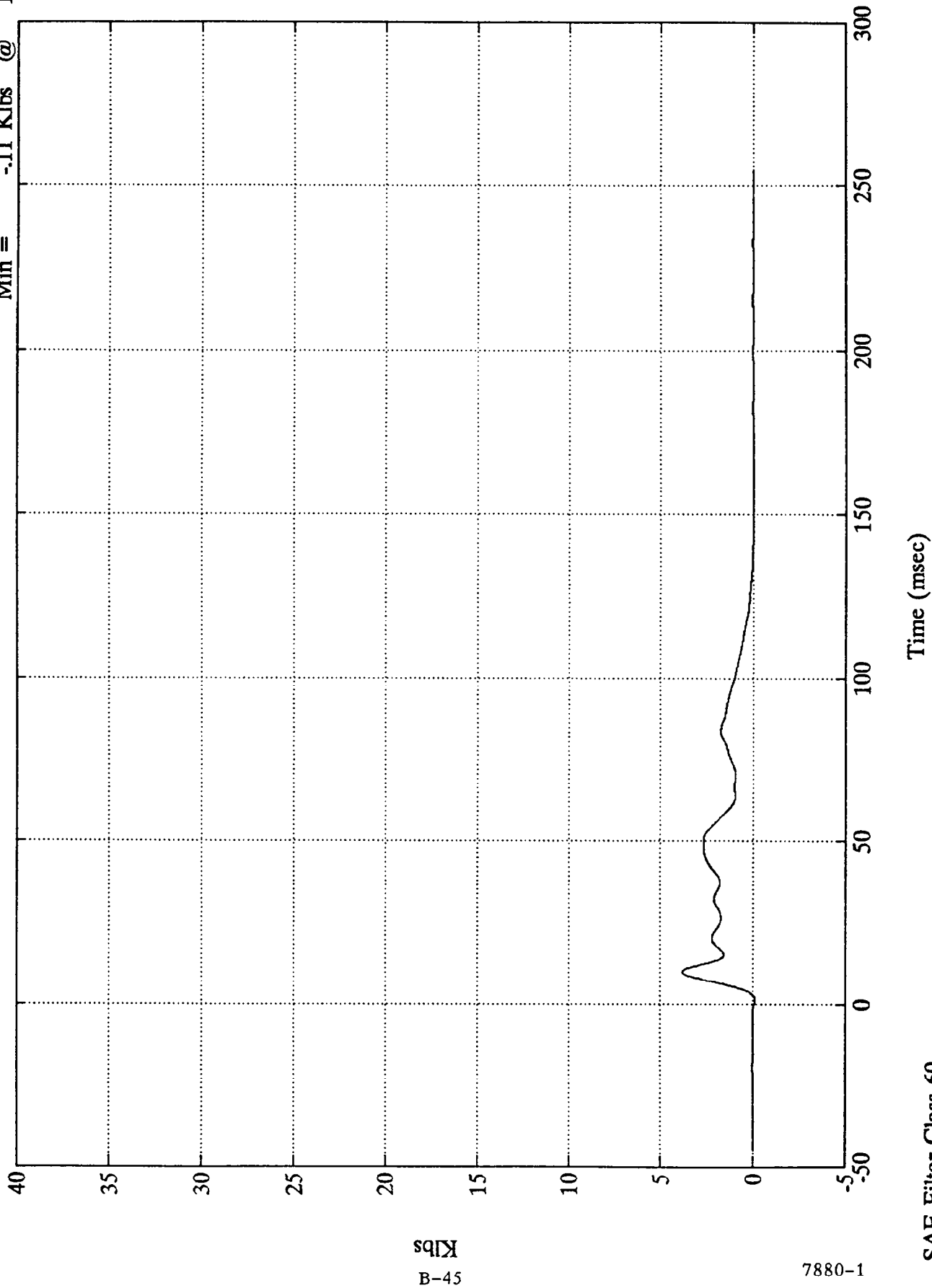
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell B8

Max =	3.80 Klbs	@	9.71 msec
Min =	-11 Klbs	@	1.19 msec



B-45

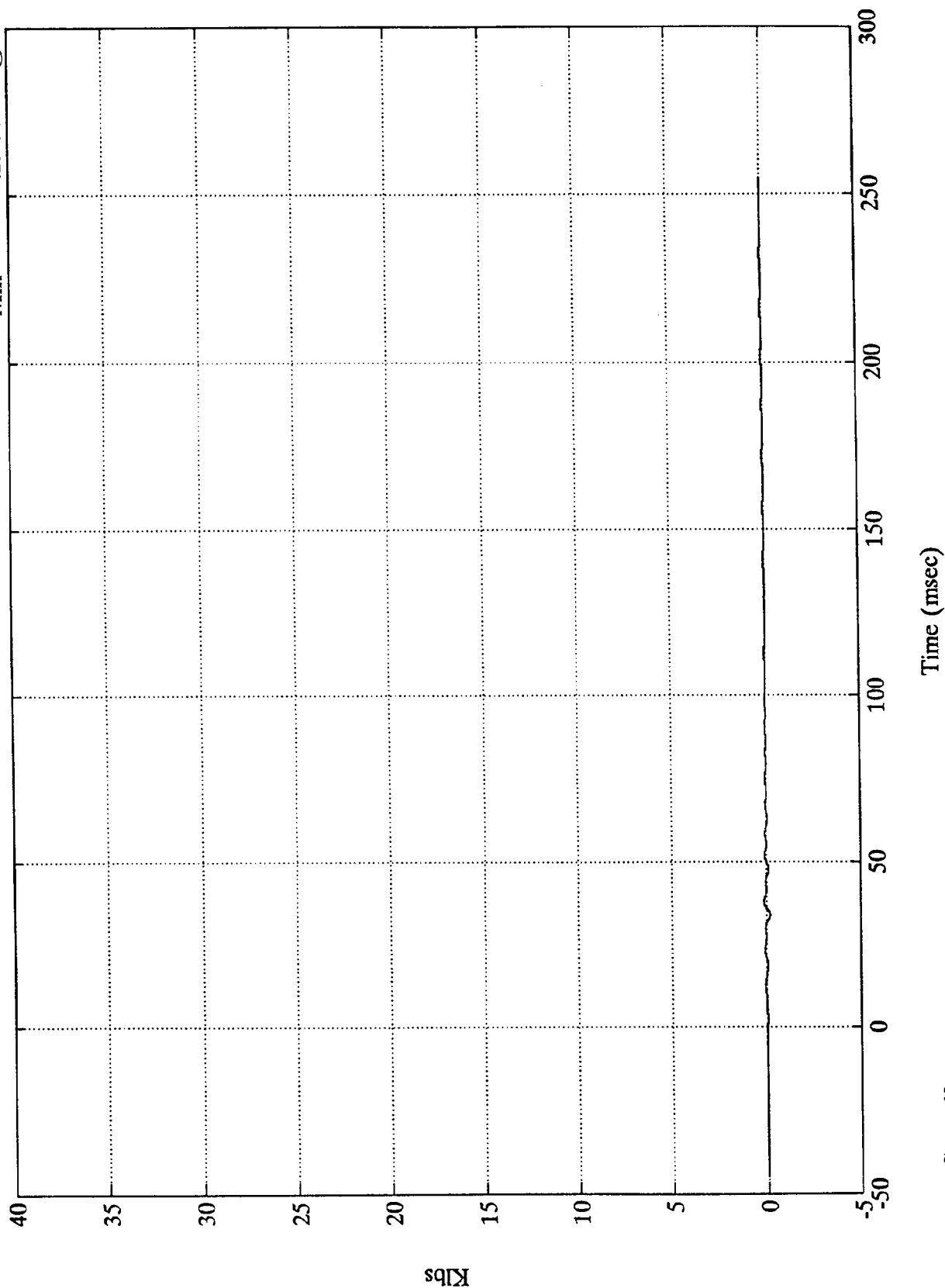
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell B9

Max = .14 Klbs @ 37.56 msec
Min = -.19 Klbs @ 33.72 msec



B-46

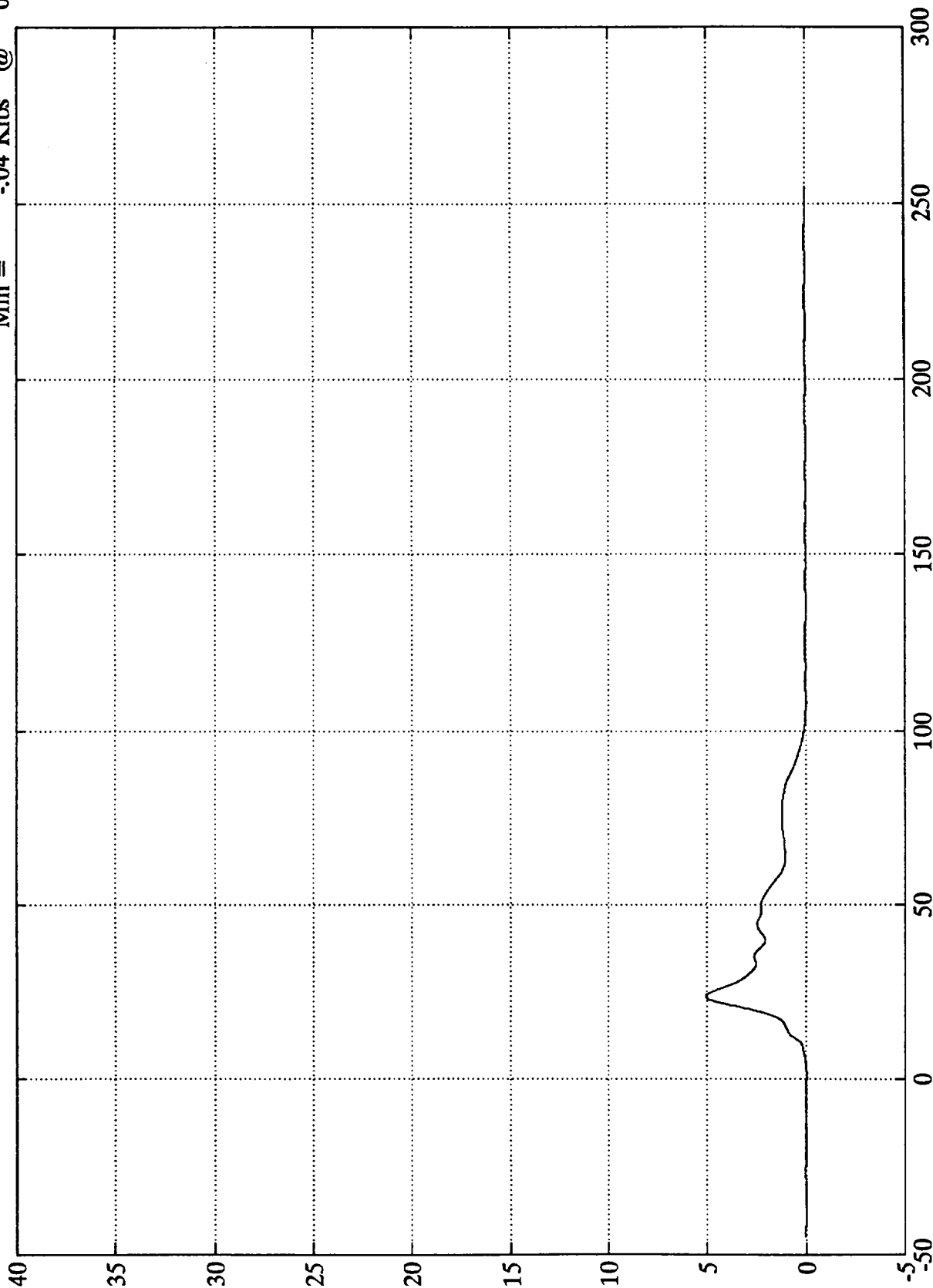
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell C2

Max =	5.06 Klbs	@	23.63 msec
Min =	-.04 Klbs	@	0.95 msec



Klbs
B-47

7880-1

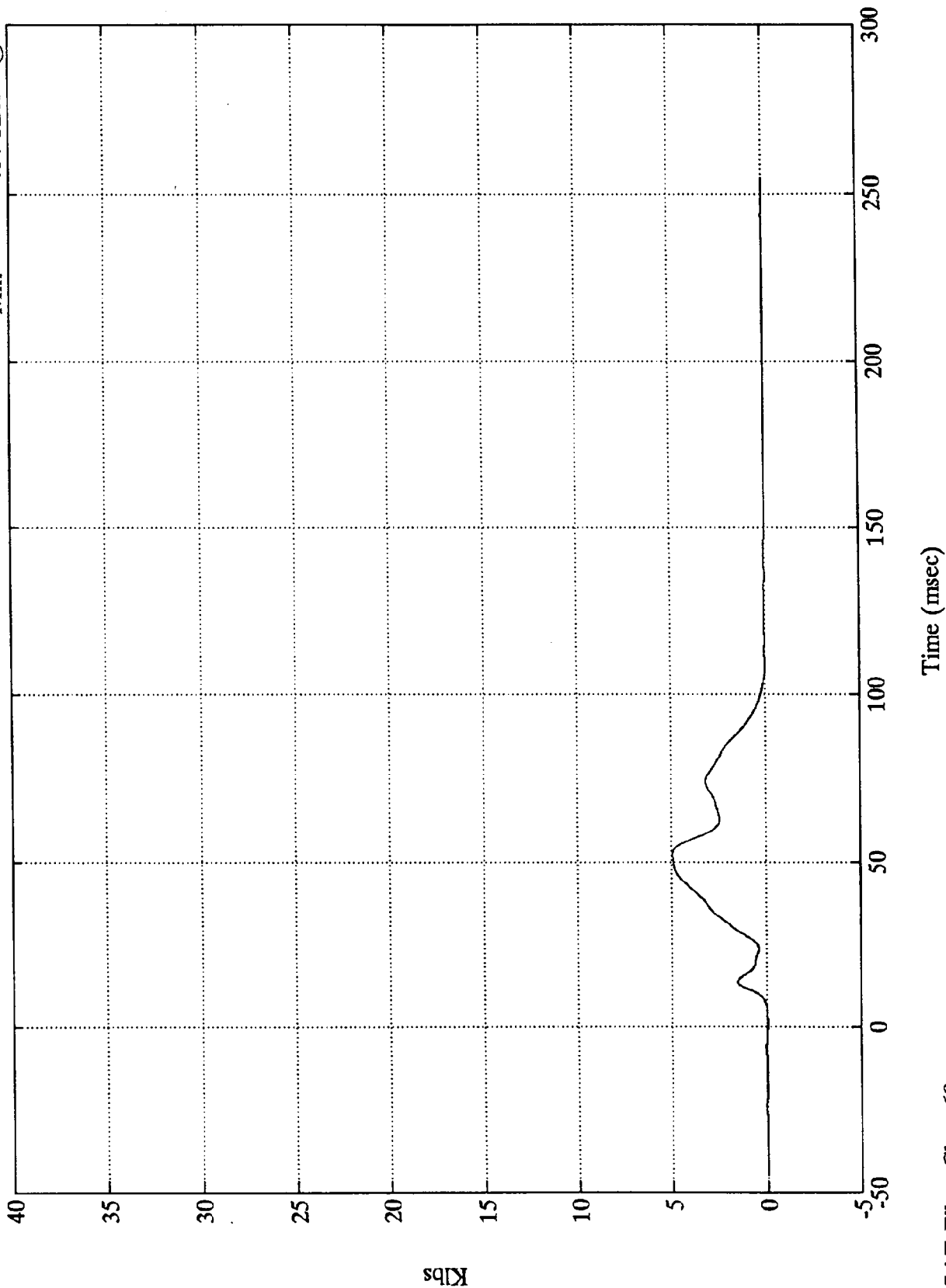
Time (msec)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 4.95 Klbs @ 52.31 msec
Min = -.04 Klbs @ 0.59 msec

Barrier Load Cell C3

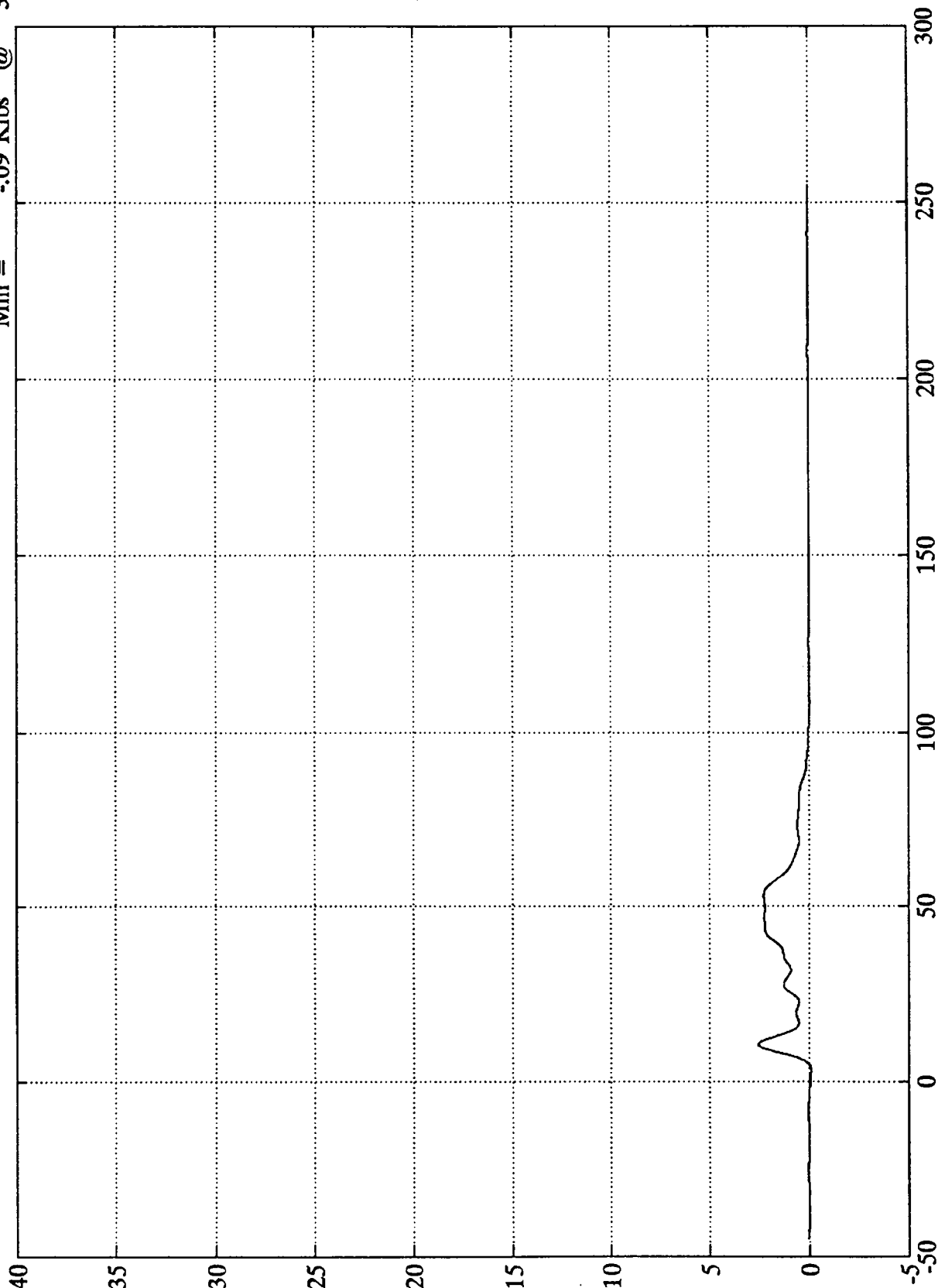


SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell C4

Max =	2.54 Klbs	@	10.55 msec
Min =	-.09 Klbs	@	3.35 msec



Klbs
B-49

7880-1

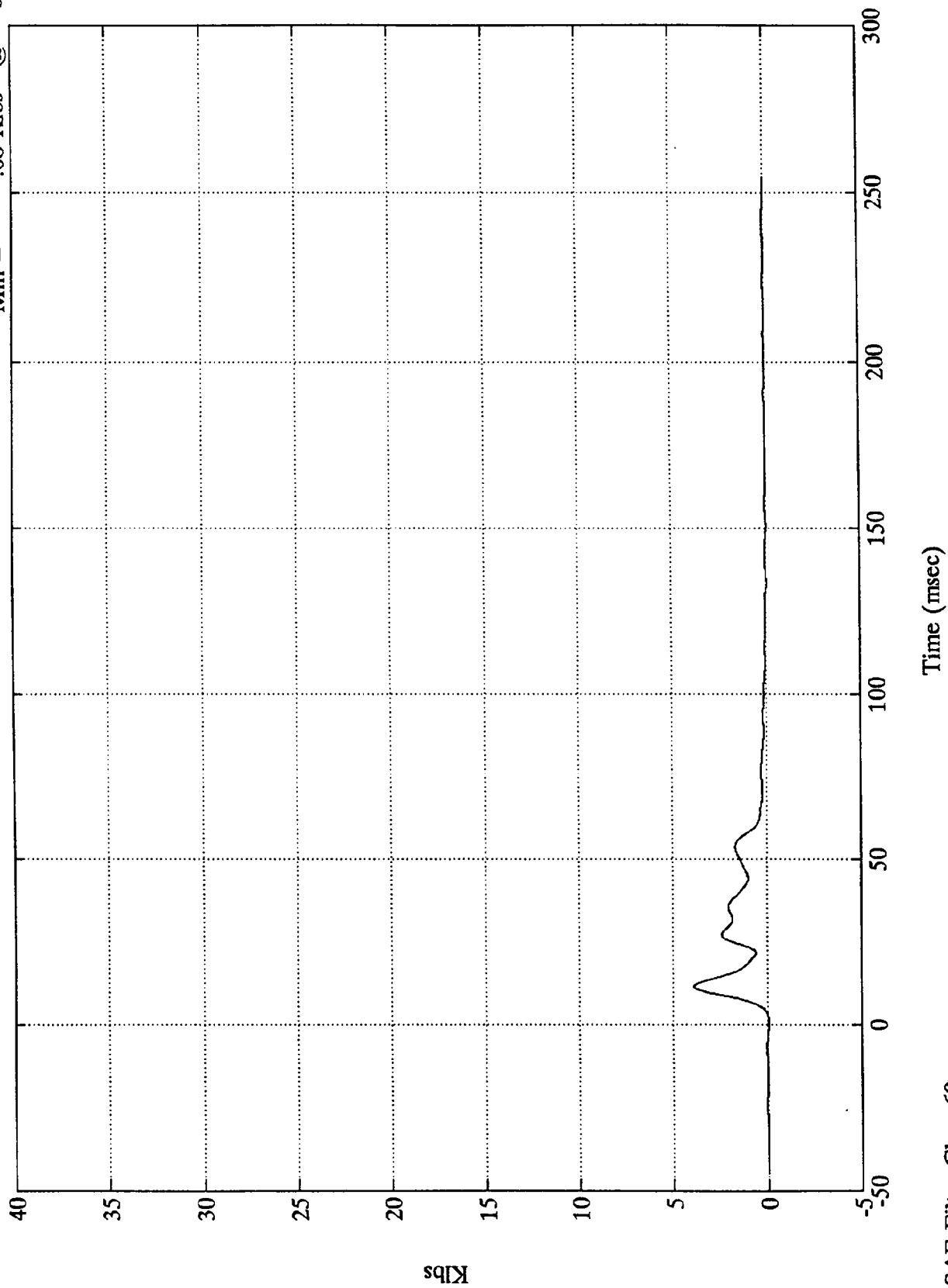
Time (msec)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 3.91 Klbs @ 11.27 msec
Min = -.08 Klbs @ 0.47 msec

Barrier Load Cell C5



Klbs
B-50

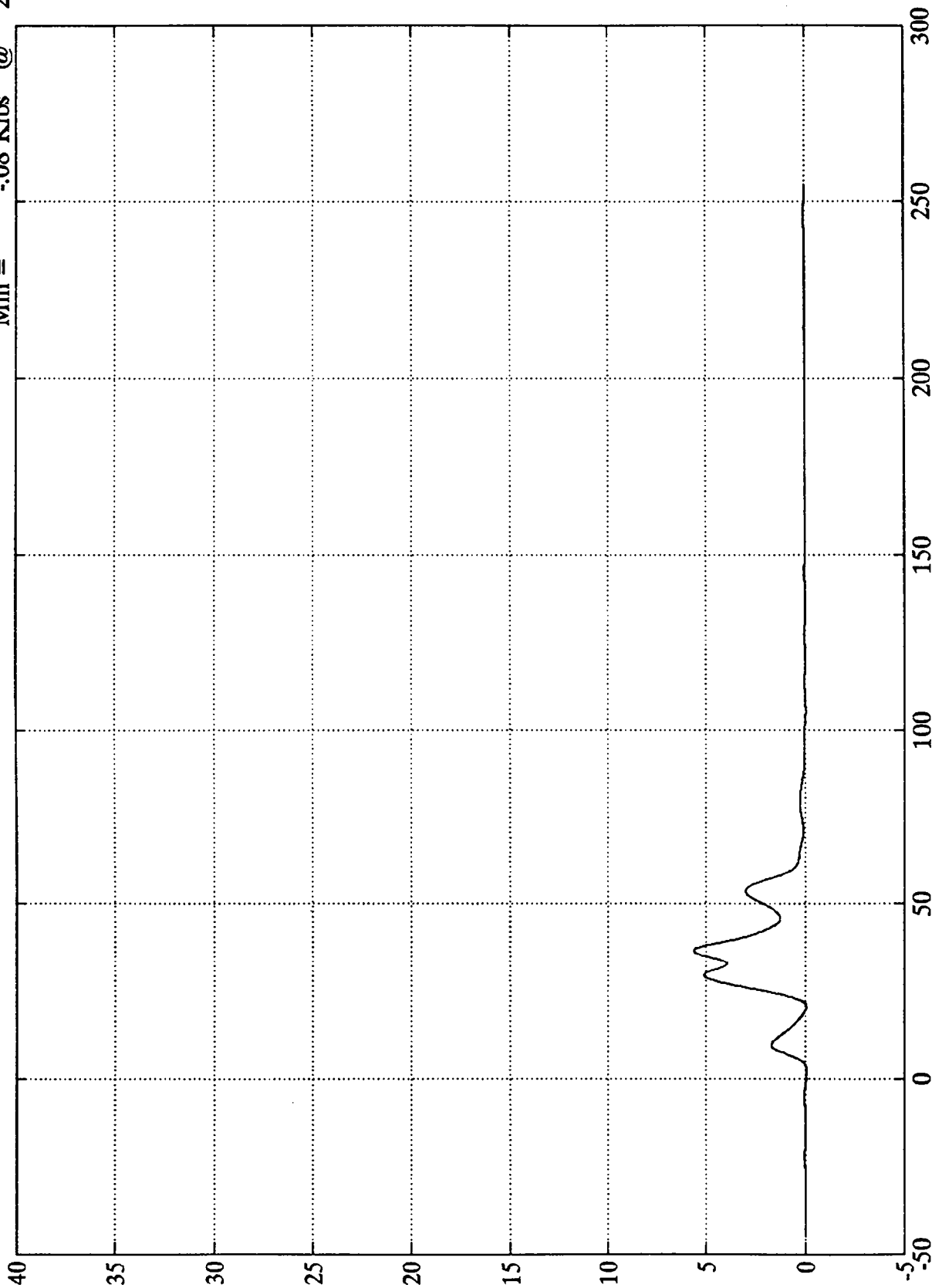
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell C6

Max = 5.63 Klbs @ 36.72 msec
Min = -.08 Klbs @ 2.39 msec



B-51
Klbs

Time (msec)

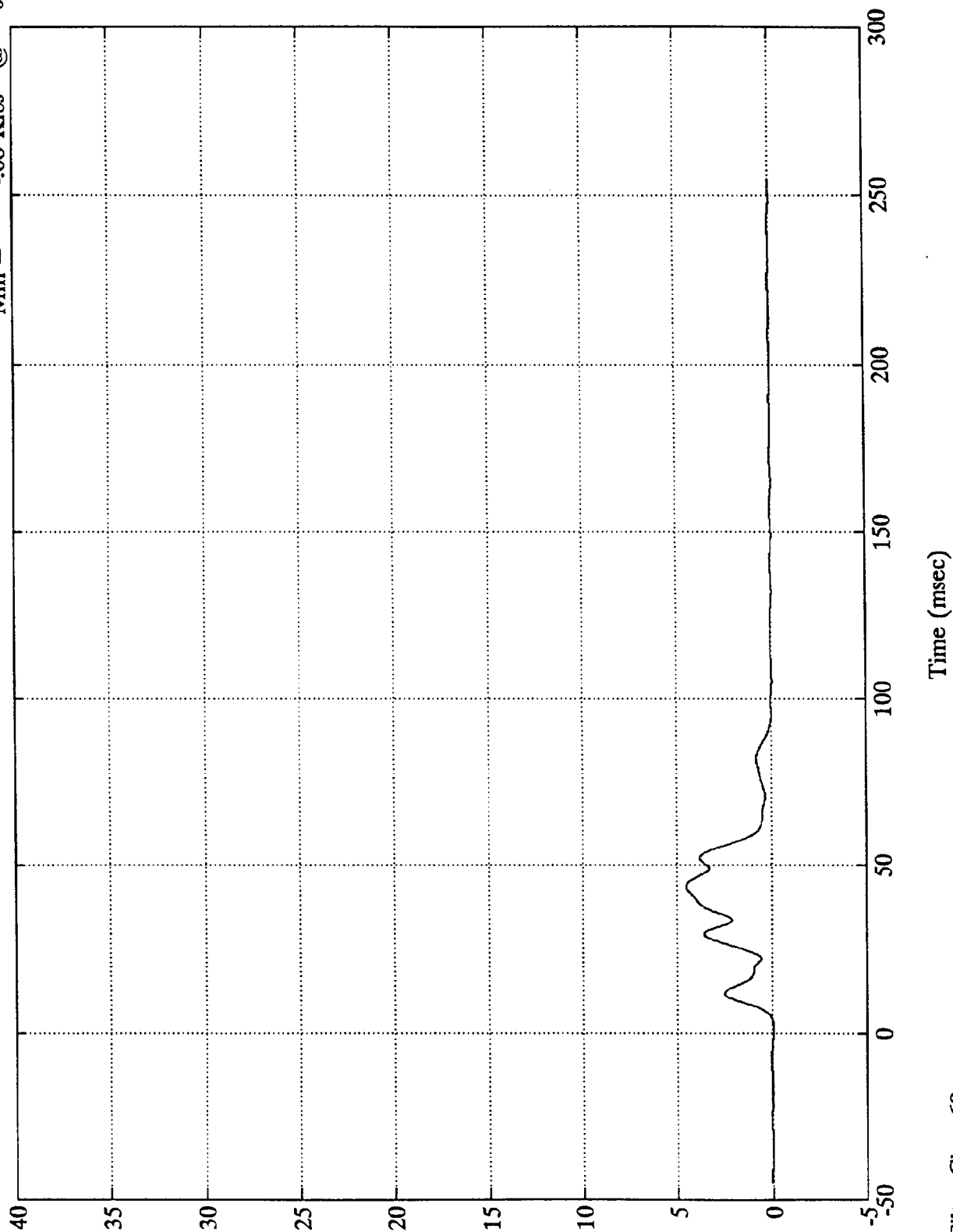
SAE Filter Class 60

7880-1

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 4.53 Klbs @ 43.31 msec
Min = -.08 Klbs @ 0.71 msec

Barrier Load Cell C7



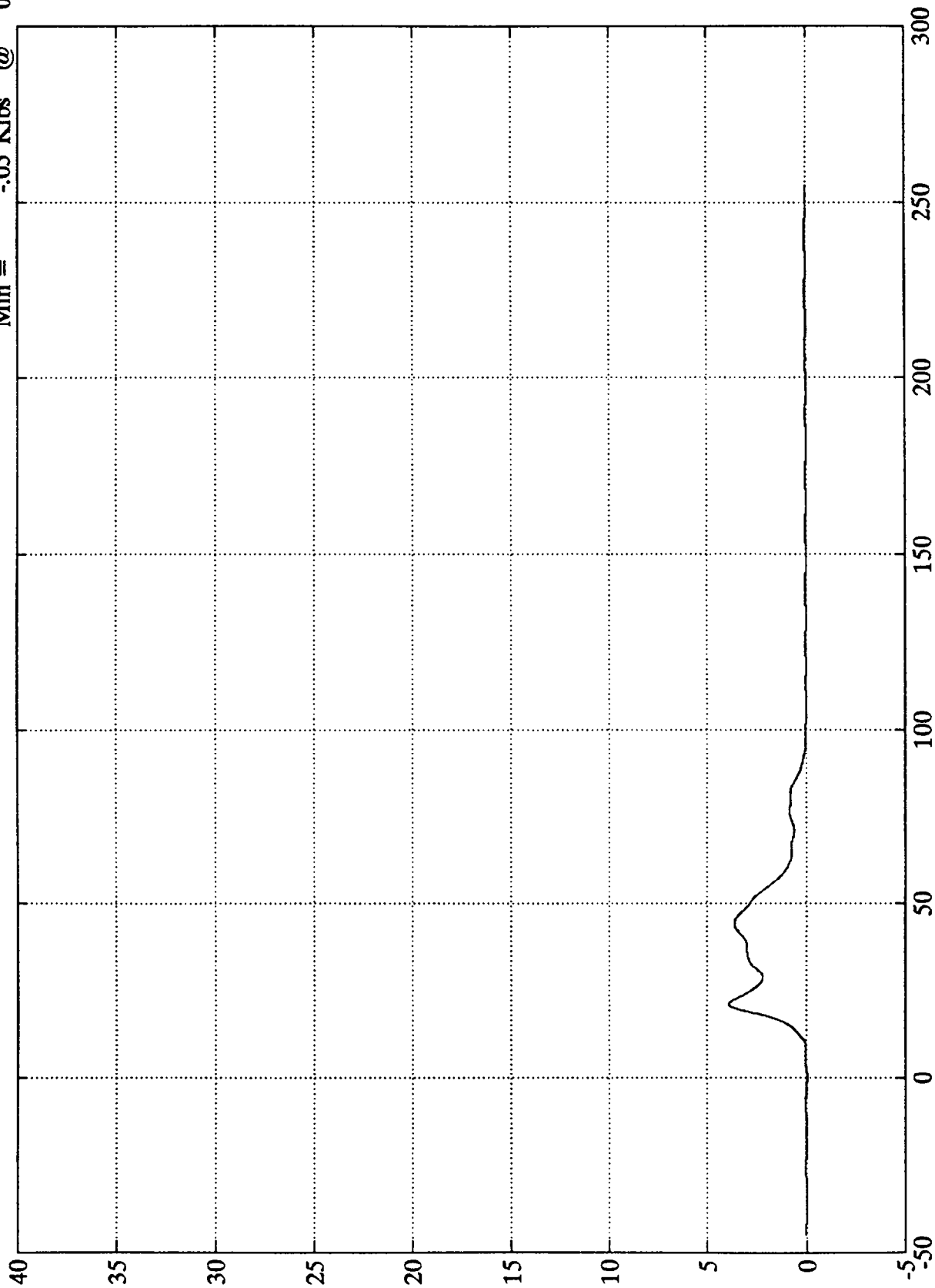
Klbs
B-52

7880-1

SAE Filter Class 60

Max = 3.92 Klbs @ 21.23 msec
Min = -.05 Klbs @ 0.35 msec

Barrier Load Cell C8



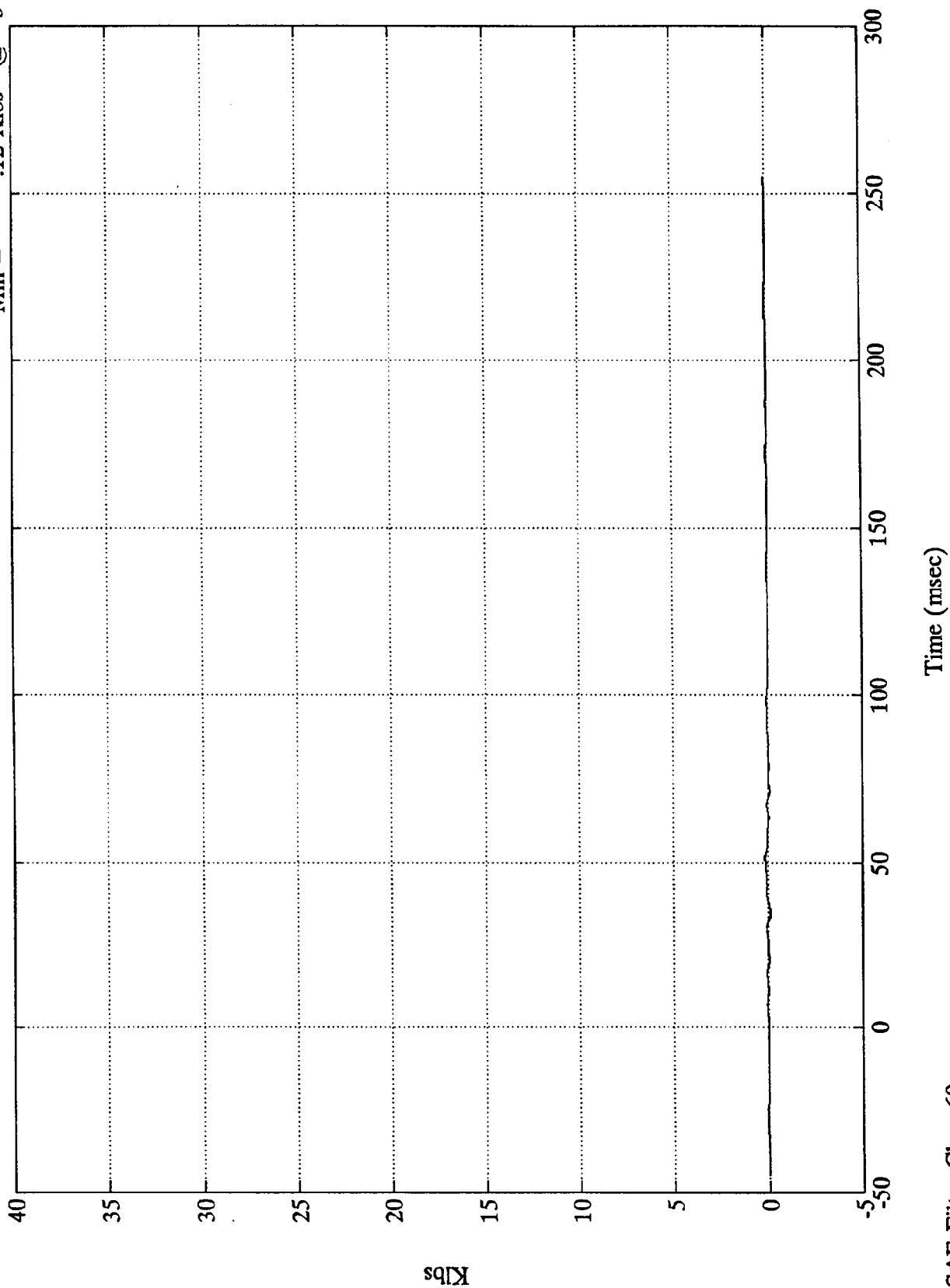
Time (msec)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = .17 Klbs @ 51.47 msec
Min = -.12 Klbs @ 34.55 msec

Barrier Load Cell C9

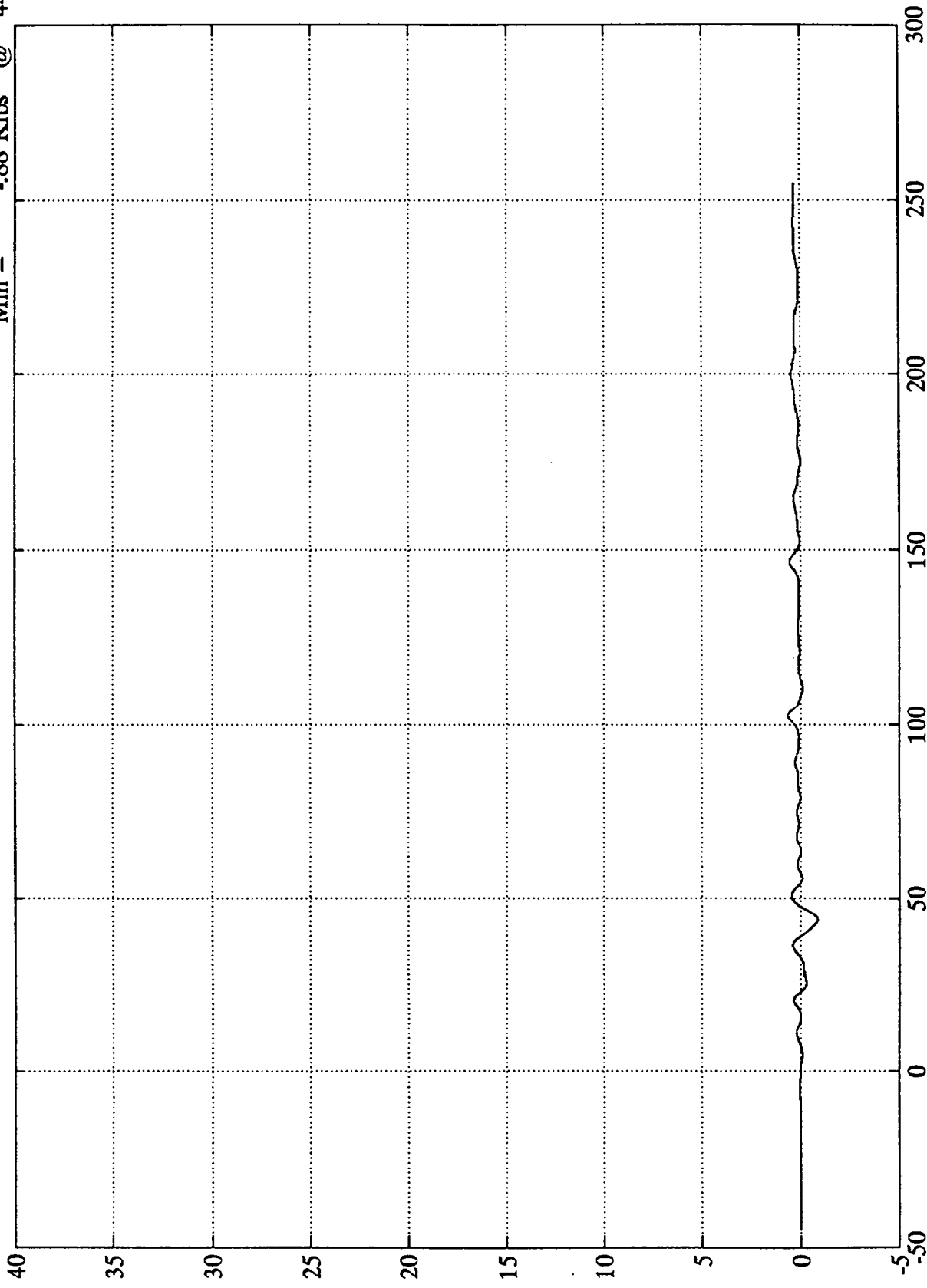


SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell D1

Max = .64 Klbs @ 102.48 msec
Min = -.88 Klbs @ 44.04 msec



Klbs
B-55

Time (msec)

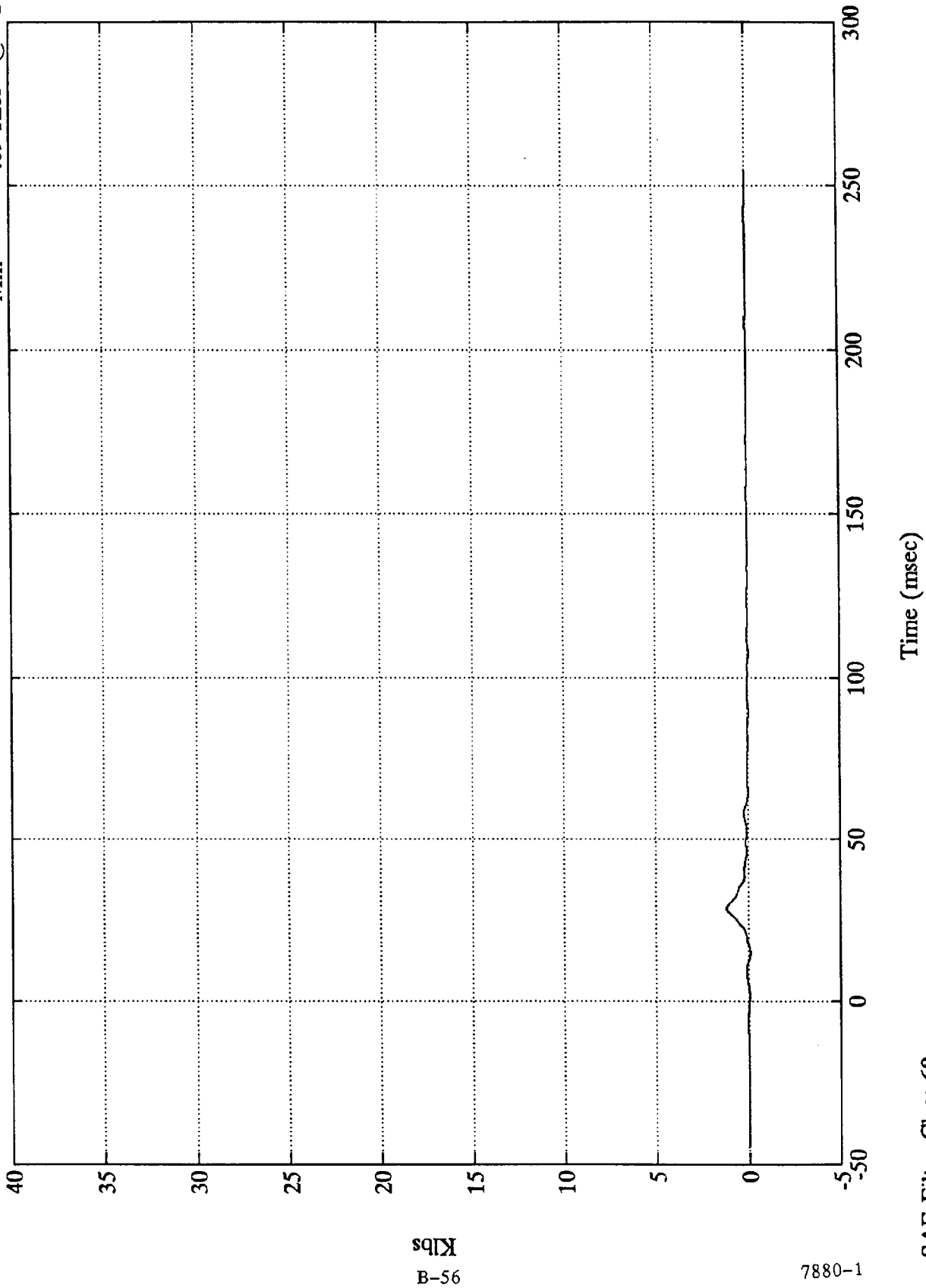
SAE Filter Class 60

7880-1

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell D2

Max = 1.18 Klbs @ 28.44 msec
Min = -.09 Klbs @ 14.63 msec



B-56

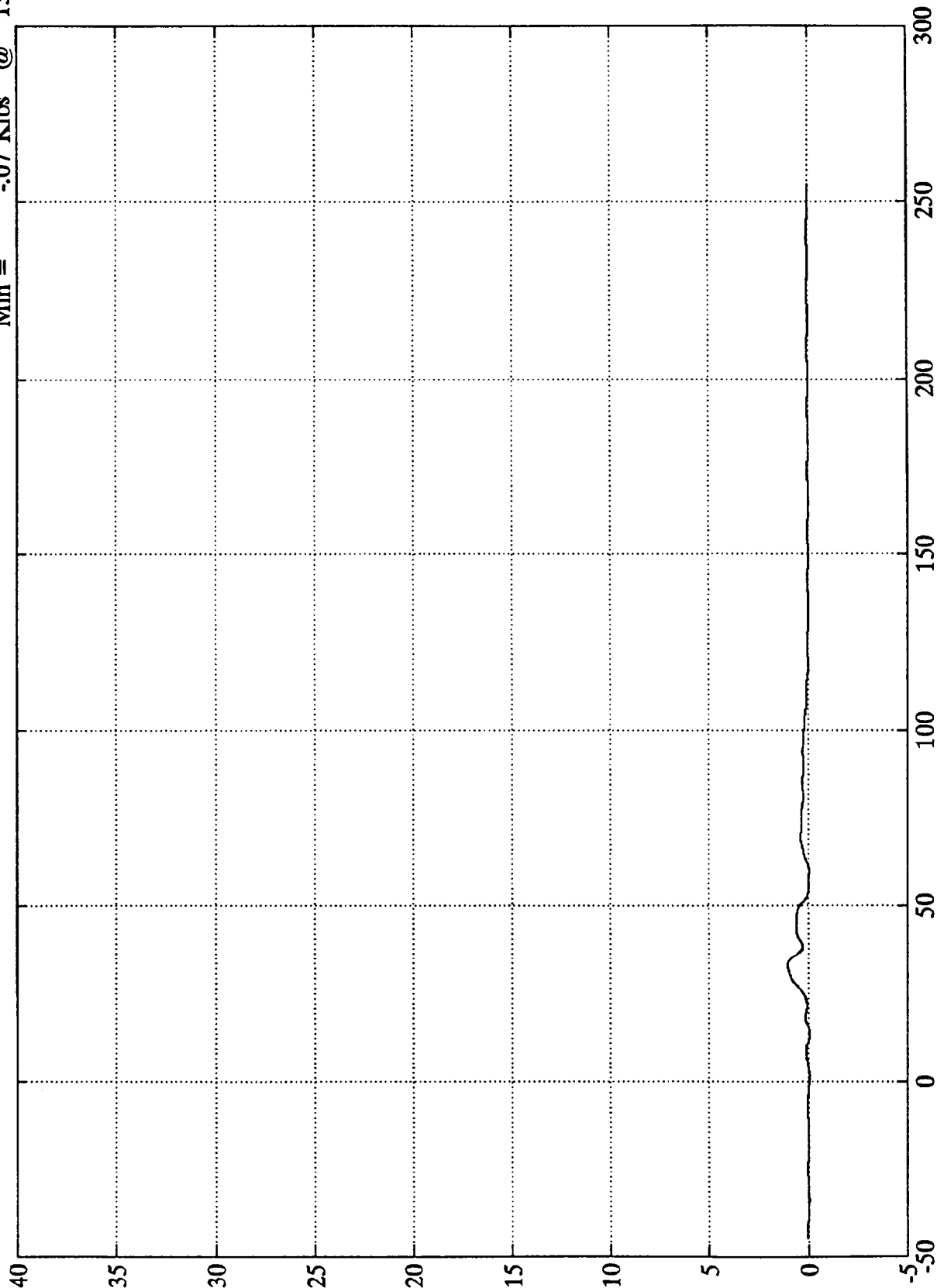
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell D3

Max =	1.05 Klbs	@	33.00 msec
Min =	-.07 Klbs	@	13.43 msec



Klbs
B-57

7880-1

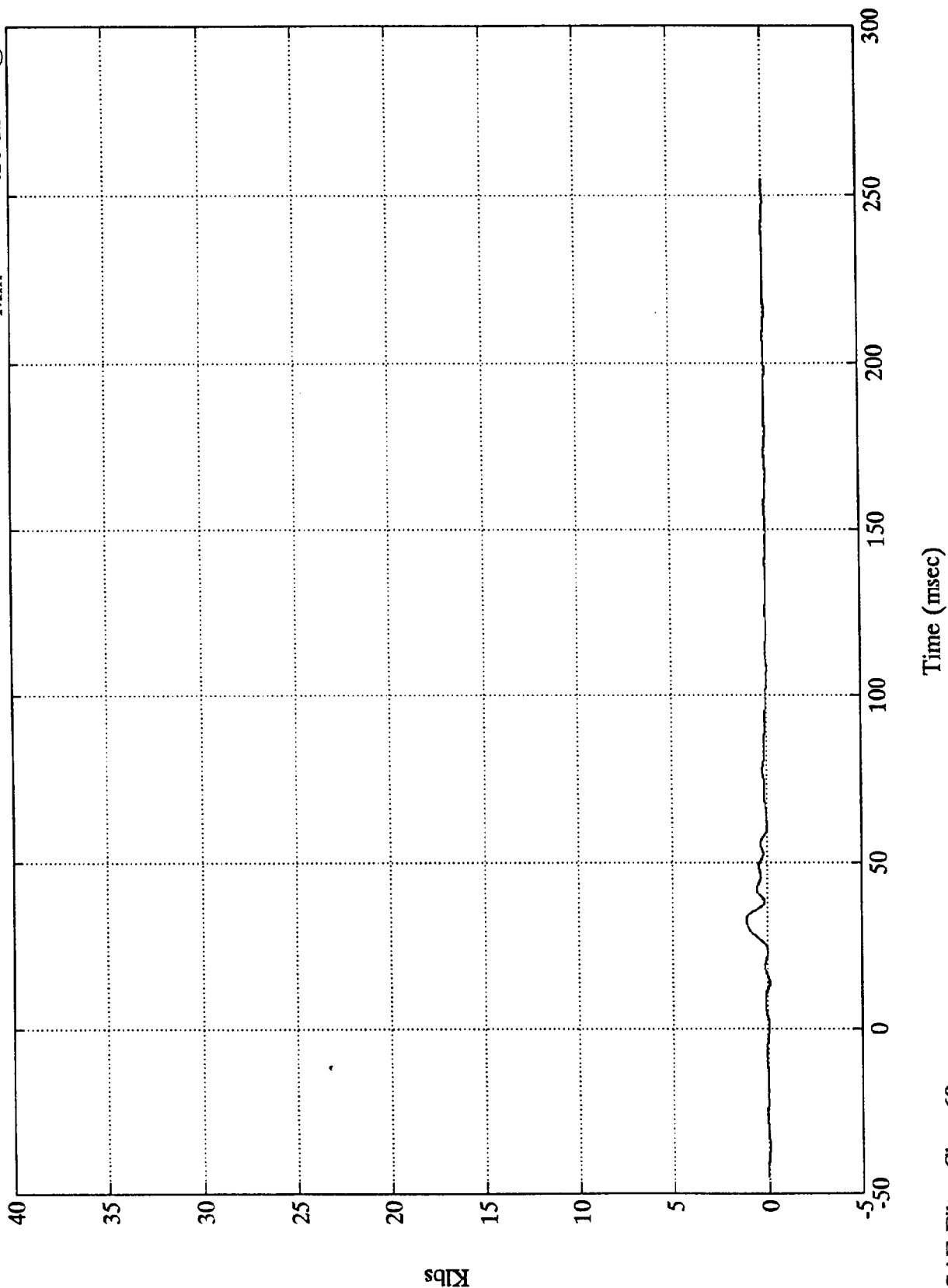
Time (msec)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 1.11 Klbs @ 32.76 msec
Min = -1.10 Klbs @ 13.55 msec

Barrier Load Cell D4



B-58

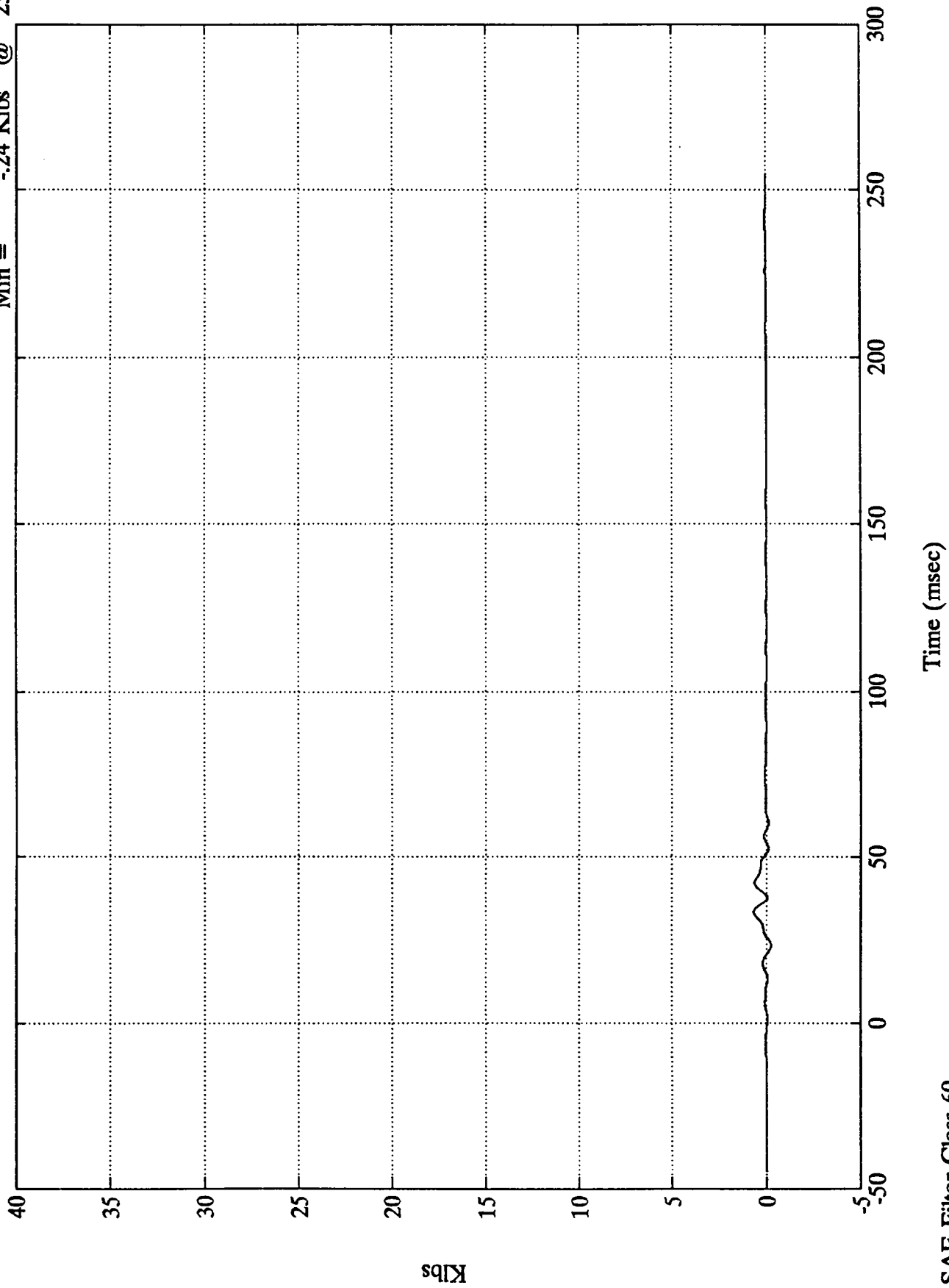
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell D5

Max = .67 Klbs @ 33.24 msec
Min = -24 Klbs @ 23.39 msec



B-59

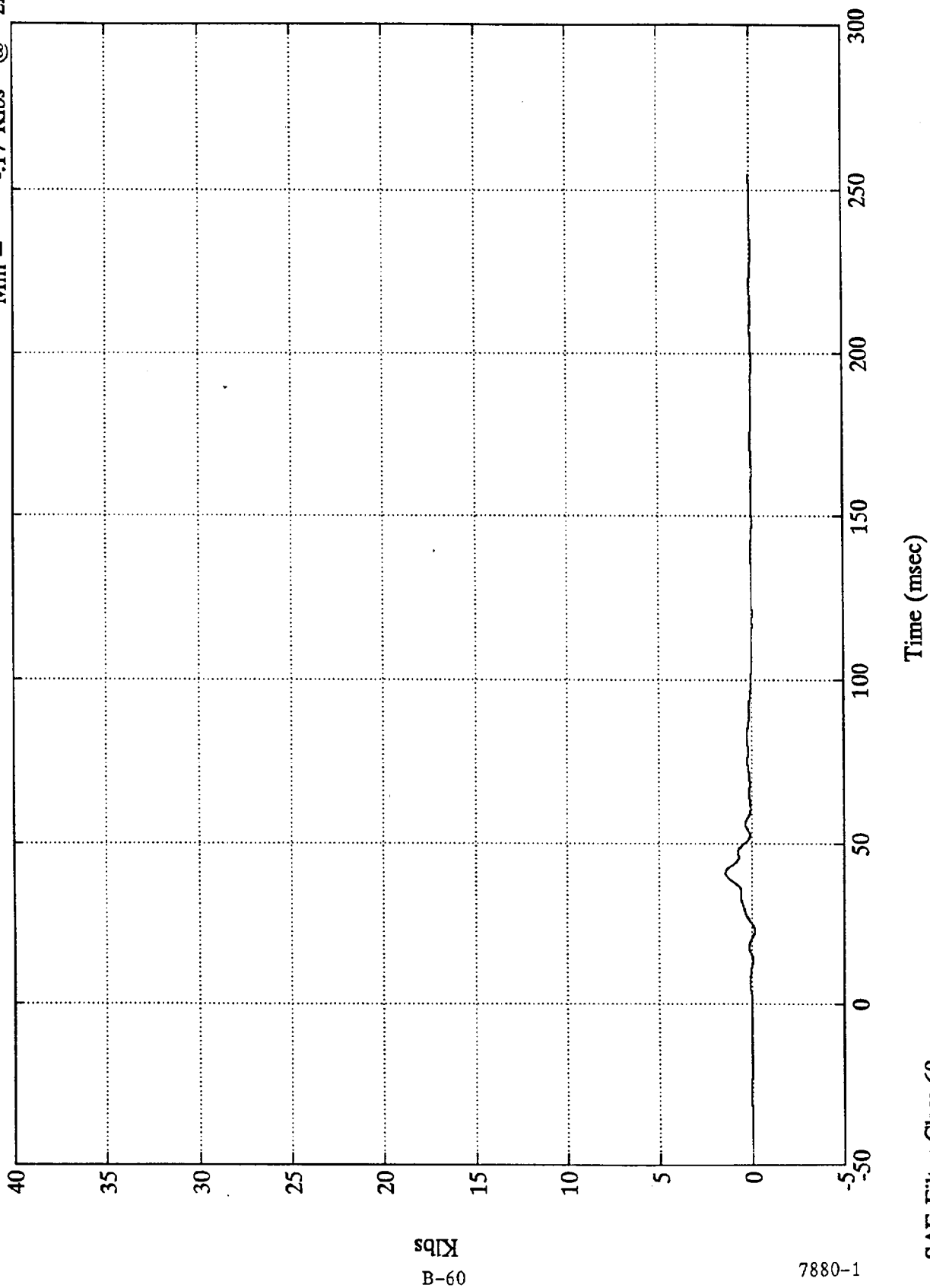
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 1.42 Klbs @ 40.68 msec
Min = -1.17 Klbs @ 22.68 msec

Barrier Load Cell D6



SAE Filter Class 60

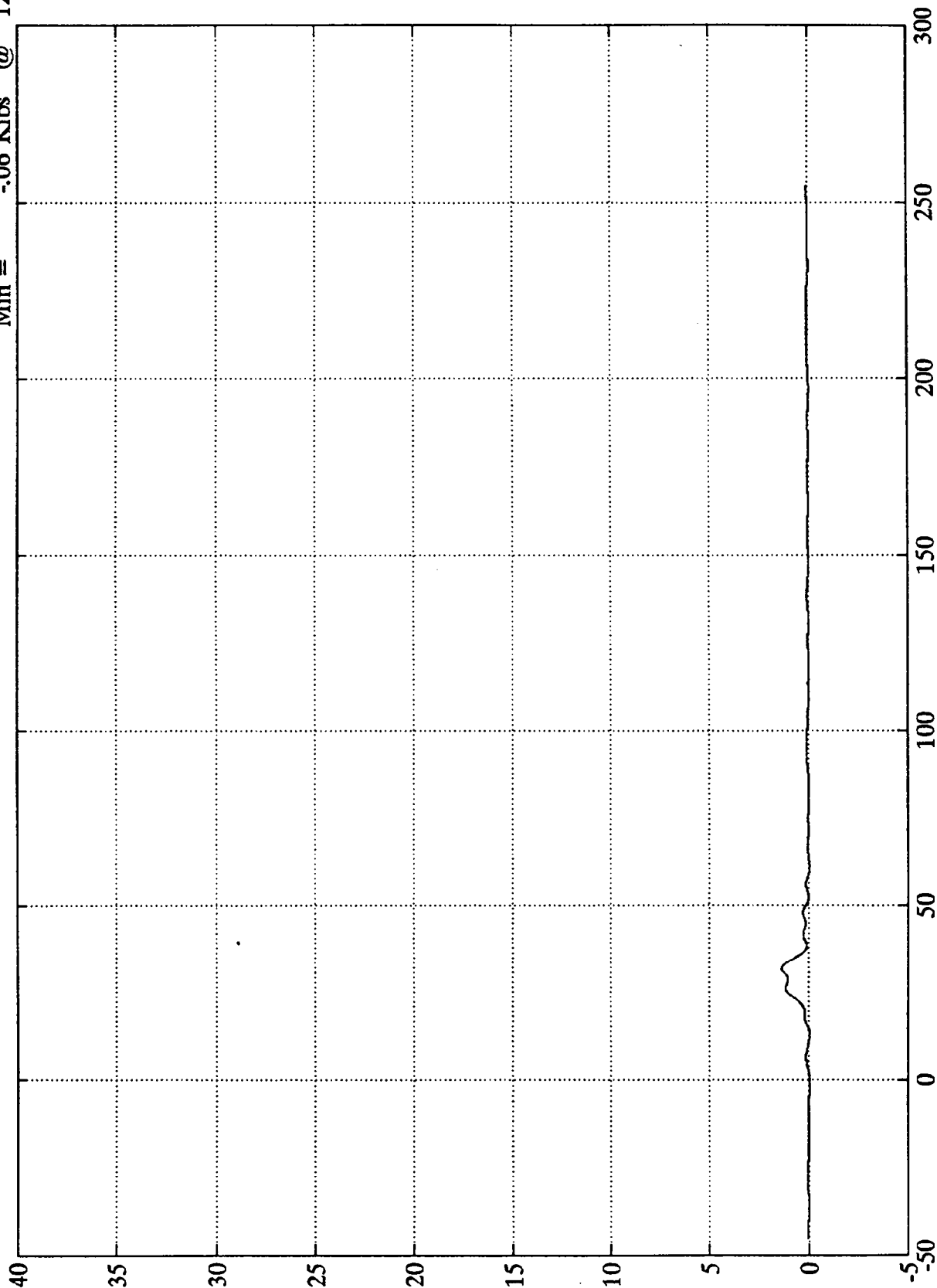
7880-1

B-60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell D7

Max = 1.35 Klbs @ 31.79 msec
Min = -.06 Klbs @ 12.71 msec



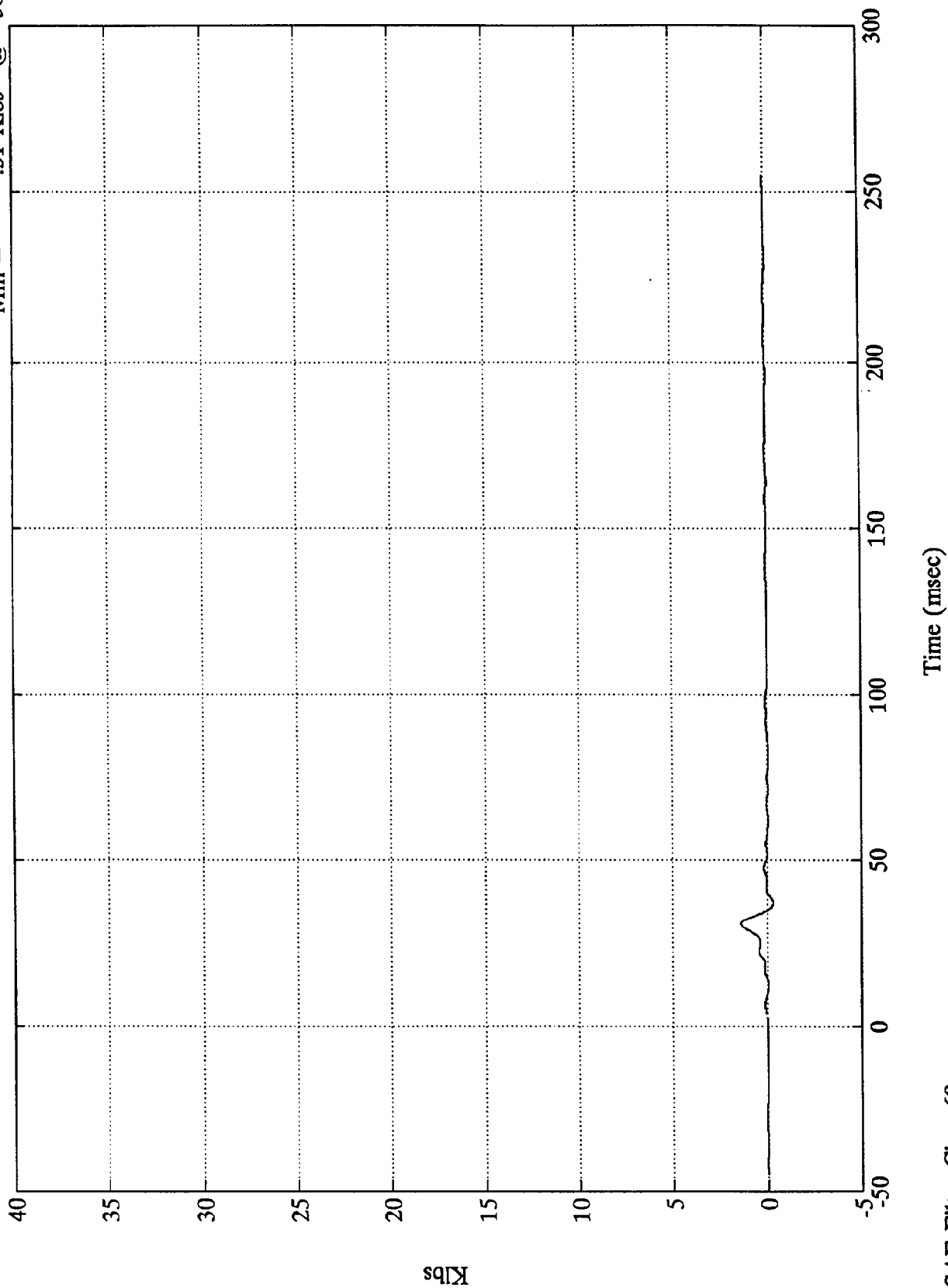
Time (msec)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 1.40 Klbs @ 30.71 msec
Min = -.31 Klbs @ 36.84 msec

Barrier Load Cell D8



Klbs
B-62

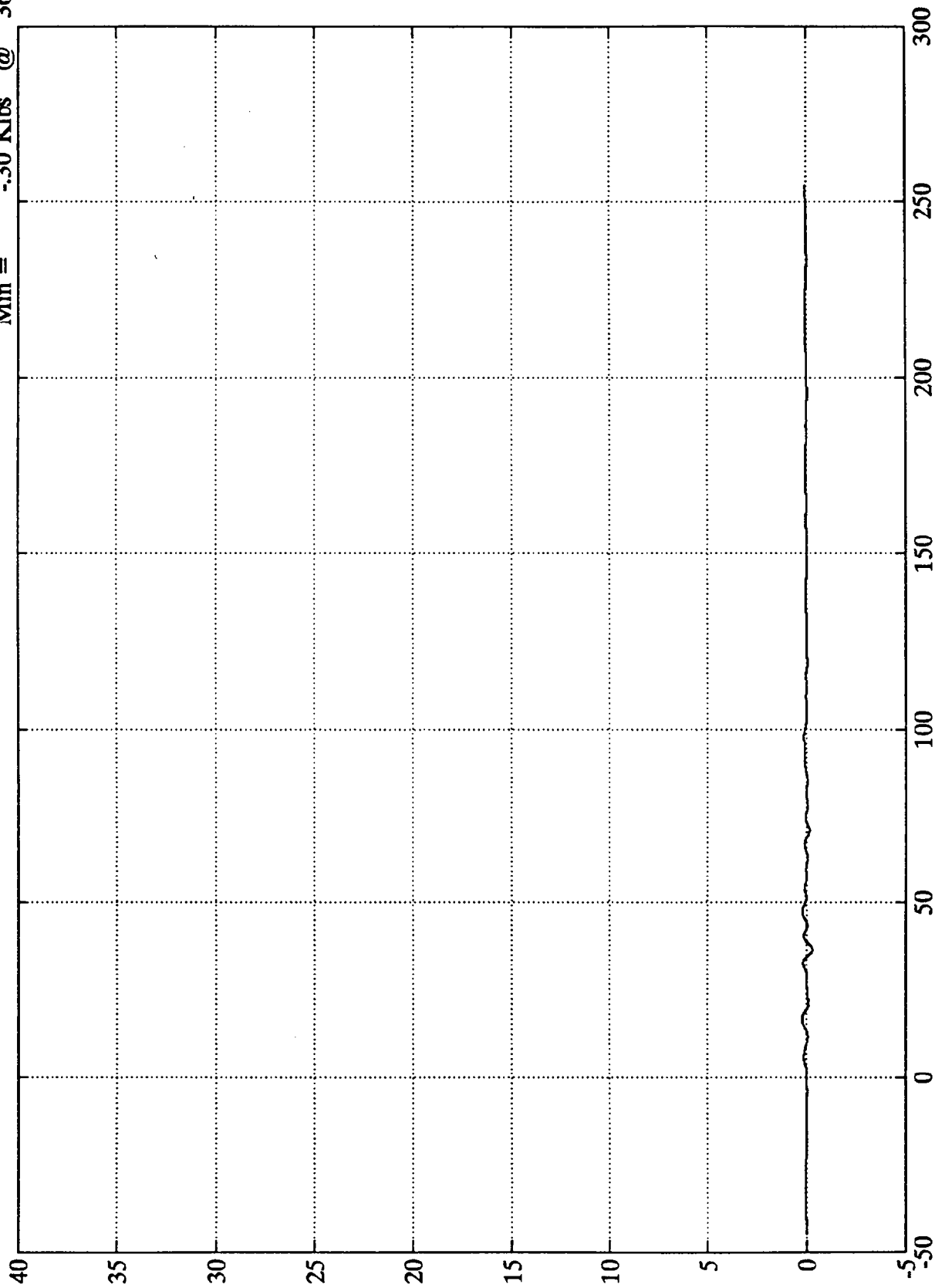
7880-1

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Barrier Load Cell D9

Max = .20 Klbs @ 16.55 msec
Min = -.30 Klbs @ 36.60 msec



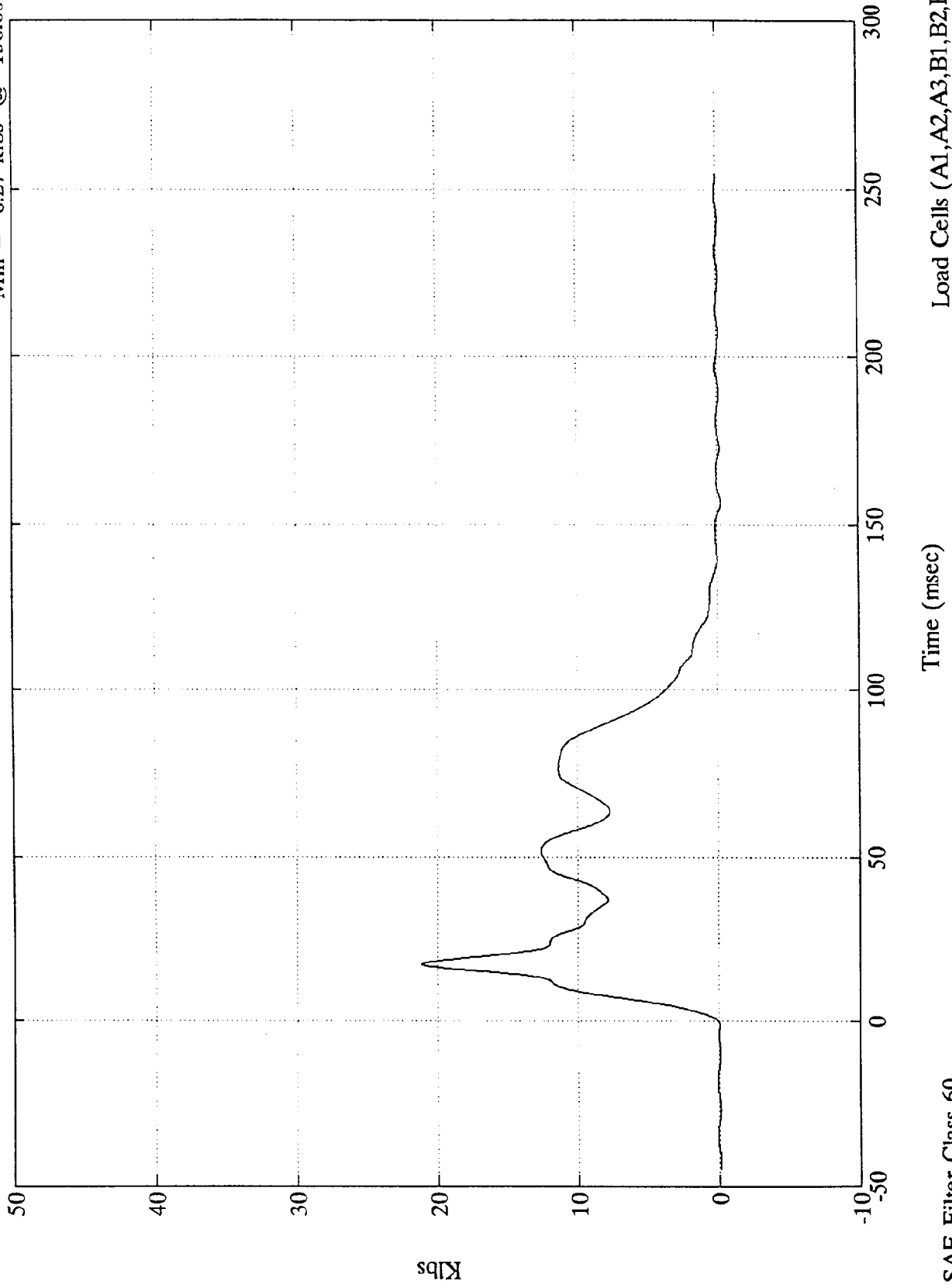
Time (msec)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 21.16 klbs @ 17.16 msec
Min = -0.27 klbs @ 156.60 msec

Group 1 Load Cell Sum

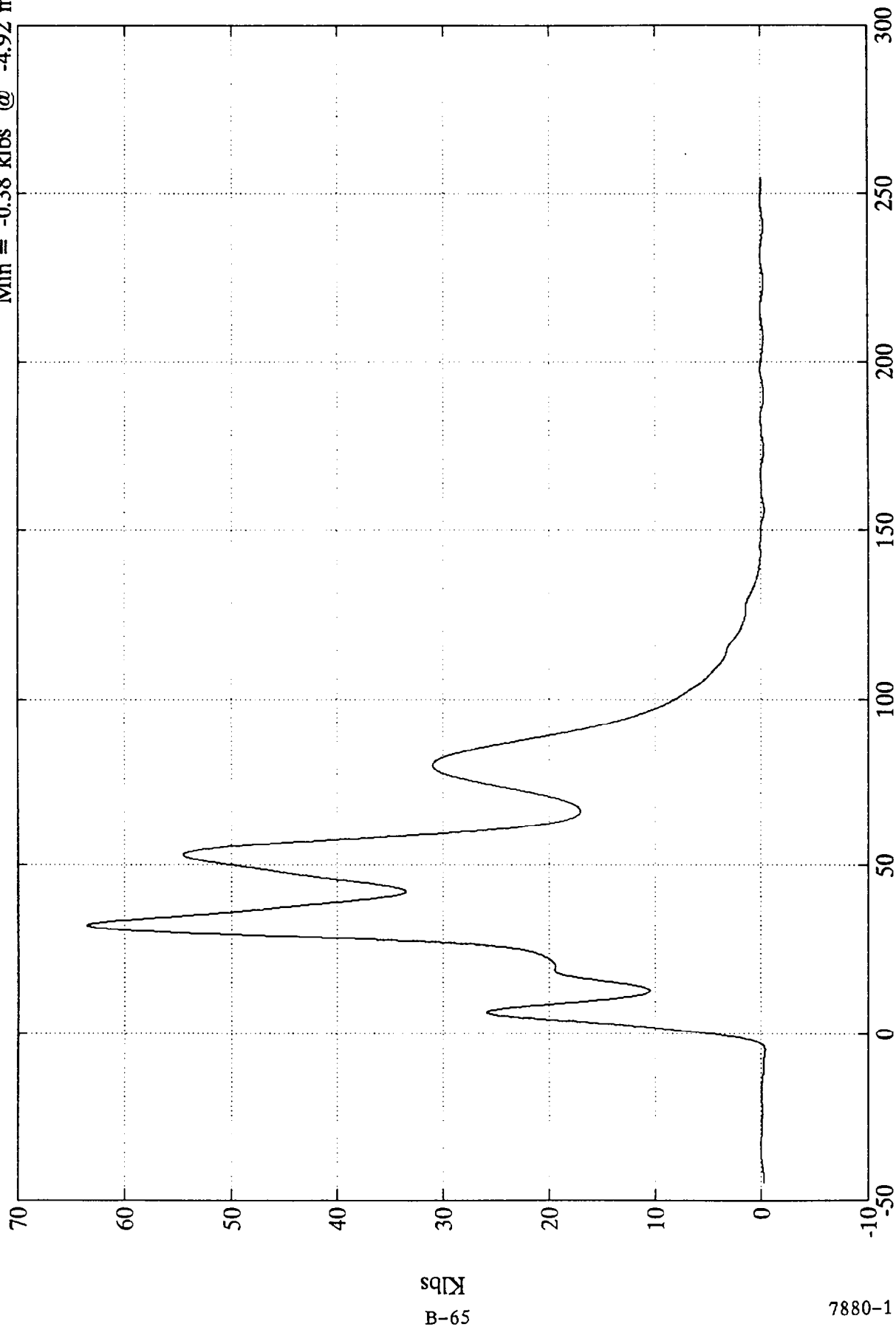


SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Group 2 Load Cell Sum

Max = 63.51 klbs @ 32.16 msec
Min = -0.38 klbs @ -4.92 msec



Time (msec)

Load Cells (A4,A5,A6,B4,B5,B6)

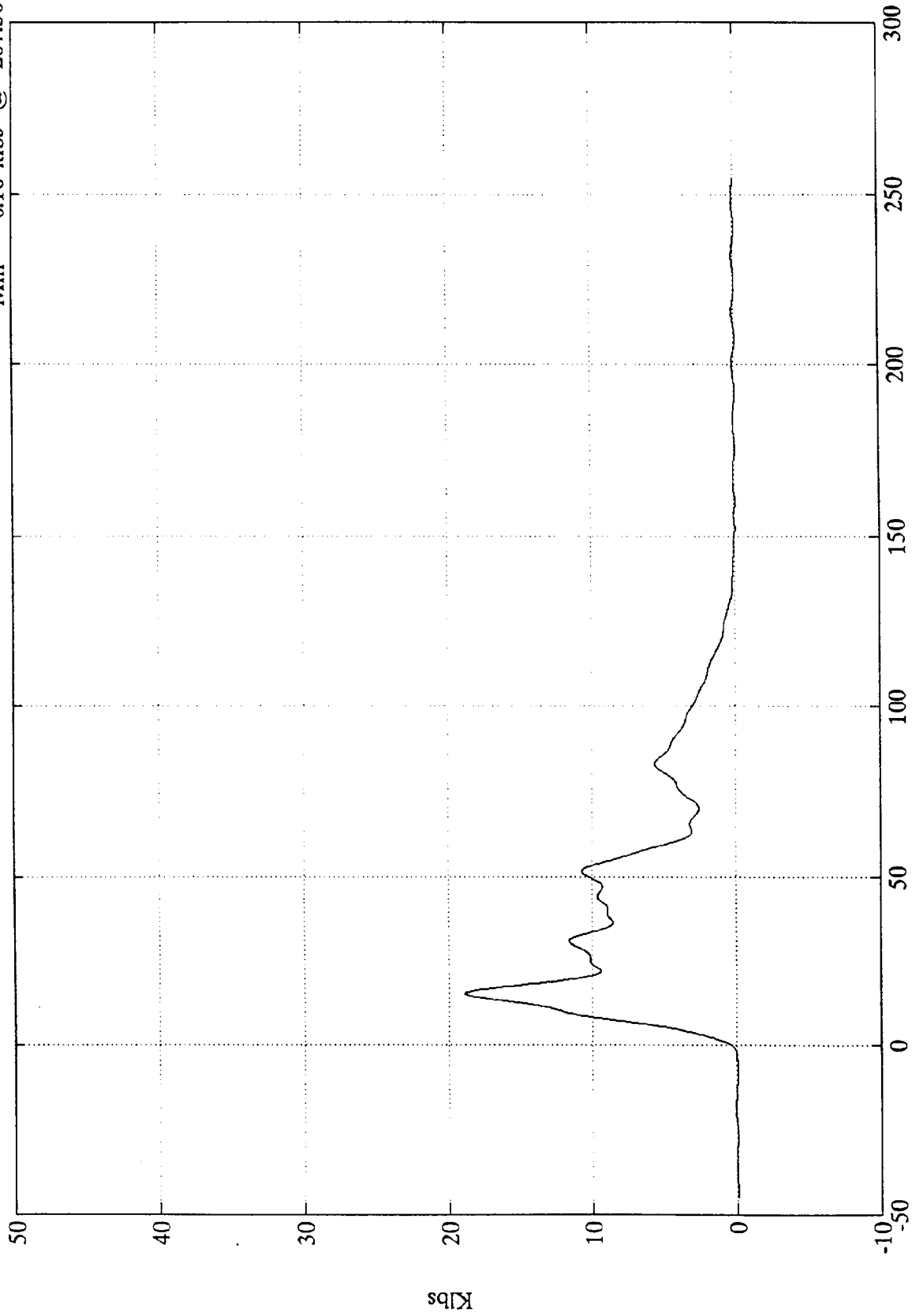
SAE Filter Class 60

7880-1
B-65
Klbs

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 18.86 klbs @ 15.00 msec
Min = -0.10 klbs @ 207.36 msec

Group 3 Load Cell Sum



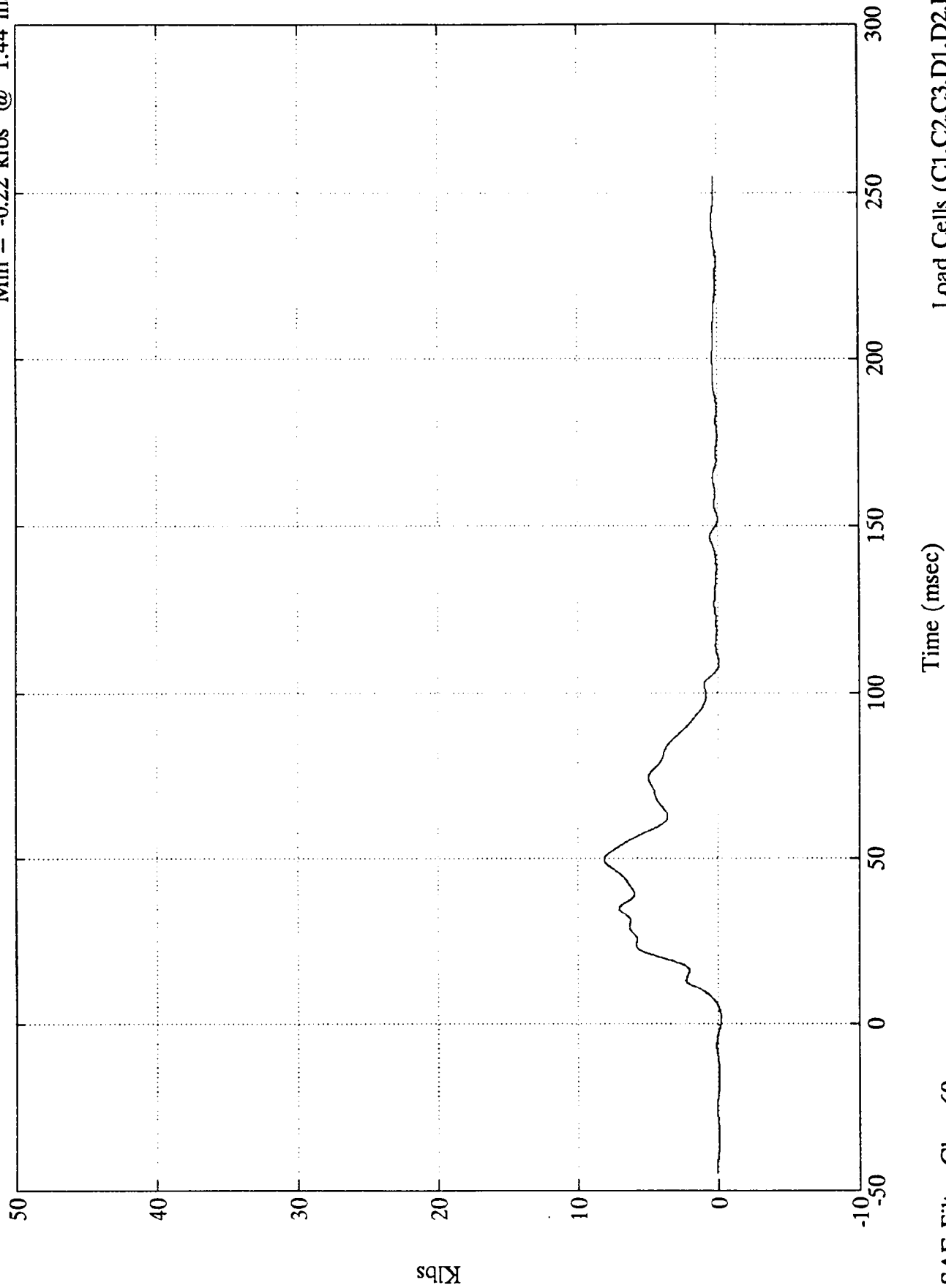
Load Cells (A7,A8,A9,B7,B8,B9)

Time (msec)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Group 4 Load Cell Sum
Max = 8.14 klbs @ 49.68 msec
Min = -0.22 klbs @ 1.44 msec

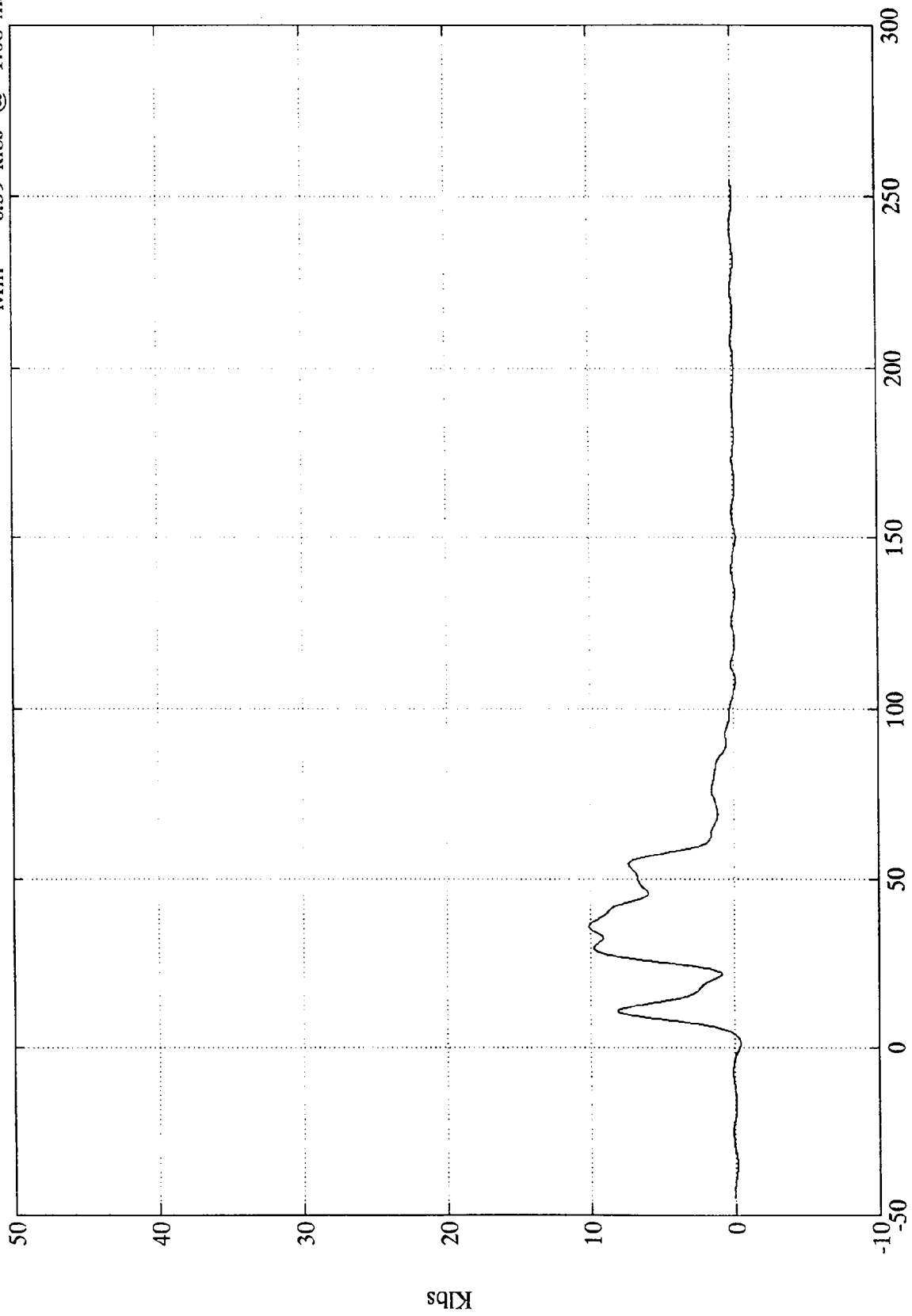


Load Cells (C1,C2,C3,D1,D2,D3)
Load cell C1 was not
included in load cell sum.

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Group 5 Load Cell Sum
Max = 10.12 klbs @ 35.76 msec
Min = -0.39 klbs @ 1.08 msec



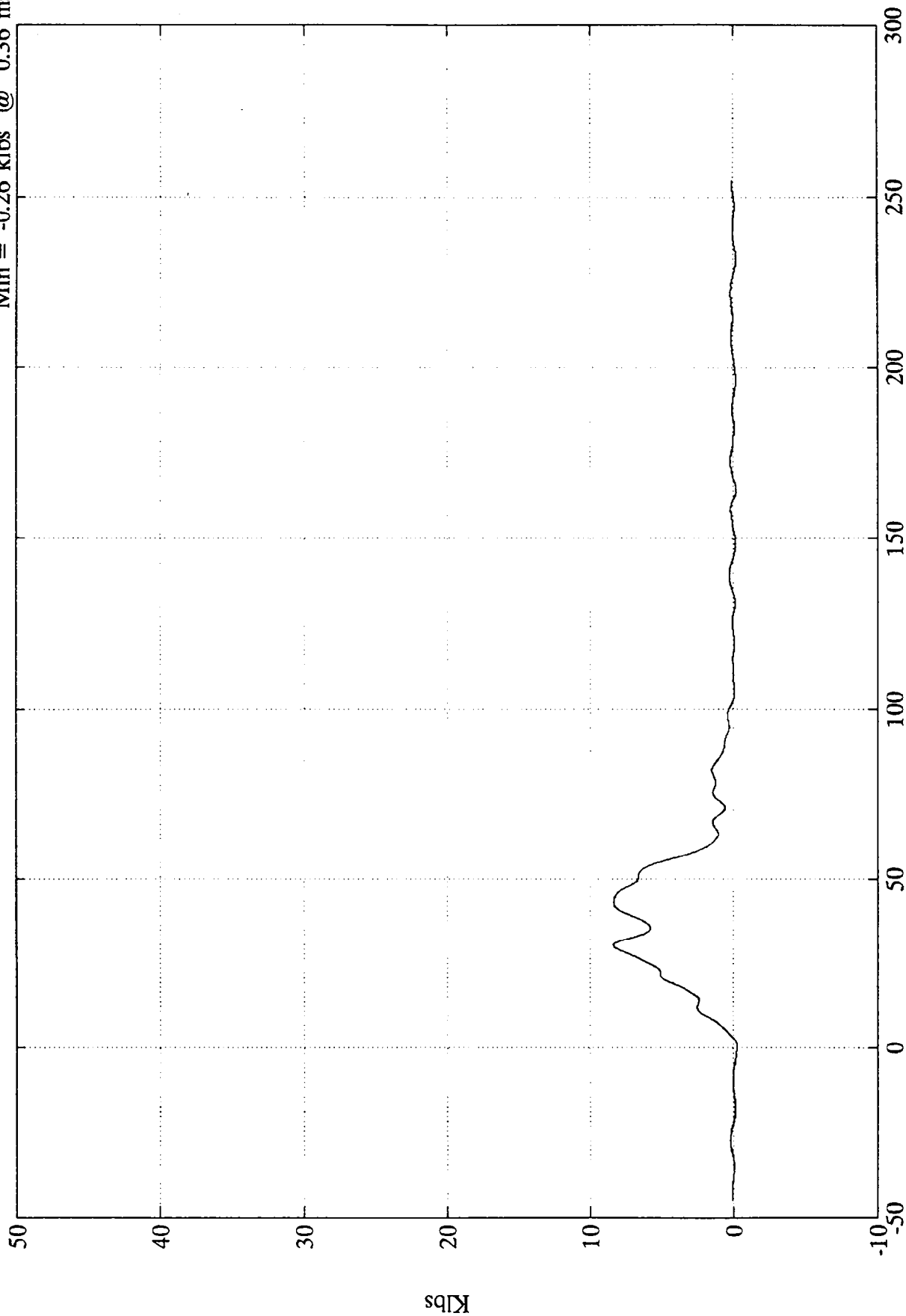
SAE Filter Class 60

Load Cells (C4,C5,C6,D4,D5,D6)

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 8.38 klbs @ 30.60 msec
Min = -0.26 klbs @ 0.36 msec

Group 6 Load Cell Sum



Time (msec)

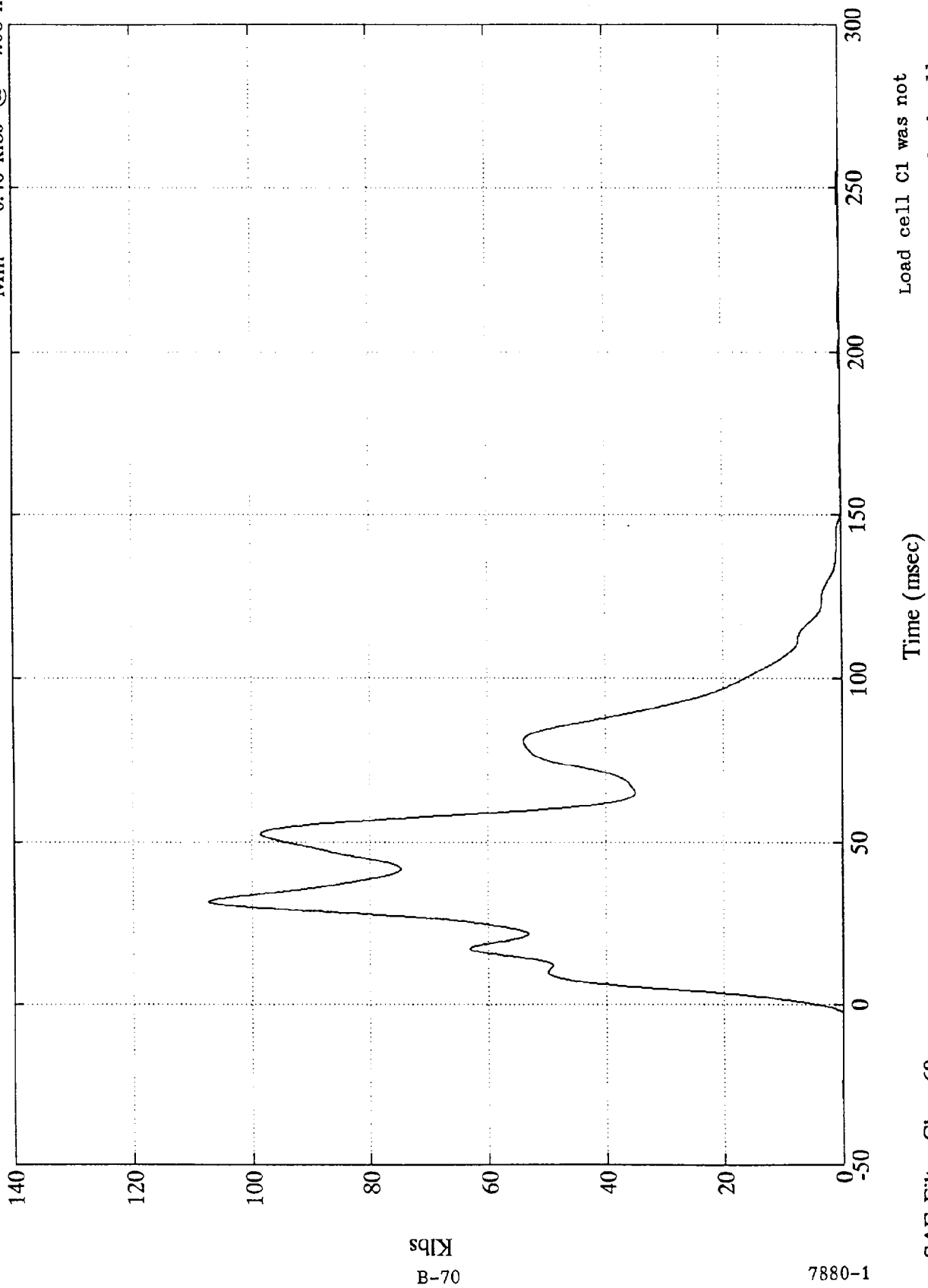
Load Cells (C7,C8,C9,D7,D8,D9)

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 107.26 klbs @ 31.68 msec
Min = -0.40 klbs @ -4.08 msec

Total Load Cell Sum



SAE Filter Class 60

Load cell C1 was not included in load cell sum.

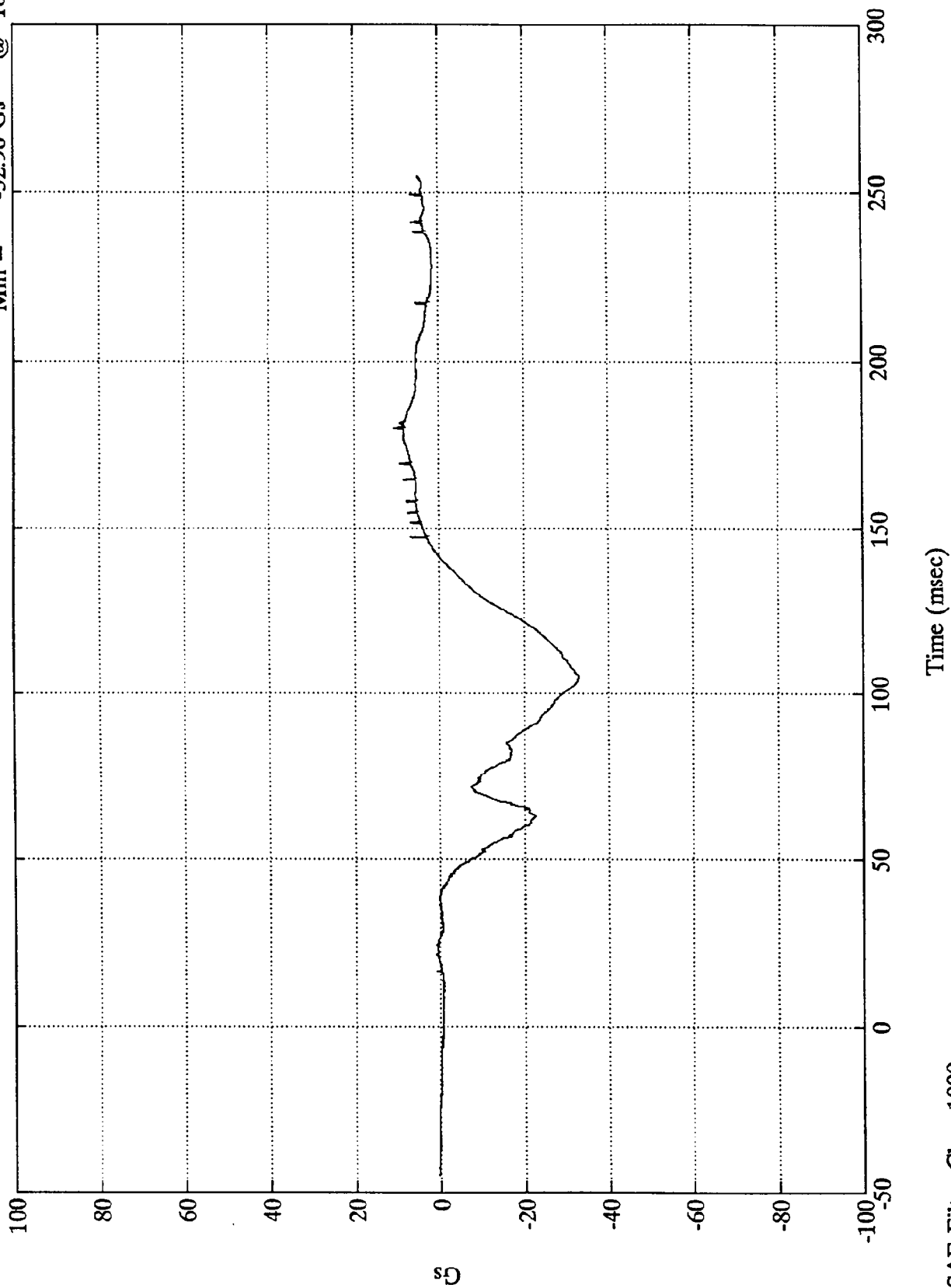
TEST NO. J43-1-1054

DUMMY DATA

CLASS	FILTER CHANNEL
Head Accelerations	1000
Chest Accelerations	180
Femur Forces	600
Belt Loads	60

NCAP OPT TEST 1 1991 NISSAN STANZA

Pos. 1 Head X
Max = 10.58 Gs @ 180.00 msec
Min = -32.96 Gs @ 105.12 msec



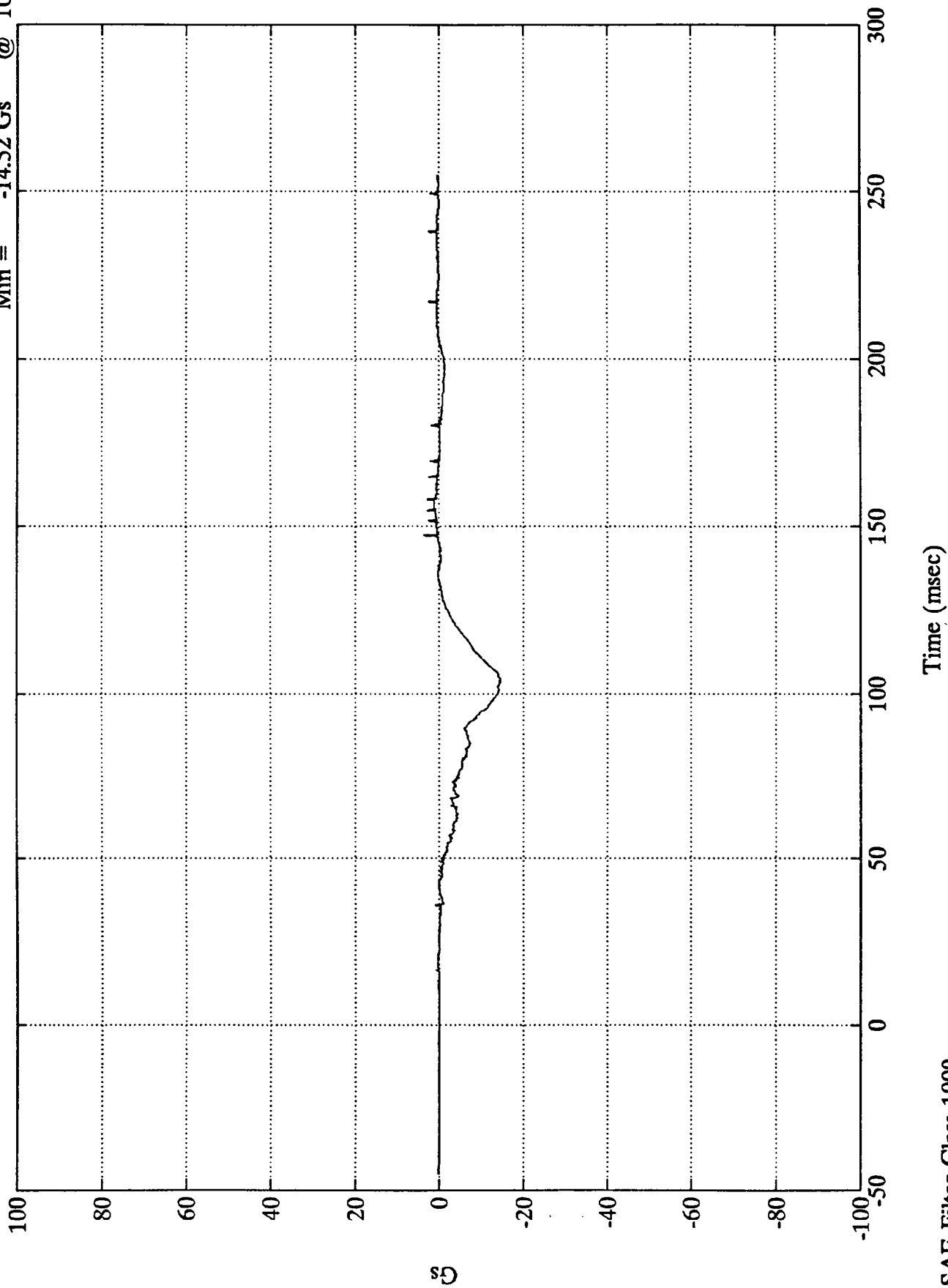
gs
B-72

7880-1

SAE Filter Class 1000

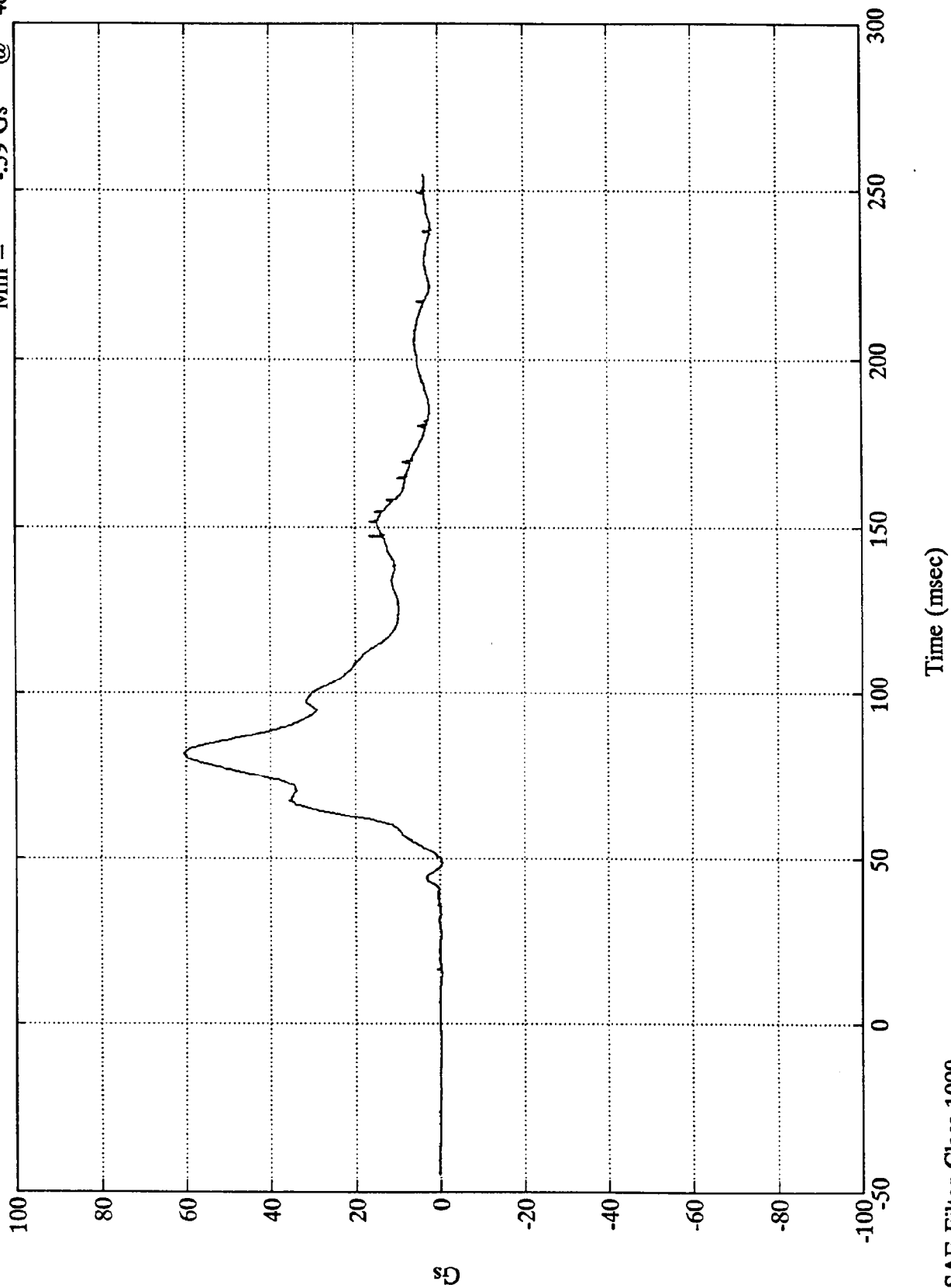
NCAP OPT TEST 1 1991 NISSAN STANZA

Pos. 1 Head Y
Max = 3.53 Gs @ 147.36 msec
Min = -14.52 Gs @ 104.52 msec



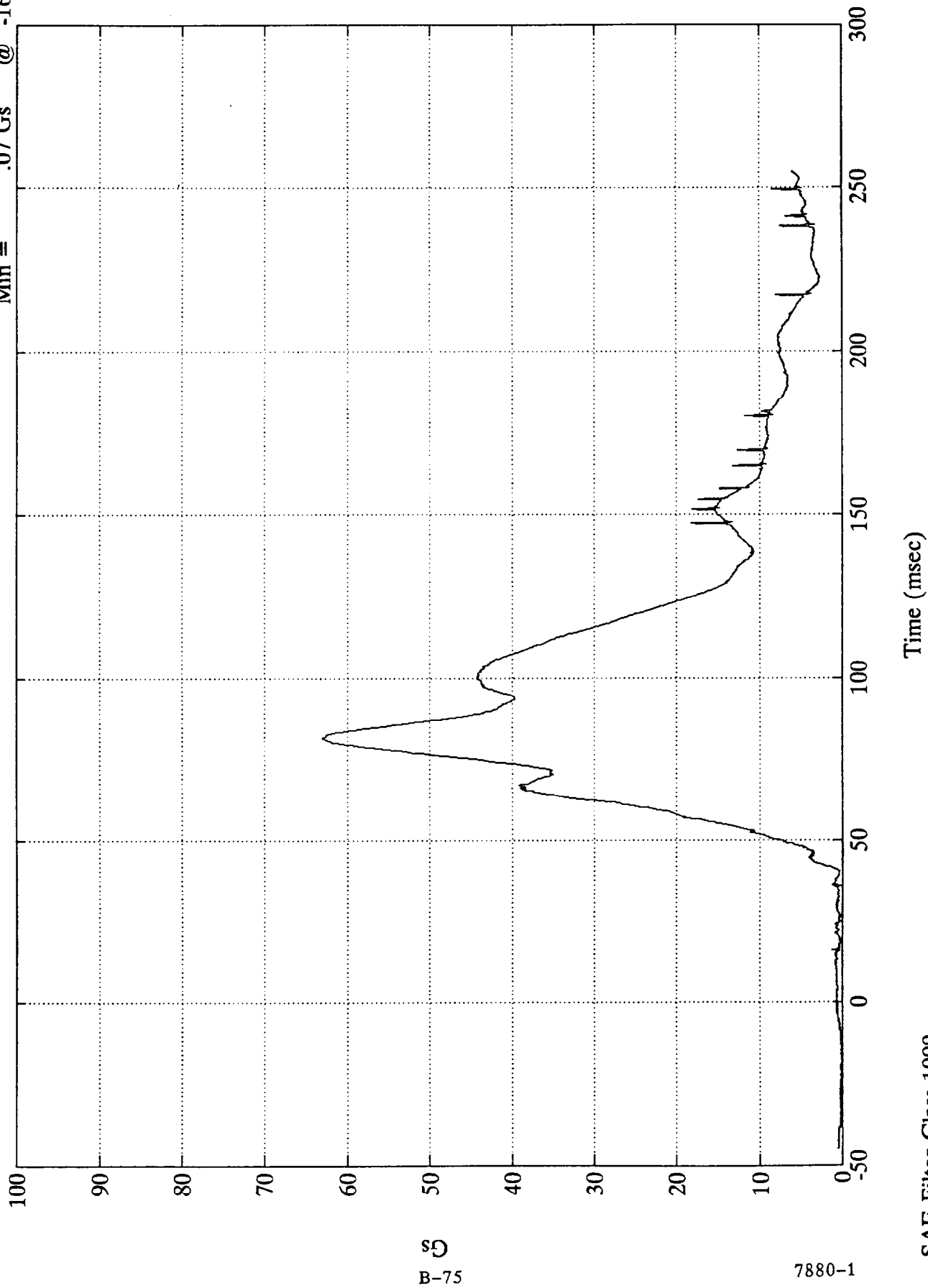
NCAP OPT TEST 1 1991 NISSAN STANZA

Pos. 1 Head Z
Max = 60.32 Gs @ 81.48 msec
Min = -5.59 Gs @ 48.84 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

Pos. 1 Head Resultant
Max = 63.01 Gs @ 81.36 msec
Min = .07 Gs @ -16.32 msec



B-75

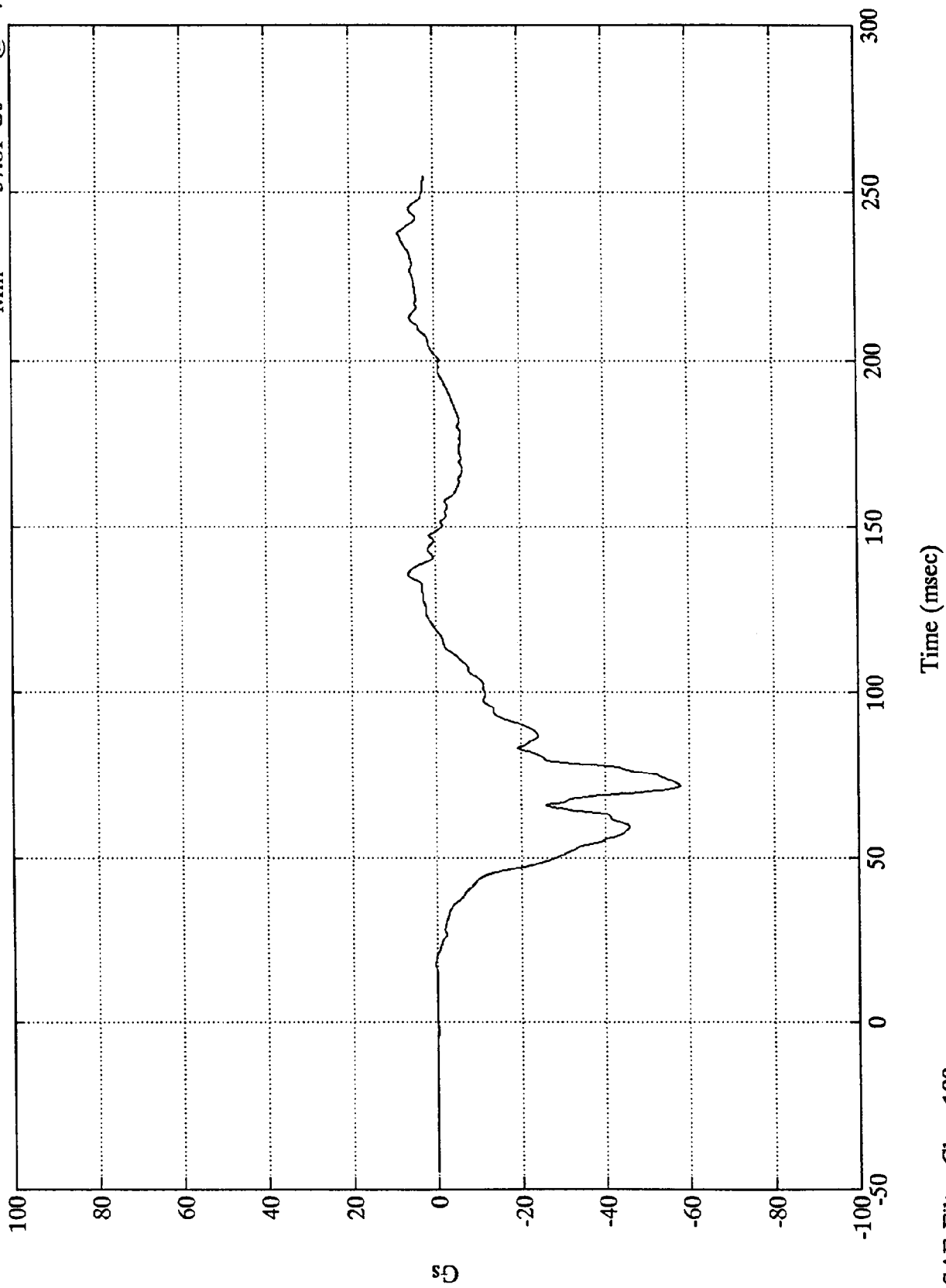
7880-1

SAE Filter Class 1000

NCAP OPT TEST 1 1991 NISSAN STANZA

Pos. 1 Chest X

Max = 8.44 Gs @ 237.84 msec
Min = -57.81 Gs @ 71.87 msec



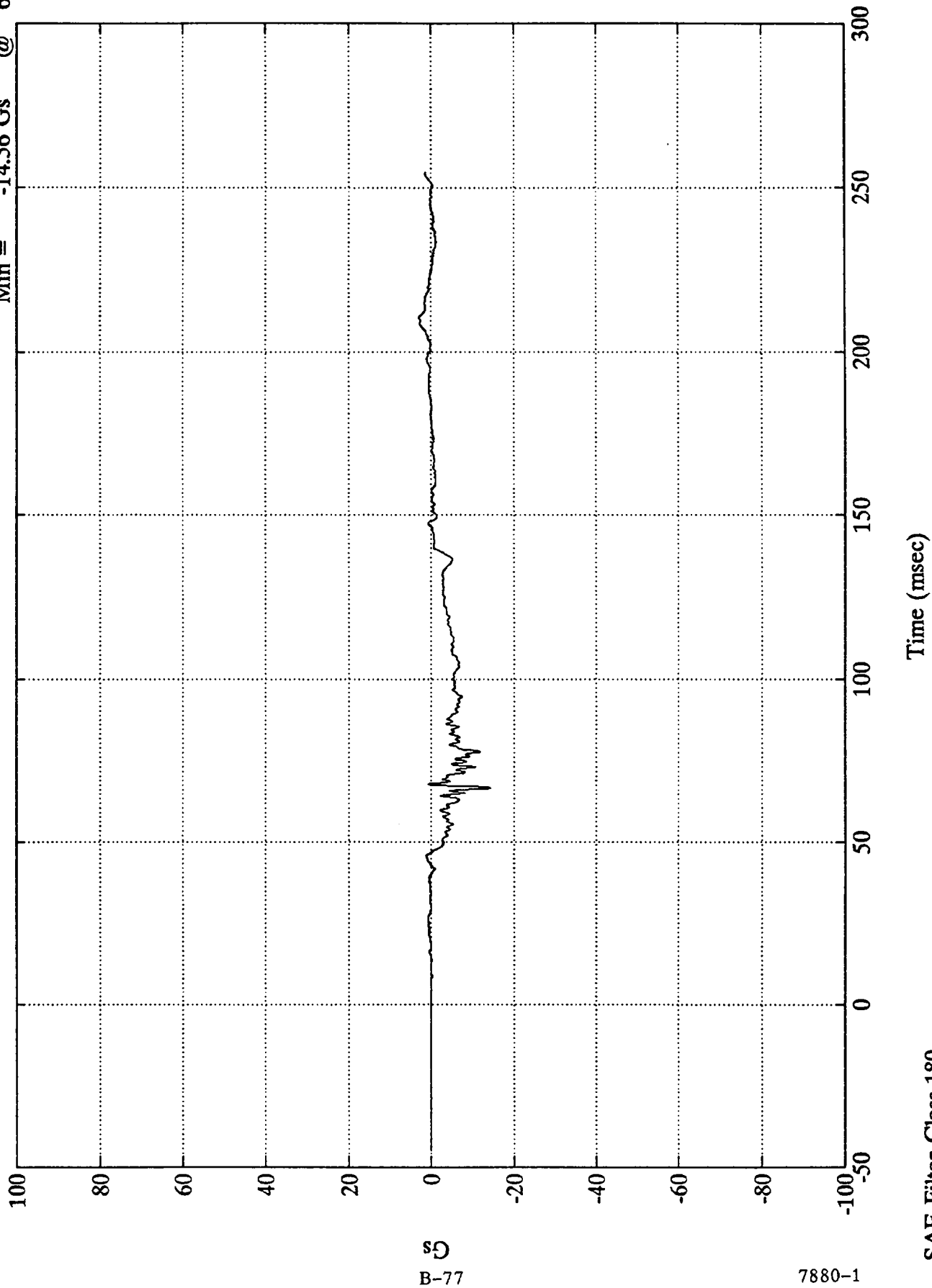
B-76

7880-1

SAE Filter Class 180

NCAP OPT TEST 1 1991 NISSAN STANZA

Pos. 1 Chest Y
Max = 2.94 Gs @ 210.24 msec
Min = -14.56 Gs @ 66.84 msec



B-77

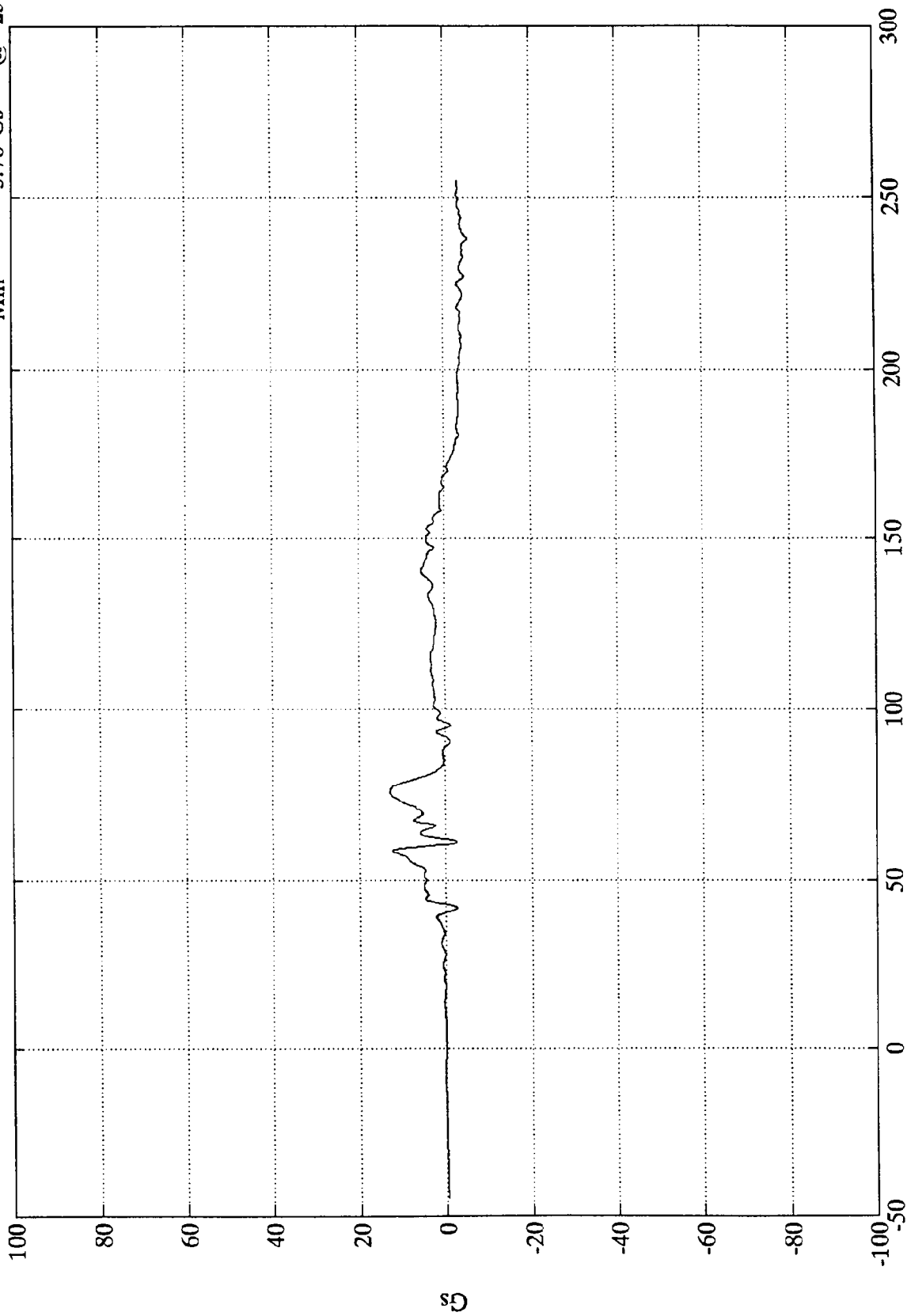
7880-1

SAE Filter Class 180

NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 13.06 Gs @ 75.36 msec
Min = -5.76 Gs @ 238.08 msec

Pos. 1 Chest Z

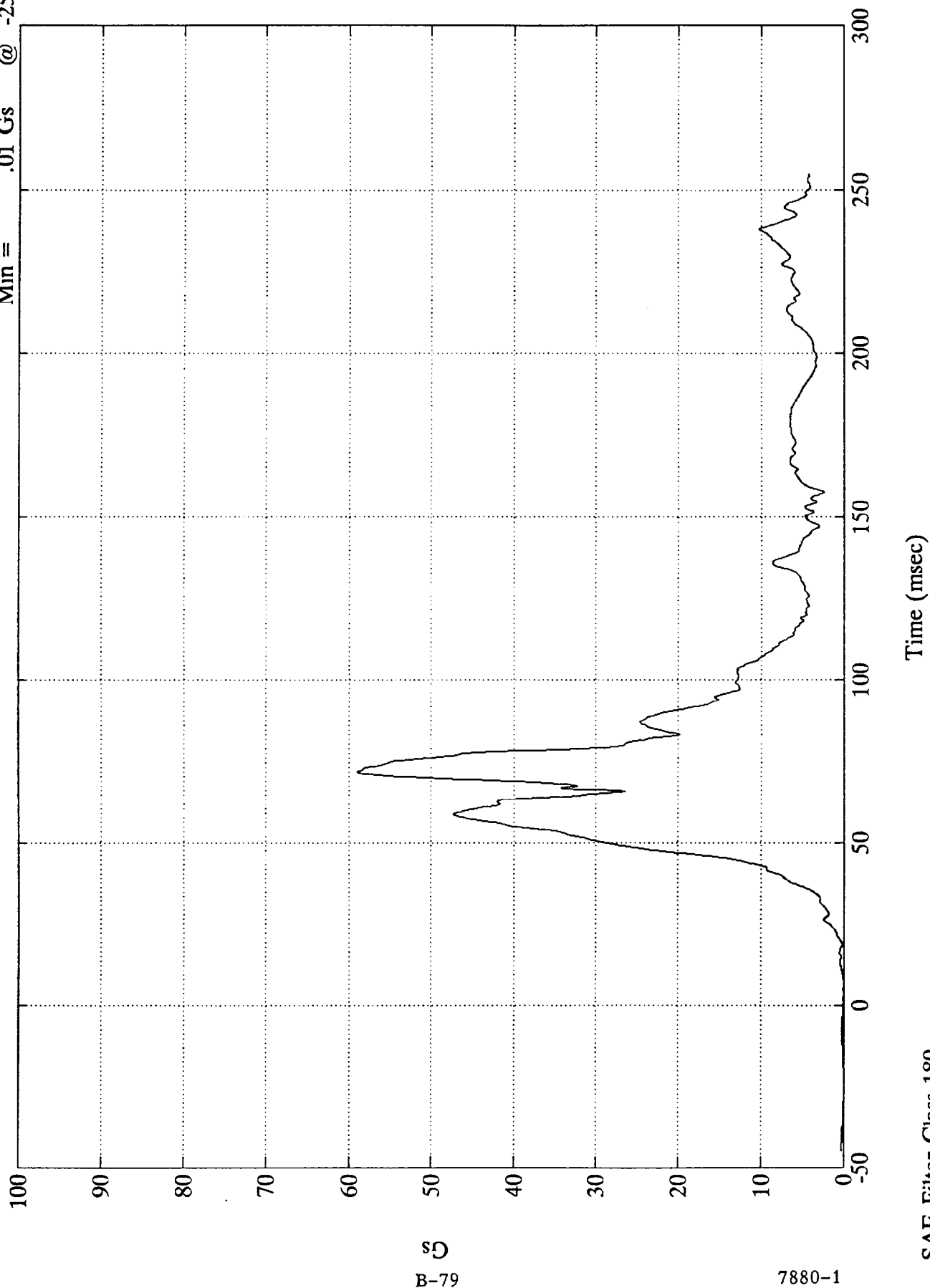


Time (msec)

SAE Filter Class 180

NCAP OPT TEST 1 1991 NISSAN STANZA

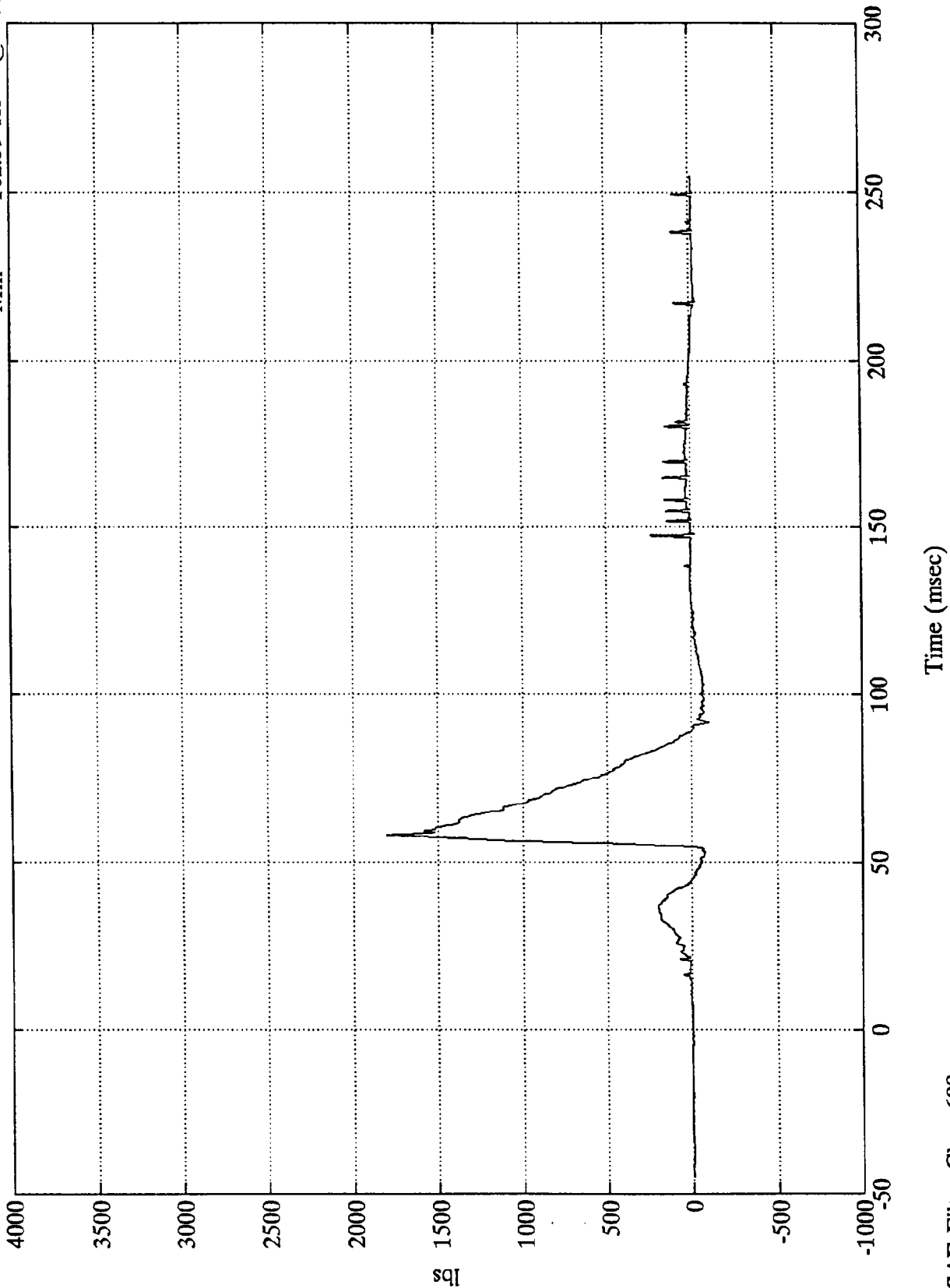
Pos. 1 Chest Resultant
Max = 58.99 Gs @ 71.87 msec
Min = .01 Gs @ -25.32 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

Pos. 1 Left Femur

Max = 1802.96 lbs @ 57.95 msec
Min = -102.39 lbs @ 91.55 msec



B-80

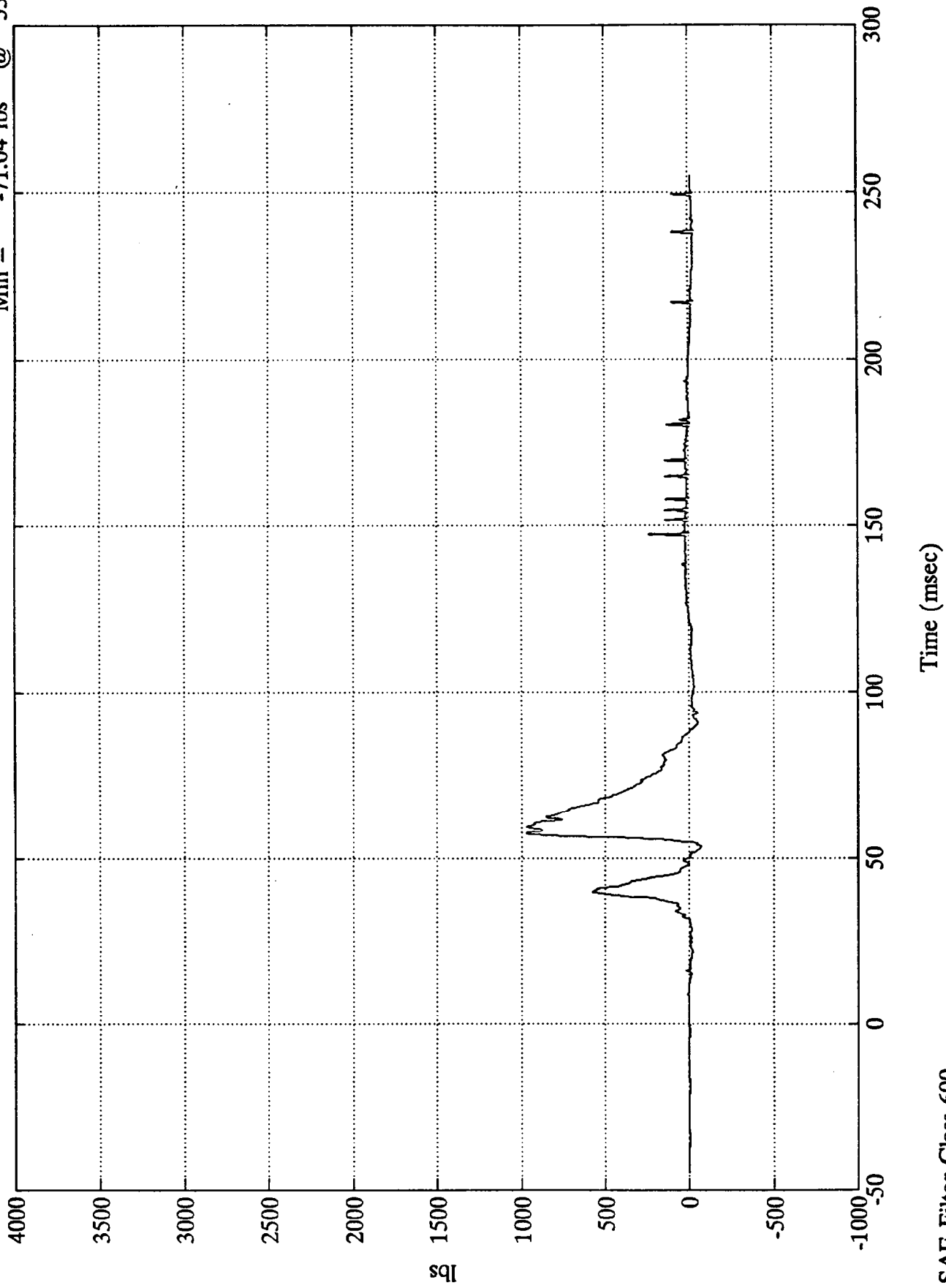
7880-1

SAE Filter Class 600

NCAP OPT TEST 1 1991 NISSAN STANZA

Pos. 1 Right Femur

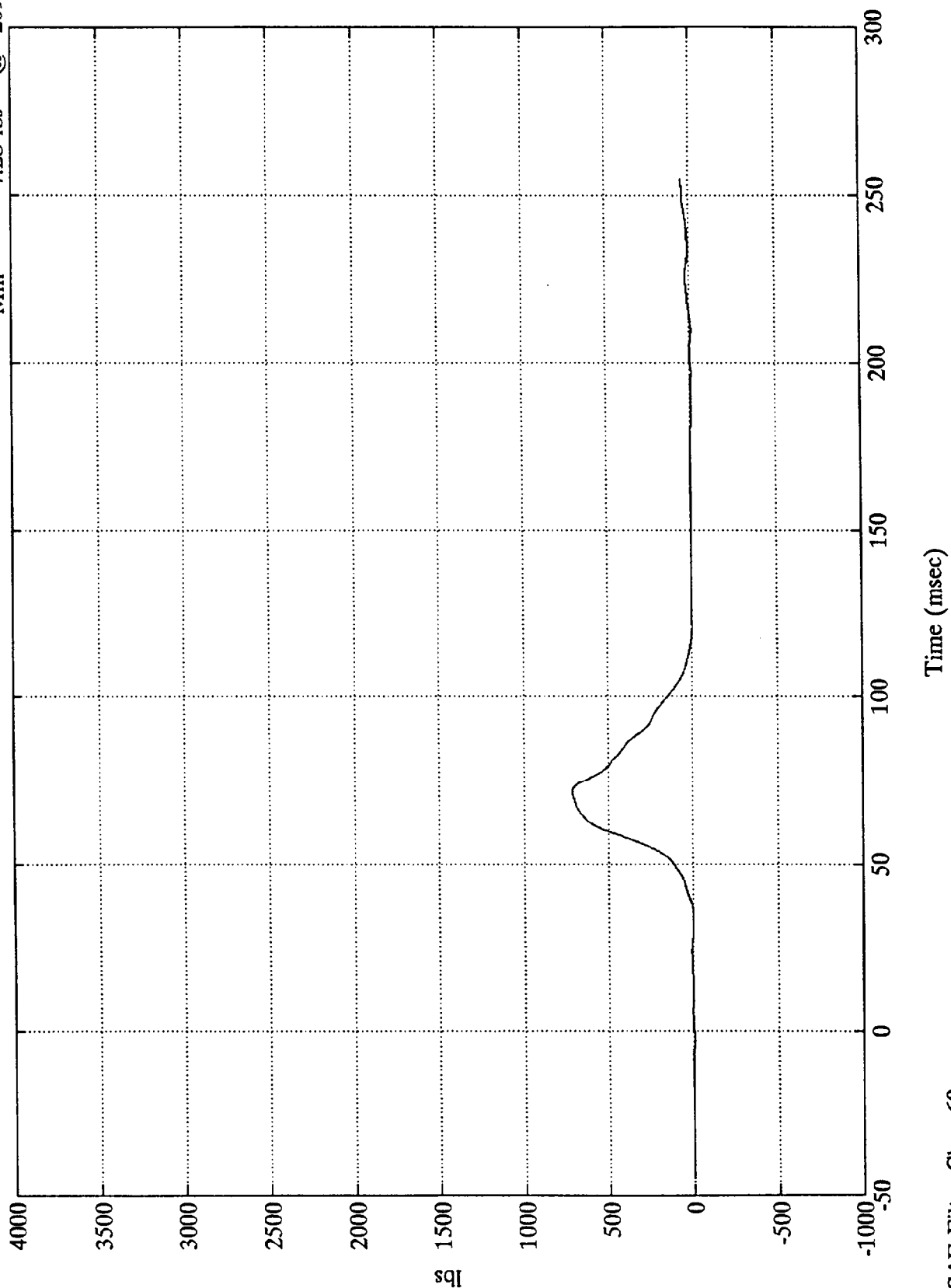
Max = 970.86 lbs @ 57.47 msec
Min = -71.04 lbs @ 53.52 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 713.30 lbs @ 71.76 msec
Min = -7.28 lbs @ 209.52 msec

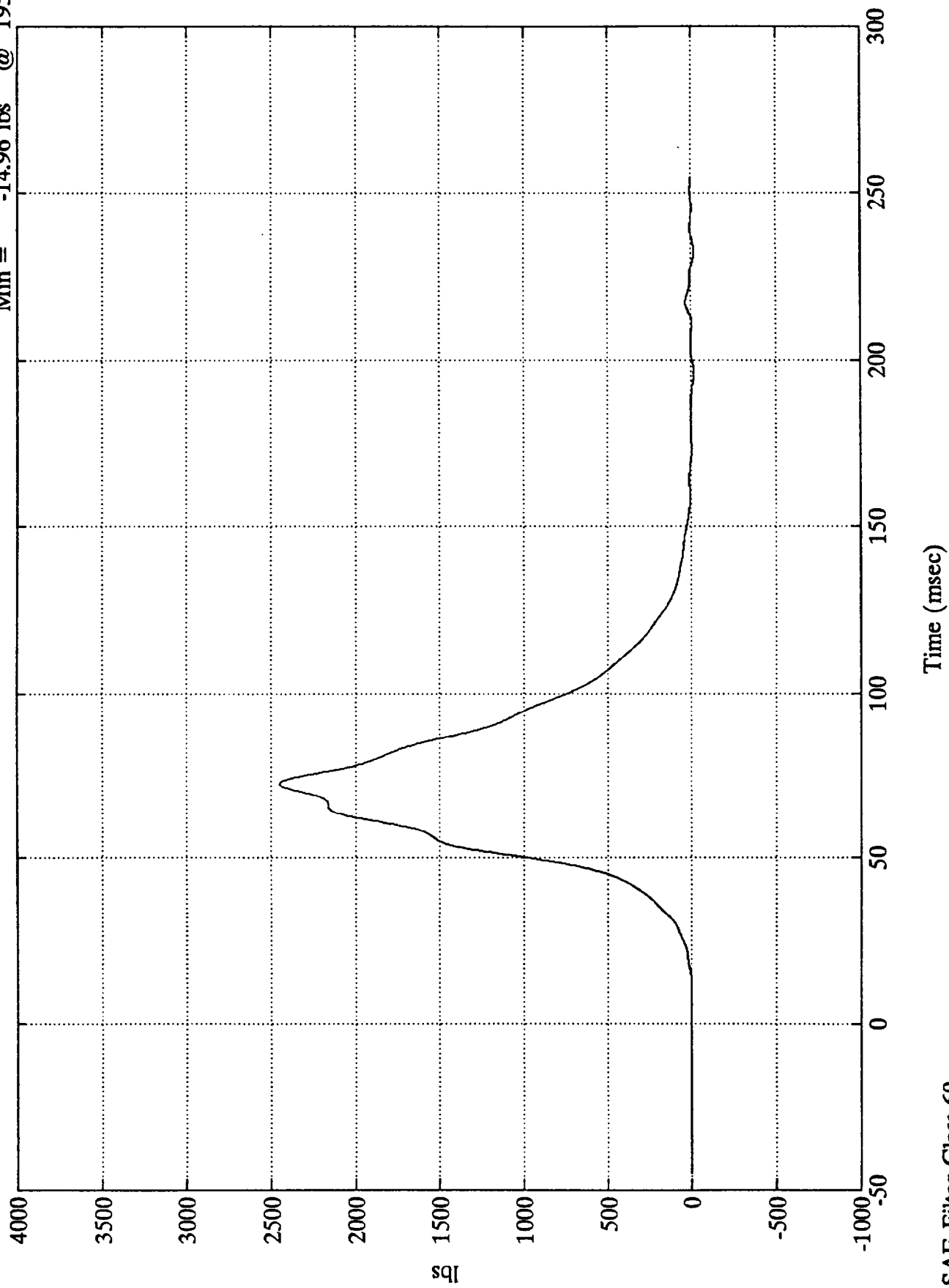
Pos. 1 Left Belt Load



NCAP OPT TEST 1 1991 NISSAN STANZA

Pos. 1 Torso Belt Load

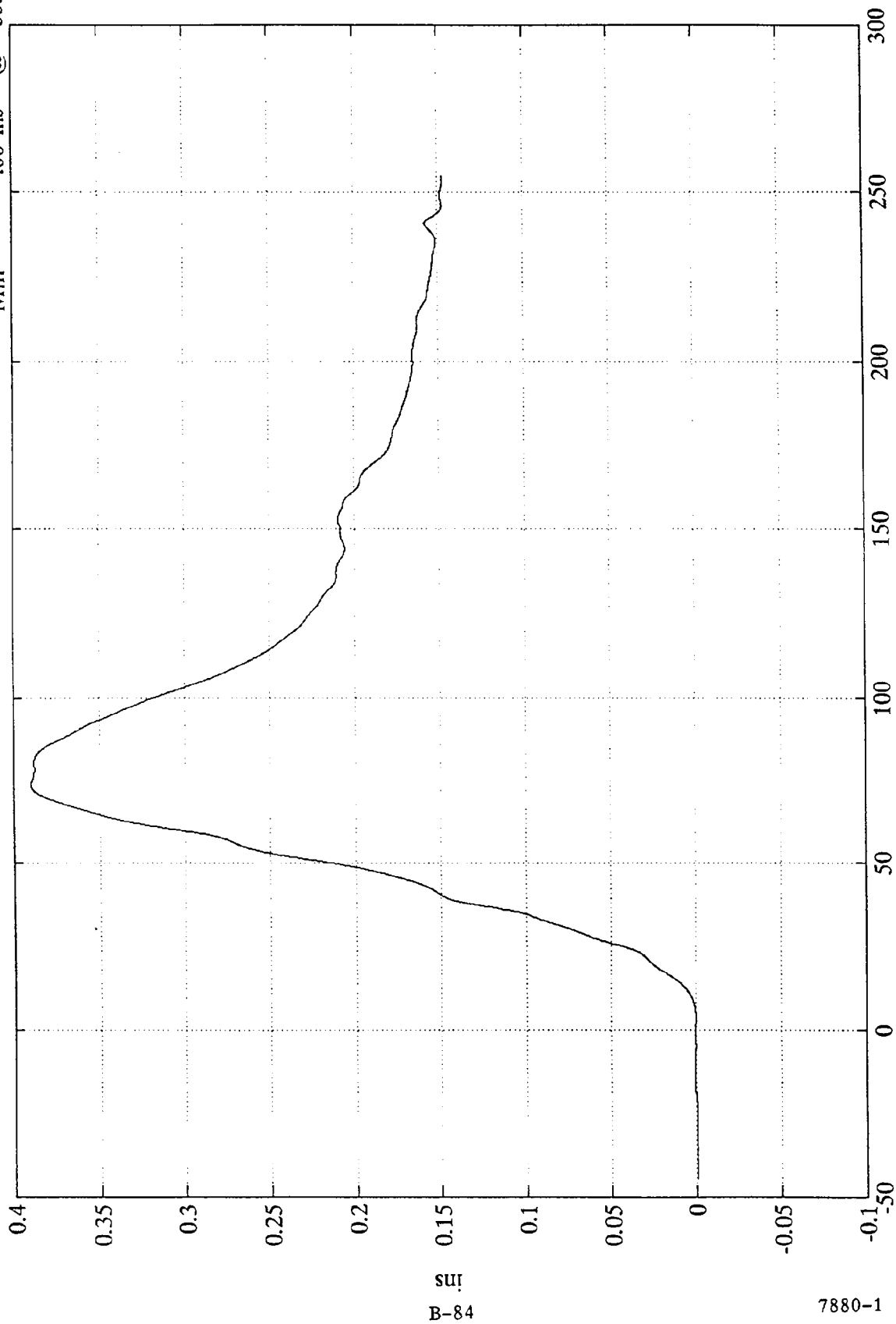
Max = 2451.95 lbs @ 72.48 msec
Min = -14.96 lbs @ 195.36 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

Max = .38 ins @ 73.44 msec
Min = -.00 ins @ -33.96 msec

Pos. 1 Belt Elongation

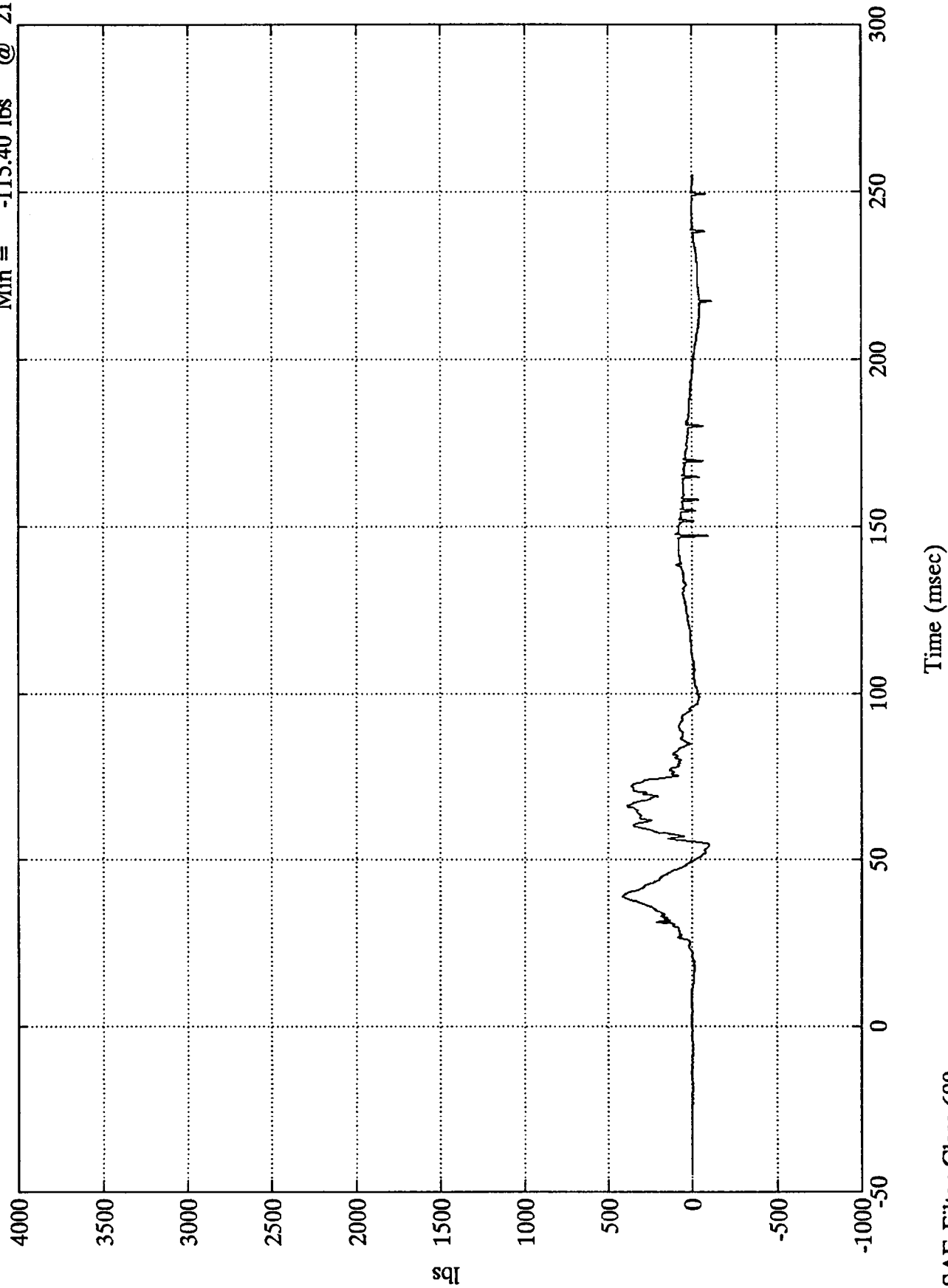


Measured over 2.5 inches

SAE Filter Class 60

NCAP OPT TEST 1 1991 NISSAN STANZA

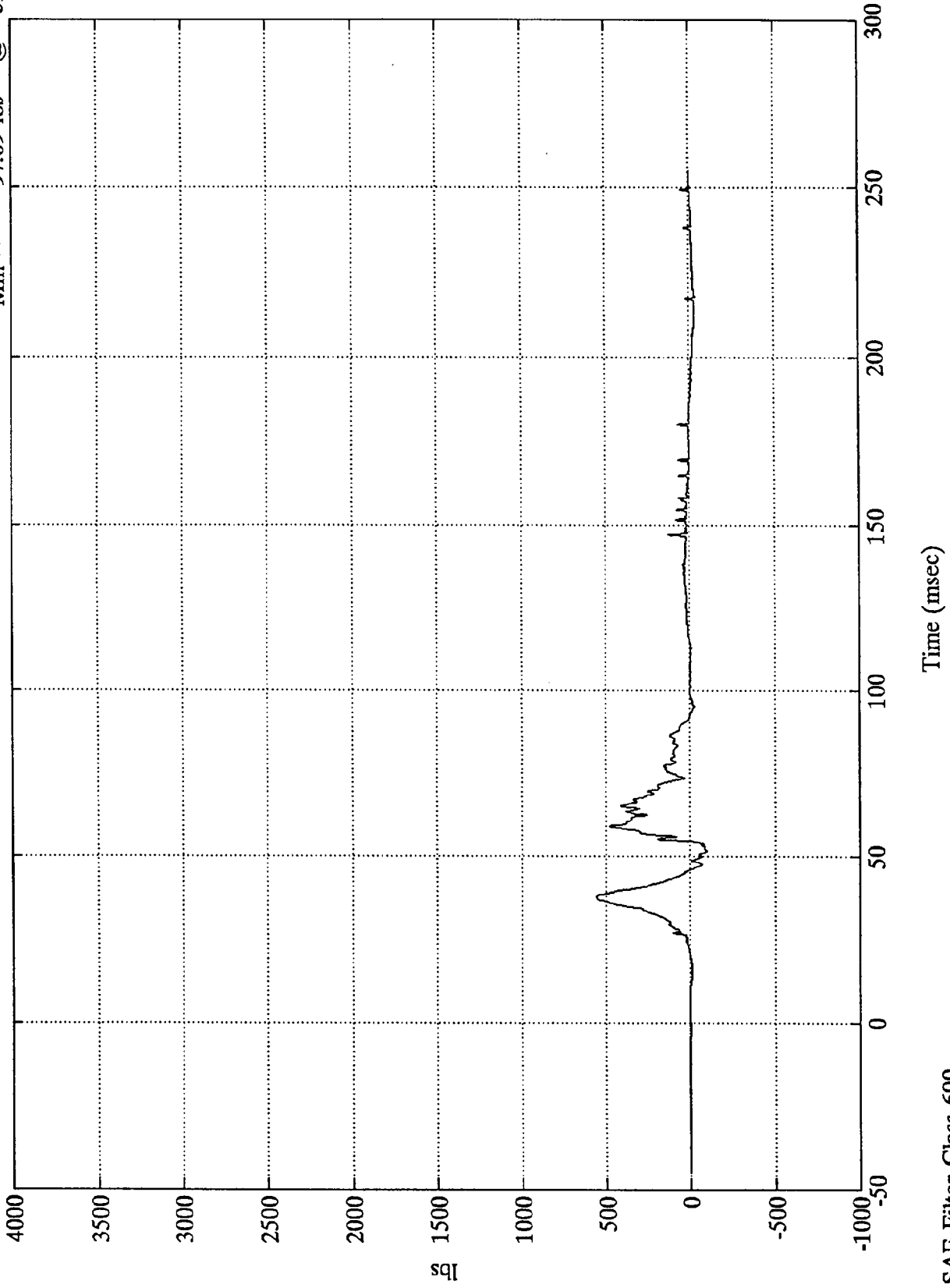
Pos. 2 Left Femur
Max = 413.19 lbs @ 39.11 msec
Min = -115.40 lbs @ 216.96 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

Pos. 2 Right Femur

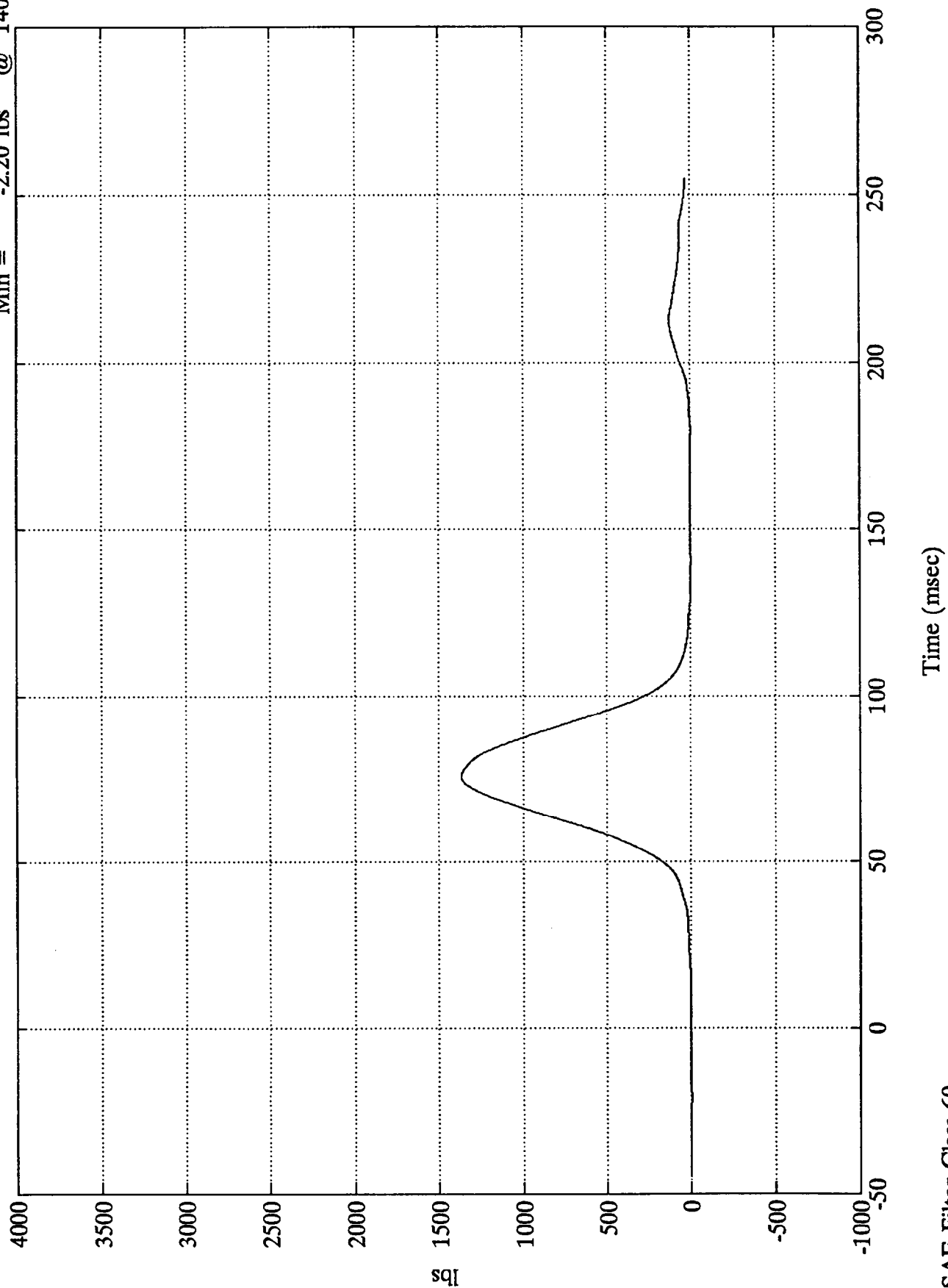
Max = 558.22 lbs @ 37.31 msec
Min = -97.09 lbs @ 51.60 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

Pos. 2 Right Belt Load

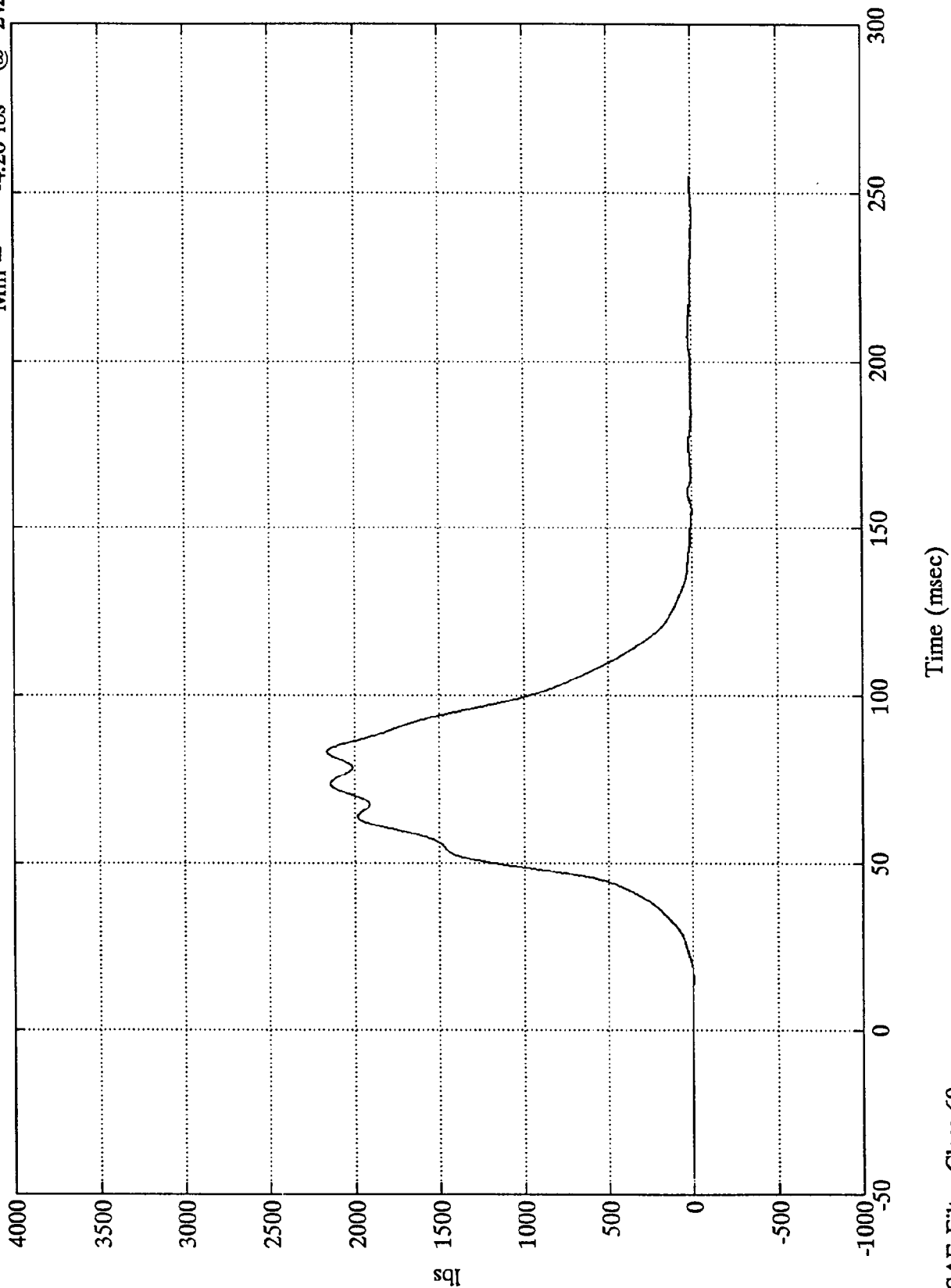
Max = 1366.24 lbs @ 75.84 msec
Min = -2.20 lbs @ 140.40 msec



NCAP OPT TEST 1 1991 NISSAN STANZA

Max = 2165.05 lbs @ 83.04 msec
Min = -4.26 lbs @ 242.88 msec

Pos. 2 Torso Belt Load



NCAP OPT TEST 1 1991 NISSAN STANZA

Max = .39 ins @ 86.04 msec
Min = -.00 ins @ 11.03 msec

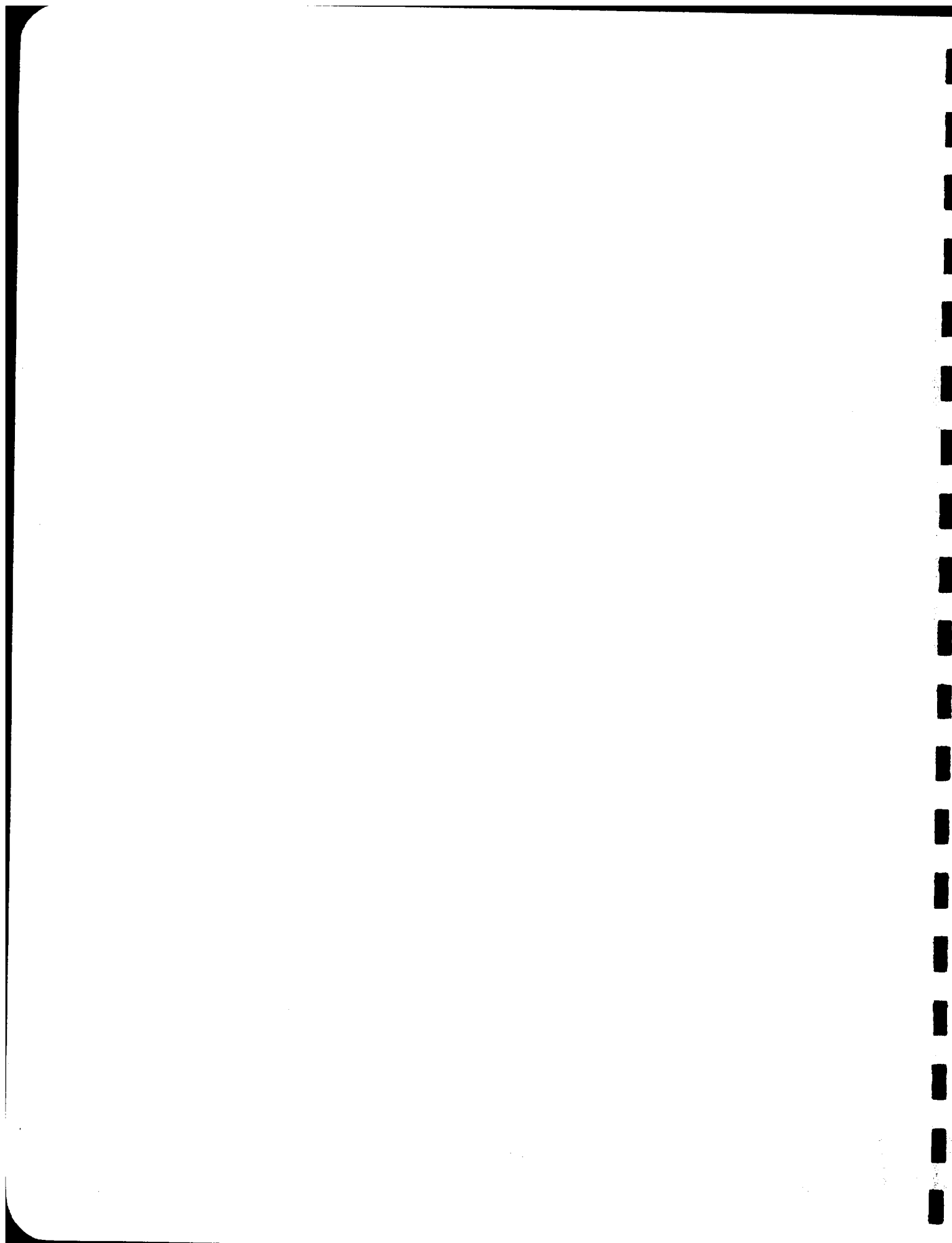
Pos. 2 Belt Elongation



Time (msec)

Measured over 2.5 inches

SAE Filter Class 60



Appendix C

PART 572-B DUMMY CONFIGURATION
AND PERFORMANCE VERIFICATION DATA SHEETS

Appendix C contains the results from certification tests performed on the 50th percentile male anthropomorphic test devices utilized for this crash test. The results indicate that the dummies meet all of the performance requirements of the six standard tests as specified in 49 CFR Part 572, Federal Register, Volume 42, No. 25, dated February 7, 1977.

The tests were conducted at the Dummy Certification Test Facility of Calspan Corporation, Advanced Technology Center. A summary of the test results, and Part 572 specifications are included in this Appendix.

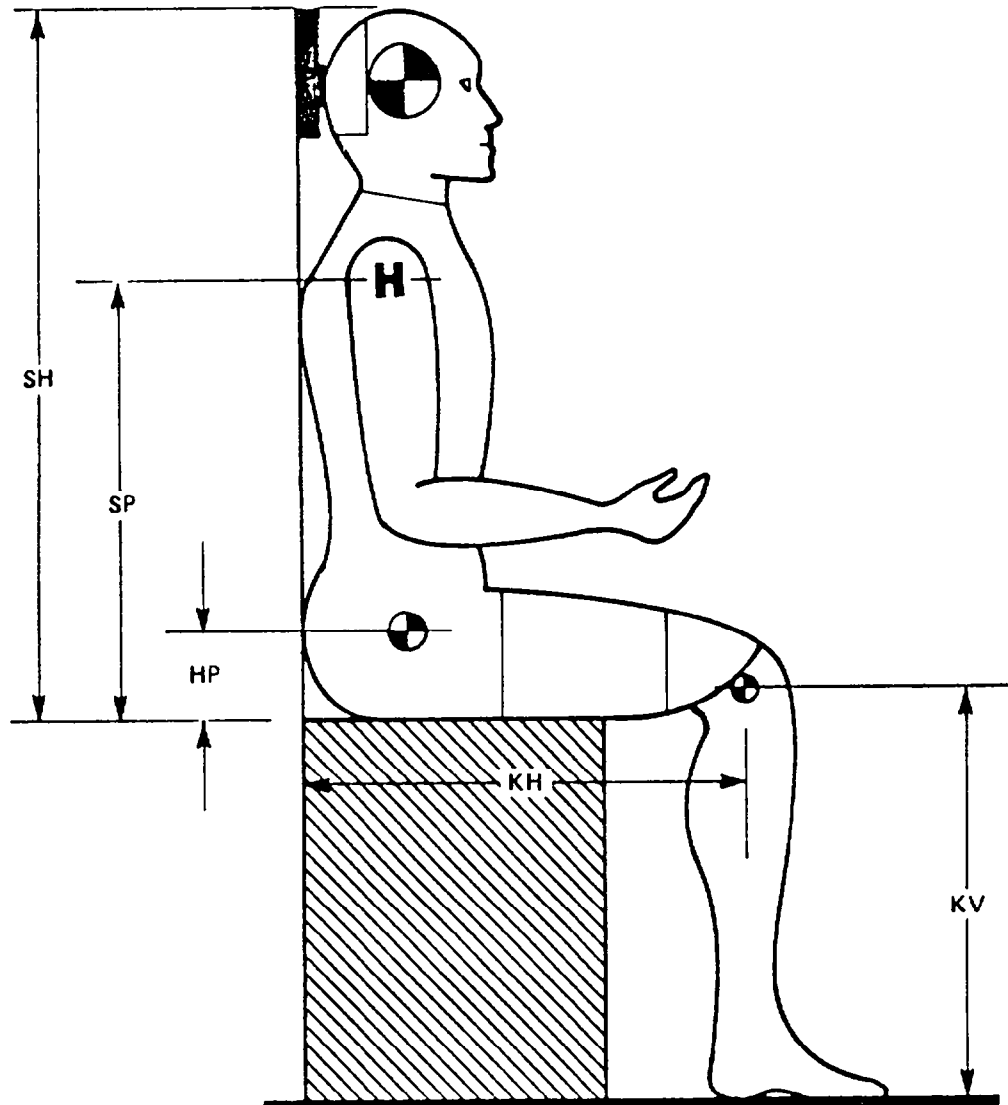
Dummy serial numbers and certification dates are:

<u>Serial No.</u>	<u>Completion Date</u>
818	4-3-91
819	4-3-91

Electronic Test Equipment

The complement of signal conditioning, recording and display equipment, in conjunction with dummy certification testing, can be found in New Car Assessment and Standards Inducant Testing Final Report No. 6525-V-1.

Figure 10
DUMMY CONFIGURATION DIMENSIONS



PART 572 DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

NHTSA DUMMY I.D. NUMBER.: 818

I. CONFIGURATION VERIFICATION DATA

	P. 572 SPECIFICATION	PRE-TEST if required	POST-TEST if required
DATE OF CONFIGURATION VERIFICATION	XXXXXXXXXXXXXX	4-3-91	
VERIFICATION NUMBER FOR DUMMY (*)	XXXXXXXXXXXXXX	1	
SH - Seated Height	35.6 to 35.8"	35.7 "	"
SP - Shoulder Pivot Height	21.8 to 22.4"	22.1 "	"
HP - Hip Pivot Height	3.9" ref.	3.9 "	"
KH - Knee Pivot from Back Line	20.1 to 20.7"	20.4 "	"
KV - Knee Pivot from floor	19.3 to 19.9"	19.4 "	"
SW - Shoulder Width	17.8 to 18.4"	18.1 "	"
HW - Hip Width	14.0 to 15.4"	14.7 "	"

II. PERFORMANCE VERIFICATION DATA:

		PRE-TEST (if required)	POST-TEST (if required)
DATE OF PERFORMANCE VERIFICATION		4-3-91	
SEQUENTIAL VERIFICATION NUMBER FOR DUMMY (*)		1	
VERIFICATION LAB TEMPERATURE (66 to 78 deg.)		69-72 deg	deg
VERIFICATION LAB HUMIDITY (10 TO 70 %)		28-33 %	%
TEST PARAMETER	SPECIFICATION		
1. HEAD DROP TEST			
a. peak resultant accel.	210 to 260 G's	250.4 G's	G's
b. peak lateral accel.	<= 10 G's	1.7 G's	G's
c. Time above 100 G's	0.9 to 1.5 ms.	1.13 ms	ms

* Sequential number beginning with "1" at the start of each fiscal years's crash test program.

TECHNICIAN'S NAME: IVAN MINKEWICZ

II. PERFORMANCE VERIFICATION DATA (continued)

NHTSA DUMMY I.D. NUMBER: 818

TEST PARAMETER		SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
2. NECK BENDING TEST				
a. Pendulum Speed		21.5 to 25.5 fps.	23.9 fps	
b. Pend. Avg. Decel. over t3 to t2		20 to 24 G's	23.9 G's	
c. Peak Resultant Head Acceleration		26 G's max.	24.25 G's	
d. Pendulum Decel. (t2-t1)		<= 3 ms.	2.98 ms	
e. Pendulum Decel. (t3-t2)		25 to 30 ms.	26.04 ms	
f. Pendulum Decel. (t4-t3)		<= 10 ms.	8.56 ms	
g. Max. Head Rotation		63 to 73 deg.	72.11 deg	
h. Chordal Displacement				

HEAD ROTATION ANGLE				
0 deg.	Time	-2 to 2 ms.	0.0 ms	
	Displ.	-.5 to .5"	0.0 "	
30 deg.	Time	25.6 to 34.4 ms.	30.26 ms	
	Displ.	2.1 to 3.1"	2.72 "	
60 deg.	Time	40.3 to 51.7 ms.	45.39 ms	
	Displ.	4.3 to 5.3"	4.99 "	
Maximum	Time	53.2 to 66.8 ms.	58.04 ms	
	Displ.	5.0 to 6.0"	5.35 "	
60 deg.	Time	67.0 to 83.0 ms.	74.65 ms	
	Displ.	4.3 to 5.3"	4.45 "	
30 deg.	Time	85.4 to 104.6 ms.	90.15 ms	
	Displ.	2.1 to 3.1"	2.13 "	
0 deg.	Time	101.0 - 123.0 ms.	102.8 ms	
	Displ.	-.5 to 0.5"	0.0 "	

TECHNICIANS NAME: IVAN MINKEWICZ

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA (continued)

II. PERFORMANCE VERIFICATION DATA (continued)

NHTSA DUMMY I.D. NUMBER: 818

TEST PARAMETER	SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
3. ABDOMINAL COMPRESSION			
TEST: (preload = 50 lbs.)			
a. Force @ 0.5"	23 to 36 lbs.	24 lbs	
b. Force @ 0.75"	36 to 50 lbs.	38 lbs	
c. Force @ 1.0"	50 to 63 lbs.	55 lbs	
d. Force @ 1.3"	73 to 88 lbs.	80.5 lbs	
4. LUMBAR FLEXION TEST:			
a. Force @ 20 deg.	22 to 34 lbs.	32 lbs	
b. Force @ 30 deg.	34 to 46 lbs.	41 lbs	
c. Force @ 40 deg.	46 to 58 lbs.	54.5 lbs	
d. Return Angle	12 deg. maximum	10 deg	
5. CHEST IMPACT TESTS:			
A. High Speed			
(1) Probe Speed	21.78-22.22 fps.	21.8 fps	
(2) Peak Deflection	1.7" maximum	1.48 "	
(3) Peak Resistive Force	2250 lbs maximum	2120 lbs	
(4) Internal Hysteresis	50 to 70%	58.9 %	
B. Low Speed			
(1) Probe Speed	13.86-14.14 fps.	14.0 fps	
(2) Peak Deflection	1.1" maximum	.95 "	
(3) Peak Resistive Force	1450 lbs maximum	1301 lbs	
(4) Internal Hysteresis	50 to 70%	58.5 %	

TECHNICIAN'S NAME: IVAN MINKEWICZ

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA (continued)

II. PERFORMANCE VERIFICATION DATA (continued)

NHTSA DUMMY I.D. NUMBER: 818

		PRE-TEST (if required)	POST-TEST (if required)
TEST PARAMETER	SPECIFICATION		
6. KNEE IMPACT TEST			
A. Left Knee			
(1) Probe Speed	6.76 to 7.04 fps	7.0 fps	
(2) Maximum Force	1850 to 2500 lbs	1934 lbs	
(3) Time above 1000 lbs.	1.7 ms. minimum	1.875 ms	
B. Right Knee			
(1) Probe Speed	6.76 to 7.04 fps	7.0 fps	
(2) Maximum Force	1850 to 2500 lbs	1881 lbs	
(3) Time Above 1000 lbs.	1.7 ms. minimum	1.875 ms	

REMARKS:

TECHNICIAN'S NAME: IVAN MINKEWICZ

INSTRUMENT CALIBRATION INFORMATION

NHTSA DUMMY ID NUMBER 818

DUMMY INSTRUMENT--	MFG	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
1. HEAD ACCELEROMETER--				
HX LONGITUDINAL--	ENDEVCO	FY05	3-91	9-91
HY LATERAL--	ENDEVCO	GD98	3-91	9-91
HZ VERTICAL--	ENDEVCO	CD75	3-91	9-91
2. CHEST ACCELEROMETER--				
CX LONGITUDINAL--	CEC	A73	3-91	9-91
CY LATERAL--	ENDEVCO	CE06	3-91	9-91
CZ VERTICAL--	CEC	A44	3-91	9-91
3. FEMUR LOAD CELLS				
LEFT SIDE	GSE	954	3-91	9-91
RIGHT SIDE	GSE	955	3-91	9-91
CALIBRATION LABORATORY INSTRUMENTS--				
1. PENDULUM ACC.--	CEC	A160	11-90	5-91
2. TEST PROBE ACCELEROMETER--	CEC	A161	11-90	5-91
3. LUMBAR FLEXION TEST PUSH FORCE GAUGE--	TRANS- DUCER INC	20051	1-91	7-91
4. ABDOMINAL COMPRESS. TEST FORCE GAUGE--	BLH	72952	1-91	7-91
5. ABDOMINAL COMPRESS. TEST FORCE GAUGE--	CIC	567-11	1-91	7-91

PART 572 DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

NHTSA DUMMY I.D. NUMBER.: 819

I. CONFIGURATION VERIFICATION DATA

	P. 572 SPECIFICATION	PRE-TEST if required	POST-TEST if required
DATE OF CONFIGURATION VERIFICATION	XXXXXXXXXXXXXX	4-3-91	
VERIFICATION NUMBER FOR DUMMY (*)	XXXXXXXXXXXXXX	1	
SH - Seated Height	35.6 to 35.8"	35.6 "	"
SP - Shoulder Pivot Height	21.8 to 22.4"	22.0 "	"
HP - Hip Pivot Height	3.9" ref.	3.9 "	"
KH - Knee Pivot from Back Line	20.1 to 20.7"	20.3 "	"
KV - Knee Pivot from floor	19.3 to 19.9"	19.5 "	"
SW - Shoulder Width	17.8 to 18.4"	18.1 "	"
HW - Hip Width	14.0 to 15.4"	14.4 "	"

II. PERFORMANCE VERIFICATION DATA:

		PRE-TEST (if required)	POST-TEST (if required)
DATE OF PERFORMANCE VERIFICATION		4-3-91	
SEQUENTIAL VERIFICATION NUMBER FOR DUMMY (*)		1	
VERIFICATION LAB TEMPERATURE (66 to 78 deg.)		69-72 deg	deg
VERIFICATION LAB HUMIDITY (10 TO 70 %)		28-33 %	%
TEST PARAMETER	SPECIFICATION		
1. HEAD DROP TEST			
a. peak resultant accel.	210 to 260 G's	258.4 G's	G's
b. peak lateral accel.	<= 10 G's	3.7 G's	G's
c. Time above 100 G's	0.9 to 1.5 ms.	1.13 ms	ms

* Sequential number beginning with "1" at the start of each fiscal years's crash test program.

TECHNICIAN'S NAME: IVAN MINKEWICZ

PART 572 DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA...continued

II. PERFORMANCE VERIFICATION DATA (continued)

NHTSA DUMMY I.D. NUMBER: 819

TEST PARAMETER		SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
2. NECK BENDING TEST				
a. Pendulum Speed		21.5 to 25.5 fps.	23.9 fps	
b. Pend. Avg. Decel. over t3 to t2		20 to 24 G's	23.3 G's	
c. Peak Resultant Head Acceleration		26 G's max.	25.74 G's	
d. Pendulum Decel. (t2-t1)		<= 3 ms.	2.85 ms	
e. Pendulum Decel. (t3-t2)		25 to 30 ms.	25.79 ms	
f. Pendulum Decel. (t4-t3)		<= 10 ms.	7.44 ms	
g. Max. Head Rotation		63 to 73 deg.	72.95 deg	
h. Chordal Displacement				
HEAD ROTATION ANGLE				
0 deg.	Time	-2 to 2 ms.	0.0 ms	
	Displ.	-.5 to .5"	0.0 "	
30 deg.	Time	25.6 to 34.4 ms.	28.89 ms	
	Displ.	2.1 to 3.1"	2.51 "	
60 deg.	Time	40.3 to 51.7 ms.	43.65 ms	
	Displ.	4.3 to 5.3"	4.79 "	
Maximum	Time	53.2 to 66.8 ms.	61.88 ms	
	Displ.	5.0 to 6.0"	5.48 "	
60 deg.	Time	67.0 to 83.0 ms.	76.51 ms	
	Displ.	4.3 to 5.3"	4.4 "	
30 deg.	Time	85.4 to 104.6 ms.	92.63 ms	
	Displ.	2.1 to 3.1"	2.11 "	
0 deg.	Time	101.0 - 123.0 ms.	106.65 ms	
	Displ.	-.5 to 0.5"	0.0 "	

TECHNICIANS NAME: IVAN MINKEWICZ

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA (continued)

II. PERFORMANCE VERIFICATION DATA (continued)

NHTSA DUMMY I.D. NUMBER: 819

		PRE-TEST (if required)	POST-TEST (if required)
TEST PARAMETER	SPECIFICATION		
3. ABDOMINAL COMPRESSION			
TEST: (preload = 50 lbs.)			
a. Force @ 0.5"	23 to 36 lbs.	27 lbs	
b. Force @ 0.75"	36 to 50 lbs.	40.5 lbs	
c. Force @ 1.0"	50 to 63 lbs.	54.5 lbs	
d. Force @ 1.3"	73 to 88 lbs.	75.5 lbs	
4. LUMBAR FLEXION TEST:			
a. Force @ 20 deg.	22 to 34 lbs.	29 lbs	
b. Force @ 30 deg.	34 to 46 lbs.	41 lbs	
c. Force @ 40 deg.	46 to 58 lbs.	55 lbs	
d. Return Angle	12 deg. maximum	10 deg	
5. CHEST IMPACT TESTS:			
A. High Speed			
(1) Probe Speed	21.78-22.22 fps.	21.8 fps	
(2) Peak Deflection	1.7" maximum	1.46 "	
(3) Peak Resistive Force	2250 lbs maximum	2142 lbs	
(4) Internal Hysteresis	50 to 70%	60.5 %	
B. Low Speed			
(1) Probe Speed	13.86-14.14 fps.	13.9 fps	
(2) Peak Deflection	1.1" maximum	.84 "	
(3) Peak Resistive Force	1450 lbs maximum	1291 lbs	
(4) Internal Hysteresis	50 to 70%	56.3 %	

TECHNICIAN'S NAME: IVAN MINKEWICZ

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA (continued)

II. PERFORMANCE VERIFICATION DATA (continued)

NHTSA DUMMY I.D. NUMBER: 819

		PRE-TEST (if required)	POST-TEST (if required)
TEST PARAMETER	SPECIFICATION		
6. KNEE IMPACT TEST			
A. Left Knee			
(1) Probe Speed	6.76 to 7.04 fps	7.0 fps	
(2) Maximum Force	1850 to 2500 lbs	2084 lbs	
(3) Time above 1000 lbs.	1.7 ms. minimum	1.875 ms	
B. Right Knee			
(1) Probe Speed	6.76 to 7.04 fps	7.0 fps	
(2) Maximum Force	1850 to 2500 lbs	1912 lbs	
(3) Time Above 1000 lbs.	1.7 ms. minimum	2.0 ms	

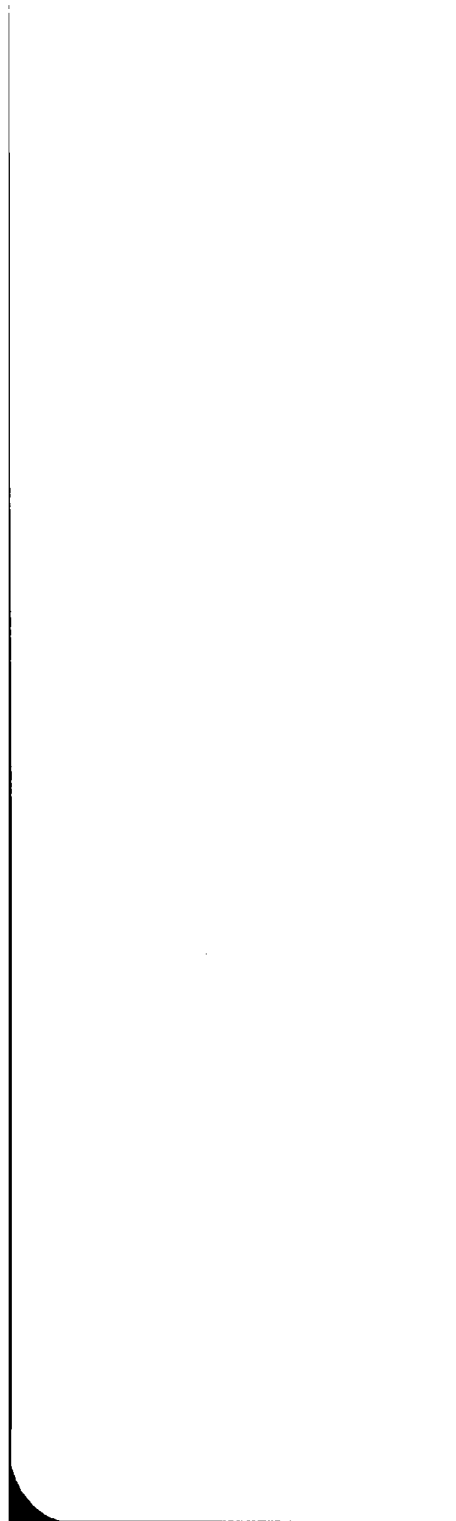
REMARKS:

TECHNICIAN'S NAME: IVAN MINKEWICZ

INSTRUMENT CALIBRATION INFORMATION

NHTSA DUMMY ID NUMBER 819

DUMMY INSTRUMENT--	MFG	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
1. HEAD ACCELEROMETER--				
HX LONGITUDINAL--	ENDEVCO	EL86	3-91	9-91
HY LATERAL--	ENDEVCO	FR42	3-91	9-91
HZ VERTICAL--	ENDEVCO	GK69	3-91	9-91
2. CHEST ACCELEROMETER--				
CX LONGITUDINAL--	CEC	A150	3-91	9-91
CY LATERAL--	ENDEVCO	EL79	3-91	9-91
CZ VERTICAL--	CEC	A151	3-91	9-91
3. FEMUR LOAD CELLS				
LEFT SIDE	GSE	77	3-91	9-91
RIGHT SIDE	GSE	1927	3-91	9-91
CALIBRATION LABORATORY INSTRUMENTS--				
1. PENDULUM ACC.--	CEC	A160	11-90	5-91
2. TEST PROBE ACCELEROMETER--	CEC	A161	11-90	5-91
3. LUMBAR FLEXION TEST PUSH FORCE GAUGE--	TRANS- DUCER INC	20051	1-91	7-91
4. ABDOMINAL COMPRESS. TEST FORCE GAUGE--	BLH	72952	1-91	7-91
5. ABDOMINAL COMPRESS. TEST FORCE GAUGE--	CIC	567-11	1-91	7-91



Appendix D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR DRIVER DUMMY
(6 Month Calibration Minimum)

DRIVER DUMMY	Serial #	Manufacturer	Calibration	
			Last	Next
Head X Y Z	FY05	ENDEVCO	3-91	9-91
	GD98	ENDEVCO	3-91	9-91
	CD75	ENDEVCO	3-91	9-91
Chest X Y Z	A73	CEC	3-91	9-91
	CE06	ENDEVCO	3-91	9-91
	A44	CEC	3-91	9-91
Right Femur Load Cell	955	GSE	3-91	9-91
Left Femur Load Cell	954	GSE	3-91	9-91
Neck Load Cell X Y Z				
Neck Moment X Y Z				
Chest Deflection Gauge Hybrid III Use Only				
Lap Belt Load Cells	123	LEBOW	3-91	9-91
Shoulder Belt Load Cells	127	LEBOW	3-91	9-91
Spool-Out Potentiometer	-	-	-	-
Belt Stretch Transducer	E1	CALSPAN	10-90	4-91

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

PASSENGER DUMMY	Serial #	Manufacturer	Calibration	
			Last	Next
Head X Y Z	EL86	ENDEVCO	3-91	9-91
	FR42	ENDEVCO	3-91	9-91
	GK69	ENDEVCO	3-91	9-91
Chest X Y Z	A150	CEC	3-91	9-91
	EL79	ENDEVCO	3-91	9-91
	A151	CEC	3-91	9-91
Right Femur Load Cell	1927	GSE	3-91	9-91
Left Femur Load Cell	77	GSE	3-91	9-91
Neck Load Cell X Y Z				
Neck Moment X Y Z				
Chest Deflection Gauge Hybrid III Use Only				
Lap Belt Load Cells	133	LEBOW	3-91	9-91
Shoulder Belt Load Cells	135	LEBOW	3-91	9-91
Spool-Out Potentiometer	-	-	-	-
Belt Stretch Transducer	E3	CALSPAN	10-90	4-91

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS
(6 Month Calibration Minimum)

	Serial #	Manufacturer	Calibration	
			Last	Next
Left Seat Rear Crossmember	A155	CEC	3-91	9-91
Right Rear Seat Crossmember	A83	CEC	3-91	9-91
Top of Engine	A115	CEC	3-91	9-91
Bottom of Engine	A146	CEC	2-90	8-91
Left Disc Brake Caliper	A29	CEC	1-91	7-91
Right Disc Brake Caliper	A164	CEC	3-91	9-91
Instrument Panel	A179	CEC	12-90	6-91
Center Rear Crossmember Z	A70	CEC	10-90	4-91
Vehicle Rear Z	A156	CEC	3-91	9-91

INSTRUMENT CALIBRATION FOR LABORATORY INSTRUMENTS
(6 Month Calibration Minimum)

	Serial #	Manufacturer	Calibration	
			Last	Next
Neck Bending Pendulum Accel.	A160	CEC	11-90	5-91
Neck Bending Rotary Potentiometer	None	BOURNS	1-91	7-91
Femur Probe Accelerometer	A160	CEC	11-90	5-91
Chest/Thorax Probe Accel.	A161	CEC	11-90	5-91
Lumbar Flexion Force Gauge	20051	TRANSDUCER INC.	1-91	7-91



Appendix E

VEHICLE OWNER'S MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

SEAT BELTS

PRECAUTIONS ON SEAT BELT USAGE

Your chances of being injured in an accident and/or the severity of injury may be greatly reduced if you are wearing your seat belt and it is properly adjusted. NISSAN strongly encourages you and all of your passengers to buckle up every time you drive.

Some states, provinces or territories require that seat belts be worn at all times when a vehicle is being driven.

WARNING:

- The belt should be adjusted to a snug fit. Slack in the lap-shoulder belt will reduce the effectiveness of the entire restraint system.
- Never wear the belt inside out or twisted.
- Do not allow more than one person to use the same belt.
- All seat belt assemblies including retractors and attaching hardware should be inspected after any collision by your NISSAN dealer. NISSAN recommends that all seat belt assemblies in use during a collision be replaced unless the collision was minor and the belts show no damage and continue to operate properly. Seat belt assemblies not

in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

Be sure to observe the following cautions when using seat belts. Failure to do so could increase the chance and/or severity of injury in an accident.

- Always pass the shoulder belt over your shoulder and across your chest. Never run the belt under your arm. Serious injury can occur if seat belt is not worn properly.

- Position the lap belt as low as possible AROUND THE HIPS, NOT THE WAIST.

Infant or small child

NISSAN recommends that infants or small children be seated in a child restraint system. You should choose a child restraint system which fits your vehicle and always follow the manufacturer's instructions for installation and use.

Children

Children who are too large for child restraint systems should be seated and restrained by the seat belts which are provided.

NISSAN recommends that children sit in the rear seat if available. According to accident statistics, children are safer when properly restrained in the rear seat than in the front seat.

If the child's seating position has a shoulder belt that fits close to the face or neck, the use of a booster seat (commercially available) may help overcome this. The booster seat should raise the child so that the shoulder belt is properly positioned across the top, middle portion of the shoulder and the lap belt is low on the hips. The booster seat should fit the vehicle seat and have a label certifying that it complies with Federal Motor Vehicle Safety Standards or Canadian Motor Vehicle Safety Standards. Once the child has grown so the shoulder belt is no longer on or near the face and neck, use the shoulder belt without the booster seat.

Never let a child stand or kneel on any seat and do not allow a child in the cargo areas while the vehicle is moving.

Pregnant women

NISSAN recommends that pregnant women use seat belts. Contact your doctor for specific recommendations. The lap belt should be worn snug and positioned as low as possible around the hips, not the waist.

Injured persons

NISSAN recommends that injured persons use seat belts, depending on the injury. Check with your doctor for specific recommendations.

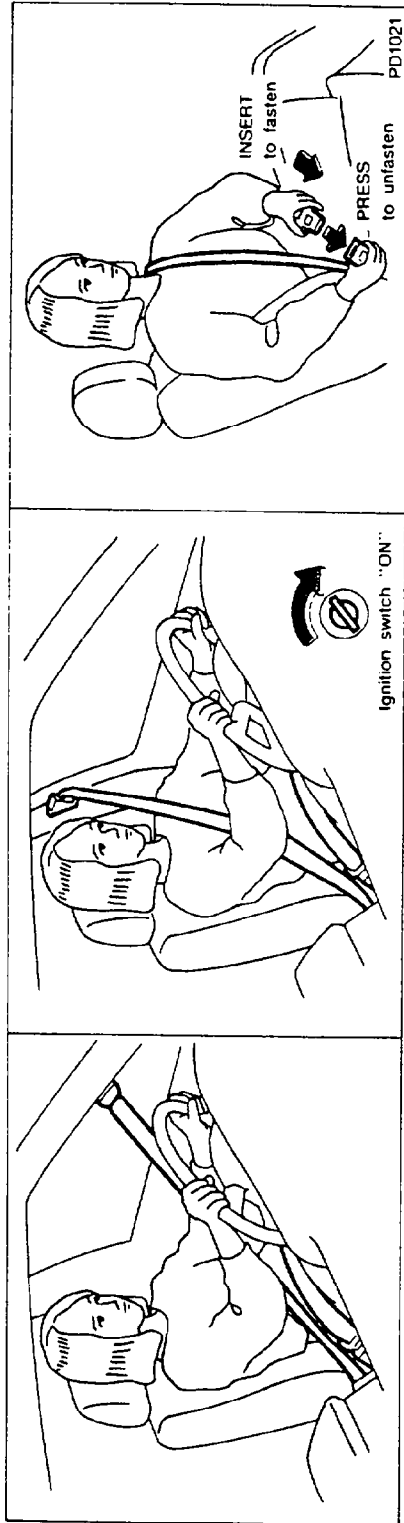
AUTOMATIC SEAT BELT SYSTEM (For U.S.A.)

The Automatic Seat Belt system consists of an automatic shoulder belt and a manual lap belt for the driver and front passenger seat positions. The shoulder belts automatically adjust to the body and seating positions when the door is closed and the ignition key is turned "ON".

- For most effective protection, always fasten the manual lap belt in addition to the automatic shoulder belt.
- To properly operate the automatic seat belt system, the shoulder belt tongue should always remain inserted in the shoulder belt buckle, located in the rail of the door opening.
- NISSAN recommends that children be seated in the rear seats. See Precautions on Seat Belt Usage earlier in this Section.

System malfunction

If, while the ignition switch is turned "ON" with either front door open, the seat belt warning light flickers and the chime sounds faster than usual for about 6 seconds, it may indicate a malfunction in the system. Have the system checked by your NISSAN dealer.



Fastening the belts

1. Open the door and make sure that the shoulder buckle is in the forward position. Then get into the vehicle and close the door.

If the ignition switch is in the "ON" position, the shoulder buckle will move to the rear position when closing the door.

2. Adjust the seat.

The seatback should not be in a reclining position any more than needed for comfort. Seat belts are most effective when the passenger sits well back and straight up in the seat.

3. Turn the ignition switch ON. The shoulder buckle will move to the rear position and will fit across your chest. Pull the shoulder belt toward the retractor to take up extra slack.

Do not touch the door guide rail while the shoulder buckle is moving.

Do not wear the shoulder belt across the neck or under your outer arm. The shoulder belt should be positioned midway over the shoulder for the most effective protection.

4. Slowly pull the lap belt out of the retractor and insert the tongue into the lap buckle until it snaps. Position the lap belt low on the hips and pull the belt toward the retractor to take up extra slack.

Do not wear the lap belt across the shoulder belt.

The retractors are designed to lock during a sudden stop or on impact. A slow pulling motion will permit the belt to move, and allow you some freedom of movement in the seat.

Unfastening the belts

1. To unfasten the lap belt, press the button on the lap buckle. The seat belt will automatically retract.
2. Open the door. The shoulder belt buckle will move to the forward position and the shoulder belt will move away from your chest.

- Do not touch the door guide rail while the shoulder buckle is moving.
- Do not unfasten the shoulder belt tongue from the buckle except in emergency. See "Operation in emergency" later in this Section.

How the automatic shoulder belt works

While the ignition switch is on:

The shoulder buckle will move to the forward position when the door is opened, and it will move to the rear position when the door is closed.

While the ignition switch is off:

The shoulder buckle will remain or move to the front position when the door is opened, and it will remain in the front position when the door is closed until the ignition switch is turned "ON".

If the shoulder buckle operates abnormally, have the system checked by your NISSAN dealer.

Seat belt warning light "  " and warning chime

When the ignition switch is turned on with the door open (the shoulder buckle is at the front position):

The chime will sound for about 6 seconds, and the warning light will flicker continuously. The warning light will go off when the door is closed and the shoulder buckle reaches the rear position.

When the ignition switch is turned on with the door closed:

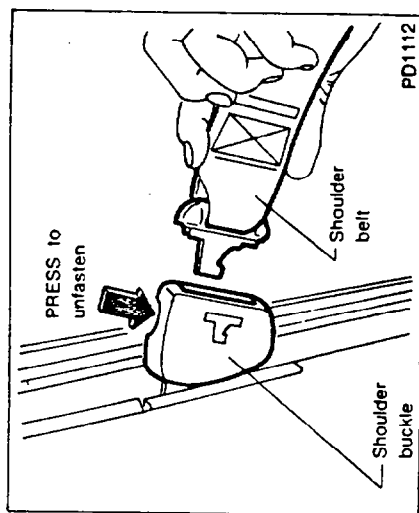
The chime will sound and the warning light will flicker until the shoulder buckle reaches the rear position. The warning light will come on for several seconds after the shoulder buckle reaches the rear position.

If the shoulder belt tongue is disconnected from the buckle:

When the ignition switch is turned on and the shoulder buckle reaches the rear position, the warning light will come on for about 100 seconds and the chime will sound for about 6 seconds until the shoulder belt is connected to the shoulder buckle. Insert the shoulder belt tongue into the shoulder buckle before driving.

If the driver side lap belt is not fastened:

When the ignition switch is turned ON and the shoulder buckle reaches the rear position, the warning light will come on for about 6 seconds and the chime will sound for about 6 seconds until the lap belt is fastened. Fasten the lap belt before driving.



Operation in an accident

Emergency release

If you need to release the shoulder belt from the shoulder belt buckle in an emergency, press the buckle marked with "PRESS EMERGENCY". Use this feature only when the shoulder belt keeps you from leaving the vehicle in an accident.

For normal use, the shoulder belt should always be connected to the buckle.

Manual operation

If either shoulder belt buckle does not operate

1. Slide the seat forward as far as possible.
2. Remove the blind cap in the lower portion of the center pillar with the screwdriver. The shaft end of the motor will be visible.
3. Using the wrench supplied in the tool bag, turn the shaft of the motor counterclockwise to move the shoulder buckle to the rear position.

Have the automatic seat belt system checked and repaired by your NISSAN dealer.

Checking seat belt retractor operation (Automatic seat belt)

Your seat belt retractors are designed to lock belt movement **only** when the vehicle slows down rapidly. Pulling on the belt will not cause the retractor to lock, no matter how fast you pull.

If you wish to have the locking operation of your seat belts checked for you, or if you have any question about belt operation, see your NISSAN dealer.

