

V2751

REPORT NUMBER: CAL-98-14

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

**GENERAL MOTORS CORPORATION
1998 CHEVROLET S-10 EXTENDED CAB FLEETSIDE
PICK-UP**

NHTSA NUMBER: MW0107

CALSPAN TEST NUMBER: 8413-13

CALSPAN SRL CORPORATION
TRANSPORTATION SCIENCE CENTER
P.O. BOX 400
BUFFALO, NEW YORK 14225



December 9, 1997

FINAL REPORT

PREPARED FOR:

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Safety Performance Standards
Office of Crashworthiness Standards
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Prepared by: Patrick G. MacDiarmid, Jr.
Patrick G. MacDiarmid, Jr., Project Engineer

Approved by: David J. Travale
David J. Travale, Program Manager
Transportation Research/
Physical Sciences Department

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16. <i>Abstract</i> A frontal barrier test of a 1998 Chevrolet S-10 extended cab fleetside pick-up was performed at Calspan SRL Corporation crash test facility in Buffalo, New York, on December 9, 1997. The impact velocity was 56.0 kph and the temperature at the barrier face was 20°C. The maximum post-test vehicle crush was 760.0 mm. The test vehicle was equipped with a 3-point restraint system and supplemental airbags at each outboard seating position. This vehicle was equipped with dual front next generation depowered airbags. The passenger side airbag was equipped with an airbag deactivation switch. With respect to FMVSS 208 "Occupant Crash Protection -Injury Criteria" both the driver and passenger appear to comply with head, chest and femur requirements.			
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Section 1

PURPOSE AND SUMMARY OF TEST MW0107

PURPOSE

This 56.0 kph frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-96-D-02010. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 48.3 kph requirements.

The 56.0 kph frontal barrier impact test was conducted in accordance with the Office of Market Incentives (OMI) Laboratory Indicant Test procedure.

SUMMARY

A frontal barrier was impacted by a 1998 Chevrolet S-10 extended cab fleetside pick-up at a velocity of 56.0 kph. The test was performed at the Calspan SRL Corporation on December 9, 1997. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by 1 real-time camera and 16 high-speed cameras. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 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, chest, and pelvis triaxial accelerometers, chest displacement potentiometers, upper neck transducers, right/left femur load cells, and lower leg instrumentation. 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 (position 1) ATD (Serial No. 061) was used in two previous tests where it did not exceed FMVSS 208 injury criteria. The right-front passenger (position 2) ATD (Serial No. 245) was calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C.

The 97 channels of data were recorded on a P.C. based data acquisition system. Appendix B contains the vehicle, load cell barrier and dummy response data traces. Load cell barrier data was not requested for this test.

The driver's HIC was 633.94. The maximum chest deceleration over 3 milliseconds was 54.703 g's and maximum chest deflection was 46.0 mm. Femur loads were -8312.6 Newtons on the left and -4958.7 Newtons on the right.

The right front passenger's HIC was 450.01. Maximum chest deceleration over 3 milliseconds was 56.126 g's and maximum chest deflection was 28.6 mm. Femur loads were -6726.3 Newtons on the left and -4008.8 Newtons on the right.

Position#1 and Position #2 belt elongation and belt spoolout signals are clipped. The bottom of engine accelerometer (#4) and the left side disc brake caliper accelerometer (#5) data did not record. These accelerometer traces are not included in this report.

The vehicle doors could not be opened immediately after the test. The doors were open after the vehicle static rollover in order to extract the dummies. Therefore, post-test driver and passenger position and interior views photographs were taken after the doors were cut open, post-rollover. These photographs will not depict the exact post-impact positions of the vehicle occupants. The vehicle windshield was cracked after the impact.

SECTION 2

GENERAL TEST AND VEHICLE PARAMETER DATA

DATA SHEET NO. 1 CRASH TEST SUMMARY

Vehicle NHTSA No. : MW0107 Test Mode : 56 kph Frontal Barrier

Test Date : December 9, 1997 Time: 13:50 Temperature : 3.3 °C

Vehicle Make/Model/Body Style : 1998 Chevrolet S-10 Extended Cab Fleetside Pick-up

Vehicle Test Weight : 1867.5 kg

Vehicle/Barrier Impact Angle : 0 °

Impact Velocity : 56.0 kph

Maximum Static Crush : 760.0 mm

Vehicle Rebound : 482.7 mm

<u>DUMMIES:</u>	<u>DRIVER</u>	<u>PASSENGER</u>
Type :	<u> 572E </u>	<u> 572E </u>
Restraint System :	<u> Airbag, Seatbelt, Knee Bolster </u>	<u> Airbag, Seatbelt, Knee Bolster </u>

Number of Data Channels : 97

Number of Cameras : 1 Real Time

 16 High Speed

DOOR OPENING DATA : Closed/Inoperable - Left Front

 Closed/Inoperable - Right Front

Front Seat(s) Data :	<u>DRIVER</u>	<u>PASSENGER</u>
Seat Track Failure :(mm of shift)	<u> 0 </u>	<u> 0 </u>
Seat Back Failure :	<u> None </u>	<u> None </u>

<u>VISIBLE DUMMY CONTACT POINTS :</u>	<u>DRIVER</u>	<u>PASSENGER</u>
Head :	<u> Face to airbag; Back of head to center of headrest </u>	<u> Face to airbag; Back of head to outboard side of headrest </u>
Abdomen :	<u> Seatbelt </u>	<u> Seatbelt </u>
Chest	<u> Airbag, Seatbelt </u>	<u> Airbag, Seatbelt </u>
Knees	<u> Knee Bolster </u>	<u> Knee Bolster, Left Knee also contacted to bottom of the center of the dashboard </u>

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION :

Year/Make/Model/Body Style : 1998 Chevrolet S-10 Extended Cab Fleetside Pick-up
NHTSA No. : MW0107 ; VIN: 1GCCS19X7W8125455 ; Color : Green
Engine Data: 6 cylinders; - CID; 4.3 Liters; - cc
Placement : X Longitudinal or In-Line; - Transverse or Lateral
Transmission Data : 4 speeds; - Manual; X Automatic; X Overdrive
Final Drive : X Rear Wheel Drive; - Front Wheel Drive; - Four Wheel Drive
Major Options : - A/C; X Pwr.Strg.; X Pwr. Brakes
- Pwr. Windows; - Pwr. Door Locks; - Tilt Wheel
Date Received : 11/25/97 ; Odometer Reading 42 km
Selling Dealer : Delia Chevrolet-Buick-Pontiac
& Address: 838 66th Street Niagara Falls, NY 14304

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by : General Motors Corporation
Date of Manufacture 10/97
GVWR : 2087 kg; GAWR: 1134 kg FRONT; 1225 kg REAR

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load : 240 kpa FRONT
240 kpa REAR
Recommended Tire Size : P205/75R15
* Recommended Cold Tire Pressure : 240 kpa FRONT; 240 kpa REAR
Size of Tires on Test Vehicle: P205/75R15 ; Manufacturer: Uniroyal
Vehicle Capacity Data :
Type of Front Seats: - Bench; - Bucket; X Split Bench
Number of Occupants: 3 Front; 1 Rear; 4 Total
Vehicle Capacity Weight (VCW) = 501 kg
No. of Occupants x 68 kg = 272 kg
Rated Cargo/Luggage Weight (RCLW) = 229 kg

*Tire pressure used for test

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with maximum fluids)= UDW:

Right Front	=	<u>453.5</u>	kg	Right Rear	=	<u>319.0</u>	kg
Left Front	=	<u>490.0</u>	kg	Left Rear	=	<u>323.5</u>	kg
TOTAL FRONT	=	<u>943.5</u>	kg	TOTAL REAR	=	<u>642.5</u>	kg
TOTAL DELIVERED WEIGHT	=	<u>1,586.0</u>	kg				
% of Total Front of Vehicle Weight	=	<u>59.5</u>	%	% of Total Rear Weight	=	<u>40.5</u>	%

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT :

Total Delivered Weight (UDW)	=	<u>1,586.0</u>	kg
Rated Cargo/Luggage Weight (RCLW)	=	<u>136.0</u>	kg
Weight of 2 p.572 Dummies @ 76 each	=	<u>152</u>	kg
TARGET TEST WEIGHT	=	<u>1,874.0</u>	kg

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 130 KG OF CARGO WEIGHT:

Right Front	=	<u>481.5</u>	kg	Right Rear	=	<u>420.0</u>	kg
Left Front	=	<u>533.0</u>	kg	Left Rear	=	<u>433.0</u>	kg
TOTAL FRONT	=	<u>1,014.5</u>	kg	TOTAL REAR	=	<u>853.0</u>	kg
TOTAL TEST WEIGHT	=	<u>1,867.5</u>	kg				
% of Total Front Weight	=	<u>54.3</u>	%	% of Total Rear Weight	=	<u>45.7</u>	%
Weight of Ballast Secured in Vehicle Trunk Area	=	<u>26</u>	kg				
Vehicle Components Removed for Weight Reduction:		<u>None</u>					

VEHICLE ATTITUDE (all dimension in millimeters):

AS DELIVERED :	RF	<u>793</u>	LF	<u>767</u>	RR	<u>818</u>	LR	<u>804</u>
FULLY LOADED :	RF	<u>785</u>	LF	<u>763</u>	RR	<u>780</u>	LR	<u>765</u>
AS TESTED :	RF	<u>787</u>	LF	<u>765</u>	RR	<u>783</u>	LR	<u>766</u>
Vehicle's Wheel Base :		<u>3120</u>	mm					
Location of Vehicle's C.G. :		<u>1,425.1</u>	mm rearward of front wheel center.					

FUEL SYSTEM DATA :

Fuel System Capacity From Owner's Manual	=	<u>69.9</u>	liters
Usable Capacity Figure Furnished by COTR	=	<u>69.0</u>	liters
Test Volume Range (92 to 94% of Usable Capacity)	=	<u>63.48</u>	to <u>64.86</u> liters
ACTUAL TEST VOLUME	=	<u>63.8</u>	liters (with entire fuel system filled)
Test Fluid Type:	<u>Stoddard Solution</u> ;	Spec. Grav. =	<u>0.764</u>
	Kinematic Viscosity =	<u>0.96</u> centistokes;	Color = <u>Orange</u>
Type of Fuel Pump:	Electric- <u>X</u> ;	Mechanical-	<u>-</u>
Does Electric Pump operate with ignition switch "ON" & engine "OFF"		Yes- <u>X</u>	No- <u>-</u>
Details of Fuel System	<u>Filler - Left Side, ahead of rear axle; Tank - Left-center, ahead of rear axle;</u>		
	<u>Lines - Inside left frame rail</u>		

DATA SHEET NO. 3 POST IMPACT DATA

TYPE OF TEST:

Type of Test : Frontal Barrier Impact Angle : 0°
Test Date : December 9, 1997 Time: 13:50 Temperature: 3.3 °C
Vehicle NHTSA No. : MW0107
Required Impact Velocity Range : 55.7 to 57.1 kph

BARRIER IMPACT VELOCITY : (Speed traps within 5 feet of impact plane.)

Trap No. 1 = 56.0 kph; Trap No. 2 = 56.0 kph
Distance from vehicle to barrier : (1) entering trap = 813 mm
(2) exiting trap = 305 mm

VEHICLE STATIC CRUSH: (mm) (For frontal and rear impacts only.)

Vehicle Length:

Pre-Test Right = 5100 ; C/L = 5165 ; Left = 5100
Post-Test Right = 4435 ; C/L = 4405 ; Left = 4430
Crush Right = 665.0 ; C/L = 760.0 ; Left = 670.0
AVERAGE = 698.3 mm

VEHICLE REBOUND: (From rigid barrier only.)

Distance from front of test vehicle to impact point :

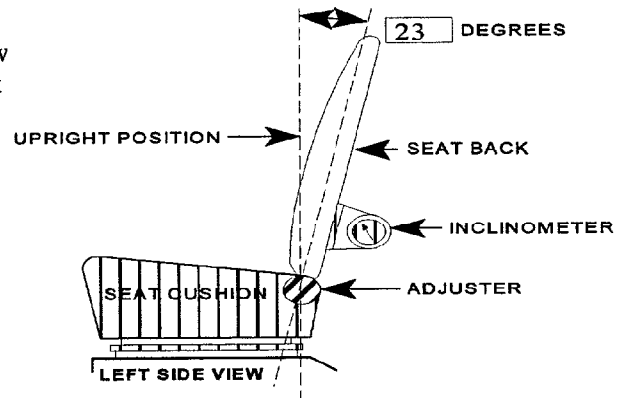
Right = 483.0 ; C/L = 494.0 ; Left = 471.0
AVERAGE = 482.7 mm

DATA SHEET NO. 4 TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model Year : 1998 Vehicle Model: Chevrolet S-10 Extended Cab Fleetside Body Style : Pick-up

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



FRONT SEAT ASSEMBLY

Seat back angle for driver's seat : 23°

Measurement instructions : Place an inclinometer 9 inches above the seat hinge point. Cut away foam to get to seat frame. Recline seatback until inclinometer reads 23 degrees.

Seat back angle for passenger's seat : 23°

Measurement instructions : Same as driver's seat.

2. Seat Fore and Aft Positioning

Positioning of the driver's seat : Seat tracks were numbered 0 to 20. Mid-position is track number 10.

Positioning of the passenger's seat (if applicable) : Same as driver's seat.

3. Fuel Tank Capacity Data

3.1

- A. "Usable Capacity" of the standard equipment fuel tank is 69.0 liters
- B. "Usable Capacity" of the optional equipment fuel tank is - liters
- C. "Usable Capacity" of the vehicle(s) used for certification testing to requirements of FMVSS 301 = 69.0 liters

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 63.8 liters

3.3 Is vehicle equipped with electric fuel pump? Yes- X ; No- -

If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

The fuel pump is activated when the ignition system is turned to the "ON" position.

DATA SHEET NO. 4 TEST VEHICLE INFORMATION (cont.)

4. STEERING COLUMN ADJUSTMENTS :

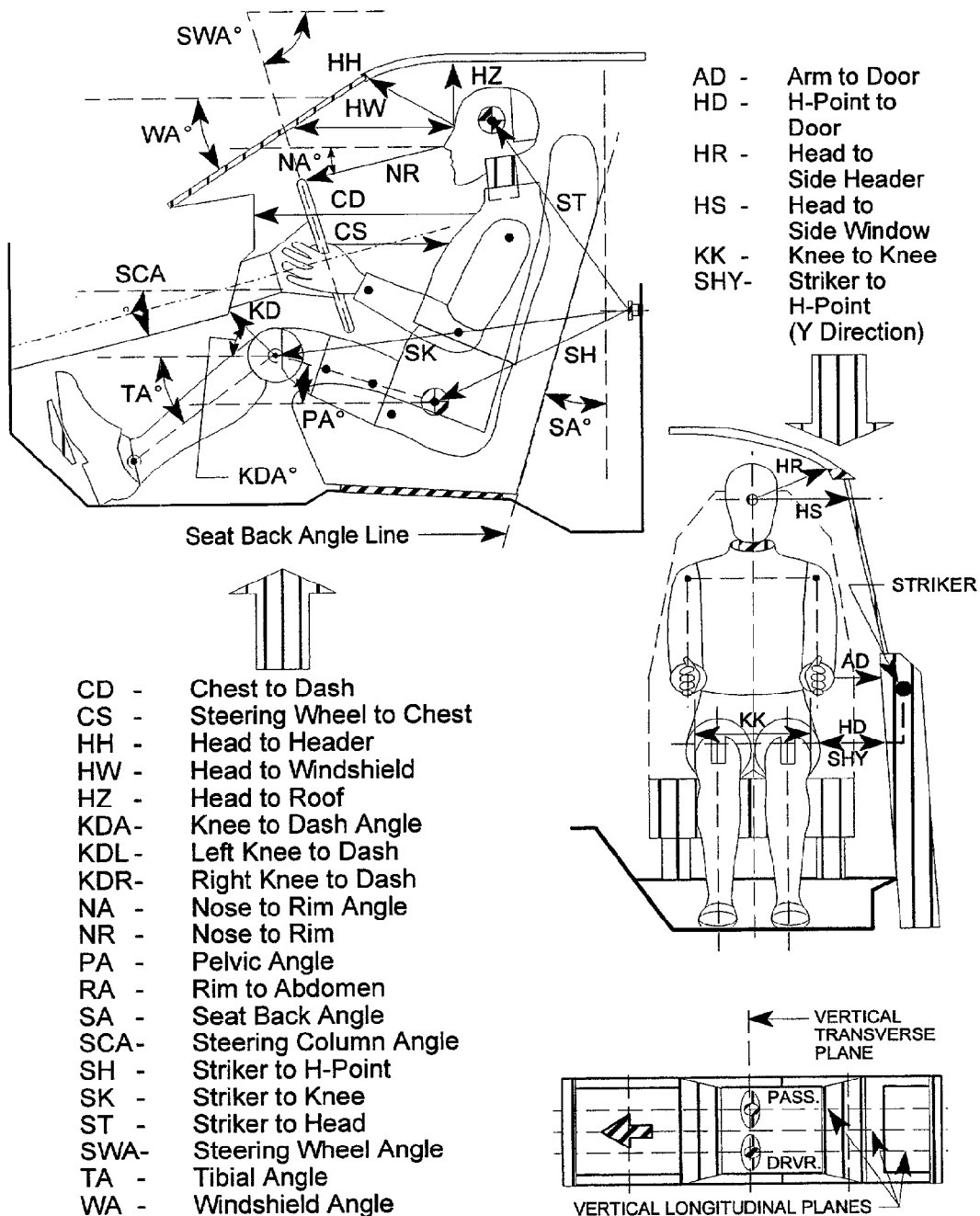
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions: This vehicle was not equipped with a tilt steering column.

5. SEAT BELT UPPER ANCHORAGE

Nominal design riding position: Seatbelt anchorages were not adjustable

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS

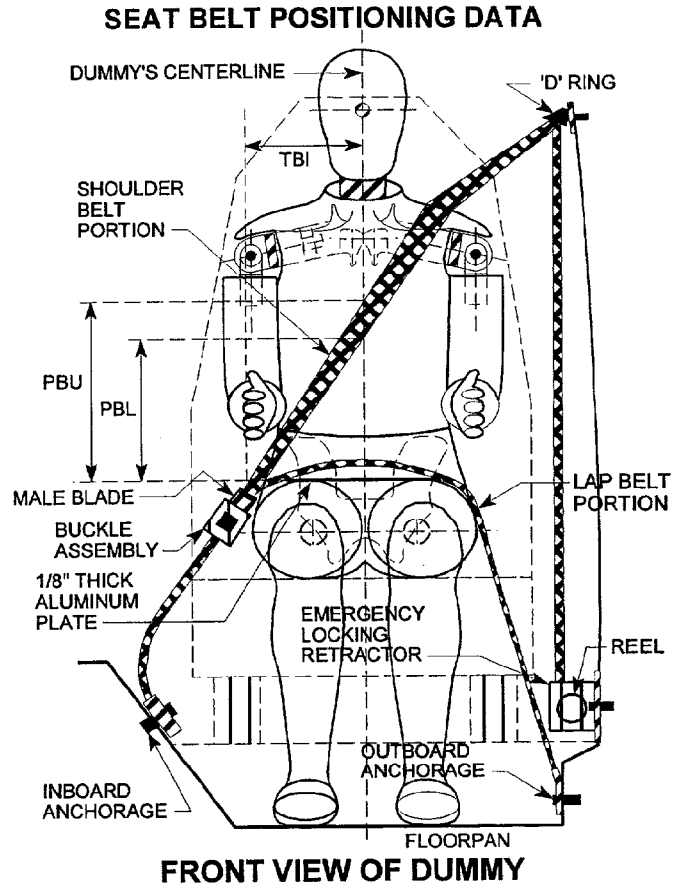


DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE

	DRIVER (Serial #061)			PASS. (Serial # 245)		
WA ^o	37 deg.			N/A		
SWA ^o	70 deg.			N/A		
SCA ^o	20 deg.			N/A		
SA ^o	23 deg.			23 deg.		
HZ	210			205		
HH	435			450		
HW	650			620		
HR	250			250		
NR	328	Angle	-14 deg.	N/A		
CD	520			460		
CS	295			N/A		
RA	148			N/A		
KDL	148	Angle (KDA)	42 deg.	150		
KDR	147			155	Angle (KDA)	40 deg.
PA ^o	23 deg.			24 deg.		
TA ^o	-50 deg.			-45 deg.		
KK	256			240		
ST	610	Angle	23 deg.	620	Angle	21 deg.
SK	708	Angle	92 deg.	690	Angle	90 deg.
SH	328	Angle	111 deg.	300	Angle	115 deg.
SHY	265			225		
HS	365			341		
HD	172			146		
AD	122			120		

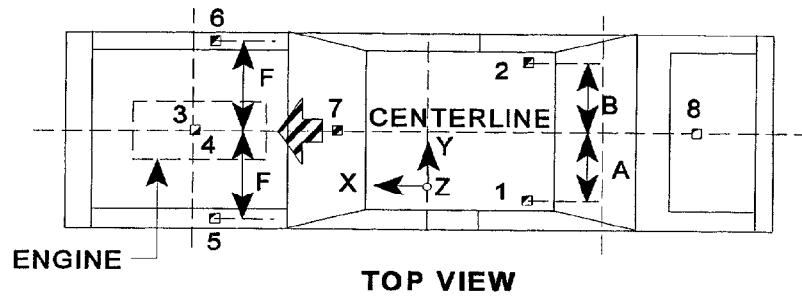
Dimensions in millimeters

DATA SHEET NO. 6 SEAT BELT POSITIONING DATA

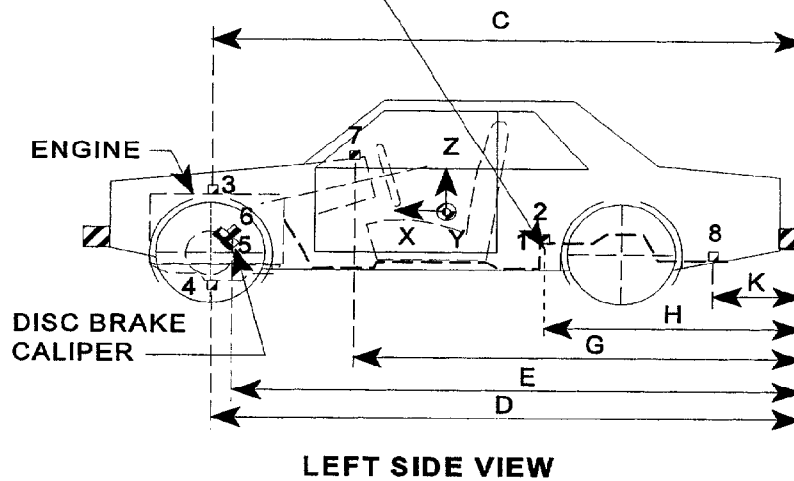


	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	205	235
PBL-- Top surface of alum. plate to belt lower edge	286	315
<u>LAP BELT TENSION</u>	10 Newtons	10 Newtons
<u>SHOULDER BELT TENSION</u>	Retractor	Retractor

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



Note: Vehicle accelerometer location and data summary shown in DATA SHEET NO. 7

DATA SHEET NO. 7 VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

DIMENSION	LENGTH (mm)
	PRE-TEST VALUES
A Left Rear Seat Crossmember Y	490
B Right Rear Seat Crossmember Y	-451
C Top of Engine X	4502
D Bottom of Engine X	4031
E Disc Brake Calipers X	4090
F Disc Brake Calipers Y	±354
G Instrument Panel X	3473
H Rear Seat Crossmembers X	2535

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE (g's)			
		Pos.	msec.	Neg.	msec.
1	Rear Seat X-Member @ Left Side	3.7	146.3	-41.8	50.6
2	Rear Seat X-Member @ Right Side	3.4	144.8	-40.4	51.9
3	Top of Engine Block	10.3	85.7	-77.8	35.5
4	Bottom of Engine	*	*	*	*
5	Disc Brake Caliper @ Left Side	*	*	*	*
6	Disc Brake Caliper @ Right Side	17.5	58.3	-84.6	46.4
7	Instrument Panel	79.8	56.1	-61.4	67.7
8	Rear Seat X-Member @ Left-Redundant	3.6	146.1	-40.2	50.0
9	Rear Seat X-Member @ Right-Redundant	6.0	60.2	-44.0	52.4

* Data did not record.

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES

NHTSA Test No.: MW0107 Vehicle: 1998 Chevrolet S-10 Extended Cab Fleetside Pick-up

DESCRIPTION	UNIT	MAXIMUM VALUE			
		Pos.	msec.	Neg.	msec.
Pos. 1 Head X	g's	13.8	187.0	-56.7	80.2
Pos. 1 Head Y	g's	3.2	166.5	-43.4	83.2
Pos. 1 Head Z	g's	22.9	60.6	-23.0	100.4
Pos. 1 Head Resultant	g's	69.1	81.2	0.0	-12.5
Pos. 2 Head X	g's	14.4	246.9	-46.5	61.6
Pos. 2 Head Y	g's	18.3	94.4	-5.6	60.9
Pos. 2 Head Z	g's	36.4	61.0	-7.0	116.6
Pos. 2 Head Resultant	g's	58.2	61.6	0.1	-28.3
Pos. 1 Chest X	g's	10.4	161.7	-55.3	77.7
Pos. 1 Chest Y	g's	2.6	104.2	-16.2	82.2
Pos. 1 Chest Z	g's	18.5	61.3	-11.2	103.2
Pos. 1 Chest Resultant	g's	57.0	77.7	0.0	-33.1
Pos. 1 Chest Displacement	mm	0.0	-39.6	-46.0	85.8
Pos. 2 Chest X	g's	3.0	179.4	-54.8	82.5
Pos. 2 Chest Y	g's	15.4	87.3	-6.2	108.9
Pos. 2 Chest Z	g's	22.5	76.0	-13.3	120.2
Pos. 2 Chest Resultant	g's	57.8	82.4	0.0	-33.9
Pos. 2 Chest Displacement	mm	0.1	23.2	-28.6	72.7
Pos. 1 Left Femur	N	241.1	38.4	-8312.6	56.1
Pos. 1 Right Femur	N	193.2	330.8	-4958.7	54.9
Pos. 2 Left Femur	N	743.1	48.2	-6726.3	63.2
Pos. 2 Right Femur	N	126.7	269.2	-4008.8	55.6
Pos. 1 Left Belt Load	N	4793.4	65.3	-38.1	217.9
Pos. 1 Torso Belt Load	N	5176.4	85.8	-87.6	142.2
Pos. 2 Right Belt Load	N	7240.7	63.9	-13.7	-0.4
Pos. 2 Torso Belt Load	N	4282.1	86.6	-35.5	144.9

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)

NHTSA Test No.: MW0107 Vehicle: 1998 Chevrolet S-10 Extended Cab Fleetside Pick-up

HEAD INJURY CRITERIA (HIC)				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	633.94	58.500	94.500	49.92
Position #2 - Passenger	450.01	58.800	94.800	43.53

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

CLIP SUMMARY*				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	54.703	76.6916	79.6916	580.850
Position #2 - Passenger	56.126	80.6273	83.6273	574.162

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

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)
HYBRID III NECK AND PELVIC DATA SHEET

Vehicle Year/Make/Model/Body Style: 1998 Chevrolet S-10 Extended Cab Fleetside Pick-up

NHTSA Test No.: MW0107 Test Date: December 9, 1997

DESCRIPTION	UNIT	MAXIMUM VALUE			
		Pos.	msec	Neg.	msec
Pos. 1 Upper Neck Fx	N	774.5	73.0	-720.6	71.5
Pos. 1 Upper Neck Fy	N	426.8	73.5	-246.2	125.5
Pos. 1 Upper Neck Fz	N	2686.7	75.8	-714.4	122.9
Pos. 1 Neck Force Result	N	2698.8	75.8	3.6	-4.3
Pos. 1 Upper Neck Mx	N-m	13.0	158.5	-32.9	93.9
Pos. 1 Upper Neck My	N-m	47.8	65.6	-30.4	82.4
Pos. 1 Upper Neck Mz	N-m	48.3	98.6	-20.4	158.7
Pos. 1 Neck Moment Result	N-m	55.0	95.0	0.0	-32.0
Pos. 2 Upper Neck Fx	N	413.5	82.8	-999.4	60.5
Pos. 2 Upper Neck Fy	N	268.6	133.1	-589.6	61.6
Pos. 2 Upper Neck Fz	N	2315.5	76.3	-500.5	128.8
Pos. 2 Neck Force Result	N	2316.8	76.3	4.8	-26.3
Pos. 2 Upper Neck Mx	N-m	27.0	115.0	-8.7	179.5
Pos. 2 Upper Neck My	N-m	57.2	160.6	-58.7	61.2
Pos. 2 Upper Neck Mz	N-m	17.0	159.3	-21.5	105.6
Pos. 2 Neck Moment Result	N-m	61.7	61.2	0.0	-33.7
Pos. 1 Pelvic (X)	g's	6.1	127.6	-85.7	55.8
Pos. 1 Pelvic (Y)	g's	13.0	52.8	-11.6	48.7
Pos. 1 Pelvic (Z)	g's	6.2	44.0	-17.0	103.7
Pos. 1 Pelvic (R)	g's	86.4	55.8	0.0	-28.9
Pos. 2 Pelvic (X)	g's	6.7	140.0	-69.6	56.9
Pos. 2 Pelvic (Y)	g's	12.8	59.3	-7.7	84.2
Pos. 2 Pelvic (Z)	g's	3.0	322.3	-17.2	114.1
Pos. 2 Pelvic (R)	g's	70.5	56.9	0.1	-28.0

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)
HYBRID III LOWER LEG DATA SHEET

Vehicle Year/Make/Model/Body Style: 1998 Chevrolet S-10 Extended Cab Fleetside Pick-up

NHTSA Test No.: MW0107 Test Date: December 9, 1997

DESCRIPTION	UNIT	MAXIMUM VALUE			
		Pos.	msec	Neg.	msec
P1 Lt Upper Tibia Mx	N-m	75.4	52.6	-30.4	123.6
P1 Lt Upper Tibia My	N-m	75.8	56.4	-191.1	45.8
P1 Lt Lower Tibia Fx	N	124.1	109.8	-1410.4	46.1
P1 Lt Lower Tibia Fz	N	271.2	63.6	-5558.6	45.5
P1 Lt Lower Tibia My	N-m	60.2	129.2	-72.1	49.7
P1 Rt Upper Tibia Mx	N-m	226.3	49.1	-51.4	61.7
P1 Rt Upper Tibia My	N-m	106.0	49.3	-40.9	44.6
P1 Rt Lower Tibia Fx	N	90.2	120.8	-1884.1	48.9
P1 Rt Lower Tibia Fz	N	93.5	111.5	-2968.3	49.4
P1 Rt Lower Tibia My	N-m	125.3	62.8	-74.0	47.7
Pos. 2 Lt Upper Tibia Mx	N-m	79.3	47.1	-14.2	58.6
Pos. 2 Lt Upper Tibia My	N-m	12.9	128.5	-108.9	57.6
Pos. 2 Lt Lower Tibia Fx	N	77.5	157.9	-1402.0	61.2
Pos. 2 Lt Lower Tibia Fz	N	164.9	173.1	-2270.0	47.0
Pos. 2 Lt Lower Tibia My	N-m	127.0	62.6	-46.1	41.5
Pos. 2 Rt Upper Tibia Mx	N-m	25.0	83.2	-52.8	51.6
Pos. 2 Rt Upper Tibia My	N-m	13.2	132.7	-109.0	42.2
Pos. 2 Rt Lower Tibia Fx	N	357.5	35.3	-936.7	43.1
Pos. 2 Rt Lower Tibia Fz	N	323.1	156.8	-3096.0	42.7
Pos. 2 Rt Lower Tibia My	N-m	121.5	89.9	-33.3	41.1

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)
HYBRID III ANKLE DATA SHEET

Vehicle Year/Make/Model/Body Style: 1998 Chevrolet S-10 Extended Cab Fleetside Pick-up
 NHTSA Test No.: MW0107 Test Date: December 9, 1997

DESCRIPTION	UNIT	MAXIMUM VALUE			
		Pos.	msec	Neg.	msec
Pos. 1 Left Ankle X	g's	123.7	52.4	-147.7	52.9
Pos. 1 Left Ankle Z	g's	22.2	54.9	-139.6	52.4
Pos. 1 Left Toe Z	g's	60.8	55.0	-179.5	52.3
Pos. 1 Right Ankle X	g's	13.4	56.4	-339.9	49.3
Pos. 1 Right Ankle Z	g's	280.8	48.8	-313.3	49.3
Pos. 1 Right Toe Z	g's	255.6	48.8	-277.1	49.4
Pos. 2 Left Ankle X	g's	13.5	65.3	-164.8	46.9
Pos. 2 Left Ankle Z	g's	178.2	46.9	-164.3	47.4
Pos. 2 Left Toe Z	g's	402.9	47.0	-164.3	47.4
Pos. 2 Right Ankle X	g's	67.0	52.5	-85.5	42.1
Pos. 2 Right Ankle Z	g's	266.1	52.0	-73.7	41.2
Pos. 2 Right Toe Z	g's	61.7	51.5	-93.5	39.6

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)
REDUNDANT DUMMY DATA

NHTSA Test No.: MW0107 Vehicle: 1998 Chevrolet S-10 Extended Cab Fleetside Pick-up

DESCRIPTION	UNIT	MAXIMUM VALUE			
		Pos.	msec	Neg.	msec
Pos. 1 Head X(R)	g's	13.0	188.1	-68.6	81.3
Pos. 1 Head Y(R)	g's	3.4	113.7	-48.0	81.9
Pos. 1 Head Z(R)	g's	24.3	60.6	-22.7	100.5
Pos. 1 Head Resultant(RR)	g's	84.0	81.9	0.0	-15.7
Pos. 2 Head X(R)	g's	14.4	246.4	-49.4	81.7
Pos. 2 Head Y(R)	g's	17.9	90.5	-6.9	199.3
Pos. 2 Head Z(R)	g's	46.2	61.0	-12.9	199.3
Pos. 2 Head Resultant(RR)	g's	62.9	61.2	0.1	-3.7
Pos. 1 Chest X(R)	g's	9.8	161.9	-54.2	78.0
Pos. 1 Chest Y(R)	g's	3.1	61.3	-13.5	82.2
Pos. 1 Chest Z(R)	g's	15.4	72.8	-11.3	116.7
Pos. 1 Chest Resultant(RR)	g's	55.9	78.1	0.0	-36.4
Pos. 2 Chest X(R)	g's	2.9	150.0	-53.2	81.7
Pos. 2 Chest Y(R)	g's	13.5	86.5	-5.8	110.8
Pos. 2 Chest Z(R)	g's	24.2	76.1	-14.5	122.1
Pos. 2 Chest Resultant(RR)	g's	57.1	81.5	0.0	-29.9

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)
REDUNDANT DUMMY DATA

NHTSA Test No.: MW0107 Vehicle: 1998 Chevrolet S-10 Extended Cab Fleetside Pick-up

HEAD INJURY CRITERIA (HIC) REDUNDANT				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	855.29	58.300	94.300	56.28
Position #2 - Passenger	510.12	58.800	94.800	45.77

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

CLIP SUMMARY* REDUNDANT				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	53.797	76.8428	79.8428	554.140
Position #2 - Passenger	56.133	80.1828	83.1828	570.999

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

DATA SHEET NO. 9 SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:

Belt length from trim panel exit
to bolt hole anchor point for
continuous webbing systems.

Driver

Passenger

2100

1980

Shoulder belt length as measured
on Part 572 Dummy.

850

830

Lap belt length as measured
on Part 572 Dummy.

930

830

SHOULDER BELT SPOOL-OFF DATA:

As determined by film analysis.

102

203

As determined mechanically.

125

207

As determined electronically.

109.9*

226.9*

BELT STRETCH DATA:

Measured electronically between shoulder
belt load cell and the "D" ring.

8.2* mm/M

65.0* mm/M

Measured mechanically.

1 mm/M

1 mm/M

* This data is clipped.

Dimensions in millimeters

DATA SHEET NO.10 SUMMARY OF FMVSS 212 DATA

FMVSS NO. 212 - "WINDSHIELD MOUNTING" DATA

DETAILS OF WINDSHIELD MOUNTING SUCH AS RETENTION METHOD, TRIM TYPE, ETC.:

Windshield is bonded in place and covered with 25 mm molding.

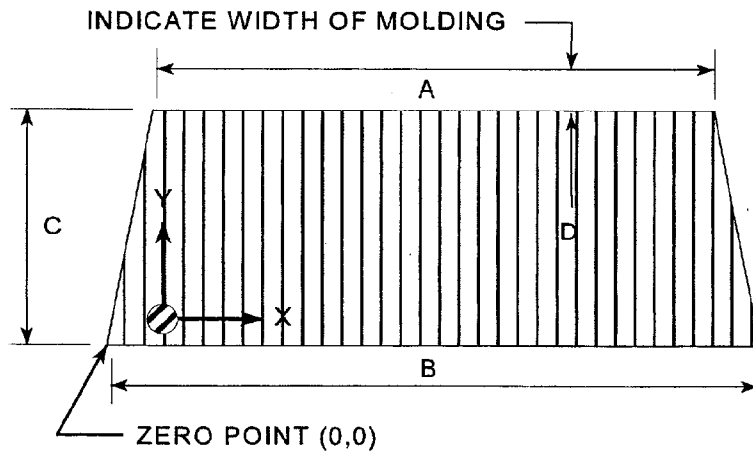
FMVSS 212 REQUIREMENTS:

The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of the windshield for vehicles equipped with automatic restraint systems for front occupants,

FMVSS 212 TEST DATA

	WINDSHIELD PERIPHERY		% OF RETENTION
	PRE-TEST (mm)	POST-TEST(mm)	
RIGHT SIDE	2110	2110	100
LEFT SIDE	2110	2110	100
TOTAL	4,220	4,220	100

AREA OF RETENTION FAILURE:



DIMENSIONS (mm)	
A	1245
B	1635
C	670
D	25

FRONT VIEW OF WINDSHIELD

FAILURE DETAILS: None

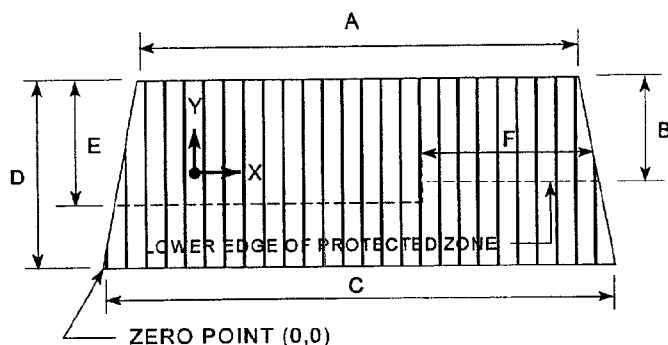
DATA SHEET NO. 11 FMVSS NO. 219 (PARTIAL) - "WINDSHIELD ZONE INTRUSION" DATA

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 165 mm diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. The locus of points is drawn on the inner surface of the windshield contacted by the sphere across the width of the instrument panel. From the outermost contactable points extend the locus line horizontally to the edges of the windshield, then draw a line on the inner surface of the windshield below and 13 mm distant from the locus line. The **LOWER EDGE OF THE PROTECTED ZONE** is the longitudinal projection of this line onto the outer surface of the windshield.

FMVSS 219 TEST DATA:

(Dimensions in mm)



FRONT VIEW OF WINDSHIELD

DIMENSIONS	
A	1245
B	340
C	1635
D	670
E	367
F	769

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 6 mm: None

(Show location of penetration on the above sketch)

COORDINATES		
	X	Y
1.	-	-
2.	-	-
3.	-	-
4.	-	-

DATA SHEET NO. 12 FMVSS NO. 301-75 "FUEL SYSTEM INTEGRITY" POST IMPACT TEST DATA

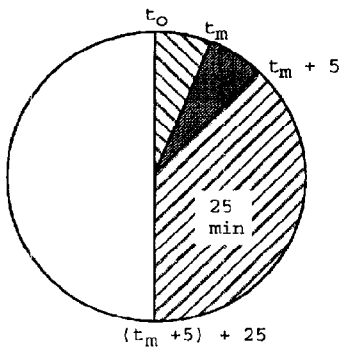
NHTSA TEST No.: MW0107 TEST DATE: December 9, 1997
VEHICLE MAKE/MODEL: 1998 Chevrolet S-10 Extended Cab Fleetside

The test vehicle was filled from 92% to 94% of the manufacture's "usable" capacity. The electric fuel pump was operating if it will operate without engine operation. Two Part 572 anthropomorphic test devices were located at each of the front designated seating positions.

=====

TEST VEHICLE IMPACT TYPE: X Frontal (56 kph)
- Oblique (48 kph) with _____ deg. barrier face first
 contacting _____
 (driver/passenger) side
- Rear Moving Barrier (48 kph)
- Lateral Moving Barrier (32 kph)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For 5 minute period after vehicle motion ceases
3. For next 25 minutes

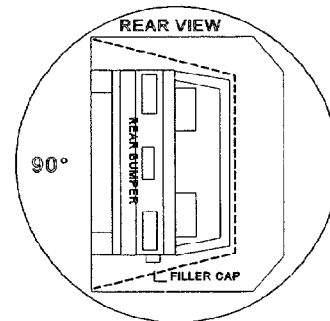
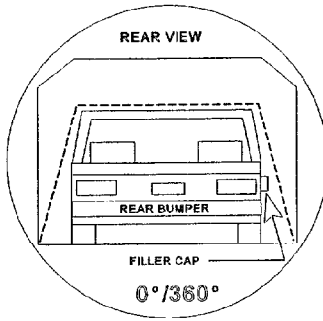
ACTUAL	MAX ALLOWED
0	28 g
0	141 g
0	28 g/min.

SOLVENT SPILLAGE DETAILS: None

DATA SHEET NO. 13 FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE:
0-90 deg.

NHTSA Test No.:
MW0107



INDETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time
(Spec. Range = 1 to 3 minutes)

1 minutes 10 seconds

FMVSS 301 Position Hold Time +

5 minutes 00 seconds

TOTAL

6 minutes 10 seconds

Next whole minute interval

7 minutes 00 seconds

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min. from onset of rotation	6th min.	7th min.	8th min. if reqd.
-------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

141 g	28 g	28 g	28 g
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III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	N/A
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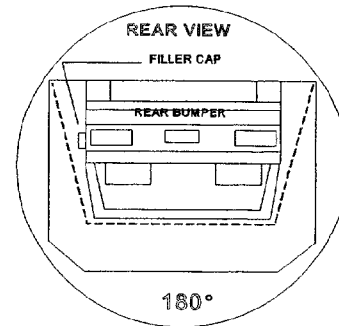
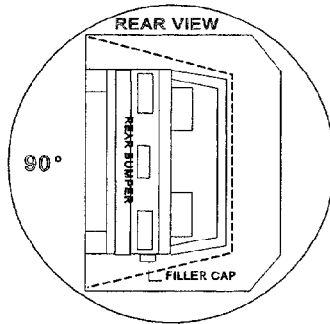
Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S): None

TEST SHEET NO. 13 FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE:
90-180 deg.

NHTSA Test No.:
MW0107



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time
(Spec. Range = 1 to 3 minutes)

1 minutes 09 seconds

FMVSS 301 Position Hold Time +

5 minutes 00 seconds

TOTAL

6 minutes 9 seconds

Next whole minute interval

7 minutes 00 seconds

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min. from onset of rotation	6th min.	7th min.	8th min. if reqd.
-------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

141 g	28 g	28 g	28 g
-------	------	------	------

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	N/A
---	---	---	-----

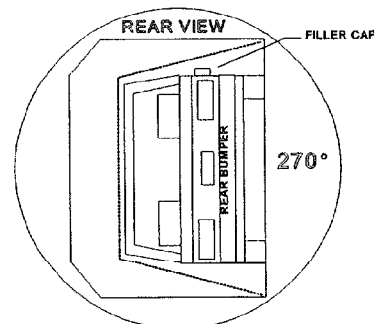
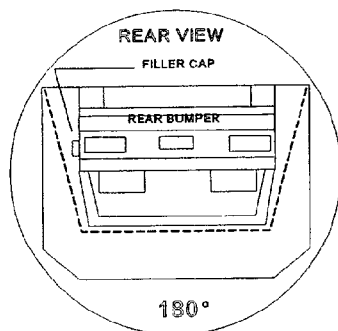
Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S): None

TEST SHEET NO. 13 FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE:
180-270 deg.

NHTSA Test No.:
MW0107



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time
(Spec. Range = 1 to 3 minutes)

1 minutes 07 seconds

FMVSS 301 Position Hold Time +

5 minutes 00 seconds

TOTAL

6 minutes 7 seconds

Next whole minute interval

7 minutes 00 seconds

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min. from onset of rotation	6th min.	7th min.	8th min. if reqd.
-------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

141 g	28 g	28 g	28 g
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III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	N/A
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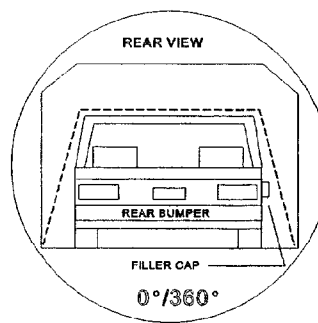
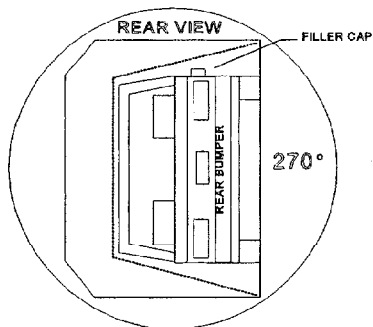
Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S): None

TEST SHEET NO. 13 FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE:
270-360 deg.

NHTSA Test No.:
MW0107



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time
(Spec. Range = 1 to 3 minutes)

1 minutes 09 seconds

FMVSS 301 Position Hold Time +

5 minutes 00 seconds

TOTAL

6 minutes 9 seconds

Next whole minute interval

7 minutes 00 seconds

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min. from onset of rotation	6th min.	7th min.	8th min. if reqd.
-------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

141 g	28 g	28 g	28 g
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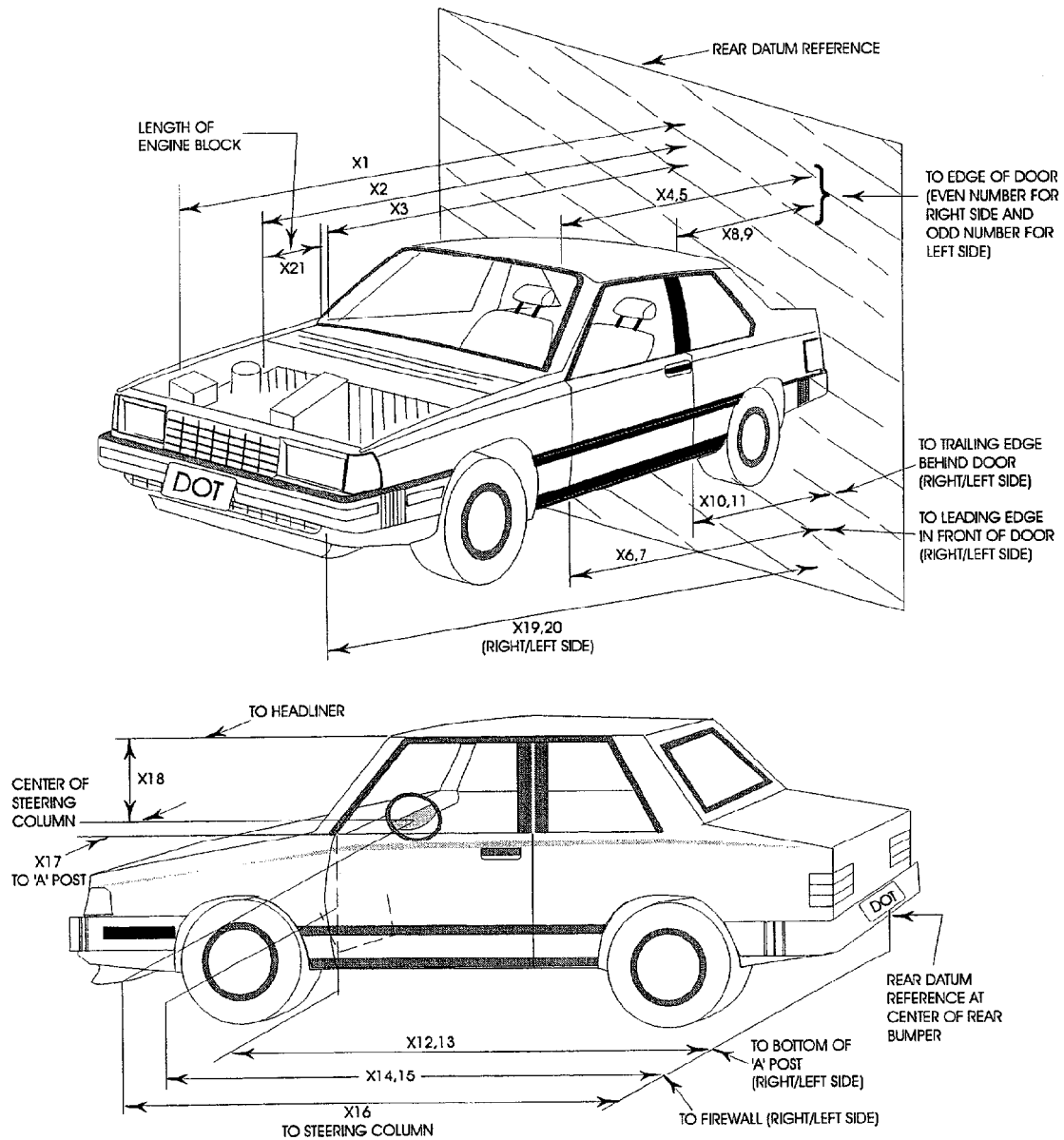
III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	N/A
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Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S): None

TEST VEHICLE MEASUREMENTS

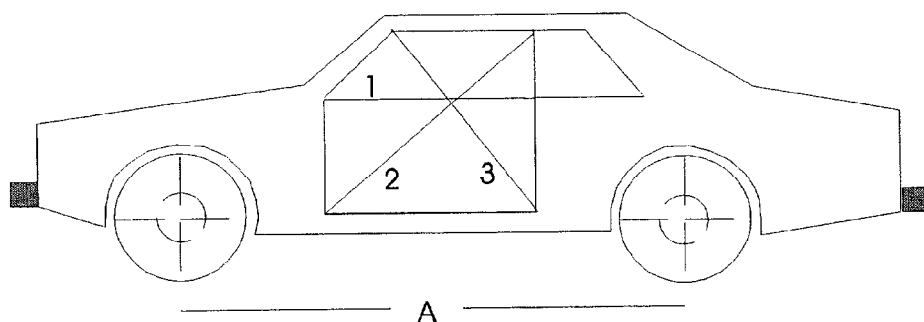


DATA SHEET NO.14 VEHICLE MEASUREMENTS

No.		All Dimensions in mm		
		Pre-Test	Post-Test	Differences
X1	Total Length of Vehicle at Centerline	5165	4405	760
X2	Rear Surface of Vehicle to Front of Engine	4375	4120*	255
X3	Rear Surface of Vehicle to Firewall	4055	3910*	145
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3833	3782	51
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3824	3750*	74
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3770	3709	61
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3765	3720*	45
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2662	2624*	38
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2659	2610*	49
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2654	2604*	50
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2648	2584*	64
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3765	3706*	59
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3766	3720	46
X14	Rear Surface of Vehicle to Firewall, Right Side	3975	3910*	65
X15	Rear Surface of Vehicle to Firewall, Left Side	4035	3910*	125
X16	Rear Surface of Vehicle to Steering Column	3315	3310	5
X17	Center of Steering Column to "A" Post	455	390	65
X18	Center of Steering Column to Headliner	470	460	10
X19	Rear Surface of Vehicle to Right Side of Front Bumper	5100	4435	665
X20	Rear Surface of Vehicle to Left Side of Front Bumper	5100	4430	670
X21	Length of Engine Block	500	500	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3490	3440	50
CD	Rear Surface of Vehicle to Center of Dash Panel	3450	3380	70
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3485	3400	85

* Estimated

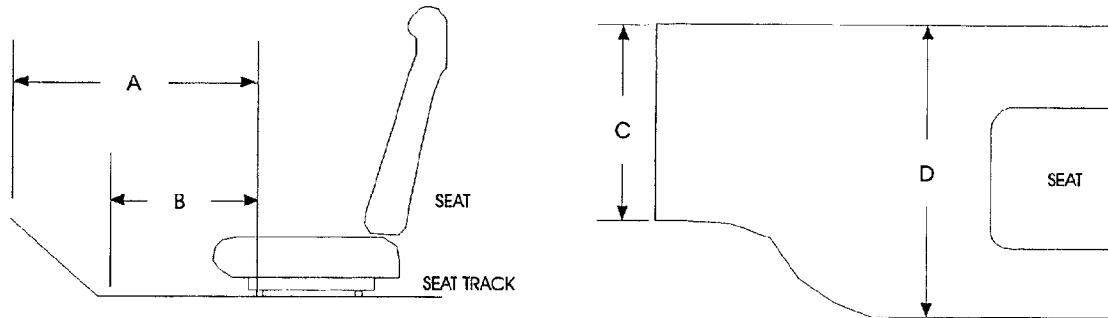
DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
VEHICLE INTRUSION MEASUREMENTS
DOOR OPENING WIDTH



UNITS (mm)	LEFT			RIGHT		
MEASUREMENT	1	2	3	1	2	3
BEFORE TEST	1070	1490	1255	1070	1495	1495
AFTER TEST	1035	1510	1280	1060	1510	1200
DIFFERENCE	35	-20	-25	10	-15	295

UNITS (mm)	A = WHEELBASE LEFT	A = WHEELBASE RIGHT
BEFORE TEST	3120	3120
AFTER TEST	2985	2985
DIFFERENCE	135	135

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
VEHICLE INTRUSION MEASUREMENTS
STATIC FOOTWELL DEFORMATION



DRIVER

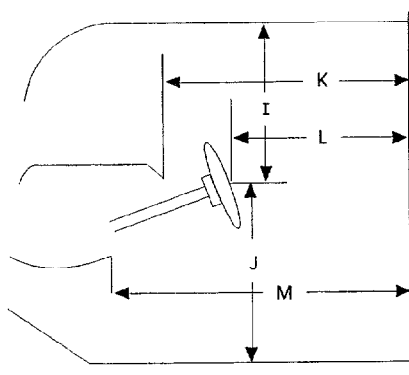
Measurement	Pre-Test	Post-Test	Difference
A	695	580	115
B	650	580	70
C	330	330	0
D	390	375	15

PASSENGER

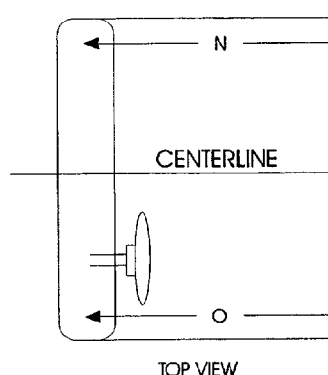
Measurement	Pre-Test	Post-Test	Difference
A	695	645	50
B	630	610	20
C	335	330	5
D	400	395	5

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
VEHICLE INTRUSION MEASUREMENTS
STATIC PASSENGER COMPARTMENT INTRUSION

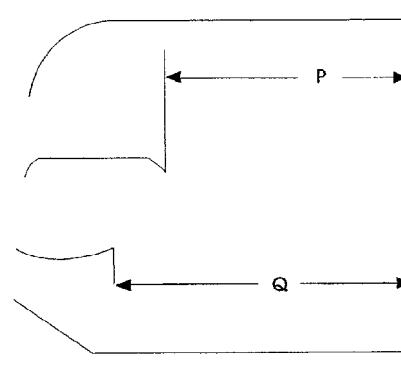


DRIVER'S SIDE



TOP VIEW

MEASUREMENTS
FROM C-PILLAR
BELT ANCHORAGE

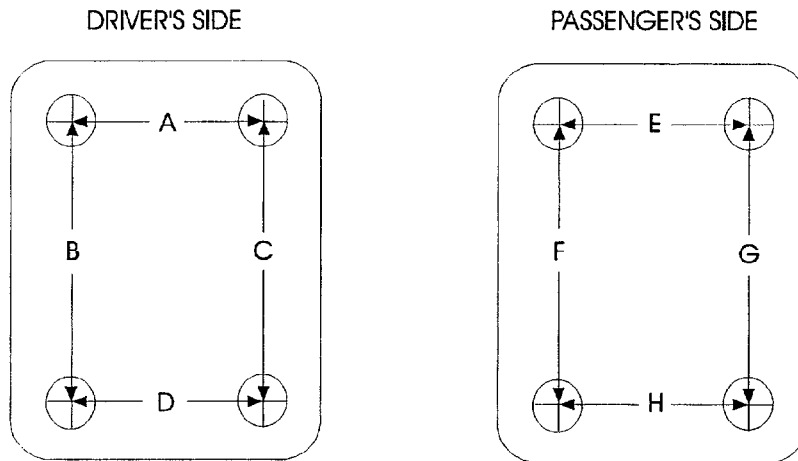


PASSENGER'S SIDE

Measurement	Pre-Test	Post-Test	Difference
I	450	445	5
J	610	615	-5
K	800	710	90
L	595	590	5
M	800	755	45
N	770	720	50
O	765	680	85
P = K (PASS.)	765	710	55
Q = M (PASS.)	760	710	50

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
FLOORBOARD DEFORMATION



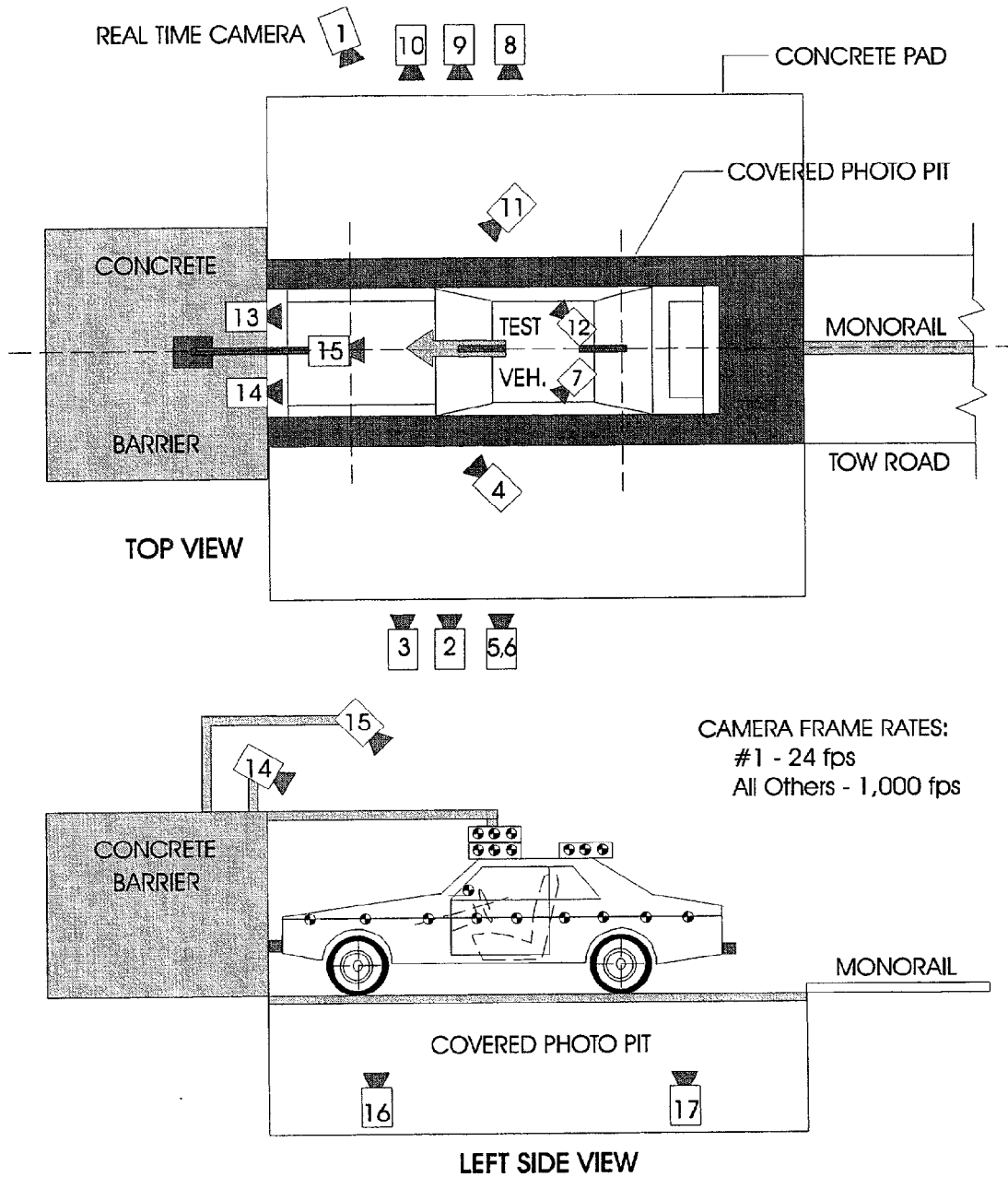
TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	485	530	-45
B	425	410	15
C	450	445	5
D	515	510	5
E	550	530	20
F	460	440	20
G	455	450	5
H	550	550	0

Units = mm

CAMERA POSITIONS FOR FRONTAL IMPACTS

NOTE: Camera information shown in DATA SHEET NO. 15.



DATA SHEET NO.15 HIGH-SPEED CAMERA LOCATIONS

NHTSA Test No.: MW0107 Vehicle: 1998 Chevrolet S-10 Extended Cab Fleetside Pick-up

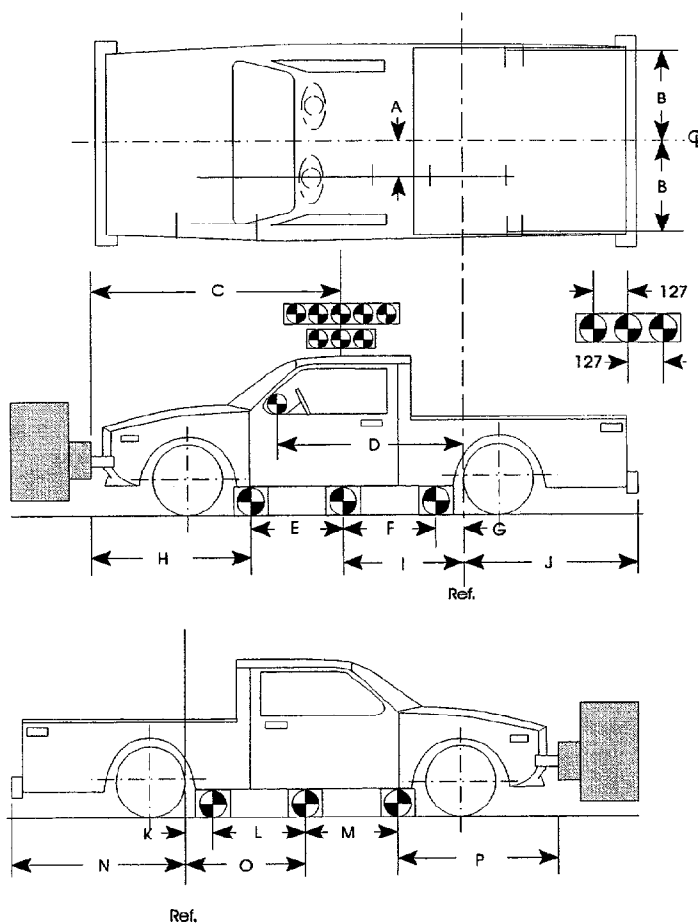
CAMERA NO.	VIEW	CAMERA POSITIONS (mm)*			ANGLE** (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	6987	1814	1105	-3	6444	12.5	1000
3	Left Side View	7792	740	1270	-5	7249	25	1000
4	Driver and Interior View	4615	2850	1955	-12	-	25	1000
5	Steering Column (Bottom)	7947	2175	1170	-7	7404	25	1000
6	Steering Column (Top)	7947	2175	1775	-2	7404	25	1000
7	Left Belt	-	-	-	-	-	13	500
8	Overall Right Side	6954	2105	1088	-4	7497	13	1000
9	Right Side View	7918	1403	1223	-2	8461	25	1000
10	Right Passenger View	8000	2063	1600	-3	8543	35	1000
11	Passenger and Interior View	4875	3176	2030	-11	-	25	1000
12	Right Belt	-	-	-	-	-	13	875
13	Passenger Front View	-450	-60	1089	-50	-	13	1000
14	Driver Front View	-450	-60	1093	-52	-	13	1000
15	Windshield View	0	0	3374	-58	-	13	1000
16	Pit View of Engine	0	1075	-3048	90	-	8	1000
17	Pit View of Fuel Tank	0	2855	-3048	90	-	8	1000

*X = film plane to monorail centerline
 Y = film plane to impact location
 Z = film plane to ground
 ** = referenced to horizontal plane
 N.T. indicates No Timing

DATA SHEET NO. 16 VEHICLE REFERENCE PHOTO TARGET LOCATIONS

(Dimensions in millimeters)

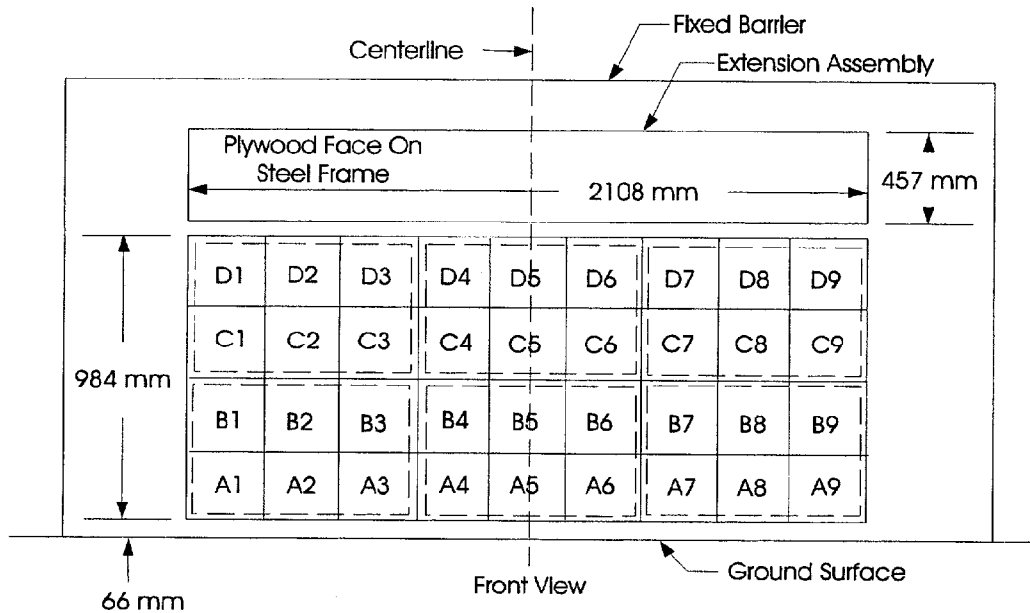
A	467
B	707
C	2420
D	1915
E	1085
F	1085
G	130
H	1335
I	1215
J	1530
K	130
L	1085
M	1085
N	1530
O	1215
P	1335



DATA SHEET NO. 17 LOAD CELL LOCATIONS ON FIXED BARRIER

Load Cell Barrier data was not requested for this test.

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



6 GROUPS OF 6 LOAD CELLS EACH

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

DATA SHEET NO. 18 POST TEST AIR BAG DATA

NHTSA No. : MW0107; Test Date: December 9, 1997; Technician: P. MacDiarmid

Vehicle Model Year/Make/Model: 1998 Chevrolet S-10 Extended Cab Fleetside

A. No. of vent holes: 2 -Driver 2 -Passenger

B. Size of vent holes: (mm²) 314 -Driver 1963 -Passenger

C. Total vent area: (mm²) 628 -Driver 3927 -Passenger

D. Deflated air bag length and width dimensions or, if round, diameter. (mm)

Driver: 600 -Height; 480 -Width; 350 -Depth

Passenger: 525 -Height; 600 -Width; 680 -Depth

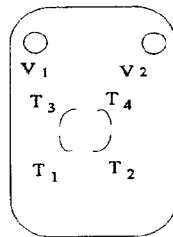
E. Is the air bag tethered?

Driver: X -Yes; - -No; If yes, record length of tether- 300

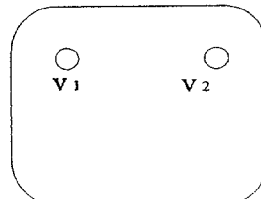
Passenger: - -Yes; X -No; If yes, record length of tether- -

Sketch the air bag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered. Also describe how the tethers are attached to the bag and the steering wheel.
(Note: Not to scale; V_n = Vent hole_n, T_n = Tether_n).

Driver



Passenger



F. Record part numbers and manufacturer name of the air bag and gas generator.

Driver: Air bag: 209705 MJ 288

Generator: GPEHX2BVGNG AB29321ZR6SA83 P16821584-NC TAC270L10641

Passenger: Air bag: 16B22860-00 ST TRUCK TRAV70167793

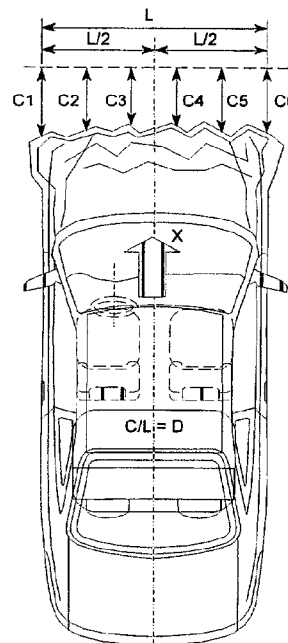
Generator: AL2694QZR6YSS1 16759325

DATA SHEET NO.19 ACCIDENT INVESTIGATION DIVISION DATA
FOR 56.3 KPH FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Chevrolet S-10 Extended Cab Fleetside Pick-up
 NHTSA Test No.: MW0107 VIN: 1GCCS19X7W8125455
 Model Year: 1998 Build Date: 10/97 Test Date: December 9, 1997
 Vehicle Size Category: Compact Pick-Up Test Weight: 1867.5 kg
 Vehicle Wheelbase: 3120 mm; Front Overhang: 1335 mm; Overall Width: 1725 mm
 Collision Deformation Classification (CDC) Code: 12FDEW3

Crush Depth Dimensions:

	PRE	POST	DIFF	
C1 =	4950	4285	-665	mm
C2 =	5100	4385	-715	mm
C3 =	5160	4375	-785	mm
C4 =	5160	4380	-780	mm
C5 =	5105	4395	-710	mm
C6 =	4945	4345	-600	mm



Midpoint of Damage: $D = \frac{\text{Vehicle Centerline}}{(\text{Longitudinal})}$

Length of Damaged Region:

L1 = 1655 mm
 L2 = 827.5 mm
 L3 = 331 mm

PHOTOGRAPHS

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PHOTOGRAPH NOT AVAILABLE



Figure A-2 PRE-TEST FRONT VIEW



Figure A-3 POST-TEST FRONT VIEW



Figure A-4 PRE-TEST LEFT SIDE VIEW



Figure A-5 POST-TEST LEFT SIDE VIEW

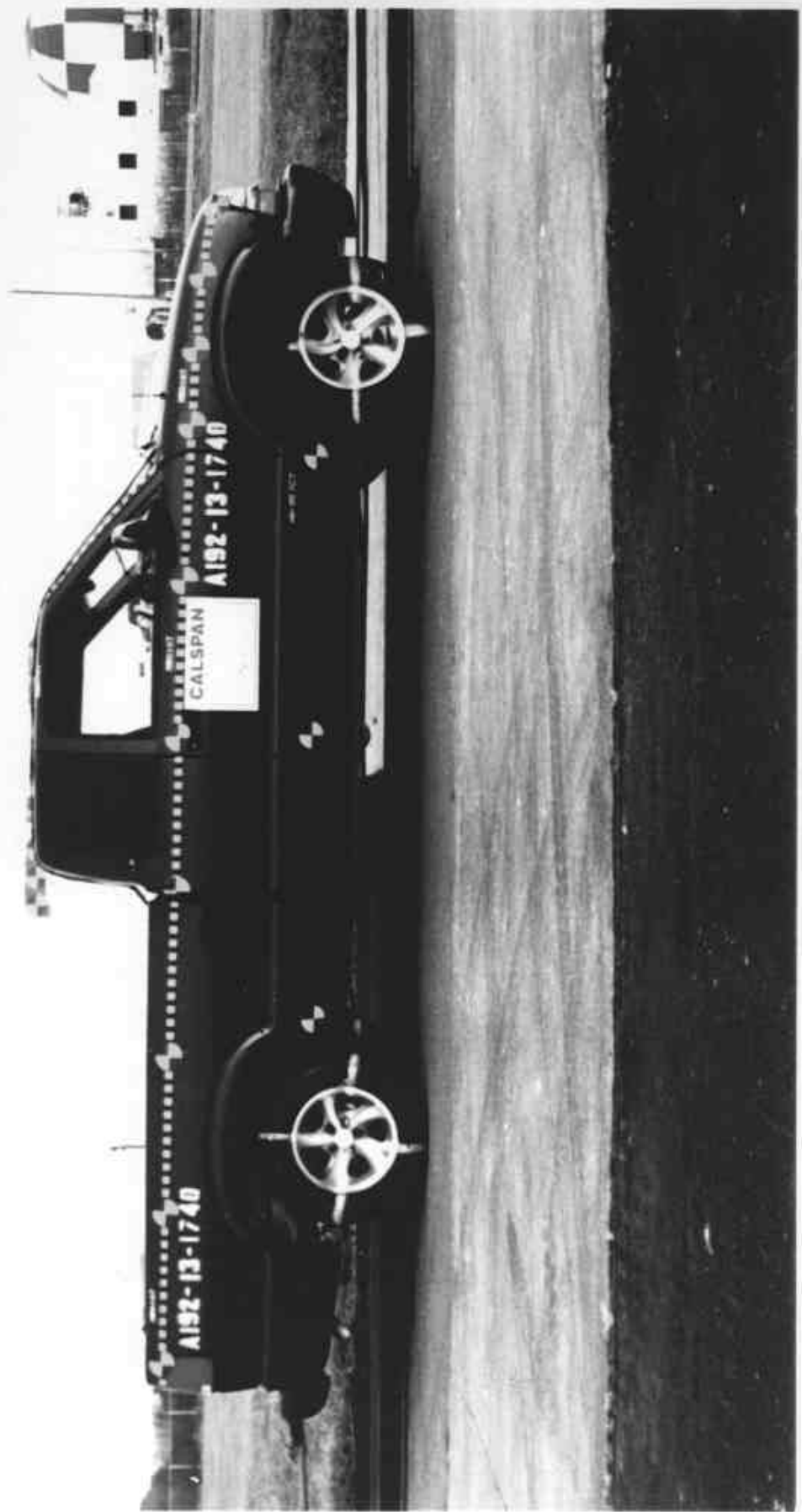


Figure A-6 PRE-TEST RIGHT SIDE VIEW

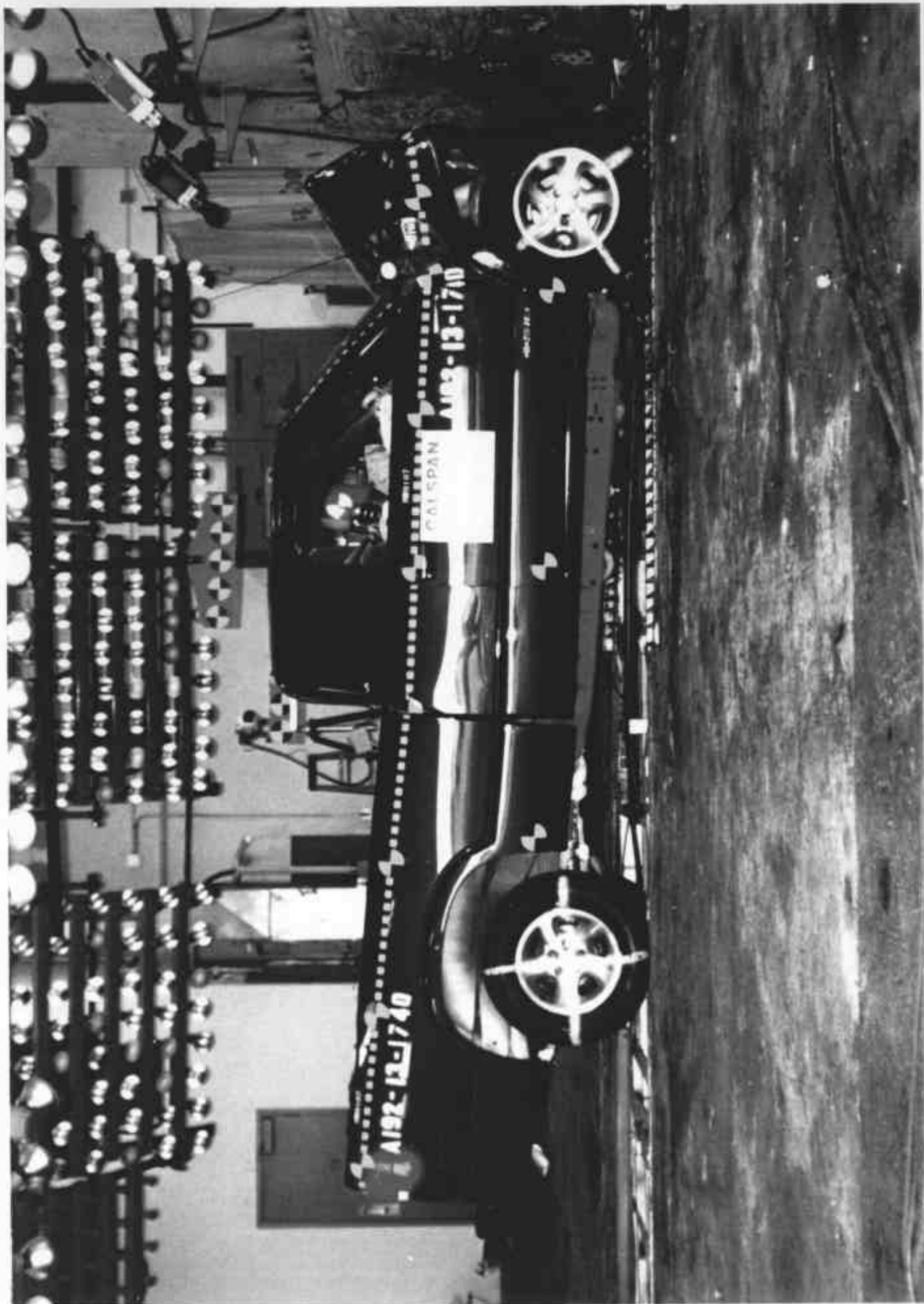


Figure A-7 POST-TEST RIGHT SIDE VIEW



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



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



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



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

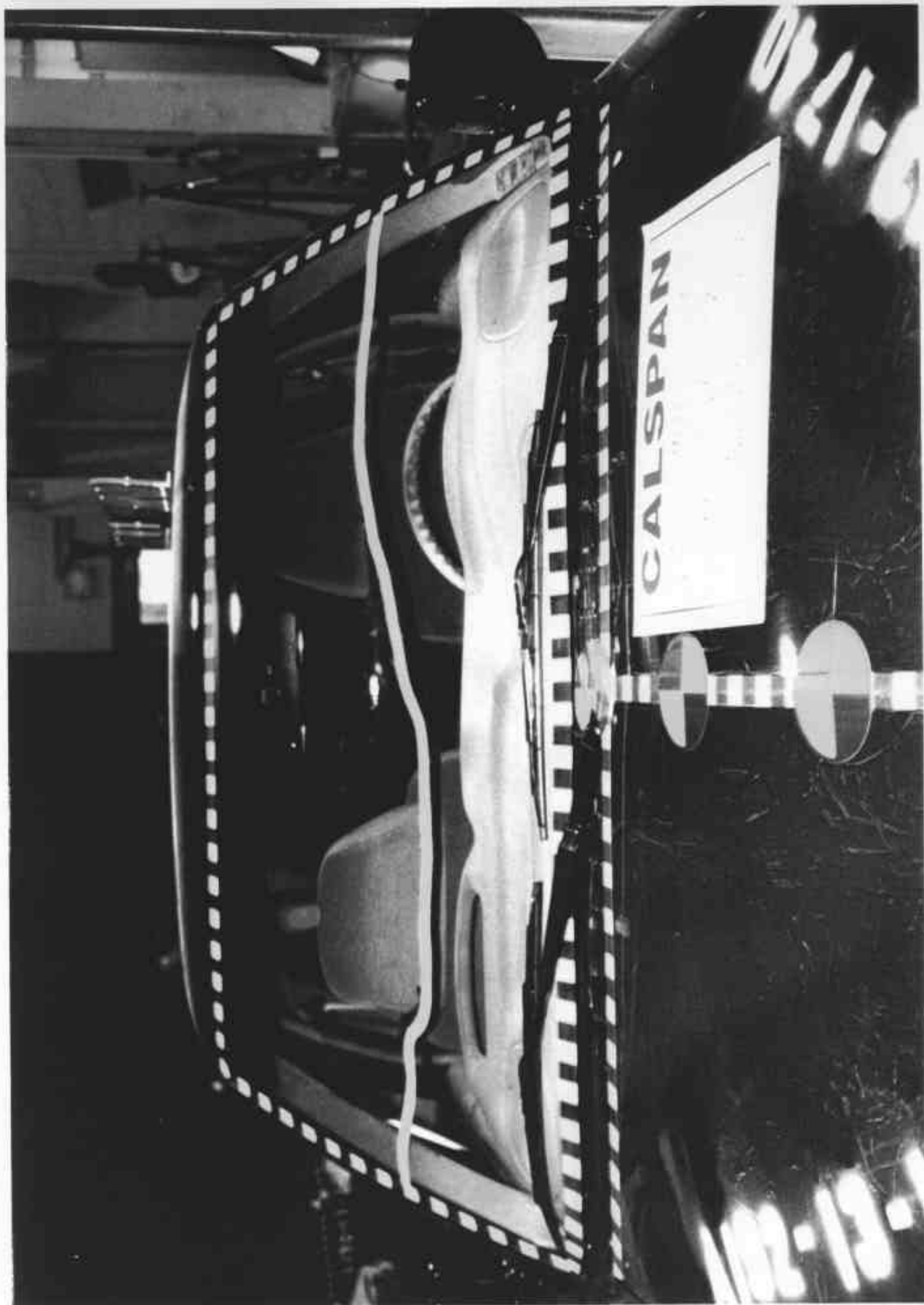


Figure A-12 PRE-TEST WINDSHIELD VIEW

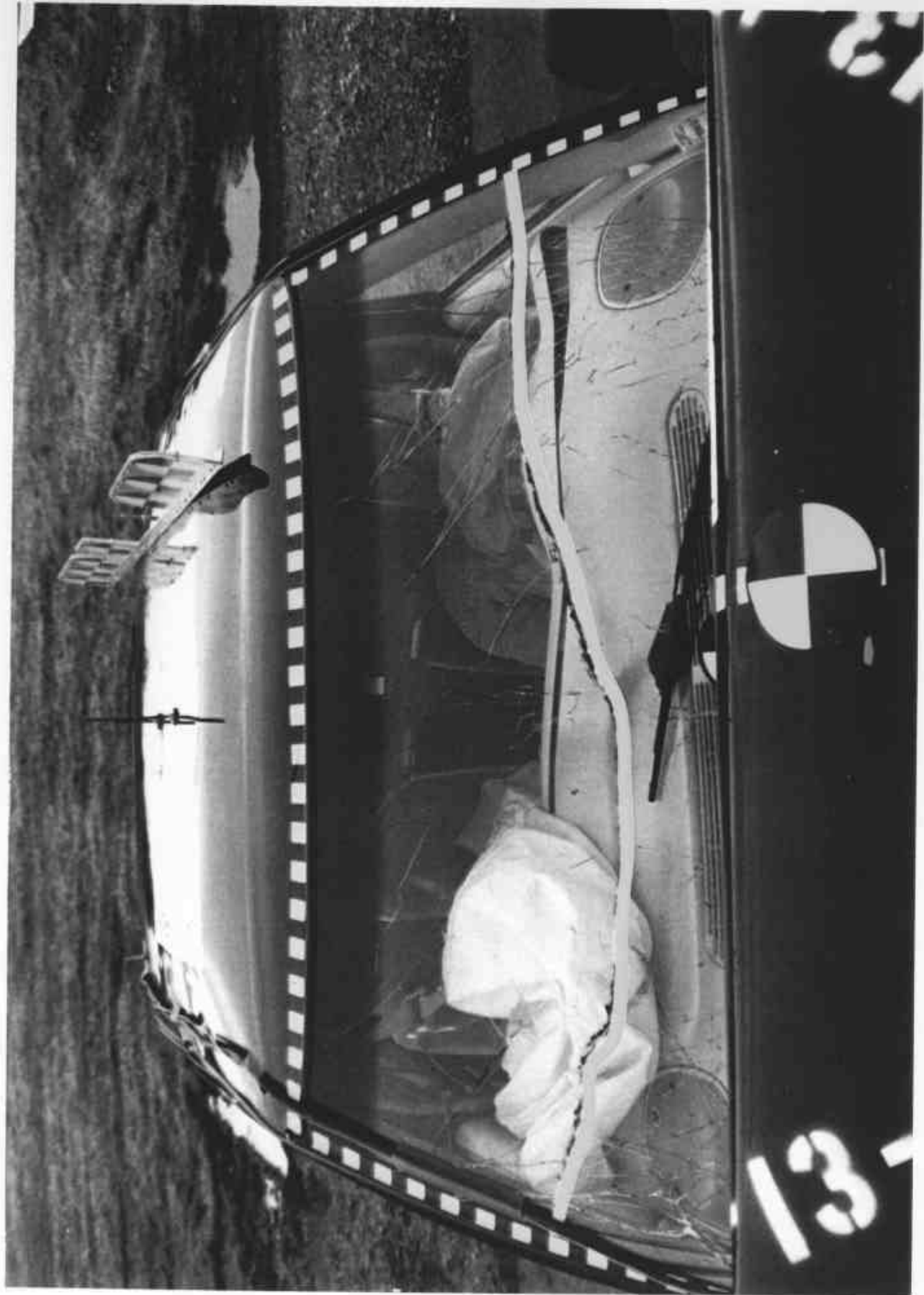


Figure A-13 POST-TEST WINDSHIELD VIEW

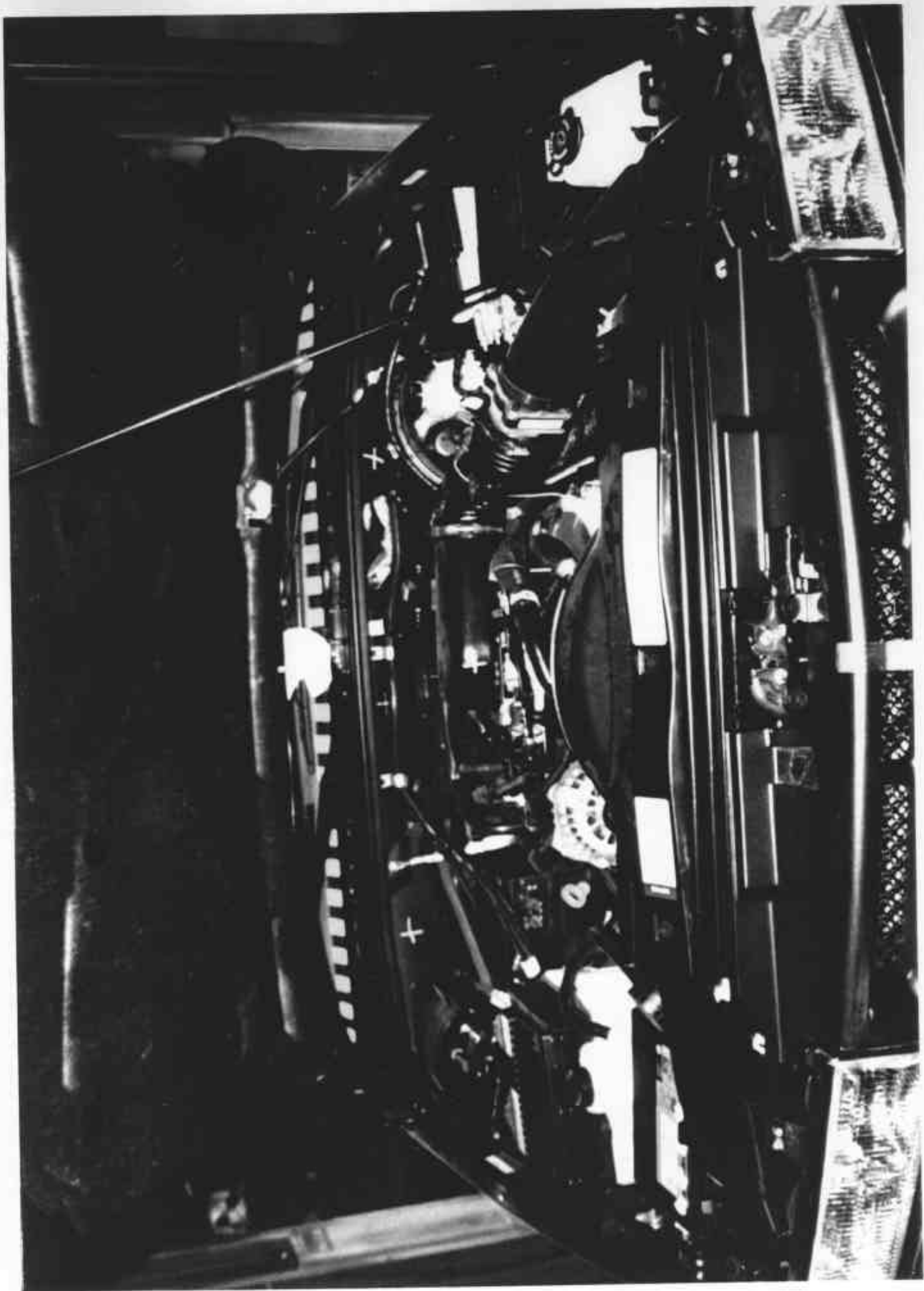


Figure A-14 PRE-TEST ENGINE COMPARTMENT VIEW

Figure A-15 FUEL CAP VIEW



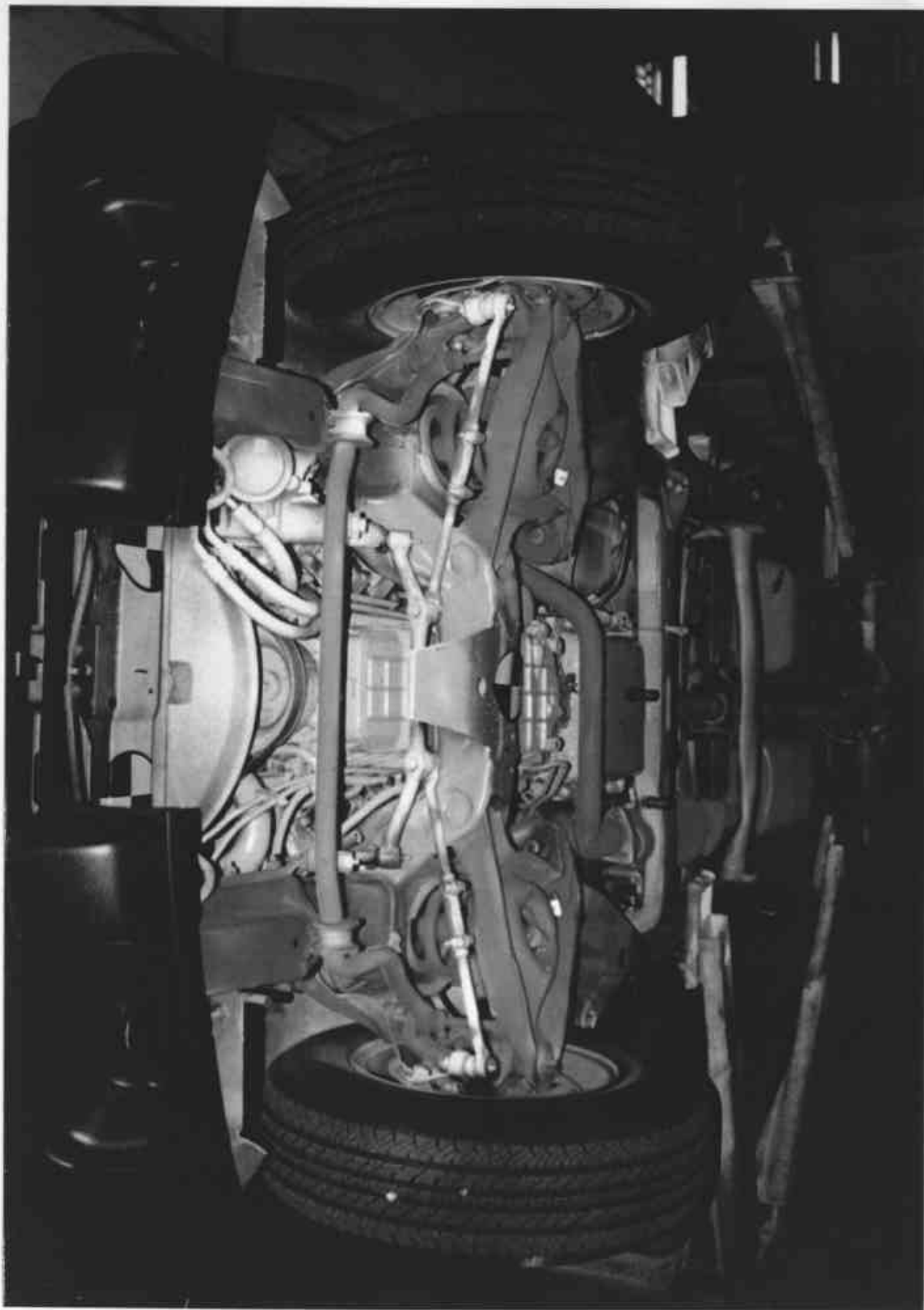


Figure A-16 PRE-TEST FRONT UNDERBODY VIEW



Figure A-17 POST-TEST FRONT UNDERBODY VIEW



Figure A-18 PRE-TEST FRONT SIDE UNDERBODY VIEW

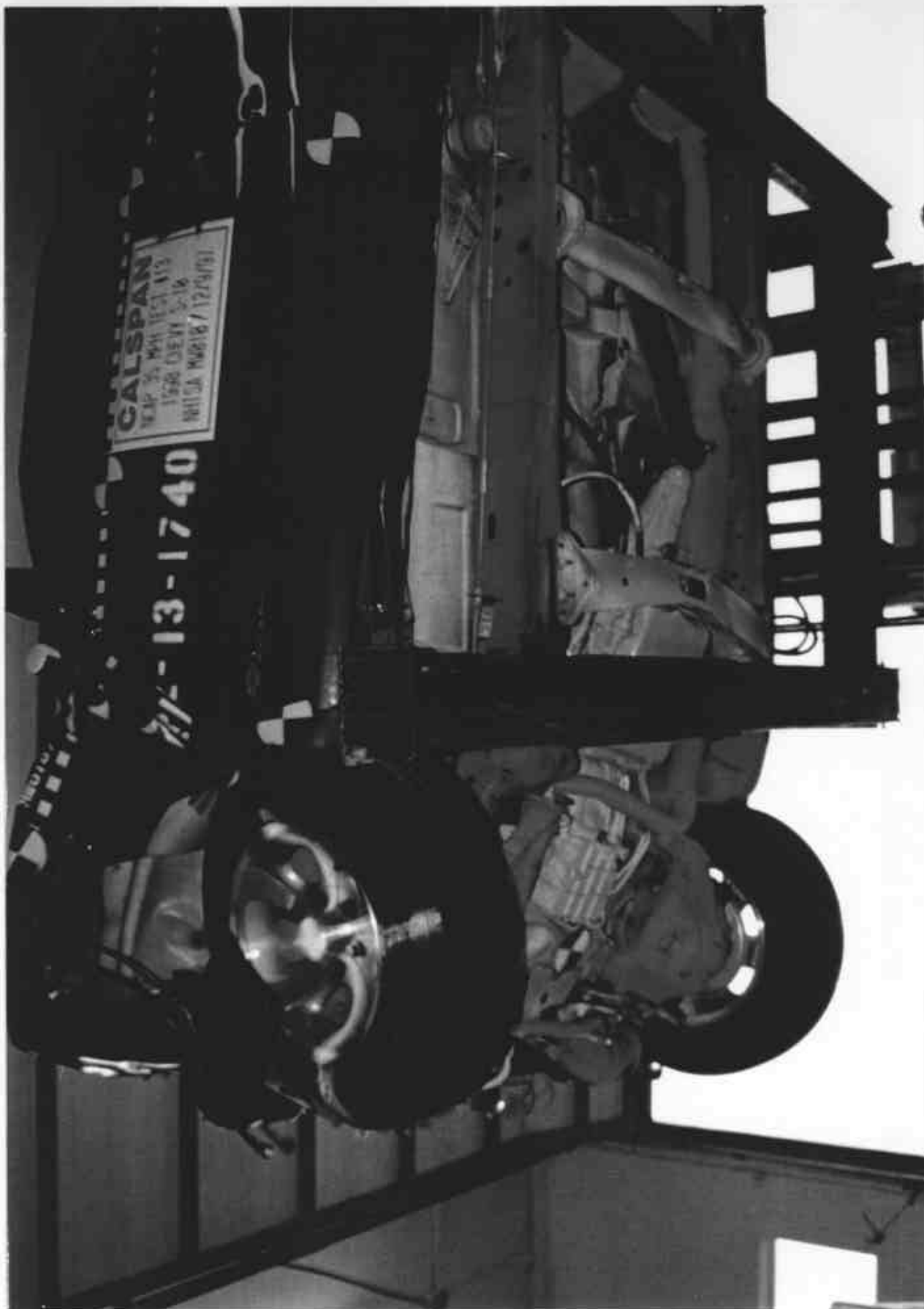


Figure A-19 POST-TEST FRONT SIDE UNDERBODY VIEW



Figure A-20 PRE-TEST REAR UNDERBODY VIEW

8413-13-1740



Figure A-21 POST-TEST REAR UNDERBODY VIEW

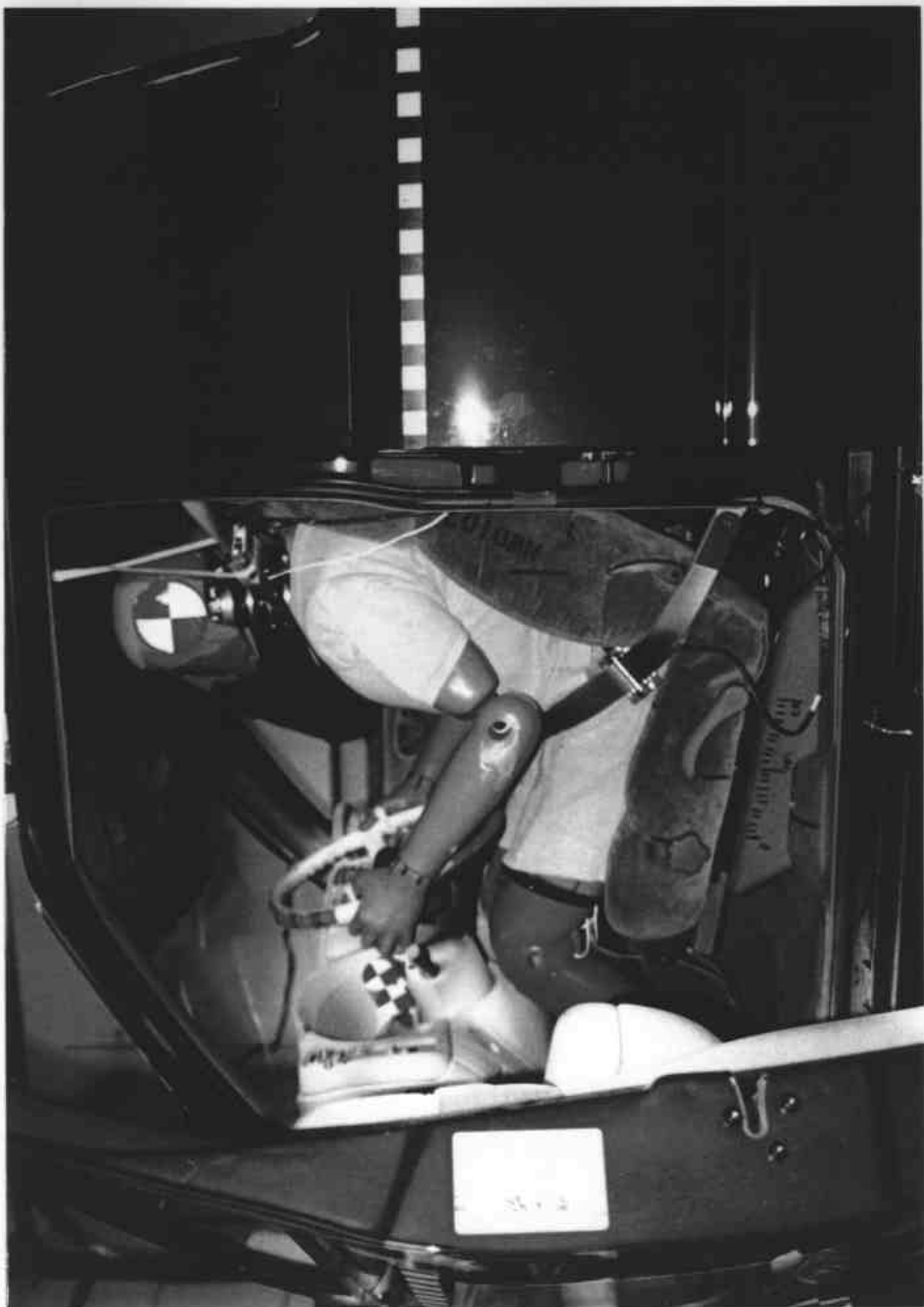


Figure A-22 PRE-TEST DRIVER POSITION VIEW



Figure A-23 POST-TEST DRIVER POSITION VIEW



Figure A-24 PRE-TEST PASSENGER POSITION VIEW

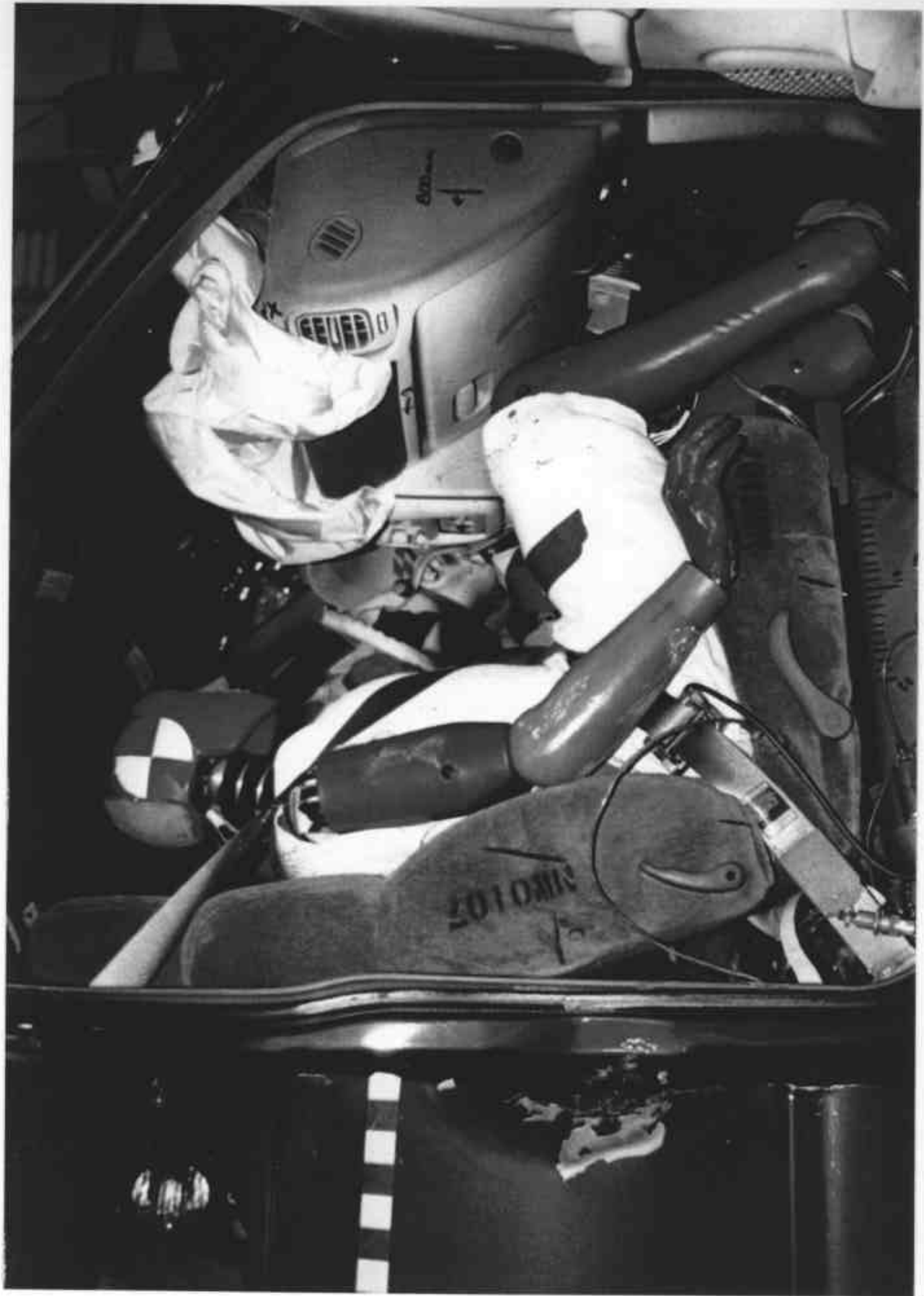


Figure A-25 POST-TEST PASSENGER POSITION VIEW



Figure A-26 PRE-TEST DRIVER AND INTERIOR VIEW

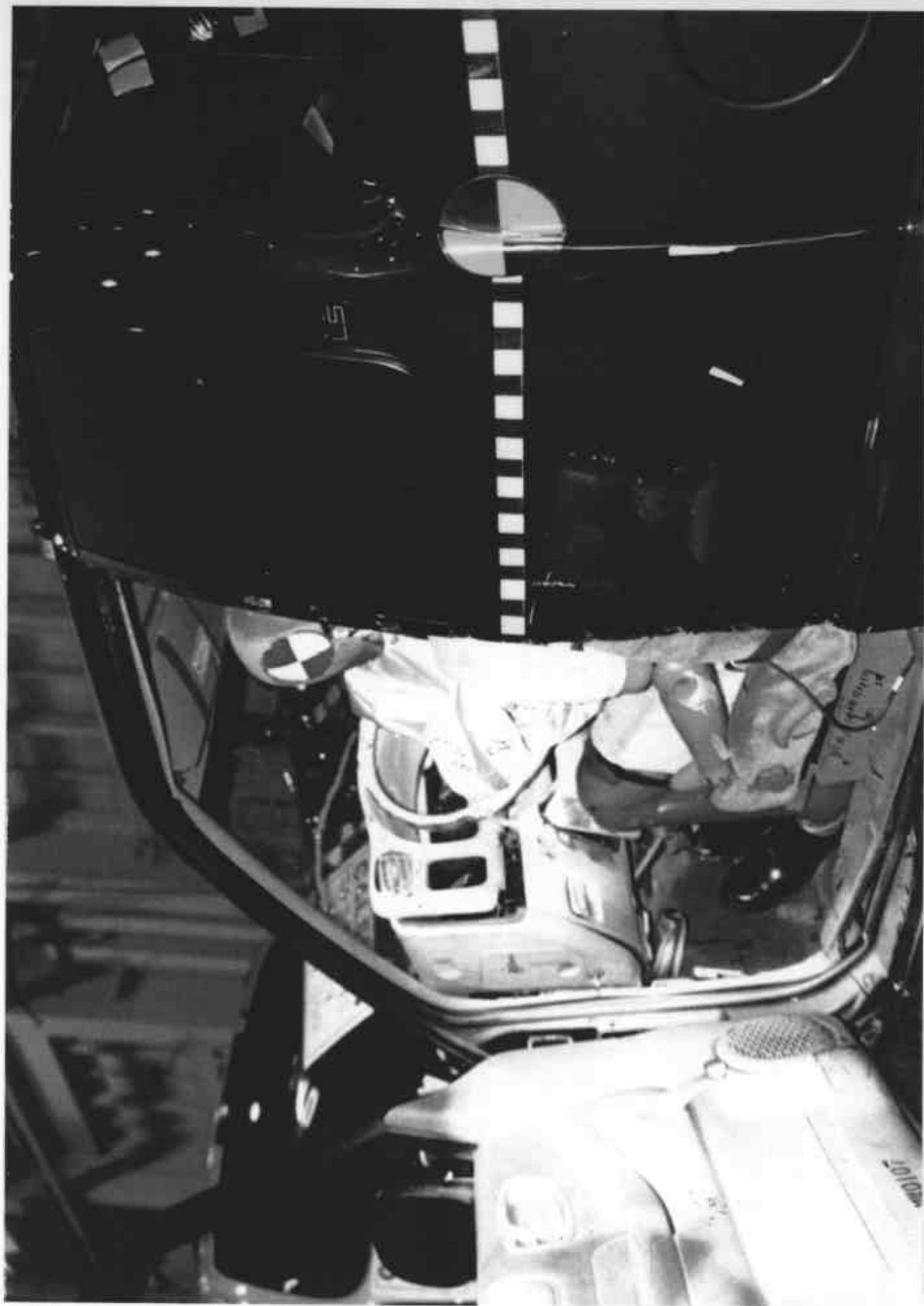


Figure A-27 POST-TEST DRIVER AND INTERIOR VIEW



Figure A-28 PRE-TEST PASSENGER AND INTERIOR VIEW



Figure A-29 POST-TEST PASSENGER AND INTERIOR VIEW

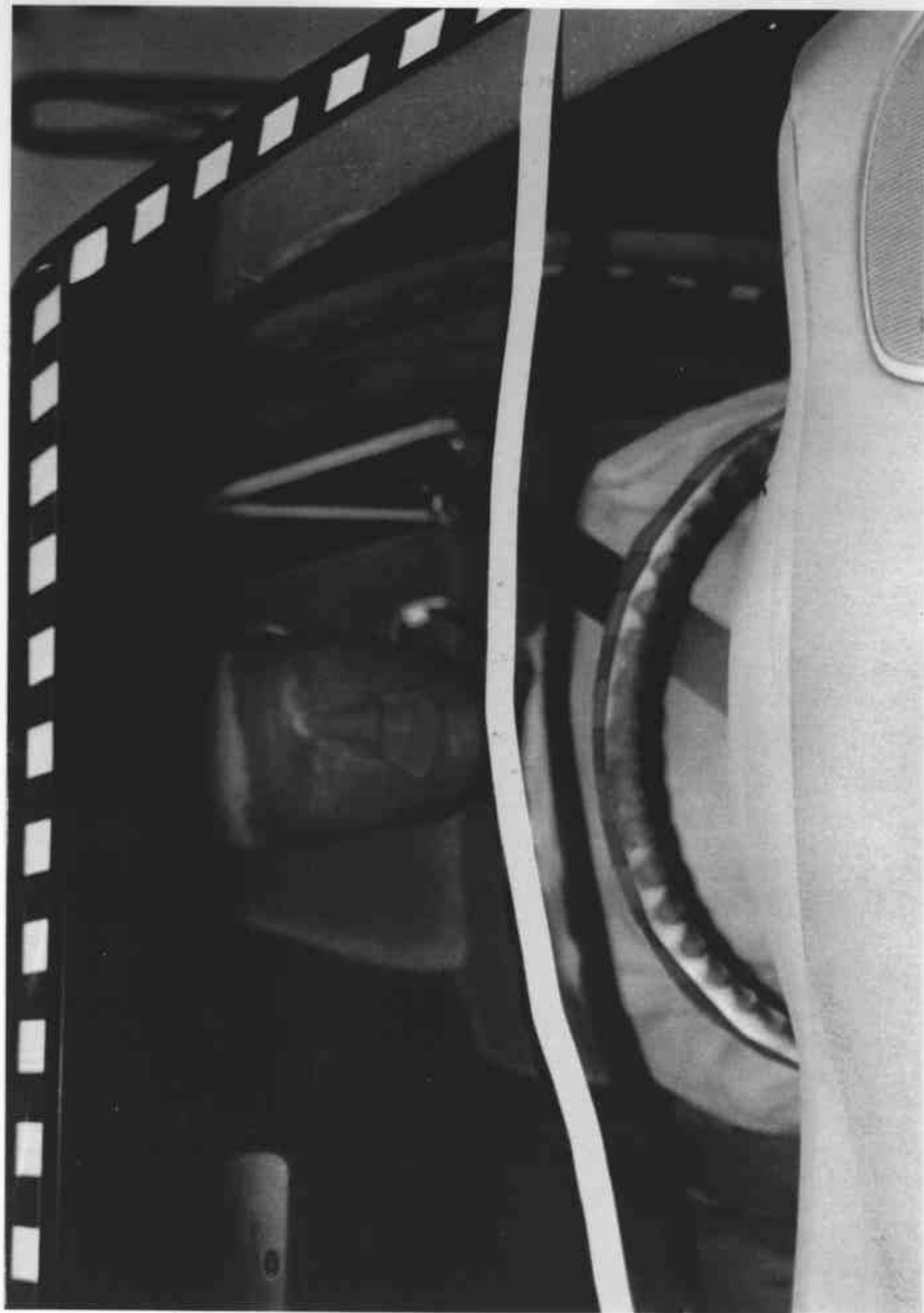


Figure A-30 PRE-TEST DRIVER HEAD LOCATION



Figure A-31 POST-TEST DRIVER HEAD LOCATION

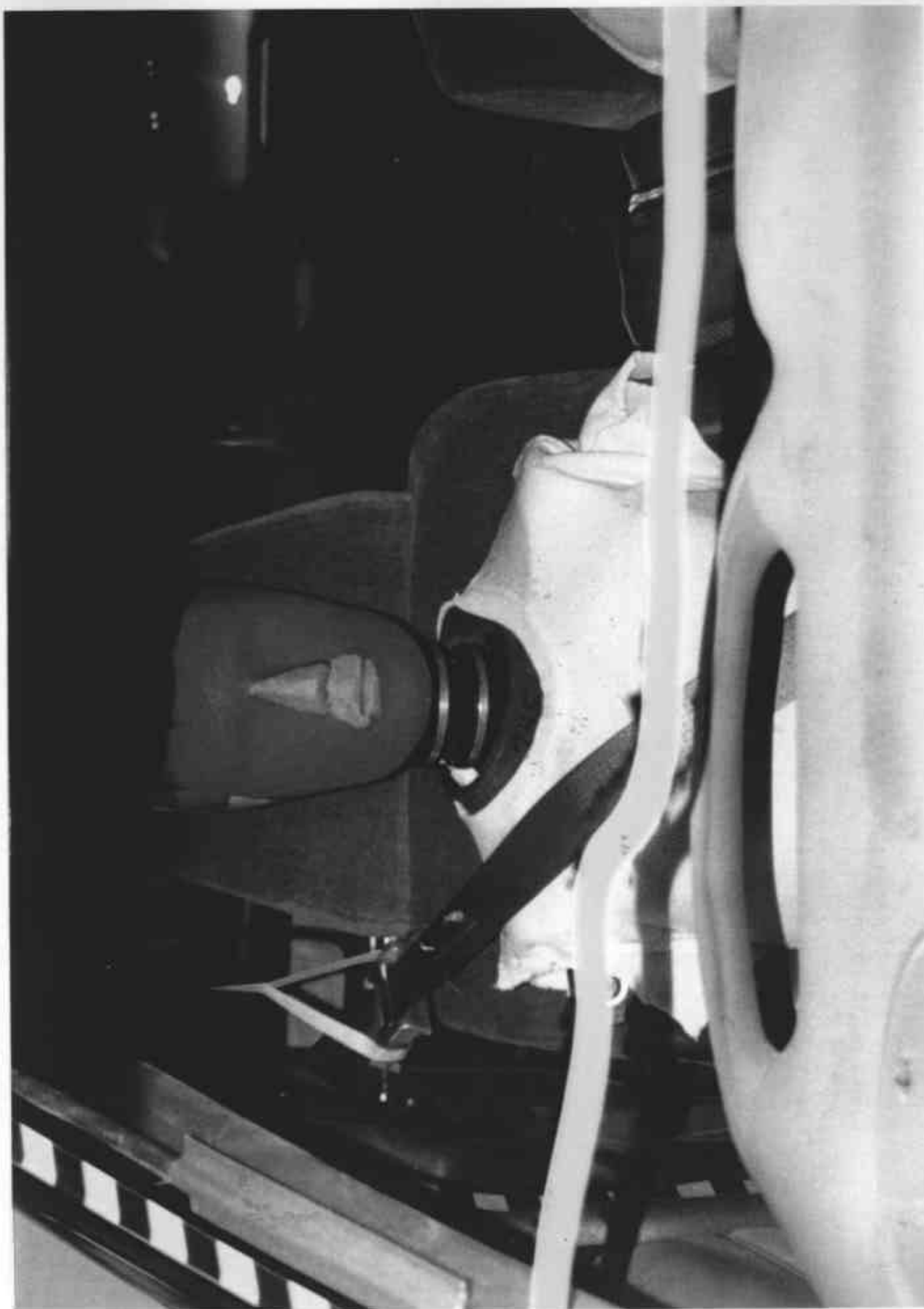


Figure A-32 PRE-TEST PASSENGER HEAD LOCATION



Figure A-33 POST-TEST PASSENGER HEAD LOCATION



Figure A-34 PRE-TEST DRIVER FLOOR PAN VIEW



Figure A-35 POST-TEST DRIVER FLOOR PAN VIEW



Figure A-36 PRE-TEST PASSENGER FLOOR PAN VIEW



Figure A-37 POST-TEST PASSENGER FLOOR PAN VIEW

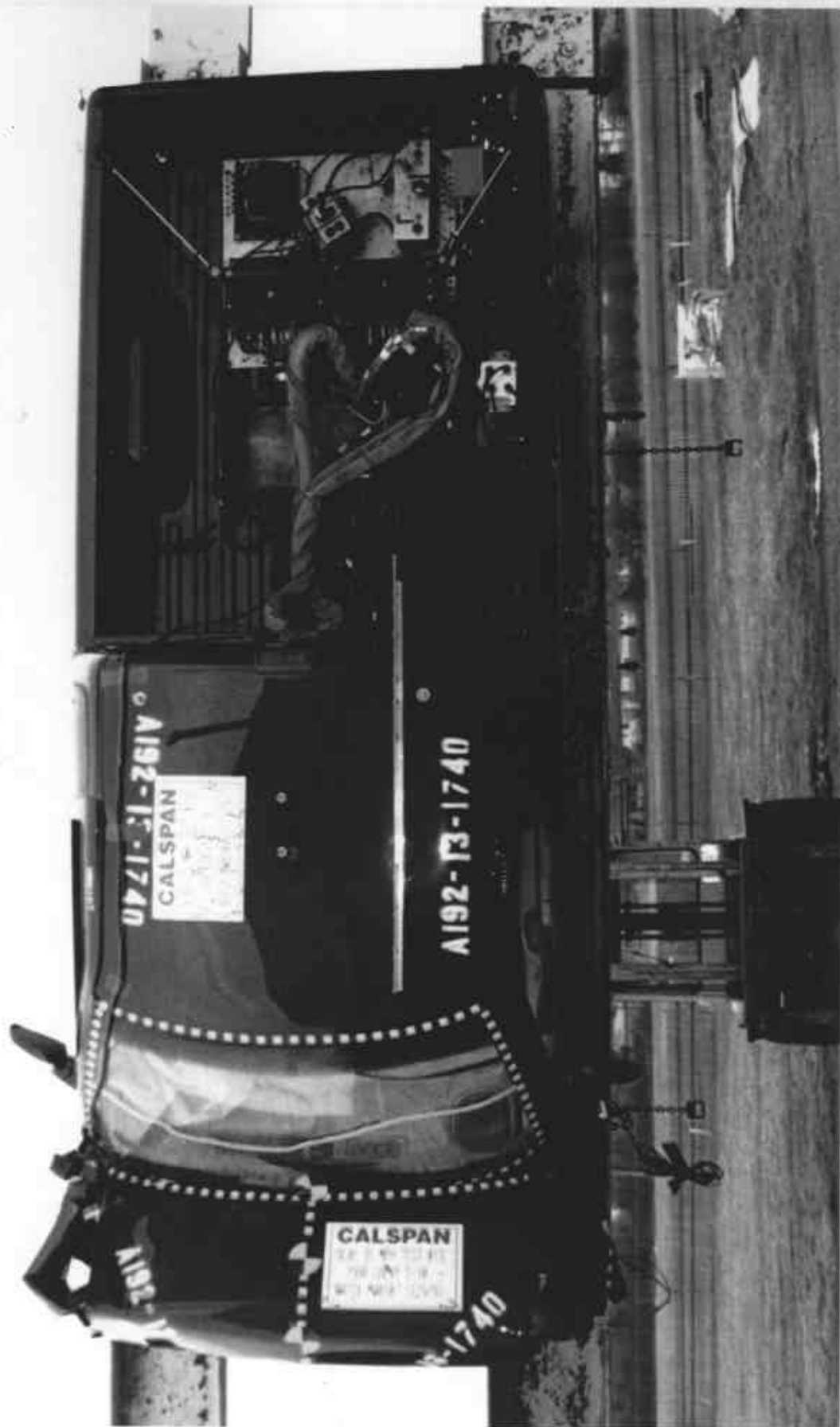


Figure A-38 ROLLOVER VIEW

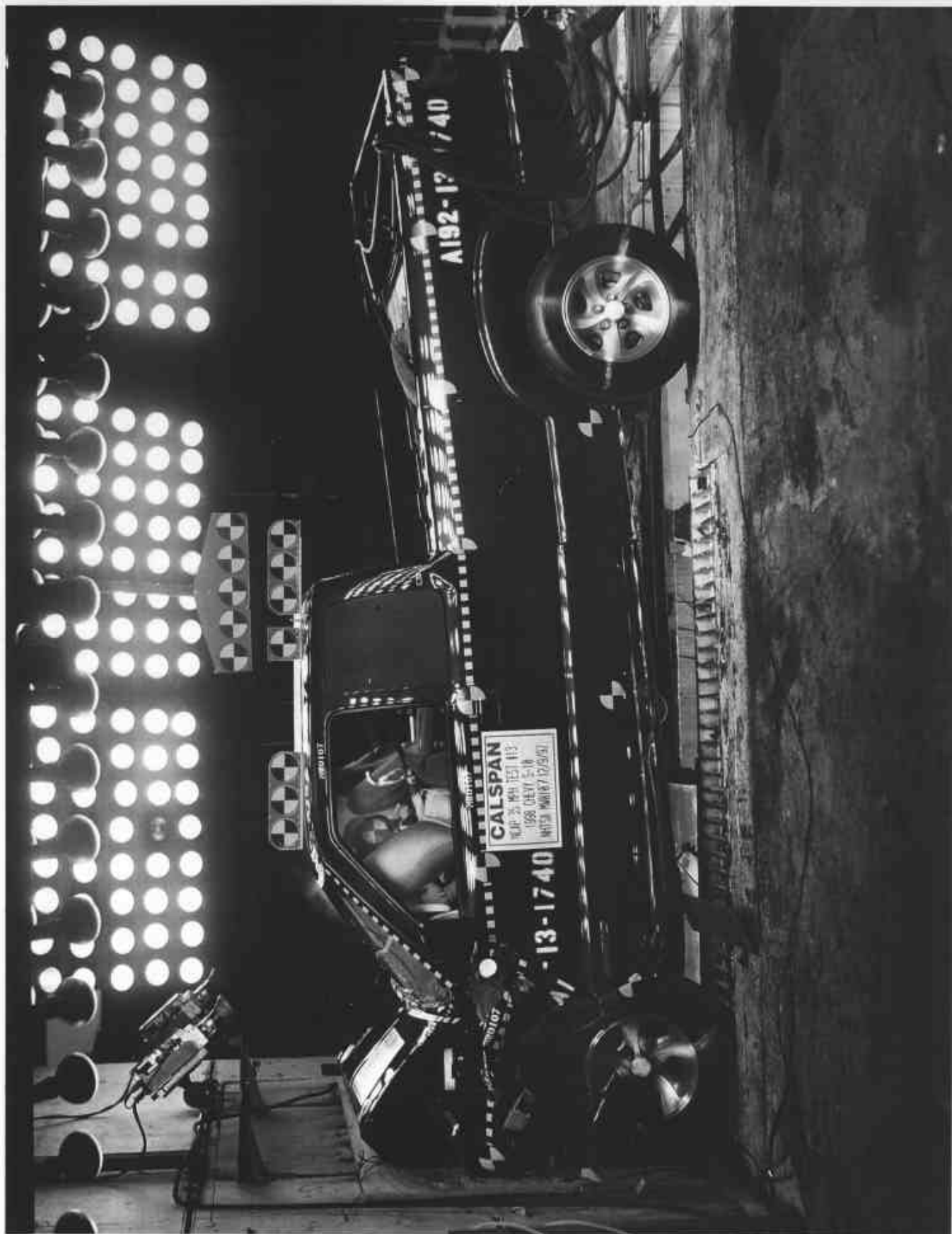


Figure A-39 IMPACT VIEW

Appendix B

DUMMY, VEHICLE AND LOAD CELL BARRIER RESPONSE DATA

**Hybrid III Dummy Sign Conventions
Load Cells and Special Transducers**

Transducer	DOT/NHTSA Sign Convention (positive unless noted)
Upper Neck Load Cell	Fx Head forward Fy Head left Fz Neck in tension Mx Right ear to right shoulder My Chin to chest (flexion) Mz Chin to left shoulder (look left)
Chest Displacement Potentiometer	Compression is negative
Pelvic Load Cell (Lower Lumbar)	Fx Chest forward Fy Chest left Fz Spine in tension
Femur Load Cell	Compression is negative
Upper Tibia Load Cell (right and left leg)	Mx Support tibia, load right side center My Support tibia, load front (shin) center
Lower Tibia Load Cell (right and left leg)	Fy Foot right w/r to left Fz Tibia in tension Mx Support tibia, press right side center

NHTSA TEST NO. MW0107

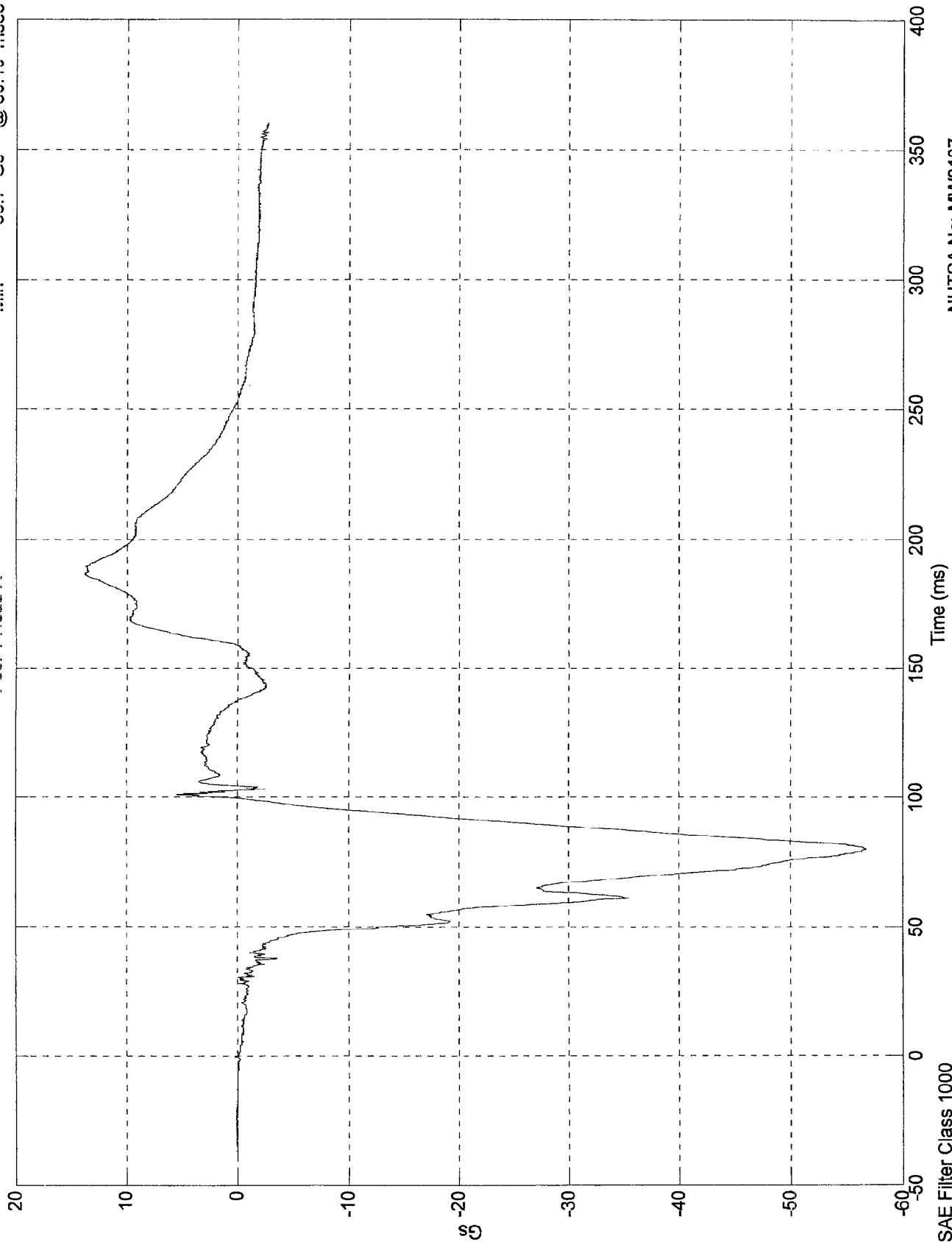
DUMMY DATA

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

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 13.8 Gs @ 186.50 msec
 Min = -56.7 Gs @ 80.10 msec

Pos. 1 Head X



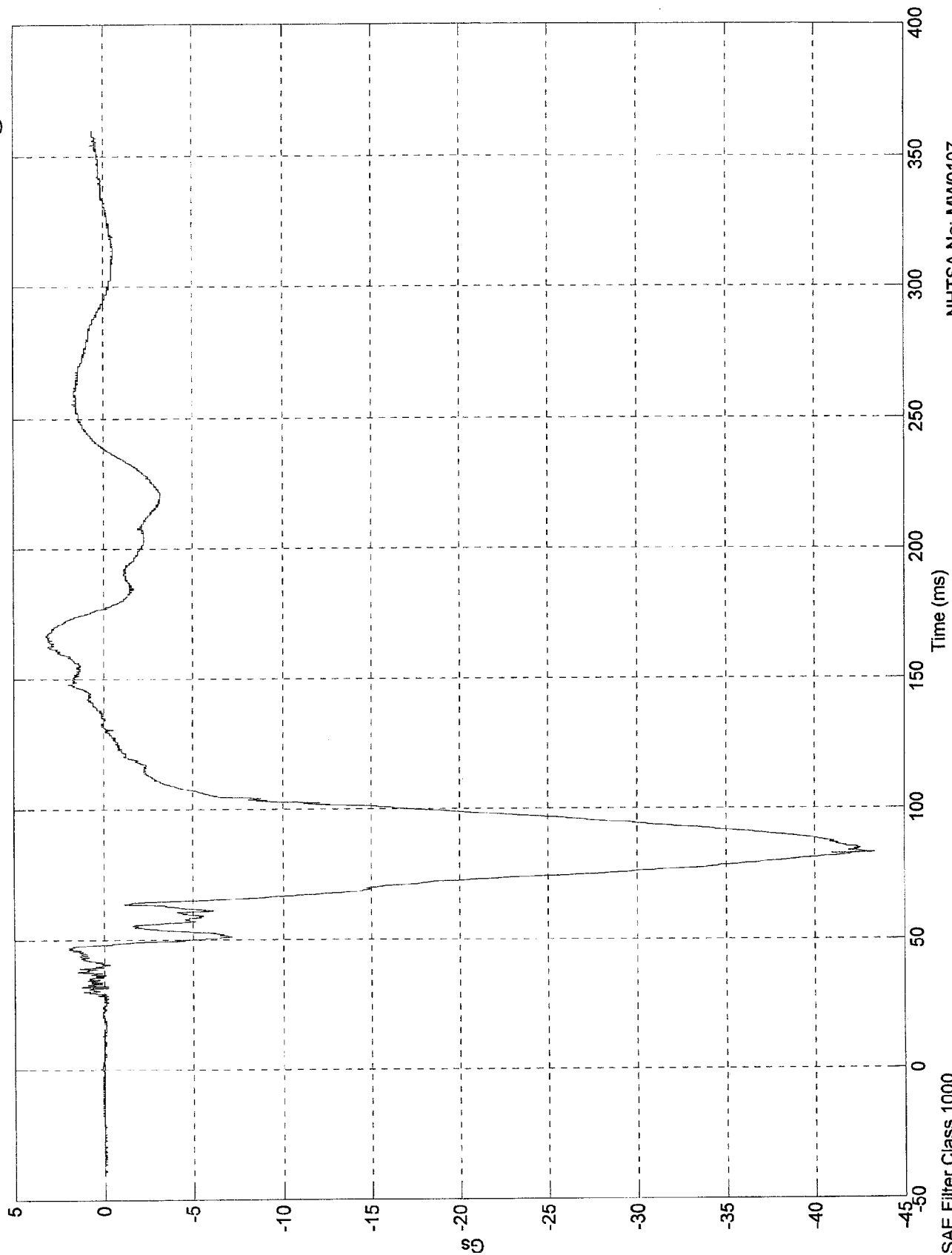
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 3.21 Gs @ 166.30 msec
 Min = -43.4 Gs @ 83.20 msec

Pos. 1 Head Y

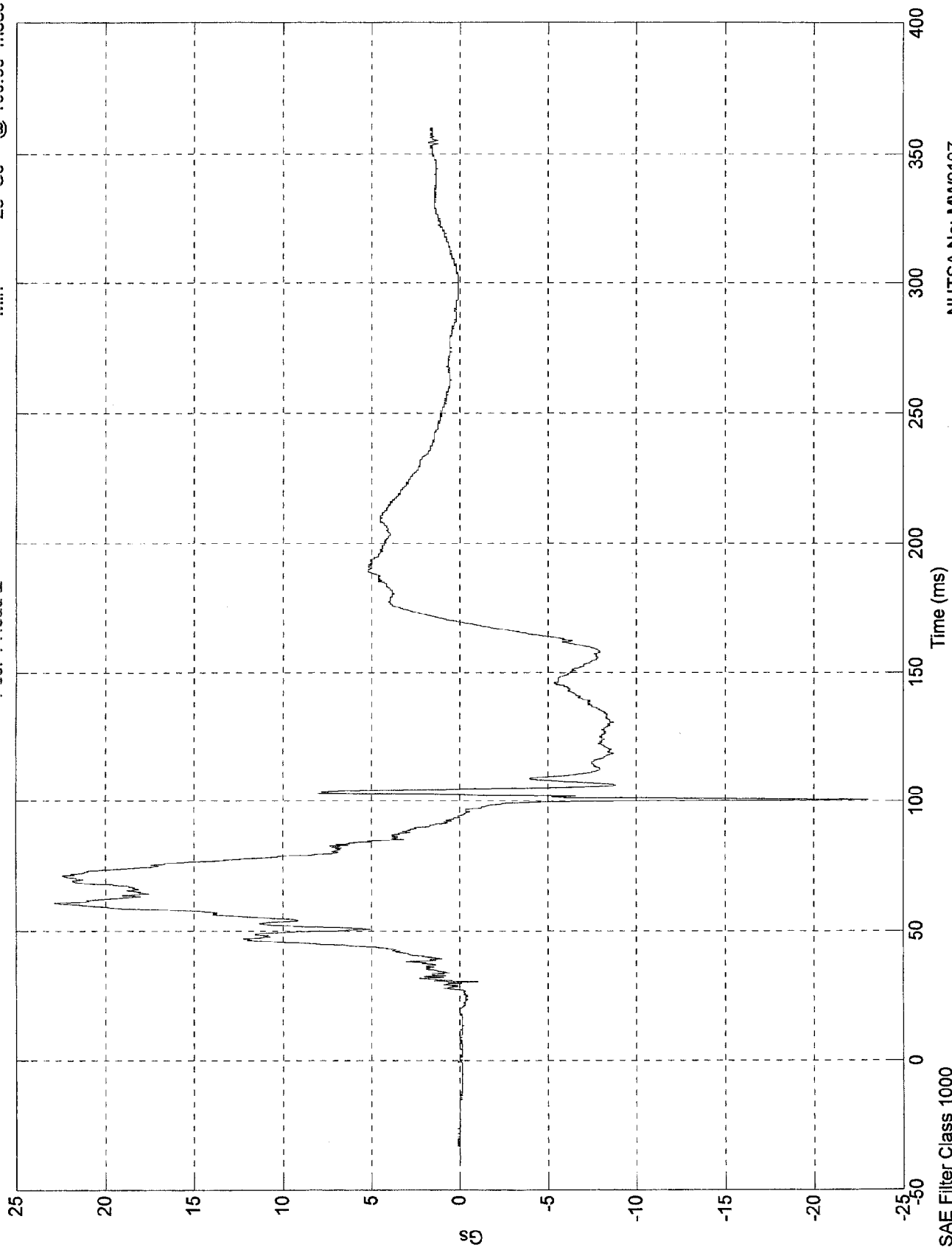


NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 22.9 Gs @ 60.60 msec
Min = -23 Gs @ 100.50 msec

Pos. 1 Head Z

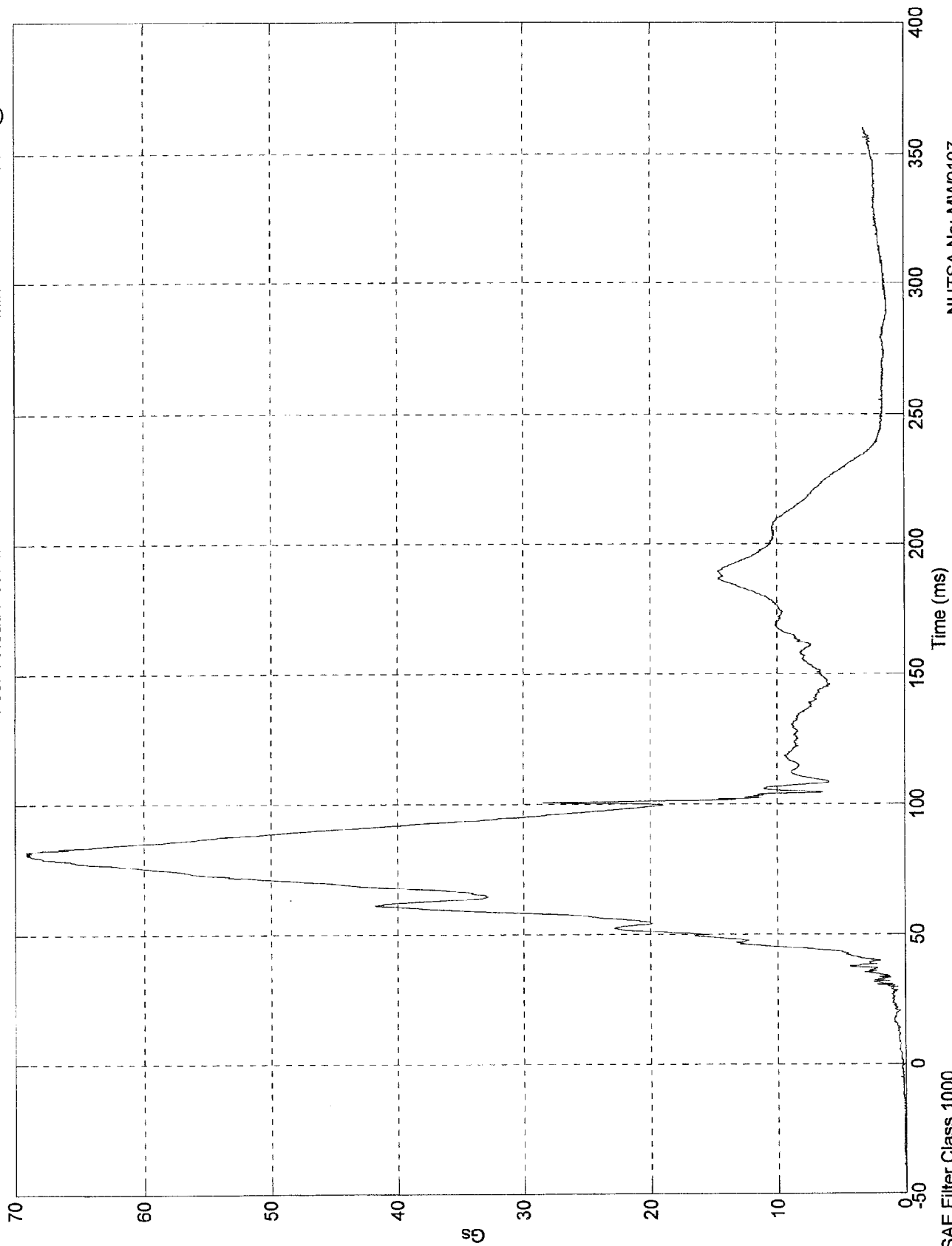


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 69.1 Gs @ 81.30 msec
 Min = 0.0398 Gs @ -39.90 msec

Pos. 1 Head Resultant



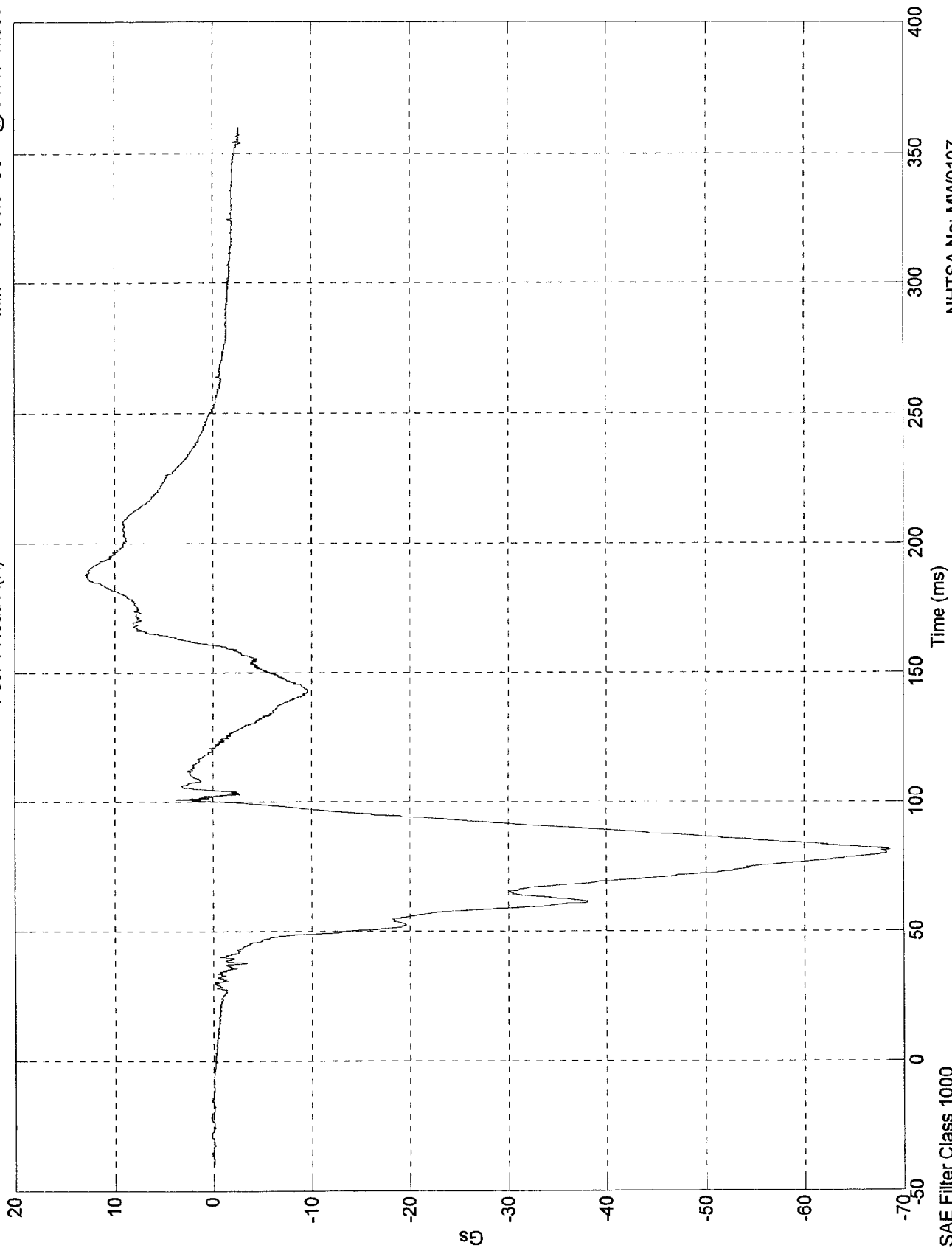
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 13 Gs @ 187.80 msec
Min = -68.6 Gs @ 81.40 msec

Pos. 1 Head X(R)



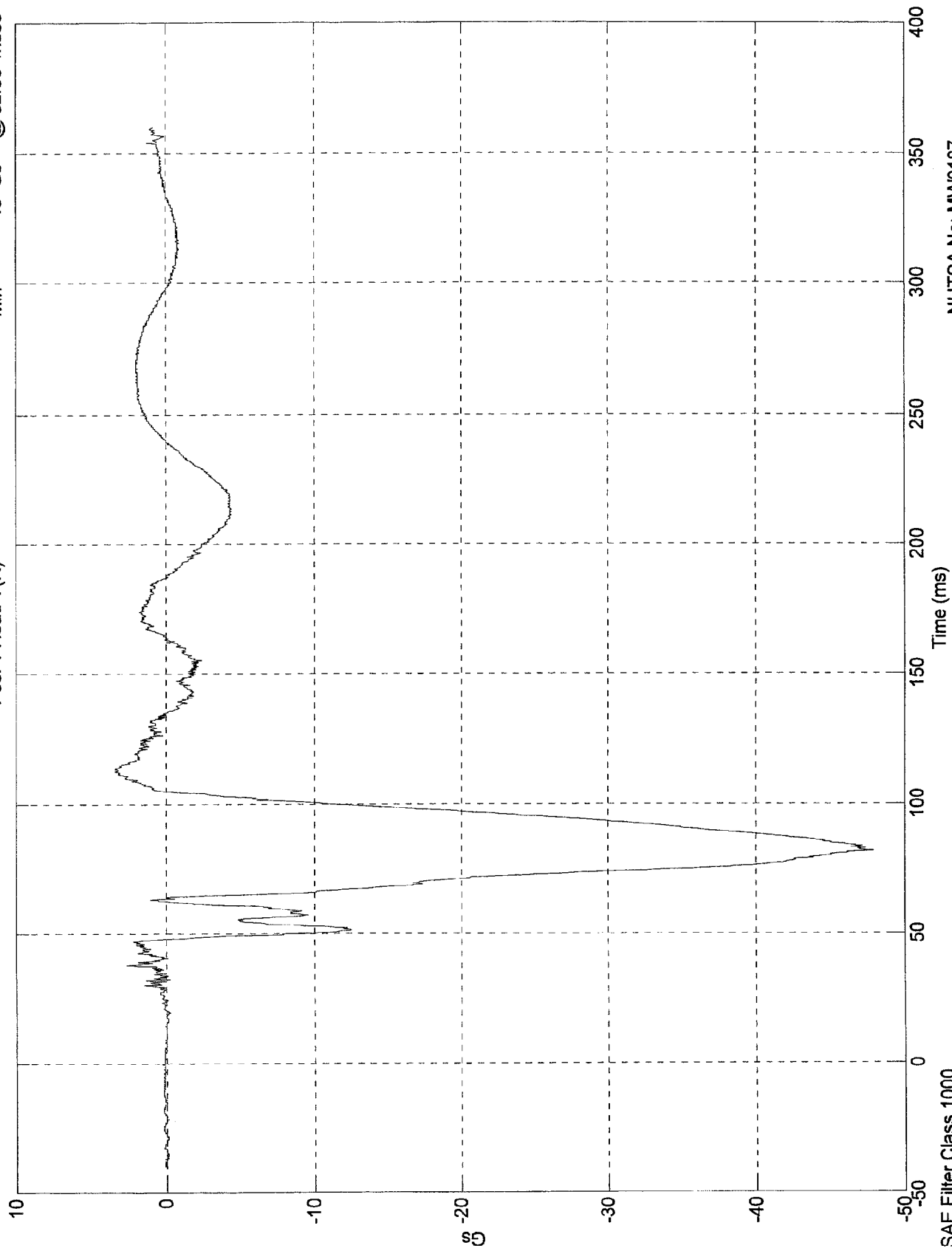
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 3.44 Gs @ 112.70 msec
 Min = -48 Gs @ 82.00 msec

Pos. 1 Head Y(R)

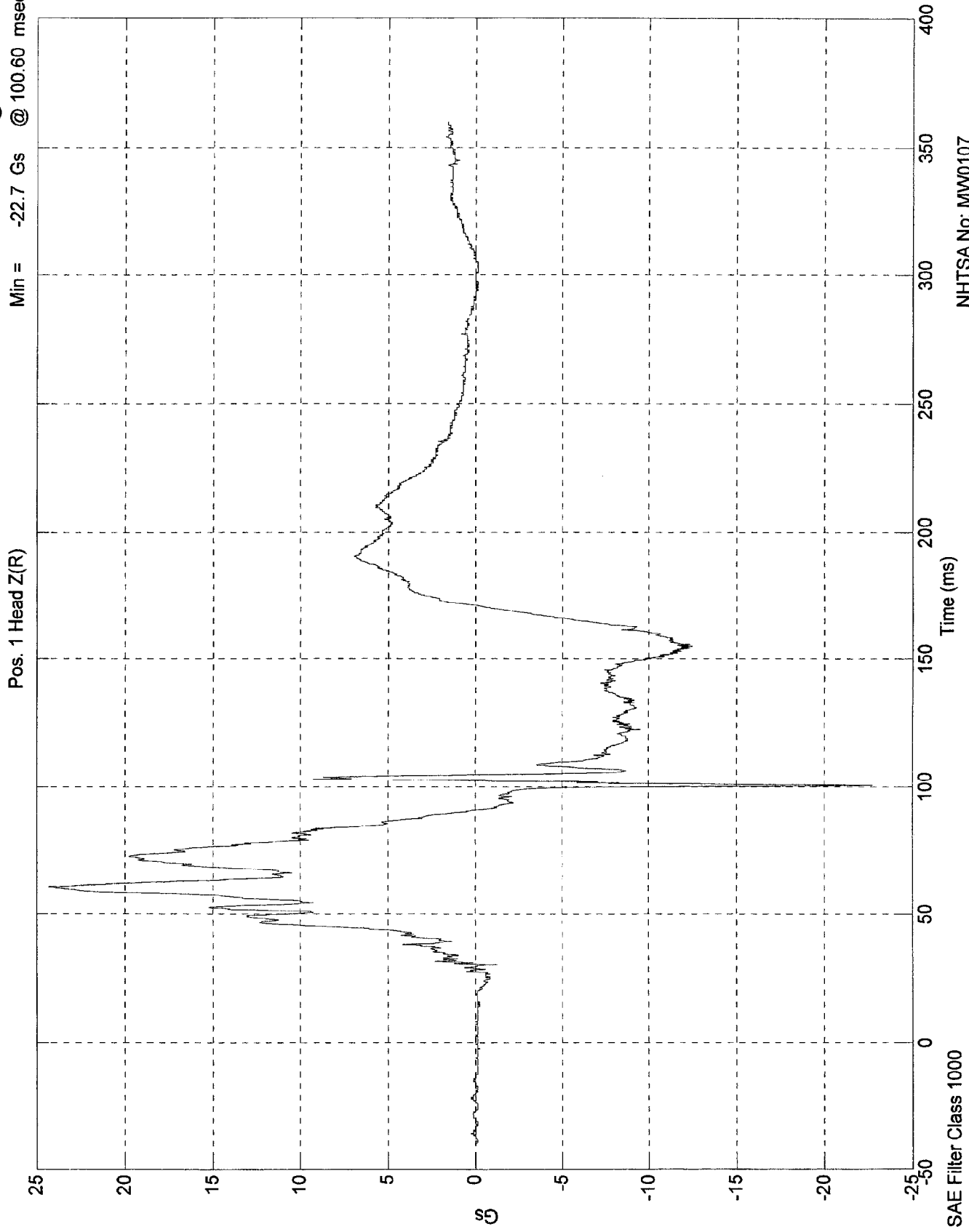


SAE Filter Class 1000

NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 24.3 Gs @ 60.50 msec
Min = -22.7 Gs @ 100.60 msec

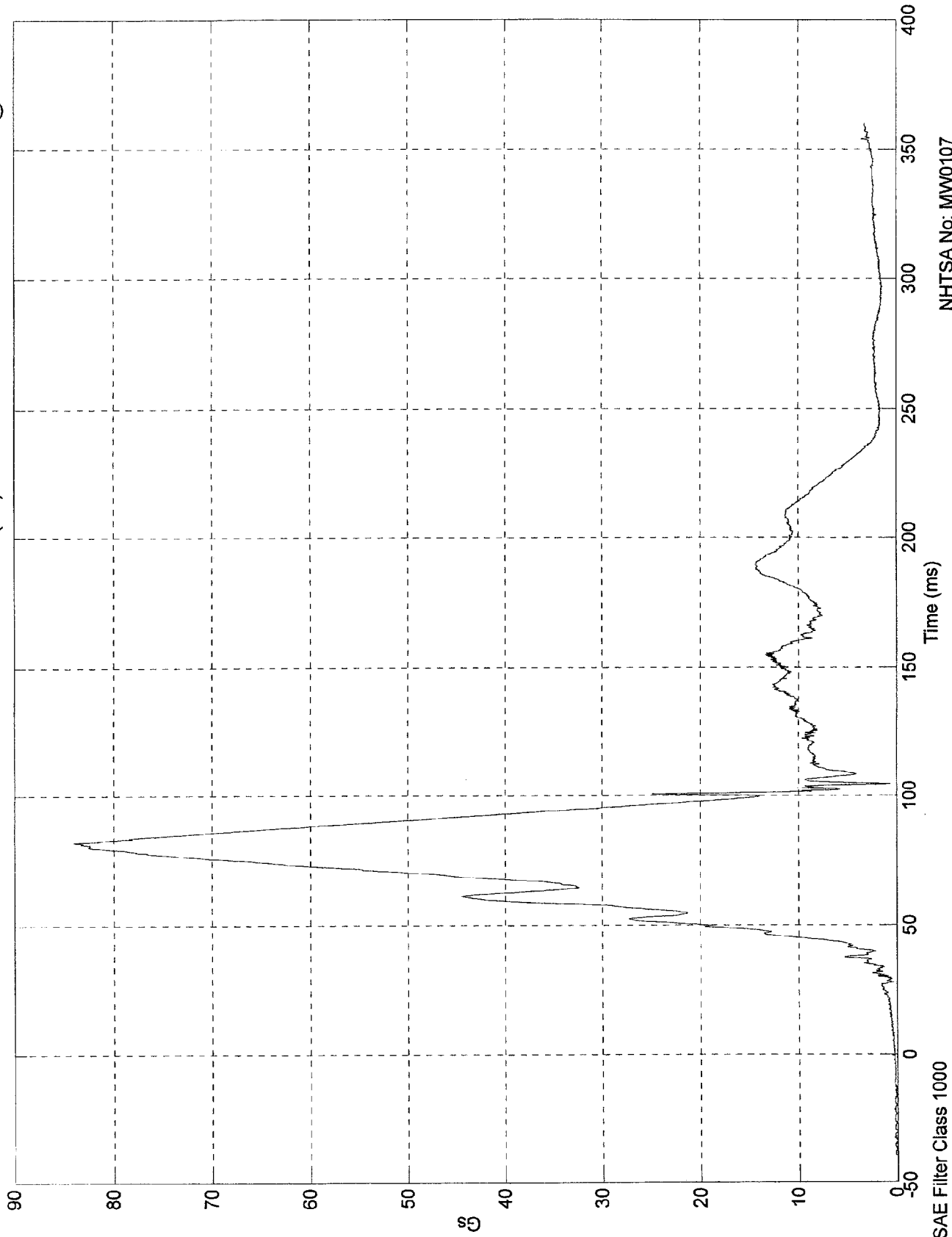


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 84 Gs @ 82.00 msec
 Min = 0.0153 Gs @ -38.00 msec

Pos. 1 Head Resultant(RR)

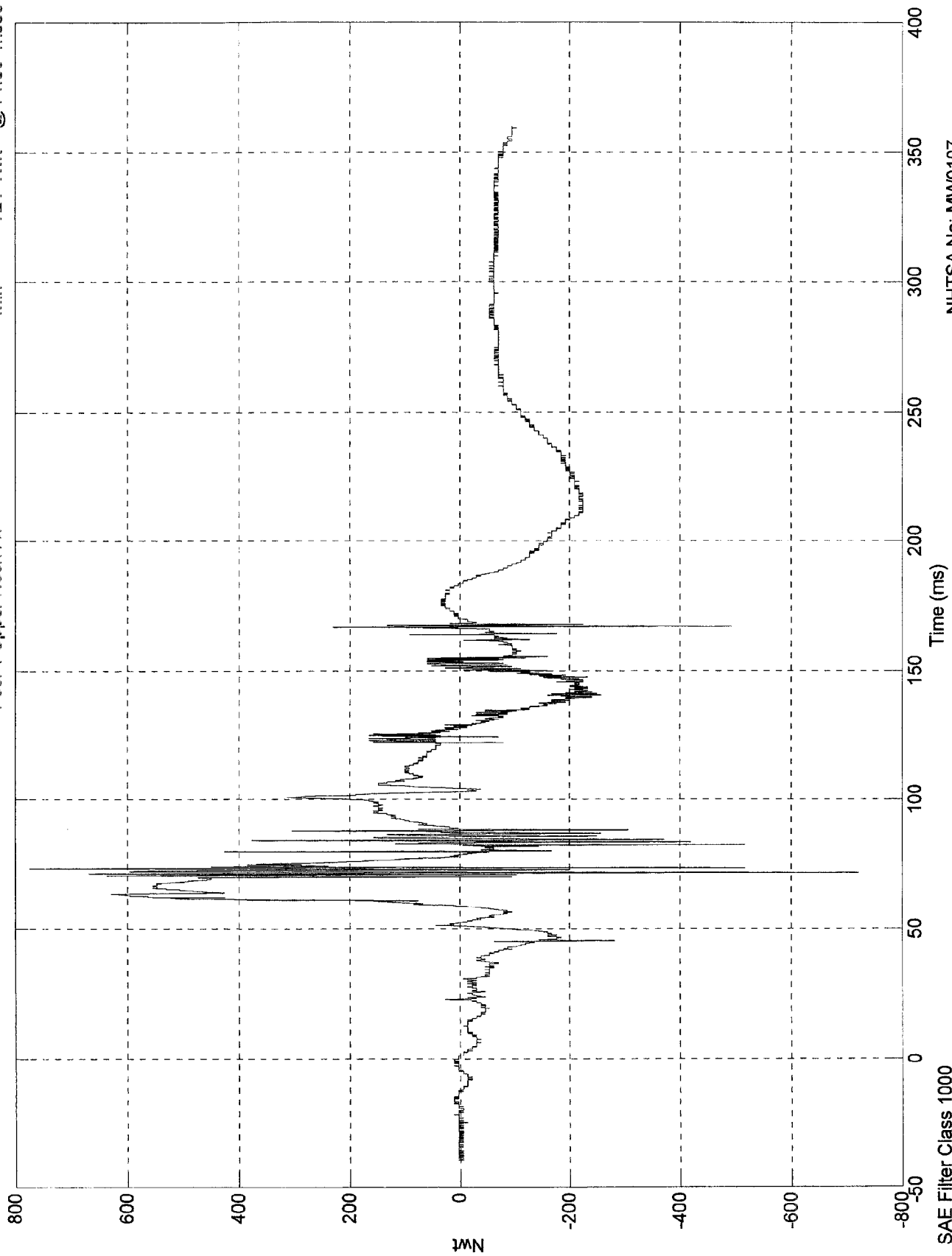


NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 775 Nwt @ 73.10 msec
 Min = -721 Nwt @ 71.60 msec

Pos. 1 Upper Neck Fx

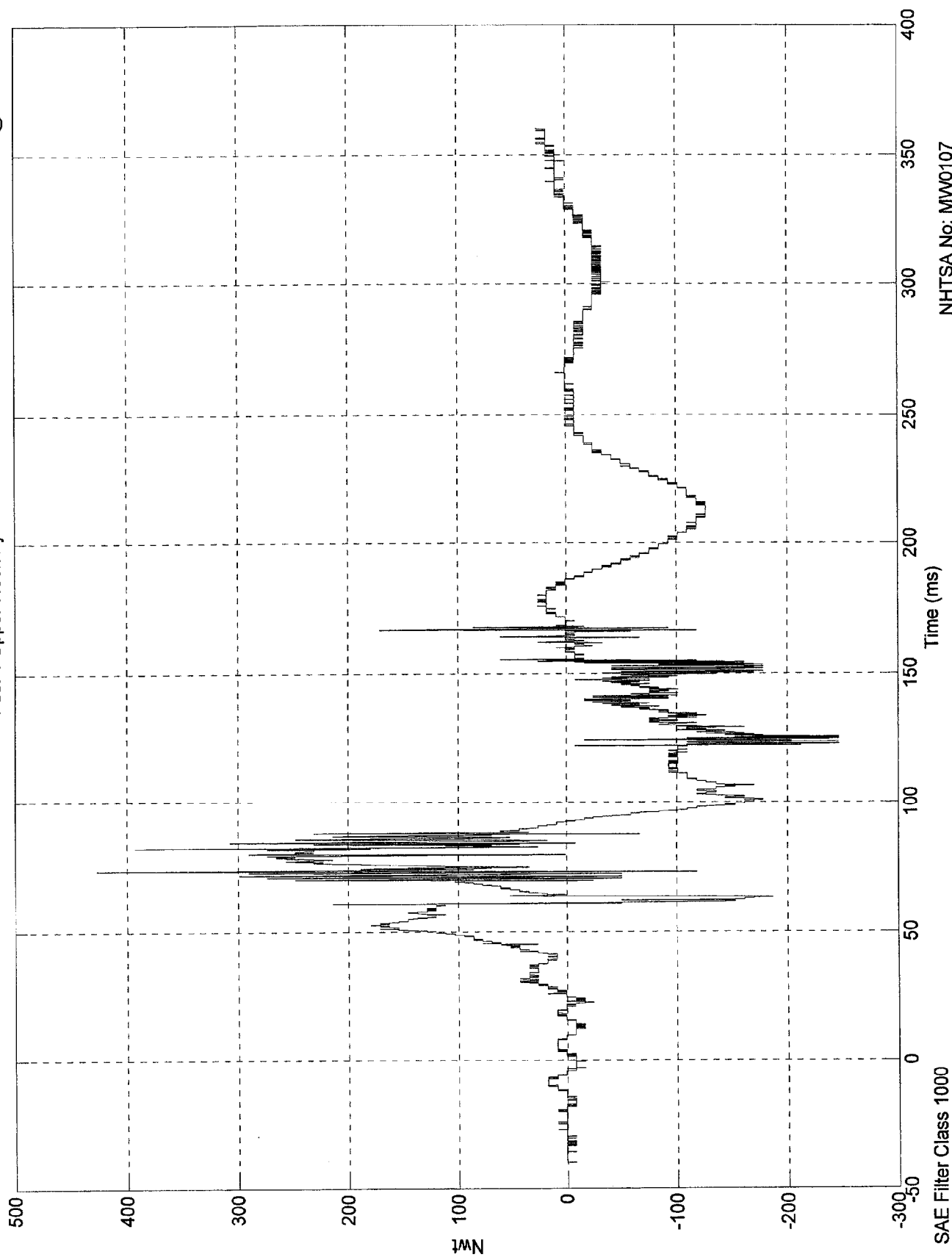


NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 427 Nwt @ 73.50 msec
 Min = -246 Nwt @ 122.90 msec

Pos. 1 Upper Neck Fy



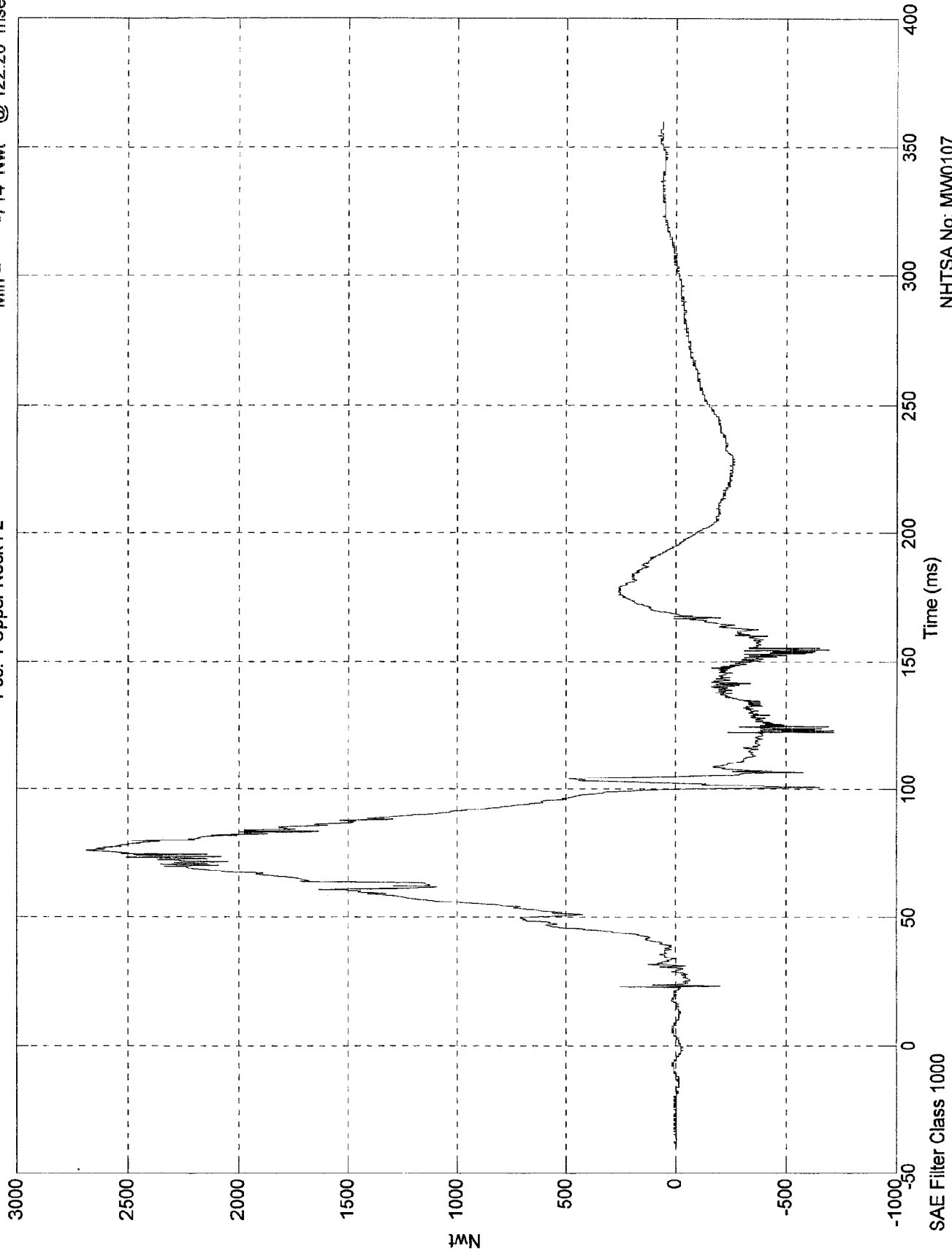
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 2.69e+003 Nwt @ 75.90 msec
Min = -714 Nwt @ 122.20 msec

Pos. 1 Upper Neck Fz

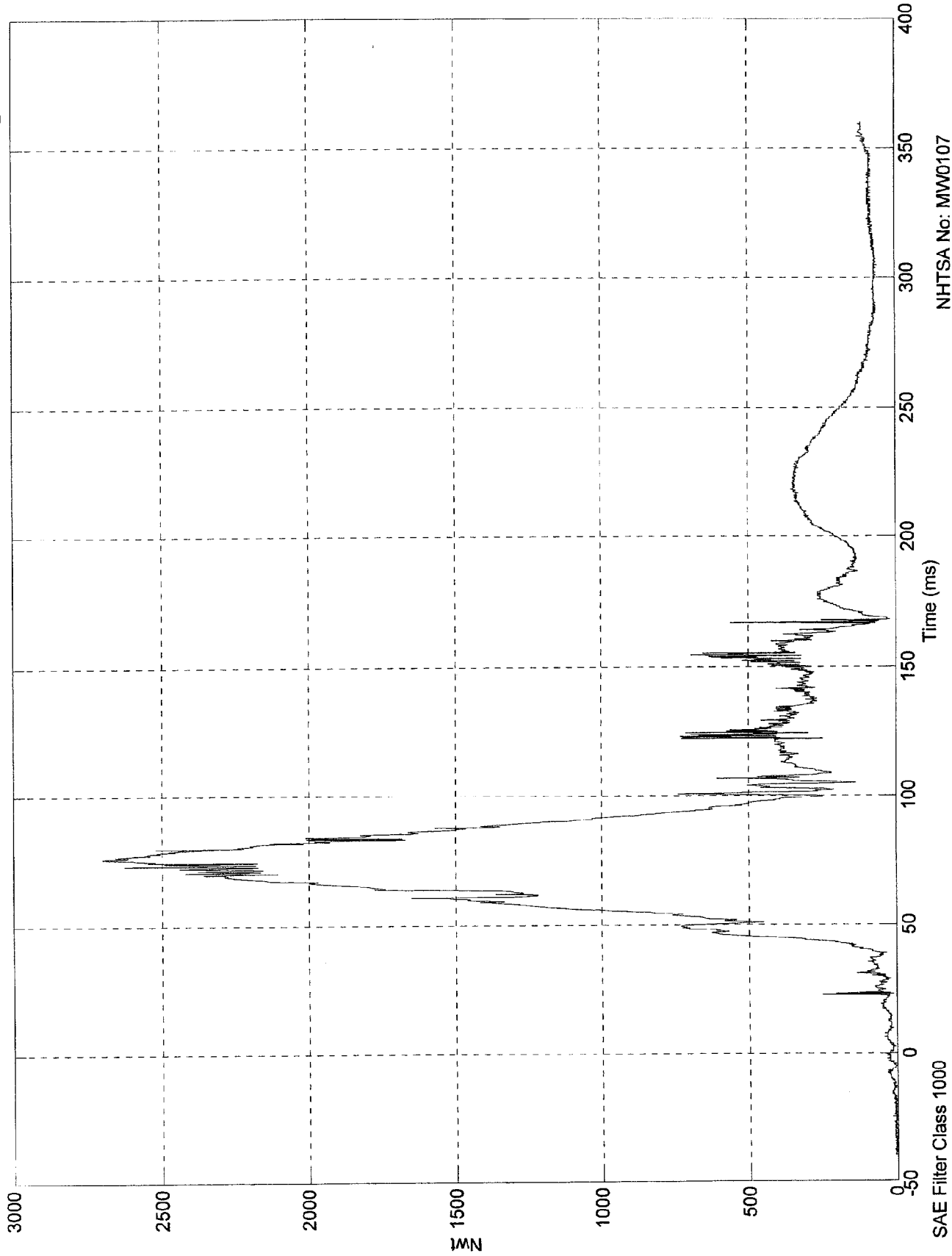


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 2.7e+003 Nwt @ 75.90 msec
Min = 3.56 Nwt @ -39.70 msec

Pos. 1 Neck Force Res.



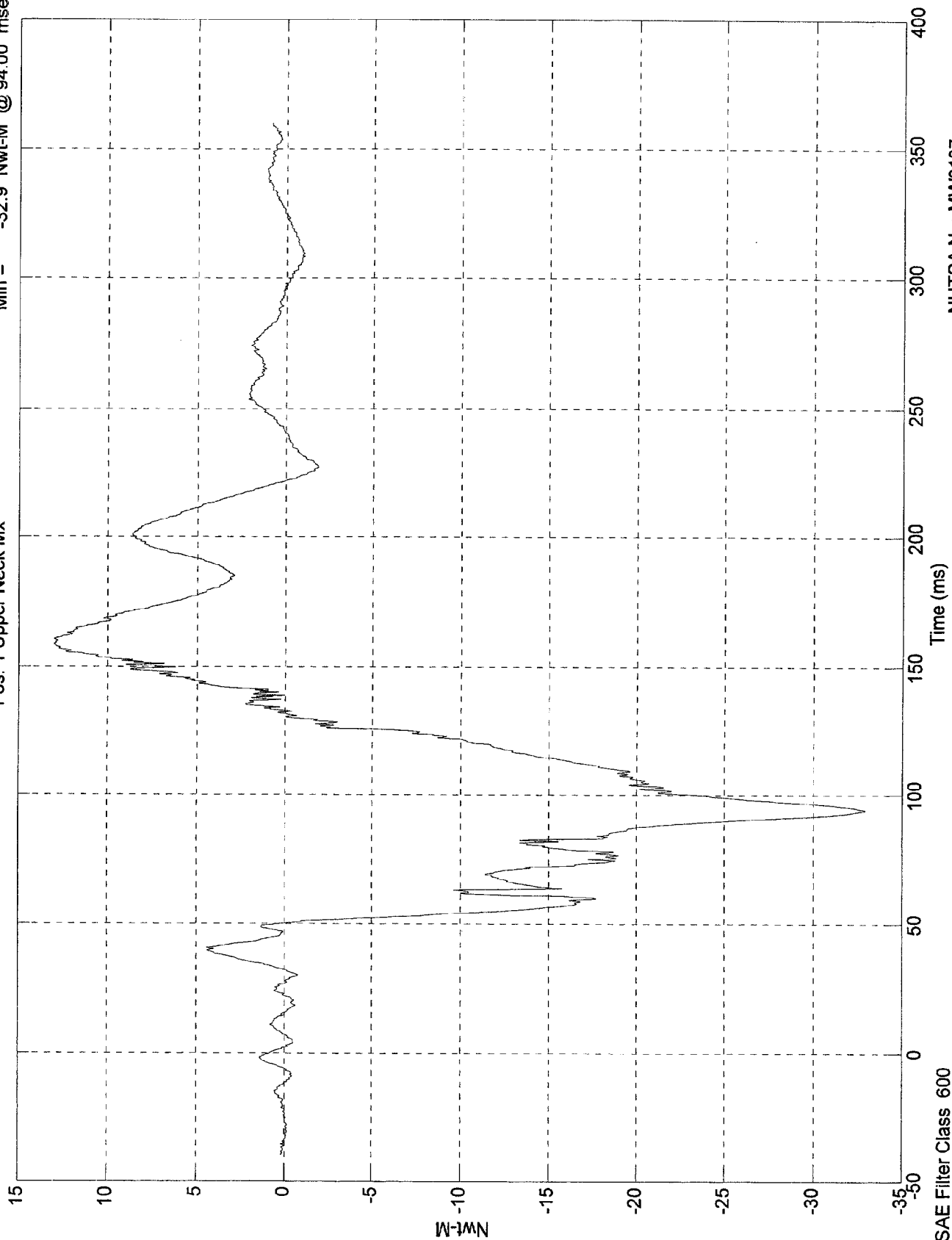
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 13 Nwt-M @ 158.60 msec
 Min = -32.9 Nwt-M @ 94.00 msec

Pos. 1 Upper Neck Mx

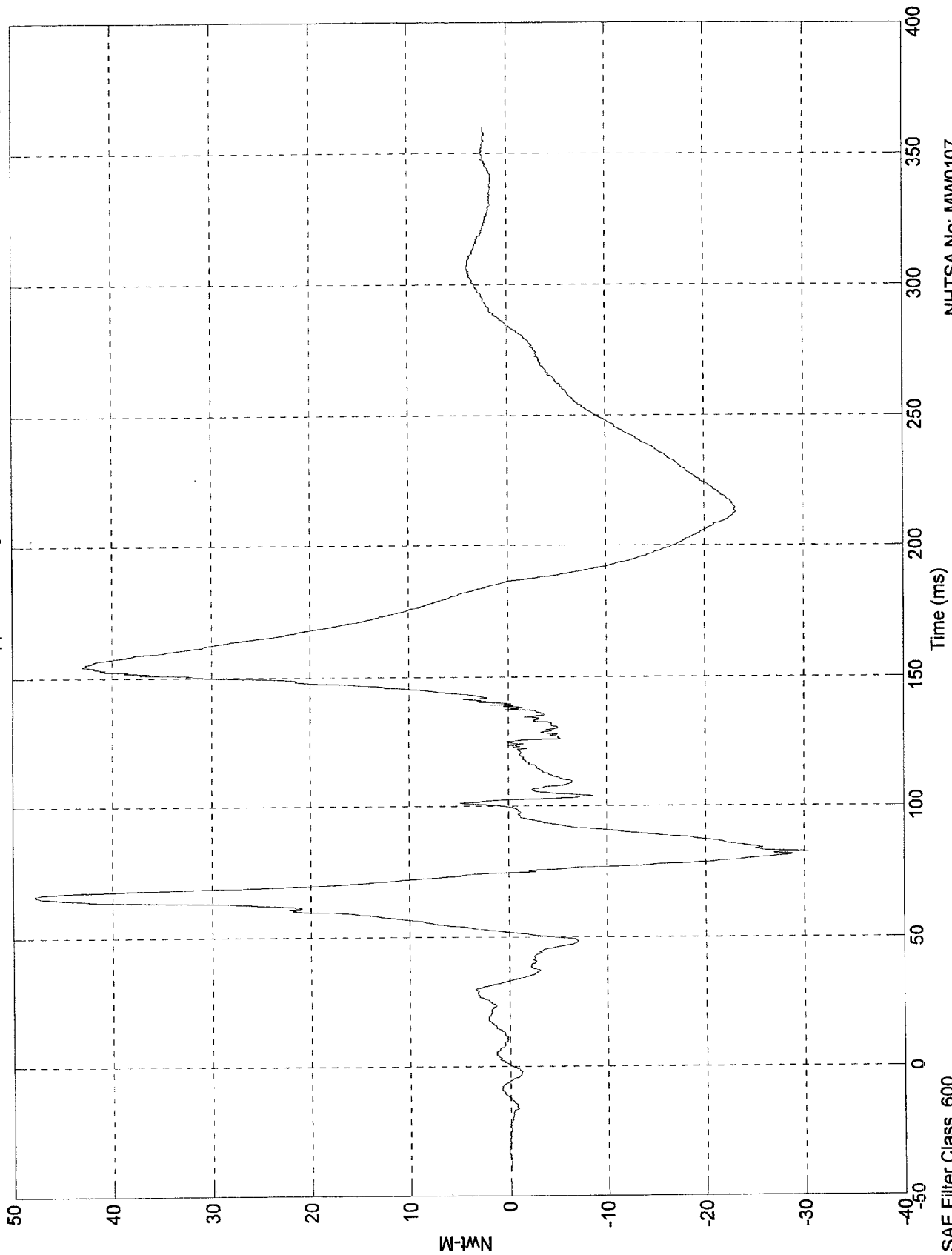


NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 47.8 Nwt-M @ 65.70 msec
Min = -30.4 Nwt-M @ 82.50 msec

Pos. 1 Upper Neck My



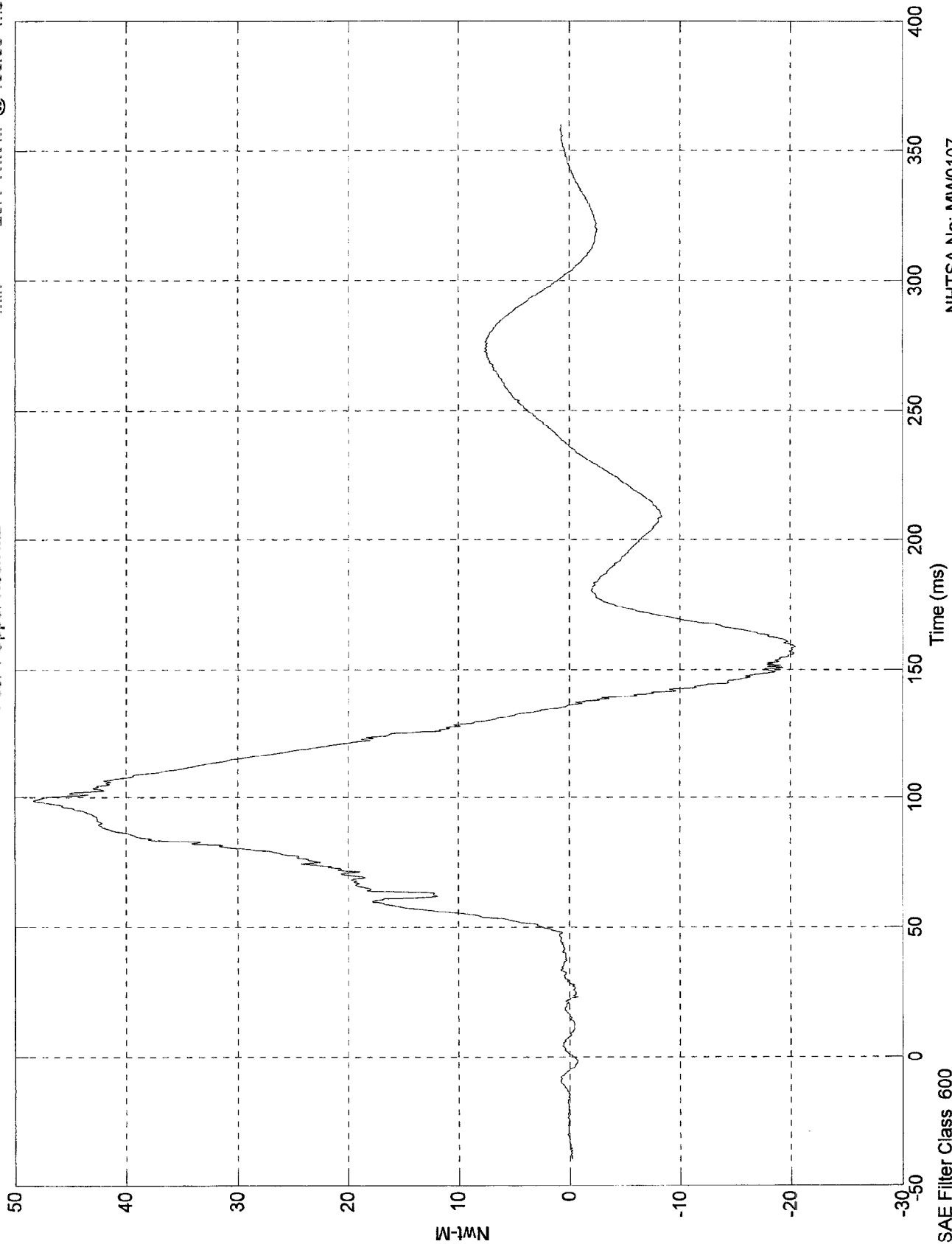
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 48.3 Nwt-M @ 98.70 msec
Min = -20.4 Nwt-M @ 158.80 msec

Pos. 1 Upper Neck Mz

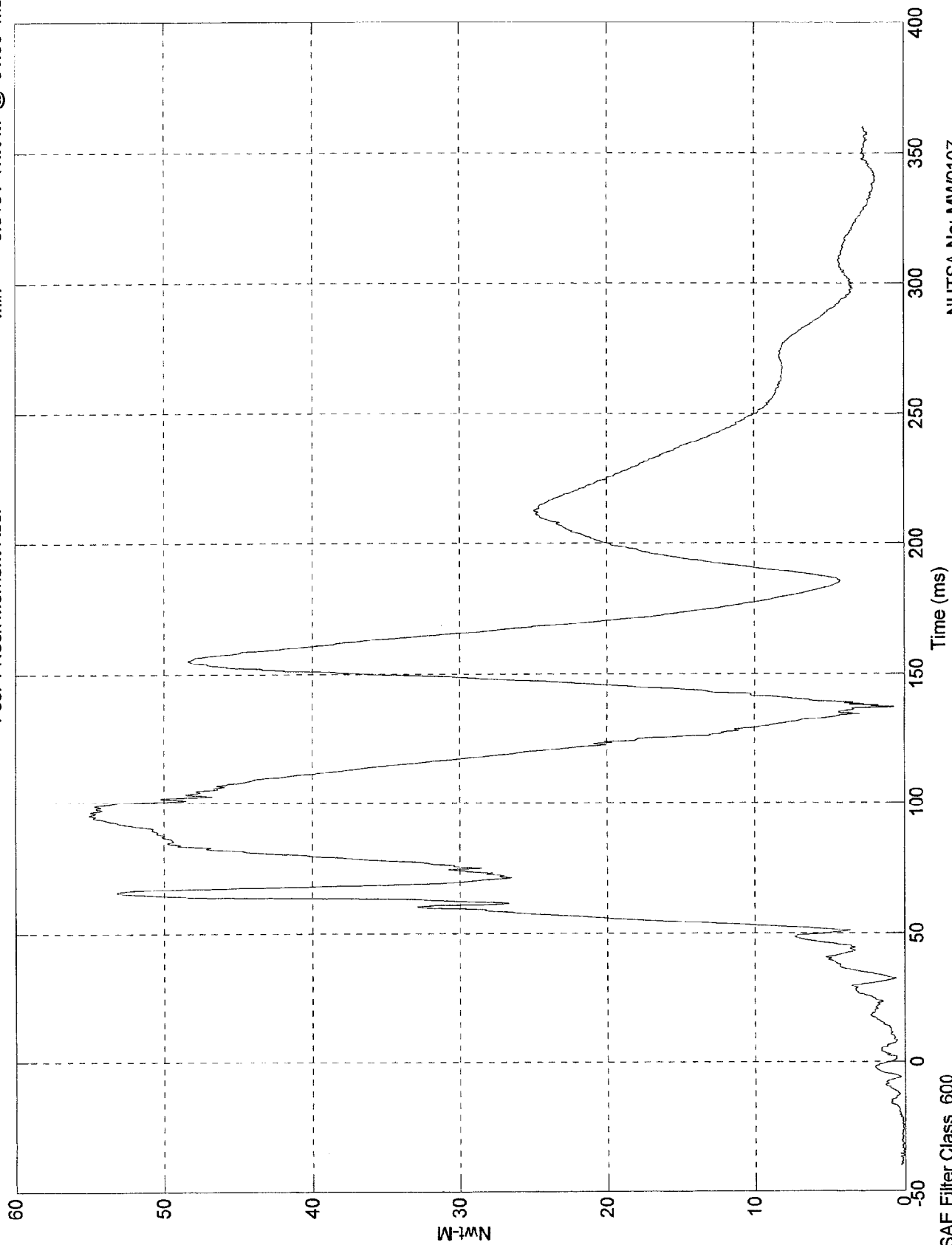


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 55 Nwt-M @ 95.10 msec
 Min = 0.0181 Nwt-M @ -31.90 msec

Pos. 1 Neck Moment Res.



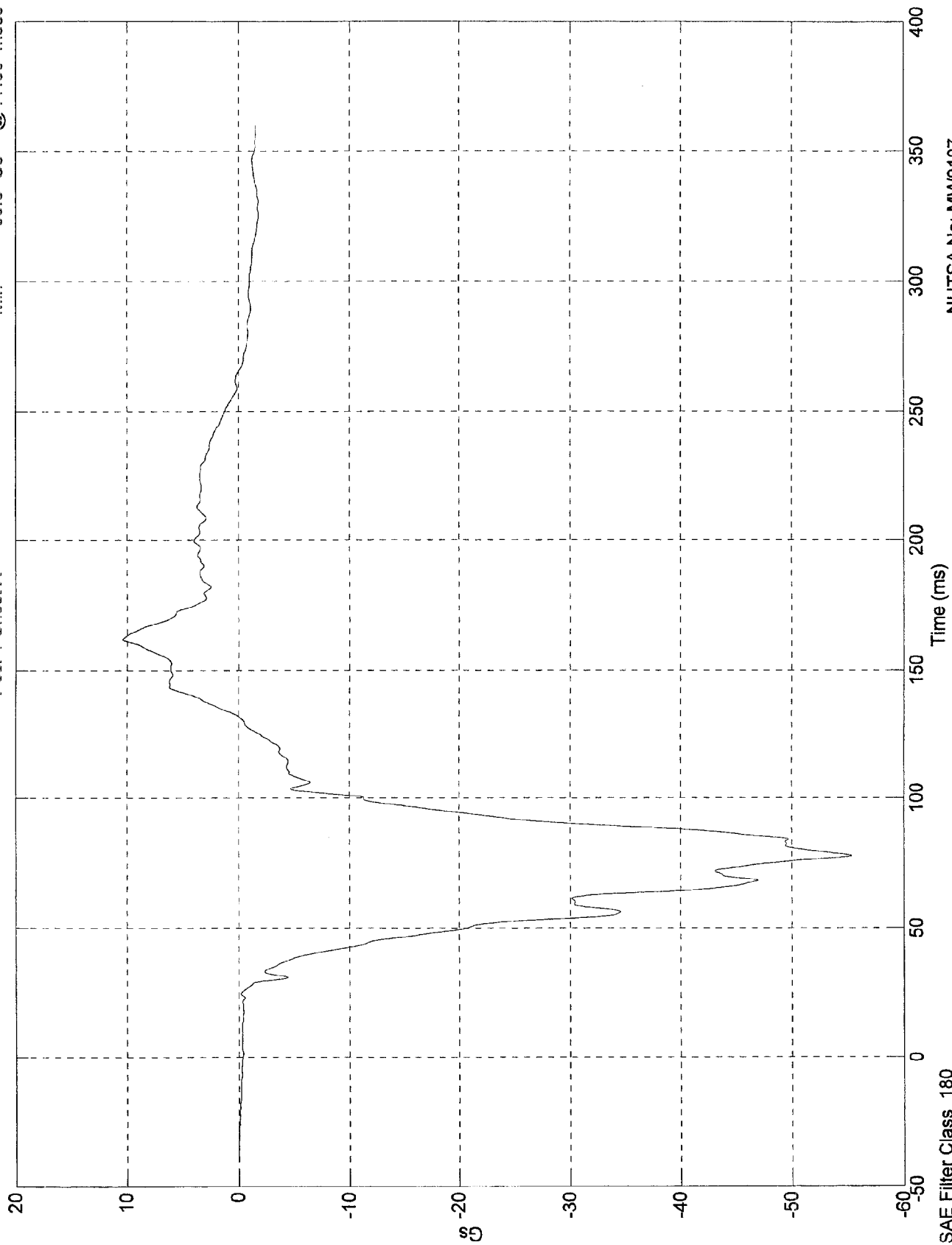
SAE Filter Class 600

NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 10.4 Gs @ 161.80 msec
Min = -55.3 Gs @ 77.80 msec

Pos. 1 Chest X

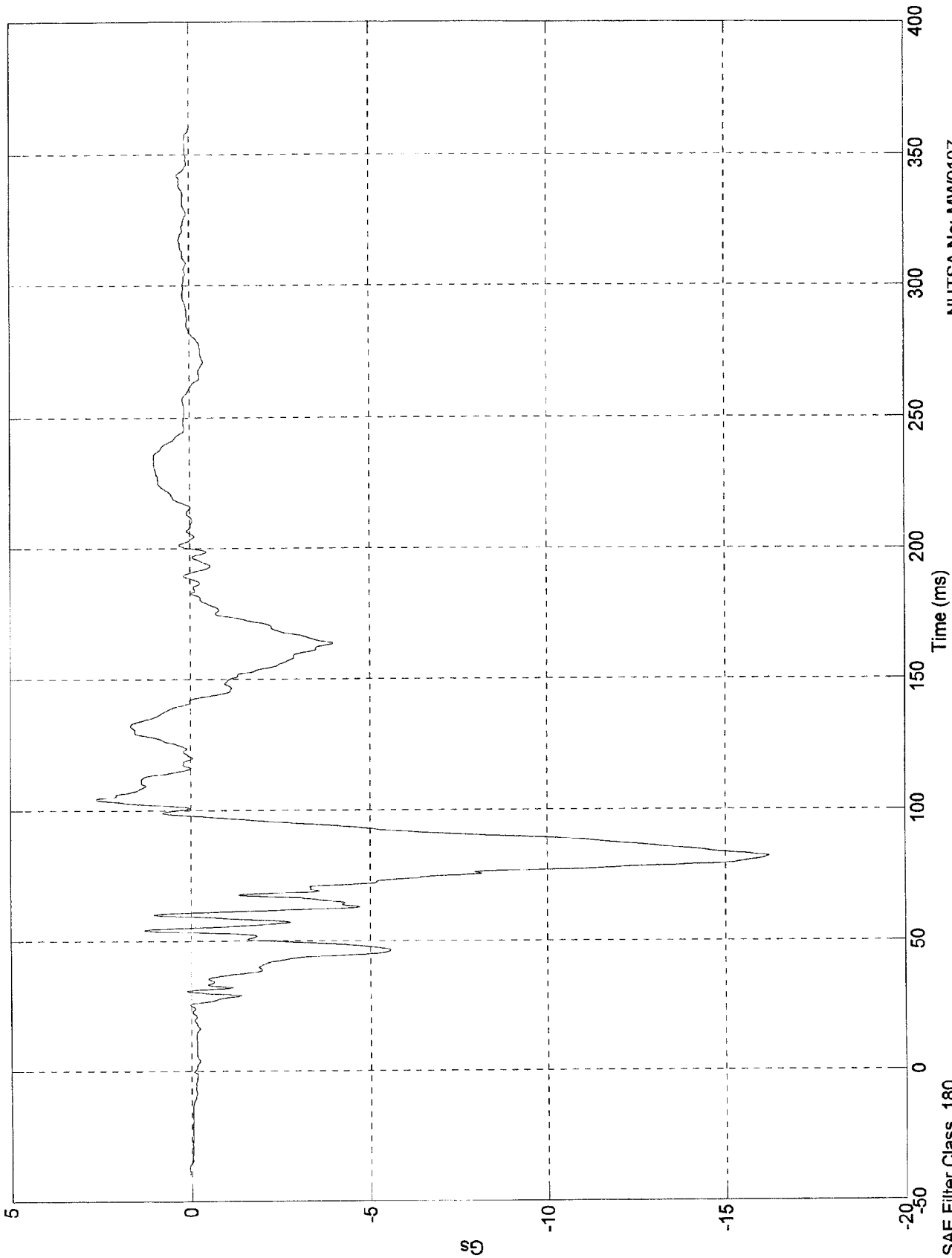


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 2.62 Gs @ 104.30 msec
Min = -16.2 Gs @ 82.30 msec

Pos. 1 Chest Y

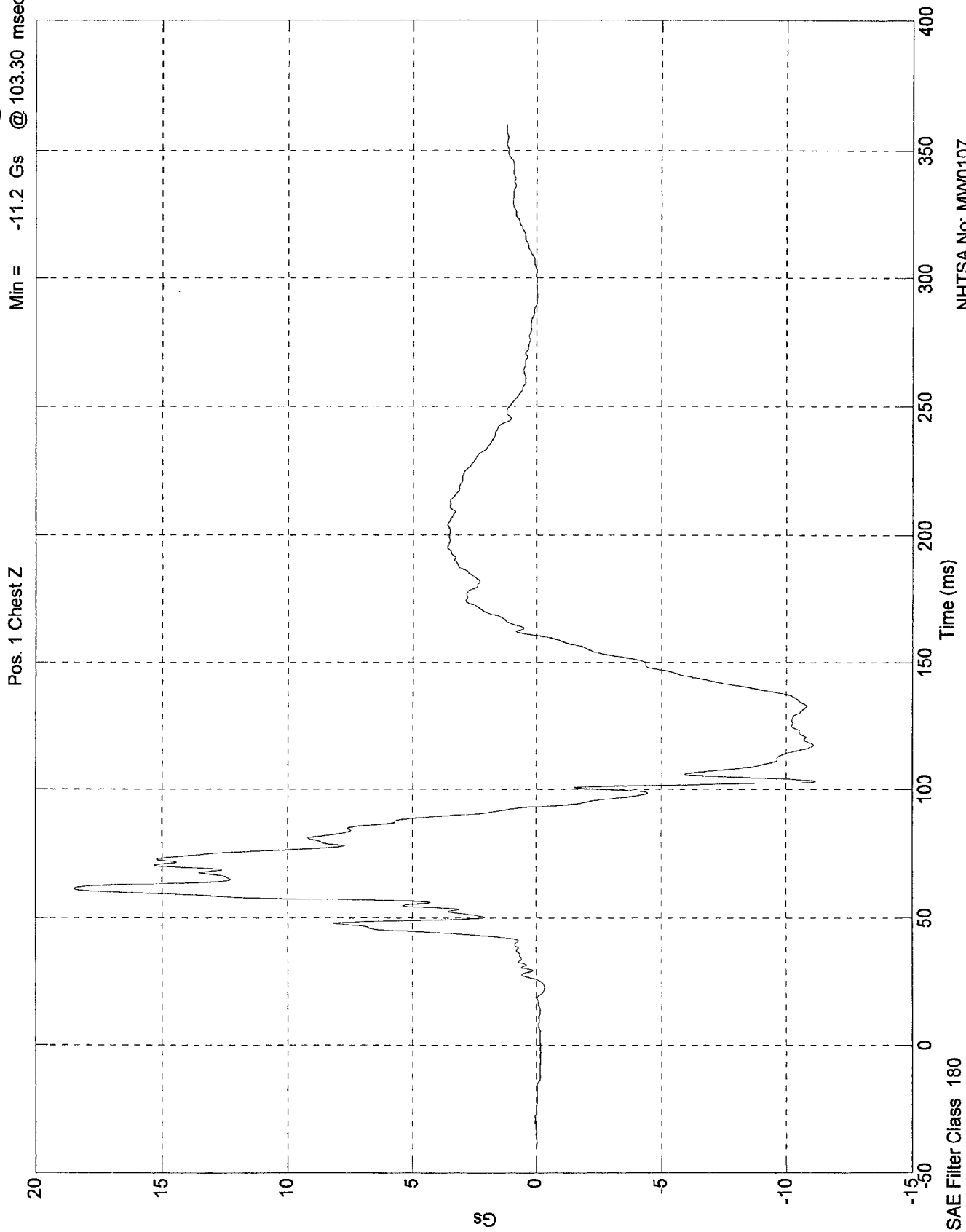


SAE Filter Class 180

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 18.5 Gs @ 61.40 msec
Min = -11.2 Gs @ 103.30 msec

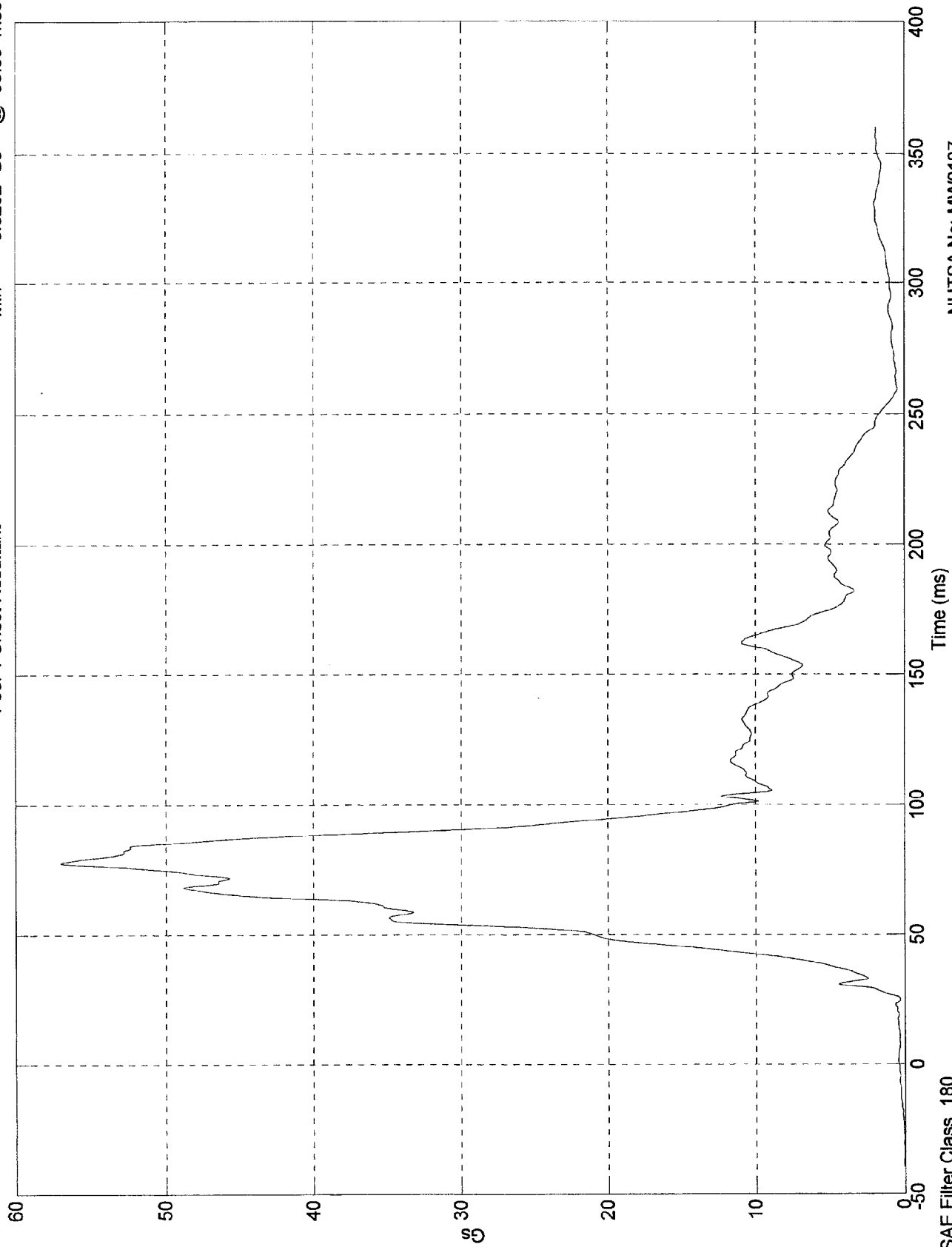


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 57 Gs @ 77.80 msec
 Min = 0.0262 Gs @ -33.00 msec

Pos. 1 Chest Resultant

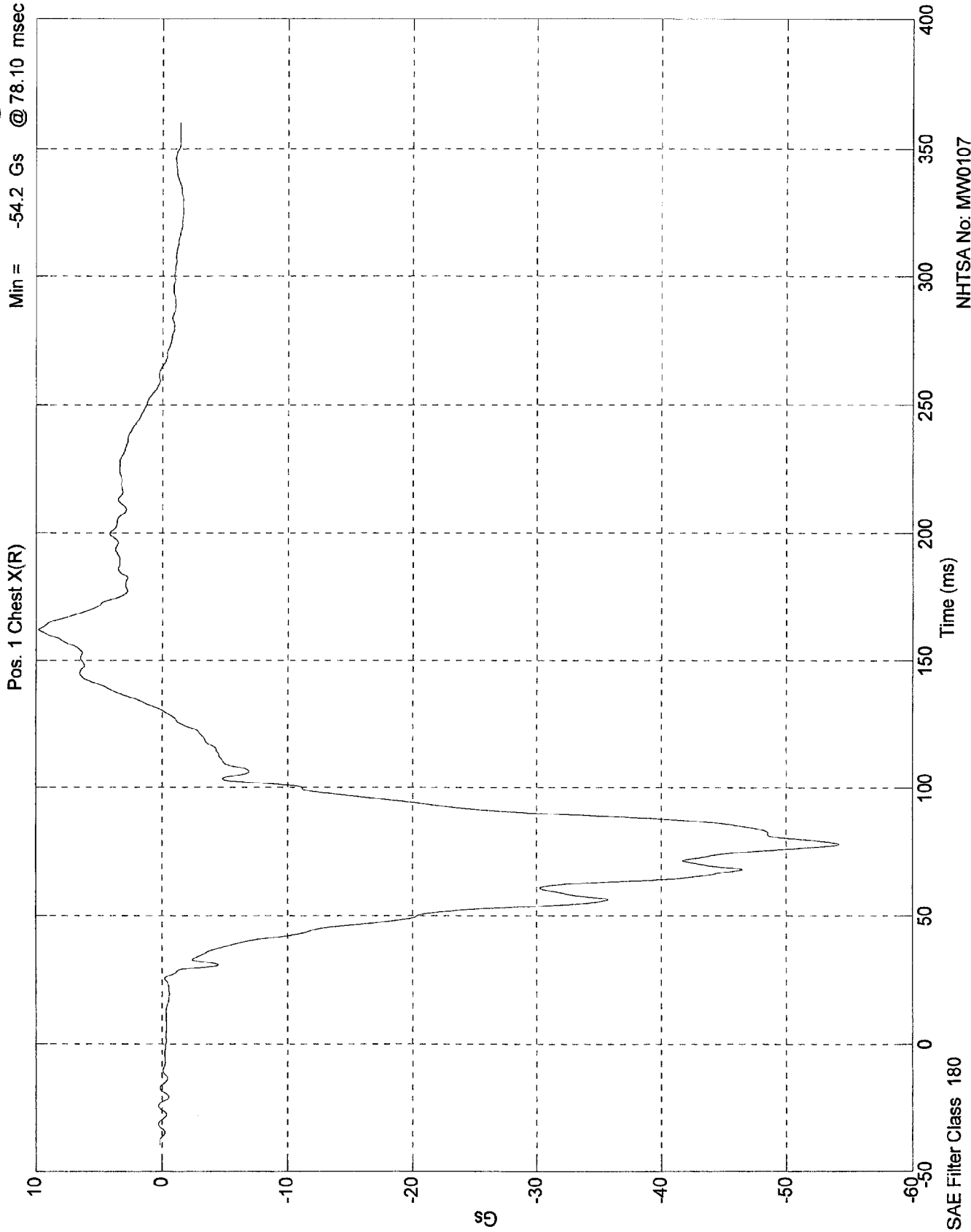


SAE Filter Class 180

NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 9.78 Gs @ 162.00 msec
Min = -54.2 Gs @ 78.10 msec

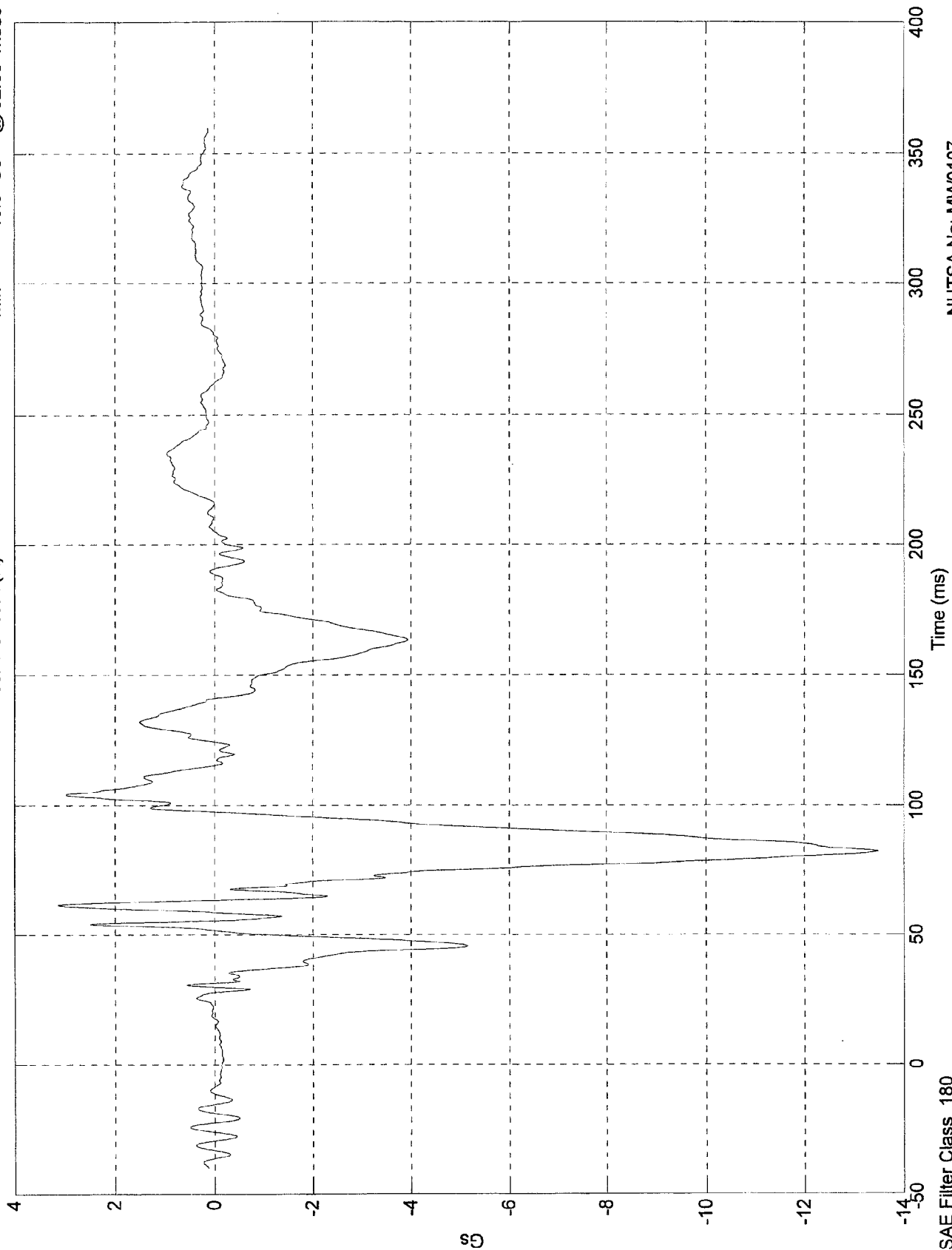


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 3.13 Gs @ 61.40 msec
Min = -13.5 Gs @ 82.30 msec

Pos. 1 Chest Y(R)



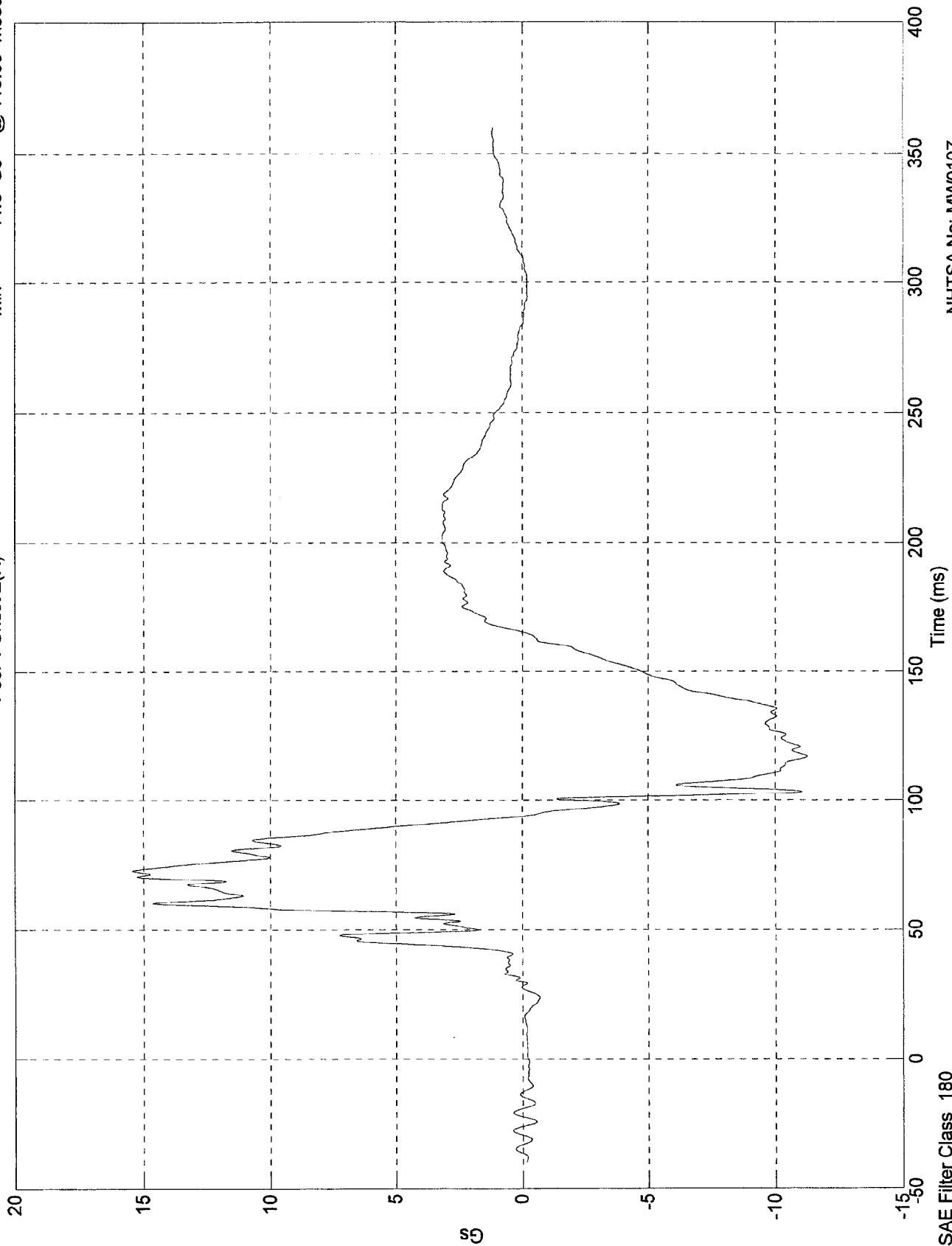
SAE Filter Class 180

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 15.4 Gs @ 72.90 msec
 Min = -11.3 Gs @ 116.80 msec

Pos. 1 Chest Z(R)



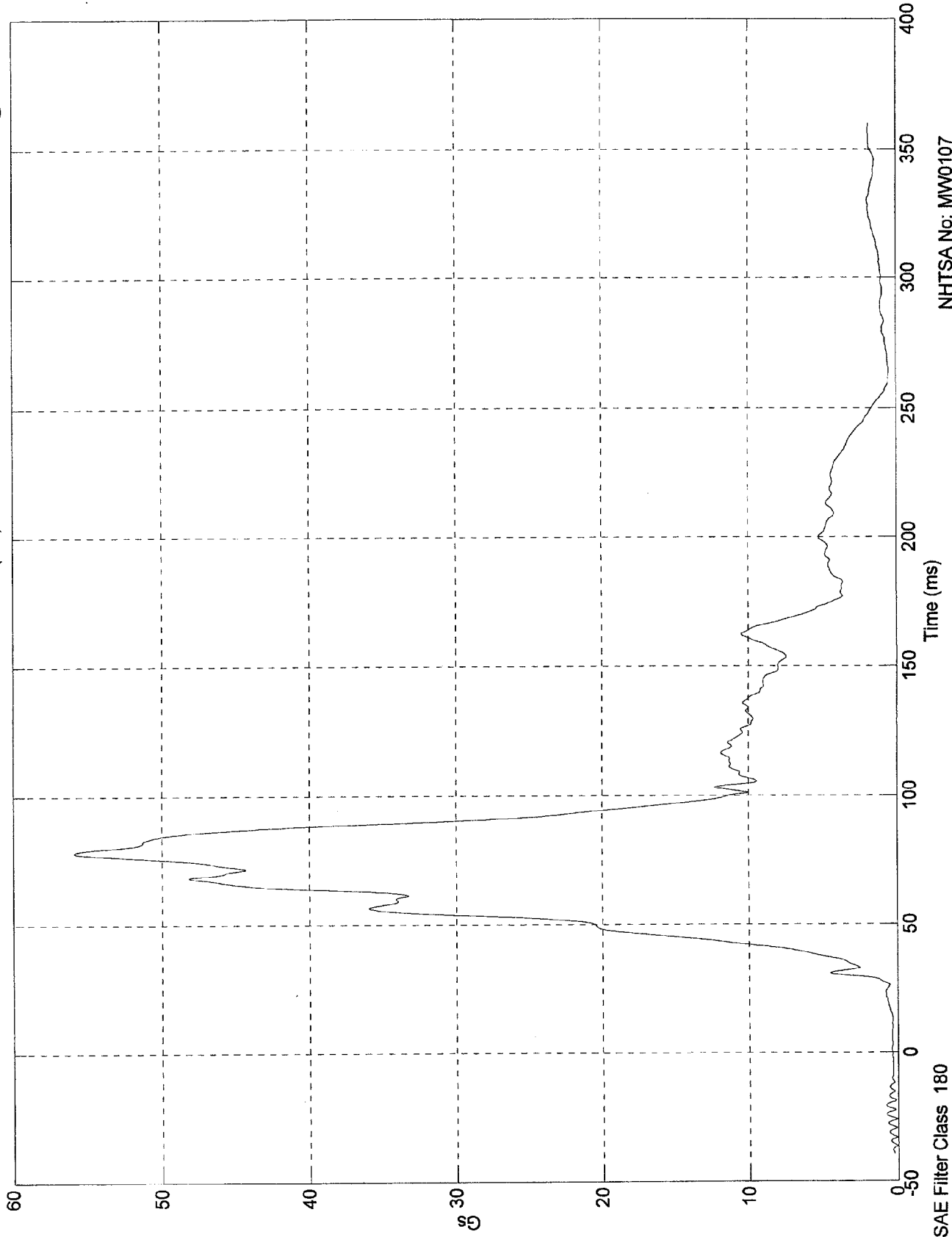
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 55.9 Gs @ 78.20 msec
 Min = 0.0234 Gs @ -36.30 msec

Pos. 1 Chest Res(RR)

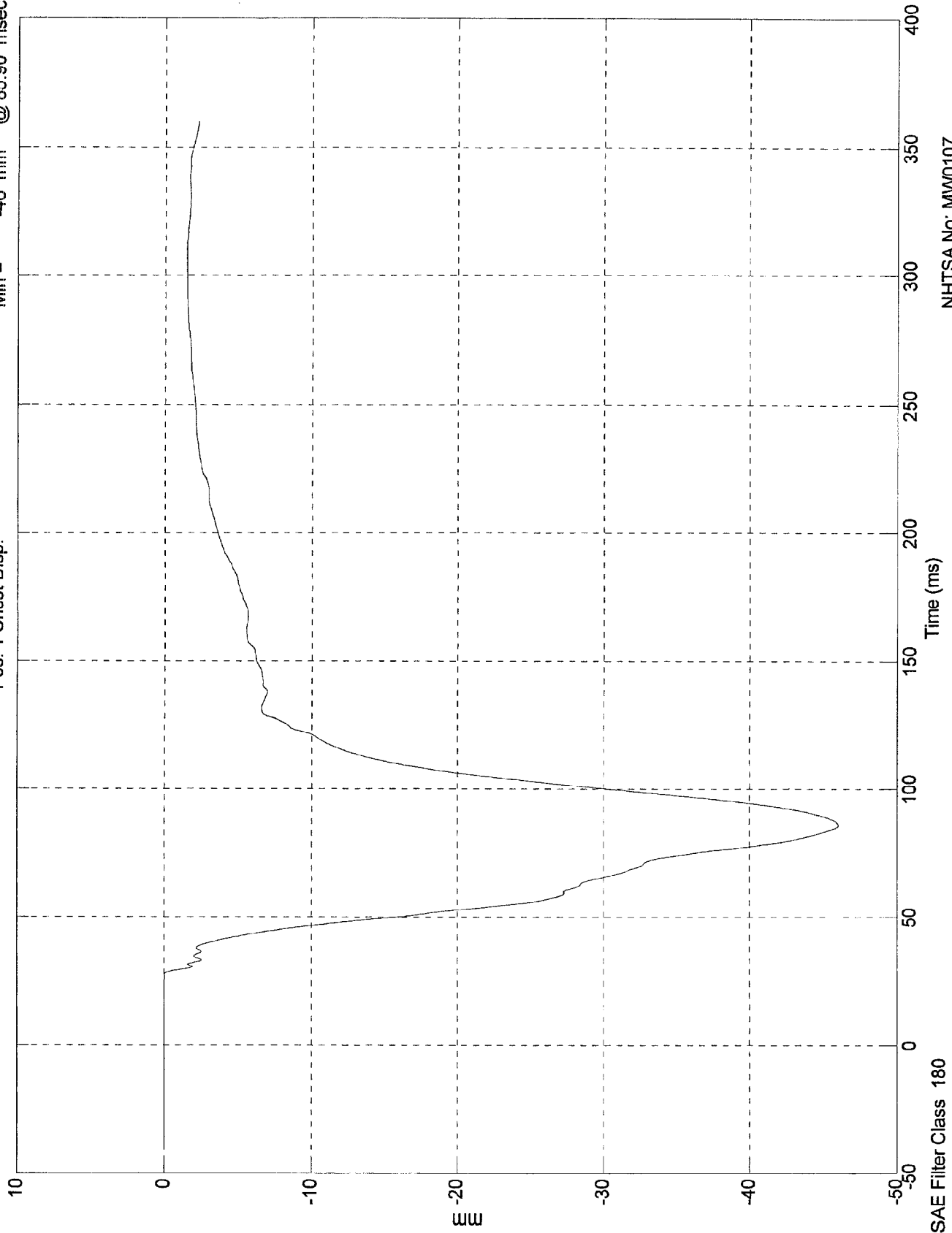


NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 0.00488 mm @ -39.50 msec
Min = -46 mm @ 85.90 msec

Pos. 1 Chest Disp.

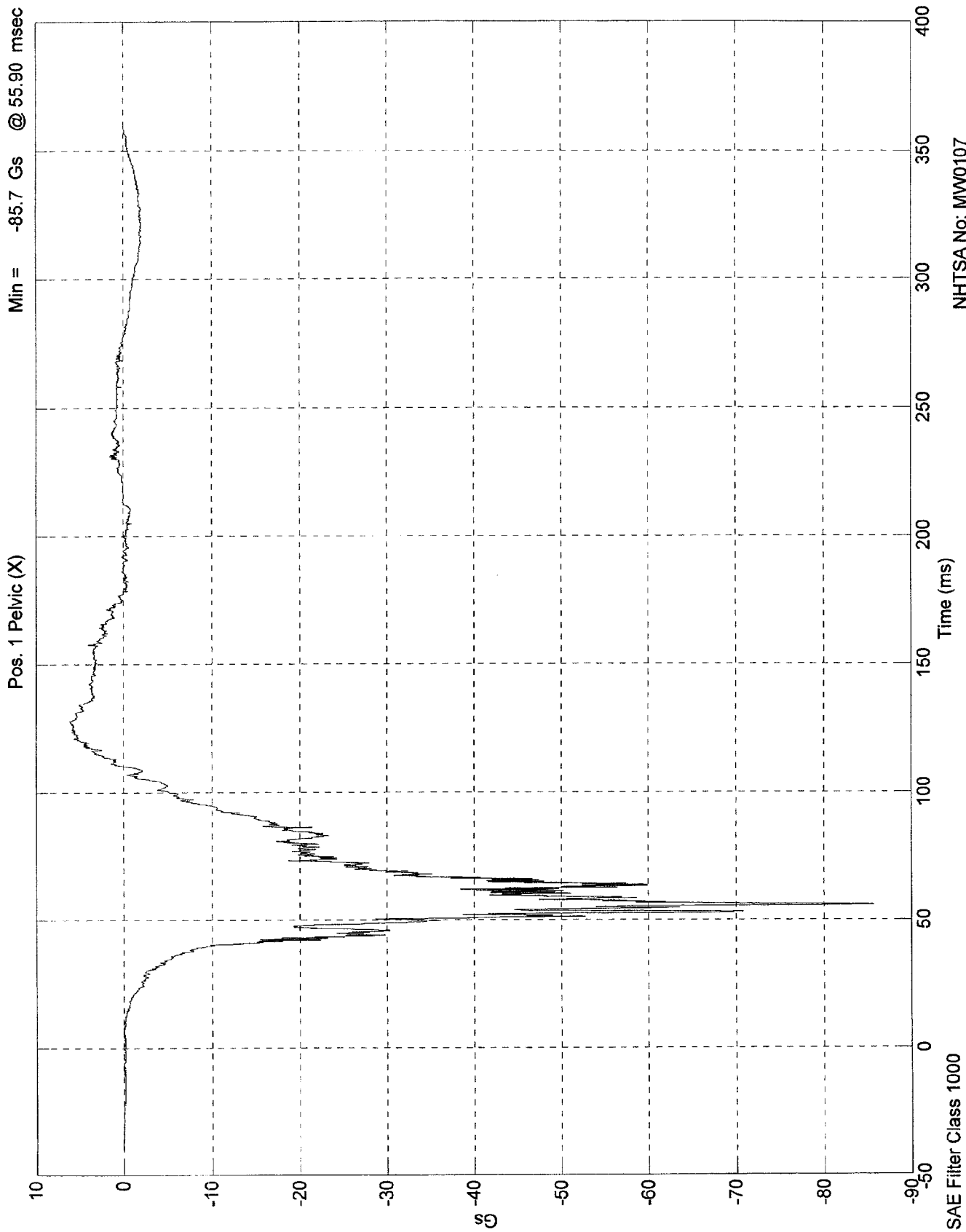


NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

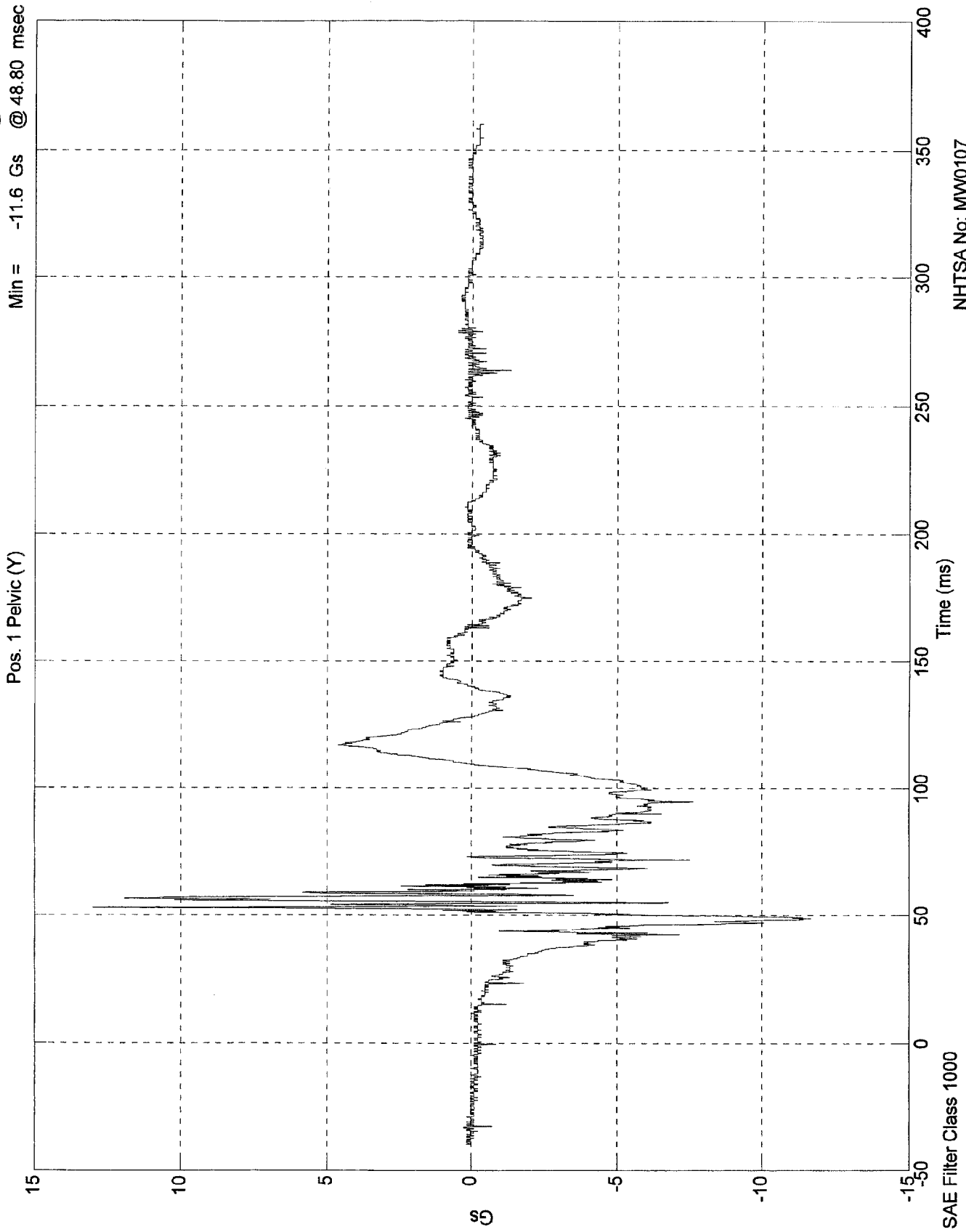
Max = 6.14 Gs @ 127.70 msec
Min = -85.7 Gs @ 55.90 msec



NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

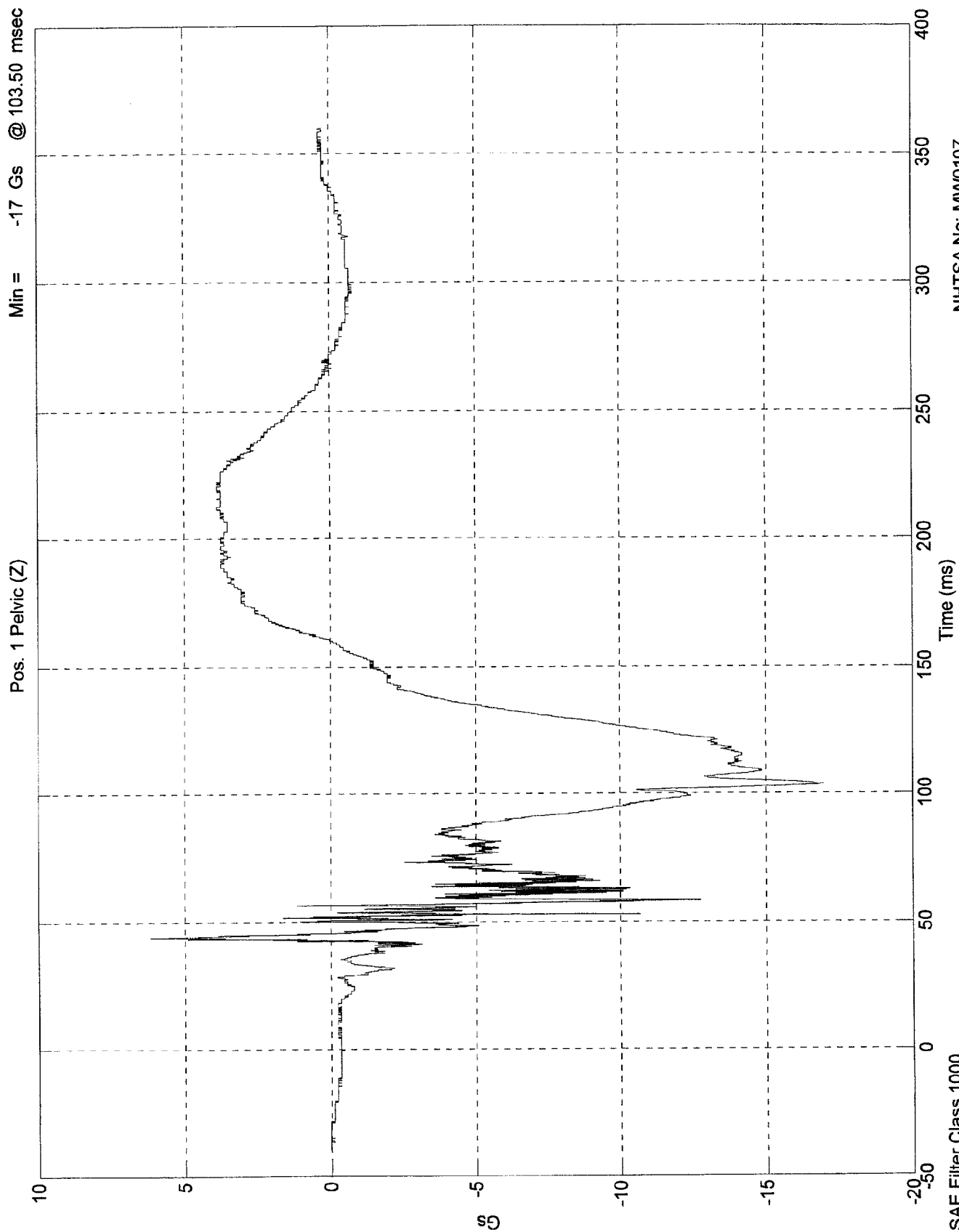
Max = 13 Gs @ 52.90 msec
Min = -11.6 Gs @ 48.80 msec



NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 6.18 Gs @ 44.10 msec
 Min = -17 Gs @ 103.50 msec



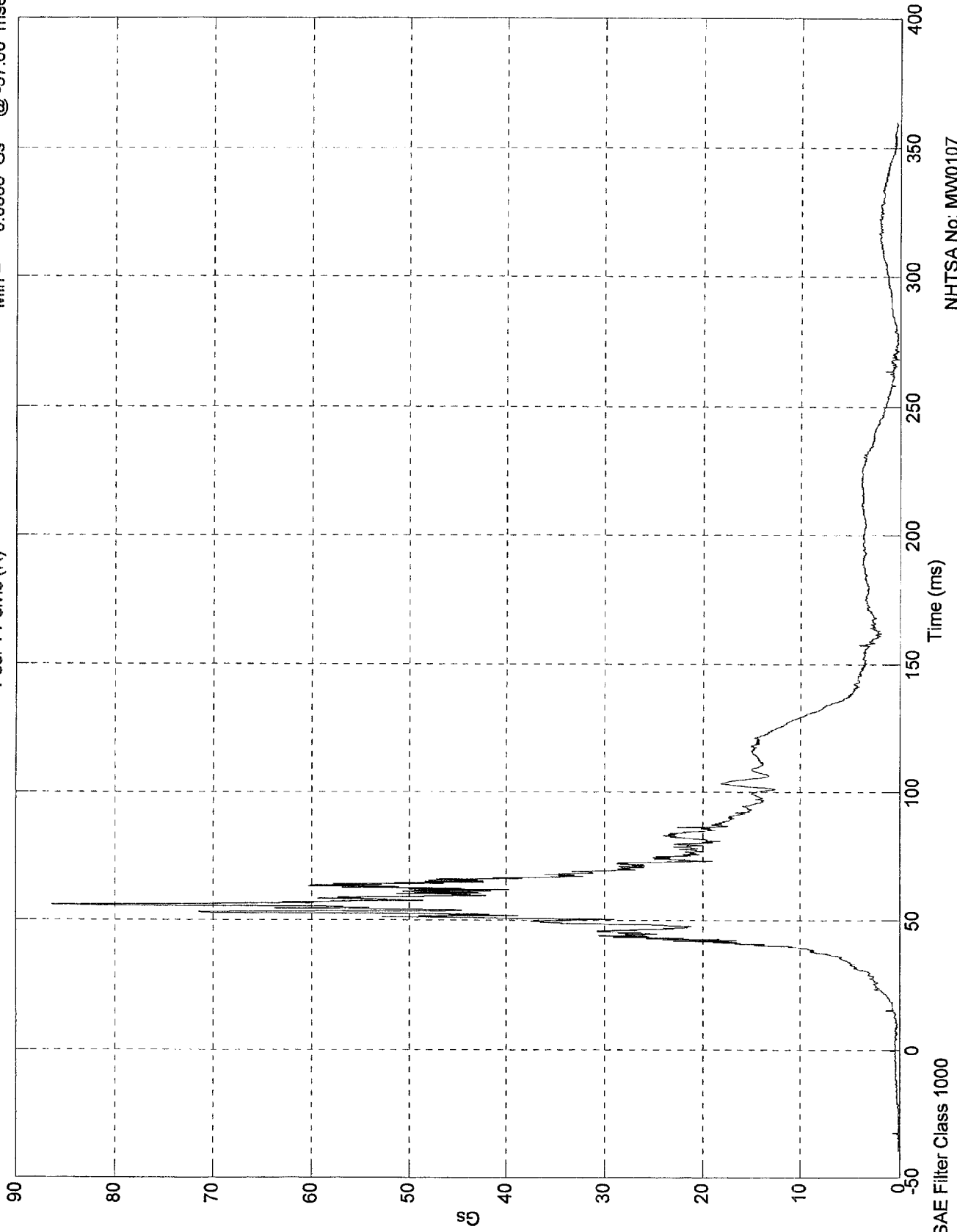
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 86.4 Gs @ 55.90 msec
 Min = 0.0388 Gs @ -37.00 msec

Pos. 1 Pelvic (R)

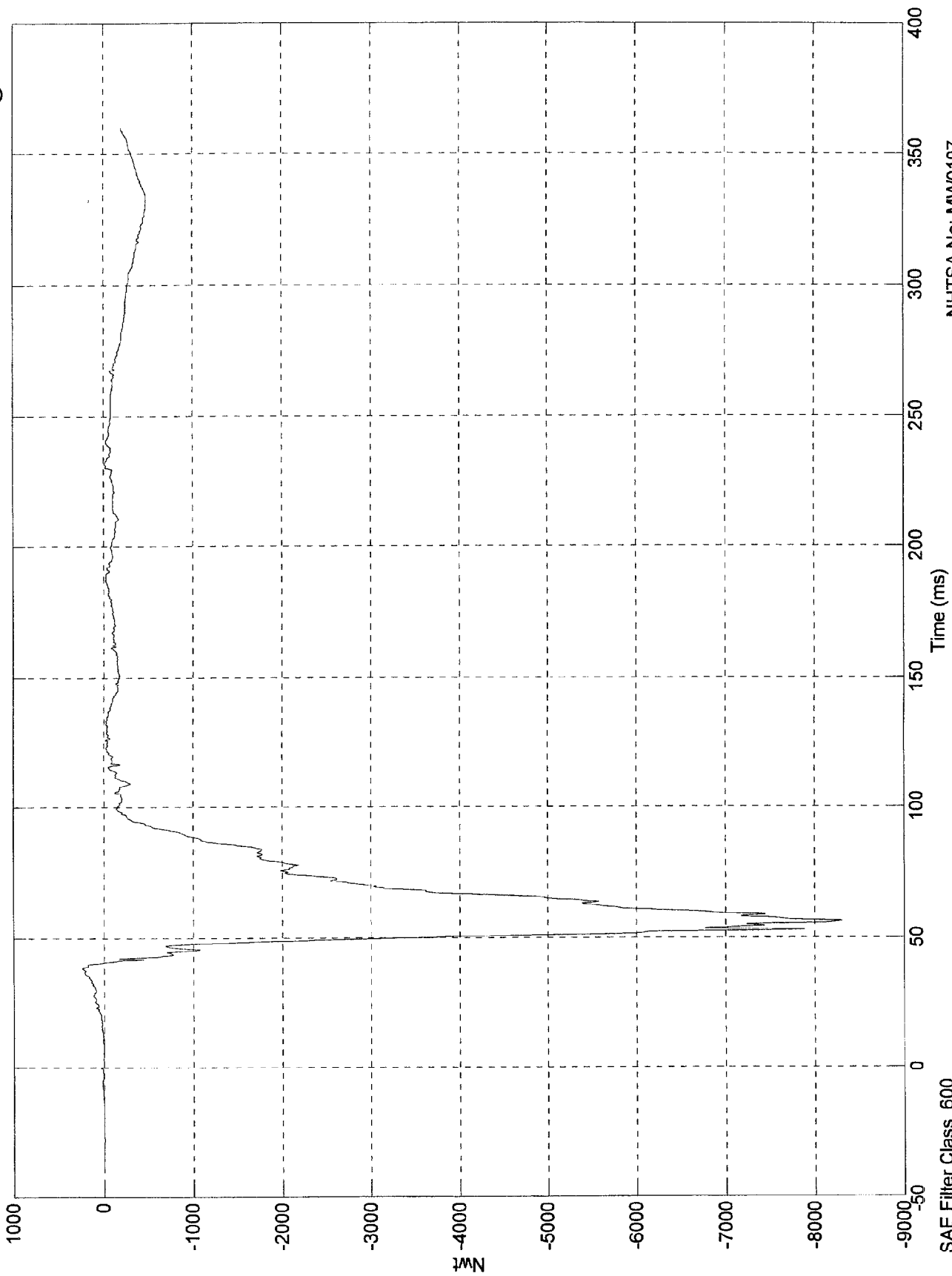


NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 241 Nwt @ 38.50 msec
Min = -8.31e+003 Nwt @ 56.20 msec

Pos. 1 Left Femur

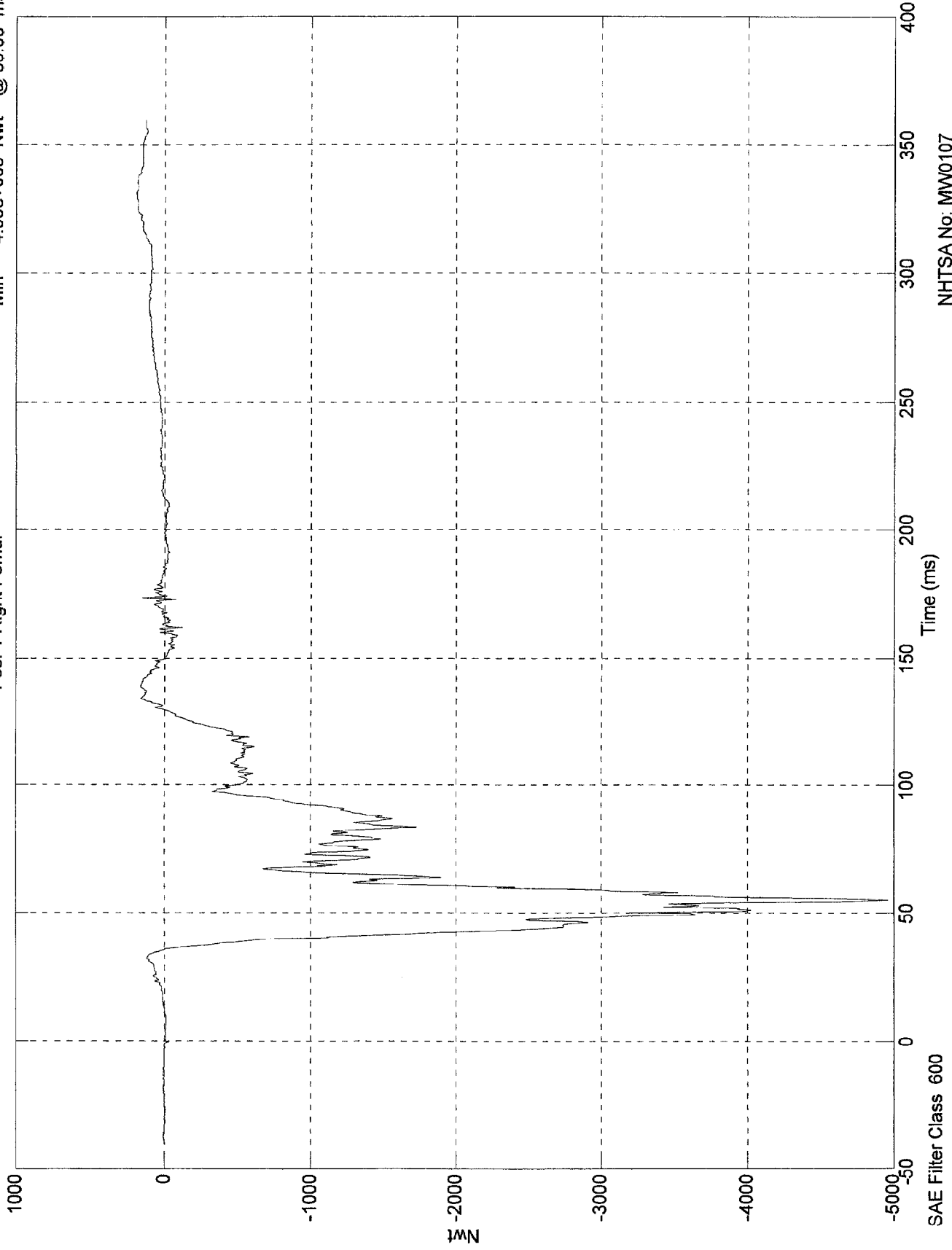


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 193 Nwt @ 330.90 msec
Min = -4.96e+003 Nwt @ 55.00 msec

Pos. 1 Right Femur

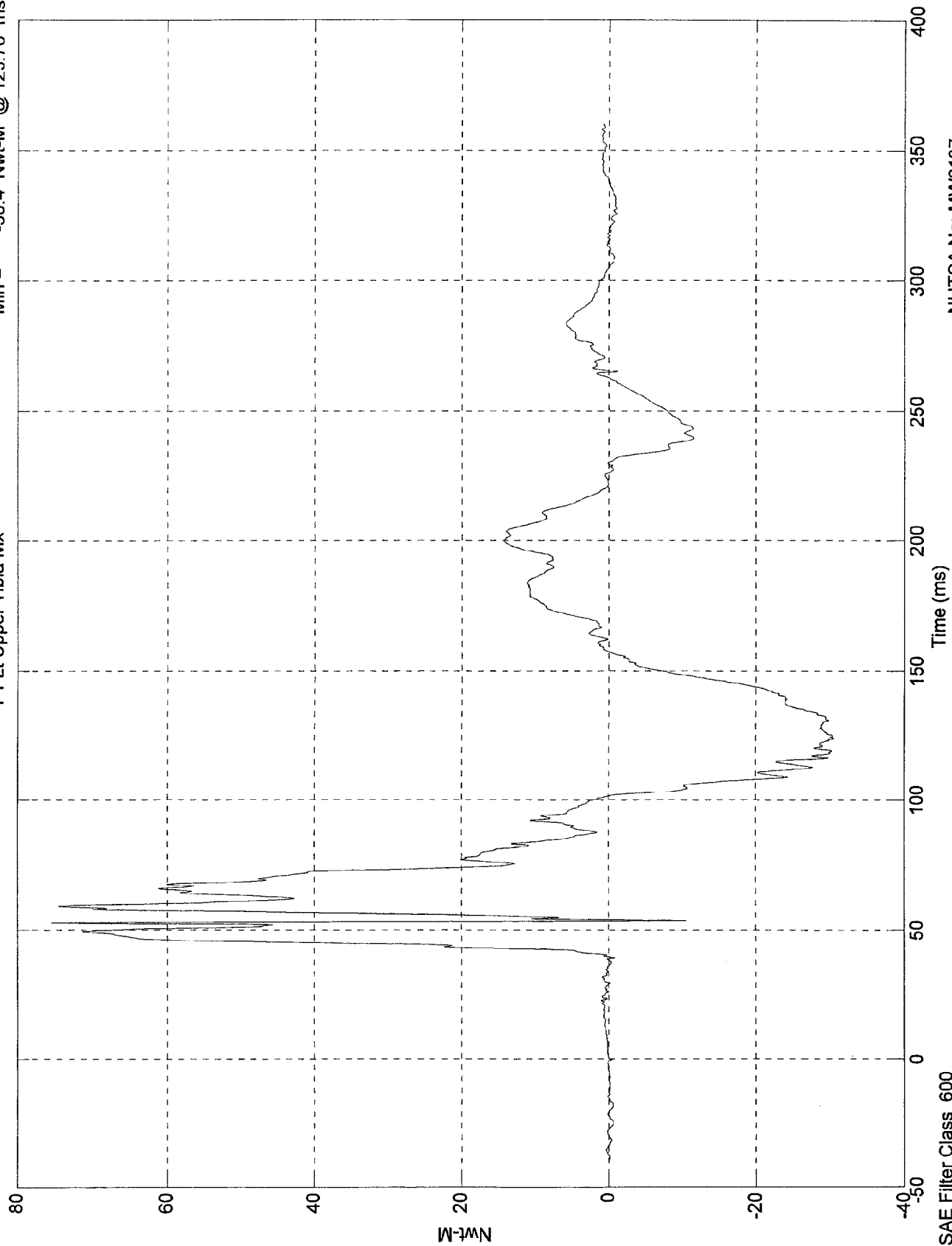


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 75.4 Nwt-M @ 52.70 msec
 Min = -30.4 Nwt-M @ 123.70 msec

P1 Lt Upper Tibia Mx



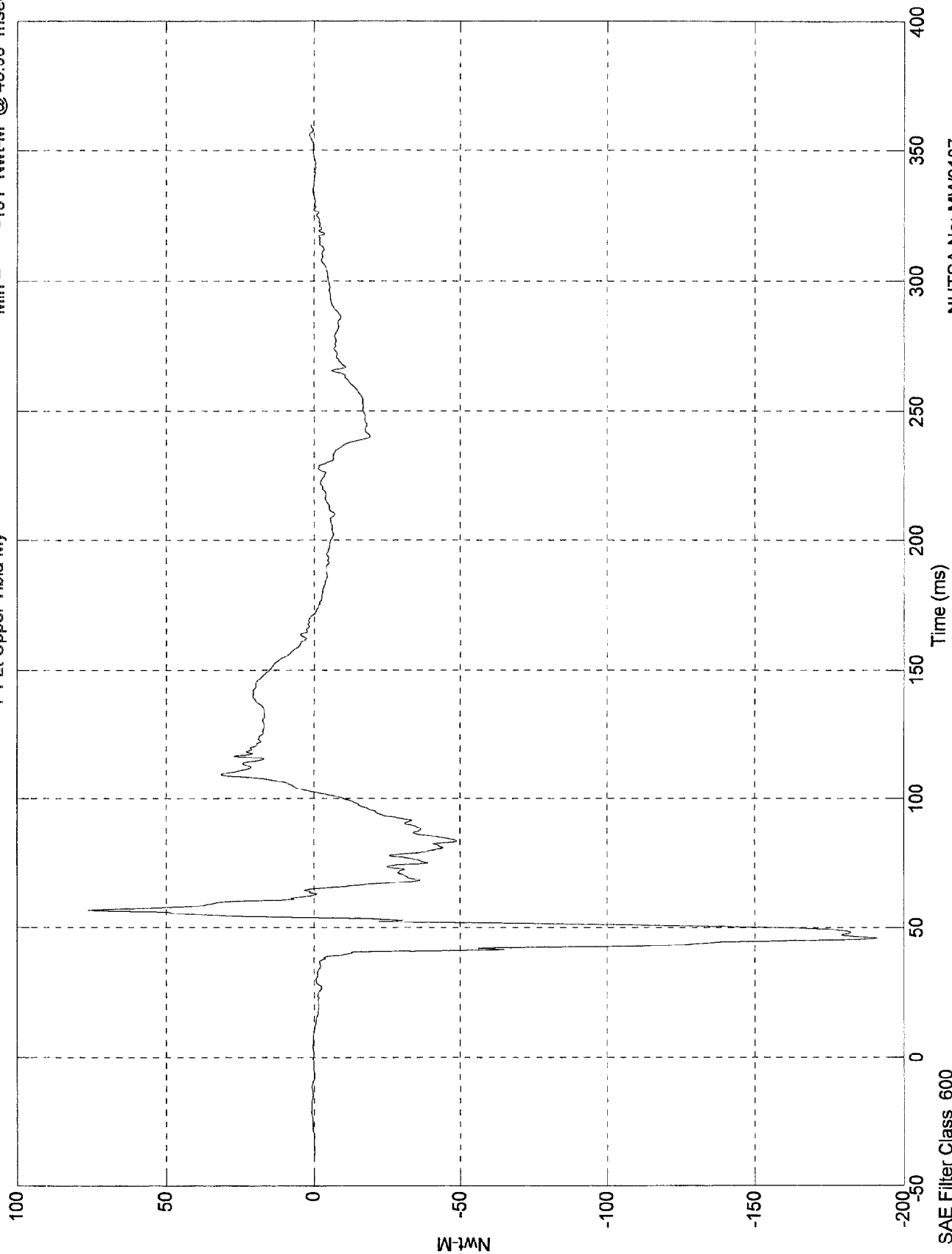
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 75.8 Nwt-M @ 56.50 msec
 Min = -191 Nwt-M @ 45.90 msec

P1 Lt Upper Tibia My



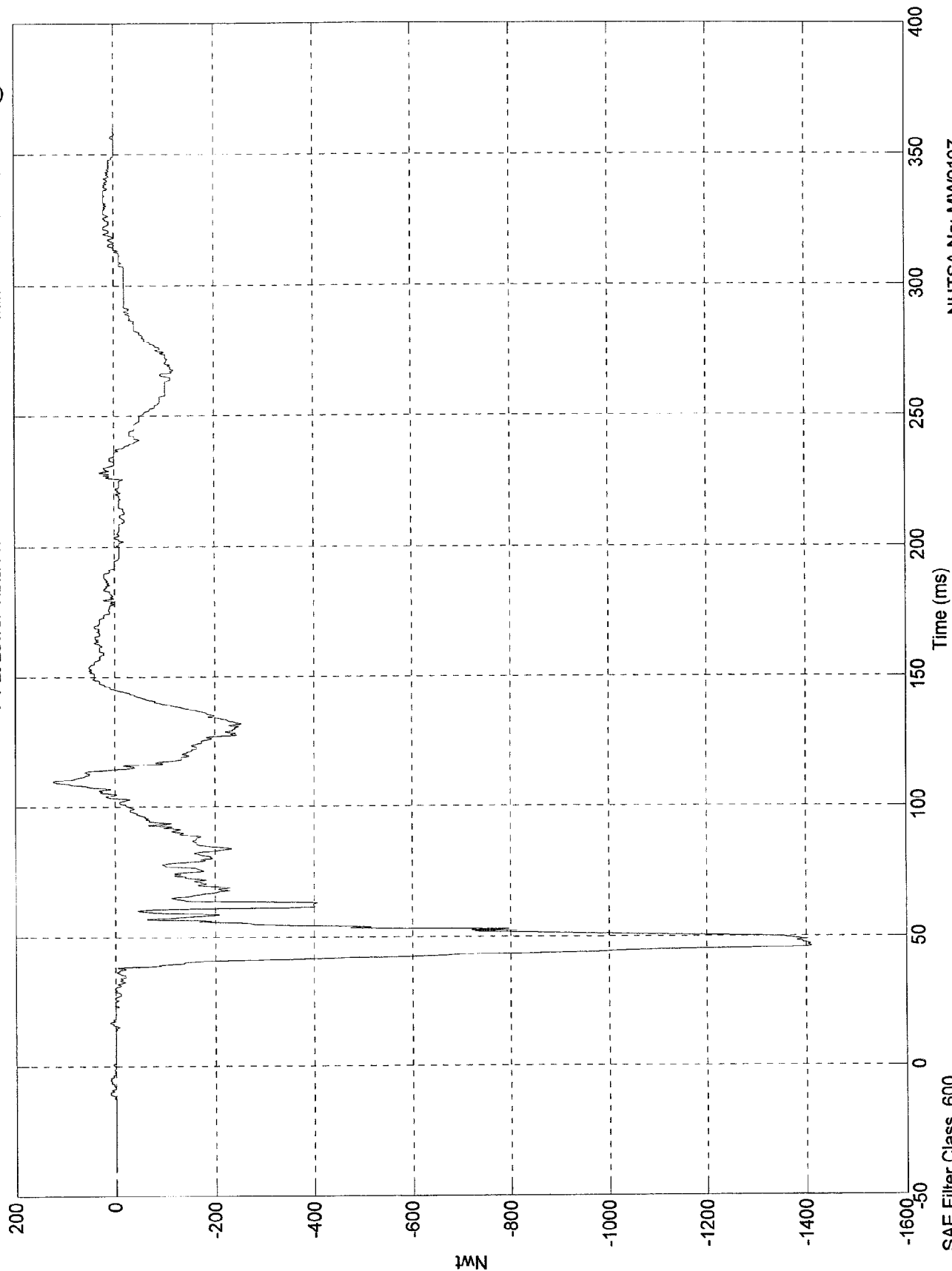
NHTSA No: MW0107
 Date: 09 Dec 1997

W-MN

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 124 Nwt @ 109.90 msec
Min = -1.41e+003 Nwt @ 46.20 msec

P1 Lt Lower Tibia Fx



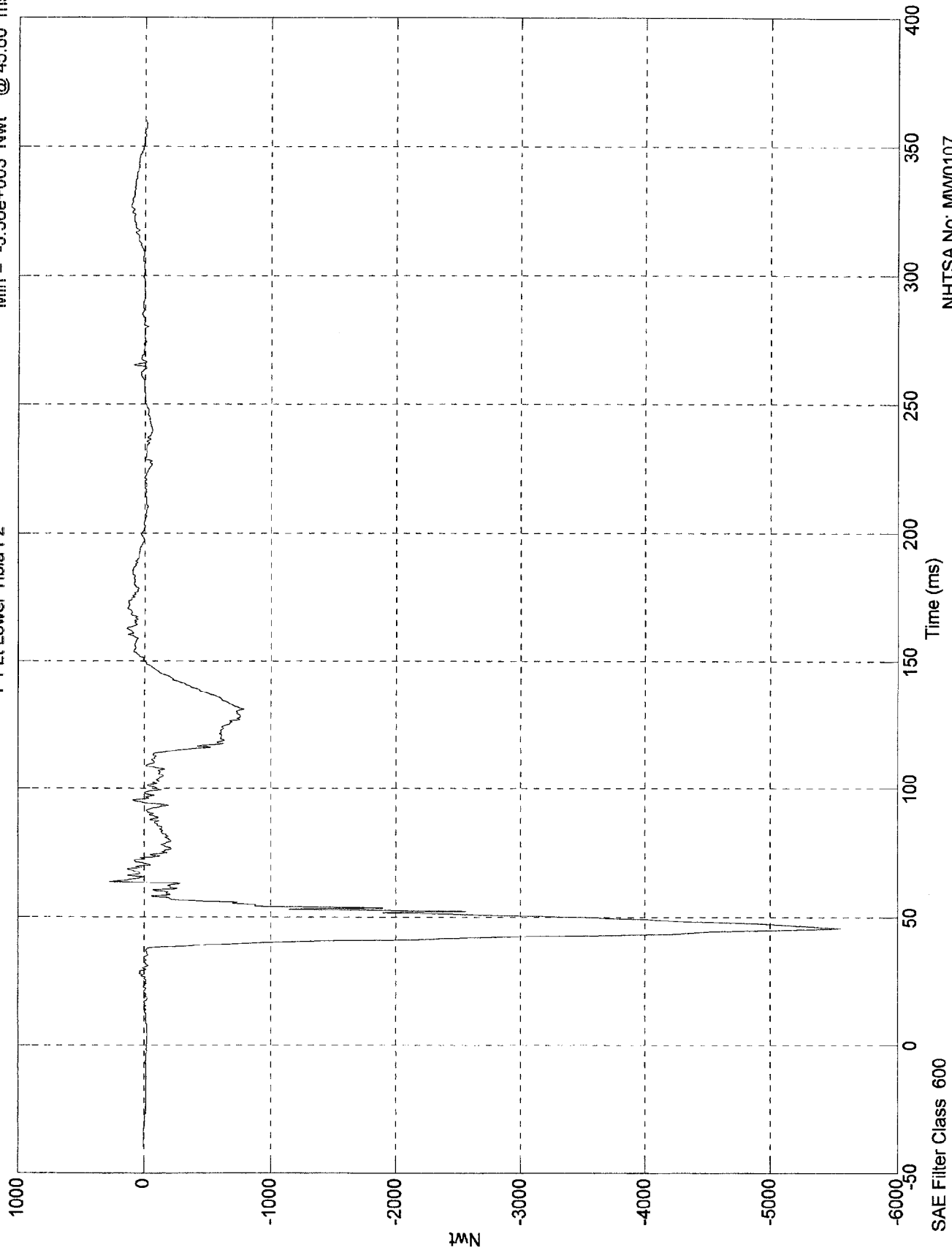
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 271 Nwt @ 63.70 msec
Min = -5.56e+003 Nwt @ 45.60 msec

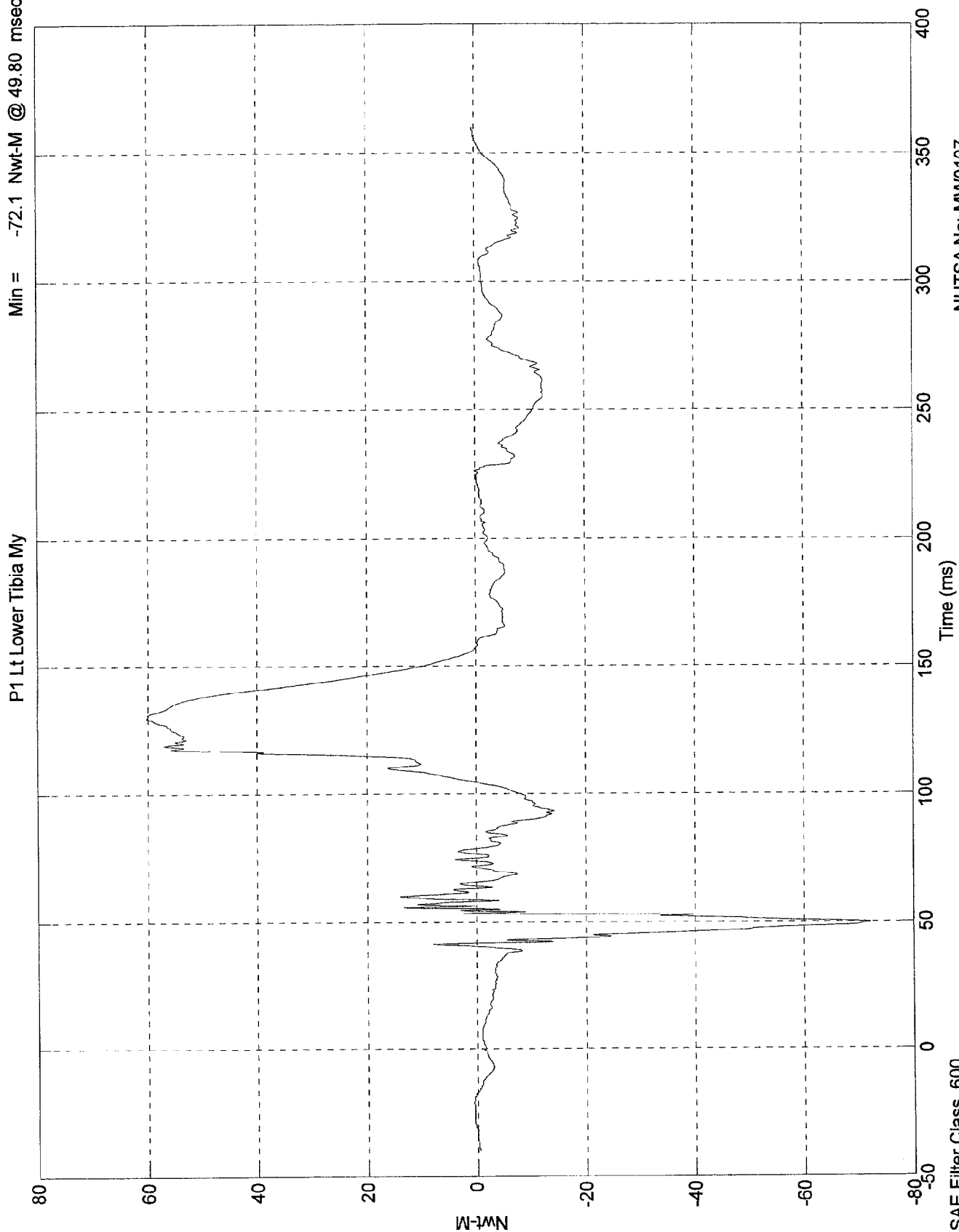
P1 Lt Lower Tibia Fz



NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 60.2 Nwt-M @ 129.30 msec
 Min = -72.1 Nwt-M @ 49.80 msec



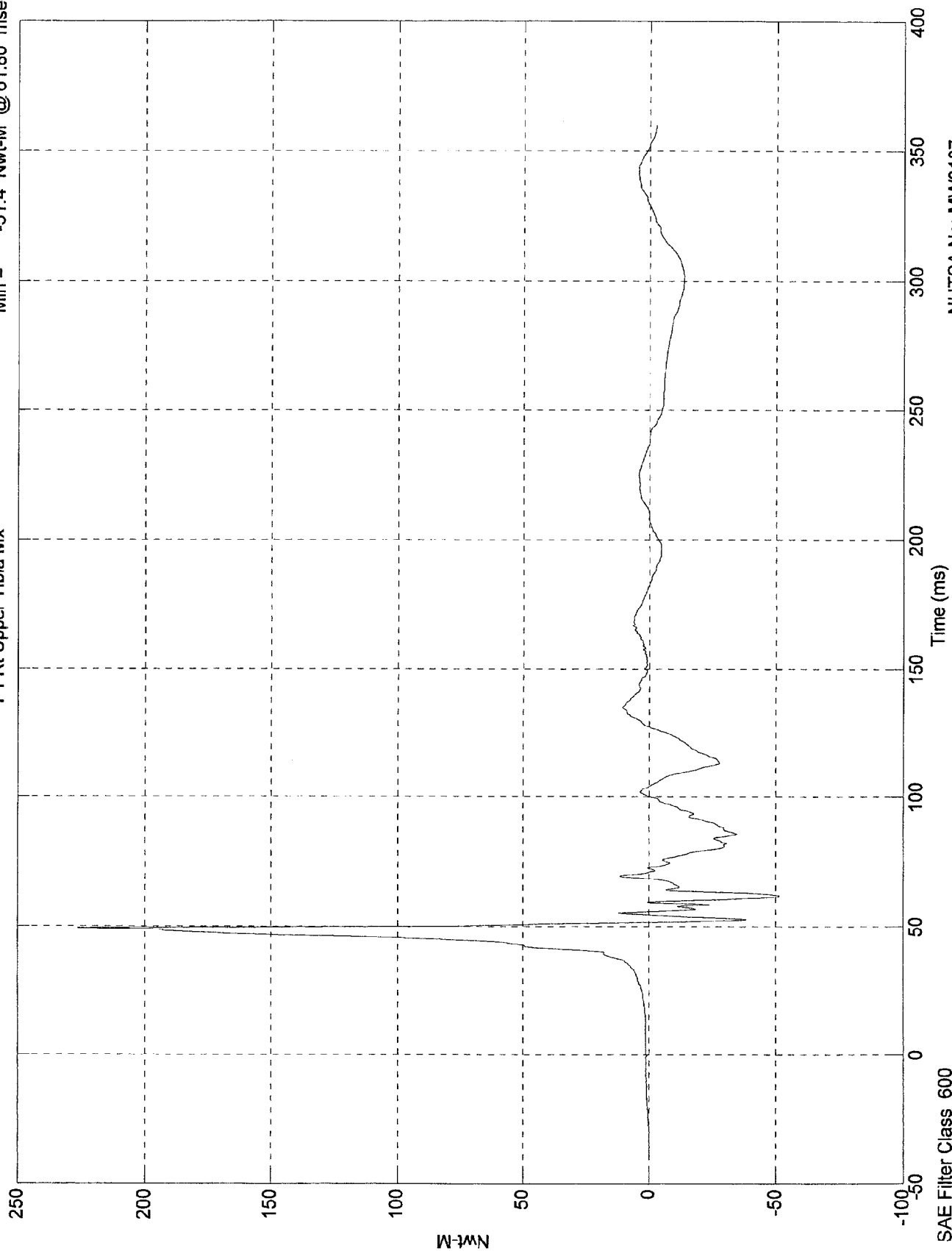
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 226 Nwt-M @ 49.20 msec
Min = -51.4 Nwt-M @ 61.80 msec

P1 Rt Upper Tibia Mx

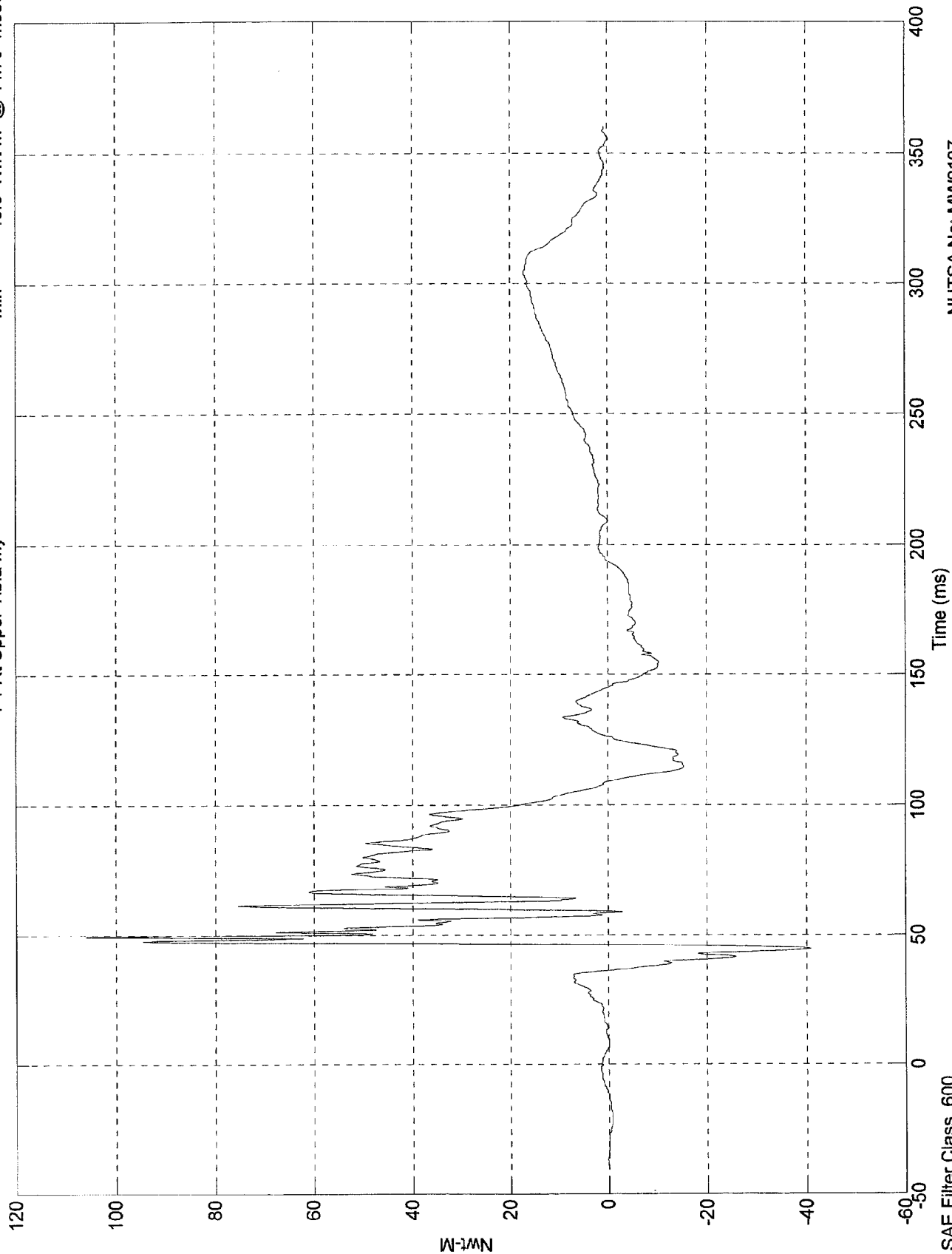


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 106 Nwt-M @ 49.40 msec
Min = -40.9 Nwt-M @ 44.70 msec

P1 Rt Upper Tibia My



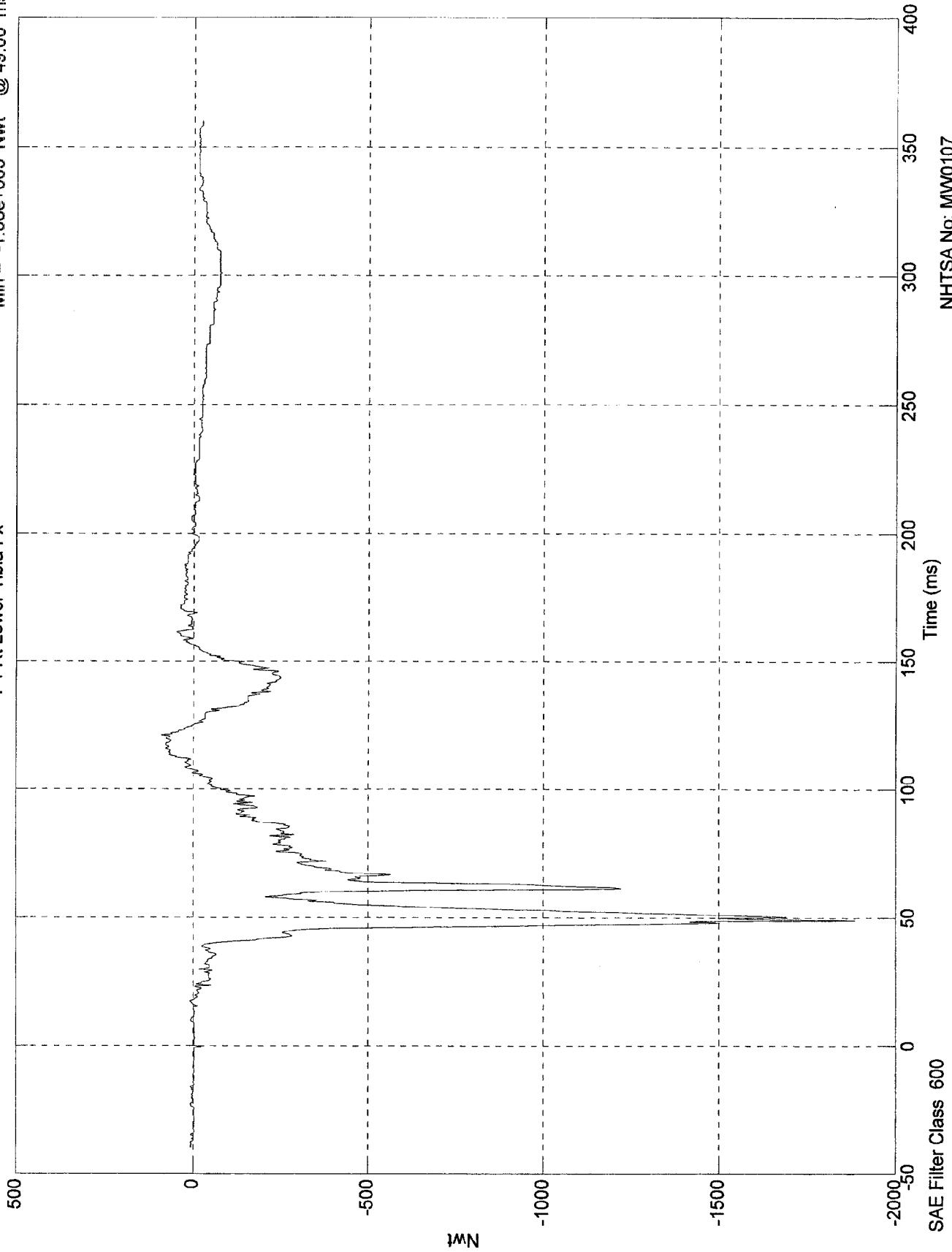
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 90.2 Nwt @ 120.90 msec
Min = -1.88e+003 Nwt @ 49.00 msec

P1 Rt Lower Tibia Fx

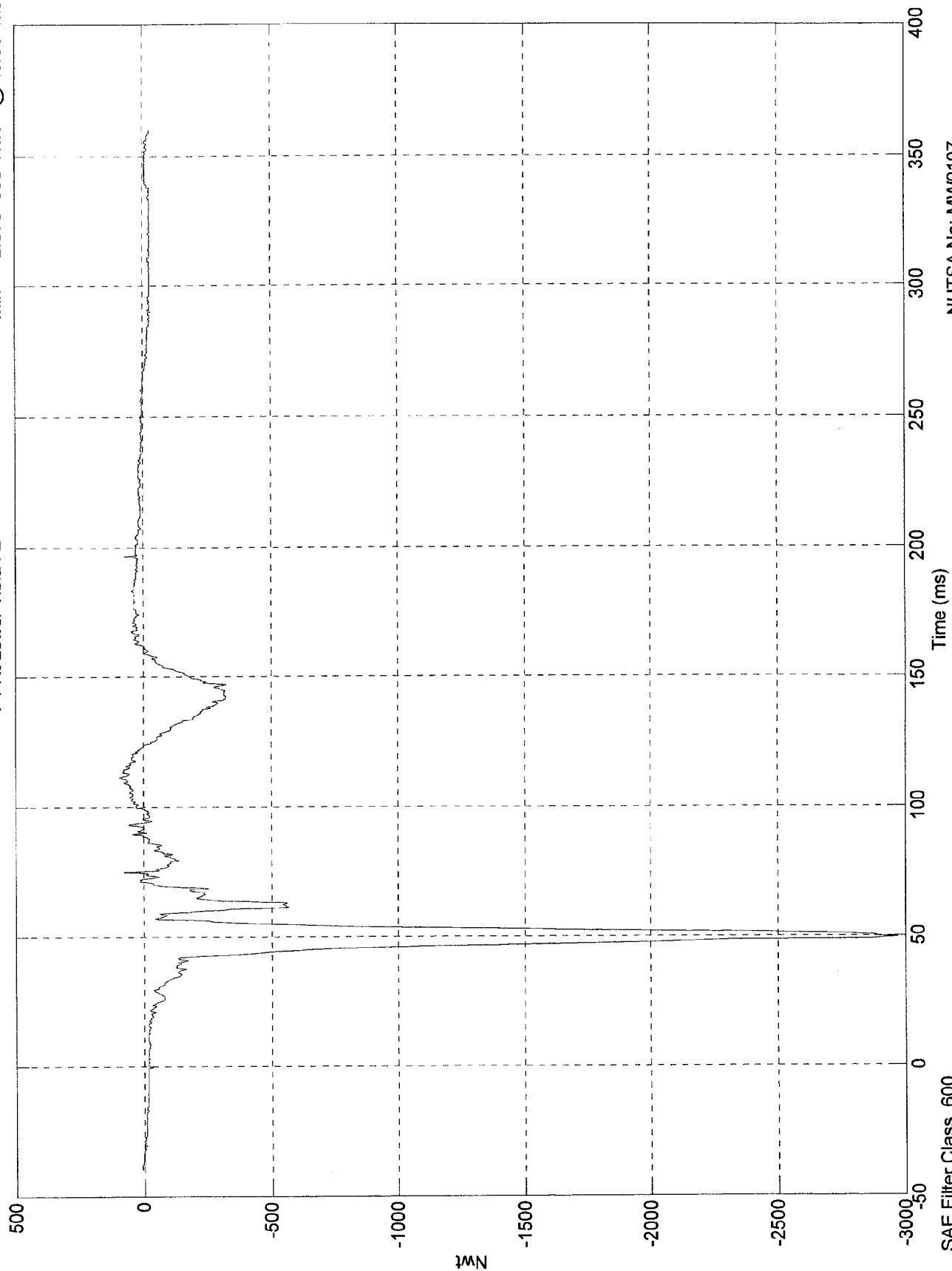


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 93.5 Nwt @ 111.60 msec
Min = -2.97e+003 Nwt @ 49.50 msec

P1 Rt Lower Tibia Fz

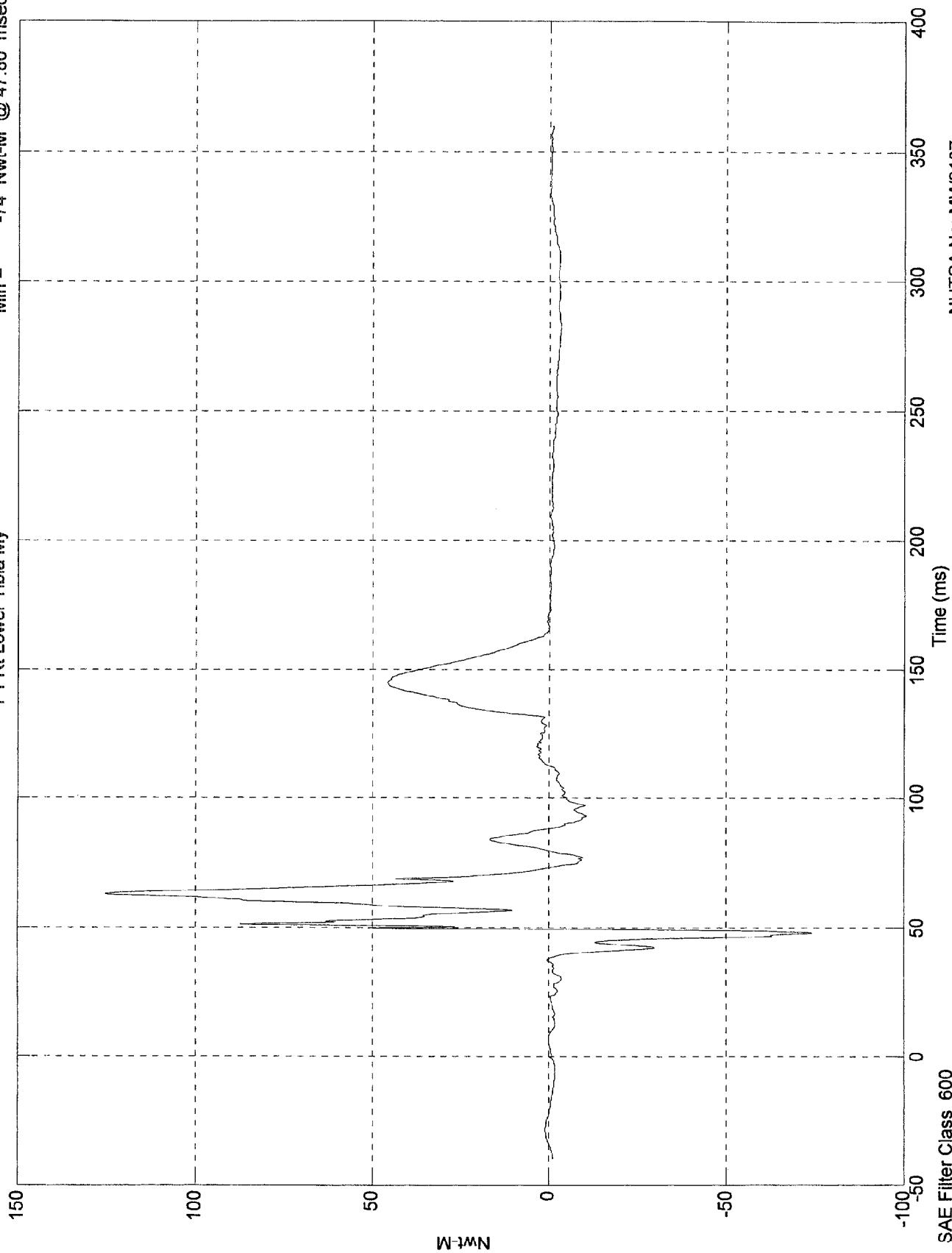


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 125 Nwt-M @ 62.90 msec
Min = -74 Nwt-M @ 47.80 msec

P1 Rt Lower Tibia My



NHTSA No: MW0107
Date: 09 Dec 1997

W-MN

B-44

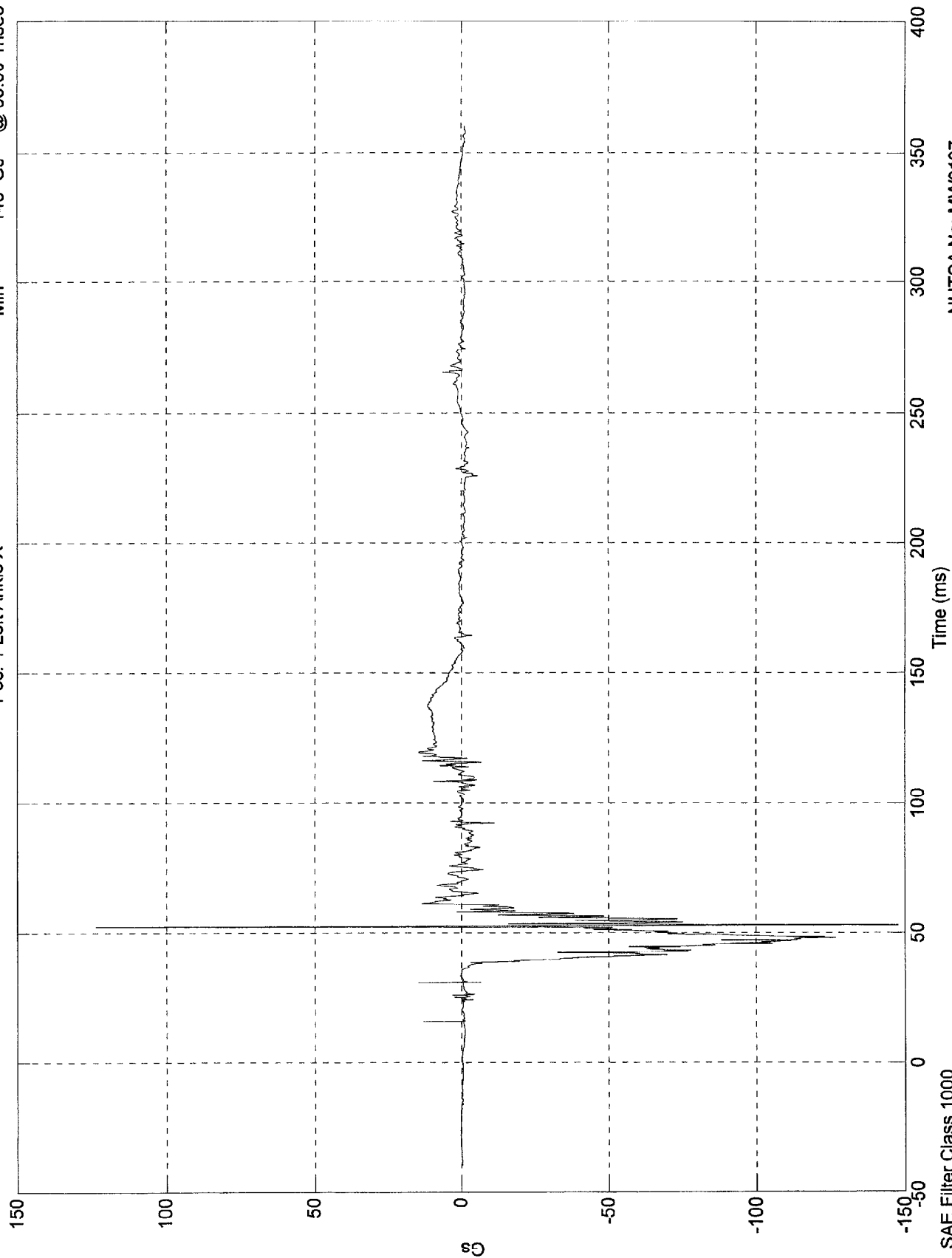
8413-13

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 124 Gs @ 52.50 msec
Min = -148 Gs @ 53.00 msec

Pos. 1 Left Ankle X

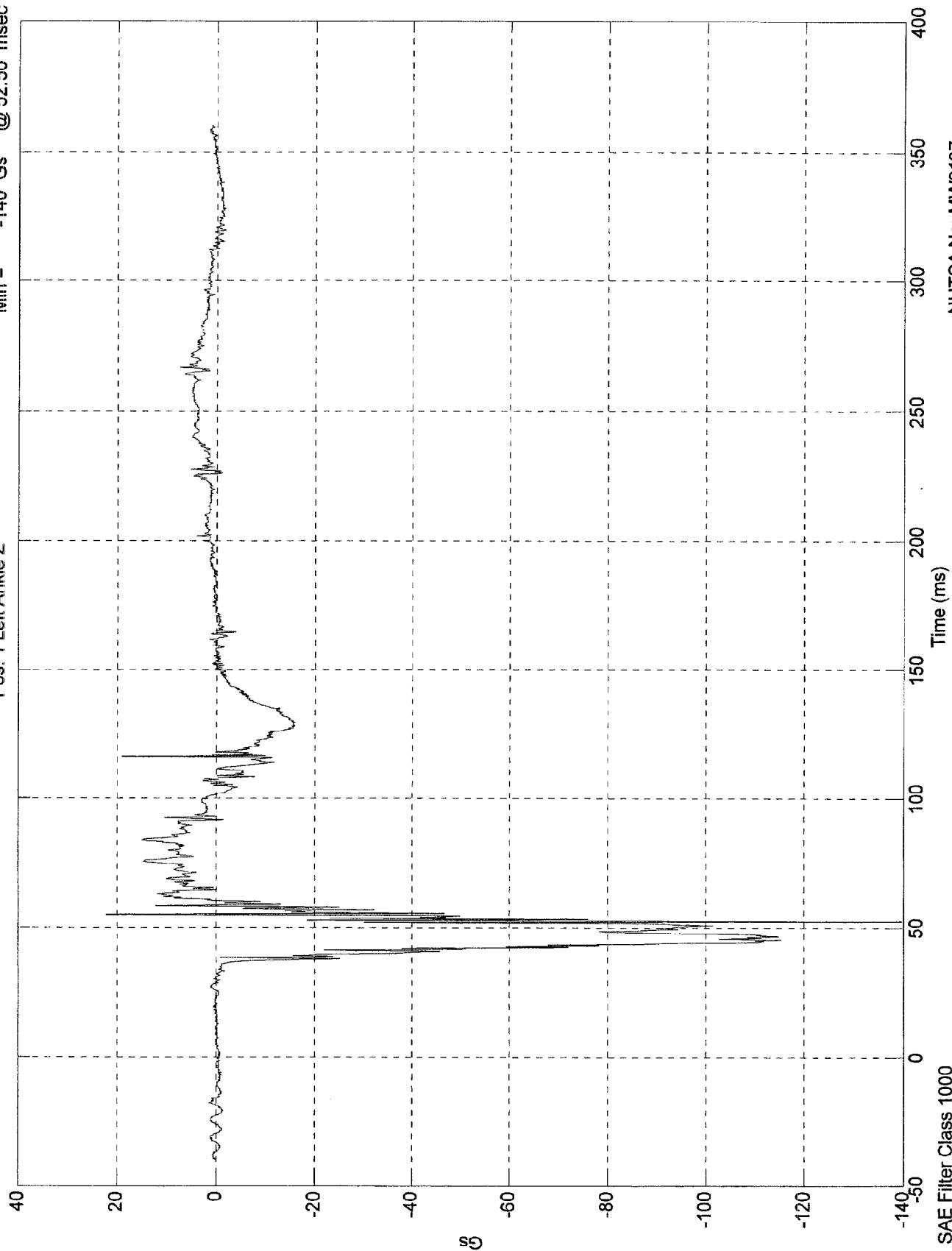


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 22.2 Gs @ 55.00 msec
Min = -140 Gs @ 52.50 msec

Pos. 1 Left Ankle Z



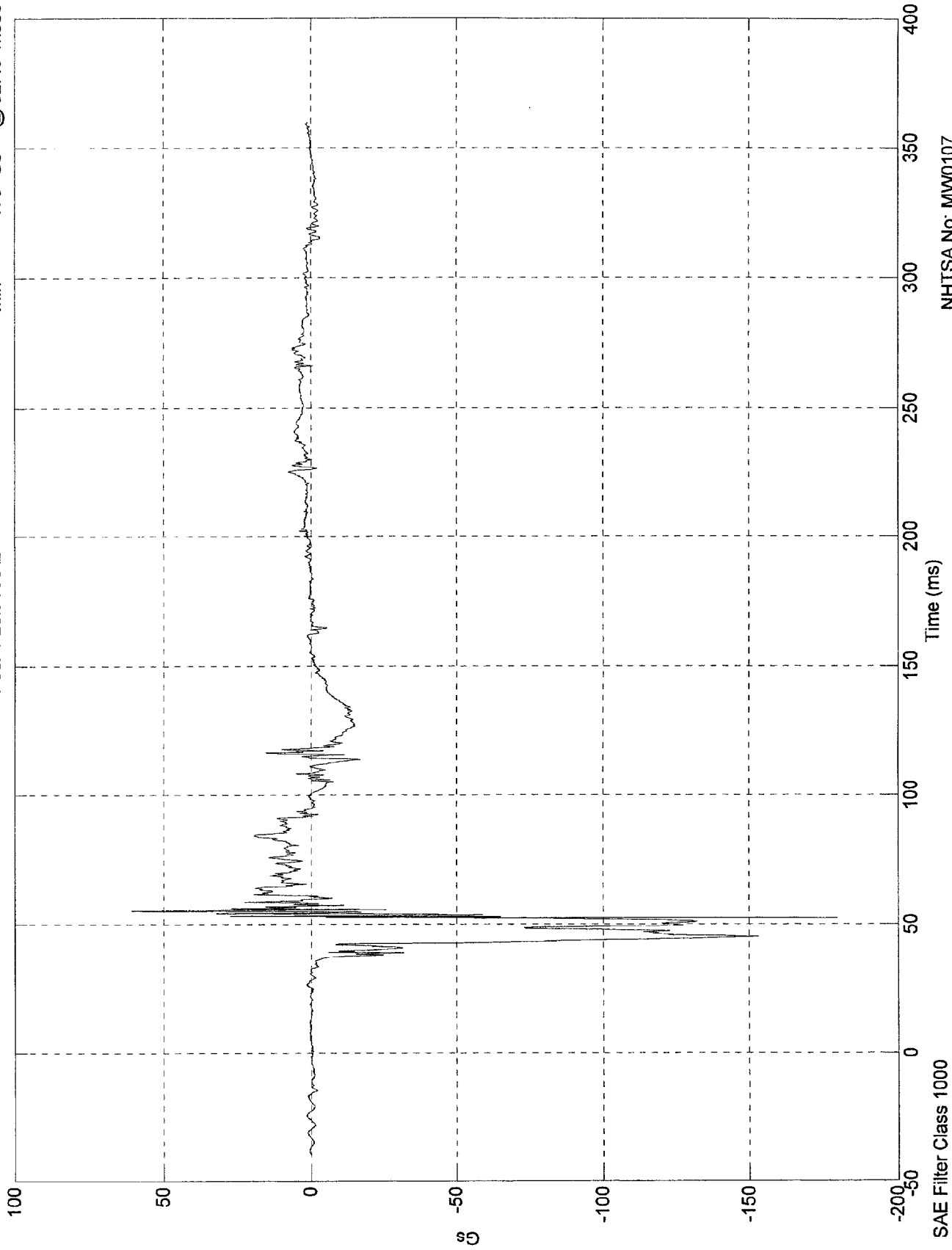
SAE Filter Class 1000

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 60.8 Gs @ 55.10 msec
Min = -179 Gs @ 52.40 msec

Pos. 1 Left Toe Z

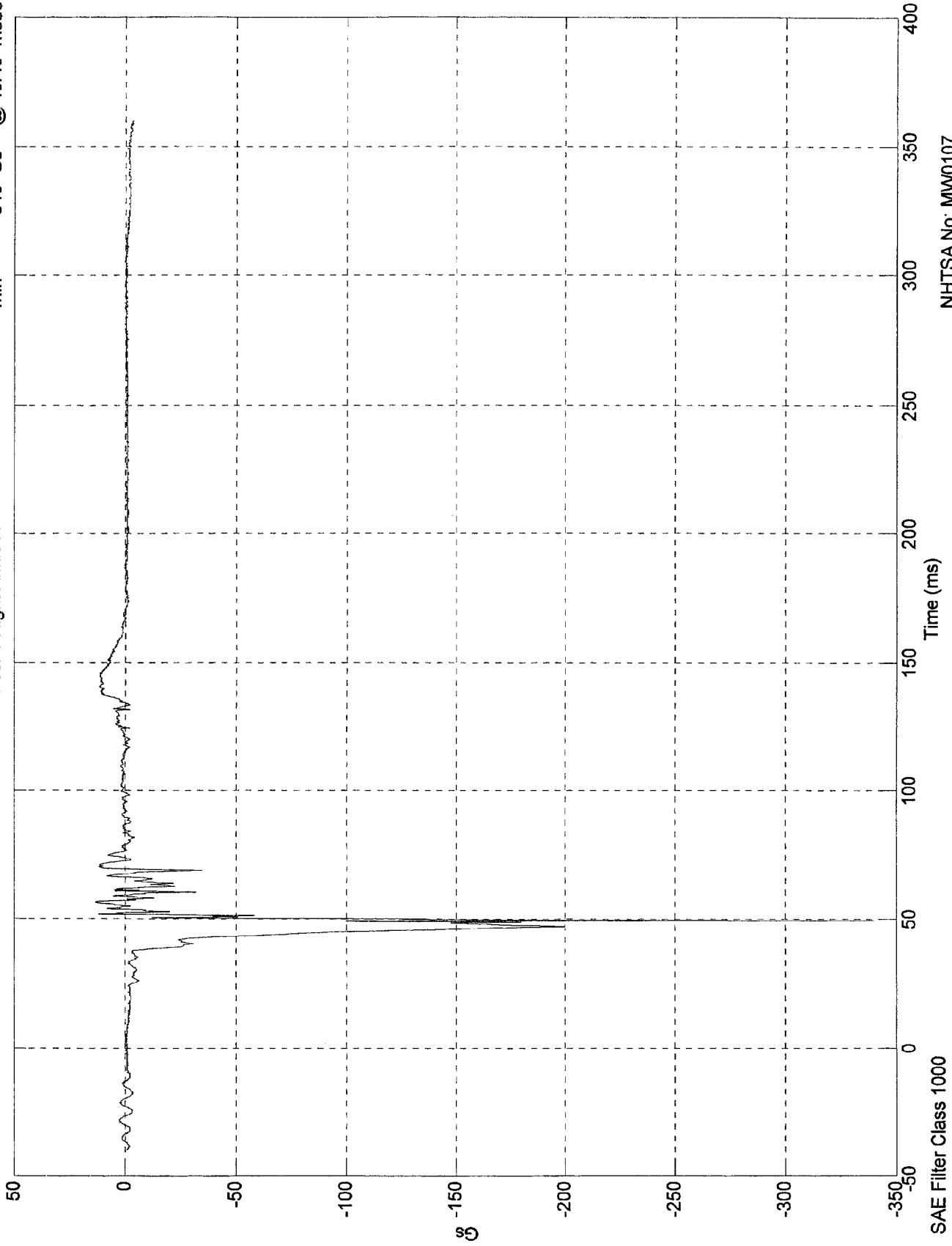


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 13.4 Gs @ 56.30 msec
Min = -340 Gs @ 49.40 msec

Pos. 1 Right Ankle X

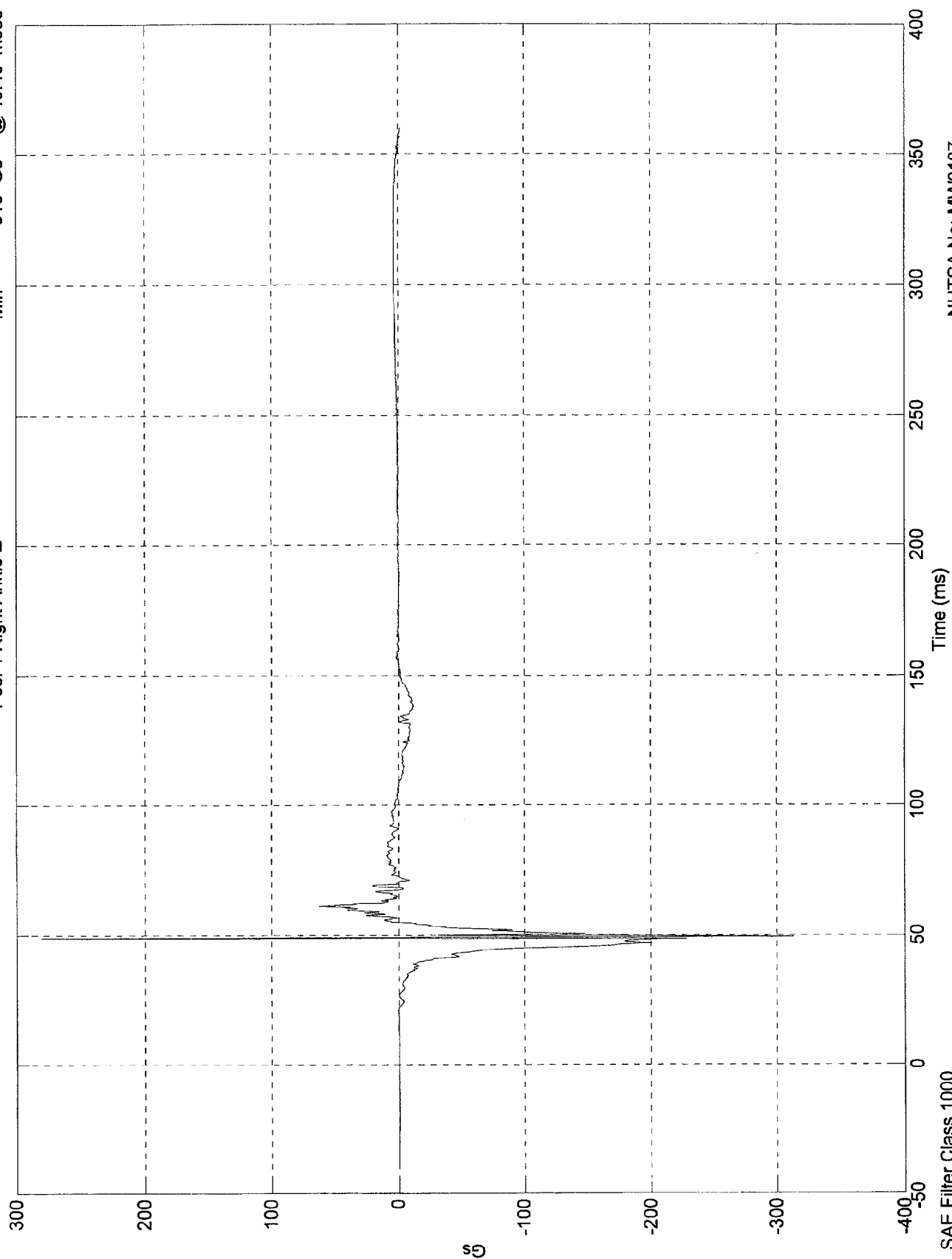


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 281 Gs @ 48.90 msec
Min = -313 Gs @ 49.40 msec

Pos. 1 Right Ankle Z

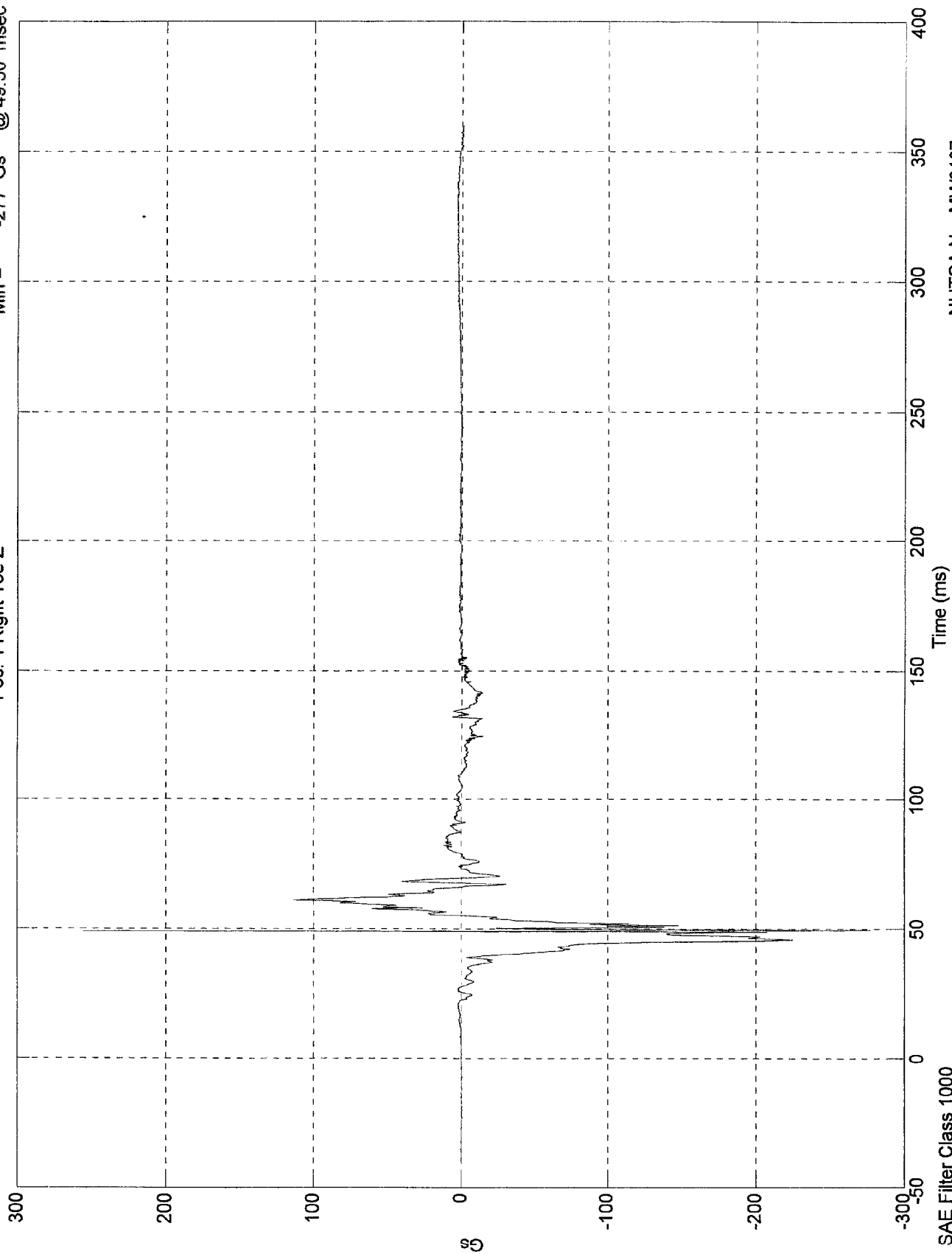


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 256 Gs @ 48.90 msec
Min = -277 Gs @ 49.50 msec

Pos. 1 Right Toe Z

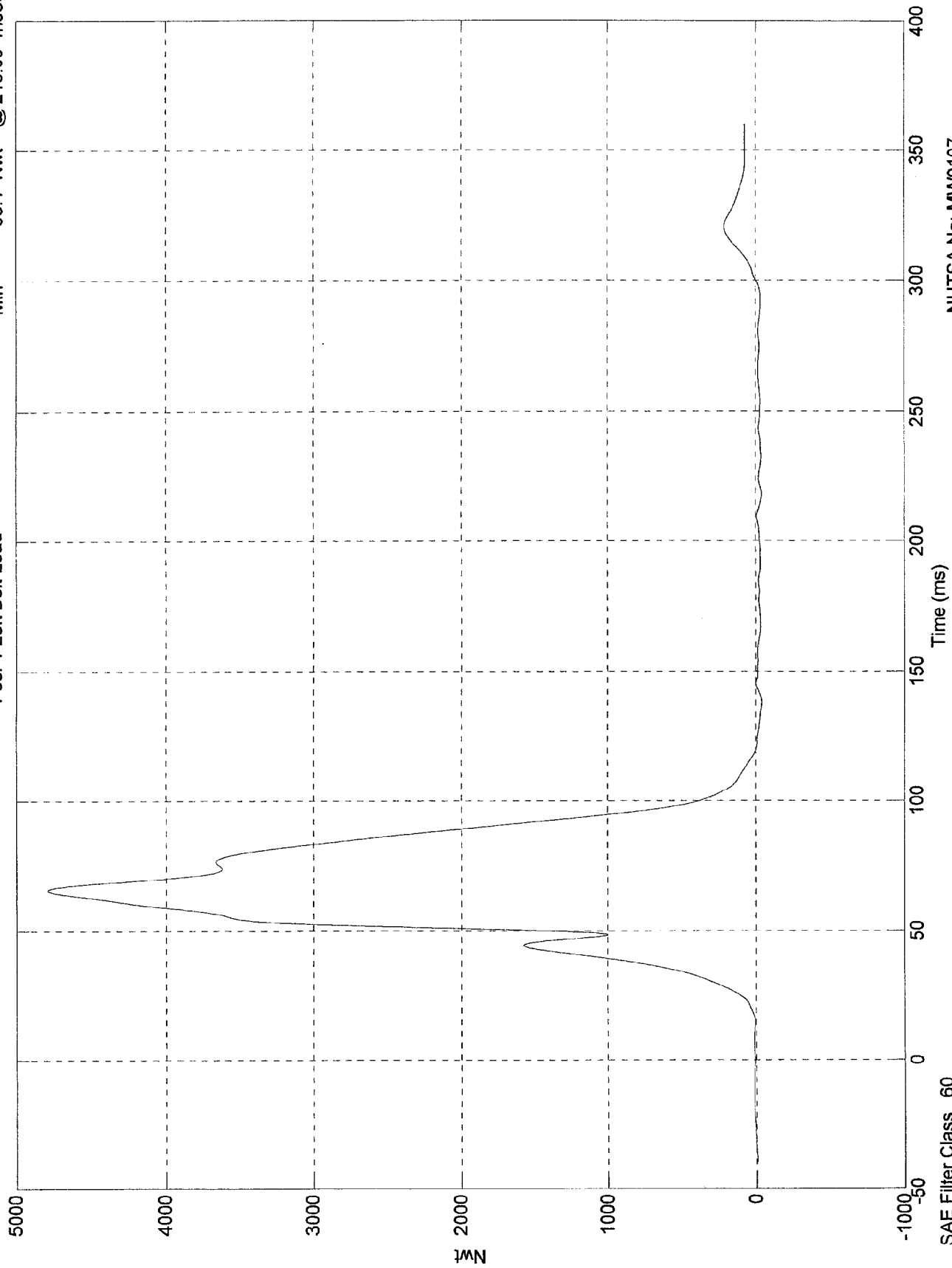


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 4.79e+003 Nwt @ 65.40 msec
Min = -38.1 Nwt @ 218.00 msec

Pos. 1 Left Belt Load

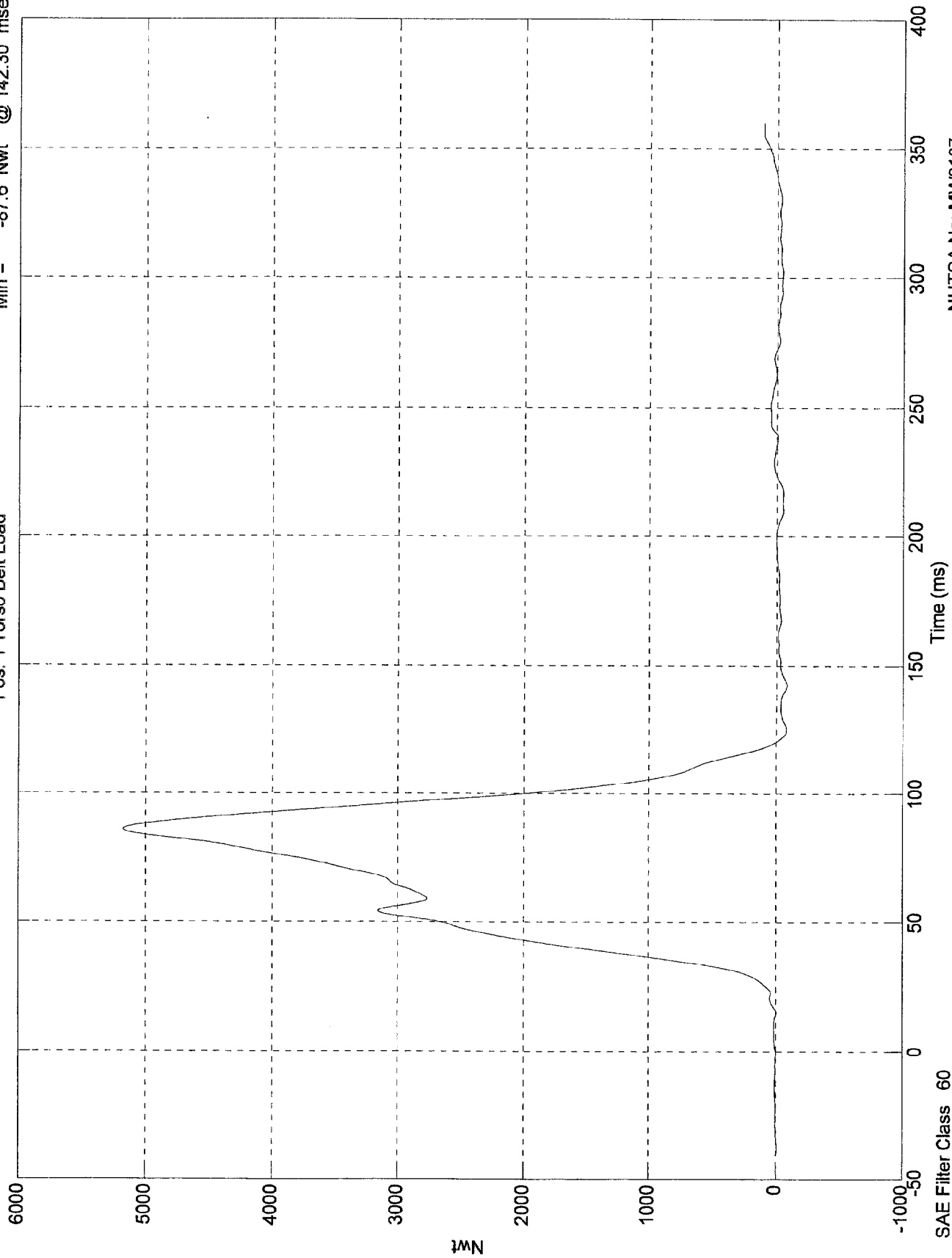


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 5.18e+003 Nwt @ 85.90 msec
Min = -87.6 Nwt @ 142.30 msec

Pos. 1 Torso Belt Load

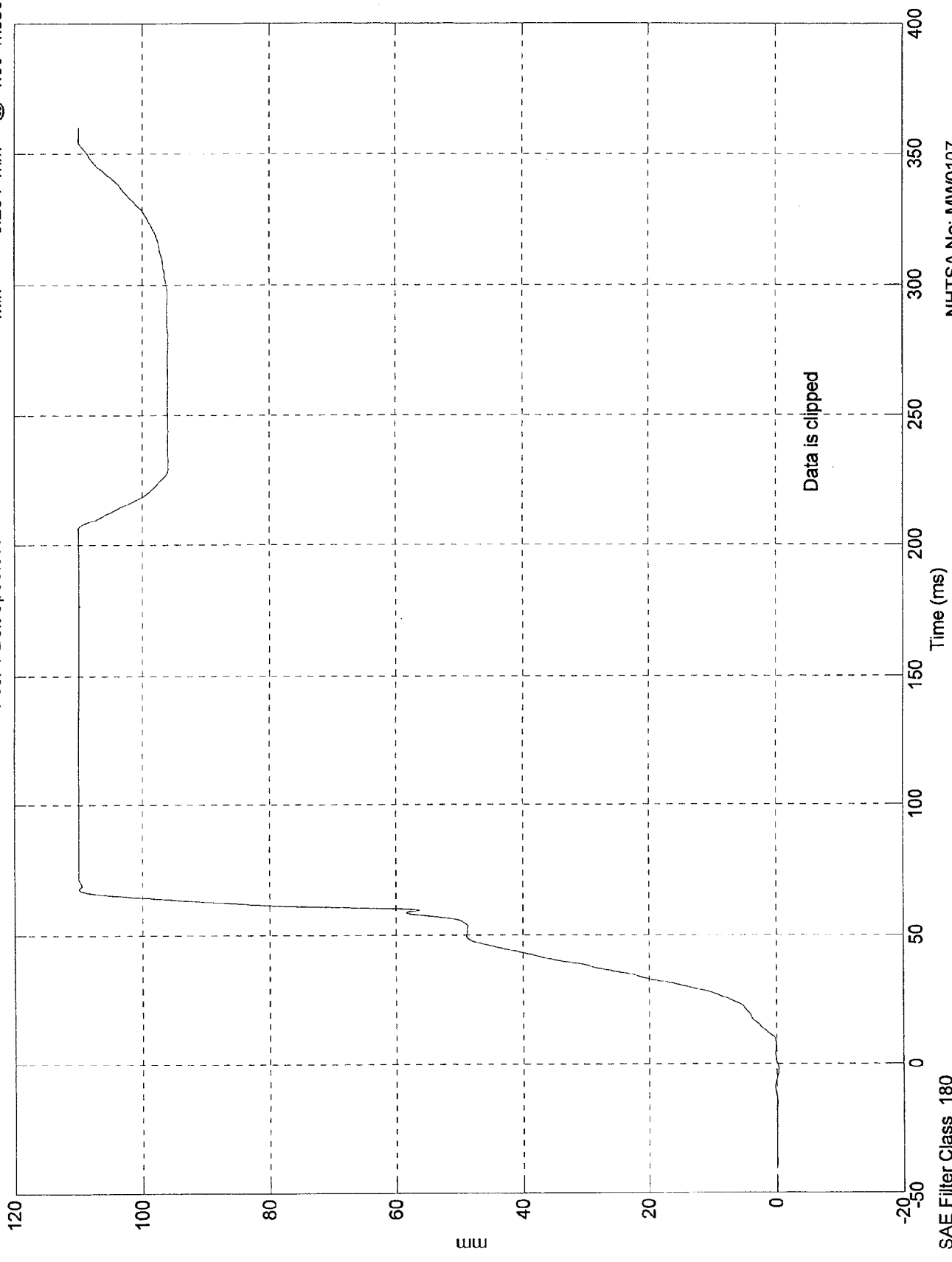


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 110 mm @ 205.70 msec
Min = -0.264 mm @ -1.90 msec

Pos. 1 Belt Spoolout



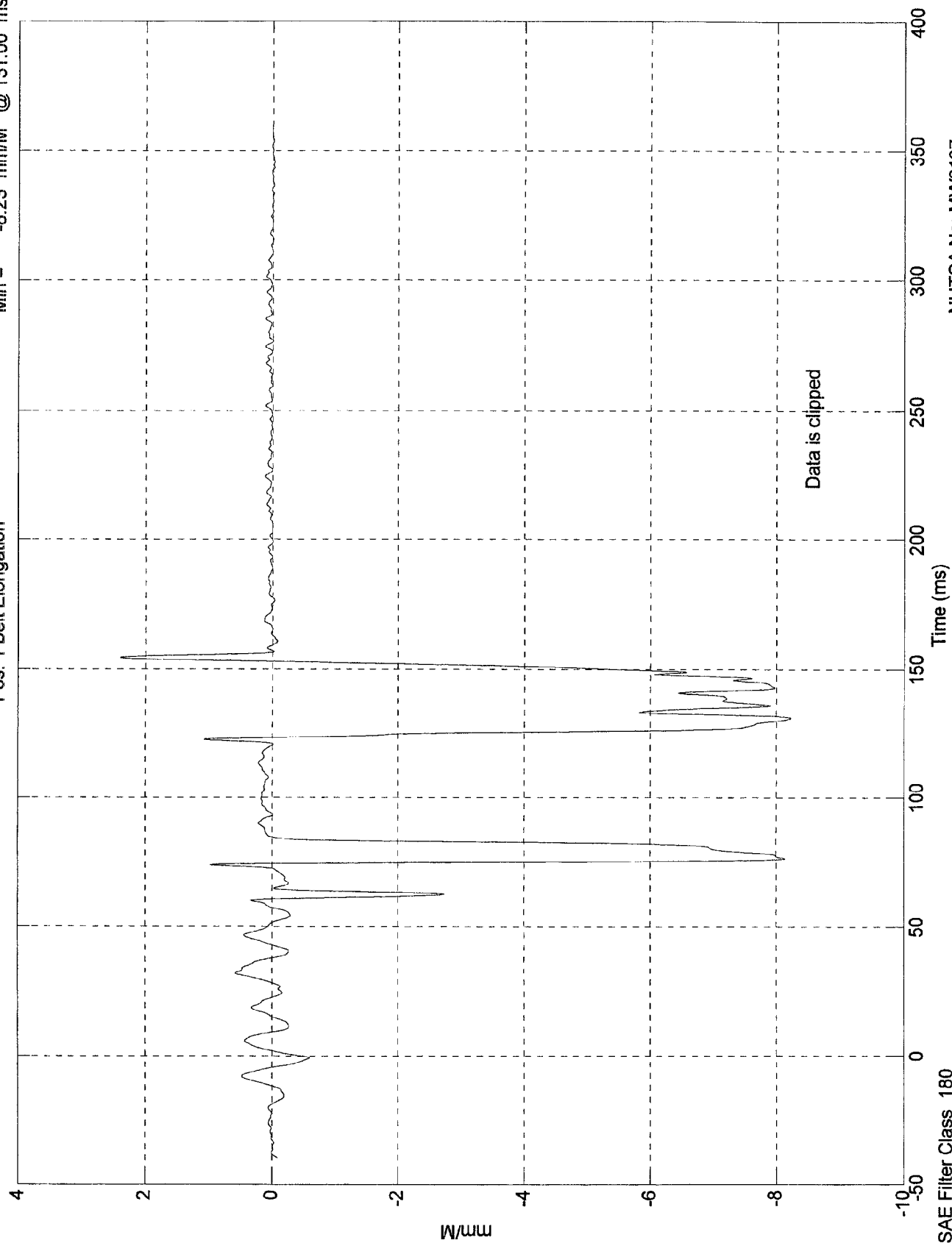
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 2.39 mm/M @ 154.30 msec
Min = -8.23 mm/M @ 131.00 msec

Pos. 1 Belt Elongation

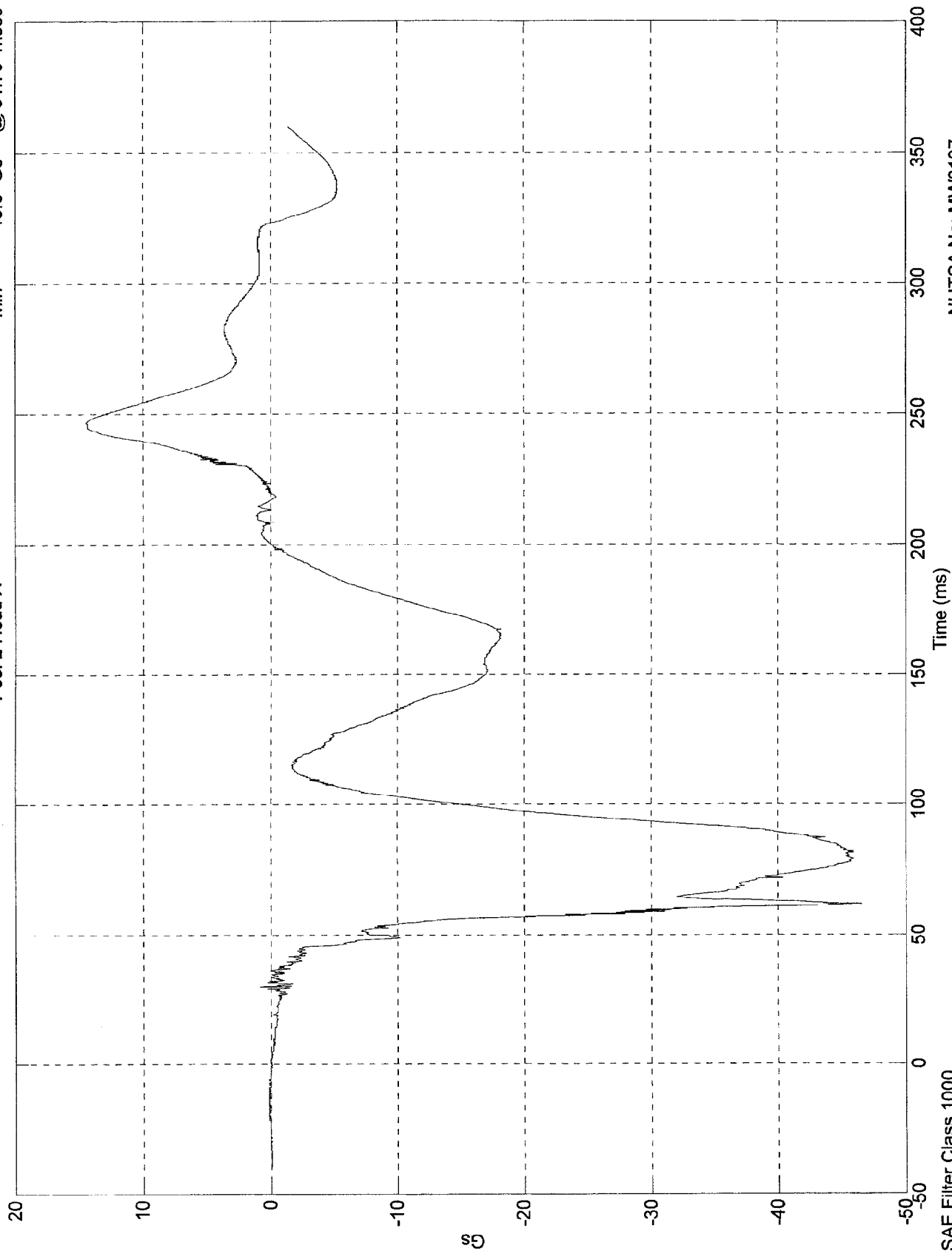


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 14.4 Gs @ 246.50 msec
Min = -46.5 Gs @ 61.70 msec

Pos. 2 Head X

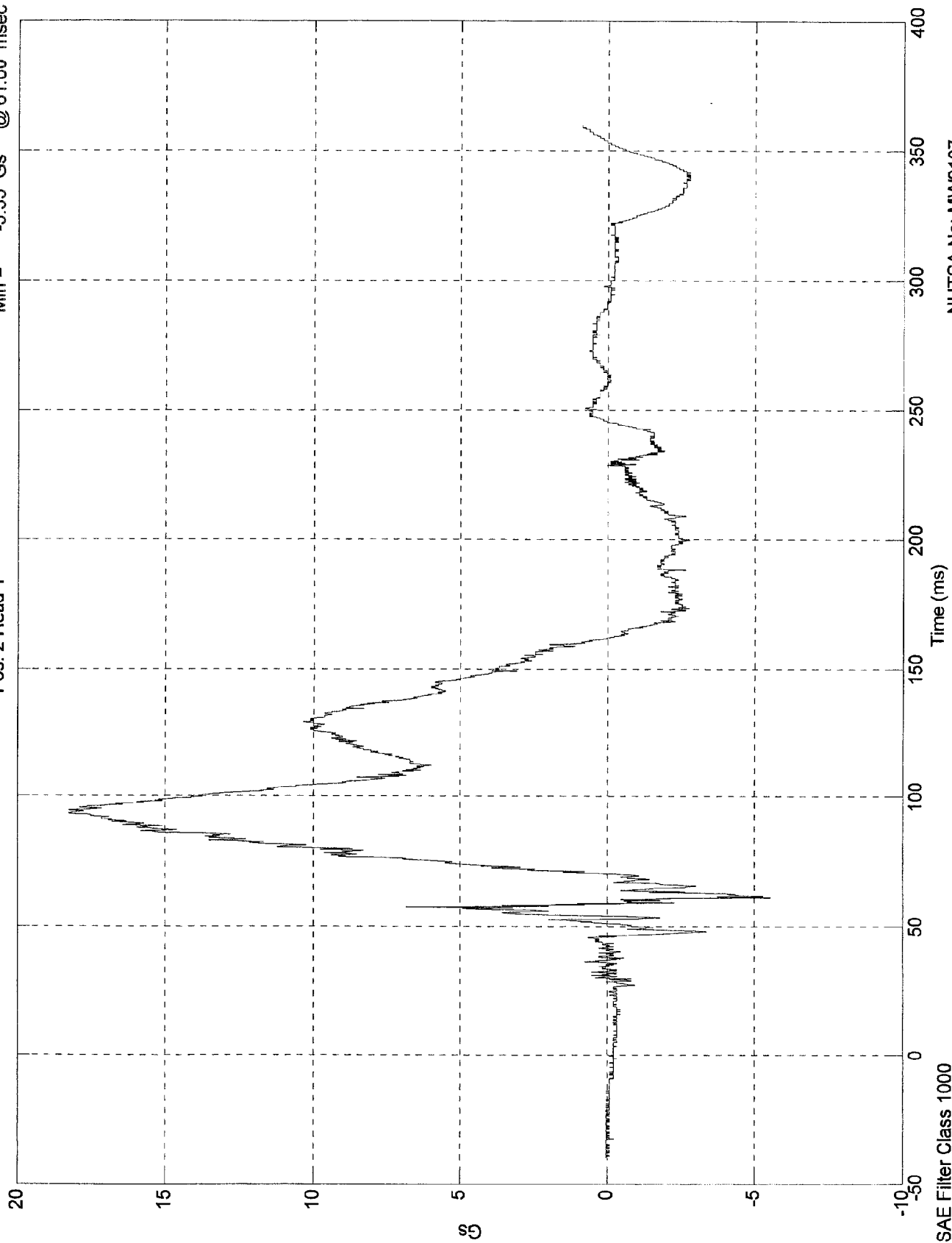


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 18.3 Gs @ 93.10 msec
Min = -5.55 Gs @ 61.00 msec

Pos. 2 Head Y



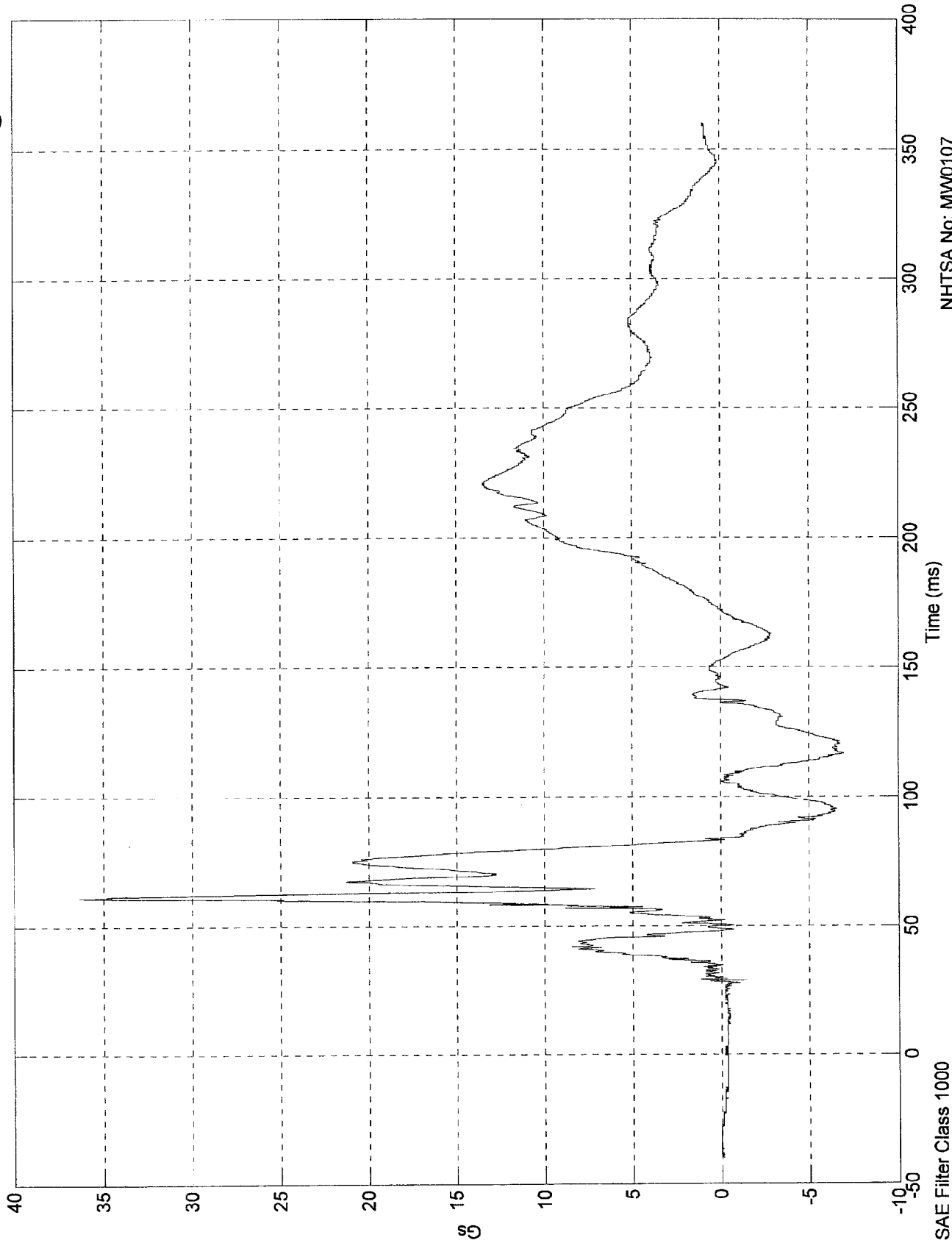
SAE Filter Class 1000

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 36.4 Gs @ 61.10 msec
Min = -6.95 Gs @ 116.50 msec

Pos. 2 Head Z



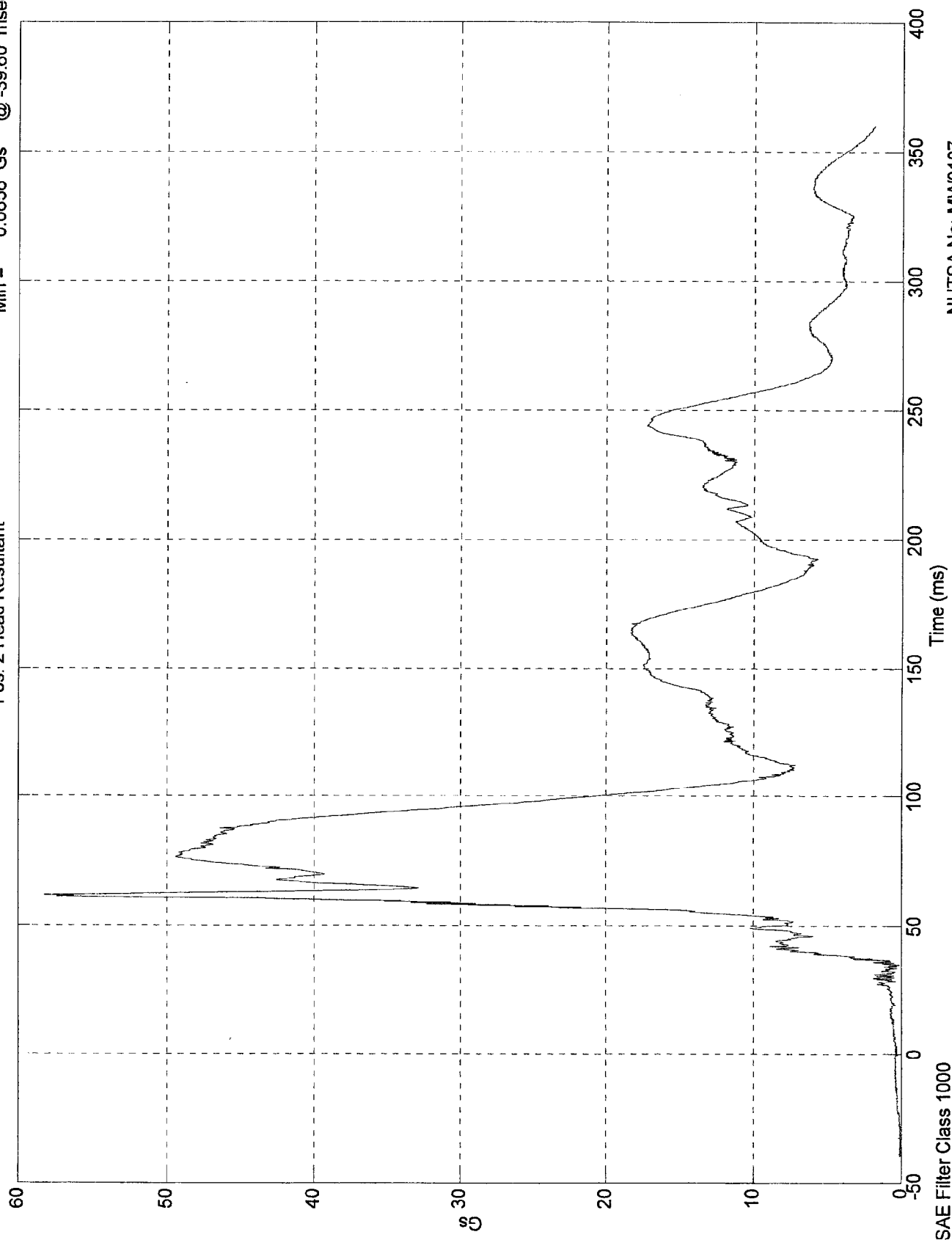
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 58.2 Gs @ 61.70 msec
 Min = 0.0656 Gs @ -39.60 msec

Pos. 2 Head Resultant

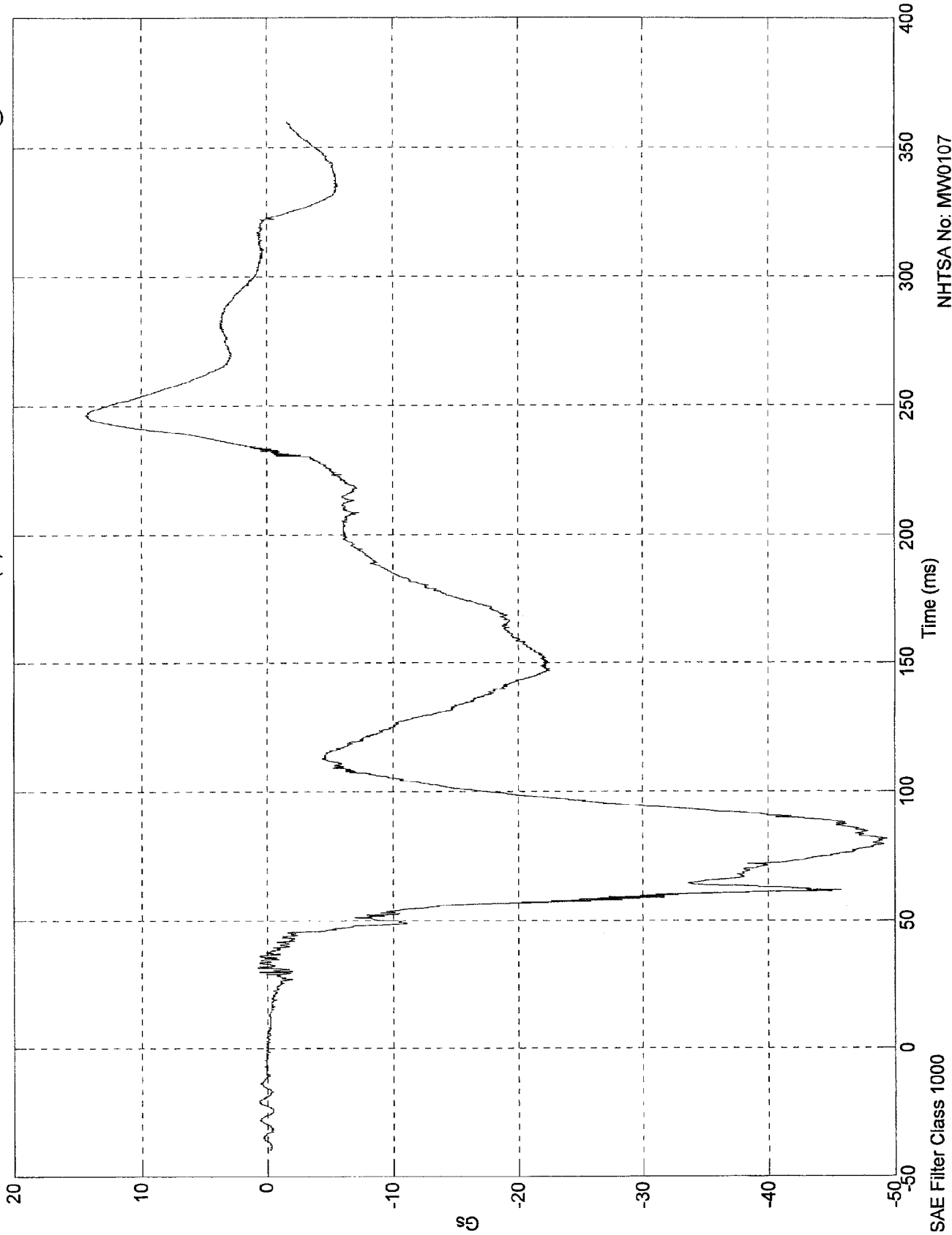


NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 14.4 Gs @ 246.50 msec
Min = -49.4 Gs @ 81.70 msec

Pos. 2 Head X(R)

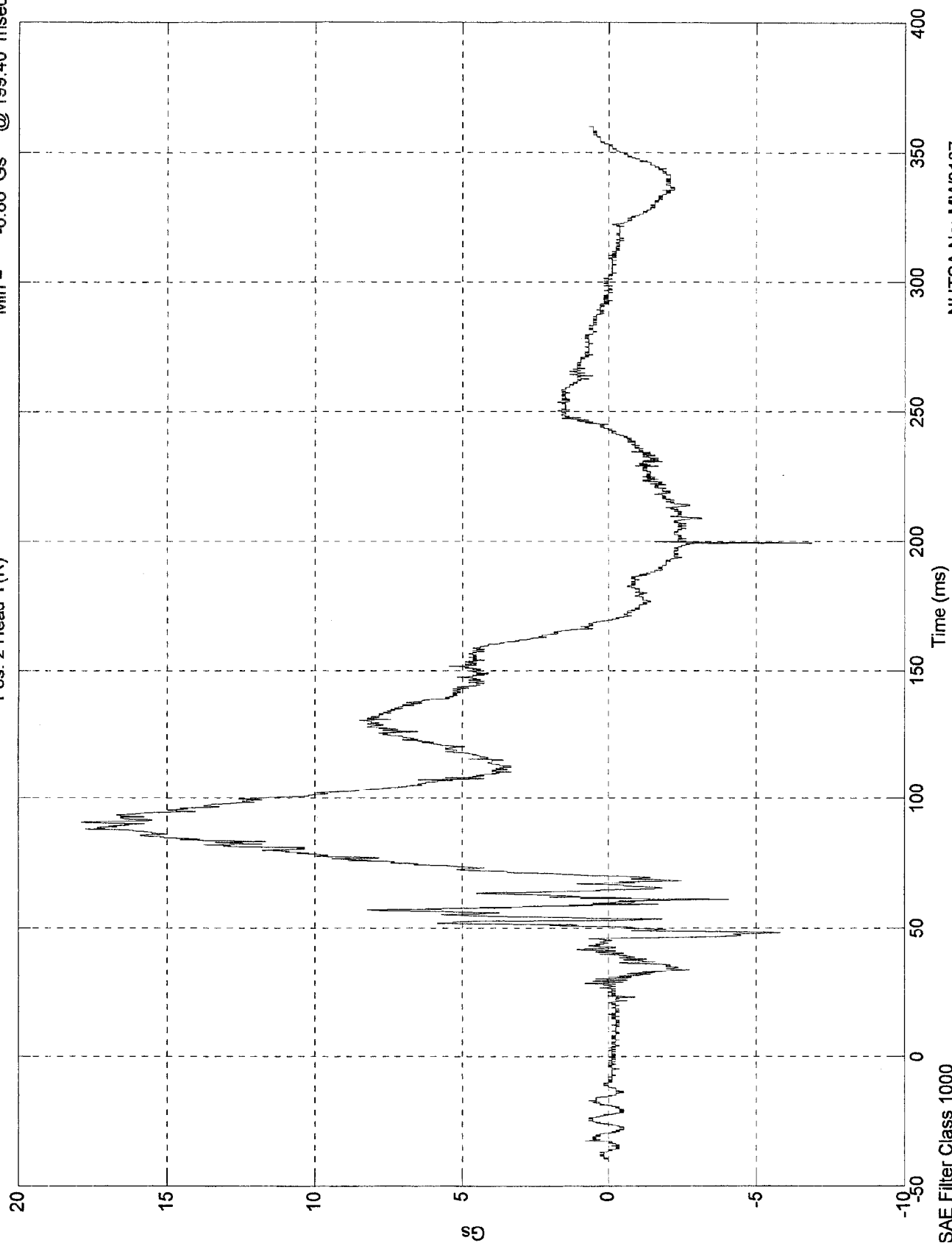


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 17.9 Gs @ 90.50 msec
Min = -6.86 Gs @ 199.40 msec

Pos. 2 Head Y(R)

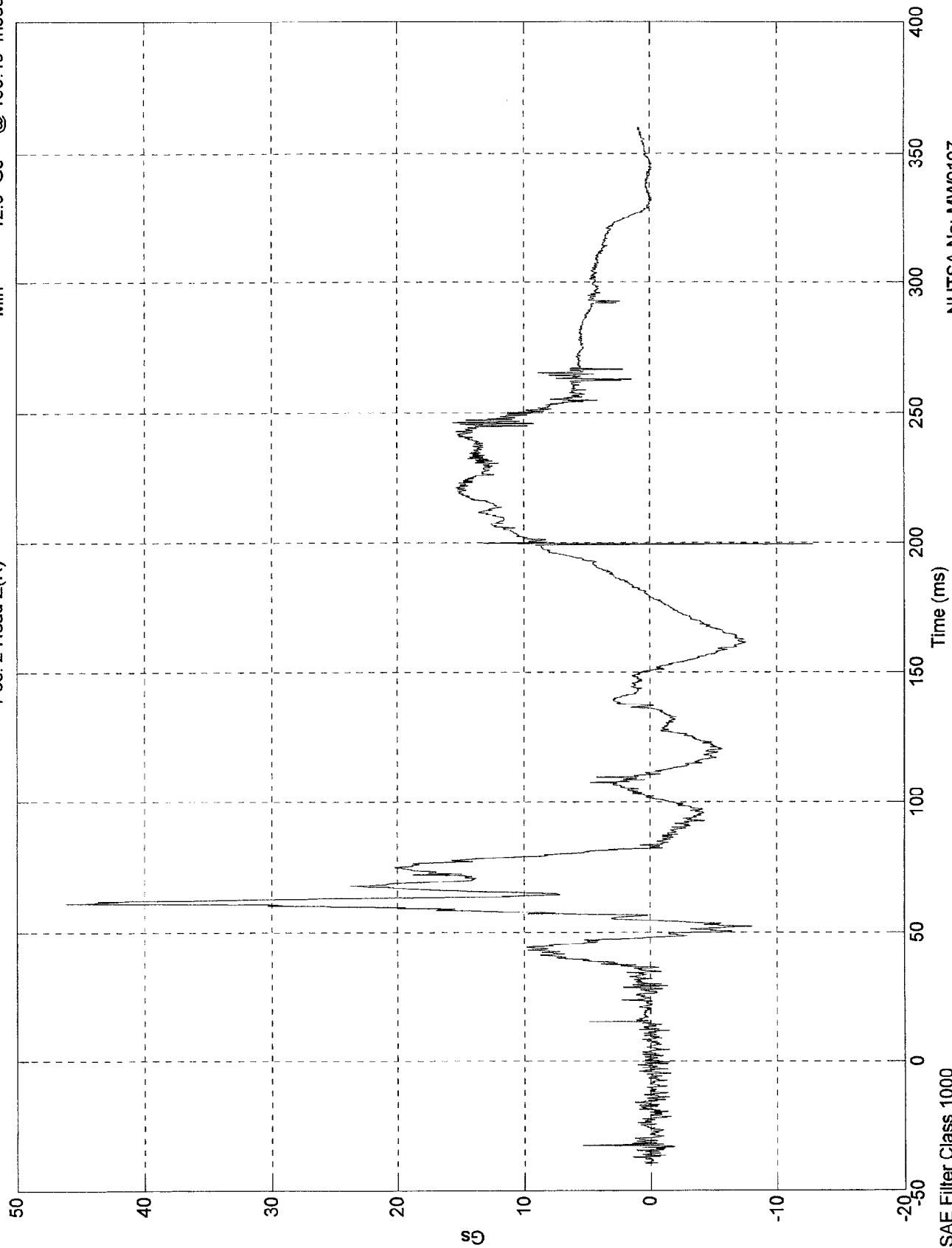


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 46.2 Gs @ 61.10 msec
 Min = -12.9 Gs @ 199.40 msec

Pos. 2 Head Z(R)



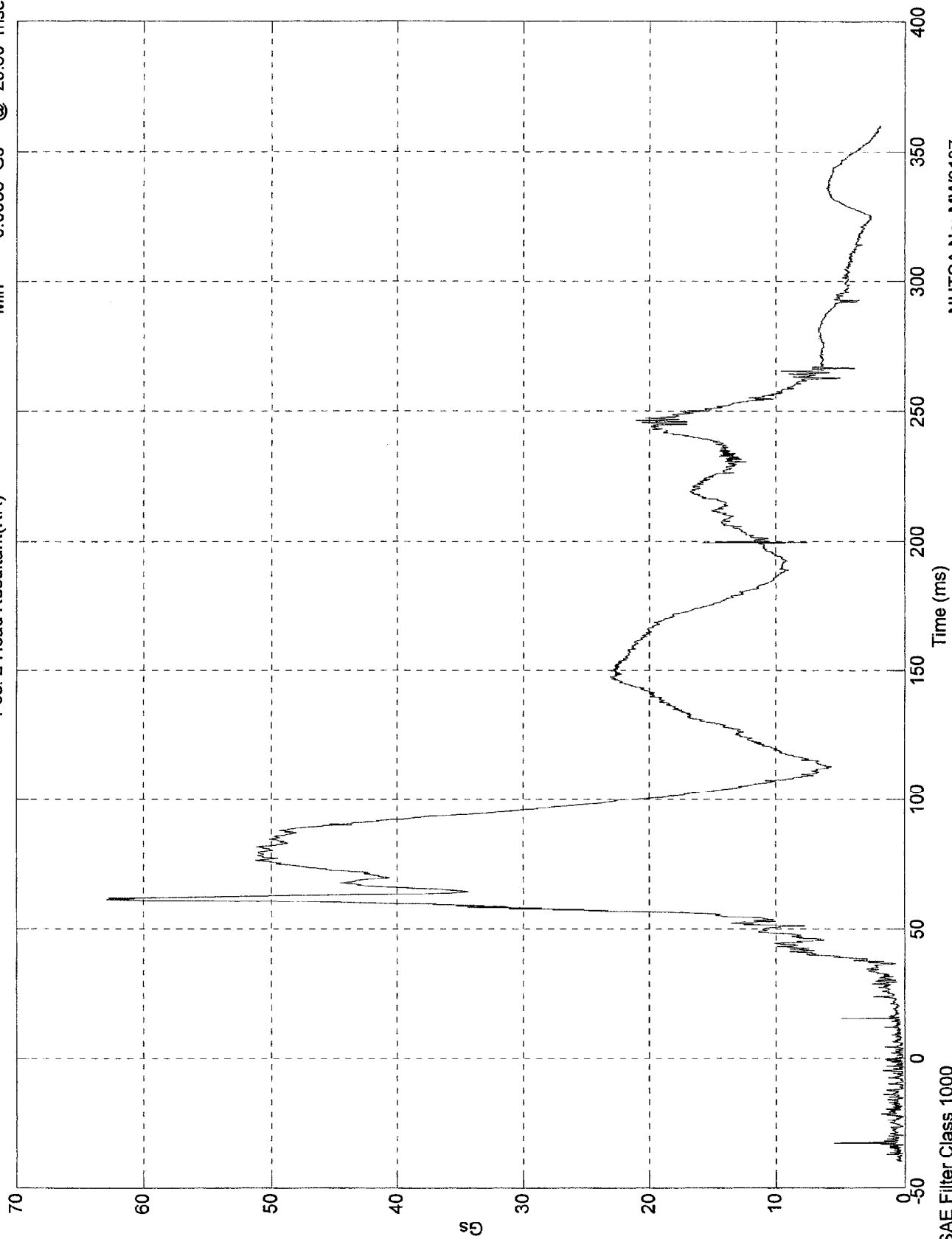
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 62.9 Gs @ 61.30 msec
Min = 0.0986 Gs @ -29.60 msec

Pos. 2 Head Resultant(RR)



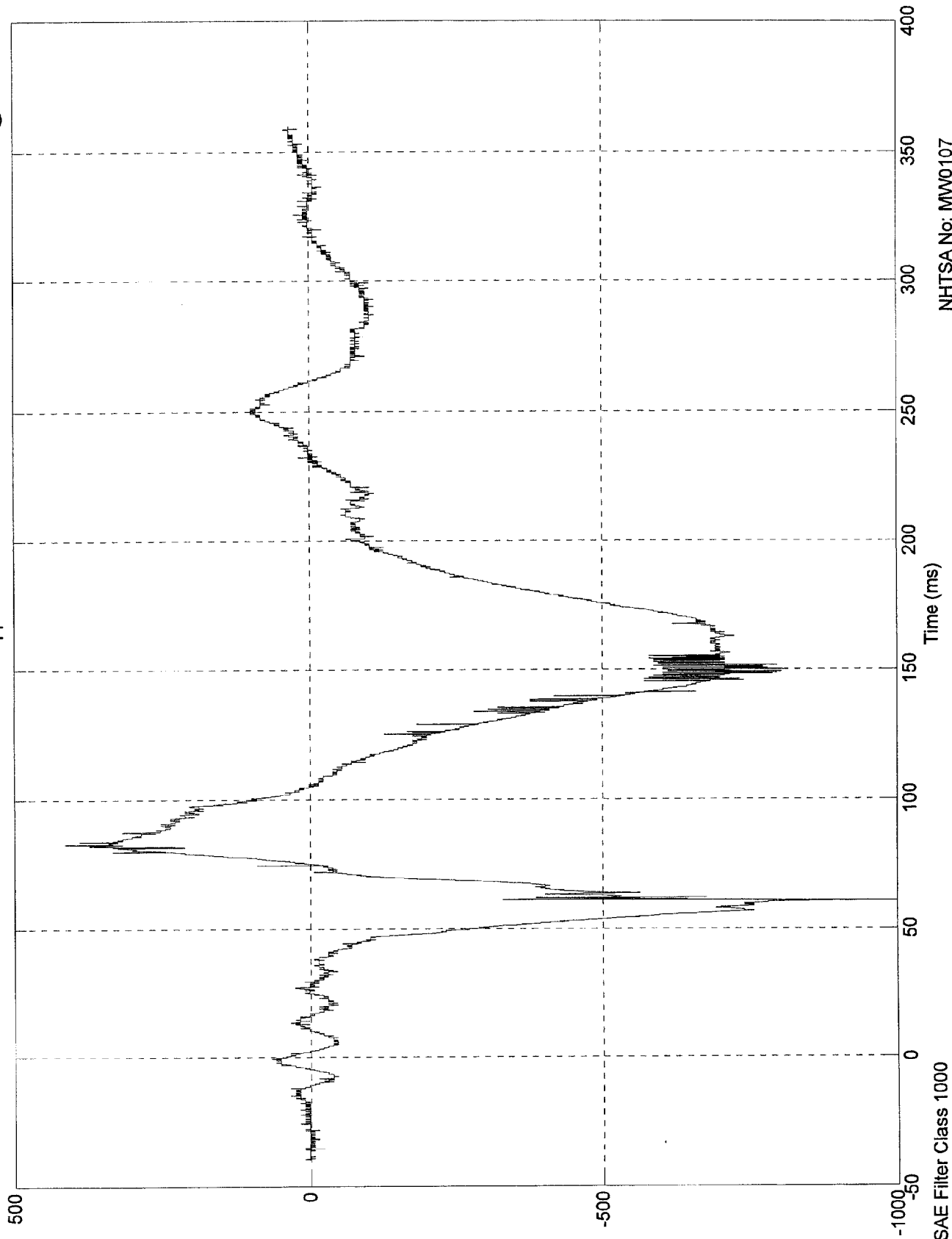
SAE Filter Class 1000

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 414 Nwt @ 82.90 msec
Min = -999 Nwt @ 60.60 msec

Pos. 2 Upper Neck Fx

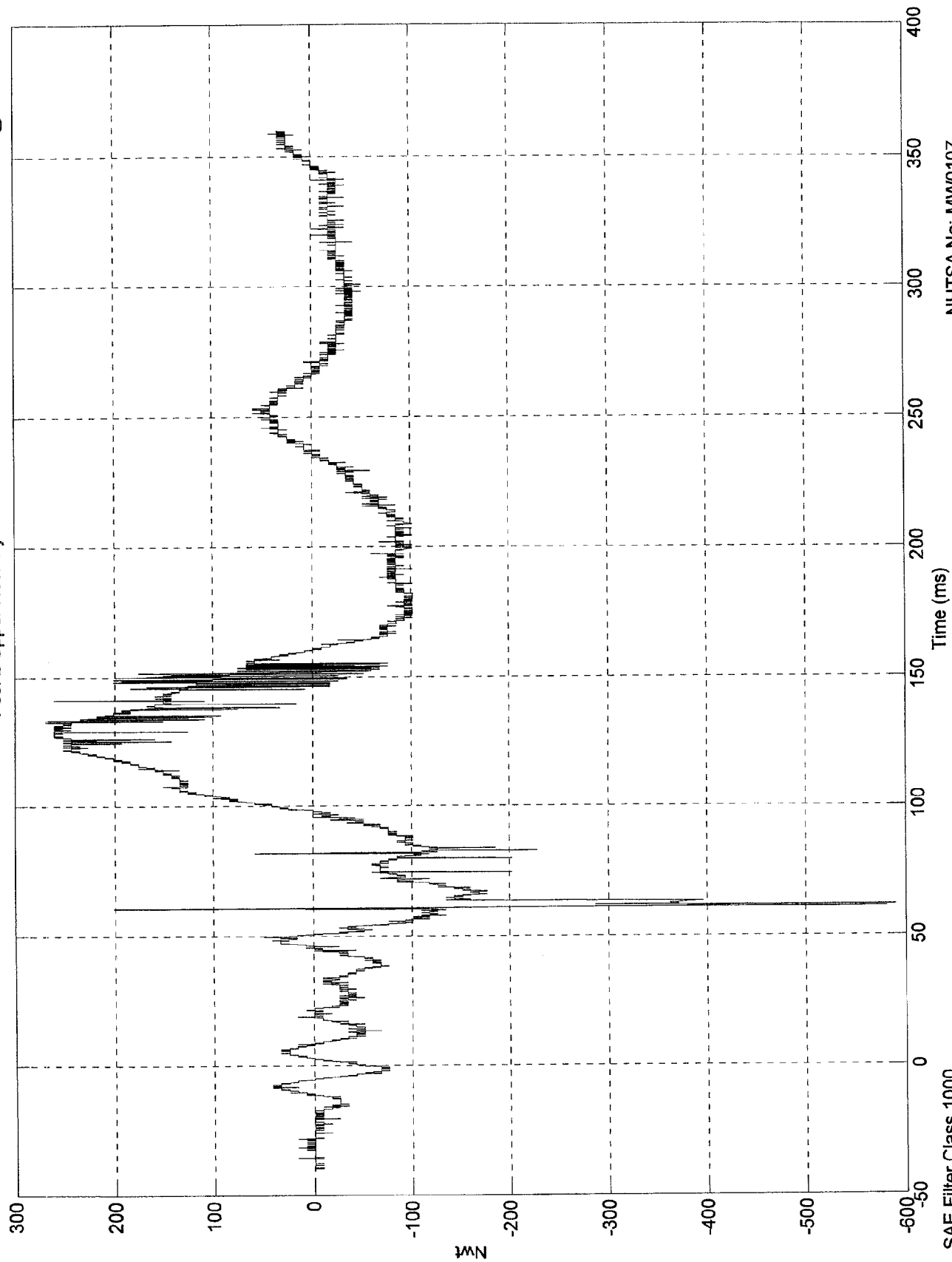


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 269 Nwt @ 132.60 msec
 Min = -590 Nwt @ 61.70 msec

Pos. 2 Upper Neck Fy



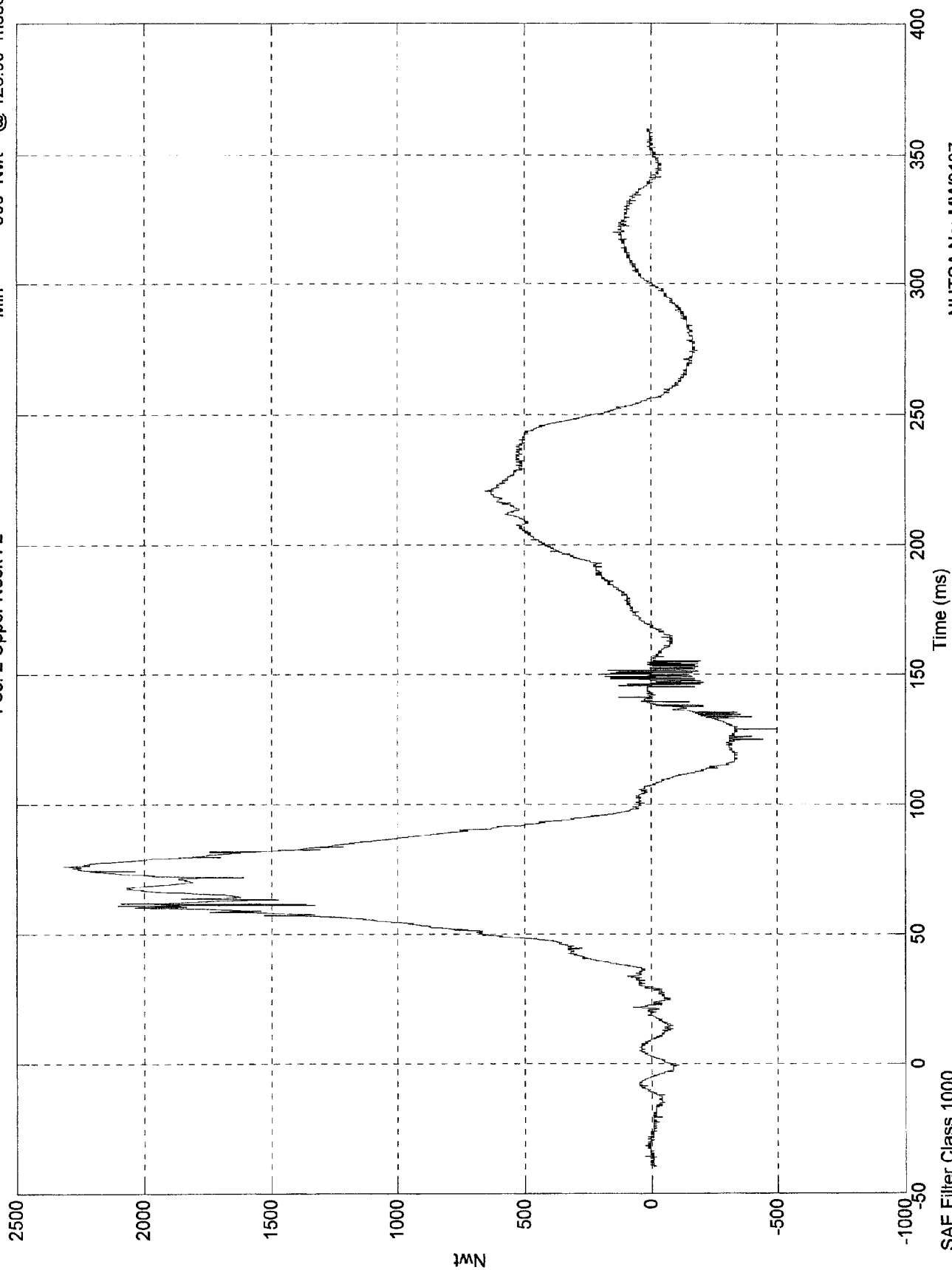
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 2.32e+003 Nwt @ 76.40 msec
Min = -500 Nwt @ 128.90 msec

Pos. 2 Upper Neck Fz

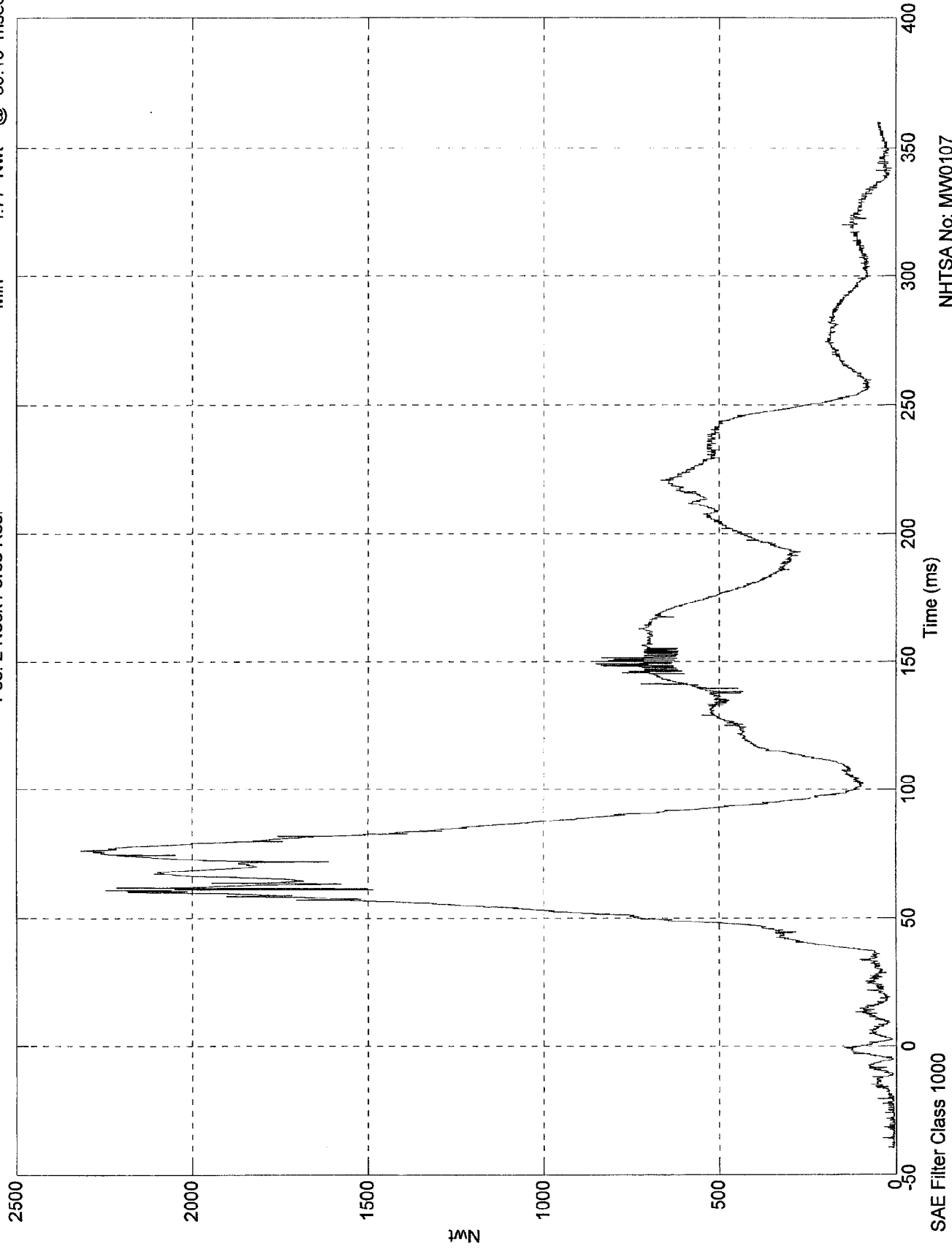


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 2.32e+003 Nwt @ 76.40 msec
Min = 4.77 Nwt @ -39.10 msec

Pos. 2 Neck Force Res.



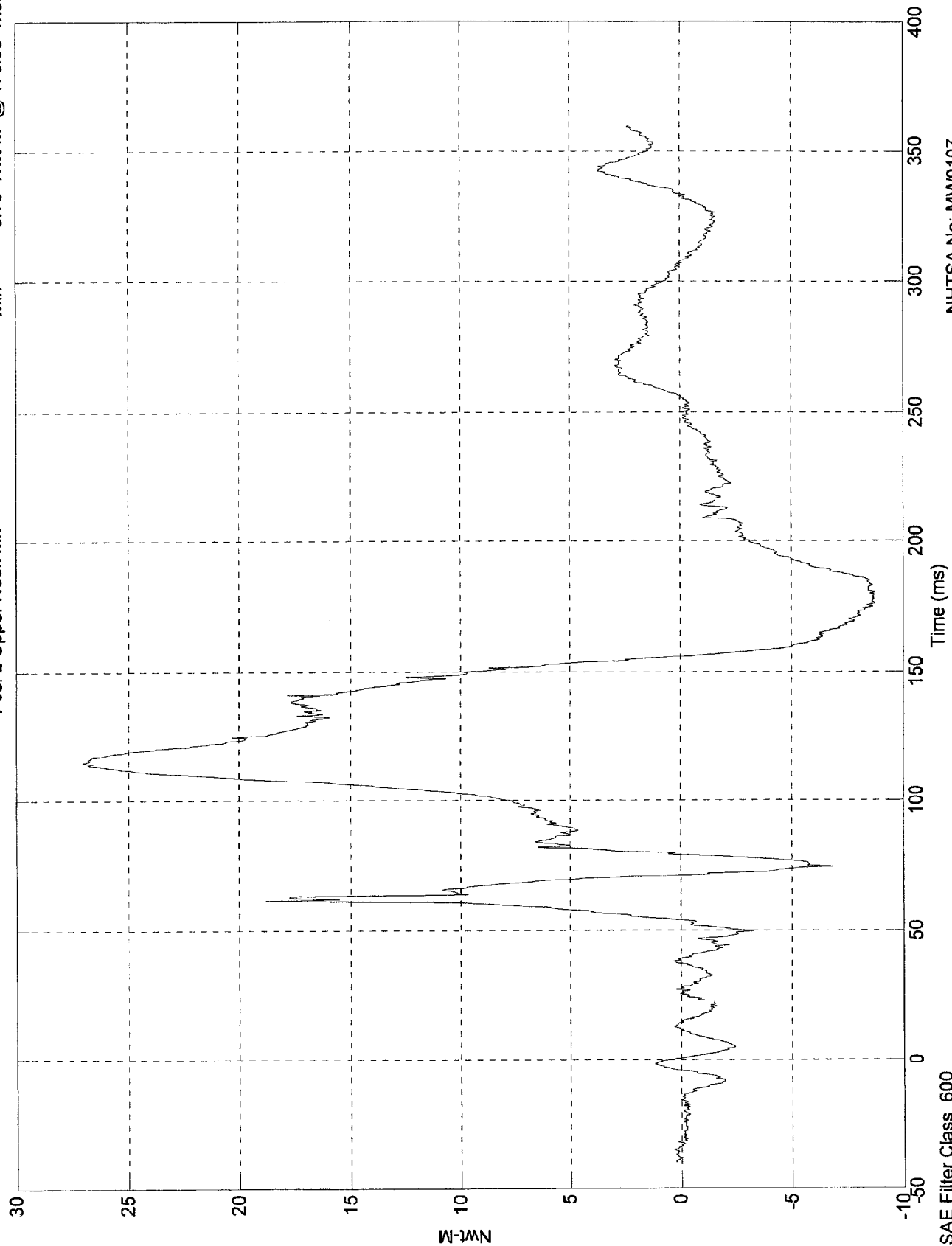
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 27 Nwt-M @ 115.10 msec
Min = -8.75 Nwt-M @ 179.60 msec

Pos. 2 Upper Neck Mx



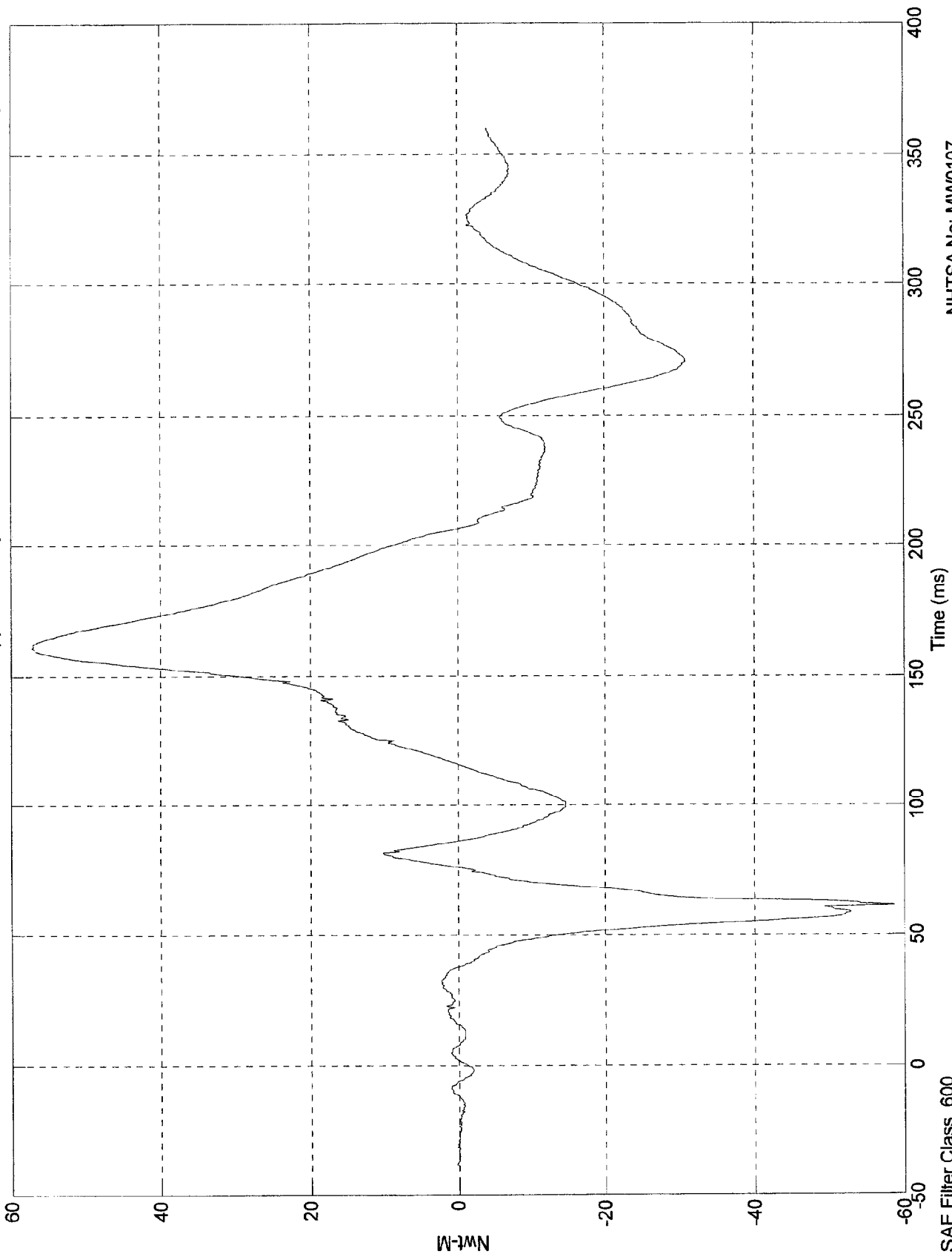
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 57.2 Nwt-M @ 160.70 msec
Min = -58.7 Nwt-M @ 61.30 msec

Pos. 2 Upper Neck My

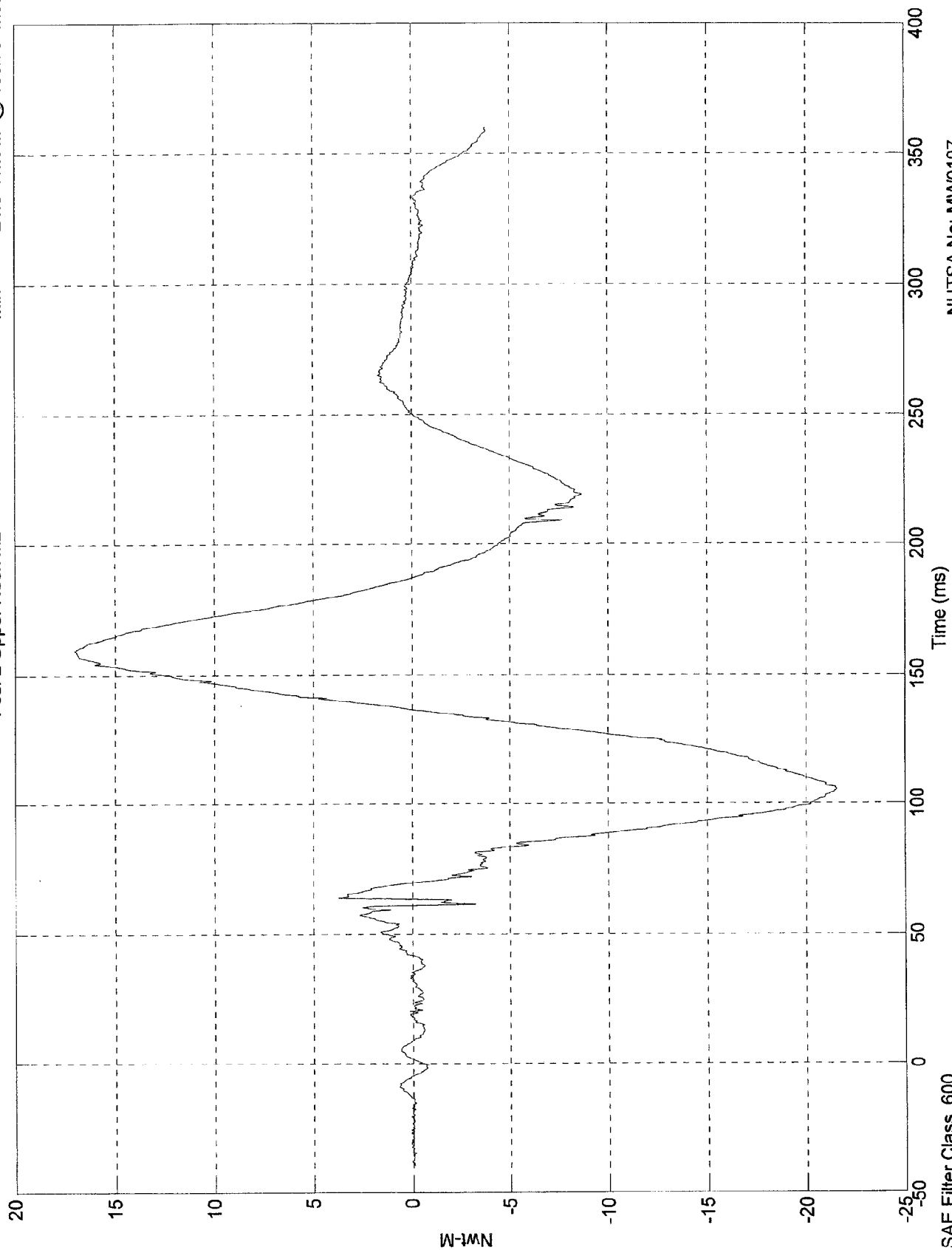


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 17 Nwt-M @ 159.40 msec
 Min = -21.5 Nwt-M @ 105.70 msec

Pos. 2 Upper Neck Mz



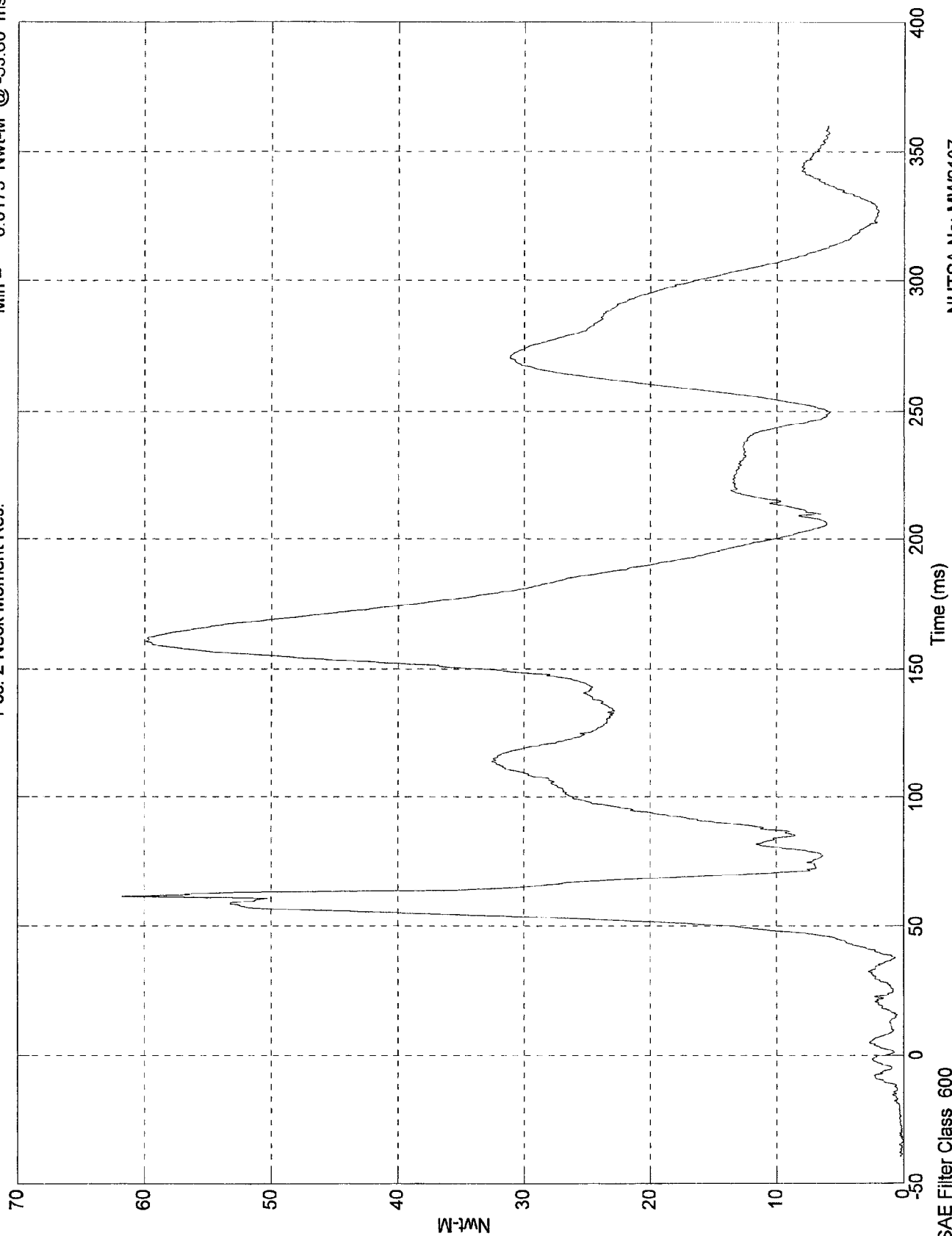
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 61.7 Nwt-M @ 61.30 msec
Min = 0.0173 Nwt-M @ -33.60 msec

Pos. 2 Neck Moment Res.



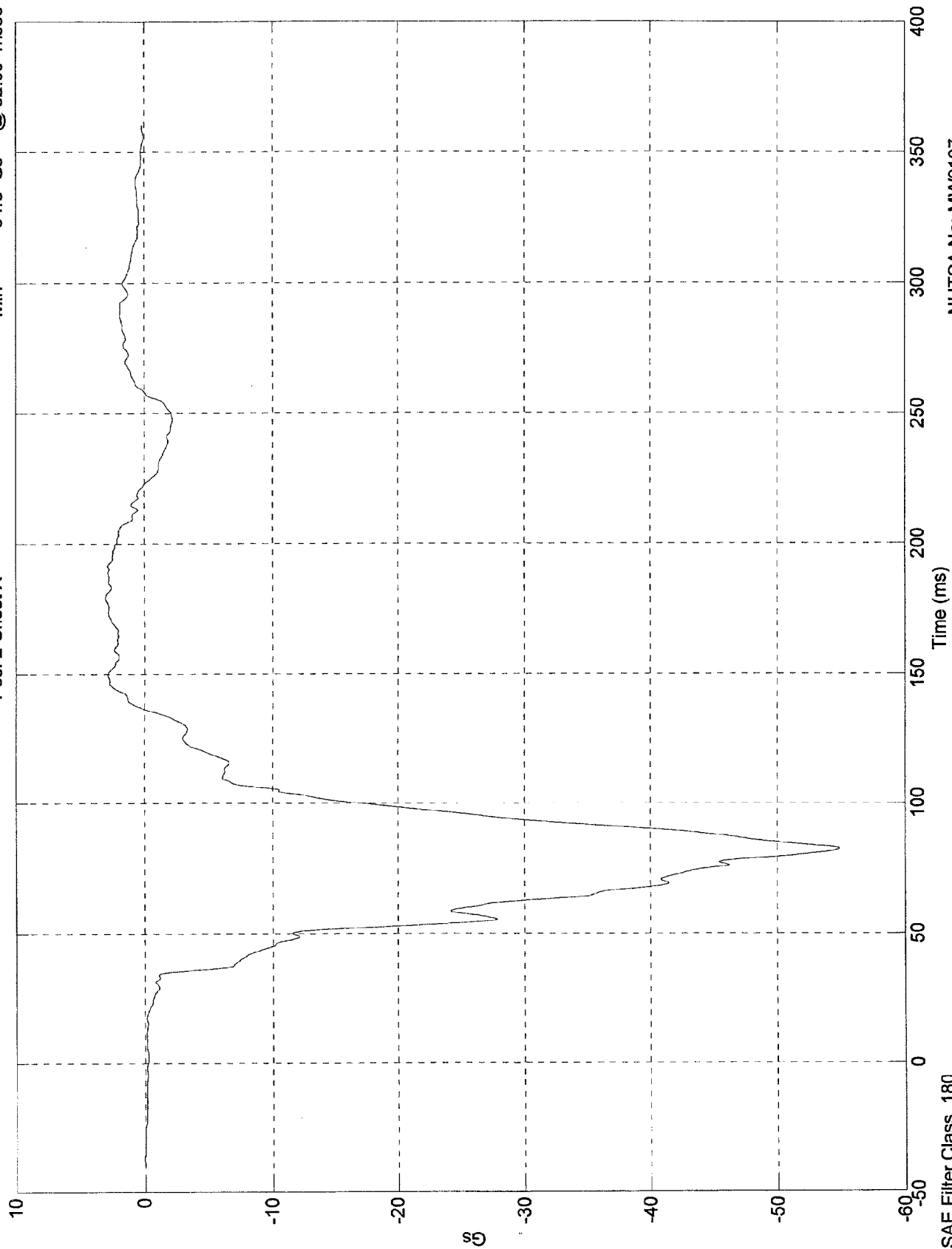
SAE Filter Class 600

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 3.02 Gs @ 179.50 msec
Min = -54.8 Gs @ 82.60 msec

Pos. 2 Chest X



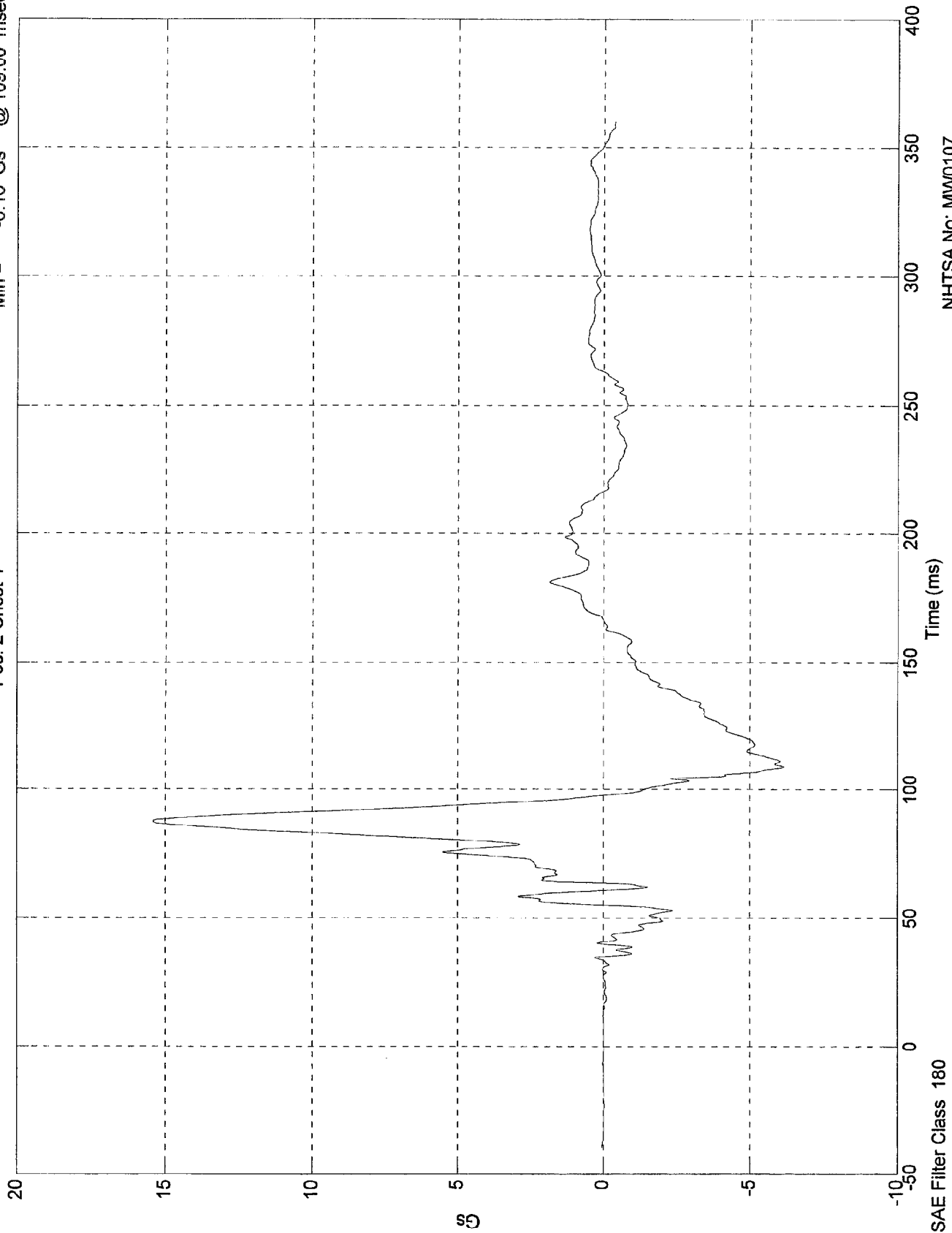
SAE Filter Class 180

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 15.4 Gs @ 87.40 msec
Min = -6.16 Gs @ 109.00 msec

Pos. 2 Chest Y



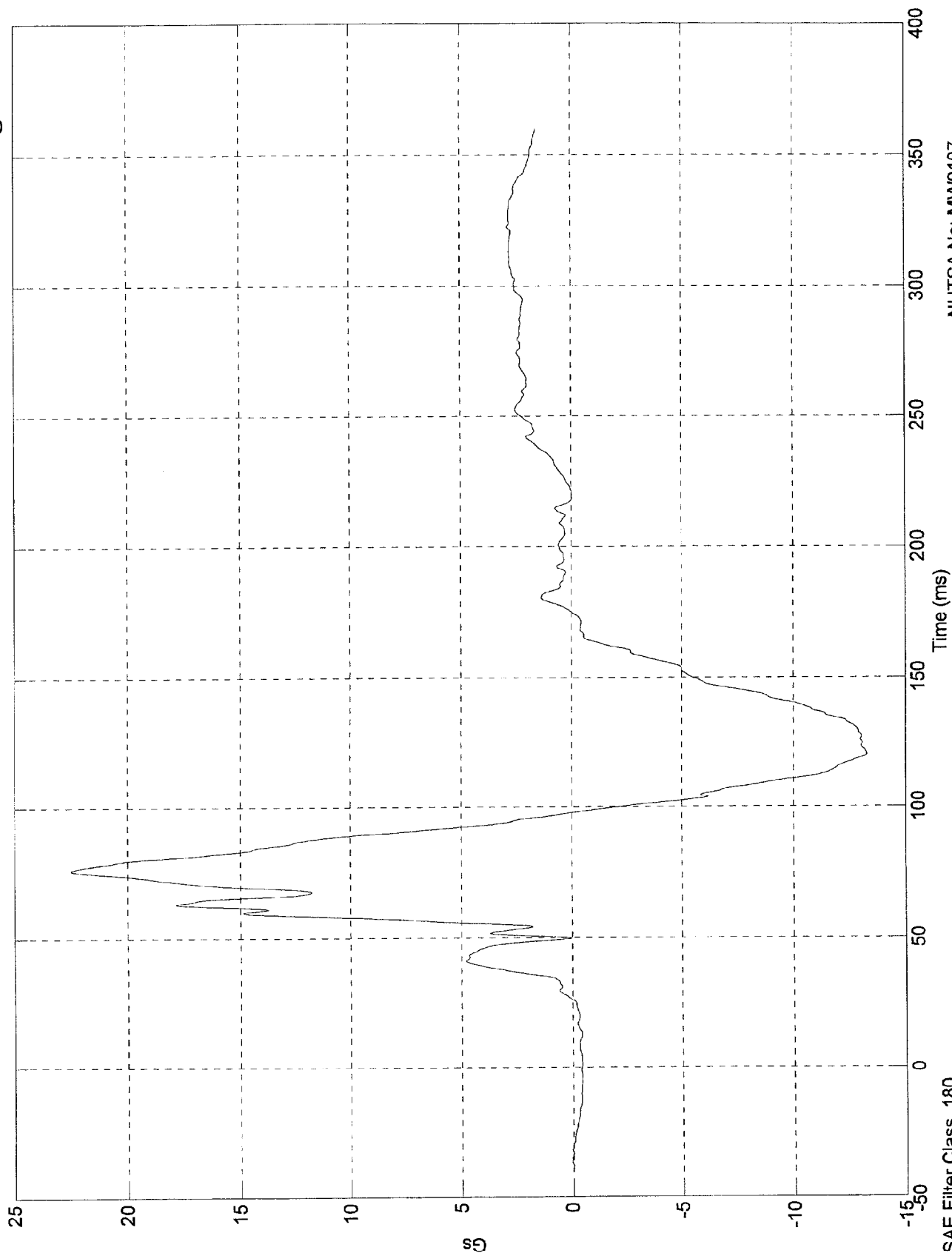
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 22.5 Gs @ 76.10 msec
 Min = -13.3 Gs @ 120.30 msec

Pos. 2 Chest Z



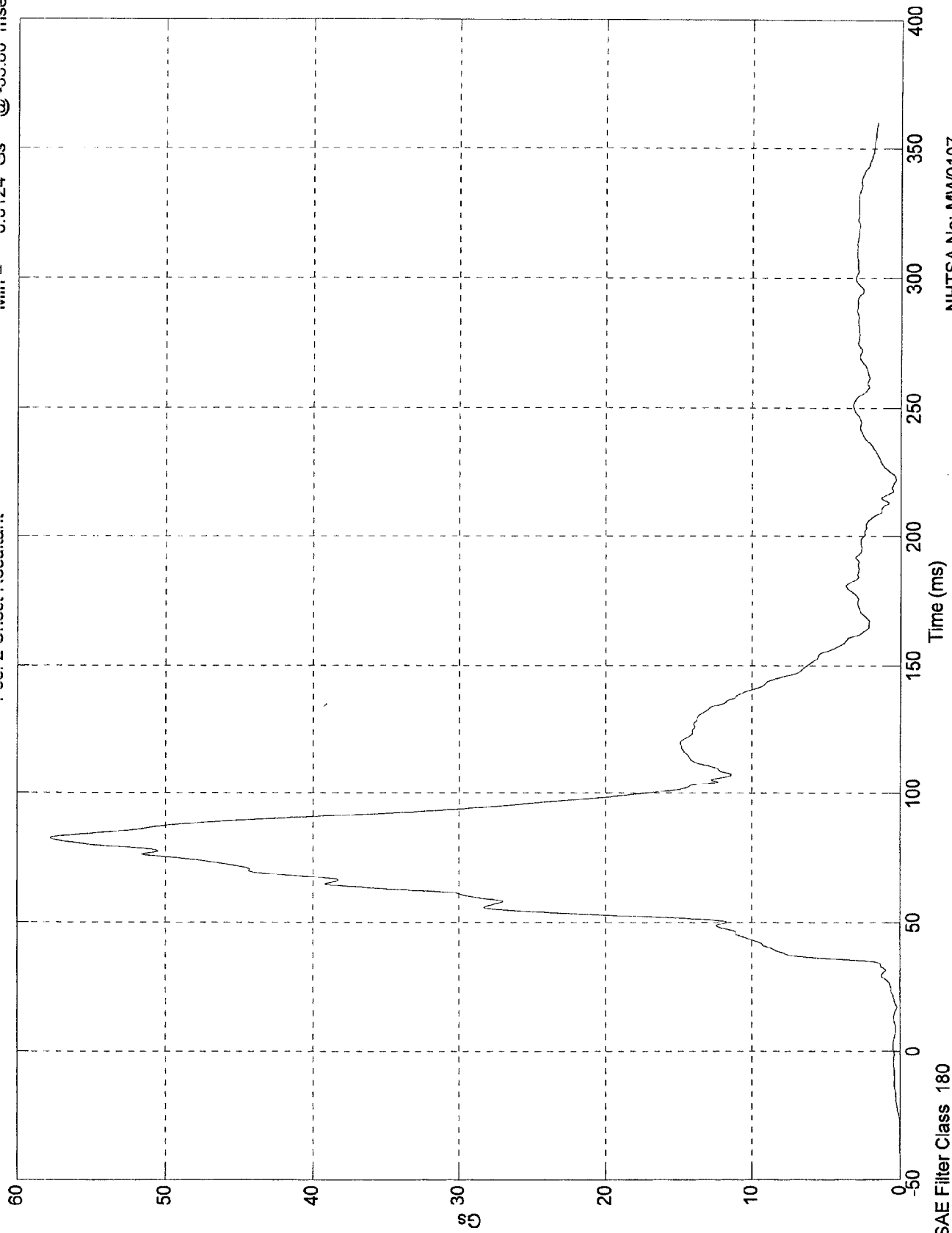
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 57.8 Gs @ 82.50 msec
 Min = 0.0124 Gs @ -33.80 msec

Pos. 2 Chest Resultant



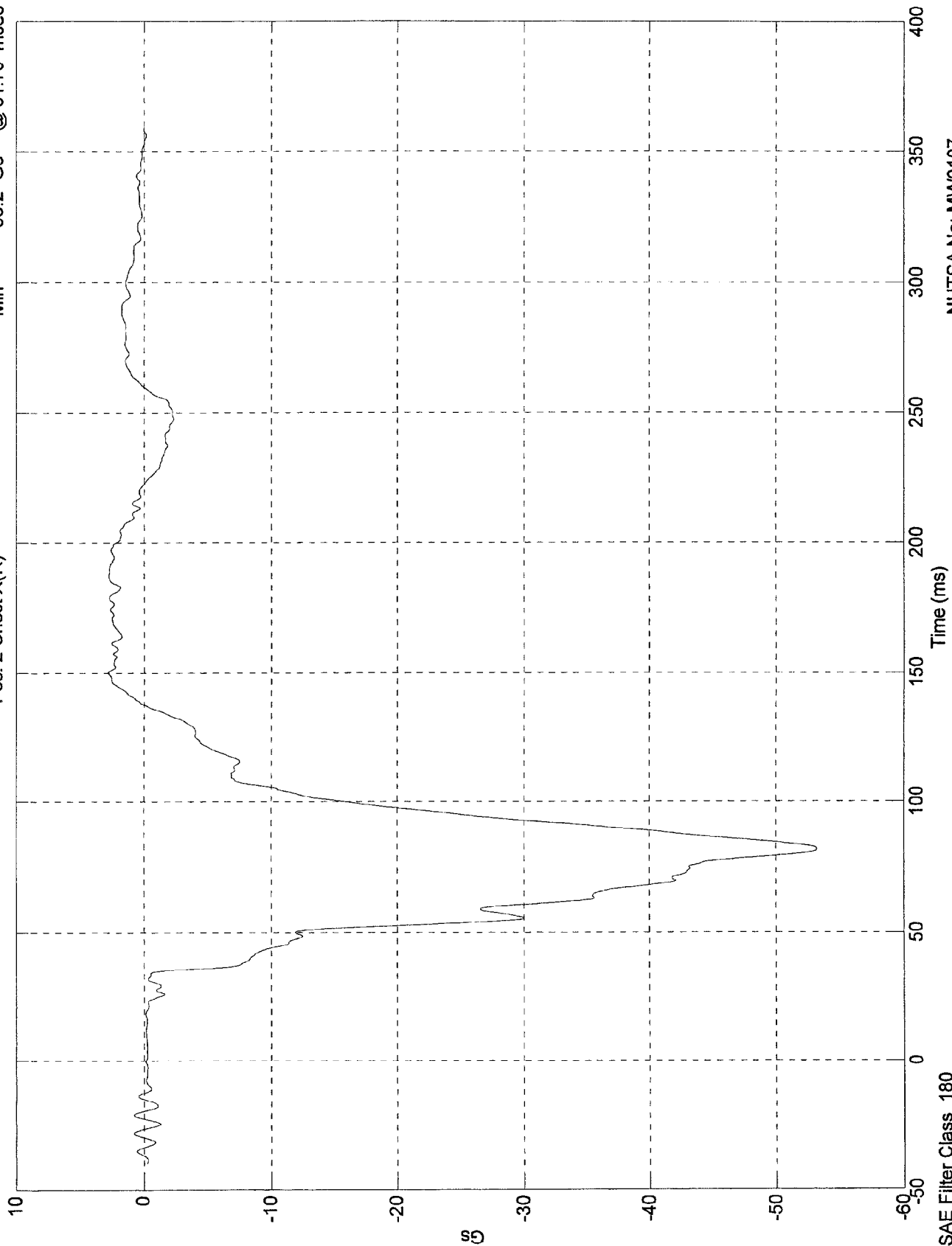
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 2.86 Gs @ 150.10 msec
Min = -53.2 Gs @ 81.70 msec

Pos. 2 Chest X(R)



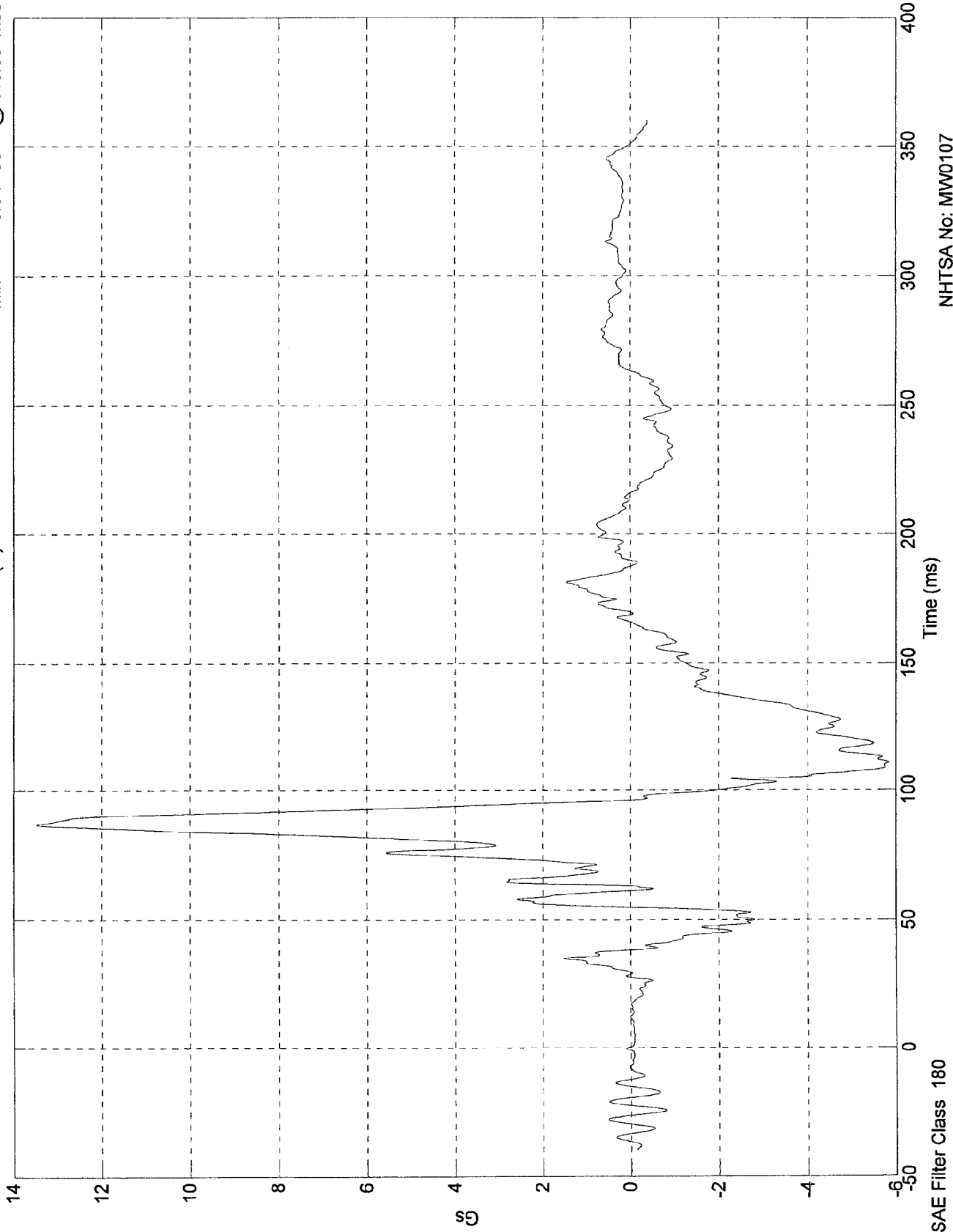
SAE Filter Class 180

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 13.5 Gs @ 86.60 msec
Min = -5.84 Gs @ 110.90 msec

Pos. 2 Chest Y(R)

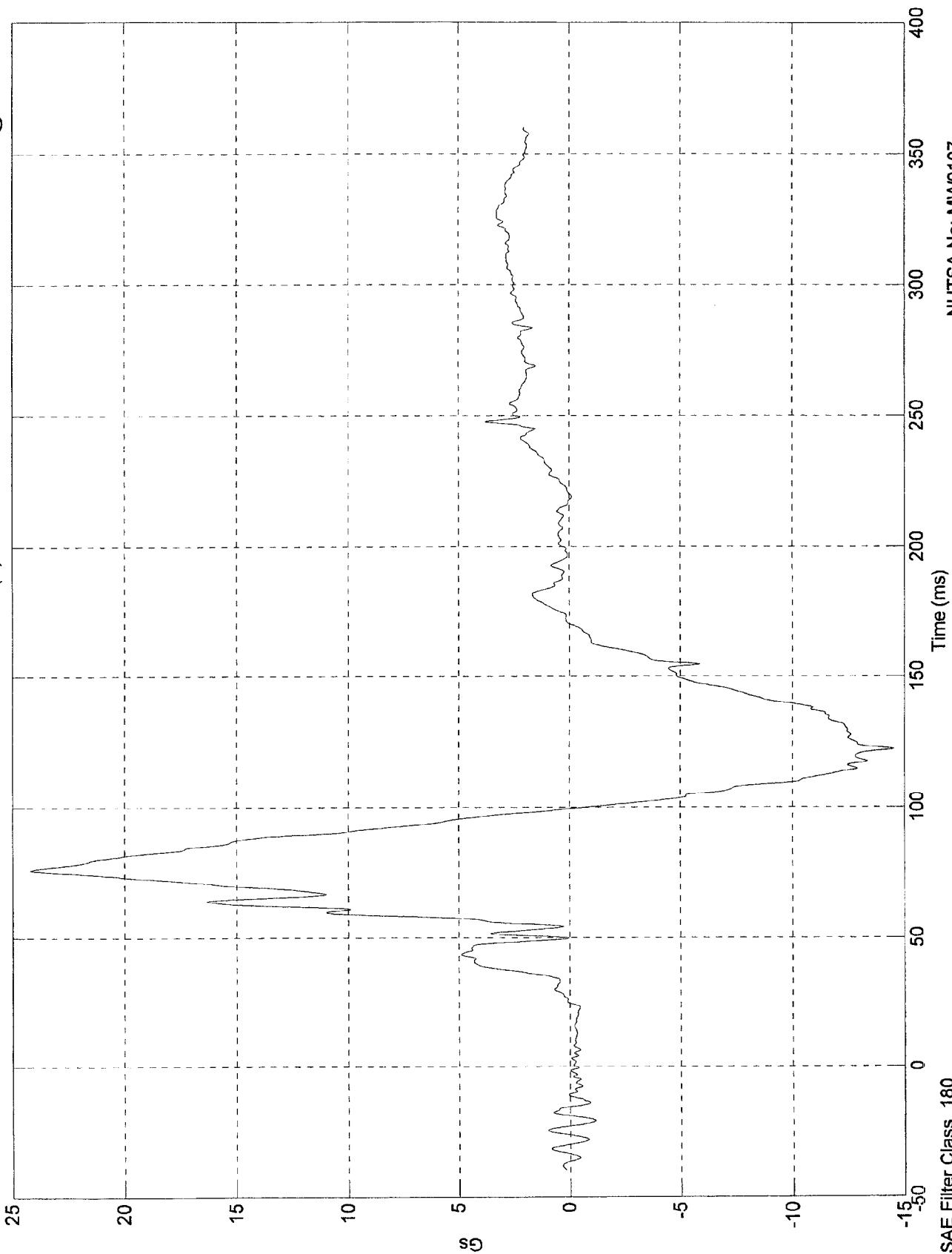


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 24.2 Gs @ 76.20 msec
 Min = -14.5 Gs @ 122.20 msec

Pos. 2 Chest Z(R)

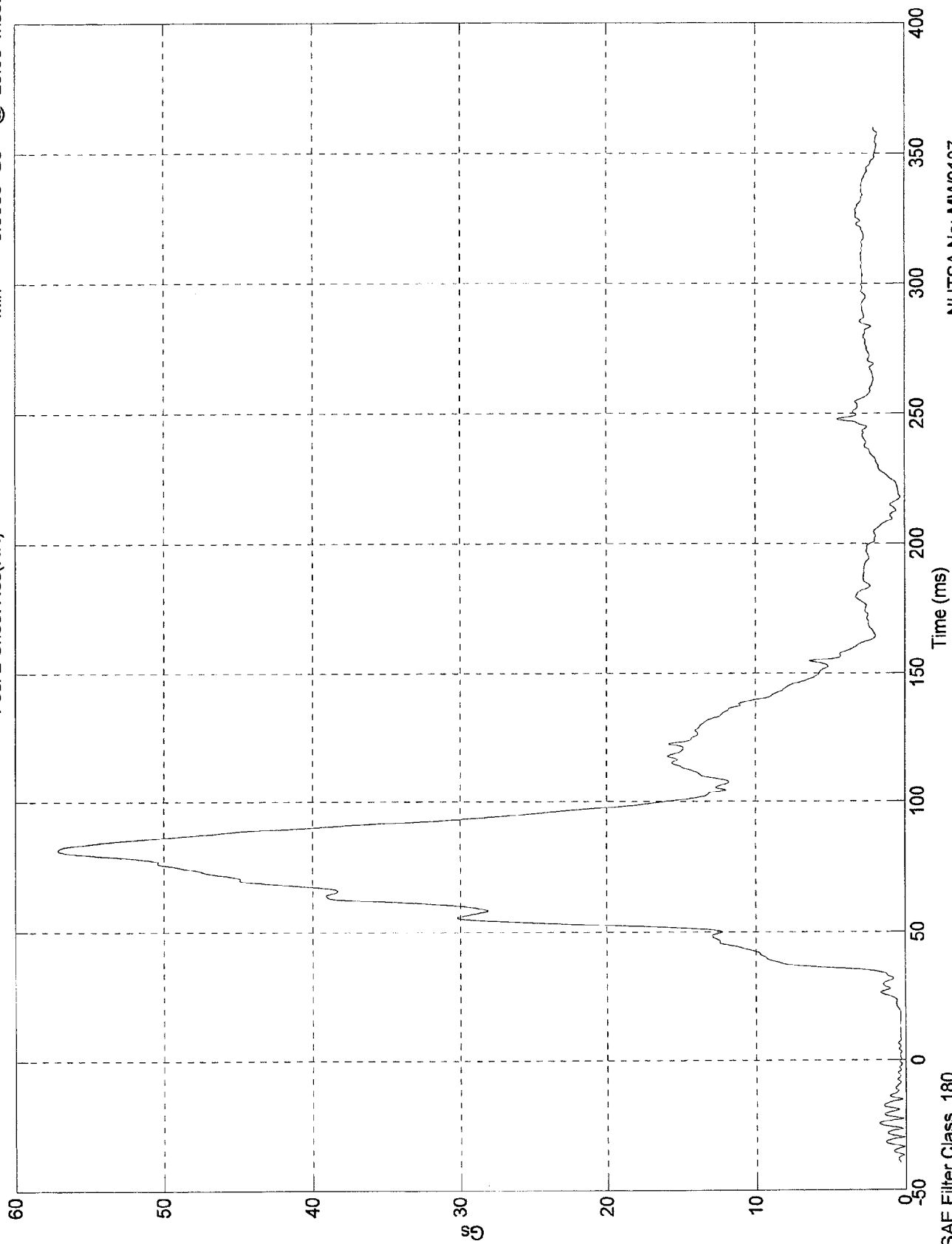


NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 57.1 Gs @ 81.60 msec
Min = 0.0386 Gs @ -29.80 msec

Pos. 2 Chest Res(RR)



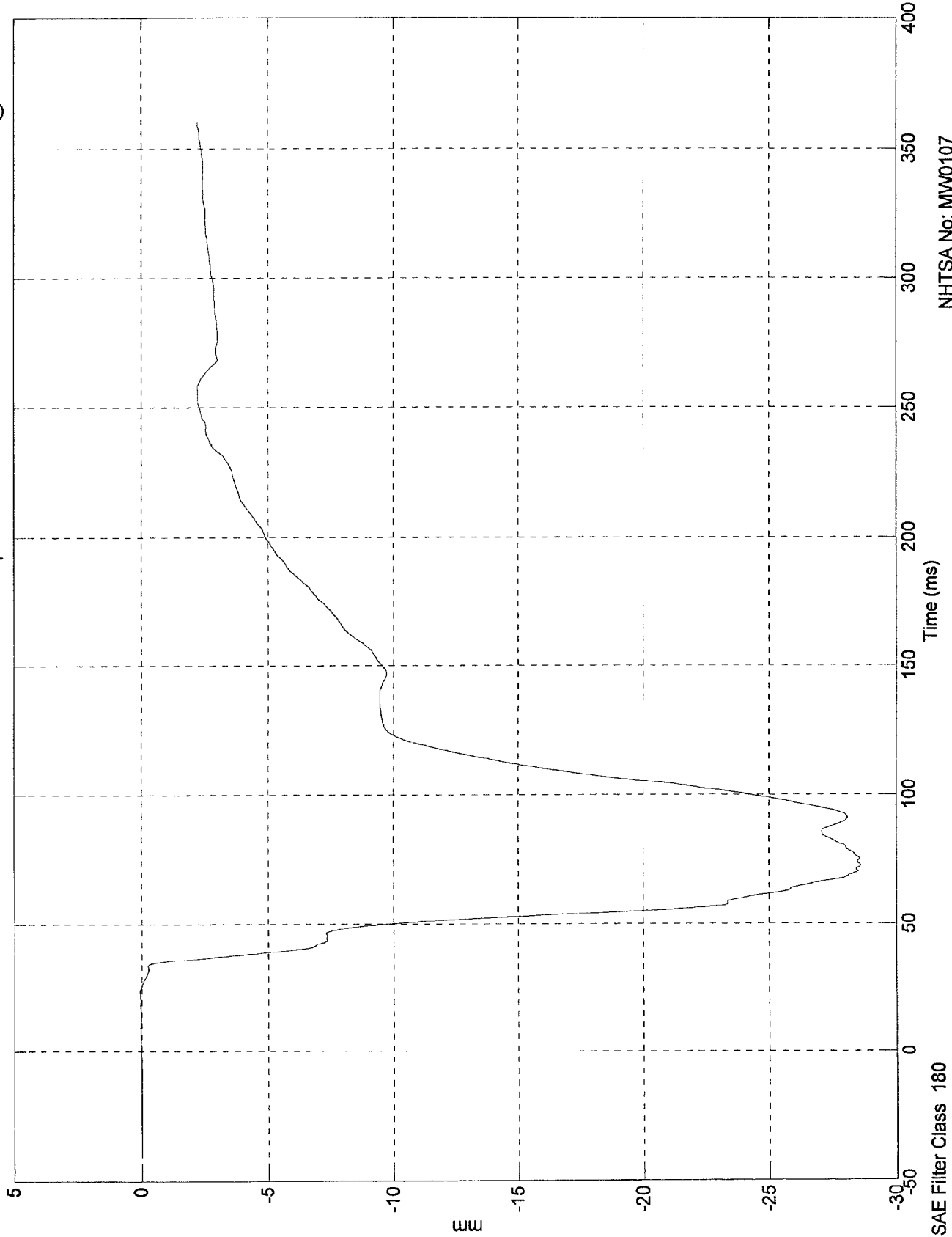
SAE Filter Class 180

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 0.0671 mm @ 23.30 msec
Min = -28.6 mm @ 72.80 msec

Pos. 2 Chest Disp.

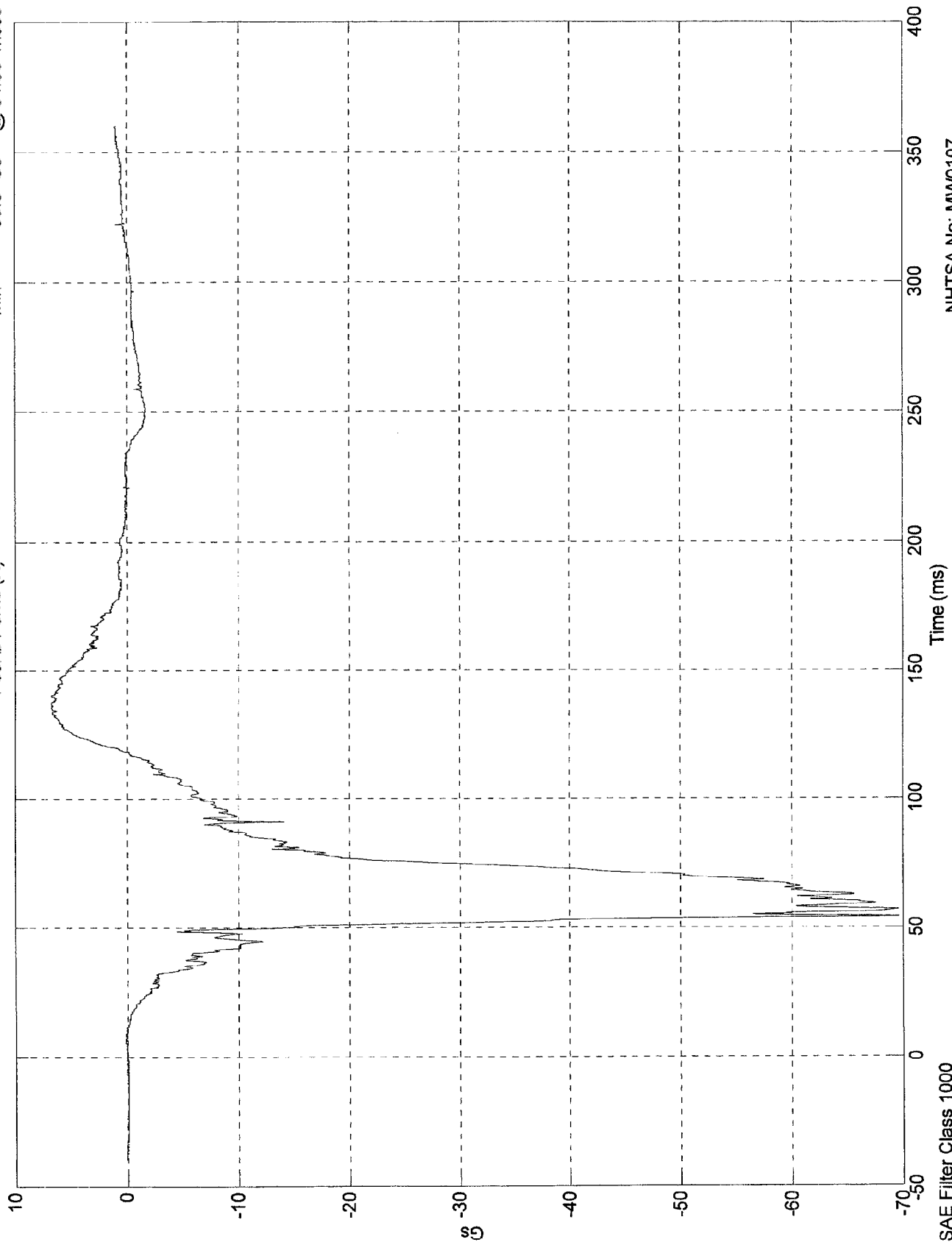


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 6.74 Gs @ 135.00 msec
Min = -69.6 Gs @ 54.30 msec

Pos. 2 Pelvic (X)

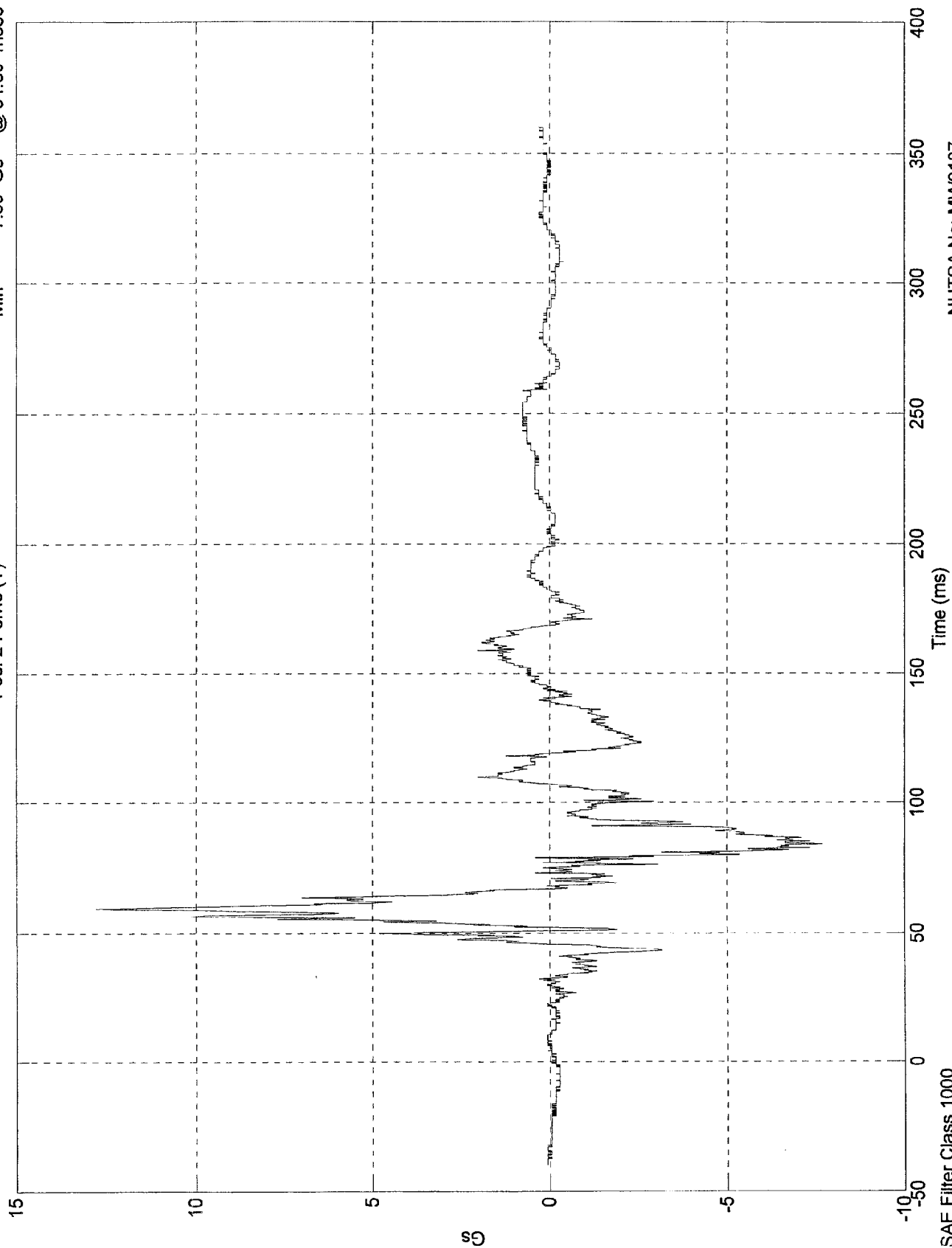


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 12.8 Gs @ 59.40 msec
 Min = -7.69 Gs @ 84.30 msec

Pos. 2 Pelvic (Y)

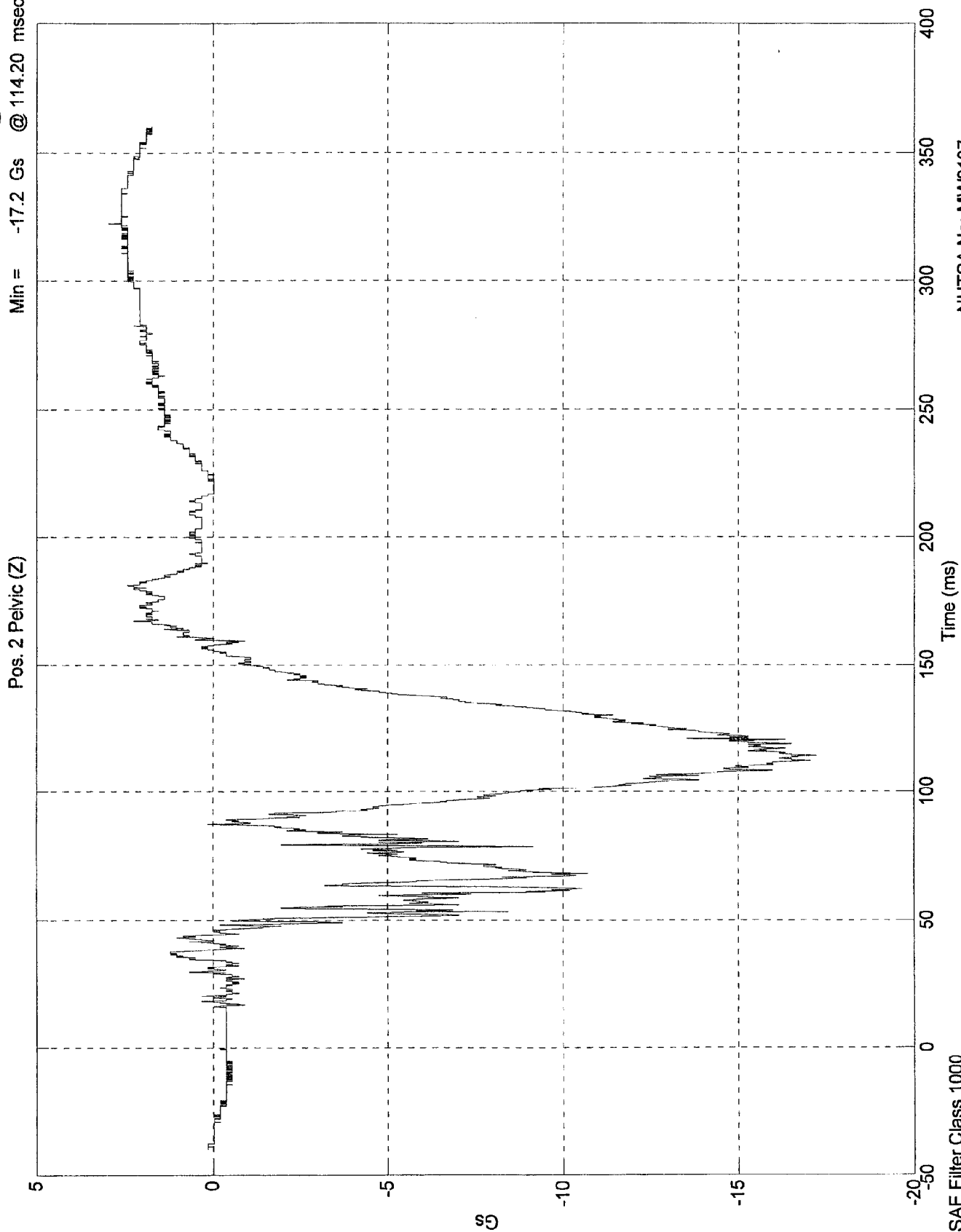


NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 2.97 Gs @ 322.40 msec
 Min = -17.2 Gs @ 114.20 msec

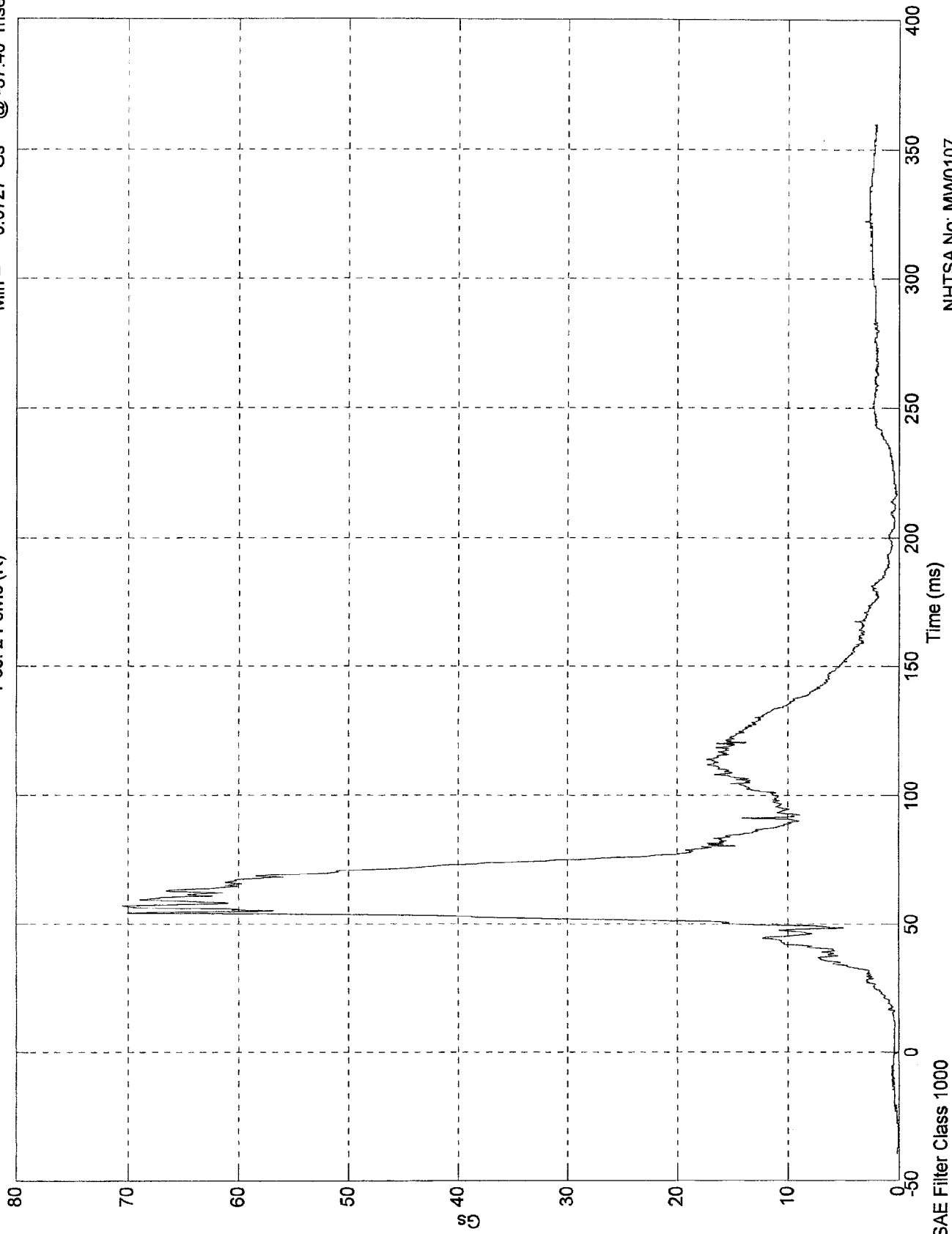


NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 70.5 Gs @ 57.00 msec
 Min = 0.0727 Gs @ -37.40 msec

Pos. 2 Pelvic (R)

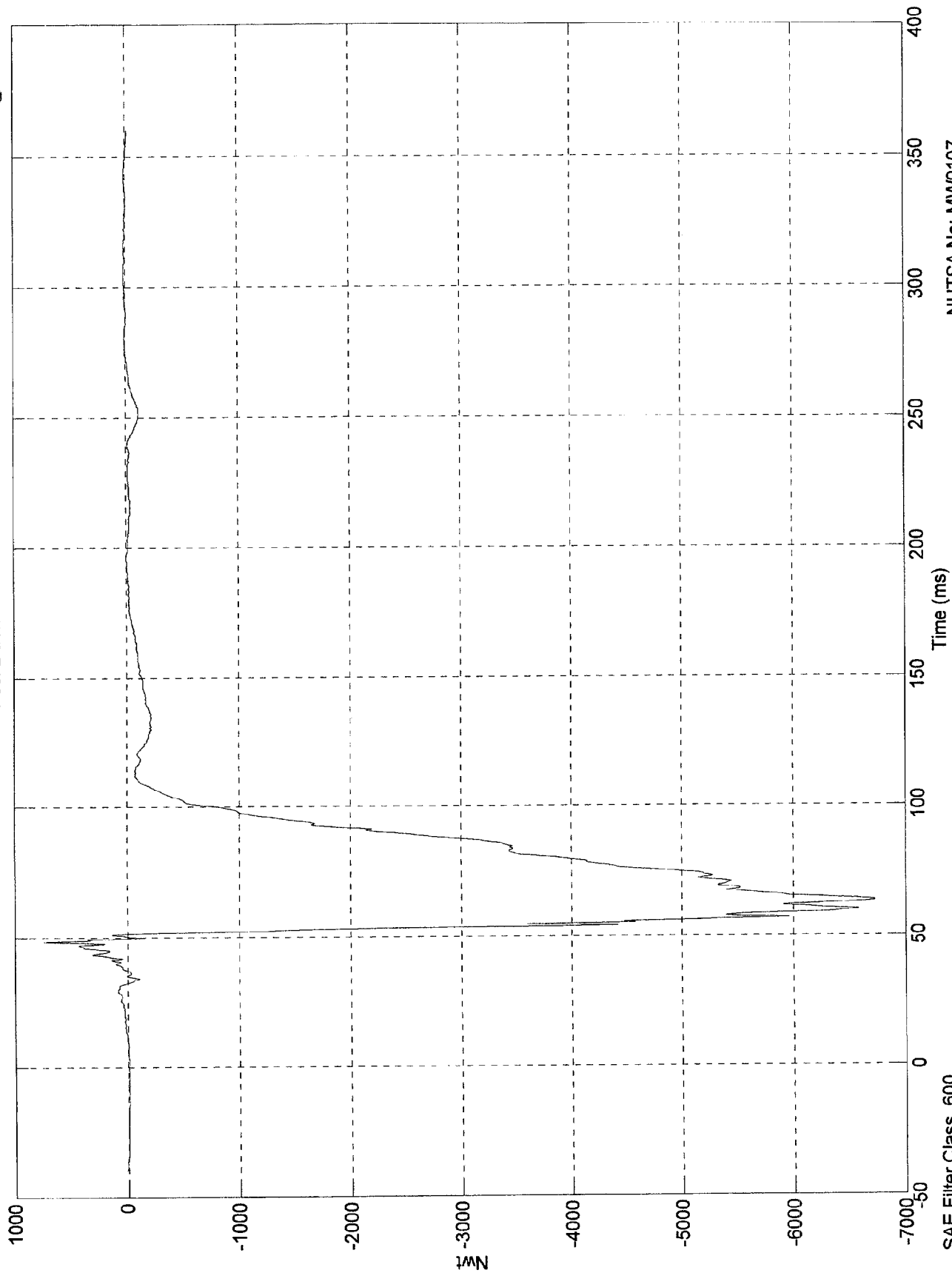


NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 743 Nwt @ 48.30 msec
Min = -6.73e+003 Nwt @ 63.30 msec

Pos. 2 Left Femur

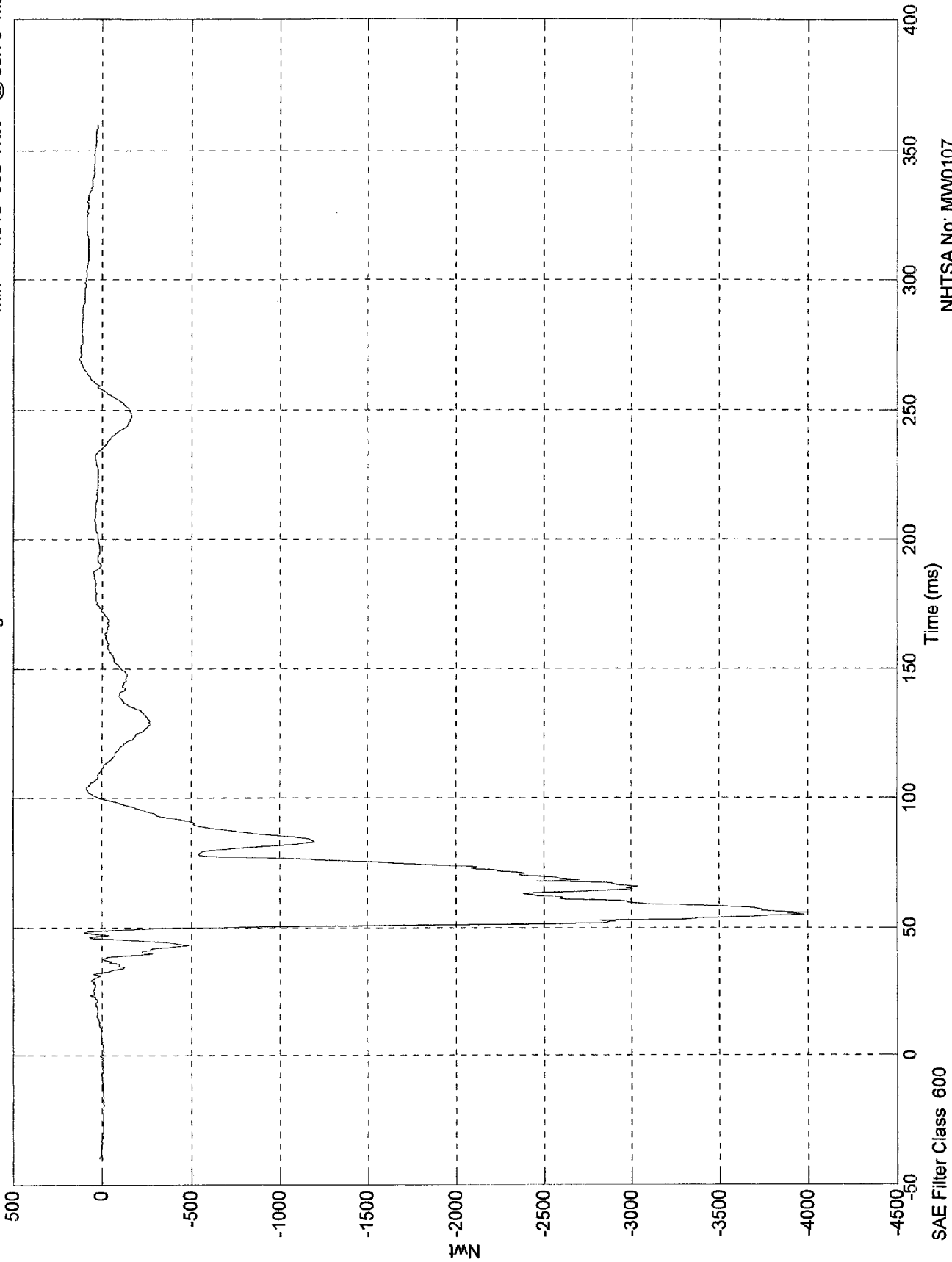


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 127 Nwt @ 269.30 msec
Min = -4.01e+003 Nwt @ 55.70 msec

Pos. 2 Right Femur

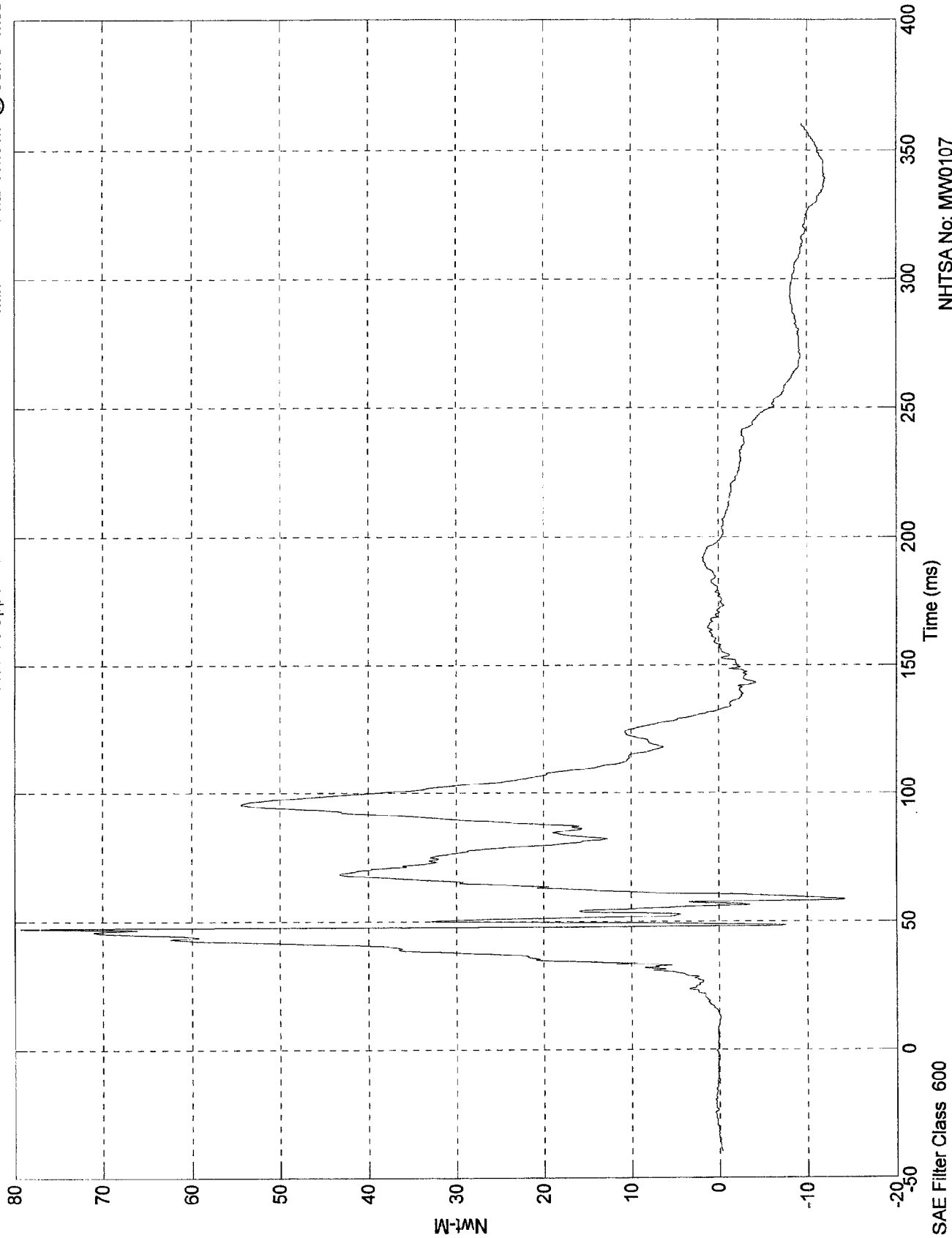


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 79.3 Nwt-M @ 47.20 msec
Min = -14.2 Nwt-M @ 58.70 msec

Pos. 2 Lt Upper Tibia Mx



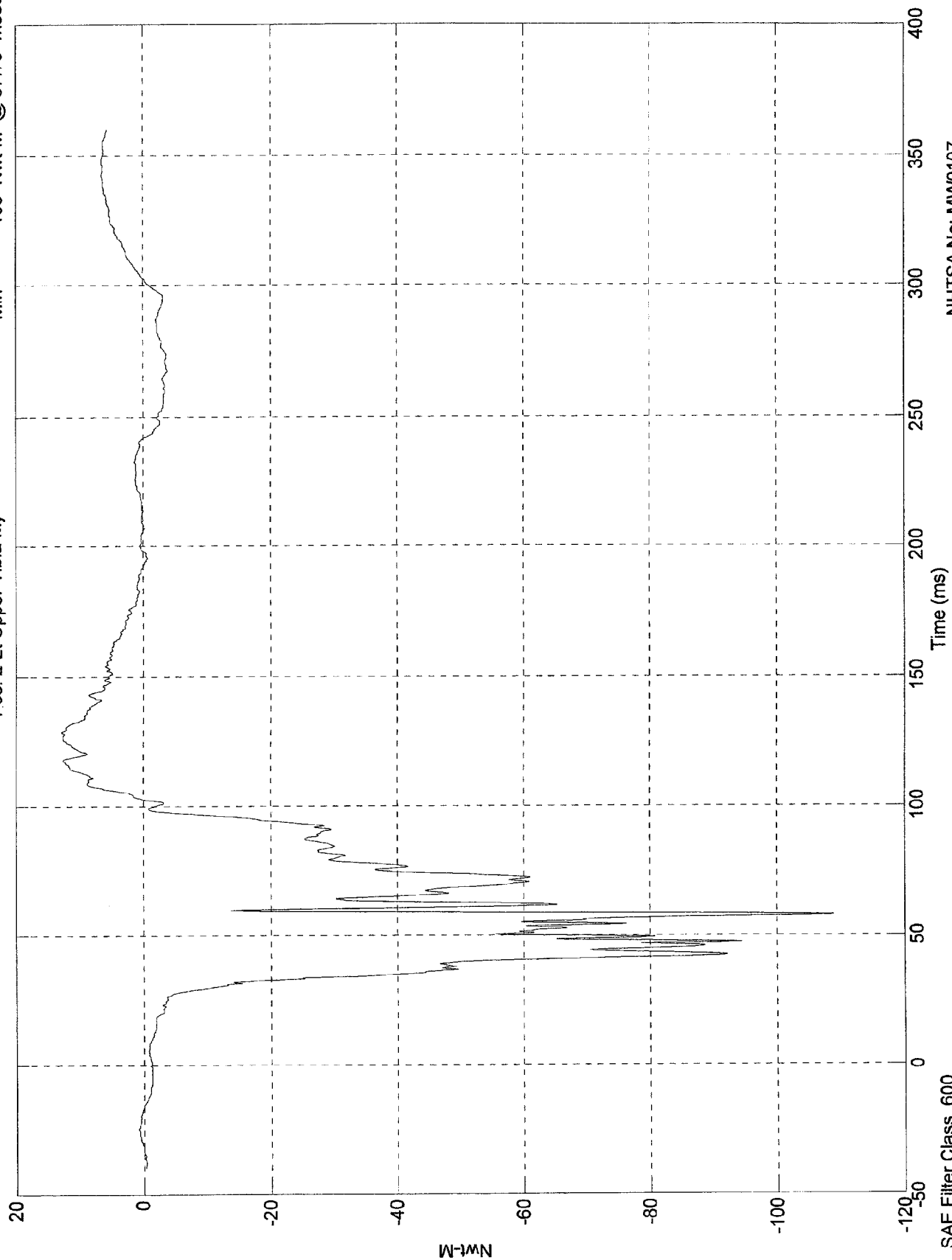
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 12.9 Nwt-M @ 128.60 msec
 Min = -109 Nwt-M @ 57.70 msec

Pos. 2 Lt Upper Tibia My



NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 600

Nwt-M

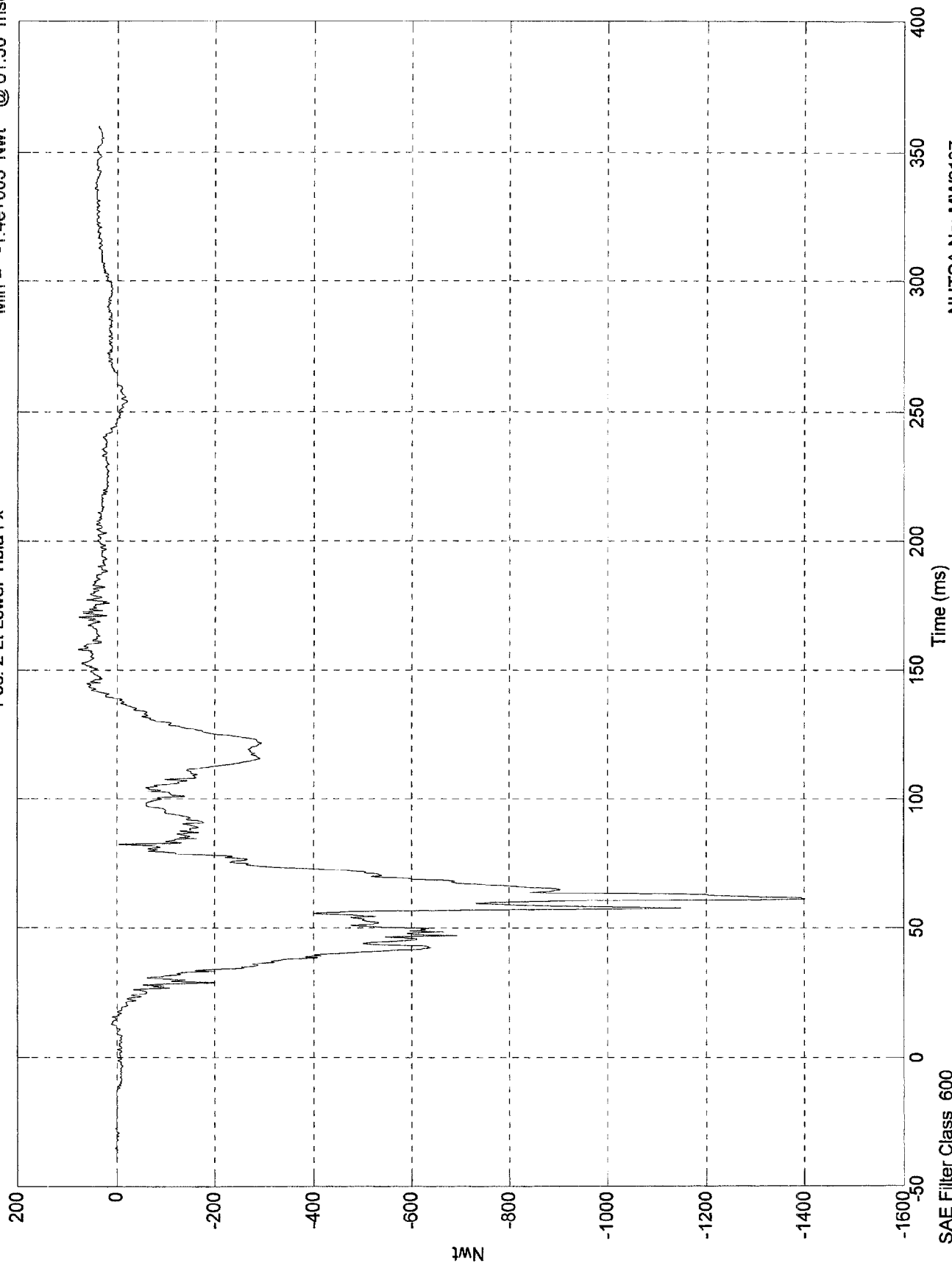
B-87

8413-13

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 77.5 Nwt @ 158.00 msec
Min = -1.4e+003 Nwt @ 61.30 msec

Pos. 2 Lt Lower Tibia Fx

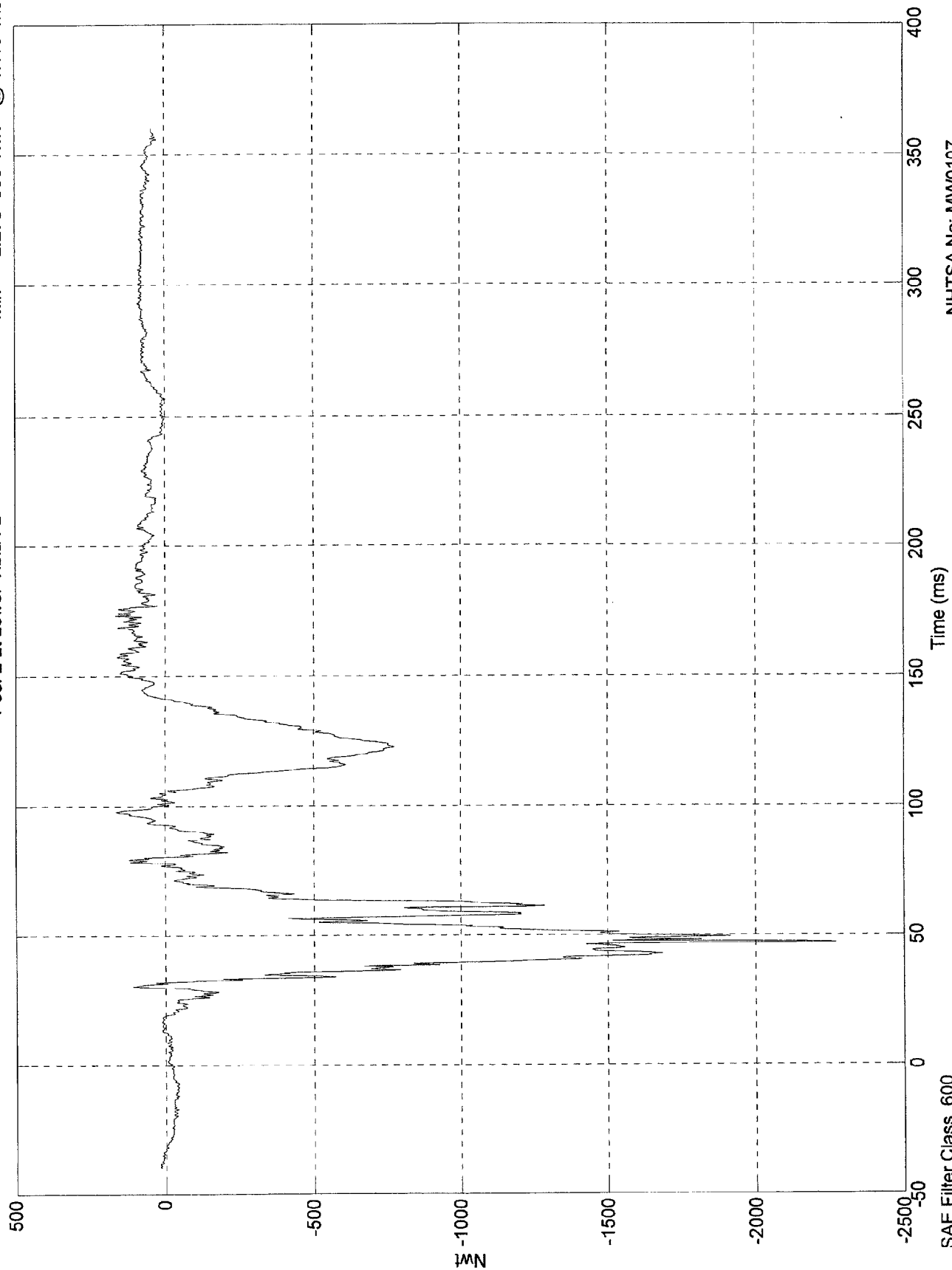


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 165 Nwt @ 173.20 msec
Min = -2.27e+003 Nwt @ 47.10 msec

Pos. 2 Lt Lower Tibia Fz



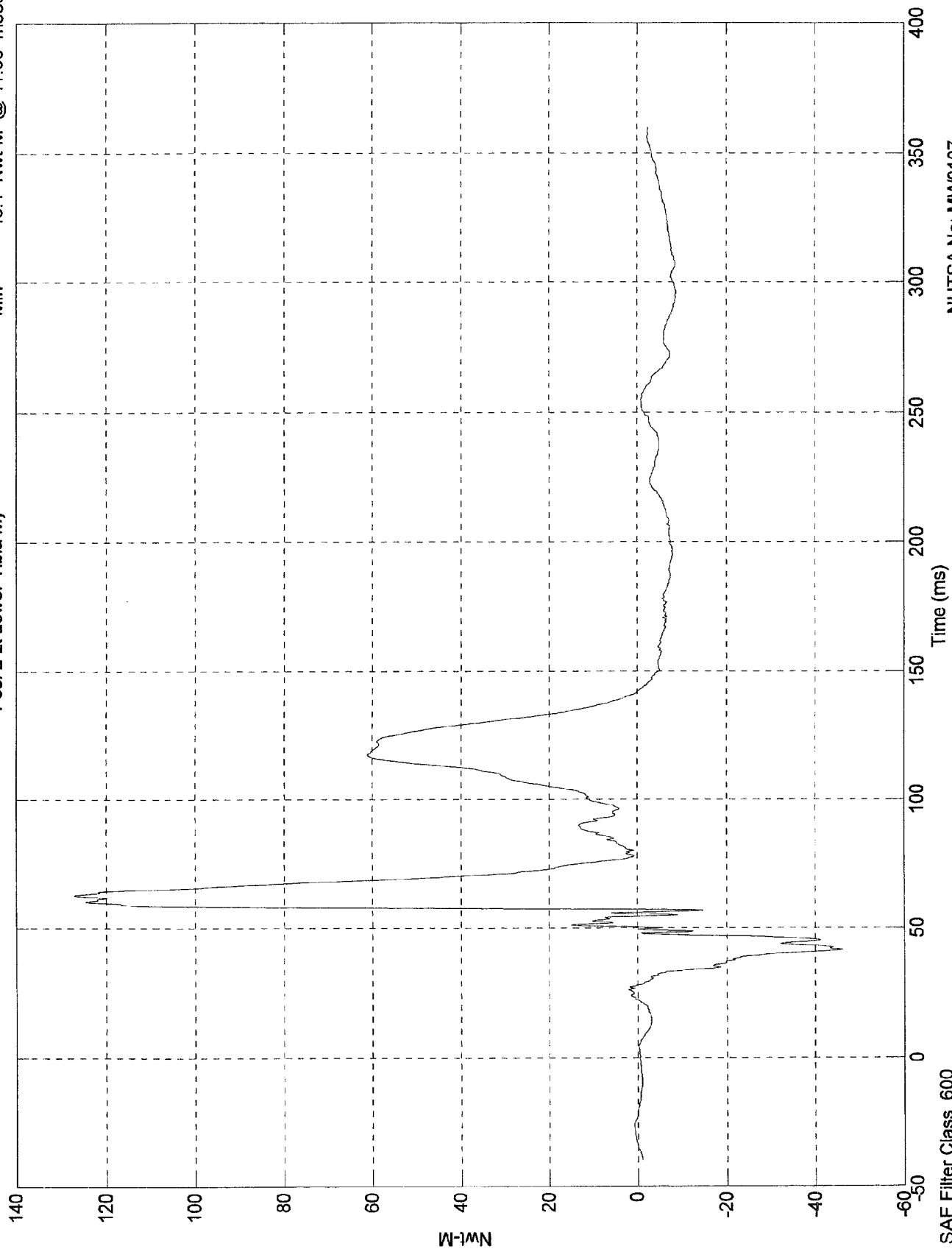
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 127 Nwt-M @ 62.70 msec
Min = -46.1 Nwt-M @ 41.60 msec

Pos. 2 Lt Lower Tibia My



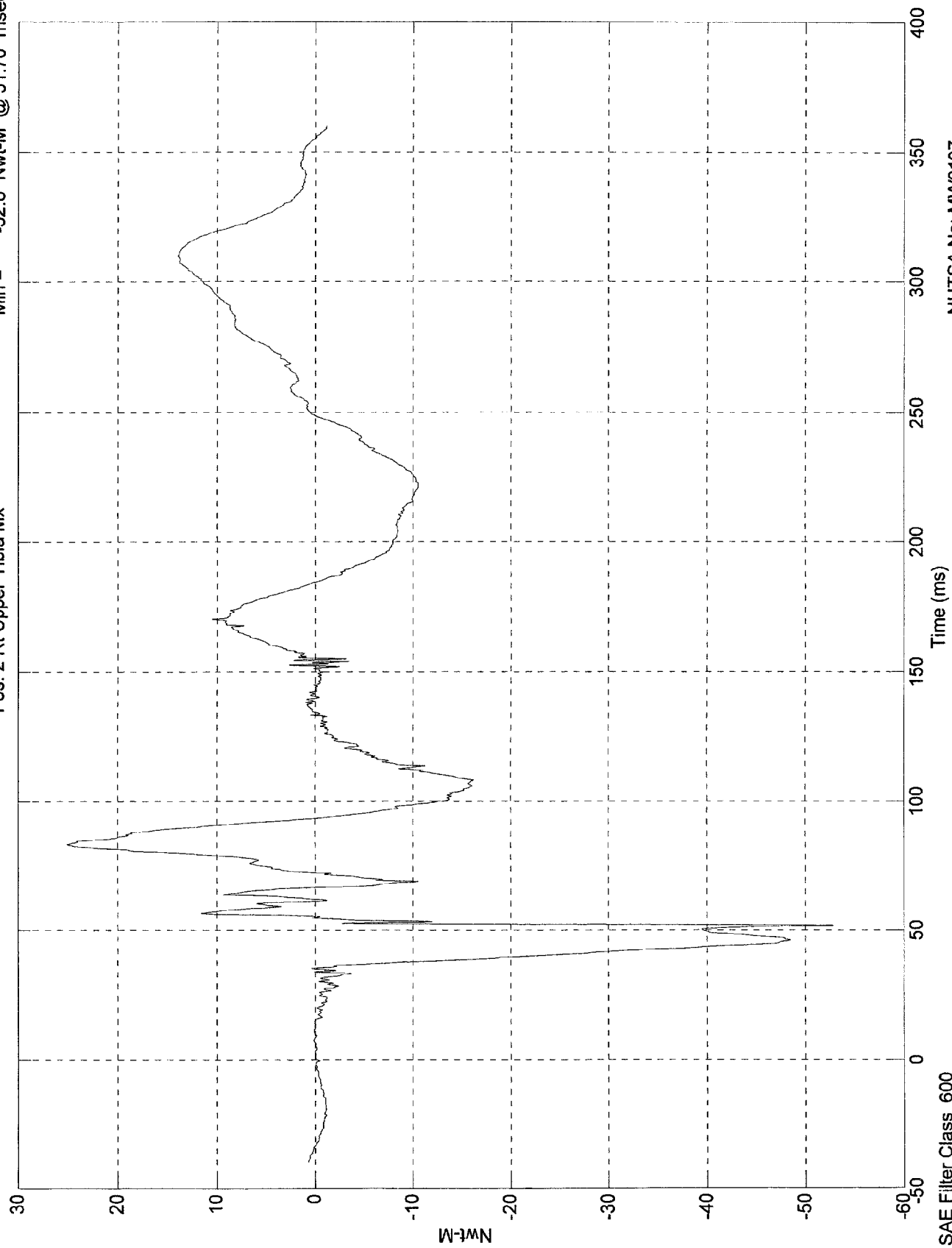
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 25 Nwt-M @ 83.30 msec
Min = -52.8 Nwt-M @ 51.70 msec

Pos. 2 Rt Upper Tibia Mx



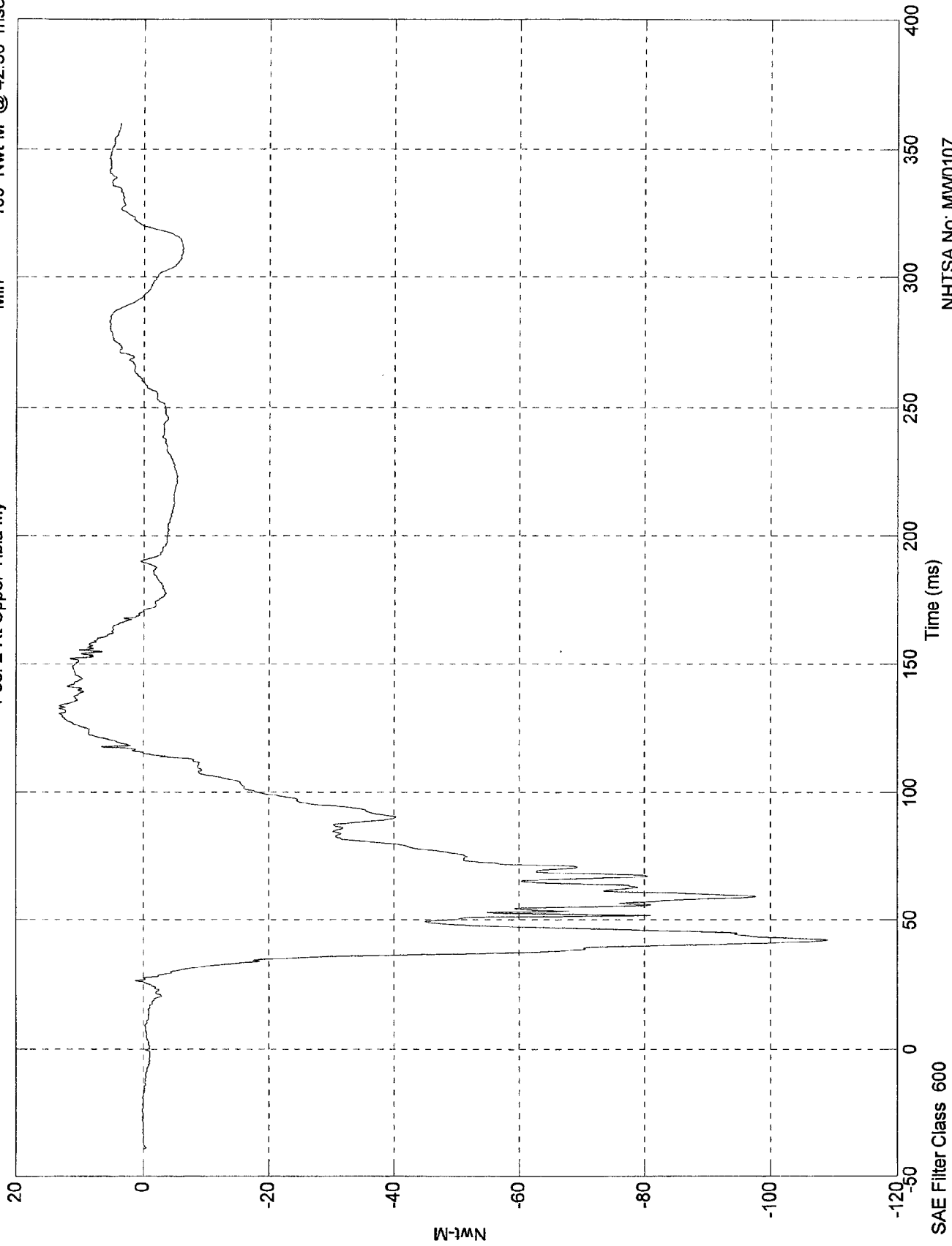
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 13.2 Nwt-M @ 132.80 msec
Min = -109 Nwt-M @ 42.30 msec

Pos. 2 Rt Upper Tibia My

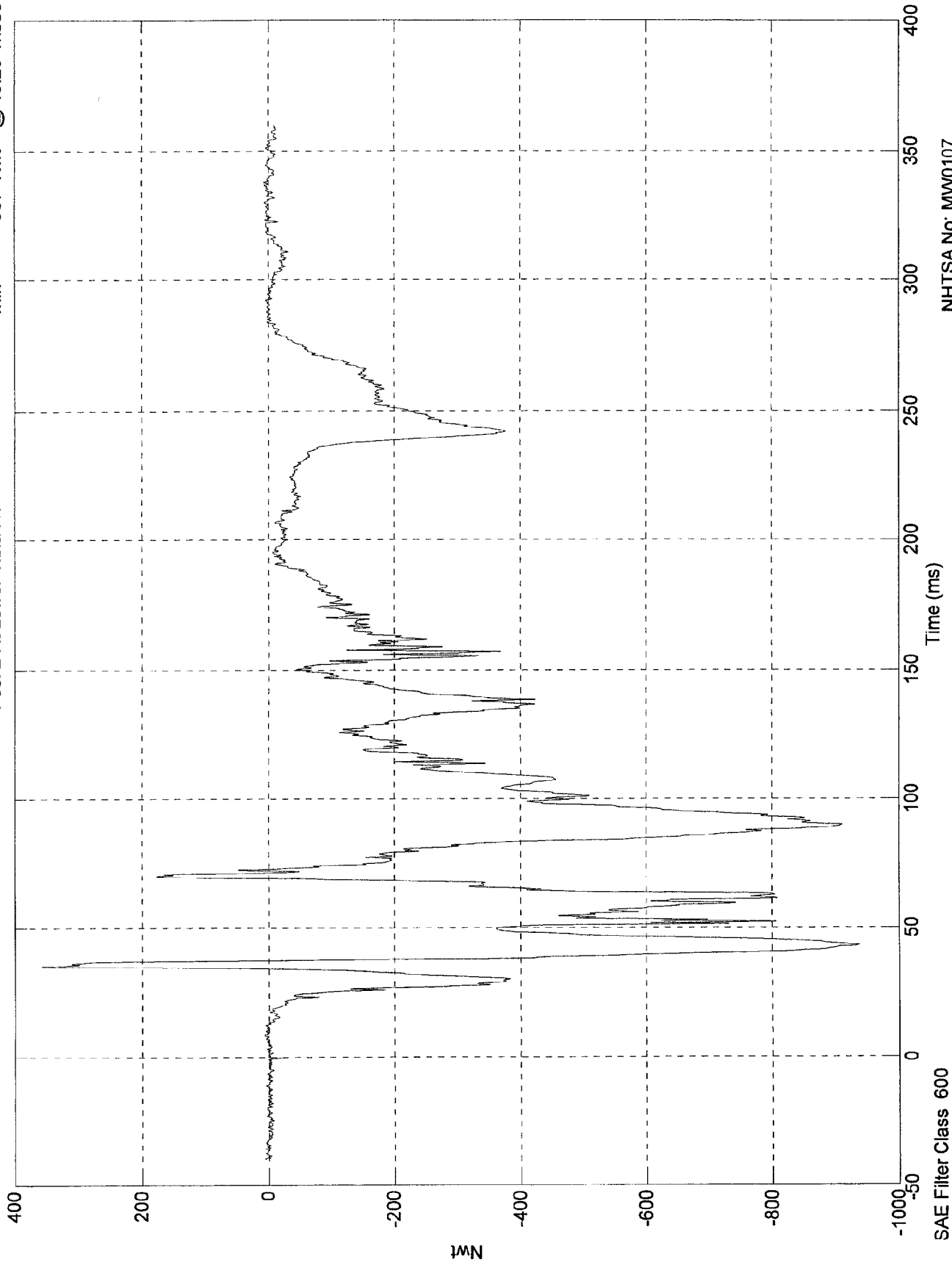


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 357 Nwt @ 35.40 msec
Min = -937 Nwt @ 43.20 msec

Pos. 2 Rt Lower Tibia Fx



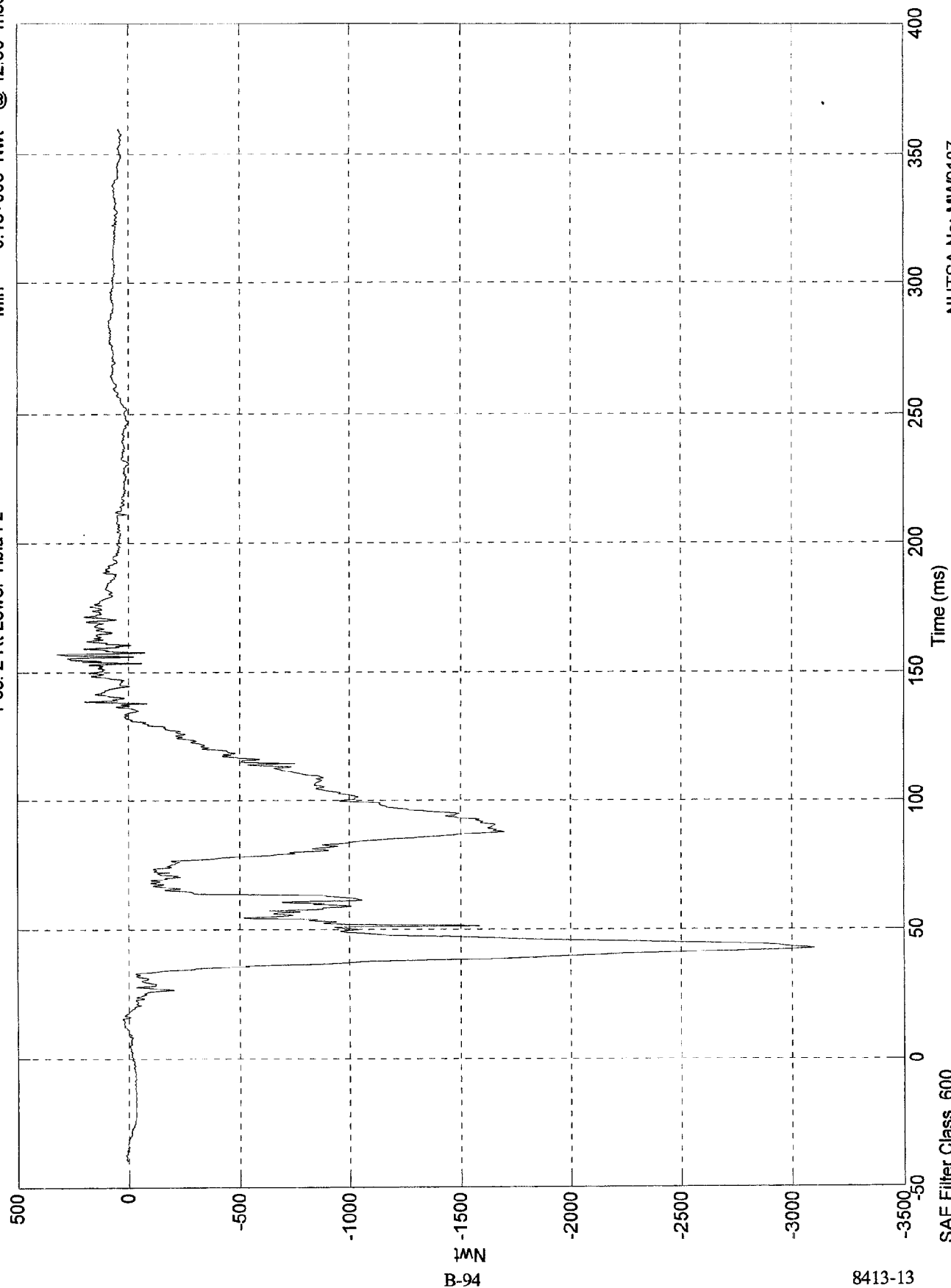
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 323 Nwt @ 156.90 msec
Min = -3.1e+003 Nwt @ 42.80 msec

Pos. 2 Rt Lower Tibia Fz

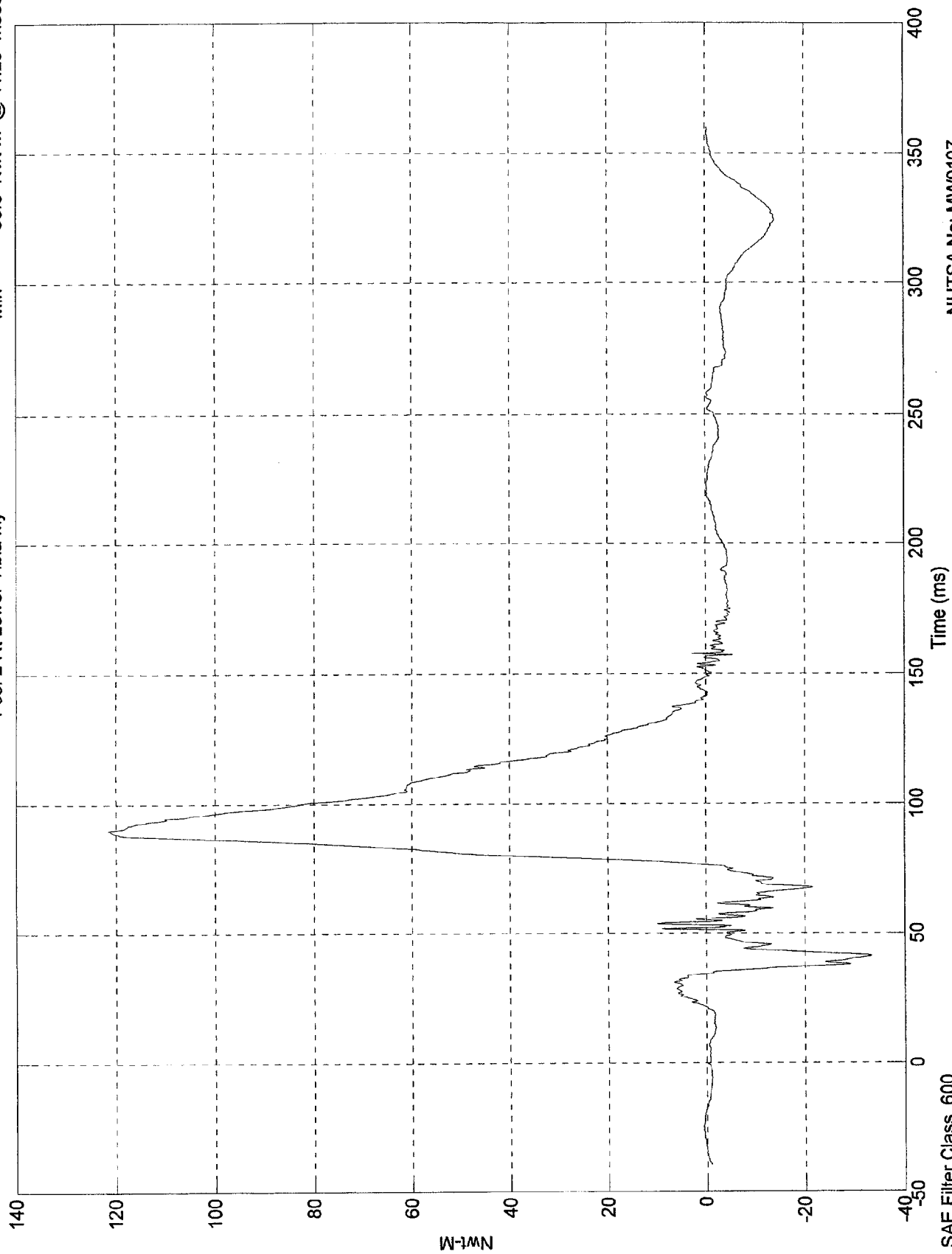


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 122 Nwt-M @ 90.00 msec
Min = -33.3 Nwt-M @ 41.20 msec

Pos. 2 Rt Lower Tibia My



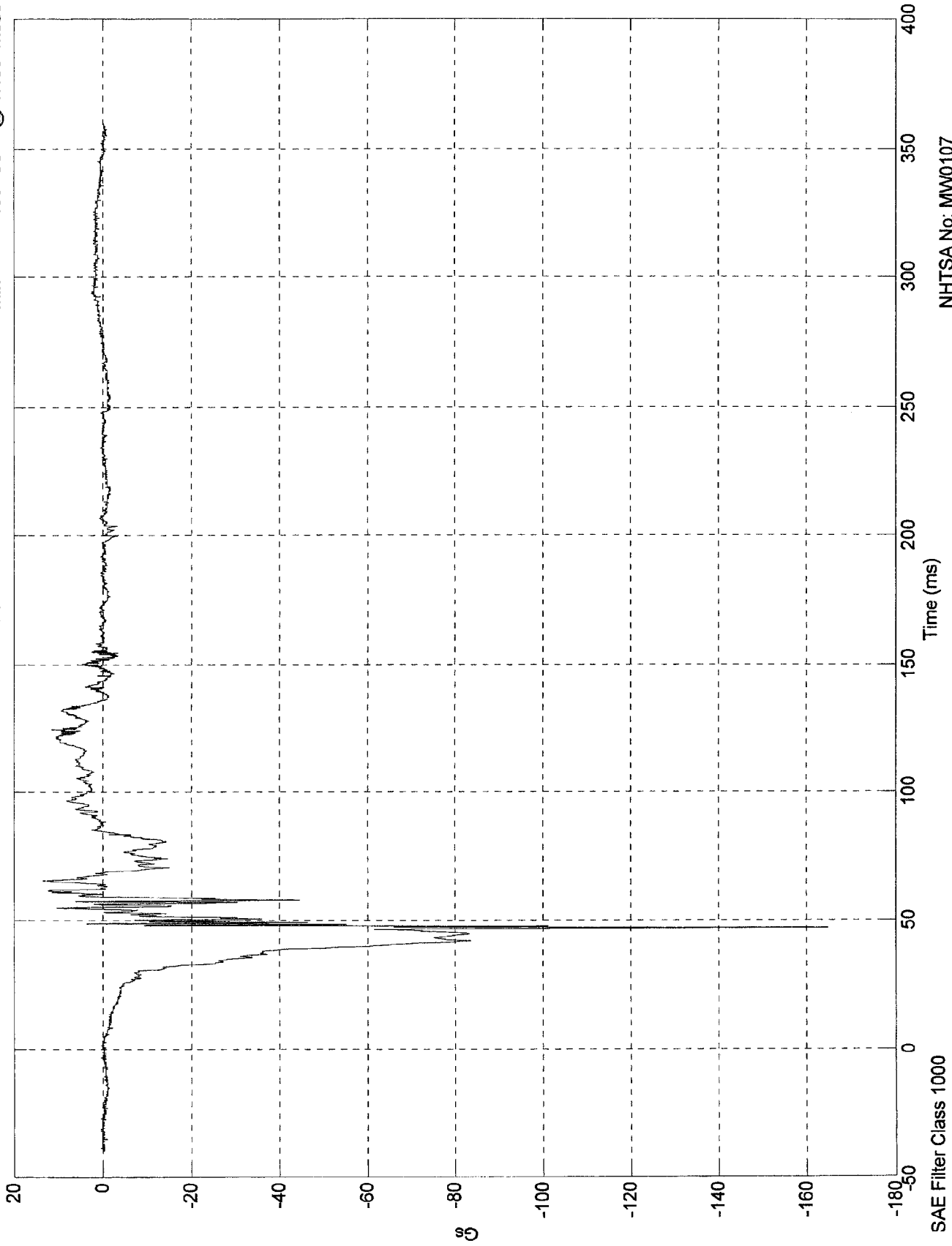
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 600

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 13.5 Gs @ 65.40 msec
Min = -165 Gs @ 47.00 msec

Pos. 2 Left Ankle X

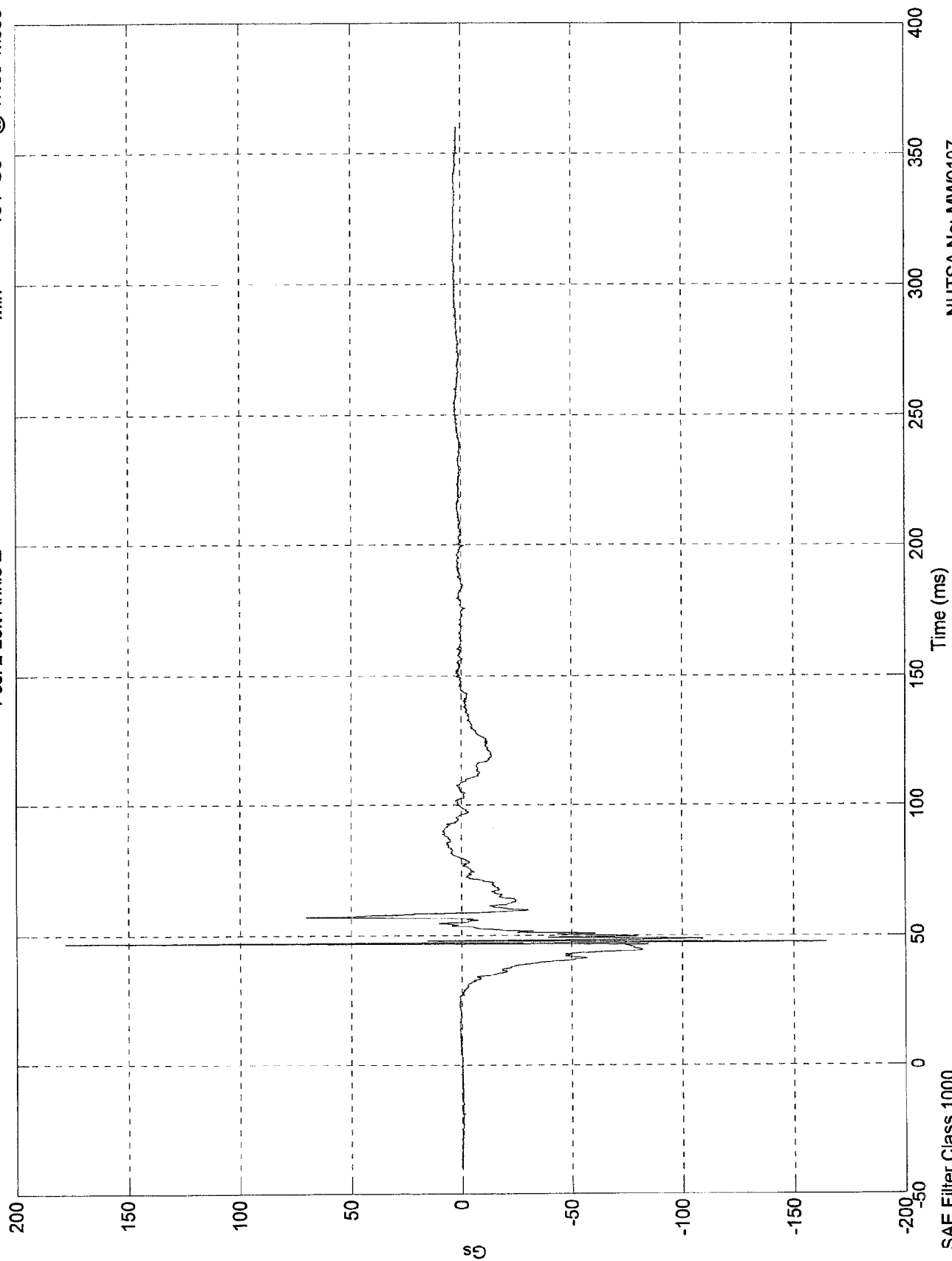


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 178 Gs @ 47.00 msec
Min = -164 Gs @ 47.50 msec

Pos. 2 Left Ankle Z



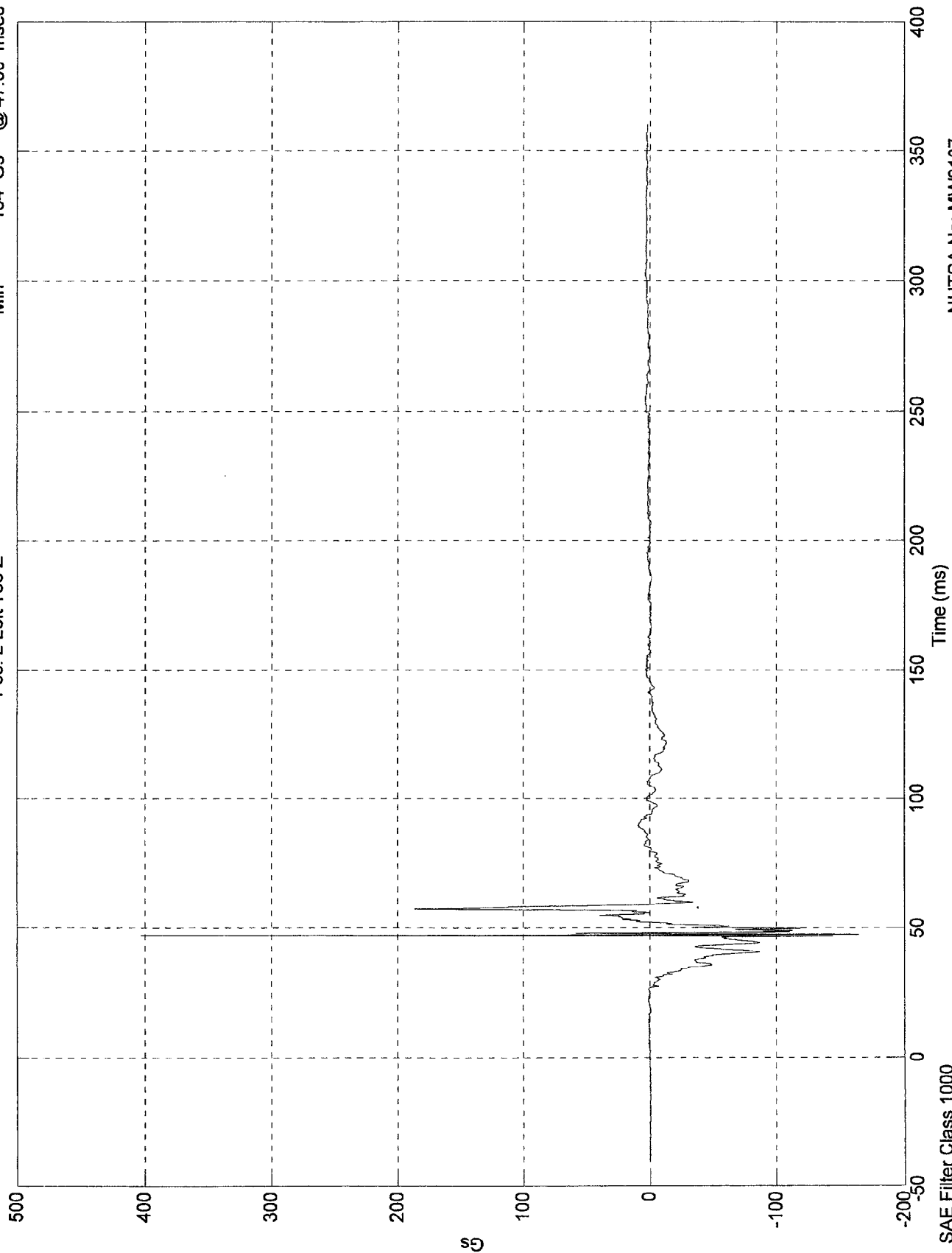
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 403 Gs @ 47.10 msec
Min = -164 Gs @ 47.50 msec

Pos. 2 Left Toe Z

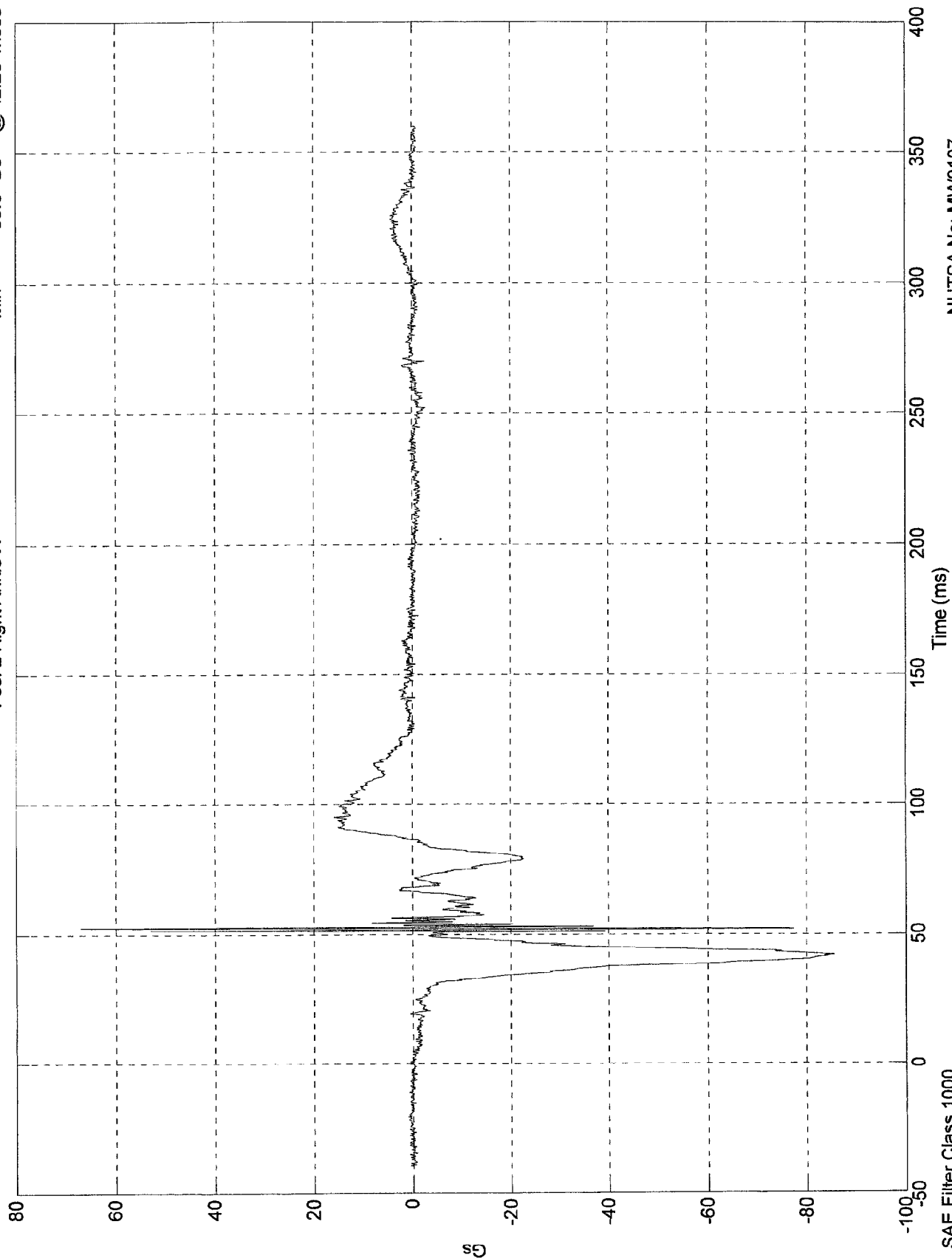


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 67 Gs @ 52.60 msec
Min = -85.5 Gs @ 42.20 msec

Pos. 2 Right Ankle X

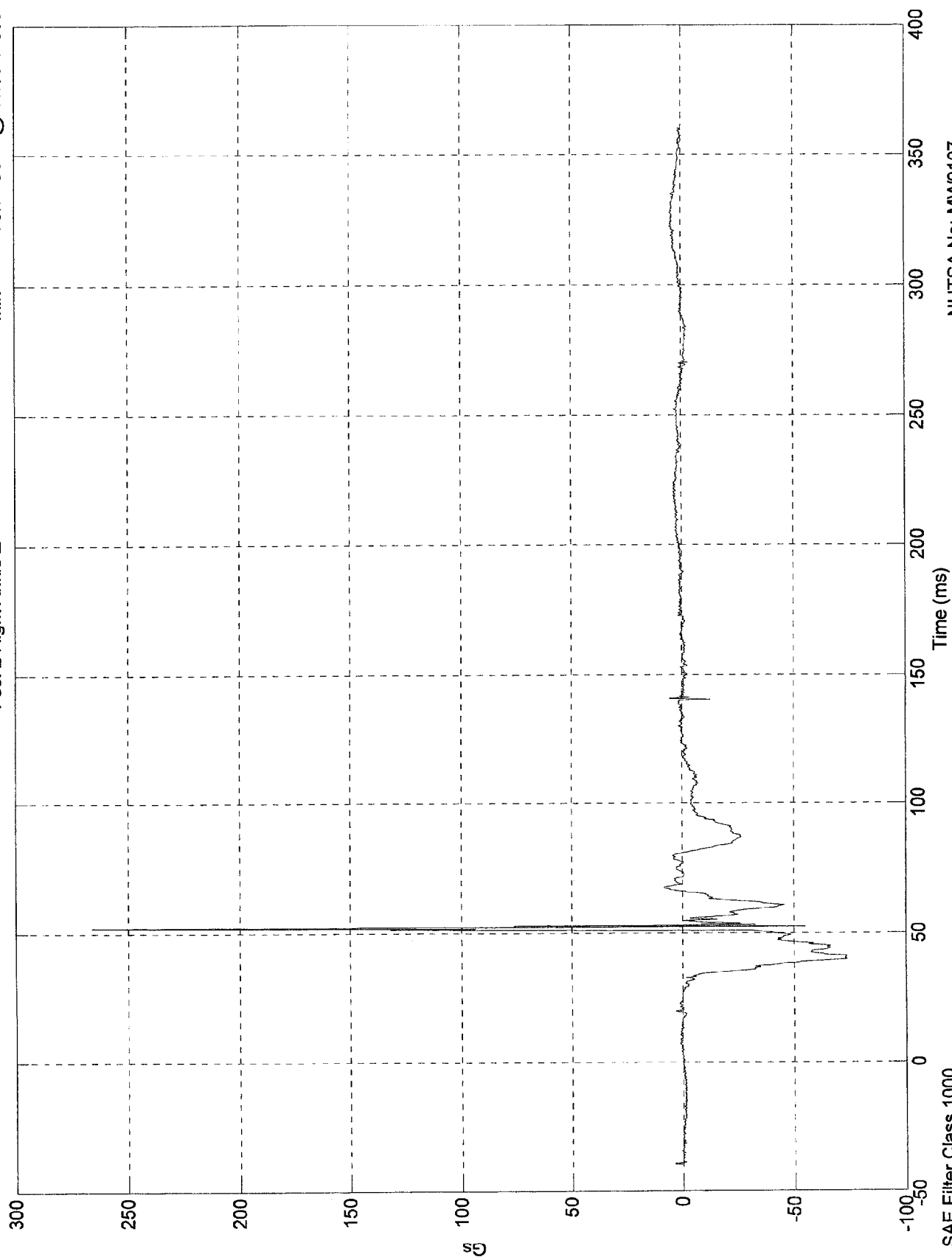


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 266 Gs @ 52.10 msec
Min = -73.7 Gs @ 41.30 msec

Pos. 2 Right Ankle Z

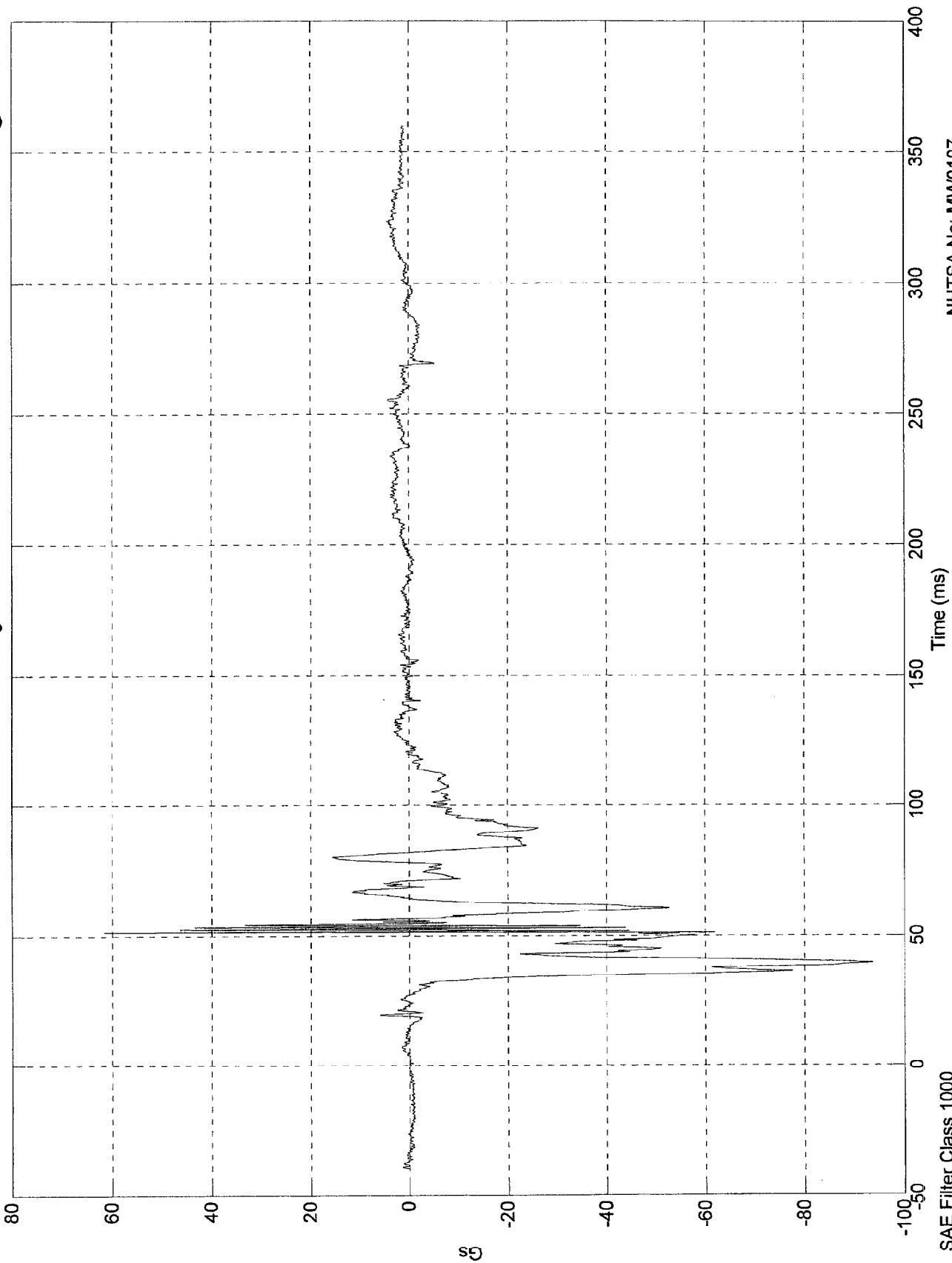


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 61.7 Gs @ 51.60 msec
Min = -93.5 Gs @ 39.70 msec

Pos. 2 Right Toe Z

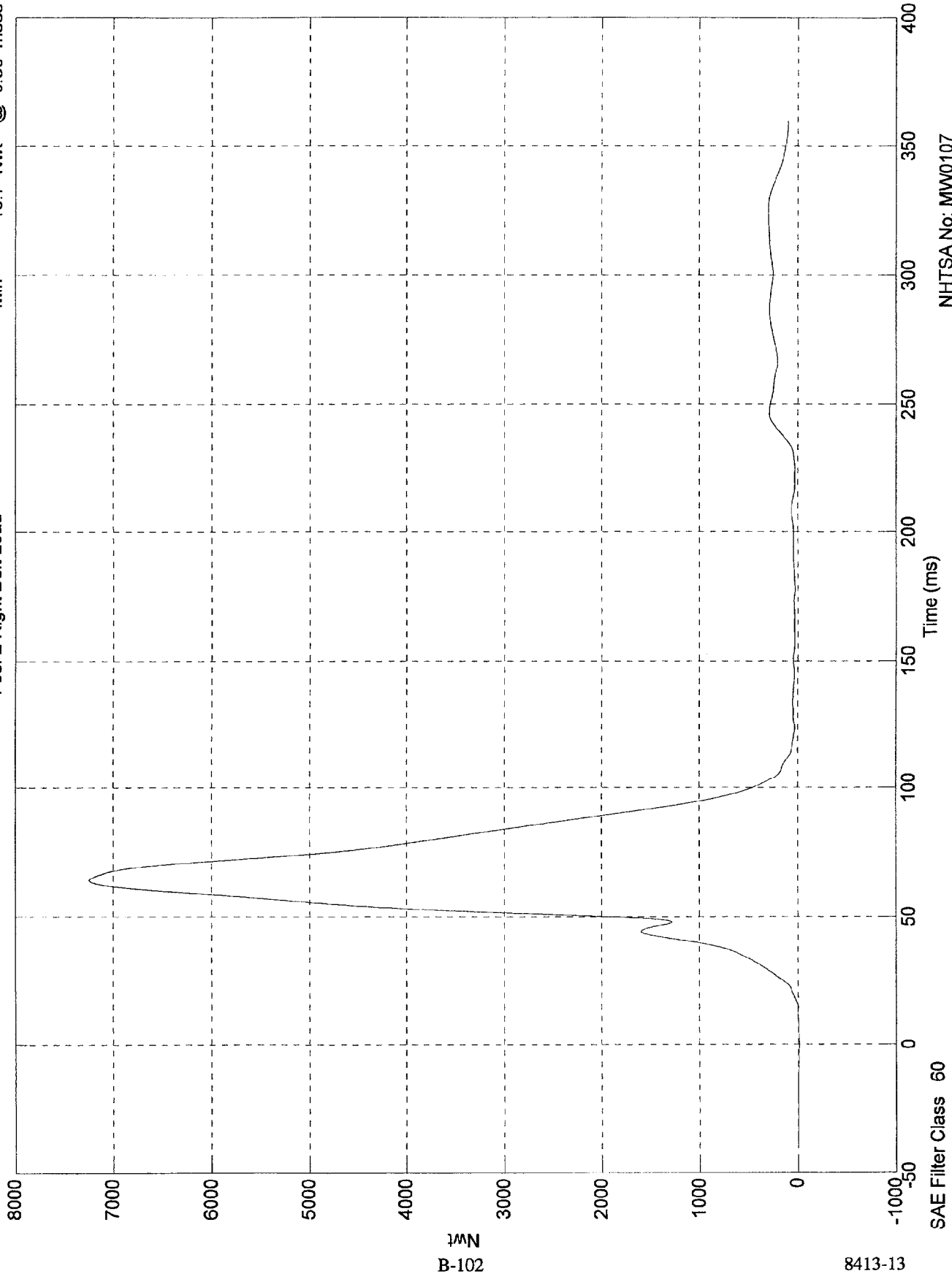


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 7.24e+003 Nwt @ 64.00 msec
Min = -13.7 Nwt @ -0.30 msec

Pos. 2 Right Belt Load

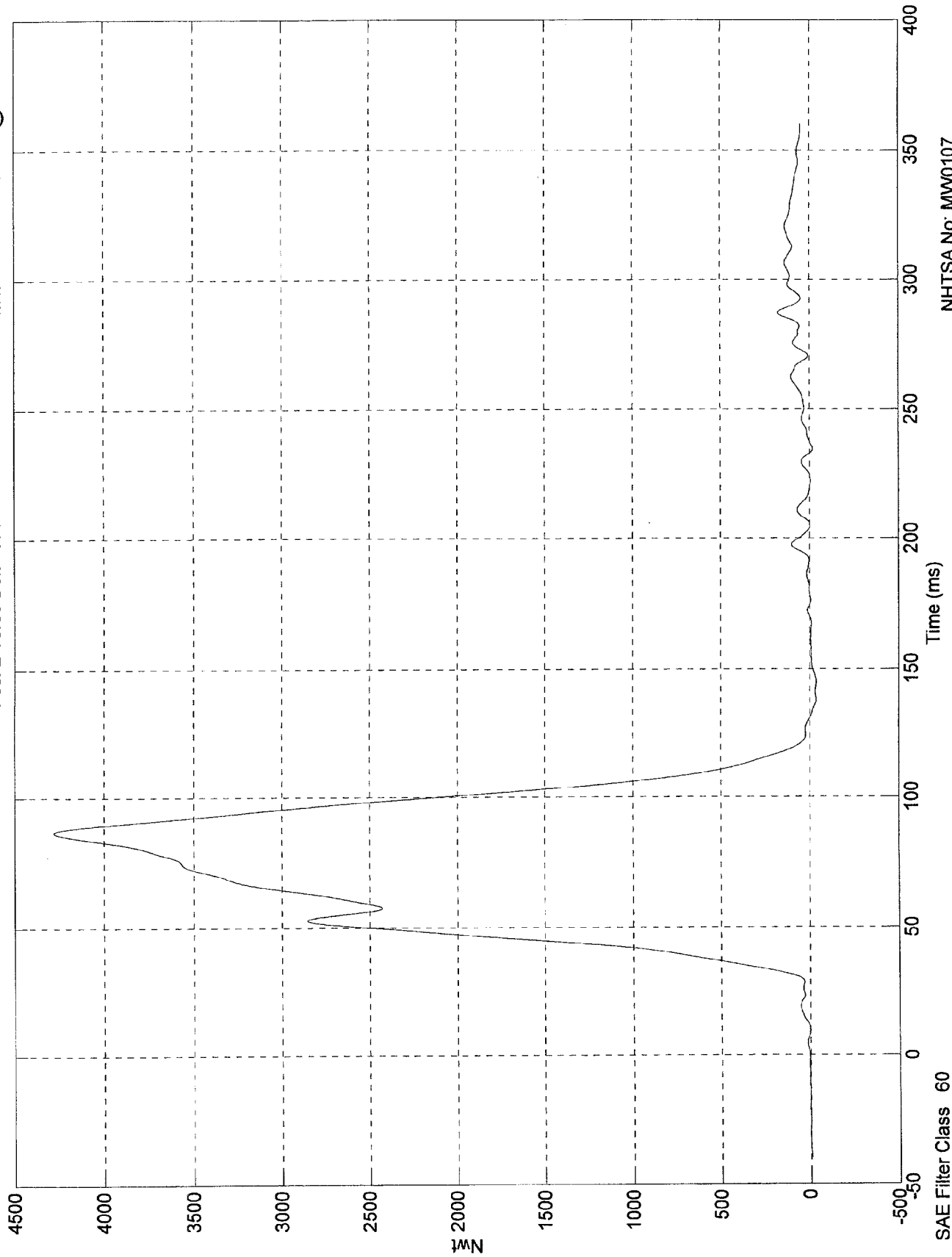


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 4.28e+003 Nwt @ 86.60 msec
Min = -35.5 Nwt @ 145.00 msec

Pos. 2 Torso Belt Load

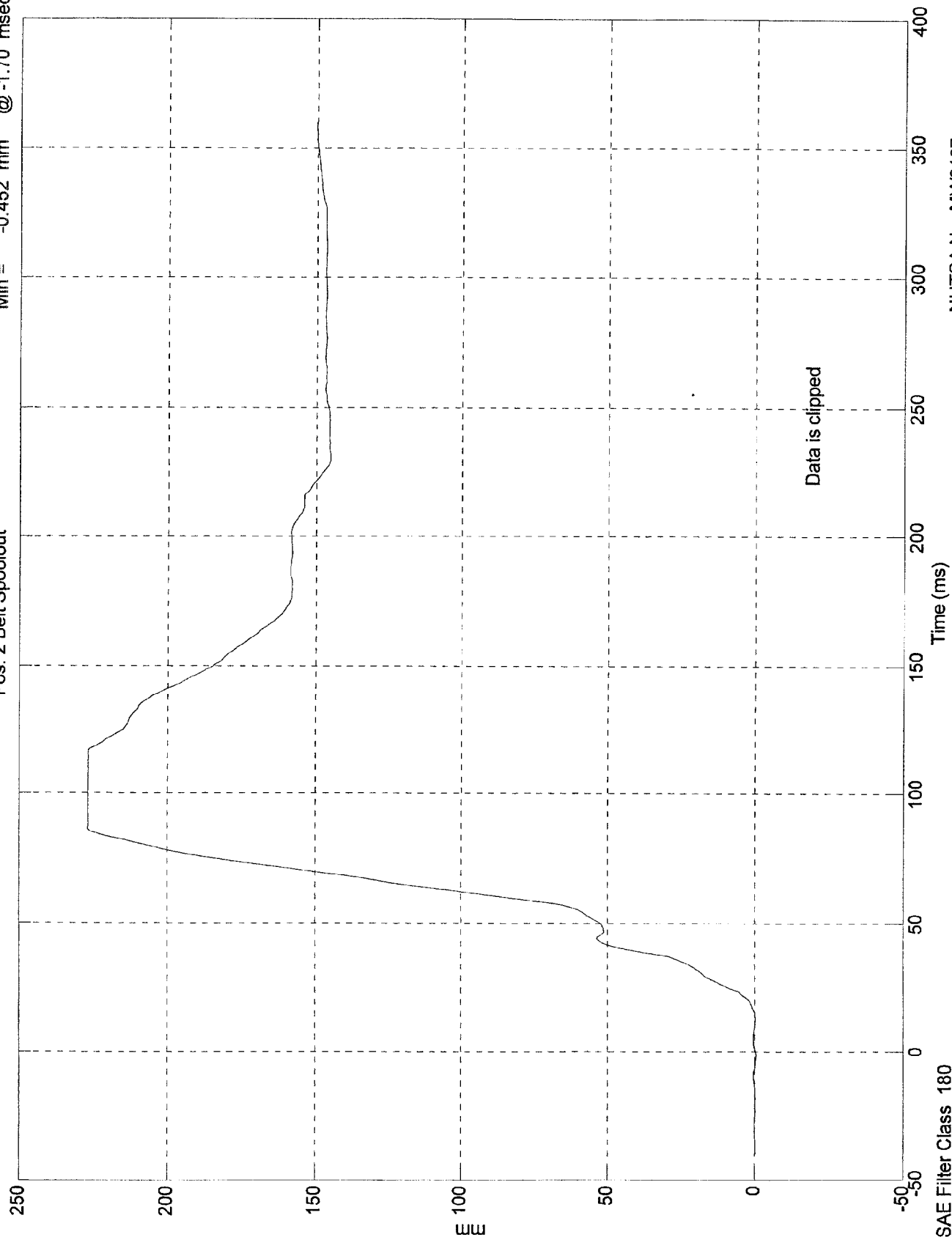


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 227 mm @ 86.40 msec
Min = -0.452 mm @ -1.70 msec

Pos. 2 Belt Spoolout

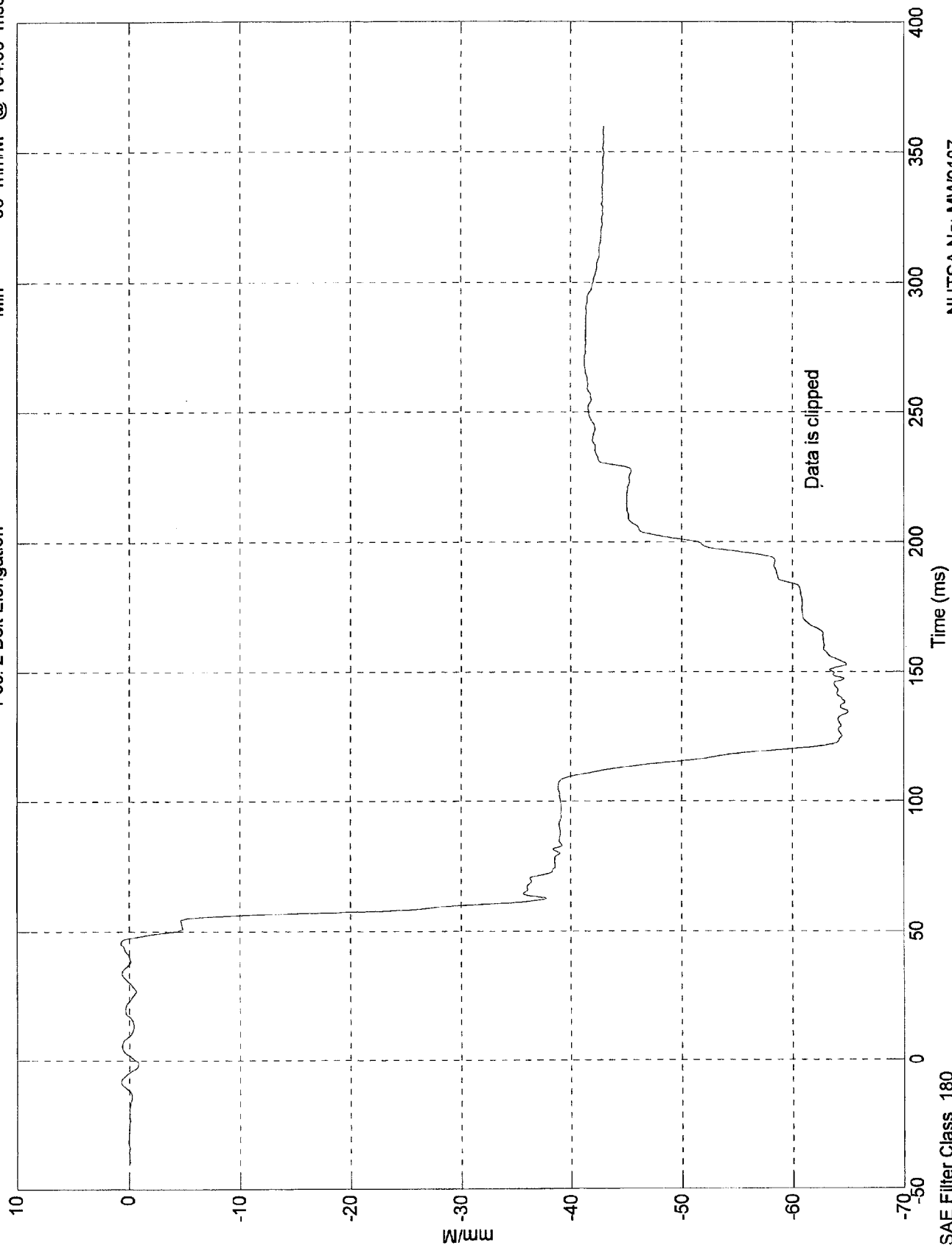


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 0.733 mm/M @ 45.60 msec
Min = -65 mm/M @ 134.30 msec

Pos. 2 Belt Elongation



Data is clipped

NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 180

NHTSA TEST NO. MW0107

VEHICLE DATA

FILTER CHANNEL CLASS

Acceleration

60

Velocity

180

Displacement

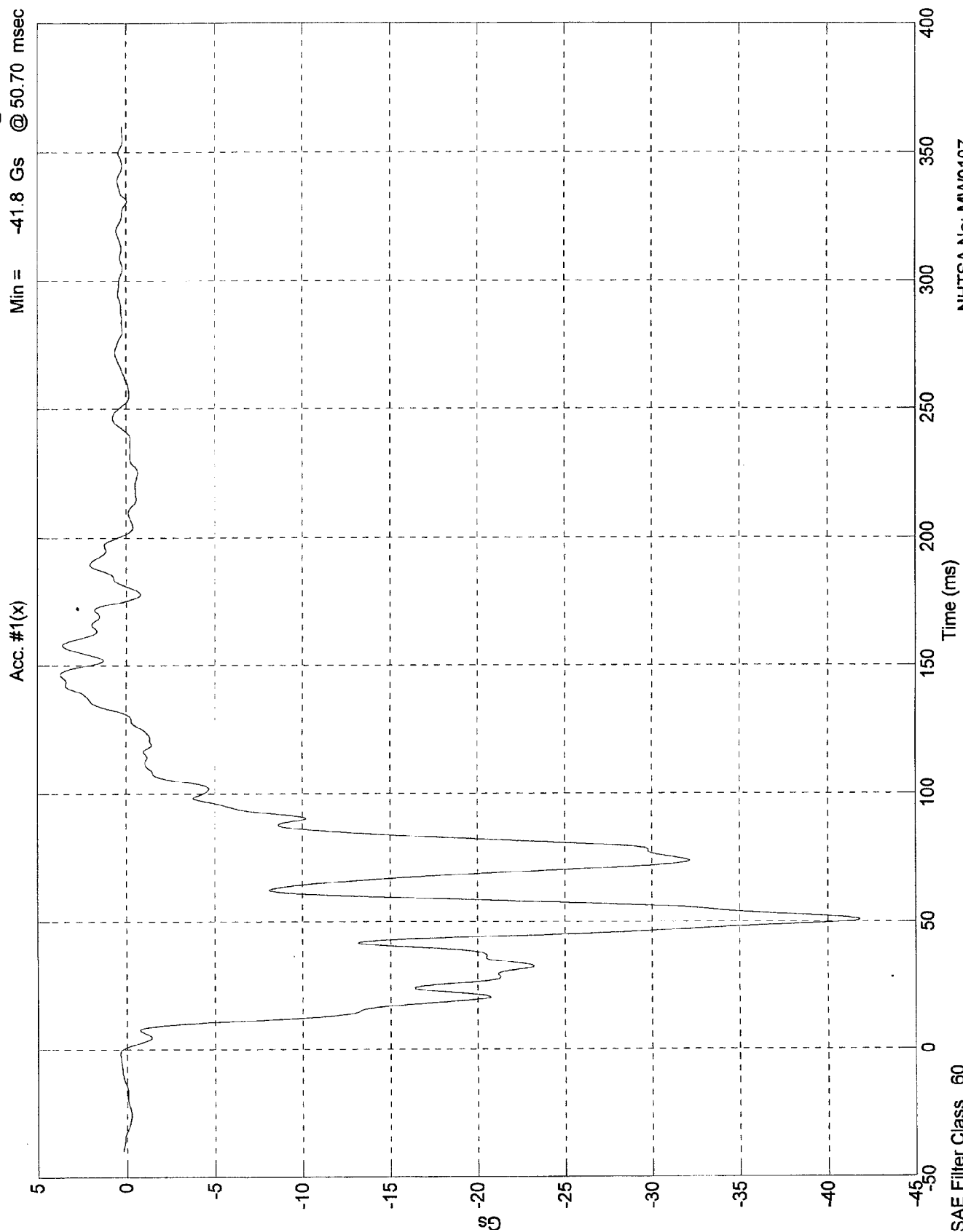
180

Time Zero

1000

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 3.71 Gs @ 146.40 msec
 Min = -41.8 Gs @ 50.70 msec



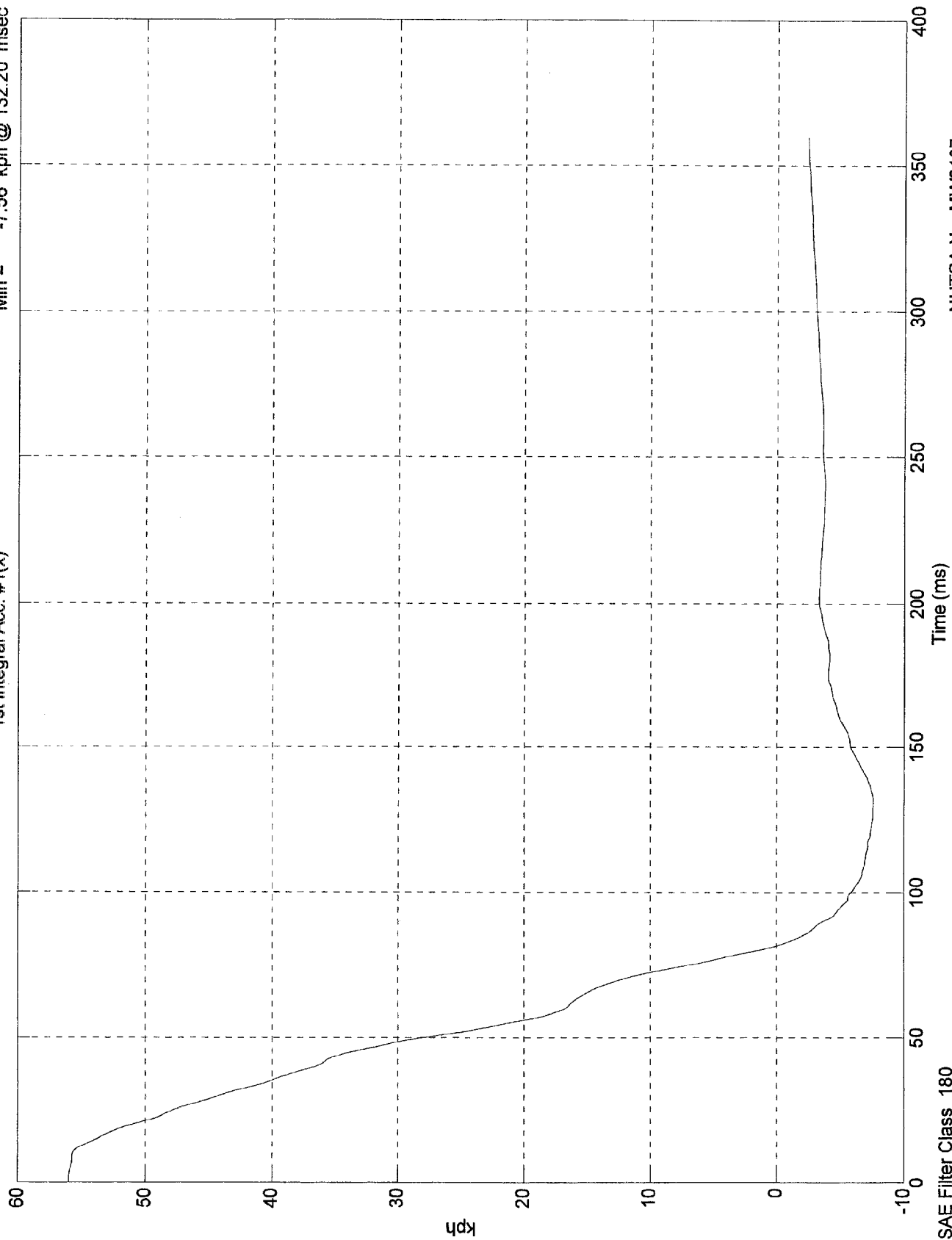
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 60

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 56 kph @ 1.30 msec
Min = -7.56 kph @ 132.20 msec

1st Integral Acc. #1(x)



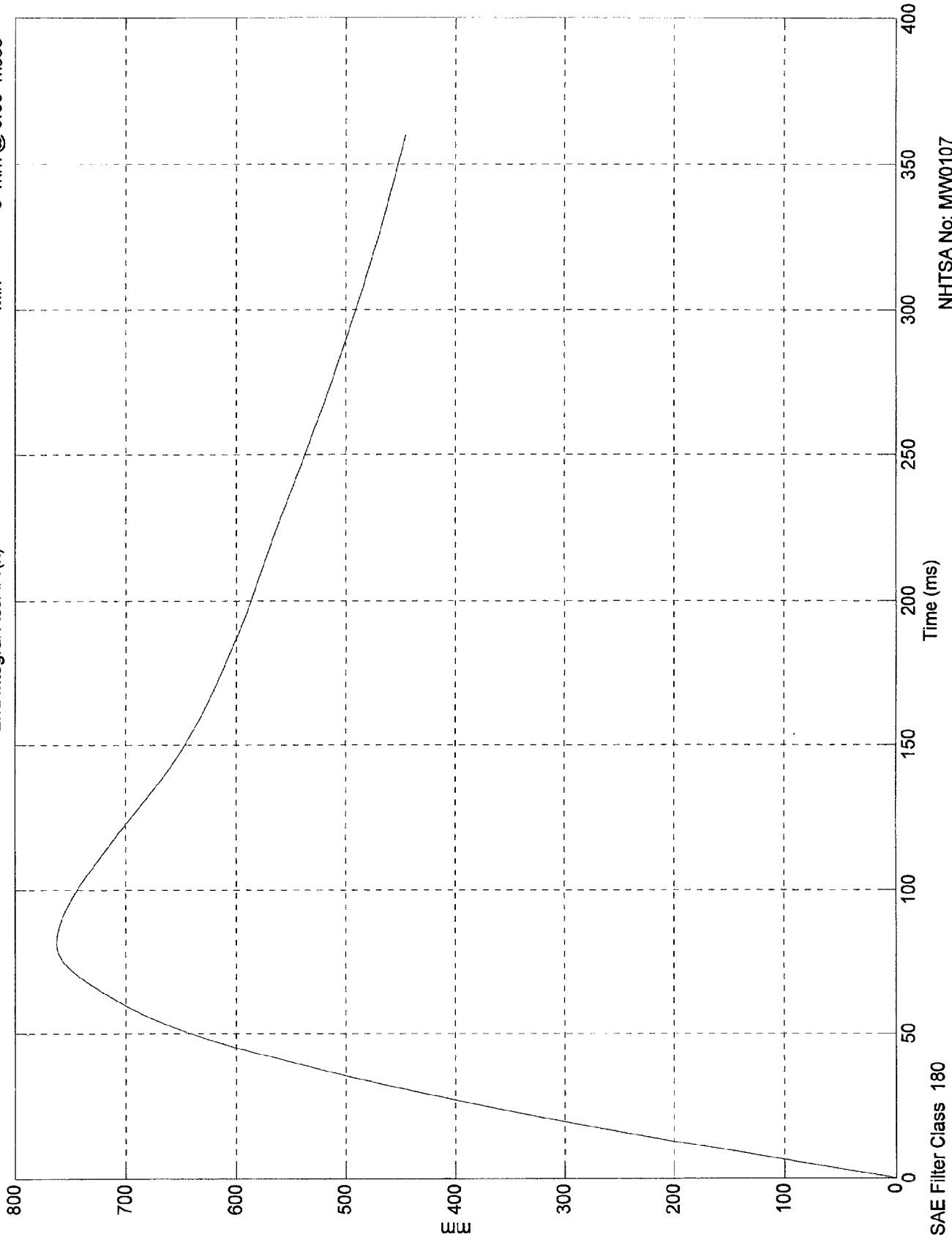
SAE Filter Class 180

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 762 mm @ 81.80 msec
Min = 0 mm @ 0.00 msec

2nd Integral Acc. #1(x)

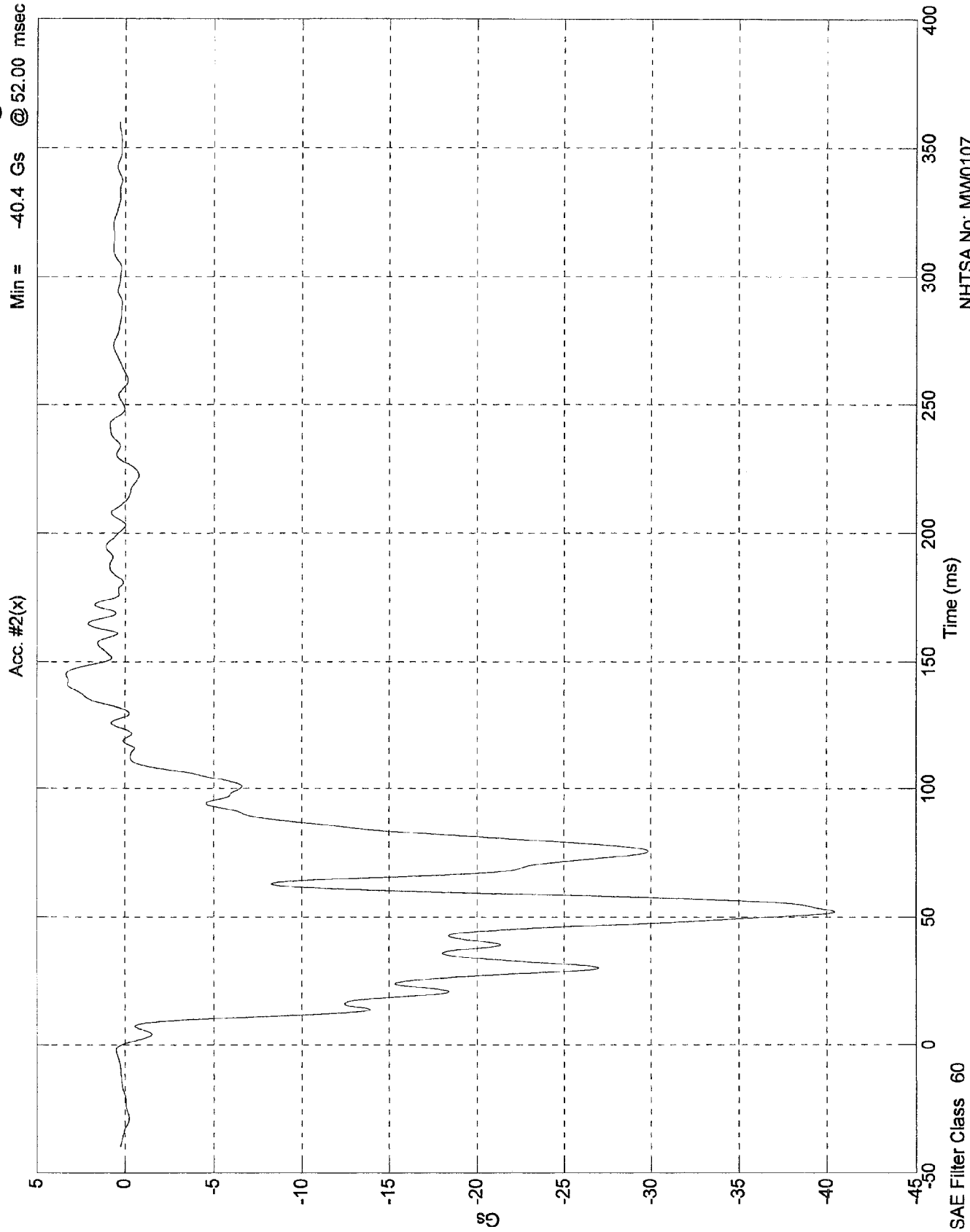


NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 3.35 Gs @ 144.90 msec
Min = -40.4 Gs @ 52.00 msec

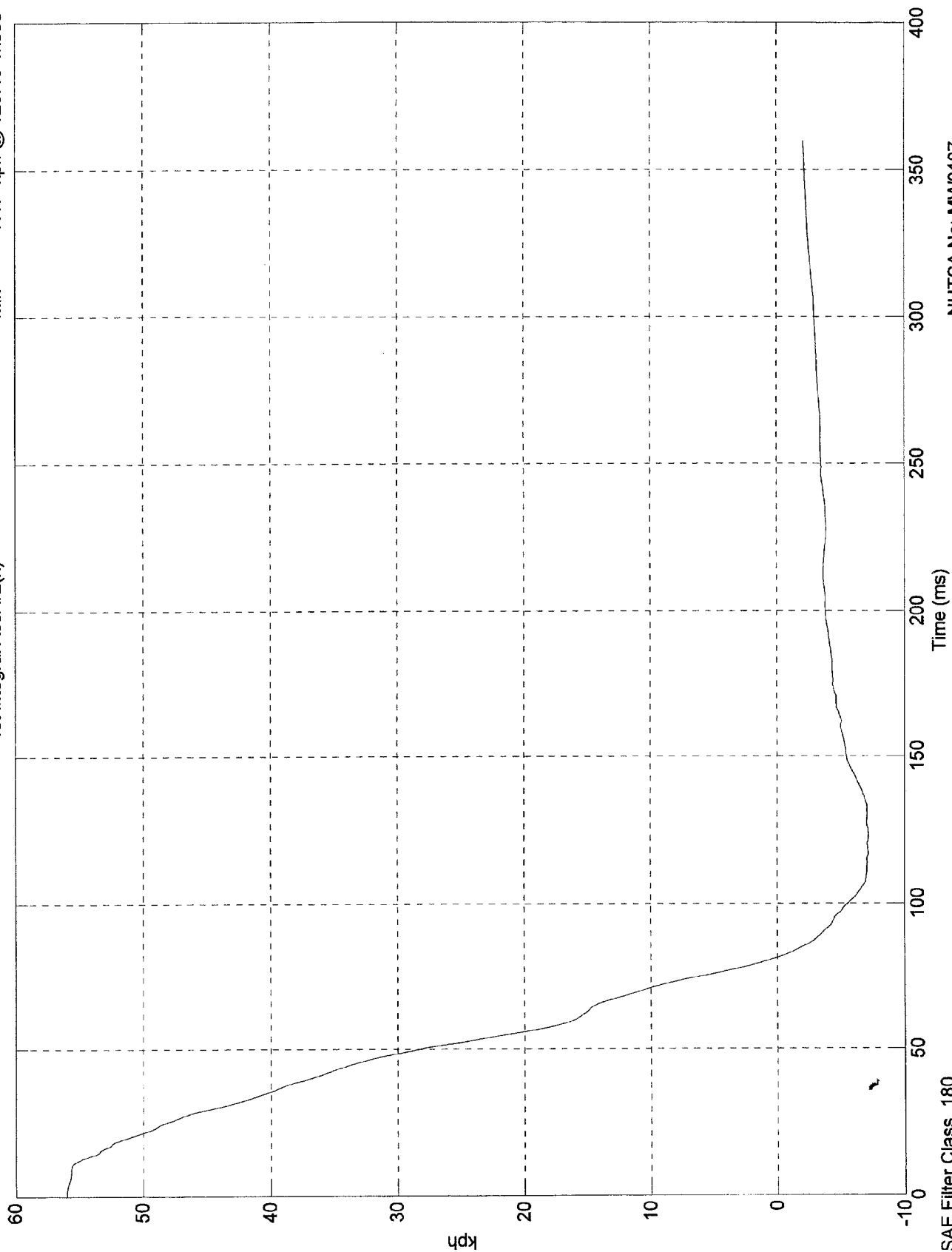


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 56 kph @ 1.10 msec
Min = -7.17 kph @ 123.40 msec

1st Integral Acc. #2(x)



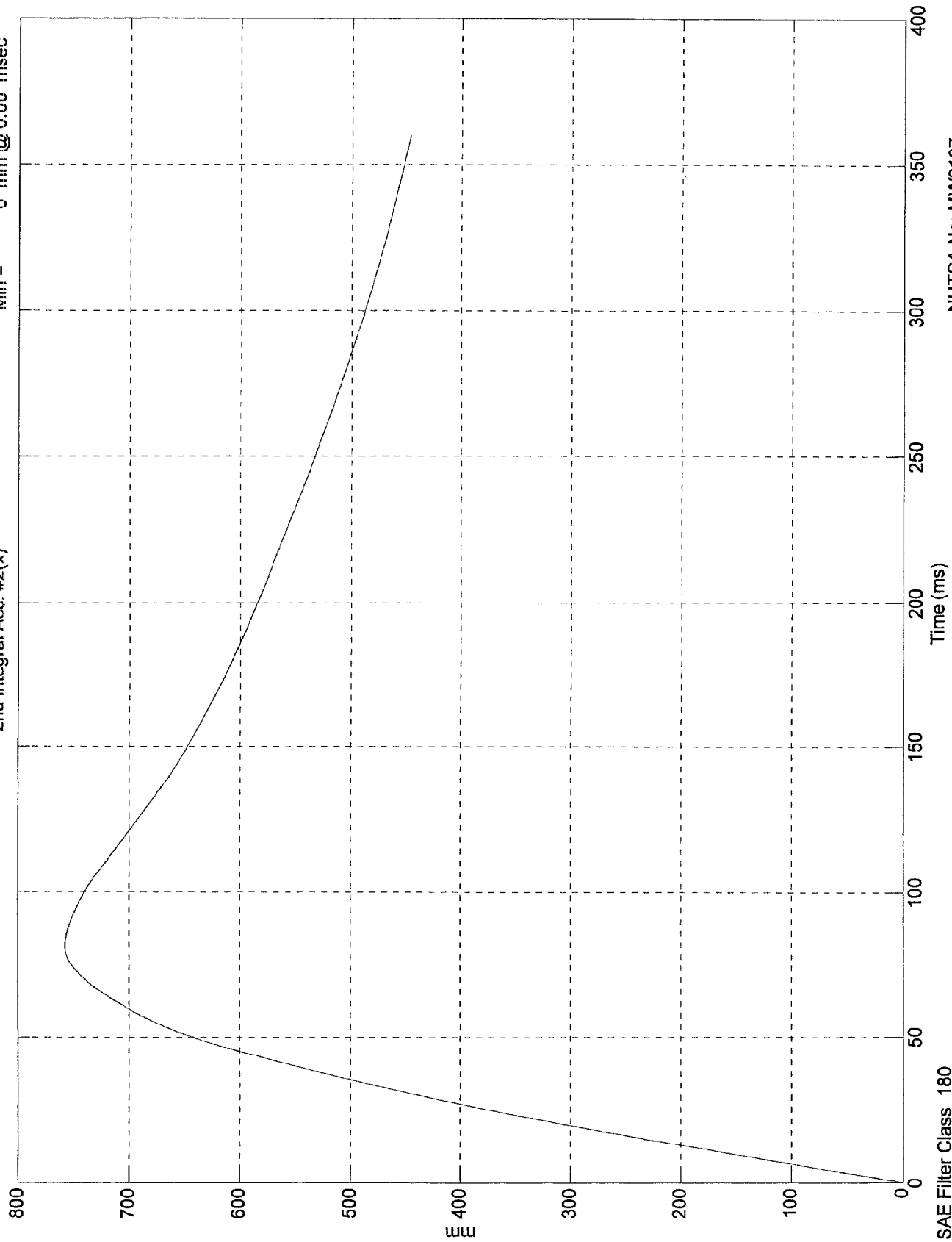
SAE Filter Class 180

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 757 mm @ 81.60 msec
Min = 0 mm @ 0.00 msec

2nd Integral Acc. #2(x)



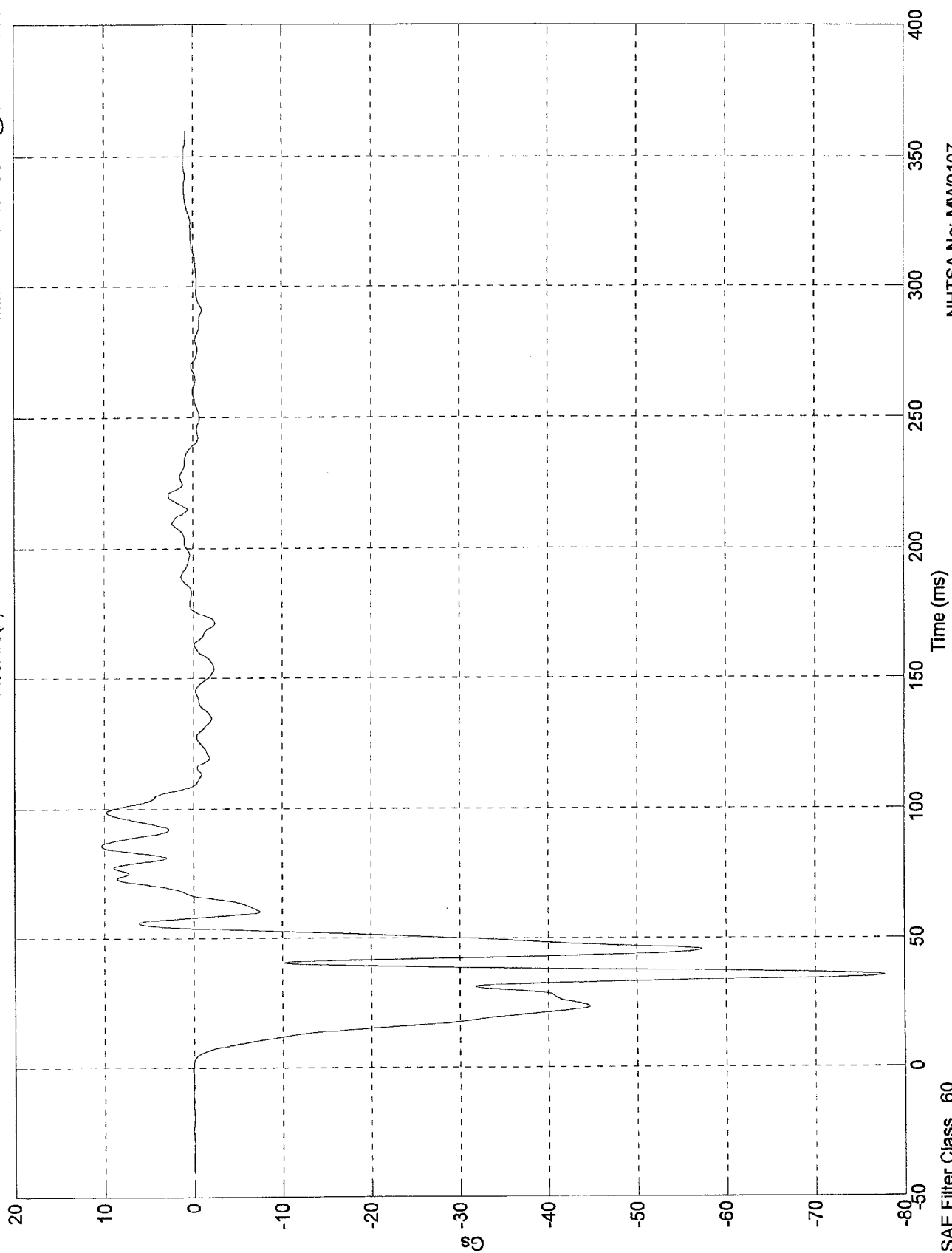
SAE Filter Class 180

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 10.3 Gs @ 85.80 msec
 Min = -77.8 Gs @ 35.60 msec

Acc. #3(x)



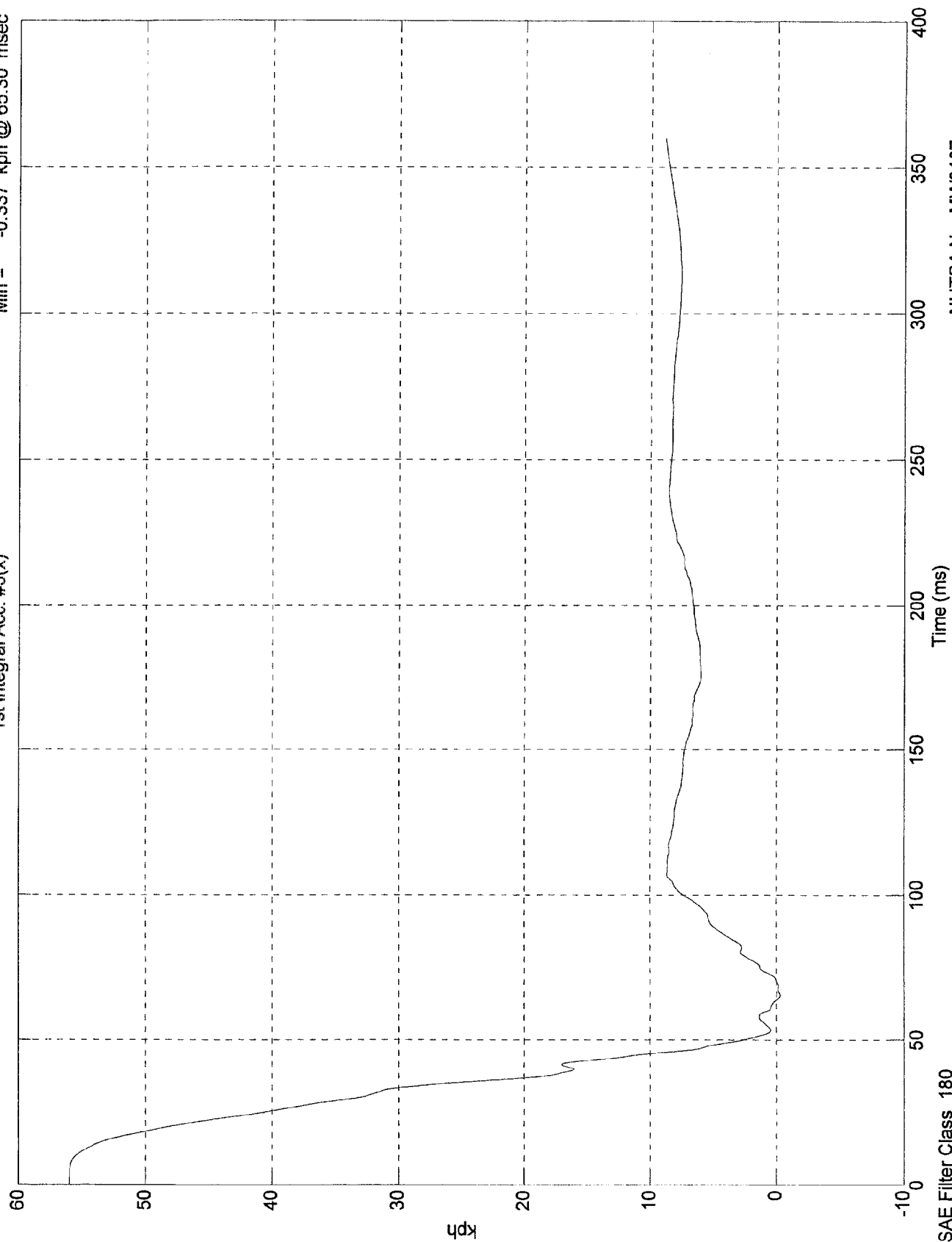
NHTSA No: MW0107
 Date: 09 Dec 1997

SAE Filter Class 60

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 56 kph @ 0.90 msec
Min = -0.337 kph @ 65.30 msec

1st Integral Acc. #3(x)



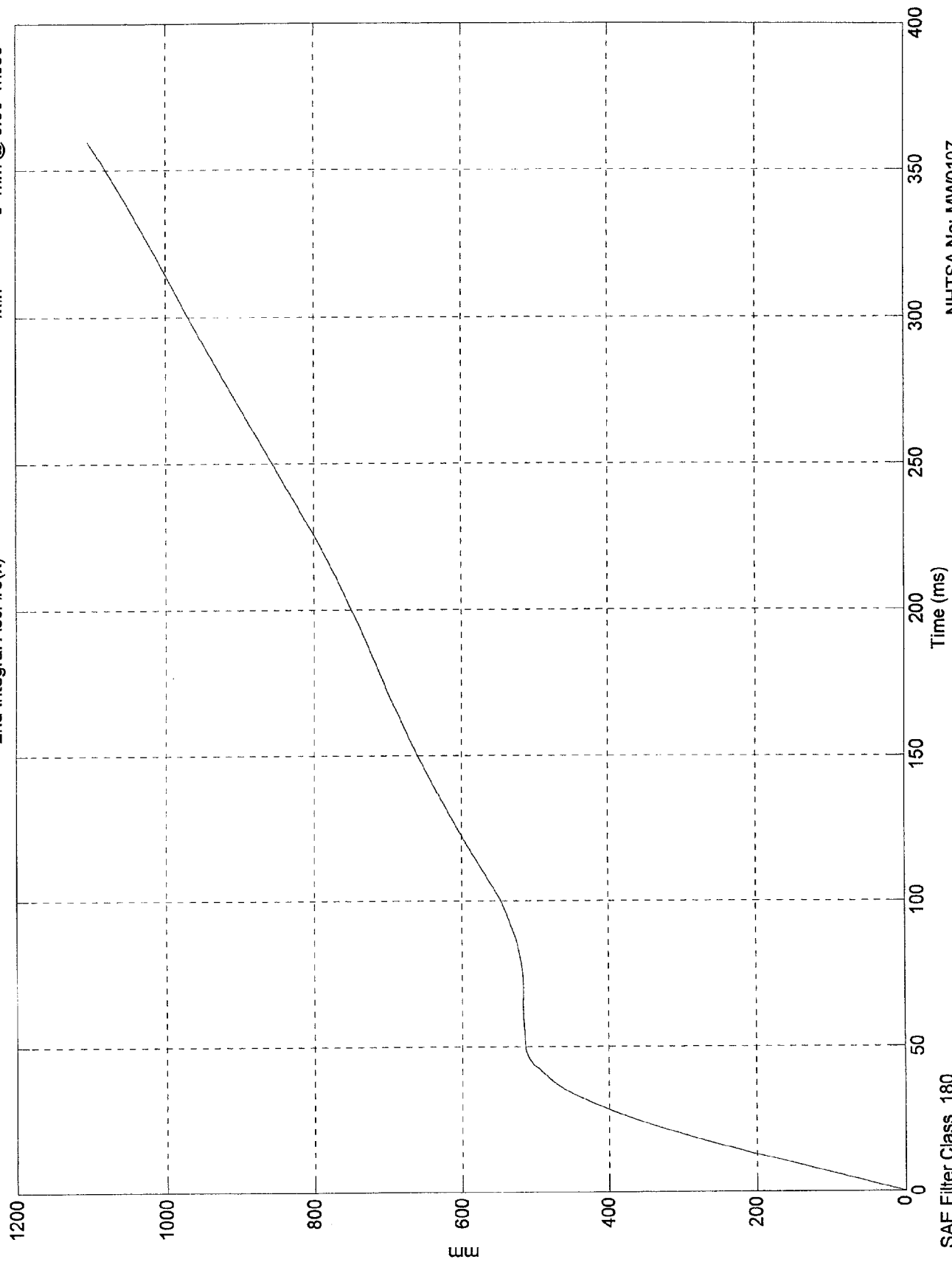
SAE Filter Class 180

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 1.1e+003 mm @ 360.00 msec
Min = 0 mm @ 0.00 msec

2nd Integral Acc. #3(x)



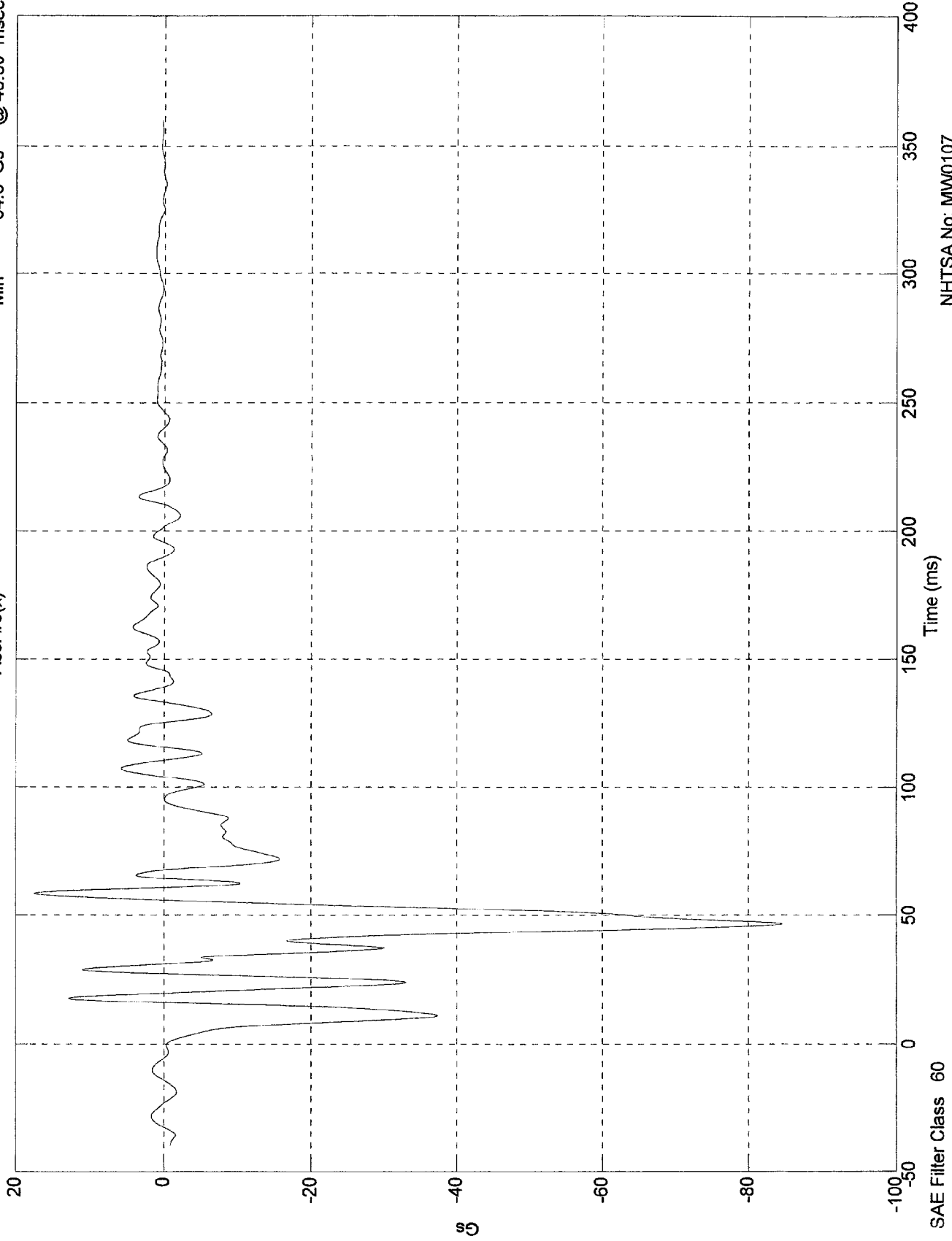
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 17.5 Gs @ 58.40 msec
Min = -84.6 Gs @ 46.50 msec

Acc. #6(x)

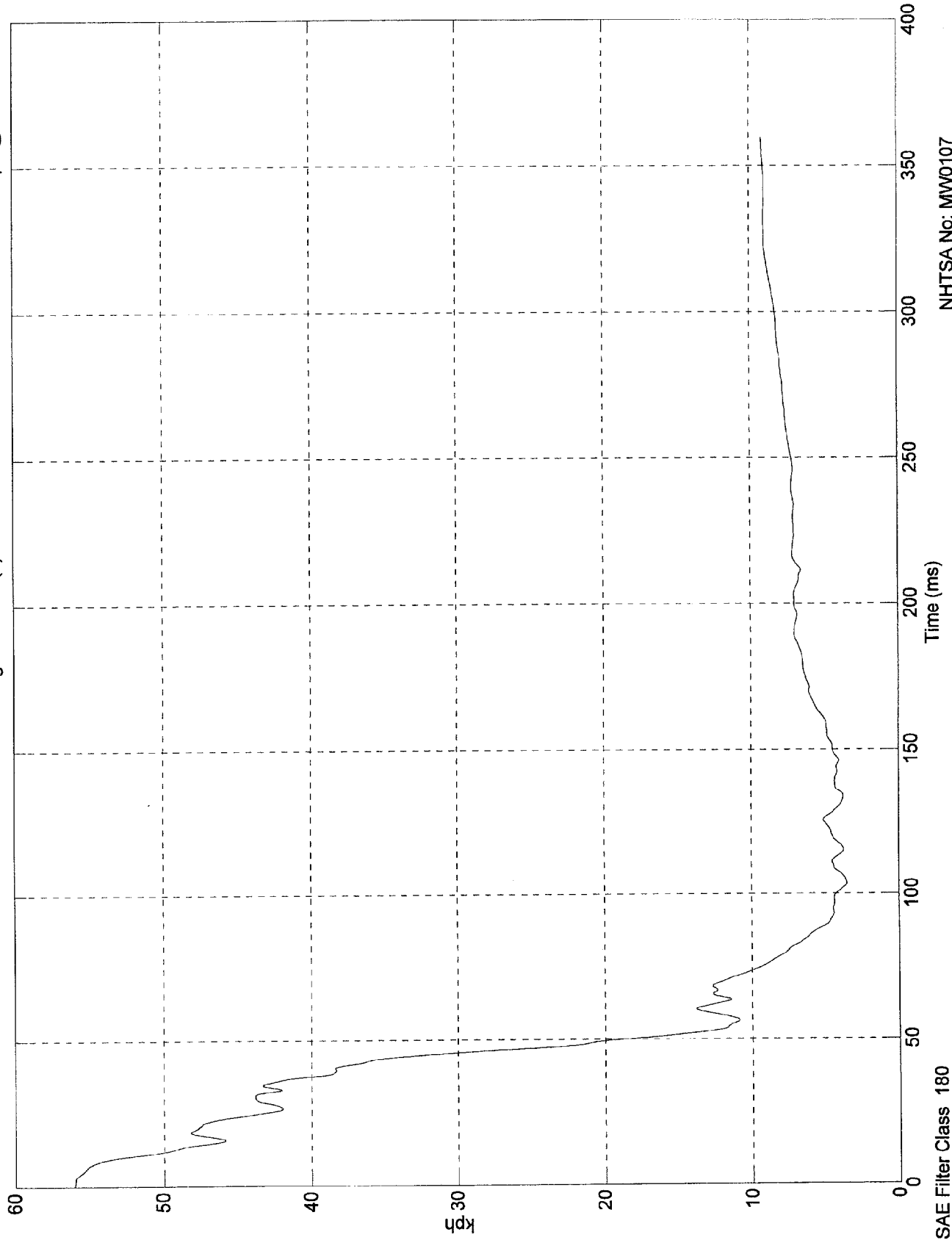


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 56 kph @ 0.20 msec
Min = 3.55 kph @ 103.40 msec

1st Integral Acc. #5(x)



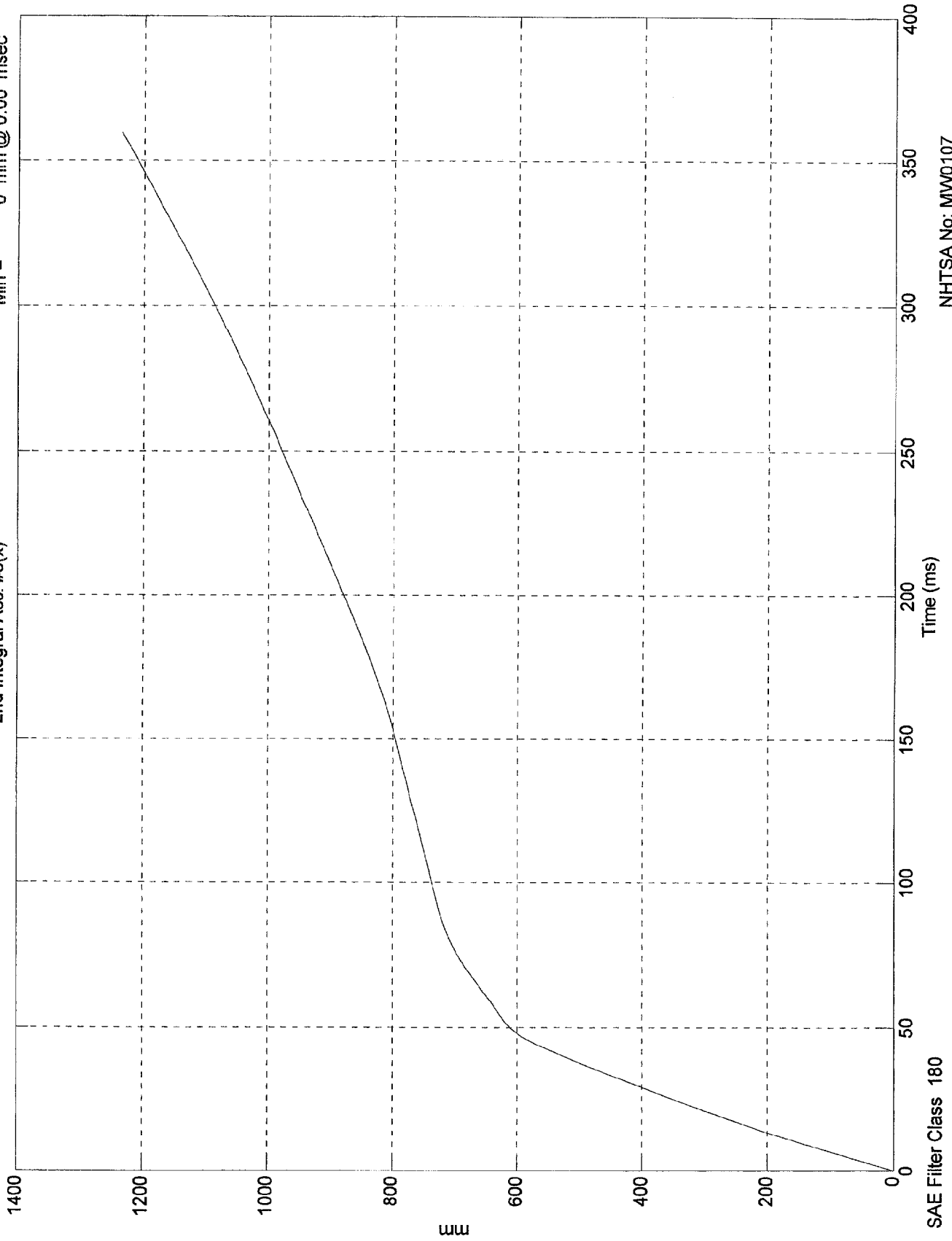
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 1.24e+003 mm @ 360.00 msec
Min = 0 mm @ 0.00 msec

2nd Integral Acc. #6(x)

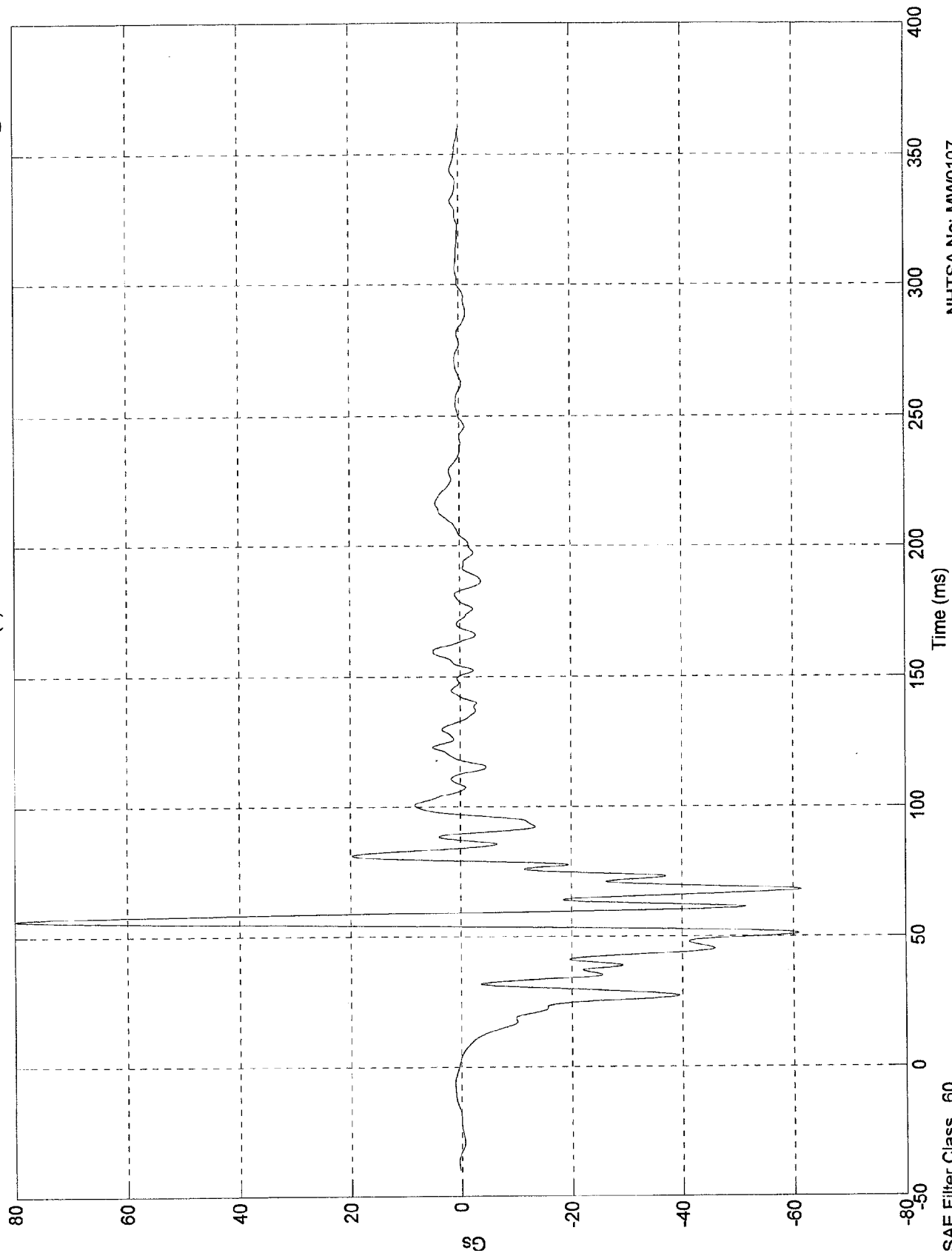


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 79.8 Gs @ 56.20 msec
Min = -61.4 Gs @ 67.80 msec

Acc. #7(x)



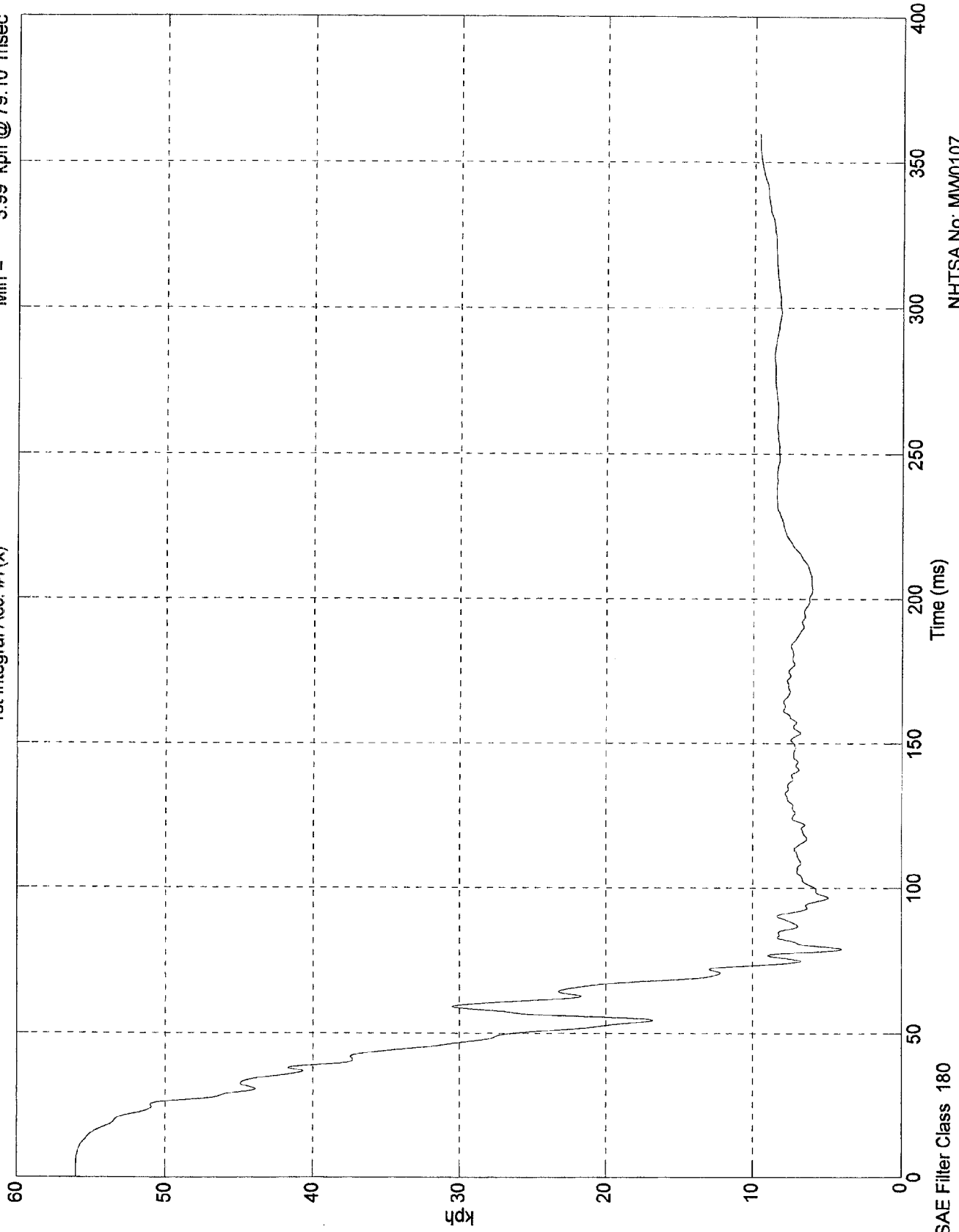
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 60

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 56 kph @ 3.20 msec
Min = 3.99 kph @ 79.10 msec

1st Integral Acc. #7(x)

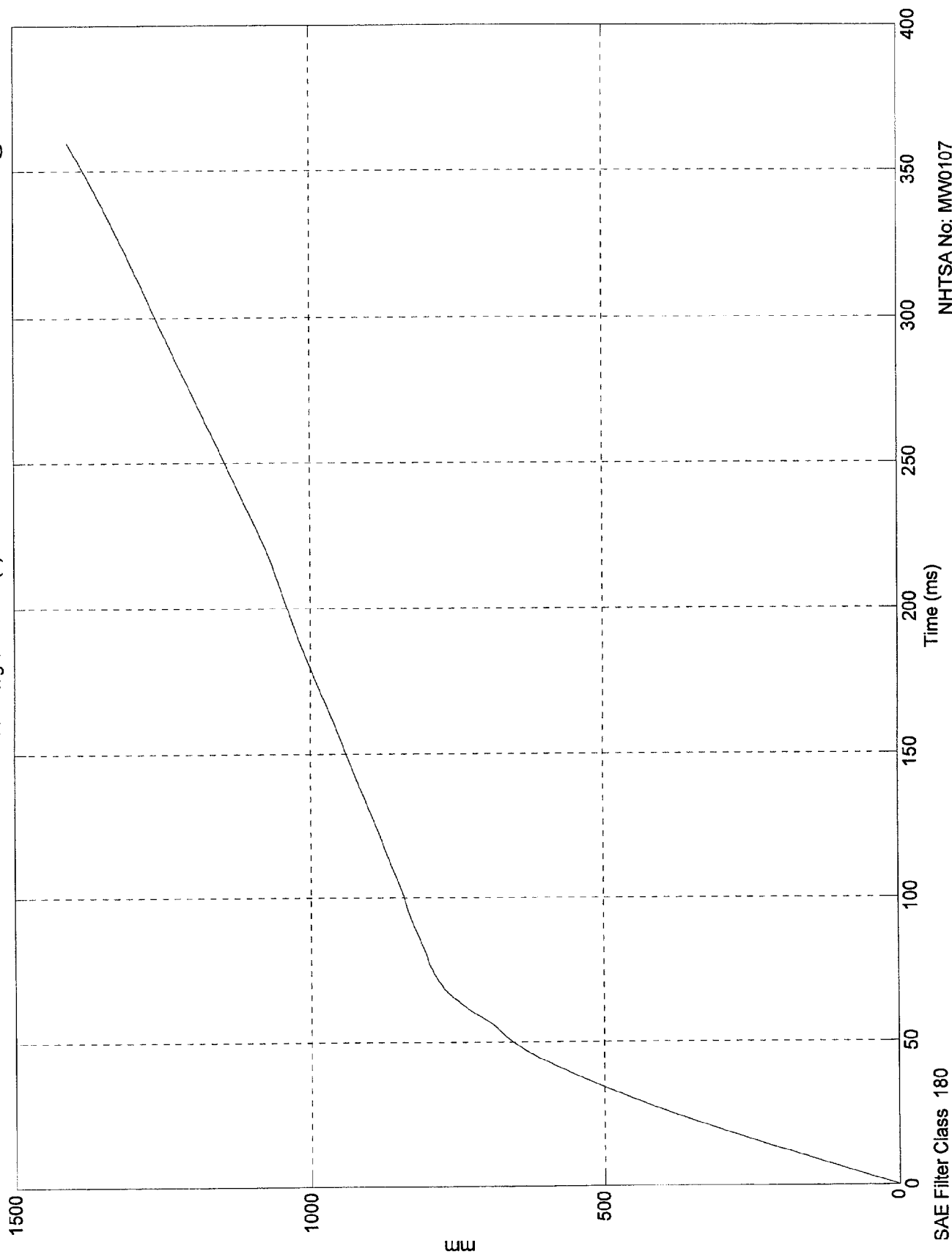


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 1.41e+003 mm @ 360.00 msec
Min = 0 mm @ 0.00 msec

2nd Integral Acc. #7(x)

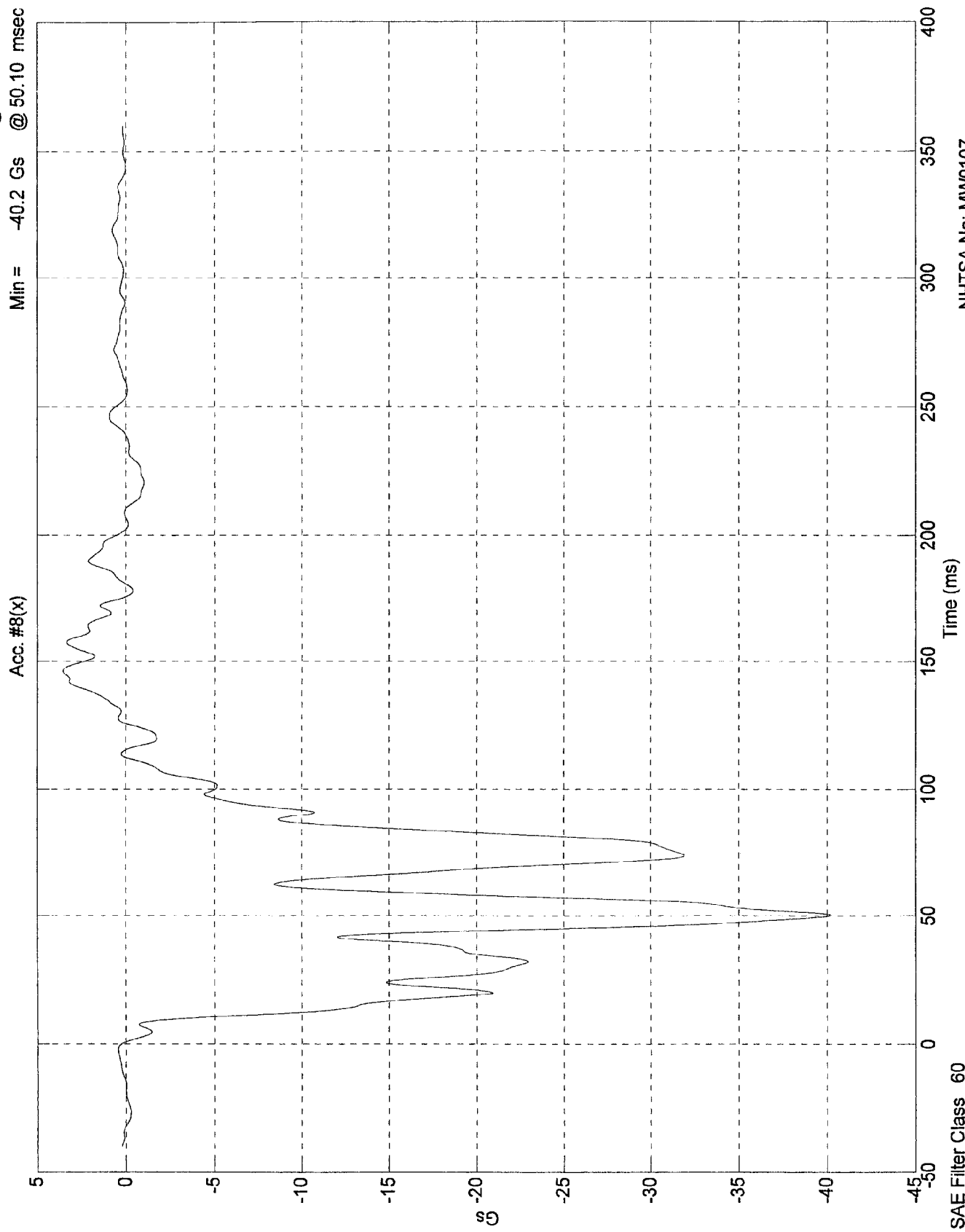


NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 3.57 Gs @ 146.20 msec
 Min = -40.2 Gs @ 50.10 msec

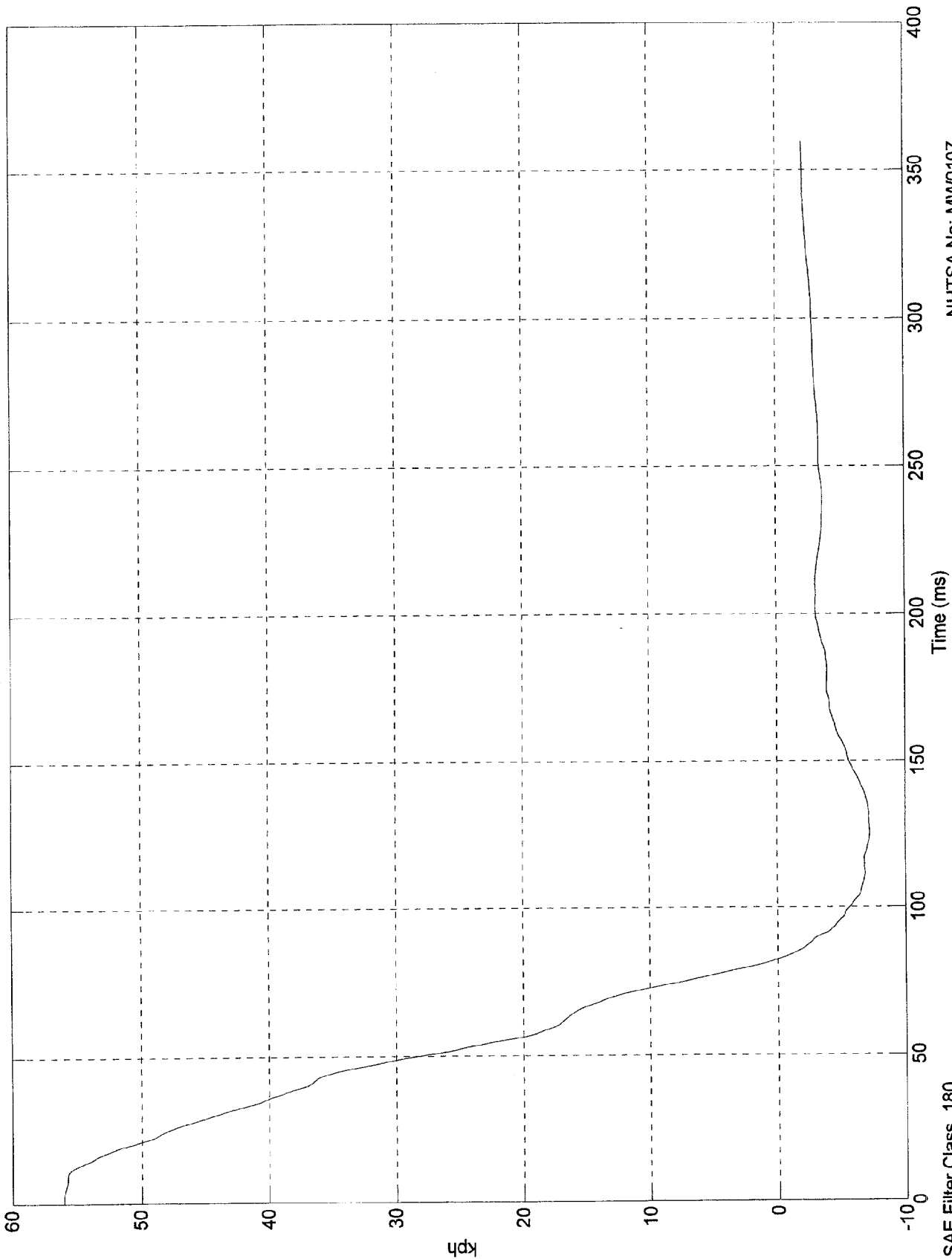


NHTSA No: MW0107
 Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 56 kph @ 1.30 msec
Min = -7.23 kph @ 125.60 msec

1st Integral Acc. #8(x)



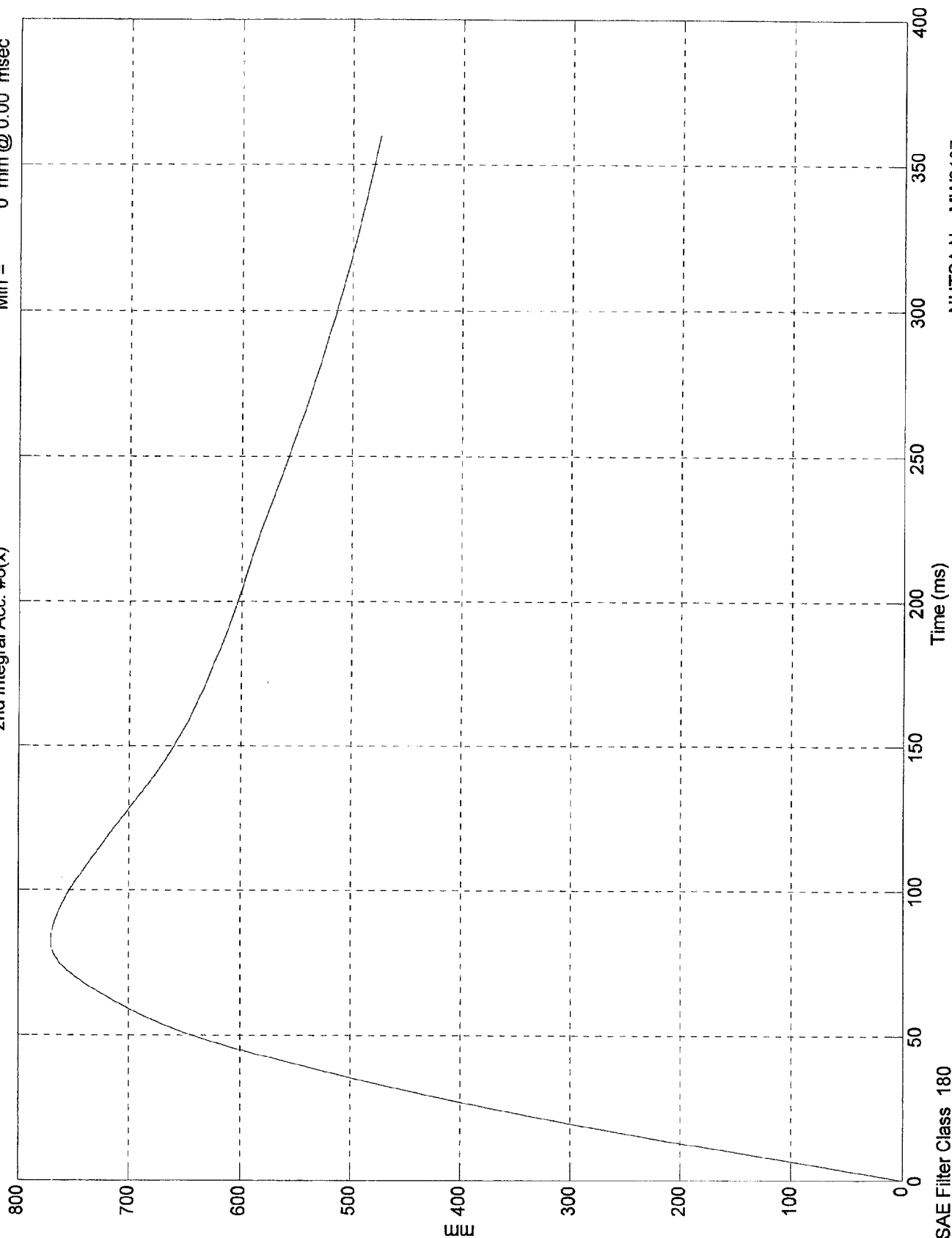
NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 770 mm @ 82.60 msec
Min = 0 mm @ 0.00 msec

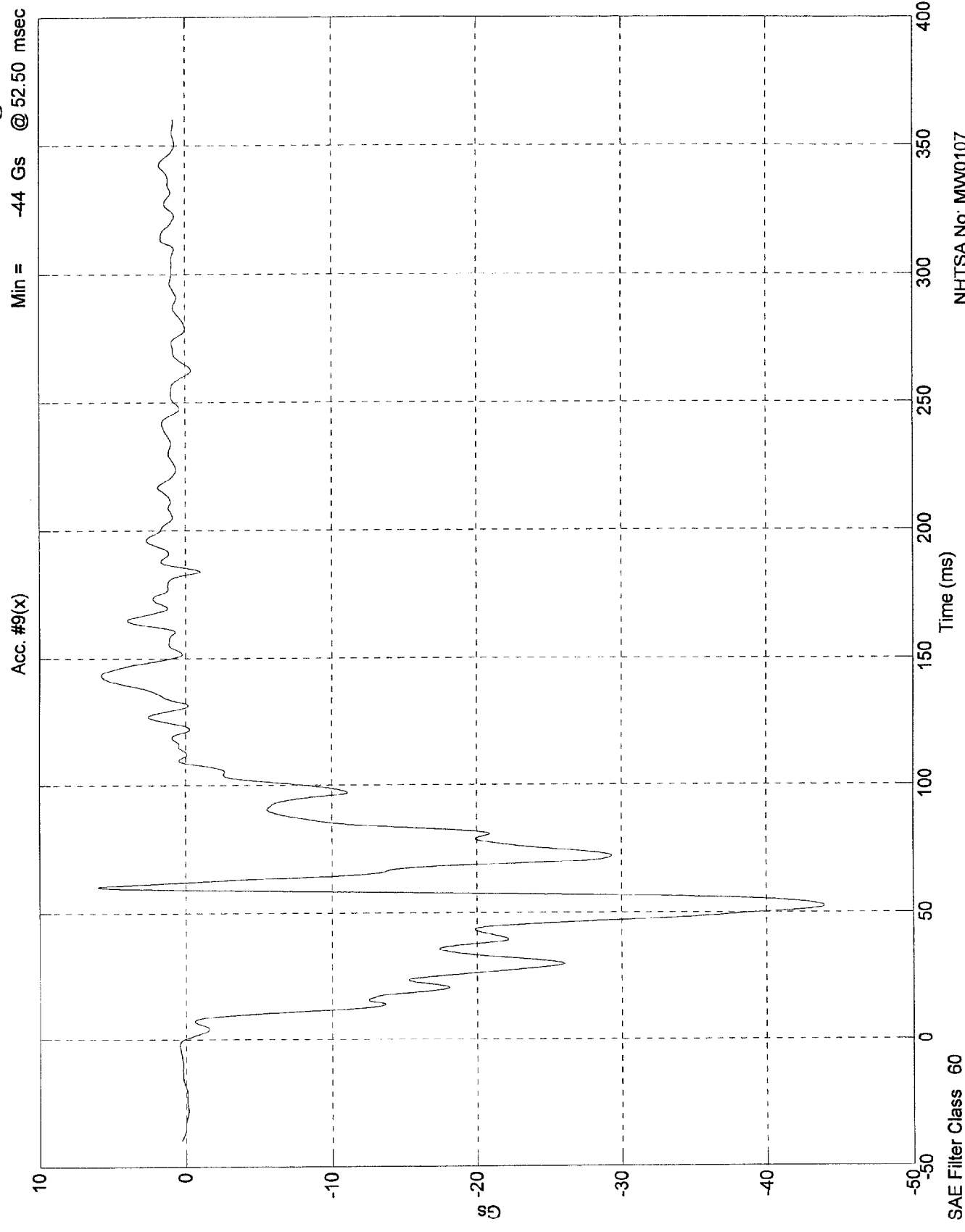
2nd Integral Acc. #8(x)



NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 5.98 Gs @ 60.30 msec
Min = -44 Gs @ 52.50 msec

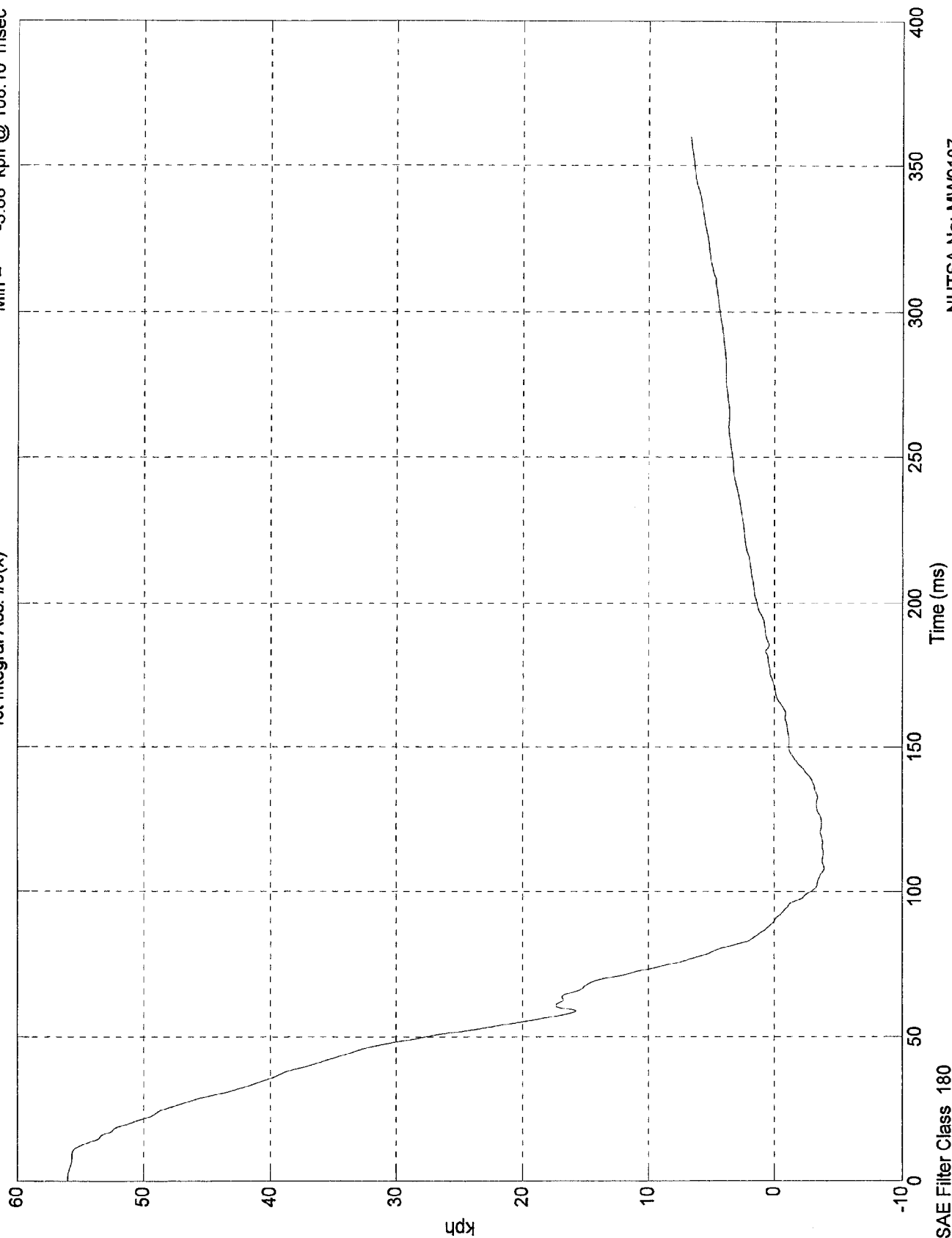


NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 56 kph @ 1.10 msec
Min = -3.88 kph @ 108.10 msec

1st Integral Acc. #9(x)



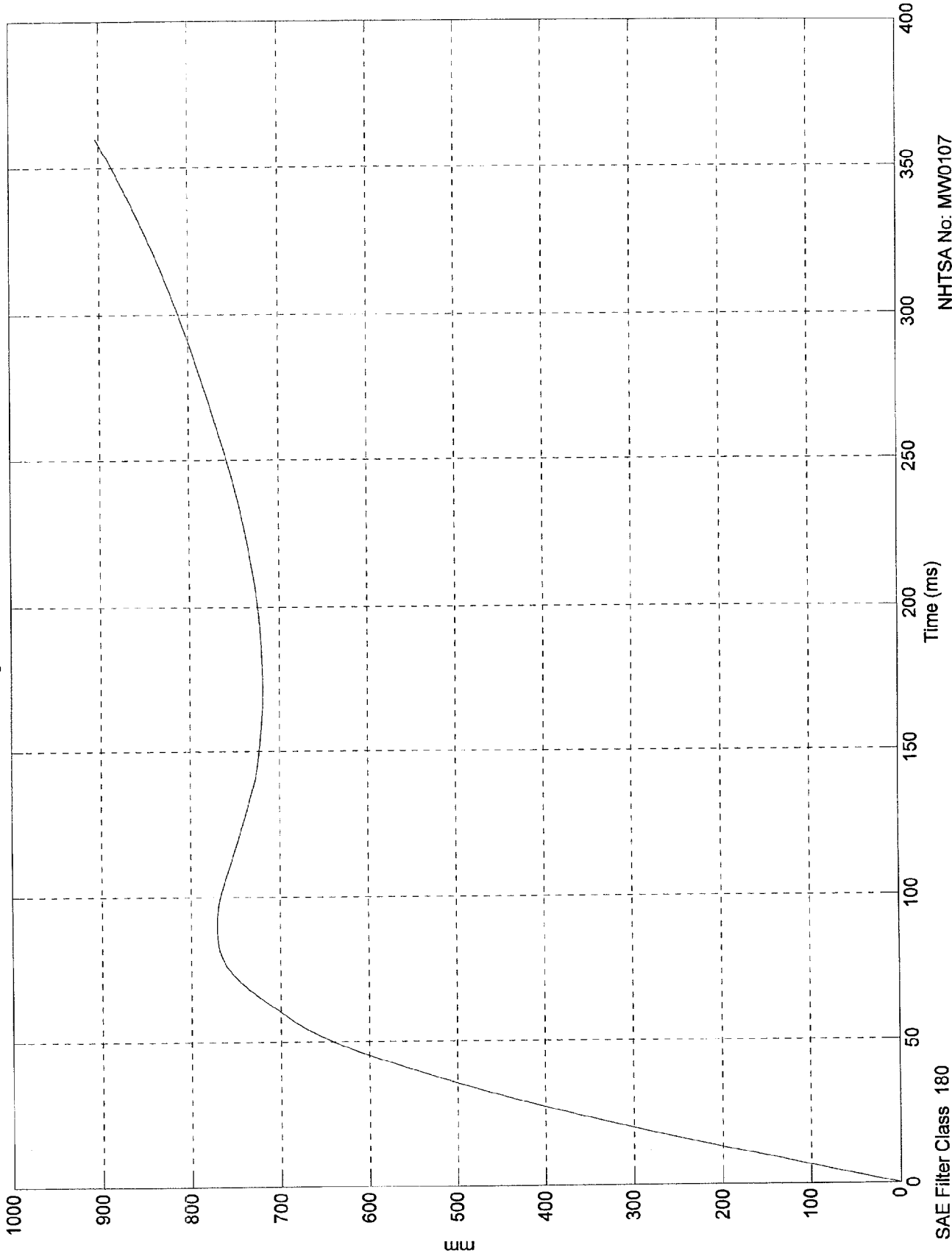
SAE Filter Class 180

NHTSA No: MW0107
Date: 09 Dec 1997

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 904 mm @ 360.00 msec
Min = 0 mm @ 0.00 msec

2nd Integral Acc. #9(x)

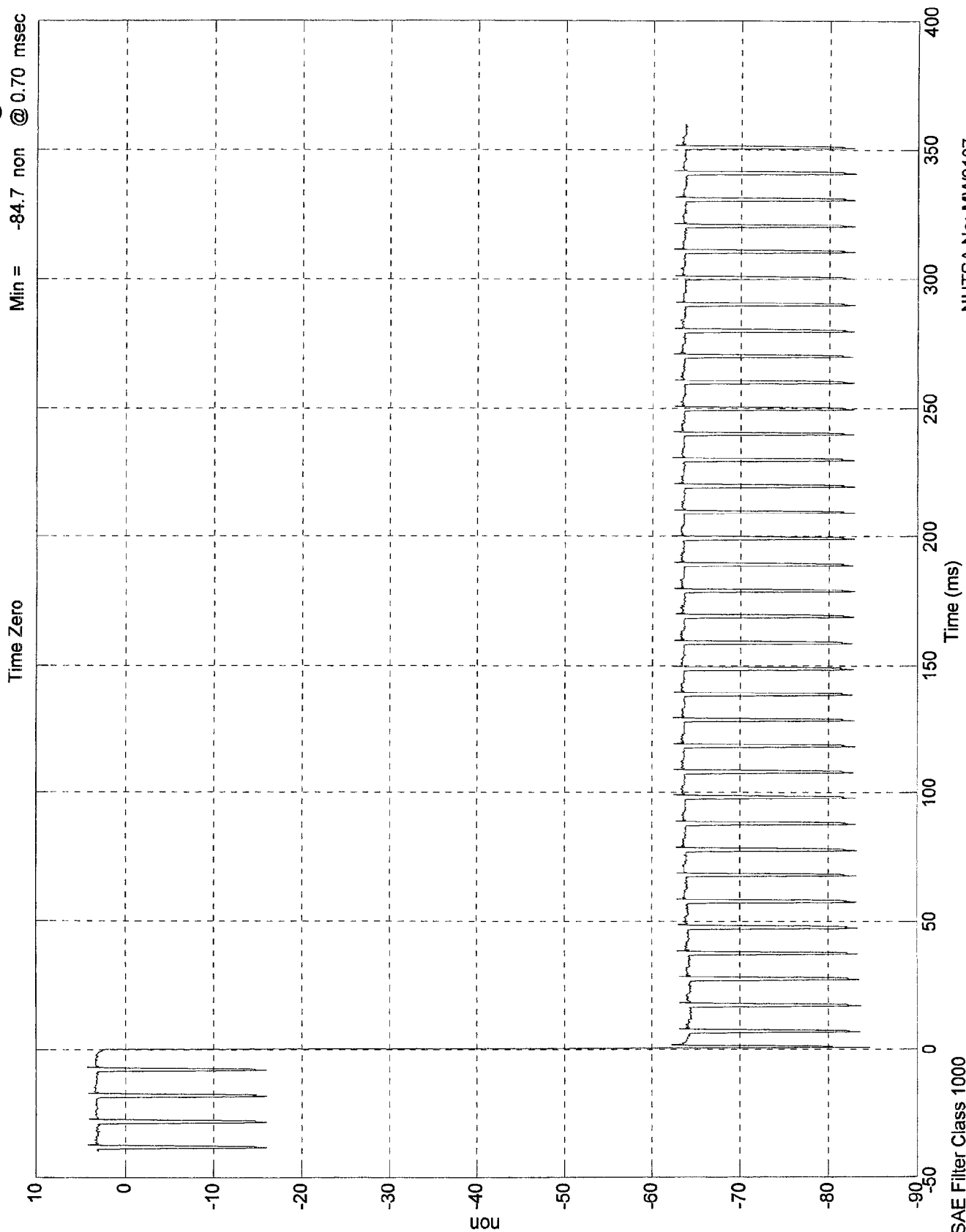


NHTSA No: MW0107
Date: 09 Dec 1997

SAE Filter Class 180

NCAP TEST #13 - 1998 CHEVROLET S10 PICKUP

Max = 4.29 non @ -7.00 msec
Min = -84.7 non @ 0.70 msec



NHTSA No: MW0107
Date: 09 Dec 1997

Appendix C
PART 572B/E 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 SRL Corporation. A summary of the test results, and Part 572 specifications are included in this Appendix.

Dummy serial numbers and certification dates are:

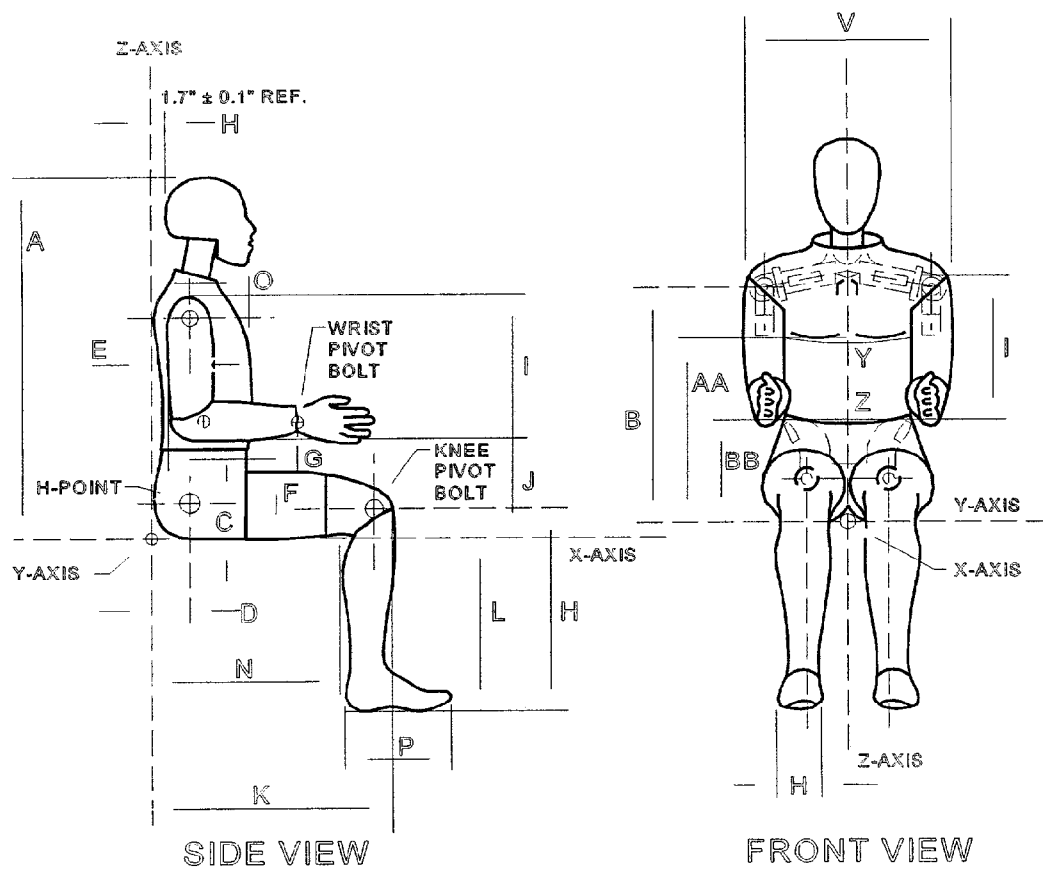
<u>Position No./Location</u>	<u>Serial No.</u>	<u>Completion Date</u>
#1/Driver	061	11/18/97
#2/Right Front Passenger	245	12/08/97

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.

DUMMY CONFIGURATION DIMENSIONS

EXTERNAL DIMENSIONS SPECIFICATIONS



NOTE: Figure is referenced to the erect seated position. The curved lumbar does not allow the Hybrid III to be positioned in a perfect erect attitude.
(REF: S572.31(A)(6))

PART 572E
HEAD DROP TEST

Dummy Serial Number 061
Calspan Sequential Test Number 3
Date 11/13/97
Workfile 061397.hdp

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	70
Relative Humidity	10% - 70%	30
Peak Resultant Acceleration	225-275 G's	241.8
Peak Lateral Acceleration	15 G's Max	3.1
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number 061
 Calspan Sequential Test Number 3
 Date 11/13/97
 Workfile 061397.nfl

6 Axis Neck Transducer

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Dcg F	70
Relative Humidity		10% - 70%	50
Impact Velocity		22.60 - 23.40 Ft/s	23.00
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	22.70
	20 ms	17.60 - 22.60 G's	19.32
	30 ms	12.50 - 18.50 G's	17.17
Max Pendulum G's Above 30 ms		29 G's Max	17.17
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	40.25
D Plane Rotation	Max	64 - 78 Deg	65.21
	Time	57 - 64 ms	57.50
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	71.80
	Time	47 - 58 ms	52.13
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	117.38
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	97.38

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number 061
 Calspan Sequential Test Number 3
 Date 11/14/97
 Workfile 061397.nex

6 Axis Neck Transducer

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	70
Relative Humidity		10% - 70%	50
Impact Velocity		19.50 - 20.30 Ft/s	19.70
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	19.32
	20 ms	14.00 - 19.00 G's	17.18
	30 ms	11.00 - 16.00 G's	13.79
Max Pendulum G's Above 30 ms		22 G's Max	13.79
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	41.13
D Plane Rotation	Max	81 - 106 Deg	90.51
	Time	72 - 82 ms	75.38
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-41.78
	Time	65 - 79 ms	71.13
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	162.50
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	141.13

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 061
Calspan Sequential Test Number 3
Date 11/17/97
Workfile 061397.th3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	71
Relative Humidity	10% - 70%	35
Pendulum Velocity	21.6 - 22.4 Ft/s	22.00
Maximum Deflection	2.50 - 2.86 in	2.50
Maximum Resistive Force	1160 - 1325 Lbs	1307.12
Internal Hysteresis	69 - 85 %	73.3

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 061
Calspan Sequential Test Number 3
Date 11/18/97
Workfile 061397

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	71
Relative Humidity	10% - 70 %	35
Probe Velocity	6.8 - 7.0 Ft/s	6.90
Peak Knee Impact Force	1060 - 1300 Lbs	1114.0
RIGHT KNEE		
Temperature	66 - 78 Deg F	71
Relative Humidity	10% - 70 %	35
Probe Velocity	6.8 - 7.0 Ft/s	6.90
Peak Knee Impact Force	1060 - 1300 Lbs	1167.0

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 061
Calspan Sequential Test Number 3
Date 11/17/97

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			71
Relative Humidity			35
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	39.4
Waist Circumference	Z	32.9 - 34.1 in	33.5
Chest Depth	O	8.4 - 9.0 in	8.5
H-Point Height	C	3.3 - 3.5 in	3.4
H-Point from Backline	D	5.3 - 5.5 in	5.4
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Total Sitting Height	A	34.6 - 35.0 in	34.8
Thigh Clearance	F	5.5 - 6.1 in	6.1
Buttock Knee Length	K	22.8 - 23.8 in	23.3
Buttock Popliteal Length	N	17.8 - 18.8 in	18.3
Popliteal Height	L	16.9 - 17.9 in	17.7
Knee Pivot Height	M	19.1 - 19.7 in	19.4
Foot Length	P	9.9 - 10.5 in	10.1
Foot Breadth	W	3.6 - 4.2 in	3.8
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.5
Shoulder Breadth	V	16.6 - 17.2 in	16.8
Shoulder Pivot Height	B	19.9 - 20.5 in	20.1
Elbow Rest Height	J	7.5 - 8.3 in	7.7
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.4
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.6

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
HEAD DROP TEST

Dummy Serial Number 245
Calspan Sequential Test Number 6
Date 12/04/97
Workfile 245697.hdp

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	70
Relative Humidity	10% - 70%	32
Peak Resultant Acceleration	225-275 G's	240.8
Peak Lateral Acceleration	15 G's Max	13.2
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number 245
 Calspan Sequential Test Number 6
 Date 12/05/97
 Workfile 245697.nfl

6 Axis Neck Transducer

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	70
Relative Humidity		10% - 70 %	30
Impact Velocity		22.60 - 23.40 Ft/s	23.18
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	24.17
	20 ms	17.60 - 22.60 G's	20.50
	30 ms	12.50 - 18.50 G's	14.08
Max Pendulum G's Above 30 ms		29 G's Max	14.08
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	41.88
D Plane Rotation	Max	64 - 78 Deg	73.14
	Time	57 - 64 ms	60.13
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	68.43
	Time	47 - 58 ms	55.75
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	120.00
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	98.63

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number 245
 Calspan Sequential Test Number 6
 Date 12/05/97
 Workfile 245697.nex

6 Axis Neck Transducer

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	70
Relative Humidity		10% - 70%	50
Impact Velocity		19.50 - 20.30 Ft/s	19.76
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	18.25
	20 ms	14.00 - 19.00 G's	16.94
	30 ms	11.00 - 16.00 G's	14.89
Max Pendulum G's Above 30 ms		22 G's Max	14.89
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	41.75
D Plane Rotation	Max	81 - 106 Deg	90.70
	Time	72 - 82 ms	74.13
Mornent About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-51.90
	Time	65 - 79 ms	70.13
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	148.38
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	134.00

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 245
Calspan Sequential Test Number 6
Date 12/05/97
Workfile 245697.th3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70
Relative Humidity	10% - 70%	30
Pendulum Velocity	21.6 - 22.4 Ft/s	21.73
Maximum Deflection	2.50 - 2.86 in	2.66
Maximum Resistive Force	1160 - 1325 Lbs	1244.68
Internal Hysteresis	69 - 85 %	74.4

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 245
Calspan Sequential Test Number 6
Date 12/08/97
Workfile 245697

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	70
Relative Humidity	10% - 70%	50
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1190.0
RIGHT KNEE		
Temperature	66 - 78 Deg F	70
Relative Humidity	10% - 70%	50
Probe Velocity	6.8 - 7.0 Ft/s	6.90
Peak Knee Impact Force	1060 - 1300 Lbs	1252.0

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 245
Calspan Sequential Test Number 6
Date 12/05/97

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70
Relative Humidity			30
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	39.2
Waist Circumference	Z	32.9 - 34.1 in	33.7
Chest Depth	O	8.4 - 9.0 in	8.4
H-Point Height	C	3.3 - 3.5 in	3.4
H-Point from Backline	D	5.3 - 5.5 in	5.4
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Total Sitting Height	A	34.6 - 35.0 in	34.8
Thigh Clearance	F	5.5 - 6.1 in	6.0
Buttock Knee Length	K	22.8 - 23.8 in	23.4
Buttock Popliteal Length	N	17.8 - 18.8 in	18.4
Popliteal Height	L	16.9 - 17.9 in	17.5
Knee Pivot Height	M	19.1 - 19.7 in	19.2
Foot Length	P	9.9 - 10.5 in	10.2
Foot Breadth	W	3.6 - 4.2 in	3.8
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.6
Shoulder Breadth	V	16.6 - 17.2 in	16.8
Shoulder Pivot Height	B	19.9 - 20.5 in	20.2
Elbow Rest Height	J	7.5 - 8.3 in	8.0
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.2
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.6

Remarks:

Laboratory Technician: B. Swiecicki

Appendix D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 061)	Serial #	Manufacturer	Calibration	
			Last	Next
Head				
X	C14883	ENDEVCO	8/97	2/98
Y	C14972	ENDEVCO	8/97	2/98
Z	C15018	ENDEVCO	8/97	2/98
Chest				
X	AL6C4	ENDEVCO	8/97	2/98
Y	AE8W7	ENDEVCO	8/97	2/98
Z	A57G	ENDEVCO	8/97	2/98
Right Femur Load Cell	952	GSE	9/97	3/98
Left Femur Load Cell	951	GSE	9/97	3/98
Neck Load Cell	269	DENTON	10/97	4/98
Y	269	DENTON	10/97	4/98
Z	269	DENTON	10/97	4/98
Neck Moment	269	DENTON	10/97	4/98
Y	269	DENTON	10/97	4/98
Z	269	DENTON	10/97	4/98
Chest Deflection Gauge	061	HUMANOID	11/97	5/98
Hybrid III Use Only				
Lap Belt Load Cells	706	LEBOW	6/97	12/97
Shoulder Belt Load Cells	707	LEBOW	6/97	12/97
Spool-Out Potentiometer	M7	MAGNETEK	9/97	3/98
Belt Stretch Transducer	E1	CALSPAN	9/97	3/98

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

(6 Month Calibration Minimum)

DRIVER DUMMY	Serial #	Manufacturer	Calibration	
			Last	Next
Head				
X (R)	A13937	ENDEVCO	10/97	4/98
Y (R)	A13517	ENDEVCO	10/97	4/98
Z (R)	A13941	ENDEVCO	10/97	4/98
Chest				
X (R)	A13811	ENDEVCO	10/97	4/98
Y (R)	A13828	ENDEVCO	10/97	4/98
Z (R)	A13883	ENDEVCO	10/97	4/98
Pelvic				
X	AC2P5	ENDEVCO	8/97	2/98
Y	ADL50	ENDEVCO	8/97	2/98
Z	A59J	ENDEVCO	8/97	2/98
Left Upper Tibia	Mx	DENTON	10/97	4/98
Left Upper Tibia	My	DENTON	10/97	4/98
Left Lower Tibia	Fy	DENTON	10/97	4/98
Left Lower Tibia	Fz	DENTON	10/97	4/98
Left Lower Tibia	Mx	DENTON	10/97	4/98
Right Upper Tibia	Mx	DENTON	10/97	4/98
Right Upper Tibia	My	DENTON	10/97	4/98
Right Lower Tibia	Fy	DENTON	10/97	4/98
Right Lower Tibia	Fz	DENTON	10/97	4/98
Right Lower Tibia	Mx	DENTON	10/97	4/98

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

(6 Month Calibration Minimum)

DRIVER DUMMY	Serial #	Manufacture	Calibration	
			Last	Next
Left Foot Front Z	A14058	ENDEVCO	9/97	3/98
Left Foot Rear X	A13929	ENDEVCO	9/97	3/98
Left Foot Rear Z	A14150	ENDEVCO	9/97	3/98
Right Foot Front Z	A14124	ENDEVCO	9/97	3/98
Right Foot Rear X	A14181	ENDEVCO	9/97	3/98
Right Foot Rear Z	A14126	ENDEVCO	9/97	3/98

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 245)	Serial #	Manufacturer	Calibration	
			Last	Next
Head				
X	ADL98	ENDEVCO	8/97	2/98
Y	AE8K0	ENDEVCO	8/97	2/98
Z	ADMB6	ENDEVCO	8/97	2/98
Chest				
X	A26A	ENDEVCO	8/97	2/98
Y	A27A	ENDEVCO	8/97	2/98
Z	A51A	ENDEVCO	8/97	2/98
Right Femur Load Cell	232	GSE	9/97	3/98
Left Femur Load Cell	231	GSE	9/97	3/98
Neck Load Cell	440	DENTON	8/97	2/98
Y	440	DENTON	8/97	2/98
Z	440	DENTON	8/97	2/98
Neck Moment	440	DENTON	8/97	2/98
Y	440	DENTON	8/97	2/98
Z	440	DENTON	8/97	2/98
Chest Deflection Gauge	245	HUMANOID	10/97	4/98
Hybrid III Use Only				
Lap Belt Load Cells	635	LEBOW	6/97	12/97
Shoulder Belt Load Cells	711	LEBOW	6/97	12/97
Spool-Out Potentiometer	M11	MAGNETEK	9/97	3/98
Belt Stretch Transducer	E4	CALSPAN	9/97	3/98

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY	Serial #	Manufacturer	Calibration	
			Last	Next
Head				
X (R)	A13829	ENDEVCO	11/97	5/98
Y (R)	AC8F6	ENDEVCO	8/97	2/98
Z (R)	ACCW0	ENDEVCO	8/97	2/98
Chest				
X (R)	AHRC9	ENDEVCO	8/97	2/98
Y (R)	AC7W8	ENDEVCO	8/97	2/98
Z (R)	ACC06	ENDEVCO	8/97	2/98
Pelvic				
X	AL6N5	ENDEVCO	8/97	2/98
Y	AL6R7	ENDEVCO	8/97	2/98
Z	A12C	ENDEVCO	8/97	2/98
Left Upper Tibia	Mx	DENTON	10/97	4/98
Left Upper Tibia	My	DENTON	10/97	4/98
Left Lower Tibia	Fy	DENTON	10/97	4/98
Left Lower Tibia	Fz	DENTON	10/97	4/98
Left Lower Tibia	Mx	DENTON	10/97	4/98
Right Upper Tibia	Mx	DENTON	10/97	4/98
Right Upper Tibia	My	DENTON	10/97	4/98
Right Lower Tibia	Fy	DENTON	10/97	4/98
Right Lower Tibia	Fz	DENTON	10/97	4/98
Right Lower Tibia	Mx	DENTON	10/97	4/98

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY	Serial #	Manufacture	Calibration	
			Last	Next
Left Foot Front Z	A13011	ENDEVCO	9/97	3/98
Left Foot Rear X	A13506	ENDEVCO	9/97	3/98
Left Foot Rear Z	A12268	ENDEVCO	9/97	3/98
Right Foot Front Z	J18418	ENDEVCO	8/97	2/98
Right Foot Rear X	AEWK1	ENDEVCO	8/97	2/98
Right Foot Rear Z	AKD92	ENDEVCO	8/97	2/98

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS

(6 Month Calibration Minimum)

	Serial #	Manufacturer	Calibration	
			Last	Next
Left Seat Rear Crossmember	D85	ICS	9/97	3/98
Right Rear Seat Crossmember	Y89	ICS	8/97	2/98
Top of Engine	D78	ICS	10/97	4/98
Bottom of Engine	H18	ICS	9/97	3/98
Left Disc Brake Caliper	Y25	CEC	10/97	4/98
Right Disc Brake Caliper	X91	CEC	10/97	4/98
Instrument Panel	E02	CEC	6/97	12/97
Left Seat Rear Crossmember (R)	D86	ICS	9/97	3/98
Right Seat Rear Crossmember (R)	X33	ICS	9/97	3/98