

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

NISSAN MOTOR COMPANY, LTD.
1993 NISSAN PICKUP

NHTSA NO. MP5202

MOBILITY SYSTEMS AND EQUIPMENT COMPANY
9920 LA CIENEGA BOULEVARD SUITE 708
INGLEWOOD, CALIFORNIA 90301



DECEMBER 10, 1992

FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF MARKET INCENTIVES
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Prepared by: Dr. Anil V. Khadilkar, Program Manager

Mr. Brian O'Keefe, Test Engineer

Mr. Jerry Kratzke, Test Engineer

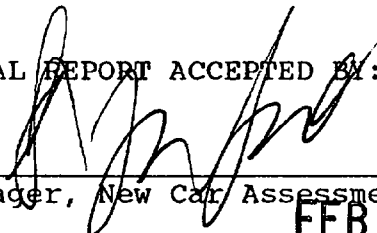
Mr. Patrick Puzzuto, Instrumentation

MOBILITY SYSTEMS AND EQUIPMENT COMPANY

Approved by: 
Dr. Anil V. Khadilkar

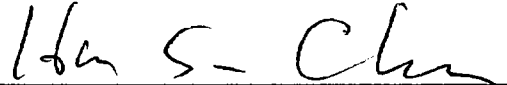
Date: 10 December 1992

FINAL REPORT ACCEPTED BY:


Manager, New Car Assessment Program

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COTR, New Car Assessment Program

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Technical Report Documentation Page

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16. Abstract A 35 MPH Frontal barrier impact test using a load cell barrier was conducted on a 1993 Nissan Pickup at the Mobility Systems and Equipment Company (MSE) crash test facility in San Bernadino, CA, on November 10, 1992. The impact velocity was 56.28 km/h, and the ambient temperature at the barrier face at the time of impact was 18 degrees C. The vehicle's maximum post-test static crush was 470 mm. Occupant injury response data summary is as follows: <table border="1"> <thead> <tr> <th>Injury Criteria Threshold Value</th> <th>Driver Dummy</th> <th>Passenger Dummy</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criterion HIC = 1000</td> <td>1009.3</td> <td>385.8</td> </tr> <tr> <td>Chest Resultant Peak 60 G's (3 msec clip)</td> <td>55.0</td> <td>49.9</td> </tr> <tr> <td>Femur Force Left 10009 N Right</td> <td>4318.1 2217.4</td> <td>2343.4 2779.9</td> </tr> </tbody> </table> Type of occupant restraint system: 3 point continuous webbing manual active belt system at each front outboard seating position.						Injury Criteria Threshold Value	Driver Dummy	Passenger Dummy	Head Injury Criterion HIC = 1000	1009.3	385.8	Chest Resultant Peak 60 G's (3 msec clip)	55.0	49.9	Femur Force Left 10009 N Right	4318.1 2217.4	2343.4 2779.9
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SECTION 1

PURPOSE AND TEST PROCEDURE

This 35 mph frontal barrier impact test is a part of the FY'93 Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-90-D-32121. 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 30 mph (48.27 km/h) FMVSS 208/212/219/301-75 requirements.

This 35 mph (56.32 km/h) frontal barrier impact test was conducted in accordance with the Office of Market Incentives (OMI) Laboratory Indicant Test Procedure, dated 01 January 1990.

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SECTION 2

SUMMARY OF FRONTAL BARRIER IMPACT TEST

A barrier was impacted by a 1993 Nissan Pickup, NHTSA No. MP5202, at a velocity of 56.28 km/h. The frontal impact test was conducted by Mobility Systems and Equipment Company (MSE) on 10 November 1992. The general test and vehicle description information are presented in Tables 1 and 2. Pretest and posttest photographs of the test vehicle and dummies are shown in Appendix A.

Two (2) Part 572 50th percentile adult male Anthropomorphic Test Devices (ATDs) were placed in the driver and right front passenger designated seating positions (DSP's) according to the NHTSA test requirements.

The ATD's were instrumented with head and chest triaxial accelerometers and right/left femur load cells. In addition, load cells were placed on the driver's and passenger's lap and shoulder belts to measure dummy upper torso and pelvic section belt loading. A summary of dummy configuration and performance verification test data is presented in Appendix C.

The frontal impact event was documented by one (1) real time camera and fifteen (15) high-speed cameras. The camera location data are presented in Table 7.

Sixty-nine (69) channels of crash parameters were recorded using two (2) FM tape recorders and three (3) direct analog to digital acquisition unit and data acquisition computers. Time history plots of all recorded channels are presented in Appendix B.

2.1 GENERAL COMMENTS

The 1993 Nissan Pickup, was equipped with a 180.6 cubic in, 4 cylinder engine and 5-speed manual transmission. The test weight of the 1993 Nissan Pickup, with two (2) 50th percentile male dummies, instrumentation, cameras and ballast was 1549 kg.

The 1993 Nissan Pickup, was involved in a frontal barrier crash at a velocity of 56.28 km/h.

The maximum static crush for the vehicle of 470 mm occurred at the centerline of the bumper. The windshield was slightly cracked, but otherwise the vehicle glazing remained intact. Both the driver's and passenger's front doors were opened without the aid of tools.

The driver ATD's face hit the steering wheel center hub. and the top of the rim. The top of his head hit the top of the steering wheel. The lower rim of the steering wheel struck the driver in the upper left abdomen. The driver ATD had a HIC value of 1009 the maximum chest acceleration (resultant clipped) was

55.0 g's and the maximum femur loads were 4318 (left) and 2217 (right) Newtons.

The passenger ATD's head had no contact and his chin contacted his chest. Both of his knees hit the glove box door. The HIC value for the passenger ATD was 386, the maximum chest acceleration (resultant clipped) was 50 g's and the maximum femur loads were 2343 (left) and 2780 (right) Newtons.

Seat belt spoolout, measured by high-speed film analysis, was 63 mm for the driver and 51 mm for the passenger.

There were no apparent visual indications of any standard solvent leaks, windshield periphery separations or windshield intrusion.

Appendix D shows occupant restraint system instructions by the manufacturer and Appendix E shows the instrumentation and calibration data.

DATA TABLE No. 1
TEST VEHICLE DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1993/Nissan/Pickup
VEHICLE NHTSA No.: M P 5 2 0 2; VIN: 1 N 6 5 D 1 1 S 9 P C 3 1 6 6 5 5 2
VEHICLE BODY COLOR: Silver; MONTH AND YEAR OF MANUFACTURE: 05/92
ENGINE: 4 Cylinders; 180.6 cu in; 2.4 Liters; 2960 cc
X Gas; Diesel; Turbocharged
PLACEMENT: X Longitudinal; Transverse (Lateral)
TRANSMISSION: 5 Speed; X Manual; Automatic; Overdrive
FINAL DRIVE: Front Wheel Drive; X Rear Wheel Drive; Four Wheel Drive
DATE VEHICLE AVAILABLE FOR 35 MPH CRASH TESTING: 09/25/92
ODOMETER READING: 161 km; OPTIONS: A/C; P/S; P/Window;
 Tilt Whl.; Cruise Control

DATA RECORD FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): 180 kPa Front; 240 kPa Rear
Recommended Tire Size: P195/75R14
Tires on Vehicle: P195/75R14; Manufacturer: Firestone
Number of Occupants: 3 Front; Rear; Third Seat; 3 TOTAL
Type of Front Seats: Bucket; X Bench; Split Bench
Type of Front Seat Back: X Fixed; Adj. Lever; Adj. Rotating Knob
Vehicle Maximum Capacity Loading: N/A kg
No. of Occupants x 68 kg: N/A kg
Cargo Capacity (Max - Occupants): 136 kg

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Right Front:	<u>370</u> kg	
Left Front:	<u>354</u> kg	Total Front: <u>724</u> kg (57% of Total)
Right Rear:	<u>286</u> kg	
Left Rear:	<u>257</u> kg	Total Rear: <u>543</u> kg (43% of Total)
		<u> </u>
		Total Weight: <u>1267</u> kg

CALCULATION OF TEST VEHICLE TARGET WEIGHT:

Total Test Vehicle Delivered Weight With Maximum Fluids:	<u>1267</u> kg
Maximum Cargo Carrying Capacity of Test Vehicle:	<u>136</u> kg *
Weight of Two Part 572 ATD's (2 * 74.5 kg):	<u>149</u> kg
TEST VEHICLE TARGET WEIGHT:	<u>1552</u> kg

* 136 kg for light trucks and MPV's

DATA TABLE No. 1 (Cont.)
TEST VEHICLE DATA

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 ATD's AND CARGO:

Right Front:	<u>410</u> kg		
Left Front:	<u>405</u> kg	Total Front:	<u>815</u> kg (53% of Total)
Right Rear:	<u>391</u> kg		
Left Rear:	<u>343</u> kg	Total Rear:	<u>734</u> kg (47% of Total)
Total Weight: <u>1549</u> kg (includes <u>18</u> kg of ballast secured in the cargo / luggage area)			

VEHICLE COMPONENTS REMOVED TO MEET TARGET WEIGHT:

1. Jack

TEST VEHICLE ATTITUDE:

As Delivered - Right Front:	<u>737</u> mm	Ready for Test - Right Front:	<u>714</u> mm
Left Front:	<u>733</u> mm	Left Front:	<u>716</u> mm
Right Rear:	<u>775</u> mm	Right Rear:	<u>743</u> mm
Left Rear:	<u>791</u> mm	Left Rear:	<u>742</u> mm

TEST VEHICLE DIMENSIONS:

Total Vehicle Length:	Right Side:	<u>4390</u> mm
	Left Side:	<u>4390</u> mm
	Centerline:	<u>4440</u> mm

Wheelbase: 2652 mm

C. G. is 1257 mm rearward of front axle centerline.

DATA TABLE No. 2
POST CRASH TEST DATA

DATE OF 35 MPH FRONTAL BARRIER IMPACT RATING TEST: 11/10/92

TIME OF TEST: 1510 Hrs; AMBIENT TEMPERATURE AT BARRIER FACE: 18° C

VEHICLE OCCUPANT COMPARTMENT TEMPERATURE: 20° C (Req. Range 19° C to 26° C)

VEHICLE WINDSHIELD MOLDING TEMPERATURE: 20° C

VEHICLE IMPACT VELOCITY: (Req. Range 55.52 to 57.13 km/h)
 Primary Speed Trap: 56.28 km/h
 Secondary Speed Trap: 56.43 km/h
 Distance from vehicle leading edge to barrier face when:
 Entering Speed Trap: 1524 mm
 Exiting Speed Trap: 305 mm

VEHICLE STATIC CRUSH:	Pretest	Posttest	Static Crush
Right Side (mm)	<u>4390</u>	<u>3950</u>	<u>440</u>
Centerline (mm)	<u>4440</u>	<u>3970</u>	<u>470</u>
Left Side (mm)	<u>4390</u>	<u>3930</u>	<u>460</u>

VEHICLE REBOUND FROM BARRIER: Right Side: 622 mm
 Centerline: 663 mm
 Left Side: 725 mm

ATD CONTACT POINTS:

	Driver ATD (ID# 830)	Pass. ATD (ID# 814)
Head	Steering Wheel Upper Rim and Center Hub	No Contact
Chest	No Contact	No Contact
Abdomen	Steering Wheel Lower Rim	No Contact
Left Femur	Instrument Panel	Glove Box Door
Right Femur	Instrument Panel	Glove Box Door

VEHICLE DOOR OPENING INFORMATION:

Door	Opened	Jammed
Right Front	Yes	No
Left Front	Yes	No
Right Rear	-	-
Left Rear	-	-

VEHICLE FRONT SEAT MOVEMENT DURING IMPACT EVENT:

Seat Cushion Shift - Driver = 0mm, Passenger = 50mm
 Seat Adjustor Failure - Driver = No, Passenger = No
 Details of Any Failure: Passenger seat cushion shifted 50 mm rearward.

OTHER NOTABLE IMPACT EFFECTS: None

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SECTION 3

OCCUPANT AND VEHICLE INFORMATION

I. OMI DATA

- Dummy Injury Criteria Data Summary
- Dummy Positioning Data
- Seat Belt Positioning Data
- Seat Belt Performance Assessment Data
- Driver Dummy to Steering Column Dimensions
- Camera Locations

II. OVR DATA

- Load Cell Barrier Data
- Vehicle Accelerometer Data

DATA TABLE No. 3
FMVSS No. 208 OCCUPANT CRASH PROTECTION DATA SHEET

VEH. YEAR/MAKE/MODEL/BODY STYLE: 1993 Nissan/Pickup

VEH. NHTSA NO.: MP5202

TEST DATE: 11/10/92

MAXIMUM ACCELERATION VALUES:	DRIVER ATD No. 830	PASSENGER ATD No. 814
Head X	-109.8	-22.3
Head Y	29.0	24.0
Head Z	77.5	47.7
HEAD RESULTANT	133.9	54.1
Chest X	-54.2	-40.3
Chest Y	-22.8	41.7
Chest Z	19.7	21.8
CHEST RESULTANT (3msec clip)	55.0	49.9
TIME INTERVAL (msec)	73.9 to 76.9	80.1 to 83.1

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	1009.3	385.8
t_1 (msec)	68.0	59.6
t_2 (msec)	104.0	95.6
Avg. Acceleration t_1 to t_2	60.1	40.9

MAXIMUM FEMUR FORCES:

Right Femur (N)	-2217.4	-2779.9
Left Femur (N)	-4318.1	-2343.4

MAXIMUM SEAT BELT FORCES:

Lap Belt (N)	9046.5	12188.0
Shoulder Belt (N)	9382.9	10228.0

MAXIMUM SEAT BELT WEBBING SPOOLOUT: BY FILM ANALYSIS

Lap/Shoulder Belt Combination	63 mm	51 mm
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DATA TABLE No. 4
TEST ATD POSITIONING DATA

PRE - IMPACT DATA:

Make / Model: Nissan Pickup
Body Style: Pickup
Model Year: 1993
Color: Silver
NHTSA No.: MP5202

DATA FROM CERTIFICATION LABEL:

Vehicle Manufacturer: Nissan
Date of Manufacture: 05/92
VIN: 1N6SD11S9PC316652
GVWR: 1998 kg
GAWR Front: 999 kg
GAWR Rear: 1155 kg

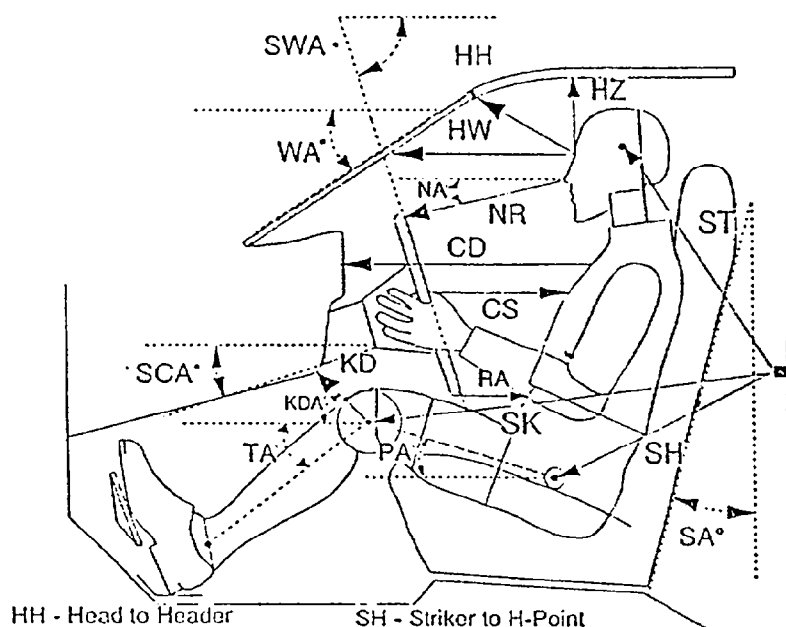
POST IMPACT DATA:

Date of Test: 11/10/92
Time: 1510 Hrs.
Temperature: 18° C
Required Impact Velocity Range: 55.52 to 57.13 km/h
Impact Velocity - Primary: 56.28 km/h
Secondary: 56.43 km/h
Seat Type: Bench
Adjustor Type: Fixed
Bucket Seat Back Type: Fixed Head Restraint

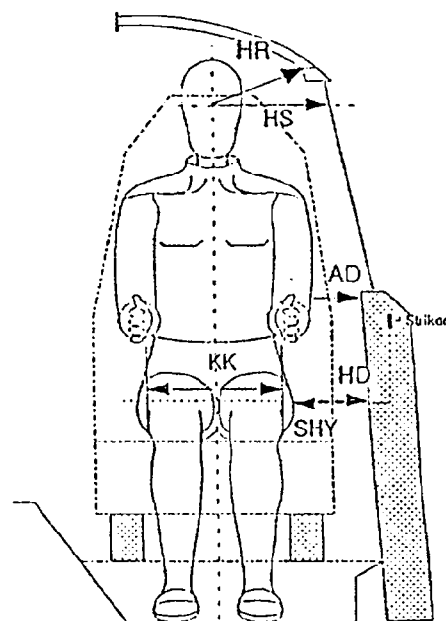
ATD POSITIONING TECHNICIANS:

Brian O'Keefe, Levi Navarro

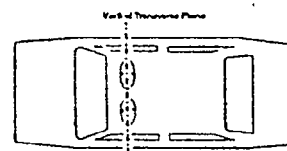
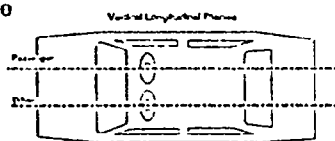
DATA TABLE No. 4 (Cont.)
TEST ATD POSITIONING DATA



HH - Head to Header
HW - Head to Windshield
HZ - Head to Roof
NR - Nose to Rim
CS - Steering Wheel to Chest
CD - Chest to Dash
RA - Rim to Abdomen
KD/KDR - Knee to Dash
KDA - Knee to Dash Angle
SH - Striker to H-Point
SK - Striker to Knee
ST - Striker to Head
NA - Nose to Rim Angle
TA - Tibial Angle
PA - Pelvic Angle
SA - Seat Back Angle
SCA - Steering Column Angle
SWA - Steering Wheel Angle
WA - Windshield Angle



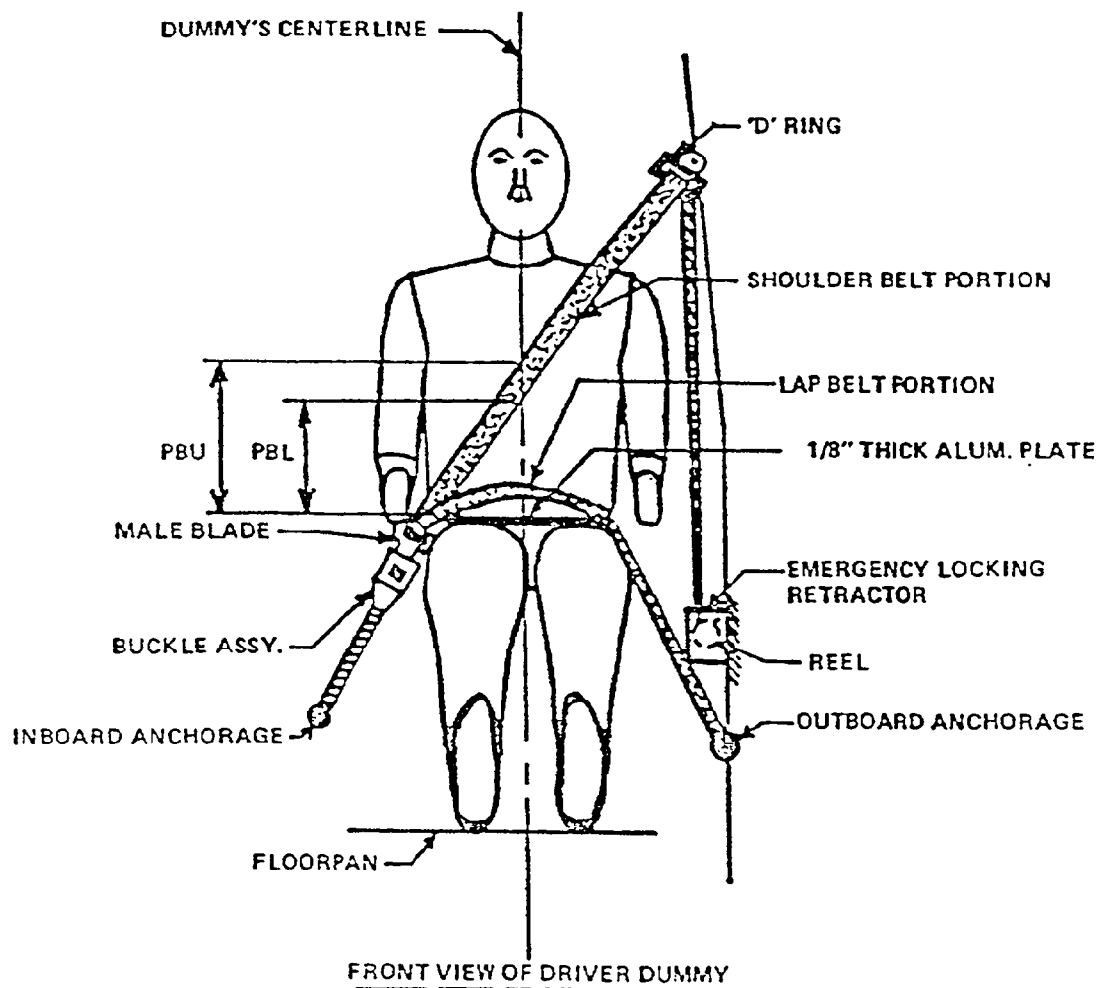
HR - Head to Side Header
HS - Head to Side Window
AD - Arm to Door
HD - H-Point to Door
SHY - Striker to H-Point (Y Dir.)
KK - Knee to Knee



DATA TABLE No. 4 (Cont.)
TEST ATD POSITIONING DATA

Measurement	Driver (Serial No. 830)		Passenger (Serial No. 814)	
	Length (mm)	Angle (Degrees)	Length (mm)	Angle (Degrees)
WA	---	35	---	---
SWA	---	64	---	---
SCA	---	22	---	---
HZ	170	90	170	90
HH	425	---	420	---
HW	525	0	560	0
HR	230	---	235	---
NR	430	18	---	---
CD	605	---	645	---
CS	350	0	---	---
RA	200	0	---	---
KDL	230	17	255	---
KDR	230	---	270	35
PA	---	15	---	10
TA	---	-43	---	-36
KK	370	---	305	---
ST	600	80	597	78
SK	592	5	622	-2
SH	240	-19	233	-12
SHY	230	0	220	0
HS	280	0	285	0
HD	165	0	160	0
AD	70	0	75	0

DATA TABLE No. 5
SEAT BELT POSITIONING DATA



Measurement	Driver ATD	Passenger ATD
PBU - Top Surface of alum. plate to belt upper edge (mm)	380	330
PBL - Top Surface of alum. plate to belt lower edge (mm)	285	240
Lap Belt Tension (N)	—	—
Shoulder Belt Tension (N)	—	—

DATA TABLE 6
SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:

Total belt length from retractor reel to bolt hole anchor point for continuous webbing systems (mm) _____

Retractor reel to 'D' ring as measured on Part 572 ATD (mm) _____

Shoulder belt length as measured on Part 572 ATD (mm) _____

Lap belt length as measured on Part 572 ATD (mm) _____

Remainder of belt webbing left on the retractor reel (mm) _____

DRIVER SIDE		PASSENGER SIDE	
PRETEST	POSTTEST	PRETEST	POSTTEST
2375	2534	2453	2512
700	700	700	700
860	900	889	910
815	934	864	902
685	618	648	684

BELT SPOOL-OFF DATA:

As determined by film analysis (mm) _____

As determined electronically (mm) _____

As determined mechanically (mm) _____

63	51
42	44
51	30

BELT STRAIN DATA: Measured on the shoulder belt

As determined electronically (%) _____

As determined mechanically (%) _____

7.30	8.26
0.0	0.0

DATA TABLE No. 7
FMVSS No. 208 CAMERA LOCATION DATA

VEH. YEAR/MAKE/MODEL/BODY STYLE: 1993/Nissan/Pickup

VEH. NHTSA NO.: MP5202

TEST DATE: 11/10/92

TIME: 1510 Hrs.

CAMERA NO.	VIEW	CAMERA POS. (mm)			ANGLE (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Left Side View	5867	14350	3404	-20	14759	15-70 Zoom	24
2	Right Side View	1640	6760	995	-1	6404	13	600
3	Left Side View	1219	9906	1727	-16	9655	25	390
4	Overhead	-152	0	4039	-69	4707	13	580
5	Pit - Engine	635	25	-1829	+90	2459	13	620
6	Pit - Fuel Tank	N/R	N/R	N/R	N/R	N/R	N/R	N/R
7	Front - Passenger	-406	406	2438	-48	3584	16	600
8	Front - Driver	-406	305	2438	-48	3587	16	520
9	Left Side - Driver	2320	2920	1970	-15	3153	16	610
10	Right Side - Pass.	2340	3060	2005	-16	3285	16	600
11	Right Side - A-Post	200	4390	1040	+1	4539	28	620
12	Left Side - A-Post	635	11150	127	-15	10808	50	680
13	Onboard - Left Side	2806	270	1225	+3	1371	13	400
14	Onboard - Right Side	2806	270	1225	+3	1371	13	400
15	Left Side - St. Col.	1422	9576	3277	-16	9720	28	610
16	Left Side - St. Col.	1422	9576	2896	-14	9598	28	660
17	Right Side - Pass.	1975	3430	1395	-4	3290	16	*

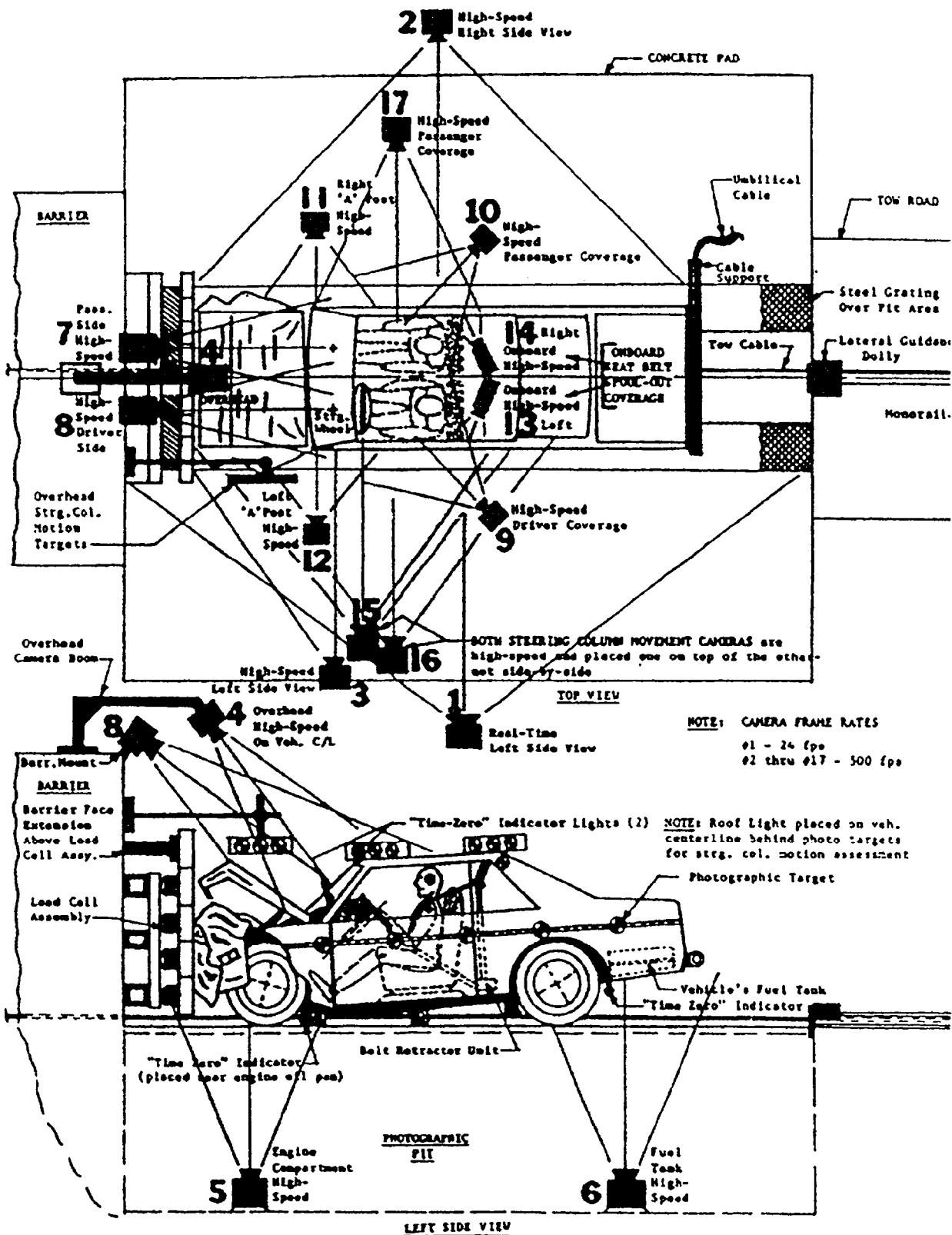
REFERENCE: X - Film plane to barrier face

Y - Film plane to monorail centerline

Z - Film plane to ground

* Film completely washed out by sun glare.

Data Table No. 7 (Cont'd) Camera Location Data



DATA TABLE No. 8
VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

No.	Description	Location			Maximum Value (g's)			
		X	Y	Z	-X	msec	+X	msec
1	Left rear seat cross member	3415	-480	625	40.8	46.4	4.4	122.9
2	Right rear seat cross member	3415	480	625	39.5	61.6	5.3	120.5
3	Top of Engine Block	540	15	920	198.6	41.4	57.1	51.0
4	Bottom of engine	840	-50	315	192.5	41.1	42.0	52.0
5	Right Brake Caliper	875	610	365	109.8	31.2	91.1	50.8
6	Instrument Panel	1370	15	1070	62.9	40.2	36.9	34.1
7	Left Brake Caliper	875	-610	365	101.8	31.3	64.4	51.0
8	Left rear seat cross member Redun.	3415	-480	625	40.4	46.4	4.5	123.0
9	Right rear seat cross member Redun.	3415	480	625	39.9	61.6	5.4	120.5

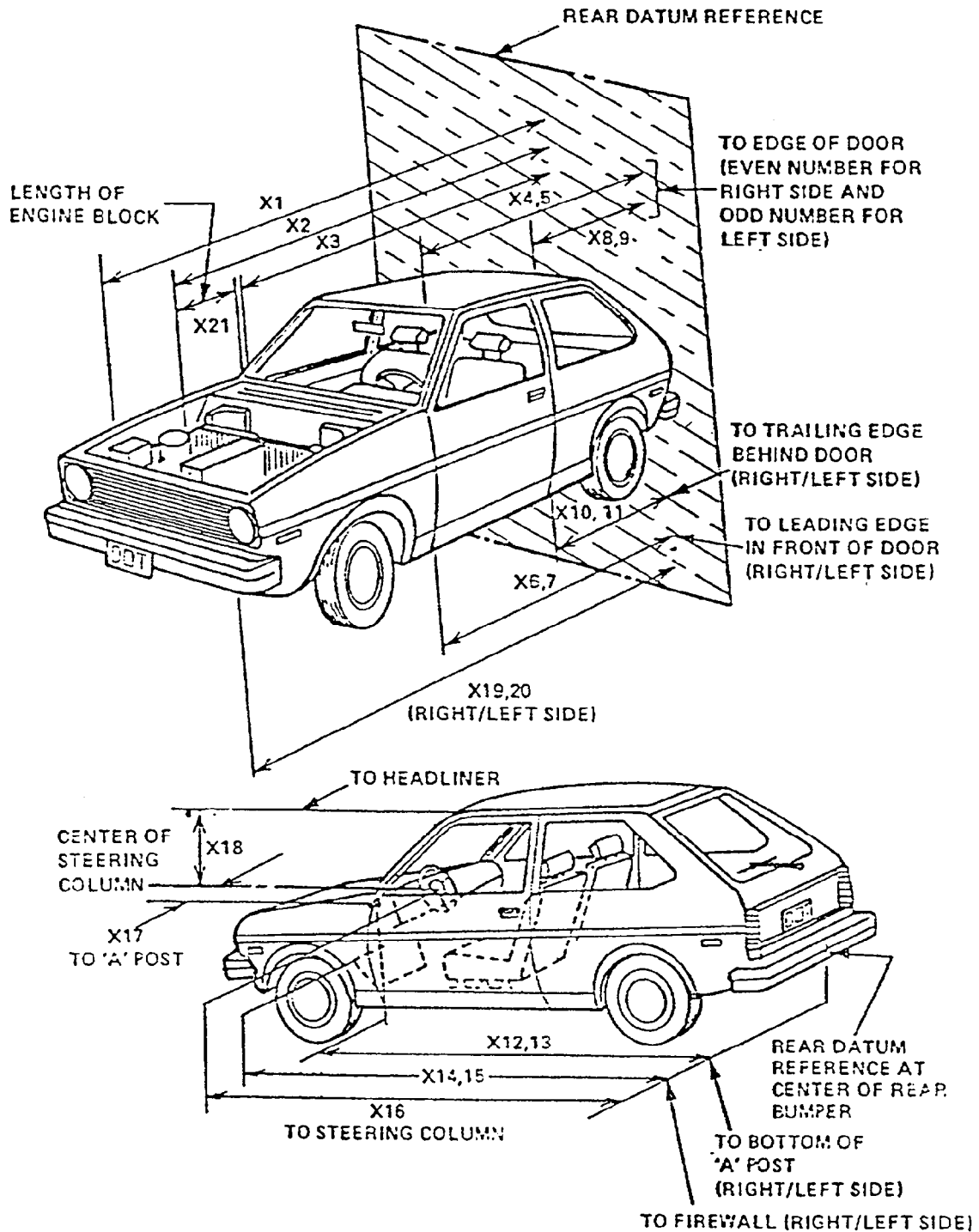
REFERENCE: X - Front Bumper Leading Edge
Y - Vehicle Centerline (Right Pos., Left Neg.)
Z - Ground Level

DATA TABLE No. 9
TEST VEHICLE MEASUREMENTS

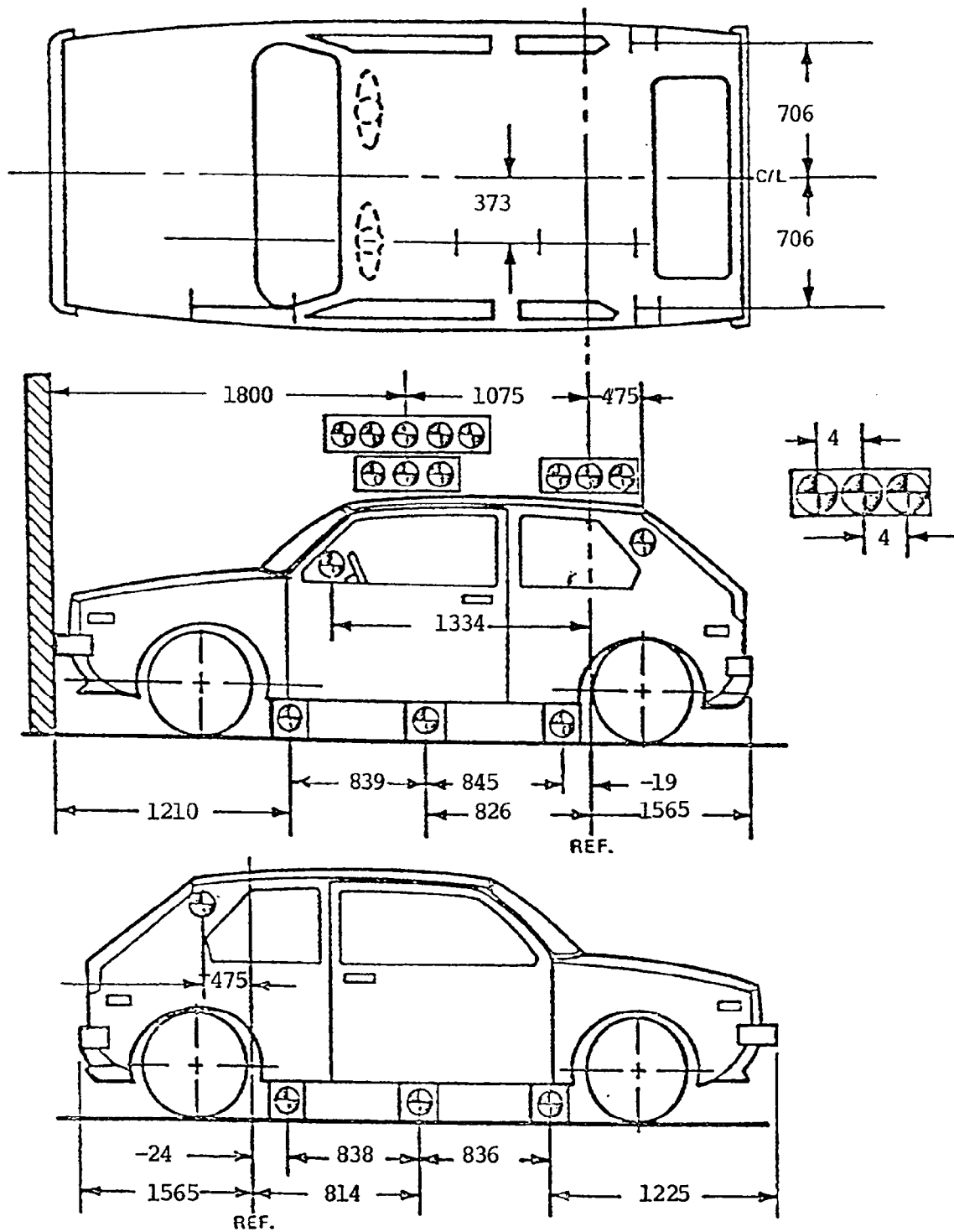
No.	Measurement Description	Pretest	Posttest	Change
1	Length of test vehicle at centerline	4440	3970	470
2	Rear surface of vehicle to front of engine	4035	3900	135
3	Rear of vehicle to firewall centerline	3295	3320	-25
4	Rear to upper leading edge of right door	2714	2750	-36
5	Rear to upper leading edge of left door	2710	2762	-52
6	Rear to lower leading edge of right door	3200	3150	50
7	Rear to lower leading edge of left door	3196	3150	46
8	Rear to upper trailing edge of right door	2100	2160	-60
9	Rear to upper trailing edge of left door	2115	2145	-30
10	Rear to lower trailing edge of right door	2080	2032	48
11	Rear to lower trailing edge of left door	2075	2045	30
12	Rear to bottom of right 'A' pillar	3268	3250	18
13	Rear to bottom of left 'A' pillar	3265	3250	15
14	Rear surface to firewall on right side	3488	3465	23
15	Rear surface to firewall on left side	3480	3440	40
16	Rear surface to steering column	2715	2730	-15
17	Center of steering column to left 'A' pillar	385	350	35
18	Center of steering column to headlining	450	470	-20
19	Rear surface to right side of front bumper	4390	3930	460
20	Rear surface to left side of front bumper	4390	3950	440
21	Length of engine block	515	515	0

All measurements in mm

DATA TABLE No. 9 (Cont.)
TEST VEHICLE MEASUREMENTS



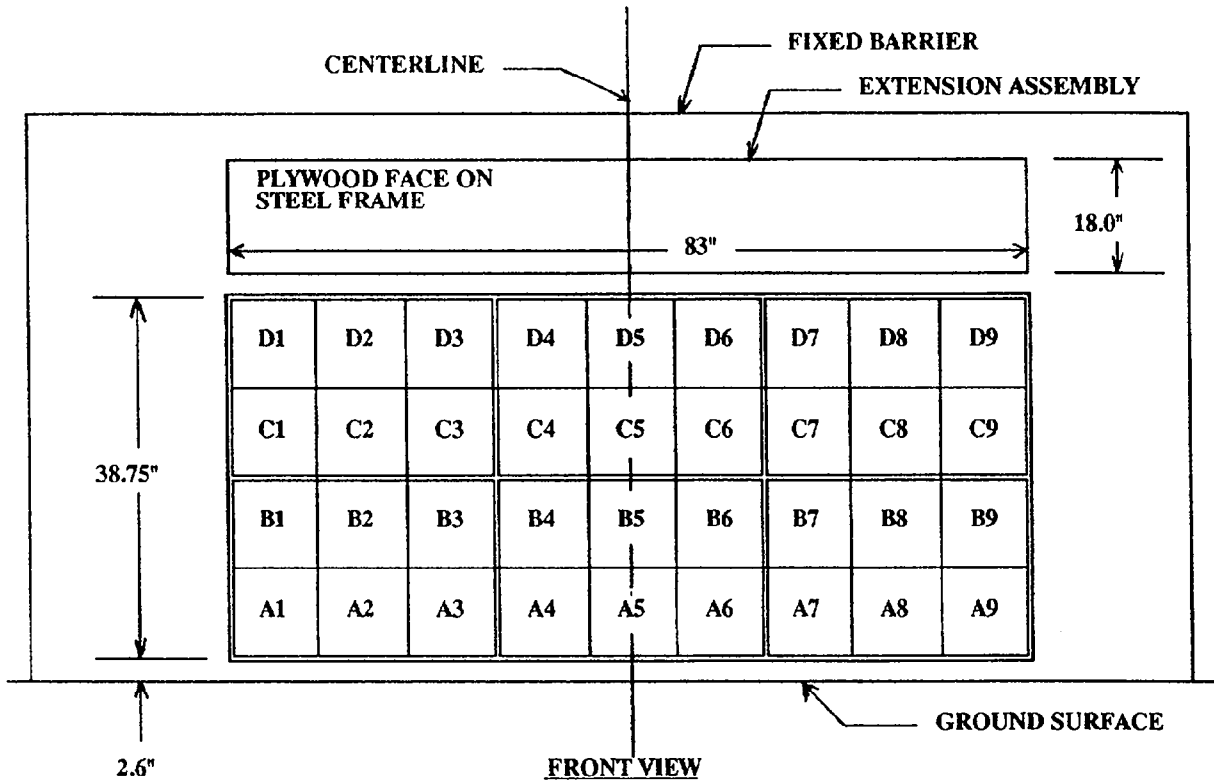
DATA TABLE No. 10
VEHICLE TARGET LOCATIONS



Dimensions in mm

DATA TABLE No. 11
LOAD CELL LOCATIONS ON FIXED BARRIER

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



6 GROUPS OF 6 LOAD CELLS EACH

Group 4 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

DATA REQUIREMENTS:

- (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)
- (4) Total load vs. vehicle dynamic crush

DATA TABLE No. 12
ACCIDENT INVESTIGATION DIVISION DATA FOR 35 MPH FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Nissan/Pickup

Veh. NHTSA No.: MP5202 ; VIN: 1N6SD11S9PC316652

Model Year: 1993 ; Build Date: 05/92 ; Test Date: 11/10/92

Veh. Size Category: N/A ; Test Weight: 1549 kg

Veh. Wheelbase: 2652 mm ; Front Overhang: 730 mm ; Overall Width: 1650 mm

ACCELEROMETER DATA:

Location: Left and right side passenger compartment

Calibration Procedure: 6 months / Drop test

Linearity: Good ; Integration Algorithm: NHTSA Standard

Veh. Impact Speed: 56.28 km/h ; Time of separation: 84.7 msec

Velocity Change: 65.2 km/h (Left) ; 64.2 km/h (Right)

Collision Deformation Classification (CDC) Code: F (Frontal)

Crush Depth Dimensions:

C1 = 409 mm

C2 = 437 mm

C3 = 463 mm

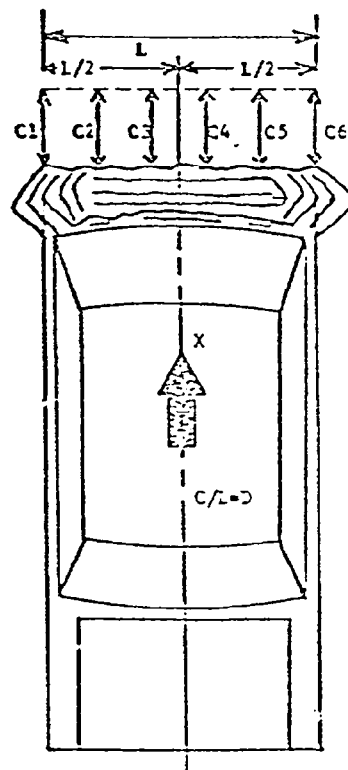
C4 = 466 mm

C5 = 459 mm

C6 = 447 mm

Midpoint of Damage: Vehicle Centerline

Length of Damaged Region: L = 1500 mm



INTENTIONALLY LEFT BLANK

SECTION 4

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

This section shows full list of Test Equipment and the calibration dates.

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 001	
SENTYP: AC	SENLOC: 01	SENATT: HDCG	
AXIS: XL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: BJ28H	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 55	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 002	
SENTYP: AC	SENLOC: 01	SENATT: HDCG	
AXIS: YL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: BT28H	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 15	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 003	
SENTYP: AC	SENLOC: 01	SENATT: HDCG	
AXIS: ZL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: AE29	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 39	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 004	
SENTYP: AC	SENLOC: 01	SENATT: CHST	
AXIS: XL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: BI14H	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 32	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 005	
SENTYP: AC	SENLOC: 01	SENATT: CHST	
AXIS: YL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: BI19H	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 17	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 006	
SENTYP: AC	SENLOC: 01	SENATT: CHST	
AXIS: ZL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: BI92H	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 11	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 007	
SENTYP: LC	SENLOC: 01	SENATT: FMRL	
AXIS: XL	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: GSE INC.	MODEL: 2430,	S/N: 735	
CALDAT: 09/OCT/92	INSRAT: 13350	CHLMAX: 32	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 008	
SENTYP: LC	SENLOC: 01	SENATT: FMRR	
AXIS: XL	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: GSE INC,	MODEL: 2430,	S/N: 710	
CALDAT: 09/OCT/92	INSRAT: 13350	CHLMAX: 19	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 009	
SENTYP: AC	SENLOC: 02	SENATT: HDCG	
AXIS: XL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: BJ61H	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 11	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 010	
SENTYP: AC	SENLOC: 02	SENATT: HDCG	
AXIS: YL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: BG95H	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 12	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 011	
SENTYP: AC	SENLOC: 02	SENATT: HDCG	
AXIS: ZL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: BJ54H	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 24	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 012	
SENTYP: AC	SENLOC: 02	SENATT: CHST	
AXIS: XL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: BJ27H	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 28	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 013	
SENTYP: AC	SENLOC: 02	SENATT: CHST	
AXIS: YL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: BG78H	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 23	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 014	
SENTYP: AC	SENLOC: 02	SENATT: CHST	
AXIS: ZL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: AR39	
CALDAT: 02/OCT/92	INSRAT: 200	CHLMAX: 14	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 015	
SENTYP: LC	SENLOC: 02	SENATT: FMRL	
AXIS: XL	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: GSE INC,	MODEL: 2430,	S/N: 634	
CALDAT: 09/OCT/92	INSRAT: 13350	CHLMAX: 18	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 016	
SENTYP: LC	SENLOC: 02	SENATT: FMRR	
AXIS: XL	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: GSE INC,	MODEL: 2430,	S/N: 550	
CALDAT: 09/OCT/92	INSRAT: 13350	CHLMAX: 21	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 017	
SENTYP: LC	SENLOC: 01	SENATT: LPBO	
AXIS: OT	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: LEBOW,	MODEL: 3371,	S/N: 333	
CALDAT: 13/OCT/92	INSRAT: 15575	CHLMAX: 60	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 018	
SENTYP: LC	SENLOC: 01	SENATT: SHBT	
AXIS: OT	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: LEBOW,	MODEL: 3371,	S/N: 327	
CALDAT: 13/OCT/92	INSRAT: 15575	CHLMAX: 61	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 019	
SENTYP: LC	SENLOC: 02	SENATT: LPBO	
AXIS: OT	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: LEBOW,	MODEL: 3371,	S/N: 330	
CALDAT: 13/OCT/92	INSRAT: 15575	CHLMAX: 78	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 020	
SENTYP: LC	SENLOC: 02	SENATT: SHBT	
AXIS: OT	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: LEBOW,	MODEL: 3371,	S/N: 308	
CALDAT: 13/OCT/92	INSRAT: 15575	CHLMAX: 66	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 021	
SENTYP: DS	SENLOC: 01	SENATT: SHBT	
AXIS: OT	UNITS: OTH	PREFIL: 1650	
INSMAN: MFG: ETI,	MODEL: LCP12A-12,	S/N: 1	
CALDAT: 10/NOV/92	INSRAT: 50	CHLMAX: 15	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: PERCENT OF TOTAL BELT STRETCH			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 022	
SENTYP: DS	SENLOC: 02	SENATT: SHBT	
AXIS: OT	UNITS: OTH	PREFIL: 1650	
INSMAN: MFG: ETI,	MODEL: LCP12A-12,	S/N: 2	
CALDAT: 10/NOV/92	INSRAT: 50	CHLMAX: 17	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: PERCENT OF TOTAL BELT STRETCH			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 023	
SENTYP: DS	SENLOC: 01	SENATT: SHBE	
AXIS: OT	UNITS: CMS	PREFIL: 1650	
INSMAN: MFG: CELESCO,	MODEL: 20 IN.,	S/N: NA	
CALDAT: 10/NOV/92	INSRAT: 51	CHLMAX: 8	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 024	
SENTYP: DS	SENLOC: 02	SENATT: SHBE	
AXIS: OT	UNITS: CMS	PREFIL: 1650	
INSMAN: MFG: MSE,	MODEL: 24 IN. LIN.,	S/N: 112	
CALDAT: 10/NOV/92	INSRAT: 61	CHLMAX: 8	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 025	
SENTYP: AC	SENLOC: NA	SENATT: SULF	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: I.C. SENSOR,	MODEL: 3031-200,	S/N: 29-200	
CALDAT: 09/OCT/92	INSRAT: 200	CHLMAX: 79	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 026	
SENTYP: AC	SENLOC: NA	SENATT: SURF	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: I.C. SENSOR, MODEL: 3031-200, S/N: 25-200			
CALDAT: 09/OCT/92	INSRAT: 200	CHLMAX: 95	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 027	
SENTYP: AC	SENLOC: NA	SENATT: ENGN	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: I.C. SENSOR, MODEL: 3031-200, S/N: 33-200			
CALDAT: 09/OCT/92	INSRAT: 200	CHLMAX: 122	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 028	
SENTYP: AC	SENLOC: NA	SENATT: ENGN	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: I.C. SENSOR, MODEL: 3031-200, S/N: 27-200			
CALDAT: 09/OCT/92	INSRAT: 200	CHLMAX: 134	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 029	
SENTYP: AC	SENLOC: NA	SENATT: DPLC	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: I.C. SENSOR, MODEL: 3031-200, S/N: 28-200			
CALDAT: 09/OCT/92	INSRAT: 200	CHLMAX: 58	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 030	
SENTYP: AC	SENLOC: NA	SENATT: FLLR	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: I.C. SENSOR, MODEL: 3031-200, S/N: 23-200			
CALDAT: 09/OCT/92	INSRAT: 200	CHLMAX: 30	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 031	
SENTYP: AC	SENLOC: NA	SENATT: FLRR	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: I.C. SENSOR, MODEL: 3031-200, S/N:			
CALDAT: 09/OCT/92	INSRAT: 200	CHLMAX: 34	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 032	
SENTYP: AC	SENLOC: NA	SENATT: OTHR	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: BELL & HOWELL, MODEL: 4-202-0001, S/N: 20839			
CALDAT: 19/OCT/92	INSRAT: 200	CHLMAX: 23	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 033	
SENTYP: AC	SENLOC: NA	SENATT: TRFC	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: BELL & HOWELL, MODEL: 4-202-0001, S/N: 19428			
CALDAT: 19/OCT/92	INSRAT: 200	CHLMAX: 28	INIVEL: 56.3
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 034	
SENTYP: LC	SENLOC: NA	SENATT: LCA1	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19349			
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 1	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 035	
SENTYP: LC	SENLOC: NA	SENATT: LCA2	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19324			
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 3	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 036	
SENTYP: LC	SENLOC: NA	SENATT: LCA3	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19283	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 23	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 037	
SENTYP: LC	SENLOC: NA	SENATT: LCA3	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19263	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 29	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 038	
SENTYP: LC	SENLOC: NA	SENATT: LCA5	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19265	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 18	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 039	
SENTYP: LC	SENLOC: NA	SENATT: LCA6	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19266	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 34	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 040	
SENTYP: LC	SENLOC: NA	SENATT: LCA7	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19317	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 10	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 041	
SENTYP: LC	SENLOC: NA	SENATT: LCA8	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19270	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 5	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 042	
SENTYP: LC	SENLOC: NA	SENATT: LCA9	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19428	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 4	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 043	
SENTYP: LC	SENLOC: NA	SENATT: LCB1	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19273	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 4	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 044	
SENTYP: LC	SENLOC: NA	SENATT: LCB1	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19276	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 11	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 045	
SENTYP: LC	SENLOC: NA	SENATT: LCB3	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19258	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 57	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 046	
SENTYP: LC	SENLOC: NA	SENATT: LCB4	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19278		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 29	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 047	
SENTYP: LC	SENLOC: NA	SENATT: LCB5	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19279		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 84	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 048	
SENTYP: LC	SENLOC: NA	SENATT: LCB6	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19282		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 58	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 049	
SENTYP: LC	SENLOC: NA	SENATT: LCB7	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19262		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 28	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 050	
SENTYP: LC	SENLOC: NA	SENATT: LCB8	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19285		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 9	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: CF
INSCOM: CHANNEL FAILED AT 30.6 MSEC			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 051	
SENTYP: LC	SENLOC: NA	SENATT: LCB9	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19286	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 6	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: CF
INSCOM: CHANNEL FAILED AT 33.0 MSEC			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 052	
SENTYP: LC	SENLOC: NA	SENATT: LCC1	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19287	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 3	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 053	
SENTYP: LC	SENLOC: NA	SENATT: LCC2	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19288	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 13	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 054	
SENTYP: LC	SENLOC: NA	SENATT: LCC3	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19289	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 10	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 055	
SENTYP: LC	SENLOC: NA	SENATT: LCC4	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19291	
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 10	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 056	
SENTYP: LC	SENLOC: NA	SENATT: LCC5	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19324		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 81	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 057	
SENTYP: LC	SENLOC: NA	SENATT: LCC6	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19313		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 16	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 058	
SENTYP: LC	SENLOC: NA	SENATT: LCC7	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19314		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 10	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 059	
SENTYP: LC	SENLOC: NA	SENATT: LCC8	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19315		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 10	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 060	
SENTYP: LC	SENLOC: NA	SENATT: LCC9	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19316		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 6	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 061	
SENTYP: LC	SENLOC: NA	SENATT: LCD1	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19317		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 2	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 062	
SENTYP: LC	SENLOC: NA	SENATT: LCD2	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19318		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 9	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 063	
SENTYP: LC	SENLOC: NA	SENATT: LCD3	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19322		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 0	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: MN
INSCOM: NO DATA COLLECTED ON THIS CHANNEL			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 064	
SENTYP: LC	SENLOC: NA	SENATT: LCD4	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19323		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 7	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 065	
SENTYP: LC	SENLOC: NA	SENATT: LCD5	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19260		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 9	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 066	
SENTYP: LC	SENLOC: NA	SENATT: LCD6	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19325		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 7	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 067	
SENTYP: LC	SENLOC: NA	SENATT: LCD7	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19332		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 0	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: MN
INSCOM: NO DATA COLLECTED ON THIS CHANNEL			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 068	
SENTYP: LC	SENLOC: NA	SENATT: LCD8	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19333		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 12	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 069	
SENTYP: LC	SENLOC: NA	SENATT: LCD9	
AXIS: XG	UNITS: NWT	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19338		
CALDAT: 14/MAY/85	INSRAT: 222	CHLMAX: 7	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM: NO COMMENT			

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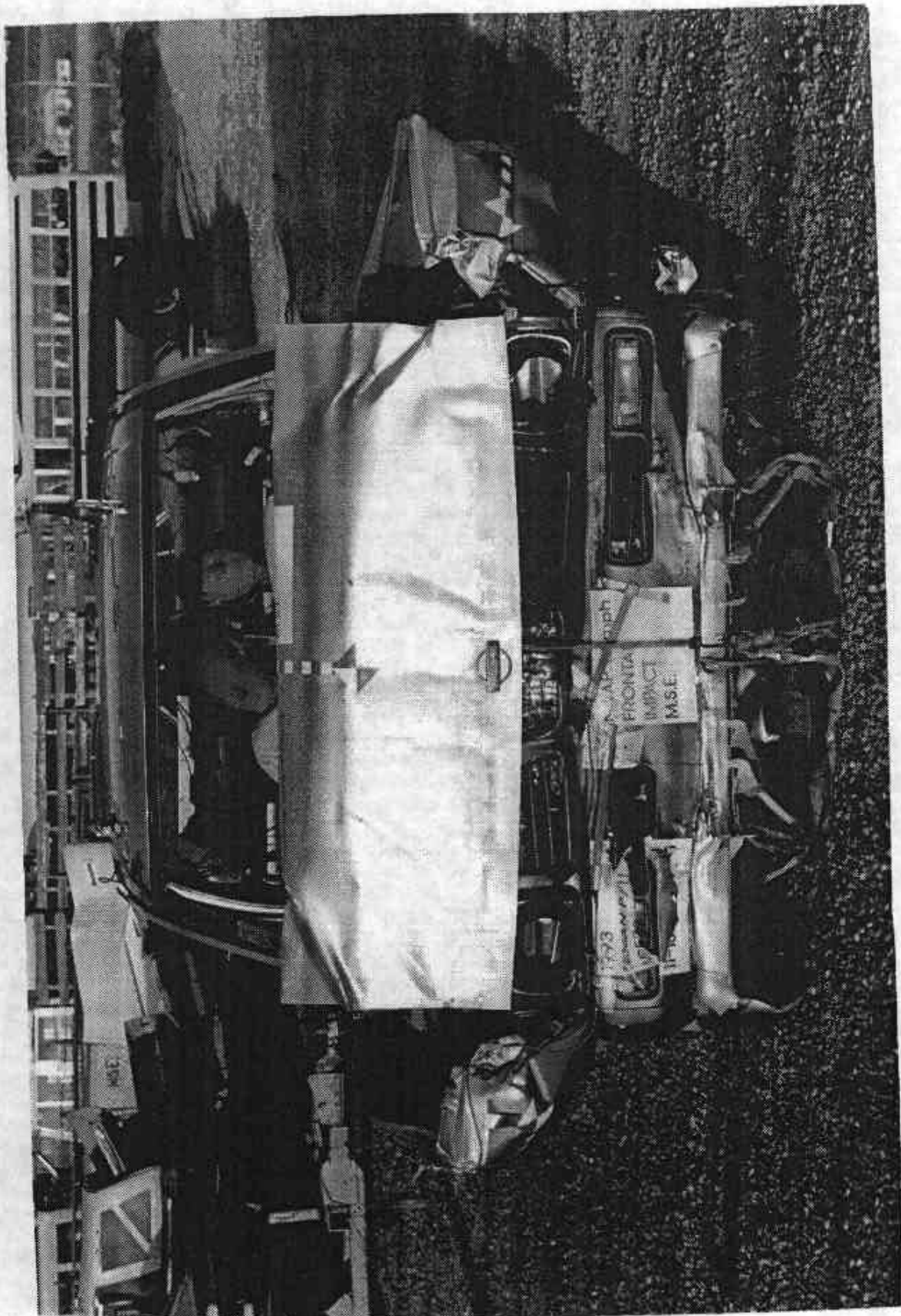
APPENDIX A

PHOTOGRAPHS

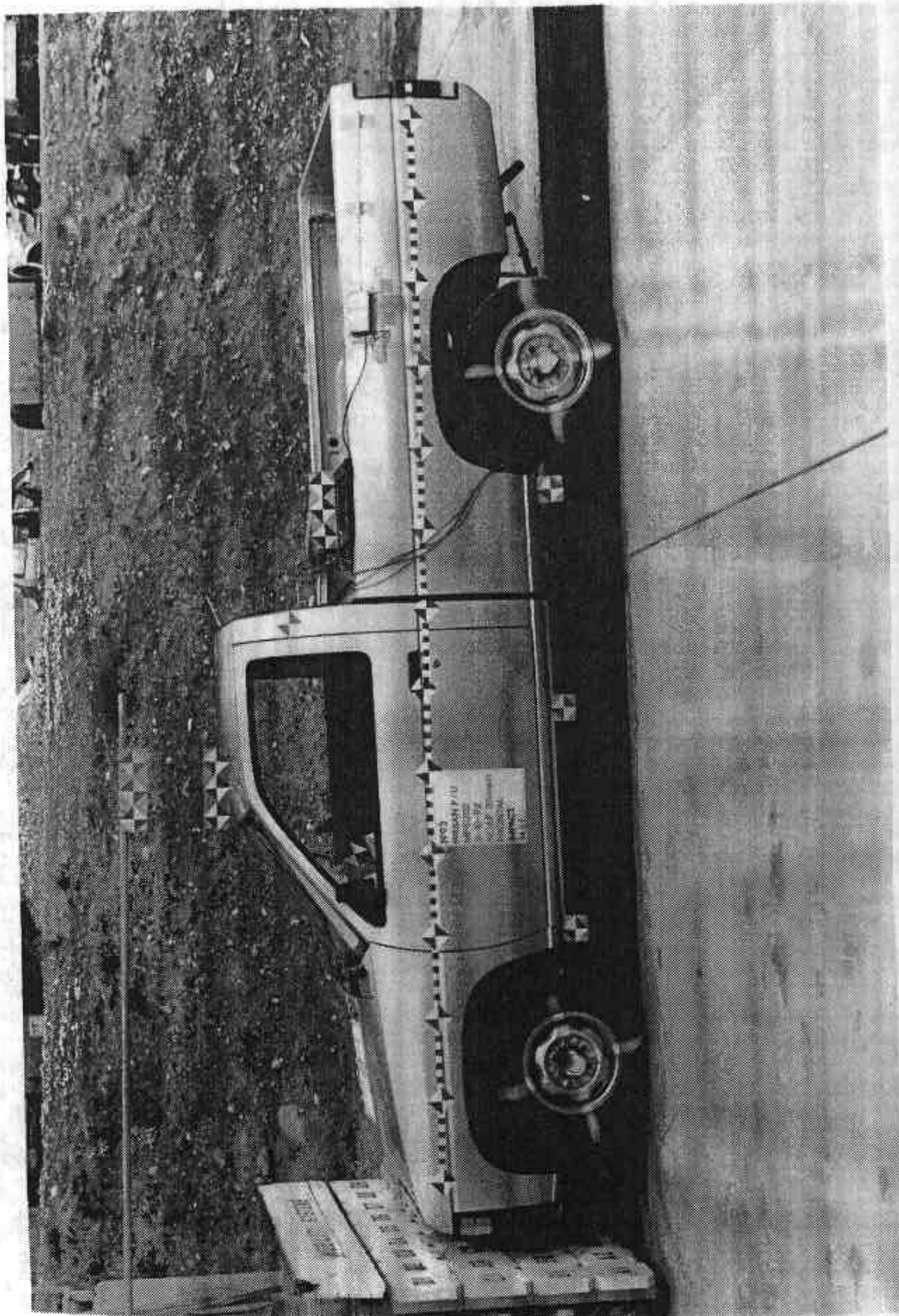
PRETEST FRONT VIEW
POSTTEST FRONT VIEW
PRETEST LEFT SIDE VIEW
POSTTEST LEFT SIDE VIEW
PRETEST RIGHT SIDE VIEW
POSTTEST RIGHT SIDE VIEW
PRETEST RIGHT FRONT 3/4 VIEW
POSTTEST RIGHT FRONT 3/4 VIEW
PRETEST LEFT REAR 3/4 VIEW
POSTTEST LEFT REAR 3/4 VIEW
PRETEST WINDSHIELD VIEW
POSTTEST WINDSHIELD VIEW
PRETEST ENGINE COMPARTMENT VIEW
POSTTEST ENGINE COMPARTMENT VIEW
PRETEST FRONT UNDERBODY VIEW
POSTTEST FRONT UNDERBODY VIEW
PRETEST REAR UNDERBODY VIEW
POSTTEST REAR UNDERBODY VIEW
PRETEST DRIVER DUMMY POSITION VIEW
POSTTEST DRIVER DUMMY POSITION VIEW
PRETEST PASSENGER DUMMY POSITION VIEW
POSTTEST PASSENGER DUMMY POSITION VIEW
PRETEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (Door Open)
POSTTEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (Door Open)
PRETEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (Door Open)
POSTTEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (Door Open)
POSTTEST DRIVER DUMMY (ATD) STEERING COLUMN HUB/RIM CONTACT AND
KNEE CONTACT AREA
POSTTEST PASSENGER DUMMY (ATD) KNEE CONTACT AREA



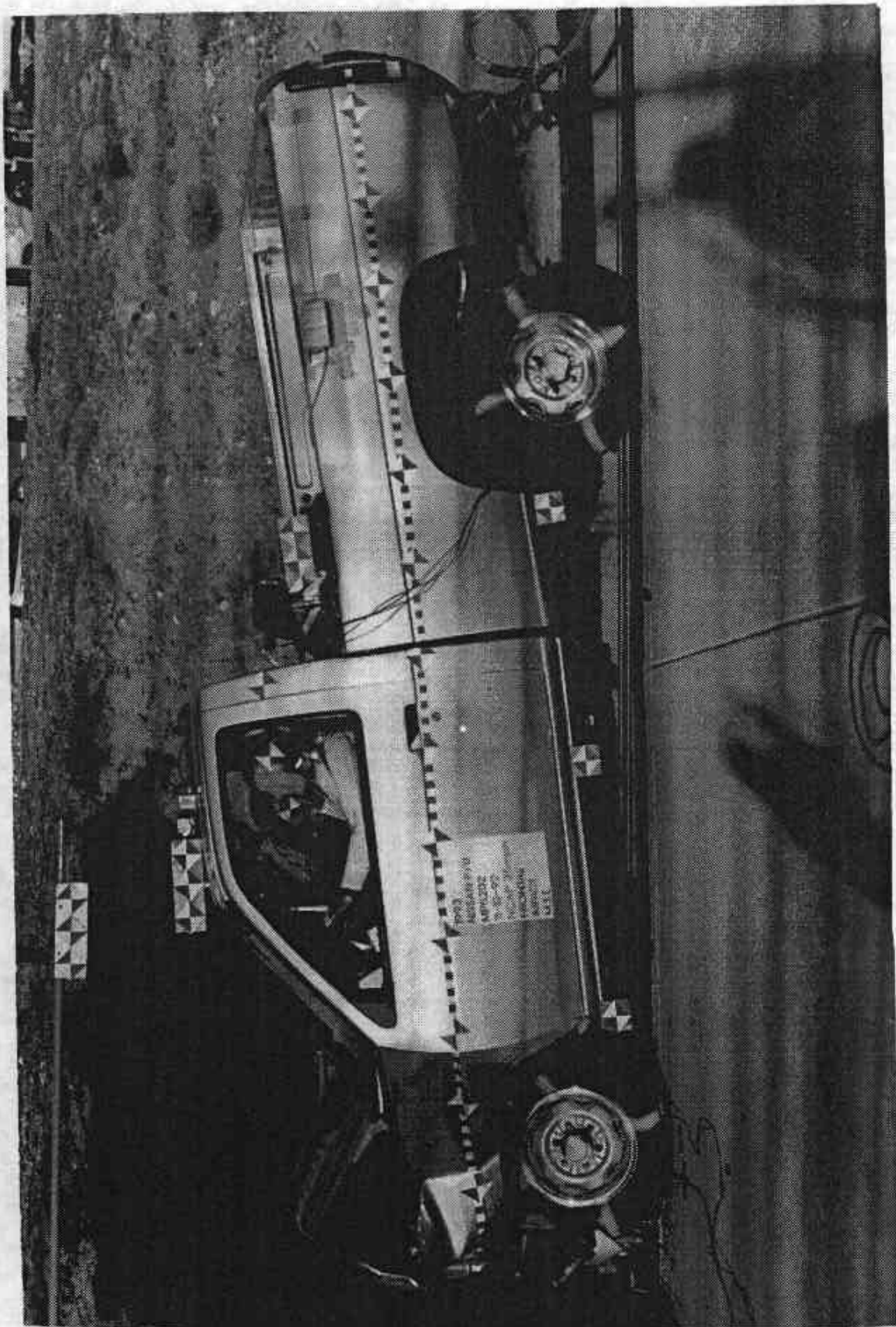
PRETEST FRONT VIEW



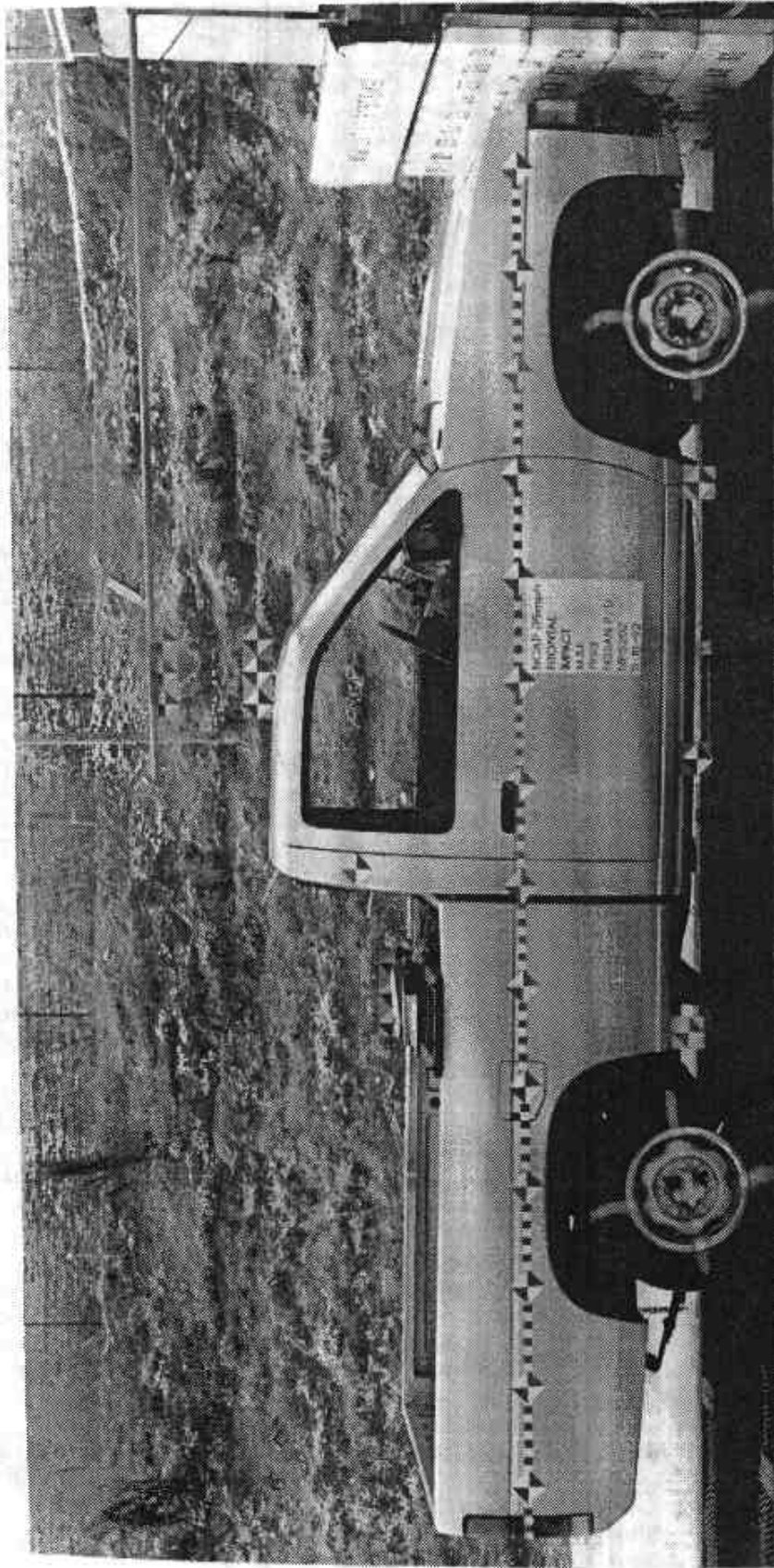
POSTTEST FRONT VIEW



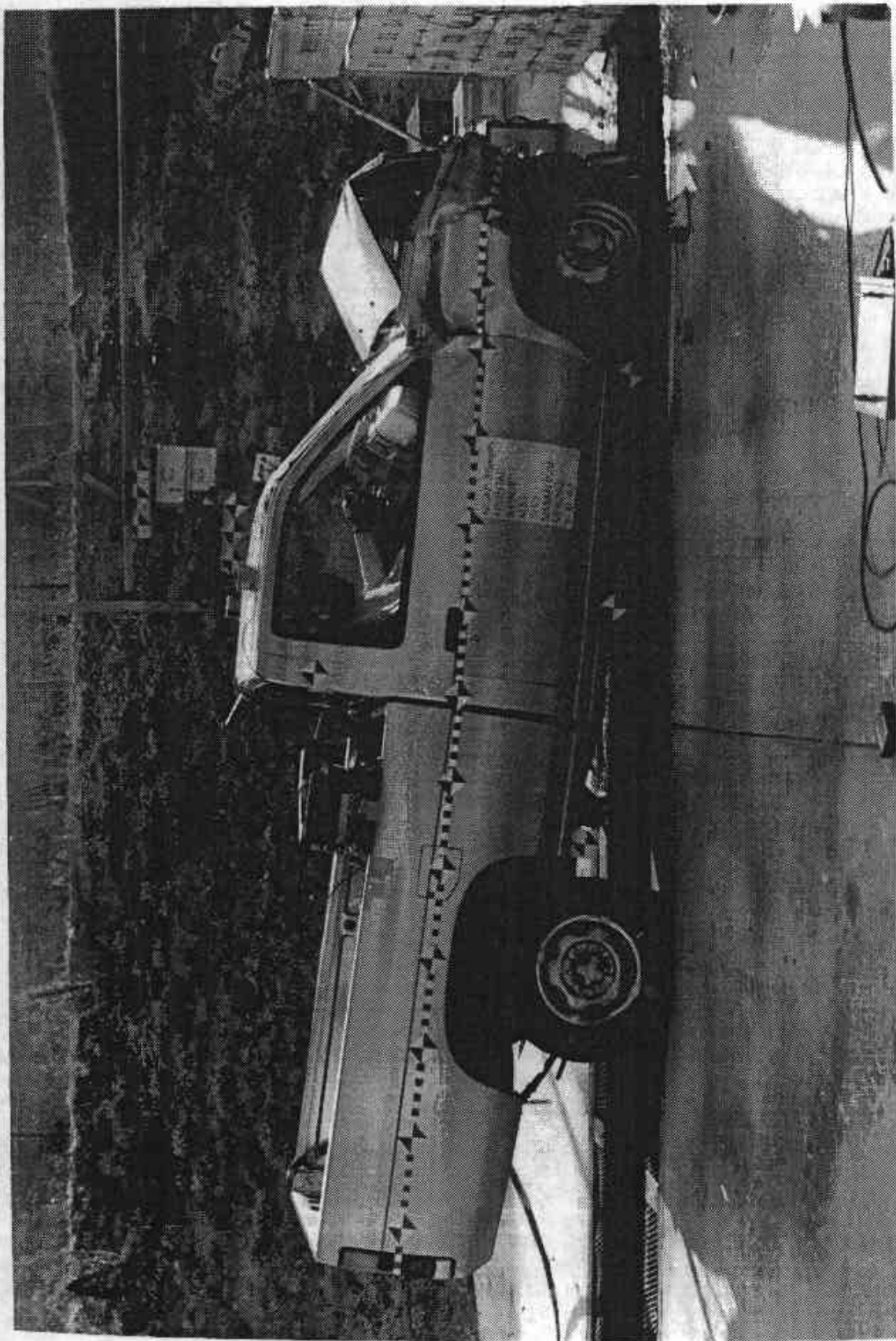
PRETEST LEFT SIDE VIEW



POSTTEST LEFT SIDE VIEW



PRETEST RIGHT SIDE VIEW



POSTTEST RIGHT SIDE VIEW



PRETEST RIGHT FRONT 3/4 VIEW



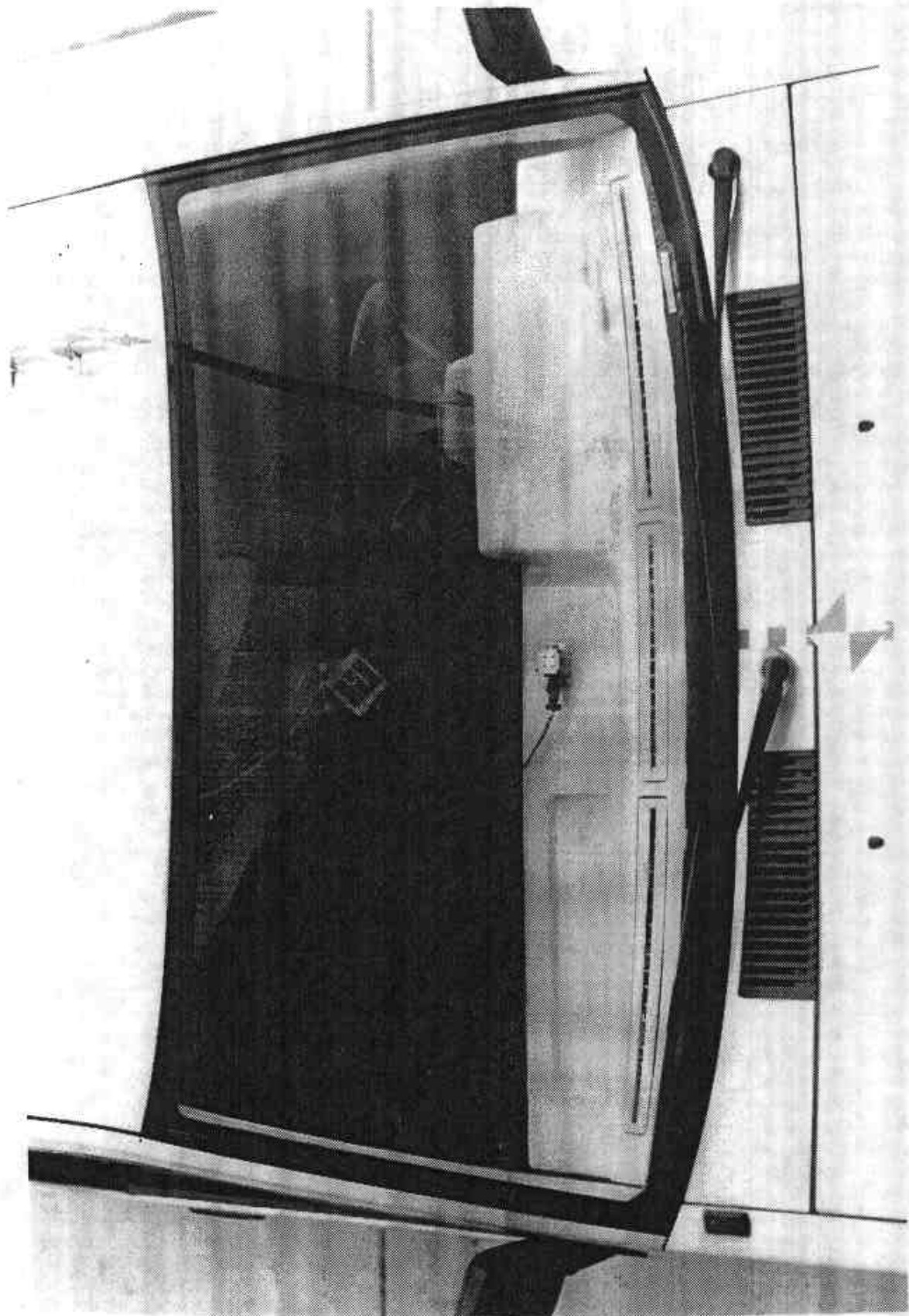
POSTTEST RIGHT FRONT 3/4 VIEW



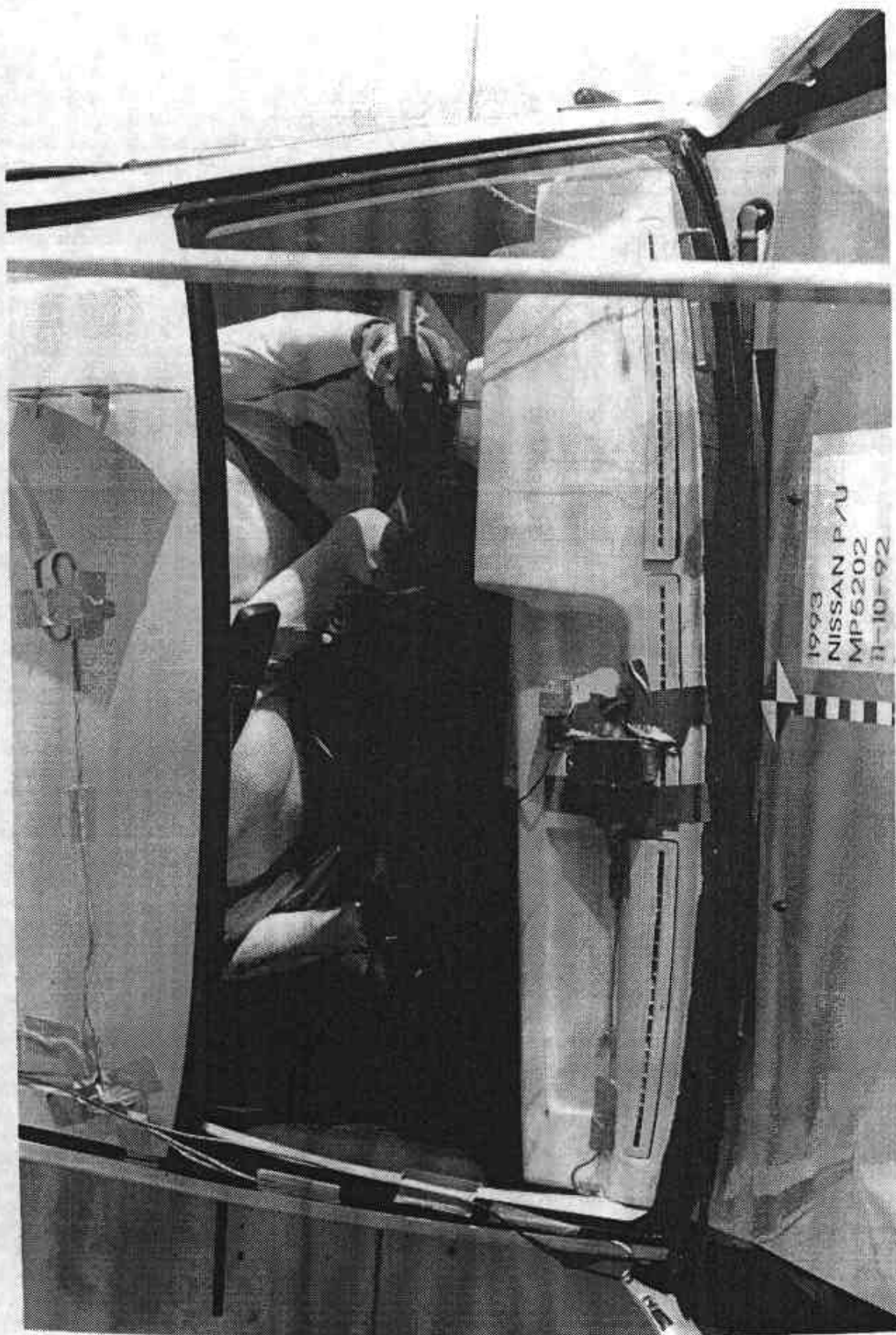
PRETEST LEFT REAR 3/4 VIEW



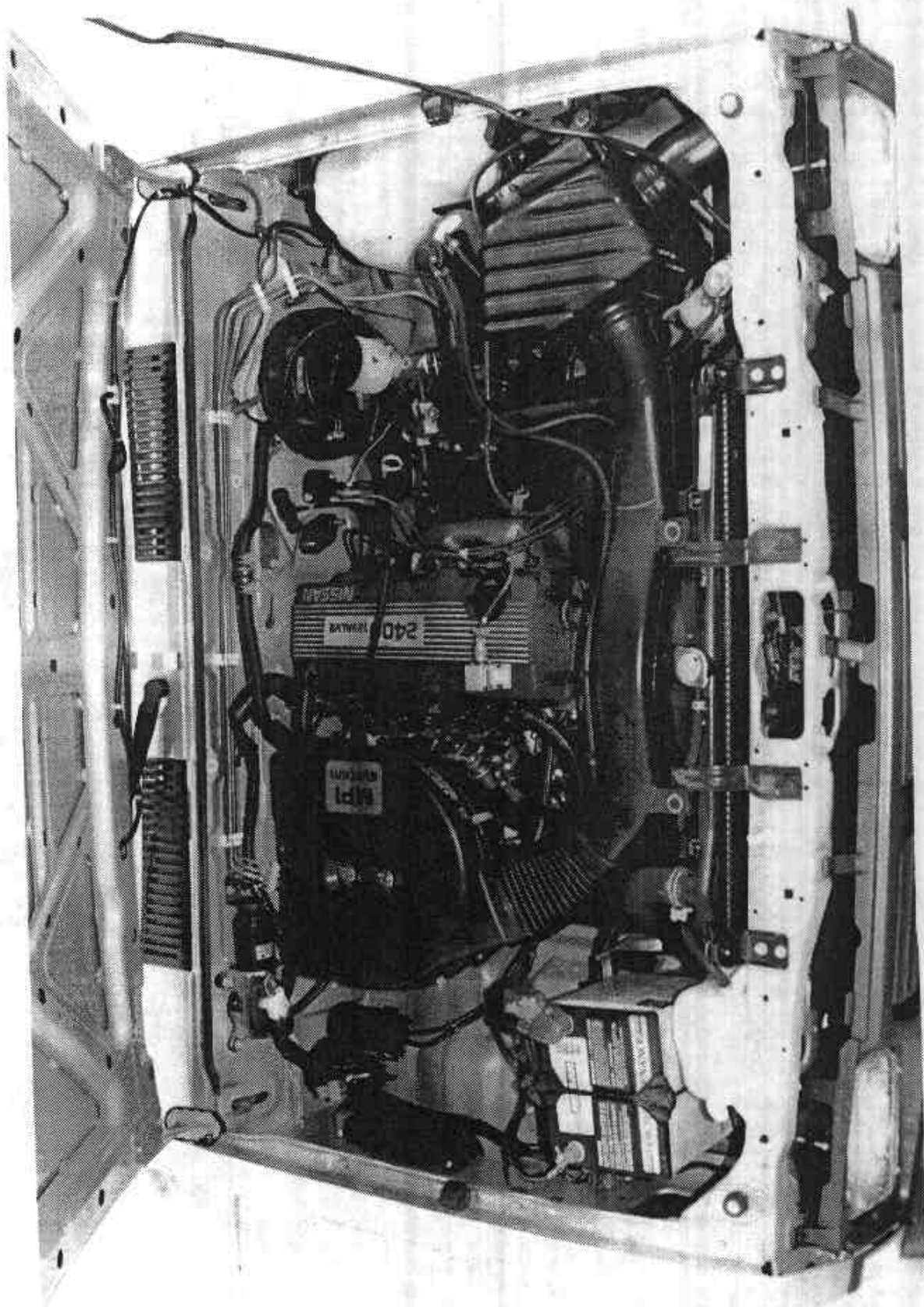
POSTTEST LEFT REAR 3/4 VIEW



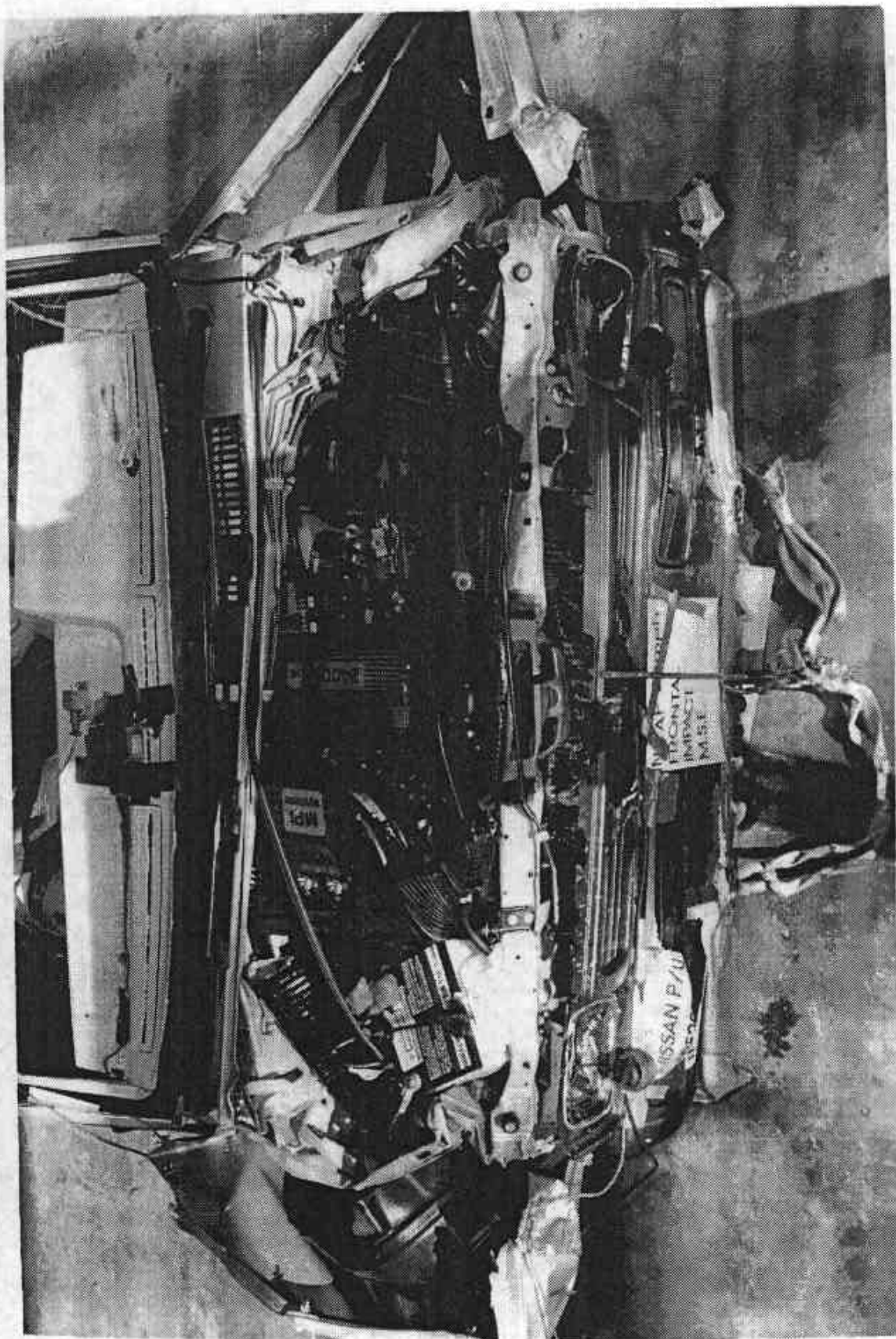
PRETEST WINDSHIELD VIEW



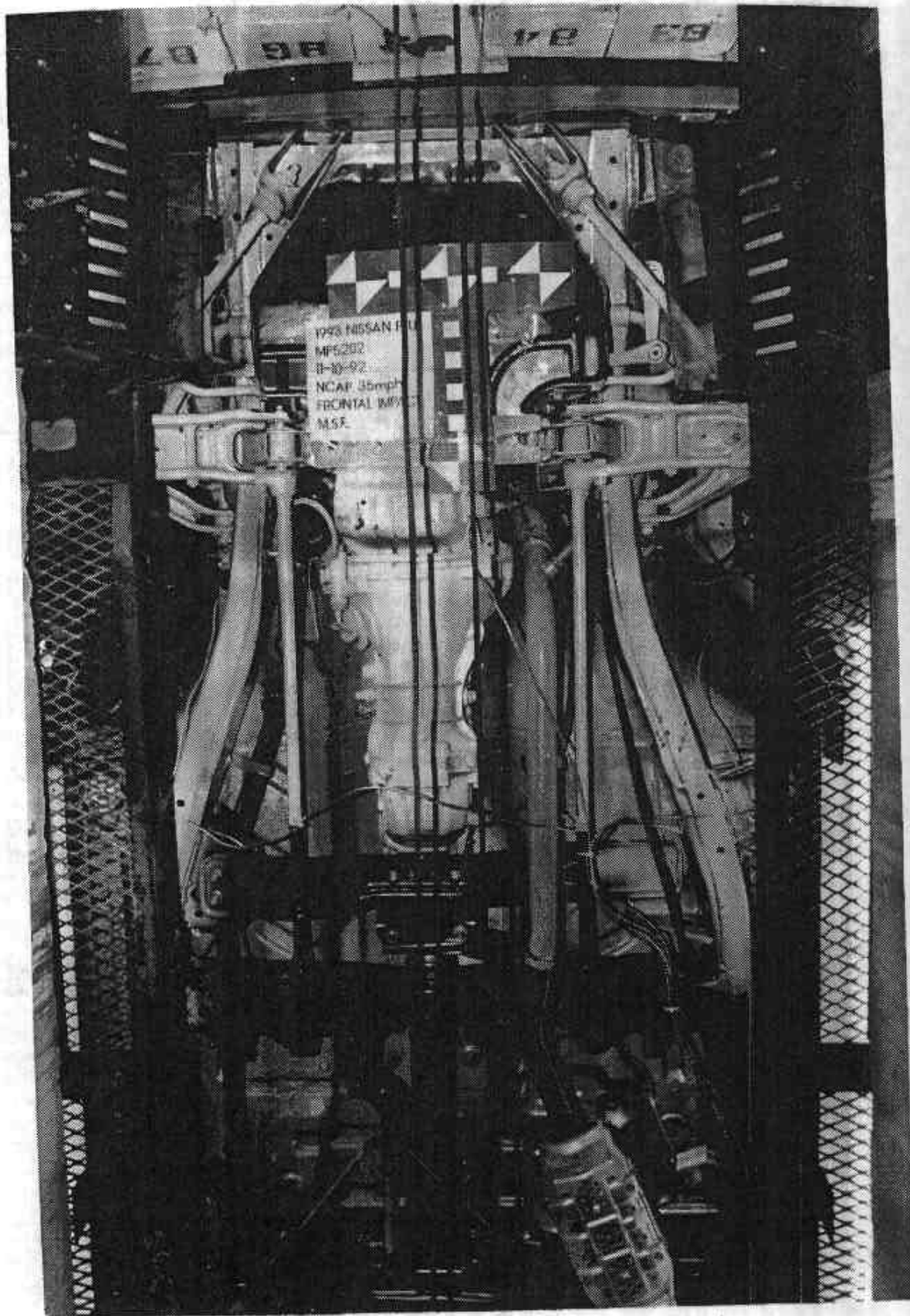
POSTTEST WINDSHIELD VIEW



PRETEST ENGINE COMPARTMENT VIEW

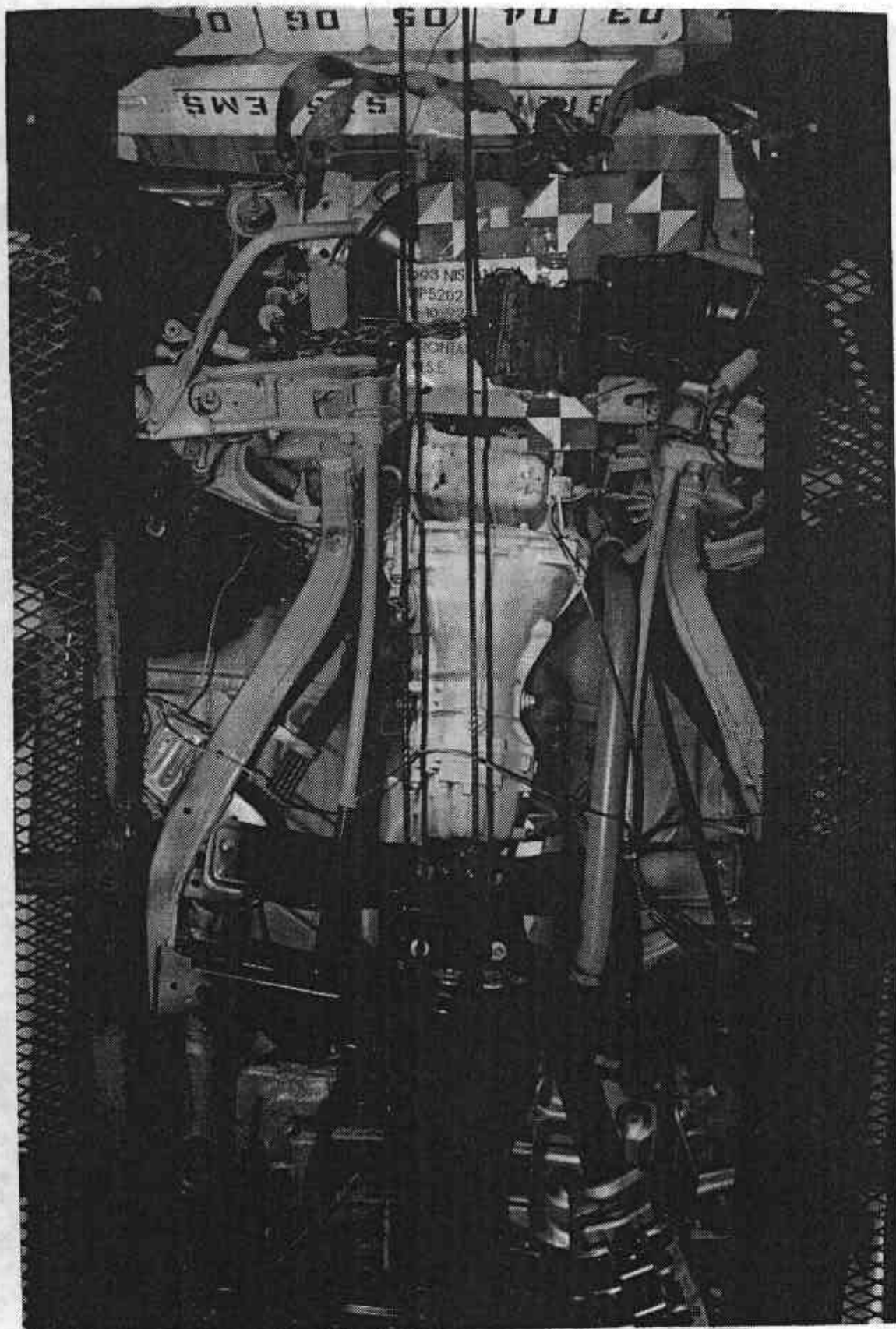


POSTTEST ENGINE COMPARTMENT VIEW



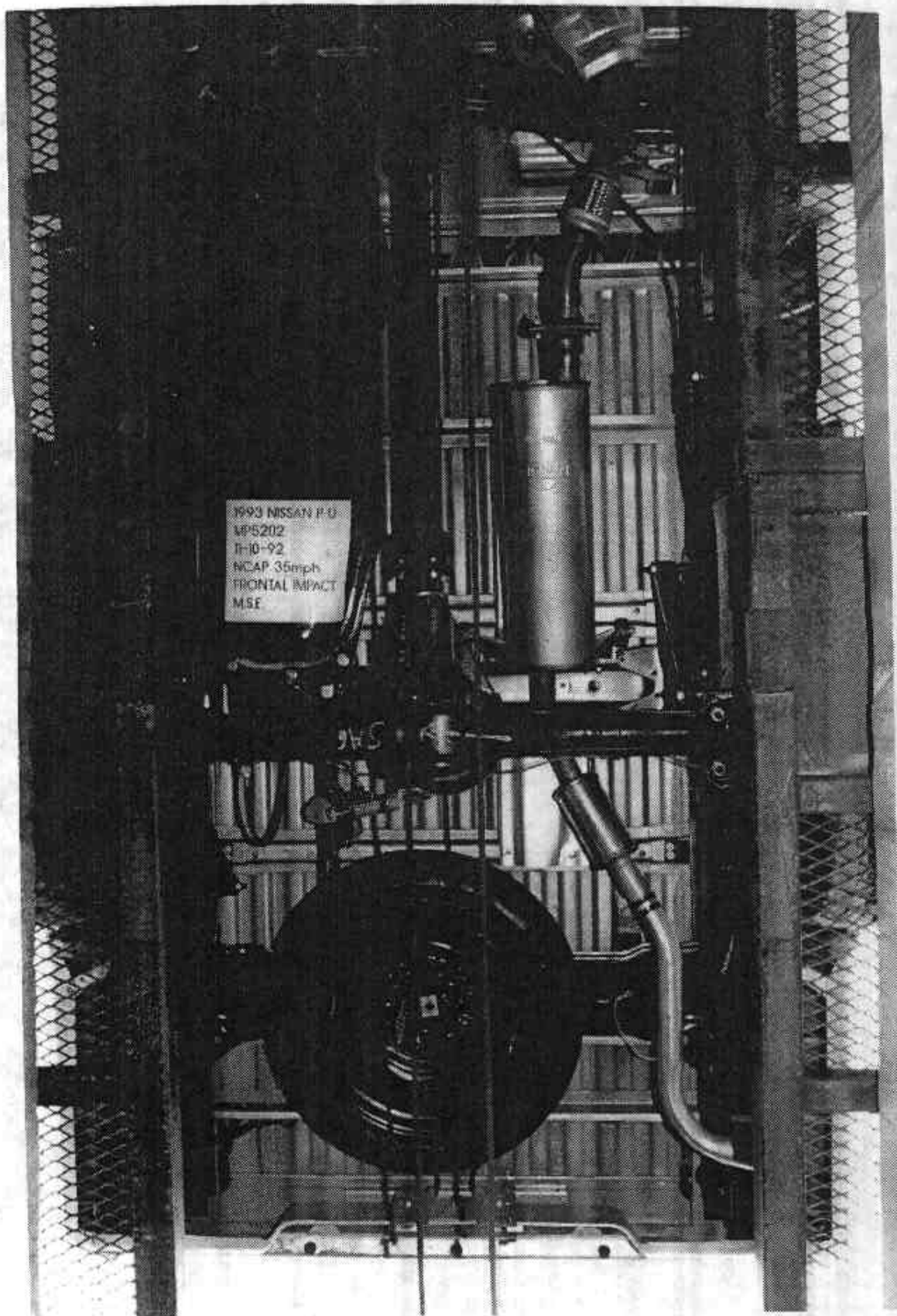
PRETEST FRONT UNDERBODY VIEW
A-15

MSE-93-R92083-N02



POSTTEST FRONT UNDERBODY VIEW
A-16

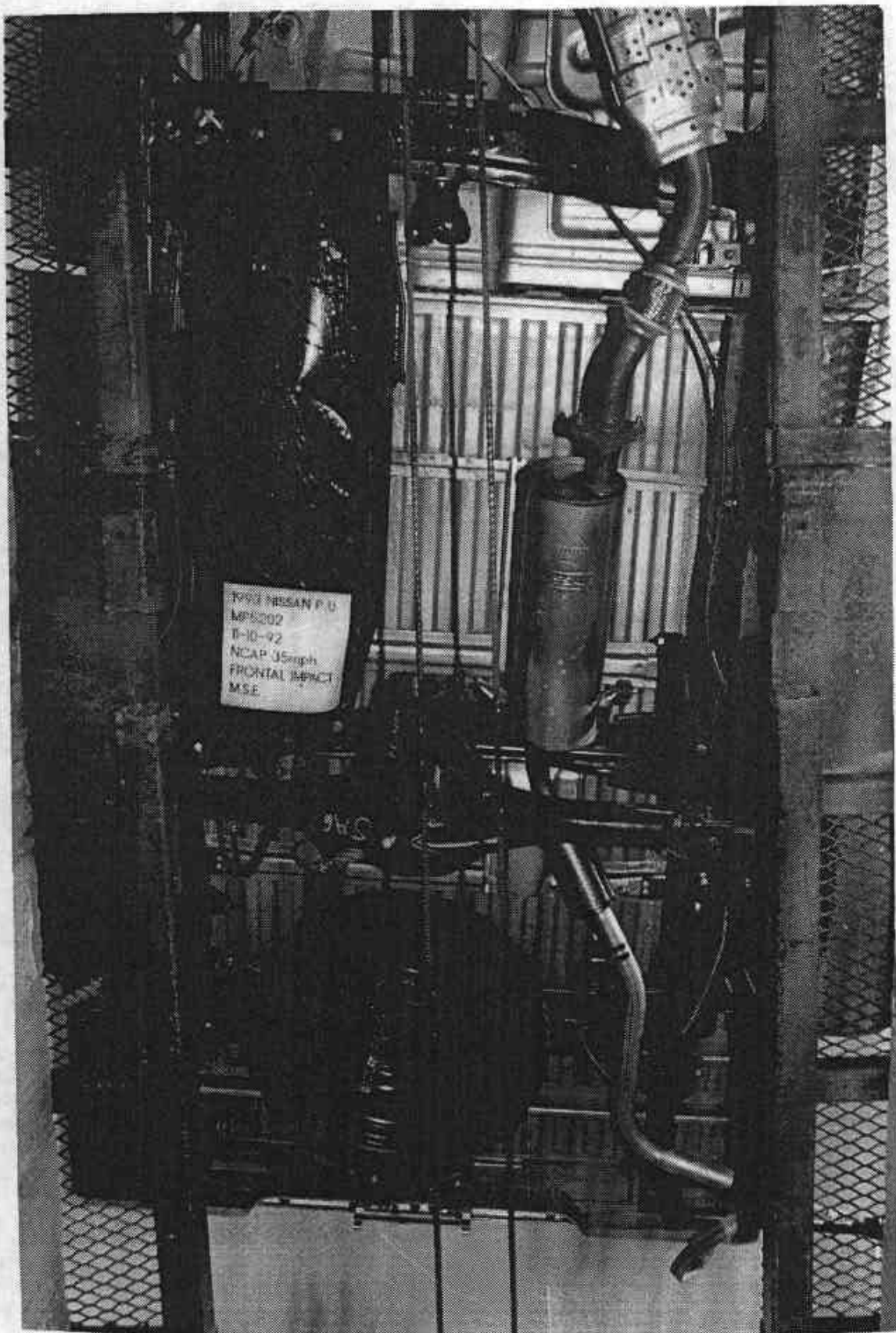
MSE-93-R92083-N02



1993 NISSAN P-U
MP5202
II-10-92
NCAP 35mph
FRONTAL IMPACT
MSE

PRETEST REAR UNDERBODY VIEW
A-17

MSE-93-R92083-N02



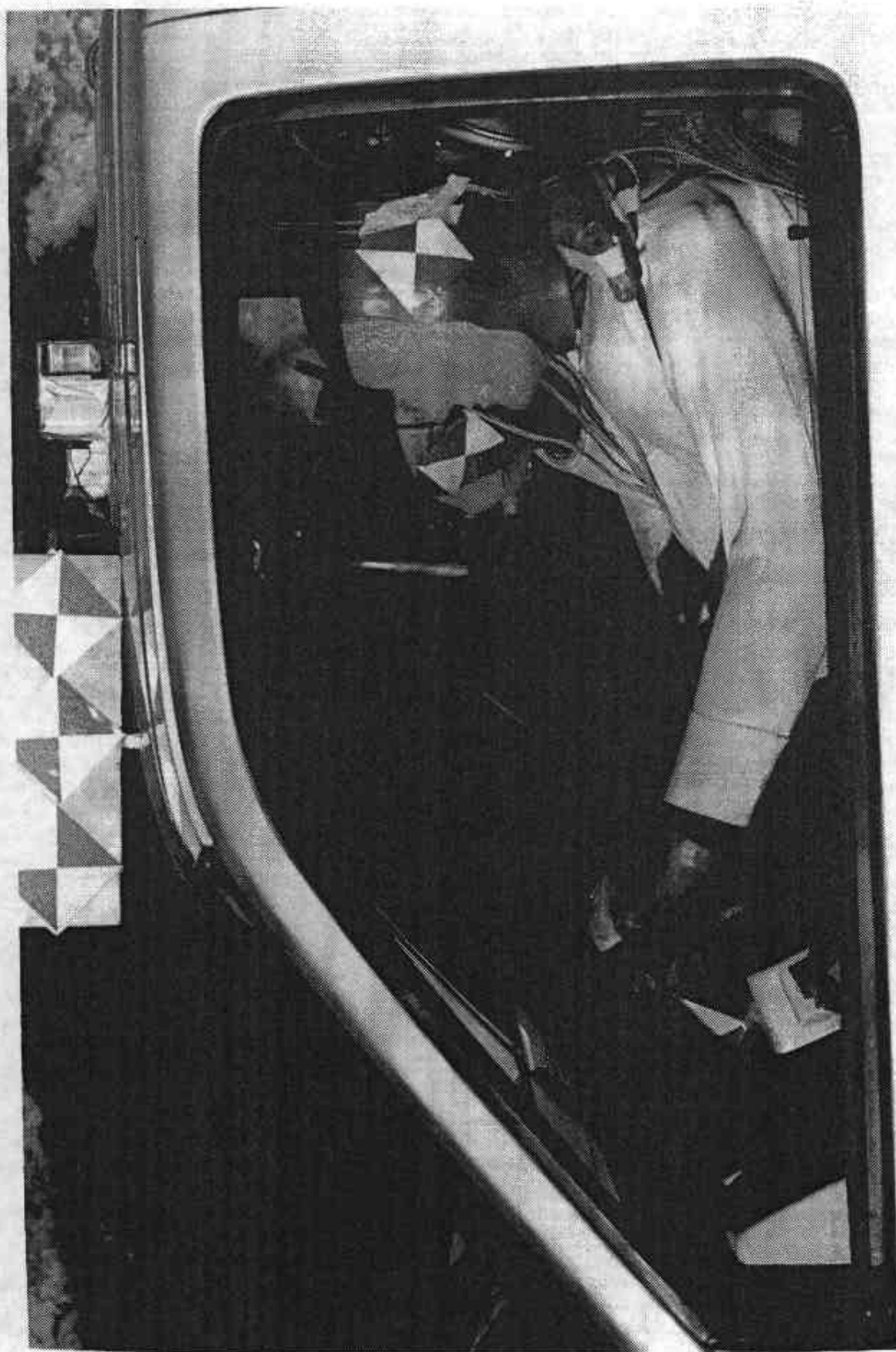
POSTTEST REAR UNDERBODY VIEW

A-18

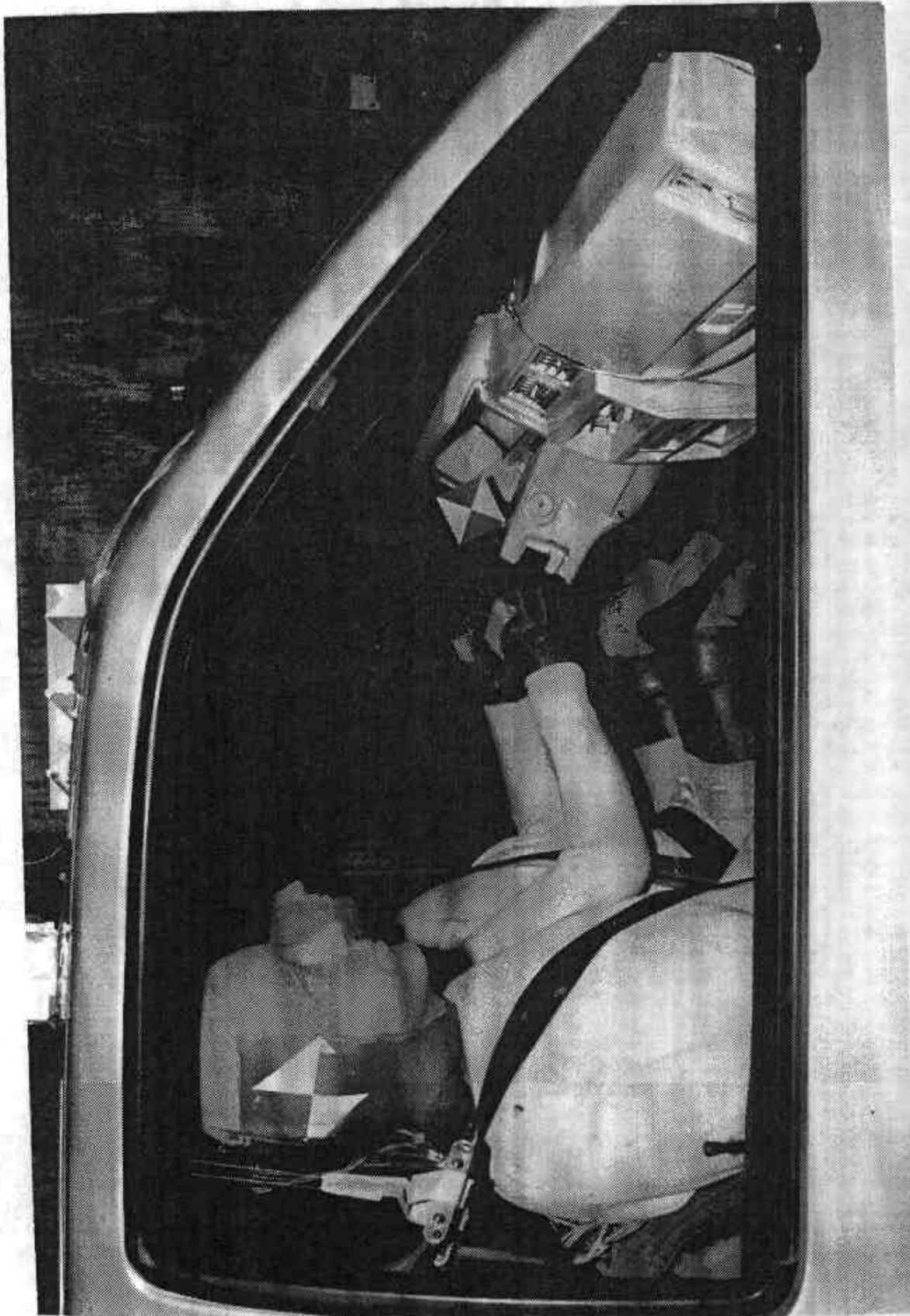
MSE-93-R92083-N02



PRETEST DRIVER DUMMY POSITION VIEW



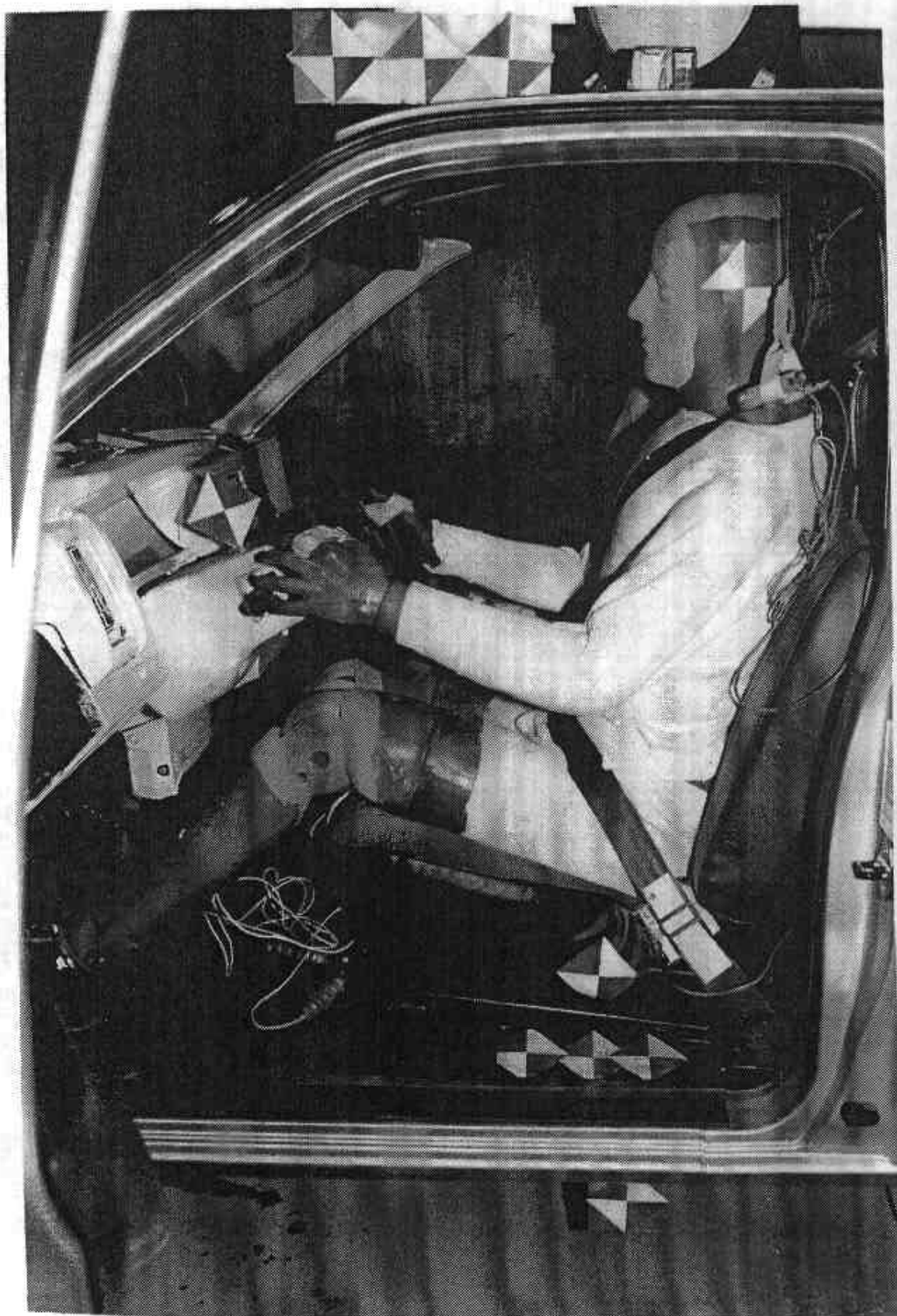
POSTTEST DRIVER DUMMY POSITION VIEW



PRETEST PASSENGER DUMMY POSITION VIEW



POSTTEST PASSENGER DUMMY POSITION VIEW



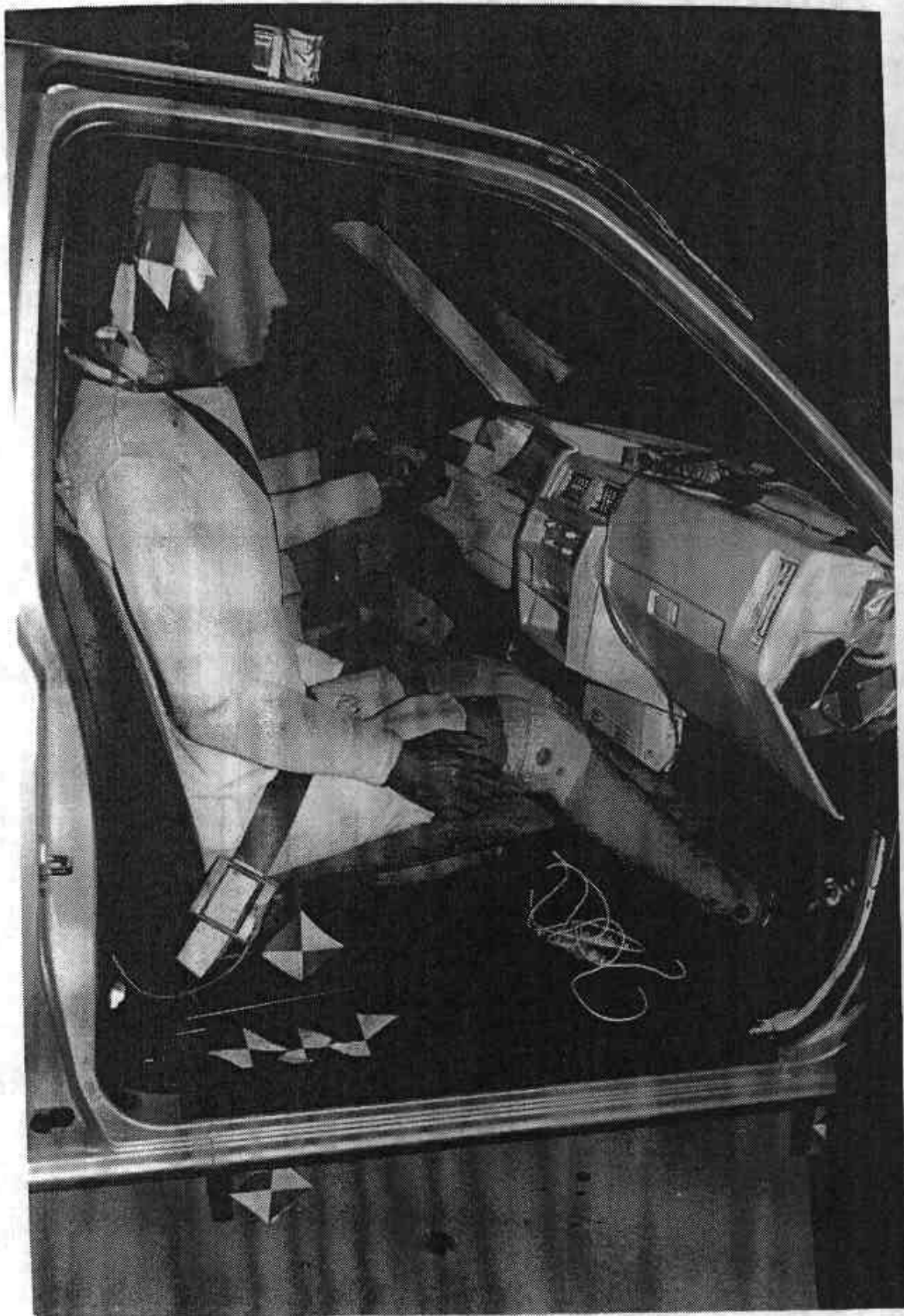
PRETEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (Door Open)

A-23

MSE-93-R92083-N02



POSTTEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (Door Open)
A-24 MSE-93-R92083-007



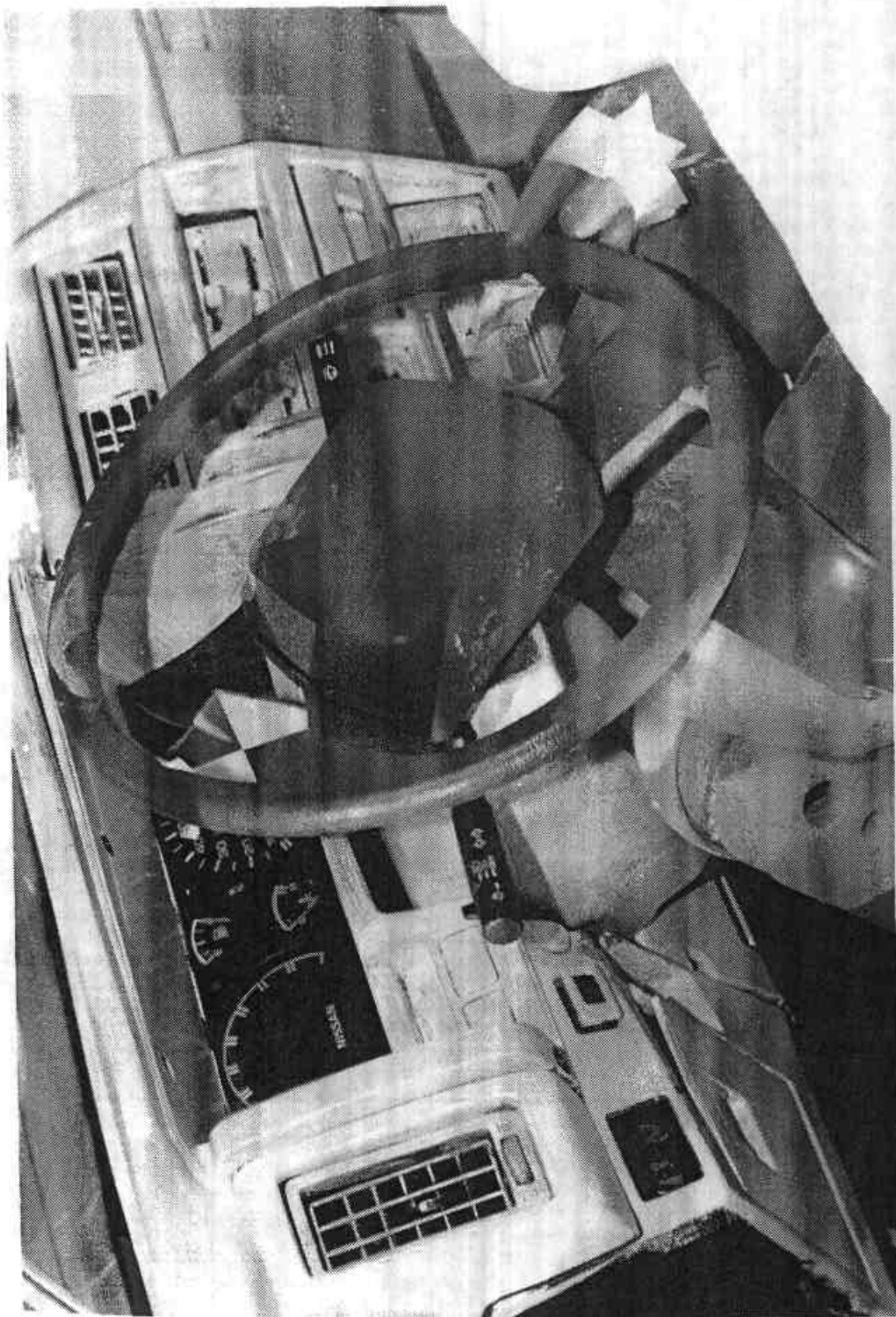
PRETEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (Door Open)

A-25

MSE-93-R92083-N02



POSTTEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (Door Open)
A-26 MSE-93-R92083-N02



POSTTEST DRIVER AND STEERING COLUMN HUB/RIM AND KNEE CONTACT AREA



POSTTEST PASSENGER ATD KNEE CONTACT AREA

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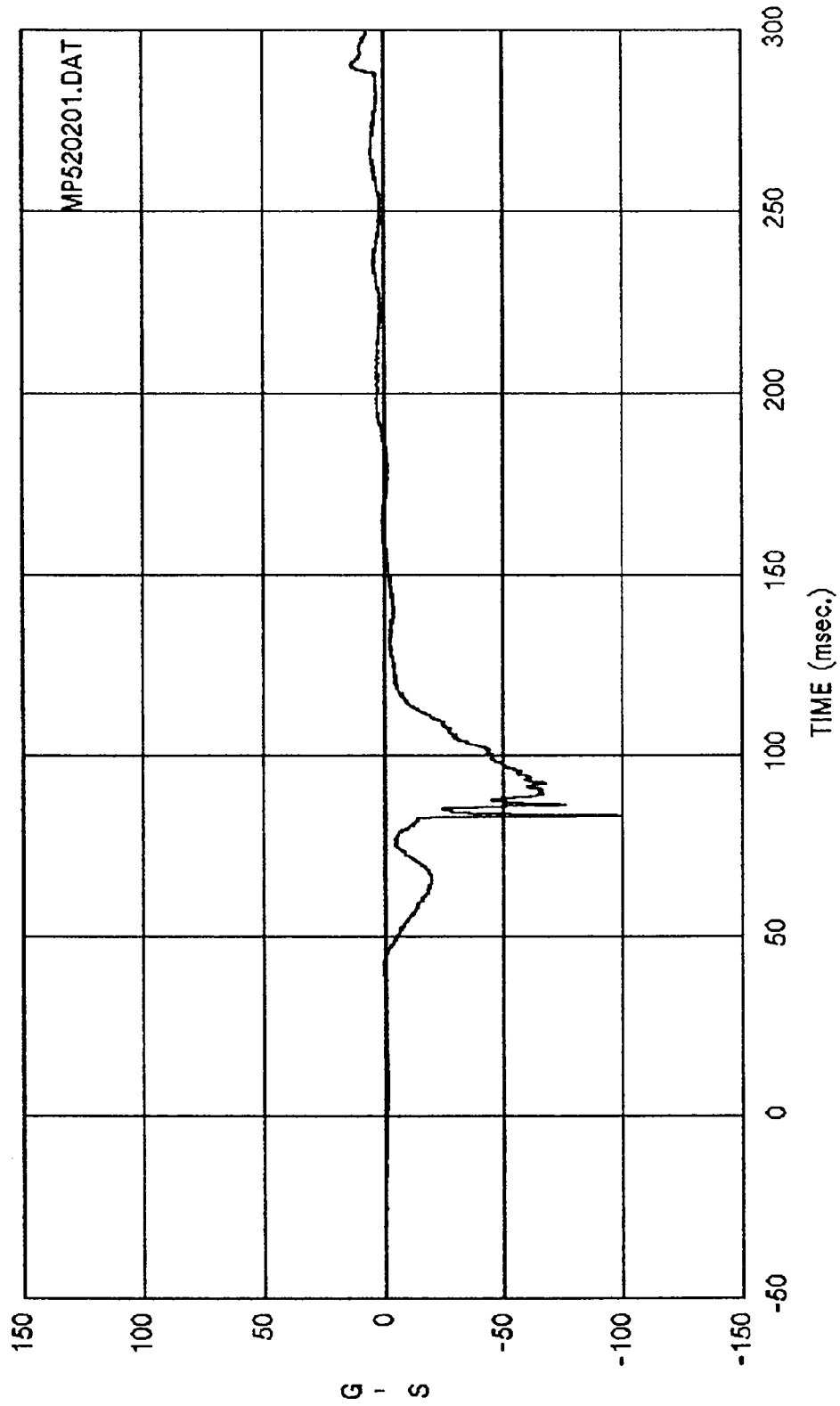
APPENDIX B-1

VEHICLE AND DUMMY (ATD) RESPONSE DATA

DATA FILTERING:

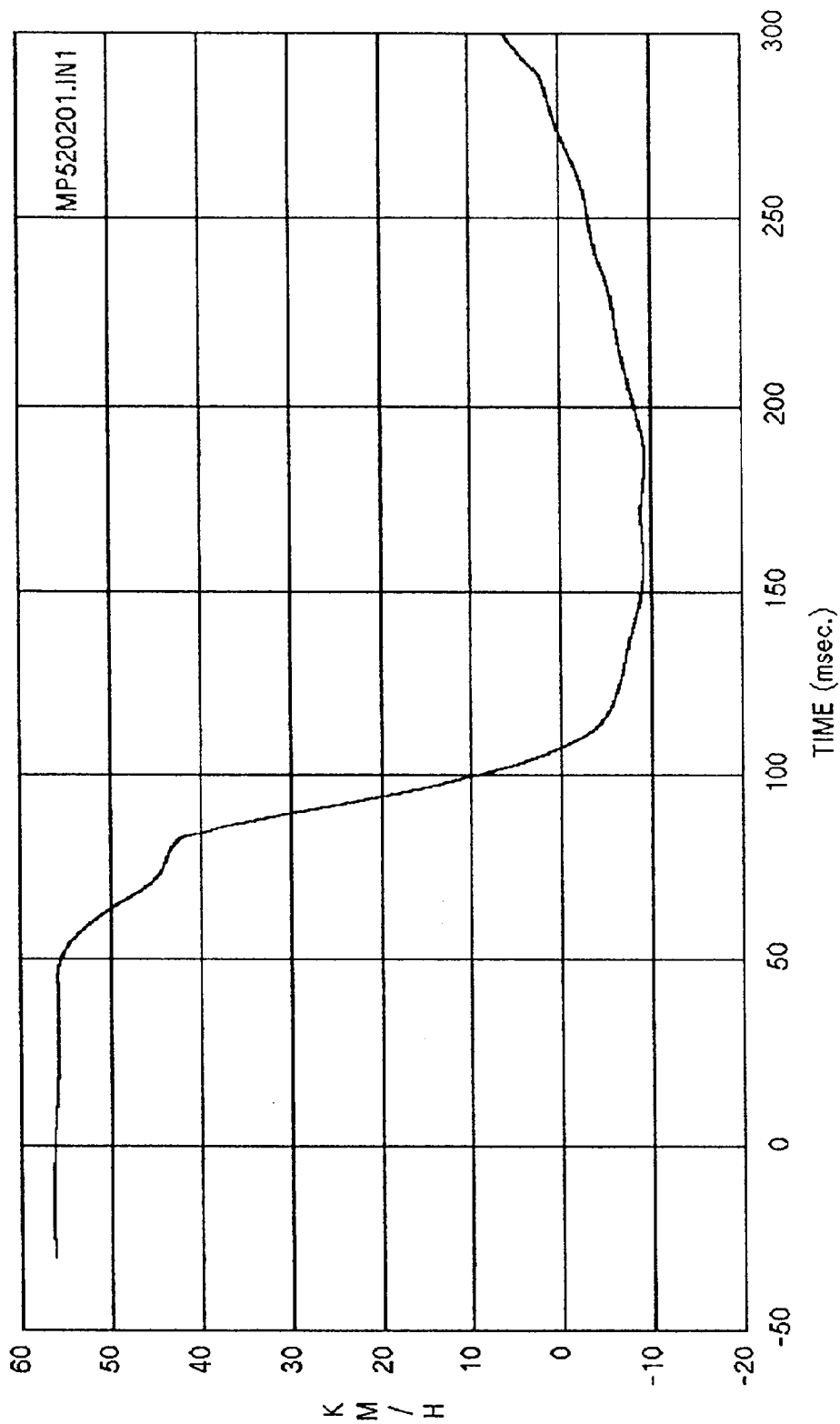
ATD Head Channels	- Class 1000
ATD Chest Channels	- Class 180
ATD Femur Channels	- Class 600
Vehicle Channels	- Class 60

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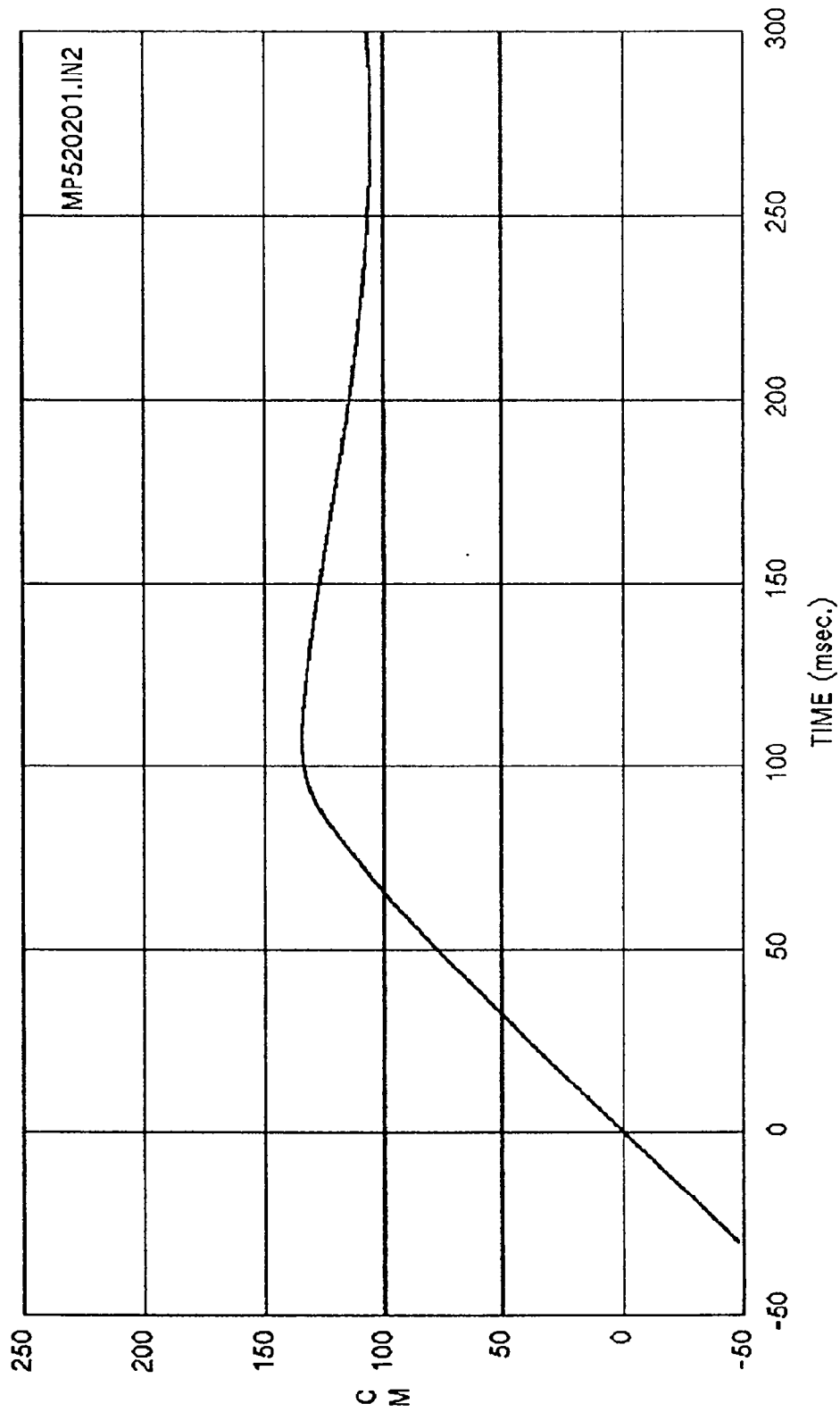
Curve: Driver head acceleration -- X axis Filter: SAE CLASS 1000 Max = 13.802 Min = -109.84

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



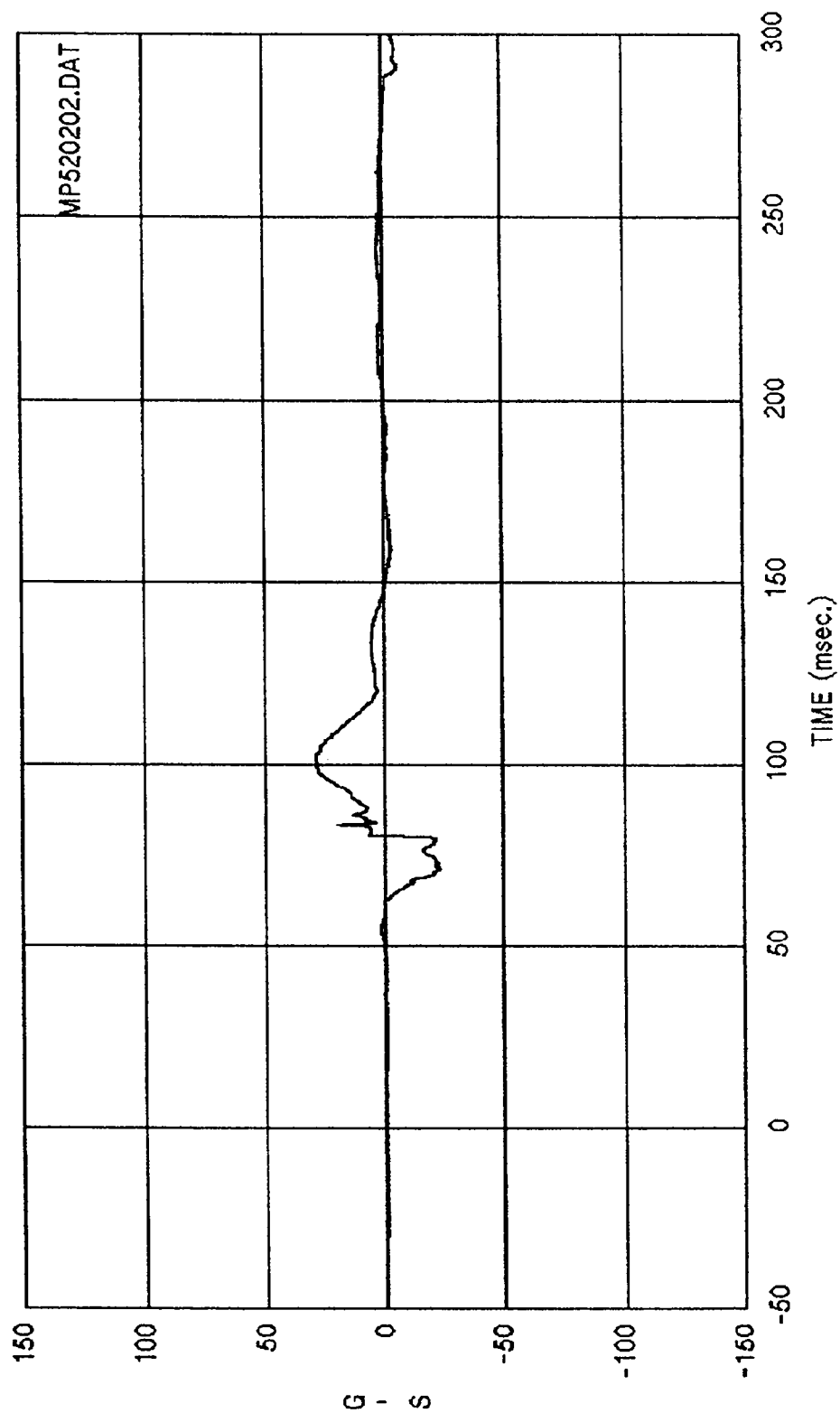
Curve: Driver head delta V -- X axis Filter: SAE CLASS 180 Max = 56.300 Min = -9.3101

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

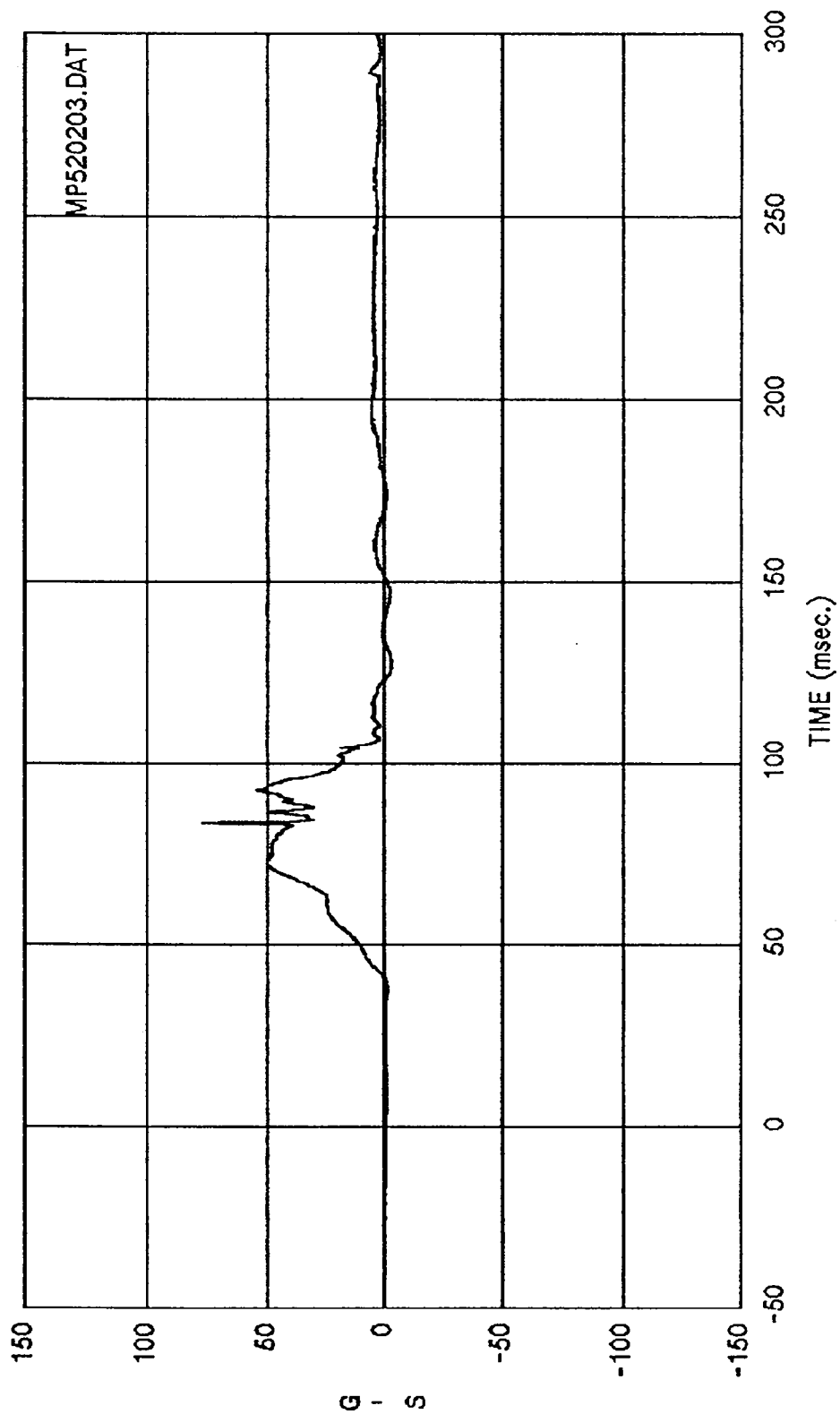


Curve: Driver head displacement -- X axis Filter: SAE CLASS 180 Max = 134.94 Min = 105.57

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

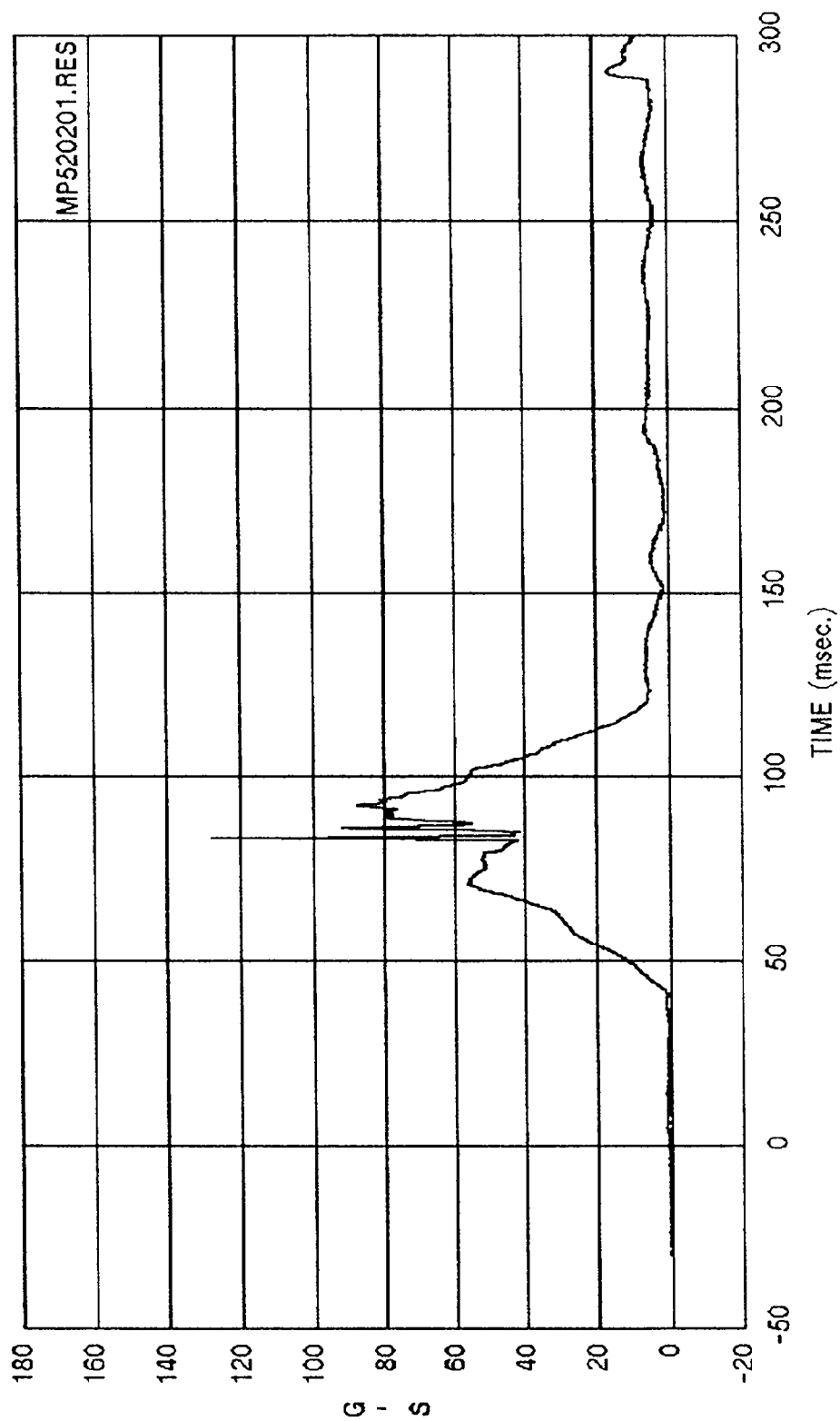


Curve: Driver head acceleration -- Y axis Filter: SAE CLASS 1000 Max = 29.015 Min = -23.482
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

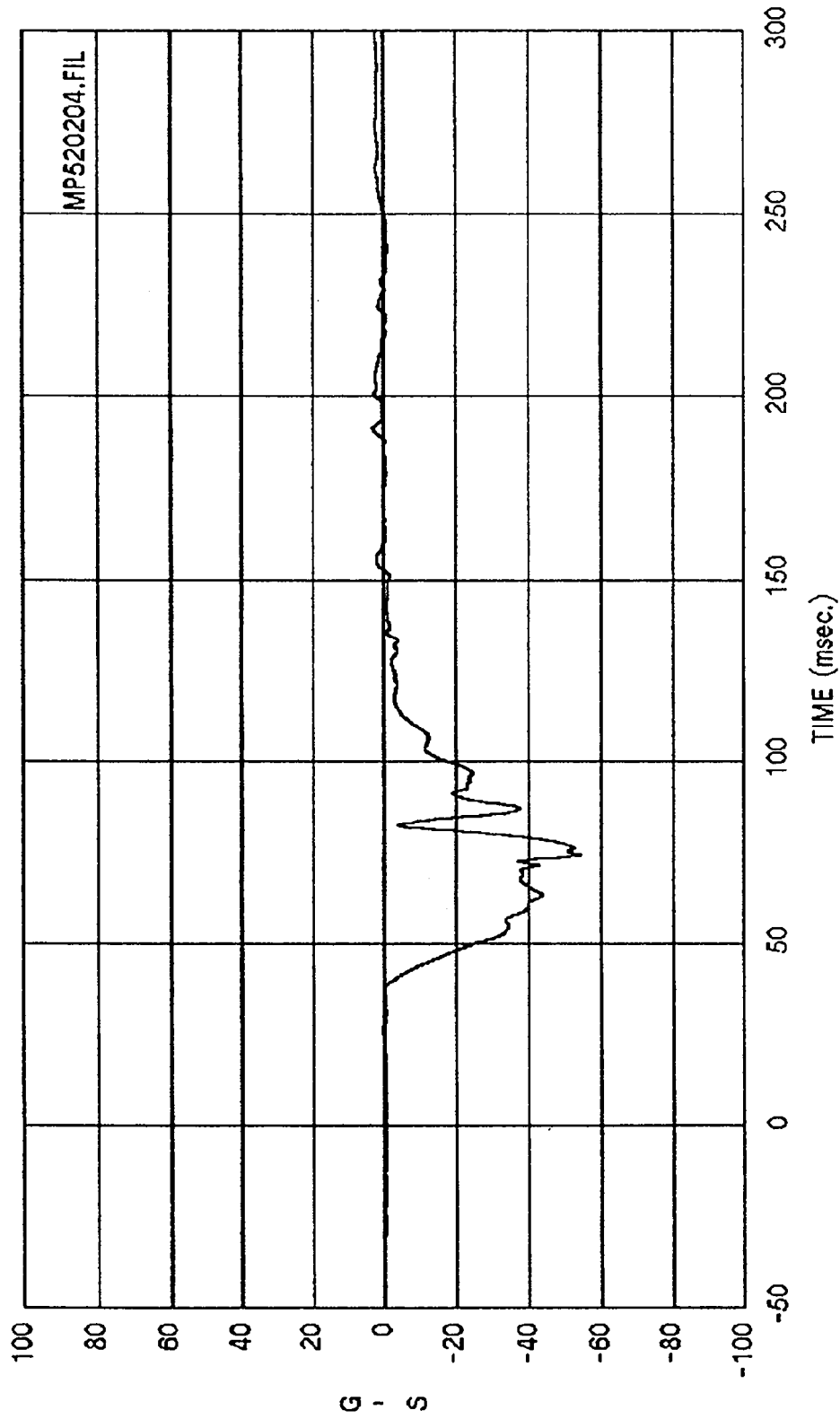


Curve: Driver head acceleration -- Z axis Filter: SAE CLASS 1000 Max = 77.499 Min = -3.1149

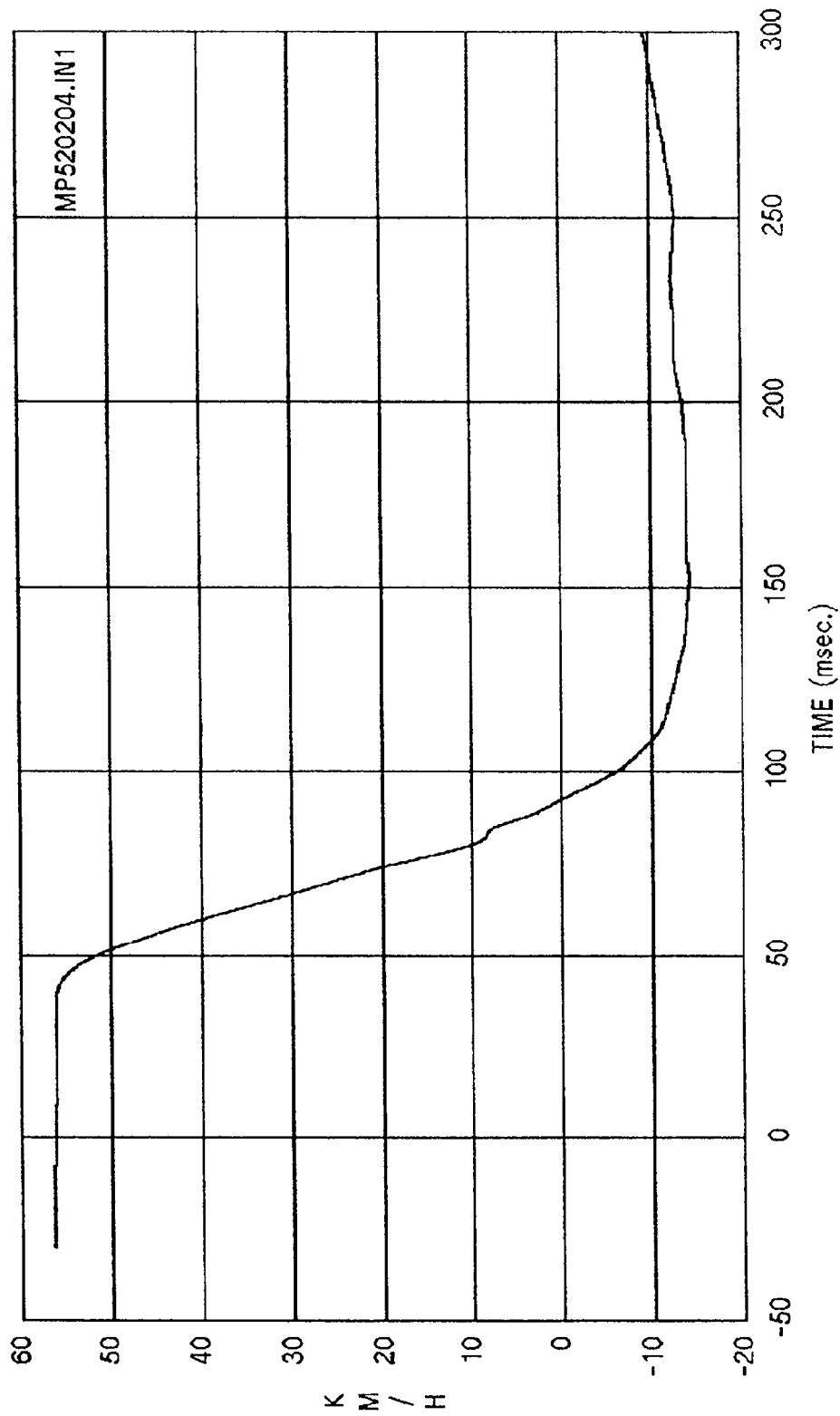
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



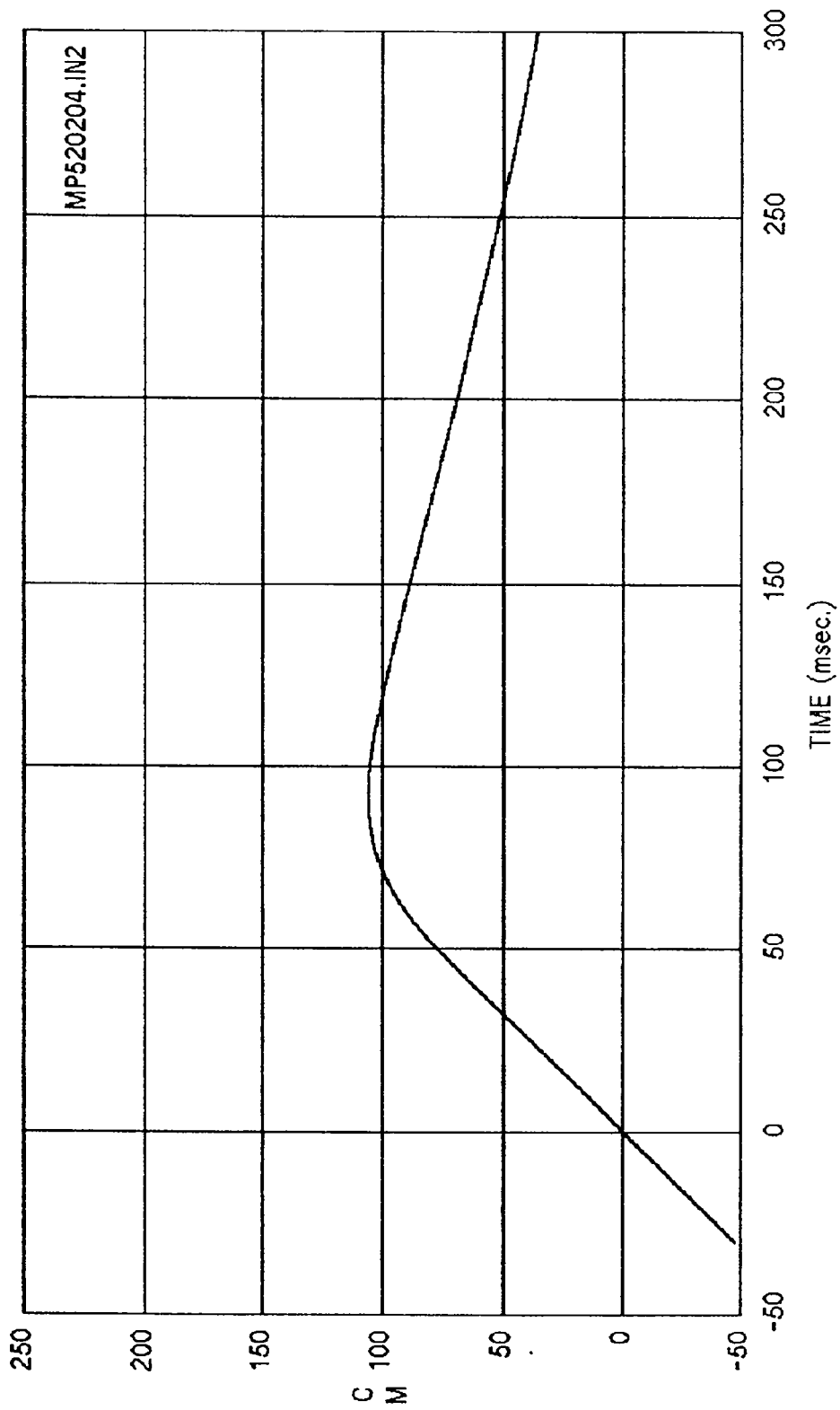
Curve: Driver head acceleration -- Resultant Filter: SAE CLASS 1000 Max = 133.89 Min = .12460
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Driver chest acceleration -- X axis Filter: SAE CLASS 180 Max = 2.9590 Min = -54.228
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

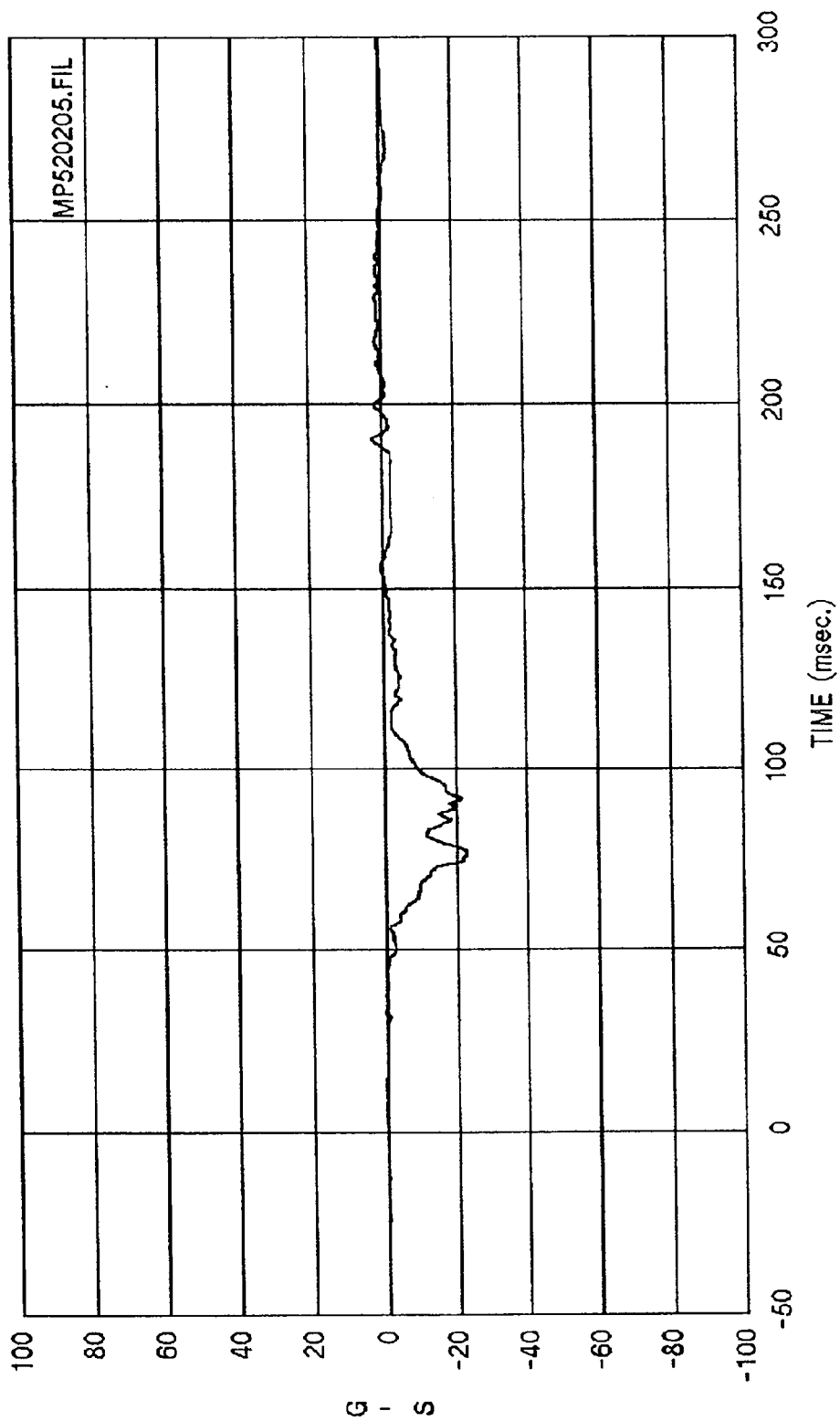


Curve: Driver chest delta V -- X axis Filter: SAE CLASS 180 Max = 56.301 Min = -14.232
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

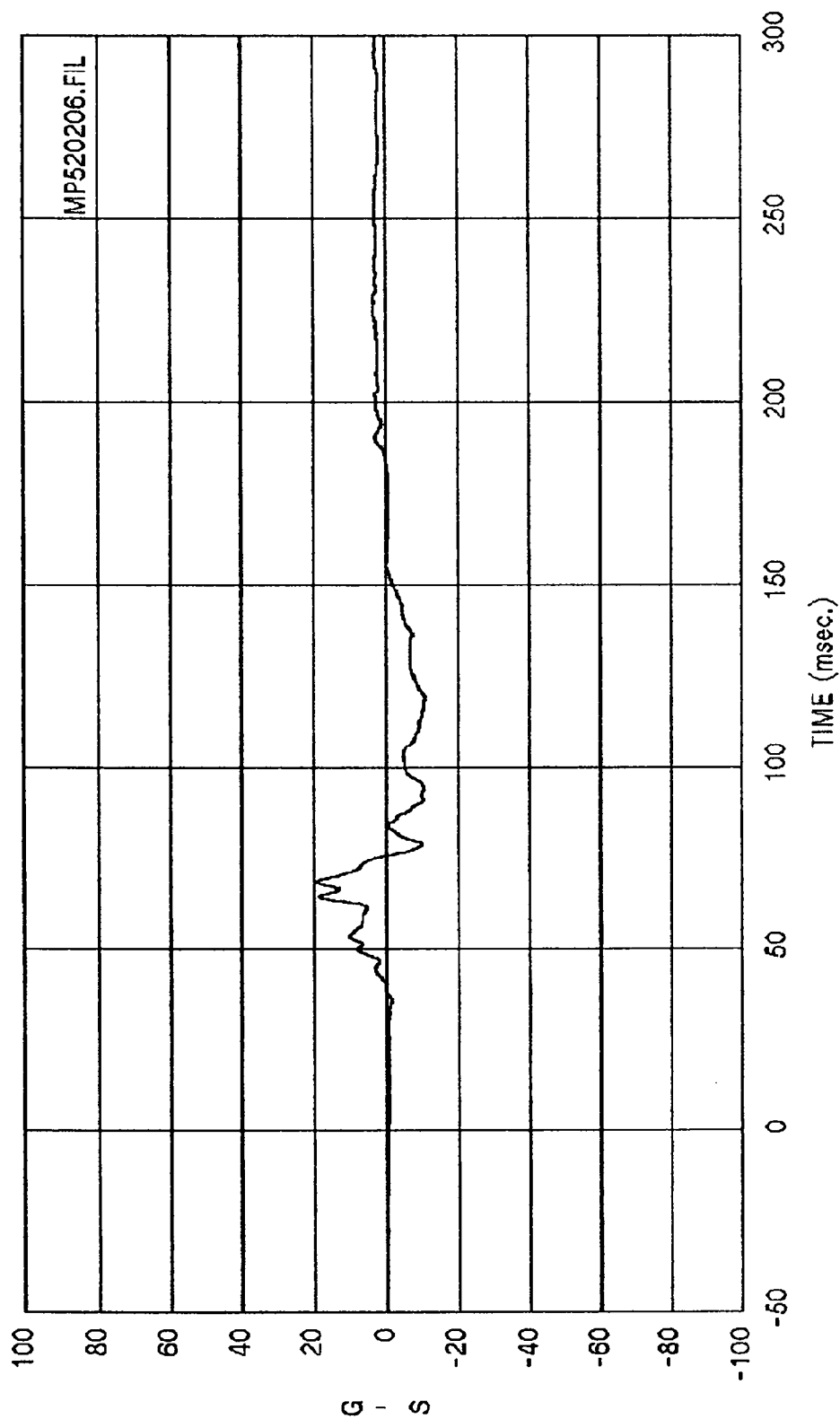


Curve: Driver chest displacement -- X axis Filter: SAE CLASS 180 Max = 106.06 Min = 36.298

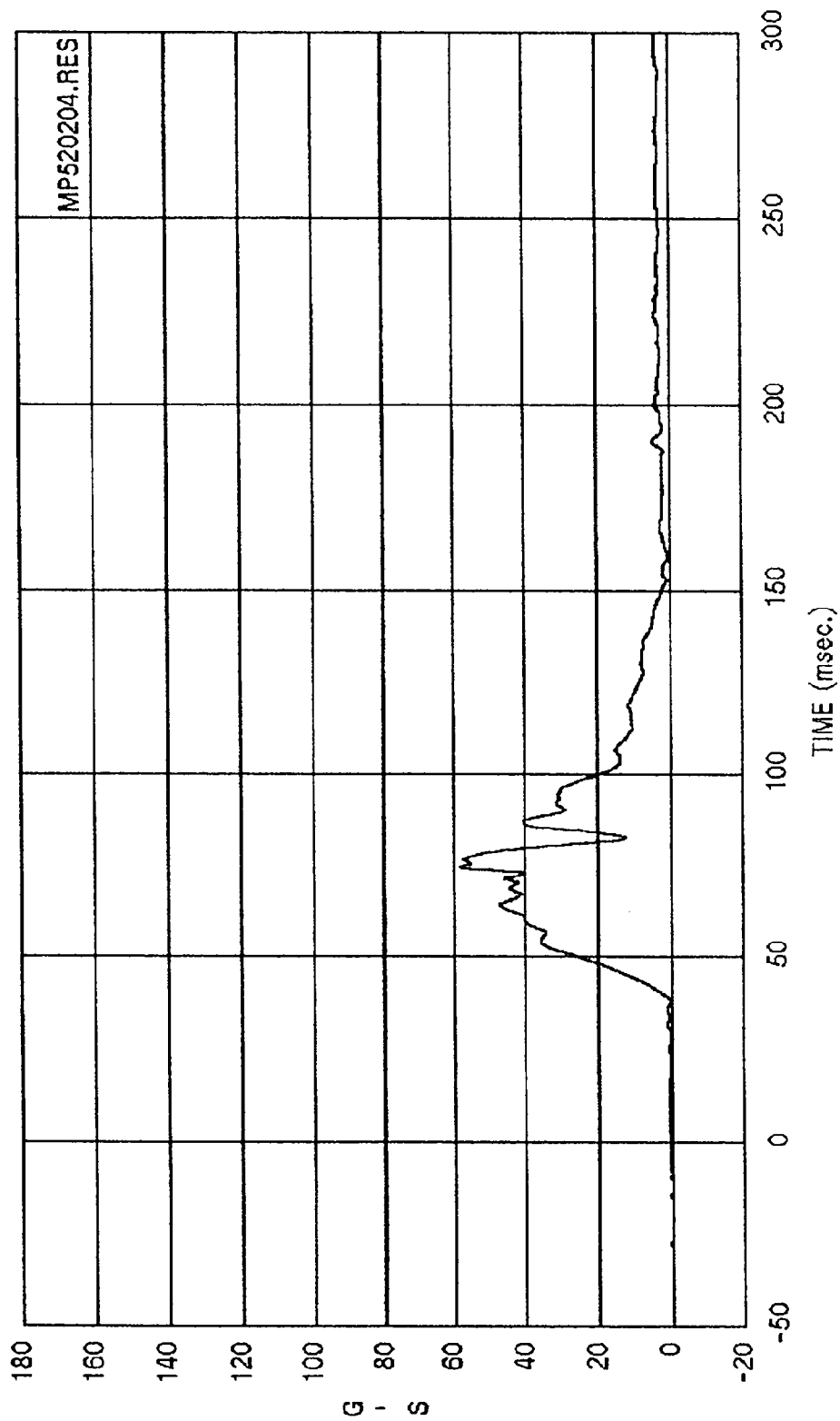
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



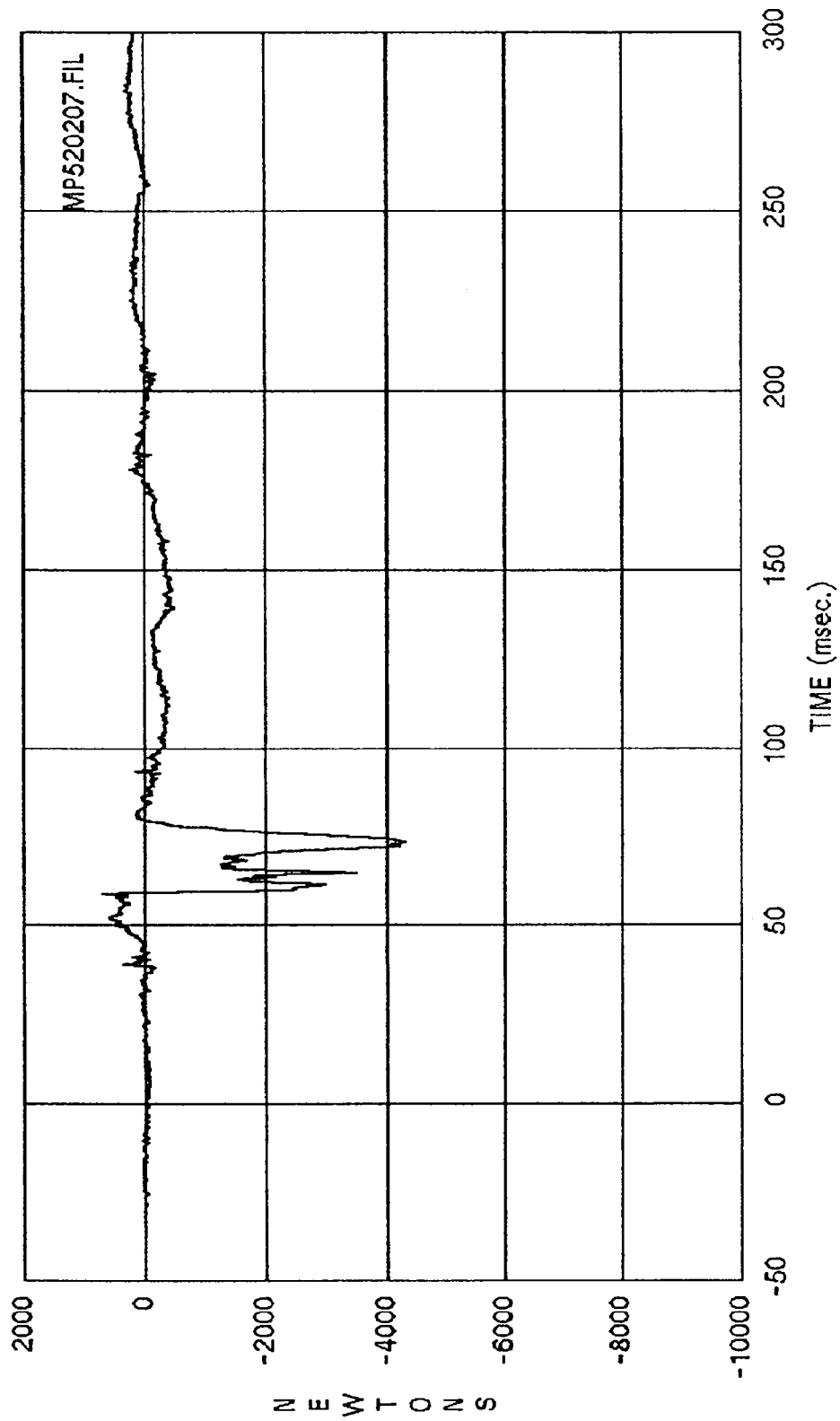
Curve: Driver chest acceleration -- Y axis Filter: SAE CLASS 180 Max = 2.6529 Min = -22.761
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



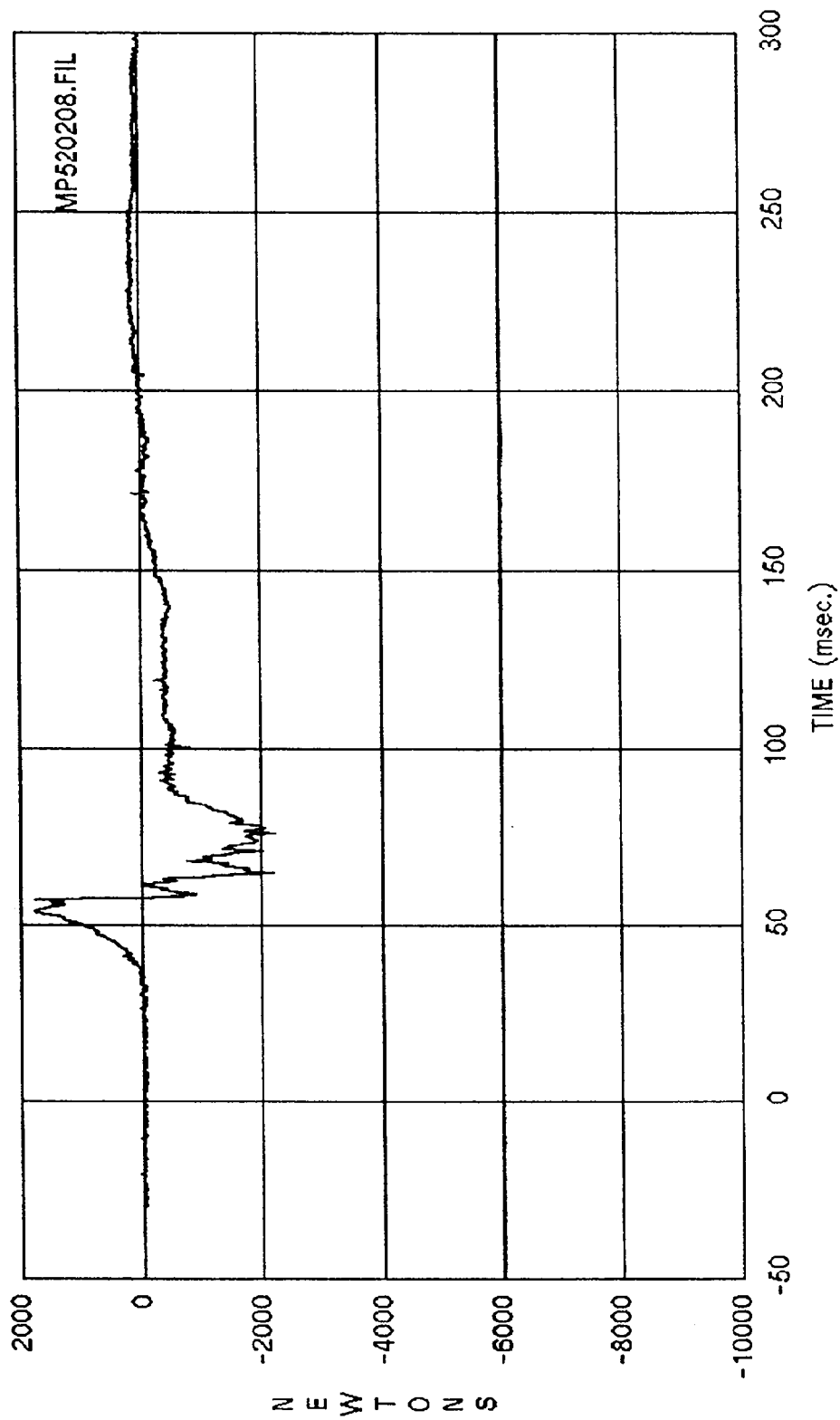
Curve: Driver chest acceleration -- Z axis Filter: SAE CLASS 180 Max = 19.740 Min = -10.817
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



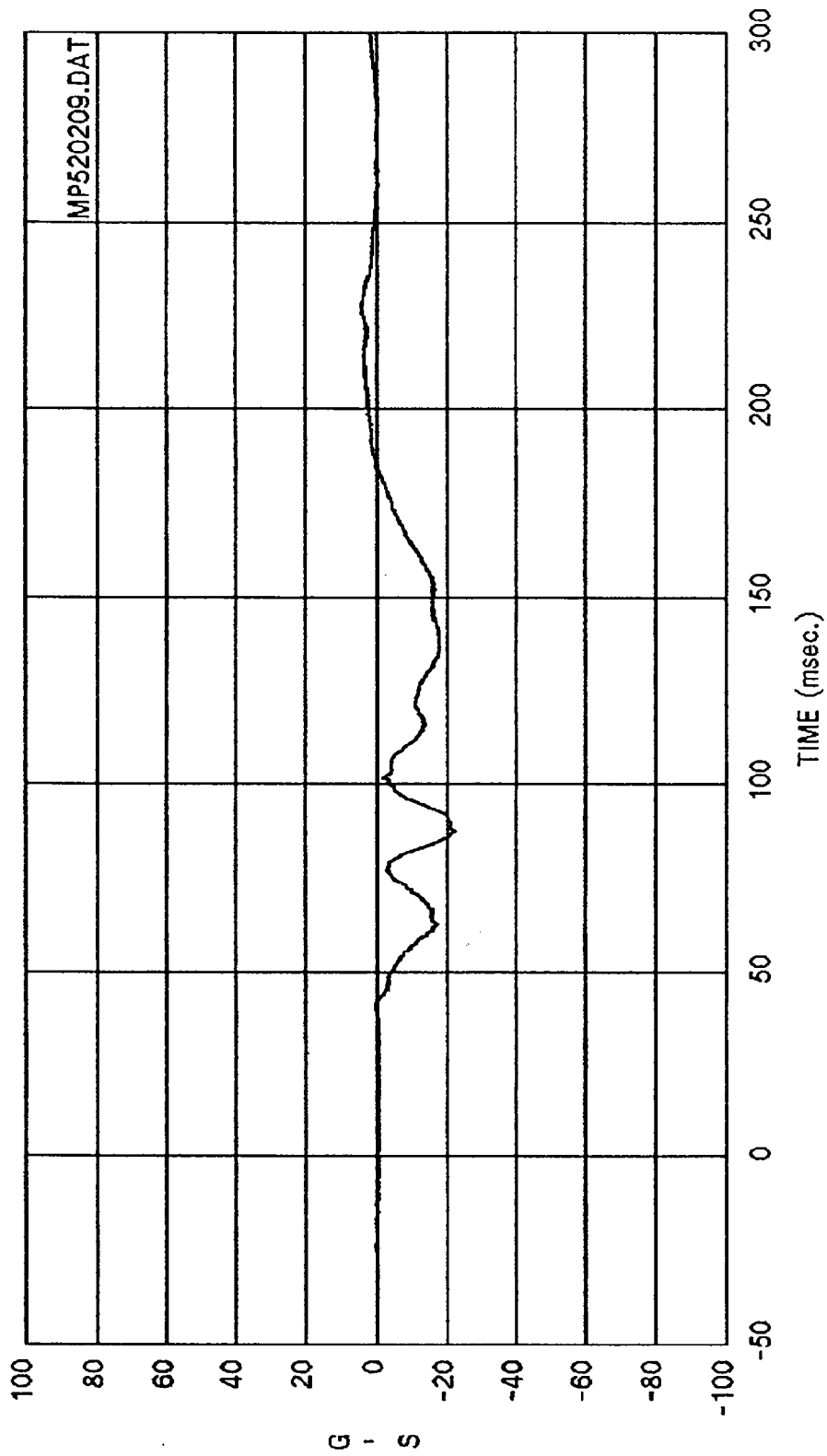
Curve: Driver chest acceleration -- Resultant Filter: SAE CLASS 180 Max = 58.634 Min = .29130
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



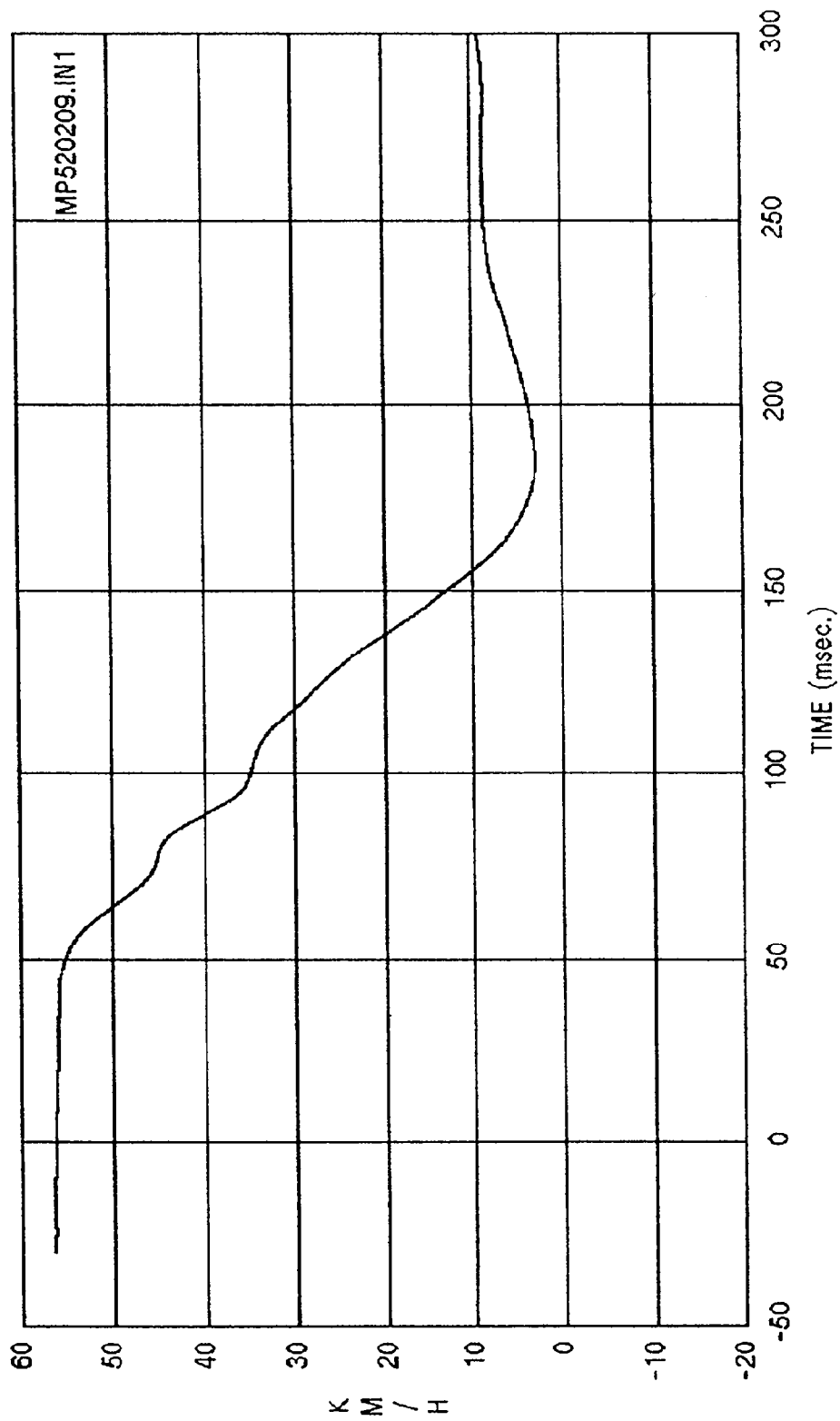
Curve: Driver left femur force Filter: SAE CLASS 600 Max = 694.93 Min = -4318.1
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



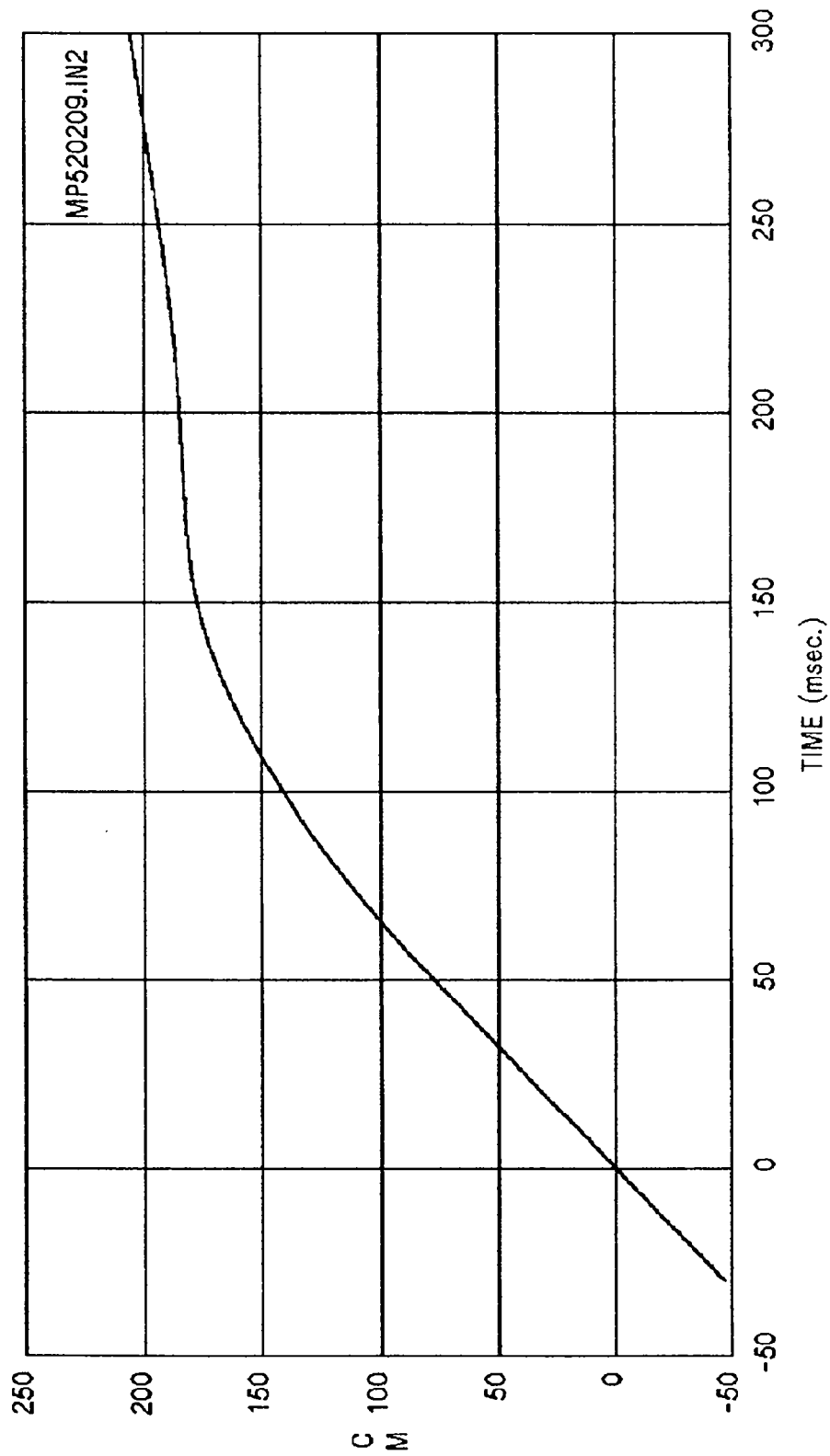
Curve: Driver right femur force Filter: SAE CLASS 600 Max = 1883.0 Min = -2217.4
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Passenger head acceleration -- X axis Filter: SAE CLASS 1000 Max = 4.5459 Min = -22.293
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

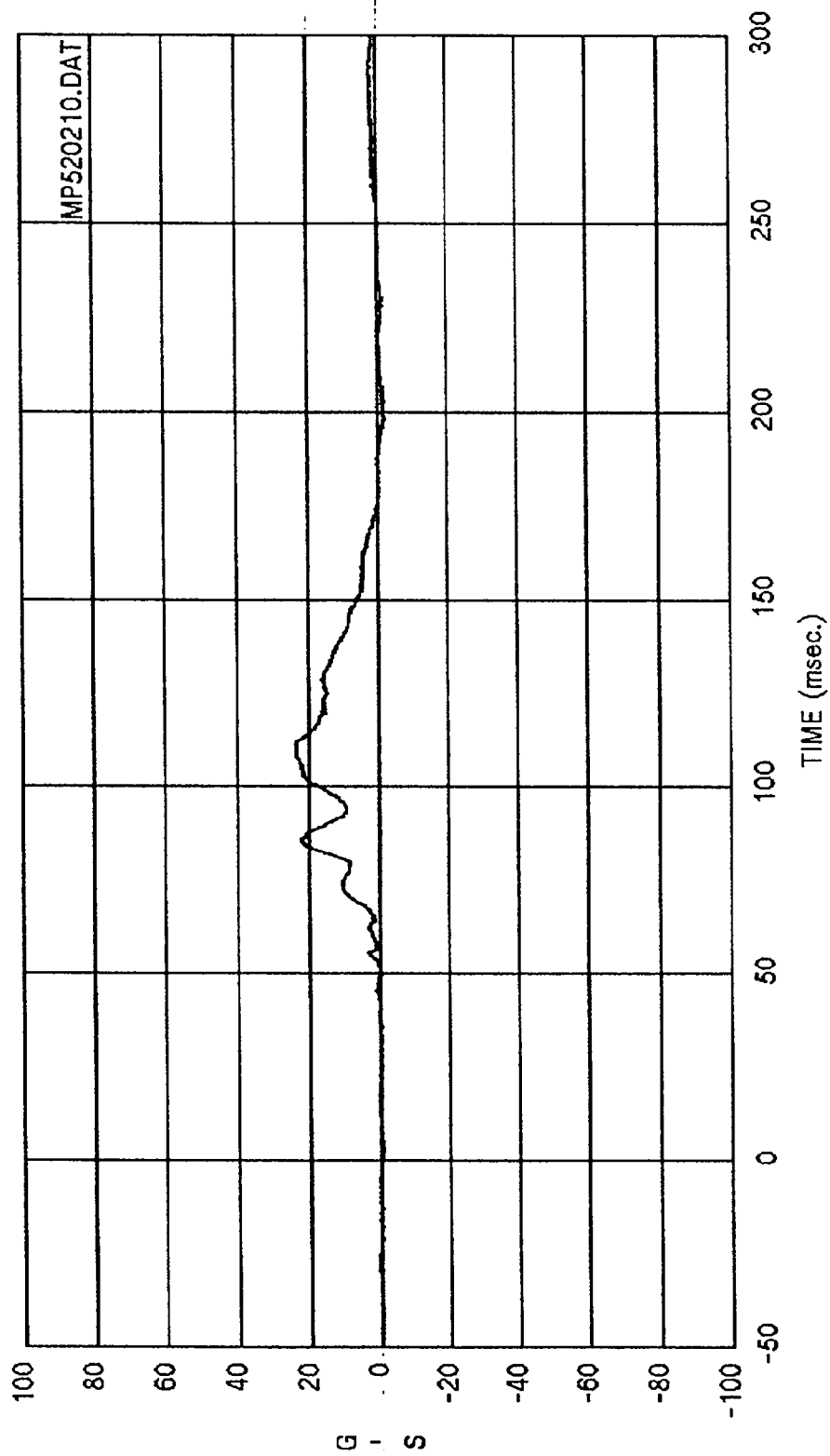


Curve: Passenger head delta V -- X axis Filter: SAE CLASS 180 Max = 56.301 Min = 2.8647
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

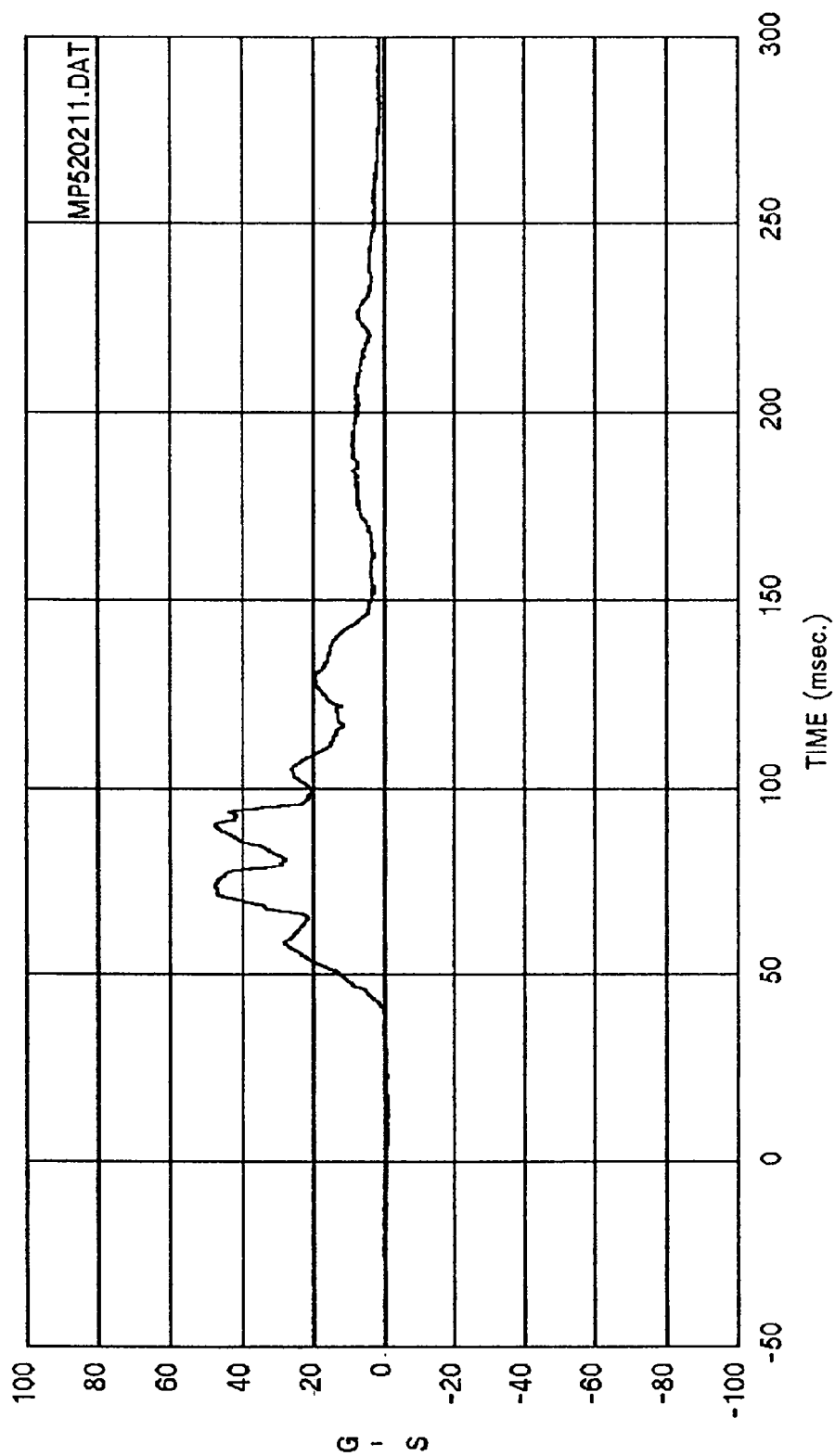


Curve: Passenger head displacement -- X axis Filter: SAE CLASS 180 Max = 205.45 Min = .10000E+11

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

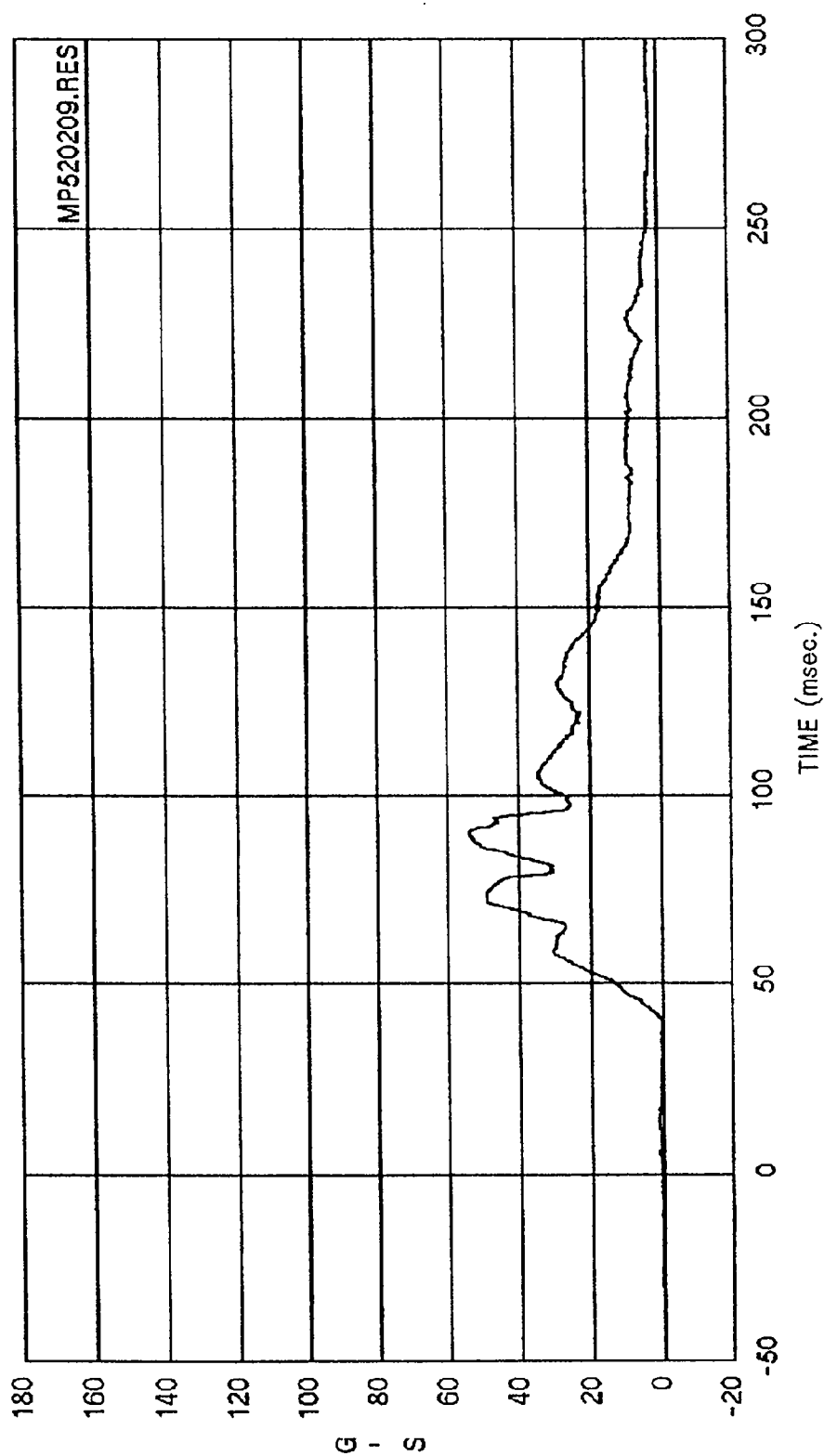


Curve: Passenger head acceleration -- Y axis Filter: SAE CLASS 1000 Max = 24.001 Min = -4.517E
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



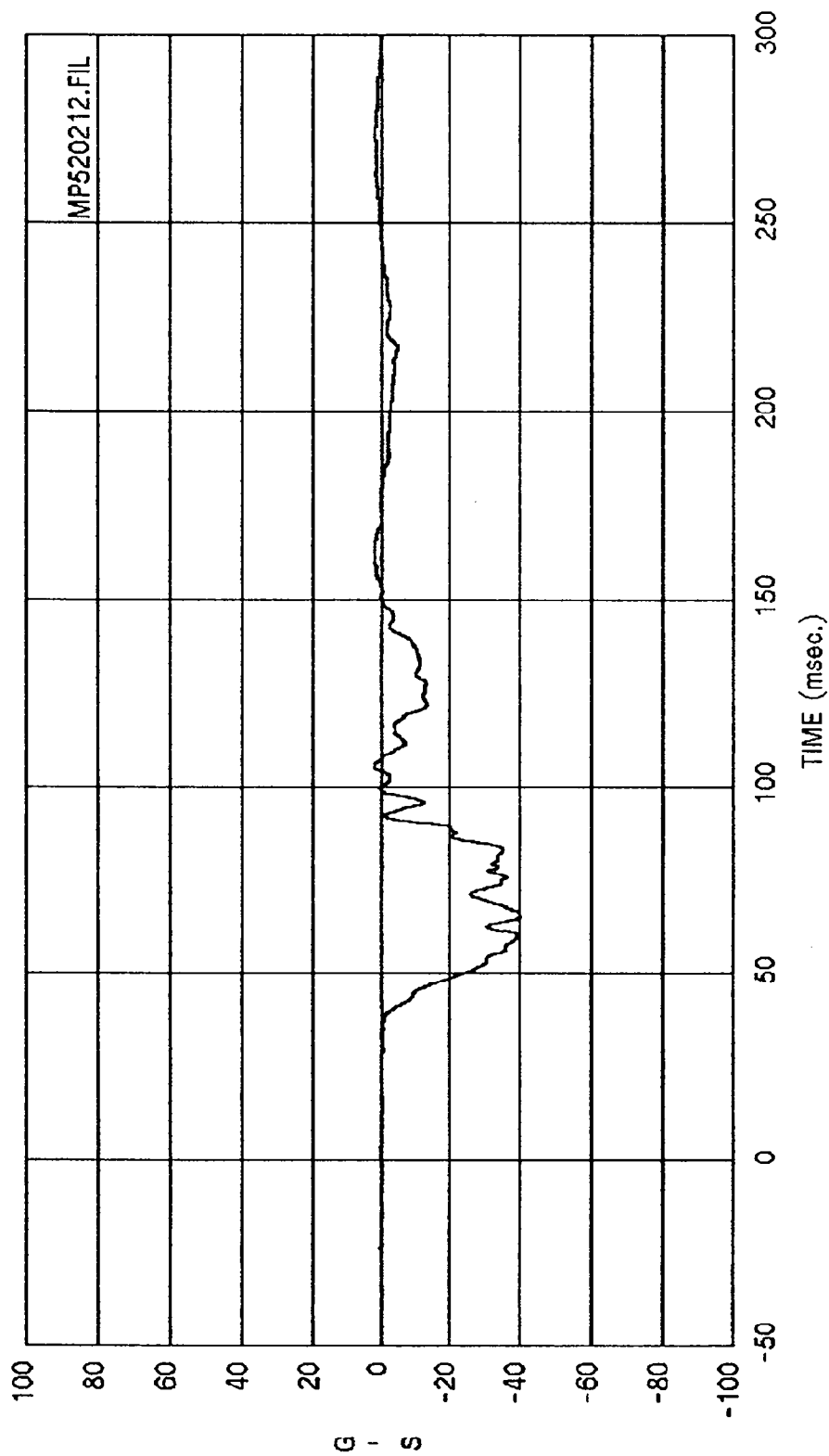
Curve: Passenger head acceleration -- Z axis Filter: SAE CLASS 1000 Max = 47.703 Min = -1.0762

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



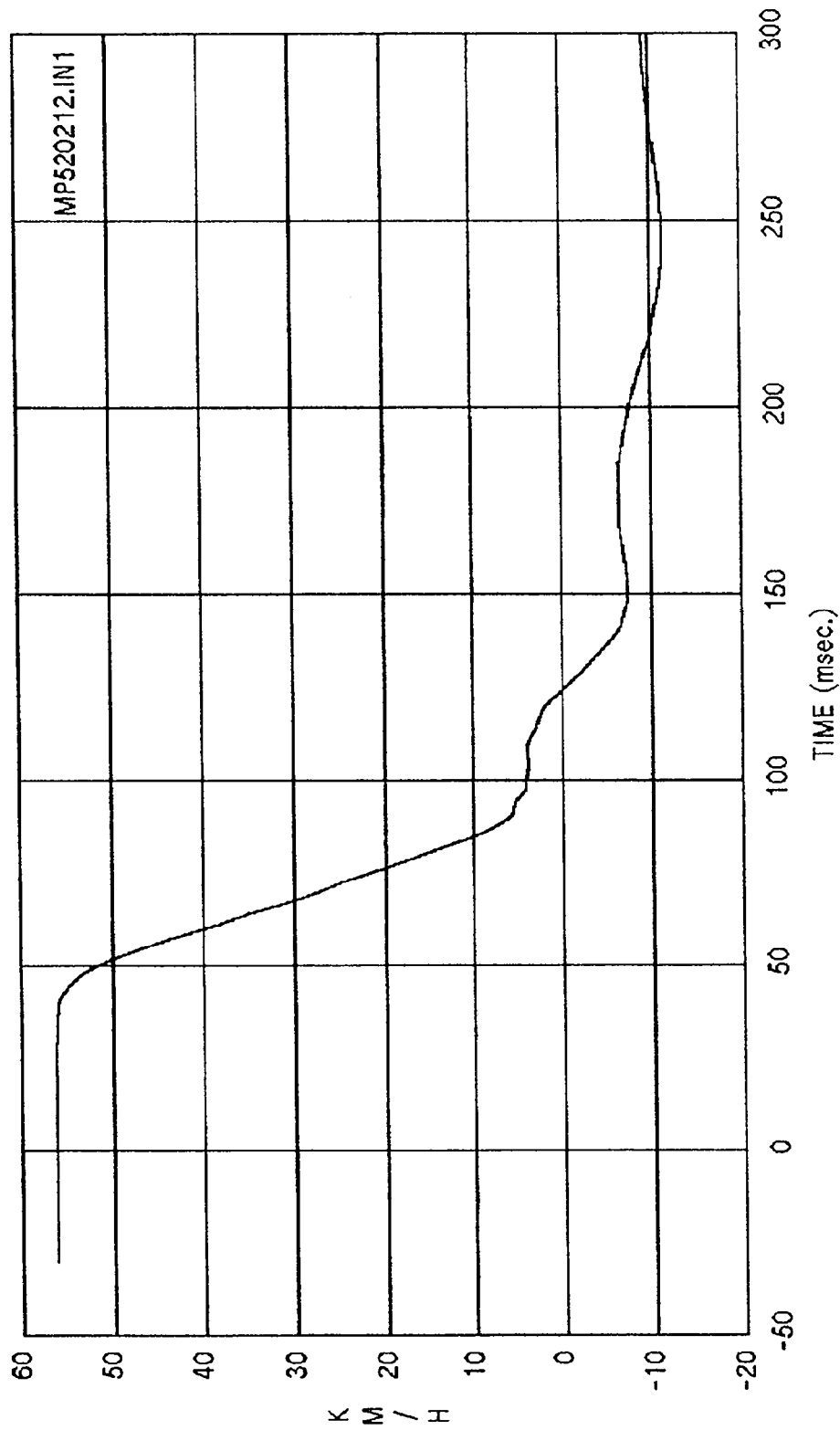
Curve: Passenger head acceleration -- Resultant Filter: SAE CLASS 1000 Max = 54.085 Min = .90917
01

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

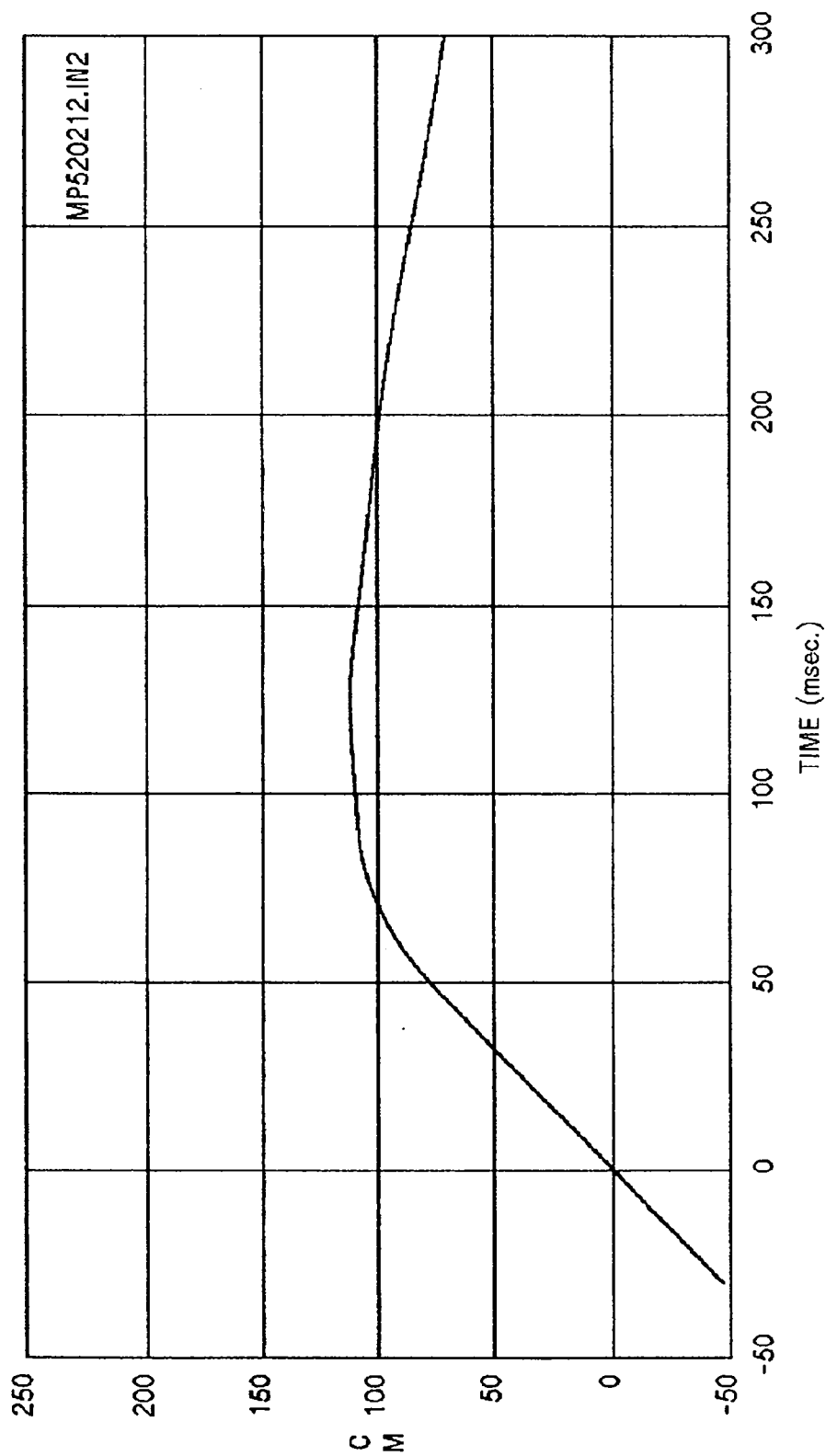


Curve: Passenger chest acceleration -- X axis Filter: SAE CLASS 180 Max = 2.0985 Min = -40.281

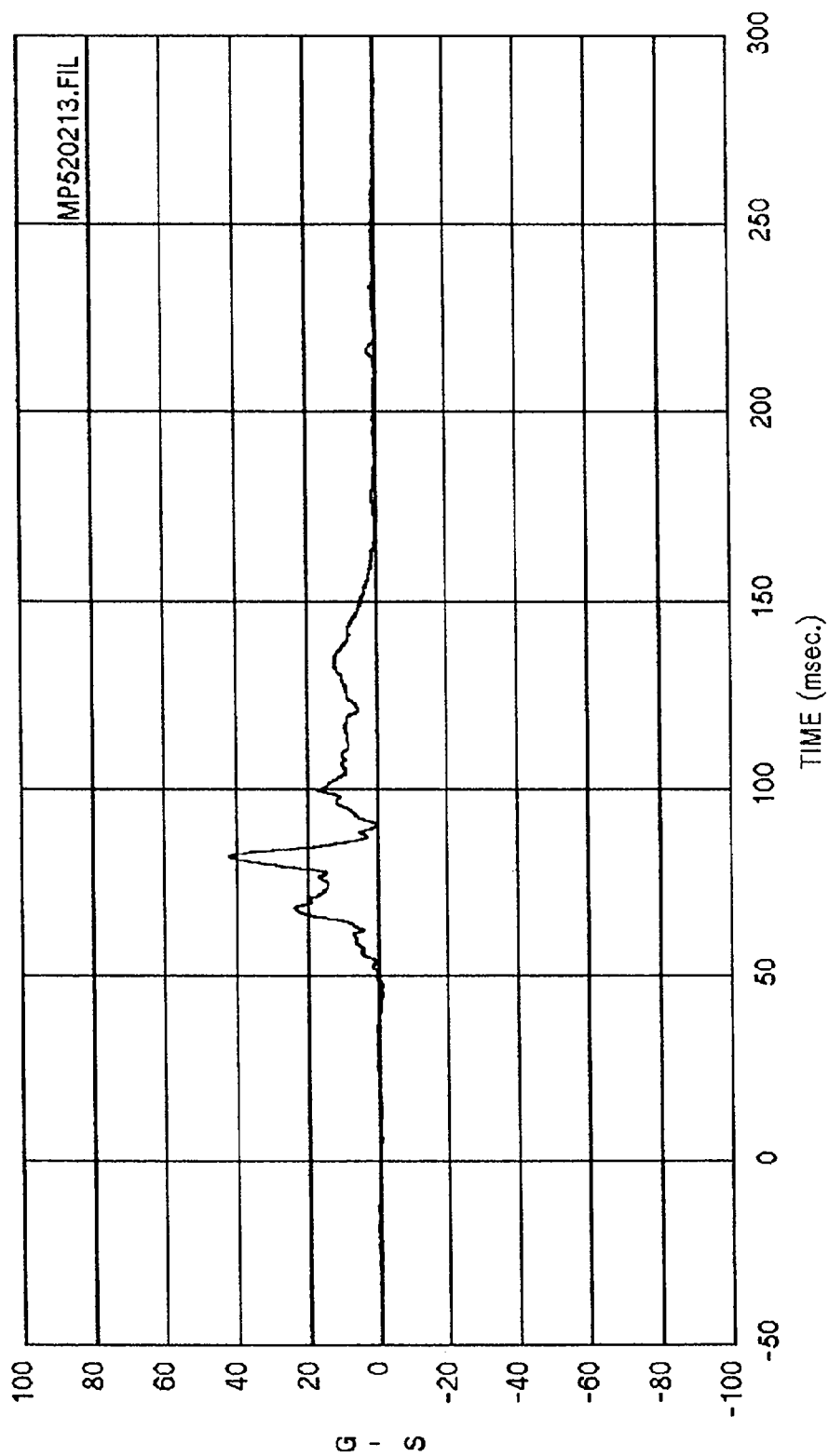
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



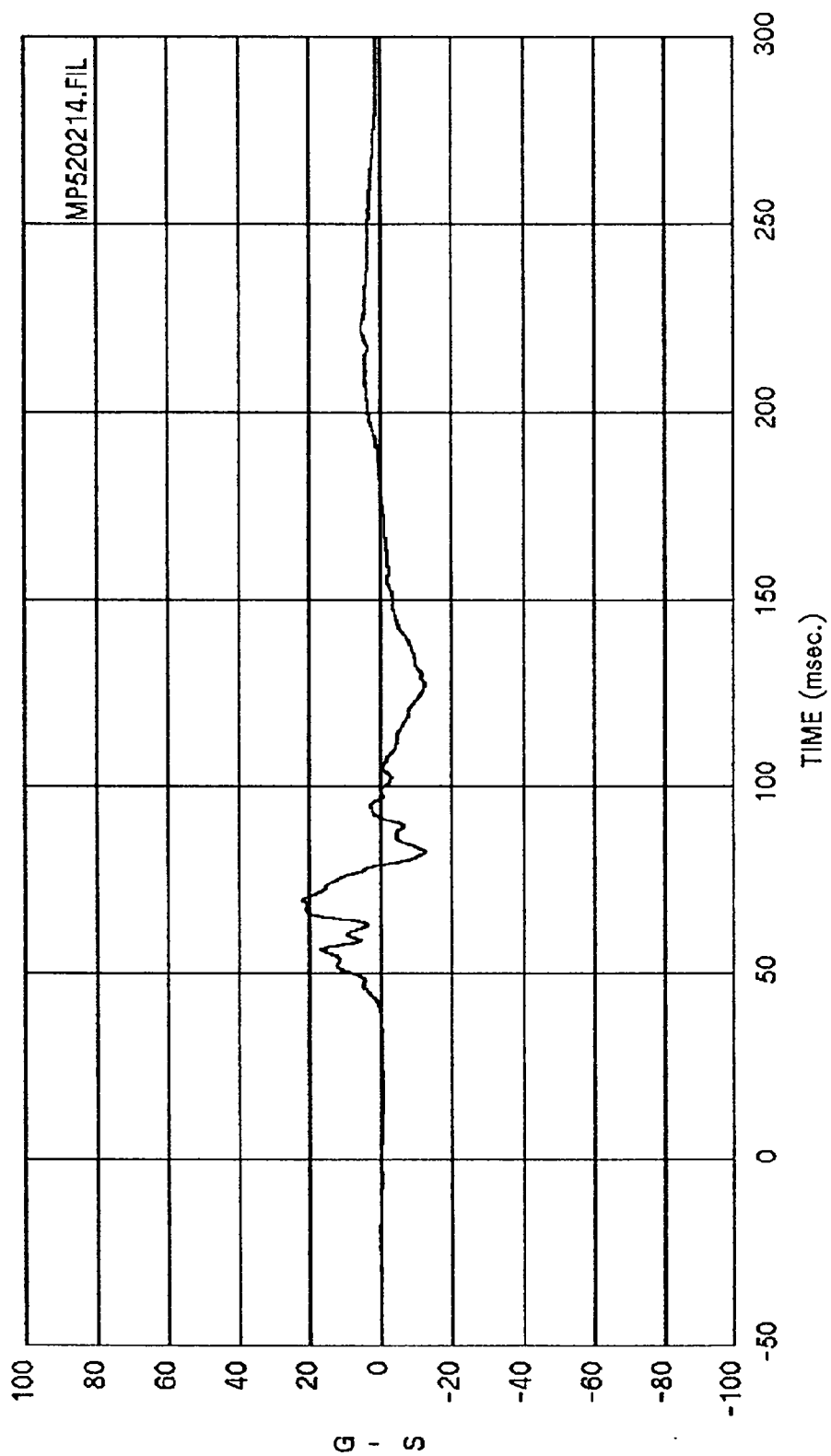
Curve: Passenger chest delta V -- X axis Filter: SAE CLASS 180 Max = 56.327 Min = -11.431
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



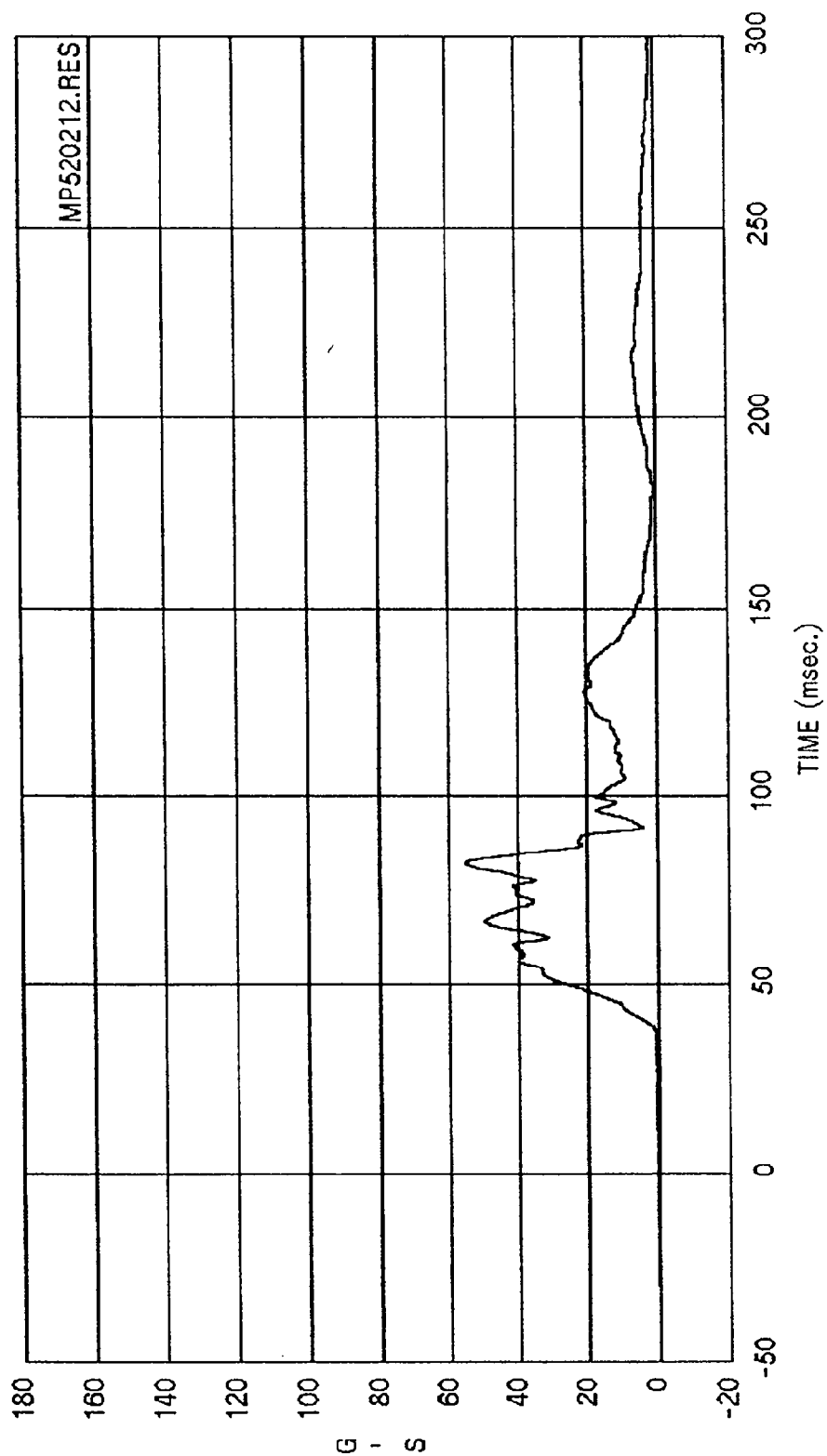
Curve: Passenger chest displacement -- X axis Filter: SAE CLASS 180 Max = 111.68 Min = 70.448
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



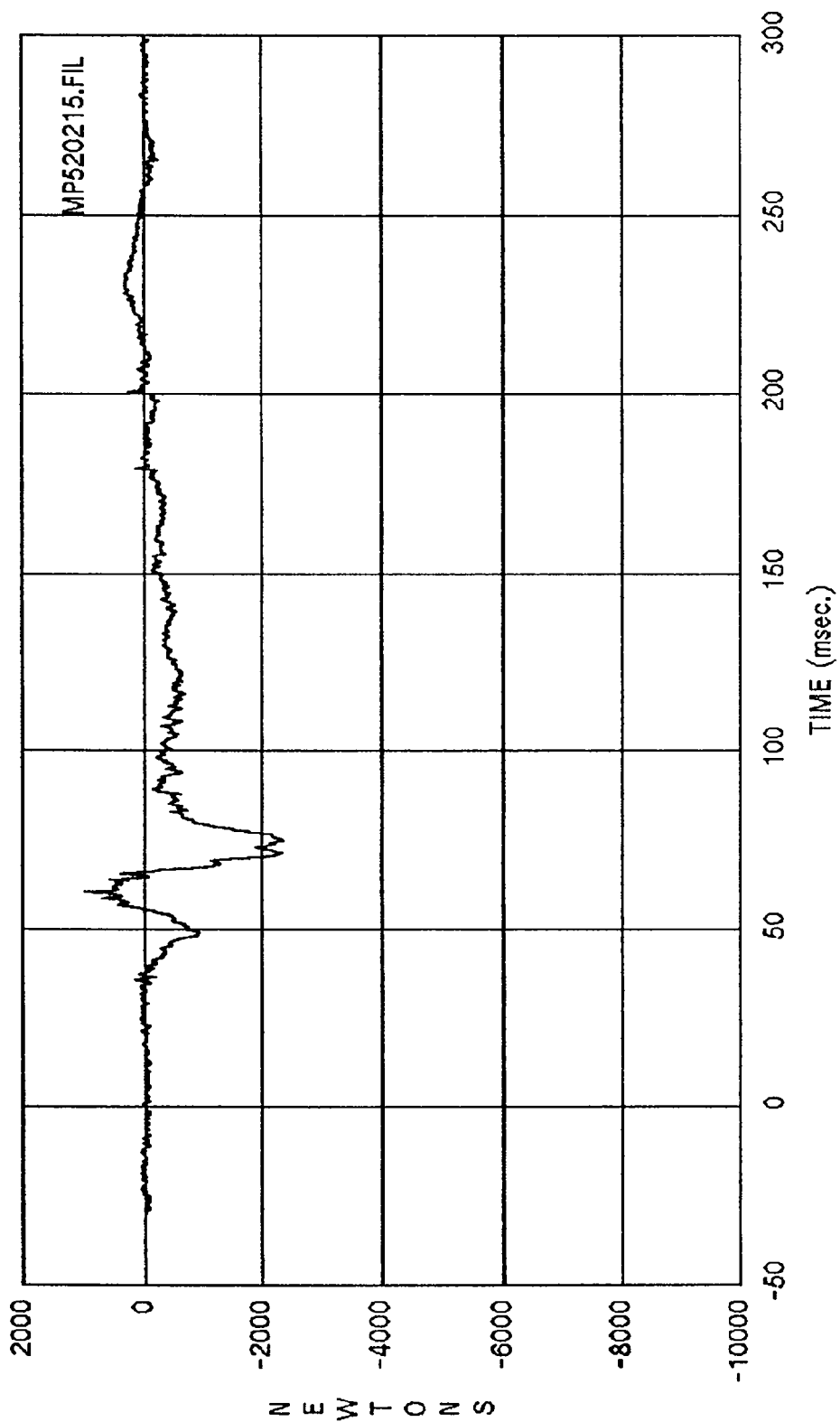
Curve: Passenger chest acceleration -- Y axis Filter: SAE CLASS 180 Max = 41.754 Min = -1.1828
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



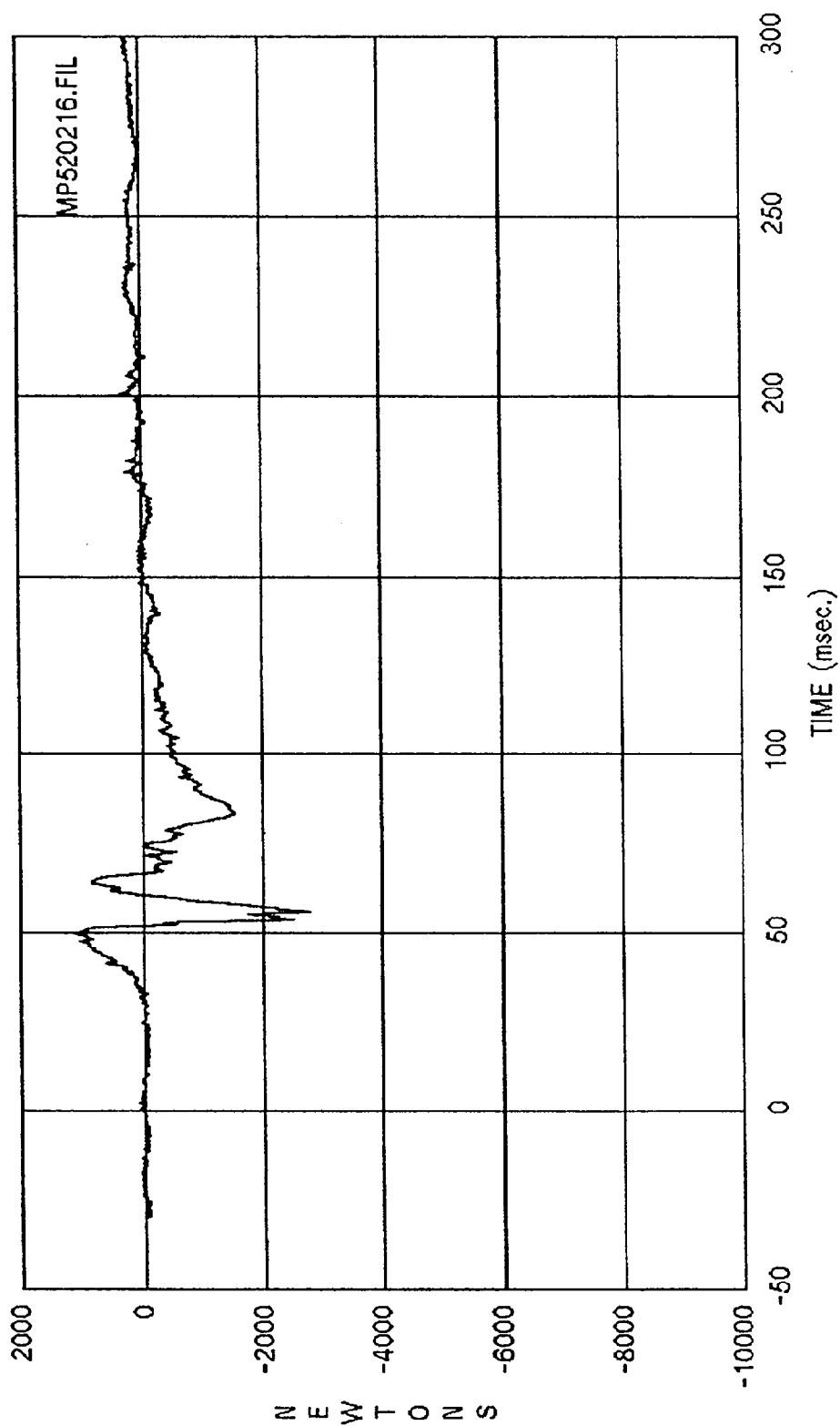
Curve: Passenger chest acceleration -- Z axis Filter: SAE CLASS 180 Max = 21.843 Min = -12.583
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Passenger chest acceleration -- Resultant Filter: SAE CLASS 180 Max = 55.301 Min = .18588
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

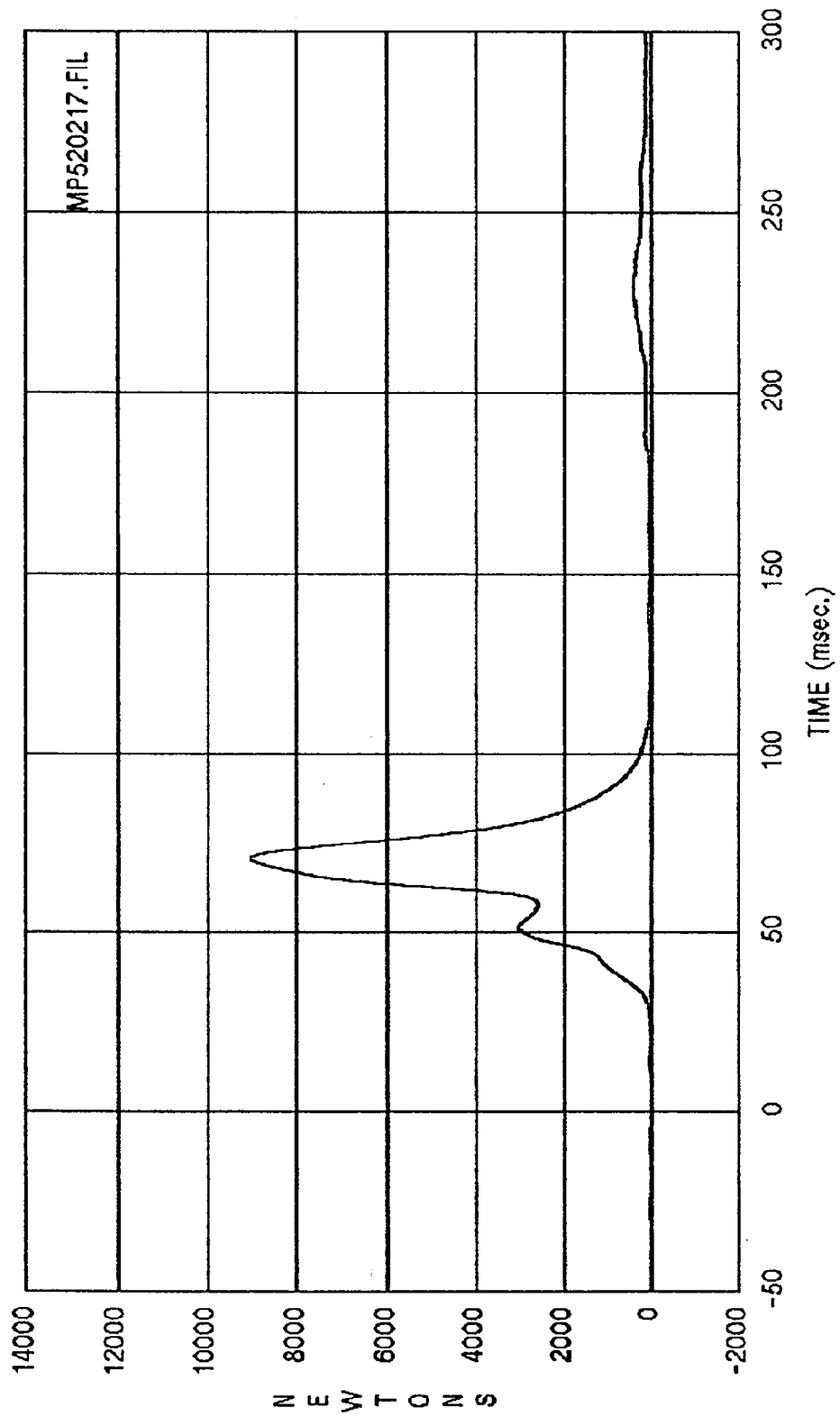


Curve: Passenger left femur force Filter: SAE CLASS 600 Max = 988.88 Min = -2343.4
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



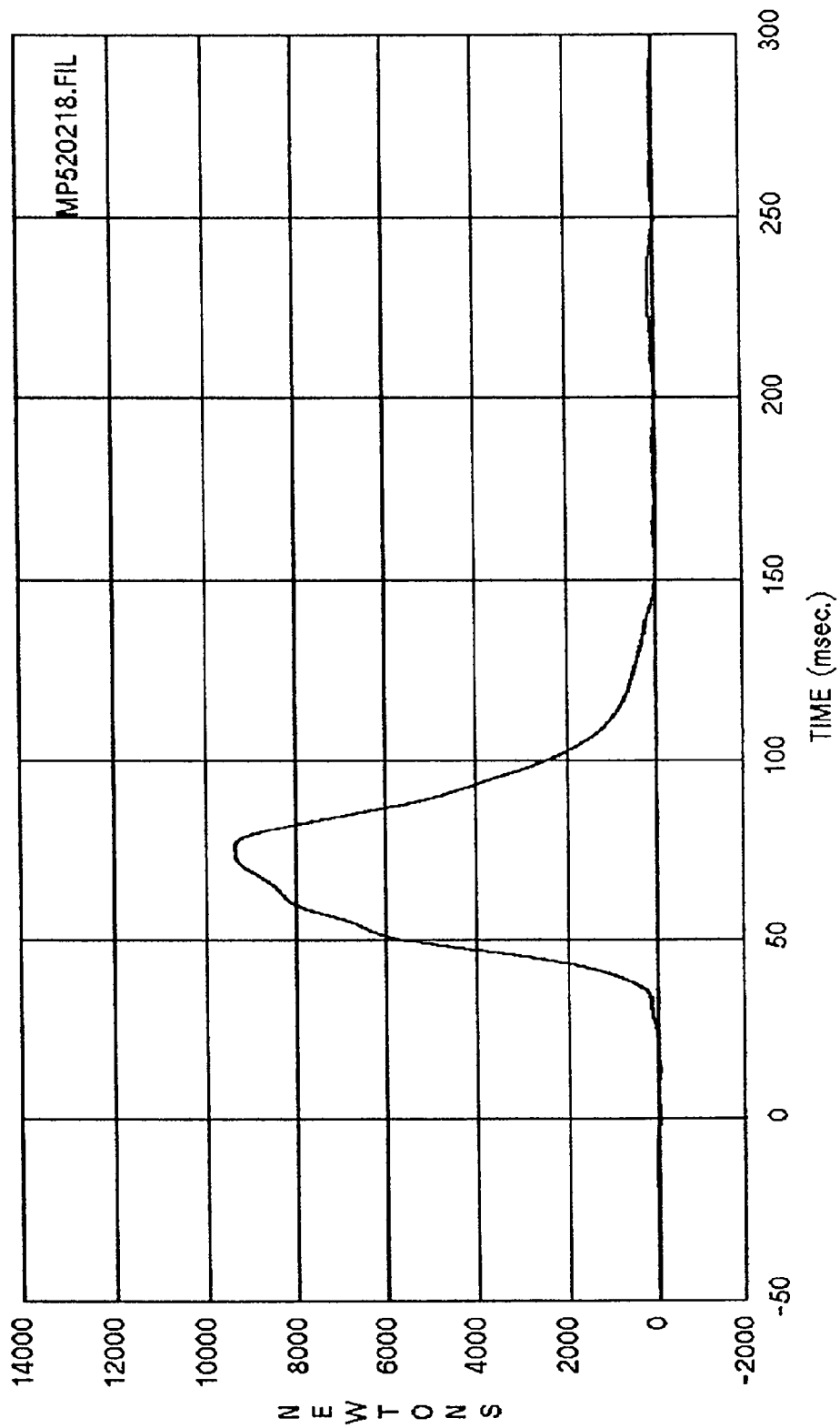
Curve: Passenger right femur force Filter: SAE CLASS 600 Max = 1112.1 Min = -2779.9

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

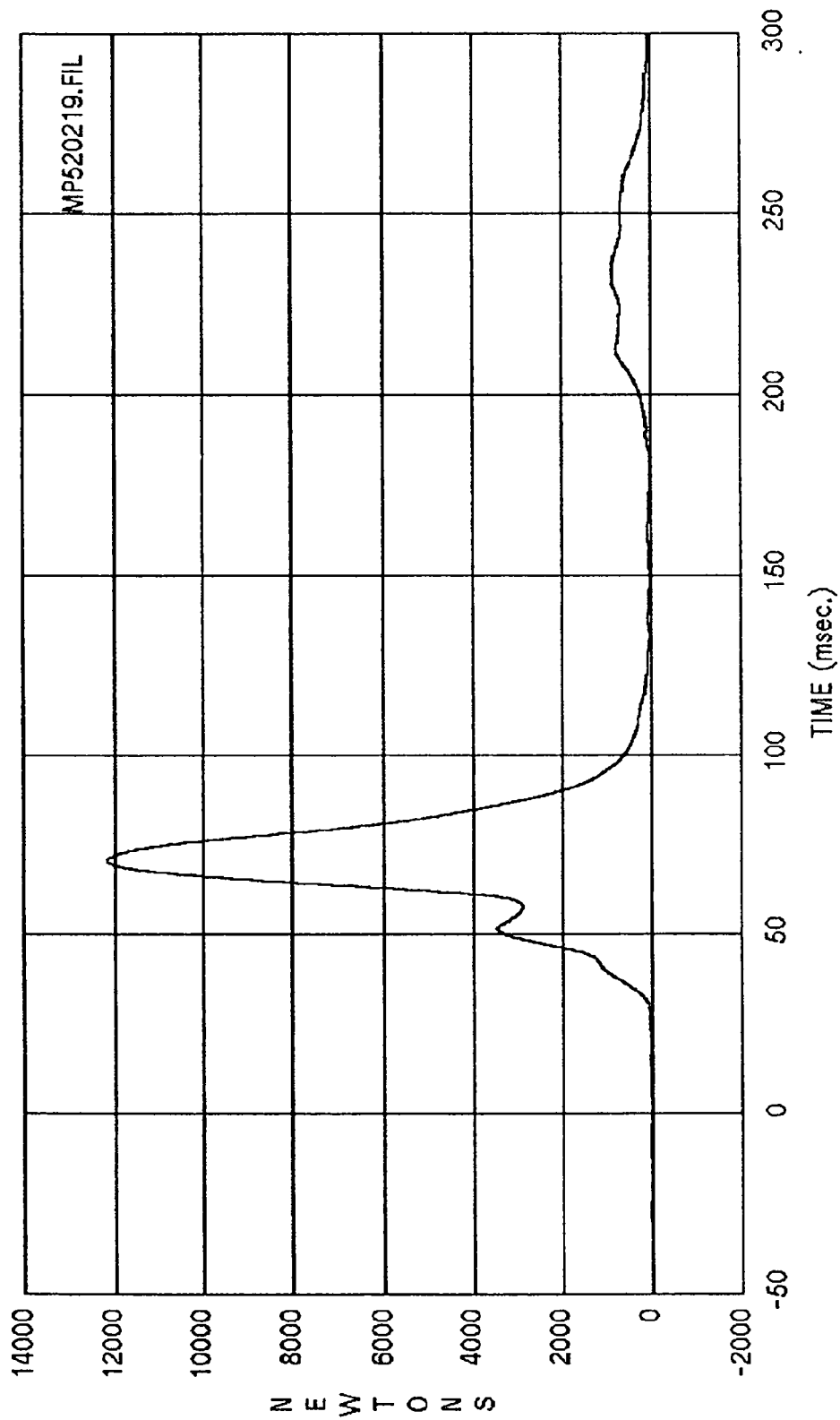


Curve: Driver lap belt load Filter: SAE CLASS 60 Max = 9046.5 Min = -5.2667

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

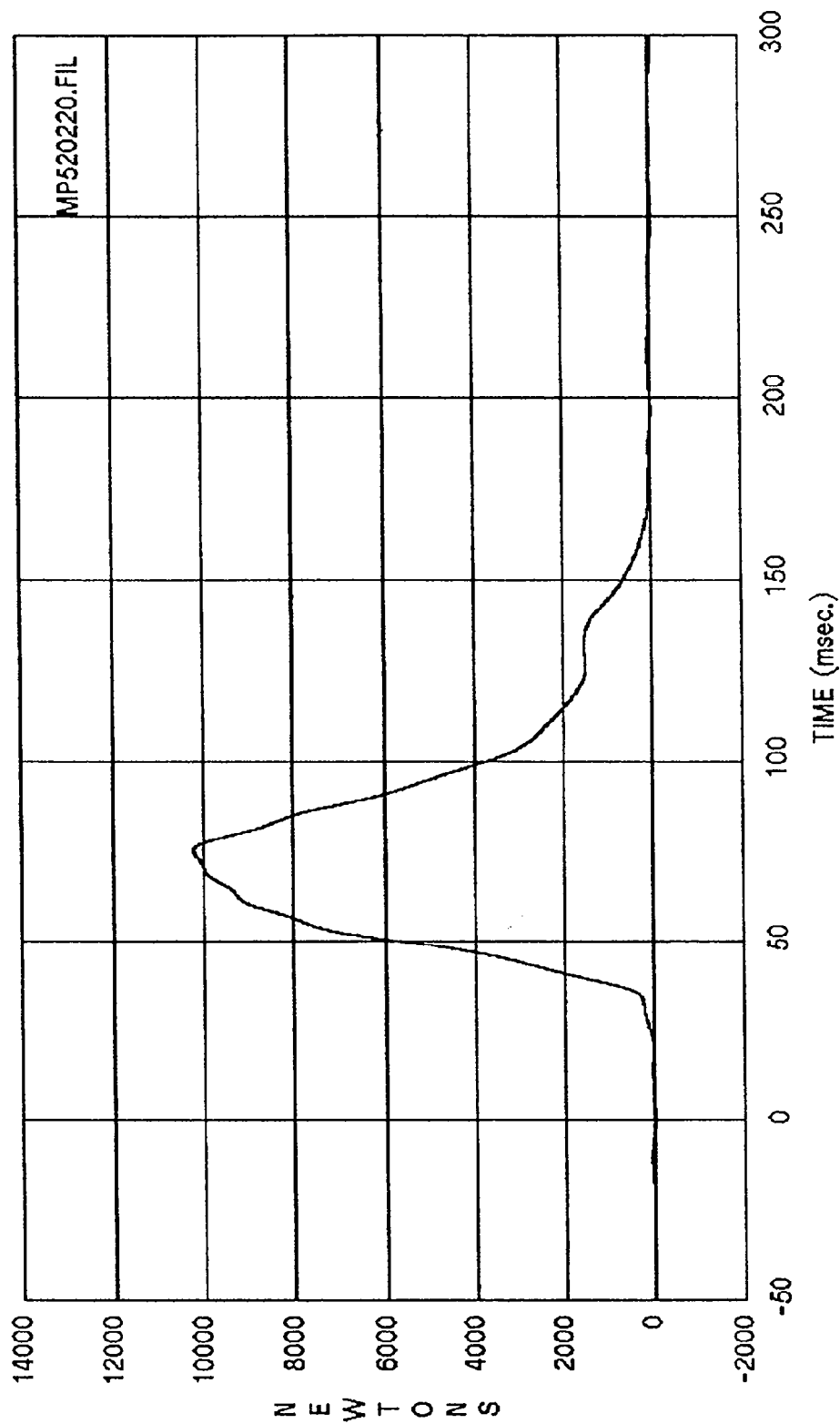


Curve: Driver shoulder belt load Filter: SAE CLASS 60 Max = 9382.9 Min = -56.471
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

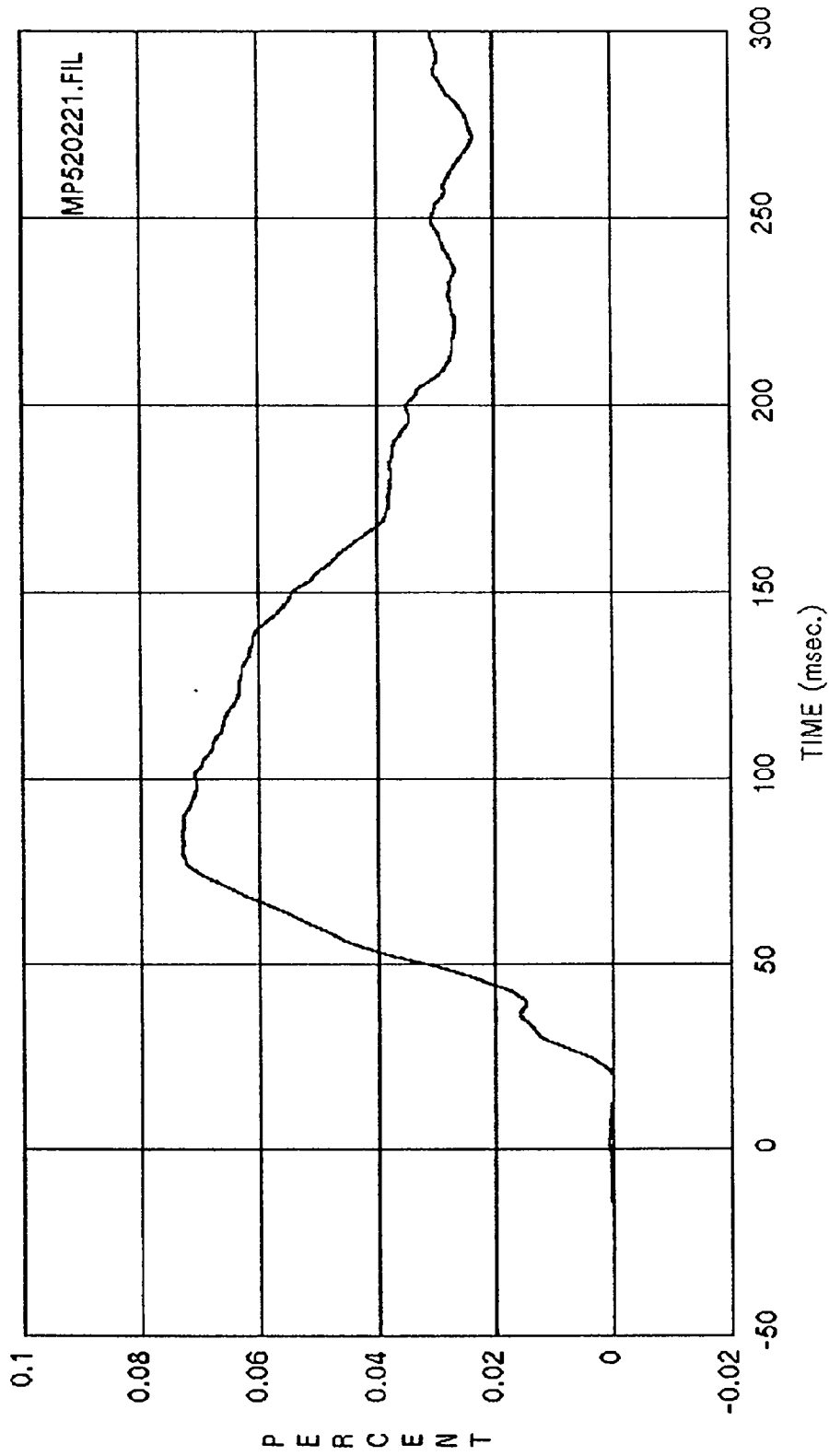


Curve: Passenger lap belt load Filter: SAE CLASS 60 Max = 12188. Min = -12.836

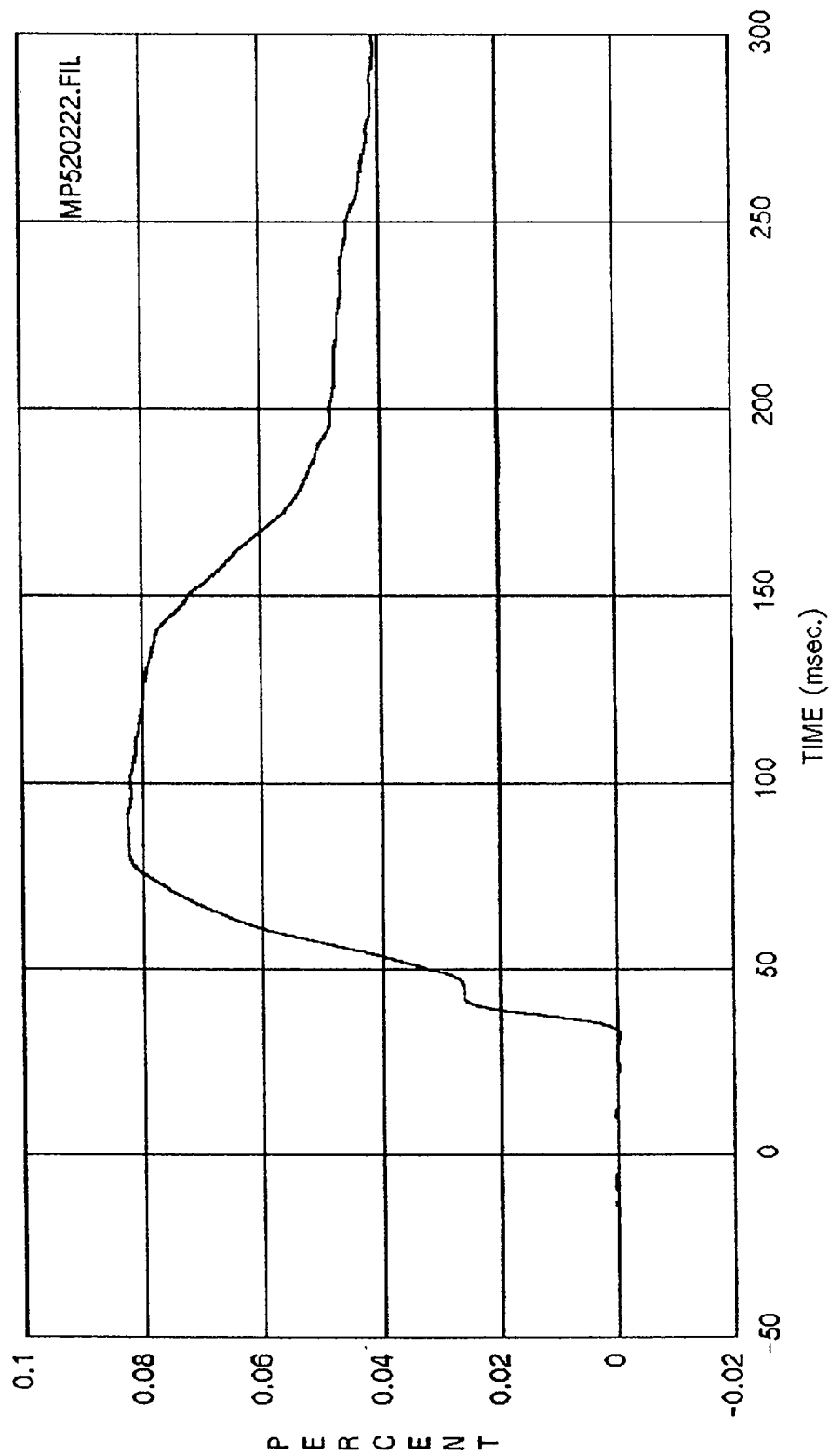
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Passenger shoulder belt load Filter: SAE CLASS 60 Max = 10228. Min = -73.408
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

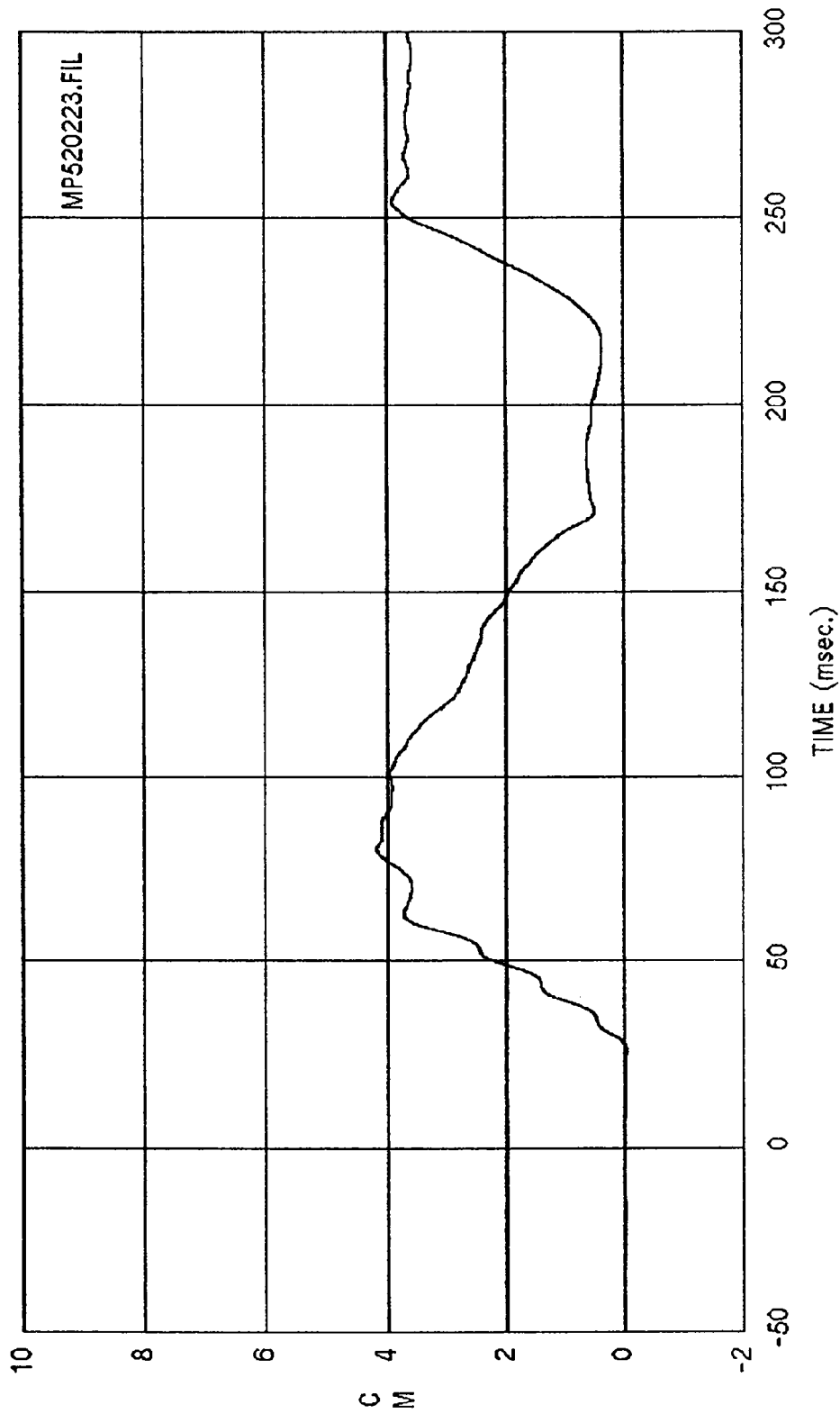


Curve: Driver shoulder belt elongation Filter: SAE CLASS 60 Max = .72989E-01 Min = -.62622E
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



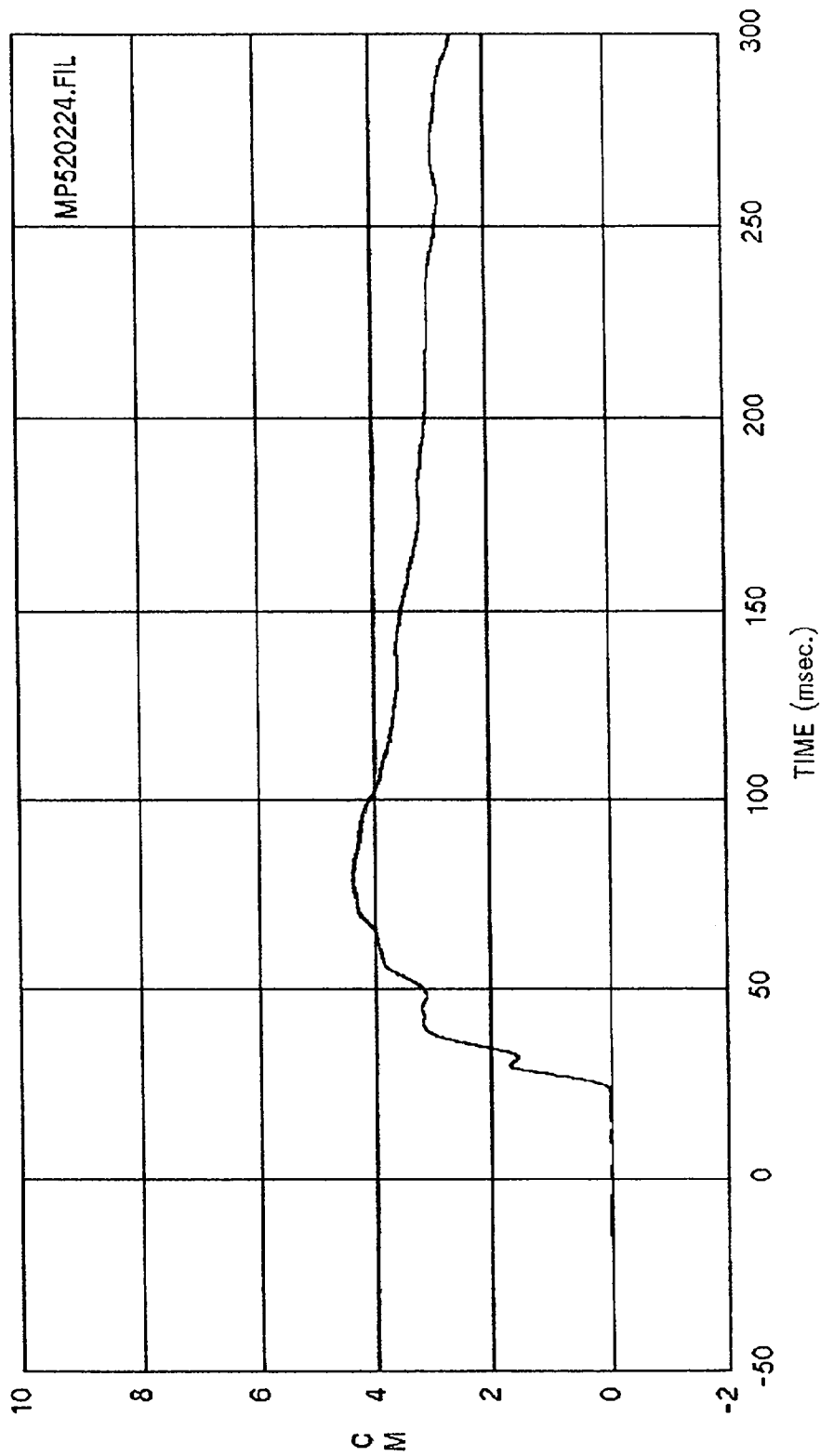
Curve: Passenger shoulder belt elongation Filter: SAE CLASS 60 Max = .82630E-01 Min = -.4840E-03

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



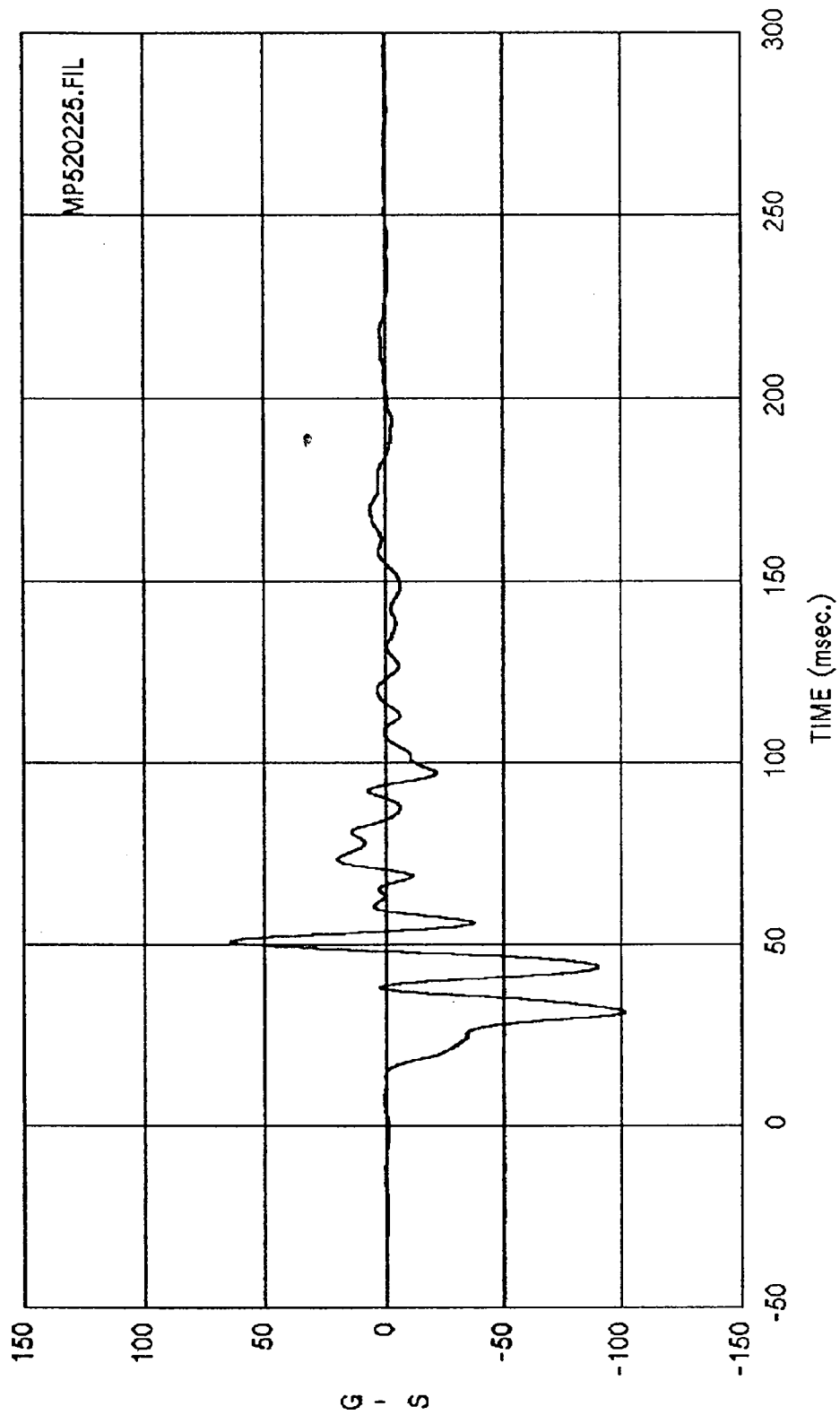
Curve: Driver shoulder belt spoolout Filter: SAE CLASS 60 Max = 4.1875 Min = -.25788E-1

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

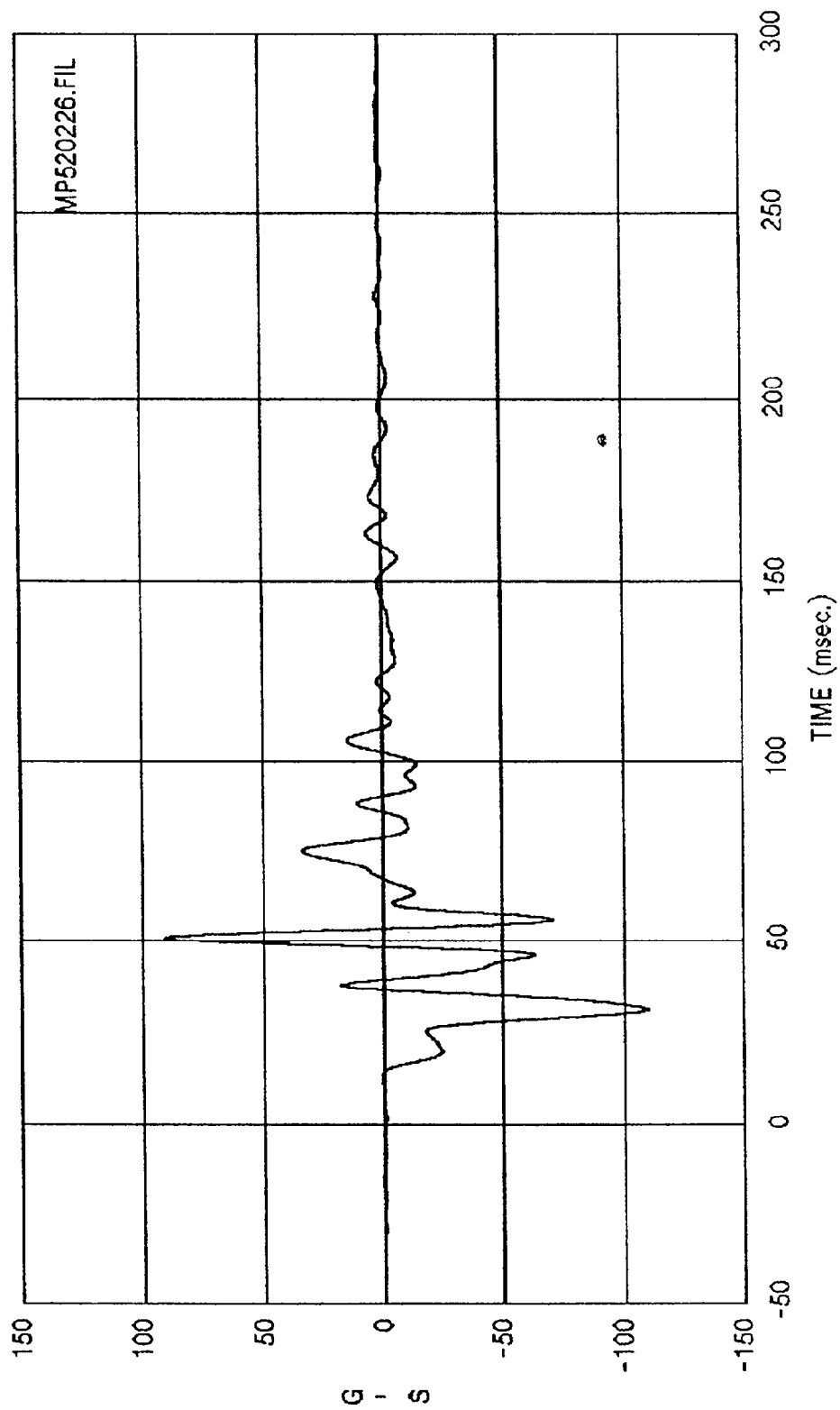


Curve: Passenger shoulder belt spoolout Filter: SAE CLASS 60 Max = 4.3961 Min = .32160E

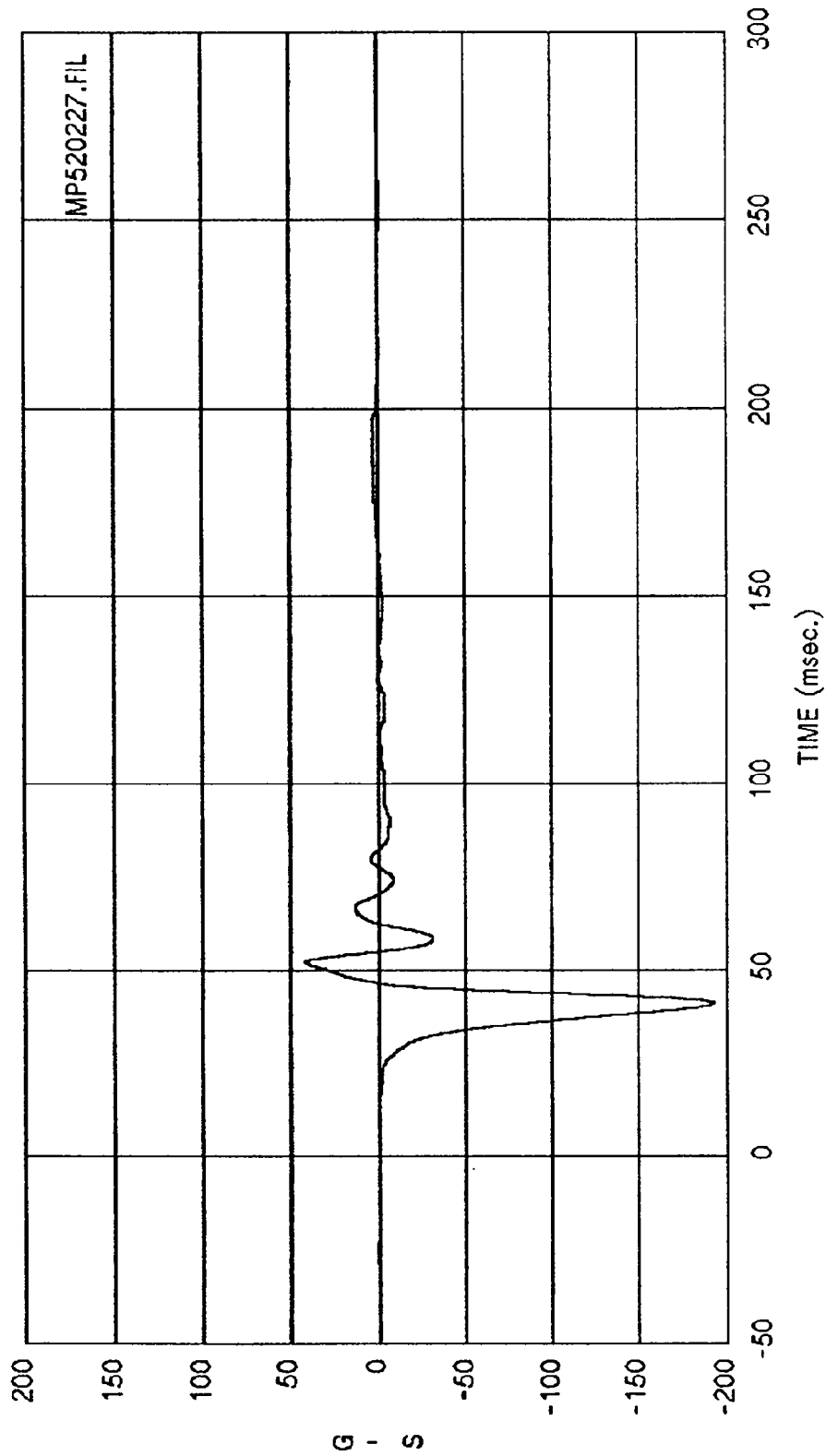
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



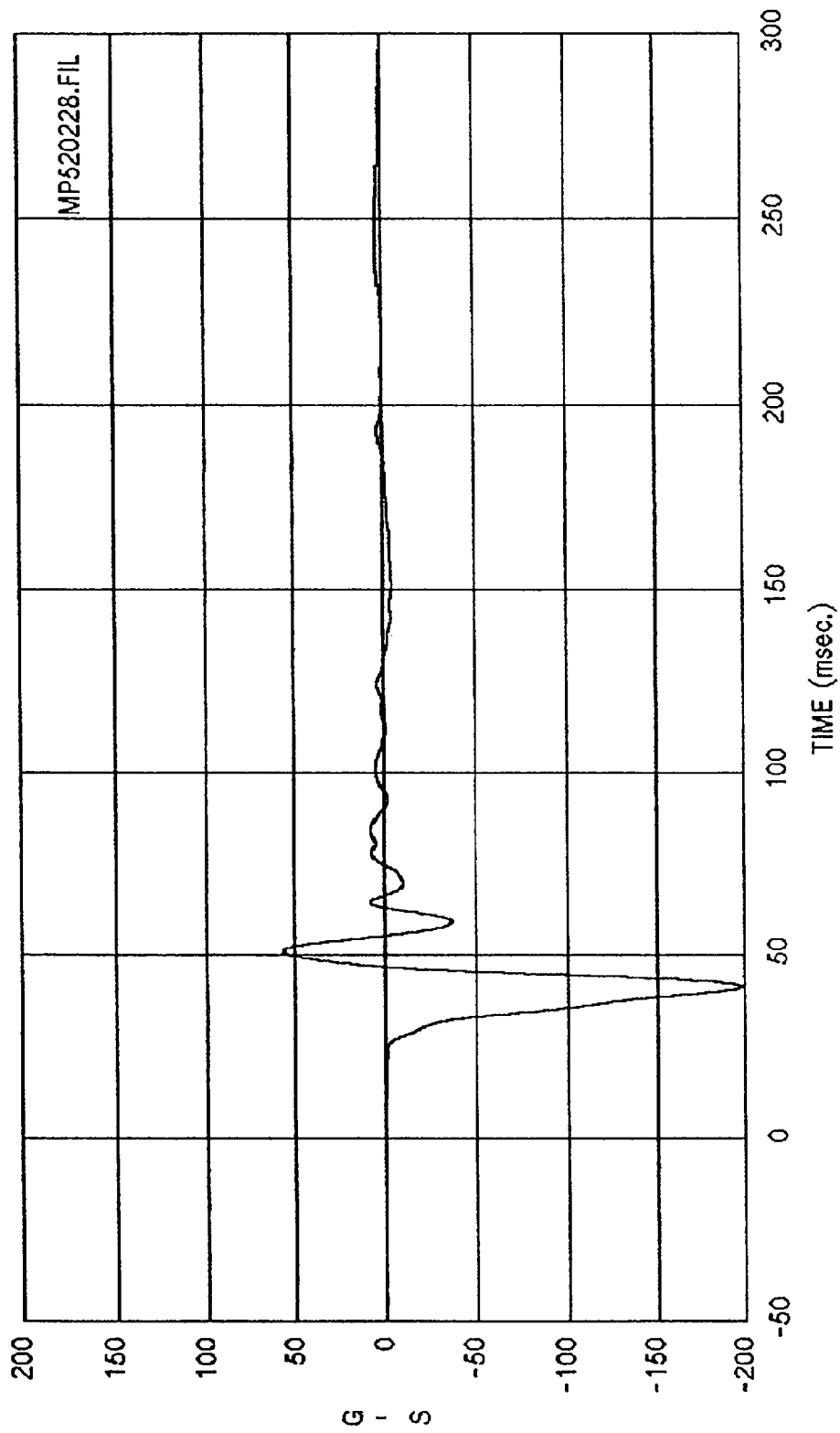
Curve: Left front caliper acceleration -- X axis Filter: SAE CLASS 60 Max = 64.367 Min = -101.77
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



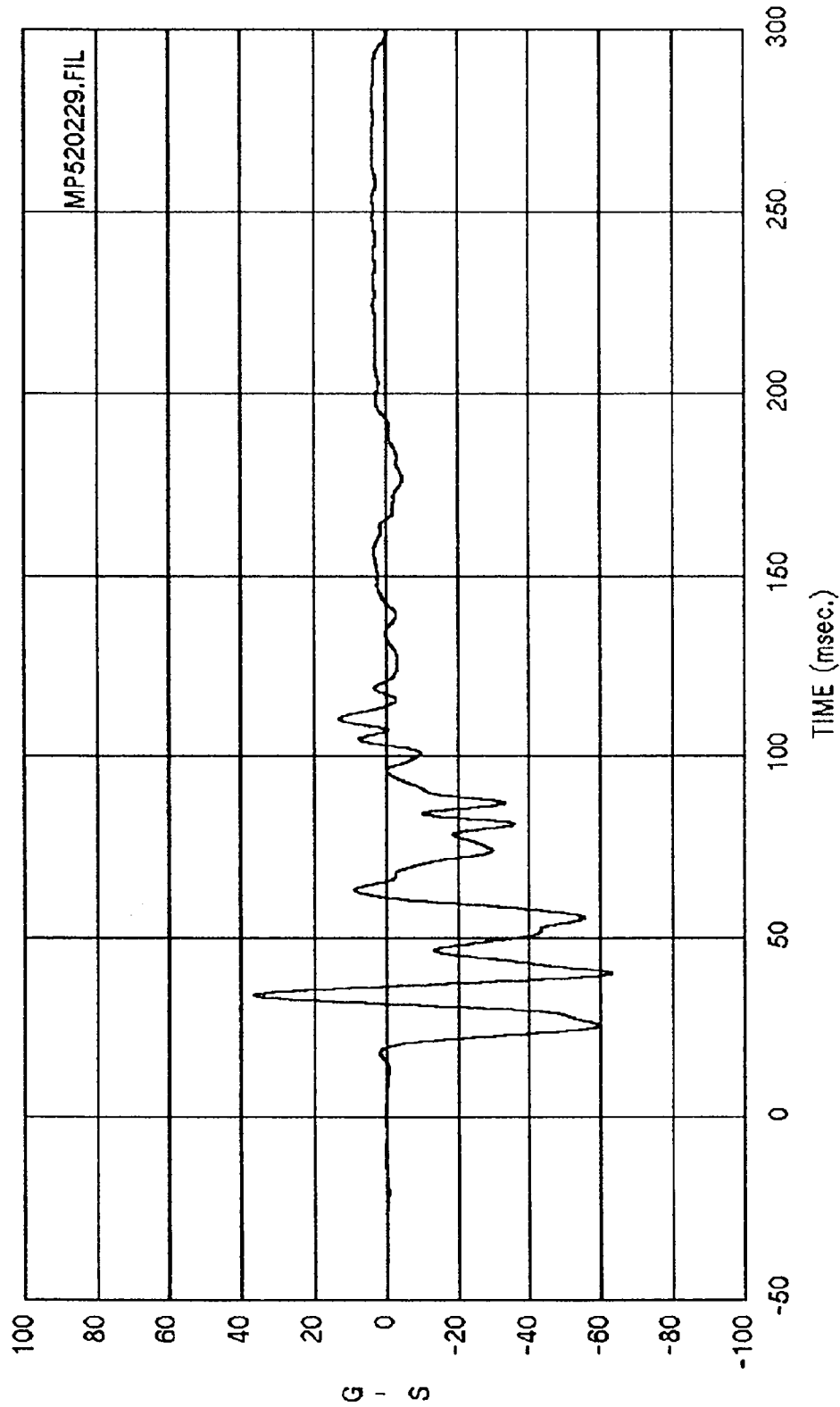
Curve: Right front caliper acceleration -- X axis Filter: SAE CLASS 60 Max = 91.127 Min = -109.81
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Engine bottom acceleration -- X axis Filter: SAE CLASS 60 Max = 42.029 Min = -192.48
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

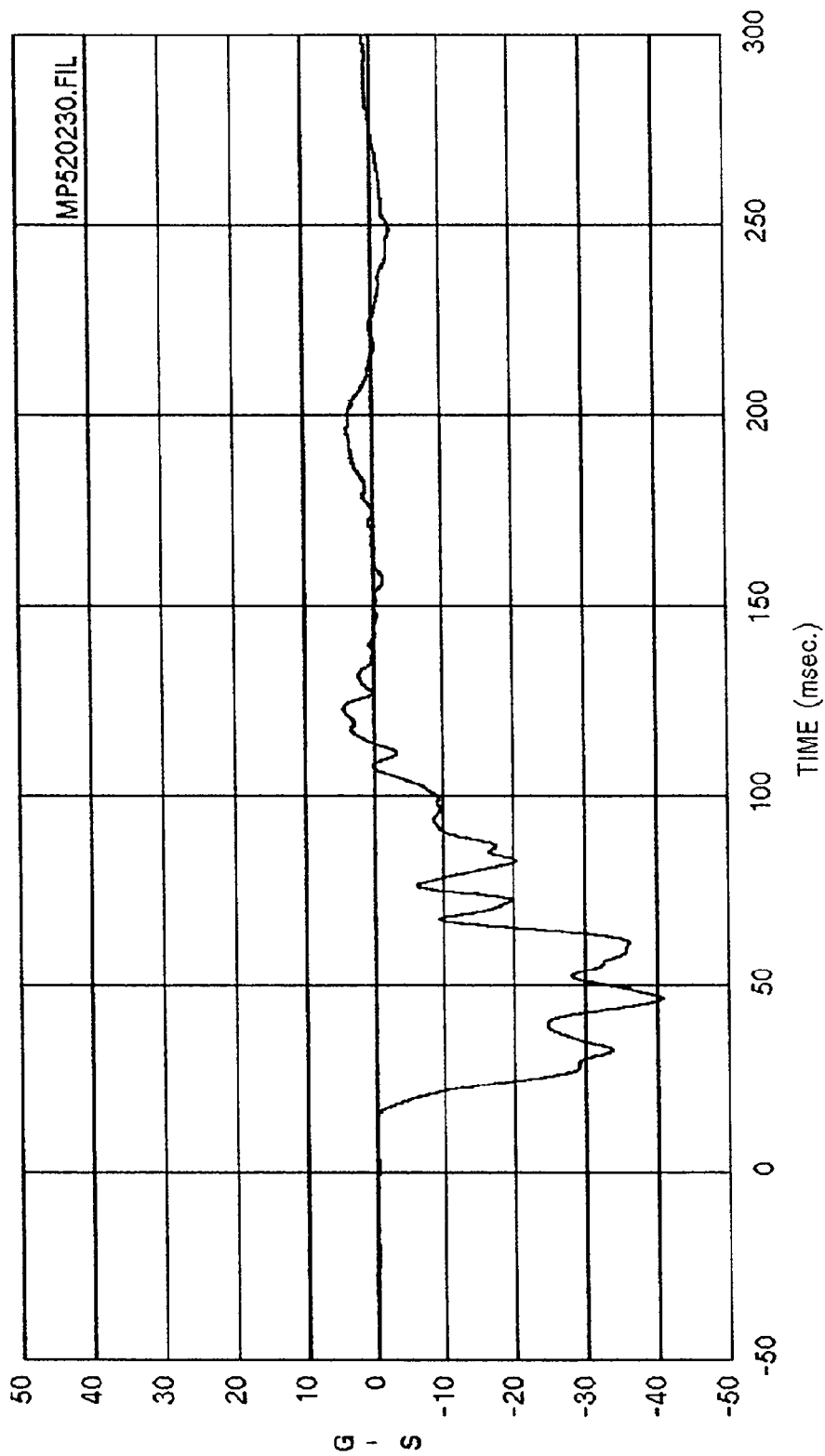


Curve: Engine top acceleration -- X axis Filter: SAE CLASS 60 Max = 57.081 Min = -198.60
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



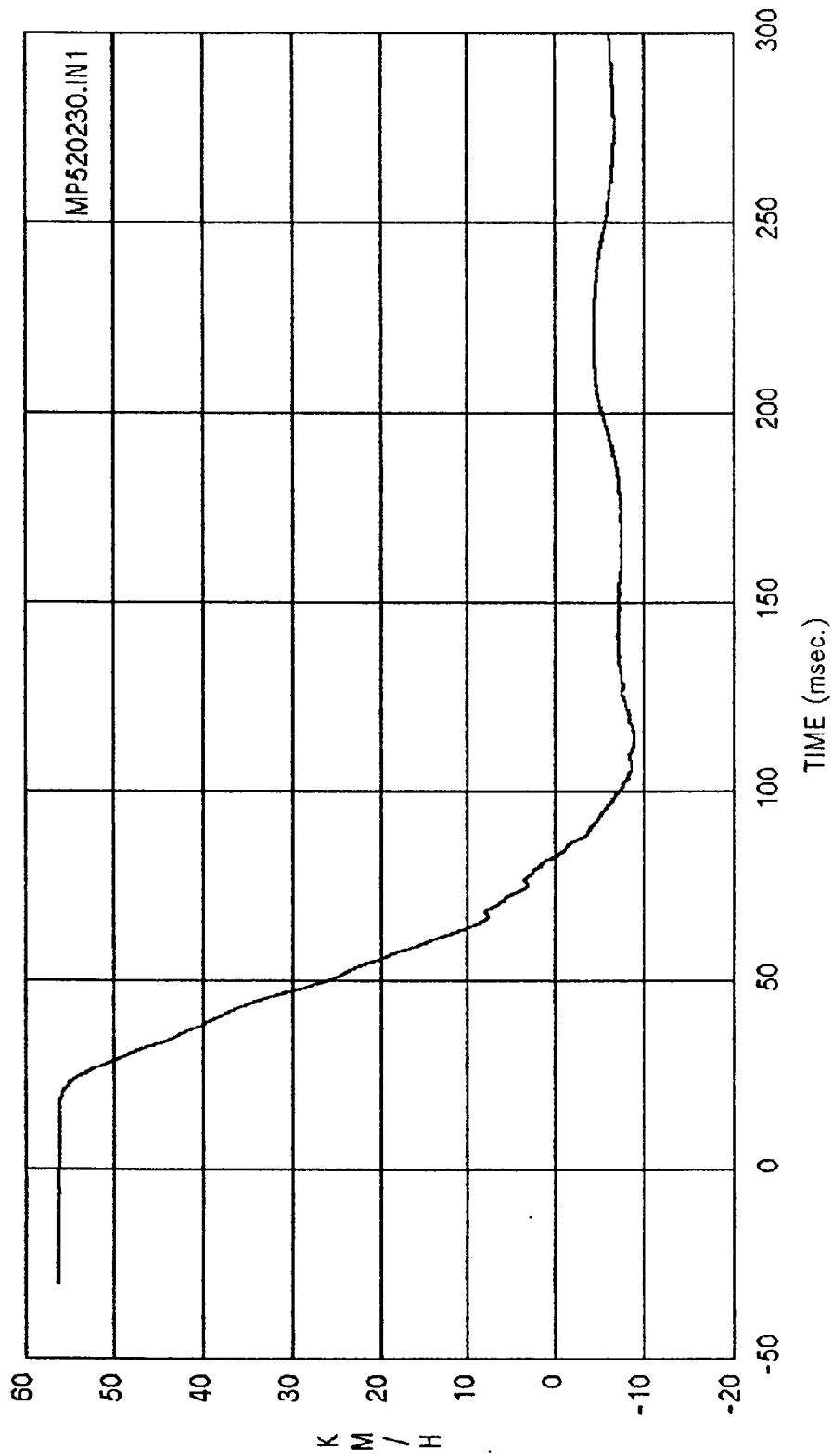
Curve: Dashpanel acceleration -- X axis Filter: SAE CLASS 60 Max = 36.861 Min = -62.933

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



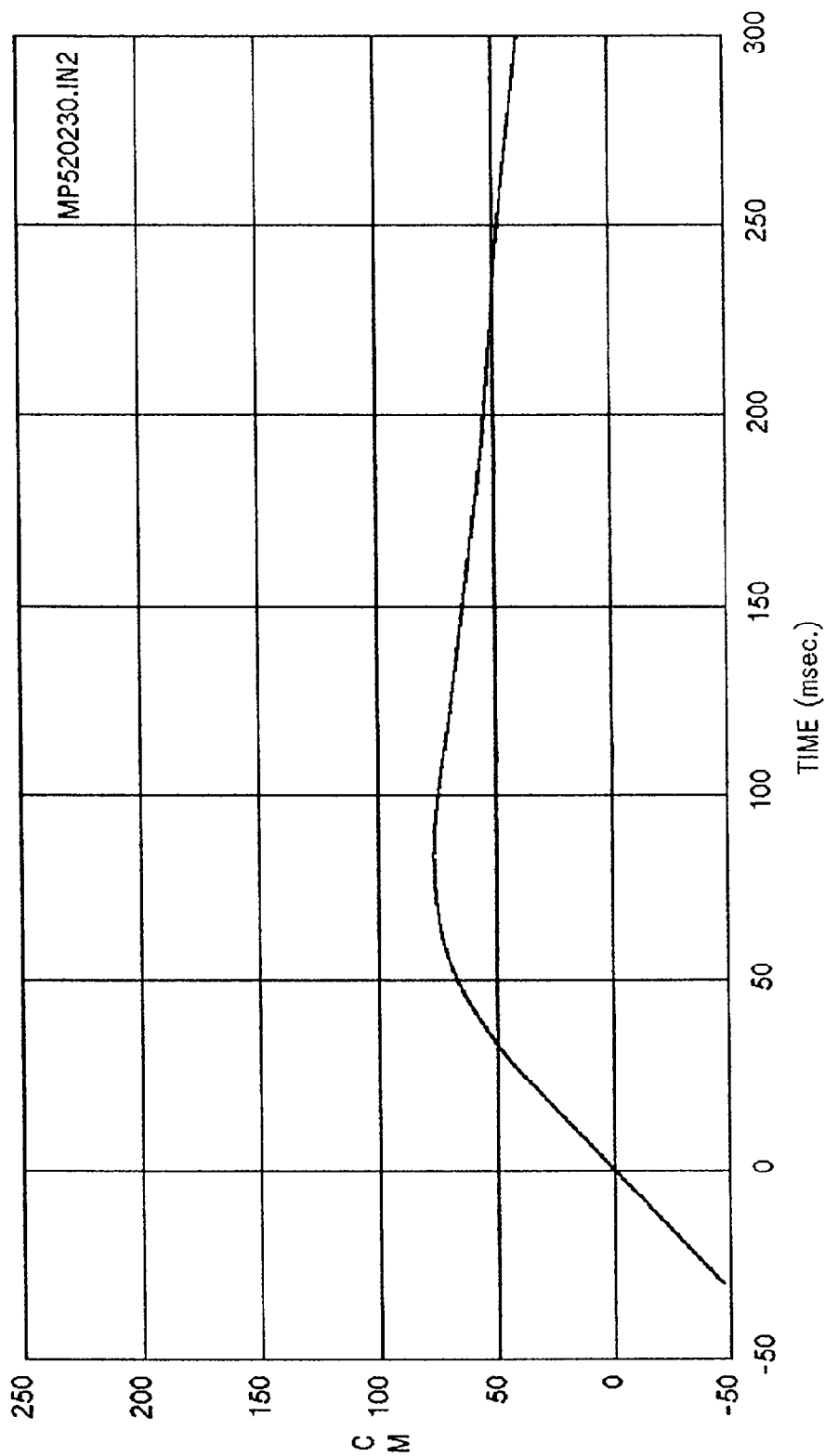
Curve: Left rear cross-member accel. - X axis (primary) Filter: SAE CLASS 60 Max = 4.3885 Min = -40.75

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



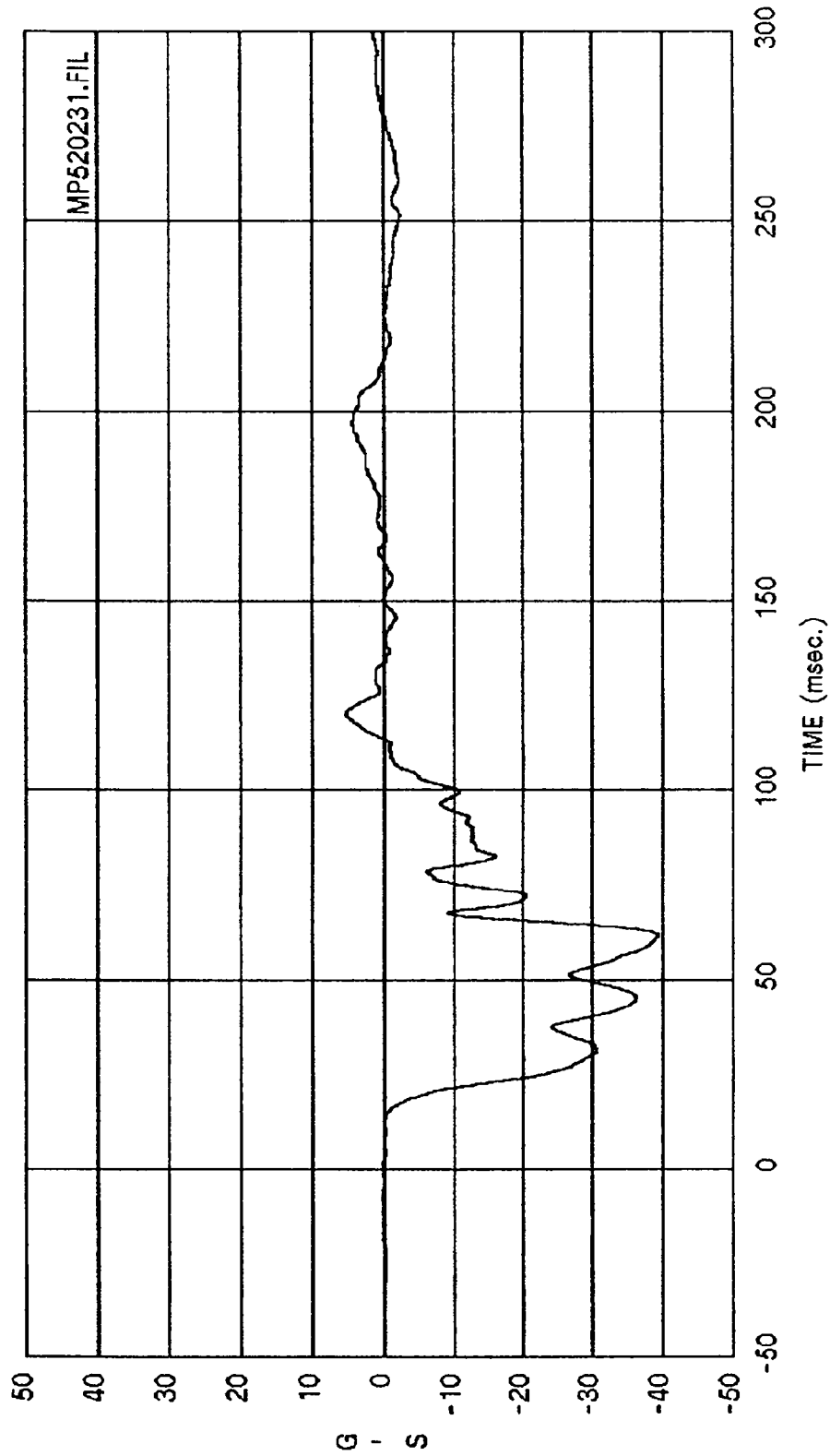
Curve: Left rear cross-member delta V -- X axis (Pri) Filter: SAE CLASS 180 Max = 56.301 Min = -8.922

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



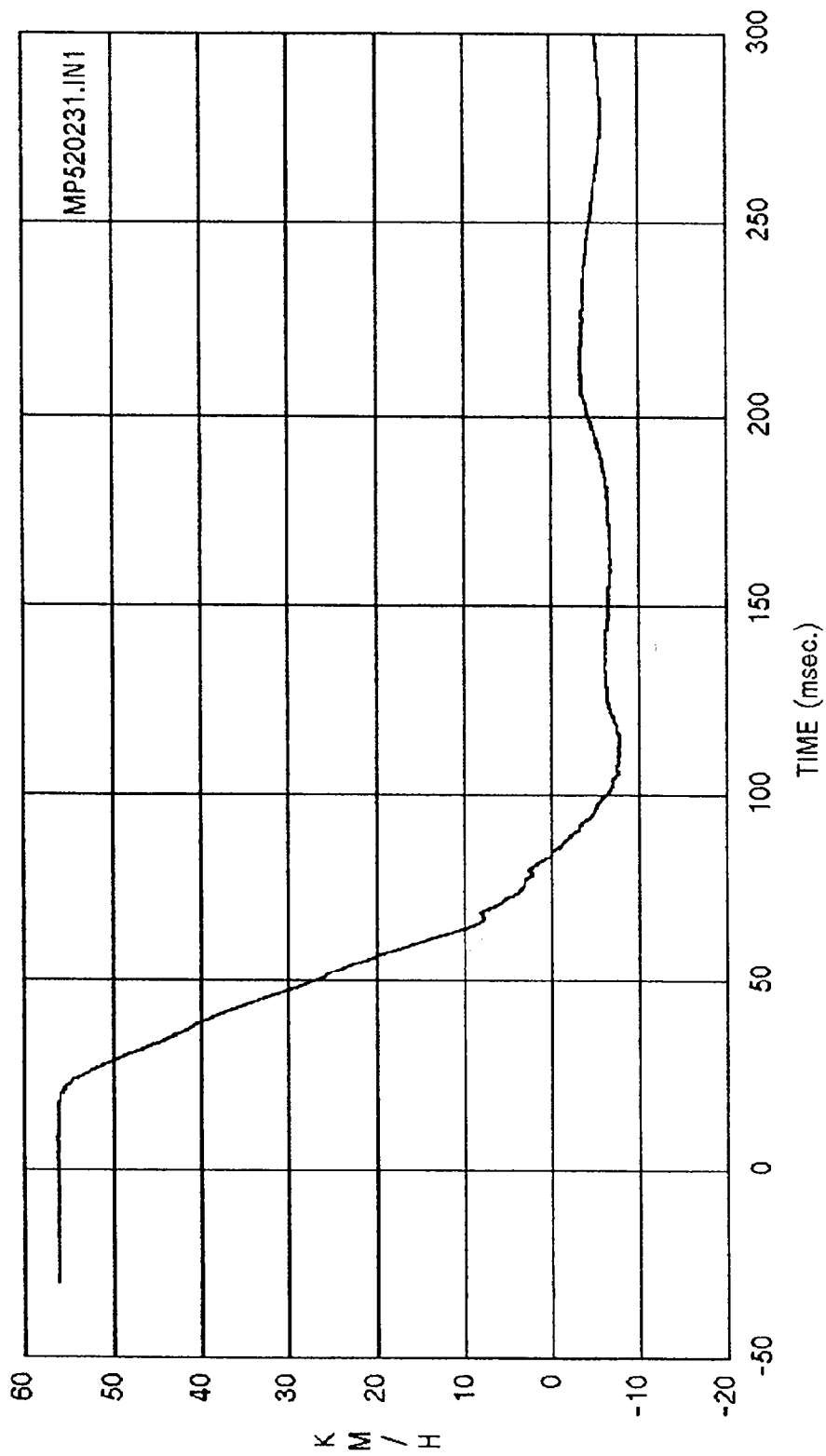
Curve: Left rear cross-member disp. - X axis (primary) Filter: SAE CLASS 180 Max = 76.696 Min = 38.925

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



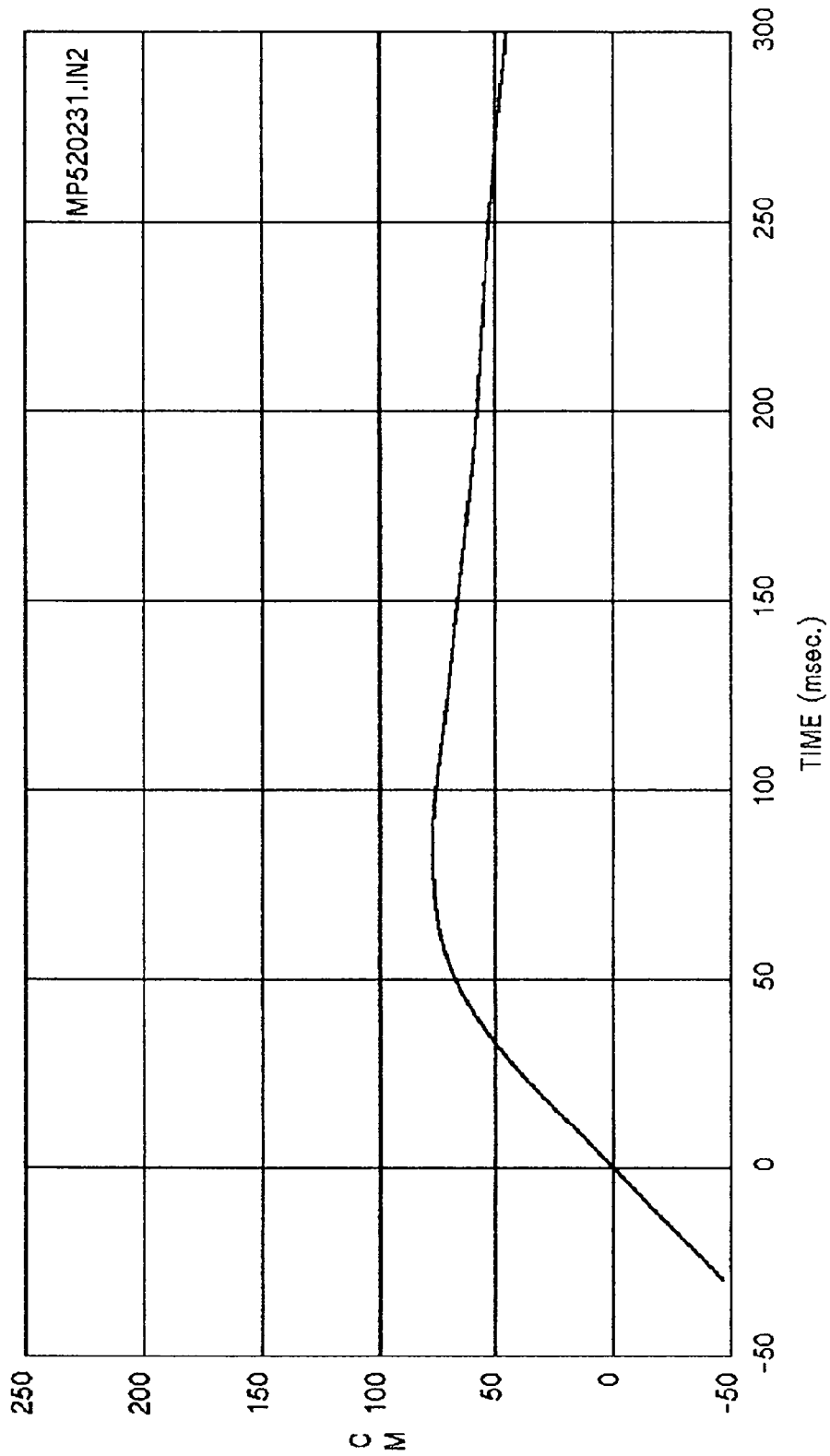
Curve: Right rear cross-member acc. - X axis (primary) Filter: SAE CLASS 60 Max = 5.3029 Min = -39.48

MSE Date: 11/10/92. Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



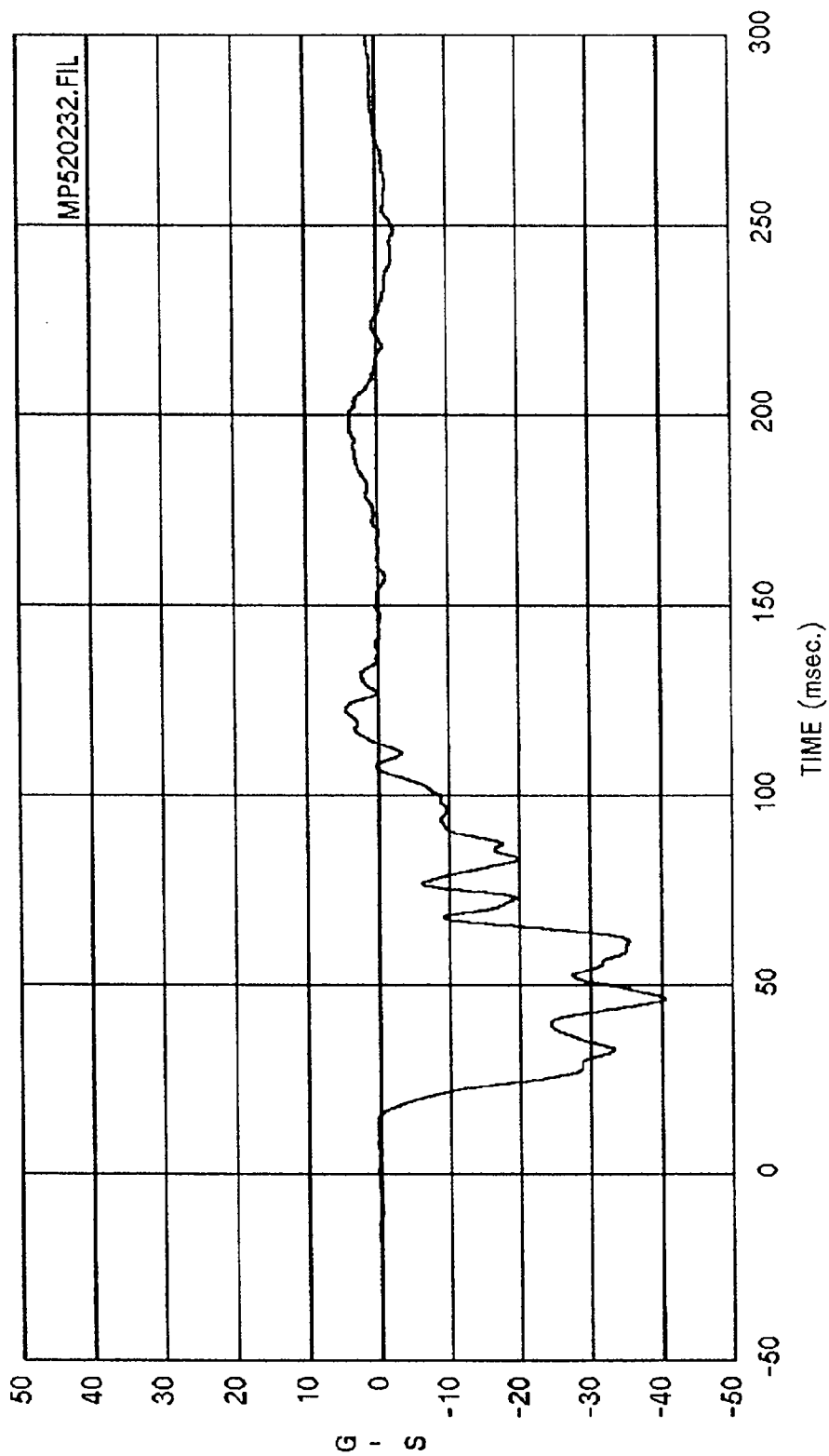
Curve: Right rear cross-member delta V -- X axis(Pri) Filter: SAE CLASS 180 Max = 56.322 Min = -7.860

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



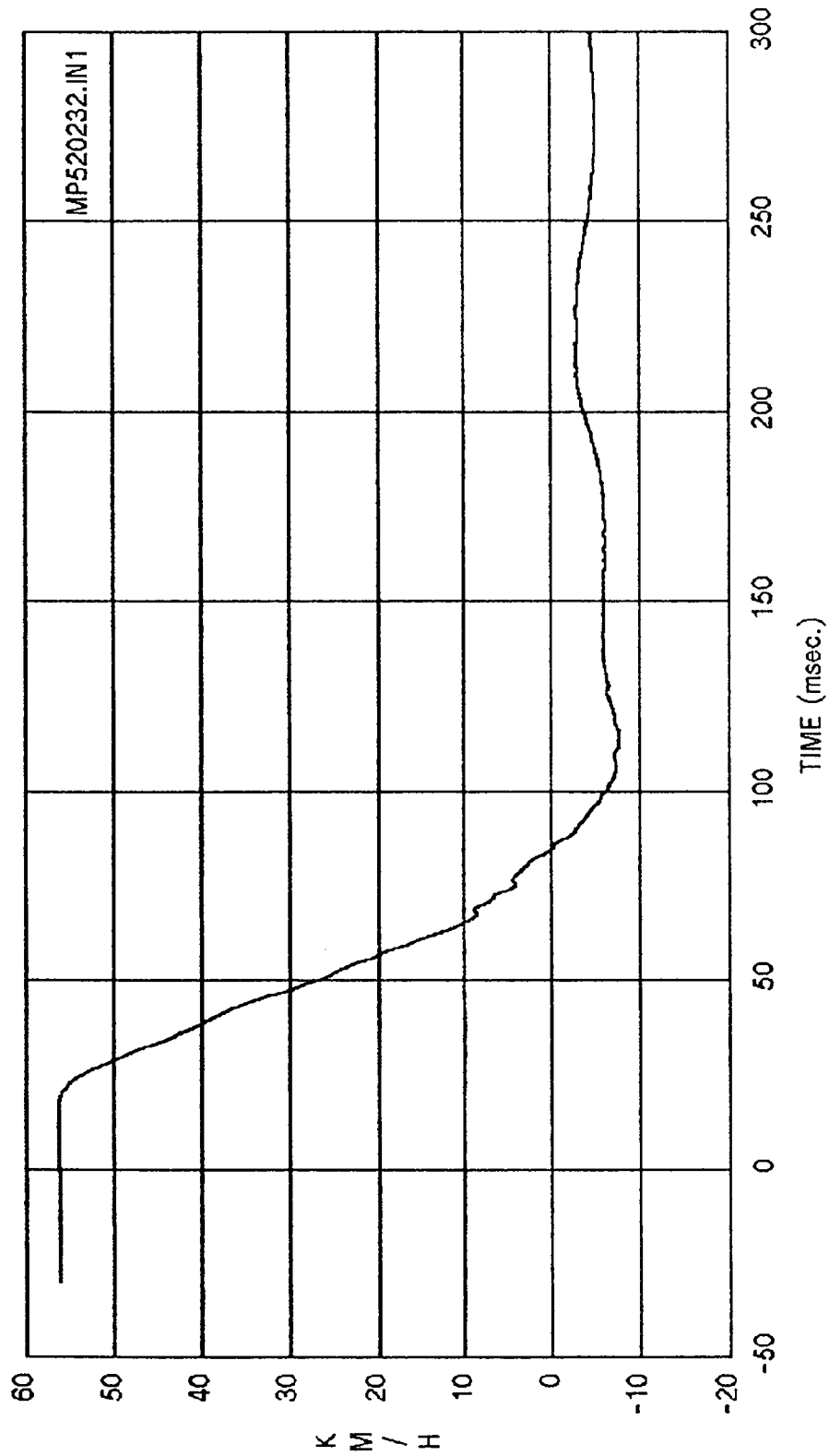
Curve: Right rear cross-member disp. - X axis (primary) Filter: SAE CLASS 180 Max = 77.105 Min = 45.220

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



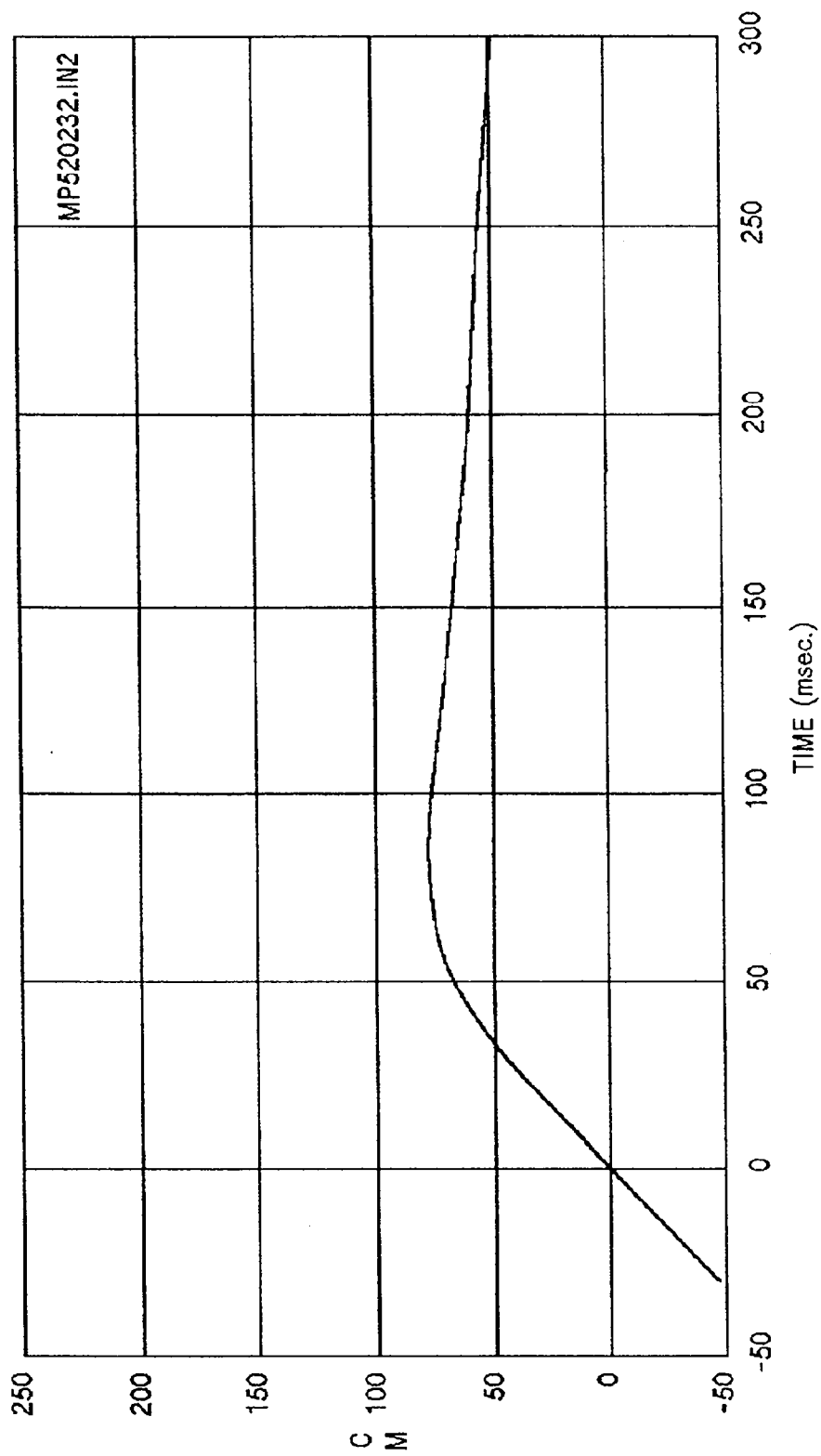
Curve: Left rear cross-member accel. - X axis(secondary) Filter: SAE CLASS 60 Max = 4.4704 Min = -40.4

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



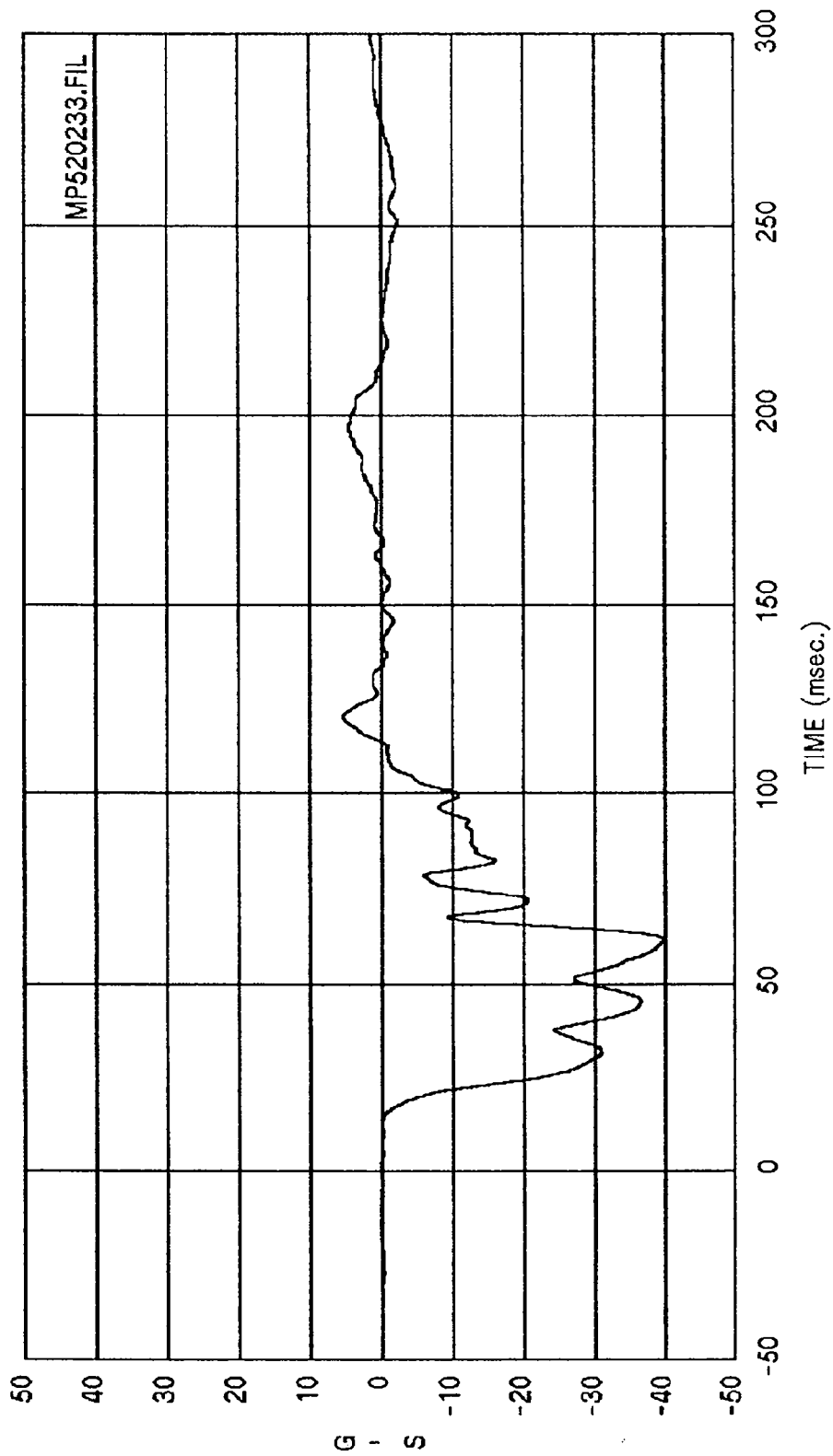
Curve: Left rear cross-member delta V -- X axis (Sec) Filter: SAE CLASS 180 Max = 56.430 Min = -7.66

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



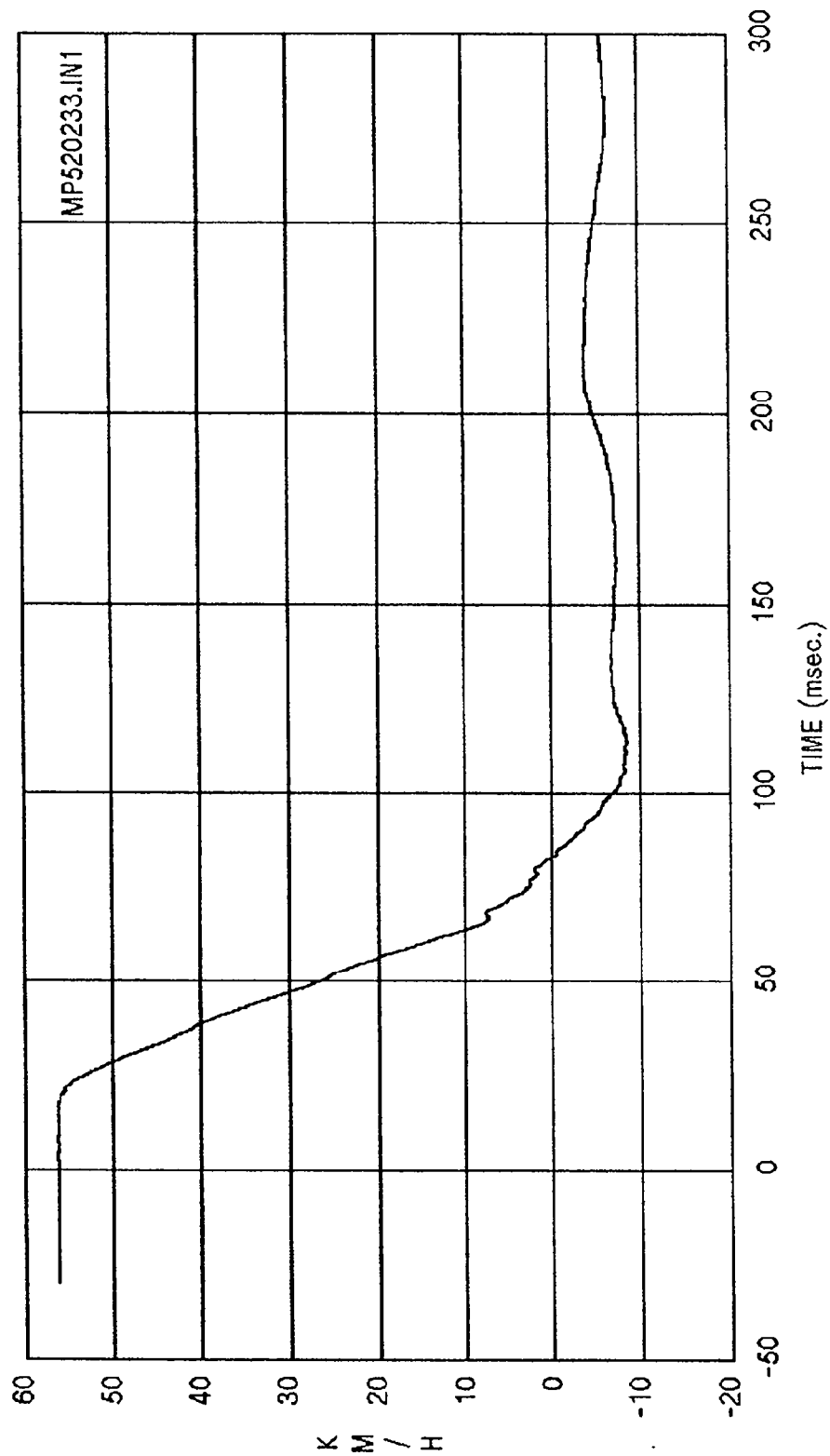
Curve: Left rear cross-member disp. - X axis(secondary) Filter: SAE CLASS 180 Max = 77.931 Min = 48.8:

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



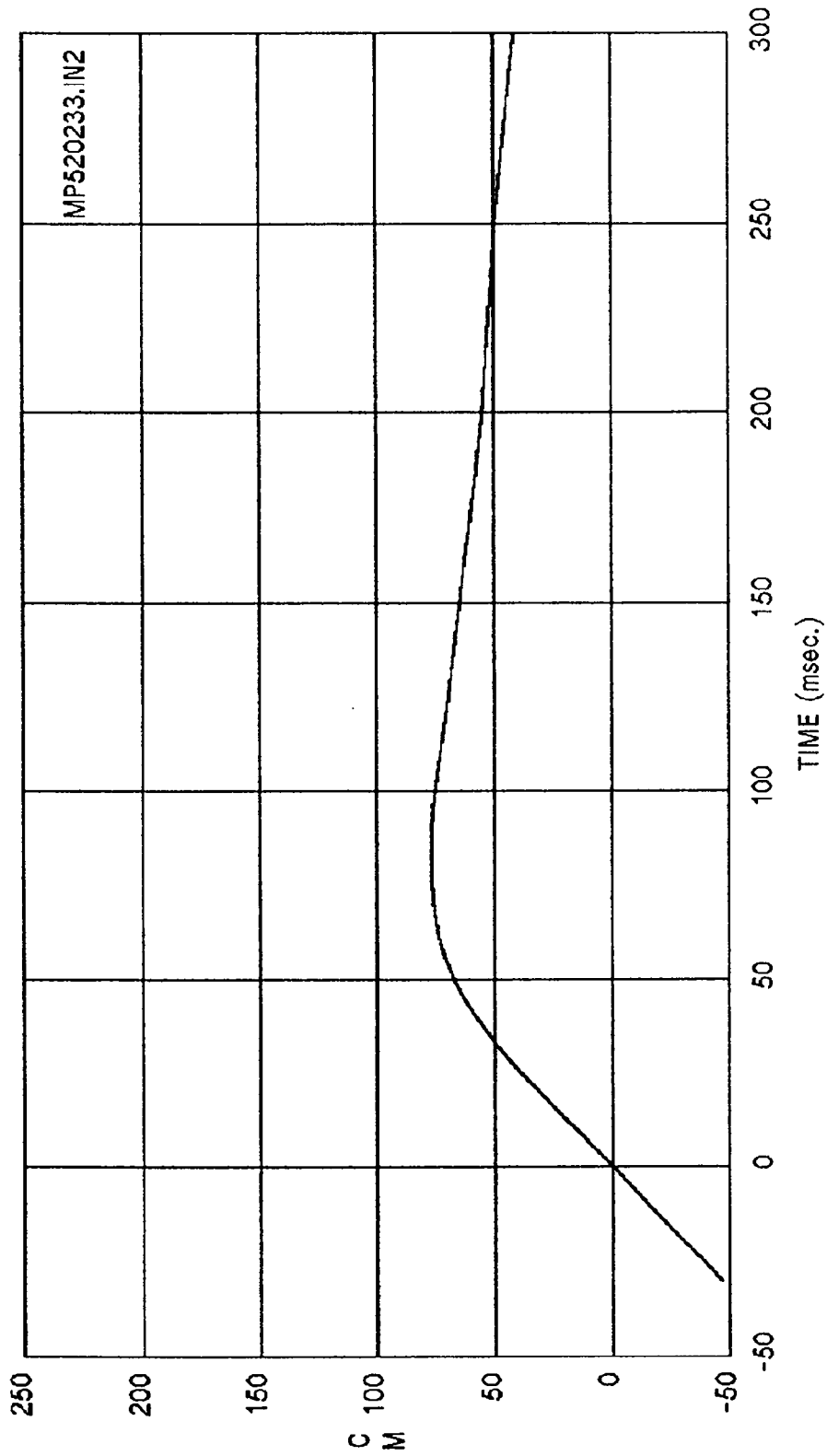
Curve: Right rear cross-member acc. - X axis (secondary) Filter: SAE CLASS 60 Max = 5.3559 Min = -39.8

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Right rear cross-member delta V -- X axis(Sec) Filter: SAE CLASS 180 Max = 56.322 Min = -8.50

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Right rear cross-member disp. - X axis(secondary) Filter: SAE CLASS 180 Max = 76.576 Min = 40.9

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

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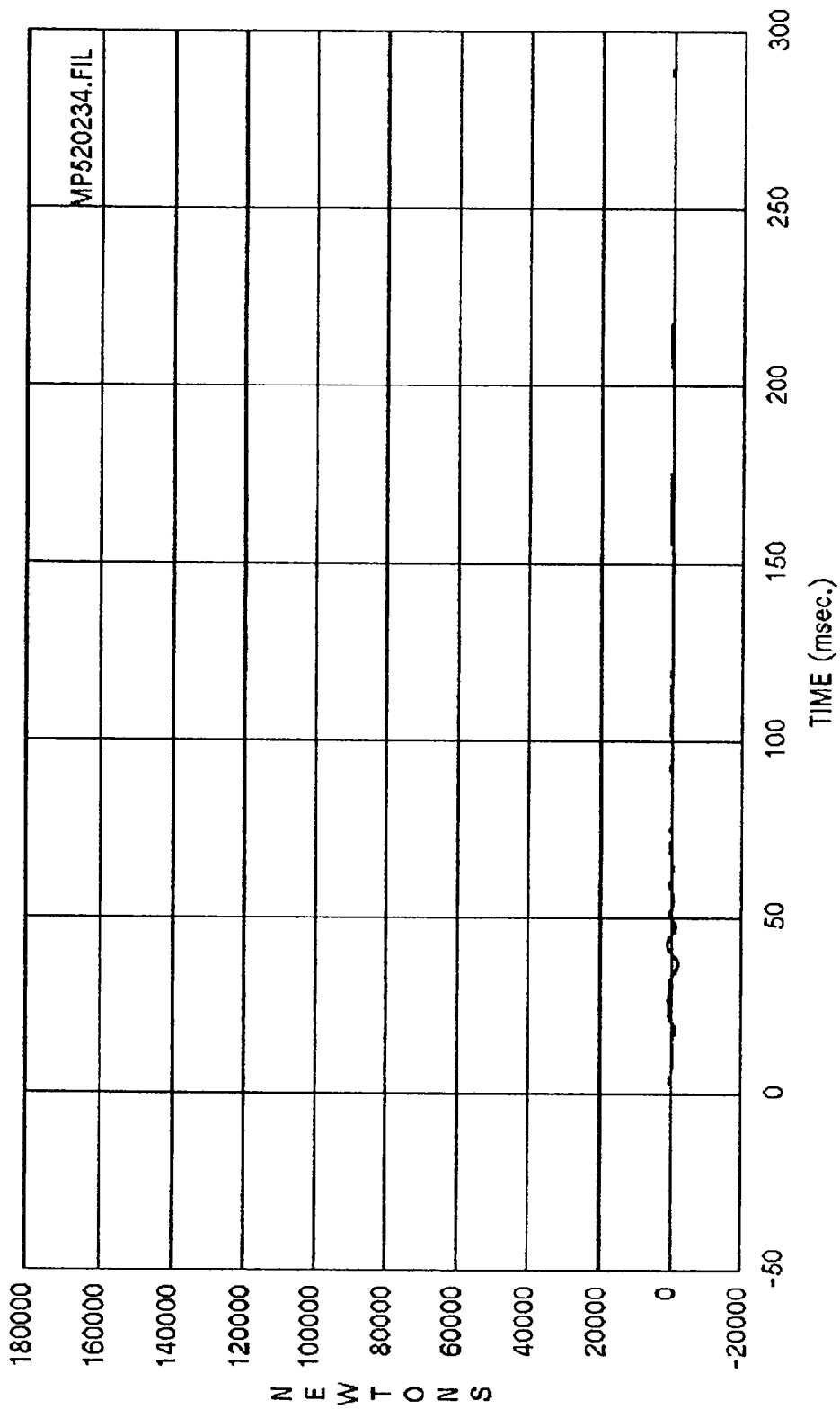
APPENDIX B-2

LOAD CELL BARRIER DATA

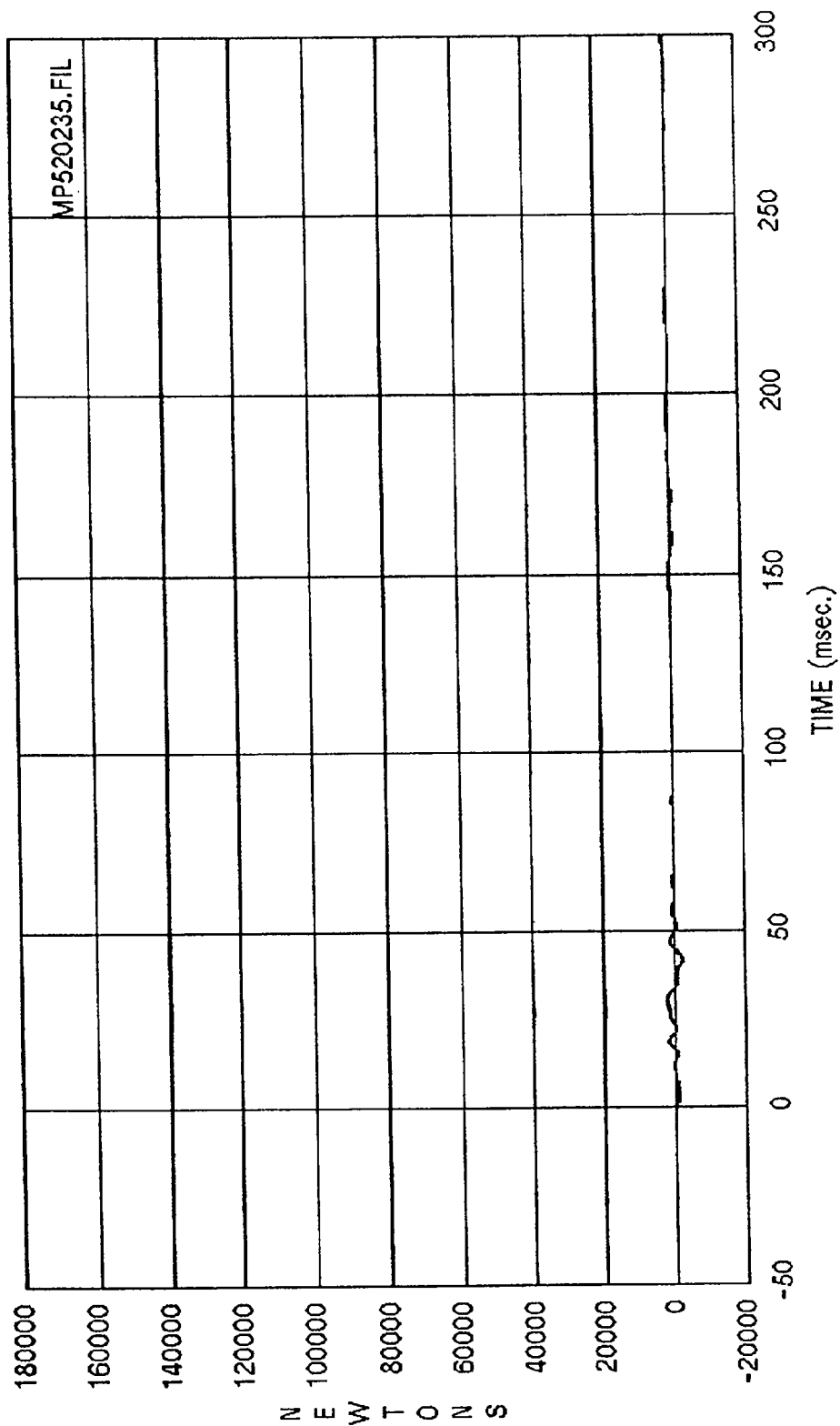
DATA FILTERING:

Load Cell Barrier Channels - Class 60

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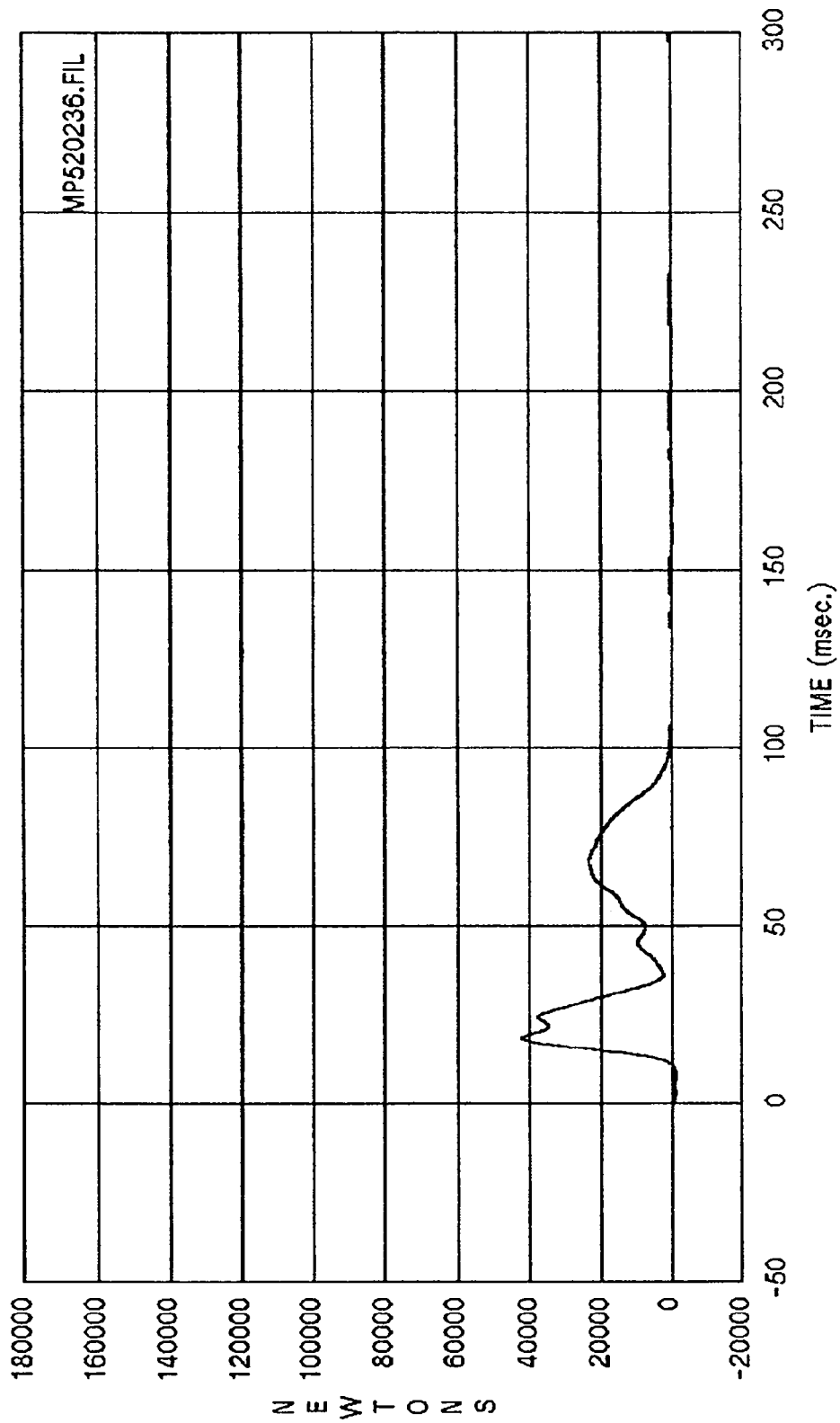


Curve: Force on barrier location A1 Filter: SAE CLASS 60 Max = 1253.8 Min = -1706.3
 MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

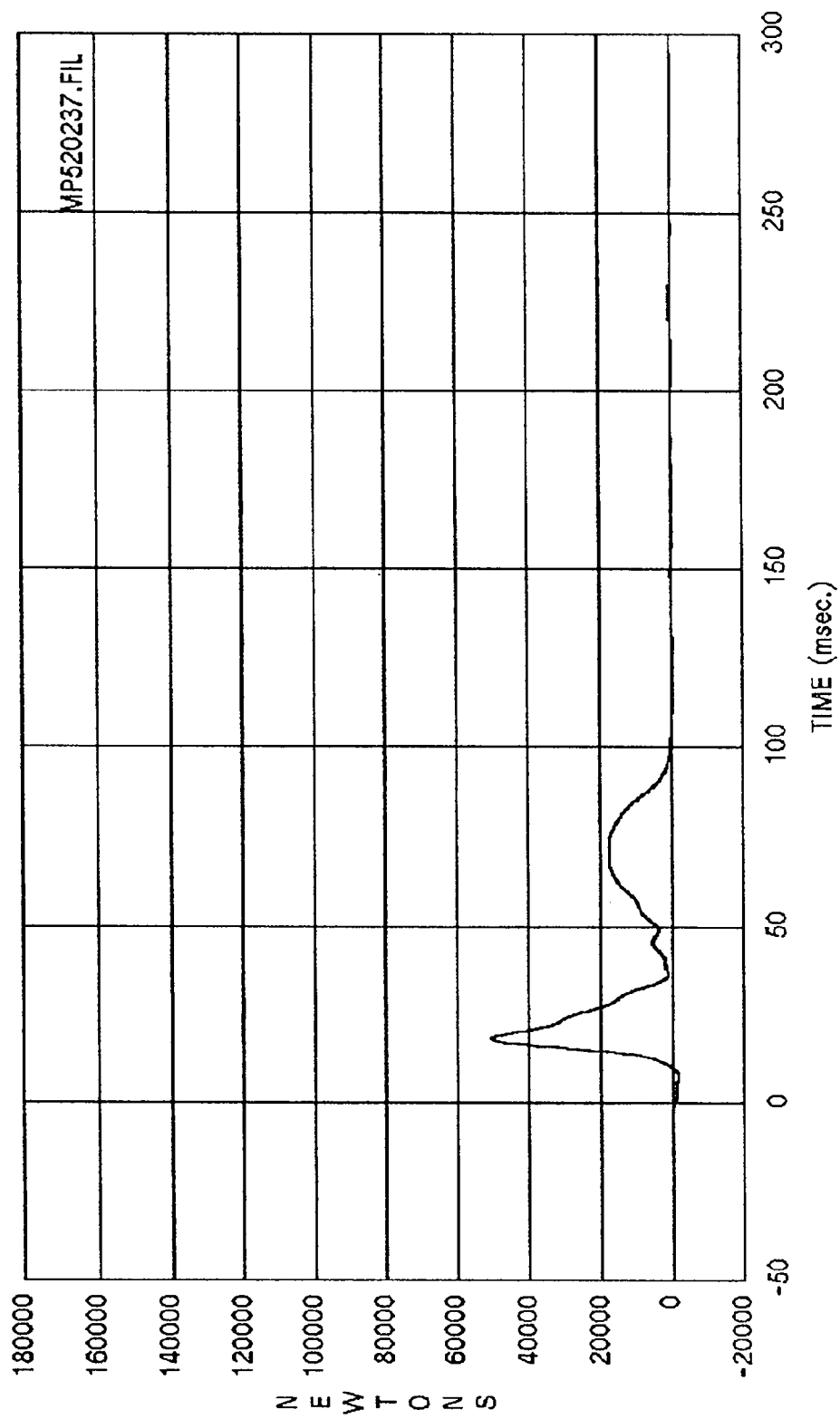


Curve: Force on barrier location A2 Filter: SAE CLASS 60 Max = 2364.9 Min = -2180.8

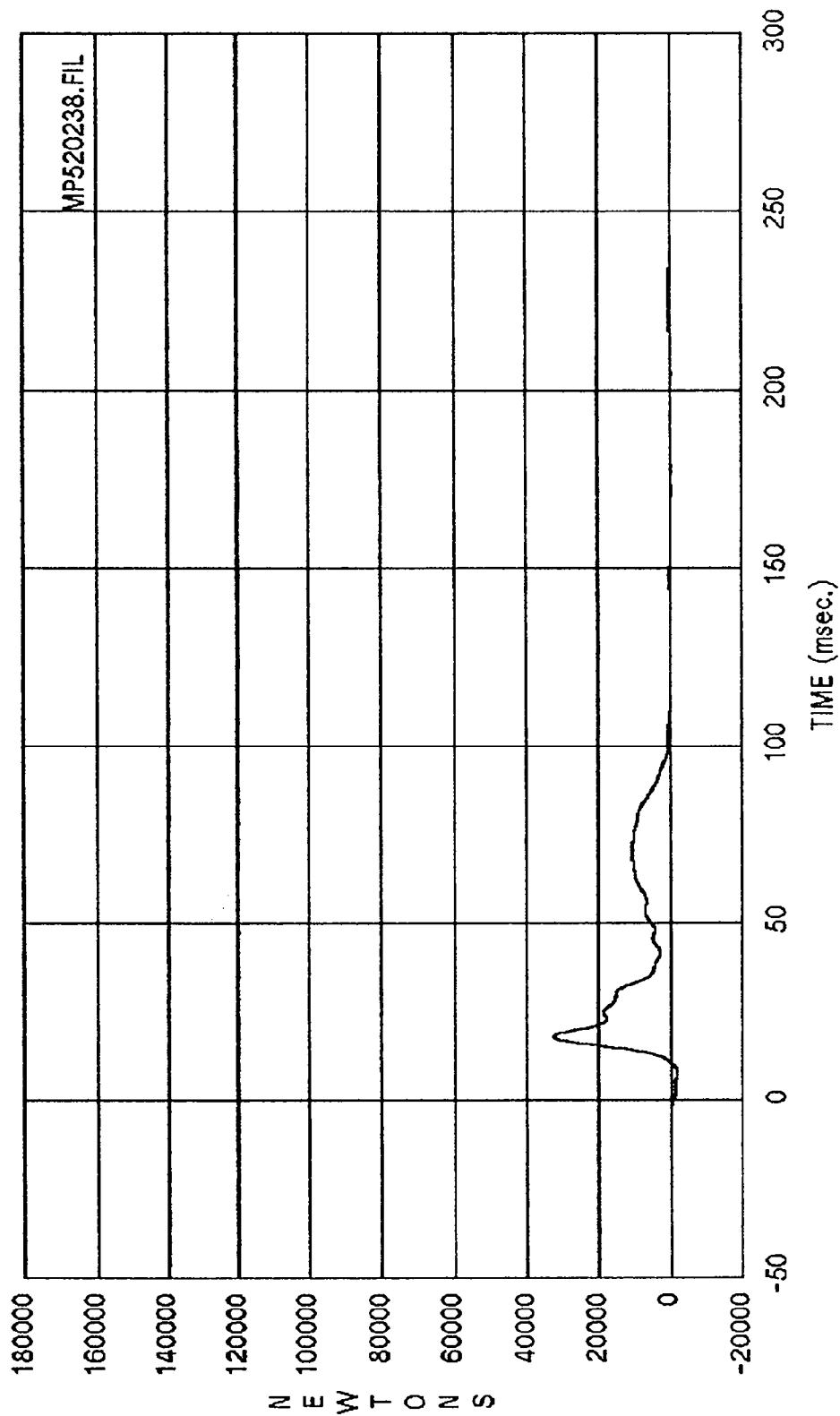
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Force on barrier location A3 Filter: SAE CLASS 60 Max = 42474. Min = -1066.5
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

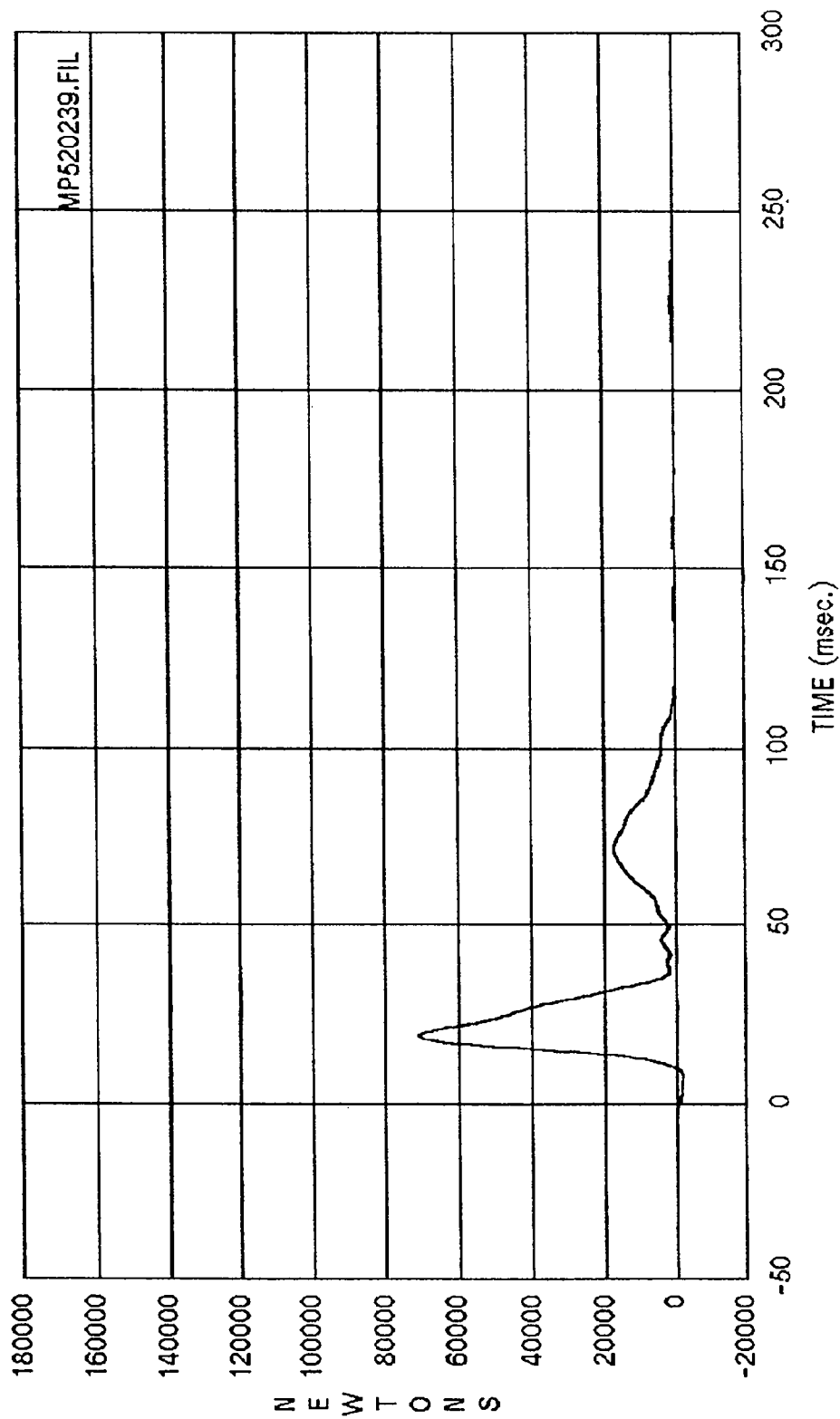


Curve: Force on barrier location A4 Filter: SAE CLASS 60 Max = 50431. Min = -1519.5
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



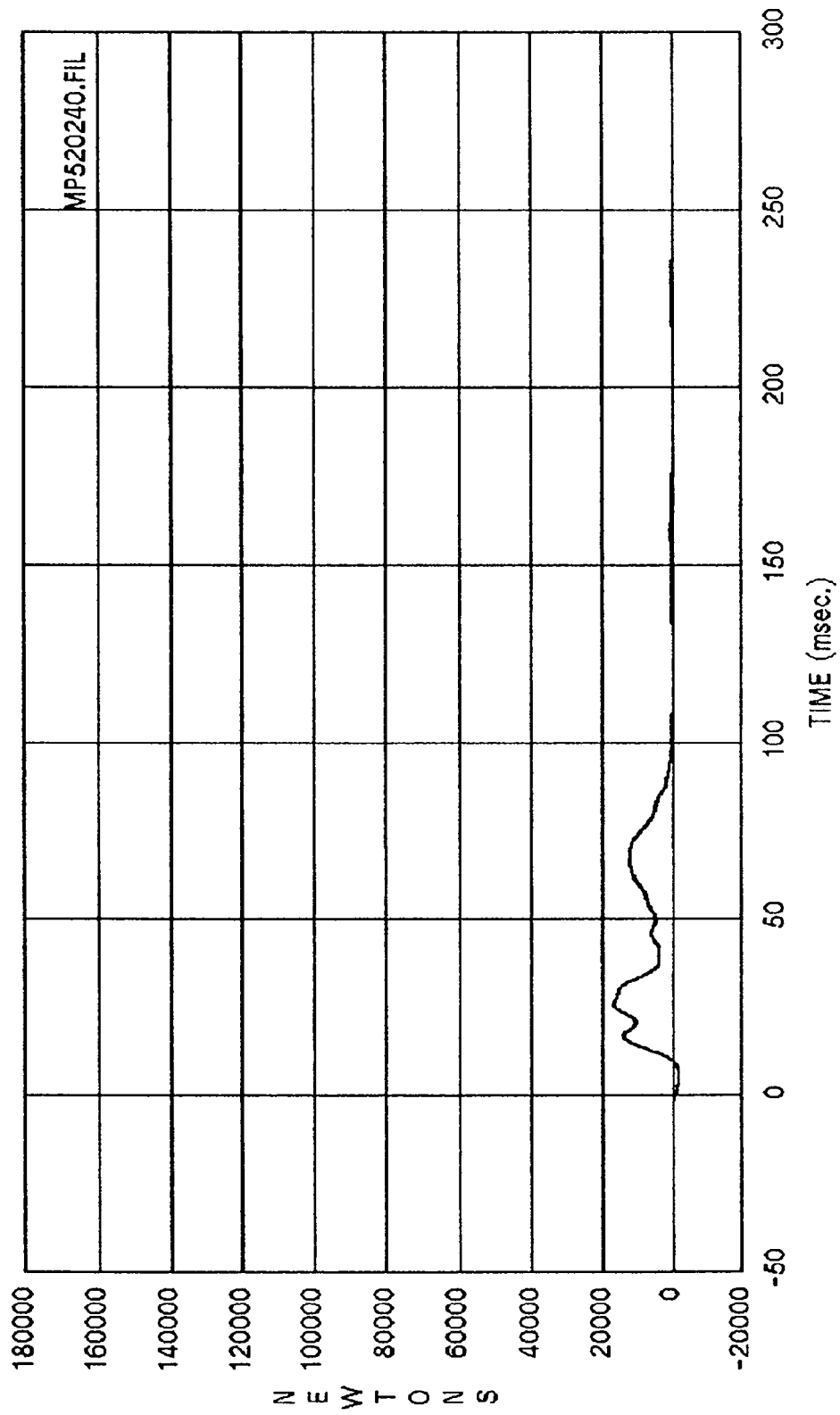
Curve: Force on barrier location A5 Filter: SAE CLASS 60 Max = 33007. Min = -1599.8

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



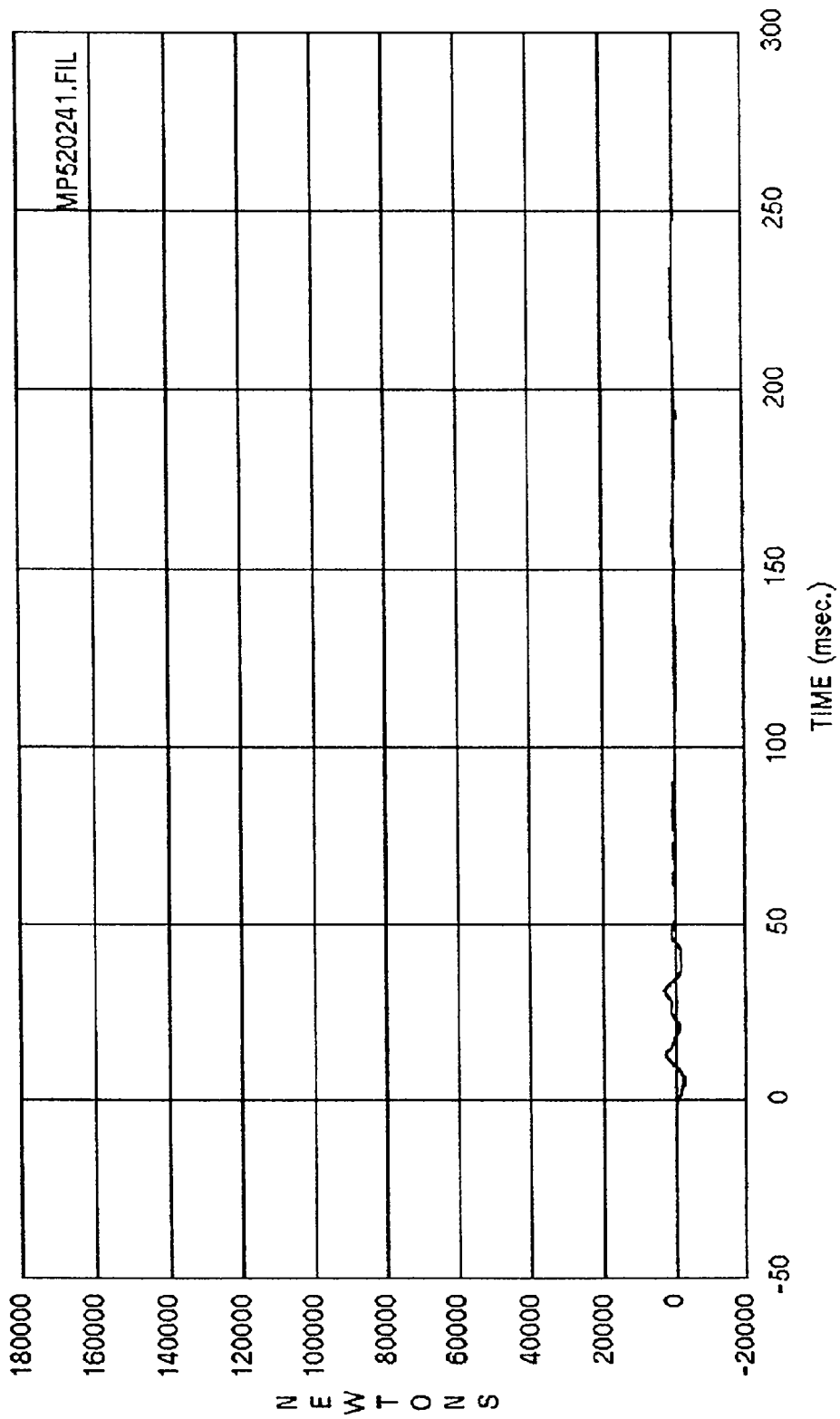
Curve: Force on barrier location A6 Filter: SAE CLASS 60 Max = 70782. Min = -1929.0

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



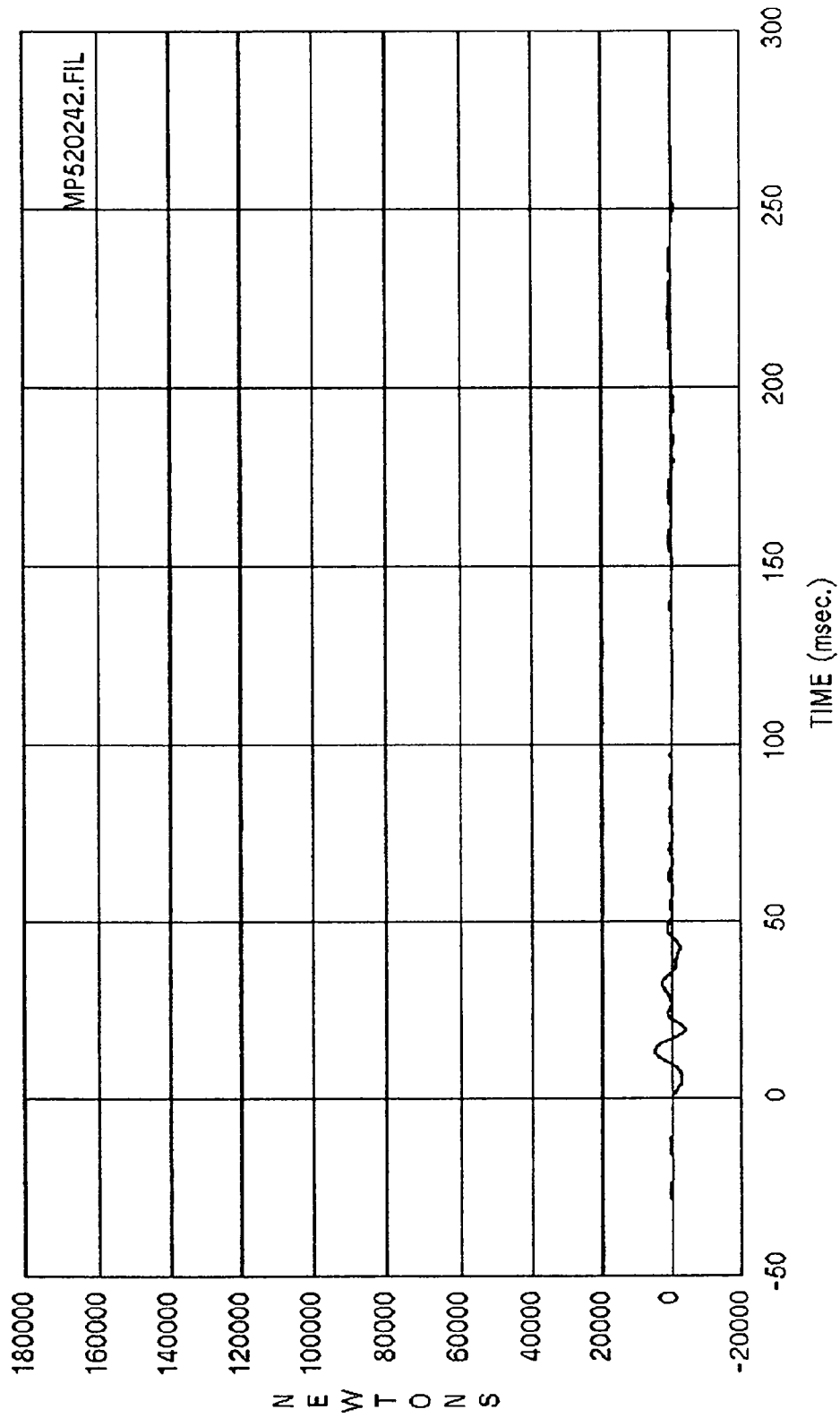
Curve: Force on barrier location A7 Filter: SAE CLASS 60 Max = 16832. Min = -1578.9

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

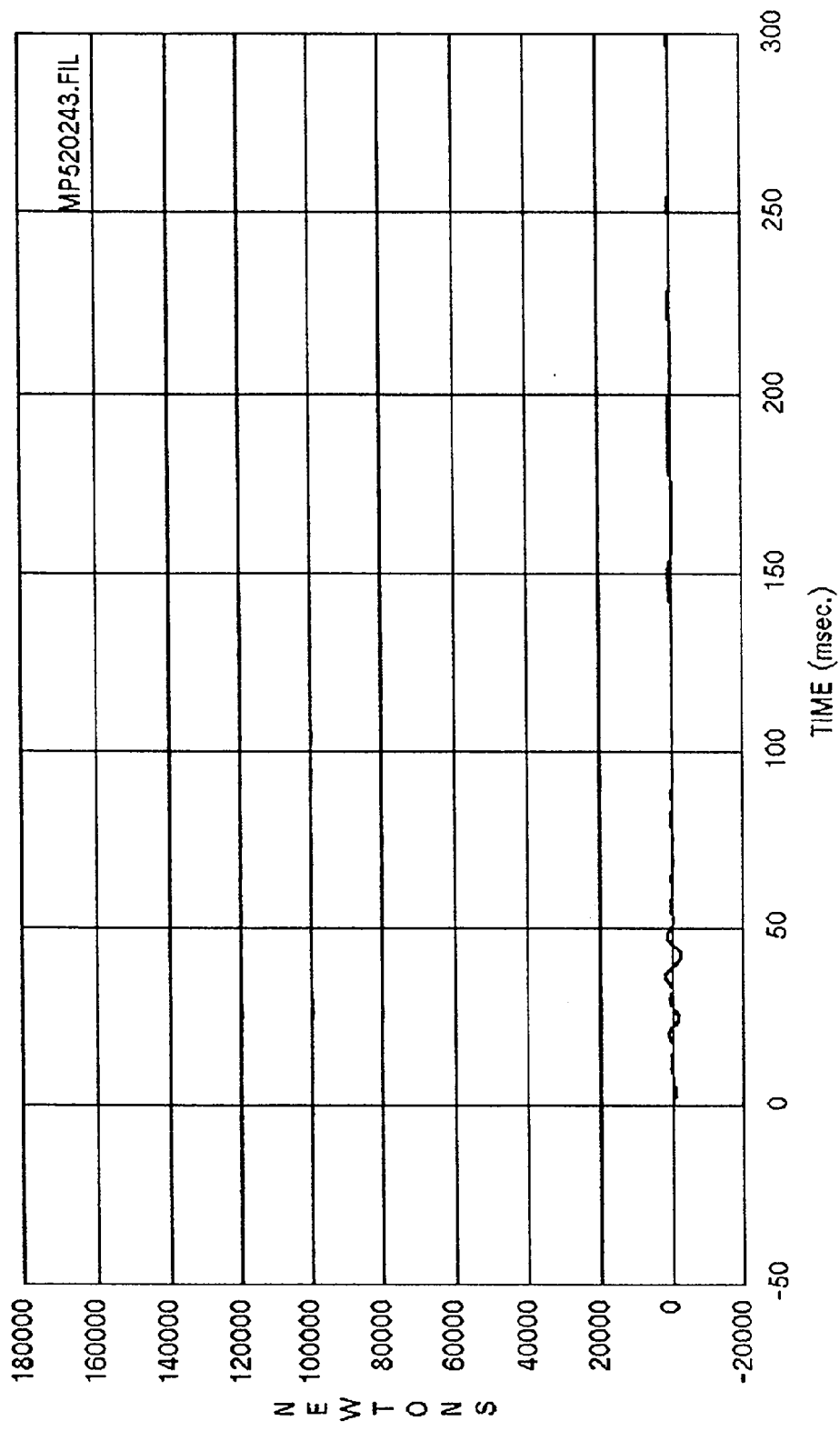


Curve: Force on barrier location A8 Filter: SAE CLASS 60 Max = 3224.1 Min = -2226.6

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

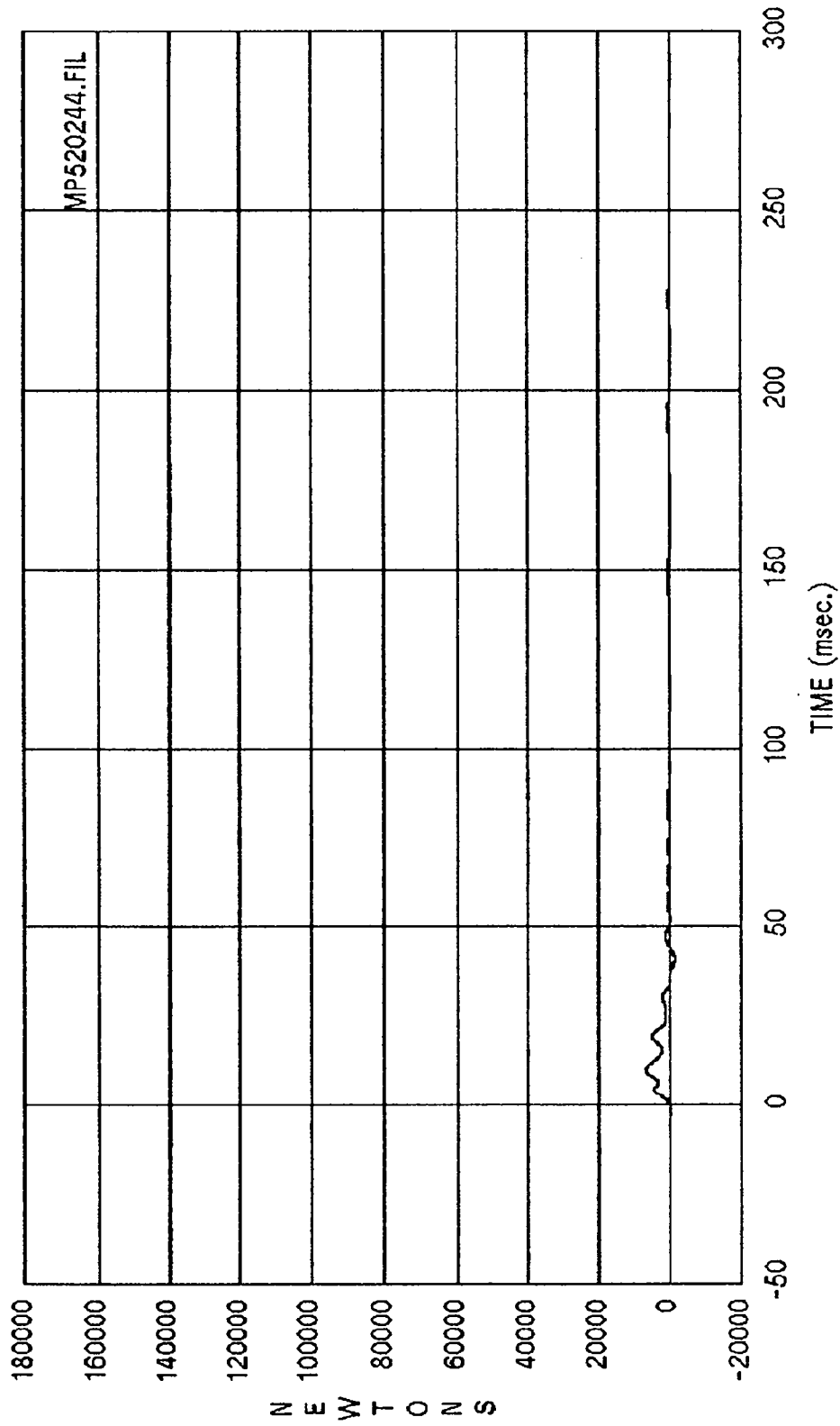


Curve: Force on barrier location A9 Filter: SAE CLASS 60 Max = 4850.5 Min = -3585.6
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



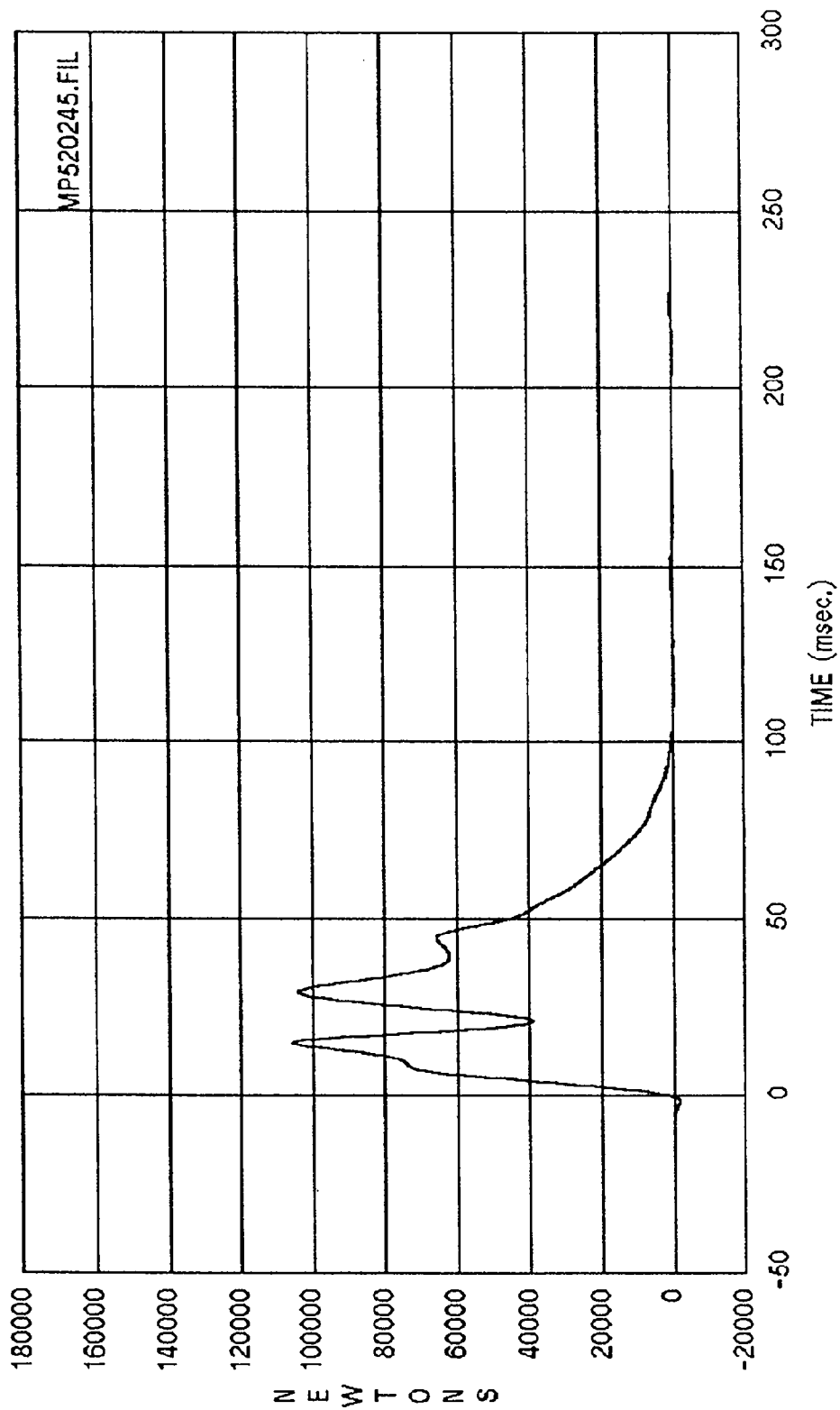
Curve: Force on barrier location B1 Filter: SAE CLASS 60 Max = 2020.8 Min = -2266.6

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



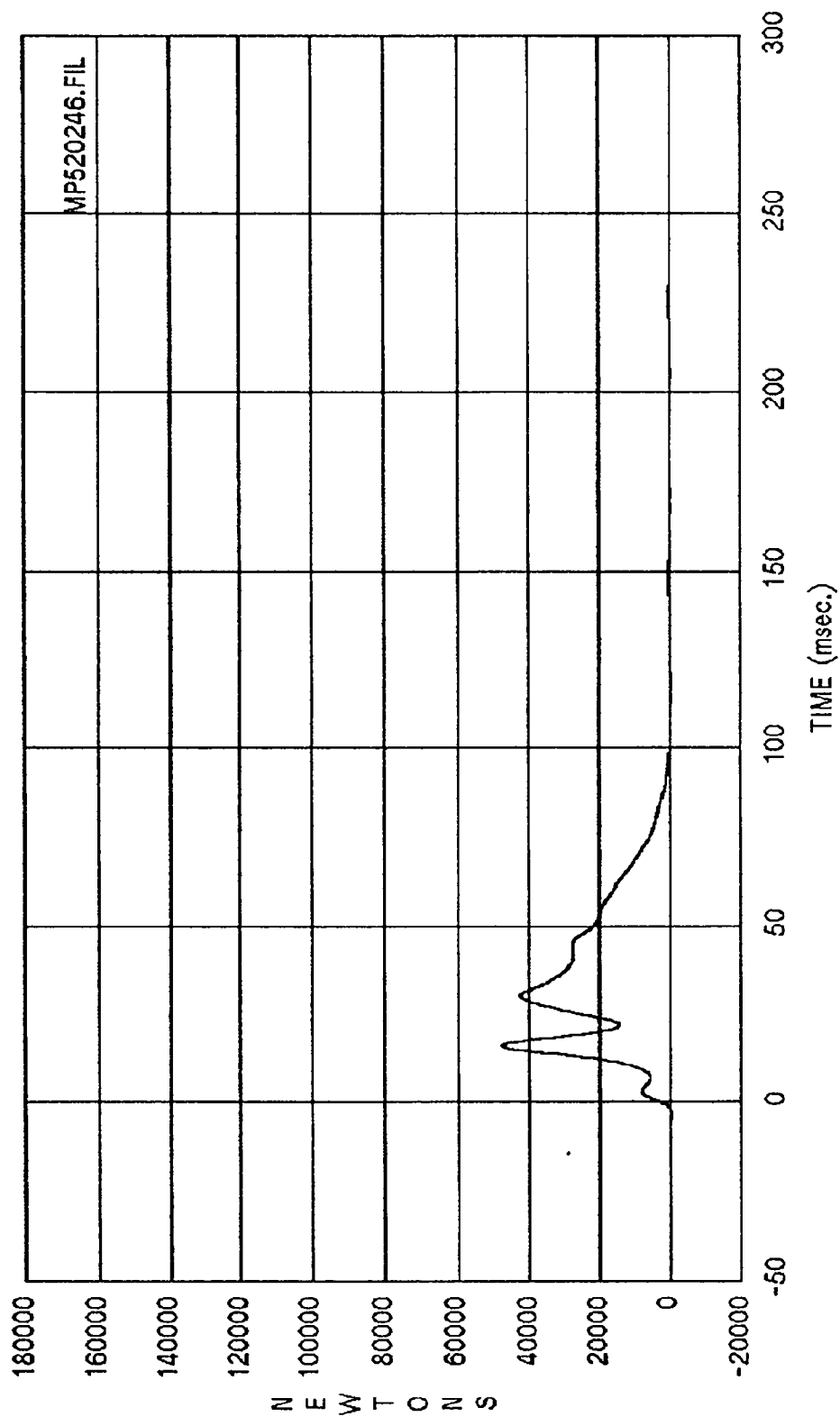
Curve: Force on barrier location B2 Filter: SAE CLASS 60 Max = 6783.6 Min = -1388.7

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

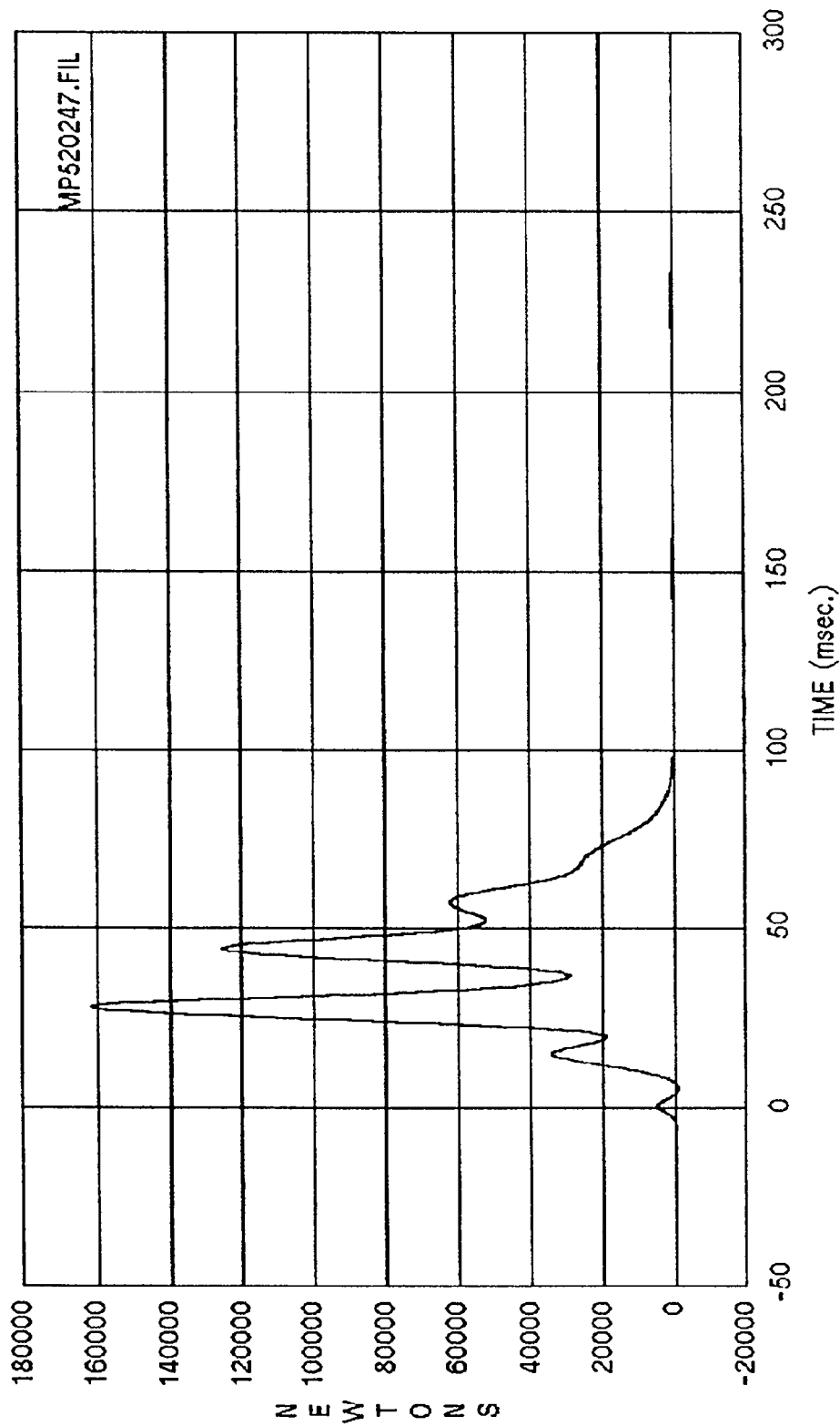


Curve: Force on barrier location B3 Filter: SAE CLASS 60 Max = .10558E+06 Min = -340.01

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

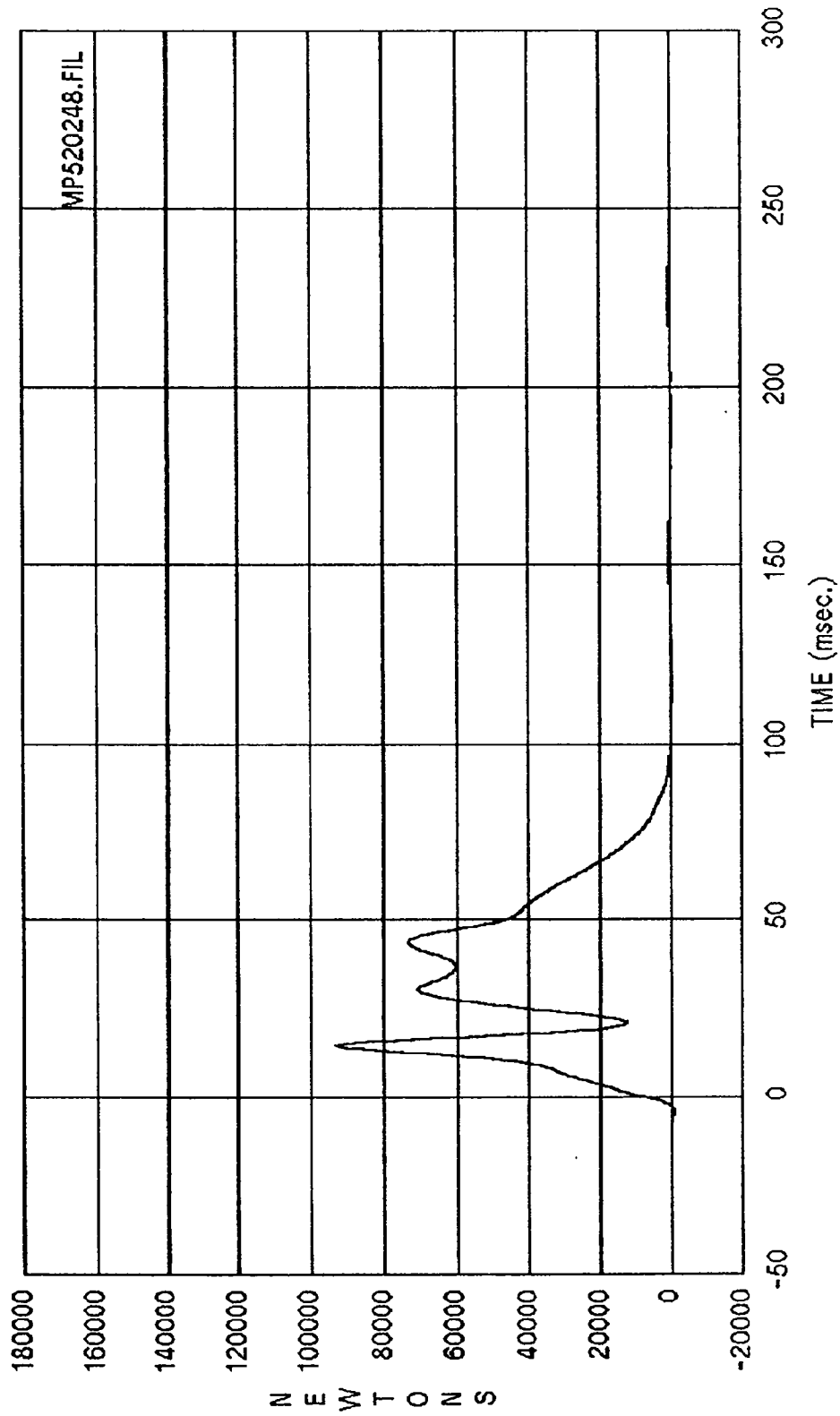


Curve: Force on barrier location B4 Filter: SAE CLASS 60 Max = 48112. Min = -192.84
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

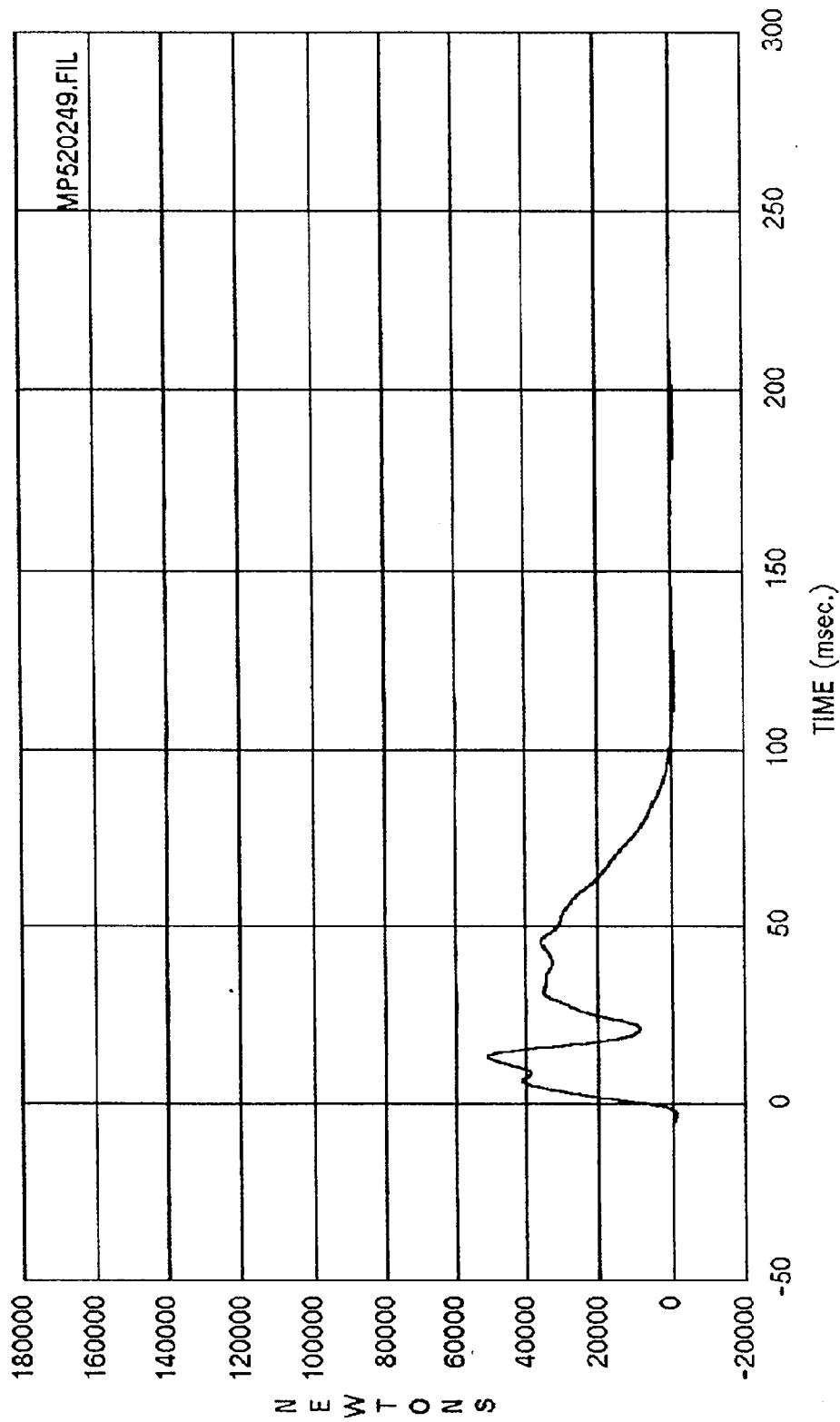


Curve: Force on barrier location B5 Filter: SAE CLASS 60 Max = .16190E+06 Min = -645.57

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

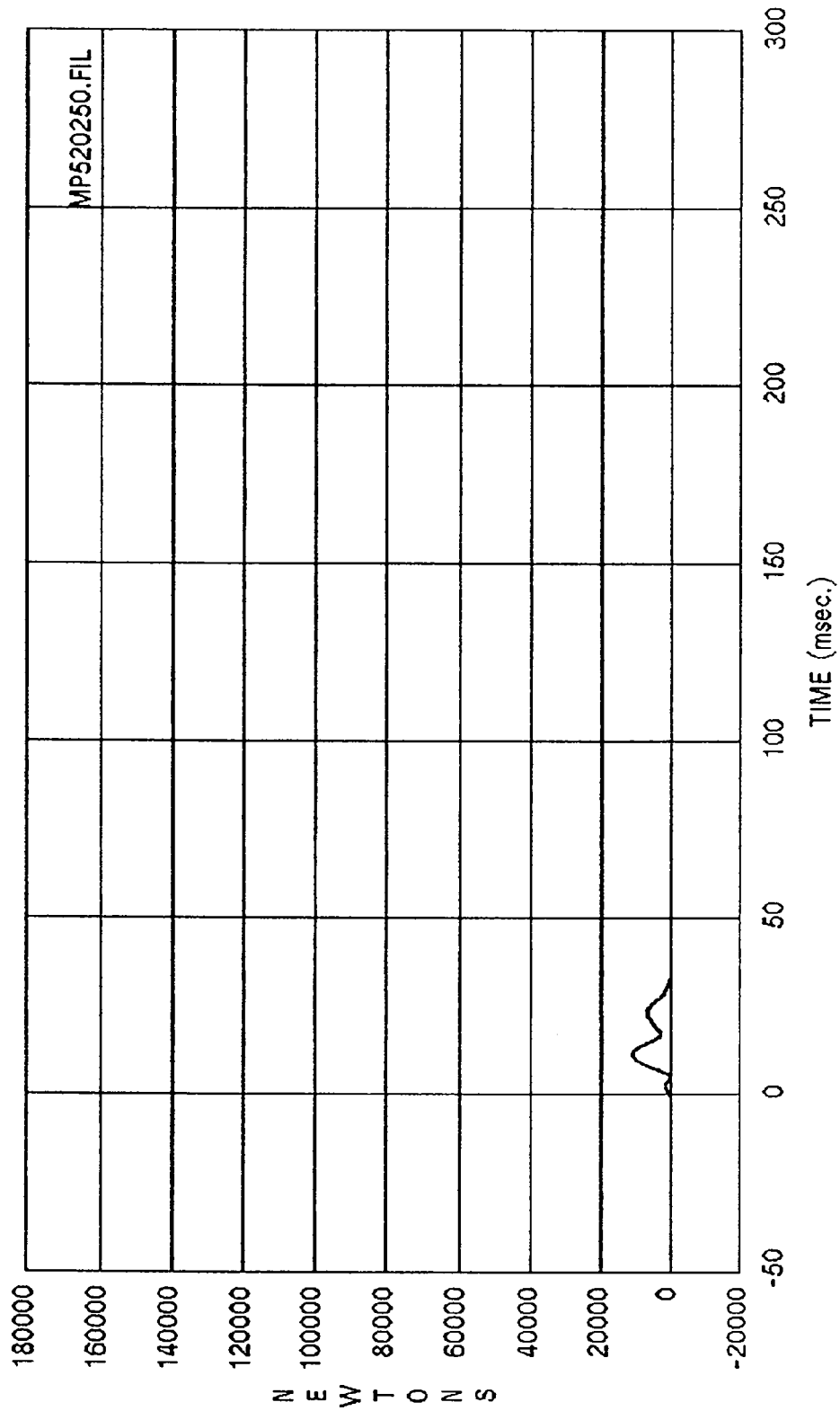


Curve: Force on barrier location B6 Filter: SAE CLASS 60 Max = 93219. Min = -319.19
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

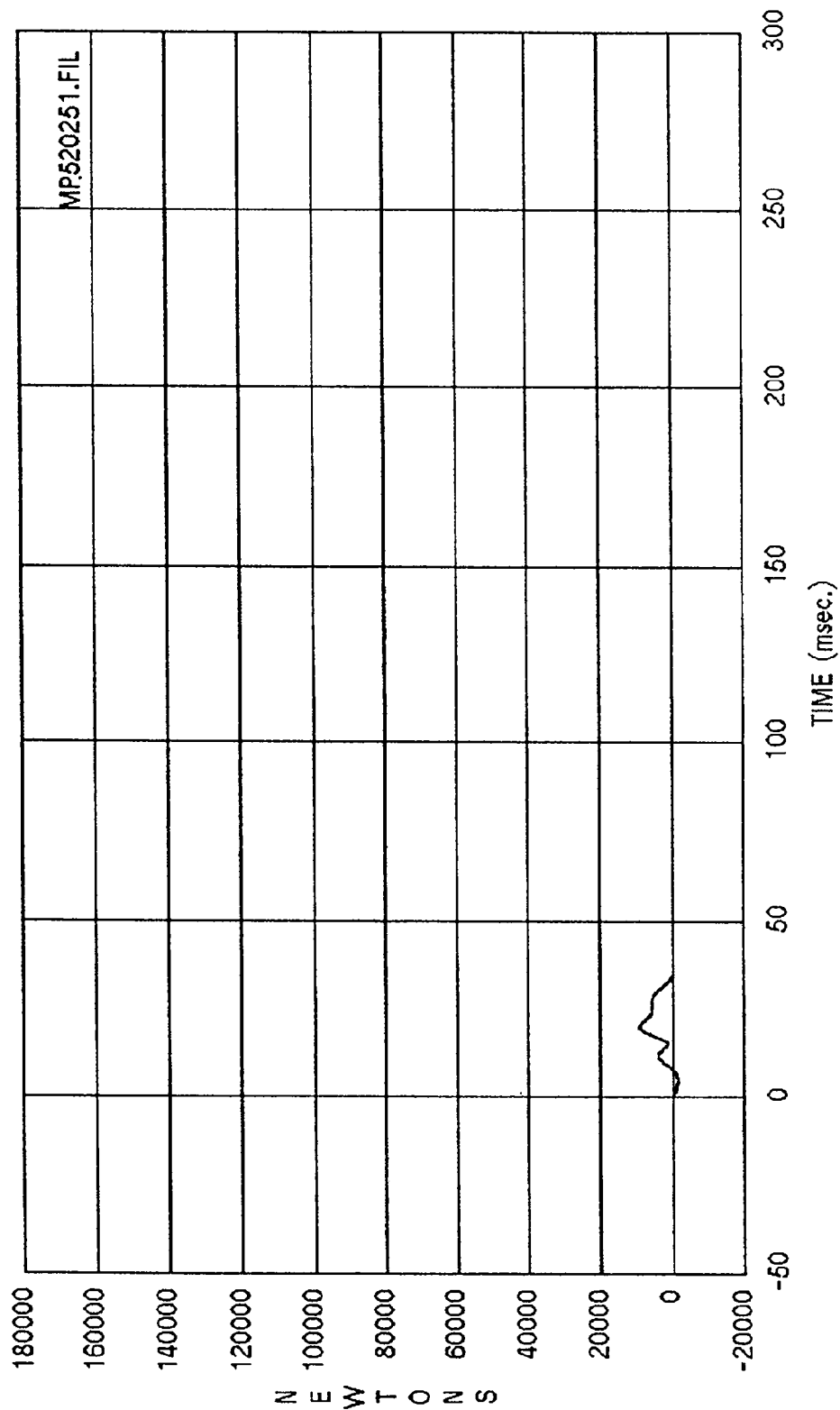


Curve: Force on barrier location B7 Filter: SAE CLASS 60 Max = 50965. Min = -717.41

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

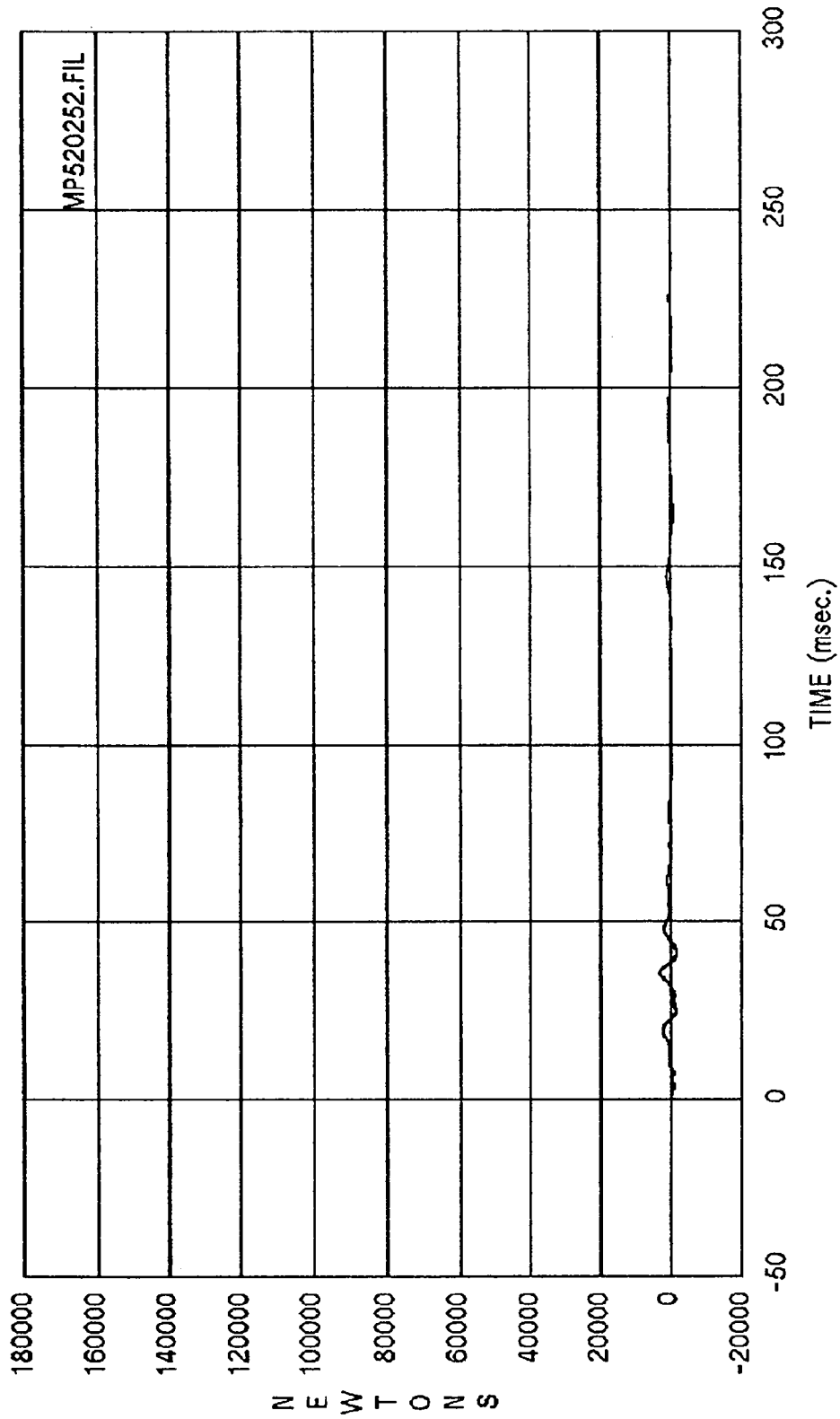


Curve: Force on barrier location B8 Filter: SAE CLASS 60 Max = 11146. Min = -63.973
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



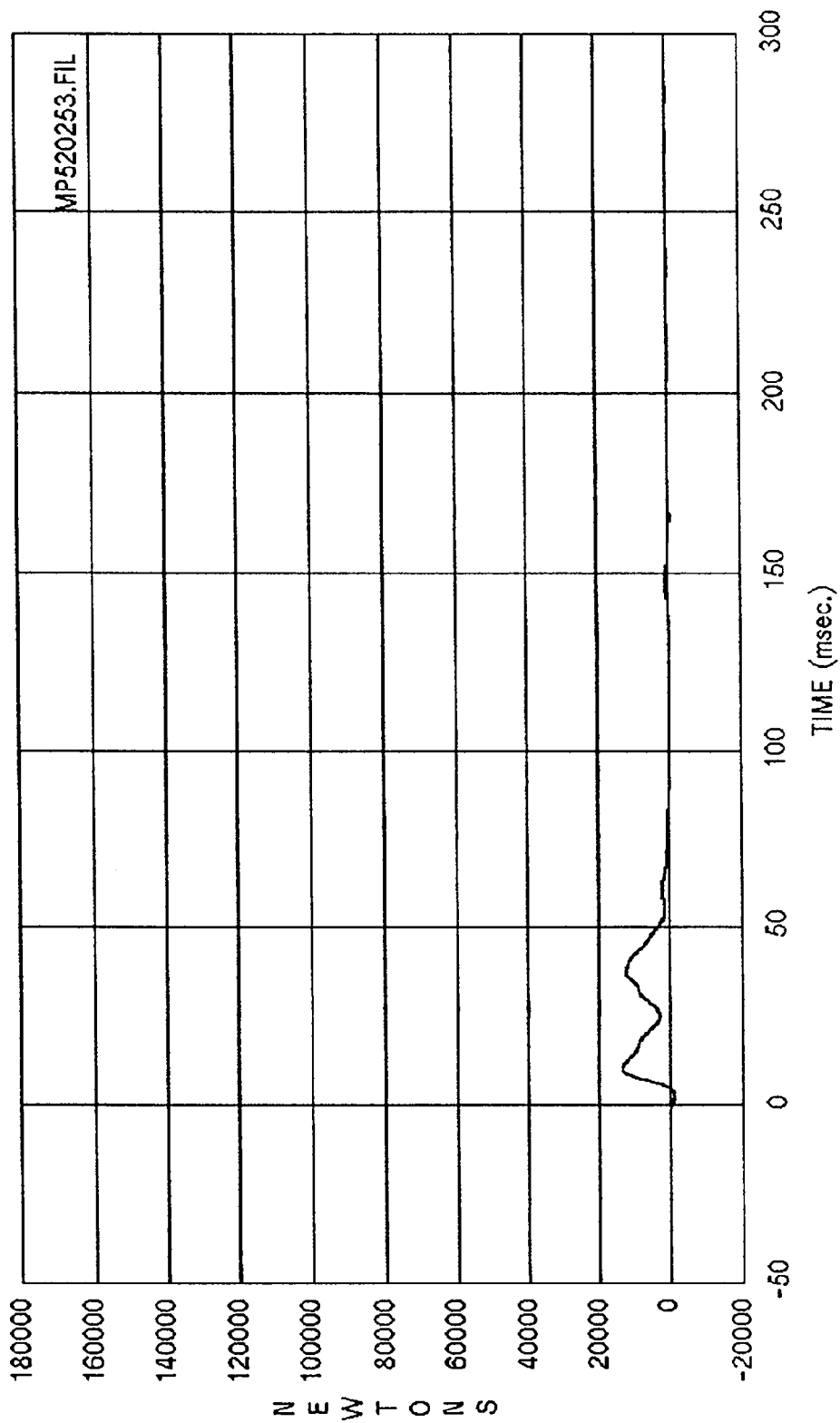
Curve: Force on barrier location B9 Filter: SAE CLASS 60 Max = 9328.6 Min = -1339.2

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



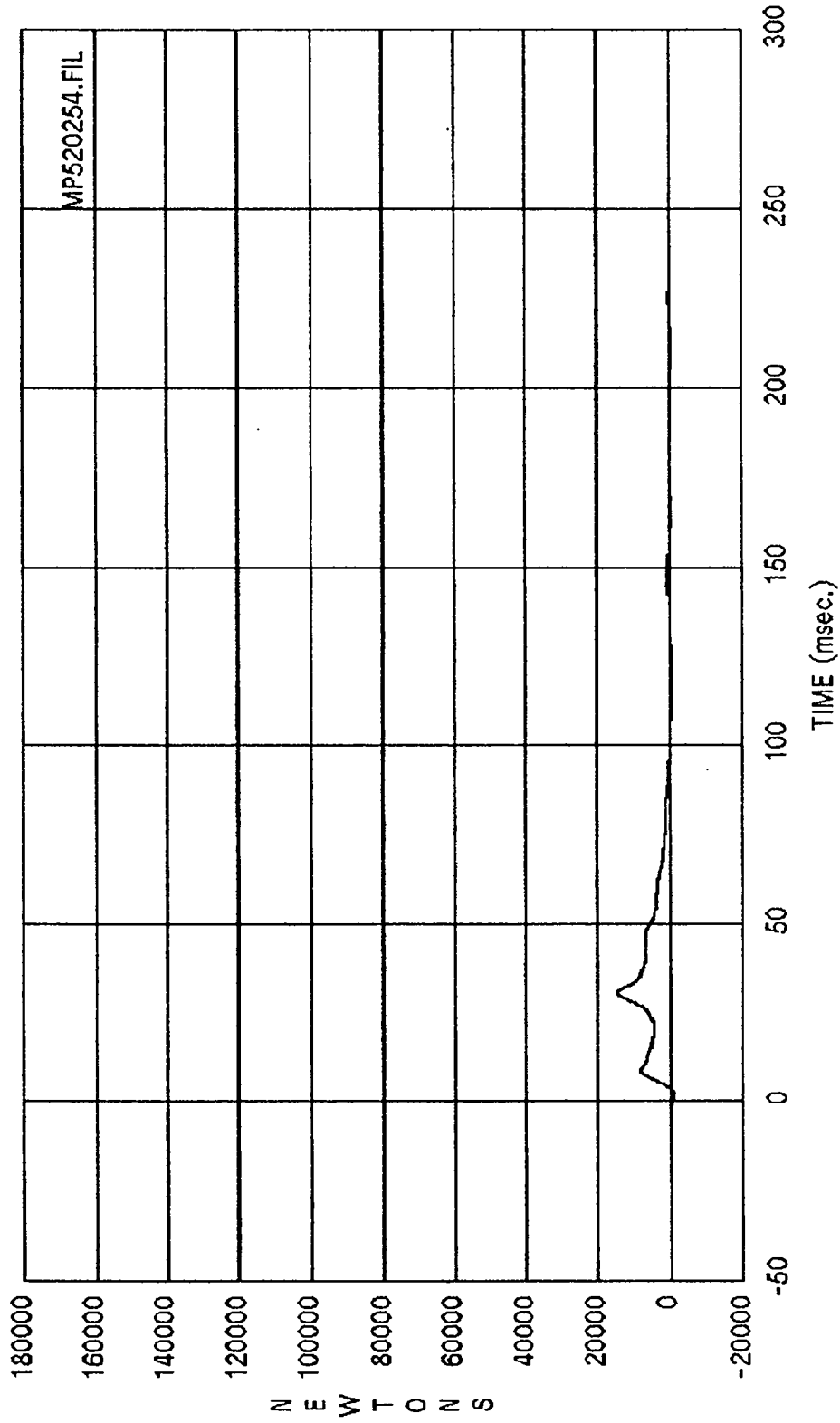
Curve: Force on barrier location C1 Filter: SAE CLASS 60 Max = 3239.4 Min = -1399.3

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

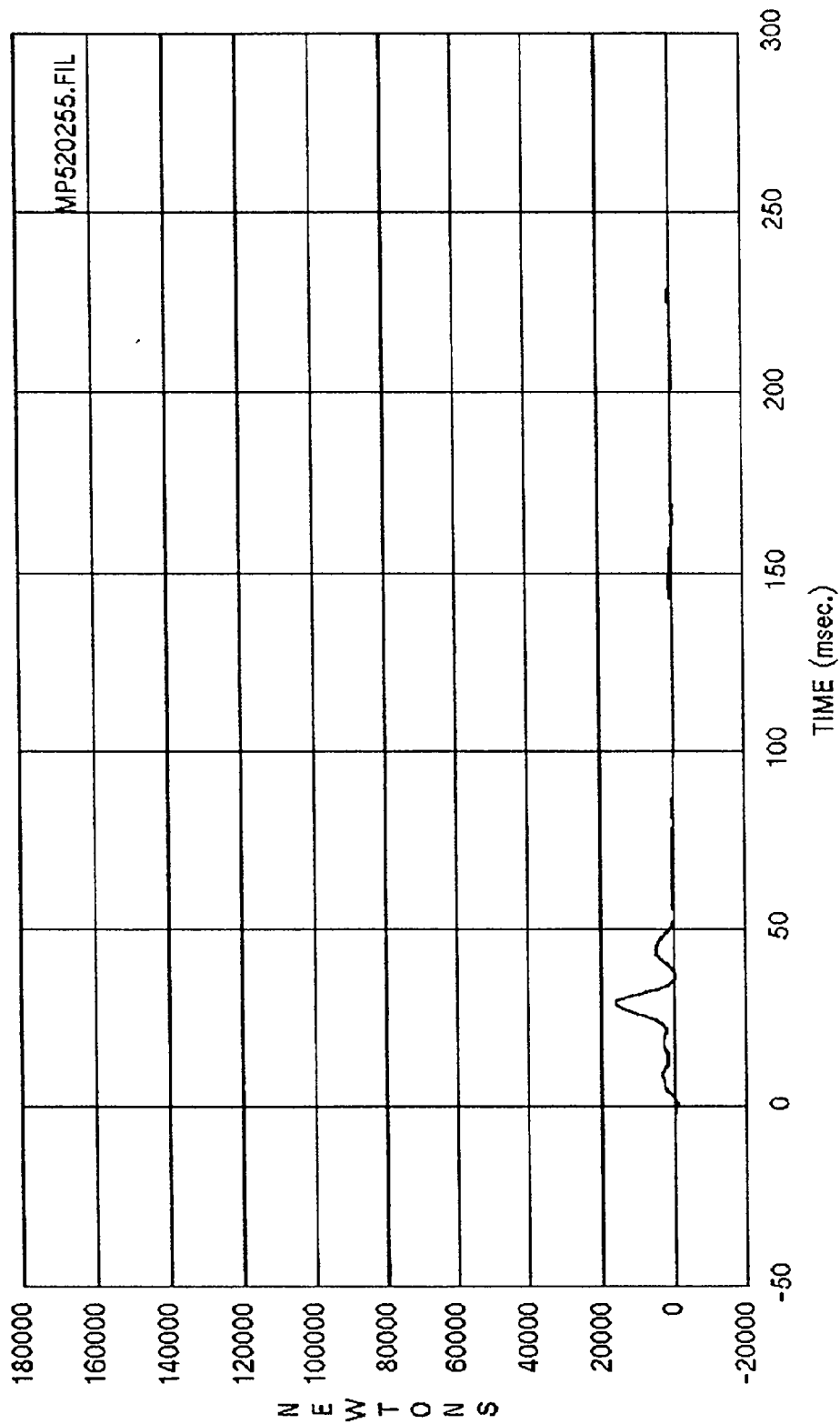


Curve: Force on barrier location C2 Filter: SAE CLASS 60 Max = 13624. Min = -1130.0

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

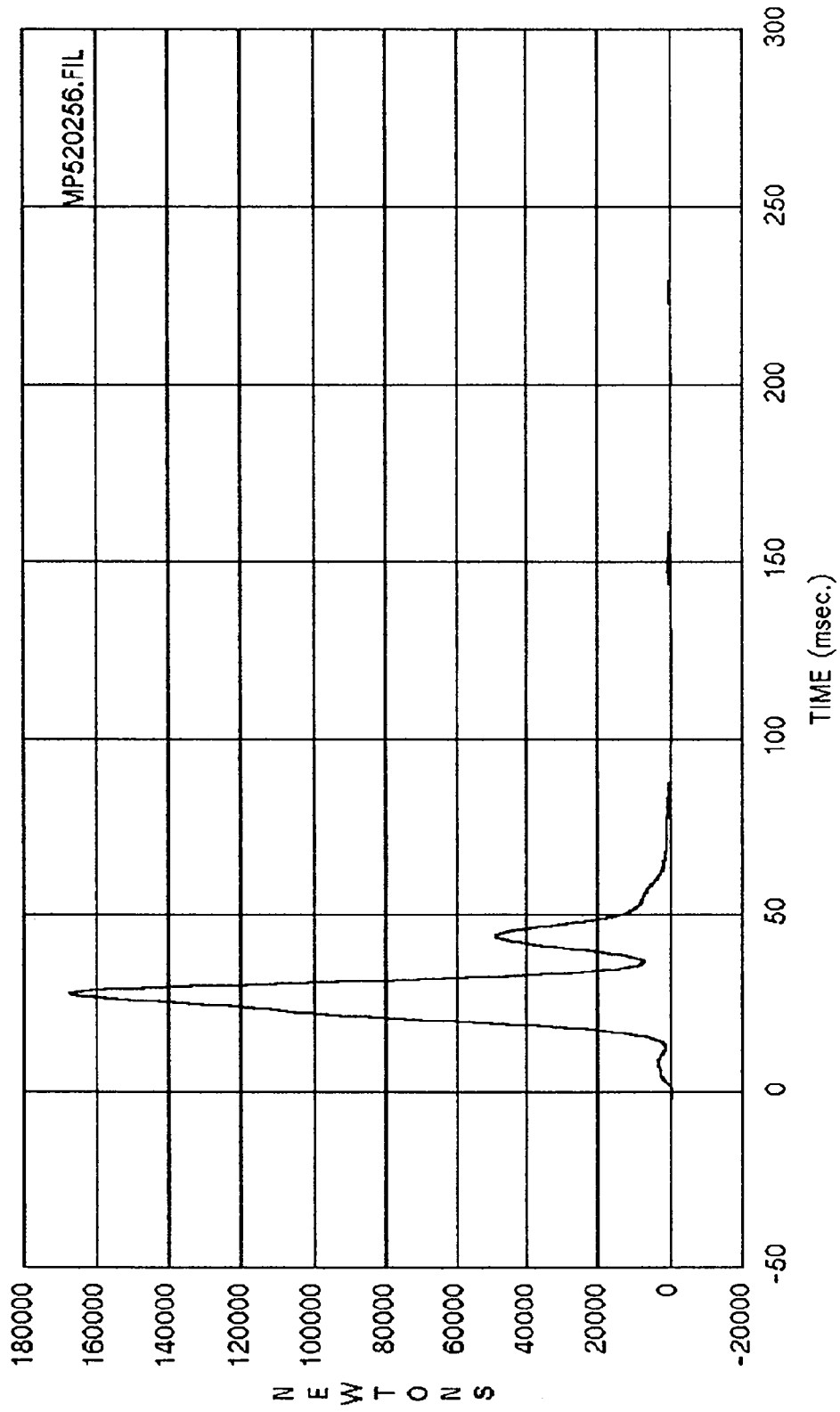


Curve: Force on barrier location C3 Filter: SAE CLASS 60 Max = 14632. Min = -765.89
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



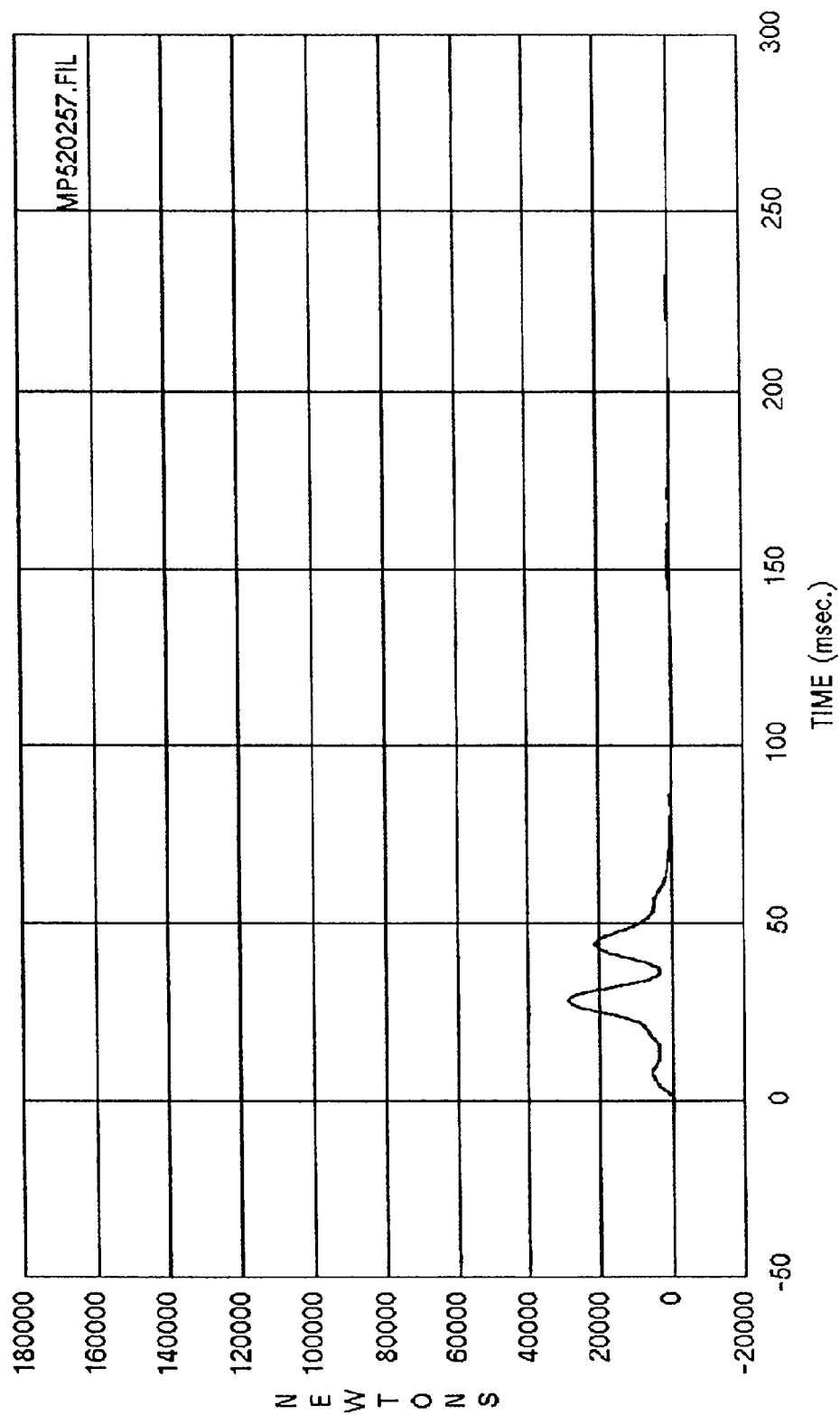
Curve: Force on barrier location C4 Filter: SAE CLASS 60 Max = 16287. Min = -565.60

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

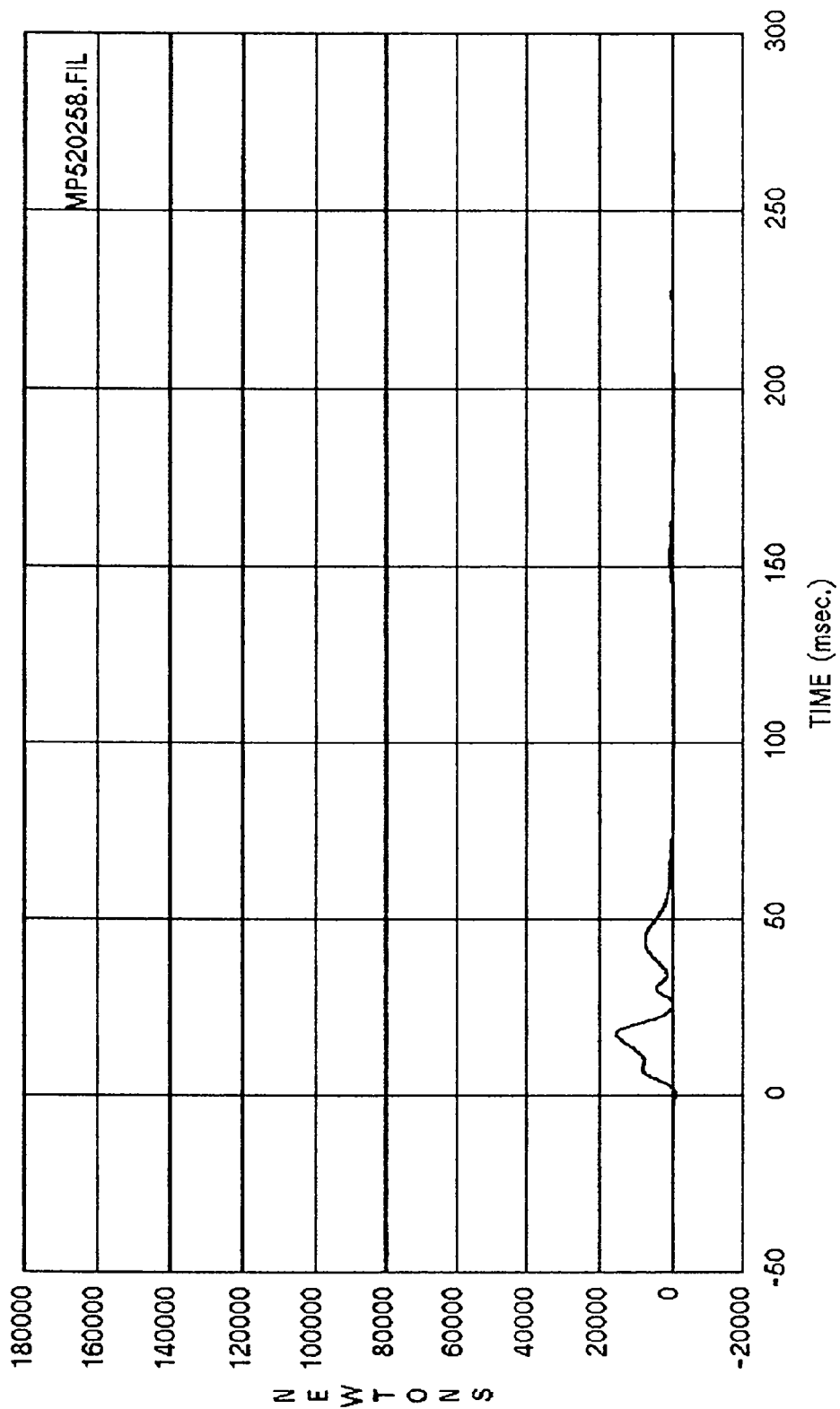


Curve: Force on barrier location C5 Filter: SAE CLASS 60 Max = .16729E+06 Min = -366.07

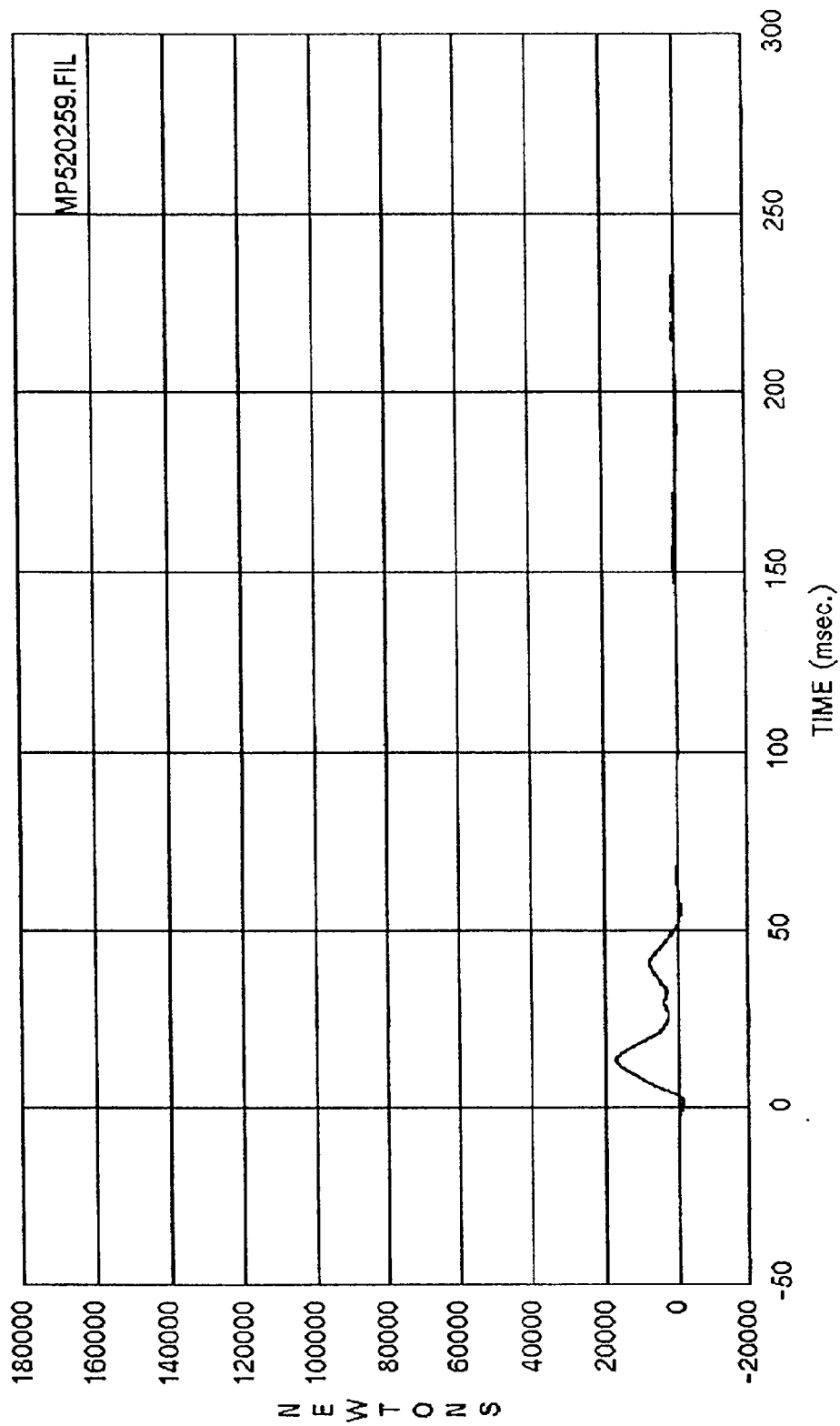
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



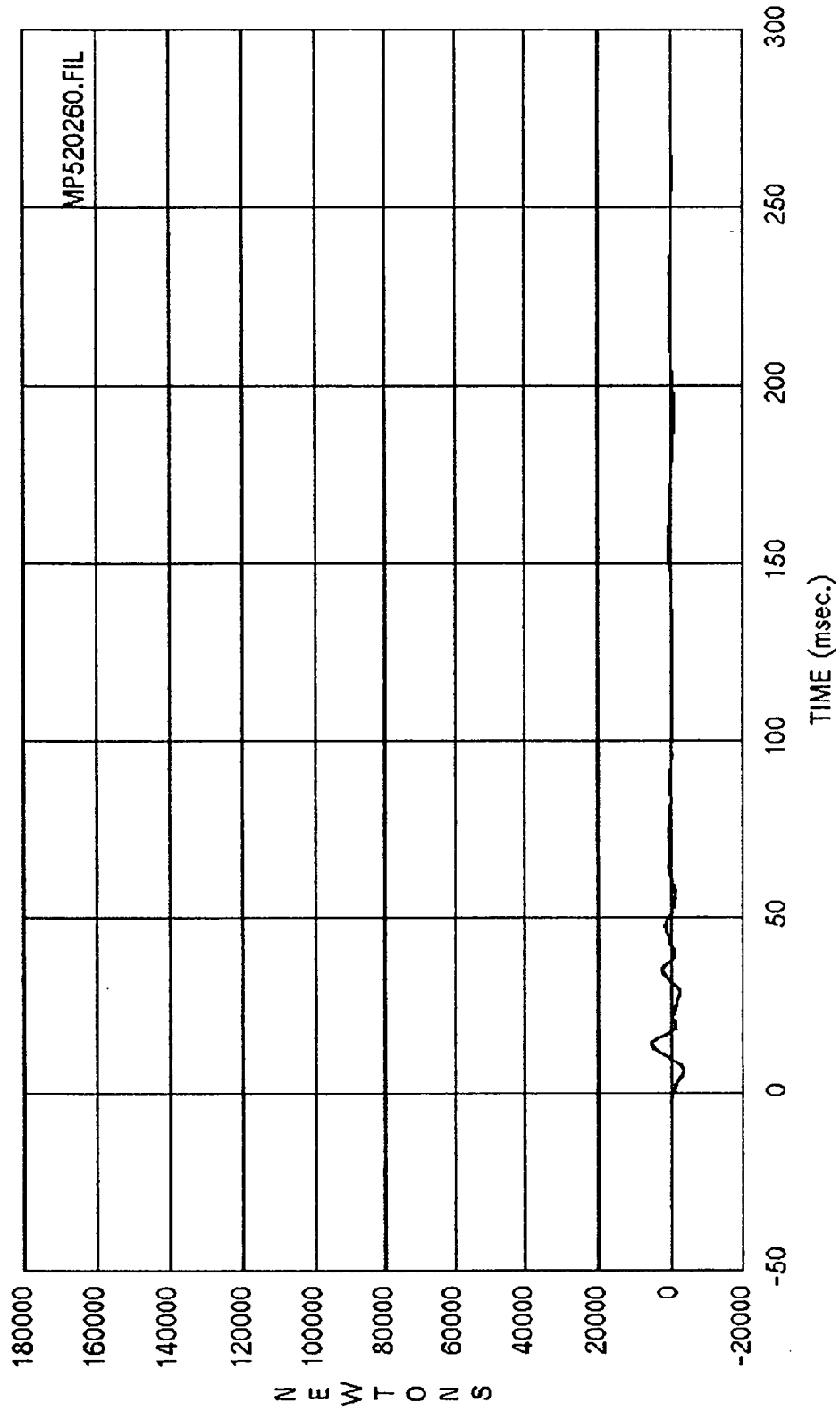
Curve: Force on barrier location C6 Filter: SAE CLASS 60 Max = 28713. Min = -321.94
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Force on barrier location C7 Filter: SAE CLASS 60 Max = 15879. Min = -693.18
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

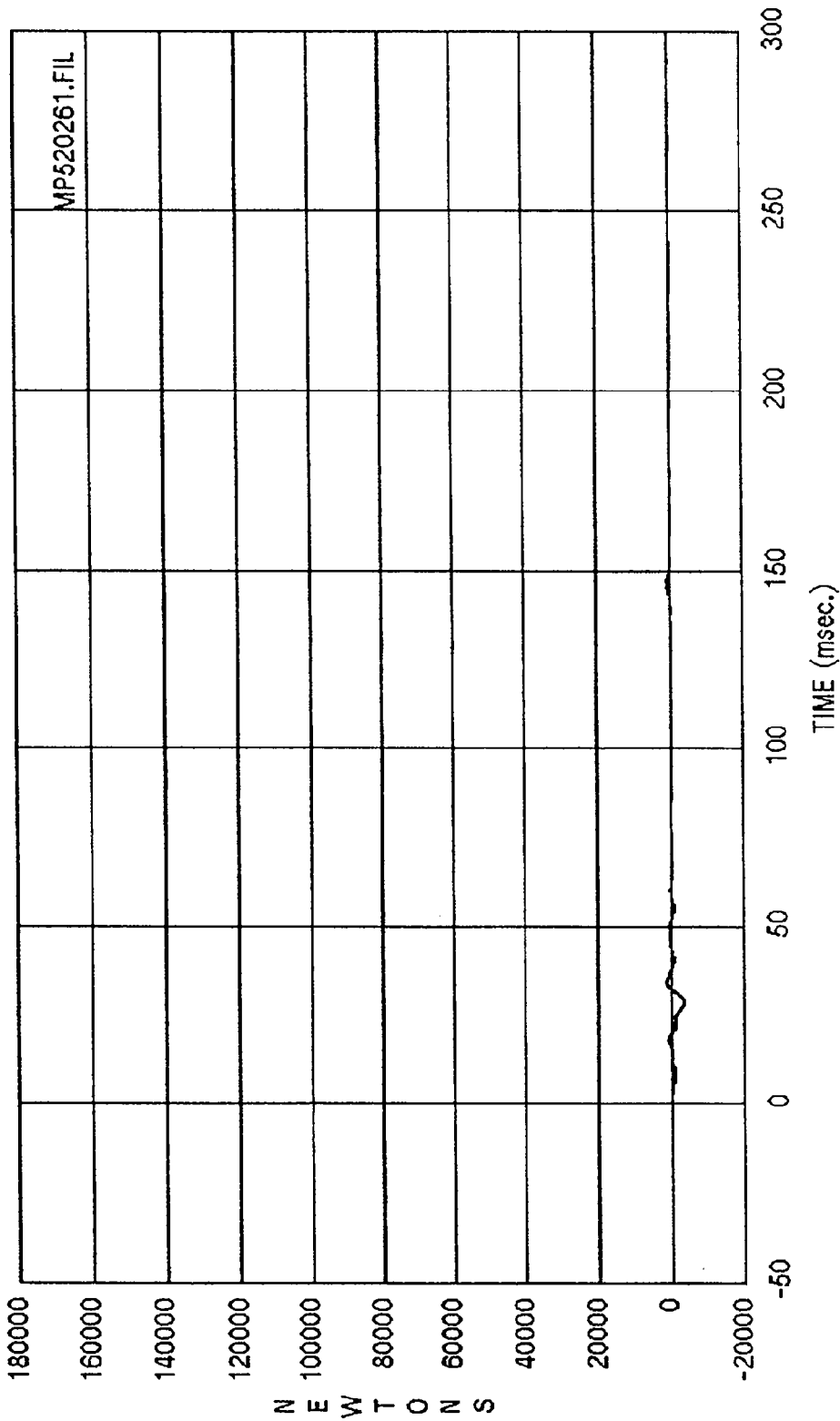


Curve: Force on barrier location C8 Filter: SAE CLASS 60 Max = 17481. Min = -1279.3
 MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



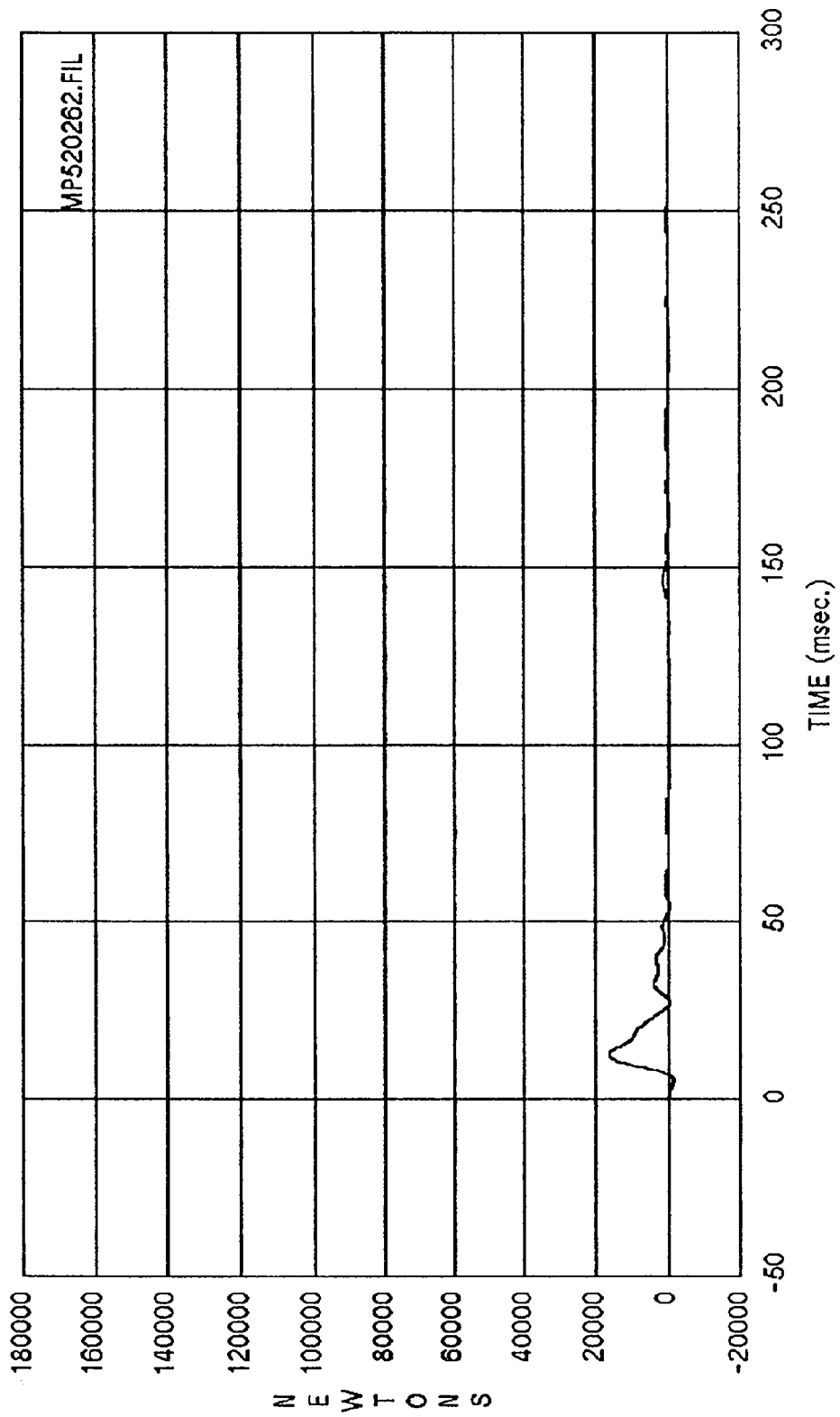
Curve: Force on barrier location C9 Filter: SAE CLASS 60 Max = 5617.5 Min = -3361.0

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



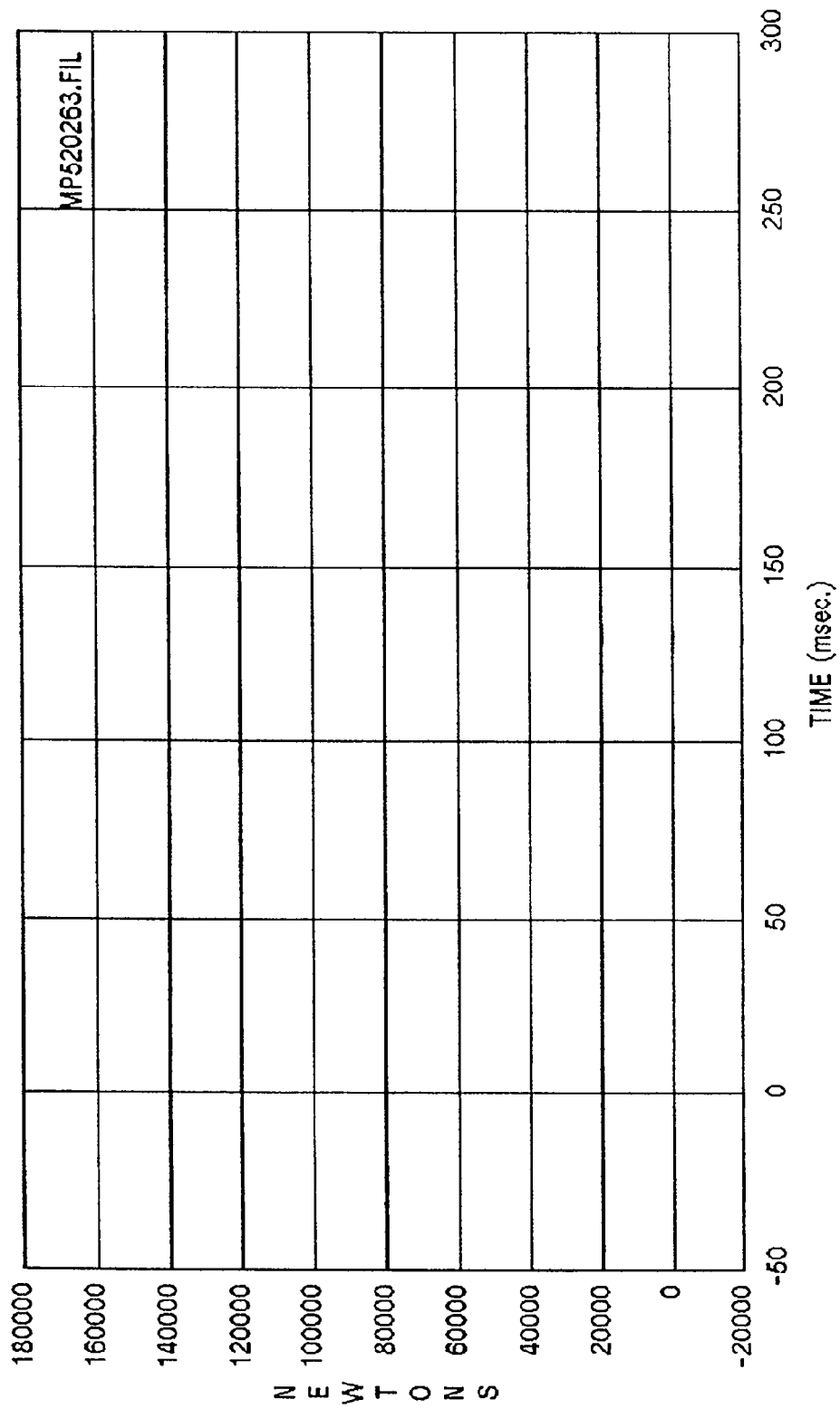
Curve: Force on barrier location D1 Filter: SAE CLASS 60 Max = 1392.7 Min = -3303.4

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

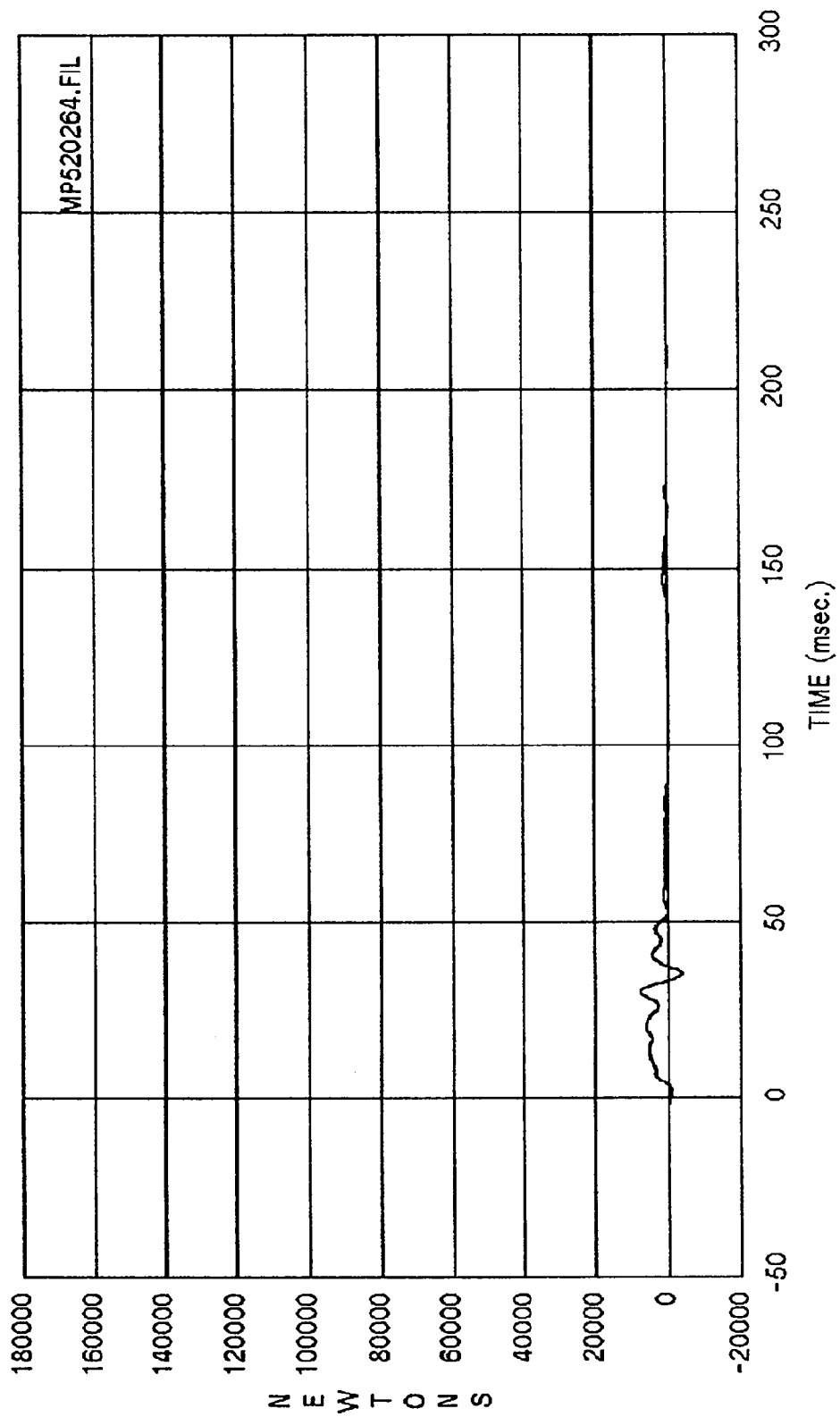


Curve: Force on barrier location D2 Filter: SAE CLASS 60 Max = 16671. Min = -1309.2

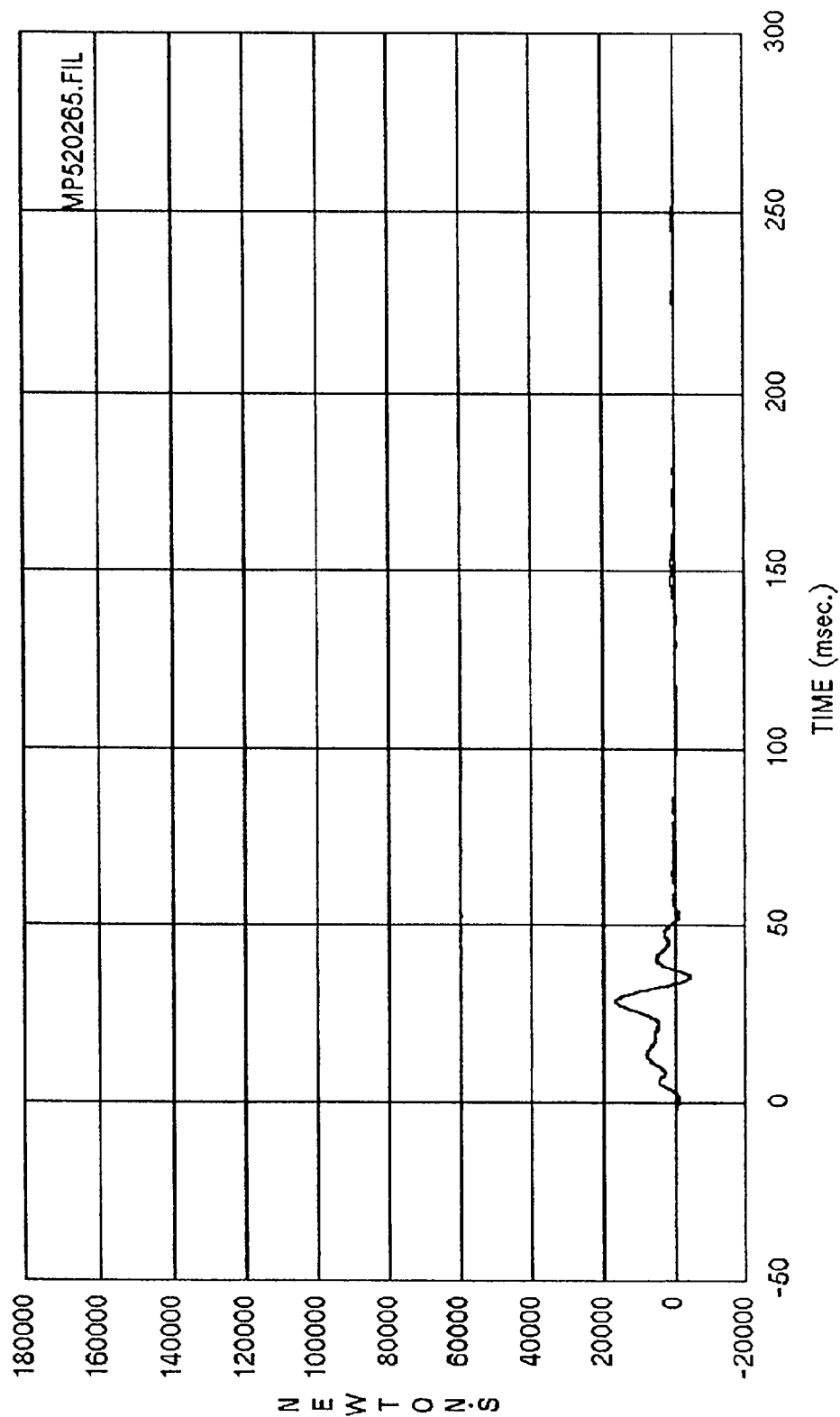
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Force on barrier location D3 Filter: SAE CLASS 60 Max = .00000 Min = .00000
 MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

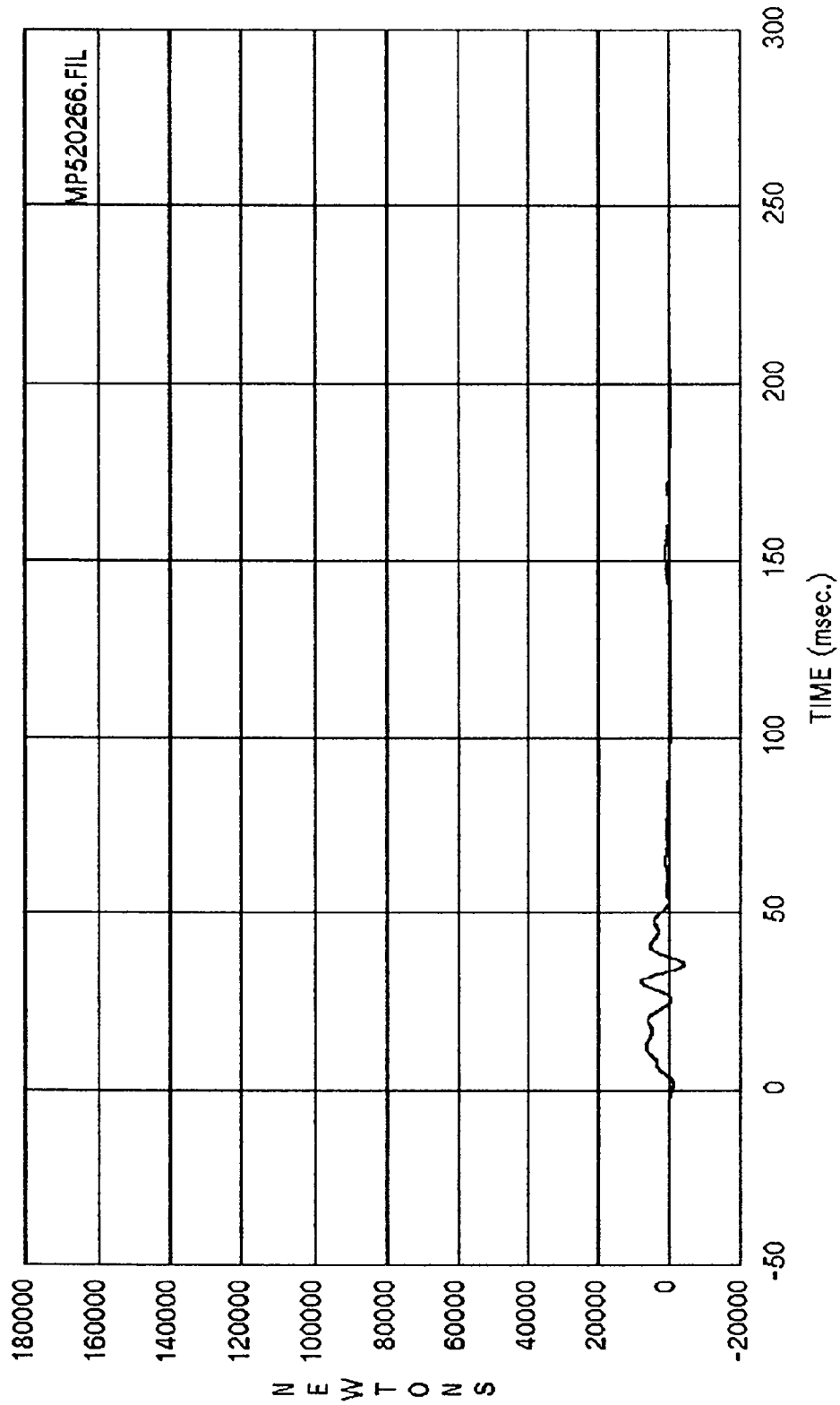


Curve: Force on barrier location D4 Filter: SAE CLASS 60 Max = 7685.0 Min = -3626.1
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

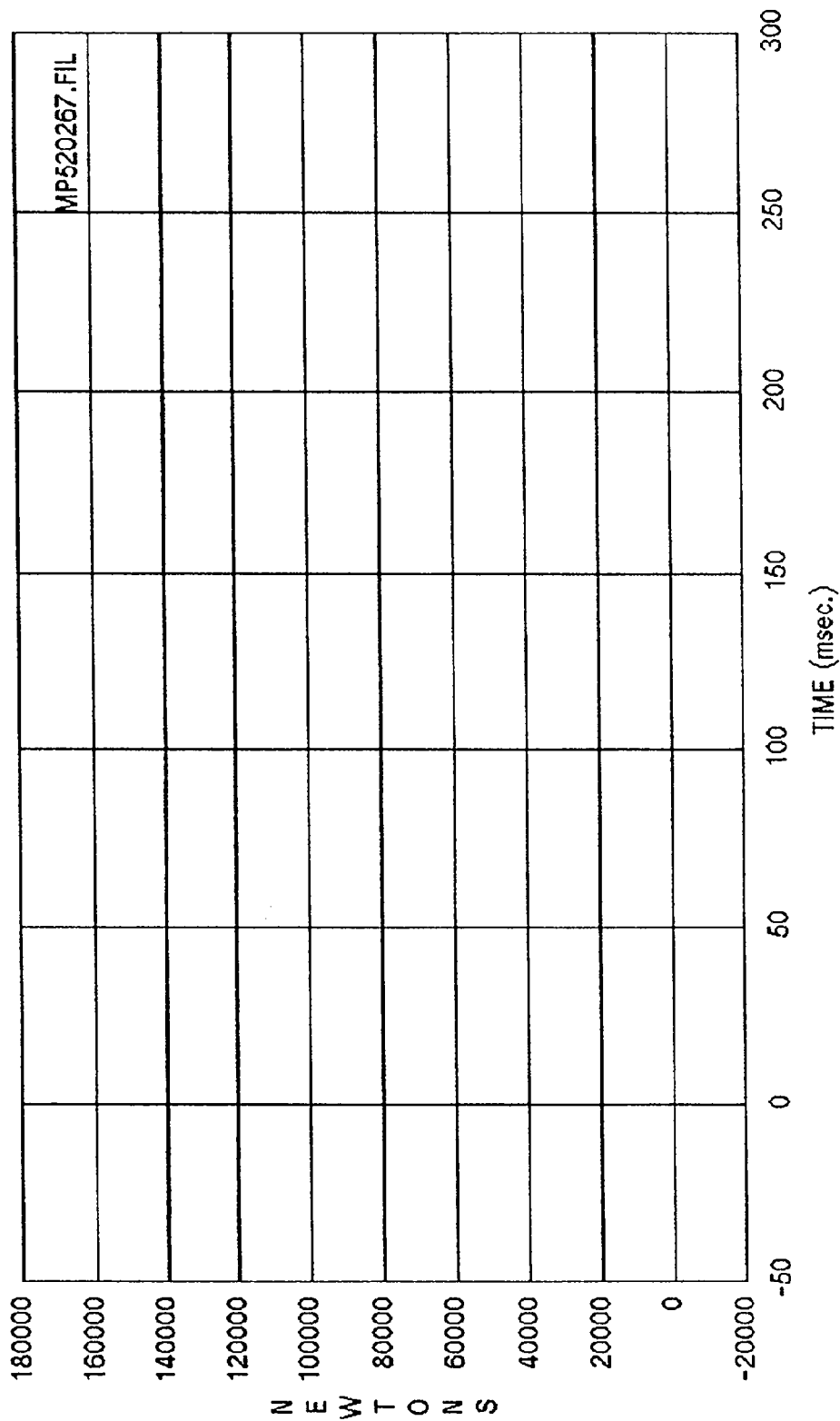


Curve: Force on barrier location D5 Filter: SAE CLASS 60 Max = 16873. Min = -4126.8

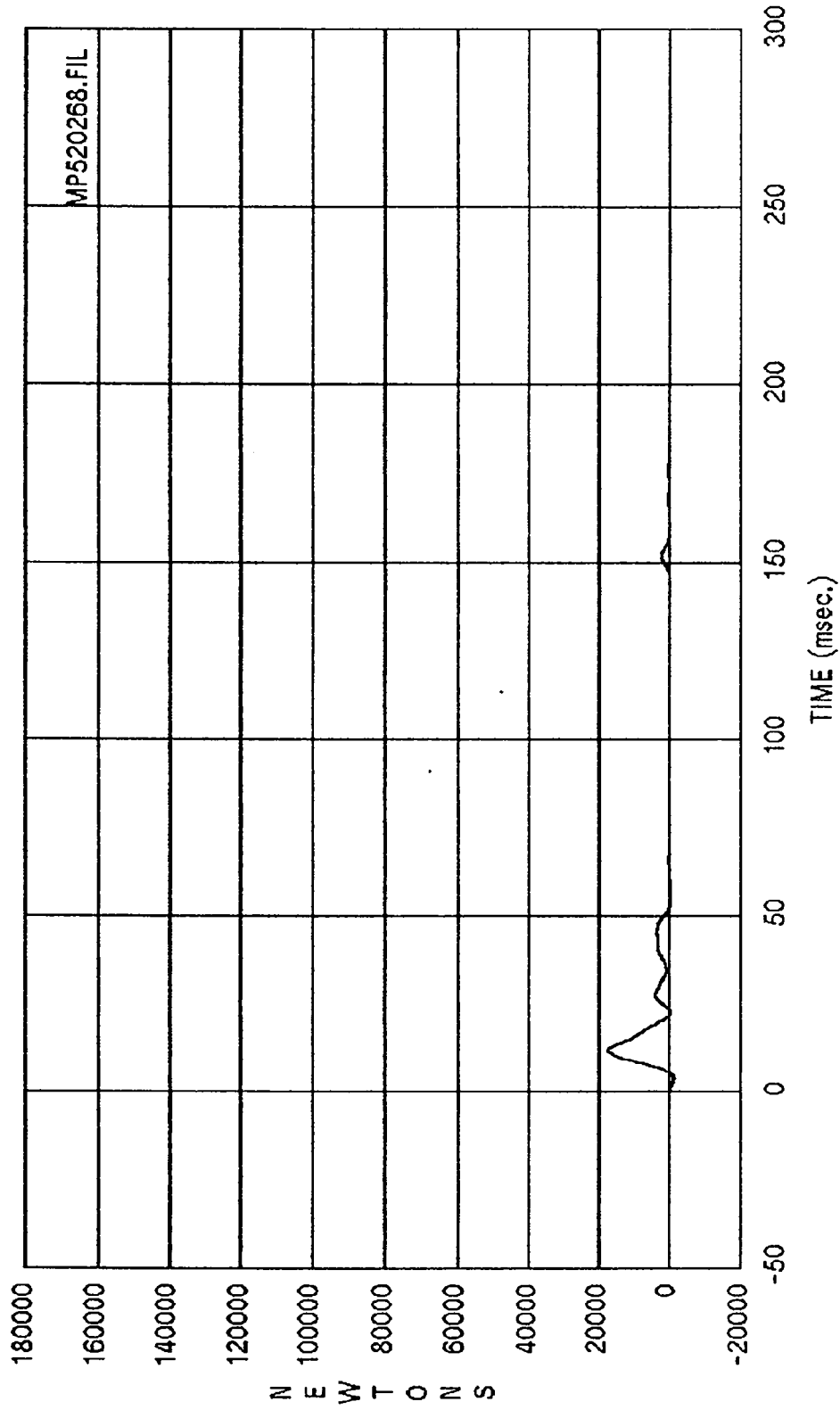
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Force on barrier location D6 Filter: SAE CLASS 60 Max = 8059.1 Min = -4084.5
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

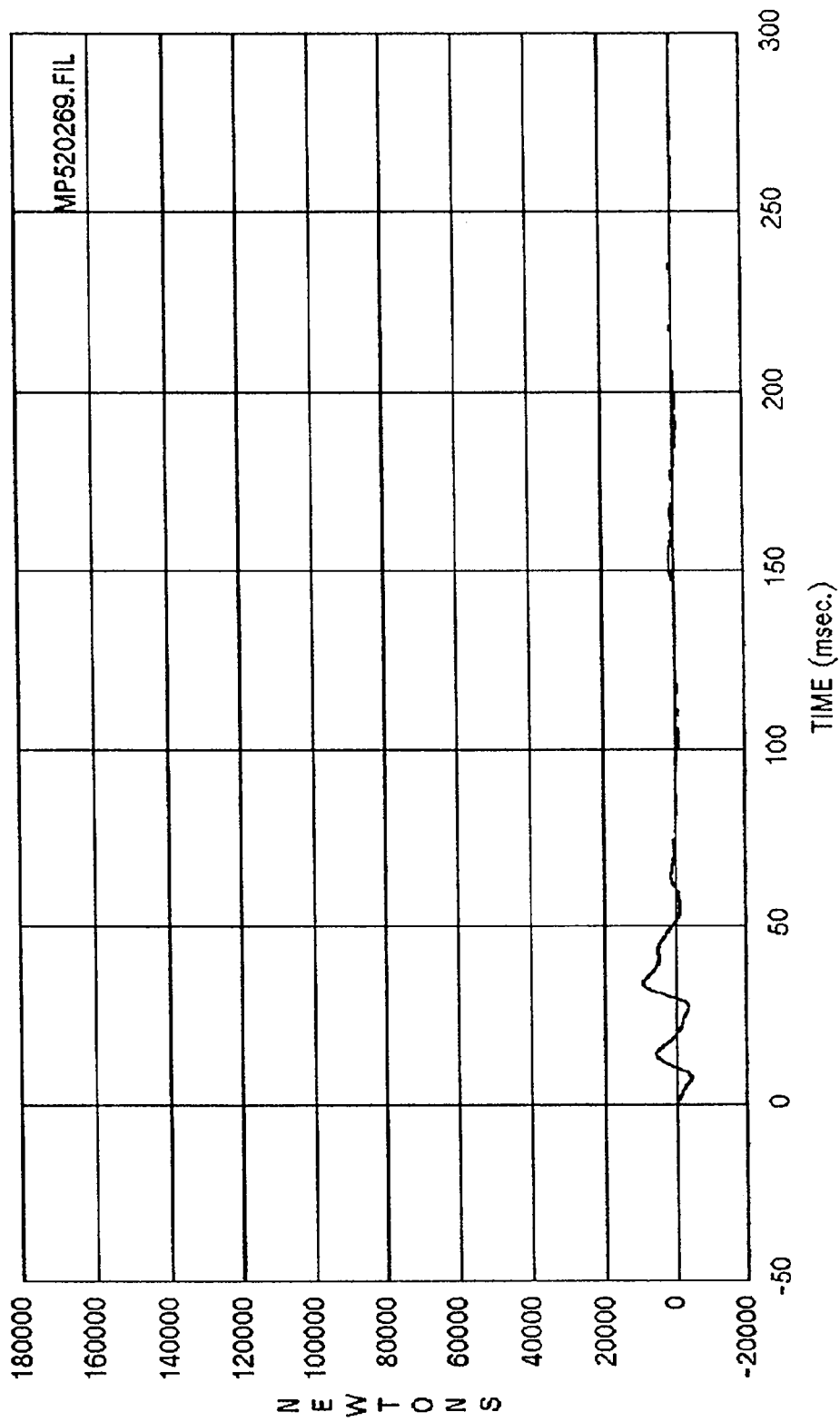


Curve: Force on barrier location D7 Filter: SAE CLASS 60 Max = .00000 Min = .00000
MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



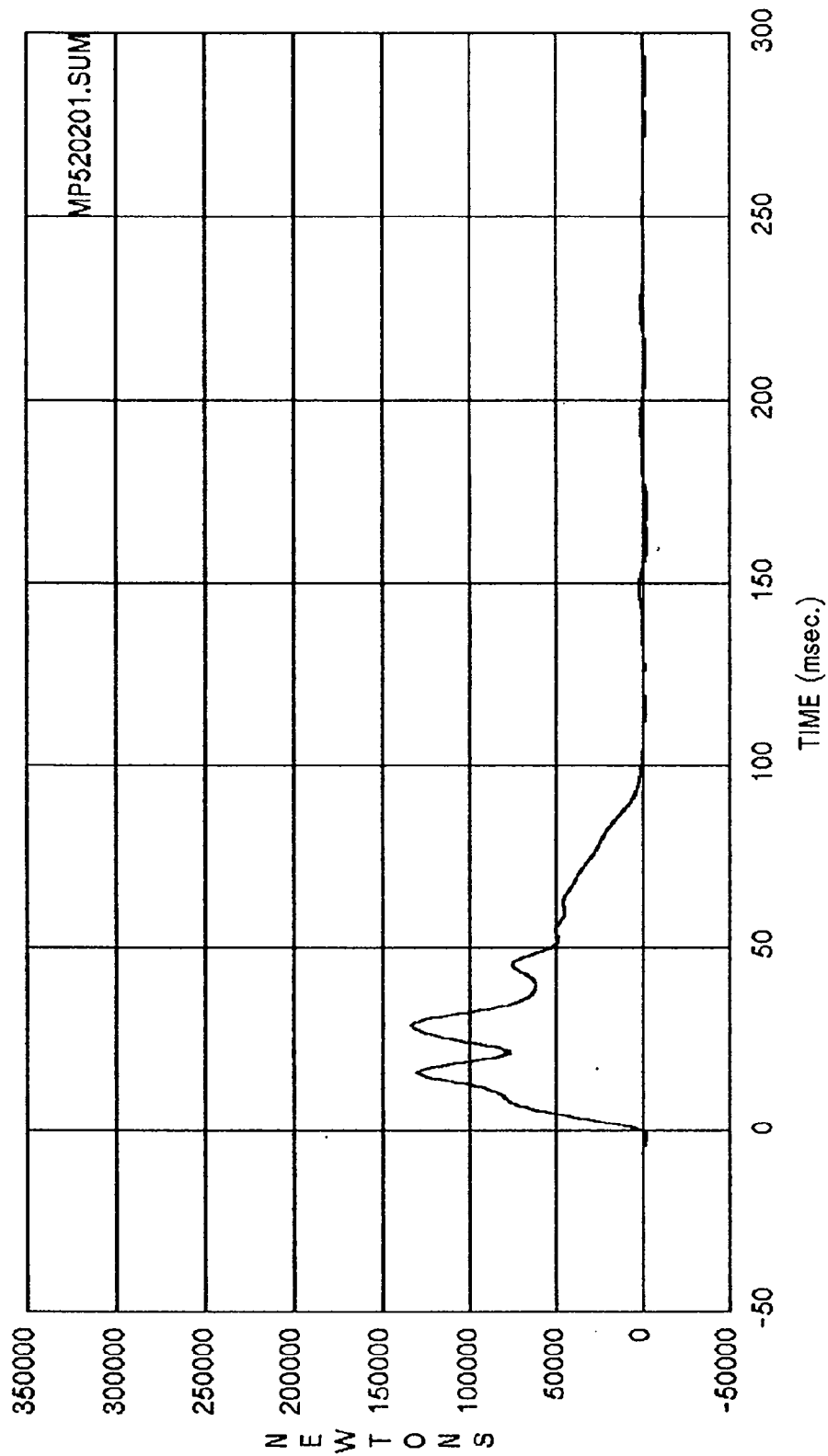
Curve: Force on barrier location D8 Filter: SAE CLASS 60 Max = 17589. Min = -1289.9

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



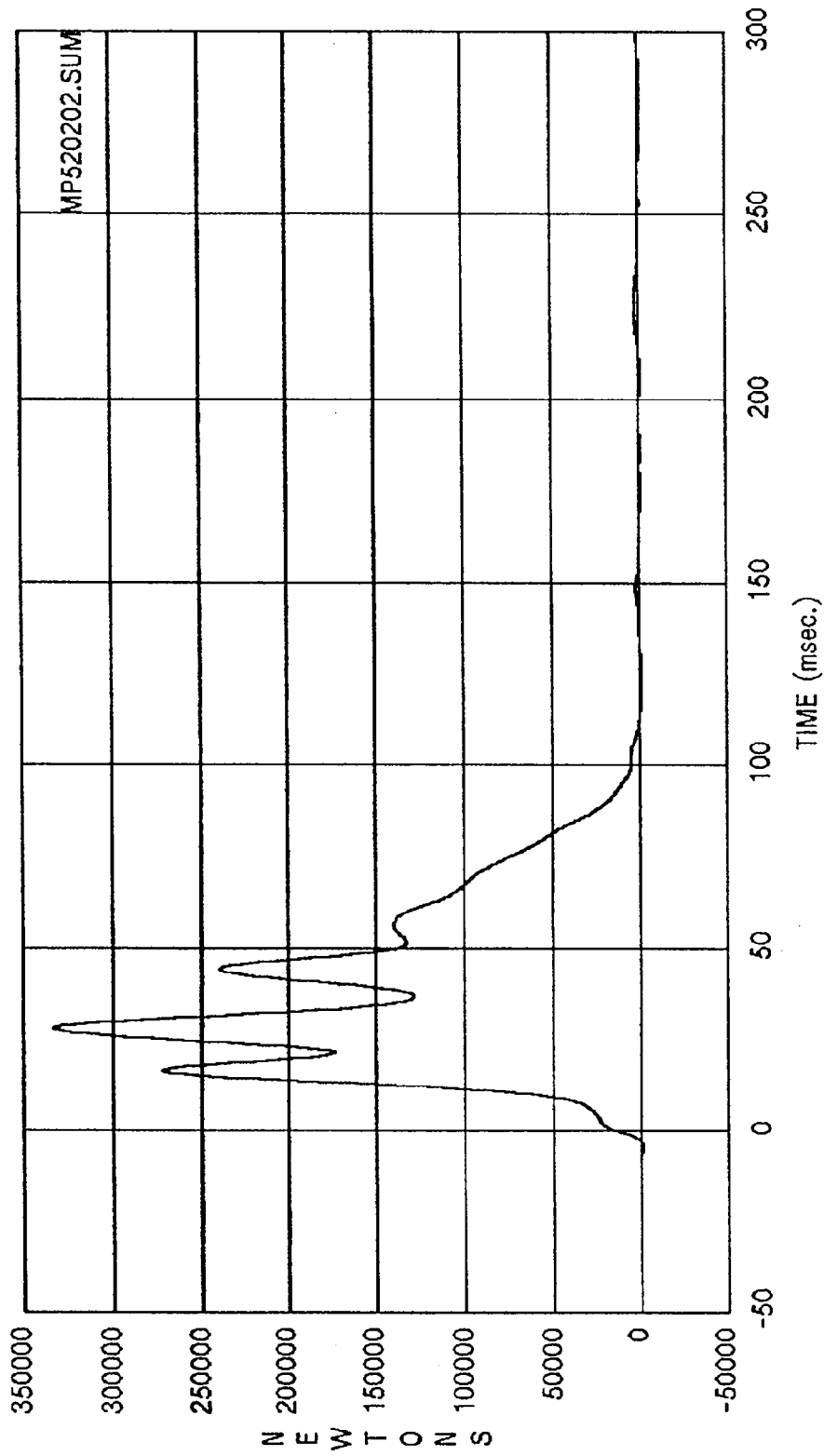
Curve: Force on barrier location D9 Filter: SAE CLASS 60 Max = 9515.0 Min = -3948.1

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



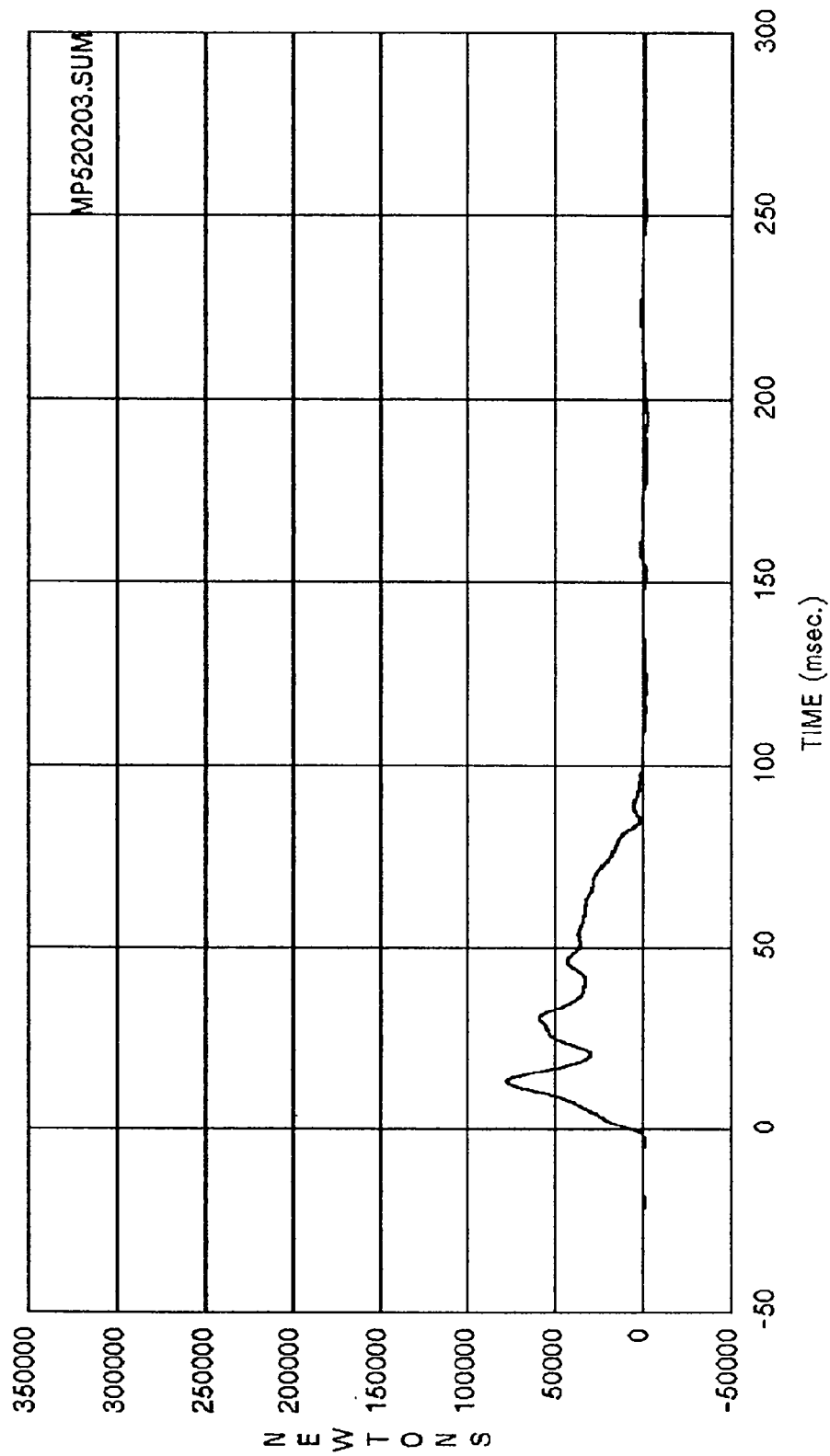
Curve: Barrier sum force A1,A2,A3,B1,B2,B3 -- Group 1 Filter: SAE CLASS 60 Max = .13316E+06 Min = 1804.6

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



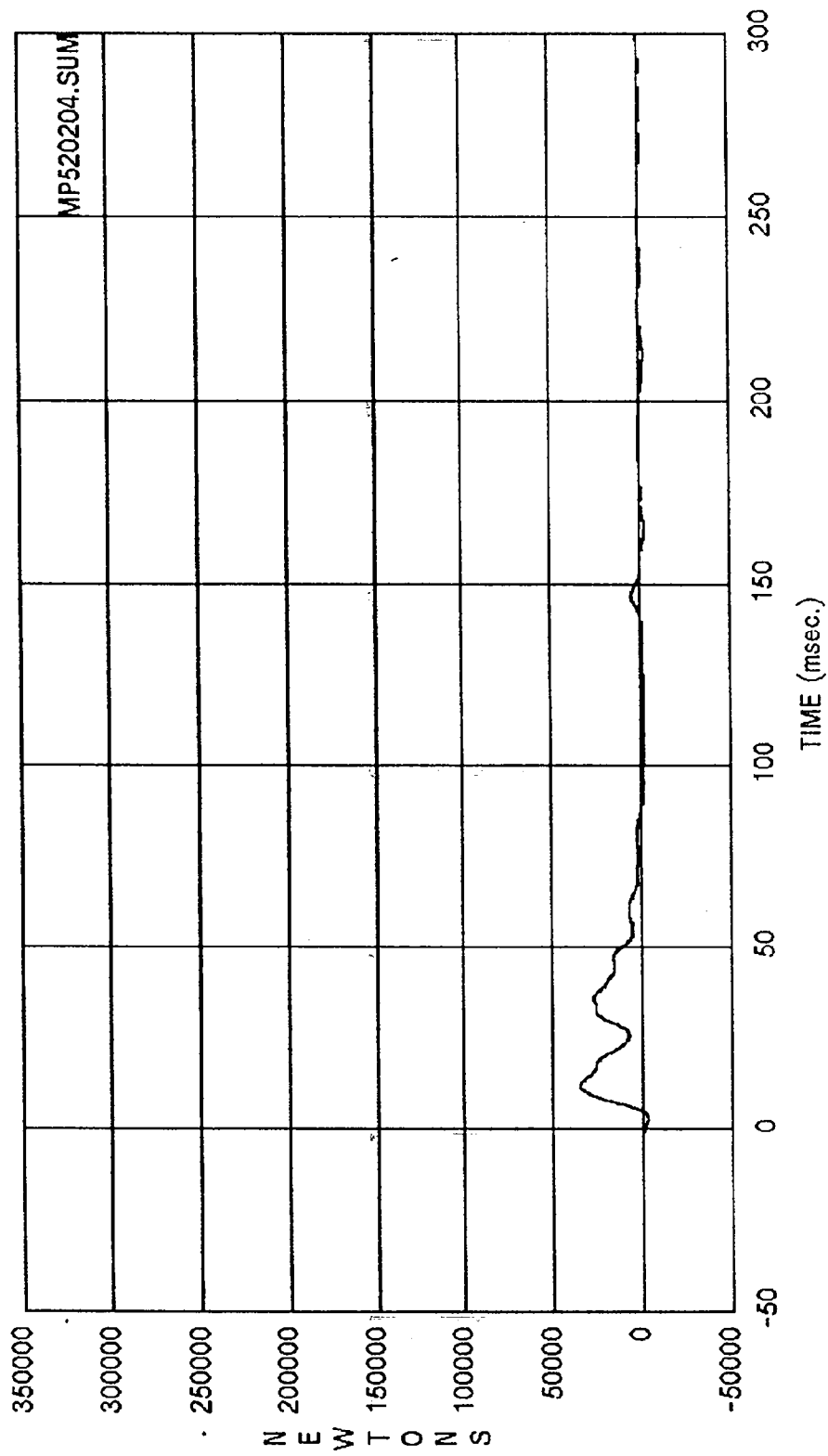
Curve: Barrier sum force A4,A5,A6,B4,B5,B6 -- Group 2 Filter: SAE CLASS 60 Max = .33369E+06 Min = 1015.3

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



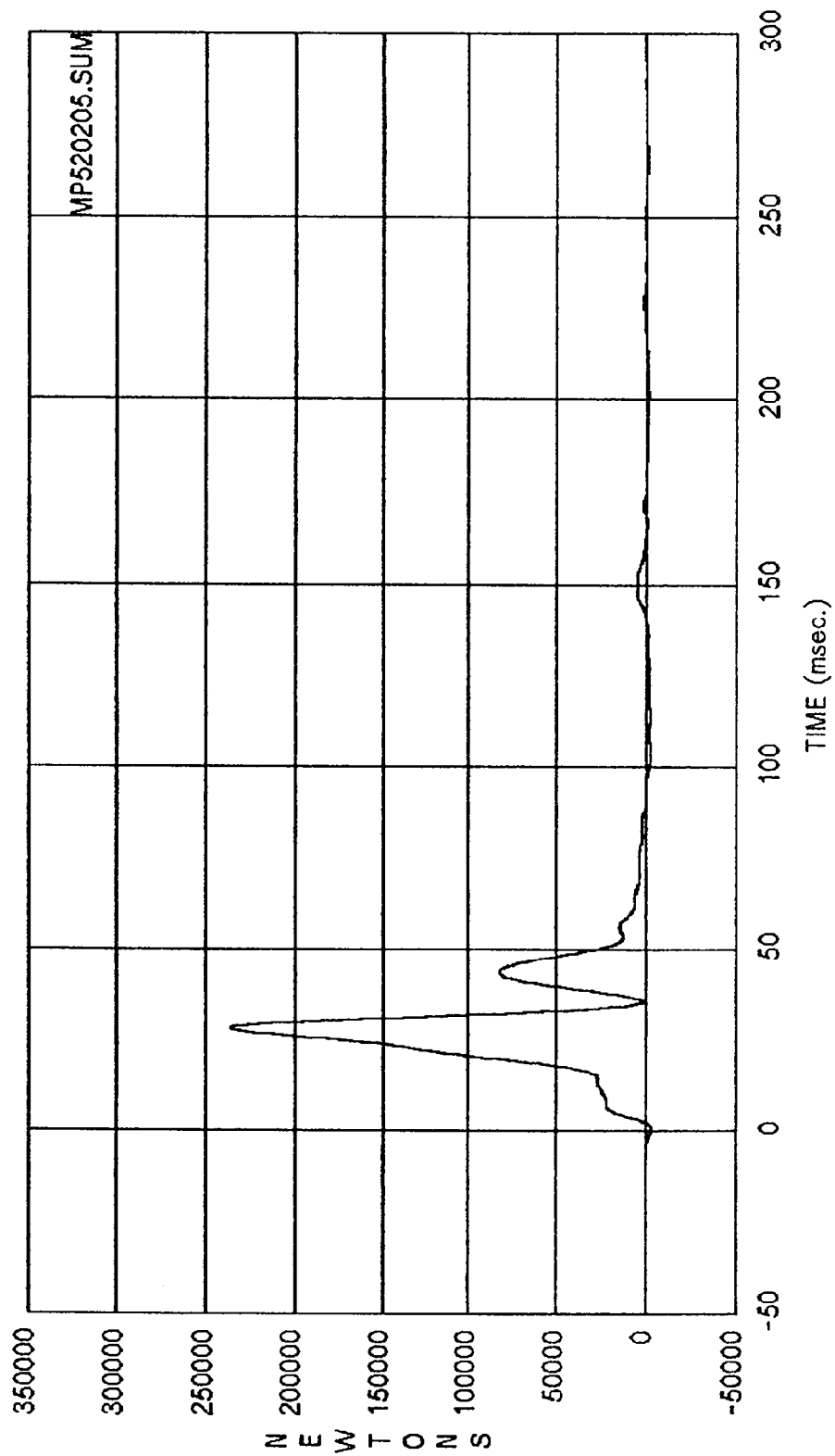
Curve: Barrier sum force A7,A8,A9,B7,B8,B9 -- Group 3 Filter: SAE CLASS 60 Max = 78561. Min = -21

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



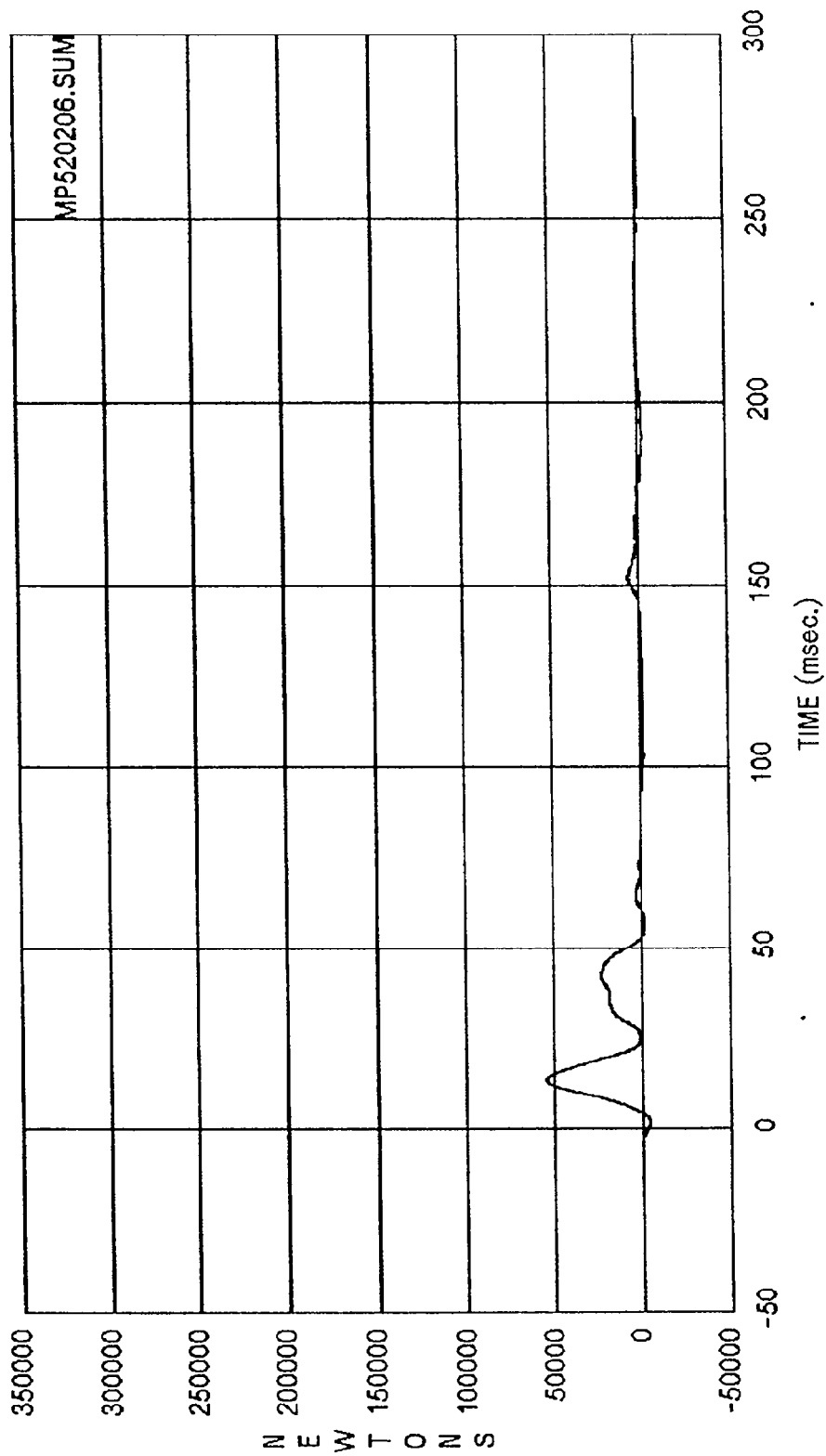
Curve: Barrier sum force C1,C2,C3,D1,D2,D3 -- Group 4 Filter: SAE CLASS 60 Max = 35589. Min = -28

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



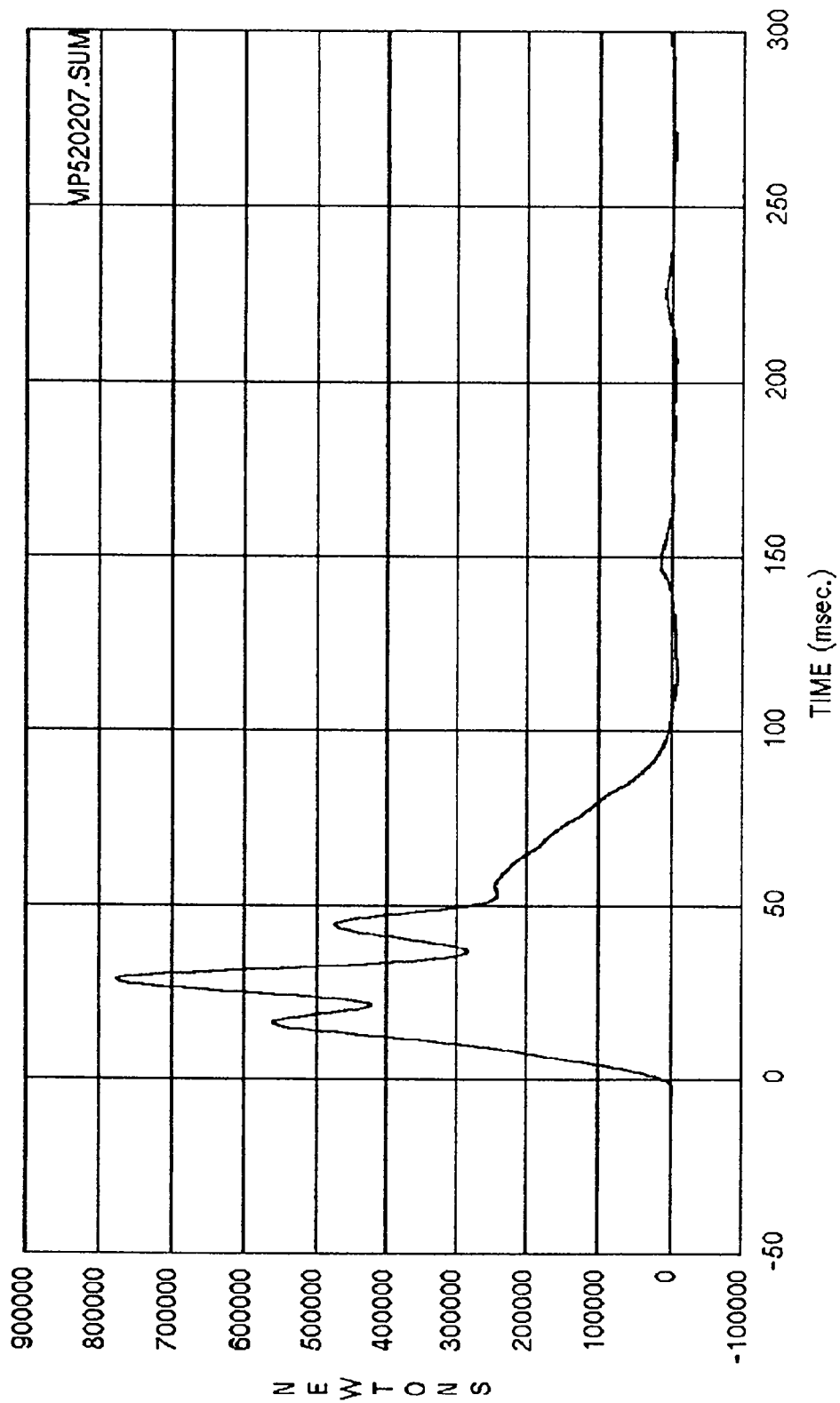
Curve: Barrier sum force C4,C5,C6,D4,D5,D6 -- Group 5 Filter: SAE CLASS 60 Max = .23656E+06 Min = 3307.9

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Barrier sum force C7,C8,C9,D7,D8,D9 -- Group 6 Filter: SAE CLASS 60 Max = 54944. Min = -39

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup



Curve: Barrier sum force -- Total Filter: SAE CLASS 60 Max = .77585E+06 Min = -7009.

MSE Date: 11/10/92 Program: 1993 NCAP, test number 2 Vehicle: 1993 Nissan Pickup

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APPENDIX C

PART 572 DUMMY CONFIGURATION AND
PERFORMANCE VERIFICATION TESTS

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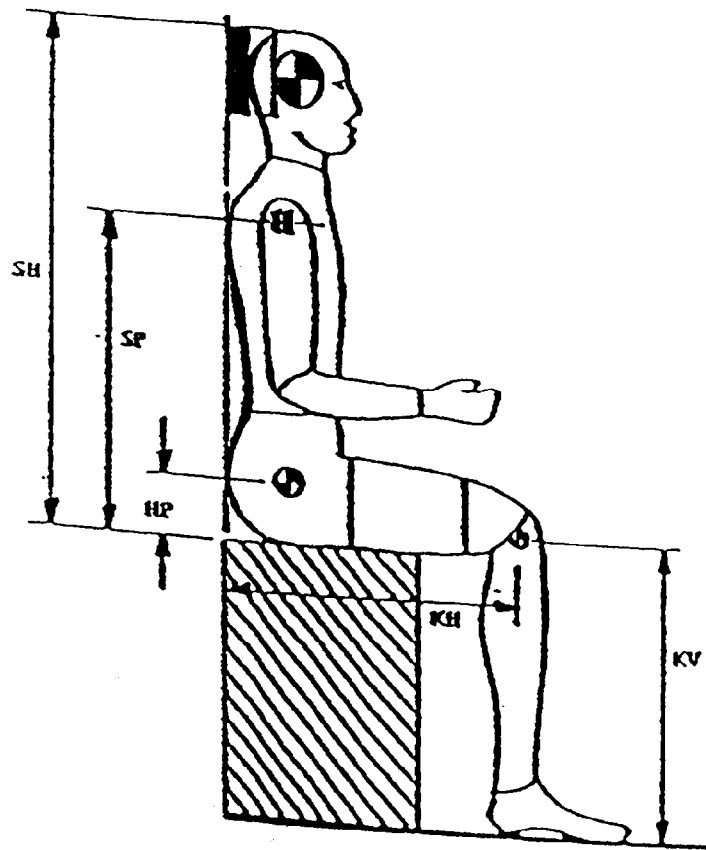
PART 572 ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

NHTSA ATD I.D. NUMBER: 814

LAB TECHNICIAN: P. Puzzuto/L. Rawlings

CALIBRATION SEQUENCE: 01

CALIBRATION DATE: 10/05/92 to 10/14/92



I. CONFIGURATION VERIFICATION DATA, PRETEST			
TESTED PARAMETER	UNITS	SPECIFICATION	TEST RESULTS
SH - Seated height	mm	904 - 909	907
SP - Shoulder pivot height	mm	554 - 569	561
HP - Hip pivot height	mm	99 reference	99
KH - Knee pivot from back	mm	511 - 526	520
KV - Knee pivot from floor	mm	490 - 505	502
SW - Shoulder width	mm	452 - 467	460
HW - Hip width	mm	356 - 391	368

PART 572 ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA (Cont.)

NHTSA ATD I.D. NUMBER: 814

LAB TECHNICIAN: P. PUZZUTO/L. RAWLINGS

CALIBRATION SEQUENCE: 01

CALIBRATION DATE: 10/05/92 to 10/14/92

II. PERFORMANCE VERIFICATION DATA, PRETEST			
TESTED PARAMETER	UNITS	SPECIFICATION	TEST RESULTS
Temperature in laboratory	Deg C	18.9 - 25.6	24.1
Humidity in laboratory	%	10 - 70	38
HEAD DROP TEST			
Peak resultant acceleration	G's	210 - 260	238.0
Peak lateral acceleration	G's	less than 10	5.5
Time above 100 G's	msec	0.9 to 1.5	1.1
ABDOMINAL COMPRESSION TEST			
Force at 12mm displacement	kg	10.5 - 16.4	15.5
Force at 19mm displacement	kg	16.4 - 22.7	21.8
Force at 25mm displacement	kg	22.7 - 28.6	28.2
Force at 33mm displacement	kg	23.2 - 40.0	39.1
CHEST IMPACT TEST, HIGH ENERGY			
Probe speed	mps	6.64 - 6.77	6.69
Peak deflection	mm	43.2 maximum	42.4
Peak resistive force	kg	1023 maximum	910
Internal hysteresis	%	50 - 70	60
CHEST IMPACT TEST, LOW ENERGY			
Probe speed	mps	4.22 - 4.31	4.27
Peak deflection	mm	27.9 maximum	27.5
Peak resistive force	kg	659 maximum	585
Internal hysteresis	%	50 - 70	58

PART 572 ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA (CONT.)

NHTSA ATD I.D. NUMBER: 814

LAB TECHNICIAN: P. Puzzuto/L. Rawlings

CALIBRATION SEQUENCE: 01

CALIBRATION DATE: 10/05/92 to 10/14/92

II. PERFORMANCE VERIFICATION DATA, PRETEST				
TESTED PARAMETER		UNITS	SPECIFICATION	TEST RESULTS
NECK BEND TEST				
Pendulum speed		mps	6.55 - 7.77	7.15
Pendulum avg. decel. ($T_1 - T_2$)		G's	20 - 24	22.0
Pendulum decel. ($T_2 - T_1$)		msec	less than 3	1.7
Pendulum decel. ($T_3 - T_2$)		msec	25 - 30	28.1
Pendulum decel. ($T_4 - T_3$)		msec	less than 10	8.5
Resultant head acceleration		G's	less than 26	25.1
Maximum head rotation		deg.	63 - 73	64.0
CHORDAL DISPLACEMENT / HEAD ROTATION ANGLE				
0 deg.	Time	msec	-2.0 - 2.0	0.0
	Displ.	mm	-13 - 13	1
30 deg.	Time	msec	25.6 - 34.4	31.1
	Displ.	mm	53 - 79	68
60 deg.	Time	msec	40.3 - 51.7	46.1
	Displ.	mm	109 - 135	127
Maximum	Time	msec	53.2 - 66.8	59.8
	Displ.	mm	127 - 152	150
60 deg.	Time	msec	67.0 - 83.0	73.5
	Displ.	mm	109 - 135	129
30 deg.	Time	msec	85.4 - 104.6	88.0
	Displ.	mm	53 - 79	70
0 deg.	Time	msec	101.0 - 123.0	102.0
	Displ.	mm	-13 - 13	4

PART 572 ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA (CONT.)

NHTSA ATD I.D. NUMBER: 814

LAB TECHNICIAN: P. Puzzuto/L. Rawlings

CALIBRATION SEQUENCE: 01

CALIBRATION DATE: 10/05/92 to 10/14/92

II. PERFORMANCE VERIFICATION DATA, PRETEST			
TESTED PARAMETER	UNITS	SPECIFICATION	TEST RESULTS
KNEE IMPACT TEST, LEFT			
Probe speed	mps	2.06 to 2.15	2.12
Maximum force	kg	841 to 1136	935
Time above 455 kg	msec	1.7 minimum	1.7
KNEE IMPACT TEST, RIGHT			
Probe speed	mps	2.06 to 2.15	2.11
Maximum force	kg	841 to 1136	920
Time above 455 kg	msec	1.7 minimum	1.8
LUMBAR FLEXION TEST			
Force at 20 degrees	kg	10.0 to 15.5	14.1
Force at 30 degrees	kg	15.5 to 20.9	18.2
Force at 40 degrees	kg	20.9 to 26.4	22.4
Lumbar return angle	deg	12 maximum	10

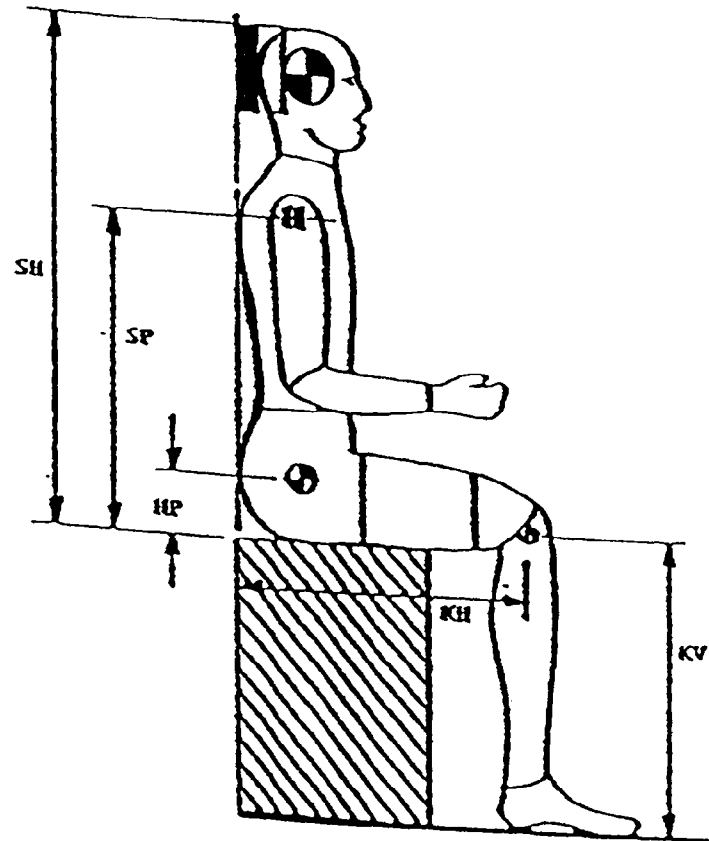
PART 572 ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

NHTSA ATD I.D. NUMBER: 830

LAB TECHNICIAN: P. Puzzuto/L. Rawlings

CALIBRATION SEQUENCE: 01

CALIBRATION DATE: 10/05/92 to 10/14/92



I. CONFIGURATION VERIFICATION DATA, PRETEST			
TESTED PARAMETER	UNITS	SPECIFICATION	TEST RESULTS
SH - Seated height	mm	904 - 909	906
SP - Shoulder pivot height	mm	554 - 569	554
HP - Hip pivot height	mm	99 reference	99
KH - Knee pivot from back	mm	511 - 526	523
KV - Knee pivot from floor	mm	490 - 505	504
SW - Shoulder width	mm	452 - 467	461
HW - Hip width	mm	356 - 391	381

PART 572 ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA (Cont.)

NHTSA ATD I.D. NUMBER: 830

LAB TECHNICIAN: P. PUZZUTO/L. RAWLINGS

CALIBRATION SEQUENCE: 01

CALIBRATION DATE: 10/05/92 to 10/14/92

II. PERFORMANCE VERIFICATION DATA, PRETEST			
TESTED PARAMETER	UNITS	SPECIFICATION	TEST RESULTS
Temperature in laboratory	Deg C	18.9 - 25.6	23.3
Humidity in laboratory	%	10 - 70	39
HEAD DROP TEST			
Peak resultant acceleration	G's	210 - 260	255.2
Peak lateral acceleration	G's	less than 10	4.1
Time above 100 G's	msec	0.9 to 1.5	1.2
ABDOMINAL COMPRESSION TEST			
Force at 12mm displacement	kg	10.5 - 16.4	13.6
Force at 19mm displacement	kg	16.4 - 22.7	19.5
Force at 25mm displacement	kg	22.7 - 28.6	28.0
Force at 33mm displacement	kg	23.2 - 40.0	39.5
CHEST IMPACT TEST, HIGH ENERGY			
Probe speed	mps	6.64 - 6.77	6.69
Peak deflection	mm	43.2 maximum	42.0
Peak resistive force	kg	1023 maximum	900
Internal hysteresis	%	50 - 70	55
CHEST IMPACT TEST, LOW ENERGY			
Probe speed	mps	4.22 - 4.31	4.27
Peak deflection	mm	27.9 maximum	27.7
Peak resistive force	kg	659 maximum	557
Internal hysteresis	%	50 - 70	53

PART 572 ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA (CONT.)

NHTSA ATD I.D. NUMBER: 830

LAB TECHNICIAN: P. Puzzuto/L. Rawlings

CALIBRATION SEQUENCE: 01

CALIBRATION DATE: 10/05/92 to 10/14/92

II. PERFORMANCE VERIFICATION DATA, PRETEST				
TESTED PARAMETER		UNITS	SPECIFICATION	TEST RESULTS
NECK BEND TEST				
Pendulum speed		mps	6.55 - 7.77	6.68
Pendulum avg. decel. ($T_1 - T_2$)		G's	20 - 24	22.6
Pendulum decel. ($T_2 - T_1$)		msec	less than 3	2.6
Pendulum decel. ($T_3 - T_2$)		msec	25 - 30	29.5
Pendulum decel. ($T_4 - T_3$)		msec	less than 10	7.8
Resultant head acceleration		G's	less than 26	24.7
Maximum head rotation		deg.	63 - 73	63.9
CHORDAL DISPLACEMENT / HEAD ROTATION ANGLE				
0 deg.	Time	msec	-2.0 - 2.0	0.0
	Displ.	mm	13 - 13	0
30 deg.	Time	msec	25.6 - 34.4	28.0
	Displ.	mm	53 - 79	62
60 deg.	Time	msec	40.3 - 51.7	46.2
	Displ.	mm	109 - 135	122
Maximum	Time	msec	53.2 - 66.8	57.1
	Displ.	mm	127 - 152	131
60 deg.	Time	msec	67.0 - 83.0	68.4
	Displ.	mm	109 - 135	119
30 deg.	Time	msec	85.4 - 104.6	89.7
	Displ.	mm	53 - 79	56
0 deg.	Time	msec	101.0 - 123.0	101.4
	Displ.	mm	13 - 13	1

PART 572 ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA (CONT.)

NHTSA ATD I.D. NUMBER: 830

LAB TECHNICIAN: P. Puzzuto/L. Rawlings

CALIBRATION SEQUENCE: 01

CALIBRATION DATE: 10/05/92 to 10/14/92

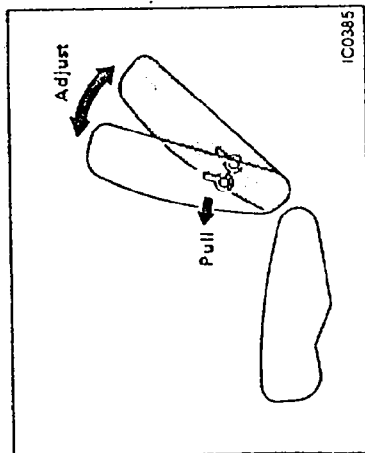
II. PERFORMANCE VERIFICATION DATA, PRETEST			
TESTED PARAMETER	UNITS	SPECIFICATION	TEST RESULTS
KNEE IMPACT TEST, LEFT			
Probe speed	mps	2.06 to 2.15	2.14
Maximum force	kg	841 to 1136	1131
Time above 455 kg	msec	1.7 minimum	1.7
KNEE IMPACT TEST, RIGHT			
Probe speed	mps	2.06 to 2.15	2.11
Maximum force	kg	841 to 1136	1108
Time above 455 kg	msec	1.7 minimum	1.7
LUMBAR FLEXION TEST			
Force at 20 degrees	kg	10.0 to 15.5	14.3
Force at 30 degrees	kg	15.5 to 20.9	18.6
Force at 40 degrees	kg	20.9 to 26.4	24.5
Lumbar return angle	deg	12 maximum	11

APPENDIX D

VEHICLE OWNER'S MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

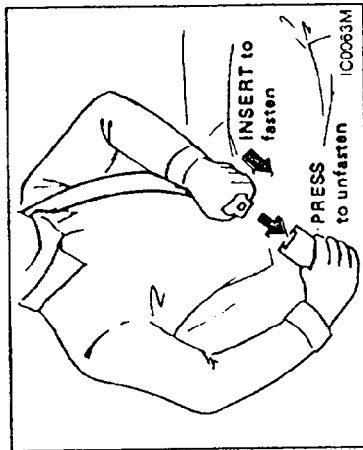
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SEAT BELTS



Pull the reclining lever and position the seat back at the desired angle. Release the reclining lever after positioning the seat at the desired angle.

The seat belts are most effective when the rider is sitting well back and straight up in the seat.



3-POINT TYPE WITH RETRACTOR

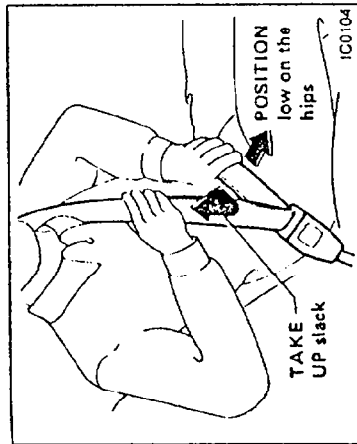
Every person who drives or rides in this vehicle should wear a seat belt at all times.

Fastening the belts

1. Adjust the seat.

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

2. Slowly pull the seat belt out of the retractor and insert the tongue into the buckle until it snaps.



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

3. Position the lap belt portion low on the hips as shown.
4. Pull the shoulder belt portion toward the retractor to take up extra slack.

Unfastening the belts

To unfasten the belt, press the button on the

buckle. The seat belt will automatically retract.

Checking seat belt operation

Your seat belt retractors are designed to lock belt movement by two separate methods:

- 1) When the belt is pulled quickly from the retractor.
- 2) When the vehicle slows down rapidly.

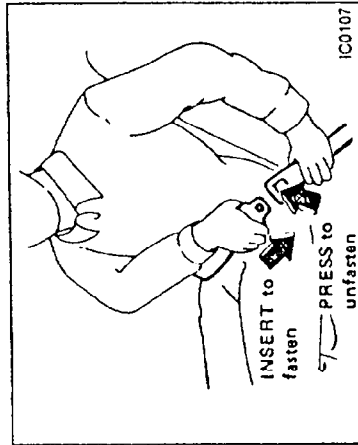
To increase your confidence in the belts, check the operation as follows:

- Grasp the shoulder belt and pull quickly forward. The retractor should lock and restrict further belt movement.

If the retractor does not lock during this check or if you have any question about belt operation, see your NISSAN dealer.

Replacing front seat belt (3-point type only)

The front seat belts are shock absorber types. Replace the belt when the loop has been pulled out and "REPLACE BELT" is visible as this indicator means the seat belt has been overstressed.

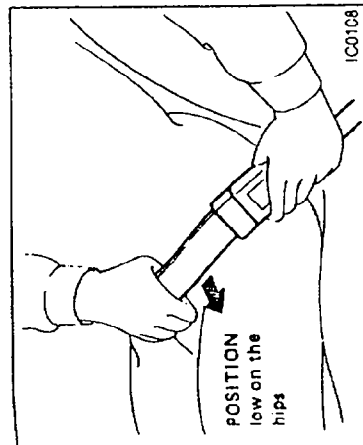


2-POINT TYPE WITH RETRACTOR

Fastening the belts

1. Slowly pull the seat belt out of the retractor and insert the tongue into the buckle until it snaps.

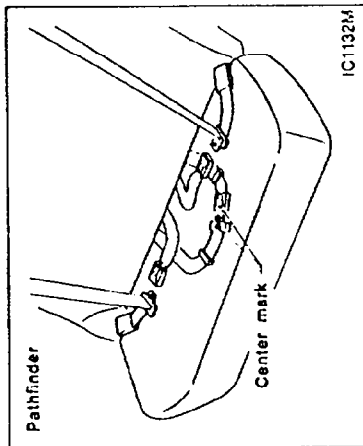
If the retractor locks and restricts further movement, let the belt rewind into the retractor, then slowly pull the belt out.



2. Position the lap belt low on the hips as shown.
3. Pull the belt toward the retractor to take up extra slack.

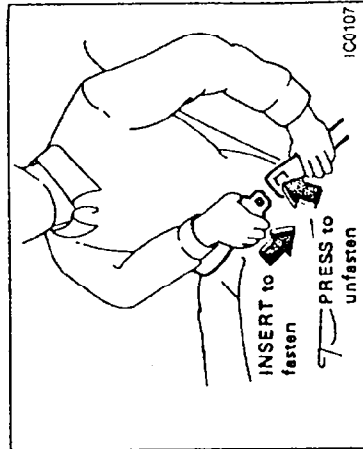
Unfastening the belts

To unfasten the belt, press the button on the buckle. The seat belt will automatically retract.



Selecting correct set of belts

The center seat belt buckle and tongue are identified by the "CENTER" mark. The center seat belt tongue can be fastened only into the center seat belt buckle.



2-POINT TYPE WITHOUT RETRACTOR

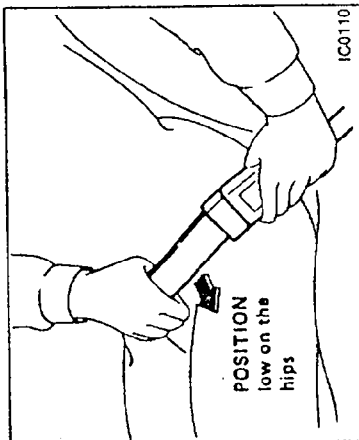
Fastening the belts

1. Insert the tongue into the buckle until it snaps.

SEAT BELT EXTENDERS

If, because of body size or driving position, it is not possible to properly fit the lap-shoulder belt and fasten it, an extender is available which is compatible with the installed seat belts. The extender adds approximately 8 inches (200 mm) of length and may be used for either the driver or passenger seating position. See your NISSAN dealer for assistance if the extender is required.

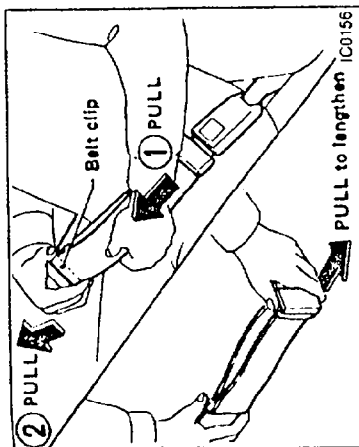
- Only NISSAN belt extenders, made by the same company which made the original equipment belts, should be used with NISSAN belts.
- Persons who can use the standard seat belt should not use an extender. Such unnecessary use could result in serious personal injury in the event of an accident.



3. Position the lap belt low on the hips as illustrated.

Unfastening the belts

To unfasten the belt, press the button on the buckle.



2. To lengthen, hold the tongue at a right angle to the belt and pull on the belt. To shorten, pull the free end of the belt away from the tongue, then pull the belt clip to take up the slack.

PRECAUTIONS ON SEAT BELT USAGE

NISSAN strongly encourages you and all of your passengers to buckle up every time you drive.

Your chances of being injured in an accident and/or the severity of injury may be greatly reduced if you are wearing your seat belt and it is properly adjusted.

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

- The belt should be adjusted to a snug fit. Slack in the lap-shoulder belt will reduce the effectiveness of the entire restraint system.
- Never wear the belt inside out or twisted.
- Do not allow more than one person to use the same belt.
- All seat belt assemblies including retractors and attaching hardware should be inspected after any collision at your NISSAN dealer. NISSAN recommends that all seat belt assemblies in use during a collision be replaced unless the collision was minor and the belts show

no damage and continue to operate properly. Seat belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

Infant or small child

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

Children

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

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

If the child's seating position has a shoulder belt that fits close to the face or neck, the use of a booster seat (commercially available) may help overcome this. The booster

seat should raise the child so that the shoulder belt is properly positioned across the top, middle portion of the shoulder and the lap belt is low on the hips. The booster seat should fit the vehicle seat and have a label certifying that it complies with Federal Motor Vehicle Safety Standards or Canadian Motor Vehicle Safety Standards. Once the child has grown so the shoulder belt is no longer on or near the face and neck, use the shoulder belt without the booster seat. Never let a child stand or kneel on any seat and do not allow a child in the cargo areas while the vehicle is moving.

Pregnant women

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

Injured persons

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

SEAT BELT MAINTENANCE

- To clean the belt webbing, apply a mild soap solution or any solution recommended for cleaning upholstery or carpets. Then brush it, wipe with a cloth and allow it to dry in the shade. Do not allow the belts to retract until they are completely dry.
- Periodically check to see that the belt and the metal components such as buckles, tongues, retractors, flexible wires and anchors work properly. If loose parts, deterioration, cuts or other damage on the webbing is found, the entire belt assembly should be replaced.

CHILD RESTRAINT SYSTEMS FOR INFANTS AND SMALL CHILDREN

Infants and small children should always be placed in an infant or child restraint system while riding in the vehicle.

WARNING:

Children and infants should never be carried on your lap. It is not possible for even the strongest adult to resist the forces of an accident. The child could be crushed between the adult and parts of the vehicle. Also, do not put the same seat belt around both your child and yourself.

In general, child restraint systems are designed to be installed with a lap belt or the lap portion of a three-point type seat belt.

Nissan recommends that the child restraint system be installed in the rear seat, unless the child is an infant and you are the only adult in the car. According to accident statistics, children are safer when properly restrained in the rear seat than in the front seat. **BUT DO NOT INSTALL THE CHILD RESTRAINT SYSTEM IN THE JUMP SEATS, BECAUSE THE SEATS ARE NOT SUITABLE FOR A CHILD RESTRAINT SYSTEM.** An improperly installed child restraint could

lead to serious injury in an accident.

Child restraint systems specially designed for infants and small children are offered by several manufacturers. Some systems may be used for both infants and small children. When selecting any child restraint system, keep the following points in mind:

- 1) Choose only a system with a label certifying that it complies with Federal Motor Vehicle Safety Standard 213 or Canadian Motor Vehicle Safety Standard 213.
- 2) Place your child in the child restraint and check the various adjustments to be sure the child restraint is compatible with your child. Always follow all of the recommended procedures.
- 3) Check the child restraint in your vehicle to be sure it is compatible with the vehicle's seat belt system.

WARNING:

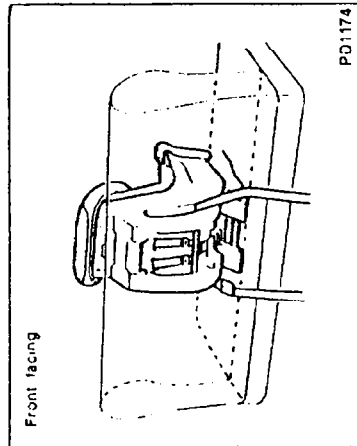
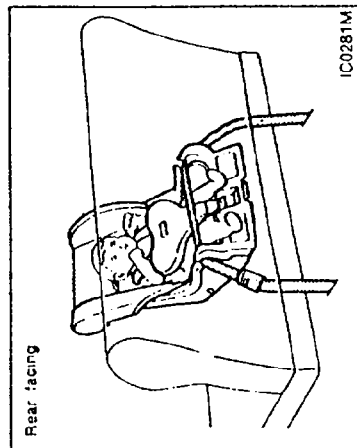
- Follow all of the child restraint manufacturer's instructions for installation and use. When purchasing a child restraint, be sure to select one which will fit your child and vehicle as it may not be possible to properly install some types of

child restraints in your vehicle.

Improper use of a child restraint system can result in increased injuries for both the infant or child and other occupants in the vehicle.

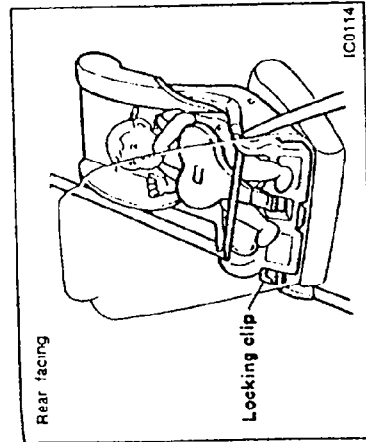
For information concerning the approved installation of a Genuine Nissan Infant/Child Safety Seat on the front or rear seats of this vehicle, contact your NISSAN dealer.

- When your child restraint system is not in use, store it in the trunk or keep it secured with a seat belt to prevent it from being thrown forward in case of a sudden stop or accident.
- Remember that a child restraint left in a closed vehicle can become very hot. Check the seating surface and buckles before placing your child back in the child restraint.
- All U.S. states and some provinces or territories require that infants and small children be restrained in approved child restraint systems at all times while the vehicle is being operated.



Installation on rear seat center (Pathfinder)

Secure the child restraint with the lap belt as illustrated. Adjust the belt for a snug fit by pulling it toward the retractor. The automatic locking retractor will hold it snug.



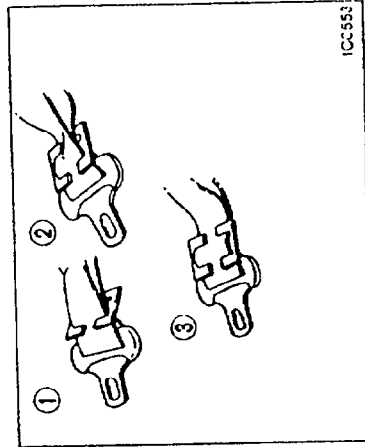
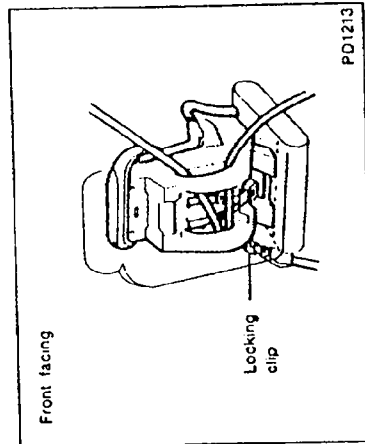
Installation on front or rear seat (3-point type)

Before using the locking clip, read the instructions attached to the clip.

Slide the seat to its rearmost position.

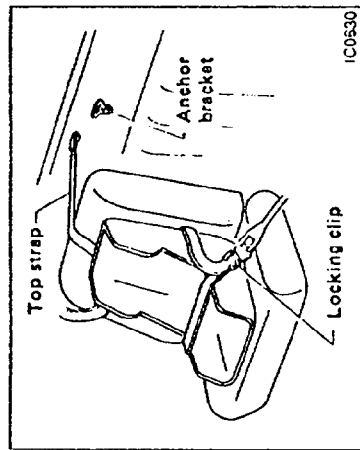
Secure the child restraint with the lap belt as illustrated. To prevent slack in the lap belt, it will be necessary to secure the lap shoulder belt in place with a locking clip.

Slide the seat forward so that the seat belt fully tightens the child restraint.



Use a NISSAN genuine locking clip (part number H8010-89970, available from your NISSAN dealer), or one which is equivalent in dimensions and strength.

When your child restraint system is not in use, keep the locking clip in the glove box to prevent it from being lost.



to withstand only these loads imposed by correctly fitted child restraints. Under no circumstances are they to be used for adult seat belts or harnesses.

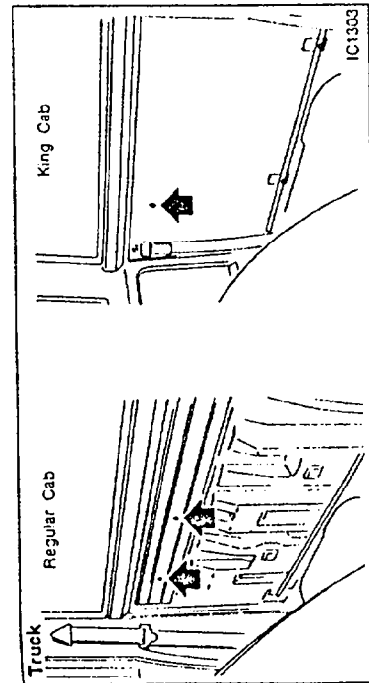
If your child restraint has a top strap, install the anchor bracket to the provided anchor point. Secure the child restraint with the lap belt and latch the top strap hook onto the anchor bracket. Make sure the shoulder belt is placed between the seat back and child restraint. To install the anchor bracket, a metric bolt of the dimensions listed below must be used.

Bolt diameter: 8.0 mm

Bolt length: more than 1.18 in (30 mm)

Thread pitch: 1.25 mm

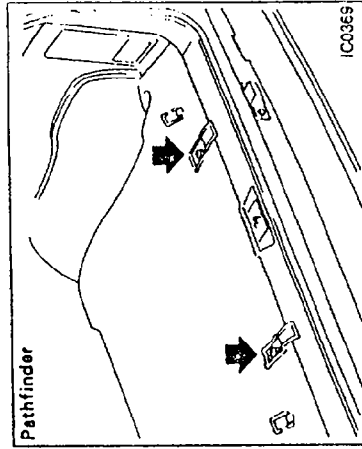
Child restraint anchor points are designed



Anchor point location

Truck

Anchor points are located under the rear window. On King Cab models, the back panel carpet is perforated to allow access to the anchor points.



Pathfinder

Anchor points are located on the rear floor panel.

APPENDIX E
INSTRUMENTATION AND CALIBRATION DATA

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CALIBRATION DATA FOR INSTRUMENTATION USED IN DUMMY CALIBRATION

DUMMY INSTRUMENTS	MFR	MODEL	S/N	CAL DATE	CAL DUE DATE
CHEST DEFLECTION POT	BECKMAN	5311	N/A	EACH USE	EACH USE
CHEST IMPACTOR ACCEL	ENTRAN	EGV-1	14N3N-V13-1	09/14/92	03/14/93
NECK PENDULUM ACCEL	"	"	"	"	"
NECK ROTATION NO. 1	BECKMAN	5311	N/A	EACH USE	EACH USE
NECK ROTATION NO. 2	BECKMAN	5311	N/A	EACH USE	EACH USE
NECK EXTENSION POT	BOURNS	80294-20518-1840202	1684-067	EACH USE	EACH USE
ABDOMINAL COMPRESSION LOAD	LEBOW/EATON	3167	1573	09/14/92	03/14/93
LUMBAR FLEXION LOAD	"	"	"	"	"
LUMBAR ROTATION	BOURNS	3590S-2-102	N/A	EACH USE	EACH USE
ABDOMINAL DISPLACEMENT	CELESCO	PT-101-15B	0786551	EACH USE	EACH USE
TIMER	MSE	MSE TIM	#1	08/17/92	02/17/93
TIME TRAP	MSE	1"	#1	08/17/92	02/17/93