

DOT 1450

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

FORD MOTOR COMPANY
1990 FORD MUSTANG
2 DOOR CONVERTIBLE (ACP)
NHTSA NO. ML0201

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



MARCH 13, 1990

FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF MARKET INCENTIVES
400 Seventh Street, S.W.
Room No. 5313 (NRM-22)
Washington, DC 20590

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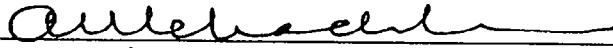
PREPARED BY: A. V. Khadilkar, Program Manager

S. Pruitt, Test Engineer

T. Kippen, Test Engineer

A. Mapara, Test Engineer

MOBILITY SYSTEMS AND EQUIPMENT COMPANY

APPROVED BY: 
Dr. Anil V. Khadilkar, Program Manager

DATE: 13 March 1990

FINAL REPORT ACCEPTED BY:

Vincent Quarles

MANAGER, New Car Assessment Program

MAY 24 1990

Date of Report Acceptance

1. Report No. MSE-90-N08		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle NEW CAR ASSESSMENT PROGRAM (NCAP) FRONTAL BARRIER IMPACT TEST 1990 FORD MUSTANG CONVERTIBLE (ACP) NHTSA No. ML0201				5. Report Date MARCH 13, 1990	
				6. Performing Organization Code MSE	
7. Author(s) Dr. A. V. Khadilkar/S.D. Pruitt/T. Kippen/A. Mapara				8. Performing Organization Report No. R9092-02	
9. Performing Organization Name and Address MOBILITY SYSTEMS AND EQUIPMENT COMPANY 9920 La Cienega Boulevard, Suite 708 Inglewood, California 90301				10. Work Unit No. (TRAIS)	
				11. Contract or Grant No. DTNH22-87-D-02009, D.O. #5	
12. Sponsoring Agency Name and Address U.S. DEPARTMENT OF TRANSPORTATION National Highway Traffic Safety Administration Office of Market Incentives 400 Seventh Street, S.W. Washington, DC 20590				13. Type of Report and Period Covered FINAL	
				14. Sponsoring Agency Code DOT/NHTSA/RM/OMI	
15. Supplementary Notes					
16. Abstract A 35 mph frontal barrier impact test using a load cell barrier was conducted on a 1990 Ford Mustang Convertible at the Mobility System and Equipment Company (MSE) crash test facility in Mira Loma, CA, on 01 March 1990. The barrier impact velocity was 35.0 mph, and the ambient temperature at the barrier face at the time of impact was 74 deg. F. The post-test vehicle crush maximum was 19.80 in. A summary of occupant injury measure data from the test appears below:					
Injury Criteria Threshold Value		Driver Dummy		Passenger Dummy	
Head Injury Criterion HIC = 1000		651		438	
Chest Resultant Peak 60 Gs (3 ms clip)		41.7		50.4	
Femur Load Left		1353		1063	
2250 Pounds Right		1707		408	
TYPE OF RESTRAINT SYSTEM: 3-point webbing system with two retractors at each front outboard seating position plus a supplemental air bag restraint system at the driver position.					
17. Key Words 35 MPH FRONTAL BARRIER IMPACT TEST NEW CAR ASSESSMENT PROGRAM (NCAP) 1990 FORD MUSTANG CONVERTIBLE (ACP)				18. Distribution Statement COPIES OF THIS REPORT ARE AVAILABLE FROM: Technical Reference Division Nat'l Highway Traffic Safety Admin. Room 5108, Nassif Building 400 7th St. S.W., Wash., DC 20590	
19. Security Classif. (of this report) UNCLASSIFIED		20. Security Classif. (of this page) UNCLASSIFIED		21. No. of Pages 32	
				22. Price	

Form DOT F 1700.7 (8-72)

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SECTION 1

PURPOSE AND TEST PROCEDURE

This 35 mph frontal barrier impact test is a part of the FY 89 Vehicle Barrier Impact and Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-87-D-02009. 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 FMVSS 208/212/219/301-75 requirements.

This 35 mph frontal barrier impact test was conducted in accordance with the Office of Market Incentives (OMI) Laboratory Indicant Test Procedure, dated 01 September 1986.

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SECTION 2

SUMMARY OF FRONTAL BARRIER IMPACT TESTS

A load cell barrier consisting of 36 cell units was impacted by a 1990 Ford Mustang Convertible NHTSA No. ML0201, at a velocity of 35.0 mph. The frontal impact test was conducted by Mobility Systems and Equipment Company (MSE) on 01 March 1990. The general test and vehicle description information is 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 8.

Sixty-five (65) channels of crash parameters were recorded using two (2) FM tape recorders, three (3) computers and associated data acquisition system. Time history plots of all recorded channels are presented in Appendix B.

2.1 GENERAL COMMENTS

The 1990 Ford Mustang Convertible, was equipped with a 302 cubic inch, 8 cylinder engine and 5 speed transmission. The test weight of the 1990 Ford Mustang Convertible, with two (2) 50th percentile male dummies, instrumentation, and cameras was 3,865 pounds.

The 1990 Ford Mustang Convertible, was involved in a frontal load cell barrier crash at a velocity of 35.0 mph.

The maximum static crush for the vehicle of 19.0 inches occurred at the centerline of the front bumper. The windshield was cracked, but no separation was observed. The driver's and passenger's front doors needed tools to open.

The driver ATD's head hit the air bag and driver's side sunvisor. The driver's left and right knees hit the dash panel.

The driver ATD had a HIC value of 651, the maximum chest acceleration (resultant clipped) was 41.7 g's and the maximum femur loads were 1,353 (left) and 1,707 (right) pounds.

The passenger ATD's head did not hit the dash panel. Both of his knees hit the glovebox door. The HIC value for the passenger ATD was 438, the maximum chest acceleration (resultant clipped) was 50.4 g's, and the maximum femur loads were 1,063 (left) and 408 (right) pounds.

Seat belt spool out, measured by high-speed film analysis, was 2.0 inches for the driver and 3.1 inches for the passenger belts.

The inboard and outboard track latching devices of the front seats remained latched.

There were no apparent visual indications of any standard solvent leaks.

Each of the test vehicle's front outboard seating position was equipped with a manual 3 point webbing system with 2 retractors. Additionally the driver's position was equipped with a supplemental air bag restraint system. The vehicle was tested with both manual and airbag systems installed and fully functional.

The fabric of the convertible top was removed. But, the supporting structural frame of the convertible top was deployed and locked in place during the test.

Data Table No. 1 Test Vehicle Data

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1990/FORD/MUSTANG/2-DOOR CONVERTIBLE

VEHICLE NHTSA NO.: M L 0 2 0 1 VIN: 1 F A C P 4 4 E X L F 1 1 5 3 4 6

VEHICLE BODY COLOR: RED; MONTH & YEAR OF MANUFACTURE: 10/89

ENGINE: 8 Cylinders; C.I.D; 5.0 Liters; 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: 02/90

ODOMETER READING: 24.7 miles; OPTIONS: X A/C; X P/S; X P/Wdo.;
 Tilt Whl.; X Cruise Control

DATA RECORD FROM VEHICLE'S TIRE PLACARD:

=====

Tire Pressure (at capacity): 30 psi Front; 30 psi Rear
Recommended Tire Size: P225/60VR15
Tires on Vehicle: P225/60VR15; Manufacturer: GOODYEAR
Number of Occupants: 2 Front; 2 Rear; 3rd Seat; 4 TOTAL
Type of Front Seats: X Bucket; Bench; Split Bench
Type of Front Seat Back: Fixed; X Adjustable With X Lever
 Rotating Knob

Vehicle Maximum Capacity Loading = 700 lbs. (A)
No. of Occupants x 150 lbs. - - - = 600 lbs. (B)
Cargo Capacity (A - B) - - - - = 100 lbs.
* gvw - Delivered Weight.

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

=====

Right Front	=	<u>950</u>	lbs.	
Left Front	=	<u>1020</u>	lbs.	TOTAL FRONT = <u>1970</u> lbs. (<u>57.2%</u> of TOTAL)
Right Rear	=	<u>755</u>	lbs.	
Left Rear	=	<u>720</u>	lbs.	
TOTAL WEIGHT	=	<u>3445</u>	lbs.	TOTAL REAR = <u>1475</u> lbs. (<u>42.8%</u> of TOTAL)

Data Table No. 1 (Con't) Test Vehicle Data

CALCULATION OF TEST VEHICLE TARGET WEIGHT:

Total Test Vehicle Delivered Weight With Maximum Fluids =	<u>3445</u>	lbs.
Maximum Cargo Carrying Capacity of Test Vehicle*- - - -	<u>100</u>	lbs.
Weight of Two P.572 Dummies (2 x 164 lbs.)- - - - -	<u>328</u>	lbs.
TEST VEHICLE TARGET WEIGHT	<u>3873</u>	lbs.

*300 lbs. for light trucks and MPVs

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES AND CARGO:

Right Front =	<u>1026</u>	lbs.	TOTAL FRONT =	<u>2116</u>	lbs. (54.7% of TOTAL)
Left Front =	<u>1090</u>	lbs.			
Right Rear =	<u>888</u>	lbs.	TOTAL REAR =	<u>1749</u>	lbs. (45.3% of TOTAL)
Left Rear =	<u>861</u>	lbs.			

TOTAL WEIGHT= 3865 lbs. (which includes 0 lbs. of cargo ballast weight placed in the cargo/luggage area)

VEHICLE COMPONENTS REMOVED TO MEET TARGET WEIGHT:

1. <u>X</u> Spare Tire	3. <u>X</u> Tail lamp hsg. <u>X</u> Rt.Side <u> </u> Left Side
2. <u> </u> Rear Bumper Assembly	4. <u> </u> Rear Seat Assembly

TEST VEHICLE ATTITUDE:

As Delivered----Right Front = 27.0 inches
Left Front = 27.1 inches
Right Rear = 27.5 inches
Left Rear = 28.0 inches

Ready For Test--Right Front = 26.7 inches
Left Front = 26.8 inches
Right Rear = 26.5 inches
Left Rear = 26.5 inches

Test Vehicle Wheelbase: 100.2 inches; C.G.= 45.4 inches rearward of front wheel centerline

Total Vehicle Length:

Right Side	=	<u>171.4</u>	inches
Left Side	=	<u>171.5</u>	inches
Centerline	=	<u>179.0</u>	inches

Data Table No. 2 Post Crash Test Data

DATA OF 35 MPH FRONTAL BARRIER IMPACT RATING TEST: 03/01/90

TIME OF TEST: 3:25 PM: AMBIENT TEMPERATURE AT BARRIER FACE: 74^o F

VEHICLE'S OCCUPANT COMPARTMENT TEMPERATURE: 74^o F

(spec. Range = 66 to 78 F.)

VEHICLE WINDSHIELD MOLDING TEMPERATURE: 74^o F.

VEHICLE IMPACT VELOCITY: Primary Speed Trap = 34.95 mph
 Secondary Speed Trap 34.97 mph
 (Specified Range = 34.5 to 35.5 mph)

Distance from vehicle's front bumper forwardmost surface to barrier face when--

- (a) entering the speed trap = 5.0 ft
 (b) exiting the speed trap = 1.0 ft

VEHICLE STATIC CRUSH:

Vehicle Pre-test Length-Right Side = 171.4"; C/Line=179.0"; Left Side=171.5"
 Vehicle Post-test Length-Right Side=154.0"; C/Line=160.0"; Left Side=152.5"
 Vehicle Static Crush --- Right Side=17.4"; C/Line=19.0"; Left Side=19.0"

VEHICLE REBOUND FROM BARRIER FACE:

Vehicle Right Side = 17.6 inches
 Vehicle Centerline = 15.2 inches
 Vehicle Left Side = 19.2 inches

VEHICLE DUMMY CONTACT POINTS:

	DRIVER (I.D. No. 464)			PASSENGER (I.D. No. 467)		
	Strg.Col. Hub	Strg. Wheel	Instru. Panel	Instru. Panel	Knee Assy.	Glove Box Door
HEAD - - - - -	NO	NO	NO	NO	NO	NO
RIGHT KNEE - -	////////	////	YES	YES	////////	YES
LEFT KNEE - -	////////	////	YES	NO	////////	YES

VEHICLE DOOR OPENING INFORMATION:

	RIGHT SIDE		LEFT SIDE	
	OPENED YES	JAMMED YES	OPENED YES	JAMMED YES
FRONT DOORS - - - - -	YES	YES	YES	YES
REAR DOORS - - - - -	N/A	N/A	N/A	N/A

Data Table No. 2 (Cont'd) Post Crash Test Data

VEHICLE'S FRONT SEAT MOVEMENT DURING CRASH EVENT:

	RIGHT SIDE	LEFT SIDE
Seat Cushion Shift - - - - -	<u>0.0</u> " forward;	<u>0.0</u> " forward
Seat Adjuster Failure- - - -	<u>None</u> ;	<u>None</u>
Details Of Any Failure: N/A		

OTHER NOTABLE IMPACT EFFECTS:

- o There were no solvent leaks
- o The convertible frame slightly separated from top of the windshield

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. YR./MAKE/MODEL/BODY STYLE: 1990/FORD/MUSTANG/CONVERTIBLE

VEH. NHTSA NO.: ML0201; TEST DATE: 03/01/90

MAXIMUM ACCELERATION VALUES:		DRIVER DUMMY #464	PASSENGER DUMMY 467
Head Channel X	HEAD X	-57.42	-31.96
Head Channel Y	Y	-12.4	13.74
Head Channel Z	Z	37.81	57.45
HEAD RESULTANT	R	66.01	62.12
Chest Channel X	CHEST X	-43.96	-49.57
Chest Channel Y	Y	-7.36	22.42
Chest Channel Z	Z	-17.40	-20.42
CHEST RESULTANT	R	41.65	50.43
TIME INTERVAL (seconds)		0.0789 to 0.0819	0.0762 to 0.0792

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	HIC	651.37	437.88
t_1 (seconds)		0.0580	0.0756
t_2 (seconds)		0.0940	0.1116
Avg. Accel. t_1 to t_2		50.42	43.03

MAXIMUM FEMUR FORCES:

Right Side (lbs.)	FR	1707.2	408.4
Left Side (lbs.)	FL	1352.8	1063.3

MAXIMUM SEAT BELT FORCES:

Lap Belt	LAP	705.1	1718.3
Shoulder Belt	SHLDR	1541.9	1963.4

MAXIMUM SEAT BELT WEBBING SPOOL-OUT:

Lap/Shoulder Belt Combination *	2.0	3.1
---------------------------------	-----	-----

* Determined From High Speed Files Analysis

Data Table No. 4 Test Dummy Positioning Data

PRE-IMPACT DATA:

Make/Model: FORD/MUSTANG

Body Style: CONVERTIBLE

Model Year: 1990

NHTSA No.: ML0201

Color: RED

DATA FROM CERTIFICATION LABEL:

Vehicle Manufacturer: FORD MOTOR CO.

Date of Manufacture: 10/89; VIN: 1FACP44EXLF115346

GVWR: 4230 lb; GAWR: Front = 2262 lb; Rear = 2031 lb

POST-IMPACT DATA:

Date of Test: 03/01/90 Time: 3:25 PM Temperature: 74 °F

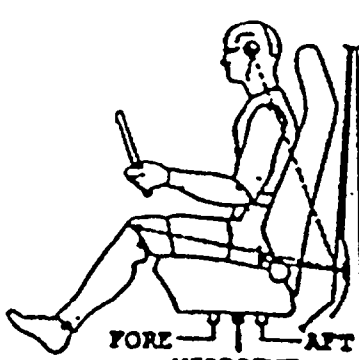
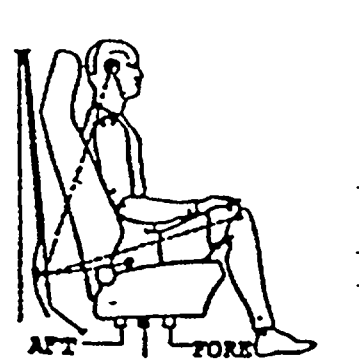
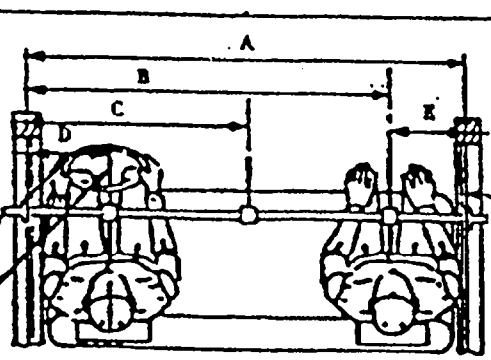
Required Impact Velocity Range: 34.5 to 35.5 mph

Impact Velocity: Primary = 34.95 mph Secondary = 34.97 mph

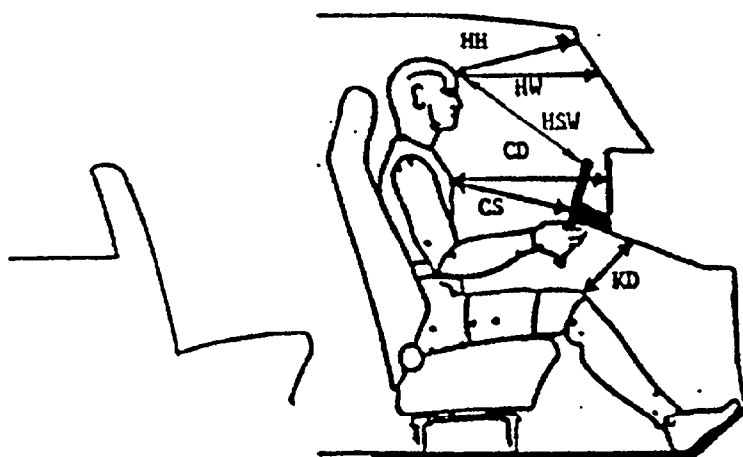
Seat Type: Bucket Adjuster Type: Manual Lever

Bucket Seat Back Type: Adjustable Headrest

TECHNICIANS: Enrique Marin

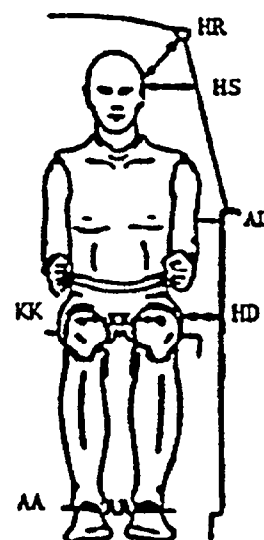
DRIVER DUMMY # <u>4 6 4 </u> HEAD <u>24.0</u> " TARGET <u>+60.0</u> KNEE <u>35.2</u> " JOINT <u>- 1.0</u> APPROX- <u>20.2</u> " IMATE <u>-10.0</u> "H" POINT  FORE MIDPOINT AFT	PASSENGER DUMMY # <u>4 6 7 </u> <u>23.0</u> " HEAD TARGET <u>+61.0</u> <u>34.5</u> " KNEE JOINT <u>- 1.0</u> <u>19.8</u> " APPROX- MATE "H" POINT <u>-10.0</u>  AFT MIDPOINT FORE
A = <u>58.5</u> " B = <u>44.5</u> " C = <u>29.25</u> " D = <u>15.2</u> " E = <u>14.0</u> "  DOOR GLASS HEIGHT LATERAL BAR ADJUSTABLE POINTER LEFT FRONT DOOR RIGHT FRONT DOOR	
DRIVER DUMMY # <u>4 6 4 </u>	PASSENGER DUMMY # <u>4 6 7 </u>

Data Table No. 4 (Cont'd) Test Dummy Positioning Data

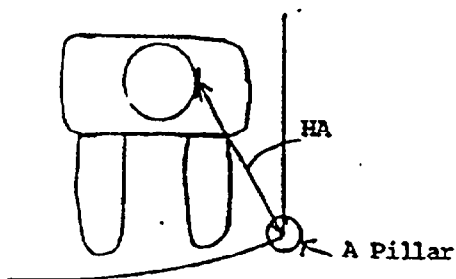


Driver		Passenger	
HH	16.2		17.6
HW	19.5		21.5
CD	22.0		24.0
CS	12.7		N/A
KD	L- 4.6		L- 7.5
KD	R- 4.9		R- 7.2
Torso Angle	24.0	Torso Angle	24.0
Seat Back Angle	22.0	Seat Back Angle	22.0
HSW	21.3		N/A

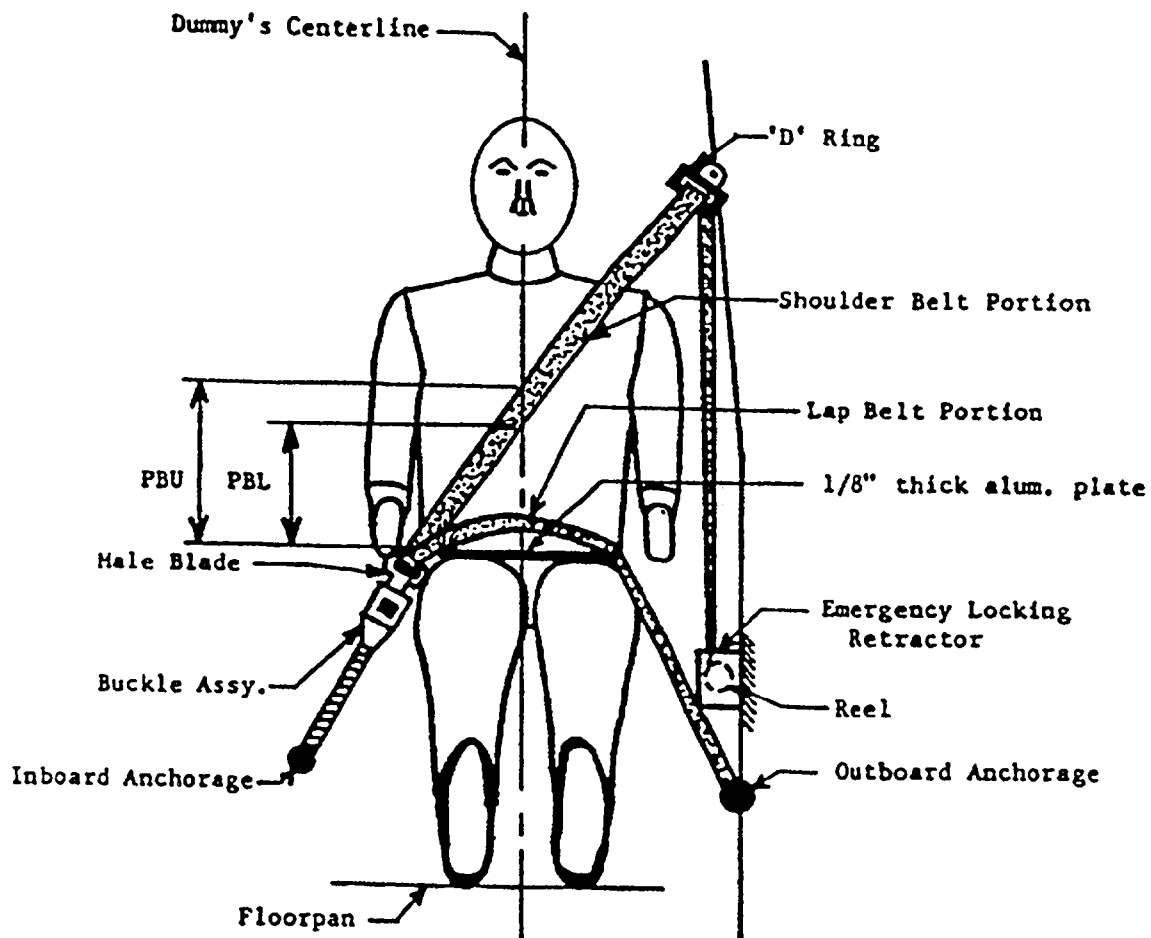
HSW = Head to Steering Wheel (in.)
 HA = Head Target to A Pillar (in.)
 HH = Head to Headrest (in.)
 HW = Head to Windshield Header (in.)
 CD = Chest to Dash (in.)
 CS = Chest to Steering Wheel (in.)
 HR = Head to Side Roof
 HS = Head to Side Window (in.)
 AD = Arm to Door (in.)
 HD = Hip to Door (in.)
 KK = Knee to Knee (in.)
 Torso and seat back angles
 are relative to vertical. (deg.)



REMARKS



Driver		Passenger	
HR	5.0		6.6
HS	8.7		7.5
AD	4.0		3.0
HD	6.4		6.6
KK	14.5		11.7
AA	12.5		9.5
HA	20.1		21.9



FRONT VIEW OF DRIVER DUMMY

	DRIVER DUMMY (inches)	PASSENGER DUMMY (inches)
<u>PBU</u> -- Top surface of alum. plate to belt upper edge	16.0	15.3
<u>PBL</u> -- Top surface of alum. plate to belt lower edge	12.2	11.5
<u>LAP BELT TENSION, POUNDS</u>	3.0	3.0
<u>SHOULDER BELT TENSION, POUNDS</u>	3.0	3.0

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 _____

Retractor reel to 'D' ring as measured on Part 572 _____

Shoulder belt length as measured on Part 572 dummy _____

Lap belt length as measured on Part 572 dummy _____

Remainder of belt webbing left on retractor reel _____

DRIVER SIDE		PASSENGER SIDE	
PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
SH-53.3 LP-46.5	SH-53.3 LP-46.5	SH-53.7 LP-45.2	SH-53.7 LP-45.2
N/A	N/A	N/A	N/A
39.8	41.0	38.5	40.0
31.0	31.5	30.0	29.3
SH-13.5 LP-15.5	SH-12.3 LP-15.0	SH-15.2 LP-15.2	SH-13.7 LP-15.9

BELT SPOOL-OFF DATA:

As determined by film analysis _____

As determined electronically _____

As determined mechanically _____

2.0 in	3.1 in
NOT MEASURED	NOT MEASURED
2.4 in	3.4 in

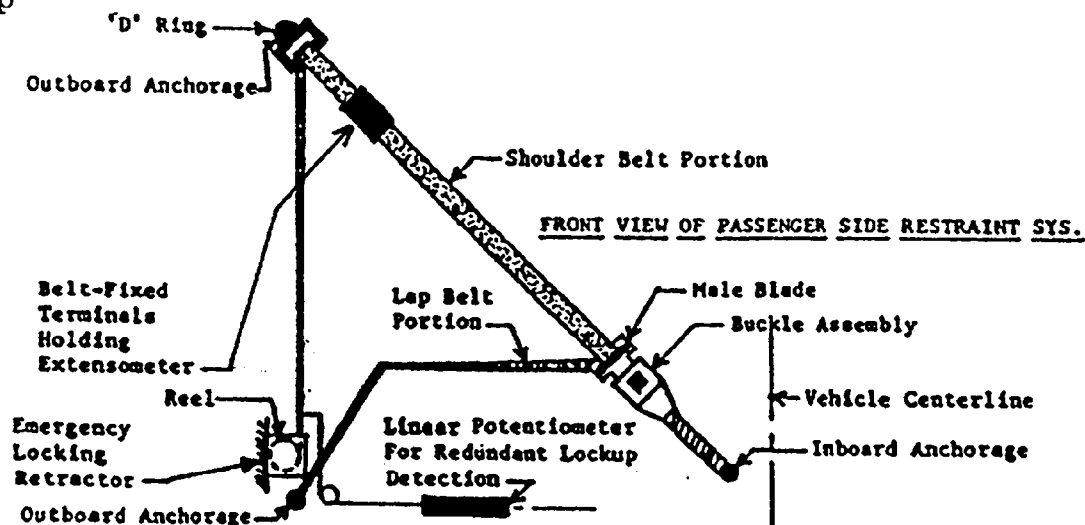
BELT STRAIN DATA:

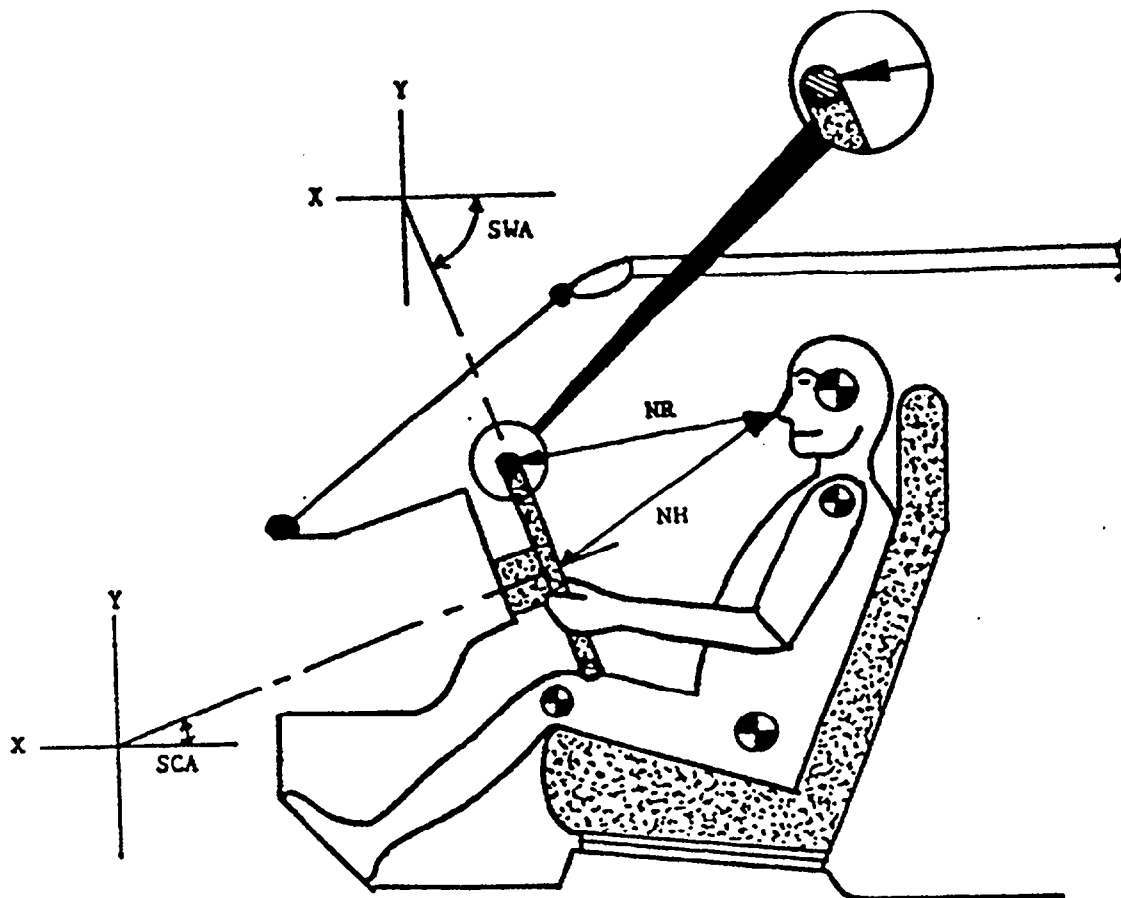
Measured between male blade and 'D' ring _____

*S = Shoulder

L = Lap

2.3 Percent	2.6 Percent
-------------	-------------





LEFT SIDE VIEW

MEASUREMENTS	
<u>NR</u> --Distance from tip of dummy's nose to Top Rear surface of steering wheel rim.	16.6 Inches
<u>NH</u> --Distance from tip of dummy's nose to center of steering column hub.	20.6 Inches
<u>SCA</u> --Angle of steering column relative to the horizontal X axis.	23.0 Degrees
<u>SWA</u> --Angle of steering wheel relative to the horizontal X axis.	67.0 Degrees

Data Table 8 Camera Location Data

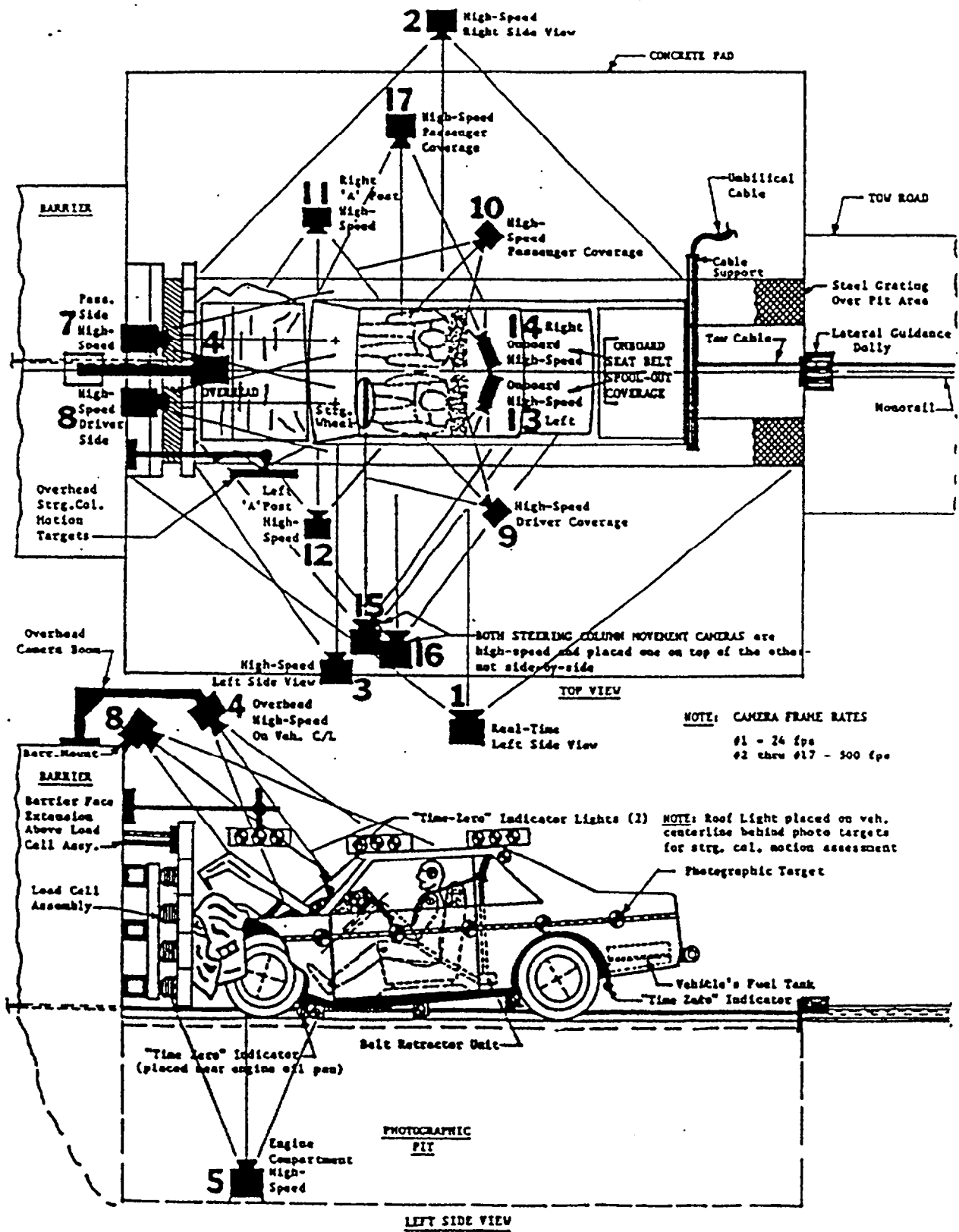
VEH. NHTSA NO.: ML0201 ; TEST DATE: 03/01/90 ; TIME: 3:25 PMVEH. YEAR/MAKE/MODEL/BODY STYLE: 1990/FORD/MUSTANG/CONVERTIBLE

CAMERA NO.	VIEW	CAMERA POS. (in.)			ANGLE (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Left Side View	-676	268	57	3	679	17-70 ZOOM	24
2	Right Side View	-258	87	52.5	2	241	13	600
3	Left Side View	-298	44	34.5	2	286	13	600
4	Overhead	-1	-4	124	64	128	13	600
5	Pit-Engine	2	42	-54	29	**	13	400
6	Pit-Fuel Tank	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.
7	Front-Passenger	+13	-14	104	-50	125	16	600
8	Front-Driver	-12	-14	104	-44	125	16	600
9	Left Side-Driver	-71	108	81	29	61	16	600
10	Right Side-Passenger	98	102	78	20	85	16	600
11	Right Side-'A' Post	19.4	27	52	2	73	28	650
12	Left Side-'A' Post	-289	-12	50.4	2	293	50	800
13	Onboard-Left Side	-4.5	84	17	28	41	13	No Data
14	Onboard-Right Side	4.5	84	17	22	40	13	No Data
15	Left Side-Steering Col.	-346	82	129	13	337	28	600
16	Left Side-Steering Col.	-344	79	111	11	332	28	600
17	Right Side Passenger	134	66	59.5	14	122	16	700

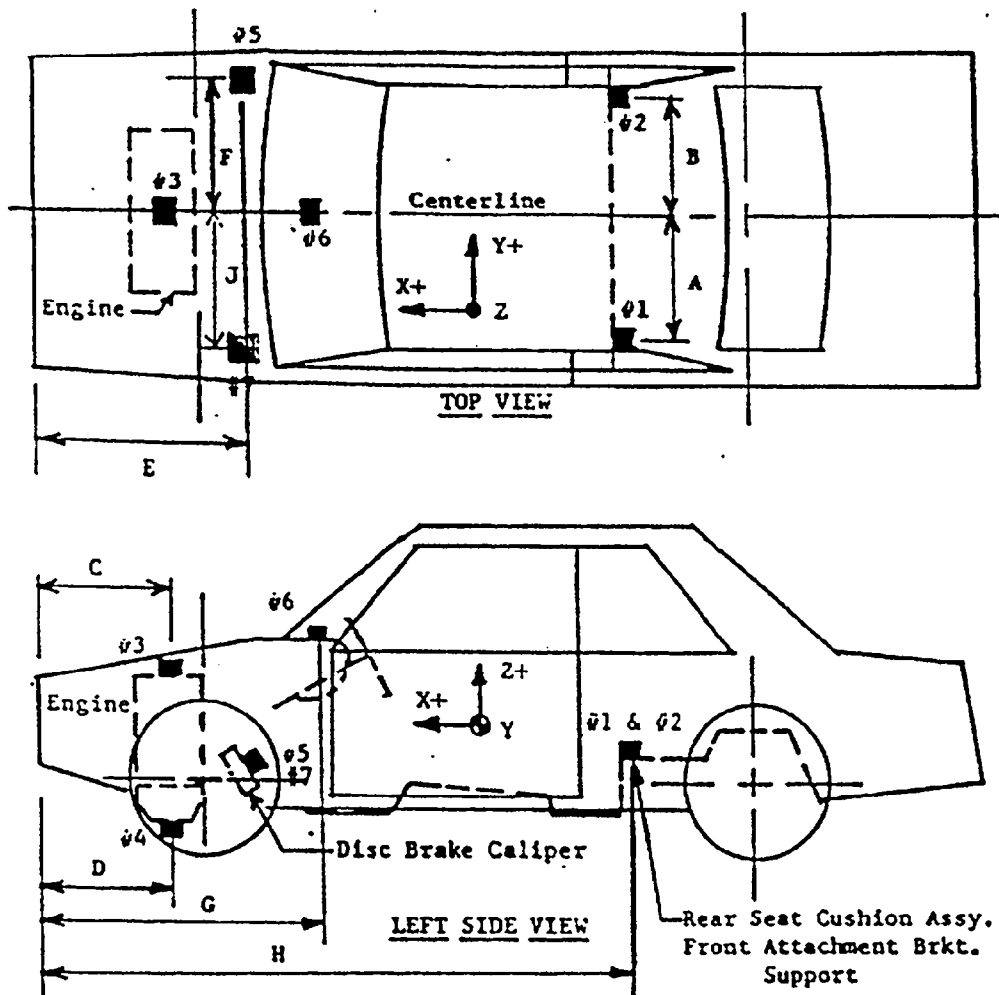
* X = film plane to monorail centerline
 Y = film plane to barrier face
 Z = film plane to ground

** Pit camera uses refractor lens for imagery.

Data Table No. 8 (Cont'd) Camera Location Data



Data Table No. 9 Vehicle Accelerometer Location and Data Summary

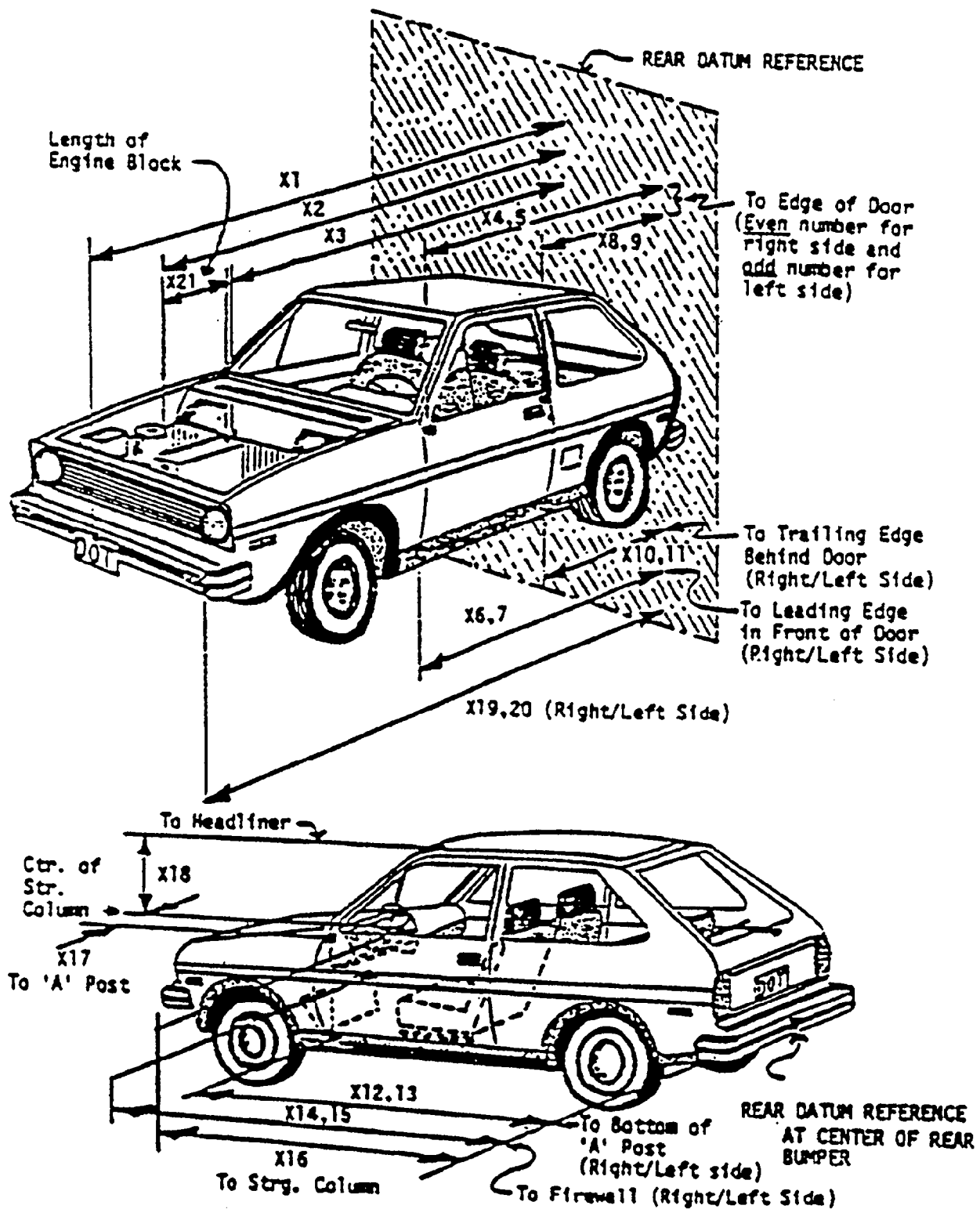


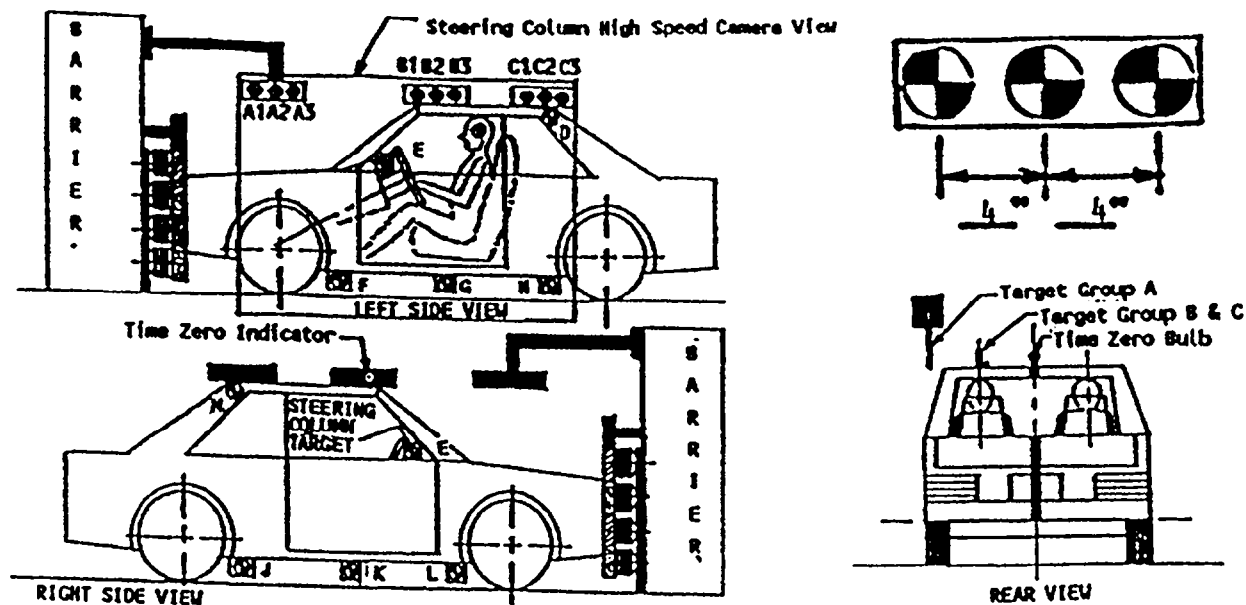
Dimension	Length (in.)
A	18.0
B	18.0
C	38.4
D	53.5
E	45.5
F	23.0
G	69.7
H	115.0
J	23.0

Loc. No.	Description	Maximum Value			
		X-	msec.	X+	msec.
1	Rear seat X-member @ Left Side	-28.5	44.5	1.3	191.3
2	Rear seat X-member @ Right Side	-28.5	49.8	1.3	202.4
3	Top of Engine Block	-117.8	34.5	21.6	43.9
4	Bottom of Engine	- 86.6	35.5	25.4	42.7
5	Disc Brake Caliper Right Side	- 64.7	64.1	14.0	106.2
6	Instrument Panel	-87.4	58.1	33.5	51.4
7	Disc Brake Caliper @Left Side	- 57.2	59.0	13.9	77.8

NO.	MEASUREMENT DESCRIPTION	Pre-Test (in.)	Post-Test (in.)	Diff. (in.)
X1	Total Length of Test Vehicle at Centerline	179.0	160.0	19.0
X2	Rear Surface of Vehicle to Front of Engine	157.5	147.3	10.2
X3	Rear Surface of Vehicle to Firewall	127.5	122.0	5.5
X4	Rear Surface to Upr. Leading Edge of Right Door	114.7	115.7	-1.0
X5	Rear Surface to Upr. Leading Edge of Left Door	114.7	115.0	-0.3
X6	Rear Surface to Lwr. Leading Edge of Right Door	114.1	113.8	0.3
X7	Rear Surface to Lwr. Leading Edge of Left Door	114.0	113.2	0.8
X8	Rear Surface to Upr. Trailing Edge of Right Door	64.2	65.0	-0.8
X9	Rear Surface to Upr. Trailing Edge of Left Door	64.1	64.1	0.0
X10	Rear Surface to Lwr. Trailing Edge of Right Door	64.1	64.0	0.1
X11	Rear Surface to Lwr. Trailing Edge of Left Door	64.0	63.2	0.8
X12	Rear Surface to Bottom 'A' Post on Right Side	113.3	113.3	0.0
X13	Rear Surface to Bottom 'A' Post on Left Side	113.2	113.0	0.2
X14	Rear Surface to Firewall on Right Side	127.0	124.3	2.7
X15	Rear Surface to Firewall on Left Side	127.8	126.0	1.8
X16	Rear Surface to Steering Column	97.2	97.2	0.0
X17	Center of Steering Column to 'A' Post	16.0	15.8	0.2
X18	Center Steering Column to Headlining	16.0	14.5	1.5
X19	Rear Surface to Right Side of Front Bumper	171.4	154.0	17.4
X20	Rear Surface to Left Side of Front Bumper	171.5	152.5	19.0
X21	Length of Engine Block	27.0	27.0	0.0

Data Table No. 10 (Cont'd) Test Vehicle Measurements





BARRIER TARGETS	'X' From Imag. Barrier Face Vertical Plane	'Y' From Monorail C/L	'Z' Above Ground
A-1	74.3	21.5	70.7
A-2	78.3	21.5	70.7
A-3	82.3	21.5	70.7
BARRIER TARGETS	'X' From Imag. Barrier Face Vertical Plane	'Y' From Monorail C/L	'Z' Above Ground
B-1	86.3	14.6	54.7
B-2	90.3	14.6	54.7
B-3	94.3	14.6	54.7
C-1	118.7	14.6	54.3
C-2	122.7	14.6	54.3
C-3	126.7	14.6	54.3
D	118.2	25.5	46.5
E	26.2	14.5	36.2
F	58.0	26.5	6.2
G	90.1	26.5	6.2
H	122.1	26.5	6.0
J	122.1	26.5	6.0
K	90.1	26.5	6.2
L	58.0	26.5	6.2
M	118.2	25.5	46.5

NOTE: Diameter of all photo targets is 4".

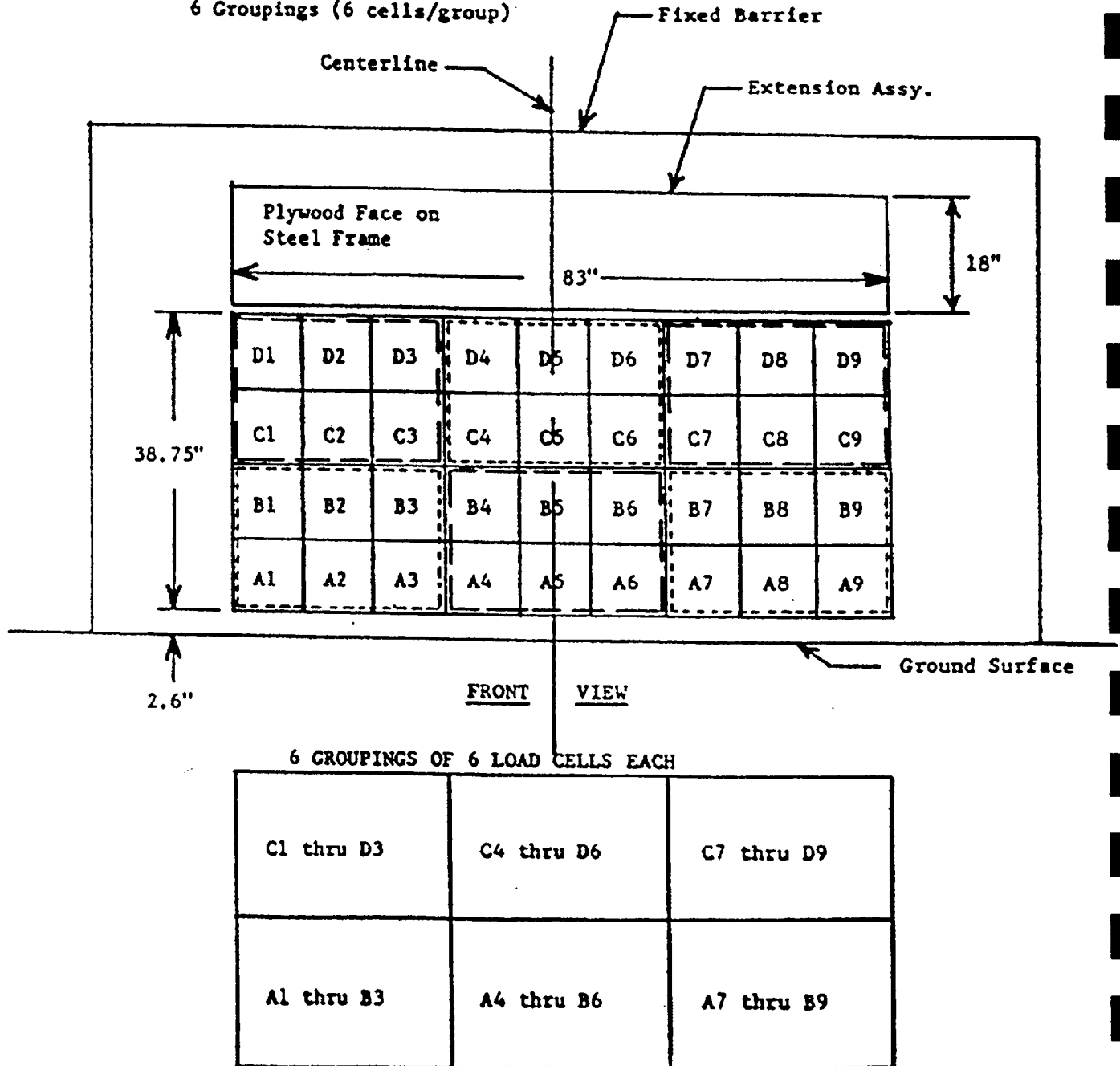
Data Table No. 12 Load Cell Locations on Fixed Barrier

36 Load Cells

4 Rows

9 Columns

6 Groupings (6 cells/group)

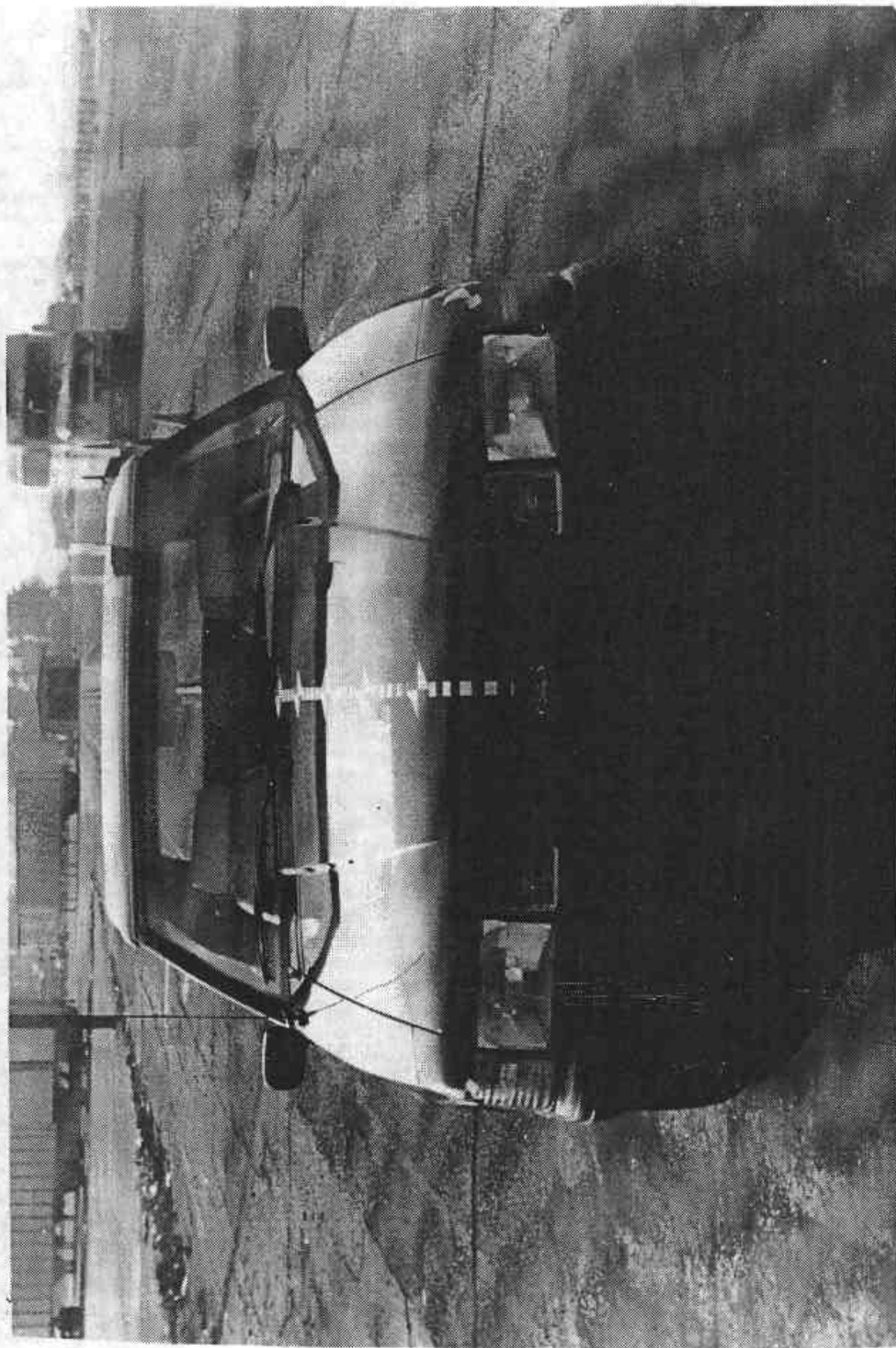


- DATA REQUIREMENTS:
- (1) Data from 36 individual load cells
 - (2) Total or Sum of 36 individual load cells
 - (3) Data from 6 Groupings shown above (6 cells/group)

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) HEAD AND KNEE CONTACT AREA
POSTTEST DRIVER DUMMY (ATD) AIR BAG DEPLOYMENT
POSTTEST PASSENGER DUMMY (ATD) KNEE CONTACT AREA

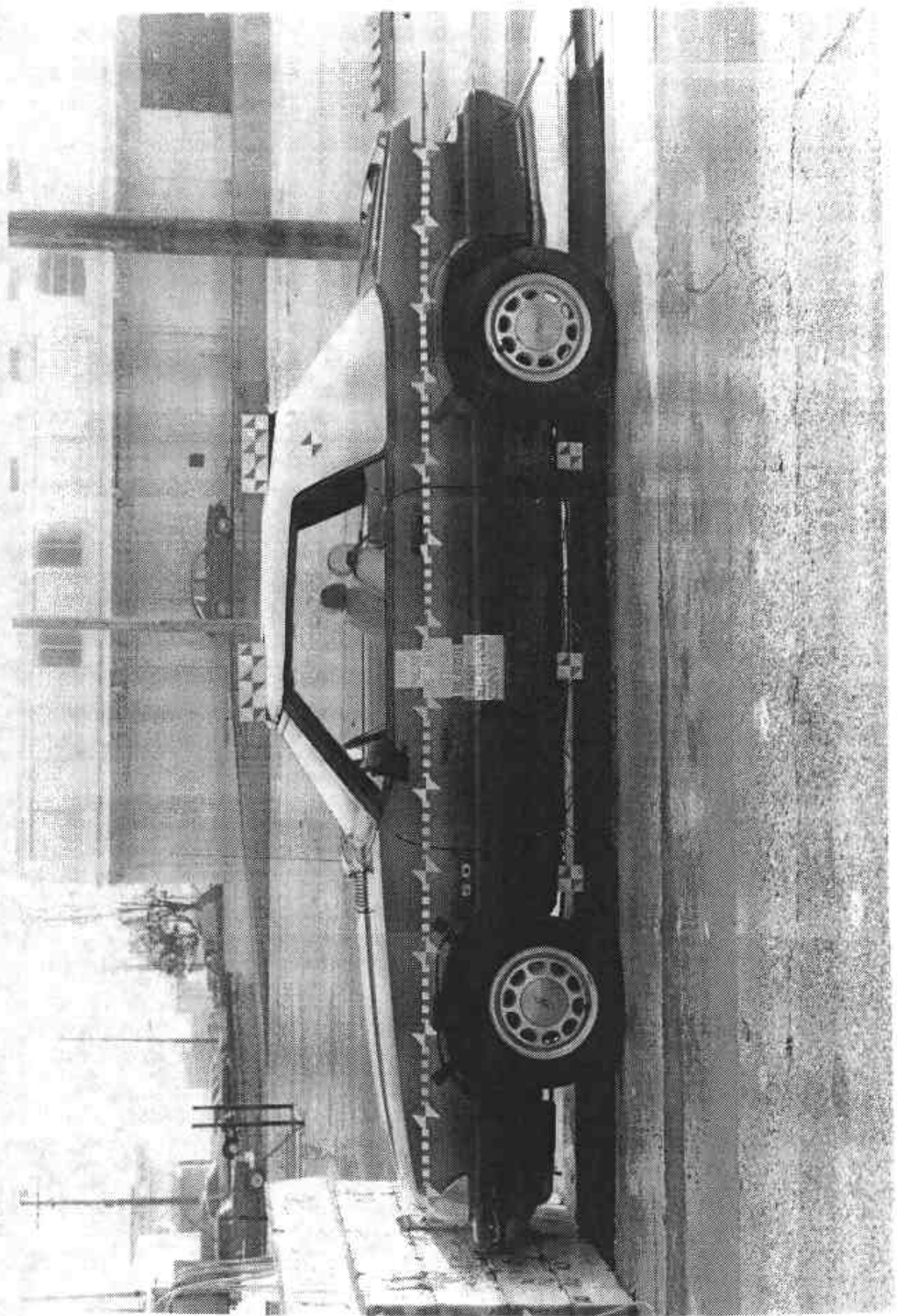
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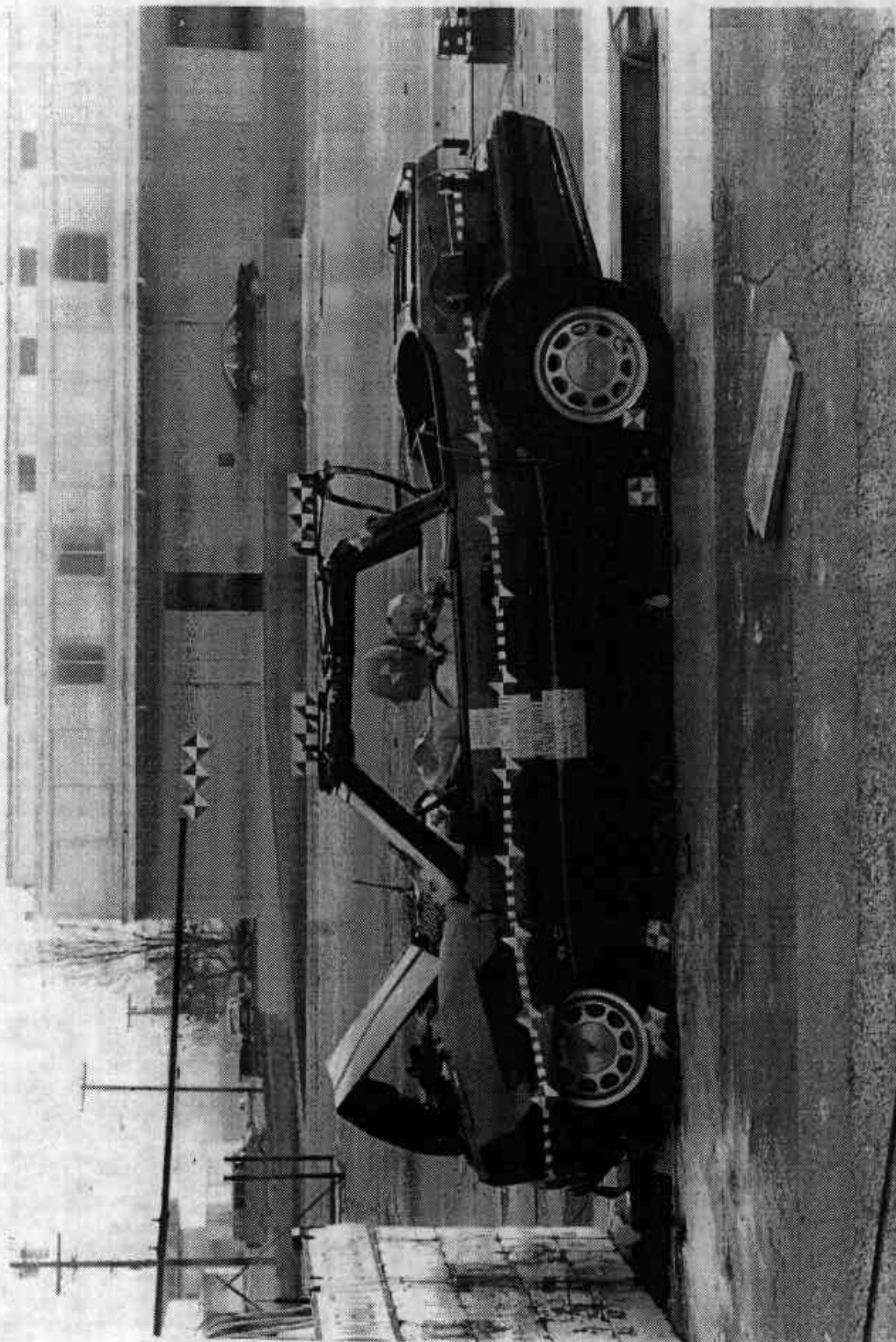
PRETEST FRONT VIEW



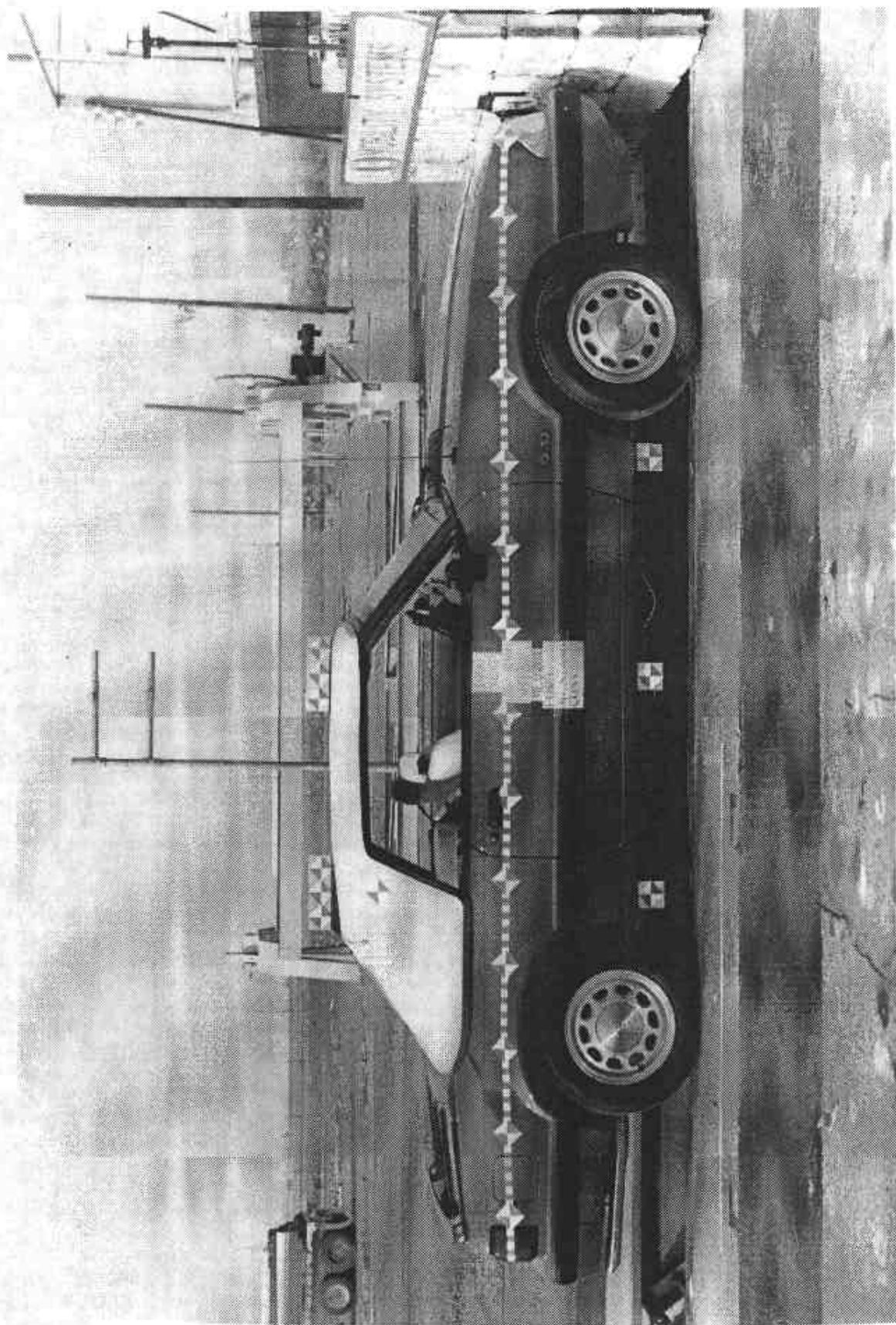
POSTTEST FRONT VIEW



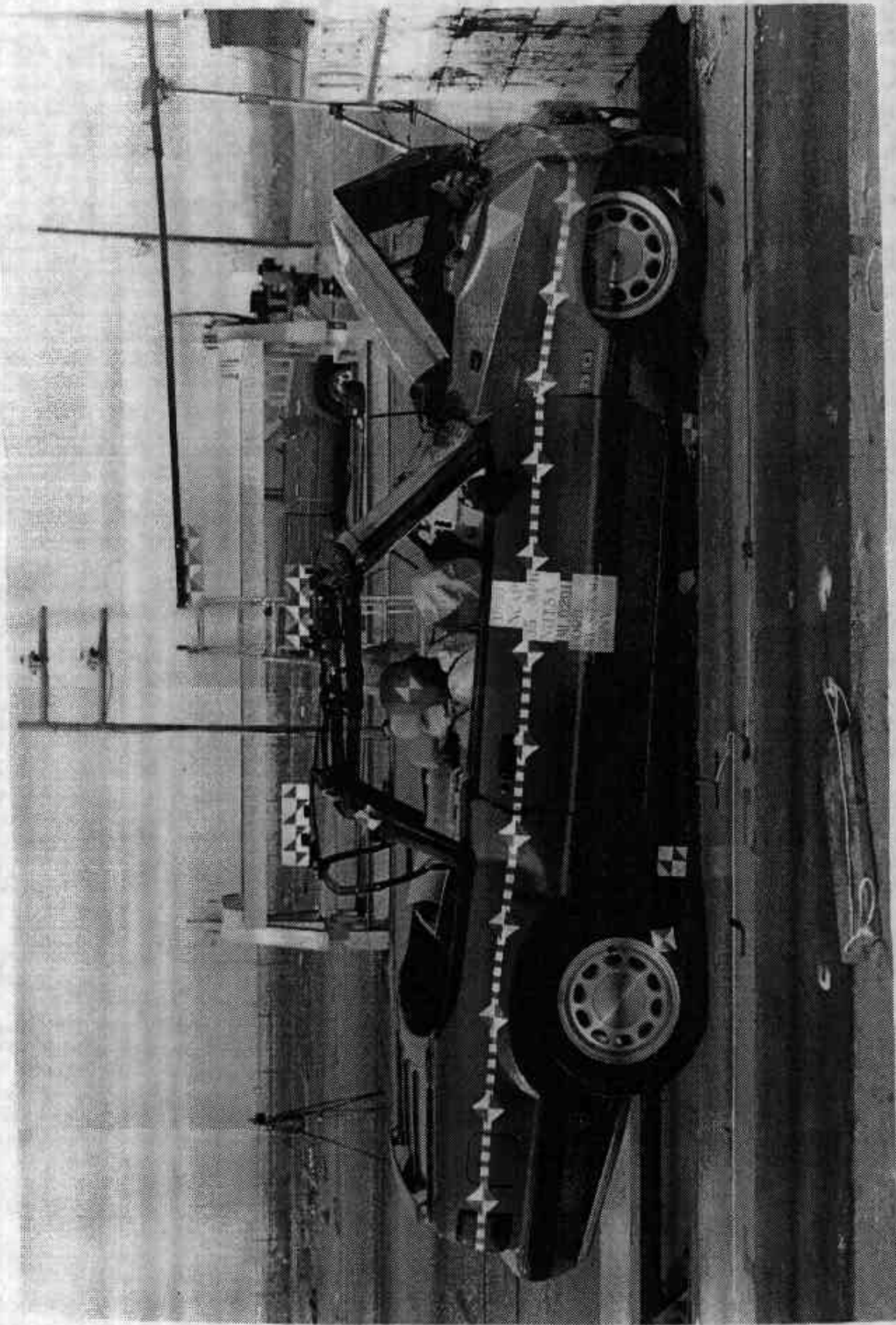
PRETEST LEFT SIDE VIEW



POSTTEST LEFT SIDE VIEW



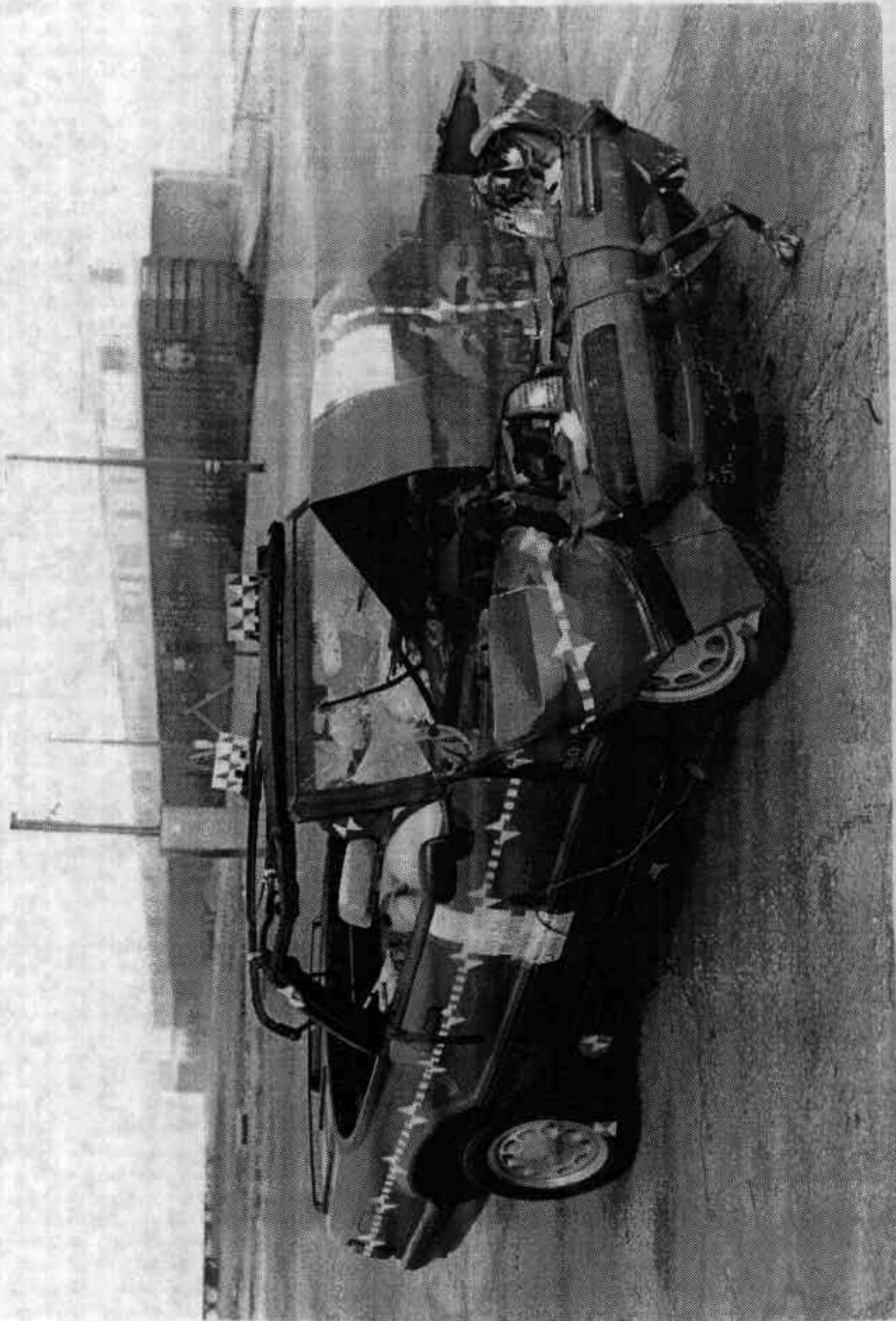
PRETEST RIGHT SIDE VIEW



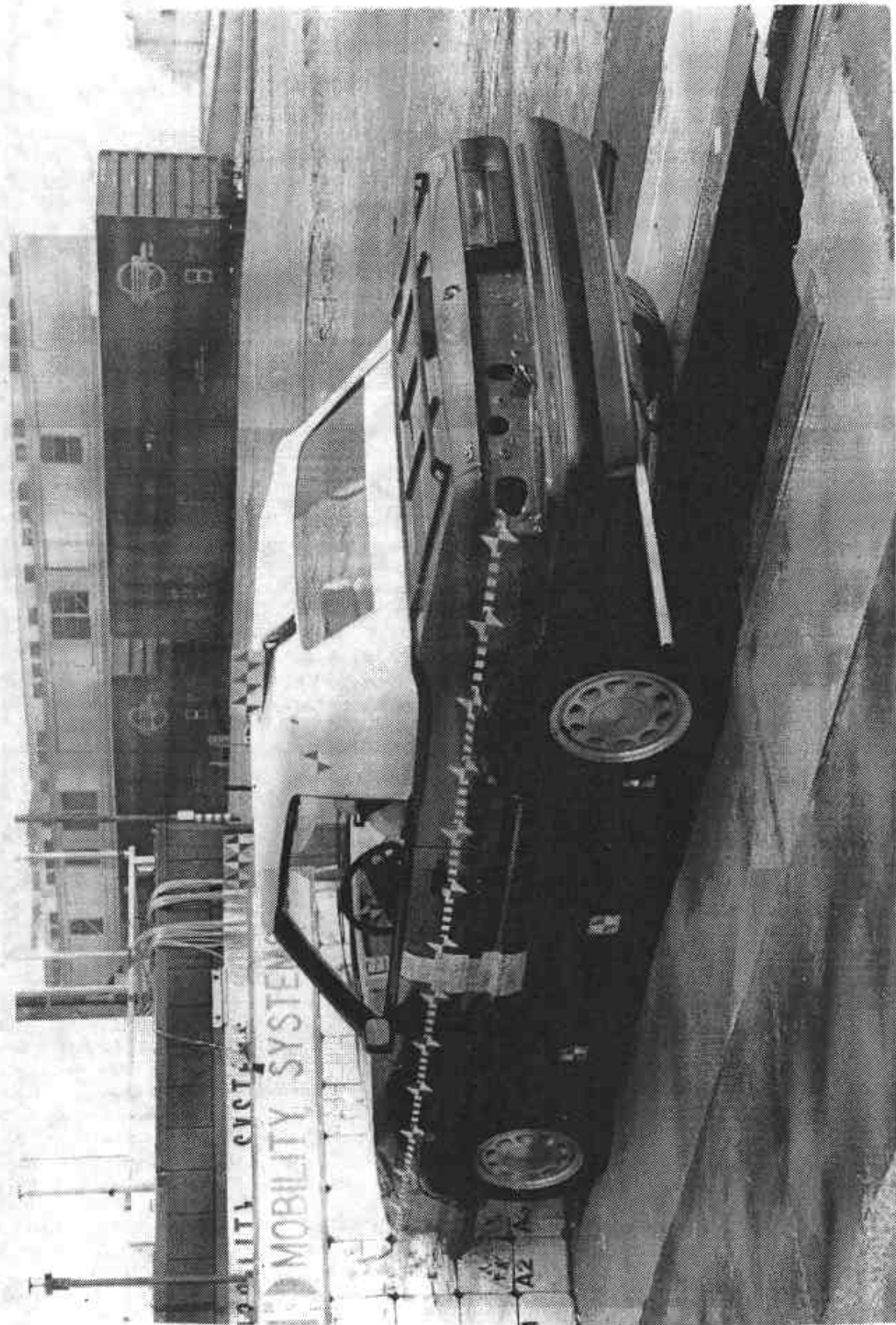
POSTTEST RIGHT SIDE VIEW



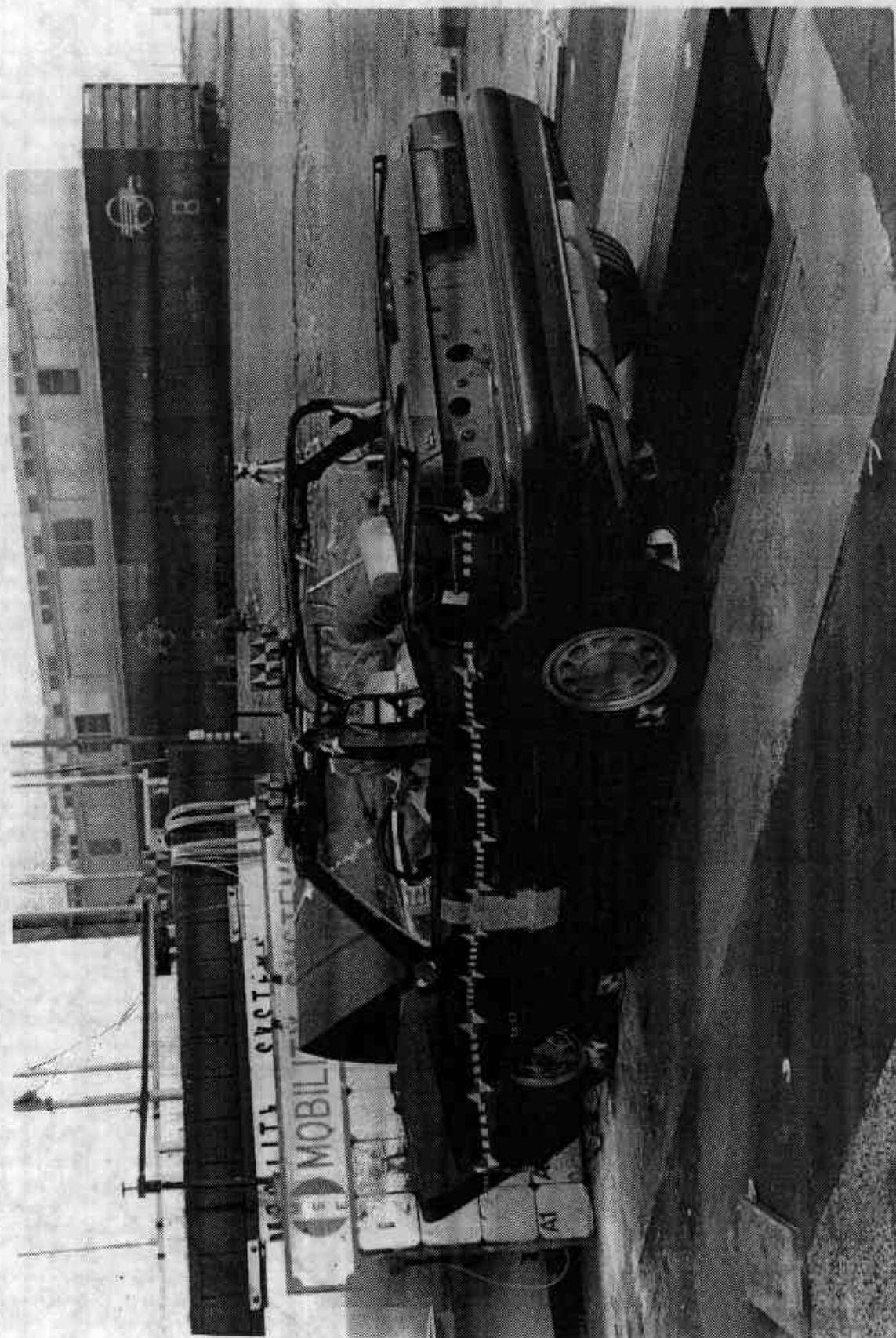
PRETEST RIGHT FRONT 3/4 VIEW



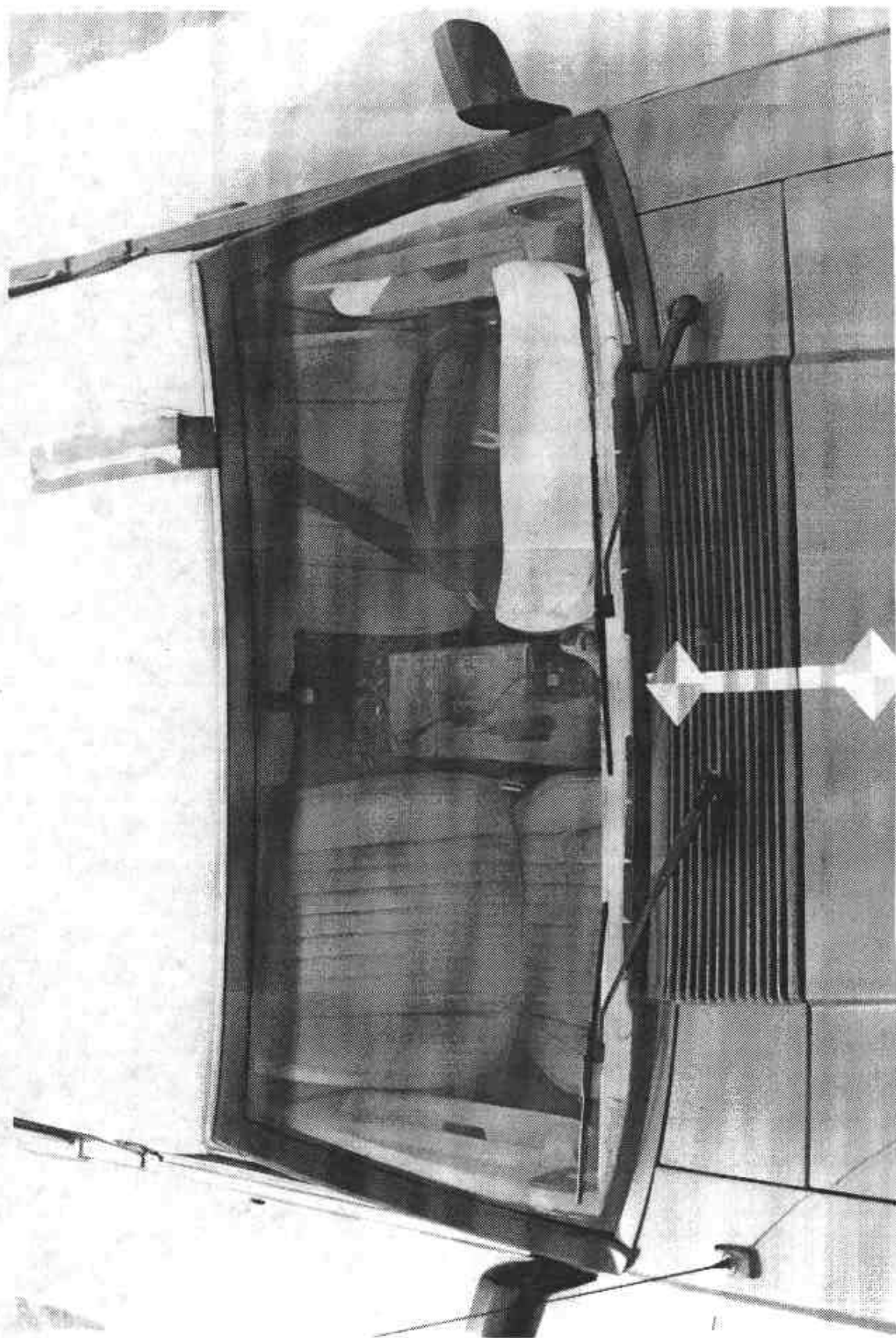
POSTTEST RIGHT FRONT 3/4 VIEW



PRETEST LEFT REAR 3/4 VIEW



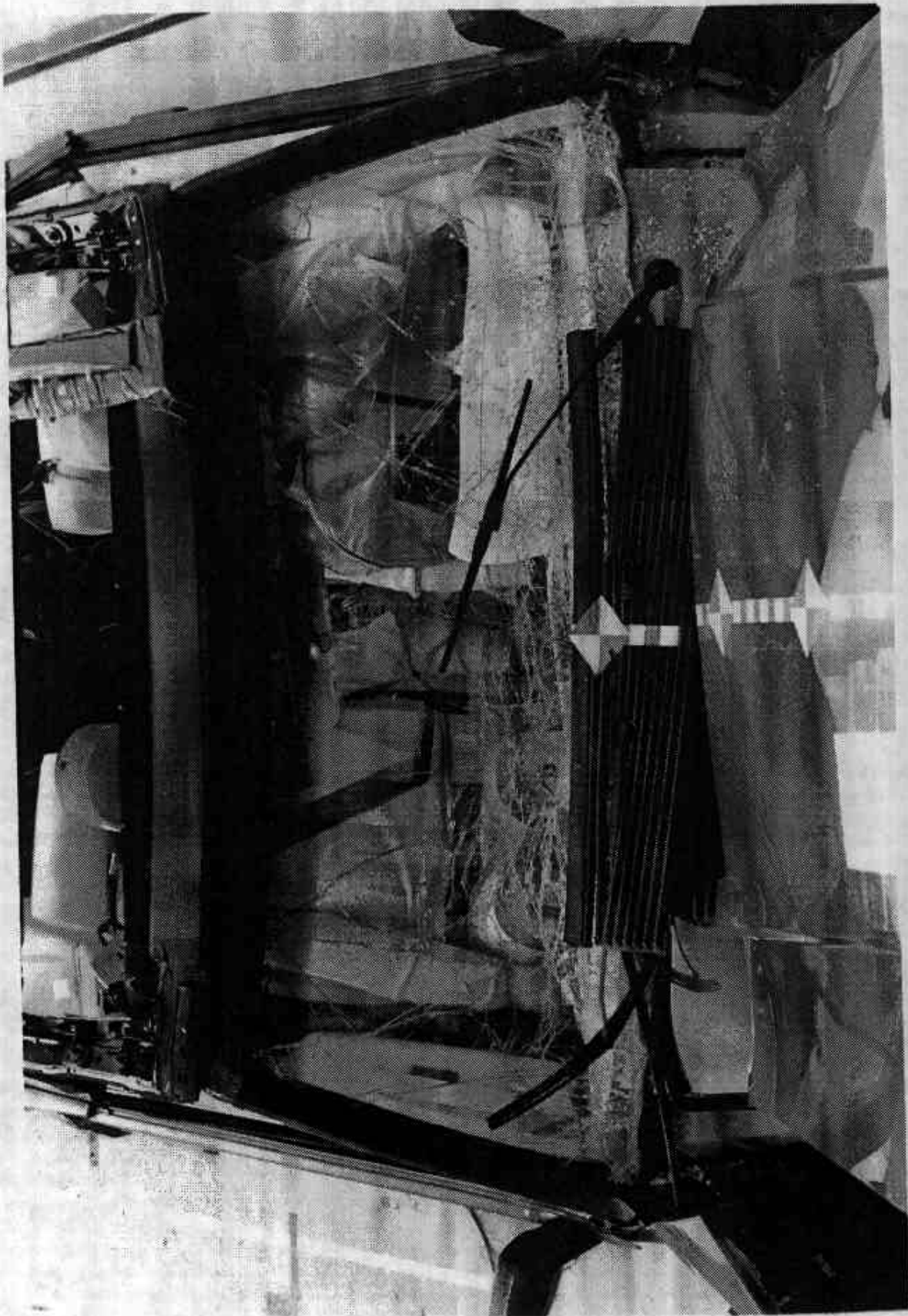
POSTTEST LEFT REAR 3/4 VIEW



PRETEST WINDSHIELD VIEW

A-11

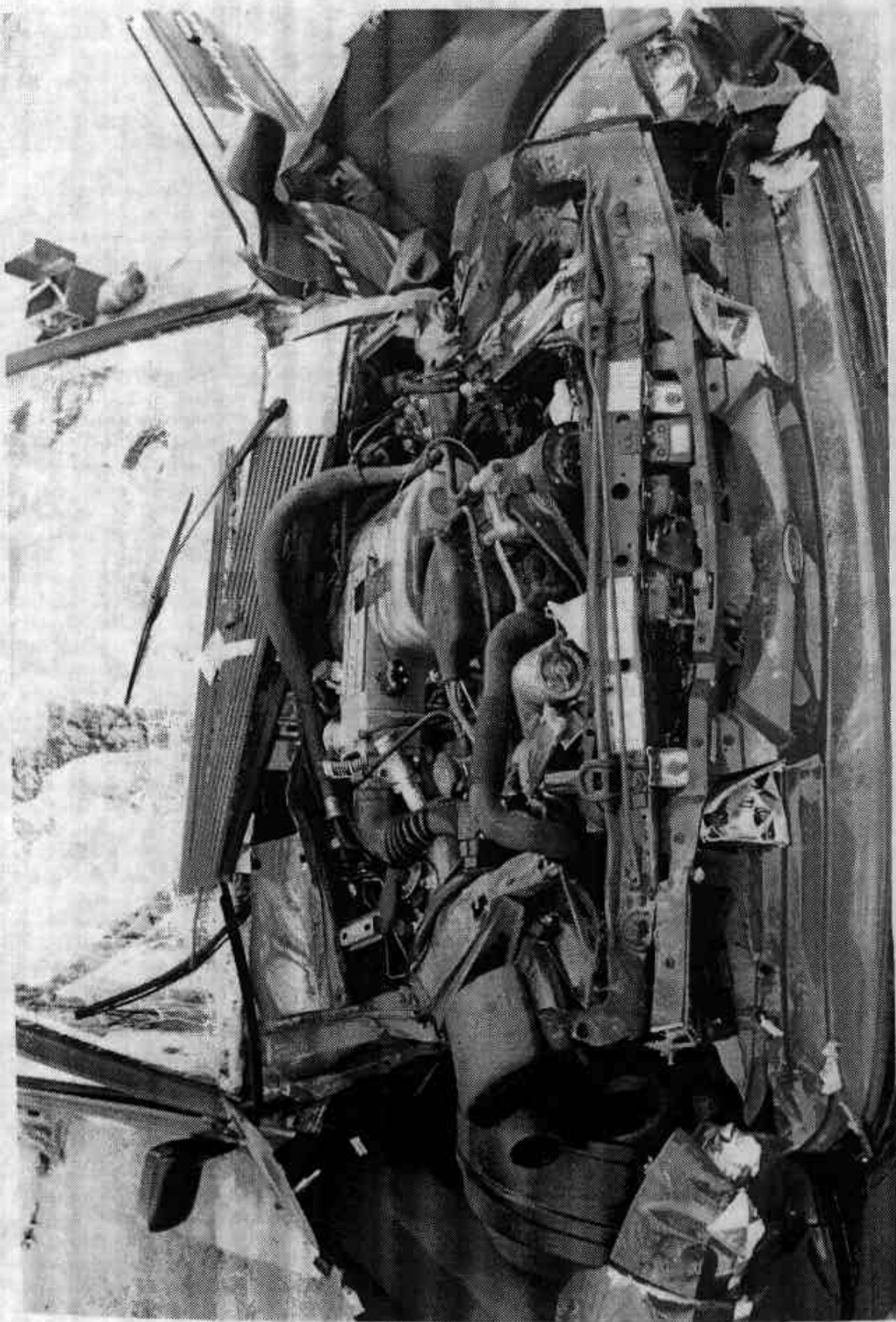
MSE-90-R9092-N02



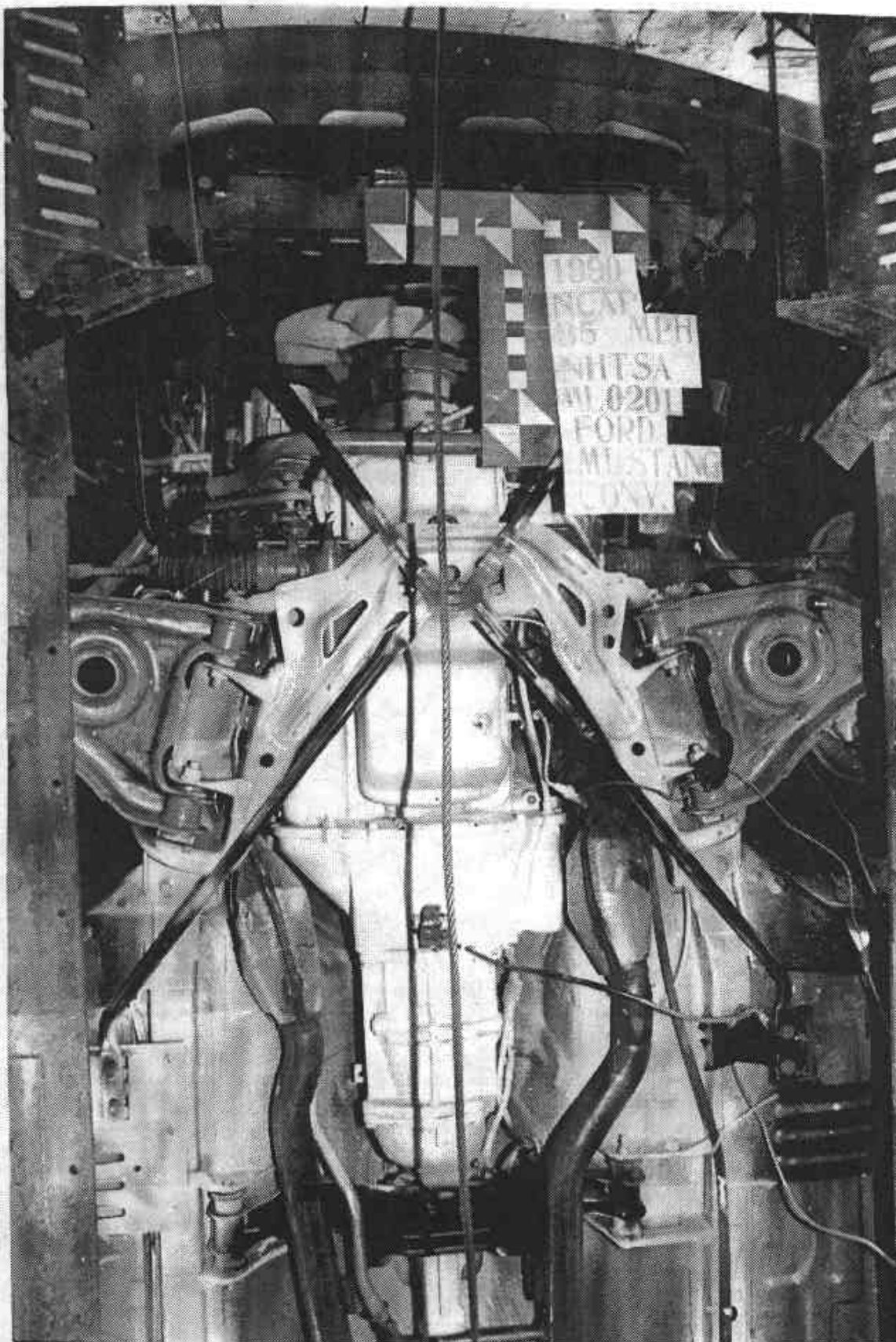
POSTTEST WINDSHIELD VIEW



PRETEST ENGINE COMPARTMENT VIEW



POSTTEST ENGINE COMPARTMENT VIEW



PRETEST FRONT UNDERBODY VIEW

A-15

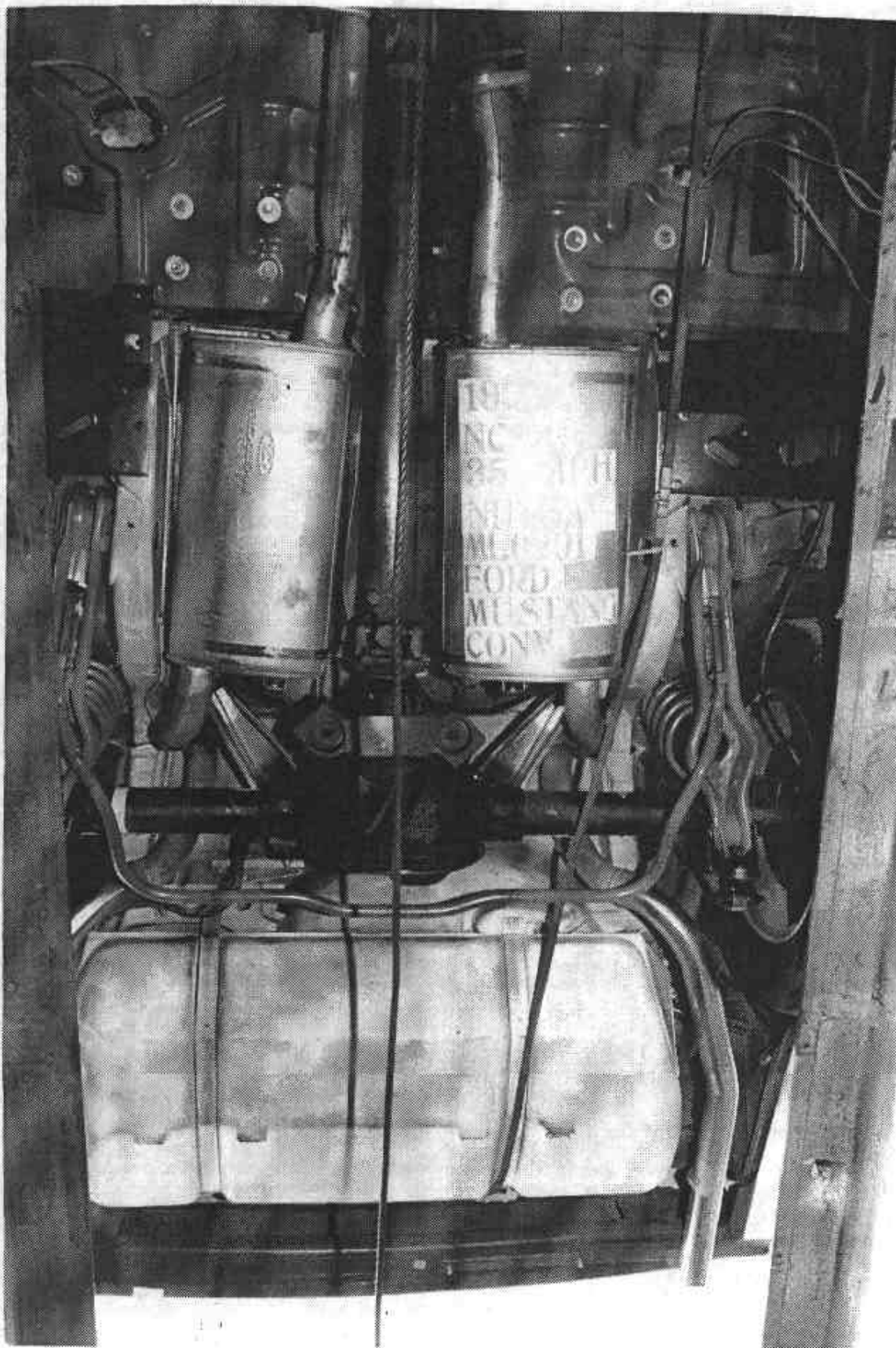
MSE-90-R9092-N02



POSTTEST FRONT UNDERBODY VIEW

A-16

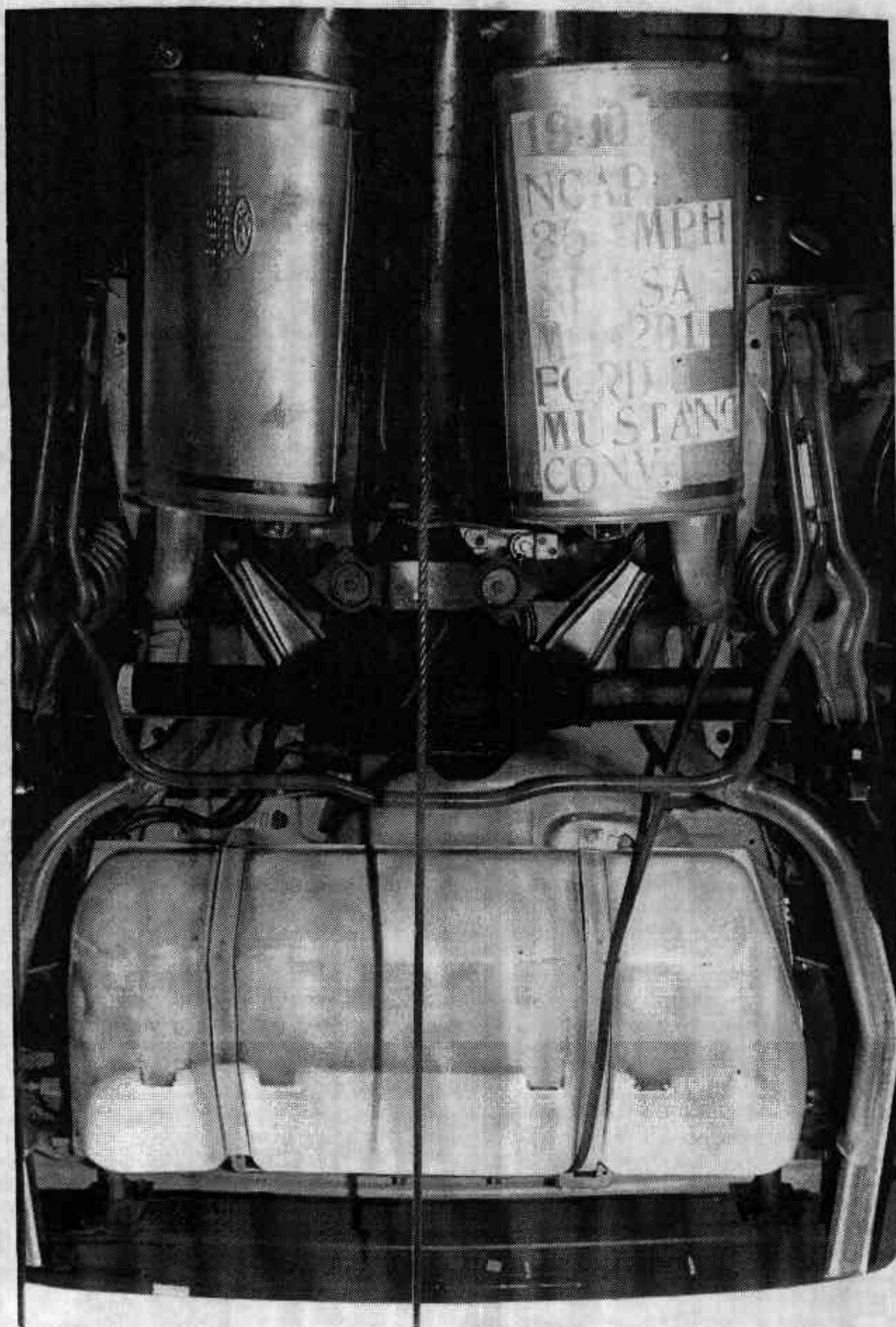
MSE-90-R9092-N02



PRETEST REAR UNDERBODY VIEW

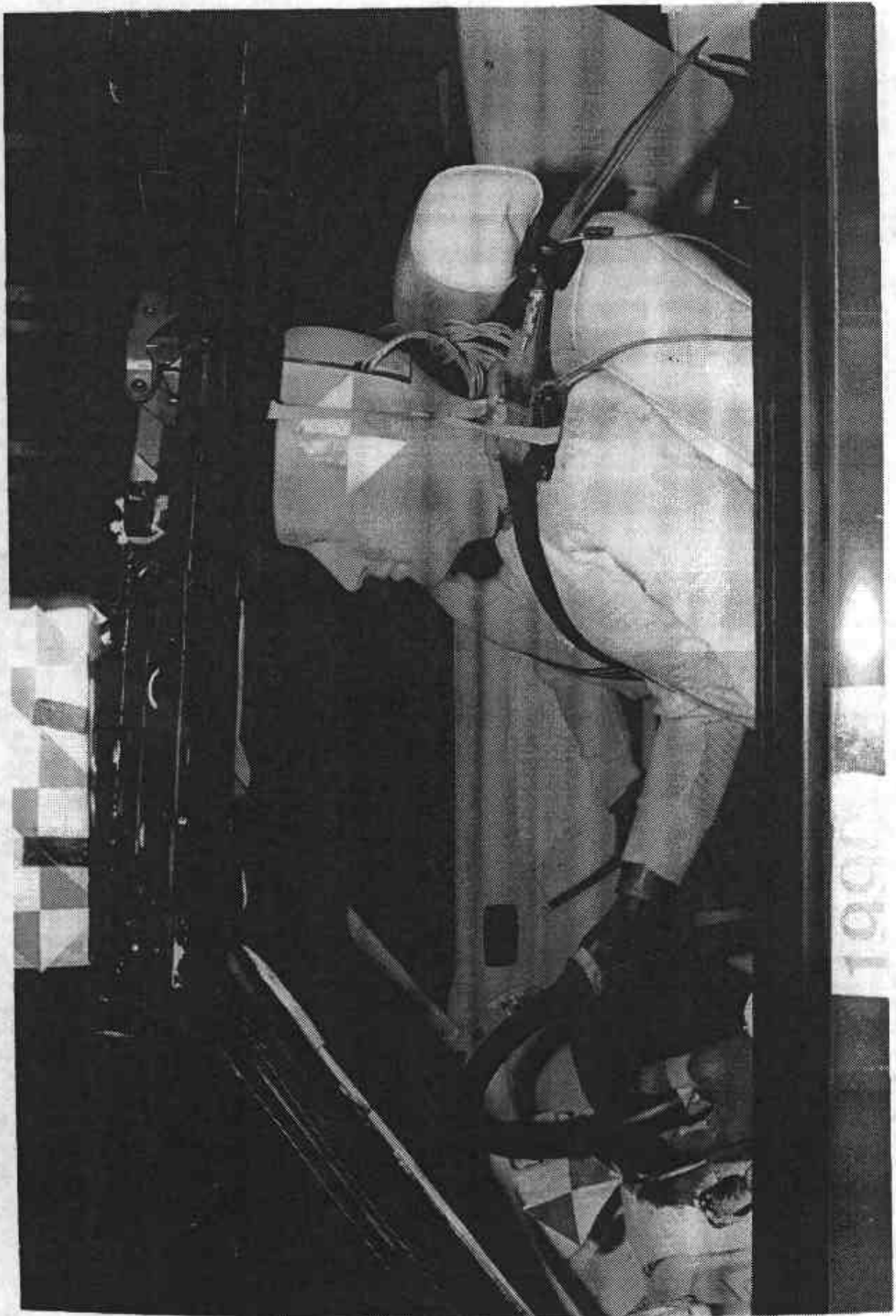
A-17

MSE-90-R9092-N02

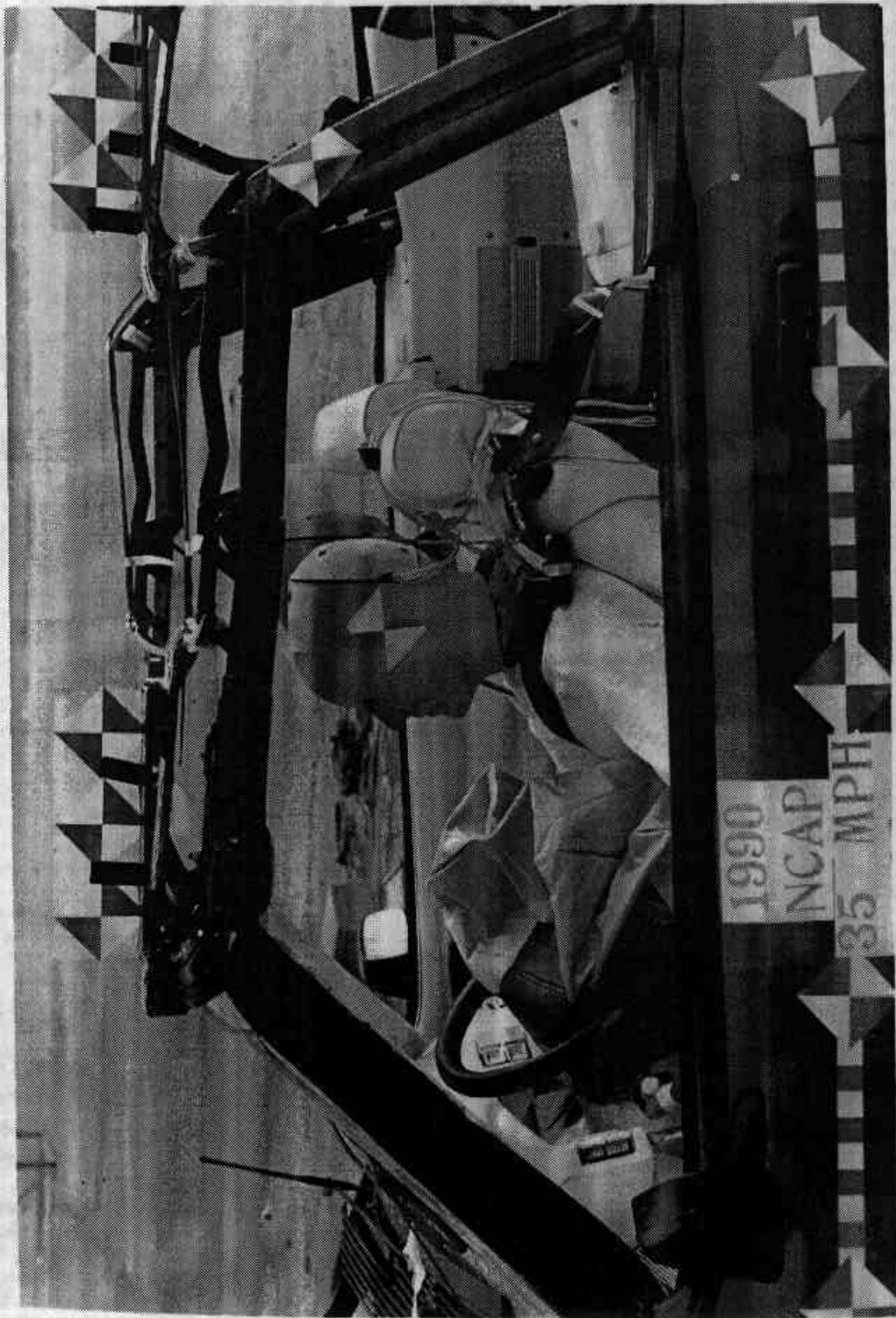


POSTTEST REAR UNDERBODY VIEW
A-18

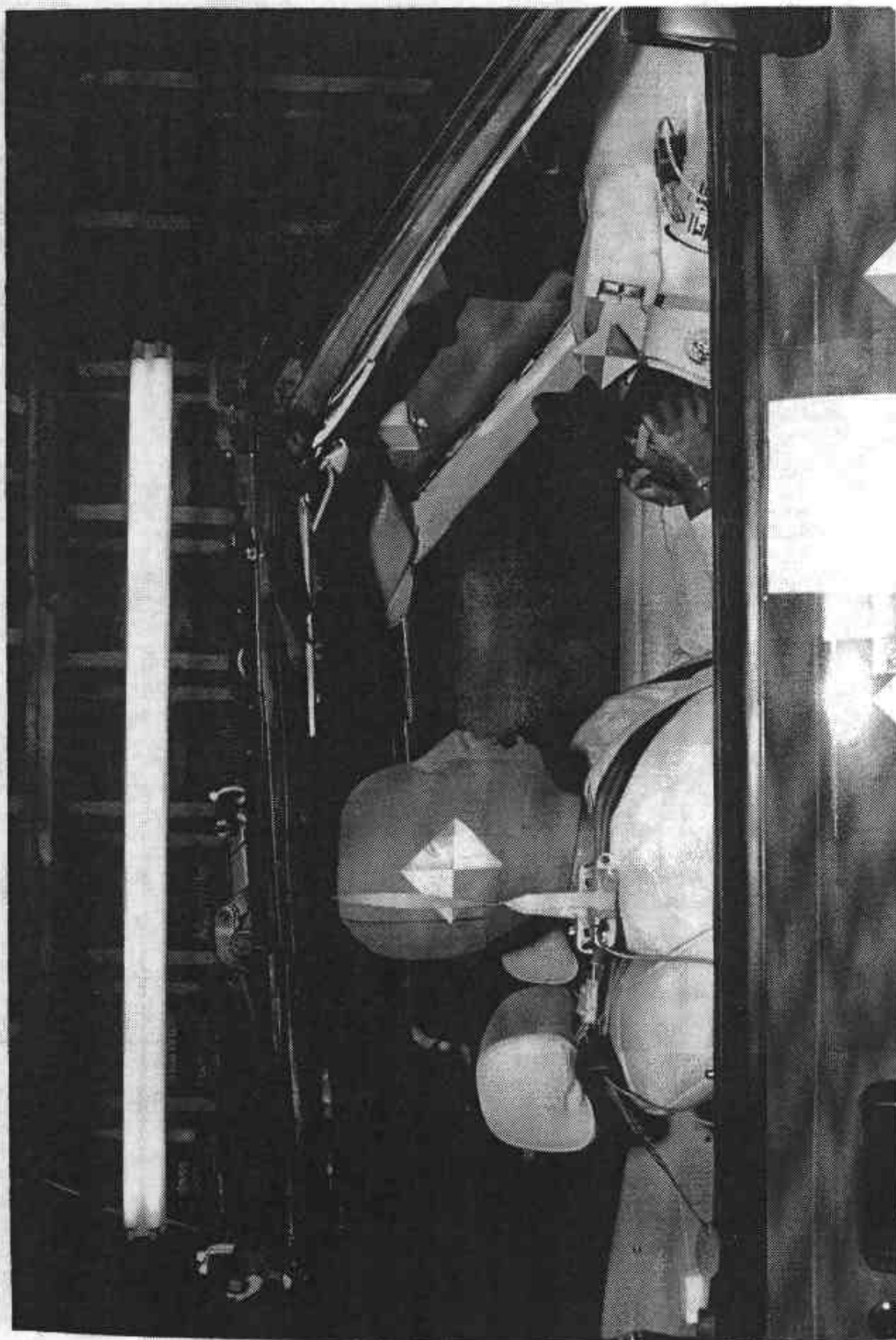
MSE-90-R9092-N02



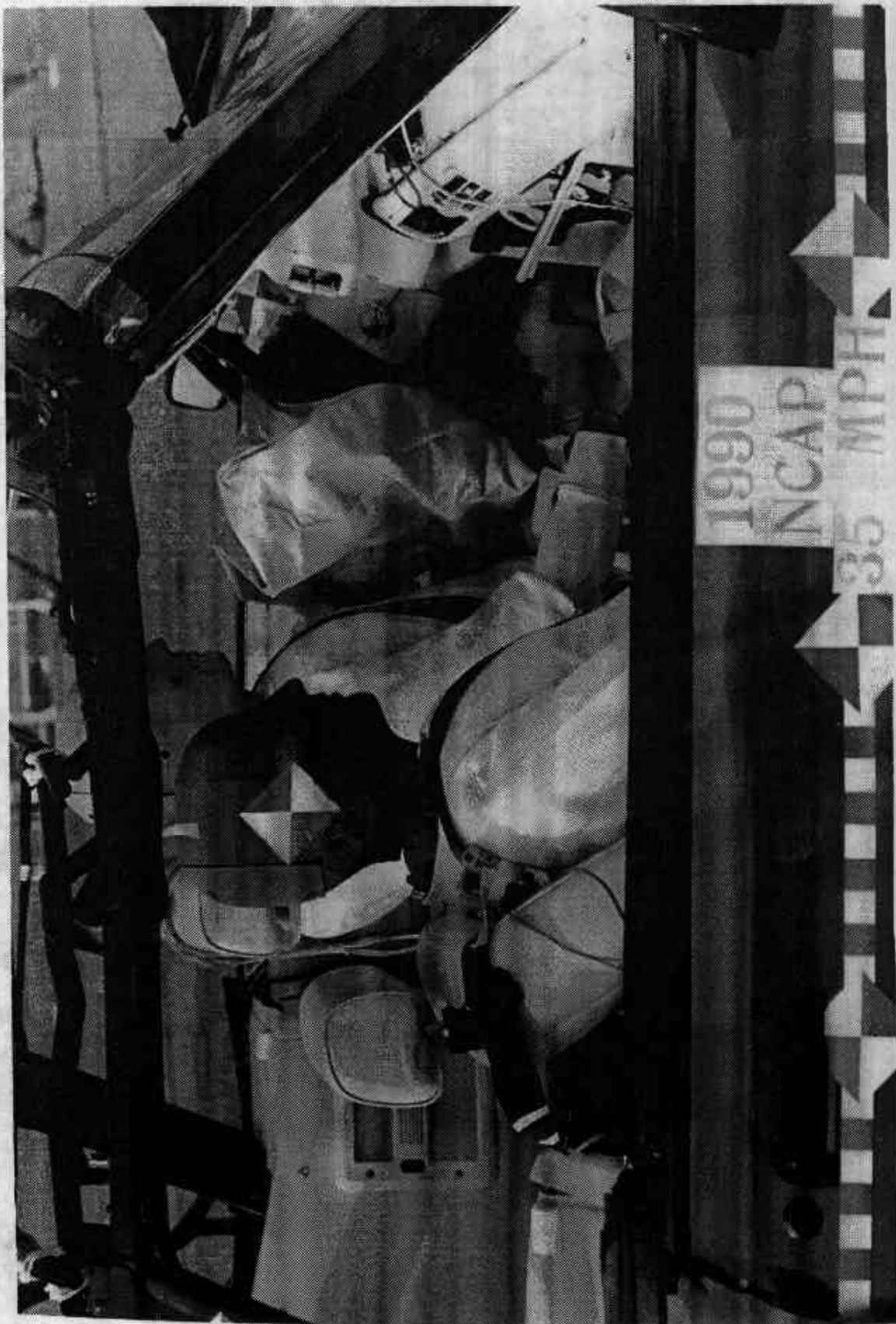
PRETEST DRIVER DUMMY POSITION VIEW



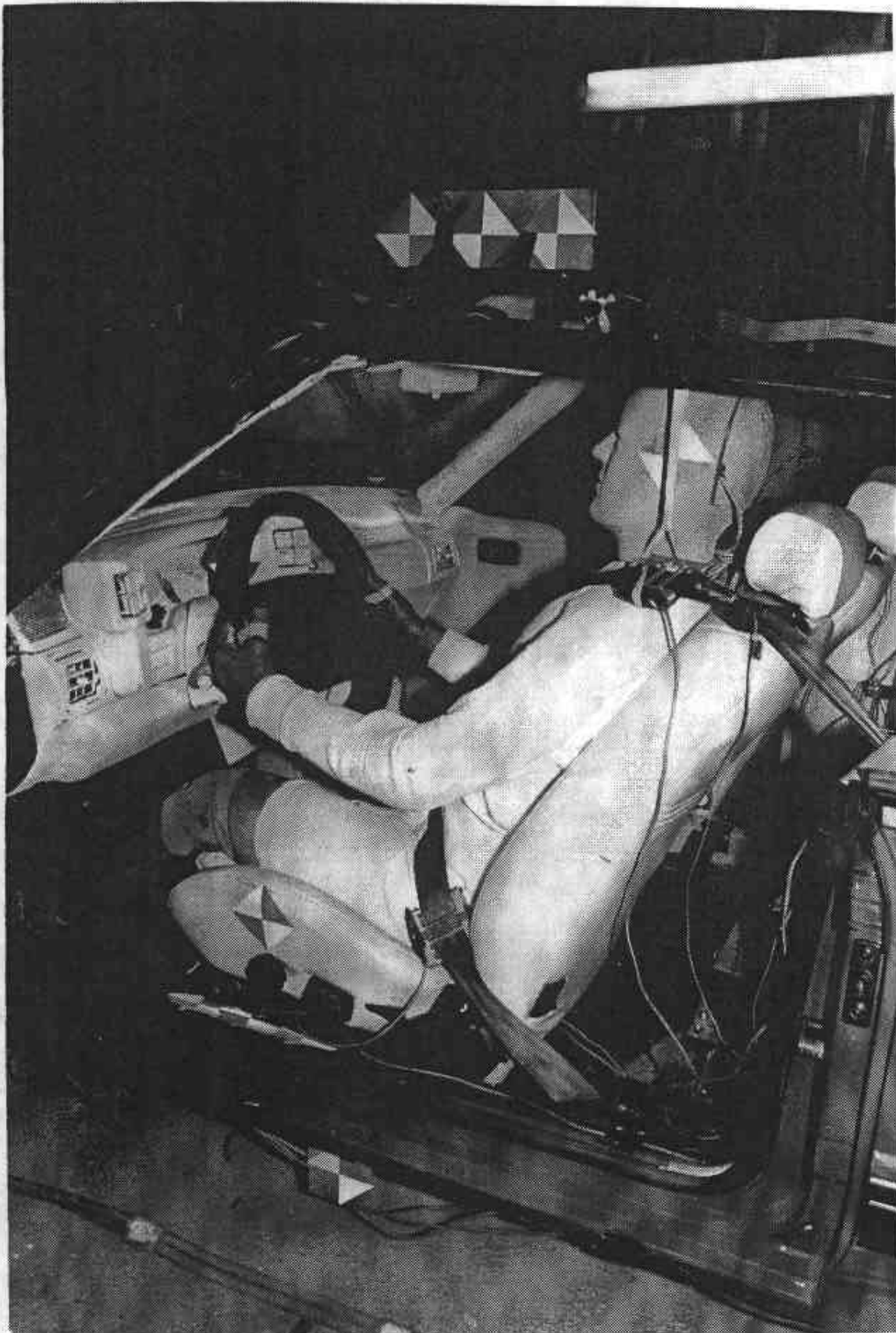
POSTTEST DRIVER DUMMY POSITION VIEW



PRETEST PASSENGER DUMMY POSITION VIEW



POSTTEST PASSENGER DUMMY POSITION VIEW



PRETEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (Door Open)

A-23

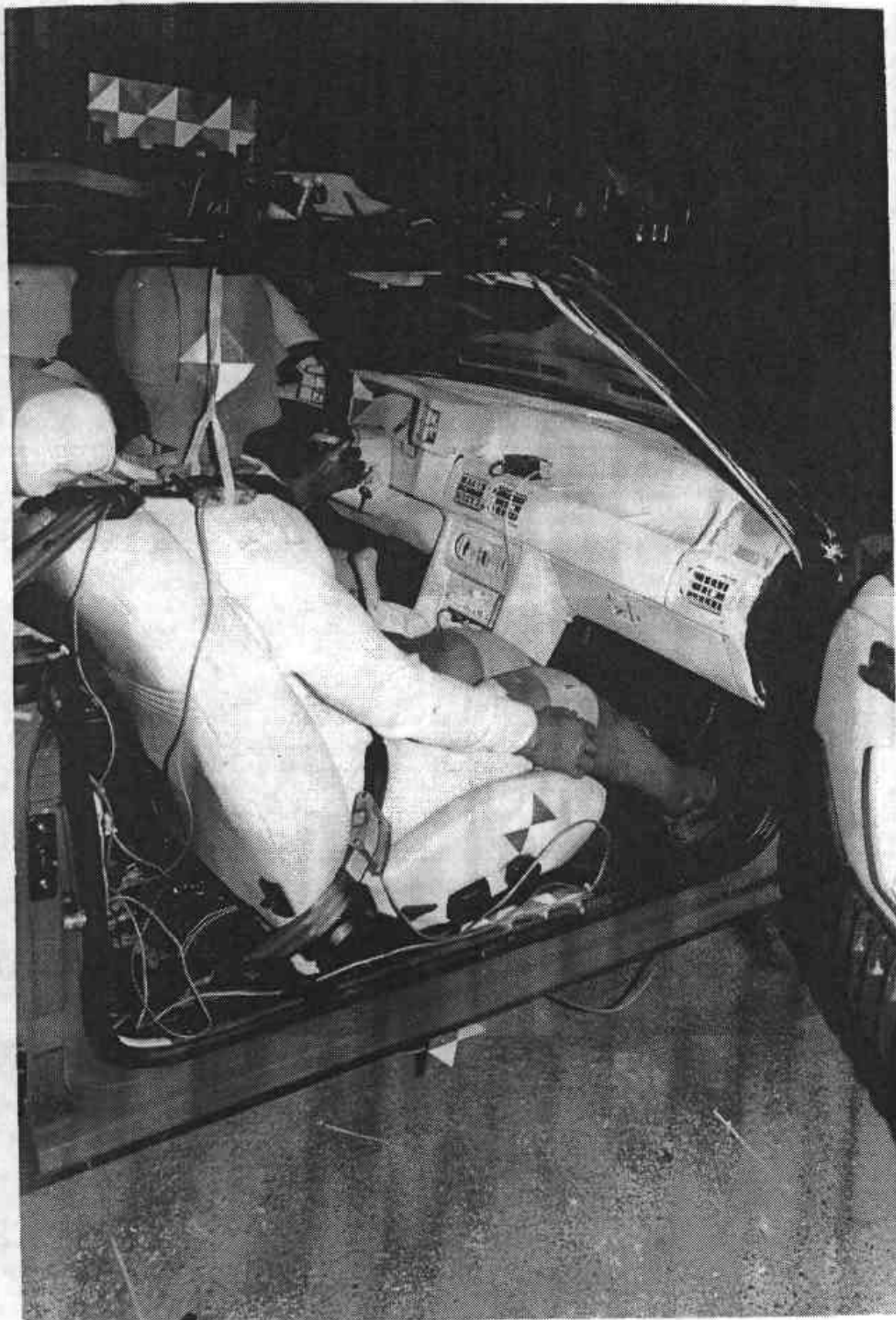
MSE-90-R9092-N02



POSTTEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (Door Open)

A-24

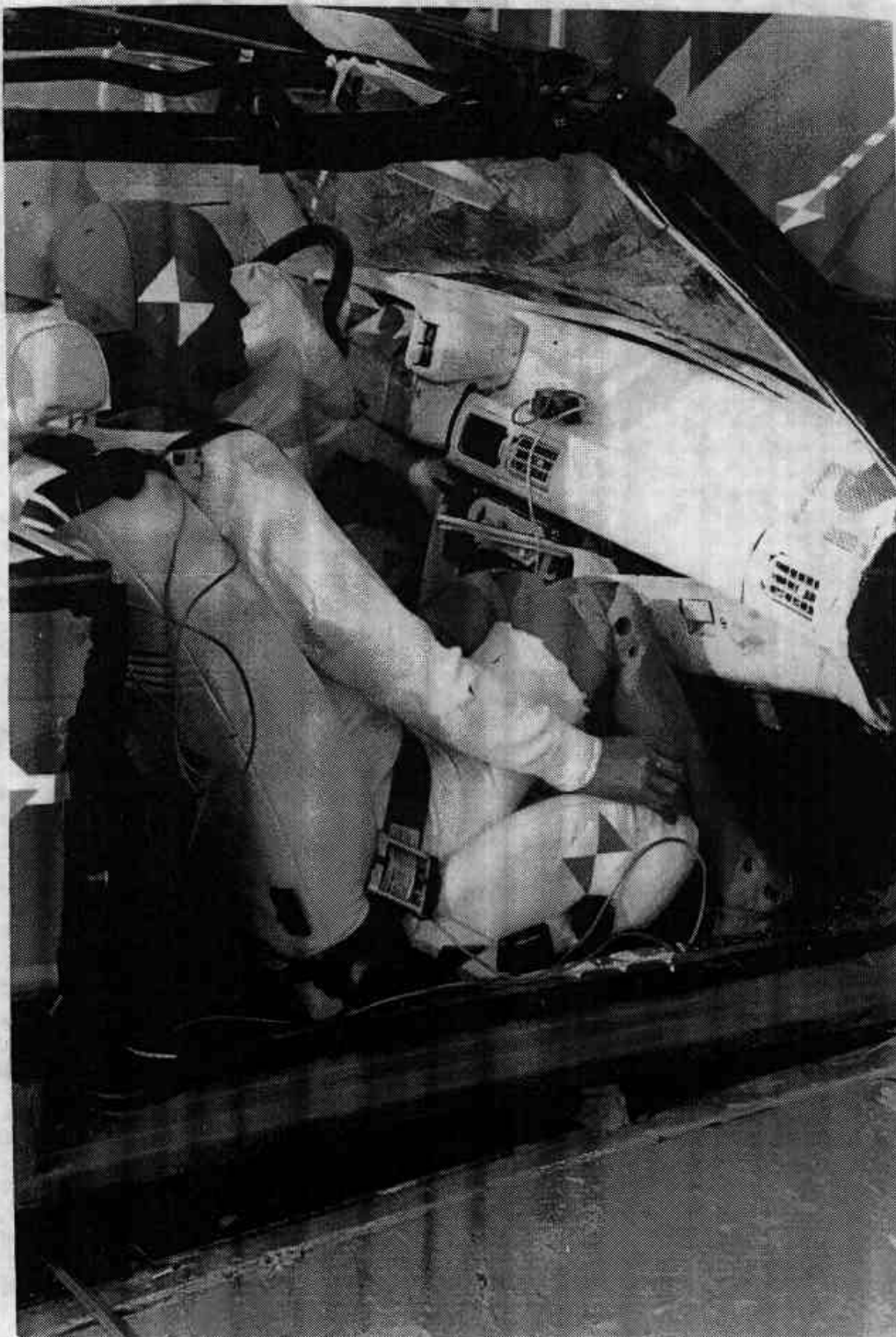
MSE-90-R9092-N02



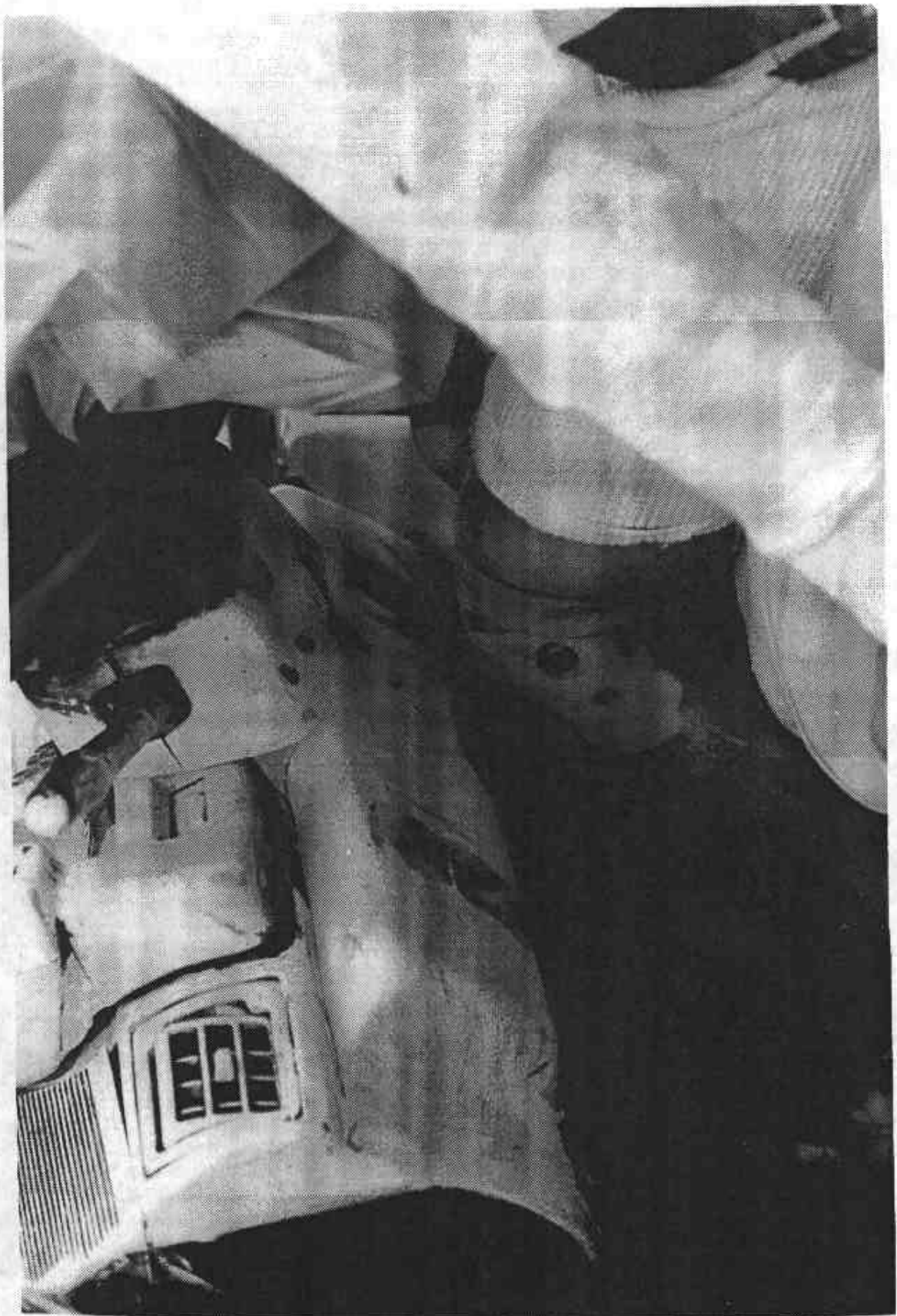
PRETEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (Door Open)

A-25

MSE-90-R9092-N02



POSTTEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (Door Open)
A-26 MSE-90-R9092-N02



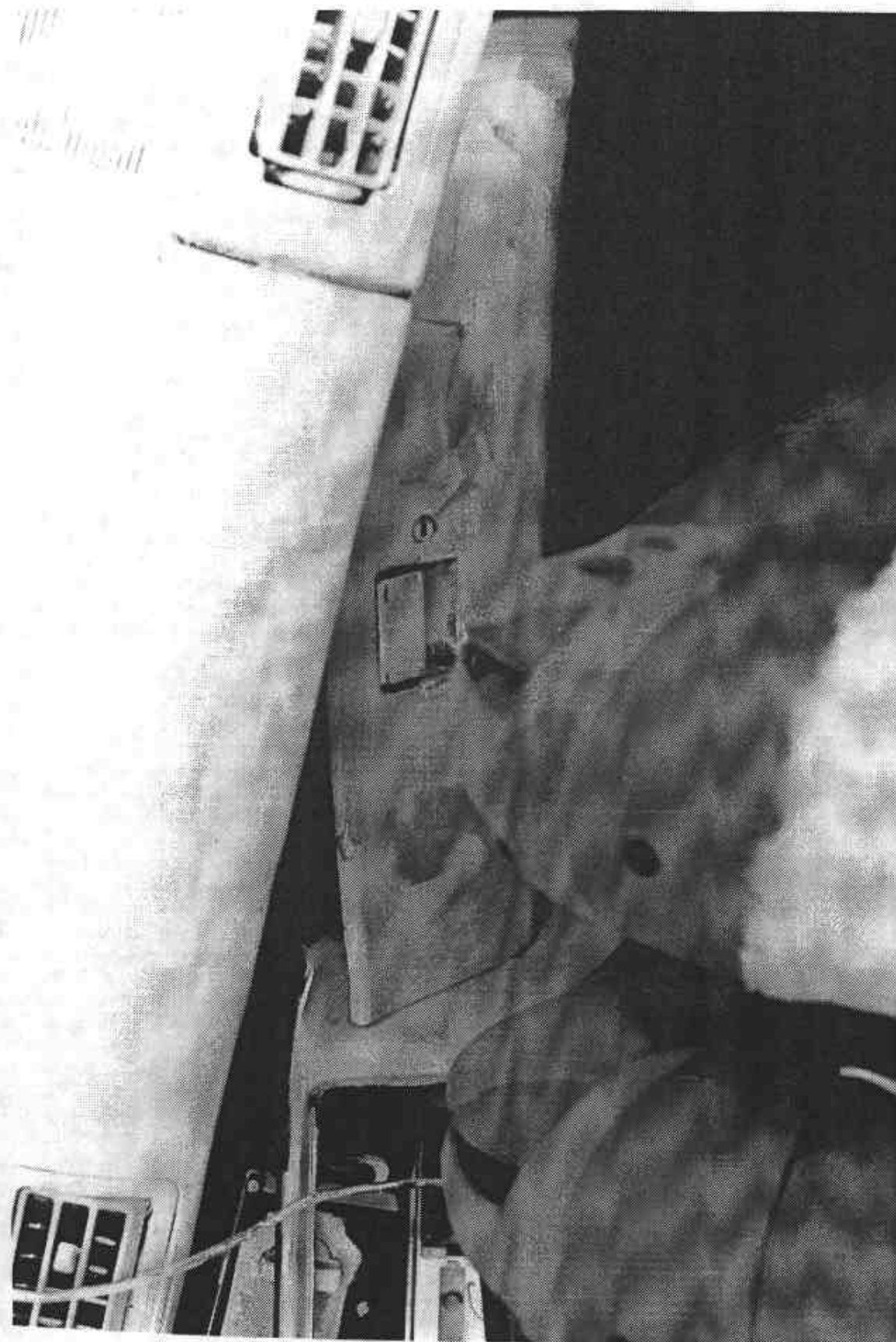
POSTTEST DRIVER DUMMY (ATD) HEAD AND KNEE CONTACT AREA



POSTTEST DRIVER DUMMY (ATD) AIR BAG DEPLOYMENT

A-28

MSE-90-R9092-N02



POSTTEST PASSENGER DUMMY (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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General Test Information

VERSNO: V2 TGID: 1
TITLE: 1990 35MPH NCAP FRONTAL BARRIER IMPACT
TSTOBJ: ACQUIRE NCAP DATA USING TWO INSTR. DUMMIES AND LOAD CELL BARRIER
TSTDAT: 01/MAR/90 TSTPRF: MSE CONNO: DTNH22-87-D-02009
TSTREF: NCAP80 TSTTYP: NCA TSTCFN: VTB
TKSURF: ASH TKCOND: DRY TEMP: 74 RECTYP: FMT
LINK: UMB CLSSPD: 34.9 IMPANG: 0 OFFSET: 0.0
IMPPNT: 9999.9 MEASUR: ENG TOTCRV: 65
TSTCOM: NO COMMENTS

Vehicle Information

VGID: 2 VEHNO: 1 MAKE: 02 MODEL: 05 YEAR: 90 BODY: CV
 VIN: 1FACP44EXLF115346 ENGINE: V8IF ENGDISP: 5.0 LITERS TRANSM: MR
 VENTWT: 3865 WHLBAS: 100.2 VEHLN: 179.0 VEHWID: 69.5
 VEHCG: 43.0 STRSEP: NA COLMEC: CON MODIND: P
 MODISC: UNMODIFIED

BX

1: 179.0
 2: 157.5
 3: 127.5
 4: 114.7
 5: 114.7
 6: 114.1
 7: 114.0
 8: 64.2
 9: 64.1
 10: 64.1
 11: 64.0
 12: 113.3
 13: 113.2
 14: 127.0
 15: 127.8
 16: 97.2
 17: 16.0
 18: 16.0
 19: 171.4
 20: 171.5
 21: 27.0

VEHSPD: 34.9 CRBANG: 0 PDOF: 0 BMPENG: NA
 SILENG: NA APLENG: NA

DPD

1: 17.6
 2: 19.5
 3: 19.1
 4: 19.0
 5: 19.6
 6: 17.5

VDI: 12FCAW9 LENCNT: 69.5 DAMDST: 0.0 CRHDST: 19.6

AX

1: 160.0
 2: 147.3
 3: 122.0
 4: 115.7
 5: 115.0
 6: 113.8
 7: 113.2
 8: 65.0
 9: 64.1
 10: 64.0
 11: 63.2
 12: 113.3
 13: 113.0
 14: 124.3
 15: 126.0
 16: 97.2
 17: 15.8
 18: 14.5
 19: 154.0
 20: 152.4
 21: 27.0

CARANG: 999 VEHOR: 999
 VEHCOR:

Barrier Information

Barrier ID: 3

BARRIG: R

BARSHIP: LCB

BARANG: 0

BARDIA: 999.9

BARCOM: 36 50KLB LOAD CELLS ARRANGED IN A 9 WIDE BY 4 HIGH MATRIX.

Occupant Information

Occupant Group ID: 4 VEHNO: 1
OCCLOC: 01 OCCTYP: P5 OCCAGE: 99 OCCSEX: M OCCHT: 999 OCCWT: 999
MTHCAL: P5 DUMSIZ: 50
DUMMAN: MFG: HUMANOID SYSTEMS, S/N 464
DUMMOD: UNMODIFIED
DUMDSC: NO COMMENTS
HM: 16.2 HW: 19.5 HR: 5.0 HS: 8.7 CD: 22.0 CS: 12.7 AD: 4.0 HD: 6.4
KD: 4.7 HB:999.9 NB:999.9 CB:999.9 KB:999.9
RESTR1: 3PT RESTR2: ABG
REXTXT: NO COMMENTS
SEPOSN: CN AIRDEP: DP
CNTRH1: NO CNTRH2: NO CNTRC1: NO CNTRC2: NO CNTRL1: DP CNTRL2: NO
HIC: 651. T1: 58.000 T2: 94.000
CLIP3M: 41.7 LFEM: 1353. RFEM: 1707. CSI: 408. LBELT: 705. SBELT: 1542.
OCCCOM:

Occupant Information

Occupant Group ID: 4 VEHNO: 1
OCCLOC: 02 OCCTYP: P5 OCCAGE: 99 OCCSEX: M OCCHT: 999 OCCWT: 999
MTHCAL: P5 DUMSIZ: 50
DUMMAN: MFG: HUMANOID SYSTEMS, S/N 467
DUMMOD: UNMODIFIED
DUMDSC: NO COMMENTS
HH: 17.6 HW: 21.5 HR: 6.6 HS: 7.5 CD: 24.0 CS:999.9 AD: 3.0 HD: 6.6
KD: 7.3 HB:999.9 NB:999.9 CB:999.9 KB:999.9
RESTR1: 3PT RESTR2: NON
REXTXT: NO COMMENTS
SEPOSN: CN AIRDEP: NA
CNTRH1: NO CNTRH2: NO CNTRC1: NO CNTRC2: NO CNTRL1: DP CNTRL2: NO
HIC: 438. T1: 75.600 T2: 111.600
CLIP3M: 50.4 LFEM: 1063. RFEM: 408. CSI: 427. LBELT: 1718. SBELT: 1963.
OCCCOM:

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: AT34			
CALDAT: 17/JAN/90	INSRAT: 200	CHLMAX: 29	INIVEL: 34.9
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

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: BB91H			
CALDAT: 17/JAN/90	INSRAT: 200	CHLMAX: 6	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

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: BF82H			
CALDAT: 17/JAN/90	INSRAT: 200	CHLMAX: 19	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

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: BJ28H			
CALDAT: 17/JAN/90	INSRAT: 200	CHLMAX: 22	INIVEL: 34.9
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

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: BT28H			
CALDAT: 17/JAN/90	INSRAT: 200	CHLMAX: 6	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

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: AE29	
CALDAT: 17/JAN/90	INSRAT: 200	CHLMAX: 9	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 007	
SENTYP: LC	SENLOC: 01	SENATT: FMRL	
AXIS: XL	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: GSE INC,	MODEL: 2430,	S/N: 634	
CALDAT: 16/JAN/90	INSRAT: 3000	CHLMAX: 45	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 008	
SENTYP: LC	SENLOC: 01	SENATT: FMRR	
AXIS: XL	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: GSE INC,	MODEL: 2430,	S/N: 735	
CALDAT: 16/JAN/90	INSRAT: 3000	CHLMAX: 57	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 009	
SENTYP: AC	SENLOC: 02	SENATT: HDCG	
AXIS: YL	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: ENDEVCO,	MODEL: 7264-200,	S/N: BJ61H	
CALDAT: 17/JAN/90	INSRAT: 200	CHLMAX: 16	INIVEL: 34.9
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

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: 17/JAN/90	INSRAT: 200	CHLMAX: 7	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

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: 17/JAN/90	INSRAT: 200	CHLMAX: 29	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

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: 17/JAN/90	INSRAT: 200	CHLMAX: 28	INIVEL: 34.9
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

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: 17/JAN/90	INSRAT: 200	CHLMAX: 17	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

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: 17/JAN/90	INSRAT: 200	CHLMAX: 11	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 015	
SENTYP: LC	SENLOC: 02	SENATT: FMRL	
AXIS: XL	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: GSE INC, MODEL: 2430, S/N: 550			
CALDAT: 16/JAN/90	INSRAT: 3000	CHLMAX: 36	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 016	
SENTYP: LC	SENLOC: 02	SENATT: FMRR	
AXIS: XL	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: GSE INC,	MODEL: 2430,	S/N: 559	
CALDAT: 16/JAN/90	INSRAT: 3000	CHLMAX: 15	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 017	
SENTYP: LC	SENLOC: 01	SENATT: LP80	
AXIS: OT	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: LEBOW,	MODEL: 3371,	S/N: 333	
CALDAT: 16/JAN/90	INSRAT: 3500	CHLMAX: 20	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 018	
SENTYP: LC	SENLOC: 01	SENATT: SHBT	
AXIS: OT	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: LEBOW,	MODEL: 3371,	S/N: 327	
CALDAT: 16/JAN/90	INSRAT: 3500	CHLMAX: 44	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 019	
SENTYP: LC	SENLOC: 02	SENATT: LP80	
AXIS: OT	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: LEBOW,	MODEL: 3371,	S/N: 330	
CALDAT: 16/JAN/90	INSRAT: 3500	CHLMAX: 50	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 020	
SENTYP: LC	SENLOC: 02	SENATT: SHBT	
AXIS: OT	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: LEBOW,	MODEL: 3371,	S/N: 308	
CALDAT: 16/JAN/90	INSRAT: 3500	CHLMAX: 57	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 021
 SENTYP: DS SENLOC: 01 SENATT: SH8T
 AXIS: OT UNITS: INS PREFIL: 1650
 INSMAN: MFG: ETI, MODEL: LCP12A-12, S/N: 8803-1
 CALDAT: 01/MAR/90 INSRAT: 30 CHLMAX: 8 INIVEL: 0.0
 NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
 INSCOM: SEAT BELT ELONGATION, UNITS ARE INCHES/IN. (PERCENTAGE BELT STRETCH)

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 022
 SENTYP: DS SENLOC: 02 SENATT: SH8T
 AXIS: OT UNITS: OTH PREFIL: 1650
 INSMAN: MFG: ETI, MODEL: LCP12A-12, S/N: 8712-1
 CALDAT: 01/MAR/90 INSRAT: 30 CHLMAX: 9 INIVEL: 0.0
 NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
 INSCOM: SEAT BELT ELONGATION, UNITS ARE INCHES/IN. (PERCENTAGE BELT STRETCH)

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 023
 SENTYP: AC SENLOC: NA SENATT: SULF
 AXIS: XG UNITS: G'S PREFIL: 1650
 INSMAN: MFG: SETRA, MODEL: 111, S/N: 1103
 CALDAT: 17/JAN/90 INSRAT: 250 CHLMAX: 33 INIVEL: 34.9
 NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
 INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 024
 SENTYP: AC SENLOC: NA SENATT: SURF
 AXIS: XG UNITS: G'S PREFIL: 1650
 INSMAN: MFG: SETRA, MODEL: 111, S/N: 1124
 CALDAT: 17/JAN/90 INSRAT: 250 CHLMAX: 87 INIVEL: 34.9
 NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
 INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 025
 SENTYP: AC SENLOC: NA SENATT: ENGM
 AXIS: XG UNITS: G'S PREFIL: 1650
 INSMAN: MFG: SETRA, MODEL: 1138, S/N: 1877
 CALDAT: 17/JAN/90 INSRAT: 250 CHLMAX: 146 INIVEL: 34.9
 NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
 INSCOM: TRANSDUCER WIRE SEVERED APPROX. T=89 MSEC.

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 026	
SENTYP: AC	SENLOC: NA	SENATT: ENGN	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: SETRA,	MODEL: 113B, S/N: 1878		
CALDAT: 17/JAN/90	INSRAT: 250	CHLMAX: 55	INIVEL: 34.9
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 027	
SENTYP: AC	SENLOC: NA	SENATT: DPLC	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: SETRA,	MODEL: 111, S/N: 1108		
CALDAT: 17/JAN/90	INSRAT: 250	CHLMAX: 114	INIVEL: 34.9
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 028	
SENTYP: AC	SENLOC: NA	SENATT: FLRR	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: SETRA,	MODEL: 111, S/N: 1105		
CALDAT: 17/JAN/90	INSRAT: 100	CHLMAX: 67	INIVEL: 34.9
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 029	
SENTYP: AC	SENLOC: NA	SENATT: FLRR	
AXIS: XG	UNITS: G'S	PREFIL: 1650	
INSMAN: MFG: SETRA,	MODEL: 111, S/N: 1123		
CALDAT: 17/JAN/90	INSRAT: 250	CHLMAX: 47	INIVEL: 34.9
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 030	
SENTYP: LC	SENLOC: NA	SENATT: LCA1	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE,	MODEL: 1220-FS, S/N: 19349		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 2	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 031	
SENTYP: LC	SENLOC: NA	SENATT: LCA2	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19324	
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 2	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 032	
SENTYP: LC	SENLOC: NA	SENATT: LCA3	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19283	
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 3	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 033	
SENTYP: LC	SENLOC: NA	SENATT: LCA4	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19263	
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 3	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 034	
SENTYP: LC	SENLOC: NA	SENATT: LCA5	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19265	
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 4	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 035	
SENTYP: LC	SENLOC: NA	SENATT: LCA6	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,		S/N: 19266	
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 3	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 036	
SENTYP: LC	SENLOC: NA	SENATT: LCA7	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19317		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 1	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 037	
SENTYP: LC	SENLOC: NA	SENATT: LCA8	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19270		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 4	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 038	
SENTYP: LC	SENLOC: NA	SENATT: LCA9	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19428		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 3	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 039	
SENTYP: LC	SENLOC: NA	SENATT: LCB1	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19273		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 2	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 040	
SENTYP: LC	SENLOC: NA	SENATT: LCB2	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19276		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 7	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 041	
SENTYP: LC	SENLOC: NA	SENATT: LCB3	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19258		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 45	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 042	
SENTYP: LC	SENLOC: NA	SENATT: LCB4	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19278		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 18	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 043	
SENTYP: LC	SENLOC: NA	SENATT: LCB5	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19279		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 19	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 044	
SENTYP: LC	SENLOC: NA	SENATT: LCB6	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19282		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 11	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 045	
SENTYP: LC	SENLOC: NA	SENATT: LCB7	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19262		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 65	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 046	
SENTYP: LC	SENLOC: NA	SENATT: LC88	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19285		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 11	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 047	
SENTYP: LC	SENLOC: NA	SENATT: LC89	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19286			
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 3	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 048	
SENTYP: LC	SENLOC: NA	SENATT: LCC1	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19287			
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 2	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 049	
SENTYP: LC	SENLOC: NA	SENATT: LCC2	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19288			
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 8	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 050	
SENTYP: LC	SENLOC: NA	SENATT: LCC3	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19289			
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 37	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 051	
SENTYP: LC	SENLOC: NA	SENATT: LCC4	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19291		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 25	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 052	
SENTYP: LC	SENLOC: NA	SENATT: LCC5	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19324		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 72	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 053	
SENTYP: LC	SENLOC: NA	SENATT: LCC6	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19313		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 48	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 054	
SENTYP: LC	SENLOC: NA	SENATT: LCC7	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19314		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 30	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 055	
SENTYP: LC	SENLOC: NA	SENATT: LCC8	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19315		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 11	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 056	
SENTYP: LC	SENLOC: NA	SENATT: LCC9	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19316		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 3	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 057	
SENTYP: LC	SENLOC: NA	SENATT: LCD1	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19460		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 2	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 058	
SENTYP: LC	SENLOC: NA	SENATT: LCD2	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19318		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 3	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 059	
SENTYP: LC	SENLOC: NA	SENATT: LCD3	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19322		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 6	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 060	
SENTYP: LC	SENLOC: NA	SENATT: LCD4	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS,	S/N: 19323		
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 4	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 061	
SENTYP: LC	SENLOC: NA	SENATT: LCD5	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 120-FS, S/N: 19260			
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 8	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 062	
SENTYP: LC	SENLOC: NA	SENATT: LCD6	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19325			
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 4	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

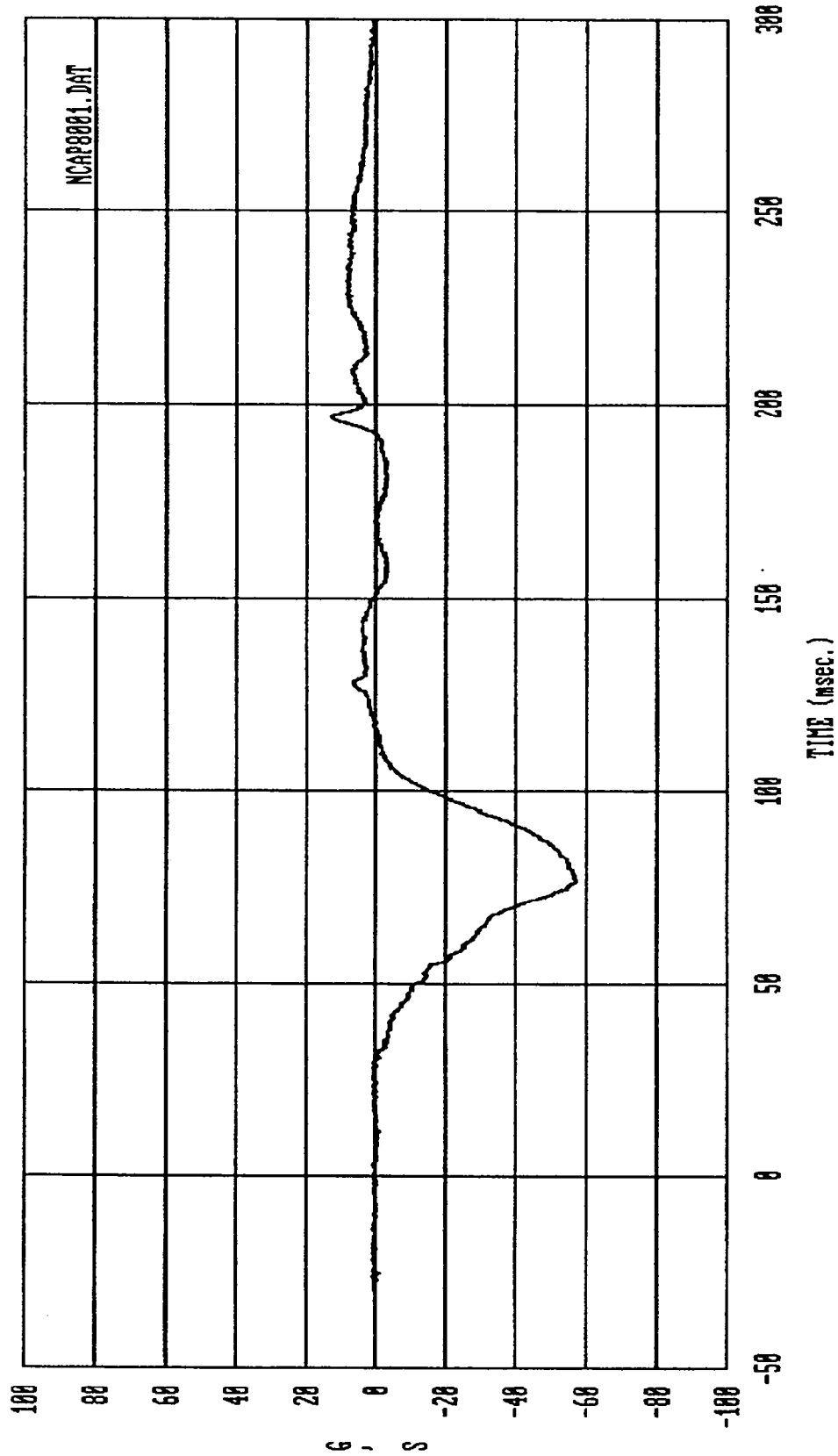
Inst. Group ID: 5	VEHNO: 0	CURNO: 063	
SENTYP: LC	SENLOC: NA	SENATT: LCD7	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19332			
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 3	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 064	
SENTYP: LC	SENLOC: NA	SENATT: LCD8	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19333			
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 5	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

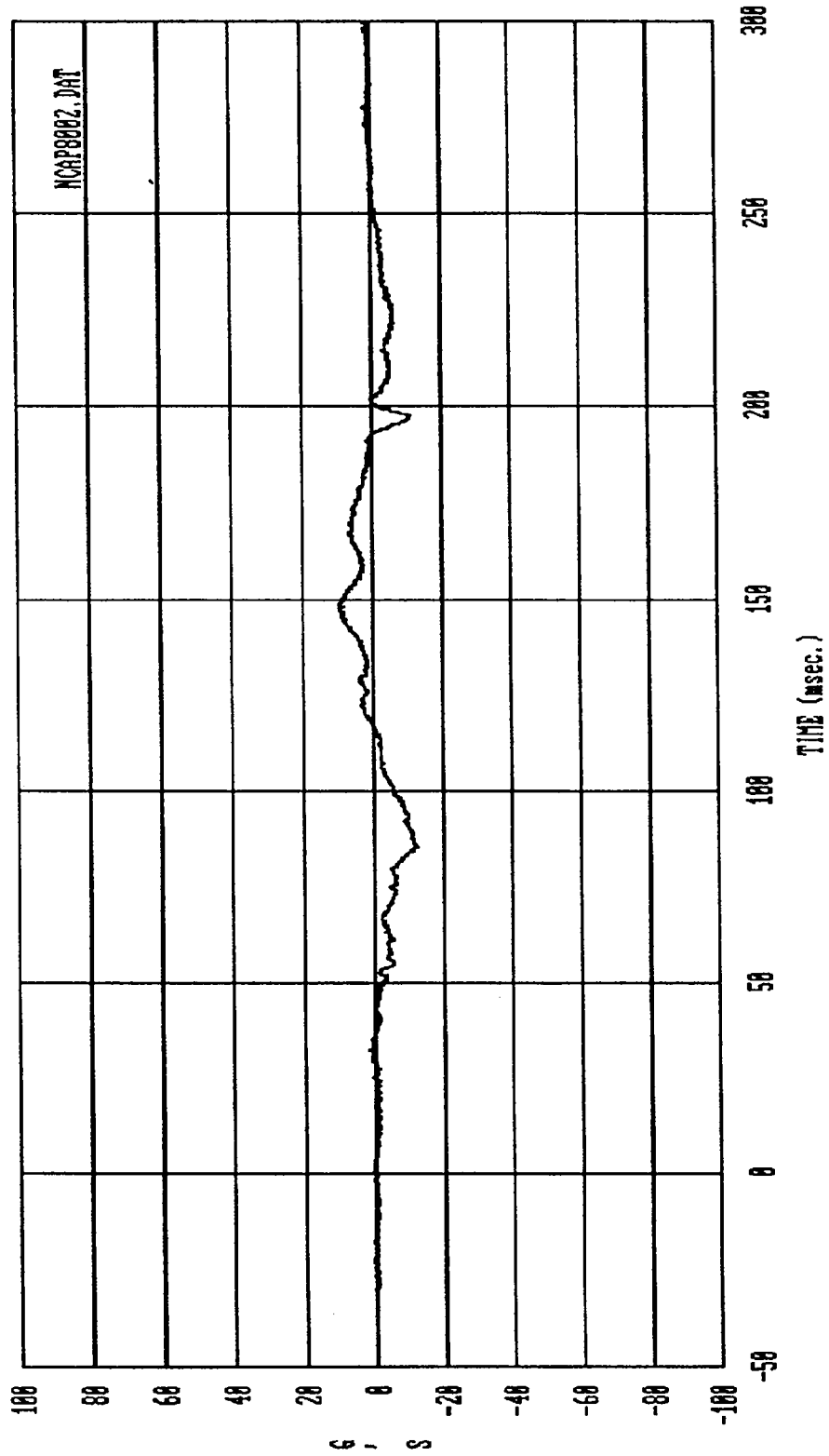
Instrumentation Information

Inst. Group ID: 5	VEHNO: 0	CURNO: 065	
SENTYP: LC	SENLOC: NA	SENATT: LCD9	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19466			
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 2	INIVEL: 0.0
NFP: -250	NLP: 2499	DELT: 120	DASTAT: AM
INSCOM:			

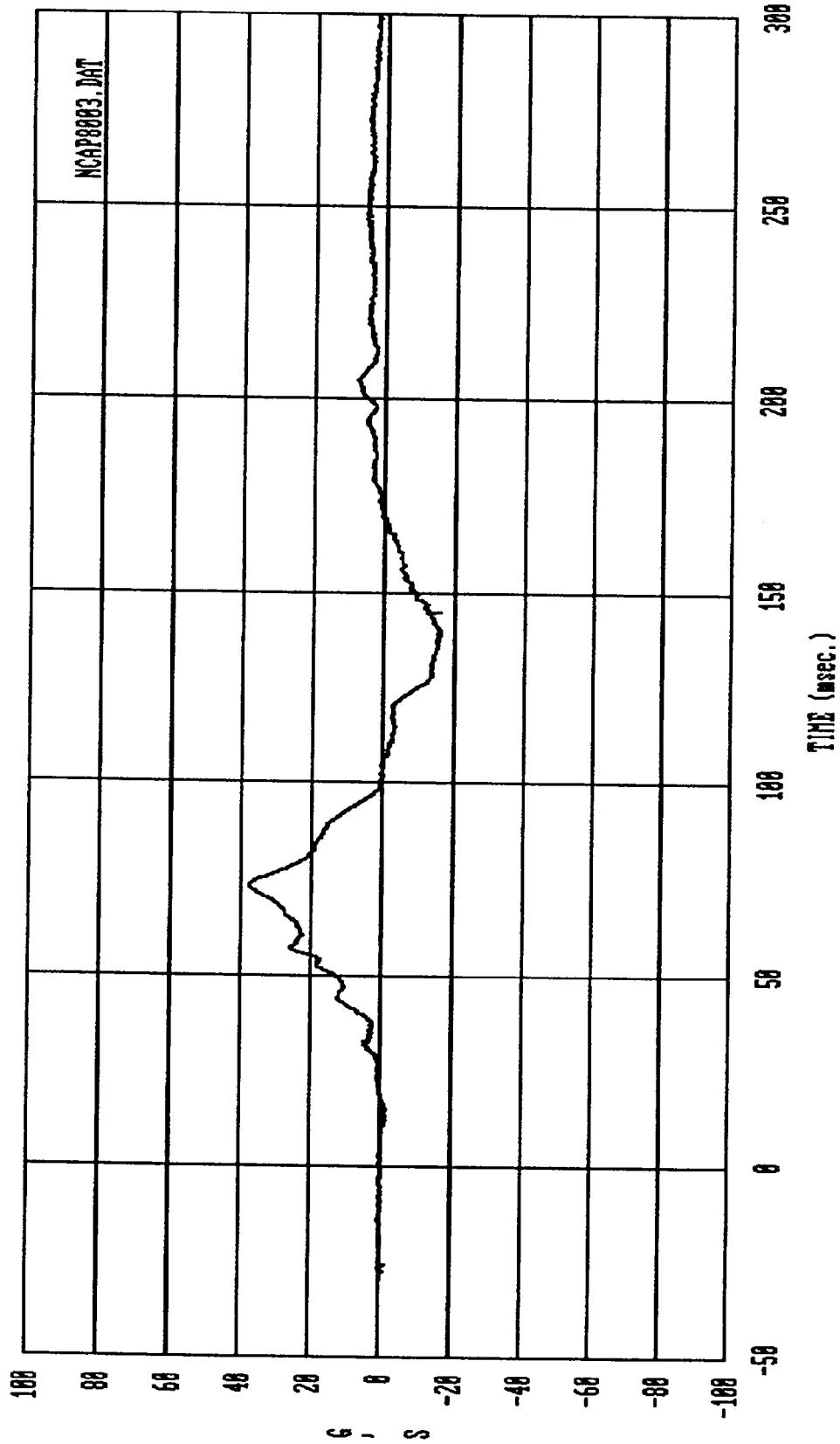


Curve: Driver Head acceleration --- X axis Filter: SAE CLASS 1000 Max = 13.092 Min = -57.415

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

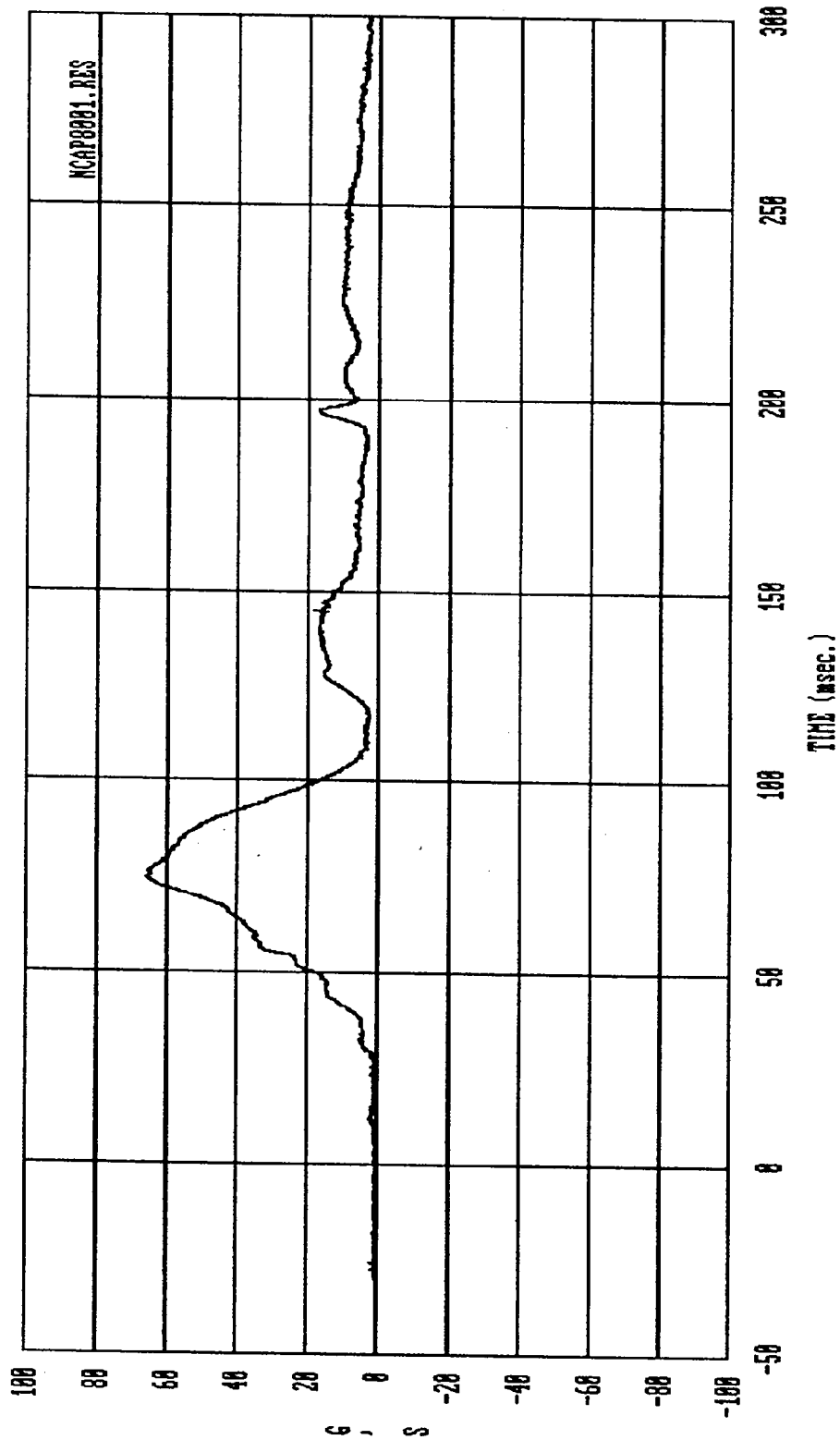


Curve: Driver Head acceleration - Y axis Filter: SAE CLASS 1800 Max = 9.6013 Min = -12.368
 MSE Date: 03/01/98 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.



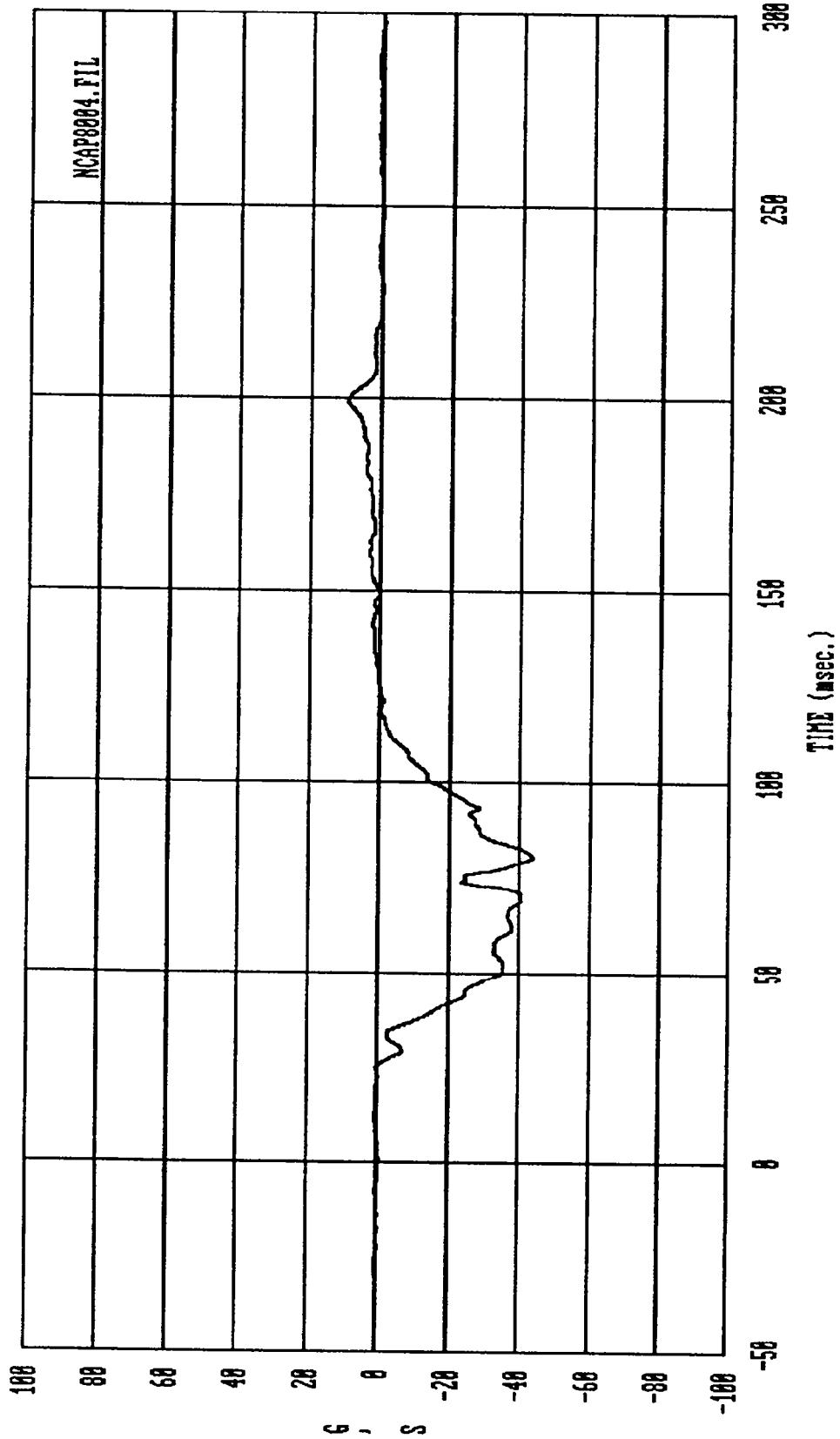
Curve: Driver Head acceleration -- Z axis Filter: SAE CLASS 1000 Max = 37.811 Min = -16.108

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



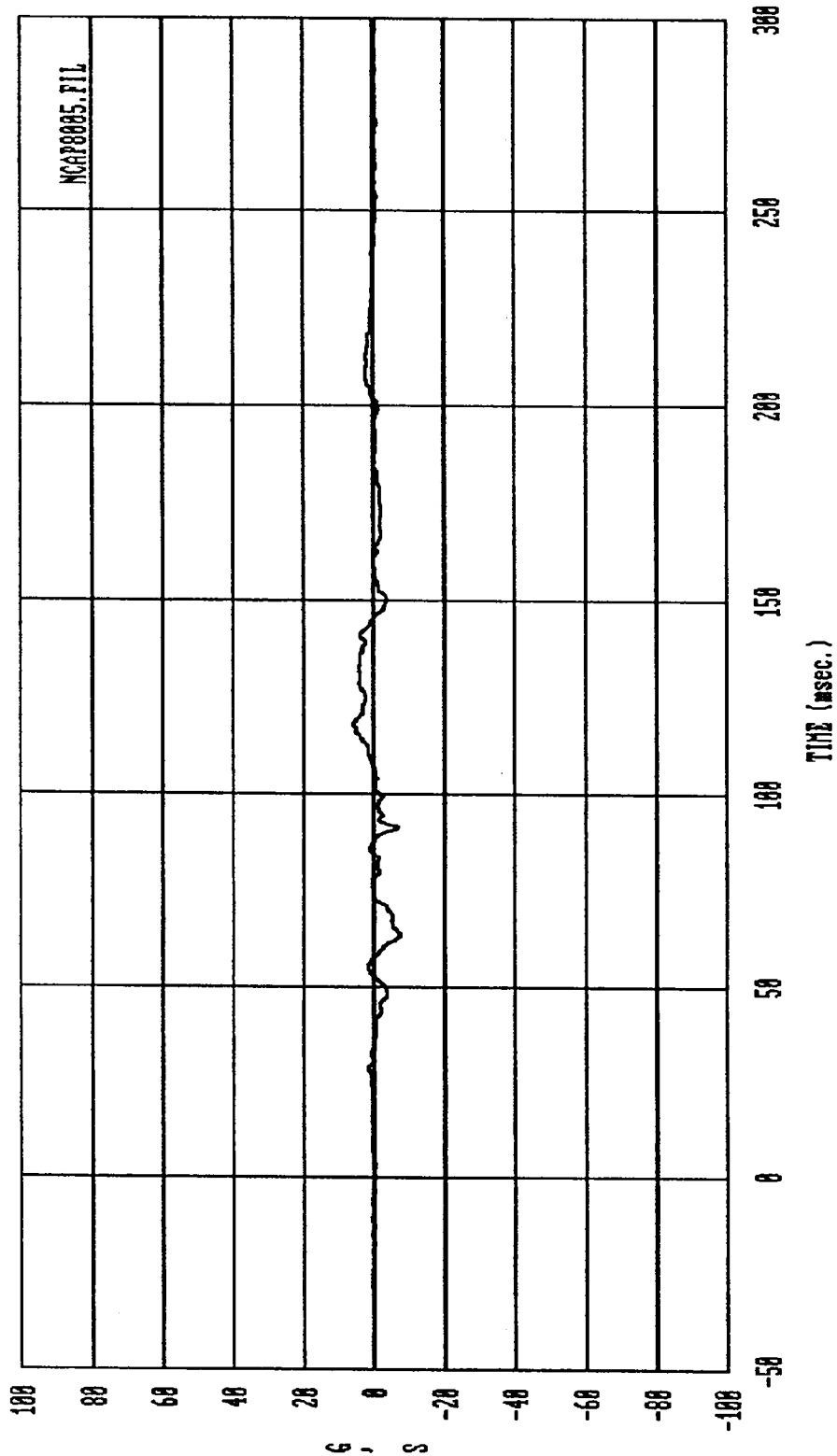
Curve: Driver Head resultant acceleration Filter: SAE CLASS 1000 Max = 66.009 Min = .16273

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



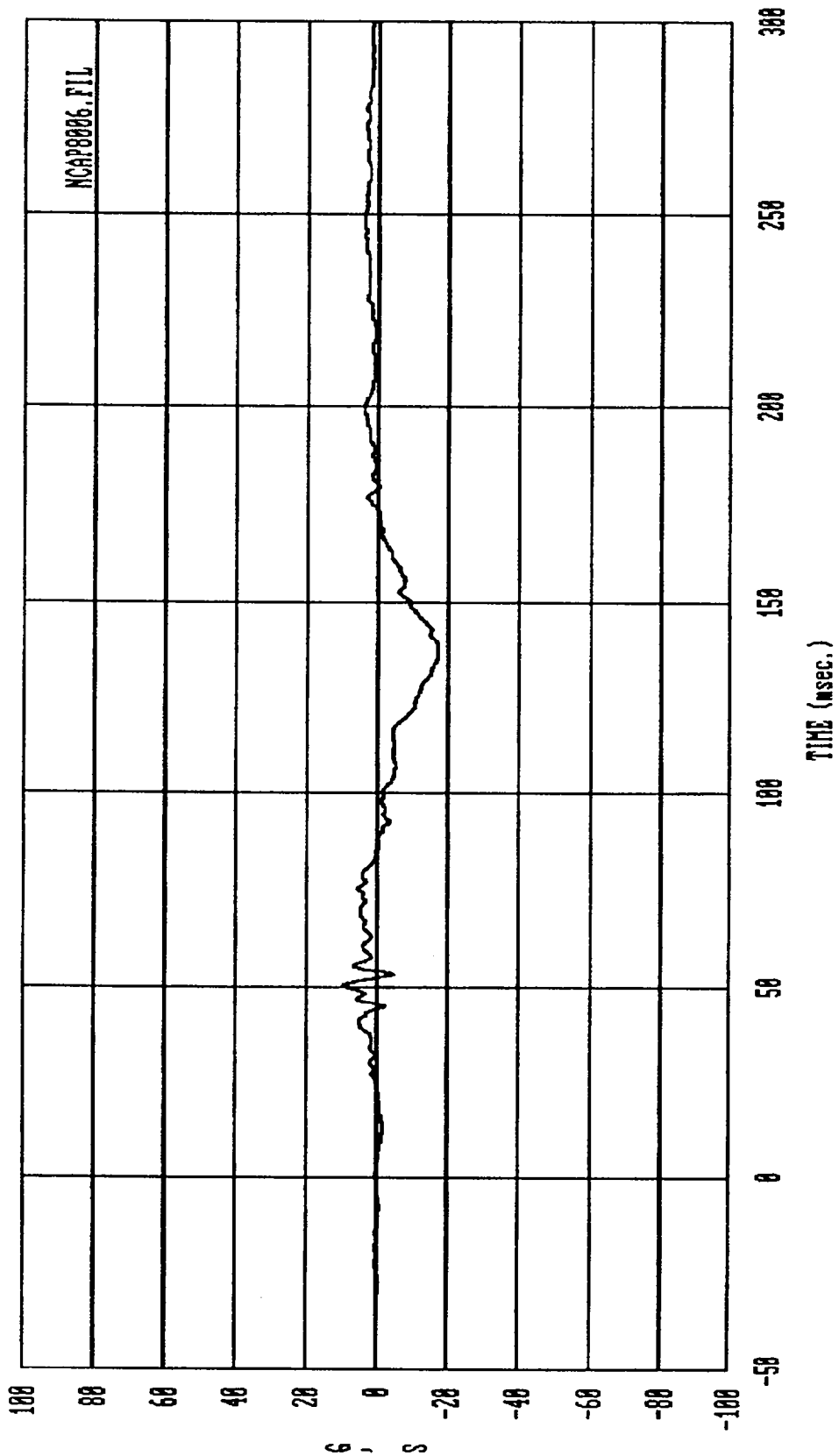
Curve: Driver Chest acceleration — X axis Filter: SAE CLASS 180 Max = 9.4566 Min = -43.957

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



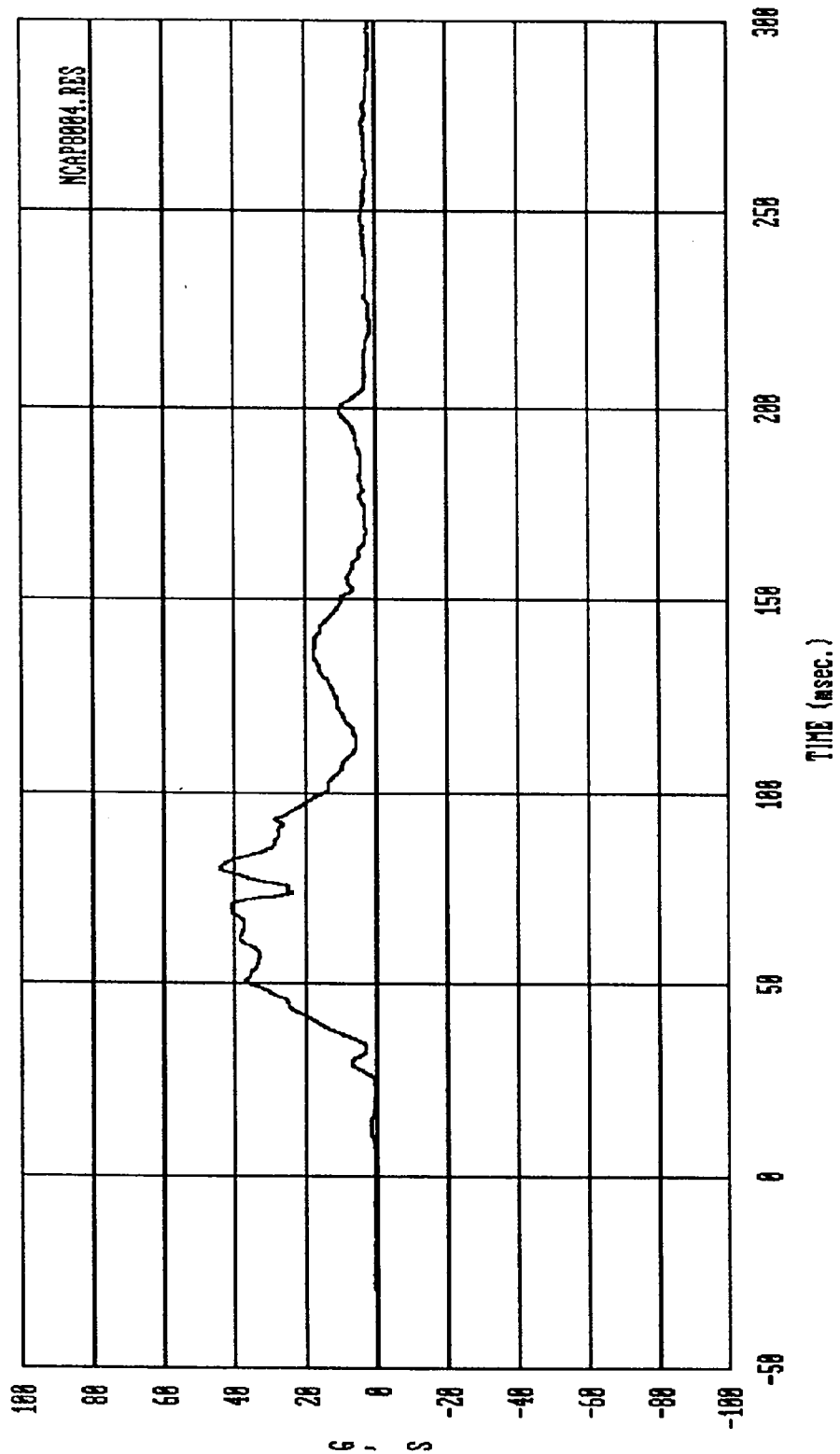
Curve: Driver Chest acceleration -- Y axis Filter: SAE CLASS 180 Max = 5.7872 Min = -7.3643

MSE Date: 03/01/98 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.

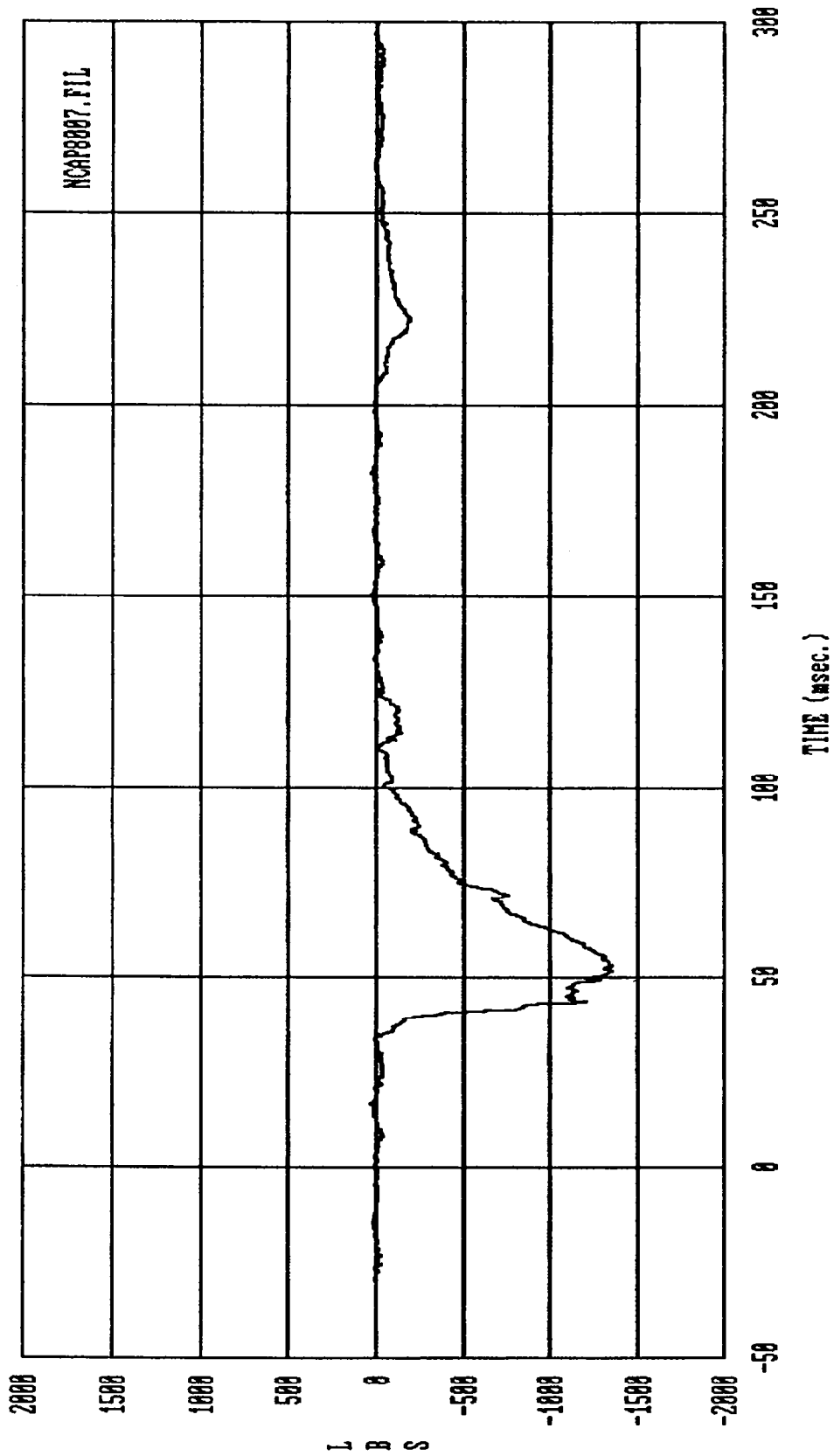


Curve: Driver Chest acceleration — Z axis Filter: SAE CLASS 180 Max = 9.5840 Min = -17.402

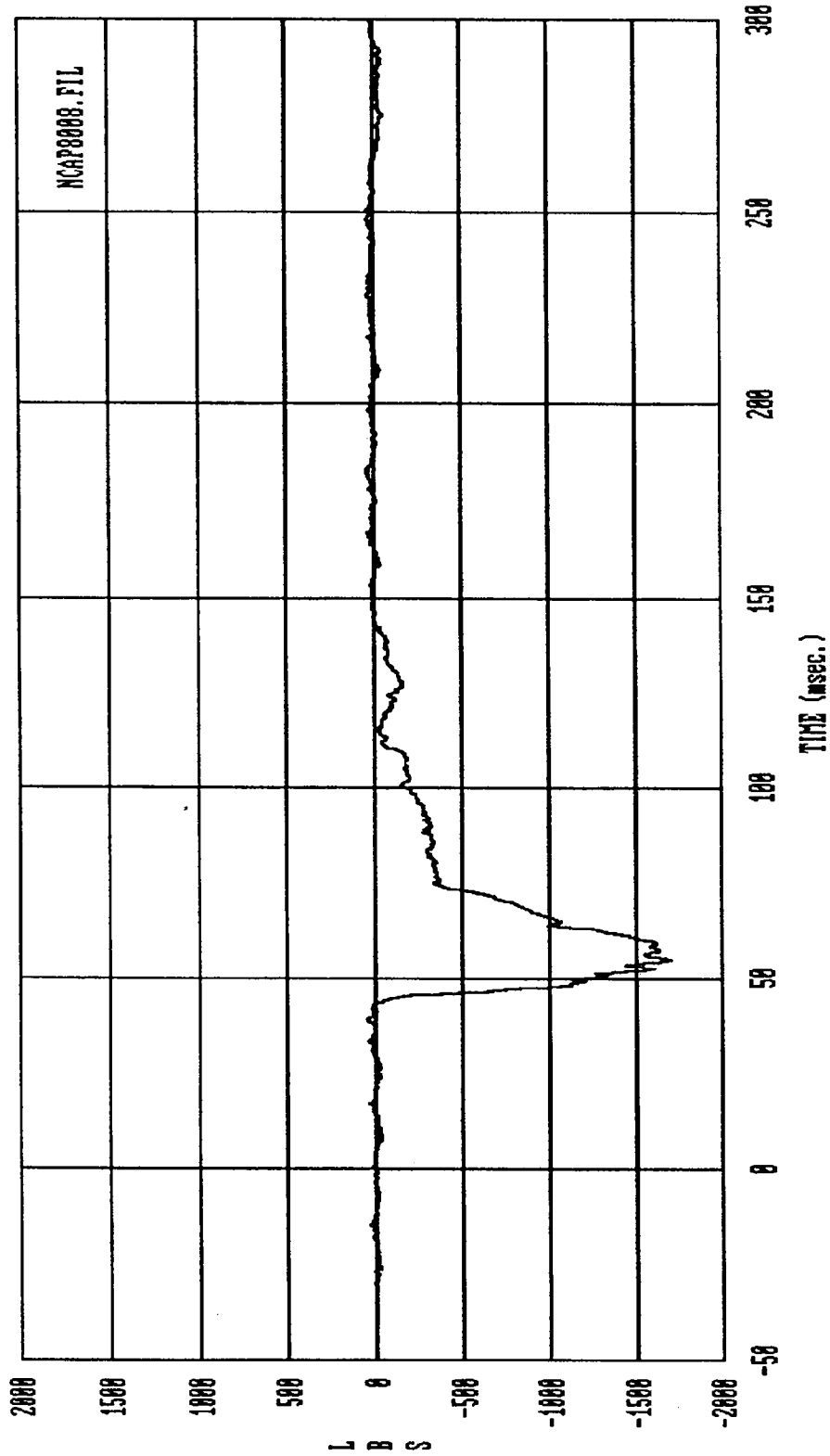
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



Curve: Driver Chest resultant acceleration Filter: SAE CLASS 180 Max = 44.182 Min = .35880
MSE Date: 03/01/90 Program: 1998 New Car Assessment 18 Vehicle: 1998 Ford Mustang Conv.

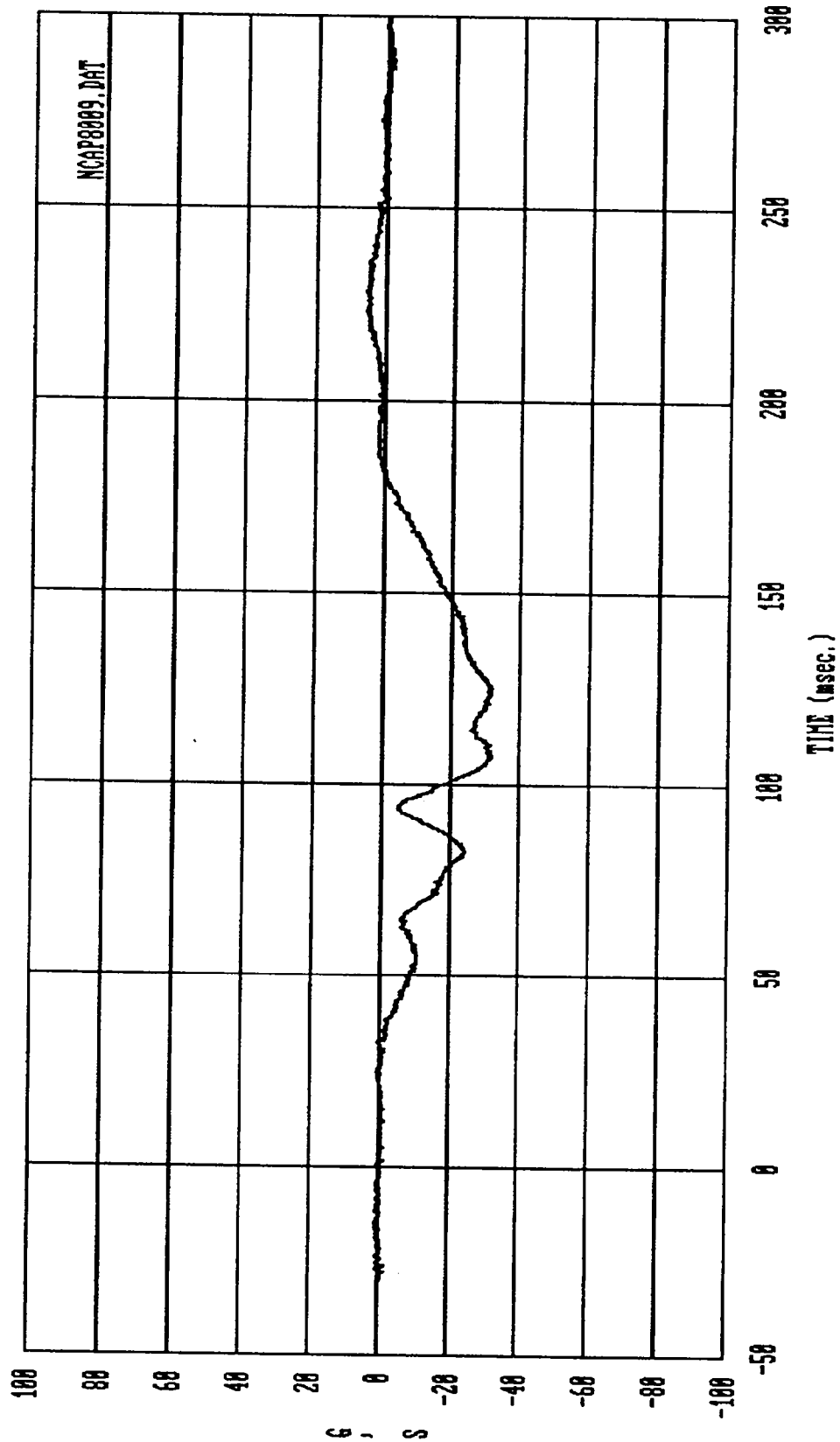


Curve: Driver Left Femur force Filter: SAE CLASS 600 Max = 37.880 Min = -1352.8
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



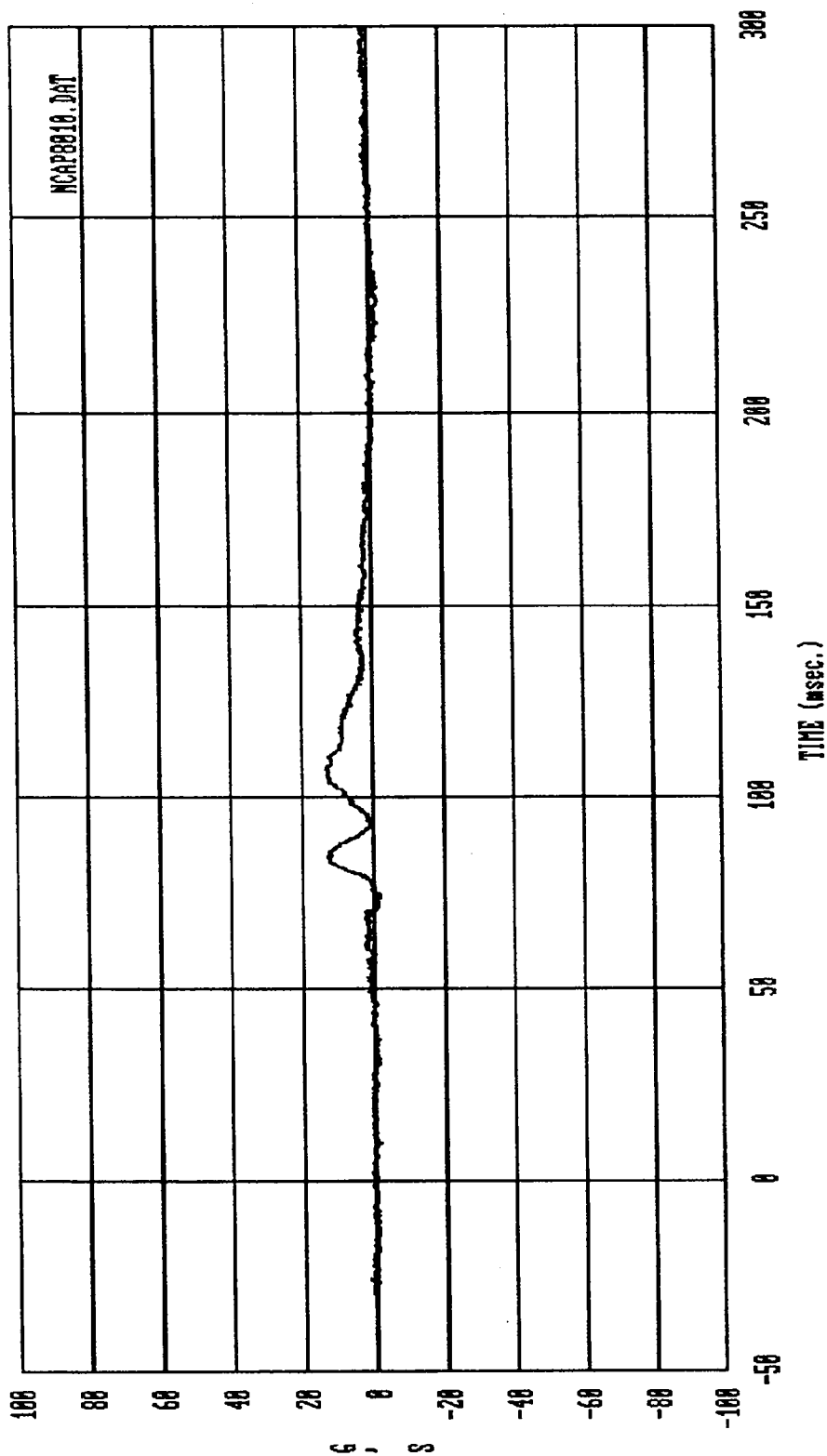
Curve: Driver Right Femur force Filter: SAE CLASS 600 Max = 52.155 Min = -1707.2

MSE Date: 03/01/98 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.

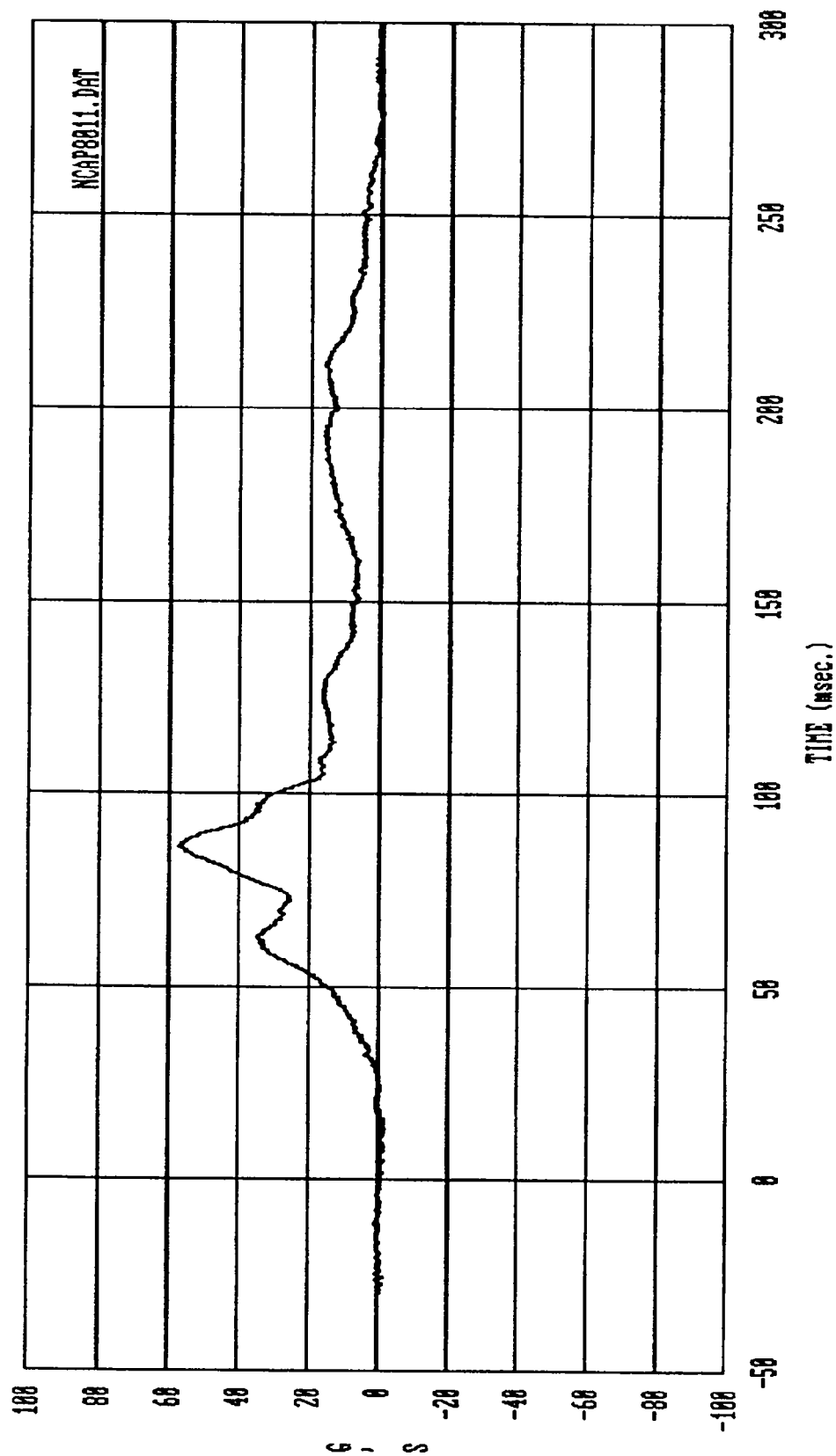


Curve: Pasngr Head acceleration -- X axis Filter: SAE CLASS 1800 Max = 6.0577 Min = -31.959

MSE Date: 03/01/98 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.

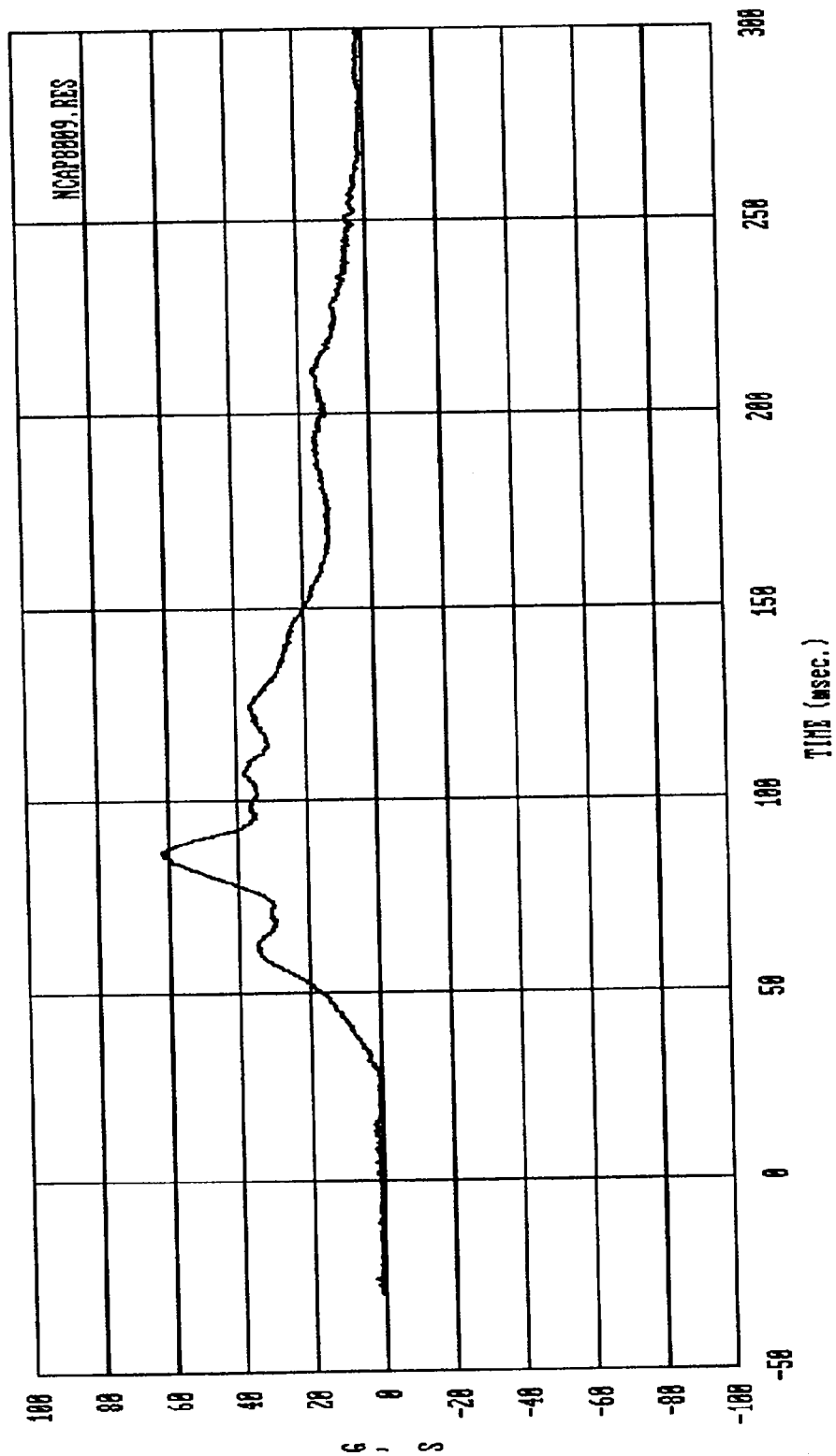


Curve: Pasngr Head acceleration — Y axis Filter: SAE CLASS 1000 Max = 13.736 Min = -2.4975
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



Curve: Pasngr Head acceleration — Z axis Filter: SAE CLASS 1000 Max = 57.452 Min = -2.8720

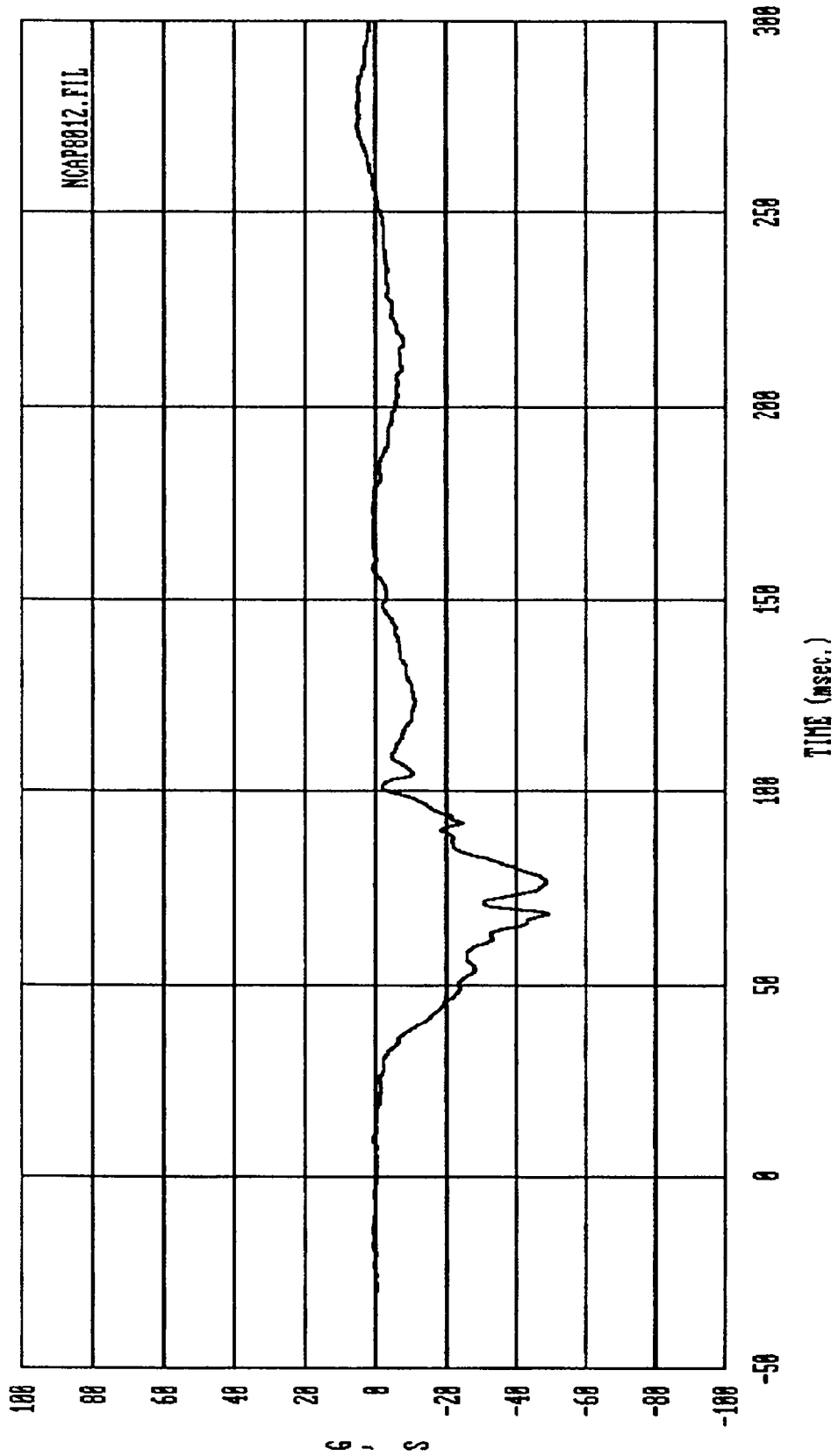
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



Curve: Pasngr Head resultant acceleration

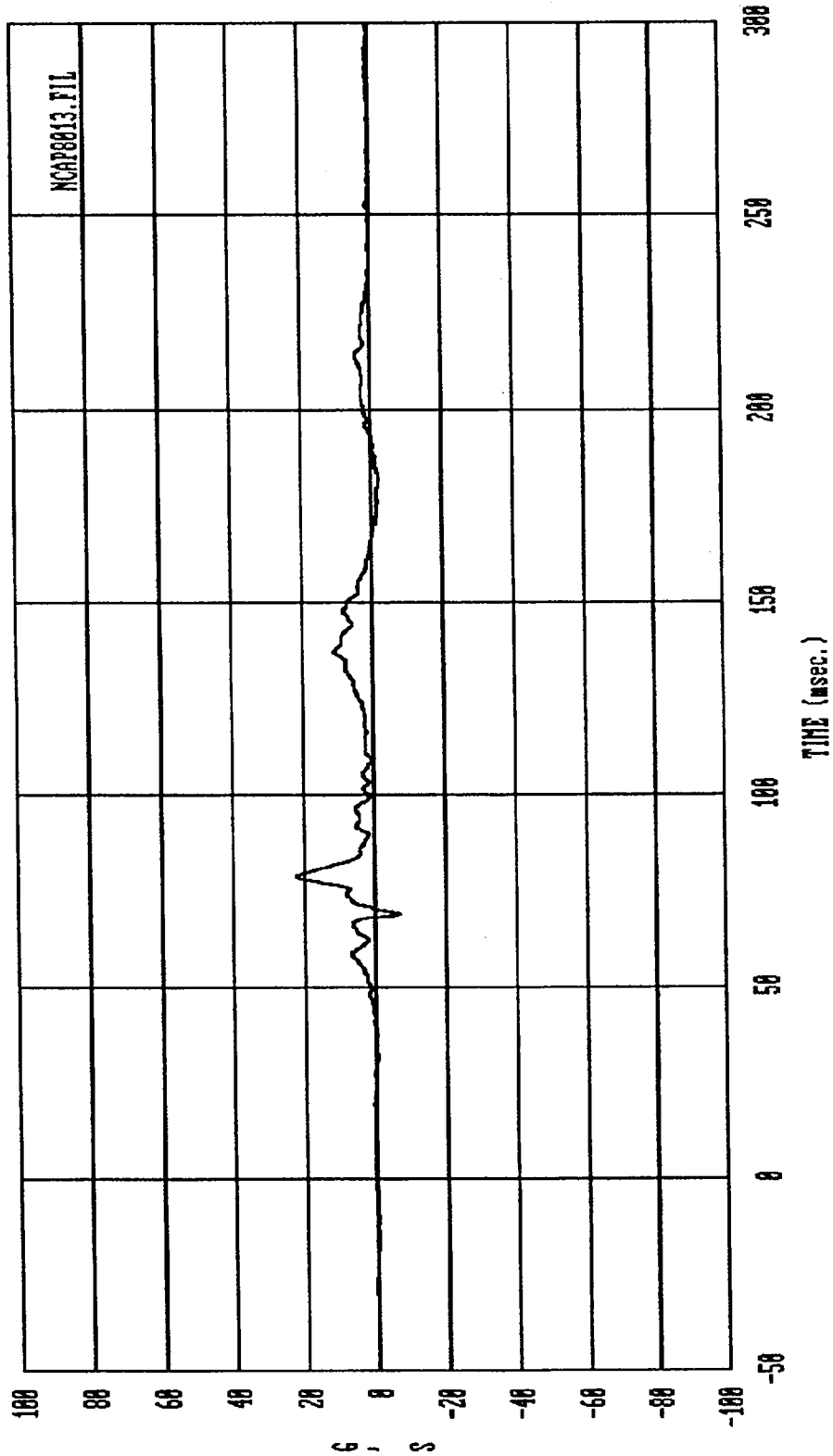
Filter: SAE CLASS 1000 Max = 62.118 Min = .00000

MSE Date: 03/01/98 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

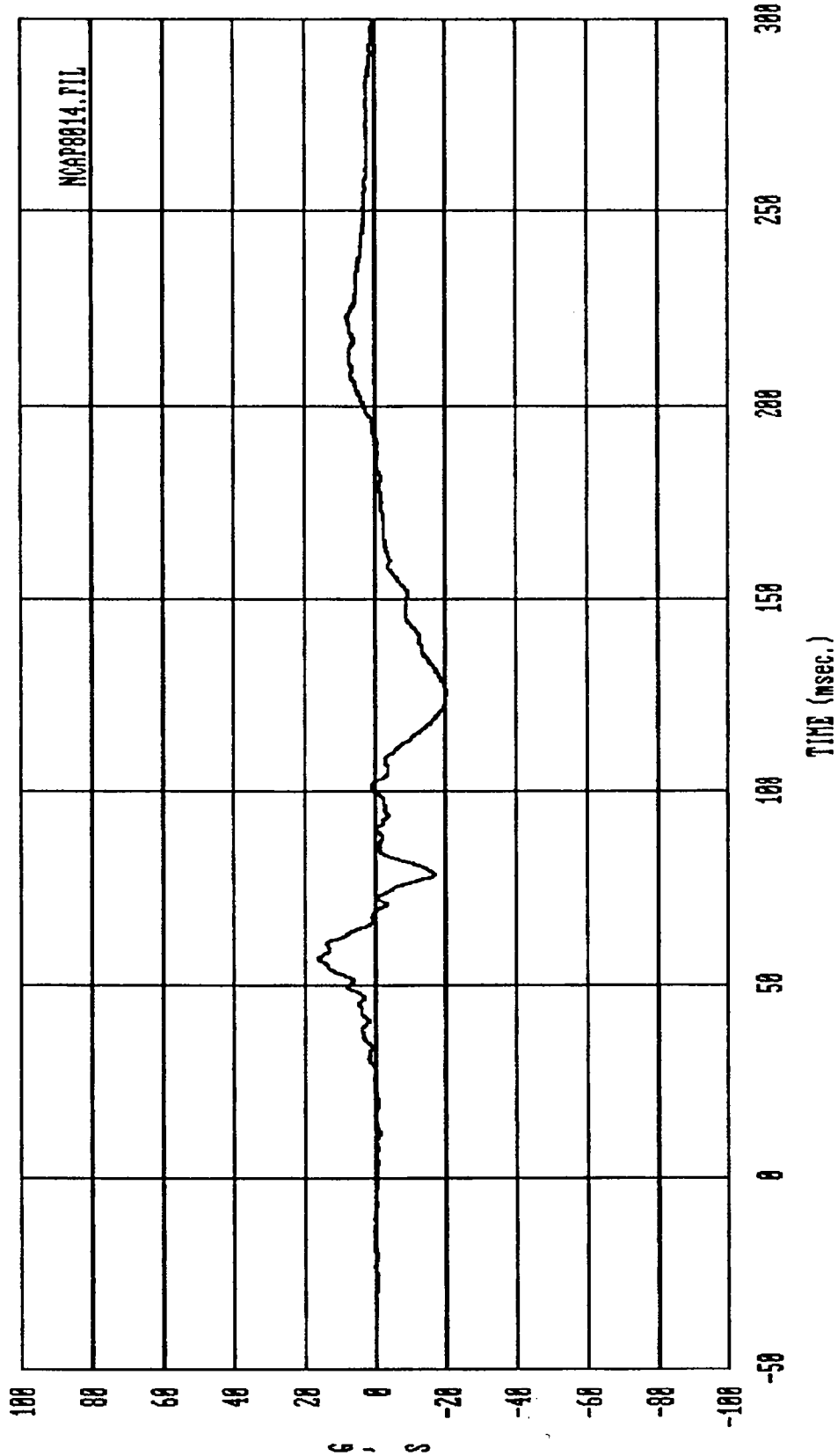


Curve: Pasngr Chest acceleration -- X axis Filter: SAE CLASS 100 Max = 5.4645 Min = -49.570

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

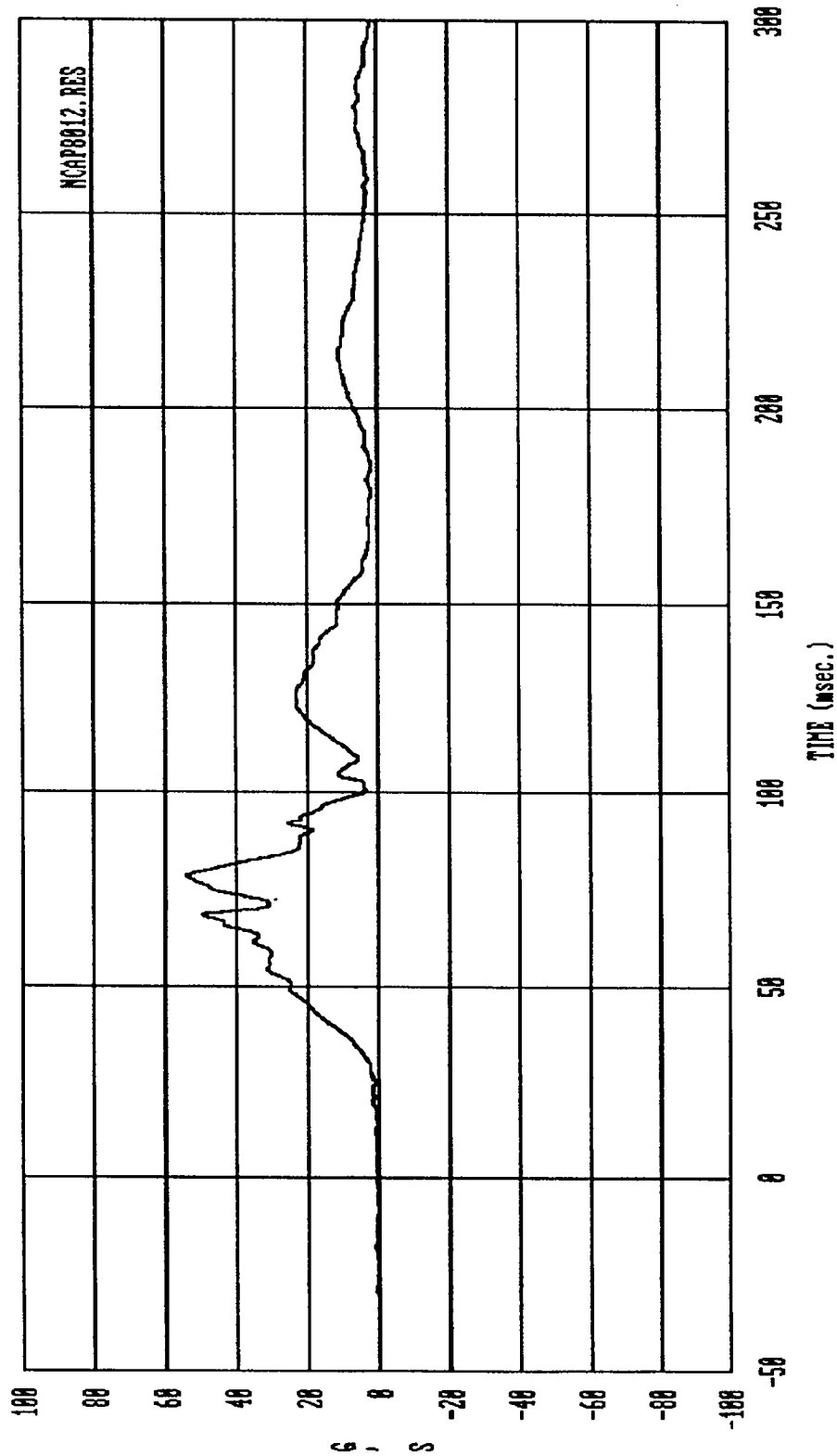


Curve: Pasngr Chest acceleration -- Y axis Filter: SAE CLASS 100 Max = 22.422 Min = -7.8430
 MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



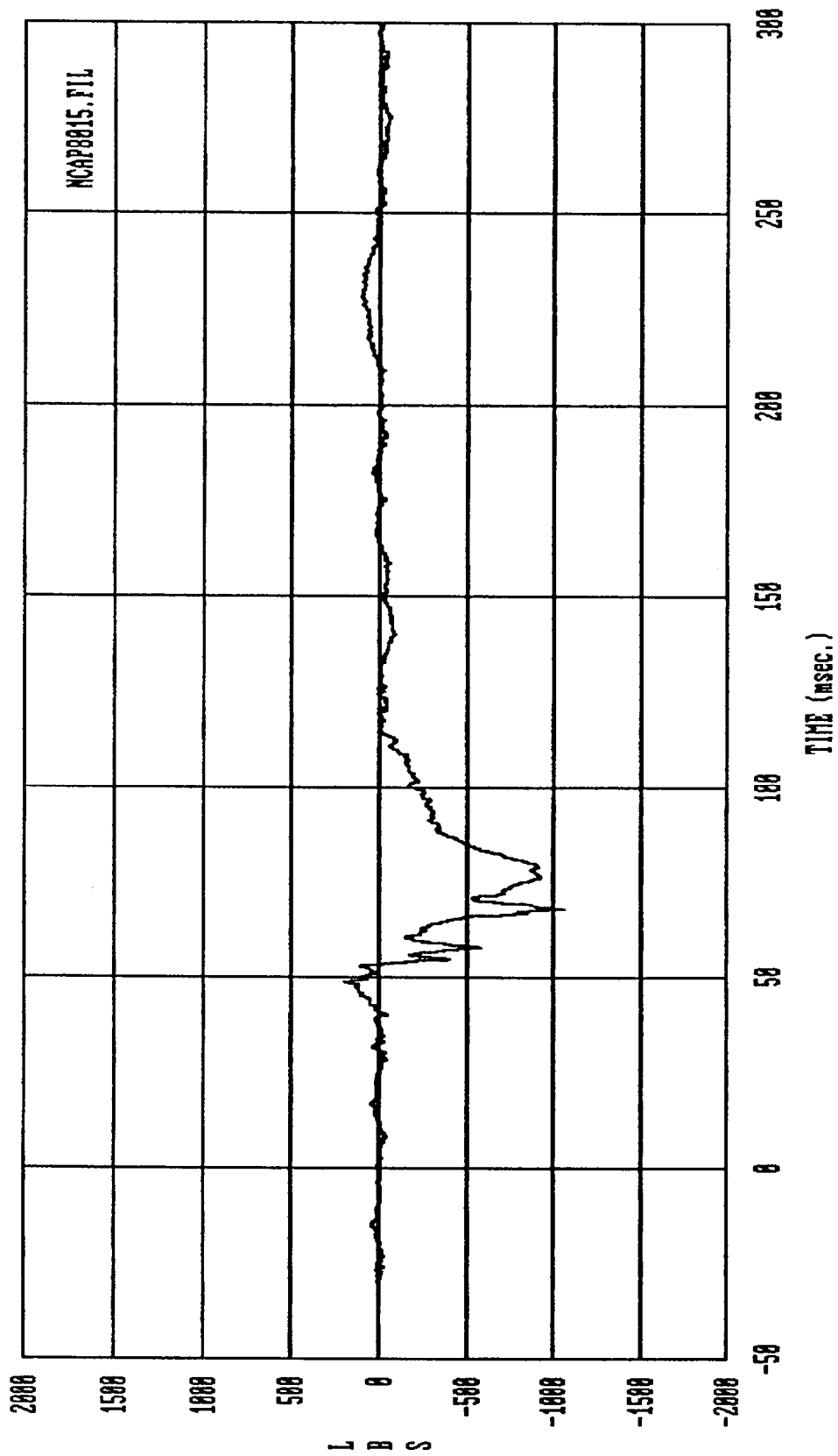
Curve: Pasngr Chest acceleration -- Z axis Filter: SAE CLASS 180 Max = 16.566 Min = -28.417

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



Curve: Pasngr Chest resultant acceleration Filter: SAE CLASS 180 Max = 54.285 Min = .33633

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

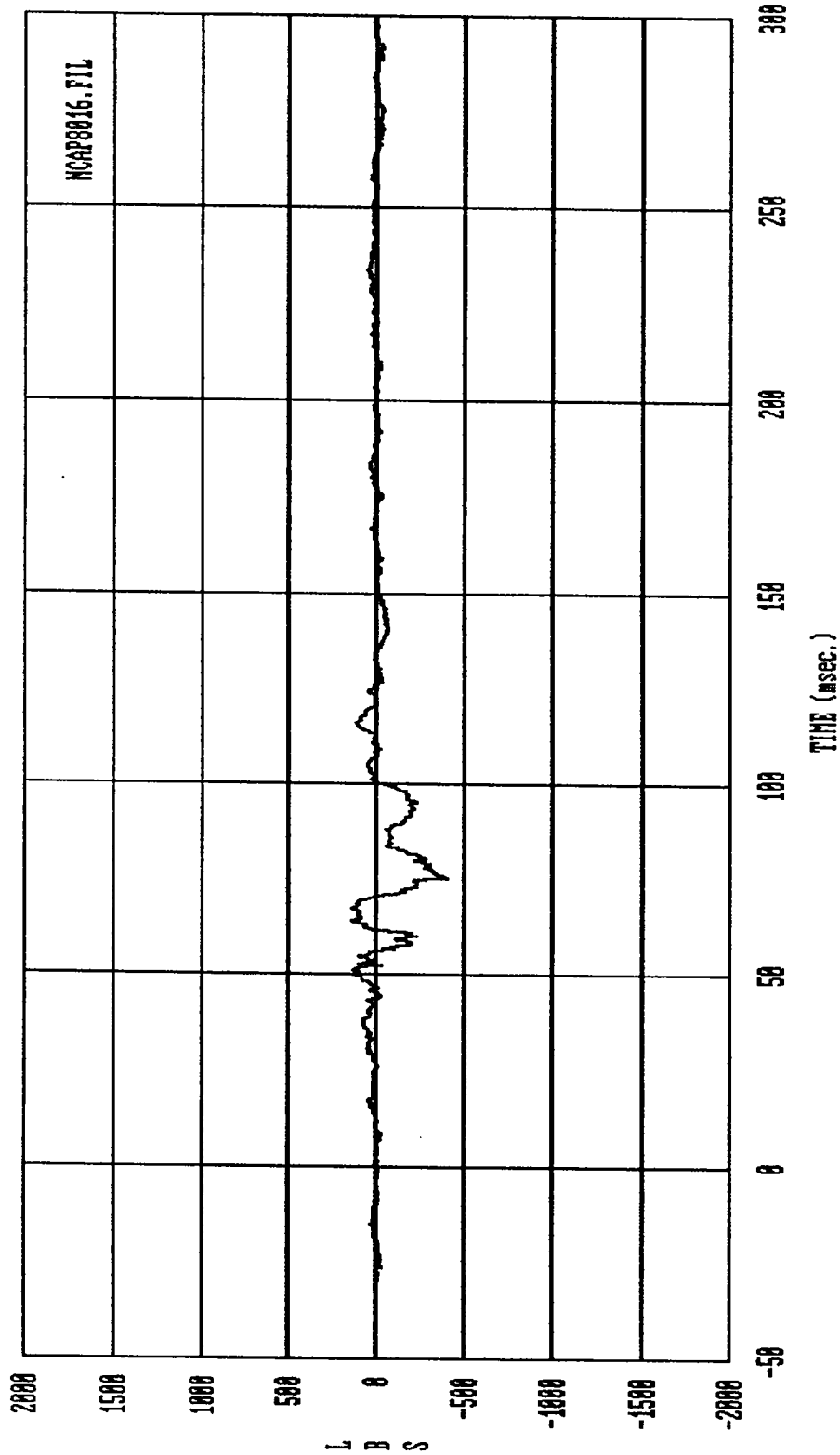


Curve: Pasngr Left Femur force

Filter: SAE CLASS 600 Max = 195.75 Min = -1063.3

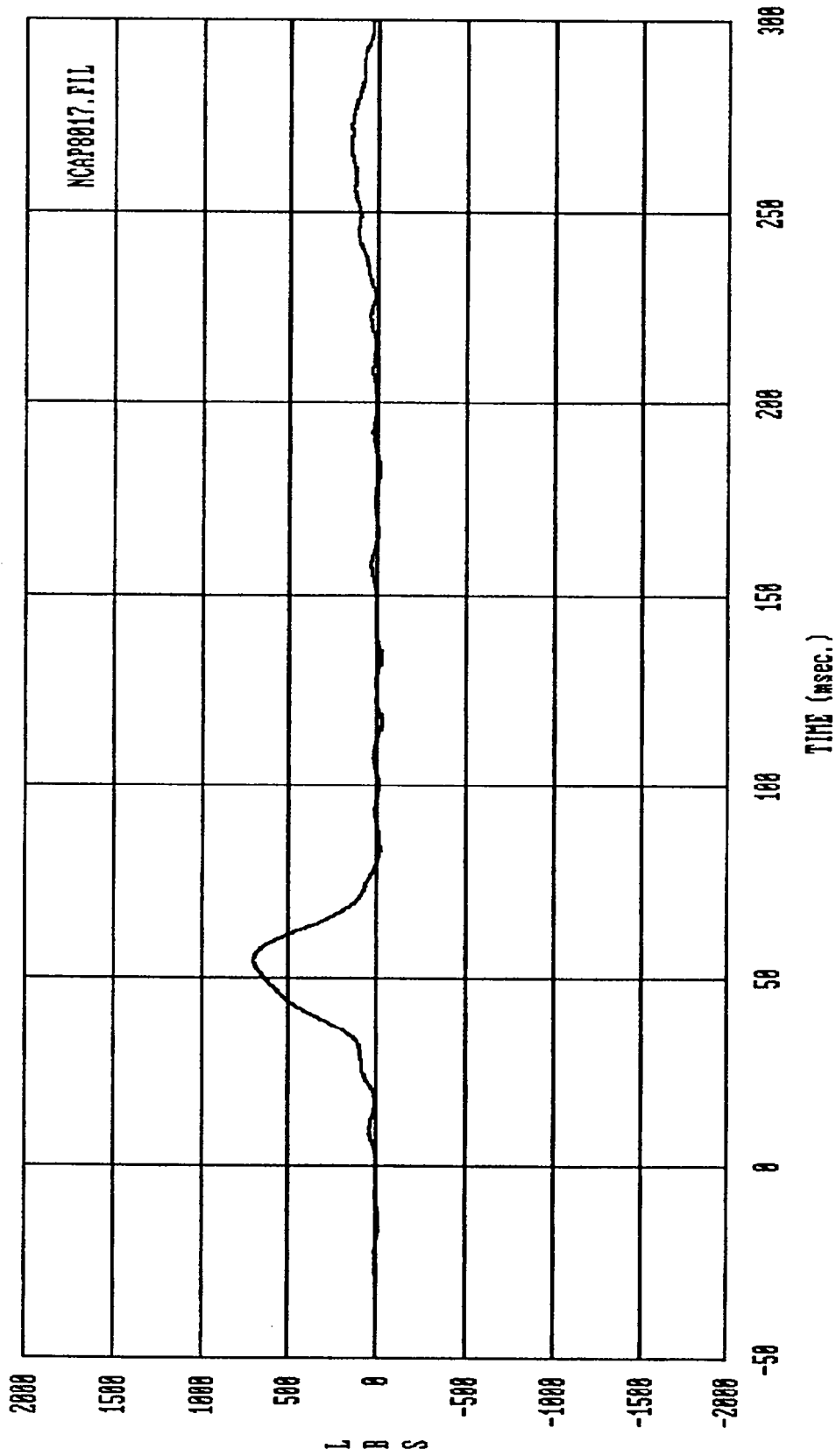
HSE Date: 03/01/90

Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



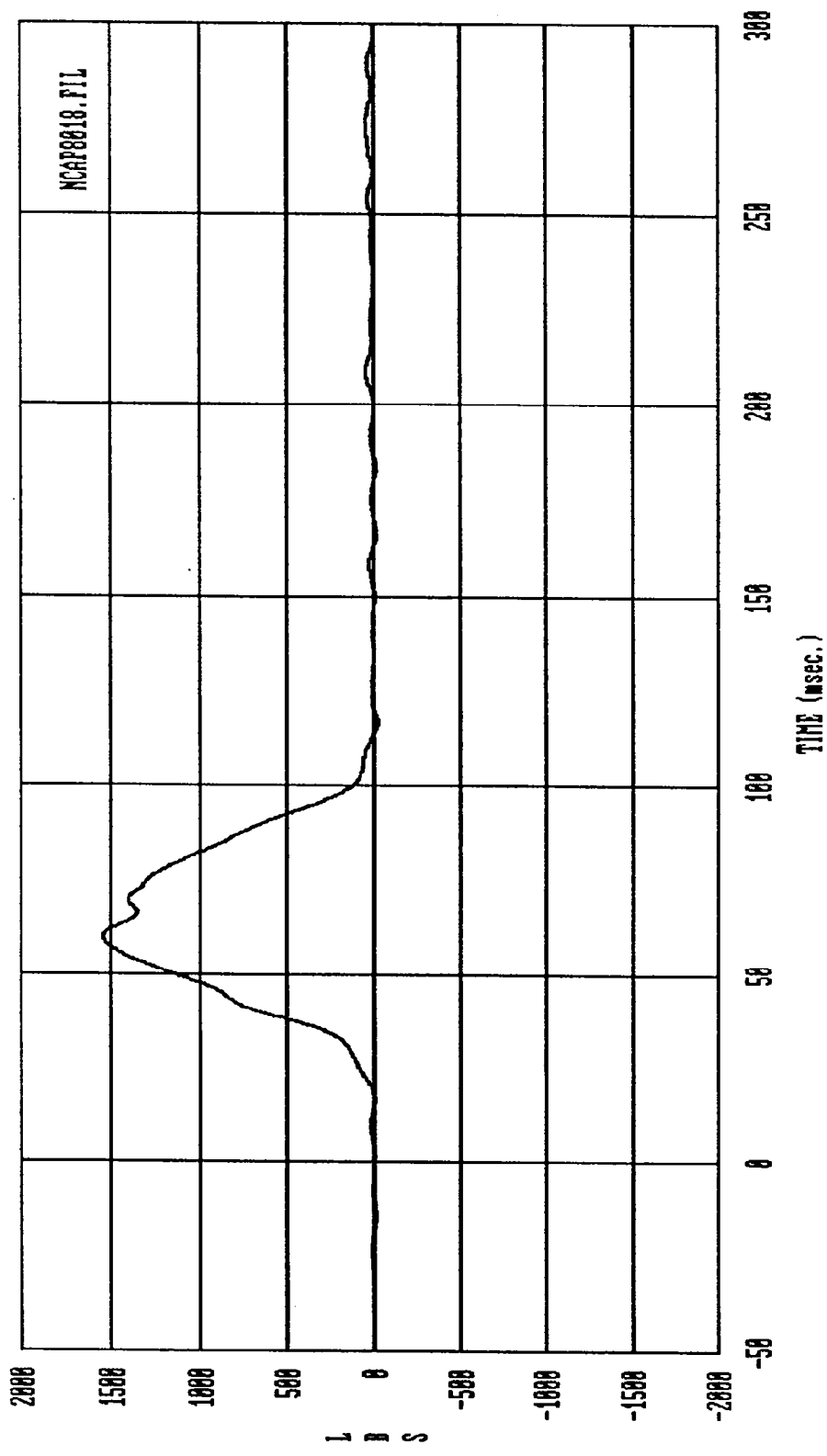
Curve: Pasngr Right Femur force Filter: SAE CLASS 600 Max = 142.40 Min = -488.44

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



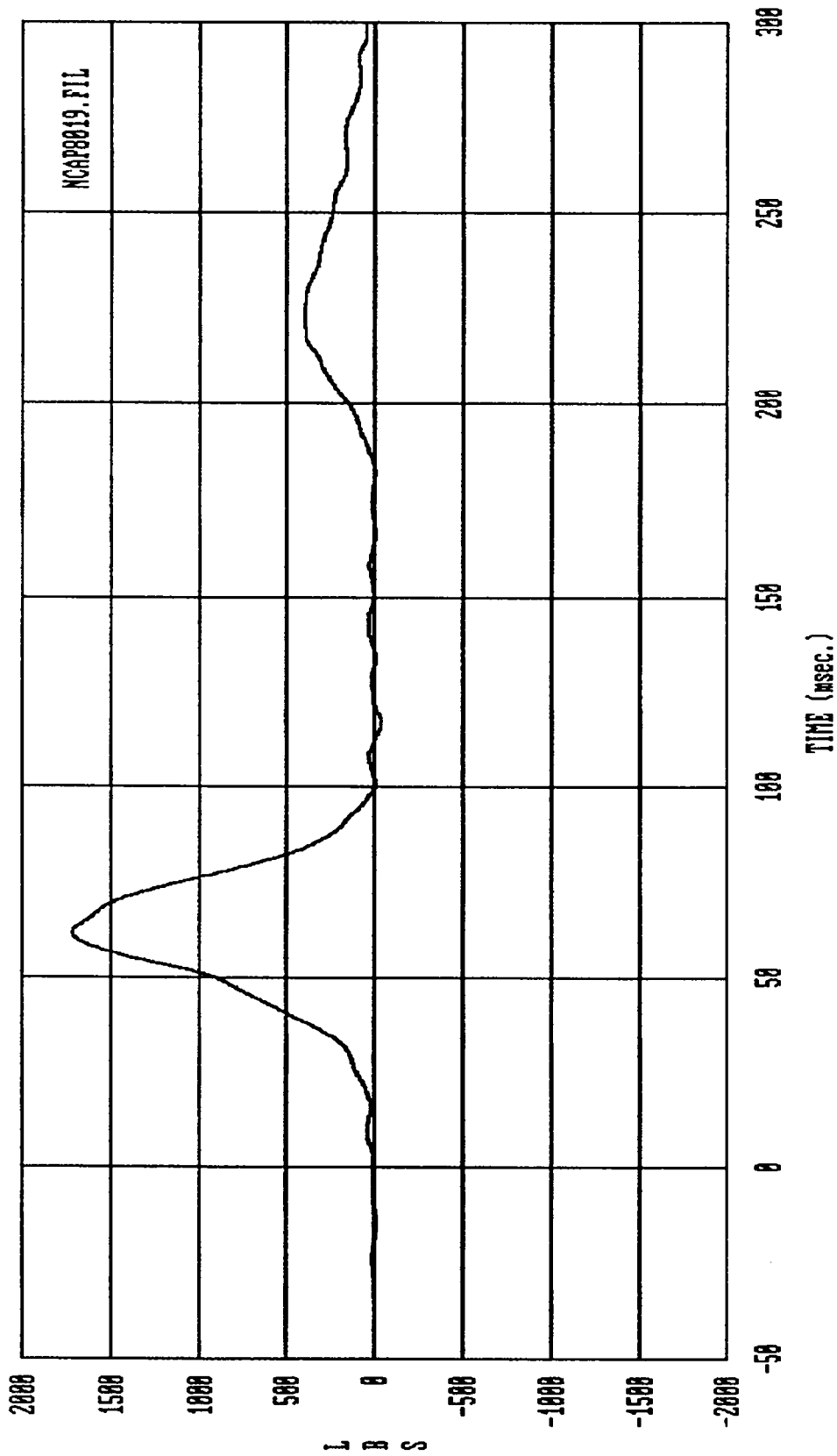
Curve: Driver Lap seat belt force Filter: SAE CLASS 60 Max = 785.11 Min = -29.919

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

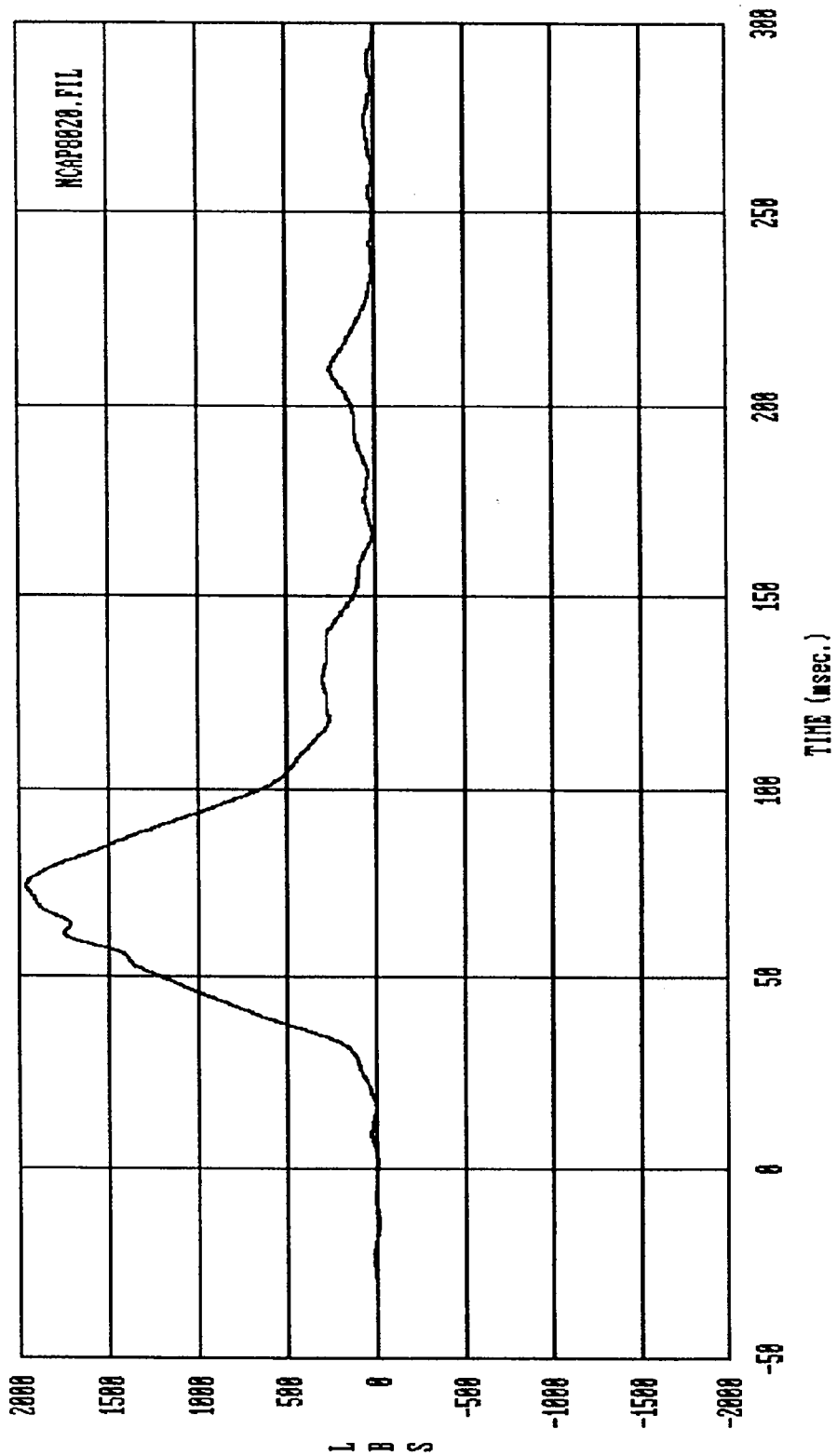


Curve: Driver Shoulder seat belt force Filter: SAE CLASS 60 Max = 1541.9 Min = -20.387

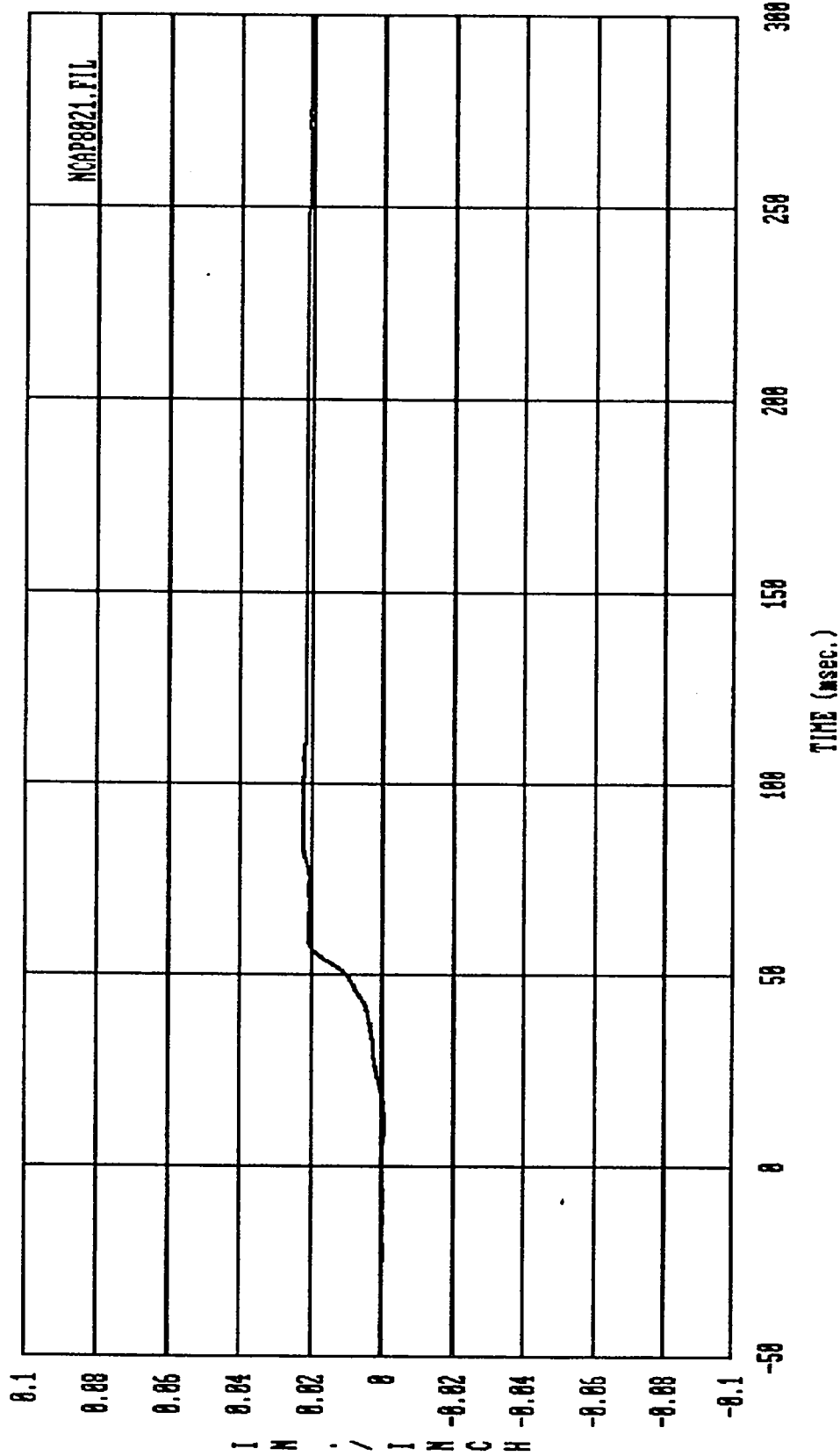
MSE Date: 03/01/90 Program: 1990 New Car Assessment 18 Vehicle: 1990 Ford Mustang Conv.



Curve: Pasngr Lap seat belt force Filter: SAE CLASS 60 Max = 1718.3 Min = -40.938
 MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

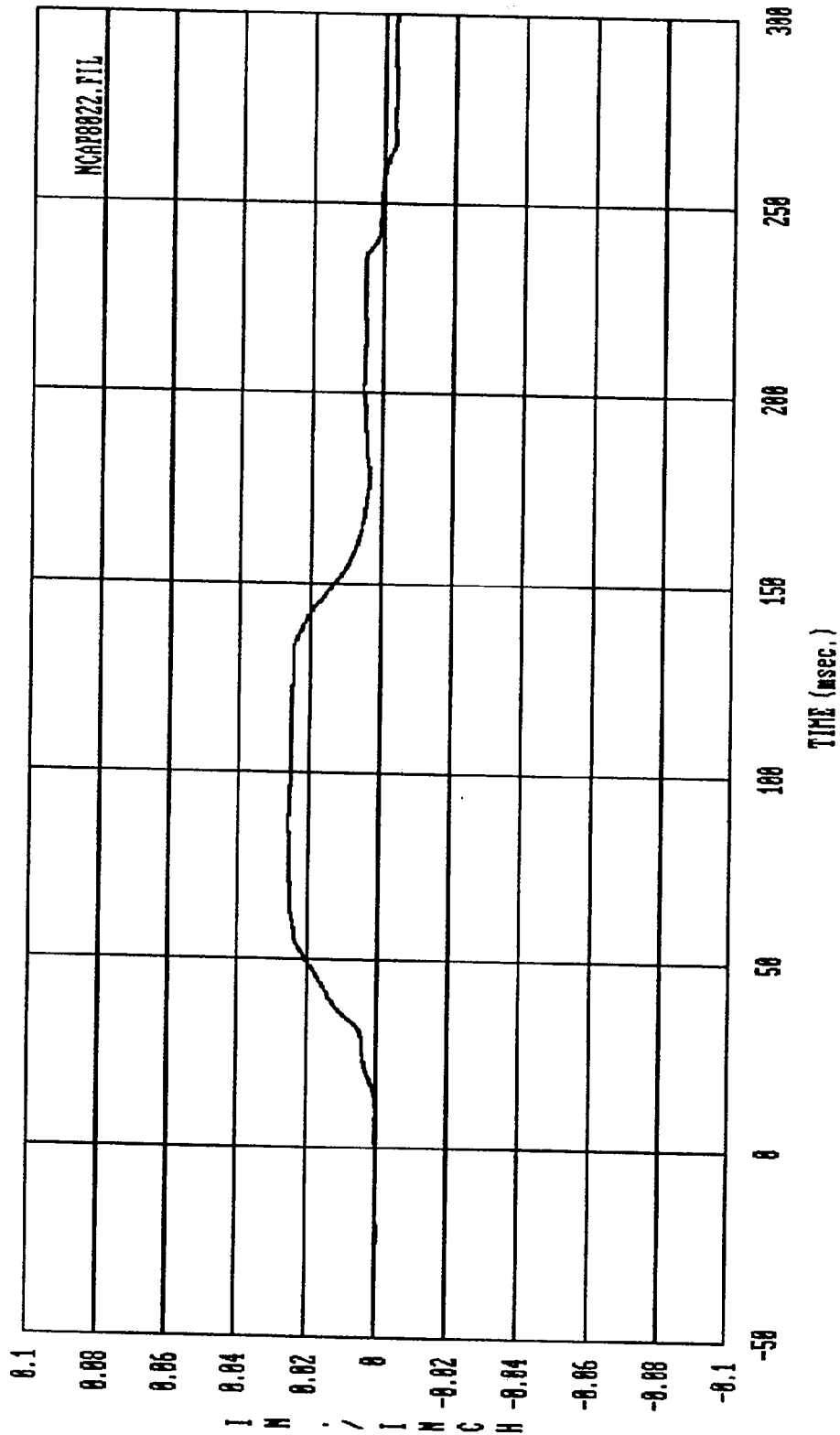


Curve: Pasngr Shoulder seat belt force Filter: SAE CLASS 60 Max = 1963.4 Min = -4.6161
MSE Date: 83/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



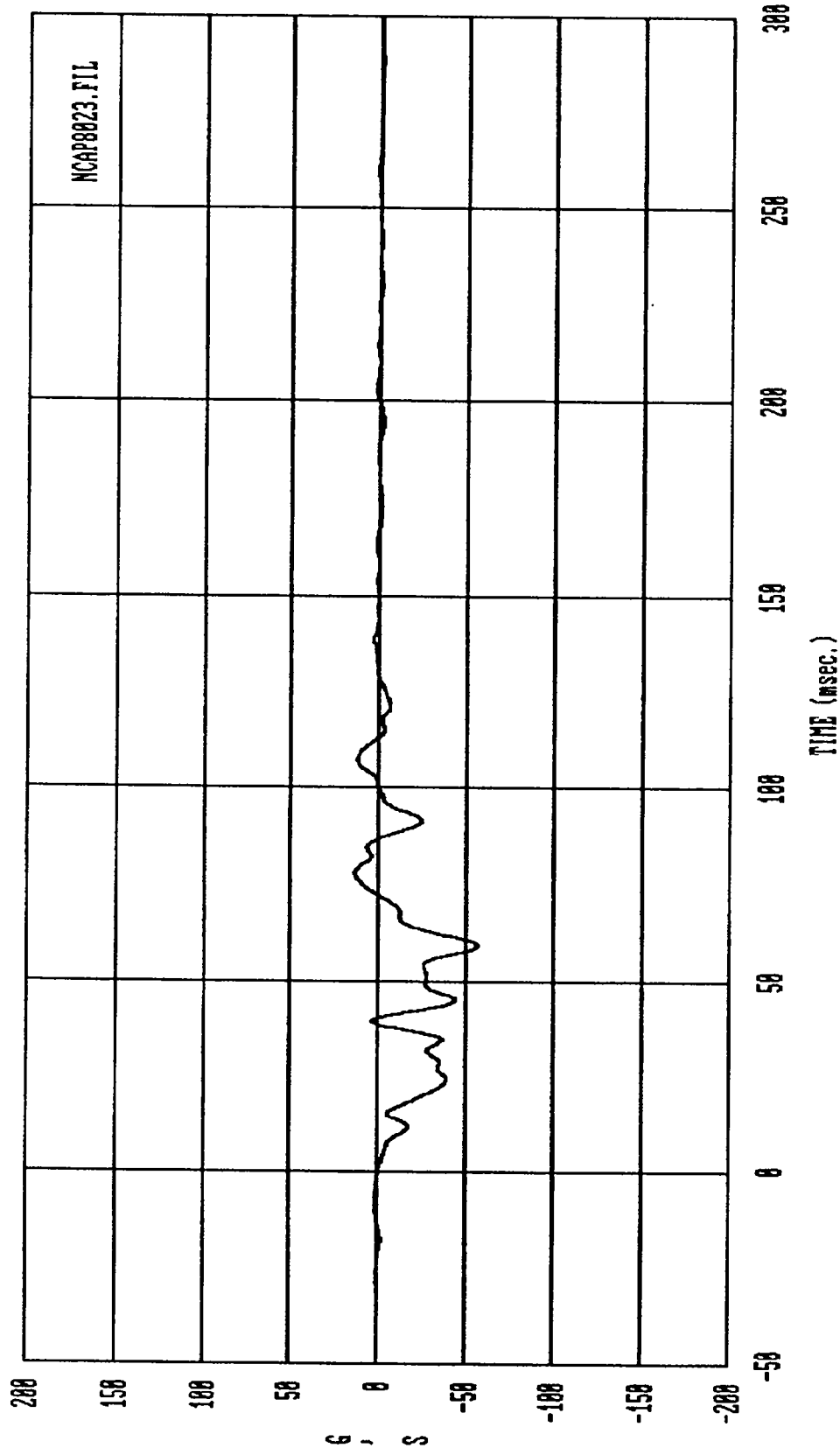
Curve: Driver seat belt elongation (Percent stretch) Filter: SAE CLASS 60 Max = .225162-01 Min = -.007862-03

MSE Date: 03/01/90 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.



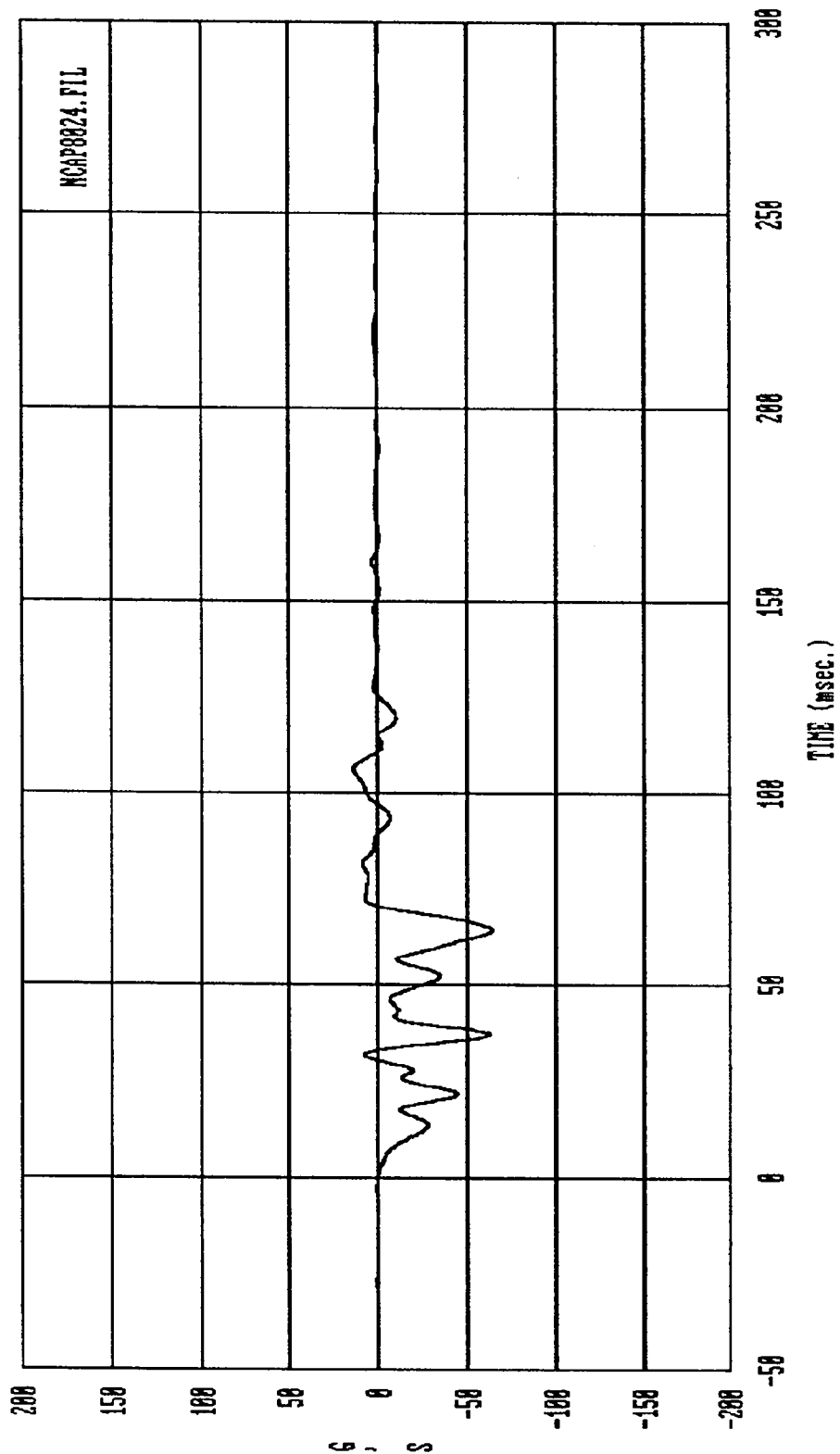
Curve: Pasngr seat belt elongation (Percent stretch) Filter: SAE CLASS 60 Max = .25853E-01 Min = -.38872E-02

MSE Date: 83/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



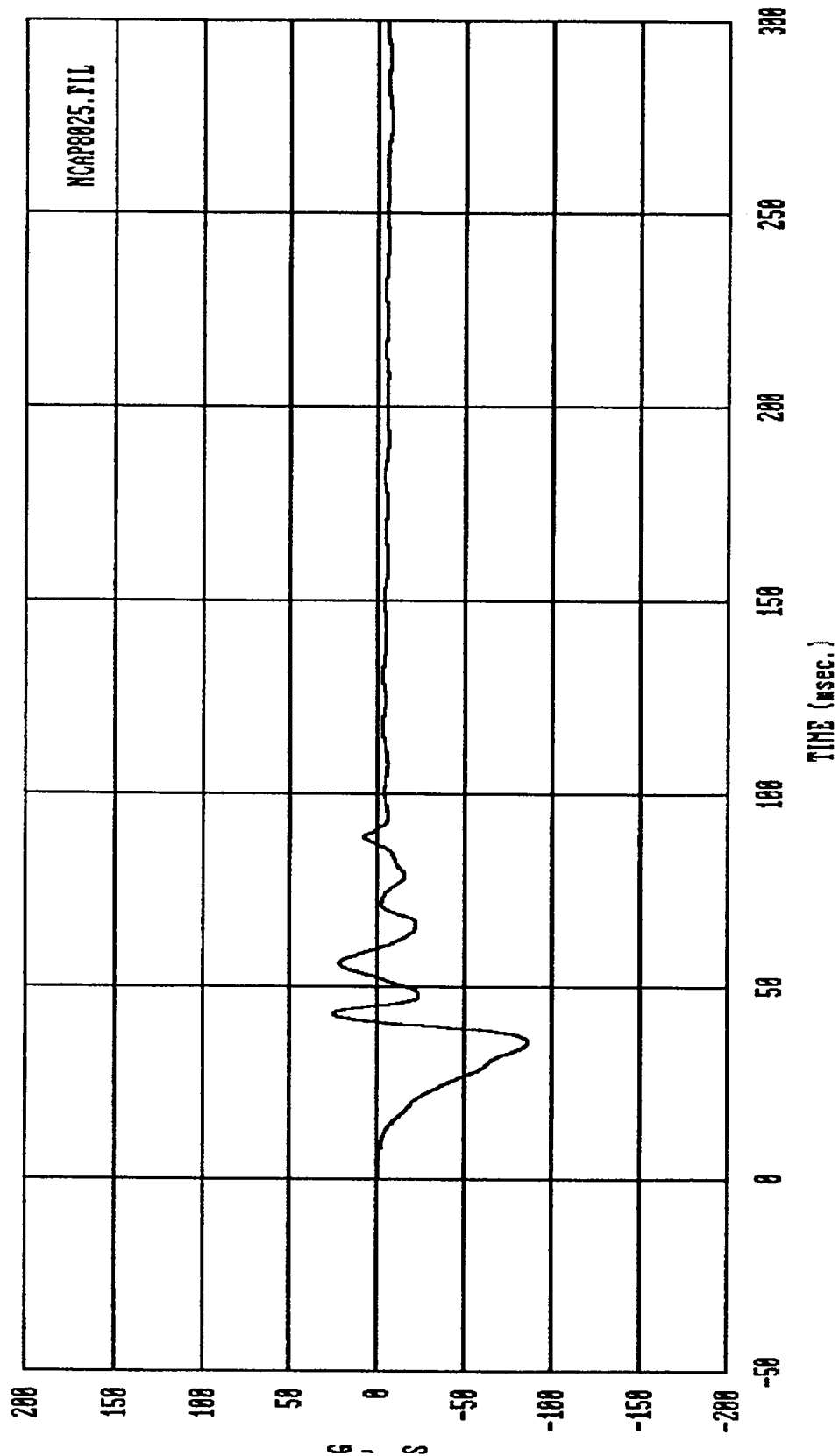
Curve: Left front brake caliper acceleration — X axis Filter: SAE CLASS 60 Max = 13.924 Min = -57.248

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



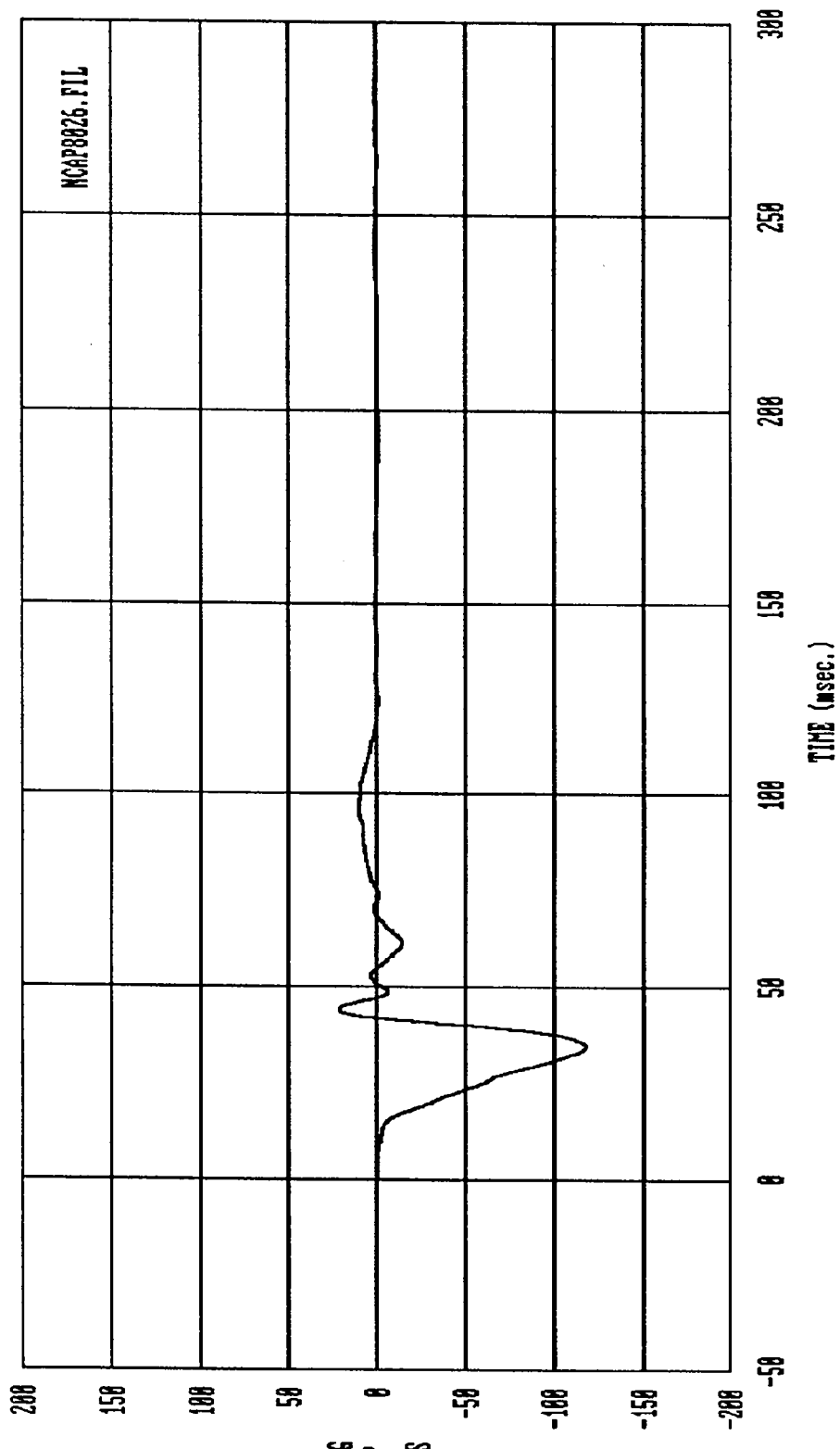
Curve: Right front brake caliper accel. -- X axis Filter: SAE CLASS 60 Max = 13.968 Min = -64.653

MSE Date: 03/01/98 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.



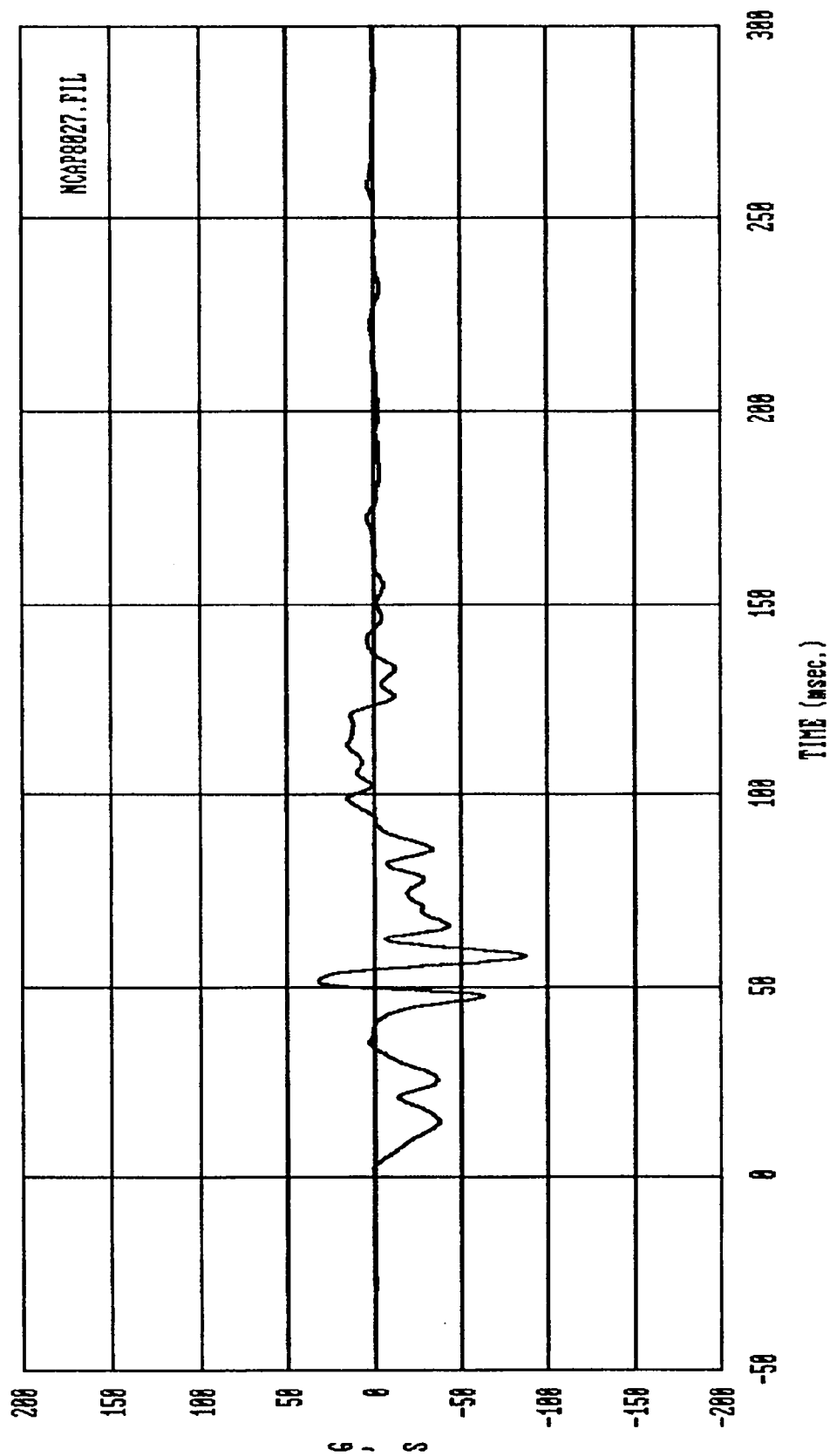
Curve: Engine bottom acceleration -- X axis Filter: SAE CLASS 60 Max = 25.437 Min = -86.632

MSE Date: 03/01/98 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



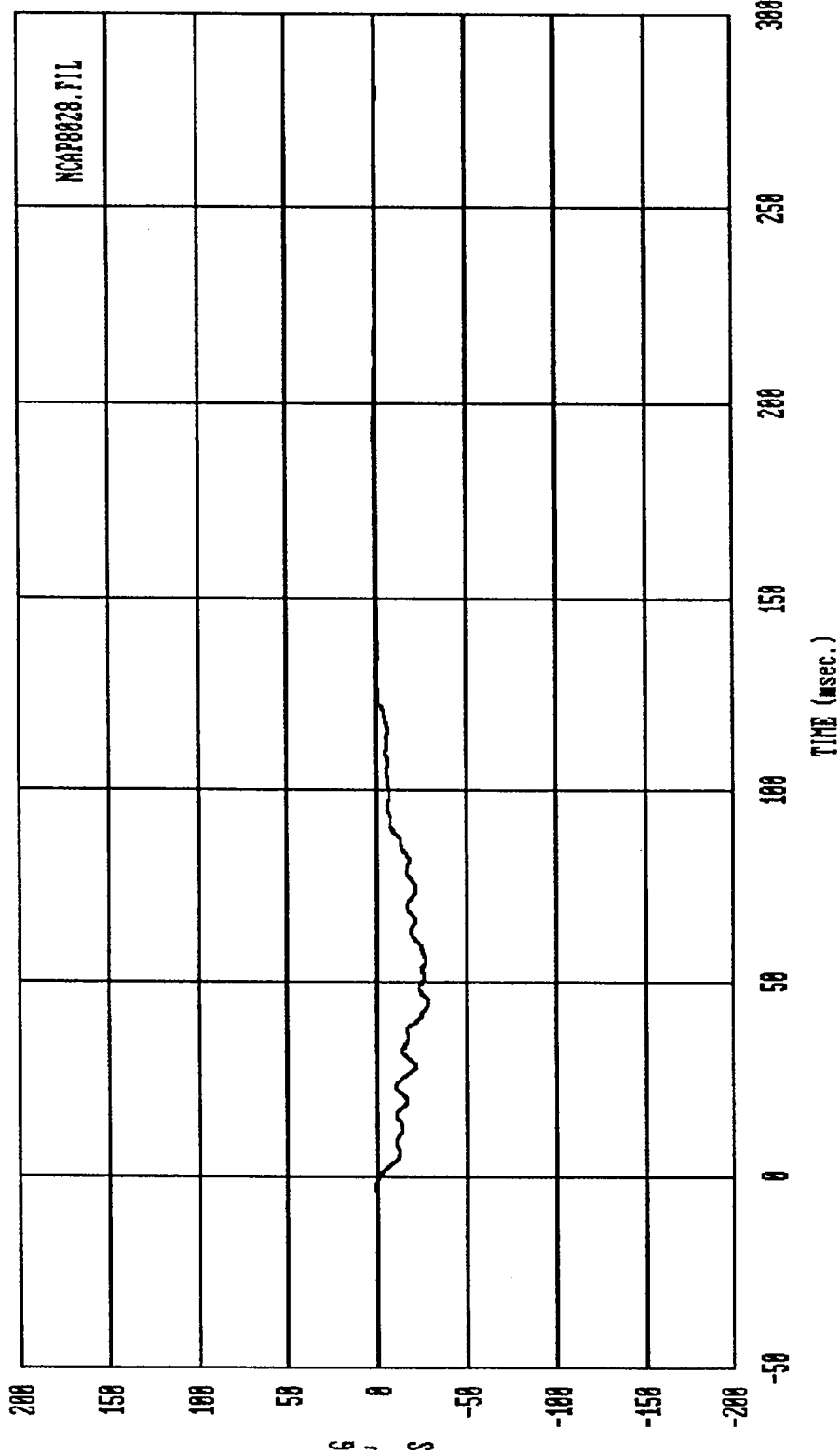
Curve: Engine top acceleration -- X axis Filter: SAE CLASS 60 Max = 21.627 Min = -117.79

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



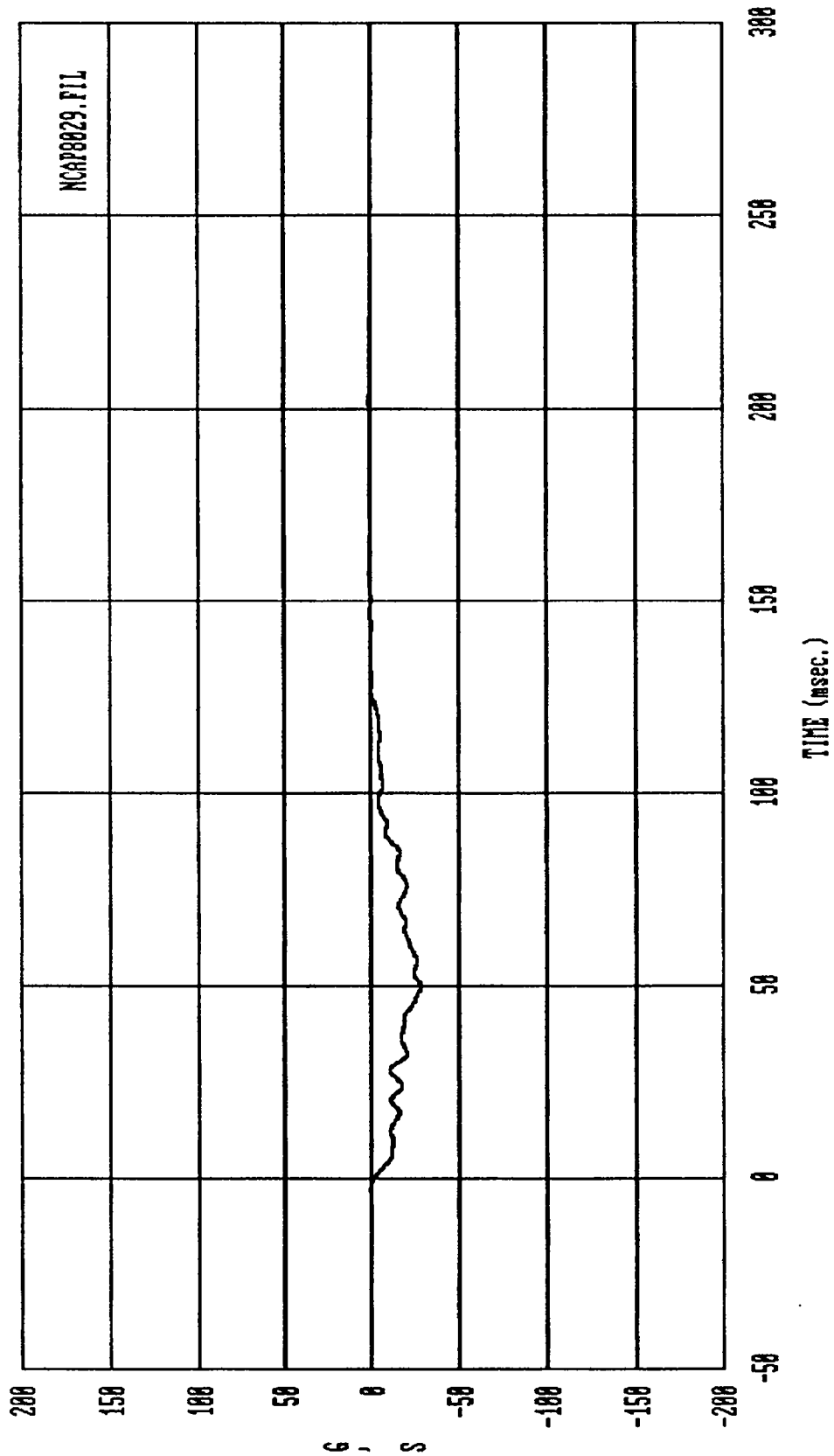
Curve: Instrument panel acceleration -- X axis Filter: SAE CLASS 60 Max = 33.498 Min = -87.443

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



Curve: Left-rear seat cross-member accel. -- X axis Filter: SAE CLASS 60 Max = 1.3443 Min = -28.540

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



Curve: Right-rear seat cross member accel. — X axis Filter: SAE CLASS 60 Max = 1.3444 Min = -28.540

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

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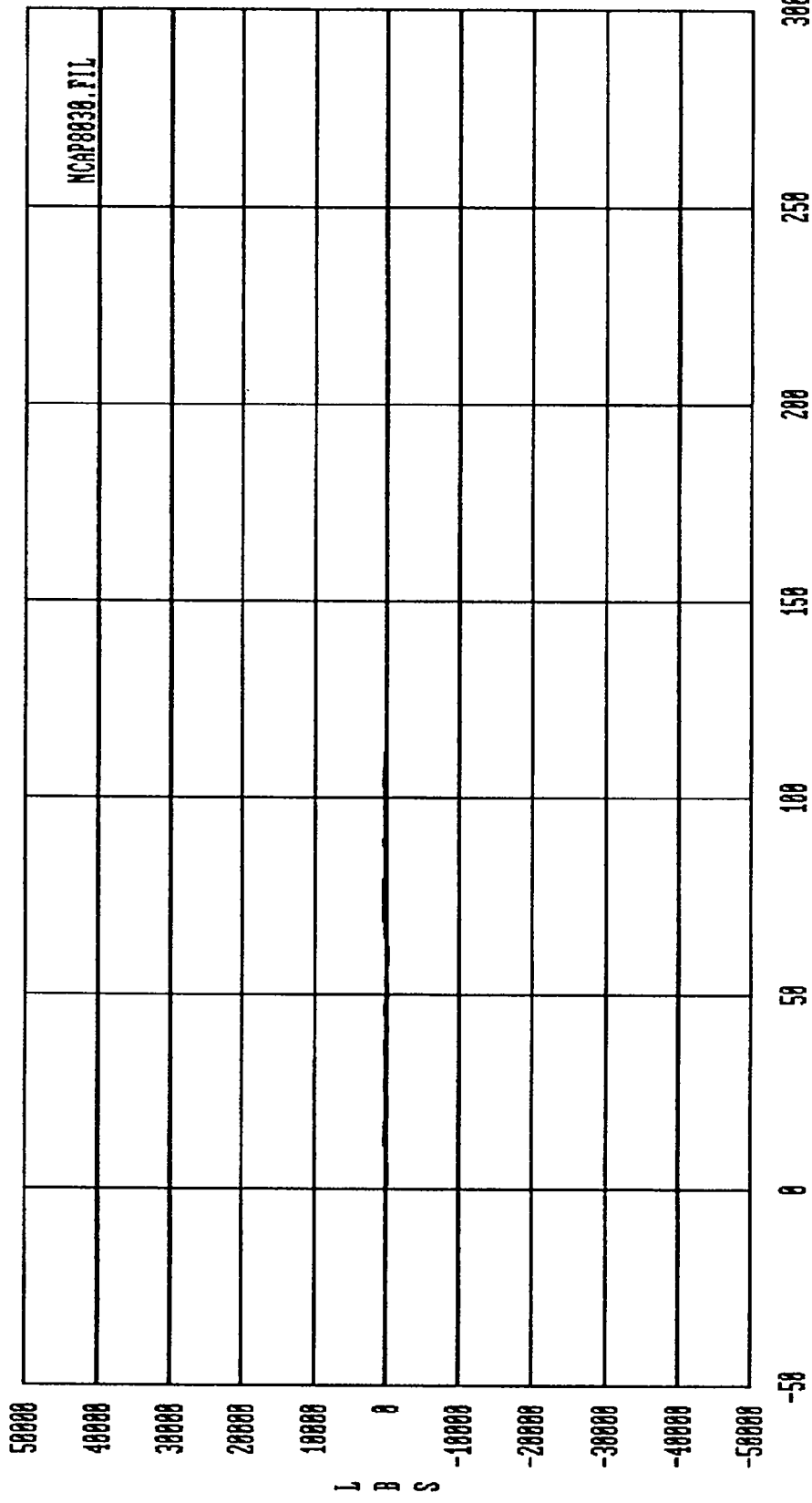
APPENDIX B-2

LOAD CELL BARRIER DATA

DATA FILTERING:

Load Cell Barrier Channels - Class 60

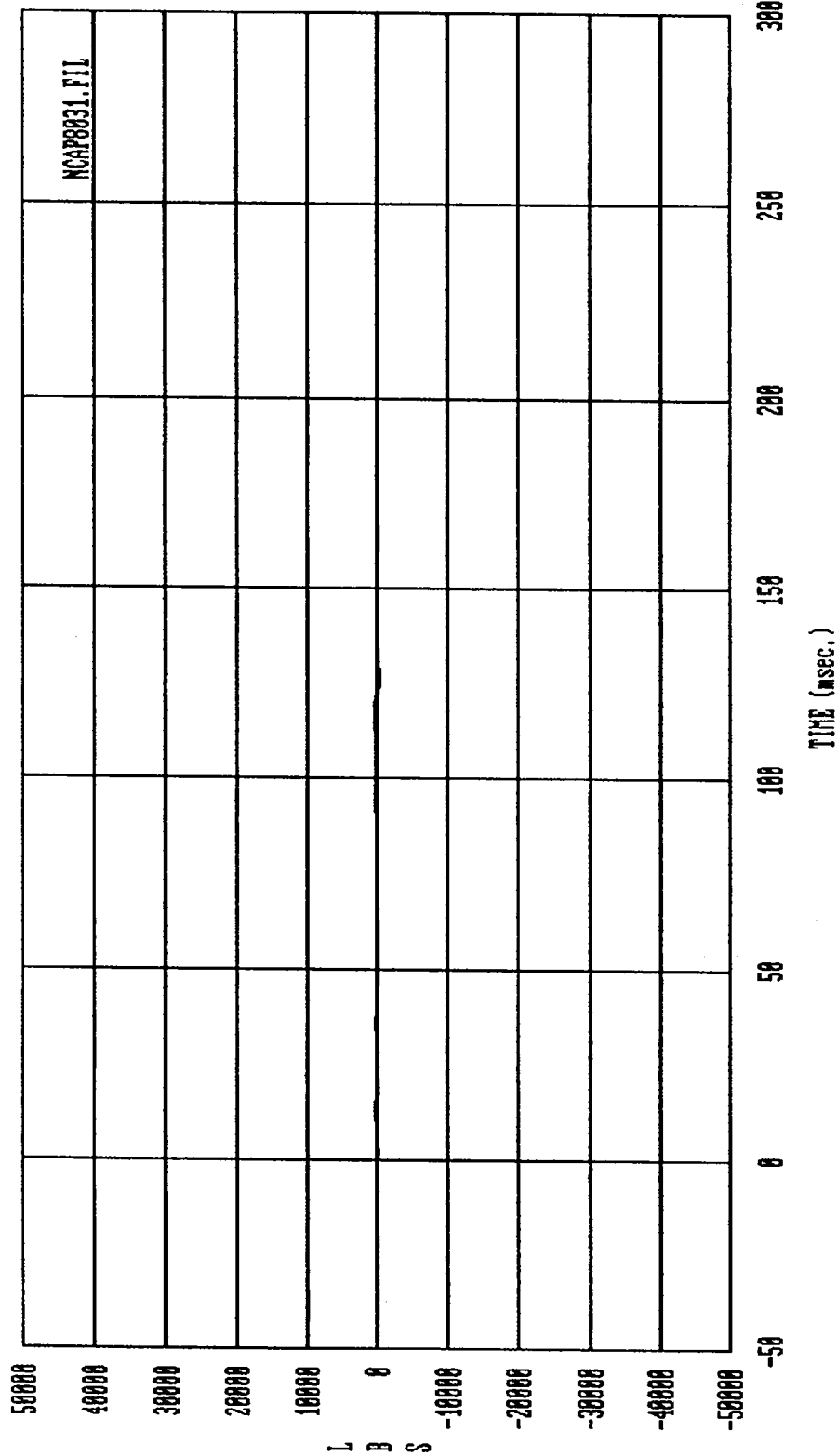
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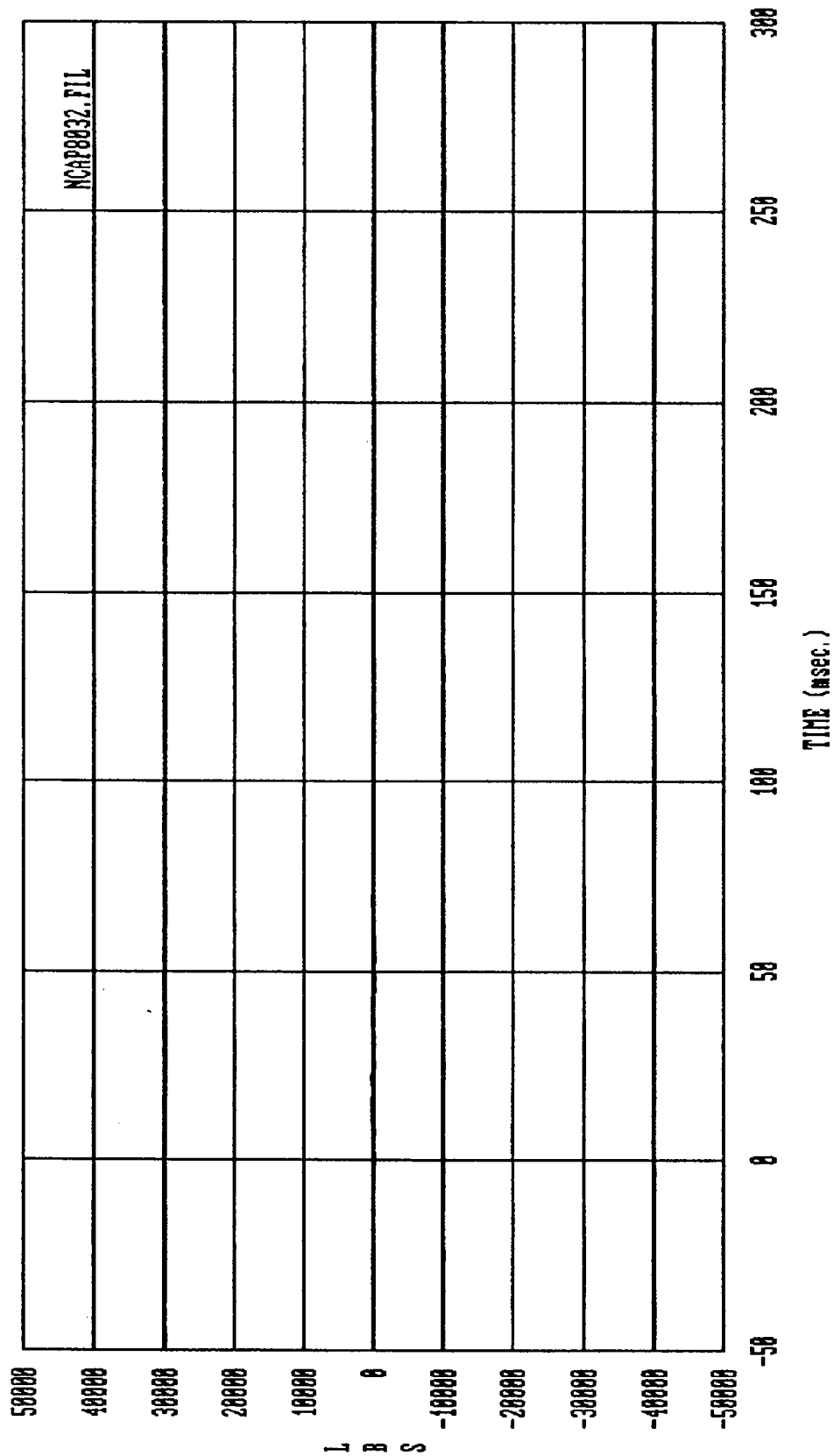
TIME (msec.)

Curve: Force on Barrier load cell A1 Filter: SAE CLASS 60 Max = 489.84 Min = -273.54

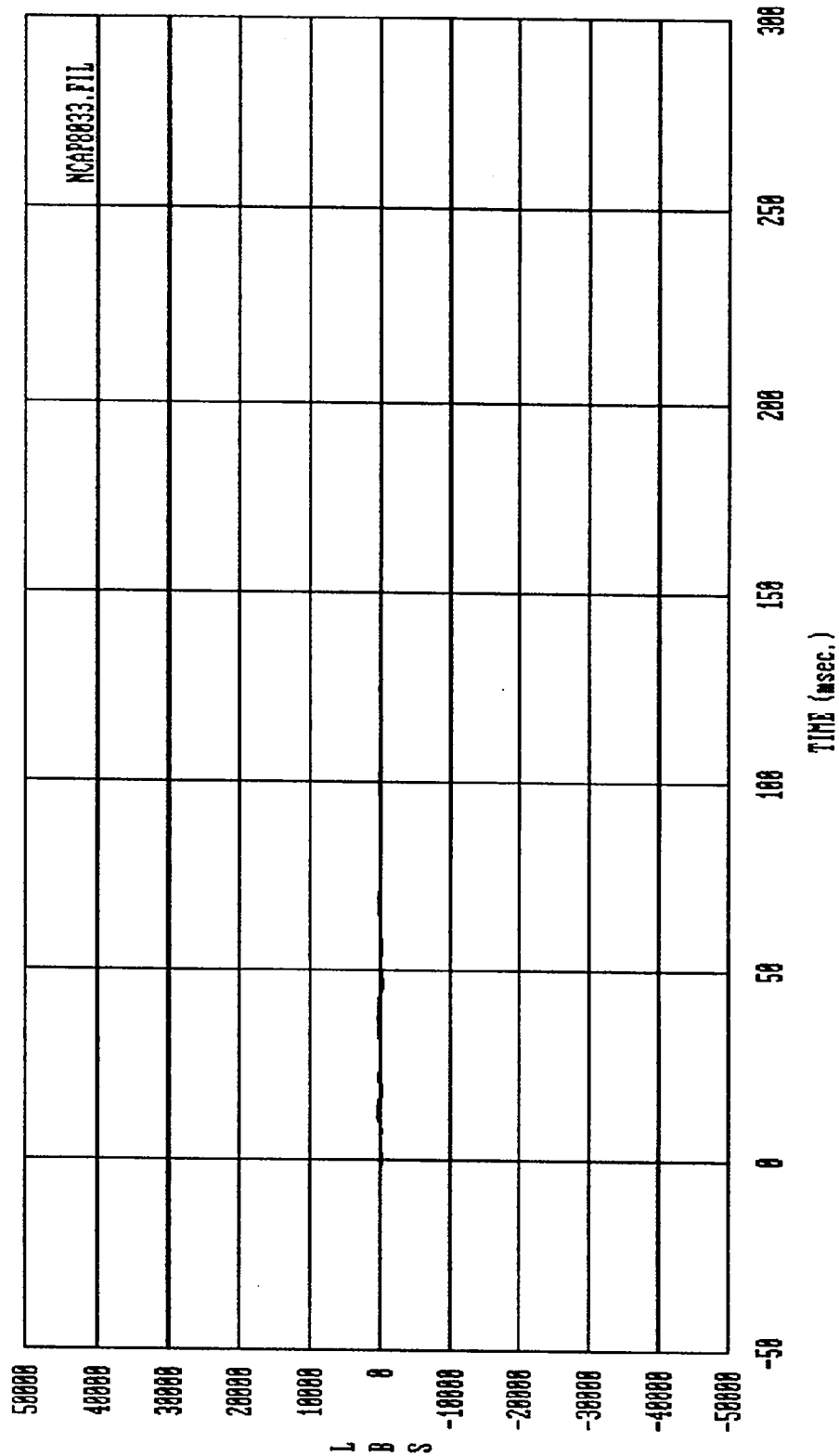
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



Curve: Force on Barrier load cell A2 Filter: SAE CLASS 60 Max = 430.73 Min = -368.89
 HSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

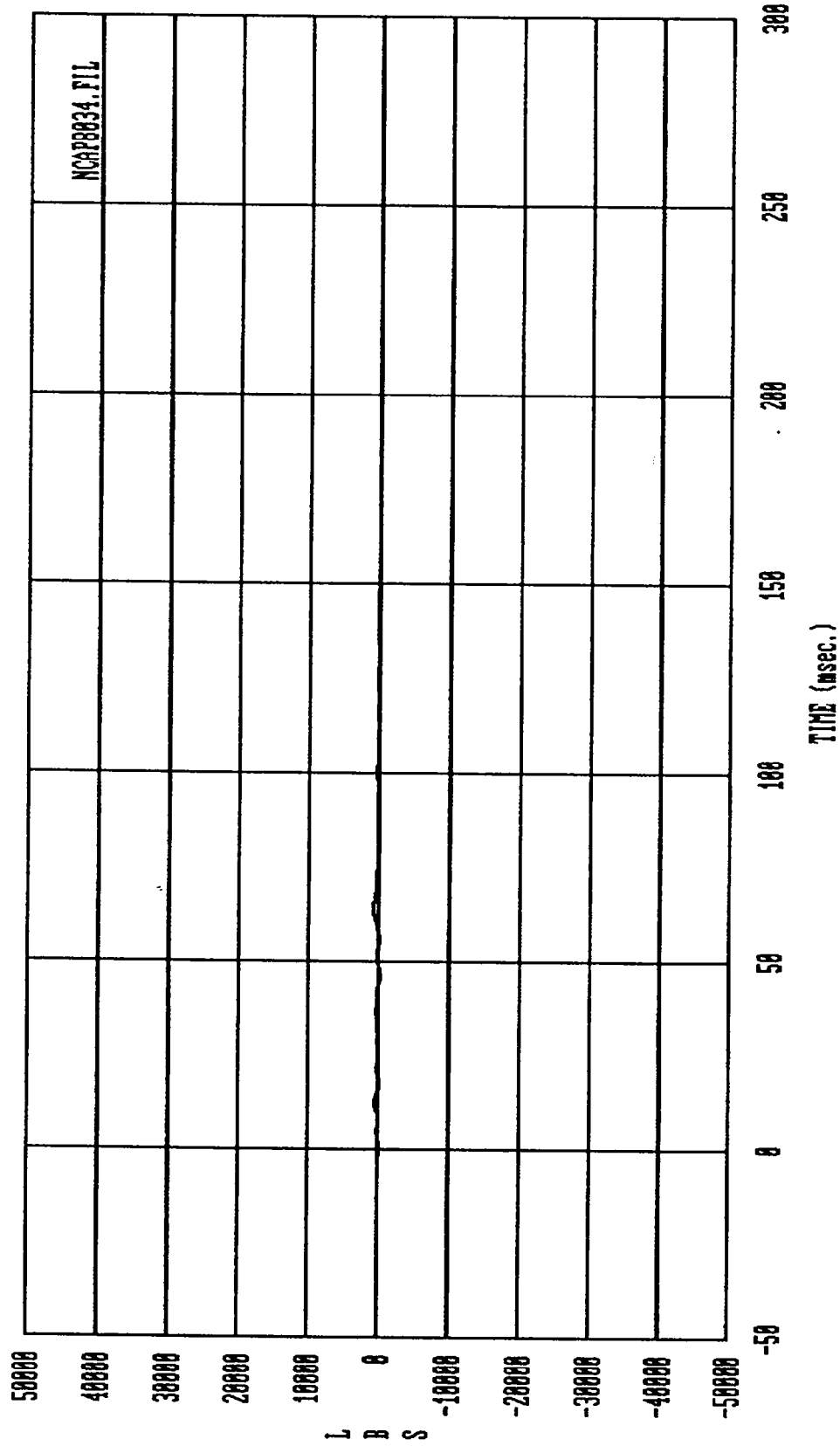


Curve: Force on Barrier load cell A3 Filter: SAE CLASS 60 Max = 329.59 Min = -252.64
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



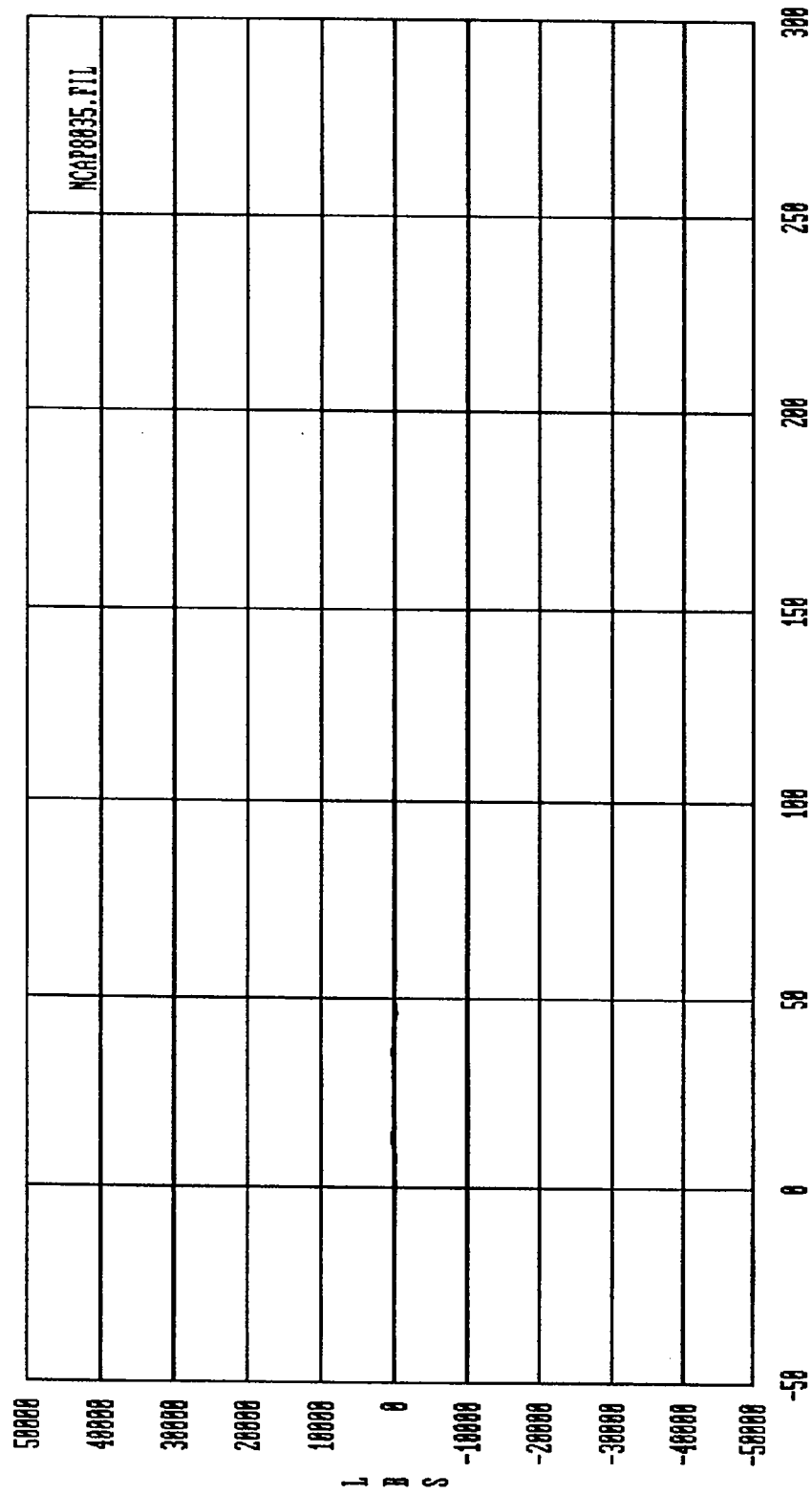
Curve: Force on Barrier load cell #4 Filter: SAE CLASS 60 Max = 431.58 Min = -336.86

MSE Date: 83/01/90 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.

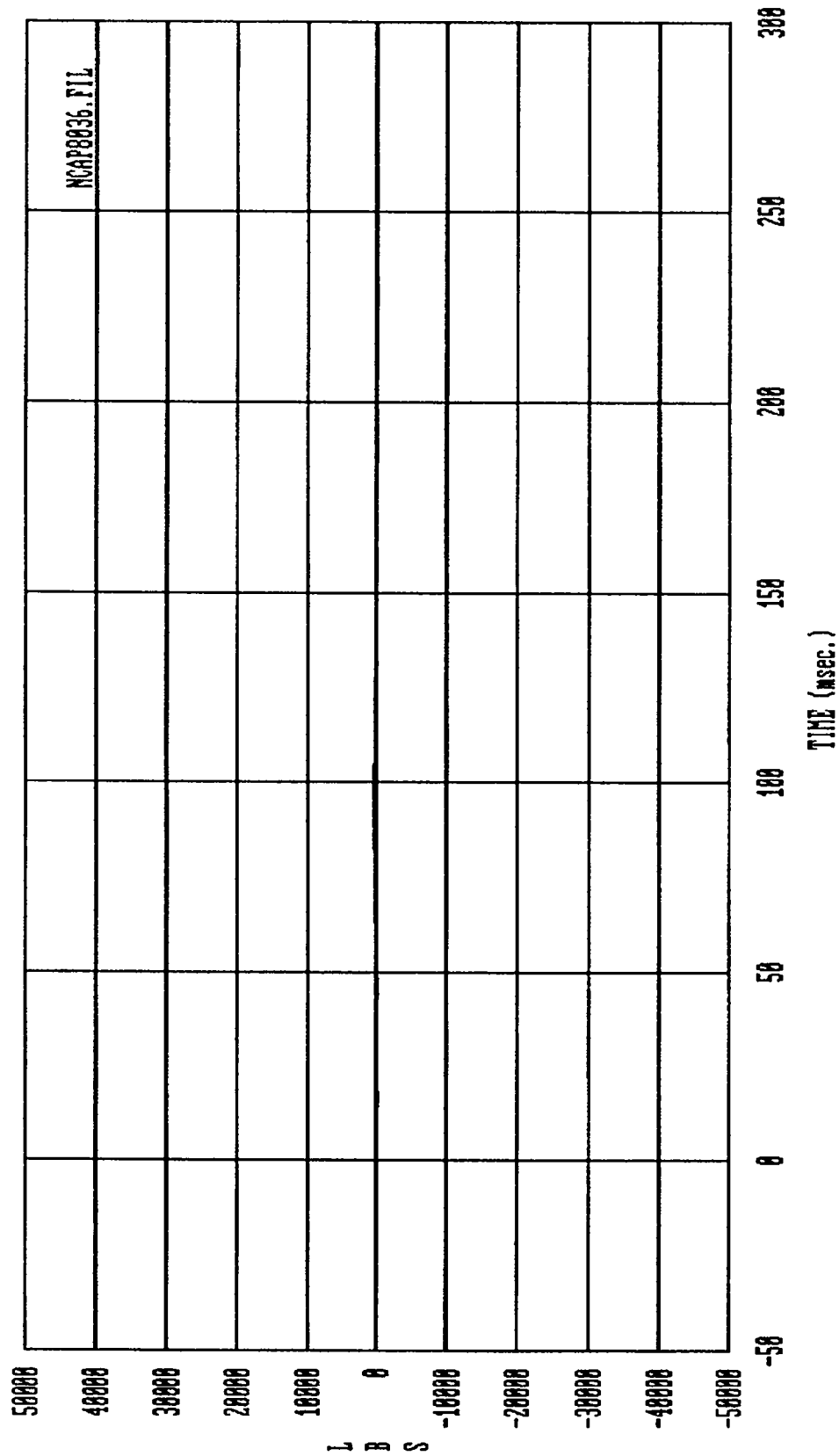


Curve: Force on Barrier load cell AS Filter: SAE CLASS 60 Max = 830.16 Min = -316.58

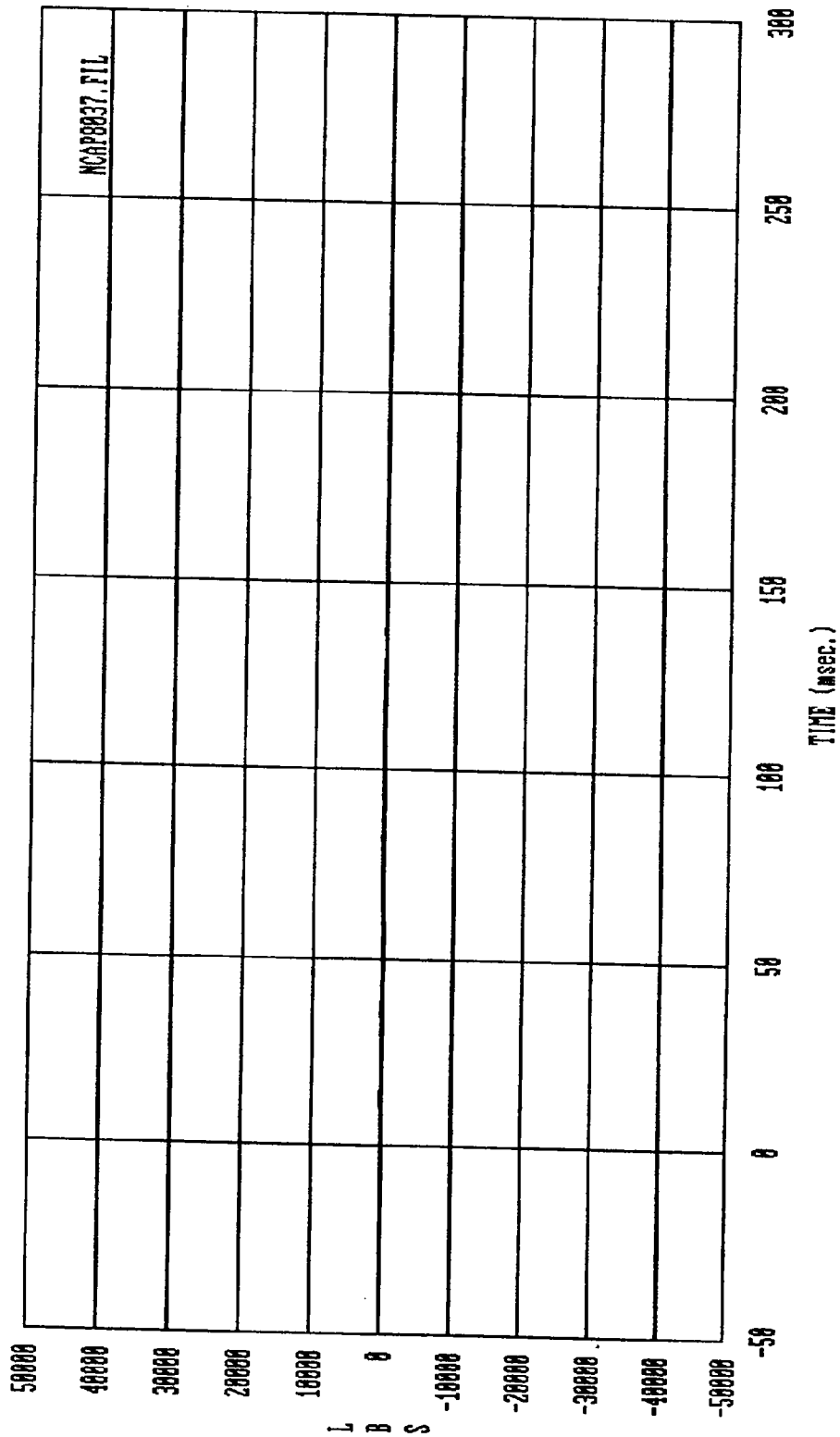
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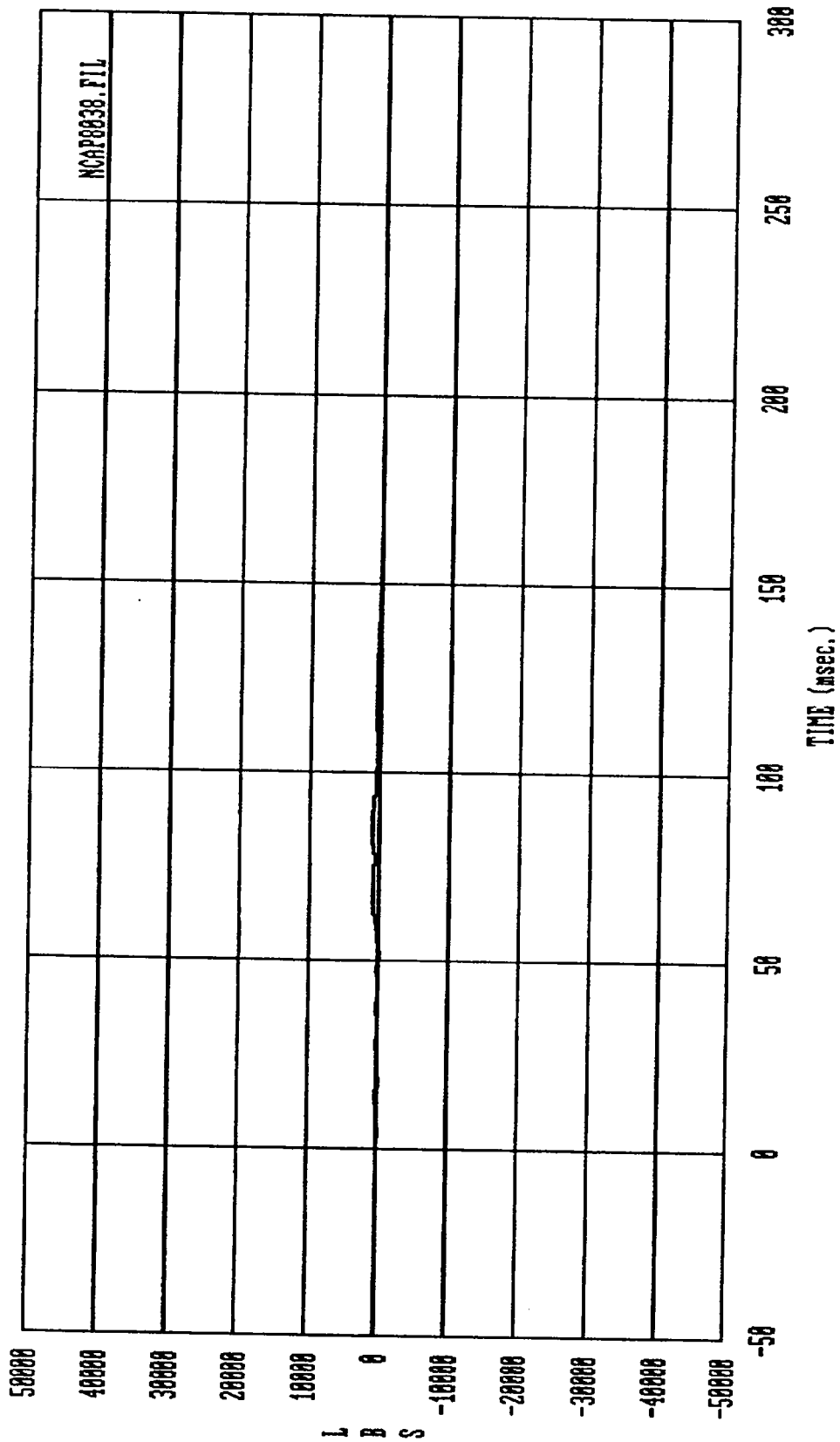
Curve: Force on Barrier load cell A6
 Filter: SAE CLASS 60 Max = 487.96 Min = -280.18
 MSE Date: 03/01/98 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.



Curve: Force on Barrier load cell A7 Filter: SAE CLASS 60 Max = 427.38 Min = -175.91
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



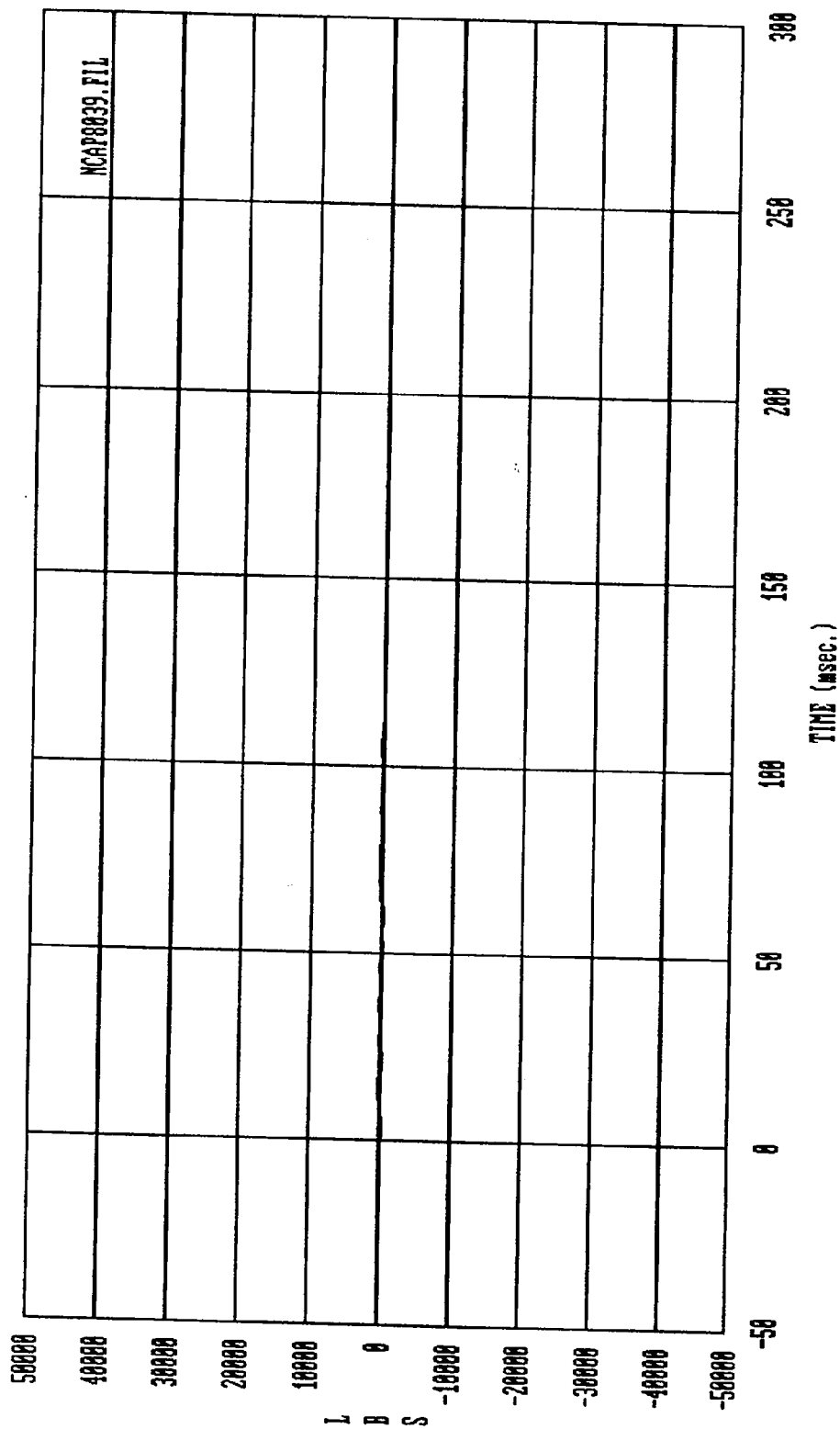
Curve: Force on Barrier load cell #8 Filter: SAE CLASS 60 Max = 316.26 Min = -166.57
 MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



Curve: Force on Barrier load cell A9

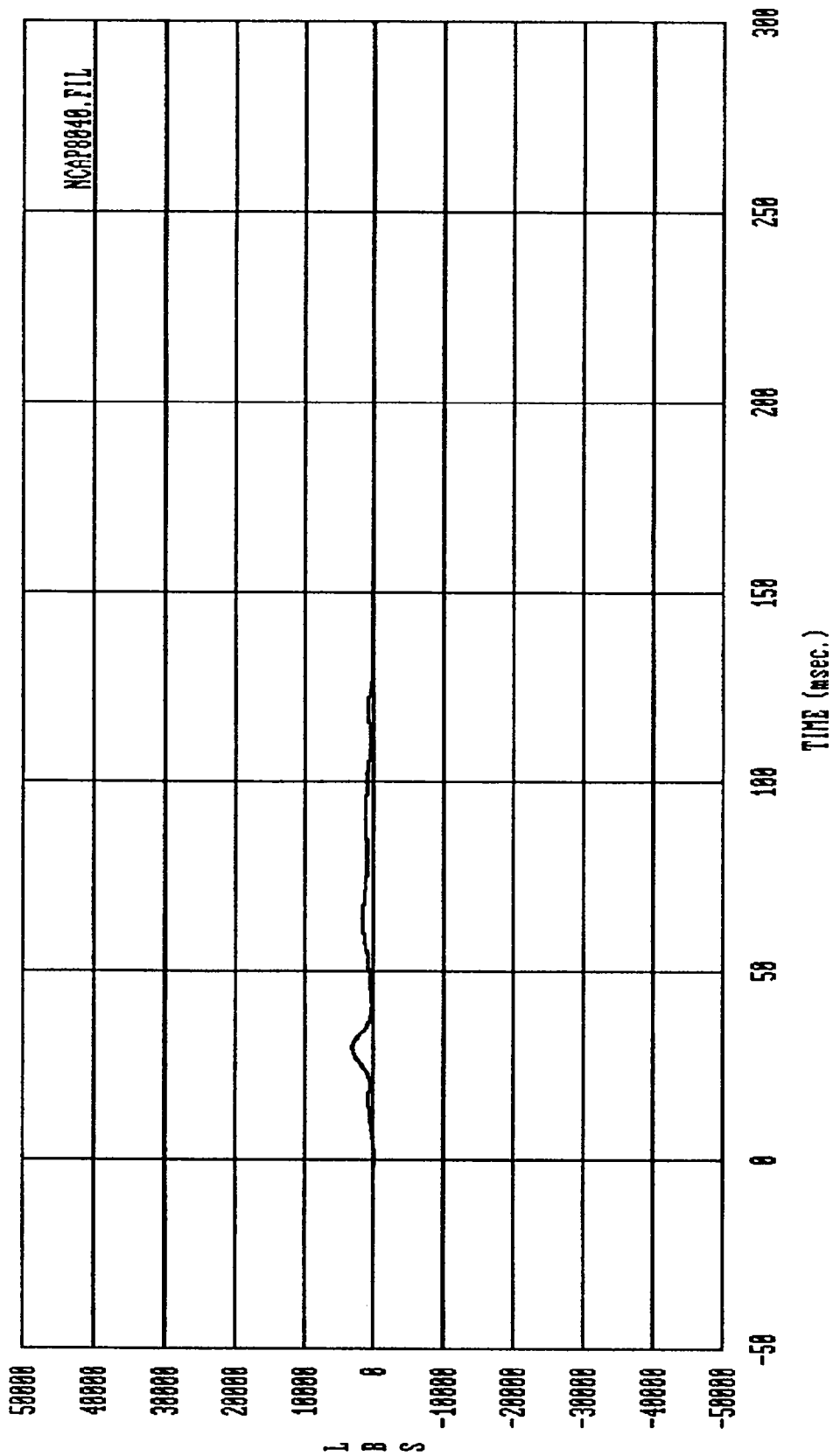
Filter: SAE CLASS 60 Max = 989.83 Min = -179.50

MSE Date: 03/01/90 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.

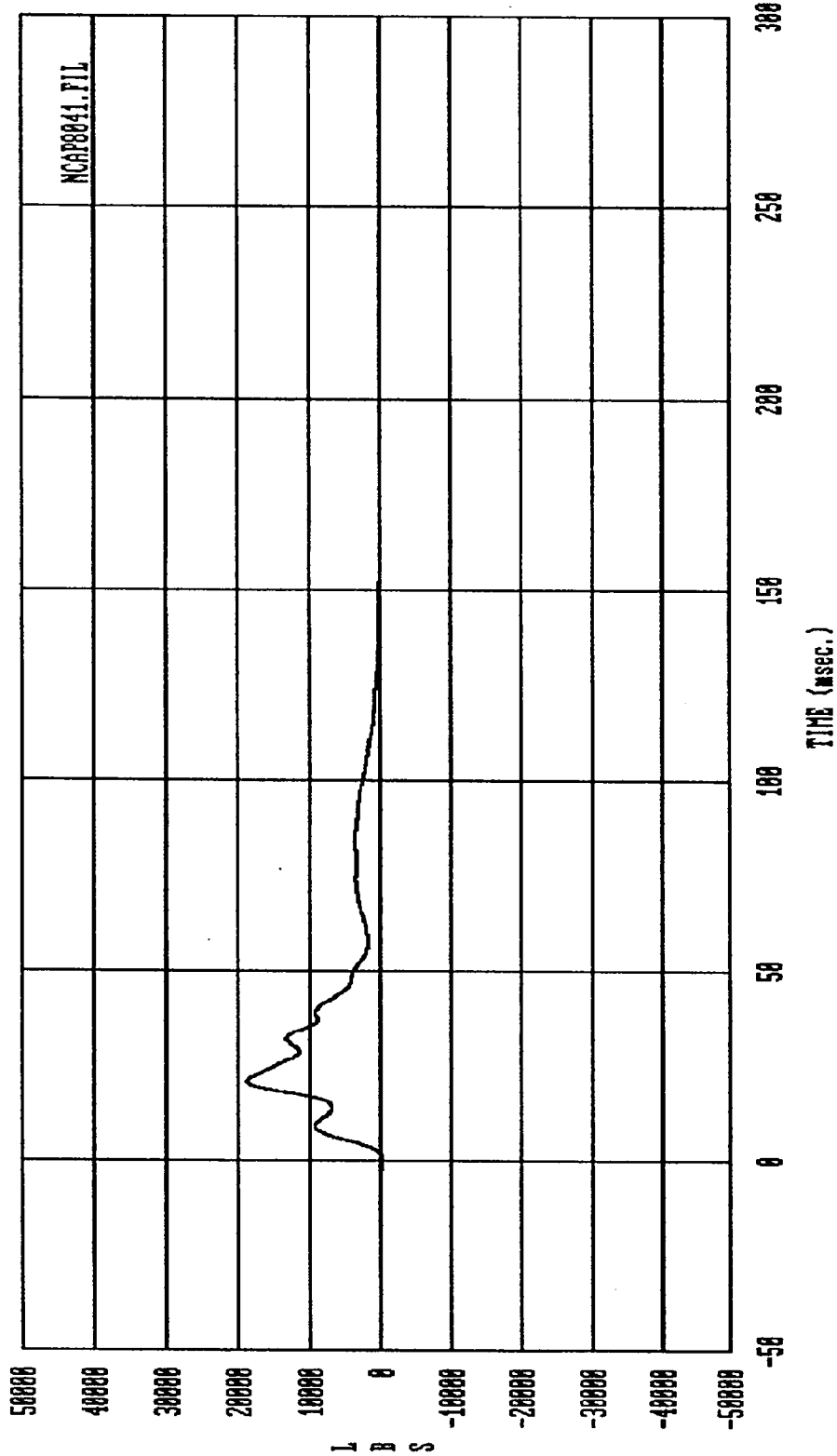


Curve: Force on Barrier load cell B1 Filter: SAE CLASS 60 Max = 489.84 Min = -273.54

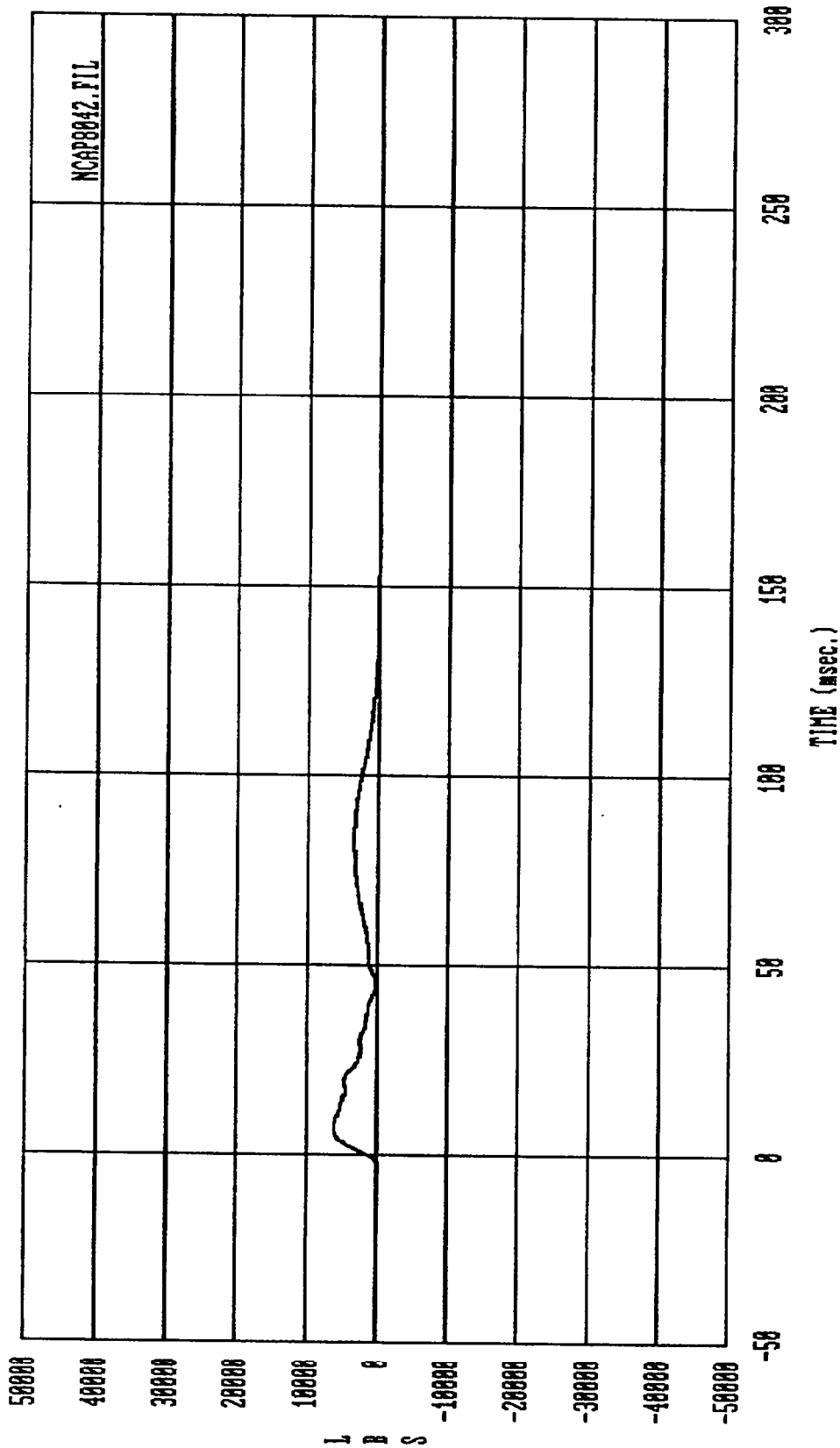
MSE Date: 83/01/90 Program: 1998 New Car Assessment 18 Vehicle: 1998 Ford Mustang Conv.



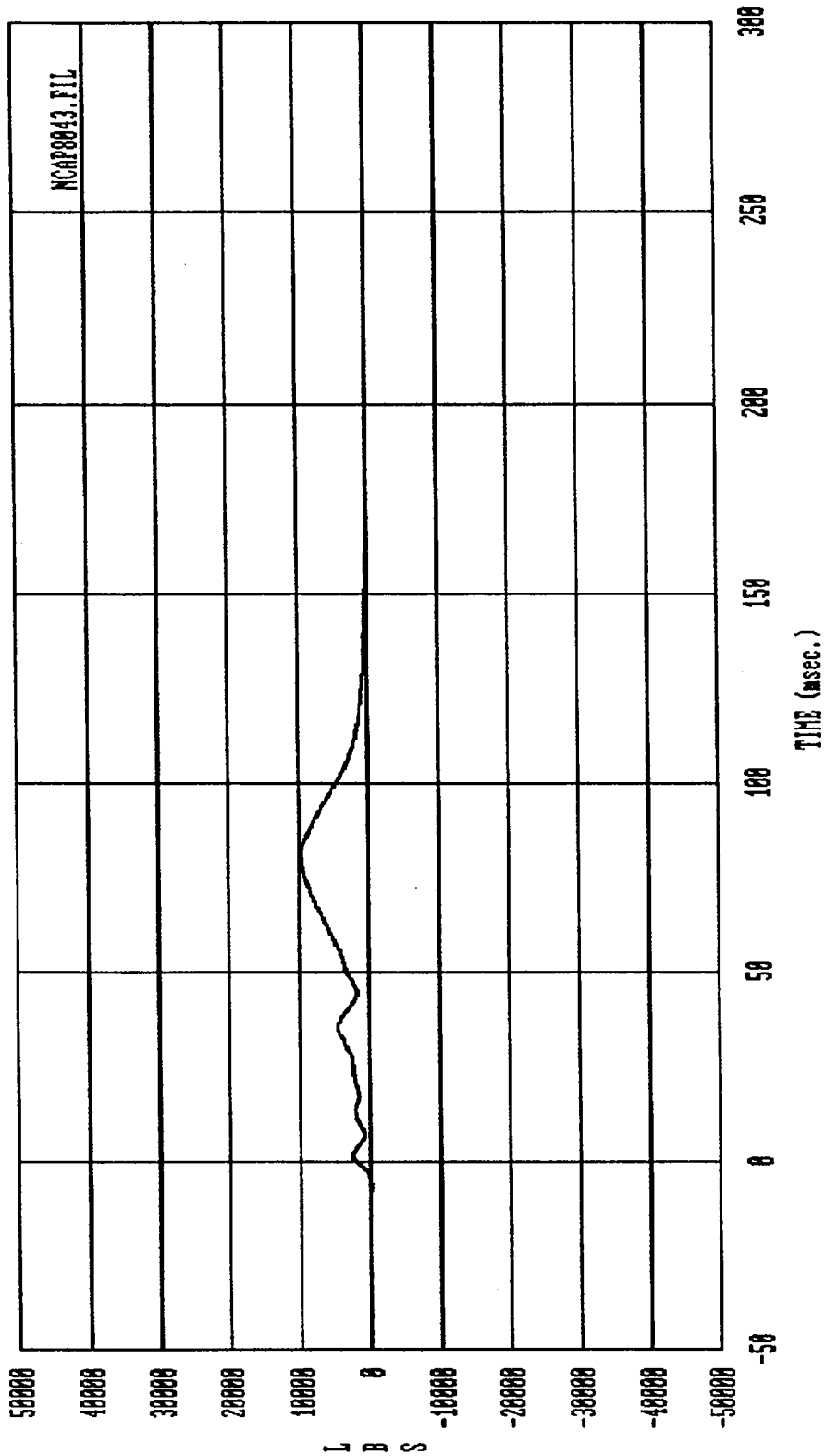
Curve: Force on Barrier load cell B2 Filter: SAE CLASS 60 Max = 3868.3 Min = -134.83
 HSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



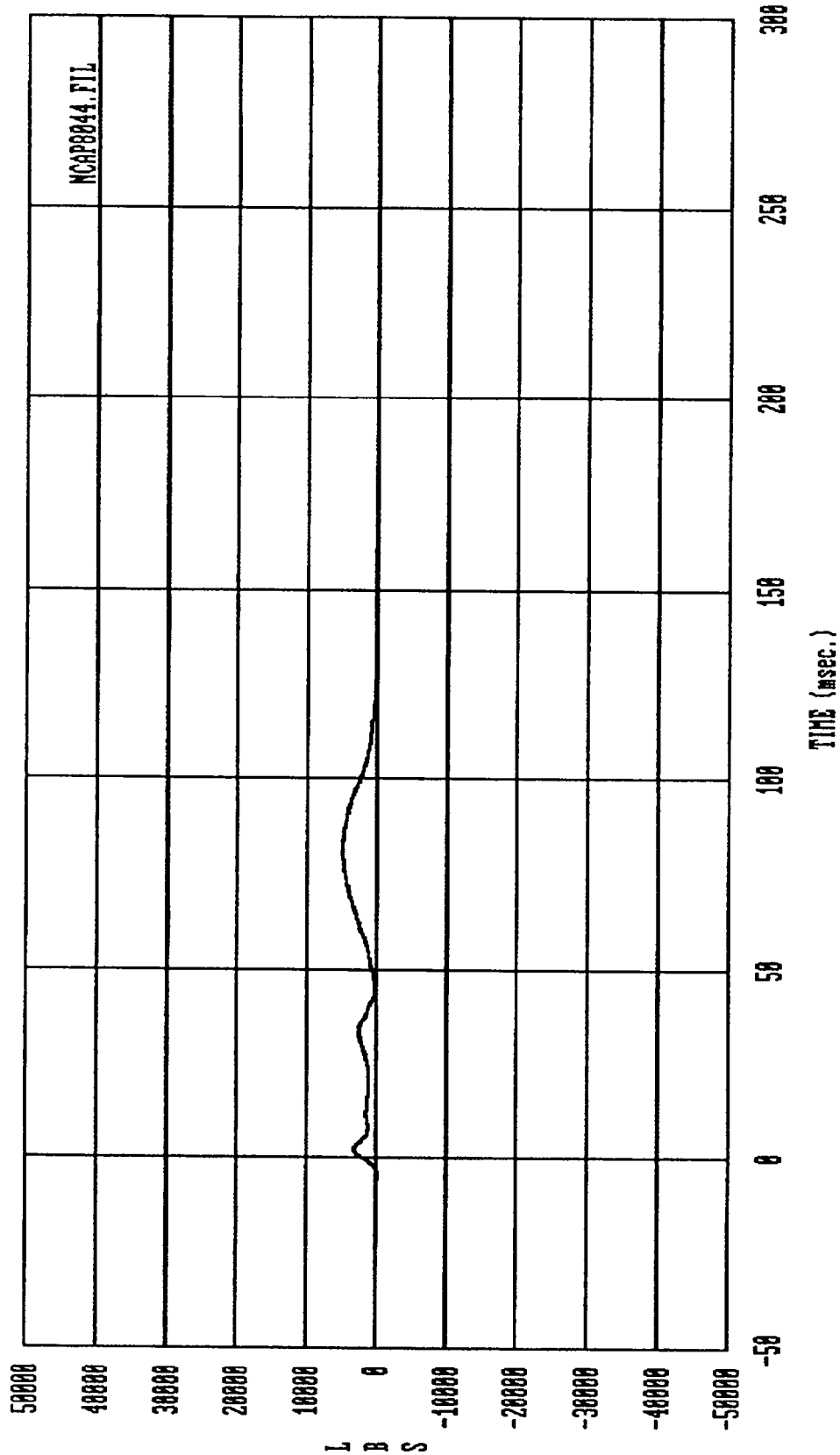
Curve: Force on Barrier load cell B3 Filter: SAE CLASS 60 Max = 18836. Min = -274.55
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



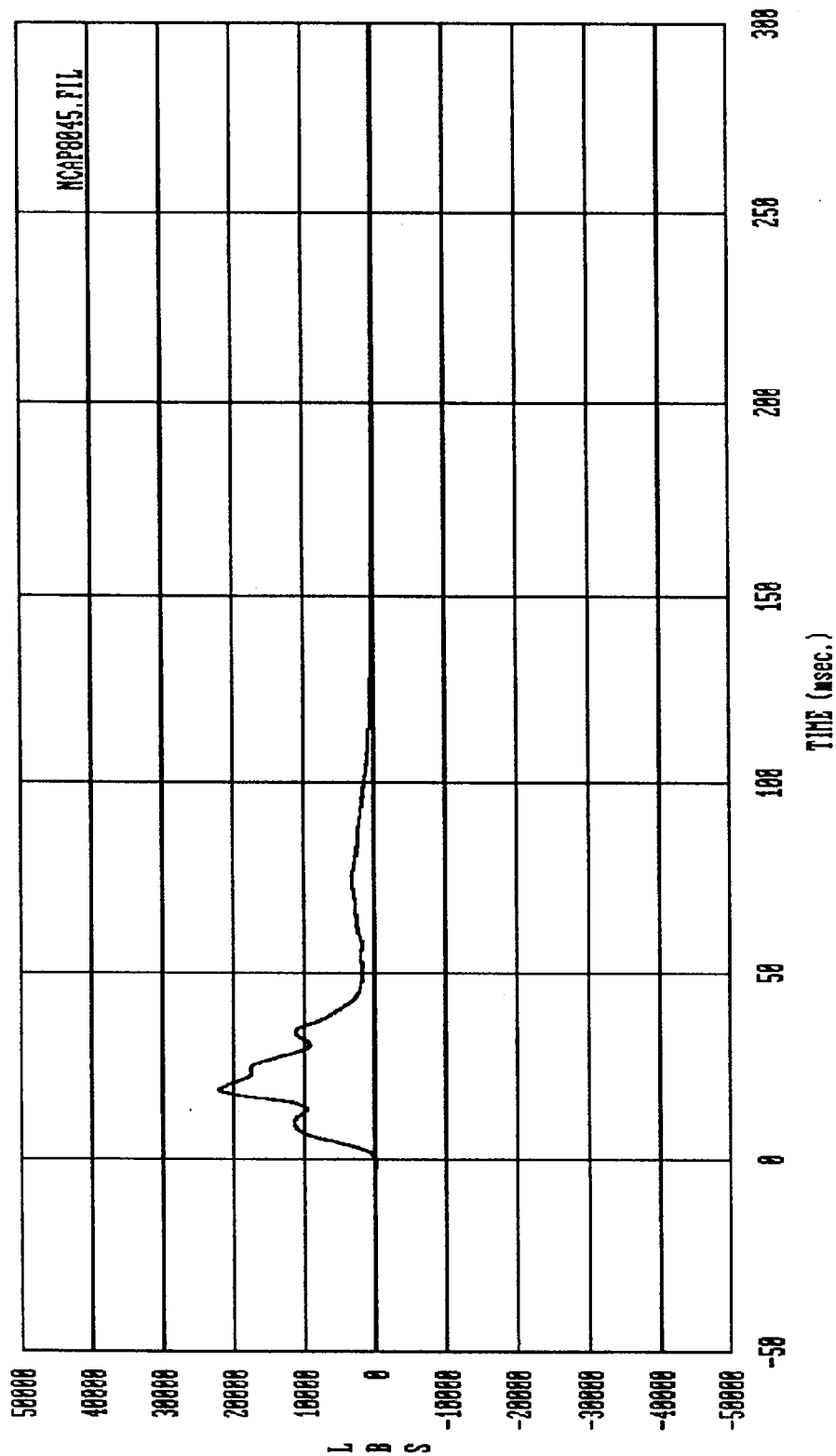
Curve: Force on Barrier load cell B4 Filter: SAE CLASS 60 Max = 6096.0 Min = -29.278
 HSE Date: 03/01/90 Program: 1990 New Car Assessment 18 Vehicle: 1990 Ford Mustang Conv.



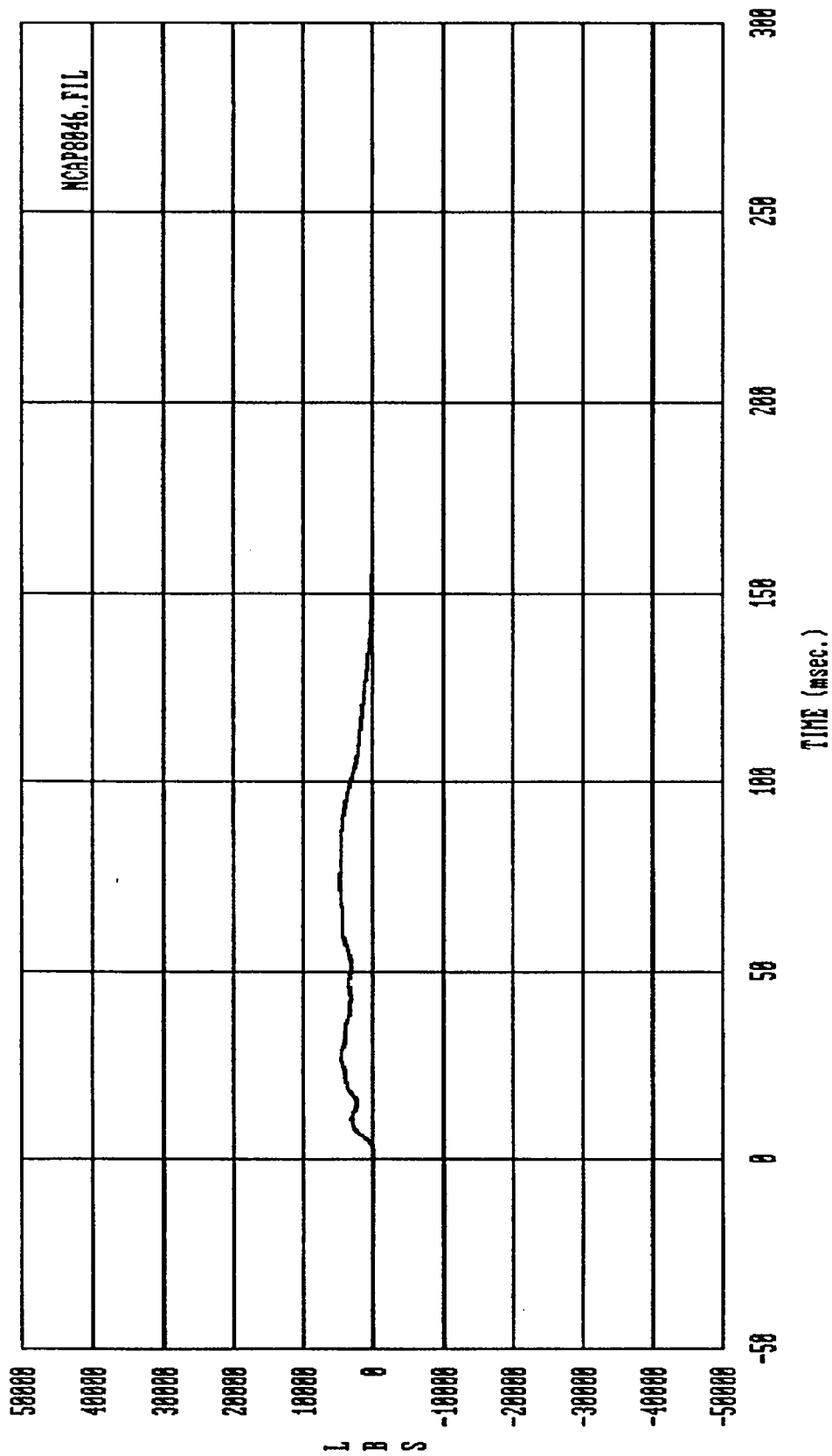
Curve: Force on Barrier load cell B5 Filter: SAE CLASS 60 Max = 9687.3 Min = -70.154
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



Curve: Force on Barrier load cell B6 Filter: SAE CLASS 60 Max = 4882.1 Min = -31.085
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



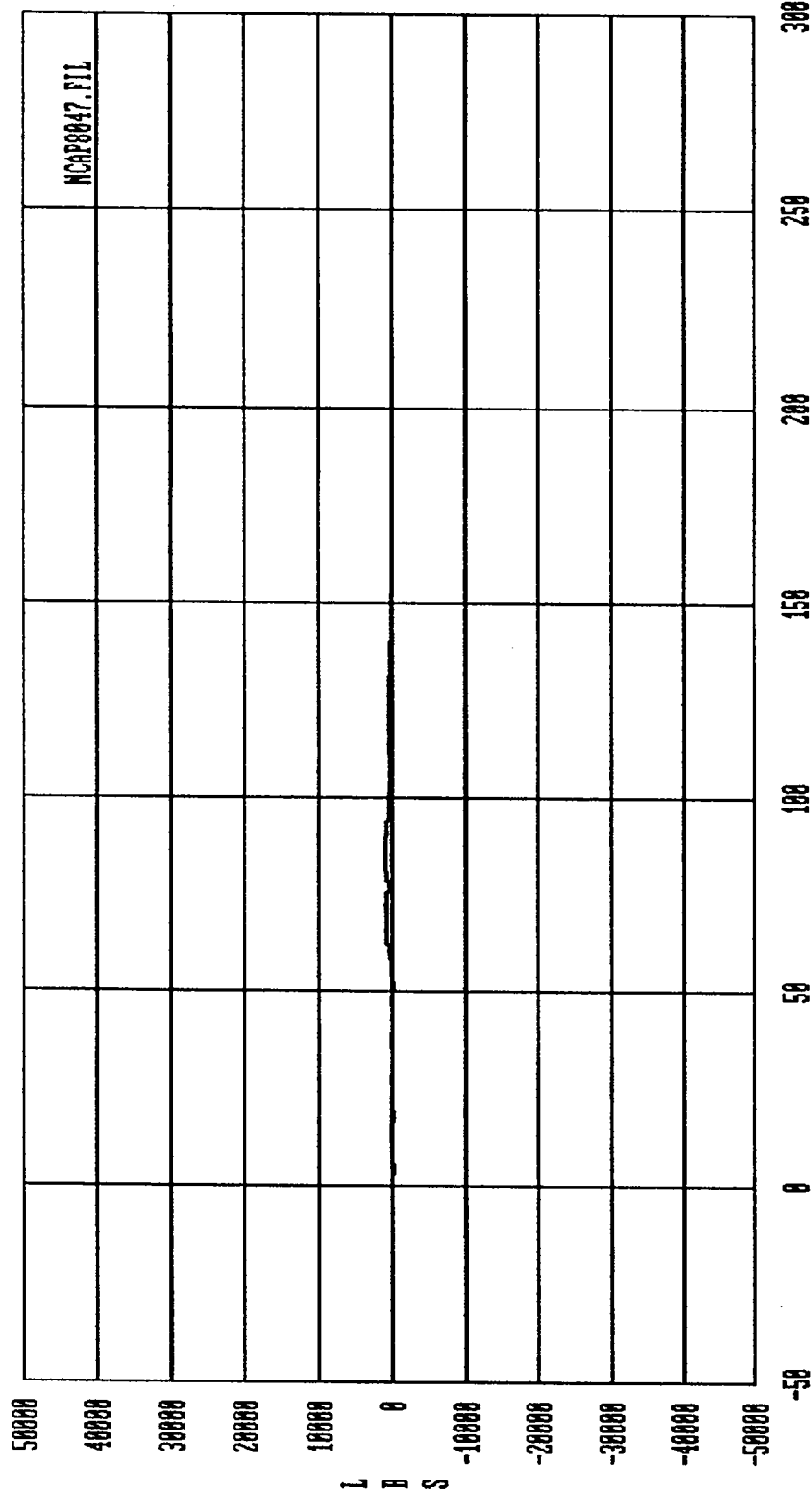
Curve: Force on Barrier load cell B7 Filter: SAE CLASS 60 Max = 22133. Min = 218.55
 MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



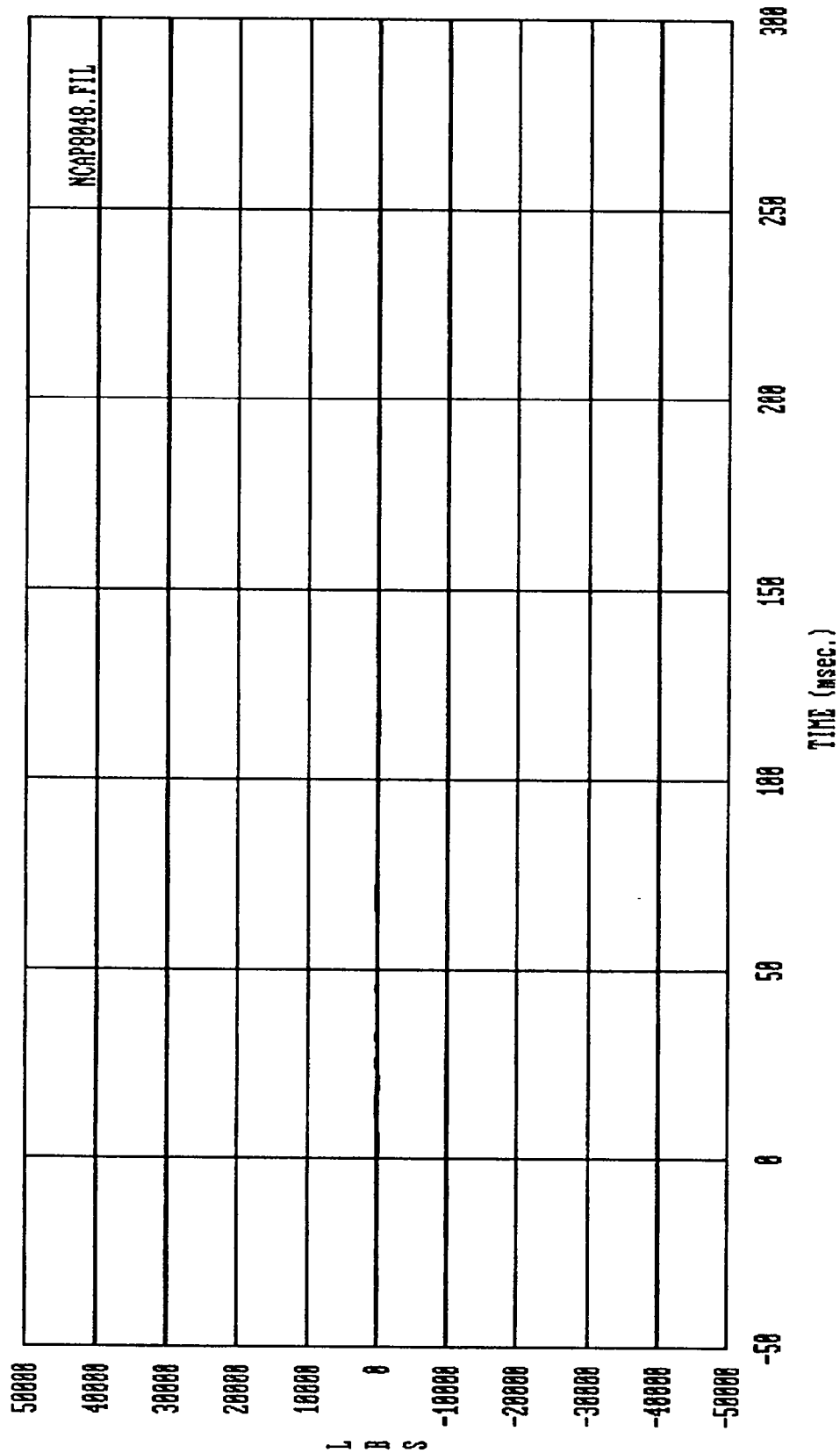
Curve: Force on Barrier load cell B8

Filter: SAE CLASS 60 Max = 4723.2 Min = -131.00

MSE Date: 83/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

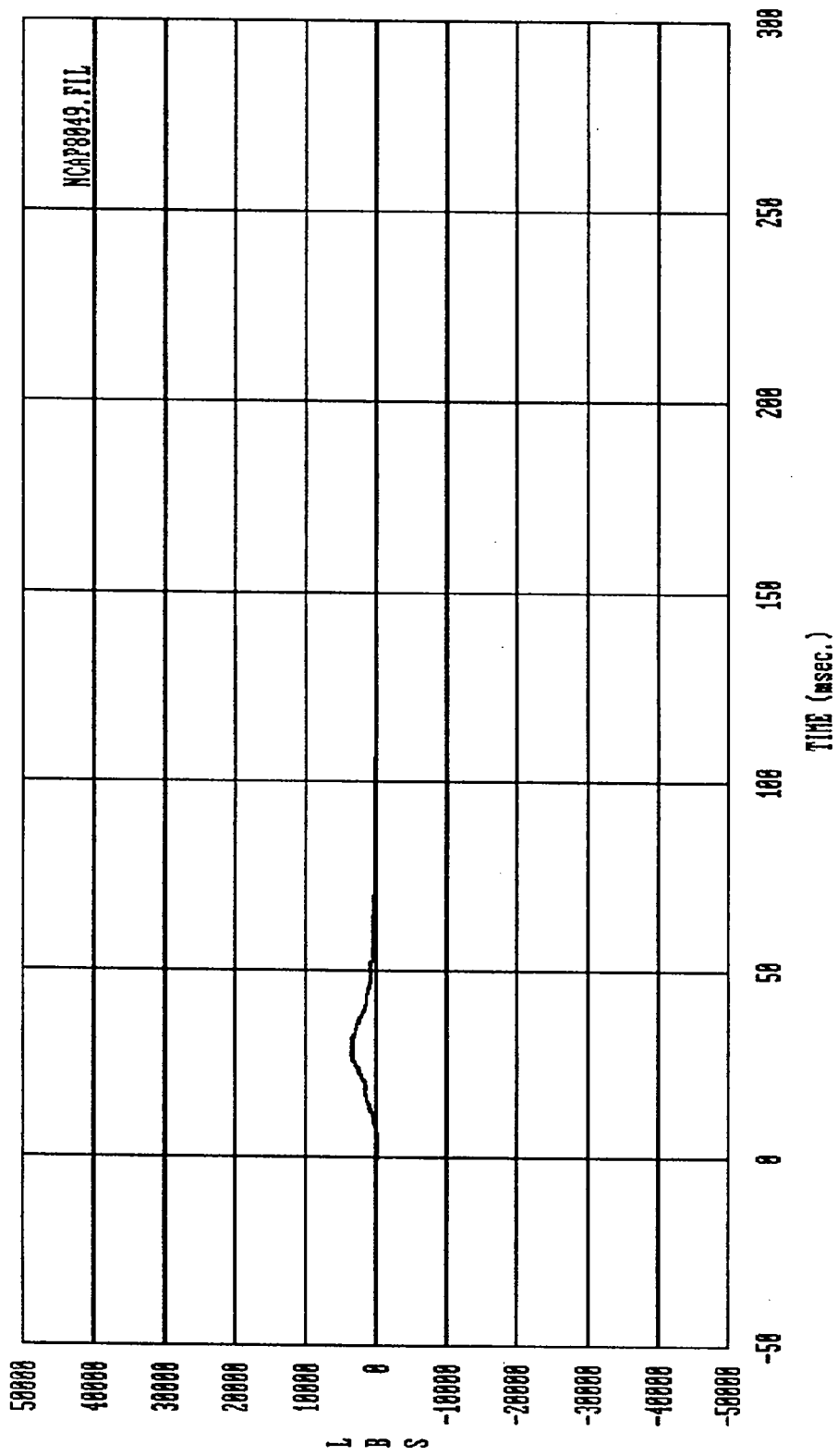


Curve: Force on Barrier load cell B9 Filter: SAE CLASS 60 Max = 993.81 Min = -179.27
MSE Date: 03/01/98 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.

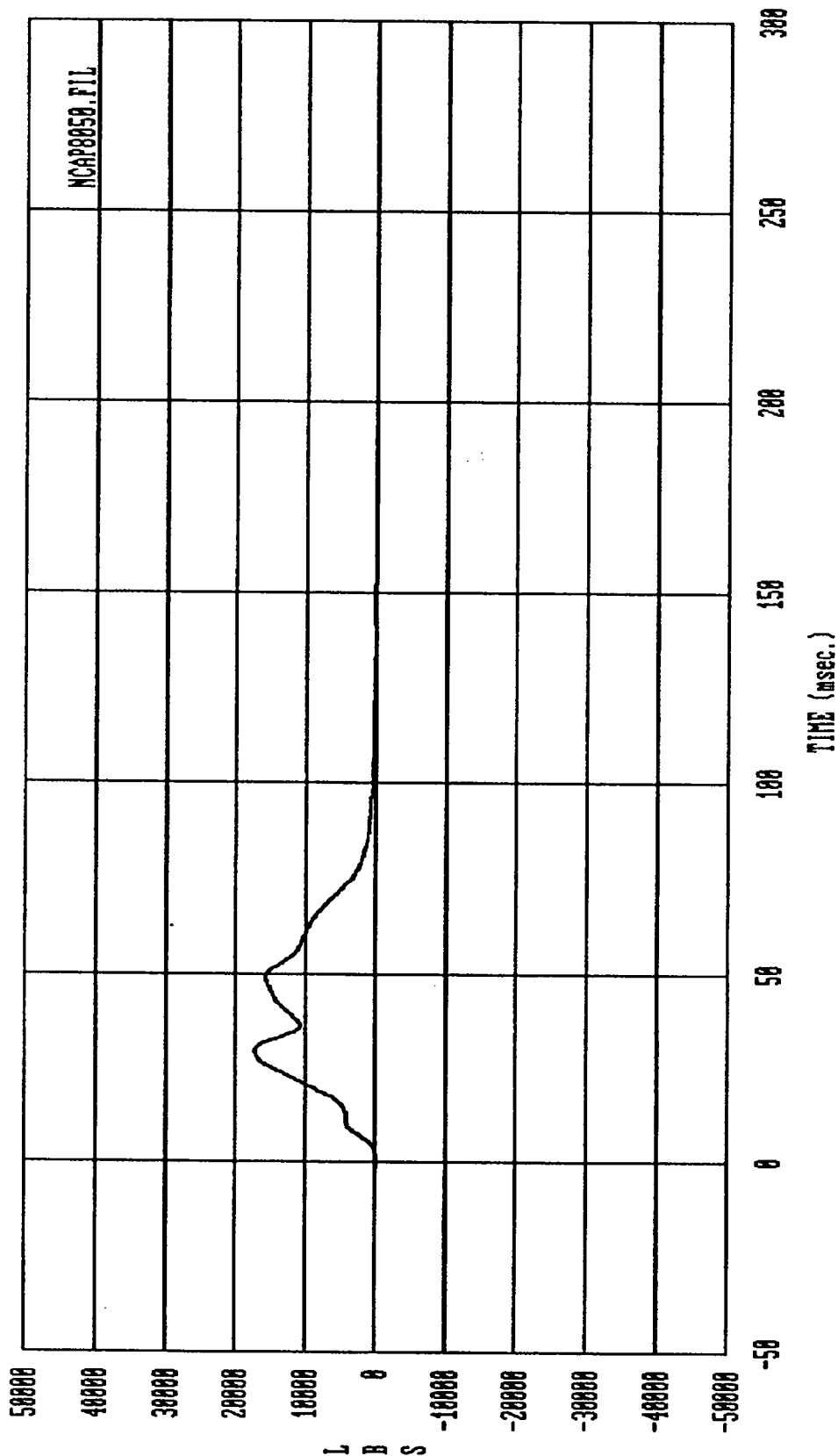


Curve: Force on Barrier load cell C1 Filter: SHE CLASS 60 Max = 238.32 Min = -181.86

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

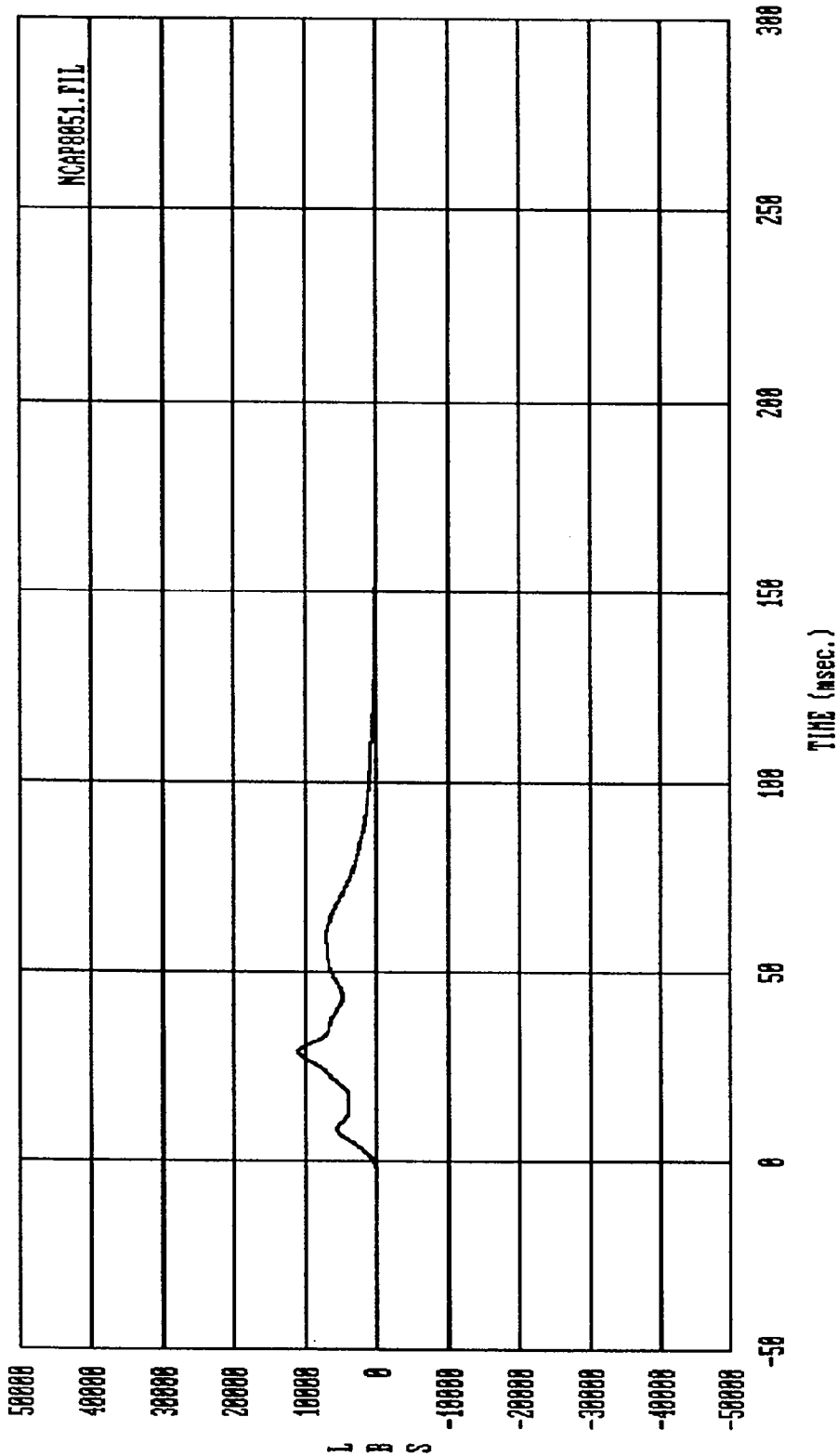


Curve: Force on Barrier load cell C2 Filter: SAE CLASS 60 Max = 3457.5 Min = -133.81
 MSE Date: 83/81/98 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



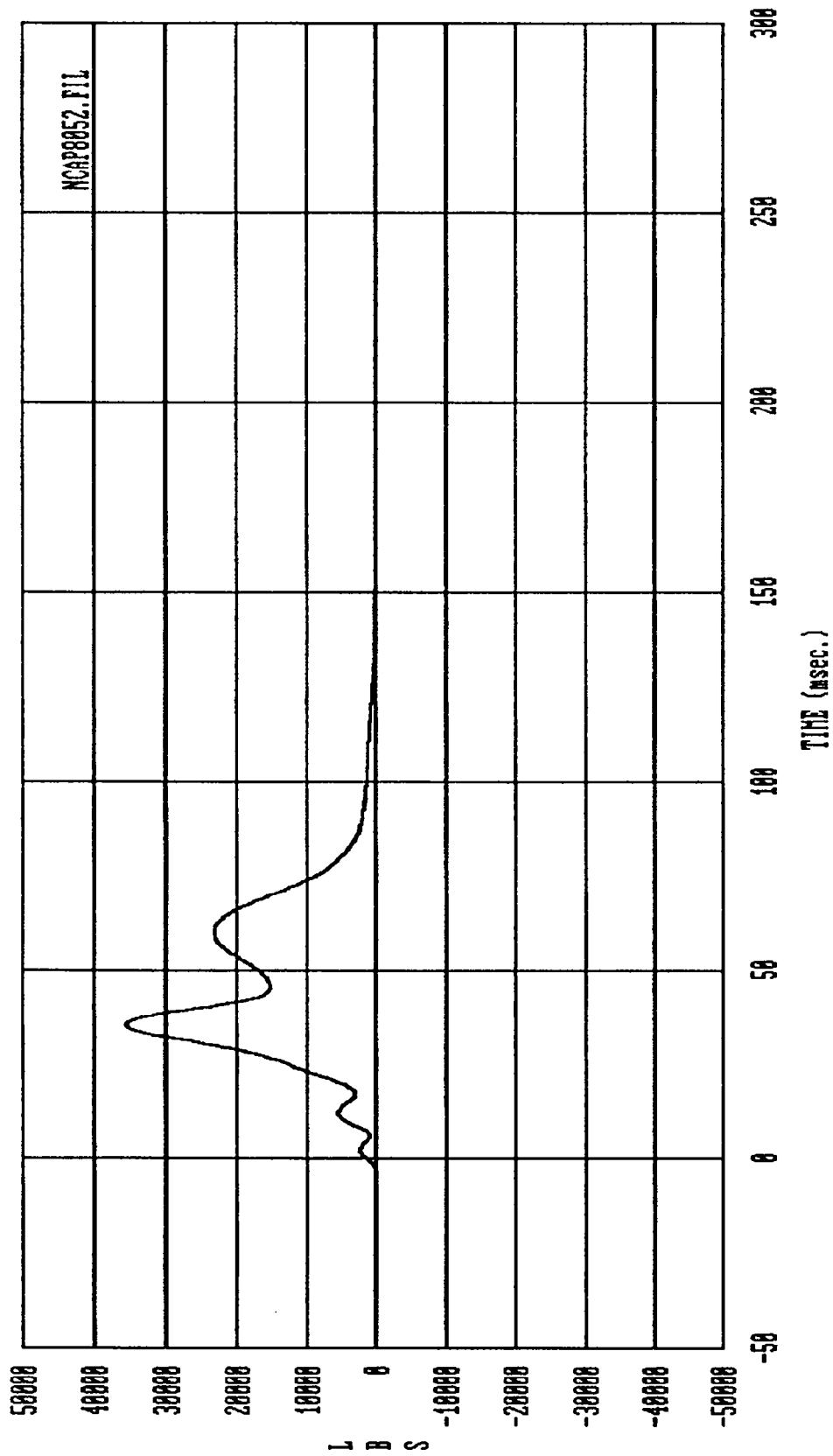
Curve: Force on Barrier load cell C3 Filter: SAE CLASS 60 Max = 17231. Min = -159.95

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

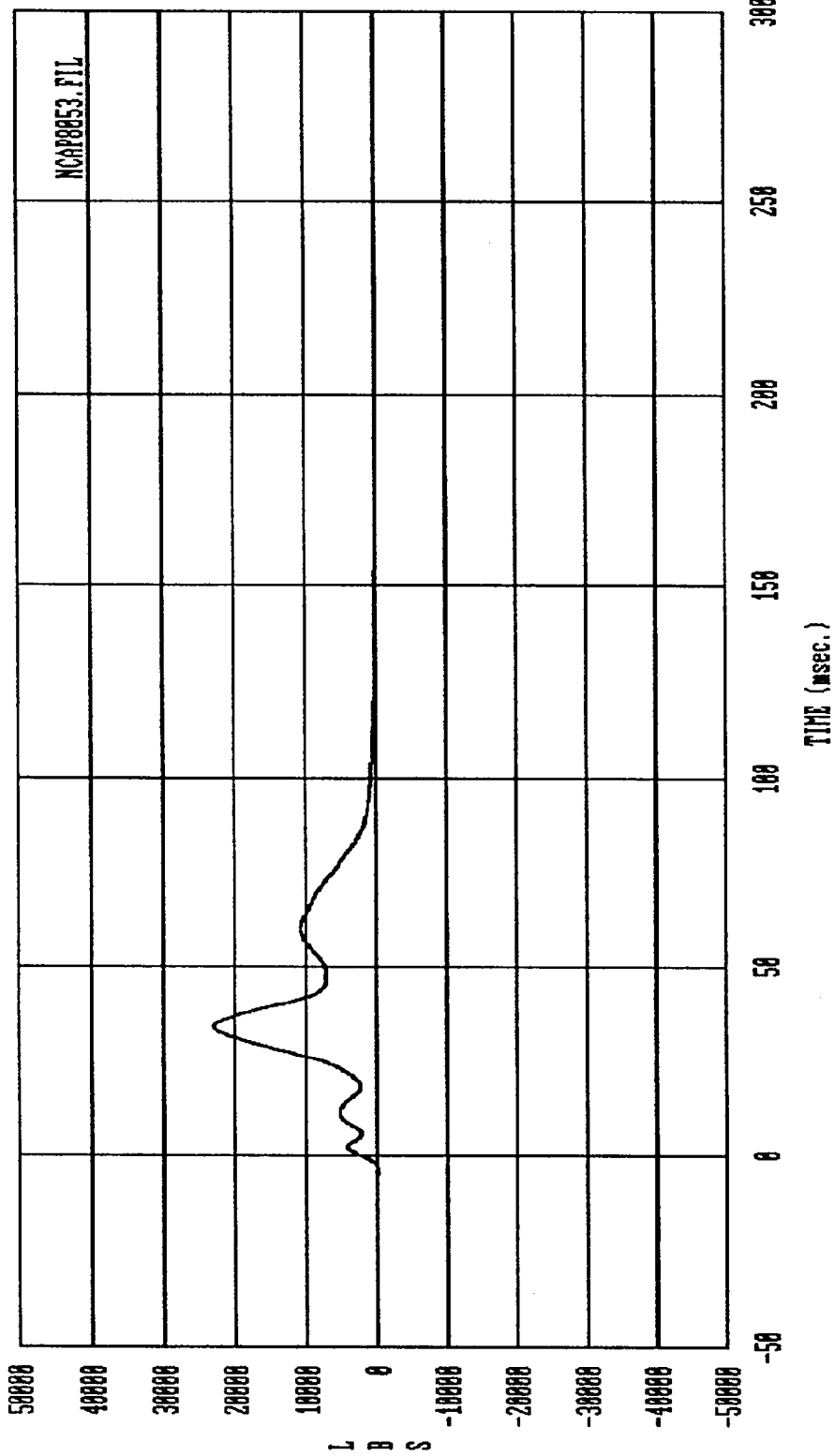


Curve: Force on Barrier load cell C4 Filter: SAE CLASS 60 Max = 18986. Min = -32.856

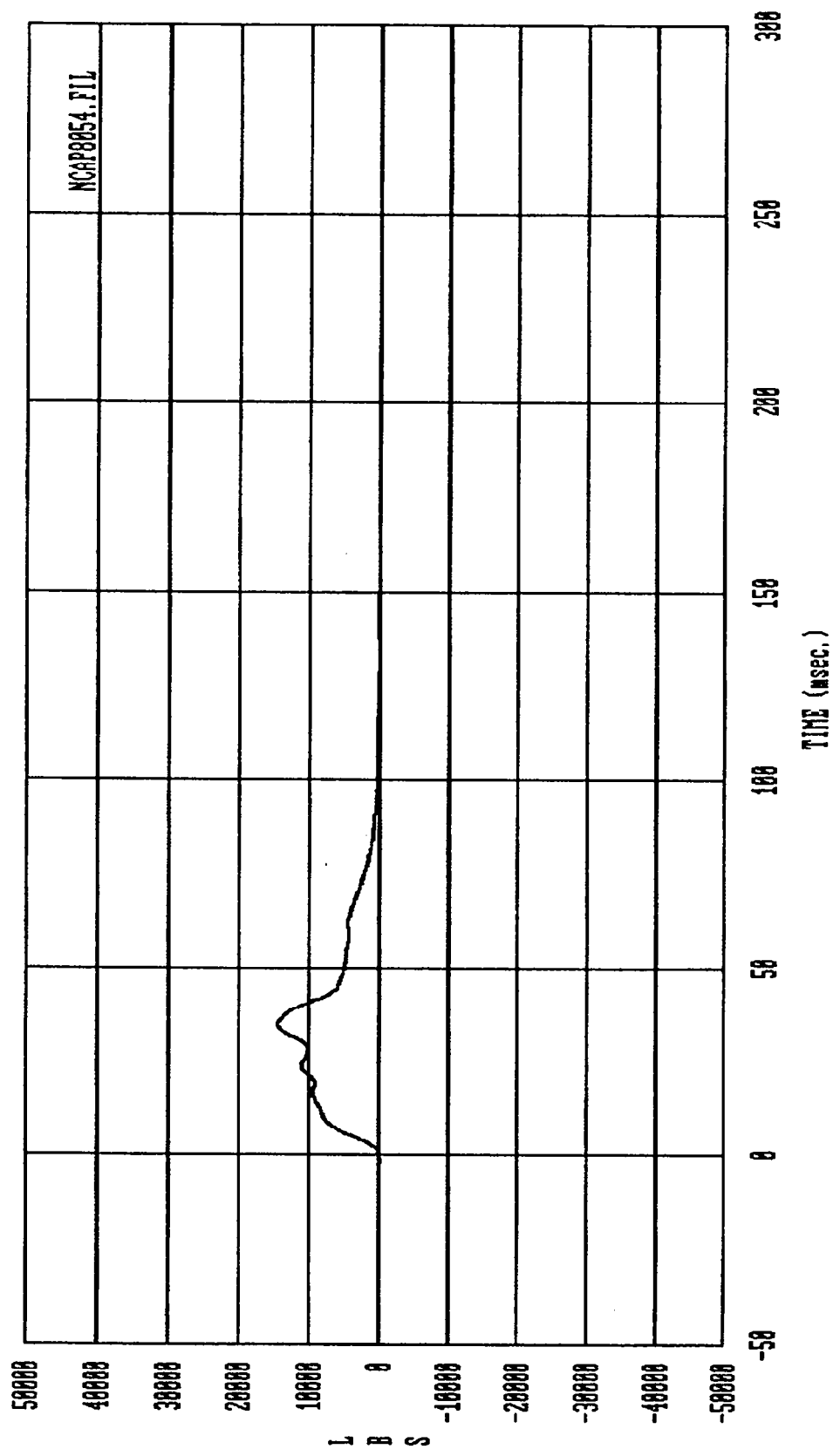
MSE Date: 83/81/90 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.



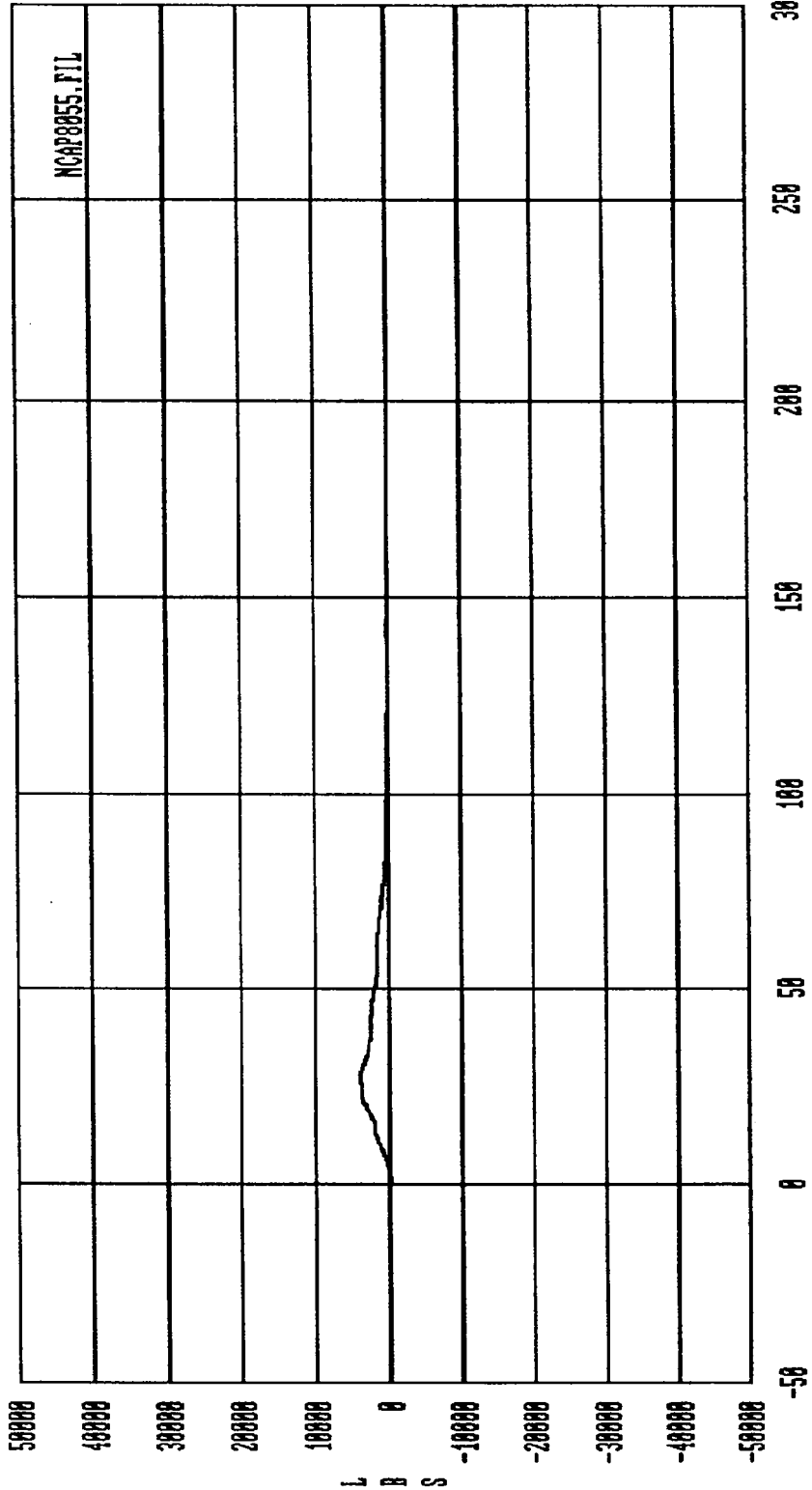
Curve: Force on Barrier load cell C5 Filter: SAE CLASS 60 Max = 35780. Min = -22.866
MSE Date: 83/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



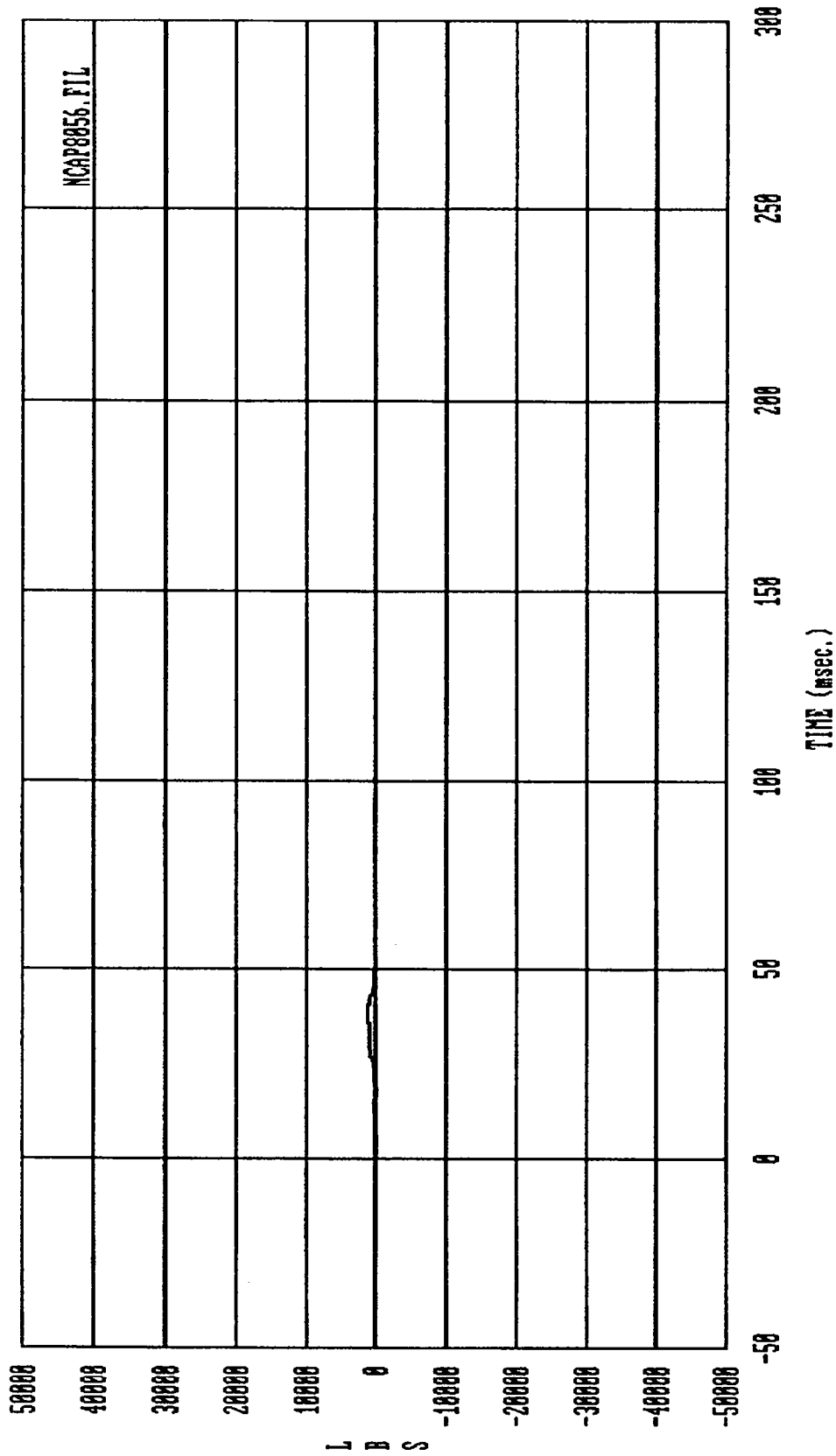
Curve: Force on Barrier load cell C6 Filter: SAE CLASS 60 Max = 22904. Min = -32.715
 MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



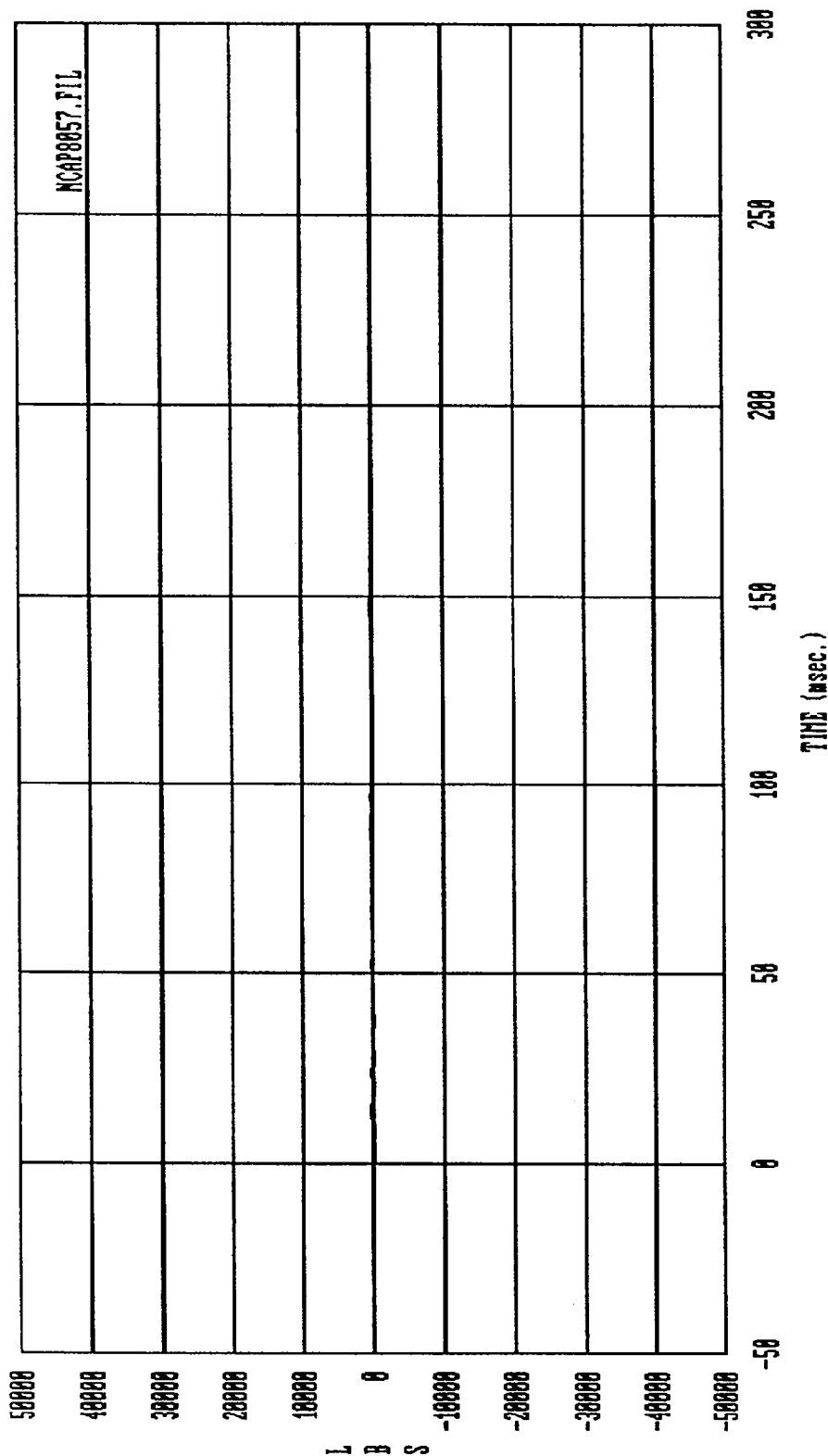
Curve: Force on Barrier load cell C7 Filter: SAE CLASS 60 Max = 14405. Min = -54.949
MSE Date: 03/01/98 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.



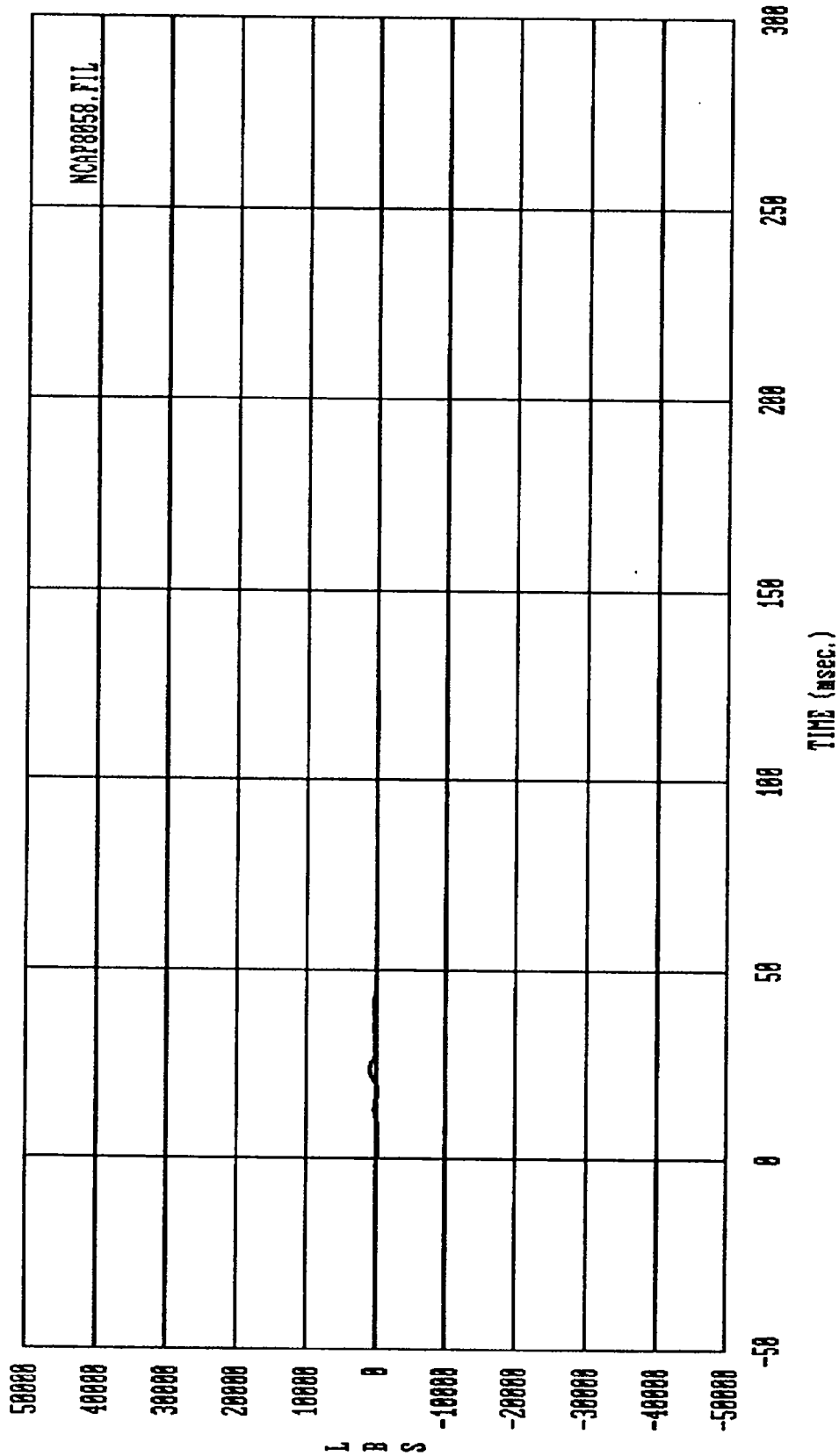
Curve: Force on Barrier load cell C8 Filter: SAE CLASS 60 Max = 3914.6 Min = -98.162
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



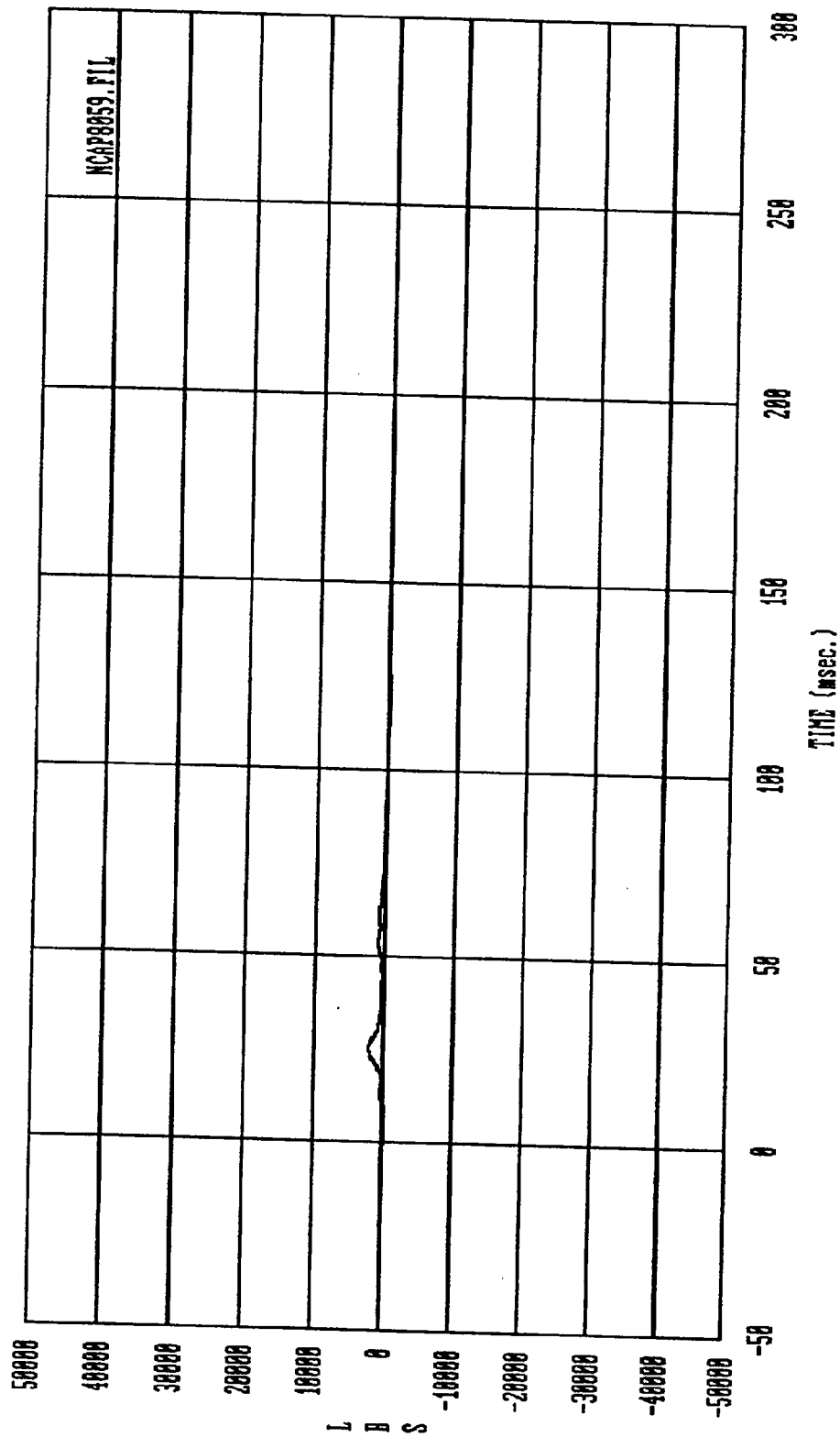
Curve: Force on Barrier load cell C9 Filter: SAE CLASS 60 Max = 1233.4 Min = -150.25
 HSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



Curve: Force on Barrier load cell D1 Filter: SAE CLASS 60 Max = 290.36 Min = -273.29
MSE Date: 03/01/90 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.

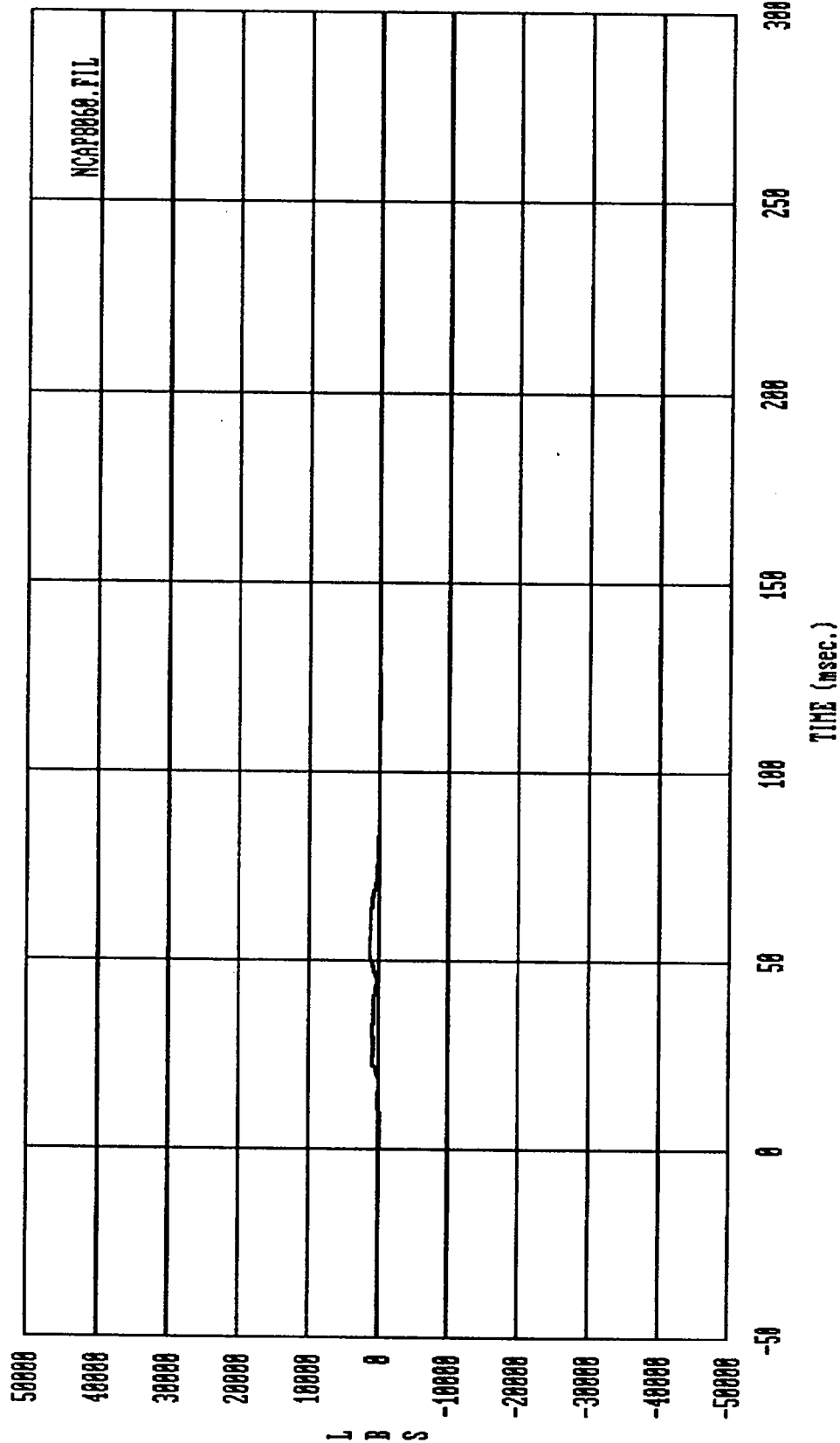


Curve: Force on Barrier load cell D2 Filter: SAE CLASS 60 Max = 1835.7 Min = -191.87
 MSE Date: 83/81/98 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.



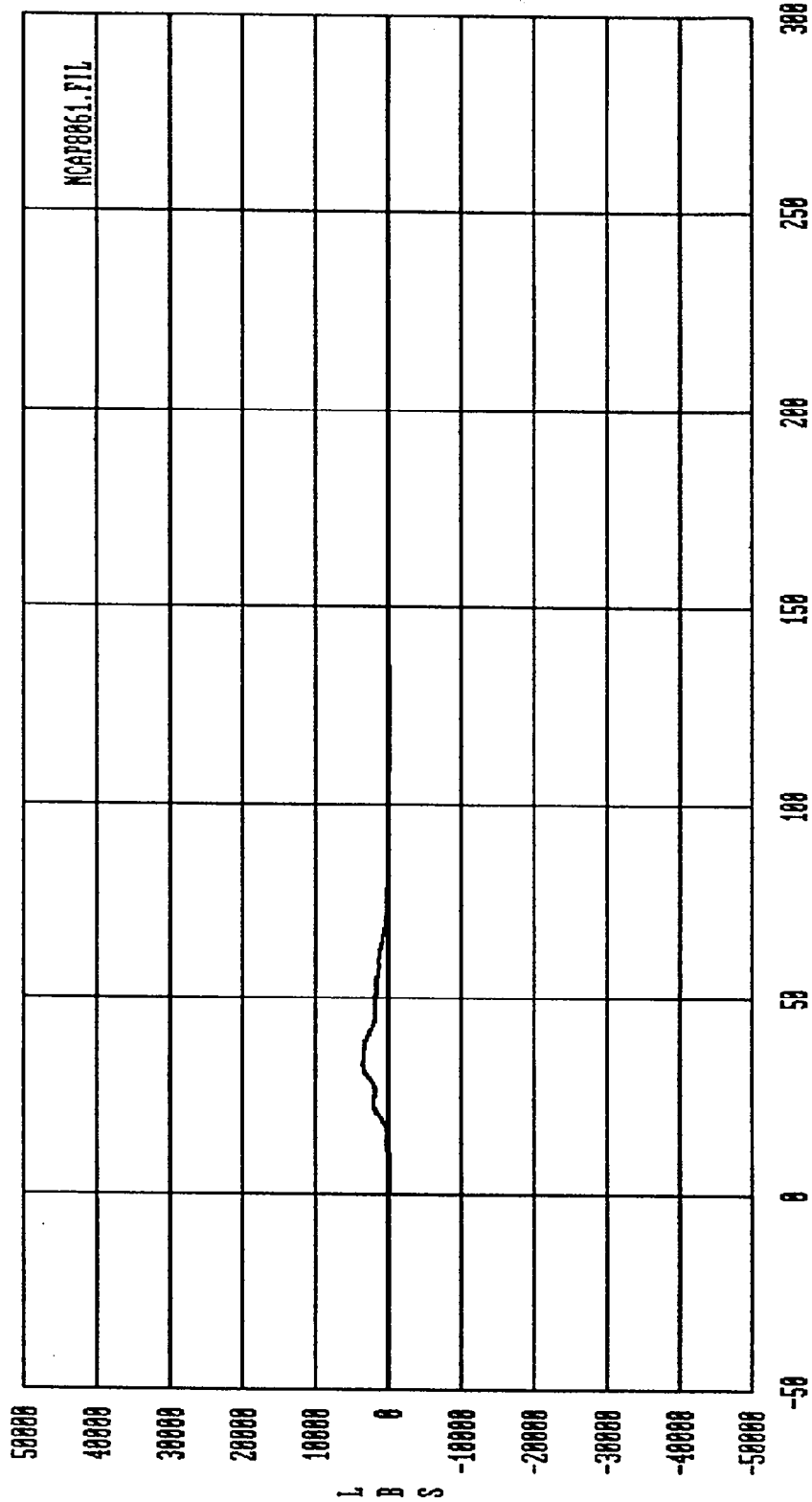
Curve: Force on Barrier load cell D3 Filter: SAE CLASS 60 Max = 2152.7 Min = -197.49

MSE Date: 03/01/90 Program: 1998 New Car Assessment 18 Vehicle: 1998 Ford Mustang Conv.



Curve: Force on Barrier load cell D4 Filter: SAE CLASS 60 Max = 1466.7 Min = -213.74

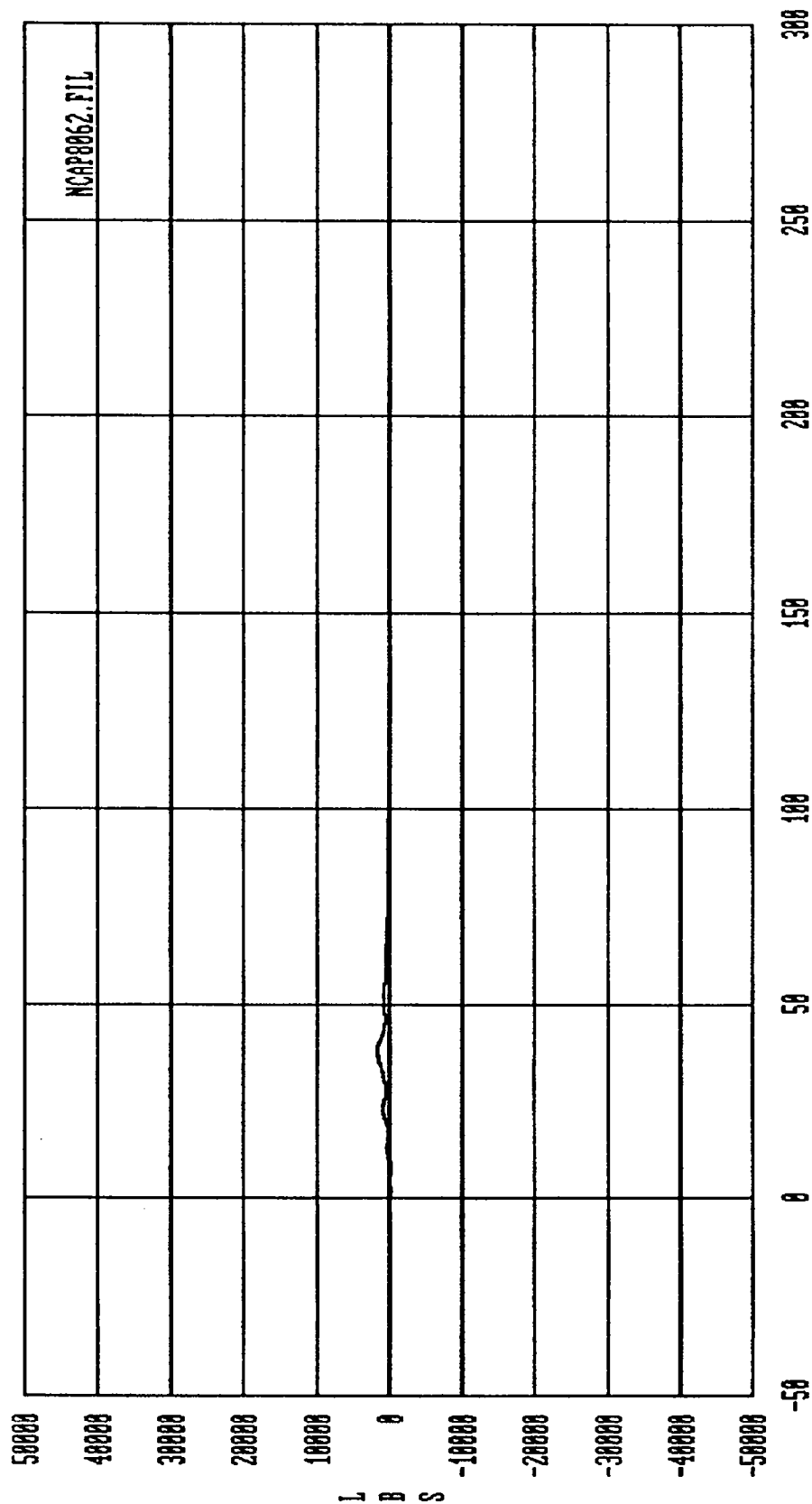
MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



TIME (msec.)

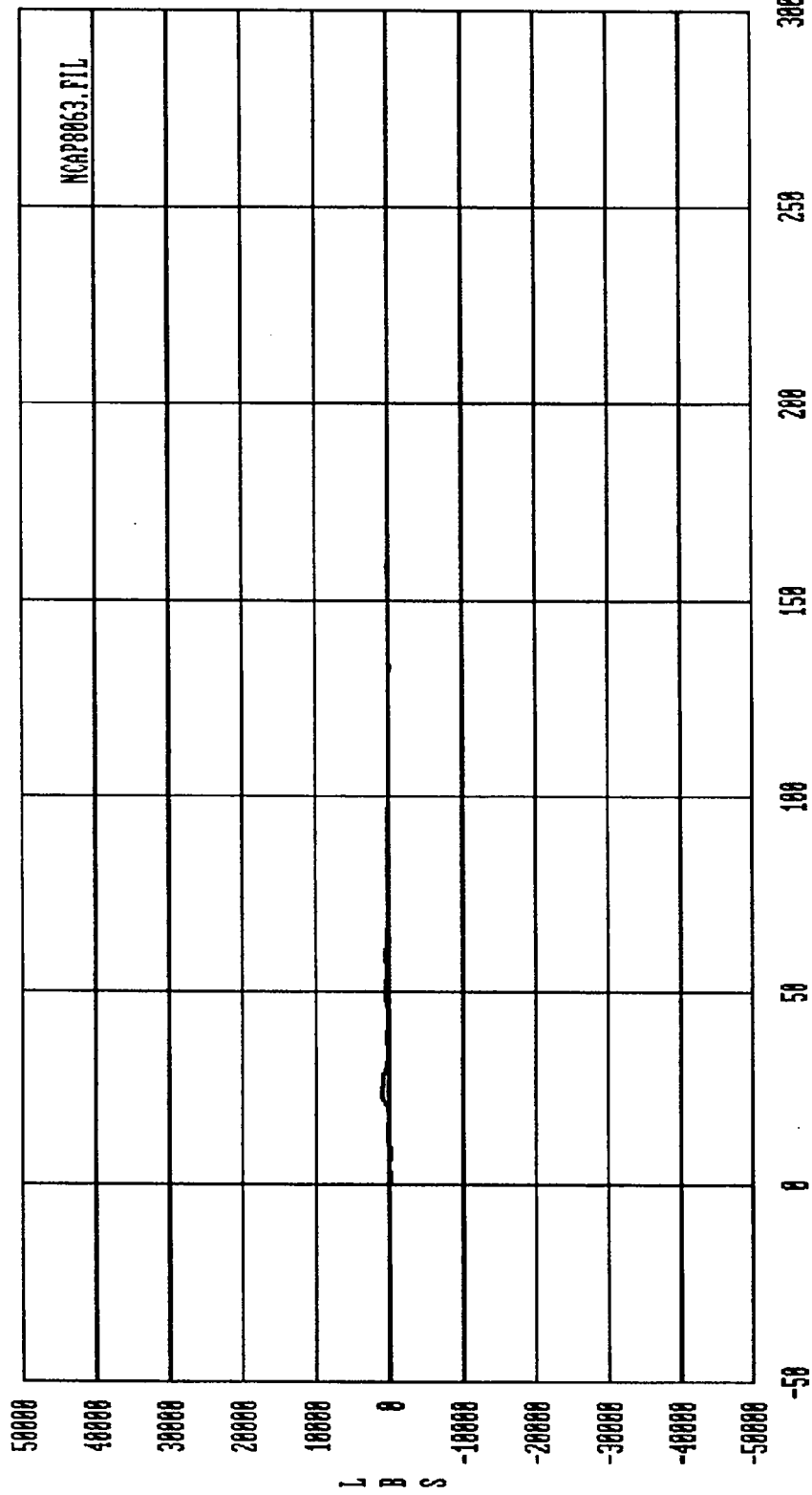
Curve: Force on Barrier load cell D5 Filter: SAE CLASS 60 Max = 3475.3 Min = -257.11

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

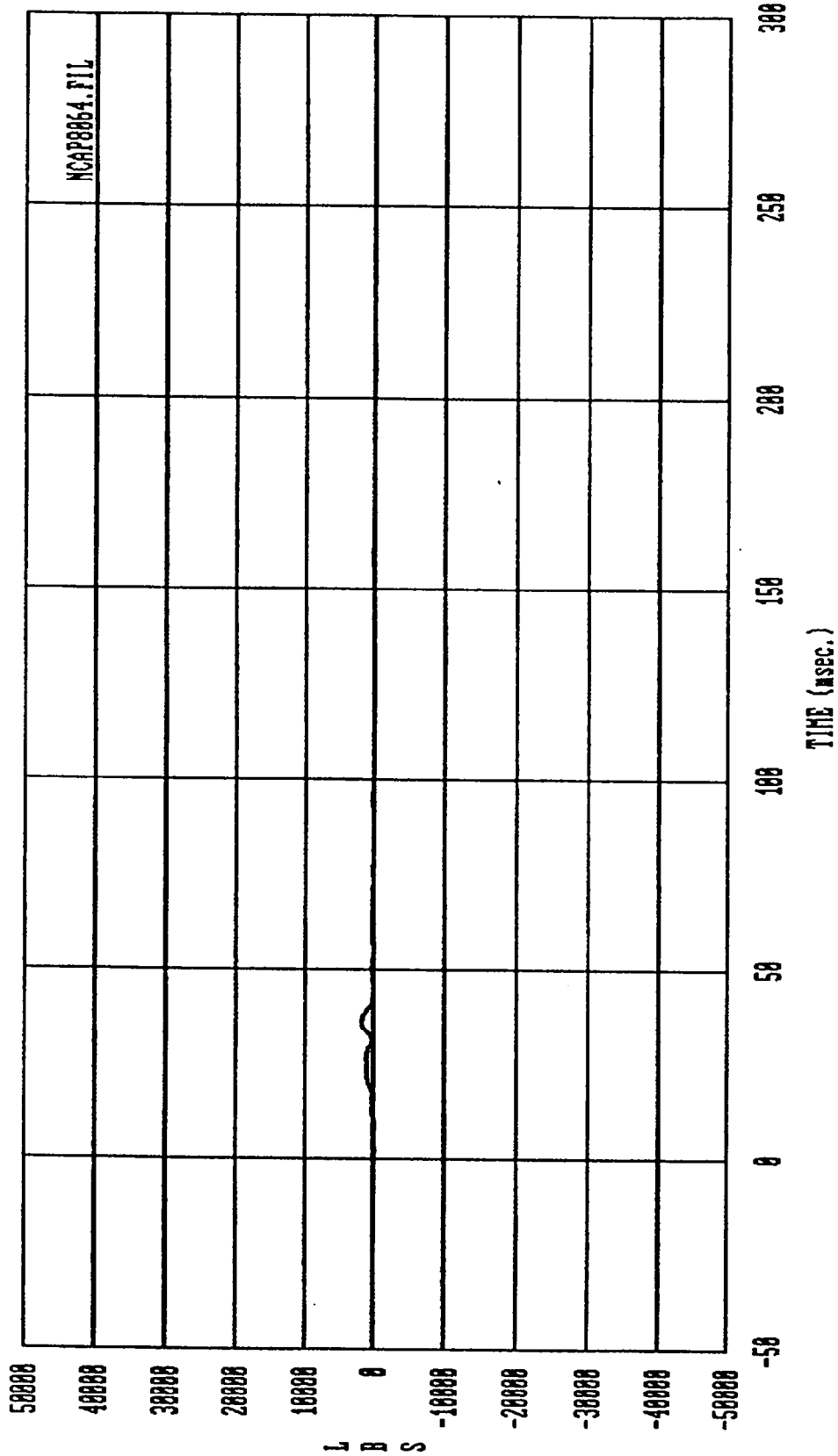


Curve: Force on Barrier load cell D6 Filter: SAE CLASS 60 Max = 1790.0 Min = -194.22

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

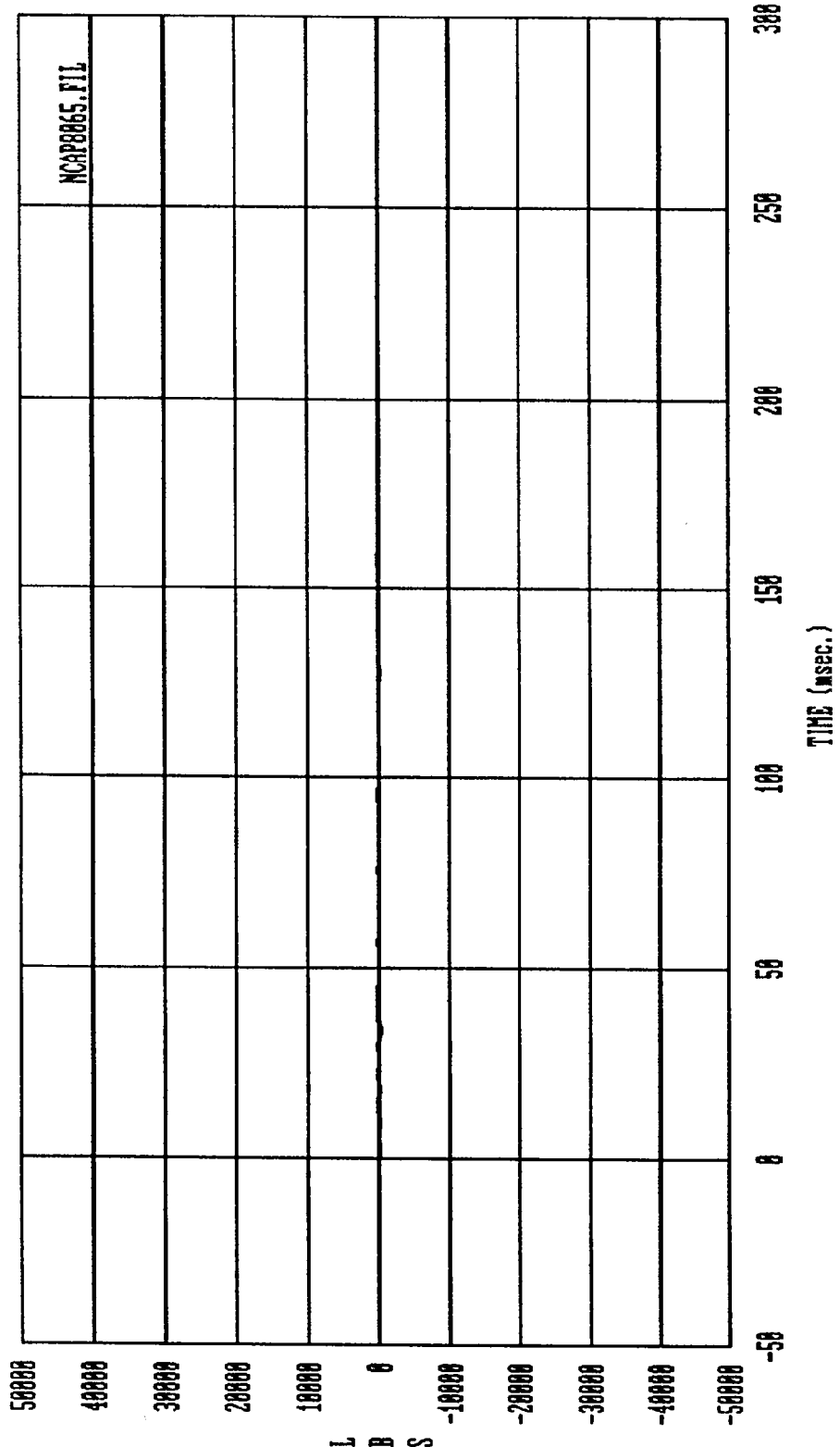


Curve: Force on Barrier load cell D7 Filter: SAE CLASS 60 Max = 992.25 Min = -175.67
 HSE Date: 83/81/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



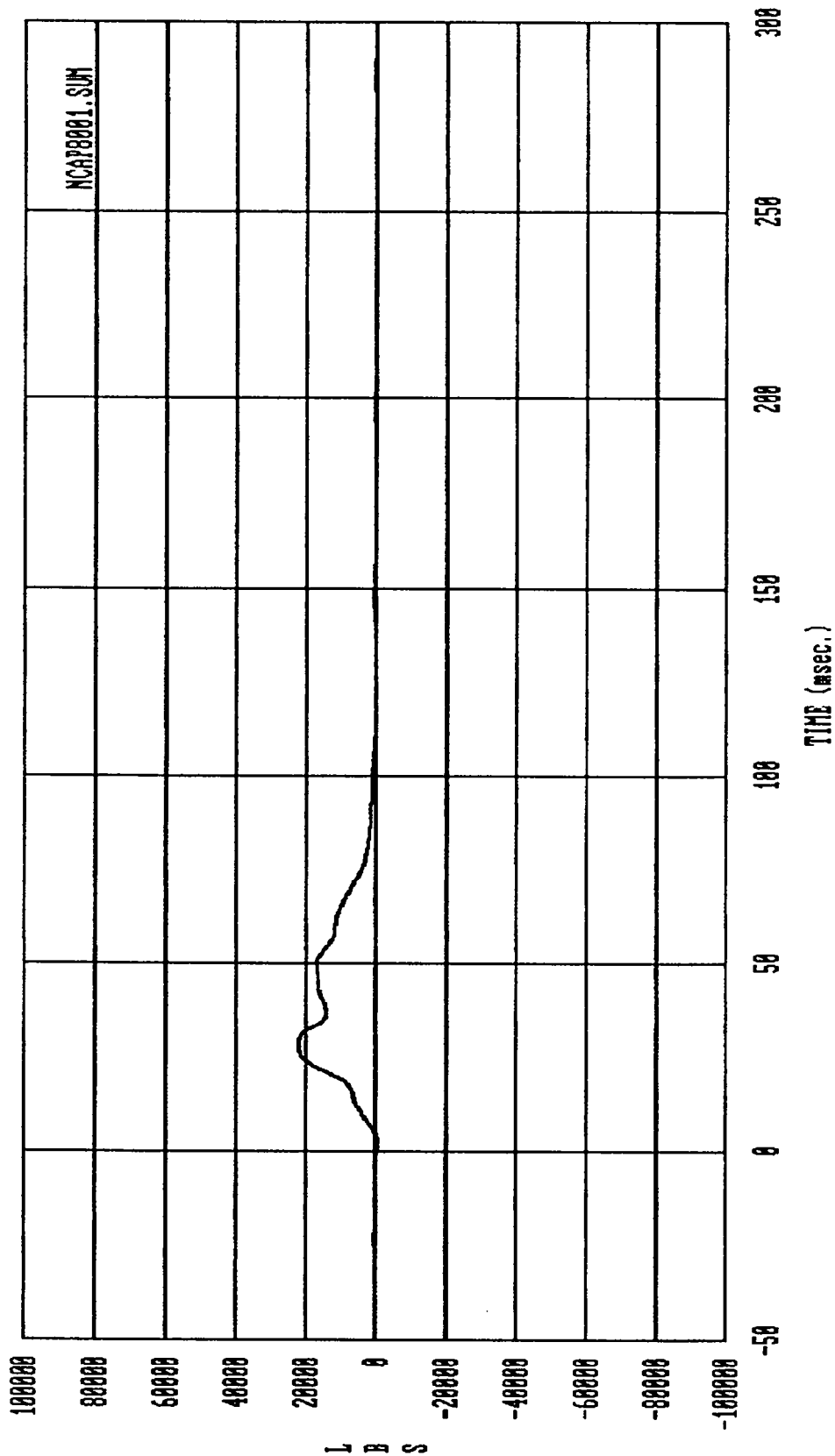
Curve: Force on Barrier load cell D8 Filter: SAE CLASS 60 Max = 1816.0 Min = -132.97

MSE Date: 03/01/98 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



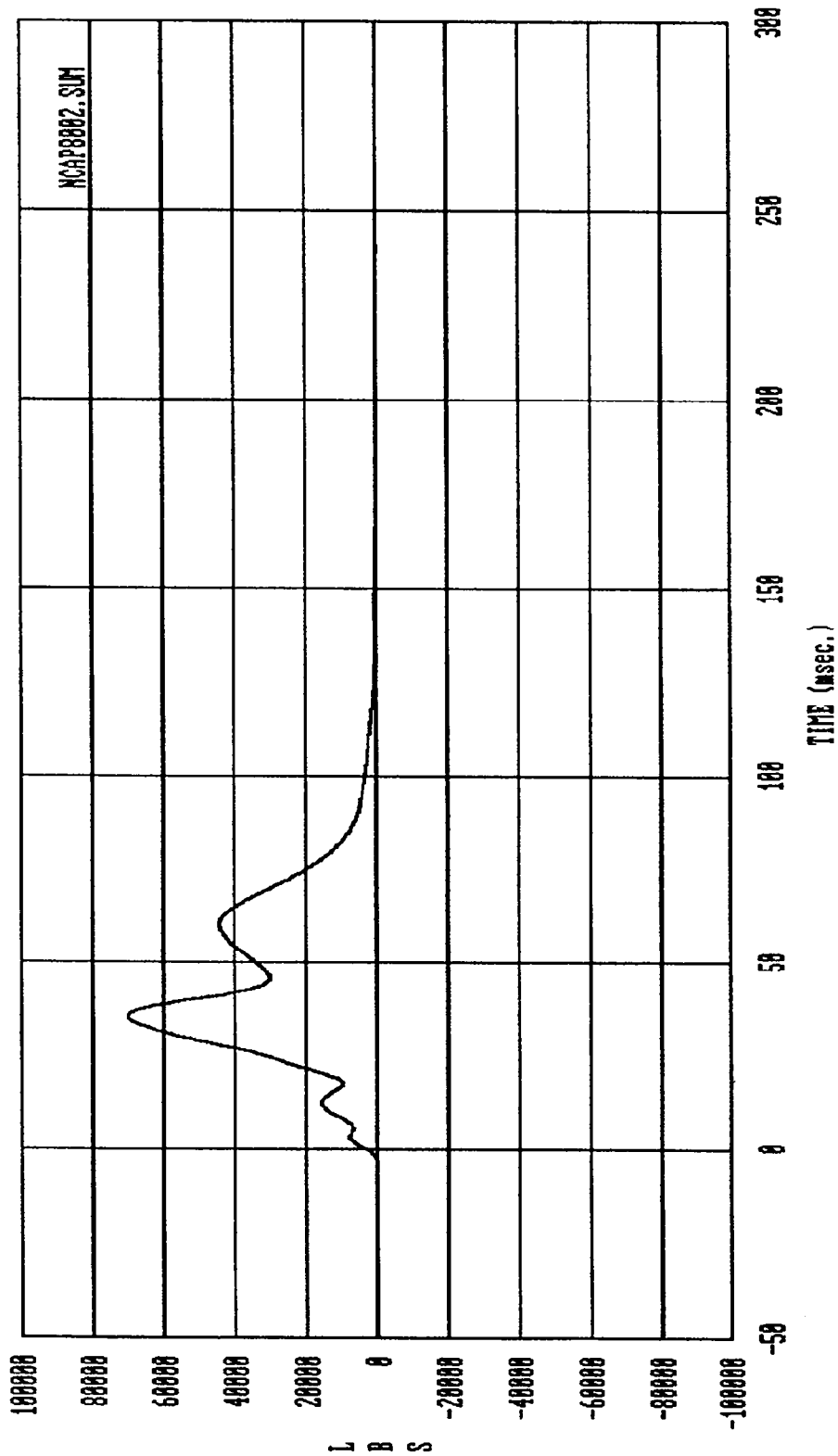
Curve: Force on Barrier load cell D9 Filter: SAE CLASS 60 Max = 381.81 Min = -324.88

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



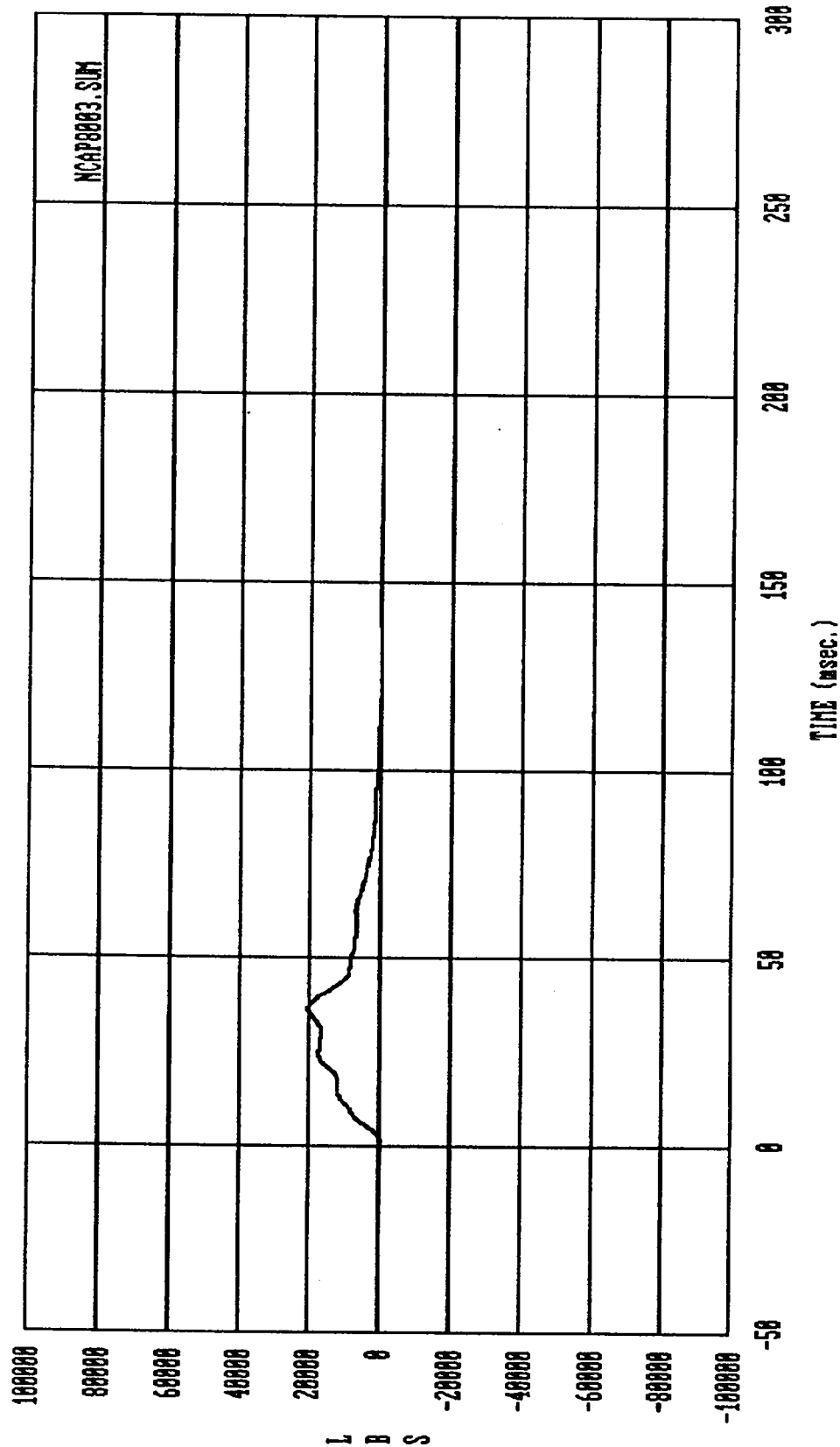
Curve: LCB sum force C1,C2,C3,D1,D2,D3 -- Group 1 Filter: SAE CLASS 60 Max = 21986. Min = -851.55

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



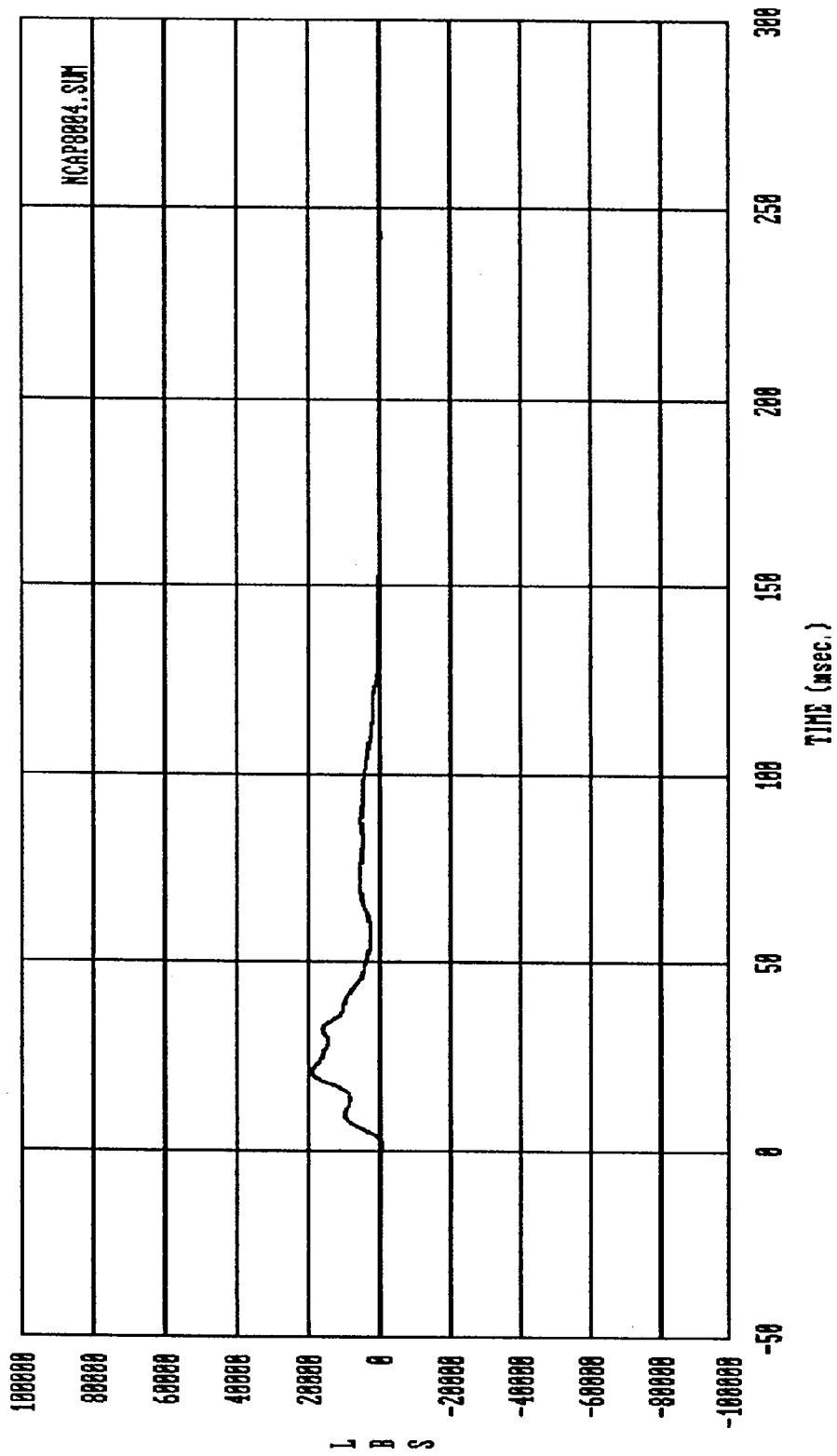
Curve: LCB sum force C4, C5, C6, D4, D5, D6 -- Group 2 Filter: SAE CLASS 60 Max = 78489, Min = -169,00

MSE Date: 83/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

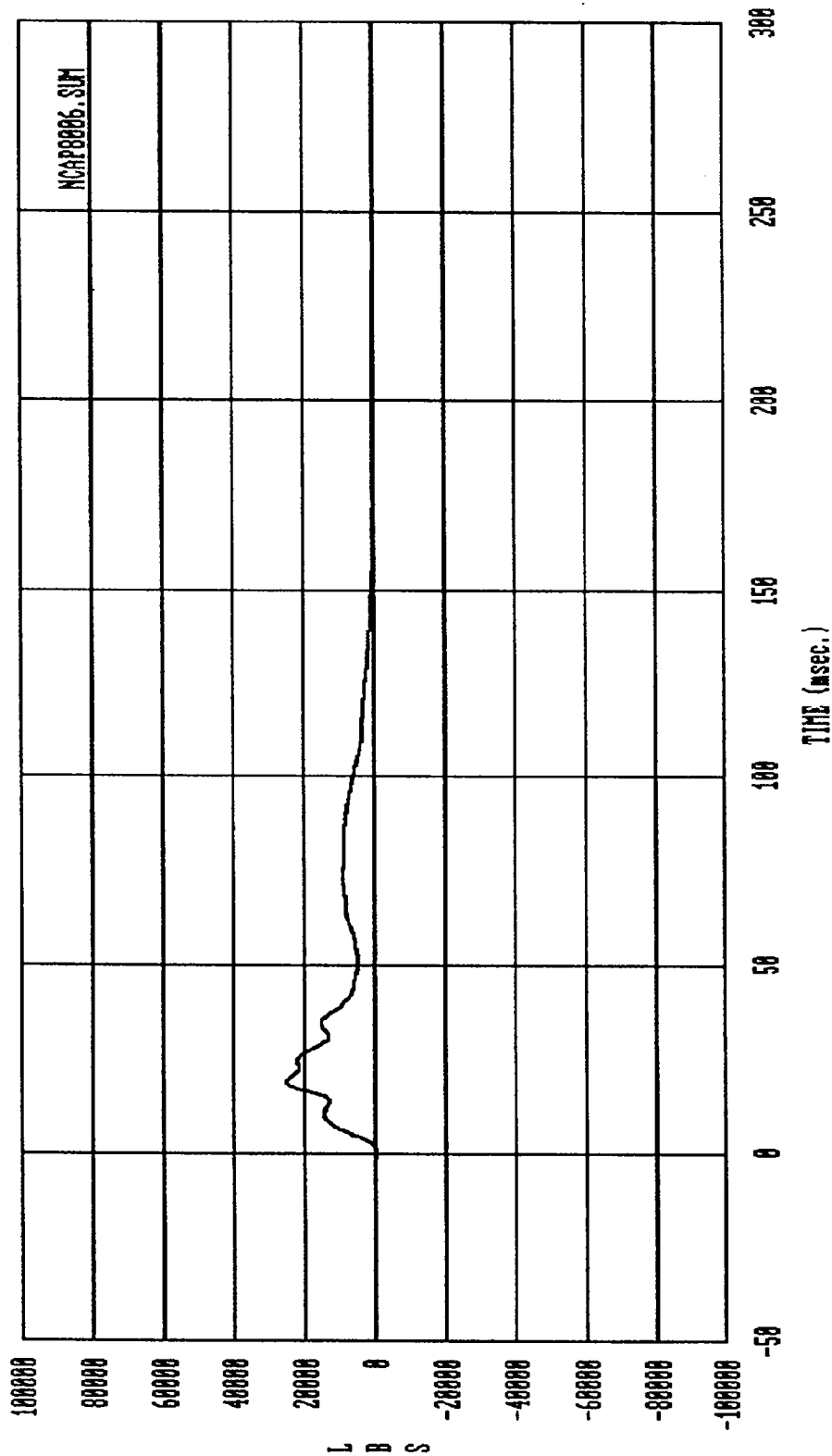


Curve: LCB sum force C7,C8,C9,D7,D8,D9 -- Group 3 Filter: SAE CLASS 68 Max = 28343. Min = -413.23

MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

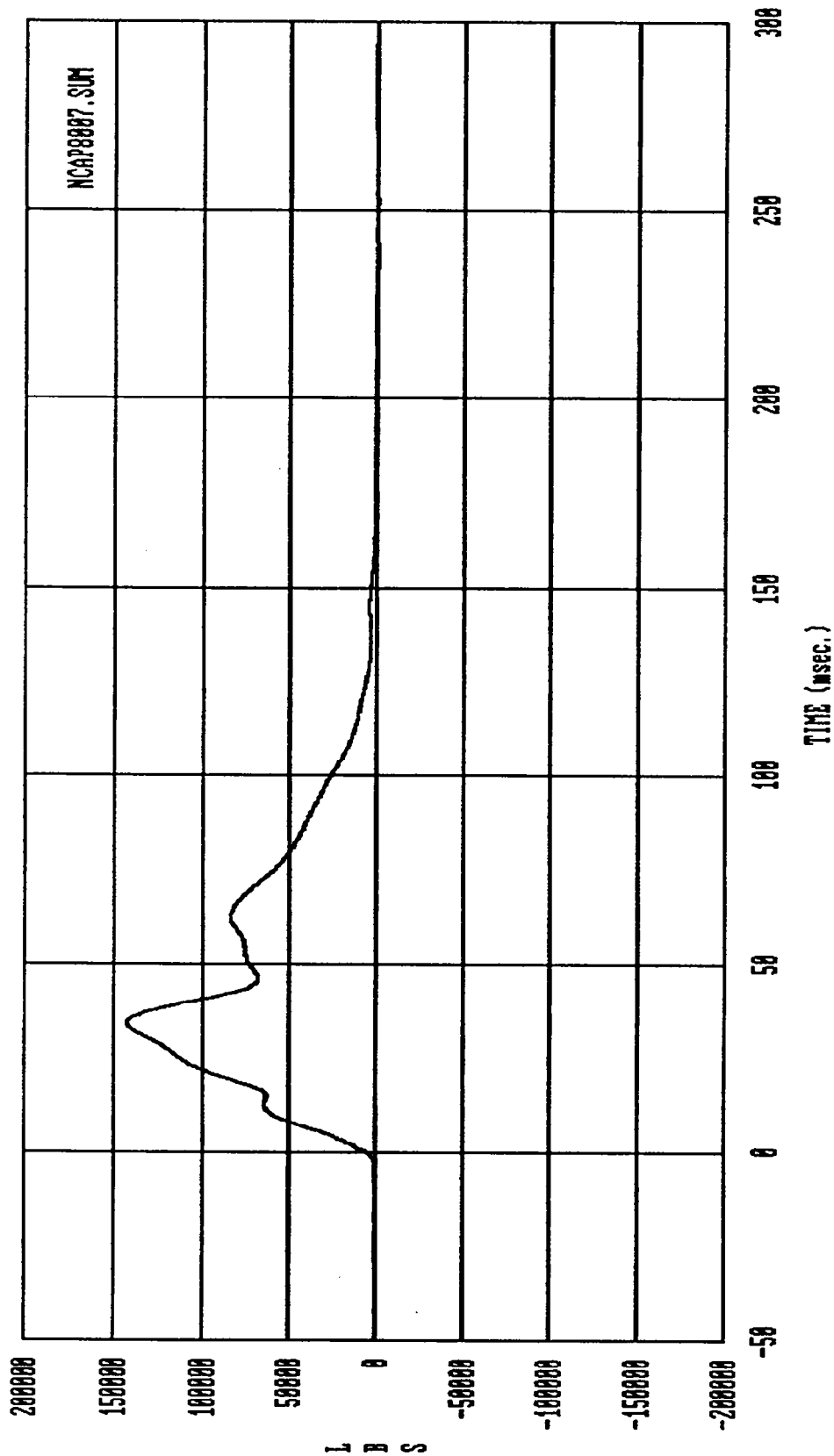


Curve: LCB sum force M1, A2, A3, B1, B2, B3 -- Group 4 Filter: SAE CLASS 60 Max = 19854. Min = -765.70
 MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.



Curve: LCB sum force #7, #8, #9, #7, #8, #9 -- Group 6 Filter: SAE CLASS 60 Max = 25350. Min = -363.46

MSE Date: 03/01/90 Program: 1998 New Car Assessment #8 Vehicle: 1998 Ford Mustang Conv.



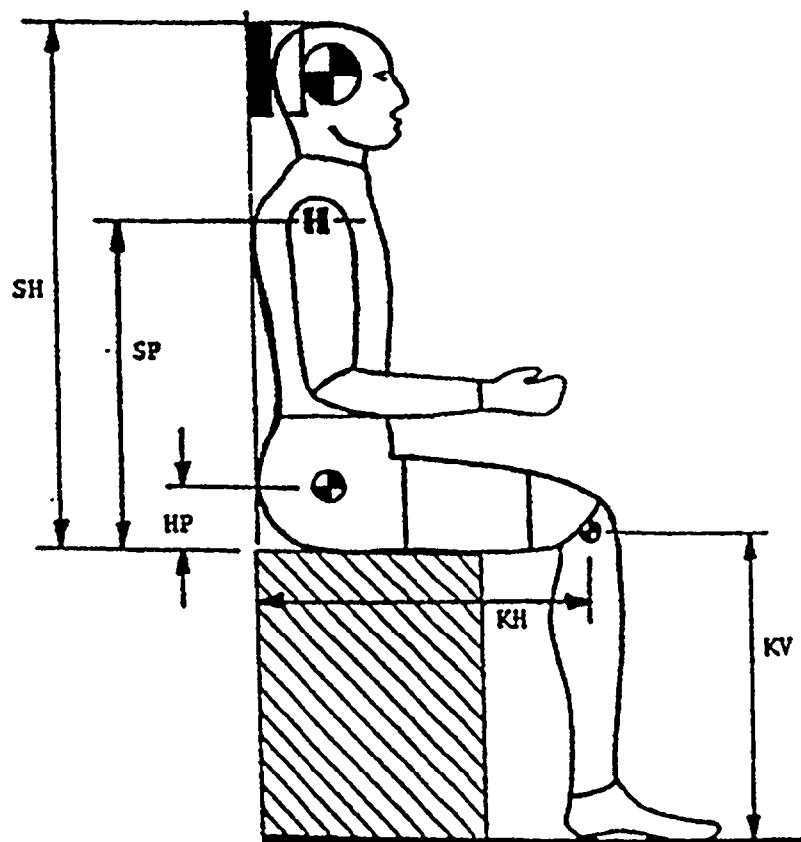
Curve: Load Cell Barrier total force Filter: SAE CLASS 60 Max = .14288E+06 Min = -489.31
 MSE Date: 03/01/90 Program: 1990 New Car Assessment #8 Vehicle: 1990 Ford Mustang Conv.

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APPENDIX C

PART 572 DUMMY CONFIGURATION AND
PERFORMANCE VERIFICATION TESTS

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I. CONFIGURATION VERIFICATION DATA:

	P. 572 SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
DATE OF CONFIGURATION VERIFICATION	////////////////	02/05/90 to	
VERIFICATION NUMBER FOR DUMMY* ---	////////////////	02/20/90	
SH - Seated Height- - - - -	35.6 to 35.8"	05	
SP - Shoulder Pivot Height- - - -	21.8 to 22.4"	35.60	
HP - Hip Pivot Height - - - - -	21.91		
KH - Knee Pivot from back line- -	3.9 ref.	3.90	
KV - Knee Pivot from floor- - - -	20.1 to 20.7"	20.60	
SW - Shoulder Width - - - - -	19.3 to 19.9"	19.40	
HW - Hip Width- - - - -	17.8 to 18.4"	18.20	
	14.0 to 15.4"	15.00	

TECHNICIAN'S NAME: APURVA MAPARA

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

DUMMY CONFIG. & PERF. VERIF. DATA....Continued:

II. PERFORMANCE VERIFICATION DATA:

NHTSA DUMMY I.D. NO.: | 4 | 6 | 4 |

TECHNICIAN NAME: APURVA MAPARA

		PRE-TEST (if required)	POST-TEST (if required)
DATE OF PERFORMANCE VERIFICATION-----		02/05-02/20/90	
SEQUENTIAL VERIFICATION NUMBER FOR DUMMY*-----		05	
VERIF. LAB. TEMPERATURE (66 to 78 F Range)----		68-72 F	F
VERIF. LAB. HUMIDITY (10 to 70% Range)-----		60-70 %	%
TEST PARAMETER	SPECIFICATION		
1. HEAD DROP TEST--			
a. Peak Resultant Accel.	210 to 260G	213.50	
b. Peak Lateral Accel.-	<10G	6.79	
c. Time above 100G - - -	0.9 to 1.5 ms	1.30	
2. NECK BENDING TEST--			
a. Pendulum Speed- - -	21.5 to 22.5 fps	22.00	
b. Pend. Avg. Decel. over t ₃ - t ₂	20 to 24G	22.77	
c. Peak Resultant Head Acceleration - - -	26G max.	25.80	
d. Pendulum Decel.(t ₂ -t ₁)	<3 ms	2.10	
e. Pendulum Decel.(t ₃ -t ₂)	25 to 30 ms	27.50	
f. Pendulum Decel.(t ₄ -t ₃)	<10 ms	10.00	
g. Max. Head Rotation -	63 to 73	64.25	
h. Chordal Displacement- Head Rotation Angle-			
0°	Time- -	-2 to 2 ms	0.00
	Displ.-	-.5 to .5"	0.006
30°	Time- -	22.6 to 34 ms	31.60
	Displ.-	2.1 to 3.1"	2.78
60°	Time- -	40.3 to 51.7ms	51.40
	Displ.-	4.3 to 5.3"	5.30
Maximum 0° (64.25)	Time- -	53.2 to 66.8ms	57.50
	Displ.-	5.0 to 6.0"	5.84

*beginning with "1" at the start of each fiscal year's crash test program

TEST PARAMETER		SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
=====		=====	=====	=====
2. NECK BENDING TEST----				
<u>Continued:</u>				
h. Chordal Displacement- Head Rotation Angle-				
° 60	Time- -	67.0 to 83.0 ms	68.00	
	Displ.-	4.3 to 5.3 in.	5.28	
° 30	Time- -	85.4 to 104.6 ms	86.60	
	Displ.-	2.1 to 3.1 in.	2.62	
° 0	Time- -	101.0 to 123.0 ms	101.00	
	Displ.-	-.5 to 0.5 in.	0.169	
3. ABDOMINAL COMPRESSION TEST: (Preload=10 pounds)				
a. Force @ .5" - - - -		23 to 36 lbs.	27.00	
b. Force @ .75" - - - -		36 to 50 lbs.	43.00	
c. Force @ 1.0"- - - -		50 to 63 lbs.	61.00	
d. Force @ 1.3"- - - -		73 to 88 lbs.	84.00	
4. LUMBAR FLEXION TEST:				
° a. Force @ 20 - - - -		22 to 34 lbs.	32.60	
° b. Force @ 30 - - - -		34 to 46 lbs.	40.60	
° c. Force @ 40 - - - -		46 to 58 lbs.	54.00	
° d. Return Angle- - - -		12 maximum	10.00	
5. CHEST IMPACT TESTS:				
a. High Speed				
(1) Probe Speed - - -		21.78-22.22 fps	21.88	
(2) Peak Deflection -		1.7" maximum	1.43	
(3) Peak Resistive Force - - - -		2250 lbs.maximum	2163.60	
(4) Internal Hysteresis		50 to 70%	50.50%	
b. Low Speed				
(1) Probe Speed - - -		13.86-14.14 fps	13.90	
(2) Peak Deflection -		1.1" maximum	1.01	
(3) Peak Resistive Force - - - -		1450 lbs.maximum	1209.20	
(4) Internal Hysteresis		50 to 70%	53.30%	

DUMMY CONFIG. & PERF. VERIF. DATA....Continued:

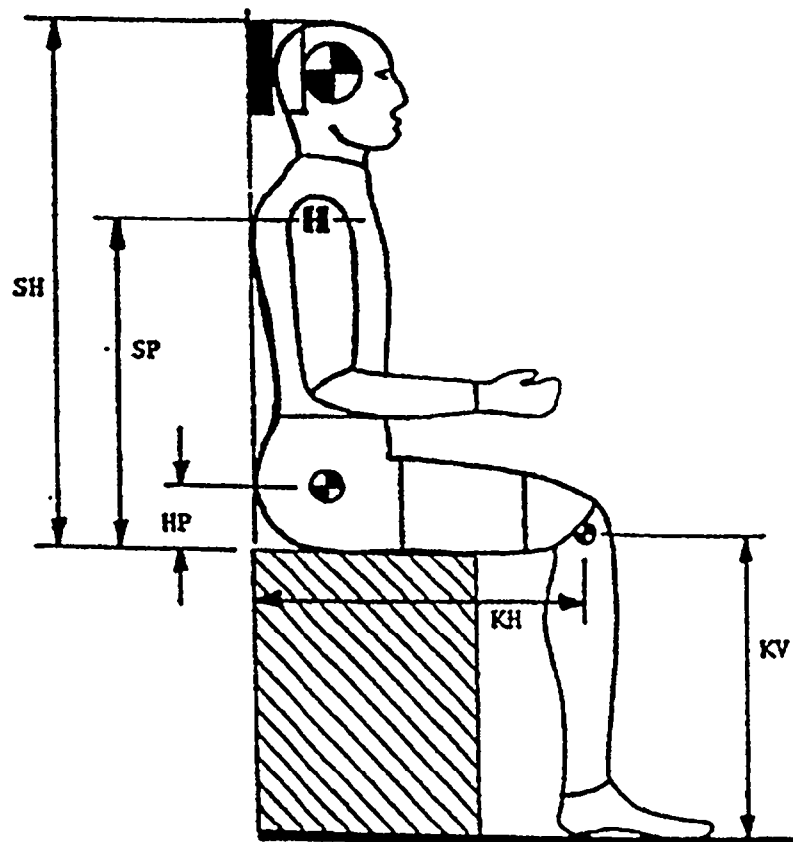
II. PERFORMANCE VERIFICATION DATA:

NHTSA DUMMY I.D. NO.:

4	6	4
---	---	---

TECHNICIAN NAME: APURVA MAPARA

TEST PARAMETER	SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
=====			
6. <u>KNEE IMPCT TESTS:</u>			
a. Right Side--			
(1) Probe Speed - - -	6.76 to 7.04 fps	6.81	
(2) Maximum Force - -	1850 to 2500 lbs	1906.40	
(3) Time Above 1000#-	1.7 ms minimum	2.40	
b. Left Side--			
(1) Probe Speed - - -	6.76 to 7.04 fps	6.80	
(2) Maximum Force - -	1850 to 2500 lbs	1880.90	
(3) Time Above 1000#-	1.7 ms minimum	2.10	

I. CONFIGURATION VERIFICATION DATA:

	P. 572 SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
DATE OF CONFIGURATION VERIFICATION	////////////////	02/05/90 to 02/20/90	
VERIFICATION NUMBER FOR DUMMY* ---	////////////////	03	
SH - Seated Height- - - - -	35.6 to 35.8"	35.60	
SP - Shoulder Pivot Height- - - -	21.8 to 22.4"	21.80	
HP - Hip Pivot Height - - - - -	3.9 ref.	3.90	
KH - Knee Pivot from back line- -	20.1 to 20.7"	20.70	
KV - Knee Pivot from floor- - - -	19.3 to 19.9"	19.30	
SW - Shoulder Width - - - - -	17.8 to 18.4"	18.20	
HW - Hip Width- - - - -	14.0 to 15.4"	14.50	

TECHNICIAN'S NAME: APURVA MAPARA

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

DUMMY CONFIG. & PERF. VERIF. DATA....Continued:

II. PERFORMANCE VERIFICATION DATA:

NHTSA DUMMY I.D. NO.:

4 6 7

TECHNICIAN NAME: APURVA MAPARA

		PRE-TEST (if required)	POST-TEST (if required)
DATE OF PERFORMANCE VERIFICATION-----		02/05-02/20/90	
SEQUENTIAL VERIFICATION NUMBER FOR DUMMY*-----		03	
VERIF. LAB. TEMPERATURE (66 to 78 F Range)----		68-72 F	F
VERIF. LAB. HUMIDITY (10 to 70% Range)-----		60-70 %	%
TEST PARAMETER	SPECIFICATION		
1. HEAD DROP TEST--			
a. Peak Resultant Accel.	210 to 260G	222.84	
b. Peak Lateral Accel.-	<10G	3.07	
c. Time above 100G - - -	0.9 to 1.5 ms	1.20	
2. NECK BENDING TEST--			
a. Pendulum Speed- - - -	21.5 to 22.5 fps	22.00	
b. Pend. Avg. Decel. over t ₃ - t ₂	20 to 24G	22.34	
c. Peak Resultant Head Acceleration - - - -	26G max.	24.43	
d. Pendulum Decel. (t ₂ - t ₁)	<3 ms	2.65	
e. Pendulum Decel. (t ₃ - t ₂)	25 to 30 ms	26.70	
f. Pendulum Decel. (t ₄ - t ₃)	<10 ms	10.00	
g. Max. Head Rotation -	63 to 73	68.40	
h. Chordal Displacement- Head Rotation Angle-			
0	Time- -	-2 to 2 ms	0.00
	Displ.-	-.5 to .5"	0.012
30	Time- -	22.6 to 34 ms	29.60
	Displ.-	2.1 to 3.1"	2.79
60	Time- -	40.3 to 51.7ms	46.20
	Displ.-	4.3 to 5.3"	5.30
Maximum	Time- -	53.2 to 66.8ms	59.90
(68.40)	Displ.-	5.0 to 6.0"	6.00

*beginning with "1" at the start of each fiscal year's crash test program

TECHNICIAN NAME: APURVA MAPARA

TEST PARAMETER		SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
=====		=====	=====	=====
2. NECK BENDING TEST----				
<u>Continued:</u>				
h. Chordal Displacement-				
Head Rotation Angle-				
60°	Time- -	67.0 to 83.0 ms	71.90	
	Displ.-	4.3 to 5.3 in.	5.30	
30°	Time- -	85.4 to 104.6 ms	88.45	
	Displ.-	2.1 to 3.1 in.	2.50	
0°	Time- -	101.0 to 123.0 ms	101.00	
	Displ.-	-.5 to 0.5 in.	0.152	
3. ABDOMINAL COMPRESSION				
<u>TEST: (Preload=10 pounds)</u>				
a. Force @ .5" - - - -		23 to 36 lbs.	32.00	
b. Force @ .75" - - - -		36 to 50 lbs.	49.00	
c. Force @ 1.0"- - - -		50 to 63 lbs.	63.00	
d. Force @ 1.3"- - - -		73 to 88 lbs.	85.00	
4. LUMBAR FLEXION TEST:				
a. Force @ 20° - - - -		22 to 34 lbs.	31.00	
b. Force @ 30° - - - -		34 to 46 lbs.	41.80	
c. Force @ 40° - - - -		46 to 58 lbs.	51.00	
d. Return Angle- - - -		12° maximum	5.20	
5. CHEST IMPACT TESTS:				
a. High Speed				
(1) Probe Speed - - -		21.78-22.22 fps	22.00	
(2) Peak Deflection -		1.7" maximum	1.69	
(3) Peak Resistive				
Force - - - - -		2250 lbs.maximum	1969.50	
(4) Internal				
Hysteresis		50 to 70%	53.50%	
b. Low Speed				
(1) Probe Speed - - -		13.86-14.14 fps	14.00	
(2) Peak Deflection -		1.1" maximum	1.00	
(3) Peak Resistive				
Force - - - - -		1450 lbs.maximum	1271.40	
(4) Internal				
Hysteresis		50 to 70%	61.60%	

DUMMY CONFIG. & PERF. VERIF. DATA....Continued:

II. PERFORMANCE VERIFICATION DATA:

NHTSA DUMMY I.D. NO.: 4 6 7

TECHNICIAN NAME: APURVA MAPARA

TEST PARAMETER	SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
6. KNEE IMPCT TESTS:			
a. Right Side--			
(1) Probe Speed - - -	6.76 to 7.04 fps	6.88	
(2) Maximum Force - -	1850 to 2500 lbs	2214.60	
(3) Time Above 1000#-	1.7 ms minimum	1.70	
b. Left Side--			
(1) Probe Speed - - -	6.76 to 7.04 fps	6.88	
(2) Maximum Force - -	1850 to 2500 lbs	1866.43	
(3) Time Above 1000#-	1.7 ms minimum	2.10	

APPENDIX D

VEHICLE OWNER'S MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

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Using Safety Restraints Properly

Safety Belts

Safety belts help protect you and your passengers in case of a collision. In most states, the law requires their use. We strongly recommend that you use them every time you travel in your vehicle.

Warning: Always drive and ride with your seat back upright and the lap belt snug across the hips to reduce the risk of serious injury to the abdomen or neck that could be caused by sliding under the safety belts in a collision.

Safety belts provide best restraint when:

- ☐ the seat back is upright
- ☐ the occupant is sitting upright (not slouched)
- ☐ the lap belt is snug and low on the hips
- ☐ the shoulder belt is snug against the chest
- ☐ the knees are straight forward

For your safety, your vehicle has different types of safety belts:

- ☐ Front and rear lap and shoulder belts — for people who sit next to the windows in either the front or rear seats
- ☐ Manual front lap and shoulder belts (Canadian vehicles only) — for people who sit in the front seat.

See the following sections for directions on how to properly use these safety belts. Also see *Safety restraints for children* in this chapter for special instructions about using safety belts for children.

Warning: Make sure that you and your passengers, including pregnant women, wear safety belts. Be sure that lap belts fit snugly and as low as possible around the hips. Do not wear them around the waist. If safety belts are not used properly, the chances of you or your passengers being injured in a collision greatly increase.

Warning: Use the shoulder belt on the outside shoulder only. Never wear the shoulder belt under the arm. Never swing it around your neck over the inside shoulder. Never use a single belt for more than one person. Failure to follow these precautions could increase the chance and/or severity of injury in an accident.

Do not allow people to ride in the cargo area of your vehicle. People who are not riding in a seat with a fastened safety belt are much more likely to be injured if you have a collision.

Never let a passenger hold a child on his or her lap while the vehicle is moving. The passenger cannot protect the child from injury in a collision.

Never use a single belt for more than one person or across seating positions. This greatly increases the chance that one or both of the people will be injured in a collision. Each seating position in your vehicle has a specific safety belt assembly which is made up of one buckle and one tongue. Each assembly is designed to be used as a pair.

Warning: Be sure to lock all doors before you drive away. This will lessen the risk of your being thrown from the vehicle in a collision.

Safety Belt Maintenance

Also, check the safety belt systems periodically to make sure that they work properly and are not damaged.

Warning: All safety belt assemblies including retractors and attaching hardware should be inspected after any collision. Ford recommends that all safety belt assemblies used during a collision be replaced unless the collision was minor and a qualified technician finds that the belts do not show damage and continue to operate properly. Safety belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

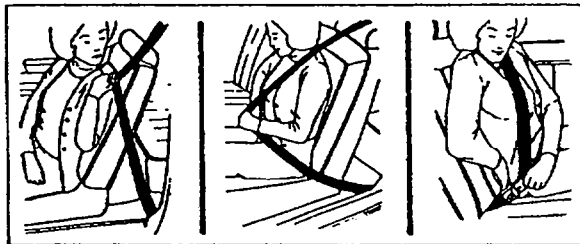
Combination Lap and Shoulder Belts

While your vehicle is in motion, the front and rear combination lap and shoulder belts adjust to your movement. However, if you brake hard, corner hard or if your vehicle receives an impact of 5 mph (8 km/h) or more, the lap and shoulder belt locks and prevents you from moving.

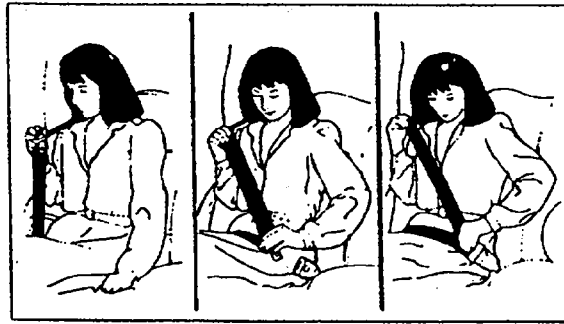
After you get into your vehicle, close the door and lock it. Then adjust the seat to the position that suits you best.

Convertible only – before fastening the front seat belt, make sure the shoulder belt passes through the belt guide loop on the top of the seat back.

To fasten the belt, find the long strap of the belt near the door, pull it across your shoulder and chest, and insert the tongue into the proper buckle on your seat until you hear a snap and feel it lock. Be sure to use the correct buckle and check to make sure the buckle is securely fastened.



Fastening the front seat lap and shoulder belt



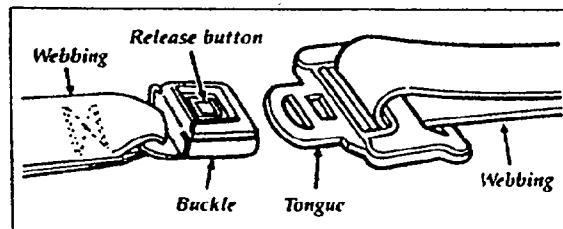
Fastening the rear seat lap and shoulder belt

Warning: Use the shoulder belt only on the shoulder that is closest to the vehicle door. Never wear the belt under your arm. If you do not use the shoulder belt properly, the chances of your being injured in a collision greatly increase.

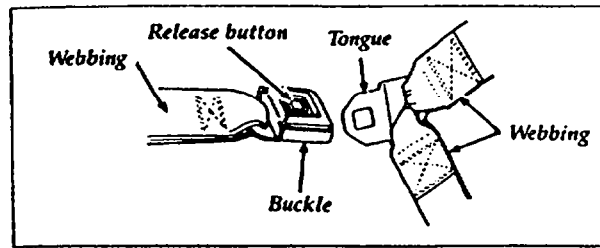
To adjust the lap part of the belt, pull up on the shoulder belt until the lap belt fits snugly low on your hips.

To unfasten the belt:

1. Push the release button in the center of the buckle. This allows the tongue to unlatch from the buckle.

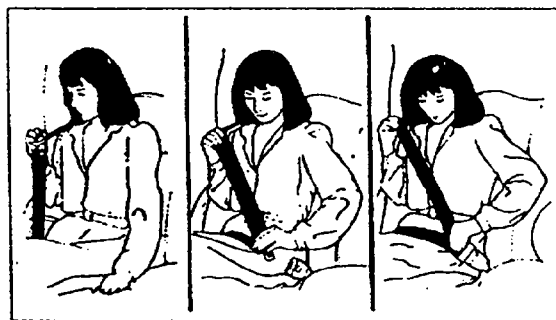


Unfastening the front (on sedans) and rear outboard lap/shoulder belts



Unfastening the Mustang convertible front outboard lap/shoulder belts

2. While the belt retracts, guide the tongue to its original position. If you do not guide the tongue, it may strike you or part of the vehicle.
3. (Mustang convertible only) Place the belt in the belt holder at the top of the seat back. The retracted belt should be stored on this holder when not in use, except when a passenger is entering or leaving the rear seat area of the vehicle.



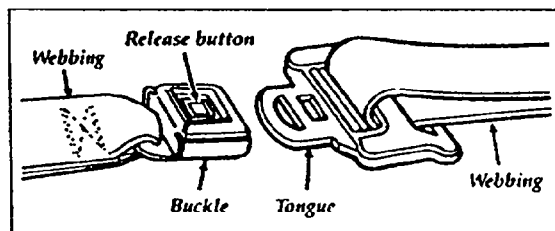
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1. Push the release button in the center of the buckle. This allows the tongue to unlatch from the buckle.



Unfastening the front (on sedans) and rear outboard lap/shoulder belts

For the lap belt portion of the safety belts next to the windows in the front and rear seat position, pull up on the shoulder portion of the belt to adjust to a snug fit.

To fasten the belt, pull the belt across your hips and insert the tongue into the correct buckle on your seat until you hear a snap and feel it lock. Make sure the buckle is securely fastened.

Rear Seat Lap-Shoulder Belts

Pull the lap-shoulder belt from the retractor so the shoulder portion of the belt crosses your shoulder and chest and insert the belt tongue into the proper buckle until you hear a snap and feel it latch. Pull up on the shoulder portion of the belt to tighten the lap portion to a snug fit. Be sure the belt is as low on your hips as possible.

Warning: Front and rear seat occupants (including pregnant women) should wear both lap and shoulder belts, for optimum protection in an accident.

Safety Lap Belt Extension Assembly

A safety belt that is too short even when fully extended can be lengthened. Available from your dealer is a safety belt extension assembly (54611C22). This assembly will add approximately eight inches (20 cm) to the length of the belt.

Warning: To ensure that the safety belt extension assembly will hold in the event of a collision, only safety belt extensions manufactured by the same supplier as the safety belt should be used. Manufacturer identification is located at the end of the webbing on a label.

Supplemental Air Bag Restraint System (SRS)

Driver Side Only

Your car is equipped with an air bag for the driver. This air bag is a supplemental restraint system. It is designed to be used in addition to safety belts to help protect against head and chest injuries in certain moderate to severe frontal collisions.

Warning: Safety belts must be worn by all vehicle occupants to help reduce the risk of injury in an accident.

The Importance of Wearing Safety Belts

There are four very important reasons to use safety belts even with an air bag system. Use your safety belts to:

- ☐ help keep you in the proper position when the air bag inflates
- ☐ reduce the risk of harm in rollover, side or rear impact accidents, since an air bag is not designed to inflate in such situations
- ☐ reduce the risk of harm in frontal collisions that are not severe enough to activate the air bag

- ☐ reduce the risk of being thrown from your car

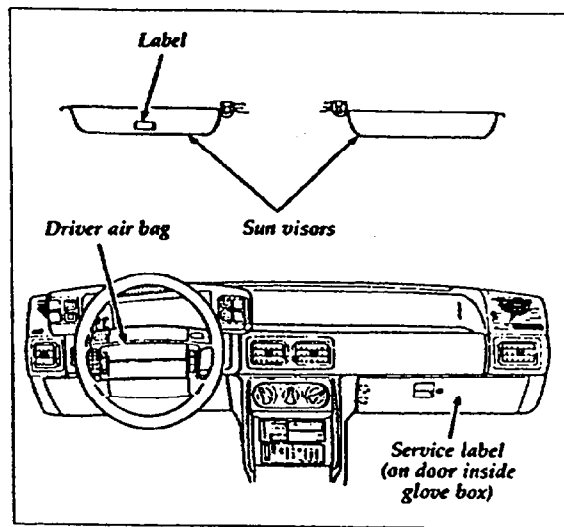
The Importance of Proper Seated Position

In an accident, air bags must inflate extremely fast to help provide additional protection for you. In order to do this, the air bags must inflate with considerable force. If you are not seated in a normal riding position with your back against the seat back, the air bag may not protect you properly and could possibly hurt you as it inflates.

Warning: Do not put objects in front of the air bag system storage area that might restrict inflation or that might increase personal injury.

How the Supplemental Air Bag System Operates

The supplemental air bag system has two main parts. One part is the air bag system with the driver air bag and inflator. The second part is the electrical system, which has impact sensors, a diagnostic module, and backup power supply. The diagnostic module monitors the supplemental air bag electrical system readiness, including the five crash sensors and wiring connecting them to the module, readiness light, air bag power, and supplemental air bag. The driver air bag is in the center of the steering wheel.



The location of the air bag and warning labels

The air bag system uses a readiness light and a tone to indicate the condition of the system. The readiness light is in the instrument cluster. When you turn the ignition key to ON, this light will light up for six seconds and then turn off. This indicates that the system is operating normally. **NOTE:** Regularly scheduled maintenance of the air bag system is not required.

If there is a problem with the system, two things may happen: the readiness light will either flash or stay lit up, or you will hear a beeping sound. If either of these things happen, have the air bag system serviced at your Ford or Lincoln-Mercury dealer immediately.

Tone Generator

The air bag readiness light indicates the air bag system condition. However, a series of five sets

32 How the Supplemental Air Bag System Operates

of five beeps will be heard only if the readiness light doesn't work and there is a problem with the air bag system. This also means that the Air Bag Restraint System (SRS) is in need of service. The tone pattern will repeat (five sets of five beeps) periodically until the problem and light are repaired. Unless serviced, the Air Bag Restraint System may not function properly in the event of an accident.

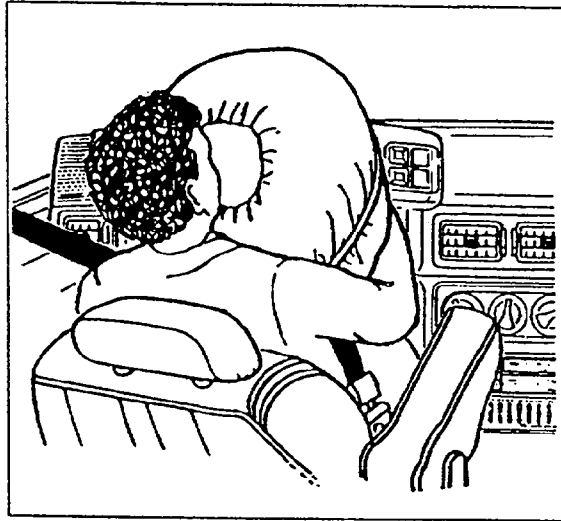
Warning: Do not attempt to service, repair, or modify the Supplemental Air Bag Restraint System; tampering could cause activation of the system and increase the risk of personal injury. For servicing of the Supplemental Air Bag Restraint System, see your Ford or Lincoln-Mercury dealer.

The air bag system is designed to stay out of sight until it is activated. The air bag system only operates in frontal accidents more severe than hitting a parked car of similar size and weight head-on at about 28 mph. In such a collision, you would be thrown forward against the safety belts. After receiving a signal from the crash sensors, the air bag inflates in about 45 milliseconds.

The air bag system is designed to inflate in moderate to severe head-on and front angle collisions, and then deflate almost immediately. The air bag and safety belt help restrain forward motion and can help reduce injuries to the head and chest. **NOTE:** Several air bag system components get hot after inflation. Do not try to touch them after inflation.

Air bags will not inflate in minor frontal collisions, even though the vehicle may be badly damaged. The fact that your air bag did not

inflate in such a collision does not mean that something is wrong with the air bag system.



The driver side supplemental air bag inflated

Report Air Bag Inflation

If an air bag inflates during a collision or for any other reason, Ford Motor Company wants to know. Please report the inflation to the Accident Investigation Team by calling "collect" (313) 337-8040.

The Accident Investigation Team reviews the information you provide. An investigator may contact you for more information. In some cases, the investigator may want to examine your car, and if an accident occurred, to get an accident report.

Warning: The air bag will inflate only once. The system is designed to function on a one-time-only basis. If the air bag is inflated, THE AIR BAG WILL NOT FUNCTION AGAIN AND MUST BE REPLACED IMMEDIATELY. If the air bag is not replaced, the unrepaired area will increase the risk of injury in a collision.

Disposal of Air Bag Equipped Vehicles

For disposal of air bags or air bag equipped vehicles, refer to the procedures in the 1990 Ford Shop Manual. Information on how to order a shop manual is available at an authorized Ford or Lincoln-Mercury Dealer. You can also order a shop manual using the order form in the back of your Owner's Guide.

Service Information Labels

Service and information labels are attached inside the glove compartment, on the sun visor, and on the radiator support in the engine compartment.

Label on the driver sun visor in the down position

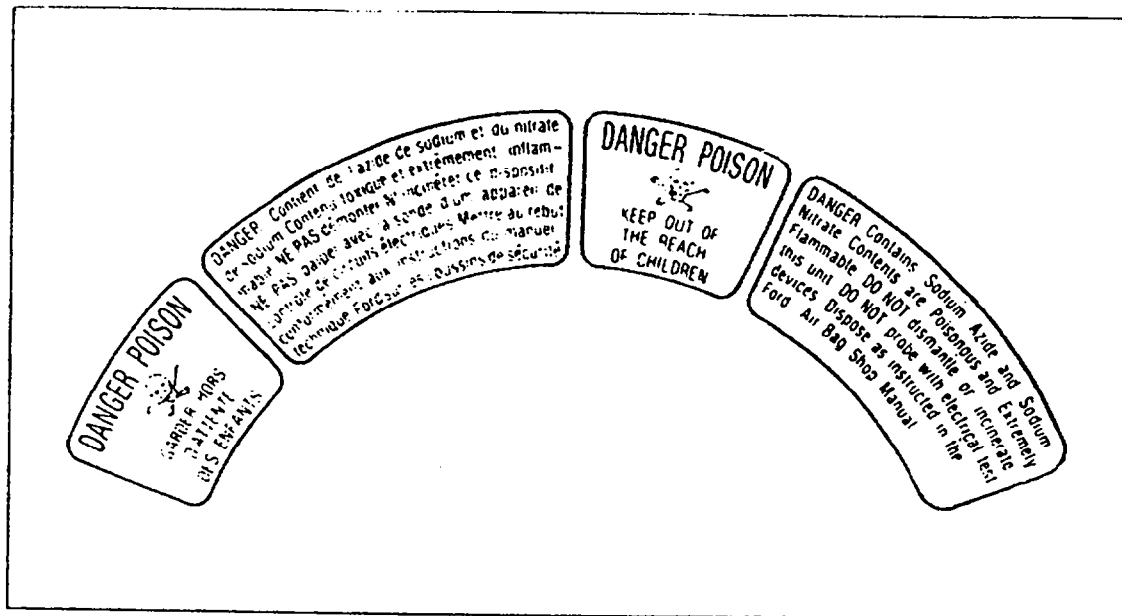
This vehicle has a
DRIVER AIR BAG.

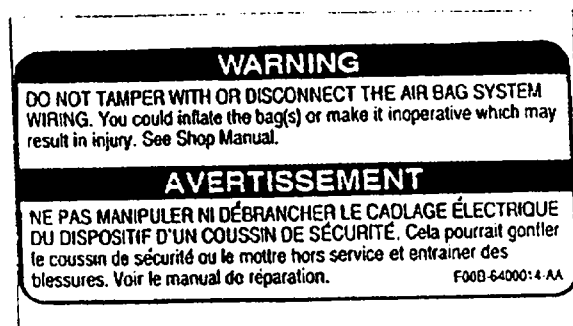
All occupants,
including the driver,
should still use seat
belts for effective
protection.

Ce véhicule comporte un,
COUSSIN DE SÉCURITÉ pour le
CONDUCTEUR.

Cependant, pour une protection
efficace, chaque occupant, y compris
le conducteur, devrait boucler sa
ceinture de sécurité.

Rear of air bag module





Label on radiator support in the engine compartment

Label located in the glove compartment



AIR BAG INFORMATION

Air Bag System is normal if "AIR BAG" lamp lights briefly when ignition key is turned on

NO MAINTENANCE IS NEEDED unless:

1. "AIR BAG" lamp does not light when key is turned on
2. "AIR BAG" lamp flashes or stays lit.
3. Groups of five "beeps" are heard
4. An air bag has inflated

USE SEAT BELTS EVEN IF YOU HAVE AN AIR BAG.

SEE OWNER GUIDE FOR MORE INFORMATION ABOUT AIR BAGS

*7FDAB 5406099 AA



COUSSIN DE SÉCURITÉ

Le dispositif du coussin de sécurité est en bon état si le témoin marqué «AIR BAG» s'allume momentanément quand le commutateur d'allumage est en position de contact.

AUCUNE INTERVENTION NE S'IMPOSE sauf si:

1. Le témoin «AIR BAG» ne s'allume pas quand le commutateur d'allumage est en position de contact.
2. Le témoin «AIR BAG» clignote ou reste allumé.
3. Des successions de cinq «bips» se font entendre
4. Un coussin de sécurité s'est déployé (gonfle)

BOUCLEZ VOTRE CEINTURE MEME SI VOUS BÉNÉFICIEZ D'UN COUSSIN DE SÉCURITÉ.

LE GUIDE DU PROPRIÉTAIRE VOUS DONNE DE PLUS AMPLES RENSEIGNEMENTS SUR LES COUSSINS DE SÉCURITÉ.

To Untwist or Unjam a Safety Belt

If you should jam the lap belt retractor by allowing the belt to retract when it is twisted, you can free the webbing with this procedure:

1. Pull on the belt with both hands to tighten it on the retractor spool.
2. Feed the belt back into the retractor until it is completely retracted. Repeat previous step if necessary.
3. Pull the belt out of its holder as far as it will go and untwist the belt or remove the object that is jamming the belt. Let the belt retract.
4. Then, pull the belt out and let it retract several times to make sure that the belt works properly.