NEW CAR ASSESSMENT PROGRAM (NCAP)

FRONTAL BARRIER IMPACT TEST

FORD MOTOR COMPANY
1991 FORD EXPLORER MPV
4 DOOR 4X4
NHTSA NO. MM0200

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

JANUARY 25, 1991

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

This Final Report was prepared for the U. S. Department of Transportation, National Highway Traffic Safety Administration under Contract No. DTNH22-87-D-02009. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

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MAR 21 1991

Date of Report Acceptance

_____
Contracting Officer's Tech. Rep. (COTR)

MAR 21 1991

Date of Report Acceptance

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
MSE-91-N03		

4. Title and Subtitle	5. Report Date
NEW CAR ASSESSMENT PROGRAM (NCAP) FRONTAL BARRIER IMPACT TEST 1991 FORD EXPLORER MPV, 4 DOOR 4X4 NHTSA No. MM0200	JANUARY 25, 1991
	6. Performing Organization Code MSE
7. Author(s) Dr. A. V. Khadilkar/S.D. Pruitt/ D. Gokhale /A. Mapara	8. Performing Organization Report No. R9092-10
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, D.C. 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 1991 Ford Explorer MPV, 4 Door 4x4 at the Mobility Systems and Equipment Company (MSE) crash test facility in Mira Loma, CA, on 11 October 1990.

The barrier impact velocity was 34.8 mph, and the ambient temperature at the barrier face at the time of impact was 89 deg. F. The post-test vehicle crush maximum was 16.0 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	903	N.D
Chest Resultant Peak 60 Gs (3 ms clip)	52.0	N.D.
Femur Load 2250 Pounds Left	486	617
Femur Load 2250 Pounds Right	606	718

TYPE OF RESTRAINT SYSTEM: An active 3-point belt system at each front outboard seating position.

17. Key Words	18. Distribution Statement
35 MPH FRONTAL BARRIER IMPACT TEST NEW CAR ASSESSMENT PROGRAM (NCAP) 1991 FORD EXPLORER MPV, 4 DOOR 4X4	Copies of this report are available from Technical Reference Division Nat'l Hwy. Traffic Safety Admin. Room 5108, Nassif Building 400 7th St. S.W. Wash. DC 20590

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
UNCLASSIFIED	UNCLASSIFIED	32	

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SECTION 1

PURPOSE AND TEST PROCEDURE

This 35 mph frontal barrier impact test is a part of the FY 91 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 TEST

A load cell barrier consisting of 36 cell units was impacted by a 1991 Ford Explorer MPV, 4 Door 4x4, NHTSA No. MM0200, at a velocity of 34.8 mph. The frontal impact test was conducted by Mobility Systems and Equipment Company (MSE) on 11 October 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 (ATD's) 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-seven (67) 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 1991 Ford Explorer MPV, 4 Door 4x4, was equipped with a 244.1 cubic inch, 6 cylinder engine and 3 speed automatic transmission. The test weight of the 1991 Ford Explorer MPV, 4 Door 4x4, with two (2) 50th percentile male dummies, instrumentation, and cameras was 4,756 pounds.

The 1991 Ford Explorer MPV, 4 Door 4x4, was involved in a frontal load cell barrier crash at a velocity of 34.8 mph.

The maximum static crush for the vehicle of 16.0 inches occurred at the vehicle centerline. The windshield was cracked, but no separation was observed. Both the driver's and passenger's front doors were opened without the aid of tools.

The driver ATD's head hit the steering wheel rim and hub. The driver's left and right knees hit the dash panel.

The driver ATD had a HIC value of 903, the maximum chest acceleration (resultant clipped) was 52.0 g's and the maximum femur loads were 486 (left) and 606 (Right) pounds.

The passenger head hit the dash panel and then the right knee. Both of his knees hit the dash panel and the glovebox door. There is no data for passenger ATD head accelerations. There is no chest data for the passenger ATD.
maximum femur loads were 617 (left) and 718 (right) pounds.

Seat belt spool out, measured by high-speed film analysis, was 2.6 inches for the driver and 2.8 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 stoddard solvent leaks.

Each of the test vehicle's front outboard seating position was equipped with a 3-point active belt system. The vehicle was tested with the active belt system.

Data Table No. 1 Test Vehicle Data

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1991/FORD/EXPLORER MPV/4 DOOR 4X4

VEHICLE NHTSA NO.: M M 0 2 0 0 VIN: 1 F M D U 3 4 X 4 M U A 2 2 6 9 0

VEHICLE BODY COLOR: BURGUNDY ; MONTH & YEAR OF MANUFACTURE: 05/90

ENGINE: 6 Cylinders; 244.1 C.I.D; _____ Liters; _____ CC
X Gas; _____ Diesel: _____ Turbocharged
PLACEMENT-- X Longitudinal; _____ Transverse (Lateral)

TRANSMISSION: 3 Speed; _____ Manual; X Automatic; X Overdrive
FINAL DRIVE: _____ Front Wheel Drive X Rear Wheel Drive;
X Four Wheel Drive

DATE VEHICLE AVAILABLE FOR 35 MPH CRASH TESTING: October 11, 1990

ODOMETER READING: 159.0 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; 35 psi Rear
Recommended Tire Size: P225/70R15
Tires on Vehicle: P225/70R15 ; Manufacturer: Firestone
Number of Occupants: 2 Front; 3 Rear; _____ 3rd Seat; _____ 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 = 968 lbs. (A)
No. of Occupants x 150 lbs.- - - = 750 lbs. (B)
Cargo Capacity (A - B)- - - - - = 218 lbs.

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Right Front = 1077 lbs.
Left Front = 1167 lbs. TOTAL FRONT = 2244 lbs.(53.0% of TOTAL)
Right Rear = 998 lbs.
Left Rear = 970 lbs
TOTAL WEIGHT = 4212 lbs. TOTAL REAR = 1968 lbs.(47.0% 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 = 4212 lbs.
Maximum Cargo Carrying Capacity of Test Vehicle*- - - - - 218 lbs.
Weight of Two P.572 Dummies (2 x 164 lbs.)- - - - - - - - 328 lbs.
TEST VEHICLE TARGET WEIGHT 4758 lbs.
*300 lbs. for light trucks and MPVs

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES AND CARGO:

Right Front = 1116 lbs. TOTAL FRONT = 2351 lbs.(49.0% of TOTAL)
Left Front = 1235 lbs.
Right Rear = 1232 lbs. TOTAL REAR = 2405 lbs.(51.0% of TOTAL)
Left Rear = 1173 lbs.

TOTAL WEIGHT= 4756 lbs. (which includes 167 lbs. of cargo ballast weight placed in the cargo/luggage area)

VEHICLE COMPONENTS REMOVED TO MEET TARGET WEIGHT:

1. X Spare Tire
2. X Rear Bumper Assembly
3. X Tail lamp hsg. ___ Rt.Side X Left Side
4. Rear Seat Assembly

TEST VEHICLE ATTITUDE:

As Delivered----Right Front = 32.7 inches
Left Front = 32.5 inches
Right Rear = 33.1 inches
Left Rear = 32.4 inches

Ready For Test--Right Front = 32.1 inches
Left Front = 31.9 inches
Right Rear = 32.0 inches
Left Rear = 31.7 inches

Test Vehicle Wheelbase: 112.0 inches; C.G.= 52.6 inches rearward of front wheel centerline

Total Vehicle Length:

Right Side = 174.0 inches
Left Side = 174.0 inches
Centerline = 184.0 inches

Data Table No. 2 Post Crash Test Data

DATA OF 35 MPH FRONTAL BARRIER IMPACT RATING TEST: 10/11/90

TIME OF TEST: 4:48 PM: AMBIENT TEMPERATURE AT BARRIER FACE: 89 °F

VEHICLE'S OCCUPANT COMPARTMENT TEMPERATURE: 76 °F

(spec. Range = 66° to 78° F.)

VEHICLE WINDSHIELD MOLDING TEMPERATURE: 76 °F.

VEHICLE IMPACT VELOCITY: Primary Speed Trap = 34.86 mph
Secondary Speed Trap 34.78 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 =174.0"; C/Line=184.0"; Left Side=174.0"
Vehicle Post-test Length-Right Side=159.7"; C/Line=168.0"; Left Side=158.9"
Vehicle Static Crush --- Right Side= 14.3"; C/Line= 16.0"; Left Side= 15.1"

VEHICLE REBOUND FROM BARRIER FACE:

Vehicle Right Side = 11.0 inches
Vehicle Centerline = 12.2 inches
Vehicle Left Side = 12.0 inches

VEHICLE DUMMY CONTACT POINTS:

	DRIVER (I.D. No. 465)			PASSENGER (I.D. No. 466)		
	Strg.Col. Hub	Strg. Wheel	Instru. Panel	Instru. Panel	Knee Assy.	Glove Box Door
HEAD	YES	YES	NO	YES	R.KNEE	NO
RIGHT KNEE	////////	/////	YES	YES	//////	YES
LEFT KNEE	////////	/////	YES	YES	//////	YES

VEHICLE DOOR OPENING INFORMATION:

	RIGHT SIDE		LEFT SIDE	
	OPENED	JAMMED	OPENED	JAMMED
FRONT DOORS	YES	N/A	YES	N/A
REAR DOORS	YES	N/A	YES	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 - - - - -	0.0 " forward;	0.0 " forward
Seat Adjuster Failure- - - -	None ;	None

Details of any failure: N/A

OTHER NOTABLE IMPACT EFFECTS: N/A

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: 1991/FORD/EXPLORER MPV/4 DOOR 4X4

VEH. NHTSA NO.: MM0200 ; TEST DATE: 10/11/90

MAXIMUM ACCELERATION VALUES:		DRIVER DUMMY # 465	PASSENGER DUMMY #466
Head Channel X	HEAD X	— 134.97	N.D
Head Channel Y	Y	— 27.47	N.D
Head Channel Z	Z	52.43	N.D
HEAD RESULTANT	R	143.61	N.D
Chest Channel X	CHEST X	- 57.14	
Chest Channel Y	Y	- 10.27	
Chest Channel Z	Z	14.78	
CHEST RESULTANT (3 msec clip)	R	51.99	
TIME INTERVAL (seconds)		0.0651 to 0.0681	

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	HIC	903.47	N.D
t_1 (seconds)		61.70	N.D
t_2 (seconds)		93.10	N.D
Avg. Accel. t_1 to t_2		60.68	N.D

MAXIMUM FEMUR FORCES:

Right Side (lbs.)	FR	606.05	717.65
Left Side (lbs.)	FL	486.13	616.63

MAXIMUM SEAT BELT FORCES:

Lap Belt	LAP	1767.2	1734.6
Shoulder Belt	SHLDR	1745.2	1903.0

MAXIMUM SEAT BELT WEBBING SPOOL-OUT:

Lap/Shoulder Belt Combination *	2.57	3.4

* Determined electronically

Data Table No. 4 Test Dummy Positioning Data

PRE-IMPACT DATA:

Make/Model: FORD/EXPLORER MPV

Body Style: 4 DOOR 4X4 Model Year: 1991

NHTSA No.: MM0200 Color: BURGUNDY

DATA FROM CERTIFICATION LABEL:

Vehicle Manufacturer: FORD MOTOR COMPANY

Date of Manufacture: 05/90 ; VIN: 1FMDU34X4MUA22690

GVWR: 5180 lb; GAWR: Front = 2540 lb; Rear = 2950 lb

POST-IMPACT DATA:

Date of Test: 10/11/90 Time: 4:48 PM Temperature: 89 °F

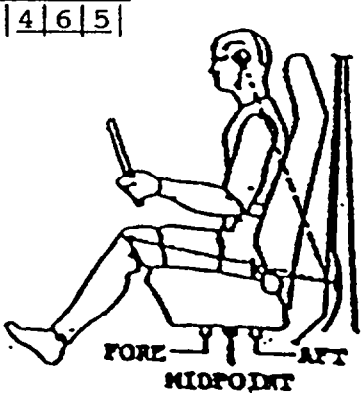
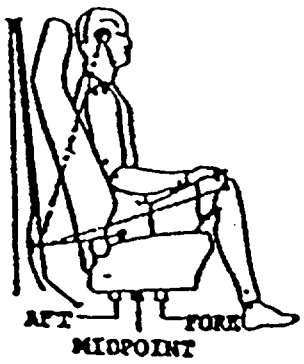
Required Impact Velocity Range: 34.5 to 35.5 mph

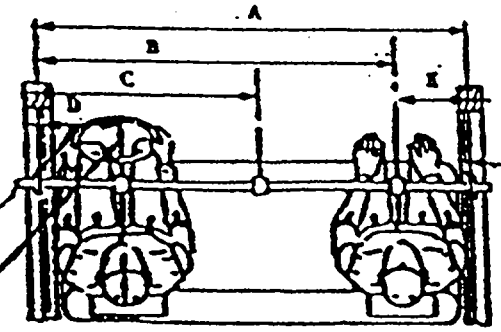
Impact Velocity: Primary = 34.86 mph Secondary = 34.78 mph

Seat Type: Bucket Adjuster Type: Lever

Bucket Seat Back Type: Integral Headrest

TECHNICIANS: Mr. Apurva A. Mapara/Mr. Dipen Gokhale

DRIVER DUMMY # |4|6|5|			PASSENGER DUMMY # |4|6|6|
HEAD 21.7 "			21.5 " HEAD
TARGET 89.0 °			89.0 ° TARGET
KNEE 21.0 "			21.9 " KNEE
JOINT - 5.0 °			- 4.0 ° JOINT
APPROX- 7.0 "			7.1 " APPROX-
IMATE -39.0 °			-30.0 ° MATE
"H" POINT			"H" POINT
	FORE AFT MIDPOINT	AFT FORE MIDPOINT	



A = 61.6 "

B = 44.4 "

C = 30.8 "

D = 16.4 "

E = 17.2 "

LATERAL BAR

ADJUSTABLE POINTER

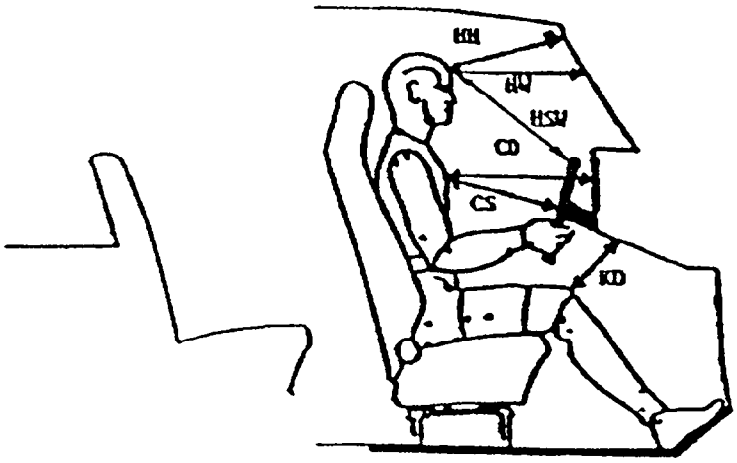
DOOR GLASS HEIGHT

LEFT FRONT DOOR

RIGHT FRONT DOOR

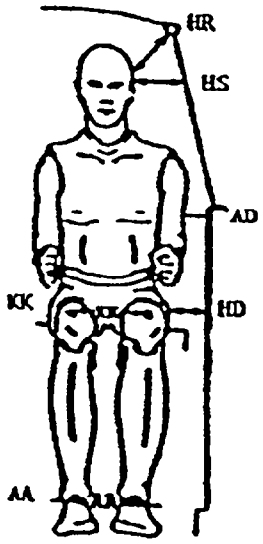
DRIVER DUMMY # \|4\|6\|5\| PASSENGER DUMMY # \|4\|6\|6\|

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

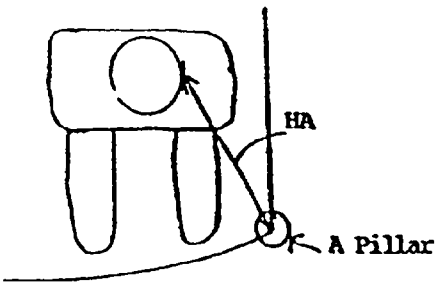


	Driver	Passenger
HH	18.5	19.0
HW	22.7	21.4
CD	24.0	23.1
CS	14.7	N/A
KD	L- 9.7	L- 9.3
KD	R- 9.7	R- 9.1
Torso Angle	20.0	Torso Angle 20.0
Seat Back Angle	24.0	Seat Back Angle 24.0
HSW	20.5	N/A

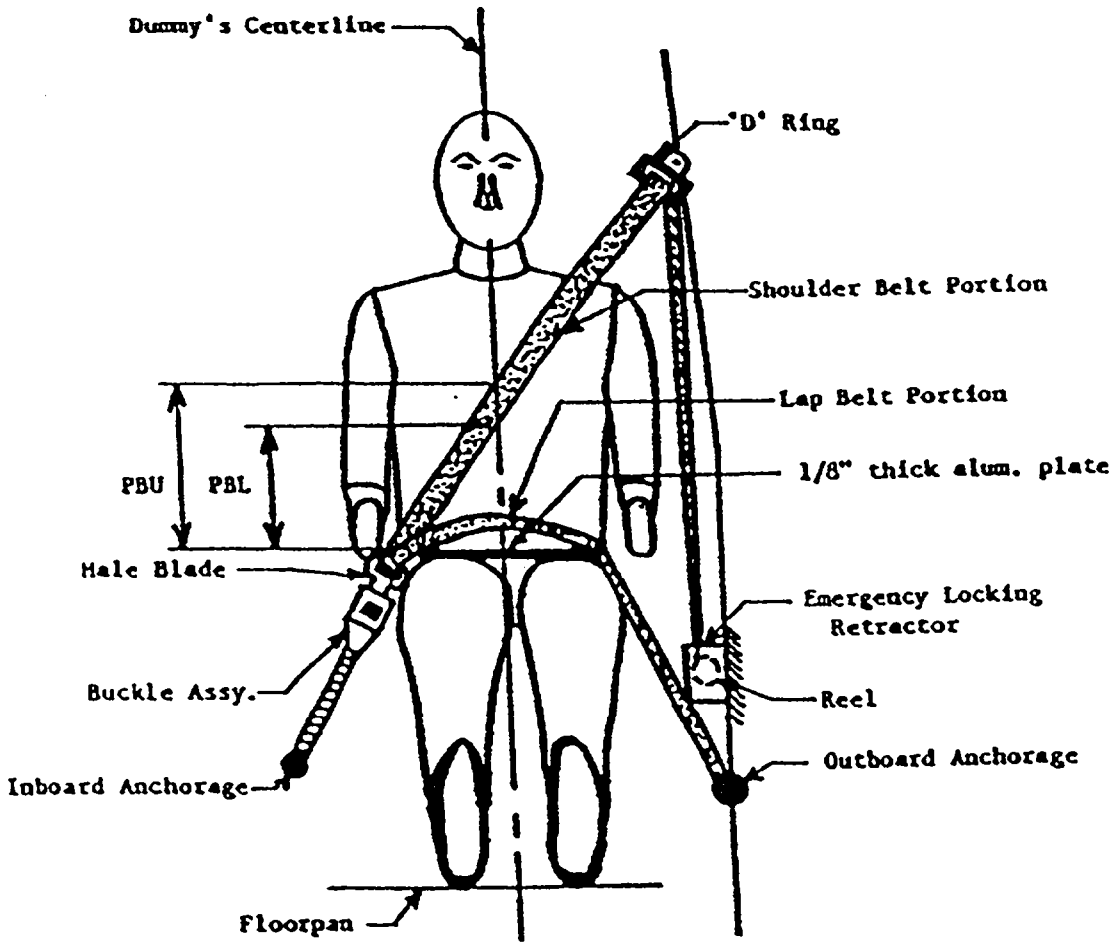
HSW = Head to Steering Wheel (in.)
HA = Head Target to A Pillar (in.)
HH = Head to Windshield Header (in.)
HW = Head to Windshield (in.)
CD = Chest to Dash (in.)
CS = Chest to Steering Wheel (in.)
HR = Head to Side Roof
HS = Head to Side Window (in.)
AD = Arm to Door (in.)
HD = Hip to Door (in.)
KK =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



REMARKS



	Driver	Passenger
HR	7.5	8.0
HS	10.1	10.7
AD	4.0	4.5
HD	5.7	5.1
KK	11.5	11.5
AA	11.5	9.5
HA	21.5	22.5

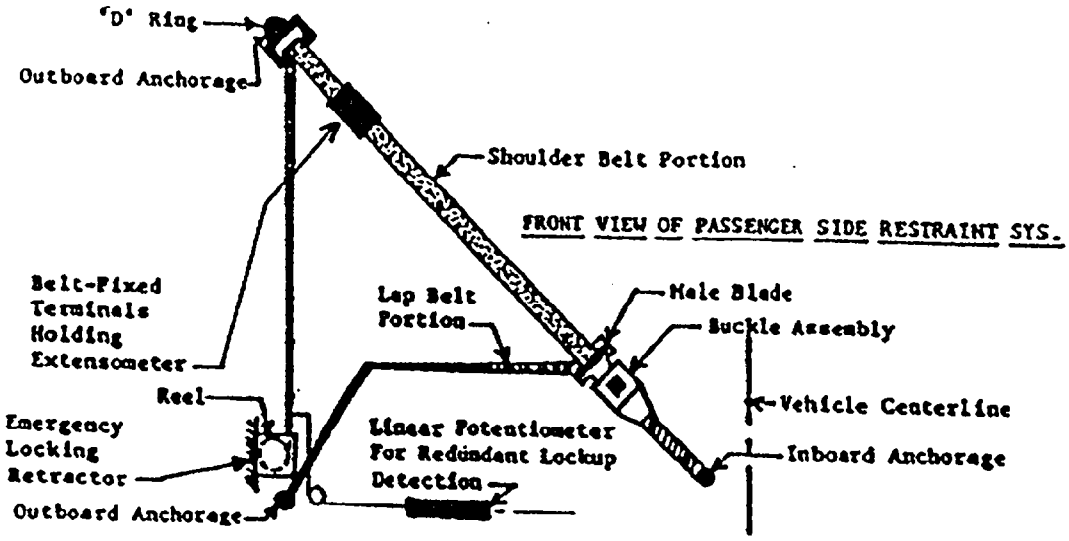


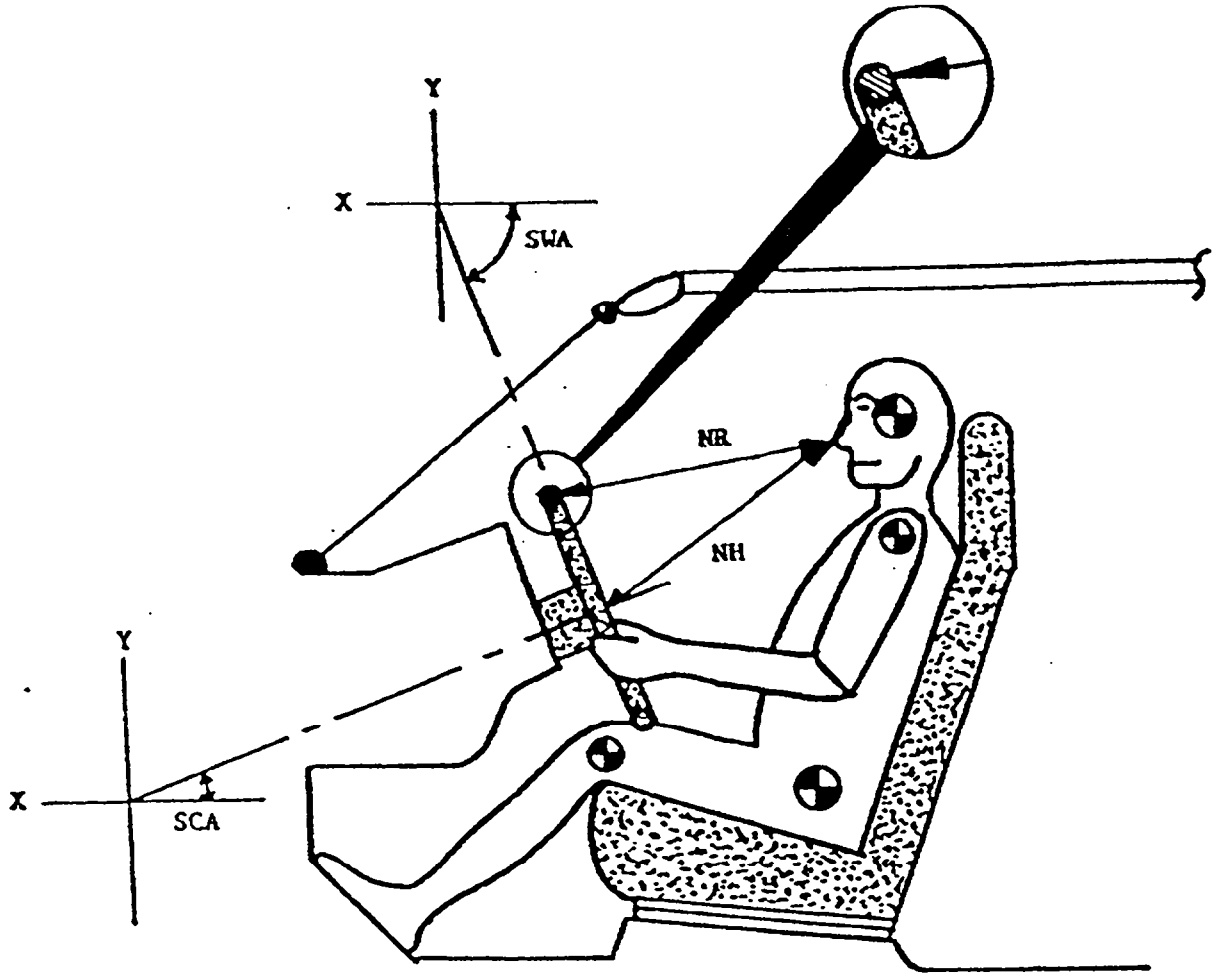
FRONT VIEW OF DRIVER DUMMY

	DRIVER DUMMY (inches)	PASSENGER DUMMY (inches)
PBU -- Top surface of alum. plate to belt upper edge	15.1	15.4
PBL -- Top surface of alum. plate to belt lower edge	11.3	11.9
LAP BELT TENSION, POUNDS	3.0	3.0
SHOULDER BELT TENSION, POUNDS	3.0	3.0

Data Table 6 Seat Belt Performance Assessment Test Data

	DRIVER SIDE		PASSENGER SIDE	
BELT LENGTH DATA:	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
Total belt length from retractor reel to bolt hole anchor point for continuous webbing systems	86.5	86.5	87.0	87.0
Retractor reel to 'D' ring as measured on Part 572	25.0	25.0	25.0	25.0
Shoulder belt length as measured on Part 572 dummy	33.0	32.5	33.5	33.5
Lap belt length as measured on Part 572 dummy	33.0	34.5	33.5	33.7
Remainder of belt webbing left on retractor reel	23.5	22.5	23.0	22.8
BELT SPOOL-OFF DATA:				
As determined by film analysis	2.6 in		2.8 in	
As determined electronically	2.3 in		3.4 in	
As determined mechanically	4.1 in		5.2 in	
BELT STRAIN DATA:				
Measured between male blade and 'D' ring	3.0 Percent		2.8 Percent	





LEFT SIDE VIEW

	MEASUREMENTS
NR--Distance from tip of dummy's nose to Top Rear surface of steering wheel rim.	18.3 Inches
NH--Distance from tip of dummy's nose to center of steering column hub.	18.5 Inches
SCA-Angle of steering column relative to the horizontal X axis.	25.0 Degrees
SWA-Angle of steering wheel relative to the horizontal X axis.	65.0 Degrees

Data Table 8 Camera Location Data

VEH. NHTSA NO.: MM0200 ; TEST DATE: 10/11/90 ; TIME: 4:48 PM

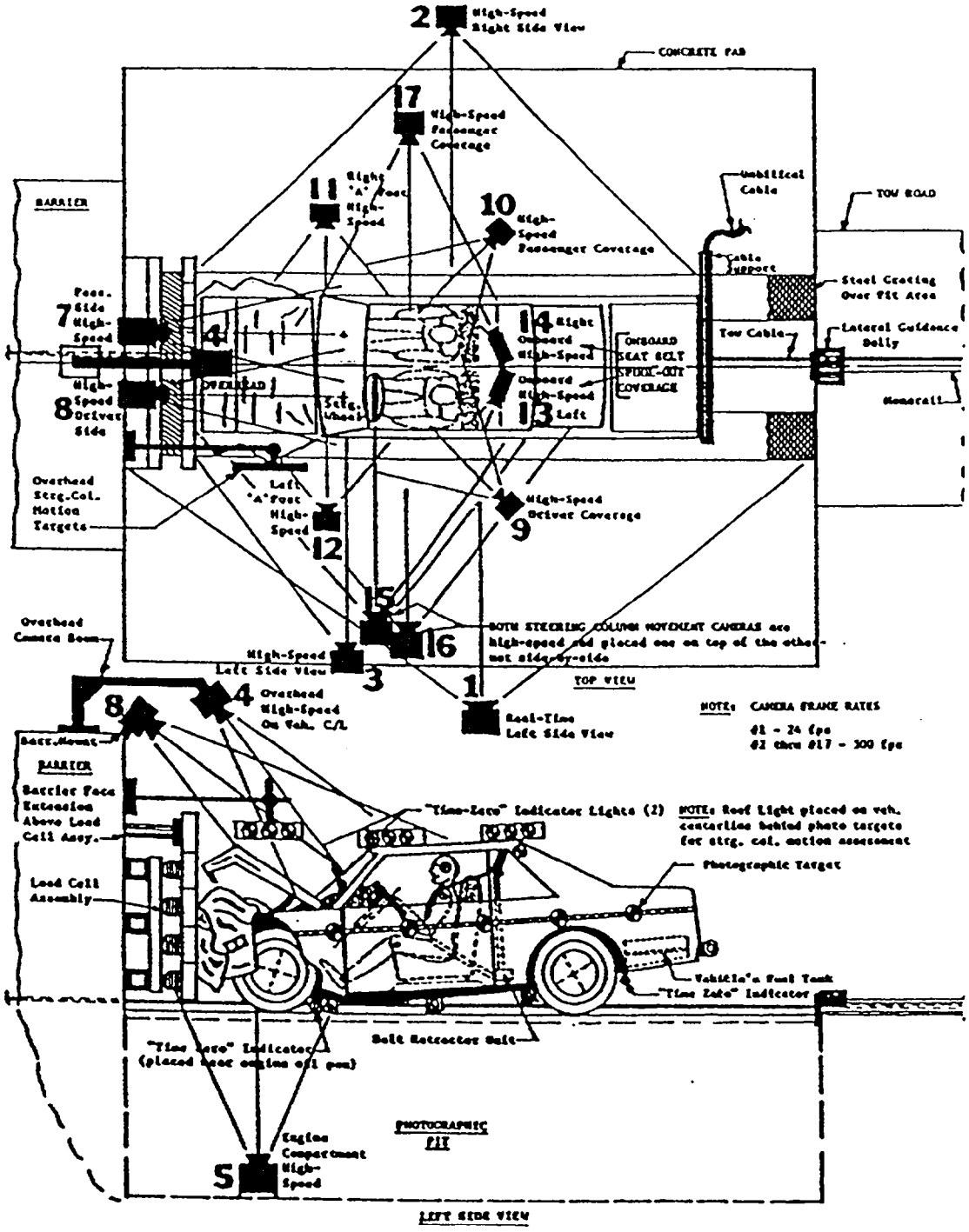
VEH. YEAR/MAKE/MODEL/BODY STYLE: 1991/FORD/EXPLORER MPV

CAMERA NO.	VIEW	CAMERA POS. (in.) X	Y	Z	ANGLE (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
1	Left Side View	-676	268	57	3	686	15-70 ZOOM	24
2	Right Side View	382	-83	51.7	2	394.3	13	540
3	Left Side View	308	-48	93.5	-1	49.8	13	250
4	Overhead	-1	-4	124	62	125	13	500
5	Pit-Engine	2	48	-55.0	13	**	13	560
6	Pit-Fuel Tank	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.
7	Front-Passenger	13	-14	104	48	116	50	600
8	Front-Driver	-12	-14	104	42	116	50	620
9	Left Side-Driver	-102	106	80.8	22	167.8	50	600
10	Right Side-Passenger	71	-93	82	18	142.8	50	600
11	Right Side-'A' Post	160	-72	52	2	182.8	50	650
12	Left Side-'A' Post	-111	-61	77.5	0	148.2	50	520
13	Onboard-Left Side	-9	-80	33	4	87.2	13	710
14	Onboard-Right Side	9	-86	33	4	92.4	13	710
15	Left Side-Steering Col.	-343	-82	128	12	375.4	50	600
16	Left Side-Steering Col.	350	-86	111	10	377.1	50	640
17	Right Side Passenger	116	-78	51	2	148.6		540

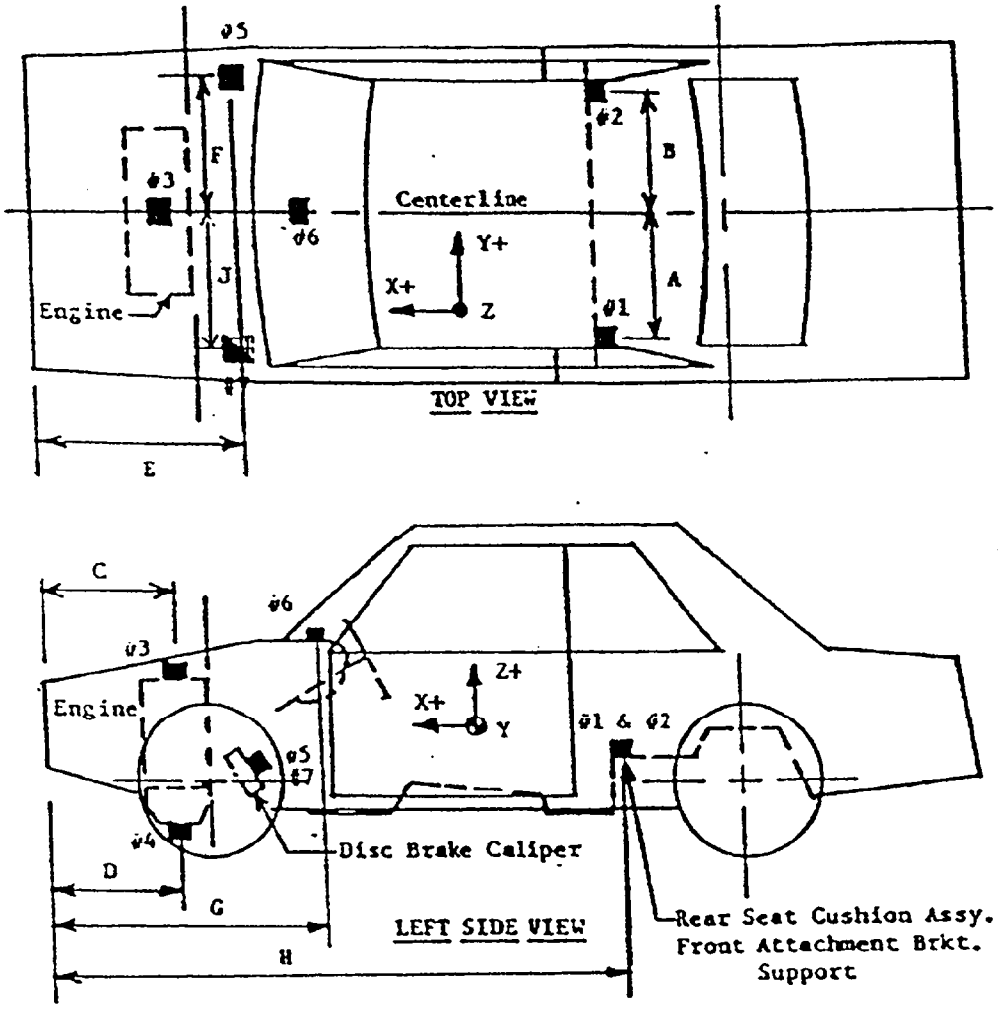
* X = film plane to monorail centerline
  Y = film plane to barrier face
  Z = film plane to ground

**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

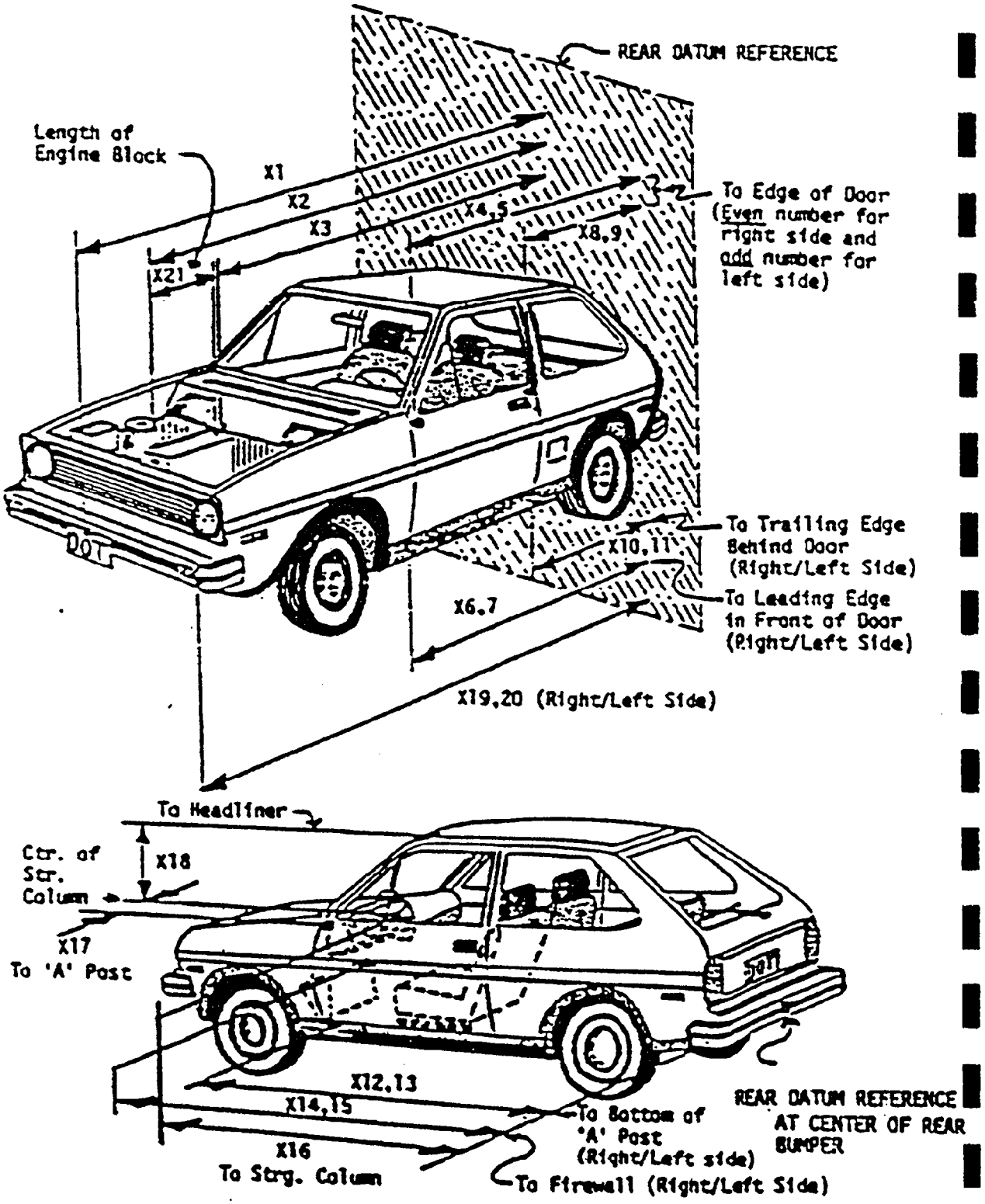


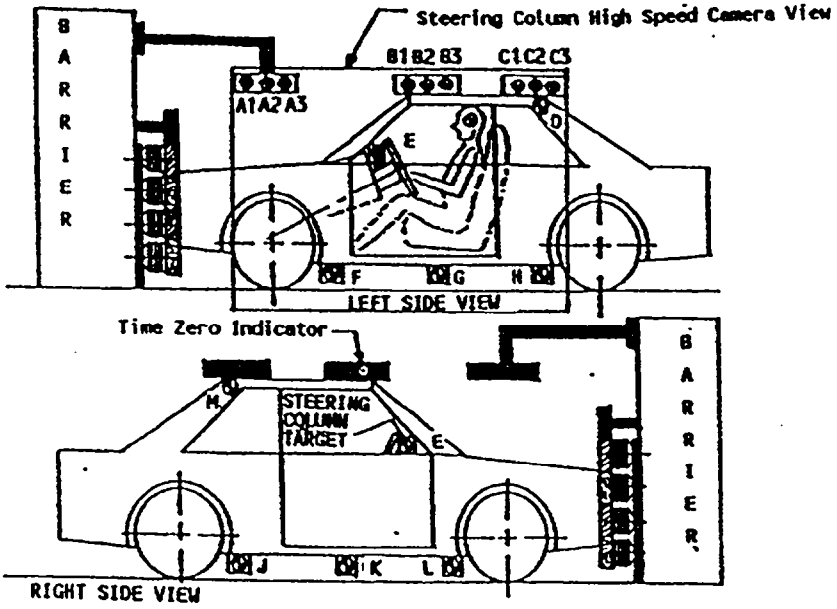
Dimension	Length (in.)
A	11.5
B	11.5
C	36.0
D	54.0
E	35.1
F	50.0
G	55.0
H	131.0
J	50.0

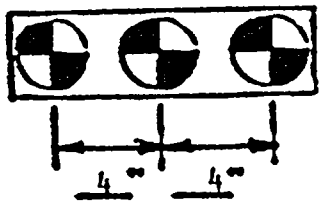
Loc. No.	Description	Maximum Value X-	msec.	X+	msec.
1	Rear seat X-member @ Left Side	2.11	162.2	-34.2	10.2
2	Rear seat X-member @ Right Side	1.5	179.9	-32.9	9.3
3	Top of Engine Block	21.7	44.7	-90.5	25.7
4	Bottom of Engine	16.7	51.2	-79.0	51.2
5	Disc Brake Caliper @ Right Side	32.6	63.9	-82.7	8.9
6	Instrument Panel	42.1	70.8	-78.8	51.2
7	Disc Brake Caliper @ Left Side	42.3	37.6	-86.1	32.3

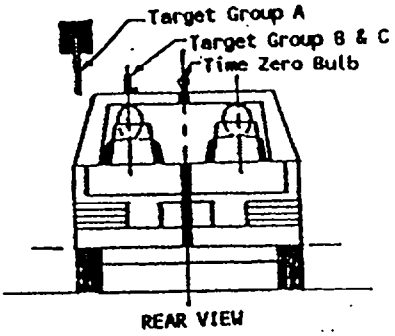
NO.	MEASUREMENT DESCRIPTION	Pre-Test (in.)	Post-Test (in.)	Diff. (in.)
X1	Total Length of Test Vehicle at Centerline	184.0	168.0	16.0
X2	Rear Surface of Vehicle to Front of Engine	163.0	150.5	12.5
X3	Rear Surface of Vehicle to Firewall	142.5	133.5	9.0
X4	Rear Surface to Upr. Leading Edge of Right Door	131.5	132.3	-0.8
X5	Rear Surface to Upr. Leading Edge of Left Door	131.7	132.8	-1.1
X6	Rear Surface to Lwr. Leading Edge of Right Door	128.3	128.9	-0.6
X7	Rear Surface to Lwr. Leading Edge of Left Door	128.7	128.5	0.2
X8	Rear Surface to Upr. Trailing Edge of Right Door	90.8	93.0	-2.2
X9	Rear Surface to Upr. Trailing Edge of Left Door	91.0	92.8	-1.8
X10	Rear Surface to Lwr. Trailing Edge of Right Door	90.3	91.0	-0.7
X11	Rear Surface to Lwr. Trailing Edge of Left Door	91.0	90.9	0.1
X12	Rear Surface to Bottom 'A' Post on Right Side	128.5	131.6	-3.1
X13	Rear Surface to Bottom 'A' Post on Left Side	128.3	130.7	-2.4
X14	Rear Surface to Firewall on Right Side	140.2	139.7	0.5
X15	Rear Surface to Firewall on Left Side	141.9	142.5	-0.6
X16	Rear Surface to Steering Column	113.8	112.5	1.3
X17	Center of Steering Column to 'A' Post	14.5	18.2	-3.7
X18	Center Steering Column to Headlining	18.5	19.6	-1.1
X19	Rear Surface to Right Side of Front Bumper	174.0	159.7	14.3
X20	Rear Surface to Left Side of Front Bumper	174.0	158.9	15.1
X21	Length of Engine Block	25.0	25.0	0.0

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









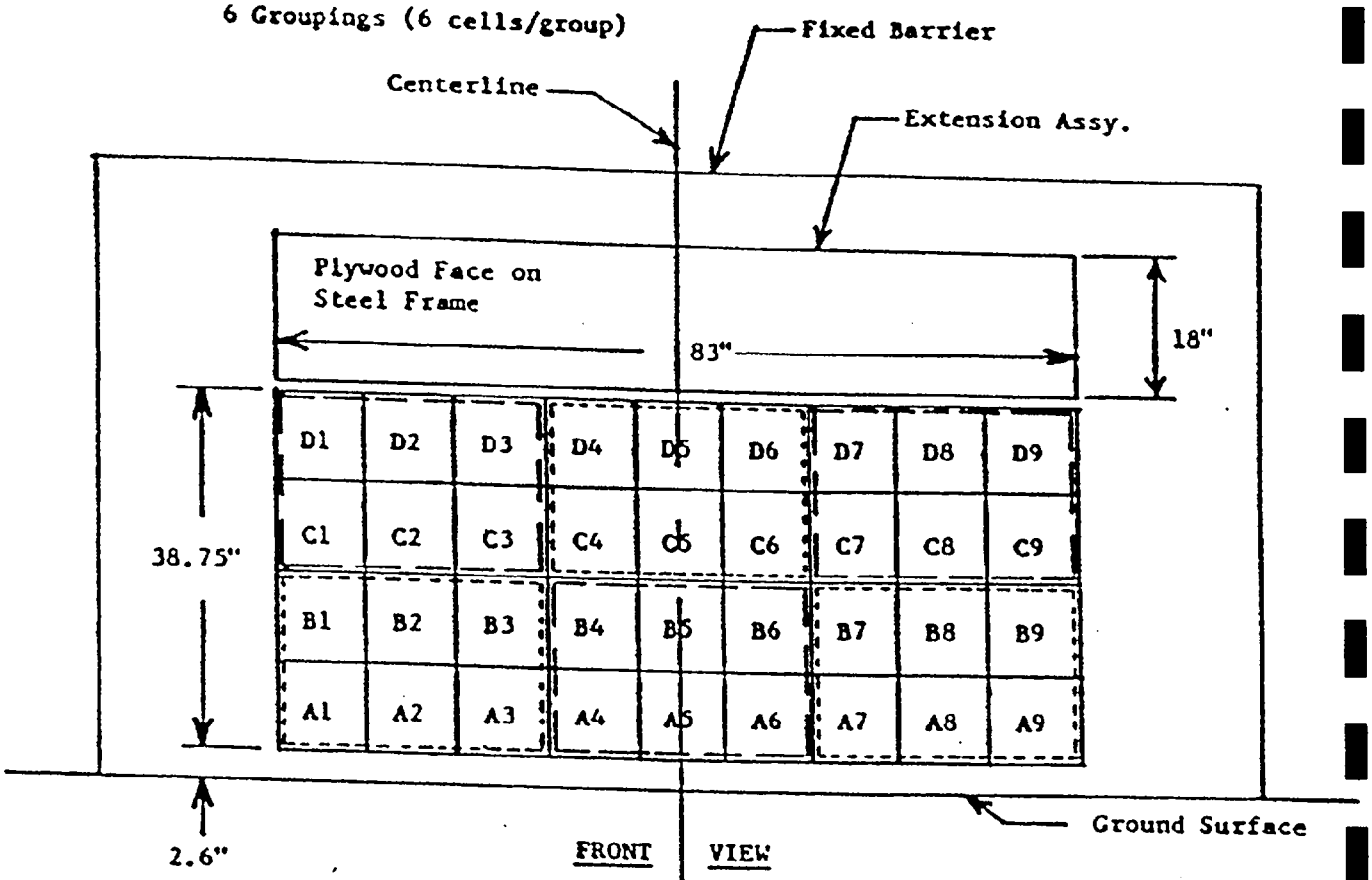
BARRIER TARGETS	'X' From Imag. Barrier Face Vertical Plane	'Y' From Monorail C/L	'Z' Above Ground
A-1	59.5	18.0	79.3
A-2	63.5	18.0	79.3
A-3	67.5	18.0	79.3

BARRIER TARGETS	'X' From Imag. Barrier Face Vertical Plane	'Y' From Monorail C/L	'Z' Above Ground
B-1	71.5	14.7	67.3
B-2	75.5	14.7	67.3
B-3	79.5	14.7	67.3
C-1	158.0	14.7	67.5
C-2	162.0	14.7	67.5
C-3	166.0	14.7	67.5
D	119.0	26.5	64.5
E	62.5	14.0	64.5
F	50.0	27.5	11.0
G	48.5	27.0	10.9
H	83.5	27.0	11.2
J	119.5	27.0	11.5
K	84.8	27.0	11.0
L	50.5	27.5	11.0
M	119.0	-26.5	64.5

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)



6 GROUPINGS OF 6 LOAD CELLS EACH

C1 thru D3	C4 thru D6	C7 thru D9
A1 thru B3	A4 thru B6	A7 thru B9

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

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 PASSENGER DUMMY (ATD) HEAD AND KNEE CONTACT AREA

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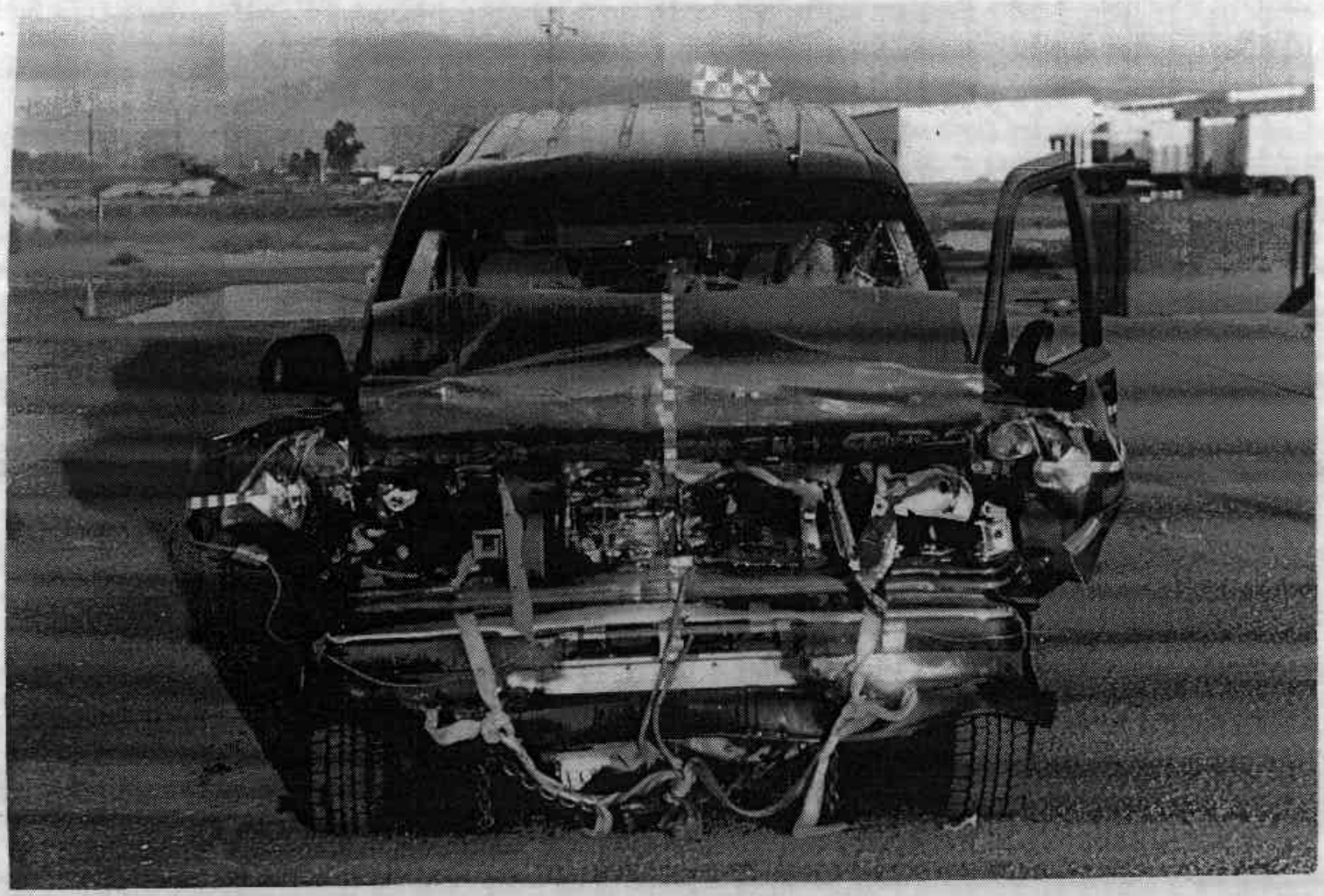
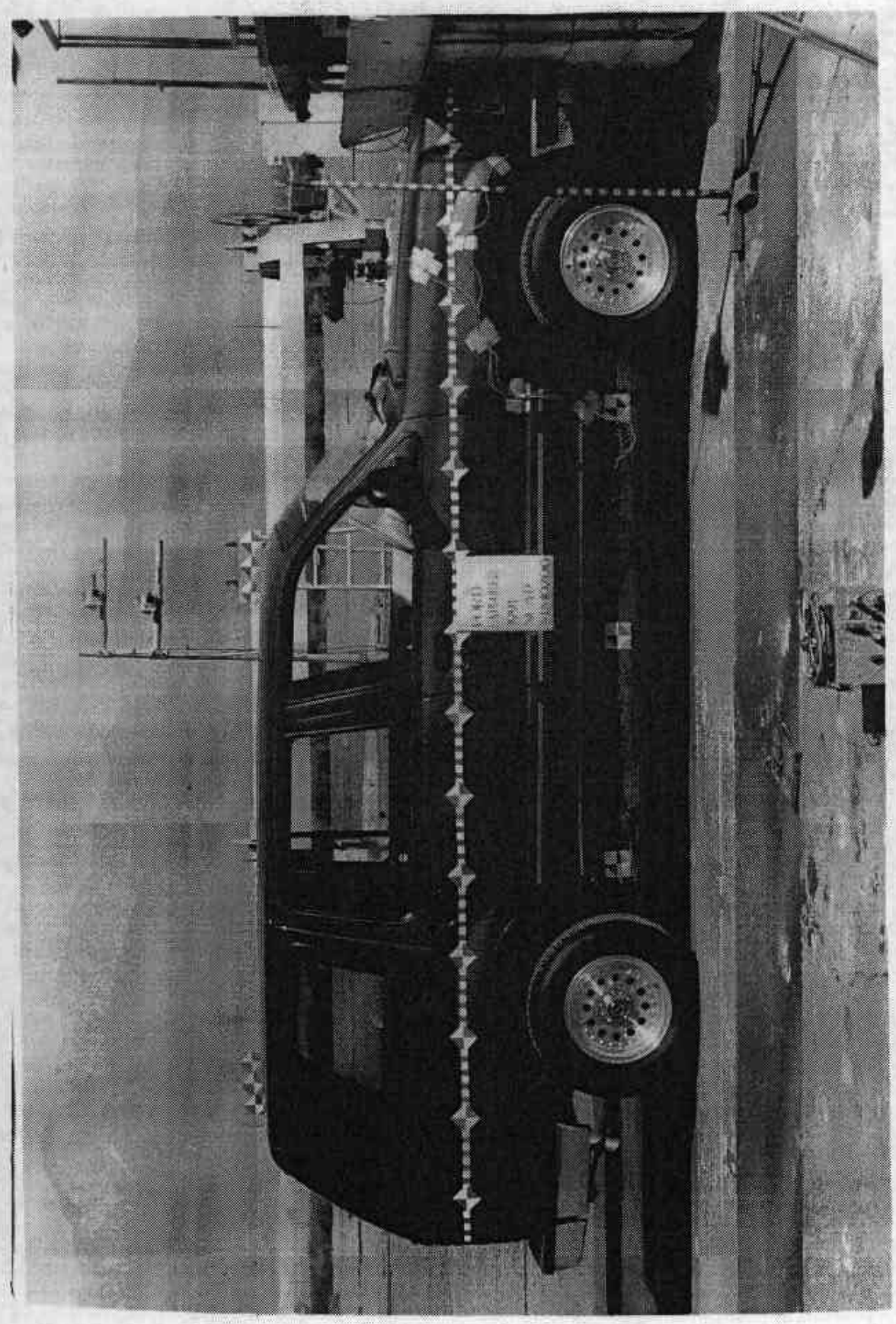
PRETEST FRONT VIEW



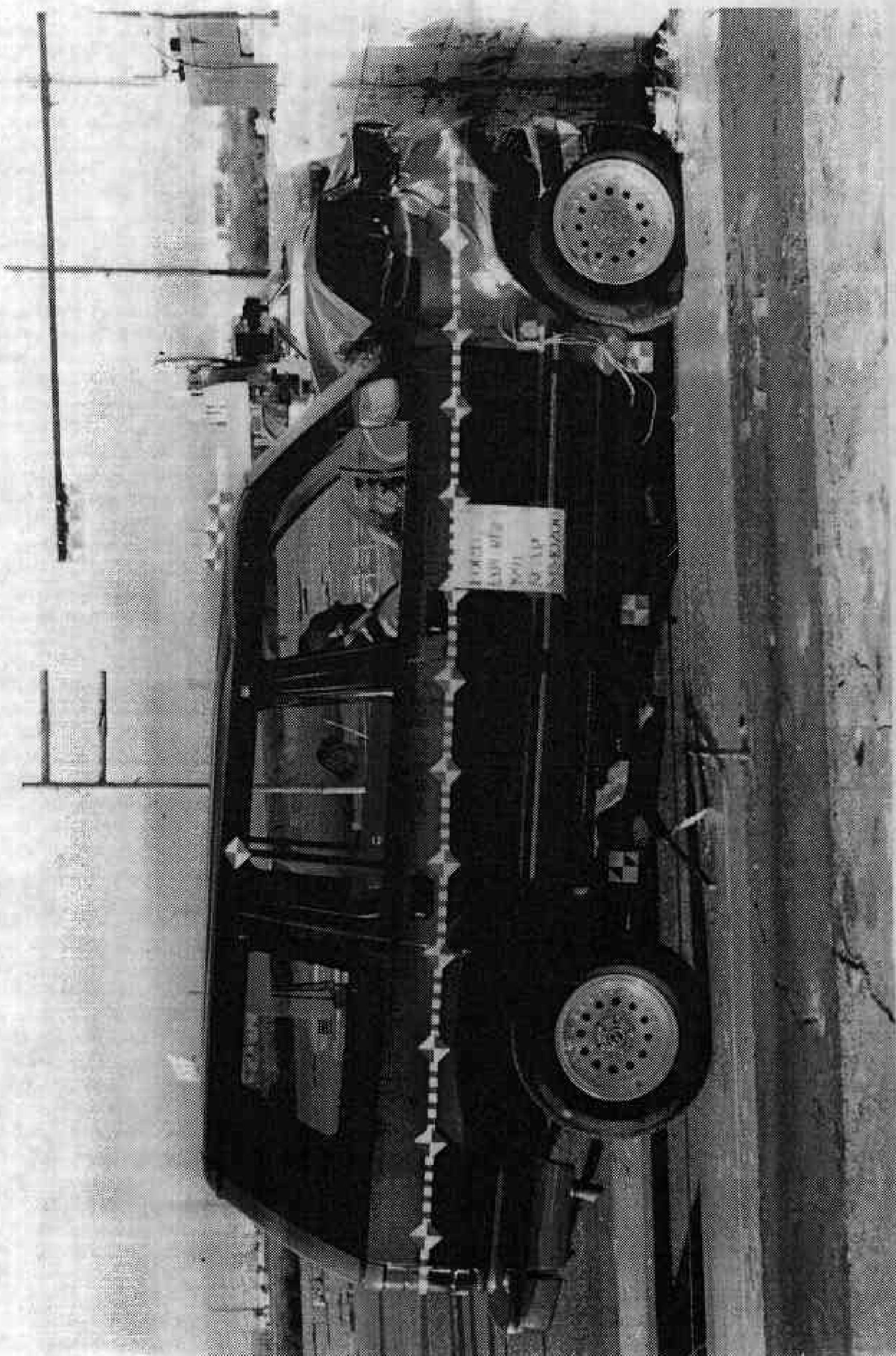
POSTTEST FRONT VIEW

PRETEST LEFT SIDE VIEW

POSTTEST LEFT SIDE VIEW



PRETEST RIGHT SIDE VIEW



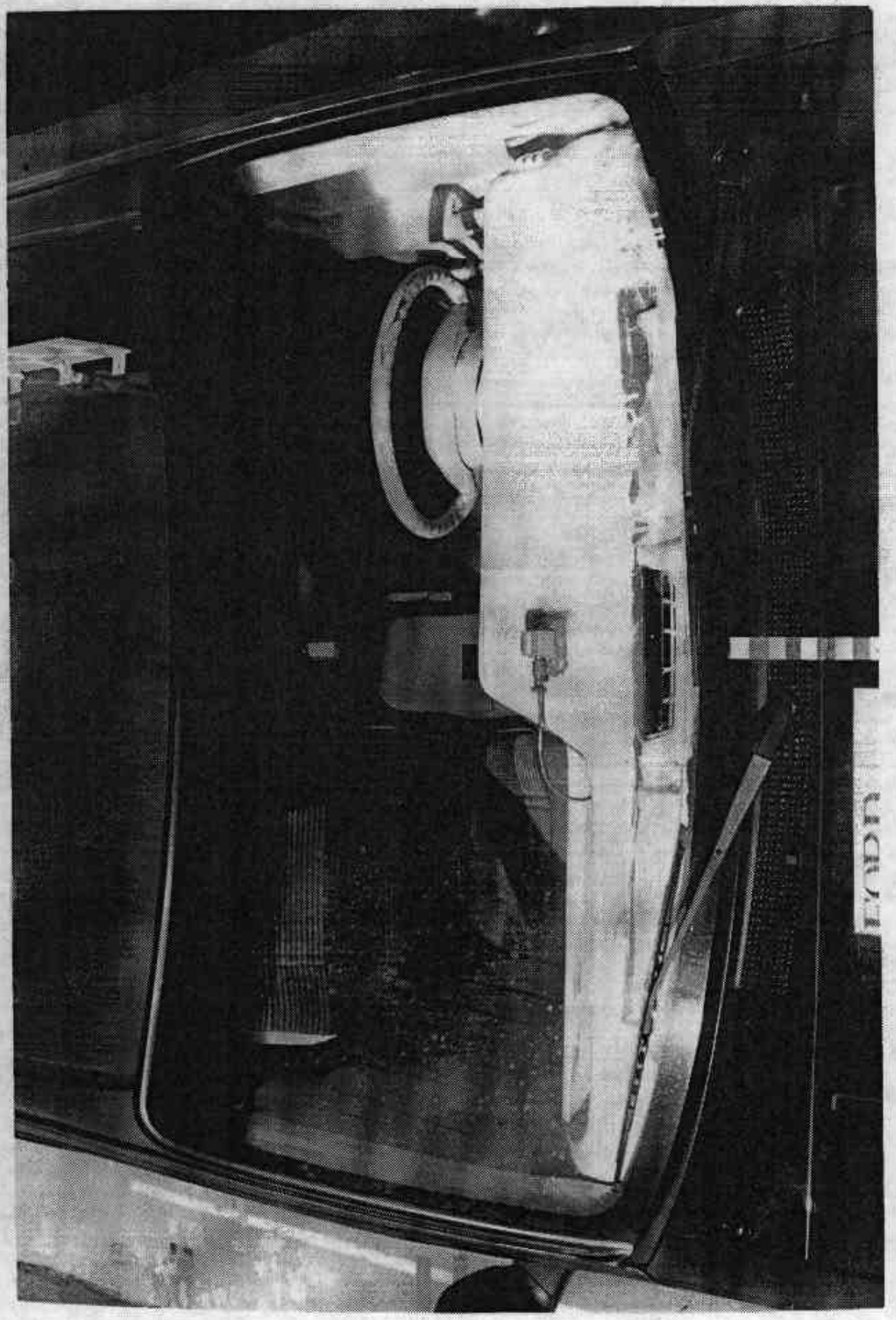
POSTTEST RIGHT SIDE VIEW

PRETEST RIGHT FRONT 3/4 VIEW

POSTTEST RIGHT FRONT 3/4 VIEW

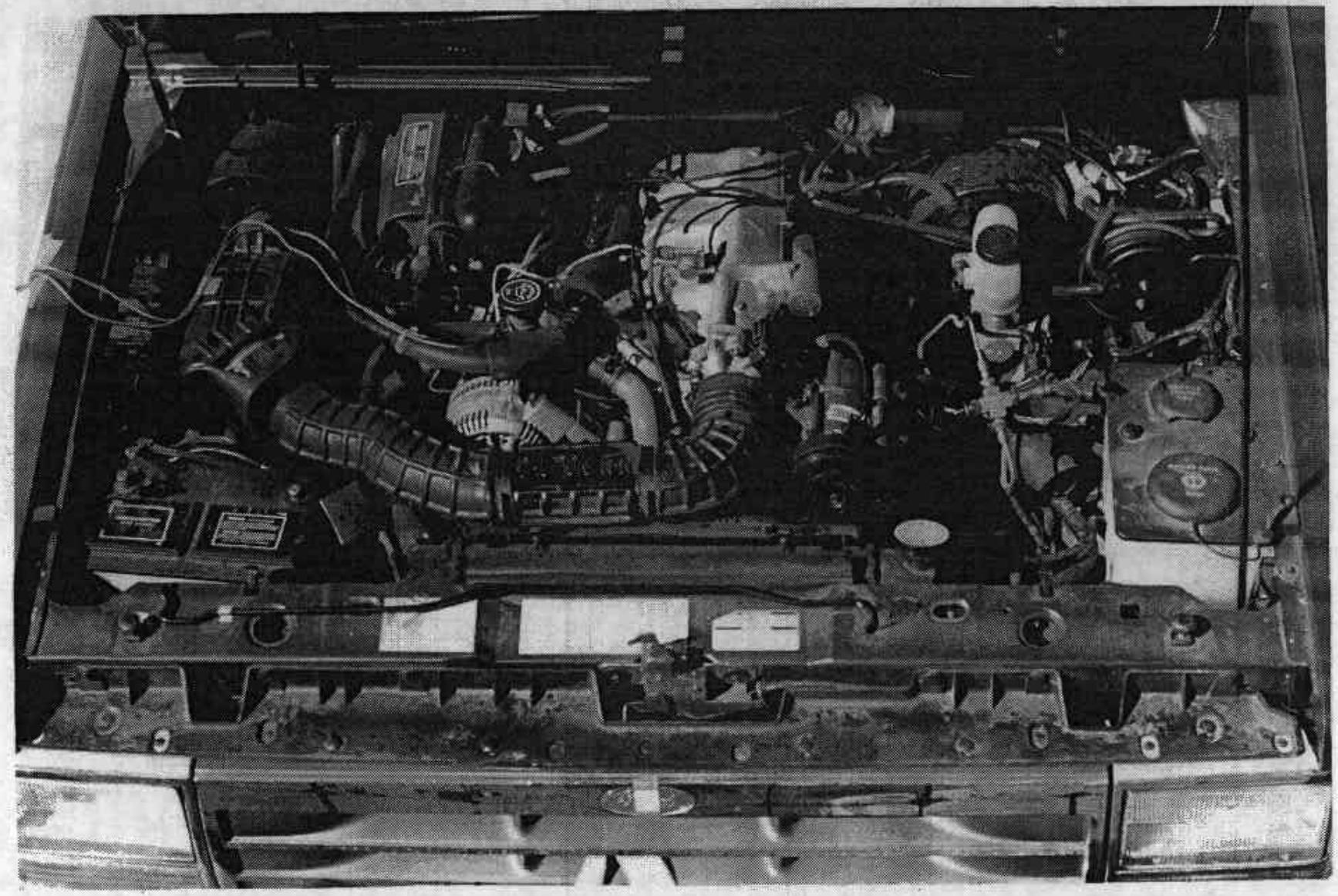
PRETEST LEFT REAR 3/4 VIEW

POSTTEST LEFT REAR 3/4 VIEW

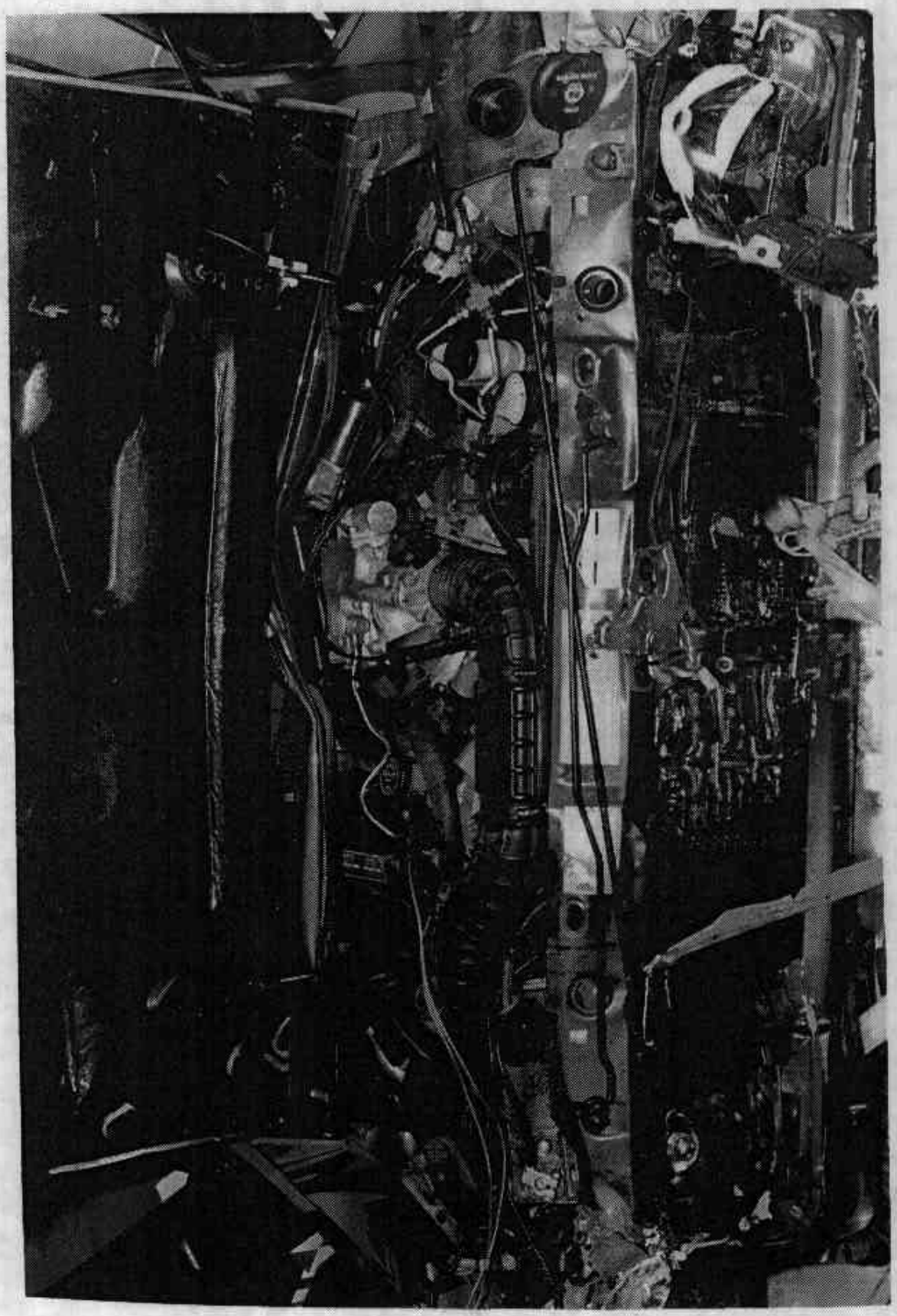


PRETEST WINDSHIELD VIEW

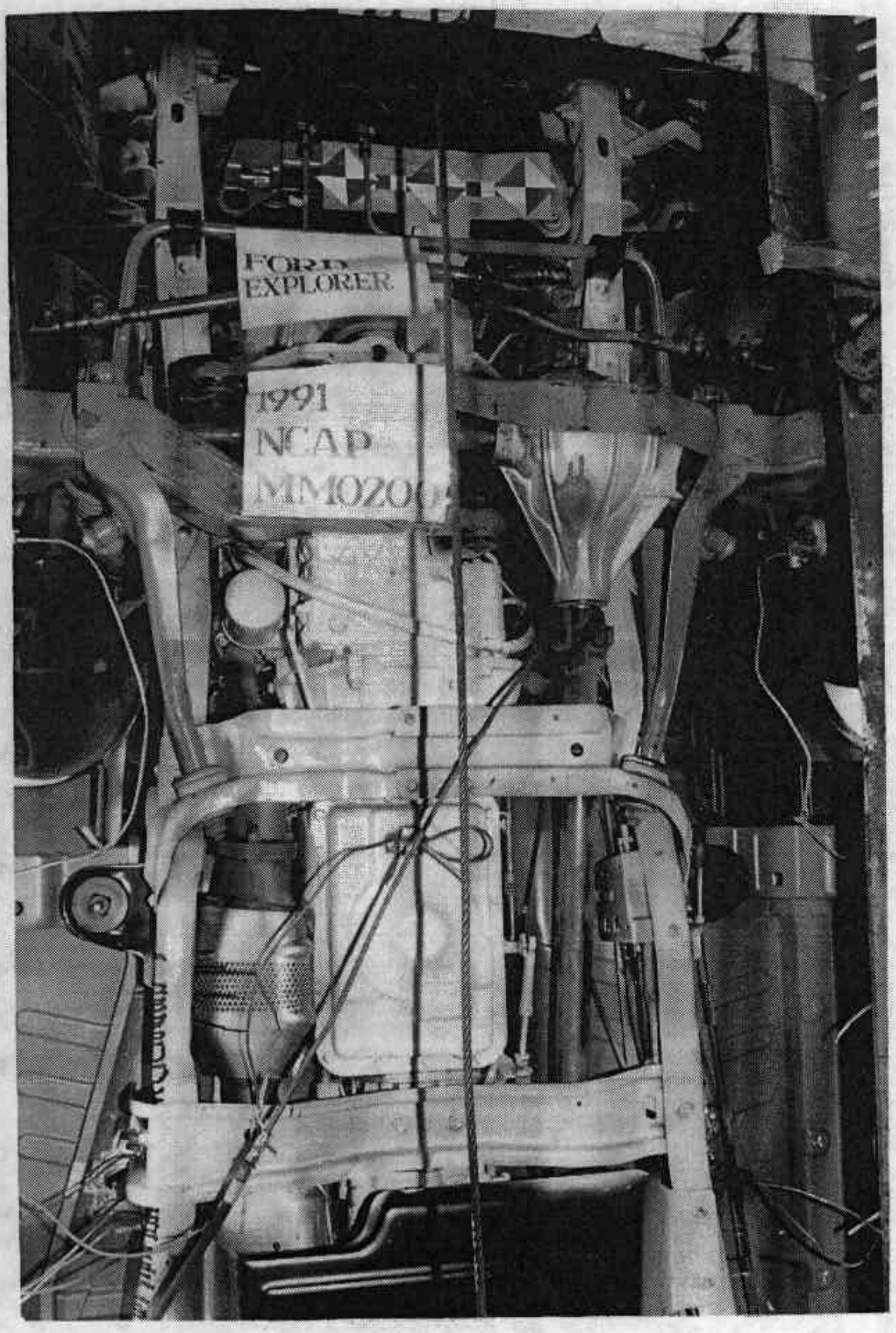
POSTTEST WINDSHIELD VIEW



PRETEST ENGINE COMPARTMENT VIEW

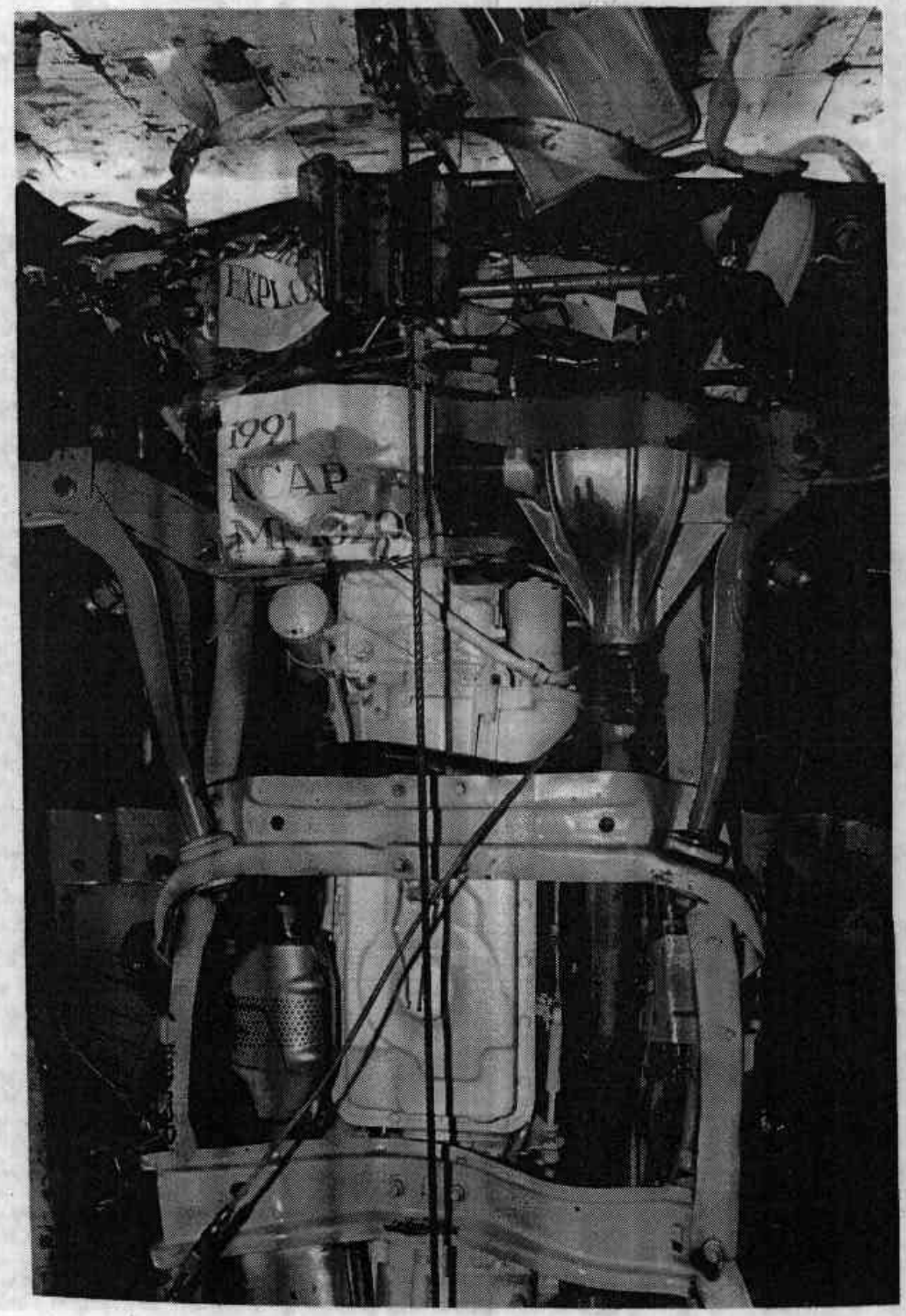


POSTTEST ENGINE COMPARTMENT VIEW

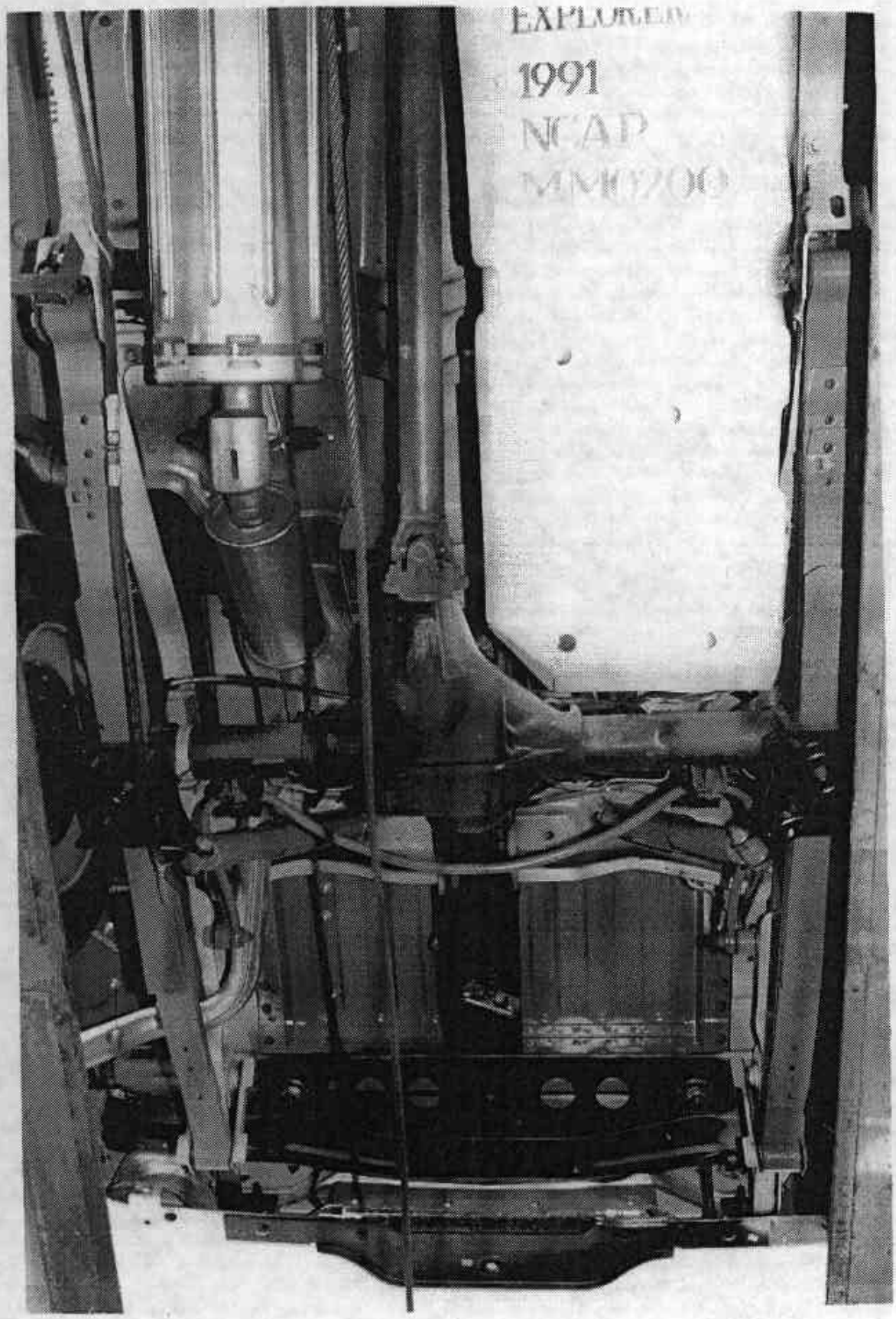


PRETEST FRONT UNDERBODY VIEW
A-15

MSE-91-R9092-N03

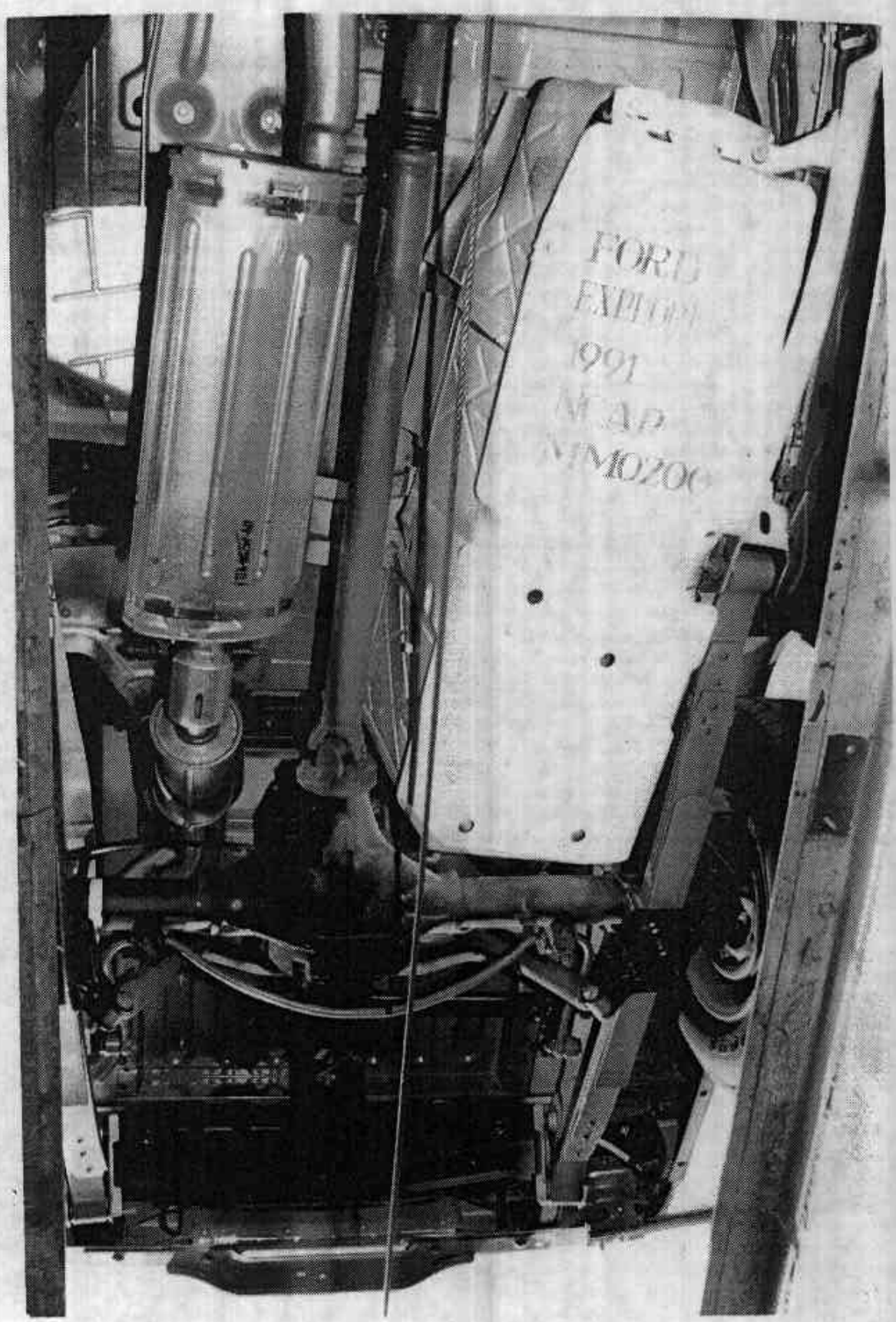


POSTTEST FRONT UNDERBODY VIEW

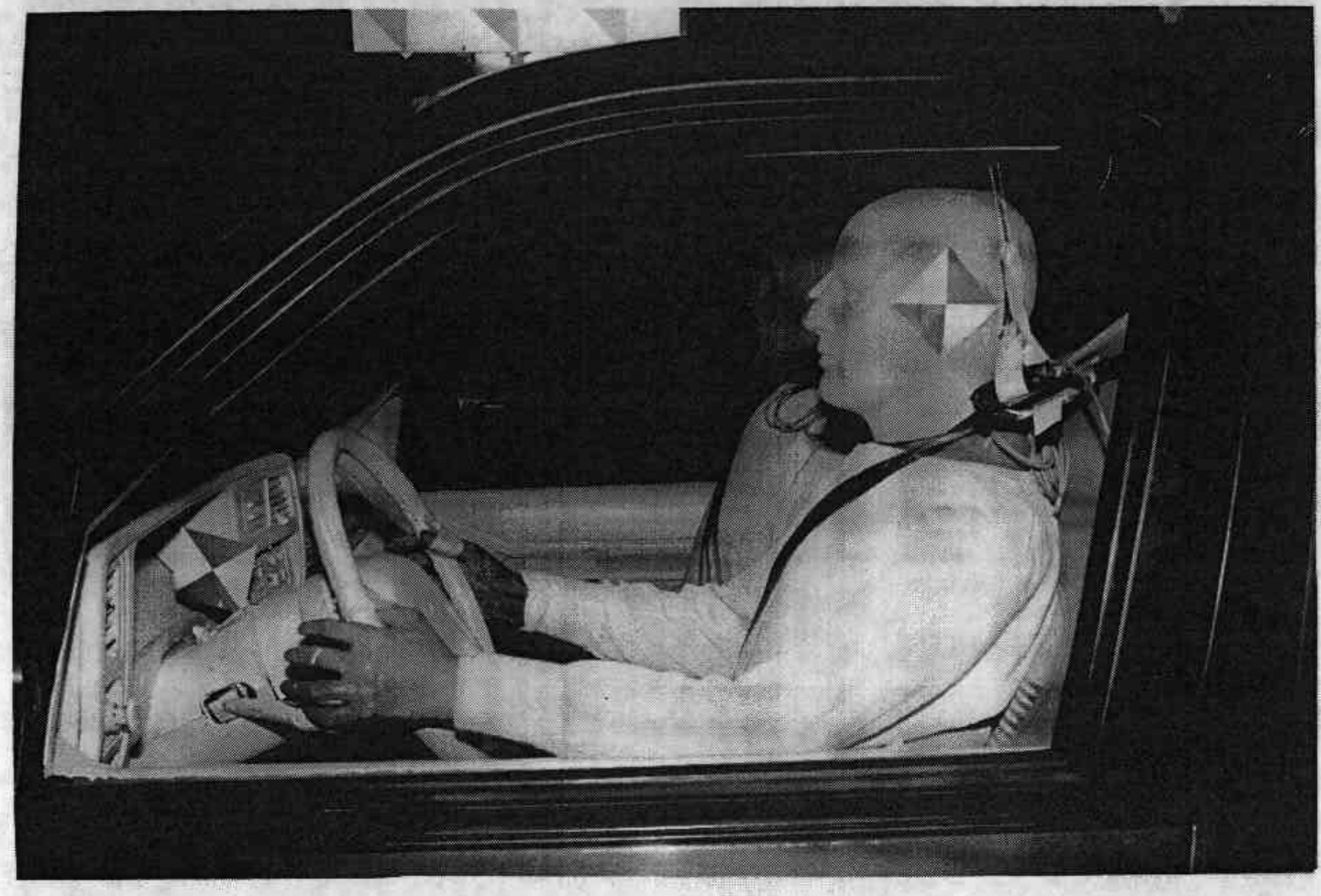


PRETEST REAR UNDERBODY VIEW

MSE-91-R9092-N03



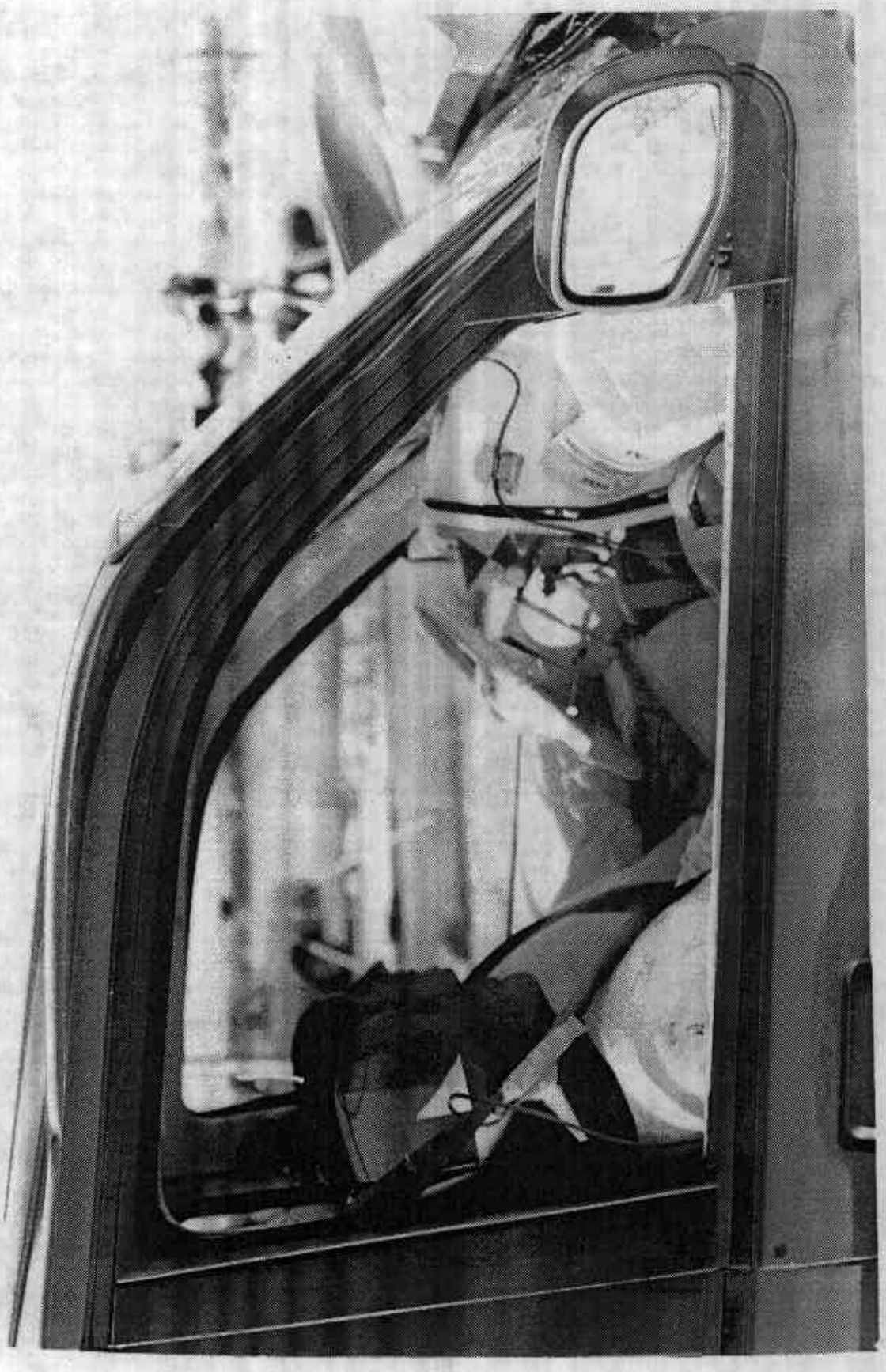
POSTTEST REAR UNDERBODY VIEW



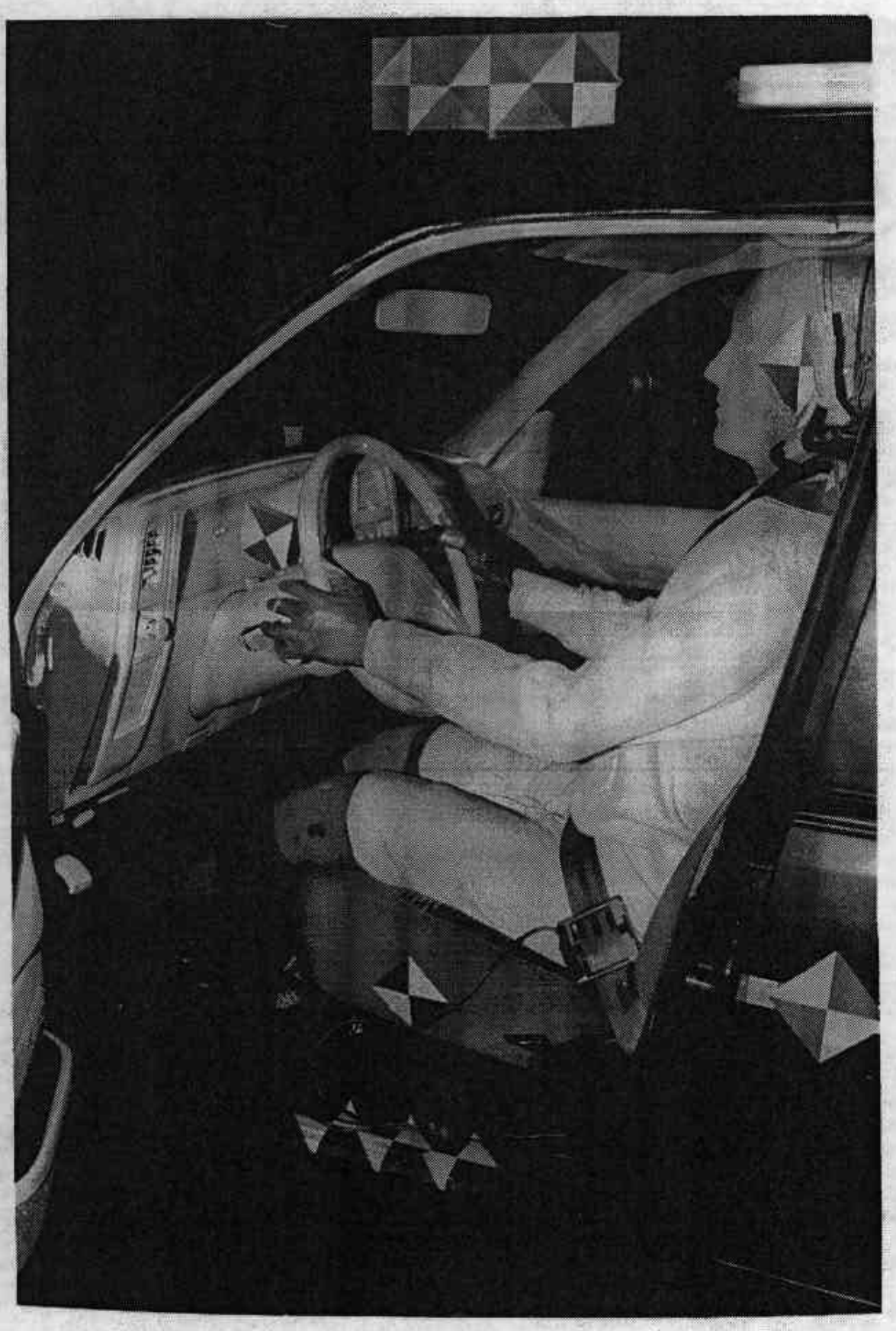
PRETEST DRIVER DUMMY POSITION VIEW

POSTTEST DRIVER DUMMY POSITION VIEW

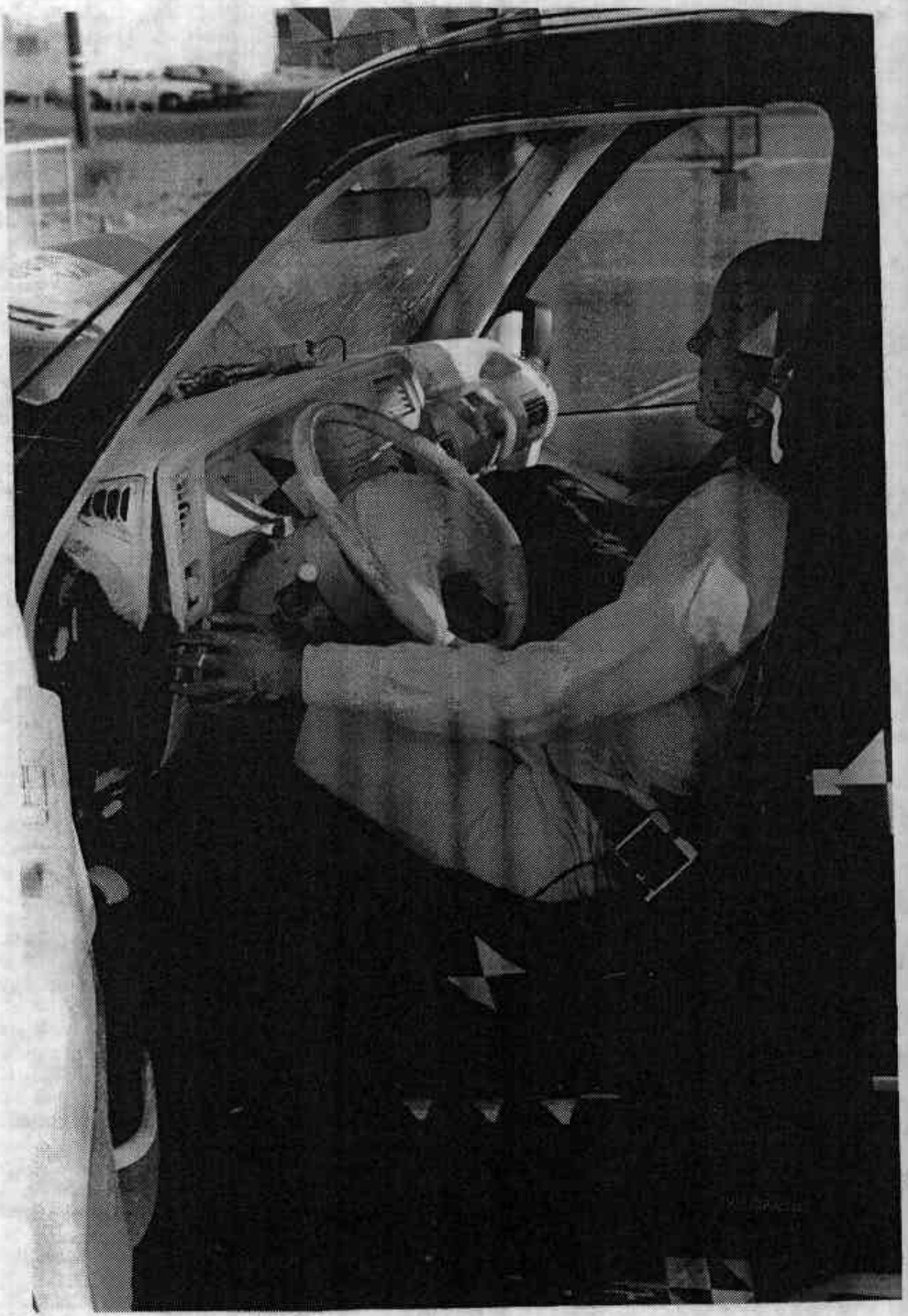
PRETEST PASSENGER DUMMY POSITION VIEW



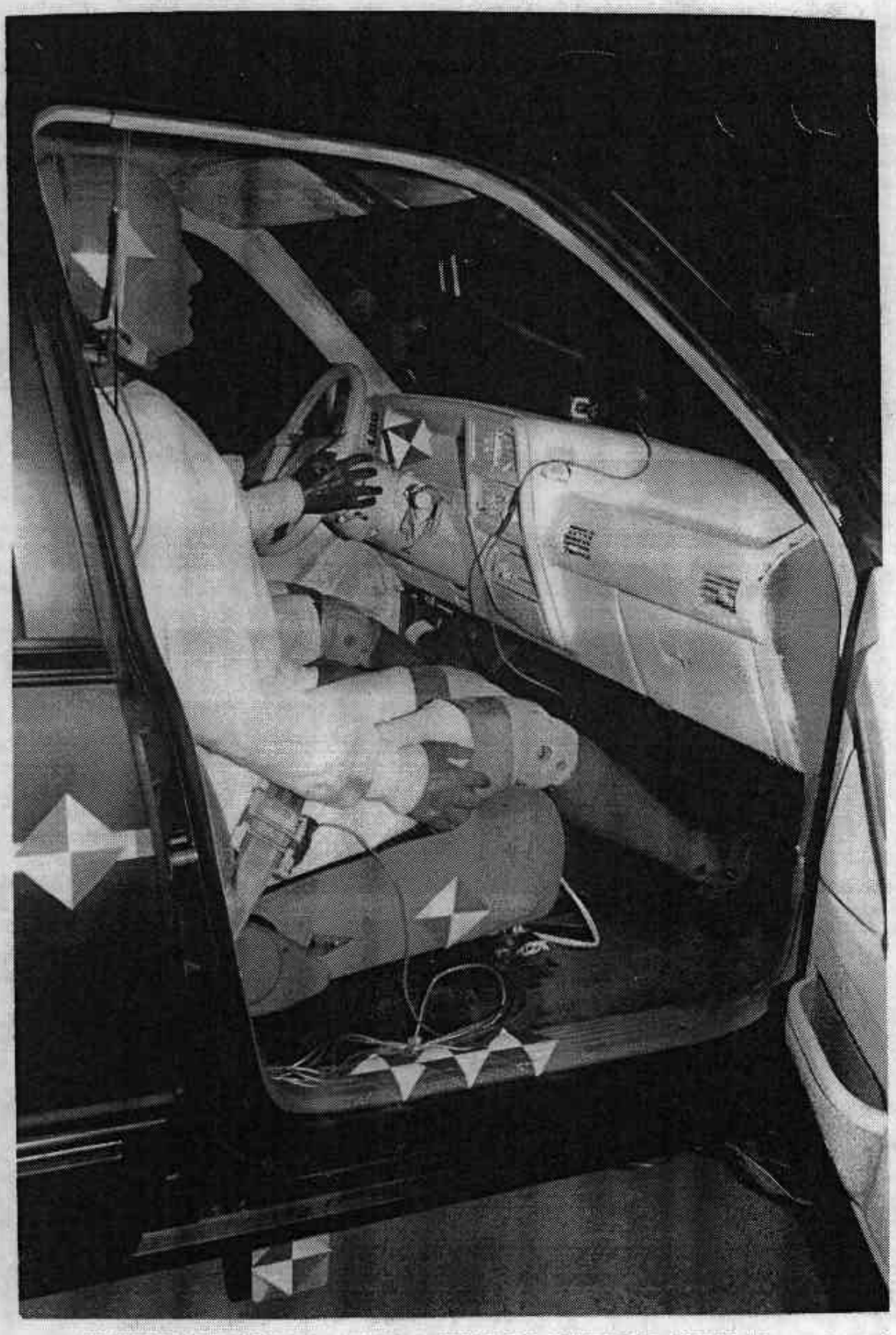
POSTTEST PASSENGER DUMMY POSITION VIEW



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 PASSENGER DUMMY (ATD) HEAD AND KNEE CONTACT AREA

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: 1991 35MPH NCAP FRONTAL BARRIER IMPACT
TSTOBJ: ACQUIRE NCAP DATA USING TWO INSTR. DUMMIES AND LOAD CELL BARRIER

TSTDAT: 11/OCT/90	TSTPRF: MSE	CONNO: DTNH22-87-D-02009	
TSTREF: NCA-03	TSTTYP: NCA	TSTCFN: VTB	
TKSURF: ASH	TKCOND: DRY	TEMP: 89	RECTYP: FMT
LINK: UMB	CLSSPD: 34.8	IMPANG: 0	OFFSET: 0.0
IMPPNT: 9999.9	MEASUR: ENG	TOTCRV: 67	

TSTCOM: NO COMMENTS

Vehicle Information

VGID: 2 VEHNO: 1 MAKE: 02 MODEL: 99 YEAR: 91 BODY: OT
VIN: 1FMDU34X4MUA22690 ENGINE: V6IF ENGDSP: 4.0 LITER TRANSM: A3
VEHTWT: 4756 WHLBAS: 112.0 VEHLEN: 184.0 VEHWID: 68.2
VEHCG: 52.6 STRSEP: NO COLMEC: OTH MODIND: P
MODDSC: UNMODIFIED
BX
1:9999.9
2:9999.9
3:9999.9
4:9999.9
5:9999.9
6:9999.9
7:9999.9
8:9999.9
9:9999.9
10:9999.9
11:9999.9
12:9999.9
13:9999.9
14:9999.9
15:9999.9
16:9999.9
17:9999.9
18:9999.9
19:9999.9
20:9999.9
21:9999.9
VEHSPD: 34.9 CRBANG: 0 PDOF: 0 BMPENG: NA
SILENG: NA APLENG: NA
DPD
1: 15.7
2: 16.1
3: 17.1
4:16.7
5: 16.3
6: 16.2
VDI: 12FCAW9 LENCNT: 68.2 DAMDST: 0.0 CRHDST: 17.1
AX
1:9999.9
2:9999.9
3:9999.9
4:9999.9
5:9999.9
6:9999.9
7:9999.9
8:9999.9
9:9999.9
10:9999.9
11:9999.9
12:9999.9
13:9999.9
14:9999.9
15:9999.9
16:9999.9
17:9999.9
18:9999.9
19:9999.9
20:9999.9
21:9999.9
CARANG: 999 VEHOR: 999
VEHCOM: MODEL IS EXPLORER. COLLAPSE MECHANISM IS DOUBLE UNIVERSAL.

Barrier Information

Barrier ID: 3
BARRIG: R
BARSHP: 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 465
DUMMOD: UNMODIFIED
DUMDSC: NO COMMENTS
HH: 18.5 HW: 22.7 HR: 7.5 HS: 10.1 CD: 24.0 CS: 14.7 AD: 4.0 HD: 5.7
KD: 9.7 HB:999.9 NB:999.9 CB:999.9 KB:999.9
RESTR1: 3PT RESTR2: SWE
RESTXT: NO COMMENTS
SEPOSN: CN AIRDEP: NA
CNTRH1: SR CNTRH2: SH CNTRC1: SW CNTRC2: NO CNTRL1: DP CNTRL2: OT
HIC: 903. T1: 61.700 T2: 93.100
CLIP3M: 52.0 LFEM: 486. RFEM: 606. CSI: 464. LBELT: 1767. SBELT: 1745.
OCCCOM: NONE

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 466
DUMMOD: UNMODIFIED
DUMDSC: NO COMMENTS
HH: 19.0 HW: 21.4 HR: 8.0 HS: 10.7 CD: 23.1 CS:999.9 AD: 4.5 HD: 5.1
KD: 9.2 HB:999.9 NB:999.9 CB:999.9 KB:999.9
RESTR1: 3PT RESTR2: DPL
RESTXT: NO COMMENTS
SEPOSN: CN AIRDEP: NA
CNTRH1: DP CNTRH2: HK CNTRC1: NO CNTRC2: NO CNTRL1: DP CNTRL2: NO
HIC: 9999. T1: 999.999 T2: 999.999
CLIP3M: LFEM: 617. RFEM: 718. CSI: LBELT: 1735. SBELT: 1903.
OCCCOM: NONE

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: BI60H
CALDAT: 10/JUL/90 INSRAT: 200 CHLMAX: 8 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: 701
CALDAT: 16/JUL/90 INSRAT: 3000 CHLMAX: 17 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: 707
CALDAT: 16/JUL/90 INSRAT: 3000 CHLMAX: 20 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: XL UNITS: G'S PREFIL: 1650
INSMAN: MFG: ENDEVCO, MODEL: 7264-200, S/N: AE09
CALDAT: 11/JUL/90 INSRAT: 200 CHLMAX: 24 INIVEL: 34.8
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: AD61
CALDAT: 11/JUL/90 INSRAT: 200 CHLMAX: 16 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

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: BF83H
CALDAT: 10/JUL/90 INSRAT: 200 CHLMAX: 68 INIVEL: 34.8
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: BJ15H
CALDAT: 10/JUL/90 INSRAT: 200 CHLMAX: 14 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: BG29H
CALDAT: 10/JUL/90 INSRAT: 200 CHLMAX: 26 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: AD76
CALDAT: 10/JUL/90 INSRAT: 200 CHLMAX: 30 INIVEL: 34.8
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: AD99
CALDAT: 10/JUL/90 INSRAT: 200 CHLMAX: 10 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: AD98
CALDAT: 11/JUL/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: 012
SENTYP: AC SENLOC: 02 SENATT: CHST
AXIS: XL UNITS: G'S PREFIL: 1650
INSMAN: MFG: ENDEVCO, MODEL: 7264-200, S/N: BJ27H
CALDAT: 11/JUL/90 INSRAT: 200 CHLMAX: 20 INIVEL: 34.8
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: 11/JUL/90 INSRAT: 200 CHLMAX: 100 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: 11/JUL/90 INSRAT: 200 CHLMAX: 112 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: 709
CALDAT: 16/JUL/90 INSRAT: 3000 CHLMAX: 21 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: 710
CALDAT: 16/JUL/90 INSRAT: 3000 CHLMAX: 24 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: LPBO
AXIS: OT UNITS: LBS PREFIL: 1650
INSMAN: MFG: LEBOW, MODEL: 3371, S/N: 333
CALDAT: 16/JUL/90 INSRAT: 3500 CHLMAX: 51 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/JUL/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: 019
SENTYP: LC SENLOC: 02 SENATT: LPBO
AXIS: OT UNITS: LBS PREFIL: 1650
INSMAN: MFG: LEBOW, MODEL: 3371, S/N: 330
CALDAT: 16/JUL/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/JUL/90 INSRAT: 3500 CHLMAX: 55 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: SHBT
AXIS: OT UNITS: INS PREFIL: 1650
INSMAN: MFG: BOURNS, MODEL: 2051414101/0.5 IN LIN., S/N: NAV
CALDAT: 11/OCT/90 INSRAT: 30 CHLMAX: 0 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: SEAT BELT ELONGATION, UNITS ARE IN./IN.,(PERCENTAGE ELONGATION)

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 022
SENTYP: DS SENLOC: 02 SENATT: SHBT
AXIS: OT UNITS: INS PREFIL: 1650
INSMAN: MFG: BOURNS, MODEL: 2051414101/0.5 IN LIN, S/N: NAV
CALDAT: 11/OCT/90 INSRAT: 30 CHLMAX: 45 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: DS SENLOC: 01 SENATT: SHBE
AXIS: OT UNITS: OTH PREFIL: 1650
INSMAN: MFG: MSE, MODEL: 24 IN. LIN, S/N: 113
CALDAT: 11/OCT/90 INSRAT: 24 CHLMAX: 0 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 024
SENTYP: DS SENLOC: 02 SENATT: SHBE
AXIS: OT UNITS: OTH PREFIL: 1650
INSMAN: MFG: MSE, MODEL: 24 IN. LIN., S/N: 112
CALDAT: 11/OCT/90 INSRAT: 24 CHLMAX: 0 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NONE

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 025
SENTYP: AC SENLOC: NA SENATT: SULF
AXIS: XG UNITS: G'S PREFIL: 1650
INSMAN: MFG: BELL & HOWELL, MODEL: 4-202-0001, S/N: 20839
CALDAT: 20/SEP/90 INSRAT: 250 CHLMAX: 75 INIVEL: 34.8
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 026
SENTYP: AC SENLOC: NA SENATT: SURF
AXIS: XG UNITS: G'S PREFIL: 1650
INSMAN: MFG: BELL & HOWELL, MODEL: 4-202-0001, S/N: 23994
CALDAT: 20/SEP/90 INSRAT: 250 CHLMAX: 74 INIVEL: 34.8
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 027
SENTYP: AC SENLOC: NA SENATT: ENGN
AXIS: XG UNITS: G'S PREFIL: 1650
INSMAN: MFG: BELL & HOWELL, MODEL:4-202-0001, S/N: 19428
CALDAT: 20/SEP/90 INSRAT: 250 CHLMAX: 48 INIVEL: 34.8
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 028
SENTYP: AC SENLOC: NA SENATT: ENGN
AXIS: XG UNITS: G'S PREFIL: 1650
INSMAN: MFG: BELL & HOWELL, MODEL: 4-202-0001, S/N: 21051
CALDAT: 27/SEP/90 INSRAT: 200 CHLMAX: 68 INIVEL: 34.8
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 029
SENTYP: AC SENLOC: NA SENATT: DPLC
AXIS: XG UNITS: G'S PREFIL: 1650
INSMAN: MFG: I.C. SENSOR, MODEL: 3031-200, S/N: 23-200
CALDAT: 27/SEP/90 INSRAT: 200 CHLMAX: 65 INIVEL: 34.8
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 030
SENTYP: AC SENLOC: NA SENATT: FLLR
AXIS: XG UNITS: G'S PREFIL: 1650
INSMAN: MFG: I.C. SENSOR, MODEL: 3031-200, S/N: 21-200
CALDAT: 27/SEP/90 INSRAT: 200 CHLMAX: 88 INIVEL: 34.8
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 031
SENTYP: AC SENLOC: NA SENATT: FLRR
AXIS: XG UNITS: G'S PREFIL: 1650
INSMAN: MFG: BELL & HOWELL, MODEL: 4-202-0001, S/N: 19288
CALDAT: 20/SEP/90 INSRAT: 250 CHLMAX: 48 INIVEL: 34.8
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 032
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: 0 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 033
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: 57 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 034
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: 6 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 035
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: 10 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 036
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: 17 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 037
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: 10 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 038
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: 6 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 039
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: 6 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 040
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: 6 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 041
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: 6 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 042
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: 11 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 043
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: 73 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 044
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: 53 INIVEL: 0.0
NFP: , -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 045
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: 6 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 046
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: 29 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 047
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: 47 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 048
SENTYP: LC SENLOC: NA SENATT: LCB8
AXIS: XG UNITS: LBS PREFIL: 1650
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19285
CALDAT: 14/MAY/85 INSRAT: 50000 CHLMAX: 16 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 049
SENTYP: LC SENLOC: NA SENATT: LCB9
AXIS: XG UNITS: LBS PREFIL: 1650
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19286
CALDAT: 14/MAY/85 INSRAT: 50000 CHLMAX: 7 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 050
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: 6 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 051
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: 15 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 052
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: 42 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 053
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: 39 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 054
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: 33 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 055
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: 31 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 056
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: 75 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NONE

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 057
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: 17 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 058
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: 6 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 059
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: 6 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 060
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: 29 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 061
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: 16 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 062
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: 17 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 063
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: 51 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5 VEHNO: 1 CURNO: 064
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: 28 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

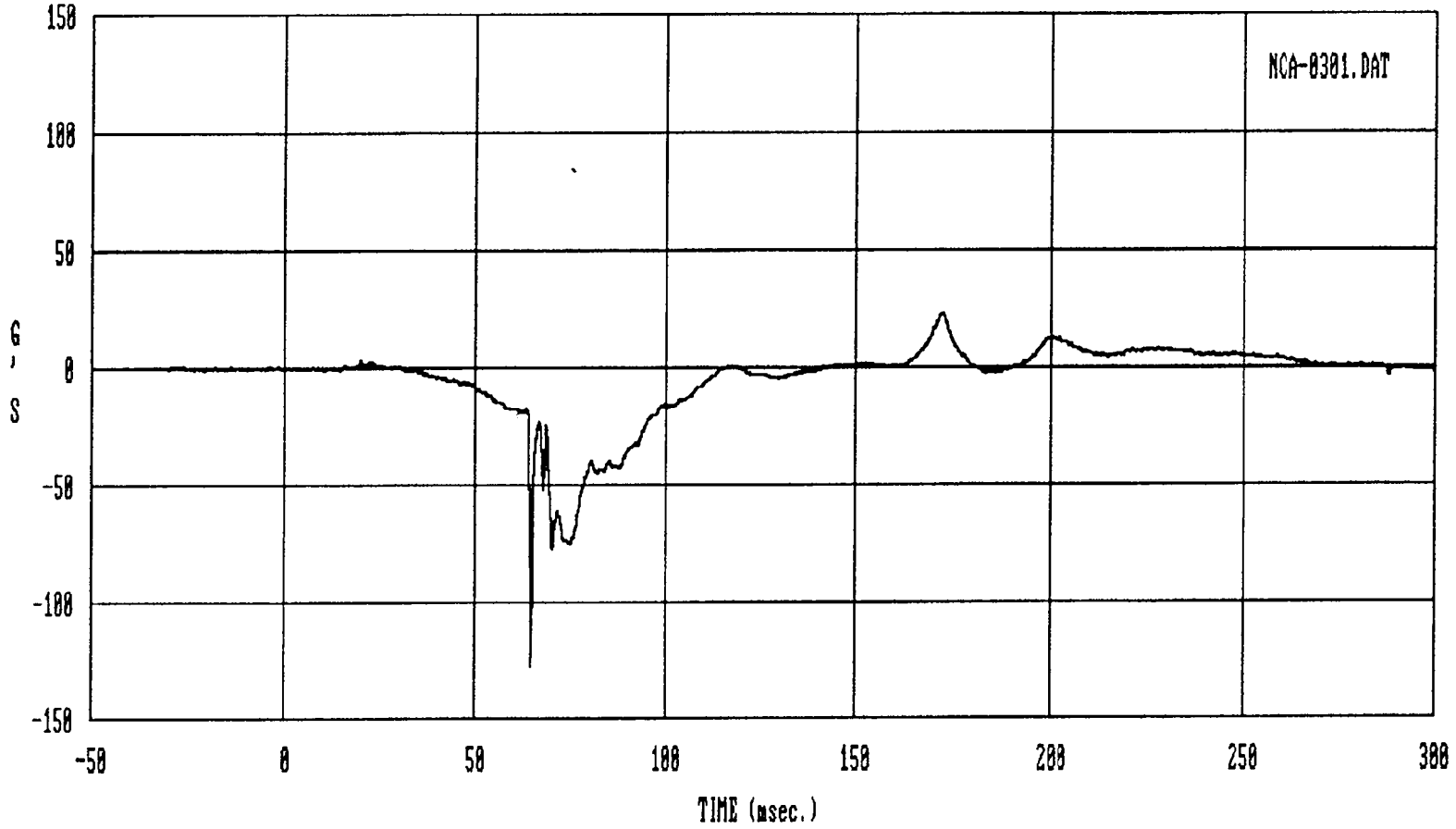
Inst. Group ID: 5 VEHNO: 1 CURNO: 065
SENTYP: LC SENLOC: NA SENATT: LCD7
AXIS: XG UNITS: LBS PREFIL: 1650
INSMAN: MFG: INTERFACE, MODEL: 1220-FS, S/N: 19332
CALDAT: 14/MAY/85 INSRAT: 50000 CHLMAX: 15 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM:

Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 066	
SENTYP: LC	SENLOC: NA	SENATT: LC08	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE,	MODEL: 1220-FS,	S/N: 19333	
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 33	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			

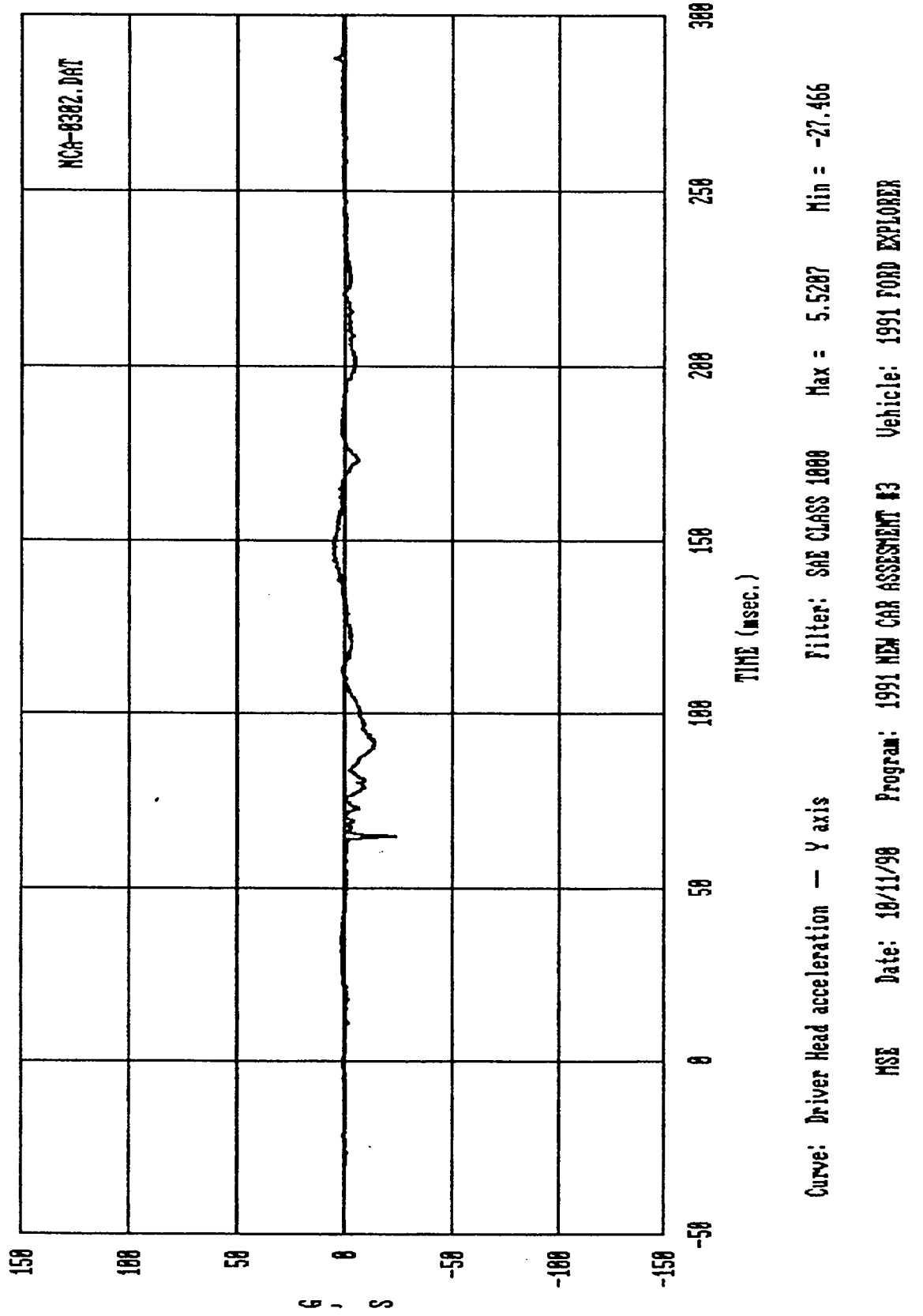
Instrumentation Information

Inst. Group ID: 5	VEHNO: 1	CURNO: 067	
SENTYP: LC	SENLOC: NA	SENATT: LC09	
AXIS: XG	UNITS: LBS	PREFIL: 1650	
INSMAN: MFG: INTERFACE,	MODEL: 1220-FS,	S/N: 19466	
CALDAT: 14/MAY/85	INSRAT: 50000	CHLMAX: 8	INIVEL: 0.0
NFP: -300	NLP: 2999	DELT: 100	DASTAT: AM
INSCOM:			



Curve: Driver Head acceleration — X axis Filter: SAE CLASS 1000 Max = 23.295 Min = -134.97

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER


NCA-8382.DAT
150
100
50
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-100
-150
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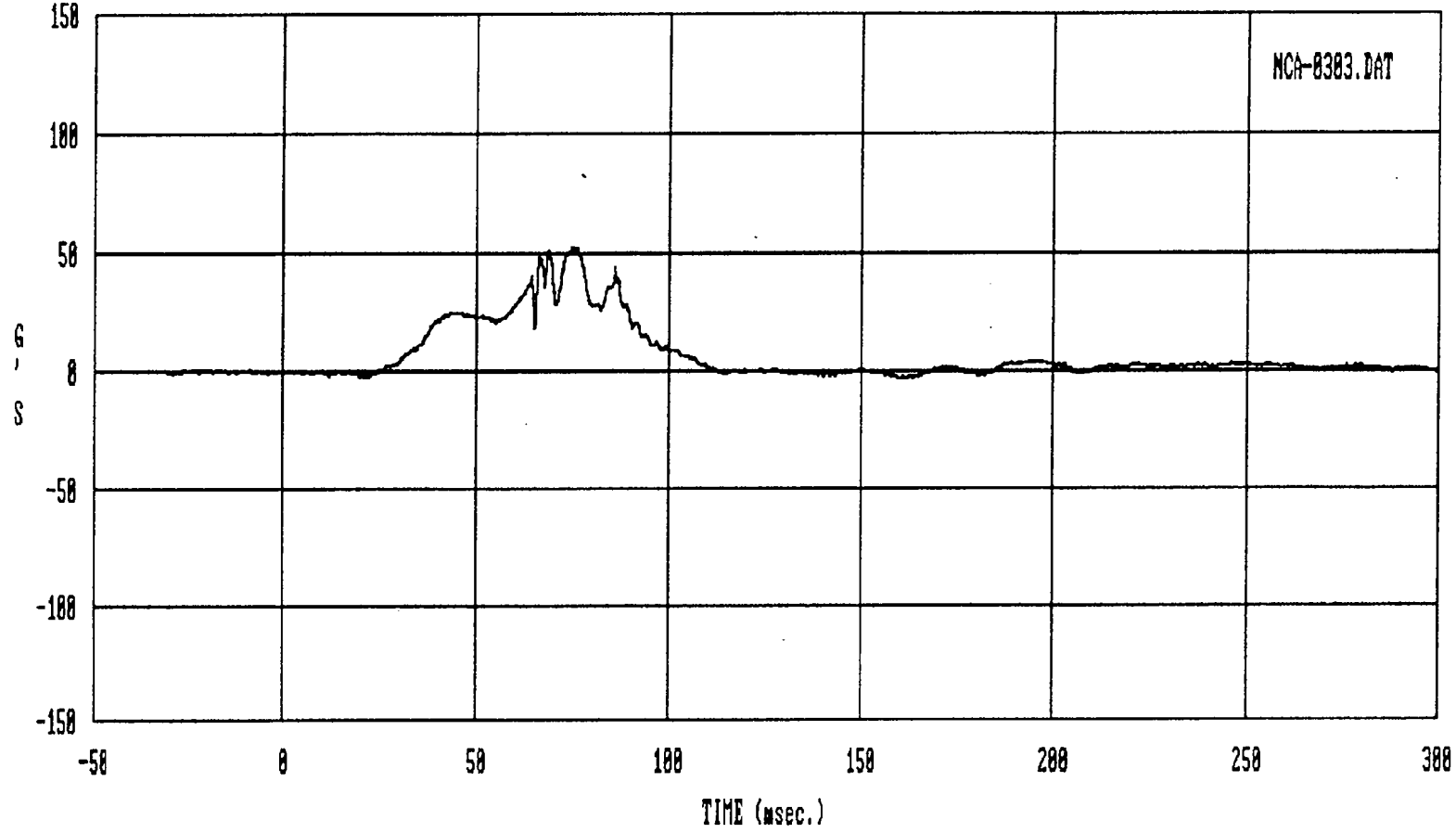
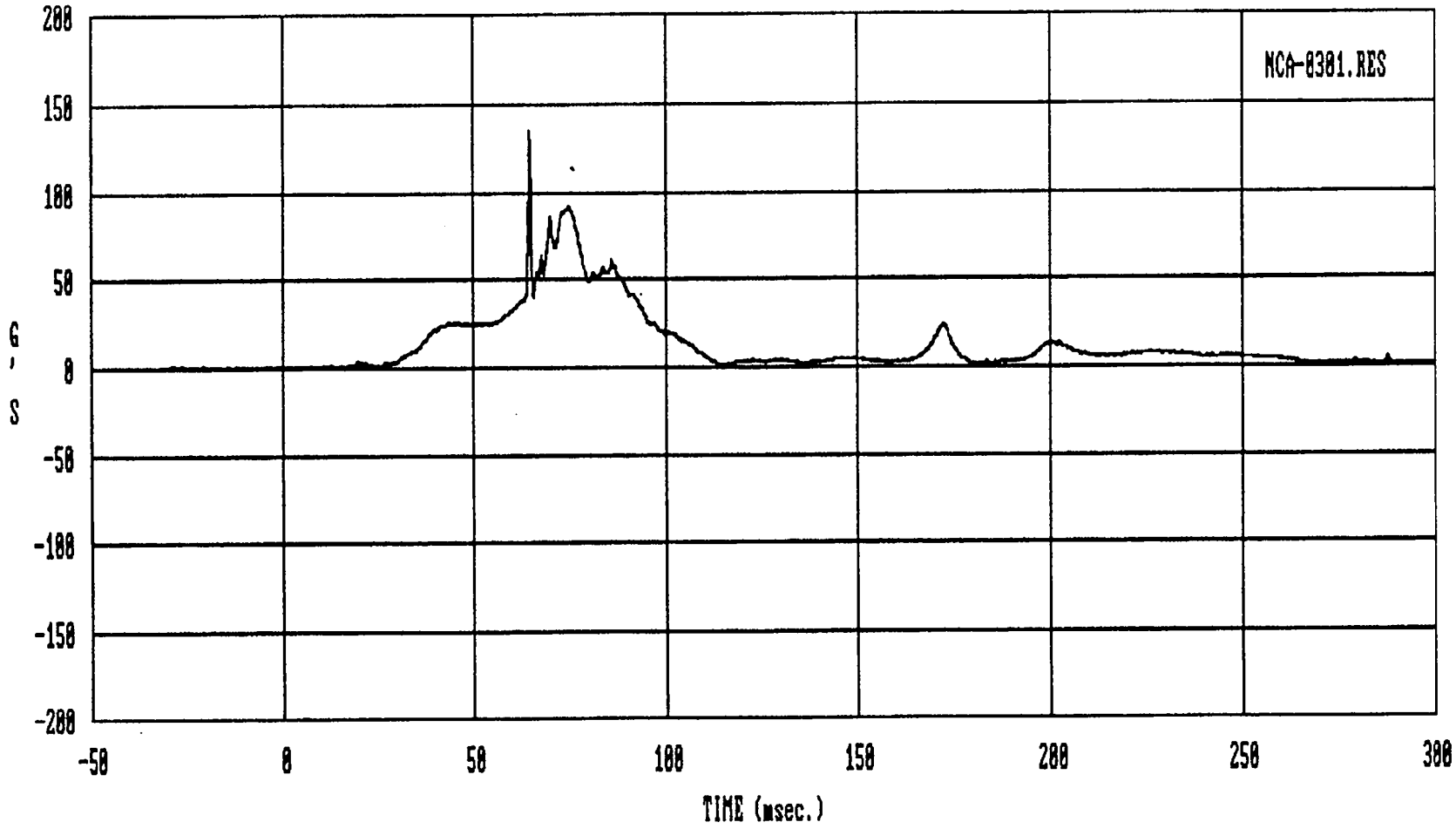
-50
0
50
100
150
200
250
300
TIME (msec.)
Curve: Driver Head acceleration — Y axis
Filter: SAE CLASS 1000
Max = 5.5287
Min = -27.466
MSE
Date: 10/11/90
Program: 1991 NEW CAR ASSESSMENT #3
Vehicle: 1991 FORD EXPLORER



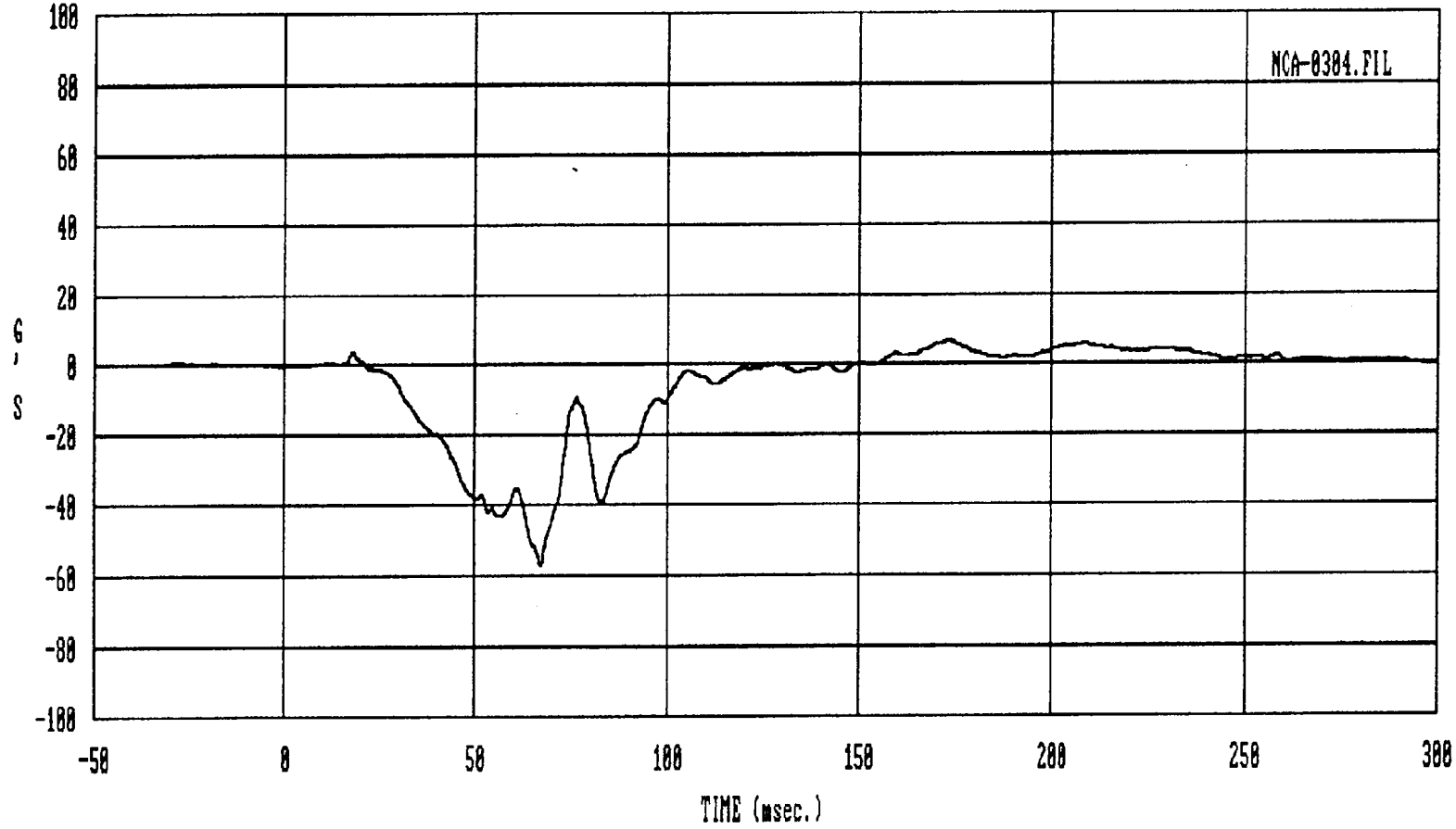
Curve: Driver Head acceleration -- Z axis Filter: SAE CLASS 1000 Max = 52.425 Min = -3.2766

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



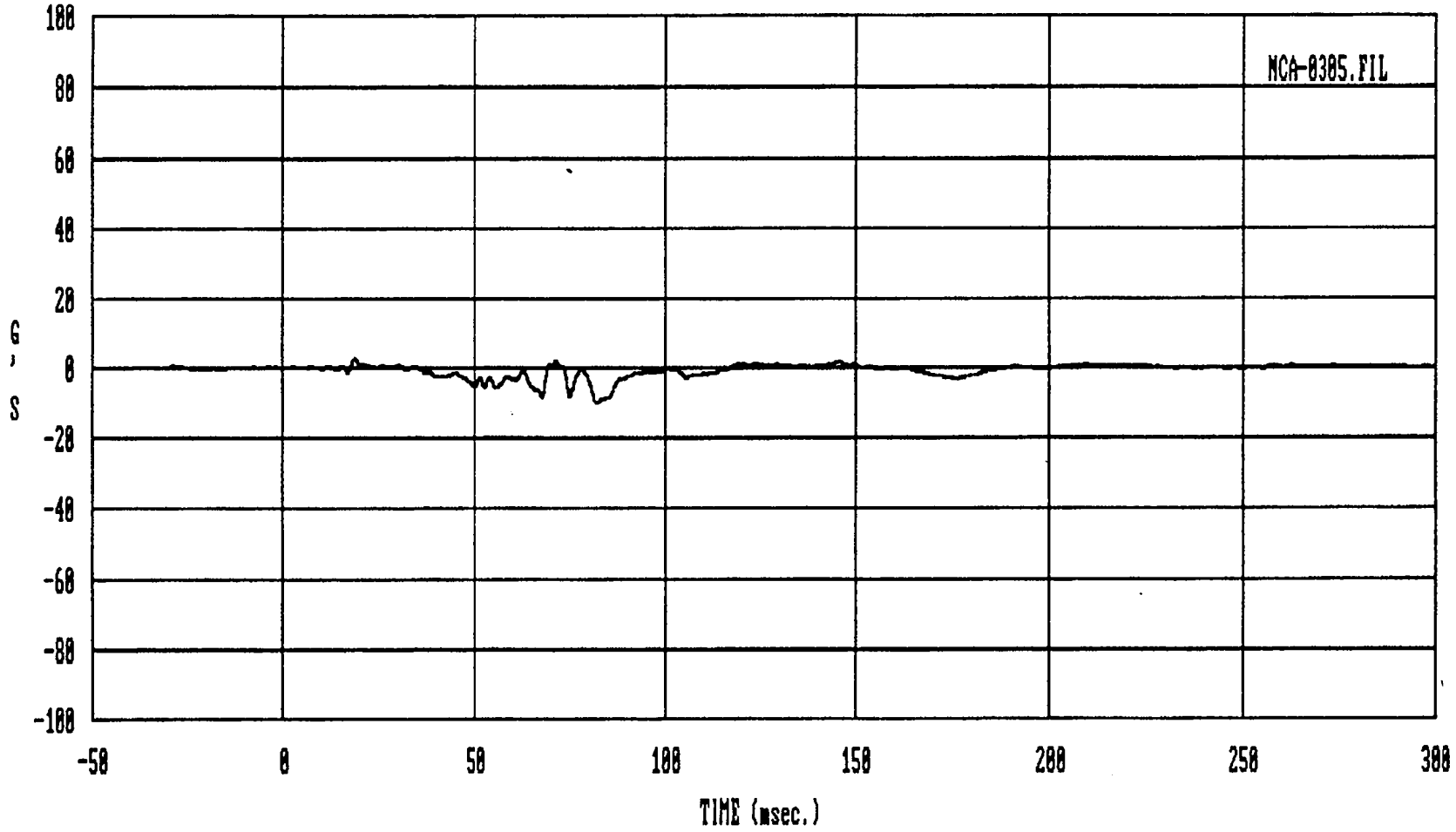
Curve: Driver Head resultant acceleration Filter: SAE CLASS 1000 Max = 143.61 Min = .34580

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



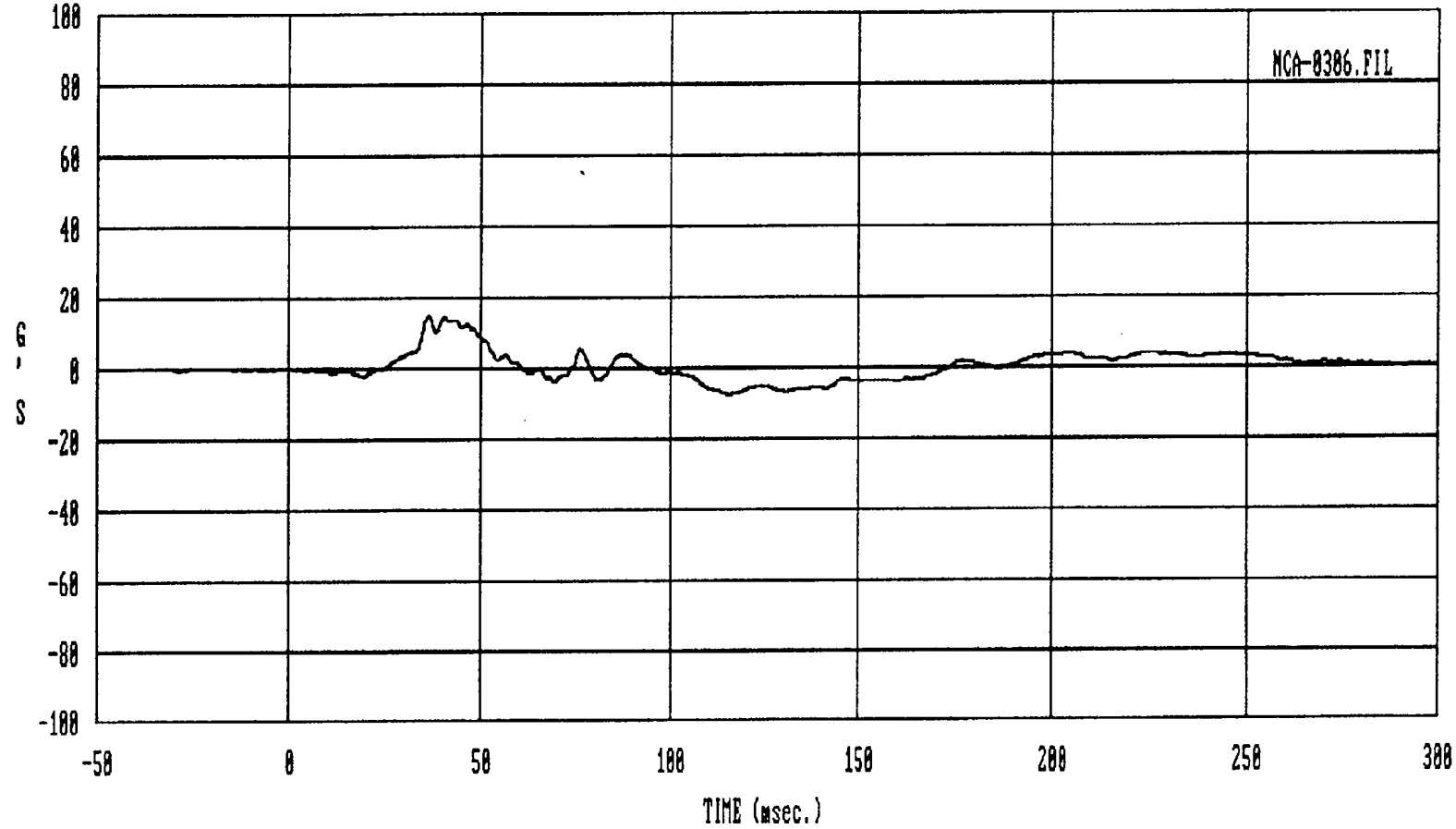
Curve: Driver Chest acceleration — X axis Filter: SAE CLASS 180 Max = 6.6389 Min = -57.143

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



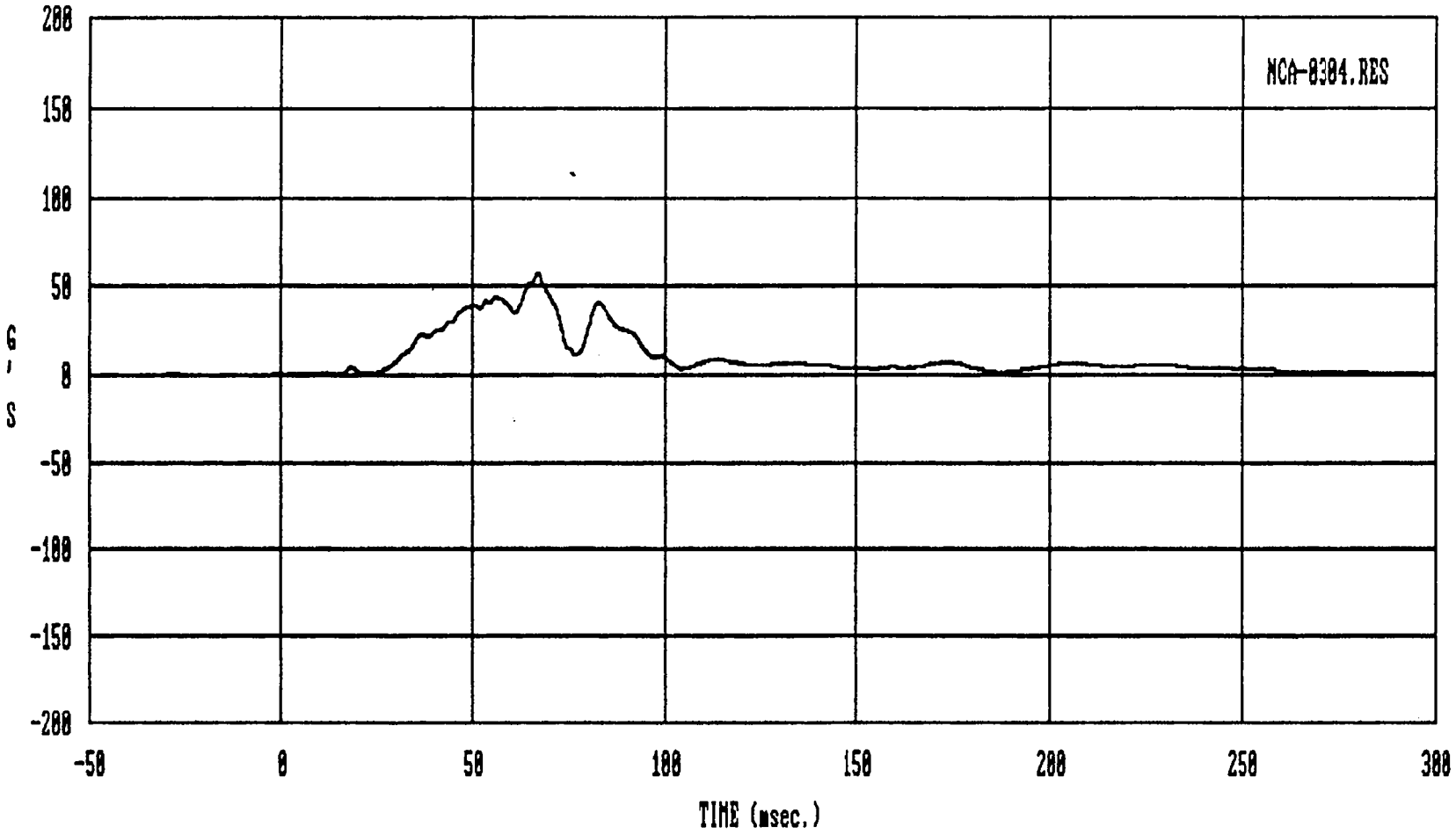
Curve: Driver Chest acceleration — Y axis Filter: SAE CLASS 180 Max = 2.7330 Min = -10.265

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



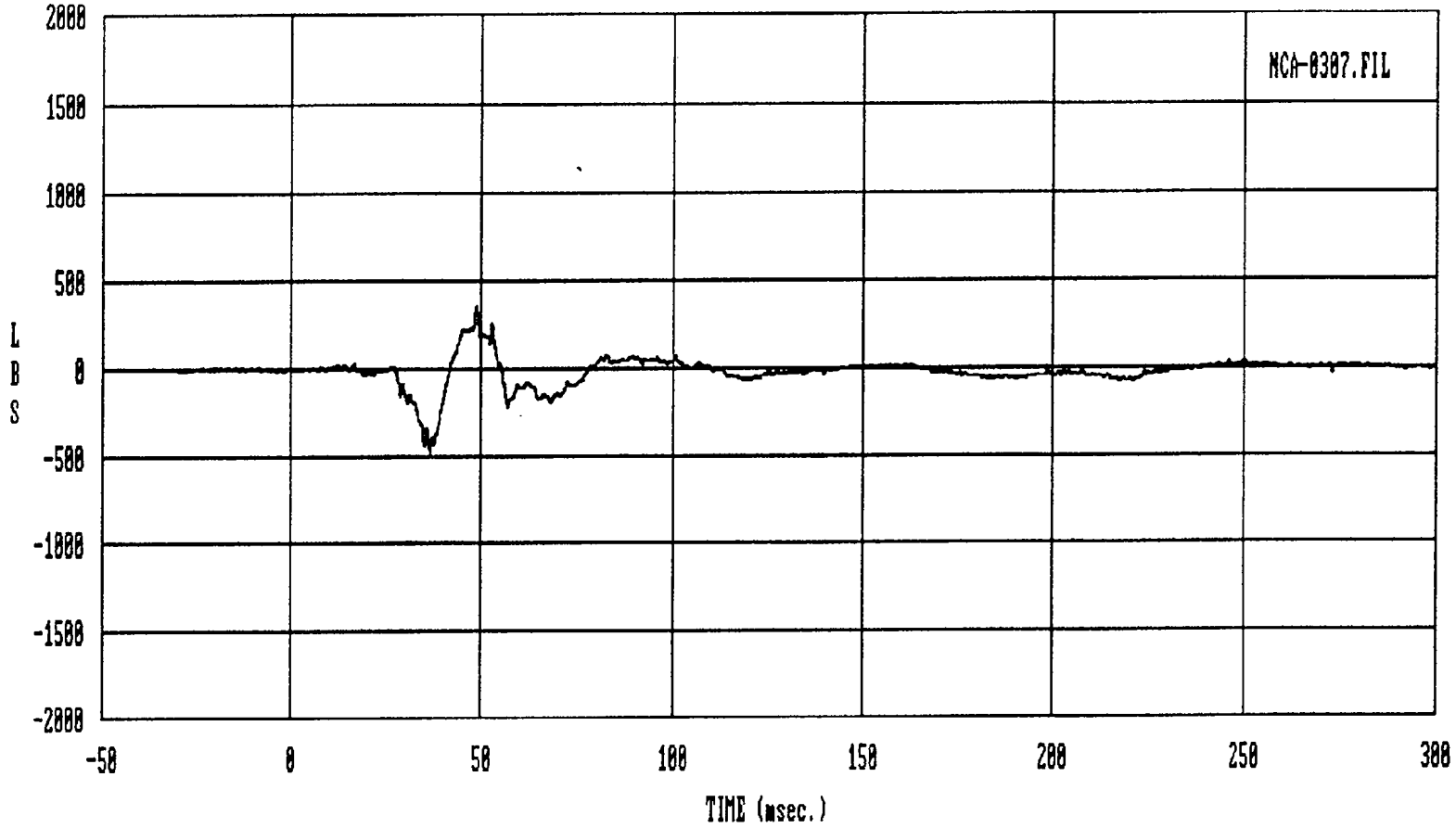
Curve: Driver Chest acceleration -- Z axis Filter: SAE CLASS 180 Max = 14.780 Min = -7.3804

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



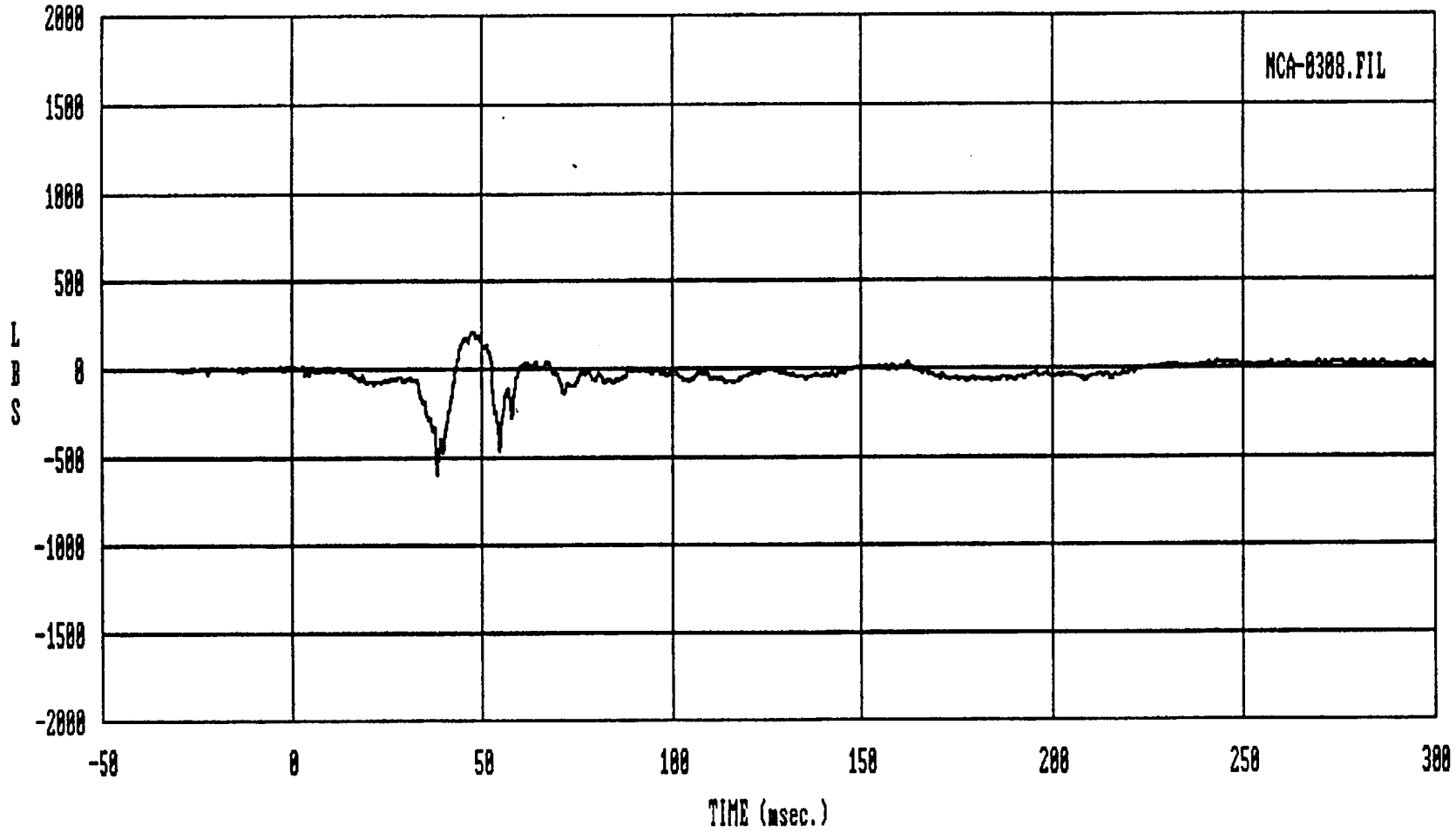
Curve: Driver Chest resultant acceleration Filter: SAE CLASS 180 Max = 57.694 Min = .41266

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



Curve: Driver Left Femur force Filter: SAE CLASS 600 Max = 359.75 Min = -486.13

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



Curve: Driver Right Femur Force Filter: SAE CLASS 600 Max = 216.43 Min = -606.85

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER

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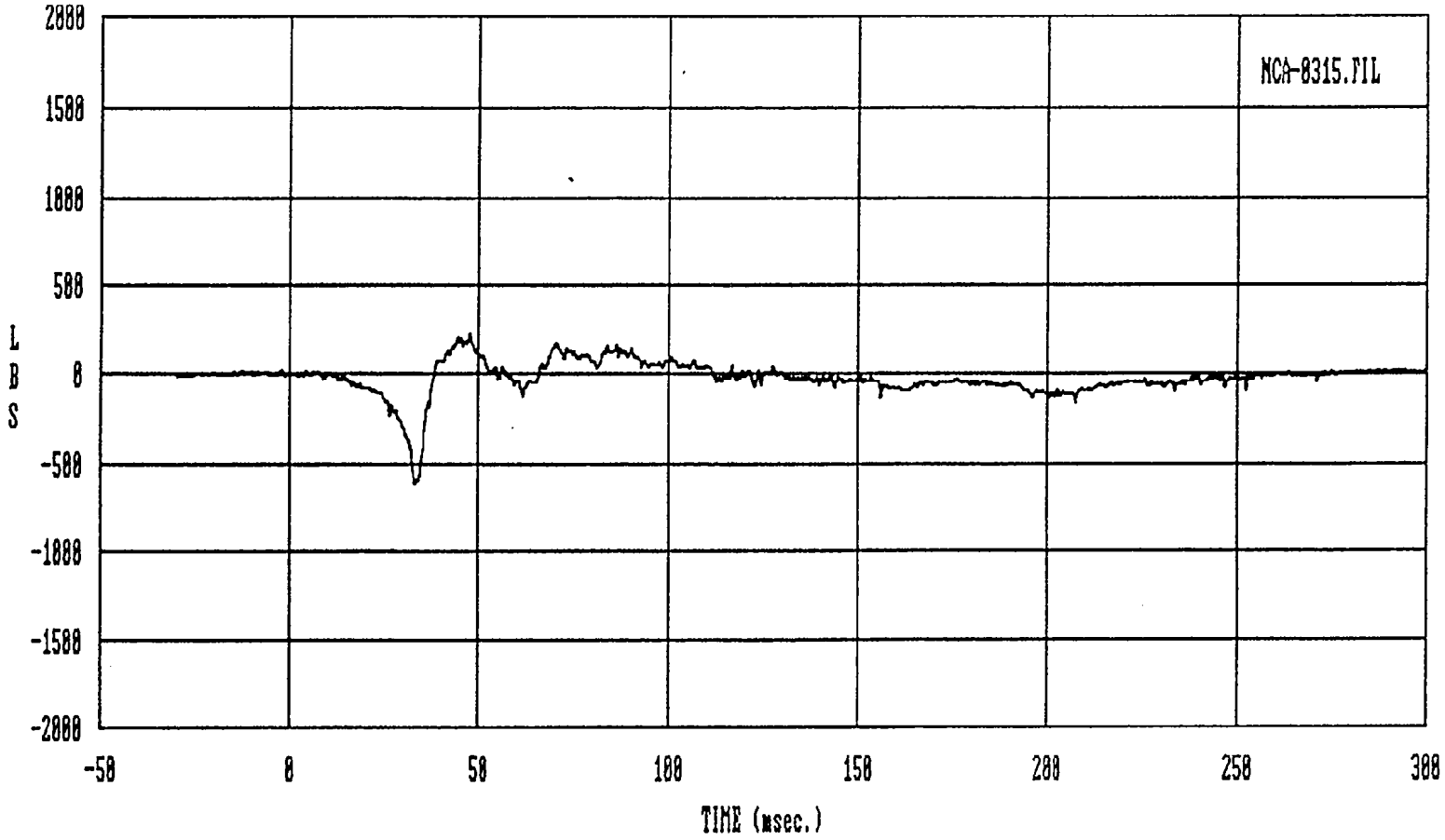
NO DATA

NO DATA

NO DATA

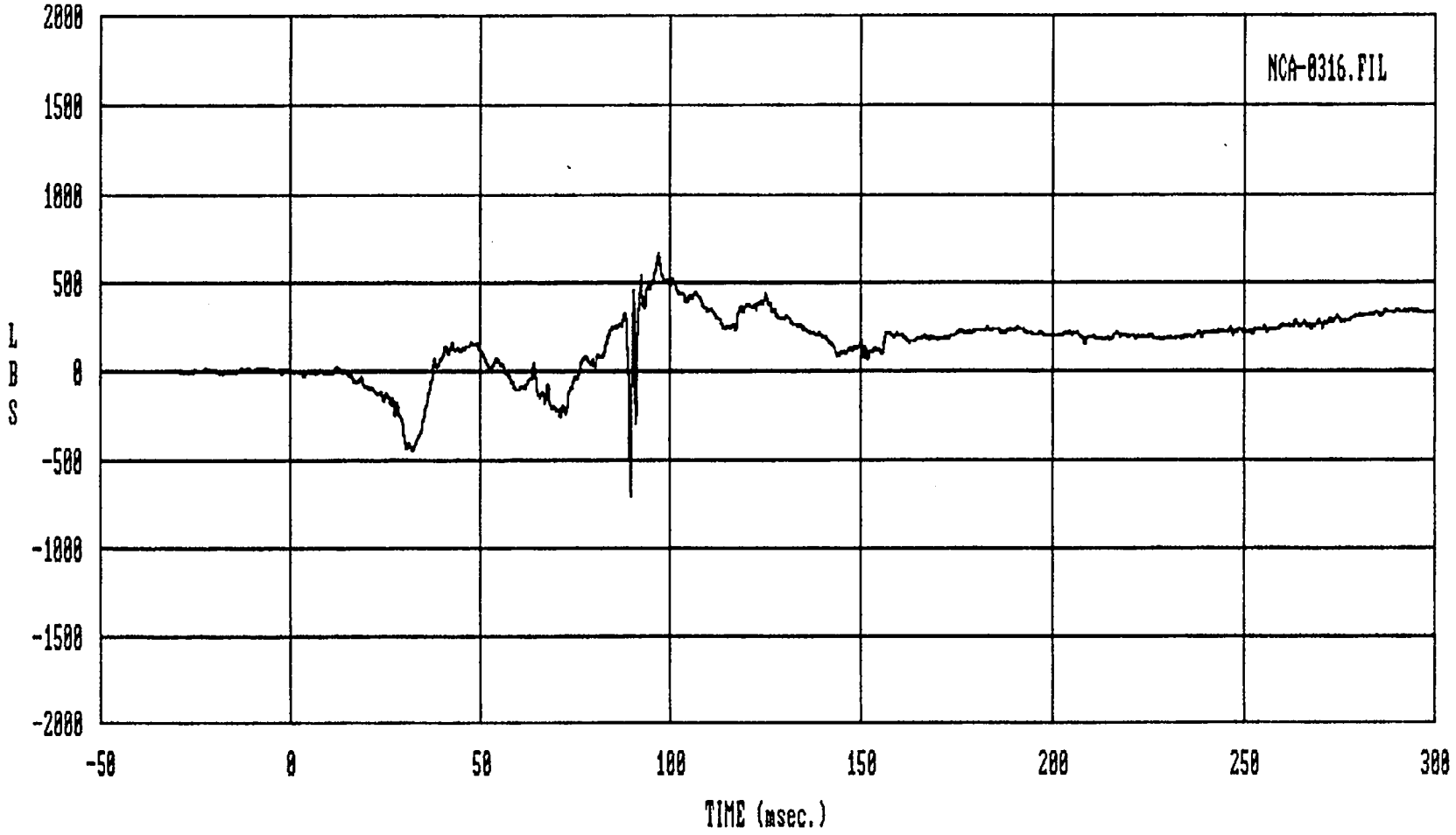
NO DATA

NO DATA



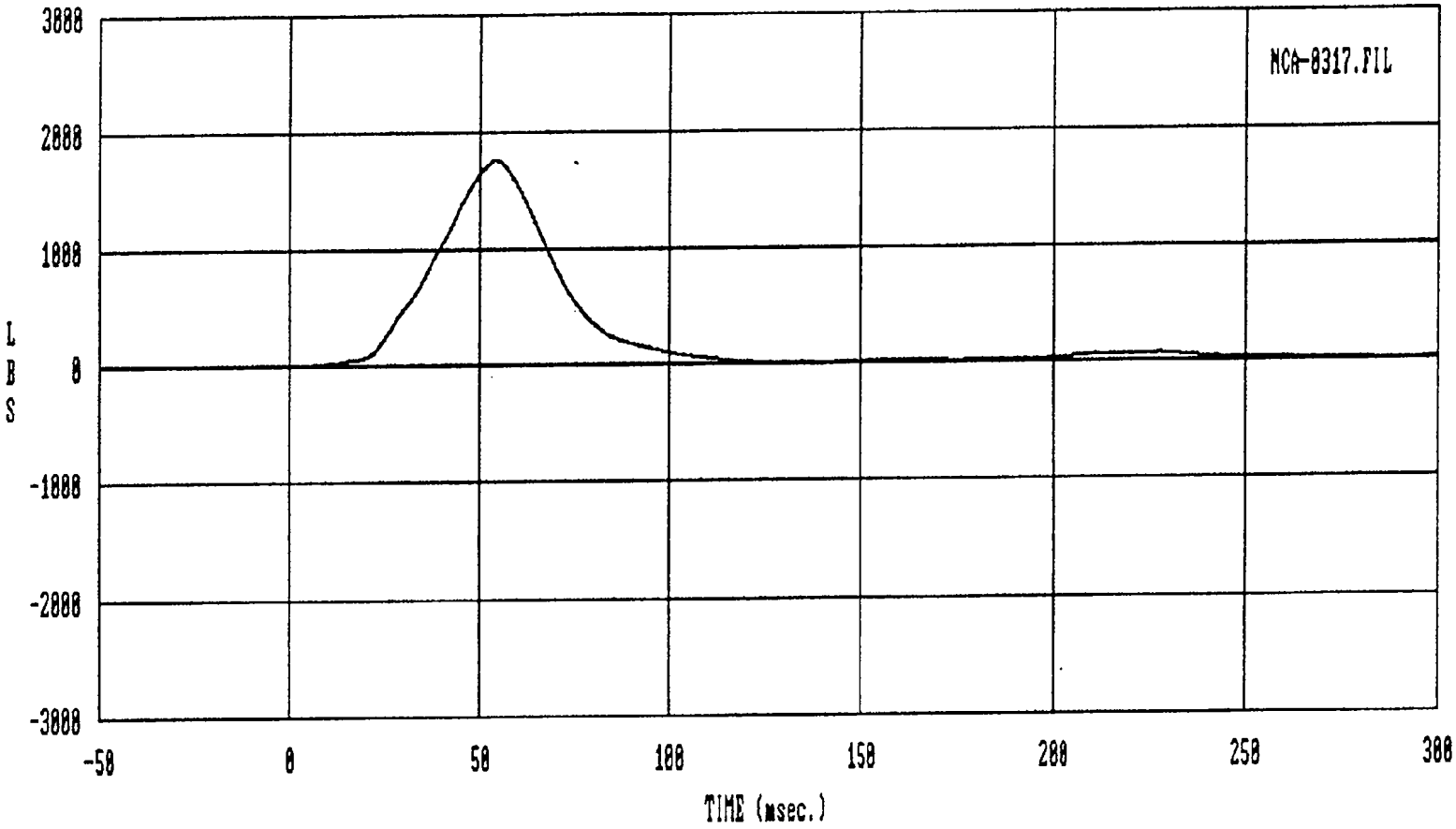
Curve: Pasngr Left Femur force Filter: SAE CLASS 600 Max = 238.84 Min = -616.63

MSE Date: 10/11/98 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



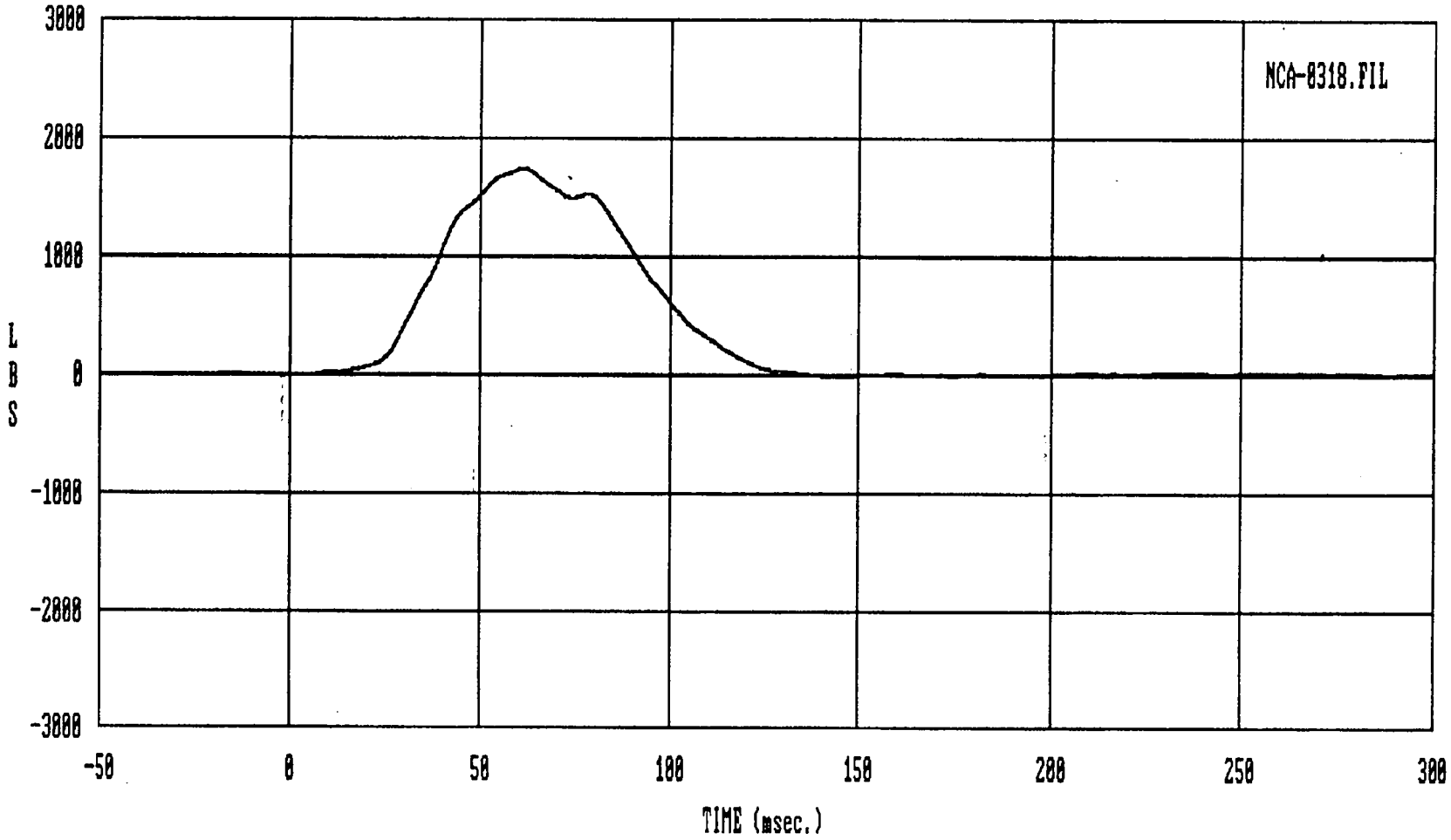
Curve: Pasngr Right Femur force Filter: SAE CLASS 600 Max = 667.87 Min = -717.65

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



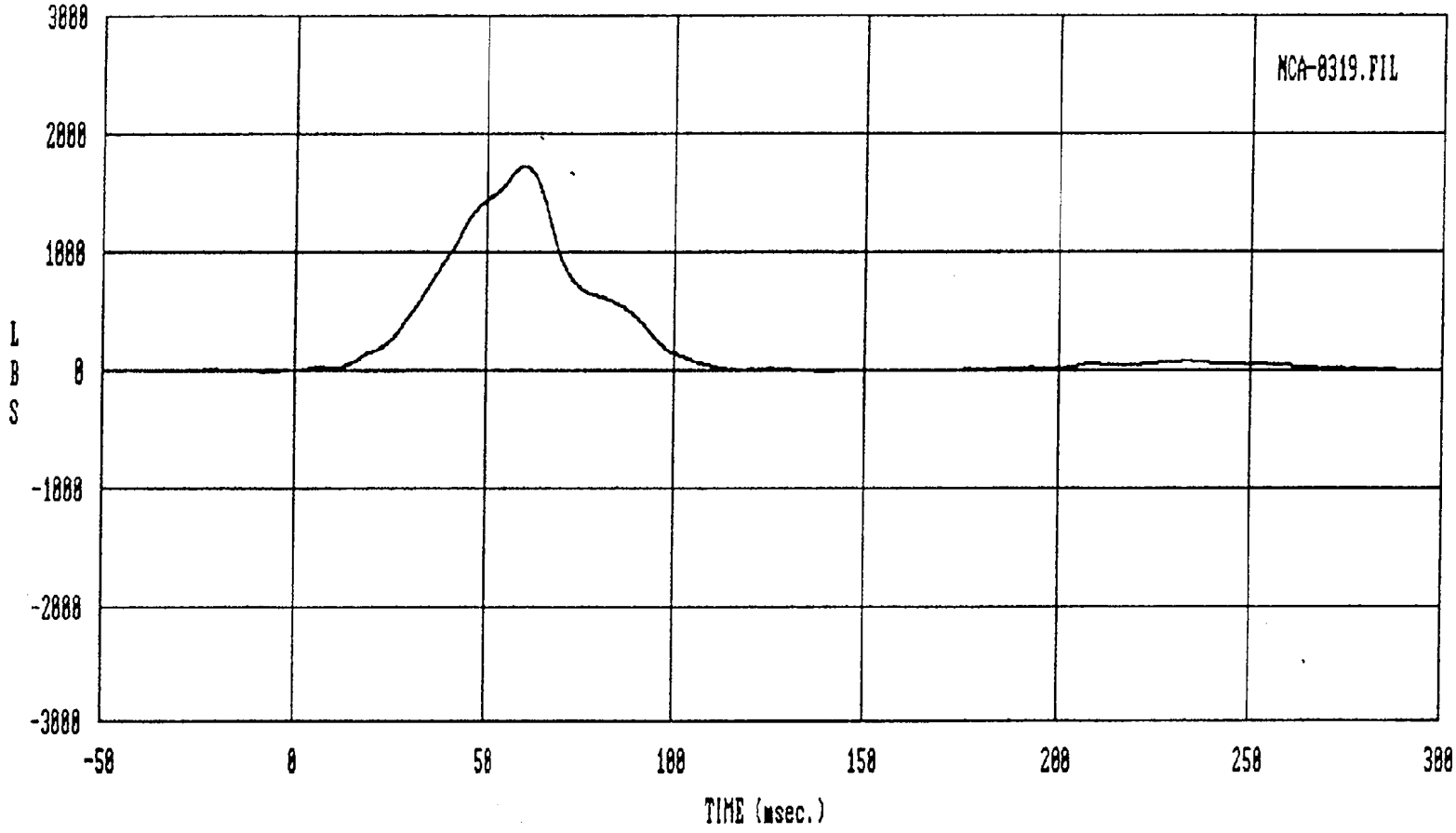
Curve: Driver Lap seat belt force Filter: SAE CLASS 60 Max = 1767.2 Min = 3.3002

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



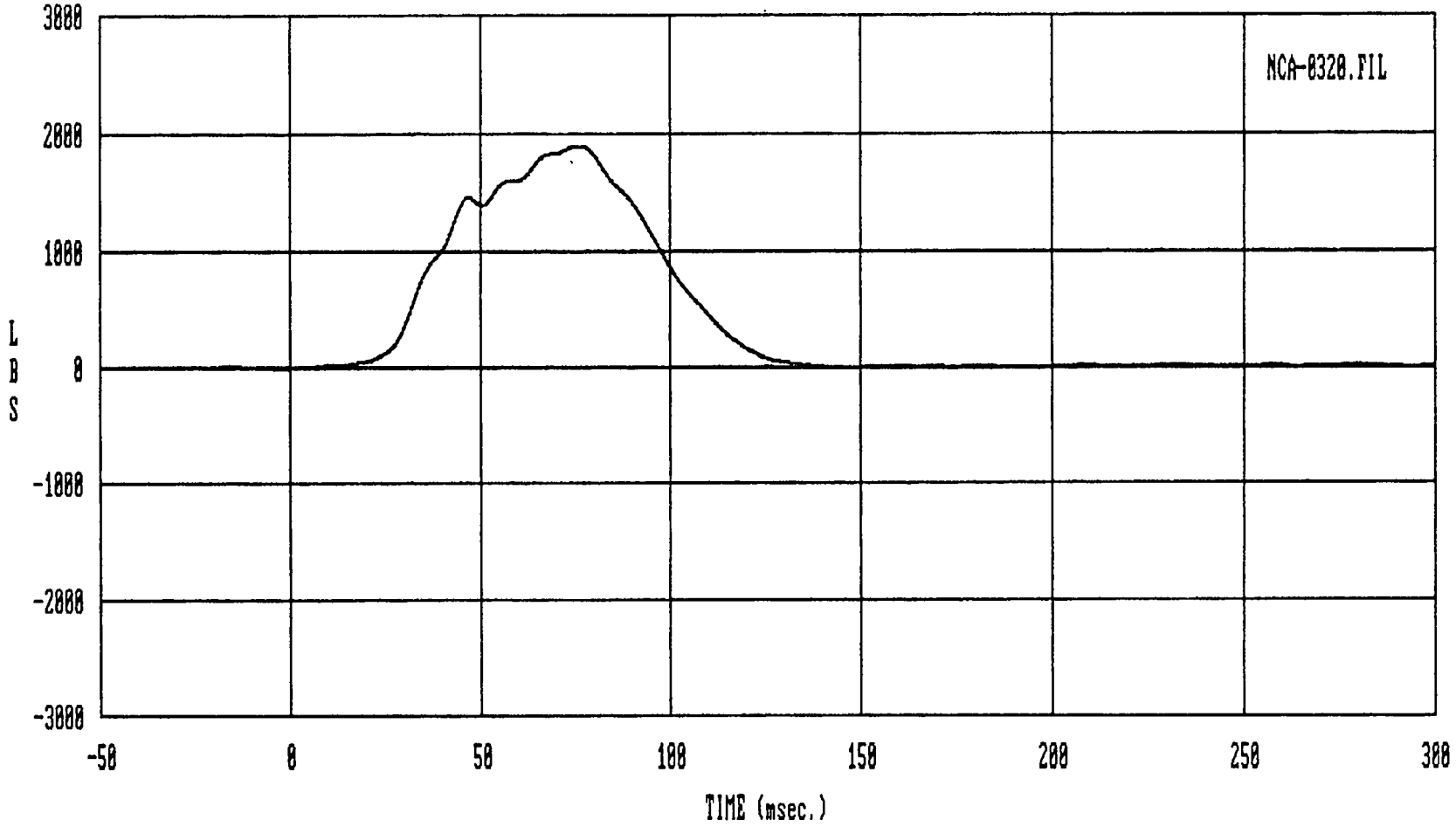
Curve: Driver Shoulder seat belt force Filter: SAE CLASS 60 Max = 1745.2 Min = -9.2232

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



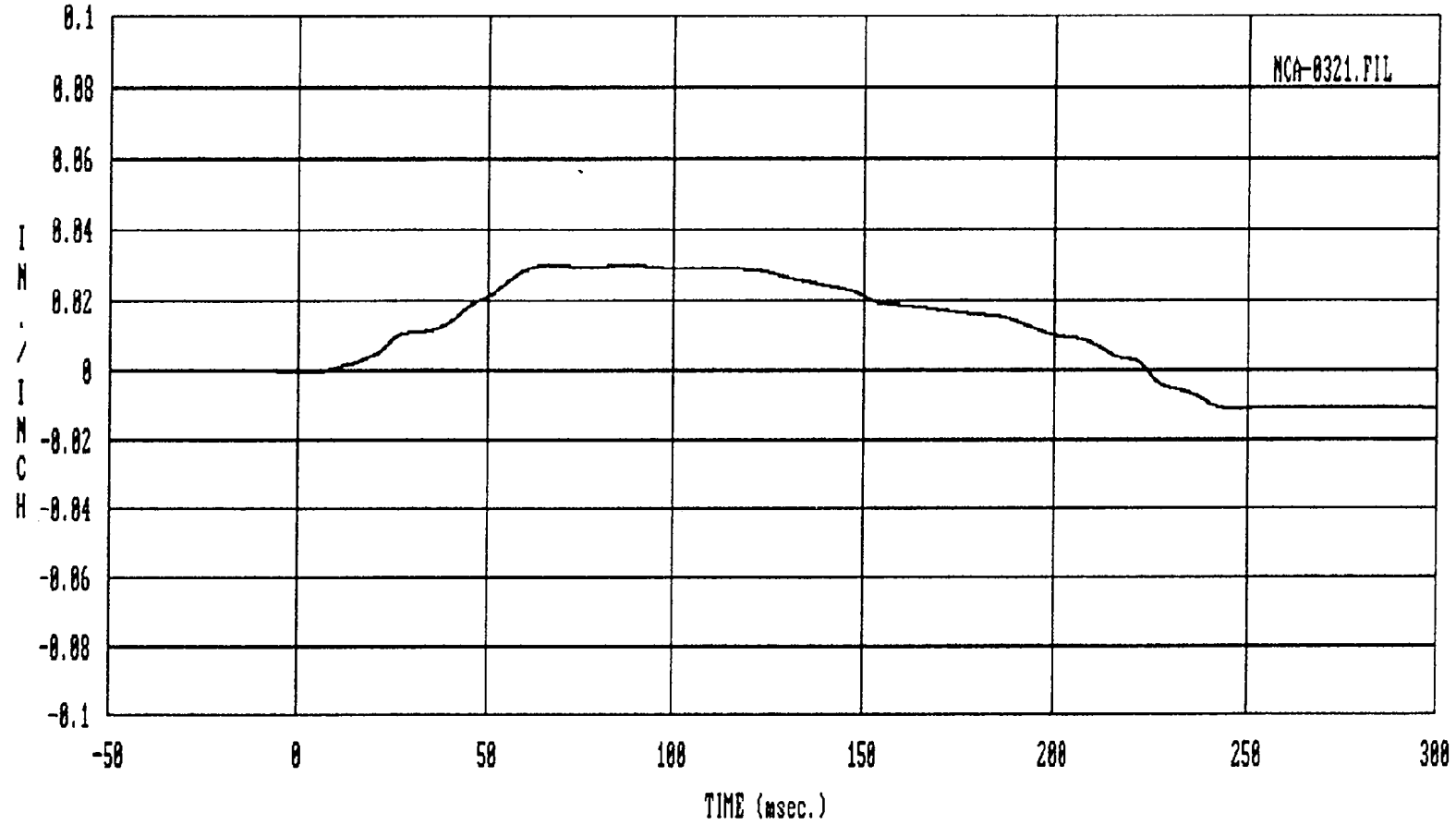
Curve: Pasngr Lap seat belt force Filter: SAE CLASS 60 Max = 1734.6 Min = -7.7863

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



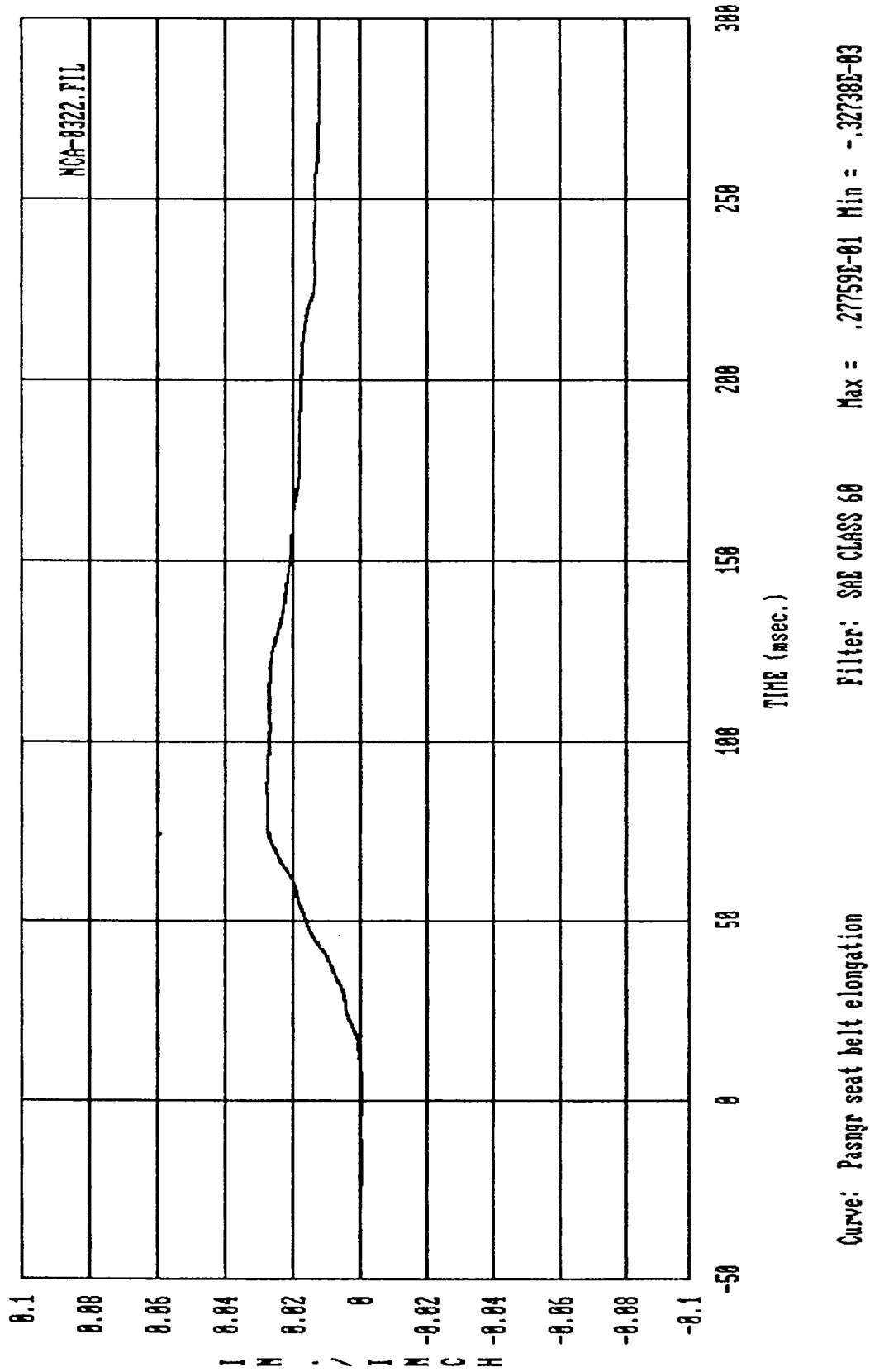
Curve: Pasngr Shoulder seat belt force Filter: SAE CLASS 60 Max = 1903.0 Min = -2.6190

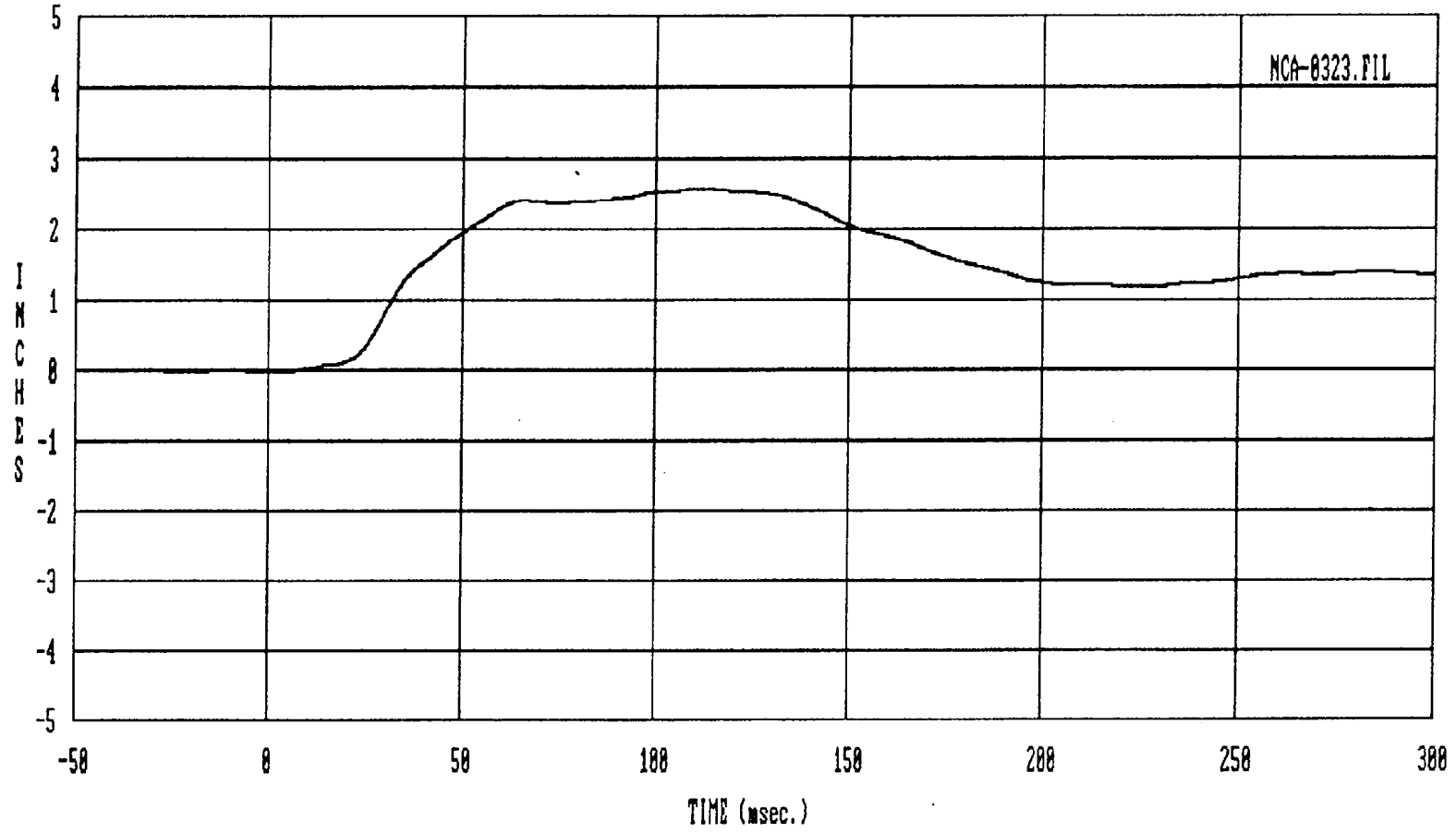
MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



Curve: Driver seat belt elongation Filter: SAE CLASS 60 Max = .29877E-01 Min = -.10826E-01

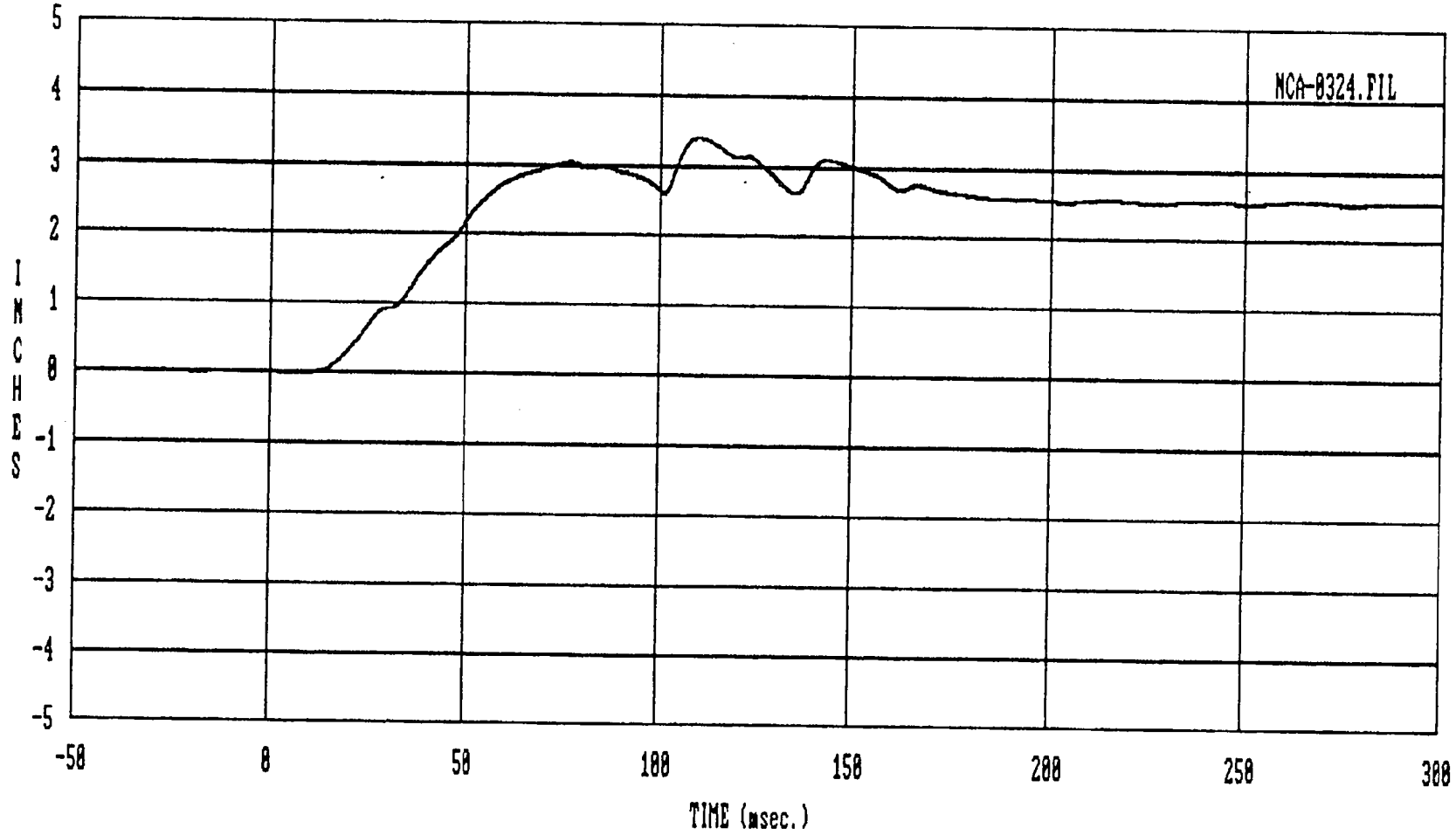
MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER


NCA-0322.FIL
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
INCH/INCH
-50
0
50
100
150
200
250
300
TIME (msec.)
Curve: Pasngr seat belt elongation
Filter: SAE CLASS 60
Max = .27598-01 Min = -.32338-03
MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



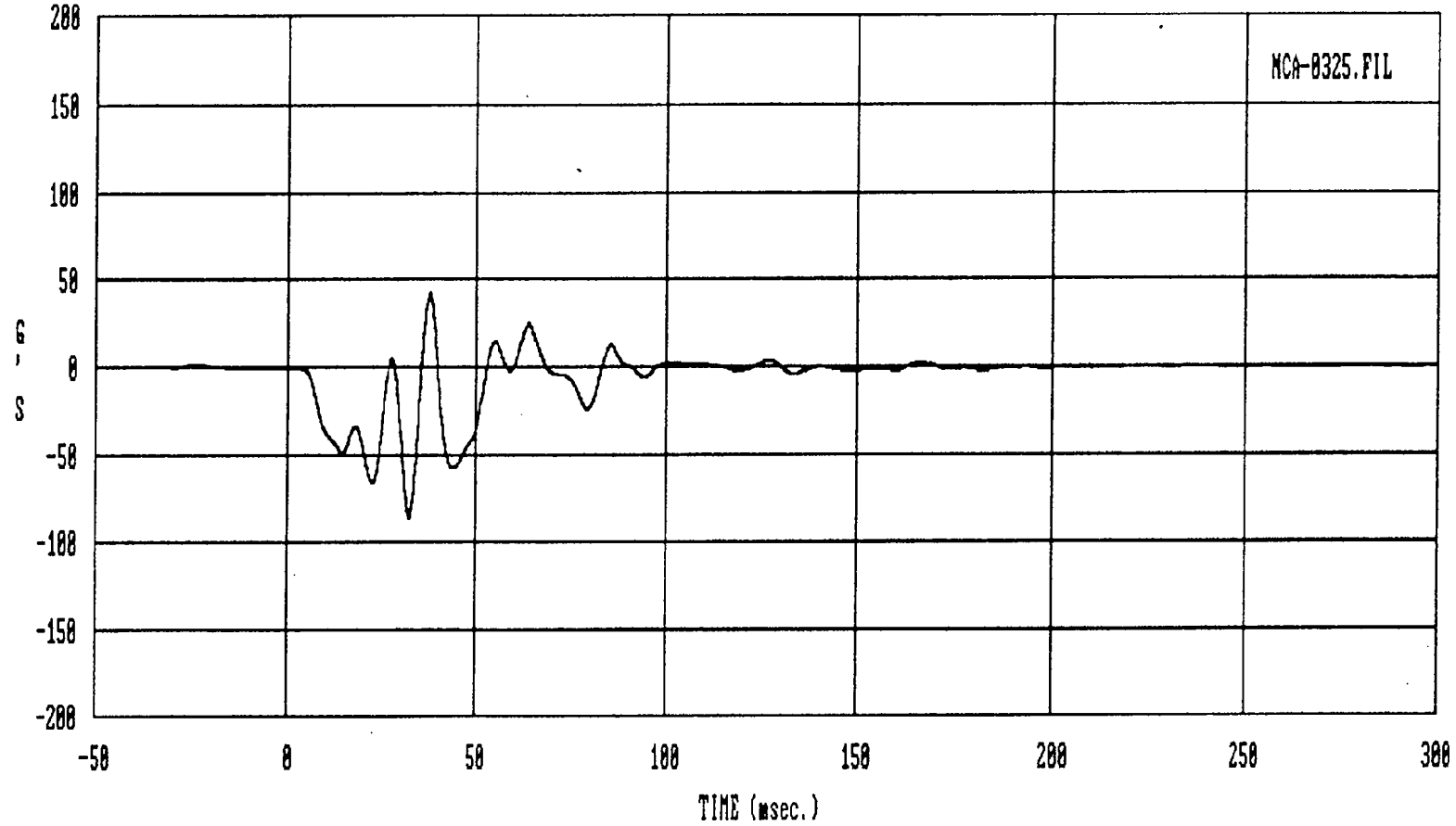
Curve: Driver seat belt pullout Filter: SAE CLASS 60 Max = 2.5721 Min = -.23378E-01

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



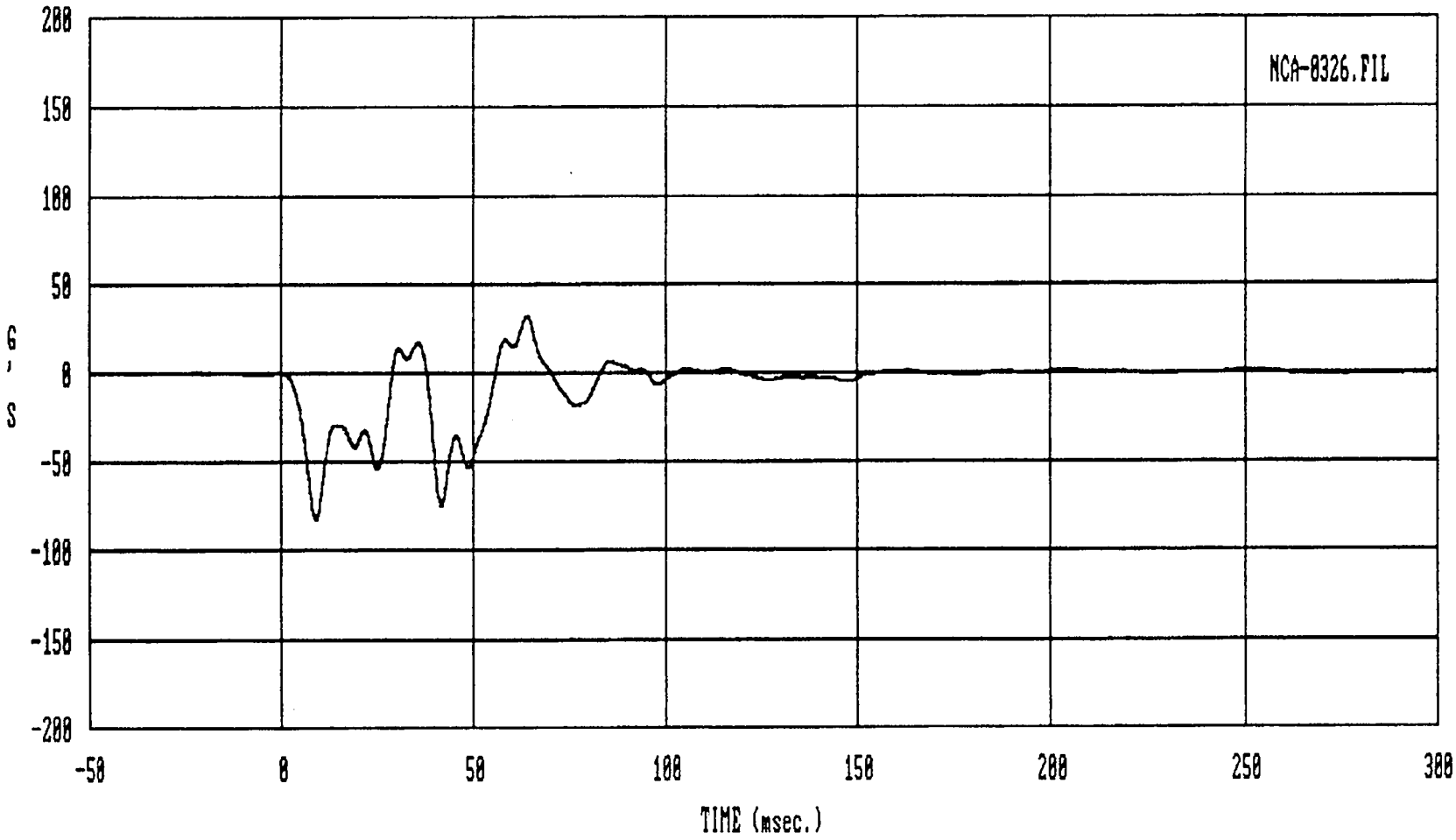
Curve: Pasngr seat belt pullout Filter: SAE CLASS 60 Max = 3.4134 Min = -.15424E-01

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



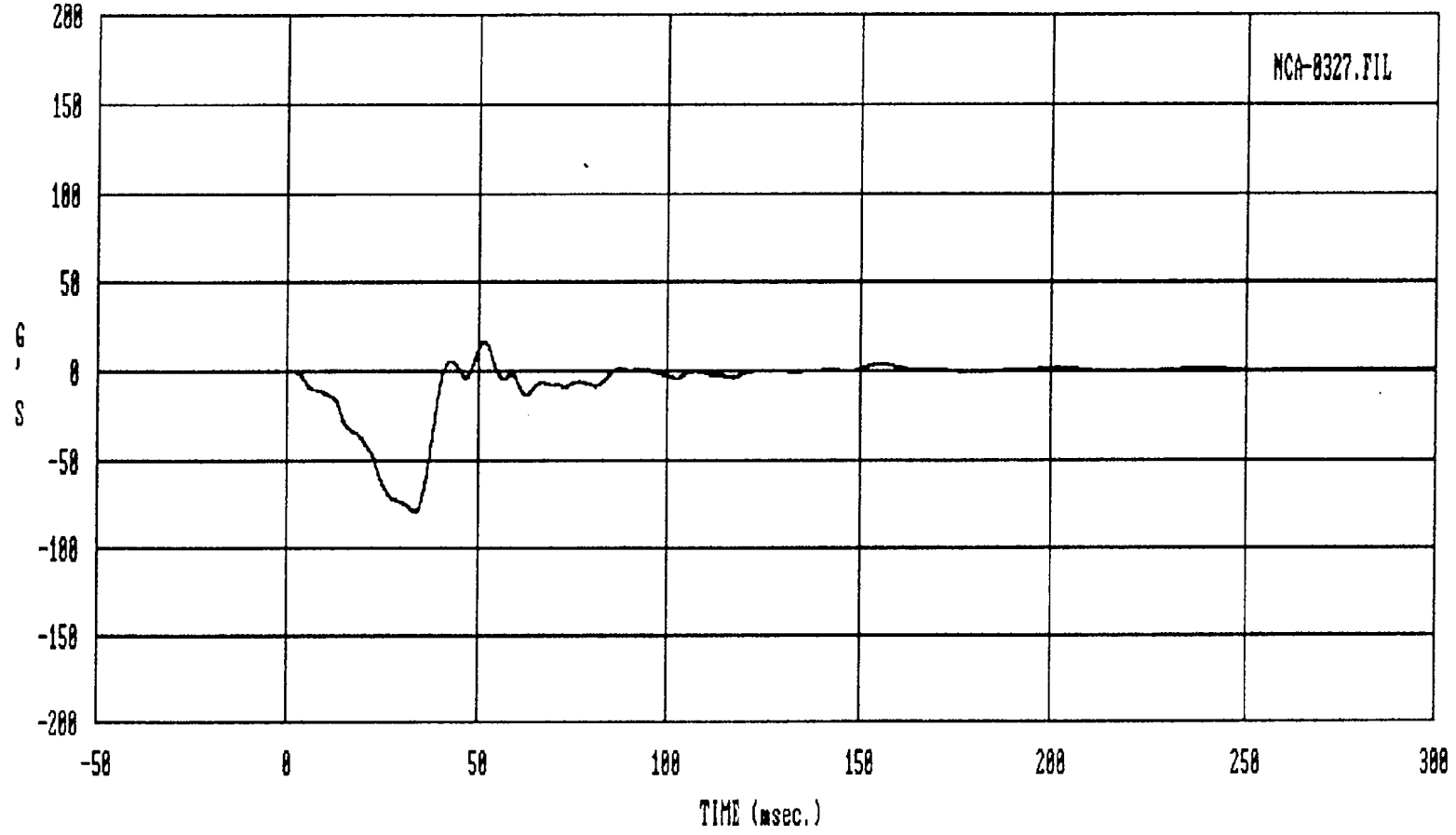
Curve: Left front brake caliper acceleration — X axis Filter: SAE CLASS 60 Max = 42.254 Min = -86.097

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



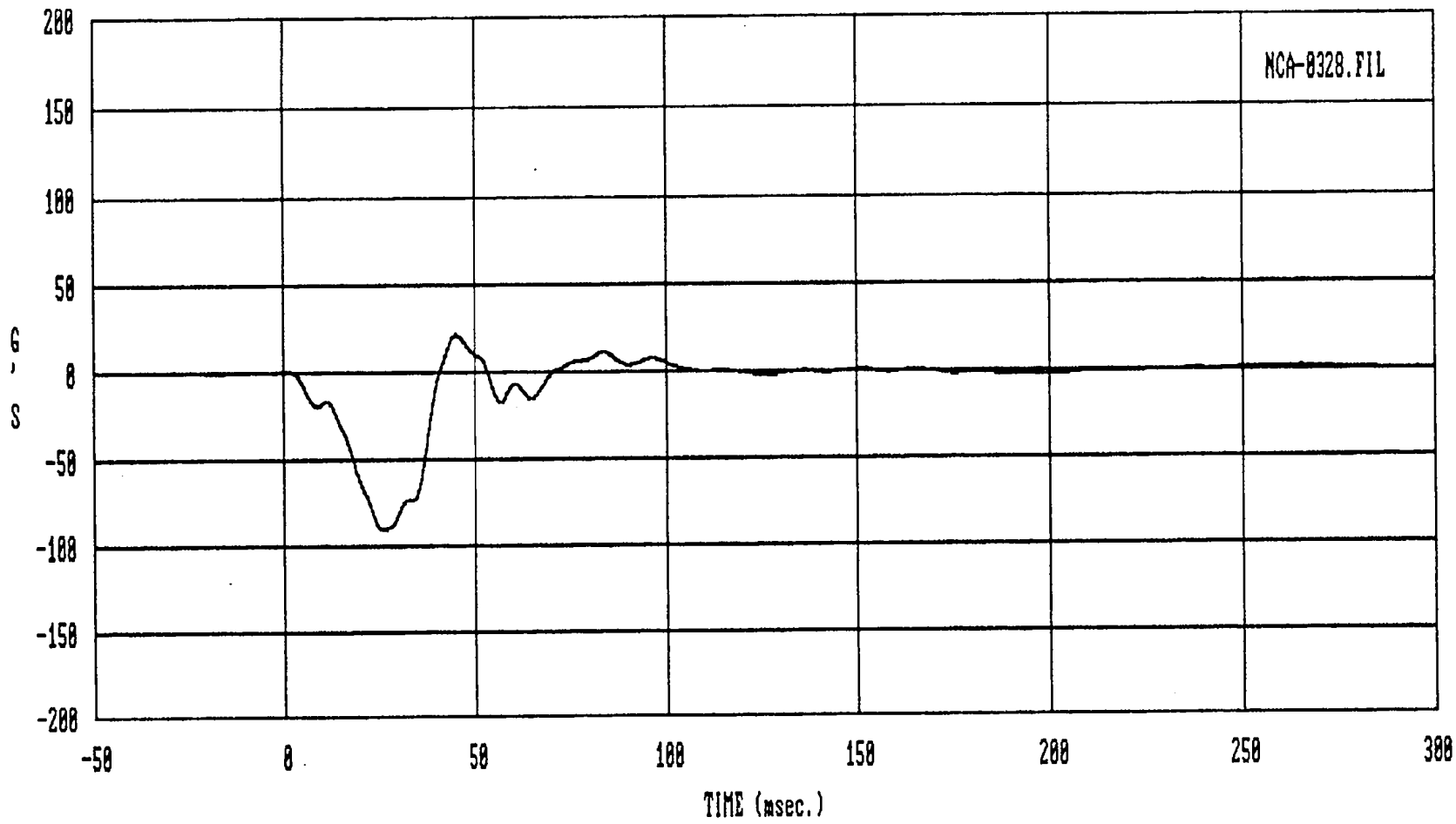
Curve: Right front brake caliper accel.—X axis Filter: SAE CLASS 60 Max = 32.618 Min = -82.734

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



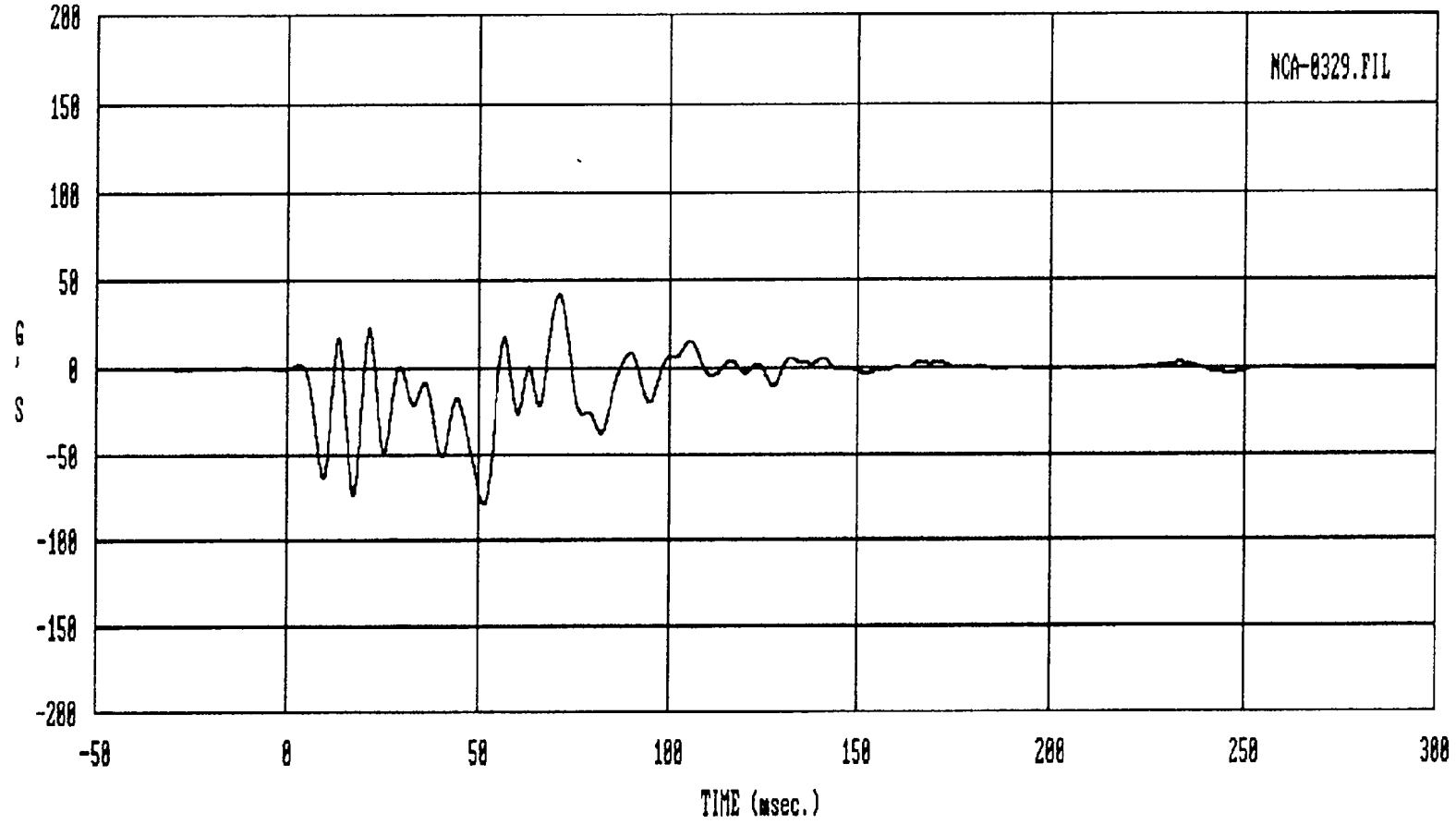
Curve: Engine bottom acceleration — X axis Filter: SAE CLASS 60 Max = 16.660 Min = -78.976

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



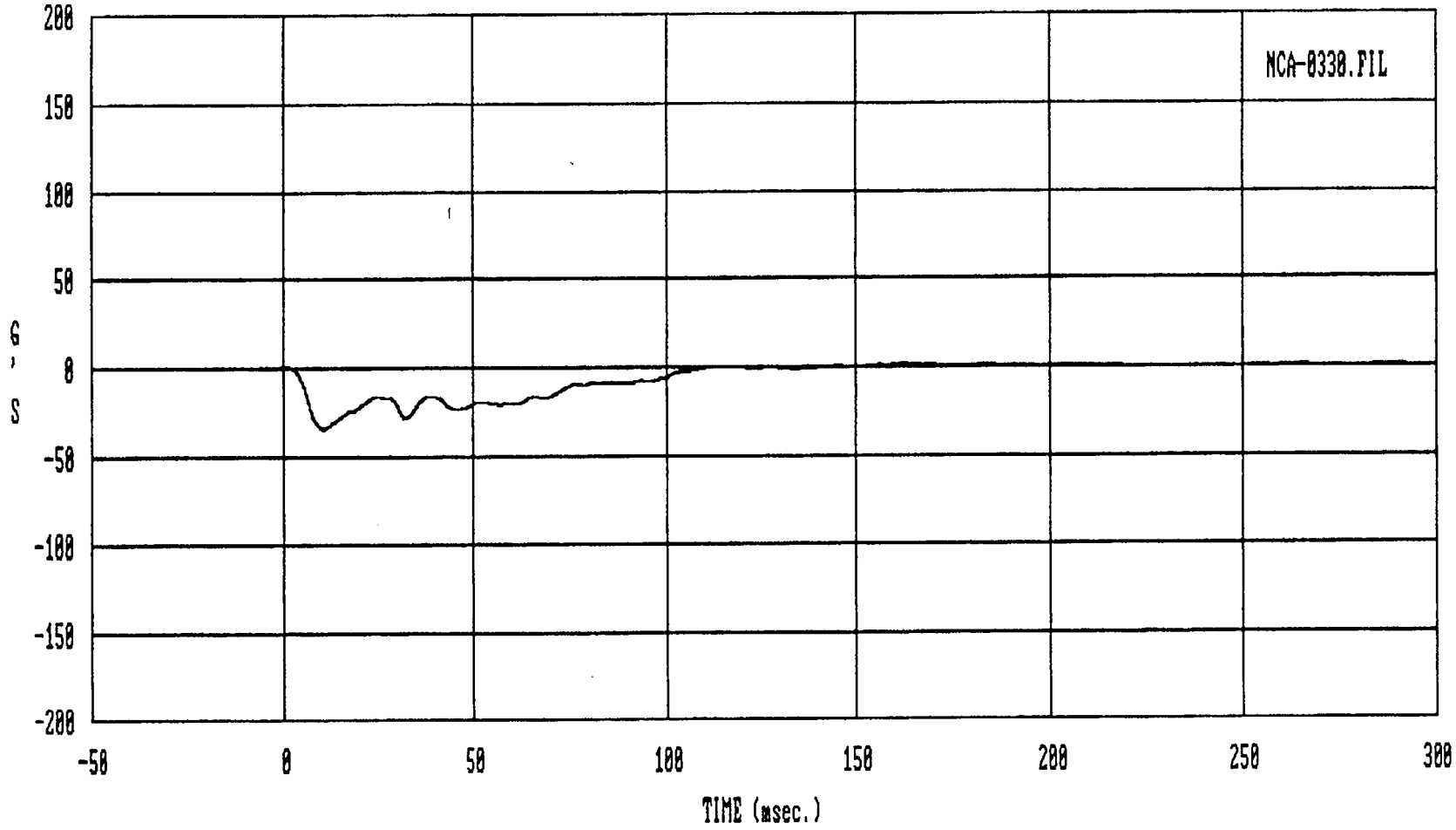
Curve: Engine top acceleration — X axis Filter: SAE CLASS 60 Max = 21.730 Min = -90.531

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



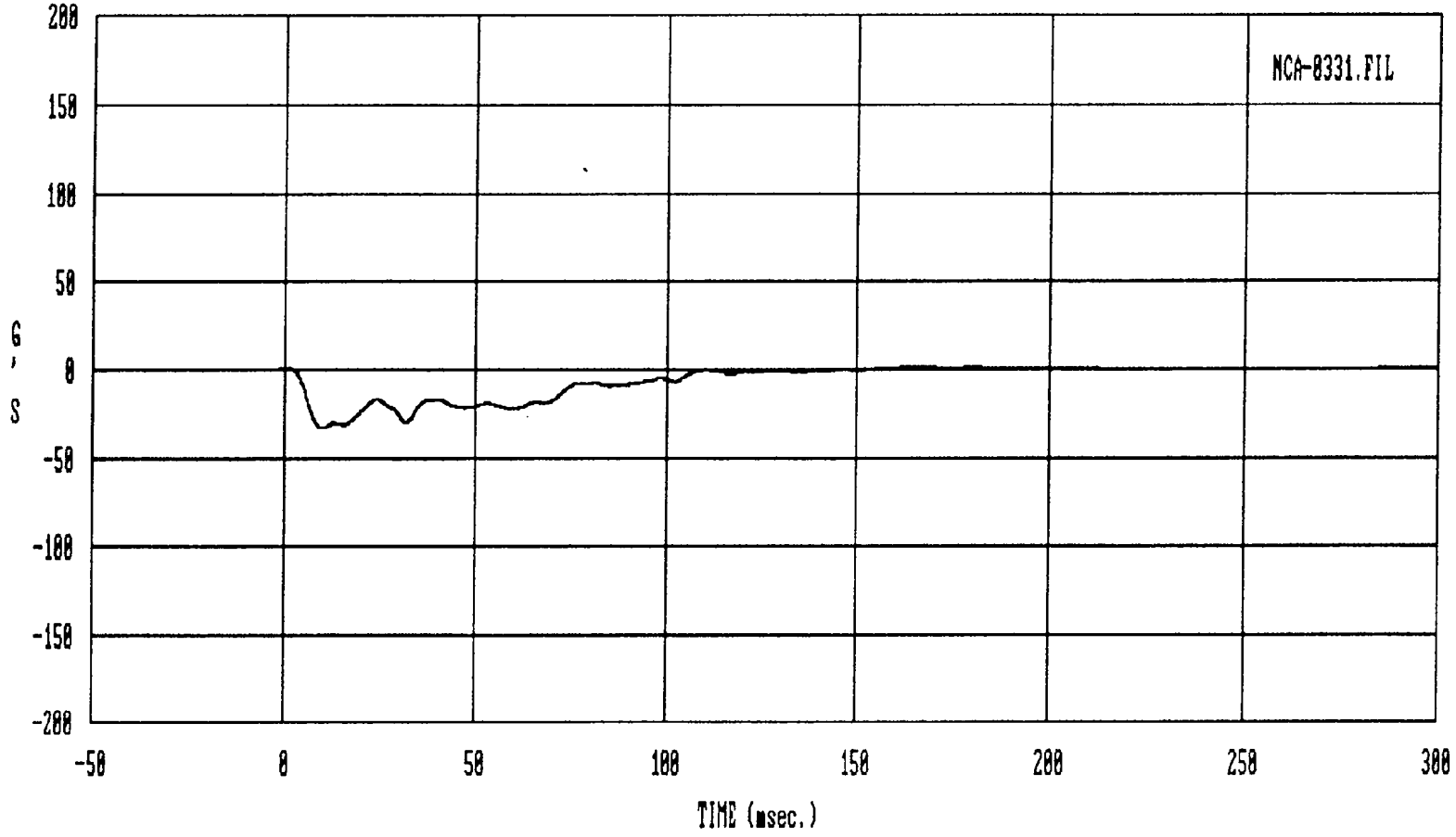
Curve: Instrument panel acceleration -- X axis Filter: SAE CLASS 60 Max = 42.133 Min = -78.841

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



Curve: Left-rear seat cross-member accel. — X axis Filter: SAE CLASS 60 Max = 2.1175 Min = -34.218

MSE Date: 10/11/98 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER



Curve: Right-rear seat cross member accel. — X axis Filter: SAE CLASS 60 Max = 1.4861 Min = -32.870

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESMENT #3 Vehicle: 1991 FORD EXPLORER

APPENDIX B-2

LOAD CELL BARRIER DATA

DATA FILTERING:
Load Cell Barrier Channels - Class 60

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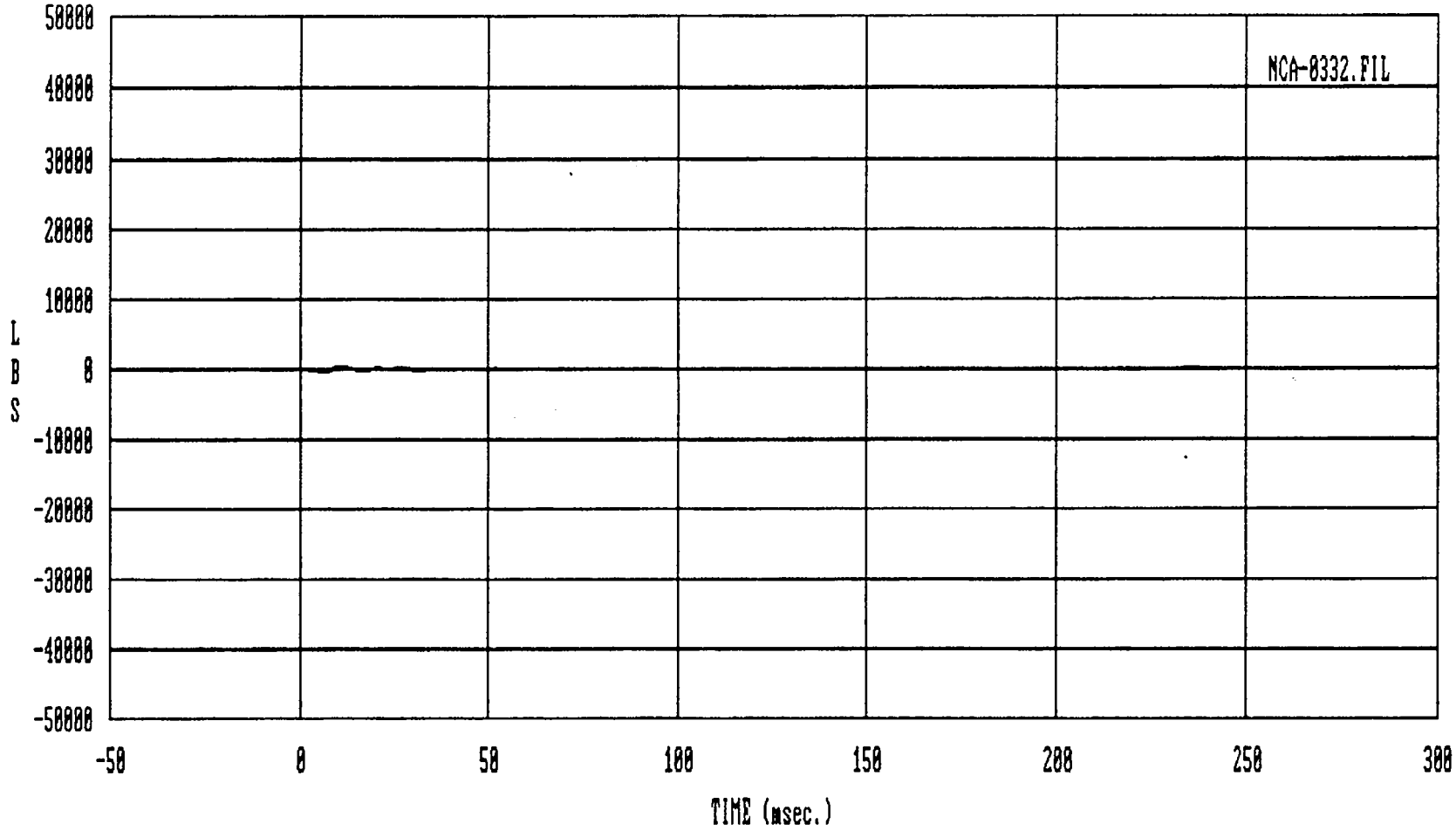
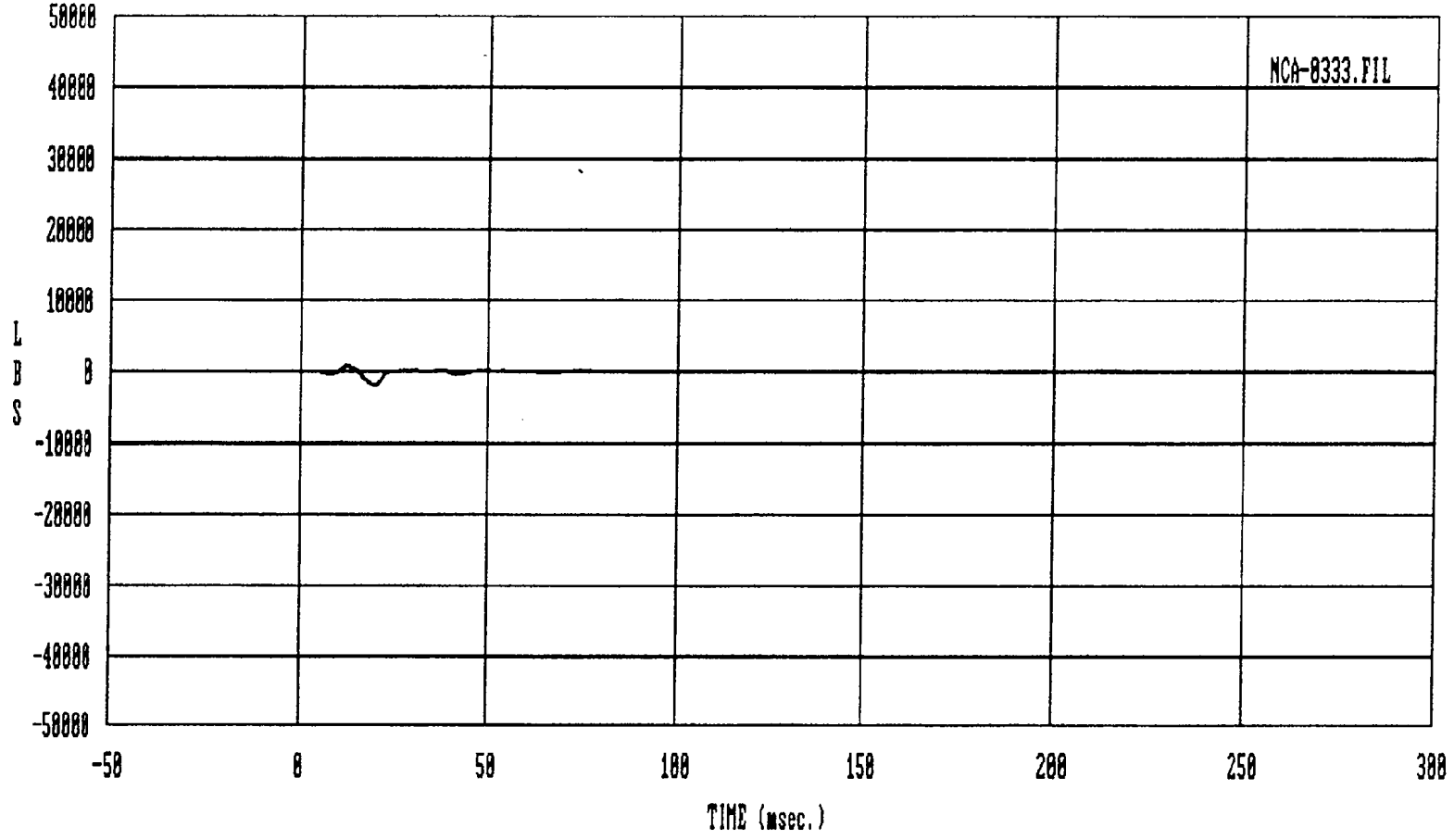


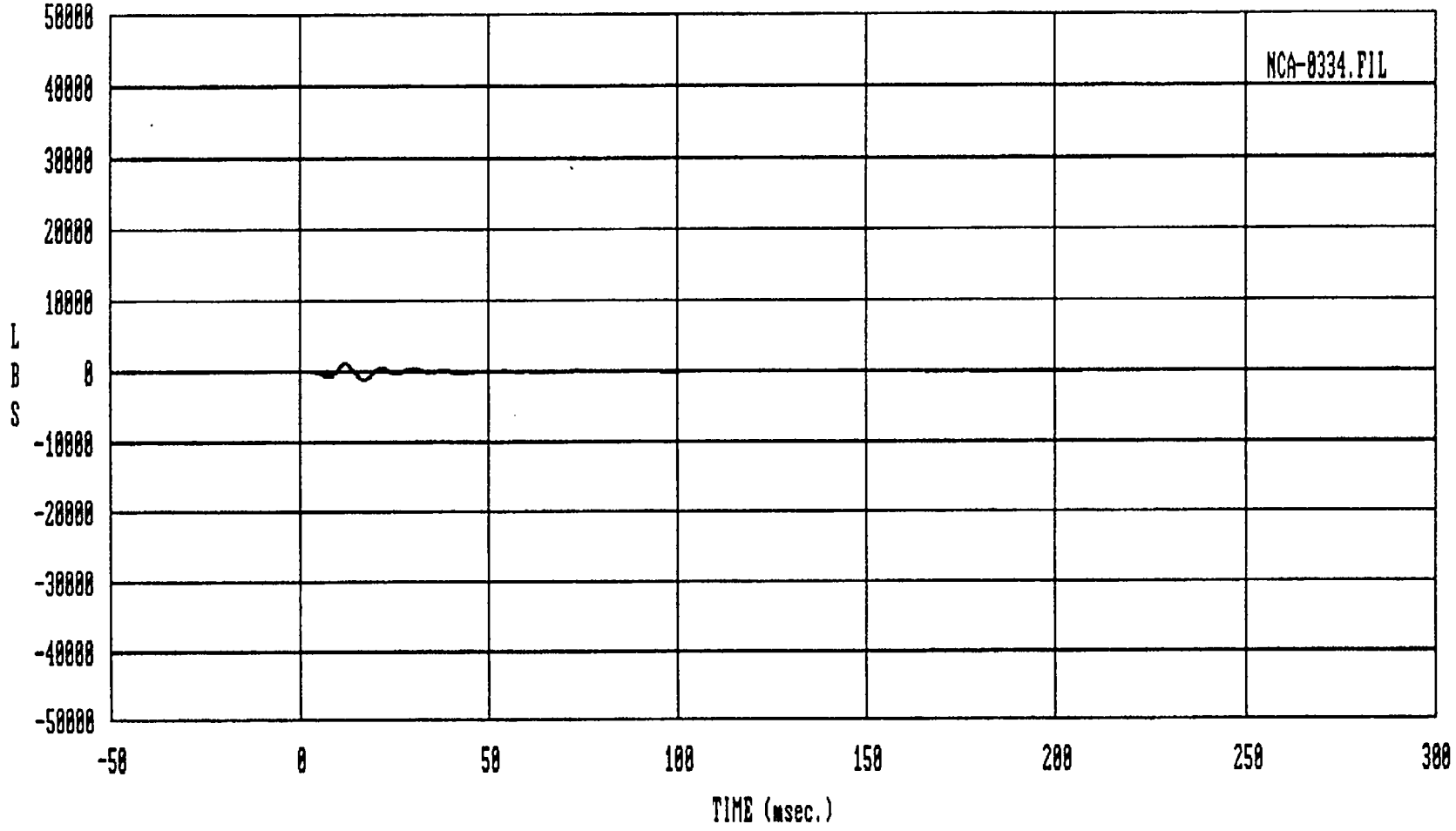
Curve: Force on Barrier load cell A1 Filter: SAE CLASS 60 Max = 491.82 Min = -378.28

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



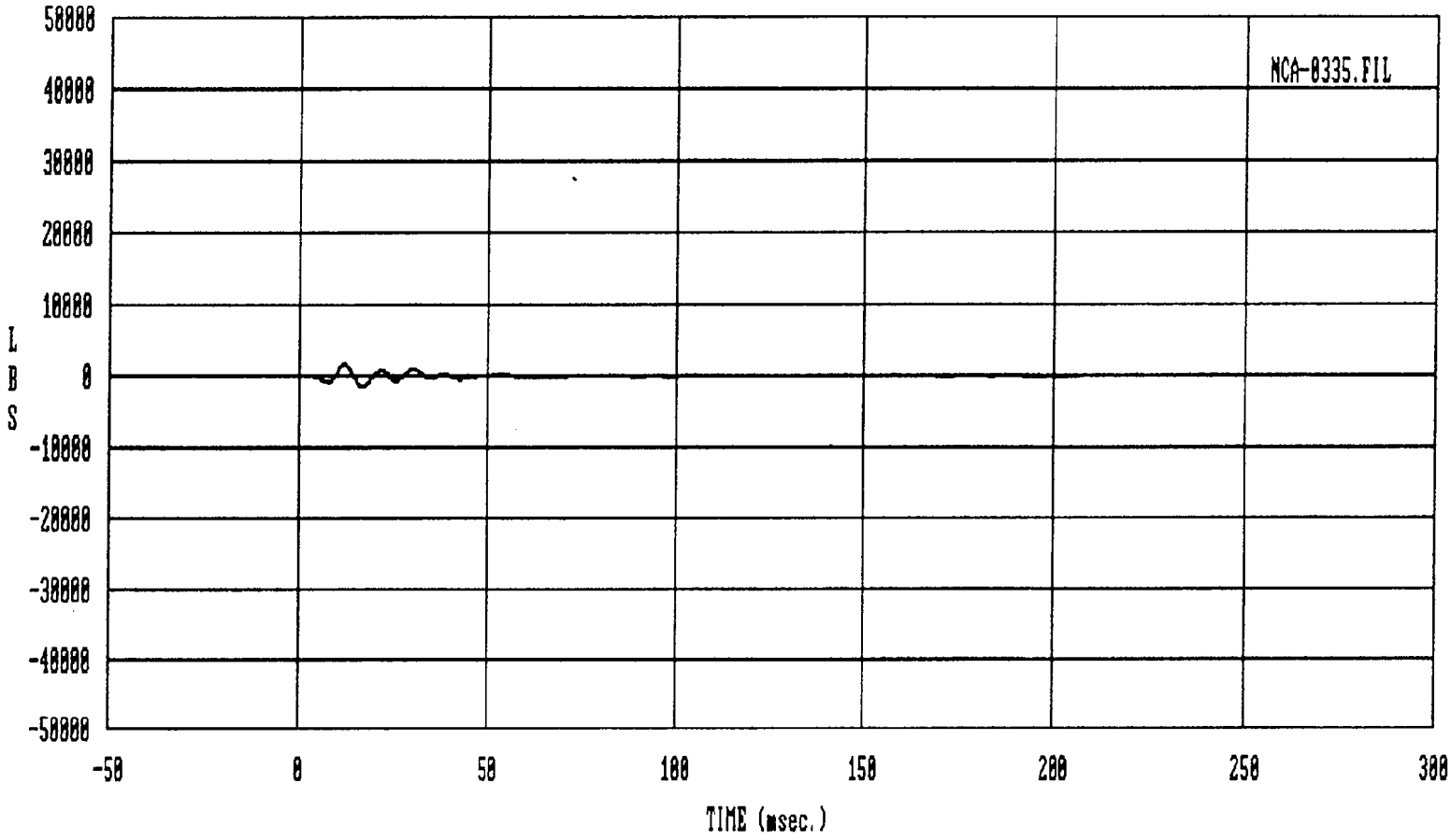
Curve: Force on Barrier load cell A2 Filter: SAE CLASS 60 Max = 771.31 Min = -1870.9

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



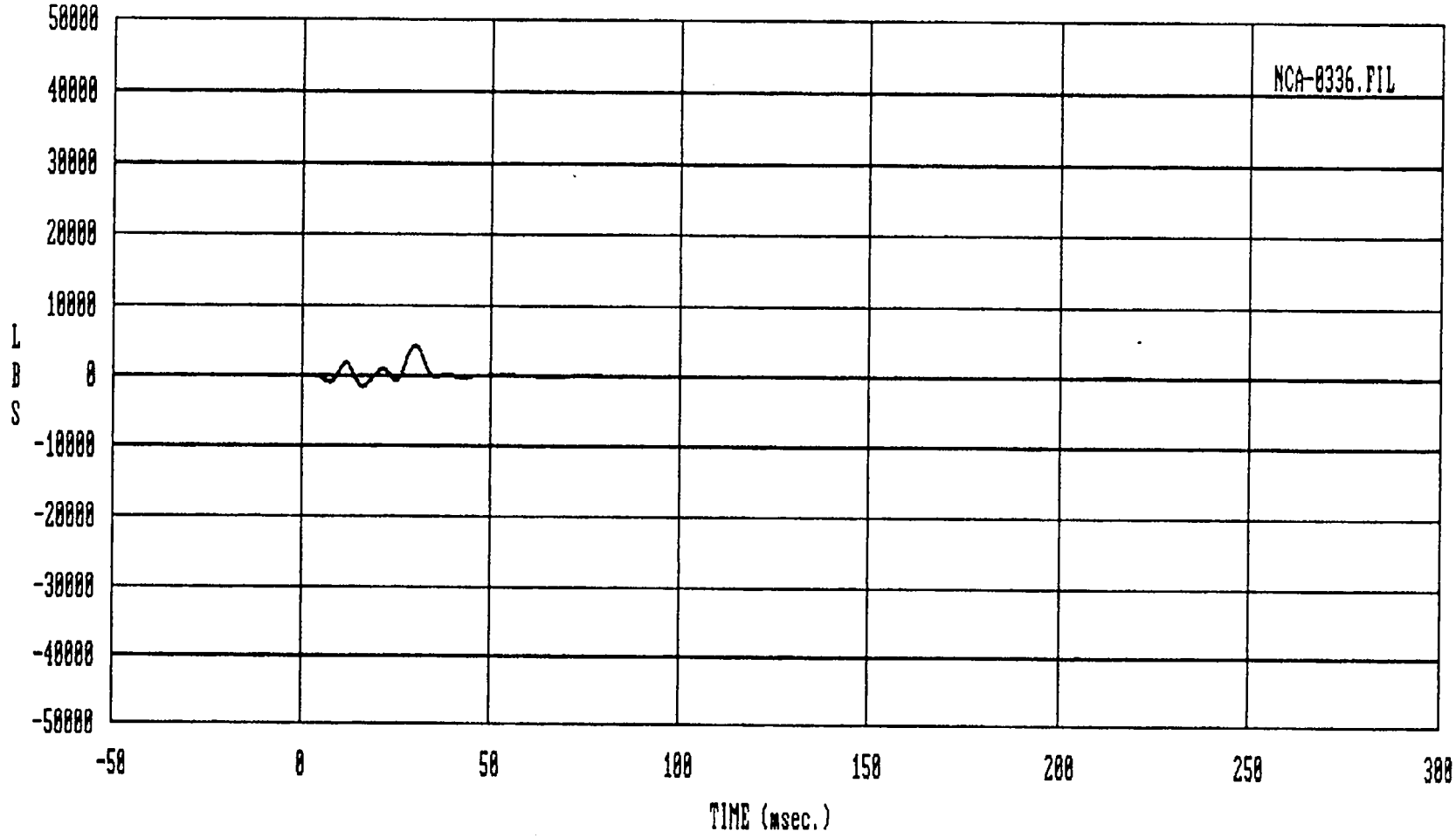
Curve: Force on Barrier load cell A3 Filter: SAE CLASS 60 Max = 1156.8 Min = -1100.0

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



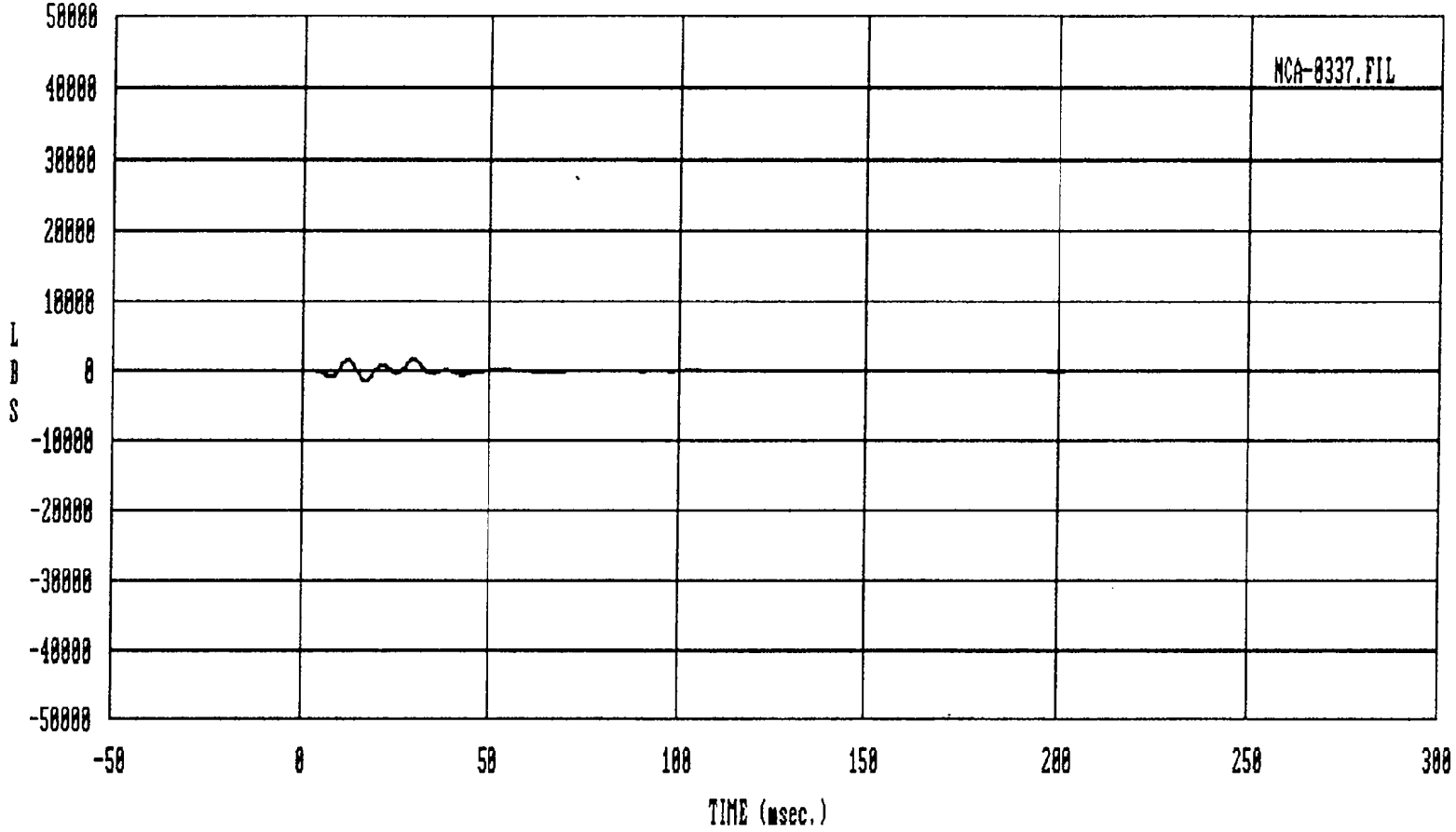
Curve: Force on Barrier load cell A4 Filter: SAE CLASS 60 Max = 1718.0 Min = -1442.7

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



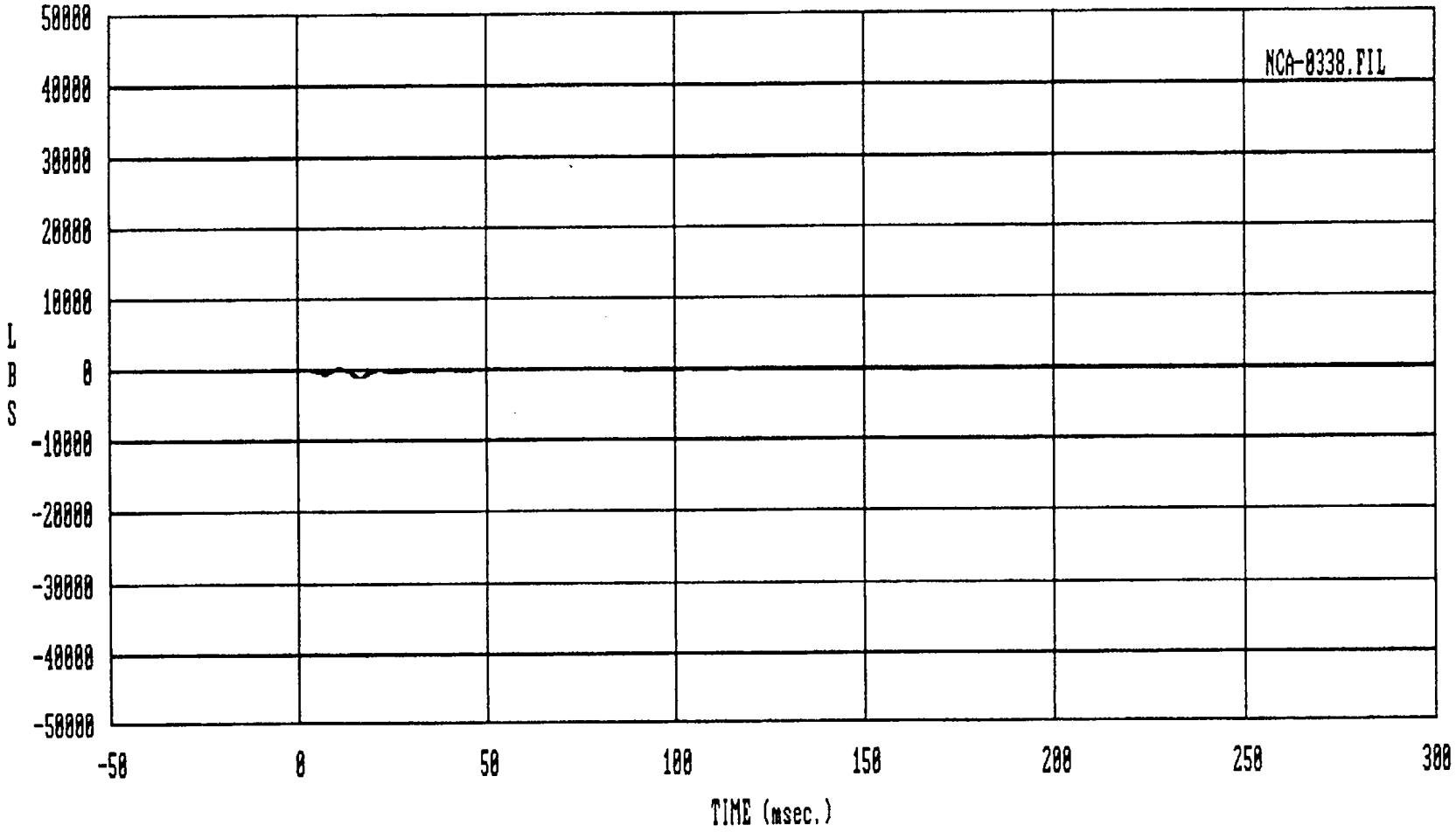
Curve: Force on Barrier load cell A5 Filter: SAE CLASS 60 Max = 4298.9 Min = -1490.1

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



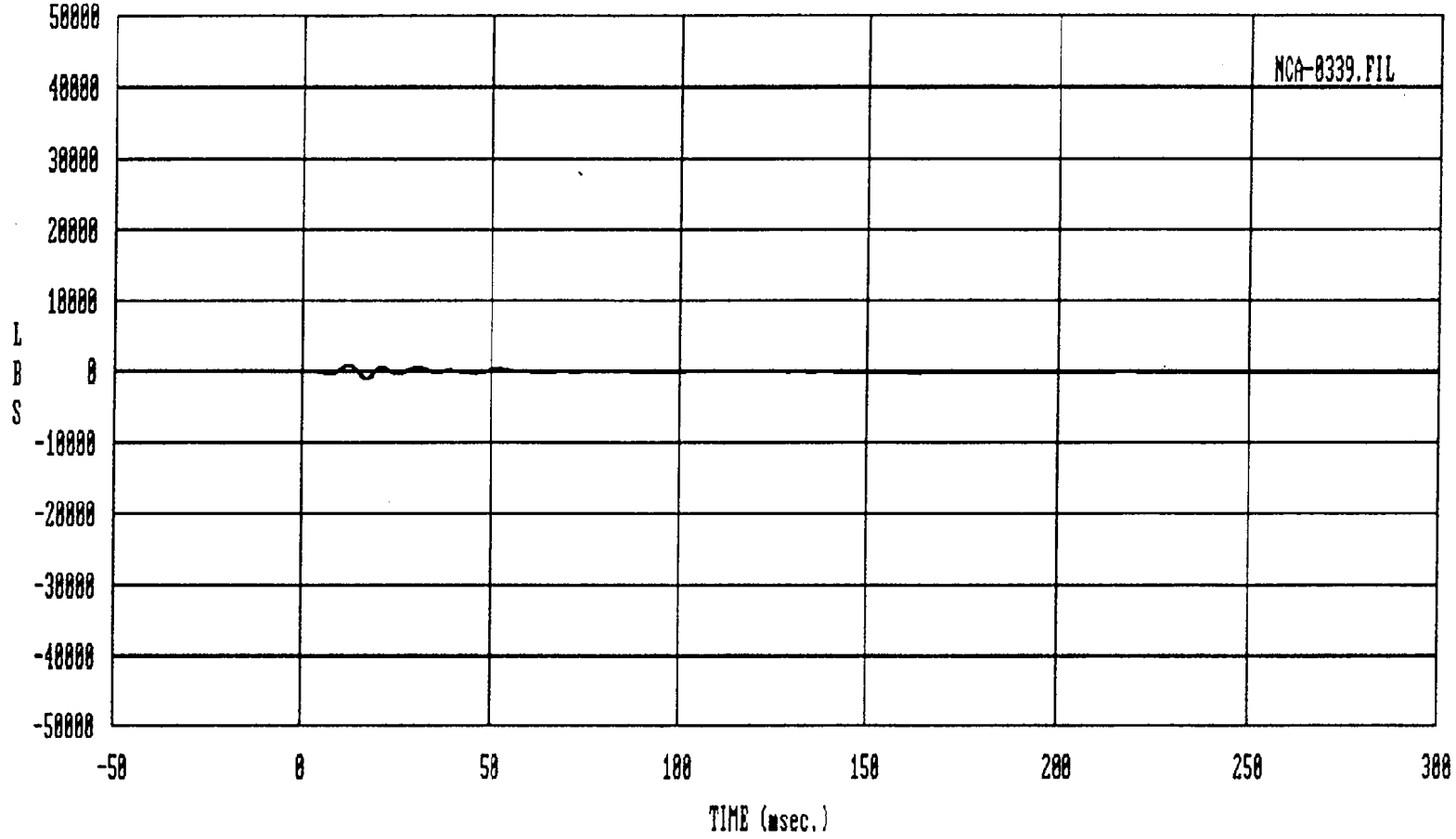
Curve: Force on Barrier load cell A6 Filter: SAE CLASS 60 Max = 1733.3 Min = -1398.9

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



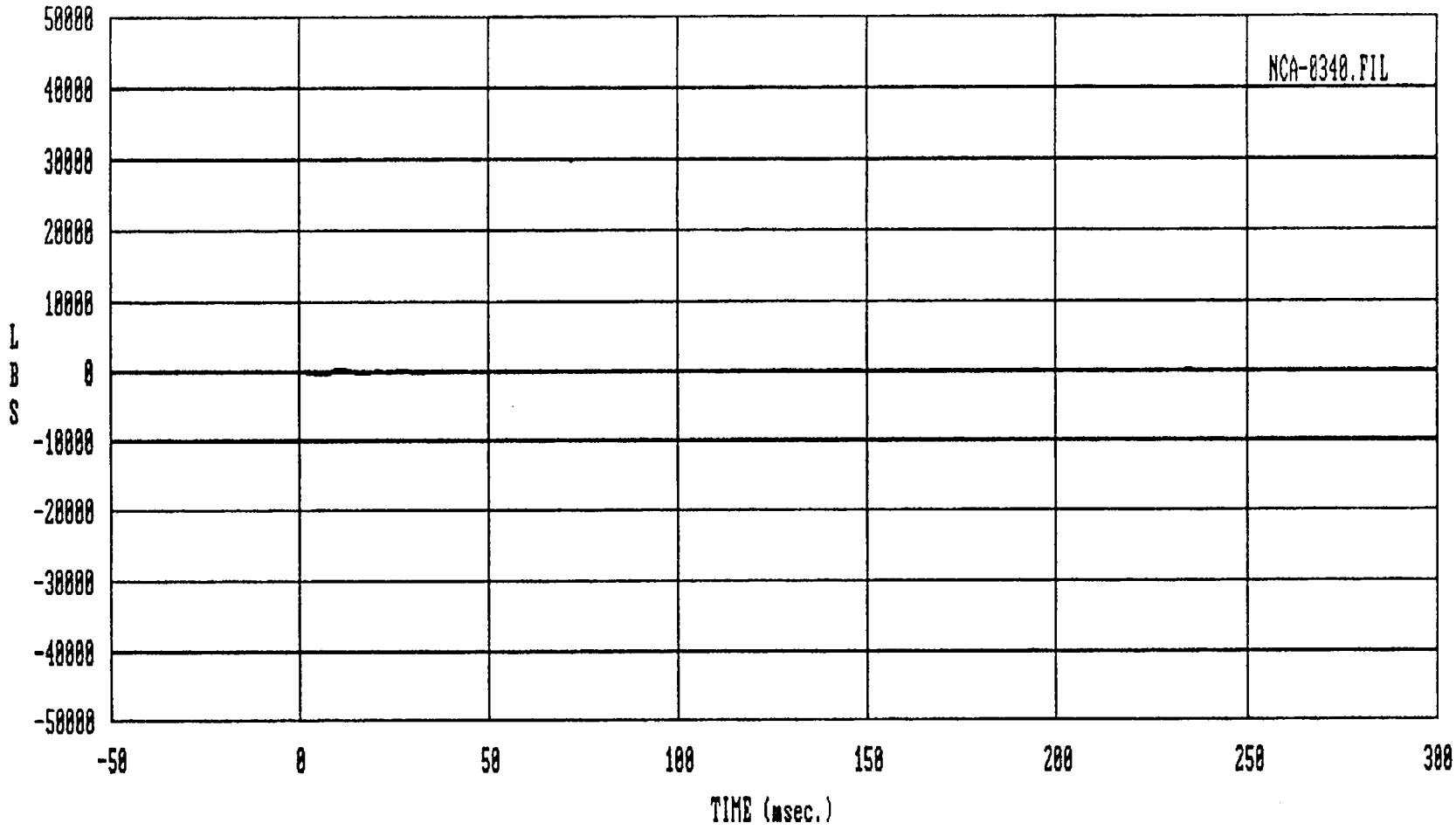
Curve: Force on Barrier load cell A7 Filter: SAE CLASS 60 Max = 158.99 Min = -1886.4

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



Curve: Force on Barrier load cell A8 Filter: SAE CLASS 60 Max = 887.22 Min = -1046.4

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



Curve: Force on Barrier load cell A9 Filter: SAE CLASS 60 Max = 480.28 Min = -410.74

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER

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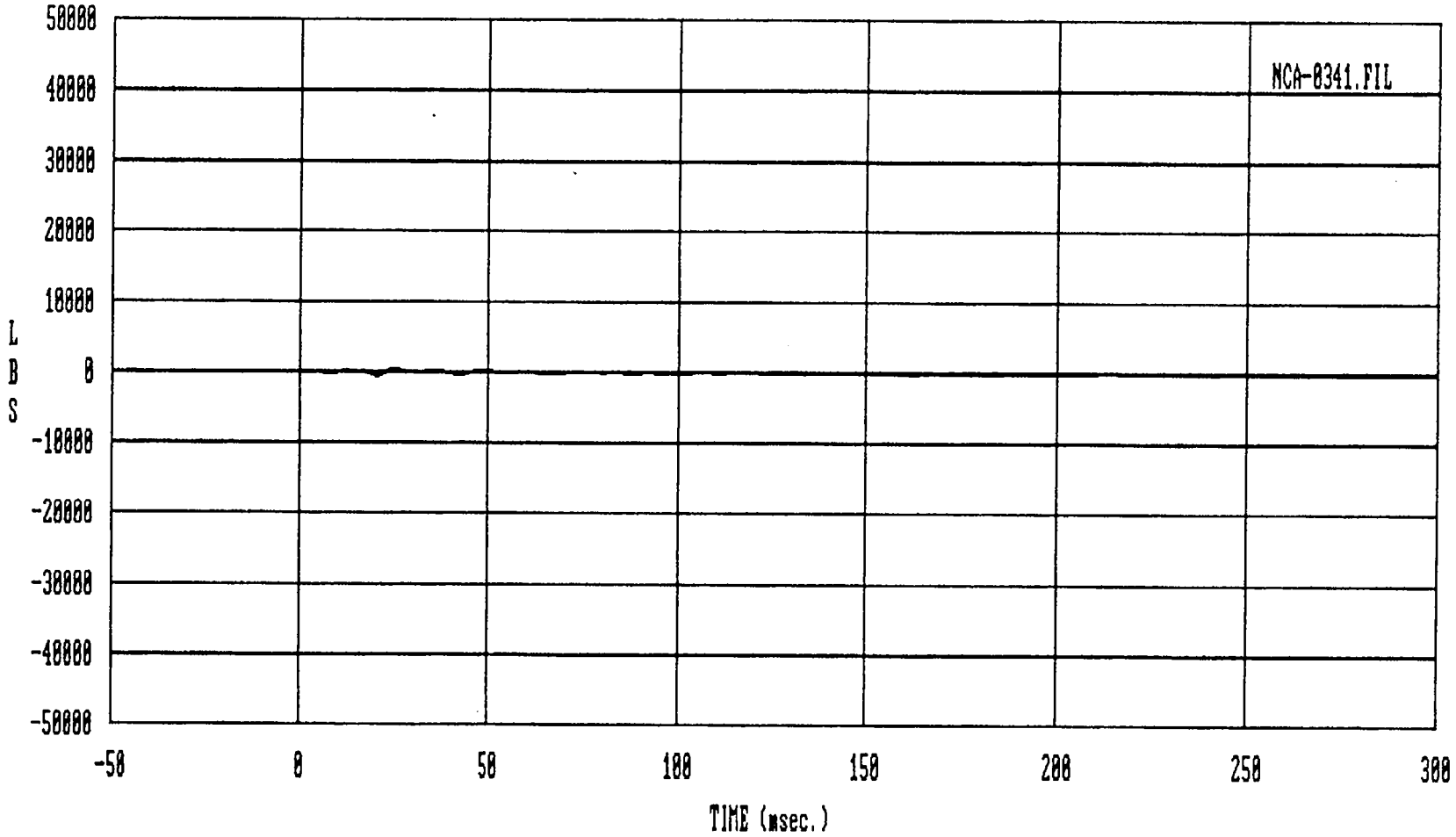
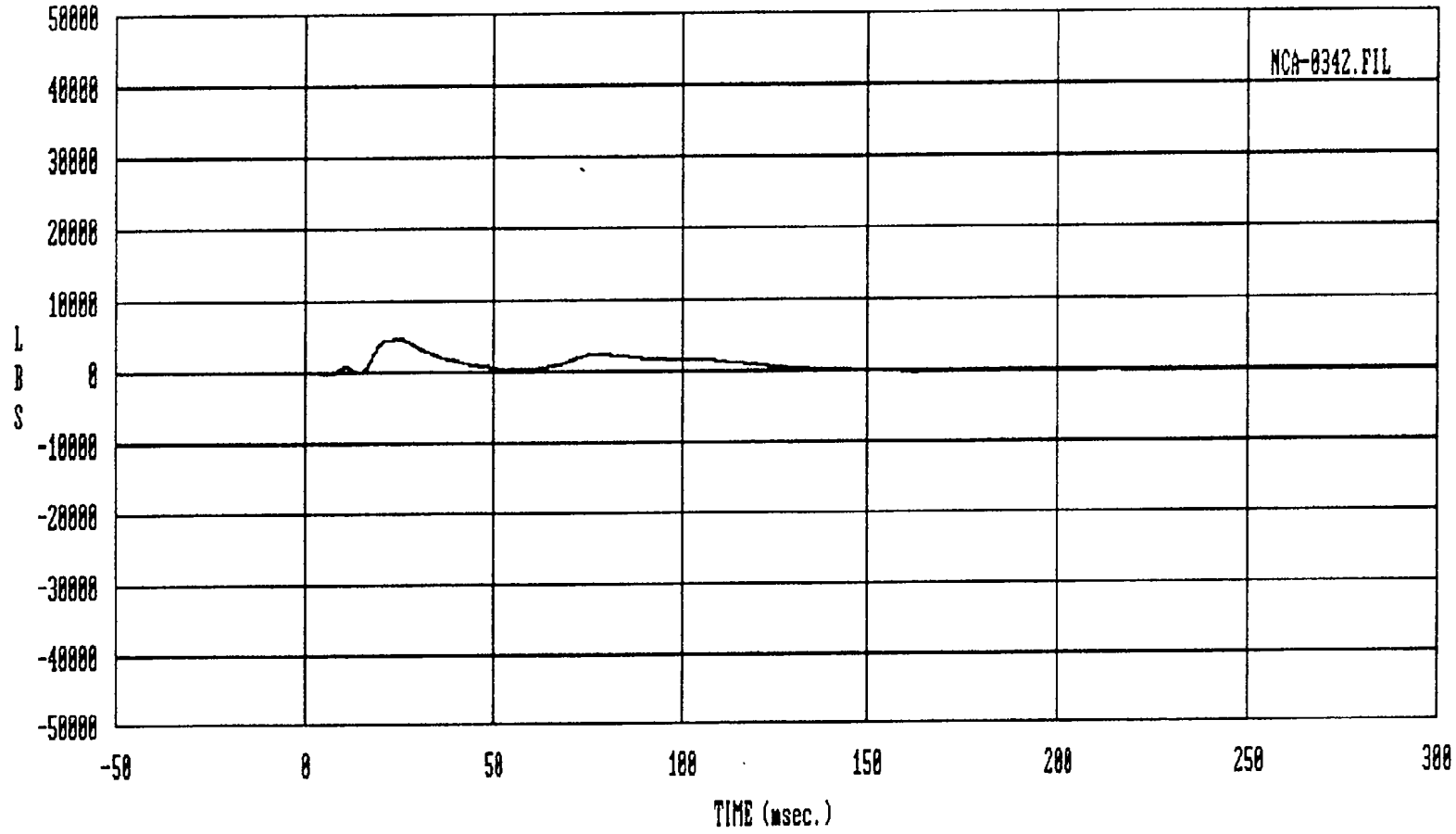


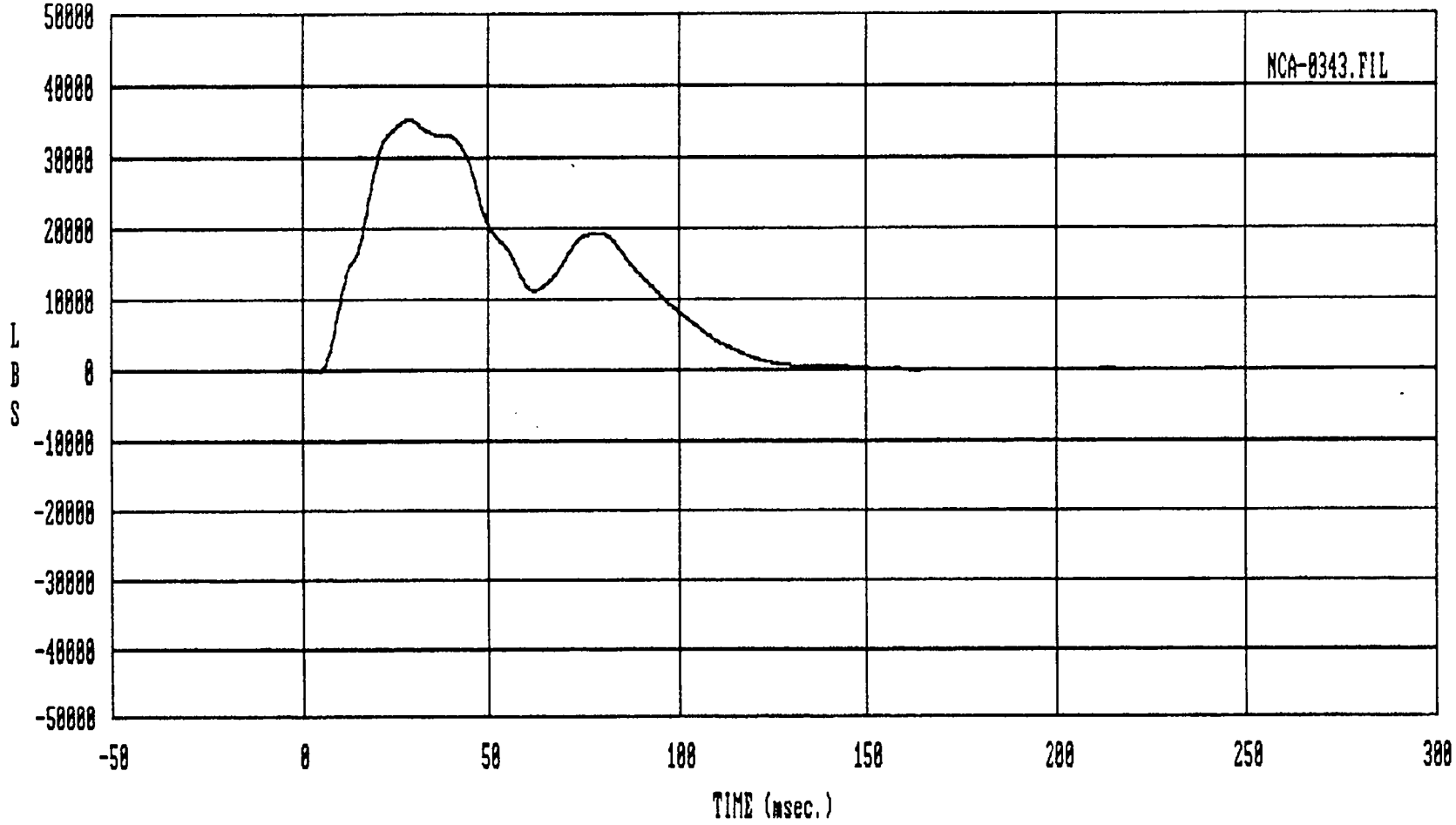
Curve: Force on Barrier load cell B1 Filter: SAE CLASS 60 Max = 476.97 Min = -491.82

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



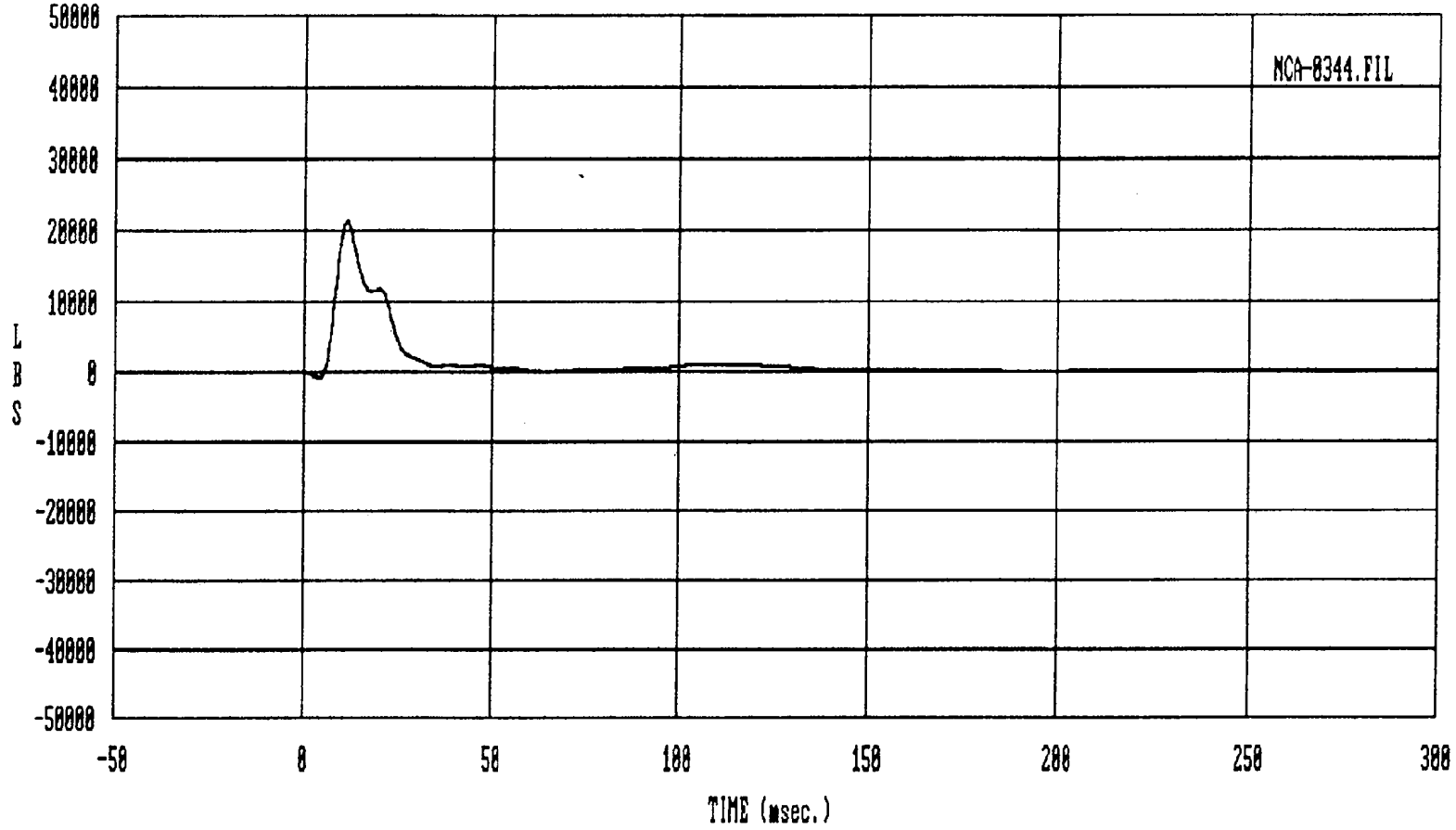
Curve: Force on Barrier load cell B2 Filter: SAE CLASS 60 Max = 4719.4 Min = -289.77

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



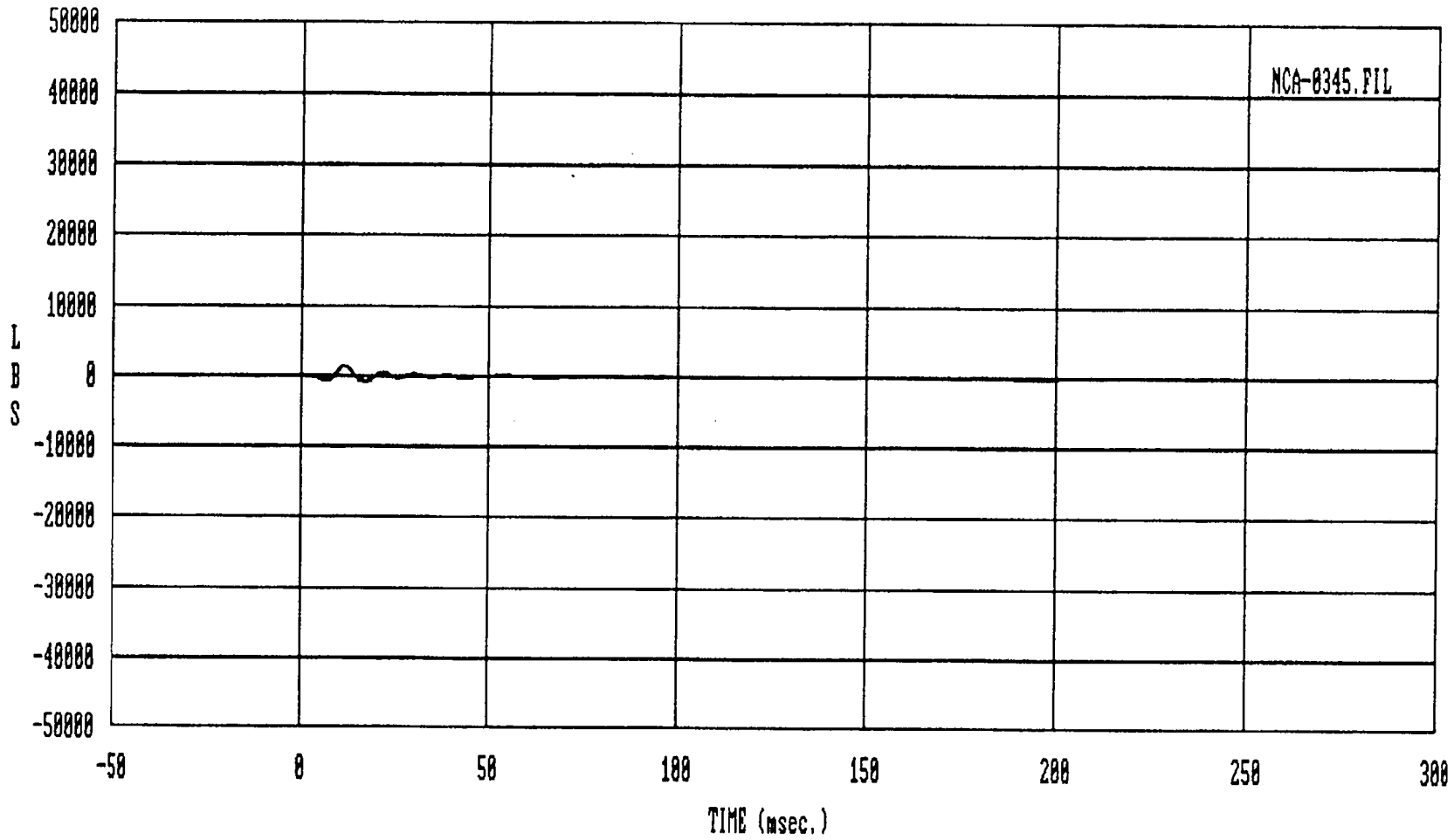
Curve: Force on Barrier load cell B3 Filter: SAE CLASS 60 Max = 35426. Min = -235.18

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



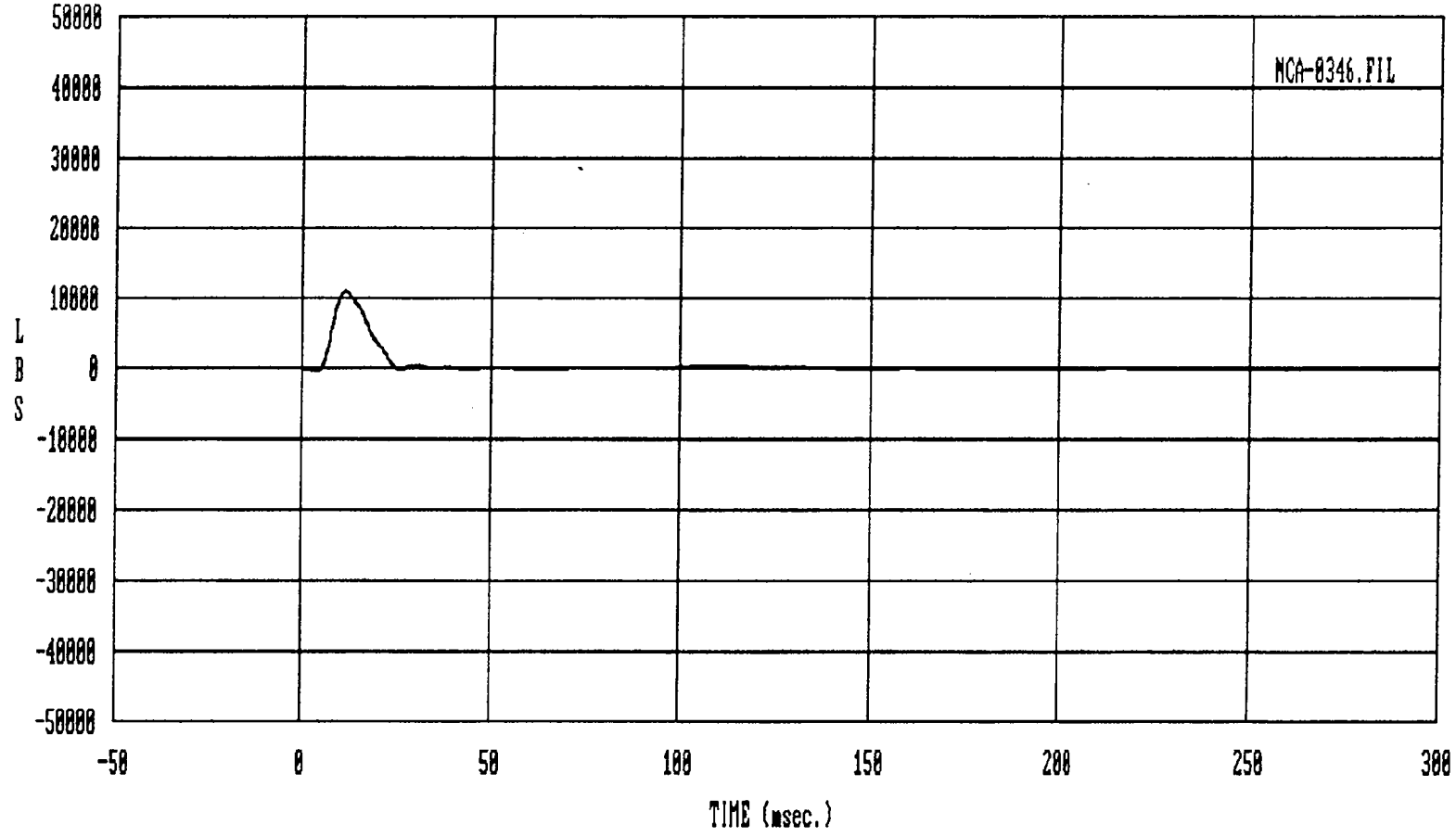
Curve: Force on Barrier load cell B4 Filter: SAE CLASS 60 Max = 21338. Min = -772.99

MSE Date: 10/11/98 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



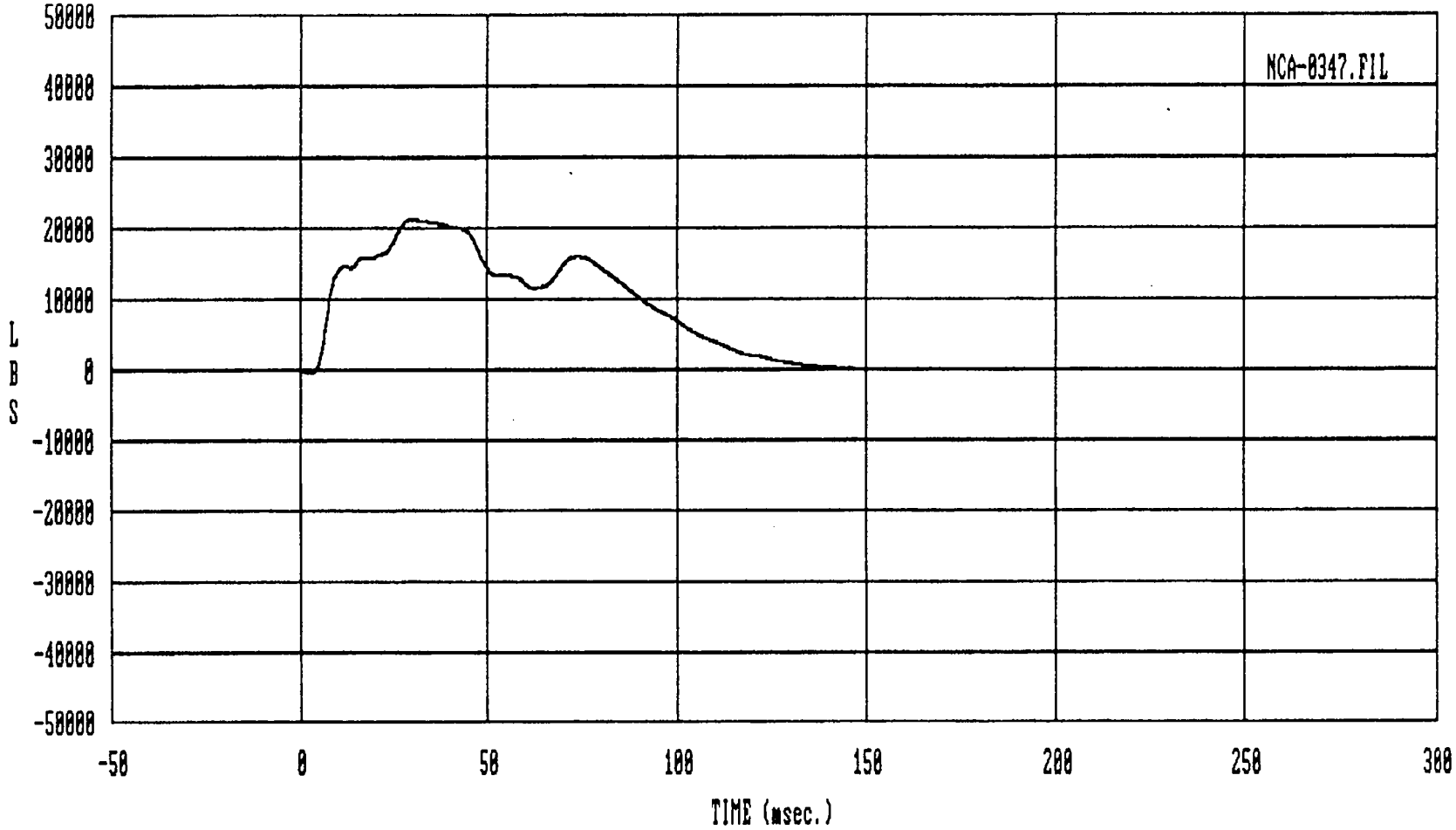
Curve: Force on Barrier load cell B5 Filter: SAE CLASS 60 Max = 1449.9 Min = -784.04

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



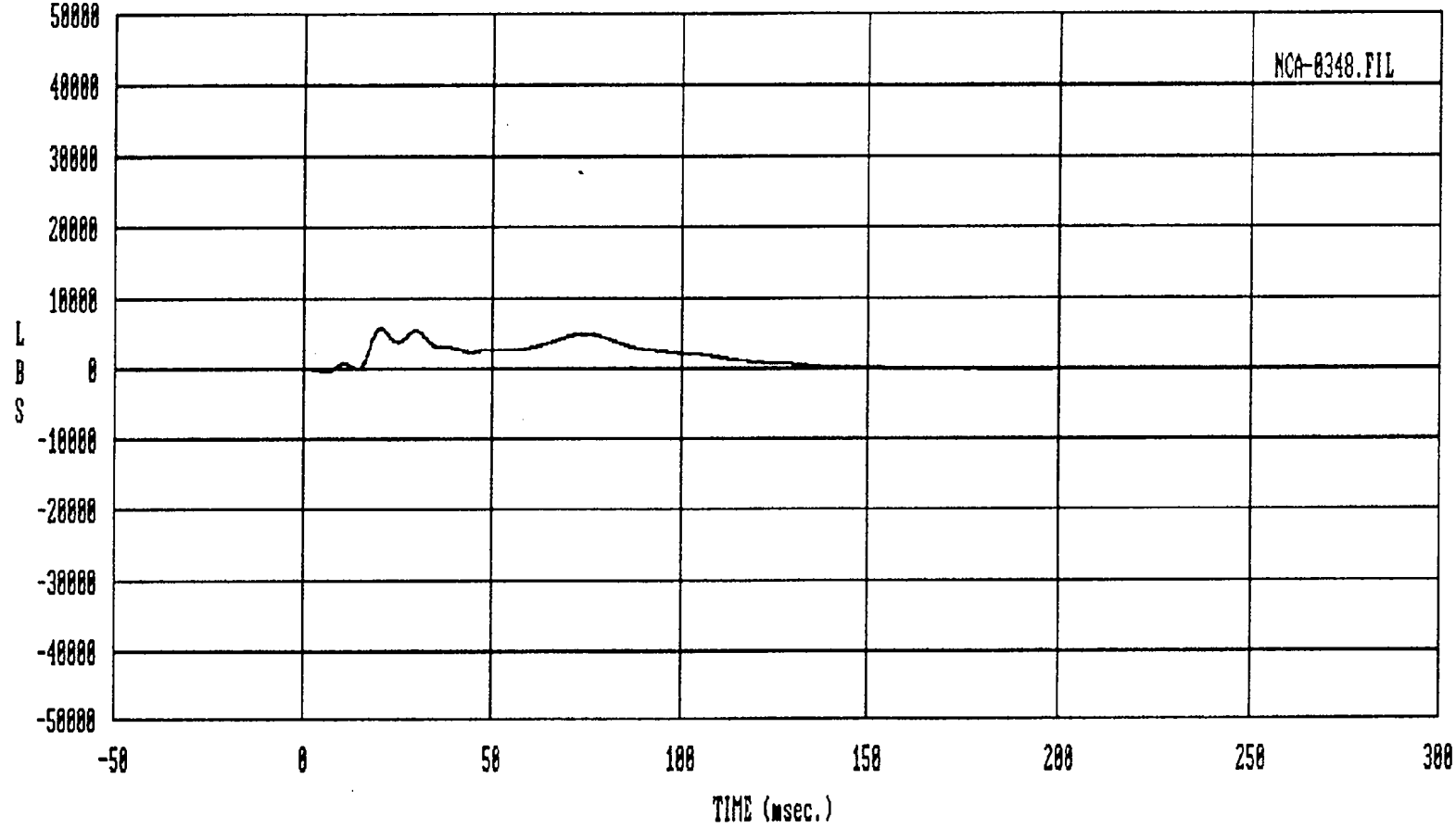
Curve: Force on Barrier load cell B6 Filter: SAE CLASS 60 Max = 10926. Min = -436.82

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



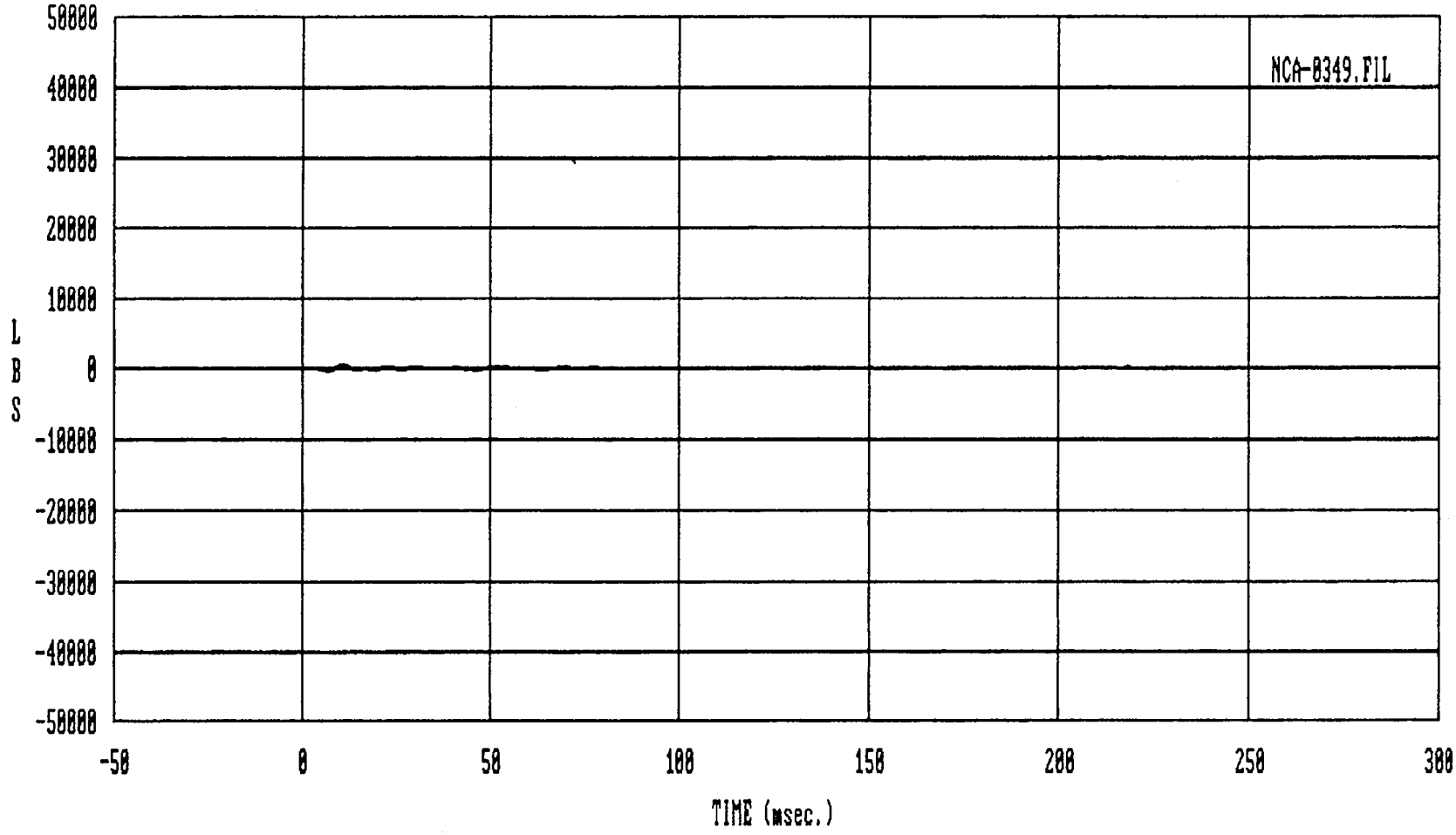
Curve: Force on Barrier load cell B7 Filter: SAE CLASS 60 Max = 21266. Min = -471.50

MSE Date: 10/11/98 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



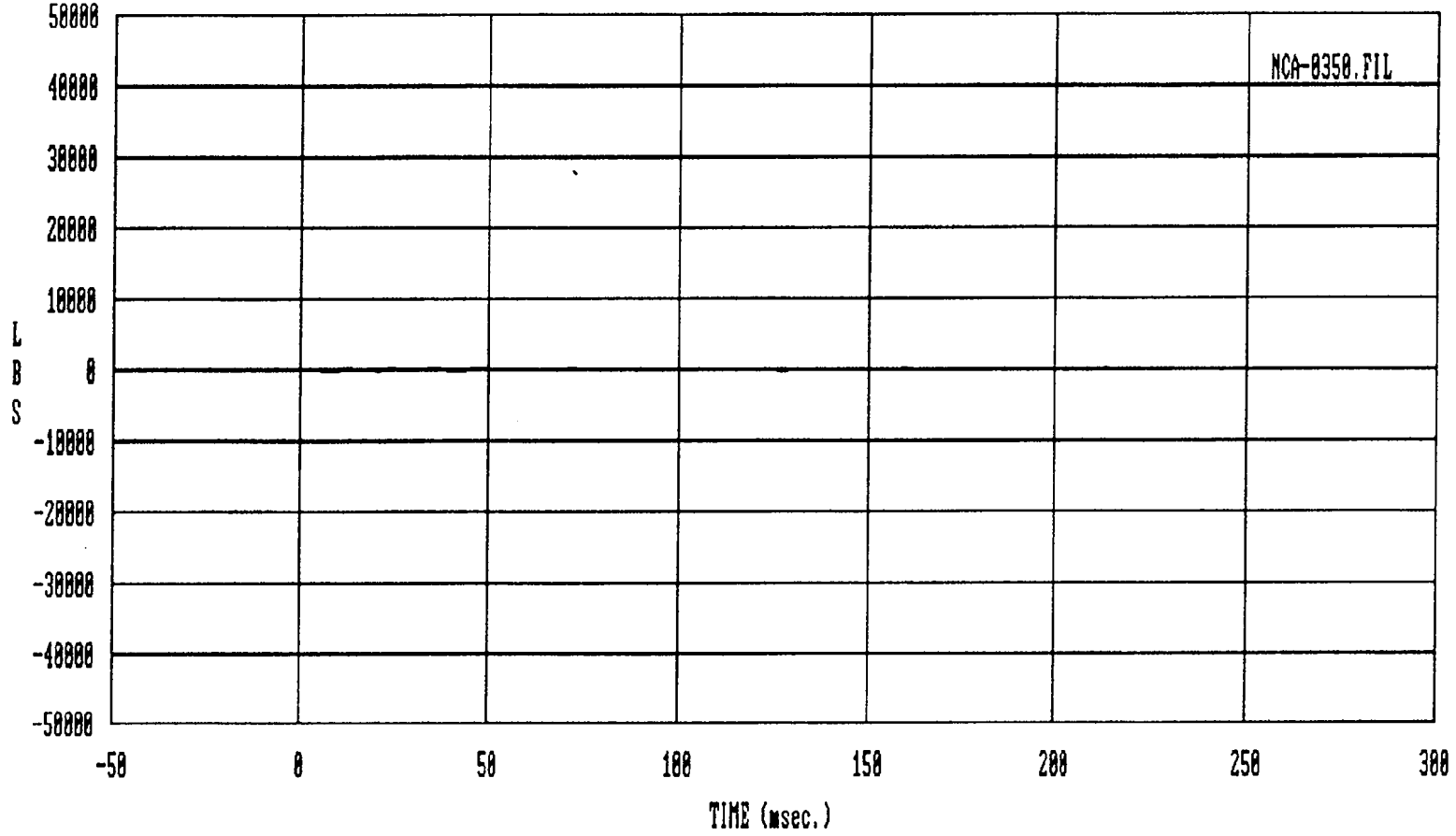
Curve: Force on Barrier load cell B8 Filter: SAE CLASS 60 Max = 5827.2 Min = -453.40

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



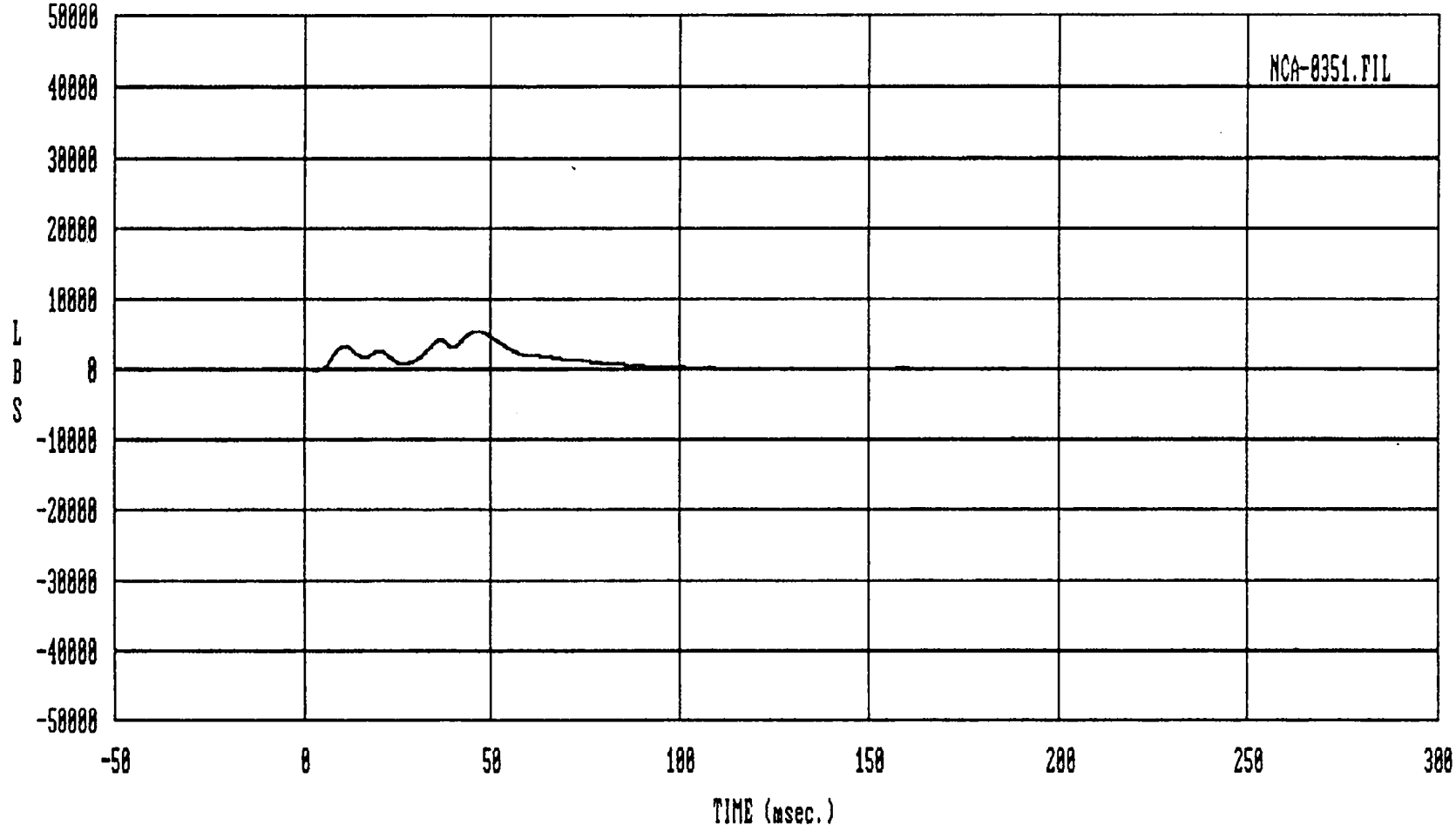
Curve: Force on Barrier load cell B9 Filter: SAE CLASS 60 Max = 552.14 Min = -329.48

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



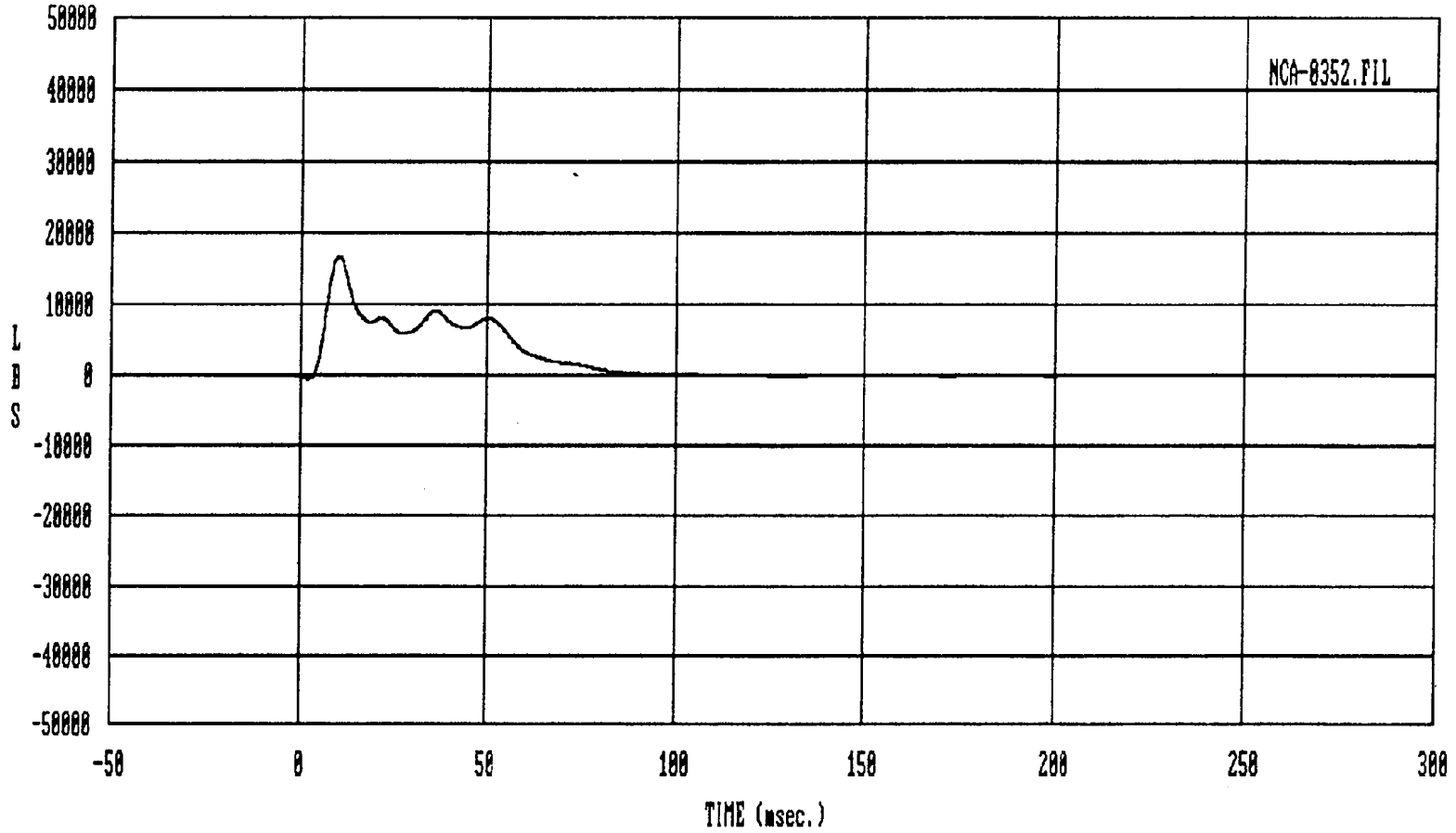
Curve: Force on Barrier load cell C1 Filter: SAE CLASS 60 Max = 265.56 Min = -258.41

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



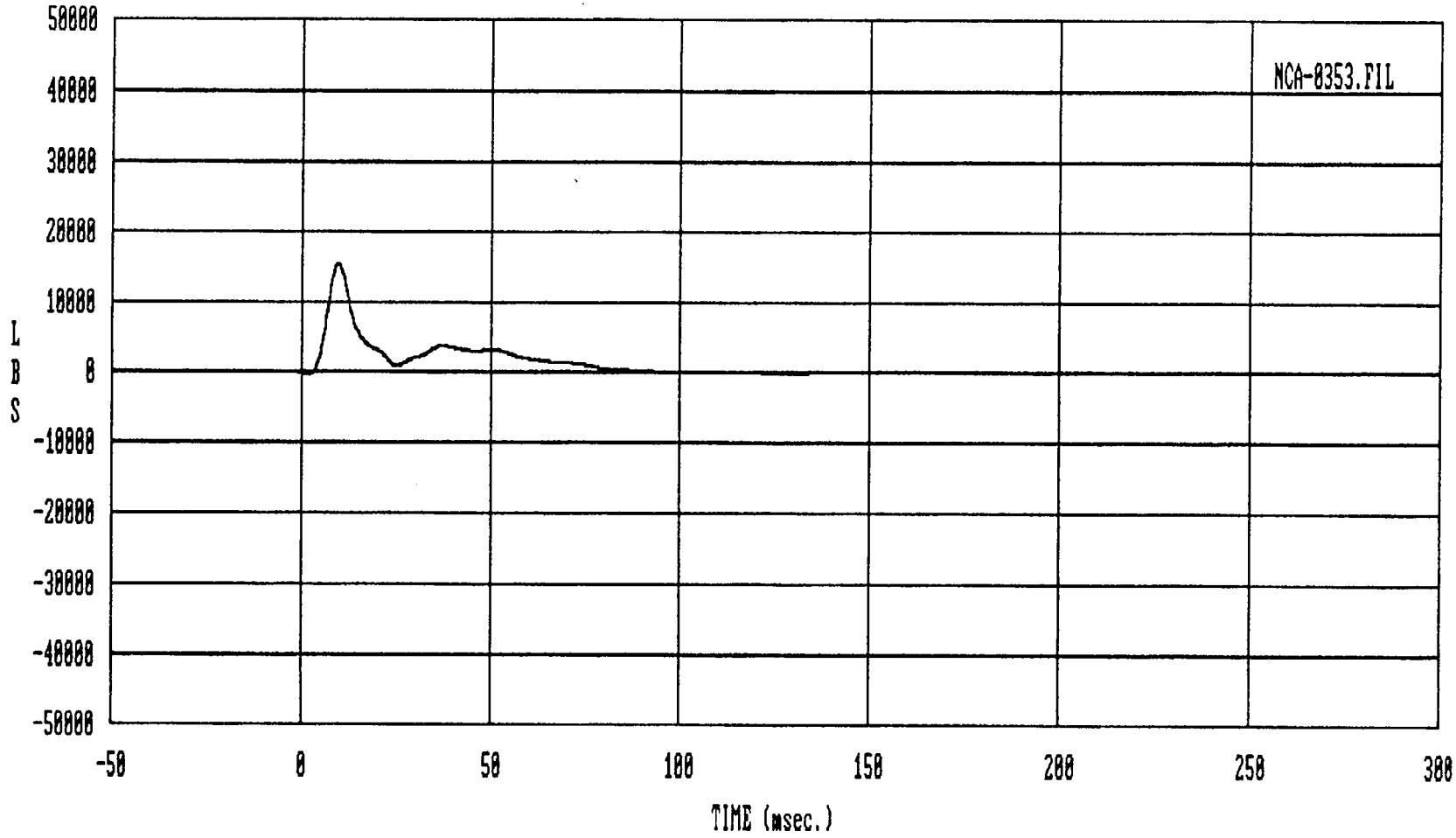
Curve: Force on Barrier load cell C2 Filter: SAE CLASS 60 Max = 5377.8 Min = -98.429

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



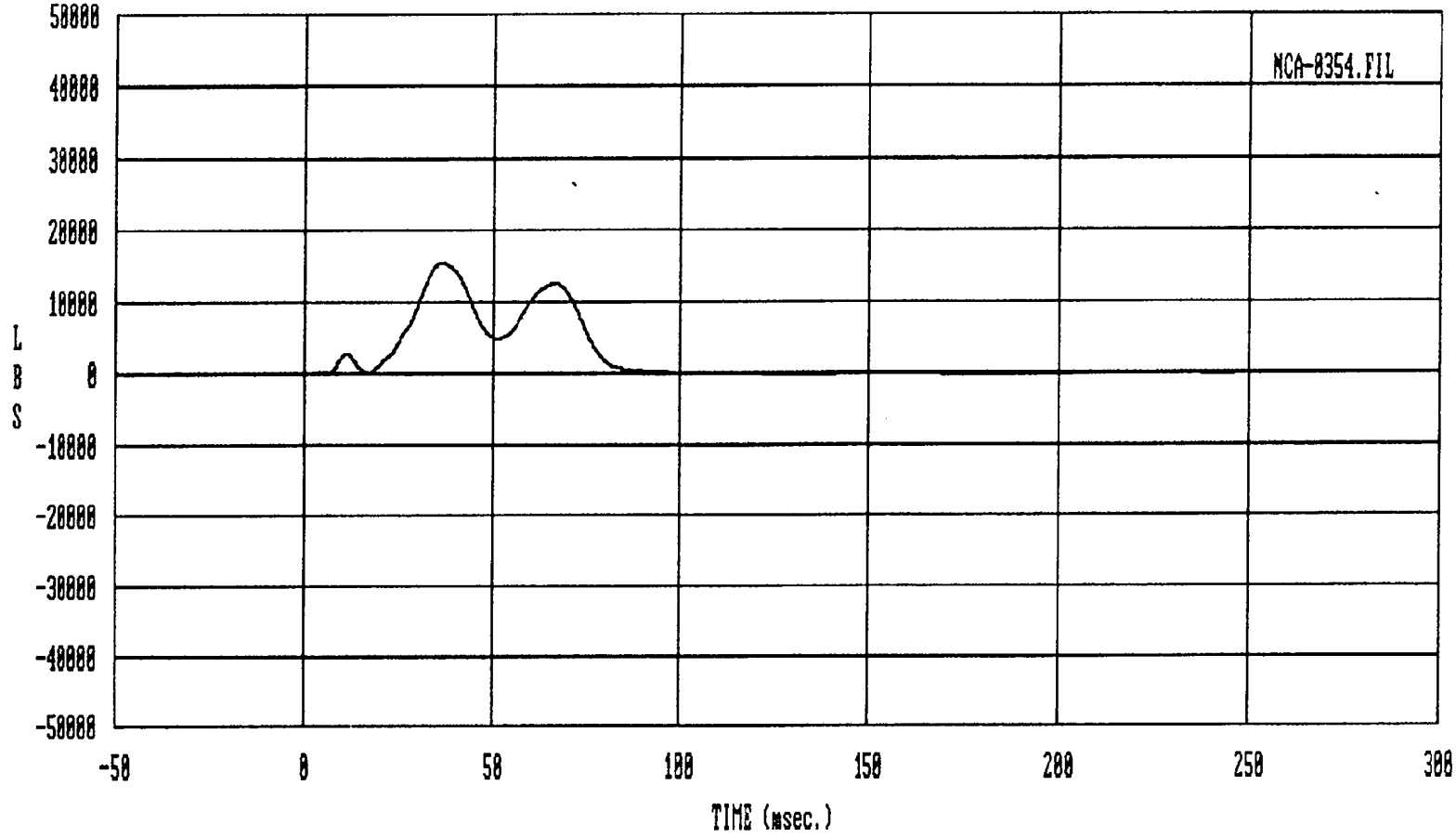
Curve: Force on Barrier load cell C3 Filter: SAE CLASS 60 Max = 16784. Min = -477.26

MSE Date: 10/11/98 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



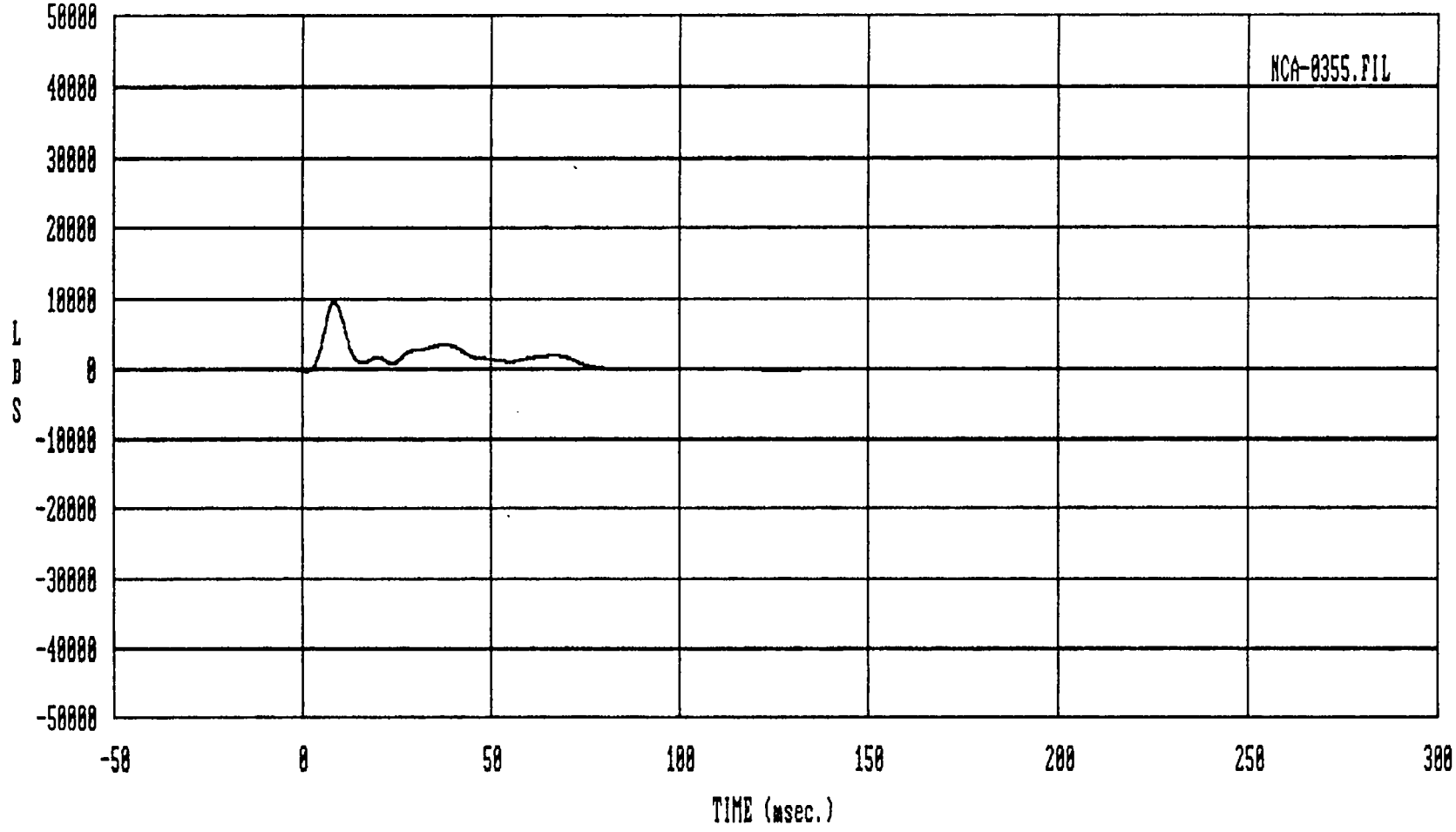
Curve: Force on Barrier load cell C4 Filter: SAE CLASS 60 Max = 15464. Min = -362.59

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



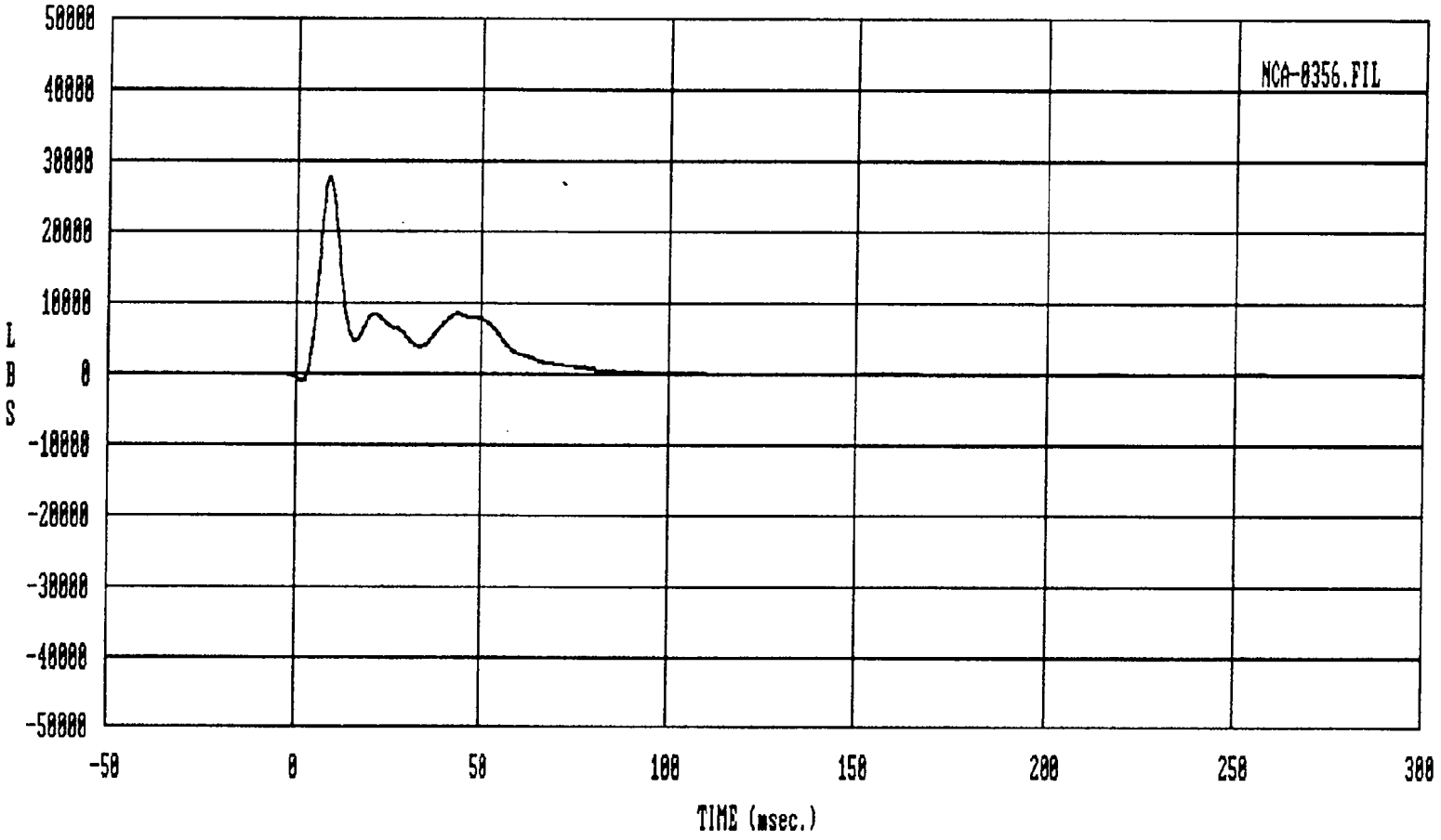
Curve: Force on Barrier load cell C5 Filter: SAE CLASS 60 Max = 15592. Min = -138.27

MSE Date: 10/11/98 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



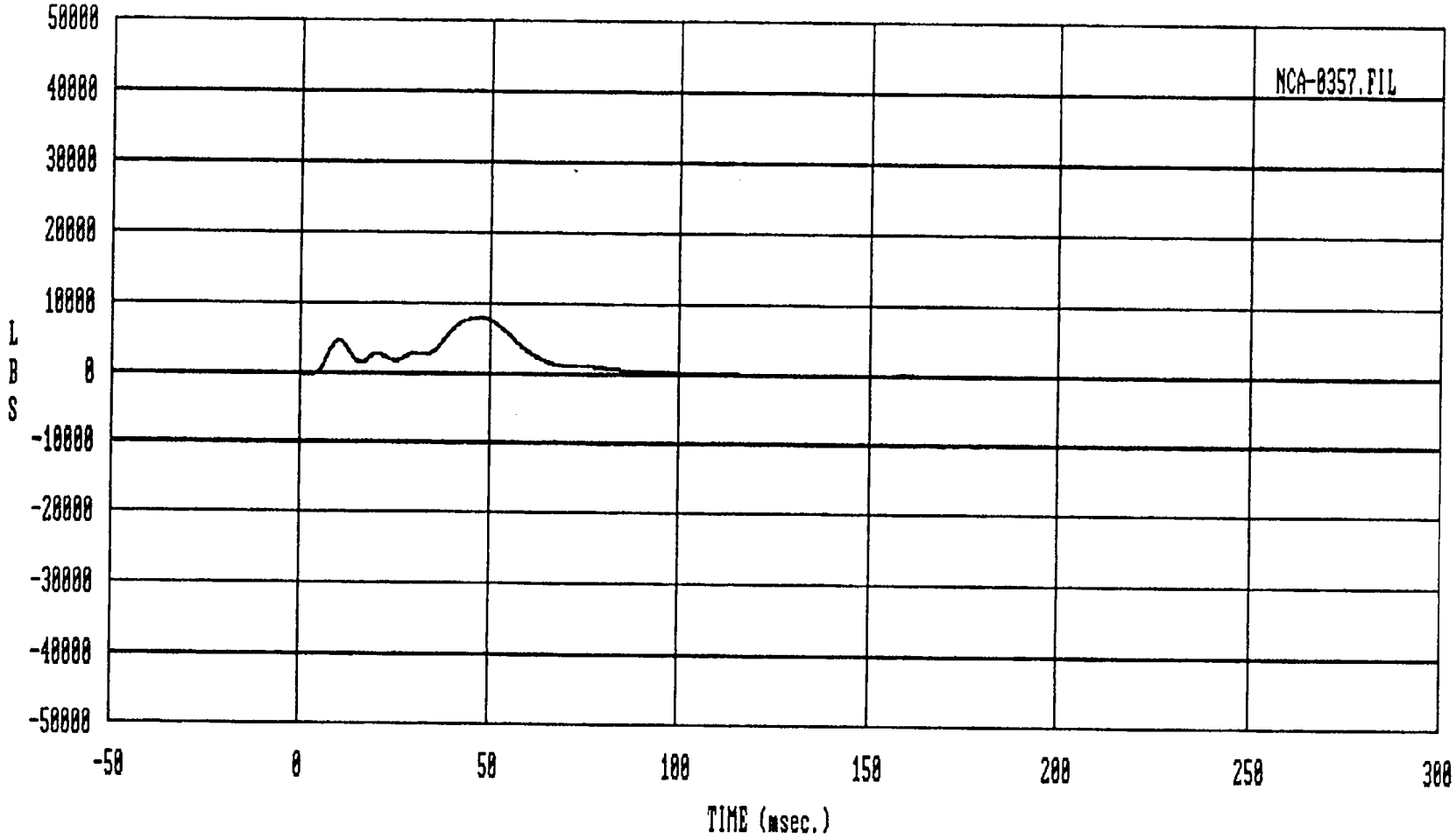
Curve: Force on Barrier load cell C6 Filter: SAE CLASS 60 Max = 9641.8 Min = -295.66

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



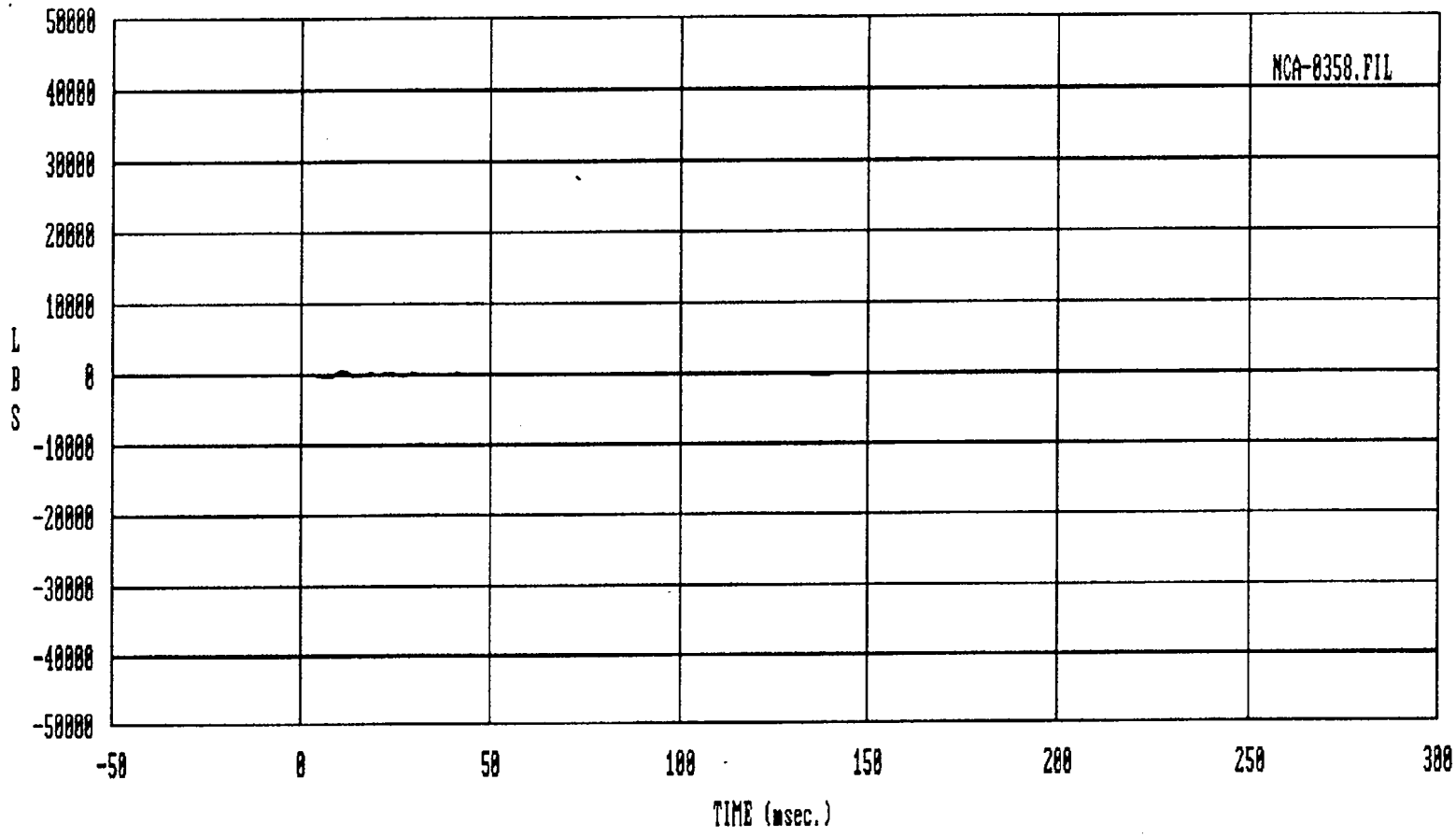
Curve: Force on Barrier load cell C7 Filter: SAE CLASS 60 Max = 27786. Min = -874.31

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



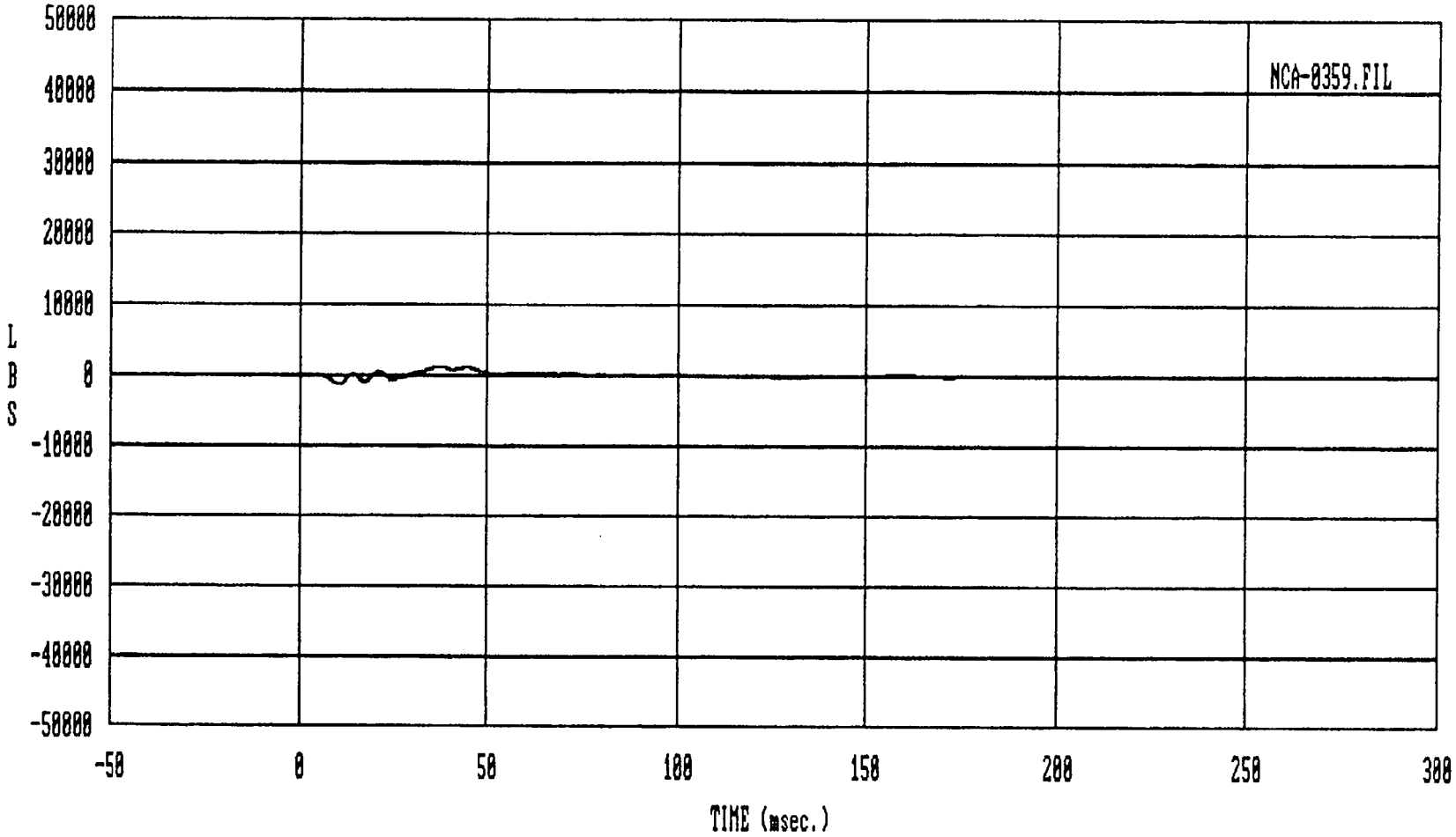
Curve: Force on Barrier load cell C8 Filter: SAE CLASS 60 Max = 7999.4 Min = -171.54

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



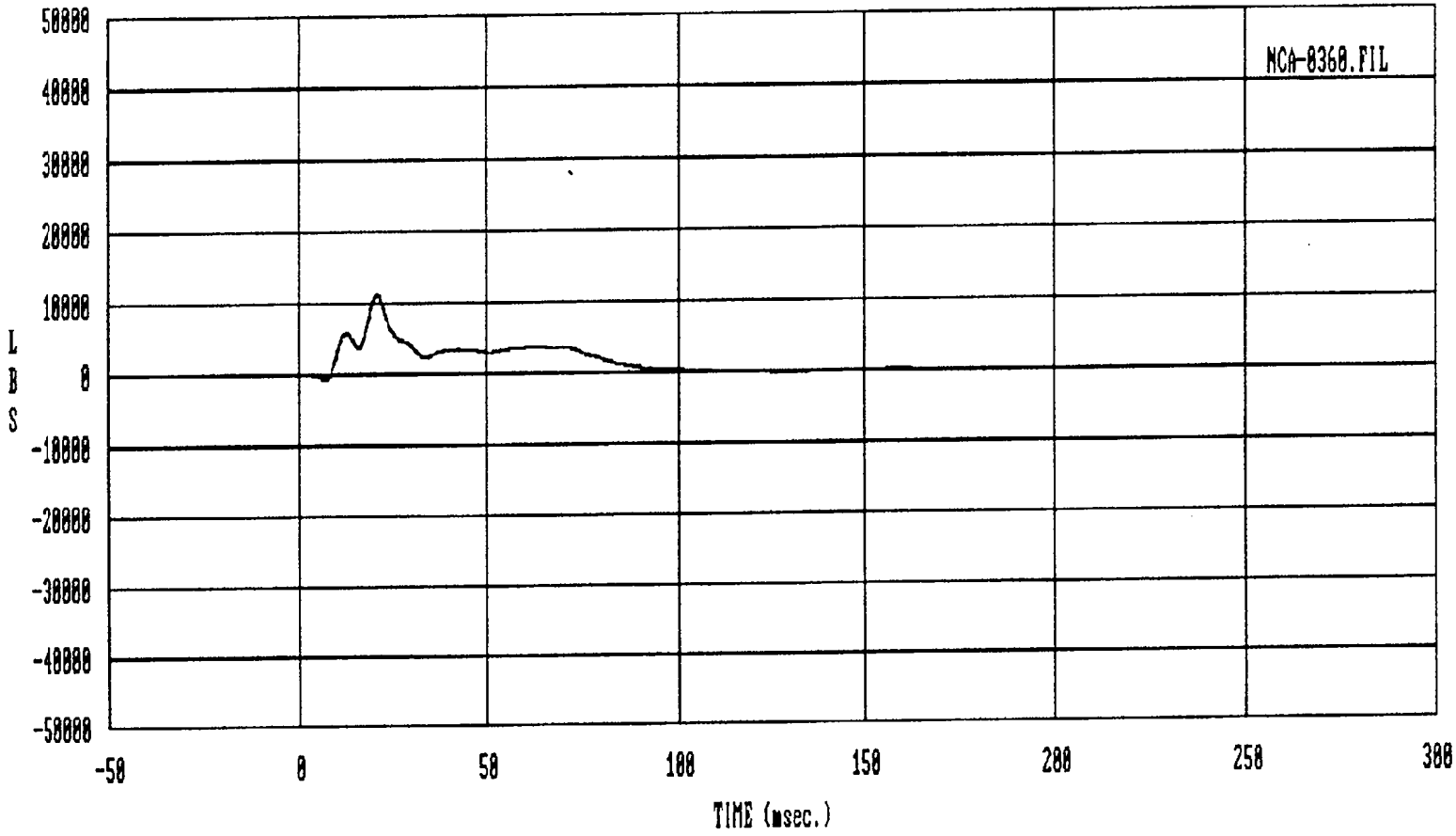
Curve: Force on Barrier load cell C9 Filter: SAE CLASS 60 Max = 569.38 Min = -489.42

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



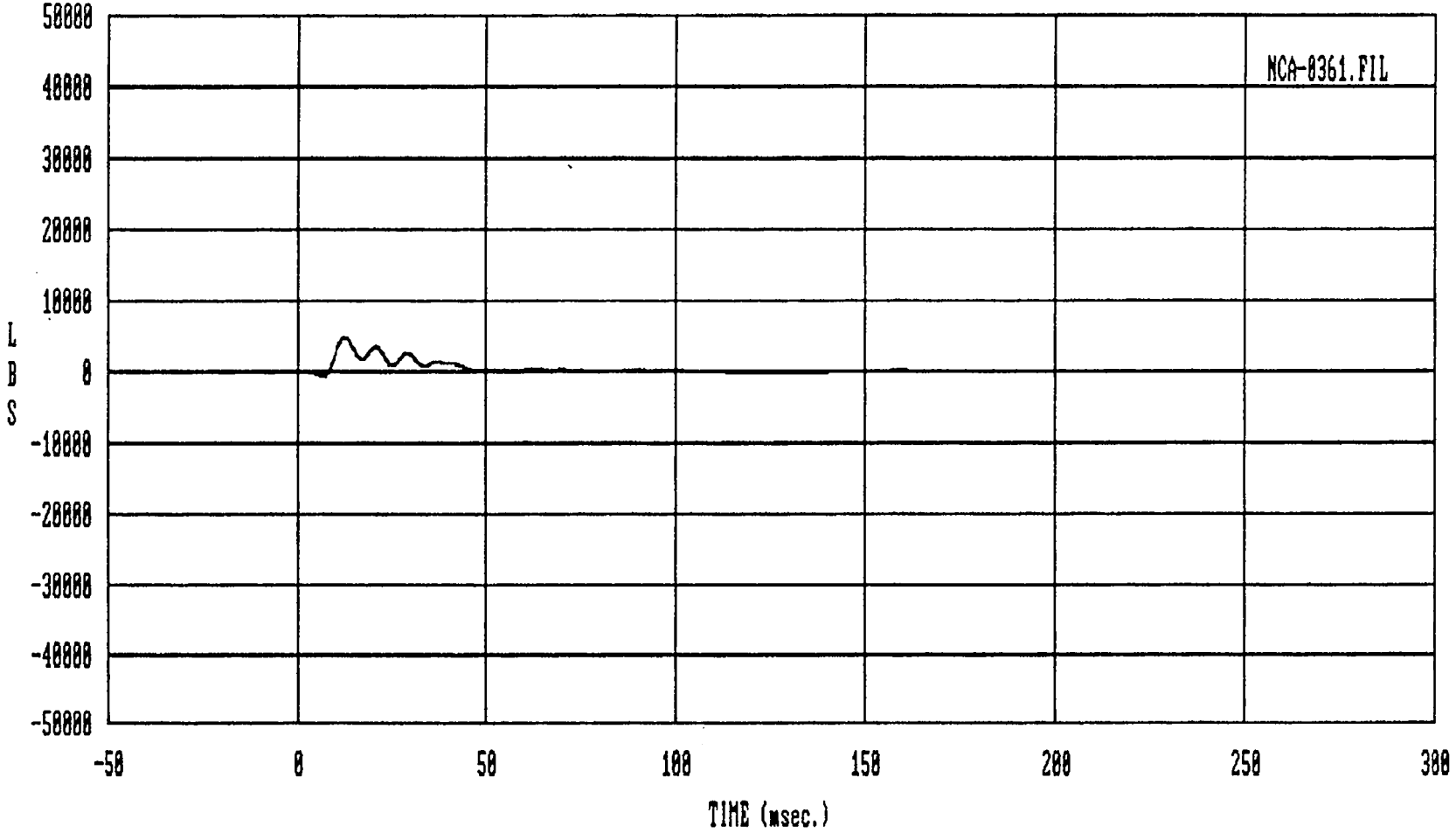
Curve: Force on Barrier load cell D1 Filter: SAE CLASS 60 Max = 1292.1 Min = -1197.9

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



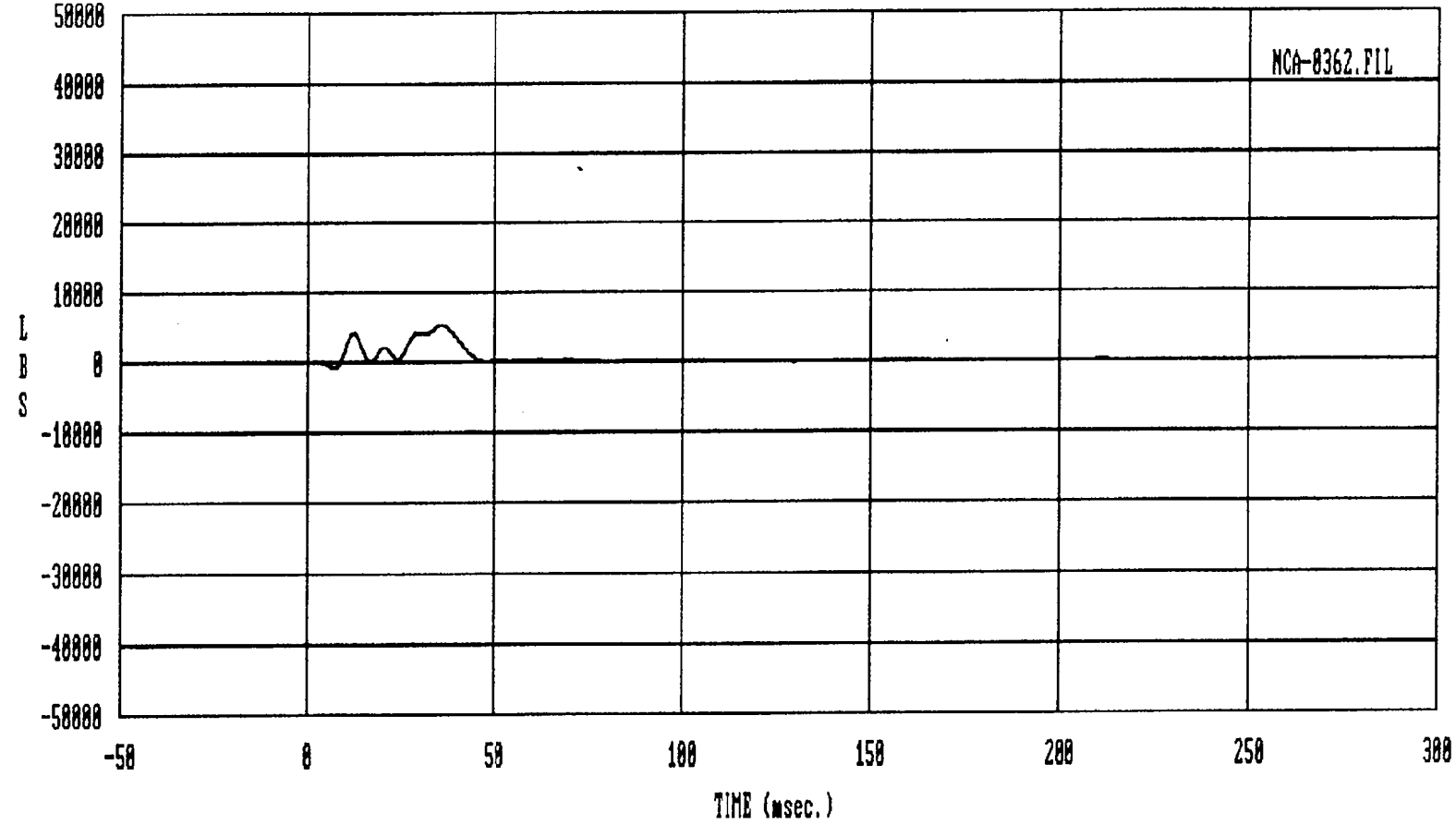
Curve: Force on Barrier load cell D2 Filter: SAE CLASS 60 Max = 11118. Min = -559.67

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



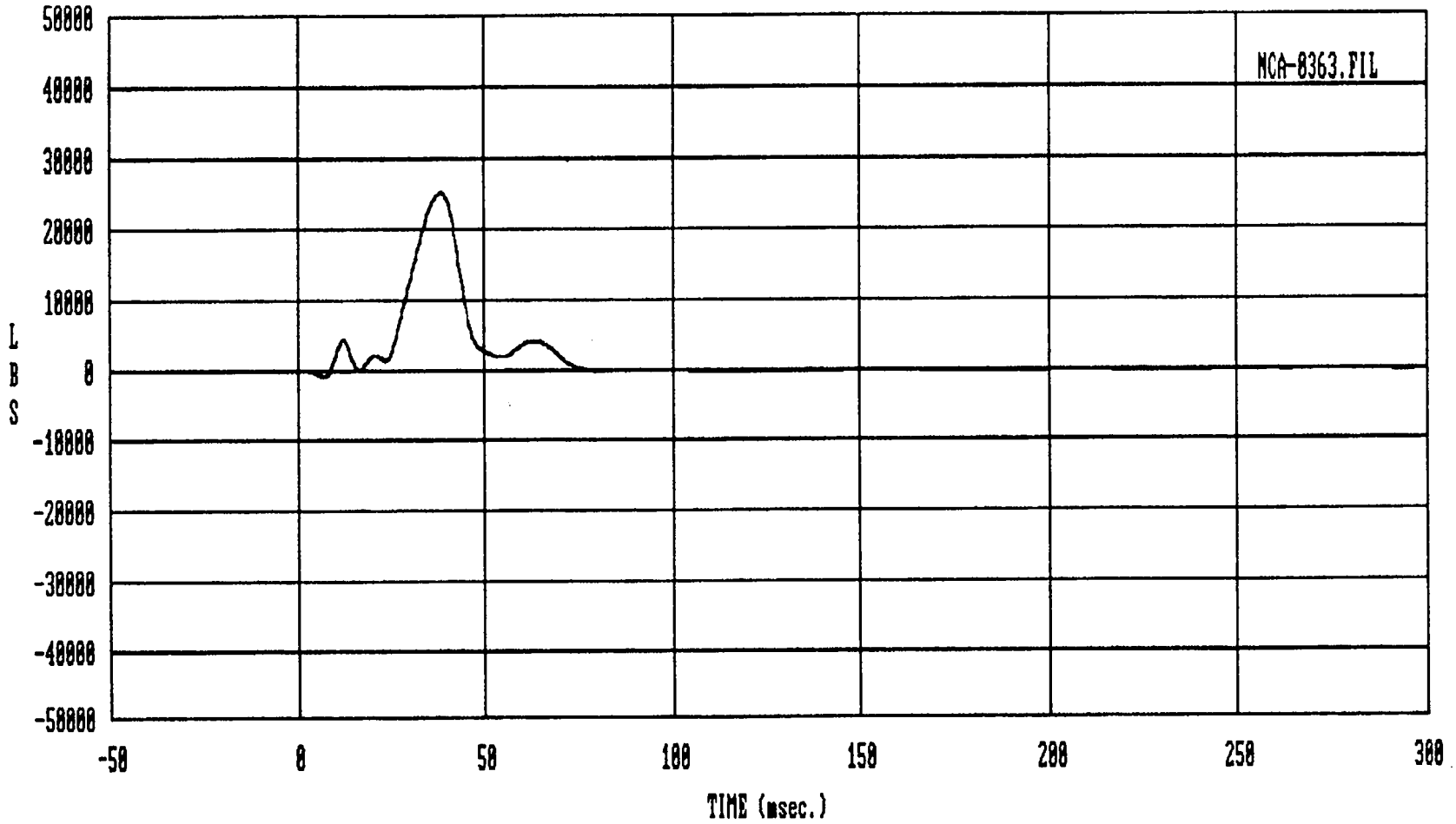
Curve: Force on Barrier load cell D3 Filter: SAE CLASS 60 Max = 4827.1 Min = -553.72

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



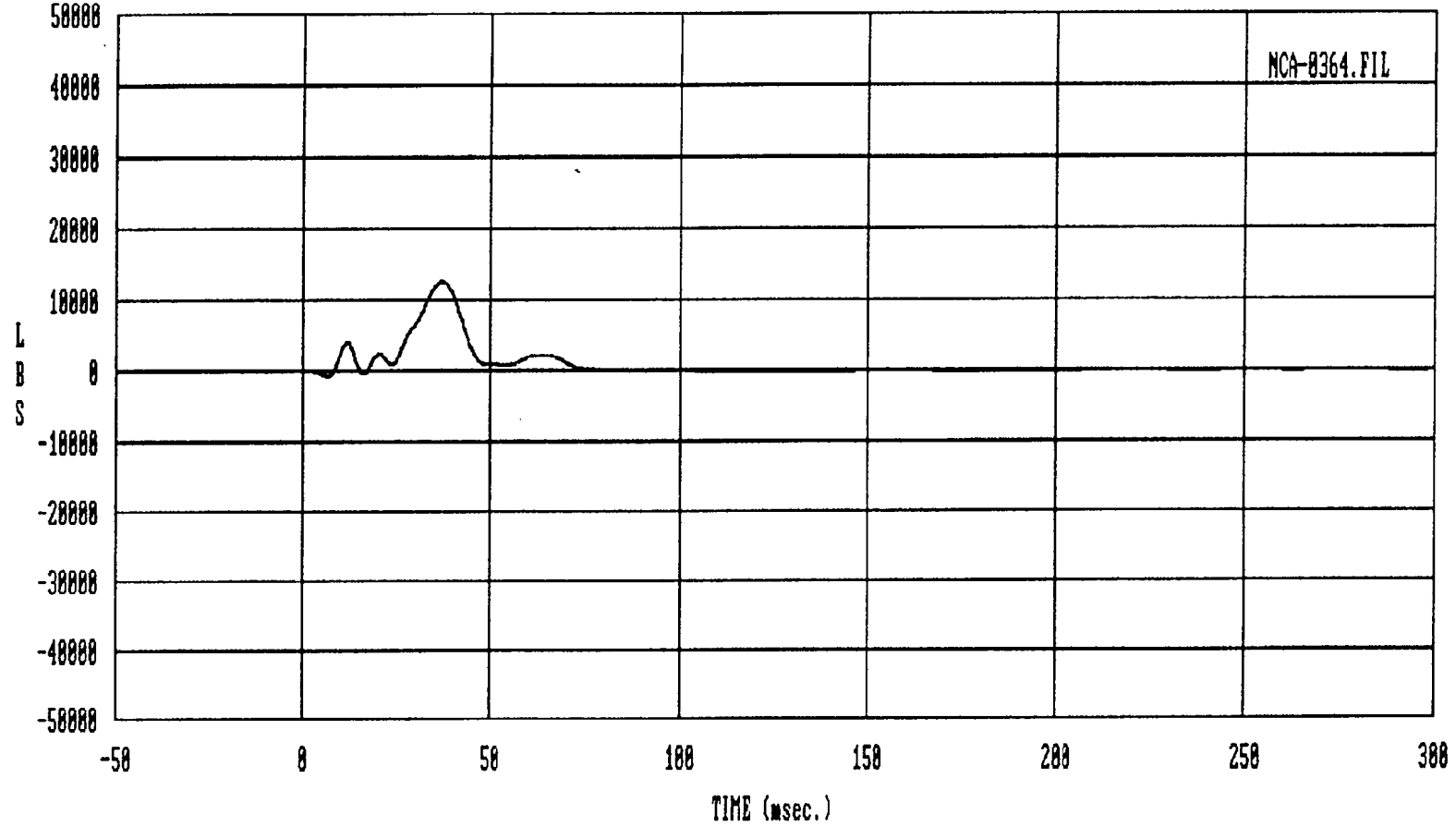
Curve: Force on Barrier load cell D4 Filter: SAE CLASS 60 Max = 5379.7 Min = -748.77

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



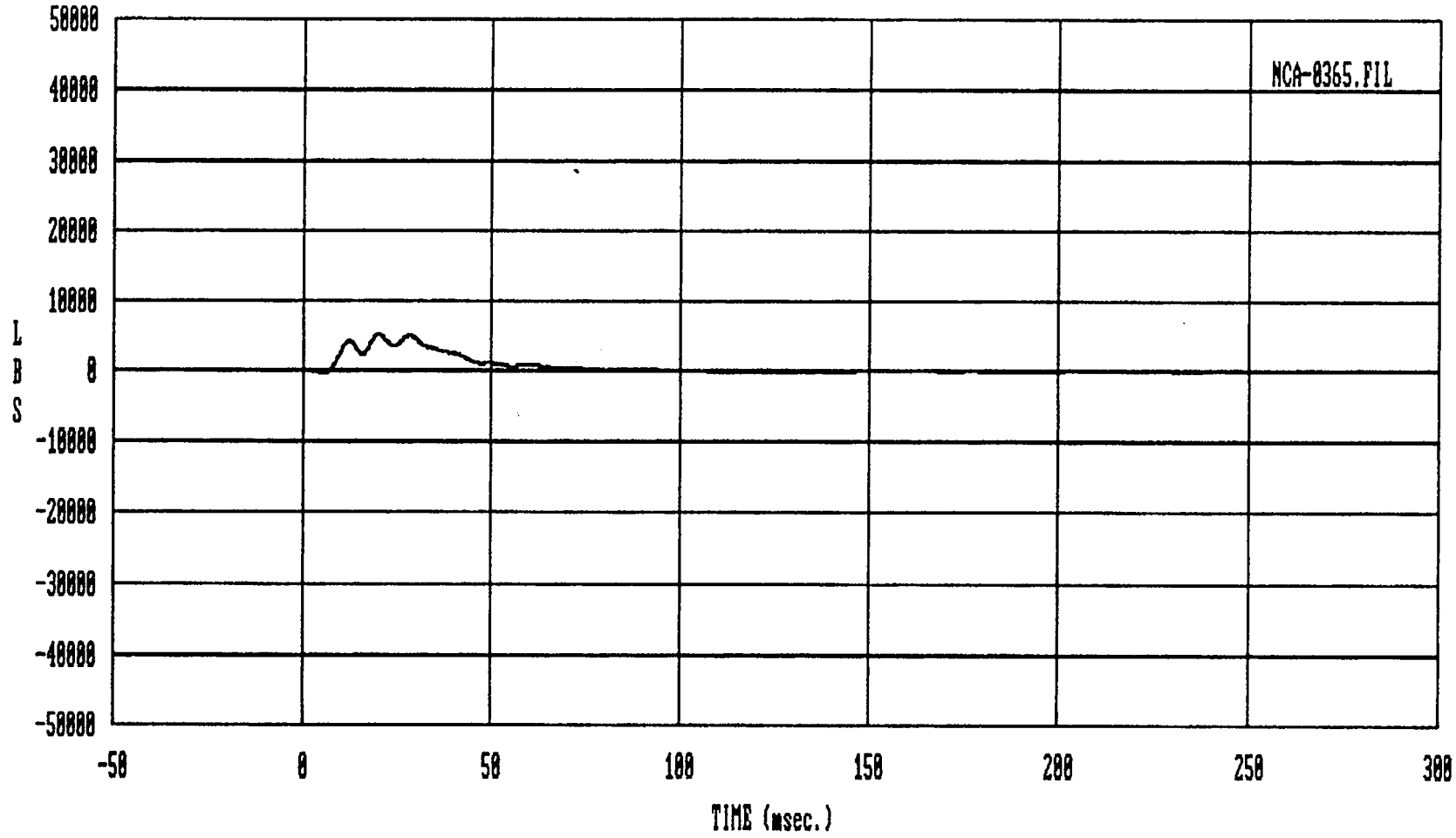
Curve: Force on Barrier load cell D5 Filter: SAE CLASS 60 Max = 25259. Min = -814.64

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



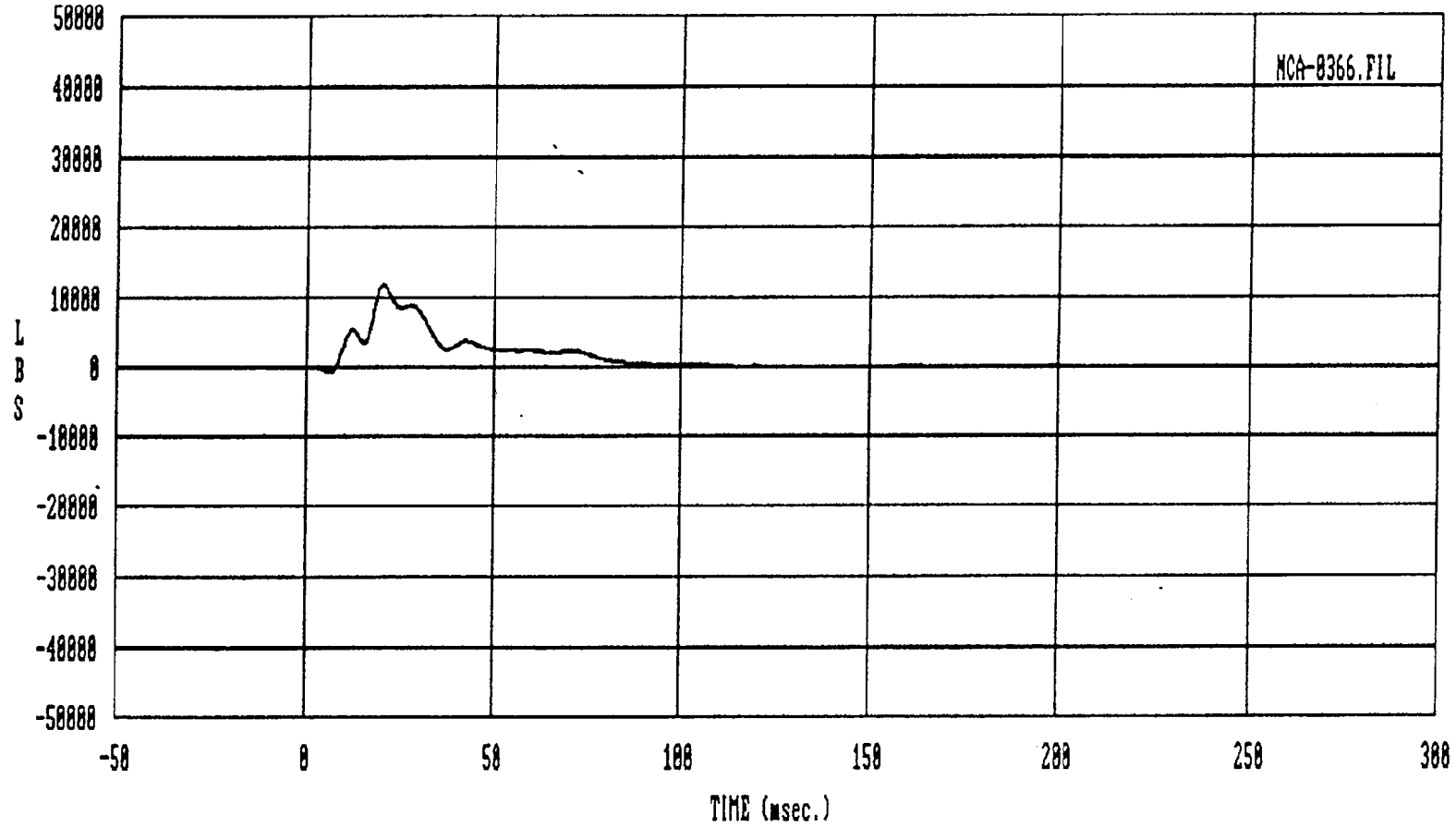
Curve: Force on Barrier load cell D6 Filter: SAE CLASS 60 Max = 12546. Min = -728.34

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



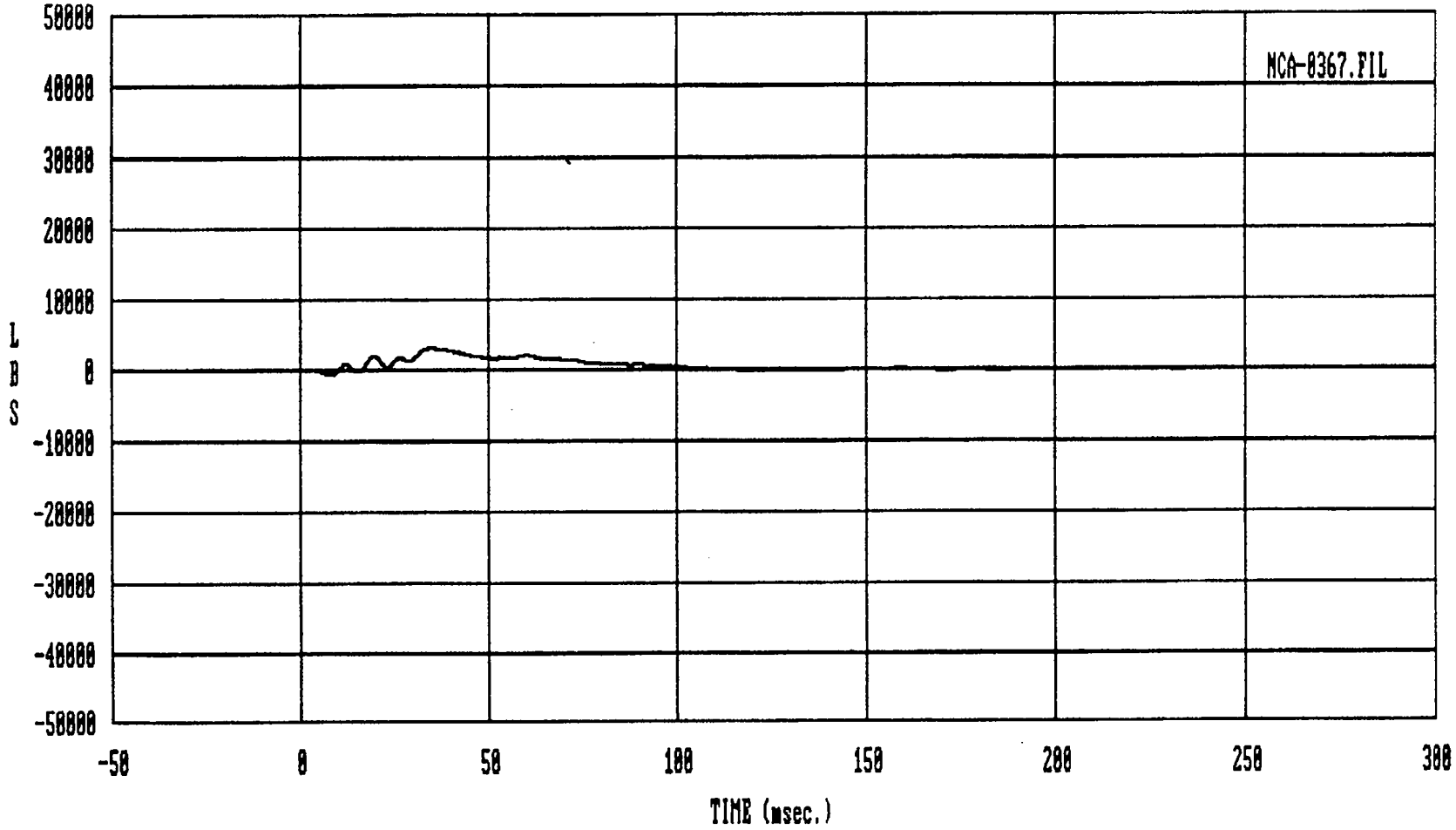
Curve: Force on Barrier load cell D7 Filter: SAE CLASS 60 Max = 5260.5 Min = -347.63

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



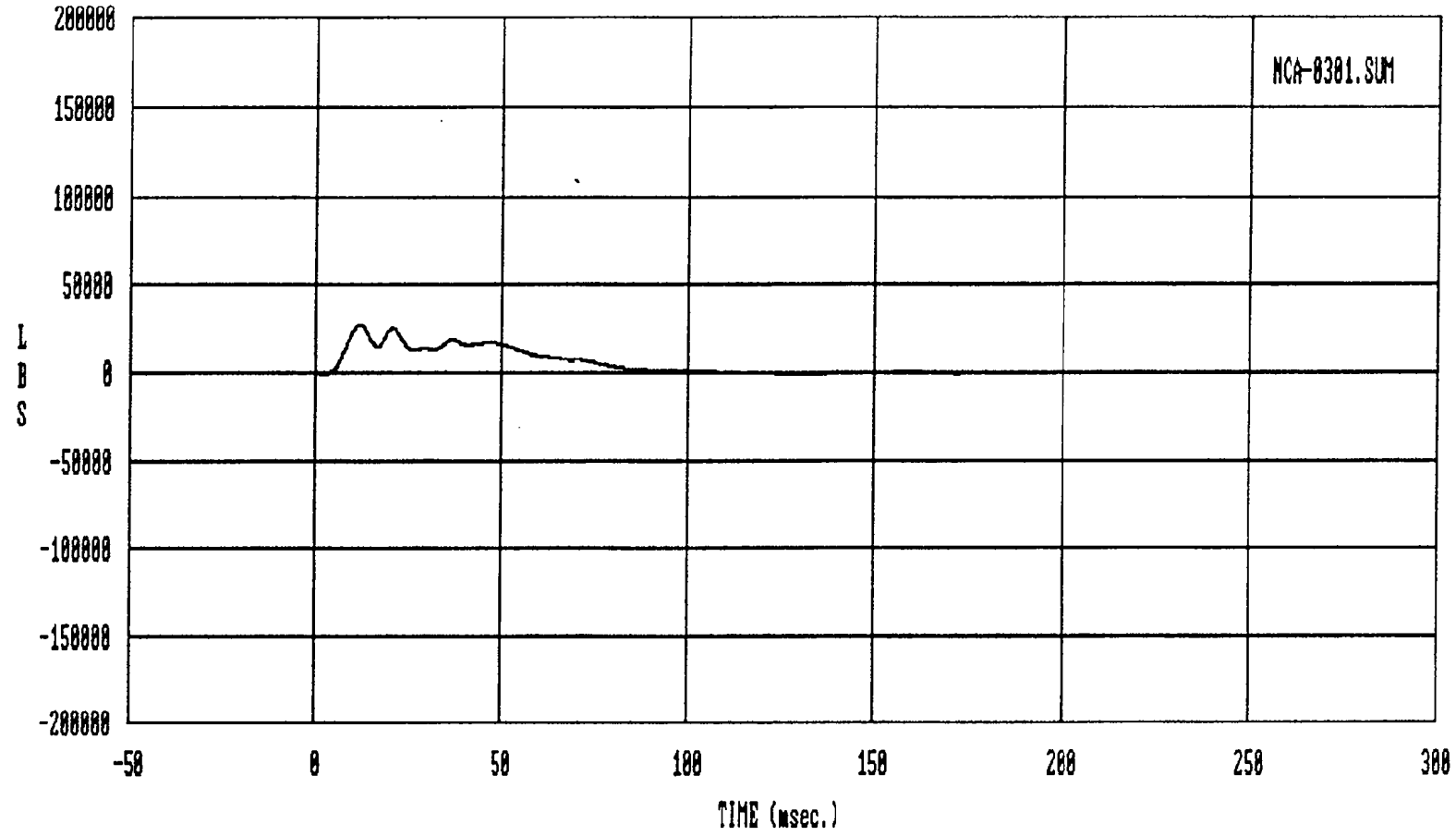
Curve: Force on Barrier load cell D8 Filter: SAE CLASS 60 Max = 11989. Min = -621.57

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



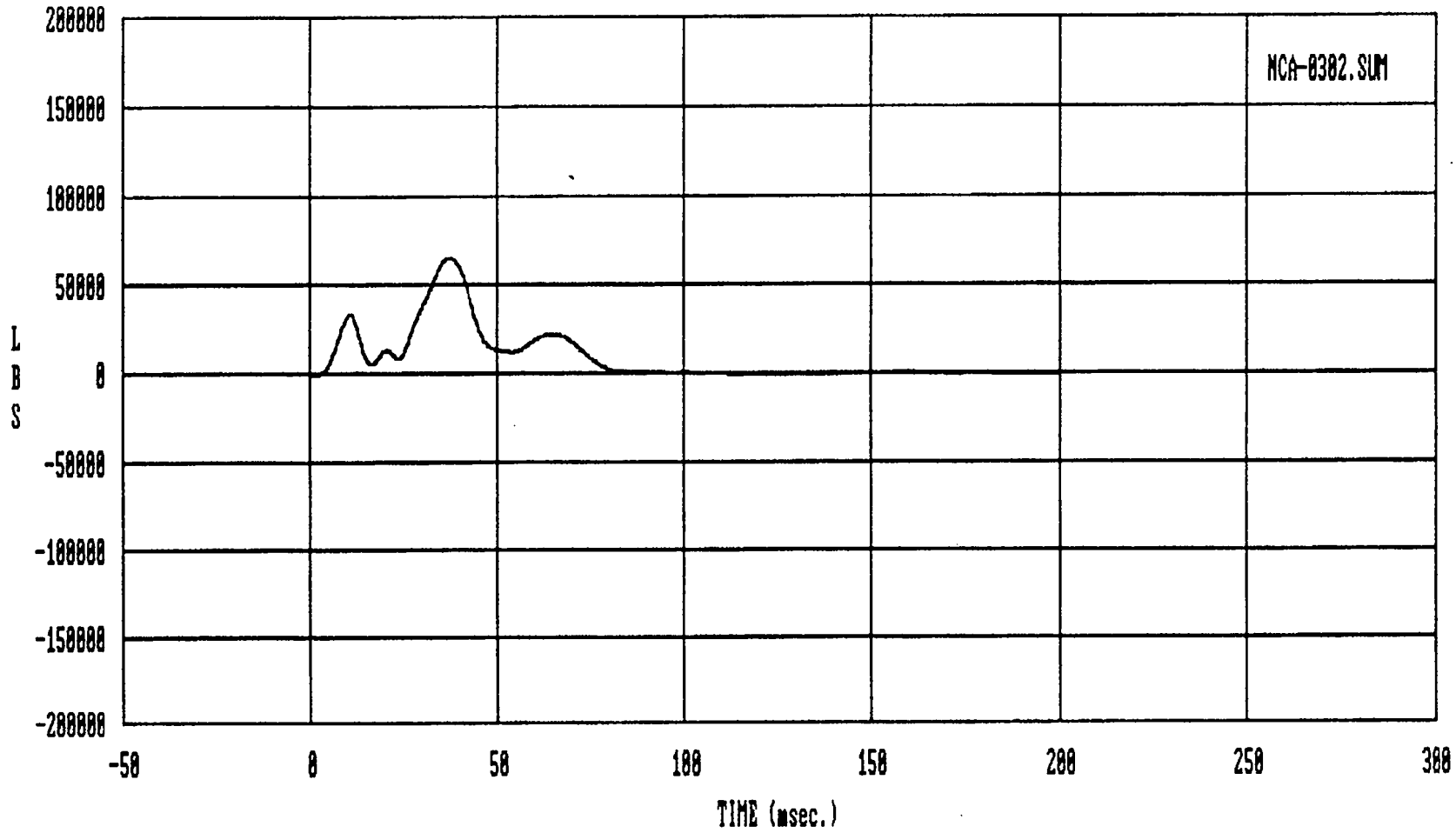
Curve: Force on Barrier load cell D9 Filter: SAE CLASS 60 Max = 3111.3 Min = -656.43

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



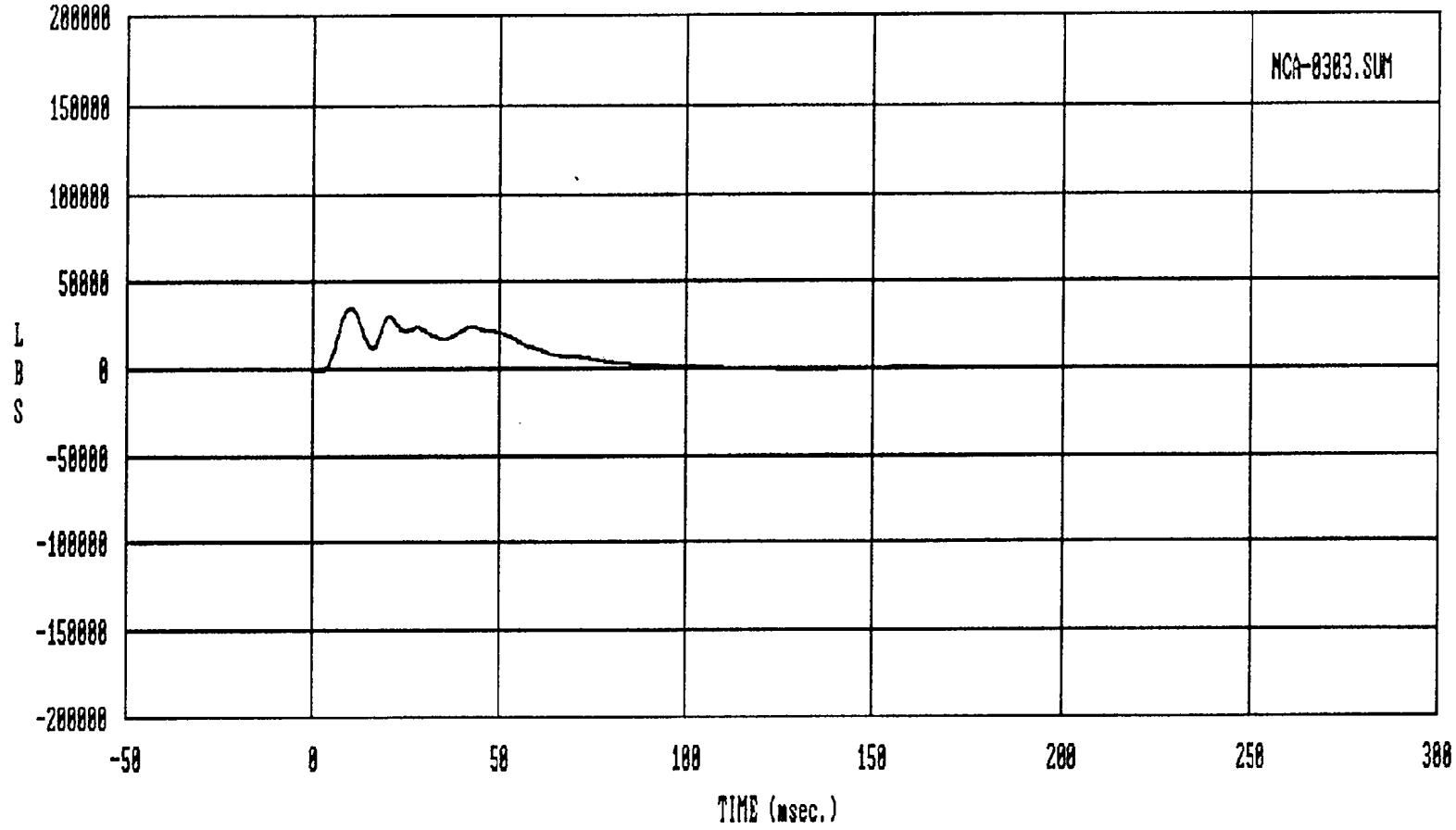
Curve: LCB sum force C1,C2,C3,D1,D2,D3 -- Group 1 Filter: SAE CLASS 60 Max = 27738. Min = -685.87

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



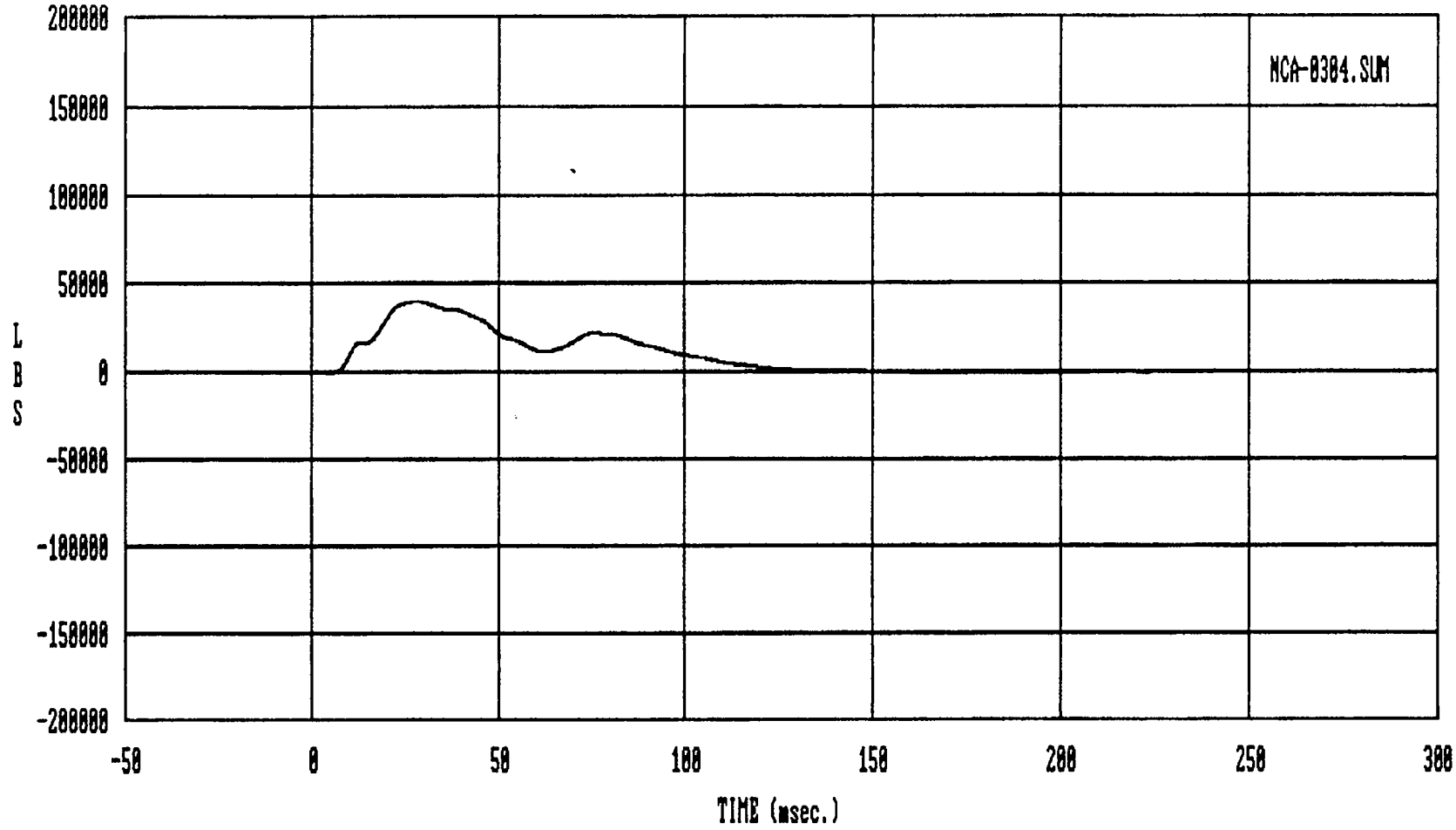
Curve: LCB sum force C4,C5,C6,D4,D5,D6 — Group 2 Filter: SAE CLASS 60 Max = 65398. Min = -873.15

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



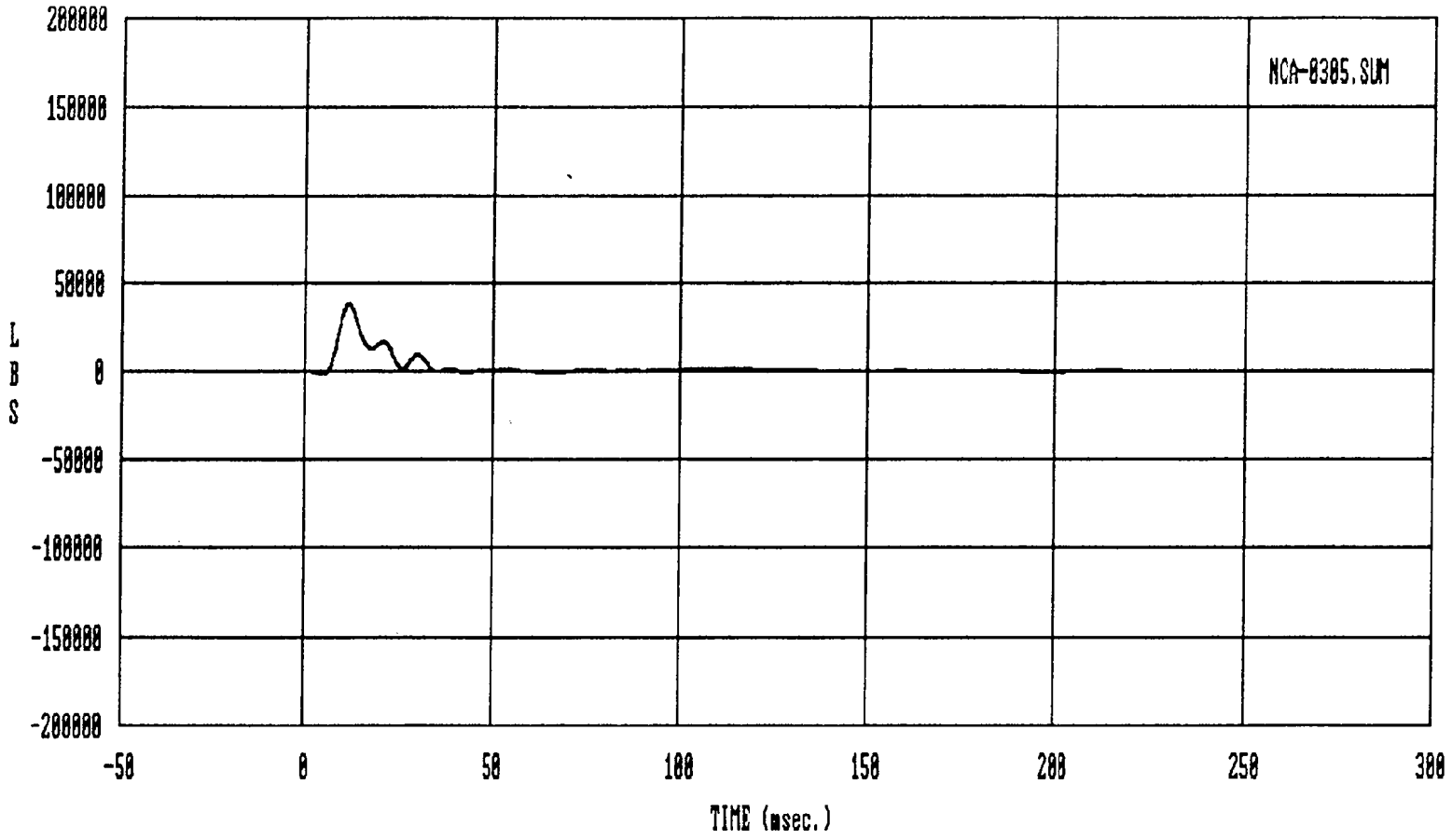
Curve: LCB sum force C7,C8,C9,D7,D8,D9 — Group 3 Filter: SAE CLASS 60 Max = 35361. Min = -988.67

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



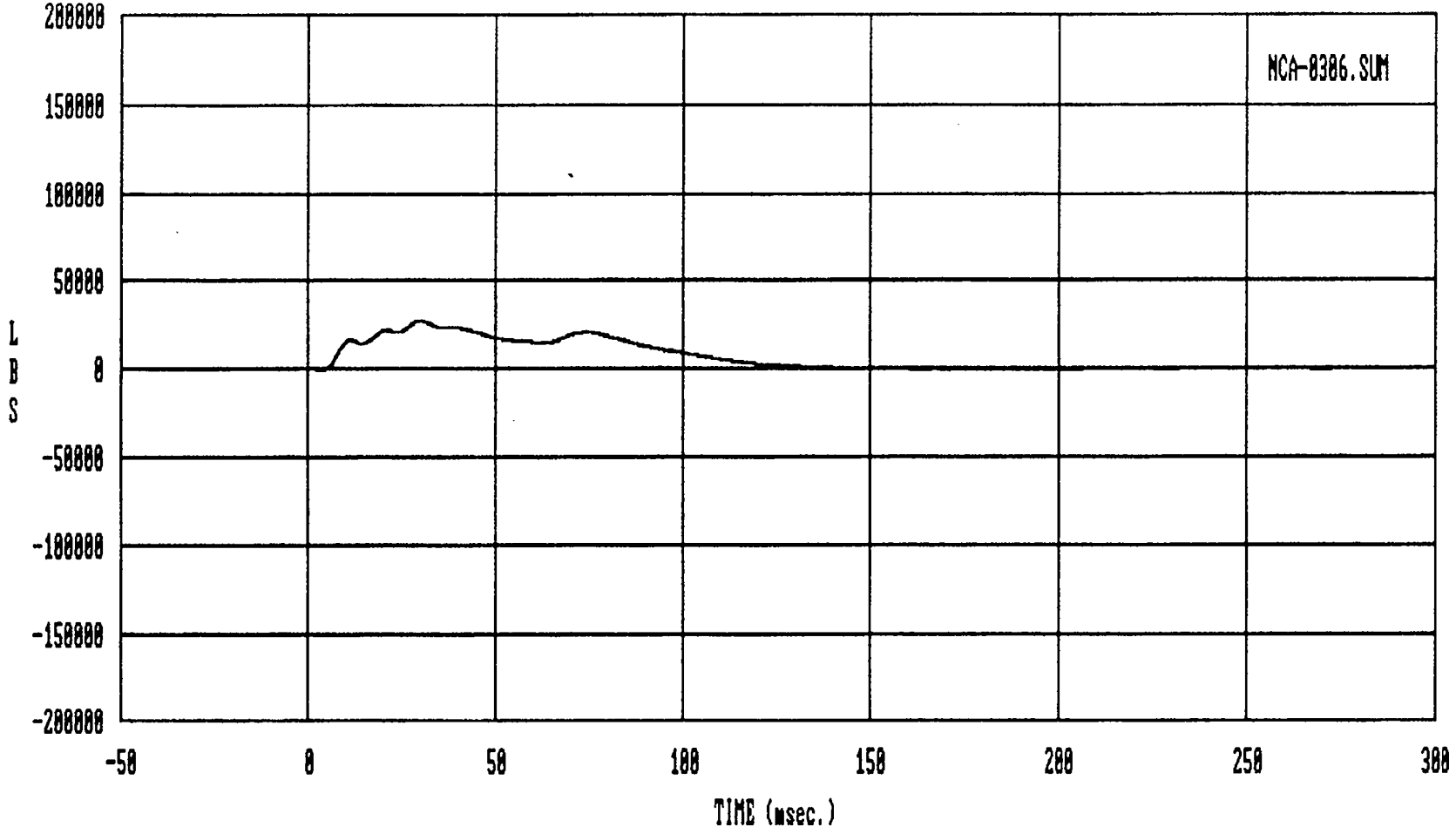
Curve: LCB sum force A1,A2,A3,B1,B2,B3 -- Group 4 Filter: SAE CLASS 60 Max = 40028. Min = -704.36

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



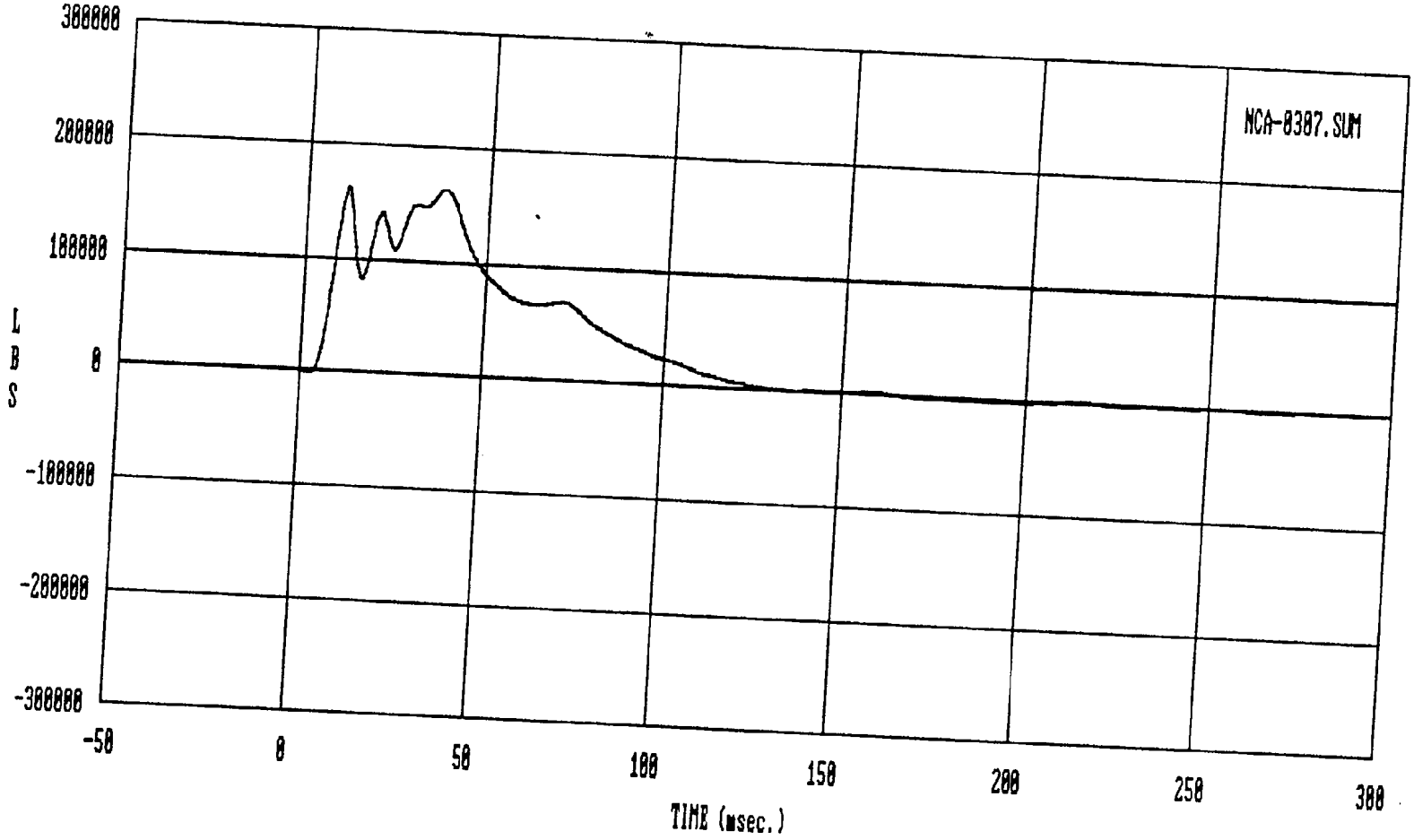
Curve: LCB sum force A4,A5,A6,B4,B5,B6 — Group 5 Filter: SAE CLASS 60 Max = 38553. Min = -1797.0

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



Curve: LCB sum force A7,A8,A9,B7,B8,B9 — Group 6 Filter: SAE CLASS 60 Max = 27557. Min = -652.24

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER



Curve: Load Cell Barrier total force Filter: SAE CLASS 60 Max = .16419E+06 Min = -2747.2

MSE Date: 10/11/90 Program: 1991 NEW CAR ASSESSMENT #3 Vehicle: 1991 FORD EXPLORER

APPENDIX C

PART 572 DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION TESTS

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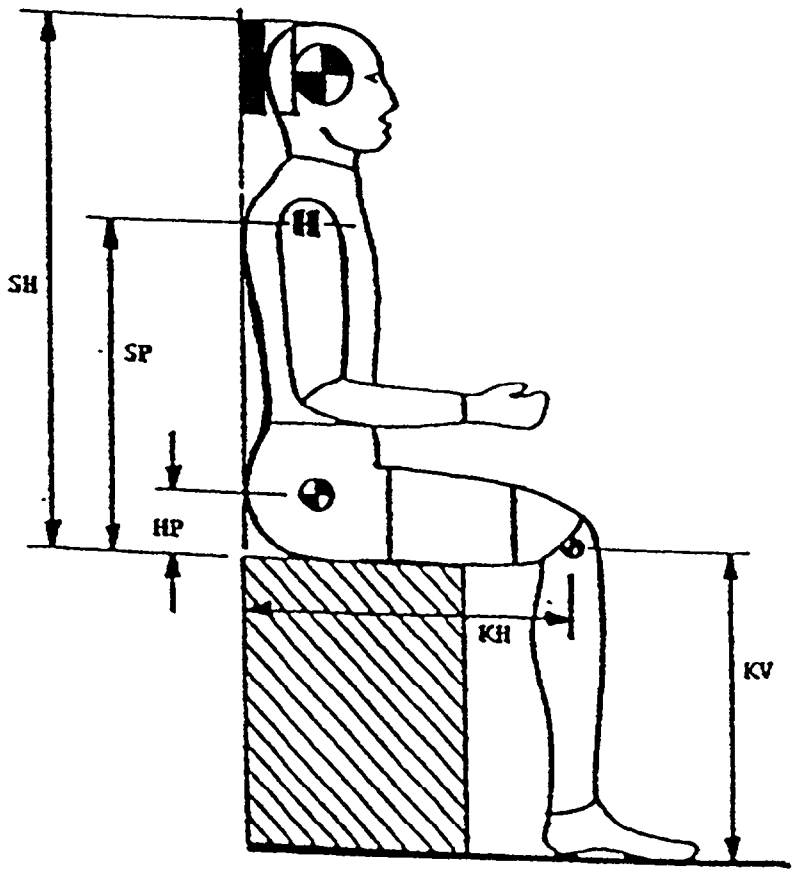
NHTSA DUMMY I.D. NO.: | 4 | 6 | 5 |

I. CONFIGURATION VERIFICATION DATA:



	P. 572 SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
DATE OF CONFIGURATION VERIFICATION	//////////////	09/10/90 to 09/25/90	
VERIFICATION NUMBER FOR DUMMY* ---	//////////////	01	
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"	20.60	
KV - Knee Pivot from floor- - - -	19.3 to 19.9"	19.30	
SW - Shoulder Width - - - - - - -	17.8 to 18.4"	18.05	
HW - Hip Width- - - - - - - - - -	14.0 to 15.4"	15.10	

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 | 5 |

TECHNICIAN NAME: APURVA MAPARA

		PRE-TEST (if required)	POST-TEST (if required)
DATE OF PERFORMANCE VERIFICATION----------		09/10-09/25/90	
SEQUENTIAL VERIFICATION NUMBER FOR DUMMY*-----		01	
VERIF. LAB. TEMPERATURE (66 to 78 F Range)----		70-75 °F	°F
VERIF. LAB. HUMIDITY (10 to 70% Range---------		50-65 %	%
TEST PARAMETER	SPECIFICATION		
1. HEAD DROP TEST--			
a. Peak Resultant Accel.	210 to 260G	234.90	
b. Peak Lateral Accel.-	<10G	8.50	
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	24.00	
c. Peak Resultant Head Acceleration - - - -	26G max.	22.75	
d. Pendulum Decel.($t_2 - t_1$)	<3 ms	1.85	
e. Pendulum Decel.($t_3 - t_2$)	25 to 30 ms	27.60	
f. Pendulum Decel.($t_4 - t_3$)	<10 ms	10.00	
g. Max. Head Rotation -	63 to 73	66.64	
h. Chordal Displacement-Head Rotation Angle-			
0° Time- -	-2 to 2 ms	0.02	
0° Displ.-	-.5 to .5"	0.00	
30° Time- -	22.6 to 34 ms	29.30	
30° Displ.-	2.1 to 3.1"	2.70	
60° Time- -	40.3 to 51.7ms	46.20	
60° Displ.-	4.3 to 5.3"	5.22	
Maximum (66.6°) Time- -	53.2 to 66.8ms	57.70	
Maximum (66.6°) Displ.-	5.0 to 6.0"	5.83	

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

I. PERFORMANCE VERIFICATION DATA: NHTSA DUMMY I.D. NO.: | 4 | 6 | 5 |

TECHNICIAN NAME: APURVA MAPARA

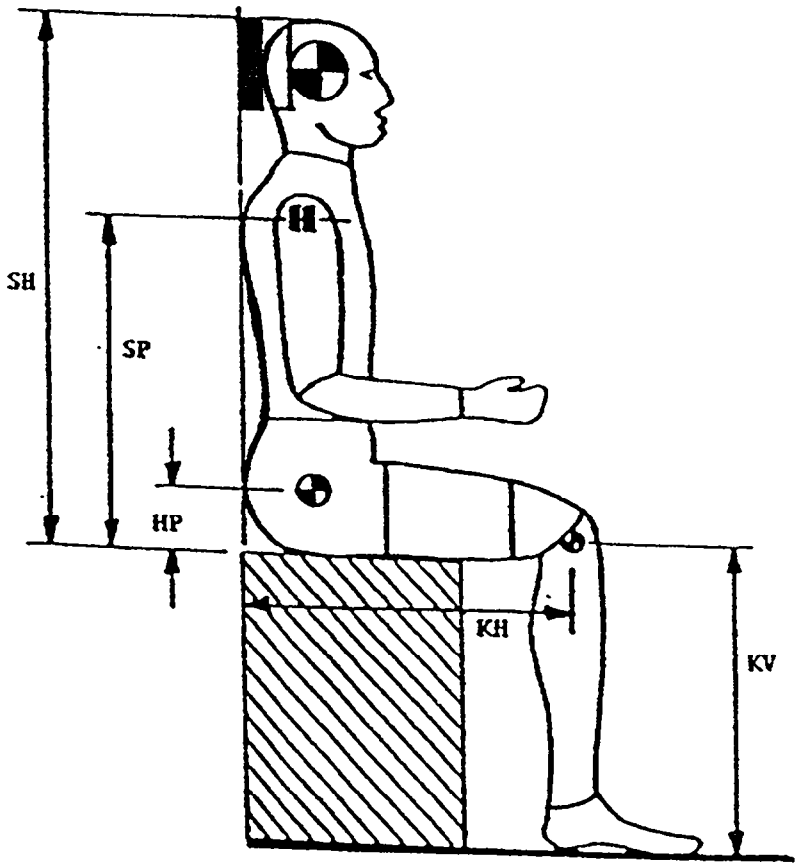
TEST PARAMETER		SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
2. NECK BENDING TEST---- Continued: h. Chordal Displacement- Head Rotation Angle-				
60°	Time- -	67.0 to 83.0 ms	69.20	
	Displ.-	4.3 to 5.3 in.	5.24	
30°	Time- -	85.4 to 104.6 ms	86.00	
	Displ.-	2.1 to 3.1 in.	2.40	
0°	Time- -	101.0 to 123.0 ms	101.50	
	Displ.-	-.5 to 0.5 in.	0.12	
3. ABDOMINAL COMPRESSION TEST: (Preload=10 pounds)				
a. Force @ .5" - - - -		23 to 36 lbs.	30.50	
b. Force @ .75" - - - -		36 to 50 lbs.	41.50	
c. Force @ 1.0"- - - - -		50 to 63 lbs.	59.00	
d. Force @ 1.3"- - - - -		73 to 88 lbs.	84.00	
4. LUMBAR FLEXION TEST:				
a. Force @ 20° - - - - -		22 to 34 lbs.	30.00	
b. Force @ 30° - - - - -		34 to 46 lbs.	45.00	
c. Force @ 40° - - - - -		46 to 58 lbs.	53.00	
d. Return Angle- - - - -		12° maximum	10.00	
5. CHEST IMPACT TESTS:				
a. High Speed				
(1) Probe Speed - - -		21.78-22.22 fps	21.84	
(2) Peak Deflection -		1.7" maximum	1.55	
(3) Peak Resistive Force - - - - - -		2250 lbs.maximum	2012.90	
(4) Internal Hysteresis		50 to 70%	50.00	
b. Low Speed				
(1) Probe Speed - - -		13.86-14.14 fps	13.90	
(2) Peak Deflection -		1.1" maximum	0.03	
(3) Peak Resistive Force - - - - - -		1450 lbs.maximum	1256.03	
(4) Internal Hysteresis		50 to 70%	50.00	

DUMMY CONFIG. & PERF. VERIF. DATA....Continued:
II. PERFORMANCE VERIFICATION DATA: NHTSA DUMMY I.D. NO.: 4 6 5
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	7.01	
(2) Maximum Force - -	1850 to 2500 lbs	2166.60	
(3) Time Above 1000#-	1.7 ms minimum	2.40	
b. Left Side--			
(1) Probe Speed - - -	6.76 to 7.04 fps	7.01	
(2) Maximum Force - -	1850 to 2500 lbs	2464.60	
(3) Time Above 1000#-	1.7 ms minimum	1.90	

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

I. CONFIGURATION VERIFICATION DATA:



	P. 572 SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
DATE OF CONFIGURATION VERIFICATION	//////////	09/10/90 to 09/25/90	
VERIFICATION NUMBER FOR DUMMY* ---	//////////	01	
SH - Seated Height- - - - - - - - -	35.6 to 35.8"	35.60	
SP - Shoulder Pivot Height- - - -	21.8 to 22.4"	21.92	
HP - Hip Pivot Height - - - - - -	3.9 ref.	3.90	
KH - Knee Pivot from back line- -	20.1 to 20.7"	20.55	
KV - Knee Pivot from floor- - - -	19.3 to 19.9"	19.30	
SW - Shoulder Width - - - - - - - -	17.8 to 18.4"	18.35	
HW - Hip Width- - - - - - - - - - -	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 | 6 |

TECHNICIAN NAME: APURVA MAPARA

		PRE-TEST (if required)	POST-TEST (if required)
DATE OF PERFORMANCE VERIFICATION----------		09/10-09/25/90	
SEQUENTIAL VERIFICATION NUMBER FOR DUMMY*-----		04	
VERIF. LAB. TEMPERATURE (66 to 78 F Range)----		70-75 °F	°F
VERIF. LAB. HUMIDITY (10 to 70% Range---------		50-65 %	%
TEST PARAMETER	SPECIFICATION		
1. HEAD DROP TEST--			
a. Peak Resultant Accel.	210 to 260G	214.80	
b. Peak Lateral Accel.-	<10G	6.80	
c. Time above 100G - - -	0.9 to 1.5 ms	1.40	
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	23.00	
c. Peak Resultant Head Acceleration - - - -	26G max.	24.30	
d. Pendulum Decel.($t_2 - t_1$)	<3 ms	2.30	
e. Pendulum Decel.($t_3 - t_2$)	25 to 30 ms	26.50	
f. Pendulum Decel.($t_4 - t_3$)	<10 ms	10.00	
g. Max. Head Rotation -	63 to 73	64.40	
h. Chordal Displacement-Head Rotation Angle-			
0° Time- -	-2 to 2 ms	-2.00	
0° Displ.-	-.5 to .5"	0.002	
30° Time- -	22.6 to 34 ms	28.10	
30° Displ.-	2.1 to 3.1"	2.50	
60° Time- -	40.3 to 51.7ms	45.60	
60° Displ.-	4.3 to 5.3"	5.00	
Maximum (64.4°) Time- -	53.2 to 66.8ms	53.50	
Maximum (64.4°) Displ.-	5.0 to 6.0"	5.34	

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

1. PERFORMANCE VERIFICATION DATA: NHTSA DUMMY I.D. NO.: | 4 | 6 | 6 |
TECHNICIAN NAME: APURVA MAPARA

TEST PARAMETER		SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
2. NECK BENDING TEST---- Continued:				
h. Chordal Displacement-Head Rotation Angle-				
60°	Time- -	67.0 to 83.0 ms	68.00	
	Displ.-	4.3 to 5.3 in.	5.00	
30°	Time- -	85.4 to 104.6 ms	86.00	
	Displ.-	2.1 to 3.1 in.	2.40	
0°	Time- -	101.0 to 123.0 ms	101.00	
	Displ.-	-.5 to 0.5 in.	0.02	
3. ABDOMINAL COMPRESSION TEST: (Preload=10 pounds)				
a. Force @ .5" - - - -		23 to 36 lbs.	30.00	
b. Force @ .75" - - - -		36 to 50 lbs.	42.50	
c. Force @ 1.0"- - - - -		50 to 63 lbs.	61.00	
d. Force @ 1.3"- - - - -		73 to 88 lbs.	84.50	
4. LUMBAR FLEXION TEST:				
a. Force @ 20° - - - - -		22 to 34 lbs.	33.00	
b. Force @ 30° - - - - -		34 to 46 lbs.	42.00	
c. Force @ 40° - - - - -		46 to 58 lbs.	50.70	
d. Return Angle- - - - -		12° maximum	7.00	
5. CHEST IMPACT TESTS:				
a. High Speed				
(1) Probe Speed - - -		21.78-22.22 fps	21.88	
(2) Peak Deflection -		1.7" maximum	1.60	
(3) Peak Resistive Force - - - - - -		2250 lbs.maximum	2234.80	
(4) Internal Hysteresis		50 to 70%	66.60	
b. Low Speed				
(1) Probe Speed - - -		13.86-14.14 fps	13.88	
(2) Peak Deflection -		1.1" maximum	1.01	
(3) Peak Resistive Force - - - - - -		1450 lbs.maximum	1200.30	
(4) Internal Hysteresis		50 to 70%	62.50	

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

II. PERFORMANCE VERIFICATION DATA: NHTSA DUMMY I.D. NO.: | 4 | 6 | 6 |

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	6.93	
(2) Maximum Force - -	1850 to 2500 lbs	2423.00	
(3) Time Above 1000#-	1.7 ms minimum	1.80	
b. Left Side--			
(1) Probe Speed - - -	6.76 to 7.04 fps	6.9	
(2) Maximum Force - -	1850 to 2500 lbs	1926.60	
(3) Time Above 1000#-	1.7 ms minimum	2.20	

APPENDIX D

VEHICLE OWNER'S MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

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Using Safety Restraints Properly

Safety Belts

The use of safety belts helps reduce the risk of injury for 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.

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:

- ❑ Combination lap and shoulder belts – for people who sit next to the side windows in either front or rear seats
- ❑ Rear lap belt with retractor (4 door only) – if your Explorer has a center rear seat
- ❑ Front lap belts without retractor – if your Explorer has a center 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. If safety belts are not used properly, the chances of you or your passengers being injured in a collision greatly increase.

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.

Do not allow any 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.

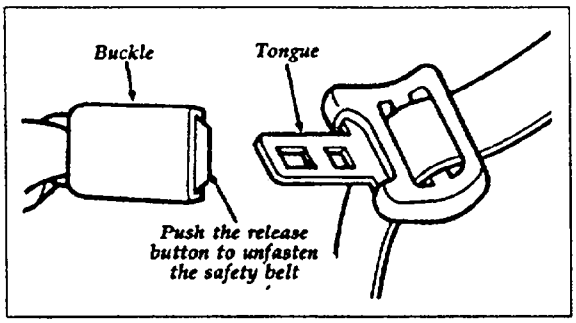
Never let a passenger hold a child on his or her lap while the vehicle is moving. The passenger cannot protect the child from injury in a collision.

Children can slide under the safety belts more easily than adults in a collision, and therefore should always ride with the seat back upright. Seat backs should also be upright for use with child safety seats.

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: 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.

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.



Fastening and unfastening the front and rear outboard safety belts

Front and Rear Seat Combination Lap and Shoulder Belts

While your vehicle is in motion, the combination lap and shoulder belt adjusts 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. Your belt system cannot be made to lock by jerking on the belt.

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

To fasten the belt, pull the lap-shoulder belt from the retractor so that the shoulder portion of the belt crosses your shoulder and chest. Insert the belt tongue into the proper buckle until you hear a snap and feel it latch.

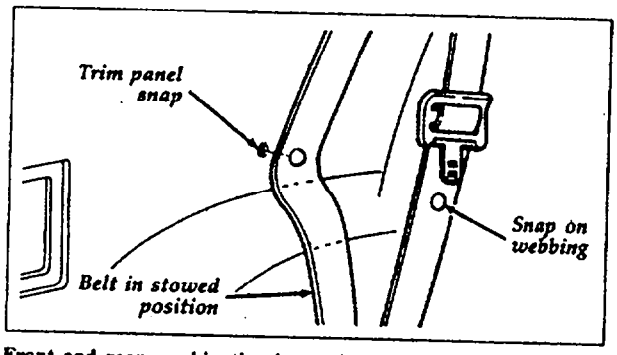
Warning: Use the shoulder belt only on the shoulder that is closest to the vehicle door. Never wear the belt under your arm. Never swing it around your neck over the inside shoulder. If you do not use the shoulder belt properly, the chances of your being injured in a collision greatly increase.

To tighten the lap portion of the belt, pull up on the shoulder belt until it fits you snugly. The belt should rest as low on your hips as possible.

The rear seat belts have a feature which allows the seat belt webbing to be stowed out of the way when the rear seats are folded down (2 door only). To stow the belt while the seat is cycled, attach the plastic snap on the seat belt to the metal mating part on the plastic trim panel. This will keep the belt out of the way while the

seats are cycled. Once the rear seats have been returned to their upright position, unsnap the belt from the trim panel.

Warning: Warning: It is important that the seat belt snap must be detached from the trim panel prior to wearing the belt.



Front and rear combination lap and shoulder belts

Center Front Lap Belt (60/40 Split Seat)

The lap belt in the center of the front seat does not adjust automatically. You must adjust it to fit snugly around your hips. Do not wear it around your waist.

Before you fasten your center position lap belt in the front seat, you may need to lengthen it.

To lengthen the belt, tip the belt tongue at a right angle to the belt. Pull the belt tongue over your lap until it reaches the buckle.

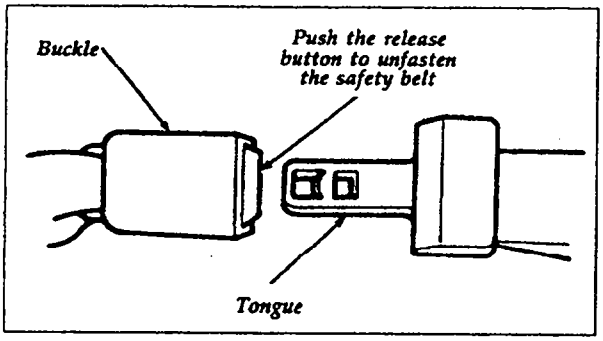
To fasten the belt, pull the belt across your hips and insert the tongue into the correct buckle on your seat until you hear a snap and feel it lock. Make sure the buckle is securely fastened.

Adjust the belt so that it fits snugly around your hips:

- If you need to shorten the belt, pull on the loose end of the webbing.

To unfasten the belt, push the release button on the buckle. This allows the tongue to unlatch from the buckle.

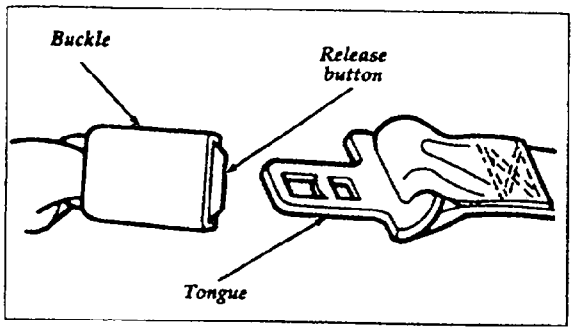
Because the center front lap belt does not have a retractor, it should be shortened and fastened when not in use.



Fastening and unfastening the front center safety belt (4 door model)

Rear Center Lap Belt with Retractor

Pull the belt out of the retractor with a steady motion and insert the tongue into the proper buckle until you hear a snap and feel the latch engage.



Fastening and unfastening the rear center safety belts (4-door model)

To Unfasten Safety Belts with Retractors:

1. Push the release button on the buckle. This allows the tongue to unlatch from the buckle.
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.

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.

Safety Belt Extension Assembly

You can lengthen a short safety belt eight inches (20 cm) with an extension assembly (611C22). See your local dealer for more details.

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.

Safety Belt Maintenance

Check your safety belt system periodically to make sure that it works properly and isn't damaged. Always have your safety belt system checked after a collision.

For information on cleaning the webbing of seat belt assemblies, see *"Cleaning the Safety Belts"* in the index.

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.