

REPORT NOS. 208-CAL-89-05
212-CAL-89-05
301-CAL-89-05

**VEHICLE SAFETY COMPLIANCE TESTING FOR OCCUPANT CRASH PROTECTION,
WINDSHIELD MOUNTING, WINDSHIELD ZONE INTRUSION (PARTIAL)
AND FUEL SYSTEM INTEGRITY**

FORD MOTOR COMPANY
1989 FORD ESCORT PONY
2-DOOR HATCHBACK

NHTSA NO. CK0204
CALSPAN TEST NO. 7715-5

MAY 4, 1989

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FINAL REPORT

Prepared for:

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16. Abstract A 30 mph vehicle safety compliance test was conducted on a 1989 Ford Escort Pony 2-door Hatchback. This test was performed at the Calspan Advanced Technology Center in Buffalo, New York on May 4, 1989. The purpose of this test was to determine compliance with the performance requirements of the following Federal Motor Vehicle Safety Standards (FMVSS 213): 1. FMVSS No. 208, "Occupant Crash Protection" 2. FMVSS No. 212, "Windshield Mounting" 3. FMVSS No. 219 (partial), "Windshield Zone Intrusion" 4. FMVSS No. 301, "Fuel System Integrity" The test mode was perpendicular (0°) and the impact velocity was 29.7 mph. The ambient temperature at the impact face was 57°F. The subject test vehicle appears to comply with the requirements of FMVSS Nos. 208, 212, 219 (partial) and 301. <u>Type of Restraint System:</u> The test vehicle was equipped with automatic shoulder and manual lap belts. Lap belts not used for test.					
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Section 1
PURPOSE AND TEST PROCEDURE

This 30 mph frontal barrier impact test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 208, 212, 219 (partial) and 301 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by Calspan Advanced Technology Center under Contract No. DTNH22-88-C-01038. The purpose of this test was to determine if the subject vehicle, a 1989 Ford Escort Pony 2-door Hatchback, meets the performance requirements of FMVSS 208, "Occupant Crash Protection"; FMVSS No. 212, "Windshield Mounting"; FMVSS No. 219 (partial), "Windshield Zone Intrusion"; and FMVSS No. 301, "Fuel System Integrity". This compliance test was conducted using the requirements found in the OVSC Laboratory Test Procedure No. TP-208-07.

Section 2
SUMMARY OF TEST NUMBER CK0204

A frontal barrier was impacted by a 1989 Ford Escort Pony 2-door Hatchback at a velocity of 29.7 mph. The test was performed at the Calspan Corporation Advanced Technology Center on May 4, 1989. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by one real-time camera and 14 high-speed cameras. Camera locations and other pertinent camera information can be found in this report.

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

Both ATDs were fully instrumented with head and chest triaxial accelerometers and left/right femur load cells. These ATDs had been certified prior to the test.

The 27 channels of data were recorded on three 14-channel FM tape recorders. Appendix B contains the vehicle and dummy response data traces.

The driver's HIC was 244. The maximum chest deceleration over 3 milliseconds was 37.8 g's. The maximum force on the driver's left femur was 1444 lbs and 1080 lbs on the right femur.

The right front passenger's HIC was 437. The maximum chest deceleration over 3 milliseconds was 34.1 g's and femur loads were 989 and 1007 lbs on the left and right femurs respectively.

TABLE 1

CRASH TEST SUMMARY

VEHICLE NHTSA NO.: CK0204 TEST MODE: 30 mph Frontal Barrier
 TEST DATE: 5/4/89 TIME: 12:30 TEMP: 57° F
 VEHICLE MAKE/MODEL/BODY STYLE: 1989 Ford Escort Pony 2-door Hatchback
 VEHICLE TEST WEIGHT: 2630 lbs VEHICLE/BARRIER IMPACT ANGLE: 0°
 IMPACT VELOCITY: 29.7 mph
 MAXIMUM STATIC CRUSH: 15.4" VEHICLE REBOUND: 30.6"

<u>DUMMIES:</u>	<u>DRIVER</u>	<u>PASSENGER</u>
TYPE	<u>Part 572</u>	<u>Part 572</u>
RESTRAINT SYSTEM	<u>Automatic shoulder belt. Manual lap belt not used for test</u>	<u>Automatic shoulder belt. Manual lap belt not used for test</u>

NUMBER OF DATA CHANNELS: 27

NUMBER OF CAMERAS: 1 Real Time
14 High Speed

DOOR OPENING DATA: closed-operable - Left Front
closed-operable - Right Front

FRONT SEAT(S) DATA:	<u>DRIVER</u>	<u>PASSENGER</u>
Seat Track Failure -	<u>0.0</u>	<u>0.0</u>
	inches of shift	
Seat Back Failure -	<u>none</u>	<u>none</u>

VISIBLE DUMMY CONTACT POINTS:	<u>DRIVER</u>	<u>PASSENGER</u>
Head	<u>Chin with Chest</u>	<u>Chin with Chest</u>
Chest	<u>-</u>	<u>-</u>
Knees	<u>Lower Dash</u>	<u>Lower Dash</u>
Abdomen	<u>Lower Steering Wheel Rim</u>	<u>-</u>

TABLE 2

GENERAL TEST AND VEHICLE PARAMETER DATATEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 1989 Ford Escort Pony 2-door Hatchback
 NHTSA No. CK0204 ; VIN 1FAPP9098KT116213 ; Color: Red
 Engine Data: 4 cylinders; - CID; 1.9 Litres; - cc
 Placement - Longitudinal or In-Line; X Transverse or lateral
 Transmission Data: 4 speeds; X Manual; - Automatic; X Overdrive
 Final Drive: - Rear Wheel Drive; X Front Wheel Drive; - Four Wheel Drive
 Major Options: - A/C; - Pwr Strg. X Pwr. Brakes - Pwr Windows
- Power Door Locks
 Date Received: 2-6-89 ; Odometer Reading - 60.2 miles
 Selling Dealer: West-Herr Ford
 & address Hamburg, New York

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by: Ford Motor Company
 Data of Manufacture: 10/88 ;
 GVWR: 3165 lbs; GAWR: 1755 lbs FRONT
1463 lbs REAR

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load 30 psi Front
30 psi Rear
 Recommended Tire Size P175/70R14 Load Range Std.
 Recommended Cold Tire Pressure 30 psi Front 30 psi Rear
 Size of Tires on Test Vehicle P175/70R14 Manufacturer Goodyear
 Vehicle Capacity Data:
 Type of Front Seats - Bench X Bucket - Split Bench
 Number of Occupants 2 Front 2 Rear 4 Total
 Vehicle Capacity Weight (VCW) = 650 lbs.
 No. of Occupants x 150 lbs = 600 lbs.
 Rated Cargo/Luggage Weight (RCLW)= 50 lbs. (Difference)

WEIGHT OF TEST VEHICLE AS RECEIVED AT LABORATORY (with maximum fluids):

Right Front = 680 lbs Right Rear = 430 lbs
 Left Front = 690 lbs Left Rear = 430 lbs
 TOTAL FRONT = 1370 lbs TOTAL REAR = 860 lbs
 % of Total Weight = 61.4 % % of Total Weight = 38.6 %
 TOTAL DELIVERED WEIGHT = 2230 lbs.

TABLE 2 (continued)
GENERAL TEST & VEHICLE PARAMETER DATA

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight	=	<u>2230</u>	lbs.
Rated Cargo/Luggage Weight (RCLW)	=	<u>50</u>	lbs.
Weight of 2 P.572 Dummies @ 164 ea.	=	<u>328</u>	lbs.
TARGET TEST WEIGHT	=	<u><u>2608</u></u>	lbs. (sum)

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 0 LBS OF CARGO WEIGHT:

Right Front =	<u>760</u>	lbs.	Right Rear =	<u>580</u>	lbs.
Left Front =	<u>720</u>	lbs.	Left Rear =	<u>570</u>	lbs.
TOTAL FRONT =	<u>1480</u>	lbs.	TOTAL REAR =	<u>1150</u>	lbs.
% of Total Weight =	<u>56.3</u>	%	% of Total Weight =	<u>43.7</u>	%
TOTAL TEST WEIGHT =	<u>2630</u>	lbs.			
Weight of Ballast secured in vehicle's cargo area =	<u>0</u>	lbs.			
Vehicle Components Removed for Weight Reduction	<u>None</u>				

TEST VEHICLE ATTITUDE: (all dimensions in inches)

AS DELIVERED	RF <u>26.1</u> ;	LF <u>26.3</u> ;	RR <u>25.5</u> ;	LR <u>25.5</u>
FULLY LOADED	RF <u>25.5</u> ;	LF <u>25.7</u> ;	RR <u>23.5</u> ;	LR <u>23.5</u>
AS TESTED	RF <u>25.8</u> ;	LF <u>26.1</u> ;	RR <u>23.7</u> ;	LR <u>24.0</u>
Vehicle's Wheelbase =	<u>93.8</u>	inches		
Location of Vehicle's C.G. =	<u>41.0</u>	inches from front axle center		

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual =	<u>11.5</u>	gallons
Usable Capacity Figure Furnished by COTR =	<u>11.5</u>	gallons
Test Volume Range (92 to 94% of Usable Capacity) =	<u>10.6</u> to <u>10.8</u>	gallons
ACTUAL TEST VOLUME =	<u>10.7</u>	gallons (with entire fuel system filled)

TABLE 3
POST-IMPACT DATA

TYPE OF TEST: X Frontal IMPACT ANGLE: 0⁰

TEST DATE: May 4, 1989 TIME: 12:30 TEMP: 57 °F

VEHICLE NHTSA NO.: CK0204

REQUIRED IMPACT VELOCITY RANGE: 28.9 to 29.9 mph

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

Trap No. 1 = 29.7 mph; Trap No. 2 = 29.7 mph

Distance from vehicle to barrier (1) entering trap = 52 inches

(2) exiting trap = 12 inches

VEHICLE STATIC CRUSH: (for Frontal and Rear Impacts Only)

Vehicle Length: Pre-Test Right = 167.2 "; C/L = 169.6 "; Left = 166.9 "

Post-Test Right = 152.4 "; C/L = 154.2 "; Left = 153.1 "

CRUSH Right = 14.8 "; C/L = 15.4 "; Left = 13.8 "

AVERAGE = 14.7 inches

VEHICLE REBOUND: (from rigid barrier only)

Distance from front of test vehicle to impact point:

Right = 31.5 "; C/L = 29.3 "; Left = 31.1 "

AVERAGE = 30.6 inches

<u>DOOR OPENING:</u>	Left	Right
Front	<u> closed-operable </u>	<u> closed-operable </u>
Rear	<u> N/A </u>	<u> N/A </u>
<u>SEAT MOVEMENT:</u>	Seat Back Failure	Seat Shift
Front	<u> None </u>	<u> None </u>
Rear	<u> None </u>	<u> None </u>

TABLE 3 (continued)

POST-IMPACT DATA

GLAZING DAMAGE: leftside lower windshield and right side lower
windshield cracked.

OTHER NOTABLE IMPACT FEATURES: NONE.

Section 3
OCCUPANT AND VEHICLE DATA

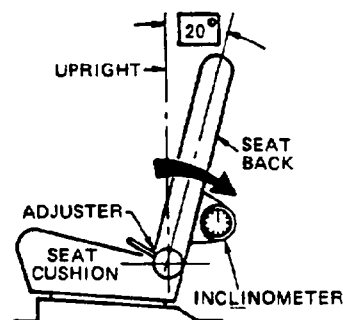
Figure 1

TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model year: 1989 Vehicle Model: Escort Pony Body Style: 2-door Hatchback

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



LEFT SIDE VIEW

Seat back angle for driver's seat 20°
Measurement instructions: Measure on seat back frame 13 inches up from
hinge point

Seat back angle for passenger's seat 20°
Measurement instructions: See above.

2. Seat Fore and Aft Positioning

Provide instructions for positioning the driver and front outboard passenger seat(s) in the center of fore and aft travel. For example, provide information to locate the detent in which the seat track is to be locked.

Positioning of the driver's seat: Seat track locked in 8th
of 15 total detents (mid position)

Positioning of the passenger's seat (if applicable): Seat track locked
in 6th of 11 total detents (mid position)

3. Fuel Tank Capacity Data

A. "Usable Capacity" of the standard equipment fuel tank is 11.5
gallons.

B. "Usable Capacity" of the optional equipment fuel tank is -
gallons.

Additional Instructions: None

Figure 2

PART 572 DUMMY IN-VEHICLE POSITION

TEST NO.: CK0204

1989 Ford Escort Pony
VEHICLE: 2-door Hatchback

SEAT TYPE:

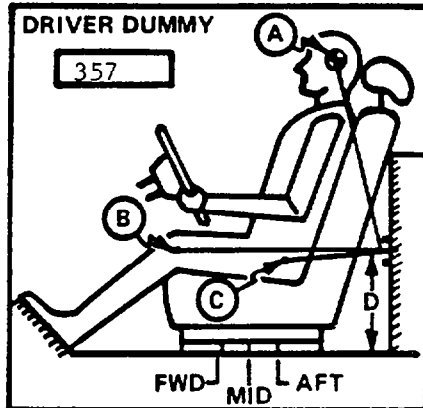
- Bench
X Bucket
- Split Bench

ADJUSTER TYPE:

X Manual
- Power

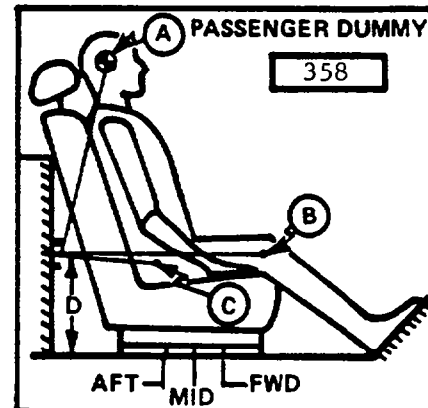
BUCKET SEAT BACK TYPE:

- Fixed
X Adjustable Reclining



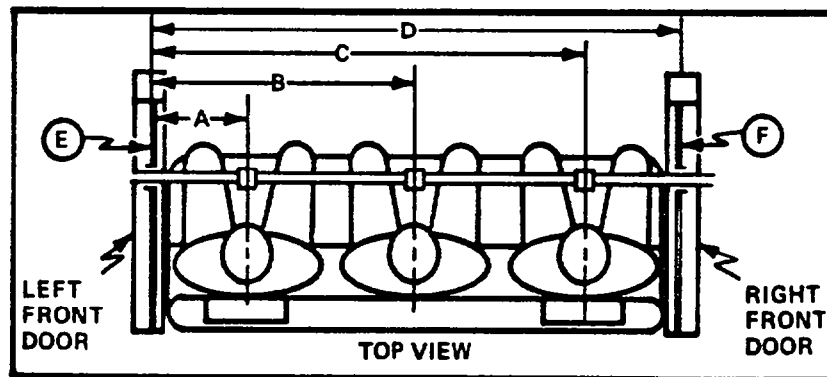
MEASUREMENT LOCATION

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



A = 23.6 in. 25 Degrees
B = 32.2 in. 92 Degrees
C = 17.2 in. 105 Degrees
D = 13.9 in.

A = 23.4 in. 23 Degrees
B = 31.5 in. 95 Degrees
C = 16.6 in. 109 Degrees
D = 13.9 in.



DUMMY ID

S/N 357

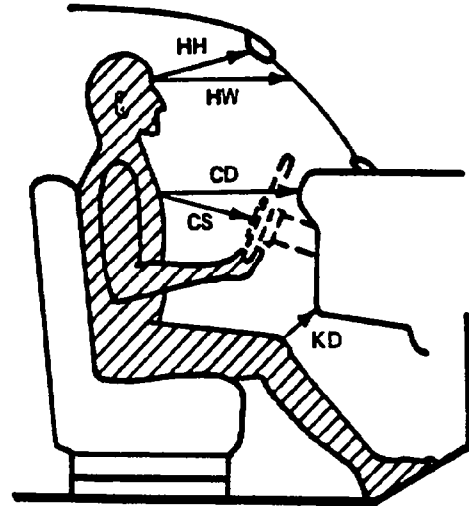
358

A = Left Door to Driver Centerline 10.7 in.
B = Left Door to Center Passenger Centerline - in.
C = Left Door to Right Passenger Centerline 36.1 in.
D = Left Door to Right Door 46.7 in.
E, F = Window Glass Height (Right and Left Must Be Equal) 12.3 in.

Figure 3

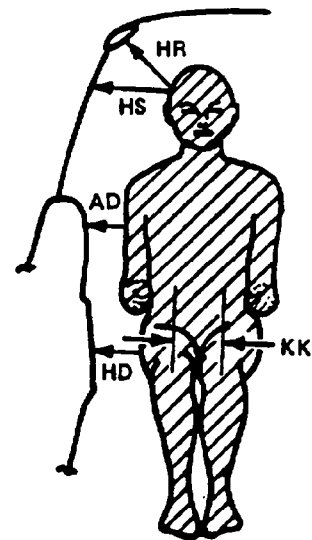
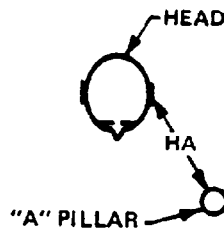
OCCUPANT CLEARANCE DIMENSIONS

	DRIVER	PASSENGER
HH	14.0	15.3
HW	17.9	18.9
CD	20.1	21.5
CS	13.0	-
KDL	3.5	4.5
KDR	3.2	4.5
SA	21°	21°
TA	21°	22°



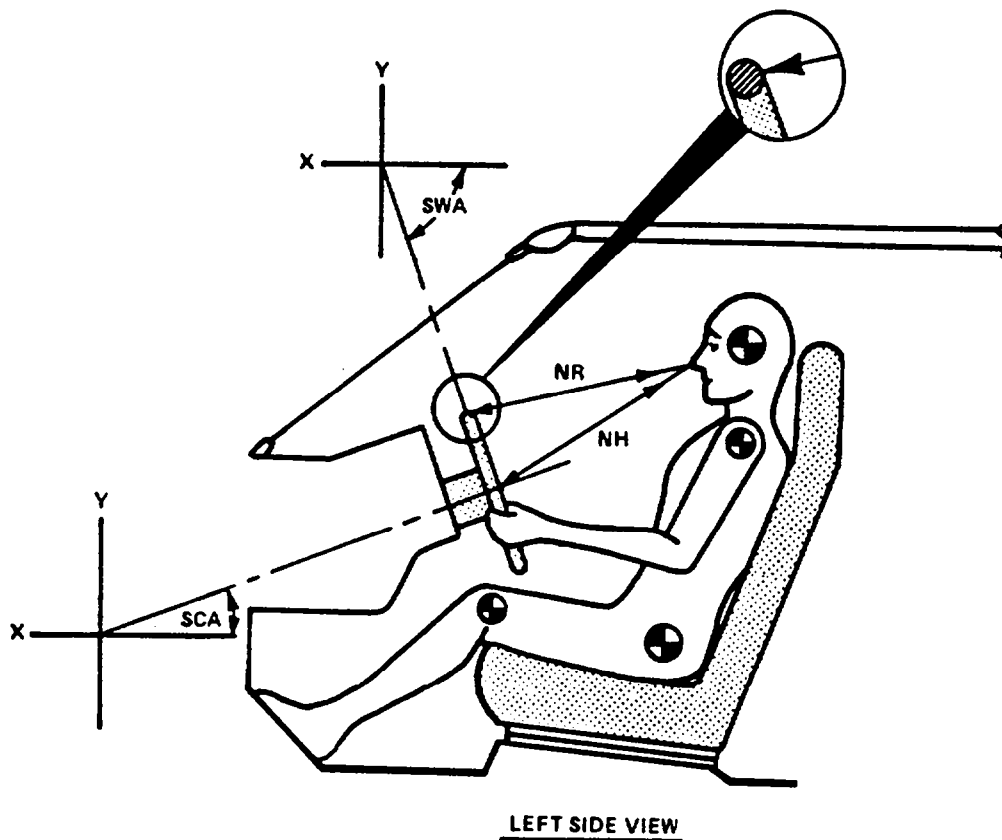
HH = Head to Windshield Header
 HW = Head to Windshield
 CD = Chest to Dash
 CS = Chest to Steering Wheel
 KD(L/R)= Knee to Dash (Left/Right)
 SA = Seat Back Angle
 TA = Torso Angle

HA = Head Target to "A" Pillar
 HR = Head to Side Roof
 HS = Head to Side Window
 AD = Arm to Door
 HD = Hip to Door
 KK = Knee to Knee



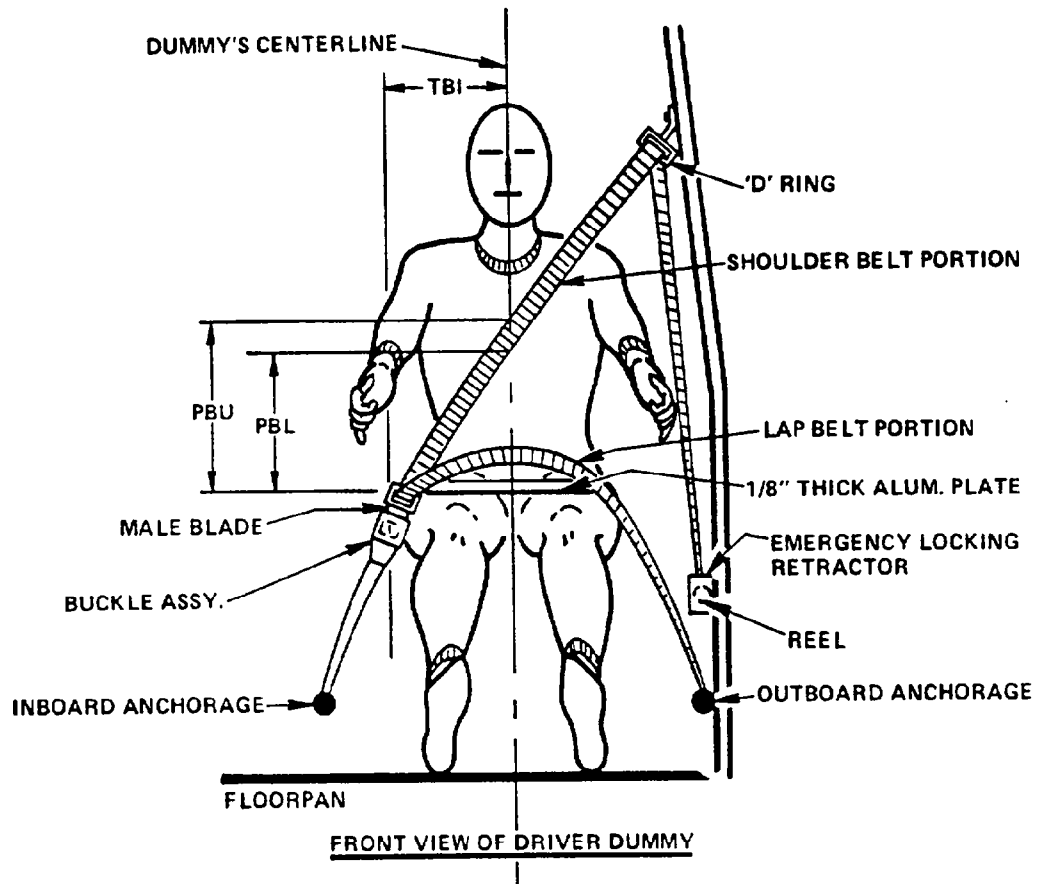
	DRIVER	PASSENGER
HR	4.3	4.1
HS	7.3	7.4
AD	3.3	3.3
HD	6.2	6.1
KK	8.9	7.3
HA	17.5	18.3

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



	MEASUREMENTS	
<u>NR</u> -- Distance from tip of dummy's nose to Top Rear surface of steering wheel rim	17.0	Inches
<u>NH</u> -- Distance from tip of dummy's nose to center of steering column hub	17.6	Inches
<u>SCA</u> -- Angle of steering column relative to the horizontal X axis	26	Degrees
<u>SWA</u> -- Angle of steering wheel relative to the horizontal X axis	-64	Degrees

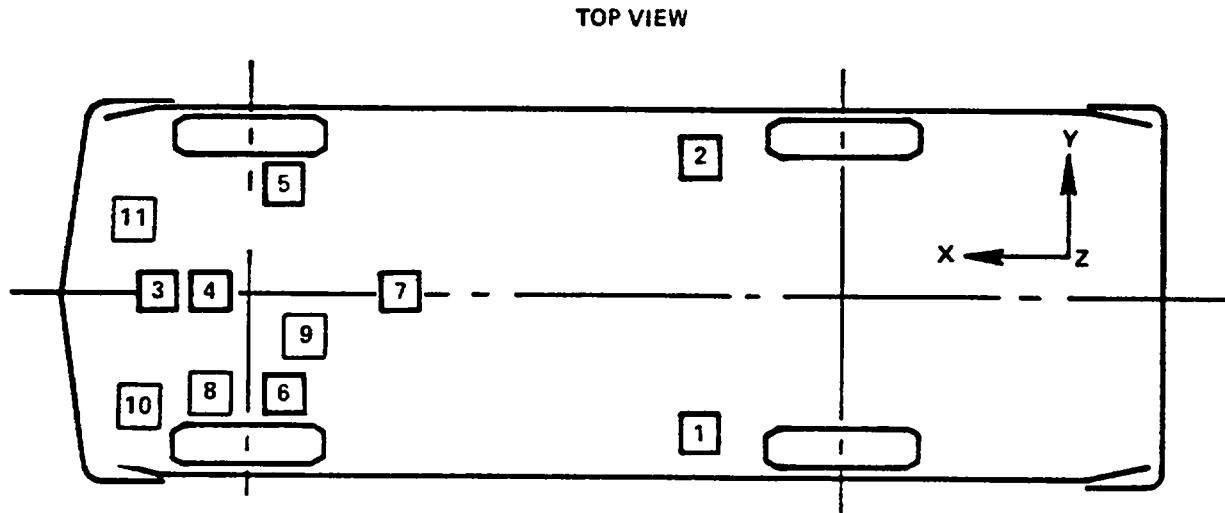
Figure 5
SEAT BELT POSITIONING DATA



	DRIVER DUMMY (inches)	PASSENGER DUMMY (inches)
<u>PBU</u> -- Top surface of alum. plate to upper edge	16.2	16.3
<u>PBL</u> -- Top surface of alum. plate to belt lower edge	13.0	13.0
<u>TBI</u> -- distance from Torso centerline to buckle	N/A *	N/A *

*Automatic shoulder belt, no inboard buckle.

Figure 6
VEHICLE ACCELEROMETER LOCATIONS



ACCELEROMETER NUMBER*	ACCELEROMETER LOCATION	DIRECTION		
		X	Y	Z
1	Left Rear Seat Crossmember	x		
2	Right Rear Seat Crossmember	x		
3	Top of Engine	x		
4	Bottom of Engine	x		
5	Right Disc Brake Caliper	x		
6	Left Disc Brake Caliper	x		
7	Instrument Panel	x		
8	Front Shock Tower	x		
9	Firewall	x		
10	Cradle Frame	x		
11	Radiator Support	x		

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

TABLE 4

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION**		NEGATIVE DIRECTION**	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	REAR SEAT X-MEMBER AT LEFT SIDE LONGITUDINAL ACCELERATION	PRE: 63.4	14.0	15.3				
		POST: 63.2	14.0	16.6				
					3	126	-34	44
2	REAR SEAT X-MEMBER AT RIGHT SIDE LONGITUDINAL ACCELERATION	PRE: 63.4	-14.0	-15.3				
		POST: 63.2	-14.4	14.2				
					3	118	-31	43
3	TOP OF ENGINE BLOCK PRE: POST: LONGITUDINAL ACCELERATION	141.9	1.0	33.2				
		137.2	0.8	31.3				
					39	48	-99	37
4	BOTTOM OF ENGINE BLOCK PRE: POST: LONGITUDINAL ACCELERATION	136.5	-11.8	12.7				
		133.6	-8.4	11.3				
					23	53	-130	32
5	BRAKE CALIPER AT RIGHT SIDE PRE: POST: LONGITUDINAL ACCELERATION	131.3	-23.5	17.5				
		127.9	-21.8	17.8				
					13	57	-72	35
6	BRAKE CALIPER AT LEFT SIDE PRE: POST: LONGITUDINAL ACCELERATION	131.2	23.5	17.5				
		131.1	22.8	17.4				
					38	59	-69	41
7	DASH PANEL PRE: POST: LONGITUDINAL ACCELERATION	112.7	4.3	33.0				
		114.0	4.6	32.0				
					55	83	-61	89

**

POSITIVENEGATIVE

*X + Forward from rear bumper
Y + Left from vehicle centerline
Z + Up from ground

LONGITUDINAL: FORWARD
LATERAL: LEFTWARD
VERTICAL: UPWARD

REARWARD
RIGHTWARD
DOWNWARD

DISTANCE MEASUREMENTS IN INCHES

TABLE 4 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION**		NEGATIVE DIRECTION**	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
8	FRONT SHOCK TOWER							
	PRE:	130.7	18.5	34.7				
	POST:	129.5	15.5	34.2				
	LONGITUDINAL ACCELERATION				46	27	-69	43
9	FIREWALL							
	PRE:	127.5	10.2	33.4				
	POST:	125.8	11.1	32.9				
	LONGITUDINAL ACCELERATION				45	62	-111	53
10	CRADLE FRAME							
	PRE:	125.2	8.5	7.9				
	POST:	122.7	12.5	6.5				
	LONGITUDINAL ACCELERATION				6	44	-70	40
11	RADIATOR SUPPORT							
	PRE:	153.7	-20.5	29.4				
	POST:	145.0	-20.5	28.7				
	LONGITUDINAL ACCELERATION				19	49	-86	30

Figure 7

CAMERA POSITIONS FOR FRONTAL IMPACTS

NOTE: Camera Information Shown on Table 5

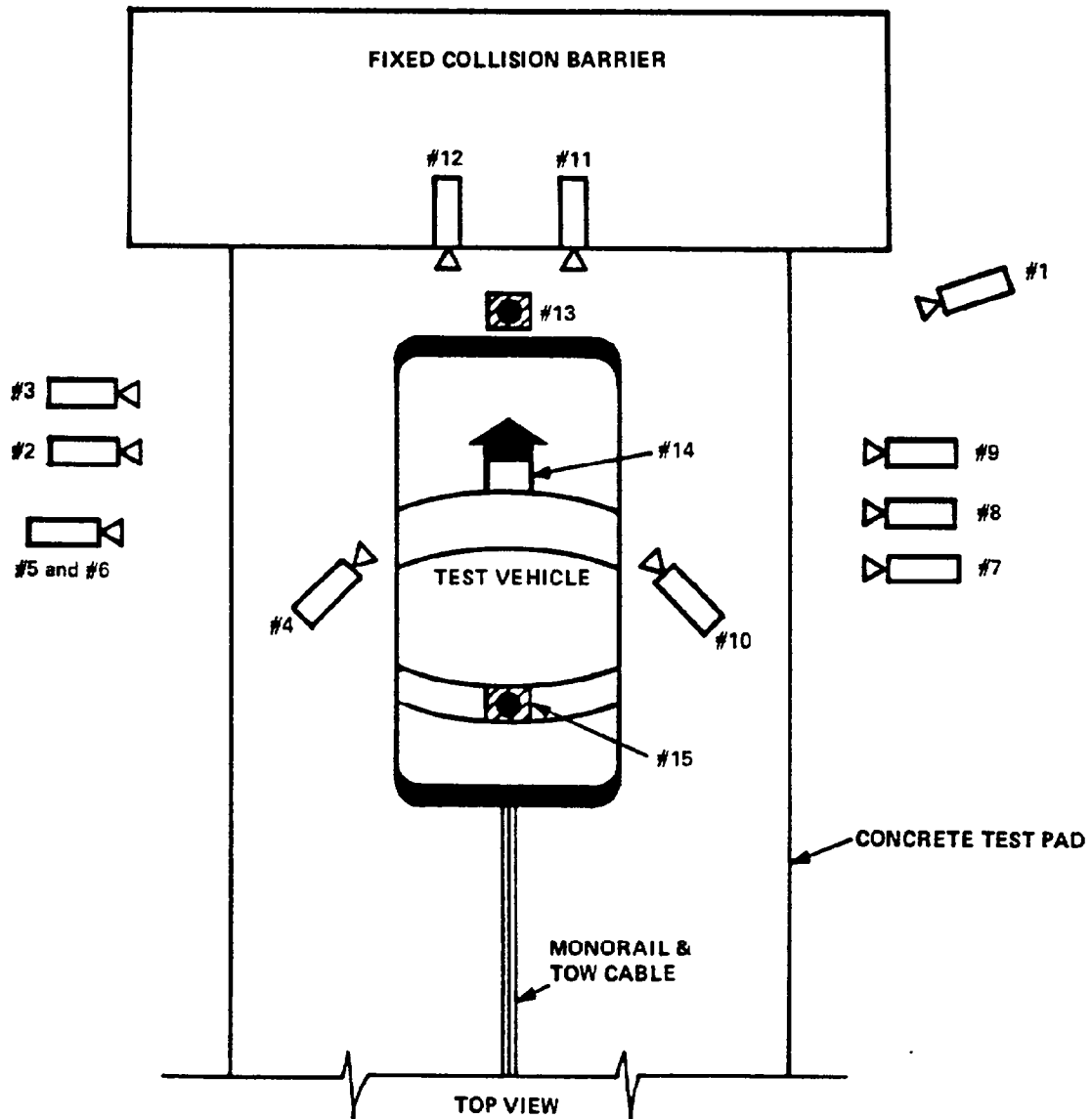


TABLE 5
HIGH-SPEED CAMERA LOCATIONS

Test No. CK0204

Vehicle 1989 Ford Escort Pony 2-door Hatchback

CAMERA NO.	VIEW	CAMERA POSITIONS (in)*			ANGLE** (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	227	49.0	41.0	-3	214.3	13	545
3	Left Side View	308	27.5	41.0	-2	295.3	25	540
4	Driver and Interior View	107	112.0	67.5	-14	-	13	790
5	Steering Column (bottom)	287	67.5	46.5	-3	274.3	25	545
6	Steering Column (top)	287	67.5	70.5	-9	274.3	25	550
7	Overall Right Side	227	76	42.0	-5	214.3	13	510
8	Right Side View	297	60	41.0	-2	284.3	25	760
9	Right Passenger View	303	79	57.0	-3	290.3	35	720
10	Passenger and Interior View	92	119	68.0	-18	-	13	600
11	Passenger Front View	46	13	73.0	-43	-	13	550
12	Driver Front View	56	16	66.0	-43	-	13	530
13	Windshield View	0	0	126.0	-52	-	25	545
14	Pit View of Engine	0	36	-120.0	90°	-	13	835
15	Pit View of Fuel Tank	0	89.5	-120.0	90°	-	13	785

* X = Film plane to monorail centerline
 Y = Film plane to impact location
 Z = Film plane to ground
 ** = Referenced to horizontal plane

Figure 1



Figure 9

TEST VEHICLE MEASUREMENTS

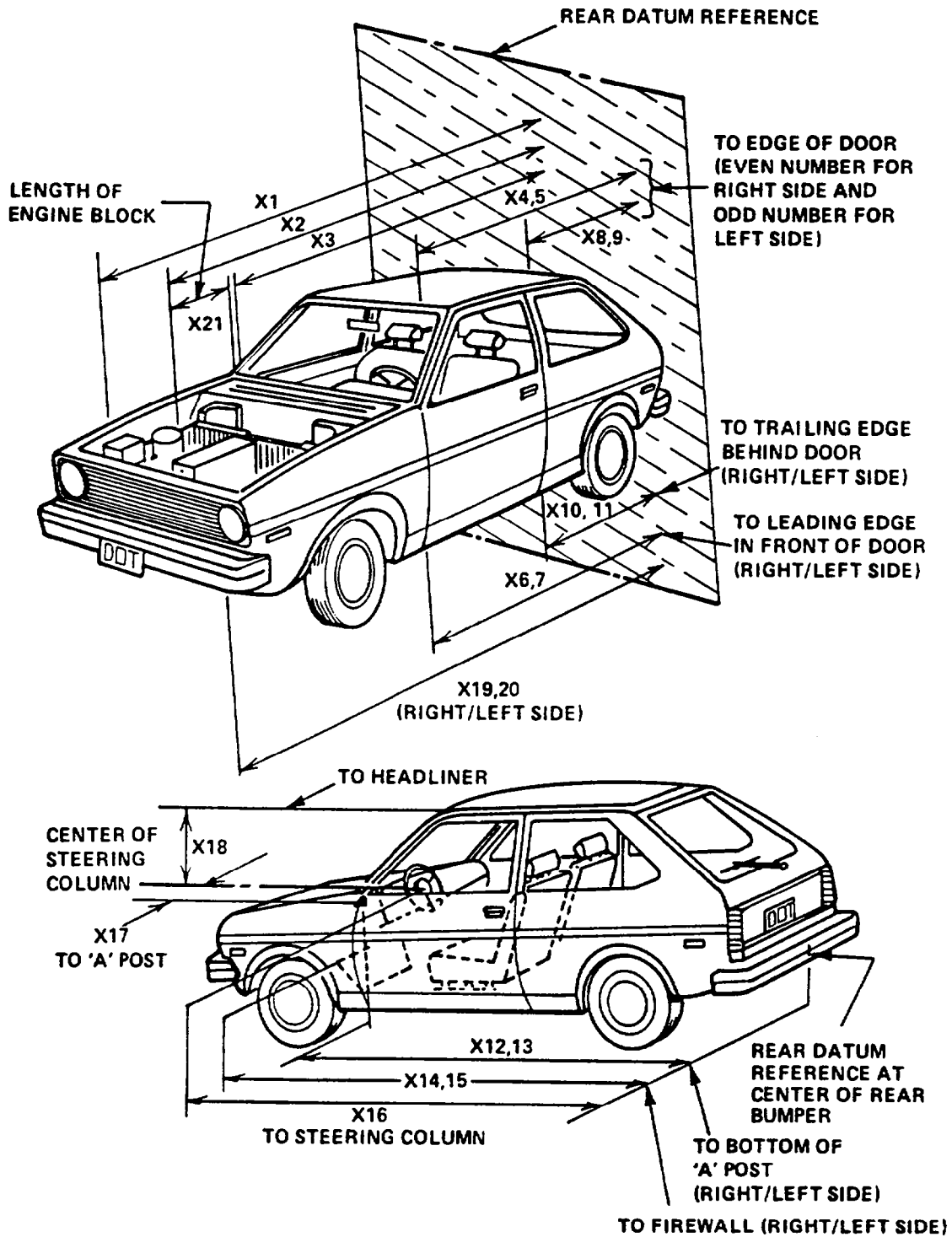


TABLE 6
VEHICLE MEASUREMENTS

No.		All Dimensions in Inches		
		Pre-Test	Post-Test	Differences
X1	Total Length of Vehicle at Centerline	169.6	154.2	15.4
X2	Rear Surface of Vehicle to Front of Engine	143.9	140.6	3.3
X3	Rear Surface of Vehicle to Firewall	126.4	123.9	2.5
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	112.6	111.8	0.8
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	112.5	112.2	0.3
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	111.6	110.5	1.9
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	111.2	110.9	0.3
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	65.7	64.7	1.0
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	65.3	65.2	0.1
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	65.4	64.4	1.0
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	64.9	64.5	0.4
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	114.1	114.7	-0.6
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	113.8	112.6	1.2
X14	Rear Surface of Vehicle to Firewall, Right Side	126.2	122.6	3.6
X15	Rear Surface of Vehicle to Firewall, Left Side	126.9	125.9	1.0
X16	Rear Surface of Vehicle to Steering Column	96.2	96.0	0.2
X17	Center of Steering Column to "A" Post	15.8	15.3	0.5
X18	Center of Steering Column to Headliner	16.5	17.0	-0.5
X19	Rear Surface of Vehicle to Right Side of Front Bumper	167.2	152.4	14.8
X20	Rear Surface of Vehicle to Left Side of Front Bumper	166.9	153.1	13.8
X21	Length of Engine Block	9.0	9.0	0.0

Section 4

SUMMARY OF RESULTS OF FMVSS NOS. 208, 212, 219(P) AND 301-75

- o "Occupant Crash Protection," FMVSS No. 208 Data
- o "Windshield Mounting," FMVSS No. 212 Data
- o "Windshield Zone Intrusion," FMVSS No. 219 (Partial) Data
- o "Fuel System Integrity," FMVSS No. 301-75

TABLE 7
DUMMY INJURY CRITERIA VALUES

	MAXIMUM ACCELERATION ("G")							
	HEAD				CHEST			
	X	Y	Z	R	X	Y	Z	R*
DUMMY (1)	-27	-6	33	39	-38	7	-12	37.8
DUMMY (2)	52	27	38	58	-35	15	22	34.1

	MAXIMUM FORCE - FEMUR LOAD (LBS)	
	Left Femur	Right Femur
DUMMY (1)	1444	1080
DUMMY (2)	989	1007

	HEAD INJURY CRITERIA **			
	HIC	36 millisecond Maximum		AVE. ACC. (g) t ₁ TO t ₂
		t ₁ (SEC)	t ₂ (SEC)	
DUMMY (1)	244	.05520	.09120	34.1
DUMMY (2)	437	.06165	.09765	43.0

*Defined as exceeding 0.003 sec. duration

**As defined in FMVSS No. 208

TABLE 8
FMVSS NO. 208 - SEAT BELT WARNING SYSTEM CHECK

With occupant in driver's position, the lap belt in stowed position, and ignition switch placed in "Start/On" position:

Log time duration of audible warning signal = 5.5 sec.

Log time duration of reminder light operation = 5.5 sec.

With occupant in driver's position, lap belt in use, and the ignition switch placed in "Start/On" position:

Log time duration of audible warning signal = 0.0 sec.
(audible warning should not operate)

Log time duration of reminder light operation = 5.5 sec.

Note wording of visual warning:

Fasten seat belt	<u>-</u>
Fasten Belt	<u>-</u>
Symbol 101-80	<u>X</u>

TABLE 9

FMVSS NO. 208 - READINESS INDICATOR

An occupant restraint system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. A totally mechanical system is exempt from this requirement.

Is the system totally mechanical? YES X NO

TABLE 10

FMVSS NO. 208 - COMFORT AND CONVENIENCE TEST SUMMARY

Test Vehicle NHTSA No.:	CK0204
Make/Model:	Ford Escort Pony
Date of Comfort/Convenience Check:	5/1/89
Technician Performing Check:	DJT
GVWR:	3165 lbs.

Seat belt comfort and convenience requirements cover vehicles manufactured on or after September 1, 1986, which have a gross vehicle weight rating of 10,000 pounds or less. Exemptions to this rule are belts installed in a walk-in, van-type vehicle and manual Type 2 belt systems installed in the front outboard seating positions of passenger automobiles. On or after September 1, 1989, the exemption of the Type 2 manual seat belts installed in the front outboard seating positions of passenger automobiles will change depending on the states' enactment of mandatory usage laws.

Was vehicle built after or on September 1, 1986, and is it equipped with:

1. Automatic seat belts YES X NO

If yes, go to requirements D1, D2 and D3

2. Manual seat belts YES NO X

**D1
CONVENIENCE HOOKS**

A convenience hook or other device is provided to stow seat belt webbing to facilitate entering or exiting the vehicle.

YES NO X

**D2
WEBBING TENSION - RELIEVING DEVICE**

The seat belt assembly installed in the outboard designated seating position has either manual or automatic tension relieving devices permitting the introduction of slack in the webbing of the shoulder belt ("comfort clips" or "window shade" devices).

YES NO X

TABLE 10 (continued)

FMVSS NO. 208 - COMFORT AND CONVENIENCE TEST SUMMARY

D3
BELT CONTACT FORCE

1. Do not measure the belt contact force if the manual or automatic seat belt assemblies in this vehicle incorporate a webbing tension relieving device.

YES NO X
2. Seats are adjusted according to instructions in Appendix B.

YES X NO
3. The test dummies are positioned according to dummy position placement instructions in Appendix B and Appendix C.

YES X NO
4. Close the vehicle's adjacent door, pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest. Then fasten the latch. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point, pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. Measure the contact force exerted by the belt webbing on the dummy's chest. The contact force is 0.4 pounds. Contact the COTR if the contact force exceeds 0.7 pounds.

Figure 10

FMVSS NO. 212 - "WINDSHIELD MOUNTING" DATA SHEET

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

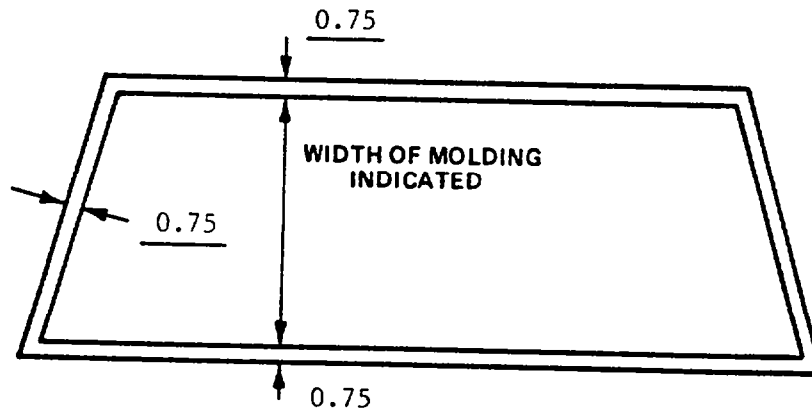
Windshield is bonded in place, edges are covered with a 0.75 inch wide plastic trim around the entire perimeter.

FMVSS 212 REQUIREMENTS: The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

FMVSS 212 TEST DATA:

	WINDSHIELD PERIPHERY		
	PRE-TEST (in.)	POST-TEST (in.)	PERCENT RETENTION
RIGHT SIDE	73.45	73.45	100%
LEFT SIDE	73.45	73.45	100%
TOTAL	146.9	146.9	100%

AREA OF RETENTION FAILURE:



FRONT VIEW

FAILURE DETAILS:

None.

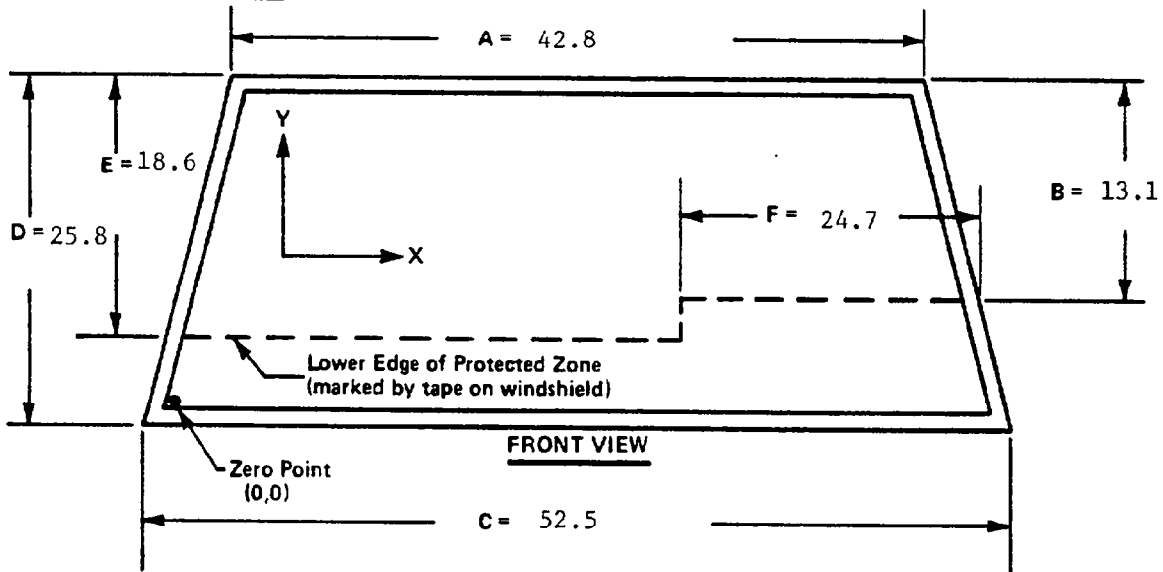
Figure 11

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

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 6.5" dia. rigid sphere weighing 15 pounds in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. The locus of points is drawn on the inner surface of the windshield contacted by the sphere across the width of the instrument panel. From the outermost contactable points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and 1/2" distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection of this line onto the outer surface of the windshield.

FMVSS 219 TEST DATA:



DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 1/4":
(Show location of penetration on above sketch)

None.

	COORDINATES	
	X	Y
1.		
2.		
3.		
4.		

TABLE 11

FUEL SYSTEM INTEGRITY POST IMPACT TEST DATAFMVSS NO. 301TEST VEHICLE NHTSA NO.:

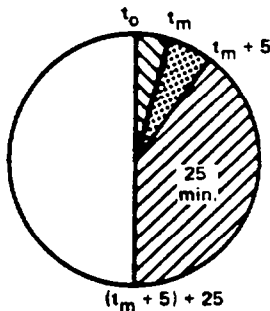
C	K	0	2	0	4
---	---	---	---	---	---

 TEST DATE: May 4, 1989Vehicle Mfr/Make/Model: 1989 Ford Escort Pony 2-door Hatchback

Test vehicle fuel tank filled to 92% to 94% of manufacturer's "useable" capacity and with electric fuel pump operating (if it will operate without engine operation) Part 572 test dummies located at each front designated seating position.

TEST VEHICLE IMPACT TYPE

- X Frontal (30 mph)
- Oblique (30 mph) with ° barrier face
first contacting
(driver/passenger) side
- Rear Moving Barrier (30 mph)
- Lateral Moving Barrier (20 mph)

FUEL SPILLAGE MEASUREMENT

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

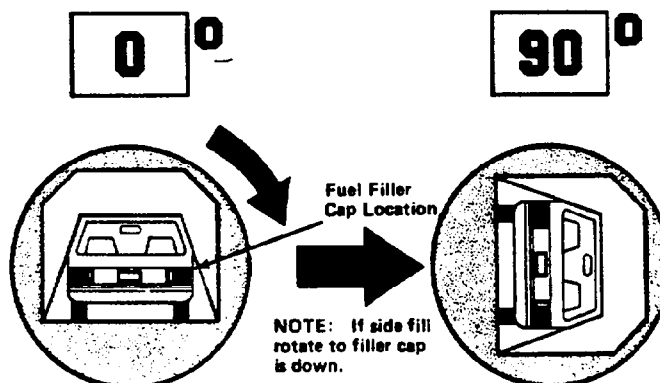
ACTUAL	MAX ALLOWED
0	1 oz
0	5 oz
0	1 oz/1 min

SOLVENT SPILLAGE DETAILS

None.

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE:



Rollover Fixture 90° Rotation Time 2 minutes 50 seconds
(Spec. Range = 1 to 3 minutes)

TOTAL

Next whole minute interval

(1) Time Period

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

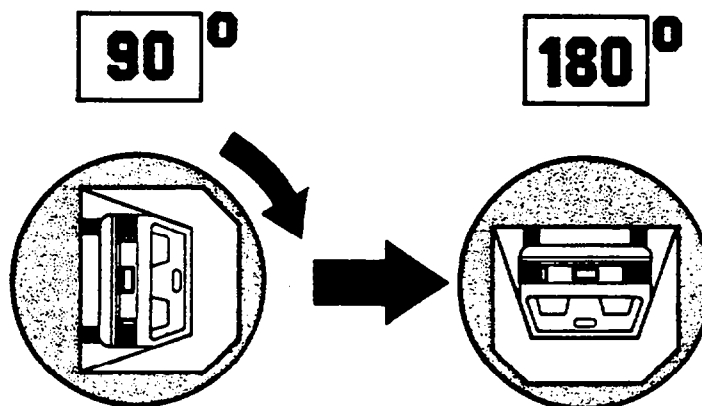
5 ounces	1 ounce	1 ounce	1 ounce
----------	---------	---------	---------

0	0	0	0
---	---	---	---

IV. SOLVENT SPILLAGE LOCATION(S):

4-10

7715-5

FMVSS NO. 301 STATIC ROLLOVER DATA SHEETVeh. NHTSA ID No.:
CK0204TEST PHASE:I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes) 2 minutes 56 seconds

FMVSS 301 Position Hold Time + 05 minutes 00 seconds

TOTAL 7 minutes 56 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce
----------	---------	---------	---------

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

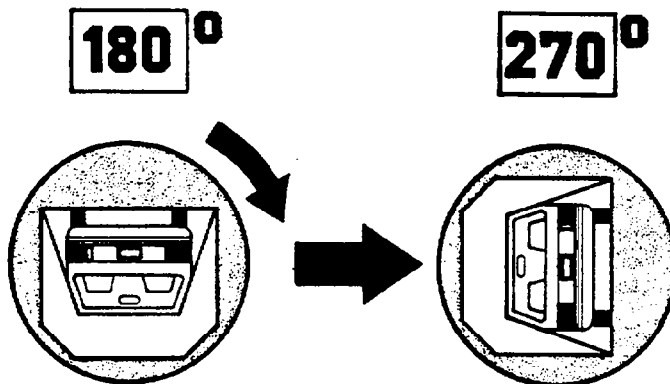
0	0	0	0
---	---	---	---

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

IV. SOLVENT SPILLAGE LOCATION(S):

None.

TABLE 12 (continued)

FMVSS NO. 301 STATIC ROLLOVER DATA SHEETVeh. NHTSA ID No.:
CK0204TEST PHASE:I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:Rollover Fixture 90° Rotation Time 2 minutes 53 seconds
(Spec. Range = 1 to 3 minutes)FMVSS 301 Position Hold Time + 05 minutes 00 seconds

TOTAL

7 minutes 53 seconds

Next whole minute interval

8 minutesII. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce
----------	---------	---------	---------

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0
---	---	---	---

Note: Record spillage for
whole minute intervals
only as determined
above.IV. SOLVENT SPILLAGE LOCATION(S):

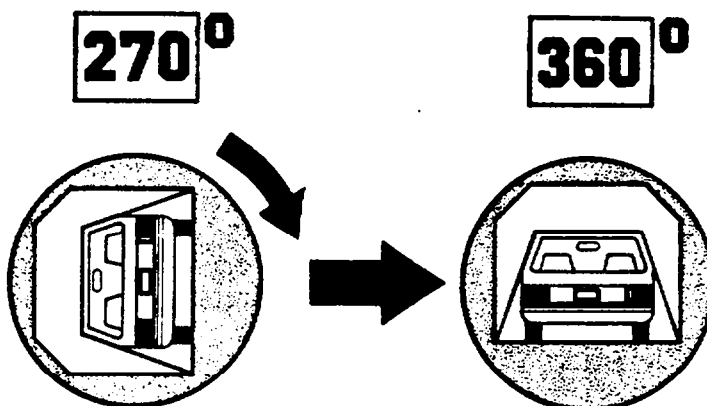
None.

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

Veh. NHTSA ID No.:

CK0204

TEST PHASE:



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 55 seconds
(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 05 minutes 00 seconds

TOTAL

7 minutes 55 seconds

Next whole minute interval

8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce
----------	---------	---------	---------

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0
---	---	---	---

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

IV. SOLVENT SPILLAGE LOCATION(S):

None.

TABLE 13

TEST VEHICLE NONCOMPLIANCE NOTICE

NHTSA CONTRACT LAB: Calspan Advanced Technology Center

LAB. PROJECT MANAGER & TELEPHONE NO.: Walter E. Levan (716) 632-7500

DATE OF TEST: May 4, 1989 VEH. NHTSA No. CK0204

VEHICLE MANUFACTURER: Ford Motor Company

Model Year 1989 VIN: 1FAPP9098KT116213

Body Style: 2-door Hatchback Build Date: 10/88

DUMMY STABILIZED TEMPERATURE AT TIME OF TEST: 70 °F (Spec. = 66-78°F)

IMPACT VELOCITY: 29.7 mph TIME OF TEST: 12:30

TYPE OF AUTOMATIC RESTRAINT SYSTEM: Driver and Passenger - Automatic
Shoulder Belt

FAILURE DETAILS: Vehicle appears to comply with the requirements of

FMVSS Nos. 208, 212, 219 (partial) and 301.

Appendix A

PHOTOGRAPHS



Figure A-1 PRE-TEST FRONT VIEW

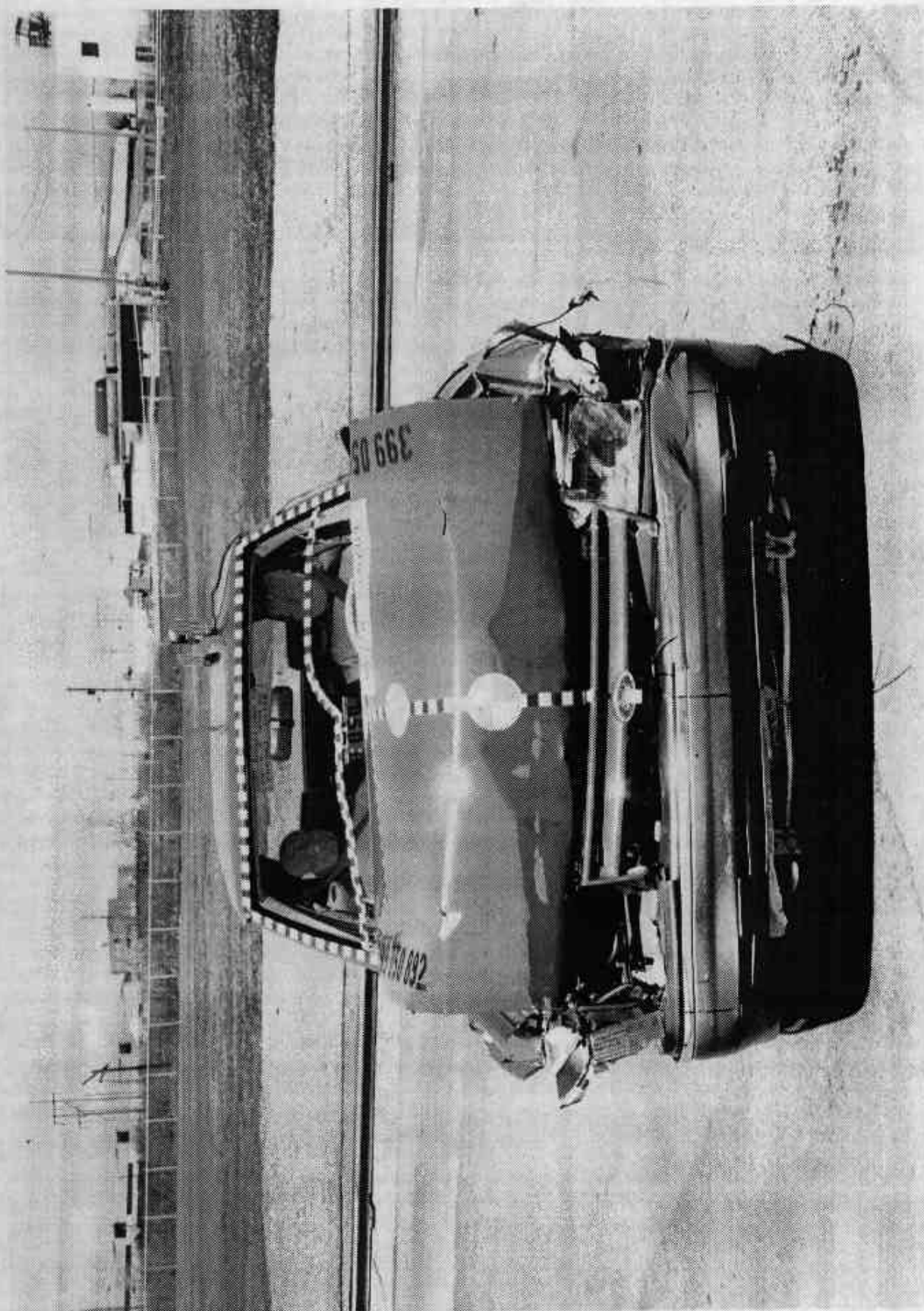


Figure A-2 POST-TEST FRONT VIEW

A-3

7715-5

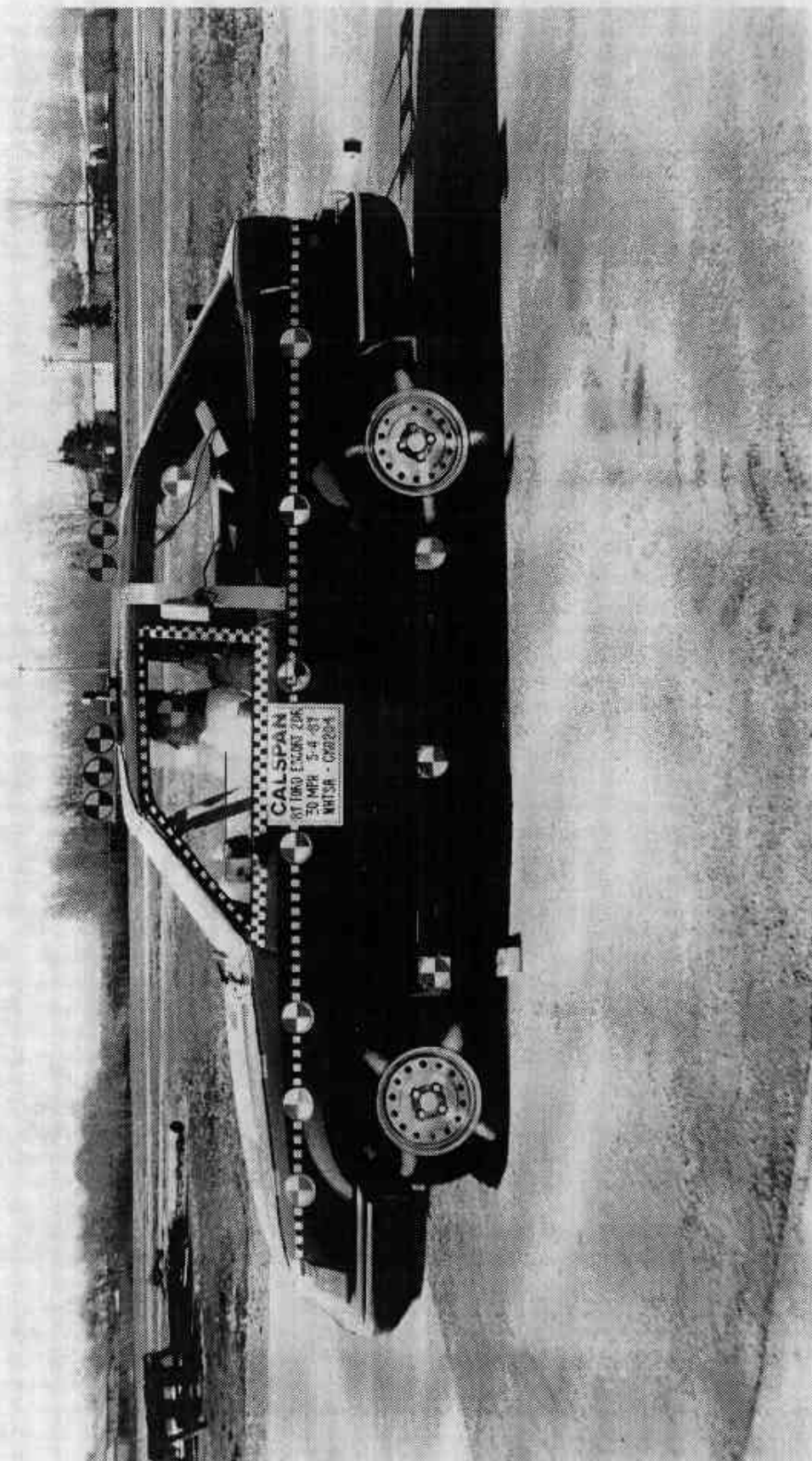


Figure A-3 PRE-TEST LEFT SIDE VIEW

A-4

7715-5

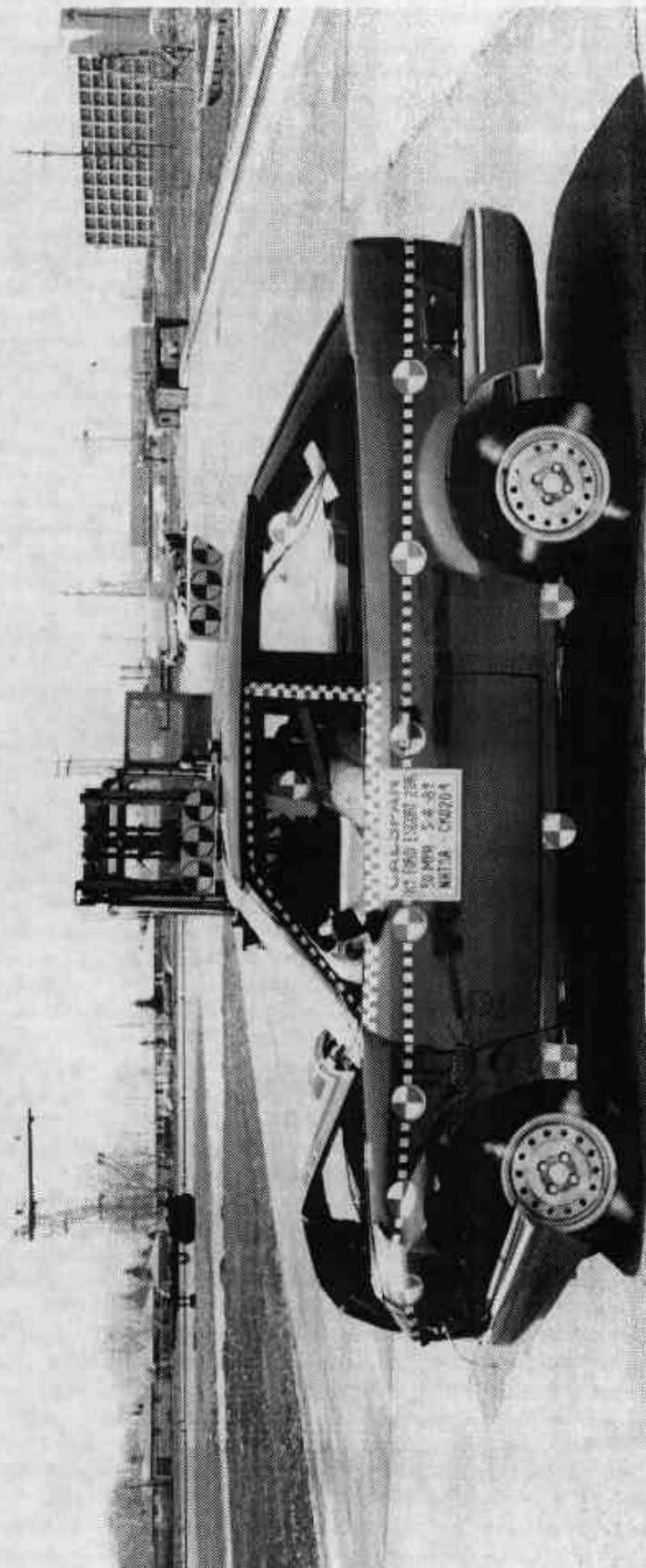


Figure A-4 POST-TEST LEFT SIDE VIEW

A-5

7715-5

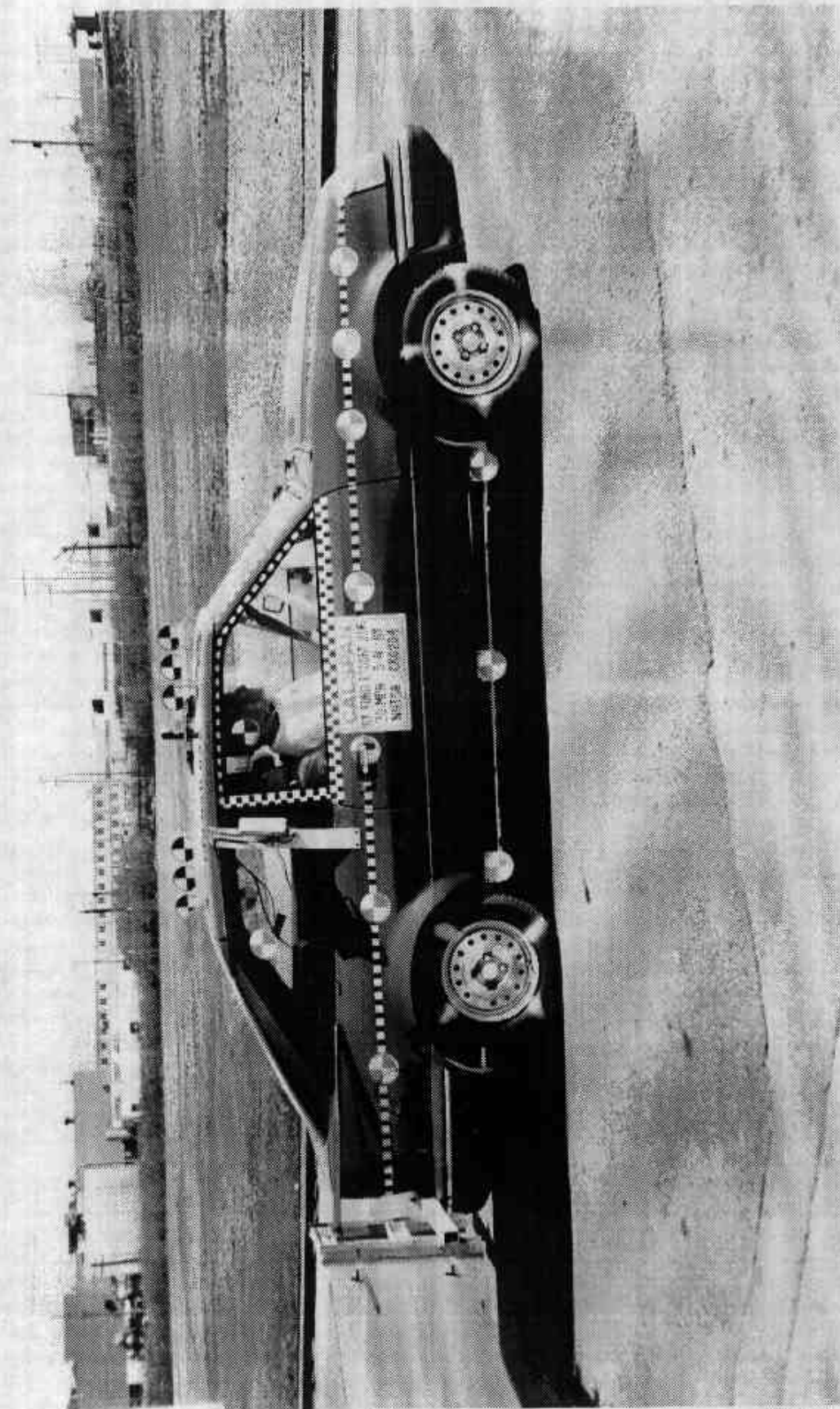


Figure A-5 PRE-TEST RIGHT SIDE VIEW

A-6

7715-5

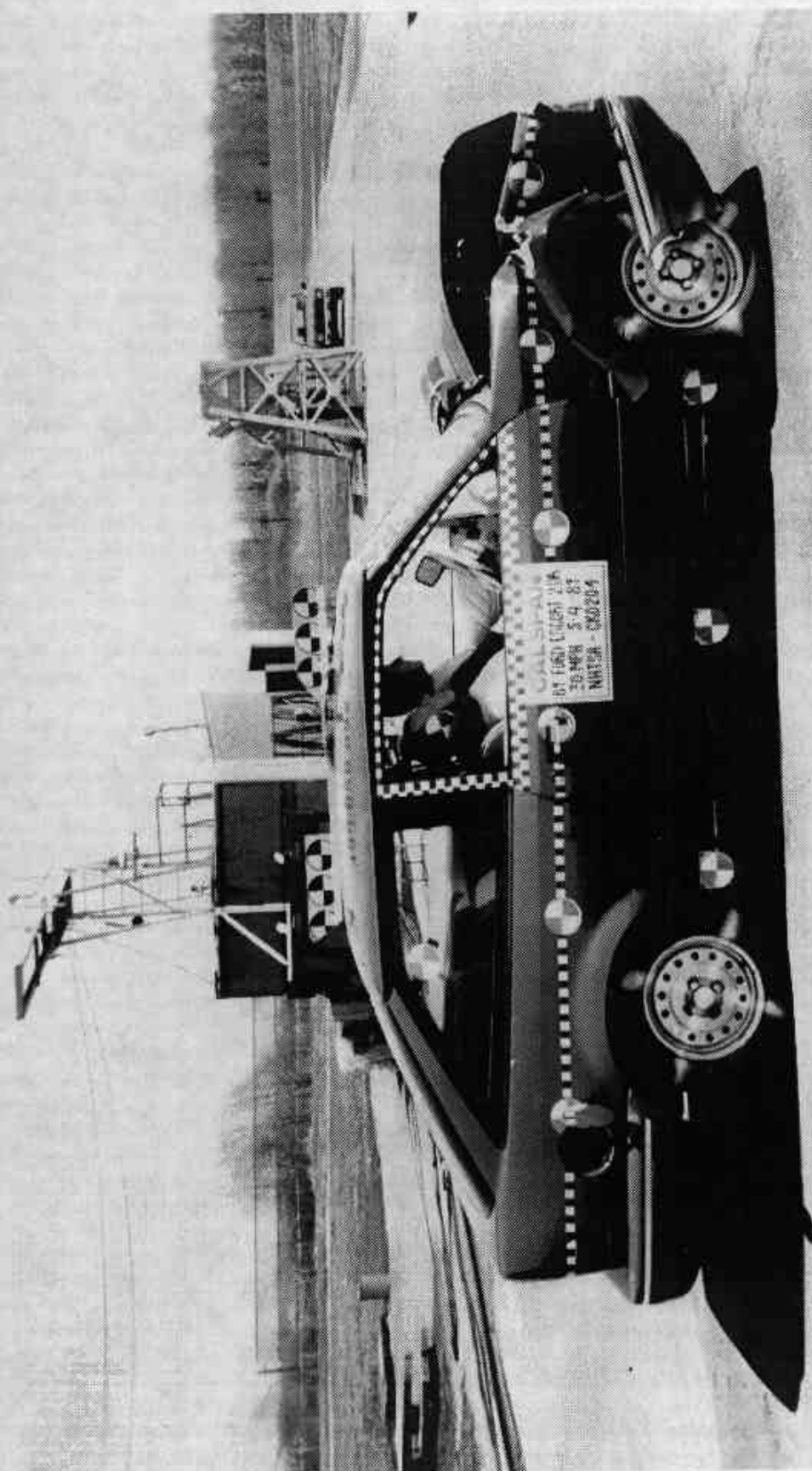


Figure A-6 POST-TEST RIGHT SIDE VIEW

A-7

7715-5

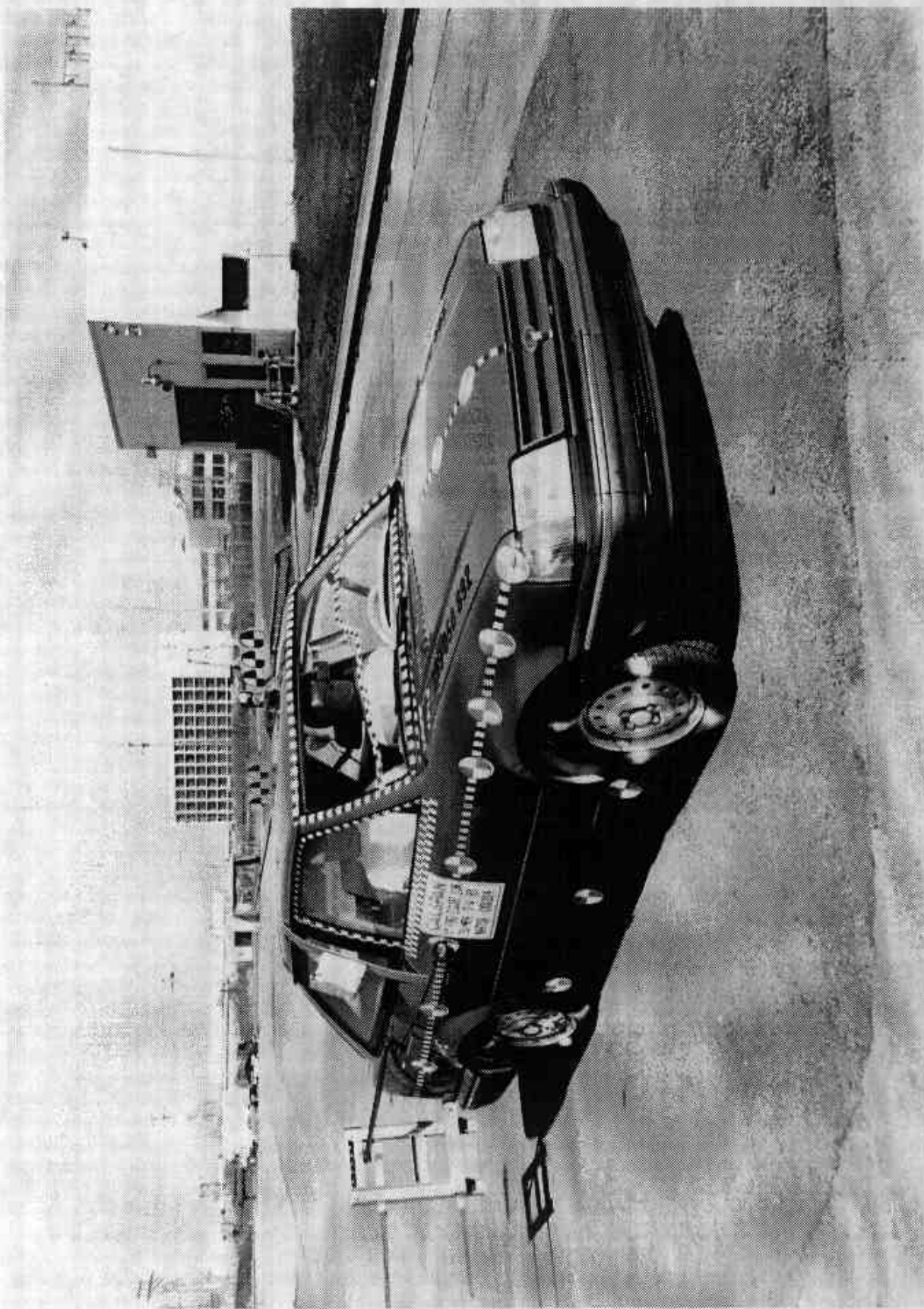


Figure A-7 PRE-TEST RIGHT FRONT THREE-QUARTER VIEW

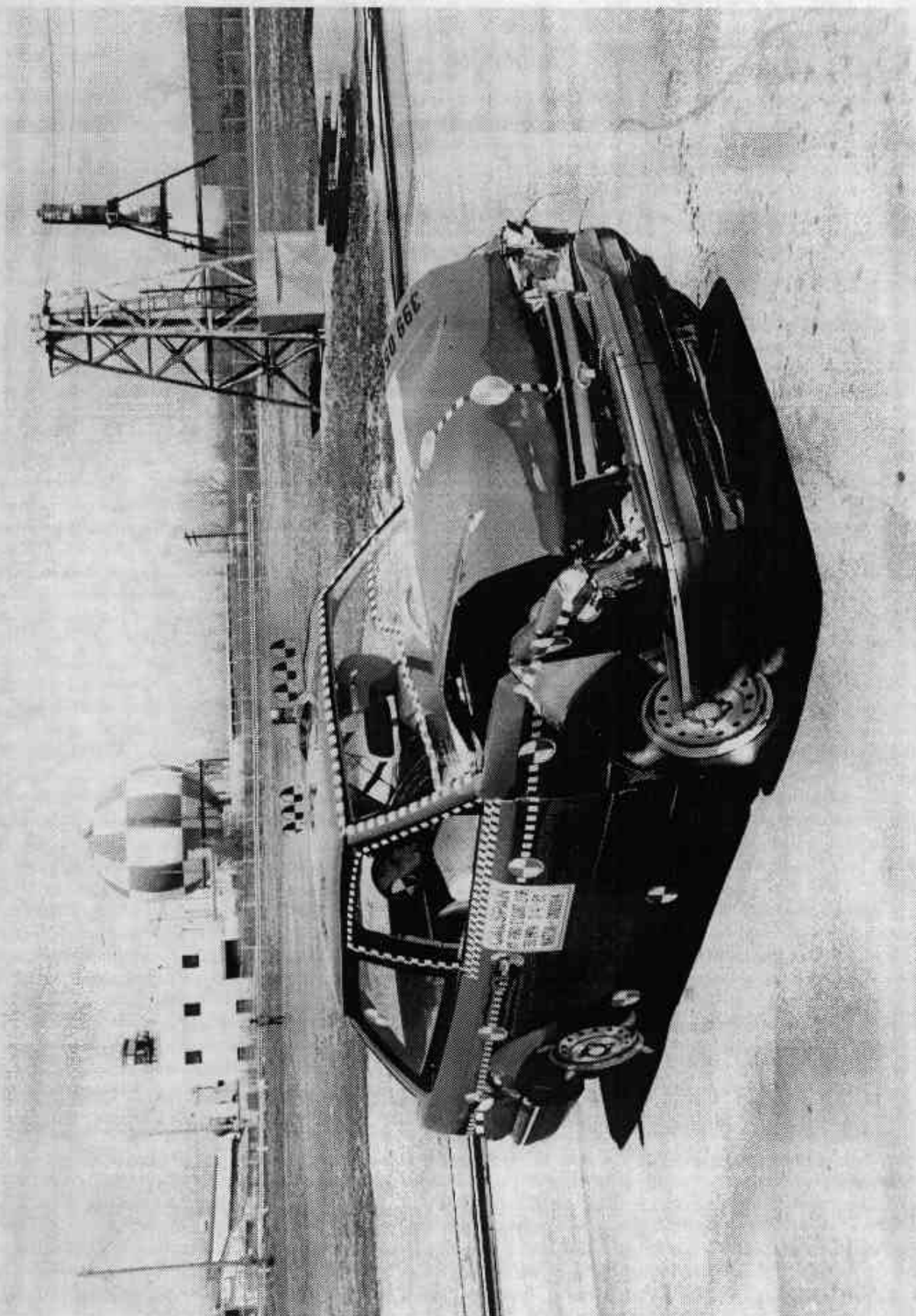


Figure A-8 POST-TEST RIGHT FRONT THREE-QUARTER VIEW

A-9

7715-5

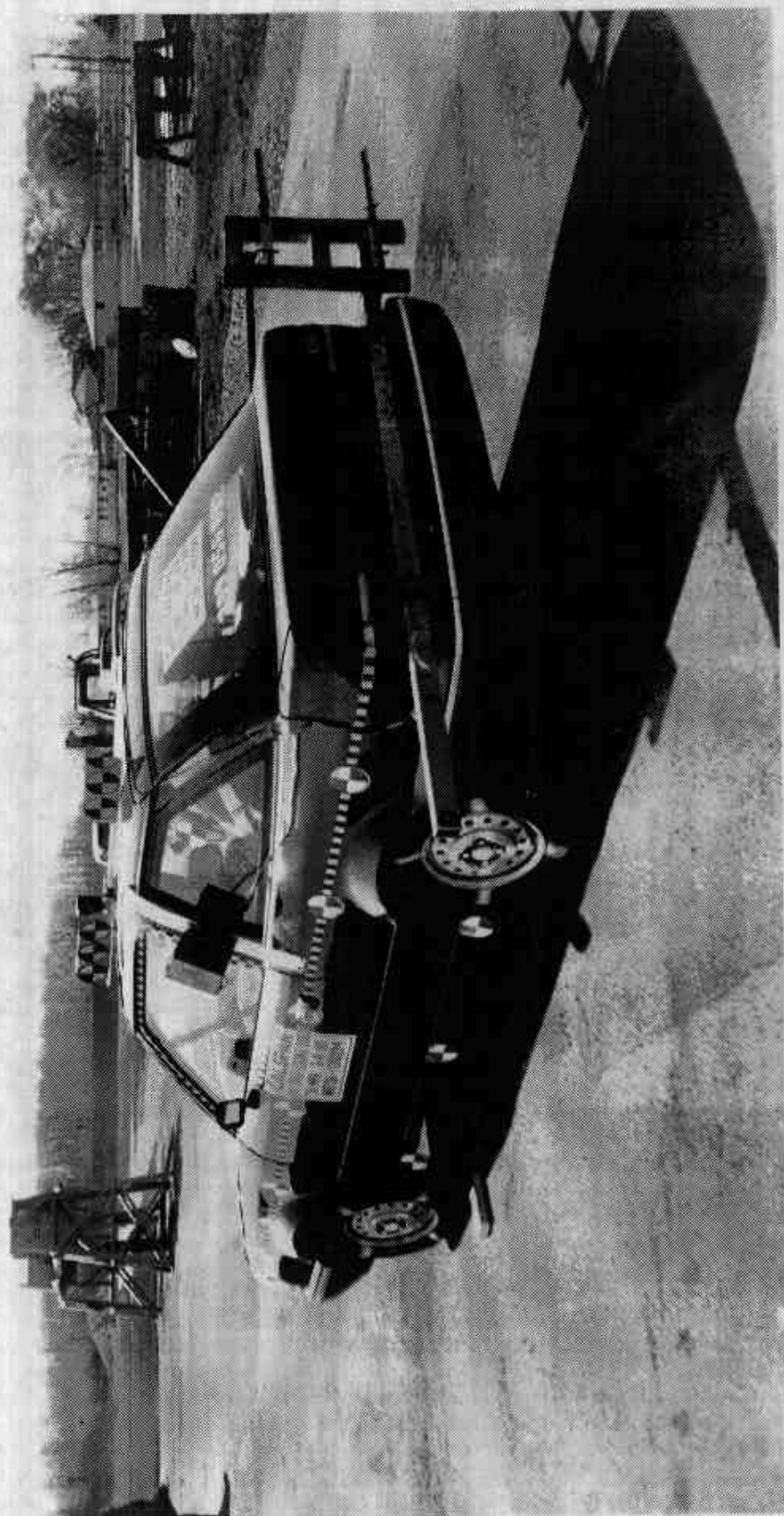


Figure A-9 PRE-TEST LEFT REAR THREE-QUARTER VIEW

A-10

7715-5



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

A-11

7715-5



Figure A-11 POST-TEST TOP VIEW

A-12

7715-5

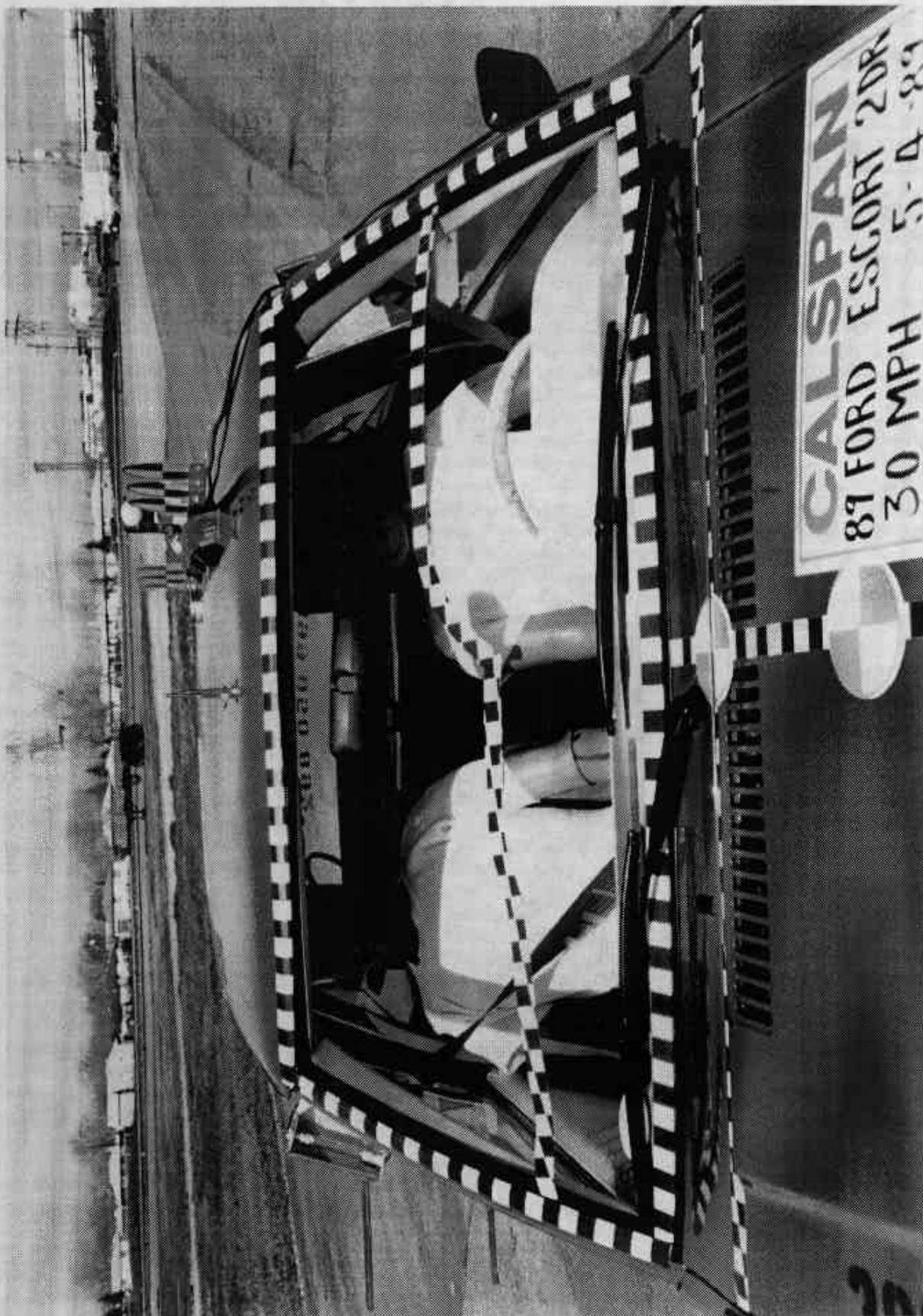


Figure A-12 PRE-TEST WINDSHIELD VIEW

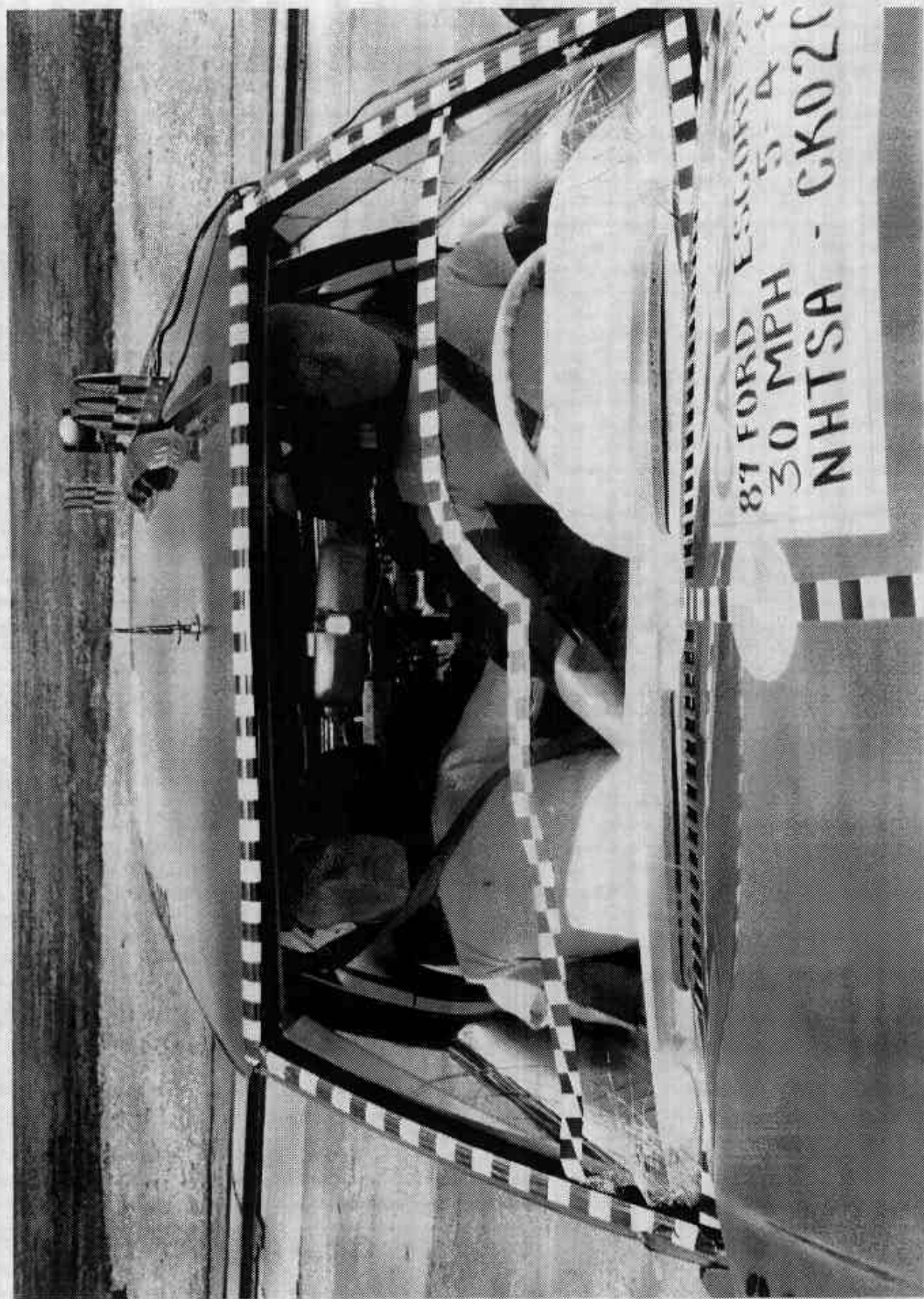


Figure A-13 POST-TEST WINDSHIELD VIEW

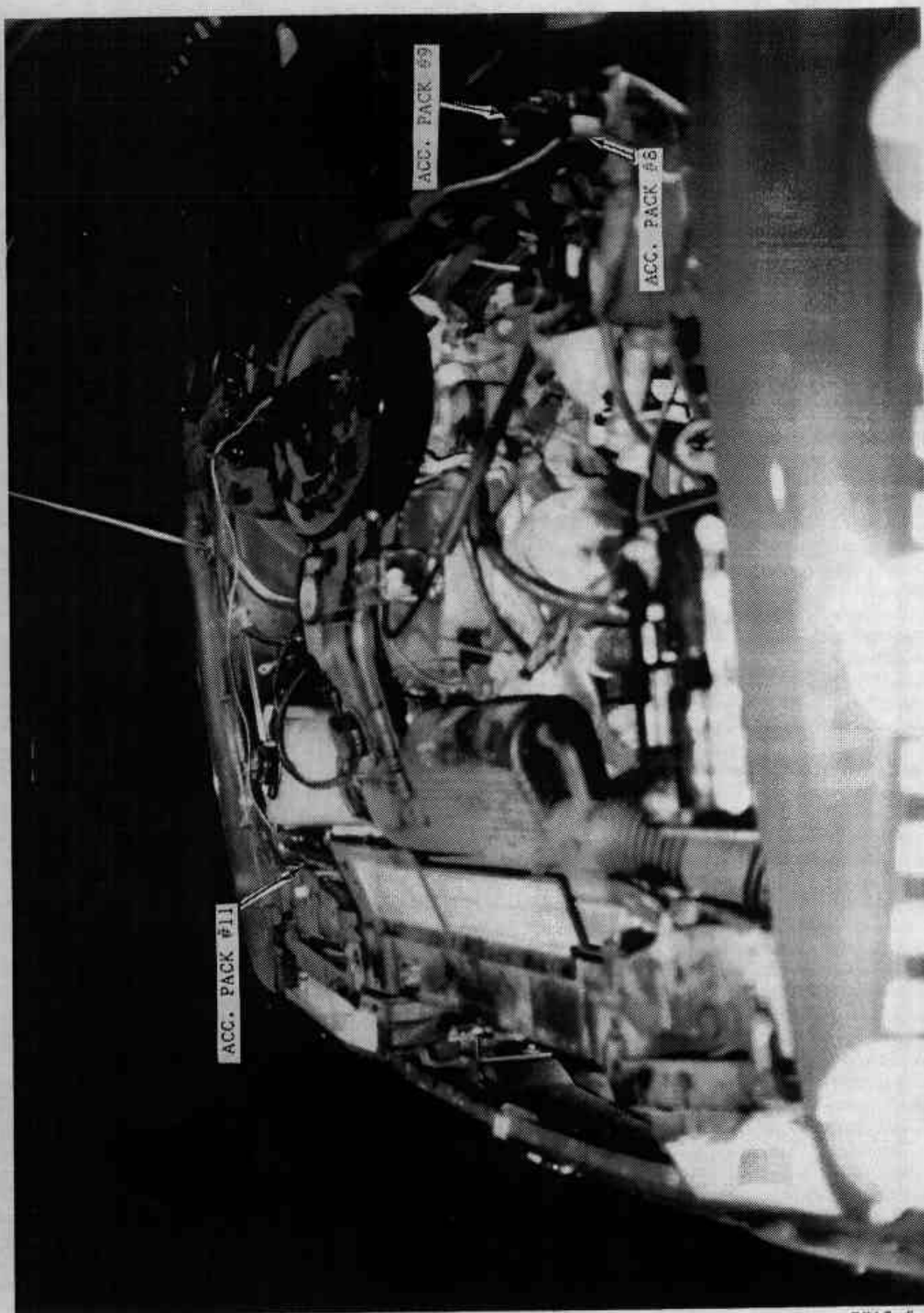


Figure A-14 PRE-TEST ENGINE COMPARTMENT VIEW

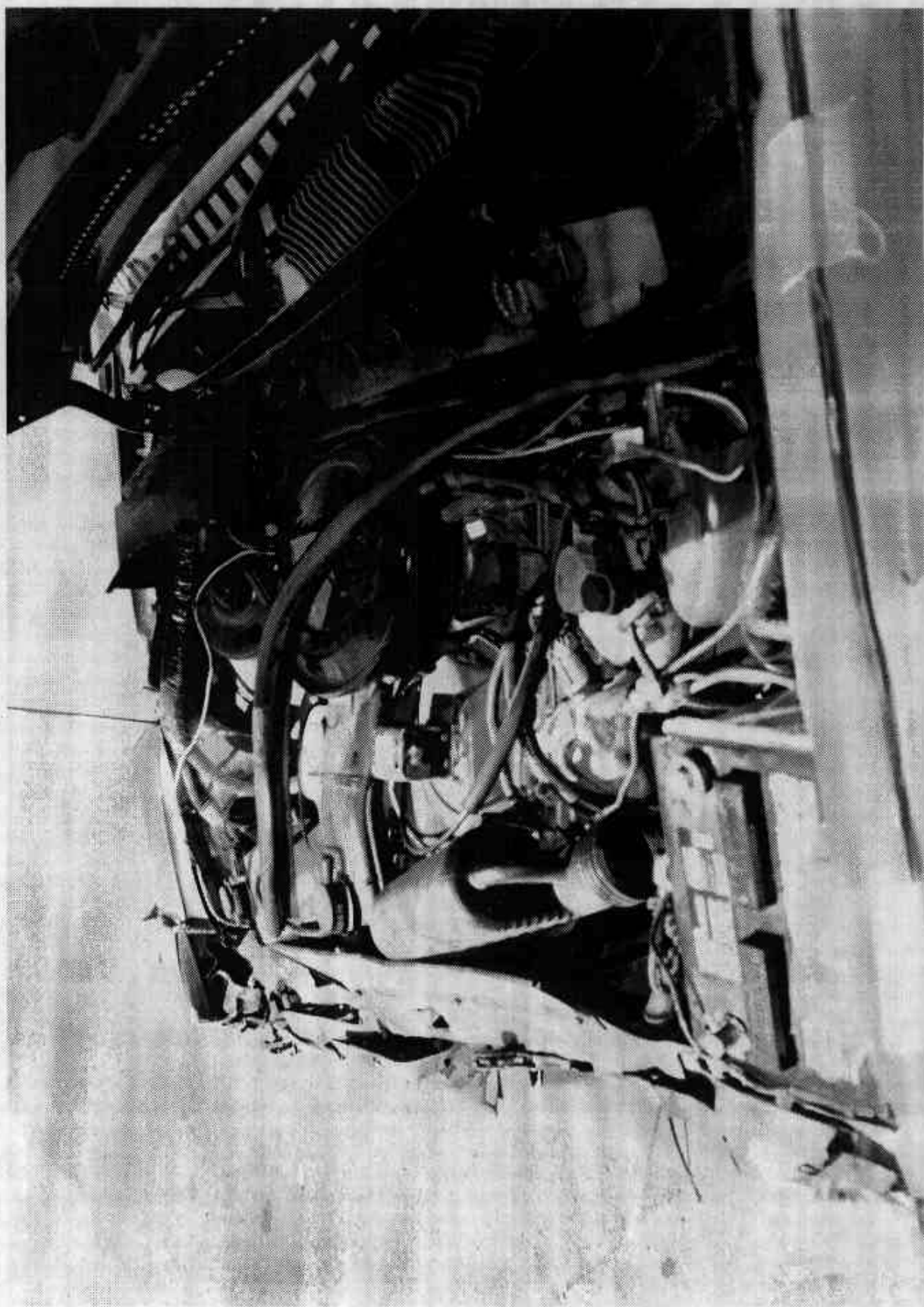


Figure A-15 POST-TEST ENGINE COMPARTMENT VIEW

A-16

7715-5

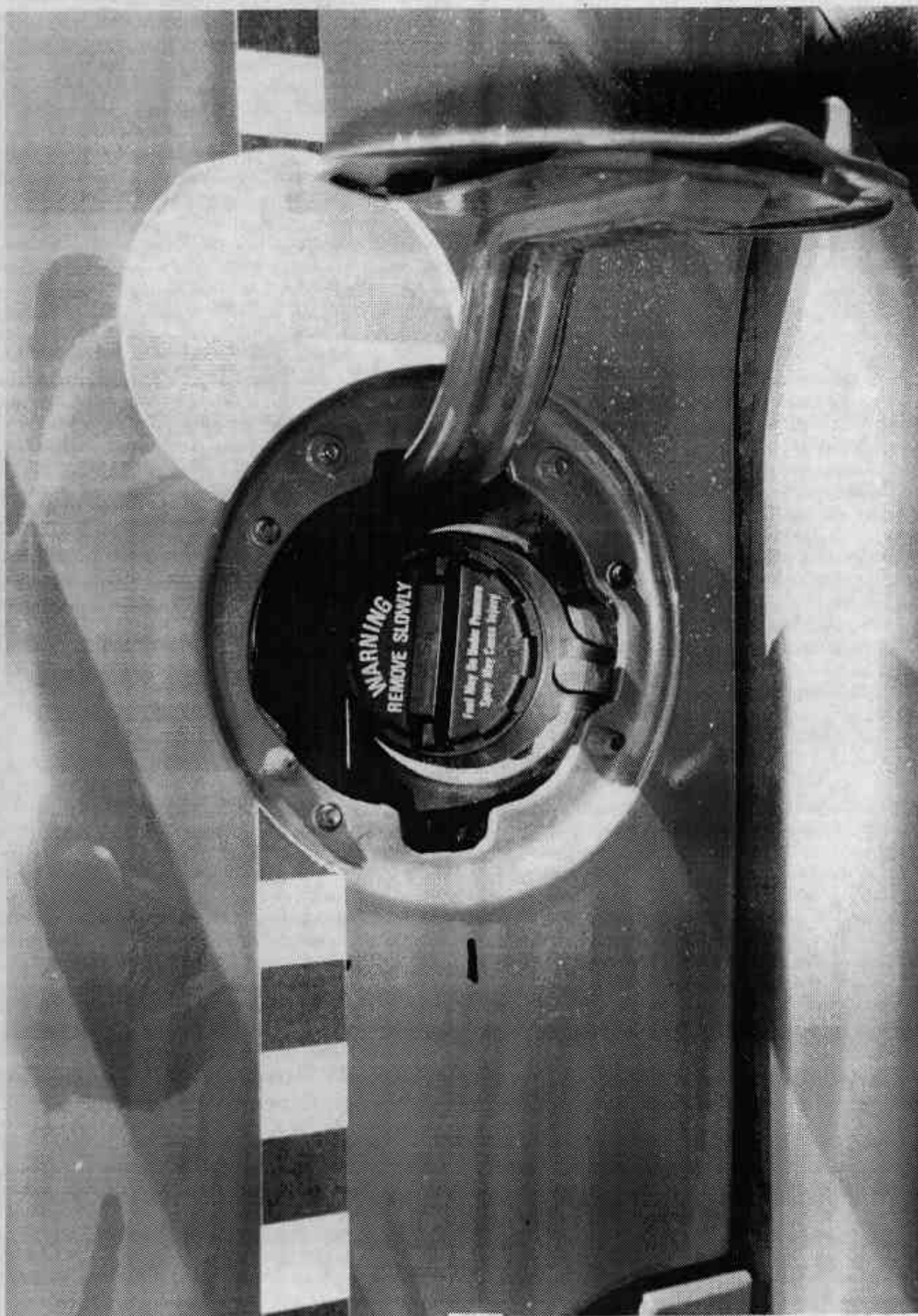


Figure A-16 PRE-TEST FUEL FILLER CAP VIEW

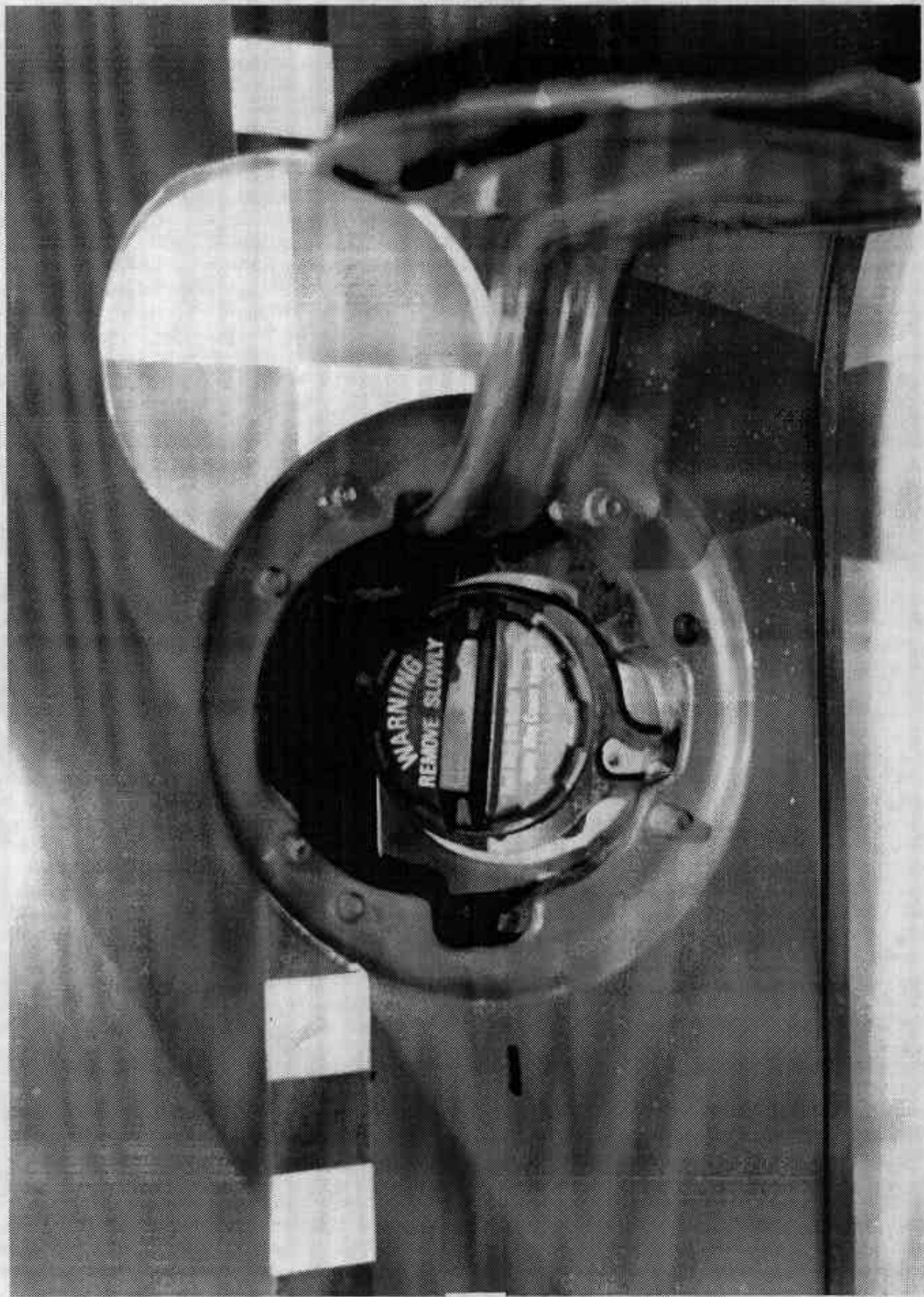


Figure A-17 POST-TEST FUEL FILLER CAP VIEW

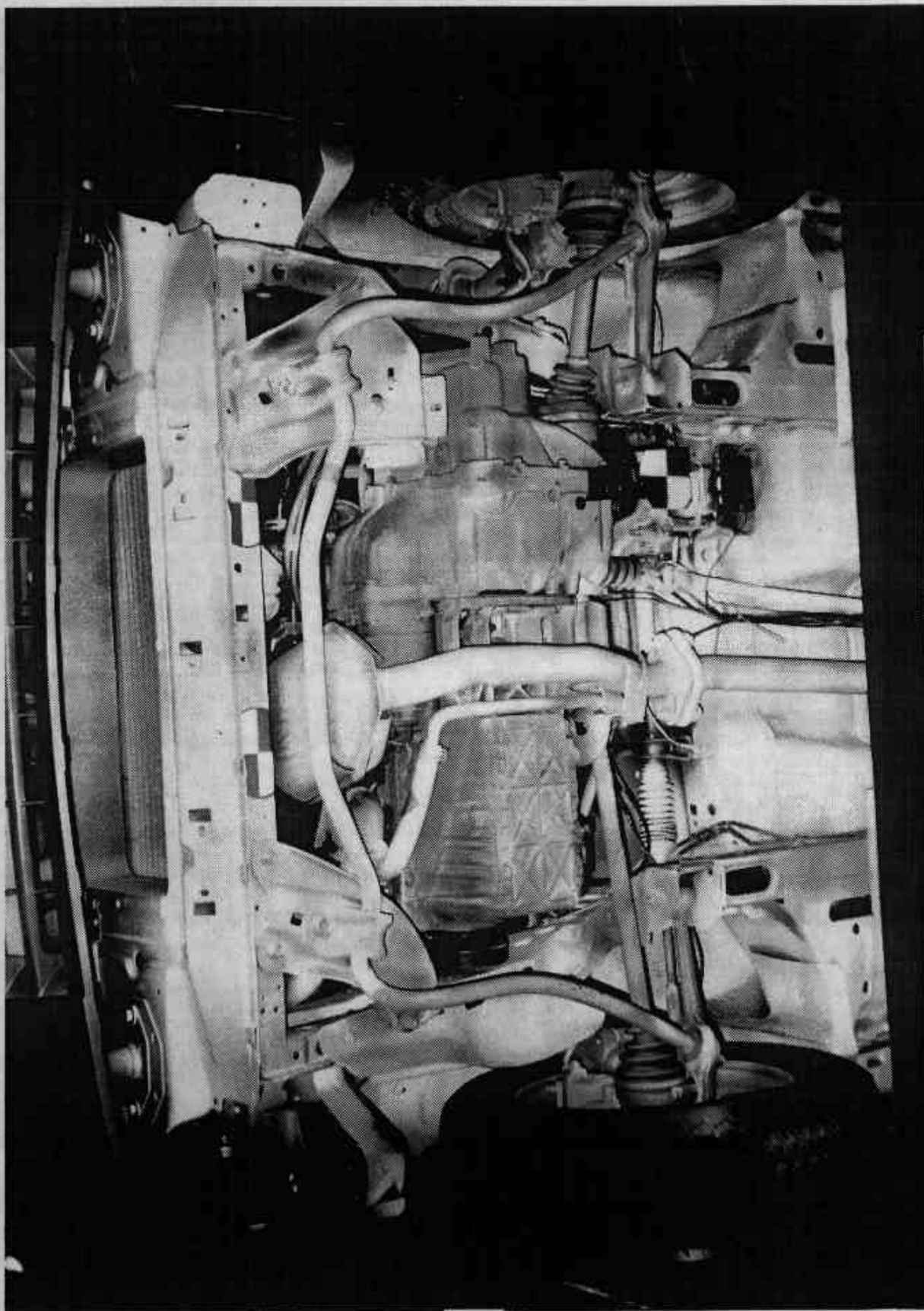


Figure A-18 PRE-TEST FRONT UNDERBODY VIEW

A-19

7715-5

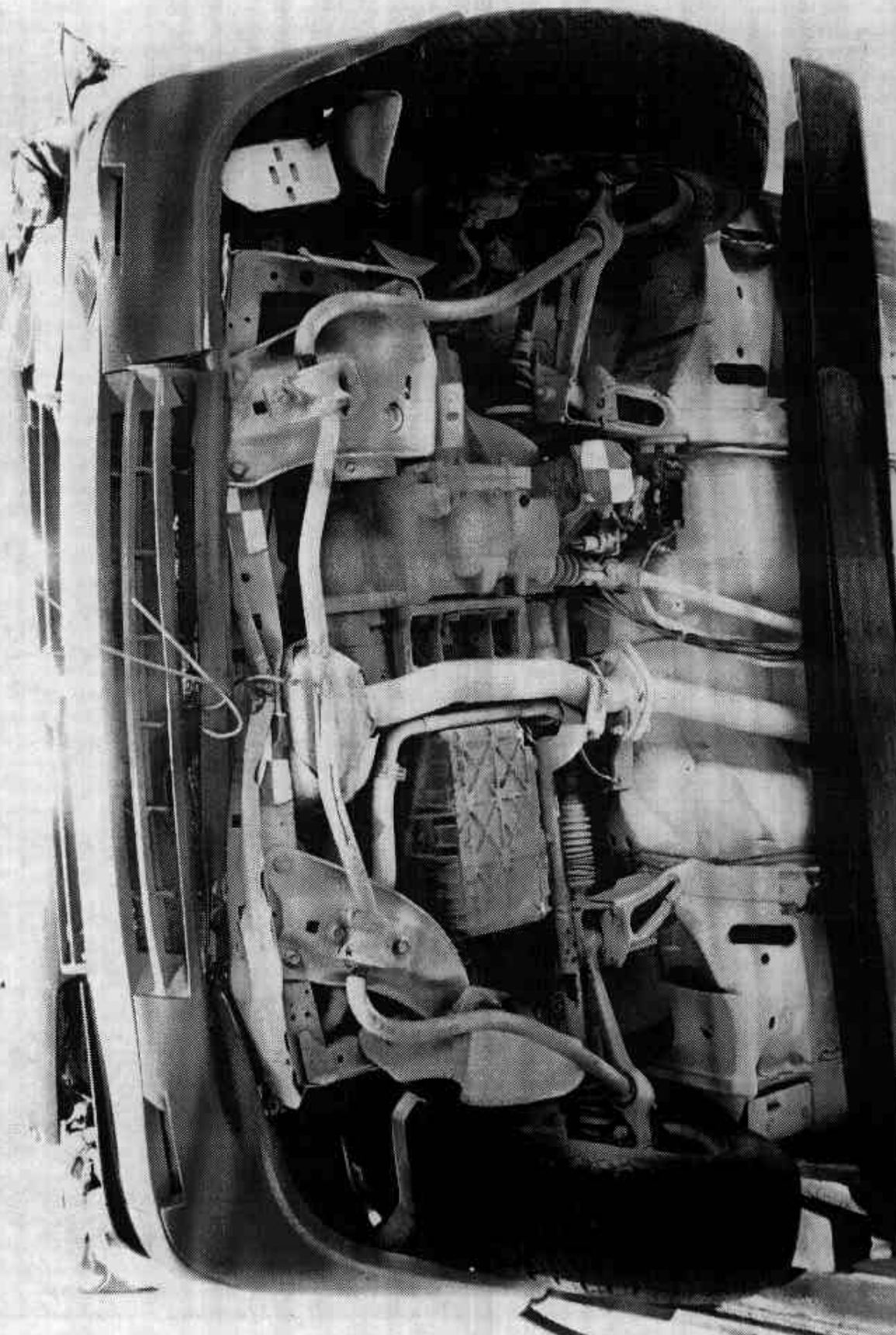


Figure A-19 POST-TEST FRONT UNDERBODY VIEW

A-20

7715-5

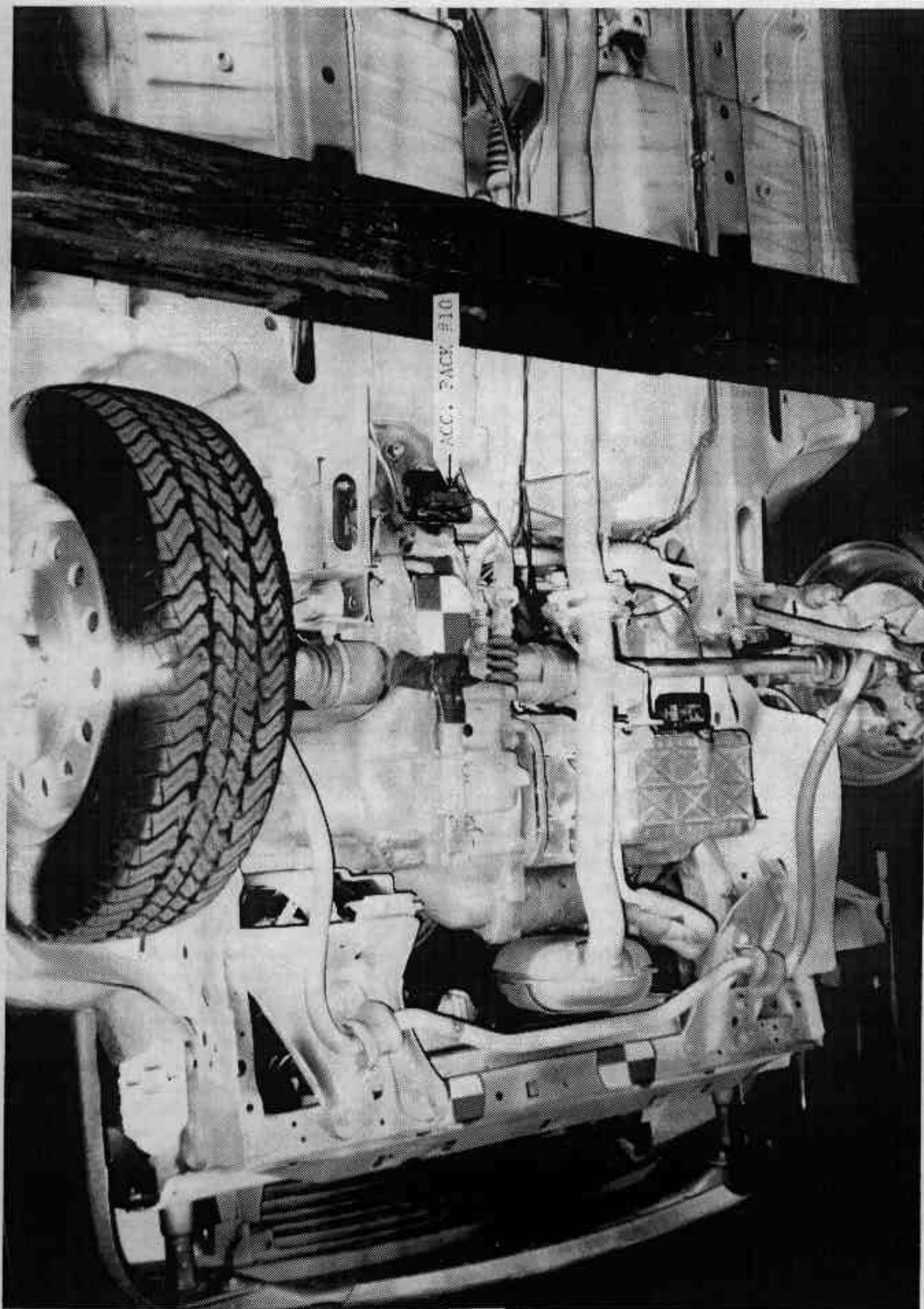


Figure A-20 PRE-TEST FRONT SIDE UNDERBODY VIEW

A-21

7715-5

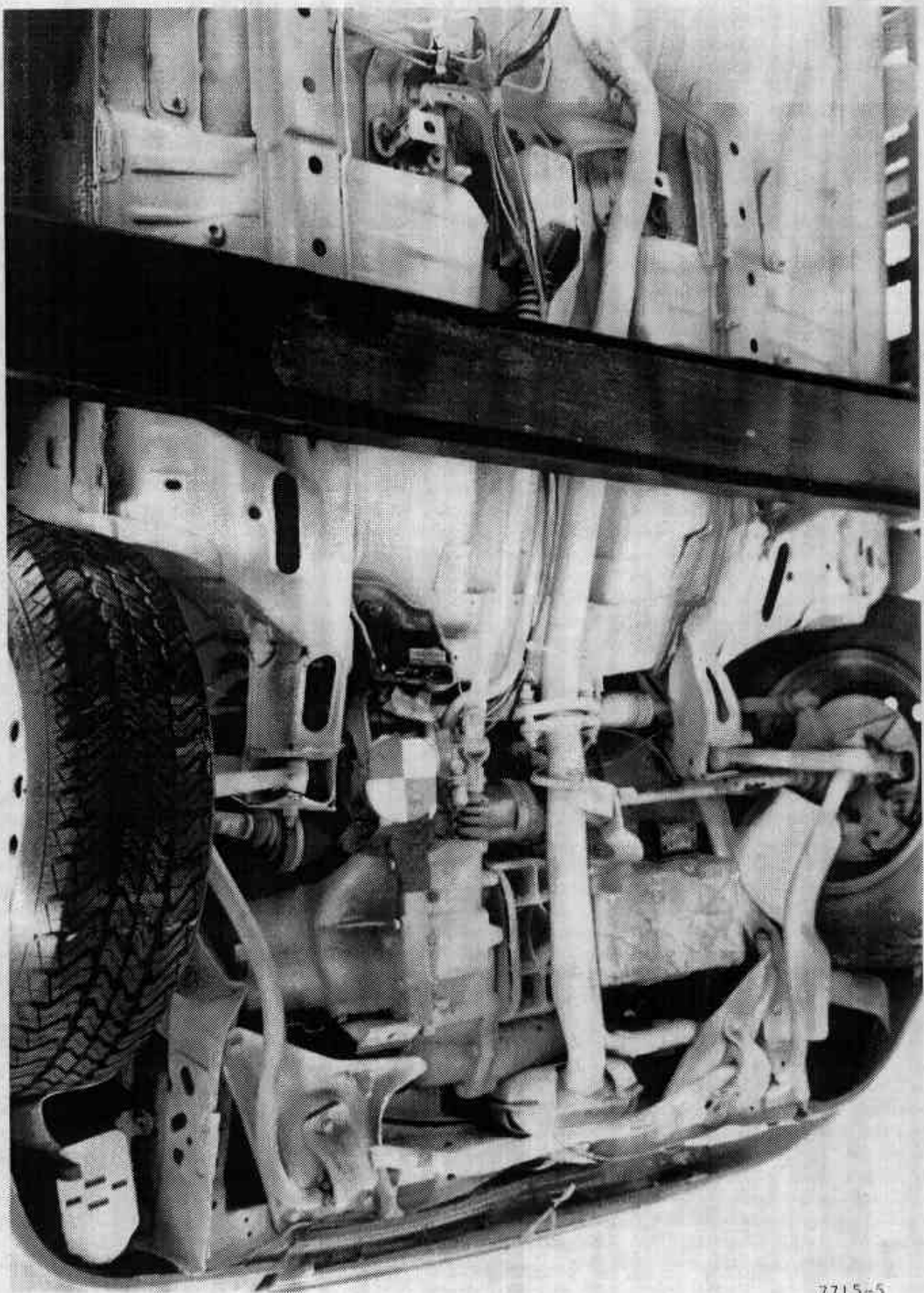


Figure A-21 POST-TEST FRONT SIDE UNDERBODY VIEW

A-22

7715-5



Figure A-22 PRE-TEST REAR UNDERBODY VIEW

A-23

7715-5

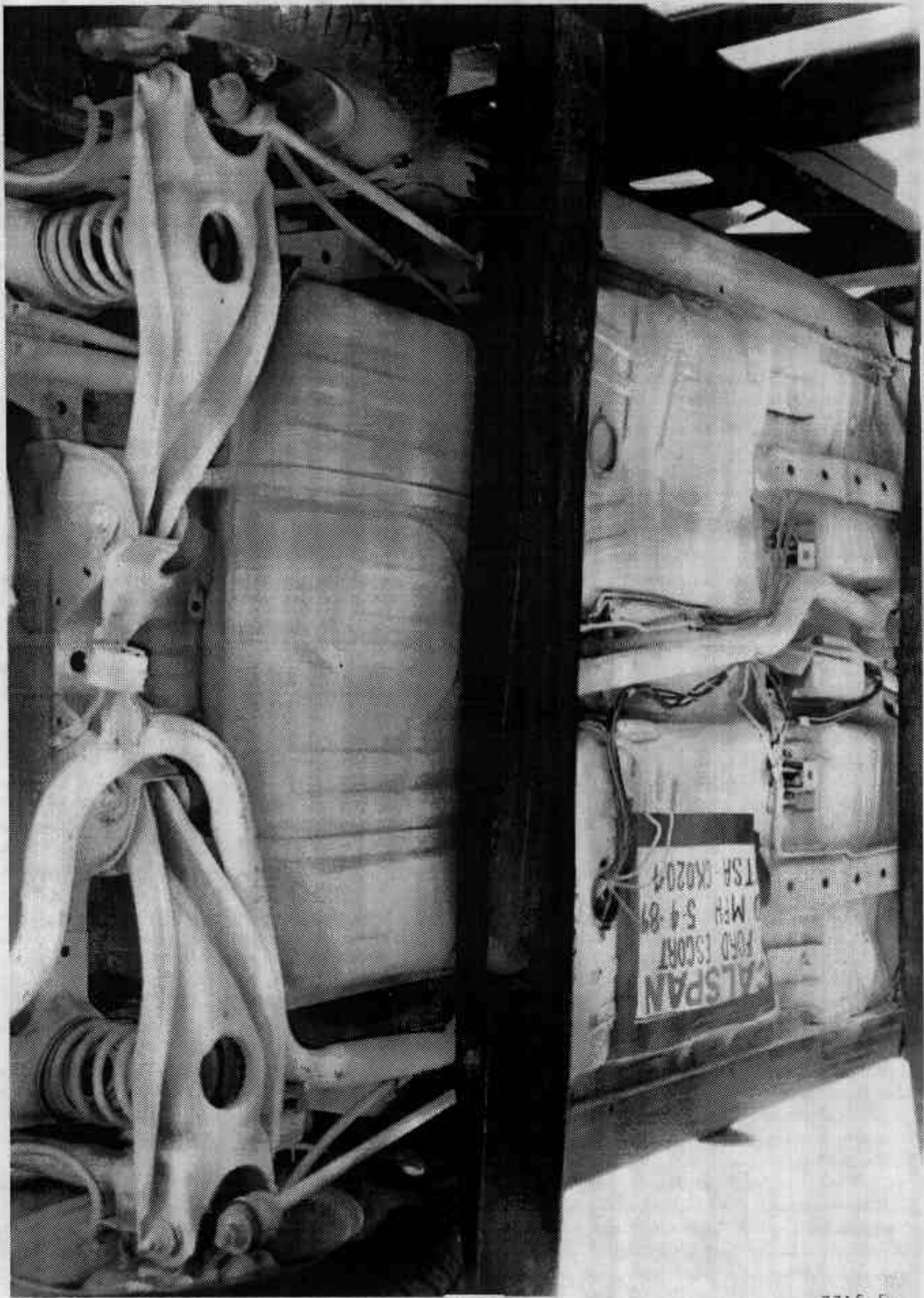


Figure A-23 POST-TEST REAR UNDERBODY VIEW

A-24

7715-5

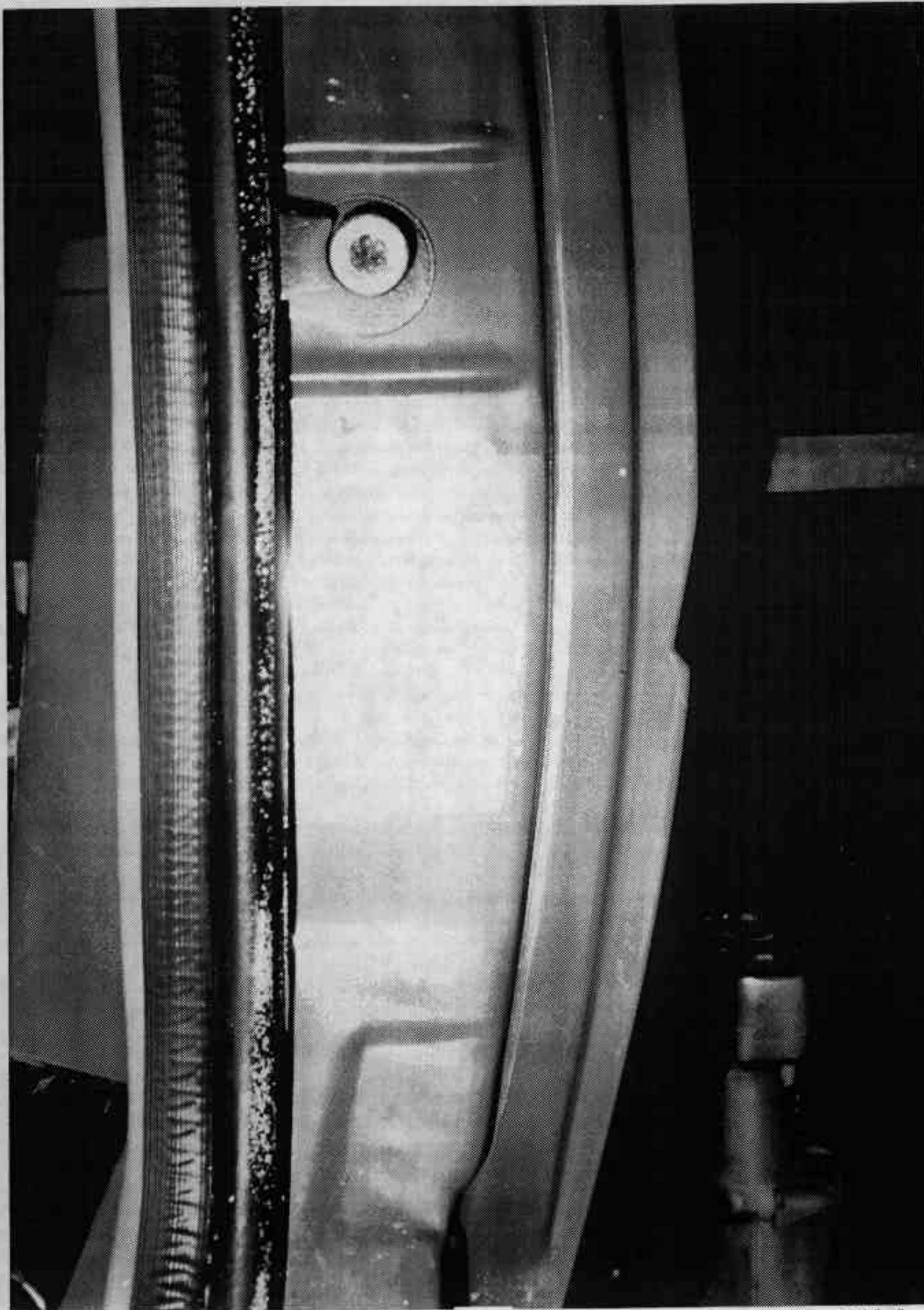


Figure A-24. CERTIFICATION LABEL

A-25

7715-5

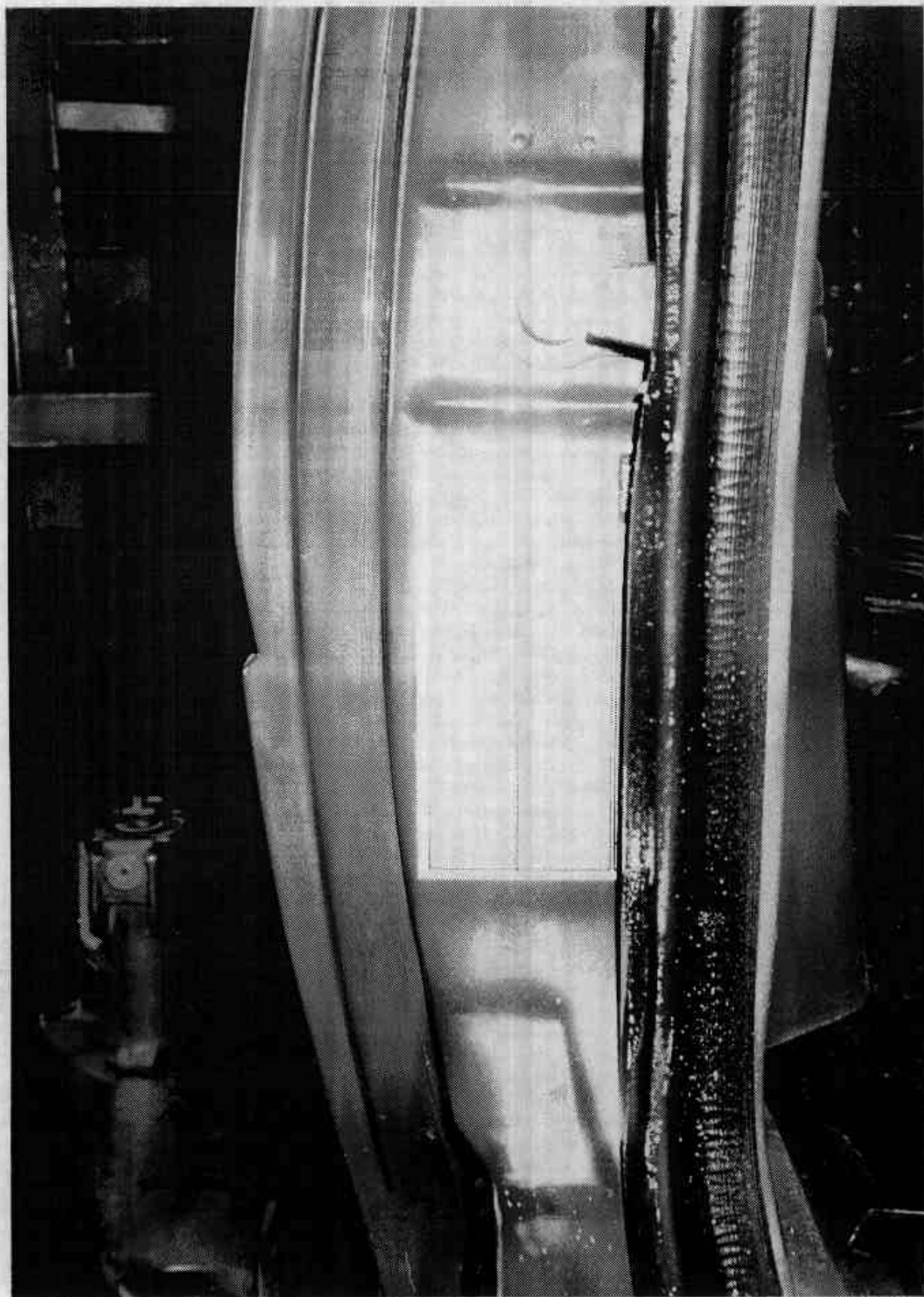


Figure A-25 TIRE PLACARD

A-26

7715-5

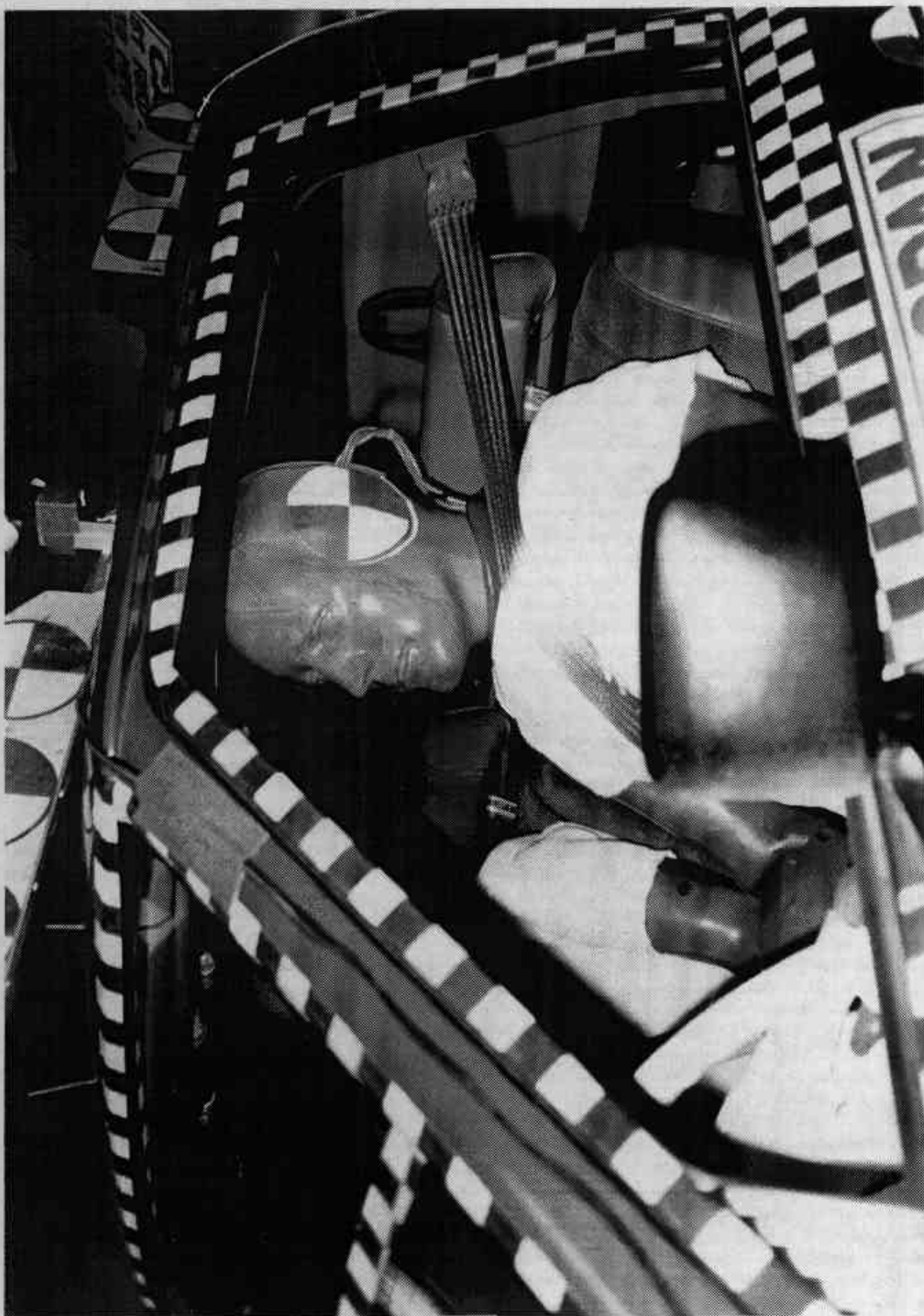


Figure A-26 PRE-TEST DRIVER DUMMY POSITION

A-27

7715-5

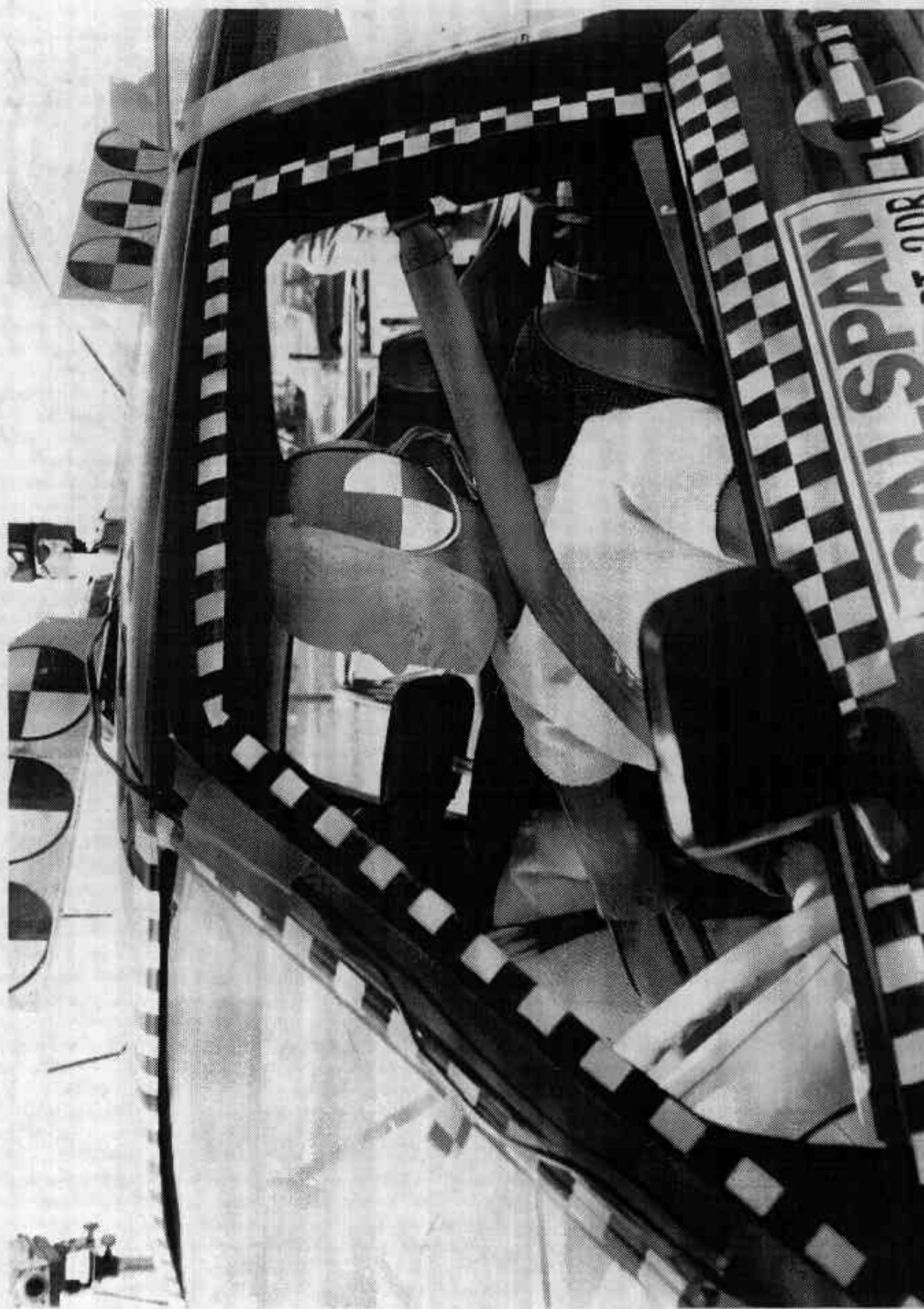


Figure A-27 POST-TEST DRIVER DUMMY POSITION



Figure A-28 PRE-TEST PASSENGER DUMMY POSITION



Figure A-29 POST-TEST PASSENGER DUMMY POSITION

A-30

7715-5

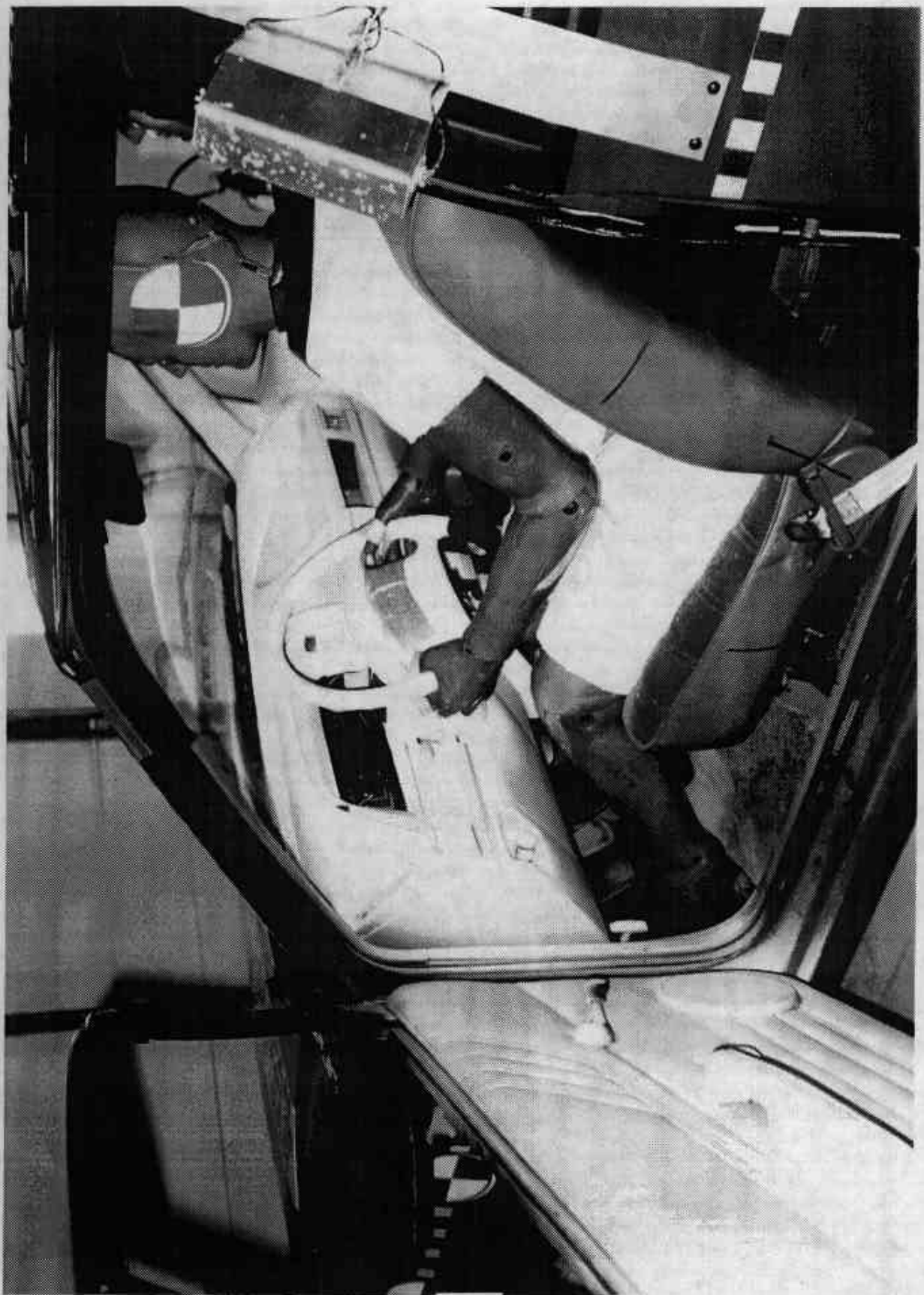


Figure A-30 PRE-TEST DRIVER DUMMY AND INTERIOR VIEW

A-31

7715-5

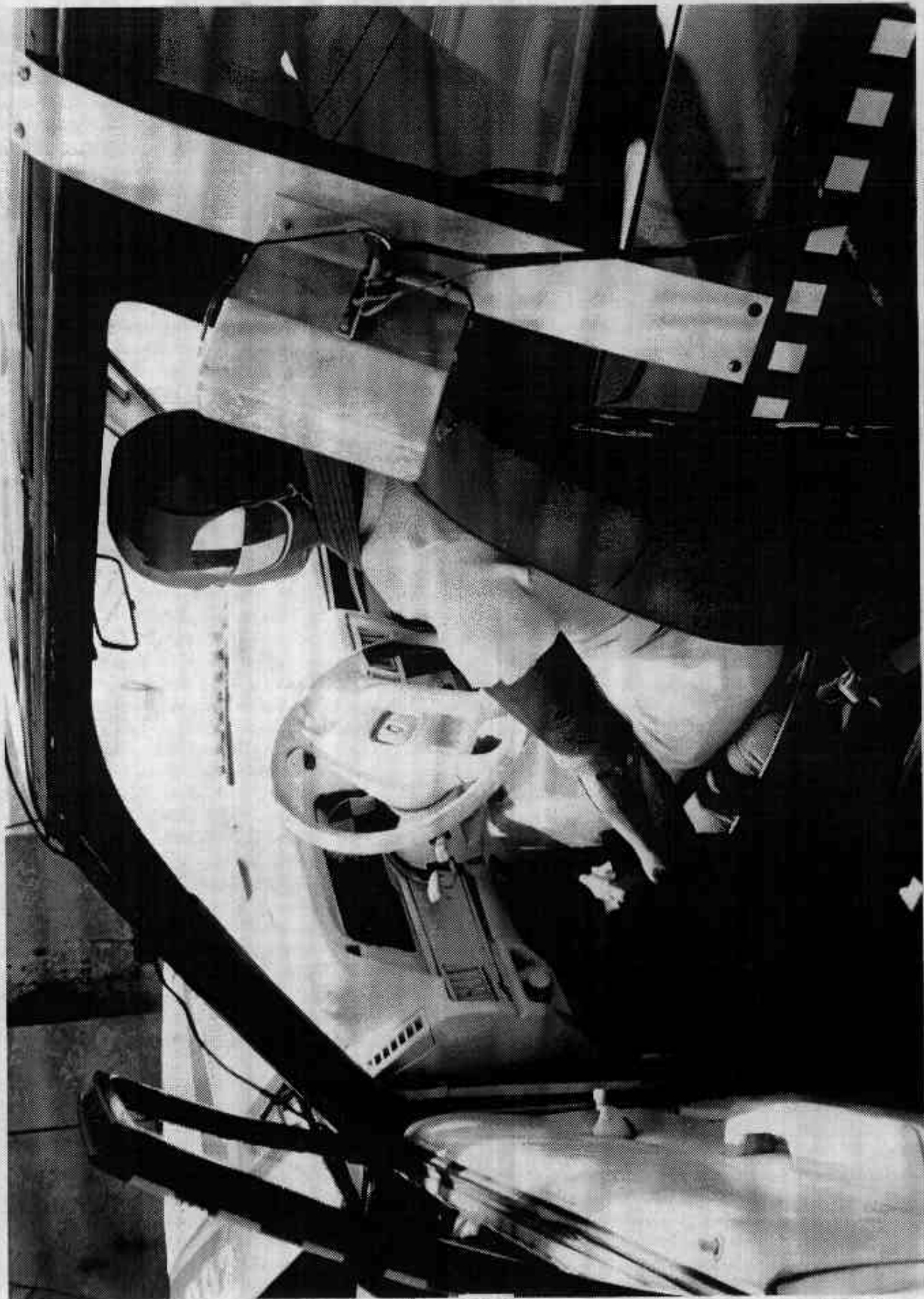


Figure A-31 POST-TEST DRIVER DUMMY AND INTERIOR VIEW

A-32

7715-S



Figure A-32 PRE-TEST PASSENGER DUMMY AND INTERIOR VIEW

A-33

7715-5



Figure A-33 POST-TEST PASSENGER DUMMY AND INTERIOR VIEW

A-34

7715-5

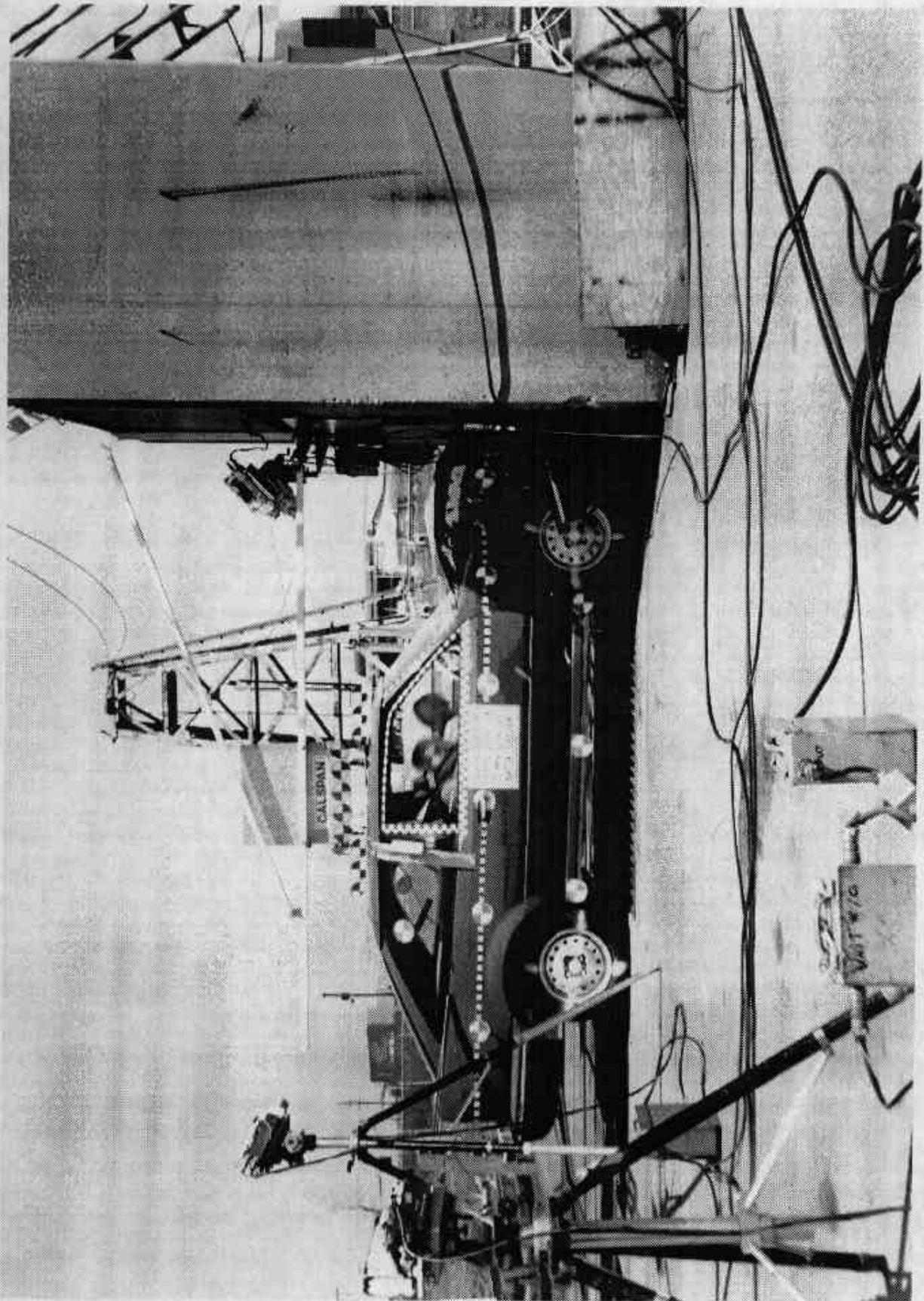


Figure A-34 VEHICLE IMPACT

A-35

7715-5

Appendix B

VEHICLE AND DUMMY RESPONSE DATA

TEST NO. CK0204

VEHICLE DATA

FILTER CHANNEL CLASS

60

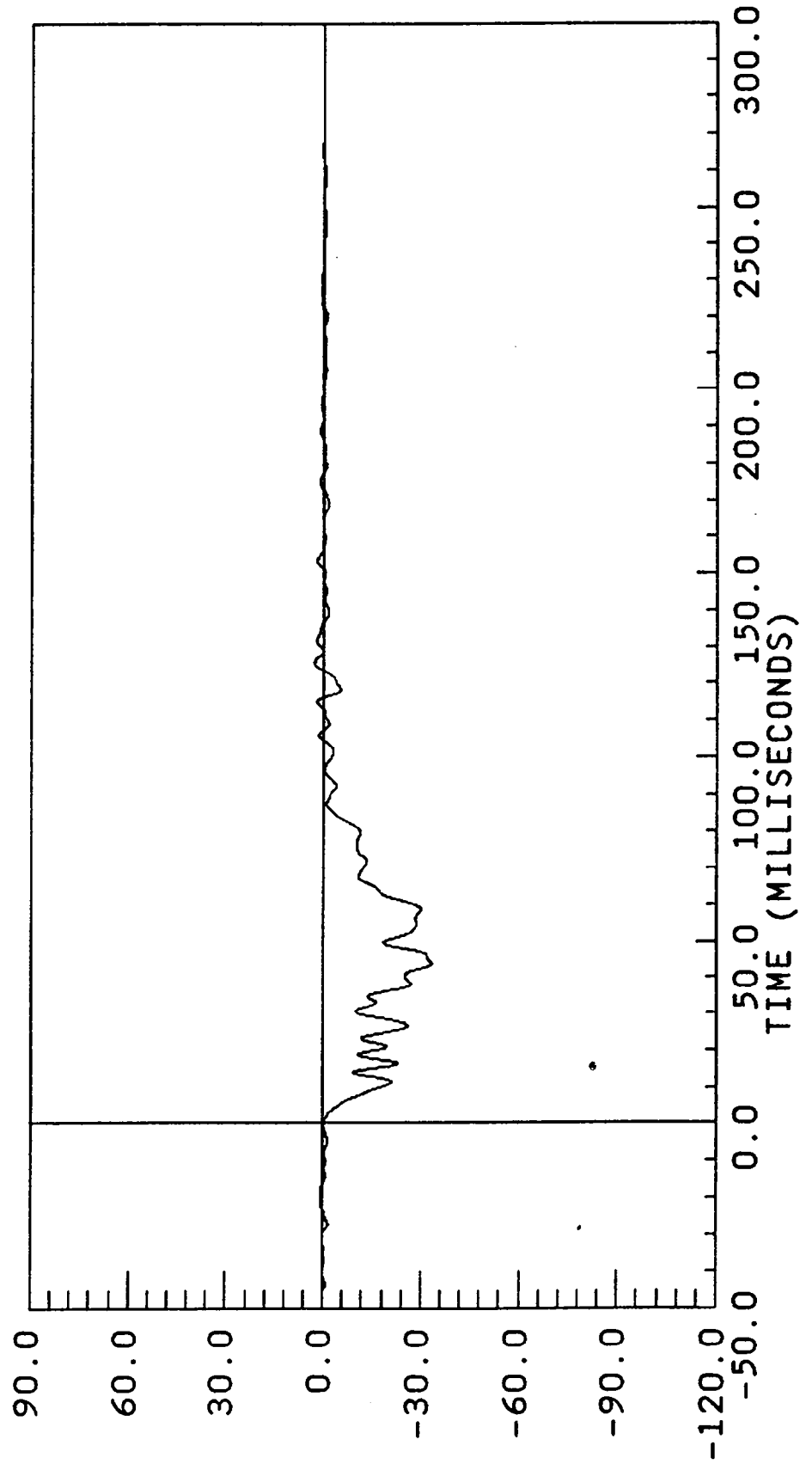
B-2

7715-5

29.70 mph

ACC PACK #1(X)
FILTERED
FILTER CUTOFF: 100HZ

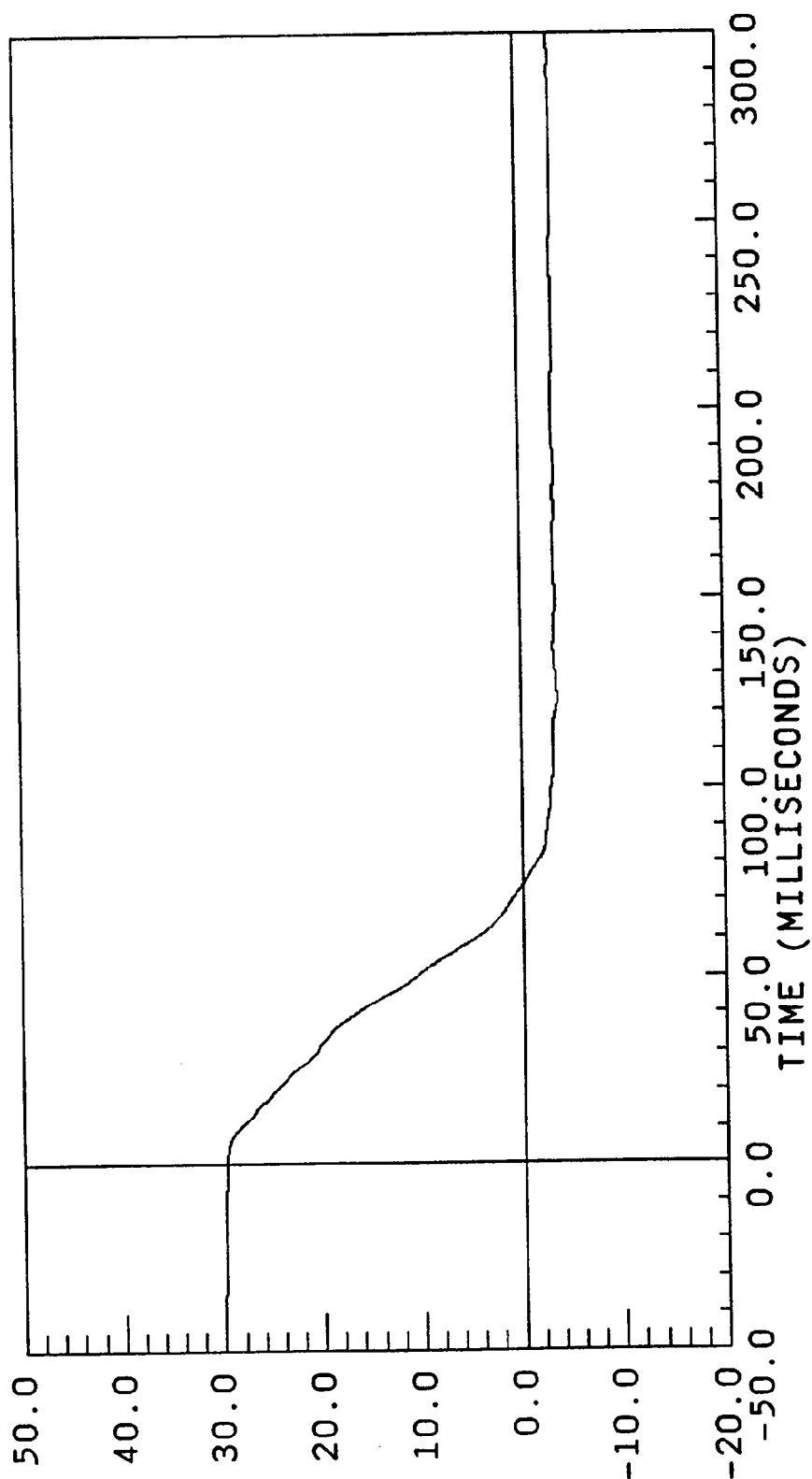
XL AXIS
YMIN = -33.51981 at 43.87500
YMAX = 2.869918 at 125.5500



V892-17.DAT

29.70 mph

ACC PACK #1(X)
COMPUTED
FILTER CUTOFF: 100HZ
XL AXIS
YMIN = -3.674841 at 123.3000
YMAX = 30.05426 at 125.5500



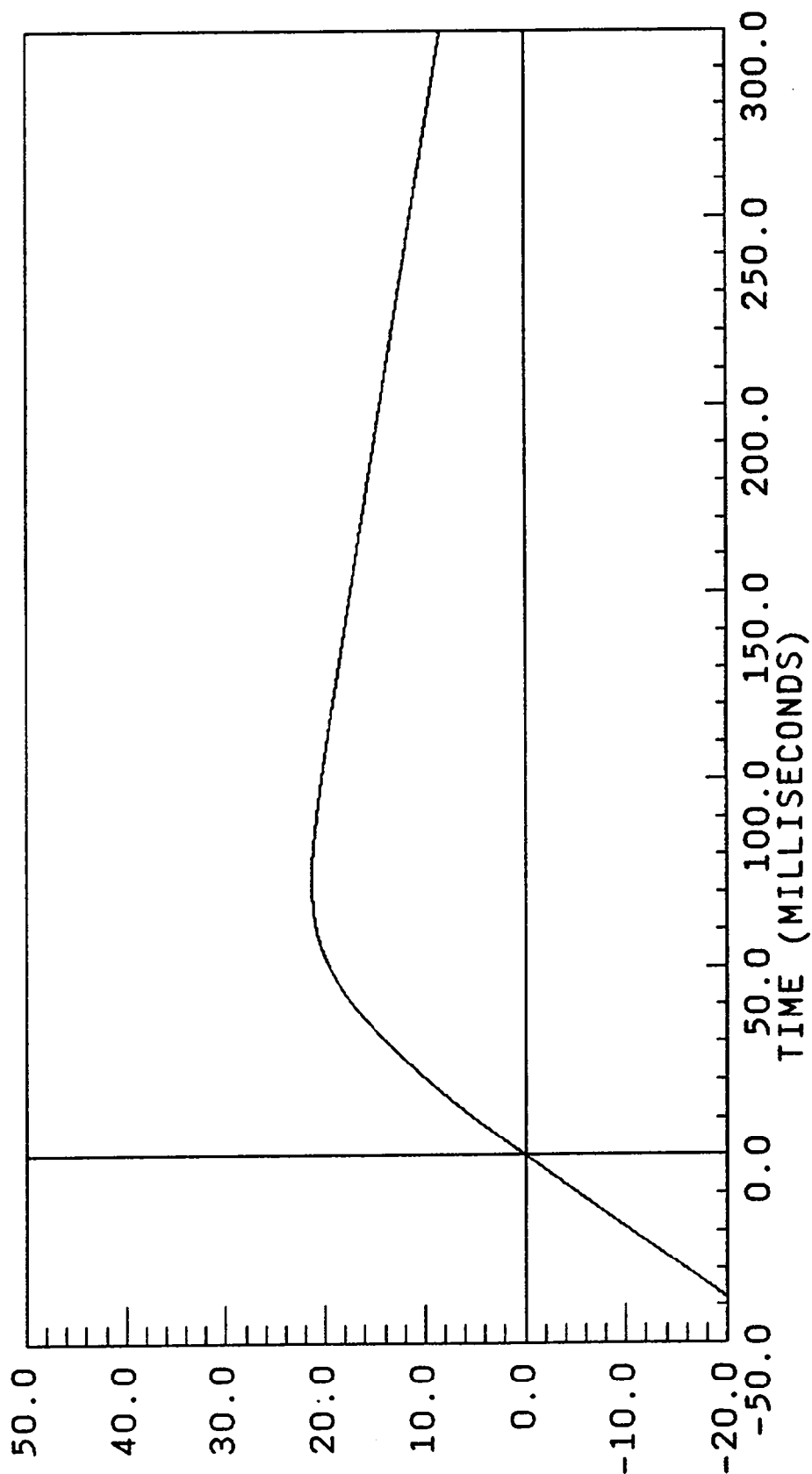
VELOCITY * MILES / HOUR

29.70 mph

ACC PACK #1(X)
COMPUTED
FILTER CUTOFF: 100Hz

XL AXIS

YMIN = -23.64951 at 123.3000
YMAX = 21.33304 at 73.50000

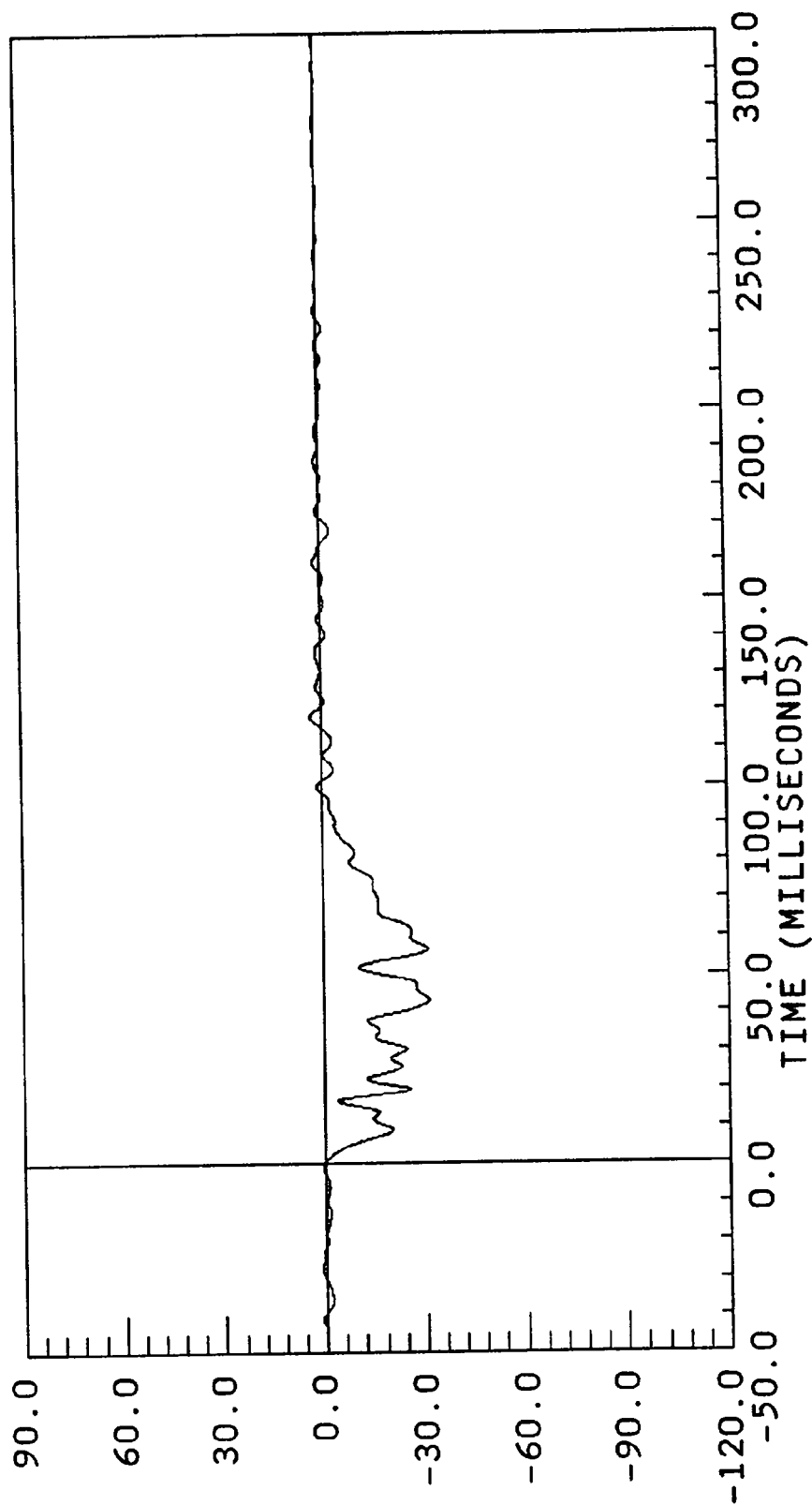


DISPLACEMENT * INCHES

BW892-18.DAT

29.70 mph

ACC PACK #2(X) XL AXIS
FILTERED YMIN = -31.34506 at 42.97500
FILTER CUTOFF: 100Hz YMAX = 3.489180 at 118.4250



ACCELERATION * G * S *

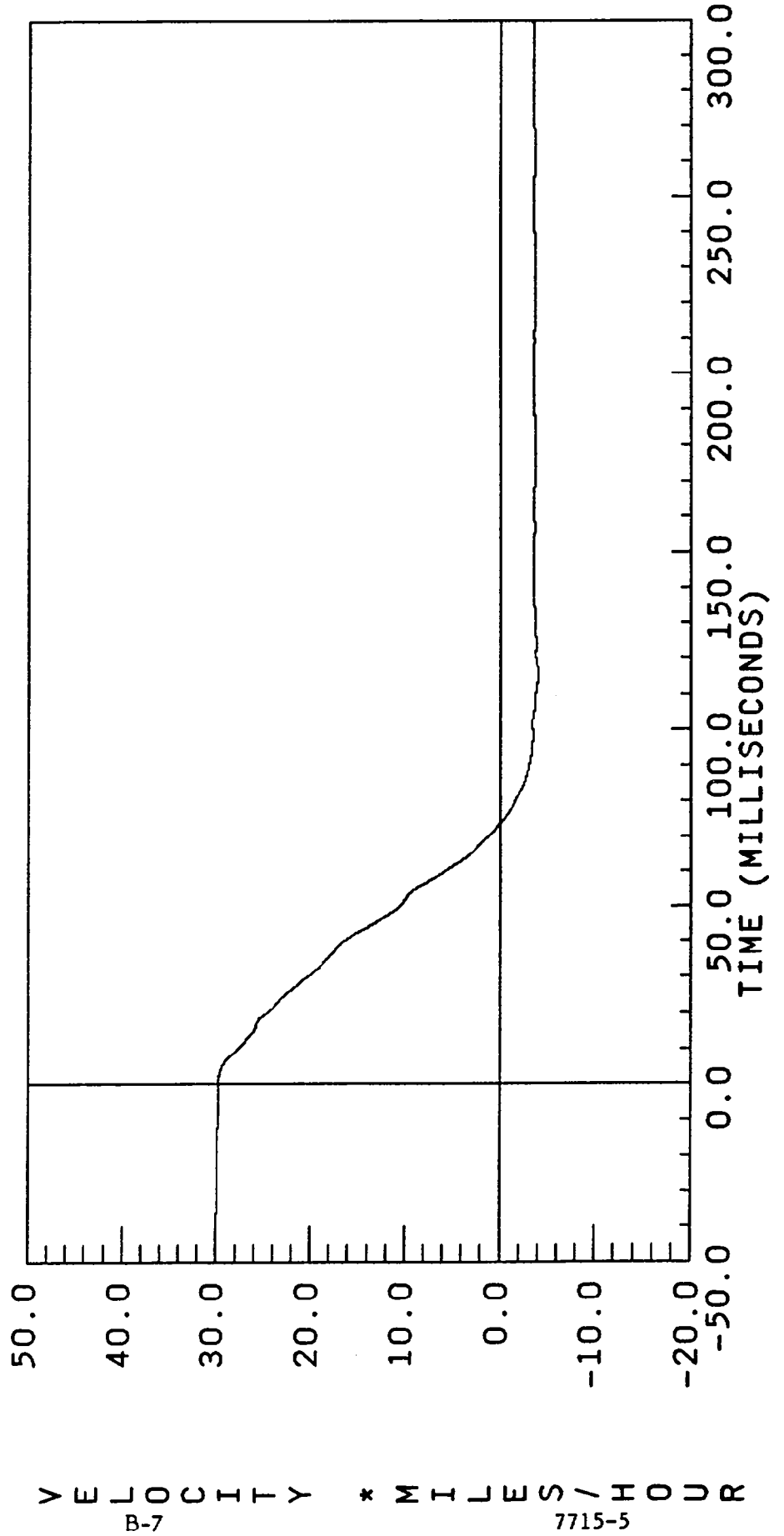
B-6

7715-5

29.70 mph

ACC PACK #2(X)
COMPUTED
FILTER CUTOFF: 100Hz

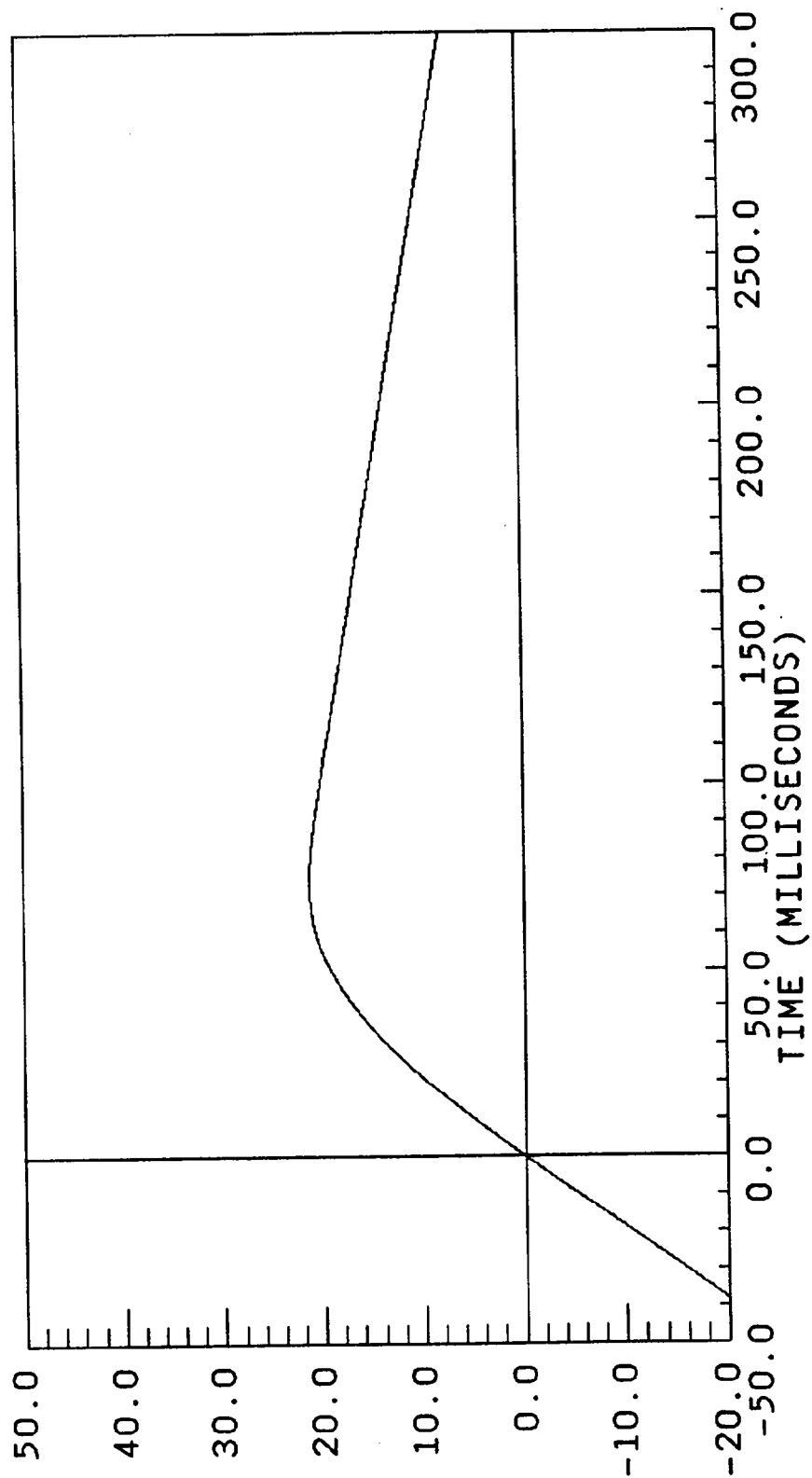
XL AXIS
YMIN = -4.021050 at 115.5750
YMAX = 30.00047 at -39.30000



D892-18.DAT

29.70 mph

ACC PACK #2(X) XL AXIS
COMPUTED YMIN = -23.63164 at 115.5750
FILTER CUTOFF: 100Hz YMAX = 21.33299 at 73.57500

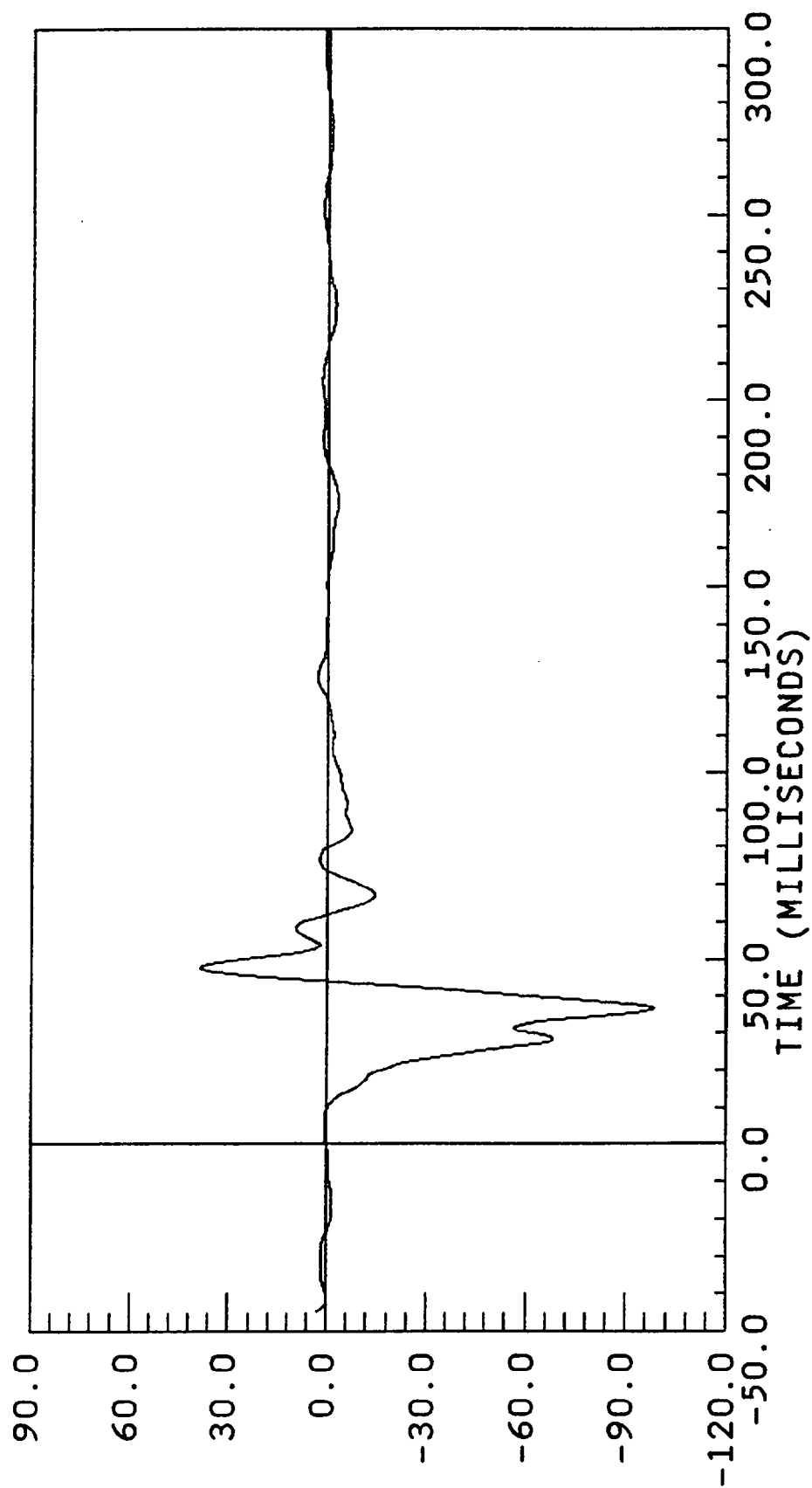


29.70 mph

ACC PACK #3(X)
 FILTERED
 FILTER CUTOFF: 100Hz

XL AXIS

YMIN = -98.58711 at 36.67500
 YMAX = 38.77261 at 47.92500

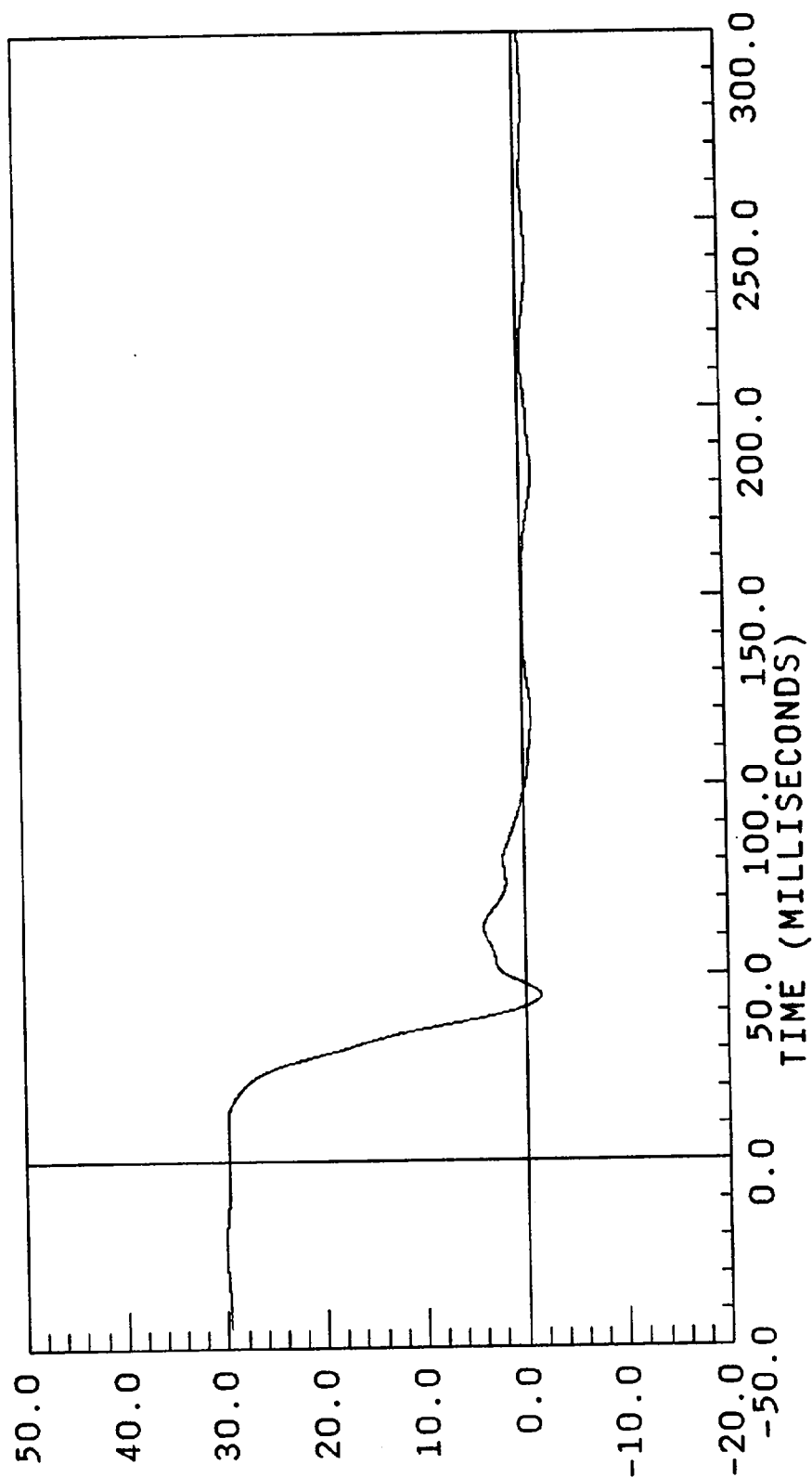


V892-19.DAT

29.70 mph

ACC PACK #3(X)
COMPUTED
FILTER CUTOFF: 100Hz

XL AXIS
YMIN = -1.601989 at 44.32500
YMAX = 29.63571 at -23.70000



VELOCITY * MILES / HOUR

29.70 mph

ACC PACK #3(X)

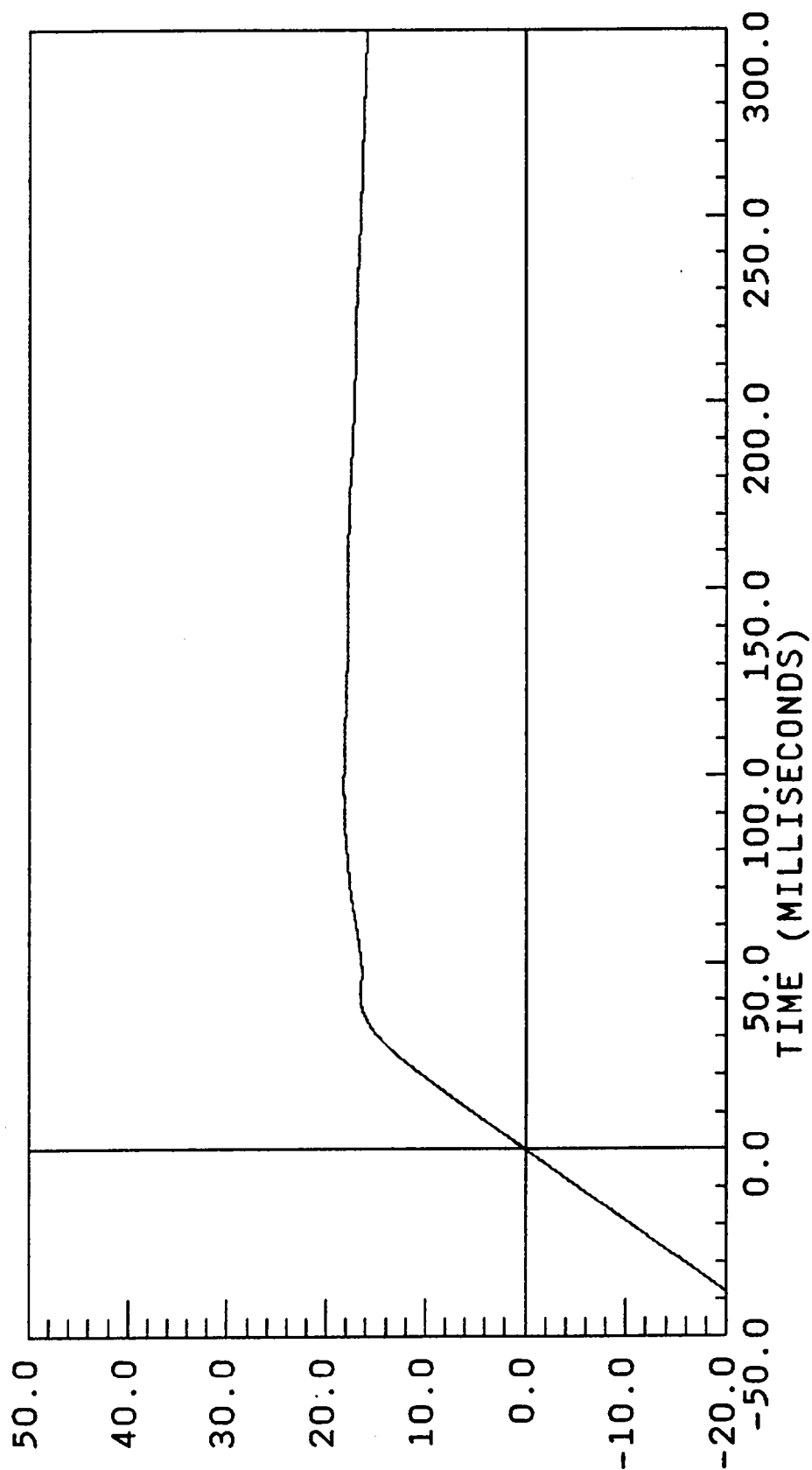
COMPUTED

FILTER CUTOFF: 100Hz

XL AXIS

YMIN = -23.61199 at 44.32500

YMAX = 18.29873 at 97.42500

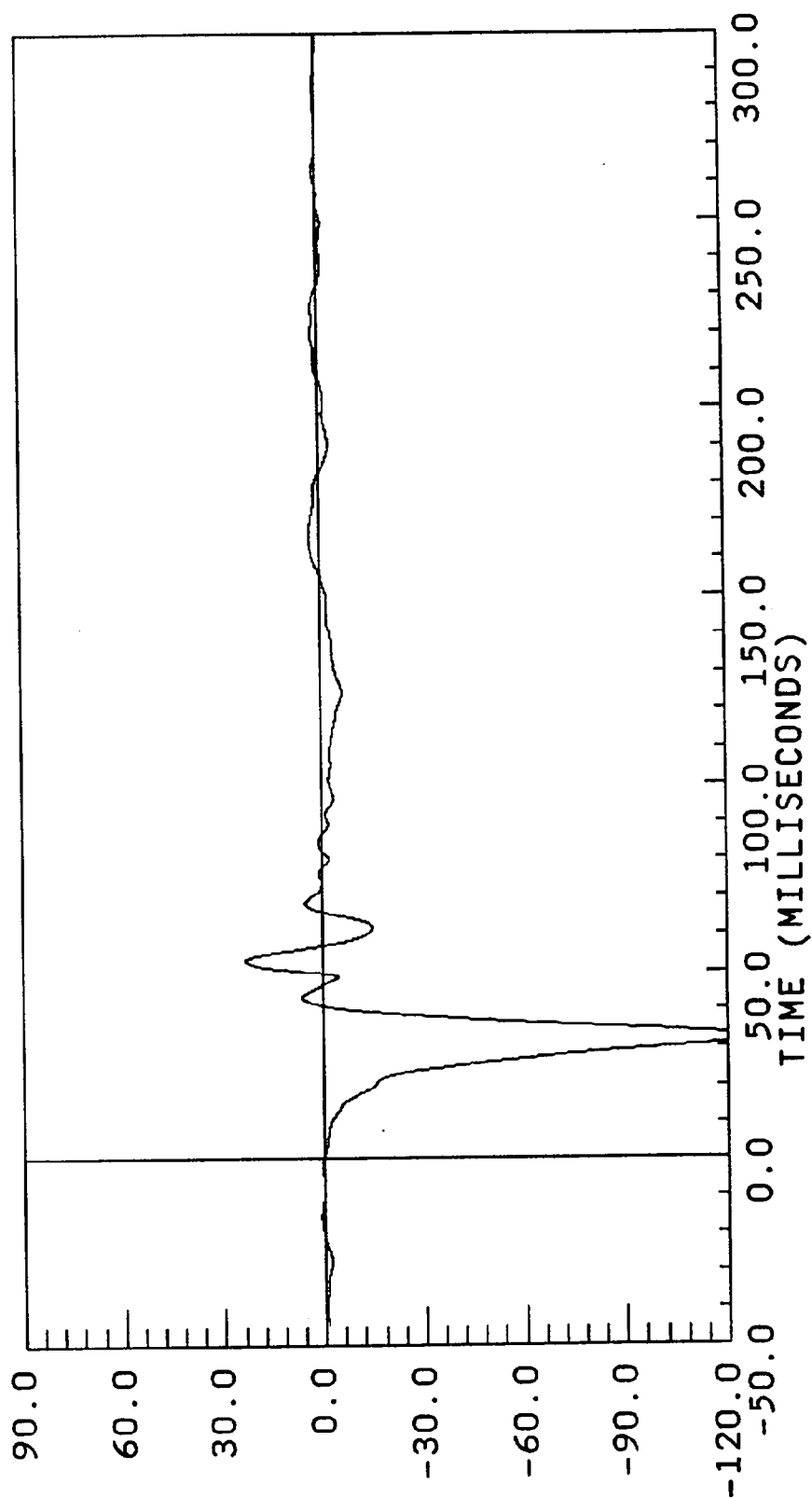


DISPLACEMENT * INCHES

BW892-20.DAT

29.70 mph

ACC PACK #4(X)
FILTERED
FILTER CUTOFF: 100Hz
XL AXIS
YMIN = -129.9091 at 32.32500
YMAX = 23.25698 at 53.02500

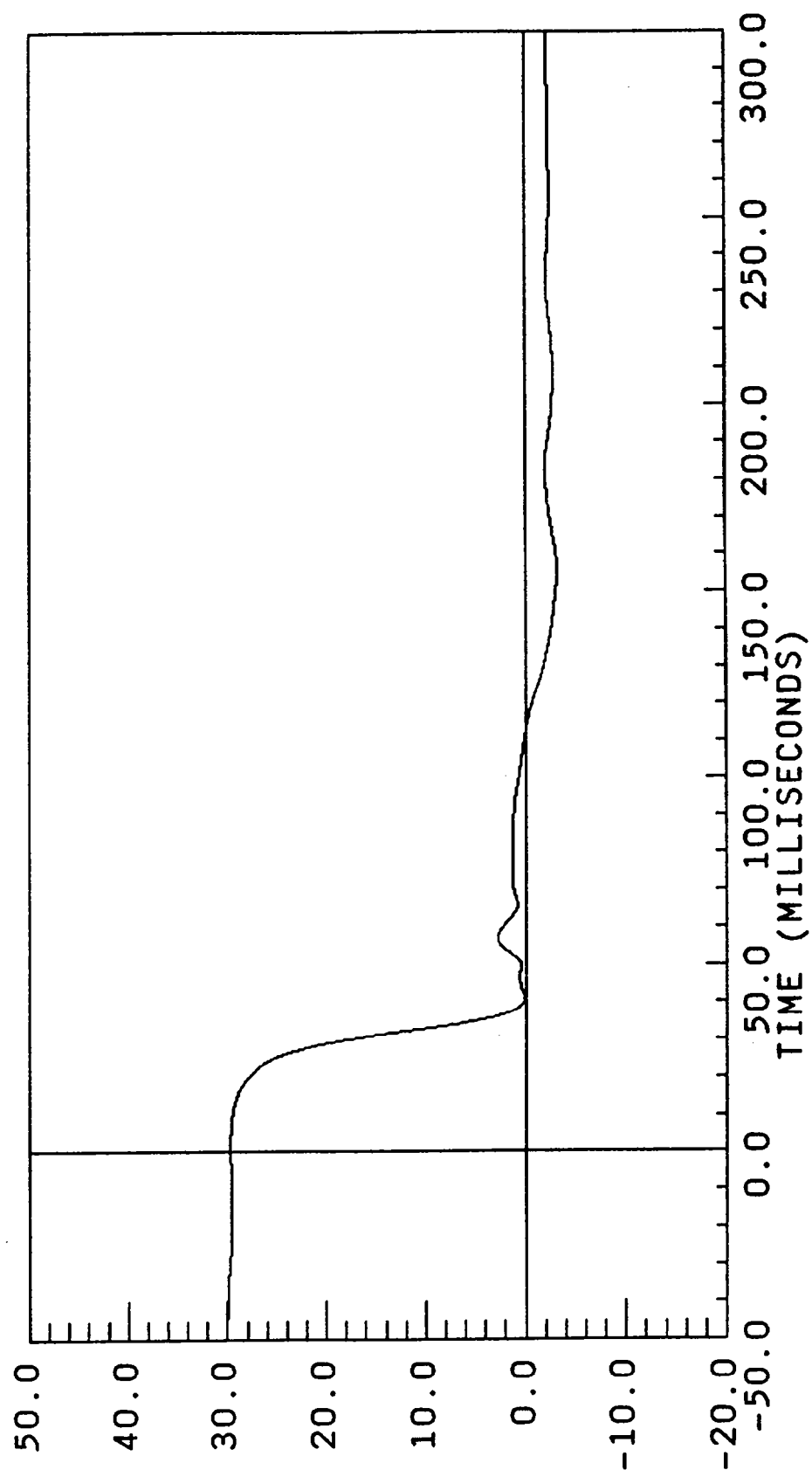


ACCELERATION * G * S *
B-12 7715-5

29.70 mph

ACC PACK #4(X)
COMPUTED
FILTER CUTOFF: 100HZ

XL AXIS
YMIN = -3.183850 at 155.6250
YMAX = 30.00586 at 53.02500

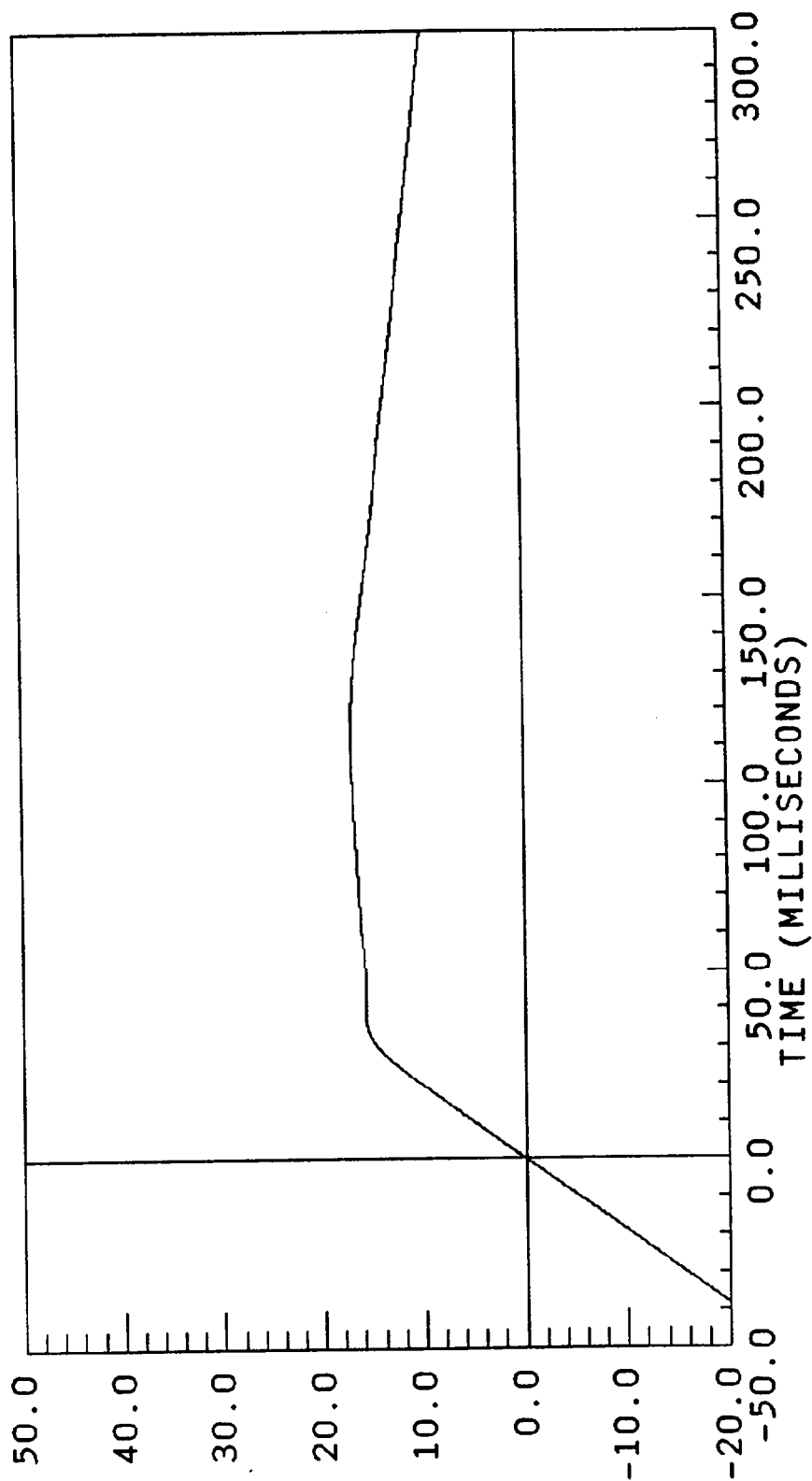


VELOCITY * MILES / HOUR

D892-20.DAT

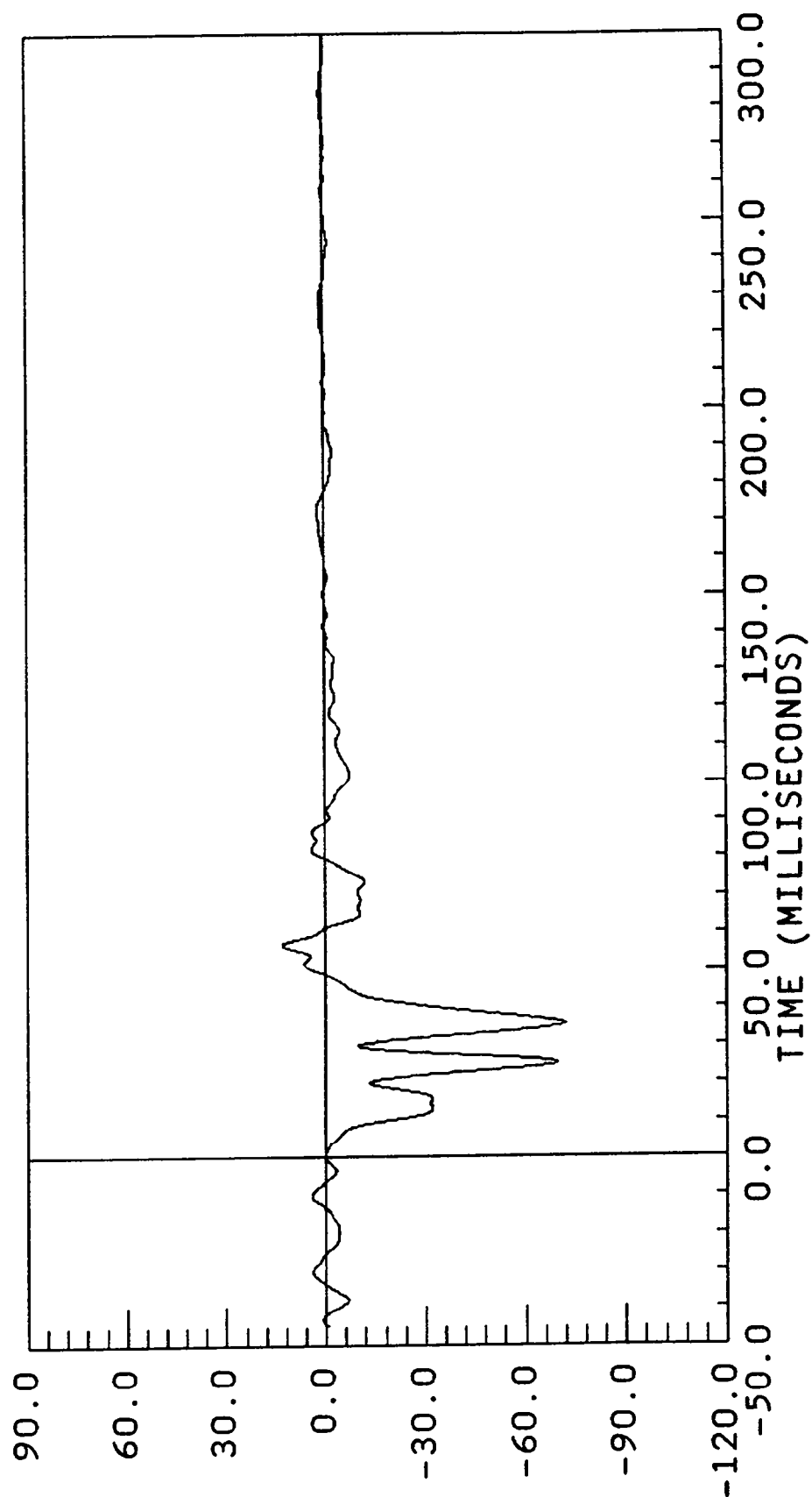
29.70 mph

ACC PACK #4(X)
COMPUTED
FILTER CUTOFF: 100Hz
XL AXIS
YMIN = -23.48505 at 155.6250
YMAX = 17.04480 at 112.1250



29.70 mph

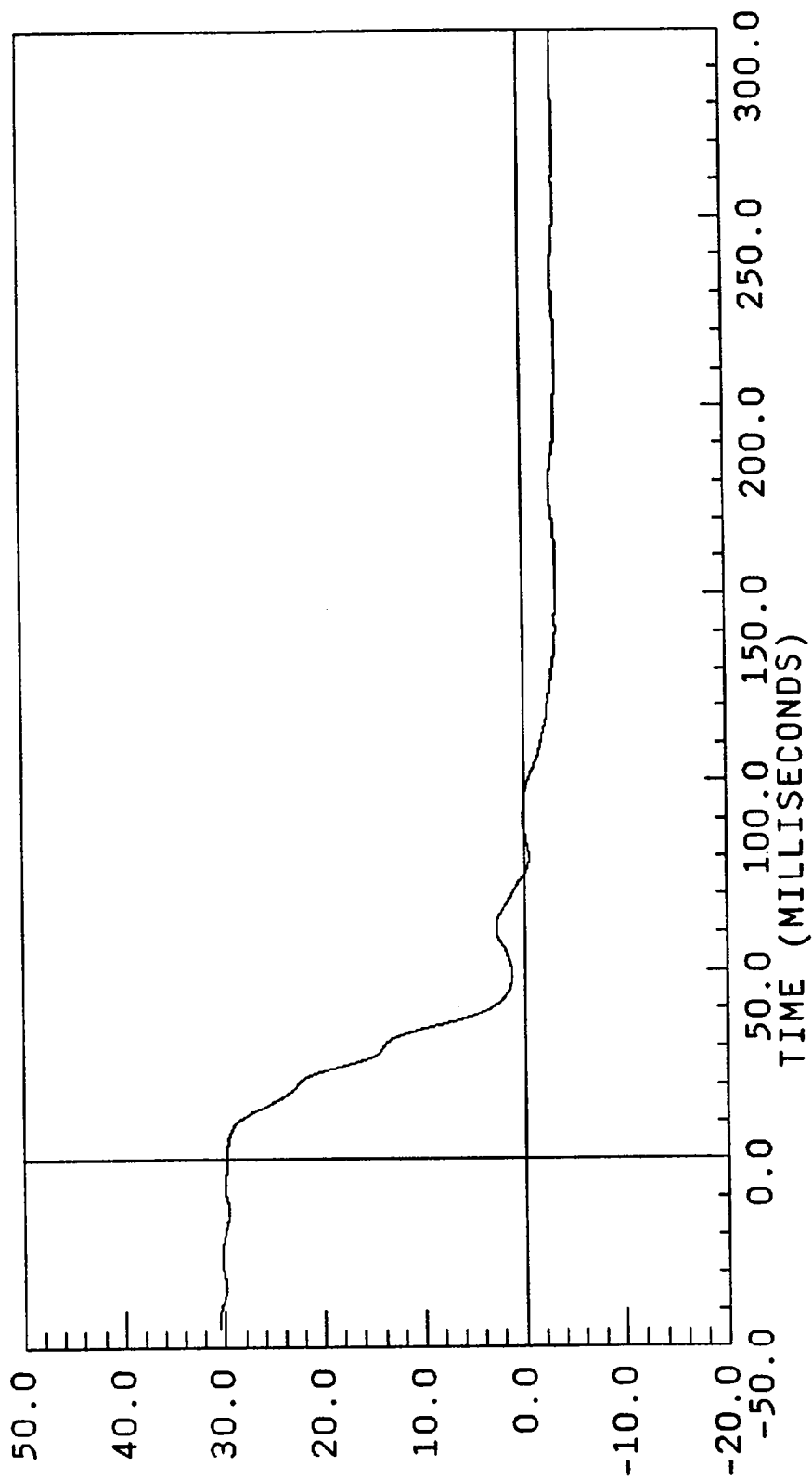
ACC PACK #5(X) XL AXIS
 FILTERED YMIN = -72.04549 at 35.55000
 FILTER CUTOFF: 100HZ YMAX = 12.96660 at 56.77500



V892-21.DAT

29.70 mph

ACC PACK #5(X)
COMPUTED
FILTER CUTOFF: 100Hz
XL AXIS
YMIN = -3.497478 at 218.1750
YMAX = 30.52609 at -42.00000



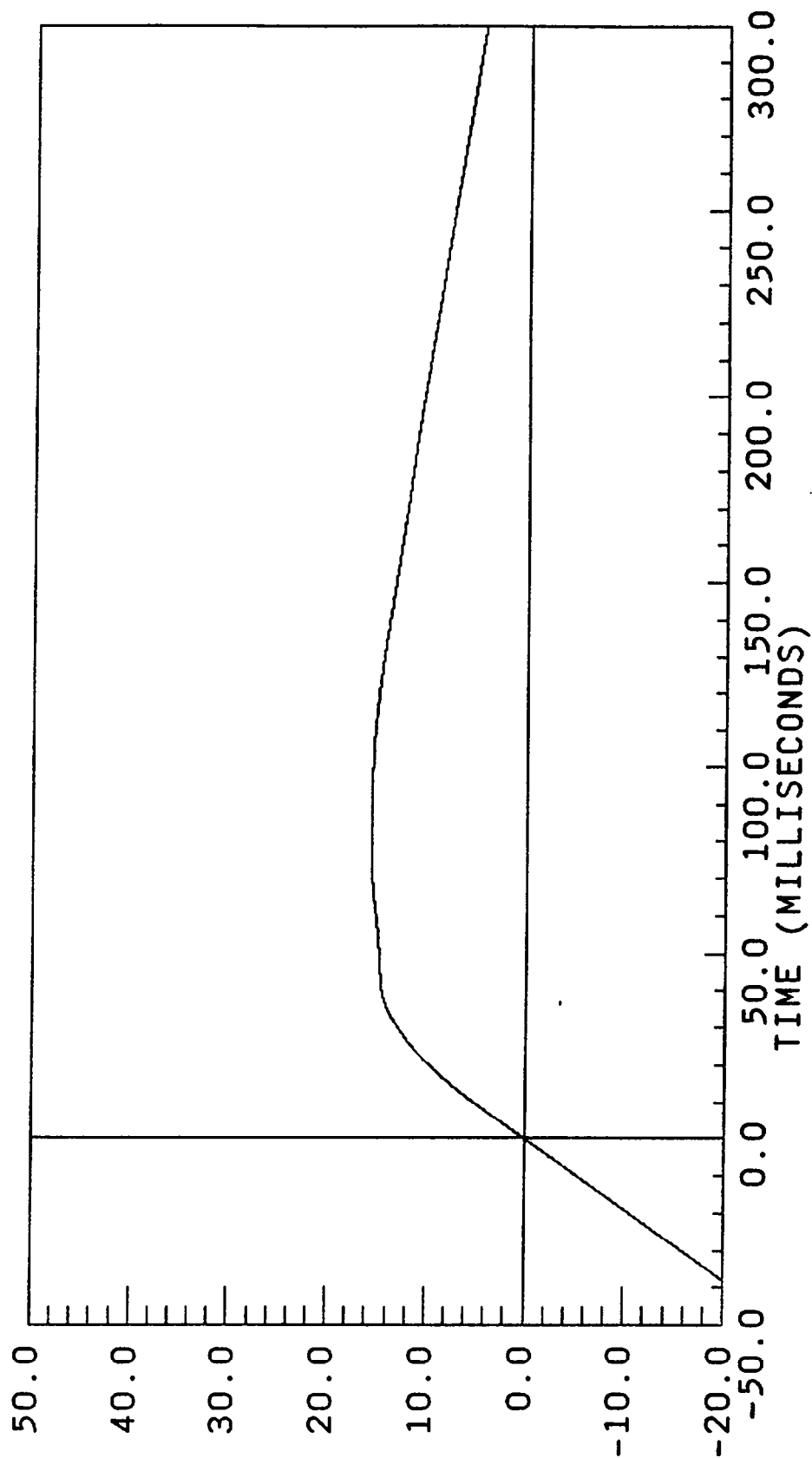
VELOCITY * MILES / HOUR
B-16 7715-5

29.70 mph

ACC PACK #5(X)
COMPUTED
FILTER CUTOFF: 100Hz

XL AXIS

YMIN = -23.73111 at 218.1750
YMAX = 15.57816 at 75.00000

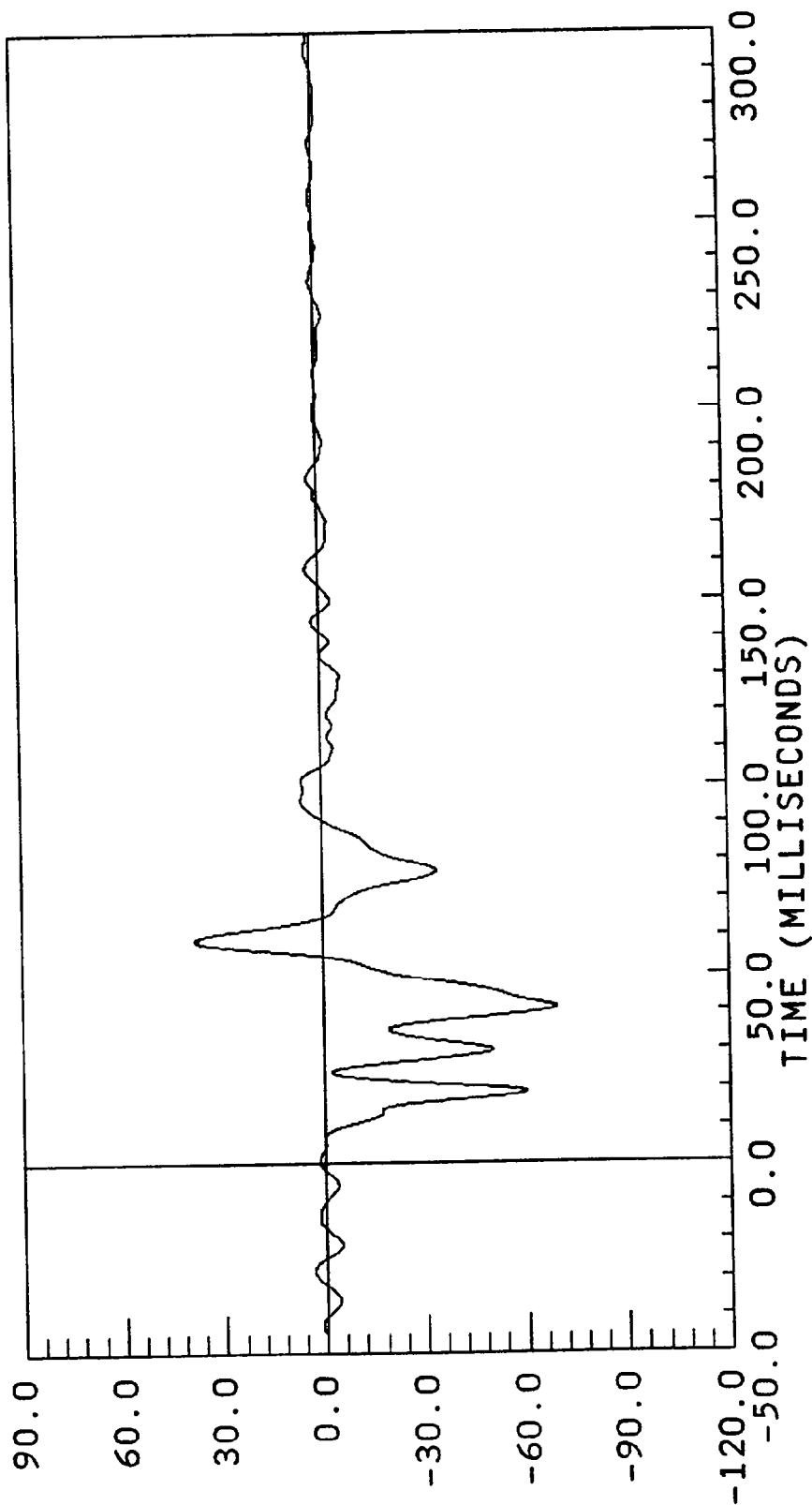


DISPLACEMENT * INCHES

BW892-22.DAT

29.70 mph

ACC PACK #6(X)
FILTERED
FILTER CUTOFF: 100Hz
XL AXIS
YMIN = -69.29930 at 40.95000
YMAX = 38.42449 at 59.02500

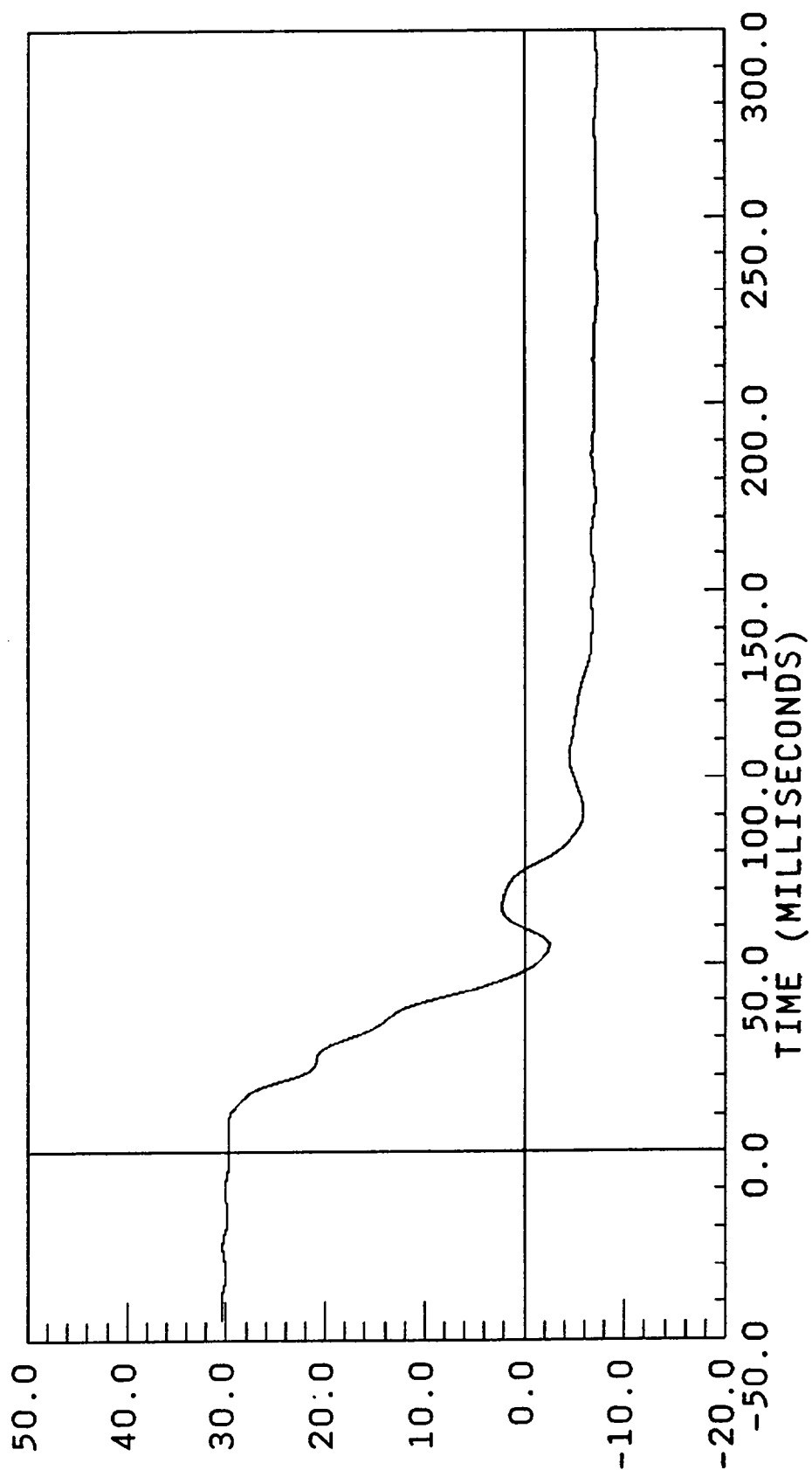


ACCELERATION
B-18

* G, S *
7715-5

29.70 mph

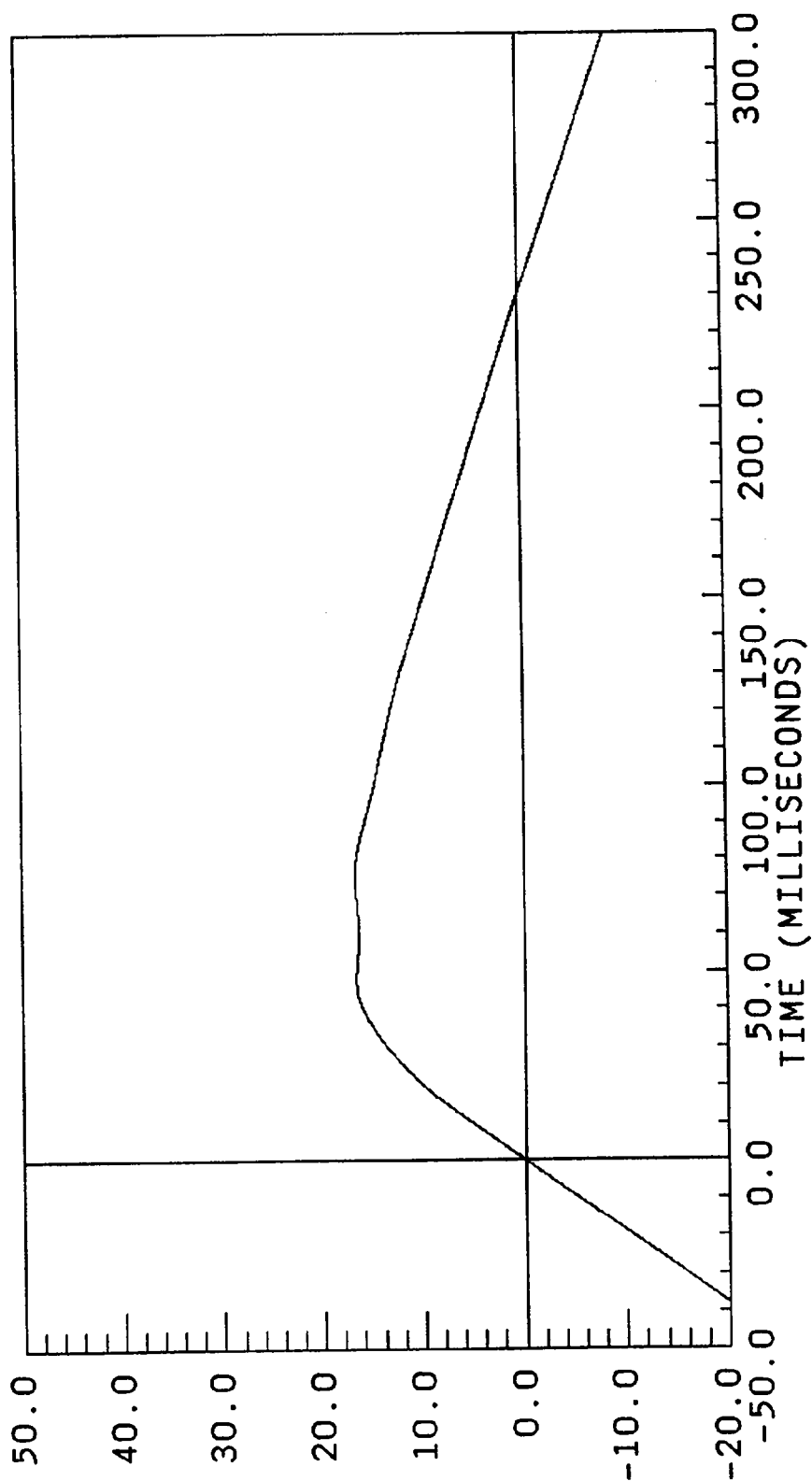
ACC PACK #6(X)
 COMPUTED
 FILTER CUTOFF: 100HZ
 XL AXIS
 YMIN = -7.349140 at 230.1750
 YMAX = 30.34123 at -40.27500



D892-22.DAT

29.70 mph

ACC PACK #6(X)
COMPUTED
FILTER CUTOFF: 100HZ
XL AXIS
YMIN = -23.78375 at 230.1750
YMAX = 16.77158 at 75.30000

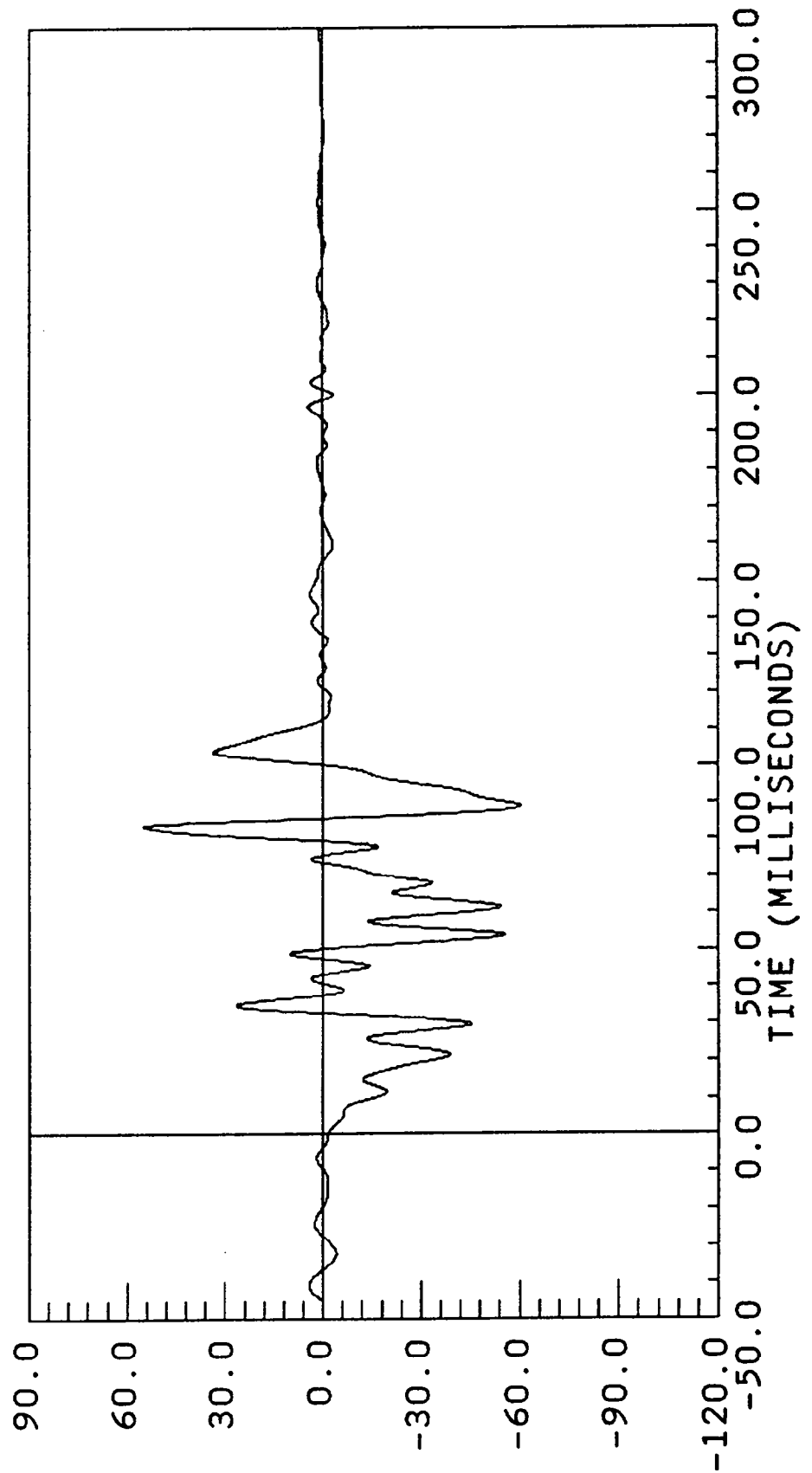


DISPLACEMENT * INCHES

29.70 mph

ACC PACK #7(X)
 FILTERED
 FILTER CUTOFF: 100HZ

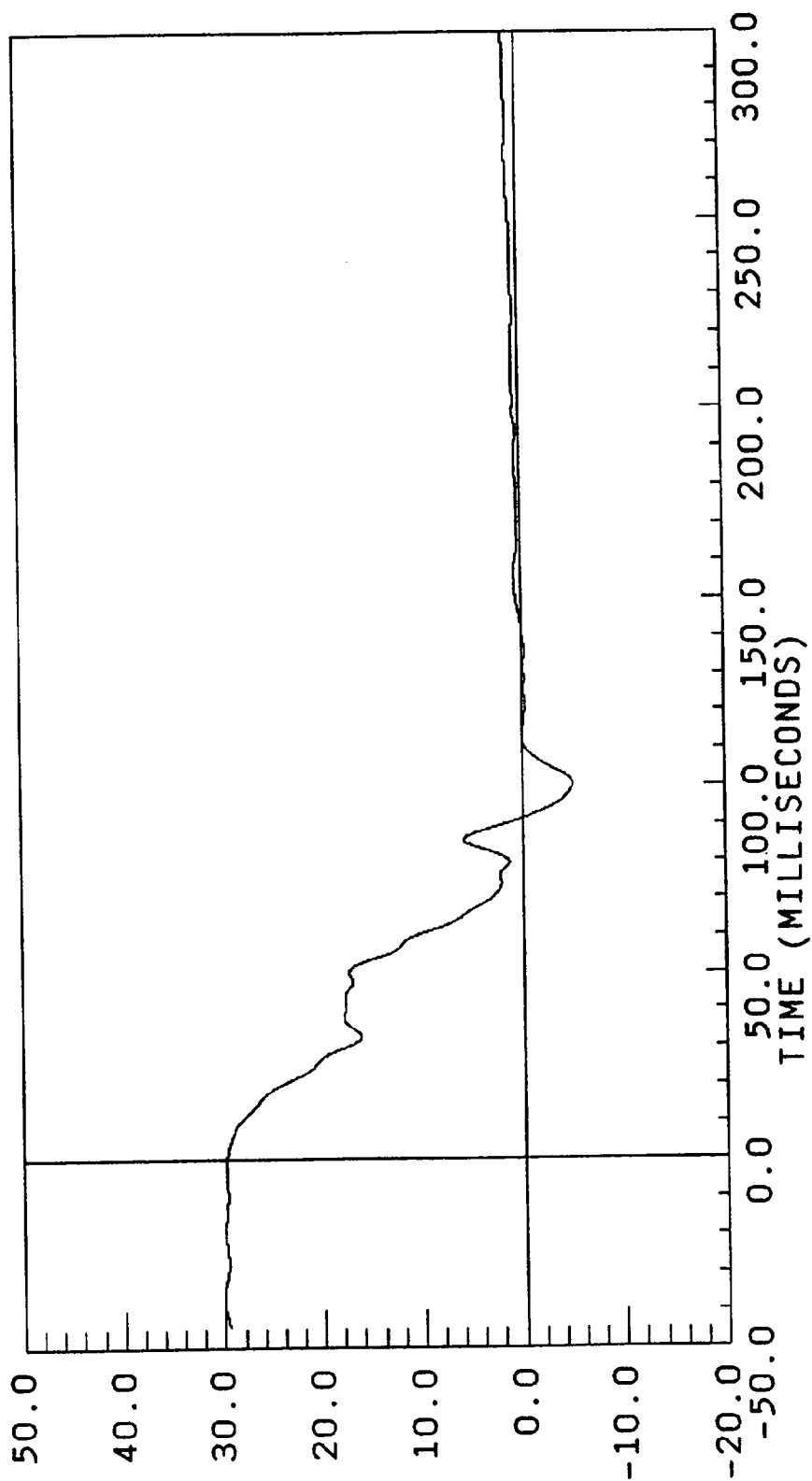
XL AXIS
 YMIN = -60.56414 at 88.87500
 YMAX = 54.74865 at 83.40000



V892-23.DAT

29.70 mph

ACC PACK #7(X) XL AXIS
COMPUTED YMIN = -5.016705 at 100.2000
FILTER CUTOFF: 100Hz YMAX = 29.63713 at -36.75000



VELOCITY * MILES / HOUR

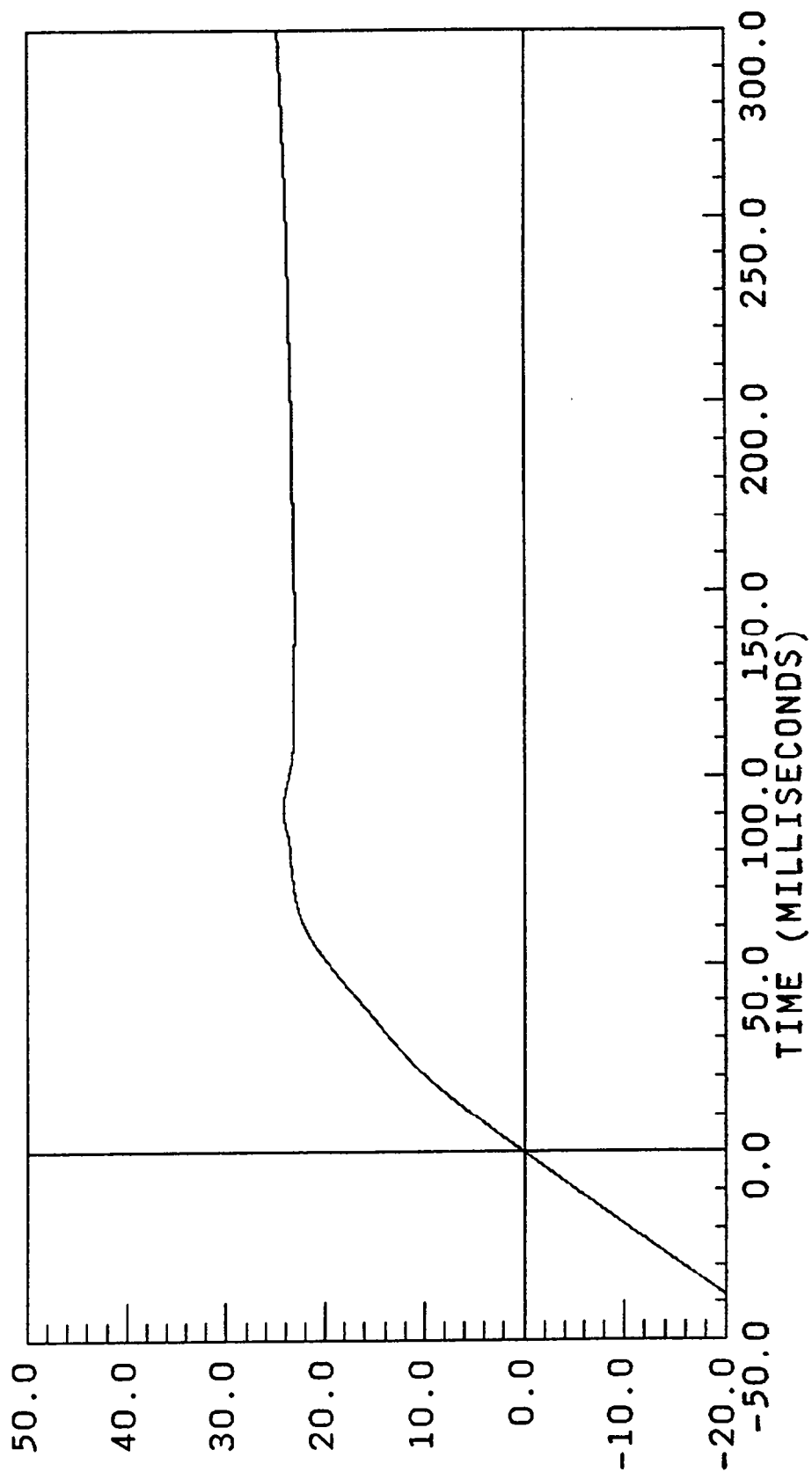
B-22

7715-5

29.70 mph

ACC PACK #7(X)
COMPUTED
FILTER CUTOFF: 100HZ

XL AXIS
YMIN = -23.55935 at 100.2000
YMAX = 24.77818 at 300.0000

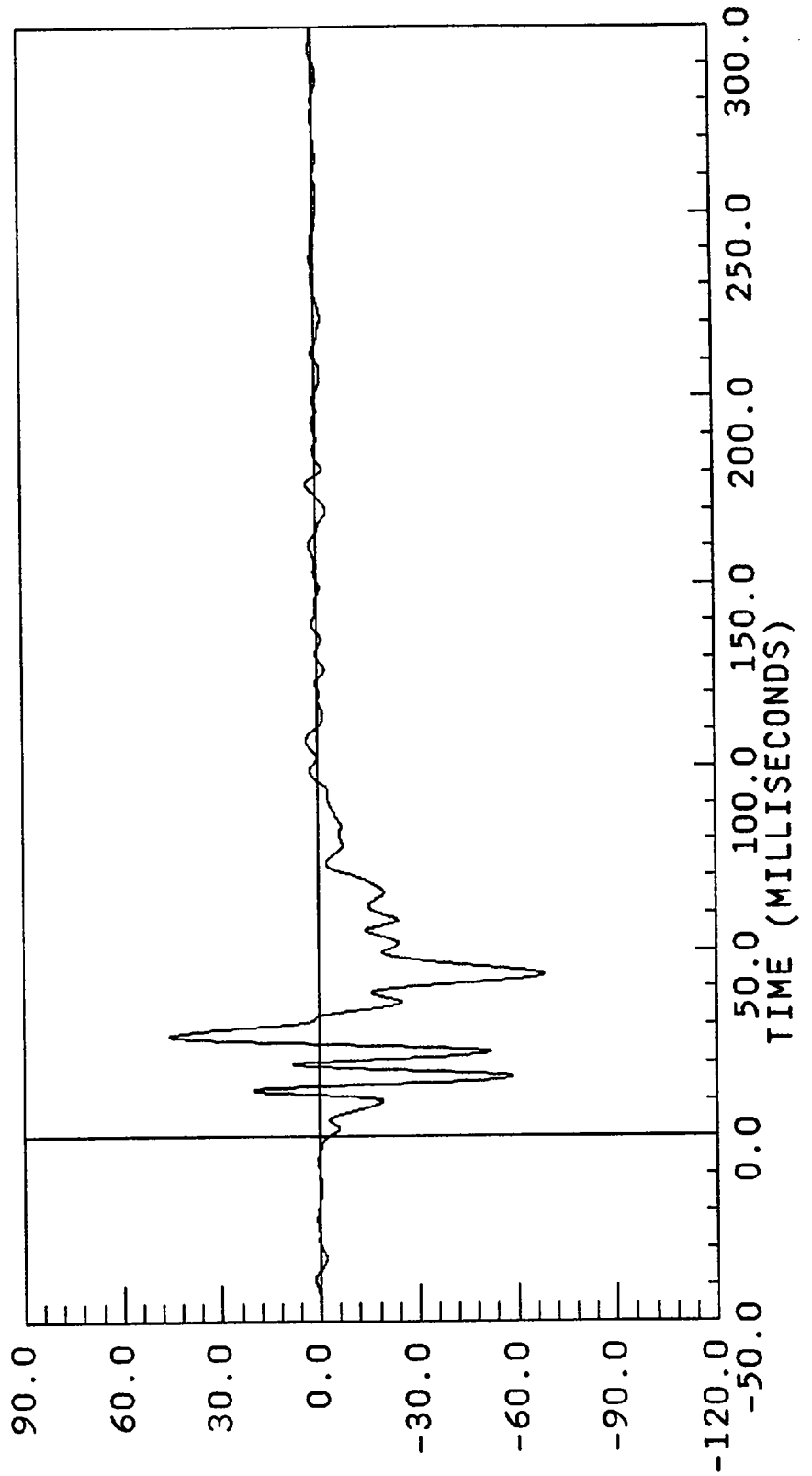


DISPLACEMENT * INCHES

BW892-24.DAT

29.70 mph

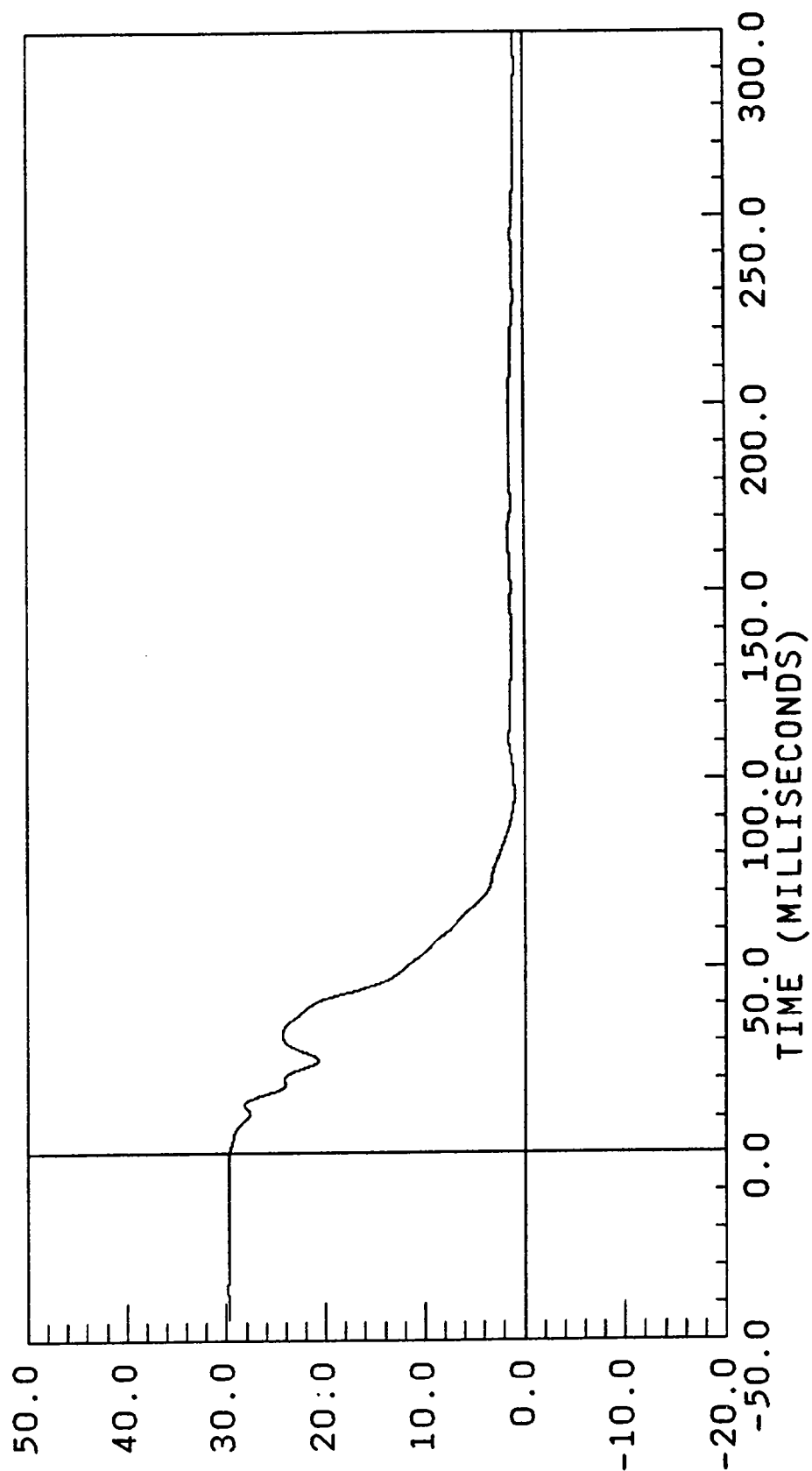
ACC PACK #8(X) XL AXIS
FILTERED YMIN = -68.50968 at 43.20000
FILTER CUTOFF: 100Hz YMAX = 45.84689 at 27.00000



29.70 mph

ACC PACK #8(X)
COMPUTED
FILTER CUTOFF: 100Hz

XL AXIS
YMIN = 0.803703 at 290.6250
YMAX = 29.70275 at -36.22500

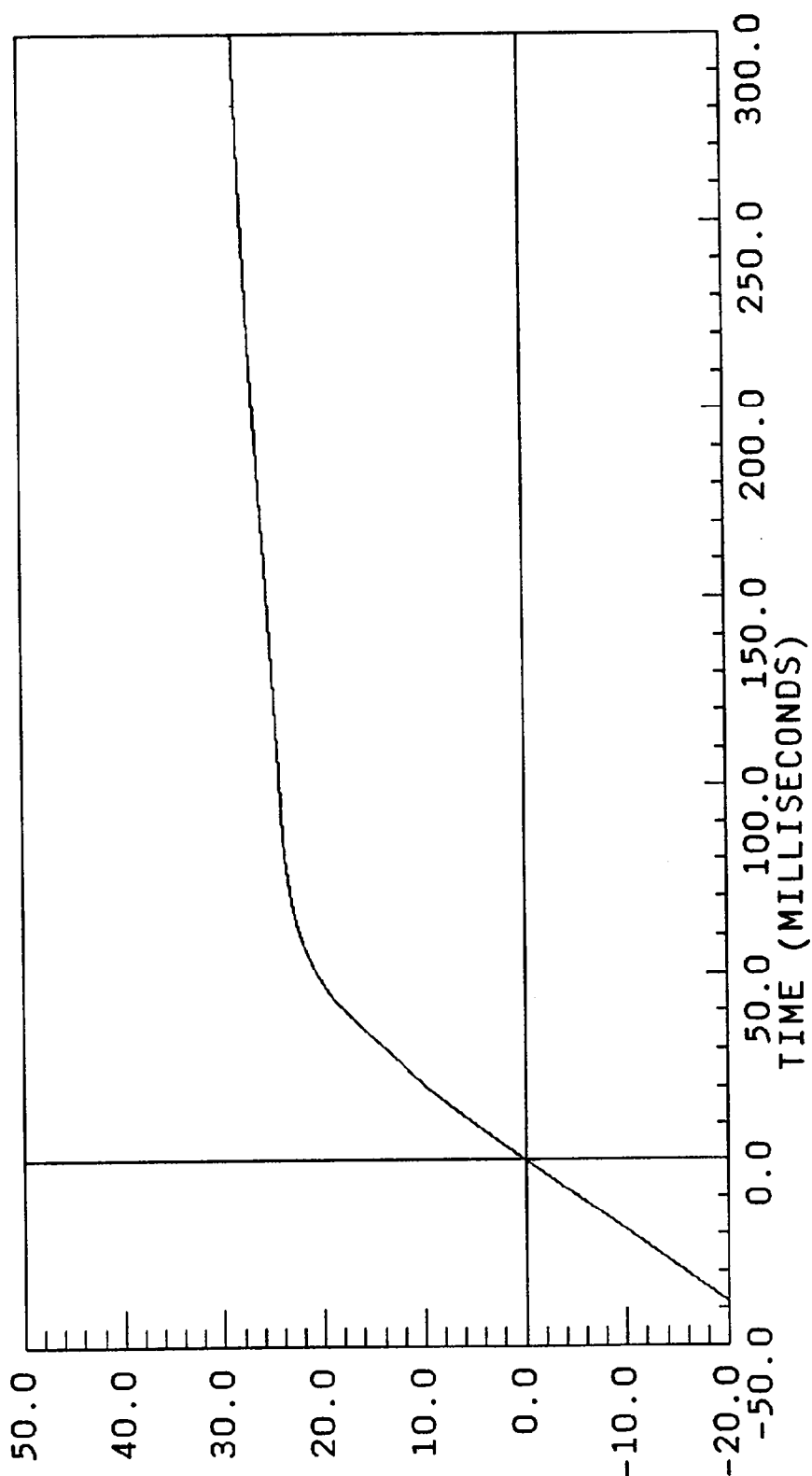


VELOCITY * MILES / HOUR

D892-24.DAT

29.70 mph

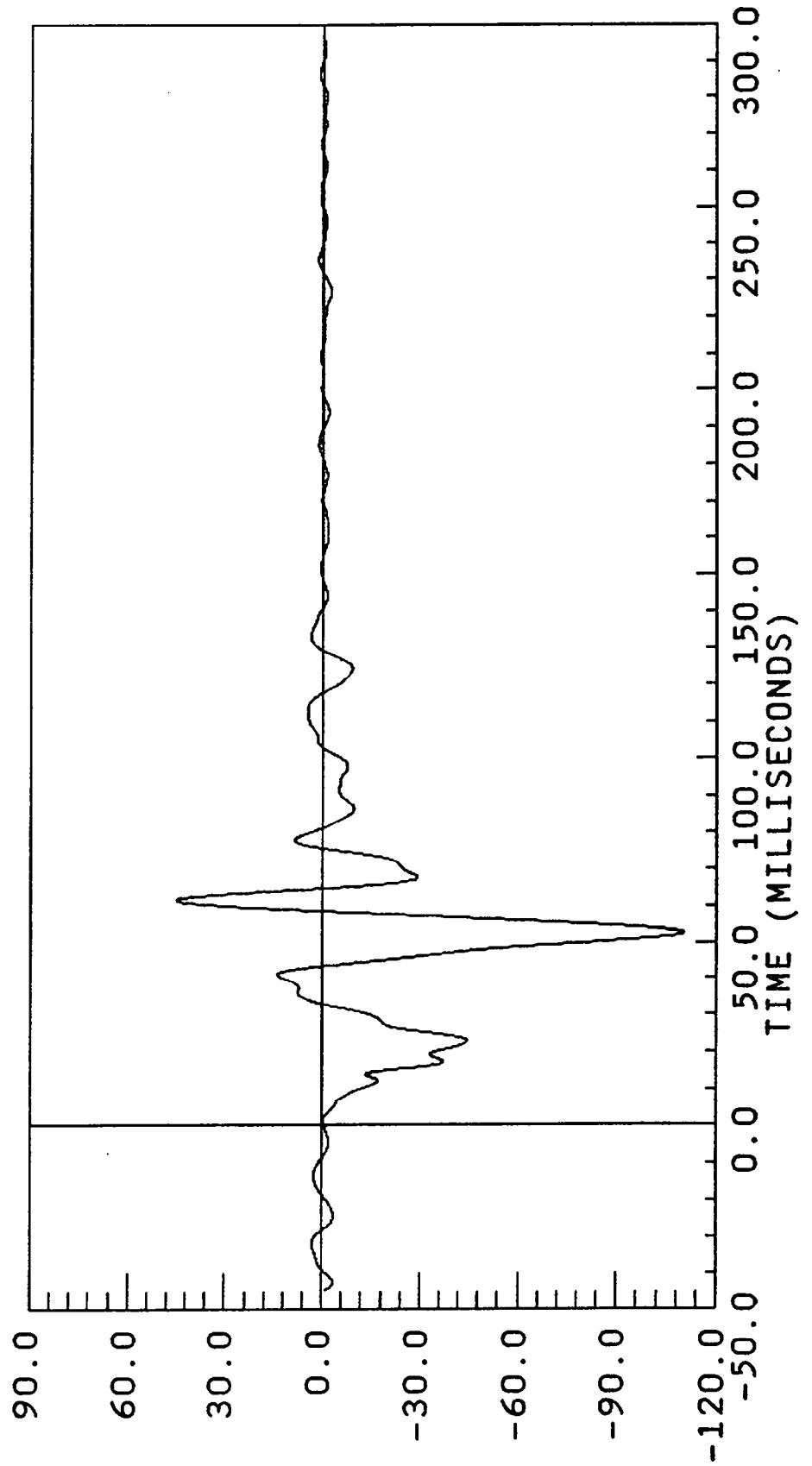
ACC PACK #8(X)
COMPUTED
FILTER CUTOFF: 100Hz
XL AXIS
YMIN = -23.52241 at 290.6250
YMAX = 28.52181 at 300.0000



29.70 mph

ACC PACK #9(X)
 FILTERED
 FILTER CUTOFF: 100HZ

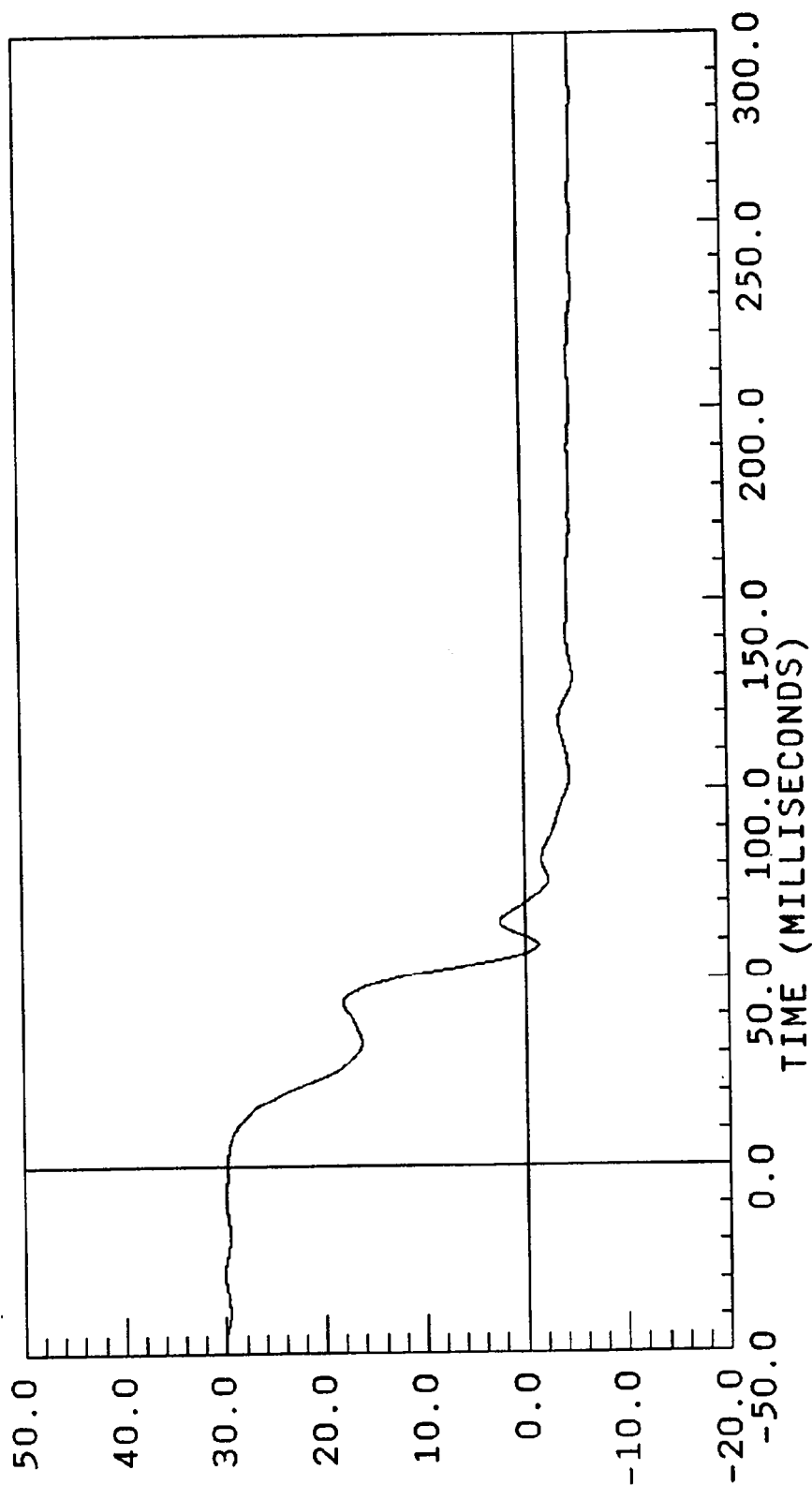
XL AXIS
 YMIN = -110.6041 at 52.50000
 YMAX = 45.28178 at 61.57500



V892-25.DAT

29.70 mph

ACC PACK #9(X)
COMPUTED
FILTER CUTOFF: 100Hz
XL AXIS
YMIN = -5.452541 at 283.2750
YMAX = 29.91717 at -28.57500



VELOCITY * MILES / HOUR

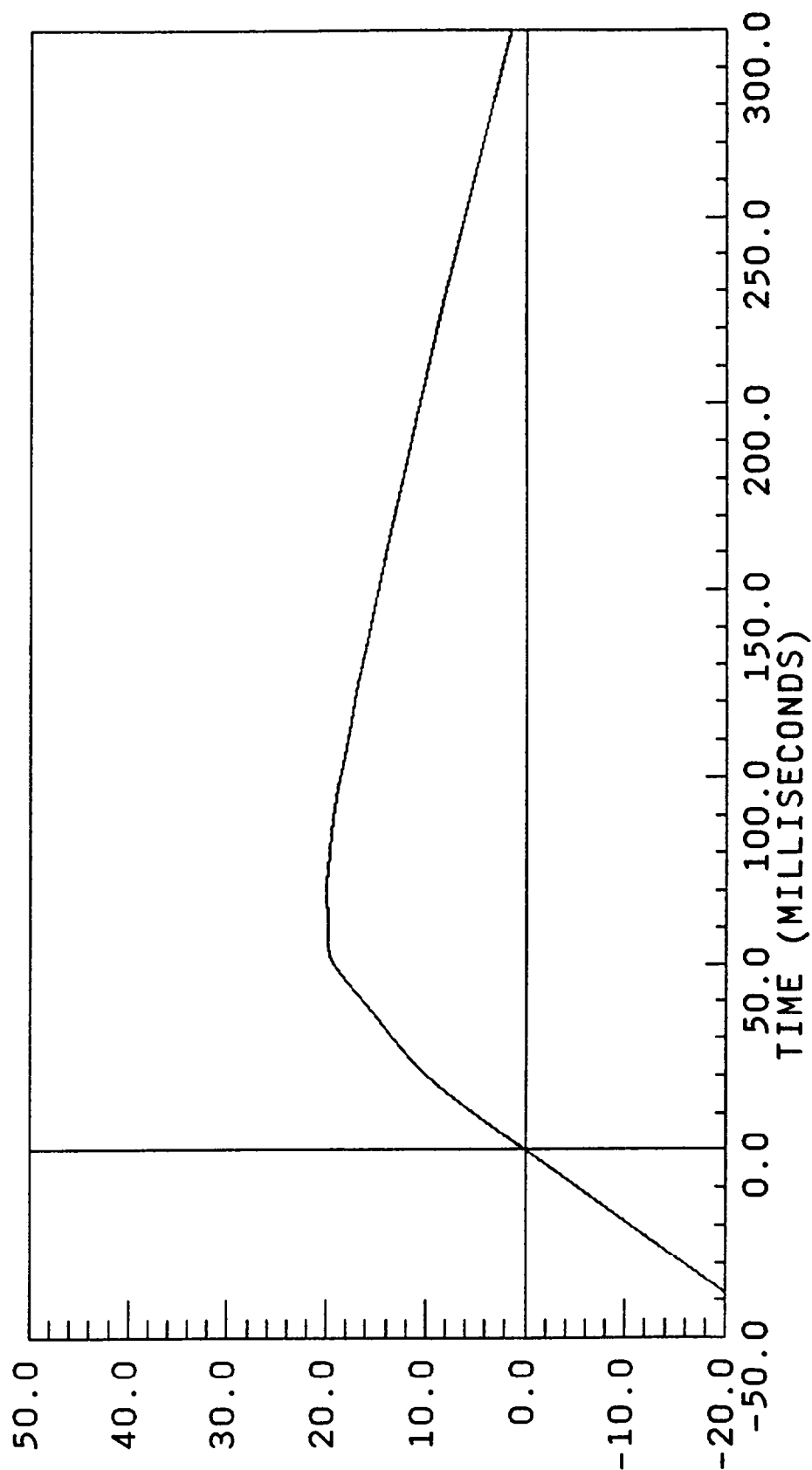
B-28

7715-5

29.70 mph

ACC PACK #9(X)
COMPUTED
FILTER CUTOFF: 100HZ

XL AXIS
YMIN = -23.56293 at 283.2750
YMAX = 20.02759 at 69.52500

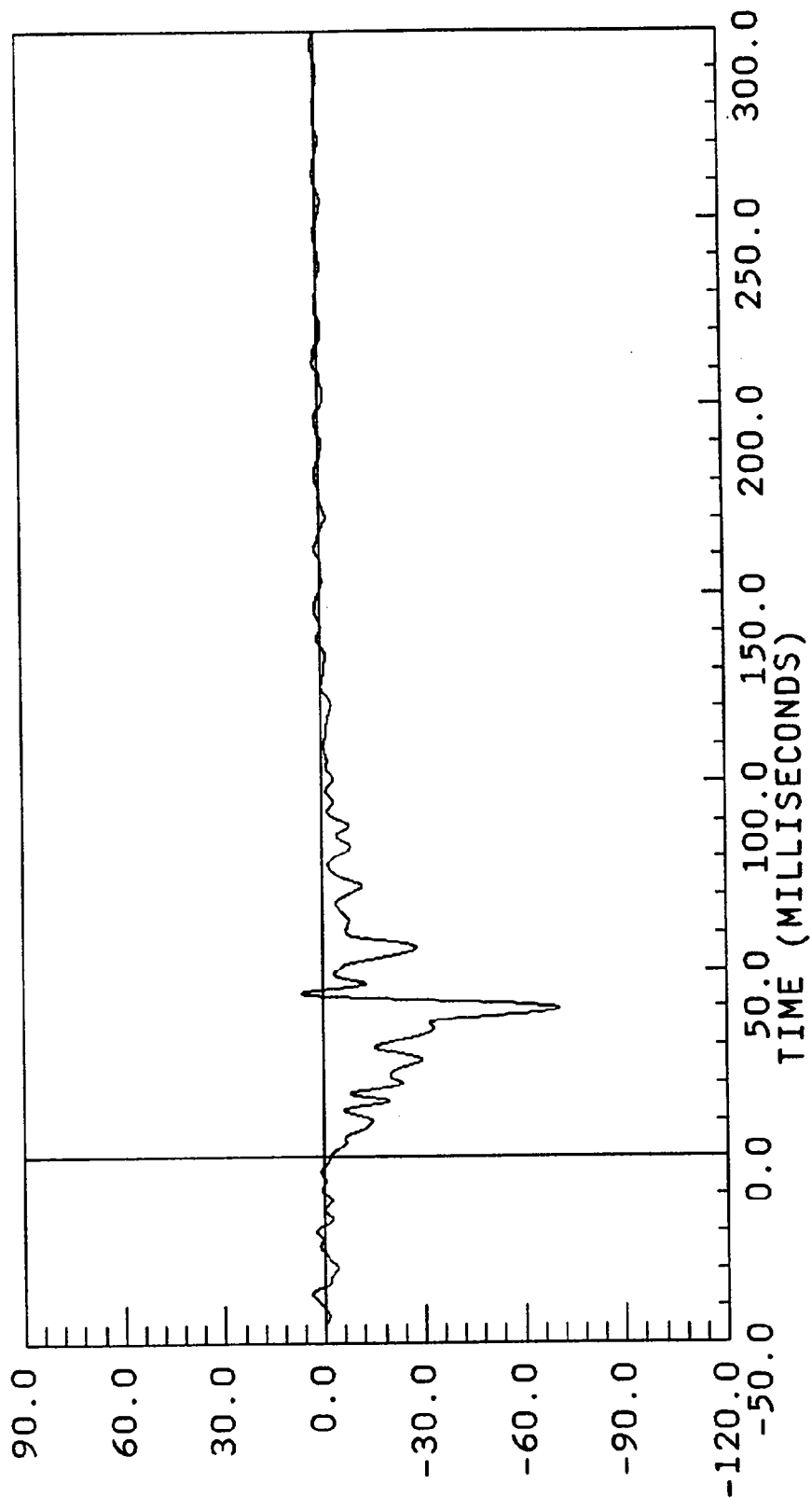


DISPLACEMENT * INCHES

BW892-26.DAT

29.70 mph

ACC PACK #10(X) XL AXIS
FILTERED YMIN = -70.43432 at 39.52500
FILTER CUTOFF: 100Hz YMAX = 6.445707 at 43.72500



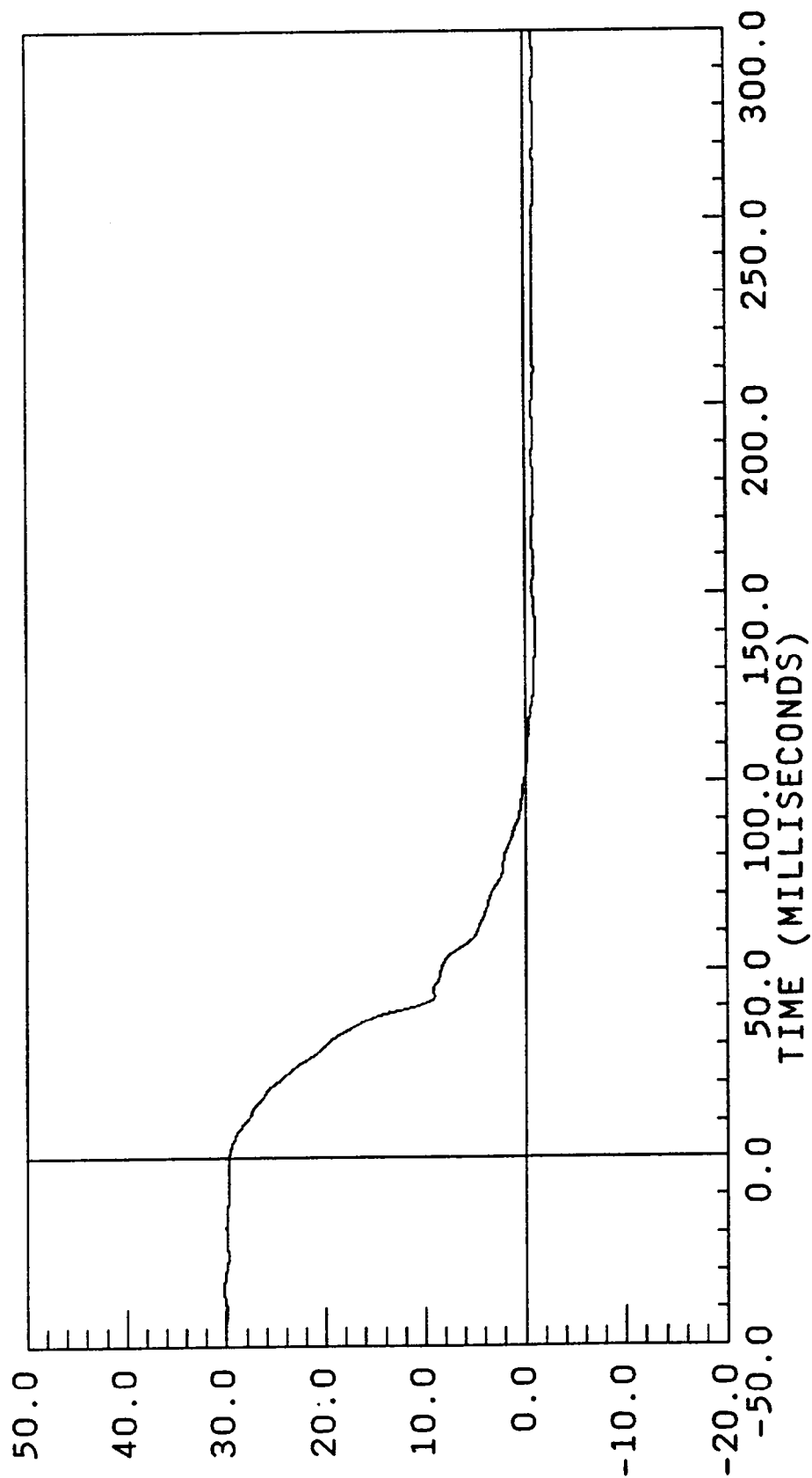
ACCELERATION * G, S *
B-30 7715-5

V892-26.DAT

29.70 mph

ACC PACK #10(X)
COMPUTED
FILTER CUTOFF: 100Hz

XL AXIS
YMIN = -1.071289 at 258.6750
YMAX = 30.02137 at -35.02500

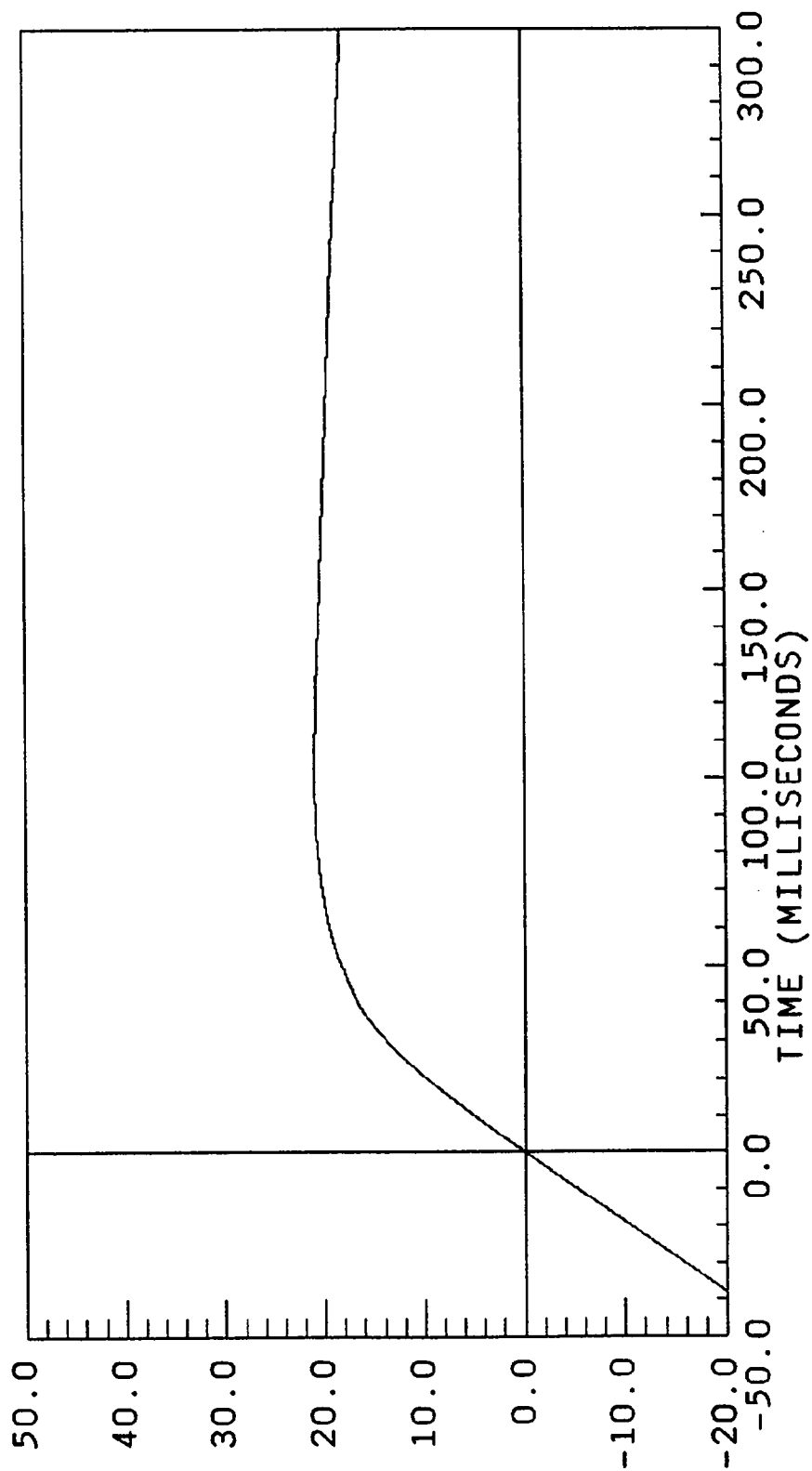


VELOCITY * MILES / HOUR

D892-26.DAT

29.70 mph

ACC PACK #10(X) XL AXIS
COMPUTED YMIN = -23.64452 at 258.6750
FILTER CUTOFF: 100Hz YMAX = 20.96497 at 101.5500



DISPLACEMENT * INCHES

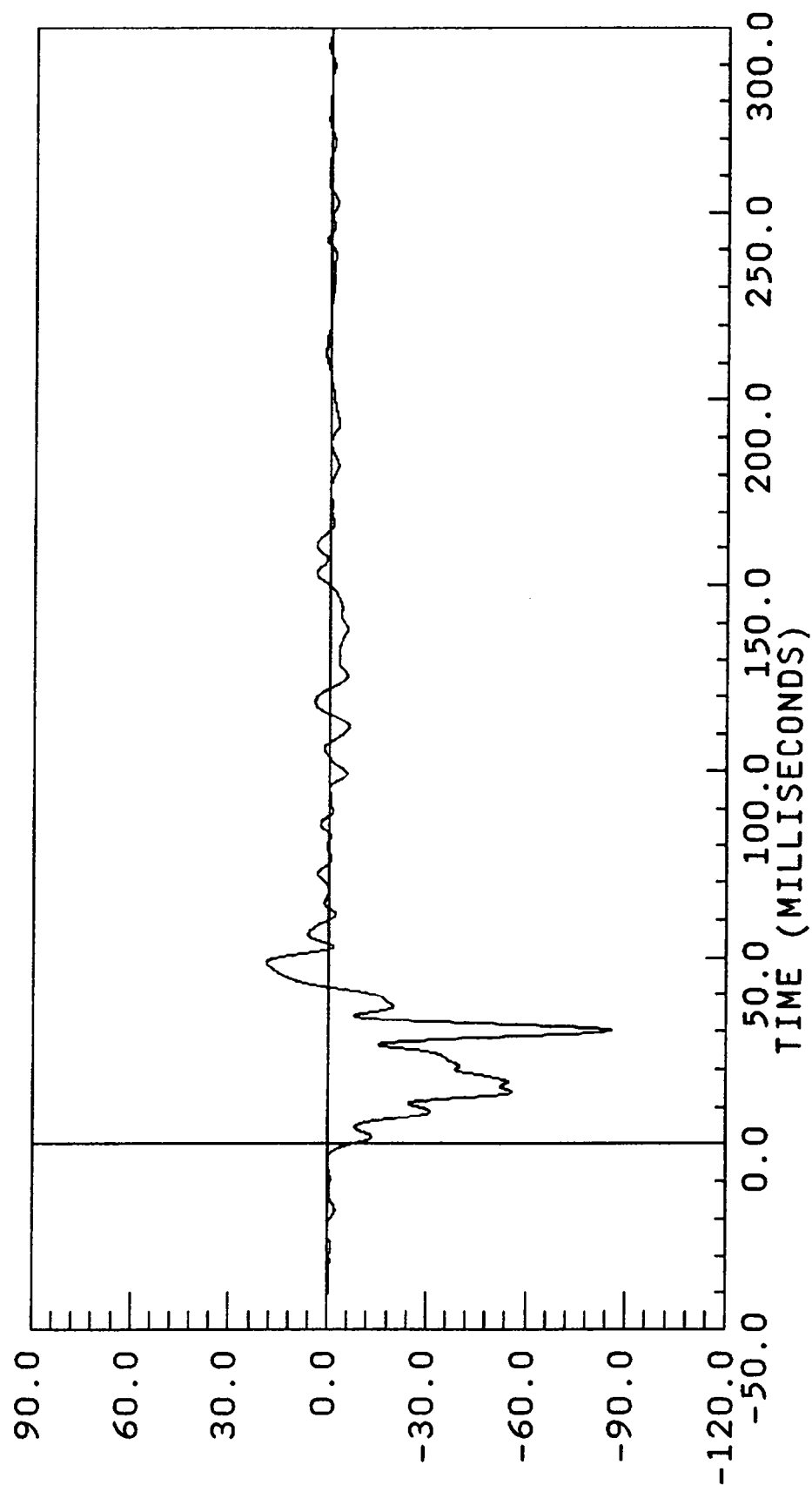
BW892-27.DAT

29.70 mph

ACC PACK #11(X)
FILTERED
FILTER CUTOFF: 100Hz

XL AXIS

YMIN = -85.81071 at 30.15000
YMAX = 19.06830 at 48.82500

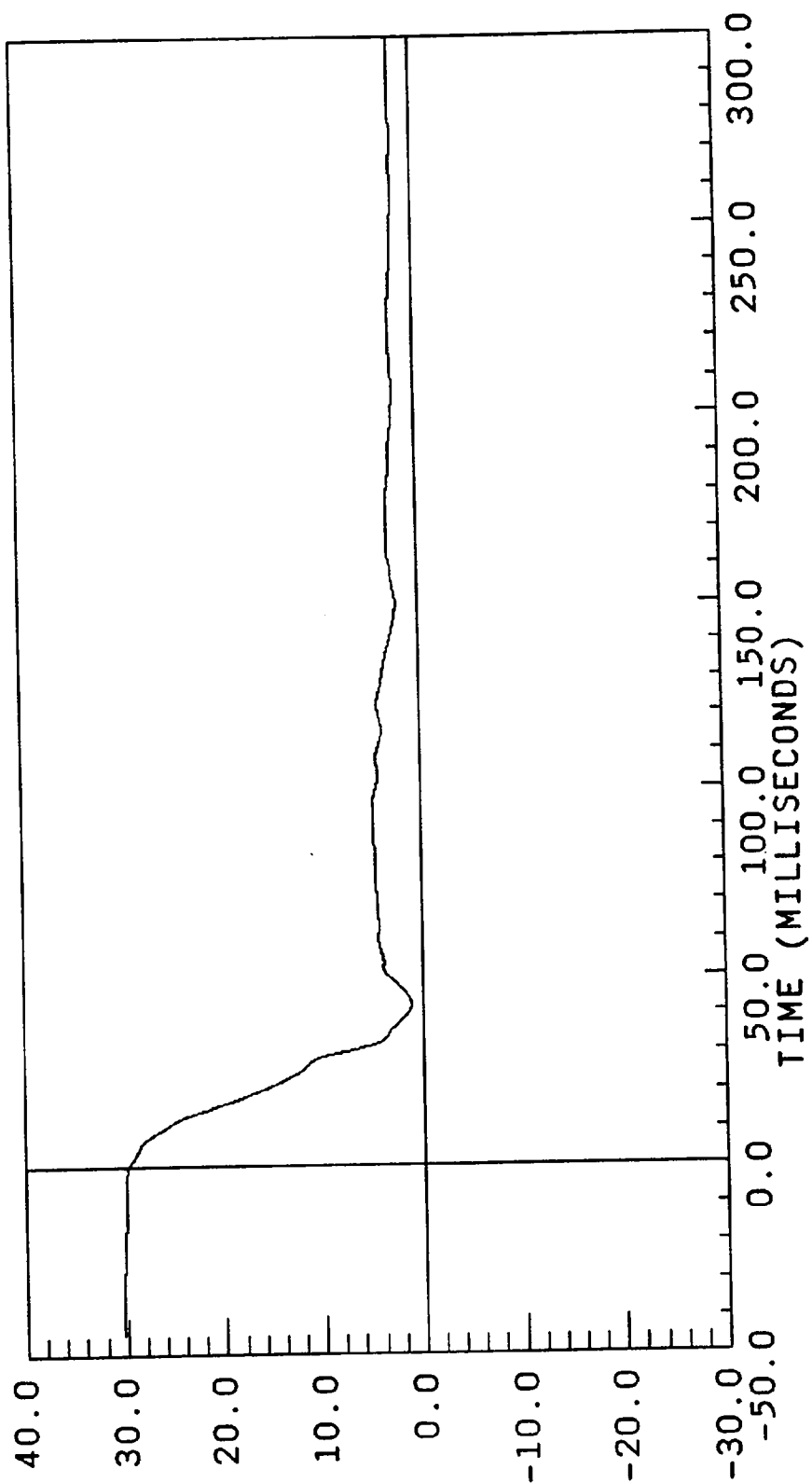


ACCELERATION * G, S *

V892-27.DAT

29.70 mph

ACC PACK #11(X) XL AXIS
COMPUTED YMIN = 1.106932 at 42.00000
FILTER CUTOFF: 100Hz YMAX = 30.34179 at -40.80000



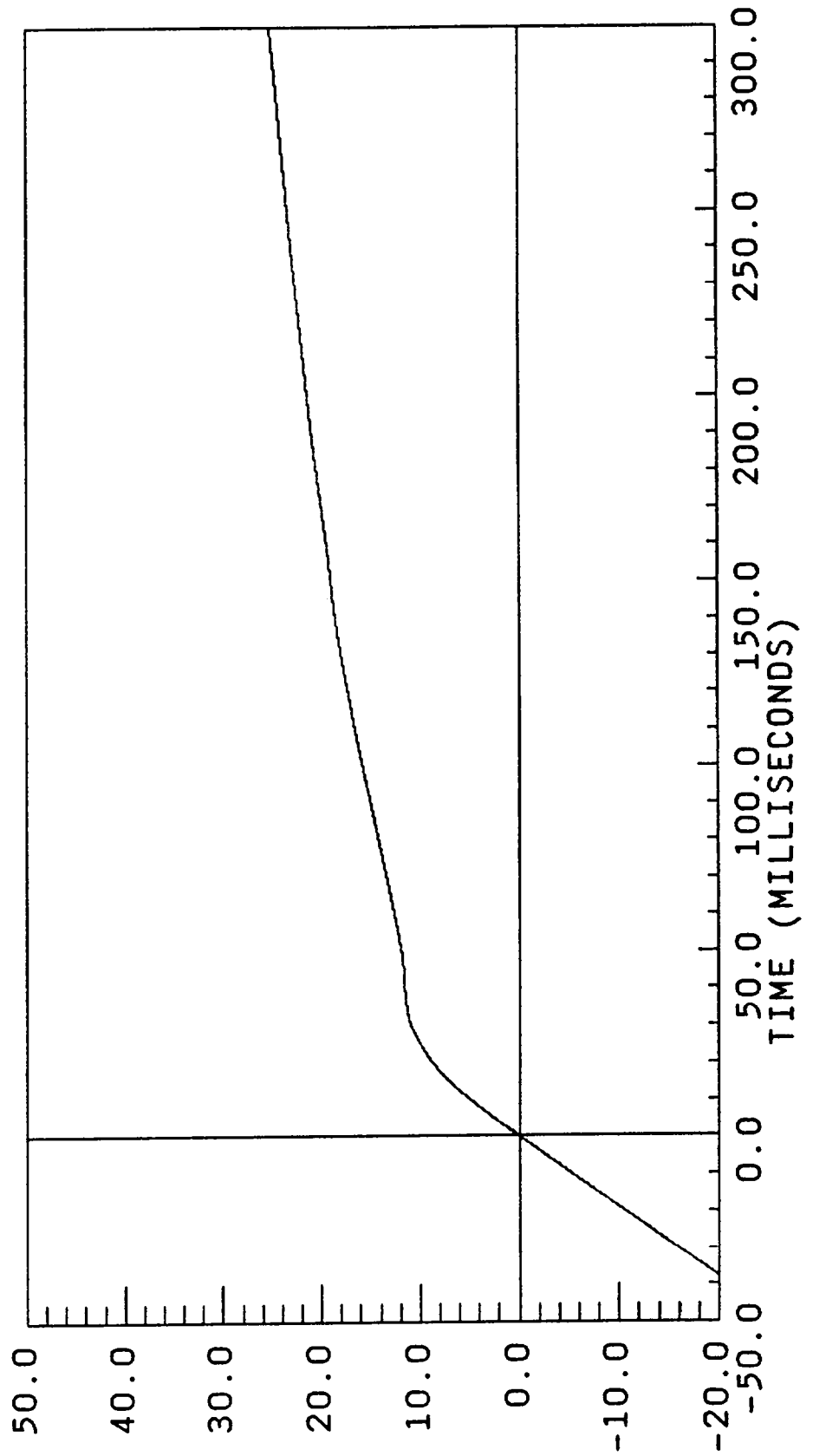
VELOCITY * MILES / HOUR
B-34 7715-5

29.70 mph

ACC PACK #11(X)
COMPUTED
FILTER CUTOFF: 100Hz

XL AXIS

YMIN = -23.81103 at 42.00000
YMAX = 25.13872 at 300.00000



DISPLACEMENT * INCHES

TEST NO. CK0204

DUMMY DATA

	FILTER CHANNEL CLASS
HEAD ACCELERATIONS	1000
CHEST ACCELERATIONS	180
FEMUR FORCES	600

HEAD INJURY CRITERION
HEAD SEVERITY INDEX
36MS. MAXIMUM DURATION

NHTSA CRASH TEST - PROC. 208

RUN= 892

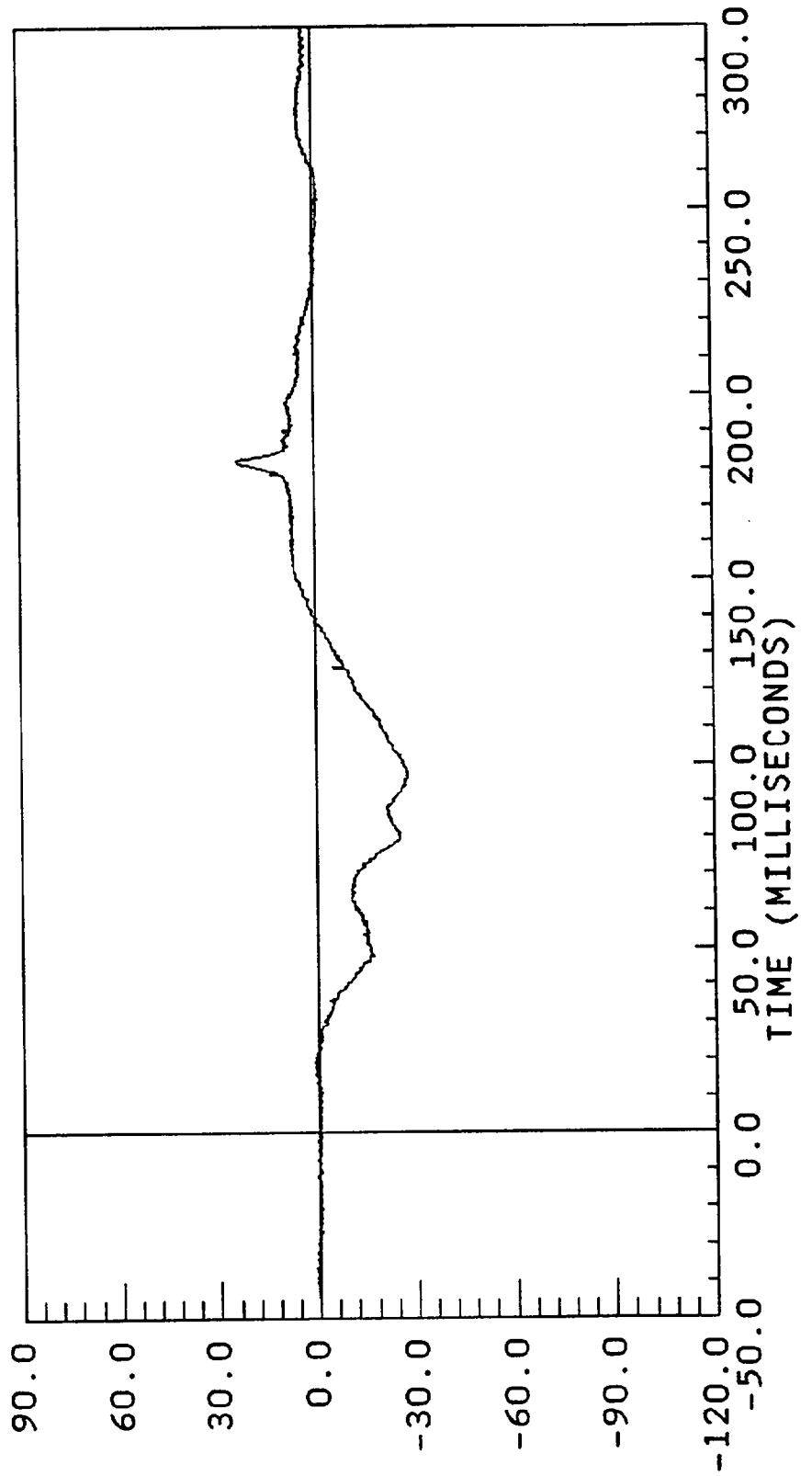
POS#1 HEAD R

HIC= 244.3 FROM T1= .05520 TO T2= .09120
AVERAGE ACCELERATION BETWEEN T1 AND T2= 34.1G'S
EVENT TIME= 300.0 MSEC
SEVERITY INDEX= 423.8

UDS\$892-1.DAT

0.00 mph

POS#1 HEAD X XL AXIS
YMIN = -27.38600 at 96.22501
YMAX = 23.55100 at 181.9500
FILTER CUTOFF: OHZ



ACCELERATION * G * S *

B-38

7715-5

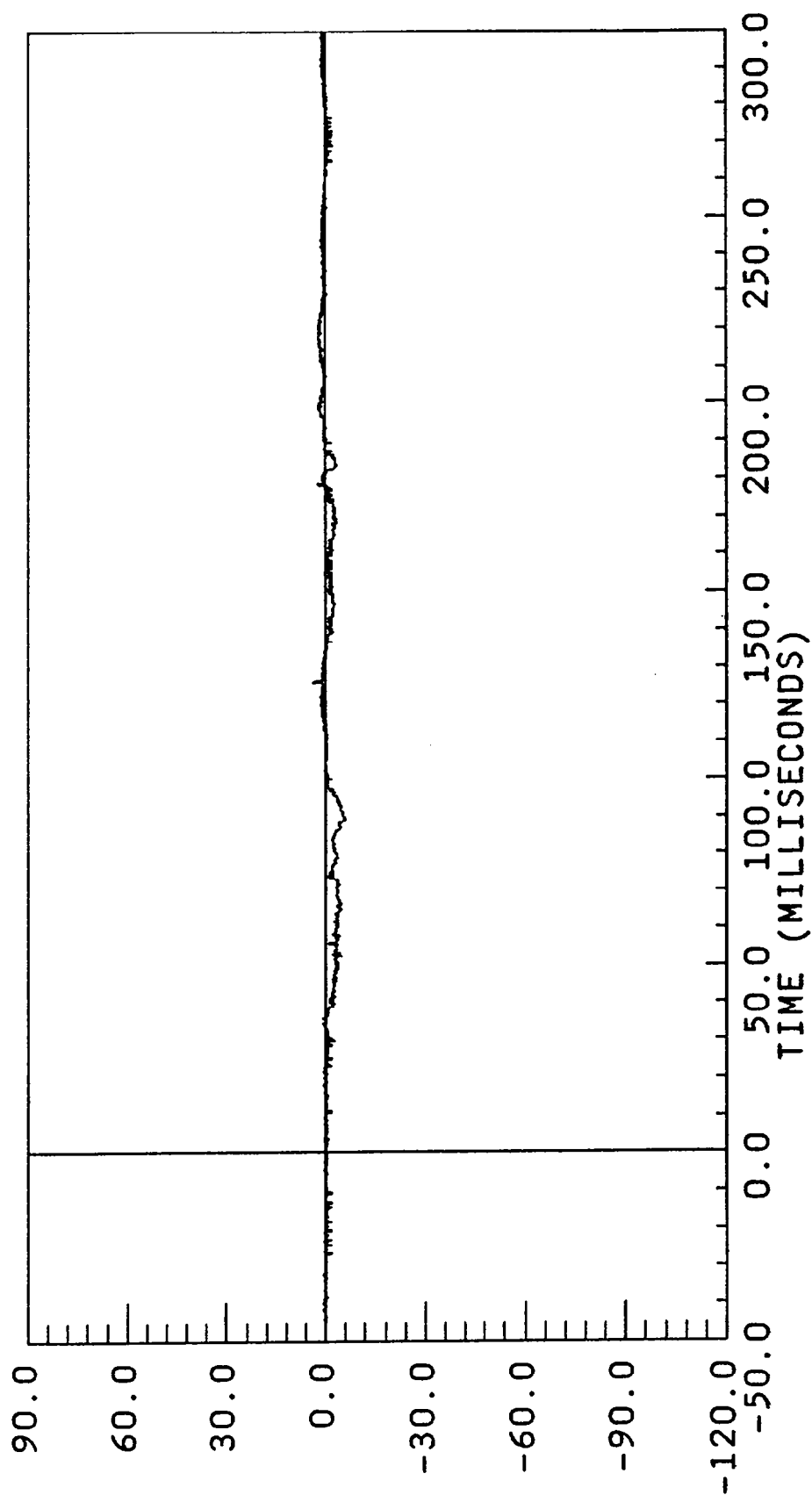
0.00 mph

POS#1 HEAD Y

YL AXIS

YMIN = -6.025300 at 88.80000
YMAX = 3.969400 at 126.00000

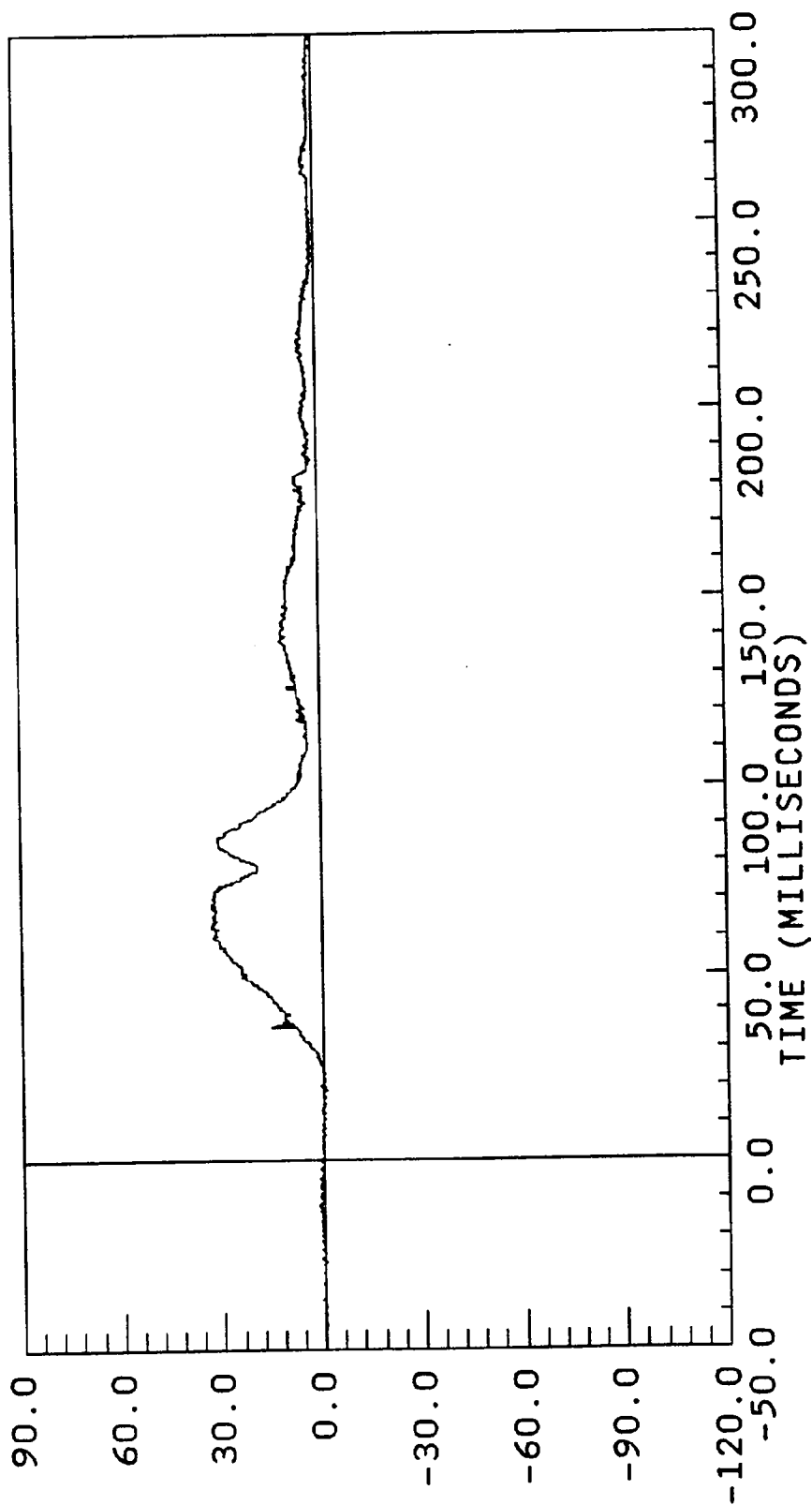
FILTER CUTOFF: 0Hz



UDS\$892-3.DAT

0.00 mph

POS#1 HEAD Z ZL AXIS
YMIN = -0.936790 at 18.67500
YMAX = 33.17300 at 62.62500
FILTER CUTOFF: 0Hz



ACCELERATION

B-40

* G * S *

7715-5

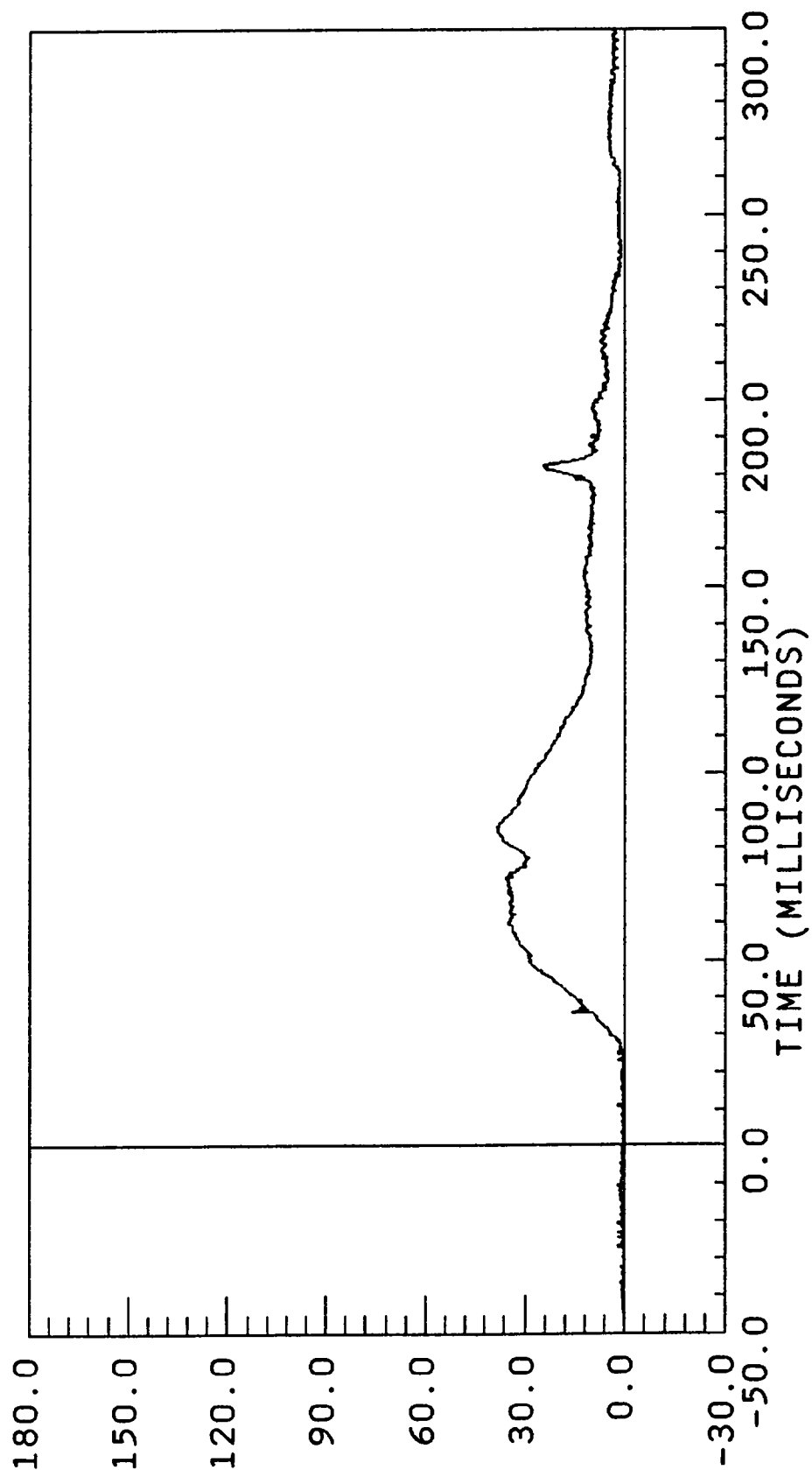
0.00 mph

POS#1 HEAD
NONSTANDARD
FILTER CUTOFF:

RS AXIS

YMIN = 0.163707 at 18.67500
YMAX = 38.64891 at 85.27500

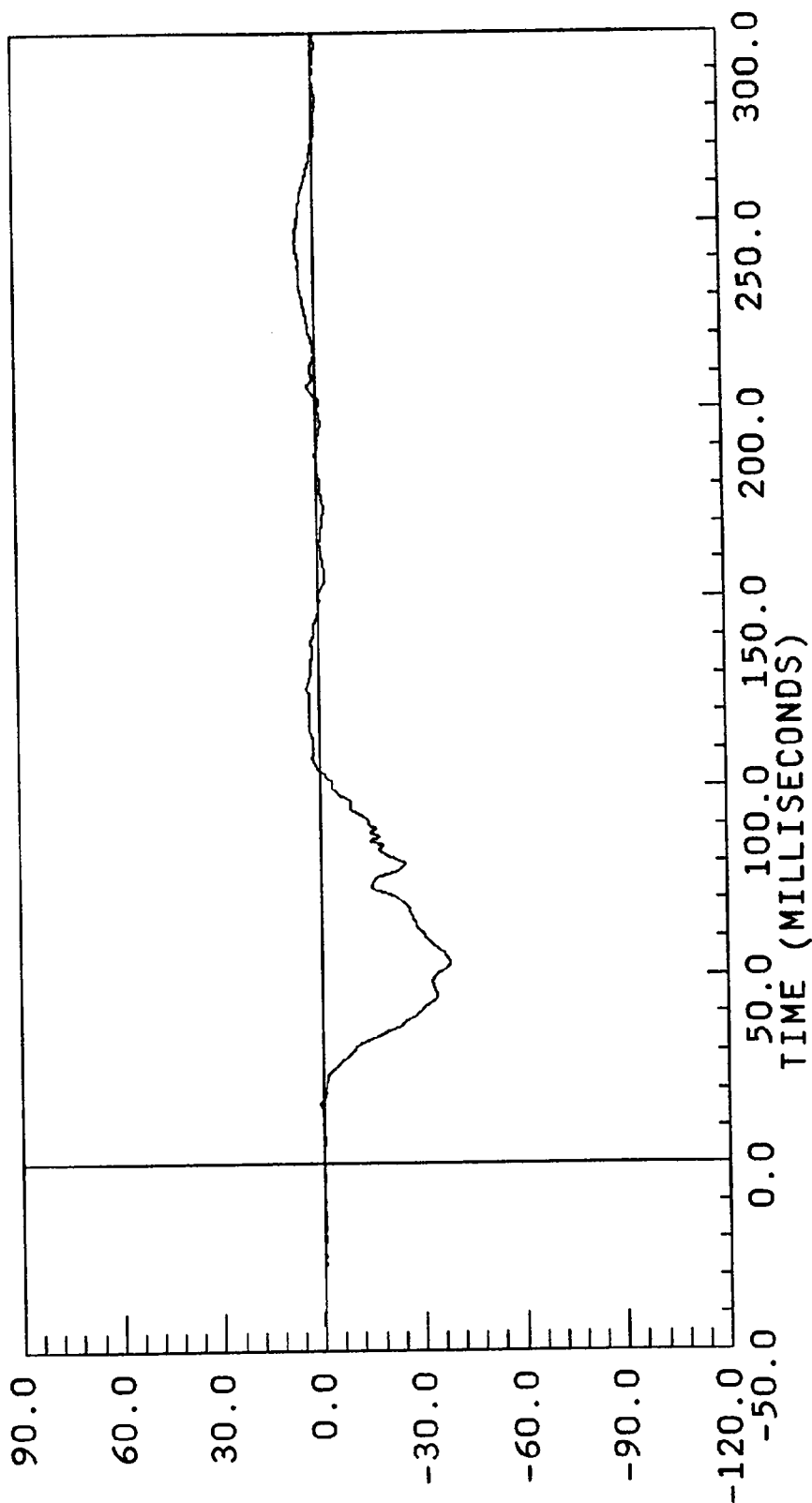
OHZ



BW892-4.DAT

0.00 mph

POS#1 CHEST X
FILTERED
FILTER CUTOFF: 300Hz
XL AXIS
YMIN = -38.07568 at 53.10000
YMAX = 5.756474 at 244.5750

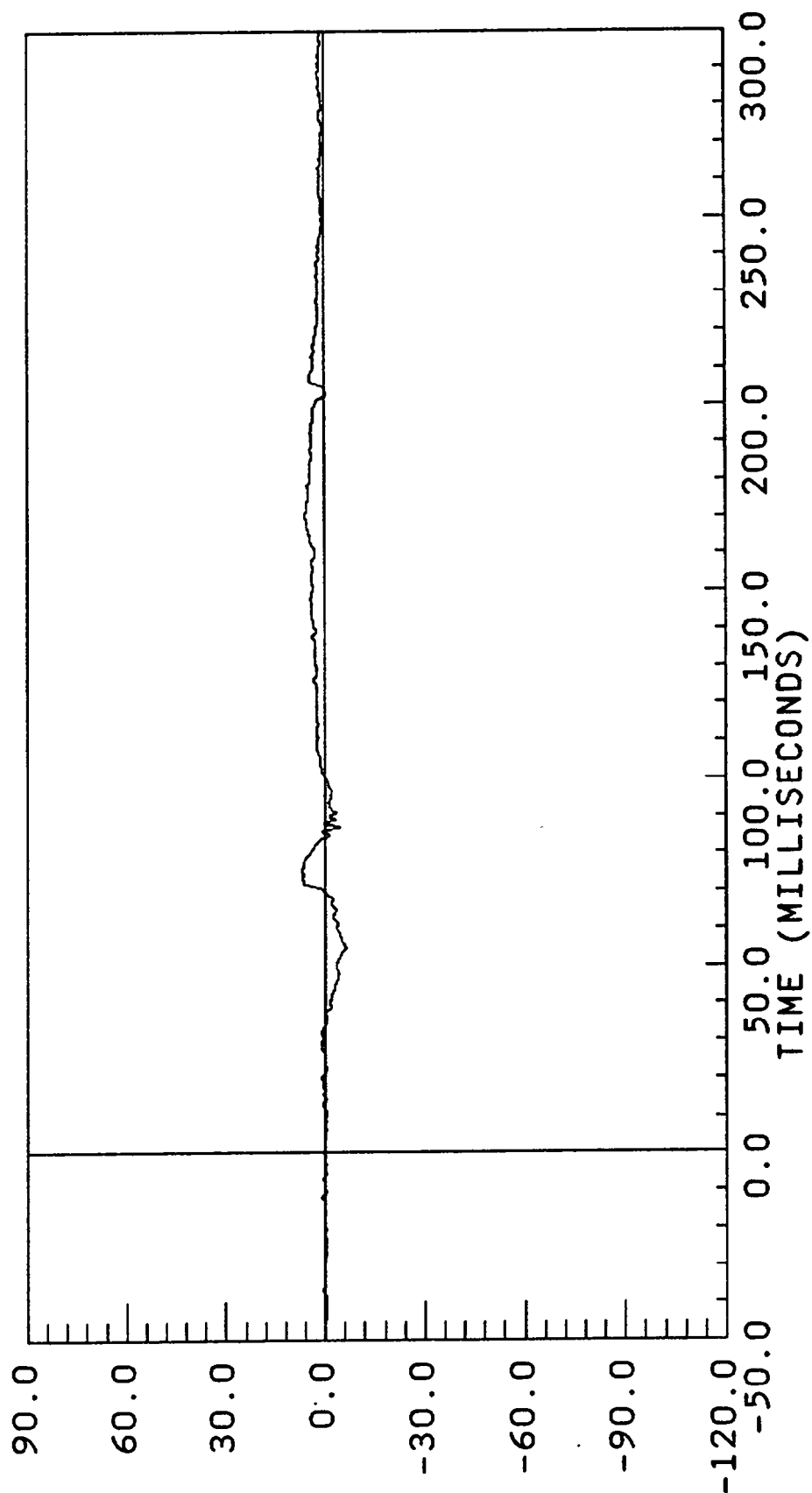


ACCELERATION * G * S *
B-42 7715-5

BW892-5.DAT

0.00 mph

POS#1 CHEST Y
FILTERED
FILTER CUTOFF: 300Hz
YL AXIS
YMIN = -6.212812 at 54.90000
YMAX = 7.067048 at 75.22501

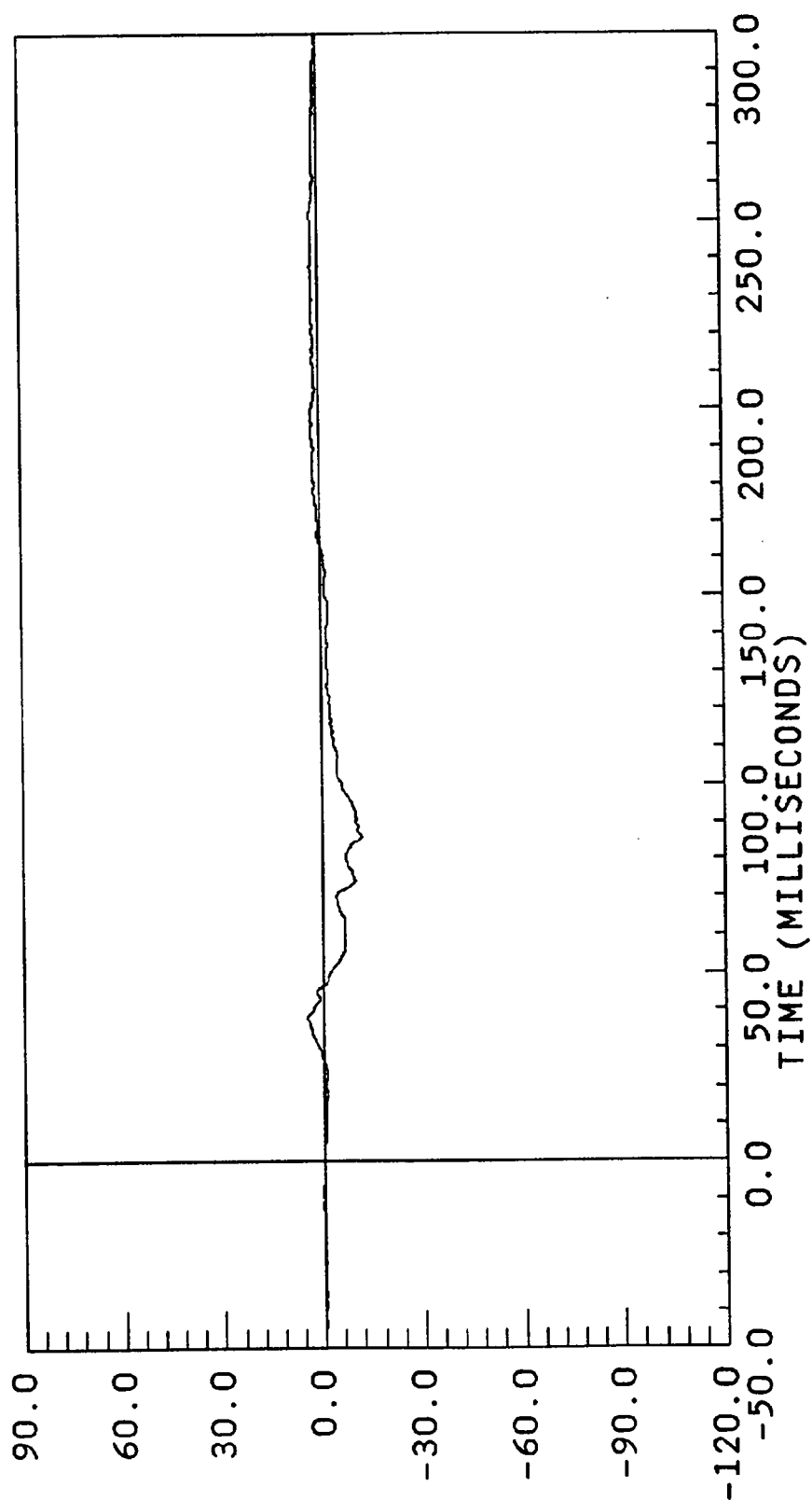


ACCELERATION * G * S *
B-43 7715-5

BW892-6.DAT

0.00 mph

POS#1 CHEST Z
FILTERED
FILTER CUTOFF: 300HZ
ZL AXIS
YMIN = -11.67098 at 86.17500
YMAX = 5.026304 at 38.02500



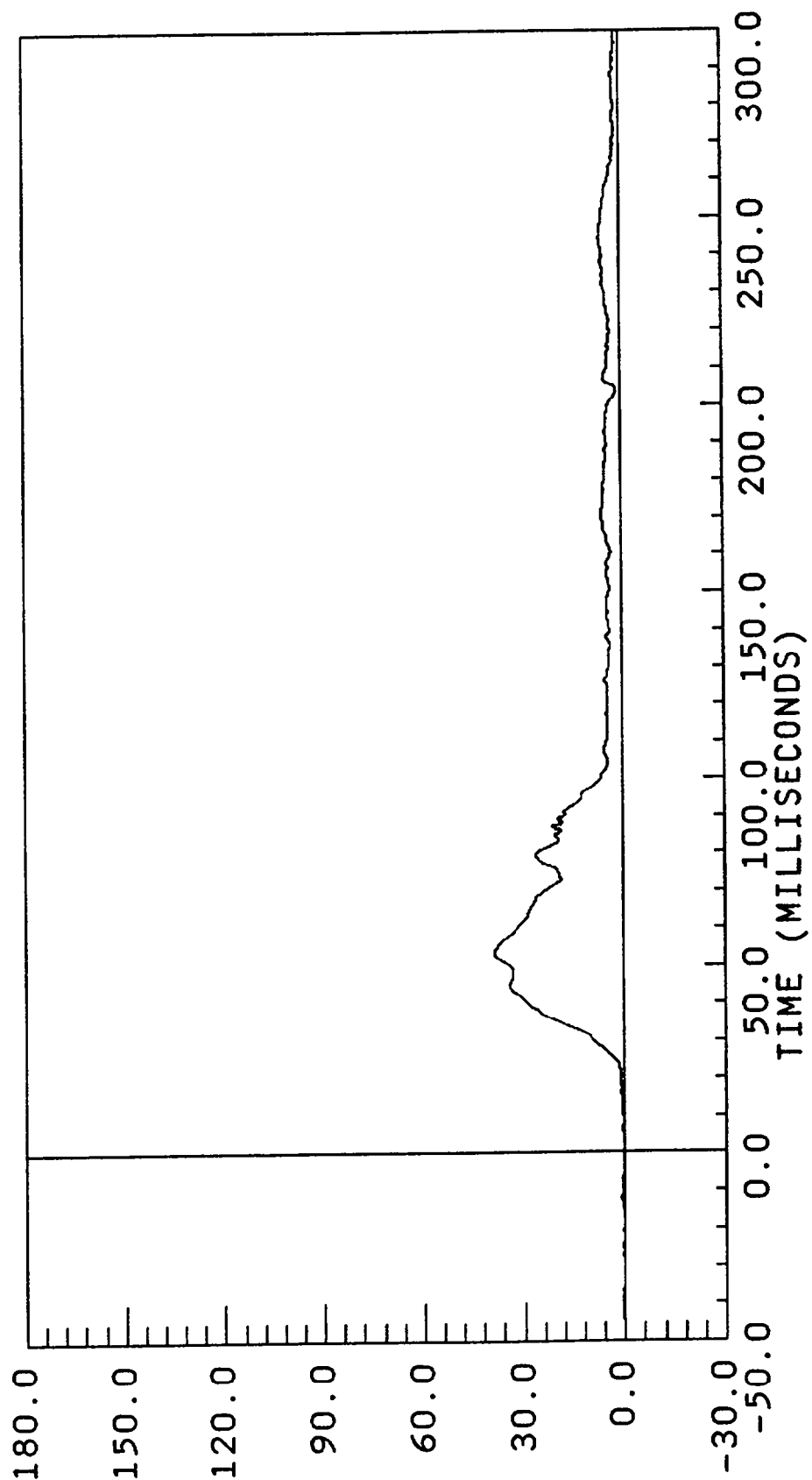
ACCELERATION * G * S *
B-44 7715-5

CHST892-1.DAT

0.00 mph

POS#1 CHEST
COMPUTED
FILTER CUTOFF: 300HZ

RS AXIS
YMIN = 0.0345545 at 86.17500
YMAX = 38.66413 at 53.25000

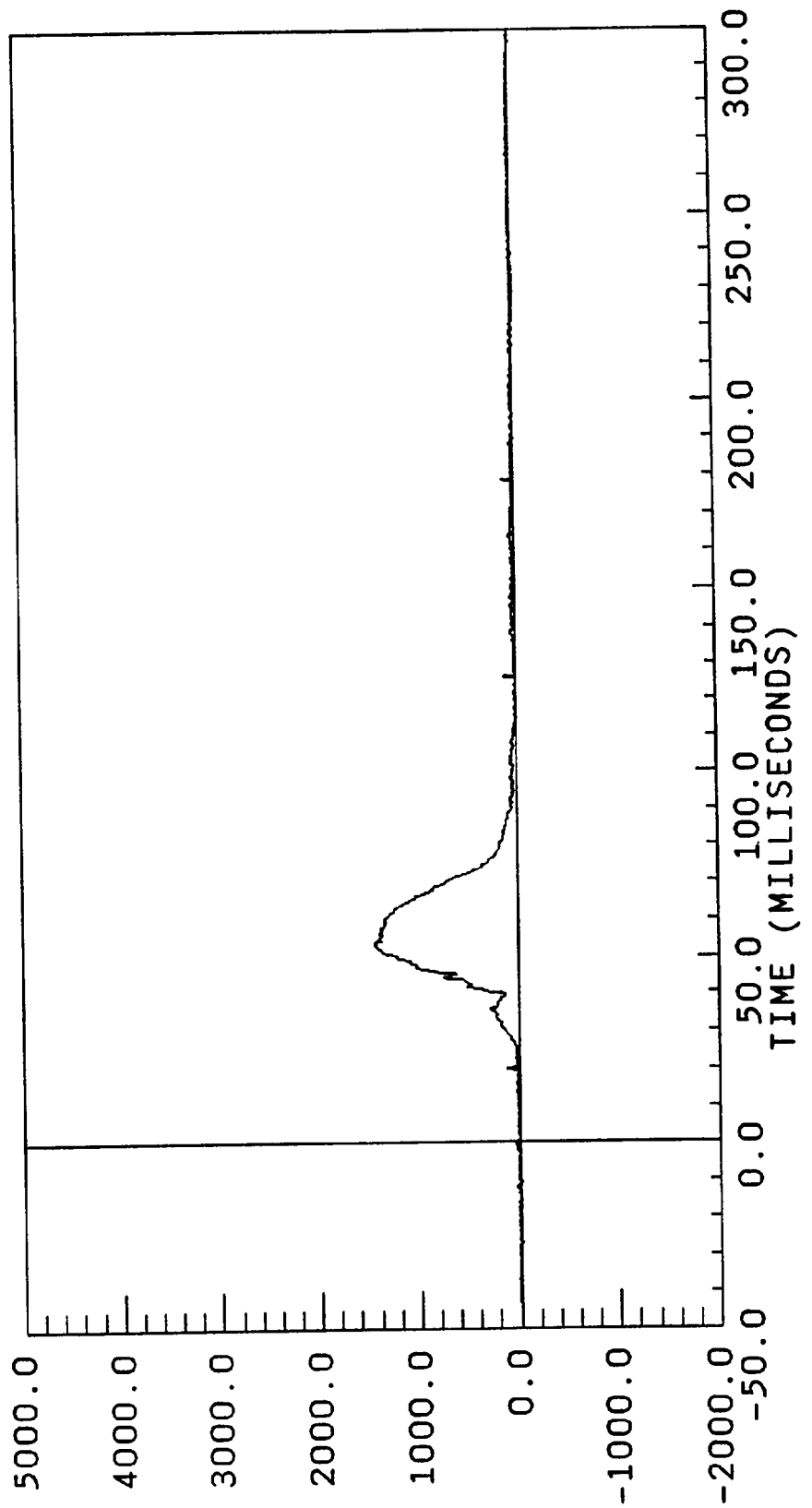


ACCELERATION * G, S *
B-45 7715-5

BW892-7.DAT

0.00 mph

POS#1 LEFT FEMUR
FILTERED
FILTER CUTOFF: 1000HZ
NA AXIS
YMIN = -32.17791 at 229.4250
YMAX = 1443.666 at 53.10000

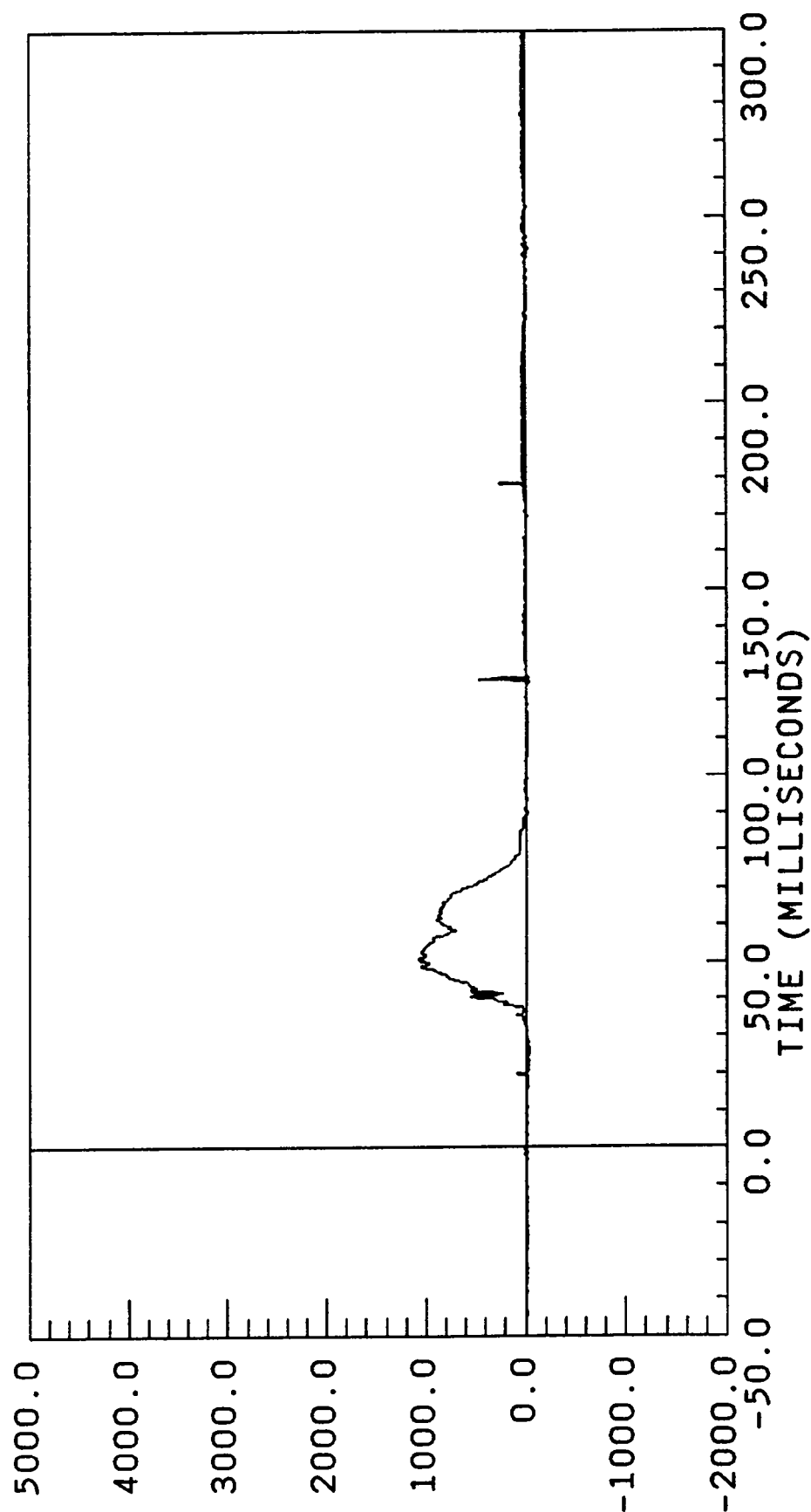


FORCE * LBS *
B-46

7715-5

0.00 mph

POS#1 RIGHT FEMUR
 FILTERED
 FILTER CUTOFF: 1000Hz
 NA AXIS
 YMIN = -41.80555 at 126.4500
 YMAX = 1079.551 at 50.70000



HEAD INJURY CRITERION
HEAD SEVERITY INDEX
36MS. MAXIMUM DURATION

NHTSA CRASH TEST - PROC. 208

RUN= 992

POS#2 HEAD R

HIC= 436.8 FROM T1= .06165 TO T2= .09765
AVERAGE ACCELERATION BETWEEN T1 AND T2= 43.0G'S
EVENT TIME= 300.0 MSEC
SEVERITY INDEX= 750.9

UDS\$892-11.DA

0.00 mph

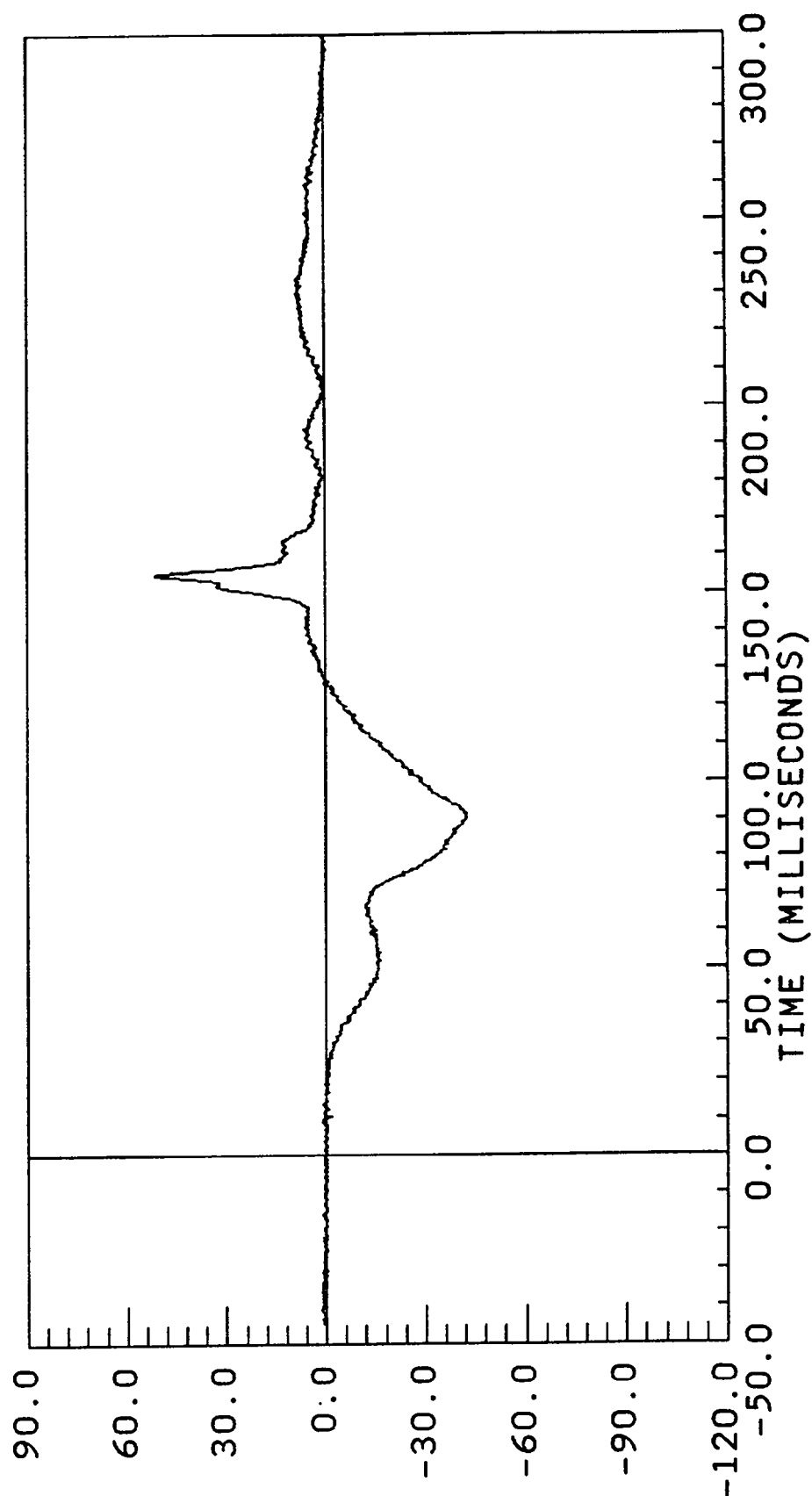
POS#2 HEAD X

XL AXIS

YMIN = -42.54100 at 89.85001

YMAX = 51.56700 at 154.8750

FILTER CUTOFF: 0Hz



ACCELERATION * G * S *

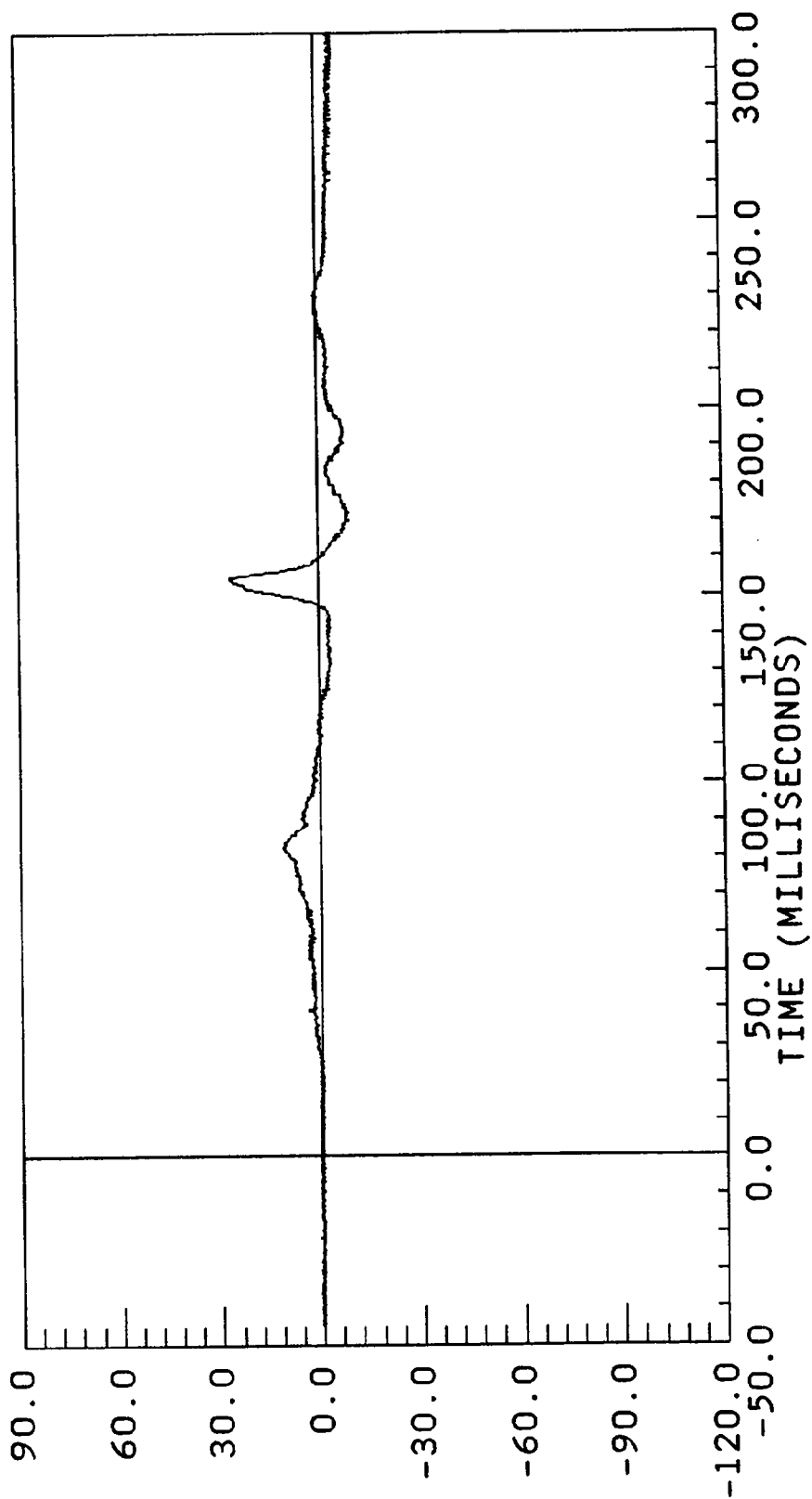
B-49

7715-5

UDS\$892-12.DA

0.00 mph

POS#2 HEAD Y YL AXIS
YMIN = -9.410100 at 170.0250
YMAX = 26.88900 at 154.2750
FILTER CUTOFF: 0Hz

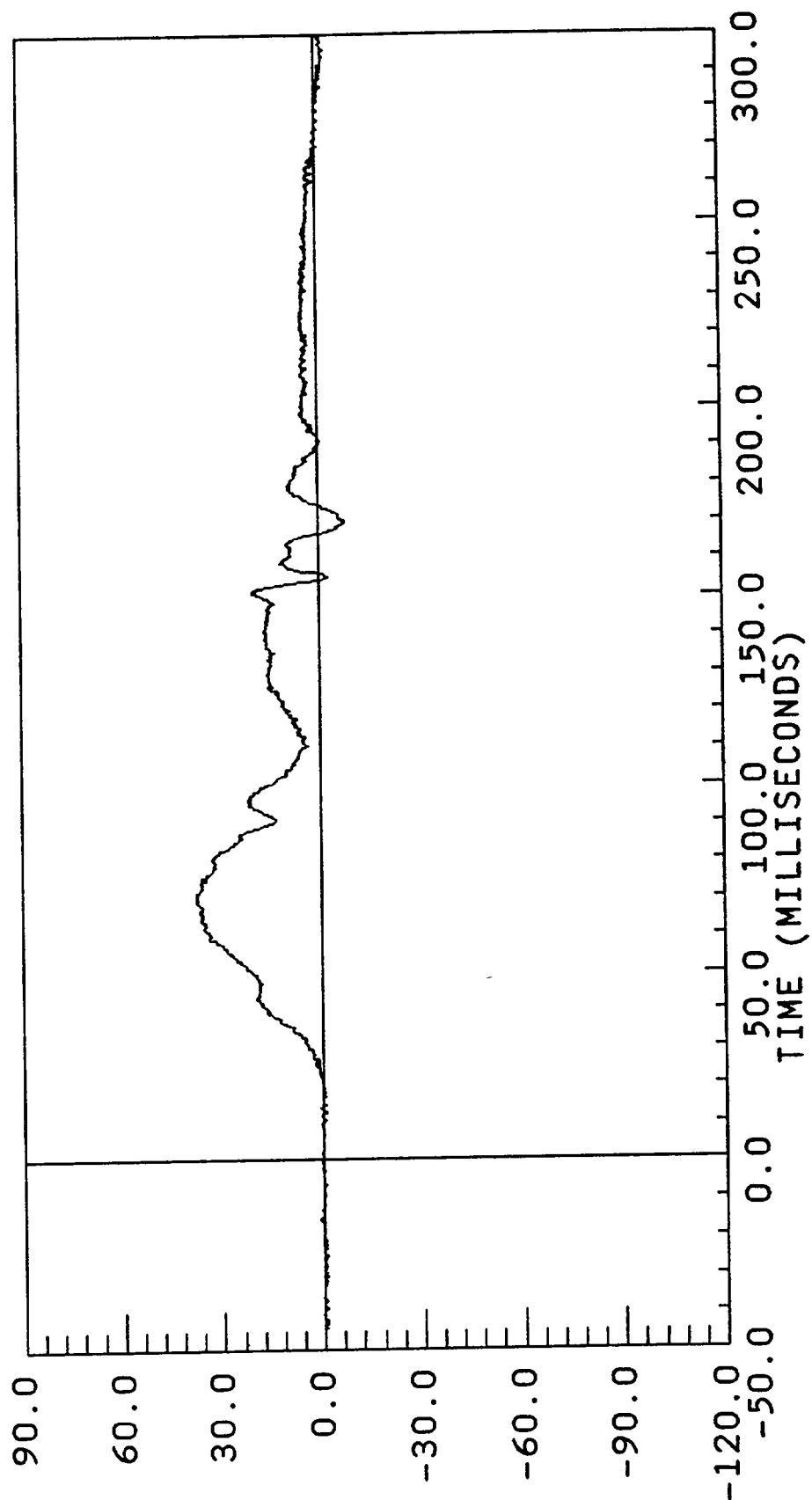


ACCELERATION * G, S *
B-50 7715-5

UDS\$892-13.DA

0.00 mph

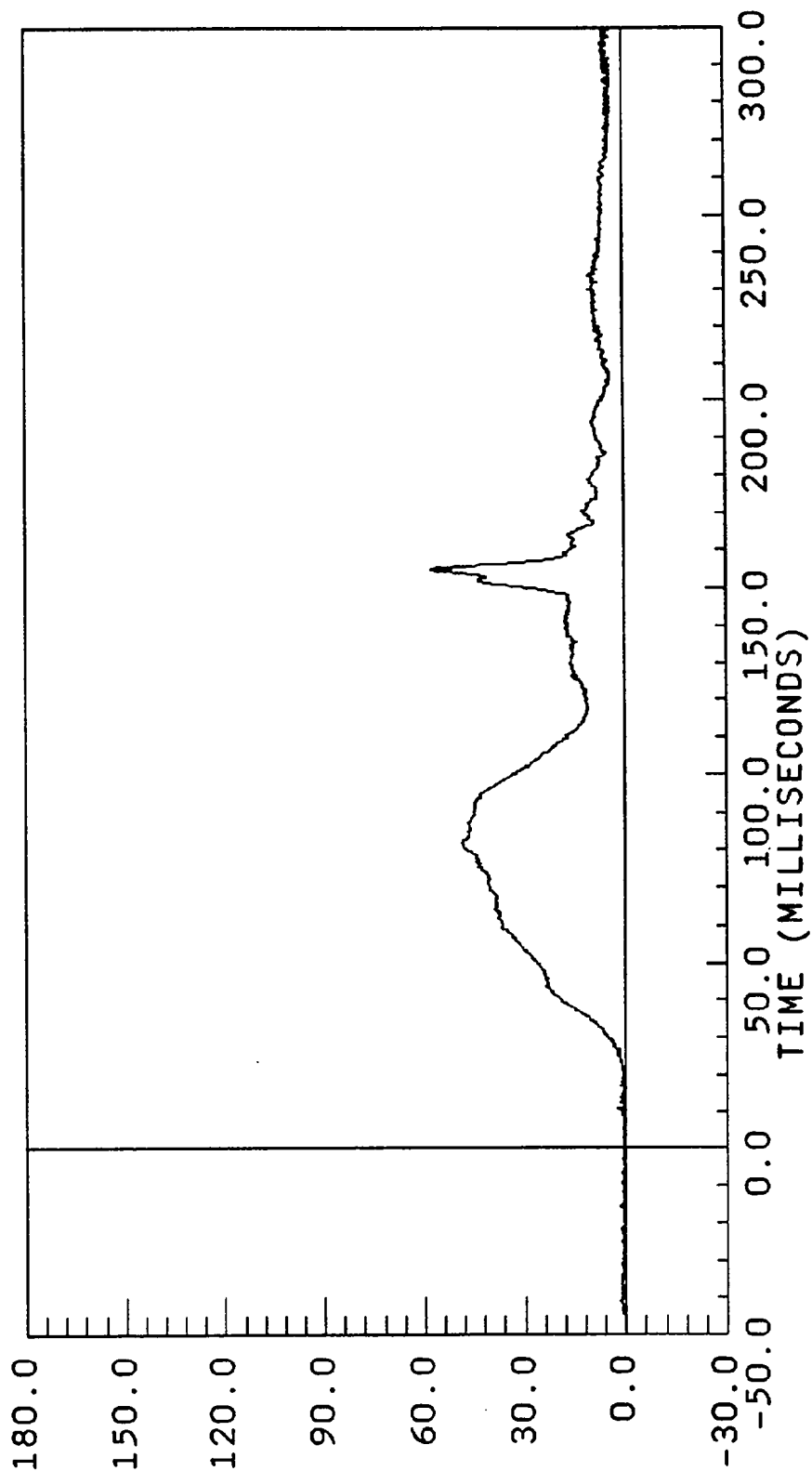
POS#2 HEAD Z ZL AXIS
YMIN = -7.986500 at 169.5000
YMAX = 37.85000 at 69.15000
FILTER CUTOFF: OHZ



HRES892-2.DAT

0.00 mph

POS#2 HEAD RS AXIS
NONSTANDARD YMIN = 0.675749 at -33.22500
FILTER CUTOFF: OHZ YMAX = 57.93902 at 154.8750



ACCELERATION * G * S *

B-52

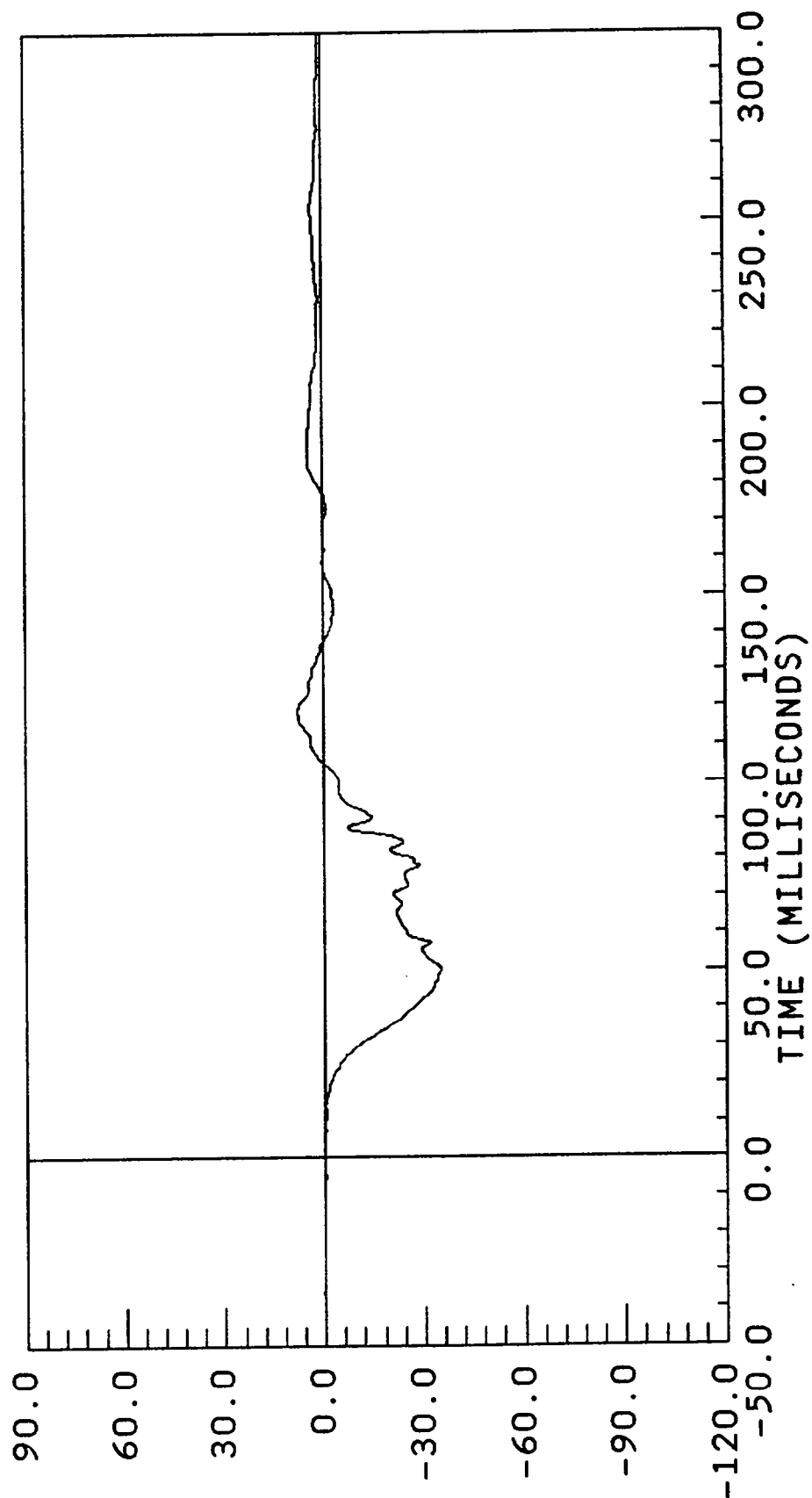
7715-5

BW892-14.DAT

0.00 mph

POS#2 CHEST X
FILTERED
FILTER CUTOFF: 300HZ

XL AXIS
YMIN = -35.07213 at 50.17500
YMAX = 7.848322 at 118.5750

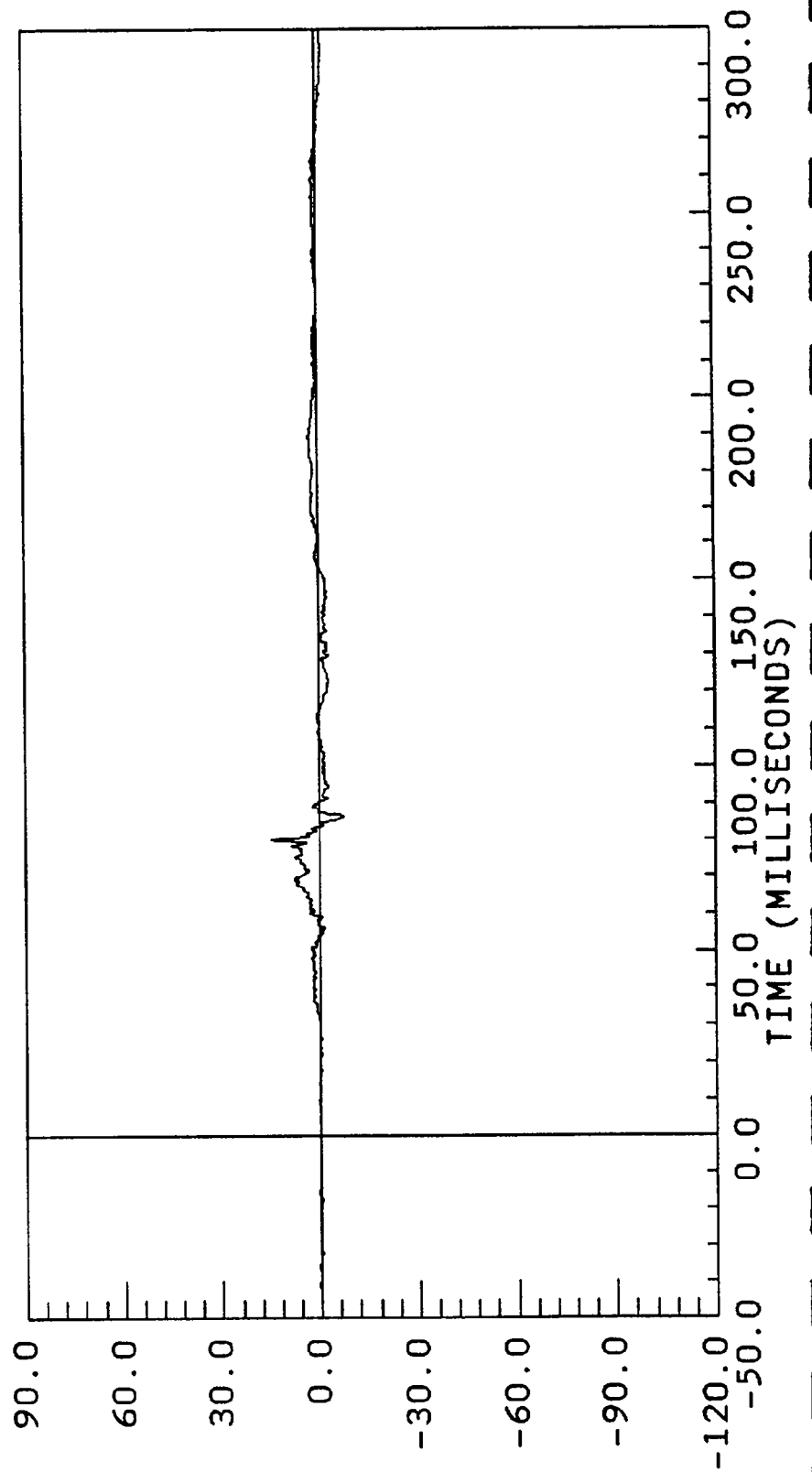


ACCELERATION * G, S *
B-53 7715-5

BW892-15.DAT

0.00 mph

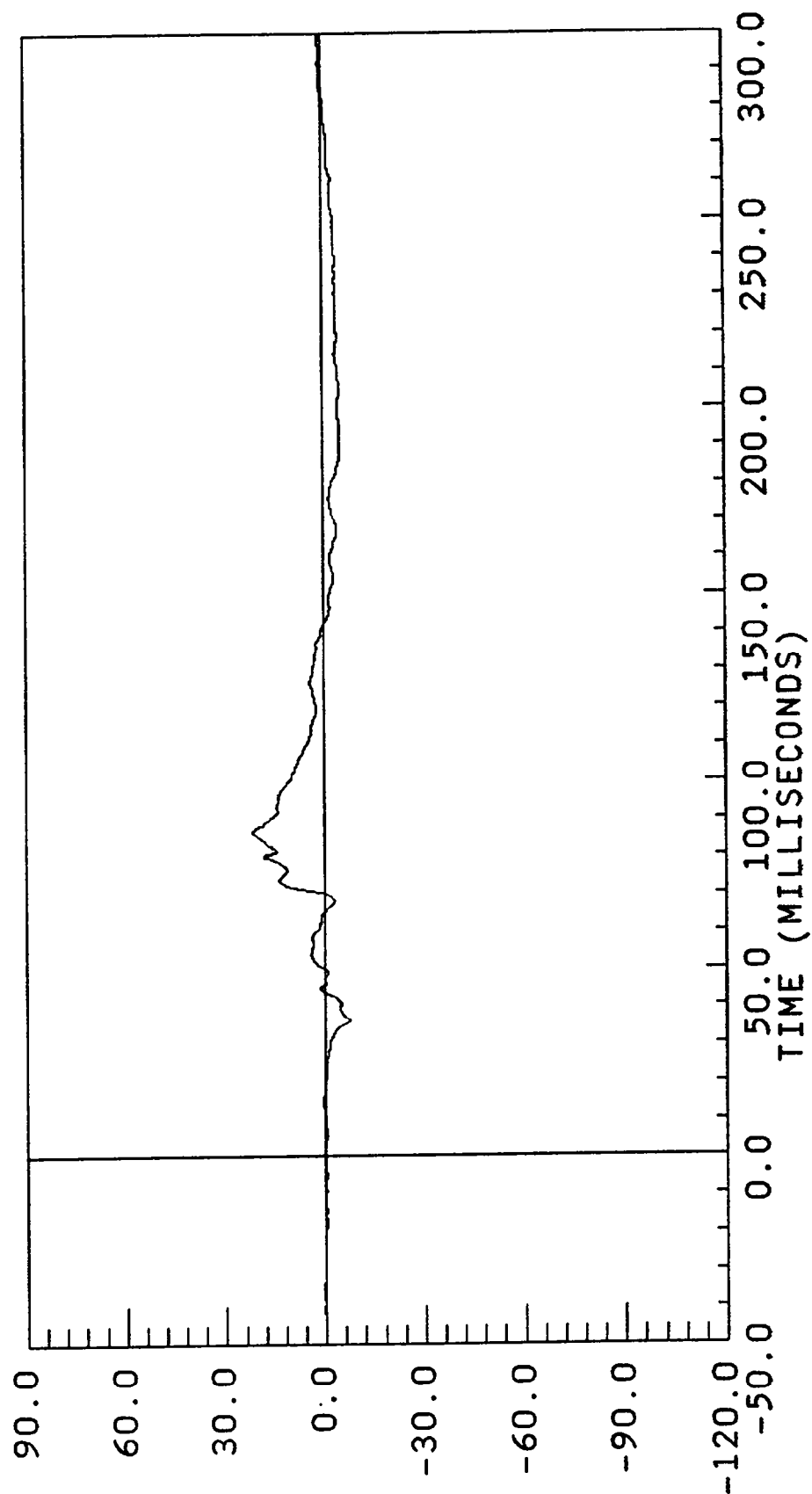
POS#2 CHEST Y YL AXIS
FILTERED YMIN = -7.529603 at 86.62500
FILTER CUTOFF: 300Hz YMAX = 15.03816 at 80.10001



ACCELERATION * G * S
B-54 7715-5

0.00 mph

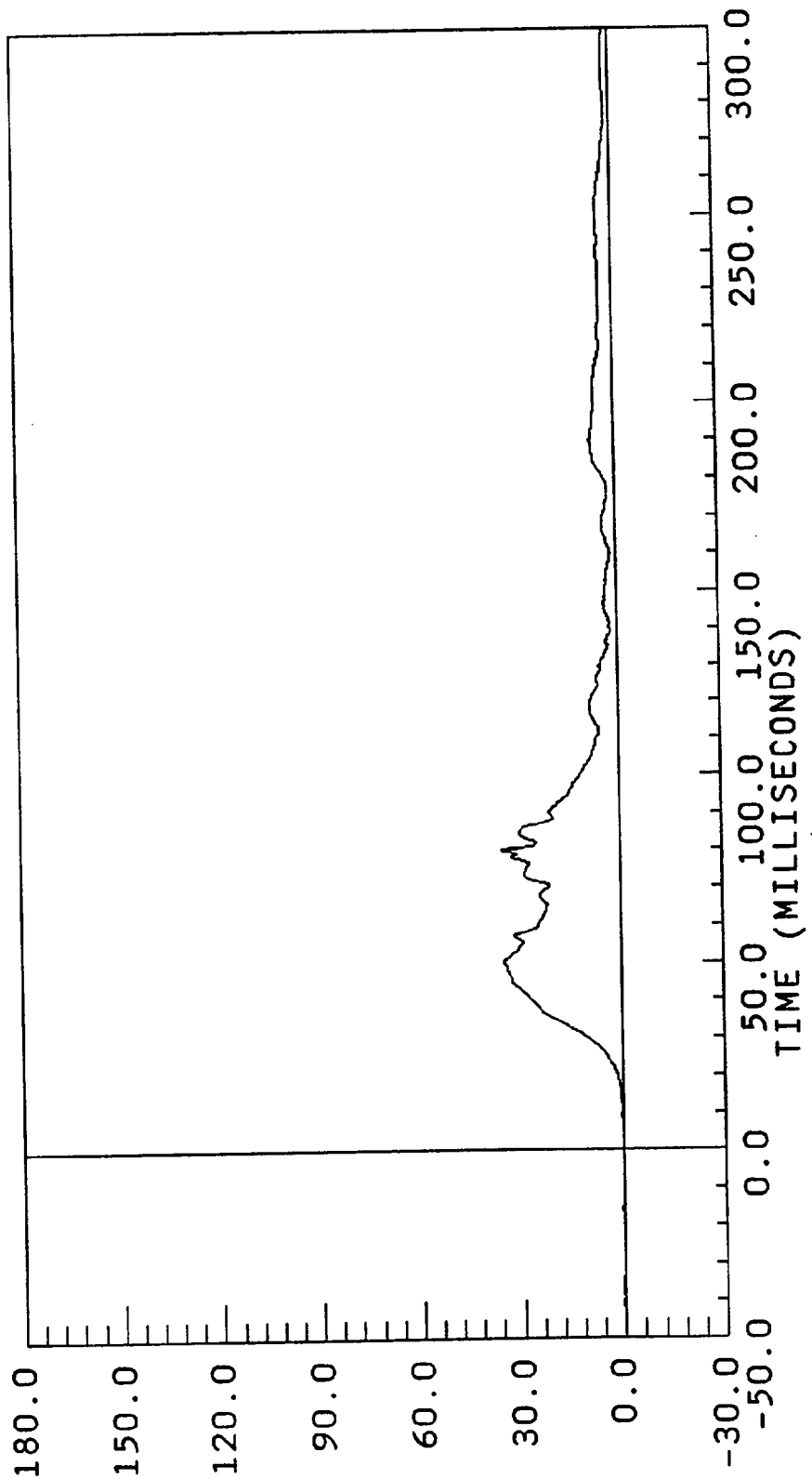
POS#2 CHEST Z
 FILTERED
 FILTER CUTOFF: 300HZ
 ZL AXIS
 YMIN = -7.340156 at 36.22500
 YMAX = 21.90154 at 86.40000



CHST892-2.DAT

0.00 mph

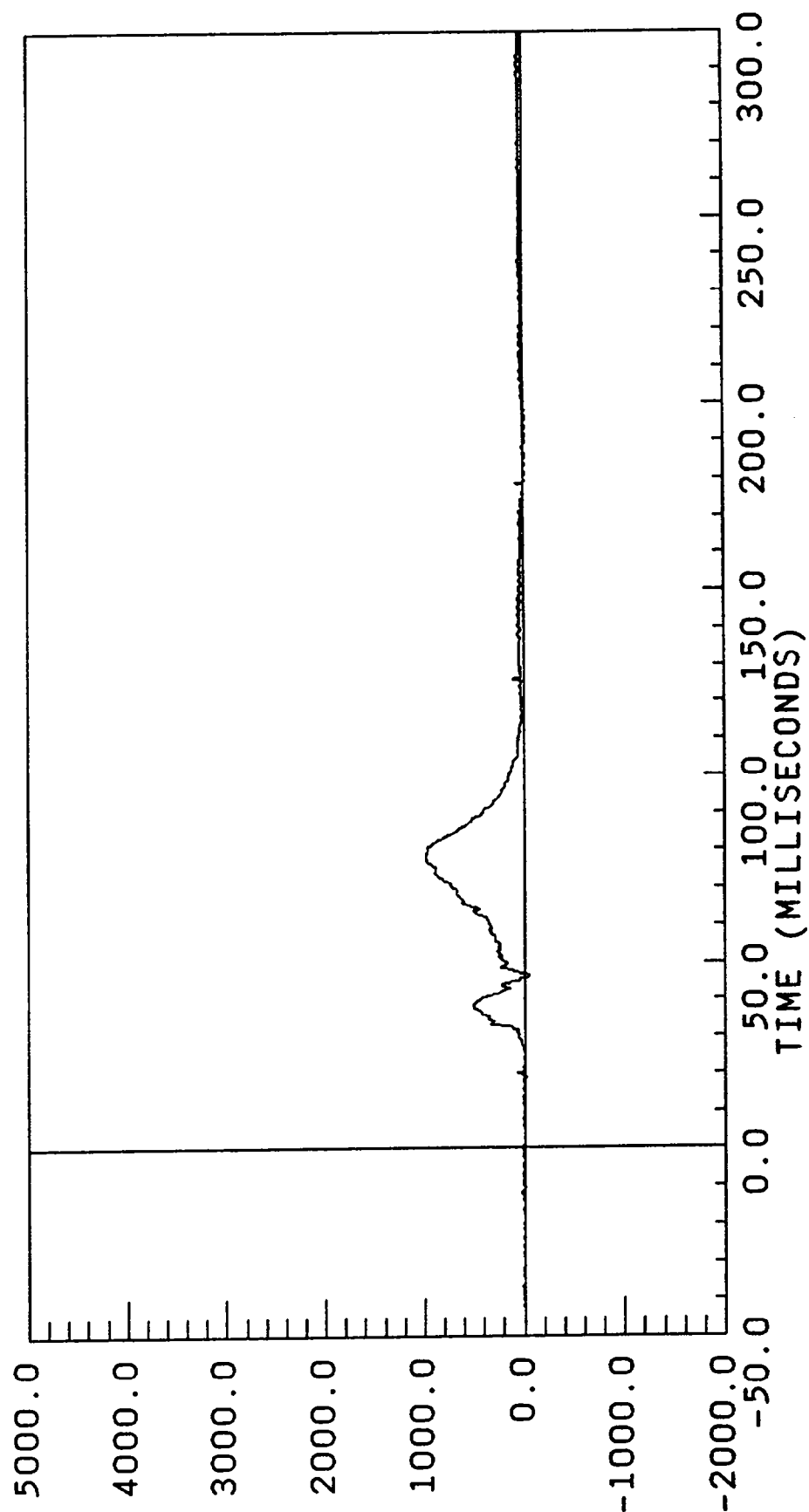
POS#2 CHEST
COMPUTED
FILTER CUTOFF: 300Hz
RS AXIS
YMIN = 0.0428322 at -23.62500
YMAX = 35.69449 at 80.02500



ACCELERATION * G * S *
B-56 7715-5

0.00 mph

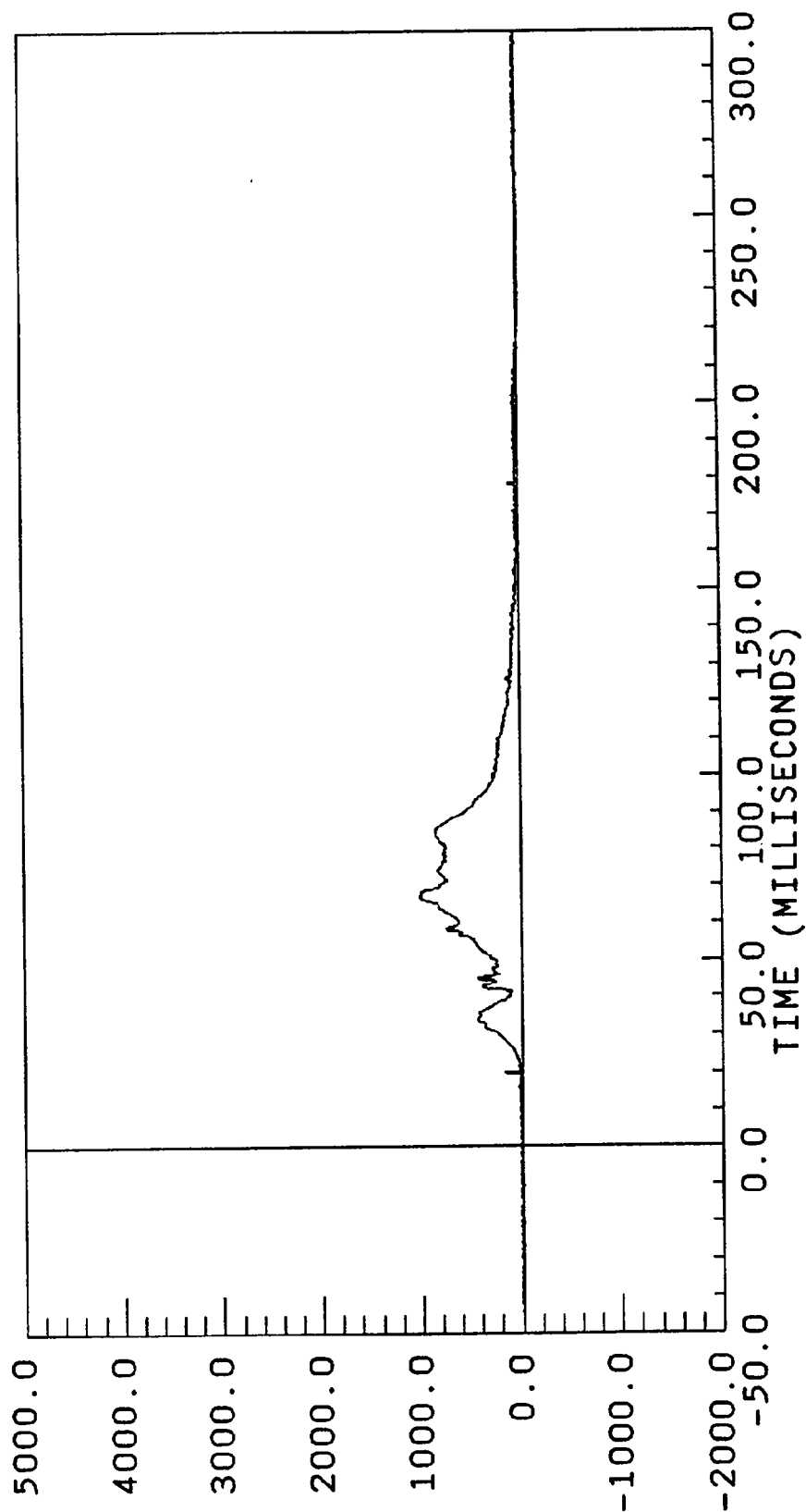
POS#2 LEFT FEMUR
 FILTERED
 FILTER CUTOFF: 1000HZ
 NA AXIS
 YMIN = -54.58177 at 46.72500
 YMAX = 989.2250 at 78.37500



BW892-10.DAT

0.00 mph

POS#2 RIGHT FEMUR
FILTERED
FILTER CUTOFF: 1000HZ
NA AXIS
YMIN = -35.16620 at 229.3500
YMAX = 1007.428 at 66.67500



FORCE * LBS *

B-58

7715-5

Appendix C

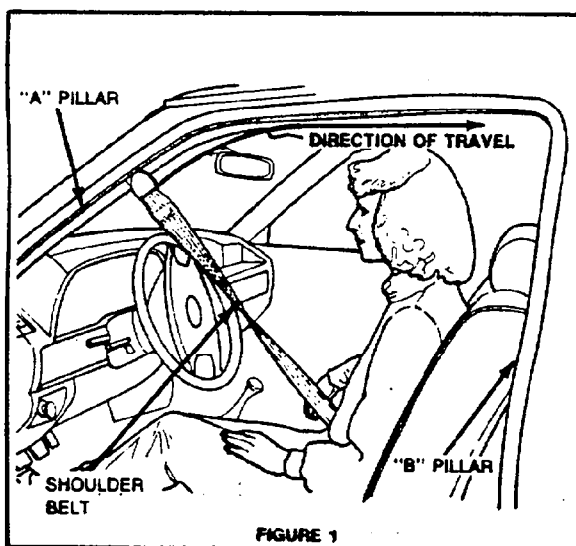
VEHICLE OWNERS MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

BEFORE DRIVING YOUR VEHICLE

- Rotate safety belt boot rearward.
- Enter rear seat in front of safety belts.
- Return rotating safety belt boot to forward position to facilitate use by front seat passengers.

MOTORIZED SHOULDER BELT PASSIVE RESTRAINT SYSTEM (Not Available on Any Model Sold in Canada)

The Passive Restraint System operates electrically. The system restrains the driver and front seat passenger in the vehicle through the use of an automatic shoulder belt, the manual lap belt, and knee bolsters. THE SAFETY LAP BELT IS TO BE MANUALLY CONNECTED BY THE DRIVER/PASSENGER AND SHOULD ALWAYS BE WORN WITH THE SHOULDER BELT. BE SURE THE LAP BELT IS ON YOUR HIPS AS LOW AS POSSIBLE.



BEFORE DRIVING YOUR VEHICLE

After entering the vehicle and closing the door, insert the key into the ignition and turn to the ON position. A motor will cause the shoulder belt to slide along its track (Figure 1) starting at the Front Body "A" Pillar and moving rearward to its locked position in the center body "B" Pillar (Figures 2 and 3). The shoulder belt warning indicator lamp in the instrument cluster  will illuminate four to eight seconds. In the unlikely event the shoulder belt should stall before it reaches the "B" Pillar, the indicator lamp will begin to flash after nine (9) seconds and will continue flashing until the shoulder belt is in its locked position in the "B" Pillar. If the indicator lamp continues flashing refer to the Manual Override System in this section before driving the vehicle. The shoulder belt will automatically adjust itself to allow for comfortable wear and freedom of movement by the occupant. It will lock tight only on extremely hard braking, or impacts of approximately 5 mph (8 km/h) or more.

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.

When the vehicle ignition is turned to the OFF position and the door is opened, the shoulder belt will move forward to the "A" Pillar. This will allow ample room for exit from the vehicle by the driver or passenger. DO NOT USE the belt as an assist handle when entering or exiting the vehicle.

BEFORE DRIVING YOUR VEHICLE

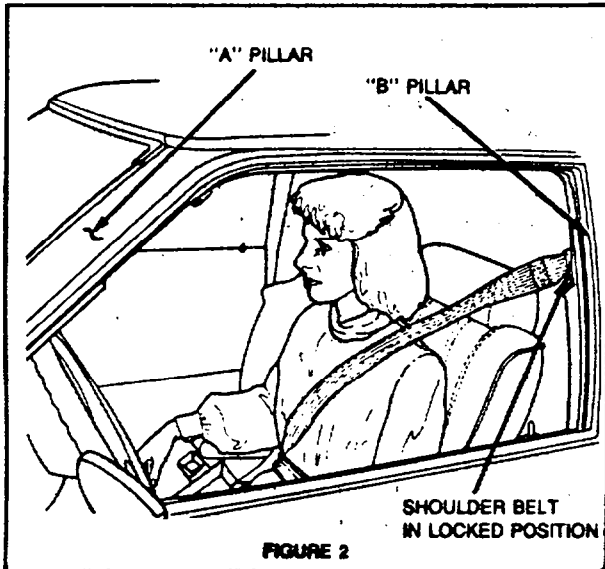


FIGURE 2

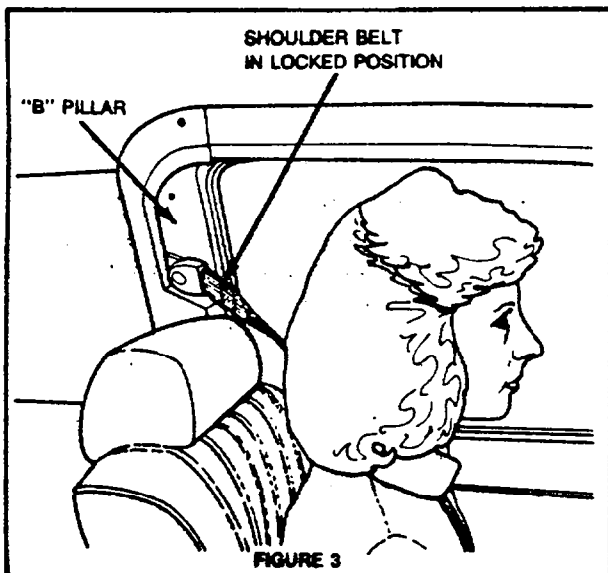


FIGURE 3

BEFORE DRIVING YOUR VEHICLE

IMPORTANT FOR YOUR SAFETY

Before driving the vehicle, read the label on the back of the sun visor (Figures 4 and 5).

DRIVER SIDE

IMPORTANT

Before driving, read the label on the other side of the visor.

IMPORTANT FOR YOUR SAFETY

Following these instructions will greatly improve your chances of avoiding severe injury in case of an accident.

- Always wear your lap belt when the car is moving.
- Be sure the shoulder belt release lever is down.
- If the symbol () stays lit for more than 6 seconds, consult your Owner's Guide before driving this vehicle.

See section entitled "Occupant Restraints" in your Owner's Guide for more information.

FIGURE 4

BEFORE DRIVING YOUR VEHICLE

PASSENGER SIDE

IMPORTANT

Before riding, read the label on the other side of the visor.

IMPORTANT FOR YOUR SAFETY

Following these instructions will greatly improve your chances of avoiding severe injury in case of an accident.

- Be sure the shoulder belt release lever is down.
- Always wear your lap belt when the car is moving.
If a lap belt cannot be worn, you should move the seat forward so your knees are as close to the instrument panel as possible.

See section entitled "Occupant Restraints" in your Owner's Guide for more information.

FIGURE 5

Door Ajar Warning Light

If door is ajar the shoulder belt will remain in the forward position at the "A" Pillar. The door ajar warning light (Figure 6) located in the instrument panel will illuminate until the door is fully closed.

WARNING – The vehicle should not be driven unless the doors are fully closed and the shoulder belts are in the locked position on the "B" Pillar.

BEFORE DRIVING YOUR VEHICLE

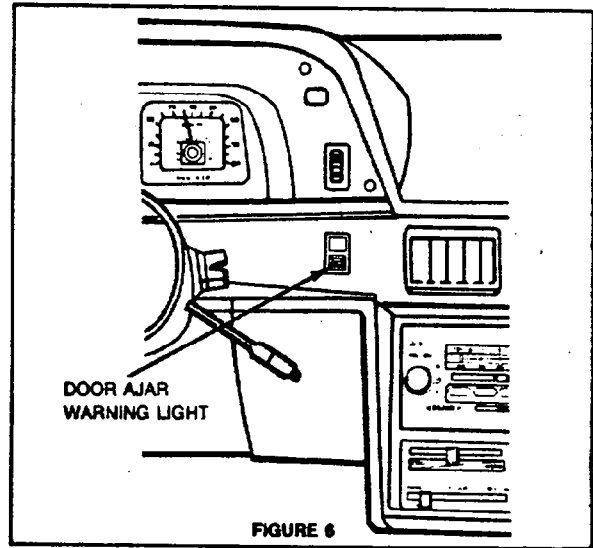


FIGURE 6

Emergency Release Levers

WARNING – Do not operate vehicle until BOTH emergency release levers located in the floor console (Figure 7) are in the DOWN position, in order for the shoulder belts to protect the occupants.