

V1703

REPORT NOS. 208-TRC-92-016
212-TRC-92-016
301-TRC-92-016

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

NISSAN MOTOR COMPANY, LTD.

1992 NISSAN MAXIMA

4-DOOR SEDAN

NHTSA NO. CN5204

TRC TEST NO. 920319

TRANSPORTATION RESEARCH CENTER INC.

10820 STATE ROUTE 347

EAST LIBERTY, OHIO 43319



APRIL 6, 1992

FINAL REPORT

PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF VEHICLE SAFETY COMPLIANCE (NEF-31)
400 SEVENTH STREET, S.W., ROOM NO. 6111
WASHINGTON, DC 20590

Rec'd
4/6/92

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-90-C-21003. 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.

REPORT PREPARED BY:

Craig A. Markusic
Craig A. Markusic, Project Engineer
Transportation Research Center Inc.

Date 4/10/92

REPORT APPROVED BY:

Kay Latimer
C. Kay Latimer, Project Manager
Transportation Research Center Inc.

Date 4-13-92

FINAL REPORT ACCEPTED BY:

Charles K. Lane
Contracting Officer's Technical Representative (COTR),
NHTSA, Office of Vehicle Safety Compliance

Date 6/2/92

1. Report No. 208-TRC-92-016 212-TRC-92-016 301-TRC-92-016		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle FINAL REPORT OF FMVSS NOS. 208, 212, 219 (PARTIAL), AND 301 COMPLIANCE TESTING OF A 1992 NISSAN MAXIMA 4-DOOR SEDAN, NHTSA NO. CNS204				5. Report Date APRIL 6, 1992	
				6. Performing Organization Code	
				8. Performing Organization Report No. 208-TRC-92-016 212-TRC-92-016 301-TRC-92-016	
7. Author(s) C. A. Markusic, Project Engineer, TRC				10. Work Unit No. (TRAIS)	
9. Performing Organization Name and Address Transportation Research Center Inc. 10820 State Route 347 East Liberty, Ohio 43319				11. Contract or Grant No. DTNH22-90-C-21003	
				13. Type of Report and Period Covered FINAL REPORT MARCH - APRIL 1992	
				14. Sponsoring Agency Code NEF-30	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (NEF-31) 400 Seventh St., S.W., Washington, DC 20590					
15. Supplementary Notes					
16. Abstract A 30 mph flat frontal barrier impact test was conducted on a 1992 Nissan Maxima 4-door sedan, NHTSA No. CNS204, at the Transportation Research Center Inc. on March 19, 1992. This test was conducted to determine compliance with Federal Motor Vehicle Safety Standards: FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Mounting"; FMVSS 219 (partial), "Windshield Zone Intrusion"; FMVSS 301, "Fuel System Integrity." The barrier impact velocity was 29.5 mph. The vehicle's maximum static crush was 16.3 inches. The ambient temperature was 72° F. The driver's head injury criteria (HIC) was 615. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 45.3 g. The driver's left and right femur maximum axial forces were 2037 pounds and 1419 pounds, respectively. The passenger's head injury criteria (HIC) was 907. The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 41.2 g. (See DATA ACQUISITION EXPLANATIONS.) The passenger's left and right femur maximum axial forces were 963 pounds and 1025 pounds, respectively. The vehicle appears to comply with the applicable requirements of FMVSS 208, 212, 219 (partial), and 301.					
17. Key Words Frontal Impact 30 mph Vehicle Safety Compliance Testing: FMVSS 208, "Occupant Crash Protection" FMVSS 212, "Windshield Mounting" FMVSS 219P, "Windshield Zone Intrusion" FMVSS 301, "Fuel System Integrity"			18. Distribution Statement Available from: NHTSA Technical Reference Division Room 5108, (NAD-52) 400 Seventh Street, SW Washington, DC 20590 Attn: Mr. Robert Hornickle		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 130	22. Price

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
AREA				
in ²	square inches	6.5	square centimeters	cm ²
ft ²	square feet	0.09	square meters	m ²
yd ²	square yards	0.8	square meters	m ²
mi ²	square miles	2.6	square kilometers	km ²
	acres	0.4	hectares	ha
MASS (weight)				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
VOLUME				
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft ³	cubic feet	0.03	cubic meters	m ³
yd ³	cubic yards	0.76	cubic meters	m ³
TEMPERATURE (exact)				
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

* 1 in = 2.54 exactly. For other exact conversions and more detailed tables, see NBS Misc. Publ. 280, Units of Weights and Measures, Price \$2.25, SD Catalog No. C13.10-280.

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
km	kilometers	1.1	miles	mi
		0.6	miles	mi
AREA				
cm ²	square centimeters	0.16	square inches	in ²
m ²	square meters	1.2	square yards	yd ²
km ²	square kilometers	0.4	square miles	mi ²
ha	hectares (10,000 m ²)	2.5	acres	ac
MASS (weight)				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	st
VOLUME				
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m ³	cubic meters	35	cubic feet	ft ³
m ³	cubic meters	1.3	cubic yards	yd ³
TEMPERATURE (exact)				
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F

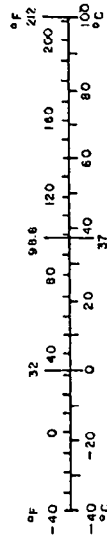


TABLE OF CONTENTS

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1.0	PURPOSE AND TEST PROCEDURE	1-1
2.0	FRONTAL BARRIER IMPACT TEST SUMMARY	2-1
3.0	FMVSS 208, 212, 219 (PARTIAL) & 301 DATA	3-1
4.0	VEHICLE, OCCUPANT, & CAMERA MEASUREMENTS	4-1
APPENDIX A	PHOTOGRAPHS	A-1
APPENDIX B	DATA PLOTS	B-1

LIST OF TABLES

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1	CRASH TEST SUMMARY	2-4
2	TEST VEHICLE INFORMATION	2-5
3	POST-IMPACT DATA	2-8
4	VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY	2-12
5	DUMMY INJURY CRITERIA	3-2
6	POST-IMPACT DUMMY/VEHICLE DATA	3-3
7	FMVSS 208 COMFORT AND CONVENIENCE DATA FOR AUTOMATIC SEAT BELTS	3-5
8	FMVSS 208 SEAT BELT WARNING SYSTEM DATA	3-6
9	FMVSS 208 LABELING AND DRIVER'S MANUAL DATA	3-7
10	FMVSS 208 READINESS INDICATOR DATA	3-8
11	FUEL SYSTEM DATA	3-11
12	FMVSS 301 POST-IMPACT TEST DATA	3-12
13	IMPACTED VEHICLE MEASUREMENTS	4-3
14	MOTION PICTURE CAMERA LOCATIONS	4-11

LIST OF FIGURES

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1	IMPACT VELOCITY MEASUREMENT SYSTEM	2-9
2	ACCIDENT INVESTIGATION DIVISION DATA FOR 30 MPH FRONTAL BARRIER IMPACT	2-10
3	VEHICLE ACCELEROMETER PLACEMENT	2-11
4	FMVSS 212 TEST DATA	3-9
5	FMVSS 219 TEST DATA	3-10
6	FMVSS 301 STATIC ROLLOVER TEST DATA	3-13
7	PRE-TEST AND POST-TEST MEASUREMENT POINTS	4-2
8	VEHICLE TARGET LOCATIONS	4-4
9	DUMMY AND SEAT POSITIONING DATA	4-5
10	DUMMY IN-VEHICLE POSITIONING DATA	4-6
11	SEAT BELT POSITIONING DATA	4-7
12	DRIVER DUMMY TO STEERING COLUMN/WHEEL ASSEMBLY DATA	4-8
13	CAMERA POSITIONS	4-9

LIST OF PHOTOGRAPHS

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
A-1.	PRE-TEST FRONT VIEW	A-2
A-2.	POST-TEST FRONT VIEW	A-3
A-3.	PRE-TEST LEFT SIDE VIEW	A-4
A-4.	POST-TEST LEFT SIDE VIEW	A-5
A-5.	PRE-TEST REAR VIEW	A-6
A-6.	POST-TEST REAR VIEW	A-7
A-7.	PRE-TEST RIGHT SIDE VIEW	A-8
A-8.	POST-TEST RIGHT SIDE VIEW	A-9
A-9.	PRE-TEST RIGHT FRONT THREE-QUARTER VIEW	A-10
A-10.	POST-TEST RIGHT FRONT THREE-QUARTER VIEW	A-11
A-11.	PRE-TEST LEFT REAR THREE-QUARTER VIEW	A-12
A-12.	POST-TEST LEFT REAR THREE-QUARTER VIEW	A-13
A-13.	POST-TEST WINDSHIELD VIEW	A-14
A-14.	PRE-TEST ENGINE COMPARTMENT VIEW	A-15
A-15.	POST-TEST ENGINE COMPARTMENT VIEW	A-16
A-16.	PRE-TEST FUEL FILLER CAP VIEW	A-17
A-17.	POST-TEST FUEL FILLER CAP VIEW	A-18
A-18.	PRE-TEST FUEL FILLER NECK VIEW	A-19
A-19.	POST-TEST FUEL FILLER NECK VIEW	A-20
A-20.	PRE-TEST FUEL TANK VIEW	A-21
A-21.	POST-TEST FUEL TANK VIEW	A-22
A-22.	PRE-TEST FRONT UNDERBODY VIEW	A-23
A-23.	POST-TEST FRONT UNDERBODY VIEW	A-24
A-24.	PRE-TEST REAR UNDERBODY VIEW	A-25
A-25.	POST-TEST REAR UNDERBODY VIEW	A-26
A-26.	PRE-TEST DRIVER DUMMY POSITION VIEW	A-27
A-27.	POST-TEST DRIVER DUMMY POSITION VIEW	A-28
A-28.	PRE-TEST PASSENGER DUMMY POSITION VIEW	A-29
A-29.	POST-TEST PASSENGER DUMMY POSITION VIEW	A-30
A-30.	PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1	A-31
A-31.	POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1	A-32
A-32.	PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2	A-33

LIST OF PHOTOGRAPHS, CONT'D.

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
A-33.	POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2	A-34
A-34.	PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 1	A-35
A-35.	POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 1	A-36
A-36.	PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2	A-37
A-37.	POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2	A-38
A-38.	POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 1	A-39
A-39.	POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 2	A-40
A-40.	POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 1	A-41
A-41.	POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 2	A-42
A-42.	POST-TEST PASSENGER DUMMY HEAD CONTACT - VIEW 1	A-43
A-43.	POST-TEST PASSENGER DUMMY HEAD CONTACT - VIEW 2	A-44
A-44.	POST-TEST PASSENGER DUMMY HEAD CONTACT - VIEW 3	A-45
A-45.	POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 1	A-46
A-46.	POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 2	A-47
A-47.	PRE-TEST VEHICLE CERTIFICATION LABEL VIEW	A-48
A-48.	PRE-TEST VEHICLE RECOMMENDED TIRE PRESSURE LABEL VIEW	A-49
A-49.	POST-TEST VEHICLE ON STATIC ROLLOVER MACHINE VIEW	A-50

SECTION 1.0

PURPOSE & TEST PROCEDURE

PURPOSE

This 30 mph flat 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 the Transportation Research Center Inc. (TRC) under Contract No. DTNH22-90-C-21003. The purpose of this test was to determine if the subject vehicle, a 1992 Nissan Maxima 4-door sedan, NHTSA No. CN5204, meets the performance requirements of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Mounting"; FMVSS 219 (partial), "Windshield Zone Intrusion"; and FMVSS 301, "Fuel System Integrity," in the flat frontal barrier impact mode.

TEST PROCEDURE

This test was conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure No. TP-208-08. Data was obtained relative to FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Mounting"; FMVSS 219 (partial), "Windshield Zone Intrusion"; and FMVSS 301, "Fuel System Integrity," performance.

The test vehicle was instrumented with seven (7) accelerometers to measure longitudinal axis accelerations. The vehicle's specified impact velocity range was 28.9 to 29.9 mph. The vehicle impacted a flat frontal barrier.

The test vehicle contained two (2) Part 572 B 50th percentile adult male anthropomorphic test devices (dummies). The dummies were positioned in the front outboard designated seating positions according to the dummy placement procedure specified in Appendices B and C of the Laboratory Test Procedure.

Both dummies were instrumented with head and chest accelerometers to measure longitudinal, lateral, and vertical accelerations; and with left and right femur load cells to measure axial forces.

The twenty-three (23) data channels were multiplexed and recorded on a 14-track tape drive. The data was digitally sampled at 8000 samples per second and processed per sections 12.8 and 12.9 of the Laboratory Test Procedure.

The crash event was recorded by one (1) real-time panning motion picture camera and fourteen (14) high-speed motion picture cameras. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera.

The vehicle and occupant data are summarized in Section 2.0. The FMVSS 208, 212, 219 (partial) and 301 data are presented in Section 3.0. The vehicle, occupant, and camera measurements are presented in Section 4.0. Appendix A contains the still photographic prints. Appendix B contains the dummy and vehicle data plots.

SECTION 2.0

FRONTAL BARRIER IMPACT TEST SUMMARY

TEST RESULTS SUMMARY

This flat frontal barrier test was conducted at TRC on March 19, 1992.

The test vehicle, a 1992 Nissan Maxima 4-door sedan, NHTSA No. CN5204, appeared to comply with the performance requirements of FMVSS 208, 212, 219 (partial), and 301 in the flat frontal barrier impact mode. The Head Injury Criteria (HIC) calculations were less than 1000, the chest resultant accelerations did not exceed 60 g's, and the axial forces transmitted through the upper legs did not exceed 2,250 pounds as measured by Part 572 B dummies seated in the front outboard designated seating positions. The vehicle's restraint system met the applicable comfort and convenience requirements. The windshield periphery retention was 100 percent. There was no penetration into any portion of the windshield. No fluid spilled from the vehicle's fuel system following the impact or during the static rollover test.

The test vehicle was equipped with a 3.0 liter, transverse engine, automatic transmission, power steering, and power brakes. The vehicle's test weight was 3612 pounds. The vehicle's impact speed was 29.5 mph. The vehicle's maximum static crush was 16.3 inches.

The driver's head injury criteria (HIC) was 615. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 45.3 g. The driver's left and right femur maximum axial forces were 2037 pounds and 1419 pounds, respectively.

The right front passenger's HIC was 907. The right front passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 41.2 g. (See DATA ACQUISITION EXPLANATIONS.) The right front passenger's left and right femur maximum axial forces were 963 pounds and 1025 pounds, respectively.

There was no loss of windshield periphery retention.

There was no intrusion through the windshield.

No fluid spilled from the vehicle's fuel system following the crash test event or during the static rollover test.

DATA ACQUISITION EXPLANATIONS

The driver's head Z-axis accelerometer, HEDZG1, recorded questionable data from 10 to 40 milliseconds. This questionable data affected the driver's head resultant acceleration calculation.

The right front passenger's chest X, Y, and Z-axis accelerometers recorded questionable data spikes at 86 milliseconds. The questionable data spikes affected the chest resultant and chest acceleration with three (3) milliseconds minimum duration calculations.

TABLE 1 CRASH TEST SUMMARY

```

NHTSA NO.:  CNS204          TEST TYPE:  Frontal Barrier Impact

TEST DATE:  03/19/92      TEST TIME:  1405      AMBIENT TEMP. (°F):  72

VEHICLE YEAR/MAKE/MODEL/BODY STYLE:  1992/Nissan/Maxima/4-door sedan

VEHICLE TEST WEIGHT (LBS):  3612

IMPACT ANGLE (DEG)*:  0

IMPACT VELOCITY (MPH)**:  PRIMARY = 29.5      SECONDARY = 29.6

MAXIMUM STATIC CRUSH (IN):  15.3

AVERAGE REBOUND (IN):  38.2

DUMMIES:          Driver  #354          Passenger  #1173

TYPE:             Part 572 B          Part 572 B

LOCATION:          Left front          Right front

RESTRAINT:       Two-point passive belt  Two-point passive belt
                  & airbag

NUMBER OF DATA CHANNELS:  23

NUMBER OF CAMERAS:  HIGH-SPEED  14          REAL-TIME  2
  
```

*With respect to tow track centerline.

**Speed trap measurement ($\pm .05$ mph accuracy)

TABLE 2 TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Nissan Motor Company, Ltd.

MAKE/MODEL: Nissan/Maxima

VIN: JN1HJ01F1NT003548

BODY STYLE: 4-door sedan

MODEL YEAR: 1992

NHTSA NO.: CN5204

COLOR: Red

ENGINE DATA: TYPE: transverse CYLINDERS: 6 DISPLACEMENT: 3.0 liter

TRANSMISSION DATA: 4 SPEED, MANUAL, X AUTOMATIC, X FWD, RWD, 4WD

DATE VEHICLE RECEIVED: 03/12/92

ODOMETER READING: 75.0

DEALER'S NAME AND ADDRESS: Ricart Nissan Inc.

P. O. Box 27130

Columbus, OH 43227

ACCESSORIES:

POWER STEERING Yes
POWER BRAKES Yes
POWER SEATS No
POWER WINDOWS Yes
TINTED GLASS Yes
RADIO Yes
CLOCK Yes
OTHER None

AUTOMATIC TRANSMISSION Yes
AUTOMATIC SPEED CONTROL Yes
TILTING STEERING WHEEL Yes
TELESCOPING STEERING WHEEL No
AIR CONDITIONING Yes
ANTI-SKID BRAKE No
REAR WINDOW DEFROSTER Yes

REMARKS:

1. IS THE VEHICLE STOCK THROUGHOUT? Yes
2. DOES VEHICLE SHOW EVIDENCE OF PRIOR ACCIDENT HISTORY? No
3. DOES VEHICLE SHOW ANY SIGNIFICANT CORROSION? No
4. CONDITION OF THE FRONT/REAR BUMPER AND FRAME: Good

CERTIFICATION DATA FROM VEHICLE'S LABEL:

VEHICLE MANUFACTURED BY: Nissan Motor Company, Ltd.

DATE OF MANUFACTURE: 11/91

VIN: JN1HJ01F1NT003548

GVWR: 4167 LBS

GAWR: FRONT: 2315 LBS., REAR: 2183 LBS.

TABLE 2 TEST VEHICLE INFORMATION CONT'D

TIRES ON VEHICLE (MFR., LINE, SIZE): Toyo, A04 All-Season, P205/65R15 92H

TIRE PRESSURE WITH MAXIMUM CAPACITY VEHICLE LOAD: FRONT: 35 PSI
REAR: 35 PSI

SPARE TIRE (MFR., LINE, SIZE): Bridgestone, T125/70D16, 96M

TYPE OF SEATS: FRONT: Buckets
REAR: Bench

TYPE OF FRONT SEAT BACKS: Manually adjustable

MAXIMUM WIDTH: 69.5 INCHES

WHEELBASE: 104.2 INCHES

LOCATION OF LABEL STATING TIRE DATA: THE LABEL WAS LOCATED ON THE UNDERSIDE OF THE CENTER ARMREST COVER.

TIRE & CAPACITY DATA FROM VEHICLE'S LABEL:

RECOMMENDED TIRE SIZE: P205/65R15 92H

RECOMMENDED COLD TIRE PRESSURE: FRONT: 29 PSI; REAR: 29 PSI

DESIGNATED SEATING CAPACITY: 2 FRONT 3 REAR 5 TOTAL

VEHICLE CAPACITY WEIGHT: 900 LBS

TEST VEHICLE ATTITUDE (ALL MEASUREMENTS ARE IN INCHES):

DELIVERED ATTITUDE: LF 28.2; RF 28.2; LR 27.9; RR 27.9

FULLY LOADED ATTITUDE: LF 27.6; RF 27.4; LR 26.4; RR 26.2

PRE-TEST ATTITUDE: LF 27.5; RF 27.5; LR 26.6; RR 26.6

POST-TEST ATTITUDE: LF 26.7; RF 28.1; LR 25.7; RR 25.9

*The vehicle did not contain a label stating tire data.

TABLE 2 TEST VEHICLE INFORMATION CONT'D

WEIGHT OF TEST VEHICLE AS RECEIVED (WITH MAXIMUM FLUIDS):

RIGHT FRONT	982 LBS.	RIGHT REAR	582 LBS.
LEFT FRONT	1018 LBS.	LEFT REAR	563 LBS.
TOTAL FRONT WEIGHT	2000 LBS.	(63.6% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	1145 LBS.	(36.4% OF TOTAL VEHICLE WEIGHT)	
TOTAL DELIVERED WEIGHT 3145 LBS.			

CALCULATION OF TEST VEHICLE'S TARGET TEST WEIGHT:

RCLW = RATED CARGO AND LUGGAGE WEIGHT*

UDW = UNLOADED DELIVERED WEIGHT (3145 LBS)

VCW = VEHICLE CAPACITY WEIGHT (900 LBS)

DSC = DESIGNATED SEATING CAPACITY (5)

$RCLW* = VCW - 150 (DSC) = 900 - 150 (5) = 150$

TARGET TEST WEIGHT = UDW + RCLW* + (NO. OF HYBRID II DUMMIES X 164 LBS/DUMMY)

TARGET TEST WEIGHT = 3145 + 150 + 328

TARGET TEST WEIGHT = 3623 LBS

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 139 LBS. OF CARGO WEIGHT:

RIGHT FRONT	1056 LBS.	RIGHT REAR	744 LBS.
LEFT FRONT	1080 LBS.	LEFT REAR	732 LBS.
TOTAL FRONT WEIGHT	2136 LBS.	(59.1% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	1476 LBS.	(40.9% OF TOTAL VEHICLE WEIGHT)	
TOTAL TEST WEIGHT	3612 LBS.	(0.3% UNDER TARGET TEST WEIGHT)	

WEIGHT OF BALLAST SECURED IN VEHICLE CARGO AREA: 0 LBS.

COMPONENTS REMOVED TO MEET TARGET TEST WEIGHT: None

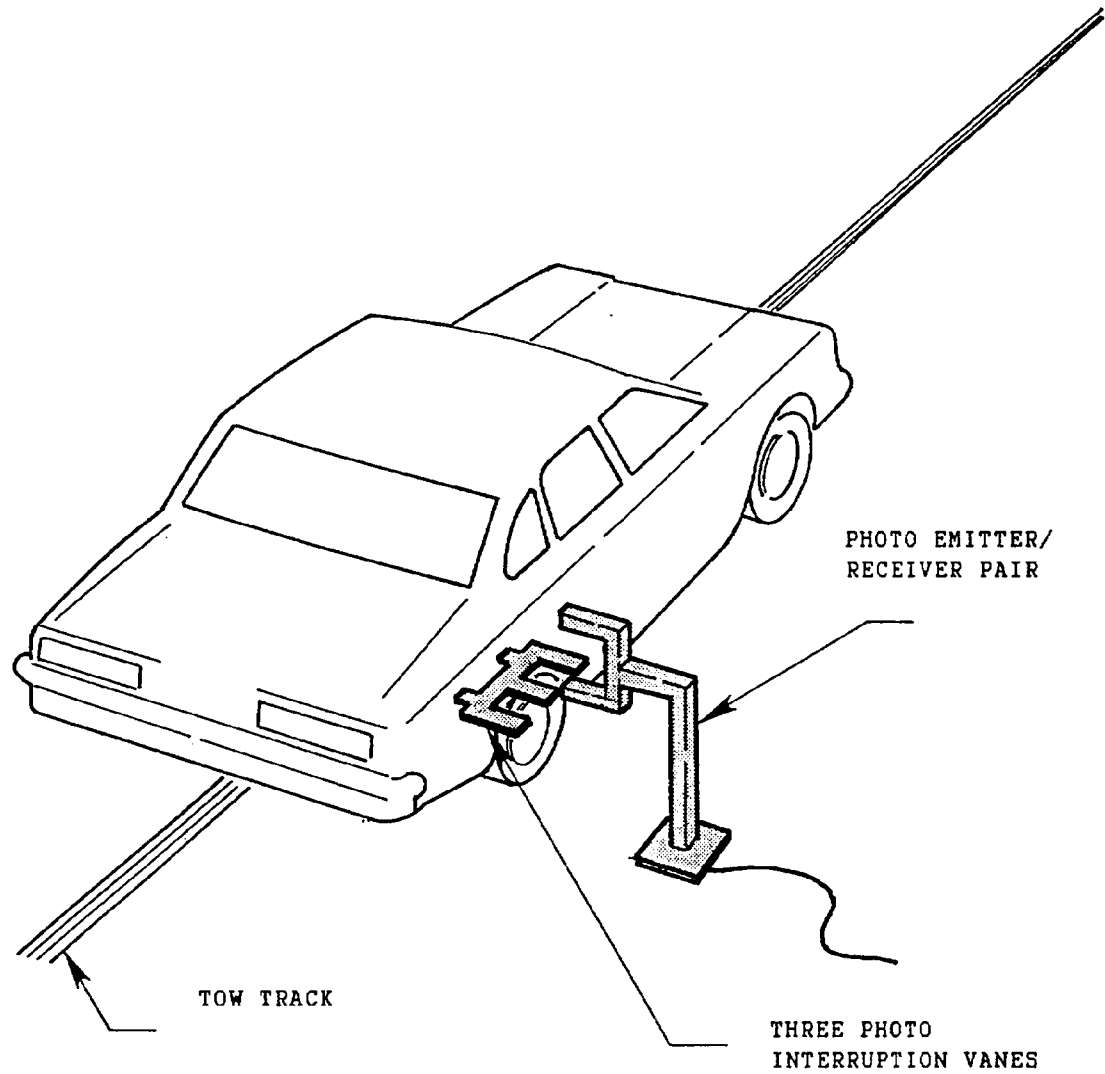
CG = 42.6 INCHES REARWARD OF FRONT WHEEL CENTERLINE

*Cargo weight for multi-purpose passenger vehicles, trucks, and buses is the vehicle's calculated cargo and luggage weight or 300 pounds, whichever is less.

TABLE 3 POST-IMPACT DATA

TEST NUMBER: 920319 NHTSA NO.: CN5204
TEST DATE: 03/19/92 TEST TIME: 1405
TEST TYPE: Frontal Barrier Impact IMPACT ANGLE: 0
AMBIENT TEMPERATURE AT IMPACT AREA: 72° F
TEMPERATURE IN OCCUPANT COMPARTMENT: 72° F
IMPACT VELOCITY: PRIMARY = 29.5 MPH SECONDARY = 29.6 MPH
(SPECIFIED RANGE = 28.9 TO 29.9 MPH)
DISTANCE FROM VEHICLE TO BARRIER: ENTERING VELOCITY TRAP = 26.0 IN.
EXITING VELOCITY TRAP = 2.0 IN.
TEST VEHICLE STATIC CRUSH (ALL MEASUREMENTS ARE IN INCHES):
OVERALL LENGTH OF TEST VEHICLE: PRE-TEST: L 183.6; C 187.4; R 183.4
POST-TEST: L 169.1; C 171.2; R 168.6
TOTAL CRUSH: L 14.5; C 16.2; R 14.8
AVERAGE CRUSH: 15.2
TEST VEHICLE REBOUND FROM FLAT BARRIER (ALL MEASUREMENTS ARE IN INCHES):
DISTANCE FROM TEST VEHICLE TO BARRIER: L 39.5; C 36.5; R 38.5; AVG. 38.2

FIGURE 1 IMPACT VELOCITY MEASUREMENT SYSTEM



The final vane clears emitter/receiver two inches before impact.

The vanes have one foot spacing.

FIGURE 2 ACCIDENT INVESTIGATION DIVISION DATA
FOR 30 MPH FRONTAL BARRIER IMPACT

VEHICLE MAKE/MODEL/BODY STYLE: Nissan/Maxima/4-door sedan
 VEHICLE NHTSA NO.: CN5204; VIN: JN1HJ01F1NT003548
 MODEL YEAR: 1992; BUILD DATE: 11/91; TEST DATE: 03/19/92
 VEHICLE SIZE CATEGORY: Midsize; TEST WEIGHT: 3612 LBS.
 VEHICLE WHEELBASE: 104.2 INCHES
 MAXIMUM WIDTH: 69.5 INCHES
 FRONT OVERHANG: 39.8 INCHES

COLLISION DEFORMATION
 CLASSIFICATION (CDC) CODE: 12FDEW2

CRUSH DEPTH
 MEASUREMENTS:

C1 =	<u>14.5</u>	INCHES
C2 =	<u>16.1</u>	INCHES
C3 =	<u>16.3</u>	INCHES
C4 =	<u>16.1</u>	INCHES
C5 =	<u>15.1</u>	INCHES
C6 =	<u>14.8</u>	INCHES

MIDPOINT OF DAMAGE: D = VEHICLE CENTERLINE
(LONGITUDINAL)

LENGTH OF DAMAGED
 REGION: L = 52.0 INCHES

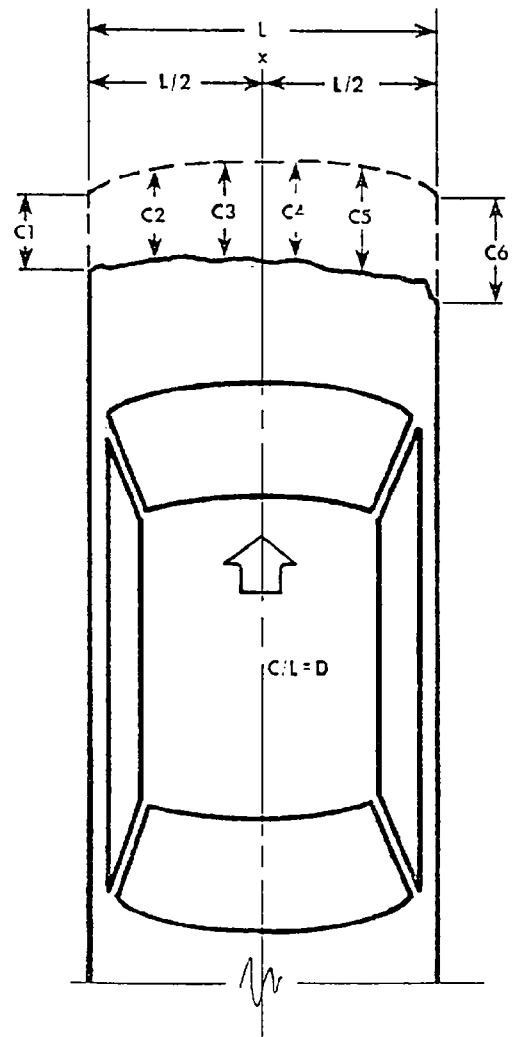
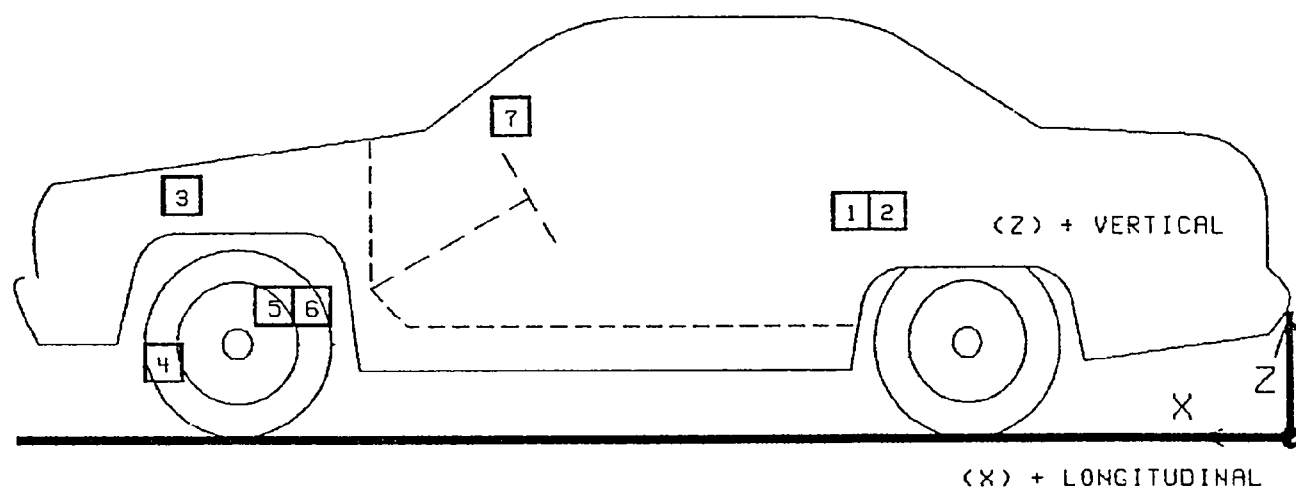
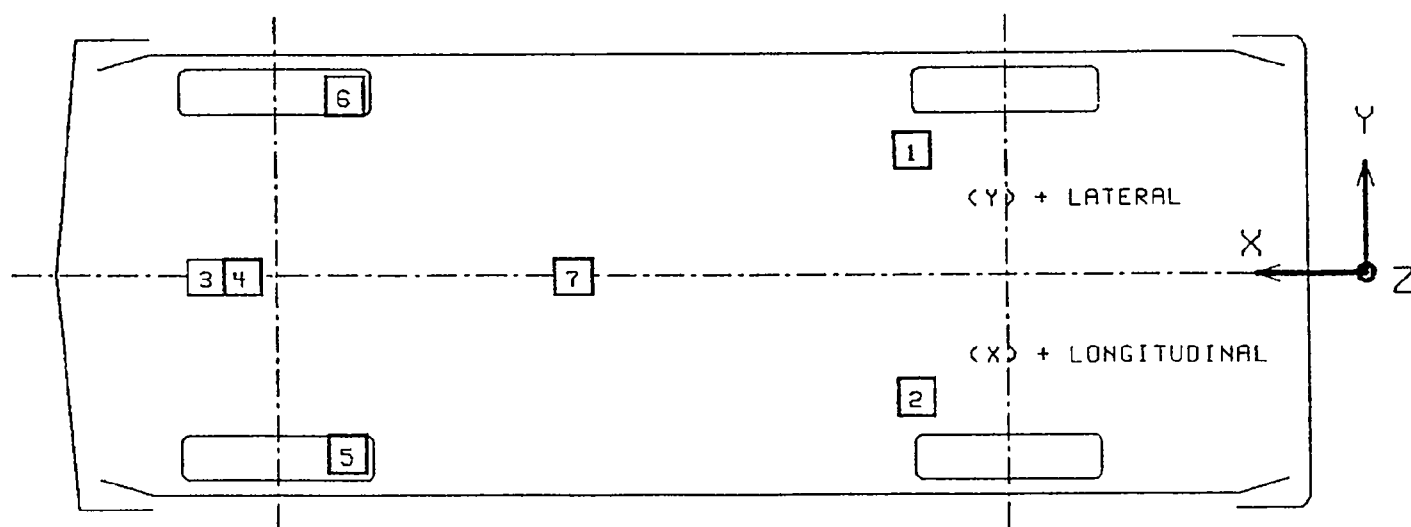


FIGURE 3

VEHICLE ACCELEROMETER PLACEMENT



SIDE VIEW



BOTTOM VIEW

TABLE 4

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 920319

No.	LOCATION		X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
						MAX G MSEC		MAX G MSEC	
1	LEFT REAR SEAT CROSSMEMBER LONGITUDINAL	PRE	69.7	21.6	14.2				
		POST	64.7	21.6	14.6				
						1.3	160.0	40.7	44.9
2	RIGHT REAR SEAT CROSSMEMBER LONGITUDINAL	PRE	69.9	-22.1	14.1				
		POST	69.9	-22.1	14.6				
						1.1	189.8	41.3	45.8
3	ENGINE TOP LONGITUDINAL	PRE	146.5	-4.4	29.2				
		POST	140.9	-5.2	28.2				
						39.3	49.8	126.4	33.9
4	ENGINE BOTTOM LONGITUDINAL	PRE	155.8	-11.0	6.8				
		POST	152.8	-10.0	5.9				
						47.8	46.1	78.2	36.5
5	RIGHT BRAKE CALIPER LONGITUDINAL	PRE	153.1	-26.1	12.9				
		POST	153.0	-27.0	13.4				
						9.5	72.0	84.6	50.3
6	LEFT BRAKE CALIPER LONGITUDINAL	PRE	153.4	26.1	12.8				
		POST	152.5	27.2	12.5				
						11.3	115.3	63.4	47.1
7	INSTRUMENT PANEL CENTER LONGITUDINAL	PRE	125.1	0.2	37.3				
		POST	125.5	0.2	37.5				
						29.5	71.1	53.4	58.0

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

REFERENCE: X: + FORWARD FROM REAR BUMPER
 Y: + LEFTWARD FROM VEHICLE CENTERLINE
 Z: + UPWARD FROM GROUND LEVEL

REPORT OF VEHICLE CONDITION AT THE
COMPLETION OF TESTING

CONTRACT NO.: DTNH22-90-C-21003
FROM: Transportation Research Center Inc.
10820 State Route 347
East Liberty, OH 43319

TO: Mr. Charles Case
COTR
Office of Vehicle Safety Compliance

The following vehicle has been subjected to testing for FMVSS 208. The vehicle was inspected upon arrival at the laboratory for the test and found to contain all of the equipment listed below. All variances have been reported within 2 working days of vehicle arrival, by letter, to the NHTSA Industrial Property Manager/NAD-30, with a carbon copy to the responsible testing office. The vehicle is again inspected, after the above test has been conducted, and all changes are noted below. The final condition of the vehicle is also noted in detail.

NHTSA NO.: CN5204
MAKE/MODEL/BODY STYLE: Nissan/Maxima/4-door sedan
MODEL YEAR: 1992 BODY COLOR: Red
VIN: JN1HJ01F1NT003548
ODOMETER (ARRIVAL): 75 DATE: 03/12/92
ODOMETER (COMPLETION): 79 DATE: 03/19/92
COST: \$17,432.00

☒ AIR CONDITIONER	☒ CONSOLE	BRAKES: ☒ POWER
☒ TINTED GLASS	☒ TACHOMETER	FRONT: Disc
☒ POWER STEERING	☒ SPEED CONTROL	REAR: Drum
☒ POWER WINDOWS	☒ REAR WINDOW DEF.	FRONT SEATS: ☐ POWER
☒ POWER DOOR LOCKS	☐ SUN/MOON ROOF	SEAT TYPE: Bucket
☒ RADIO	☐ T-TOP	
☒ CLOCK	☒ TILT STEERING WHEEL	NO. OF SEATS: 5
☐ ROOF RACK	☐ OTHER OPTIONS: _____	

ENGINE: 6 CYLINDERS; 3.0 LITERS
TRANSMISSION: 4-speed; DRIVE TYPE: Front wheel
TIRE SIZE: P205/65R15
GASOLINE TYPE: Unleaded

EQUIPMENT THAT IS NO LONGER ON THE VEHICLE AS NOTED ABOVE: None

EXPLANATION: NA

VEHICLE CONDITION: This vehicle has been subjected to a 30 mph frontal
barrier impact.

SECTION 3.0

FMVSS 208, 212, 219 (partial), & 301 DATA

TABLE 5 DUMMY INJURY CRITERIA

MAXIMUM ACCELERATION (G)

	HEAD				CHEST			
	X	Y	Z	R	X	Y	Z	R*
DRIVER	69.8	-21.6	92.8Y	92.9Y	-46.3	7.6	12.7	45.3
PASSENGER	73.9	27.8	-67.4	81.8	63.0Y	32.6Y	79.9Y	41.2Y

MAXIMUM FEMUR COMPRESSIVE FORCE (LBS)

	LEFT FEMUR	RIGHT FEMUR
DRIVER	2037	1419
PASSENGER	963	1025

HEAD INJURY CRITERIA**

	HIC	TIME t ₁ (MSEC) ¹	TIME t ₂ (MSEC) ²
DRIVER	615	64.6	100.6
PASSENGER	907	71.9	107.9

*Defined as exceeding 0.003 sec. duration

**As defined in FMVSS No. 208

Y See DATA ACQUISITION EXPLANATIONS

TABLE 6 POST-IMPACT DUMMY/VEHICLE DATA

VISIBLE DUMMY CONTACT POINTS:

	DRIVER #354	PASSENGER #1173
HEAD	<u>Airbag</u>	<u>Chest</u>
CHEST	<u>Airbag</u>	<u>None</u>
ABDOMEN	<u>None</u>	<u>None</u>
LEFT KNEE	<u>Instrument panel</u>	<u>Instrument panel</u>
RIGHT KNEE	<u>Instrument panel</u>	<u>Instrument panel</u>

DOOR OPENING:

	LEFT	RIGHT
FRONT	<u>Easy</u>	<u>Easy</u>
REAR	<u>Easy</u>	<u>Easy</u>

SEAT MOVEMENT:

	SEAT BACK FAILURE	SEAT SHIFT
FRONT	<u>None</u>	<u>None</u>
REAR	<u>NA</u>	<u>NA</u>

GLAZING DAMAGE:

The entire windshield cracked upon impact.

OTHER NOTABLE IMPACT EFFECTS:

None

DUMMY KINEMATIC SUMMARY

Driver Dummy

Upon impact, the airbag contacted the driver dummy's chest. The dummy then translated forward on the seat into the airbag impacting both knees into the instrument panel. Next, the dummy's head rotated downward into the airbag. The driver dummy was restrained by the two-point passive shoulder belt and airbag. The dummy then rebounded rearward into the seat back as the dummy's head rotated rearward into the head restraint. The driver dummy came to rest in the driver's seat restrained by the two-point passive shoulder belt and airbag.

Right Front Passenger Dummy

Upon impact, the right front passenger dummy translated forward on the seat impacting both knees into the instrument panel. The dummy's head then rotated downward contacting the dummy's chest. The right front passenger dummy was restrained by the two-point passive shoulder belt. The dummy then rebounded rearward into the seat back as the dummy's head rotated rearward into the head restraint. The right front passenger dummy came to rest seated in the right front passenger's seat, restrained by the two-point passive shoulder belt.

TABLE 7 FMVSS 208 COMFORT & CONVENIENCE DATA FOR AUTOMATIC SEAT BELTS

MAKE/MODEL: Nissan/Maxima

VIN: JN1HJ01F1NT003548

BODY STYLE: 4-door sedan

NHTSA NO.: CN5204

DATE OF MANUFACTURE: 11/91

CONVENIENCE HOOKS:

DEVICE TO STOW SEAT BELT WEBBING TO FACILITATE ENTERING OR EXITING THE VEHICLE AUTOMATICALLY RELEASES THE WEBBING WHEN THE IGNITION IS TURNED TO THE "ON" OR "START" POSITION

WEBBING TENSION-RELIEVING DEVICE:

DO OUTBOARD SEATING POSITION SEAT BELTS HAVE WEBBING TENSION-RELIEVING DEVICES? NO

BELT CONTACT FORCE:

BELT CONTACT FORCE ON CHEST OF TEST DUMMY: 0.2 POUNDS.

TABLE 8 FMVSS 208 SEAT BELT WARNING SYSTEM DATA

WITH OCCUPANT IN DRIVER'S POSITION AND LAP BELT IN STOWED POSITION AND
IGNITION SWITCH PLACED IN "START/ON" POSITION:

Duration of audible warning signal = 6 sec.

Duration of reminder light operation = 101 sec.

WITH OCCUPANT IN DRIVER'S POSITION AND LAP BELT IN USE AND THE IGNITION
SWITCH PLACED IN "START/ON" POSITION:

Duration of audible warning signal = 1 beep while passive track
is in motion

(NOTE: audible warning should not operate)

Duration of reminder light operation = 6 sec.

WORDING OF VISUAL WARNING:

 Fasten Seat Belt

 Fasten Belt

 X Symbol 101-80

 Other: _____

TABLE 9 FMVSS 208 LABELING AND DRIVER'S MANUAL DATA

DESCRIBE LOCATION OF LABEL WHICH DESCRIBES MANUFACTURER'S MAINTENANCE OR REPLACEMENT SCHEDULE FOR CRASH-DEPLOYED OCCUPANT PROTECTION SYSTEM: The label was located on the driver's sunvisor.

THE MANUFACTURER'S RECOMMENDED SCHEDULE IS TO: (check one)

_____ Replace
 _____ Repair
 X Other: inspect

This system: (check one)

____ a. by ____ month, ____ year
 ____ b. by ____ miles
X c. or after a time interval of ____ months or 10 years.
 ____ d. other: _____

WERE APPROPRIATE INSTRUCTIONS CONCERNING MAINTENANCE AND/OR REPLACEMENT OF THIS SYSTEM PROVIDED? YES, owner's manual, pages 2-11 & 2-12

WAS A DESCRIPTION OF THE FUNCTIONAL OPERATION OF THE SYSTEM PROVIDED?
YES, owner's manual, pages 2-10 and 2-11

IS THERE A REFERENCE TO THE INSTRUCTIONS AND DESCRIPTION OF THE SYSTEM ON THE LABEL? YES

WAS AN OWNER'S MANUAL PROVIDED? YES

DID THE OWNER'S MANUAL CONTAIN APPROPRIATE INFORMATION CONCERNING
MAINTENANCE AND/OR REPLACEMENT AND A DESCRIPTION OF THE FUNCTIONAL OPERATION
OF THE SYSTEMS? YES, pages 2-10 through 2-12

TABLE 10 FMVSS 208 READINESS INDICATOR DATA

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? NO

IF NO:

DESCRIBE THE LOCATION OF THE READINESS INDICATOR: The readiness indicator was located on the far right side of the instrument cluster.

IS THE READINESS INDICATOR CLEARLY VISIBLE TO THE DRIVER? YES

IS A LIST OF THE ELEMENTS IN THE OCCUPANT RESTRAINT SYSTEM, BEING MONITORED BY THE READINESS INDICATOR, PROVIDED?

YES, owner's manual, page 2-11

FIGURE 4 FMVSS 212 TEST DATA

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

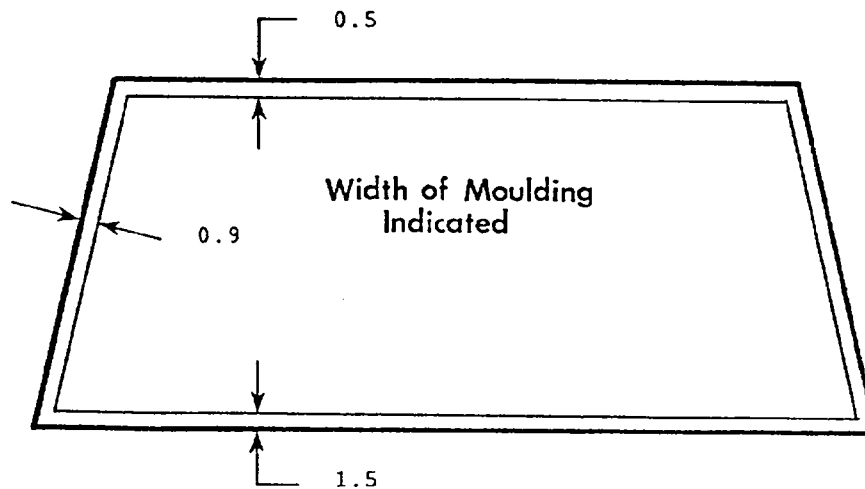
Plastic trim around outer perimeter, adhesive around inner perimeter.

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.

WINDSHIELD PERIPHERY MEASUREMENTS:

	PRE-TEST	POST-TEST	PERCENT RETENTION
RIGHT SIDE	82.6	82.6	100
LEFT SIDE	82.6	82.6	100
TOTAL	165.2	165.2	100

PRE-TEST WINDSHIELD MOUNTING MATERIAL TEMPERATURE: 72° F



FRONT VIEW OF WINDSHIELD*

LOSS OF WINDSHIELD RETENTION LENGTHS: None

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

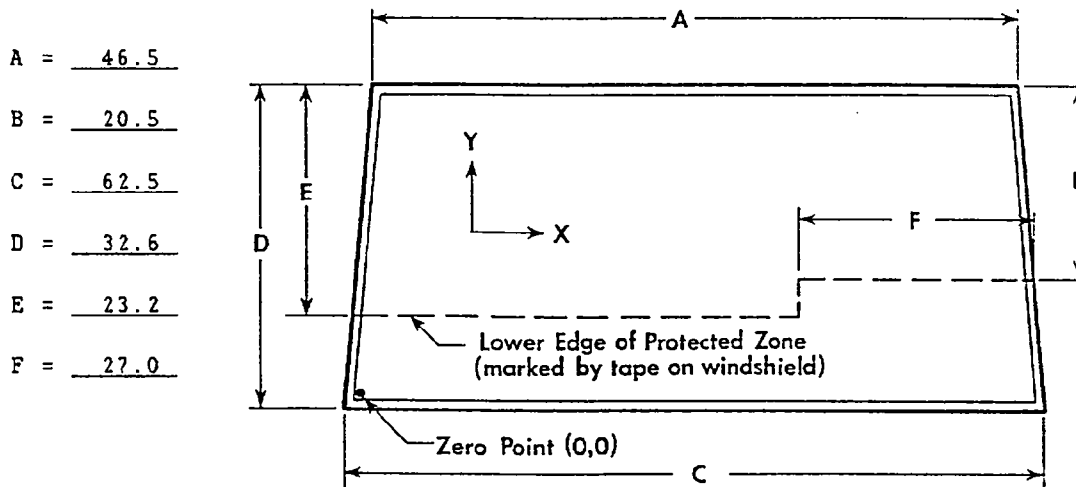
*INDICATE AREAS OF LOSS OF RETENTION, IF ANY, ON WINDSHIELD DIAGRAM.

FIGURE 5 FMVSS 219 TEST DATA

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 6.5 inch diameter 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. Draw the locus of points on the inner surface of the windshield contactable 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 0.5 inch from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection onto the outer surface of the windshield of this line.

WINDSHIELD MEASUREMENTS:



FRONT VIEW

METHOD OF ADHERING PROTECTED ZONE TEMPLATE TO WINDSHIELD: NA

AREAS OF WINDSHIELD TEMPLATE PENETRATION
GREATER THAN 0.25 IN.: NA

COORDINATES

X	Y
1.	
2.	
3.	

AREAS OF WINDSHIELD PENETRATION, BELOW THE PROTECTED ZONE,
THROUGH THE INNER SURFACE OF THE WINDSHIELD: None

1.
2.
3.

ALL MEASUREMENTS ARE IN INCHES.

TABLE 11 FUEL SYSTEM DATA

MAKE/MODEL: Nissan/Maxima

NHTSA NO.: CN5204

FUEL SYSTEM CAPACITY: 18.5 GALLONS (FROM OWNER'S MANUAL)

USABLE CAPACITY: 17.7 GALLONS (FURNISHED BY COTR)

TEST VOLUME RANGE: 16.3 GALLONS TO 16.6 GALLONS (92-94% OF USABLE)

ACTUAL TEST VOLUME: 16.5 GALLONS (WITH ENTIRE FUEL SYSTEM FILLED)

TEST FLUID TYPE: STODDARD SOLVENT

SPECIFIC GRAVITY: 0.764

KINEMATIC VISCOSITY: 0.99 CENTISTOKES

TEST FLUID COLOR: PURPLE

DETAILS OF FUEL SYSTEM: The fuel tank was located in front of the rear
axle. The fuel filler neck was located on the left side. The fuel
lines ran along the left frame rail to the front.

ELECTRIC FUEL PUMP: Yes FUEL INJECTION: Yes

DOES ELECTRIC FUEL PUMP OPERATE WITH IGNITION SWITCH "ON" AND THE ENGINE NOT
OPERATING? No

TABLE 12 FMVSS 301 POST-IMPACT TEST DATA

TEST VEHICLE NHTSA NO.: CNS204 ; TEST DATE: 03/19/92
VEHICLE MAKE/MODEL/BODY STYLE: Nissan/Maxima/4-door sedan

TEST REQUIREMENTS:

Test vehicle fuel tank filled to 92 to 94% of manufacturer's usable 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/PASS.) SIDE.
 REAR MOVING BARRIER (30 MPH)
 LATERAL MOVING BARRIER (20 MPH)

FUEL SYSTEM FLUID SPILLAGE MEASUREMENTS:

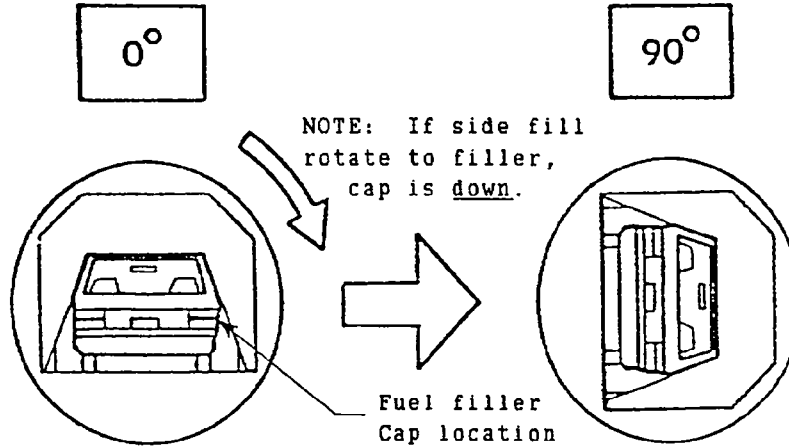
	<u>TEST</u> <u>RESULTS</u>	<u>MAXIMUM</u> <u>ALLOWABLE</u>
1. FROM IMPACT UNTIL VEHICLE MOTION CEASES - - -	0 OZ.	1 OZ.
2. 5 MINUTE PERIOD AFTER VEHICLE MOTION CEASES -	0 OZ.	5 OZ.
3. NEXT 25 MINUTES AFTER 5 MINUTE PERIOD - - - -	0 OZ.	1 OZ./1 MIN.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

FIGURE 6 FMVSS 301 STATIC ROLLOVER TEST DATA

NHTSA NO.: CN5204
TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

TIME REQ. FOR MACHINE TO ROTATE 90° = 2 minutes, 00 seconds

FMVSS 301 POSITION HOLD TIME = 5 minutes, 00 seconds

TOTAL - - - - - = 7 minutes, 00 seconds

NEXT WHOLE MINUTE INTERVAL - - - - = 7 minutes

FUEL SYSTEM FLUID SPILLAGE MEASUREMENTS:

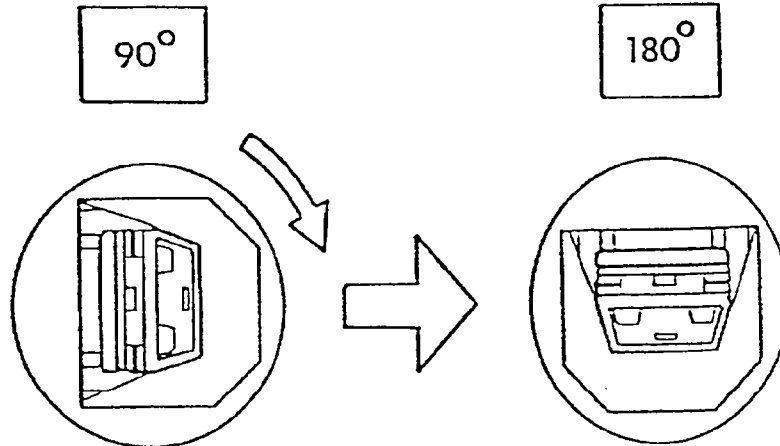
<u>0° TO 90° ROTATION (FUEL FILLER CAP DOWN)</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 oz.	5 oz.
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

FIGURE 6 FMVSS 301 STATIC ROLLOVER TEST DATA, CONT'D.

NHTSA NO.: CN5204
TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

TIME REQ. FOR MACHINE TO ROTATE 90° = 2 minutes, 00 seconds
FMVSS 301 POSITION HOLD TIME = 5 minutes, 00 seconds
TOTAL - - - - - = 7 minutes, 00 seconds
NEXT WHOLE MINUTE INTERVAL - - - - = 14 minutes

FUEL SYSTEM FLUID SPILLAGE MEASUREMENTS:

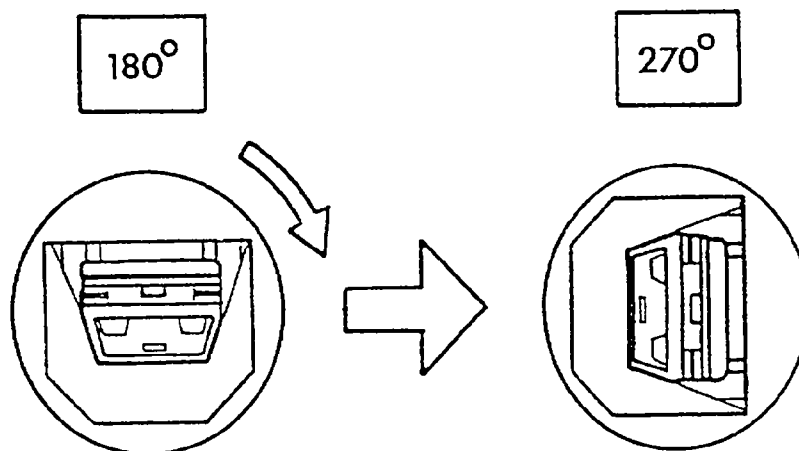
<u>90° TO 180° ROTATION</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 oz.	5 oz.
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

FIGURE 6 FMVSS 301 STATIC ROLLOVER TEST DATA, CONT'D.

NHTSA NO.: CN5204
TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

TIME REQ. FOR MACHINE TO ROTATE 90° = 2 minutes, 00 seconds

FMVSS 301 POSITION HOLD TIME = 5 minutes, 00 seconds

TOTAL - - - - - = 7 minutes, 00 seconds

NEXT WHOLE MINUTE INTERVAL - - - - = 21 minutes

FUEL SYSTEM FLUID SPILLAGE MEASUREMENTS:

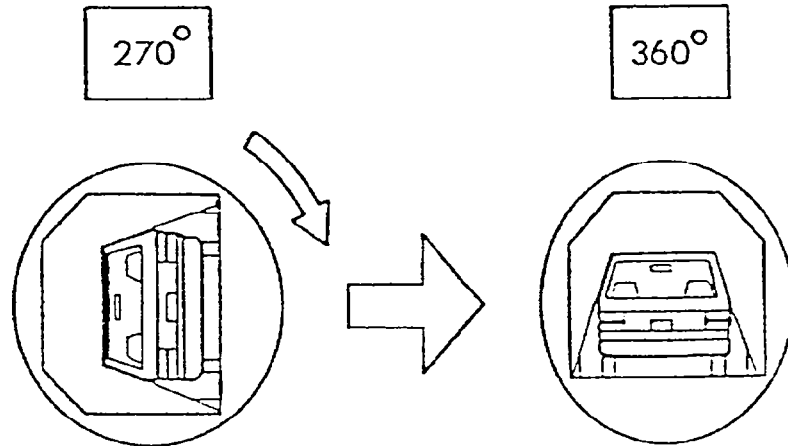
<u>180° TO 270° ROTATION</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 oz.	5 oz.
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

FIGURE 6 FMVSS 301 STATIC ROLLOVER TEST DATA, CONT'D.

NHTSA NO.: CN5204
TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

TIME REQ. FOR MACHINE TO ROTATE 90° = 2 minutes, 00 seconds
FMVSS 301 POSITION HOLD TIME = 5 minutes, 00 seconds
TOTAL - - - - - = 7 minutes, 00 seconds
NEXT WHOLE MINUTE INTERVAL - - - - = 28 minutes

FUEL SYSTEM FLUID SPILLAGE MEASUREMENTS:

<u>270° TO 360° ROTATION</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 oz.	5 oz.
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

SECTION 4.0

VEHICLE, OCCUPANT, AND CAMERA MEASUREMENTS

FIGURE 7

PRE-TEST AND POST-TEST MEASUREMENT POINTS

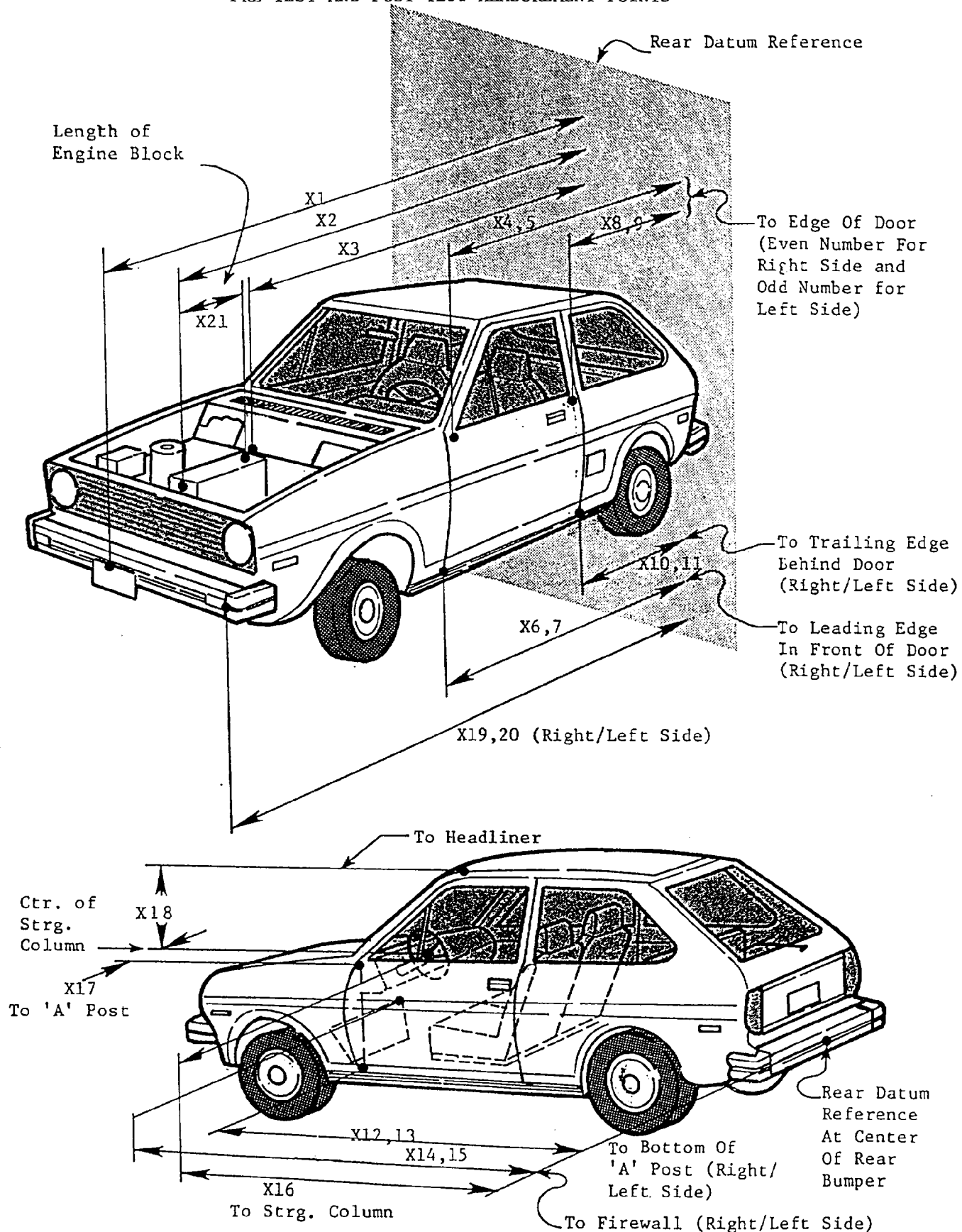


TABLE 13 IMPACTED VEHICLE MEASUREMENTS

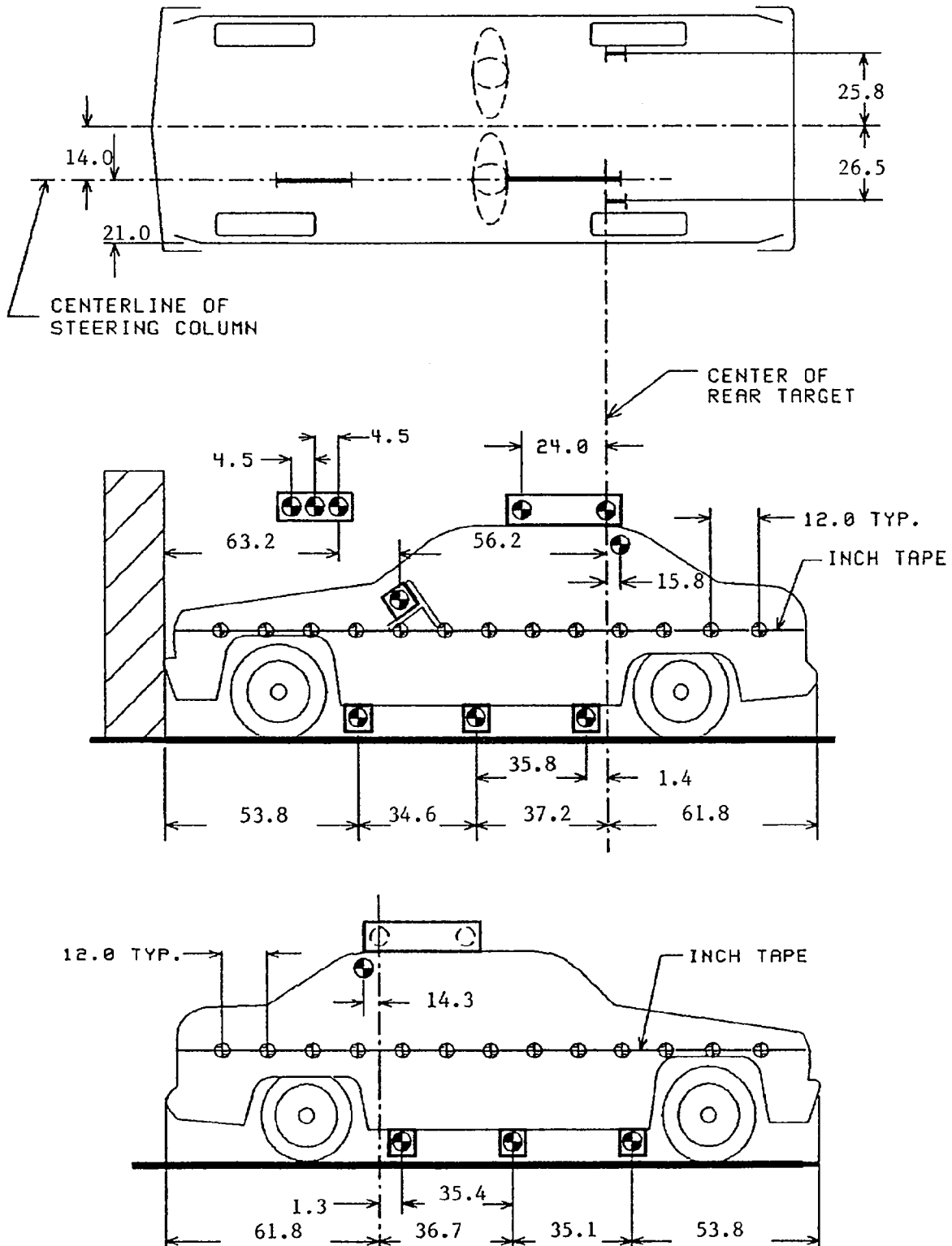
VEHICLE MAKE/MODEL: Nissan/Maxima

TEST NUMBER: 920319

NO.	TYPE OF MEASUREMENT	ALL MEASUREMENTS ARE IN INCHES		
		PRE-TEST	POST-TEST	DIFF.
X1	TOTAL LENGTH OF VEHICLE AT CENTERLINE	187.4	171.2	16.2
X2	REAR SURFACE OF VEHICLE TO FRONT OF ENGINE BLOCK	168.5	167.1	1.4
X3	REAR SURFACE OF VEHICLE TO FIREWALL	137.0	137.2	-0.2
X4	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF RIGHT DOOR	127.4	127.4	0.0
X5	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF LEFT DOOR	127.1	127.4	-0.3
X6	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF RIGHT DOOR	126.8	126.2	0.6
X7	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF LEFT DOOR	126.9	126.5	0.4
X8	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF RIGHT DOOR	84.8	84.9	-0.1
X9	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF LEFT DOOR	84.6	84.9	-0.3
X10	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF RIGHT DOOR	84.6	84.2	0.4
X11	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF LEFT DOOR	84.8	84.4	0.4
X12	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON RIGHT SIDE	127.0	126.4	0.6
X13	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON LEFT SIDE	126.9	126.5	0.4
X14	REAR SURFACE OF VEHICLE TO FIREWALL - RIGHT SIDE	135.1	136.4	-1.3
X15	REAR SURFACE OF VEHICLE TO FIREWALL - LEFT SIDE	136.6	137.5	-0.9
X16	REAR SURFACE OF VEHICLE TO STEERING WHEEL CENTER	108.4	110.6	-2.2
X17	CENTER OF STEERING COLUMN TO "A" POST	12.0	12.5	-0.5
X18	CENTER OF STEERING COLUMN TO HEADLINER	17.9	16.4	1.5
X19	REAR SURFACE OF VEHICLE TO RIGHT SIDE OF FRONT BUMPER	183.4	168.6	14.8
X20	REAR SURFACE OF VEHICLE TO LEFT SIDE OF FRONT BUMPER	183.6	169.1	14.5
X21	LENGTH OF ENGINE BLOCK	15.0	15.0	0.0

FIGURE 8

VEHICLE TARGET LOCATIONS



ALL DISTANCE MEASUREMENTS ARE IN INCHES.

FIGURE 9 DUMMY AND SEAT POSITIONING DATA

PRE-IMPACT DATA:

MAKE/MODEL: Nissan/Maxima
 BODY STYLE: 4-door sedan MODEL YEAR: 1992
 NHTSA NO.: CN5204 COLOR: Red

DATA FROM CERTIFICATION LABEL:

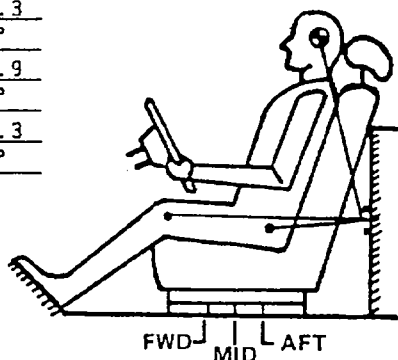
VEHICLE MANUFACTURER: Nissan Motor Company, Ltd.
 DATE OF MANUFACTURE: 11/91 VIN: JN1HJ01F1NT003548
 GVWR: 4167 LBS.; GAWR: FRONT = 2315 LBS.; REAR = 2183 LBS.

POST-IMPACT DATA:

DATE OF TEST: 03/19/92 TIME: 1405 TEMPERATURE: 72° F
 IMPACT VELOCITY: PRIMARY = 29.5 MPH SECONDARY = 29.6 MPH
 REQUIRED IMPACT VELOCITY RANGE: 28.9 TO 29.9 MPH
 SEAT TYPE: Bucket ADJUSTER TYPE: Manual
 FRONT SEAT BACK TYPE: Manually adjustable
 TECHNICIANS: B. Crabtree, D. Jones, B. Fishbaugh

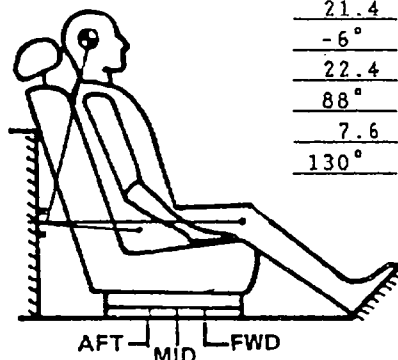
DRIVER DUMMY # 354 TYPE: HII

HEAD 20.3
 TARGET -5°
 KNEE 21.9
 JOINT 90°
 APPROX- 7.3
 IMATE 117°
 "H"
 POINT

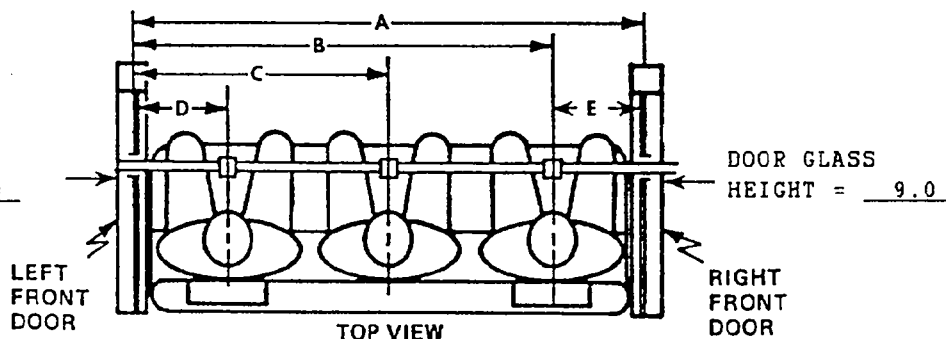


PASSENGER DUMMY # 1173 TYPE: HII

HEAD 21.4
 TARGET -6°
 KNEE 22.4
 JOINT 88°
 APPROX- 7.6
 IMATE 130°
 "H"
 POINT



A = 53.0
 B = 41.0
 C = NA
 D = 13.9
 E = 12.0
 DOOR GLASS
 HEIGHT = 9.0



DRIVER
 DUMMY

PASSENGER
 DUMMY

ALL ANGLES ARE RELATIVE TO VERTICAL PLANE THROUGH DOOR STRIKER.
 ALL DISTANCE MEASUREMENTS ARE IN INCHES.

FIGURE 10 DUMMY IN VEHICLE POSITIONING DATA

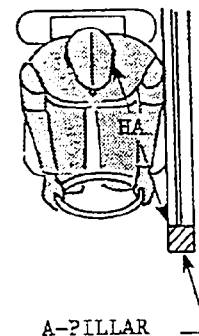
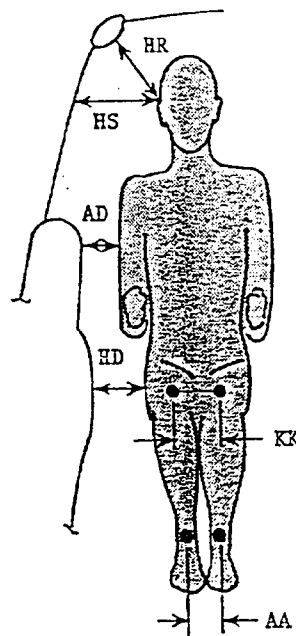
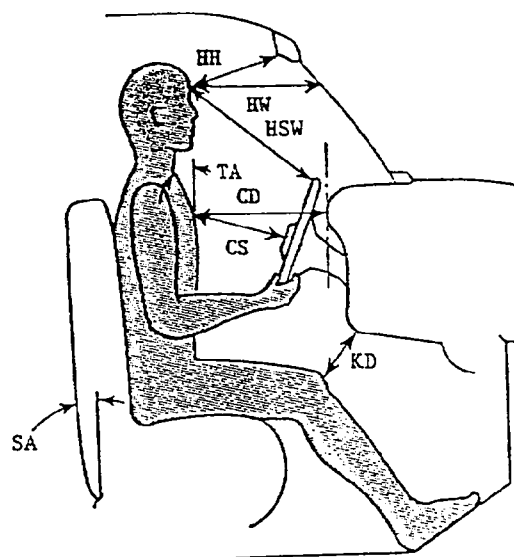
	DRIVER	PASSENGER
HH	16.9	16.5
HW	21.8	21.5
CD	24.9	25.7
CS	15.6	NA
KDL	7.0	6.5
KDR	6.9	6.6
TA	25°	24°
SA	18°	18°
HSW	23.9	NA

	DRIVER	PASSENGER
HR	6.6	6.1
HS	11.0	9.6
AD	5.4	4.5
HD	6.8	5.8
KK	10.2	7.9
AA	12.0	7.9
HA	22.6	22.7

KNEE OUTER BOLT HEAD TO OUTER
BOLT HEAD SPACING:

DRIVER = 14.5

PASSENGER = 11.8

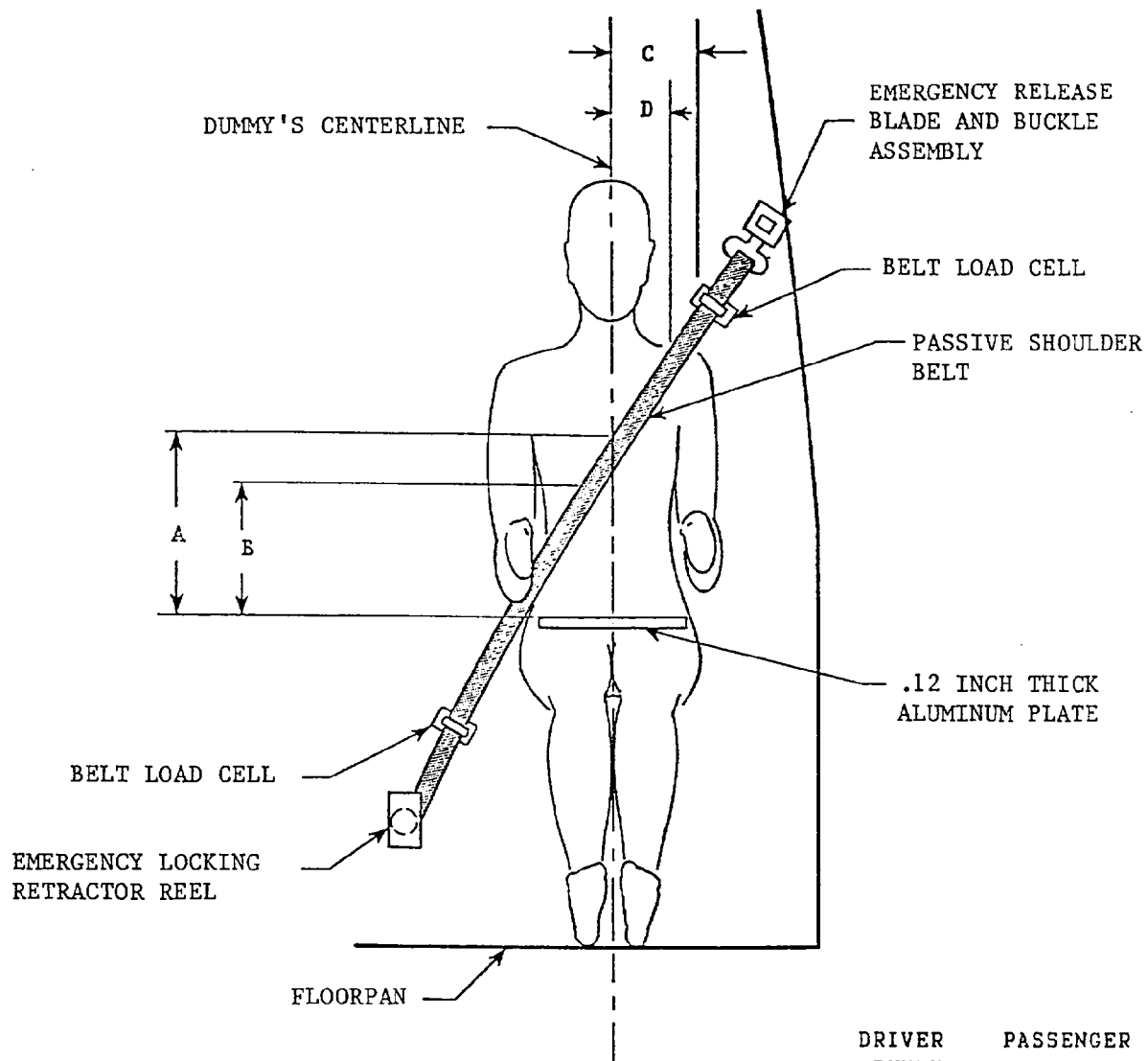


HH = HEAD TO WINDSHIELD HEADER
HW = HEAD TO WINDSHIELD
CD = CHEST TO DASH
CS = CHEST TO STEERING WHEEL
KD = KNEE TO DASH
TA = TORSO ANGLE
SA = SEAT BACK ANGLE
HSW = HEAD TO STEERING WHEEL

HR = HEAD C.G. TARGET TO SIDE ROOF HEADER
HS = HEAD C.G. TARGET TO SIDE WINDOW
AD = ARM TO DOOR
HD = HIP TO DOOR
KK = KNEE TO KNEE
AA = ANKLE TO ANKLE
HA = HEAD C.G. TARGET TO A-PILLAR

TORSO AND SEAT BACK ANGLES ARE RELATIVE TO VERTICAL.
ALL DISTANCE MEASUREMENTS ARE IN INCHES.

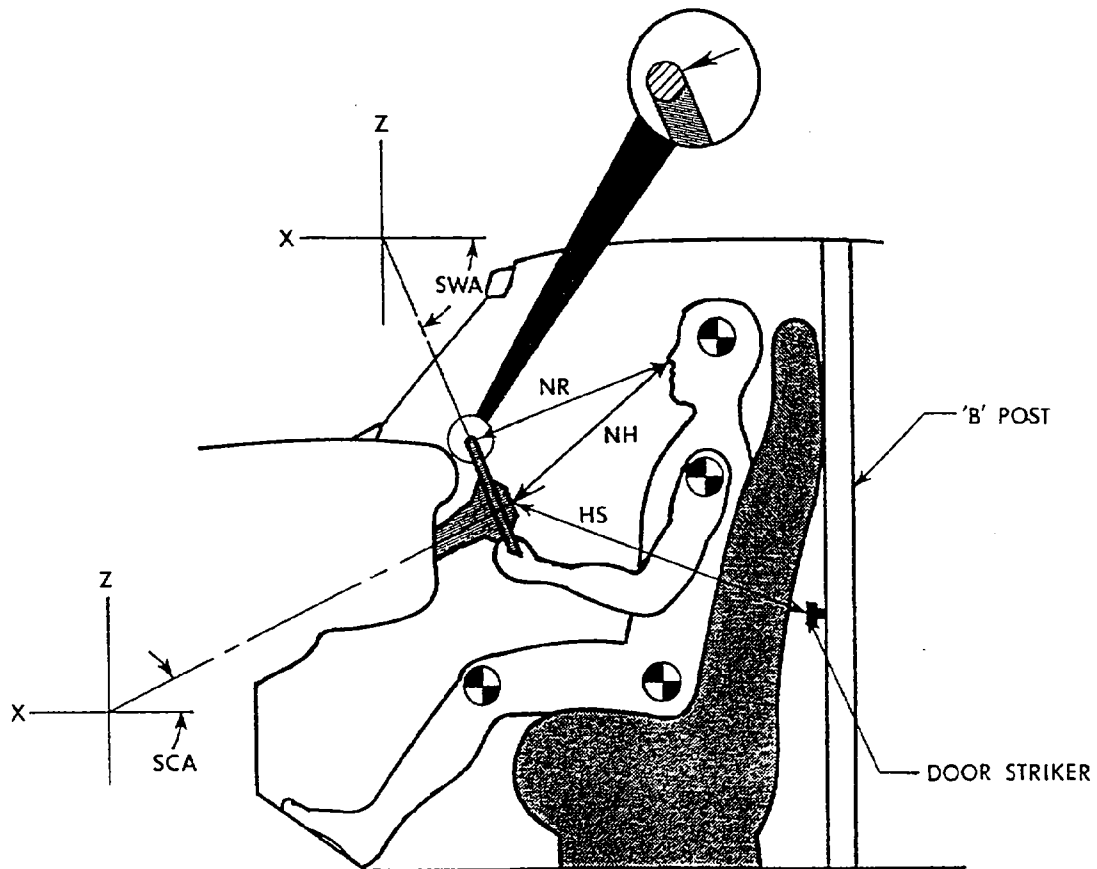
FIGURE 11 SEAT BELT POSITIONING DATA



	DRIVER DUMMY	PASSENGER DUMMY
A - TOP SURFACE OF ALUMINUM PLATE TO BELT UPPER EDGE	13.5	14.4
B - TOP SURFACE OF ALUMINUM PLATE TO BELT LOWER EDGE	10.6	11.5
C - DUMMY CENTERLINE TO OUTER EDGE OF BELT AT CHEST FLESH TOP	7.6	4.8
D - DUMMY CENTERLINE TO INNER EDGE OF BELT AT CHEST FLESH TOP	5.1	4.9

ALL MEASUREMENTS ARE IN INCHES.

FIGURE 12 DRIVER DUMMY TO STEERING COLUMN/WHEEL ASSEMBLY DATA



POSITION OF STEERING COLUMN TILTING AND TELESCOPING ADJUSTMENTS, IF ANY:
The steering column was placed in the midpoint of the possible range
of adjustment.

MEASUREMENTS

NR	- DISTANCE FROM TIP OF DUMMY'S NOSE TO TOP REAR SURFACE OF STEERING WHEEL RIM.	21.9
NH	- DISTANCE FROM TIP OF DUMMY'S NOSE TO CENTER OF STEERING COLUMN HUB.	21.2
HS	- DISTANCE FROM CENTER OF STEERING COLUMN HUB TO THE FORWARD SURFACE OF THE DOOR LOCK STRIKER PIN.	22.8
SCA	- ANGLE OF STEERING COLUMN RELATIVE TO THE HORIZONTAL X AXIS	24°
SWA	- ANGLE OF STEERING WHEEL RELATIVE TO THE HORIZONTAL X AXIS	66°

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

4, 7, 8

FIGURE 13

CAMERA POSITIONS

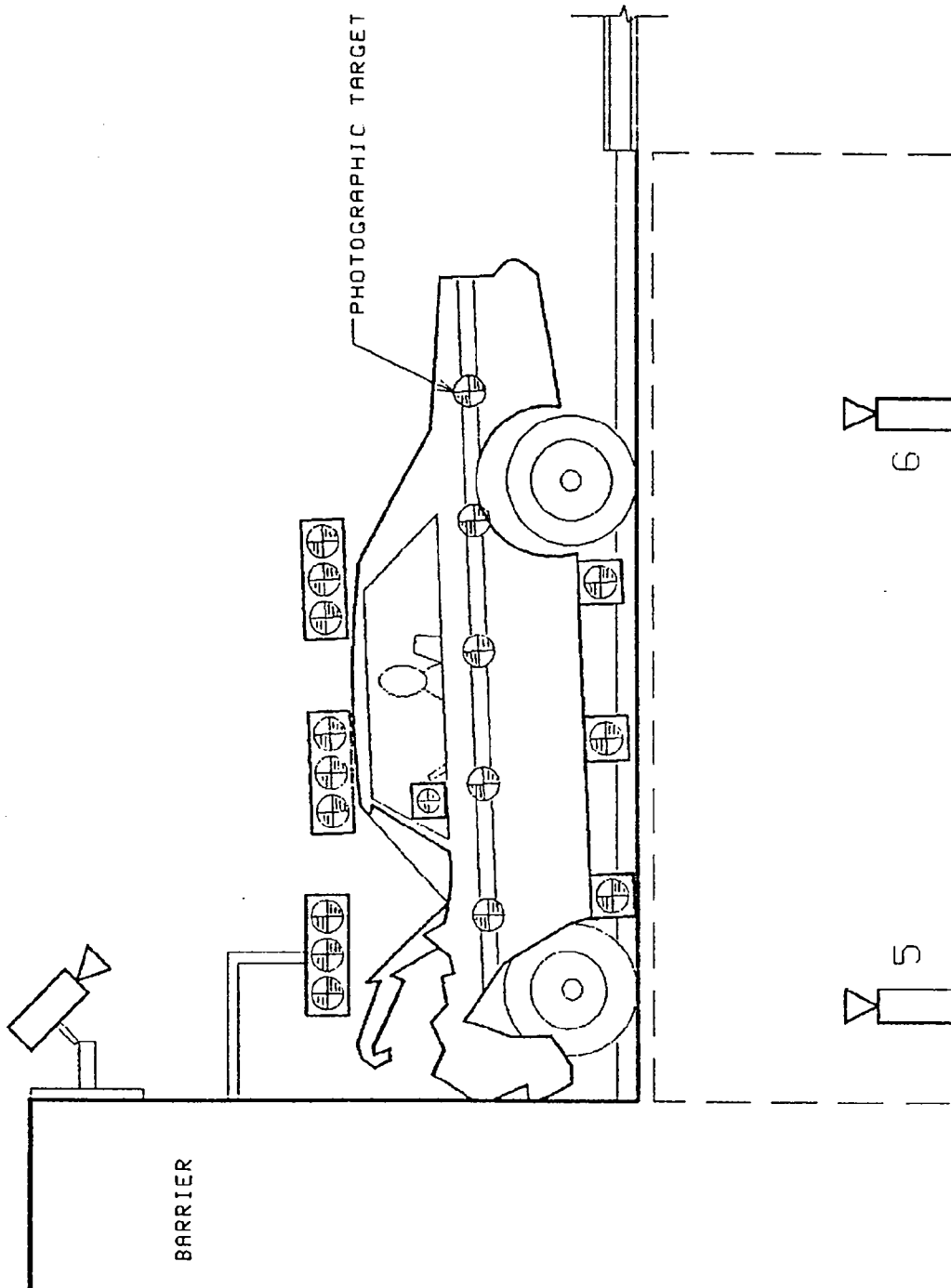


FIGURE 13

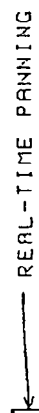


TABLE 14 MOTION PICTURE CAMERA LOCATIONS

TEST NO.: 920319		VEHICLE: 1992 Nissan/Maxima 4-door sedan					FILM PLANE		FILM
CAMERA NO.	VIEW	CAMERA POSITIONS (IN)*			ANGLE** (DEG)	TO HEAD TARGET (IN)	LENS (MM)	SPEED (FPS)	
		X	Y	Z					
1	Real-time panning	-142.0	-504.0	61.0	NA	NA	16	24	
2	Right overall	-81.3	-266.4	37.1	-2	NA	13	500	
3	Left vehicle crush	-41.5	295.0	44.0	-4	209.0	25	998	
4	Windshield front view	-6.0	0.0	98.0	-40	NA	13	495	
5	Pit front position	-50.5	0.0	-92.4	90	NA	13	1000	
6	Pit rear position	-99.3	0.0	-99.0	90	NA	13	998	
7	Passenger front view	-4.5	-13.8	93.0	-50	NA	17	498	
8	Driver front view	-6.8	14.5	93.0	-50	NA	17	495	
9	Driver kinematics	-157.3	116.0	87.0	-27	93.0	25	500	
10	Passenger kinematics	-152.1	-116.0	87.0	-26	88.0	25	500	
11	Right windshield intrusion	-38.1	-306.1	44.0	0	NA	50	510	
12	Left windshield intrusion	-53.0	309.4	42.3	0	NA	50	***	
13	Steering column motion	-122.0	286.0	103.0	-14	NA	25	***	
14	Steering column motion	-122.0	286.0	75.1	-9	NA	25	***	
15	Passenger kinematics	-38.8	-293.0	45.3	-4	229.0	25	1010	
16	Real-time documentation	NA	NA	NA	NA	NA	12-120	24	

*X = Film plane forward of barrier face

+Y = Film plane to left of monorail centerline

+Z = Film plane above ground level

**Angle = Film plane angled upward from horizontal plane

***Camera did not run during crash test event.

APPENDIX A

PHOTOGRAPHS

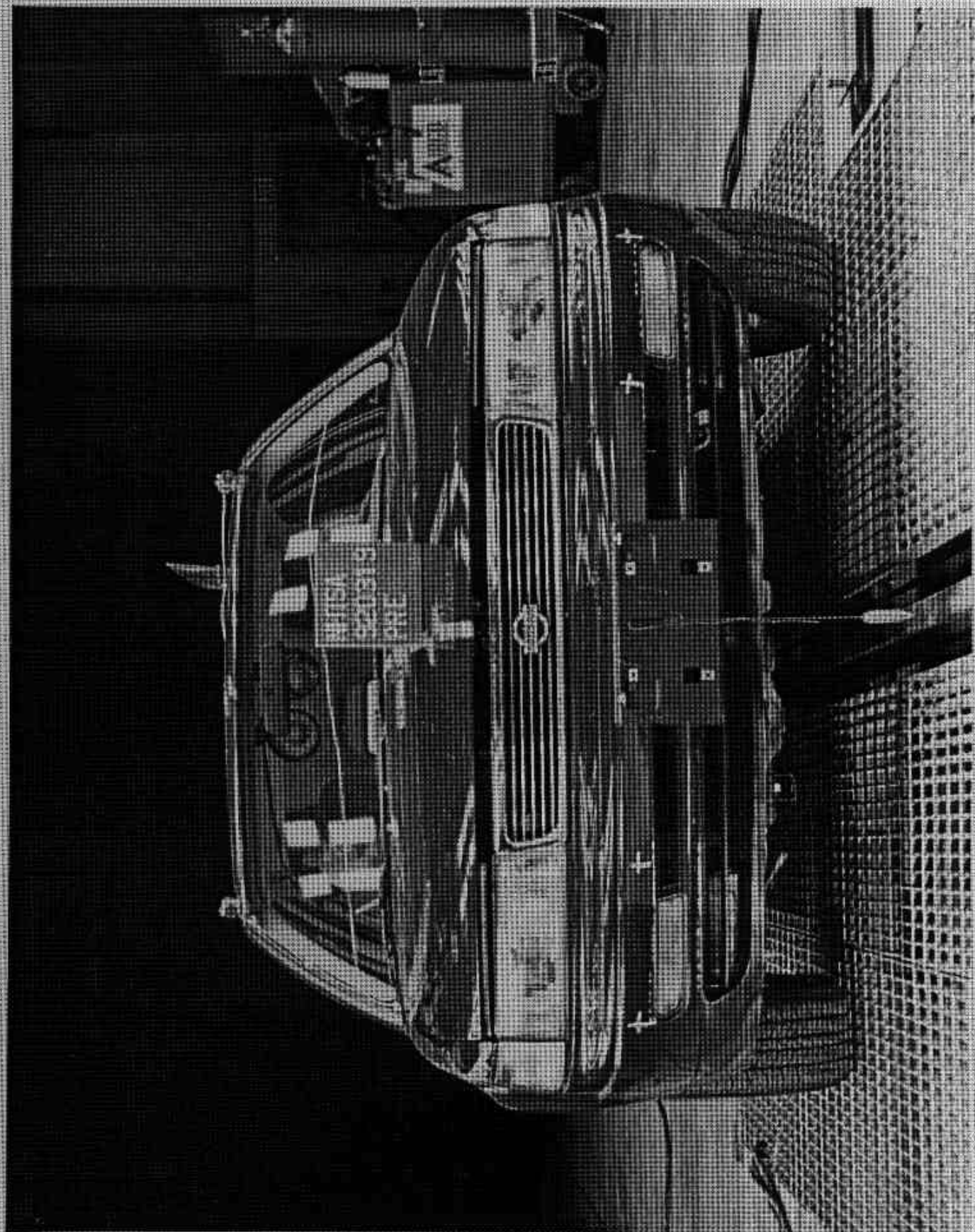


FIGURE A-1. PRE-TEST FRONT VIEW

A-2

920319

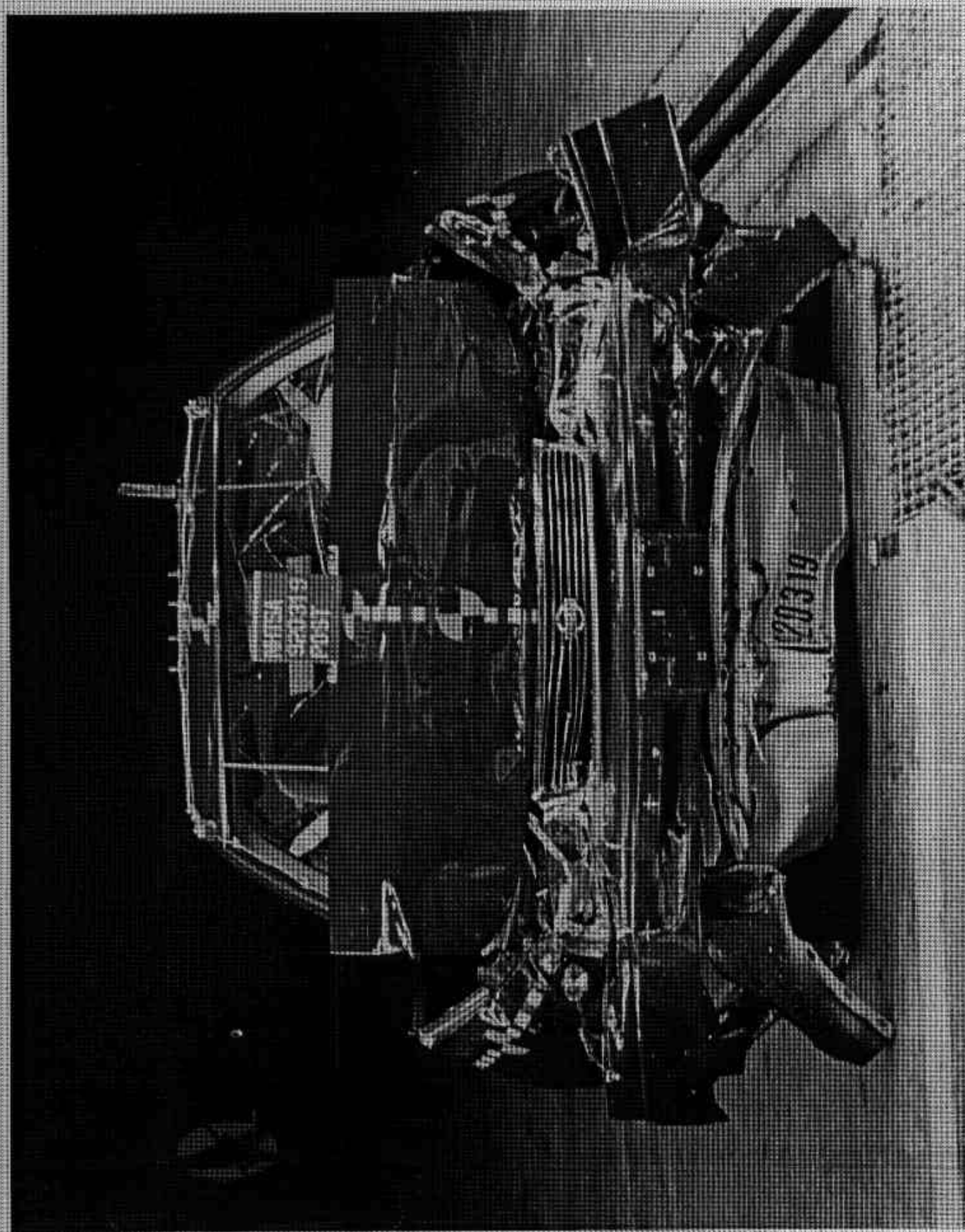


FIGURE A-2. POST-TEST FRONT VIEW

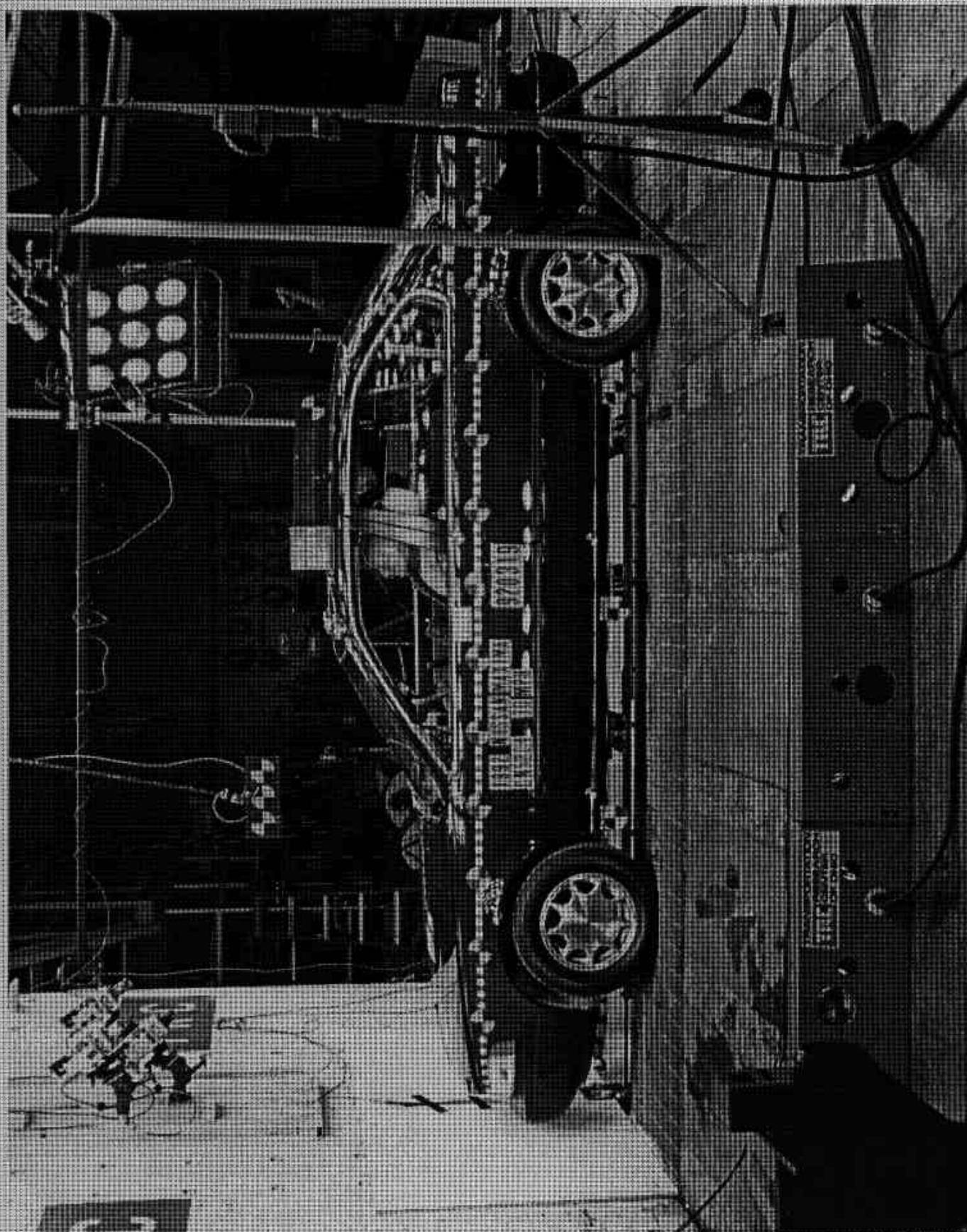


FIGURE A-3. PRE-TEST LEFT SIDE VIEW

A-4

920319

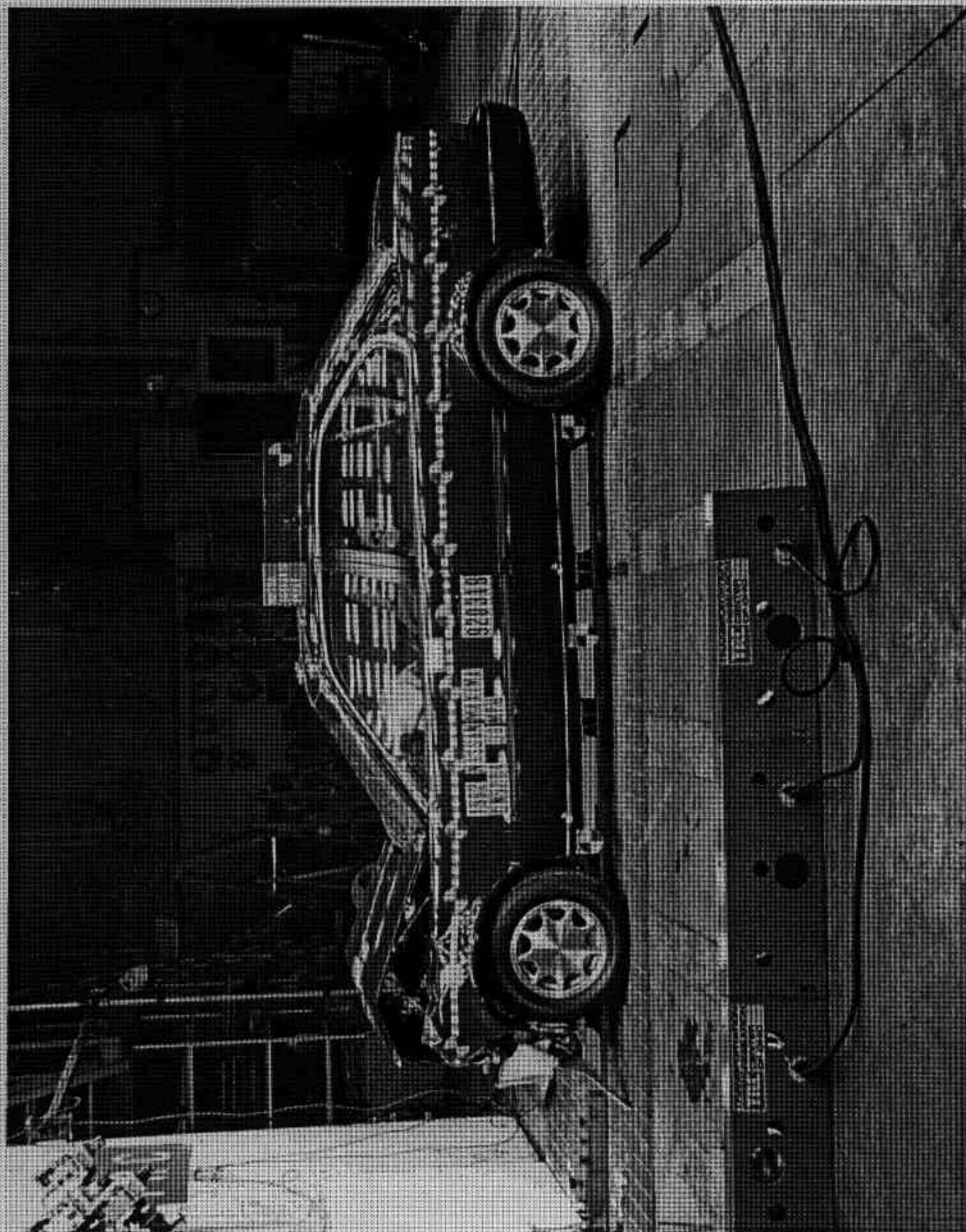


FIGURE A-4. POST-TEST LEFT SIDE VIEW
A-5

920319

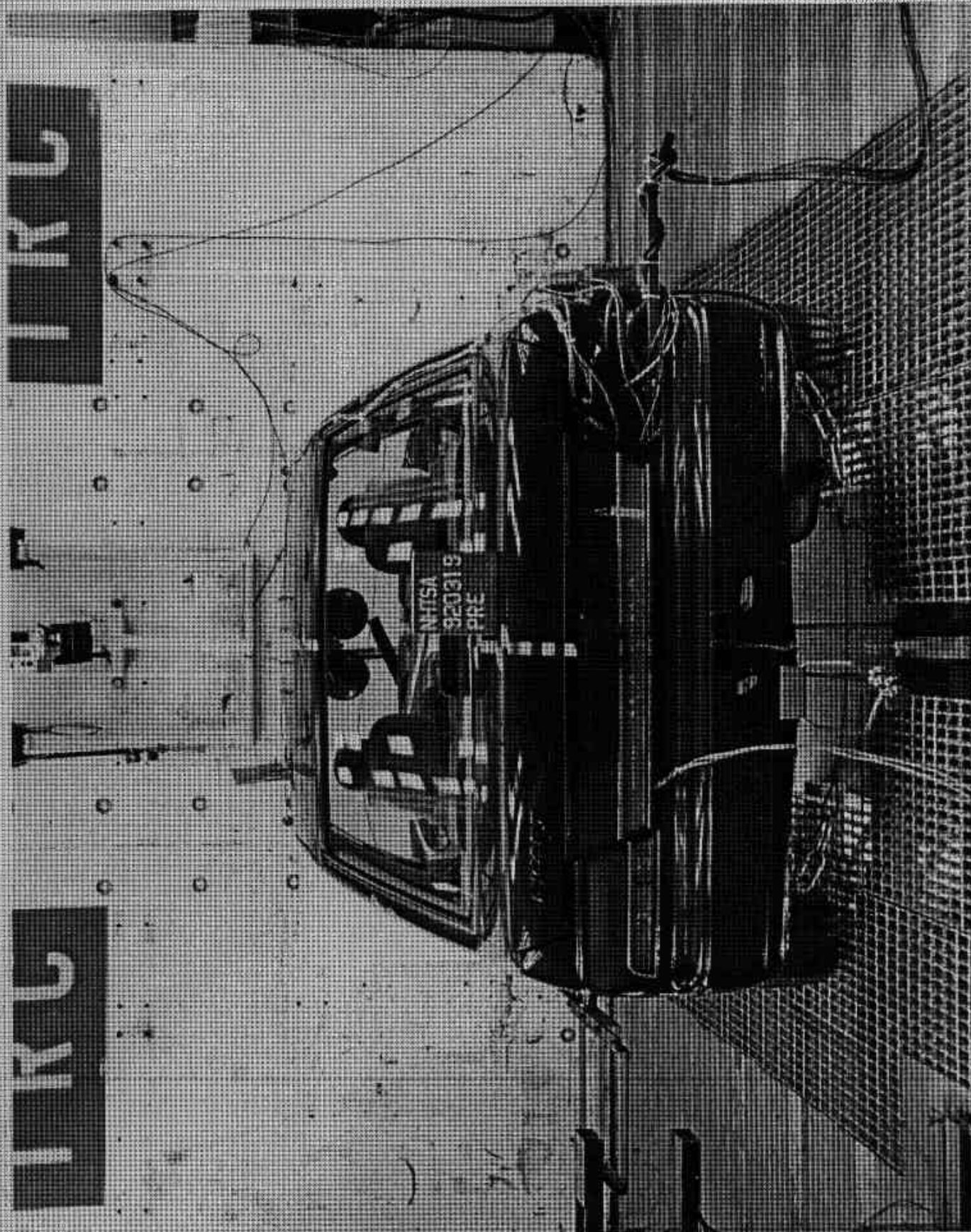


FIGURE A-5, PRE-TEST REAR VIEW

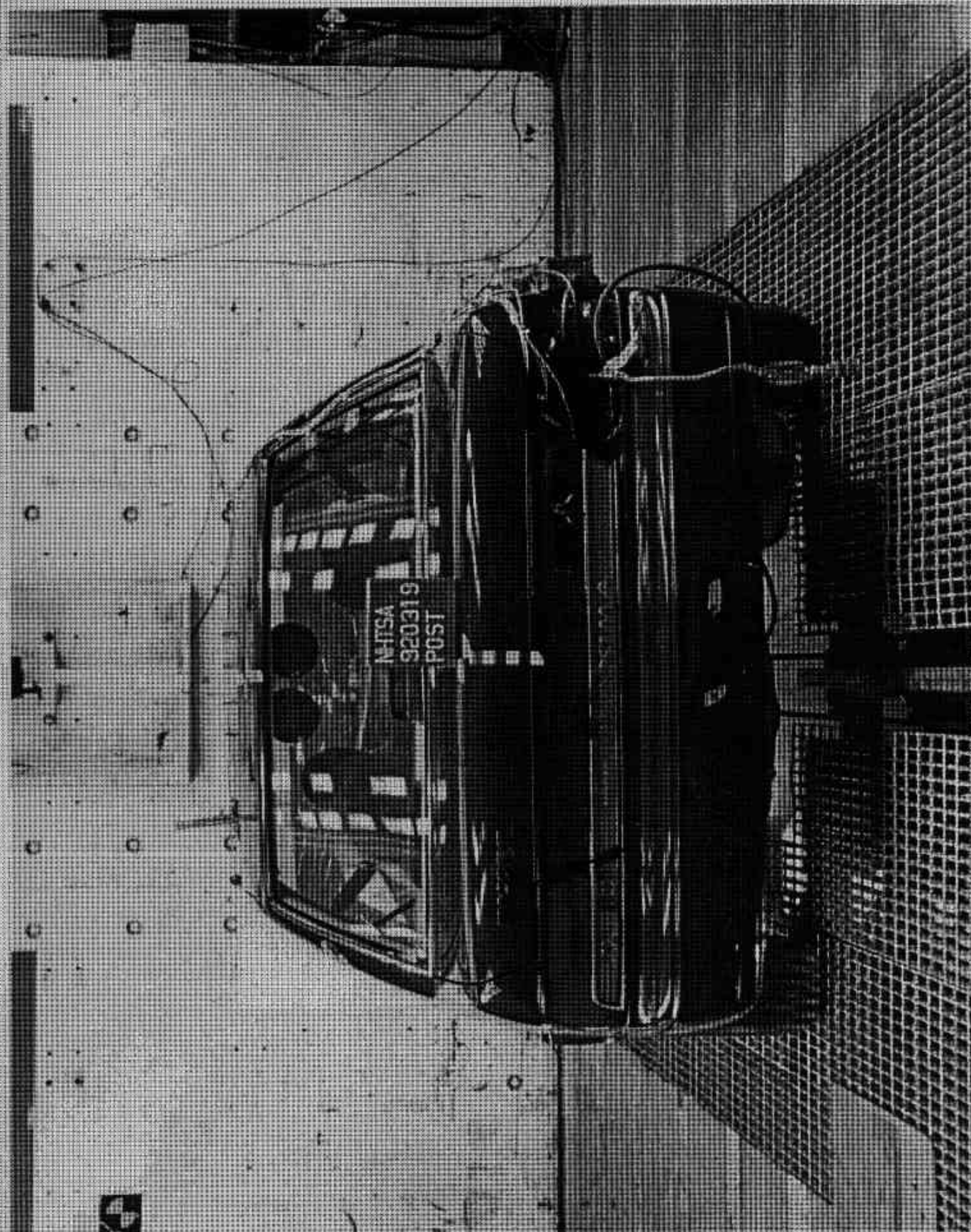


FIGURE A-6. POST-TEST REAR VIEW

A-7

920319

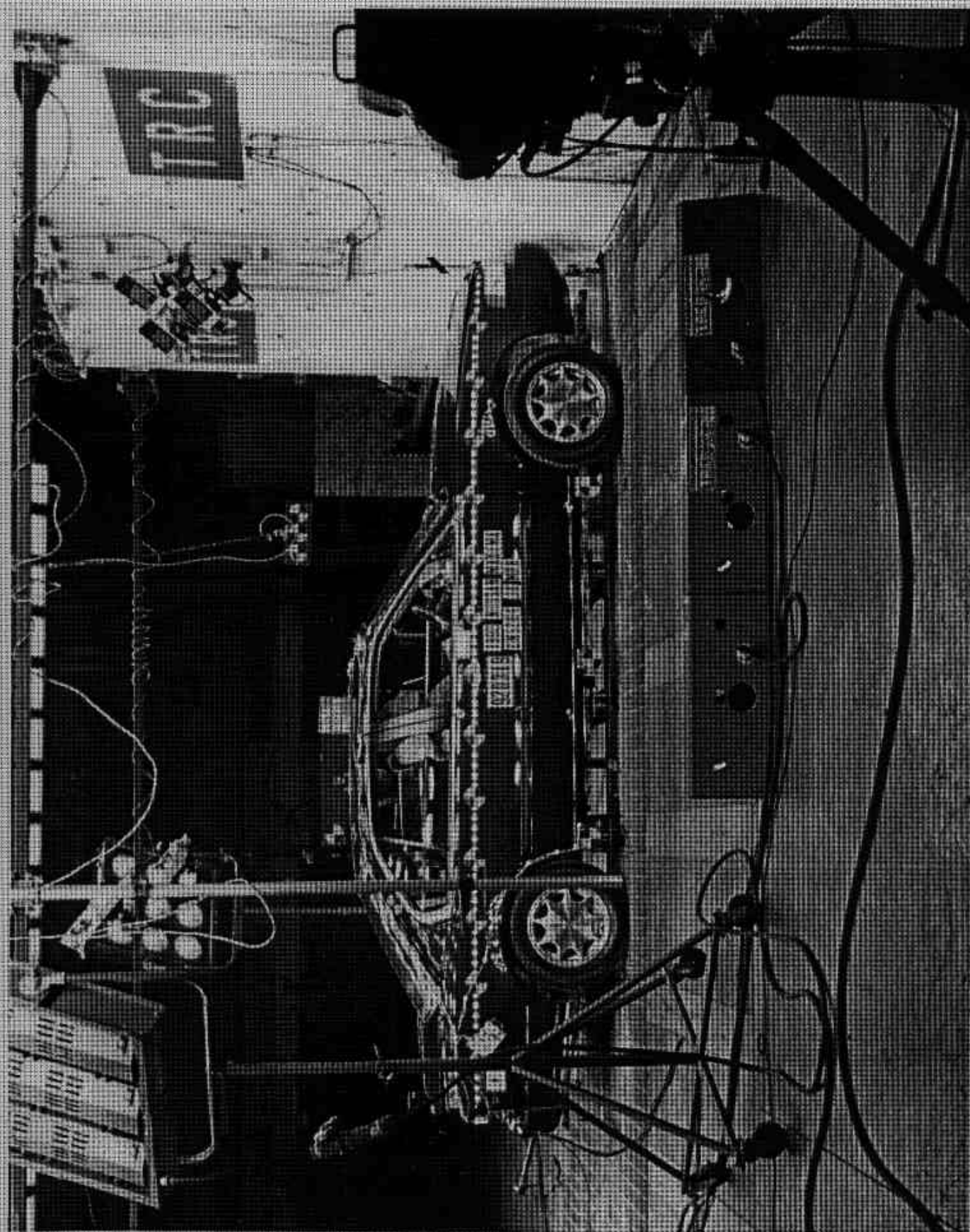


FIGURE A-7. PRE-TEST RIGHT SIDE VIEW
A-8

920319

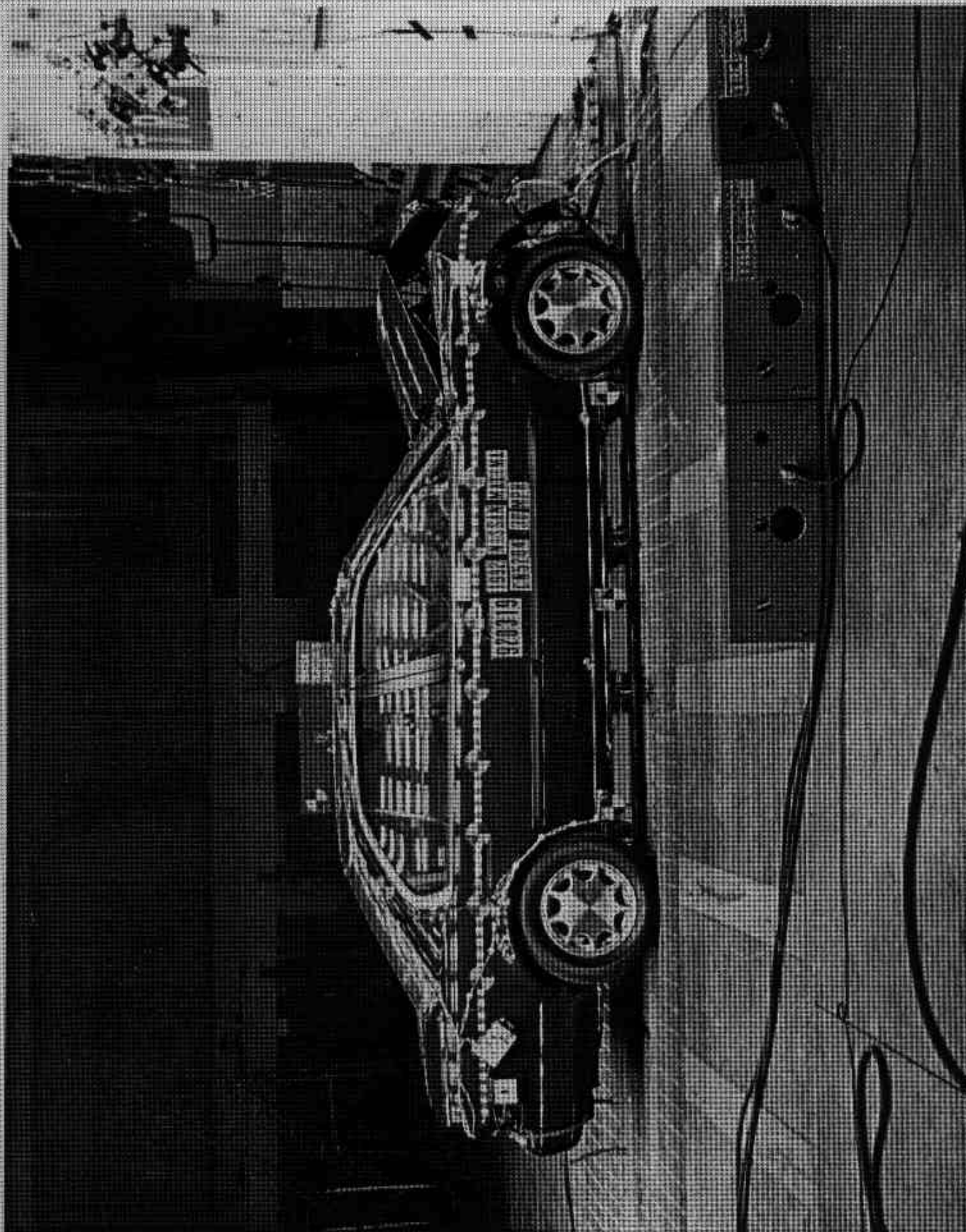


FIGURE A-8. POST-TEST RIGHT SIDE VIEW

A-9

920319

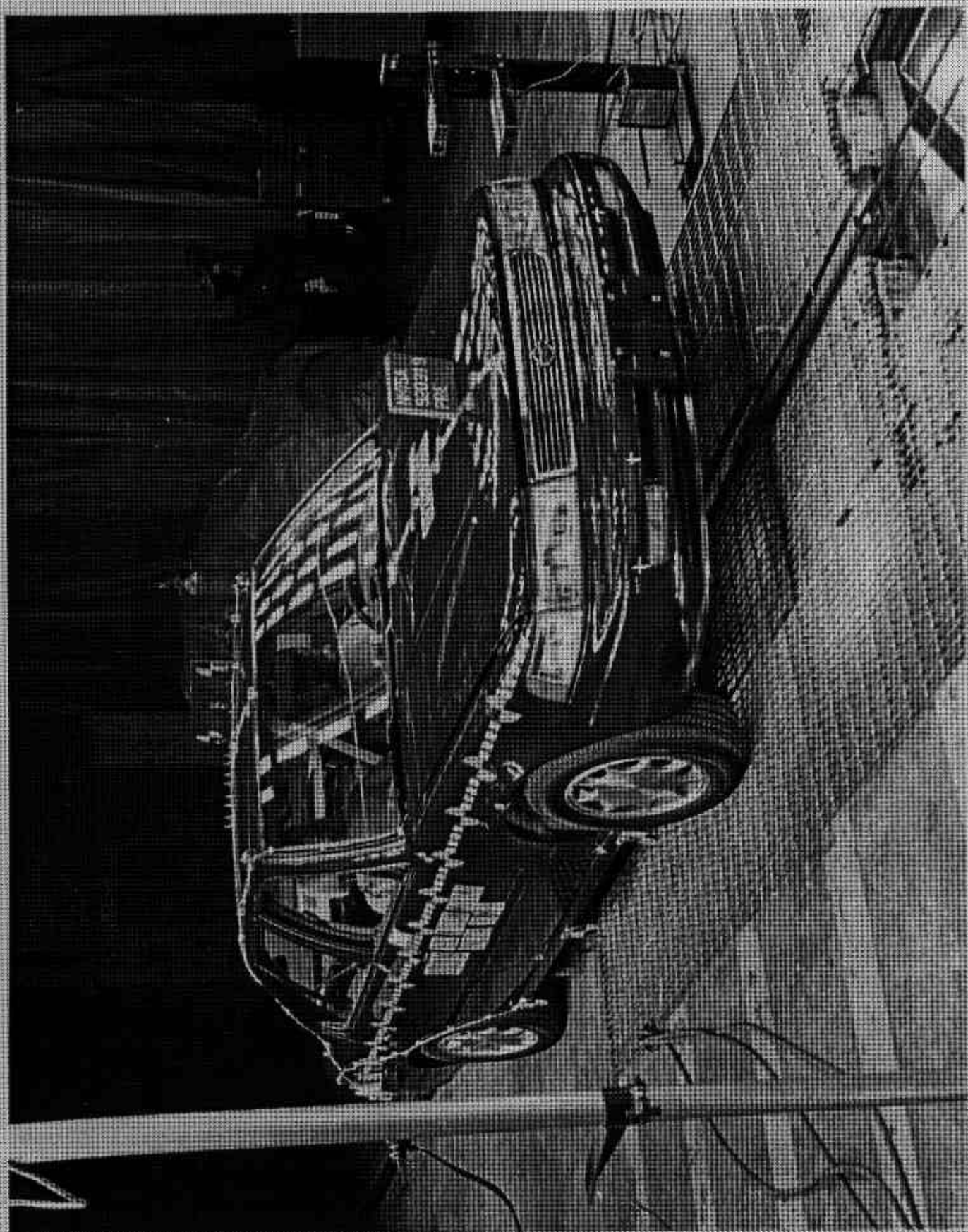


FIGURE A-9, PRE-TEST RIGHT FRONT THREE-QUARTER VIEW

A-10

920319

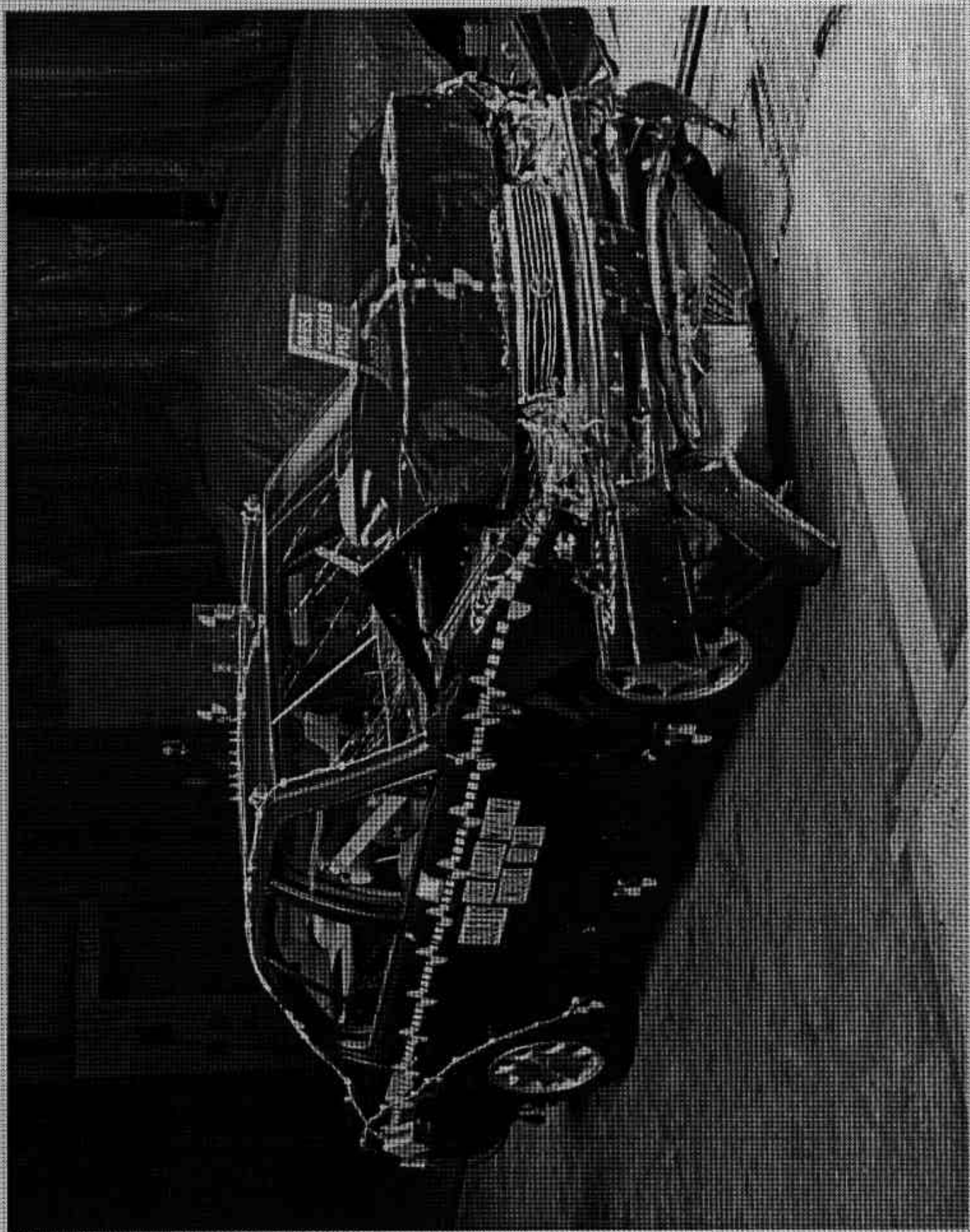


FIGURE A-10. POST-TEST RIGHT FRONT THREE-QUARTER VIEW

A-11

920319

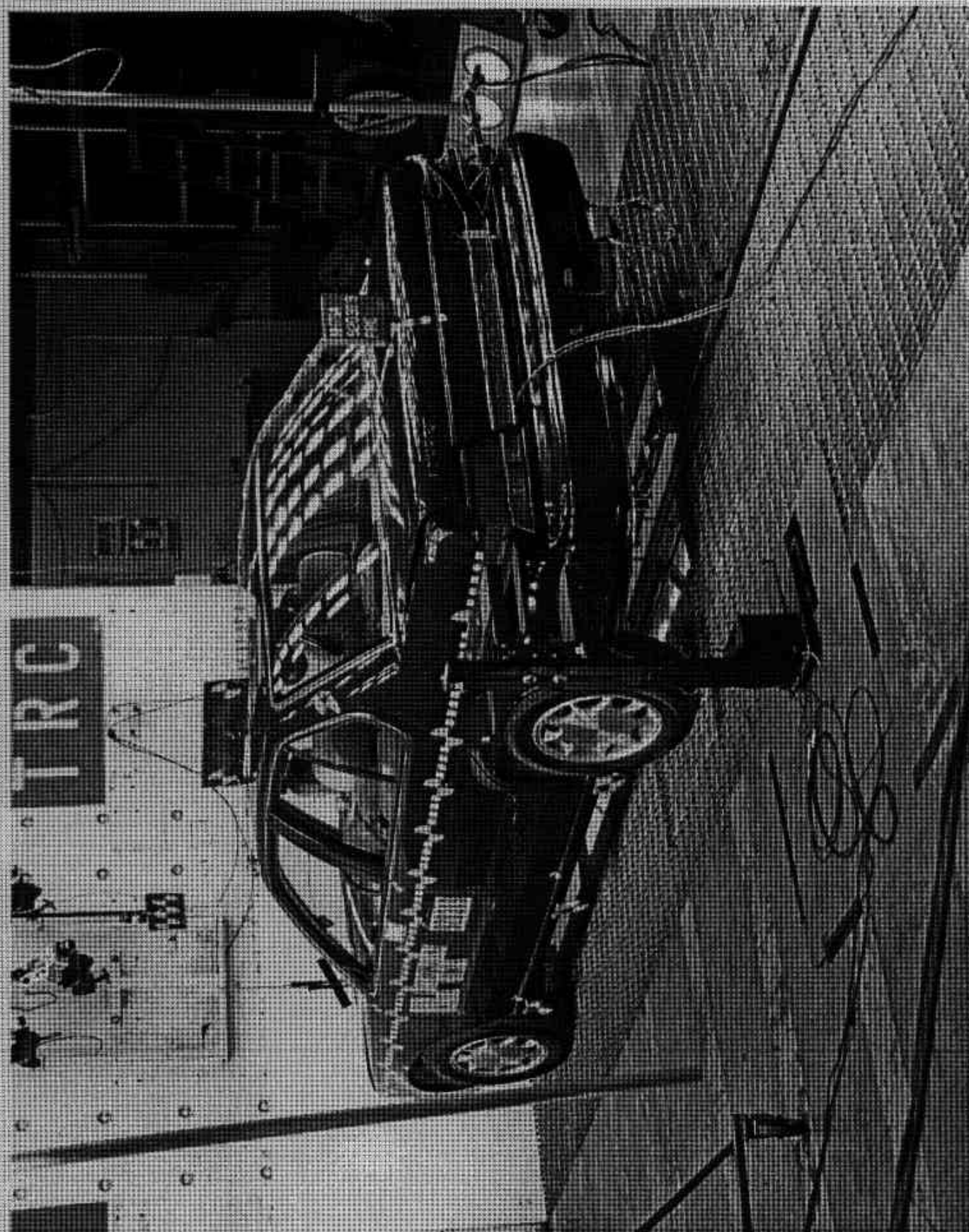


FIGURE A-11. PRE-TEST LEFT REAR THREE-QUARTER VIEW
A-12

920319

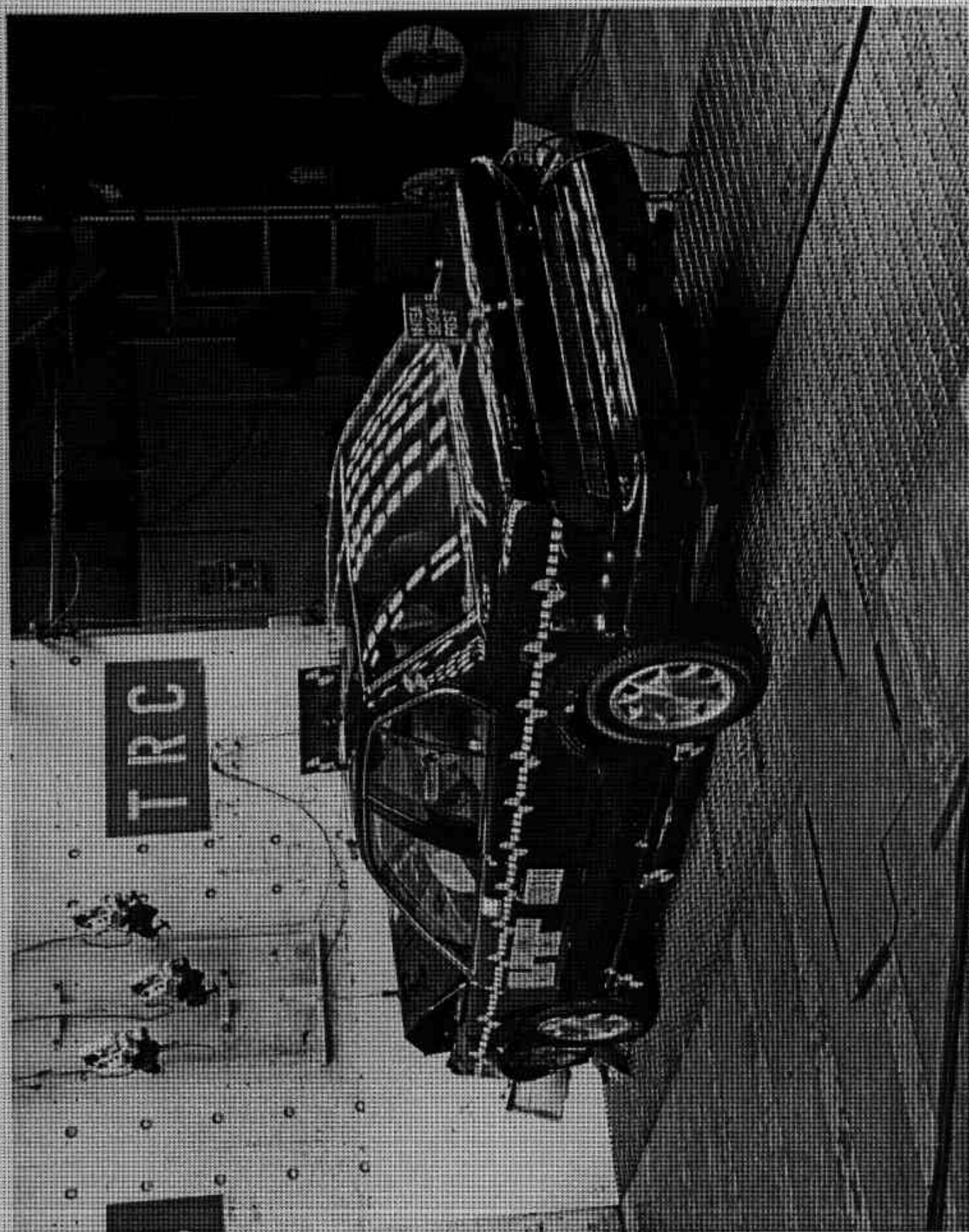


FIGURE A-12. POST-TEST LEFT REAR THREE-QUARTER VIEW

A-13

920319

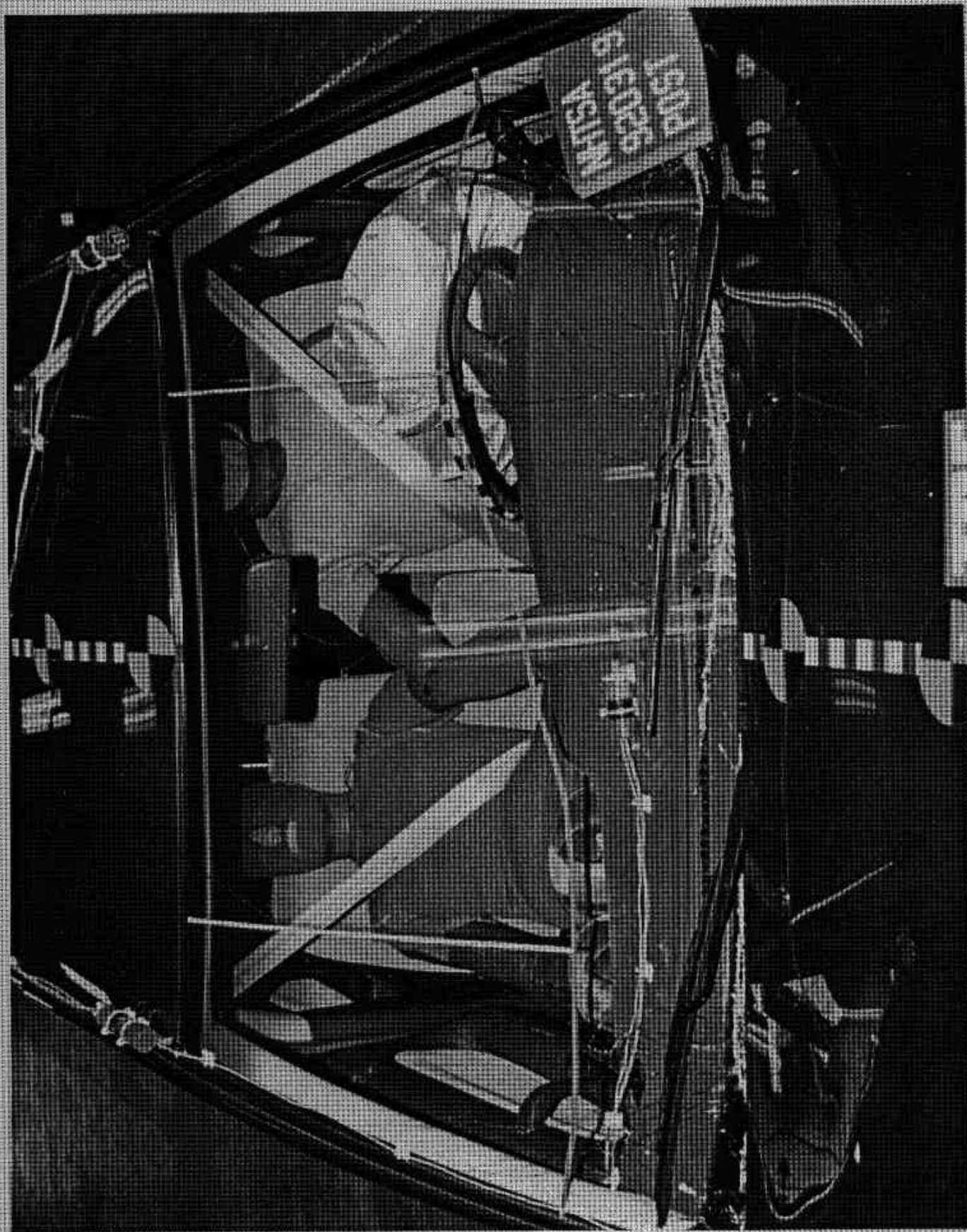


FIGURE A-13. POST-TEST WINDSHIELD VIEW

A-14

920319

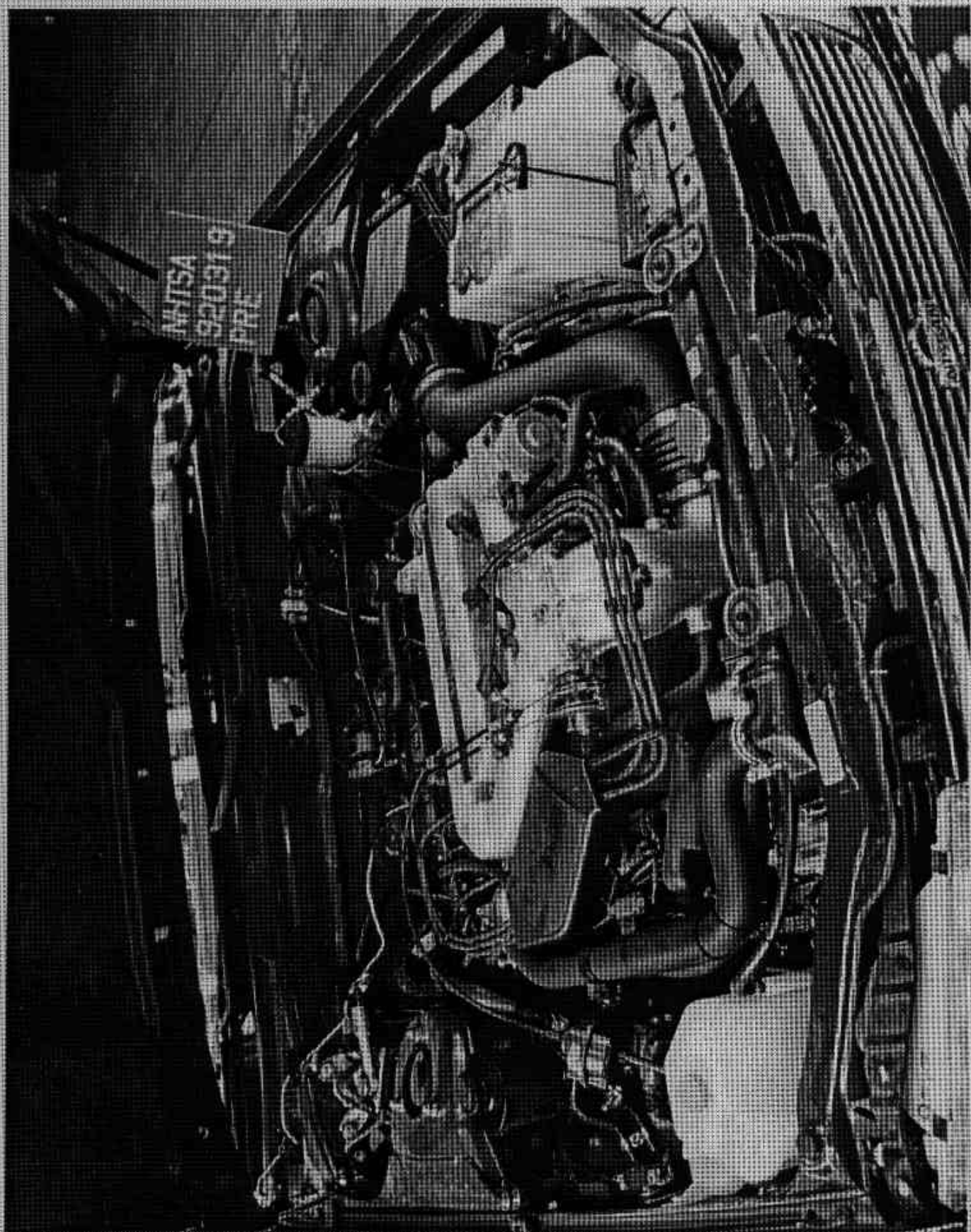


FIGURE A-14. PRE-TEST ENGINE COMPARTMENT VIEW

A-15

920319

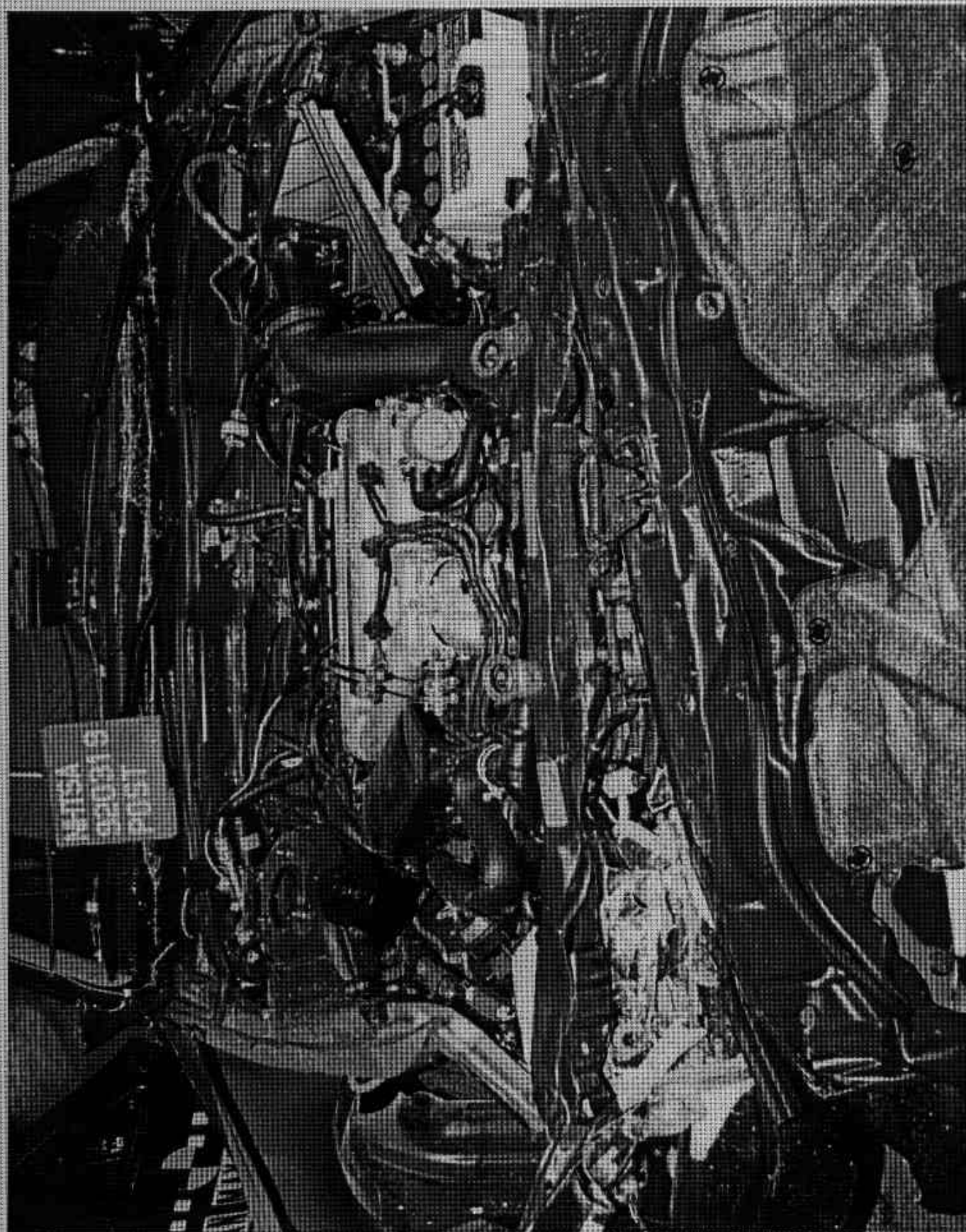


FIGURE A-15. POST-TEST ENGINE COMPARTMENT VIEW

A-16

920319



FIGURE A-16. PRE-TEST FUEL FILLER CAP VIEW
A-17

920319

NHTSA
920319
POST

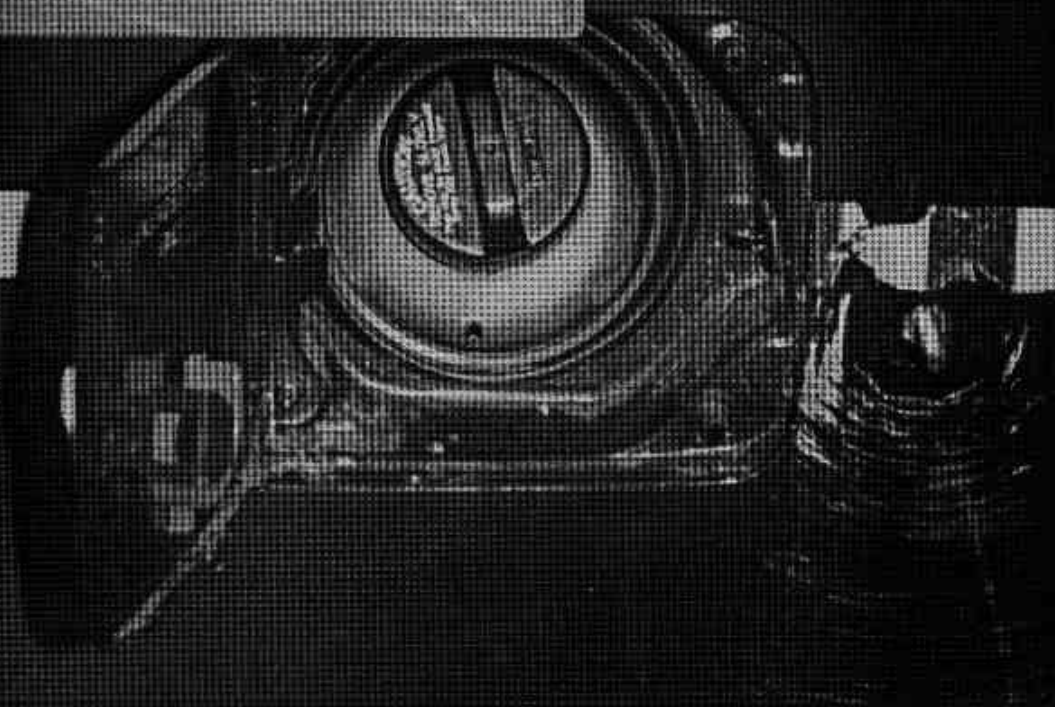


FIGURE A-17. POST-TEST FUEL FILLER CAP VIEW

A-18

920319



FIGURE A-18. PRE-TEST FUEL FILLER NECK VIEW

A-19

920319



FIGURE A-19. POST-TEST FUEL FILLER NECK VIEW
A-20

920319



FIGURE A-20. PRE-TEST FUEL TANK VIEW
A-21

920319



FIGURE A-21. POST-TEST FUEL TANK VIEW

A-22

920319

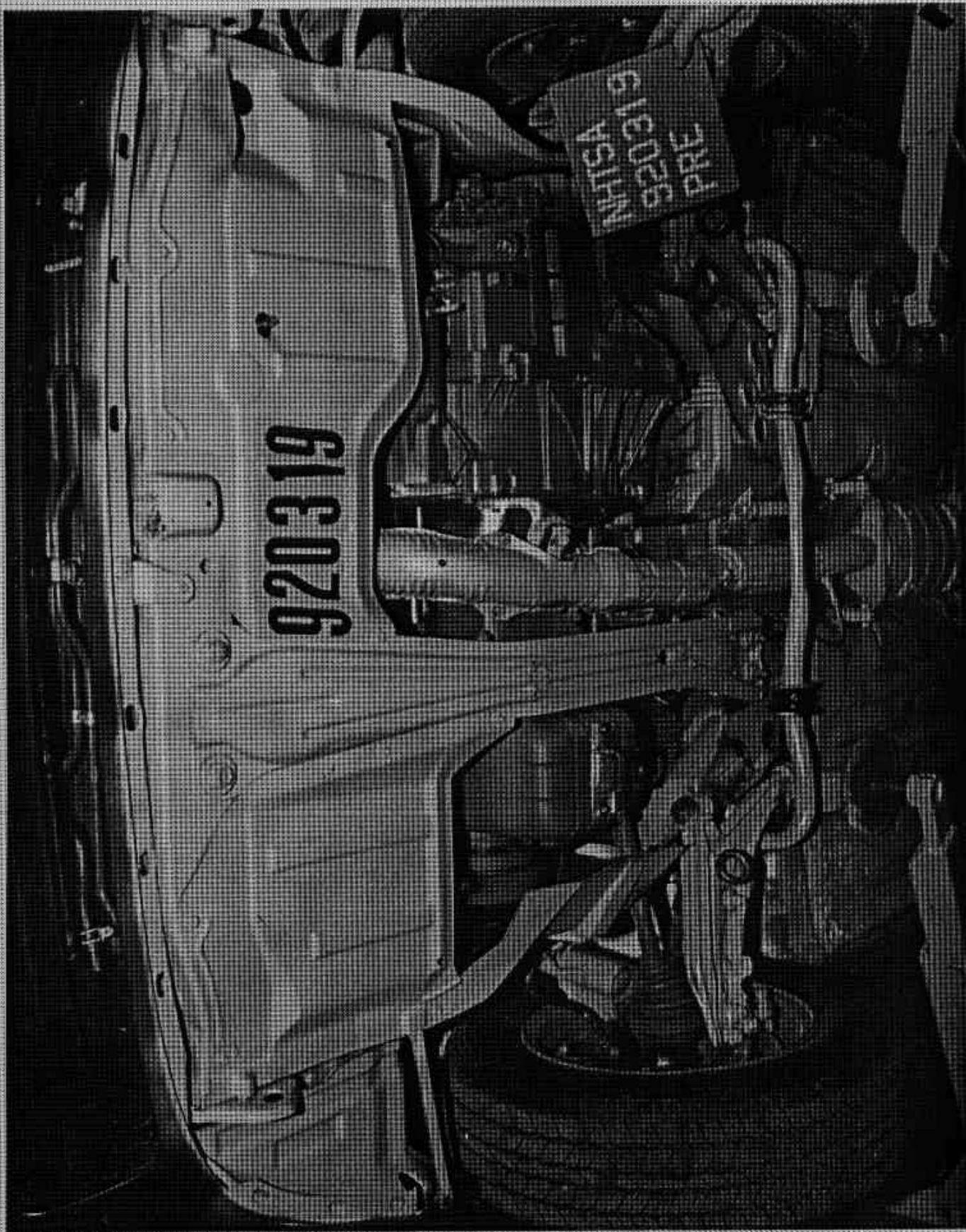


FIGURE A-22. PRE-TEST FRONT UNDERBODY VIEW
A-23

920319

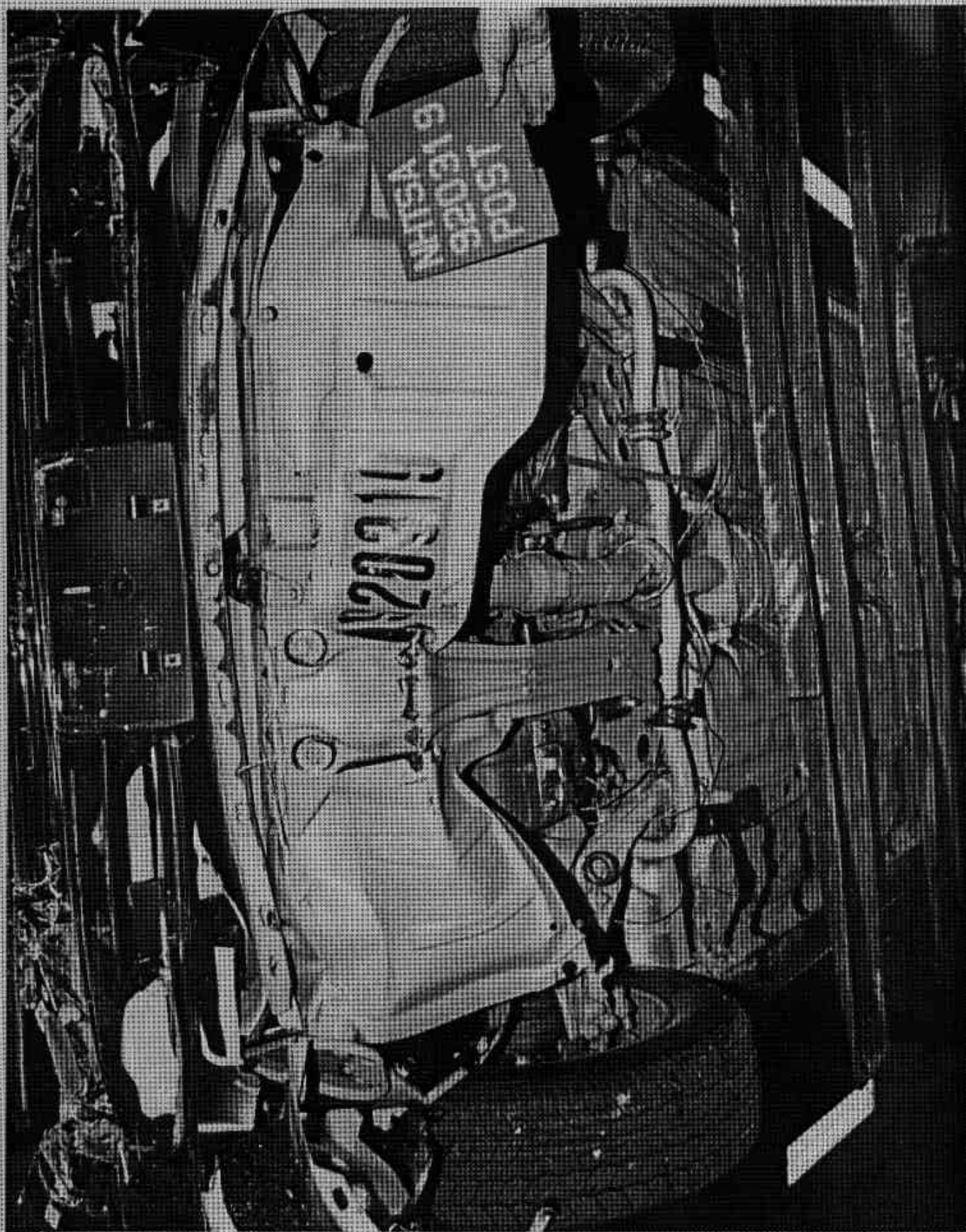


FIGURE A-23. POST-TEST FRONT UNDERBODY VIEW

A-24

920319

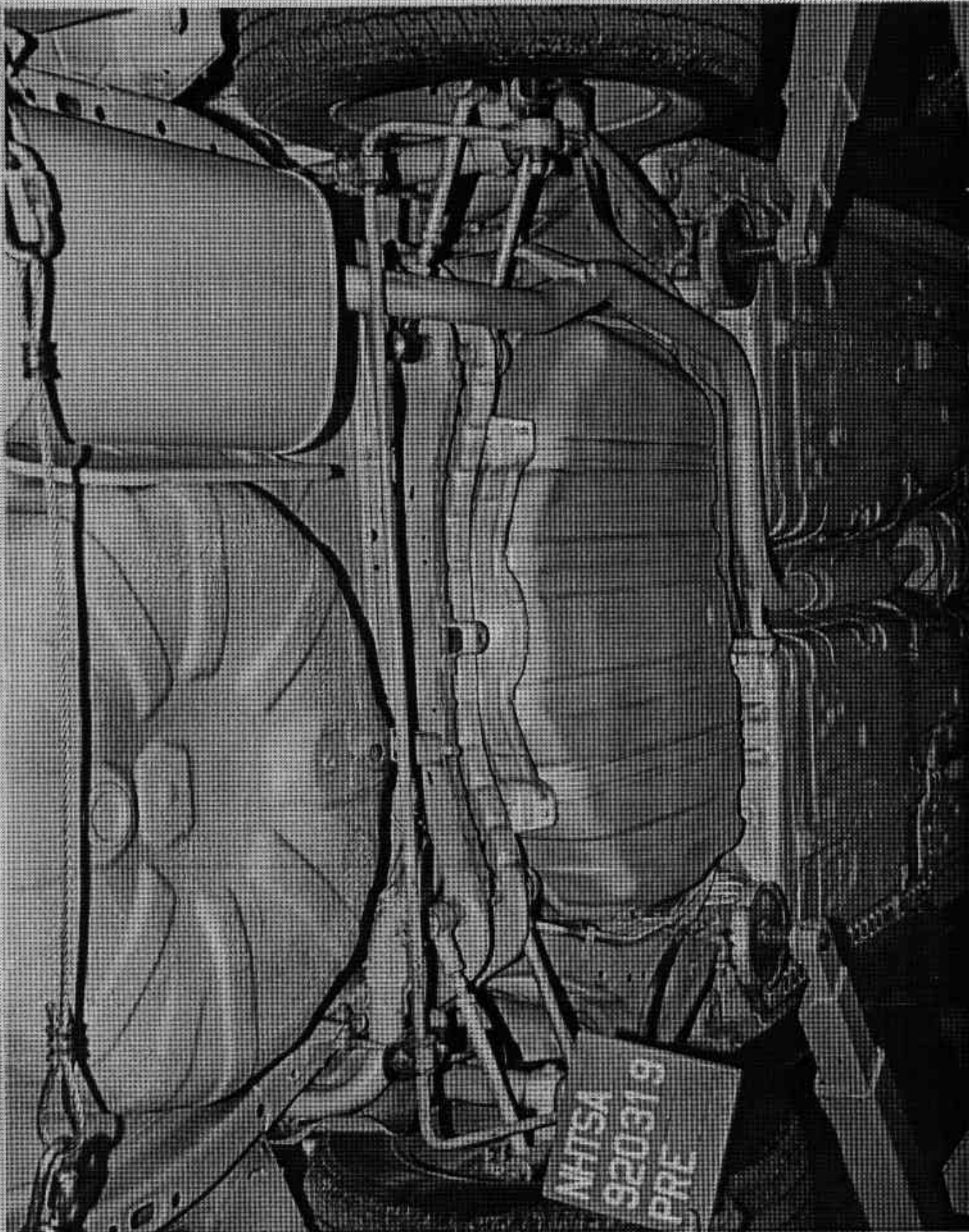


FIGURE A-24. PRE-TEST REAR UNDERBODY VIEW
A-25

920319

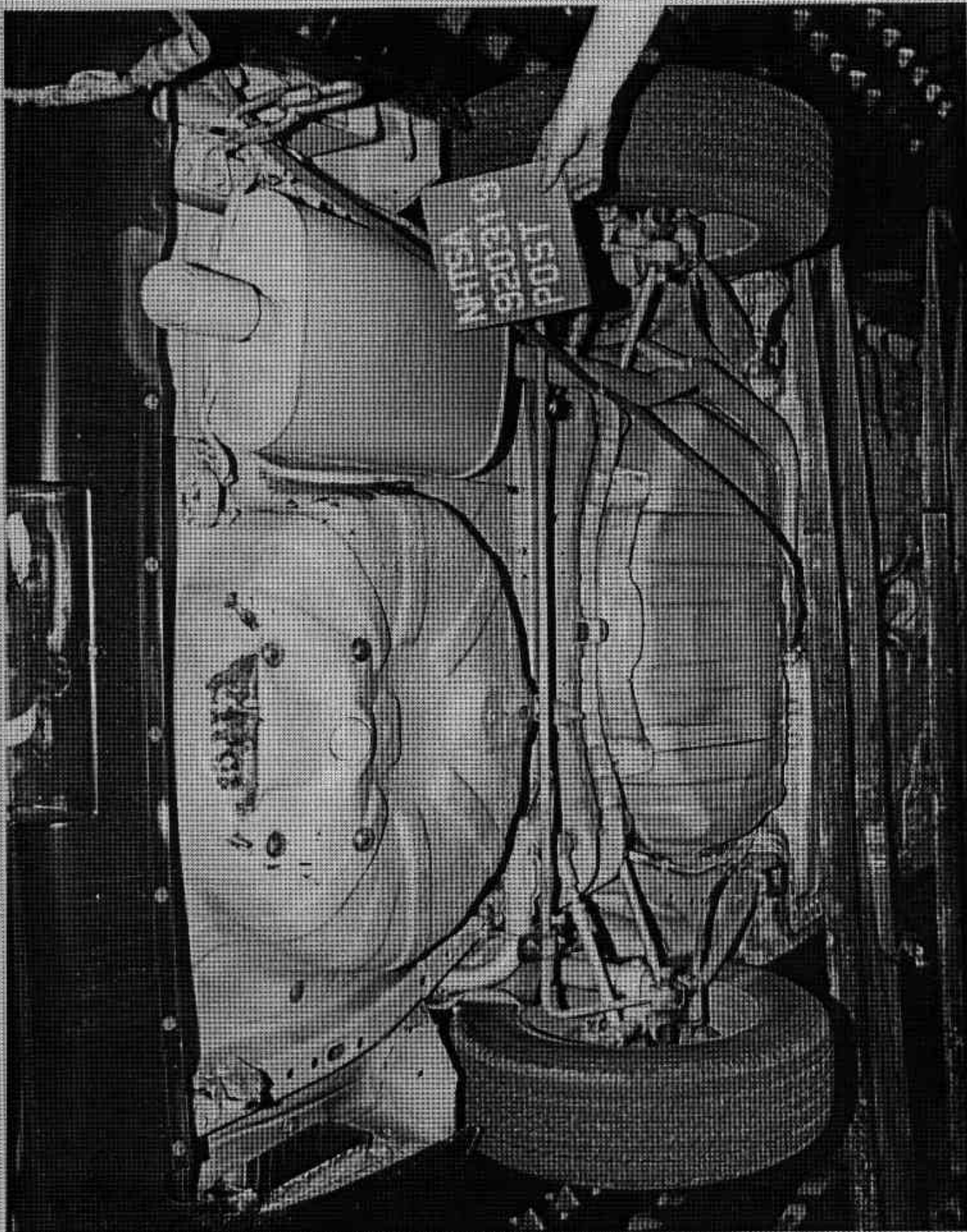


FIGURE A-25. POST-TEST REAR UNDERBODY VIEW

A-26

920319



FIGURE A-26, PRE-TEST DRIVER DUMMY POSITION VIEW

A-27

920319

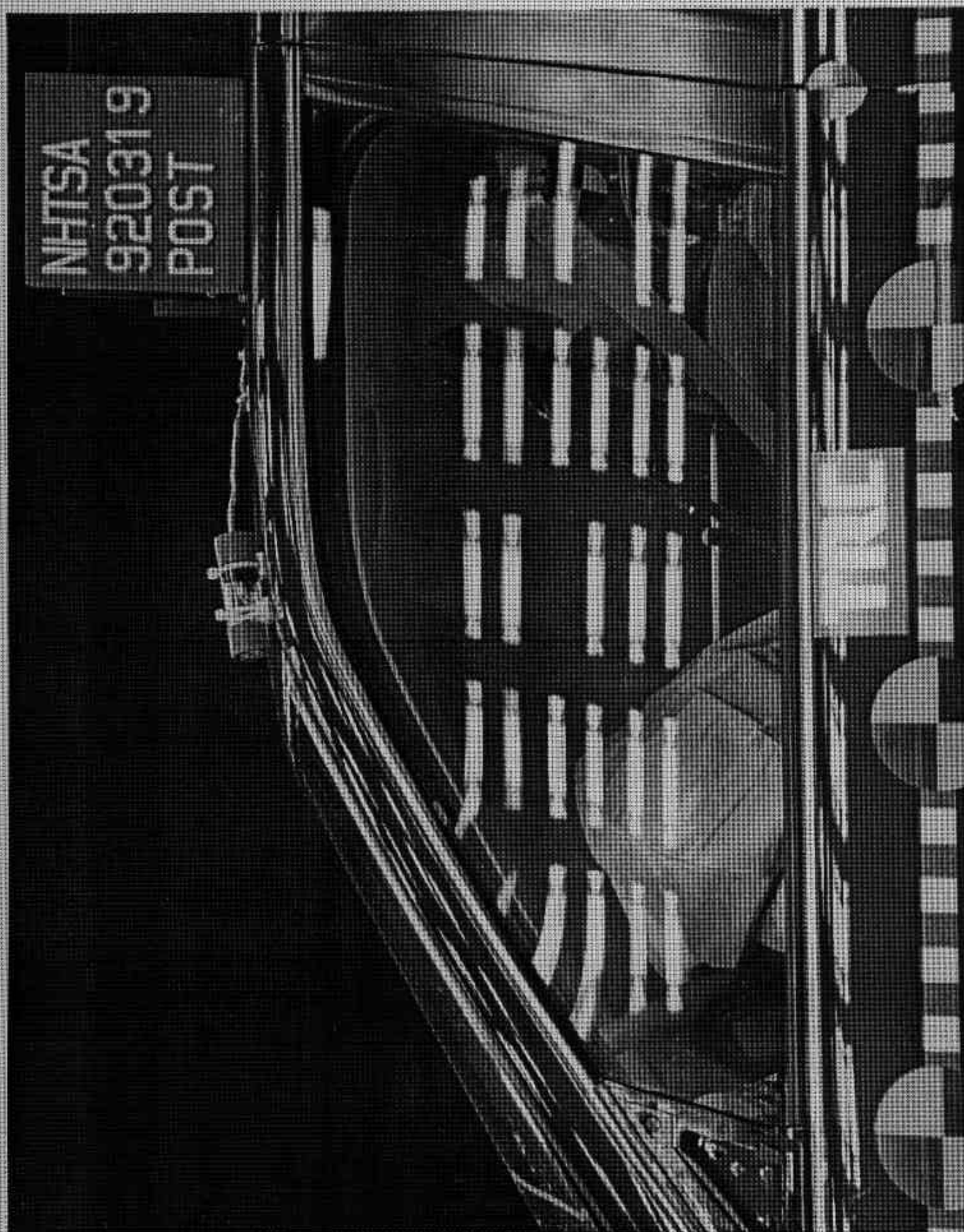


FIGURE A-27. POST-TEST DRIVER DUMMY POSITION VIEW



FIGURE A-28. PRE-TEST PASSENGER DUMMY POSITION VIEW

A-29

920319

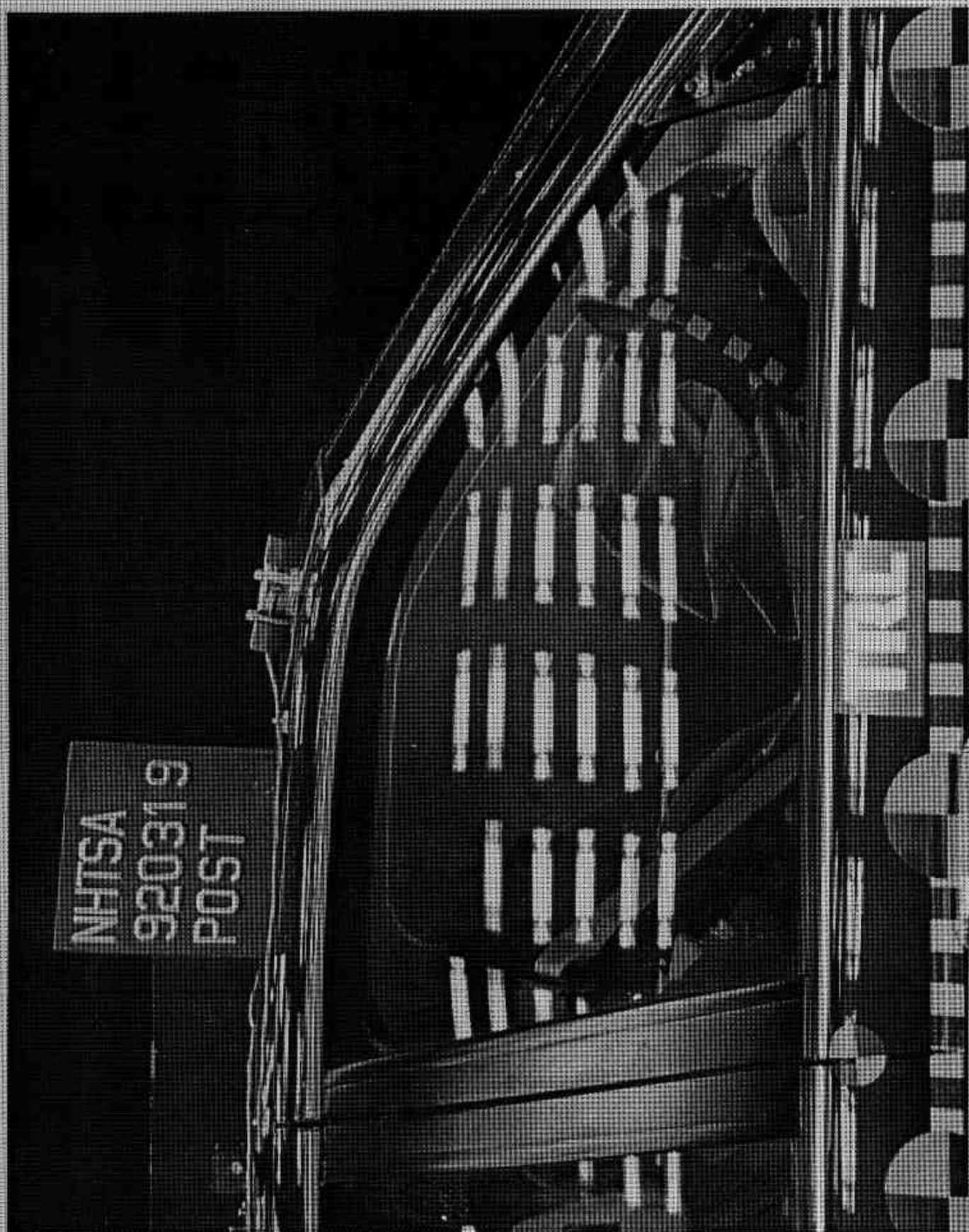


FIGURE A-29. POST-TEST PASSENGER DUMMY POSITION VIEW

A-30

920319

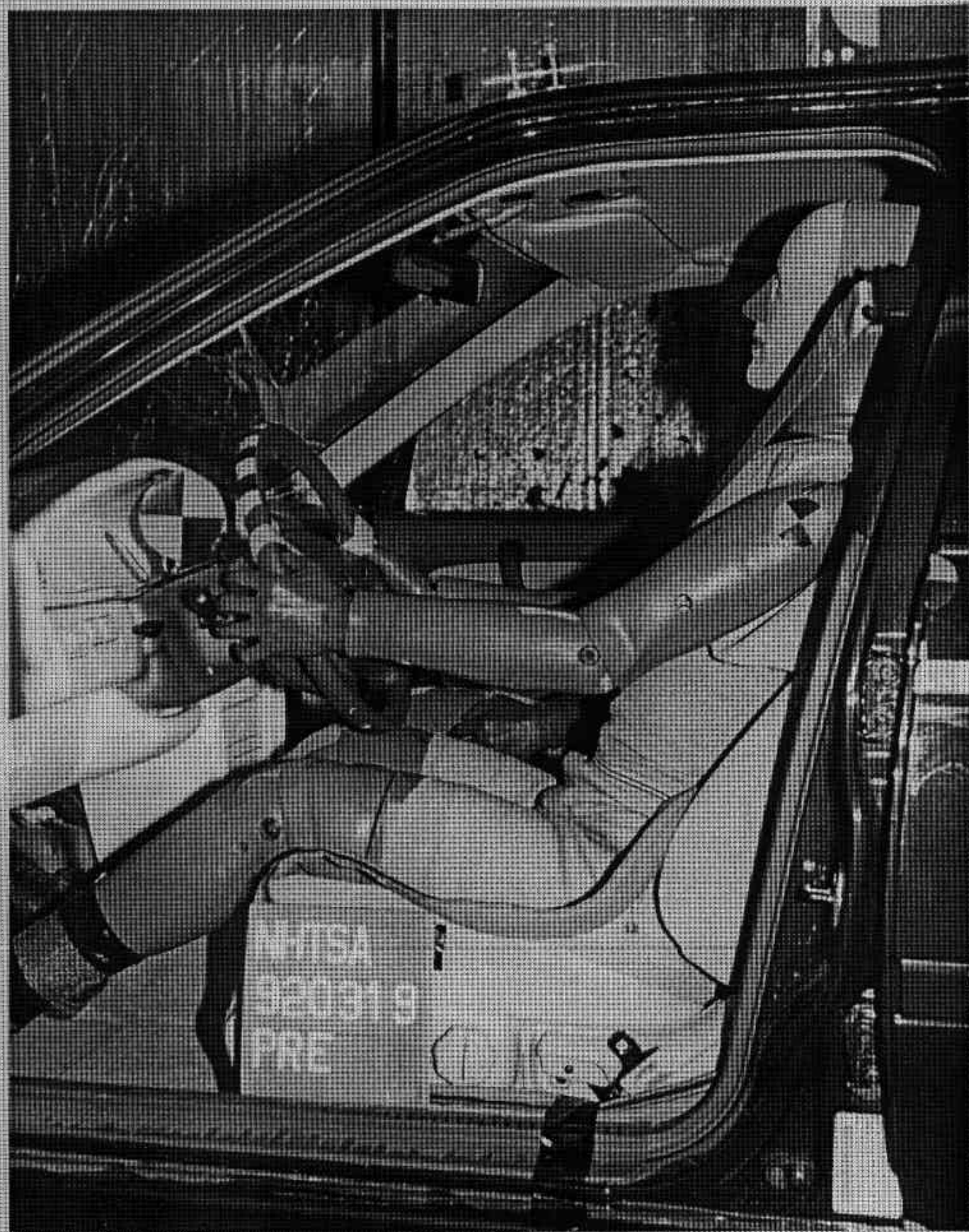


FIGURE A-30. PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1

A-31

920319



FIGURE A-31. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1

A-32

920319



FIGURE A-32. PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2

A-33

920319



FIGURE A-33. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2

A-34

920319



FIGURE A-34. PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 1
A-35 920319



FIGURE A-35. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 1

A-36

920319



FIGURE A-36. PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2

A-37

920319



FIGURE A-37. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2

A-38

920319

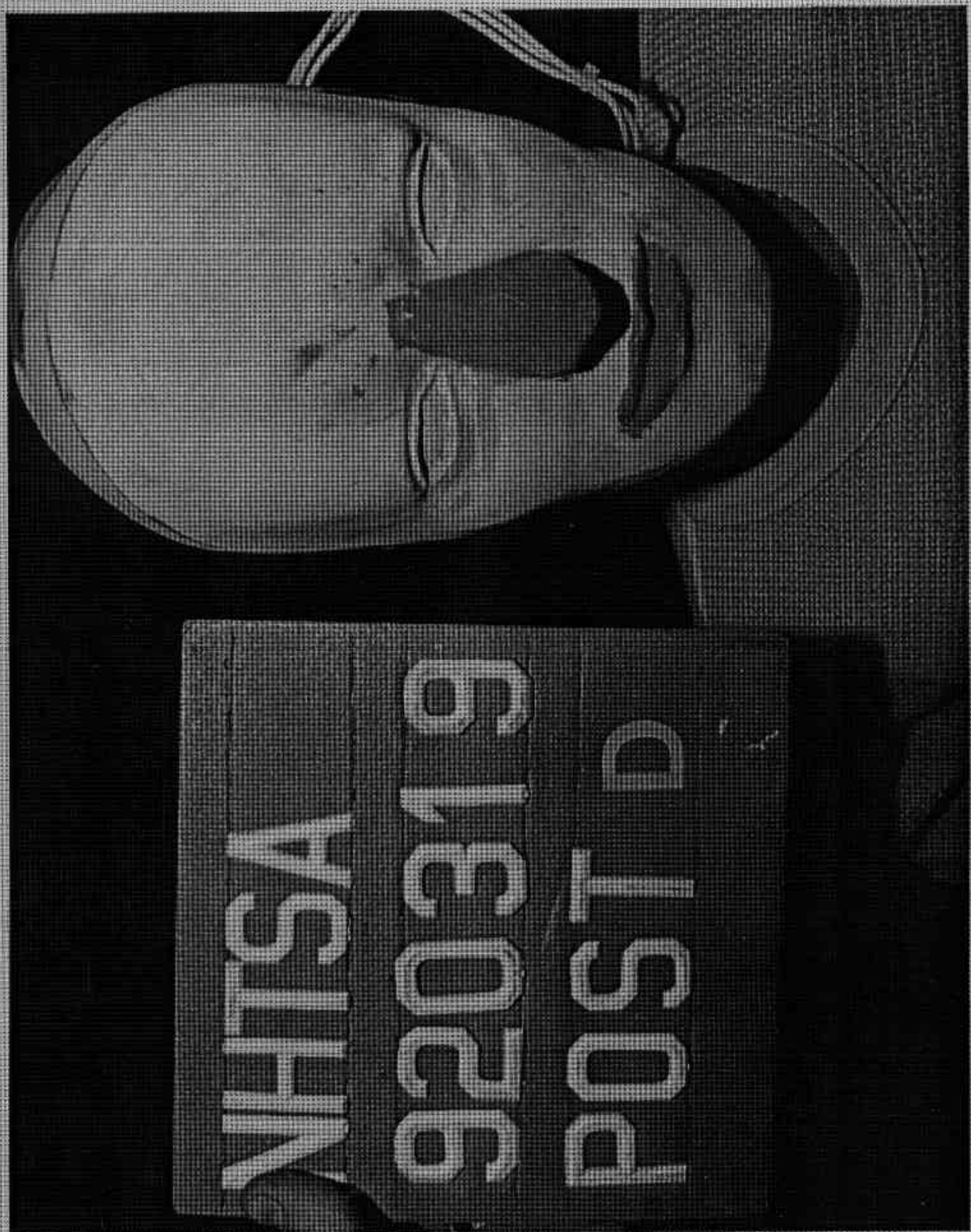


FIGURE A-38. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 1

A-39

920319



FIGURE A-39. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 2

A-40

920319



FIGURE A-40. POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 1

A-41

920319

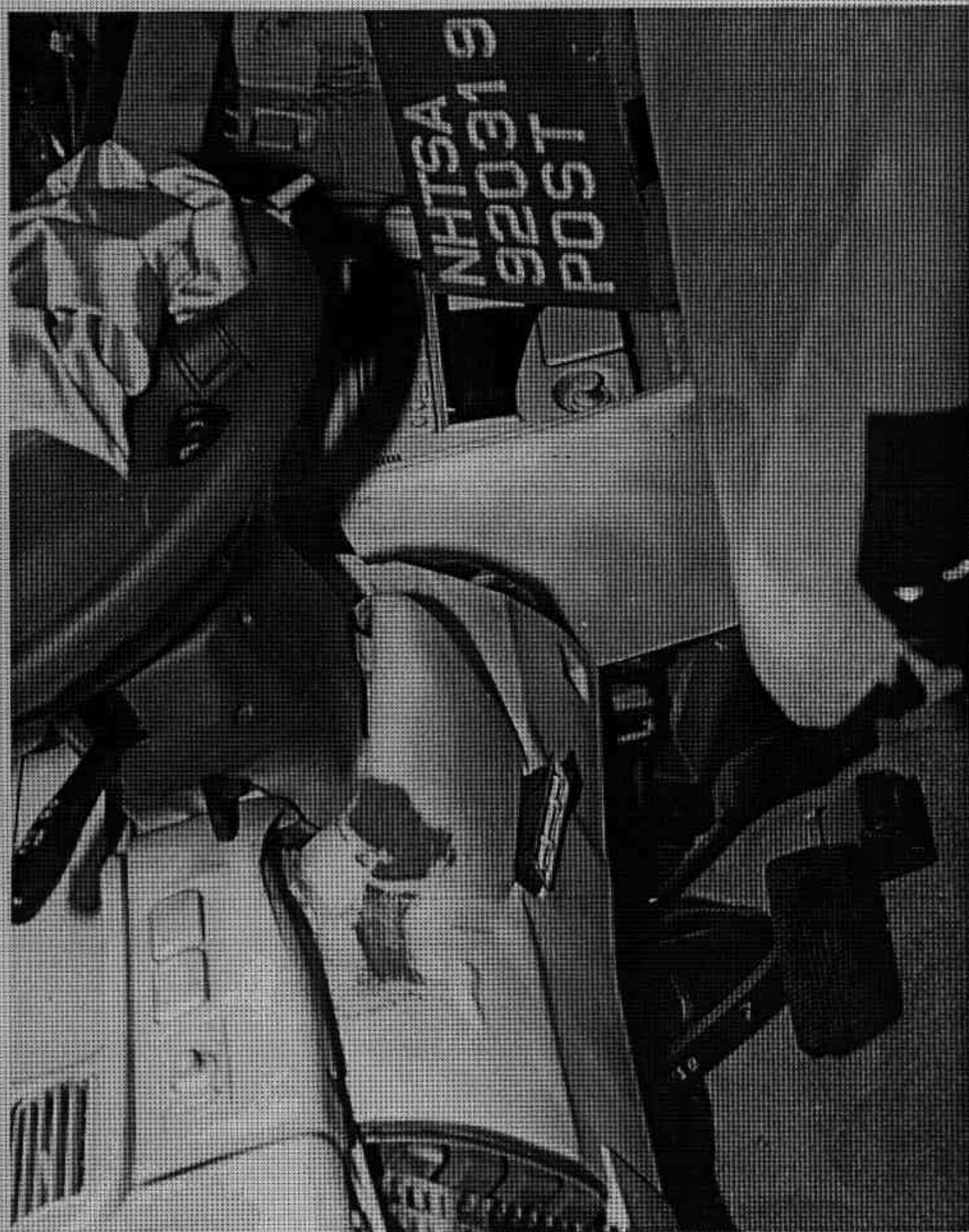


FIGURE A-41. POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 2

A-42

920319

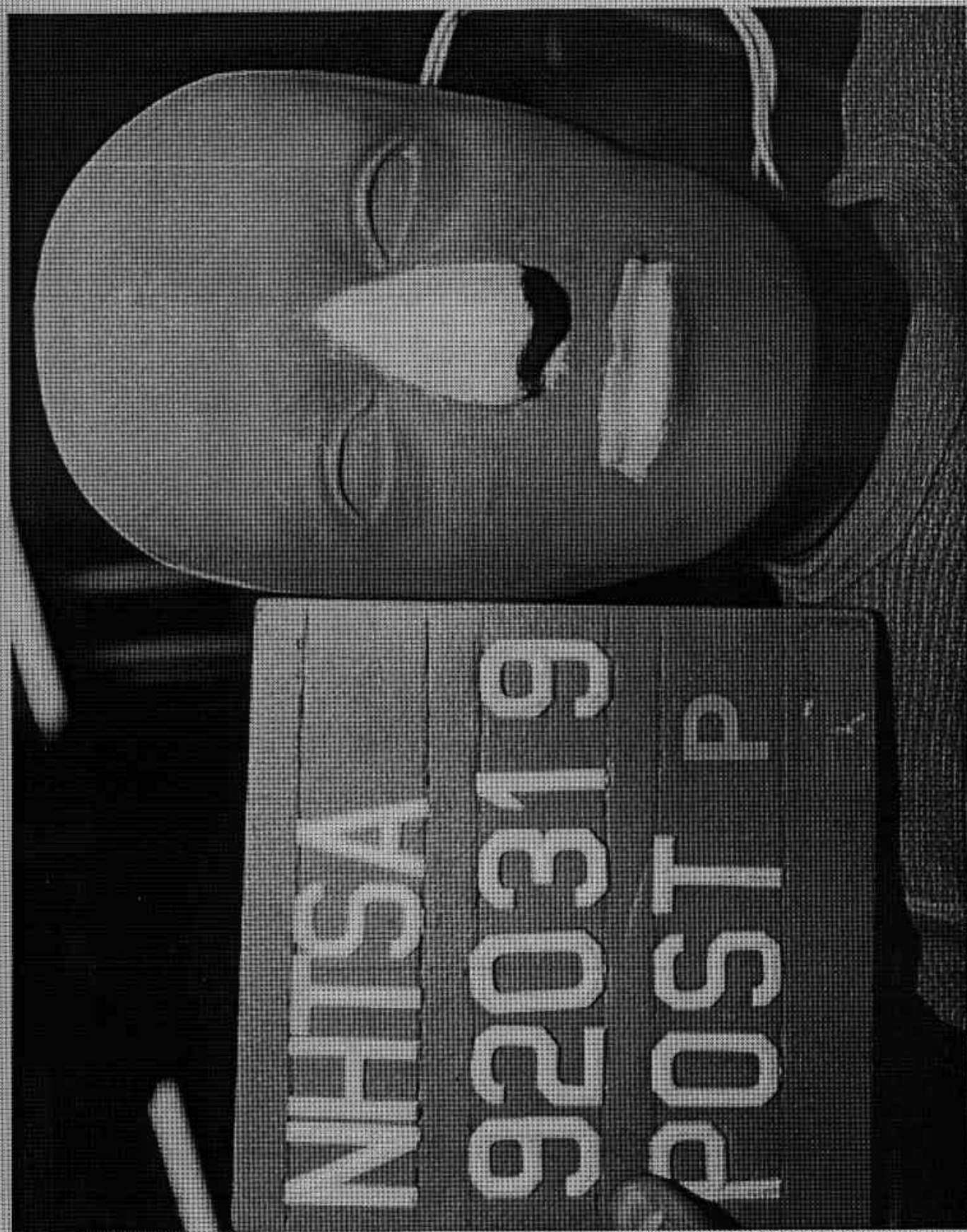


FIGURE A-42. POST-TEST PASSENGER DUMMY HEAD CONTACT - VIEW 1

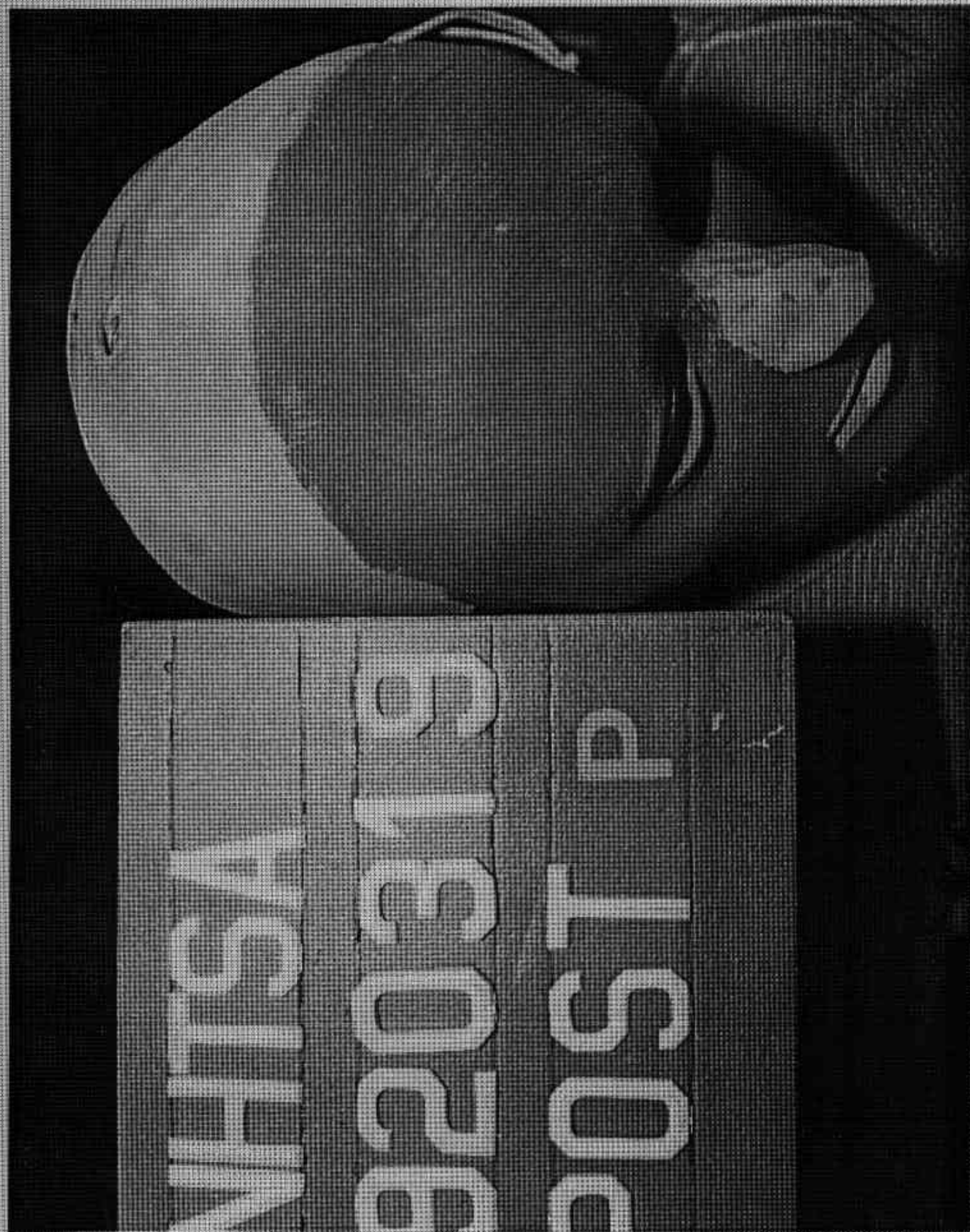


FIGURE A-43. POST-TEST PASSENGER DUMMY HEAD CONTACT - VIEW 2

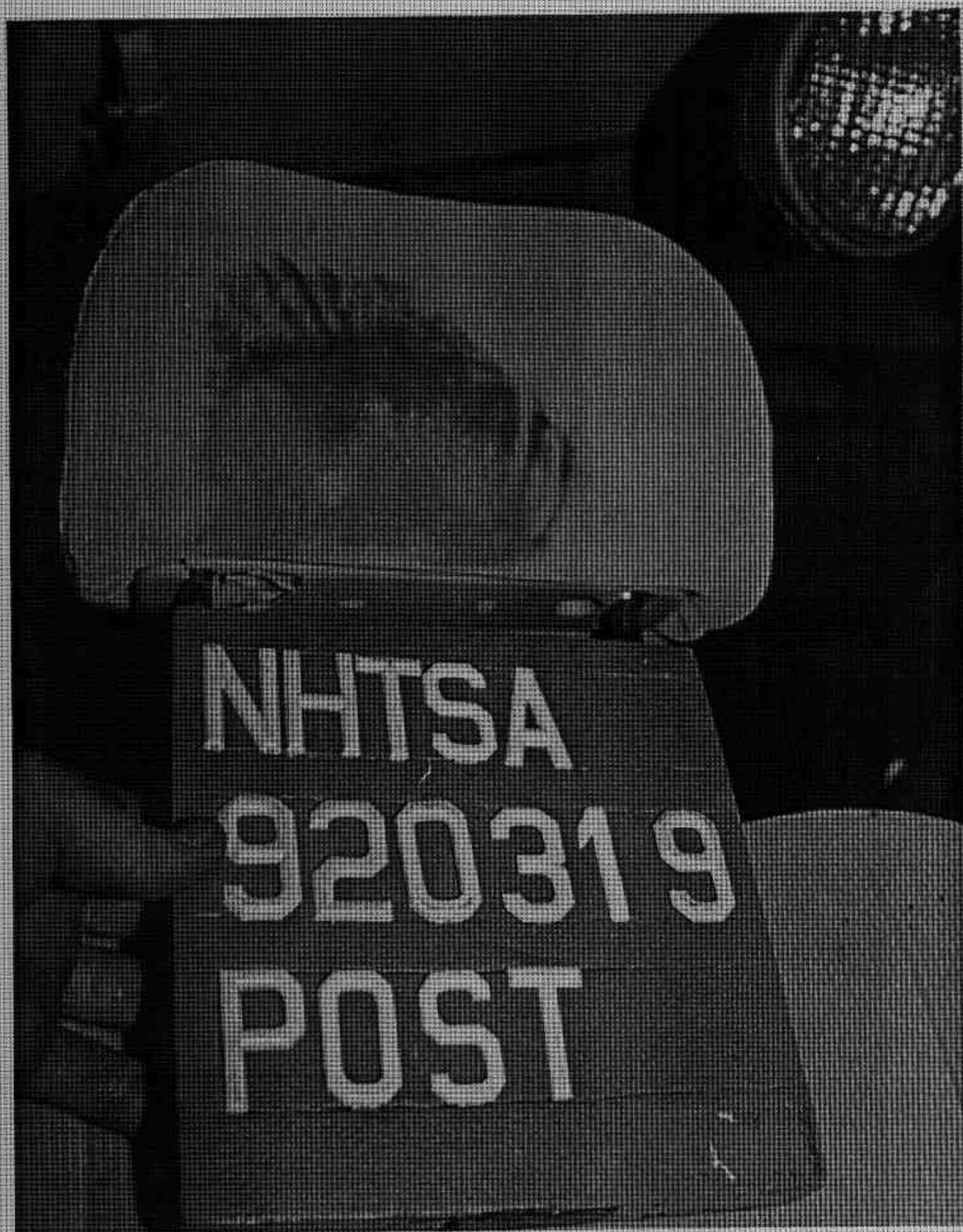


FIGURE A-44. POST-TEST PASSENGER DUMMY HEAD CONTACT - VIEW 3

A-45

920319



FIGURE A-45. POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 1

A-46

920319

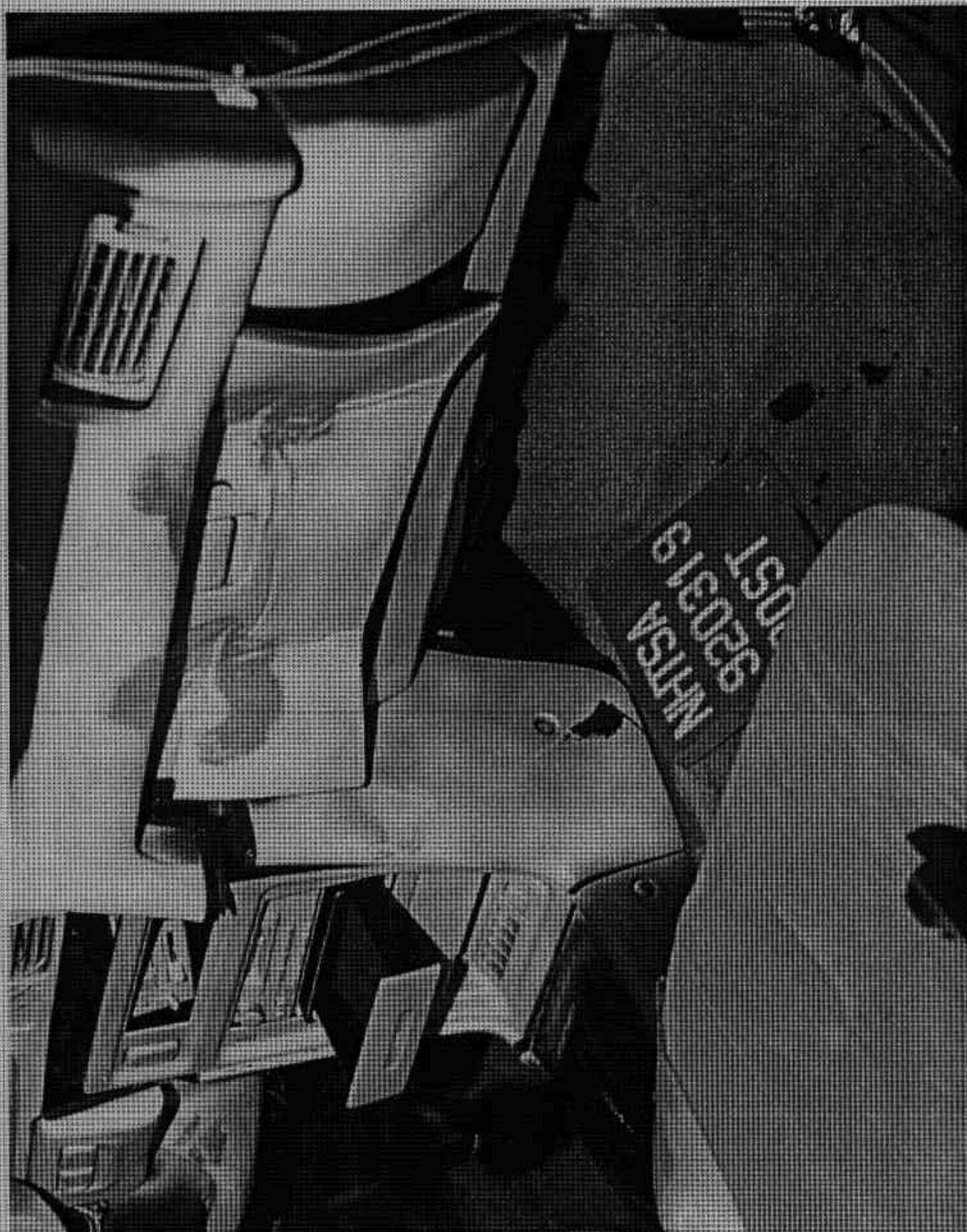


FIGURE A-46. POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 2

MFG BY NISSAN MOTOR CO., LTD.

DATE

11/91

GVWR

4167 LBS.

GAWR FR

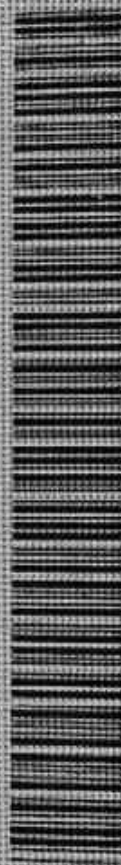
2315 LBS.

RR 2183 LBS.

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL
MOTOR VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION
STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE
SHOWN ABOVE.

JN1HJ01F1NT003548

PASSENGER CAR



JN1HJ01F1NT003548

FIGURE A-47. PRE-TEST VEHICLE CERTIFICATION LABEL VIEW

VEHICLE CAPACITY WEIGHT	8000 lb	SEATING CAPACITY	FRONT 2 AFTER 3	TOTAL 5
VEHICLE GROSS WEIGHT	10000 lb	NUMBER OF PLACES AVAILABLE	FRONT 2 AFTER 3	5
RECOMMENDED COLD TIRE INFLATION PRESSURE				
PRESSION DE GONFLEMENT RECOMMANDÉE DES PNEUS FROIDS				
TIRE SIZE		FRONT PSI	REAR PSI	
DIVISIONS		AVANT (kg/cm ²)	ARRIÈRE (kg/cm ²)	
P205/65 R15 82H		29 (200)	29 (200)	
SPARE TIRE		FRONT PSI	REAR PSI	
SIDE OF BODY		AVANT (kg/cm ²)	ARRIÈRE (kg/cm ²)	
T125/70 D18		60 (420)	60 (420)	
DO NOT USE IN EXCESS OF 50 MPH (80 km/h)				
NE PAS UTILISER AU-DELÀ DE 80 km/h				
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION				
CONSULTEZ LE MANUEL D'UTILISATION POUR PLUS D'INFORMATIONS				
UTILISATION À UNE VITESSE MAX 80 km/h				
POUR LES DÉTAILS DE RÉFÉRENCE AU MANUEL DE CONDUCTEUR				

FIGURE A-48. PRE-TEST VEHICLE RECOMMENDED TIRE PRESSURE LABEL VIEW

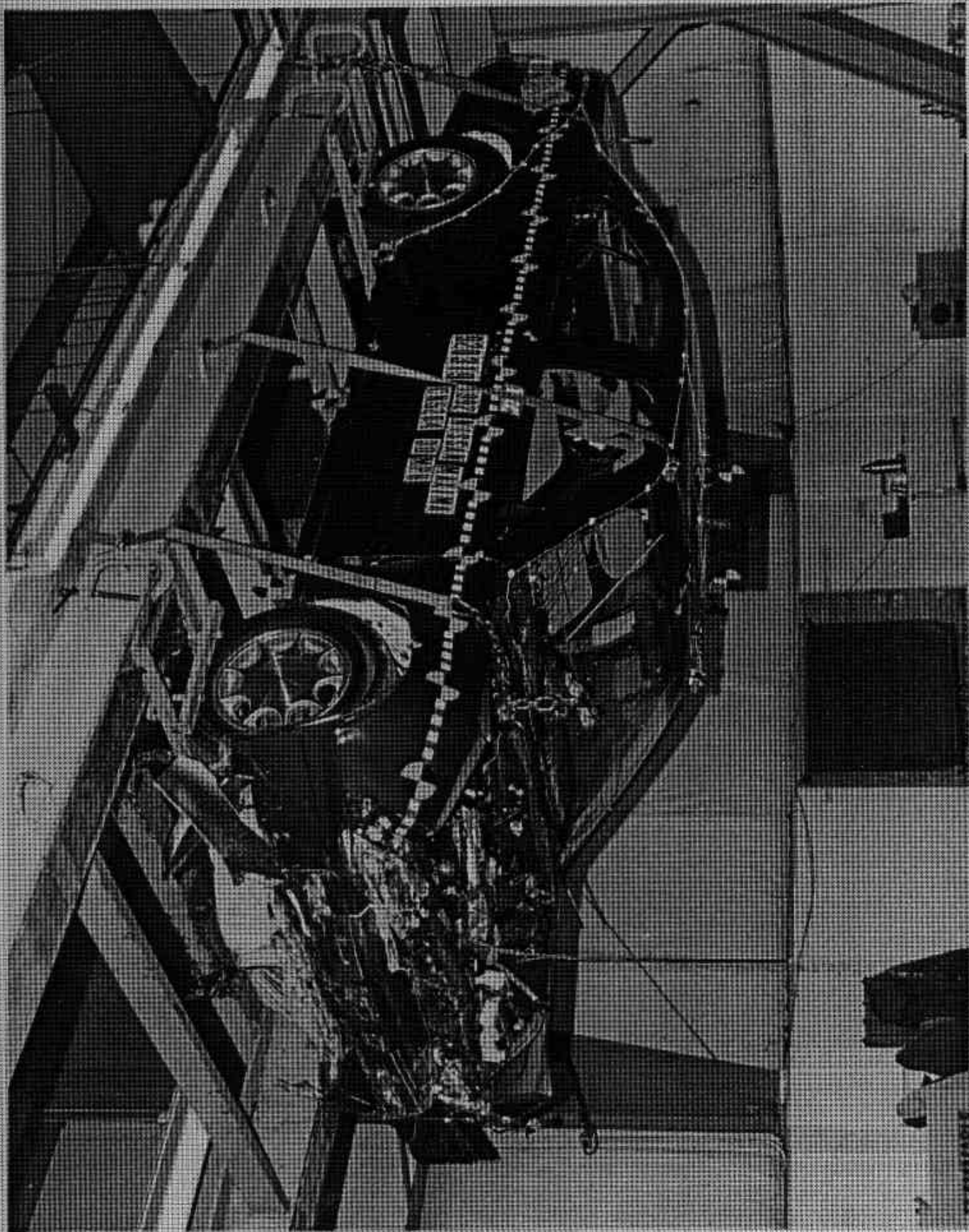


FIGURE A-49. POST-TEST VEHICLE ON STATIC ROLLOVER MACHINE VIEW

A-50

920319

APPENDIX B

DATA PLOTS

TRC 920319

200 COMPLIANCE TESTING

92079

HEDXG1

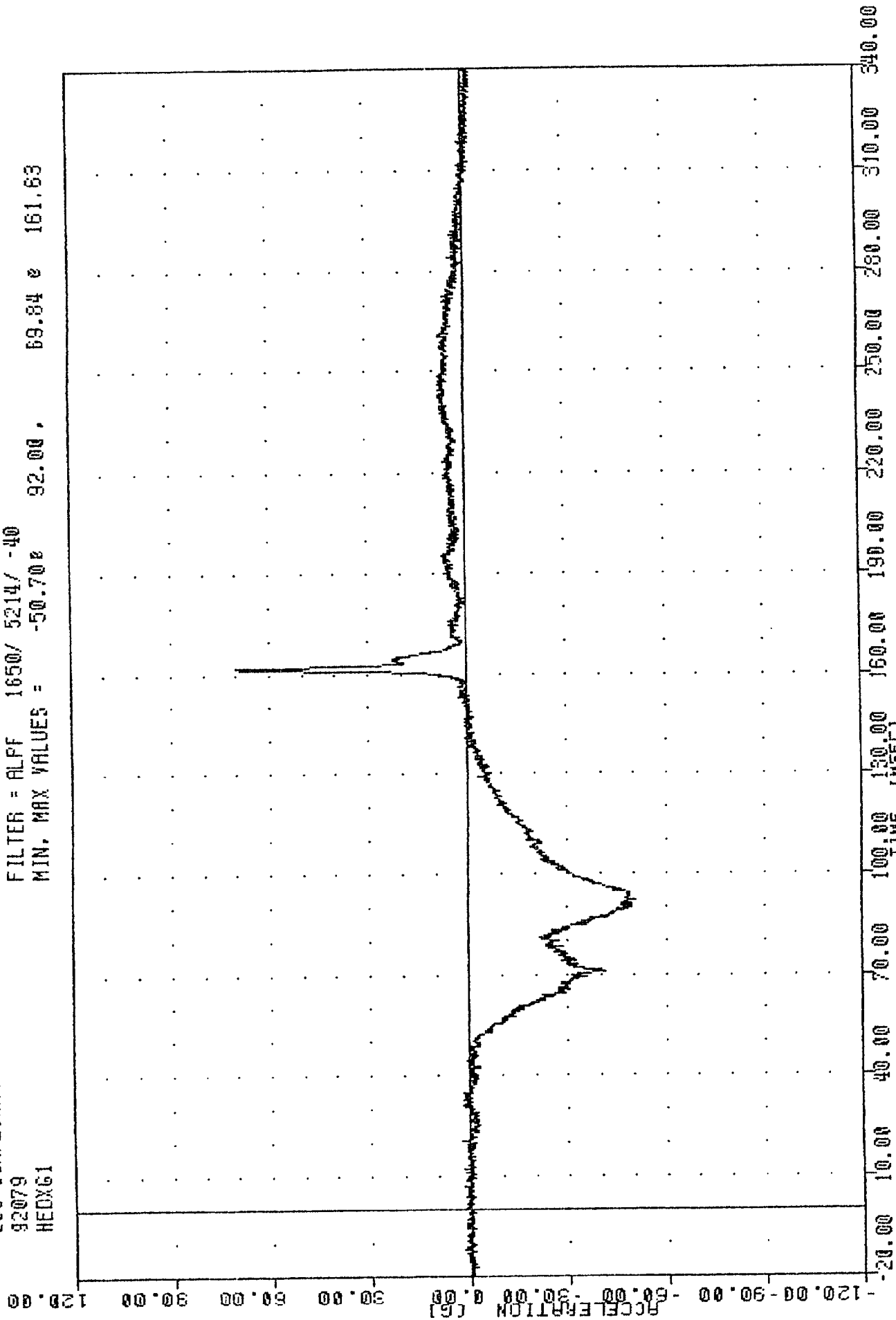
FILTER = ALPF 1650/ 5214/ -40

MIN. MAX VALUES = -50.70%

92.00

69.84

161.63



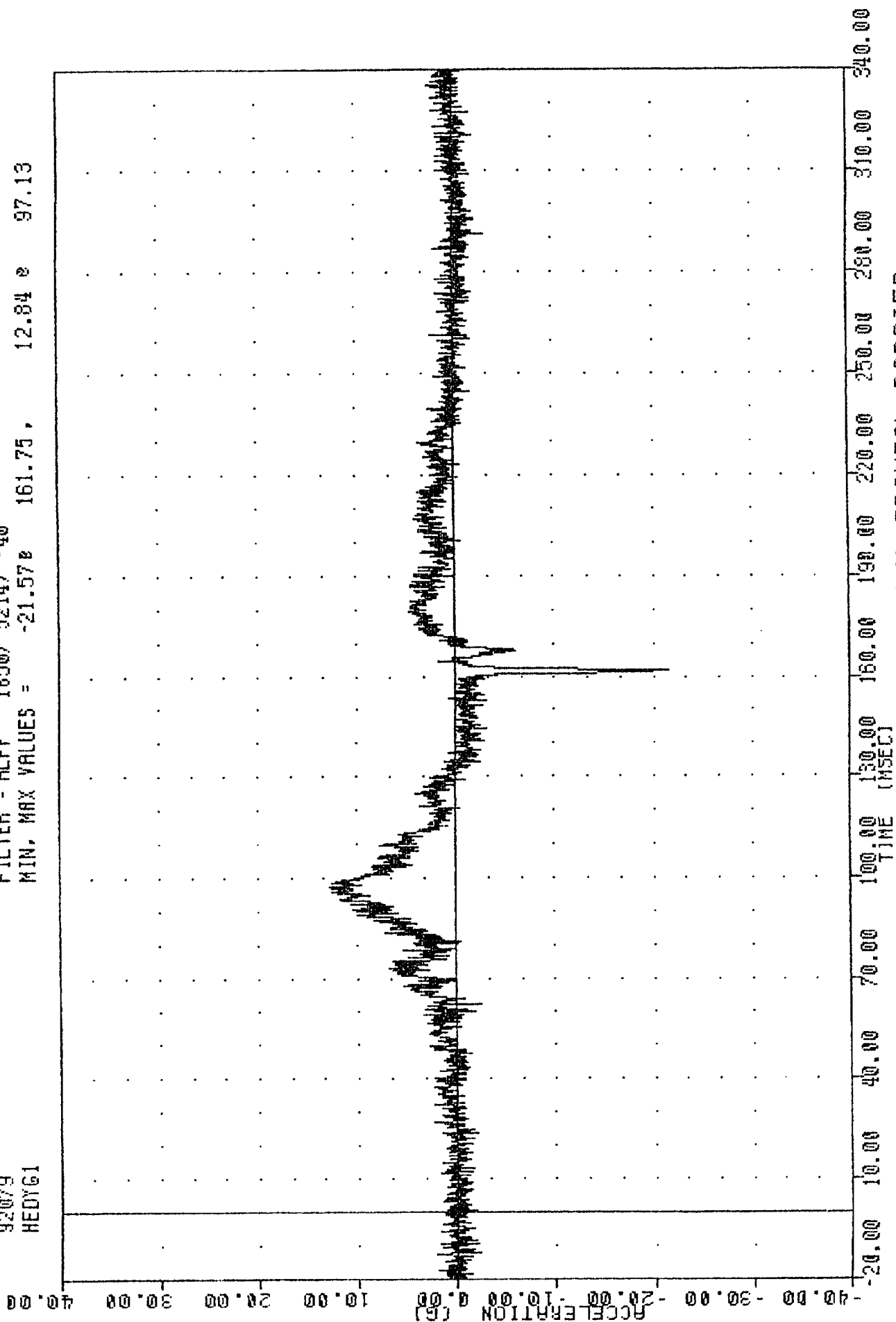
B-2

920319

1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
DRIVER HEAD X-AXIS ACCELERATION

TRC 920319
308 COMPLIANCE TESTING
92079
HEDYG1

FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -21.57 161.75, 12.84 97.13



B-3

920319

1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
DRIVER HEAD Y-AXIS ACCELERATION

TRC 920319

208 COMPLIANCE TESTING

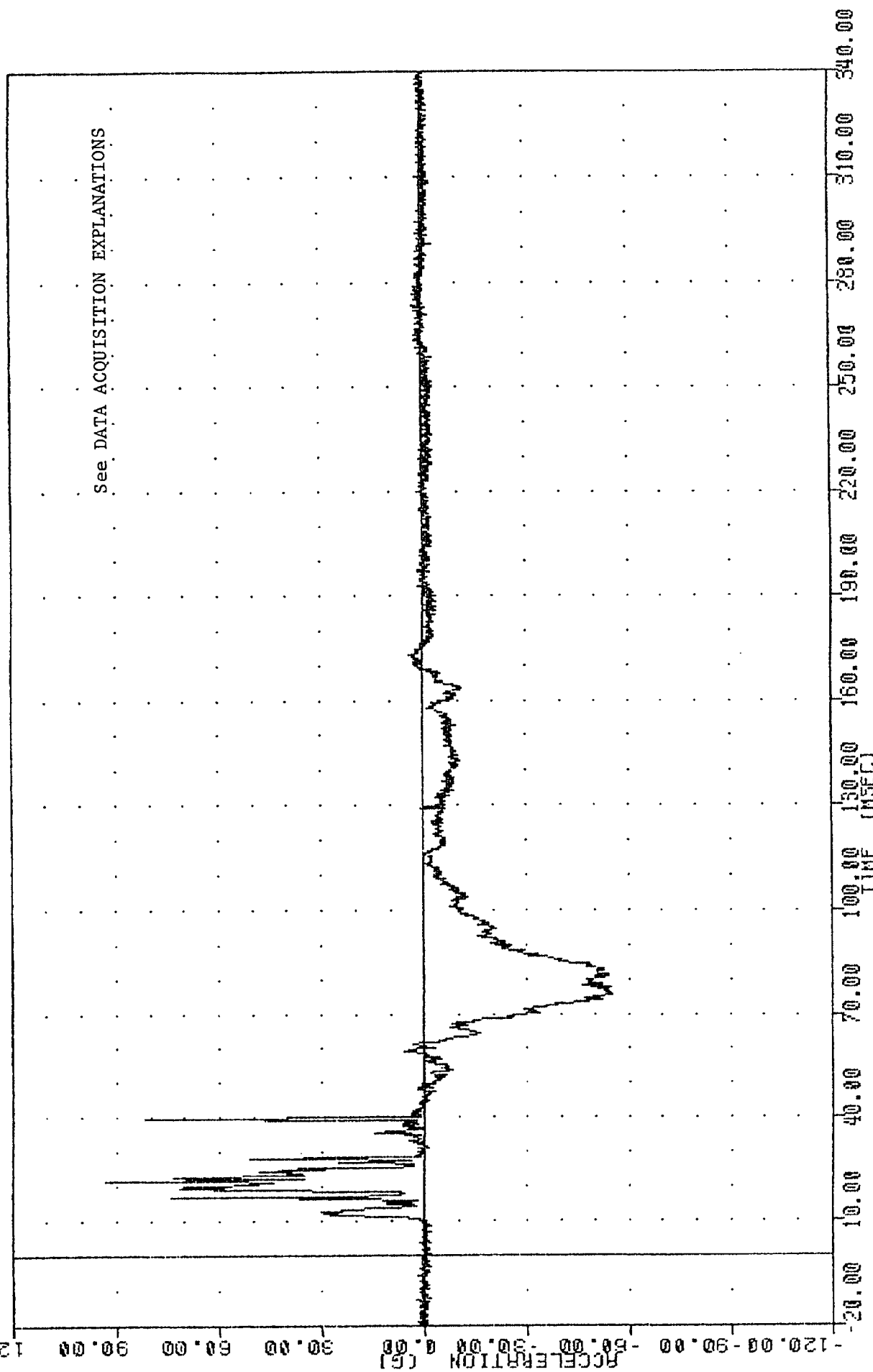
92079

HEDIG1

FILTER = ALPF 1650/ 5214/ -40

MIN. MAX VALUES = -55.210

92.84 21.63



See DATA ACQUISITION EXPLANATIONS

1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
DRIVER HEAD Z-AXIS ACCELERATION

TRC 920319

208 COMPLIANCE TESTING

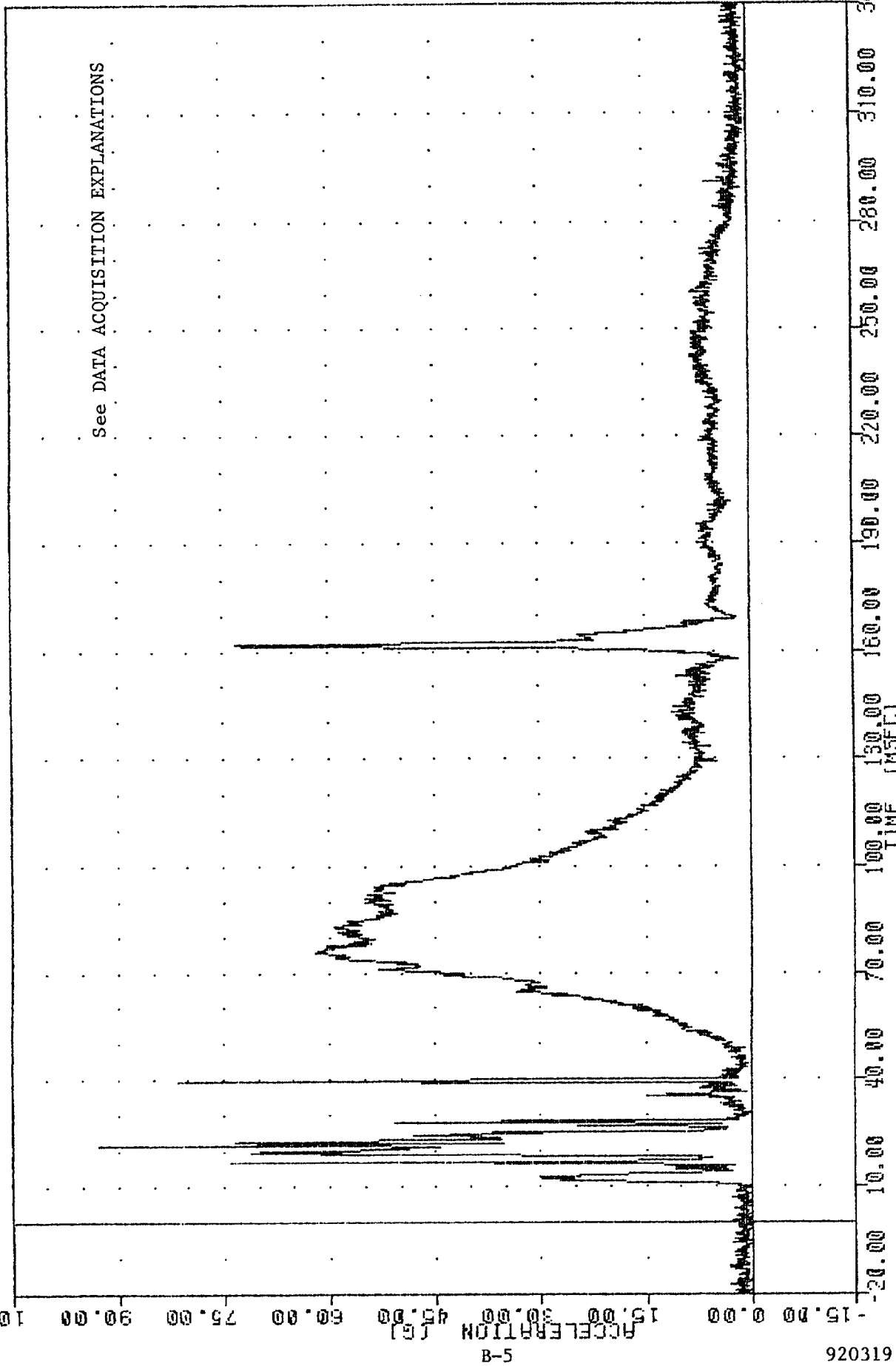
92079

HEAD61

FILTER = ALPF 1650/ 5214/ -40

MIN. MAX VALUES = 0.13g

-6.63, 92.85 g 21.63



TRC , 920319

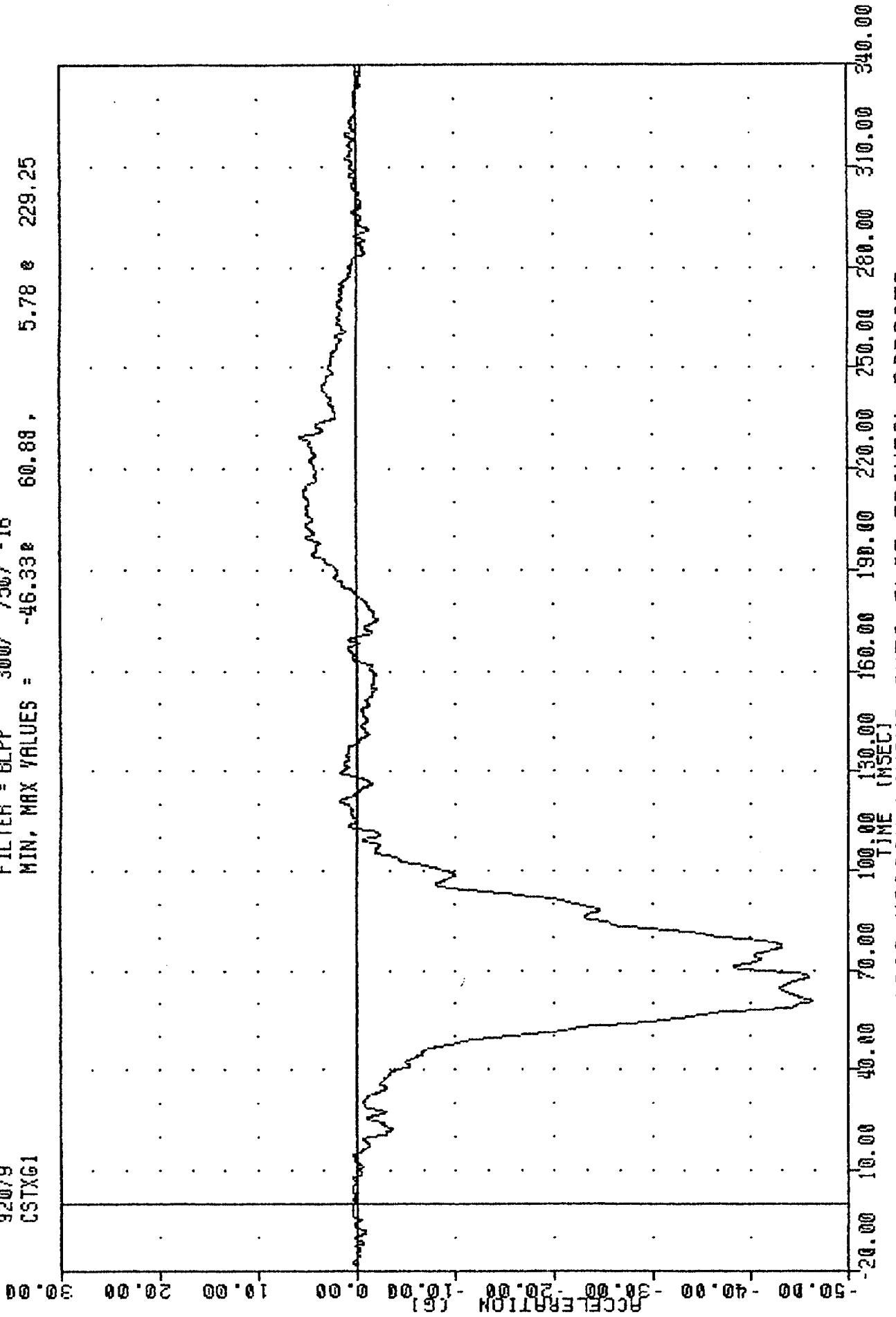
208 COMPLIANCE TESTING

92079

CSTXG1

FILTER = BLPP 300/ 750/ -16

MIN, MAX VALUES = -46.33 60.88 , 5.78 229.25



TRC 920319

200 COMPLIANCE TESTING

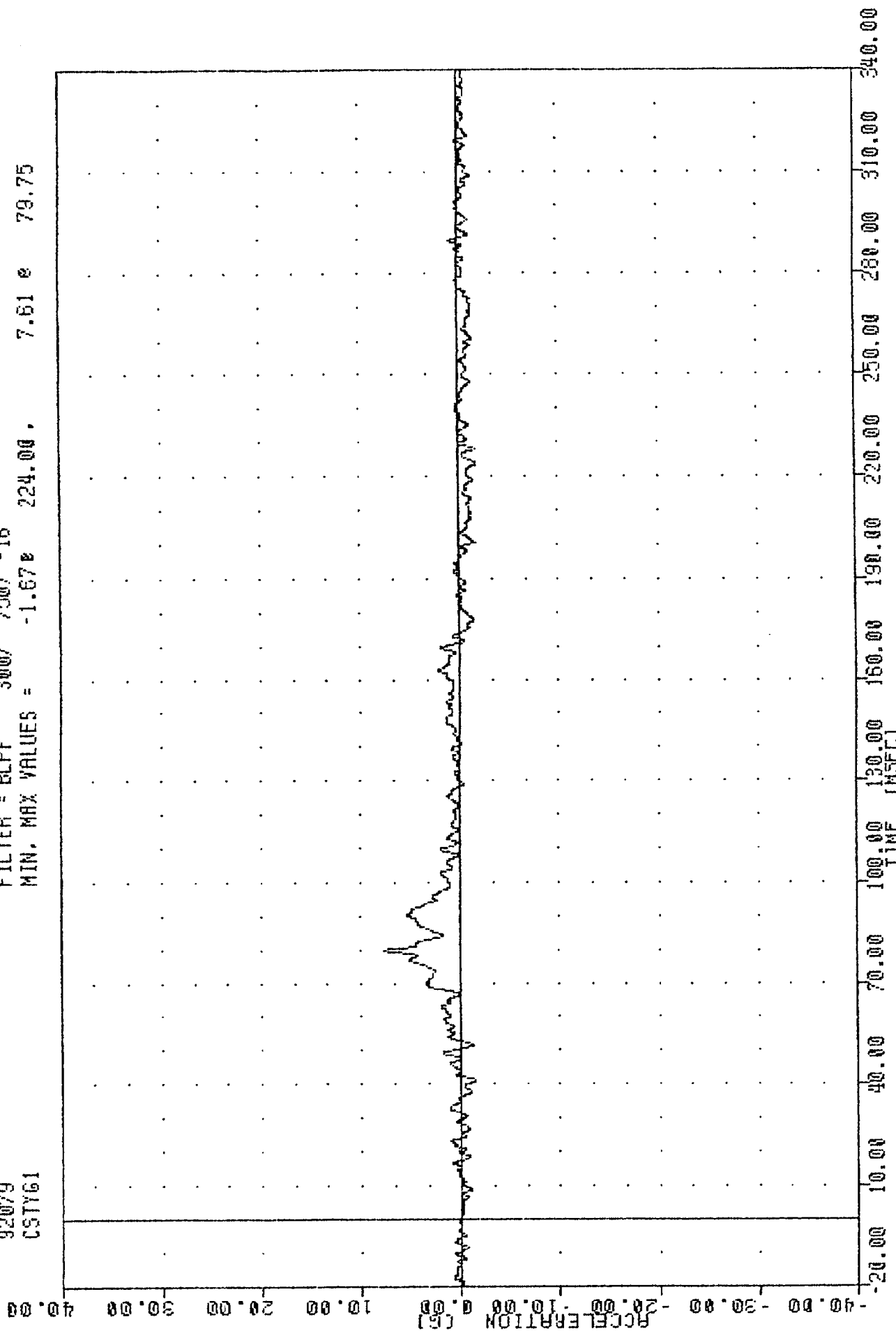
92079

CSTY61

FILTER = BLPP 300/ 750/ -16

MIN. MAX VALUES = -1.67 224.00

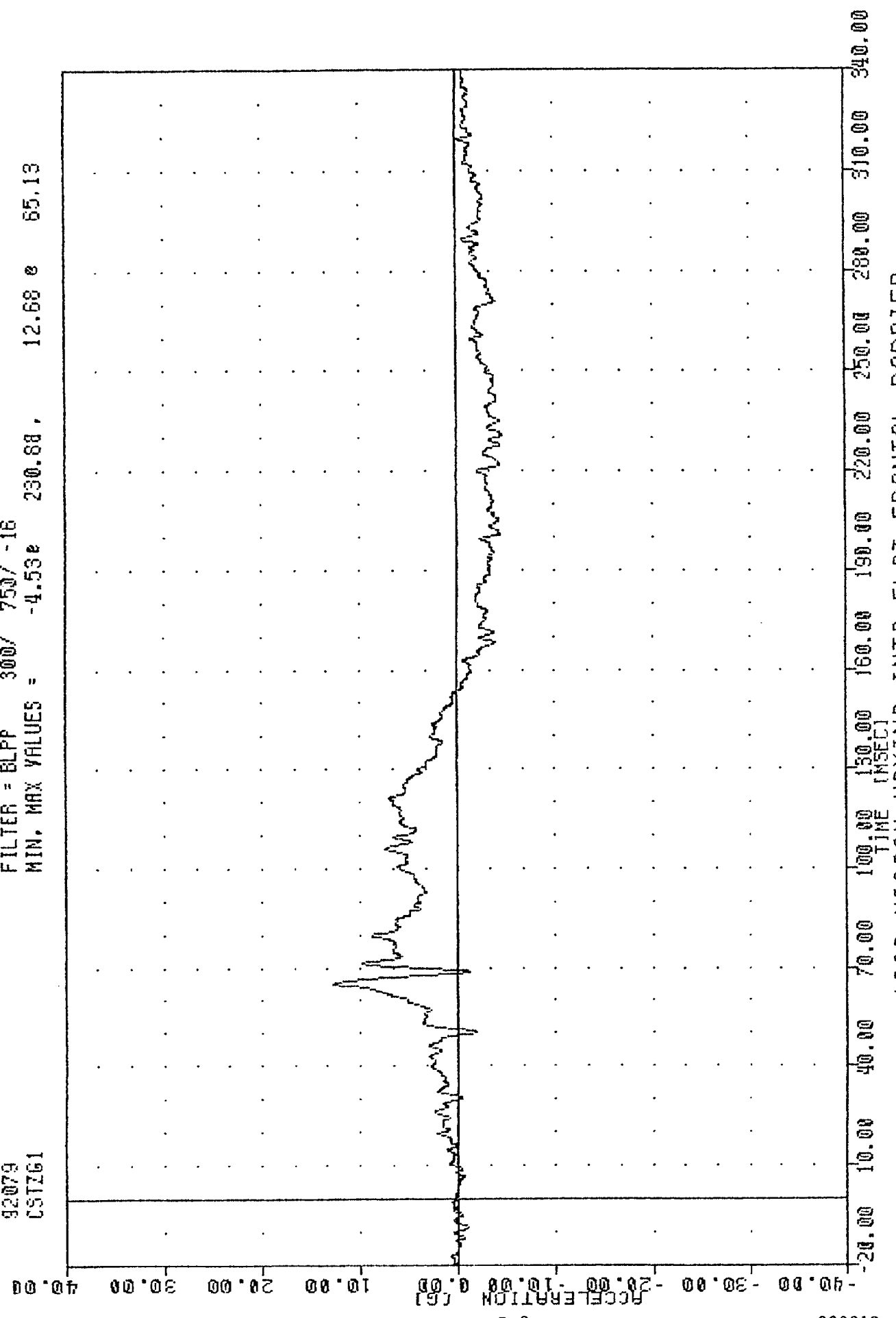
7.61 e 79.75



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
DRIVER CHEST Y-AXIS ACCELERATION

TRC 920319
 200 COMPLIANCE TESTING
 92079
 CSTIG1

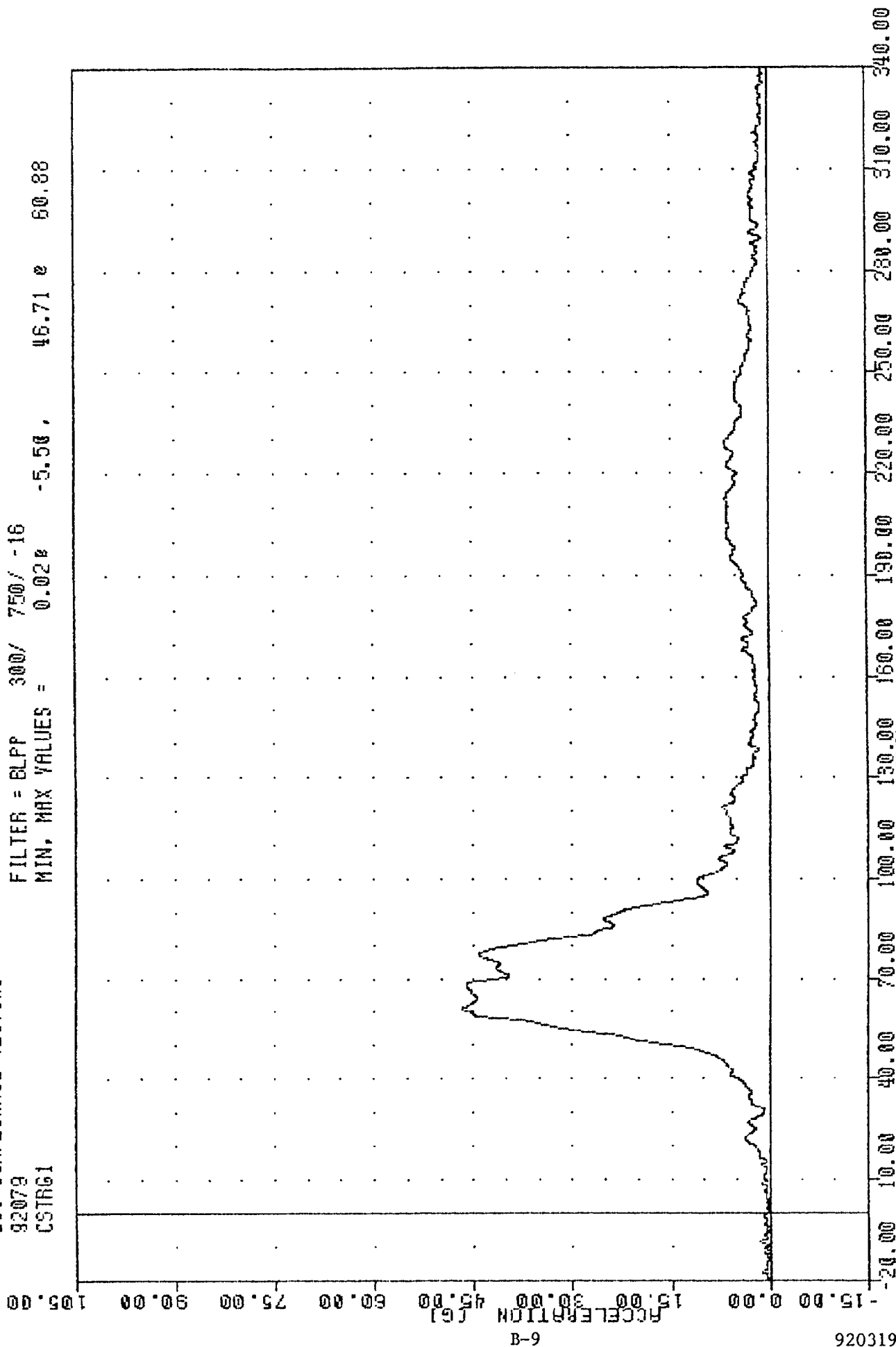
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -4.53e 230.68, 12.68 e 65.13



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
 DRIVER CHEST Z-AXIS ACCELERATION

TRC 920319
 200 COMPLIANCE TESTING
 92079
 CSTRG1

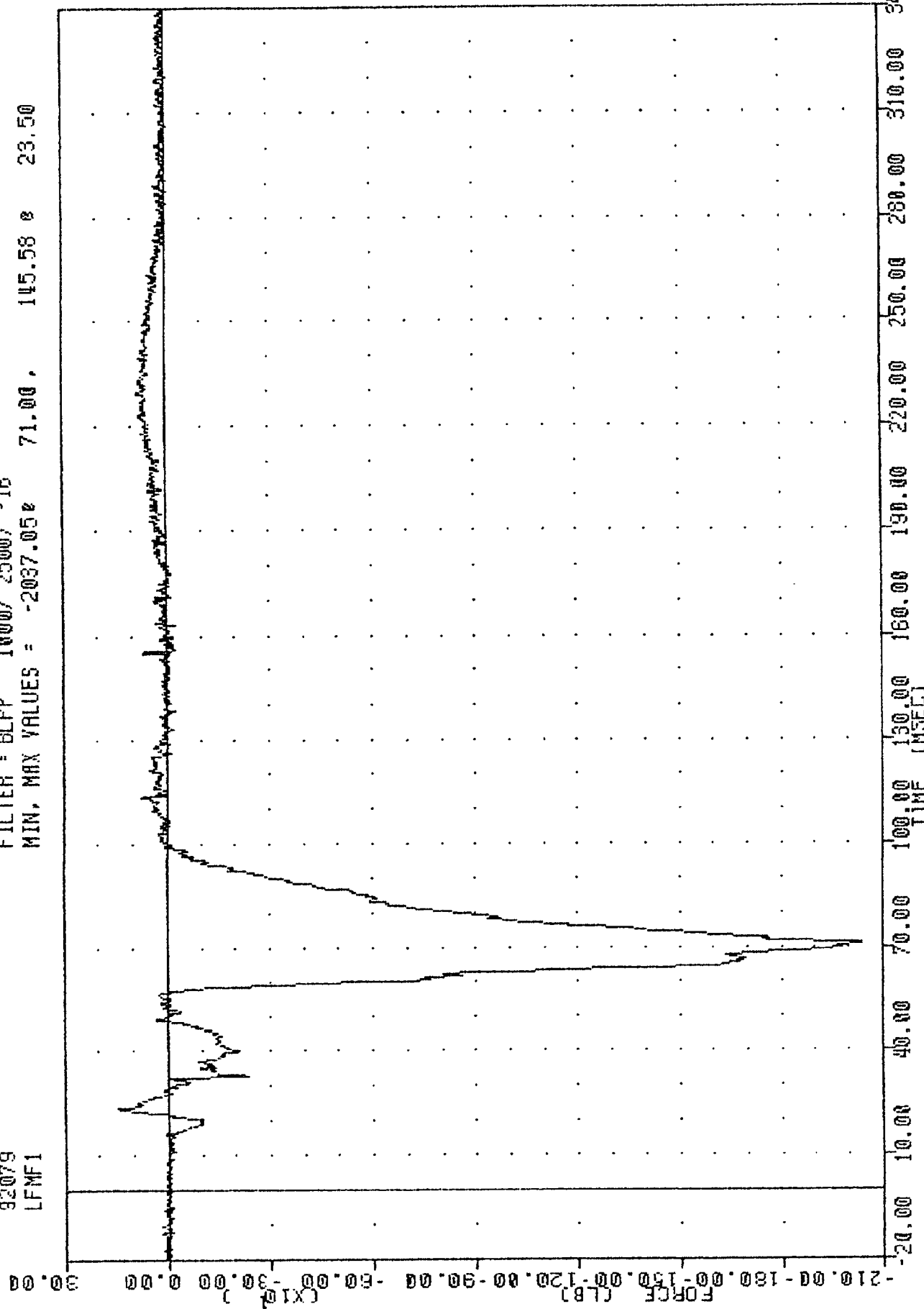
FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -5.50 , 46.71 @ 60.88



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
 DRIVER CHEST RESULTANT ACCELERATION

HHC
 200 COMPLIANCE TESTING
 92079
 LFMF1

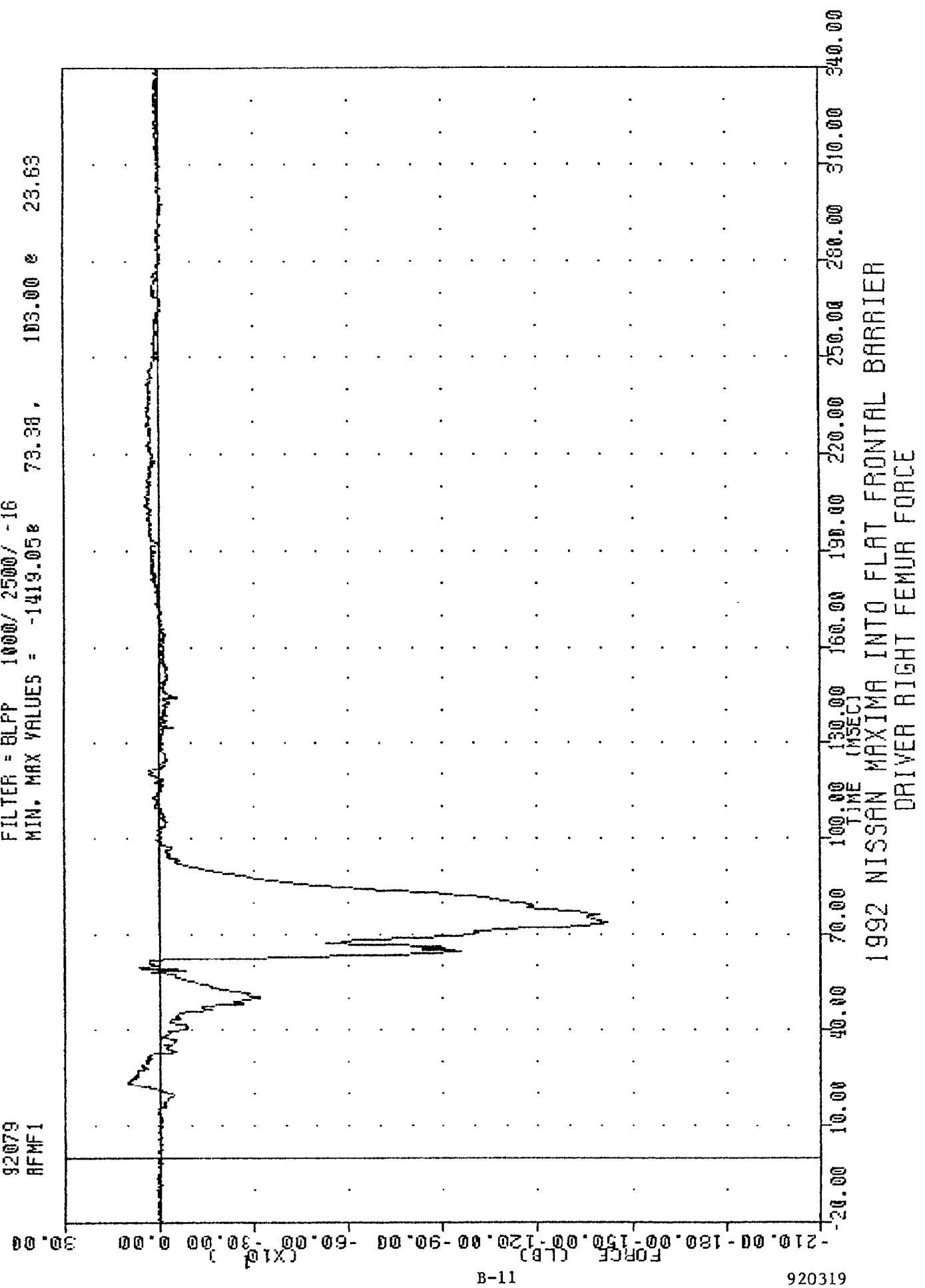
FILTER = BLPP 1000/ 2500/ -16
 MIN, MAX VALUES = -2037.050 71.00, 145.58 0 23.50



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
 DRIVER LEFT FEMUR FORCE

TRC 920319
208 COMPLIANCE TESTING
92079
AFMF1

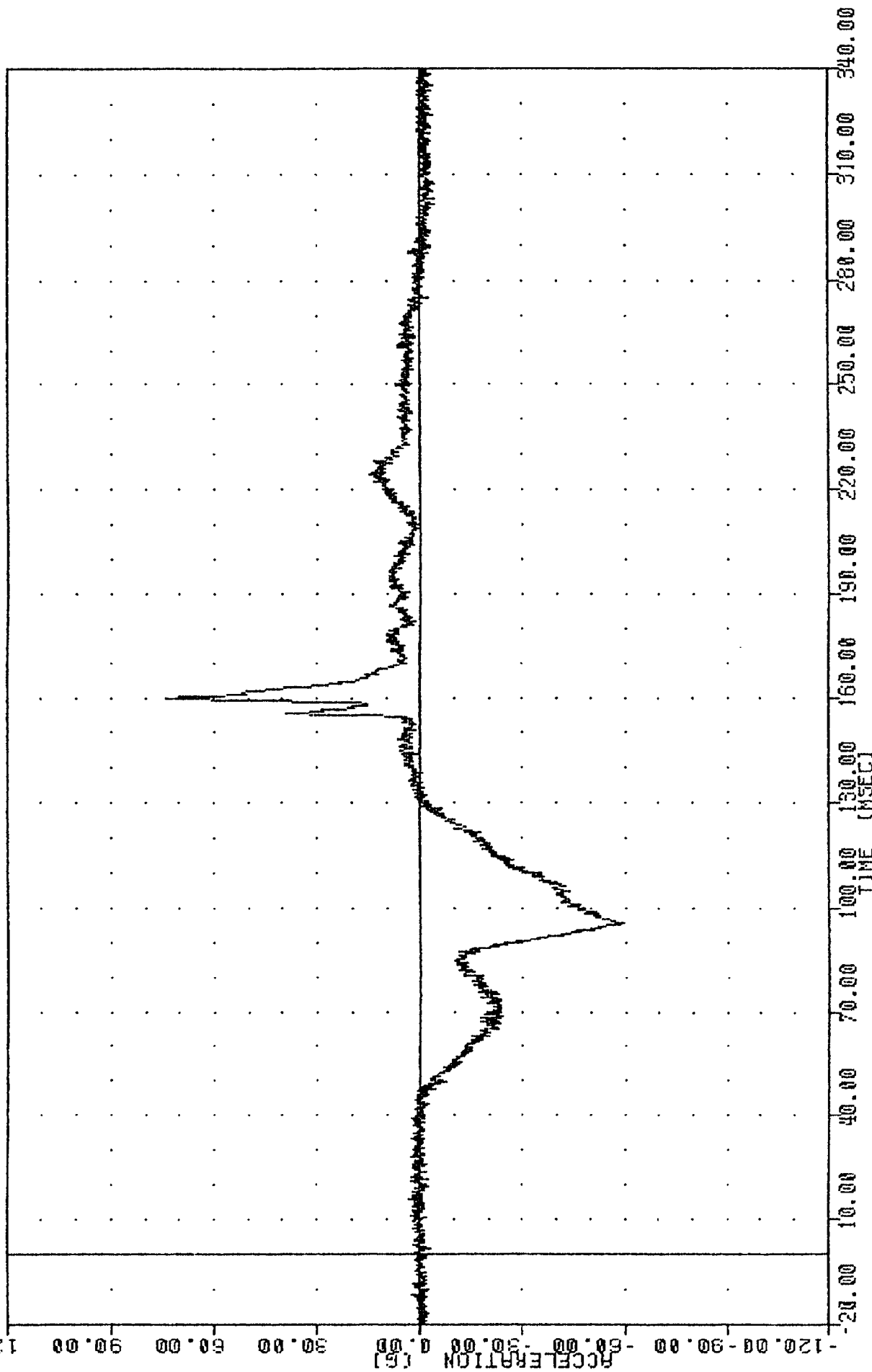
FILTER = BLPP 1000/ 2500/ -16
MIN. MAX VALUES = -1419.058 73.38 103.00 23.63



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
DRIVER RIGHT FEMUR FORCE

TRC 920319
 200 COMPLIANCE TESTING
 92079
 HEOXG2

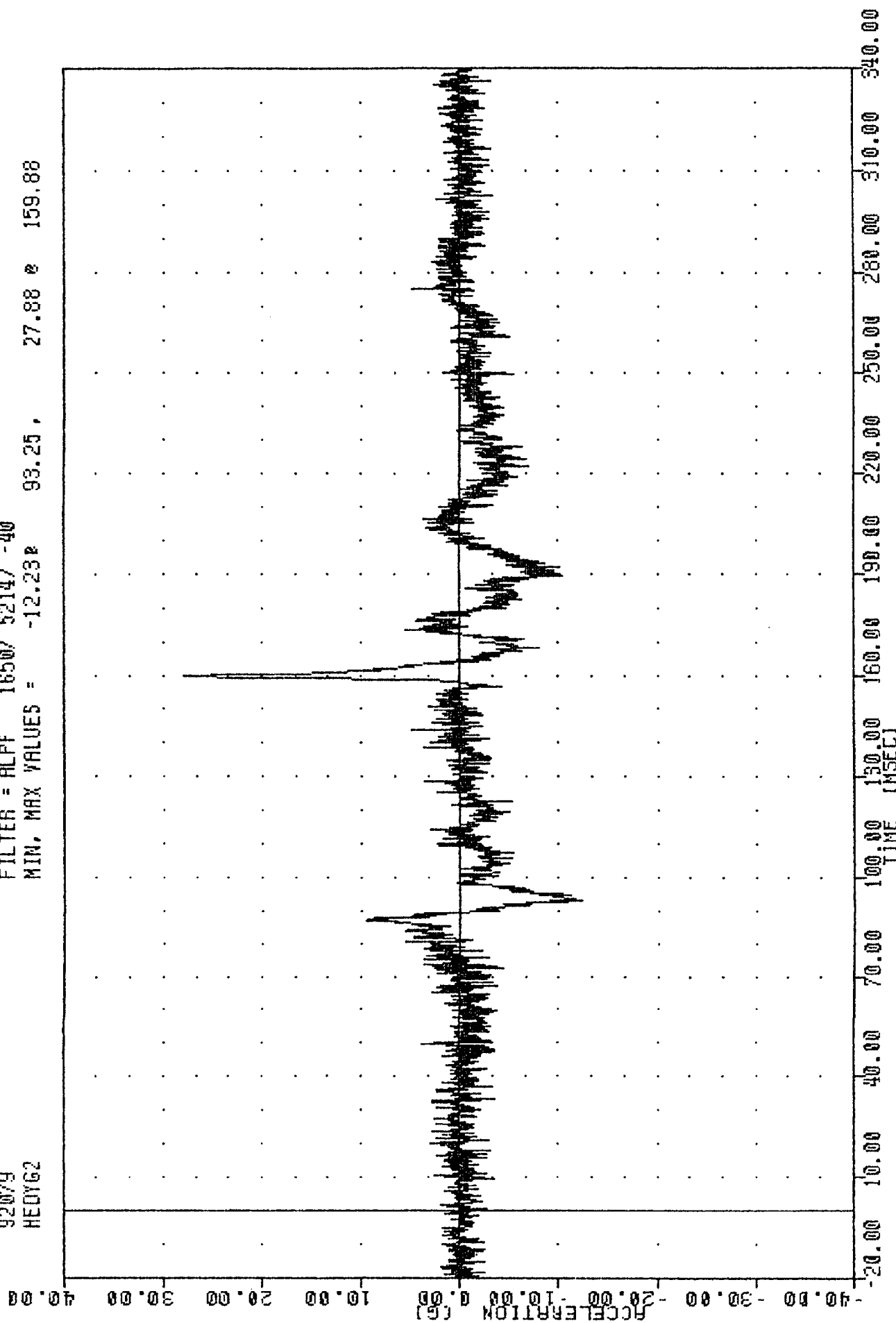
FILTER = ALPF 1650/ 5214/ -40
 MIN, MAX VALUES = -59.35 95.50 , 73.91 159.75



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER HEAD X-AXIS ACCELERATION

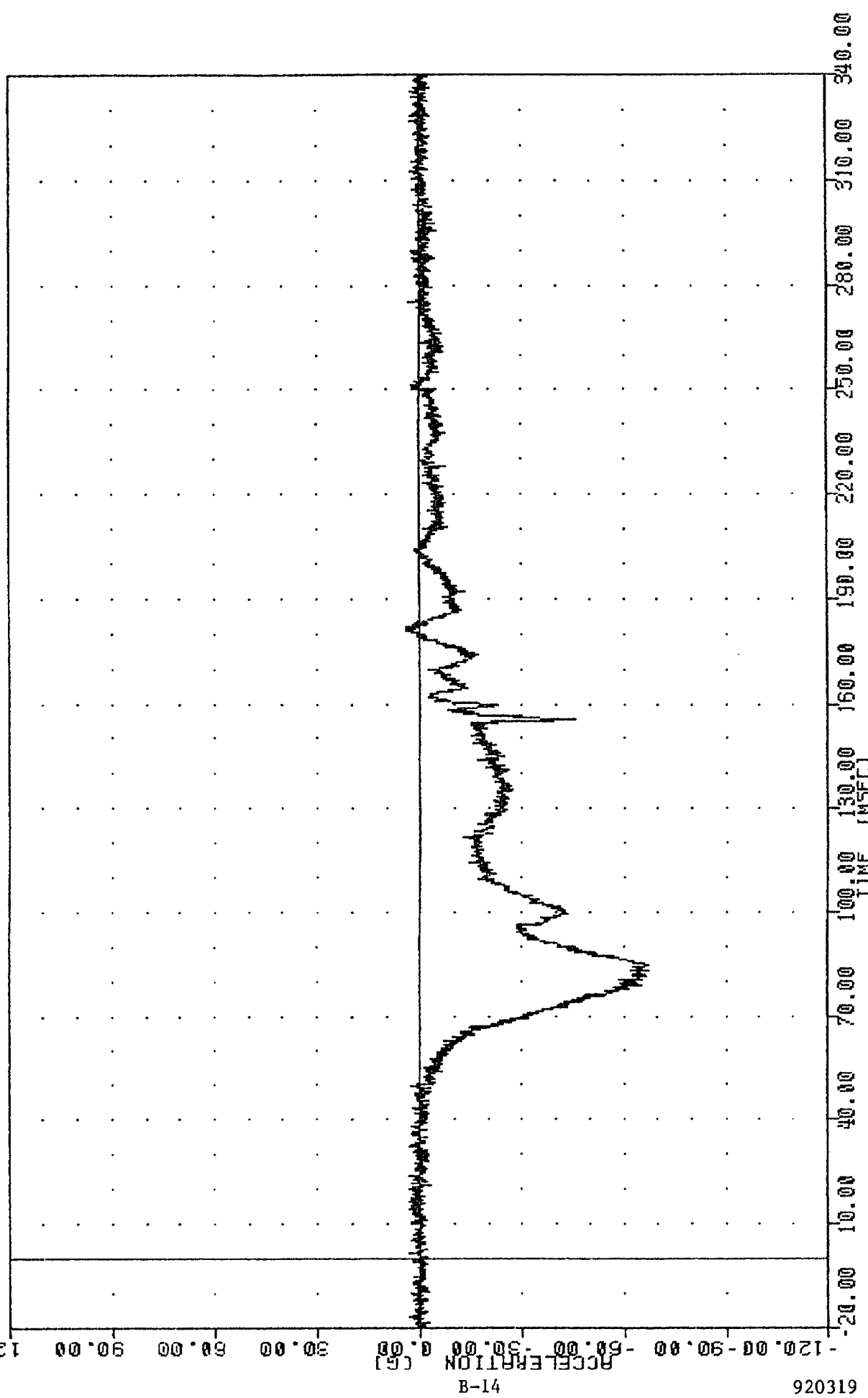
TRC 920319
208 COMPLIANCE TESTING
92079
HEDY62

FILTER = ALPF 1650/ 5214/ -40
MIN, MAX VALUES = -12.232 93.25, 27.88 159.88



TRC 920319
200 COMPLIANCE TESTING
92079
HEDZG2

FILTER = ALPF 1650/ 5214/ -40
MIN, MAX VALUES = -67.44e 83.13, 4.18 e 181.00

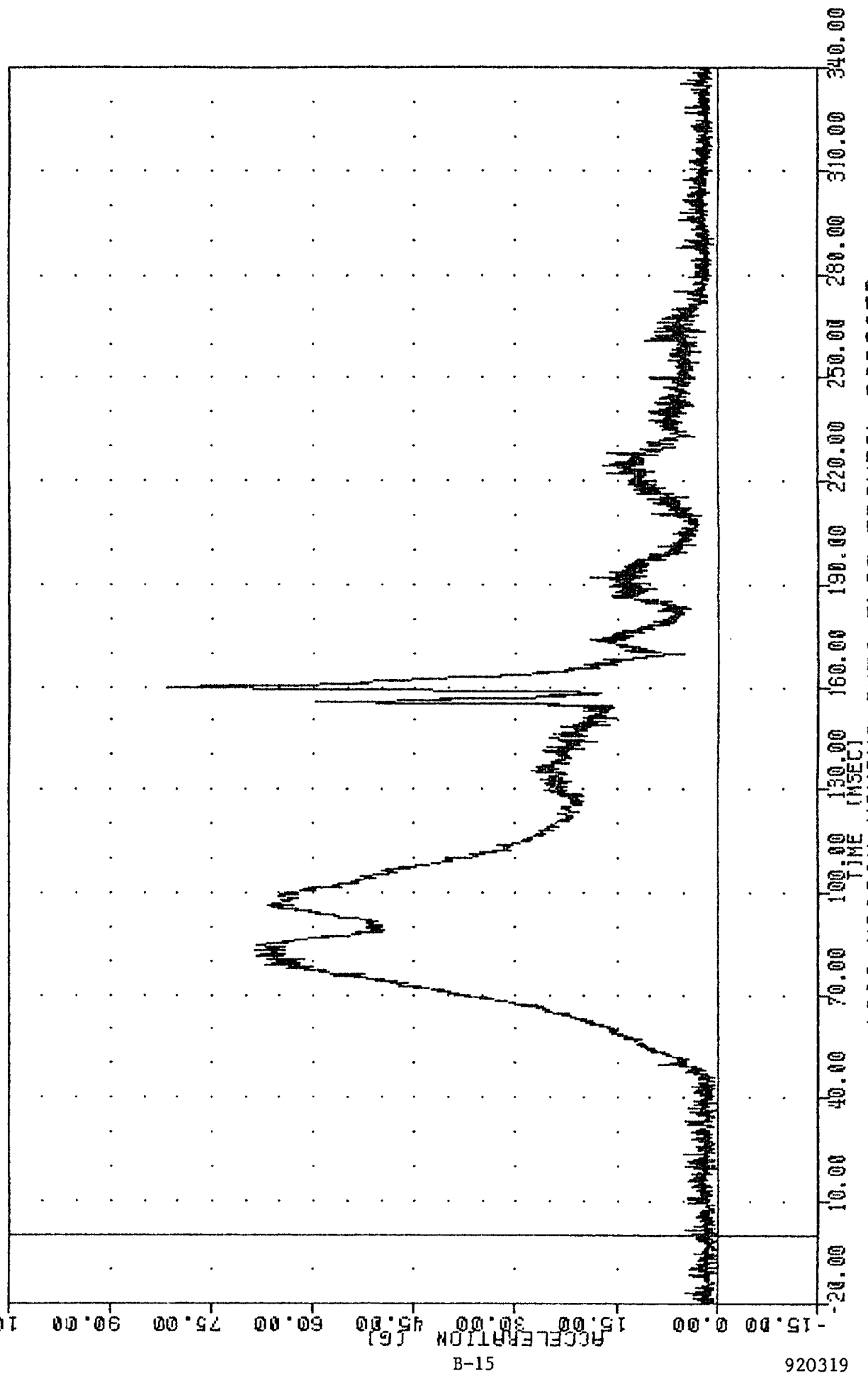


B-14

920319

186
 200 COMPLIANCE TESTING
 92079
 HEDRG2

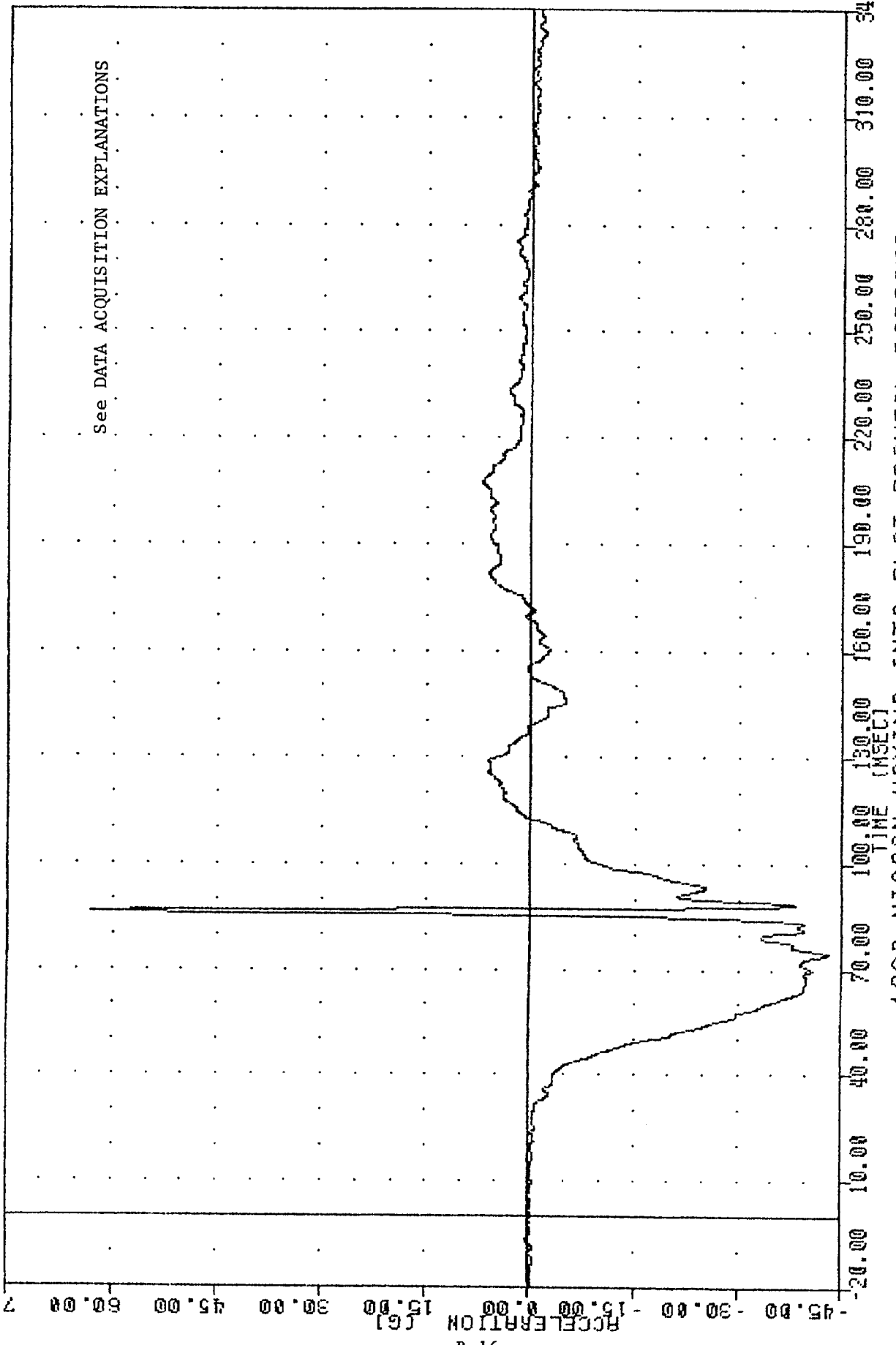
FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = 0.088 -4.38 81.78 159.75



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION

IR 319
208 COMPLIANCE TESTING
92079
CSTXG2

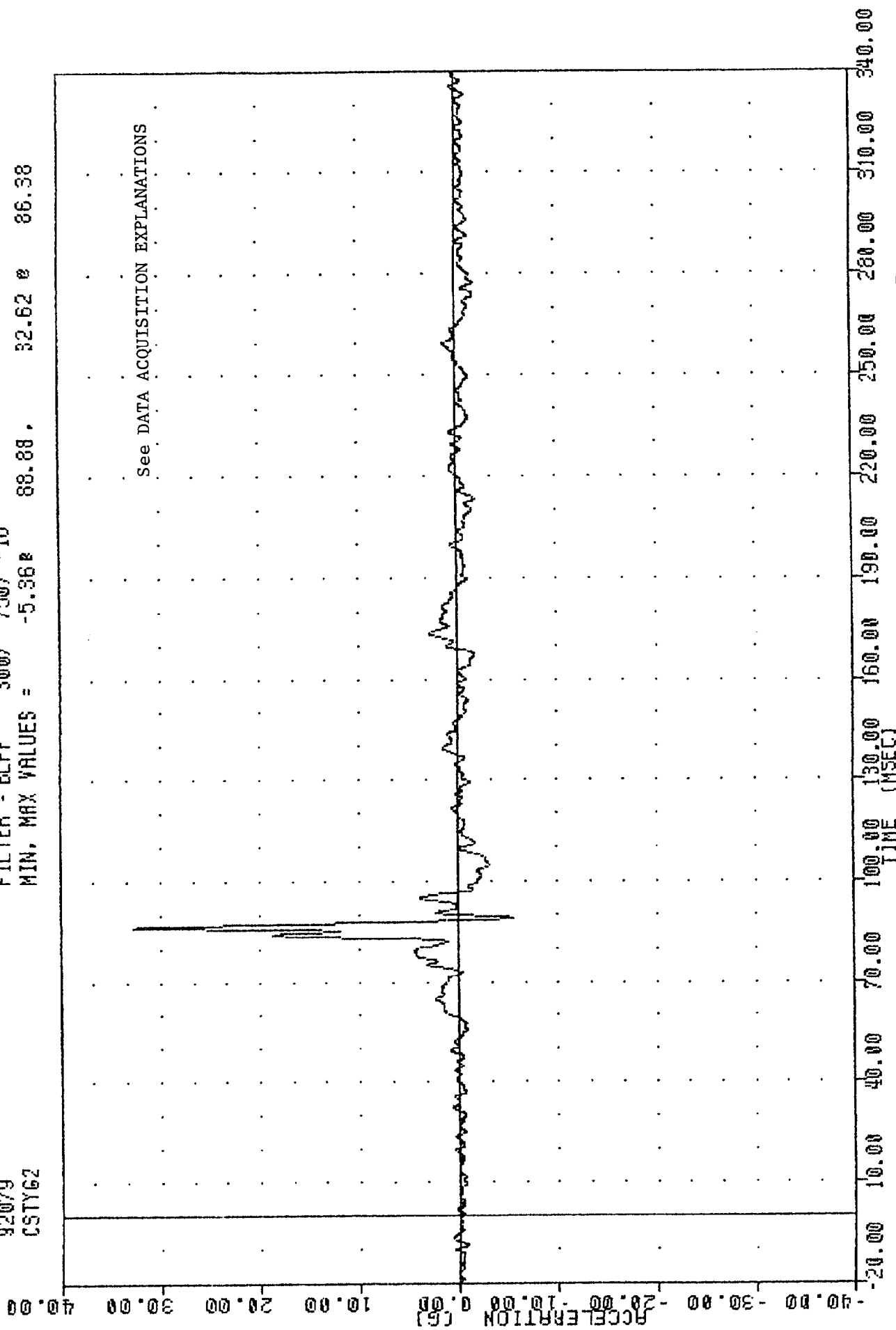
FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -43.04e 74.38 , 62.96 e 86.25



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER CHEST X-AXIS ACCELERATION

TRC , 920319
 200 COMPLIANCE TESTING
 92079
 CSTY62

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -5.36 88.88 32.62 86.38



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER CHEST Y-AXIS ACCELERATION

TRC , 920319

208 COMPLIANCE TESTING

92079

CSTZG2

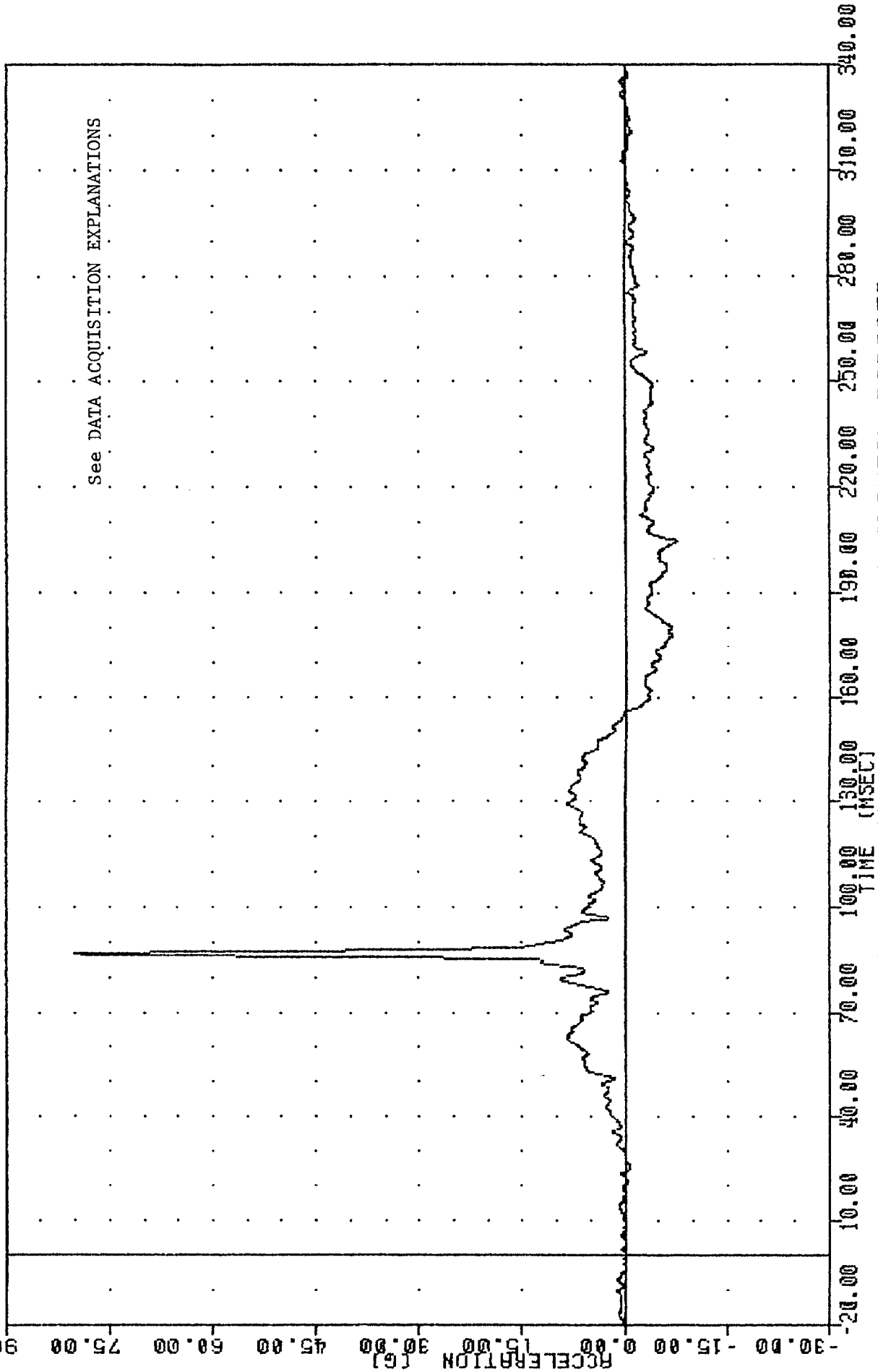
FILTER = BLPP 300/ 750/ -16

MIN. MAX VALUES = -7.69* 204.63, 79.92 @ 86.50

ACCELERATION (G)

B-18

920319



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER CHEST Z-AXIS ACCELERATION

TRC , 920319

200 COMPLIANCE TESTING

92079

CSTRG2

FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = 0.030 -2.63 , 104.55 e 86.38

105.00

90.00

75.00

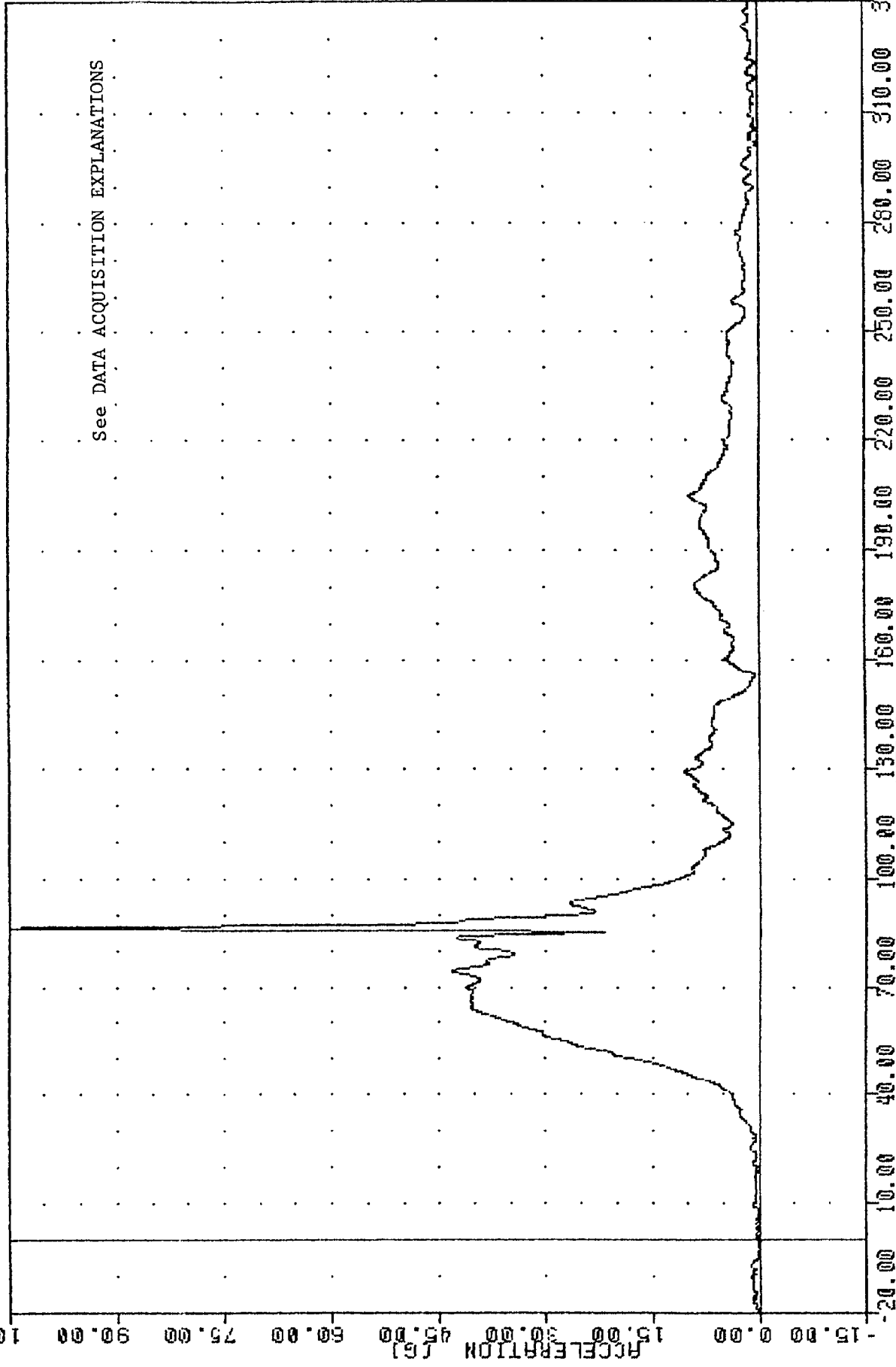
60.00

45.00

ACCELERATION (G)

B-19

920319



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION

TRC , 920319

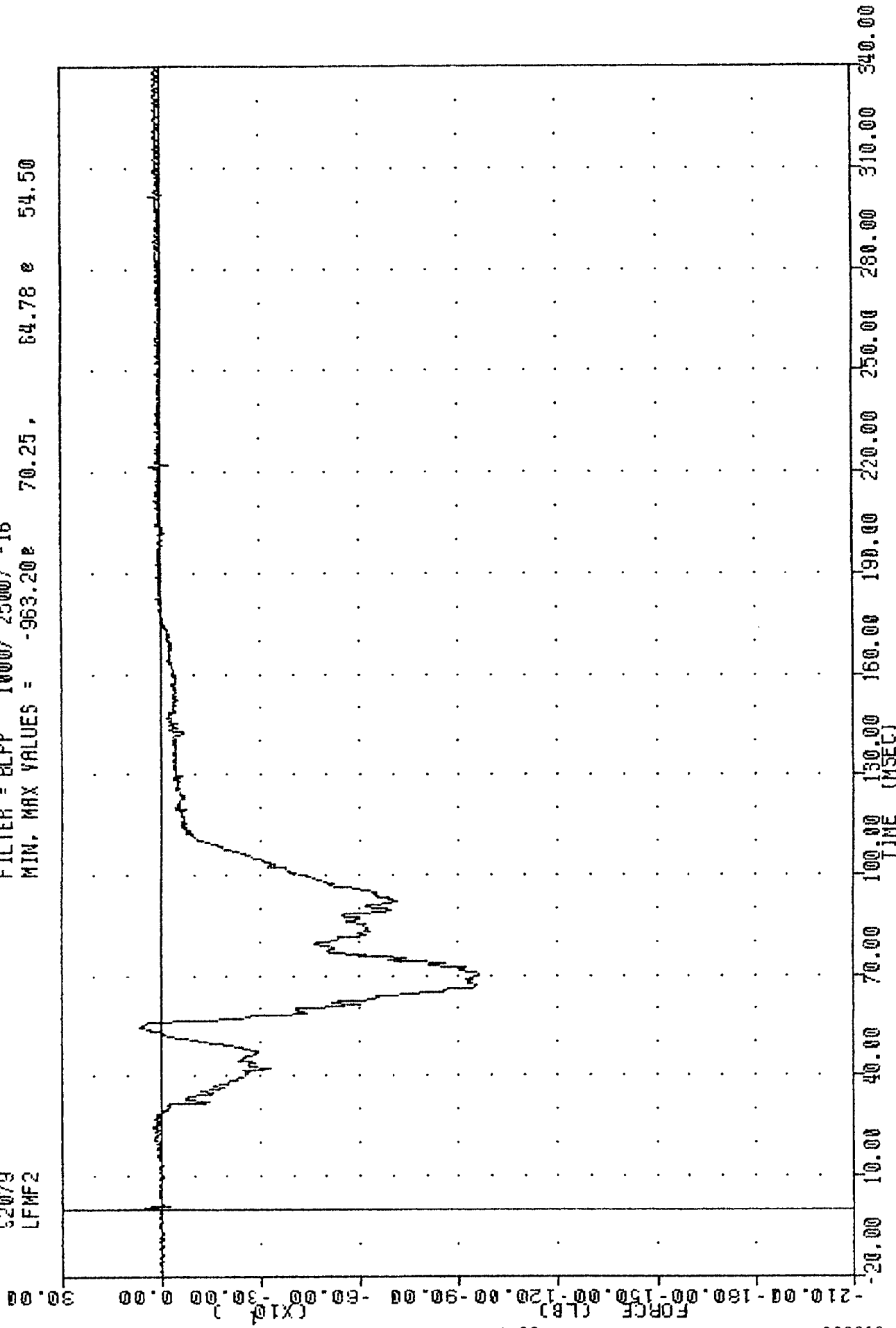
200 COMPLIANCE TESTING

52078

LFMF2

FILTER = BLPP 1000/ 2500/ -16

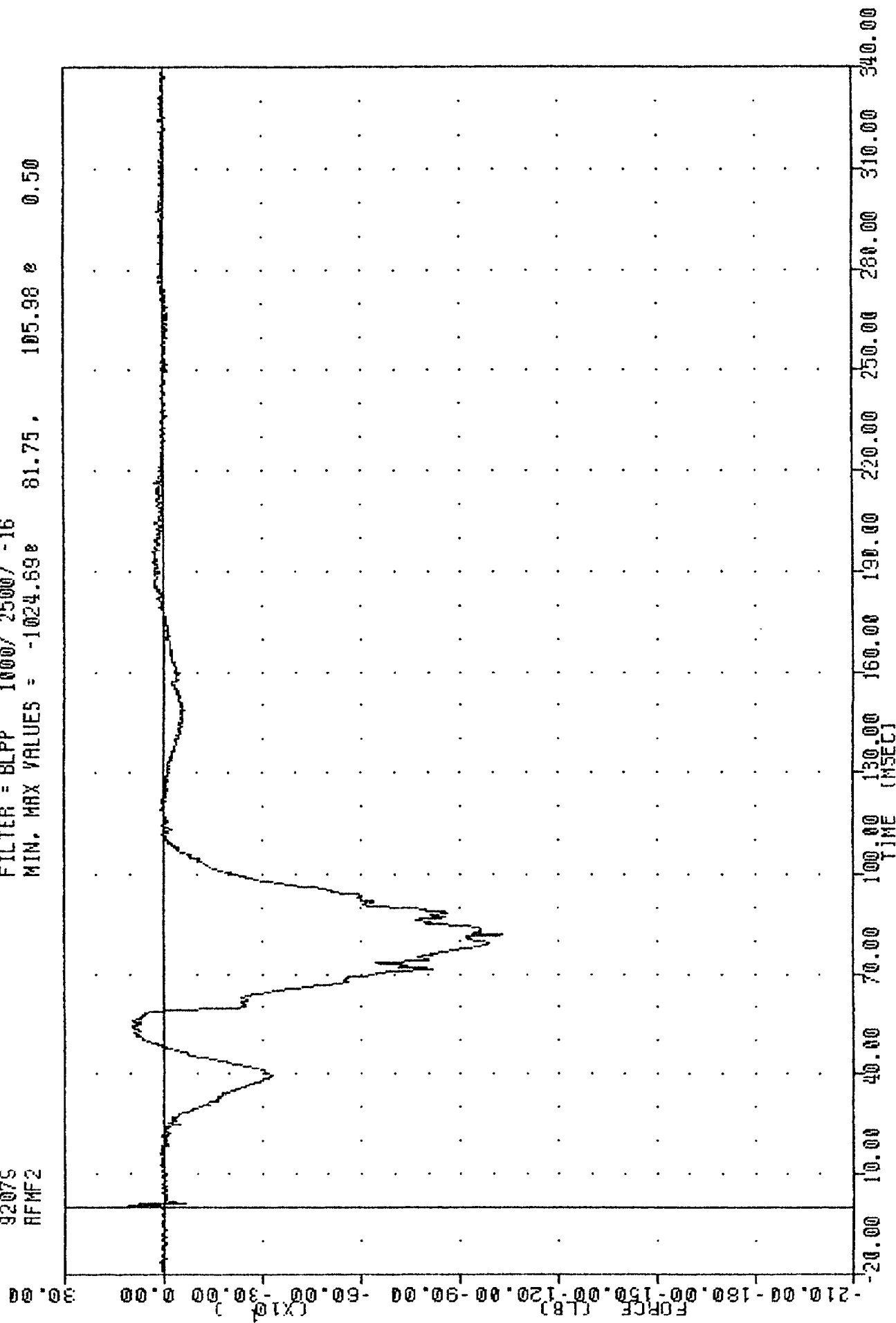
MIN, MAX VALUES = -963.20e 70.25, 64.78 e 54.50



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER LEFT FEMUR FORCE

TRC 920319
208 COMPLIANCE TESTING
92075
RFMF2

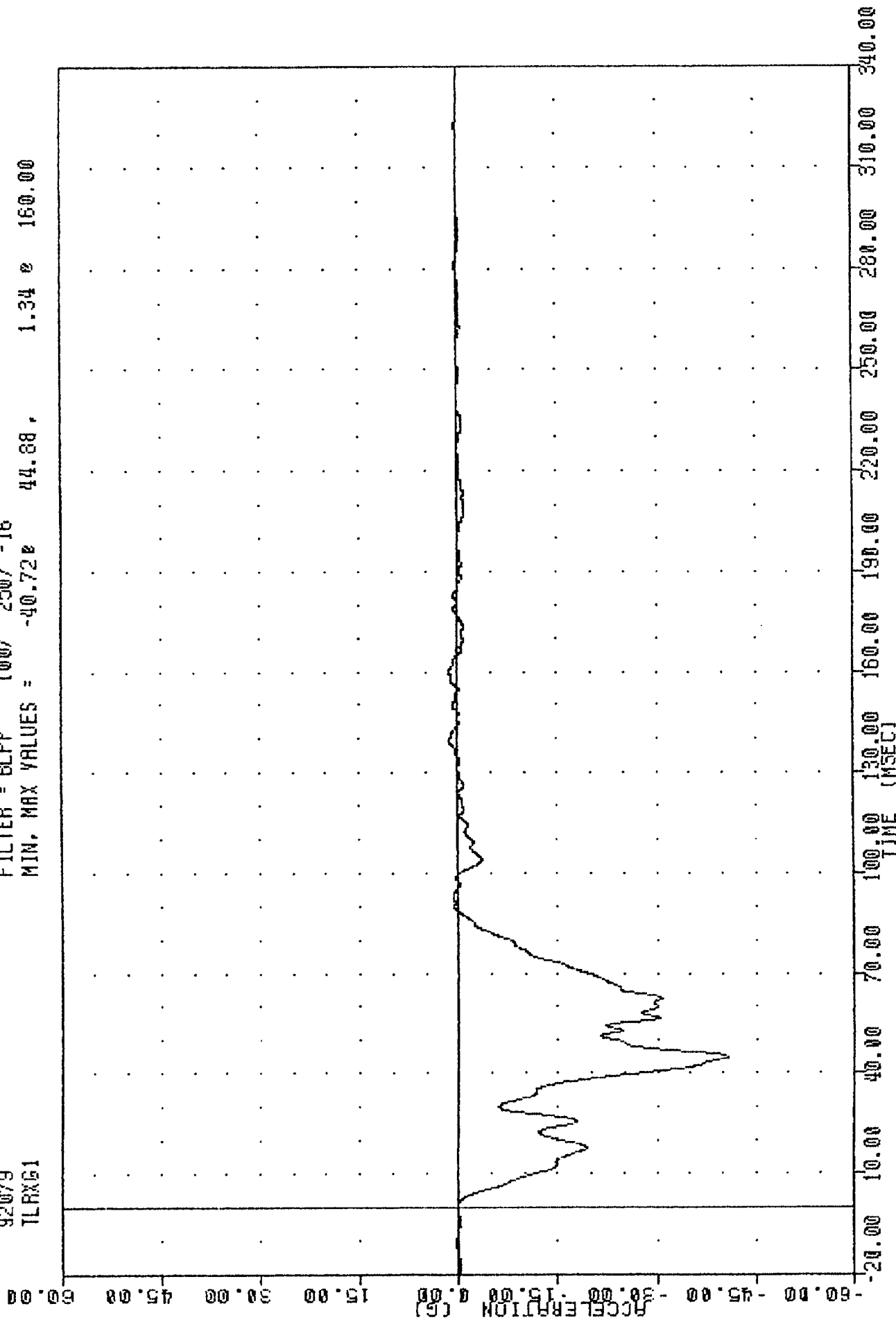
FILTER = BLPP 1000/ 2500/ -16
MIN, MAX VALUES = -1024.690 81.75, 105.98 0.50



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER RIGHT FEMUR FORCE

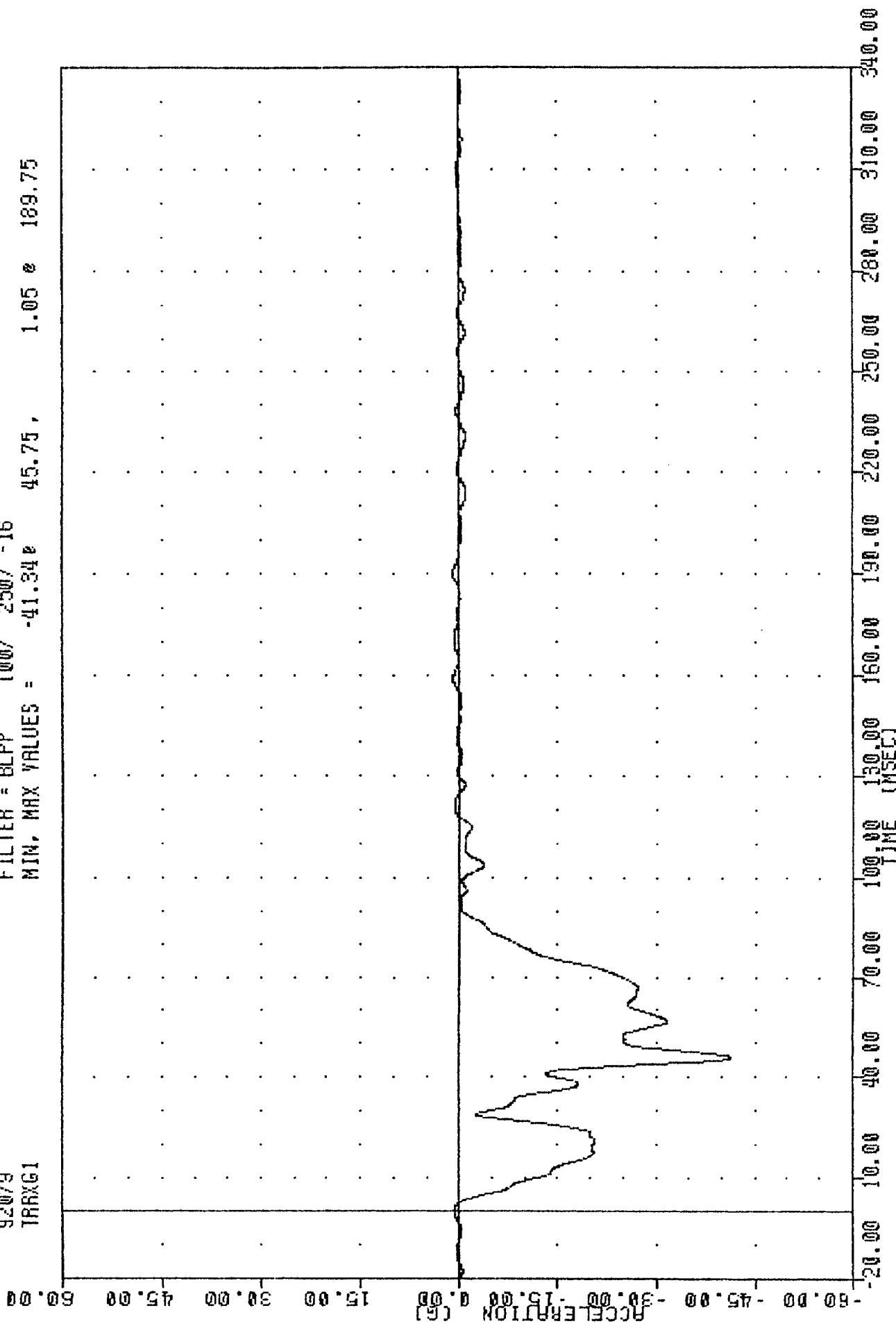
TRC , 920319
208 COMPLIANCE TESTING
92079
TLRXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -40.72 44.88 1.34 160.00



TRC 920319
200 COMPLIANCE TESTING
92079
TRRXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -41.34e 45.75, 1.05 e 189.75



TRC , 920319

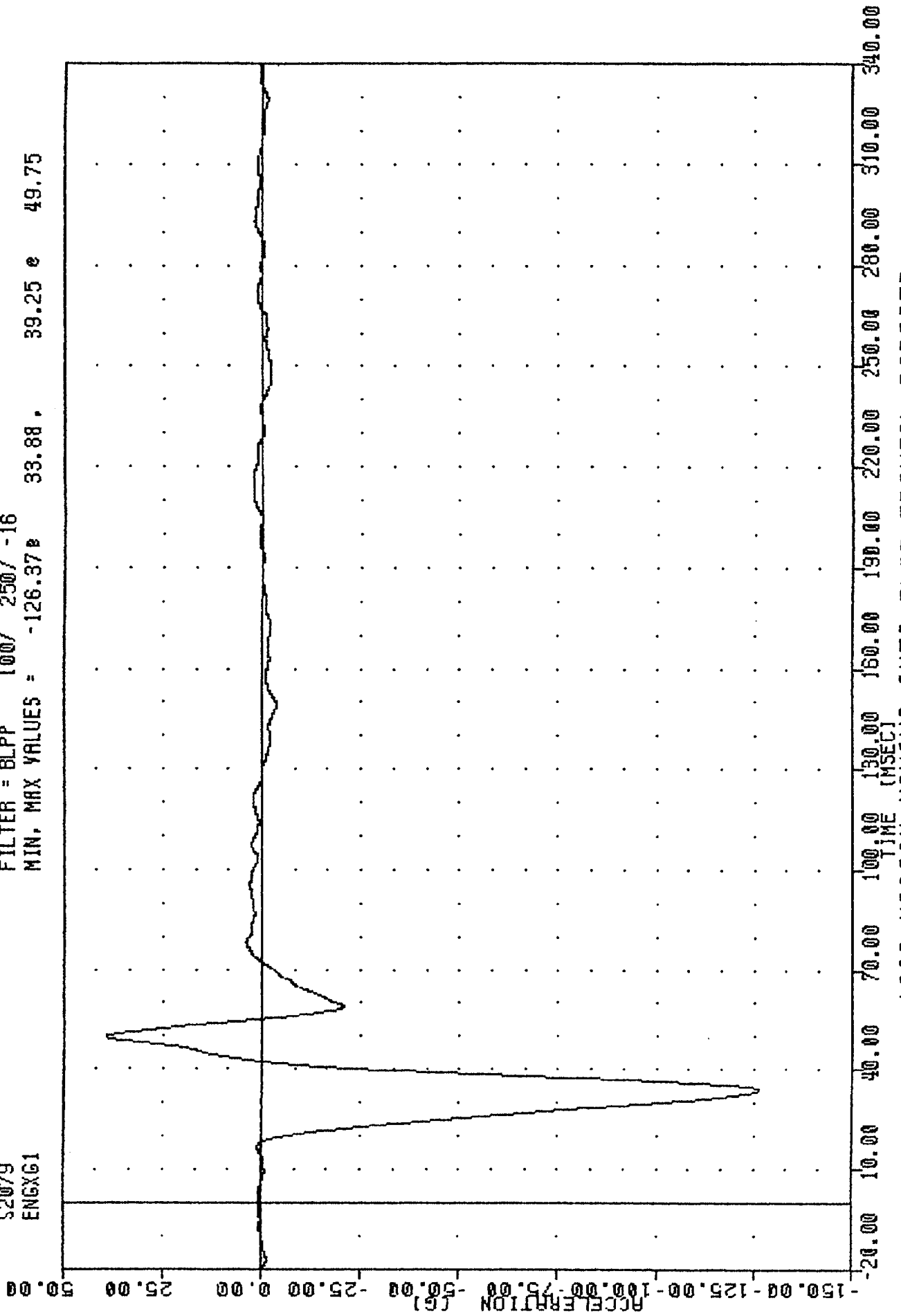
208 COMPLIANCE TESTING

52079

ENGXG1

FILTER = BLPP 100/ 250/ -16

MIN, MAX VALUES = -126.37 33.88 , 39.25 49.75



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
ENGINE TOP X-AXIS ACCELERATION

TRC 920319

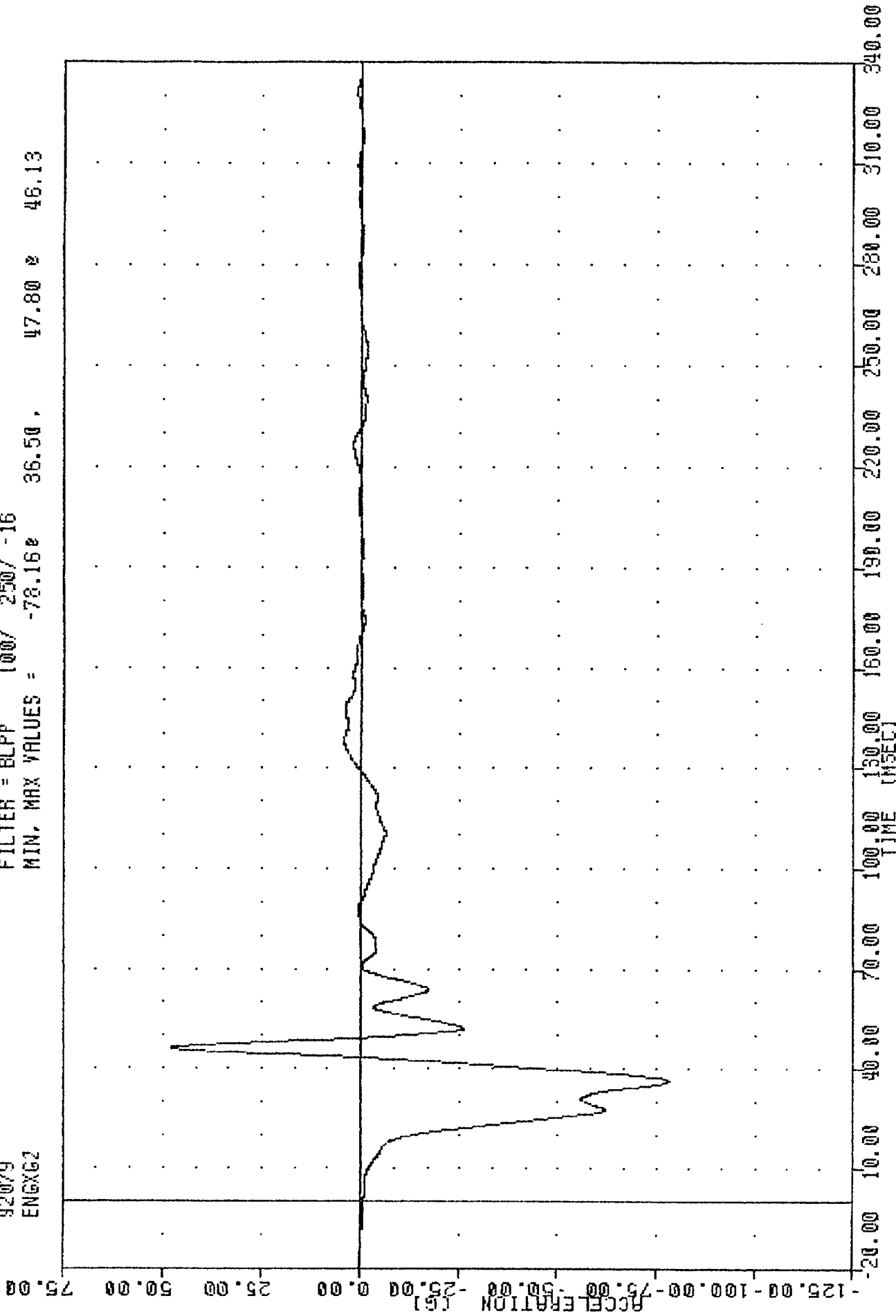
208 COMPLIANCE TESTING

92079

ENGXG2

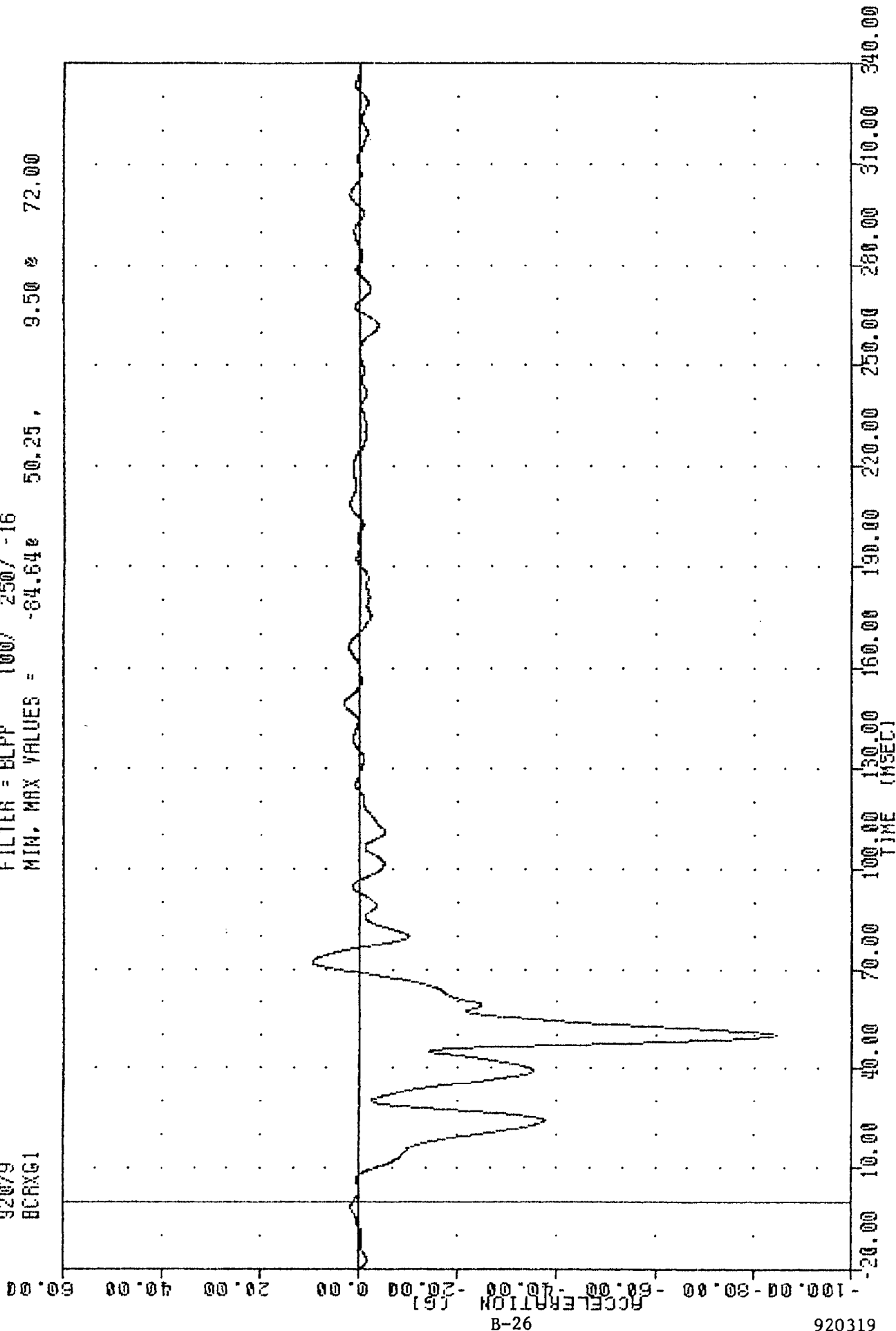
FILTER = BLPP 100/ 250/ -16

MIN. MAX VALUES = -78.16e 36.50e 47.80e 46.13



TRC 920319
200 COMPLIANCE TESTING
92079
BCRXG1

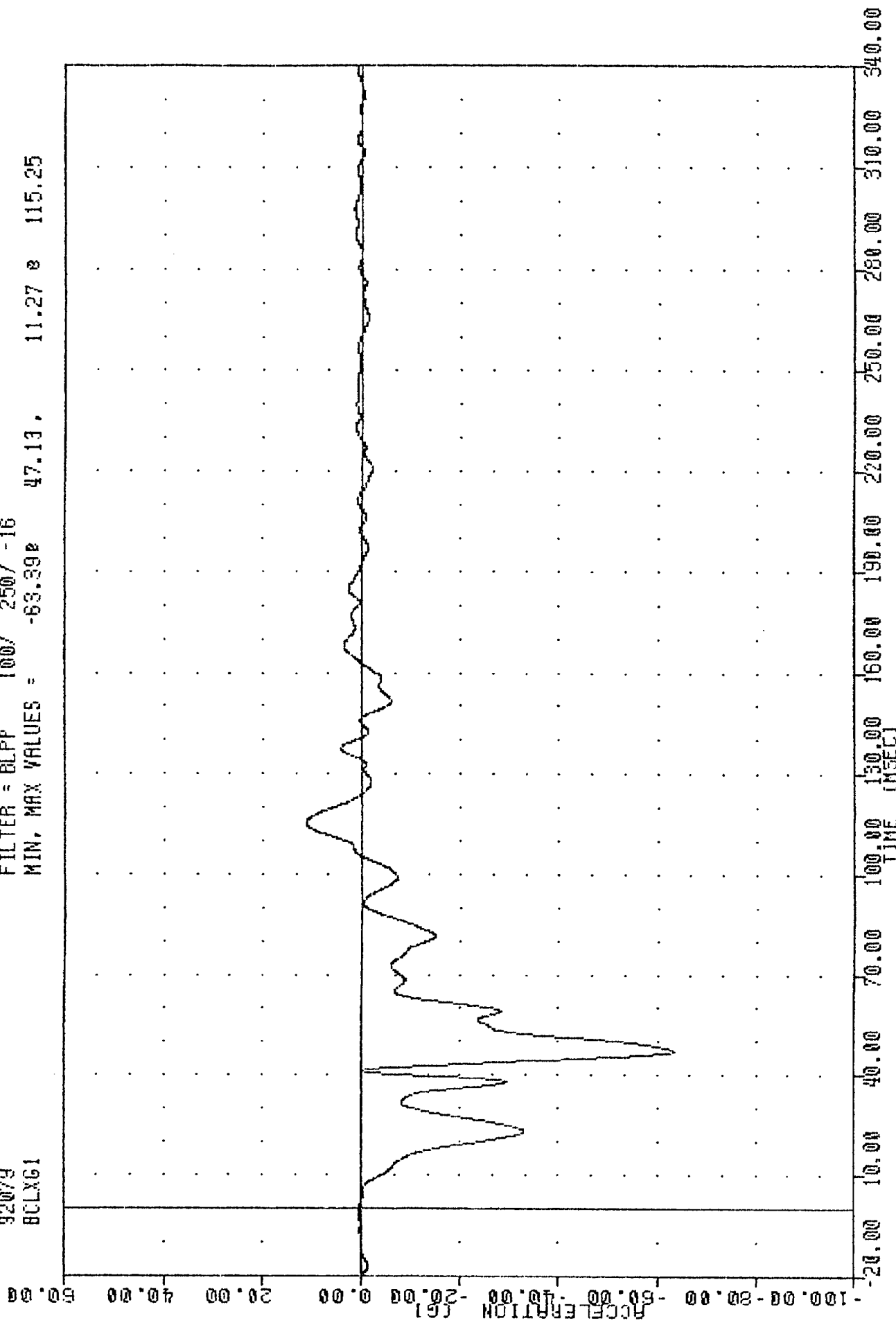
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -84.64e 50.25, 9.50 e 72.00



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
RIGHT BRAKE CALIPER X-AXIS ACCELERATION

TLC 920319
208 COMPLIANCE TESTING
92079
BCLXG1

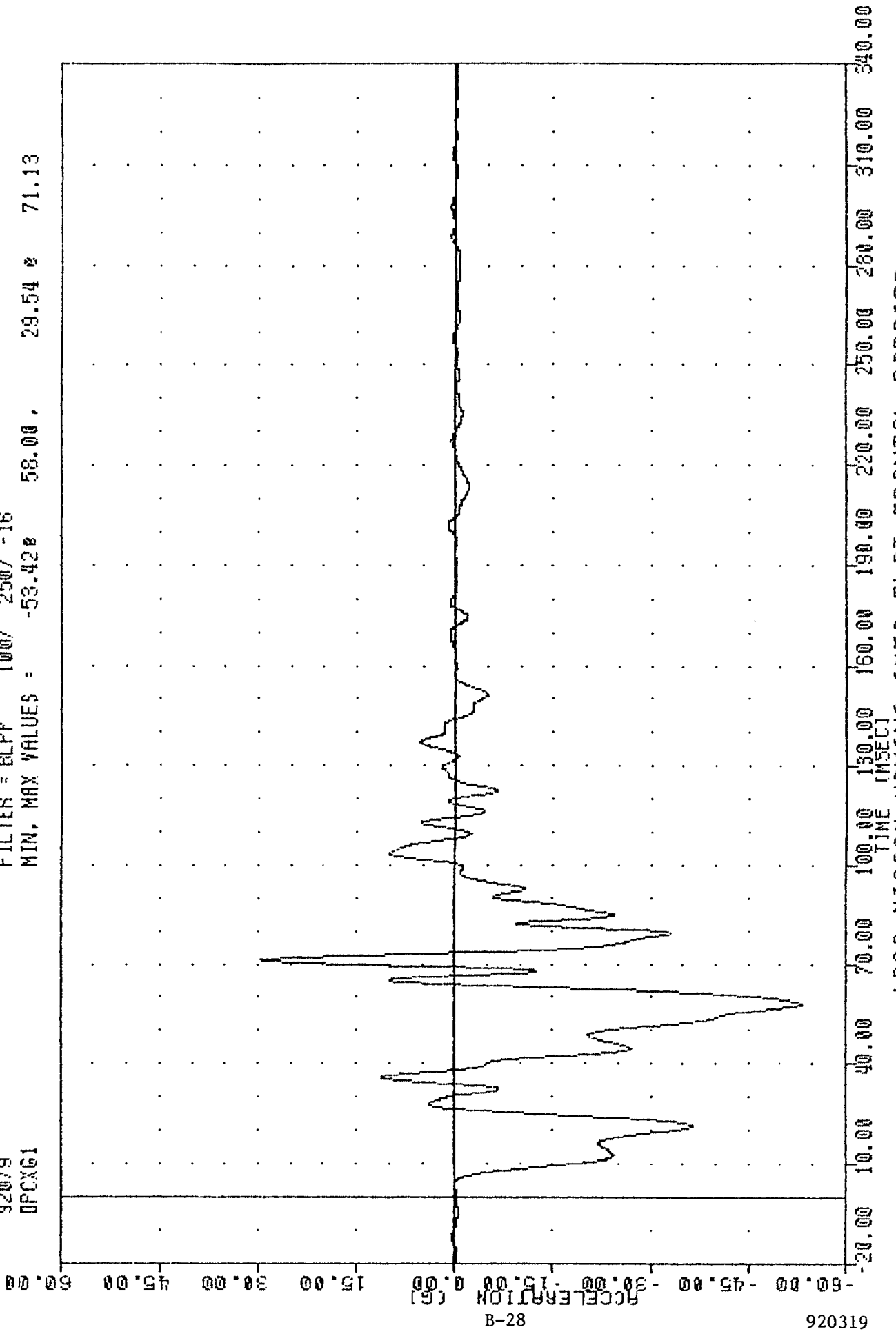
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = 47.13, 11.27 8 115.25



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
LEFT BRAKE CALIPER X-AXIS ACCELERATION

TRC 920319
200 COMPLIANCE TESTING
92079
DPCXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -53.428 58.00 29.54 71.13



1992 NISSAN MAXIMA INTO FLAT FRONTAL BARRIER
INSTRUMENT PANEL CENTER X-AXIS ACCELERATION