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REPORT NOS. 208-TRC-93-008

212-TRC-93-008

301-TRC-93-008

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

MITSUBISHI MOTORS CORPORATION

1993 MITSUBISHI 3000 GT

3-DOOR HATCHBACK

NHTSA NO. CP5601

TRC TEST NO. 921223

TRANSPORTATION RESEARCH CENTER INC.

10820 STATE ROUTE 347

EAST LIBERTY, OHIO 43319



JANUARY 8, 1992

FINAL REPORT

PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF VEHICLE SAFETY COMPLIANCE (NEF-31)
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Rec'd
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16. Abstract A 30 mph flat frontal barrier impact test was conducted on a 1993 Mitsubishi 3000 GT, NHTSA No. CP5601, at the Transportation Research Center Inc. on December 23, 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 29.3 mph. The vehicle's maximum static crush was 21.0 inches. The ambient temperature was 74° F. The driver's head injury criteria (HIC) was 241. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 42.9 g. The driver's chest maximum deflection was 0.8 inches. The driver's left and right femur maximum axial forces were 1233 pounds and 1474 pounds, respectively. The passenger's head injury criteria (HIC) was 444. The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 36.7 g. The passenger's chest maximum deflection was 2.0 inches. The passenger's left and right femur maximum axial forces were 1078 pounds and 598 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		
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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	meters	m
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	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)

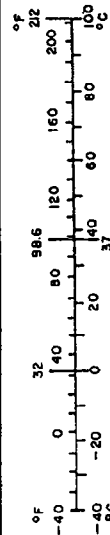
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
----	------------------------	----------------------------	---------------------	----

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
m	meters	1.1	yards	yd
km	kilometers	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	
MASS (weight)				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
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
----	---------------------	-------------------	------------------------	----



* 1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Monograph 286, Units of Weights and Measures, Price \$2.25, SD Catalog No. C13.10286.

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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 1993 Mitsubishi 3000 GT 3-door hatchback, NHTSA No. CP5601, 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 E 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 Appendix B and Optional Appendix 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. Each Part 572 E dummy's instrumentation also included a chest potentiometer to measure longitudinal deflection.

The twenty-five (25) 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 December 23, 1992.

The test vehicle, a 1993 Mitsubishi 3000 GT 3-door hatchback, NHTSA No. CP5601, 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 E dummies seated in the front outboard designated seating positions. For each Part 572 E dummy, the chest deflection did not exceed 3.0 inches. 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, manual transmission, power steering, and power brakes. The vehicle's test weight was 3721 pounds. The vehicle's impact speed was 29.3 mph. The vehicle's maximum static crush was 21.0 inches.

The driver's head injury criteria (HIC) was 241. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 42.9 g. The driver's chest maximum deflection was 0.8 inches. The driver's left and right femur maximum axial forces were 1233 pounds and 1474 pounds, respectively.

The right front passenger's HIC was 444. The right front passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 36.7 g. The right front passenger's chest maximum deflection was 2.0 inches. The right front passenger's left and right femur maximum axial forces were 1078 pounds and 588 pounds, respectively.

There was no loss of windshield periphery retention.

There was no penetration through the windshield.

Following the impact, no fluid spilled from the vehicle's fuel system prior to the static rollover test or during any portion of the static rollover test.

TABLE 1 CRASH TEST SUMMARY

NHTSA NO.: CP5601 TEST TYPE: Frontal Barrier Impact

TEST DATE: 12/23/92 TEST TIME: 1353 AMBIENT TEMP. (°F): 74

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1993/Mitsubishi/3000 GT/3-door hatchback

VEHICLE TEST WEIGHT (LBS): 3721

IMPACT ANGLE (DEG)*: 0

IMPACT VELOCITY (MPH)**: PRIMARY = 29.3 SECONDARY = 29.3

MAXIMUM STATIC CRUSH (IN): 21.0

AVERAGE REBOUND (IN): 17.7

DUMMIES: Driver #230 Passenger #229

TYPE: Part 572 E Part 572 E

LOCATION: Left front Right front

RESTRAINT: Airbag Passive 3-point belt

NUMBER OF DATA CHANNELS: 25

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: Mitsubishi Motors Corporation

MAKE/MODEL: Mitsubishi 3000 GT

VIN: JA3BM54J6PY002682

BODY STYLE: 3-door hatchback

MODEL YEAR: 1993

NHTSA NO.: CP5601

COLOR: Gray

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

TRANSMISSION DATA: 5 SPEED, X MANUAL, AUTOMATIC, X FWD, RWD, 4WD

DATE VEHICLE RECEIVED: 09/28/92

ODOMETER READING: 63

DEALER'S NAME AND ADDRESS: Ricart Ford, Inc.
4255 South Hamilton Rd.
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 No
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: Mitsubichi Motors Corporation

DATE OF MANUFACTURE: 06/92

VIN: JA3BM54J6PY002682

GVWR: 4244 LBS

GAWR: FRONT: 2425 LBS., REAR: 1874 LBS.

TABLE 2 TEST VEHICLE INFORMATION CONT'D

TIRES ON VEHICLE (MFR., LINE, SIZE): Yokohama, 225/55R16

TIRE PRESSURE WITH MAXIMUM CAPACITY VEHICLE LOAD: FRONT: 44 PSI
REAR: 44 PSI

SPARE TIRE (MFR., LINE, SIZE): T125/90D16

TYPE OF SEATS: FRONT: Bucket
REAR: Bucket

TYPE OF FRONT SEAT BACKS: Manually adjustable

MAXIMUM WIDTH: 72.5 INCHES

WHEELBASE: 97.0 INCHES

LOCATION OF LABEL STATING TIRE & CAPACITY DATA:

The label was located on the driver's door.

TIRE & CAPACITY DATA FROM VEHICLE'S LABEL:

RECOMMENDED TIRE SIZE: 225/55R16

RECOMMENDED COLD TIRE PRESSURE: FRONT: 32 PSI; REAR: 29 PSI

DESIGNATED SEATING CAPACITY: 2 FRONT 2 REAR 4 TOTAL

VEHICLE CAPACITY WEIGHT: 661 LBS.

TEST VEHICLE ATTITUDE (ALL MEASUREMENTS ARE IN INCHES):

DELIVERED ATTITUDE:	LF	28.9;	RF	29.0;	LR	28.1;	RR	29.2
FULLY LOADED ATTITUDE:	LF	29.1;	RF	29.2;	LR	28.7;	RR	28.9
PRE-TEST ATTITUDE:	LF	27.6;	RF	28.1;	LR	27.6;	RR	27.9
POST-TEST ATTITUDE:	LF	29.1;	RF	29.6;	LR	26.8;	RR	28.1

TABLE 2 TEST VEHICLE INFORMATION CONT'D

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

RIGHT FRONT	986 LBS.	RIGHT REAR	650 LBS.
LEFT FRONT	995 LBS.	LEFT REAR	710 LBS.
TOTAL FRONT WEIGHT	1981 LBS.	(59.3% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	1360 LBS.	(40.7% OF TOTAL VEHICLE WEIGHT)	
TOTAL DELIVERED WEIGHT 3341 LBS.			

CALCULATION OF TEST VEHICLE'S TARGET TEST WEIGHT:

RCLW = RATED CARGO AND LUGGAGE WEIGHT*

UDW = UNLOADED ELIVERED WEIGHT (3341 LBS)

VCW = VEHICLE CAPACITY WEIGHT (661 LBS)

DSC = DESIGNATED SEATING CAPACITY (4)

RCLW* = VCW - 150 (DSC) = 61 LBS.

TARGET TEST WEIGHT = UDW + RCLW* + (NO. OF HYBRID III DUMMIES X 167 LBS/DUMMY)

TARGET TEST WEIGHT = 3341 + 61 + 334

TARGET TEST WEIGHT = 3736 LBS

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 46 LBS. OF CARGO WEIGHT:

RIGHT FRONT	1049 LBS.	RIGHT REAR	757 LBS.
LEFT FRONT	1093 LBS.	LEFT REAR	822 LBS.
TOTAL FRONT WEIGHT	2142 LBS.	(57.6% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	1579 LBS.	(42.4% OF TOTAL VEHICLE WEIGHT)	
TOTAL TEST WEIGHT	3721 LBS.	(0.4% UNDER TARGET TEST WEIGHT)	

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

COMPONENTS REMOVED TO MEET TARGET TEST WEIGHT: None

CG = 41.2 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: 921223

NHTSA NO.: CP5601

TEST DATE: 12/23/92

TEST TIME: 1353

TEST TYPE: Frontal Barrier Impact

IMPACT ANGLE: 0

AMBIENT TEMPERATURE AT IMPACT AREA:

74° F

TEMPERATURE IN OCCUPANT COMPARTMENT:

70° F

IMPACT VELOCITY: PRIMARY = 29.3 MPH

SECONDARY = 29.3 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 173.5; C 179.5; R 173.4

POST-TEST: L 159.8; C 158.5; R 162.6

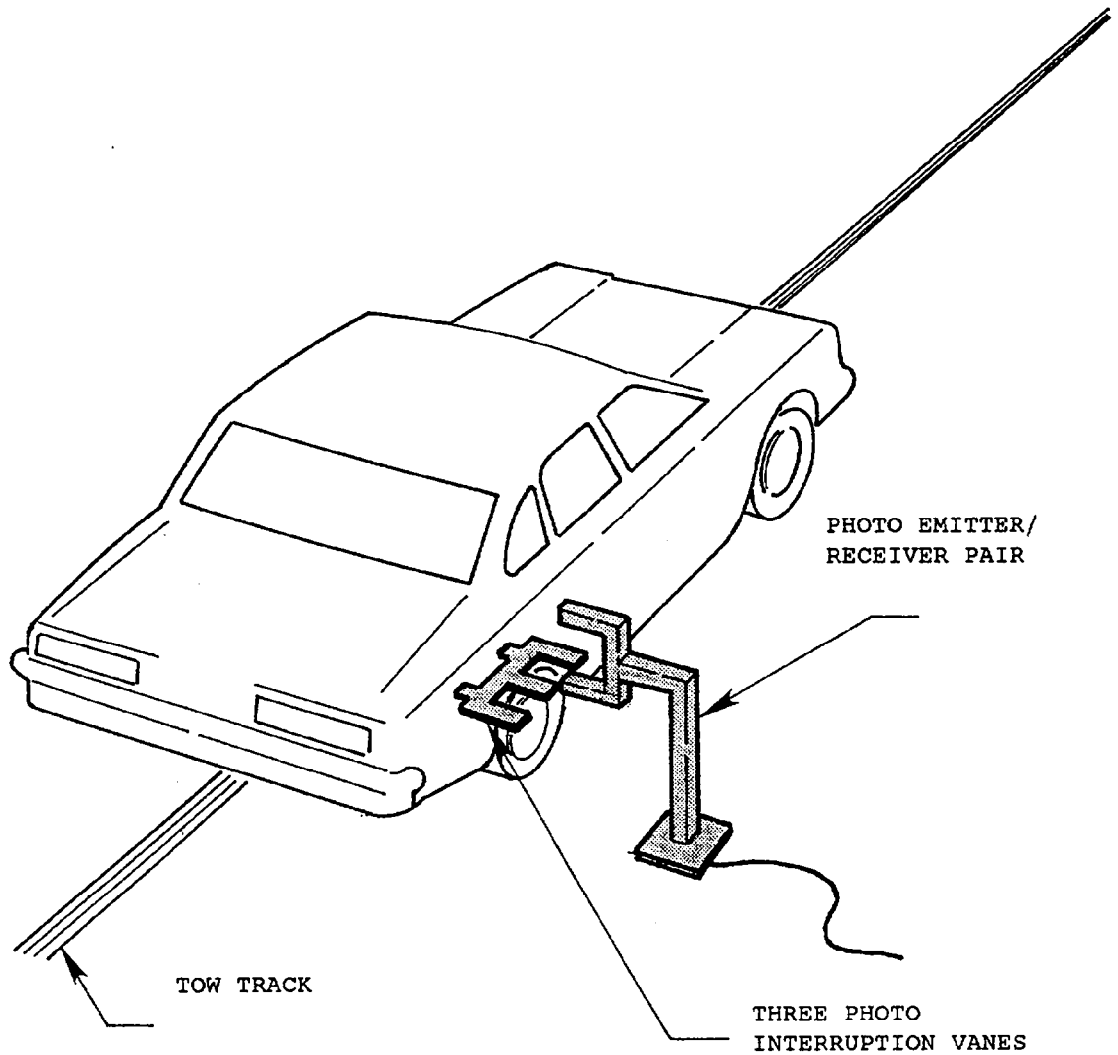
TOTAL CRUSH: L 13.7; C 21.0; R 10.8

AVERAGE CRUSH: 15.2

TEST VEHICLE REBOUND FROM FLAT BARRIER (ALL MEASUREMENTS ARE IN INCHES):

DISTANCE FROM TEST VEHICLE TO BARRIER: L 18.5; C 19.6; R 15.0; AVG. 17.7

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: Mitsubishi/3000 GT/3-door hatchback

VEHICLE NHTSA NO.: CP5601; VIN: JA3BM54J6PY002682

MODEL YEAR: 1993; BUILD DATE: 06/92; TEST DATE: 12/23/92

VEHICLE SIZE CATEGORY: Sub-compact; TEST WEIGHT: 3721 LBS.

VEHICLE WHEELBASE: 97.0 INCHES

MAXIMUM WIDTH: 72.5 INCHES

FRONT OVERHANG: 40.5 INCHES

COLLISION DEFORMATION
CLASSIFICATION (CDC) CODE: 12FDEW2

CRUSH DEPTH
MEASUREMENTS:

C1 =	<u>13.7</u>	INCHES
C2 =	<u>17.5</u>	INCHES
C3 =	<u>19.0</u>	INCHES
C4 =	<u>20.7</u>	INCHES
C5 =	<u>15.4</u>	INCHES
C6 =	<u>10.8</u>	INCHES

MIDPOINT OF DAMAGE: D = VEHICLE CENTERLINE
(LONGITUDINAL)

LENGTH OF DAMAGED
REGION: L = 54.5 INCHES

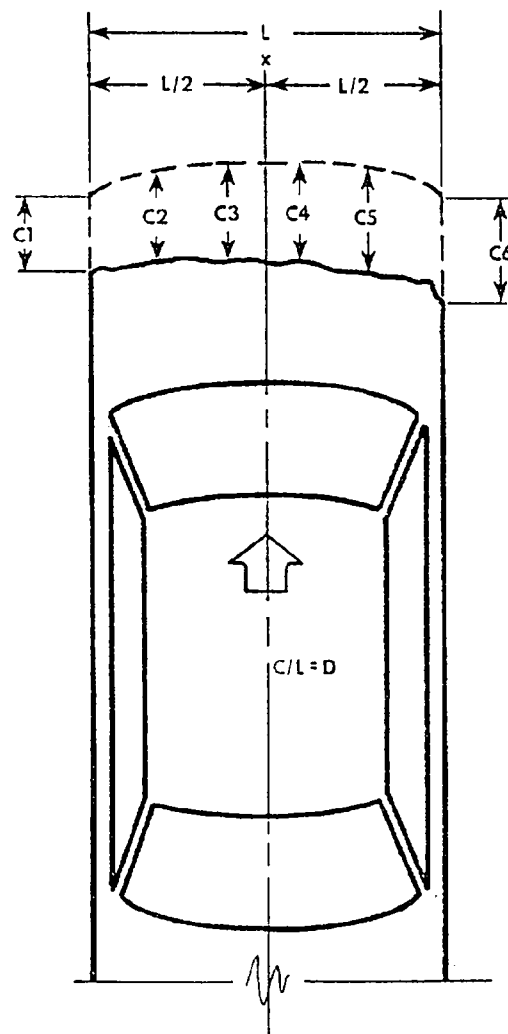
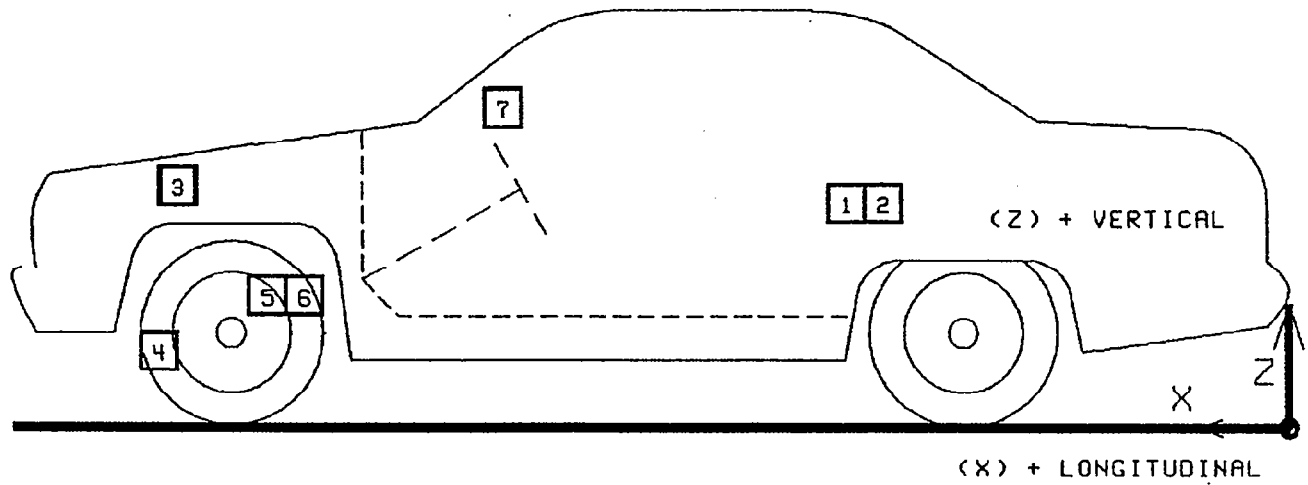
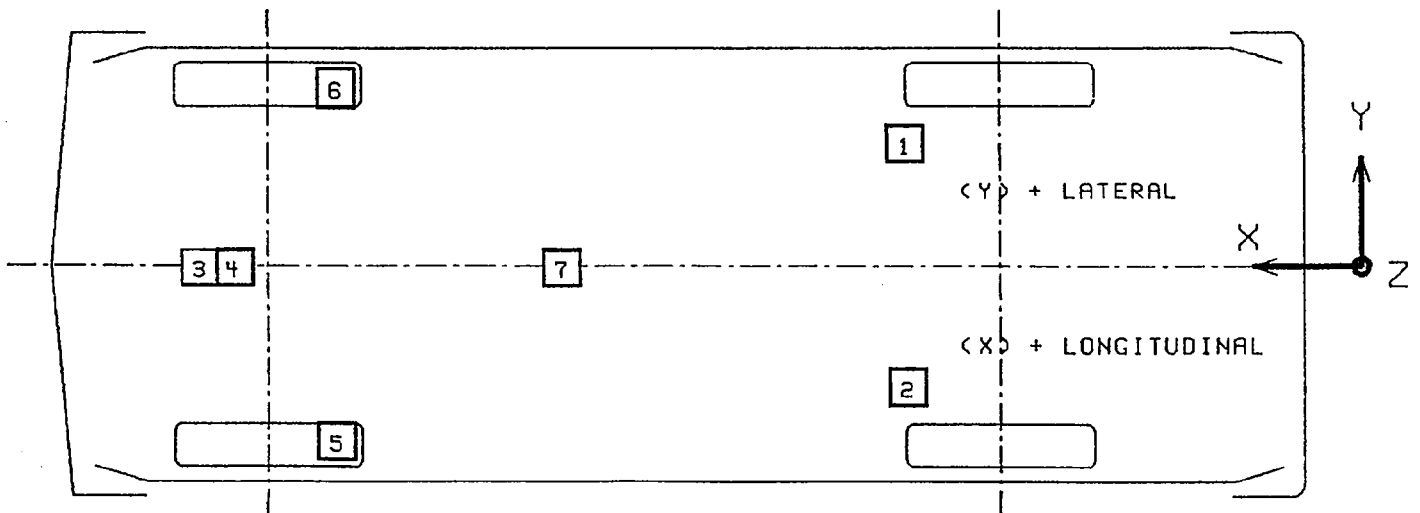


FIGURE 3

VEHICLE ACCELEROMETER PLACEMENT



SIDE VIEW



BOTTOM VIEW

TABLE 4

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 921223

No.	LOCATION		X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
						MAX G MSEC		MAX G MSEC	
1	LEFT REAR SEAT CROSSMEMBER LONGITUDINAL	PRE	69.5	16.4	13.8				
		POST	69.5	16.4	14.2				
						2.1	126.0	27.5	56.5
2	RIGHT REAR SEAT CROSSMEMBER LONGITUDINAL	PRE	69.9	-16.4	14.1				
		POST	69.9	-16.4	14.5				
						24.0	74.4	82.3	48.4
3	ENGINE TOP LONGITUDINAL	PRE	143.9	3.6	32.1				
		POST	138.8	3.8	32.9				
						21.6	49.8	76.8	31.1
4	ENGINE BOTTOM LONGITUDINAL	PRE	143.0	10.5	9.0				
		POST	136.5	9.5	9.5				
						37.2	45.6	96.4	33.9
5	RIGHT BRAKE CALIPER LONGITUDINAL	PRE	142.2	-27.0	11.2				
		POST	139.8	-27.0	10.5				
						2.8	115.9	27.7	57.6
6	LEFT BRAKE CALIPER LONGITUDINAL	PRE	142.2	27.0	11.3				
		POST	137.5	27.0	9.5				
						39.9	72.3	81.0	50.6
7	INSTRUMENT PANEL CENTER LONGITUDINAL	PRE	110.8	0.0	35.6				
		POST	109.9	0.0	37.4				
						24.2	30.6	49.7	81.8

* 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.: CP5601
MAKE/MODEL/BODY STYLE: Mitsubishi/3000 GT/3-door hatchback
MODEL YEAR: 1993 BODY COLOR: Gray
VIN: JA3BM54J6PY002682
ODOMETER (ARRIVAL): 63 DATE: 09/28/92
ODOMETER (COMPLETION): 69 DATE: 12/23/92
COST: \$22,640.84

☒ AIR CONDITIONER	☐ CONSOLE	BRAKES: ☒ POWER
☒ TINTED GLASS	☐ TACHOMETER	FRONT: Disc
☒ POWER STEERING	☒ SPEED CONTROL	REAR: Disc
☒ POWER WINDOWS	☒ REAR WINDOW DEF.	
☒ POWER DOOR LOCKS	☐ SUN/MOON ROOF	FRONT SEATS: ☐ POWER
☒ RADIO	☐ T-TOP	SEAT TYPE: Bucket
☒ CLOCK	☒ TILT STEERING WHEEL	NO. OF SEATS: 4
☐ ROOF RACK	☐ OTHER OPTIONS: _____	

ENGINE: 6 CYLINDERS; 3.0 LITERS
TRANSMISSION: manual; DRIVE TYPE: Front wheel drive
TIRE SIZE: 225/55R16
GASOLINE TYPE: Unleaded

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

EXPLANATION: NA

VEHICLE CONDITION: Vehicle has been subjected to a 30 mph frontal
barrier crash test.

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
DRIVER	-43.0	11.3	26.2	43.6	-45.9	-4.3	-8.9
PASSENGER	-49.1	4.0	-43.3	51.6	-38.5	-5.8	-14.4

MAXIMUM FEMUR COMPRESSIVE FORCE (LBS)

	LEFT FEMUR	RIGHT FEMUR
DRIVER	1233	1474
PASSENGER	1078	598

HEAD INJURY CRITERIA**

	HIC	TIME t_1 (MSEC)	TIME t_2 (MSEC)
DRIVER	241	65.5	100.4
PASSENGER	444	75.6	111.6

CHEST MAXIMUM RESULTANT ACCELERATION*

	ACCEL. (G)	TIME t_1 (MSEC)	TIME t_2 (MSEC)
DRIVER	42.9	78.4	81.5
PASSENGER	36.7	58.5	61.6

MAXIMUM CHEST DEFLECTION (IN.)

DRIVER	0.8
PASSENGER	2.0

*Defined as equal to or exceeding 0.003 sec. duration

**As defined in FMVSS No. 208

TABLE 6 POST-IMPACT DUMMY/VEHICLE DATA

VISIBLE DUMMY CONTACT POINTS:

	DRIVER #314	PASSENGER #230
HEAD	<u>Airbag/header</u>	<u>Dummy's 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>NA</u>	<u>NA</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 lower left corner of the windshield cracked on
impact.

OTHER NOTABLE IMPACT EFFECTS:

None

DUMMY KINEMATIC SUMMARY

Driver Dummy

Upon impact, the driver dummy translated forward on the seat with both knees impacting the instrument panel. The dummy's head and chest impacted the airbag with the dummy's head rotating slightly rearward. The driver dummy was restrained by the airbag. The dummy rebounded rearward into the seat back as the dummy's head contacted the header and then rotated slightly rearward into the head restraint. The driver dummy came to rest in the driver's seat.

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 rotated downward impacting the dummy's chest. The right front passenger dummy was restrained by the three-point unbelt. 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 in the right front passenger's seat restrained by the three-point unbelt.

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

MAKE/MODEL: Mitsubishi/3000 GT

VIN: JA3BM54J6PY002682

BODY STYLE: 3-door hatchback

NHTSA NO.: CP5601

DATE OF MANUFACTURE: 06/92

WEBBING TENSION - RELIEVING DEVICE:

DO OUTBOARD SEATING POSITION SEAT BELTS HAVE WEBBING TENSION - RELIEVING DEVICES?(check one): NO

IF YES:

MAXIMUM SLACK RECOMMENDED IN OWNER'S MANUAL: _____ INCHES

DOES OWNER'S MANUAL WARN THAT INTRODUCING SLACK BEYOND THE AMOUNT SPECIFIED CAN SIGNIFICANTLY REDUCE THE EFFECTIVENESS OF THE SHOULDER

BELT? _____ YES _____ NO

IF NO, EXPLAIN:

THE WEBBING TENSION - RELIEVING DEVICE IS CANCELLED WHEN

(check one): _____ The adjacent door is opened.

_____ The latch plate is released from the buckle.

_____ A manual means is activated on a open-body vehicle without doors.

OPEN-BODY VEHICLE (without doors): DOES THE MANUAL MEANS TO CANCEL

THE WEBBING TENSION - RELIEVING DEVICE OPERATE PROPERLY? _____ YES

_____ NO

IF NO, EXPLAIN:

BELT CONTACT FORCE:

BELT CONTACT FORCE ON CHEST OF TEST DUMMY: 0.2 POUNDS

_____ NOT APPLICABLE, THE VEHICLE'S SEAT BELT SYSTEM INCLUDED A WEBBING TENSION - RELIEVING DEVICE.

TABLE 7 FMVSS 208 COMFORT & CONVENIENCE DATA FOR MANUAL SEAT BELTS, CONT'D

MAKE/MODEL: Mitsubishi/3000 GT

VIN: JA3BM54J6PY002682

BODY STYLE: 3-door hatchback

NHTSA NO.: CP5601

DATE OF MANUFACTURE: 06/92

LATCHPLATE ACCESS:

ARE THE SEAT BELT LATCHPLATES, IN THEIR NORMAL STOWED POSITION, WITHIN
THE REACH ENVELOPE? YES

DOES THE CLEARANCE TEST BLOCK MOVE UNHINDERED TO THE LATCHPLATE OR
BUCKLE? YES

RETRACTION:

SEAT BELT AUTOMATICALLY RETRACTS WHEN

(check one): The adjacent vehicle door is open and the seat belt
latchplate is released.

 X The seat belt latchplate is released.

ARE THE STOWED SEAT BELT WEBBING AND HARDWARE PINCHED WHEN THE DOOR IS
CLOSED? NO

OPEN-BODY VEHICLE (without doors): DOES THE SEAT BELT SYSTEM FULLY
RETRACT WHEN THE WEBBING TENSION-RELIEVING DEVICE IS MANUALLY
DEACTIVATED? YES NO

ACCESSIBILITY:

IS THE SEAT CUSHION REMOVABLE SO THE SEAT BACK SERVES A FUNCTION OTHER
THAN SEATING? NO

IS THE SEAT REMOVABLE? NO

IS THE SEAT MOVABLE SO THE SPACE FORMERLY OCCUPIED BY THE SEAT CAN BE
USED FOR A SECONDARY FUNCTION? NO

NOTE: IF ANY OF THE ABOVE ANSWERS ARE "YES", THE ACCESSIBILITY
REQUIREMENTS DO NOT APPLY.

TABLE 7 FMVSS 208 COMFORT & CONVENIENCE DATA FOR MANUAL SEAT BELTS, CONT'D

MAKE/MODEL: Mitsubishi/3000 GT

VIN: JA3BM54J6PY002682

BODY STYLE: 3-door hatchback

NHTSA NO.: CP5601

DATE OF MANUFACTURE: 06/92

ACCESSIBILITY, CONT'D:

IF WEBBING IS DESIGNED TO PASS THROUGH THE SEAT CUSHION OR BETWEEN THE CUSHION AND SEAT BACK ARE ONE OF THE FOLLOWING PARTS NORMALLY ON TOP OF OR ABOVE THE SEAT CUSHION: LATCHPLATE, BUCKLE, WEBBING?

Not Applicable, the webbing is not designed to pass through the seat cushion or between the cushion and seat back.

ARE THE REMAINING TWO PARTS ACCESSIBLE UNDER NORMAL CONDITIONS?

Not Applicable, the webbing is not designed to pass through the seat cushion or between the cushion and seat back.

DO THE LATCHPLATE AND BUCKLE PASS THROUGH THE GUIDES PROVIDED AND FALL BEHIND THE SEAT WHEN THE BELT IS COMPLETELY RETRACTED (OR DETACHED IF NOT RETRACTABLE); THE SEAT IS MOVED TO ANY POSITION; AND THE SEAT BACK, IF FOLDABLE, IS FOLDED FORWARD AS FAR AS POSSIBLE AND THEN MOVED BACKWARD INTO POSITION?

Not Applicable, the restraint system does not provide guides.

IS THE INBOARD RECEPTACLE END OF THE OUTBOARD SEATING POSITION'S SEAT BELT ACCESSIBLE WITH THE CENTER ARM REST IN ANY POSITION TO WHICH IT CAN BE ADJUSTED WITHOUT MOVING THE ARM REST FOR ACCESS? YES

TABLE 8 FMVSS 208 SEAT BELT WARNING SYSTEM DATA

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

Duration of audible warning signal = 6 sec.

Duration of reminder light operation = 6 sec.

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

Duration of audible warning signal = 0 sec.

(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 in the glove box.

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

- ☐ Replace
☐ Repair
☒ Other: Have system inspected

This system: (check one)

- ☐ a. by ☐ month, ☐ year
☐ b. by ☐ miles
☒ 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, page 33

WAS A DESCRIPTION OF THE FUNCTIONAL OPERATION OF THE SYSTEM PROVIDED? YES, owner's manual, pages 31 & 32

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 31, 32 & 33

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 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 31

FIGURE 4 FMVSS 212 TEST DATA

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

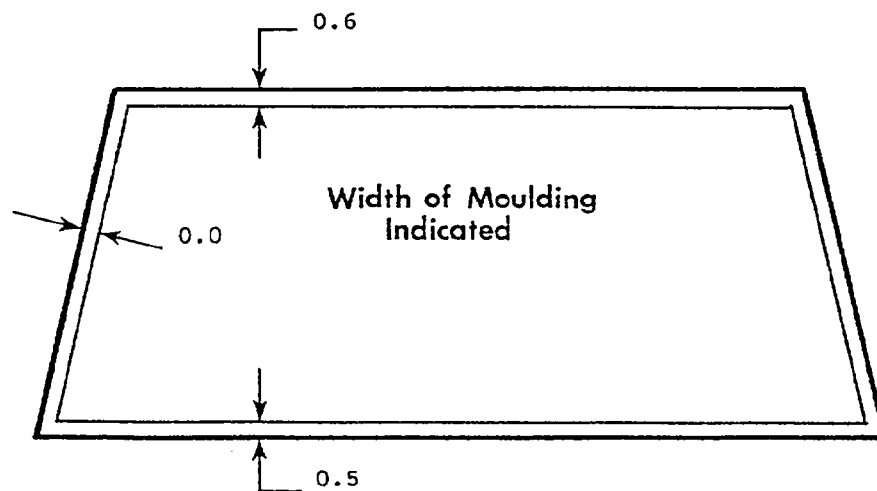
Plastic trim along upper and lower edges of windshield, adhesive around the entire perimeter of windshield.

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	81.0	81.0	100
LEFT SIDE	81.0	81.0	100
TOTAL	162.0	162.0	100

PRE-TEST WINDSHIELD MOUNTING MATERIAL TEMPERATURE: 70° 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:

A = 46.0

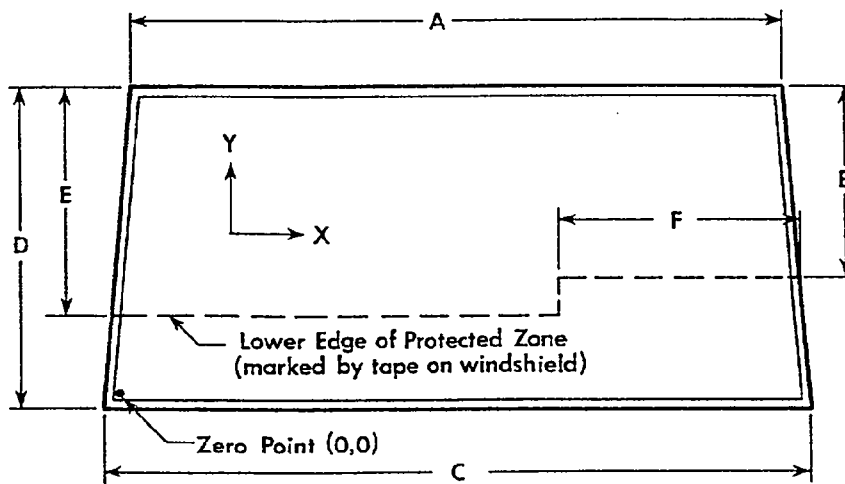
B = 13.4

C = 59.0

D = 29.8

E = 19.5

F = 17.9



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: Mitsubishi/3000 GT

NHTSA NO.: CP5601

FUEL SYSTEM CAPACITY: 20.0 GALLONS (FROM OWNER'S MANUAL)

USABLE CAPACITY: 19.8 GALLONS (FURNISHED BY COTR)

TEST VOLUME RANGE: 18.2 GALLONS TO 18.6 GALLONS (92-94% OF USABLE)

ACTUAL TEST VOLUME: 18.5 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 is located behind the rear axle.

The fuel filler is on the right side. The fuel lines run along the
right side 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.: CP5601; TEST DATE: 12/23/92

VEHICLE MAKE/MODEL/BODY STYLE: Mitsubishi/3000 GT/3-door hatchback

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.

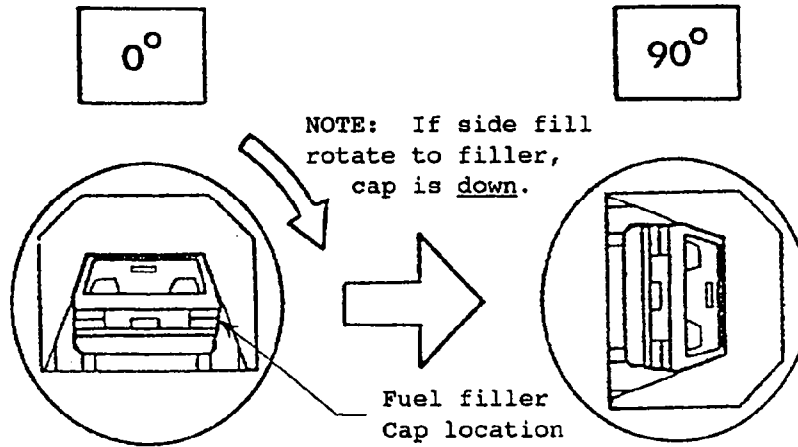
FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

FIGURE 6 FMVSS 301 STATIC ROLLOVER TEST DATA

NHTSA NO.: CP5601

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.

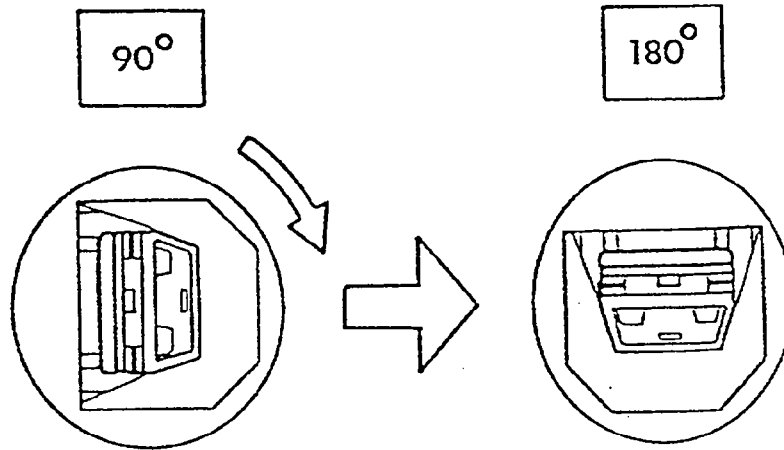
FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

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

NHTSA NO.: CP5601

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:

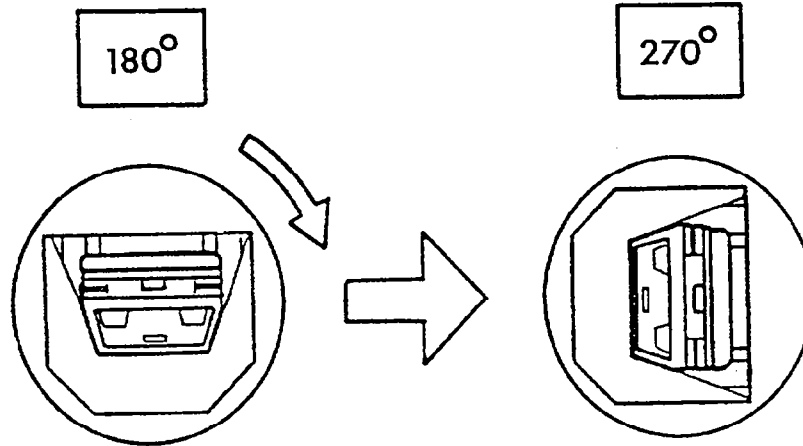
<u>90° TO 180° ROTATION</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 oz.	5 oz.
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

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

NHTSA NO.: CP5601
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:

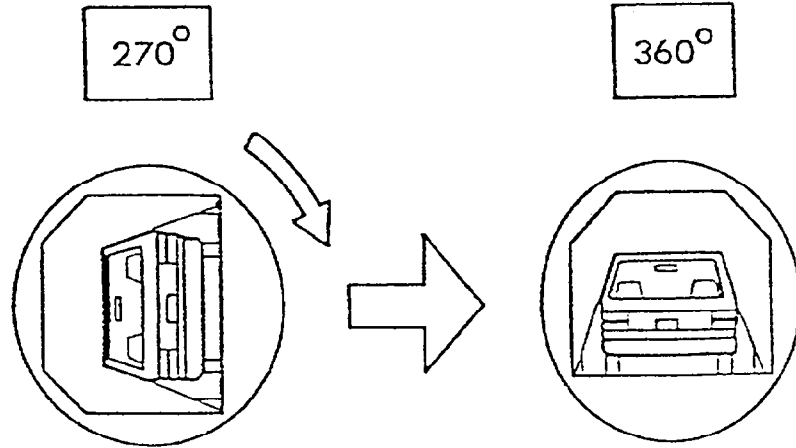
<u>180° TO 270° ROTATION</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 oz.	5 oz.
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

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

NHTSA NO.: CP5601
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

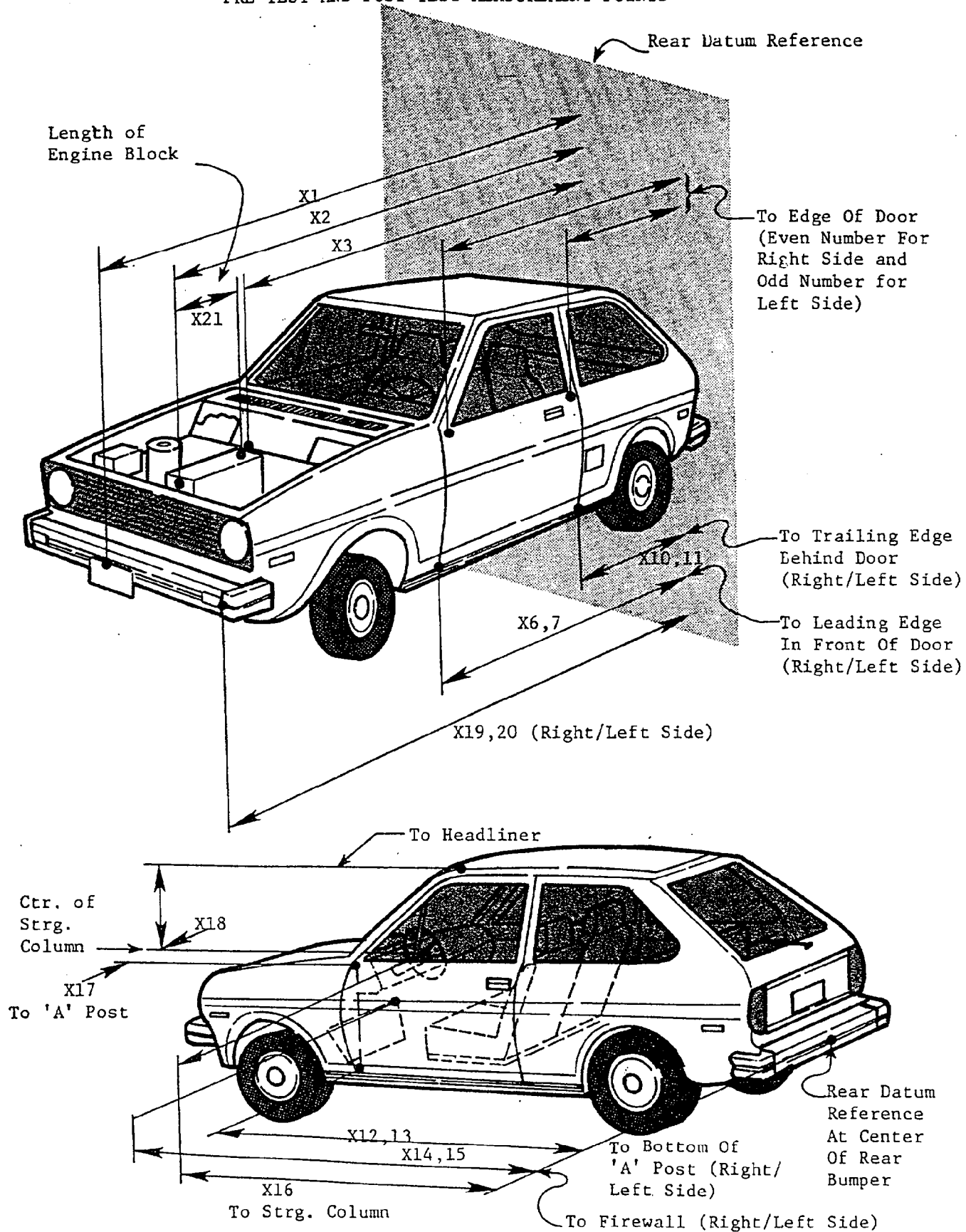
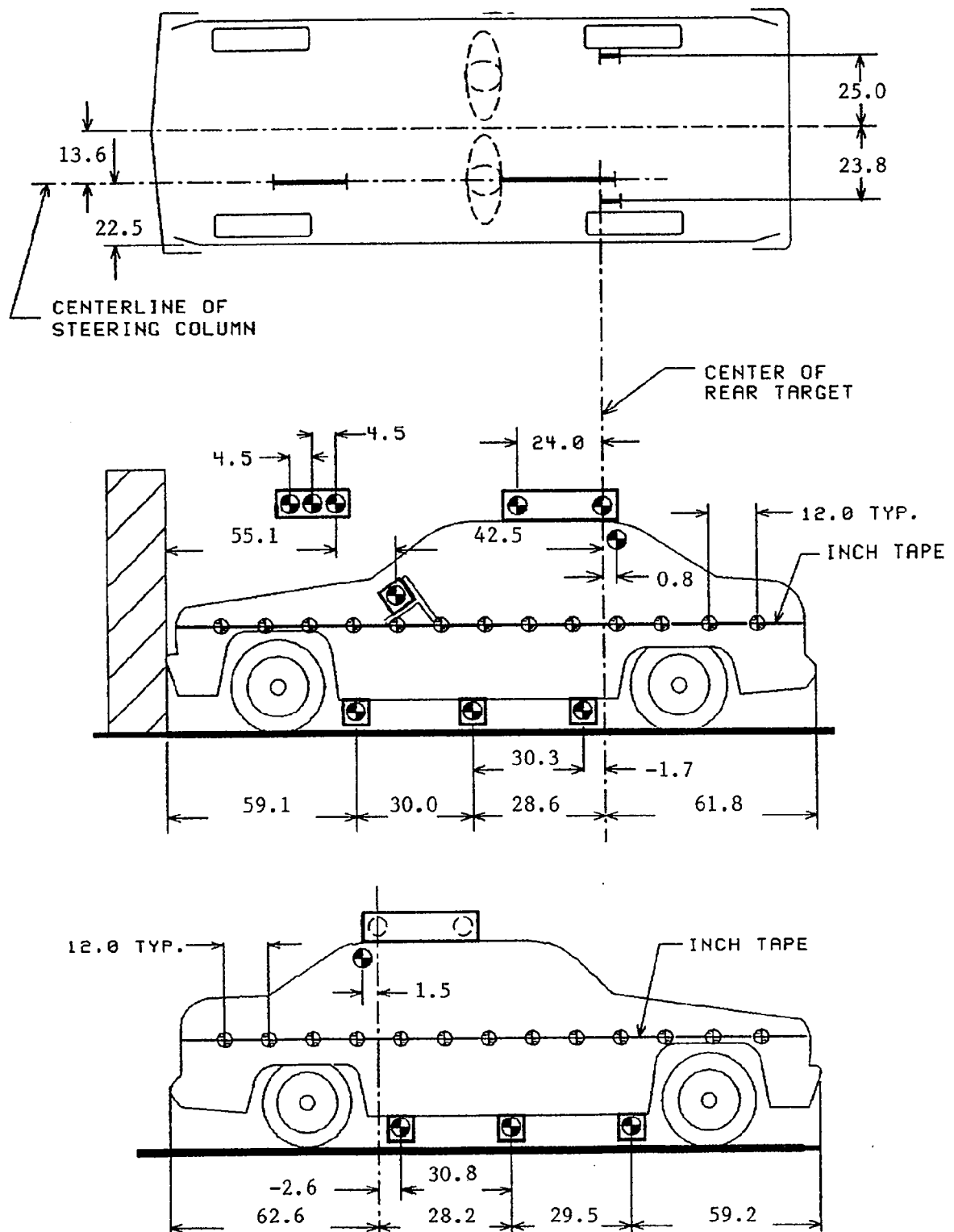


TABLE 13 IMPACTED VEHICLE MEASUREMENTS

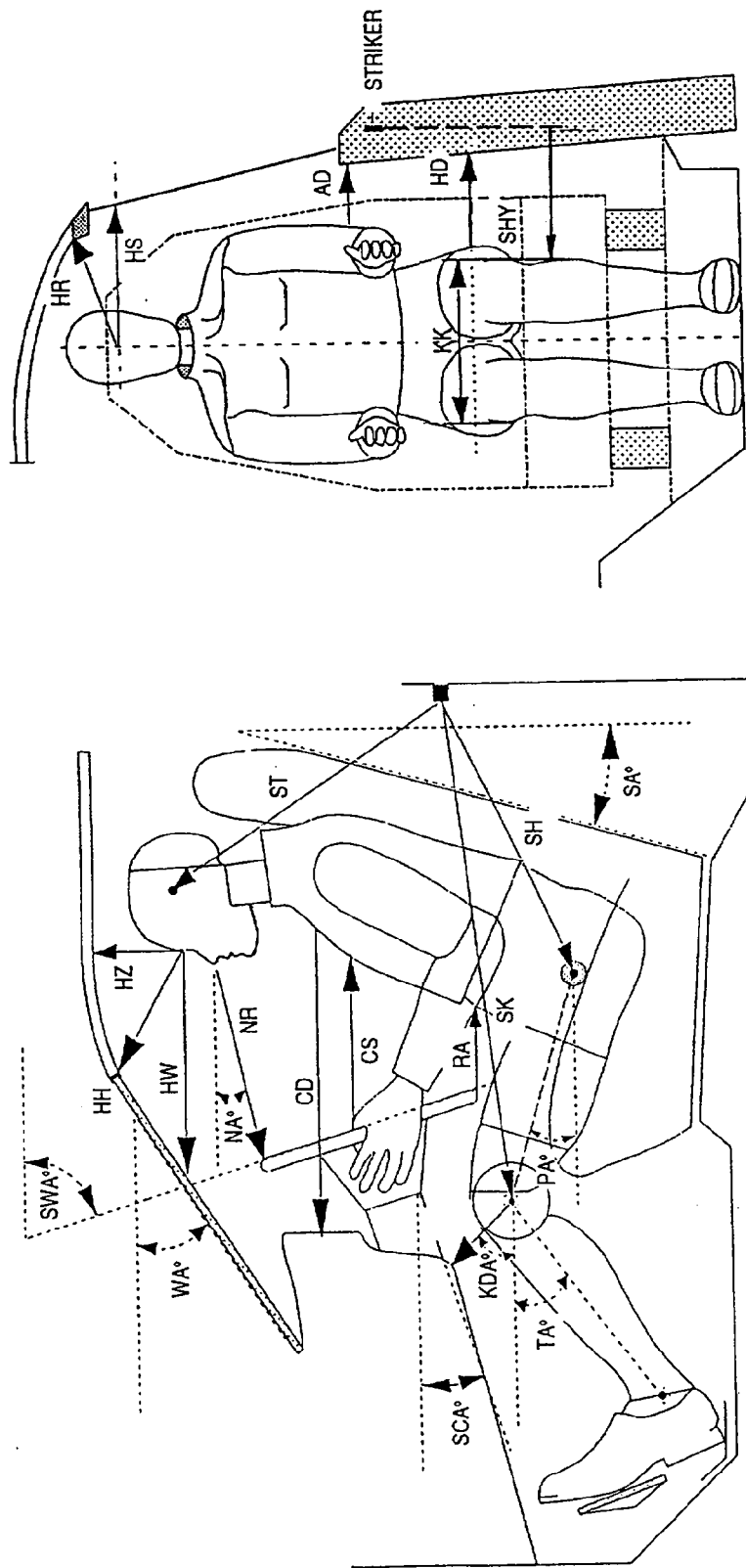
VEHICLE MAKE/MODEL: Mitsubishi/3000 GT		TEST NUMBER: 921223		ALL MEASUREMENTS ARE IN INCHES		
NO.	TYPE OF MEASUREMENT	PRE-TEST	POST-TEST	DIFF.		
X1	TOTAL LENGTH OF VEHICLE AT CENTERLINE	179.5	158.5	21.0		
X2	REAR SURFACE OF VEHICLE TO FRONT OF ENGINE BLOCK	158.2	152.5	5.7		
X3	REAR SURFACE OF VEHICLE TO FIREWALL	128.8	128.2	0.6		
X4	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF RIGHT DOOR	115.2	115.0	0.2		
X5	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF LEFT DOOR	115.2	115.0	0.2		
X6	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF RIGHT DOOR	112.5	112.4	0.1		
X7	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF LEFT DOOR	112.8	112.6	0.2		
X8	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF RIGHT DOOR	63.9	63.7	0.2		
X9	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF LEFT DOOR	64.0	63.8	0.2		
X10	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF RIGHT DOOR	69.0	68.9	0.1		
X11	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF LEFT DOOR	69.0	68.9	0.1		
X12	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON RIGHT SIDE	114.0	114.4	-0.4		
X13	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON LEFT SIDE	113.9	114.6	-0.7		
X14	REAR SURFACE OF VEHICLE TO FIREWALL - RIGHT SIDE	130.8	127.4	3.4		
X15	REAR SURFACE OF VEHICLE TO FIREWALL - LEFT SIDE	127.9	125.1	2.8		
X16	REAR SURFACE OF VEHICLE TO STEERING WHEEL CENTER	98.9	100.4	-1.5		
X17	CENTER OF STEERING COLUMN TO "A" POST	12.2	15.9	-3.7		
X18	CENTER OF STEERING COLUMN TO HEADLINER	15.8	16.6	-0.8		
X19	REAR SURFACE OF VEHICLE TO RIGHT SIDE OF FRONT BUMPER	173.4	162.6	10.8		
X20	REAR SURFACE OF VEHICLE TO LEFT SIDE OF FRONT BUMPER	173.5	159.8	13.7		
X21	LENGTH OF ENGINE BLOCK	16.0	16.0	0.0		

FIGURE 8
VEHICLE TARGET LOCATIONS

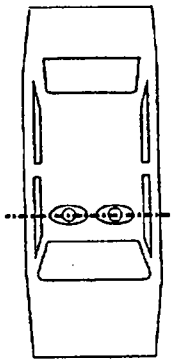


ALL DISTANCE MEASUREMENTS ARE IN INCHES.

FIGURE 9
DUMMY MEASUREMENT LOCATIONS FOR FRONT SEAT OCCUPANTS



VERTICAL TRANSVERSE PLANE



VERTICAL LONGITUDINAL PLANE

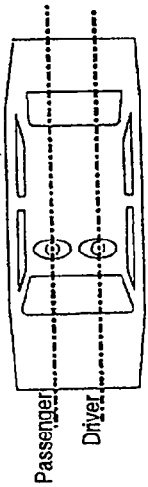


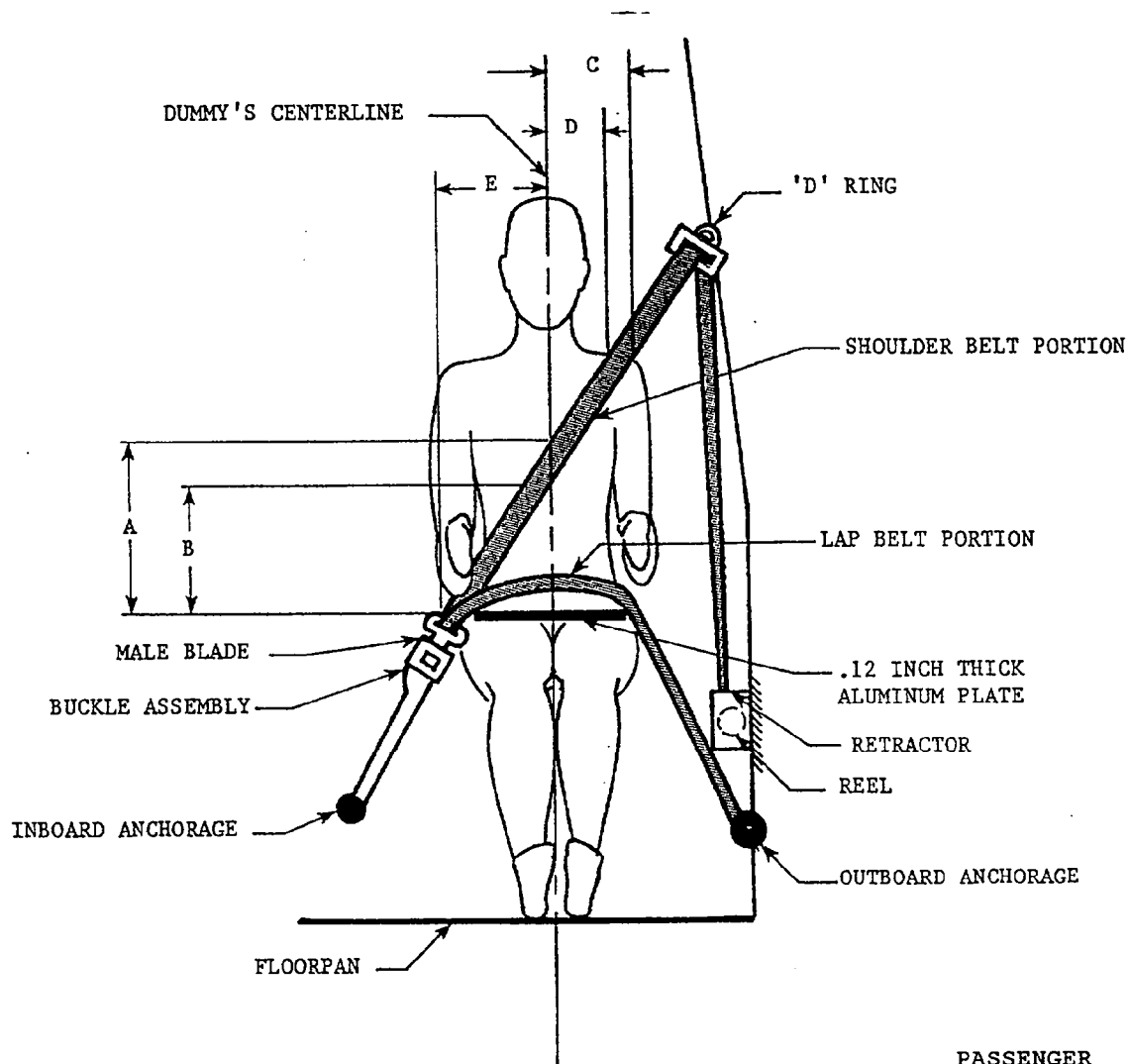
TABLE 14 DUMMY MEASUREMENT DATA FOR FRONT SEAT OCCUPANTS

DESIGNATION	TYPE OF MEASUREMENT	DRIVER (SERIAL #230)	PASSENGER (SERIAL #229)
WA°	WINDSHIELD ANGLE	25°	NA
SWA°	STEERING WHEEL ANGLE	16°	NA
SCA°	STEERING COLUMN ANGLE	16°	NA
SA°	SEAT BACK ANGLE	21°	21°
HZ	HEAD TO ROOF	4.6	5.1
HH	HEAD TO HEADER	9.1	10.5
HW	HEAD TO WINDSHIELD	16.7	18.8
HR	HEAD TO SIDE HEADER	6.3	6.0
NR	NOSE TO RIM	11.7	NA
NA	NOSE TO RIM ANGLE	9°	NA
CD	CHEST TO DASH	19.6	22.1
CS	STEERING WHEEL TO CHEST	12.1	NA
RA	RIM TO ABDOMEN	8.4	NA
KDL	LEFT KNEE TO DASH	5.8	7.8
KDR	RIGHT KNEE TO DASH	6.6	7.4
KDA	OUTBOARD KNEE TO DASH ANGLE	35°	44°
PA°	PELVIC ANGLE	24°	23°
TA°	TIBIAL ANGLE	25°	26°
KK	KNEE TO KNEE	12.5	10.6
ST	STRIKER TO HEAD	22.0	20.5
	STRIKER TO HEAD ANGLE	-49°	-49°
SK	STRIKER TO KNEE	34.1	32.2
	STRIKER TO KNEE ANGLE	8°	11°
SH	STRIKER TO H-POINT	20.5	19.6
	STRIKER TO H-POINT ANGLE	24°	29°
SHY	STRIKER TO H-POINT (Y DIR.)	8.8	8.8
HS	HEAD TO SIDE WINDOW	9.6	10.1
HD	H-POINT TO DOOR	6.2	6.0
AD	ARM TO DOOR	3.9	3.8

THE SEAT BACK ANGLE (SA°) IS MEASURED RELATIVE TO VERTICAL, ALL OTHER ANGLES ARE MEASURED RELATIVE TO HORIZONTAL.

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

FIGURE 10 SEAT BELT POSITIONING DATA



	PASSENGER DUMMY
A - TOP SURFACE OF ALUM. PLATE TO BELT UPPER EDGE	12.8
B - TOP SURFACE OF ALUM. PLATE TO BELT LOWER EDGE	9.8
C - DUMMY CENTERLINE TO OUTER EDGE OF BELT AT CHEST FLESH TOP	4.1
D - DUMMY CENTERLINE TO INNER EDGE OF BELT AT CHEST FLESH TOP	2.0
E - DUMMY CENTERLINE TO INTERSECTION OF UPPER TORSO BELT AND LAP BELT	9.5

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

FIGURE 11

CAMERA POSITIONS

4, 7, 8

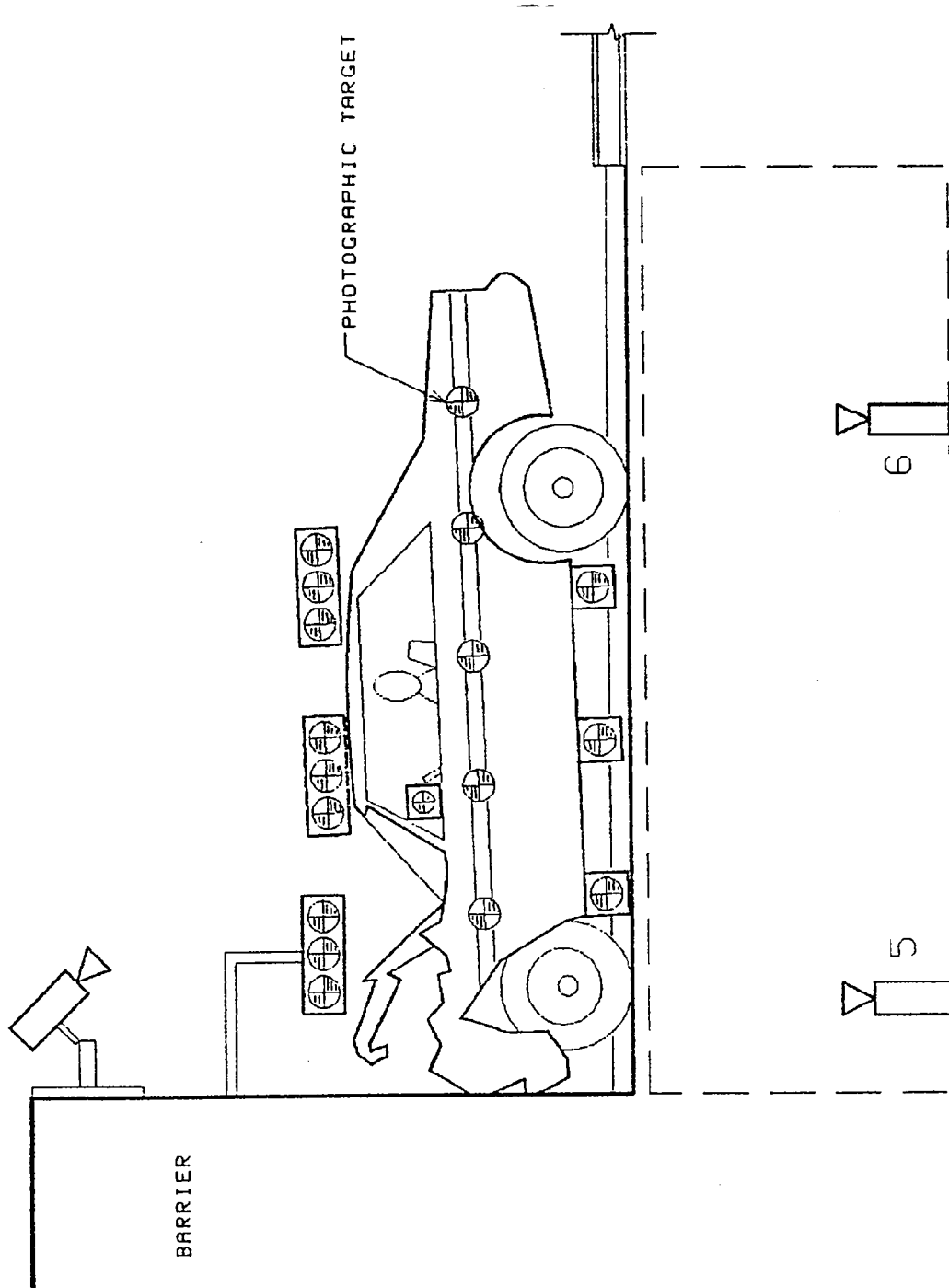


FIGURE 11

CAMERA POSITIONS, CONTINUED

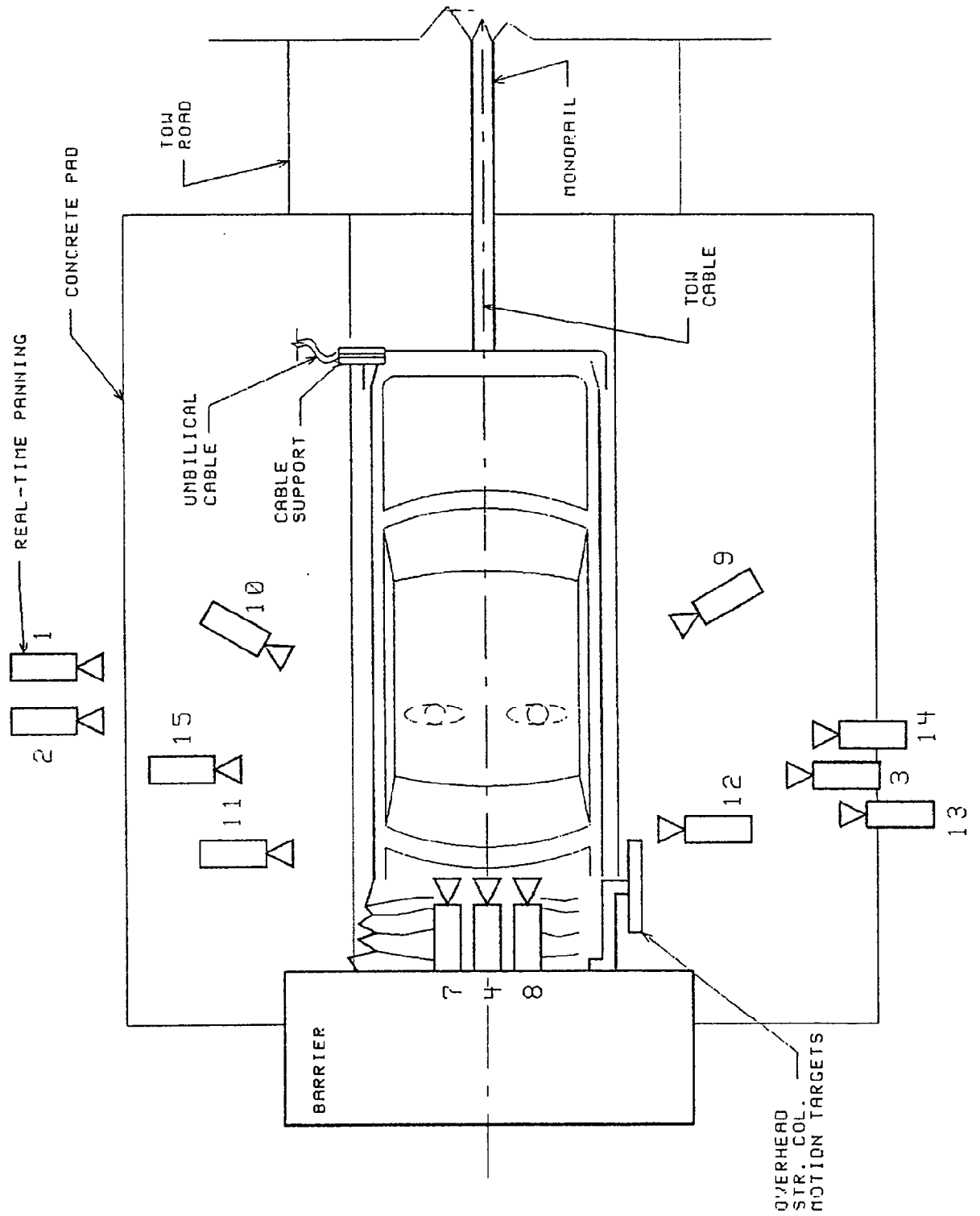


TABLE 15 MOTION PICTURE CAMERA LOCATIONS

TEST NO.: 921223		VEHICLE: Mitsubishi 3000 GT 3-door hatchback					FILM PLANE			FILM SPEED (FPS)
CAMERA NO.	VIEW	CAMERA POSITIONS (IN)*			ANGLE** (DEG)	TO HEAD TARGET (IN)	LENS (MM)			
		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		495	
3	Left vehicle crush	-41.5	295.0	44.0	-4	200.0	25		1012	
4	Windshield front view	-6.0	0.0	85.0	-40	NA	13		473	
5	Pit-left subframe sidemember	-8.0	29.0	-16.0	90	NA	13		998	
6	Pit-right subframe sidemember	-7.0	30.0	-12.0	90	NA	13		993	
7	Passenger front view	-4.5	-13.8	93.0	-50	NA	17		508	
8	Driver front view	-6.8	14.5	93.0	-50	NA	17		510	
9	Driver kinematics	-157.3	116.0	87.0	-27	99.0	25		500	
10	Passenger kinematics	-152.1	-116.0	87.0	-26	96.0	25		505	
11	Right windshield intrusion	-38.1	-306.1	44.0	0	NA	50		500	
12	Left windshield intrusion	-53.0	309.4	42.3	0	NA	50		508	
13	Steering column motion	-98.0	285.0	103.0	-14	NA	25		500	
14	Steering column motion	-98.0	285.0	75.1	-9	NA	25		498	
15	Passenger kinematics	-38.8	-293.0	45.3	-4	223.0	25		1020	
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

APPENDIX A

PHOTOGRAPHS

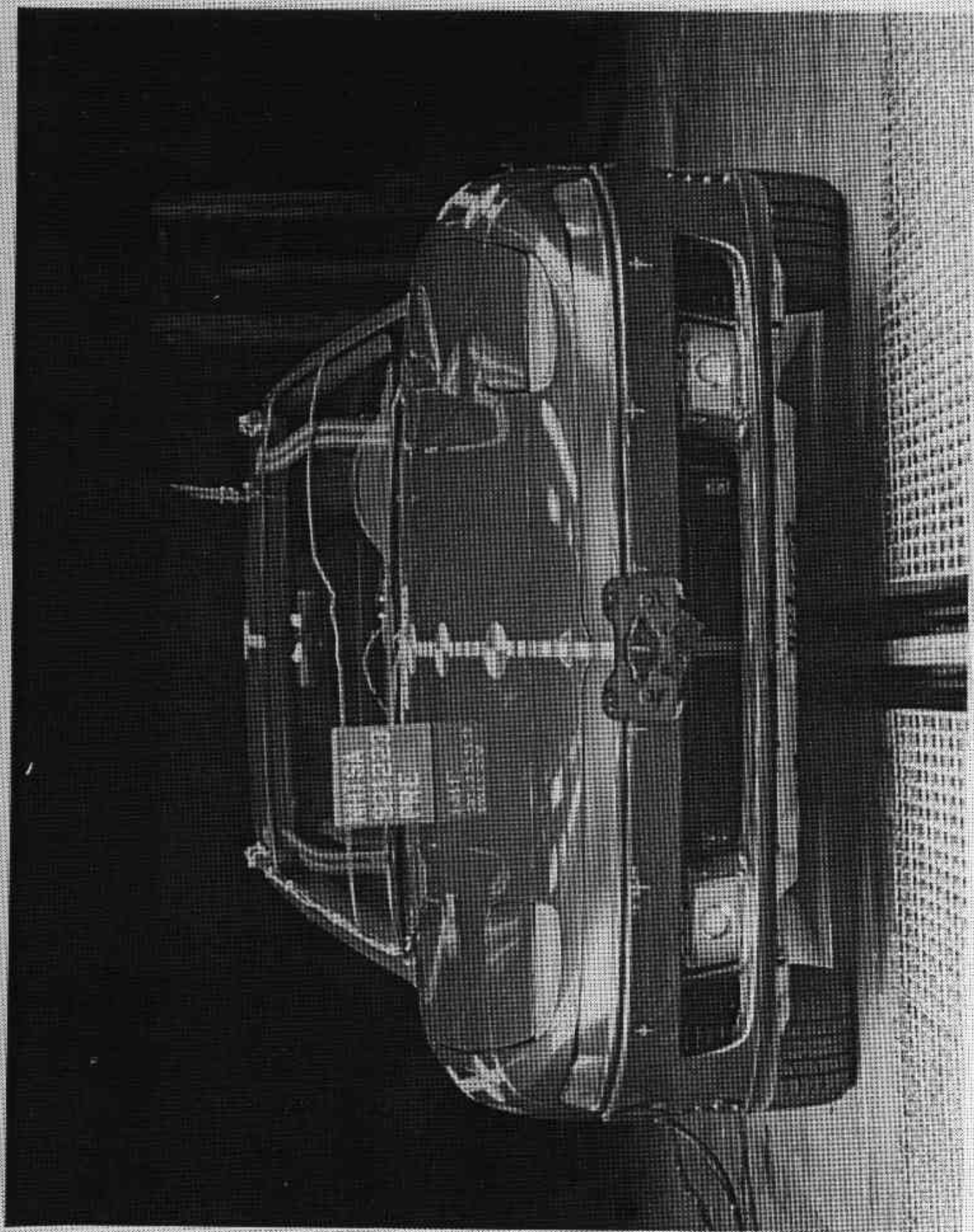


FIGURE A-1. PRE-TEST FRONT VIEW

A-2

921223

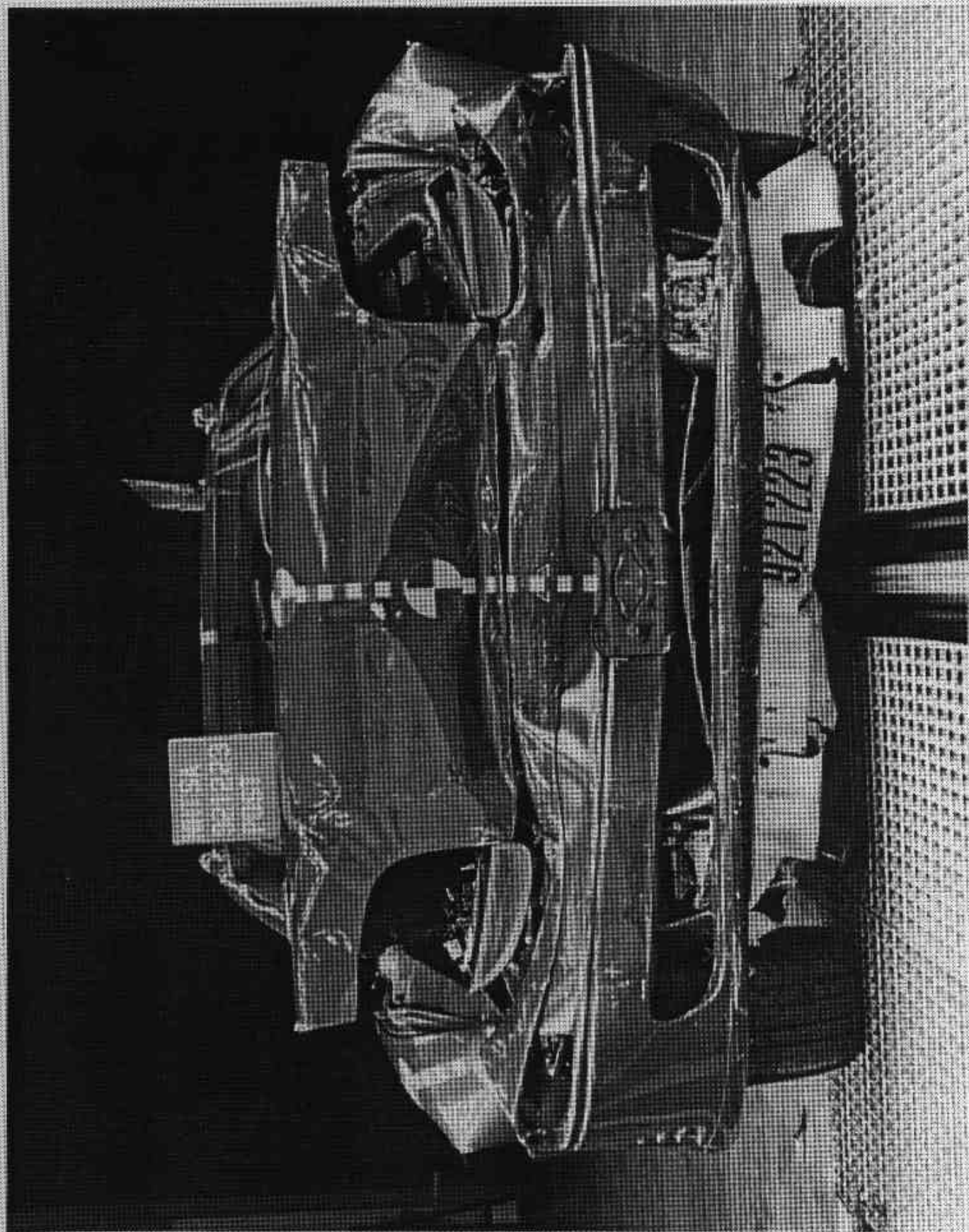


FIGURE A-2. POST-TEST FRONT VIEW

A-3

921223

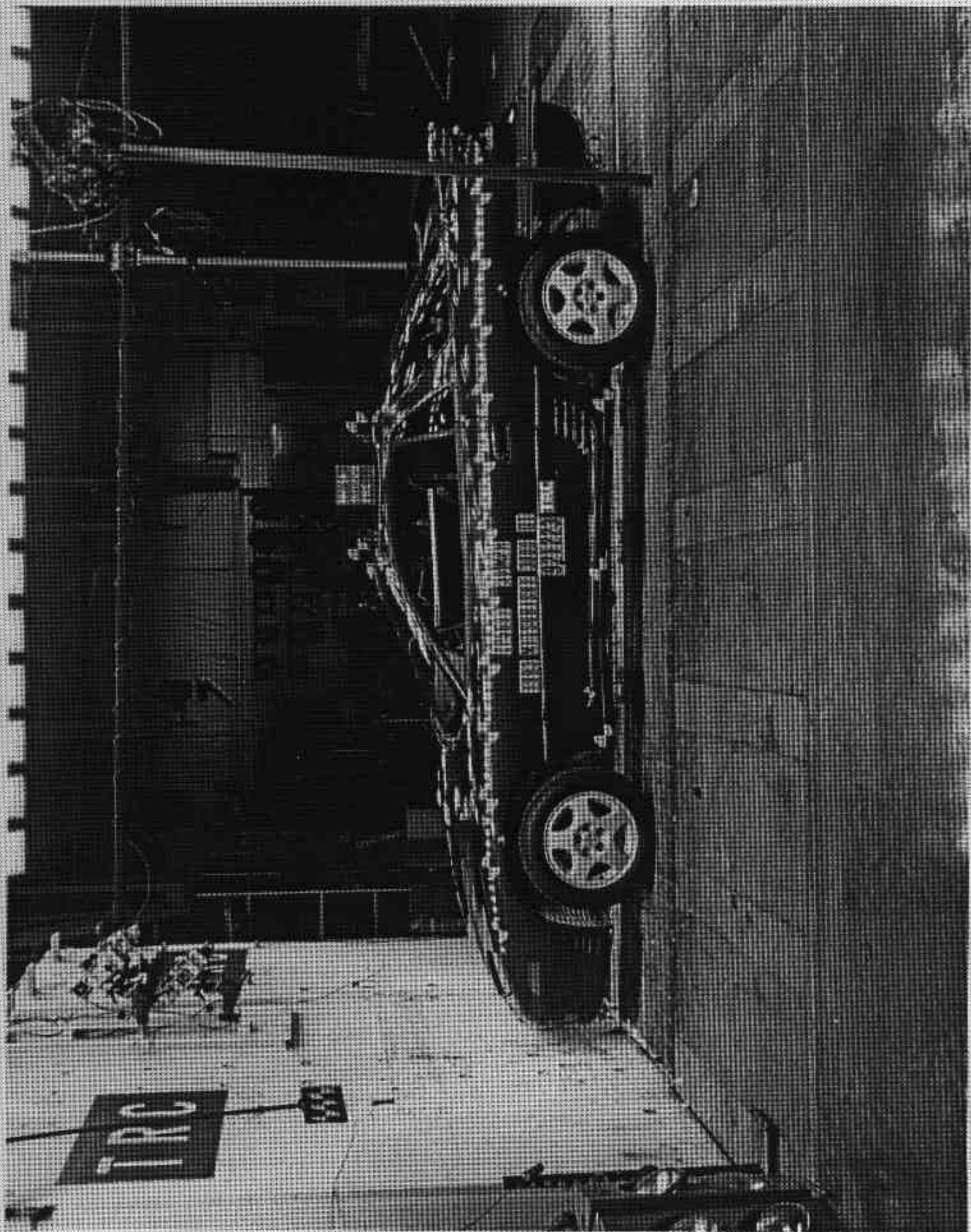


FIGURE A-3. PRE-TEST LEFT SIDE VIEW
A-4

921223

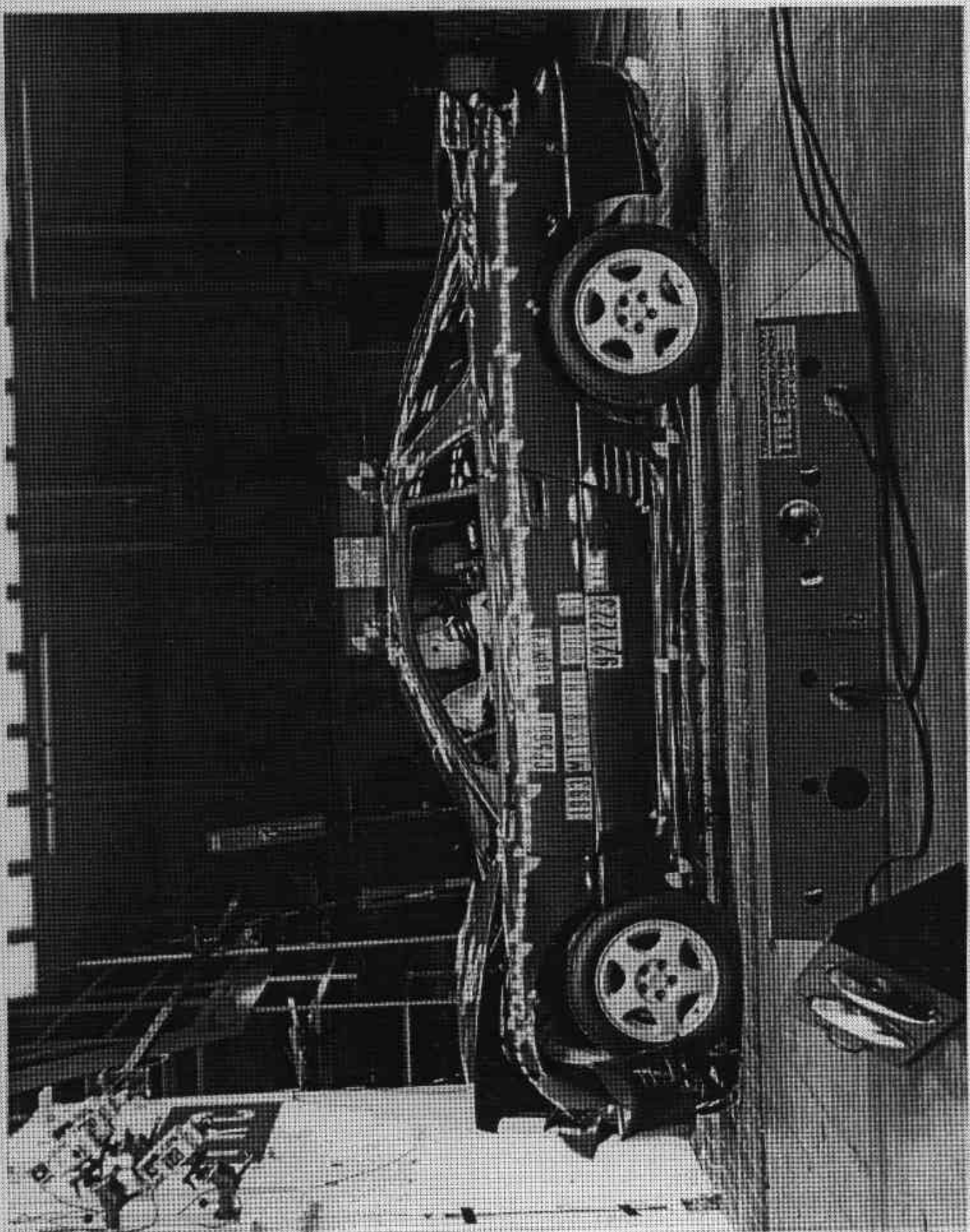


FIGURE A-4, POST-TEST LEFT SIDE VIEW
A-5

921223

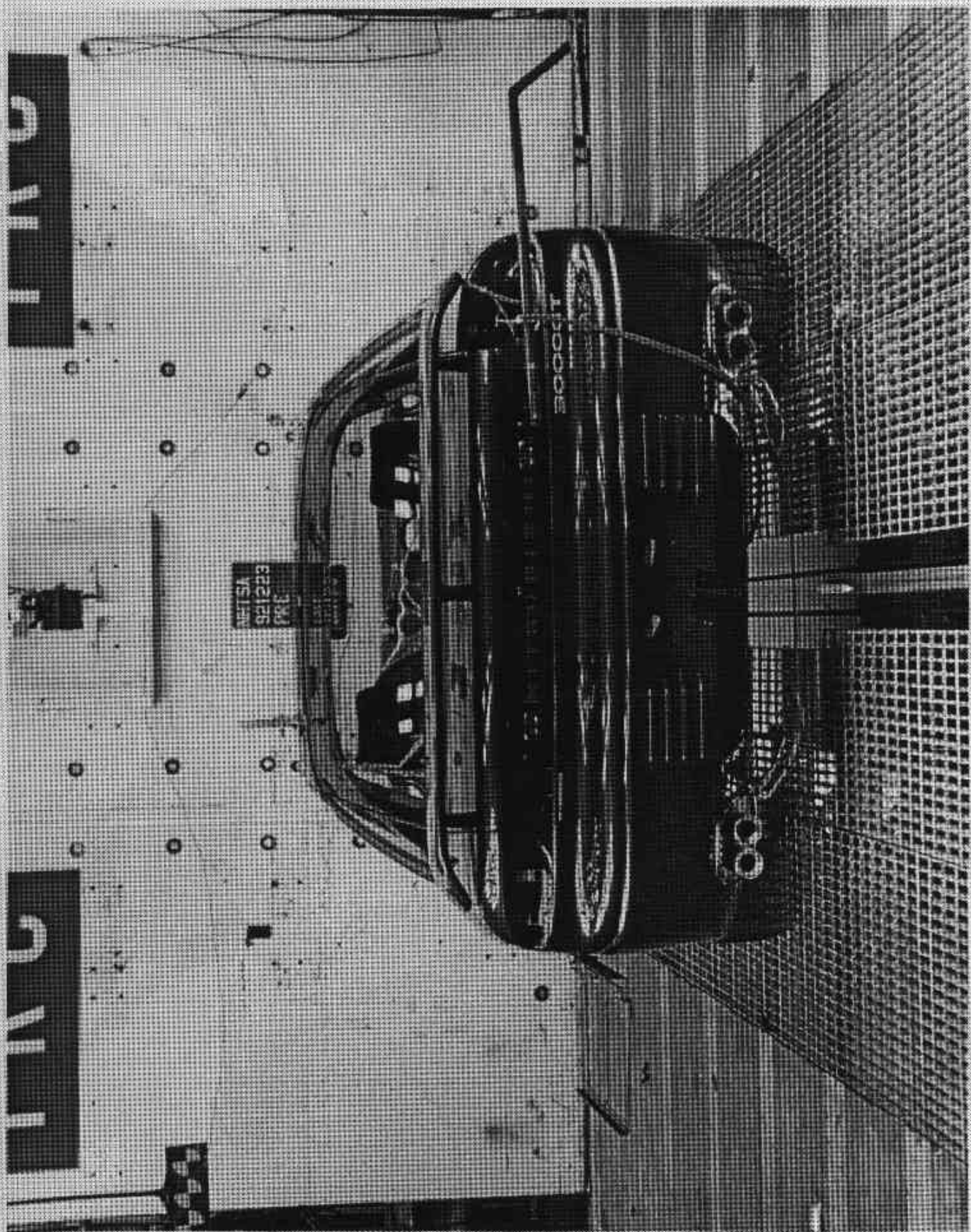


FIGURE A-5. PRE-TEST REAR VIEW

A-6

921223

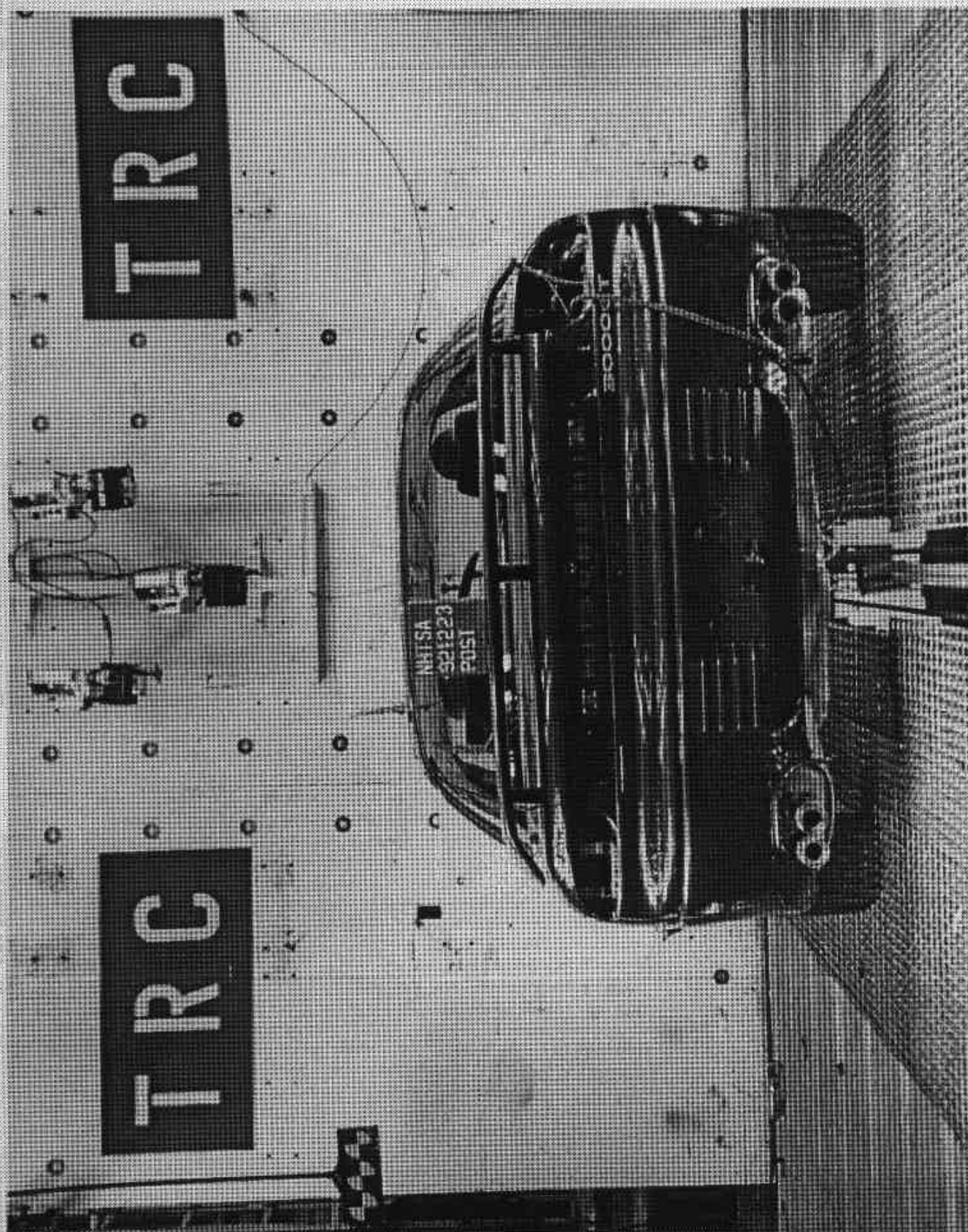


FIGURE A-6. POST-TEST REAR VIEW

A-7

921223

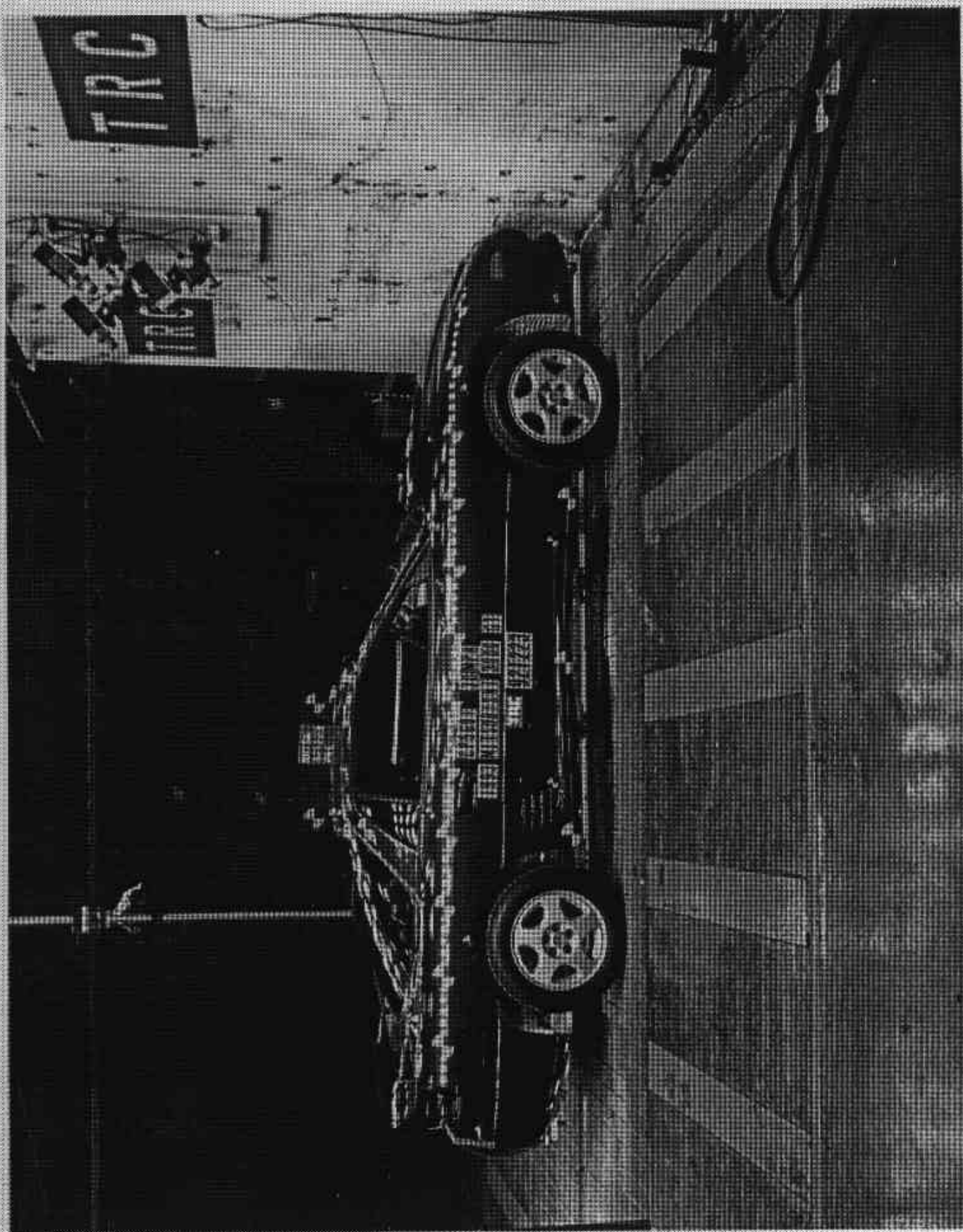


FIGURE A-7. PRE-TEST RIGHT SIDE VIEW
A-8

921223

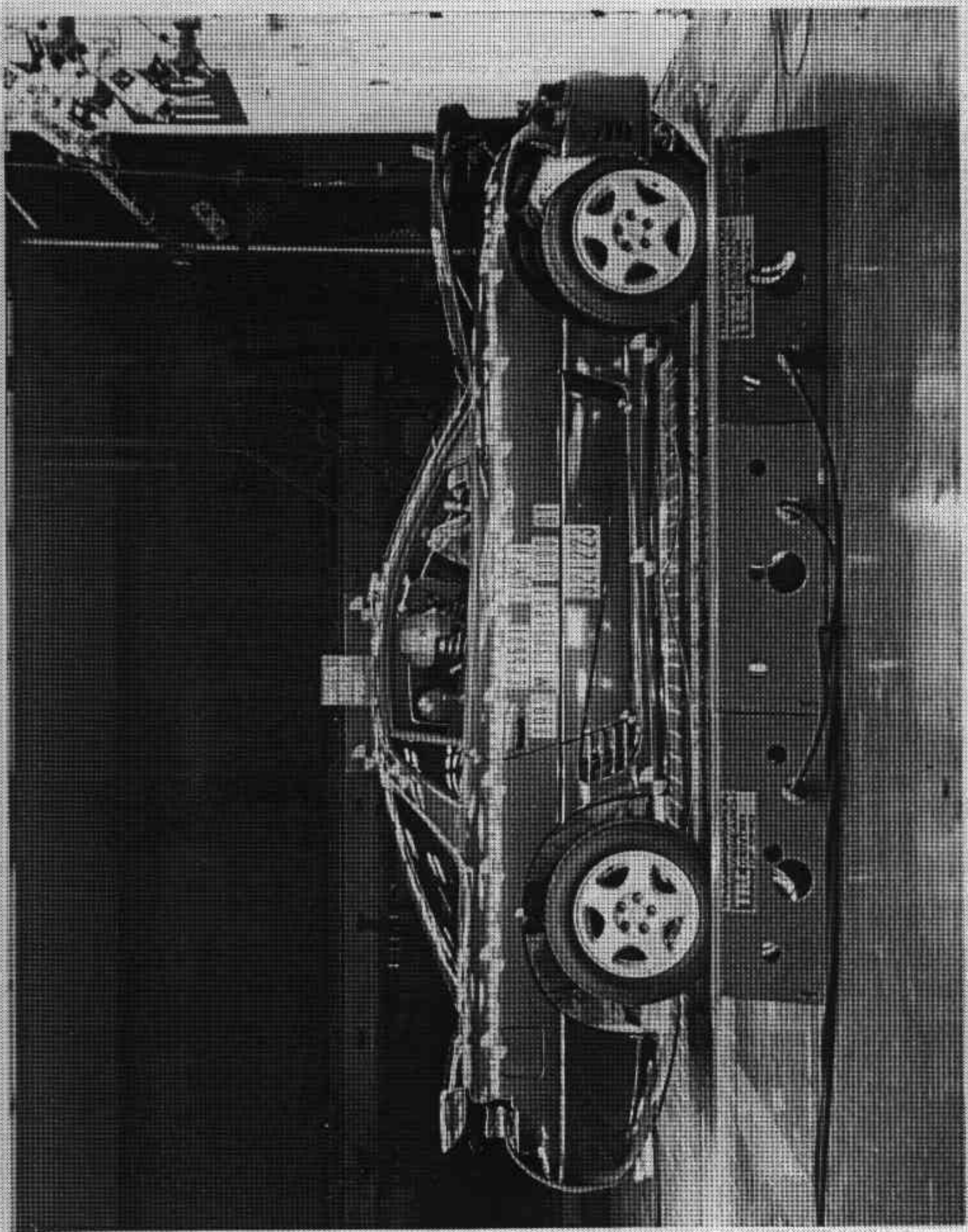


FIGURE A-8. POST-TEST RIGHT SIDE VIEW
A-9

921223



FIGURE A-9. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW
A-10

921223

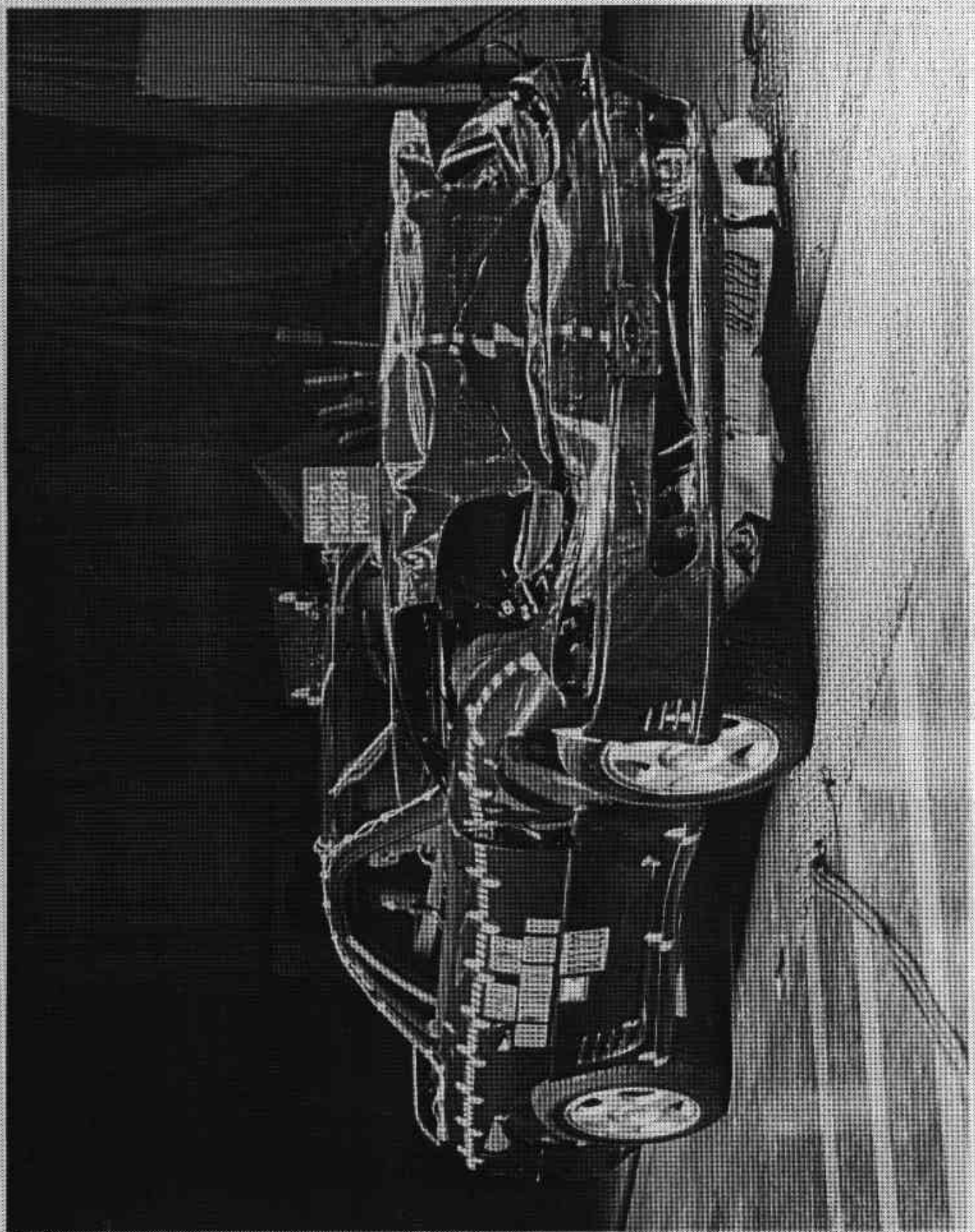


FIGURE A-10. POST-TEST RIGHT FRONT THREE-QUARTER VIEW

A-11

921223

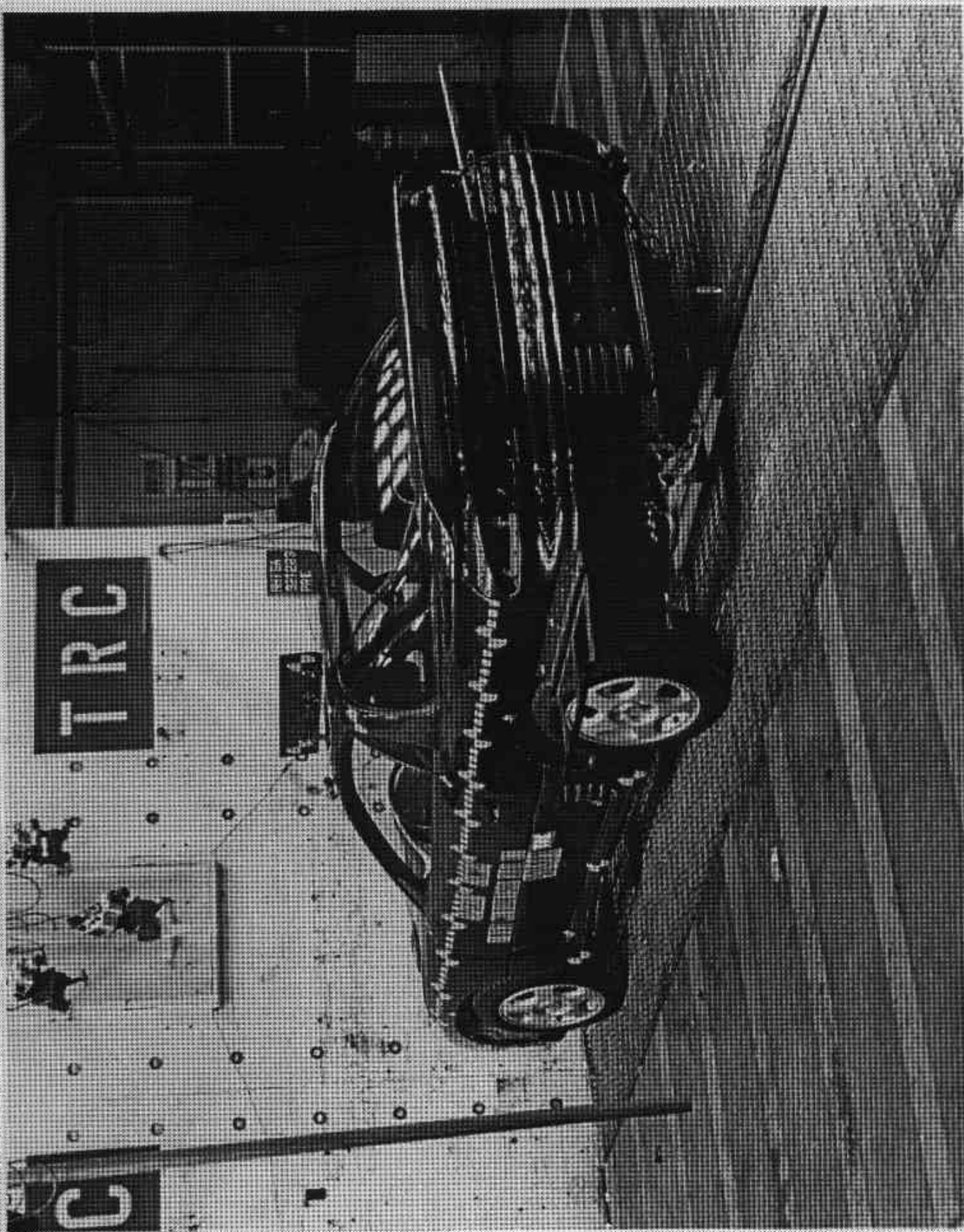


FIGURE A-11. PRE-TEST LEFT REAR THREE-QUARTER VIEW
A-12

921223

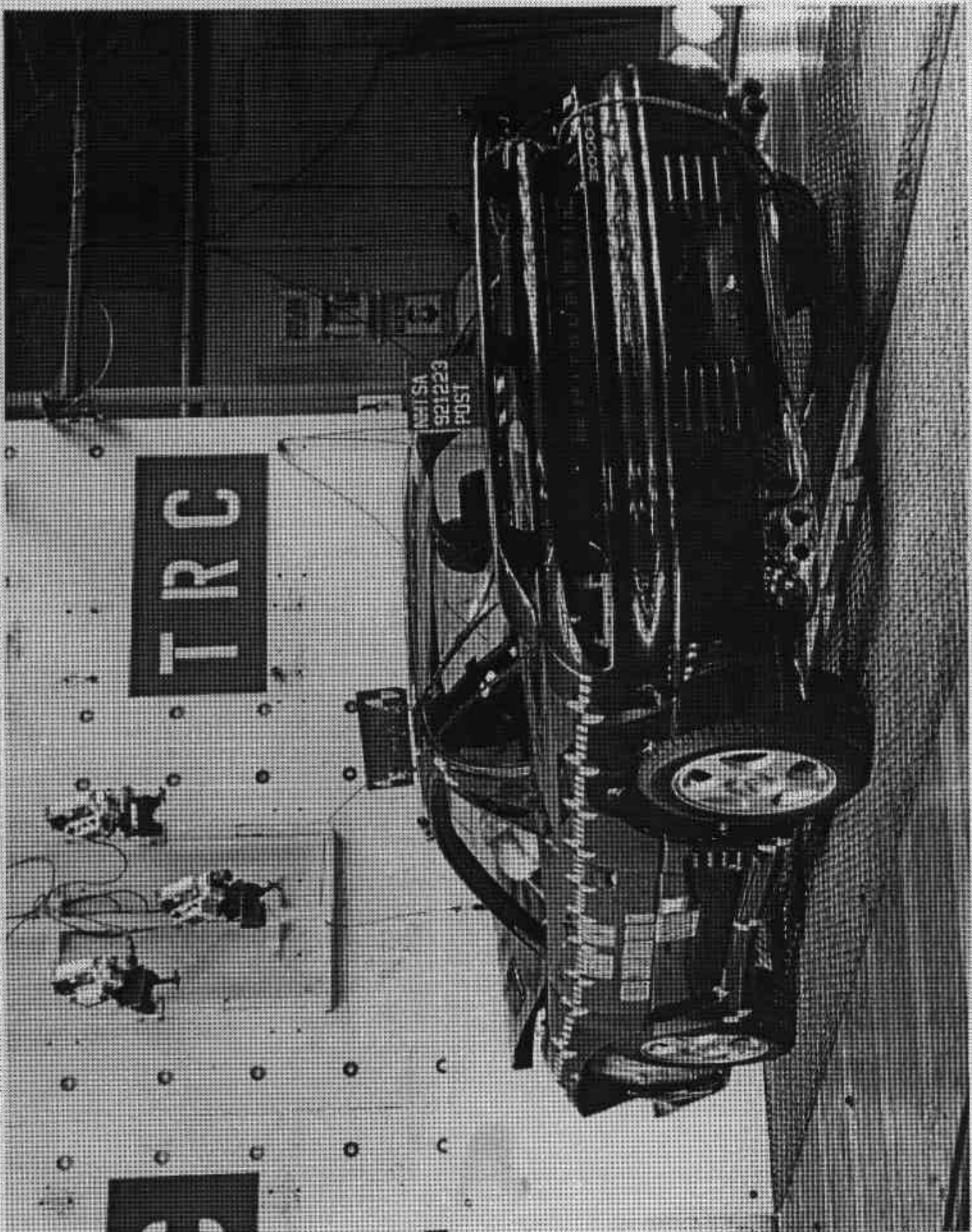


FIGURE A-12. POST-TEST LEFT REAR THREE-QUARTER VIEW
A-13

921223

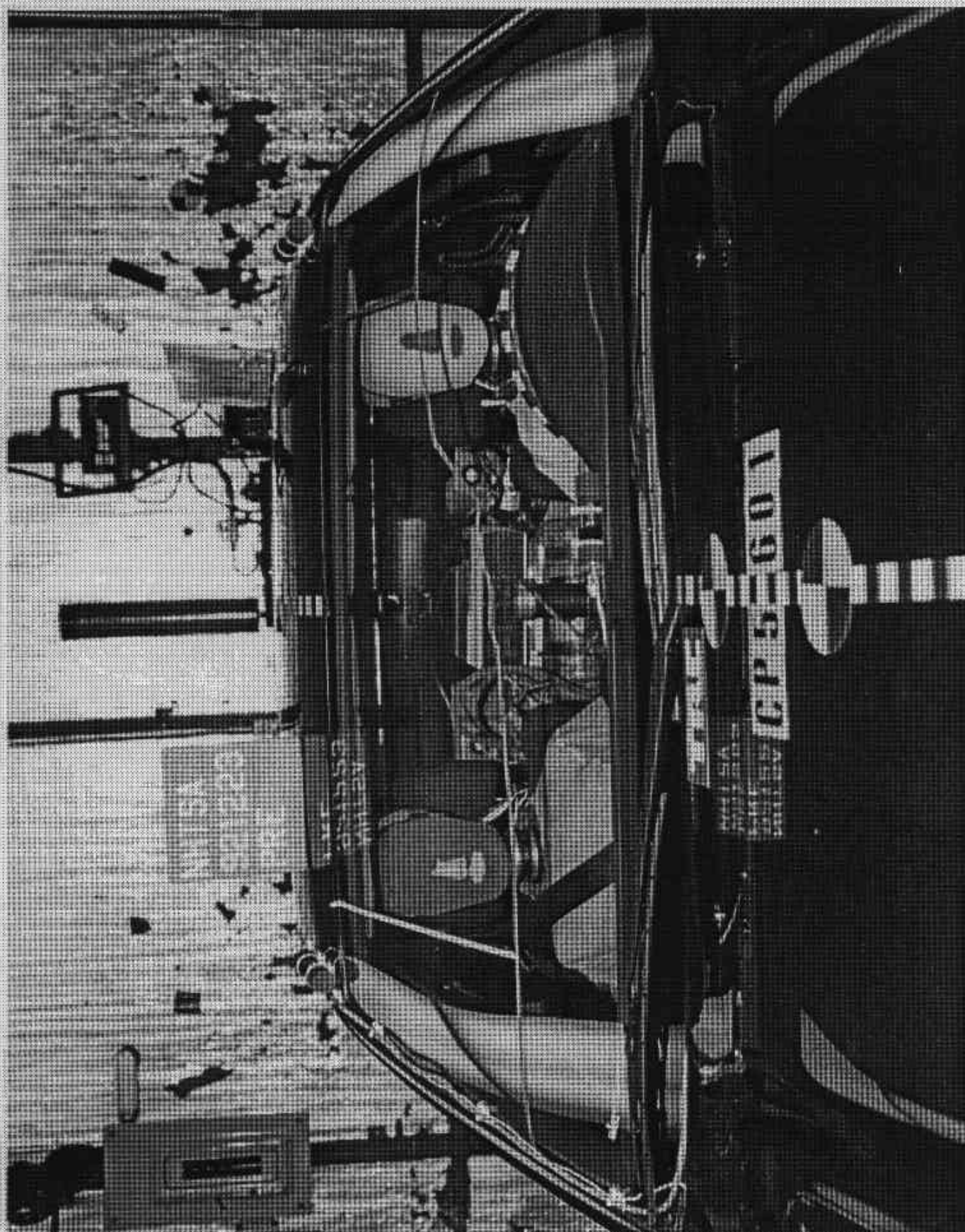


FIGURE A-13. PRE-TEST WINDSHIELD VIEW
A-14

921223

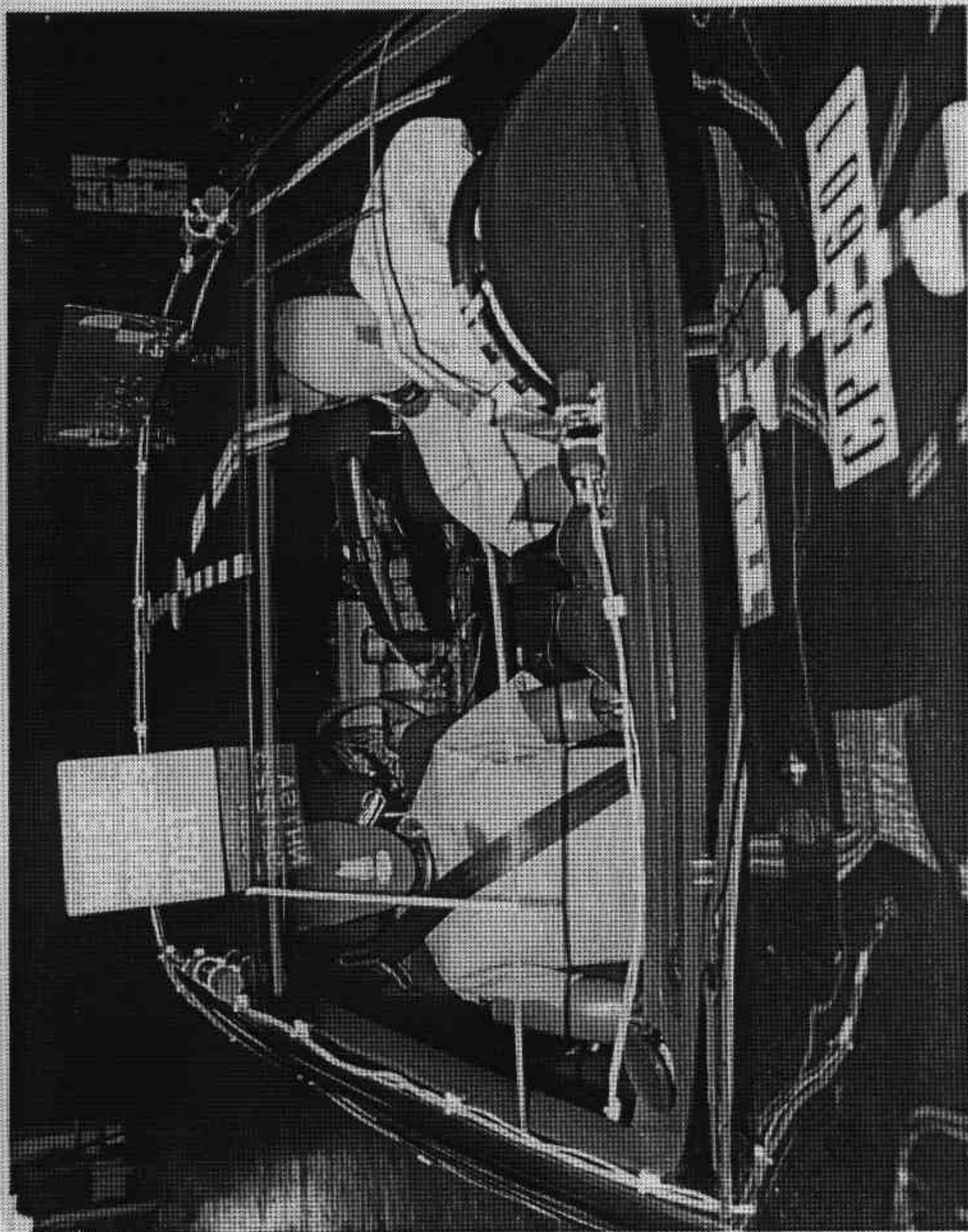


FIGURE A-14. POST-TEST WINDSHIELD VIEW
A-15

921223

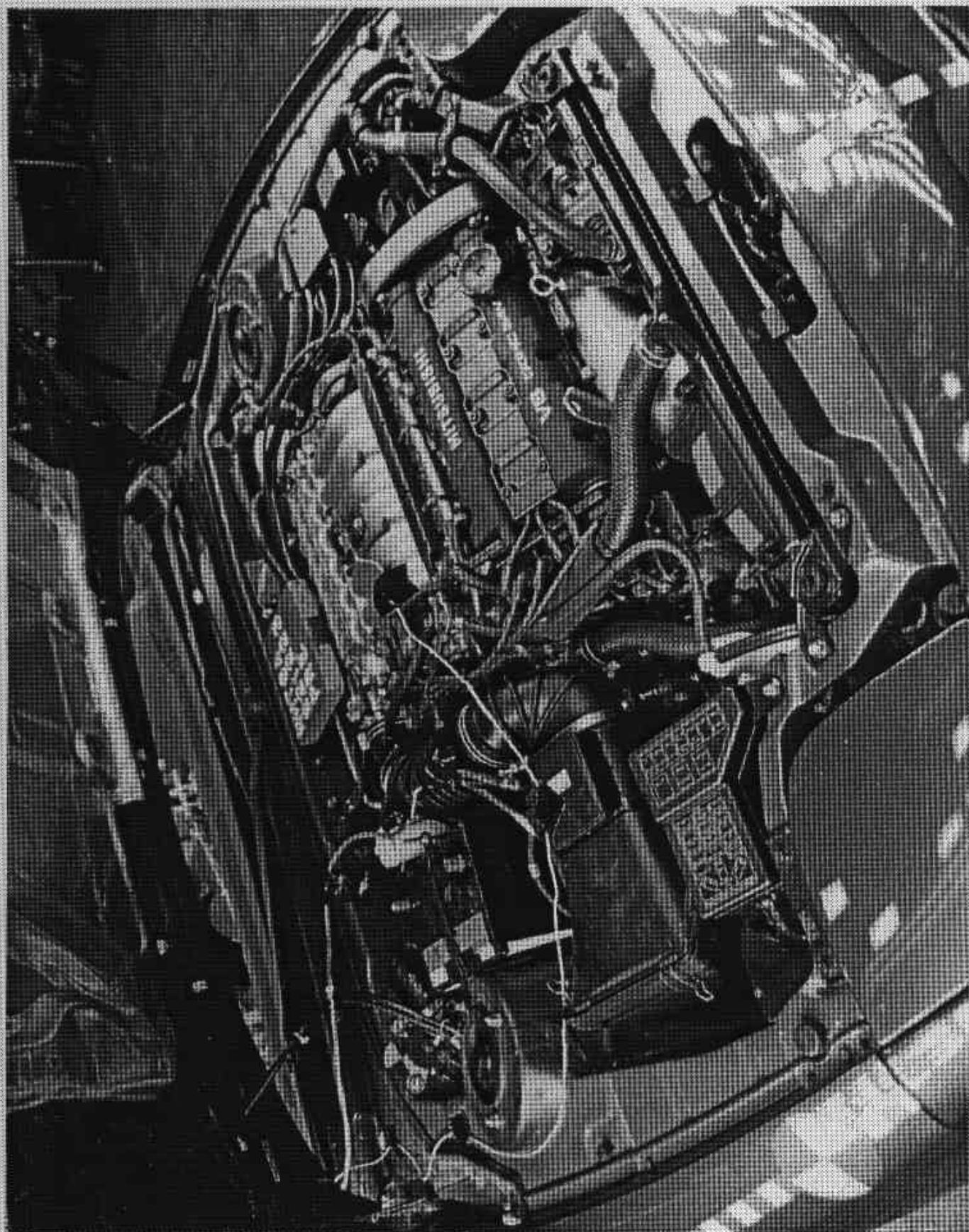


FIGURE A-15. PRE-TEST ENGINE COMPARTMENT VIEW
A-16

921223

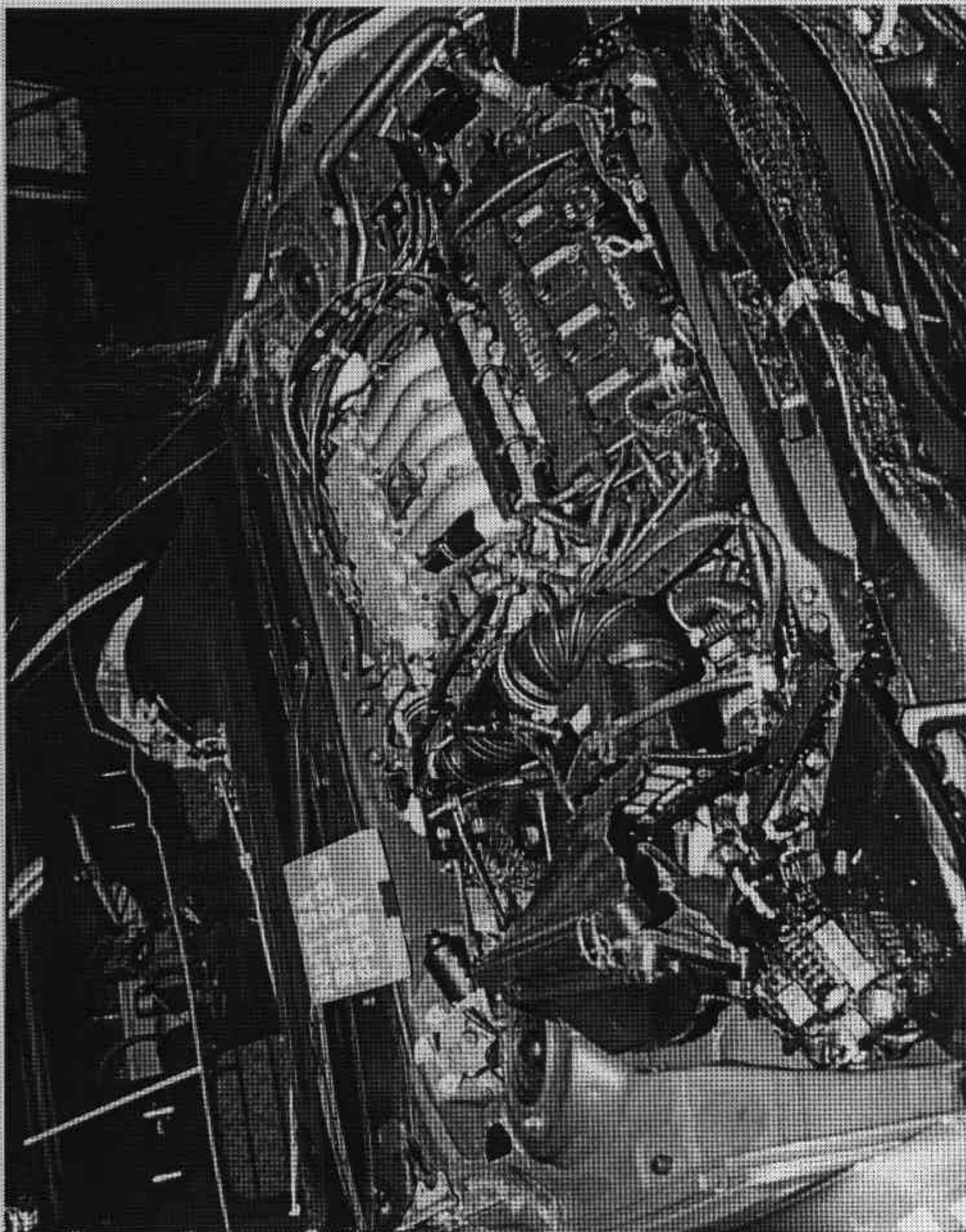


FIGURE A-16. POST-TEST ENGINE COMPARTMENT VIEW

A-17

921223



FIGURE A-17. PRE-TEST FUEL FILLER CAP VIEW
A-18

921223



FIGURE A-18. POST-TEST FUEL FILLER CAP VIEW

A-19

921223



FIGURE A-19. PRE-TEST FUEL FILLER NECK VIEW

A-20

921223



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

A-21

921223

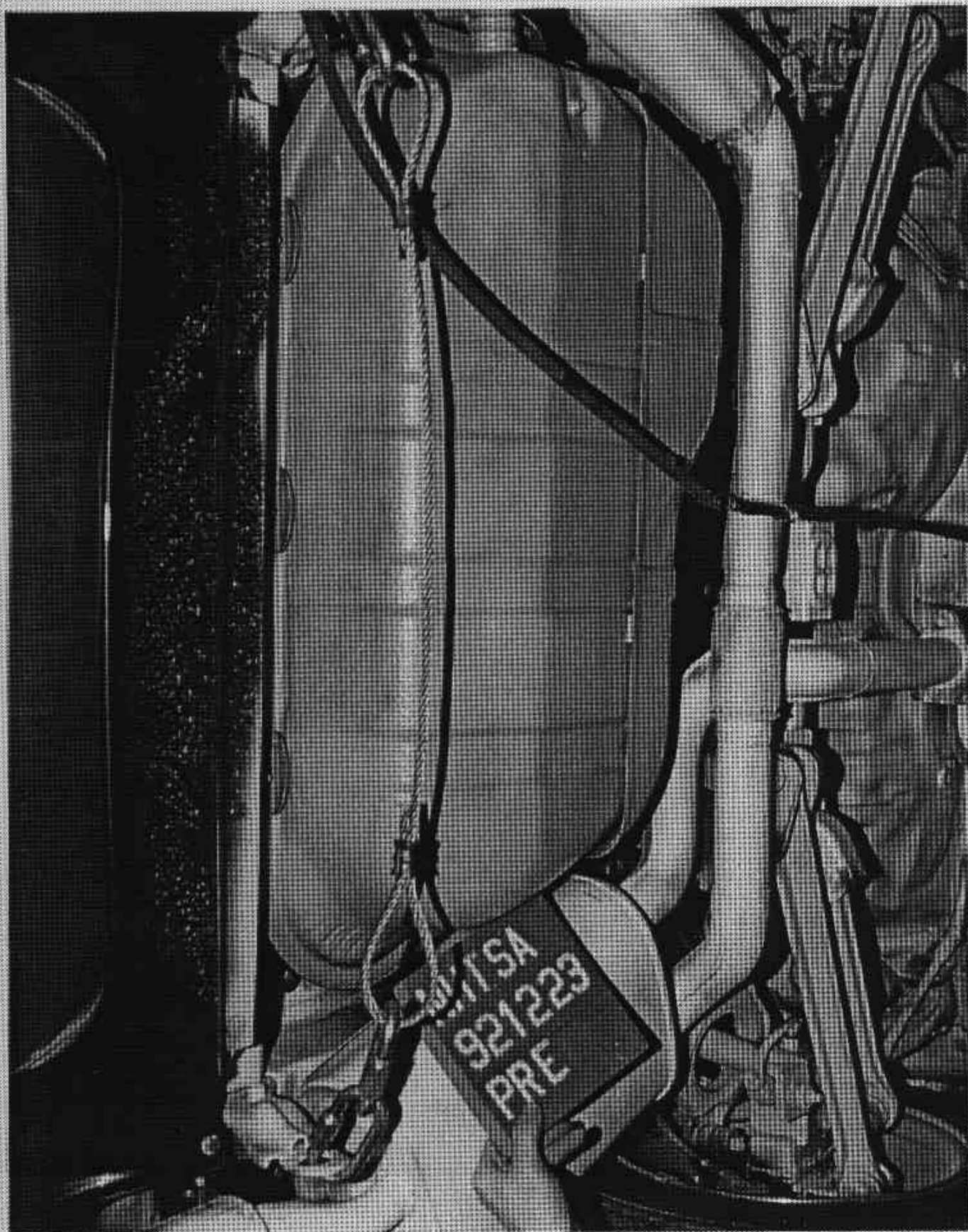


FIGURE A-21. PRE-TEST FUEL TANK VIEW
A-22

921223

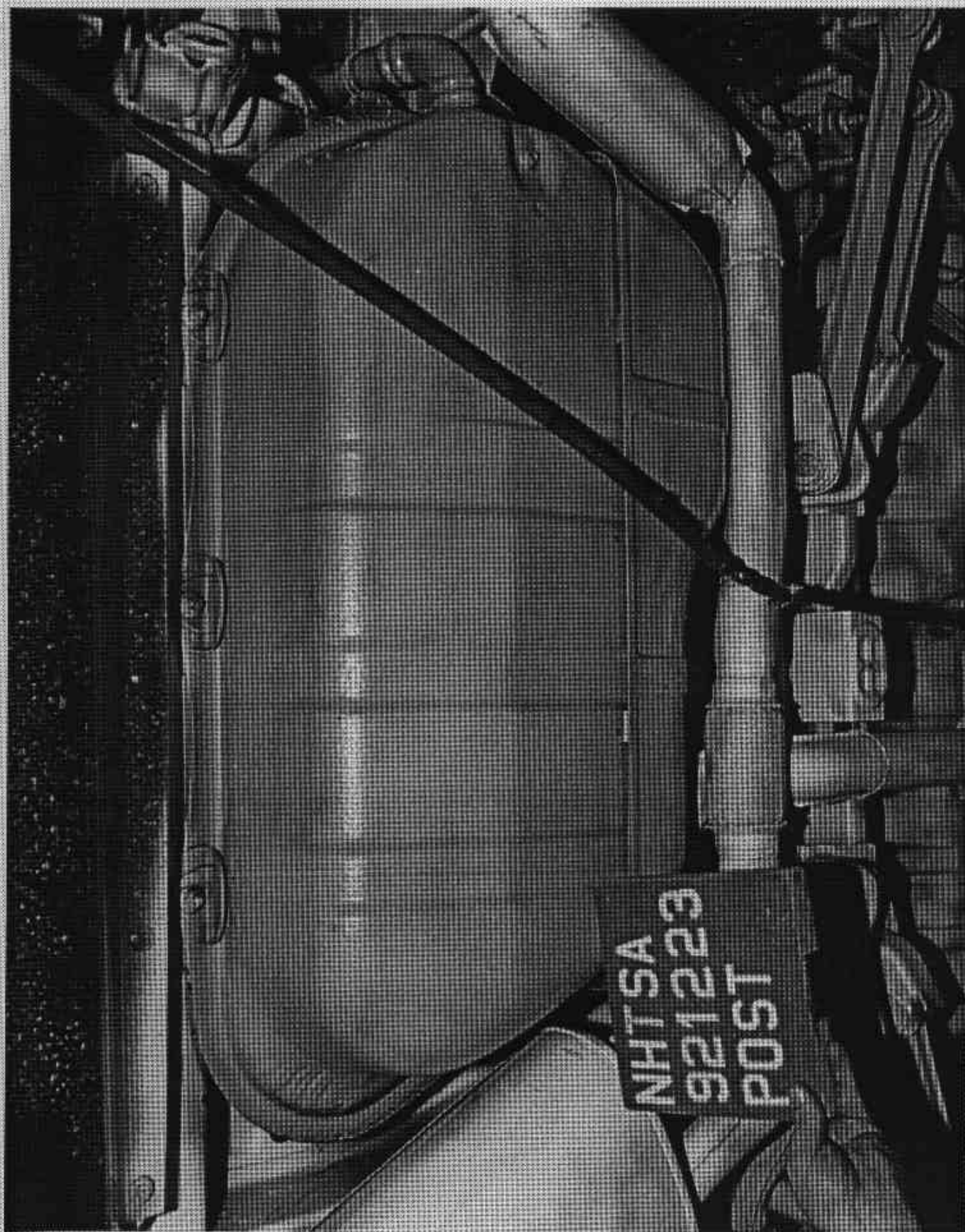


FIGURE A-22. POST-TEST FUEL TANK VIEW
A-23

921223



FIGURE A-23. PRE-TEST FRONT UNDERBODY VIEW

A-24

921223

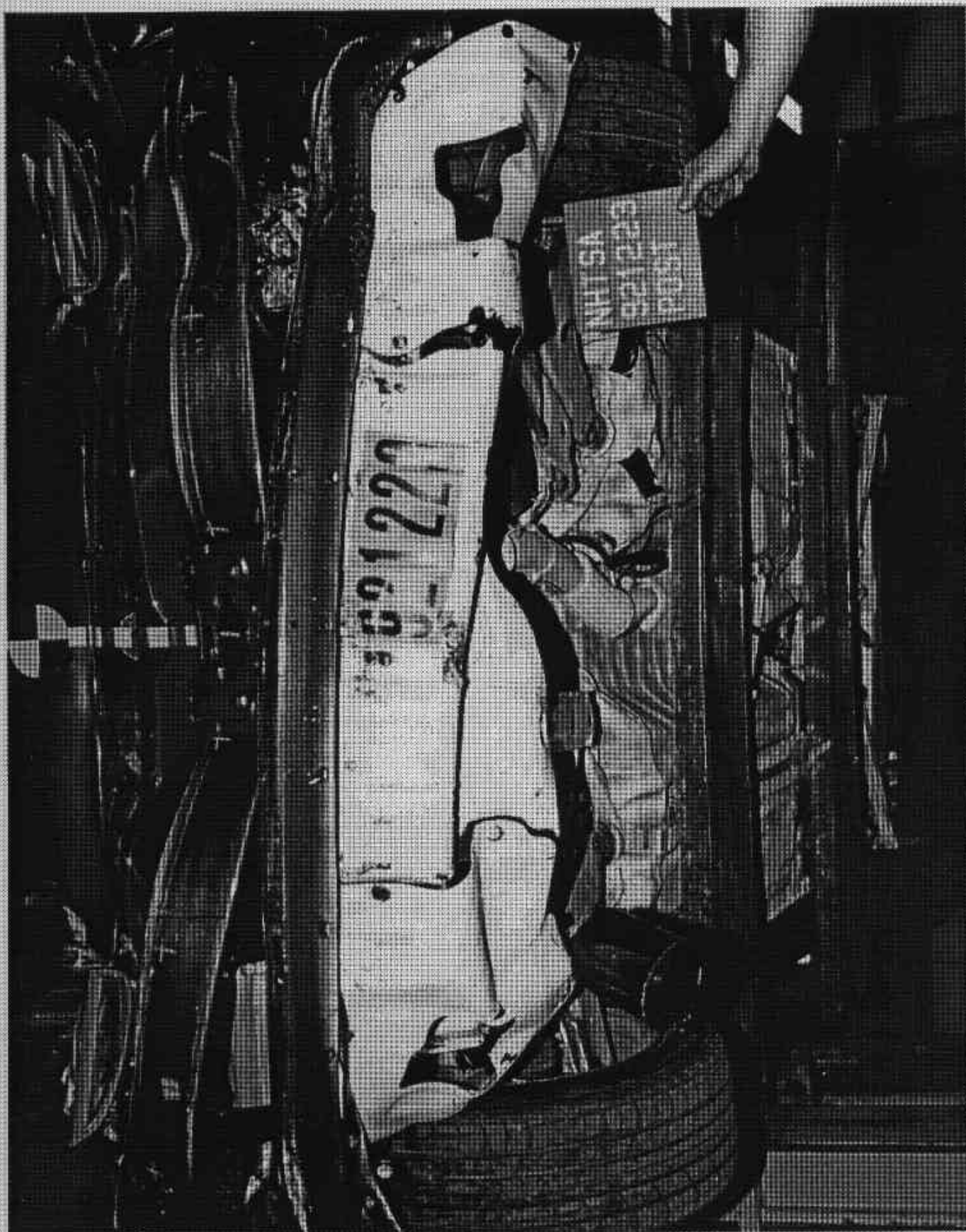


FIGURE A-24. POST-TEST FRONT UNDERBODY VIEW

A-25

921223

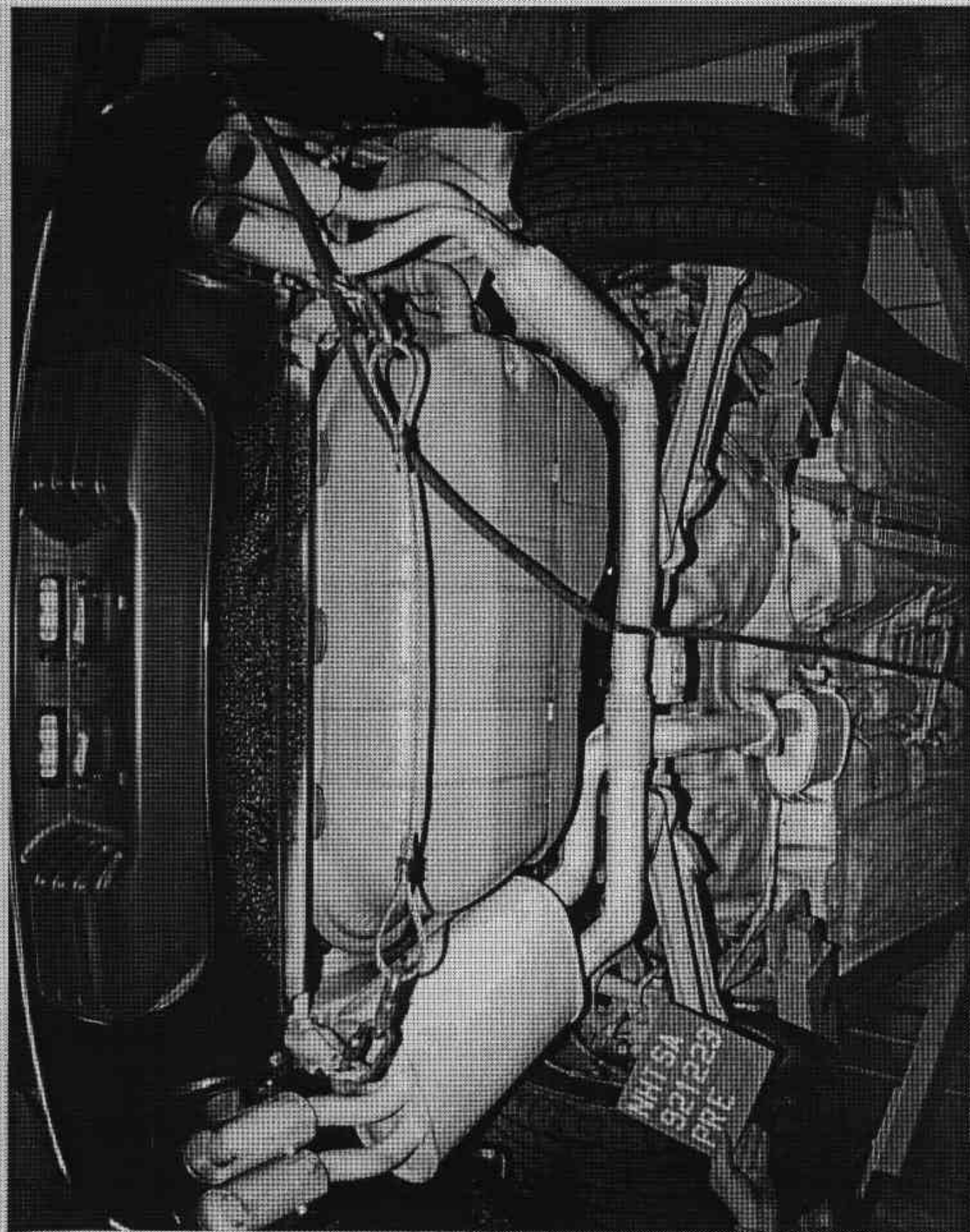


FIGURE A-25. PRE-TEST REAR UNDERBODY VIEW

A-26

921223

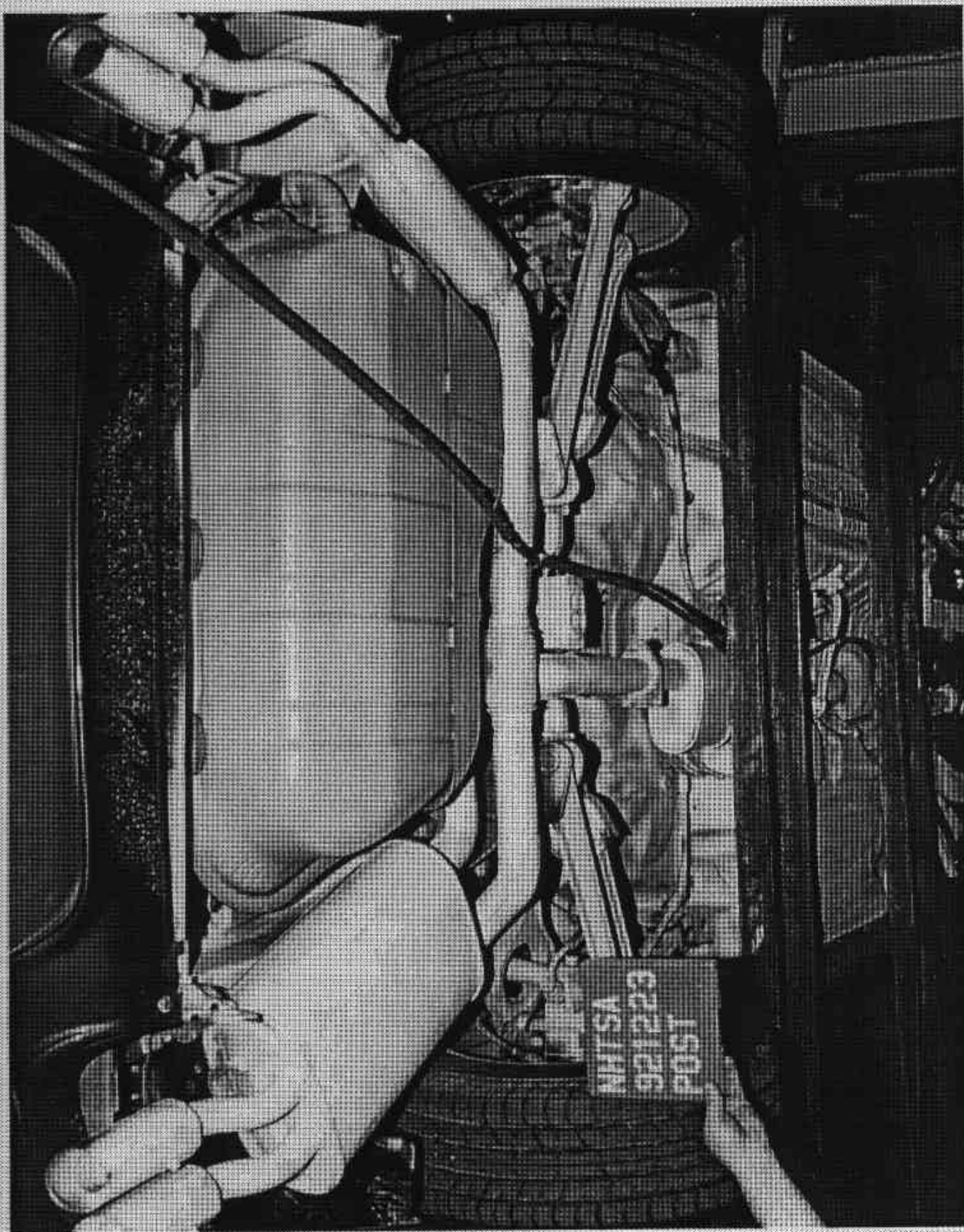


FIGURE A-26. POST-TEST REAR UNDERBODY VIEW
A-27

921223

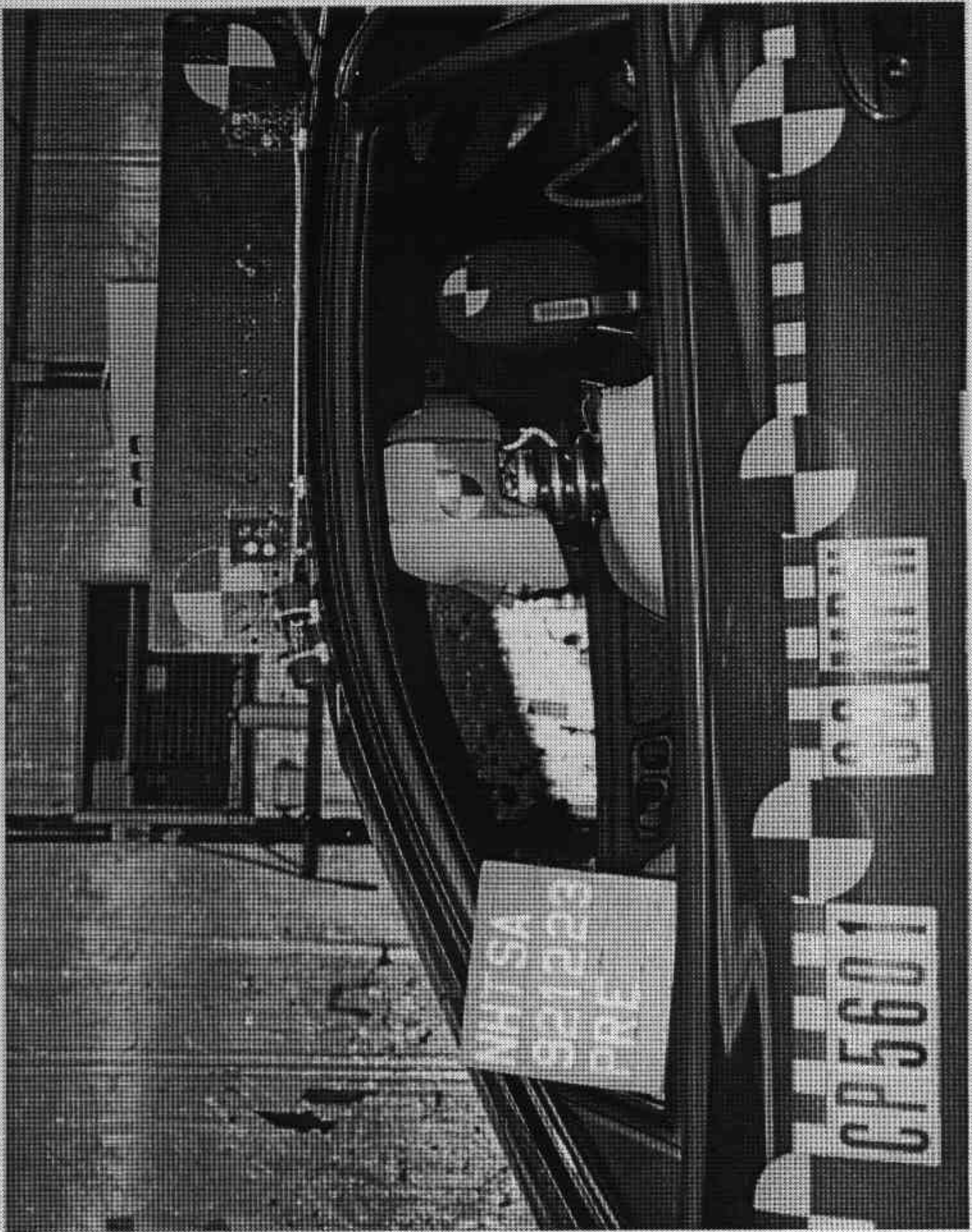


FIGURE A-27. PRE-TEST DRIVER DUMMY POSITION VIEW

A-28

921223

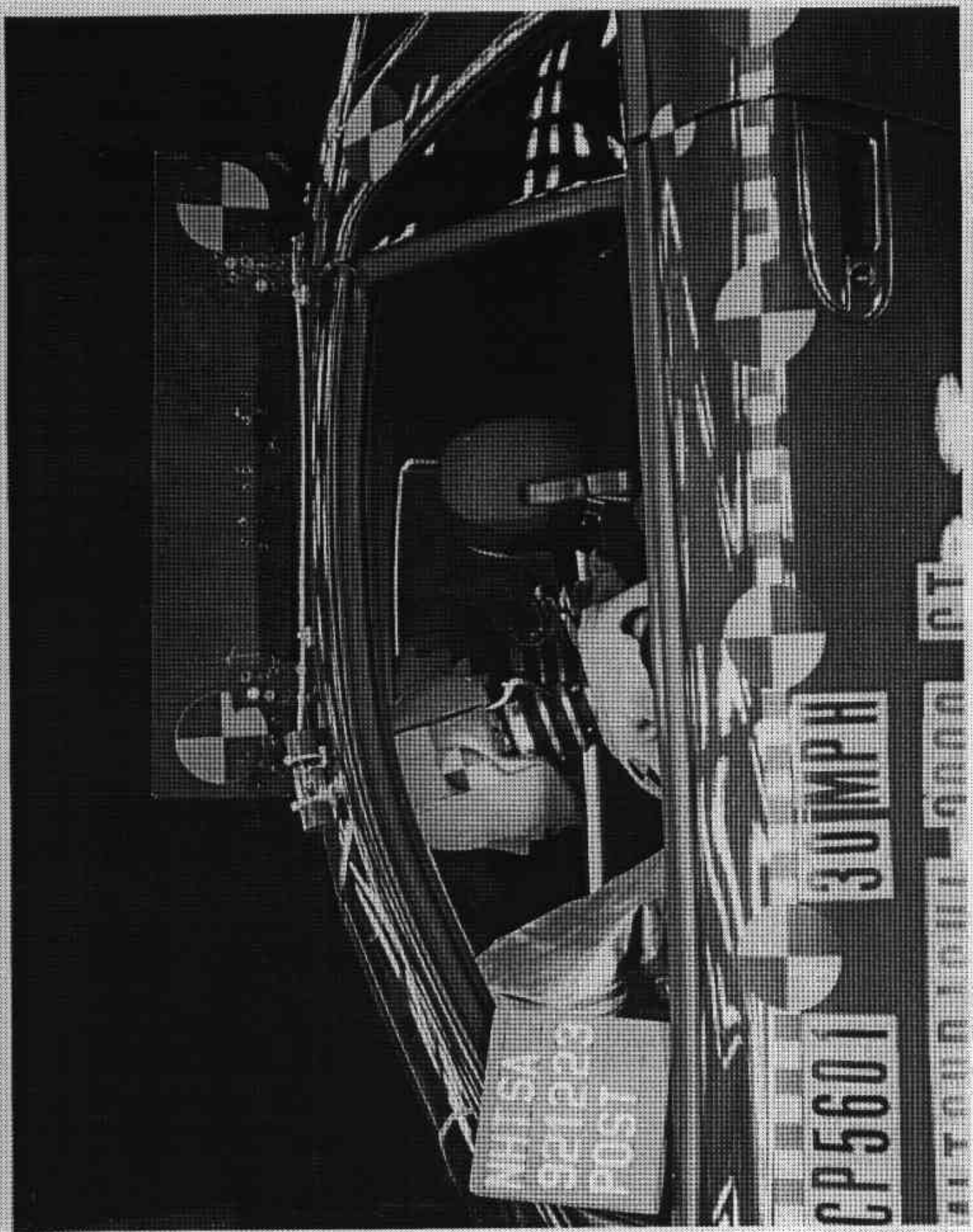


FIGURE A-28. POST-TEST DRIVER DUMMY POSITION VIEW

A-29

921223

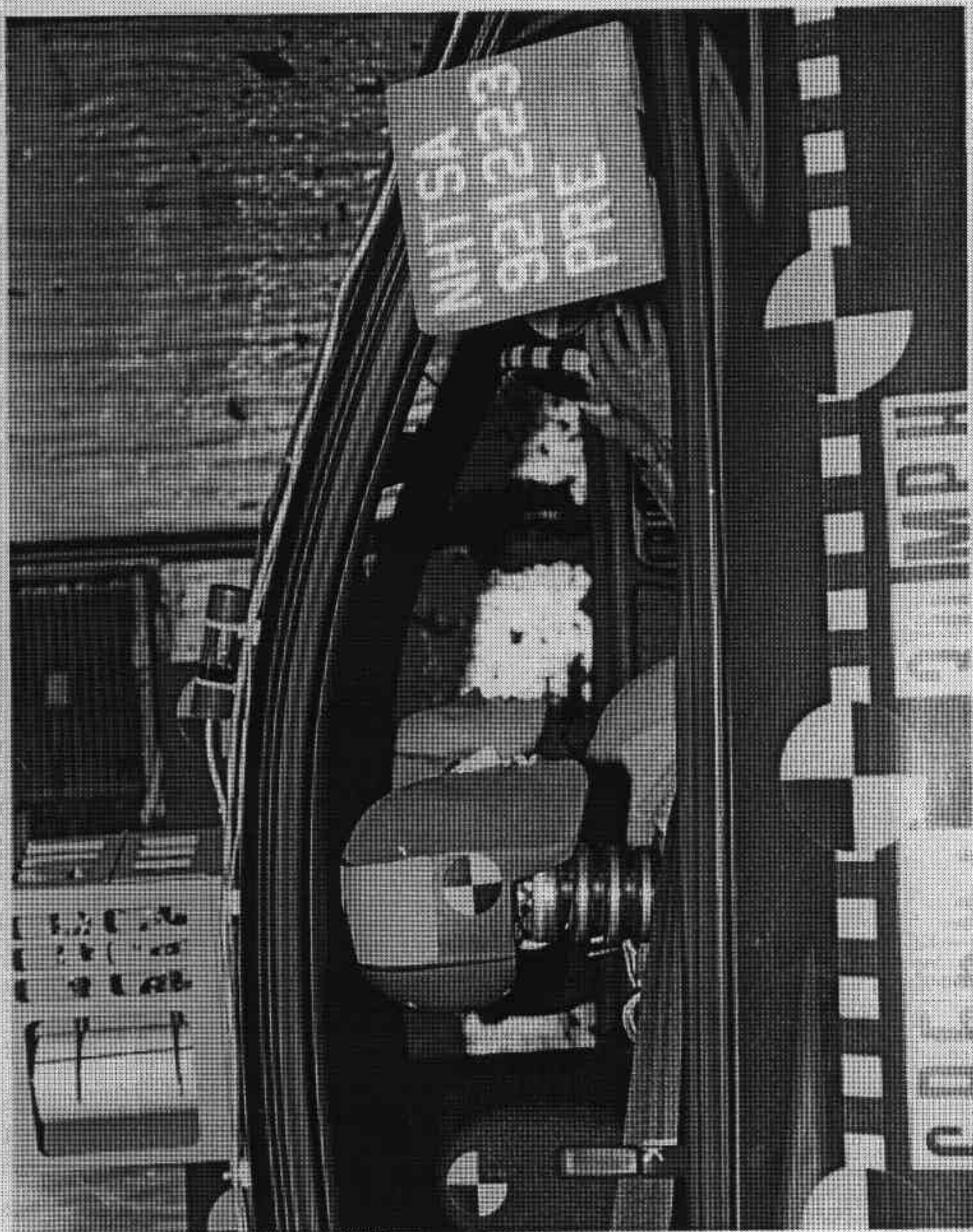


FIGURE A-29. PRE-TEST PASSENGER DUMMY POSITION VIEW

A-30

921223



FIGURE A-30. POST-TEST PASSENGER DUMMY POSITION VIEW

A-31

921223



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

A-32

921223



FIGURE A-32. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1

A-33

921223



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

A-34

921223

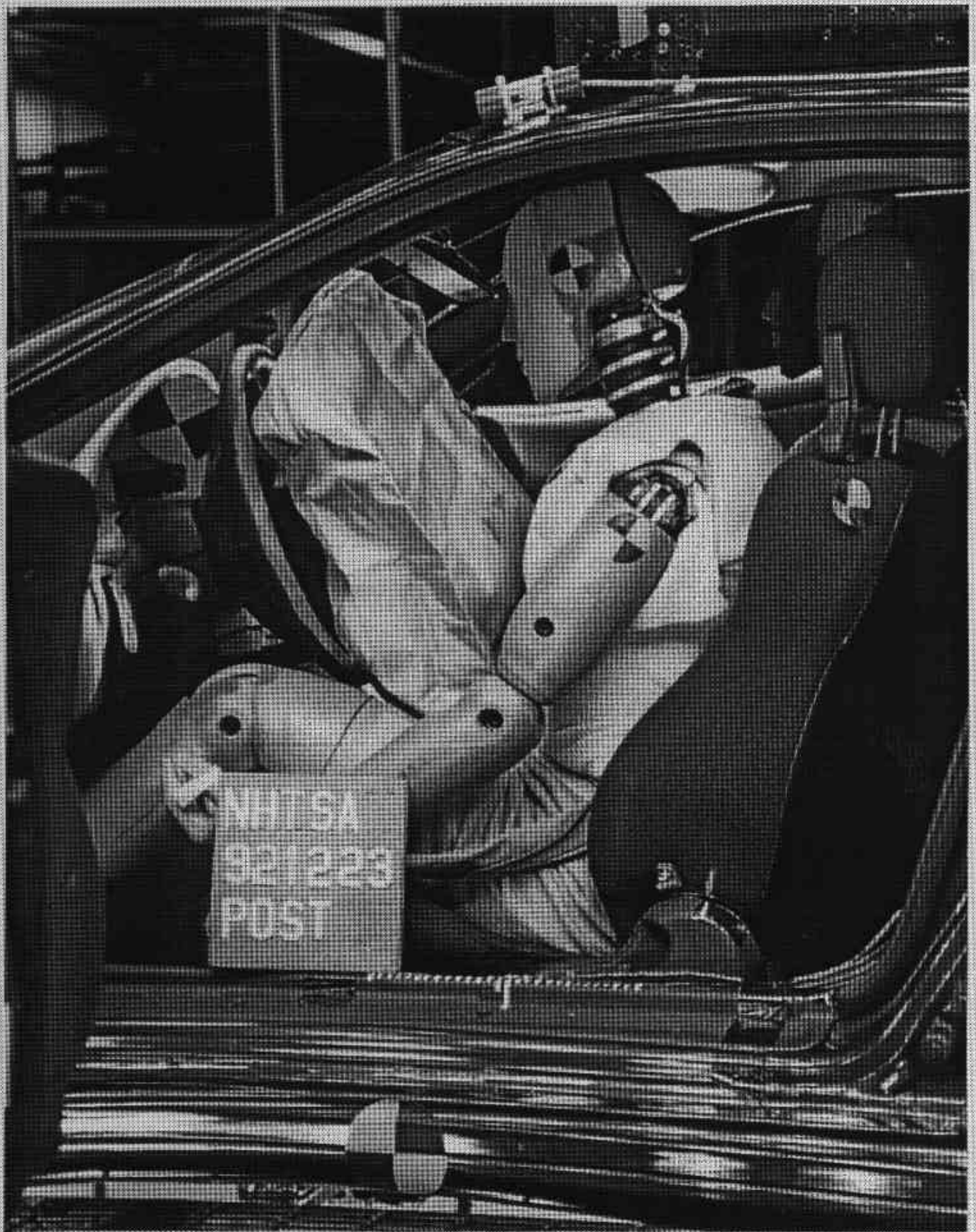


FIGURE A-34. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2

A-35

921223



FIGURE A-35. PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 1
A-36 921223

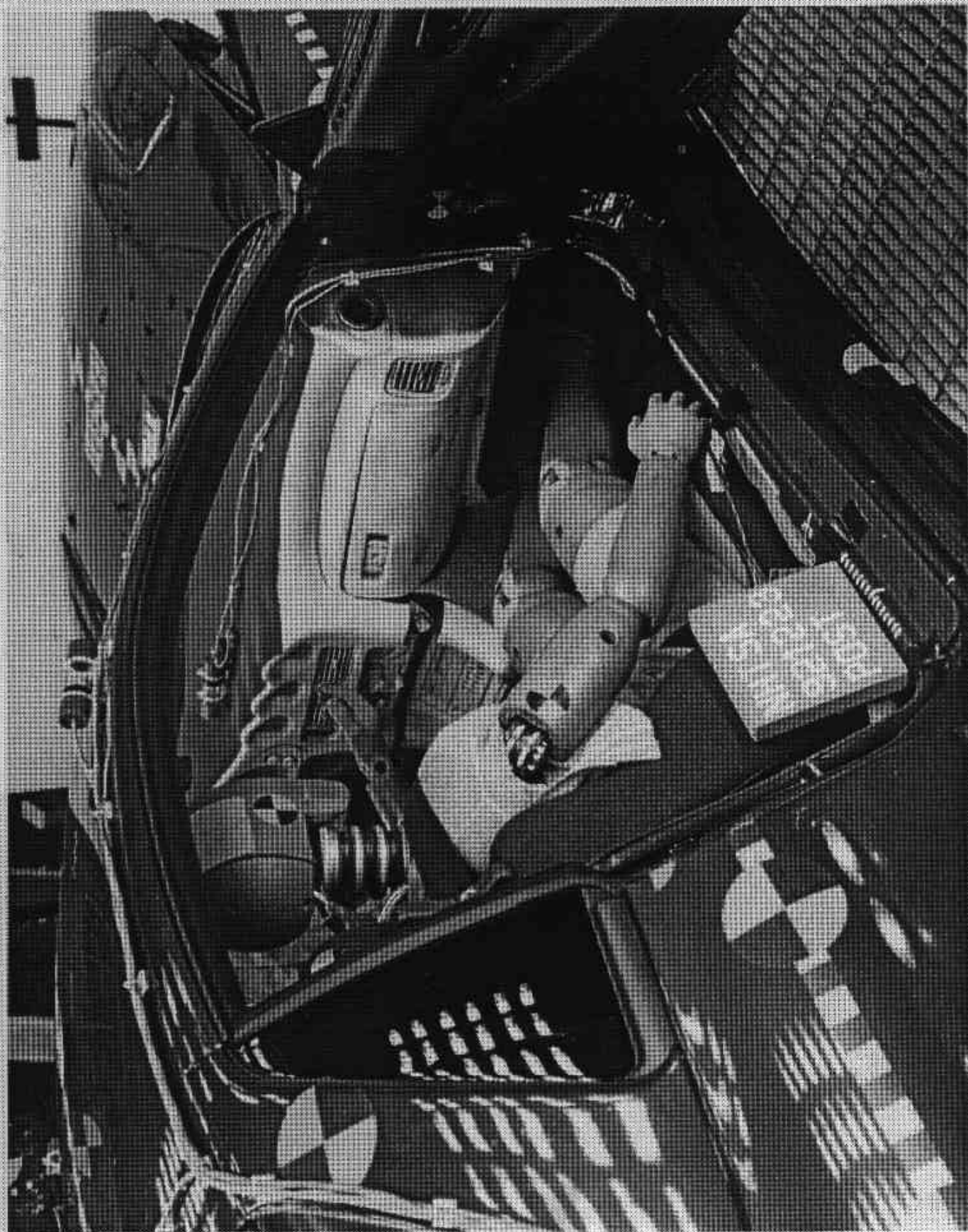


FIGURE A-36. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 1
A-37 921223



FIGURE A-37. PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2
A-38

921223

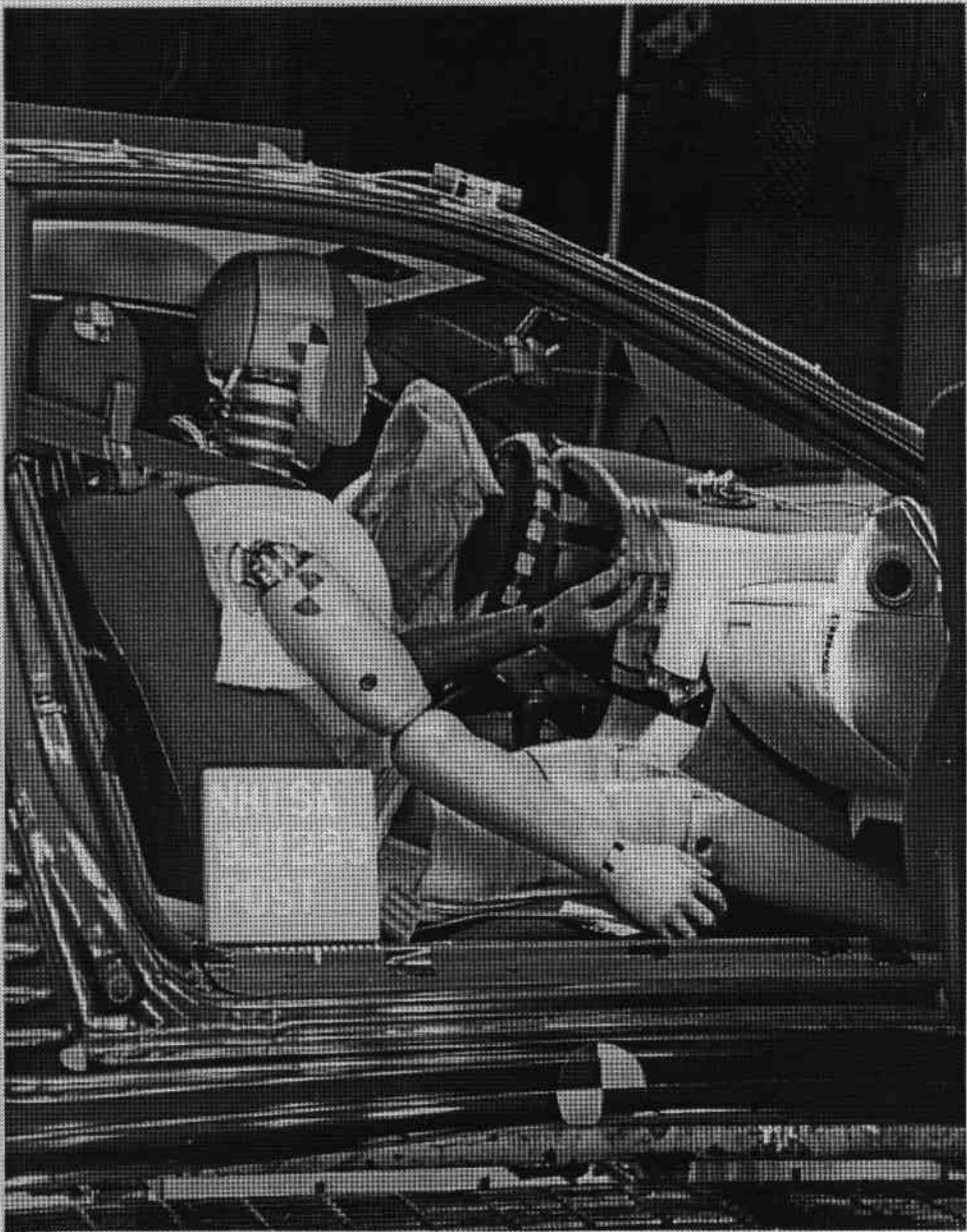


FIGURE A-38. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2

A-39

921223

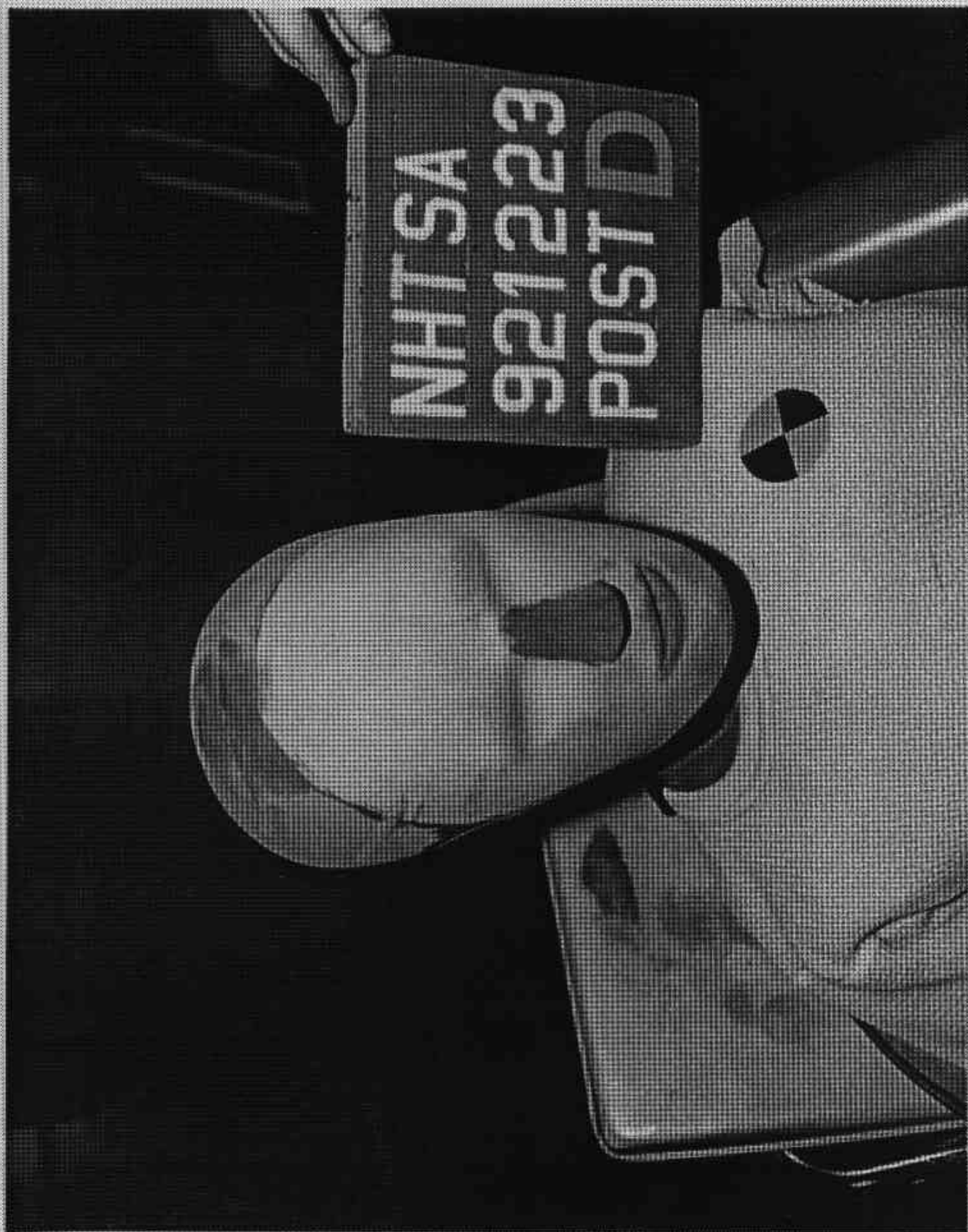


FIGURE A-39. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 1

A-40

921223



FIGURE A-40. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 2

A-41

921223



FIGURE A-41. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 3

A-42

921223



FIGURE A-42. POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 1

A-43

921223

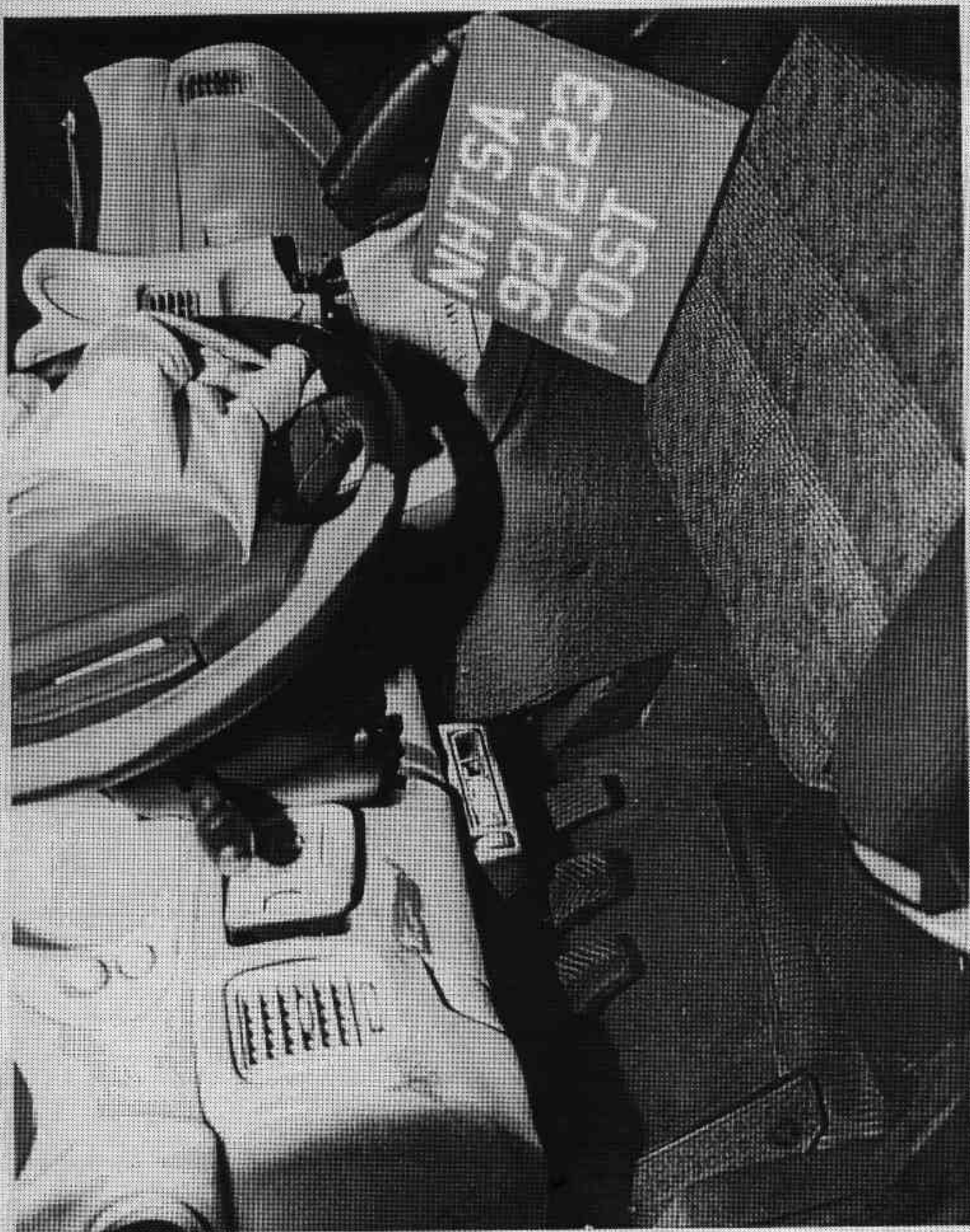


FIGURE A-43. POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 2

A-44

921223



FIGURE A-44. POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 3

A-45

921223



FIGURE A-45. POST-TEST PASSENGER DUMMY HEAD CONTACT VIEW

A-46

921223

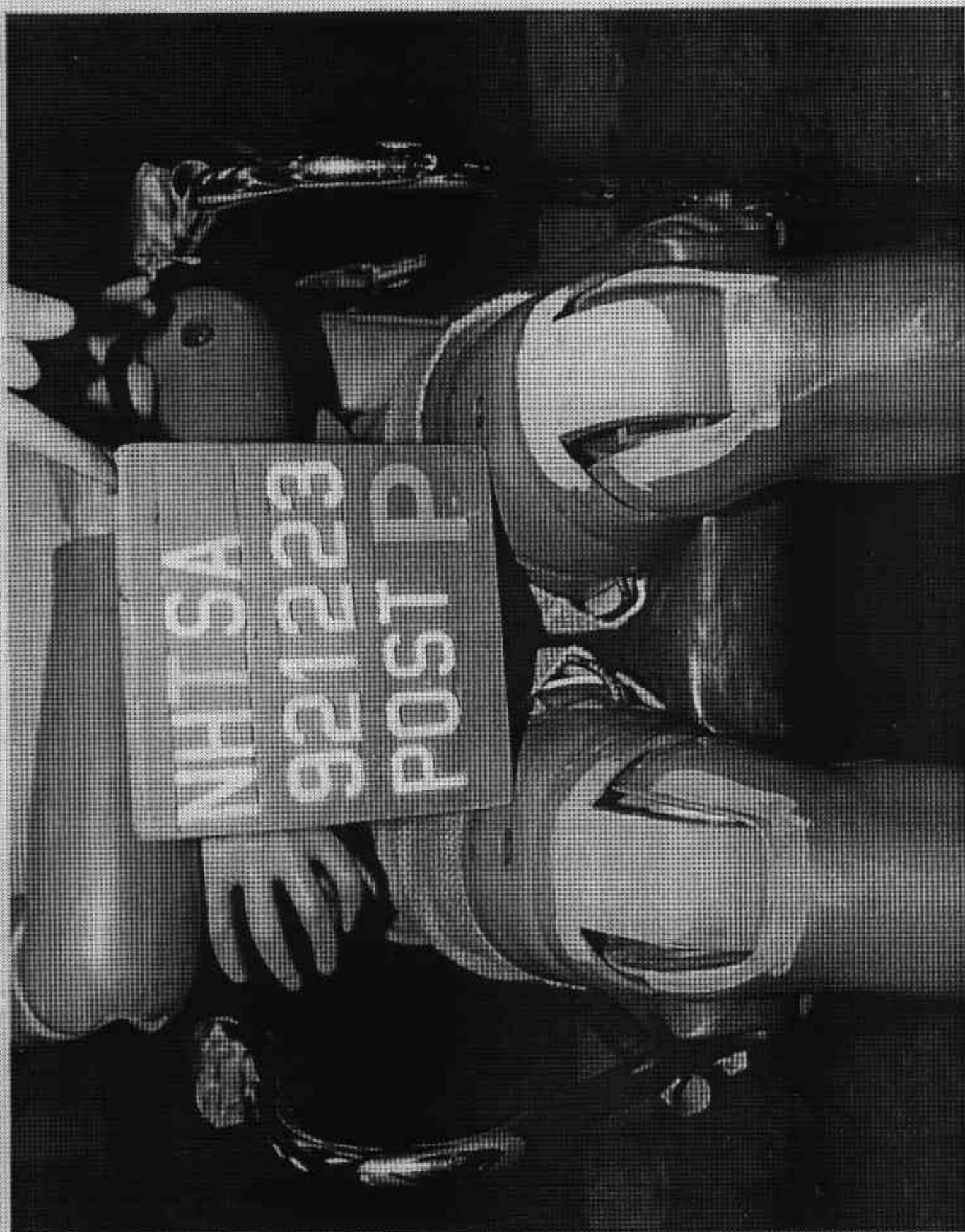


FIGURE A-46. POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 1

A-47

921223

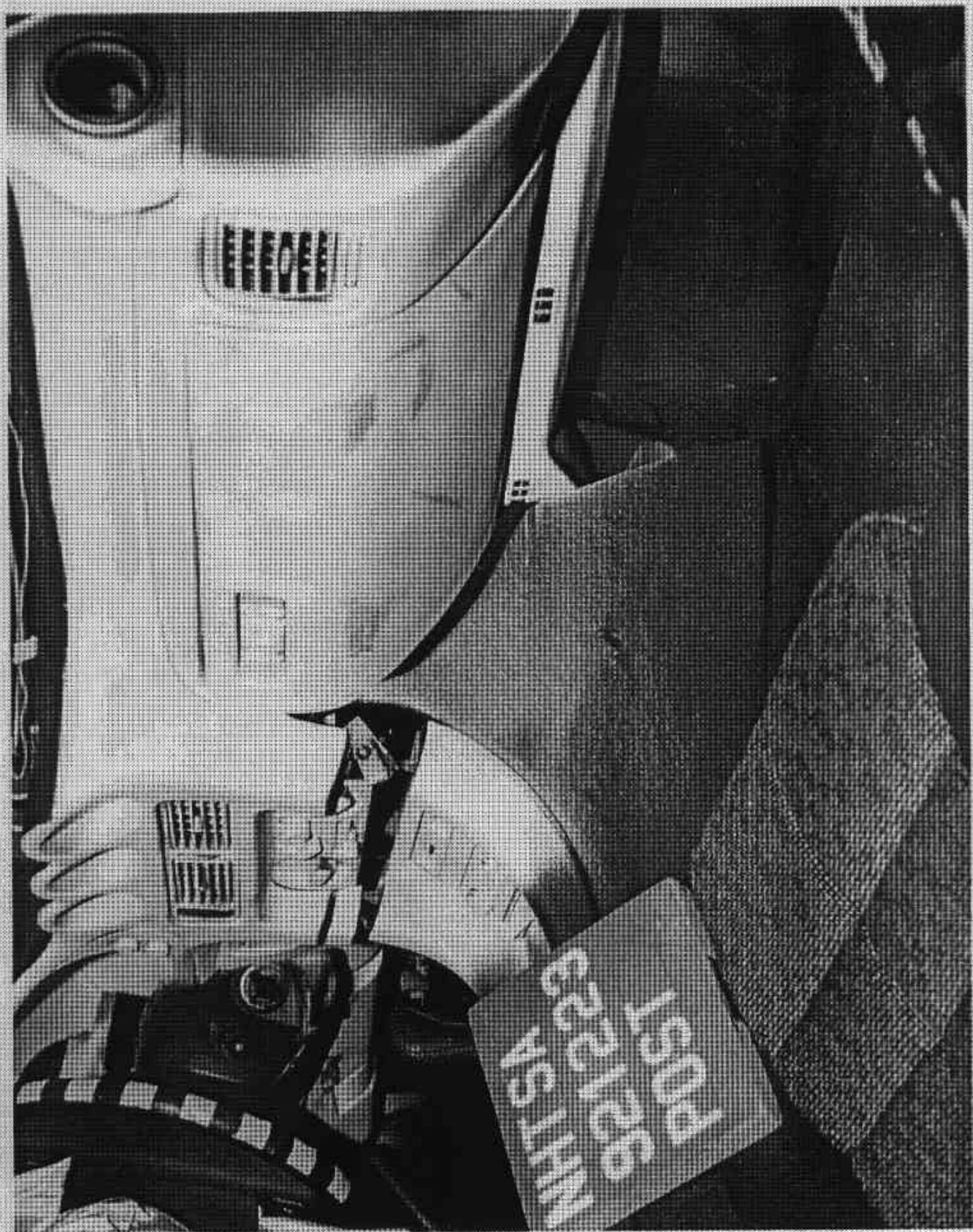


FIGURE A-47. POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 2

A-48

921223



FIGURE A-48. PRE-TEST VEHICLE CERTIFICATION LABEL VIEW

TIRE INFLATION PRESSURE (COLD)	
STANDARD INFLATION PRESSURE FOR ALL LOAD	
1ST SEAT 2PASS	
2ND SEAT 2PASS	
TOTAL 4PASS	
LUGGAGE 28kg (62lbs)	
TOTAL WEIGHT 300kg (661 lbs)	
TIRE SIZE 225/55R16 93V	
FRONT	REAR
220KPa (32PSI)	200KPa (29PSI)
TIRE SIZE T125/90D16	
TEMPORARY USE ONLY	
420 KPa (60 PSI)	
PART NO. MB624758	

FIGURE A-49, PRE-TEST VEHICLE RECOMMENDED TIRE PRESSURE LABEL VIEW

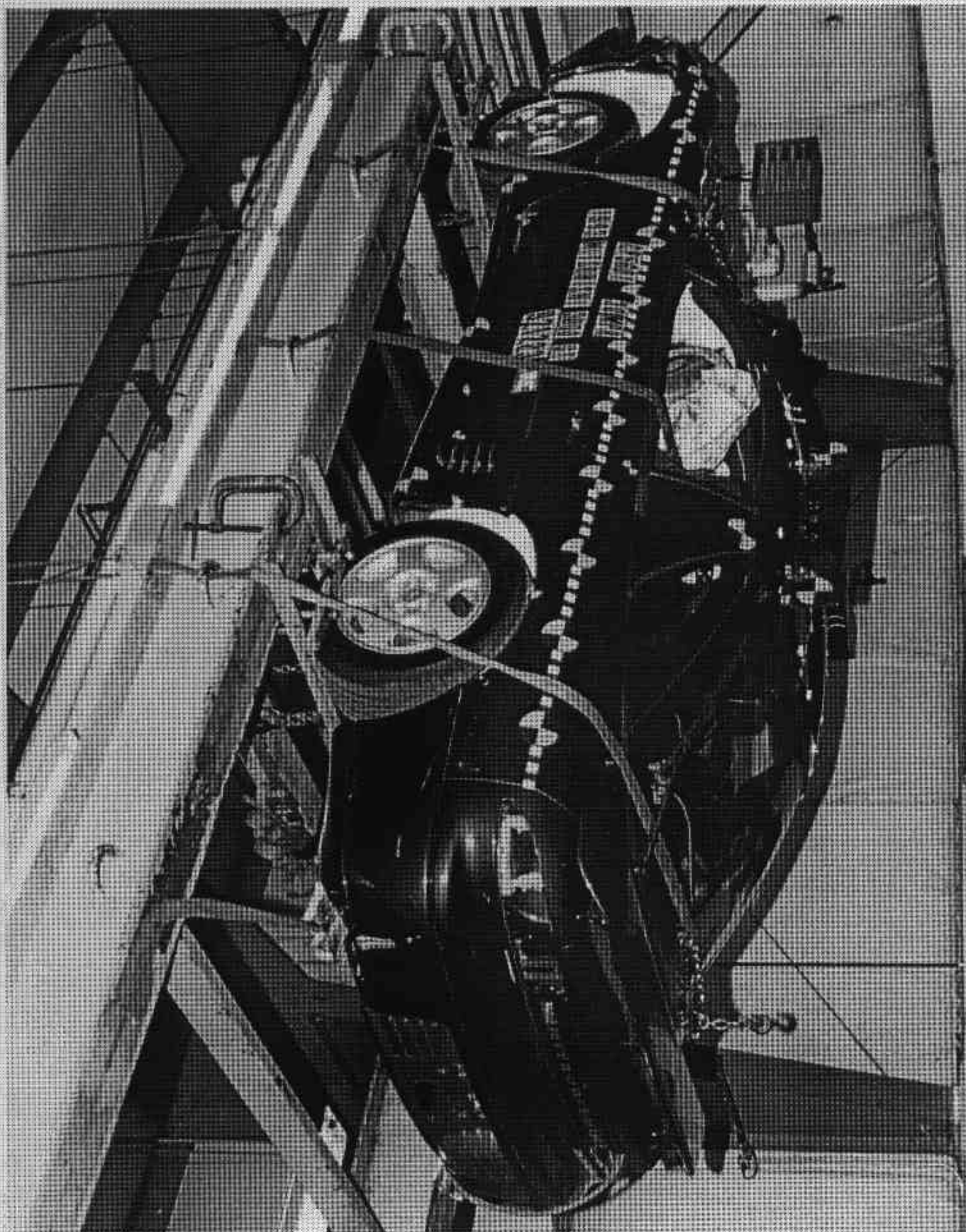


FIGURE A-50. POST-TEST VEHICLE ON STATIC ROLLOVER MACHINE VIEW

A-51

921223

APPENDIX B

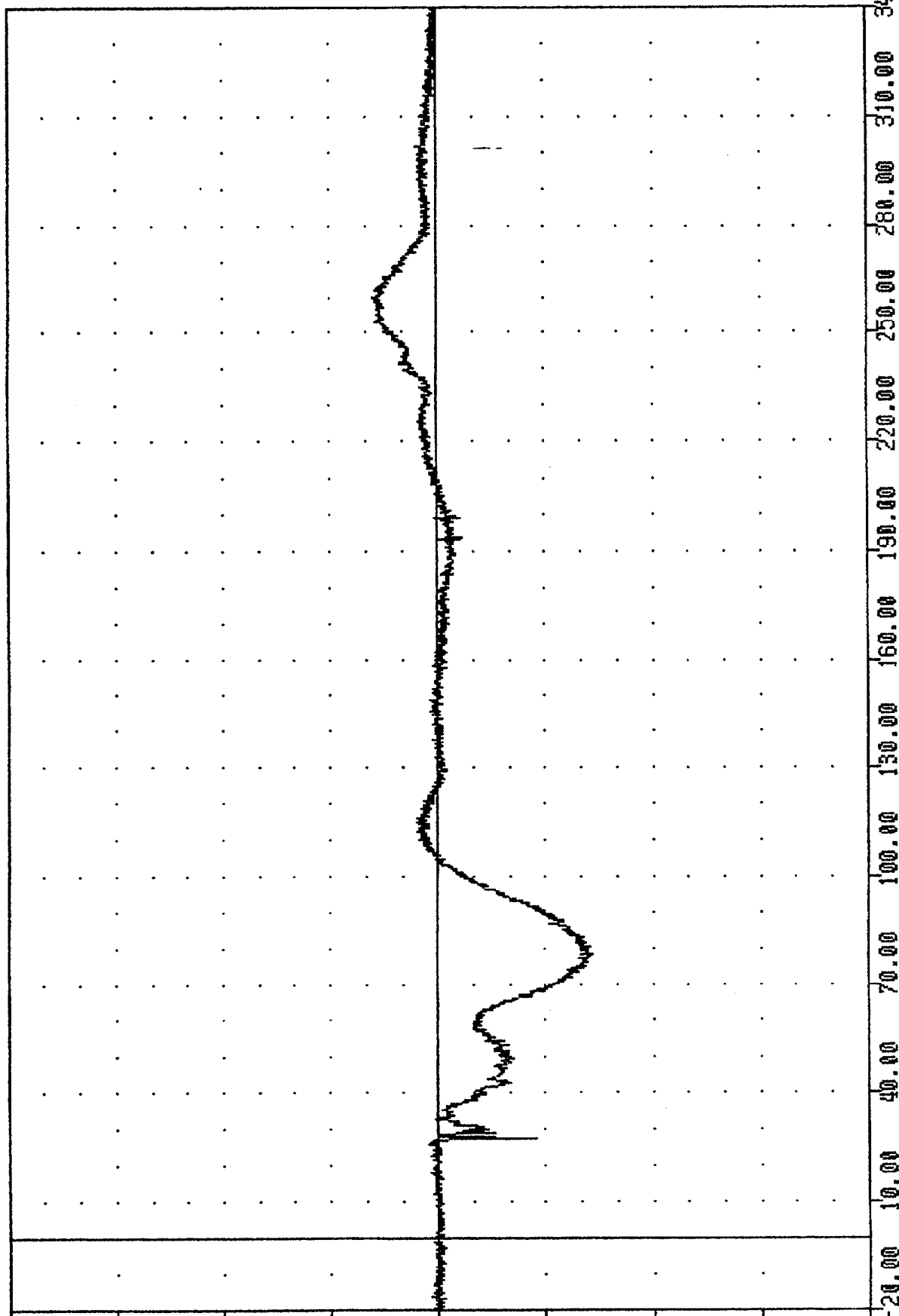
DATA PLOTS

TRC
200 COMPLIANCE TESTING
92358
HEDXG1

, 921223

FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -42.98 78.25, 17.81 259.63

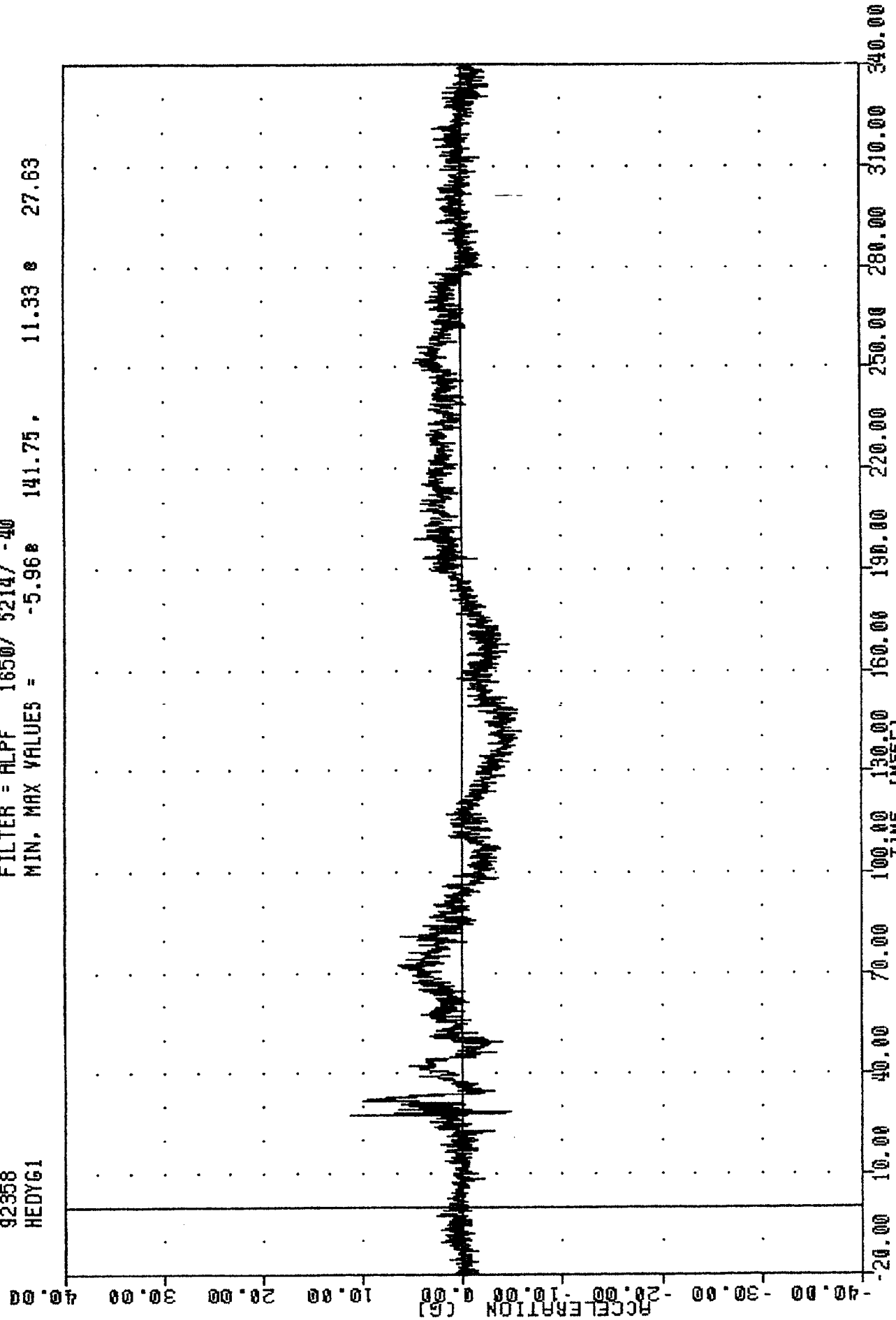
ACCELERATION (G)



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
DRIVER HEAD X-AXIS ACCELERATION

TRC , 921223
208 COMPLIANCE TESTING
92358
HEDYG1

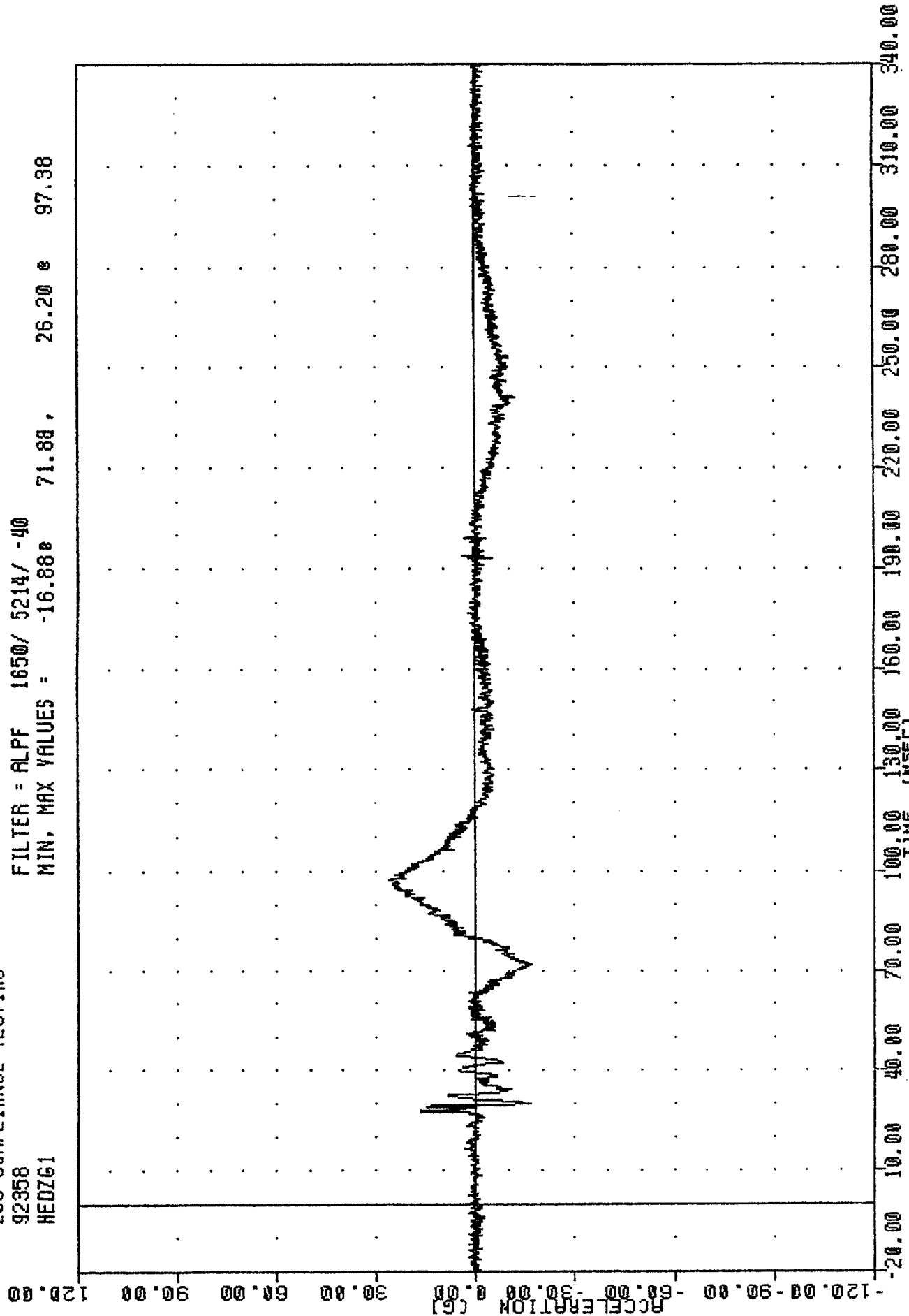
FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -5.96e 141.75. 11.33 e 27.63



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
DRIVER HEAD Y-AXIS ACCELERATION

TRC , 921223
208 COMPLIANCE TESTING
92358
HEDZG1

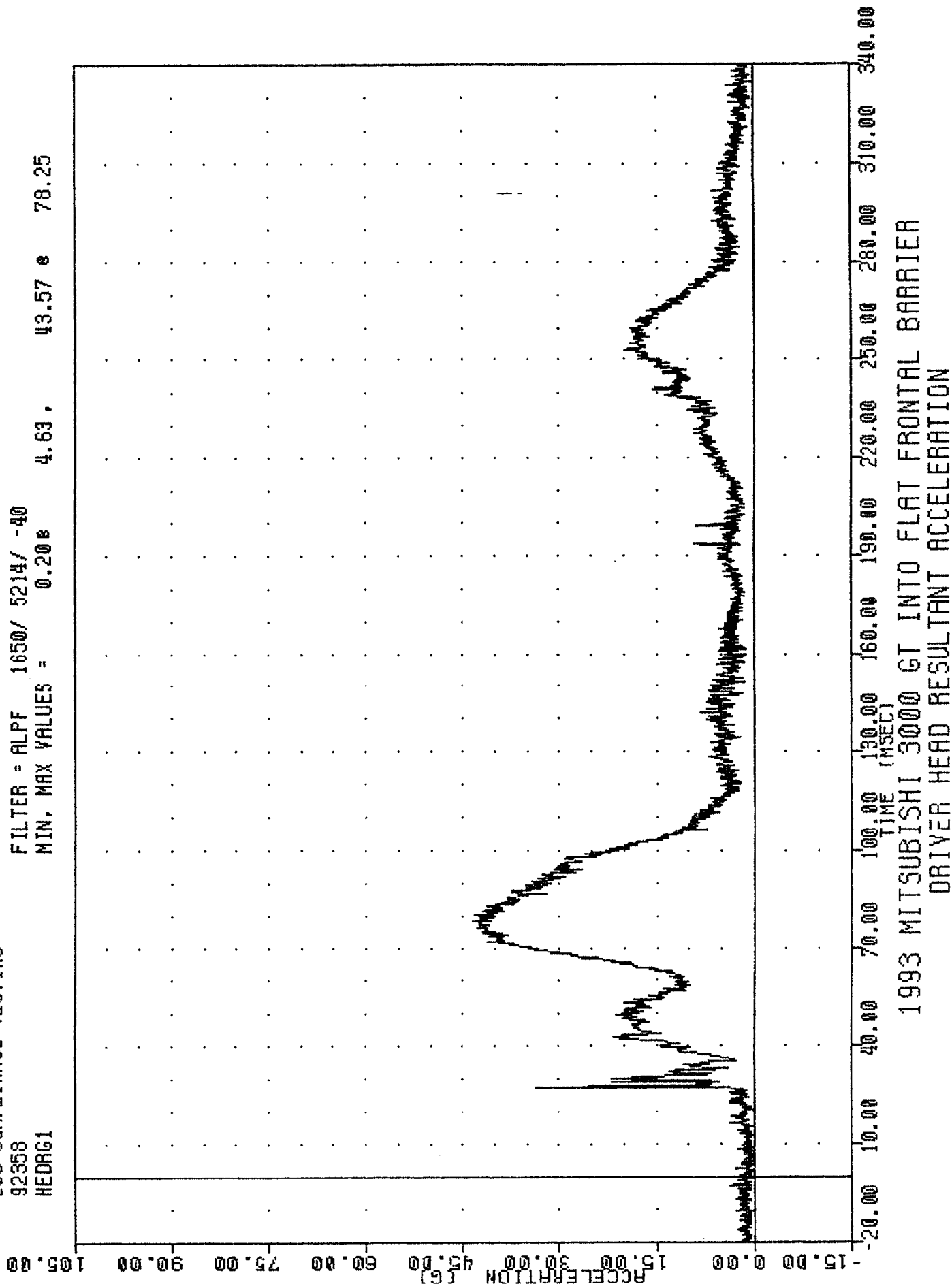
FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -16.88e 71.88, 26.20 e 97.38



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
DRIVER HEAD Z-AXIS ACCELERATION

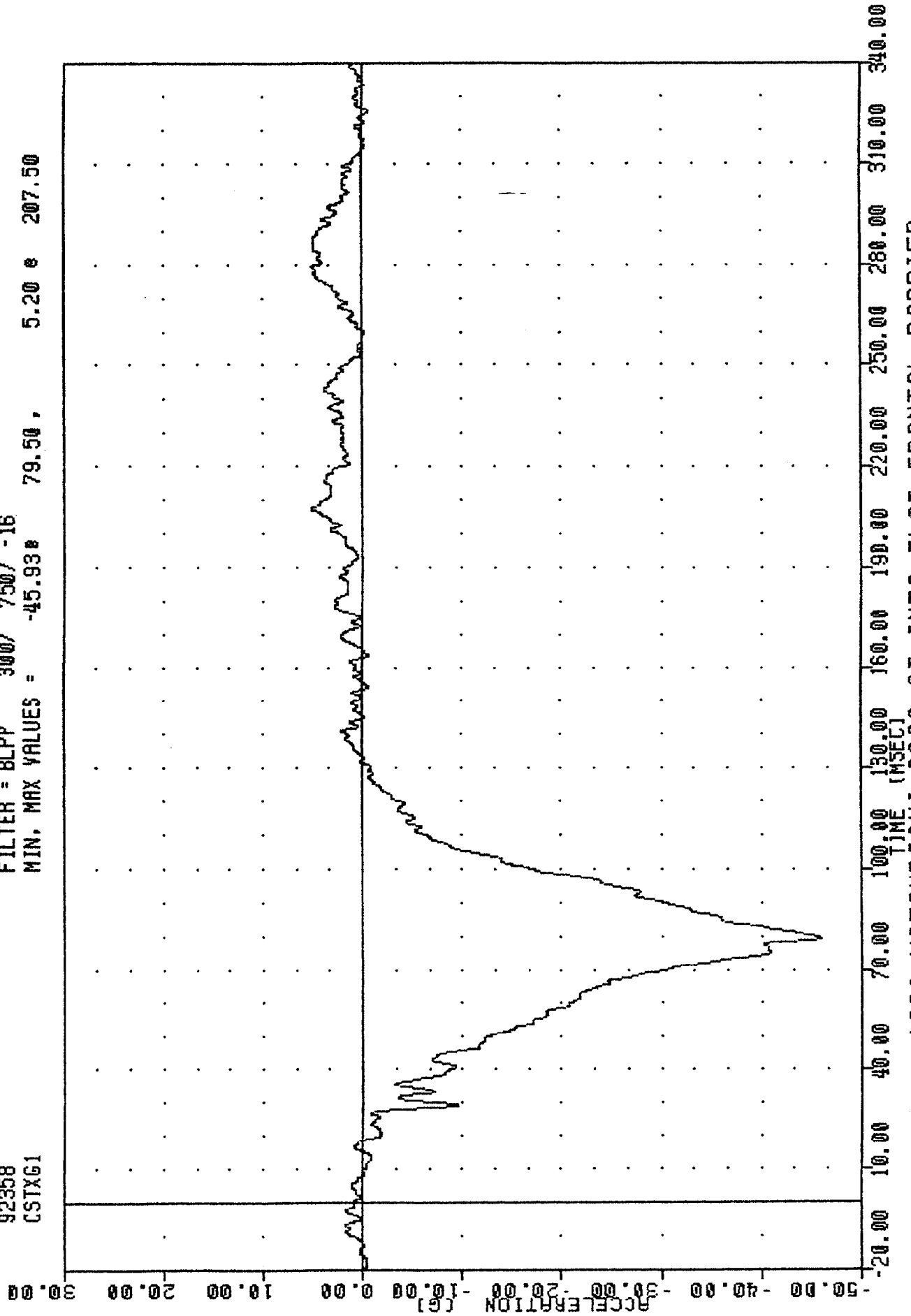
TRC , 921223
 208 COMPLIANCE TESTING
 92358
 HEDRG1

FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = 0.20e 4.63 , 43.57 e 78.25



TRC , 921223
208 COMPLIANCE TESTING
92358
CSTXG1

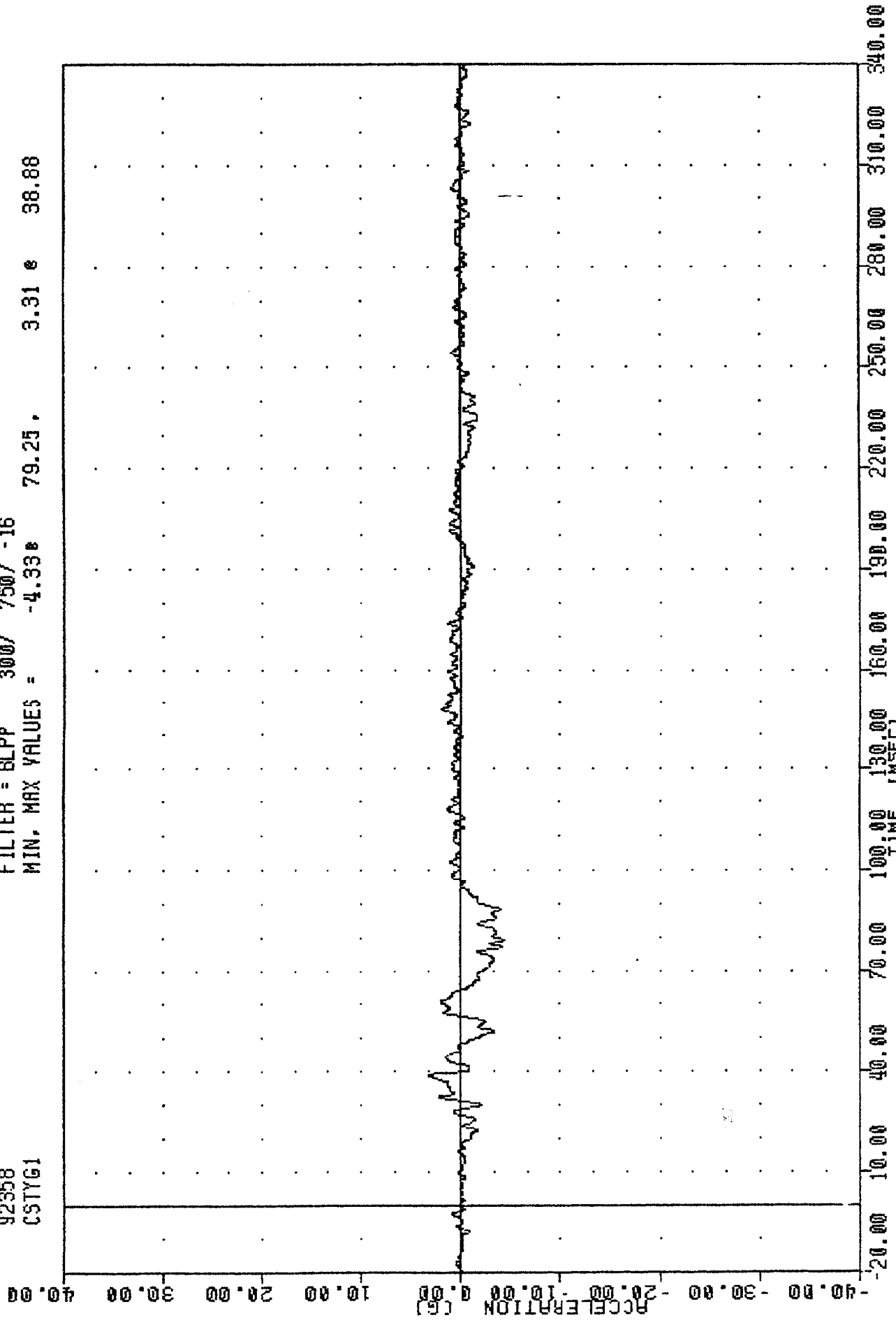
FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -45.93 79.50, 5.20 e 207.50



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
DRIVER CHEST X-AXIS ACCELERATION

TRC , 921223
 200 COMPLIANCE TESTING
 92358
 CSTYG1

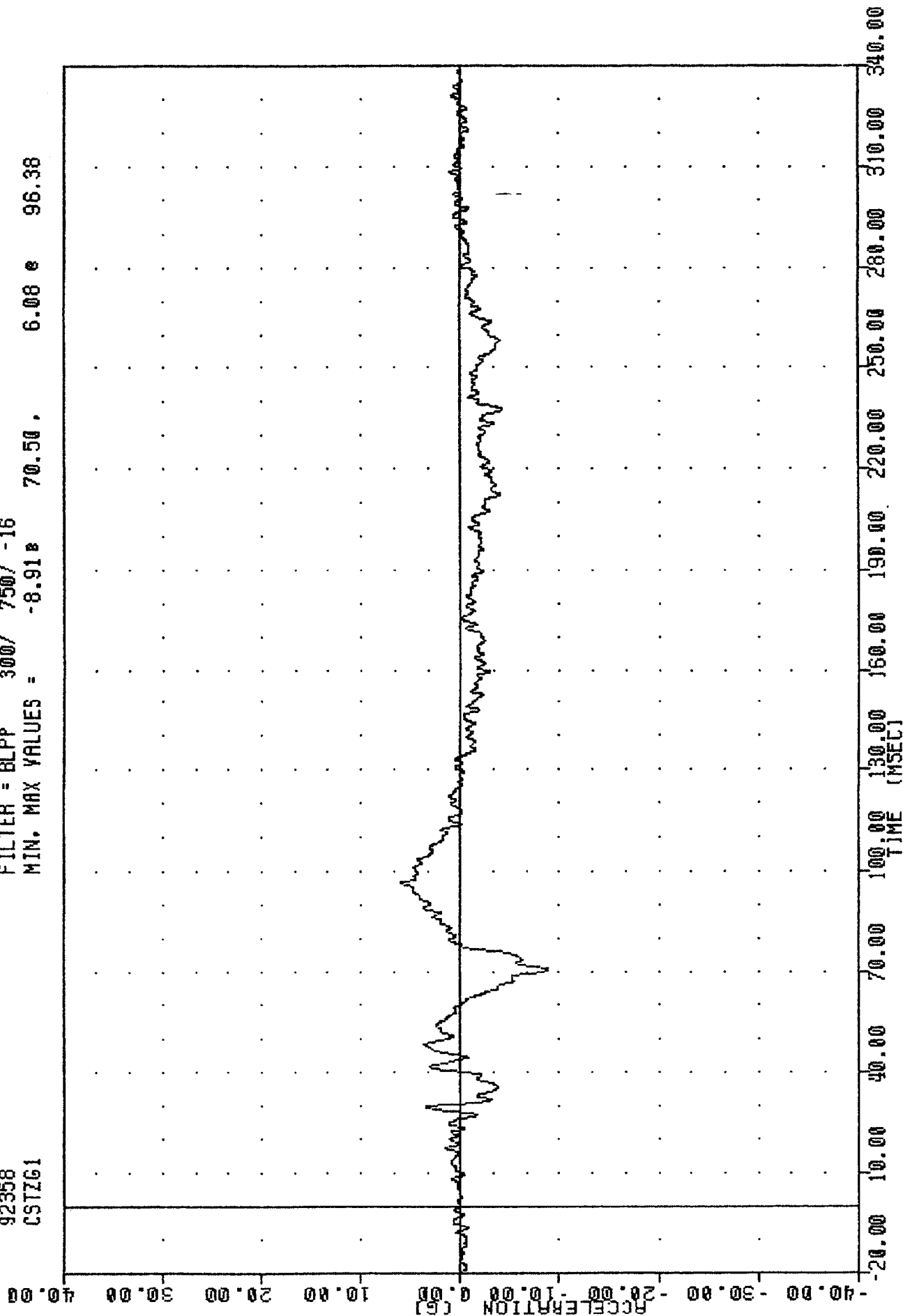
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -4.33e 79.25. 3.31 e 38.88



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
 DRIVER CHEST Y-AXIS ACCELERATION

TRC , 921223
 208 COMPLIANCE TESTING
 92358
 CSTZG1

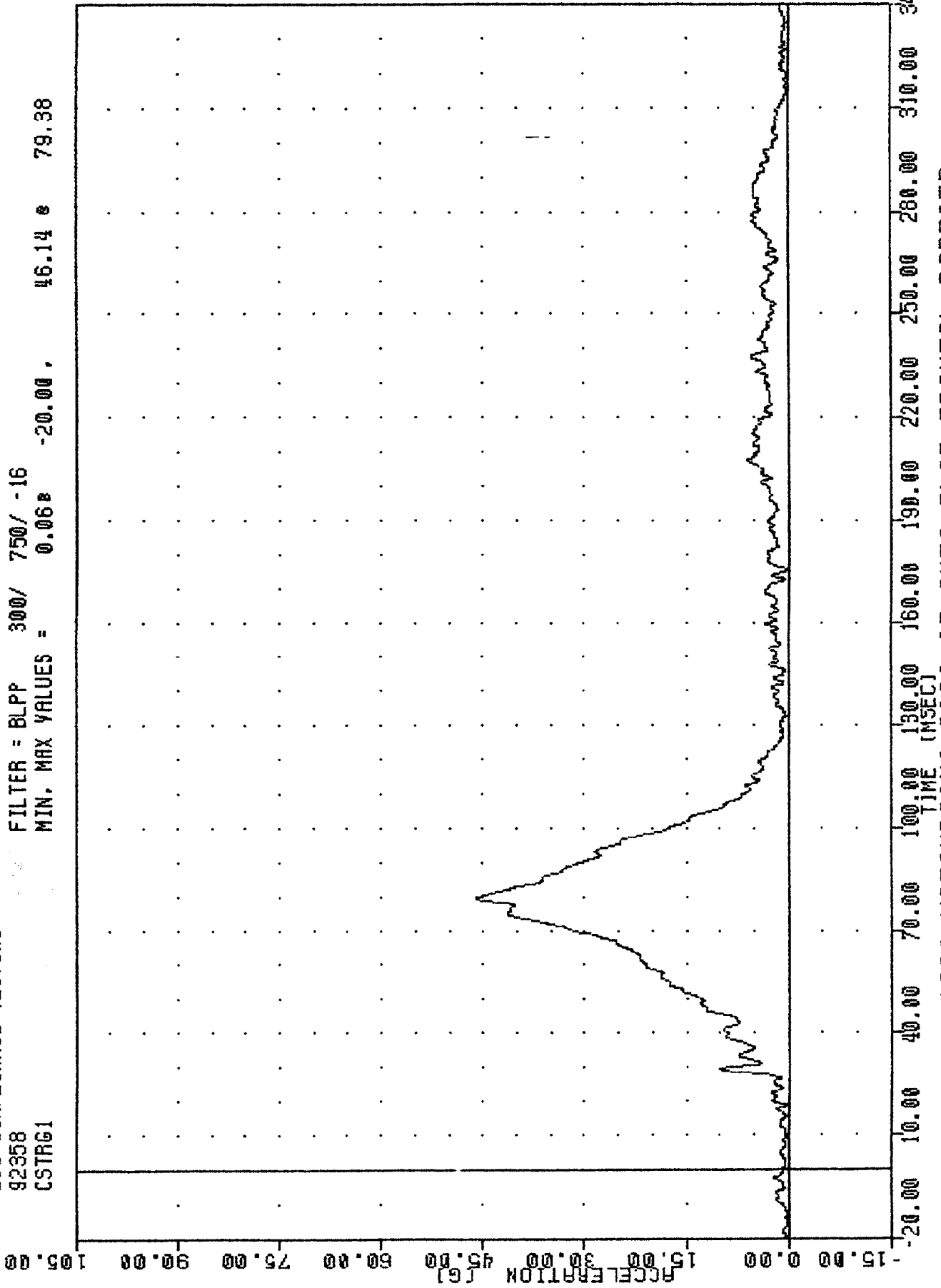
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -8.91 70.50 6.08 96.38



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
 DRIVER CHEST Z-AXIS ACCELERATION

TRC , 921223
 200 COMPLIANCE TESTING
 92358
 CSTRG1

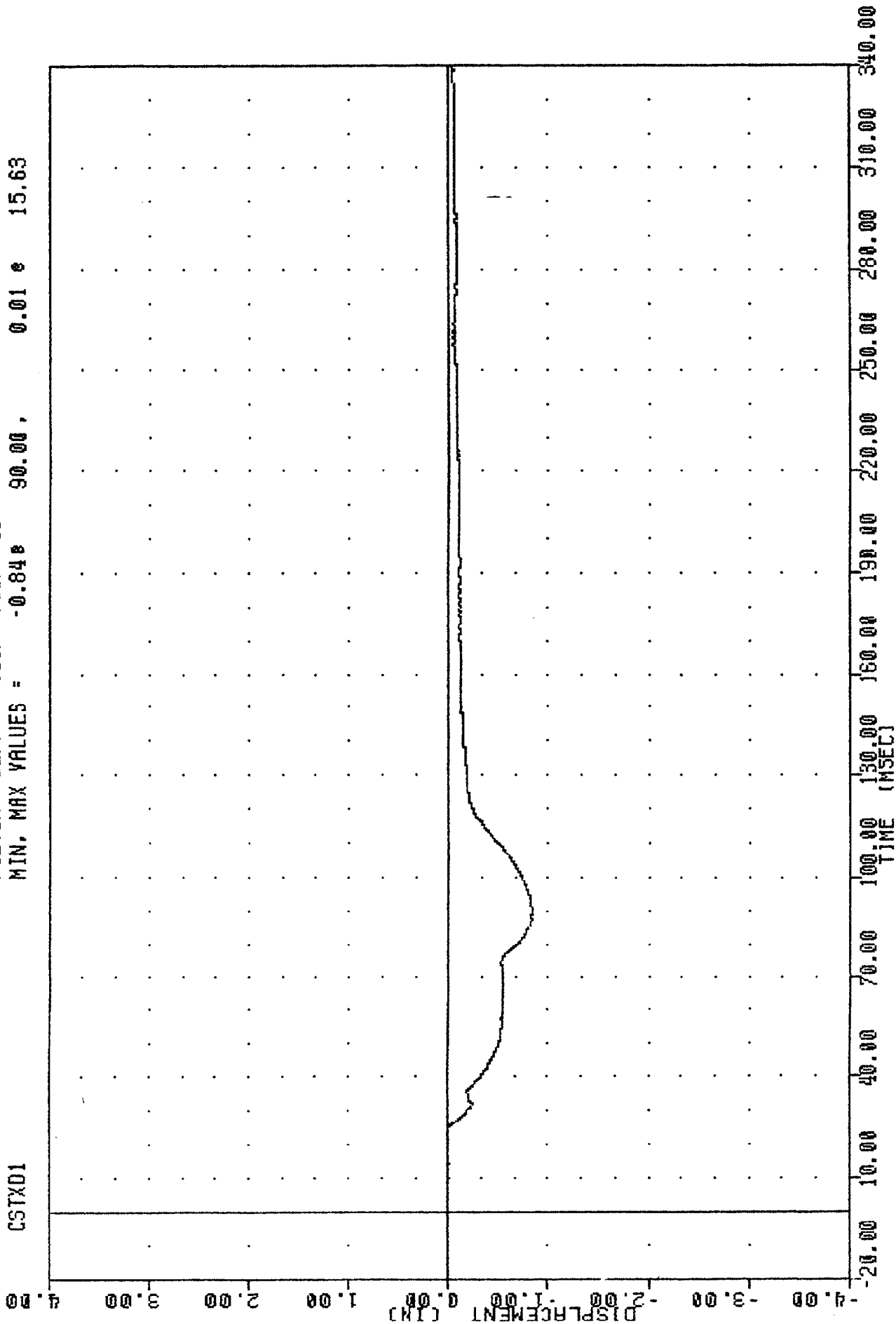
FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = 0.068 -20.00, 46.14 e 79.38



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
 DRIVER CHEST RESULTANT ACCELERATION

TRC , 921223
200 COMPLIANCE TESTING
92358
CSTXD1

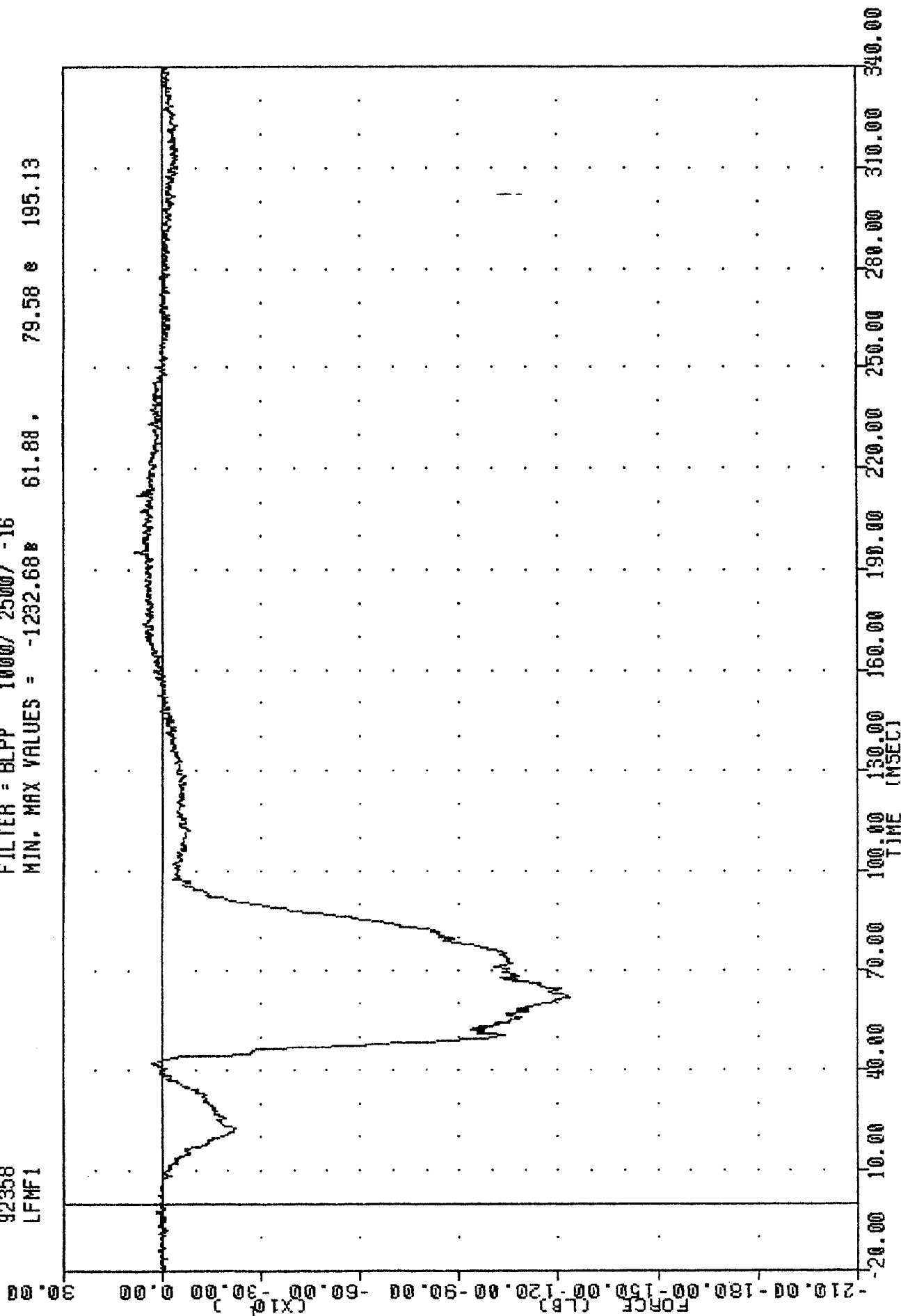
FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -0.848 90.00 , 0.01 e 15.63



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
DRIVER CHEST DEFLECTION

TRC , 921223
 208 COMPLIANCE TESTING
 92358
 LFMF1

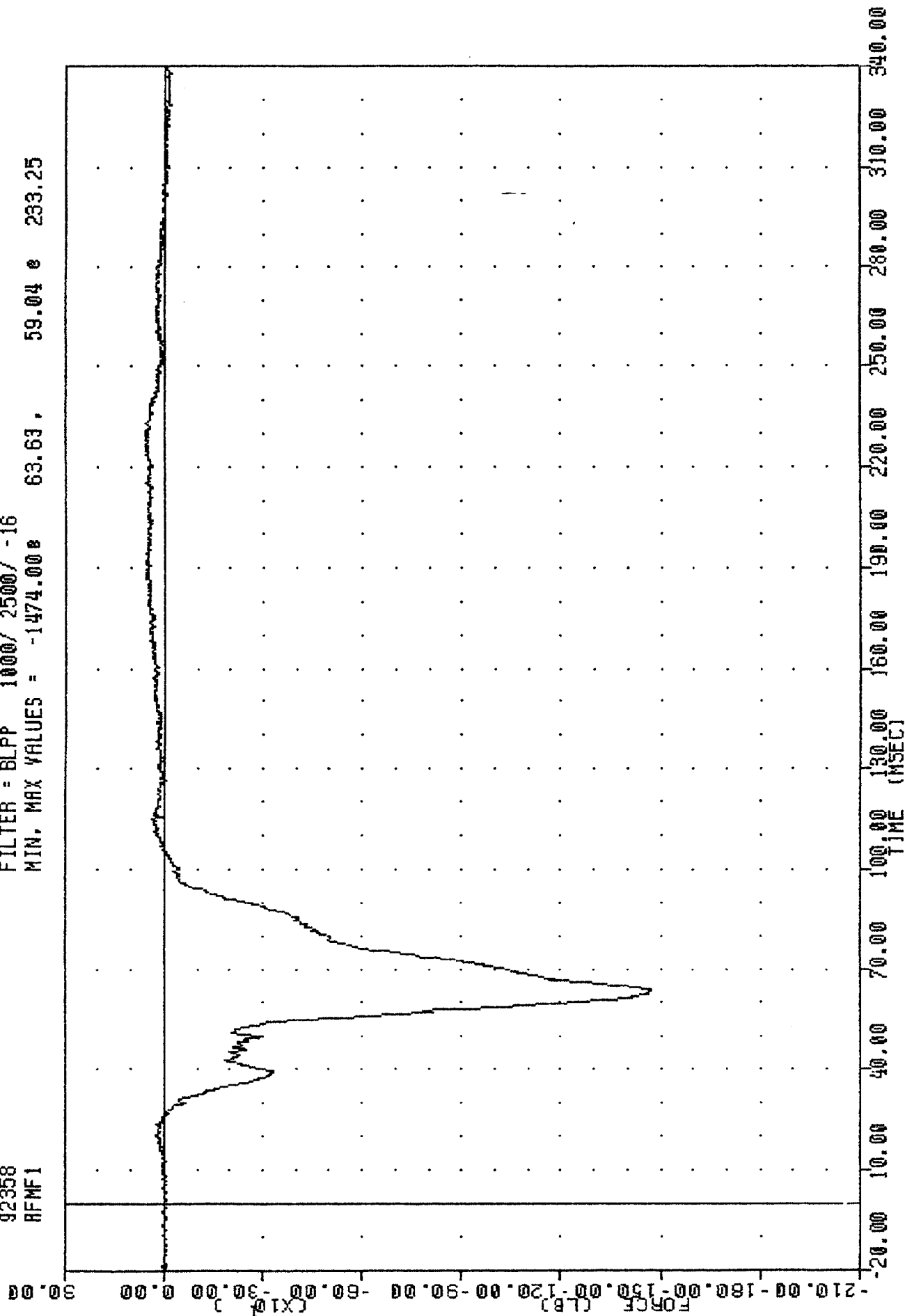
FILTER = BLPP 1000/ 2500/ -16
 MIN. MAX VALUES = -1232.68 61.88 , 79.58 e 195.13



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
 DRIVER LEFT FEMUR FORCE

TRC , 921223
 208 COMPLIANCE TESTING
 92358
 RFMF1

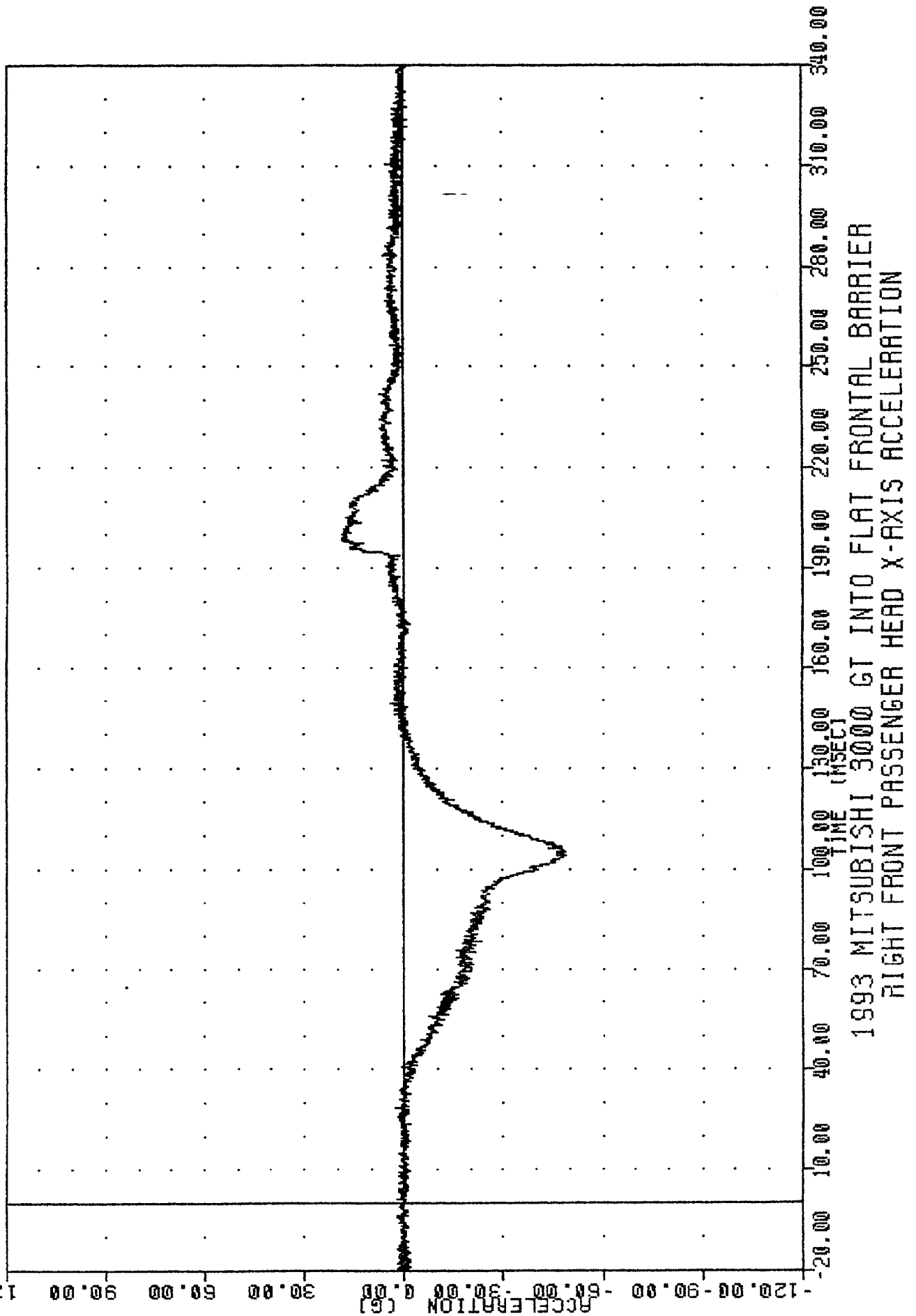
FILTER = BLPP 1000/ 2500/ -16
 MIN. MAX VALUES = -1474.00e 63.63, 59.04 e 233.25



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
 DRIVER RIGHT FEMUR FORCE

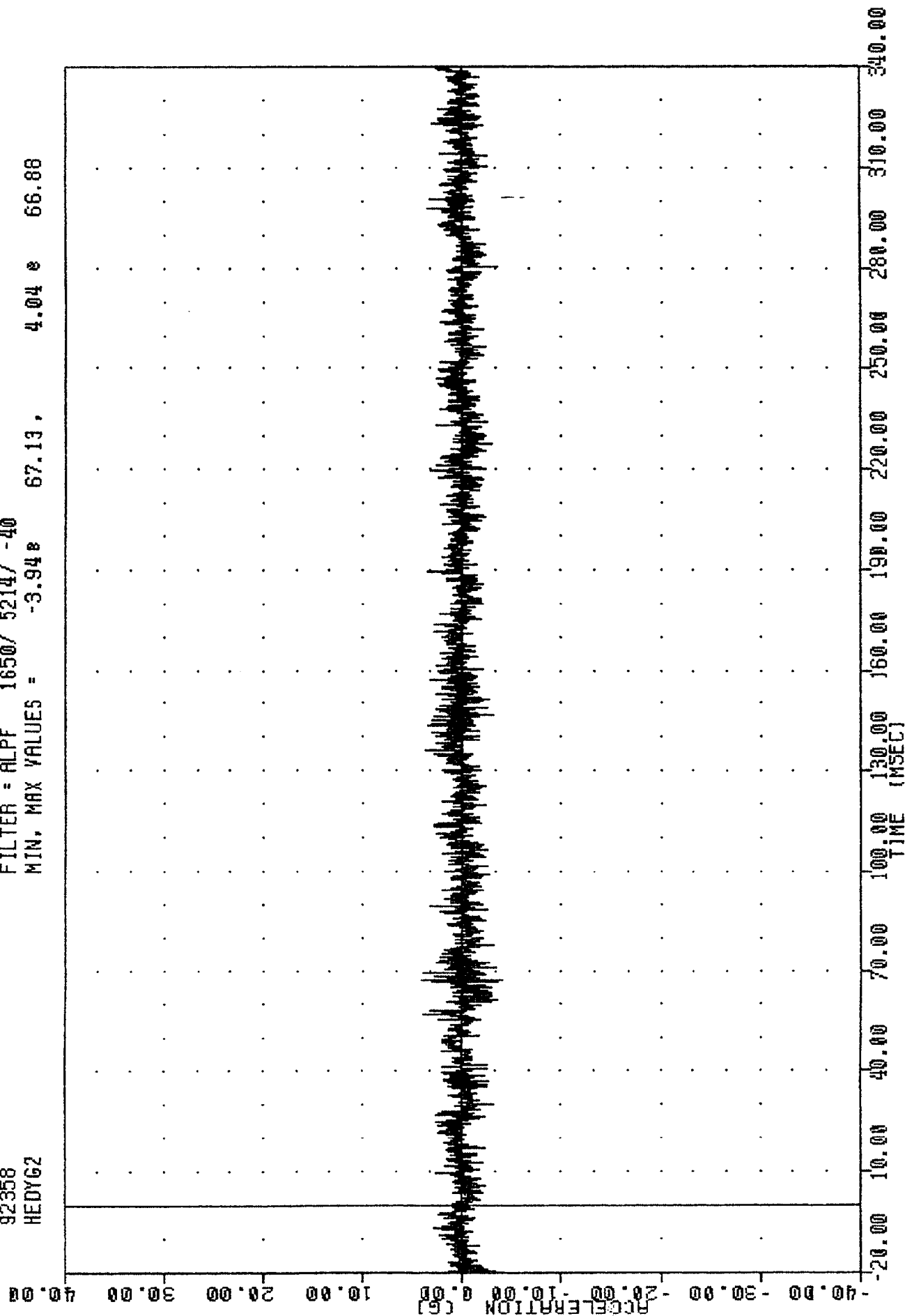
TRC
208 COMPLIANCE TESTING
92358
HEDXG2

FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -49.07 104.38 18.55 e 198.63



TRC , 921223
208 COMPLIANCE TESTING
92358
HEDYG2

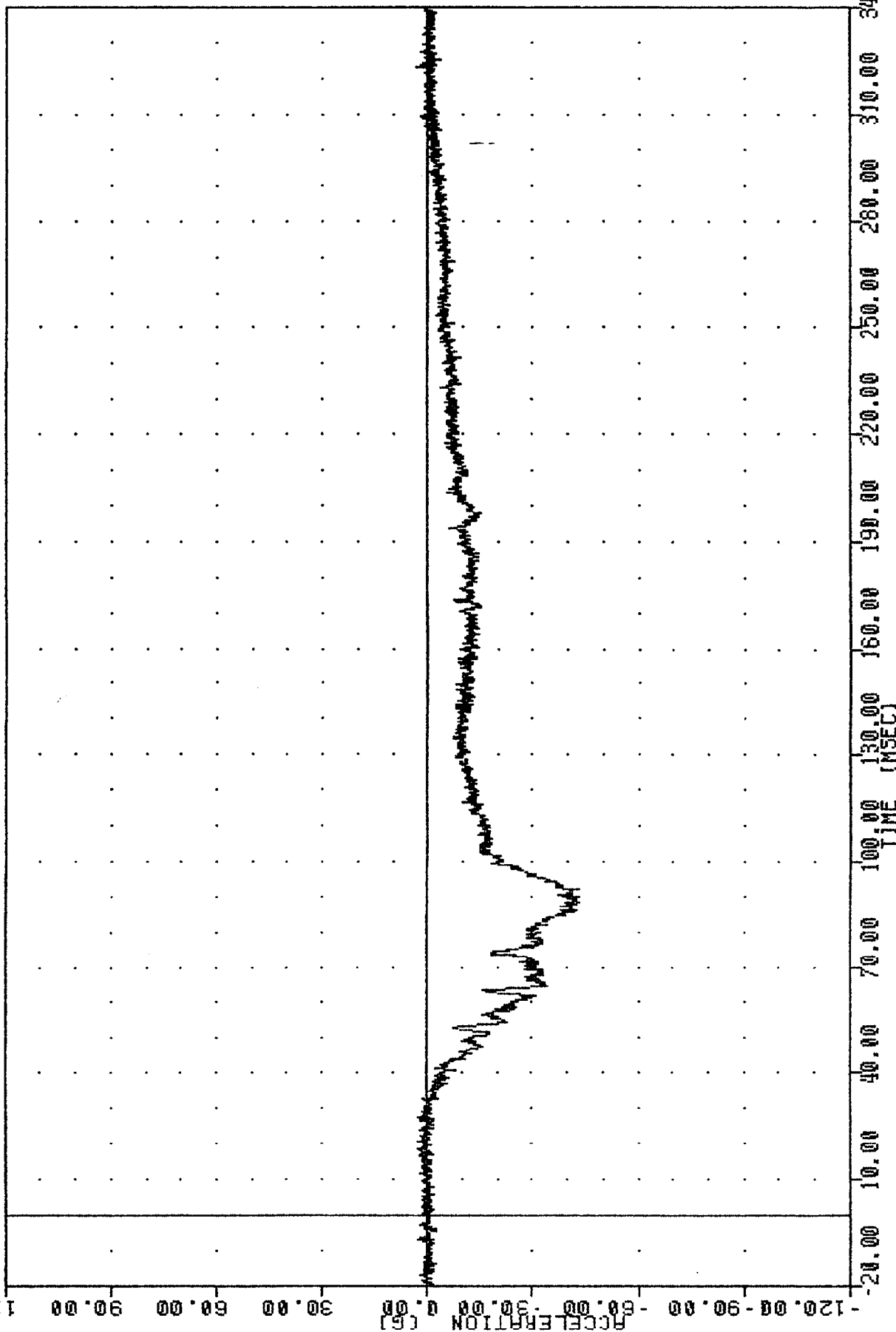
FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -3.94e 67.13, 4.04 e 66.88



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER HEAD Y-AXIS ACCELERATION

TRC
200 COMPLIANCE TESTING
92358
HE0262

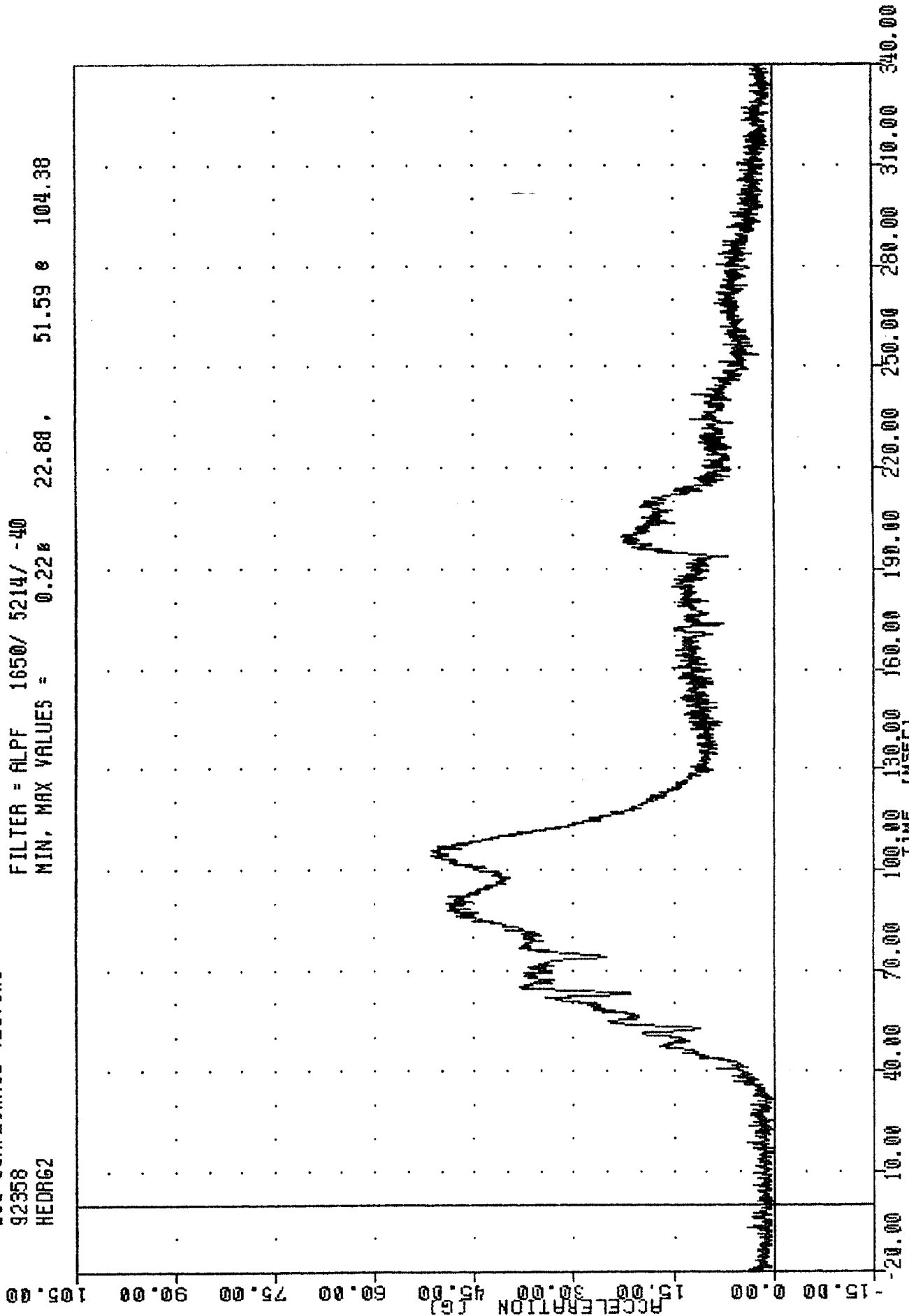
FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -43.27 88.50, 3.12 323.50



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER HEAD Z-AXIS ACCELERATION

TRC , 921223
 208 COMPLIANCE TESTING
 92358
 HEDRG2

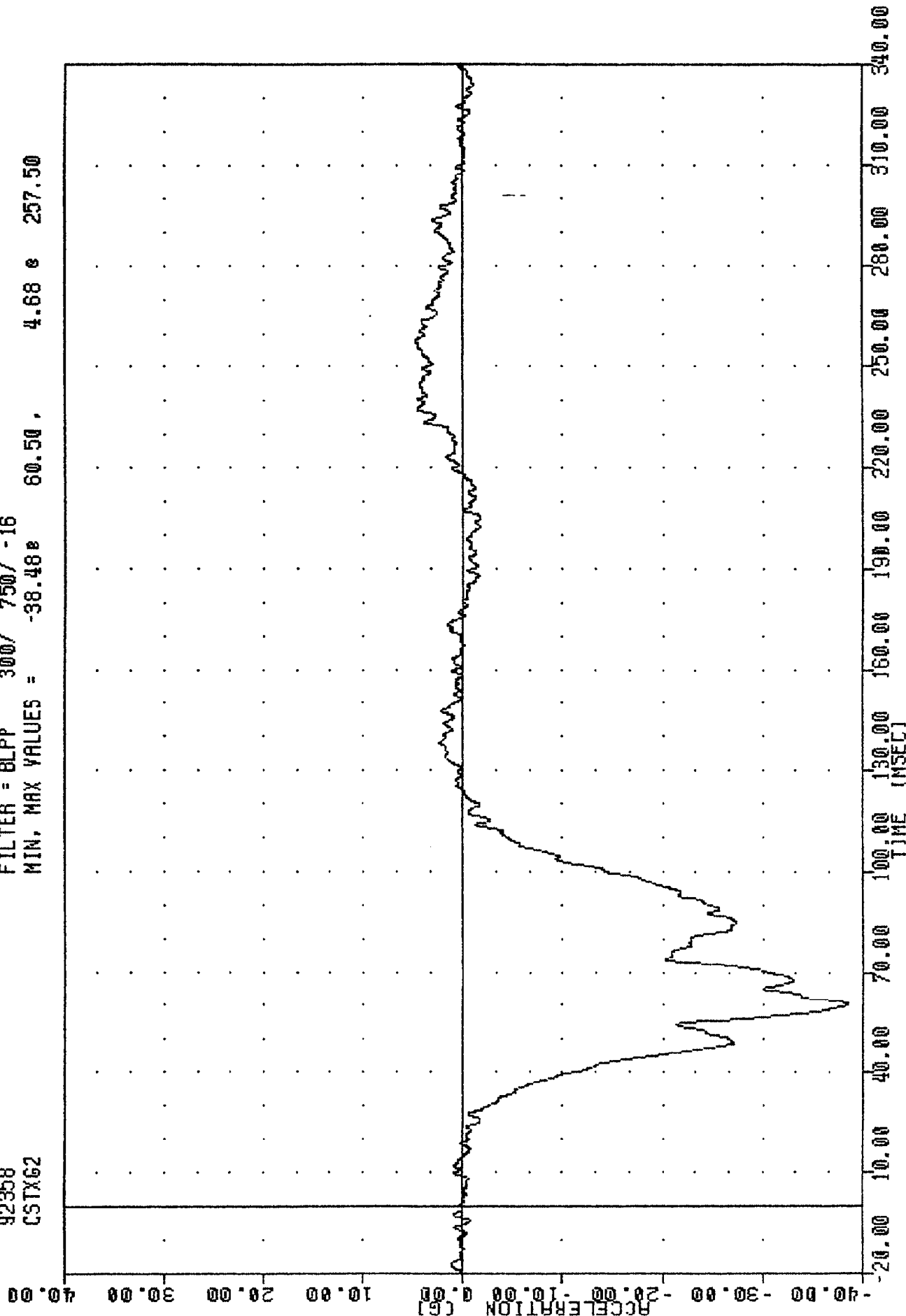
FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = 0.22 22.88 51.59 e 104.38



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION

TRC , 921223
208 COMPLIANCE TESTING
92358
CSTX62

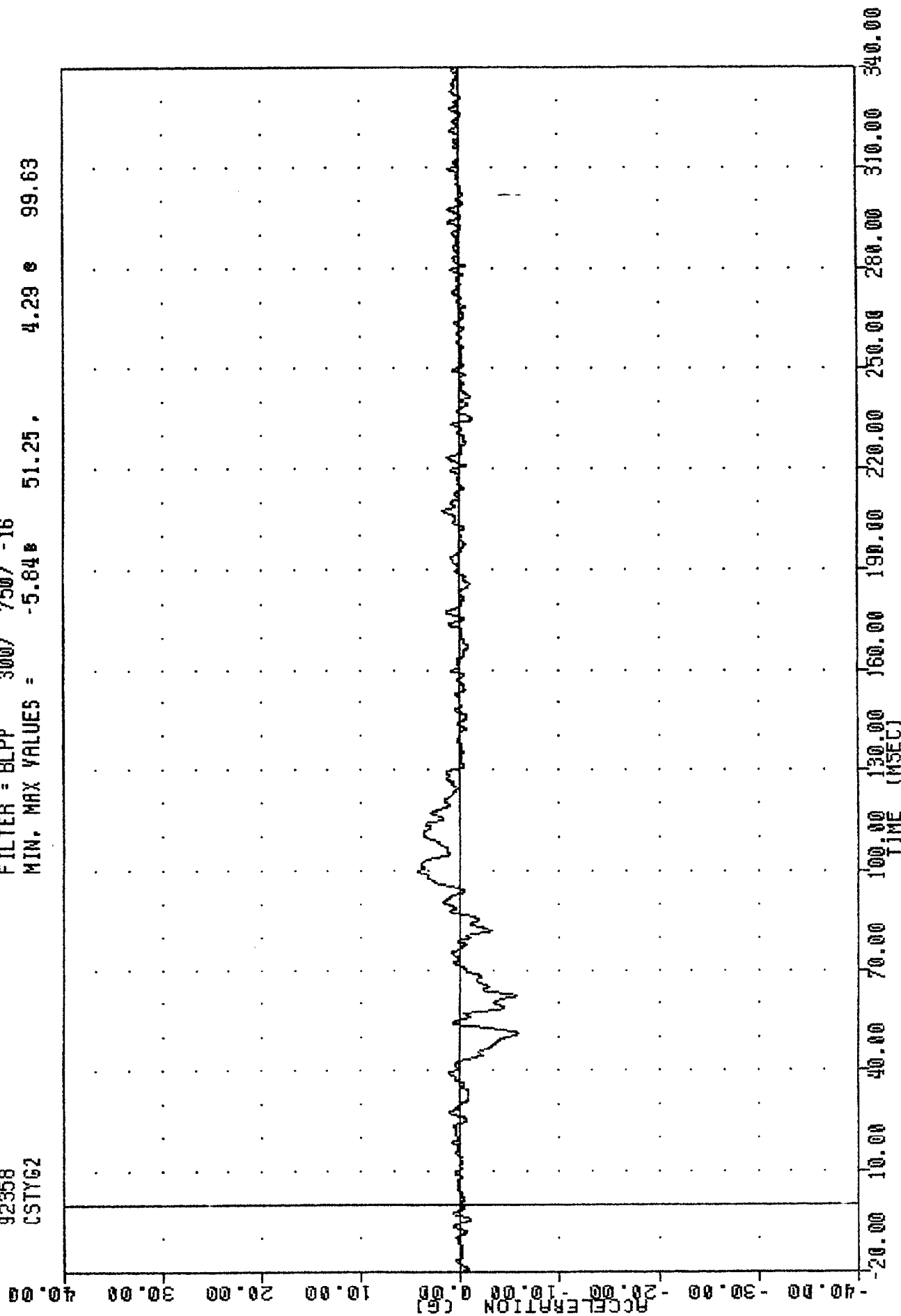
FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -38.48e 60.50 , 4.68 e 257.50



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER CHEST X-AXIS ACCELERATION

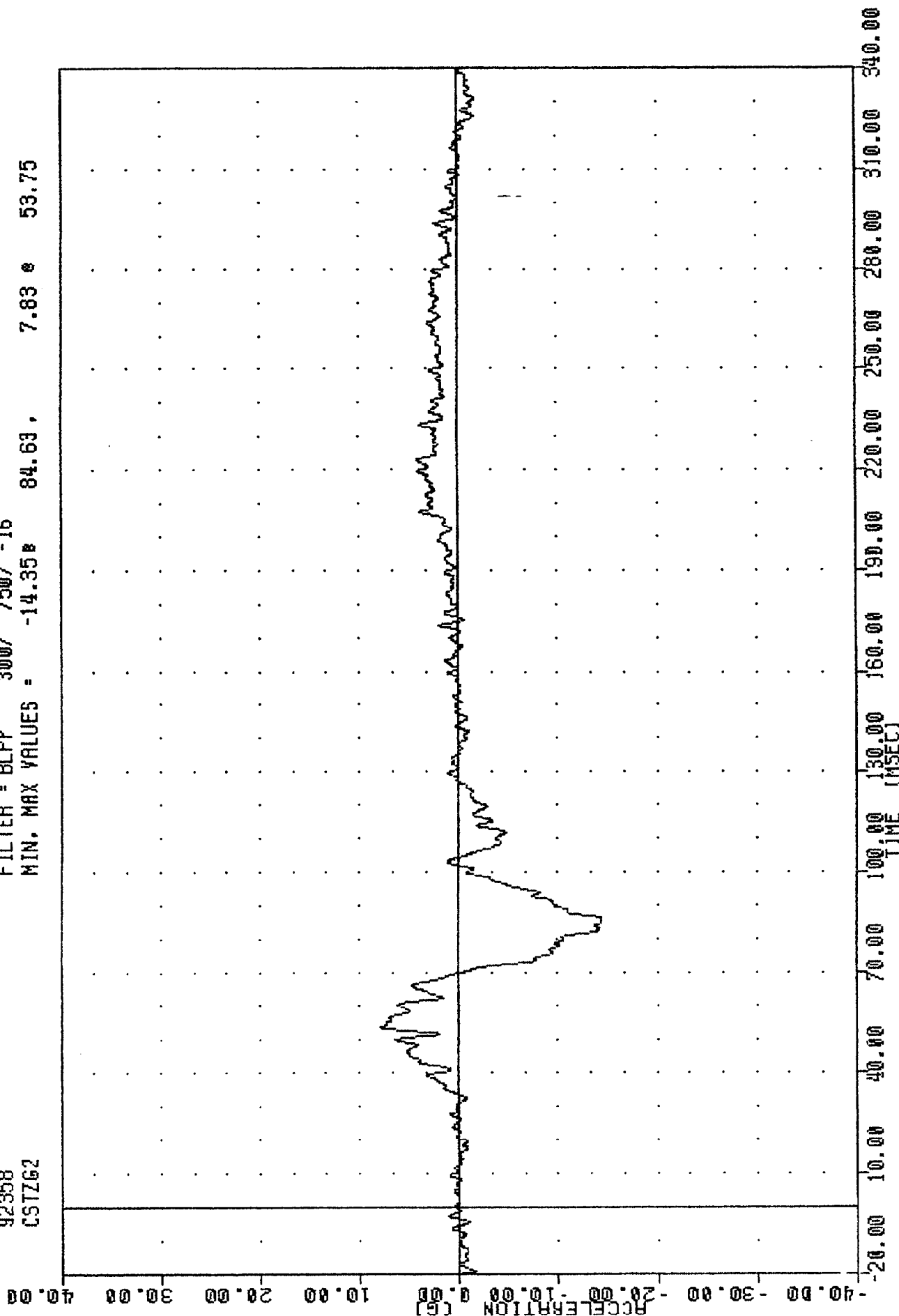
TRC , 921223
208 COMPLIANCE TESTING
92358
CSTY62

FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -5.84 51.25 , 4.29 e 99.63



TRC , 921223
 208 COMPLIANCE TESTING
 92358
 CSTZG2

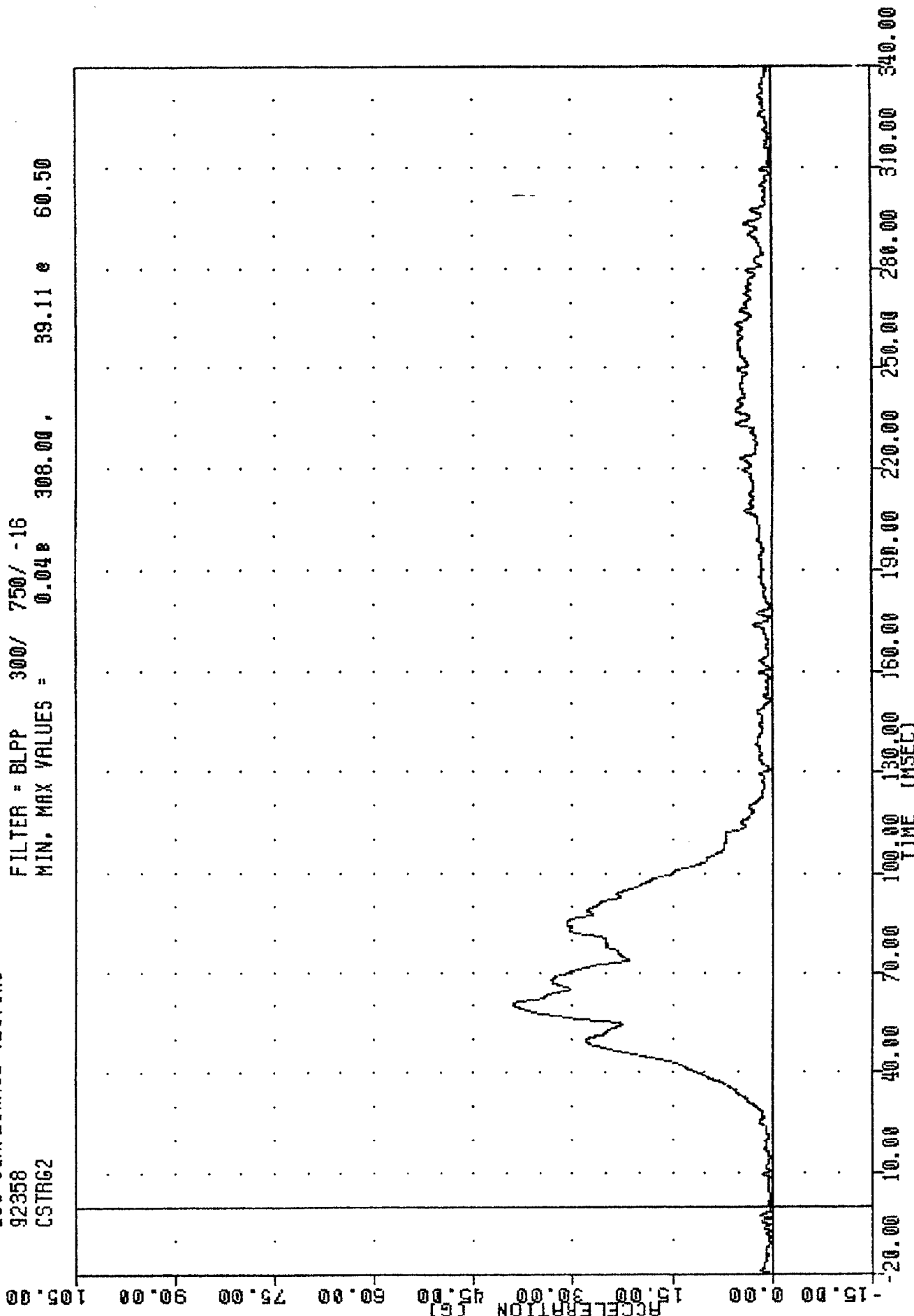
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -14.35B 84.63, 7.83 e 53.75



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER CHEST Z-AXIS ACCELERATION

TRC , 921223
 208 COMPLIANCE TESTING
 92358
 CSTR62

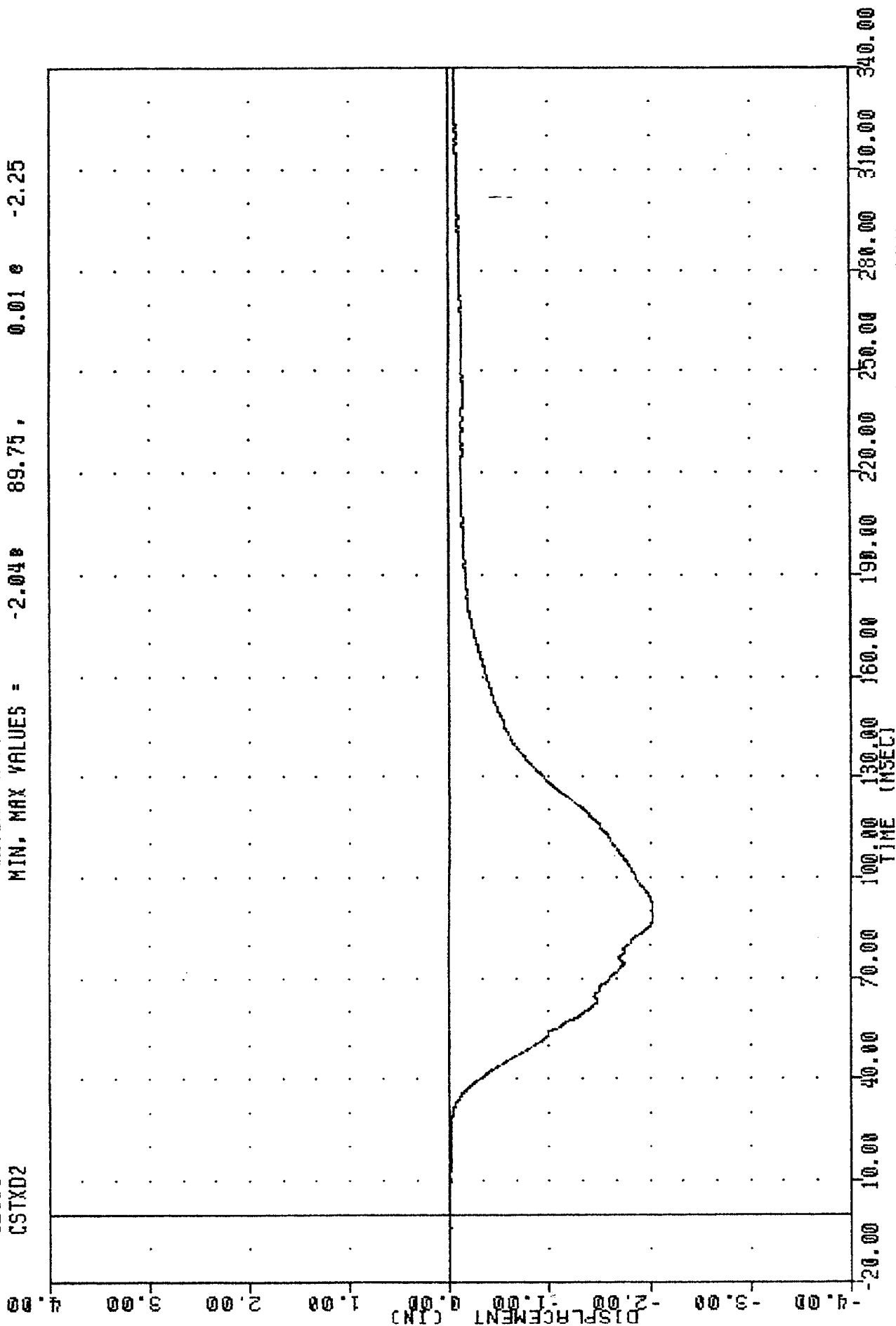
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.048 308.00 , 39.11 e 60.50



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION

TRC , 921223
208 COMPLIANCE TESTING
92358
CSTXD2

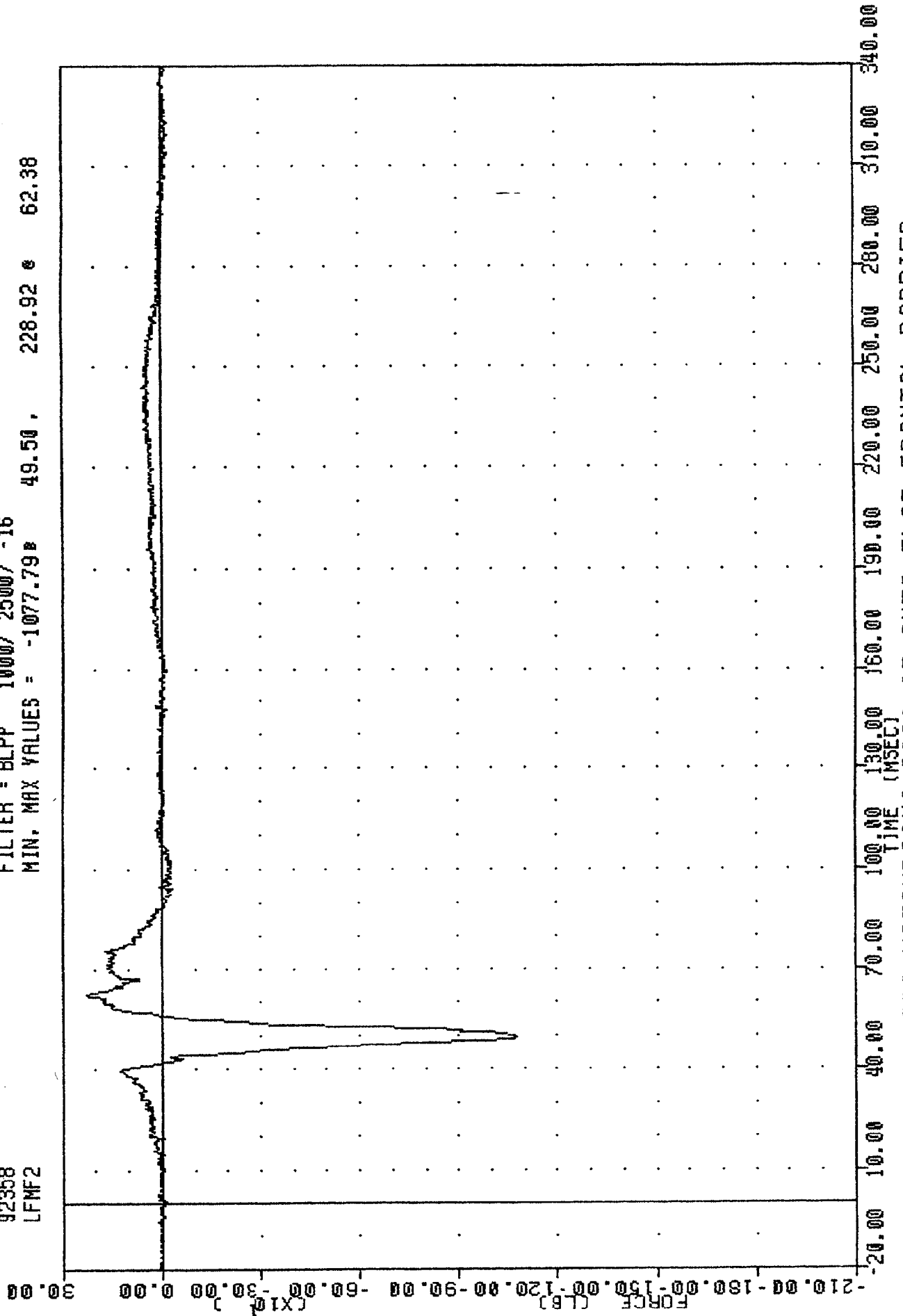
FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -2.048 89.75, 0.018 -2.25



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER CHEST DEFLECTION

TRC , 921223
 208 COMPLIANCE TESTING
 92358
 LFMF2

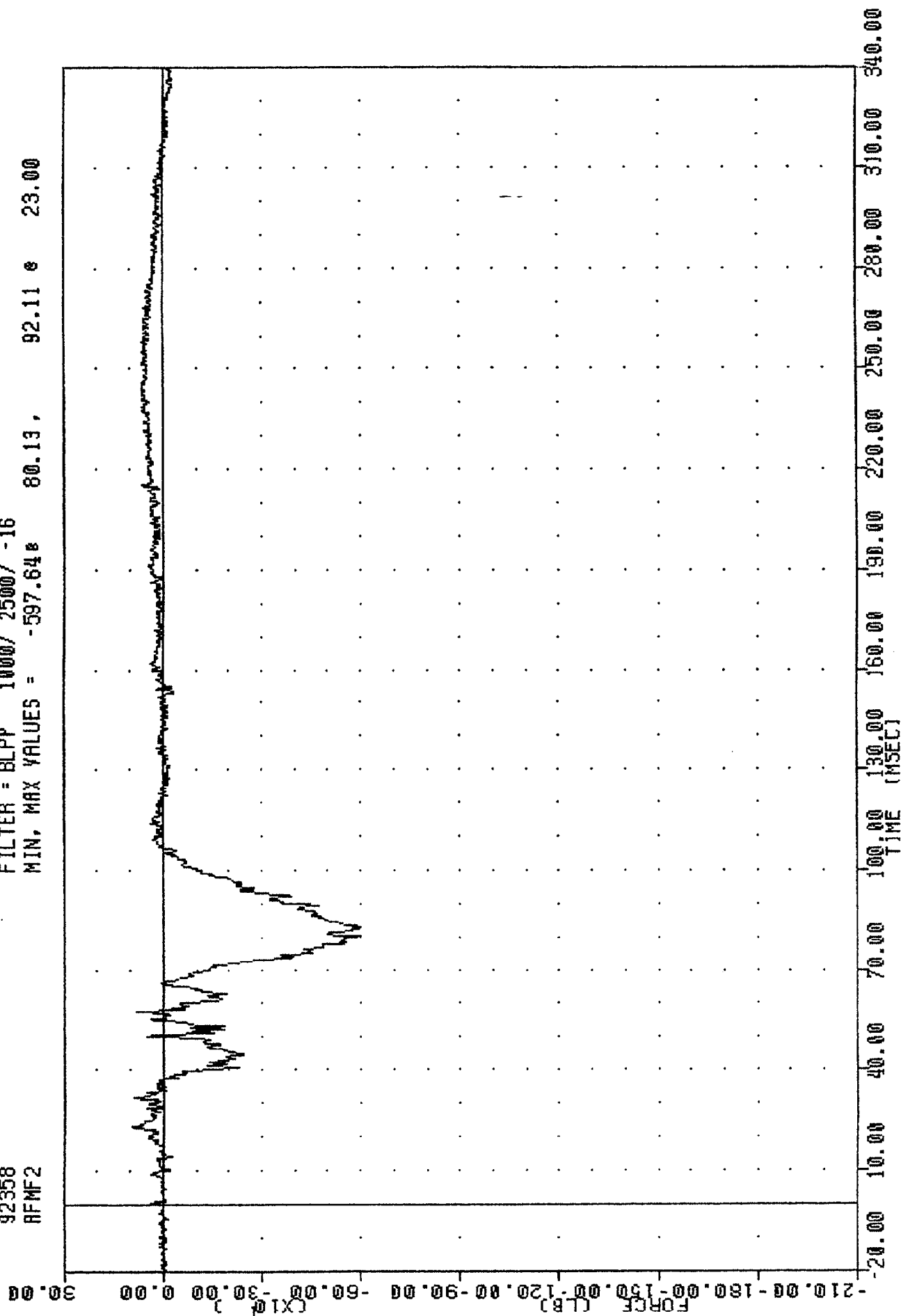
FILTER = BLPP 1000/ 2500/ -16
 MIN. MAX VALUES = -1077.79# 49.50 , 228.92 # 62.38



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER LEFT FEMUR FORCE

TRC , 921223
 208 COMPLIANCE TESTING
 92358
 RFMF2

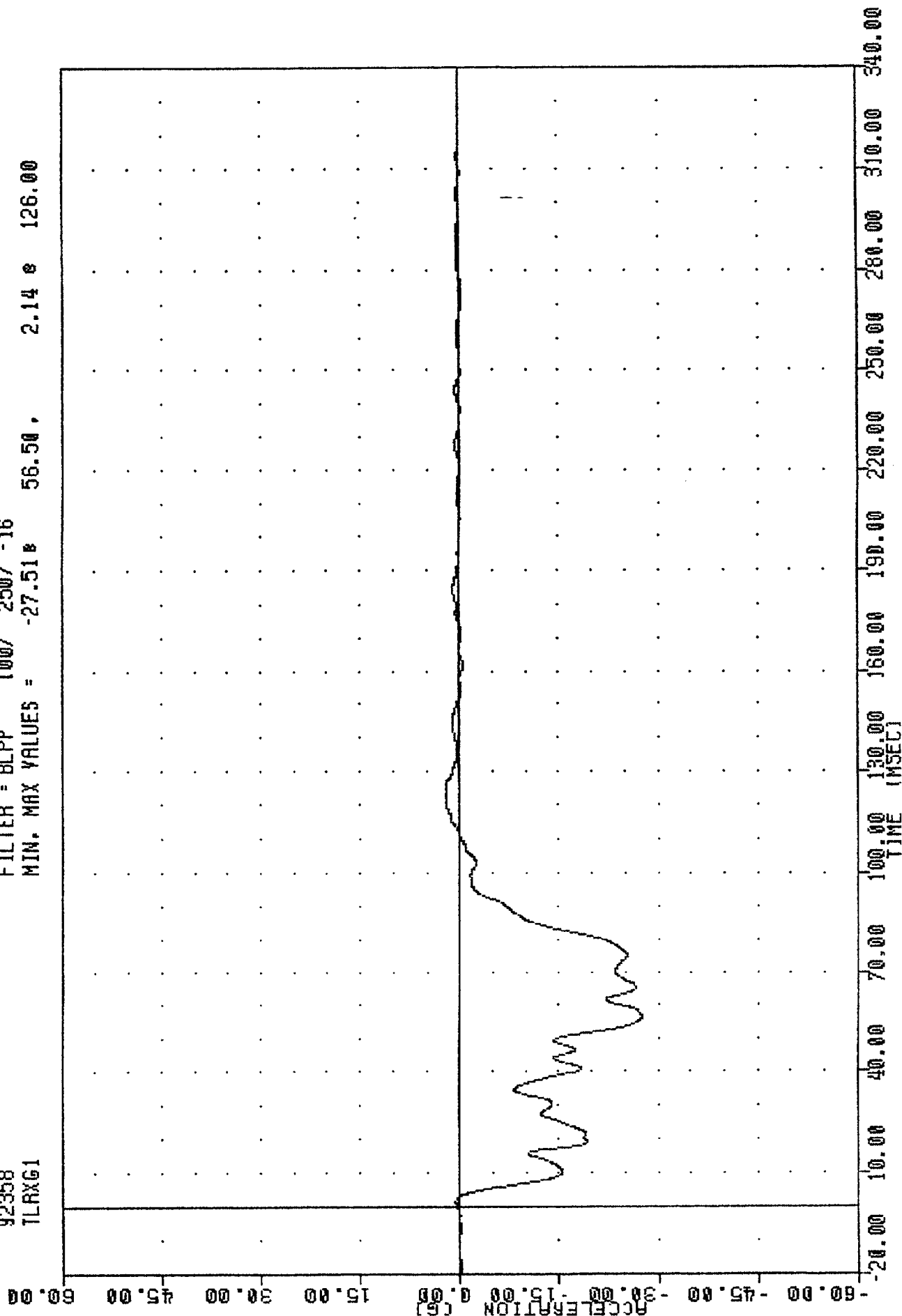
FILTER = BLPP 1000/ 2500/ -16
 MIN, MAX VALUES = -597.64 80.13 , 92.11 e 23.00



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER RIGHT FEMUR FORCE

TRC , 921223
208 COMPLIANCE TESTING
92358
TLRXG1

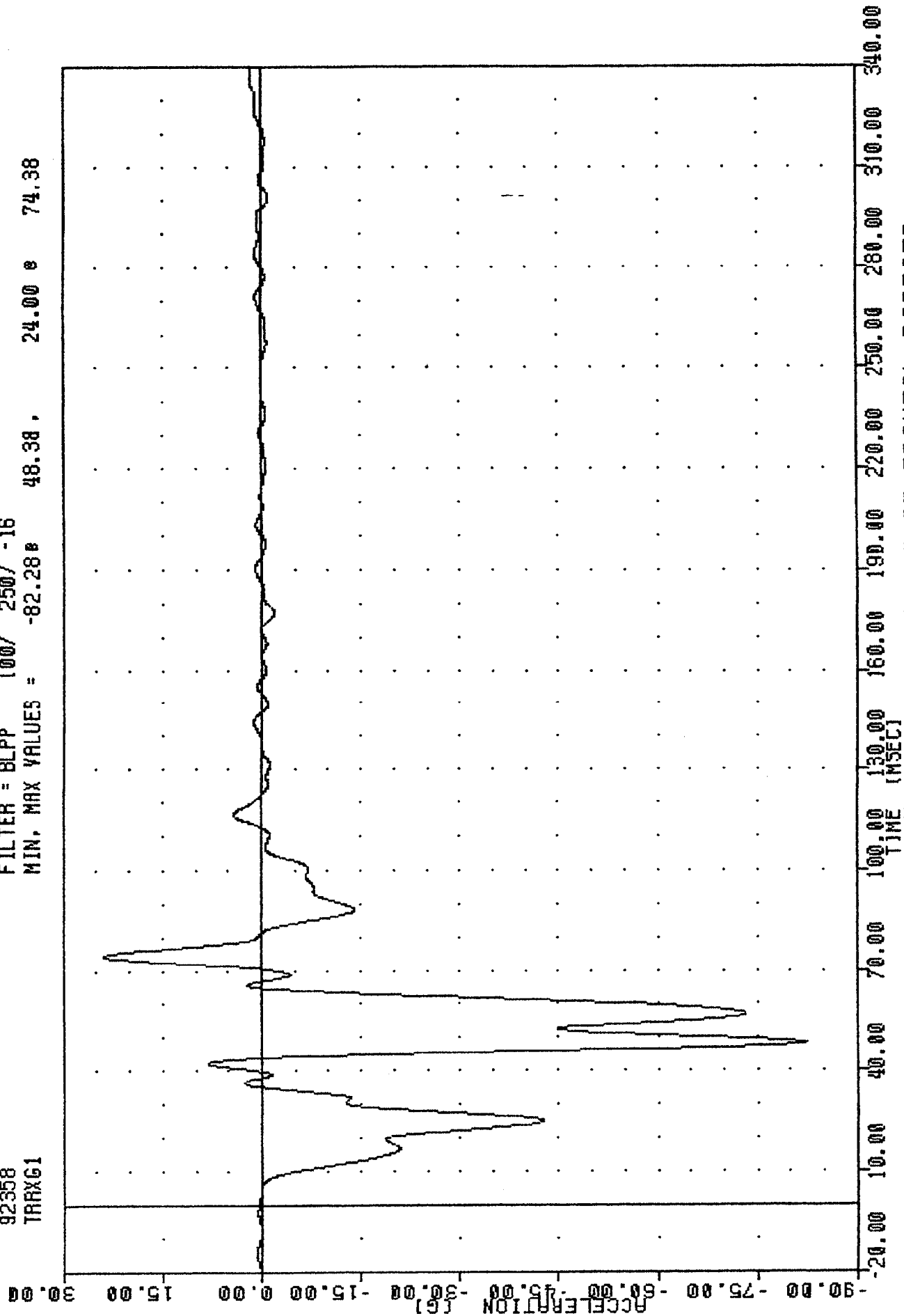
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -27.51 56.50 2.14 e 126.00



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
LEFT REAR SEAT X-AXIS ACCELERATION

TRC , 921223
200 COMPLIANCE TESTING
92358
TRRXG1

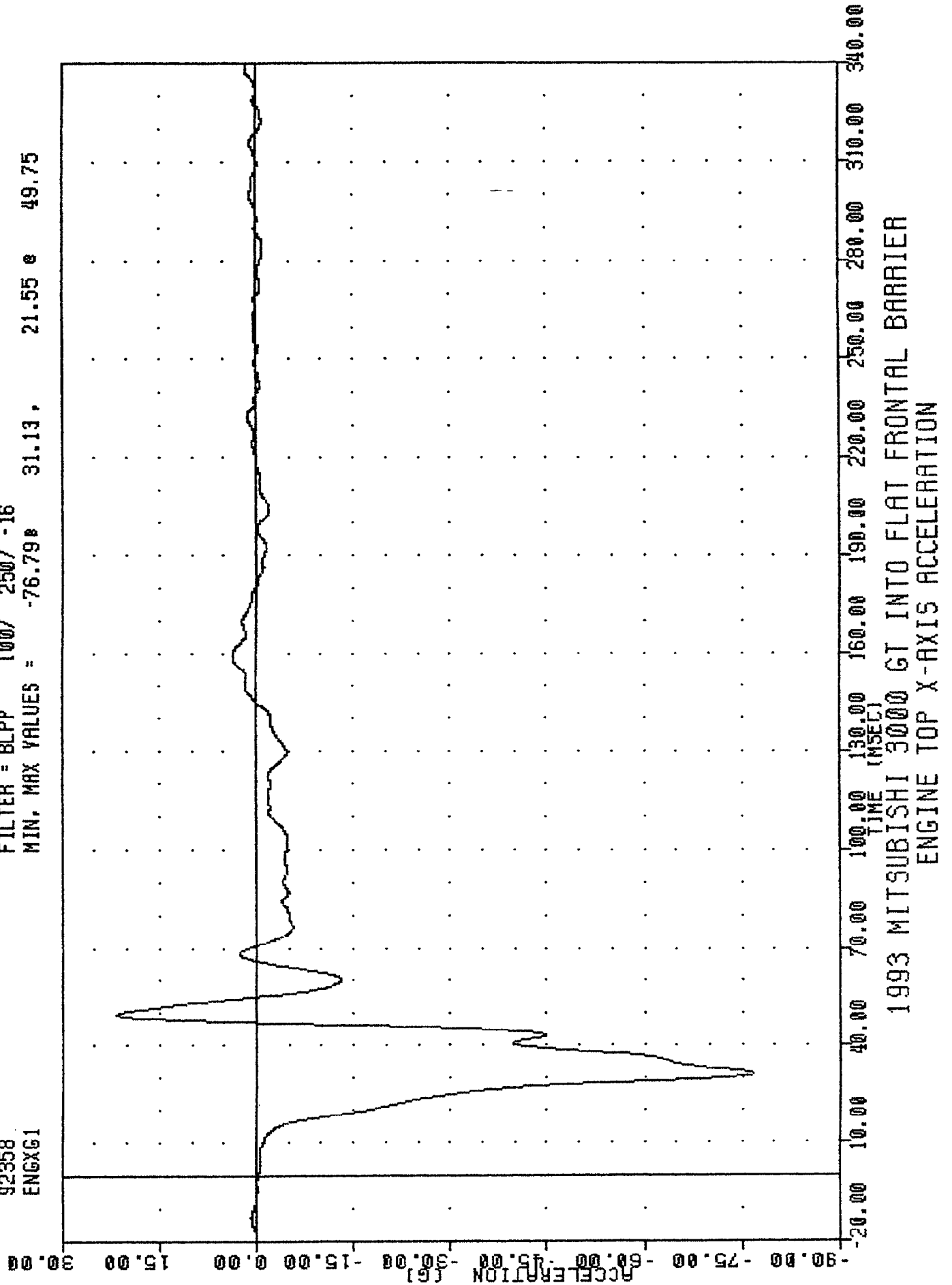
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -82.28 48.38 24.00 74.38



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
RIGHT REAR SEAT X-AXIS ACCELERATION

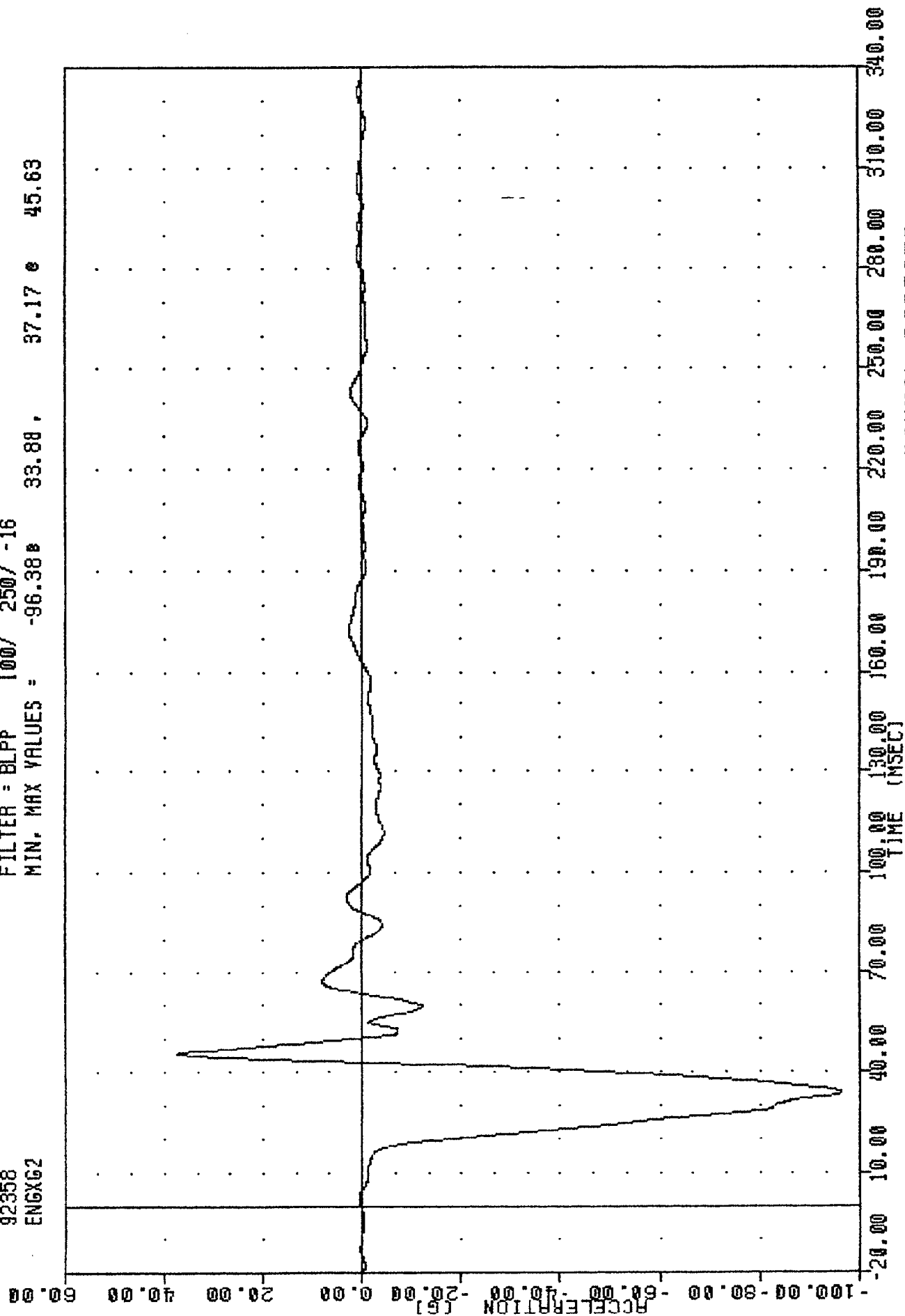
TRC .921223
200 COMPLIANCE TESTING
92358
ENGXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -76.79 31.13 21.55 e 49.75



TRC , 921223
208 COMPLIANCE TESTING
92358
ENGXG2

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -96.38 33.88 , 37.17 e 45.63

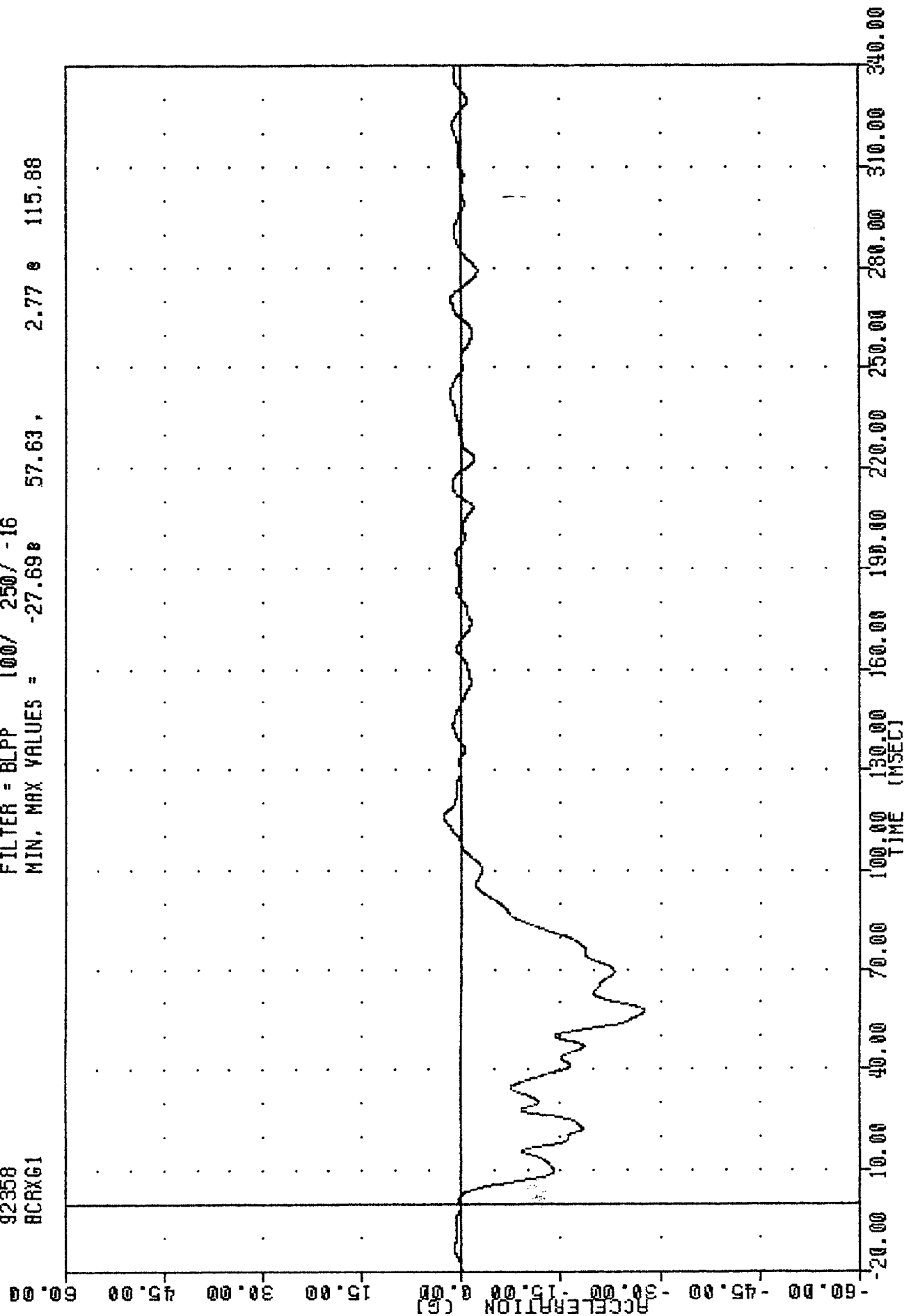


1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
ENGINE BOTTOM X-AXIS ACCELERATION

TRC
208 COMPLIANCE TESTING
92358
BCRXG1

, 921223

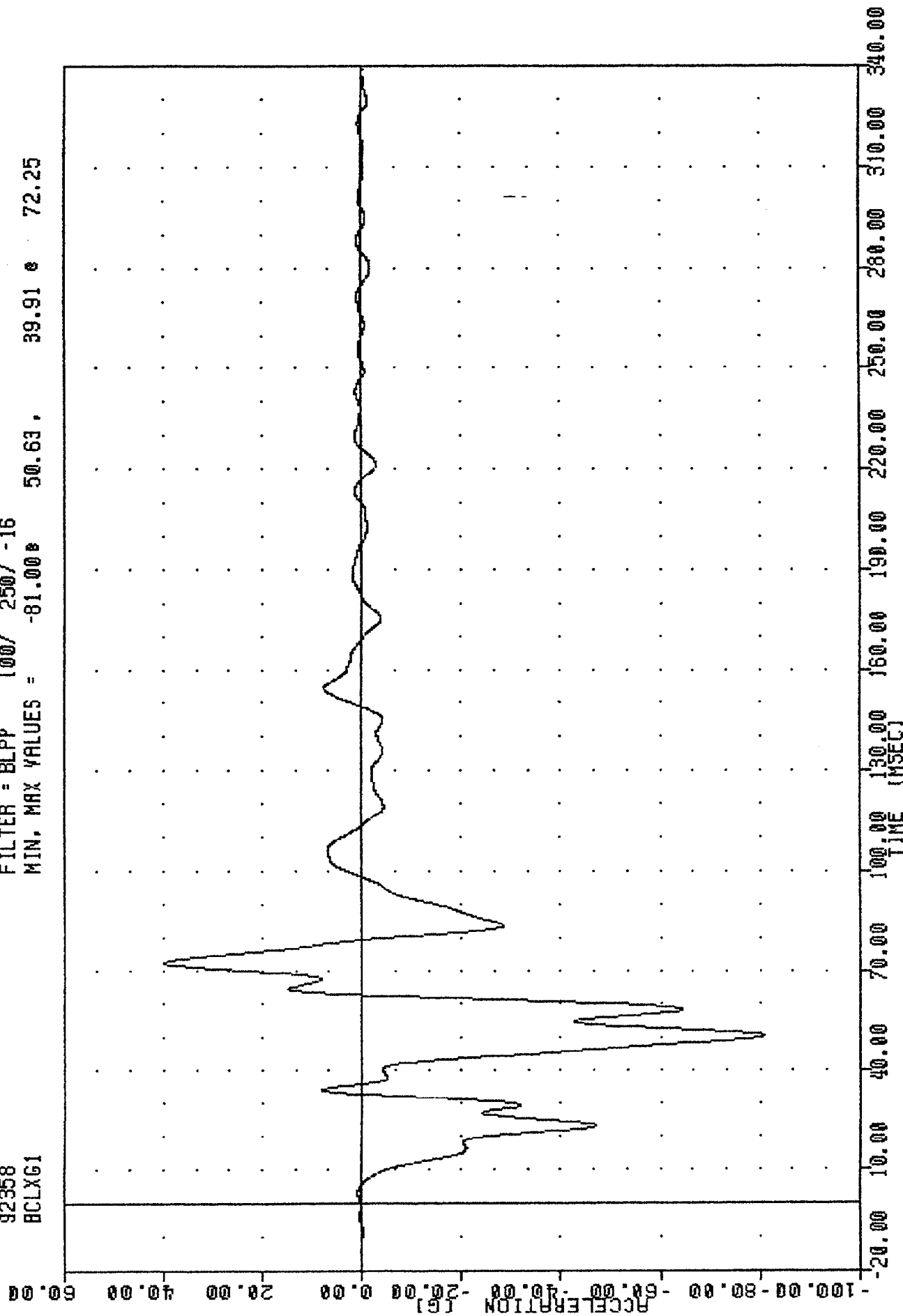
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -27.69g 57.63, 2.77 g 115.88



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
RIGHT BRAKE CALIPER X-AXIS ACCELERATION

TRC
208 COMPLIANCE TESTING
92358
BCLXG1

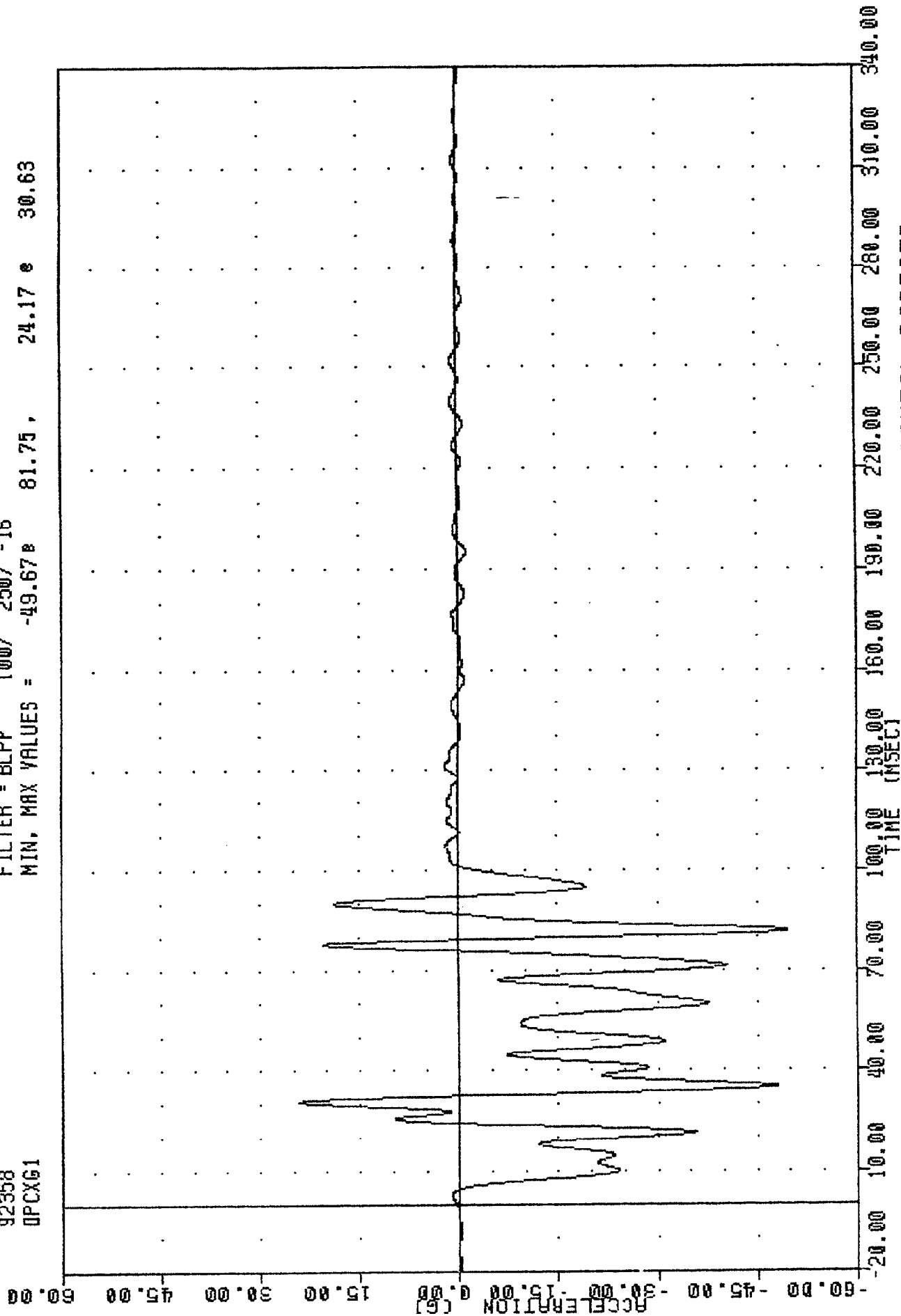
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -81.00 50.63 39.91 72.25



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
LEFT BRAKE CALIPER X-AXIS ACCELERATION

TRC , 921223
208 COMPLIANCE TESTING
92358
OPCXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -49.678 81.75, 24.17 e 30.63



1993 MITSUBISHI 3000 GT INTO FLAT FRONTAL BARRIER
INSTRUMENT PANEL CENTER X-AXIS ACCELERATION