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REPORT NOS. 208-TRC-93-006

212-TRC-93-006

301-TRC-93-006

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

TOYOTA MOTOR CORPORATION

1993 TOYOTA TERCEL

2-DOOR COUPE

NHTSA NO. CP5101

TRC TEST NO. 921202

TRANSPORTATION RESEARCH CENTER INC.

10820 STATE ROUTE 347

EAST LIBERTY, OHIO 43319



DECEMBER 18, 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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16. Abstract A 30 mph flat frontal barrier impact test was conducted on a 1993 Toyota Tercel 2-door coupe, NHTSA No. CP5101, at Transportation Research Center Inc. on December 2, 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 15.9 inches. The ambient temperature was 68° F. The driver's head injury criteria (HIC) was 307. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 47.1 g. The driver's left and right femur maximum axial forces were 793 pounds and 1127 (See DATA ACQUISITION EXPLANATIONS) pounds, respectively. The passenger's head injury criteria (HIC) was 621. The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 46.0 g. The passenger's left and right femur maximum axial forces were 777 pounds and 850 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 Hornickie		
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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	kilometers	km
mi	miles	1.6		
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	0.96	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. 286, Units of Weight and Measure, Price \$1.25, SD Catalog No. C1310-286.

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	
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
		1.06	quarts	qt
		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

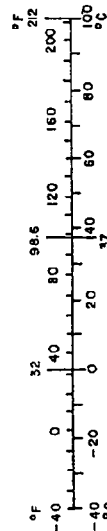


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SECTION 1.0

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 Toyota Tercel 2-door coupe, NHTSA No. CP5101, 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 December 2, 1992.

The test vehicle, a 1993 Toyota Tercel 2-door coupe, NHTSA No. CP5101, 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 1.5 liter, transverse engine, manual transmission, and power brakes. The vehicle's test weight was 2290 pounds. The vehicle's impact speed was 29.3 mph. The vehicle's maximum static crush was 15.9 inches.

The driver's head injury criteria (HIC) was 307. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 47.1 g. The driver's left and right femur maximum axial forces were 793 pounds and 1127 pounds, respectively (See DATA ACQUISITION EXPLANATIONS).

The right front passenger's HIC was 621. The right front passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 46.0 g. The right front passenger's left and right femur maximum axial forces were 777 pounds and 850 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.

DATA ACQUISITION EXPLANATIONS

The driver's right femur load cell, RFMF1, recorded questionable data spikes after 150 milliseconds. The femur load cell data cable, connector, and data acquisition circuit were checked immediately after the test and appeared normal. The right knee passed the post-test calibration knee impact test. The cause of the spikes could not be identified.

The right brake caliper, BCRXG1, lost data at 41 milliseconds resulting from the accelerometer's cable being cut by the vehicle's crush on impact.

DATA ACQUISITION EXPLANATIONS

The driver's right femur load cell, RFMF1, recorded questionable data spikes after 150 milliseconds.

The right brake caliper, BCRXG1, lost data at 41 milliseconds due to the accelerometer's cable being cut by the vehicle's crush on impact.

TABLE 1 CRASH TEST SUMMARY

NHTSA NO.: CP5101 TEST TYPE: Frontal Barrier Impact

TEST DATE: 12/02/92 TEST TIME: 1356 AMBIENT TEMP. (°F): 68

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1993/Toyota/Tercel/2-door coupe

VEHICLE TEST WEIGHT (LBS): 2290

IMPACT ANGLE (DEG)*: 0

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

MAXIMUM STATIC CRUSH (IN): 15.9

AVERAGE REBOUND (IN): 26.5

DUMMIES: Driver #353 Passenger #354

TYPE: Part 572 B Part 572 B

LOCATION: Left front Right front

RESTRAINT: Airbag Passive 2-point belt

NUMBER OF DATA CHANNELS: 23

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

*With respect to tow track centerline.

**Speed trap measurement (± .05 mph accuracy)

TABLE 2 TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Toyota Motor Corporation

MAKE/MODEL: Toyota/Tercel

VIN: JT2EL46S8P0260792

BODY STYLE: 2-door coupe

MODEL YEAR: 1993

NHTSA NO.: CP5101

COLOR: Green

ENGINE DATA: TYPE: transverse CYLINDERS: 4 DISPLACEMENT: 1.5 liter

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

DATE VEHICLE RECEIVED: 09/29/92

ODOMETER READING: 64

DEALER'S NAME AND ADDRESS: Germain Toyota of Columbus
5777 Scarborough Blvd.
Columbus, OH 43232

ACCESSORIES:

POWER STEERING	No	AUTOMATIC TRANSMISSION	No
POWER BRAKES	Yes	AUTOMATIC SPEED CONTROL	No
POWER SEATS	No	TILTING STEERING WHEEL	No
POWER WINDOWS	No	TELESCOPING STEERING WHEEL	No
TINTED GLASS	No	AIR CONDITIONING	No
RADIO	No	ANTI-SKID BRAKE	No
CLOCK	No	REAR WINDOW DEFROSTER	Yes
OTHER	None		

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: Toyota Motor Corporation

DATE OF MANUFACTURE: 08/92

VIN: JT2EL46S8P0260792

GVWR: 2870 LBS

CAWR: FRONT: 1540 LBS., REAR: 1380 LBS.

TABLE 2 TEST VEHICLE INFORMATION CONT'D

TIRES ON VEHICLE (MFR., LINE, SIZE): OHTSU, Hi-Steel 535, P145/80R13

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

SPARE TIRE (MFR., LINE, SIZE): Bridgestone, Temporary spare, T105/70D14

TYPE OF SEATS: FRONT: Bucket
REAR: Bench

TYPE OF FRONT SEAT BACKS: Manually adjustable

MAXIMUM WIDTH: 64.8 INCHES

WHEELBASE: 94.0 INCHES

LOCATION OF LABEL STATING TIRE & CAPACITY DATA:

The label was located in the glove compartment.

TIRE & CAPACITY DATA FROM VEHICLE'S LABEL:

RECOMMENDED TIRE SIZE: P145/80R13

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

DESIGNATED SEATING CAPACITY: 2 FRONT 3 REAR 5 TOTAL

VEHICLE CAPACITY WEIGHT: 775 LBS.

TEST VEHICLE ATTITUDE (ALL MEASUREMENTS ARE IN INCHES):

DELIVERED ATTITUDE:	LF	24.8;	RF	24.9;	LR	25.1;	RR	25.3
FULLY LOADED ATTITUDE:	LF	24.0;	RF	24.2;	LR	24.1;	RR	24.5
PRE-TEST ATTITUDE:	LF	24.0;	RF	24.1;	LR	23.9;	RR	23.9
POST-TEST ATTITUDE:	LF	23.2;	RF	25.4;	LR	23.6;	RR	25.1

TABLE 2 TEST VEHICLE INFORMATION CONT'D

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

RIGHT FRONT	584 LBS.	RIGHT REAR	375 LBS.
LEFT FRONT	602 LBS.	LEFT REAR	392 LBS.
TOTAL FRONT WEIGHT	1186 LBS.	(60.7% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	767 LBS.	(39.3% OF TOTAL VEHICLE WEIGHT)	
TOTAL DELIVERED WEIGHT 1953 LBS.			

CALCULATION OF TEST VEHICLE'S TARGET TEST WEIGHT:

RCLW = RATED CARGO AND LUGGAGE WEIGHT*

UDW = UNLOADED DELIVERED WEIGHT (1953 LBS)

VCW = VEHICLE CAPACITY WEIGHT (775 LBS)

DSC = DESIGNATED SEATING CAPACITY (5)

$RCLW* = VCW - 150 (DSC) = 25$

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

TARGET TEST WEIGHT = 1953 + 25 + 328

TARGET TEST WEIGHT = 2306 LBS

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 9 LBS. OF CARGO WEIGHT:

RIGHT FRONT	670 LBS.	RIGHT REAR	460 LBS.
LEFT FRONT	675 LBS.	LEFT REAR	485 LBS.
TOTAL FRONT WEIGHT	1345 LBS.	(58.7% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	945 LBS.	(41.3% OF TOTAL VEHICLE WEIGHT)	
TOTAL TEST WEIGHT	2290 LBS.	(0.7% UNDER TARGET TEST WEIGHT)	

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

COMPONENTS REMOVED TO MEET TARGET TEST WEIGHT: Trunk lid, rear bumper, rear seat belt, rear trim, muffler

CG = 38.8 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: 921202 NHTSA NO.: CP5101
TEST DATE: 12/02/92 TEST TIME: 1356
TEST TYPE: Frontal Barrier Impact IMPACT ANGLE: 0
AMBIENT TEMPERATURE AT IMPACT AREA: 68° 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.

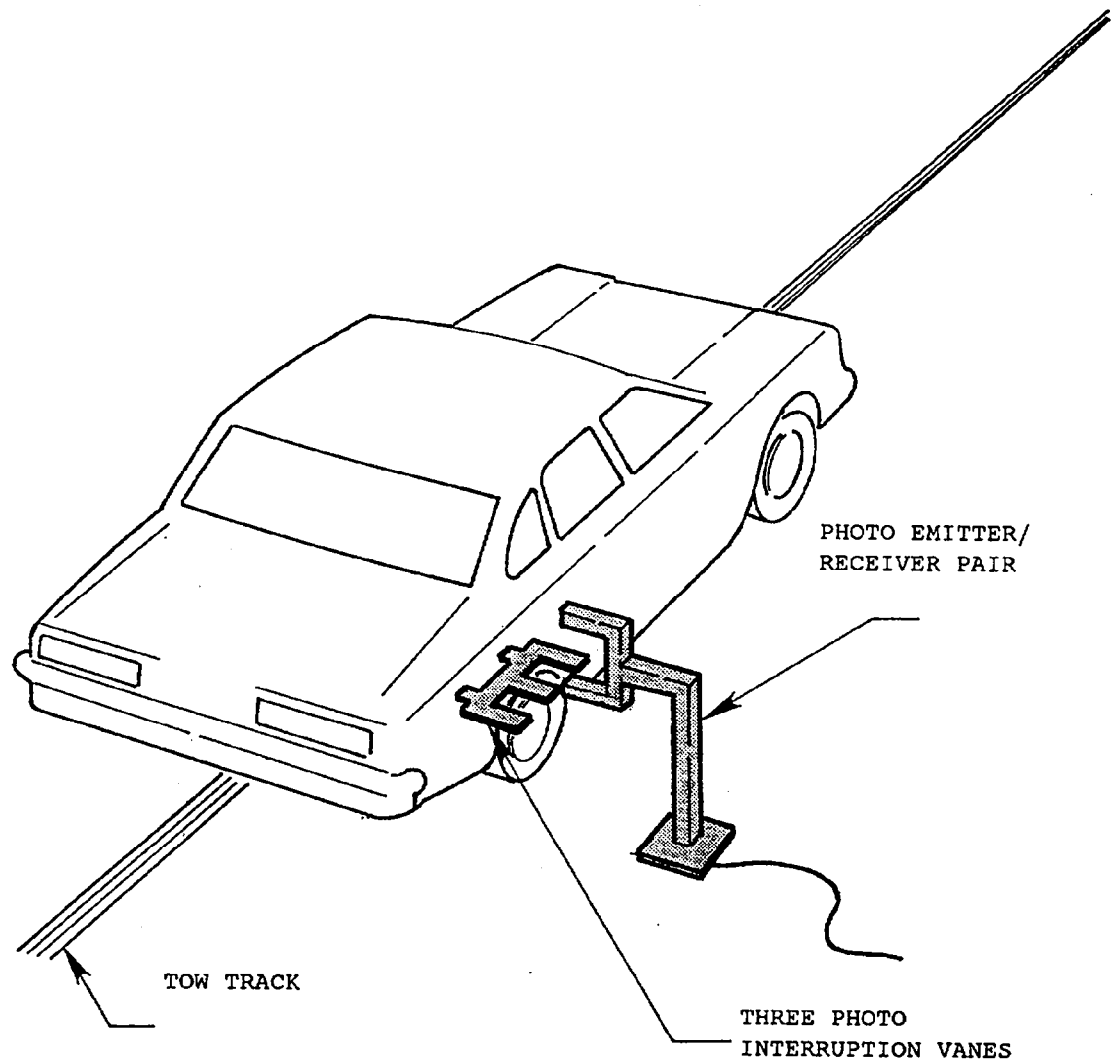
TEST VEHICLE STATIC CRUSH (ALL MEASUREMENTS ARE IN INCHES):

OVERALL LENGTH OF TEST VEHICLE: PRE-TEST: L 152.0; C 158.2; R 152.2
POST-TEST: L 138.6; C 142.4; R 138.5
TOTAL CRUSH: L 13.4; C 15.8; R 13.7
AVERAGE CRUSH: 14.3

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

DISTANCE FROM TEST VEHICLE TO BARRIER: L 28.1; C 24.1; R 27.4; AVG. 26.5

FIGURE 1 IMPACT VELOCITY MEASUREMENT SYSTEM



The final vane clears the final emitter/receiver pair 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: Toyota/Tercel/2-door coupe
 VEHICLE NHTSA NO.: CP5101; VIN: JT2EL46S8P0260792
 MODEL YEAR: 1993; BUILD DATE: 08/92; TEST DATE: 12/02/92
 VEHICLE SIZE CATEGORY: Sub-compact; TEST WEIGHT: 2290 LBS.
 VEHICLE WHEELBASE: 94.0 INCHES
 MAXIMUM WIDTH: 64.8 INCHES
 FRONT OVERHANG: 31.9 INCHES

COLLISION DEFORMATION
 CLASSIFICATION (CDC) CODE: 12FDEW2

CRUSH DEPTH
 MEASUREMENTS:

C1 =	<u>13.4</u>	INCHES
C2 =	<u>15.4</u>	INCHES
C3 =	<u>15.9</u>	INCHES
C4 =	<u>15.4</u>	INCHES
C5 =	<u>14.6</u>	INCHES
C6 =	<u>13.7</u>	INCHES

MIDPOINT OF DAMAGE: D = VEHICLE CENTERLINE
(LONGITUDINAL)

LENGTH OF DAMAGED
 REGION: L = 60.0 INCHES

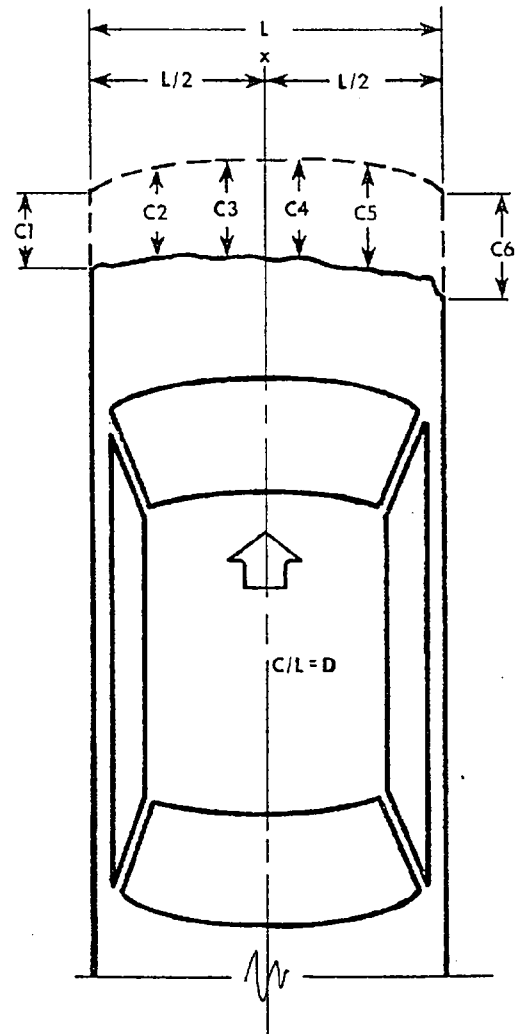
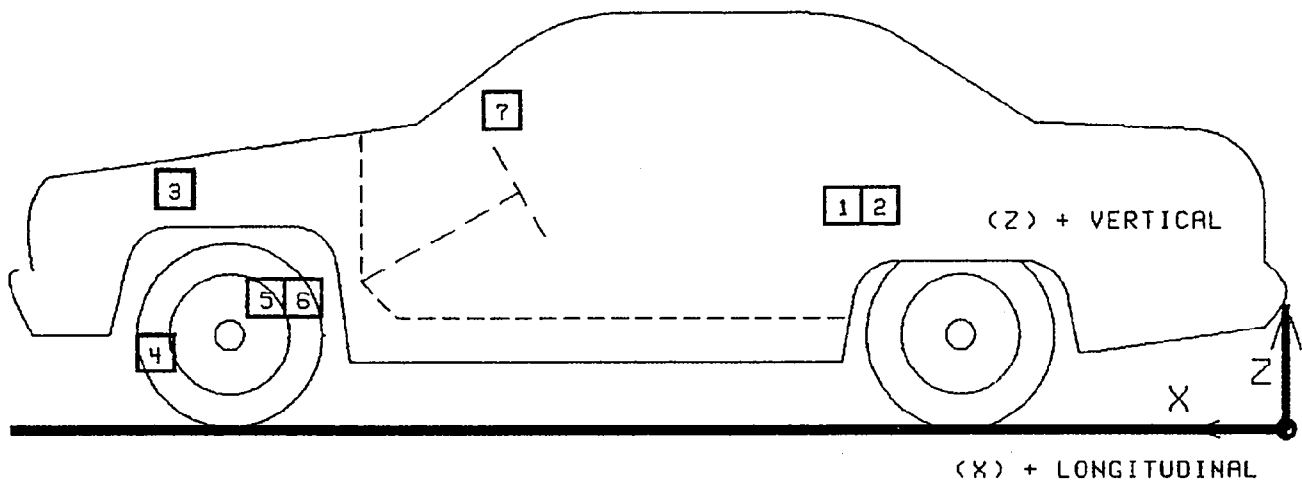
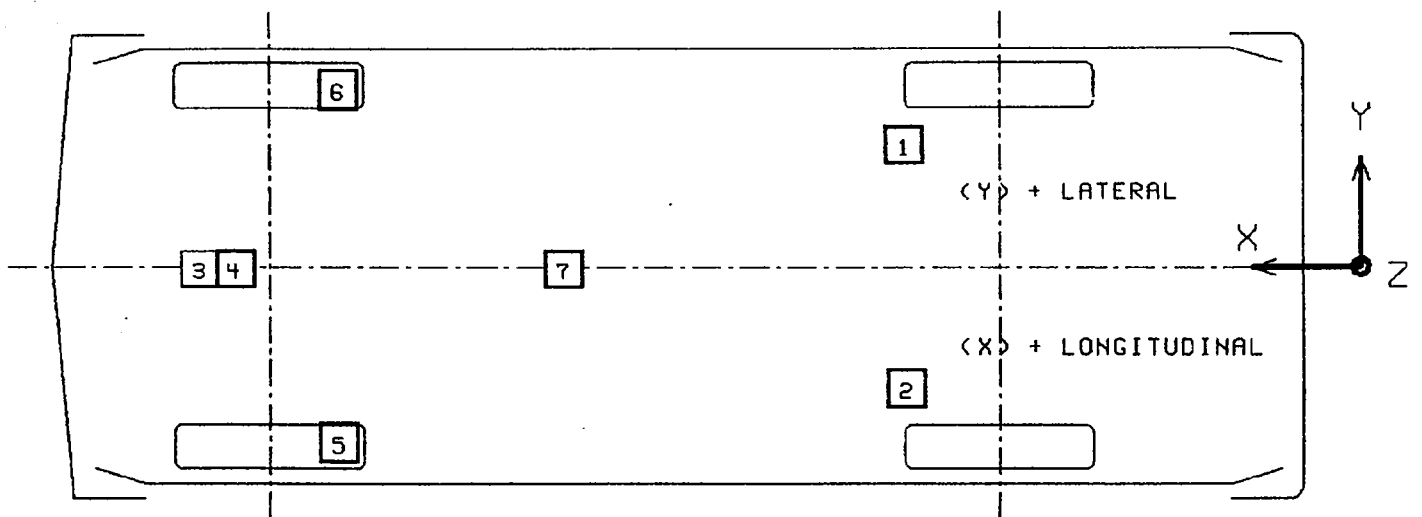


FIGURE 3

VEHICLE ACCELEROMETER PLACEMENT



SIDE VIEW



BOTTOM VIEW

TABLE 4

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 921202

No.	LOCATION		X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
						MAX G MSEC		MAX G MSEC	
1	LEFT REAR SEAT CROSSMEMBER LONGITUDINAL	PRE	57.8	11.1	16.5				
		POST	57.8	11.1	17.4				
						3.3	125.6	32.7	42.8
2	RIGHT REAR SEAT CROSSMEMBER LONGITUDINAL	PRE	57.8	-10.9	16.4				
		POST	57.8	-10.9	17.9				
						2.8	148.6	31.7	52.8
3	ENGINE TOP LONGITUDINAL	PRE	135.5	-5.0	29.2				
		POST	130.9	-4.5	28.5				
						65.6	44.5	83.9	36.1
4	ENGINE BOTTOM LONGITUDINAL	PRE	129.8	-6.2	9.0				
		POST	125.8	-6.0	8.5				
						21.0	47.5	97.7	36.3
5	RIGHT BRAKE CALIPER LONGITUDINAL	PRE	129.9	-24.2	12.8				
		POST	127.8	-24.2	12.0				
						---	---Y	---	---Y
6	LEFT BRAKE CALIPER LONGITUDINAL	PRE	129.9	24.2	12.8				
		POST	128.4	25.0	12.5				
						9.8	66.9	59.7	49.0
7	INSTRUMENT PANEL CENTER LONGITUDINAL	PRE	108.5	-1.0	32.8				
		POST	108.1	-1.0	34.2				
						9.5	112.4	47.2	54.1

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

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

Y See DATA ACQUISITION EXPLANATIONS

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.: CP5101
MAKE/MODEL/BODY STYLE: Toyota/Tercel/2-door coupe
MODEL YEAR: 1993 BODY COLOR: Green
VIN: JT2EL46S8P0260792
ODOMETER (ARRIVAL): 64 DATE: 09/29/92
ODOMETER (COMPLETION): 67 DATE: 12/02/92
COST: \$8,188.00

☐ AIR CONDITIONER	☐ CONSOLE	BRAKES: <u>X</u> POWER
☐ TINTED GLASS	☐ TACHOMETER	FRONT: Disc
☐ POWER STEERING	☐ SPEED CONTROL	REAR: Drum
☐ 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: 5
☐ ROOF RACK	☐ OTHER OPTIONS: _____	

ENGINE: 4 CYLINDERS; 1.5 LITERS
TRANSMISSION: manual; DRIVE TYPE: Front wheel drive
TIRE SIZE: 145/80R13
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	-59.8	-19.3	-35.0	68.8	-48.0	-6.5	9.0
PASSENGER	-31.1	9.9	-71.7	72.5	-47.8	17.3	-10.5

MAXIMUM FEMUR COMPRESSIVE FORCE (LBS)		
	LEFT FEMUR	RIGHT FEMUR
DRIVER	793	1127 ^Y
PASSENGER	777	850

HEAD INJURY CRITERIA**			
	HIC	TIME t_1 (MSEC)	TIME t_2 (MSEC)
DRIVER	307	62.0	82.4
PASSENGER	621	57.1	93.1

CHEST MAXIMUM RESULTANT ACCELERATION*			
	ACCEL. (G)	TIME t_1 (MSEC)	TIME t_2 (MSEC)
DRIVER	47.1	79.9	83.0
PASSENGER	46.0	69.1	72.2

*Defined as equal to or 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 #353	PASSENGER #354
HEAD	<u>Airbag & sunvisor</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>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 entire windshield cracked upon impact.

OTHER NOTABLE IMPACT EFFECTS:

None

DUMMY KINEMATIC SUMMARY

Driver Dummy

Upon impact, the driver dummy translated forward on the seat impacting the dummy's head and chest into the airbag and the dummy's knees into the instrument panel. The dummy's head impacted the header. The driver dummy was restrained by the airbag. The dummy 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.

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 two-point passive belt. The dummy rebounded rearward rotating slightly to the right, 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 seat rotated slightly to the right and restrained by the two-point passive belt.

TABLE 7 FMVSS 208 COMFORT & CONVENIENCE DATA FOR SEAT BELTS

AUTOMATIC SEAT BELTS

MAKE/MODEL: Toyota Tercel VIN: JT2EL46S8P0260792
BODY STYLE: 2-door coupe NHTSA NO.: CP5101
DATE OF MANUFACTURE: 08/92

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.

Not applicable, the vehicle's restraint system does not include convenience hooks or devices to stow seat belt webbing.

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:

IS THE WEBBING TENSION - RELIEVING DEVICE CANCELLED EACH TIME THE ADJACENT DOOR IS OPENED? _____ YES _____ NO

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: 0.1 POUNDS

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

TABLE 7 FMVSS 208 COMFORT & CONVENIENCE DATA FOR SEAT BELTS, CONTD.

MANUAL SEAT BELTS

MAKE/MODEL: Toyota/Tercel

VIN: JT2EL46S8P0260792

BODY STYLE: 2-door coupe

NHTSA NO.: CP5101

DATE OF MANUFACTURE: 08/92

WEBBING TENSION - RELIEVING DEVICE:

DO OUTBOARD SEATING POSITION SEAT BELTS HAVE WEBBING TENSION - RELIEVING DEVICES?(check one): ☐ YES ☒ 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: 0.1 POUNDS

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

LATCHPLATE ACCESS:

ARE THE SEAT BELT LATCHPLATES, IN THEIR NORMAL STOWED POSITION, WITHIN THE REACH ENVELOPE? ☒ YES ☐ NO

DOES THE CLEARANCE TEST BLOCK MOVE UNHINDERED TO THE LATCHPLATE OR BUCKLE? ☒ YES ☐ NO

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

MANUAL SEAT BELTS

MAKE/MODEL: Toyota/Tercel

VIN: JT2EL46S8P0260792

BODY STYLE: 2-door coupe

NHTSA NO.: CP5101

DATE OF MANUFACTURE: 08/92

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 SEAT BELTS, CONT'D

MANUAL SEAT BELTS

MAKE/MODEL: Toyota/Tercel

VIN: JT2EL46S8P0260792

BODY STYLE: 2-door coupe

NHTSA NO.: CP5101

DATE OF MANUFACTURE: 08/92

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 = continuous sec.

WITH OCCUPANT IN DRIVER'S POSITION AND UNIBELT 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 = 0 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 sun visor.

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

☐ Replace
☐ Repair
☒ Other: Service

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, pages 32 and 49

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

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, and 49

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 in the lower right corner 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 49

FIGURE 4 FMVSS 212 TEST DATA

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

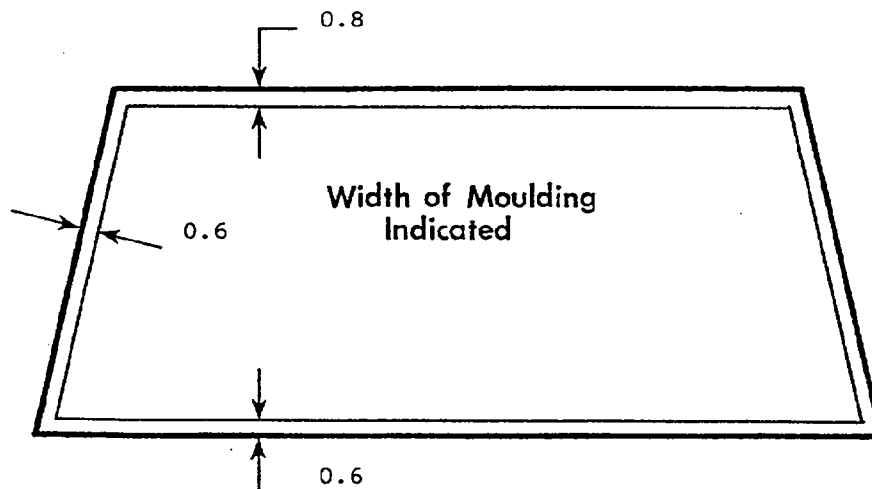
Plastic trim around outer perimeter, adhesive around inner perimeter.

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	74.5	74.5	100
LEFT SIDE	74.5	74.5	100
TOTAL	149.0	149.0	100

PRE-TEST WINDSHIELD MOUNTING MATERIAL TEMPERATURE: 68° F



FRONT VIEW OF WINDSHIELD*

LOSS OF WINDSHIELD RETENTION LENGTHS: None

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

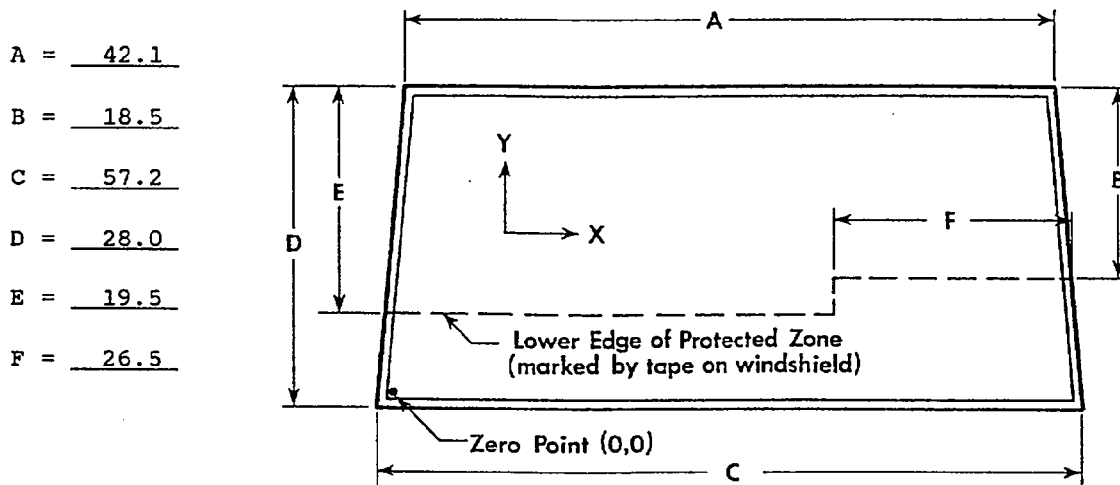
*INDICATE AREAS OF LOSS OF RETENTION, IF ANY, ON WINDSHIELD DIAGRAM.

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: Toyota/Tercel

NHTSA NO.: CP5101

FUEL SYSTEM CAPACITY: 11.9 GALLONS (FROM OWNER'S MANUAL)

USABLE CAPACITY: 11.9 GALLONS (FURNISHED BY COTR)

TEST VOLUME RANGE: 10.9 GALLONS TO 11.2 GALLONS (92-94% OF USABLE)

ACTUAL TEST VOLUME: 11.1 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 in front of the rear axle.
The fuel lines run along the left side to the front. The fuel filler
is located on the left side.

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.: CP5101 ; TEST DATE: 12/02/92

VEHICLE MAKE/MODEL/BODY STYLE: Toyota/Tercel/2-door coupe

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:

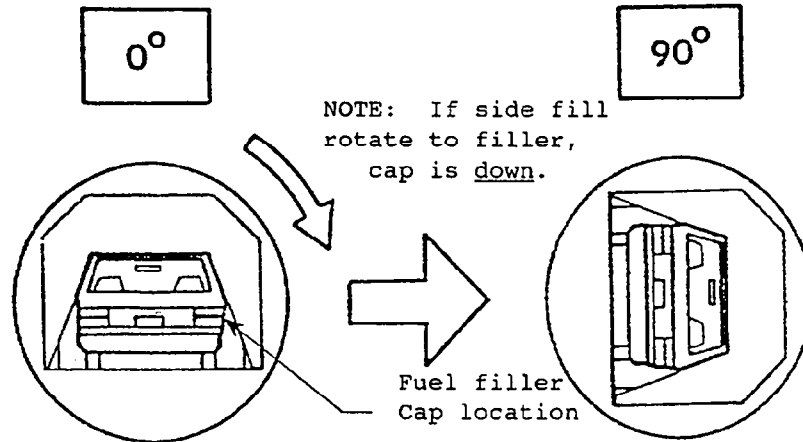
	TEST RESULTS	MAXIMUM ALLOWABLE
1. FROM IMPACT UNTIL VEHICLE MOTION CEASES - - -	0 OZ.	1 OZ.
2. 5 MINUTE PERIOD AFTER VEHICLE MOTION CEASES -	0 OZ.	5 OZ.
3. NEXT 25 MINUTES AFTER 5 MINUTE PERIOD - - - -	0 OZ.	1 OZ./1 MIN.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

FIGURE 6 FMVSS 301 STATIC ROLLOVER TEST DATA

NHTSA NO.: CP5101
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:

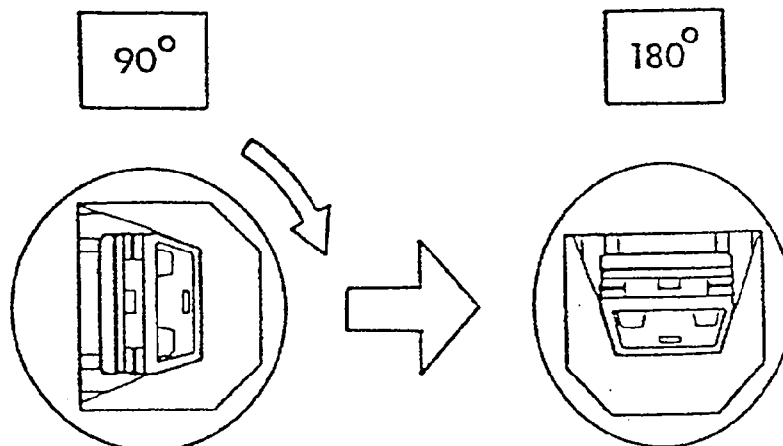
<u>0° TO 90° ROTATION (FUEL FILLER CAP DOWN)</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 oz.	5 oz.
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

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

NHTSA NO.: CP5101
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:

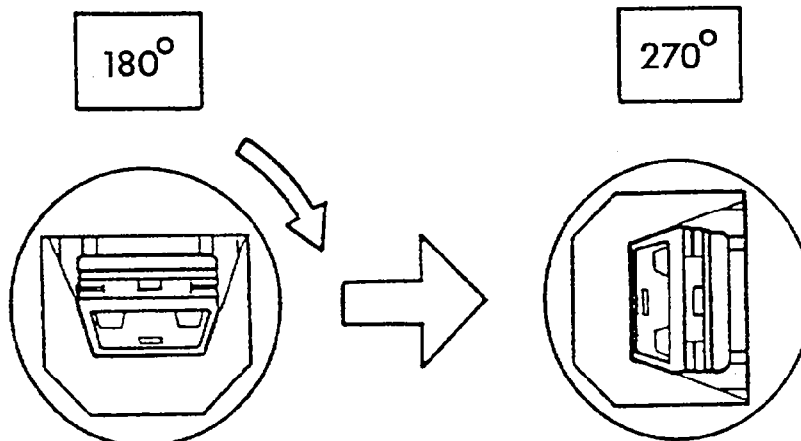
<u>90° TO 180° ROTATION</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 oz.	5 oz.
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

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

NHTSA NO.: CP5101
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.

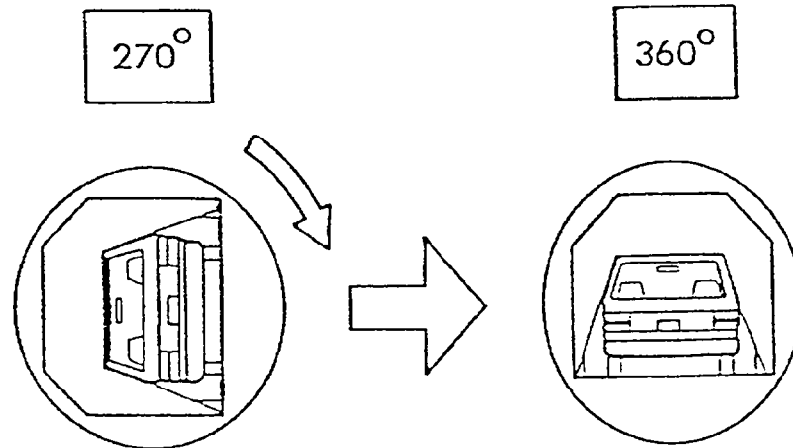
FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

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

NHTSA NO.: CP5101

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

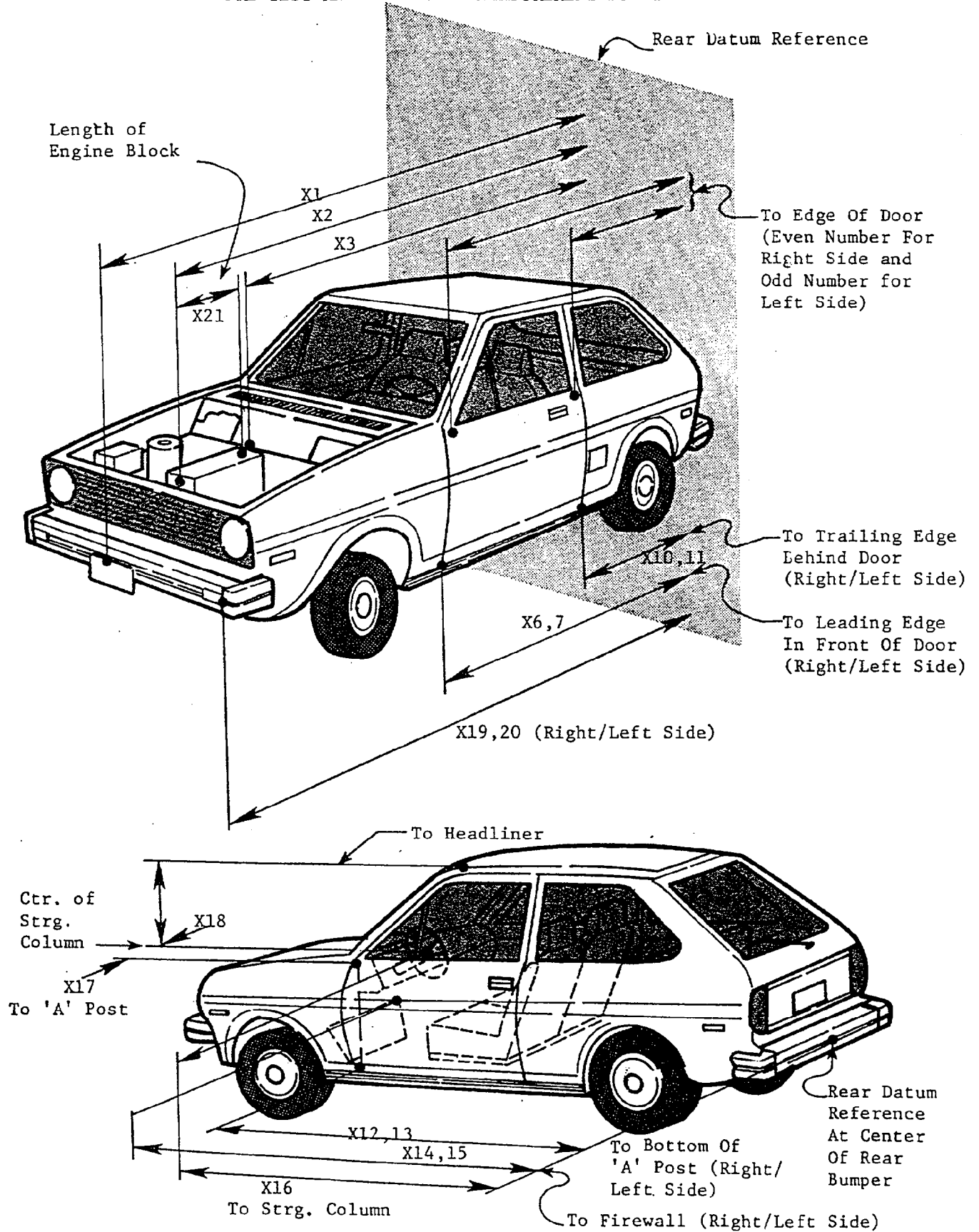
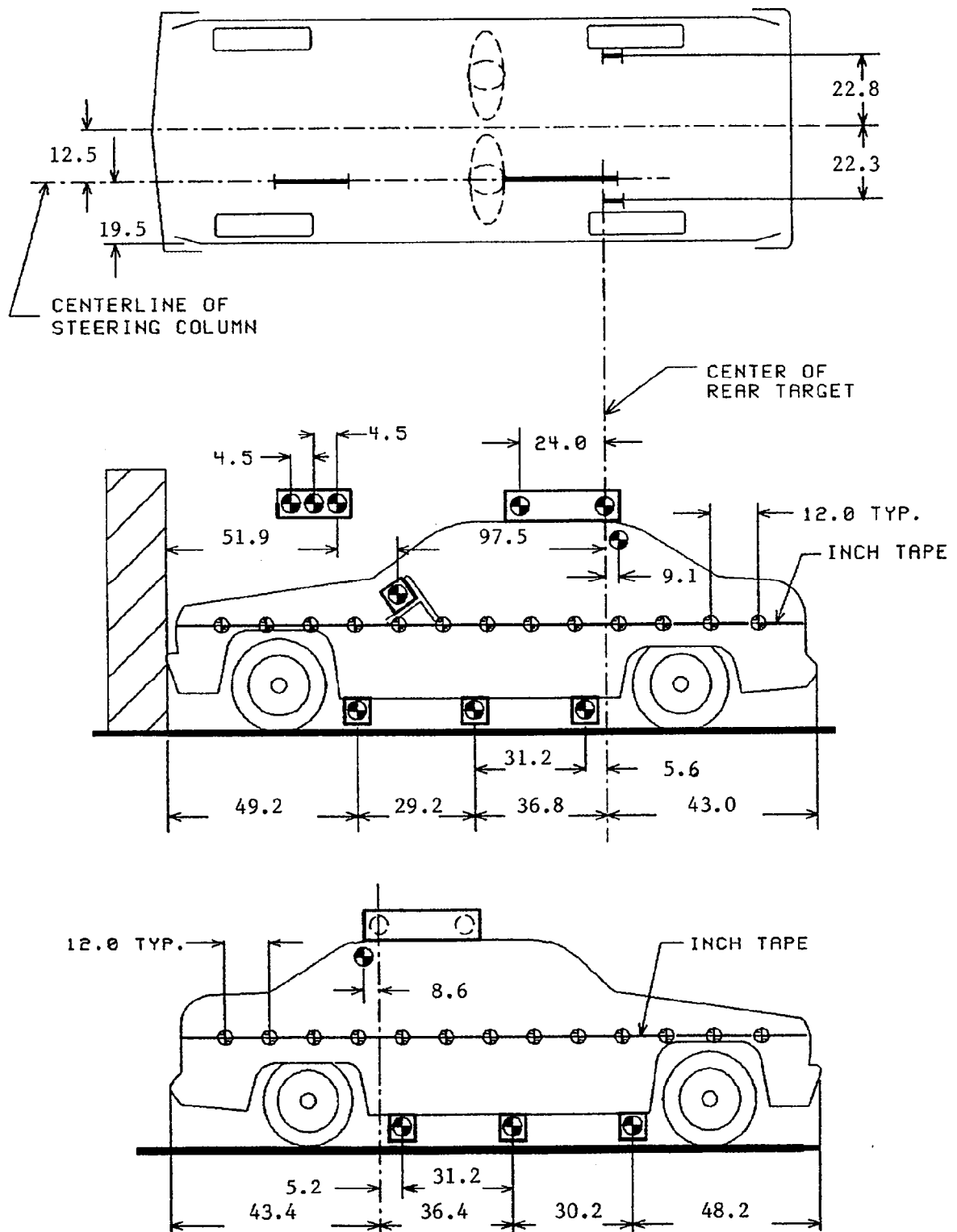


TABLE 13 IMPACTED VEHICLE MEASUREMENTS

VEHICLE MAKE/MODEL: Toyota/Tercel		TEST NUMBER: 921202		ALL MEASUREMENTS ARE IN INCHES		
NO.	TYPE OF MEASUREMENT	PRE-TEST	POST-TEST	DIFF.		
X1	TOTAL LENGTH OF VEHICLE AT CENTERLINE	158.2	142.4	15.8		
X2	REAR SURFACE OF VEHICLE TO FRONT OF ENGINE BLOCK	137.8	133.1	4.7		
X3	REAR SURFACE OF VEHICLE TO FIREWALL	120.2	119.4	0.8		
X4	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF RIGHT DOOR	108.5	108.1	0.4		
X5	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF LEFT DOOR	108.5	107.8	0.7		
X6	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF RIGHT DOOR	108.3	107.0	1.3		
X7	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF LEFT DOOR	108.2	106.9	1.3		
X8	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF RIGHT DOOR	61.1	60.5	0.6		
X9	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF LEFT DOOR	61.0	60.4	0.6		
X10	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF RIGHT DOOR	62.1	60.5	1.6		
X11	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF LEFT DOOR	62.1	60.5	1.6		
X12	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON RIGHT SIDE	108.4	106.9	1.5		
X13	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON LEFT SIDE	108.6	107.2	1.4		
X14	REAR SURFACE OF VEHICLE TO FIREWALL - RIGHT SIDE	120.2	119.2	1.0		
X15	REAR SURFACE OF VEHICLE TO FIREWALL - LEFT SIDE	120.3	118.7	1.6		
X16	REAR SURFACE OF VEHICLE TO STEERING WHEEL CENTER	90.8	93.2	-2.4		
X17	CENTER OF STEERING COLUMN TO "A" POST	11.0	14.2	-3.2		
X18	CENTER OF STEERING COLUMN TO HEADLINER	13.8	14.2	-0.4		
X19	REAR SURFACE OF VEHICLE TO RIGHT SIDE OF FRONT BUMPER	152.2	138.5	13.7		
X20	REAR SURFACE OF VEHICLE TO LEFT SIDE OF FRONT BUMPER	152.0	138.6	13.4		
X21	LENGTH OF ENGINE BLOCK	16.2	16.2	0.0		

FIGURE 8

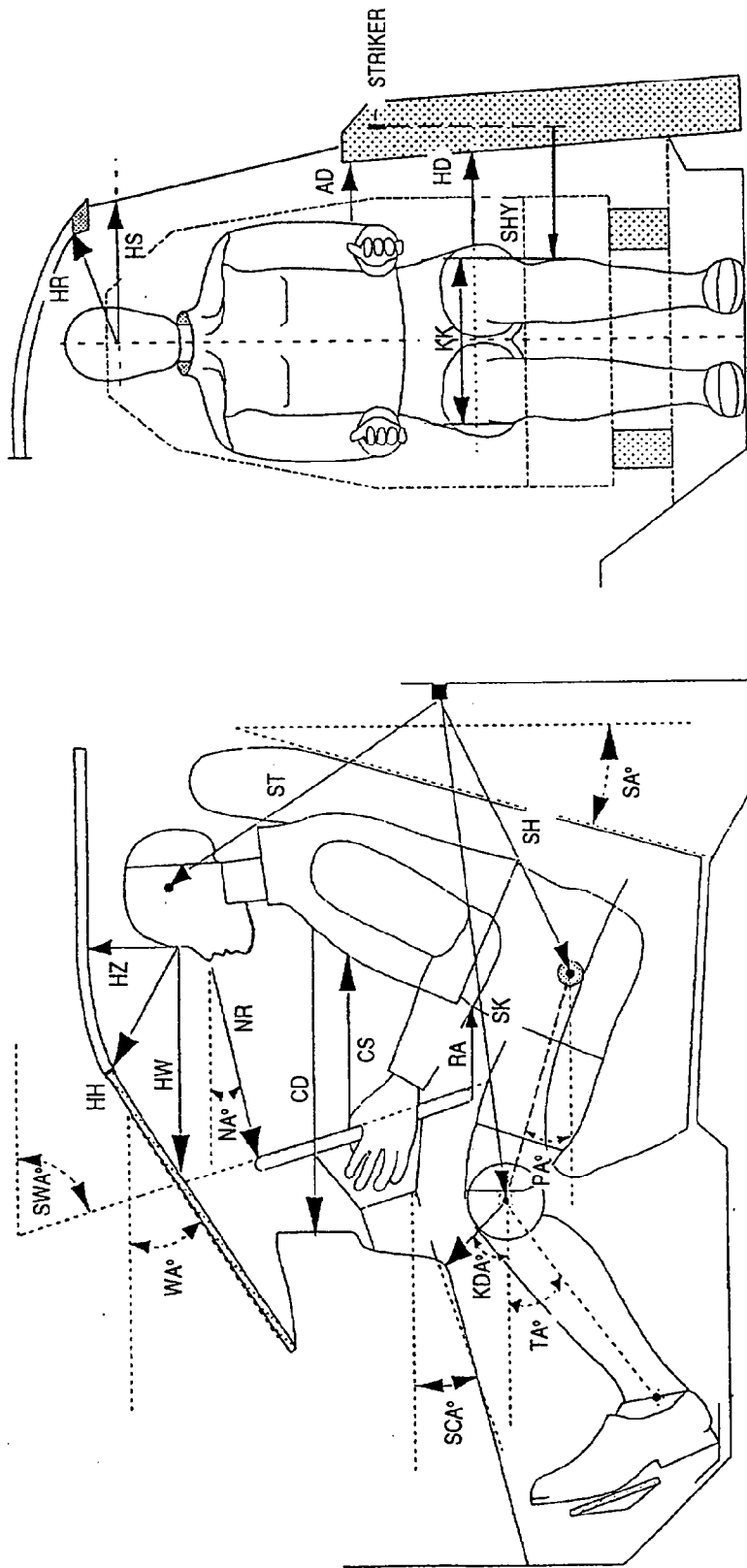
VEHICLE TARGET LOCATIONS



ALL DISTANCE MEASUREMENTS ARE IN INCHES.

FIGURE 9

DUMMY MEASUREMENT LOCATIONS FOR FRONT SEAT OCCUPANTS



VERTICAL TRANSVERSE PLANE

VERTICAL LONGITUDINAL PLANE

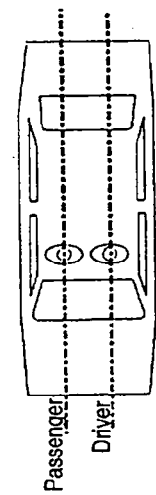
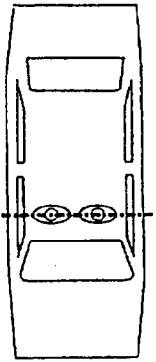


TABLE 14 DUMMY MEASUREMENT DATA FOR FRONT SEAT OCCUPANTS

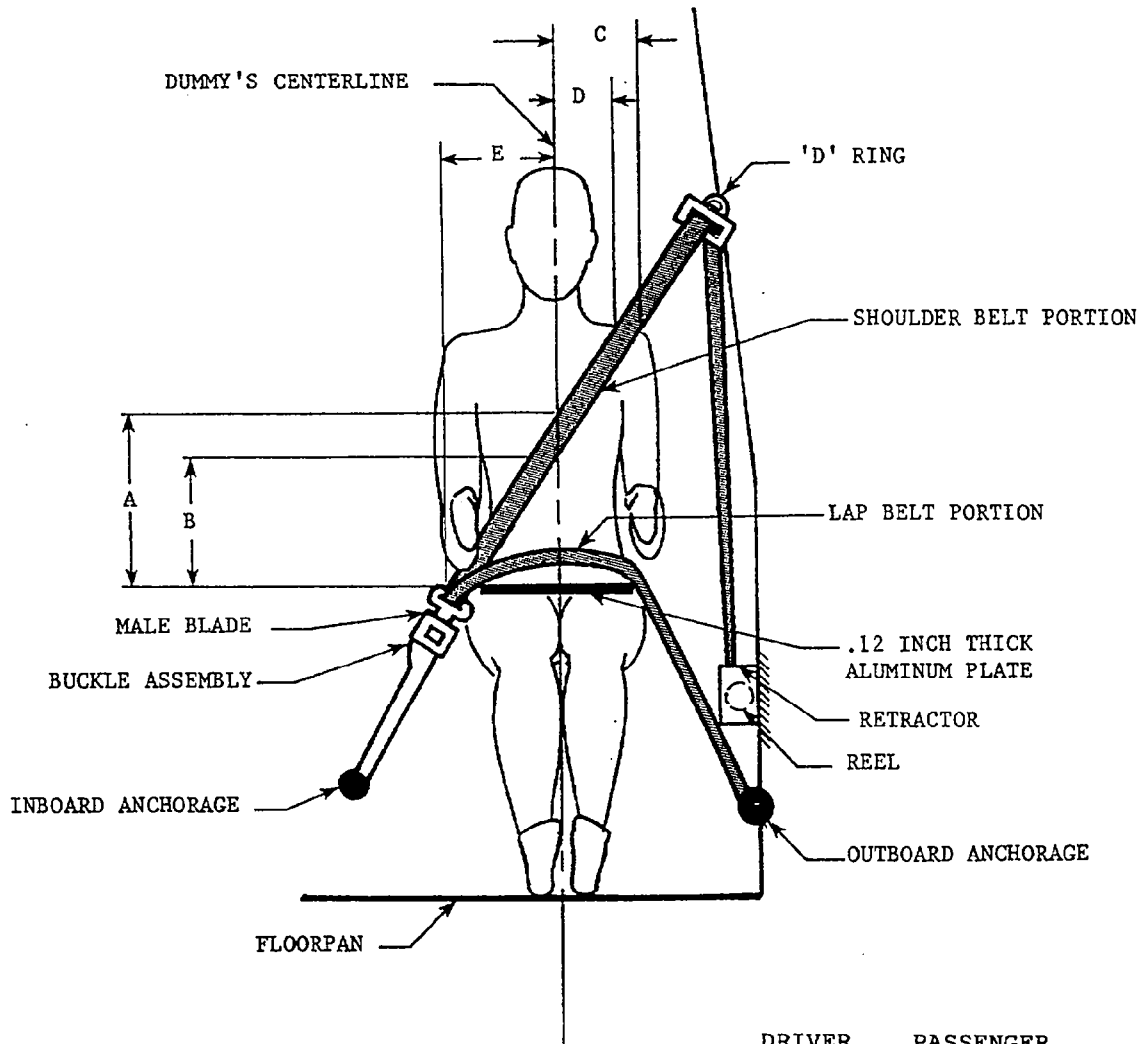
DESIGNATION	TYPE OF MEASUREMENT	DRIVER (SERIAL #353)	PASSENGER (SERIAL #354)
WA°	WINDSHIELD ANGLE	30°	NA
SWA°	STEERING WHEEL ANGLE	65°	NA
SCA°	STEERING COLUMN ANGLE	25°	NA
SA°	SEAT BACK ANGLE	6°	6°
HZ	HEAD TO ROOF	6.0	5.8
HH	HEAD TO HEADER	9.5	11.0
HW	HEAD TO WINDSHIELD	15.8	18.3
HR	HEAD TO SIDE HEADER	7.8	7.8
NR	NOSE TO RIM	15.2	NA
NA	NOSE TO RIM ANGLE	22°	NA
CD	CHEST TO DASH	20.6	20.9
CS	STEERING WHEEL TO CHEST	10.9	NA
RA	RIM TO ABDOMEN	6.8	NA
KDL	LEFT KNEE TO DASH	5.9	6.1
KDR	RIGHT KNEE TO DASH	6.5	6.1
KDA	OUTBOARD KNEE TO DASH ANGLE	32°	25°
PA°	PELVIC ANGLE	21°	15°
TA°	TIBIAL ANGLE	46°	40°
KK	KNEE TO KNEE	14.0	11.6
ST*	STRIKER TO HEAD	20.9	20.5
	STRIKER TO HEAD ANGLE	-55°	-51°
SK*	STRIKER TO KNEE	31.2	32.8
	STRIKER TO KNEE ANGLE	7°	7°
SH*	STRIKER TO H-POINT	18.6	19.2
	STRIKER TO H-POINT ANGLE	27°	25°
SHY	STRIKER TO H-POINT (Y DIR.)	8.8	8.2
HS	HEAD TO SIDE WINDOW	11.4	10.6
HD	H-POINT TO DOOR	6.6	6.2
AD	ARM TO DOOR	4.4	4.2

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

*A negative angle indicates the measurement point was located above the striker.

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

FIGURE 10 SEAT BELT POSITIONING DATA



	DRIVER DUMMY	PASSENGER DUMMY
A - TOP SURFACE OF ALUM. PLATE TO BELT UPPER EDGE		13.2
B - TOP SURFACE OF ALUM. PLATE TO BELT LOWER EDGE		9.9
C - DUMMY CENTERLINE TO OUTER EDGE OF BELT AT CHEST FLESH TOP		5.2
D - DUMMY CENTERLINE TO INNER EDGE OF BELT AT CHEST FLESH TOP		2.8

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

4, 7, 8

FIGURE 11
CAMERA POSITIONS

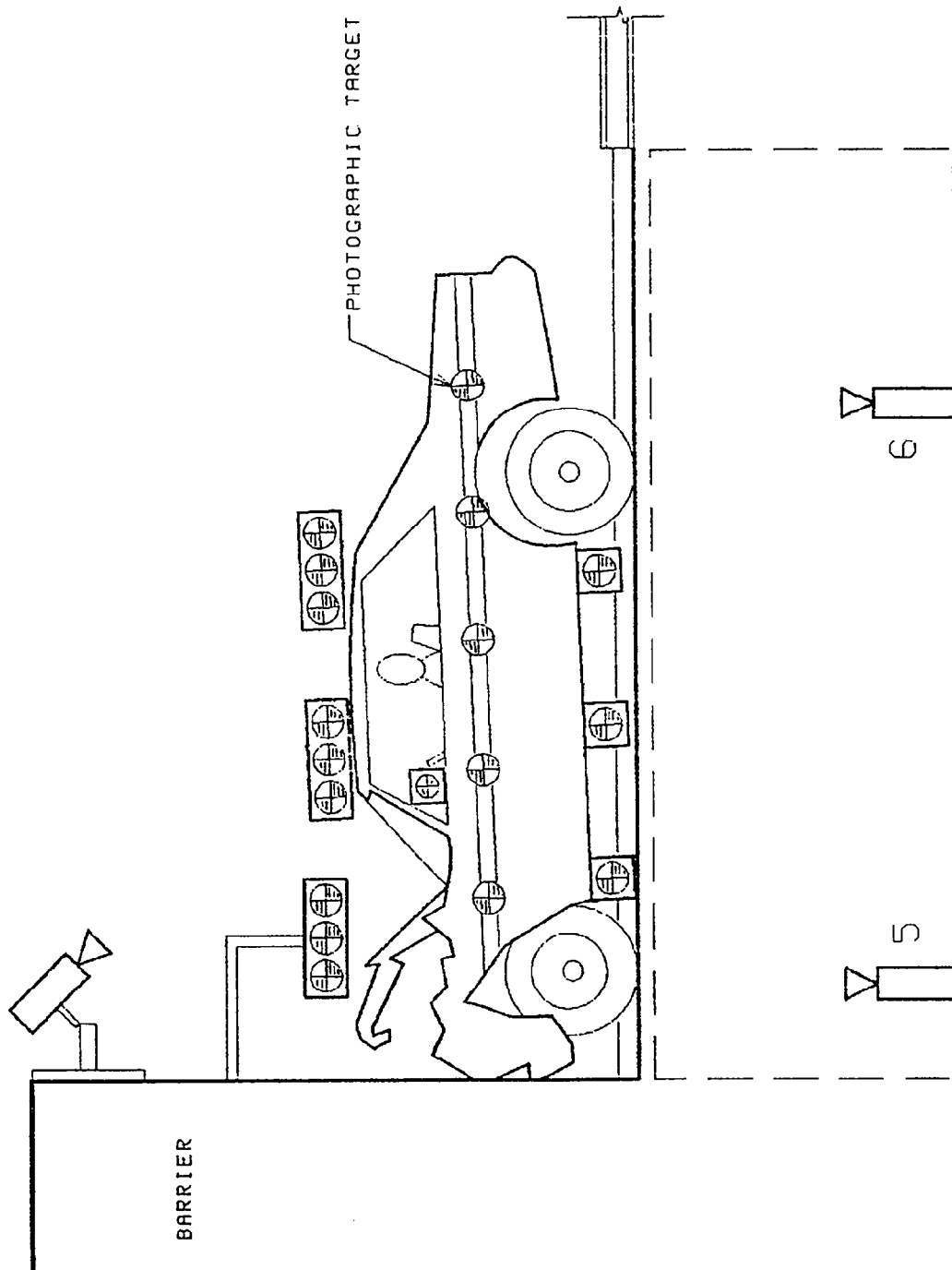


FIGURE 11

CAMERA POSITIONS, CONTINUED

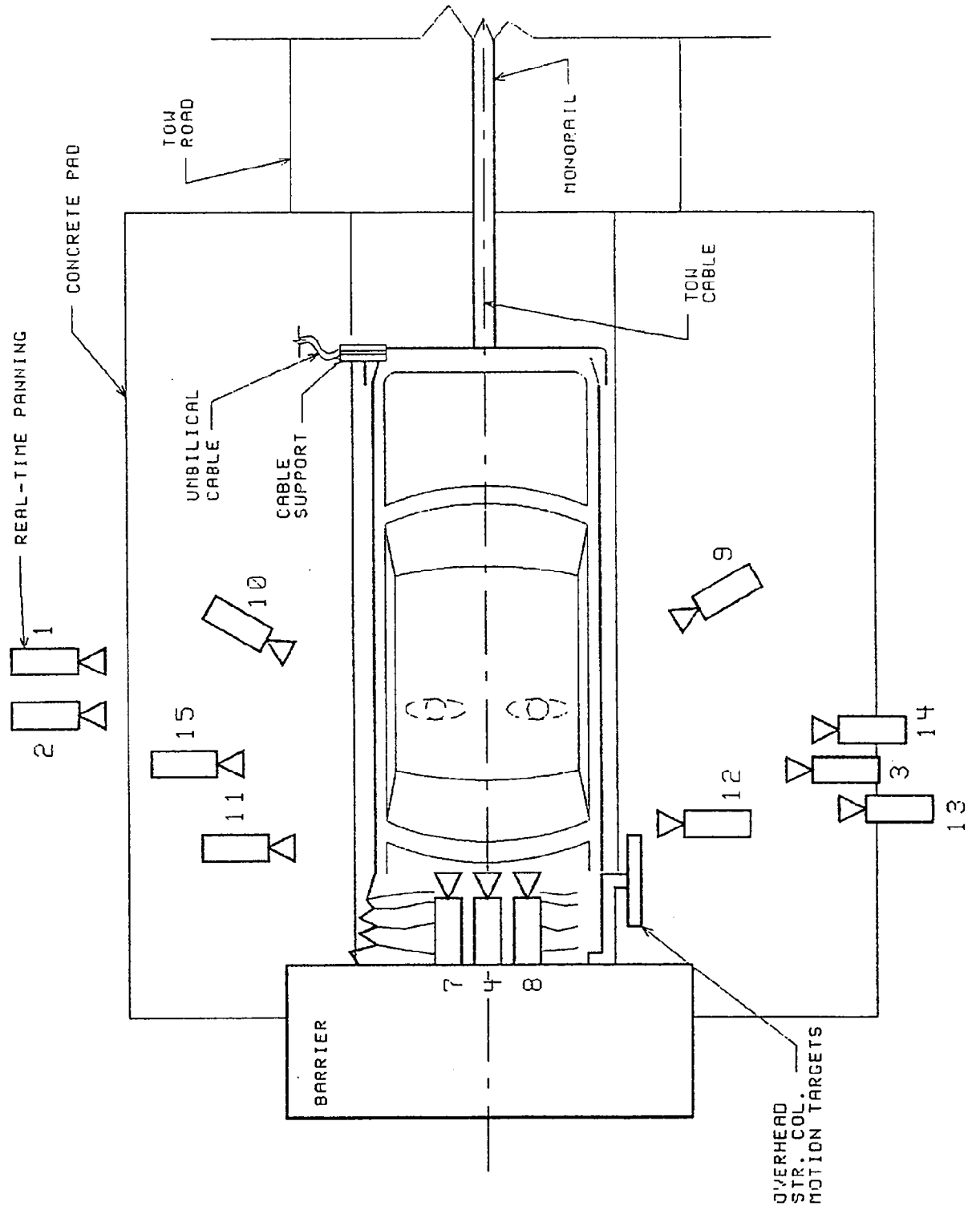


TABLE 15 MOTION PICTURE CAMERA LOCATIONS

TEST NO.: 921202		VEHICLE: Toyota Tercel 2-door coupe					CAMERA POSITIONS (IN)*			ANGLE**	FILM PLANE		FILM
CAMERA NO.	VIEW	X	Y	Z	(DEG)	TO HEAD	TARGET (IN)	LENS (MM)	SPEED (FPS)				
1	Real-time panning	-142.0	-504.0	61.0	NA	NA	NA	16	24				
2	Right overall	-81.3	-266.4	37.1	-2	NA	NA	13	510				
3	Left vehicle crush	-41.5	295.0	44.0	-4	217.0	25	25	998				
4	Windshield front view	-6.0	0.0	55.0	-40	NA	13	13	498				
5	Pit-left subframe sidemember	-8.0	29.0	-16.0	90	NA	13	13	998				
6	Pit-right subframe sidemember	-7.0	30.0	-12.0	90	NA	13	13	995				
7	Passenger front view	-4.5	-13.8	93.0	-50	NA	17	17	502				
8	Driver front view	-6.8	14.5	93.0	-50	NA	17	17	505				
9	Driver kinematics	-157.3	116.0	87.0	-27	116.0	25	25	500				
10	Passenger kinematics	-152.1	-116.0	87.0	-26	105.0	25	25	498				
11	Right windshield intrusion	-38.1	-306.1	44.0	0	NA	50	50	495				
12	Left windshield intrusion	-53.0	309.4	42.3	0	NA	50	50	490				
13	Steering column motion	-88.0	285.0	103.0	-14	NA	25	25	498				
14	Steering column motion	-88.0	285.0	75.1	-9	NA	25	25	500				
15	Passenger kinematics	-38.8	-293.0	45.3	-4	228.0	25	25	1022				
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

921202

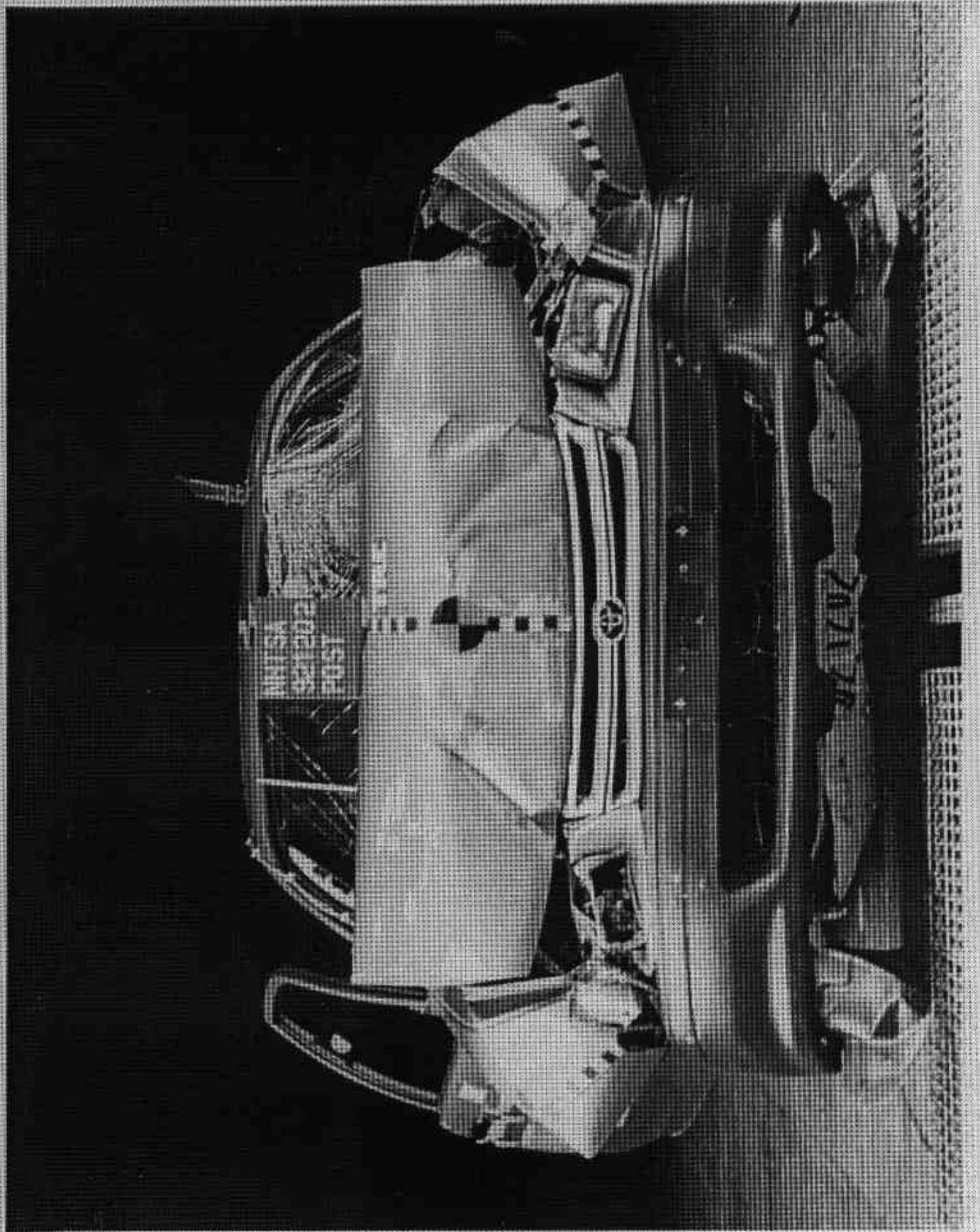


FIGURE A-2. POST-TEST FRONT VIEW

A-3

921202

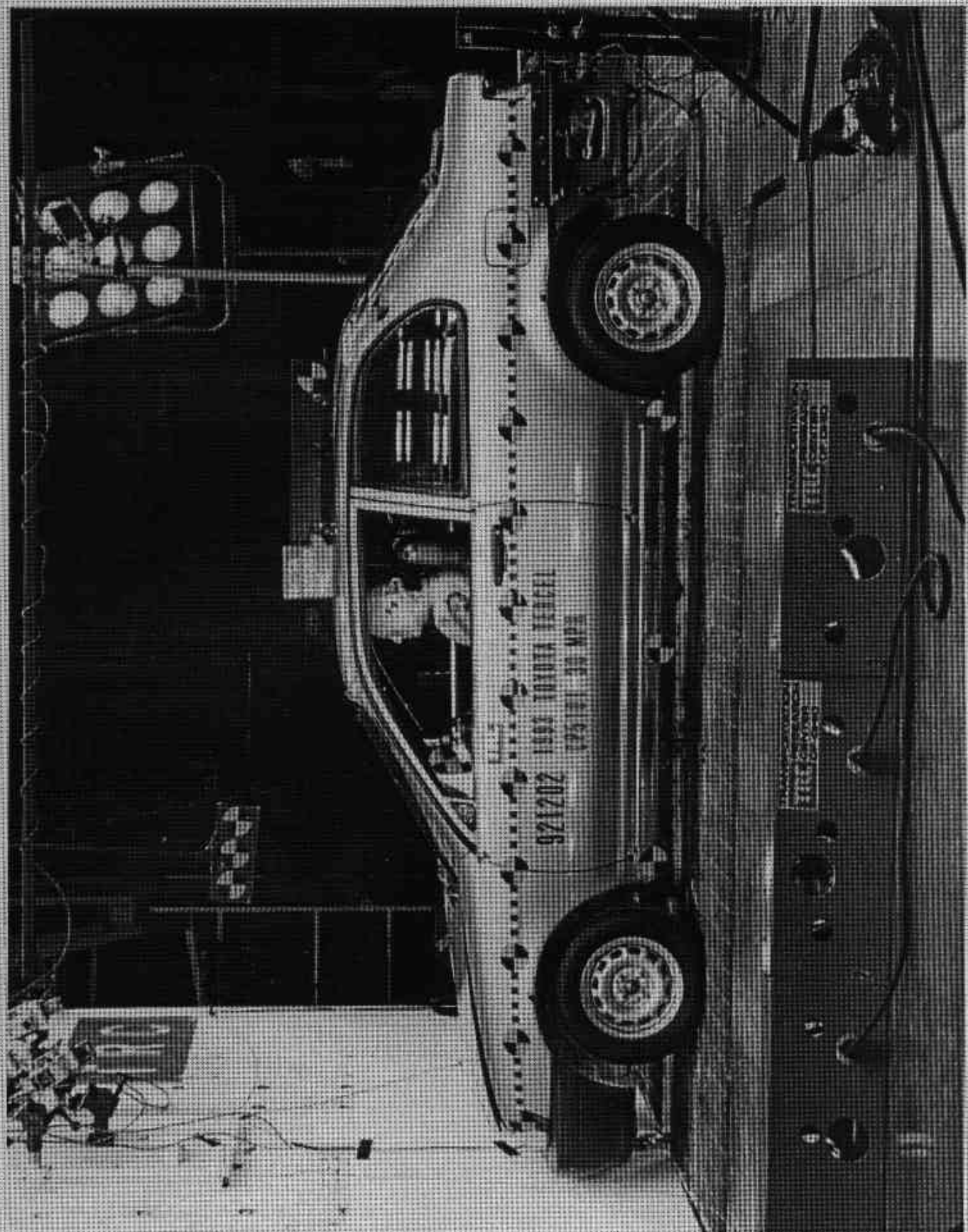


FIGURE A-3, PRE-TEST LEFT SIDE VIEW

A-4

921202

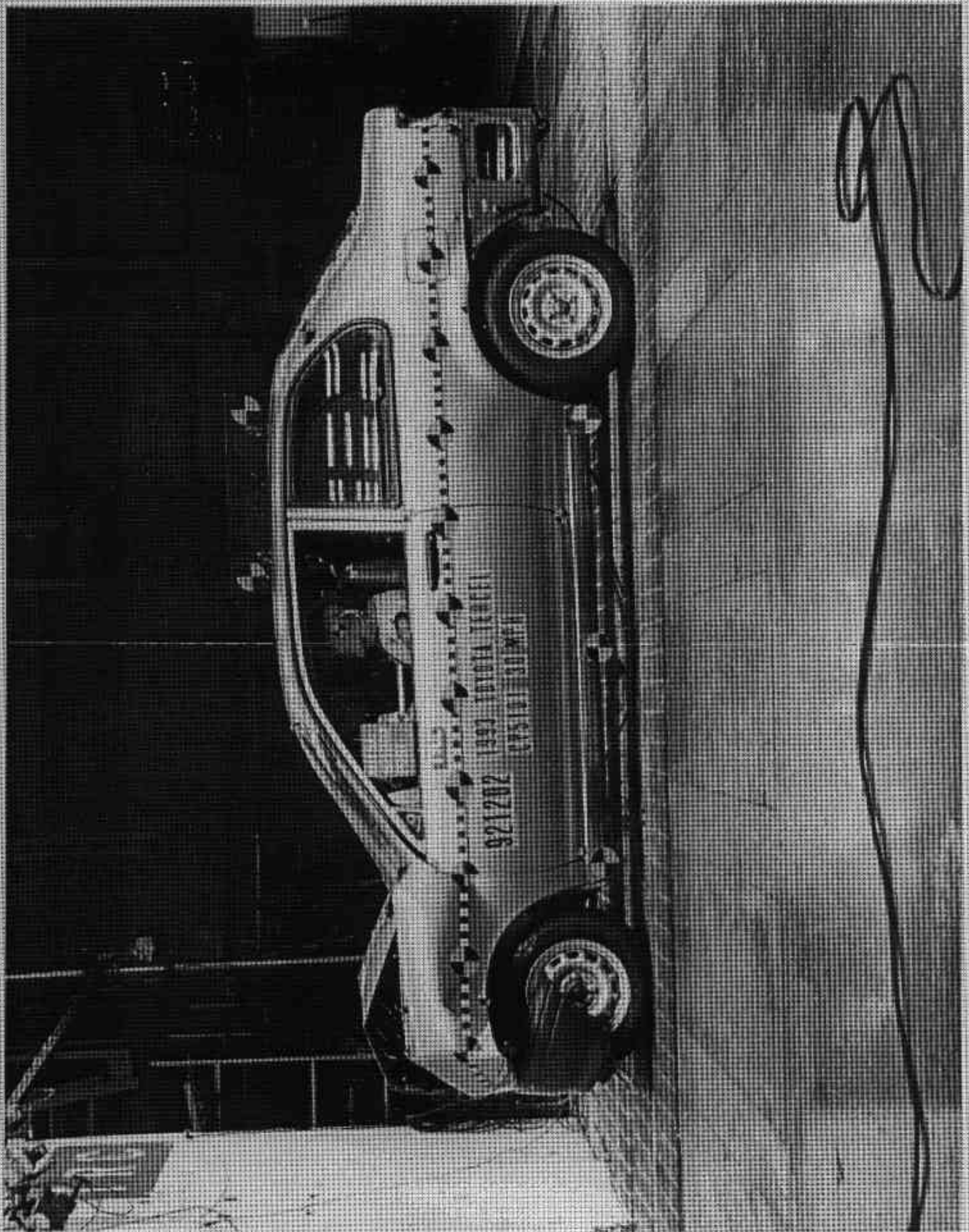


FIGURE A-4. POST-TEST LEFT SIDE VIEW
A-5

921202

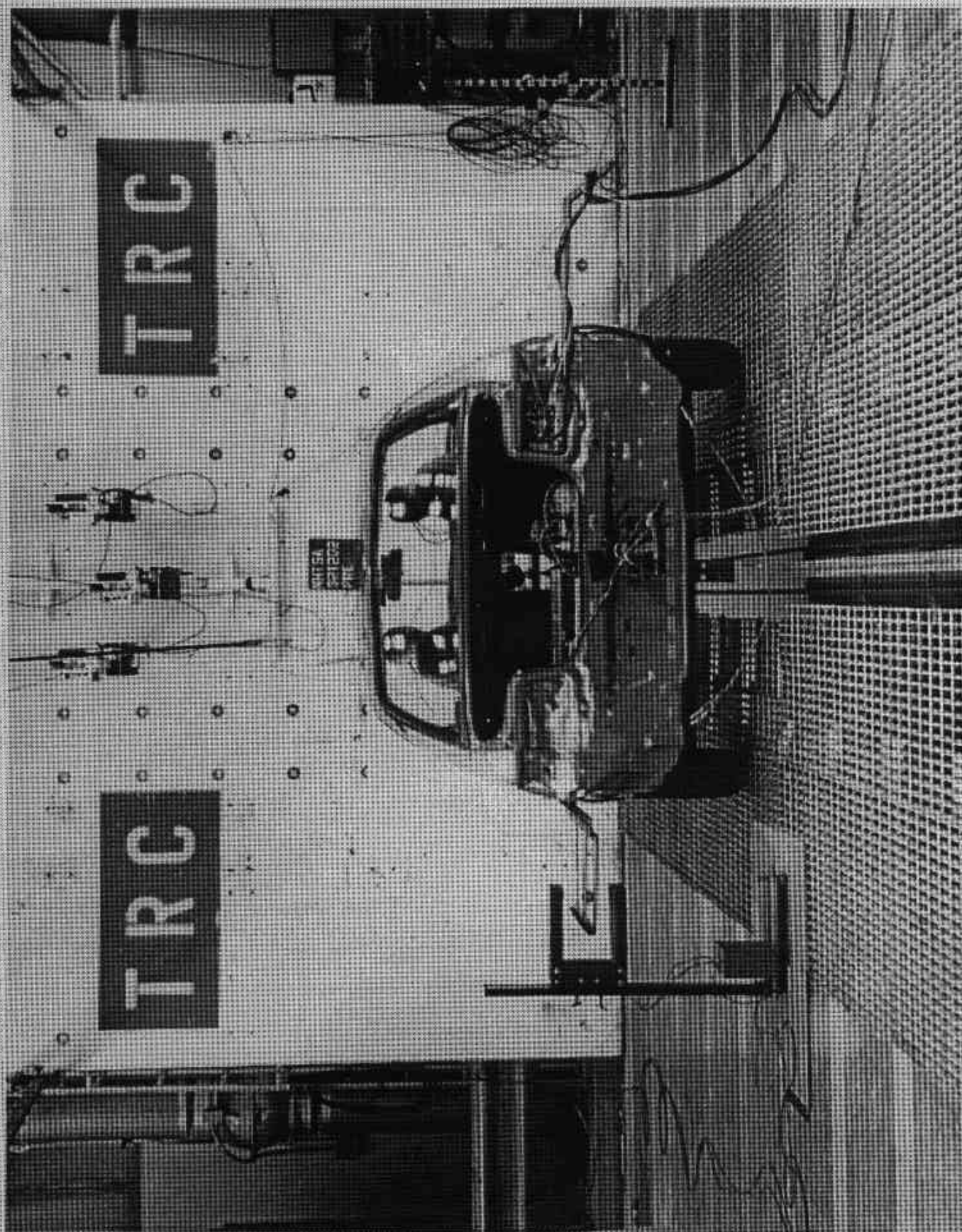


FIGURE A-5. PRE-TEST REAR VIEW

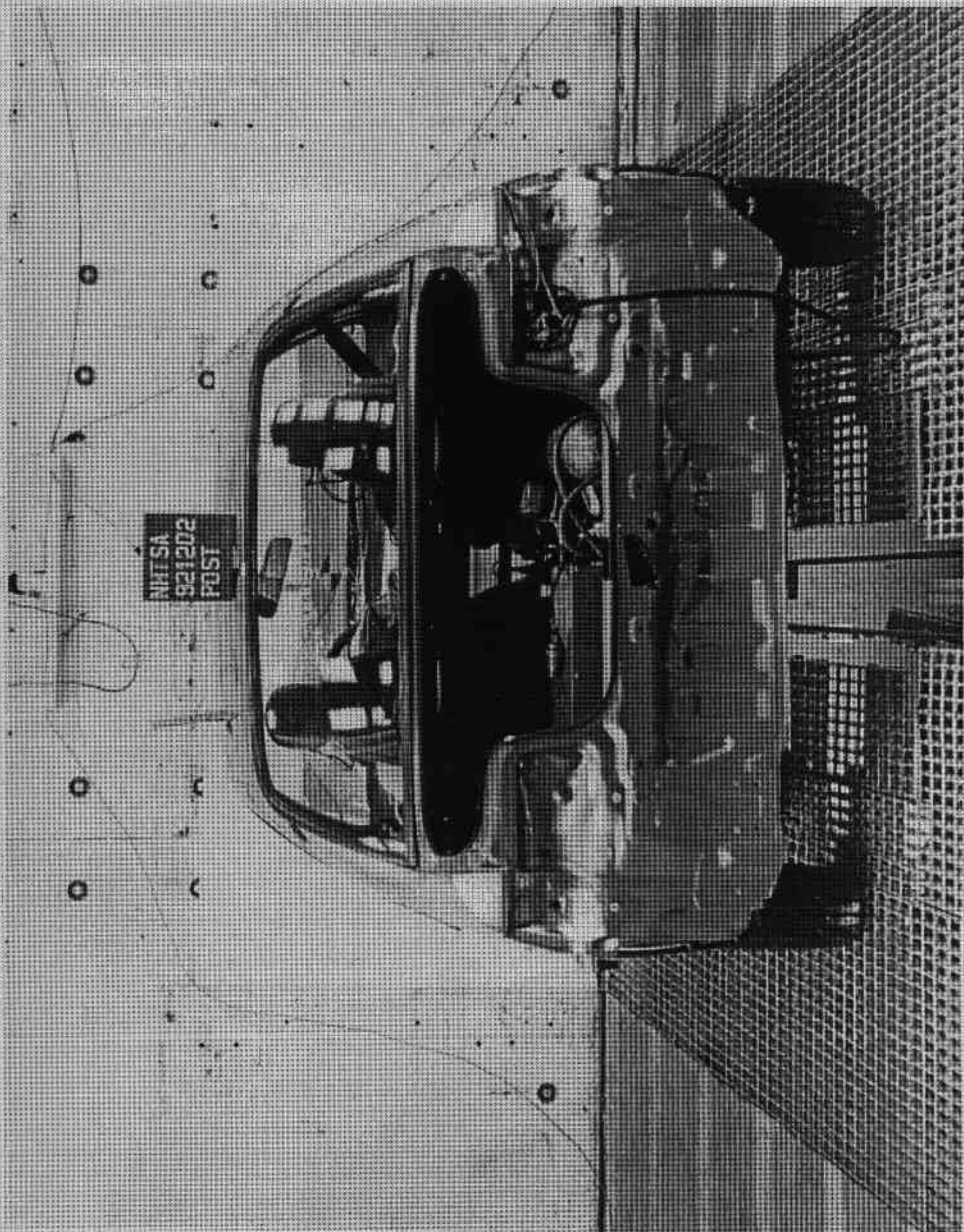


FIGURE A-6. POST-TEST REAR VIEW

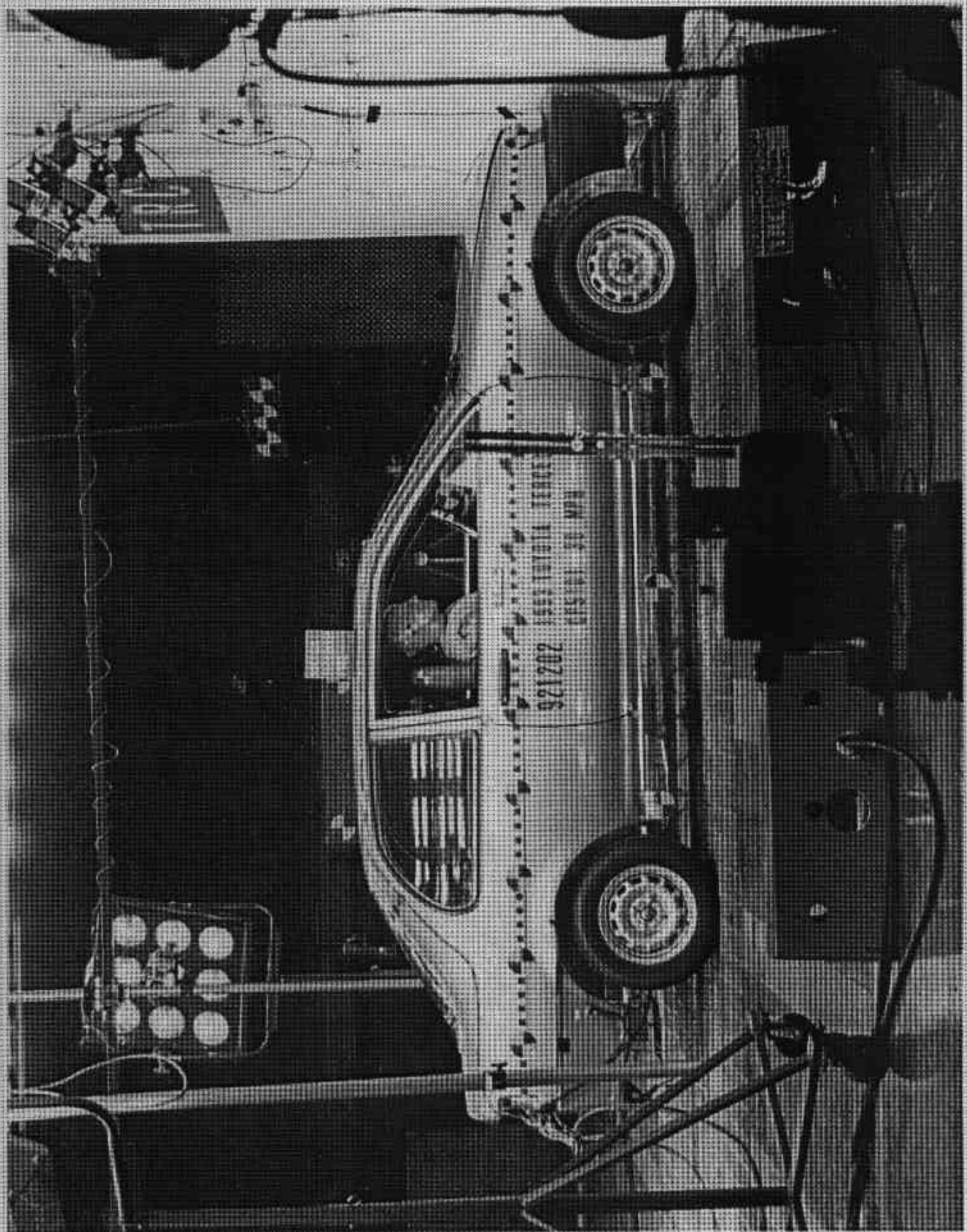


FIGURE A-7. PRE-TEST RIGHT SIDE VIEW
A-8

921202

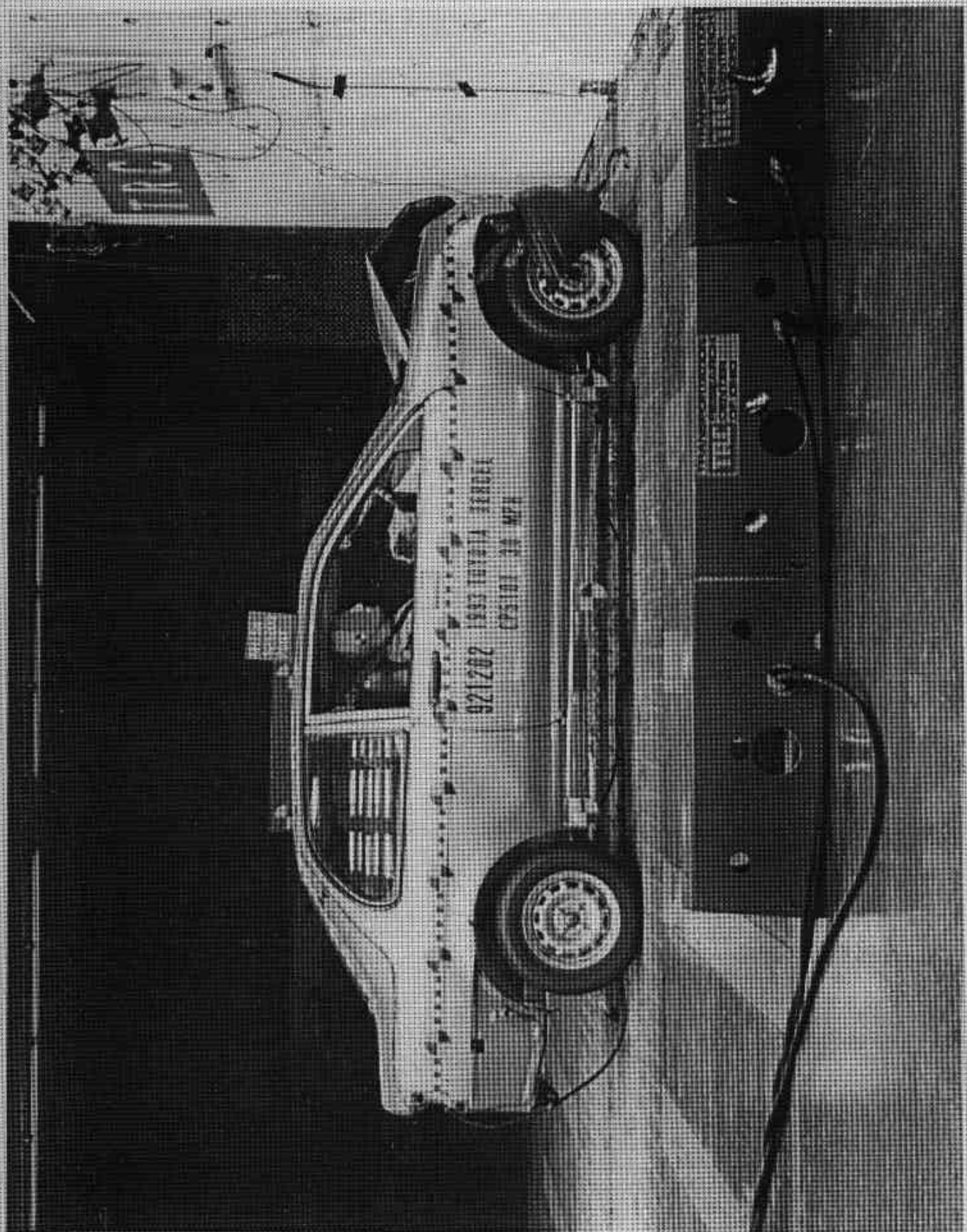


FIGURE A-8. POST-TEST RIGHT SIDE VIEW

A-9

921202

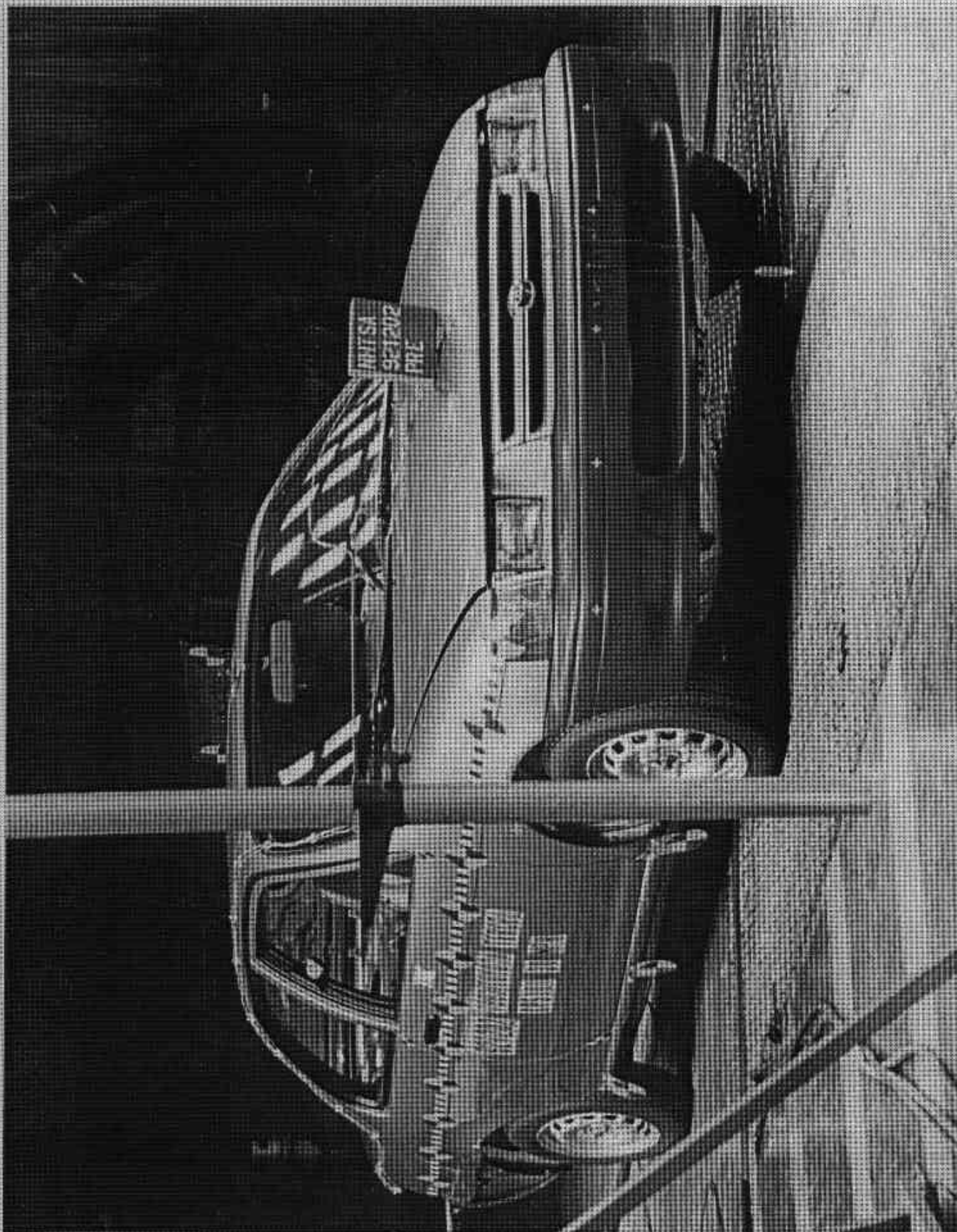


FIGURE A-9. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW

A-10

921202

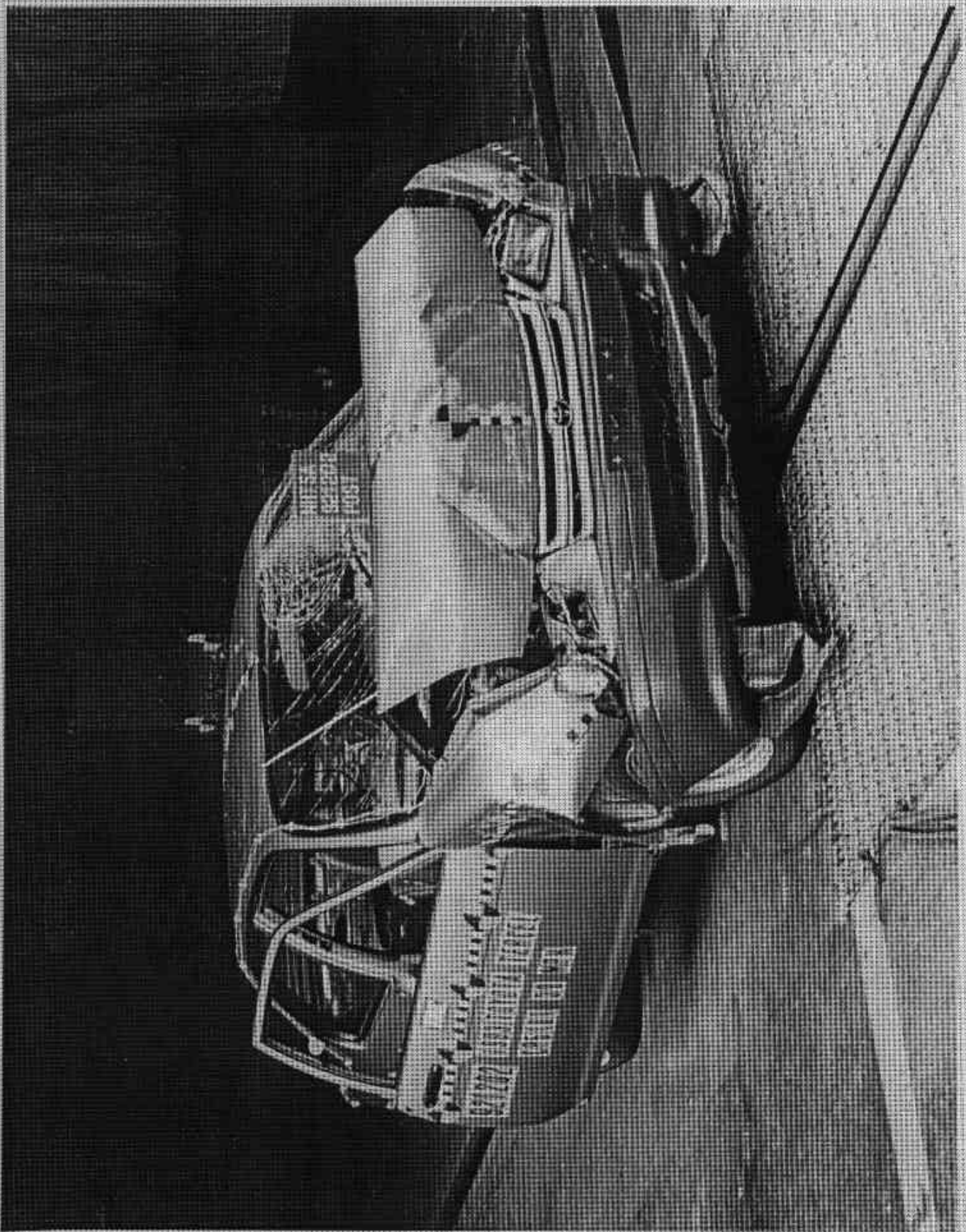


FIGURE A-10. POST-TEST RIGHT FRONT THREE-QUARTER VIEW

A-11

921202

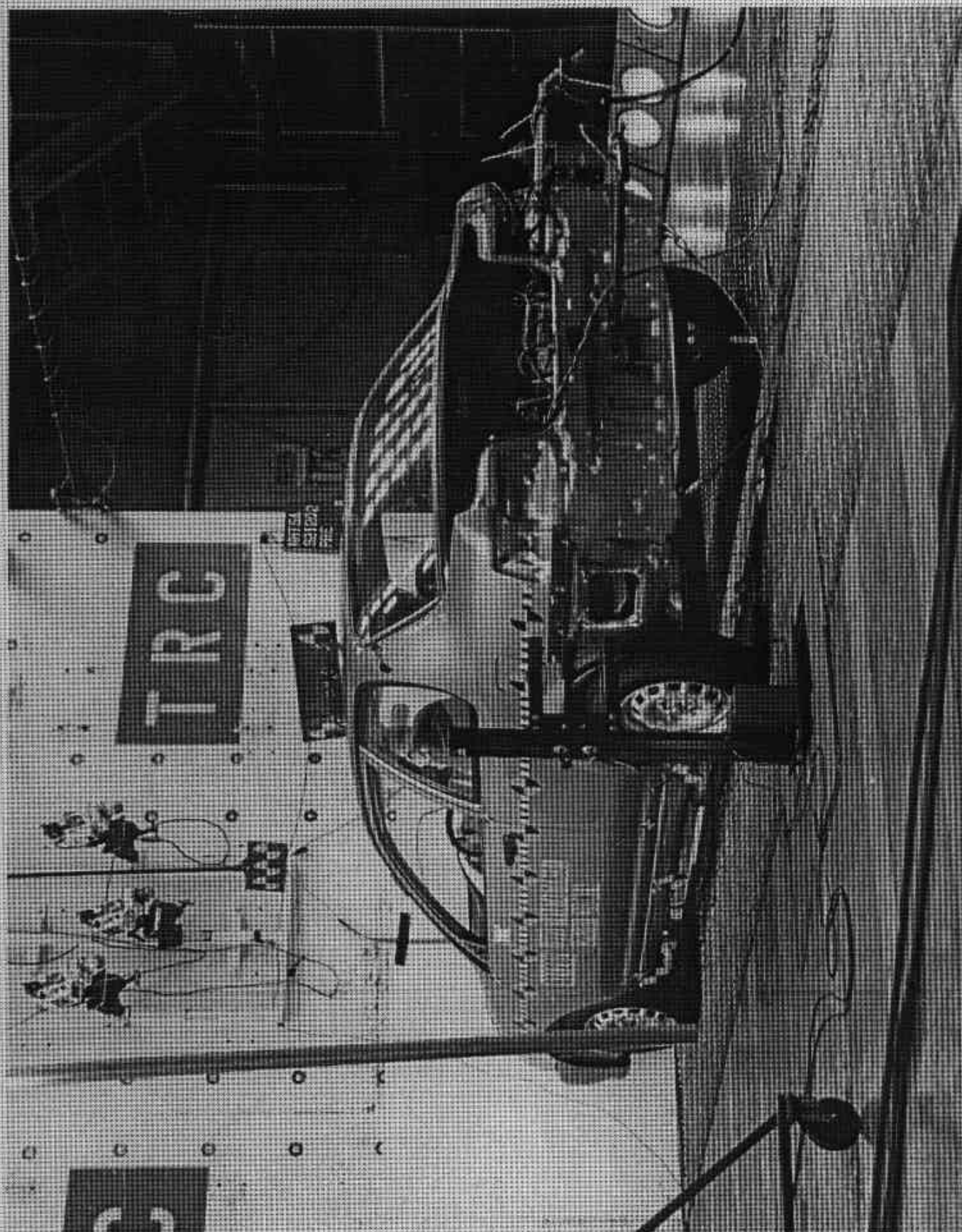


FIGURE A-11. PRE-TEST LEFT REAR THREE-QUARTER VIEW

A-12

921202

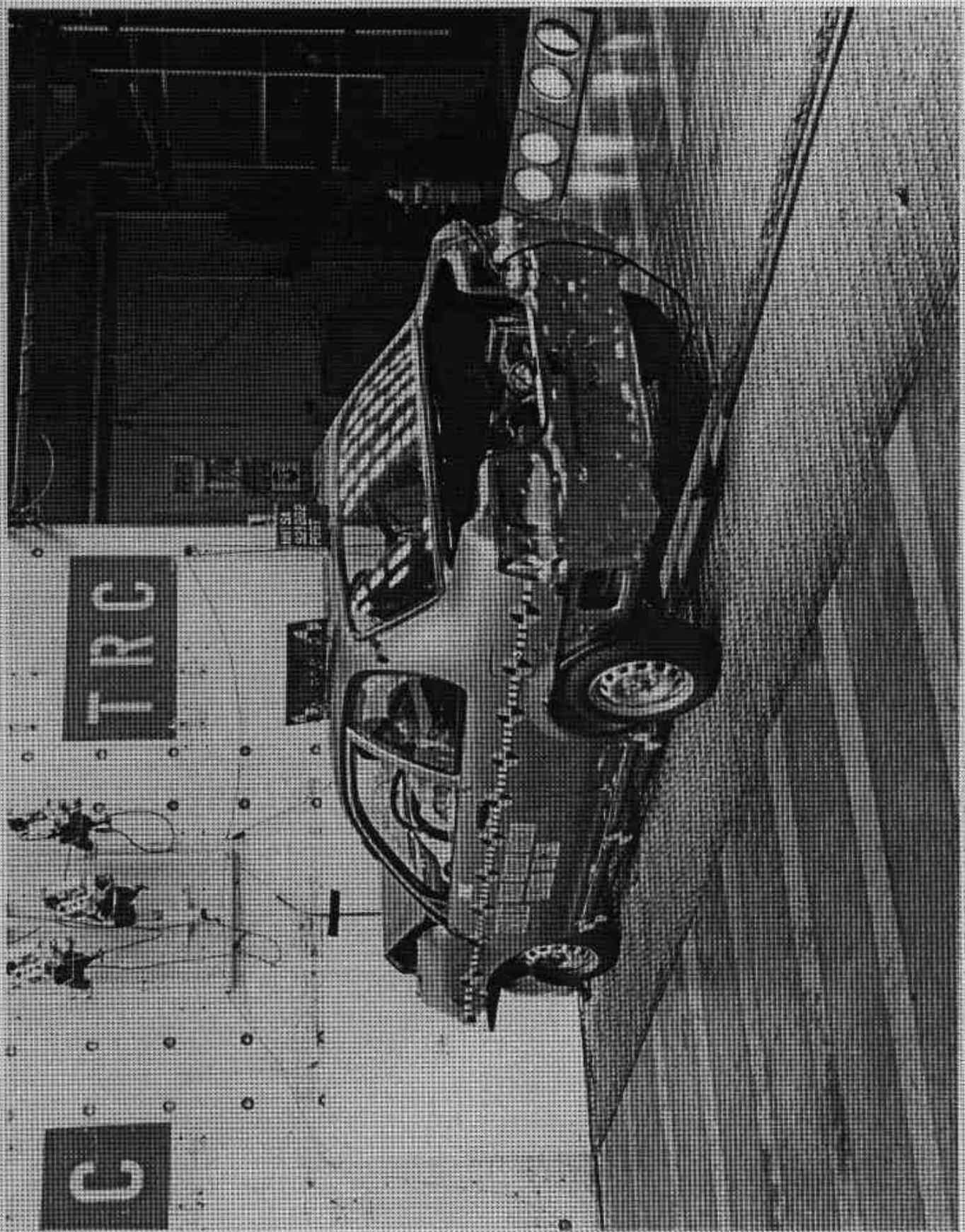


FIGURE A-12. POST-TEST LEFT REAR THREE-QUARTER VIEW
A-13

921202

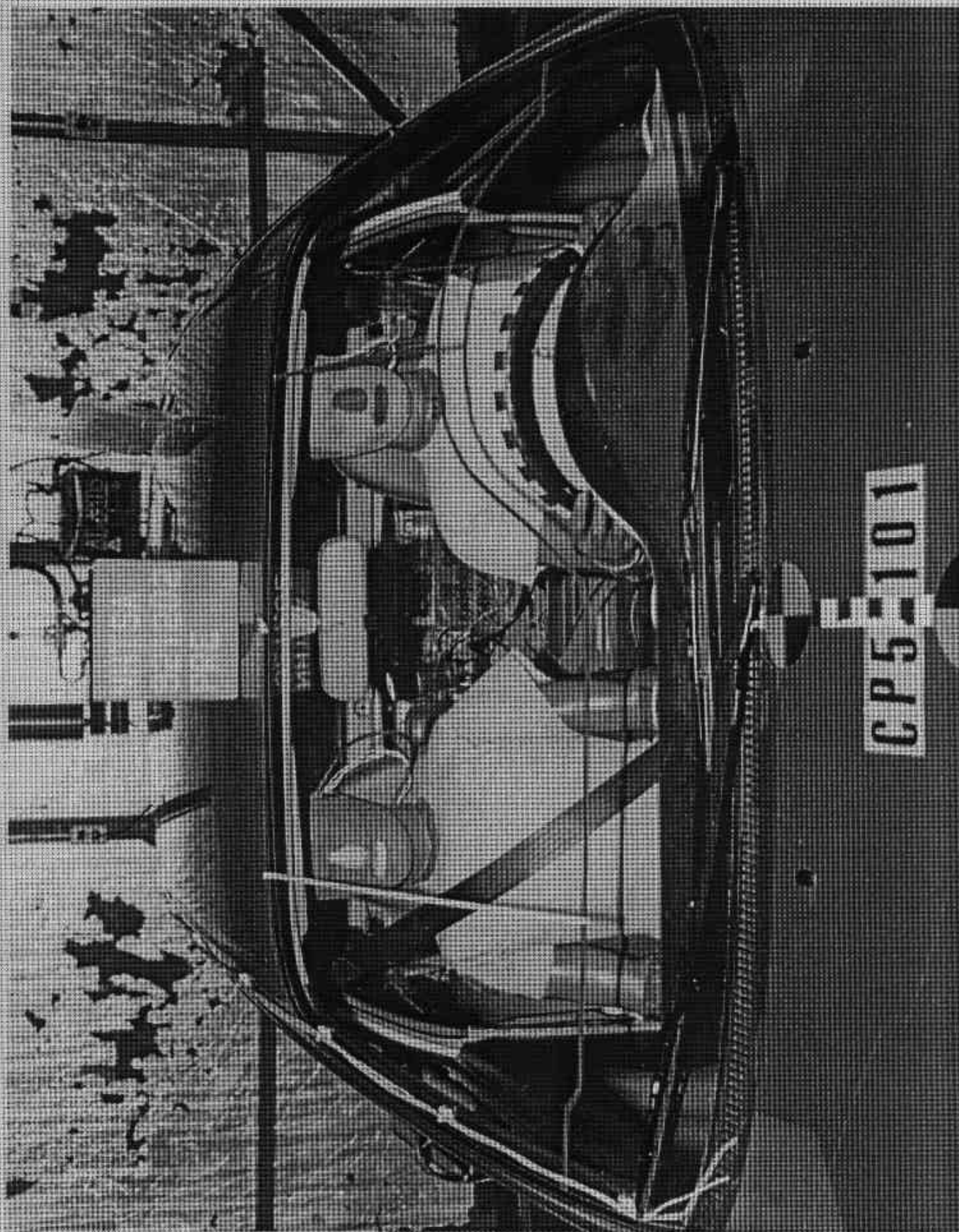


FIGURE A-13. PRE-TEST WINDSHIELD VIEW
A-14

921202

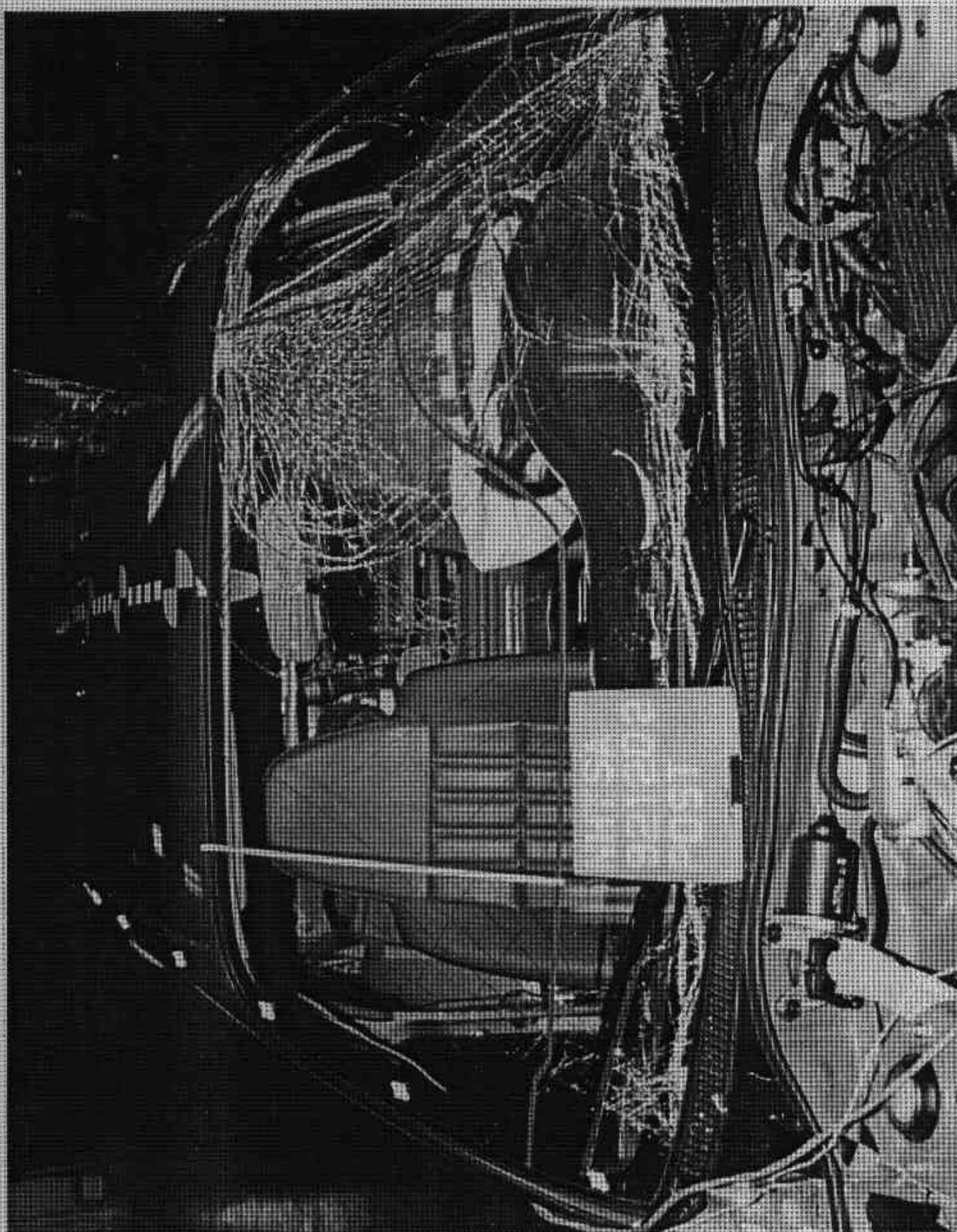


FIGURE A-14. POST-TEST WINDSHIELD VIEW
A-15

921202

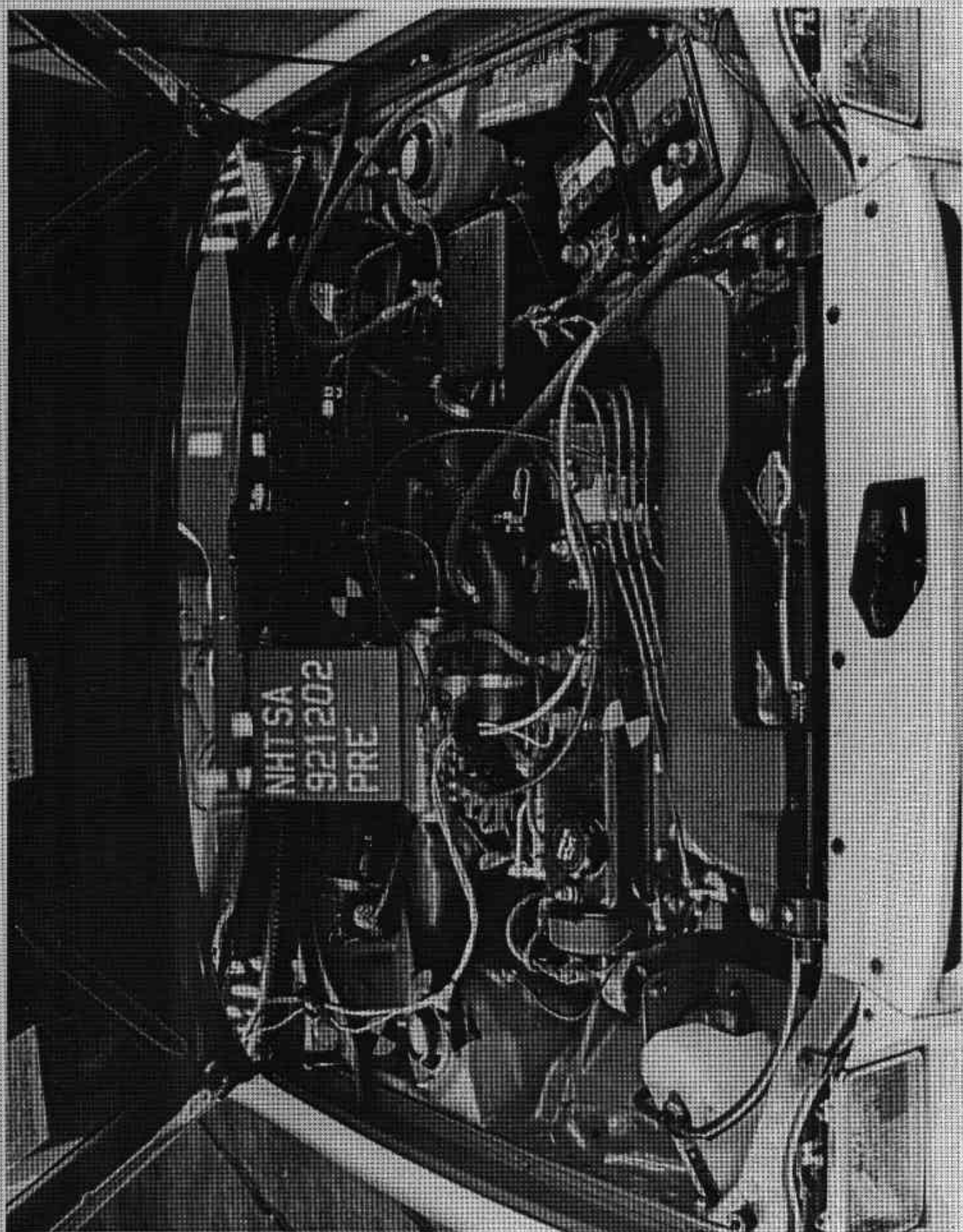


FIGURE A-15. PRE-TEST ENGINE COMPARTMENT VIEW

A-16

921202

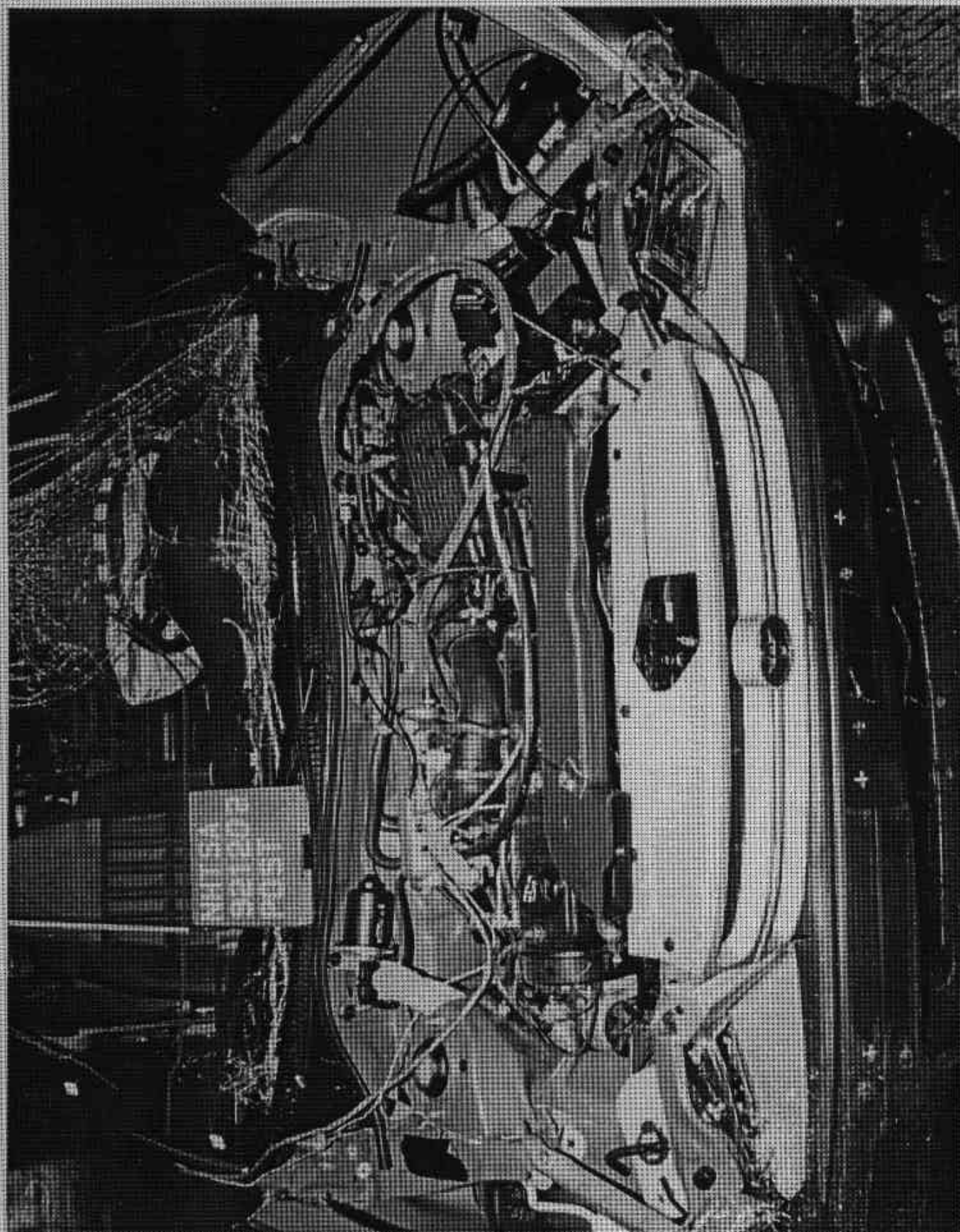


FIGURE A-16. POST-TEST ENGINE COMPARTMENT VIEW

A-17

921202

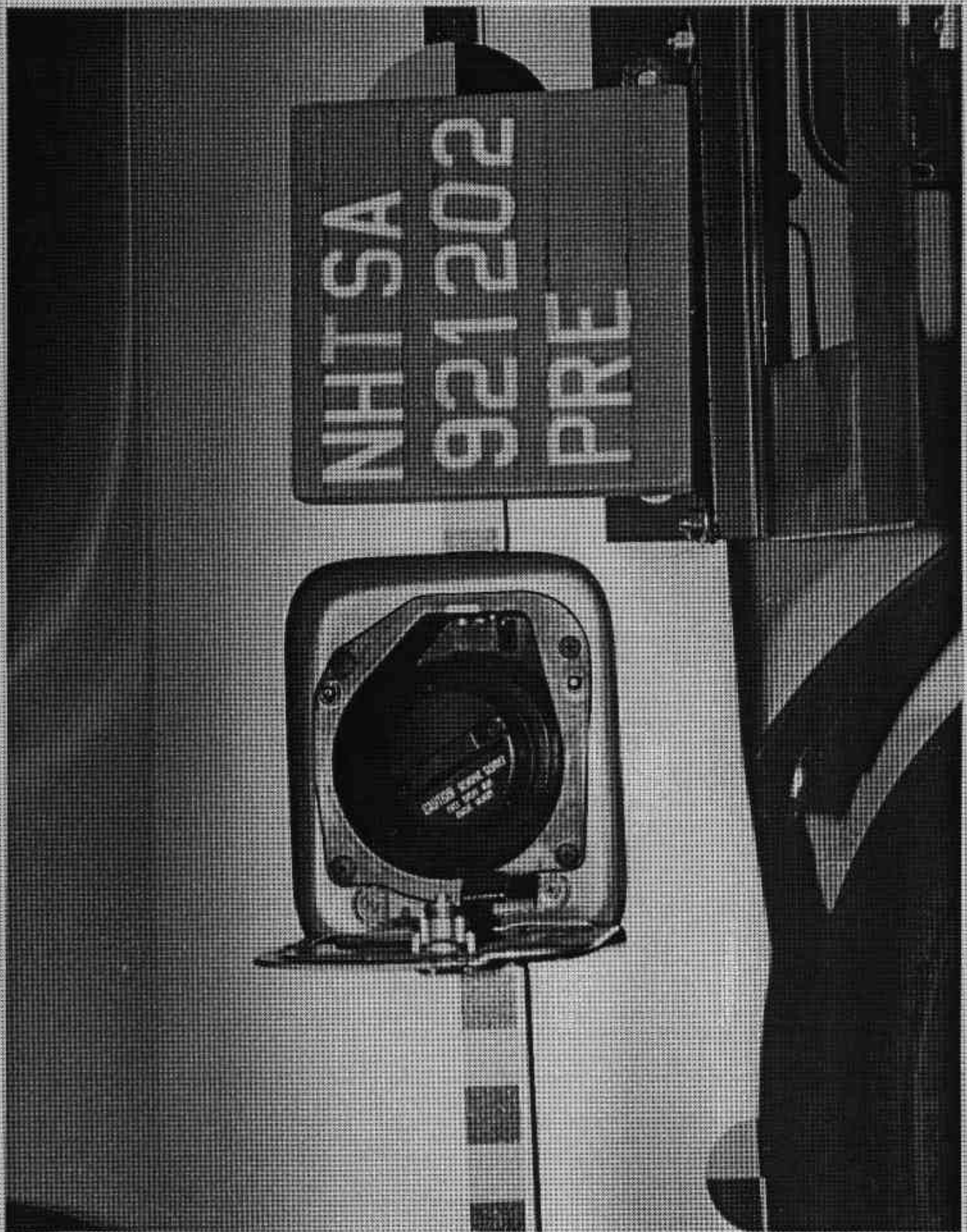


FIGURE A-17. PRE-TEST FUEL FILLER CAP VIEW
A-18

921202



FIGURE A-18. POST-TEST FUEL FILLER CAP VIEW
A-19

921202



FIGURE A-19. PRE-TEST FUEL FILLER NECK & TANK VIEW
A-20

921202

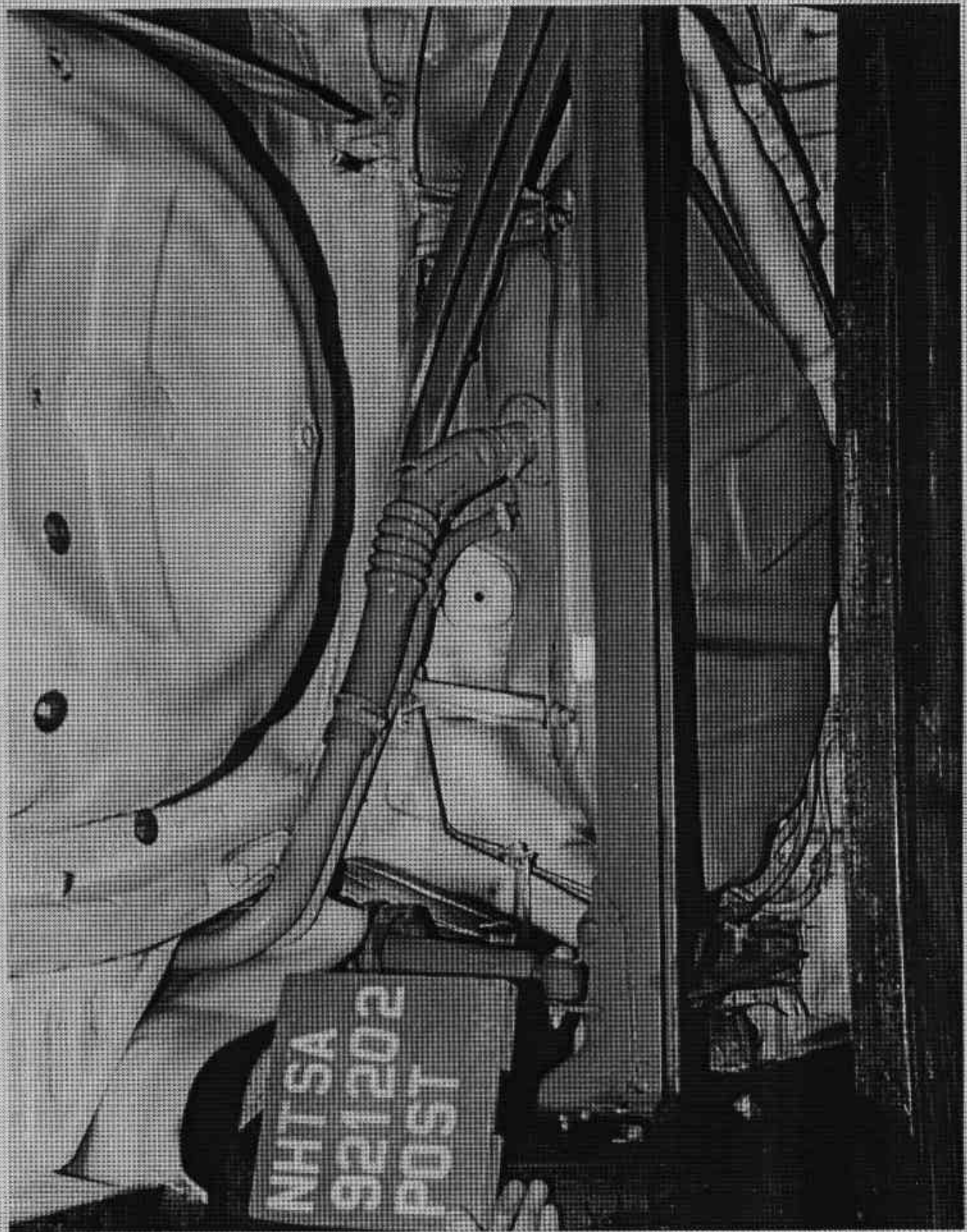


FIGURE A-20. POST-TEST FUEL FILLER NECK & TANK VIEW

A-21

921202

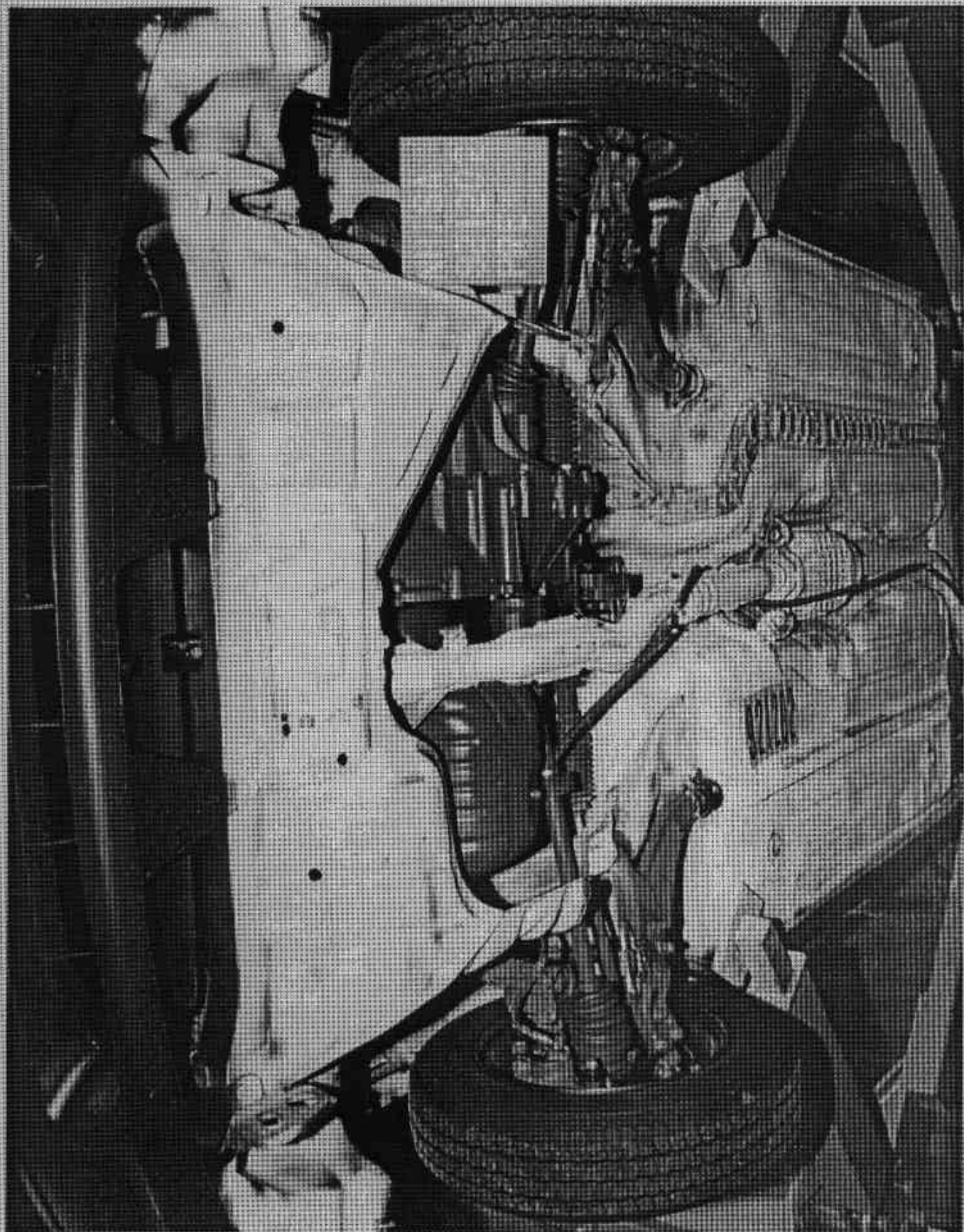


FIGURE A-21. PRE-TEST FRONT UNDERBODY VIEW

A-22

921202

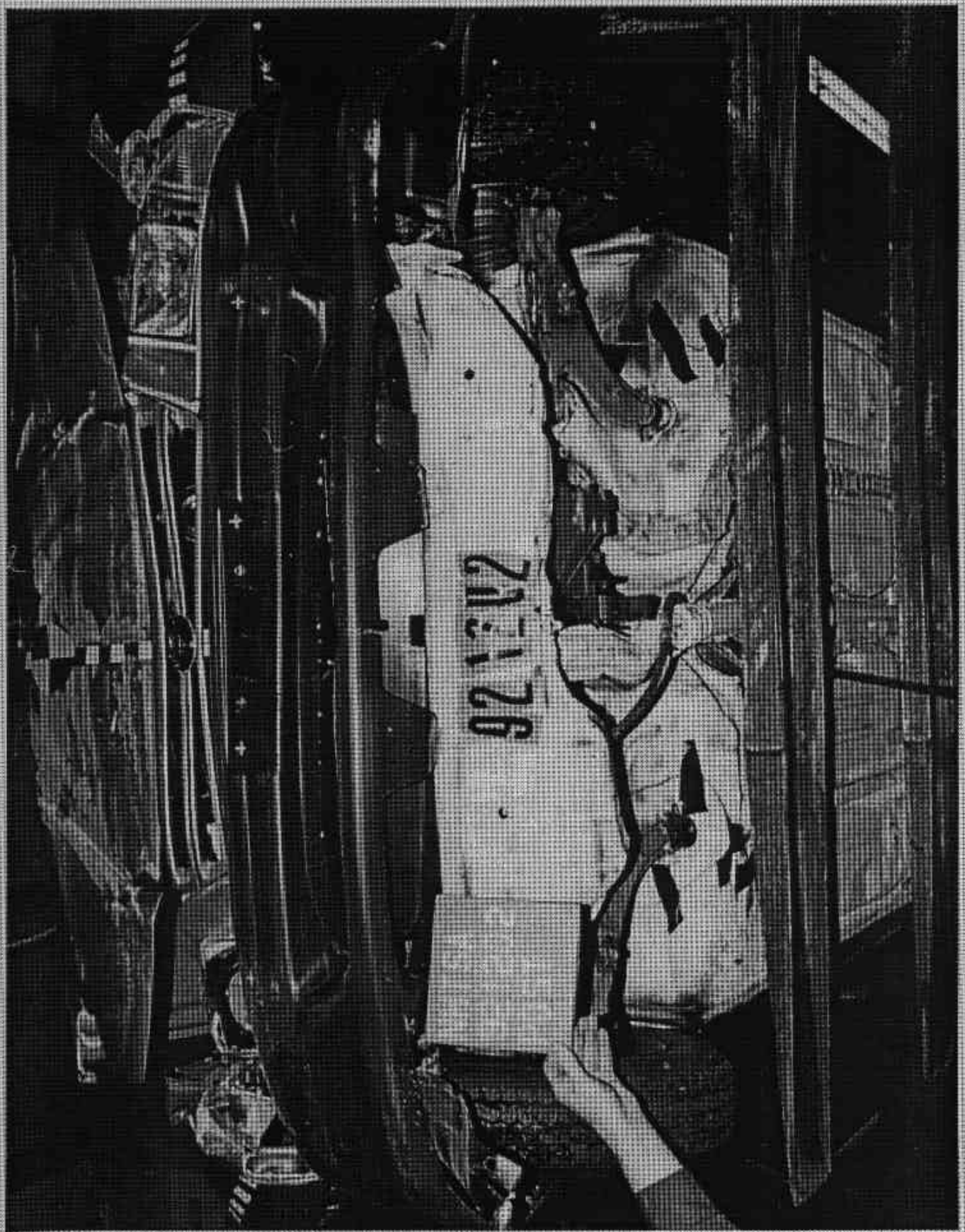


FIGURE A-22. POST-TEST FRONT UNDERBODY VIEW
A-23

921202

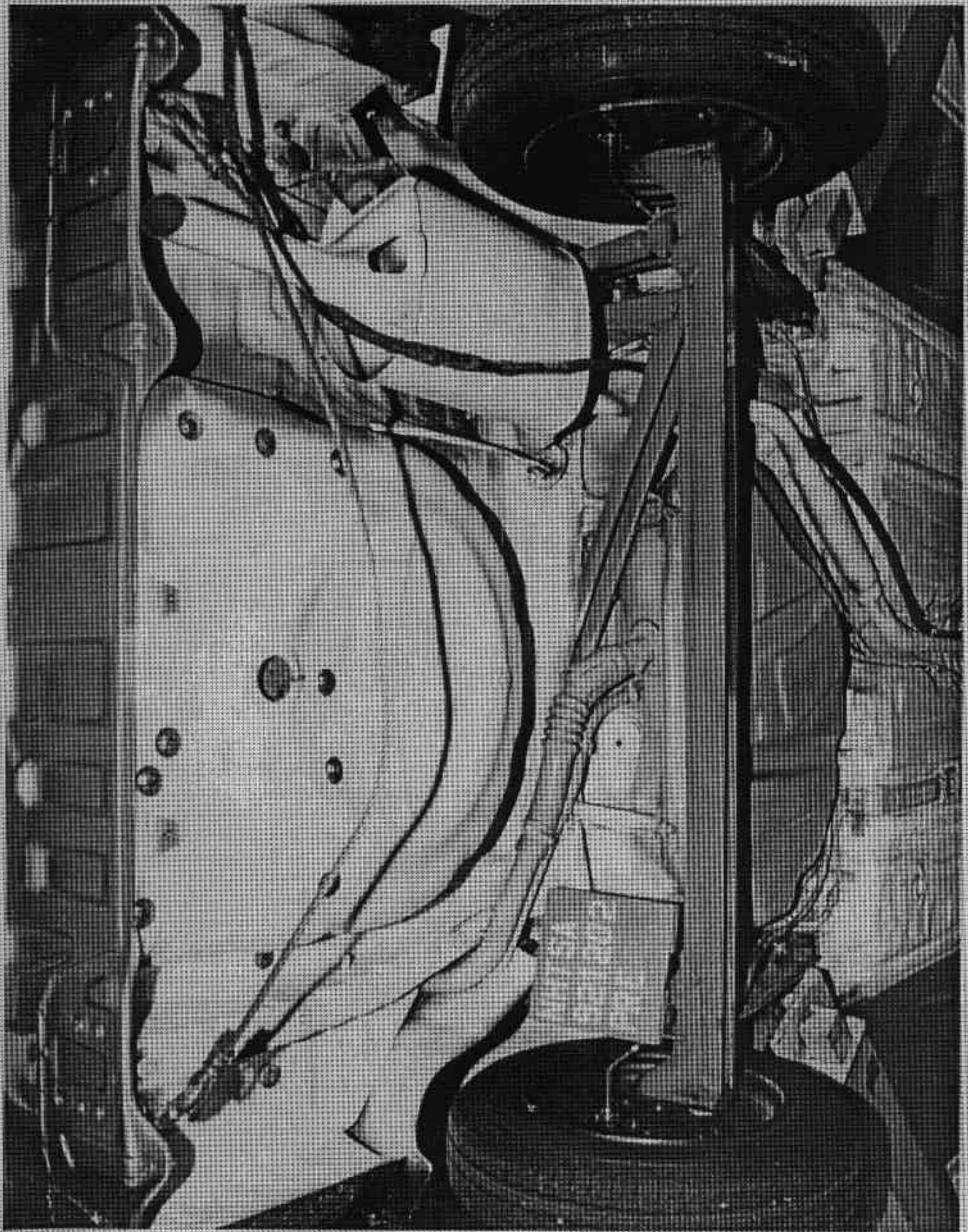


FIGURE A-23. PRE-TEST REAR UNDERBODY VIEW

A-24

921202

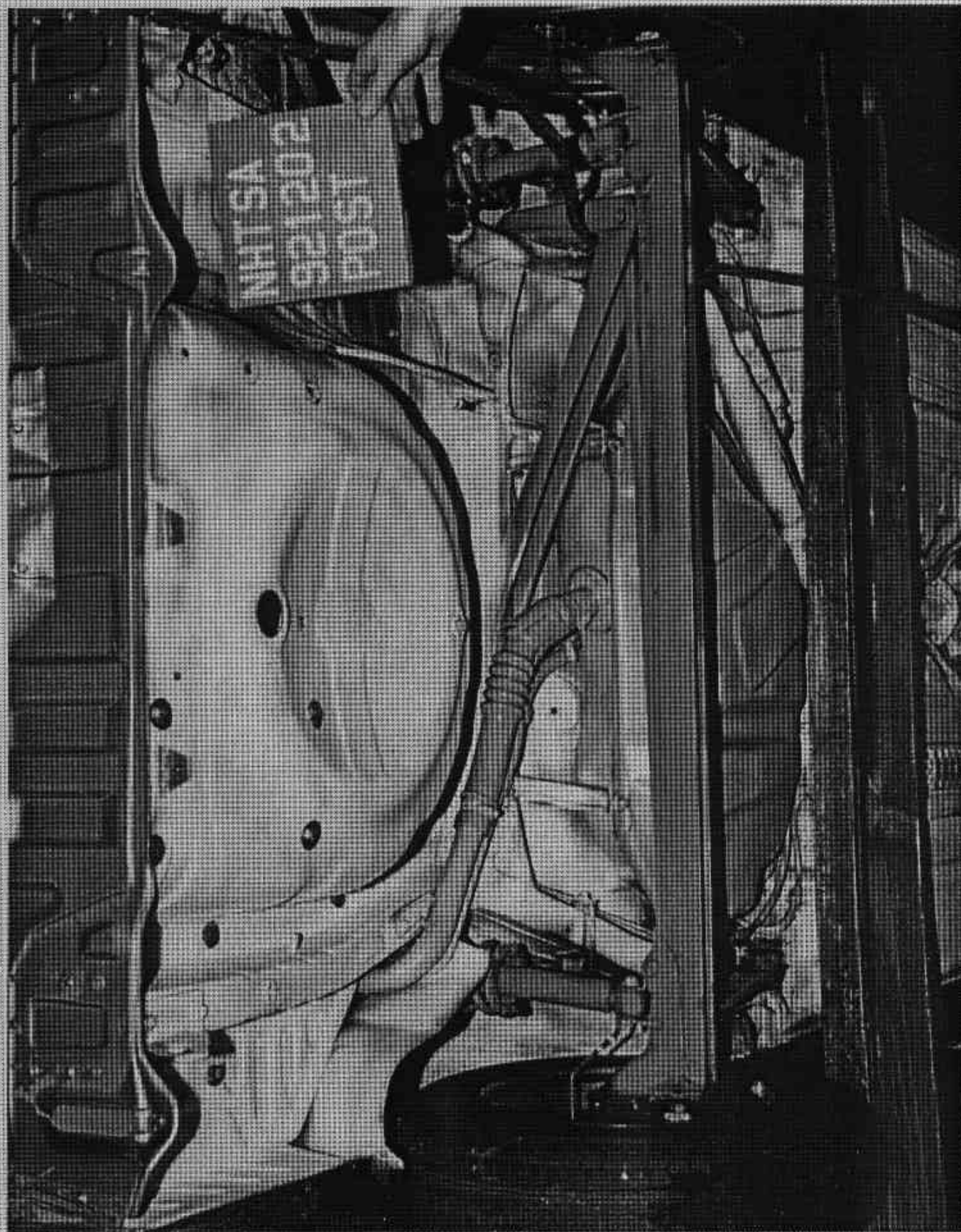


FIGURE A-24, POST-TEST REAR UNDERBODY VIEW
A-25

921202



FIGURE A-25. PRE-TEST DRIVER DUMMY POSITION VIEW

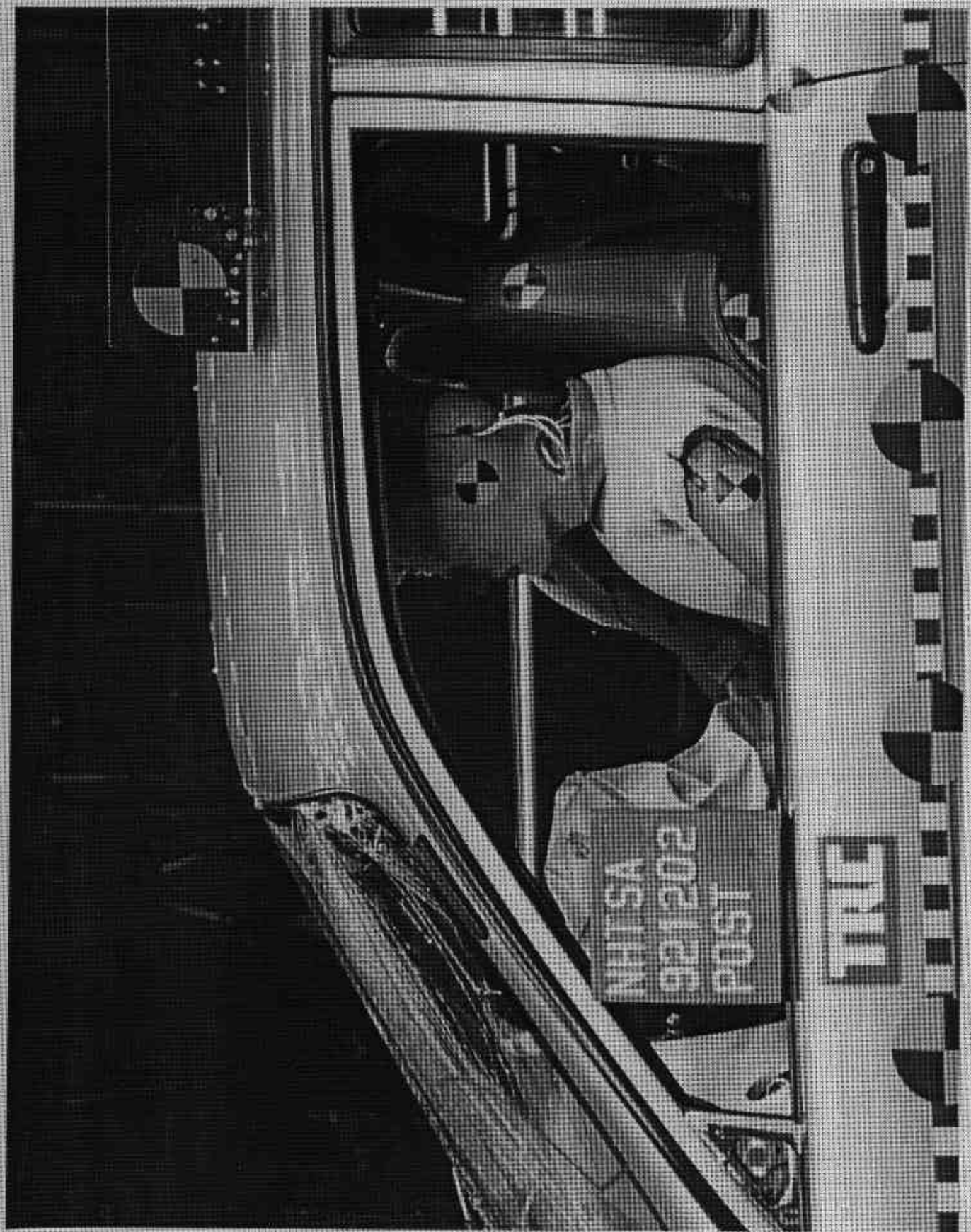


FIGURE A-26. POST-TEST DRIVER DUMMY POSITION VIEW

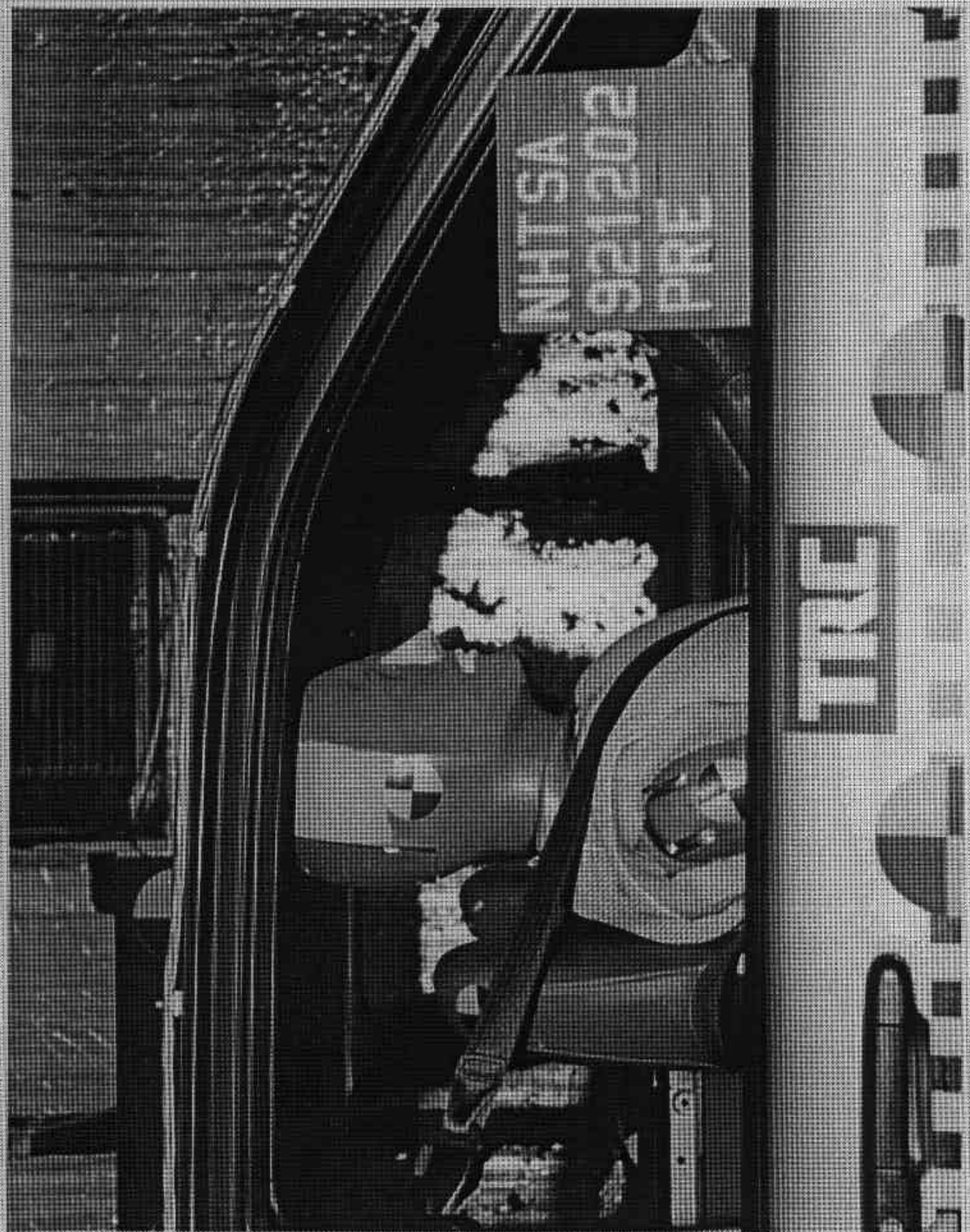


FIGURE A-27. PRE-TEST PASSENGER DUMMY POSITION VIEW

A-28

921202



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

A-29

921202

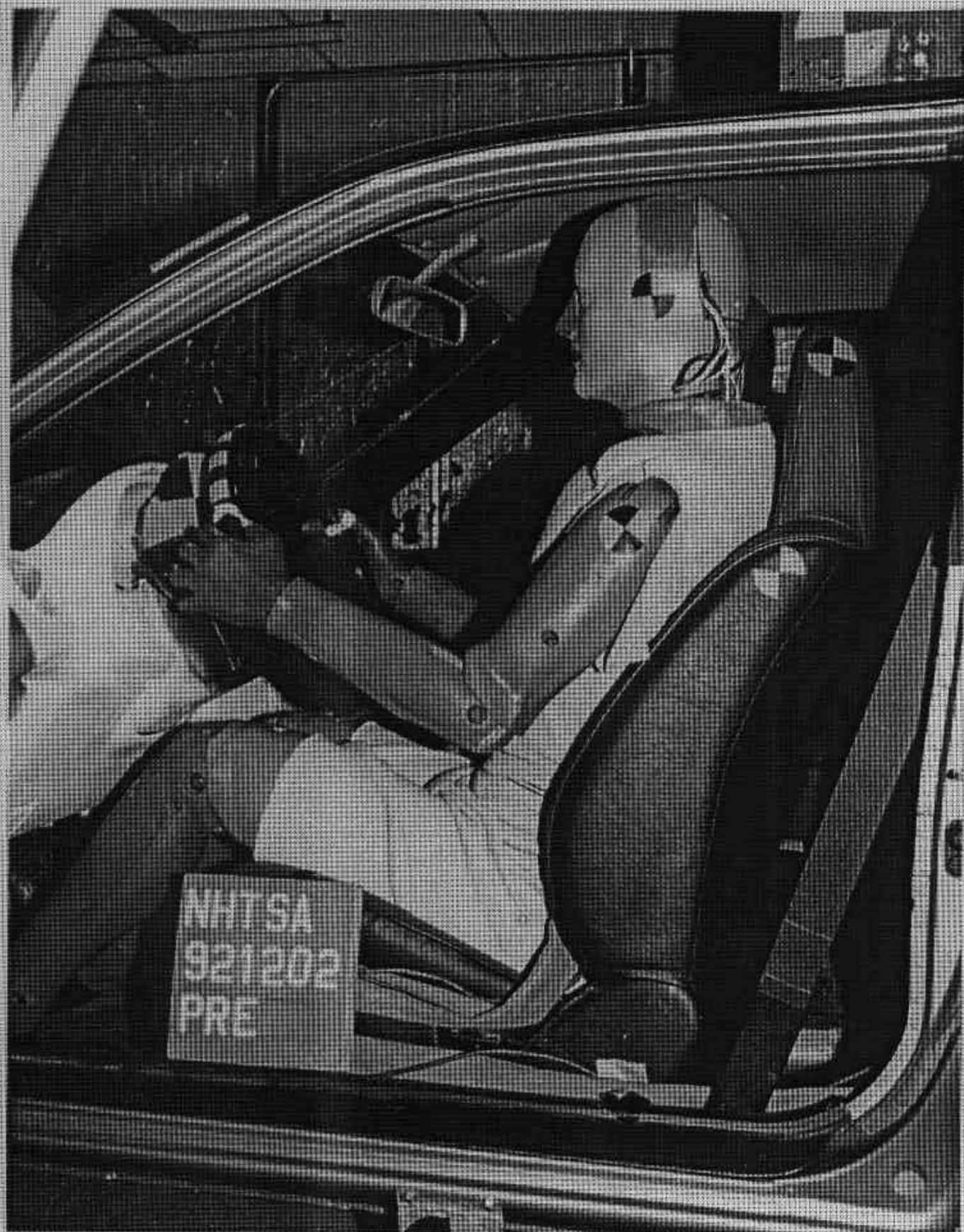


FIGURE A-29. PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1

A-30

921202



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

A-31

921202



FIGURE A-31. PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2

A-32

921202

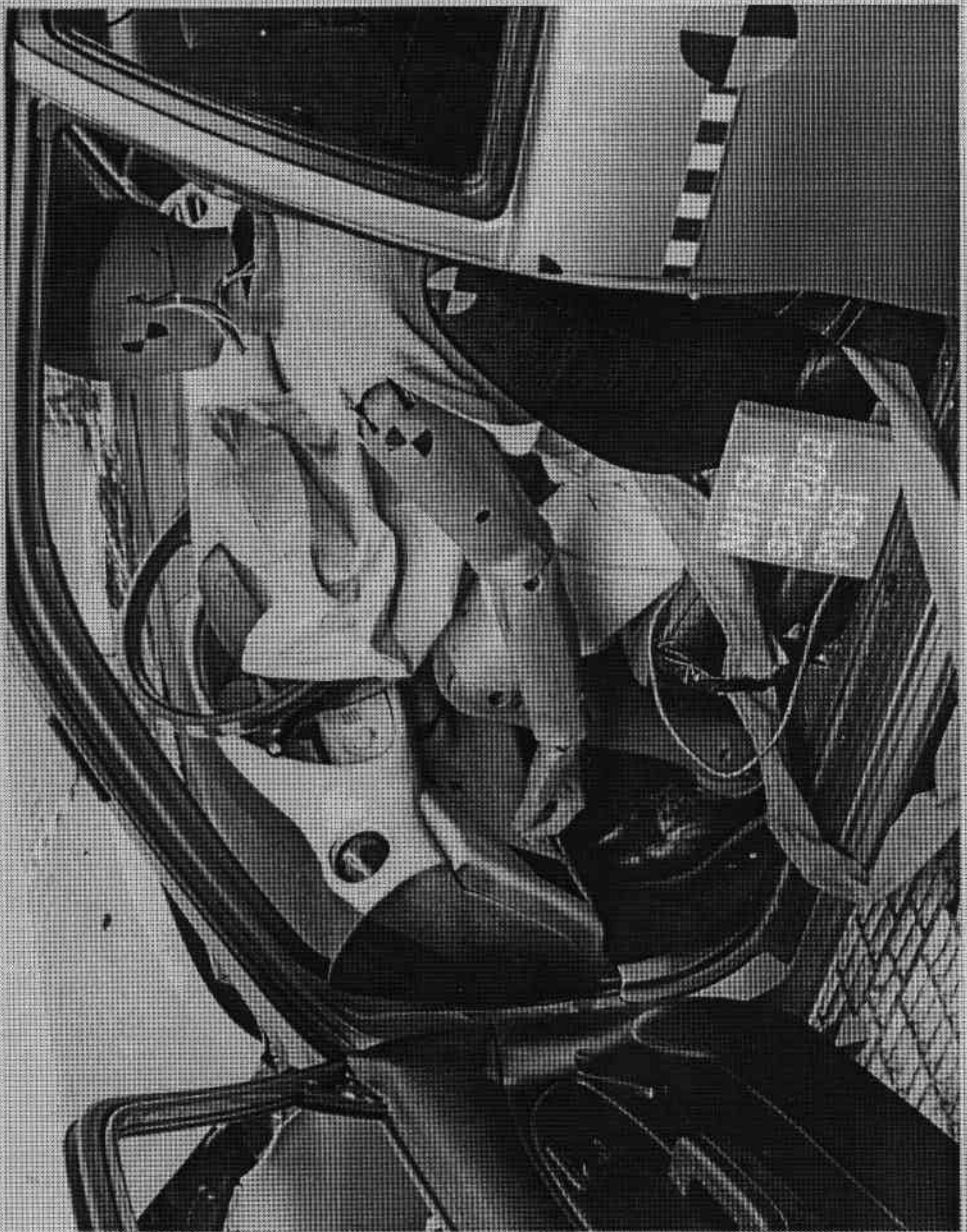


FIGURE A-32. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2

A-33

921202

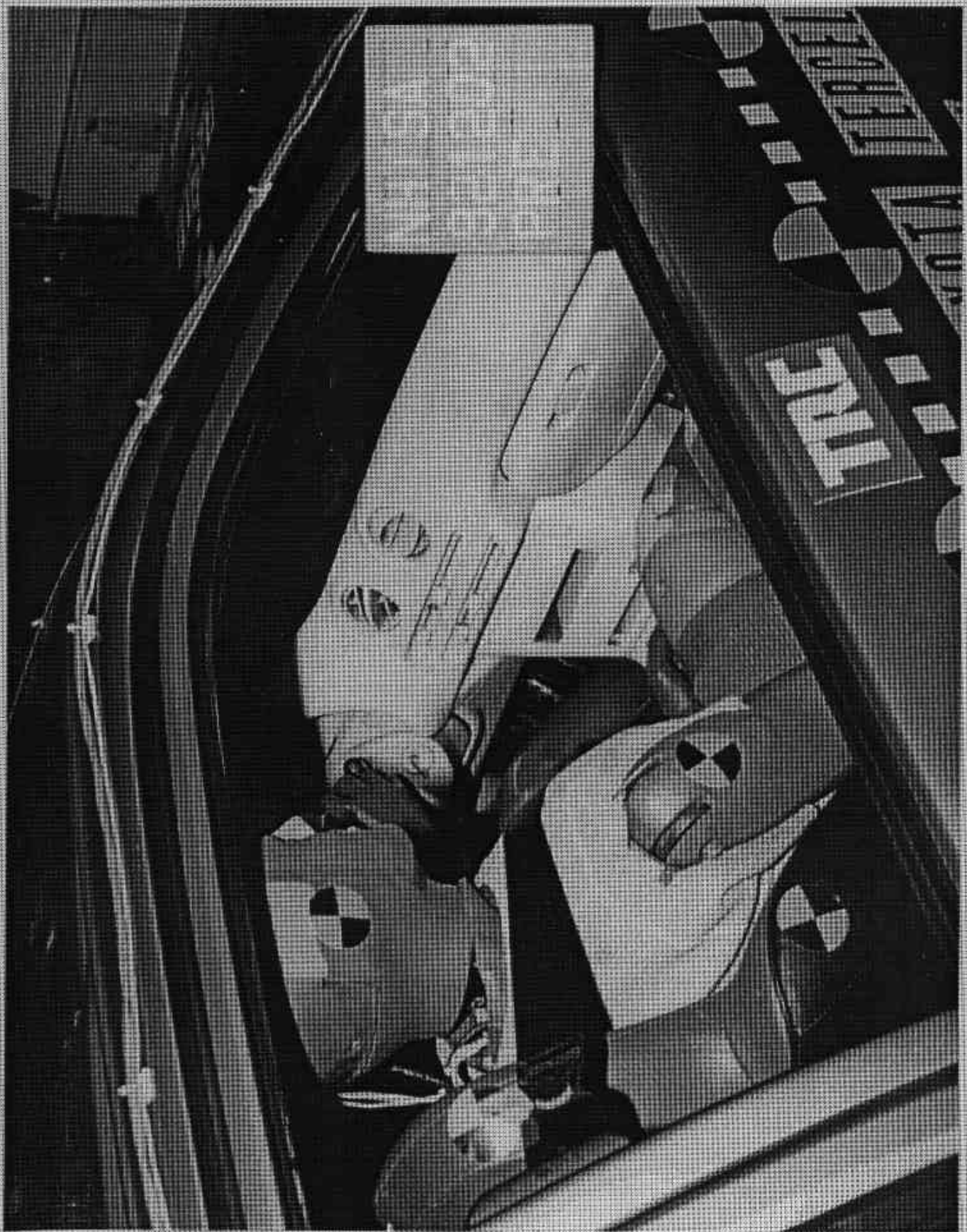


FIGURE A-33. PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW

A-34

921202



FIGURE A-34. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 1
A-35 921202



FIGURE A-35. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2

A-36

921202



FIGURE A-36. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 1



FIGURE A-37. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 2

A-38

921202



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

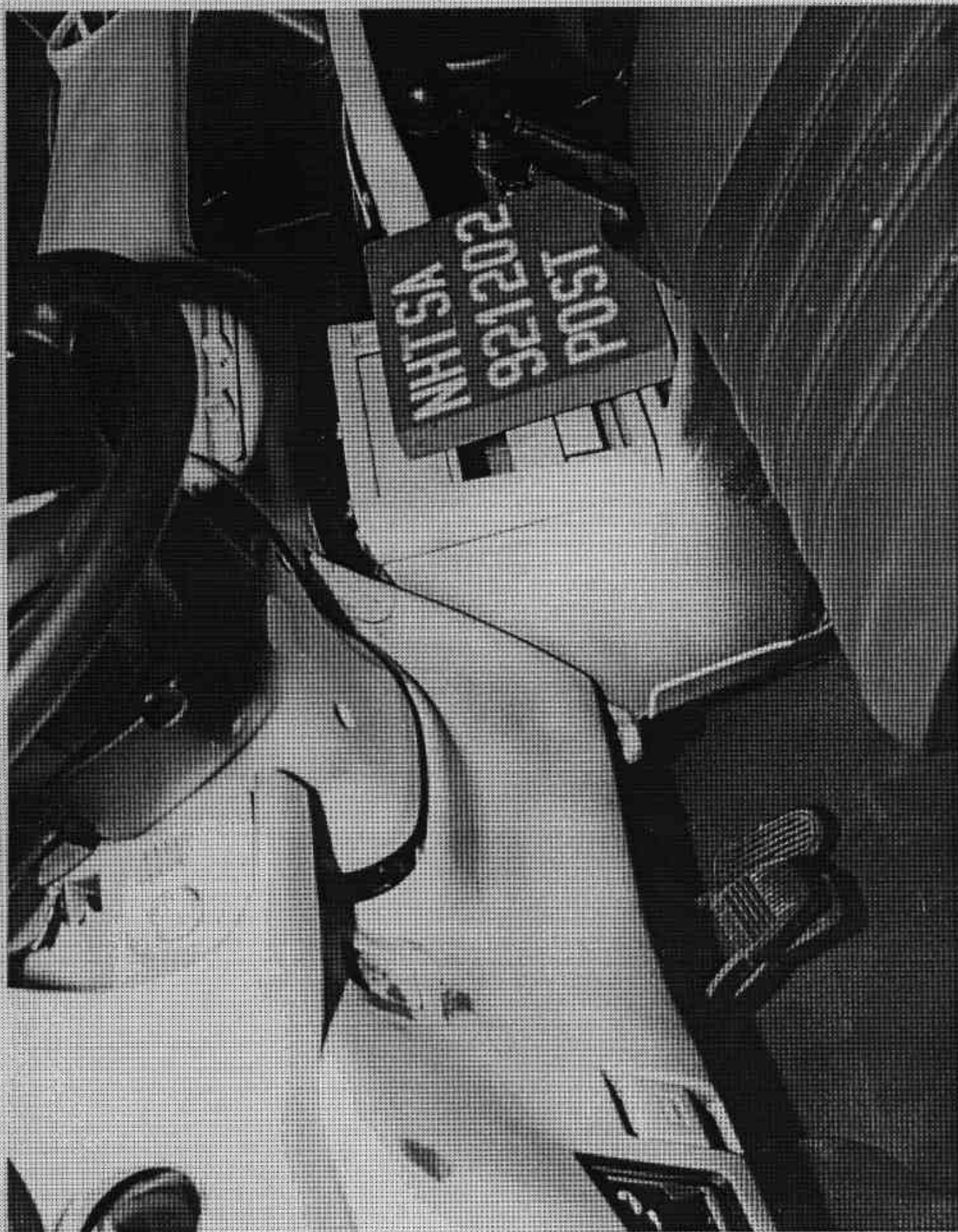


FIGURE A-39. POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 2

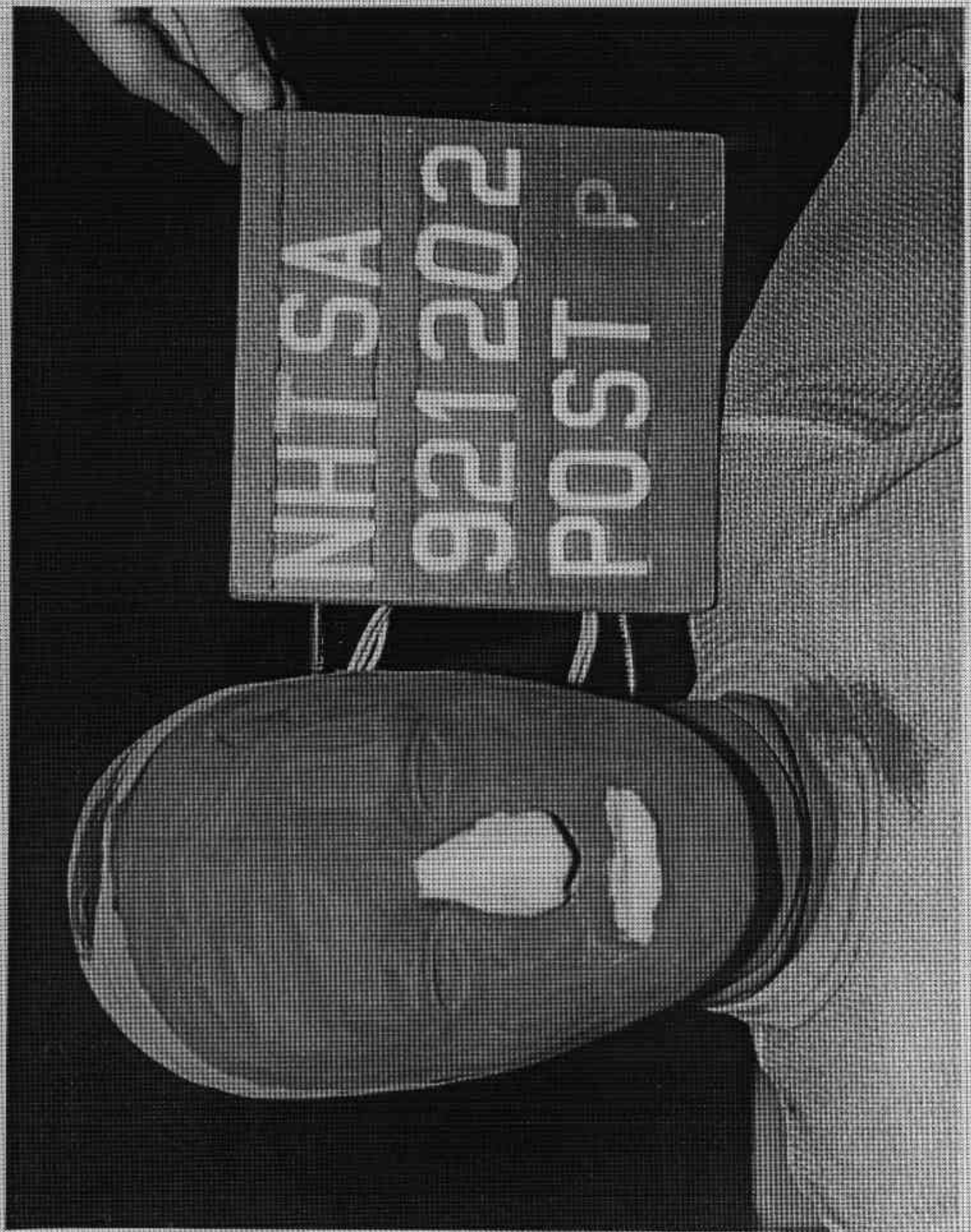


FIGURE A-40. POST-TEST PASSENGER DUMMY HEAD CONTACT VIEW

A-41

921202

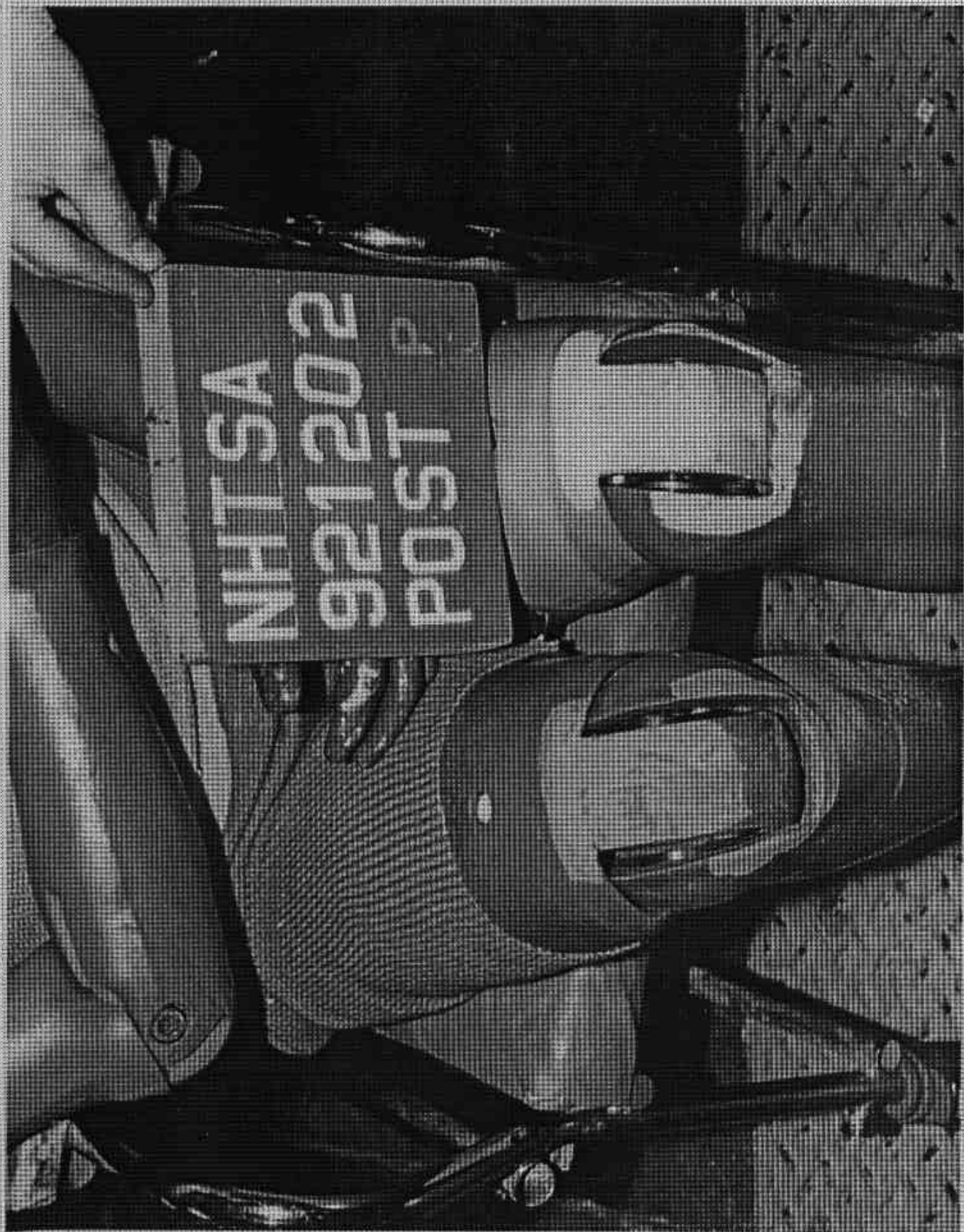


FIGURE A-41. POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 1

A-42

921202

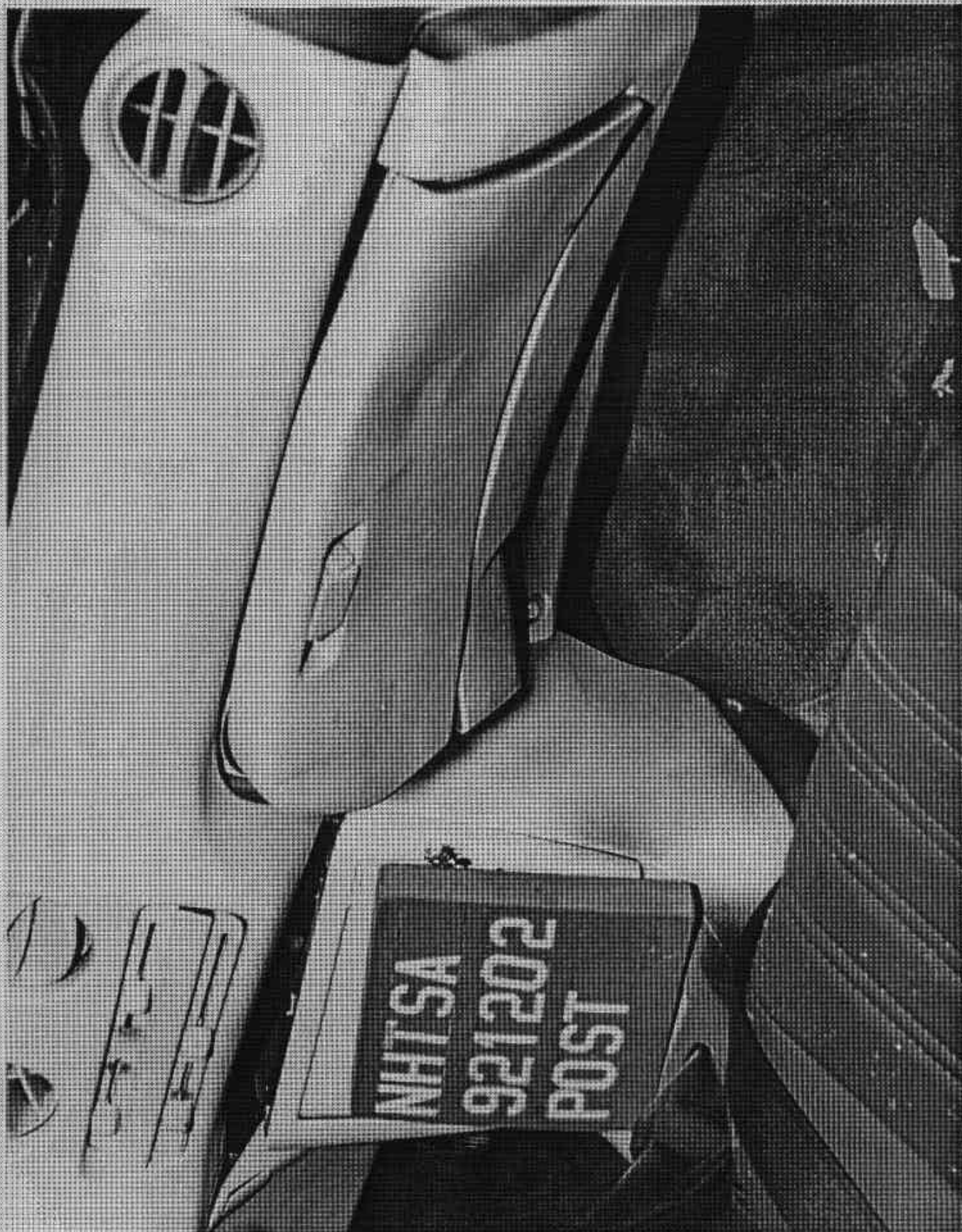


FIGURE A-42. POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 2

TOYOTA

* MFD. BY: TOYOTA MOTOR CORPORATION 08/92
 GVWR 2870LB GAWR FR 1540LB RR 1380LB
 THIS VEHICLE CONFORMS TO ALL APPLICABLE
 FEDERAL MOTOR VEHICLE SAFETY BUMPER AND
 THEFT PREVENTION STANDARDS IN EFFECT ON
 THE DATE OF MANUFACTURE SHOWN ABOVE
 JT2EL46S8P0260792 PASS. CAR

C/TR: 6M9/LA27 MODEL: EL42L-ADKBEA
 A/TM: -672/C141 MADE IN JAPAN
 NO. 021

* BA02112091 *

FIGURE A-43. PRE-TEST VEHICLE CERTIFICATION LABEL VIEW

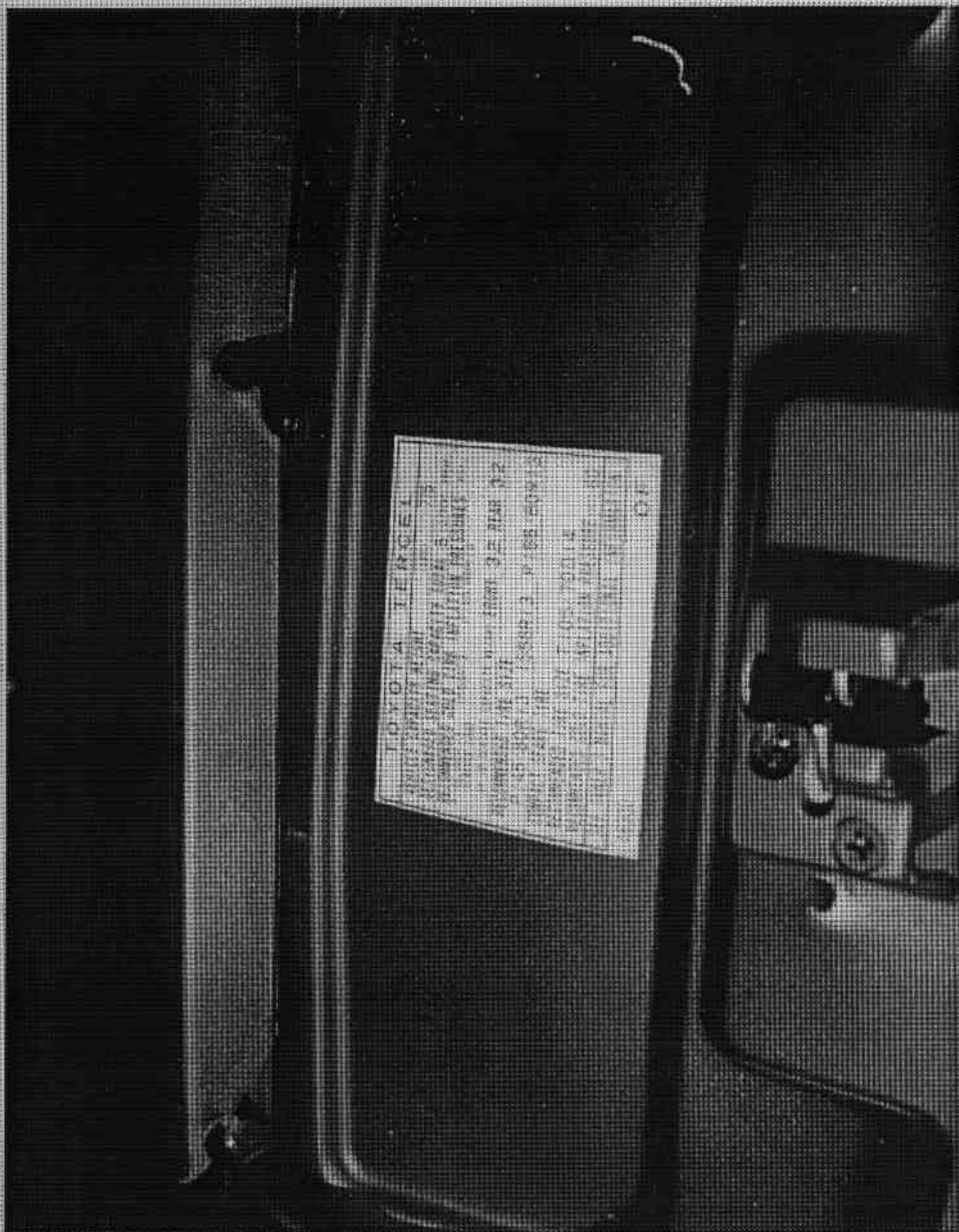


FIGURE A-44. PRE-TEST VEHICLE RECOMMENDED TIRE PRESSURE LABEL VIEW

A-45

921202

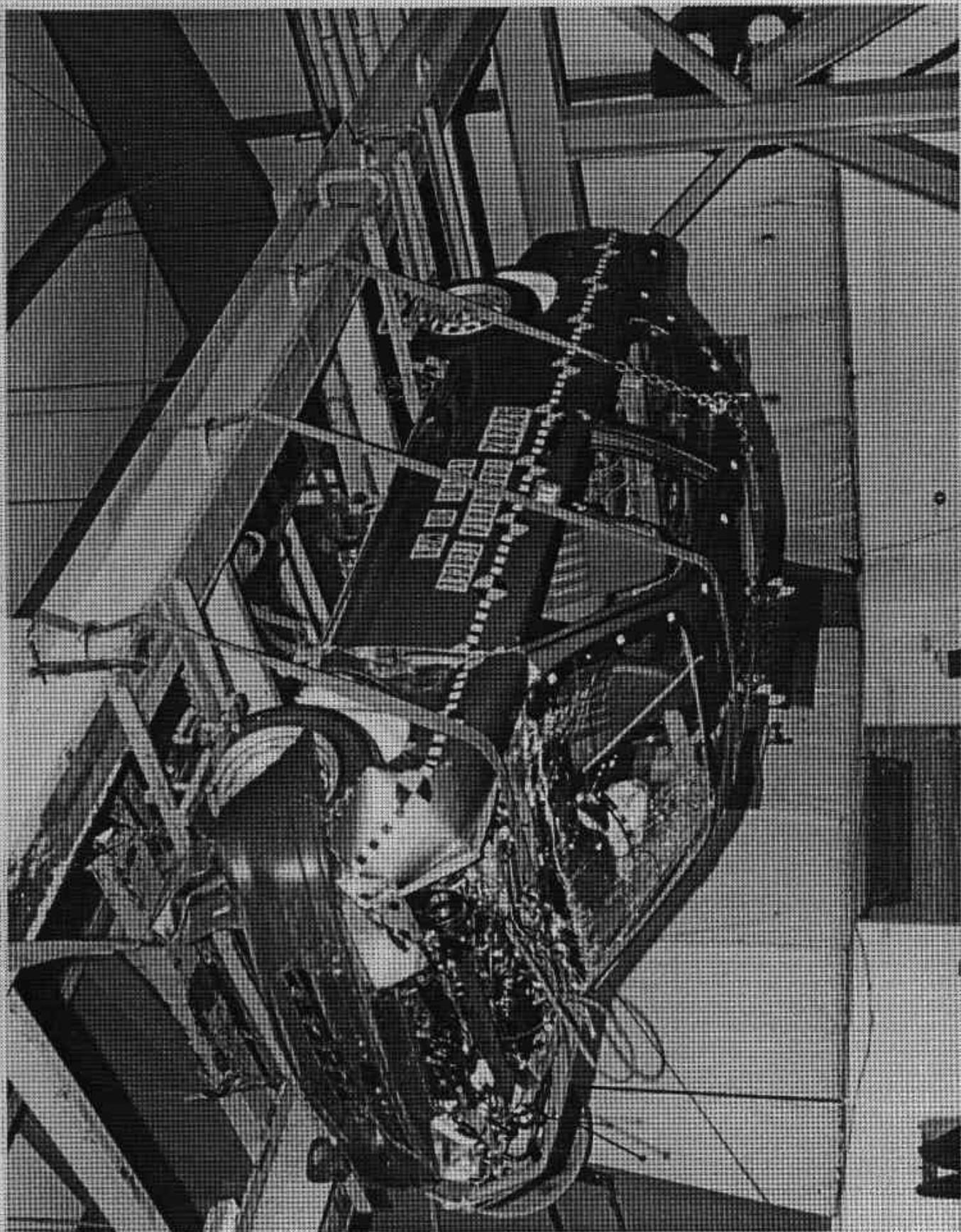


FIGURE A-45. POST-TEST VEHICLE ON STATIC ROLLOVER MACHINE VIEW

A-46

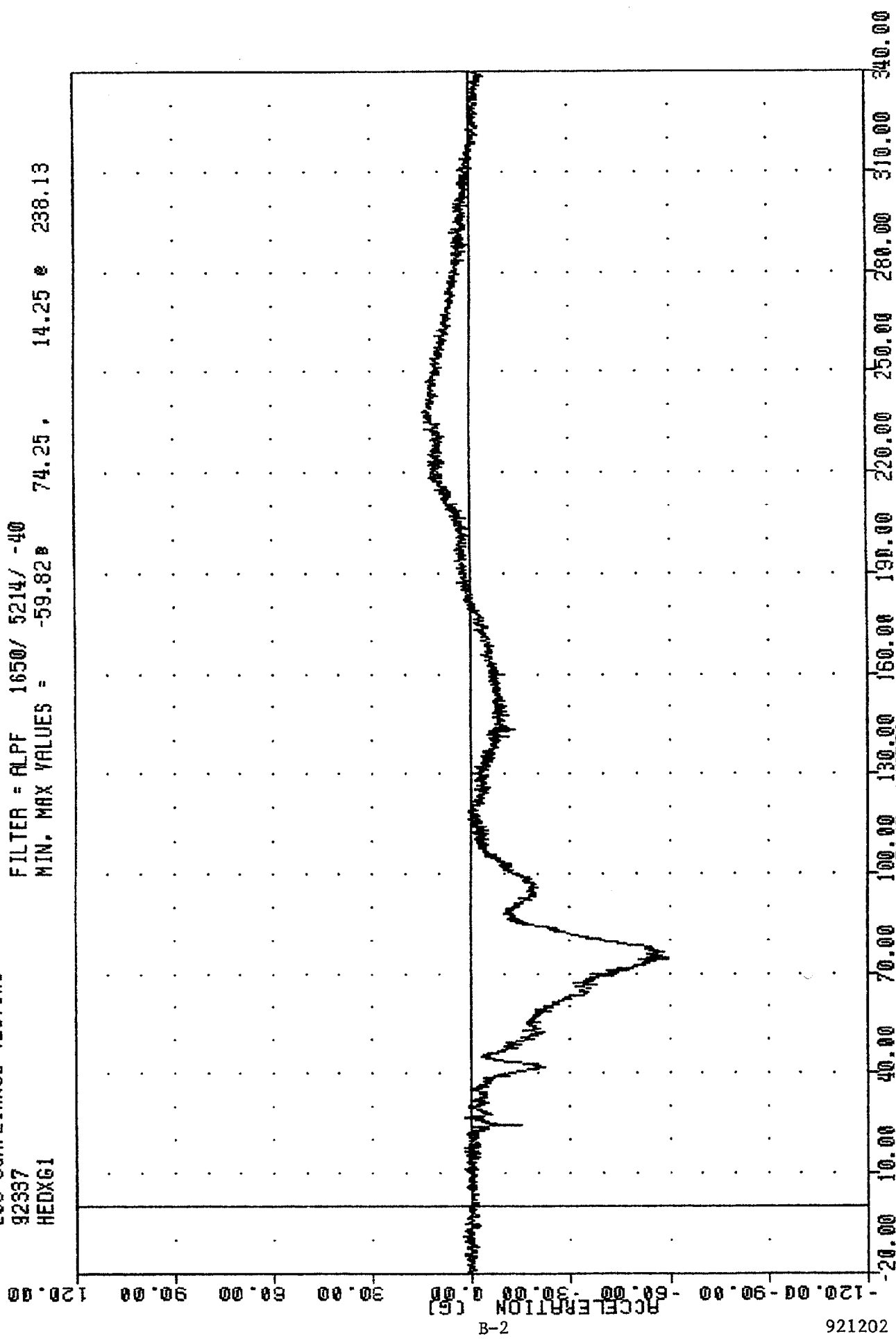
921202

APPENDIX B

DATA PLOTS

TRC 921202
 200 COMPLIANCE TESTING
 92337
 HEDXG1

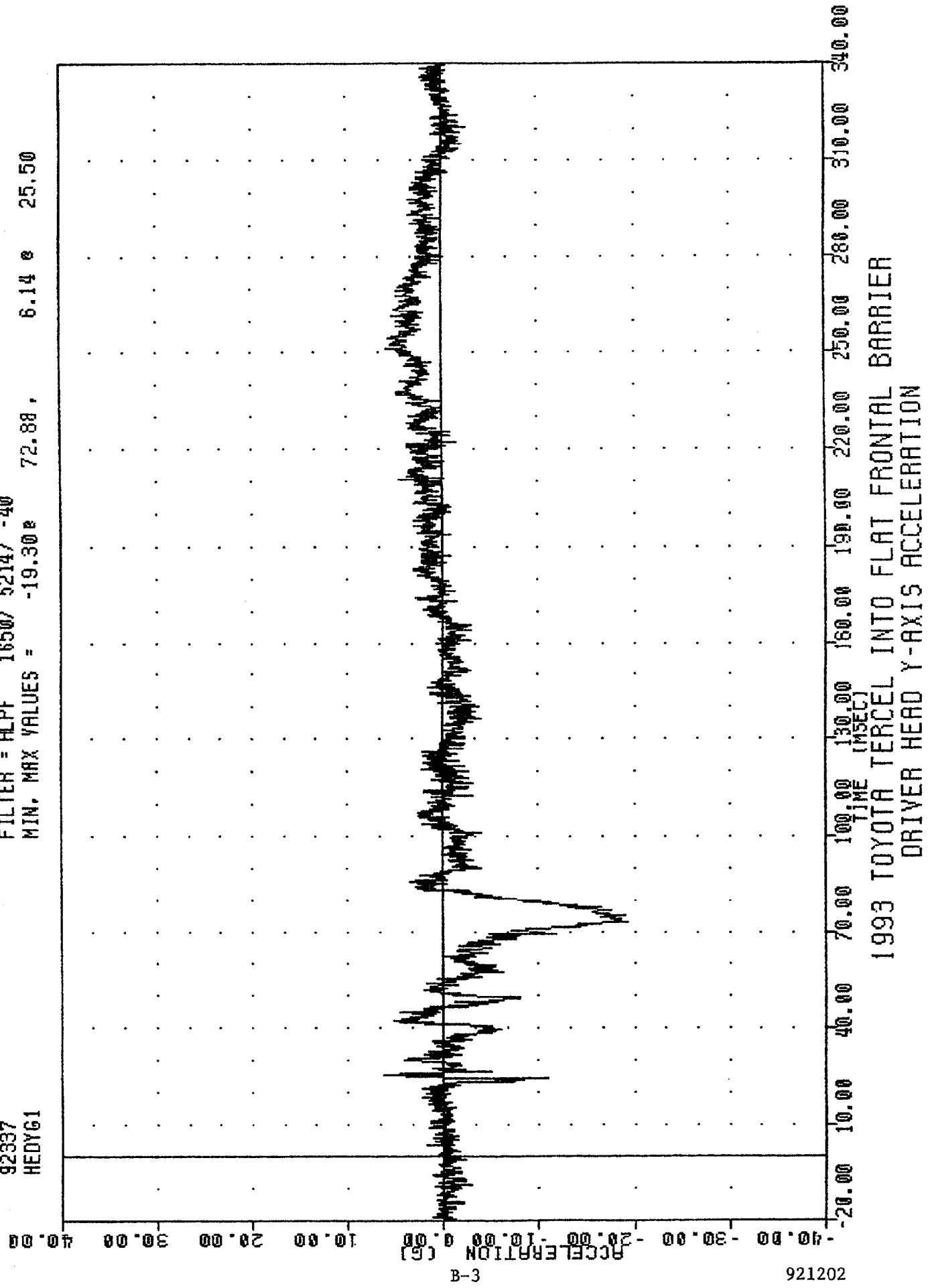
FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = -59.82 74.25 14.25 e 238.13



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
 DRIVER HEAD X-AXIS ACCELERATION

TRC 921202
208 COMPLIANCE TESTING
92337
HEDY61

FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -19.30e 72.88, 6.14 e 25.50



TRC 921202

208 COMPLIANCE TESTING

92337

HEDZG1

FILTER = ALPF 1650/ 5214/ -40

MIN. MAX VALUES = -35.05 72.25, 12.64 24.75

120.00

90.00

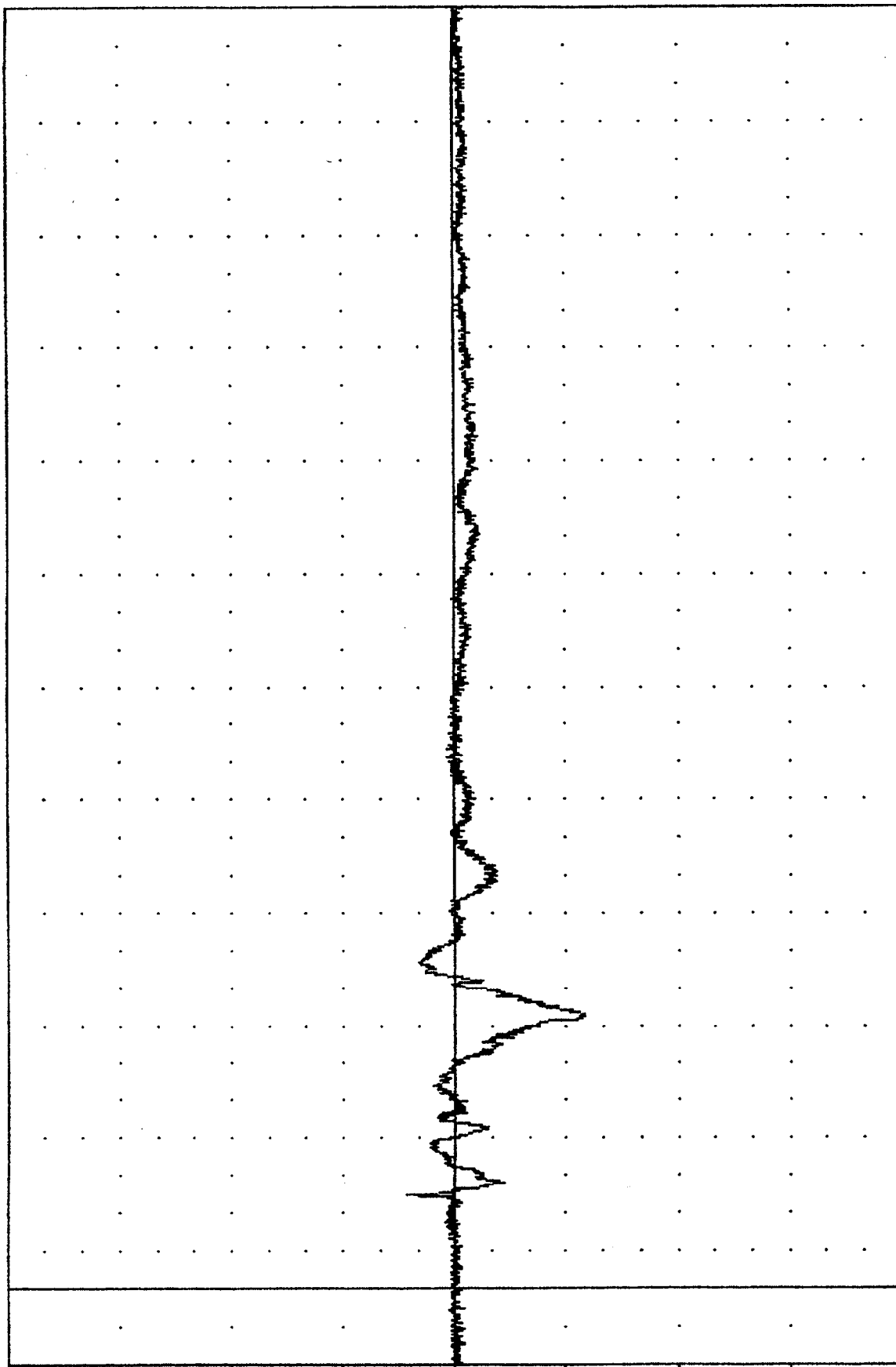
60.00

30.00

0.00

B-4

921202

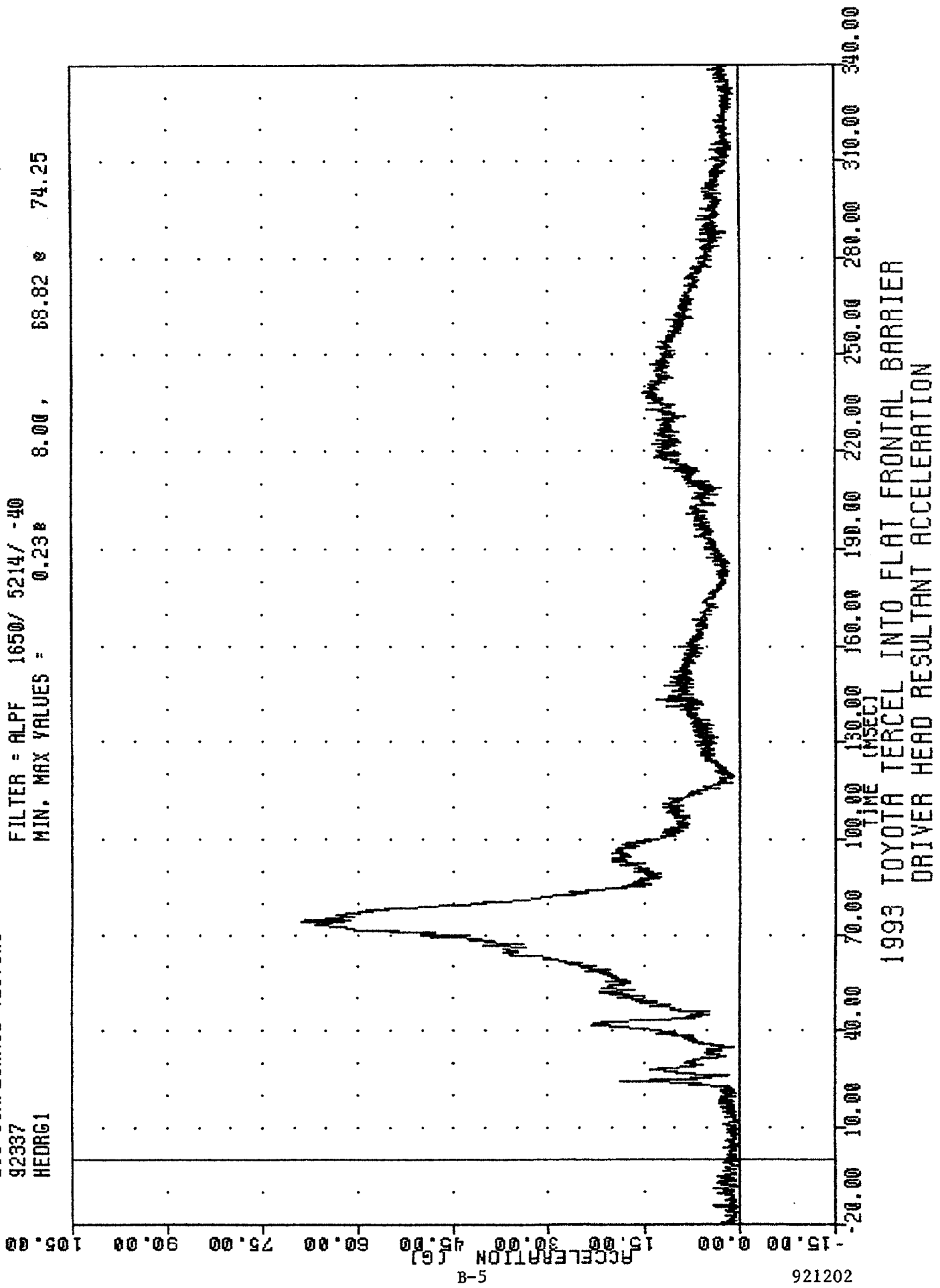


20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
DRIVER HEAD Z-AXIS ACCELERATION

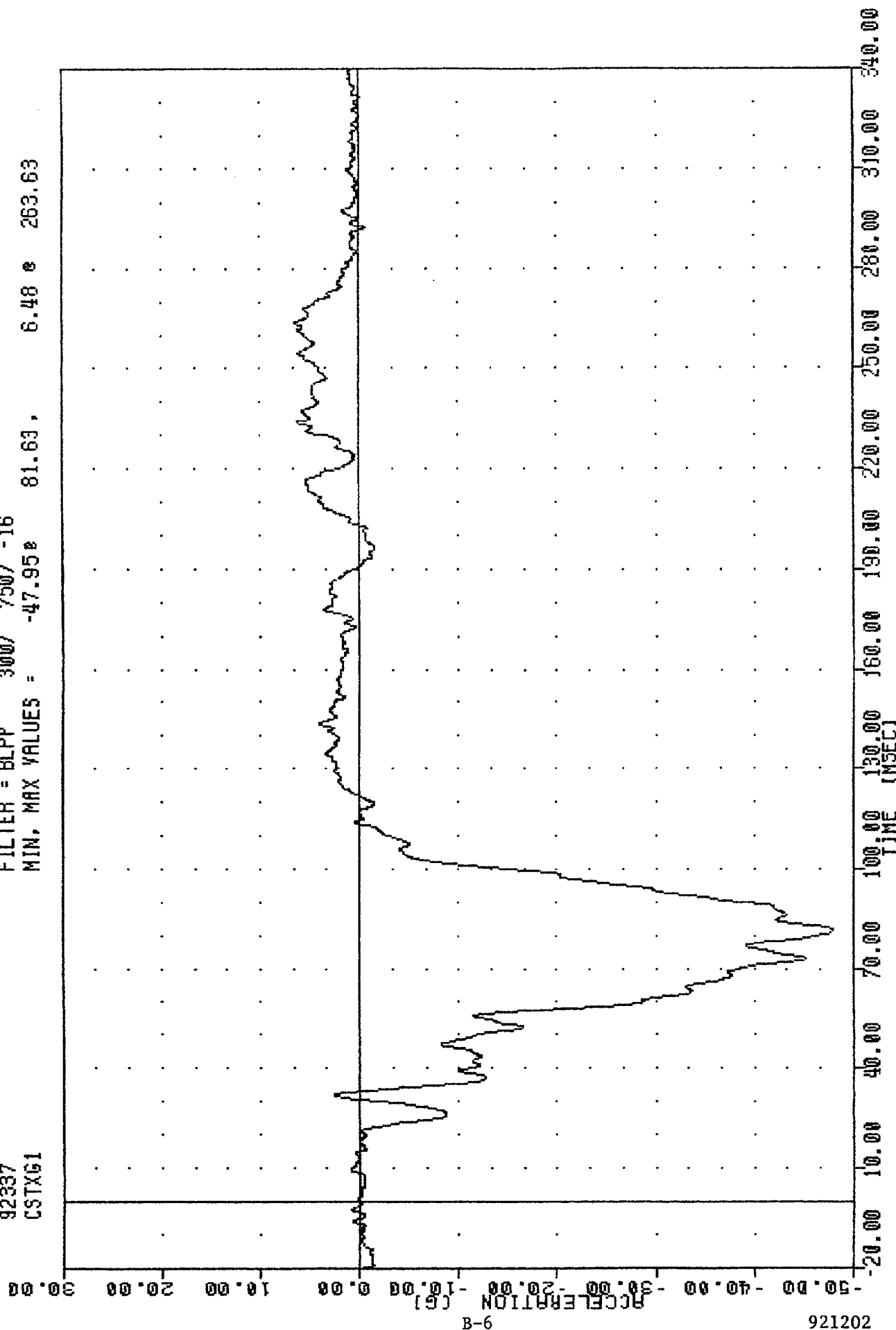
TRC, 921202
 208 COMPLIANCE TESTING
 92337
 HEDRG1

FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = 0.23 8.00, 68.82 74.25



TRC 921202
 208 COMPLIANCE TESTING
 92337
 CSTXG1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -47.95 81.63 6.48 263.63



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
 DRIVER CHEST X-AXIS ACCELERATION

TRC

921202

200 COMPLIANCE TESTING

92337

CSTY61

FILTER = BLPP 300/ 750/ -16

MIN. MAX VALUES = -6.46 85.38

3.67 237.50

40.00

30.00

20.00

10.00

0.00

-10.00

-20.00

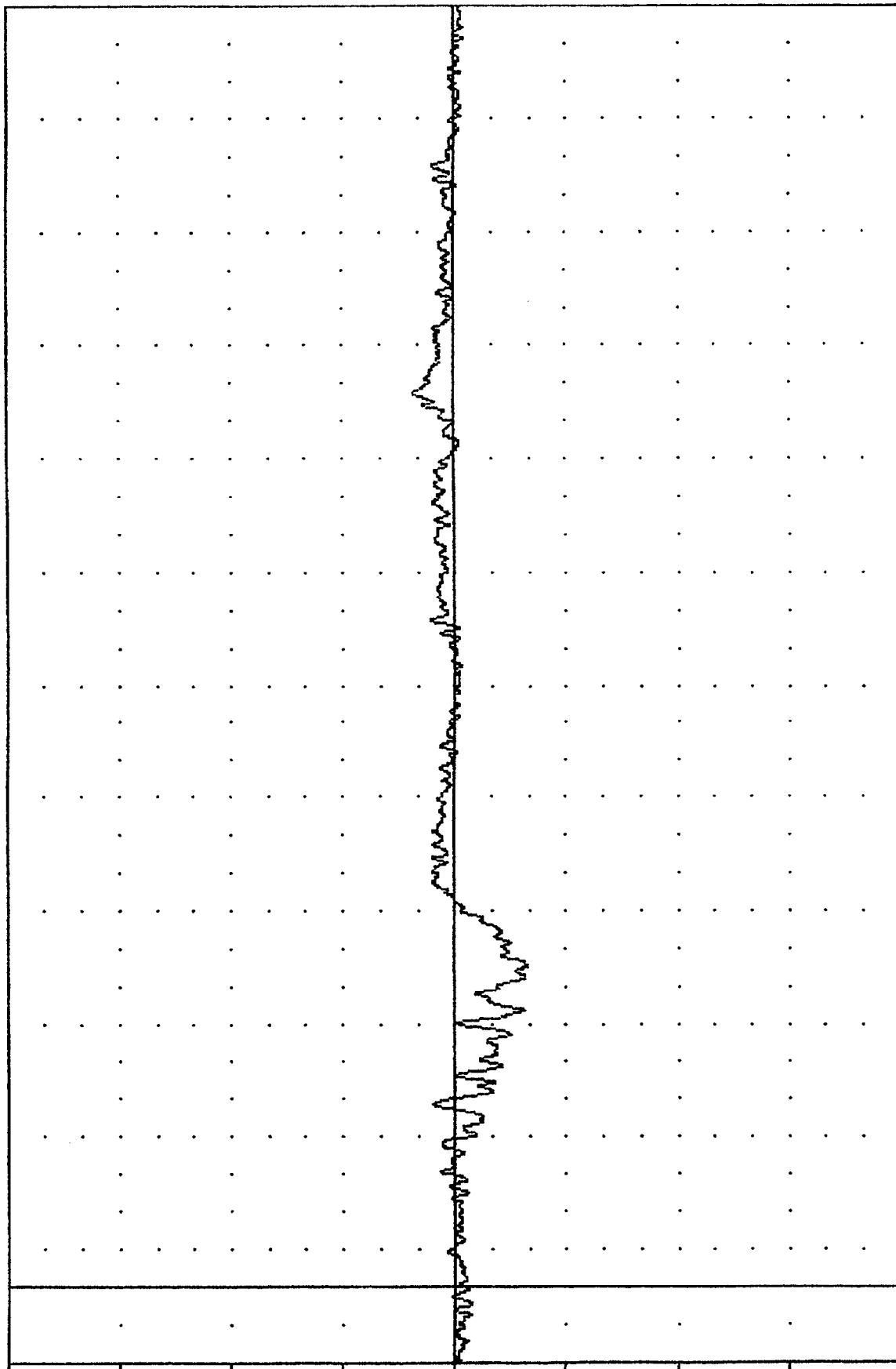
-30.00

-40.00

ACCELERATION (G)

B-7

921202



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
TIME (MSEC)

TRC 921202

208 COMPLIANCE TESTING

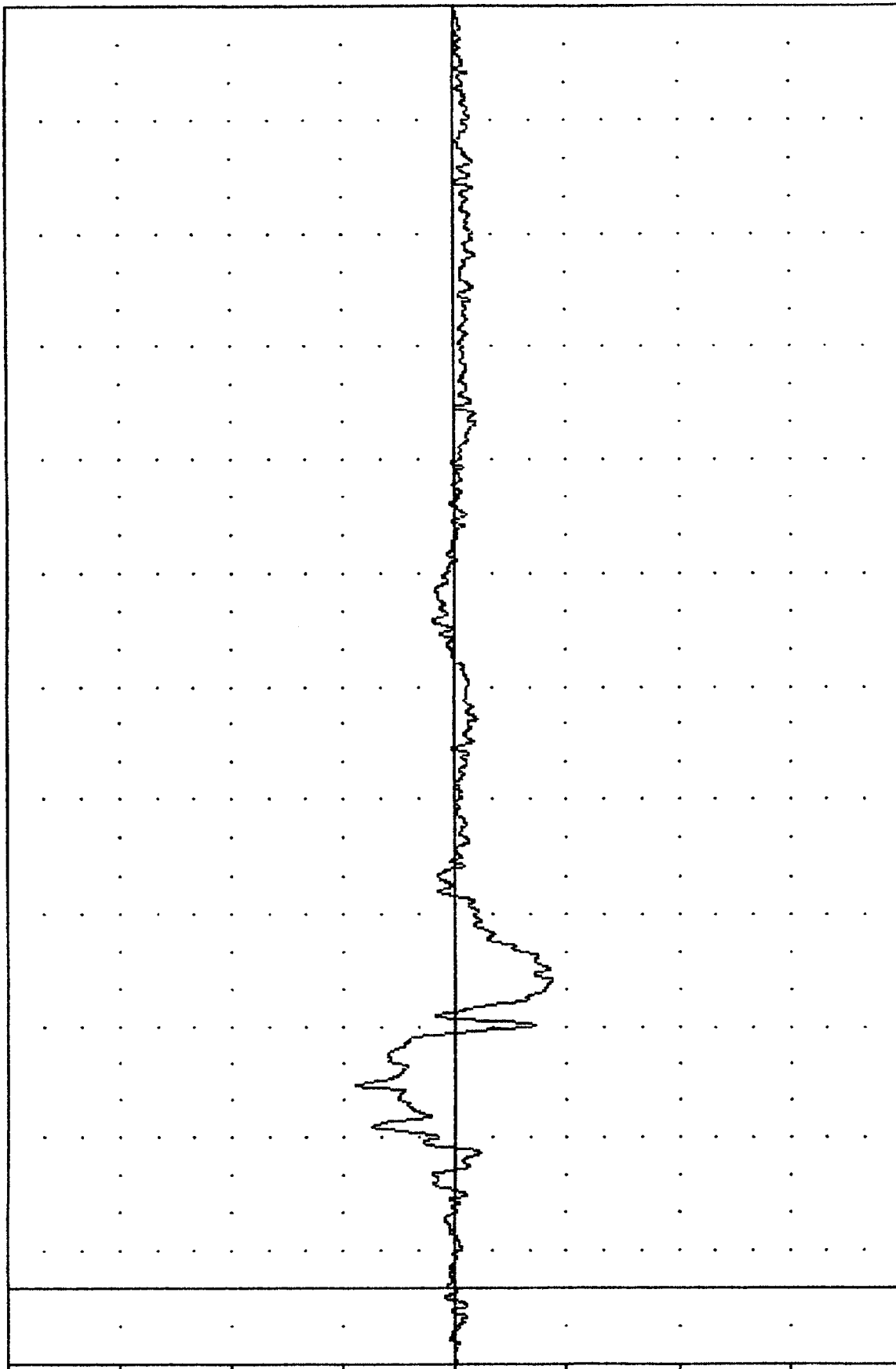
92337

CSTZG1

FILTER = BLPP 300/ 750/ -16

MIN. MAX VALUES = -8.75 82.38 9.00 54.13

ACCELERATION (G)



20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00

921202

B-8

1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
DRIVER CHEST Z-AXIS ACCELERATION

TRC 921202

208 COMPLIANCE TESTING

92337

CSTR61

FILTER = BLPP 300/ 750/ -16

MIN, MAX VALUES = 0.118

8.38,

49.03 s

81.75

105.00

90.00

75.00

60.00

45.00

30.00

15.00

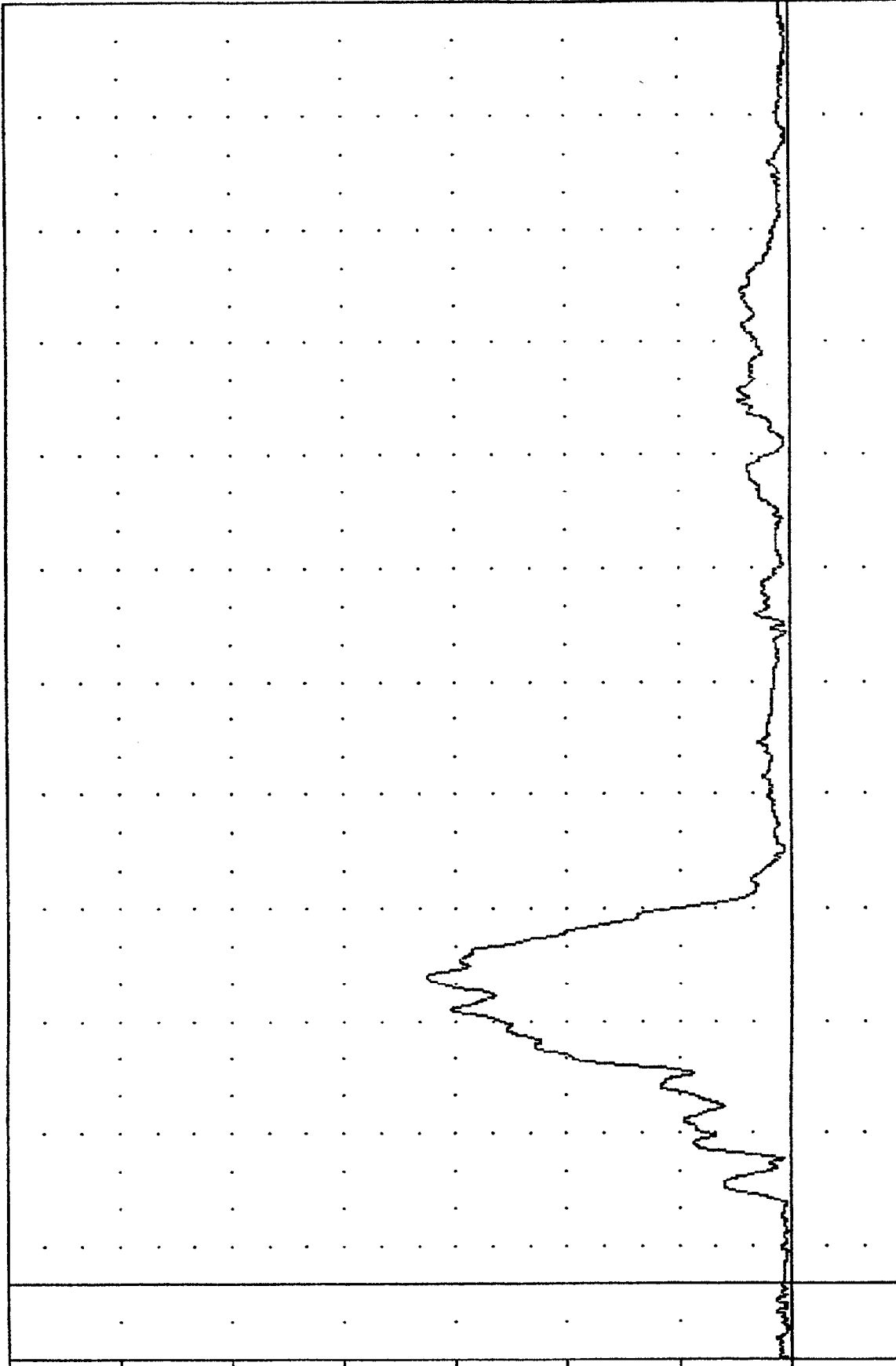
0.00

-15.00

ACCELERATION (G)

B-9

921202

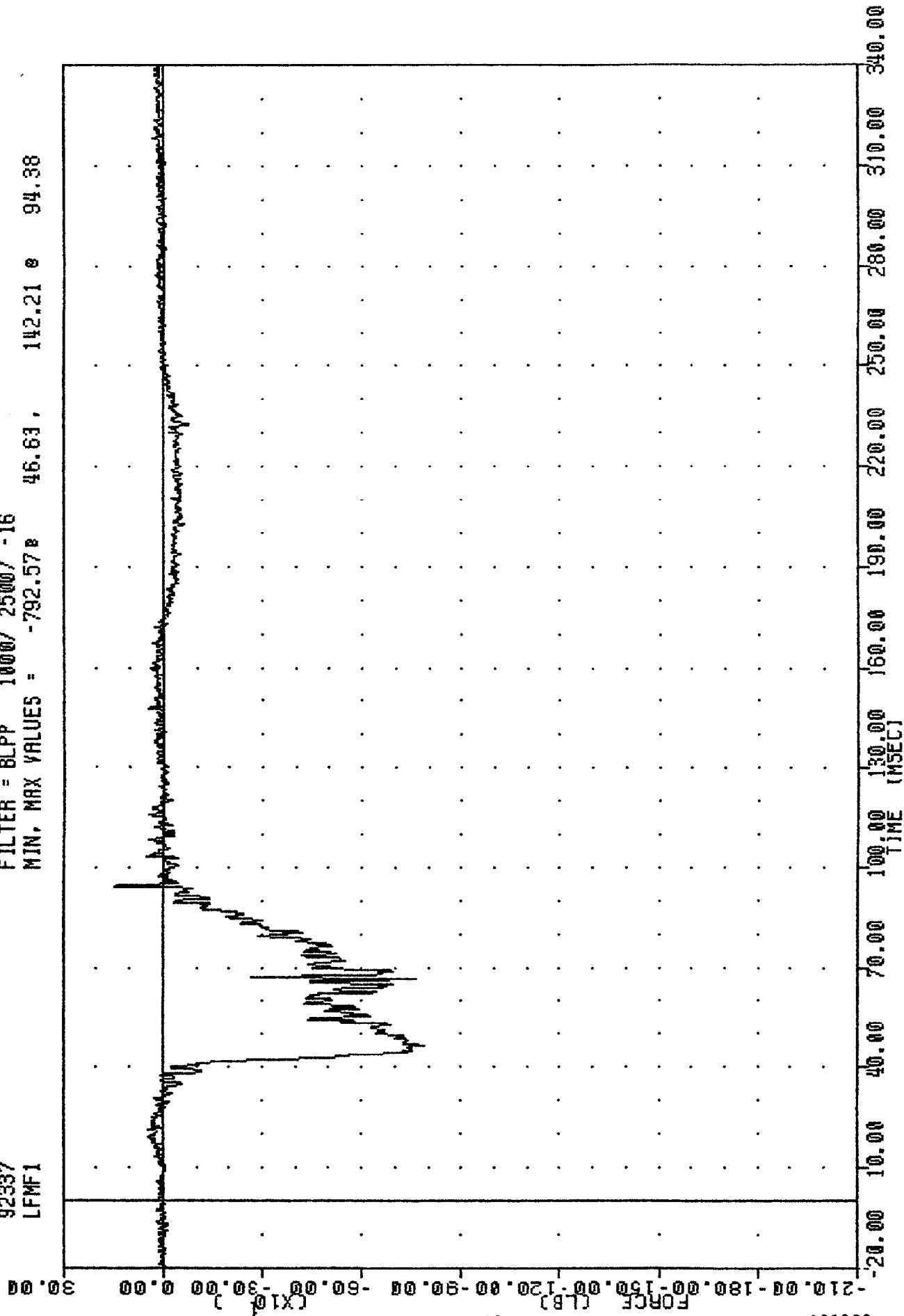


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
DRIVER CHEST RESULTANT ACCELERATION

TAC , 921202
200 COMPLIANCE TESTING
92337
LFMF1

FILTER = BLPP 1000/ 2500/ -16
MIN, MAX VALUES = -792.57 46.63, 142.21 94.38



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
DRIVER LEFT FEMUR FORCE

TRC

921202

208 COMPLIANCE TESTING

92337

RFMF1

FILTER = BLPP 1000/ 2500/ -16

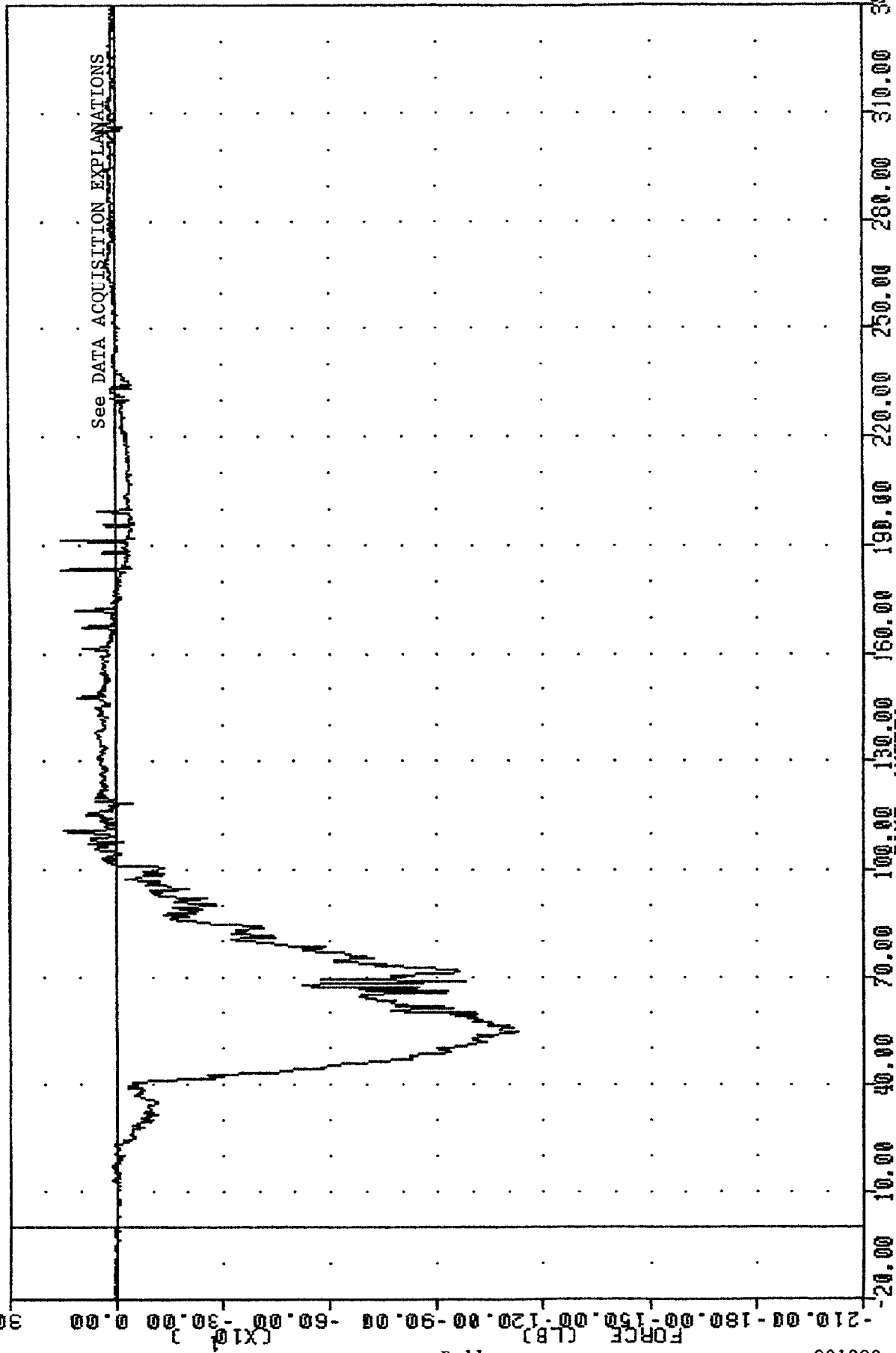
MIN. MAX VALUES = -1126.60 54.75, 154.29 191.38

30.00

0.00
-30.00
-60.00
-90.00
-120.00
-150.00
-180.00
-210.00

B-11

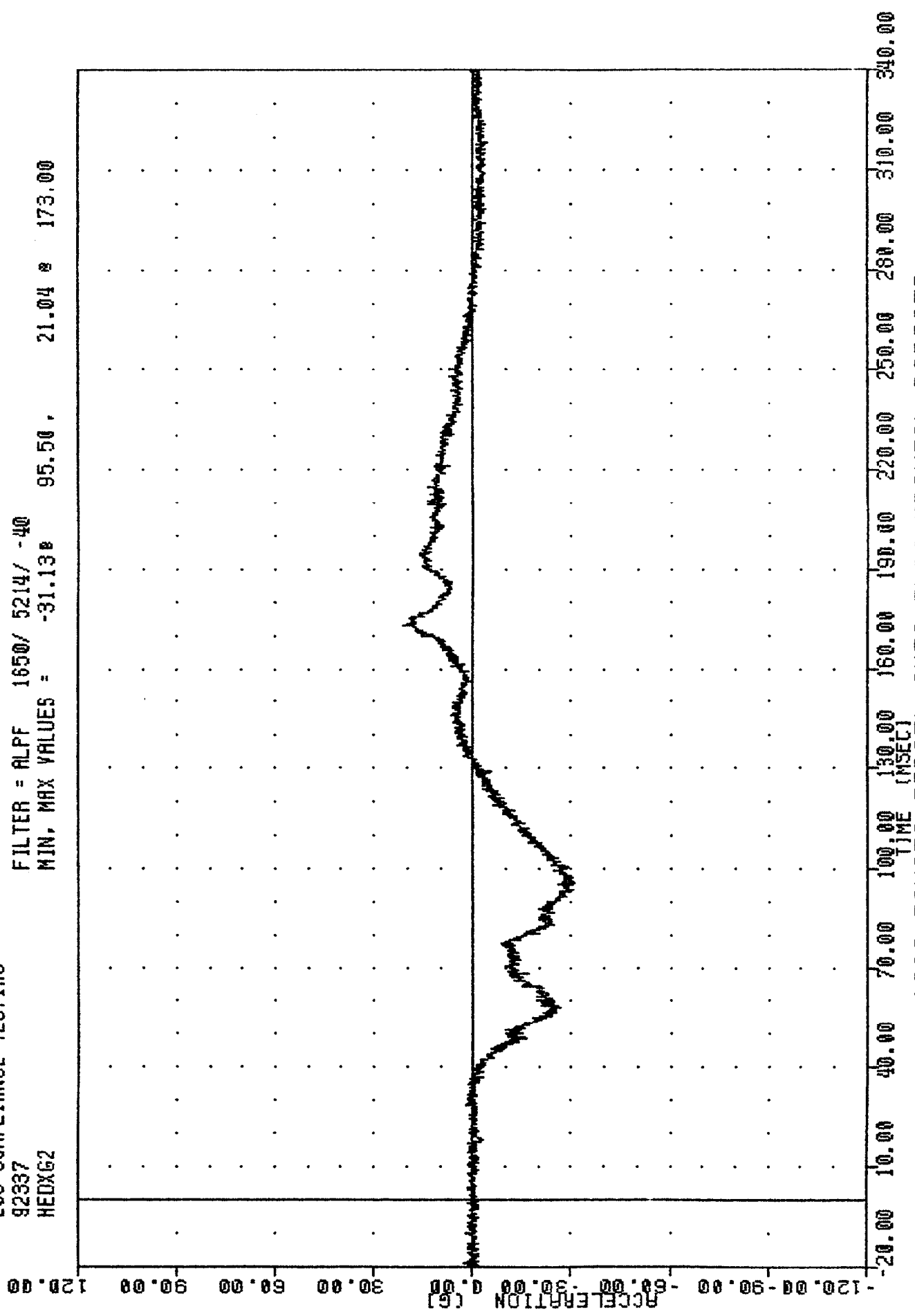
921202



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
DRIVER RIGHT FEMUR FORCE

TRC 921202
208 COMPLIANCE TESTING
92337
HEDXG2

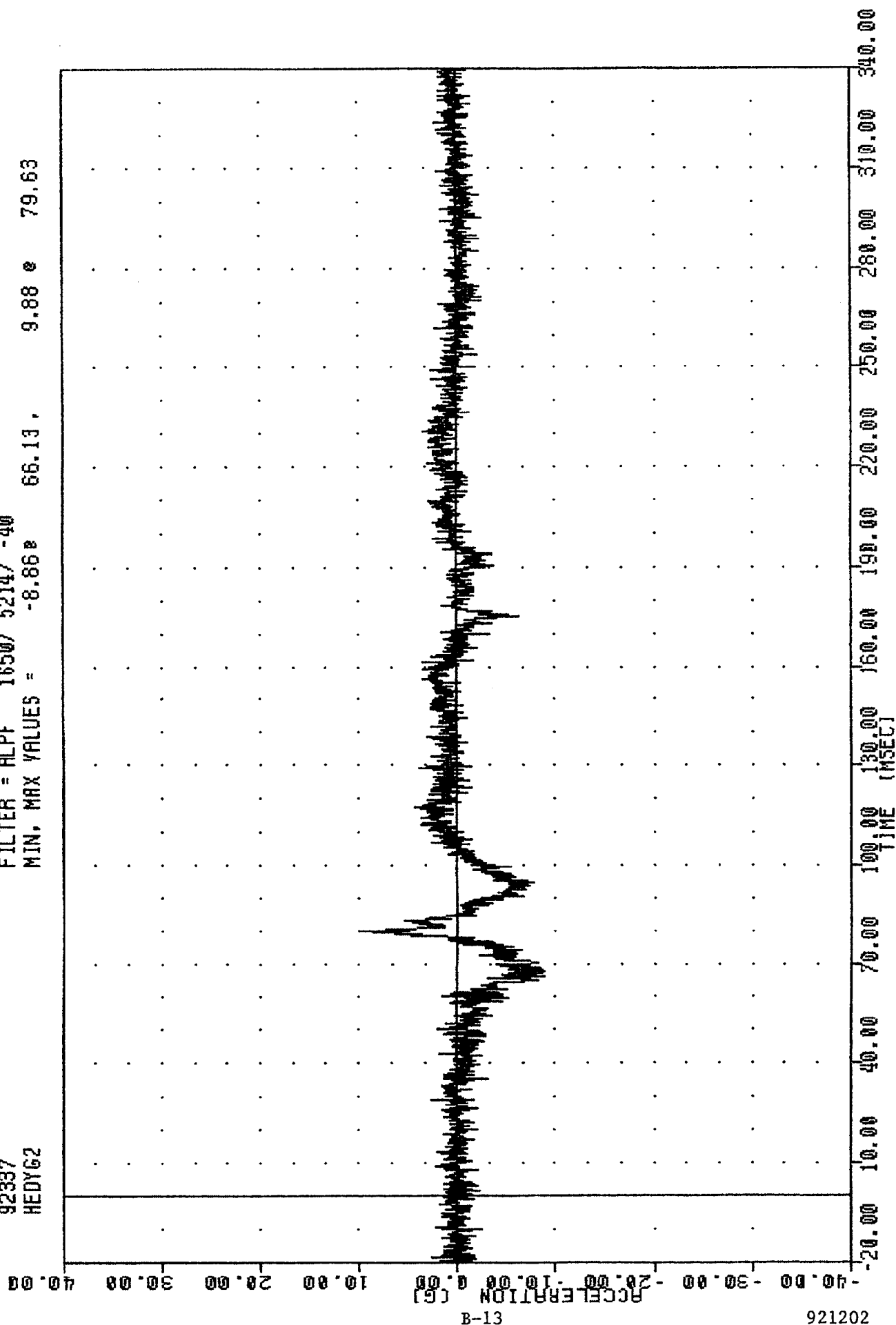
FILTER = ALPF 1650/ 5214/ -40
MIN, MAX VALUES = -31.13e 95.50, 21.04 e 173.00



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER HEAD X-AXIS ACCELERATION

TRC 921202
208 COMPLIANCE TESTING
92337
HEDYG2

FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -8.86 e 66.13, 9.88 e 79.63



TRC 921202

200 COMPLIANCE TESTING

92337

HEDZG2

FILTER = ALPF 1650/ 5214/ -40

MIN. MAX VALUES = -71.72 76.38 2.89 -9.75

120.00

90.00

60.00

30.00

0.00

-30.00

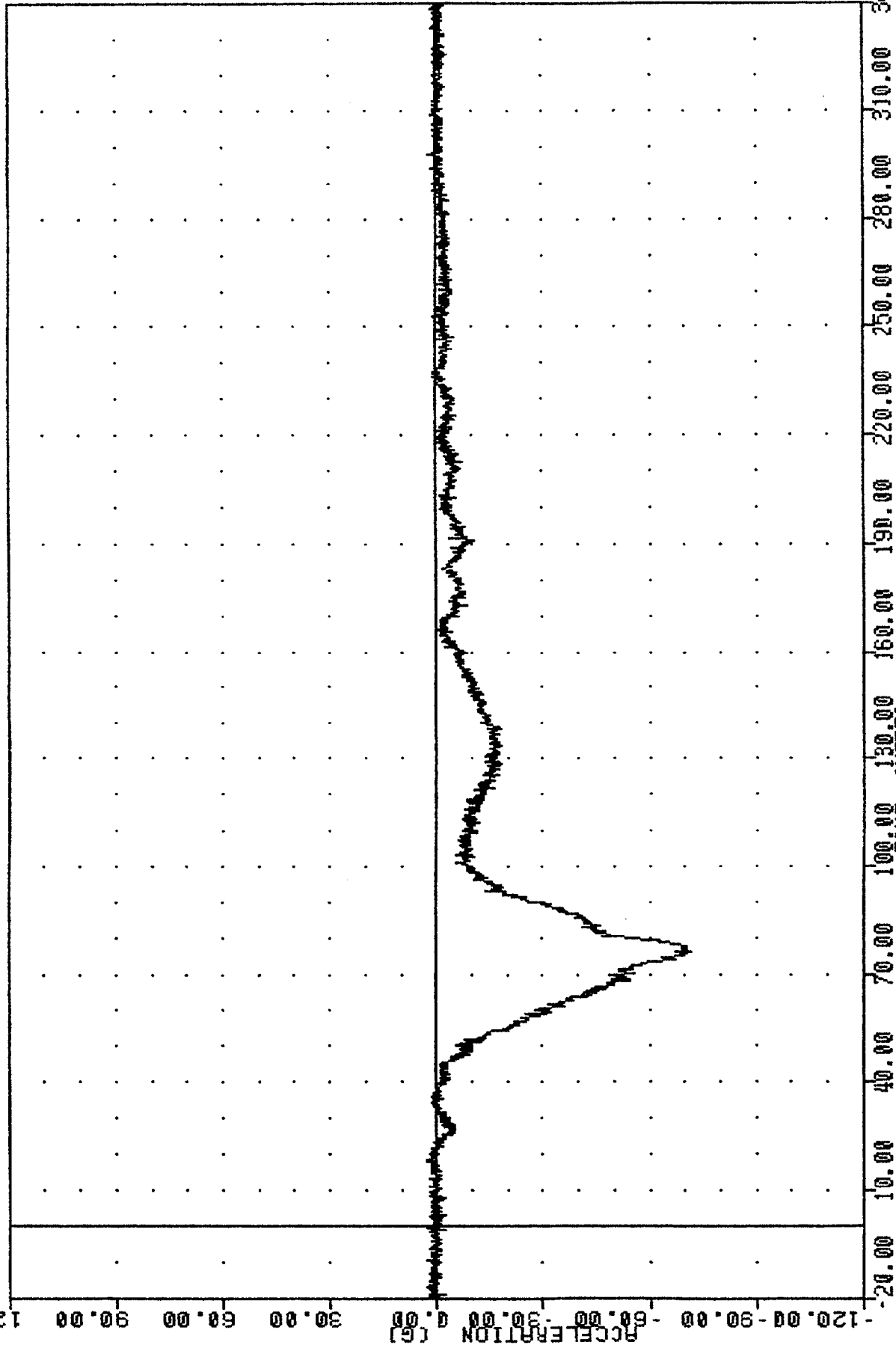
-60.00

-90.00

-120.00

B-14

921202



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER HEAD Z-AXIS ACCELERATION

TRC 921202

208 COMPLIANCE TESTING

92337

HEAD62

FILTER = ALPF 1650/ 5214/ -40

MIN. MAX VALUES = 0.108

5.13

72.48

76.38

105.00

90.00

75.00

60.00

45.00

30.00

15.00

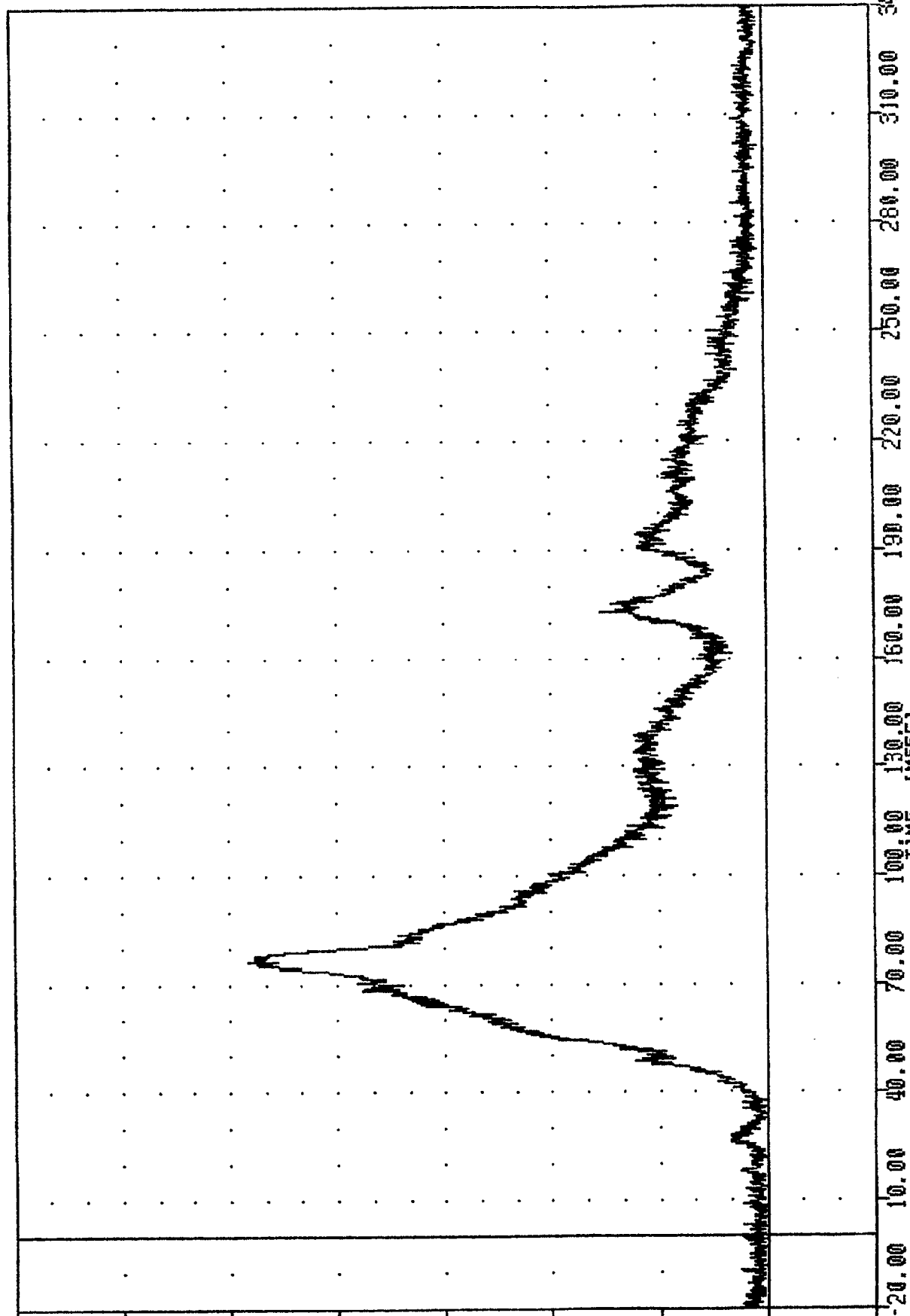
0.00

-15.00

ACCELERATION (G)

B-15

921202



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION

TRC 921202

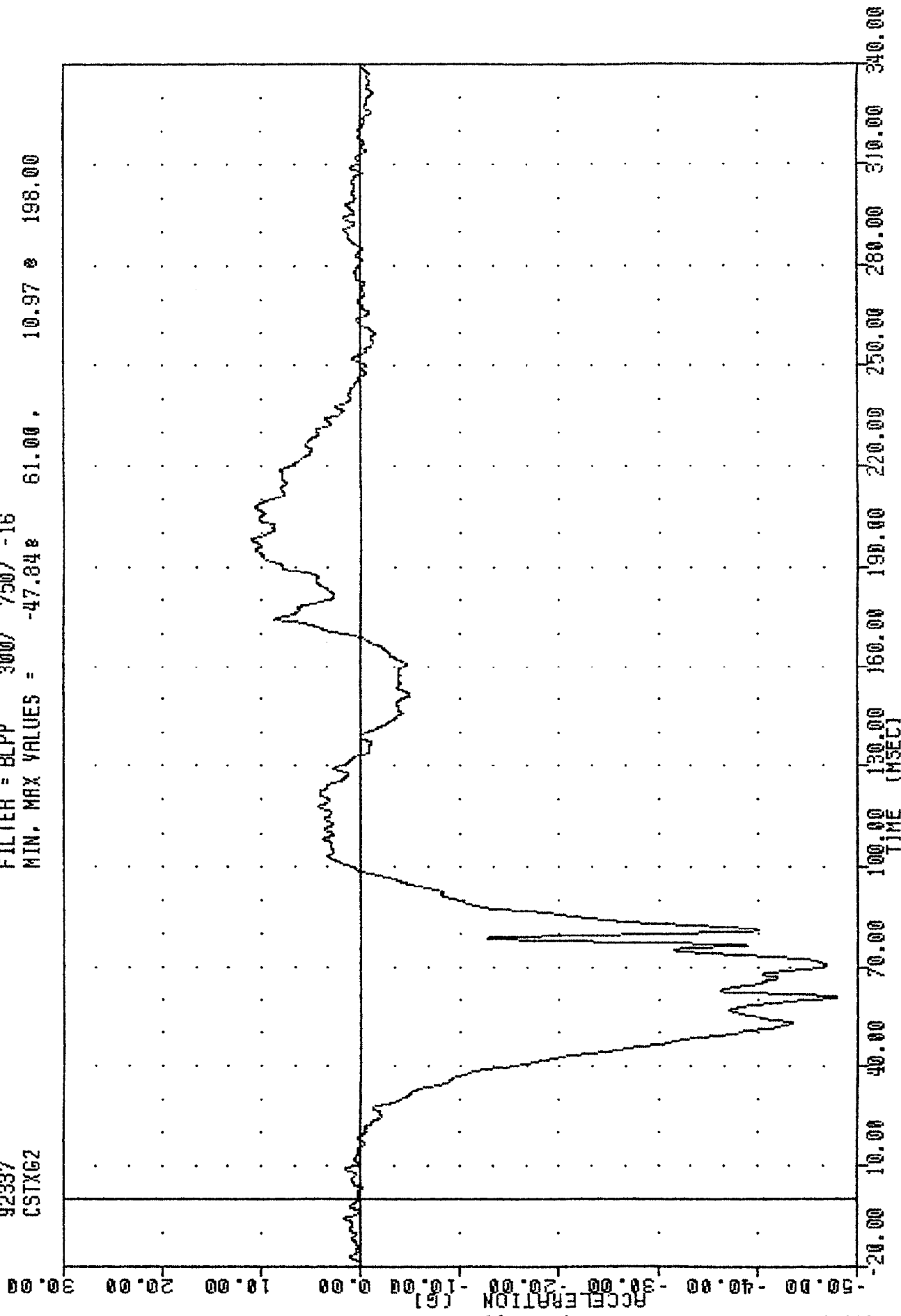
200 COMPLIANCE TESTING

92337

CSTXG2

FILTER = BLPP 300/ 750/ -16

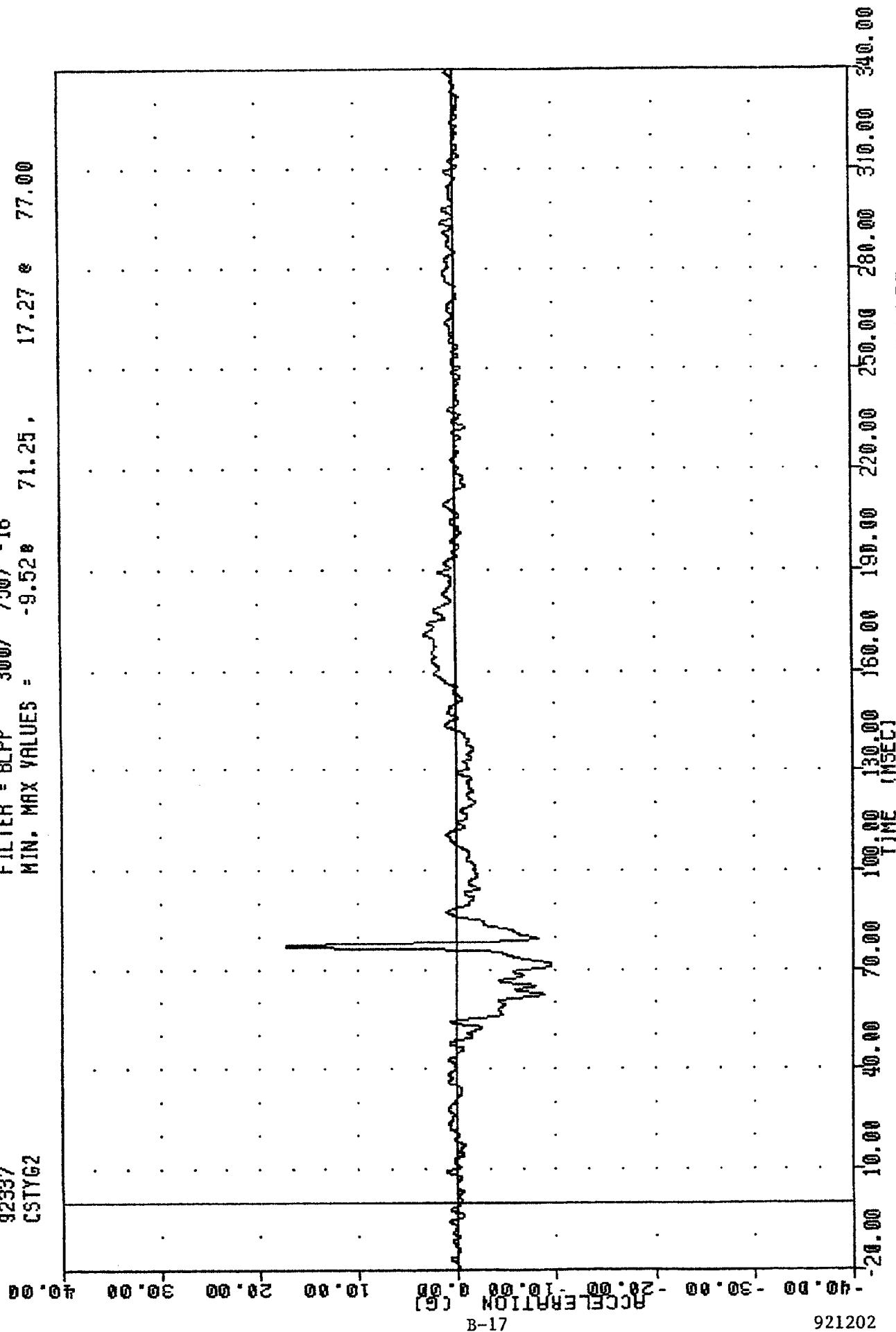
MIN. MAX VALUES = -47.84e 61.00. 10.97 e 198.00



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER CHEST X-AXIS ACCELERATION

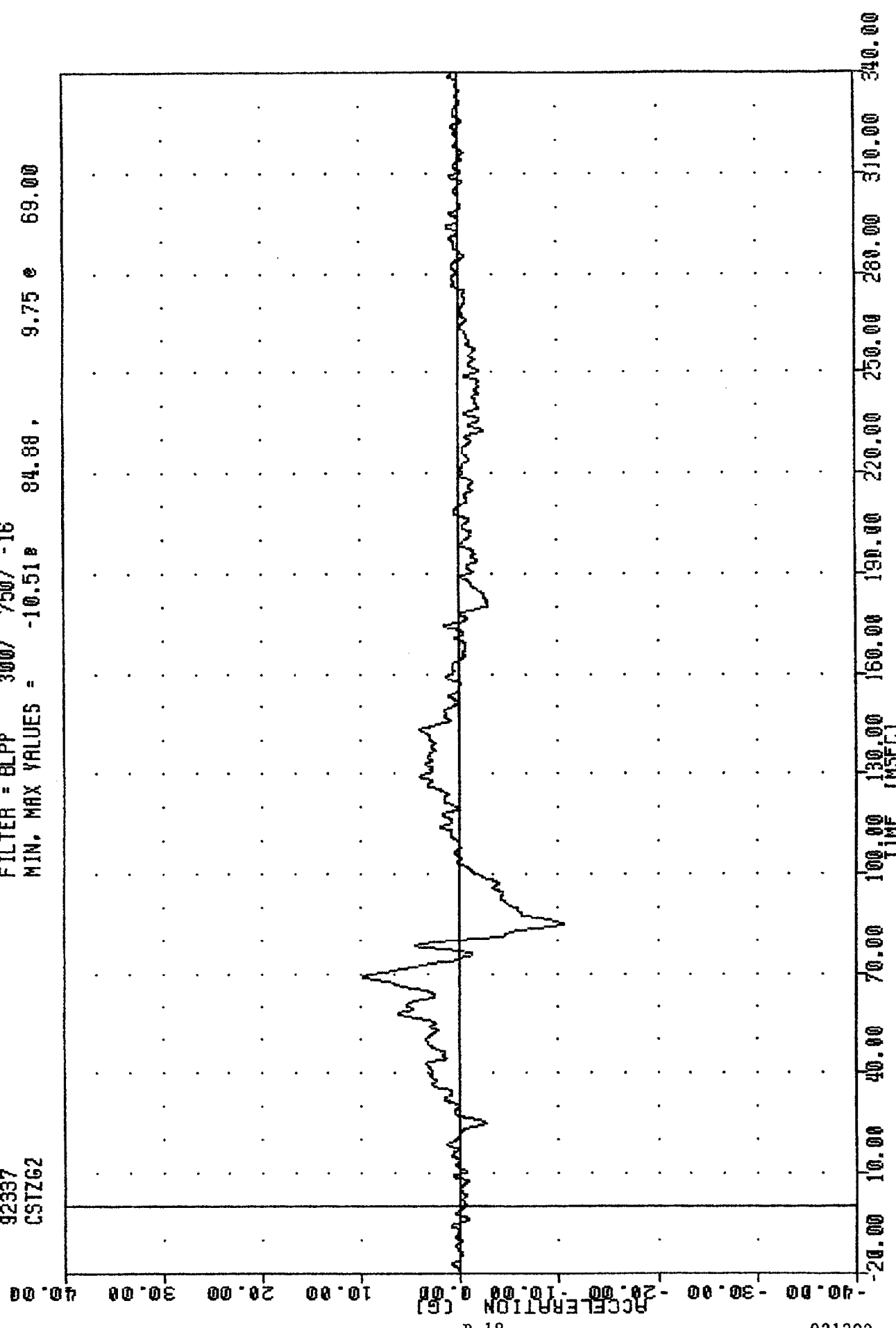
TRC , 921202
200 COMPLIANCE TESTING
92337
CSTYG2

FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = 71.25, 17.27 e 77.00



TRC 921202
208 COMPLIANCE TESTING
92337
CSTZ62

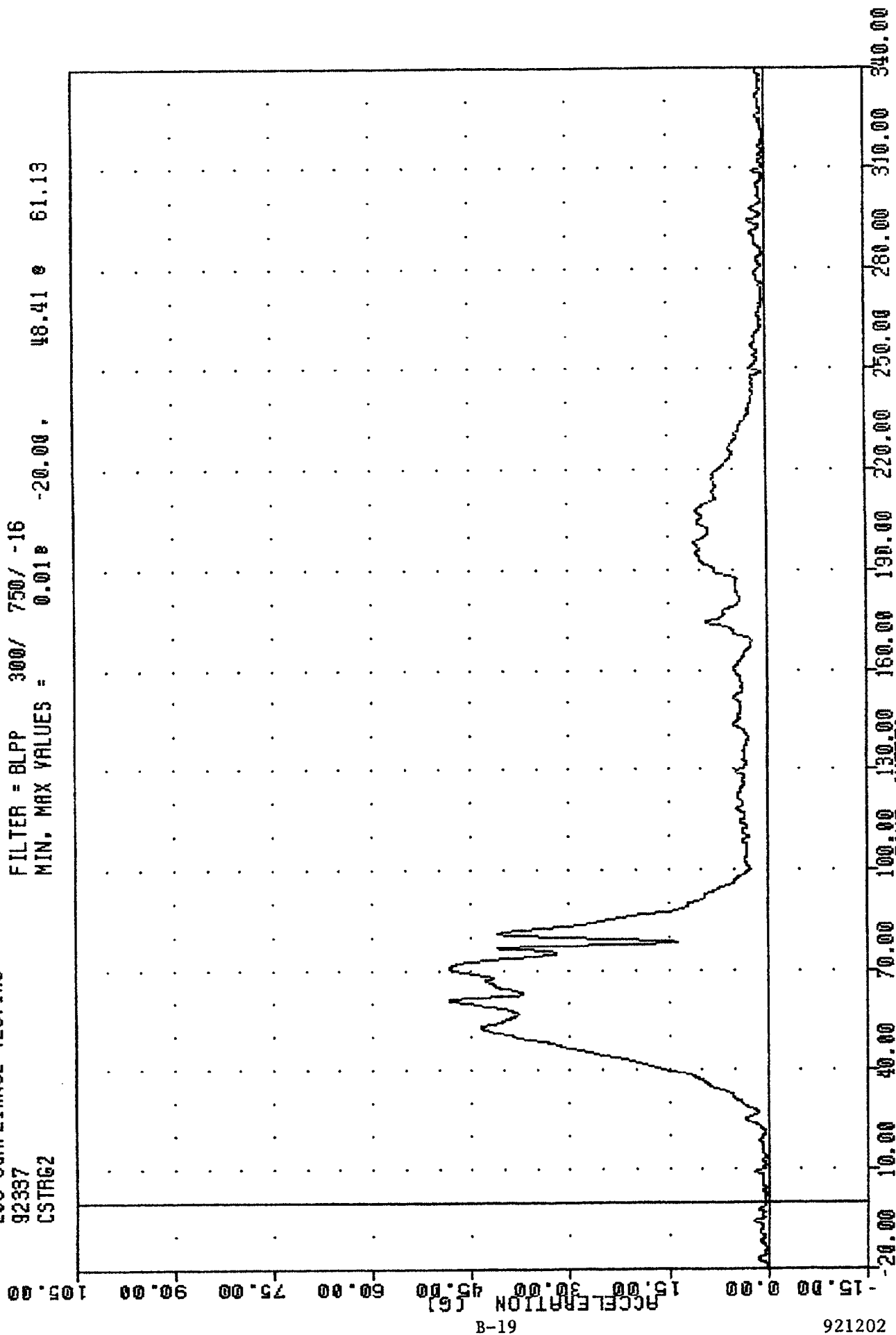
FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -10.51 84.88 9.75 69.00



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER CHEST Z-AXIS ACCELERATION

TRC 921202
200 COMPLIANCE TESTING
92337
CSTRG2

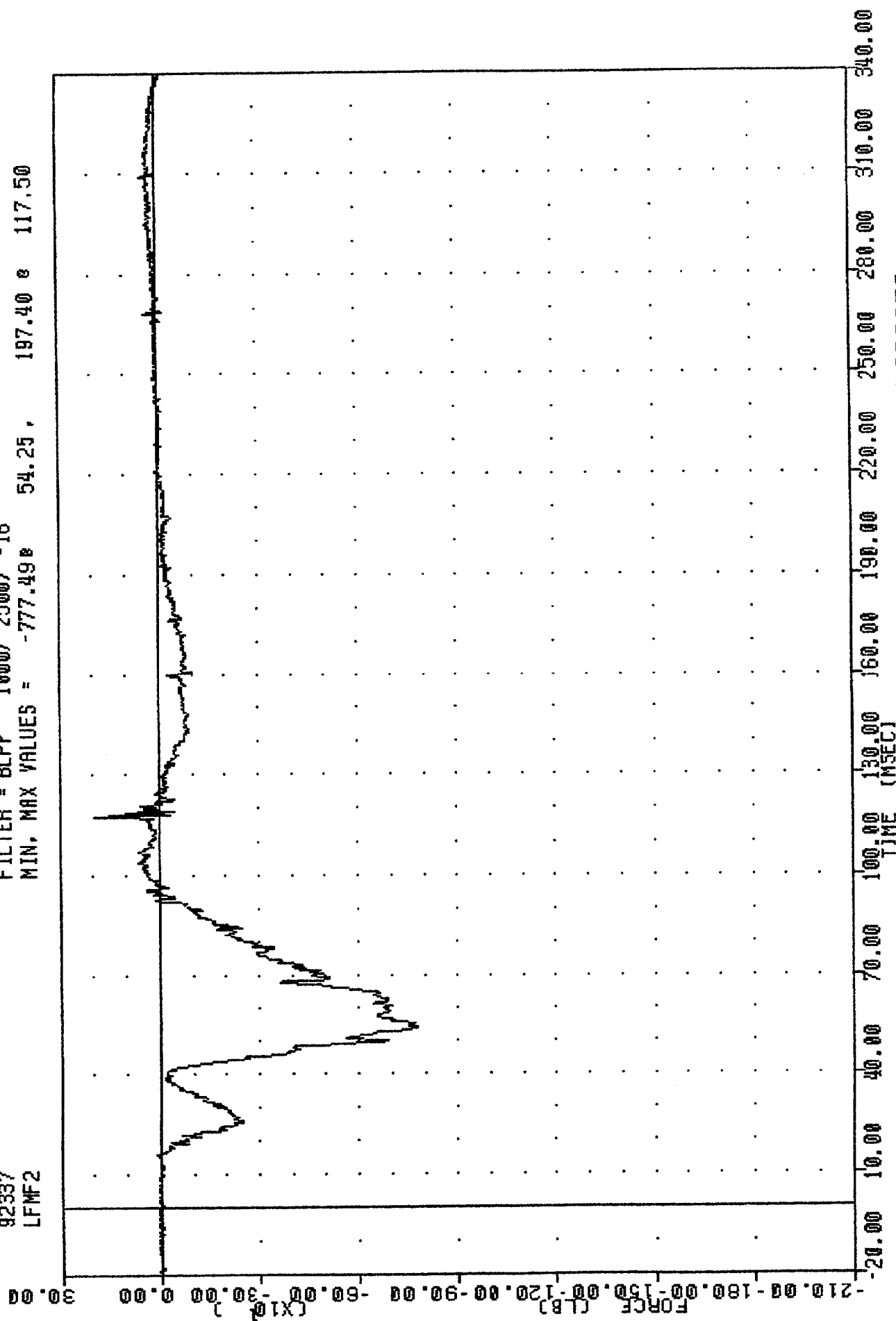
FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = 0.018 -20.00 48.41 61.13



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION

TRC 921202
 200 COMPLIANCE TESTING
 92337
 LFMF2

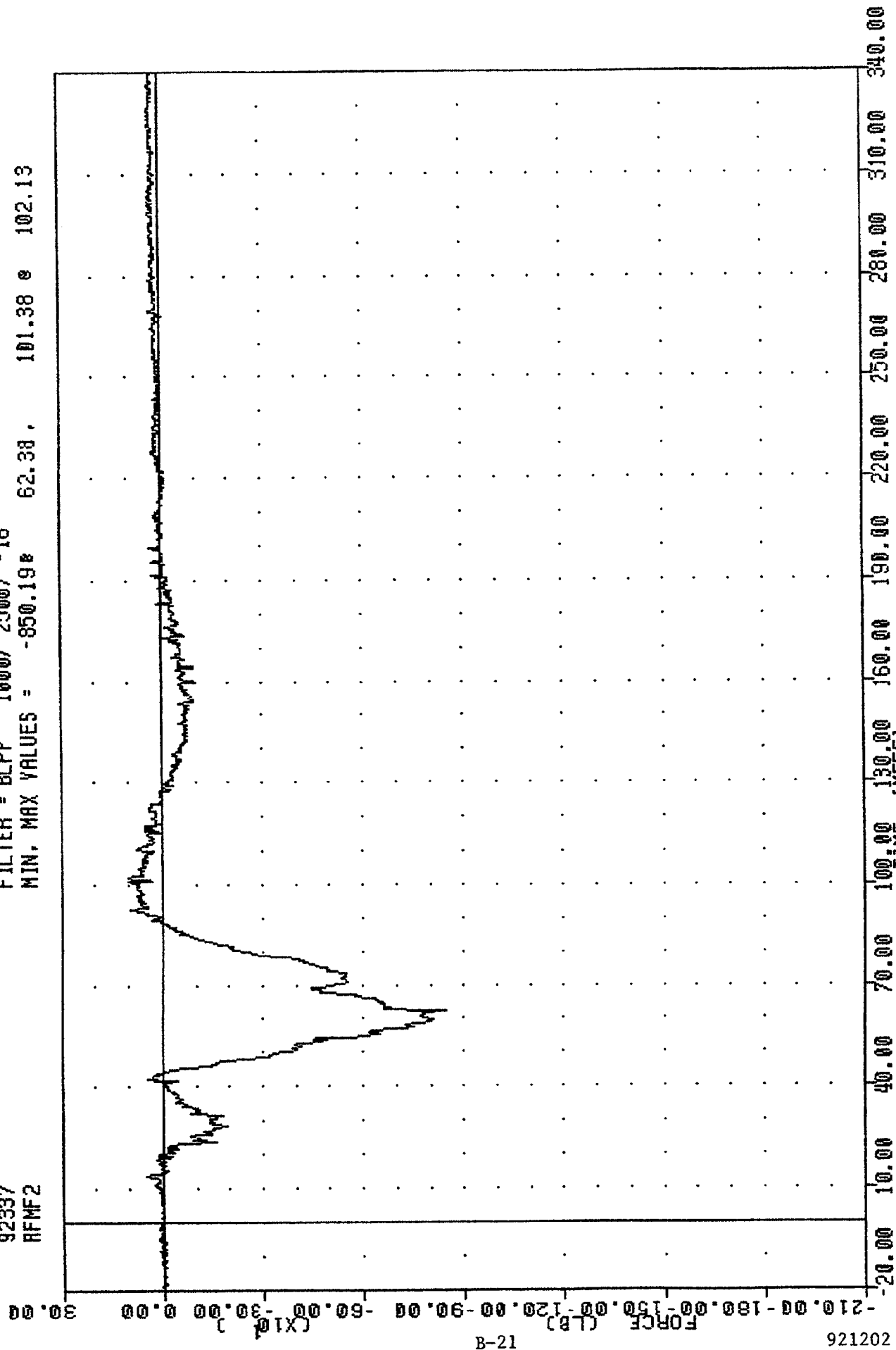
FILTER = BLPP 1000/ 2500/ -16
 MIN. MAX VALUES = -777.490 54.25 197.40 117.50



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER LEFT FEMUR FORCE

TRC 921202
208 COMPLIANCE TESTING
92337
RFMF2

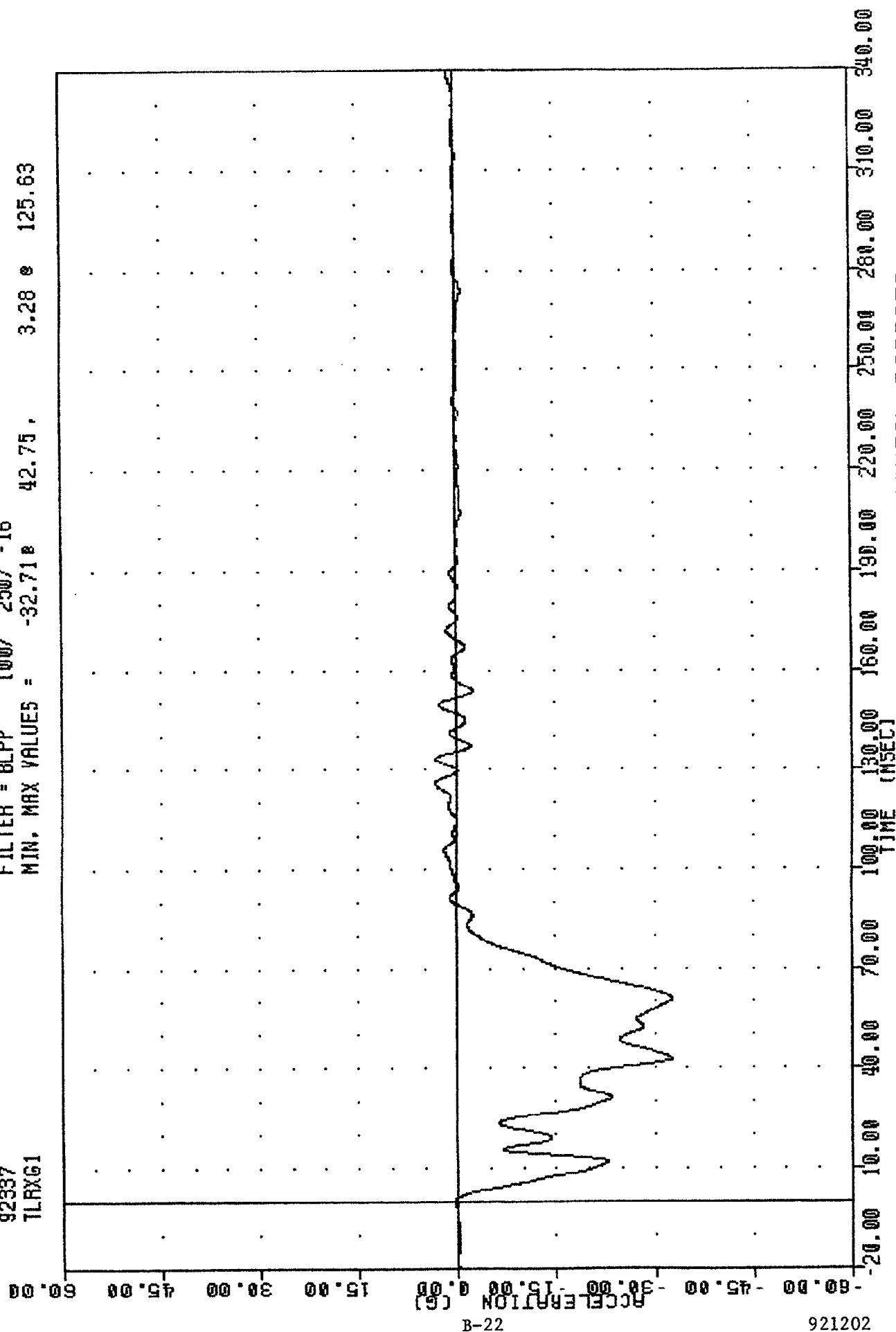
FILTER = BLPP 1000/ 2500/ -16
MIN. MAX VALUES = -850.198 62.38 101.38 @ 102.13



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER RIGHT FEMUR FORCE

TRC 921202
200 COMPLIANCE TESTING
92337
TLRXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -32.71 42.75 3.28 125.63



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
LEFT REAR SEAT X-AXIS ACCELERATION

TRC 921202

208 COMPLIANCE TESTING

92337

TRRXG1

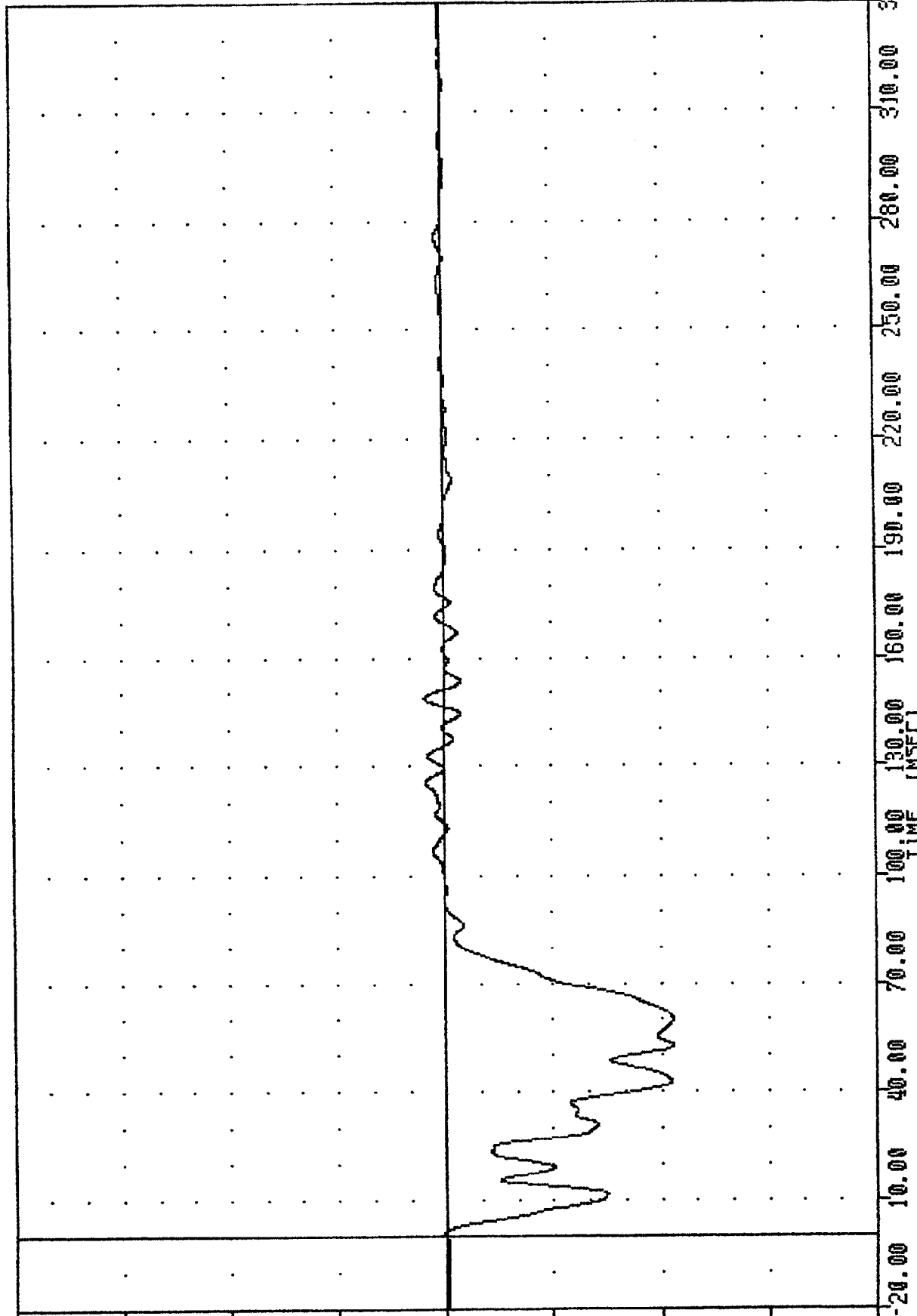
FILTER = BLPP 100/ 250/ -16

MIN. MAX VALUES = -31.73 52.75 2.81 148.63

ACCELERATION (G)

B-23

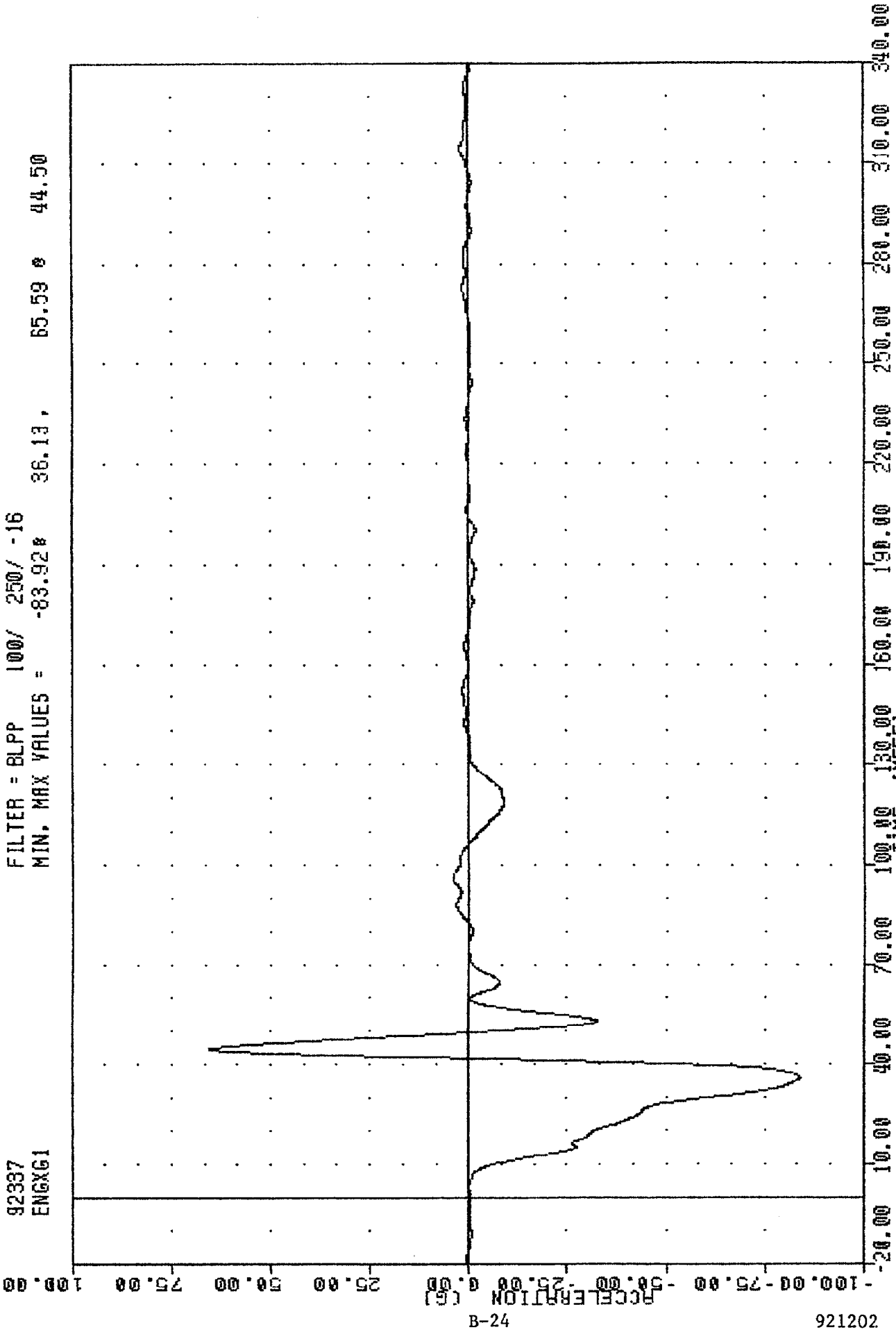
921202



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
RIGHT REAR SEAT X-AXIS ACCELERATION

TRC 921202
200 COMPLIANCE TESTING
92337
ENGXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -83.92# 36.13, 65.59 # 44.50



TRC 921202

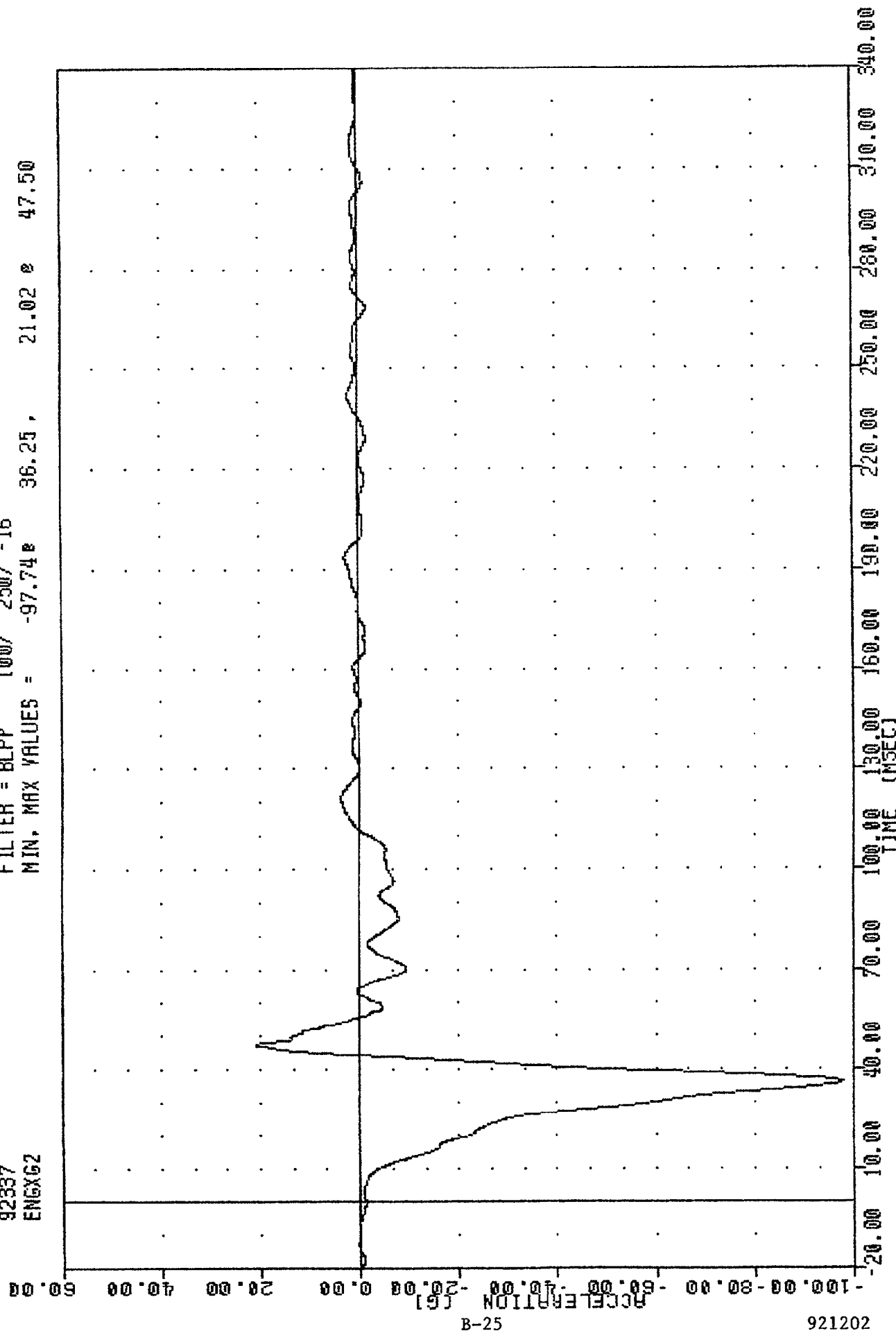
200 COMPLIANCE TESTING

92337

ENGX62

FILTER = BLPP 100/ 250/ -16

MIN, MAX VALUES = -97.74 36.25 21.02 47.50



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
ENGINE BOTTOM X-AXIS ACCELERATION

TRC 921202

200 COMPLIANCE TESTING

92337

BCRXG1

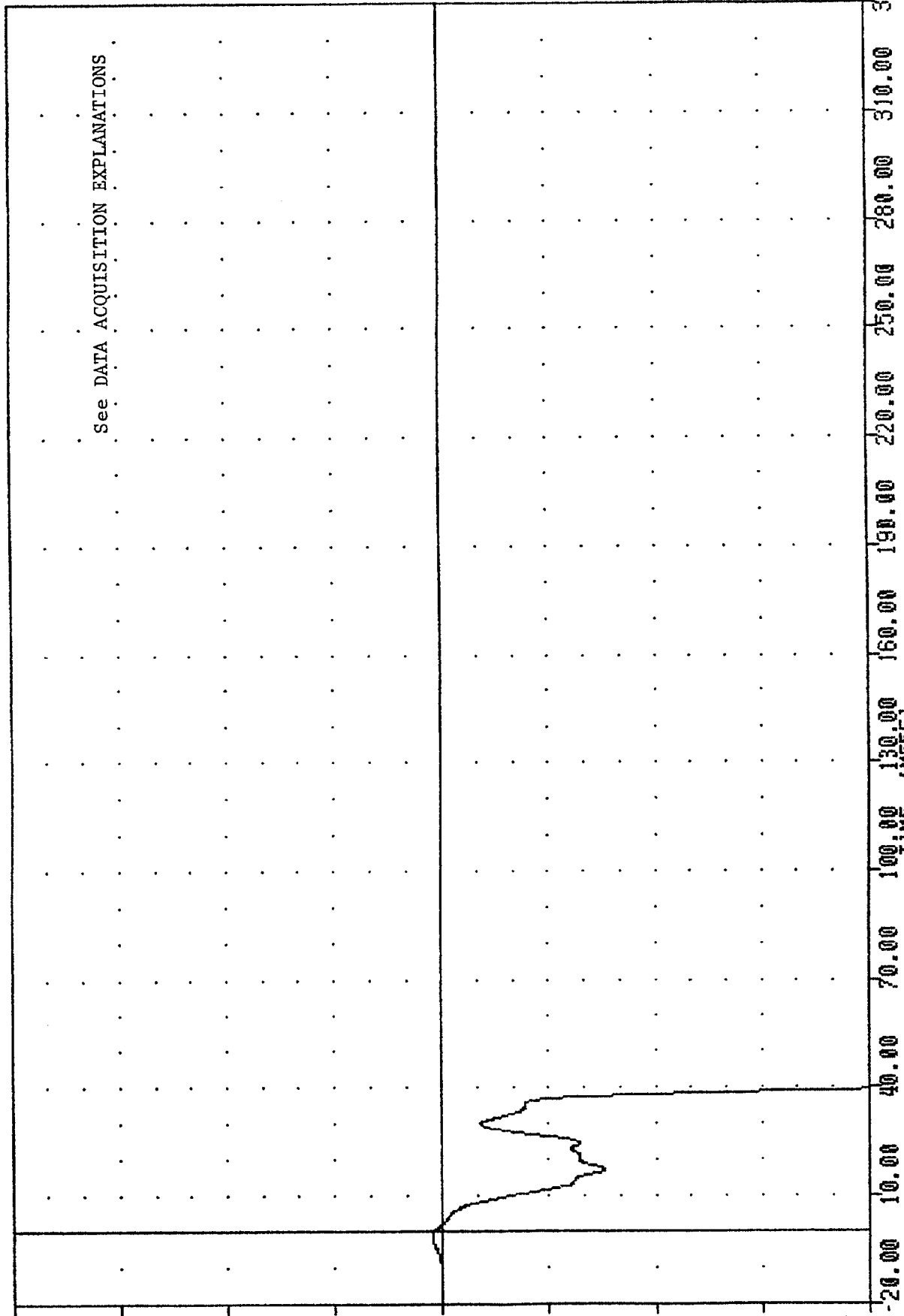
FILTER = BLPP 100/ 250/ -16

MIN. MAX VALUES = -1037.59 49.25, 1.44 -1.38

ACCELERATION (G)

B-26

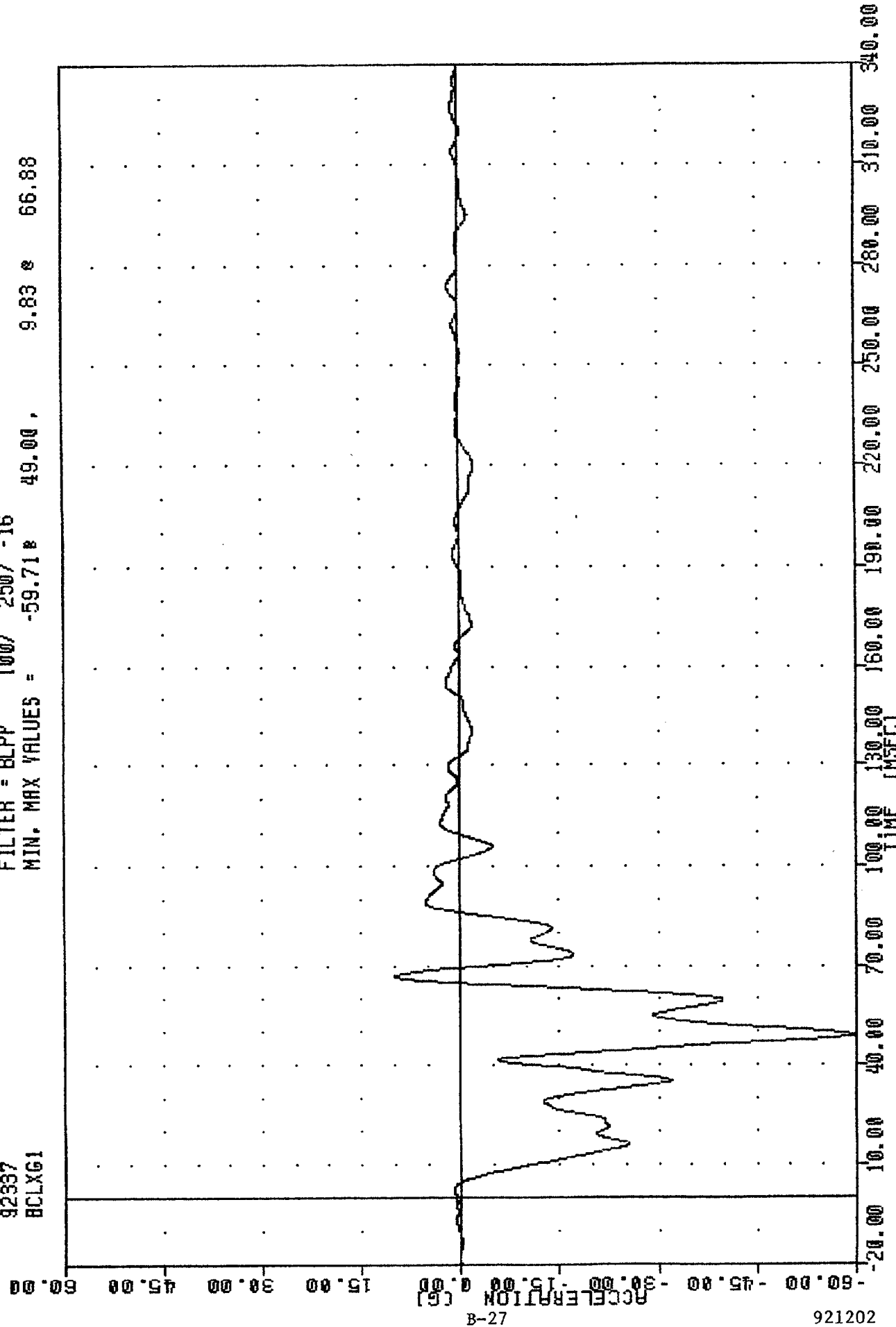
921202



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
RIGHT BRAKE CALIPER X-AXIS ACCELERATION

TRC 921202
 200 COMPLIANCE TESTING
 92337
 BCLXG1

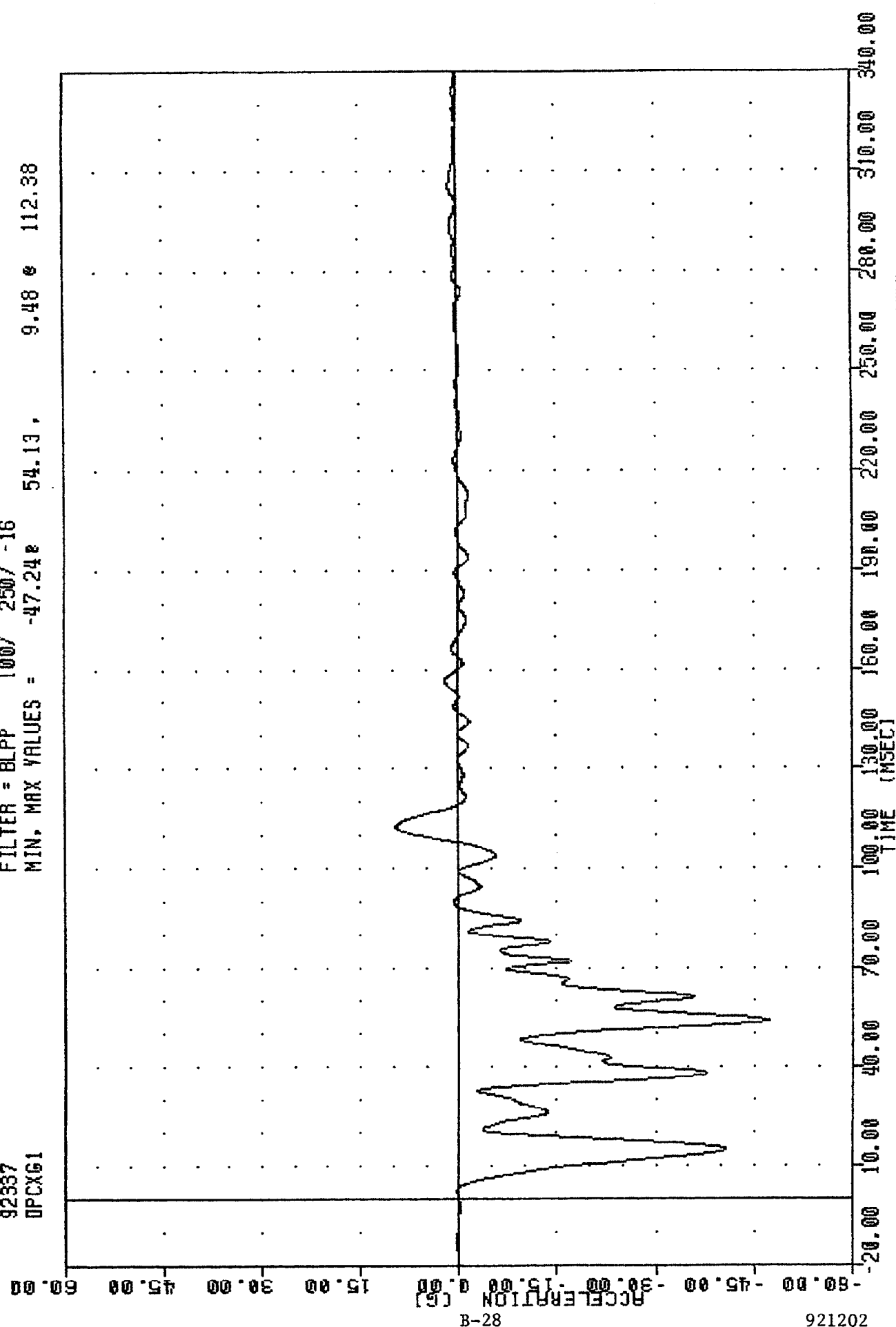
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -59.71 49.00, 9.83 66.88



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
 LEFT BRAKE CALIPER X-AXIS ACCELERATION

TRC 921202
208 COMPLIANCE TESTING
92337
DPCXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -47.24 54.13 9.48 112.38



1993 TOYOTA TERCEL INTO FLAT FRONTAL BARRIER
INSTRUMENT PANEL CENTER X-AXIS ACCELERATION