

REPORT NOS. 208-TRC-92-007

212-TRC-92-007

301-TRC-92-007

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

FORD MOTOR COMPANY OF CANADA, LTD.

1992 FORD CROWN VICTORIA

4-DOOR SEDAN

NHTSA NO. CN0206

TRC TEST NO. 920122

THE TRANSPORTATION RESEARCH CENTER OF OHIO

10820 STATE ROUTE 347

EAST LIBERTY, OHIO 43319



FEBRUARY 7, 1992

FINAL REPORT

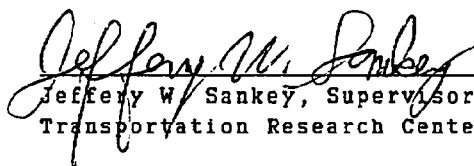
PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF VEHICLE SAFETY COMPLIANCE (NEF-31)
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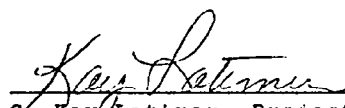
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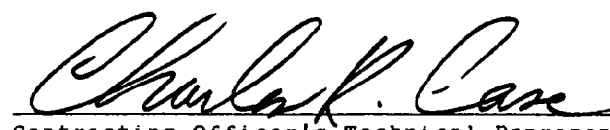
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1. Report No. 208-TRC-92-007 212-TRC-92-007 301-TRC-92-007	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle FINAL REPORT OF FMVSS NOS. 208, 212, 219 (PARTIAL), AND 301 COMPLIANCE TESTING OF A 1992 FORD CROWN VICTORIA 4-DOOR SEDAN, NHTSA NO. CN0206		5. Report Date February 7, 1992	
		6. Performing Organization Code	
7. Author(s) J. W. Sankey, Supervisor, Laboratory, Engineering		8. Performing Organization Report No. 208-TRC-92-007 212-TRC-92-007 301-TRC-92-007	
9. Performing Organization Name and Address Transportation Research Center of Ohio 10820 State Route 347 East Liberty, Ohio 43319		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No. DTNH22-90-C-21003	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (NEF-31) 400 Seventh St., S.W., Washington, DC 20590		13. Type of Report and Period Covered FINAL REPORT JANUARY - FEBRUARY 1992	
		14. Sponsoring Agency Code NEF-30	
15. Supplementary Notes			
16. Abstract A 30 mph flat frontal barrier impact test was conducted on a 1992 Ford Crown Victoria 4-door sedan, NHTSA No. CN0206, at the Transportation Research Center of Ohio on January 22, 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 15.2 inches. The ambient temperature was 72° F. The driver's head injury criteria (HIC) was 431. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 53.9 g. The driver's left and right femur maximum axial forces were 1196 pounds and 985 pounds, respectively. (See DATA ACQUISITION EXPLANATIONS) The passenger's head injury criteria (HIC) was 239. The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 31.3 g. The passenger's left and right femur maximum axial forces were 565 pounds and 377 pounds, respectively. The vehicle appears to comply with the applicable requirements of FMVSS 208, 212, 219 (partial), and 301.			
17. Key Words Frontal Impact 30 mph Vehicle Safety Compliance Testing: FMVSS 208, "Occupant Crash Protection" FMVSS 212, "Windshield Mounting" FMVSS 219P, "Windshield Zone Intrusion" FMVSS 301, "Fuel System Integrity"		18. Distribution Statement Available from: NHTSA Technical Reference Division Room 5108, (NAD-52) 400 Seventh Street, SW Washington, DC 20590 Attn: Mr. Robert Hornickle	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 133	22. Price

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

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

* 1 in = 2.54 exactly. For other exact conversions and more detailed tables, see NPS Misc. Publ. 280, Units of Weights and Measures, Price \$2.25, SD Catalog No. C13.10-286.

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
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	1.05	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

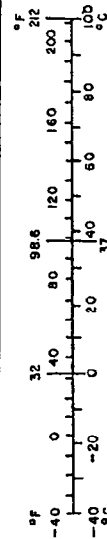


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SECTION 1.0

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 of Ohio (TRC) under Contract No. DTNH22-90-C-21003. The purpose of this test was to determine if the subject vehicle, a 1992 Ford Crown Victoria 4-door sedan, NHTSA No. CN0206, 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 January 22, 1992.

The test vehicle, a 1992 Ford Crown Victoria 4-door sedan, NHTSA No. CN0206, 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 4.6 liter, longitudinal engine, automatic transmission, power steering, and power brakes. The vehicle's test weight was 4402 pounds. The vehicle's impact speed was 29.3 mph. The vehicle's maximum static crush was 15.2 inches.

The driver's head injury criteria (HIC) was 431. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 53.9 g. The driver's left and right femur maximum axial forces were 1196 pounds and 985 pounds, respectively. (See DATA ACQUISITION EXPLANATIONS.)

The right front passenger's HIC was 239. The right front passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 31.3 g. The right front passenger's left and right femur maximum axial forces were 565 pounds and 377 pounds, respectively.

There was no loss of windshield periphery retention.

There was no intrusion through the windshield.

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

DATA ACQUISITION EXPLANATIONS

All data channels in one (1) multiplexed data stream recorded spikes at 3 milliseconds and from 50 to 65 milliseconds. The umbilical cable carrying this data stream was damaged during this impact and was replaced following this test.

The data channels affected were:

HEDXG1, driver's head X-axis acceleration
HEDYG1, driver's head Y-axis acceleration
HEDZG1, driver's head Z-axis acceleration
CSTXG1, driver's chest X-axis acceleration
CSTYG1, driver's chest Y-axis acceleration
CSTZG1, driver's chest Z-axis acceleration
LFMF1, driver's left femur force

The driver's head and chest resultant acceleration calculations, HEDRG1 and CSTRG1, were affected by these spikes.

The left brake caliper X-axis accelerometer, BCLXG1, lost data from 25 to 37 milliseconds, 60 to 63 milliseconds, and 71 to 82 milliseconds due to the vehicle's crush pinching the accelerometer cable.

TABLE 1 CRASH TEST SUMMARY

NHTSA NO.: CN0206 TEST TYPE: Frontal Barrier Impact

TEST DATE: 01/22/92 TEST TIME: 1409 AMBIENT TEMP. (°F): 72

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1992/Ford/Crown Victoria/4-door sedan

VEHICLE TEST WEIGHT (LBS): 4402

IMPACT ANGLE (DEG)*: 0

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

MAXIMUM STATIC CRUSH (IN): 15.2

AVERAGE REBOUND (IN): 19.9

DUMMIES:	Driver #1173	Passenger #353
TYPE:	Part 572 B	Part 572 B
LOCATION:	Left front	Right front
RESTRAINT:	Airbag	Three-point unbelt

NUMBER OF DATA CHANNELS: 23

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

*With respect to tow track centerline.

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

TABLE 2 TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Ford Motor Co. of Canada, Ltd.

MAKE/MODEL: Ford/Crown Victoria

VIN: 2FACP73W9NX100856

BODY STYLE: 4-door sedan

MODEL YEAR: 1992

NHTSA NO.: CN0206

COLOR: Titanium frost

ENGINE DATA: TYPE: longitudinal CYLINDERS: 8 DISPLACEMENT: 4.6 liter

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

DATE VEHICLE RECEIVED: 10/10/91

ODOMETER READING: 37.0

DEALER'S NAME AND ADDRESS: Chapman Ford
1255 Columbus St.
Marysville, OH 43040

ACCESSORIES:

POWER STEERING	Yes	AUTOMATIC TRANSMISSION	Yes
POWER BRAKES	Yes	AUTOMATIC SPEED CONTROL	No
POWER SEATS	Driver's seat	TILTING STEERING WHEEL	Yes
POWER WINDOWS	Yes	TELESCOPING STEERING WHEEL	No
TINTED GLASS	Yes	AIR CONDITIONING	Yes
RADIO	Yes	ANTI-SKID BRAKE	No
CLOCK	Yes	REAR WINDOW DEFROSTER	Yes
OTHER	Preferred equipment package 111 Cornering lamps		

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: Ford Motor Co. of Canada, Ltd.

DATE OF MANUFACTURE: 04/91

VIN: 2FACP73W9NX100856

GVWR: 5200 LBS

GAWR: FRONT: 2610 LBS., REAR: 2660 LBS.

TABLE 2 TEST VEHICLE INFORMATION CONT'D

TIRES ON VEHICLE (MFR., LINE, SIZE): Michelin, XGT4 P215/70R15

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

SPARE TIRE (MFR., LINE, SIZE): Michelin, Tex, T125/80R16

TYPE OF SEATS: FRONT: Split Bench
REAR: Bench

TYPE OF FRONT SEAT BACKS: Manually Adjustable

MAXIMUM WIDTH: 77.8 INCHES

WHEELBASE: 113.5 INCHES

LOCATION OF LABEL STATING TIRE & CAPACITY DATA: THE LABEL WAS LOCATED ON
THE RIGHT C-PILLAR.

TIRE & CAPACITY DATA FROM VEHICLE'S LABEL:

RECOMMENDED TIRE SIZE: P215/70R15

RECOMMENDED COLD TIRE PRESSURE: FRONT: 30 PSI; REAR: 34 PSI

DESIGNATED SEATING CAPACITY: 3 FRONT 3 REAR 6 TOTAL

VEHICLE CAPACITY WEIGHT: 1100 LBS. LUGGAGE 200 LBS.

TEST VEHICLE ATTITUDE (ALL MEASUREMENTS ARE IN INCHES):

DELIVERED ATTITUDE: LF 28.4; RF 29.0; LR 28.4; RR 28.5

FULLY LOADED ATTITUDE: LF 28.0; RF 28.5; LR 26.6; RR 27.0

PRE-TEST ATTITUDE: LF 28.6; RF 29.0; LR 26.8; RR 27.1

POST-TEST ATTITUDE: LF 28.0; RF 28.8; LR 26.5; RR 26.9

TABLE 2 TEST VEHICLE INFORMATION CONT'D

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

RIGHT FRONT	1052 LBS.	RIGHT REAR	872 LBS.
LEFT FRONT	1089 LBS.	LEFT REAR	871 LBS.
TOTAL FRONT WEIGHT	2141 LBS.	(55.1% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	1743 LBS.	(44.9% OF TOTAL VEHICLE WEIGHT)	
TOTAL DELIVERED WEIGHT 3884 LBS.			

CALCULATION OF TEST VEHICLE'S TARGET TEST WEIGHT:

RCLW = RATED CARGO AND LUGGAGE WEIGHT*

UDW = UNLOADED DELIVERED WEIGHT (3884 LBS)

VCW = VEHICLE CAPACITY WEIGHT (1100 LBS)

DSC = DESIGNATED SEATING CAPACITY (6)

$RCLW* = VCW - 150 (DSC) = 1100 - 150 (6) = 200 \text{ LBS.}$

$TARGET \text{ TEST WEIGHT} = UDW + RCLW* + (NO. \text{ OF HYBRID II DUMMIES} \times 164 \text{ LBS/DUMMY})$

$TARGET \text{ TEST WEIGHT} = 3884 + 200 + 328$

$TARGET \text{ TEST WEIGHT} = 4412 \text{ LBS}$

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 190 LBS. OF CARGO WEIGHT:

RIGHT FRONT	1090 LBS.	RIGHT REAR	1098 LBS.
LEFT FRONT	1128 LBS.	LEFT REAR	1086 LBS.
TOTAL FRONT WEIGHT	2218 LBS.	(50.4% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	2184 LBS.	(49.6% OF TOTAL VEHICLE WEIGHT)	
TOTAL TEST WEIGHT	4402 LBS.	(0.2% UNDER TARGET TEST WEIGHT)	

WEIGHT OF BALLAST SECURED IN VEHICLE CARGO AREA: 125 LBS.

COMPONENTS REMOVED TO MEET TARGET TEST WEIGHT: None

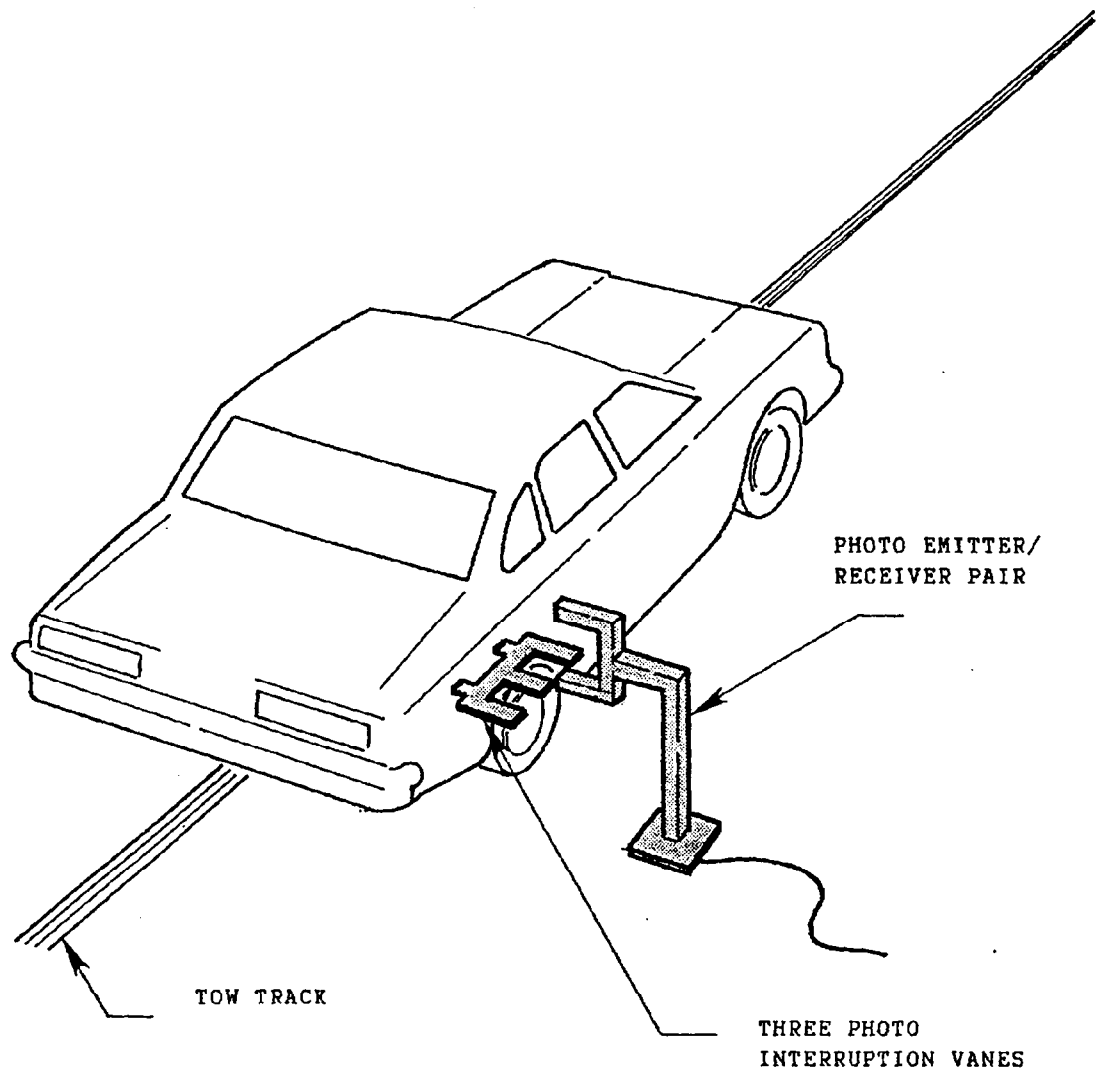
CG = 56.3 INCHES REARWARD OF FRONT WHEEL CENTERLINE

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

TABLE 3 POST-IMPACT DATA

TEST NUMBER: 920122 NHTSA NO.: CN0206
TEST DATE: 01/22/92 TEST TIME: 1409
TEST TYPE: Frontal Barrier Impact IMPACT ANGLE: 0
AMBIENT TEMPERATURE AT IMPACT AREA: 72° F
TEMPERATURE IN OCCUPANT COMPARTMENT: 74° 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 207.0; C 211.2; R 207.0
POST-TEST: L 194.8; C 198.0; R 191.8
TOTAL CRUSH: L 12.2; C 13.2; R 15.2
AVERAGE CRUSH: 13.5
TEST VEHICLE REBOUND FROM FLAT BARRIER (ALL MEASUREMENTS ARE IN INCHES):
DISTANCE FROM TEST VEHICLE TO BARRIER: L 20.6; C 16.6; R 22.4; AVG. 19.9

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: Ford/Crown Victoria/4-door sedan
 VEHICLE NHTSA NO.: CN0206 ; VIN: 2FACP73W9NX100856
 MODEL YEAR: 1992 ; BUILD DATE: 04/91 ; TEST DATE: 01/22/92
 VEHICLE SIZE CATEGORY: Large ; TEST WEIGHT: 4402 LBS.
 VEHICLE WHEELBASE: 113.5 INCHES
 MAXIMUM WIDTH: 77.8 INCHES
 FRONT OVERHANG: 43.3 INCHES

COLLISION DEFORMATION
 CLASSIFICATION (CDC) CODE: 12FDEW2

CRUSH DEPTH
 MEASUREMENTS:

C1 =	<u>12.2</u>	INCHES
C2 =	<u>12.0</u>	INCHES
C3 =	<u>13.2</u>	INCHES
C4 =	<u>13.5</u>	INCHES
C5 =	<u>13.6</u>	INCHES
C6 =	<u>15.2</u>	INCHES

MIDPOINT OF DAMAGE: D = VEHICLE CENTERLINE
(LONGITUDINAL)

LENGTH OF DAMAGED
 REGION: L = 61.8 INCHES

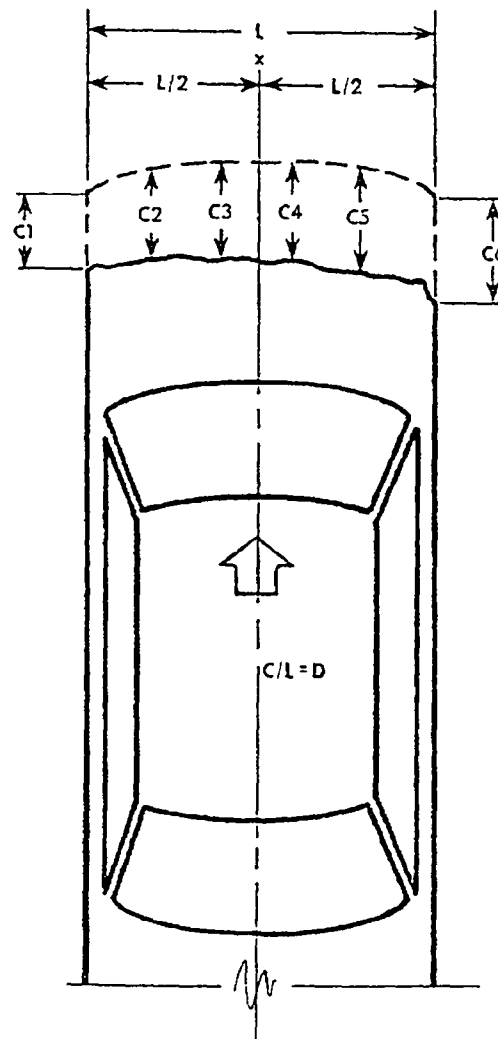
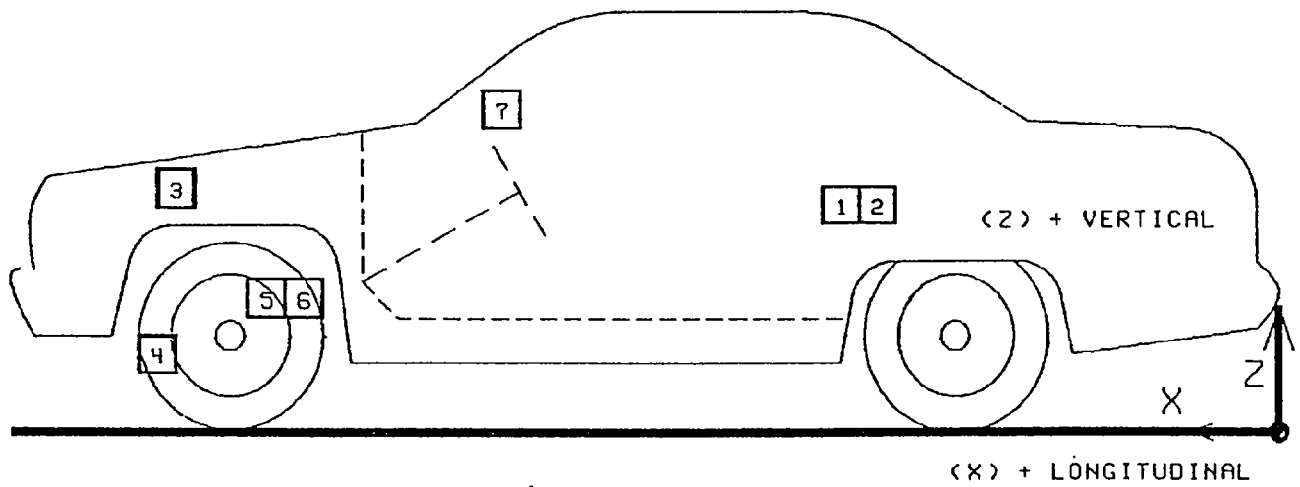
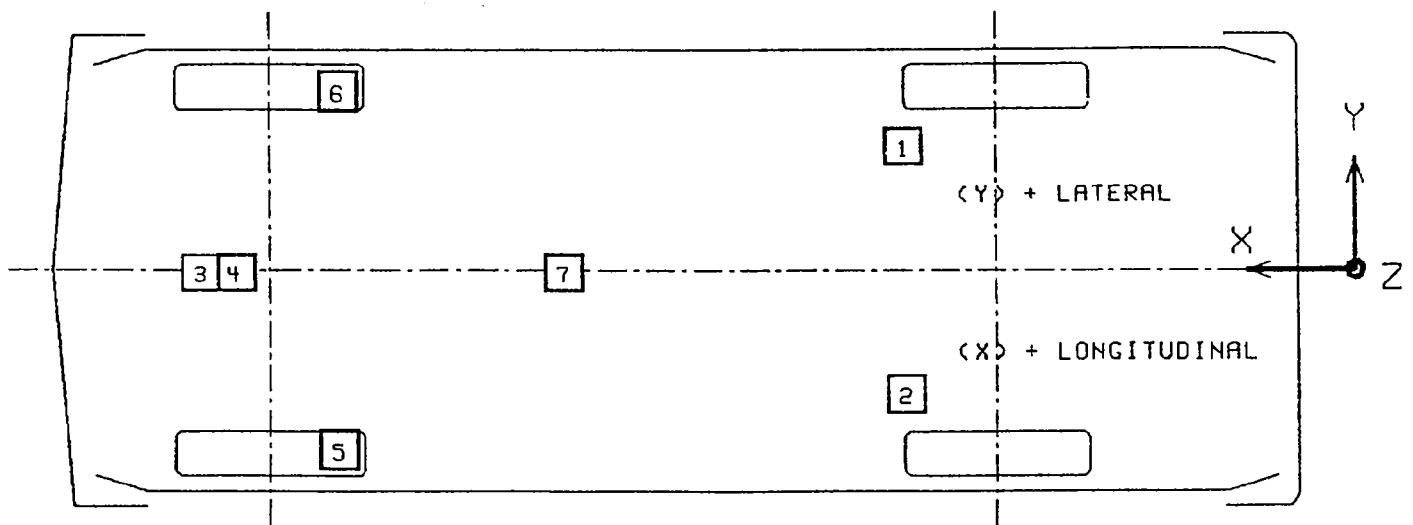


FIGURE 3
VEHICLE ACCELEROMETER PLACEMENT



SIDE VIEW



BOTTOM VIEW

TABLE 4

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 920122

No.	LOCATION		X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
						MAX	G MSEC	MAX	G MSEC
1	LEFT REAR SEAT CROSSMEMBER LONGITUDINAL	PRE	85.5	20.0	14.1				
		POST	85.5	20.0	14.5				
						1.5	153.9	25.5	35.0
2	RIGHT REAR SEAT CROSSMEMBER LONGITUDINAL	PRE	86.0	-20.5	14.2				
		POST	86.0	-20.5	14.8				
						1.4	155.9	19.8	72.4
3	ENGINE TOP LONGITUDINAL	PRE	117.0	-0.5	31.9				
		POST	164.5	0.0	32.0				
						10.0	106.6	39.9	70.6
4	ENGINE BOTTOM LONGITUDINAL	PRE	163.0	-1.5	8.2				
		POST	161.1	-1.5	6.6				
						7.3	30.4	42.1	36.5
5	RIGHT BRAKE CALIPER LONGITUDINAL	PRE	166.0	-25.0	14.1				
		POST	162.6	-24.2	13.0				
						87.0	39.1	108.2	33.8
6	LEFT BRAKE CALIPER LONGITUDINAL	PRE	165.5	25.0	14.4				
		POST	163.2	23.8	13.5				
						---	---Y	---	---Y
7	INSTRUMENT PANEL CENTER LONGITUDINAL	PRE	138.2	0.5	40.1				
		POST	138.6	0.5	39.0				
						18.2	113.8	50.6	93.6

* 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

SECTION 3.0

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

TABLE 5 DUMMY INJURY CRITERIA

MAXIMUM ACCELERATION (G)

	HEAD				CHEST			
	X	Y	Z	R	X	Y	Z	R*
DRIVER	-79.9 Y	-11.5 Y	-54.9 Y	92.2 Y	-54.2 Y	-13.3 Y	-20.9 Y	53.9
PASSENGER	-66.5	-38.0	-36.8	82.9	-31.4	15.8	15.5	31.3

MAXIMUM FEMUR COMPRESSIVE FORCE (LBS)

	LEFT FEMUR	RIGHT FEMUR
DRIVER	1196 Y	985
PASSENGER	565	377

HEAD INJURY CRITERIA**

	HIC	TIME t_1 (MSEC) ¹	TIME t_2 (MSEC) ²
DRIVER	431	85.5	95.8
PASSENGER	239	89.1	125.1

*Defined as exceeding 0.003 sec. duration

**As defined in FMVSS No. 208

Y See DATA ACQUISITION EXPLANATIONS

TABLE 6 POST-IMPACT DUMMY/VEHICLE DATA

VISIBLE DUMMY CONTACT POINTS:

	DRIVER #1173	PASSENGER #353
HEAD	<u>Sunvisor & airbag</u>	<u>None</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>Difficult, No tools required</u>	<u>Difficult, no tools required</u>
REAR	<u>Easy</u>	<u>Easy</u>

SEAT MOVEMENT:

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

GLAZING DAMAGE:

Both lower corners of the windshield were cracked
upon impact.

OTHER NOTABLE IMPACT EFFECTS:

The driver's sunvisor mirror was cracked during the
impact. Steering column was separated completely
from the shear capsules & was displaced approximately
1.7 inches forward.

DUMMY KINEMATIC SUMMARY

Driver Dummy

Upon impact, the driver dummy translated forward on the seat impacting both knees into the instrument panel. The dummy's head rotated forward and contacted the driver's sun visor. The dummy's head rotated rearward as the dummy's head and chest were restrained by the driver's airbag. The dummy's head rotated forward and then rearward as the dummy rebounded into the seat back. The dummy came to rest seated in the driver's seat, leaning toward the right.

Right Front Passenger Dummy

Upon impact, the right front passenger dummy translated forward on the seat with both knees impacting the instrument panel. The dummy's head then rotated forward as the dummy's torso was restrained by the three-point unbelt. The dummy's head rotated rearward as the dummy rebounded into the seat back. The dummy came to rest seated 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: Ford/Crown Victoria

VIN: 2FACP73W9NX100856

BODY STYLE: 4-door sedan

NHTSA NO.: CN0206

DATE OF MANUFACTURE: 04/91

WEBBING TENSION - RELIEVING DEVICE:

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

BELT CONTACT FORCE:

BELT CONTACT FORCE ON CHEST OF TEST DUMMY: .2 POUNDS

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

ACCESSIBILITY:

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

IS THE SEAT REMOVABLE? NO

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

MAKE/MODEL: Ford/Crown Victoria

VIN: 2FACP73W9NX100856

BODY STYLE: 4-door sedan

NHTSA NO.: CN0206

DATE OF MANUFACTURE: 04/91

ACCESSIBILITY, CONT'D:

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.

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?

Not Applicable, the vehicle does not contain a center arm rest.

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 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 = 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 PROTECTON SYSTEM: The label was located on the top of the driver's sun visor.

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

_____ Replace
 X Repair
_____ Other: _____

This system: (check one)

___a. by _____ month, _____ year
___b. by _____ miles
___c. or after a time interval of _____ months or _____ years.
 X d. other: Airbag light flashes or stays lit.
Airbag lamp does not light when key is turned on.
Groups of five beeps are heard.

WERE APPROPRIATE INSTRUCTIONS CONCERNING MAINTENANCE AND/OR REPLACEMENT OF THIS SYSTEM PROVIDED? X YES, owner's manual, page 36

_____ YES, label on vehicle
_____ NO

WAS A DESCRIPTION OF THE FUNCTIONAL OPERATION OF THE SYSTEM PROVIDED?

 X YES, owner's manual, pages 34 and 35
_____ YES, label on vehicle
_____ NO

IS THERE A REFERENCE TO THE INSTRUCTIONS AND DESCRIPTION OF THE SYSTEM ON THE LABEL? X YES _____ NO

WAS AN OWNER'S MANUAL PROVIDED? X YES _____ NO

DID THE OWNER'S MANUAL CONTAIN APPROPRIATE INFORMATION CONCERNING MAINTENANCE AND/OR REPLACEMENT AND A DESCRIPTION OF THE FUNCTIONAL OPERATION OF THE SYSTEMS? X YES, pages 34, 35, and 36

_____ NO

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? ☐ YES ☒ NO

IF NO:

DESCRIBE THE LOCATION OF THE READINESS INDICATOR: The readiness indicator was a light stating "AIRBAG" located in the upper right corner of the instrument cluster.

IS THE READINESS INDICATOR CLEARLY VISIBLE TO THE DRIVER?

☒ YES ☐ NO

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

☒ YES, owner's manual, pages 34 and 35

☐ YES, label on vehicle

☐ NO

FIGURE 4 FMVSS 212 TEST DATA

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

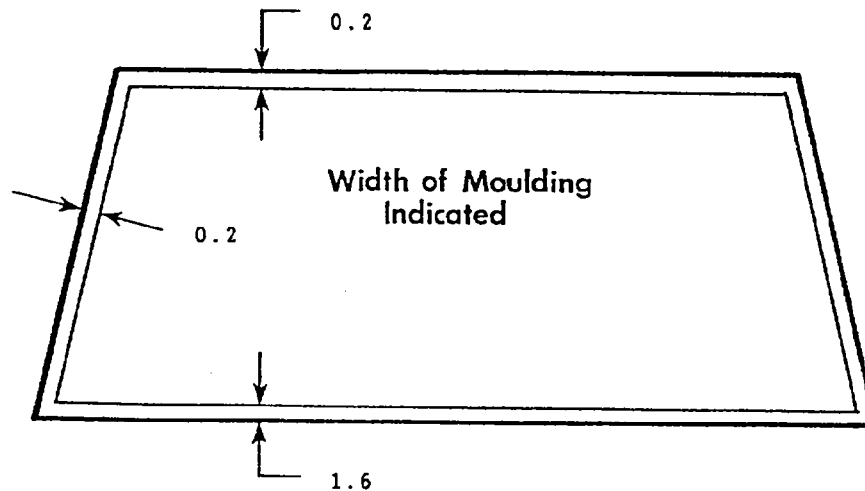
Plastic trim around outer perimeter, adhesive around inner perimeter.

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	85.5	85.5	100
LEFT SIDE	85.5	85.5	100
TOTAL	171.0	171.0	100

PRE-TEST WINDSHIELD MOUNTING MATERIAL TEMPERATURE: 74° F



FRONT VIEW OF WINDSHIELD*

LOSS OF WINDSHIELD RETENTION LENGTHS: None

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

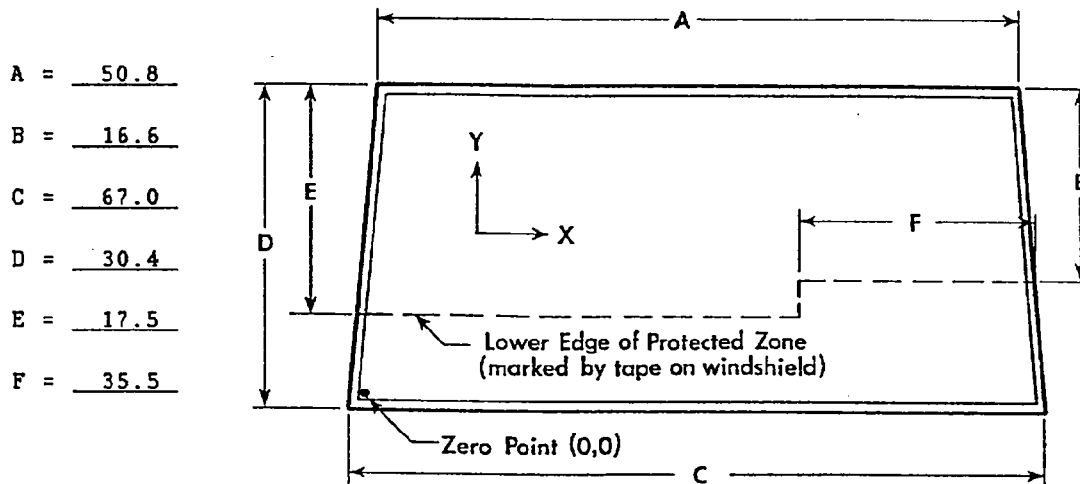
*INDICATE AREAS OF LOSS OF RETENTION, IF ANY, ON WINDSHIELD DIAGRAM.

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: Ford/Crown Victoria
NHTSA NO.: CN0206
FUEL SYSTEM CAPACITY: 20.0 GALLONS (FROM OWNER'S MANUAL)
USABLE CAPACITY: 20.0 GALLONS (FURNISHED BY COTR)
TEST VOLUME RANGE: 18.4 GALLONS TO 18.8 GALLONS (92-94% OF USABLE)
ACTUAL TEST VOLUME: 18.6 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 lines run along the left frame rail to the front. The fuel
filler neck 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.: CN0206 ; TEST DATE: 01/22/92
VEHICLE MAKE/MODEL/BODY STYLE: Ford/Crown Victoria/4-door sedan

TEST REQUIREMENTS:

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

TEST VEHICLE IMPACT TYPE:

- ☒ X FRONTAL (30 MPH)
☐ OBLIQUE (30 MPH) WITH ° BARRIER FACE
FIRST CONTACTING (DRIVER/PASS.) SIDE.
☐ REAR MOVING BARRIER (30 MPH)
☐ LATERAL MOVING BARRIER (20 MPH)

FUEL SYSTEM FLUID SPILLAGE MEASUREMENTS:

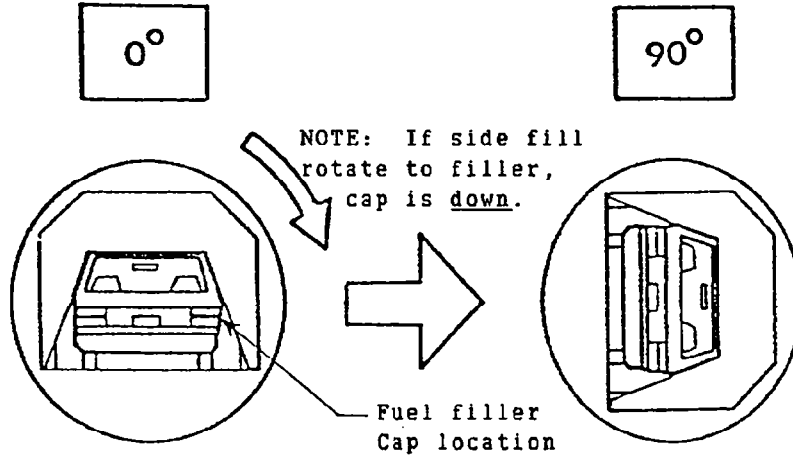
	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FROM IMPACT UNTIL VEHICLE MOTION CEASES - - -	0 OZ.	1 OZ.
2. 5 MINUTE PERIOD AFTER VEHICLE MOTION CEASES -	0 OZ.	5 OZ.
3. NEXT 25 MINUTES AFTER 5 MINUTE PERIOD - - - -	0 OZ.	1 OZ./1 MIN.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

FIGURE 6 FMVSS 301 STATIC ROLLOVER TEST DATA

NHTSA NO.: CN0206
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:

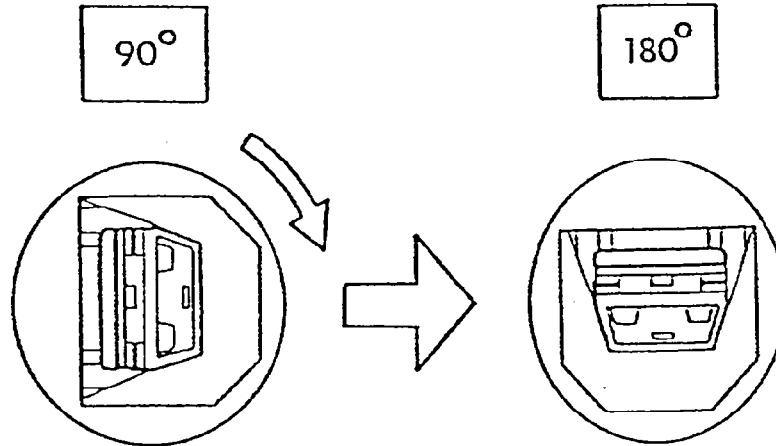
<u>0° TO 90° ROTATION (FUEL FILLER CAP DOWN)</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 oz.	5 oz.
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

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

NHTSA NO.: CN0206
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:

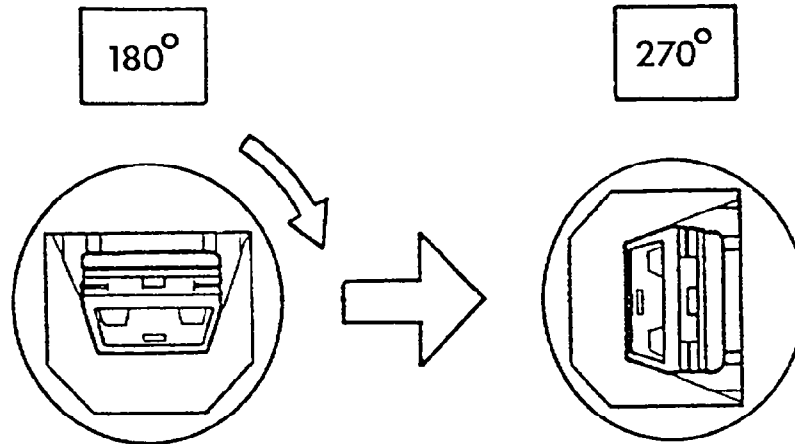
<u>90° TO 180° ROTATION</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 oz.	5 oz.
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

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

NHTSA NO.: CN0206
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:

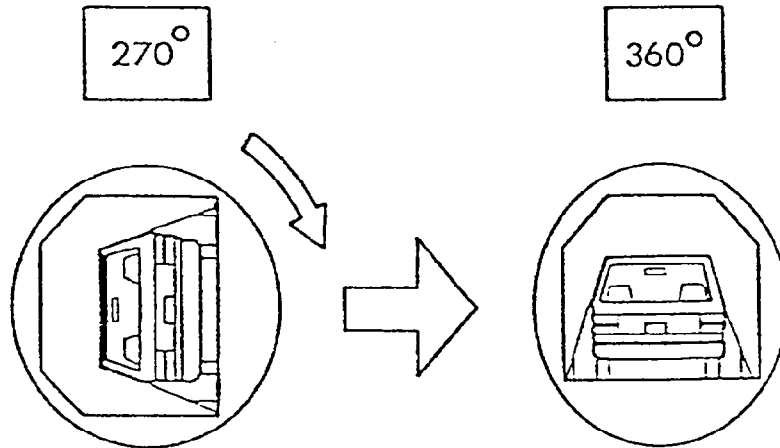
<u>180° TO 270° ROTATION</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 oz.	5 oz.
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 oz.	1 oz.

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

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

NHTSA NO.: CN0206
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

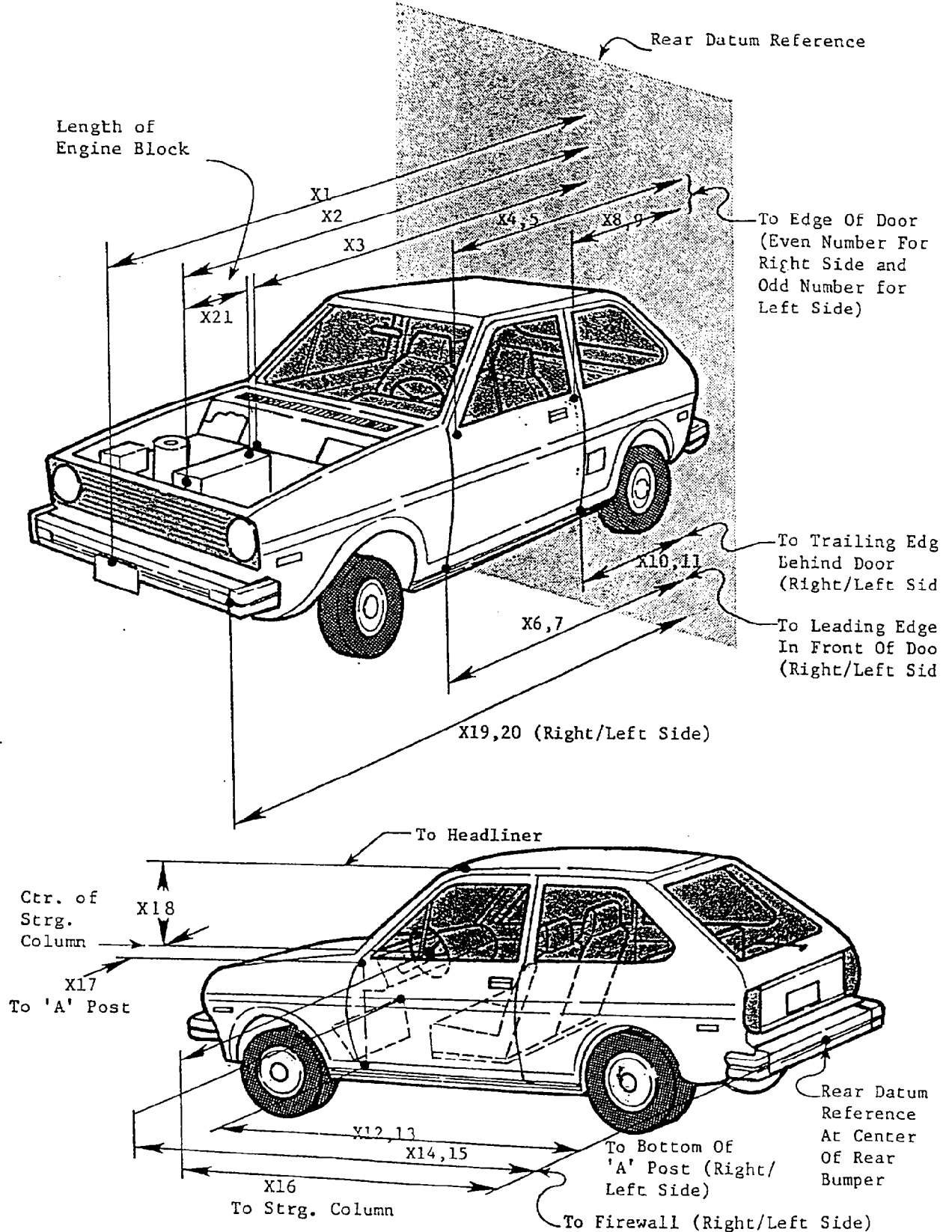
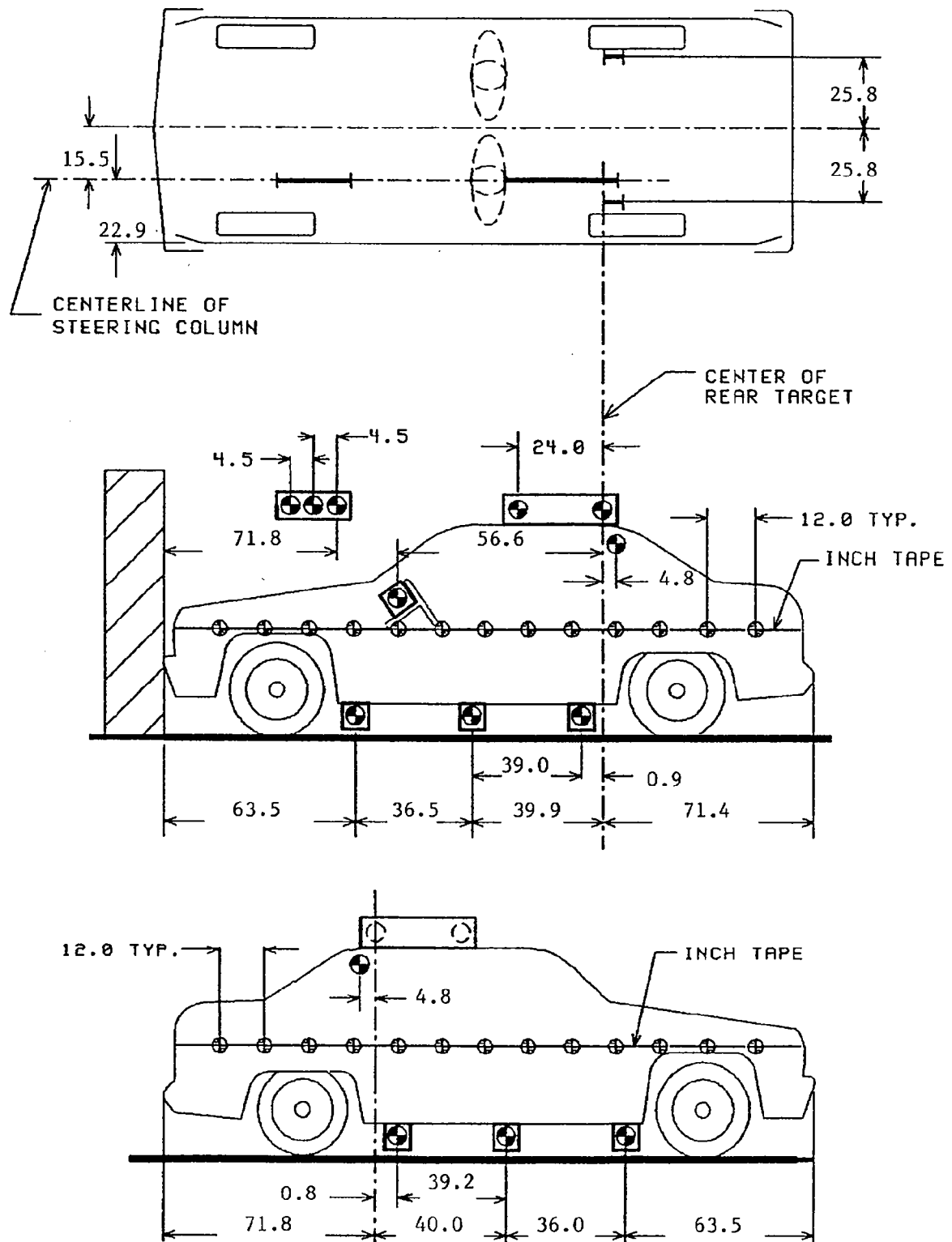


TABLE 13 IMPACTED VEHICLE MEASUREMENTS

VEHICLE MAKE/MODEL: Ford/Crown Victoria		TEST NUMBER: 920122	ALL MEASUREMENTS ARE IN INCHES		
NO.	TYPE OF MEASUREMENT		PRE-TEST	POST-TEST	DIFF.
X1	TOTAL LENGTH OF VEHICLE AT CENTERLINE		211.2	198.0	13.2
X2	REAR SURFACE OF VEHICLE TO FRONT OF ENGINE BLOCK		177.2	169.4	7.8
X3	REAR SURFACE OF VEHICLE TO FIREWALL		155.2	152.2	3.0
X4	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF RIGHT DOOR		144.4	144.5	-0.1
X5	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF LEFT DOOR		144.1	144.4	-0.3
X6	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF RIGHT DOOR		143.8	143.2	0.6
X7	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF LEFT DOOR		143.6	143.1	0.5
X8	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF RIGHT DOOR		99.6	100.2	-0.6
X9	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF LEFT DOOR		99.8	100.2	-0.4
X10	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF RIGHT DOOR		100.1	99.3	0.8
X11	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF LEFT DOOR		100.2	99.8	0.4
X12	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON RIGHT SIDE		138.1	139.2	-1.1
X13	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON LEFT SIDE		138.0	138.9	-0.9
X14	REAR SURFACE OF VEHICLE TO FIREWALL - RIGHT SIDE		152.8	152.0	0.8
X15	REAR SURFACE OF VEHICLE TO FIREWALL - LEFT SIDE		152.2	152.0	0.2
X16	REAR SURFACE OF VEHICLE TO STEERING WHEEL CENTER		124.8	125.1	-0.3
X17	CENTER OF STEERING COLUMN TO "A" POST		10.8	11.6	-0.8
X18	CENTER OF STEERING COLUMN TO HEADLINER		17.6	18.0	-0.4
X19	REAR SURFACE OF VEHICLE TO RIGHT SIDE OF FRONT BUMPER		207.0	191.8	15.2
X20	REAR SURFACE OF VEHICLE TO LEFT SIDE OF FRONT BUMPER		207.0	194.8	12.2
X21	LENGTH OF ENGINE BLOCK		25.0	25.0	0.0

FIGURE 8
VEHICLE TARGET LOCATIONS



ALL DISTANCE MEASUREMENTS ARE IN INCHES.

FIGURE 9 DUMMY AND SEAT POSITIONING DATA

PRE-IMPACT DATA:

MAKE/MODEL: Ford/Crown Victoria
 BODY STYLE: 4-door sedan MODEL YEAR: 1992
 NHTSA NO.: CN0206 COLOR: Titanium frost

DATA FROM CERTIFICATION LABEL:

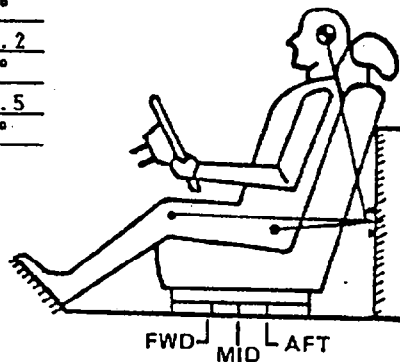
VEHICLE MANUFACTURER: Ford Motor Company of Canada, Ltd.
 DATE OF MANUFACTURE: 04/91 VIN: 2FACP73W9NX100856
 GVWR: 5200 LBS.; GAWR: FRONT = 2610 LBS.; REAR = 2660 LBS.

POST-IMPACT DATA:

DATE OF TEST: 01/22/92 TIME: 1409 TEMPERATURE: 72° F
 IMPACT VELOCITY: PRIMARY = 29.3 MPH SECONDARY = 29.3 MPH
 REQUIRED IMPACT VELOCITY RANGE: 28.9 TO 29.9 MPH
 SEAT TYPE: Split bench ADJUSTER TYPE: Power adjustable
 FRONT SEAT BACK TYPE: Manually adjustable
 TECHNICIANS: R. Benavides, E. VanVoorhis

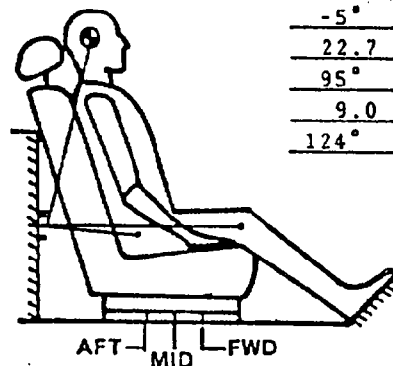
DRIVER DUMMY # 1173 TYPE: HII

HEAD 20.5
 TARGET -10°
 KNEE 23.2
 JOINT 98°
 APPROX- 9.5
 IMATE 124°
 "H"
 POINT

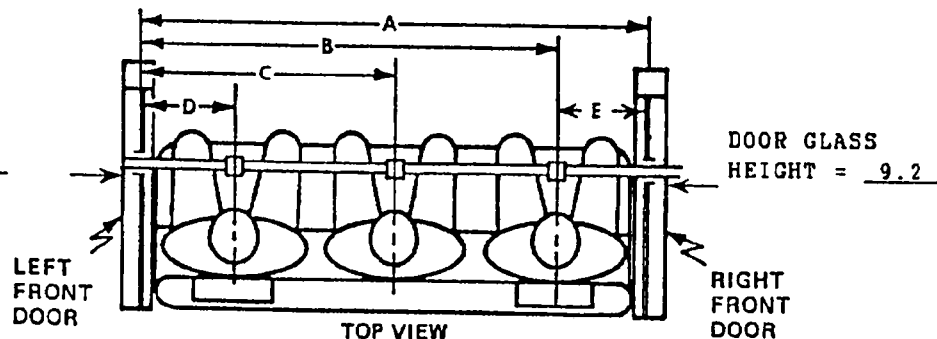


PASSENGER DUMMY # 353 TYPE: HII

HEAD 20.6
 TARGET -5°
 KNEE 22.7
 JOINT 95°
 APPROX- 9.0
 IMATE 124°
 "H"
 POINT



A = 57.6
 B = 43.6
 C = NA
 D = 12.5
 E = 14.0
 DOOR GLASS
 HEIGHT = 9.2



DRIVER
 DUMMY

PASSENGER
 DUMMY

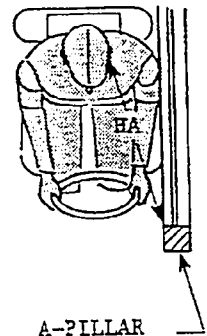
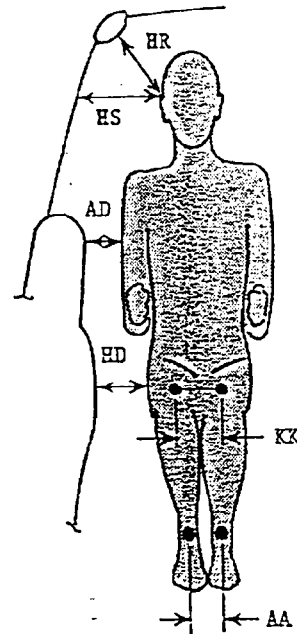
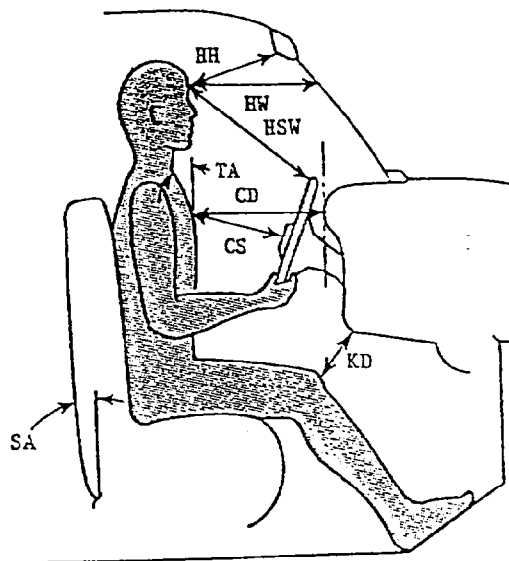
ALL ANGLES ARE RELATIVE TO VERTICAL PLANE THROUGH DOOR STRIKER.
 ALL DISTANCE MEASUREMENTS ARE IN INCHES.

FIGURE 10 DUMMY IN VEHICLE POSITIONING DATA

	DRIVER	PASSENGER
HH	16.8	16.6
HW	22.5	23.5
CD	23.2	21.4
CS	13.0	NA
KDL	5.0	5.2
KDR	4.5	5.2
TA	24°	22°
SA	24°	22°
HSW	20.5	NA

	DRIVER	PASSENGER
HR	6.2	6.6
HS	10.8	11.4
AD	4.9	5.4
HD	7.1	8.0
KK	10.5	7.8
AA	10.0	7.5
HA	23.0	23.1

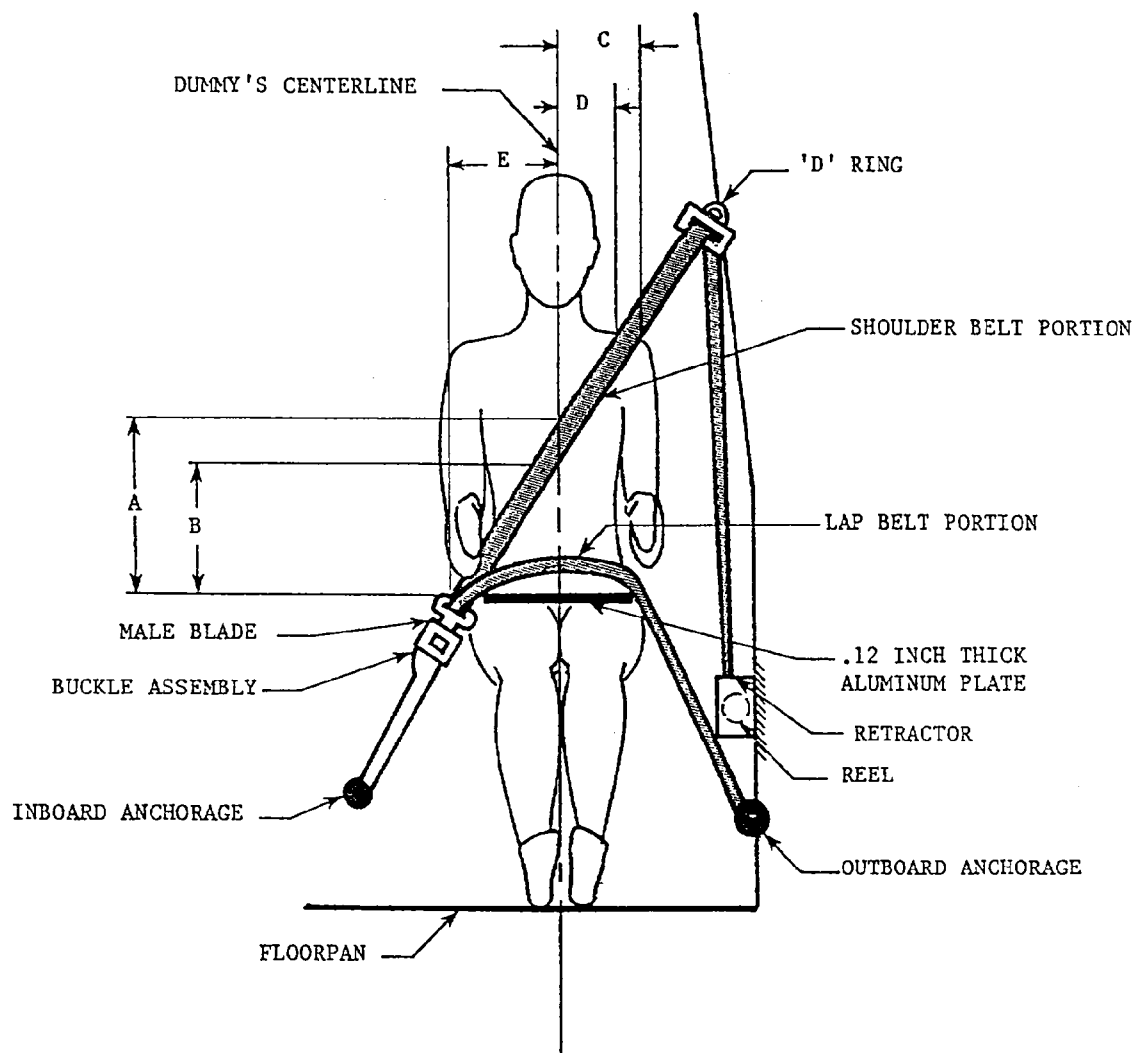
KNEE OUTER BOLT HEAD TO OUTER
BOLT HEAD SPACING:
DRIVER = 14.5
PASSENGER = 11.8



HH = HEAD TO WINDSHIELD HEADER HR = HEAD C.G. TARGET TO SIDE ROOF HEADER
HW = HEAD TO WINDSHIELD HS = HEAD C.G. TARGET TO SIDE WINDOW
CD = CHEST TO DASH AD = ARM TO DOOR
CS = CHEST TO STEERING WHEEL HD = HIP TO DOOR
KD = KNEE TO DASH KK = KNEE TO KNEE
TA = TORSO ANGLE AA = ANKLE TO ANKLE
SA = SEAT BACK ANGLE HA = HEAD C.G. TARGET TO A-PILLAR
HSW = HEAD TO STEERING WHEEL

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

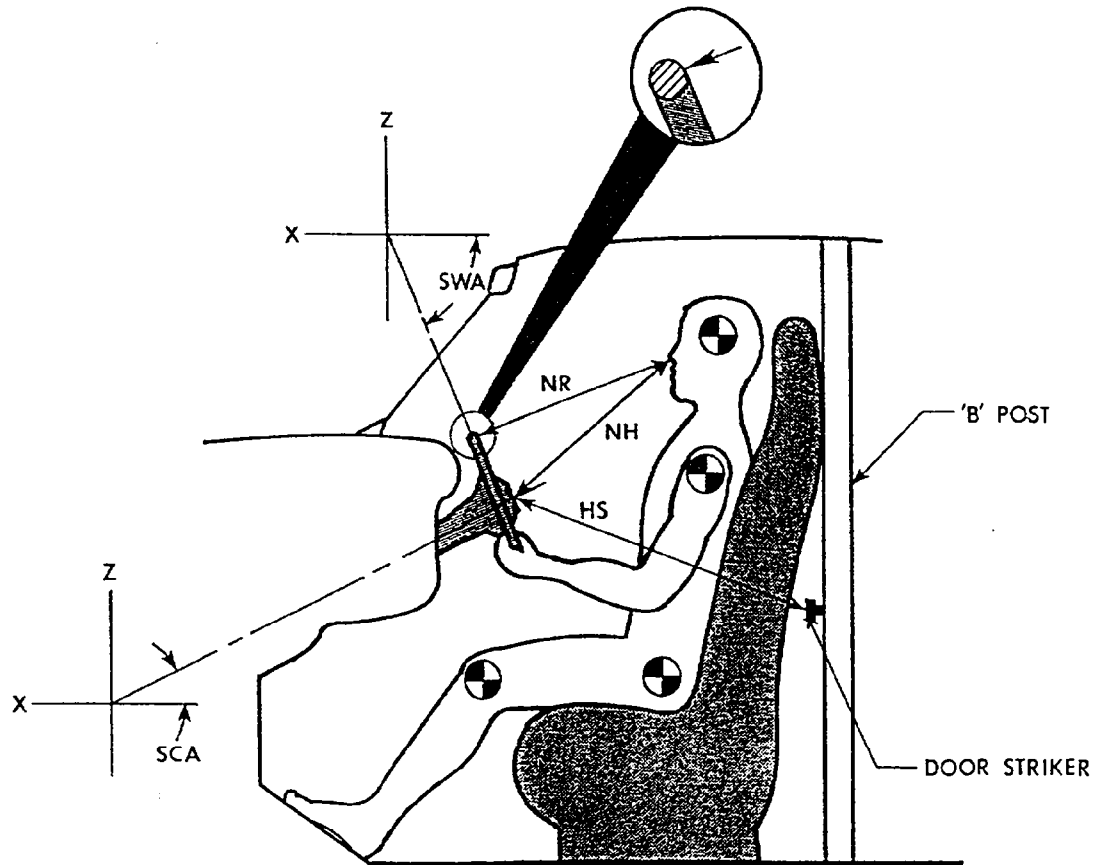
FIGURE 11 SEAT BELT POSITIONING DATA



	PASSENGER DUMMY
A - TOP SURFACE OF ALUM. PLATE TO BELT UPPER EDGE	16.0
B - TOP SURFACE OF ALUM. PLATE TO BELT LOWER EDGE	12.6
C - DUMMY CENTERLINE TO OUTER EDGE OF BELT AT CHEST FLESH TOP	4.8
D - DUMMY CENTERLINE TO INNER EDGE OF BELT AT CHEST FLESH TOP	2.2
E - DUMMY CENTERLINE TO INTERSECTION OF UPPER TORSO BELT AND LAP BELT	10.0

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

FIGURE 12 DRIVER DUMMY TO STEERING COLUMN/WHEEL ASSEMBLY DATA



POSITION OF STEERING COLUMN TILTING AND TELESCOPING ADJUSTMENTS, IF ANY:
The steering column was latched in the mid position of the five adjustment positions.

MEASUREMENTS

NR	- DISTANCE FROM TIP OF DUMMY'S NOSE TO TOP REAR SURFACE OF STEERING WHEEL RIM.	18.5
NH	- DISTANCE FROM TIP OF DUMMY'S NOSE TO CENTER OF STEERING COLUMN HUB.	19.1
HS	- DISTANCE FROM CENTER OF STEERING COLUMN HUB TO THE FORWARD SURFACE OF THE DOOR LOCK STRIKER PIN.	21.5
SCA	- ANGLE OF STEERING COLUMN RELATIVE TO THE HORIZONTAL X AXIS	22°
SWA	- ANGLE OF STEERING WHEEL RELATIVE TO THE HORIZONTAL X AXIS	68°

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

FIGURE 13
CAMERA POSITIONS

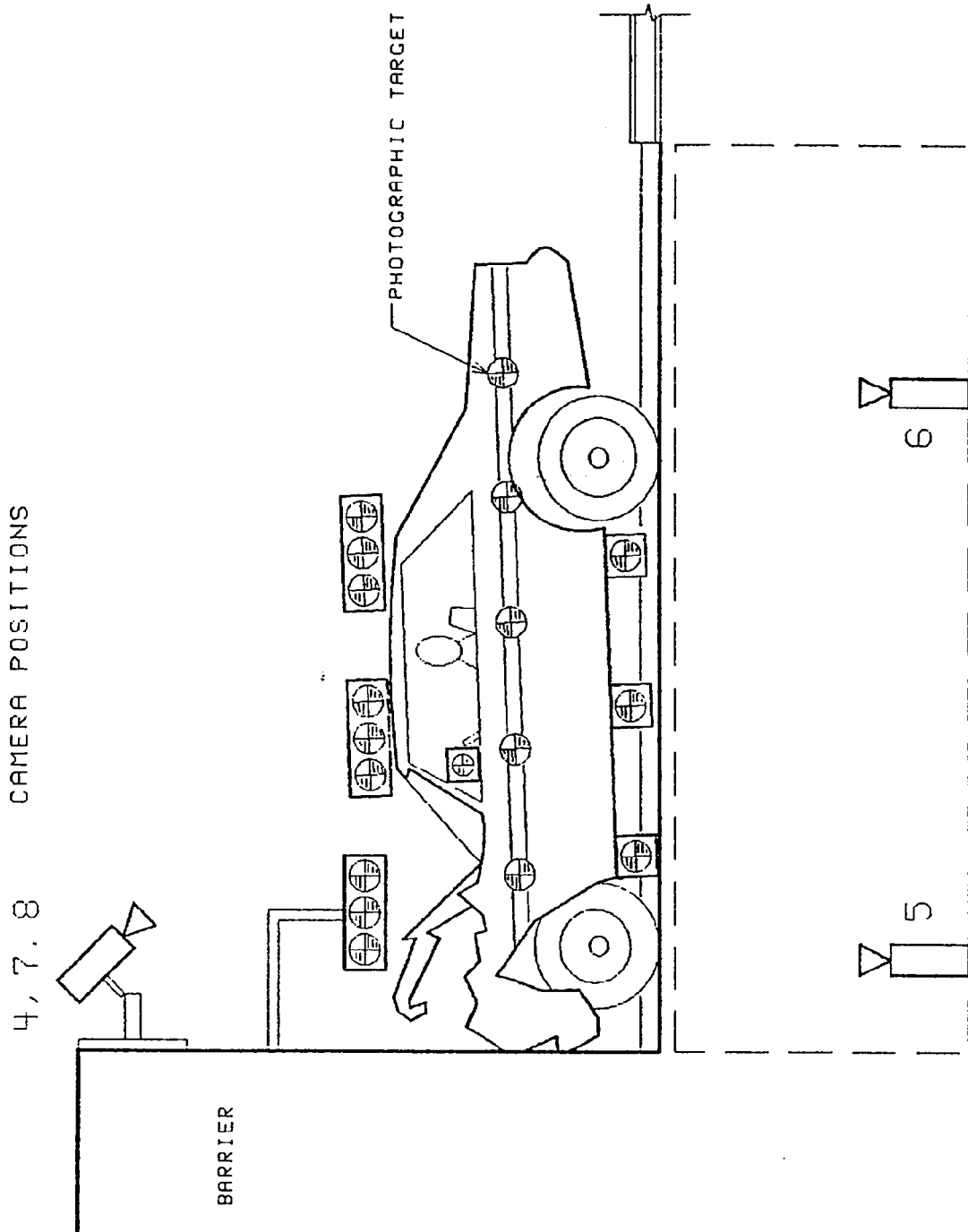


FIGURE 13
CAMERA POSITIONS, CONTINUED

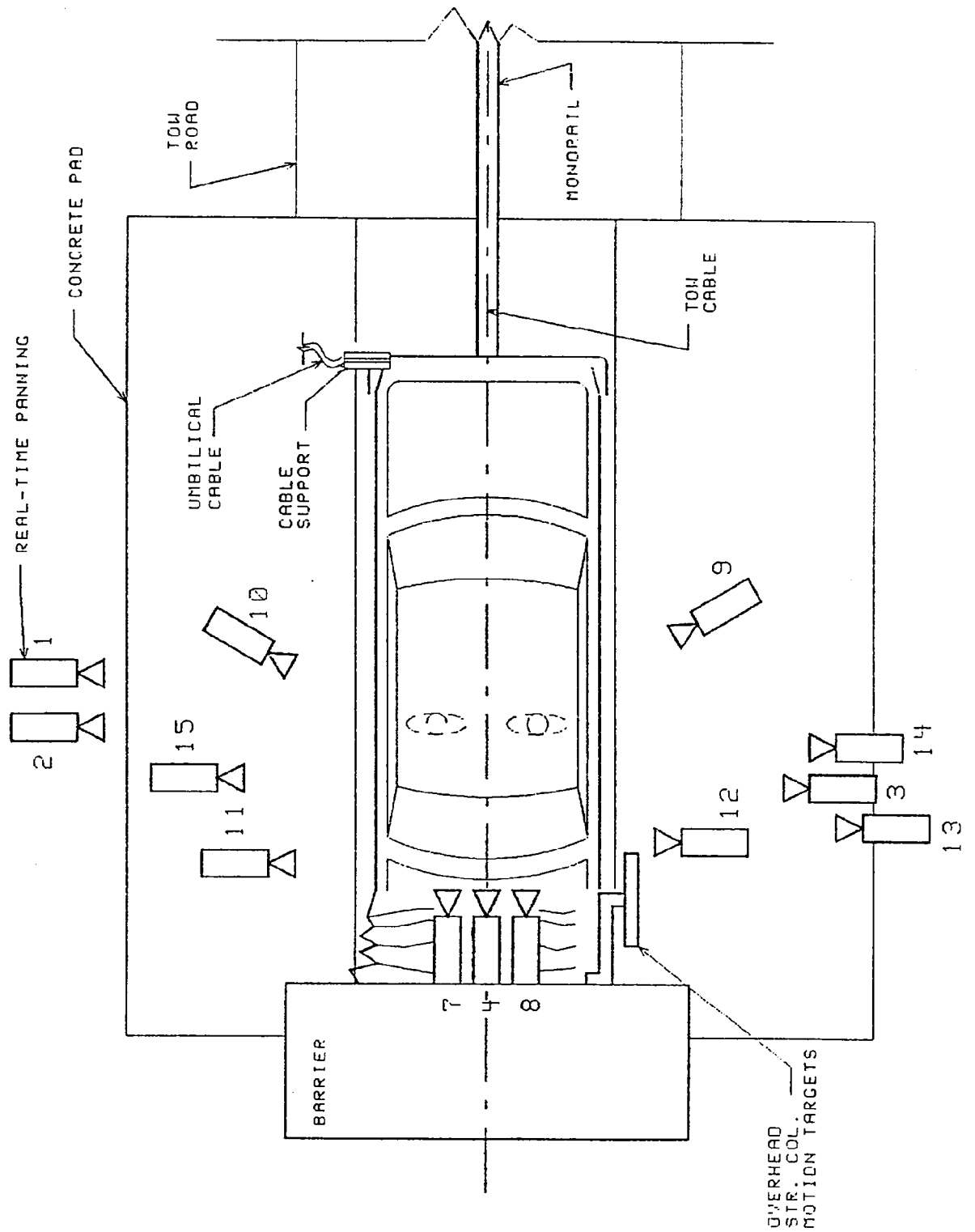


TABLE 14 MOTION PICTURE CAMERA LOCATIONS

TEST NO.: 920122		VEHICLE: 1992 Ford Crown Victoria					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		502	
3	Left dummy head	-120.0	90.0	18.0	23	NA	25		500	
4	Windshield front view	-6.0	0.0	88.0	-40	NA	13		500	
5	Pit front position	-50.5	0.0	-92.4	90	NA	13		995	
6	Pit rear position	-99.3	0.0	-99.0	90	NA	13		995	
7	Passenger front view	-4.5	-13.8	93.0	-50	NA	17		500	
8	Driver front view	-6.8	14.5	93.0	-50	NA	17		495	
9	Driver kinematics	-157.3	116.0	87.0	-27	93.0	25		435	
10	Passenger kinematics	-152.1	-116.0	87.0	-26	90.0	25		500	
11	Right windshield intrusion	-38.1	-306.1	44.0	0	NA	50		493	
12	Left windshield intrusion	-53.0	309.4	42.3	0	NA	50		498	
13	Steering column motion	-120.0	285.0	103.0	-14	NA	25		498	
14	Steering column motion	-120.0	285.0	75.1	-9	NA	25		500	
15	Passenger kinematics	-38.8	-293.0	45.3	-4	220.0	25		507	
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

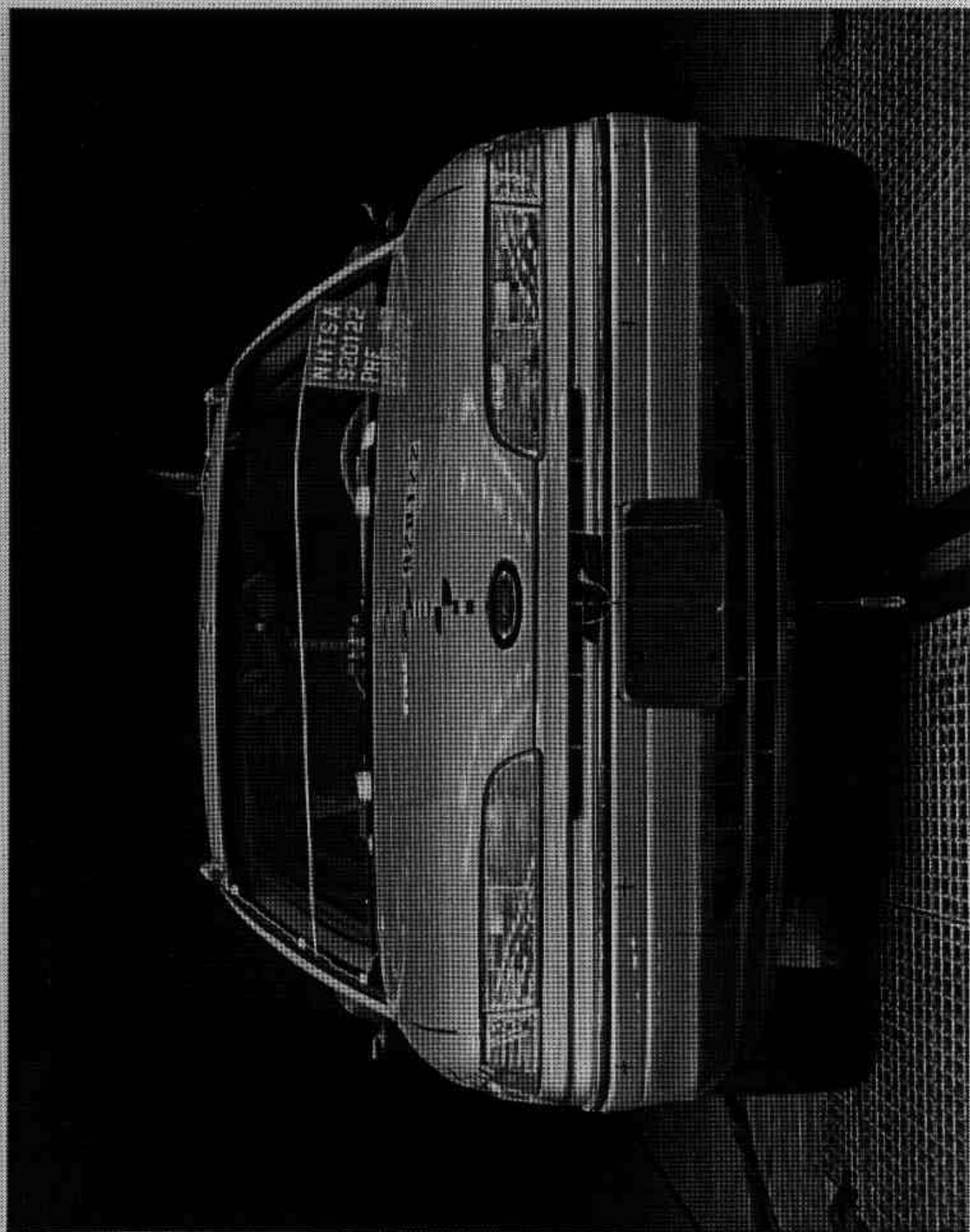


FIGURE A-1. PRE-TEST FRONT VIEW

A-2

920122

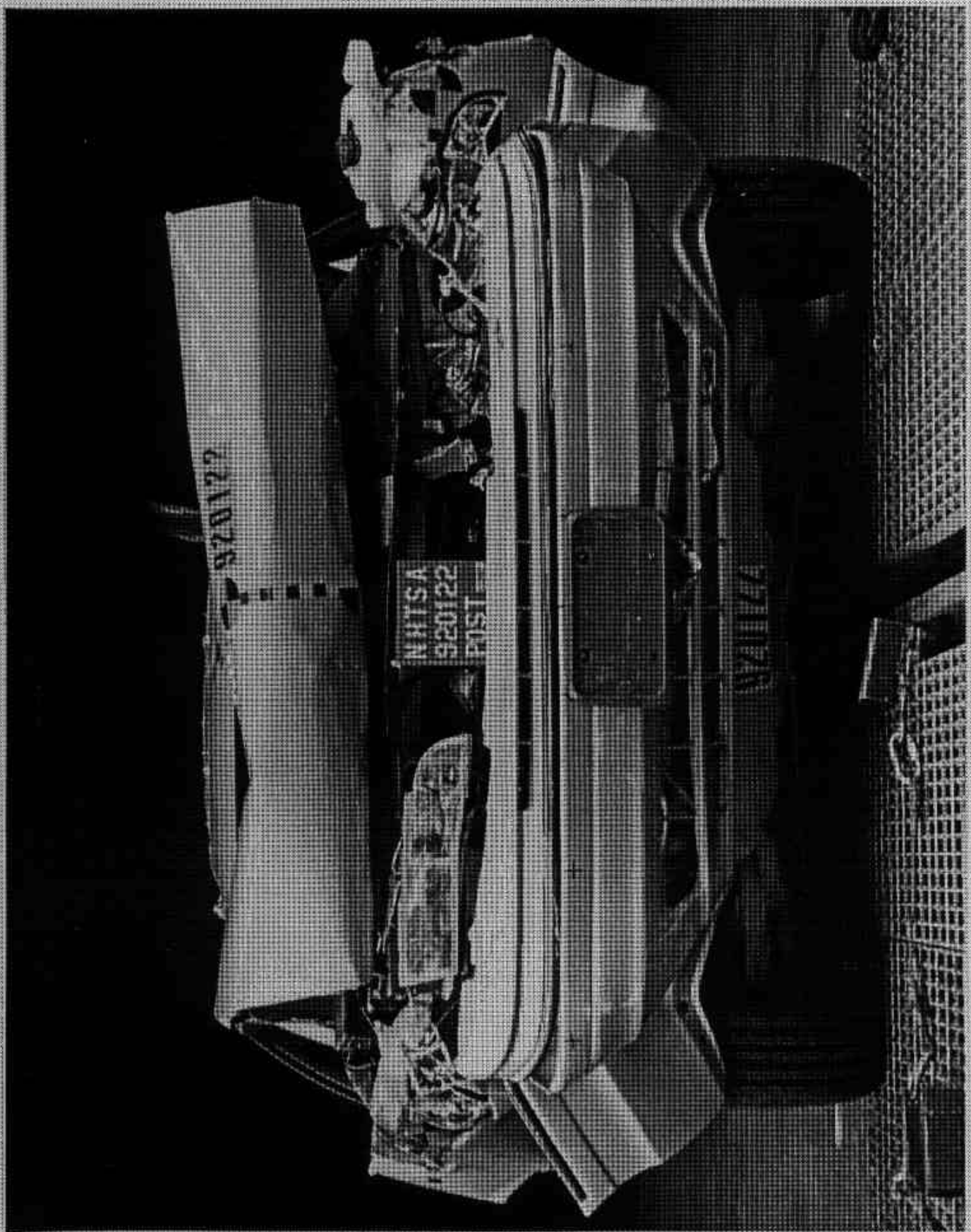


FIGURE A-2. POST-TEST FRONT VIEW

A-3

920122

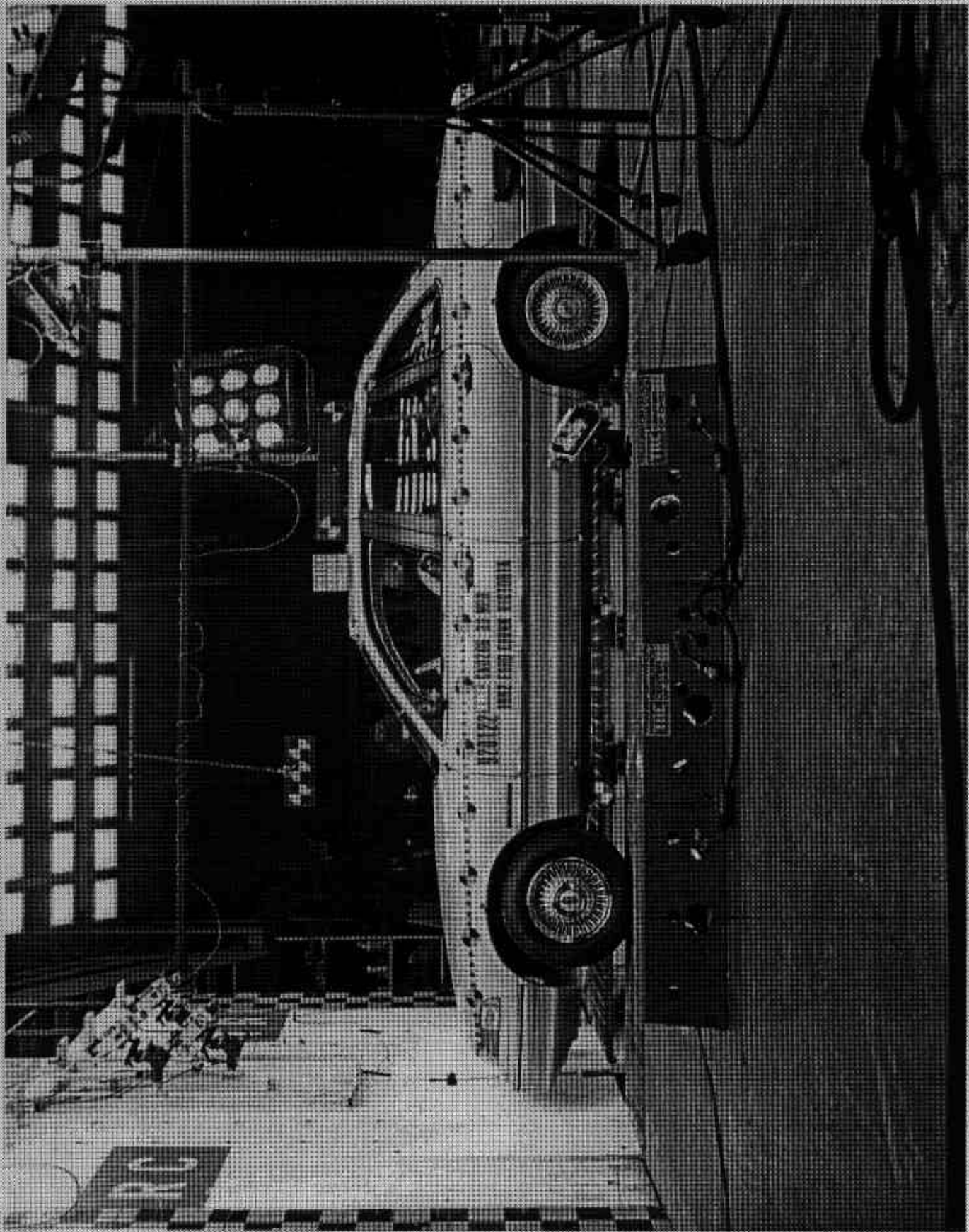


FIGURE A-3. PRE-TEST LEFT SIDE VIEW

A-4

920122



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

920122

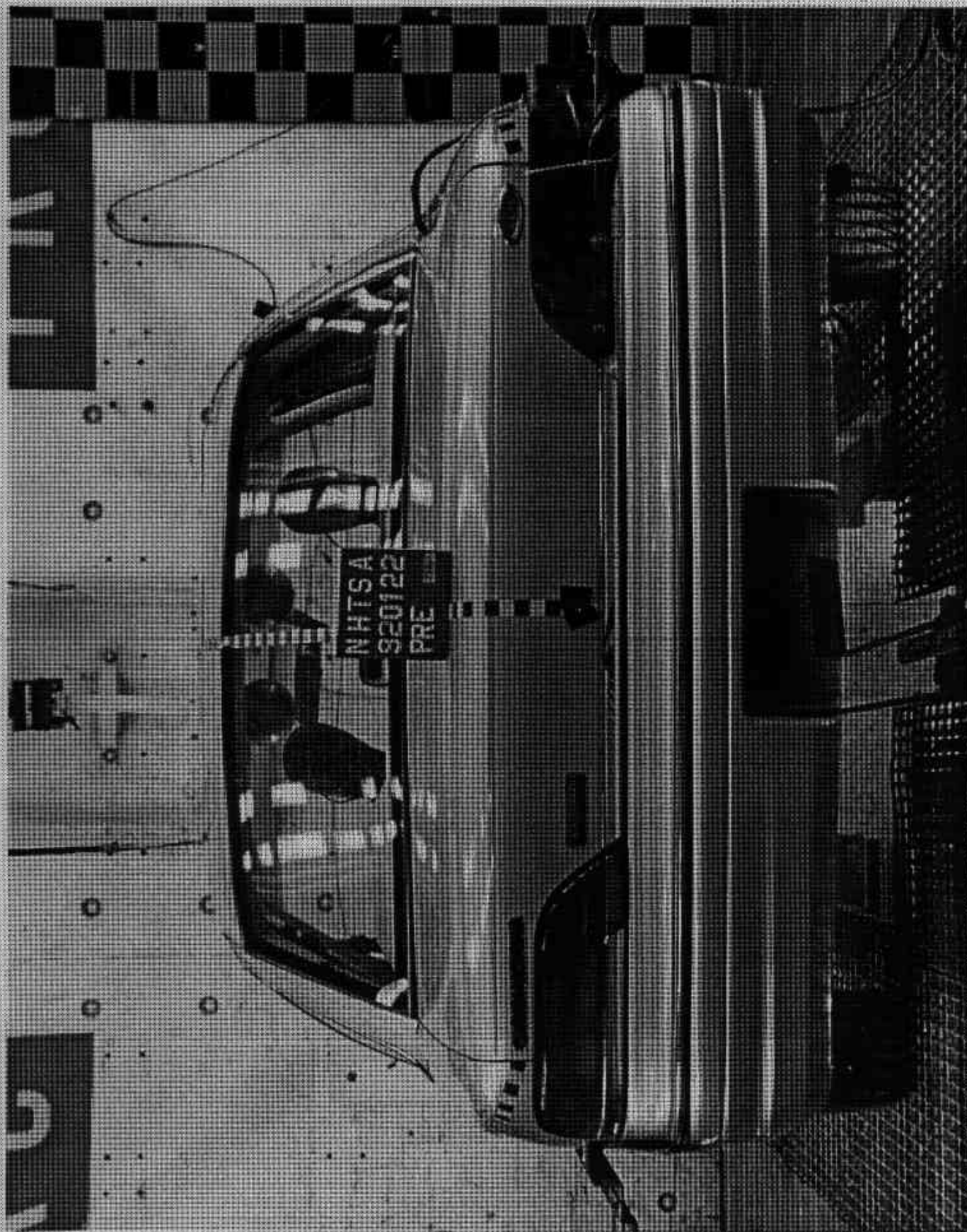


FIGURE A-5. PRE-TEST REAR VIEW

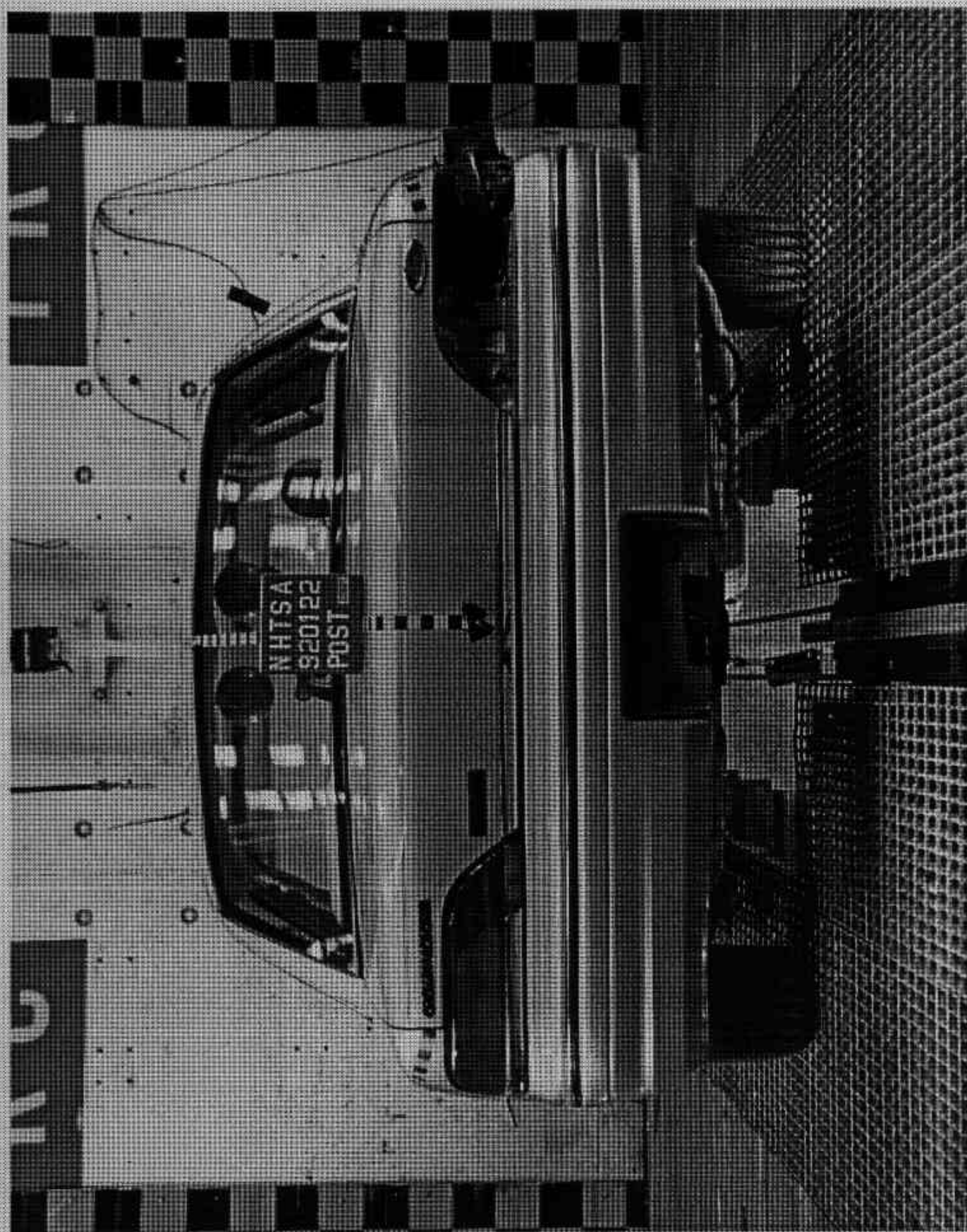


FIGURE A-6. POST-TEST REAR VIEW

A-7

920122

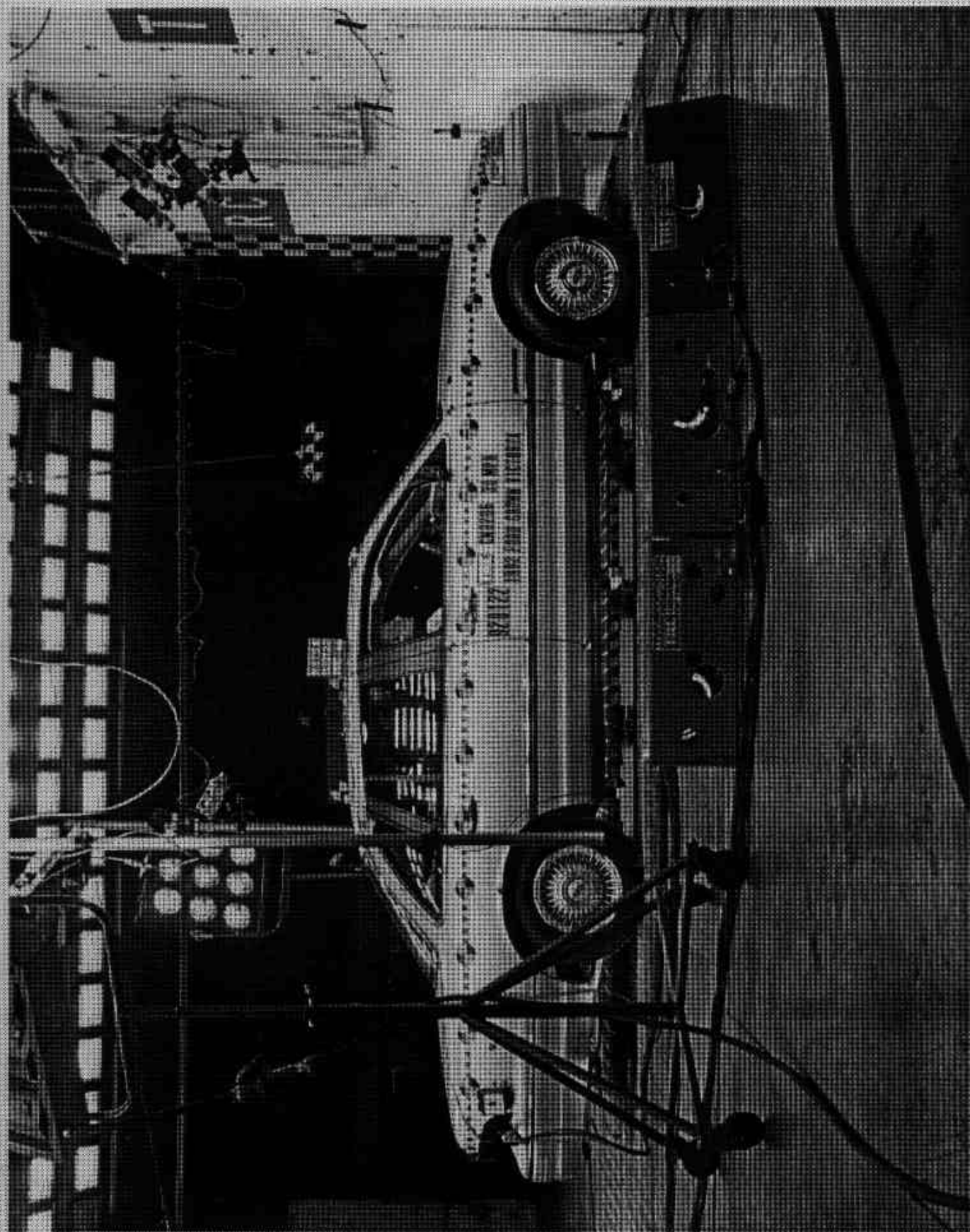


FIGURE A-7. PRE-TEST RIGHT SIDE VIEW
A-8

920122

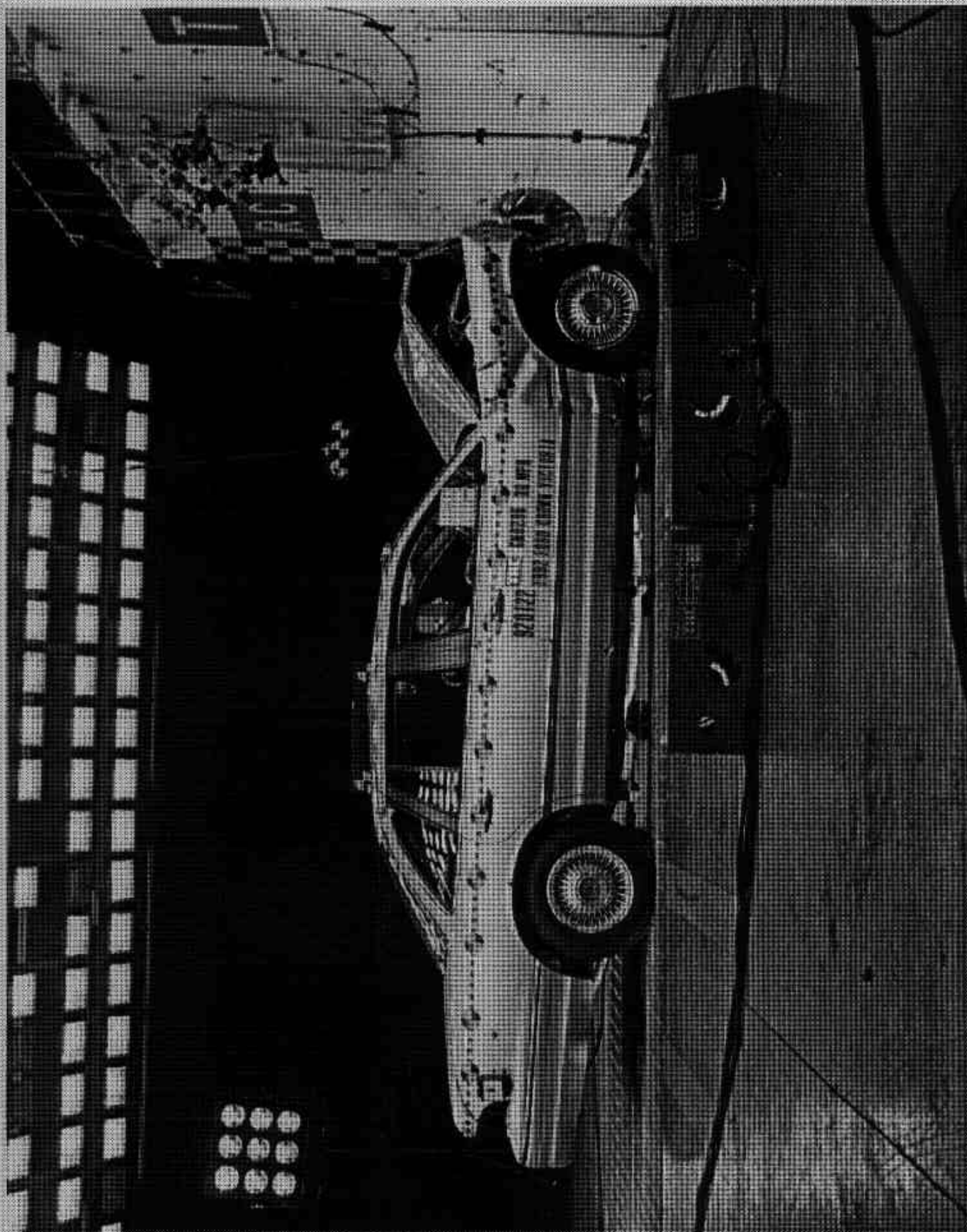


FIGURE A-8. POST-TEST RIGHT SIDE VIEW

A-9

920122

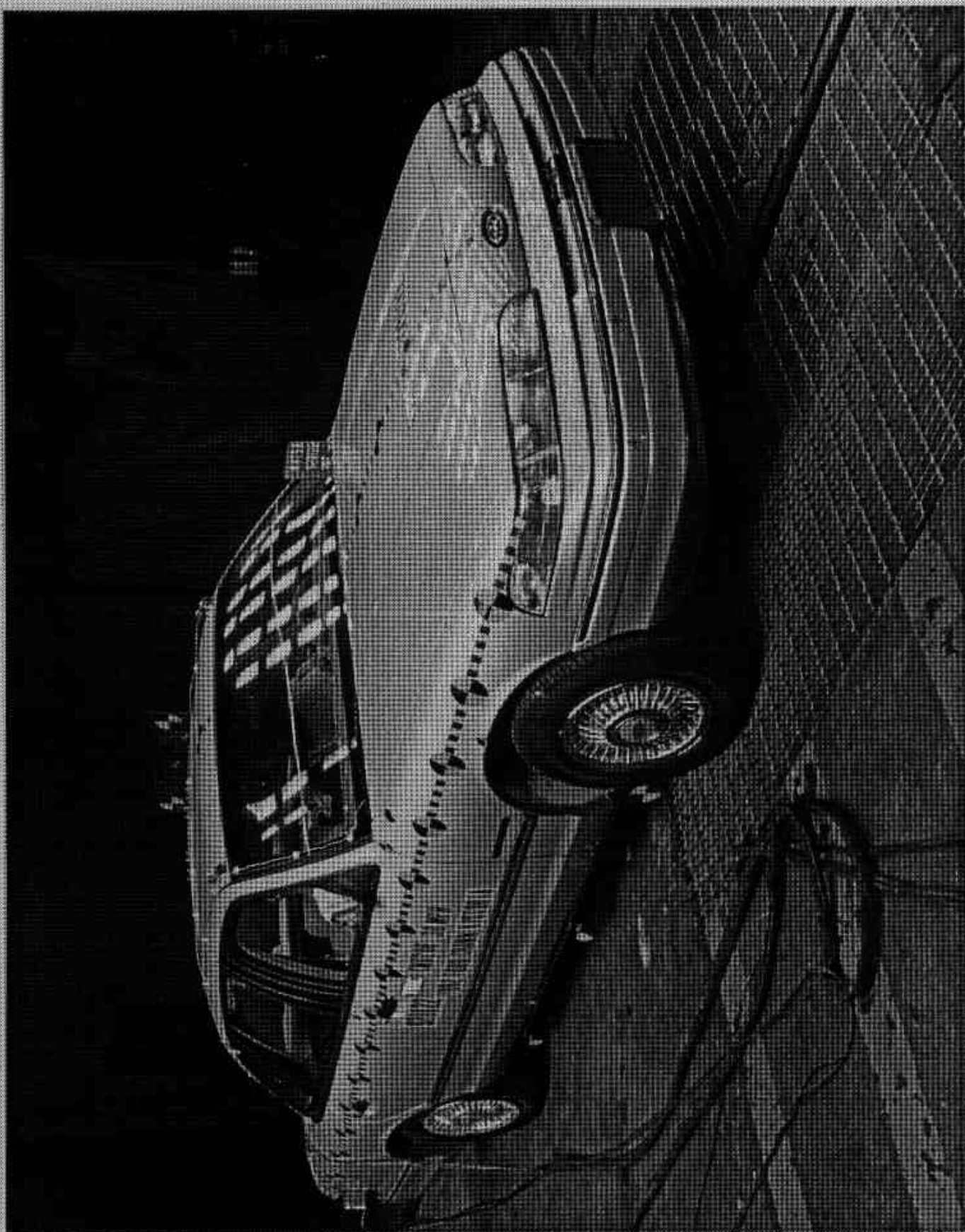


FIGURE A-9, PRE-TEST RIGHT FRONT THREE-QUARTER VIEW

A-10

920122

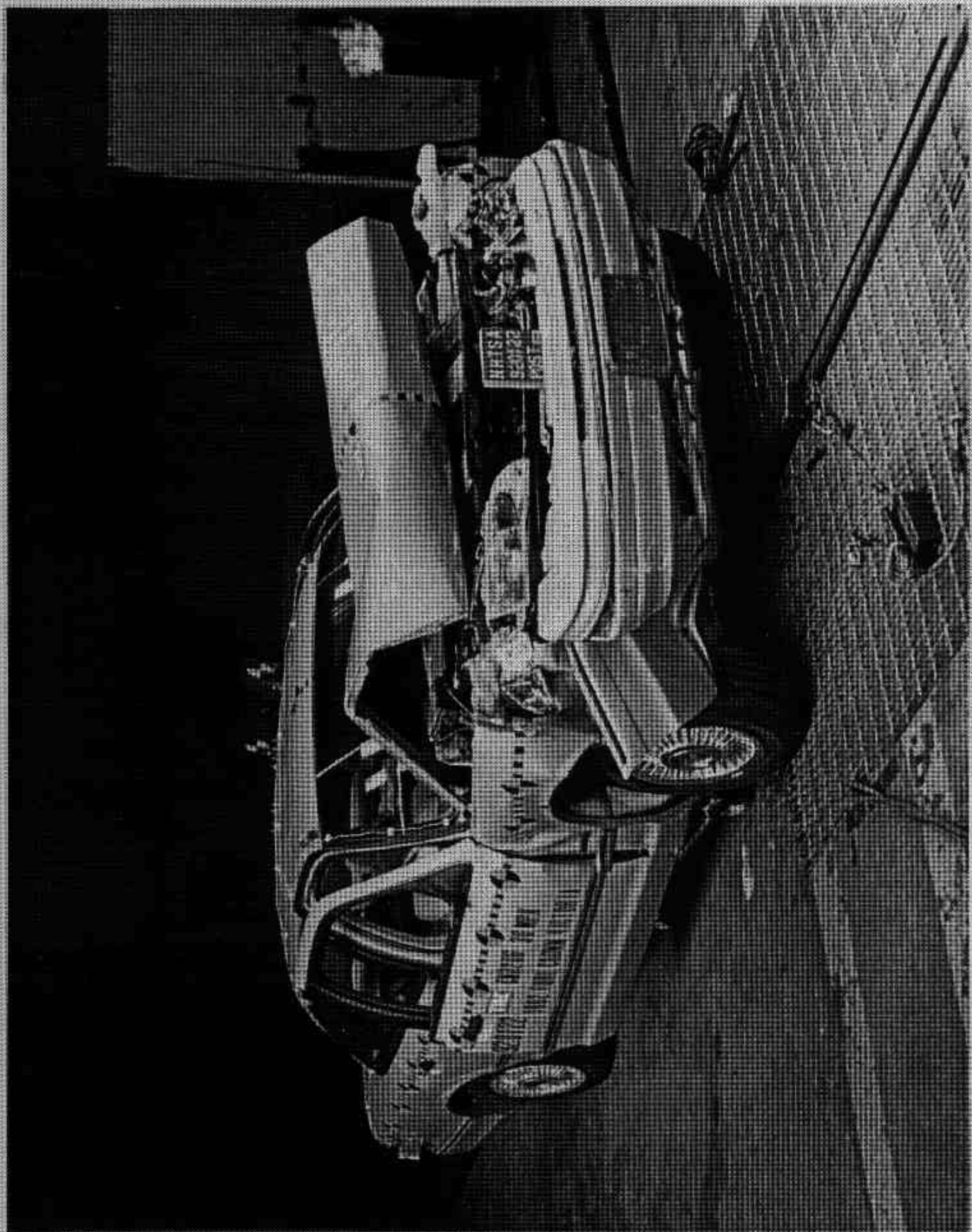


FIGURE A-10. POST-TEST RIGHT FRONT THREE-QUARTER VIEW
A-11

920122



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

A-12

920122



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

A-13

920122

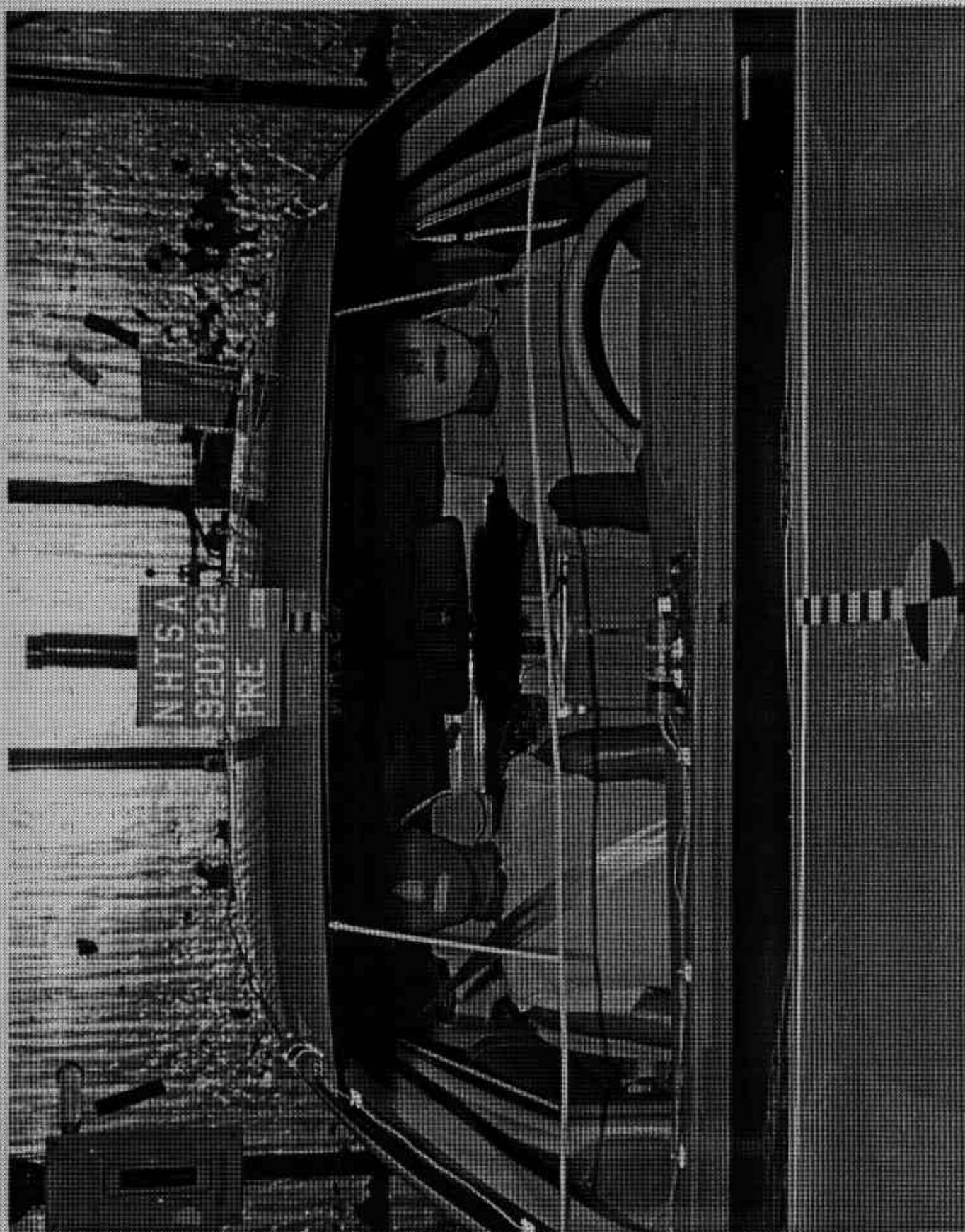


FIGURE A-13. PRE-TEST WINDSHIELD VIEW
A-14

920122

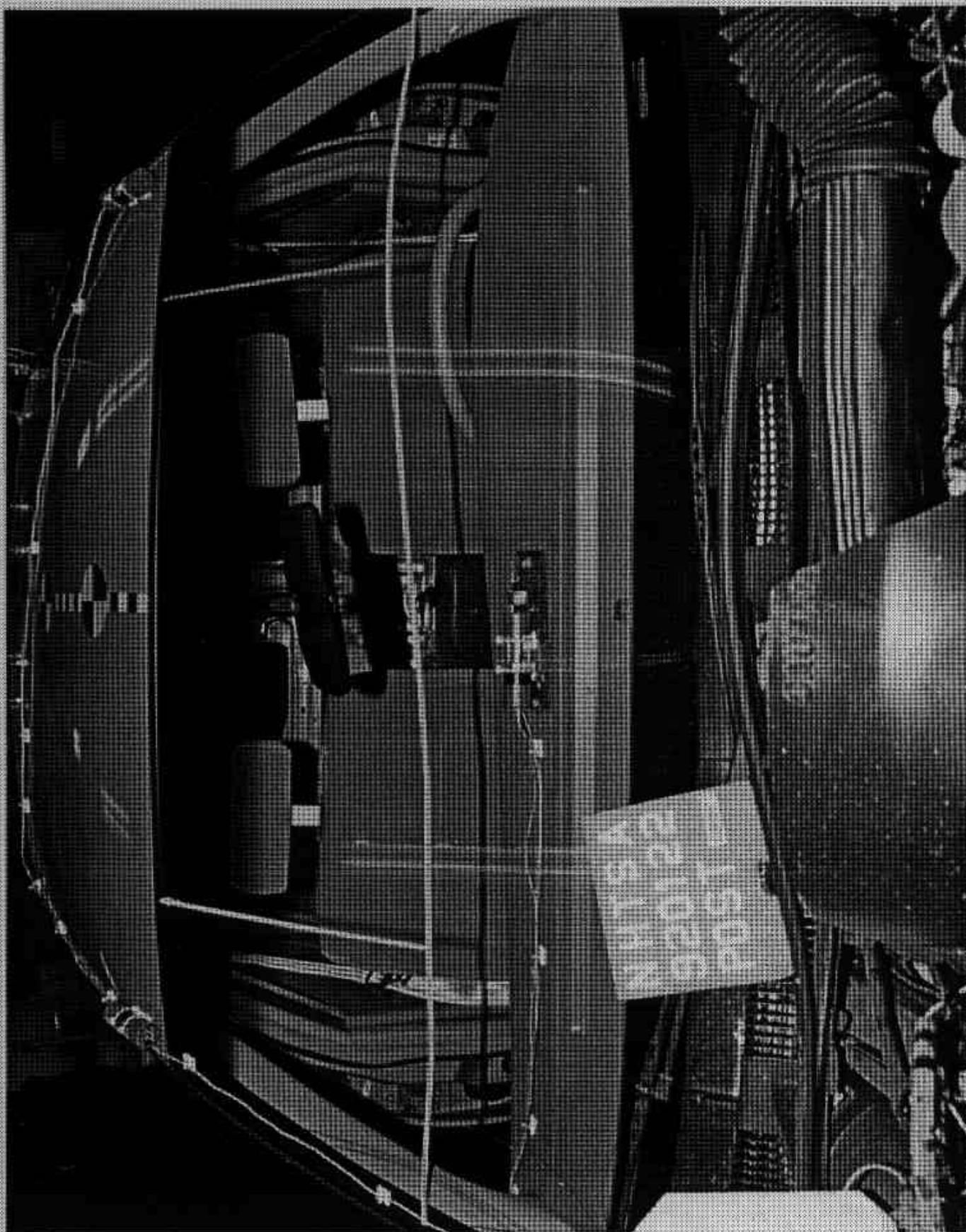


FIGURE A-14. POST-TEST WINDSHIELD VIEW
A-15

920122

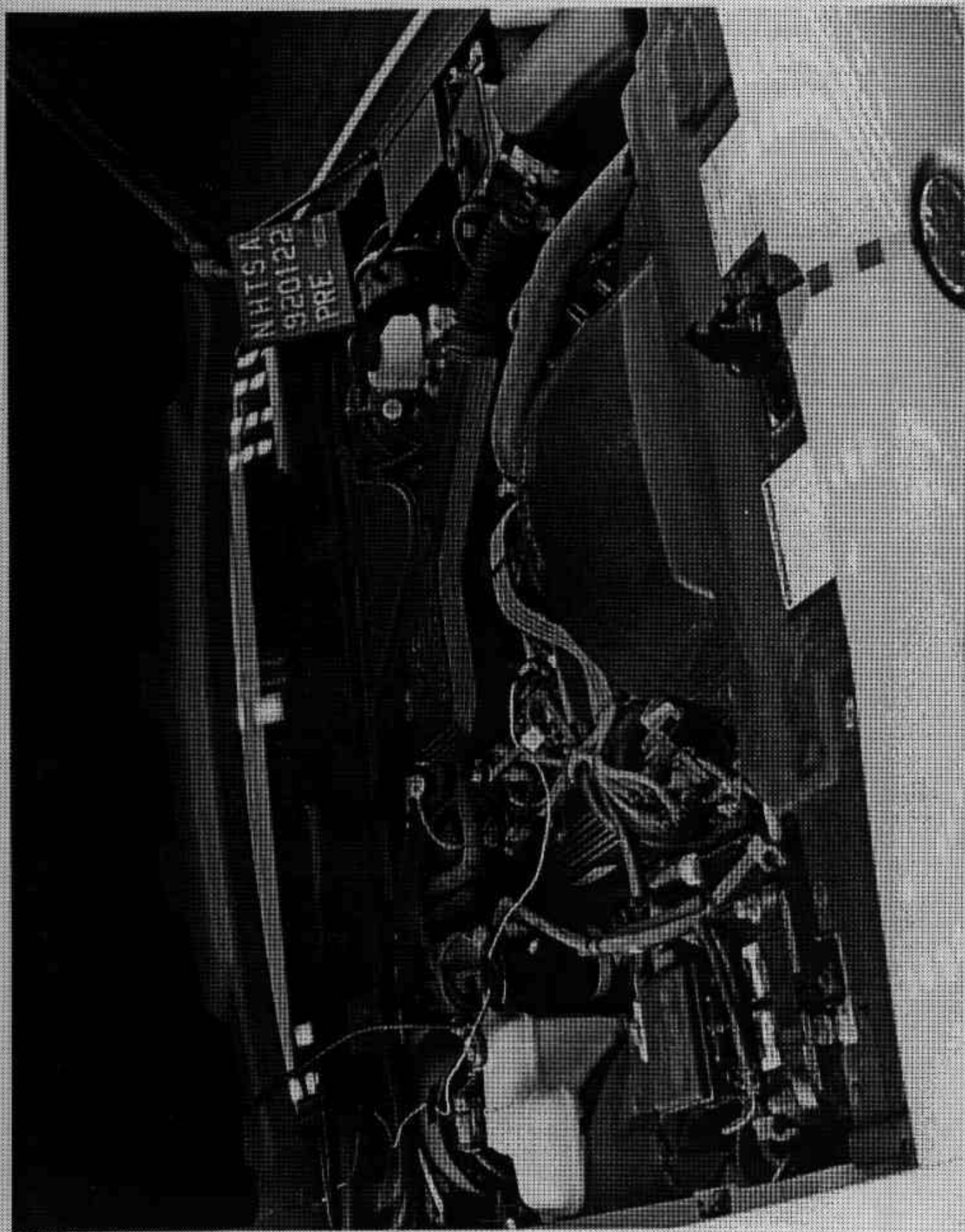


FIGURE A-15. PRE-TEST ENGINE COMPARTMENT VIEW

A-16

920122



FIGURE A-16. POST-TEST ENGINE COMPARTMENT VIEW

A-17

920122

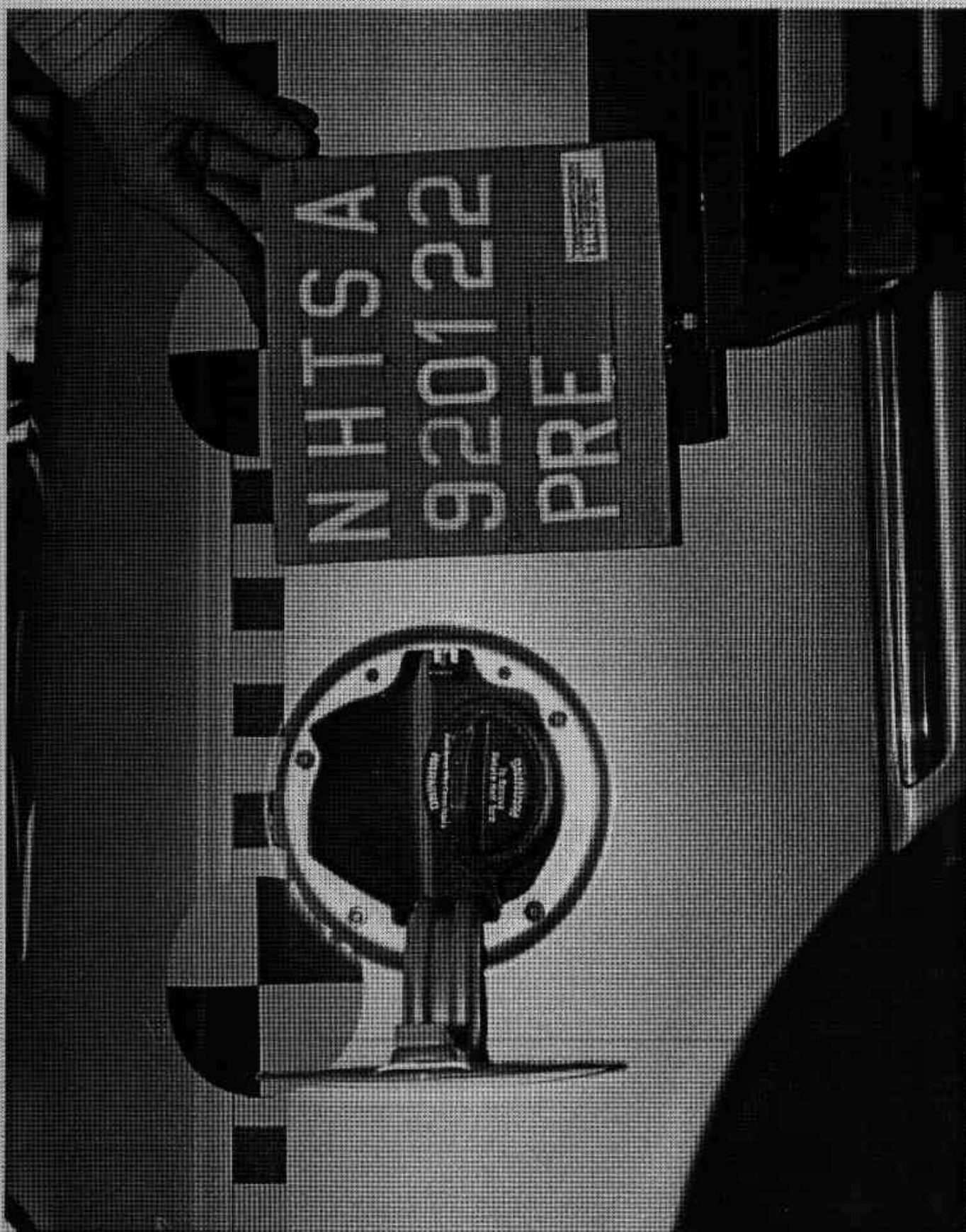


FIGURE A-17. PRE-TEST FUEL FILLER CAP VIEW
A-18

920122



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

A-19

920122



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

920122



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

A-21

920122

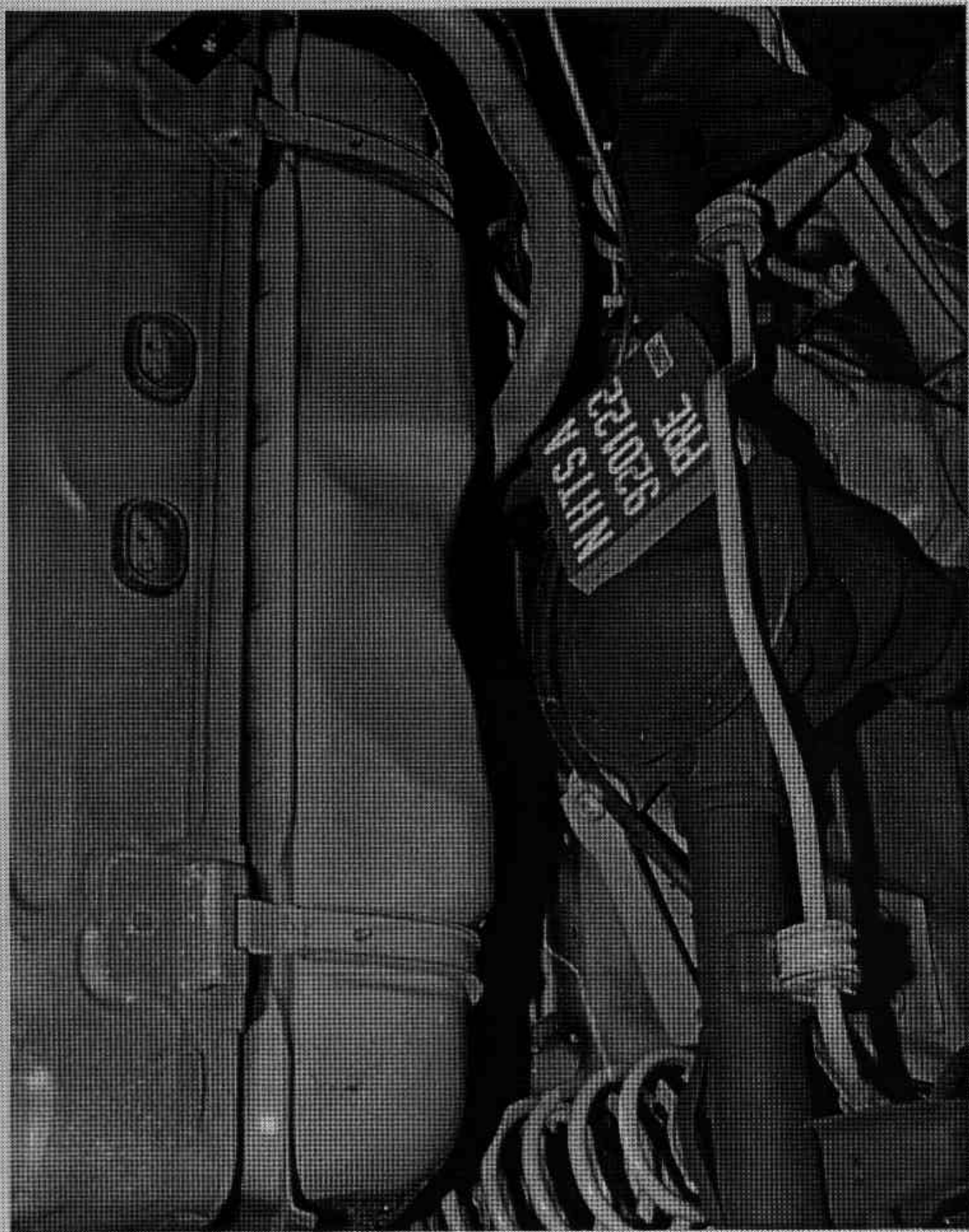


FIGURE A-21. PRE-TEST FUEL TANK VIEW
A-22

920122

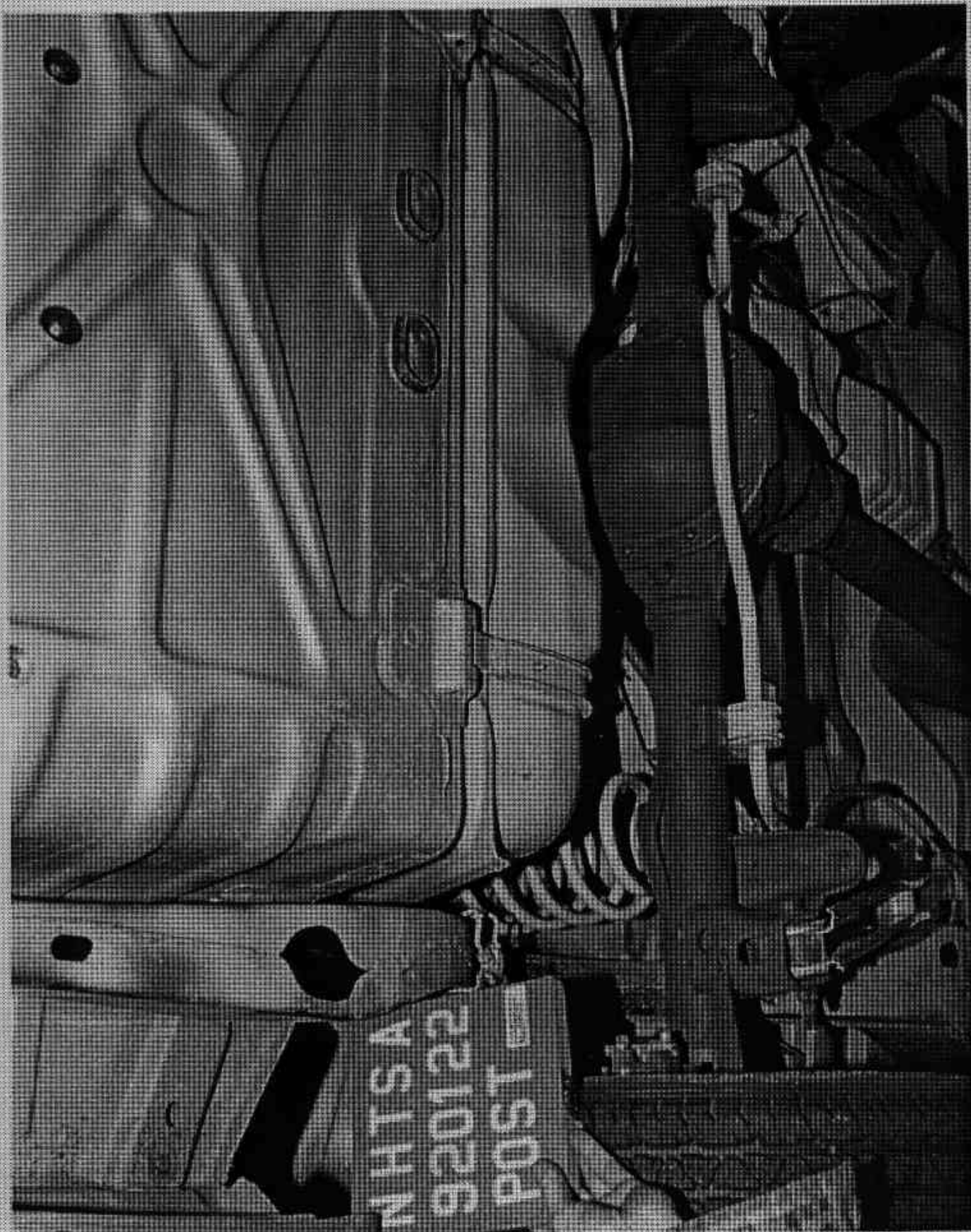


FIGURE A-22. POST-TEST FUEL TANK VIEW
A-23

920122

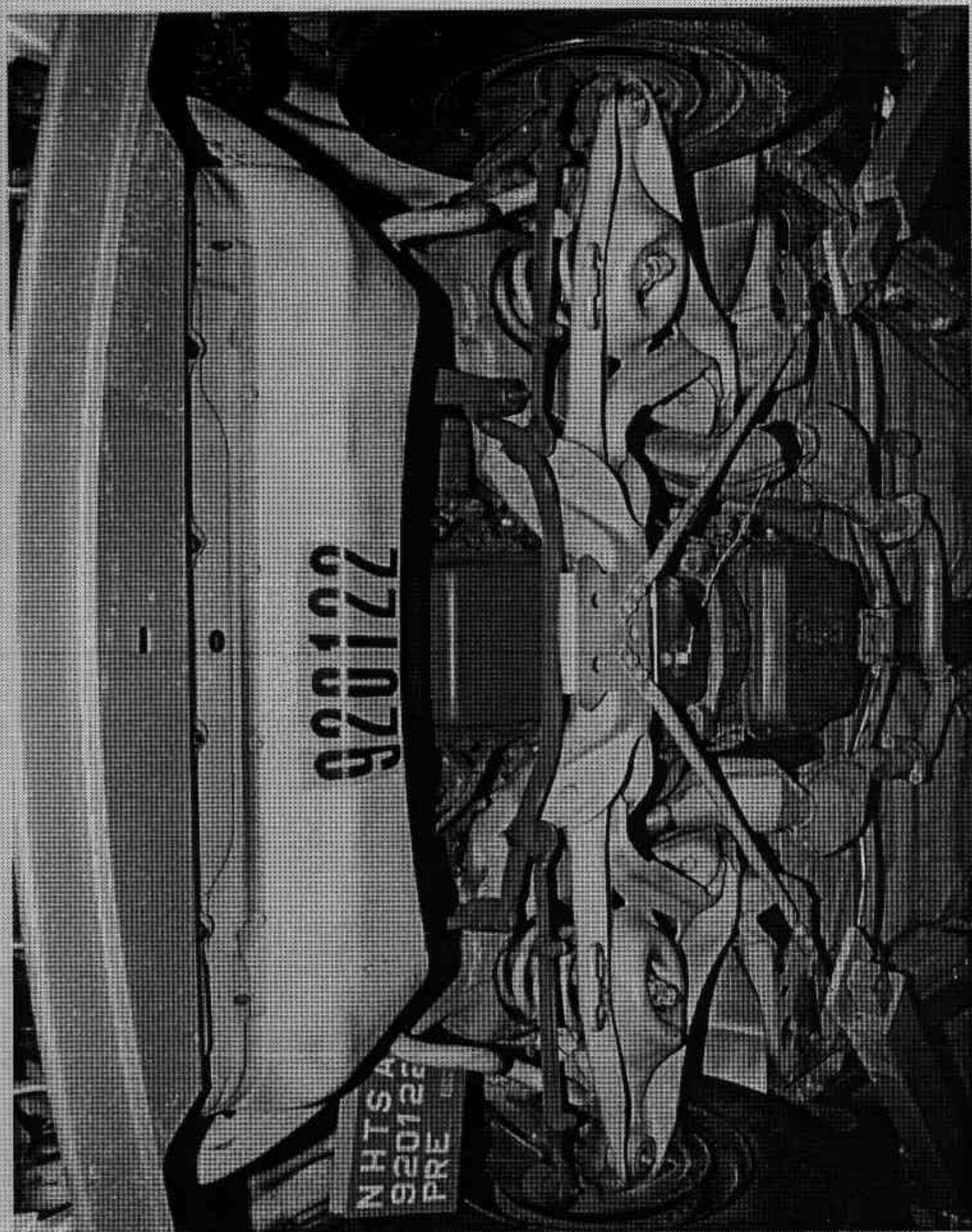


FIGURE A-23. PRE-TEST FRONT UNDERBODY VIEW



FIGURE A-24. POST-TEST FRONT UNDERBODY VIEW

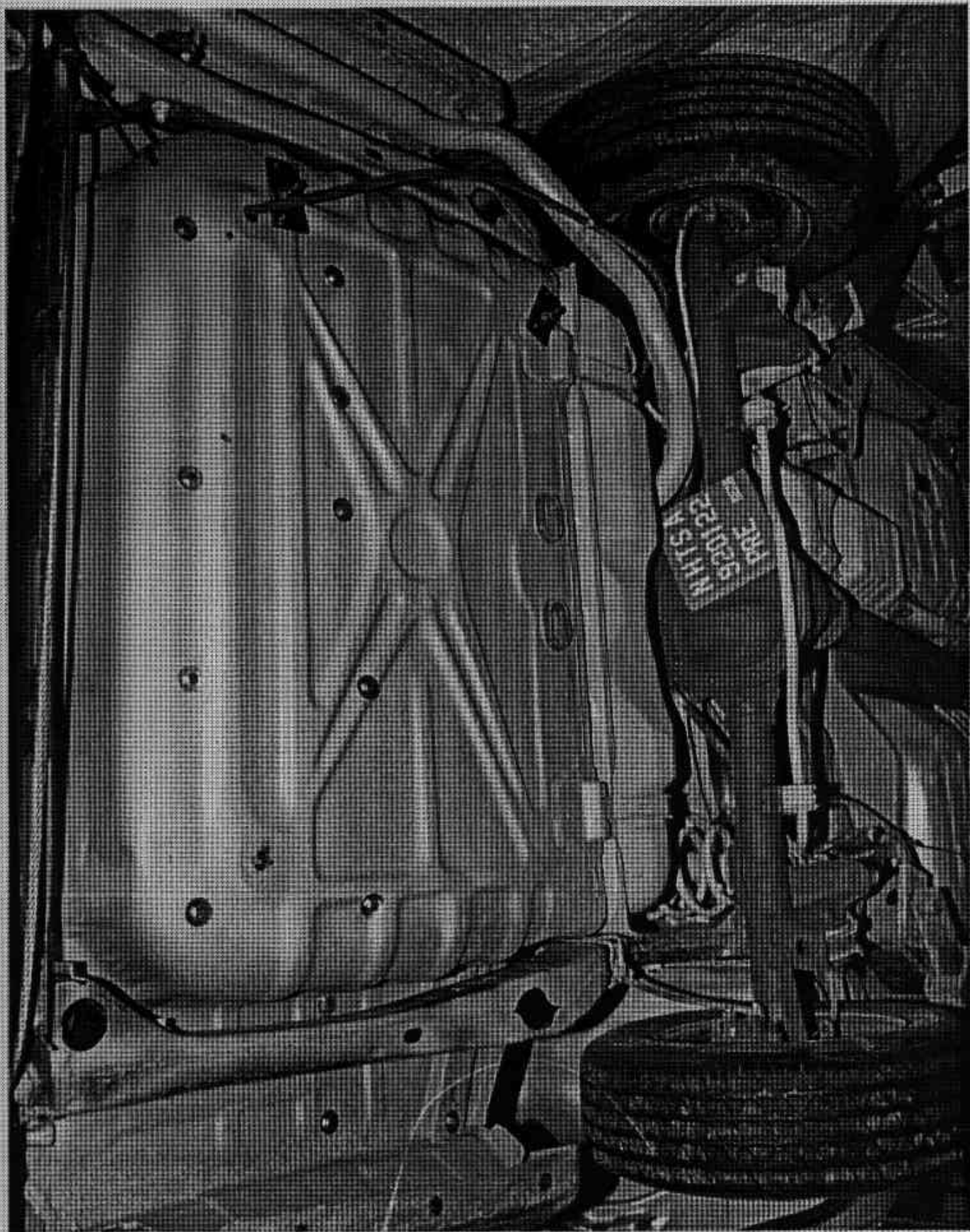


FIGURE A-25. PRE-TEST REAR UNDERBODY VIEW

A-26

920122

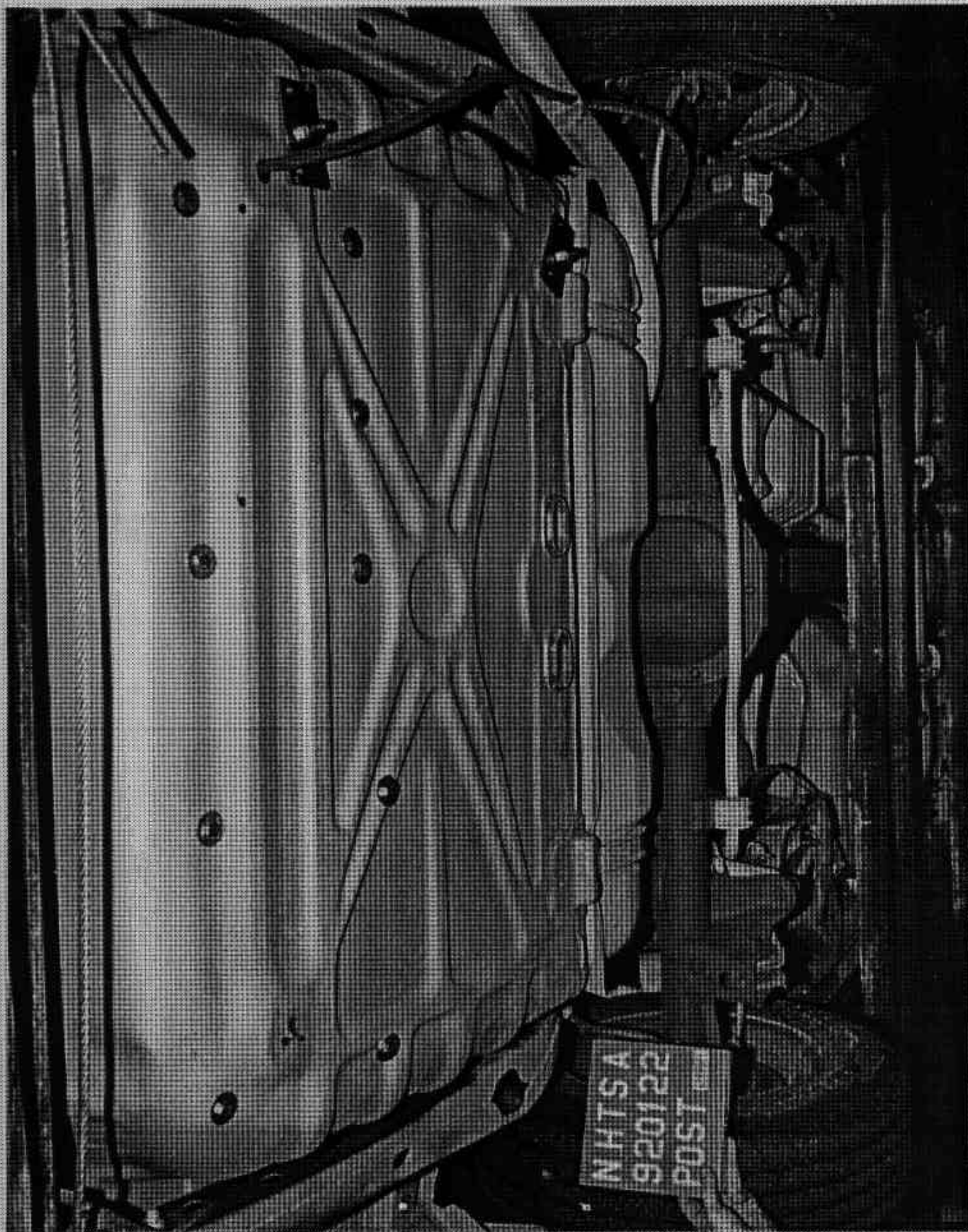


FIGURE A-26. POST-TEST REAR UNDERBODY VIEW

A-27

920122

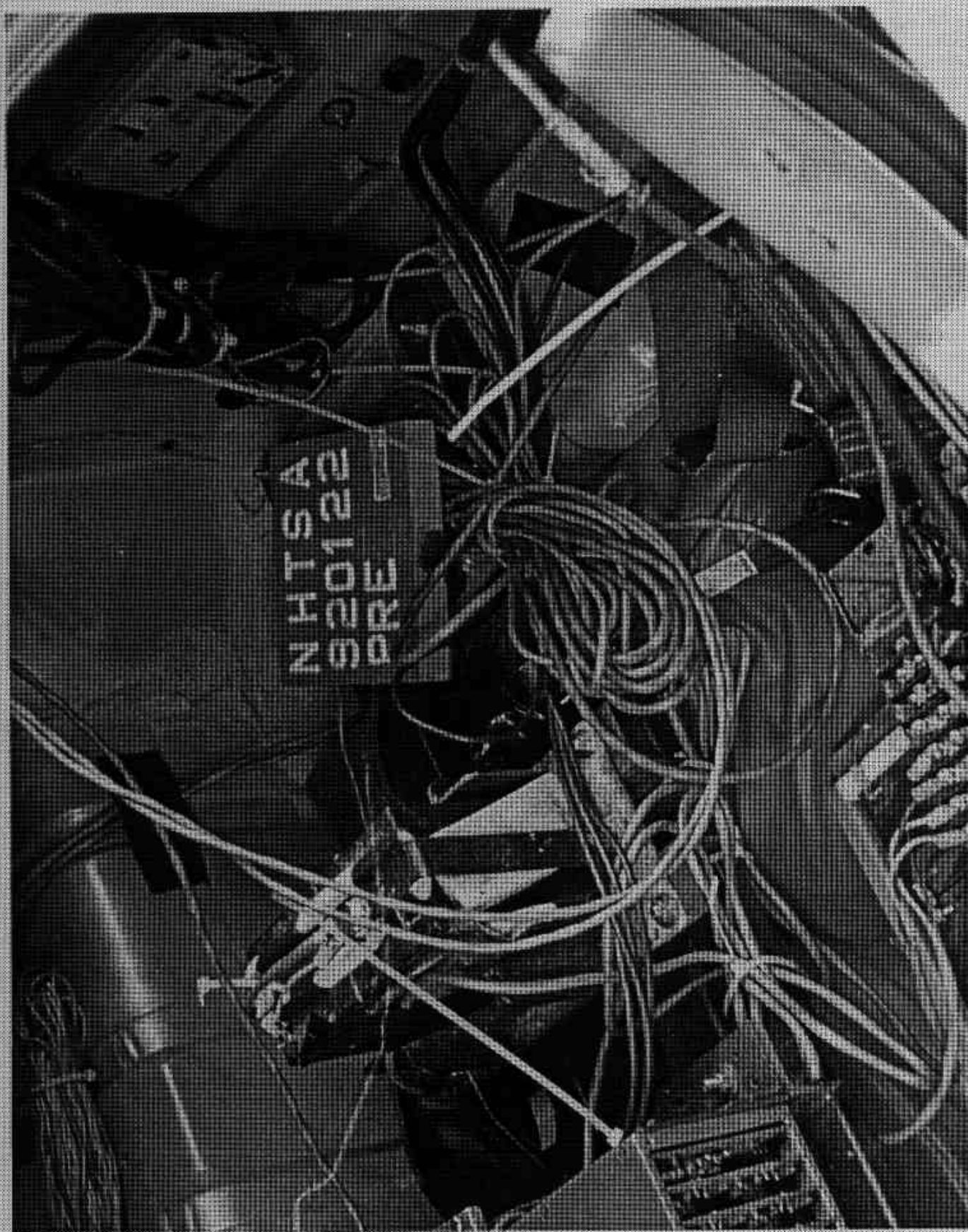


FIGURE A-27. PRE-TEST BALLAST LOCATION VIEW

A-28

920122



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

A-29

920122

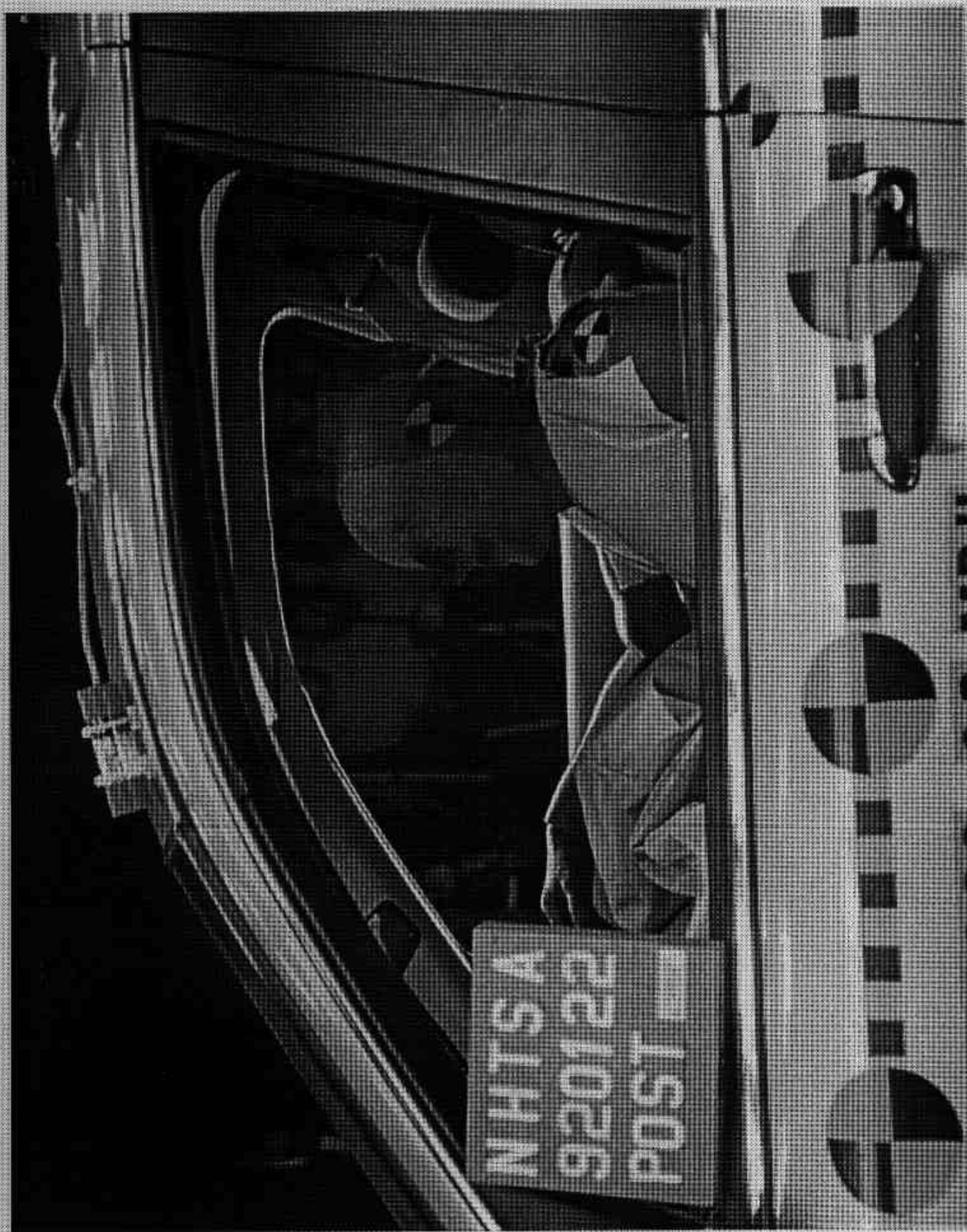


FIGURE A-29. POST-TEST DRIVER DUMMY POSITION VIEW

A-30

920122



FIGURE A-30. PRE-TEST PASSENGER DUMMY POSITION VIEW
A-31

920122



FIGURE A-31. POST-TEST PASSENGER DUMMY POSITION VIEW

A-32

920122



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

A-33

920122



FIGURE A-33. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1

A-34

920122

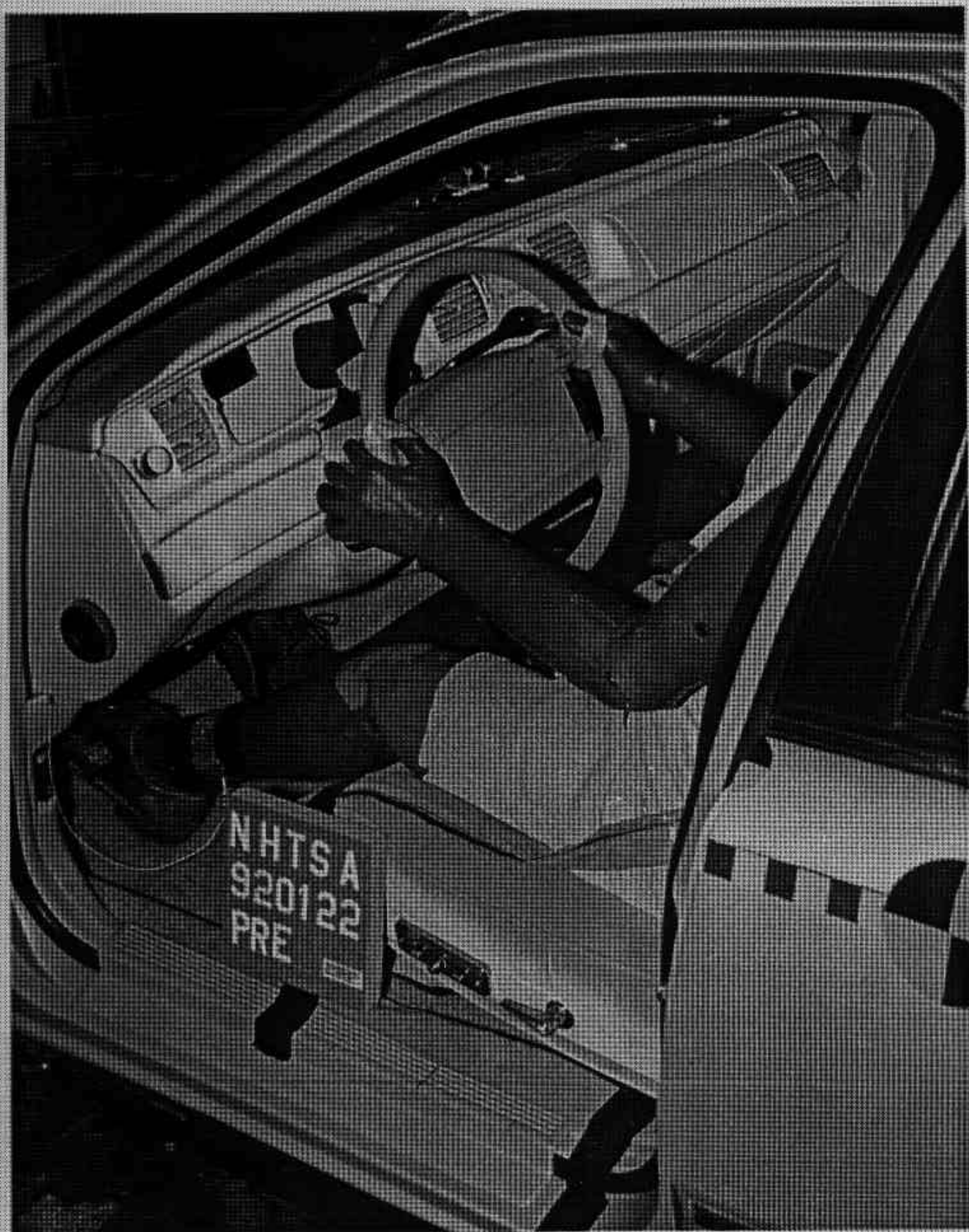


FIGURE A-34. PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2



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

A-36

920122



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

A-37

920122

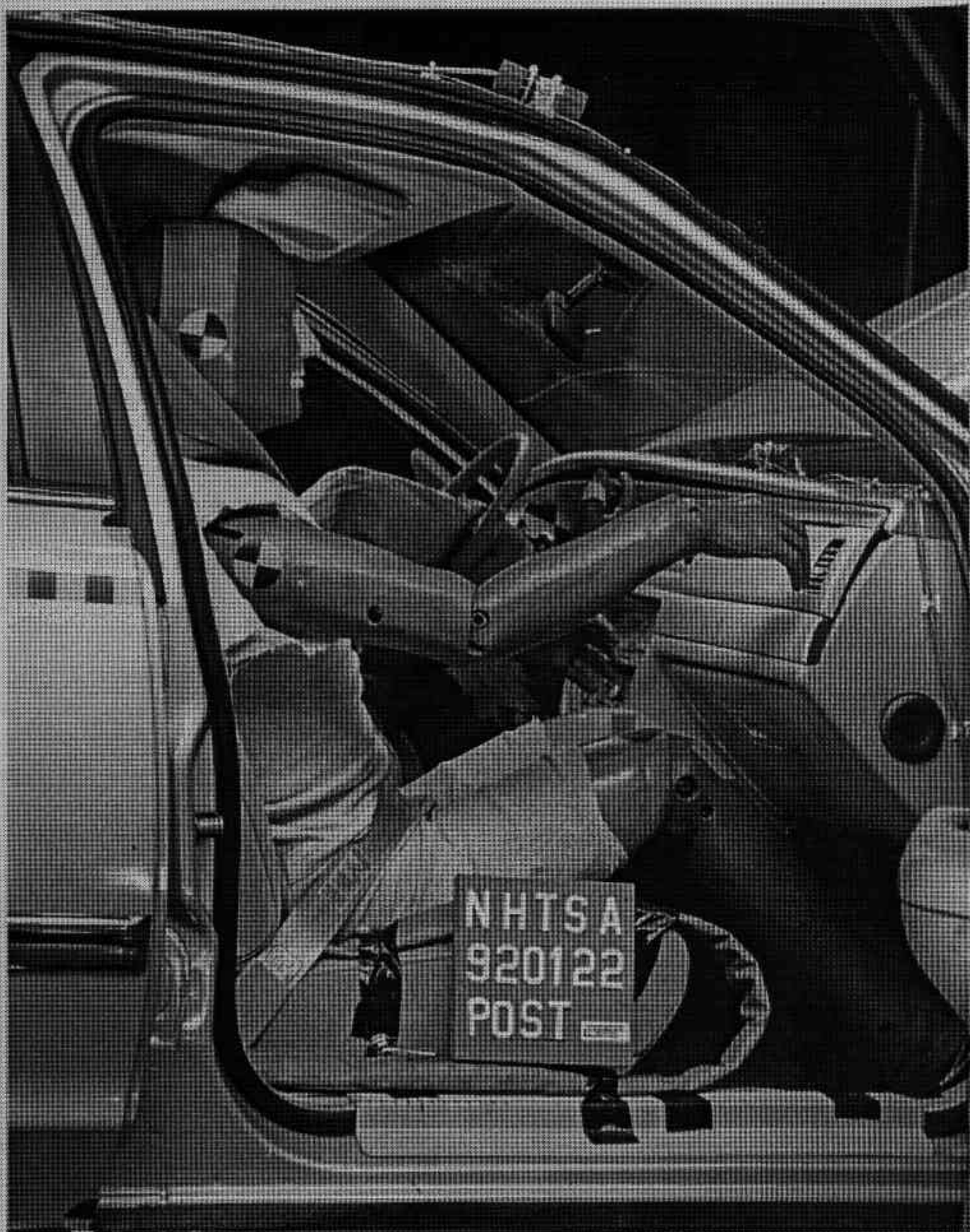


FIGURE A-37. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 1
A-38 920122

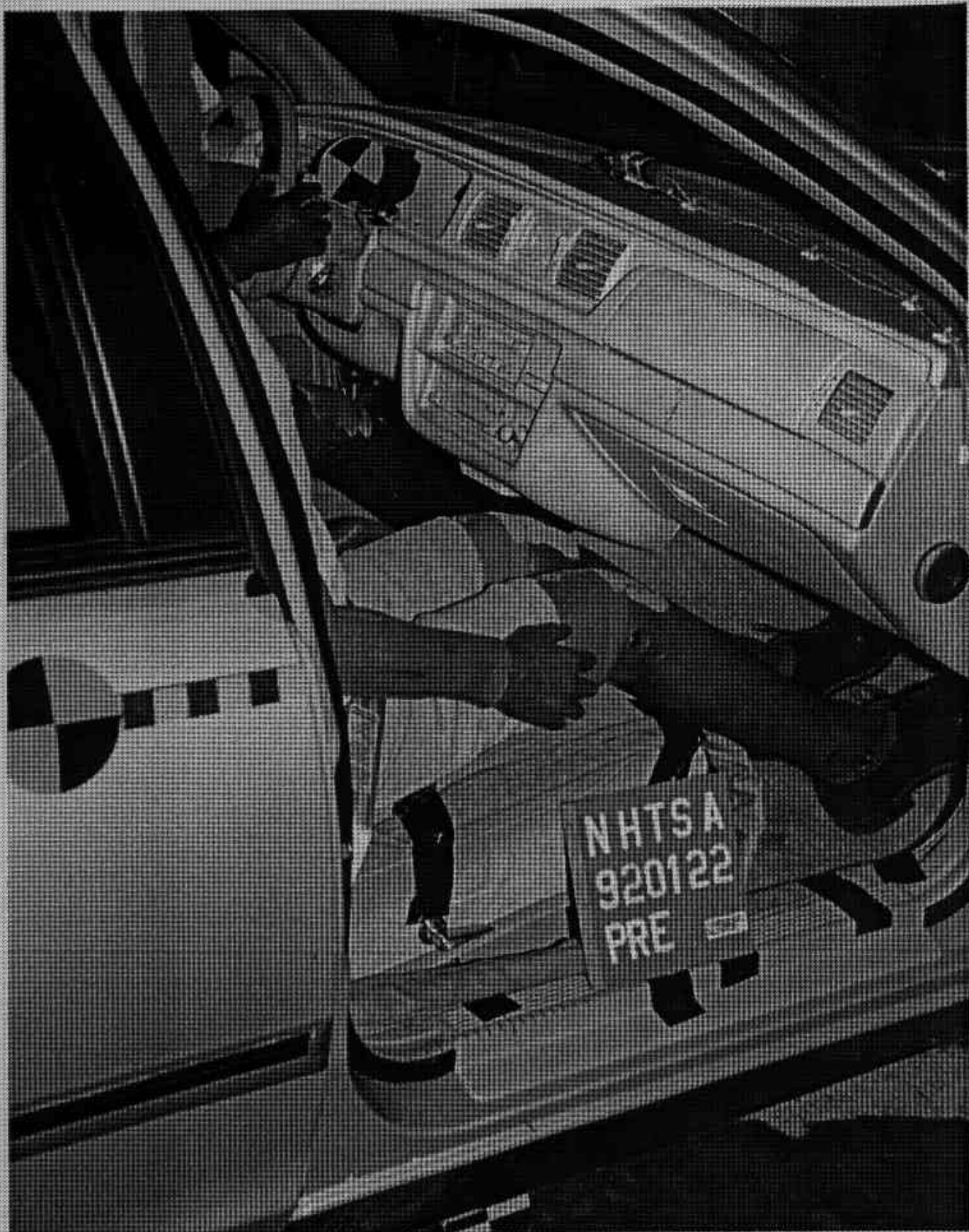


FIGURE A-38. PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2

A-39

920122

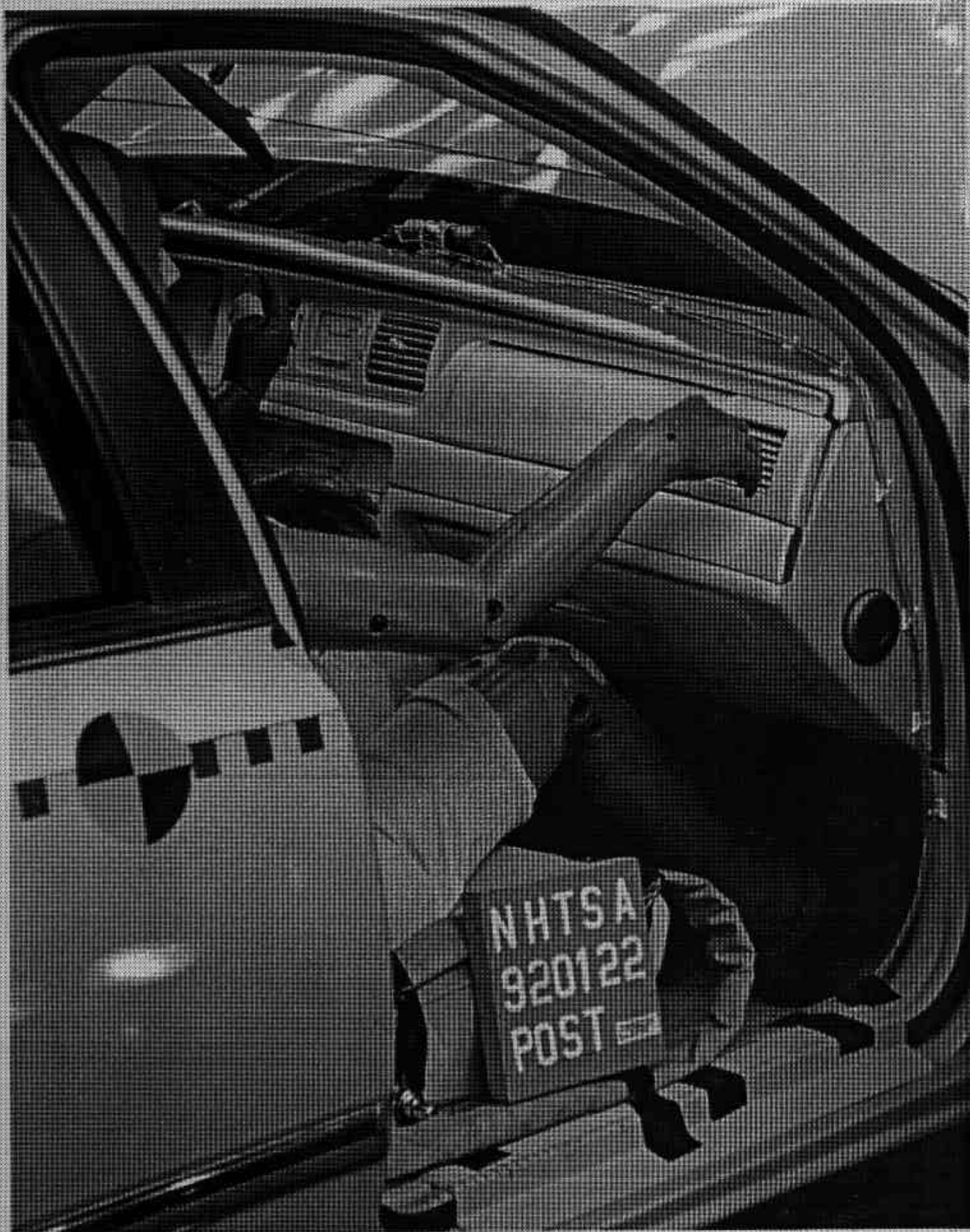


FIGURE A-39. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2
A-40 920122

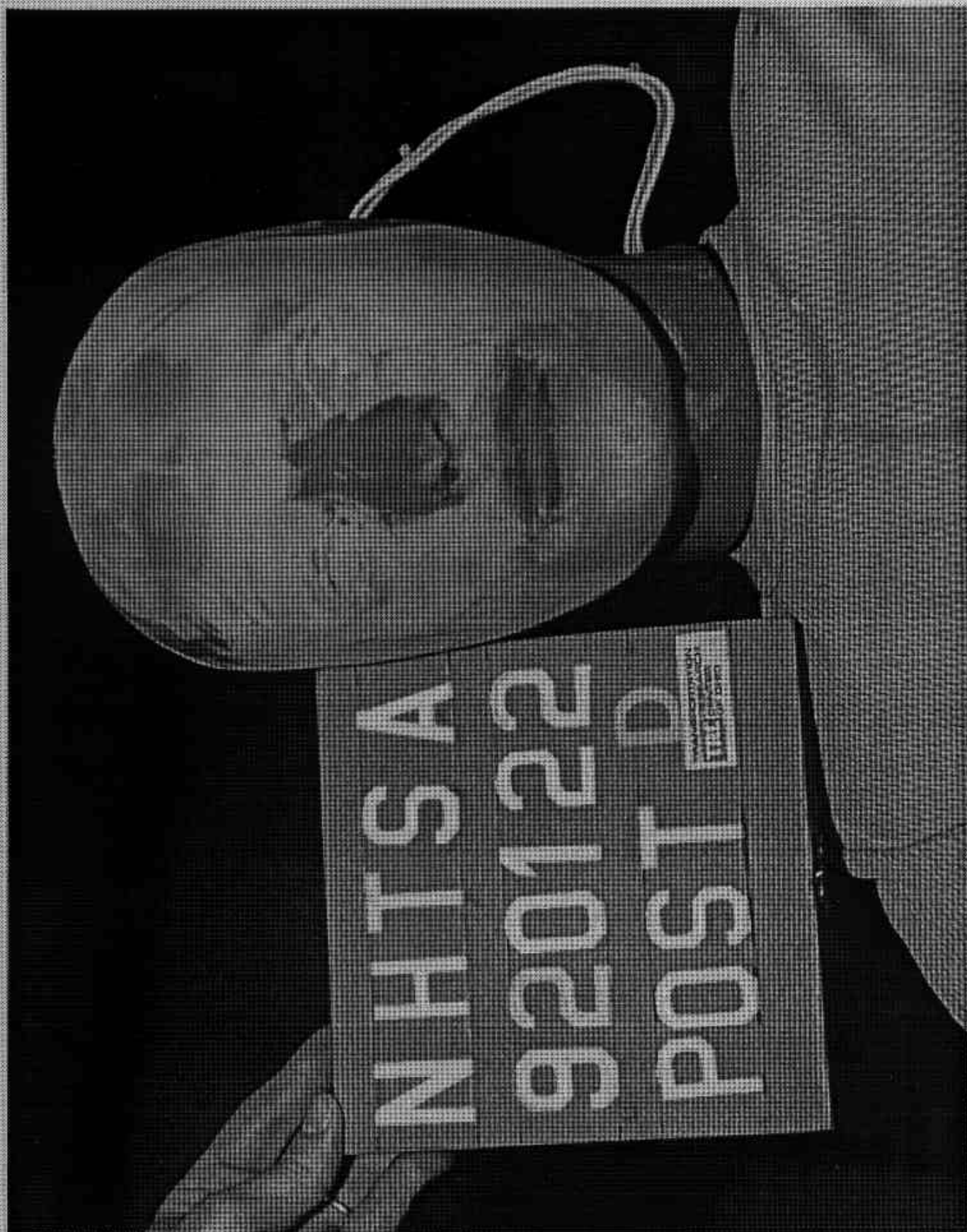


FIGURE A-40. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 1

A-41

920122

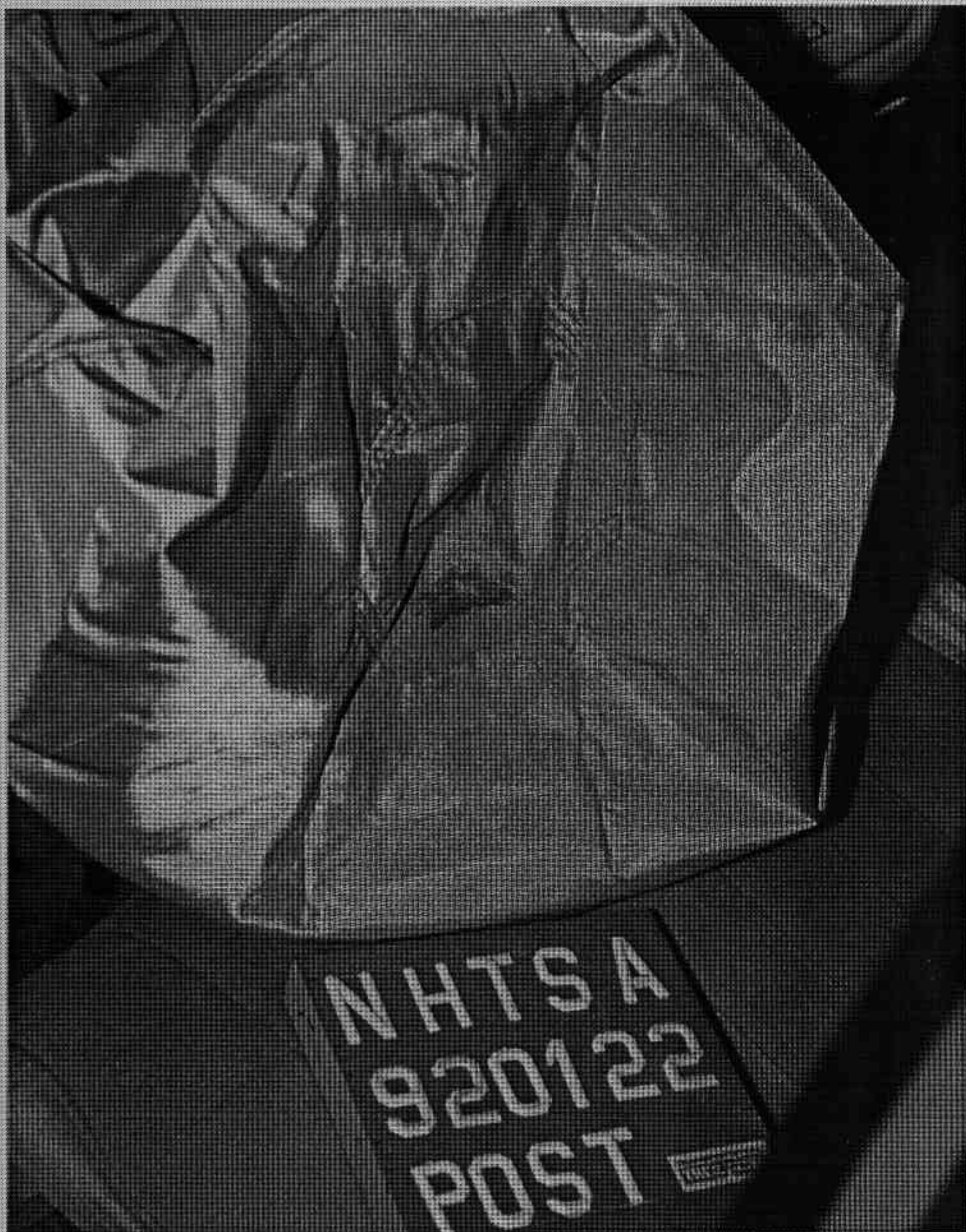


FIGURE A-41. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 2

A-42

920122

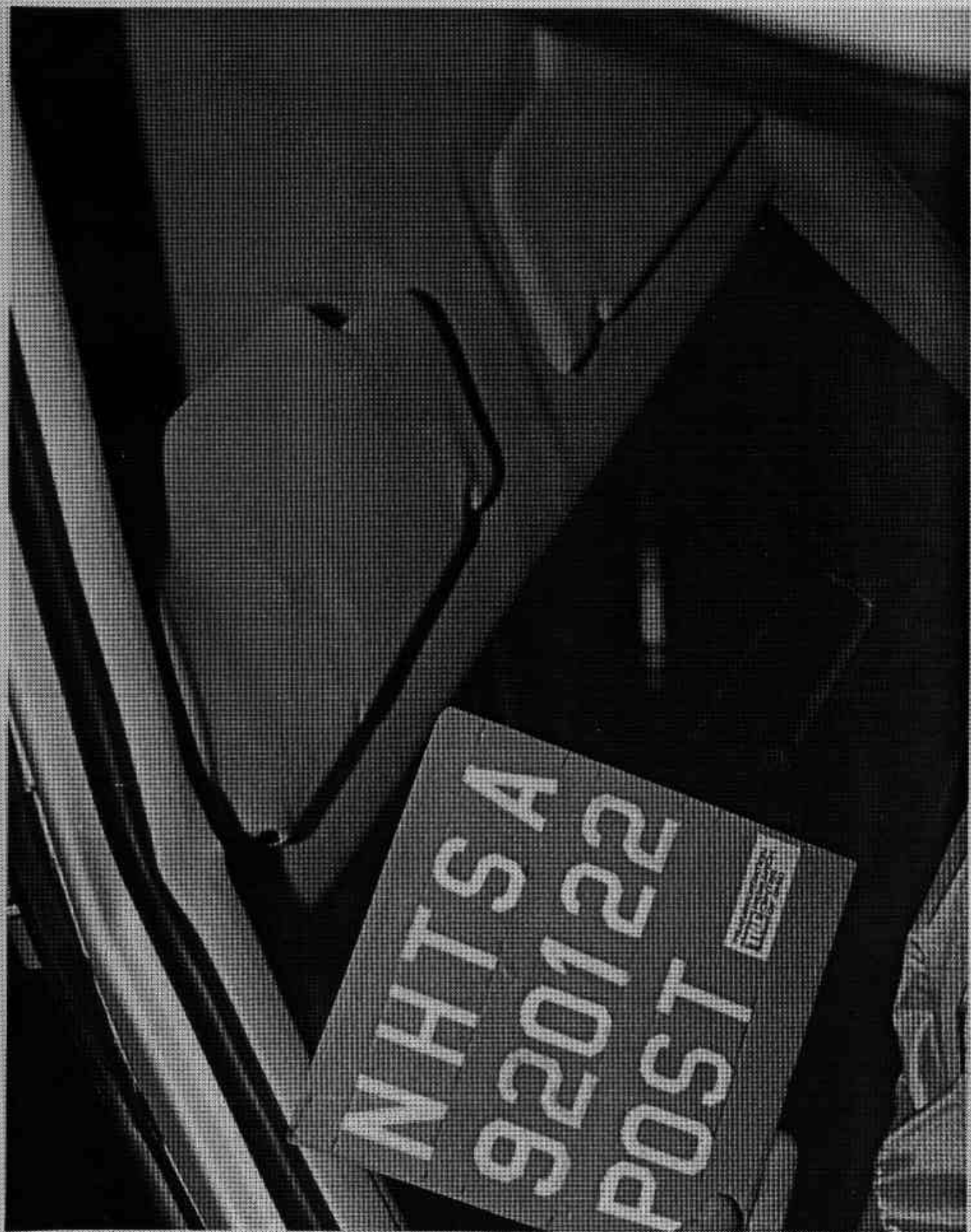


FIGURE A-42. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 3

A-43

920122



FIGURE A-43. POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 1

A-44

920122



FIGURE A-44. POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 2

A-45

920122



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

A-46

920122

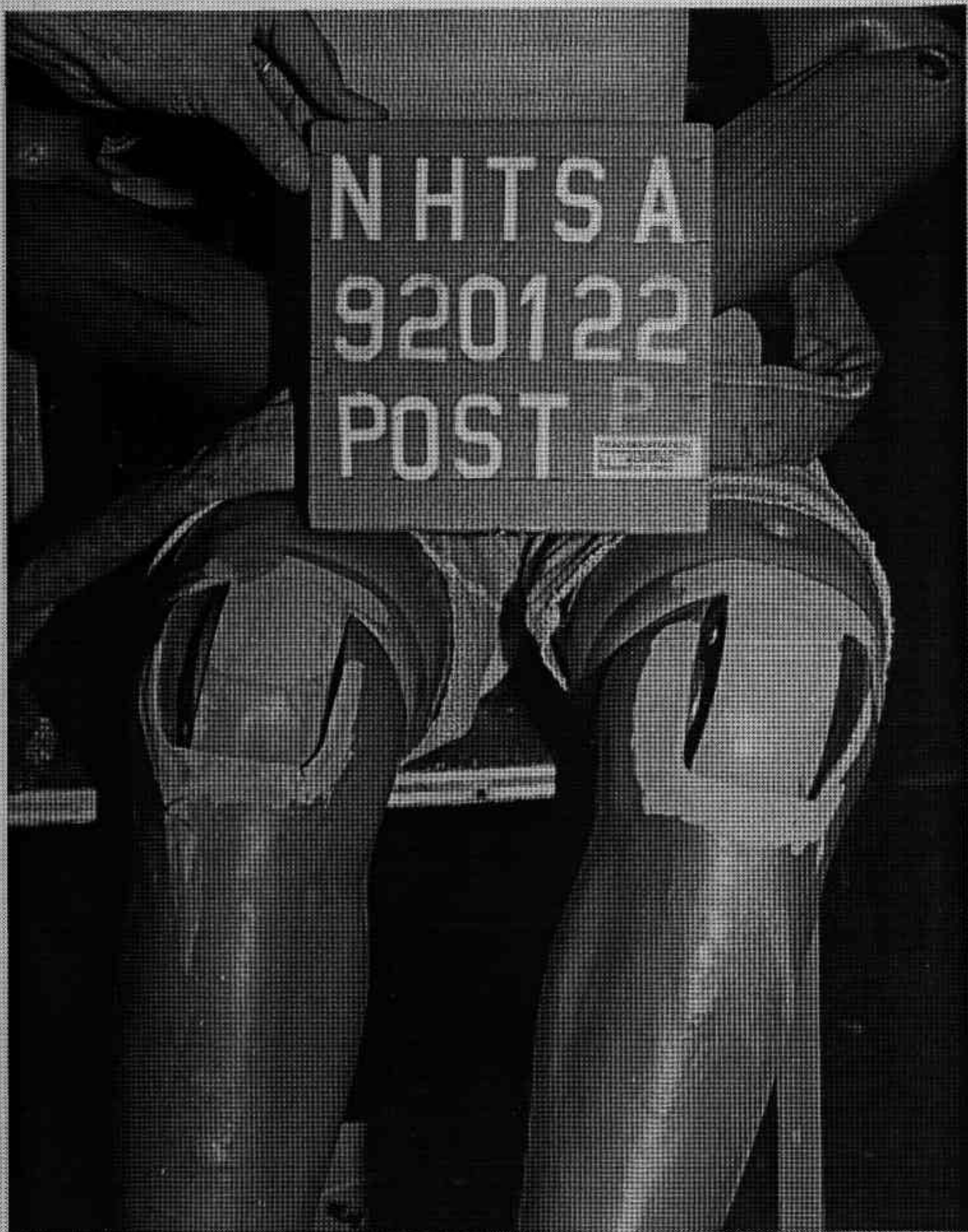


FIGURE A-46. POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 1

A-47

920122

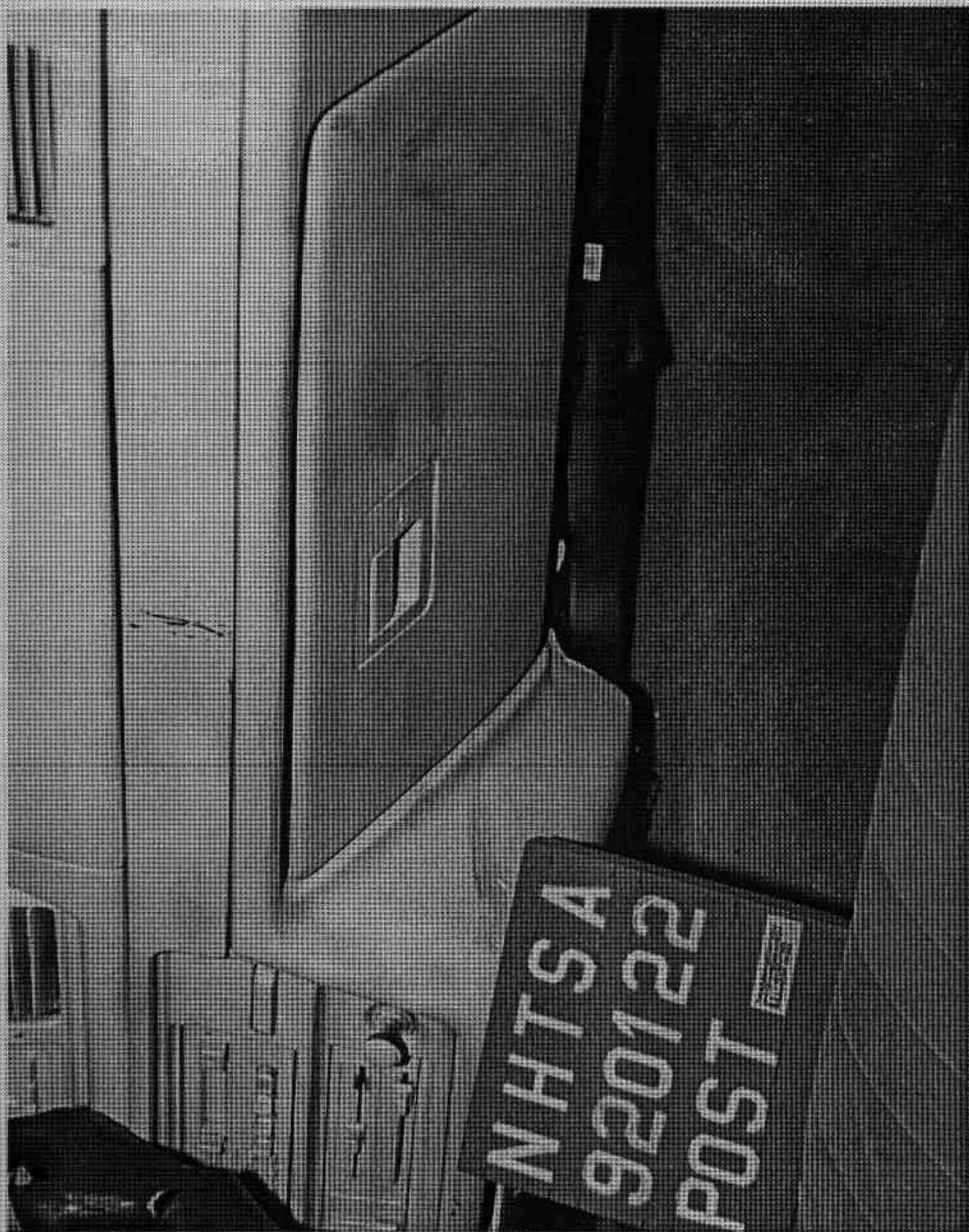


Fig. A-47. POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 2

A-48

920122

MFD. BY FORD MOTOR CO. OF CANADA LTD.
 DATE: 04/91
 FRONT GAWR: 2610LB 1183KG
 REAR GAWR: 2660LB 1206KG

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

VIN: 2FACP73W9NX100856
 TYPE: PASSENGER

F0136
 R0103



EXTERIOR PAINT COLORS
 BODY / VR / MLCG / INT TRIM / TARE / R / S / AX / II / 42 / 050
 BA4 / T / H / Y / 10022
 MADE IN CANADA V-FR0-5020V010-00

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

MODEL'S MODELES		TIRE SIZE DIMENSIONS DES PNEUS	LOAD MAXIMUM CHARGE MAXIMALE	TIRE PRESSURE PNEUS PSI BAR	WHEEL ROUE INCH CM
SEDANS BERLINES		P215/70R16	STD	30 PSI 2.0 bar	16
		P225/70R16	T	30 PSI 2.0 bar	16
		P225/70R16	STD	30 PSI 2.0 bar	16
HANDLING PACKAGE PAQUET MANOEUVRE		P225/70R16	STD	30 PSI 2.0 bar	16
		P225/70R16	T	30 PSI 2.0 bar	16
		P225/70R16	STD	30 PSI 2.0 bar	16

FOR SUSTAINED HIGH SPEED, TRAILER TOWING, HEAVY LOADS, ACCESSORIES AND TEMPERATURES, SEE OWNER'S MANUAL FOR LIMITED LOADS, WEIGHTS, CAPACITIES, RESTRICTIONS, RECOMMENDATIONS AND LIMITATIONS. ALWAYS USE PROPER TIRE INFLATION PRACTICES.

POUR UN HAUT NIVEAU DE PERFORMANCE, TRAILER TOWING, CHARGES ELEVEES, ACCESSOIRES ET TEMPERATURES, VOIR LE MANUEL D'UTILISATION POUR LES LIMITES DE CHARGE, POIDS, CAPACITES, RESTRICTIONS, RECOMMANDATIONS ET LIMITATIONS. TOUJOURS UTILISER DES PNEUS APPROPRIES.

FIGURE A-49. PRE-TEST VEHICLE RECOMMENDED TIRE PRES. LABEL VIEW

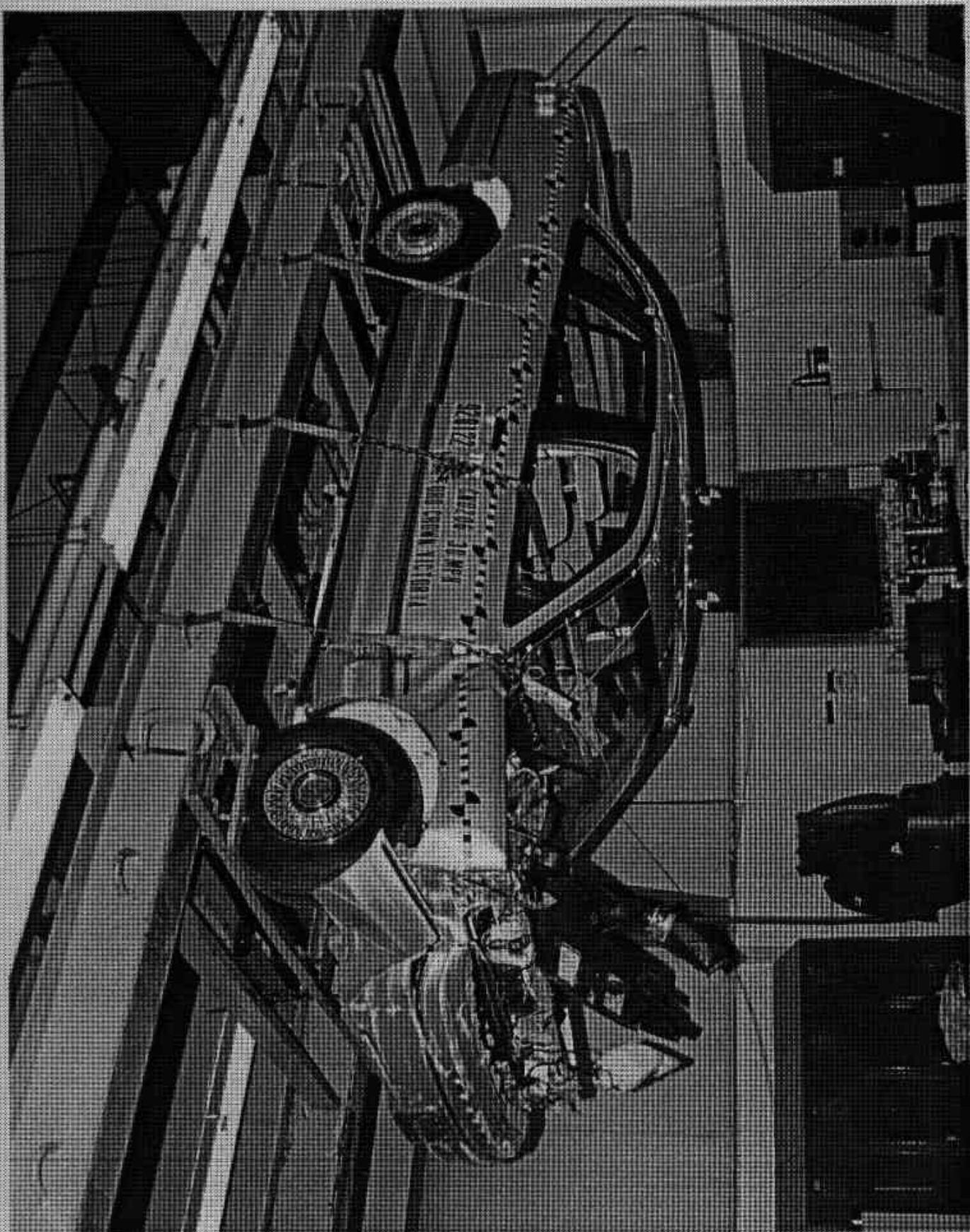


FIGURE A-50. POST-TEST VEHICLE ON STATIC ROLLOVER MACHINE VIEW

A-51

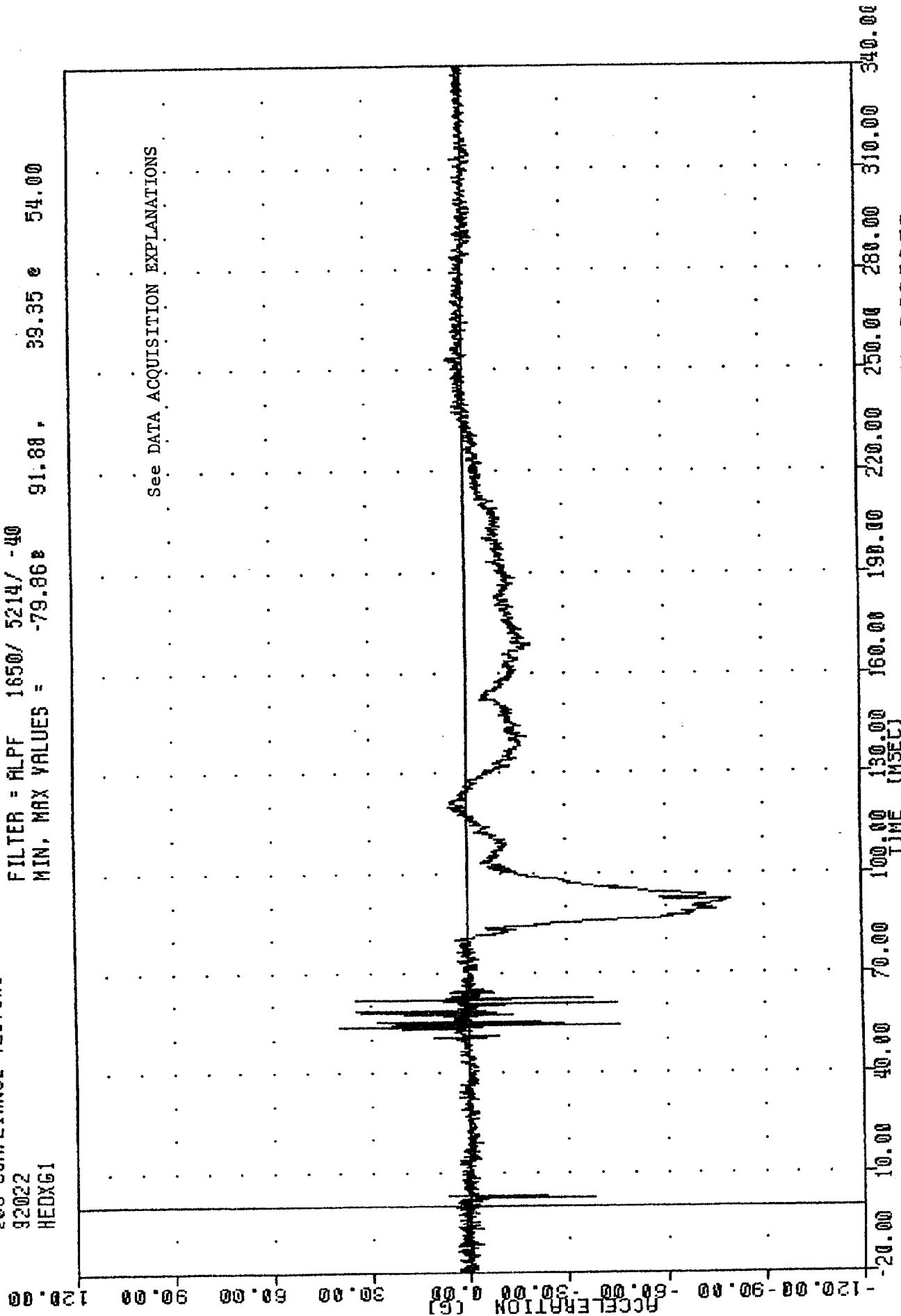
920122

APPENDIX B

DATA PLOTS

TRC , 920122
 208 COMPLIANCE TESTING
 92022
 HEDXG1

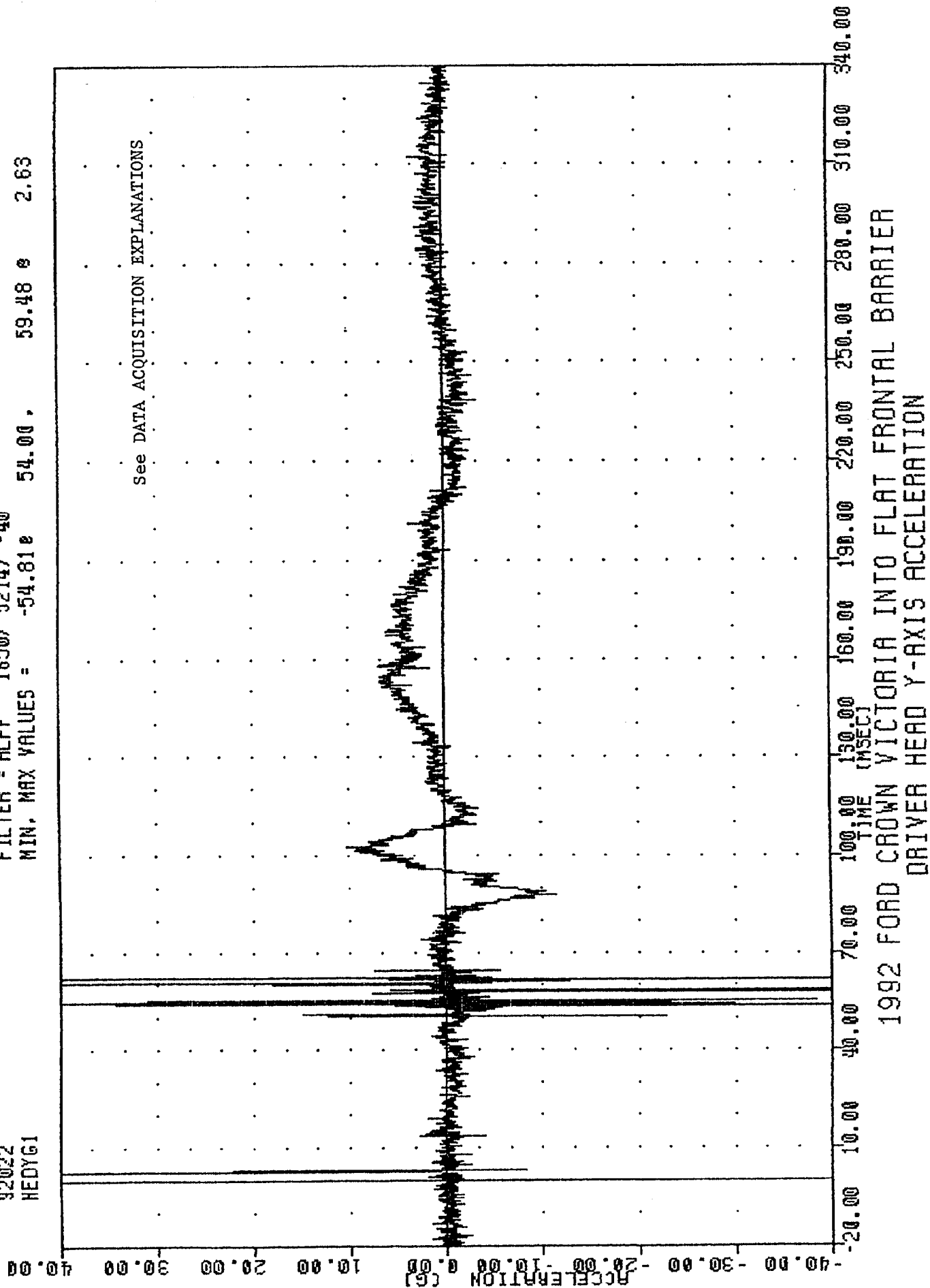
FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = -79.86 91.88 , 39.35 e 54.00



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
 DRIVER HEAD X-AXIS ACCELERATION

TRC , 920122
 208 COMPLIANCE TESTING
 92022
 HEDYG1

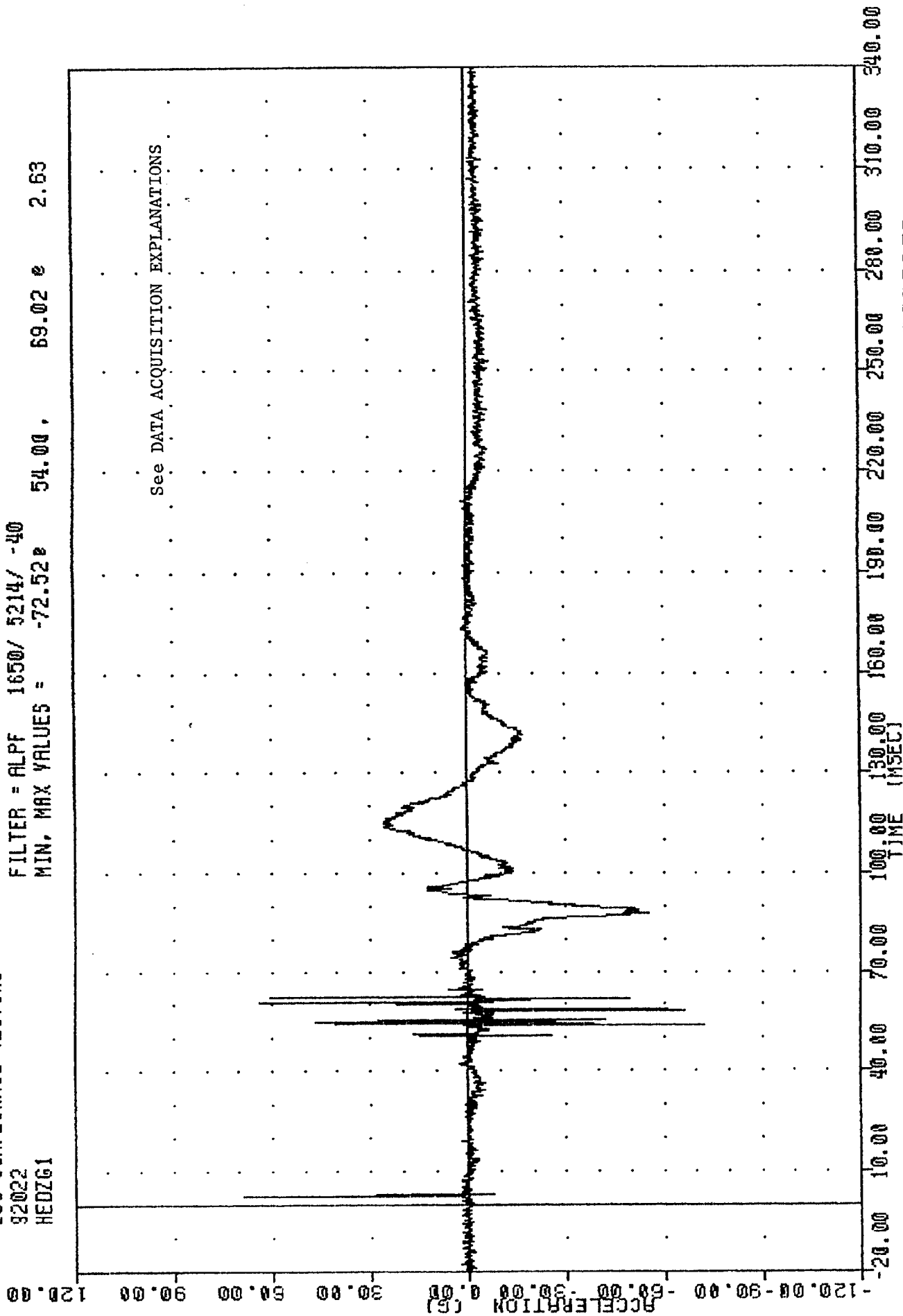
FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = -54.81e 54.00, 59.48 e 2.63



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
 DRIVER HEAD Y-AXIS ACCELERATION

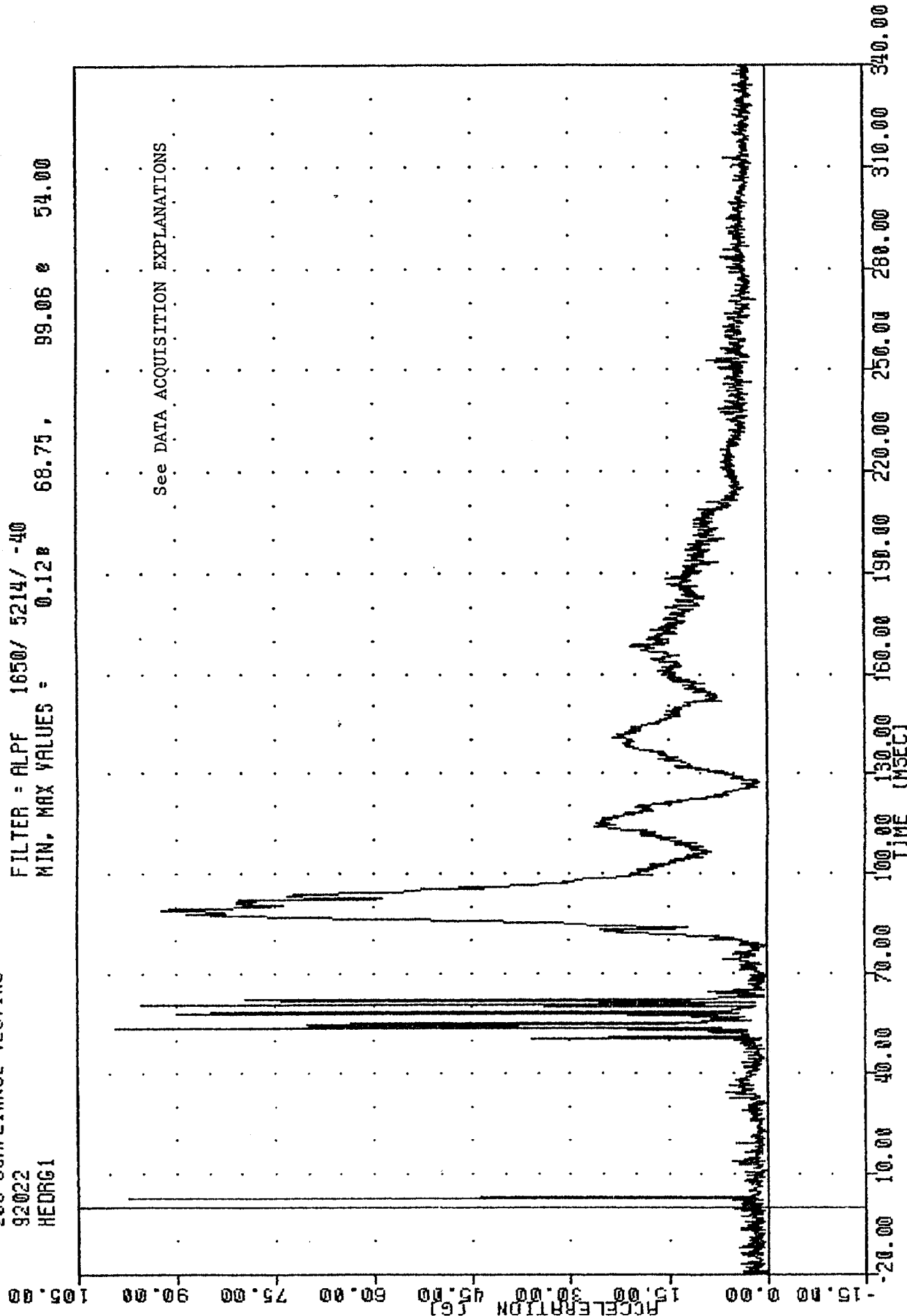
TRC
208 COMPLIANCE TESTING
92022
HEDZG1

FILTER = ALPF 1650/ 5214/ -40
MIN, MAX VALUES = -72.520 54.00, 69.02 e 2.63



TRC , 920122
 208 COMPLIANCE TESTING
 920222
 HEDRG1

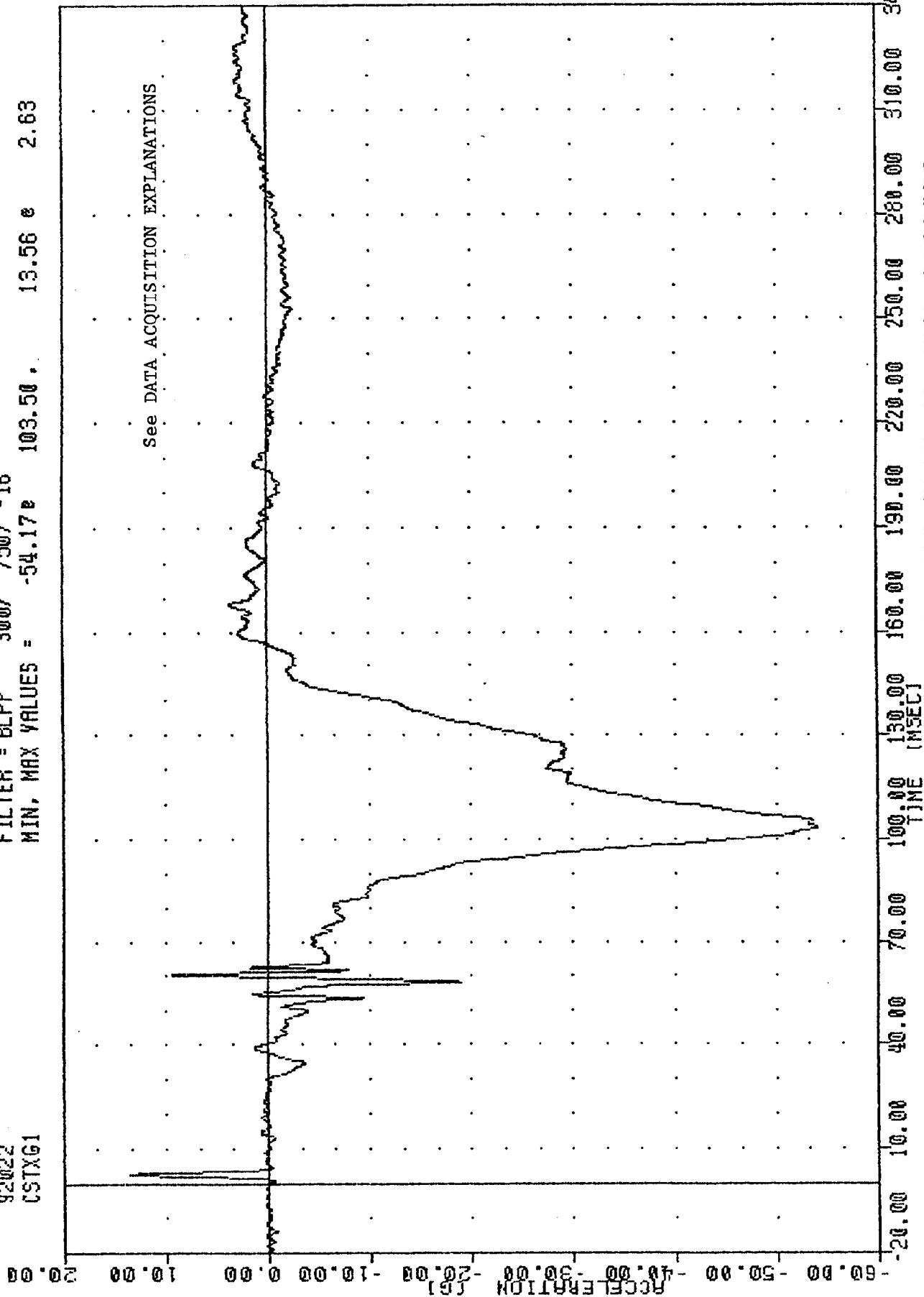
FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = 0.12B 68.75, 99.06 e 54.00



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
 DRIVER HEAD RESULTANT ACCELERATION

TRC , 920122
200 COMPLIANCE TESTING
92022
CSTXG1

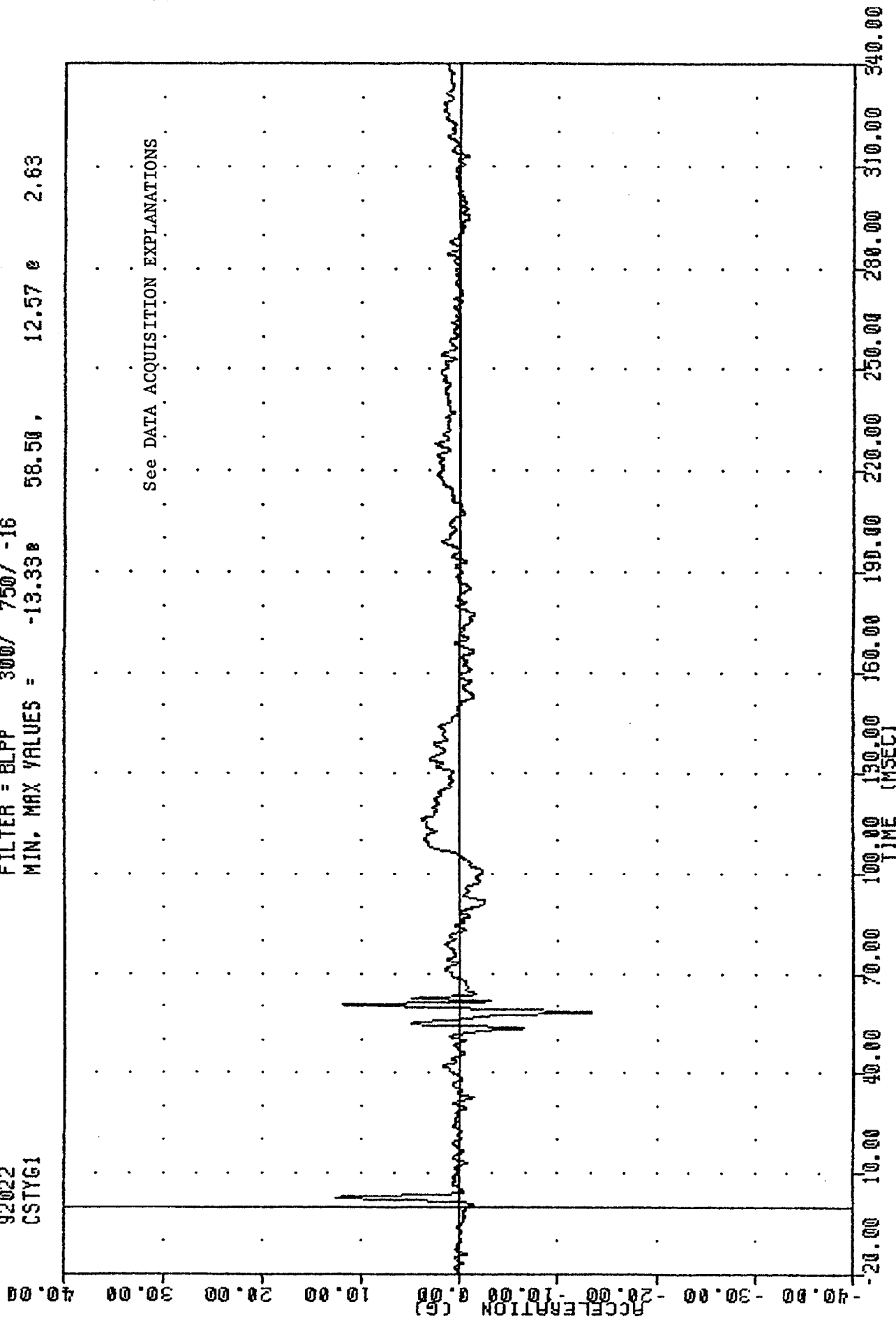
FILTER = BLPP 300/ 750/ -16
MIN, MAX VALUES = -54.17e 103.50 . 13.56 e 2.63



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
DRIVER CHEST X-AXIS ACCELERATION

TRC , 920122
 200 COMPLIANCE TESTING
 92022
 CSTYG1

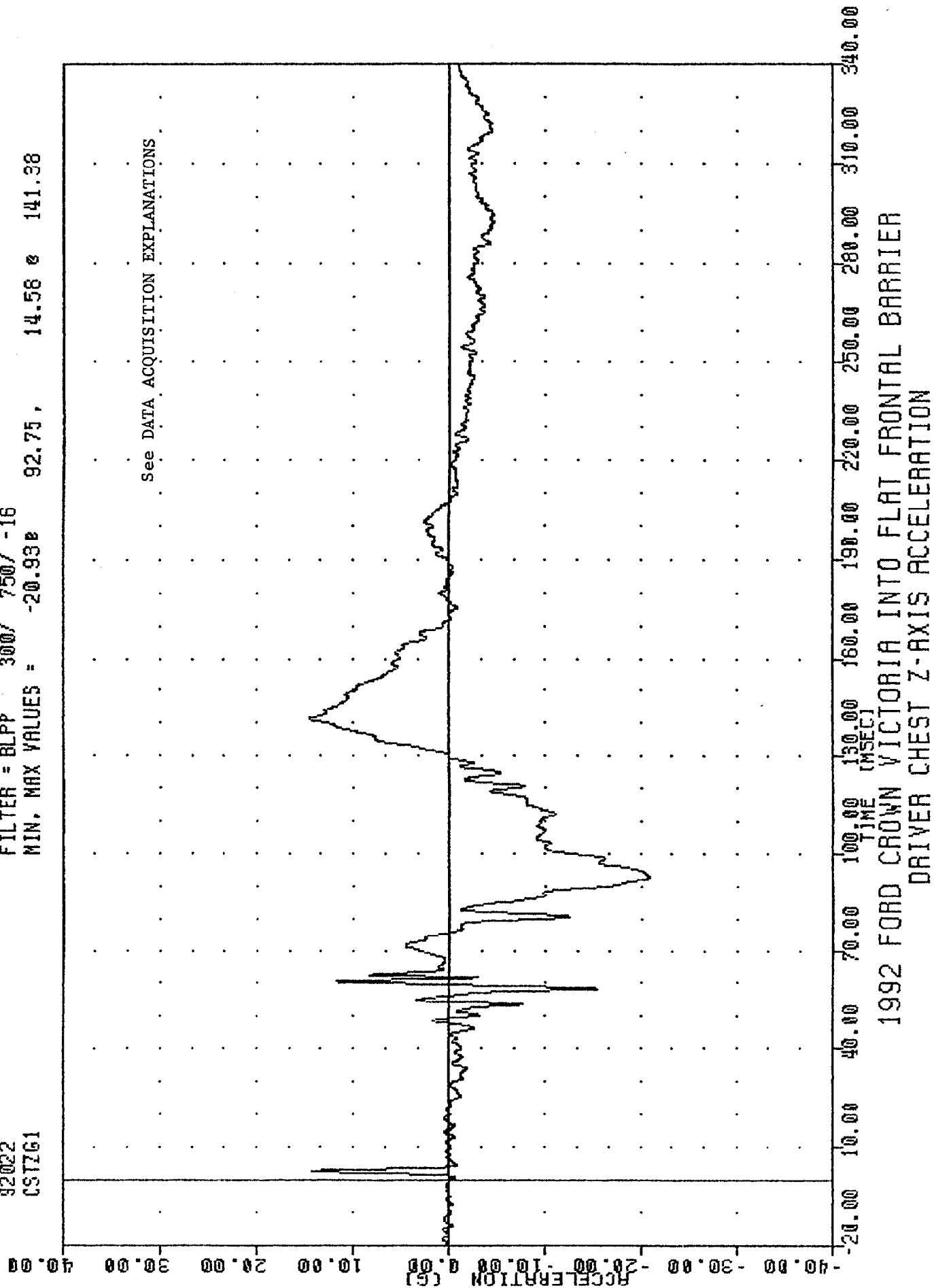
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -13.33 58.50 , 12.57 2.63



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
 DRIVER CHEST Y-AXIS ACCELERATION

TRC
208 COMPLIANCE TESTING
92022
CSTZG1

FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -20.93 92.75 , 14.58 141.38



TRC
208 COMPLIANCE TESTING
92022
CSTRG1

FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = 0.07 55.17 103.38

105.00

90.00

75.00

60.00

45.00

30.00

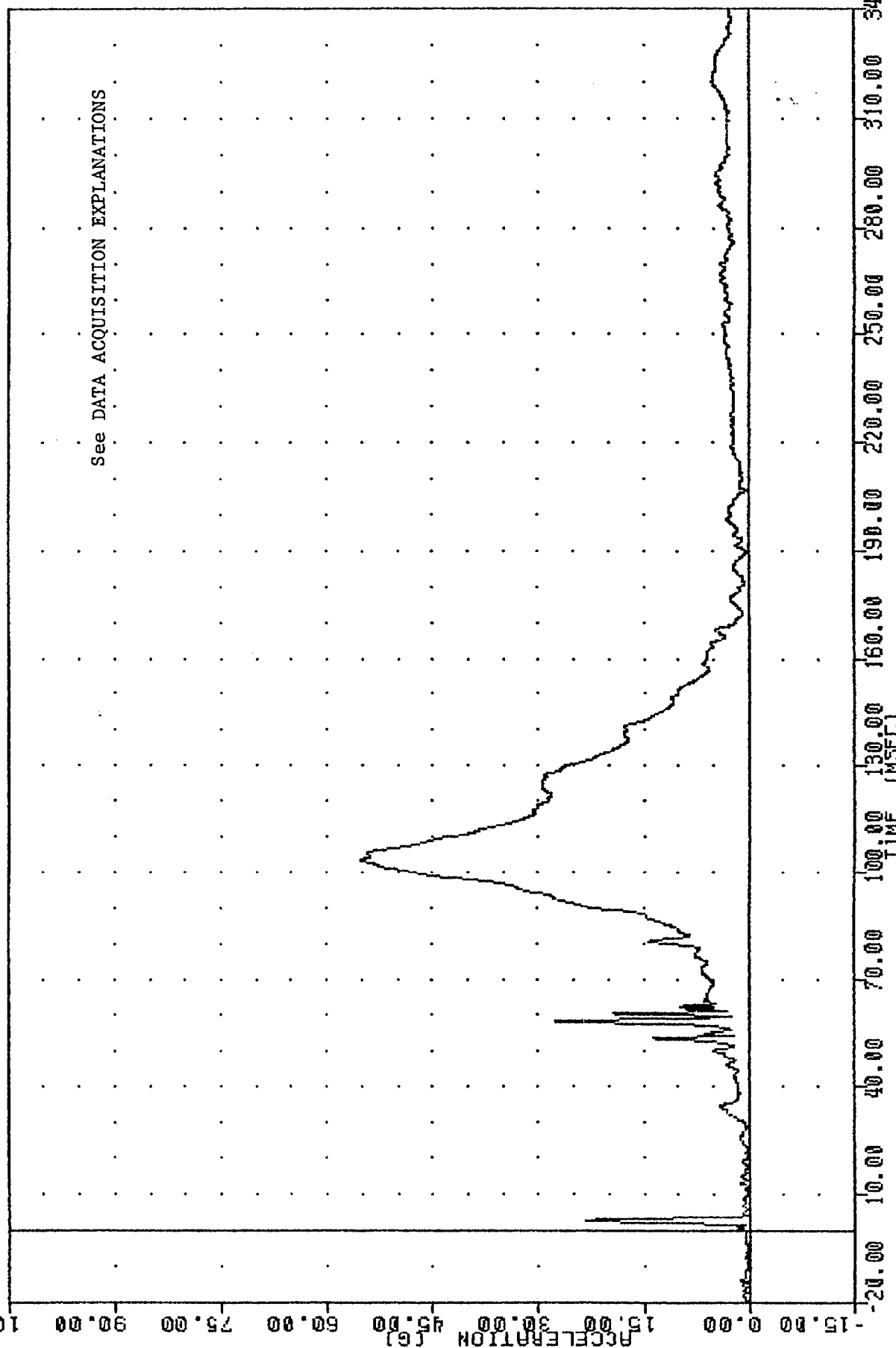
15.00

0.00

-15.00

B-9

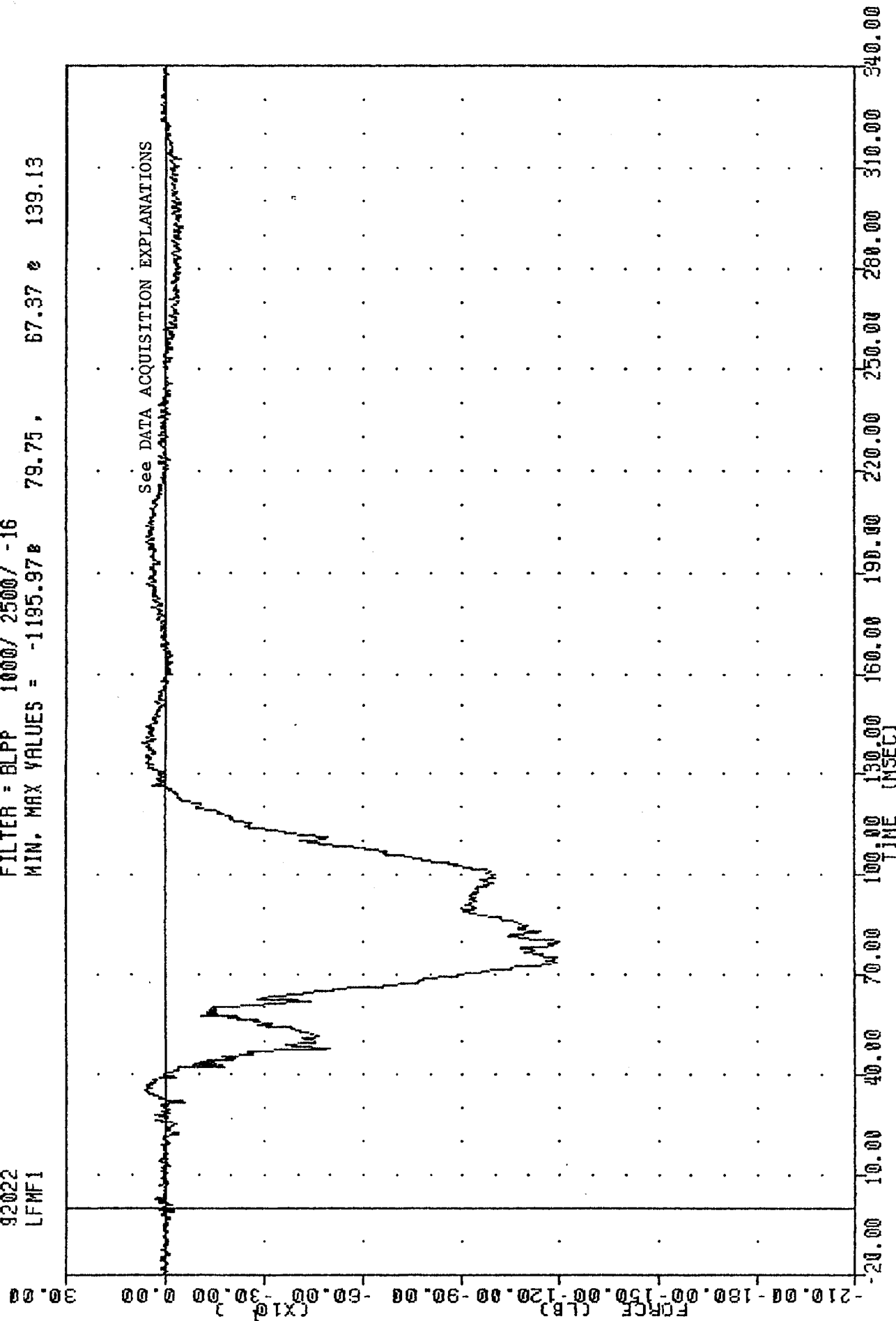
920122



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
DRIVER CHEST RESULTANT ACCELERATION

TRC , 920122
 208 COMPLIANCE TESTING
 92022
 LFMF1

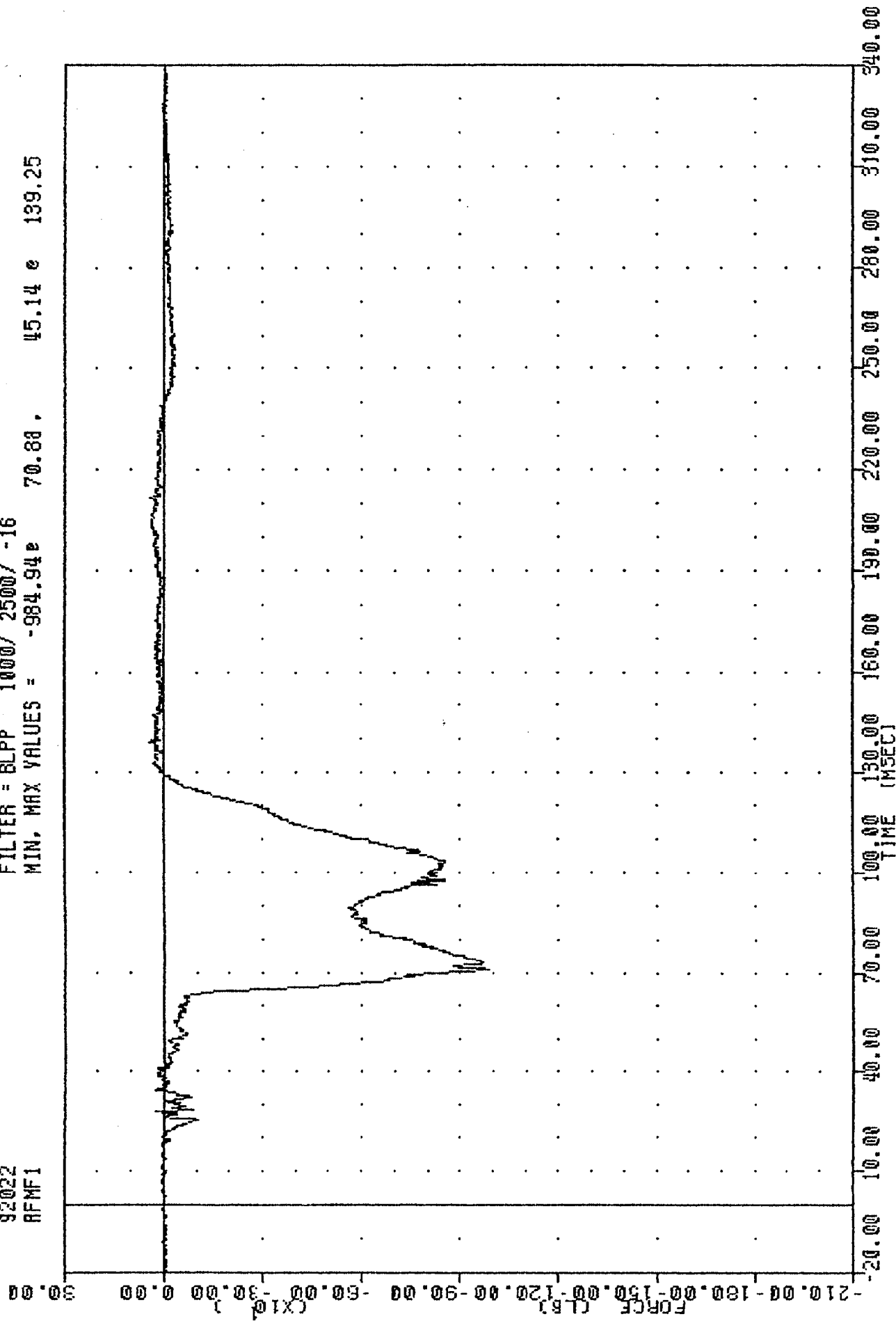
FILTER = BLPP 1000/ 2500/ -16
 MIN. MAX VALUES = -1195.97 79.75 , 67.37 e 139.13



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
 DRIVER LEFT FEMUR FORCE

TRC , 920122
200 COMPLIANCE TESTING
92022
RFMF1

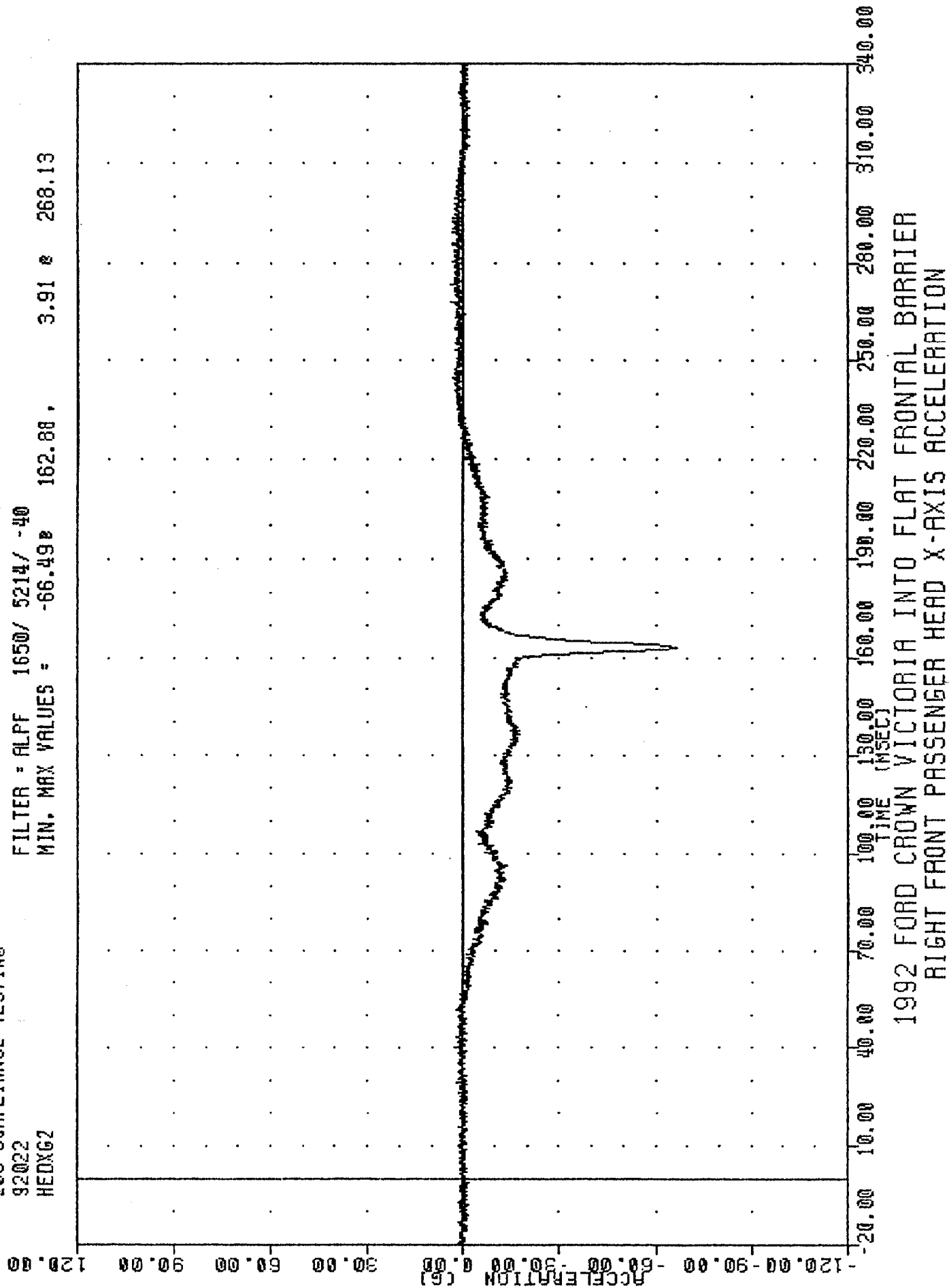
FILTER = BLPP 1000/ 2500/ -16
MIN, MAX VALUES = -984.94e 70.88 , 45.14 e 139.25



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
DRIVER RIGHT FEMUR FORCE

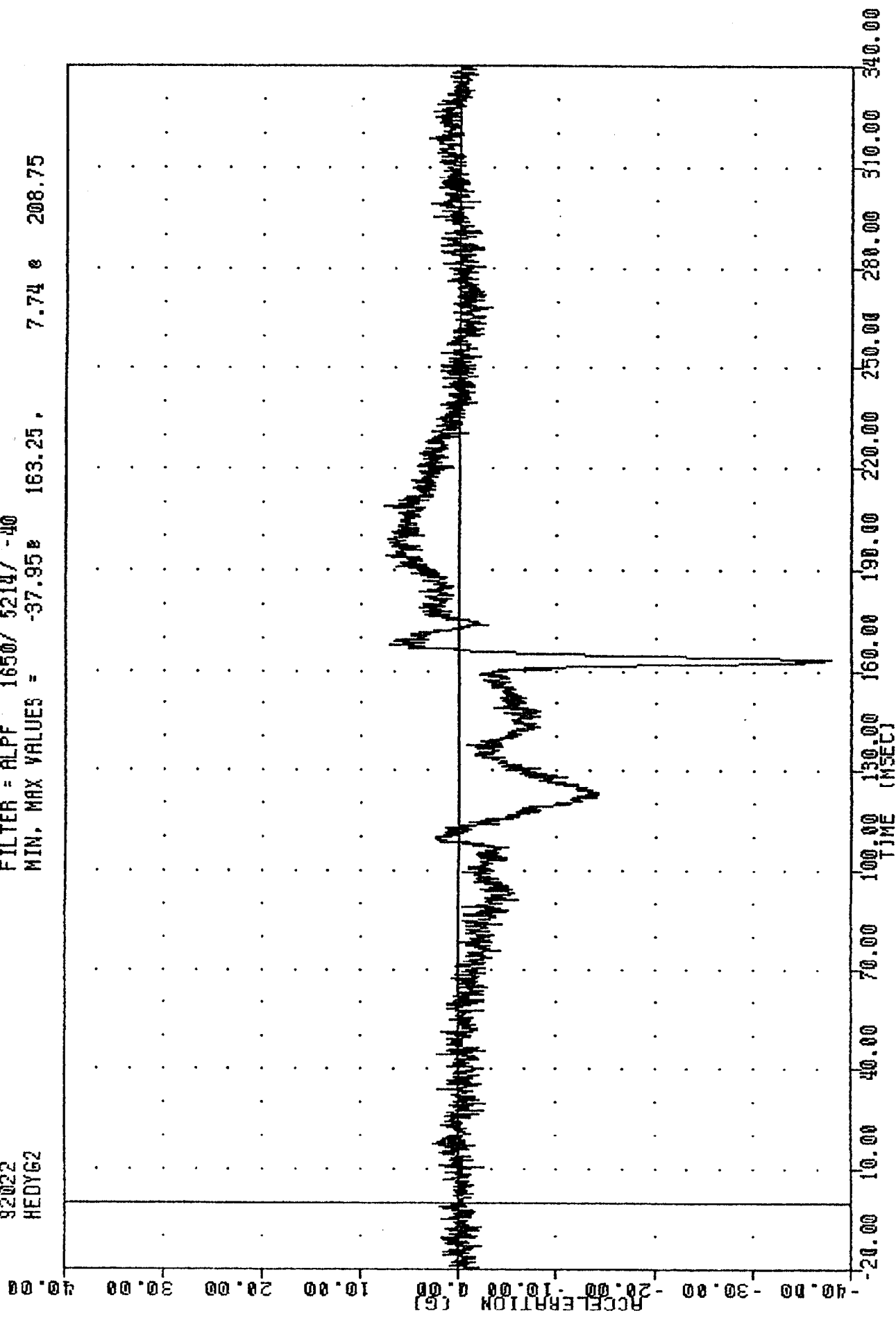
TRC , 920122
 208 COMPLIANCE TESTING
 92022
 HEDXG2

FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = -66.498 162.88 , 3.91 & 268.13



TRC 920122
208 COMPLIANCE TESTING
92022
HEDYG2

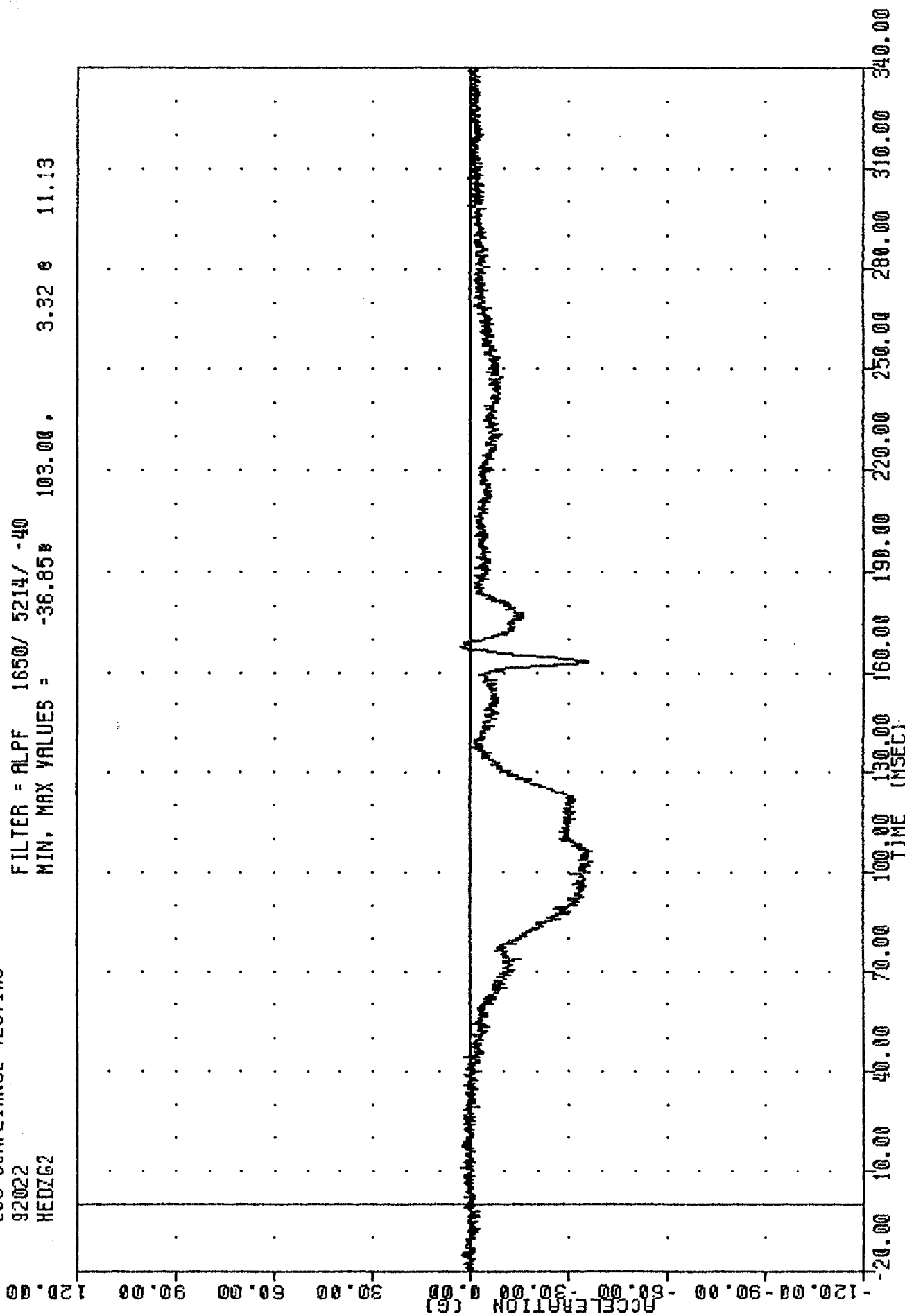
FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -37.95 163.25 , 7.74 208.75



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER HEAD Y-AXIS ACCELERATION

TRC , 920122
208 COMPLIANCE TESTING
92022
HEDZG2

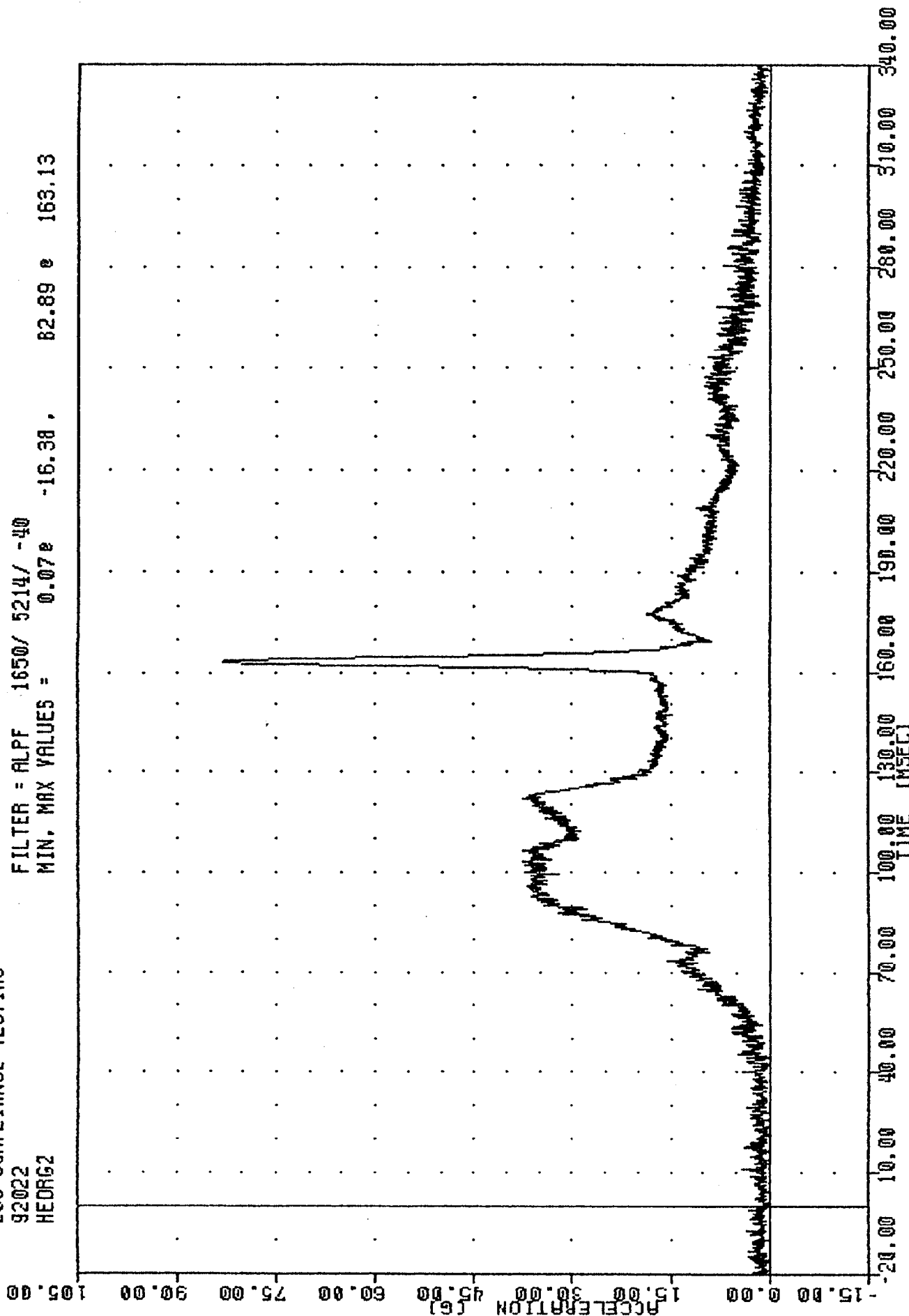
FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -36.85# 103.00 , 3.32 # 11.13



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER HEAD Z-AXIS ACCELERATION

TRC 920122
 200 COMPLIANCE TESTING
 92022
 HEDRG2

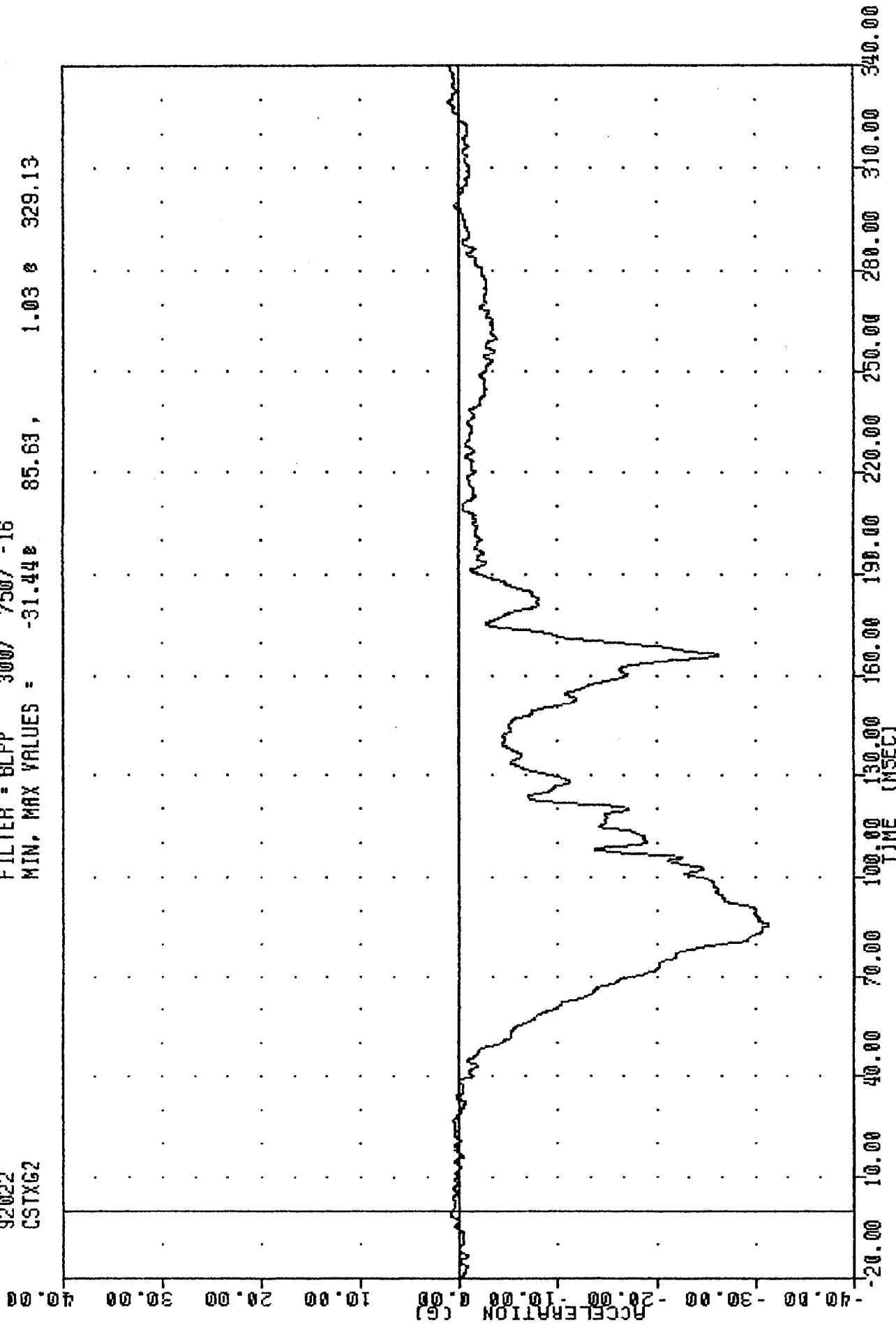
FILTER = ALPF 1650/ 5214/ -40
 MIN, MAX VALUES = 0.07e -16.38, 82.89 e 163.13



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION

TRC , 920122
 308 COMPLIANCE TESTING
 92022
 CSTXG2

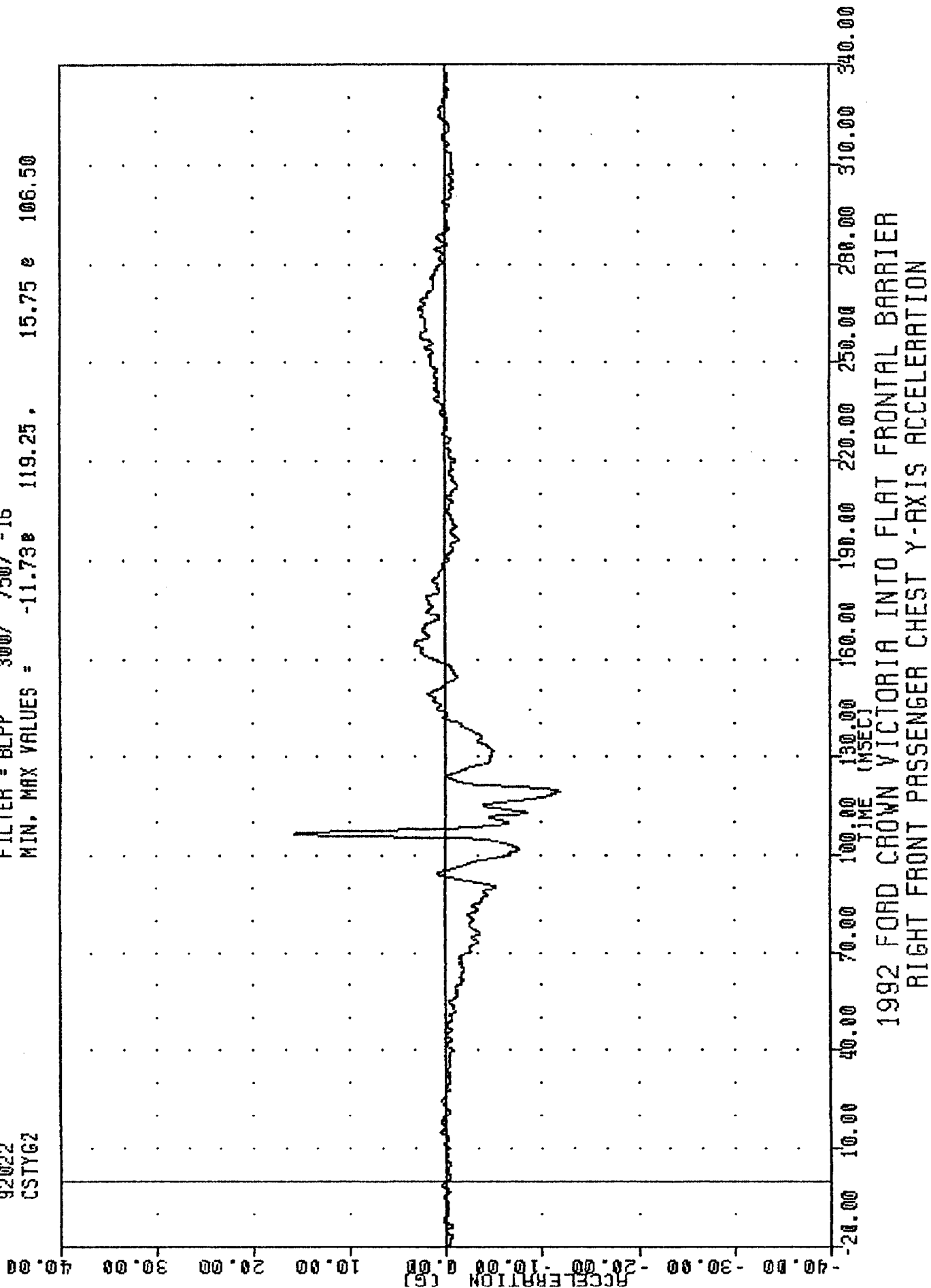
FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -31.44e 85.63, 1.03 e 329.13



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER CHEST X-AXIS ACCELERATION

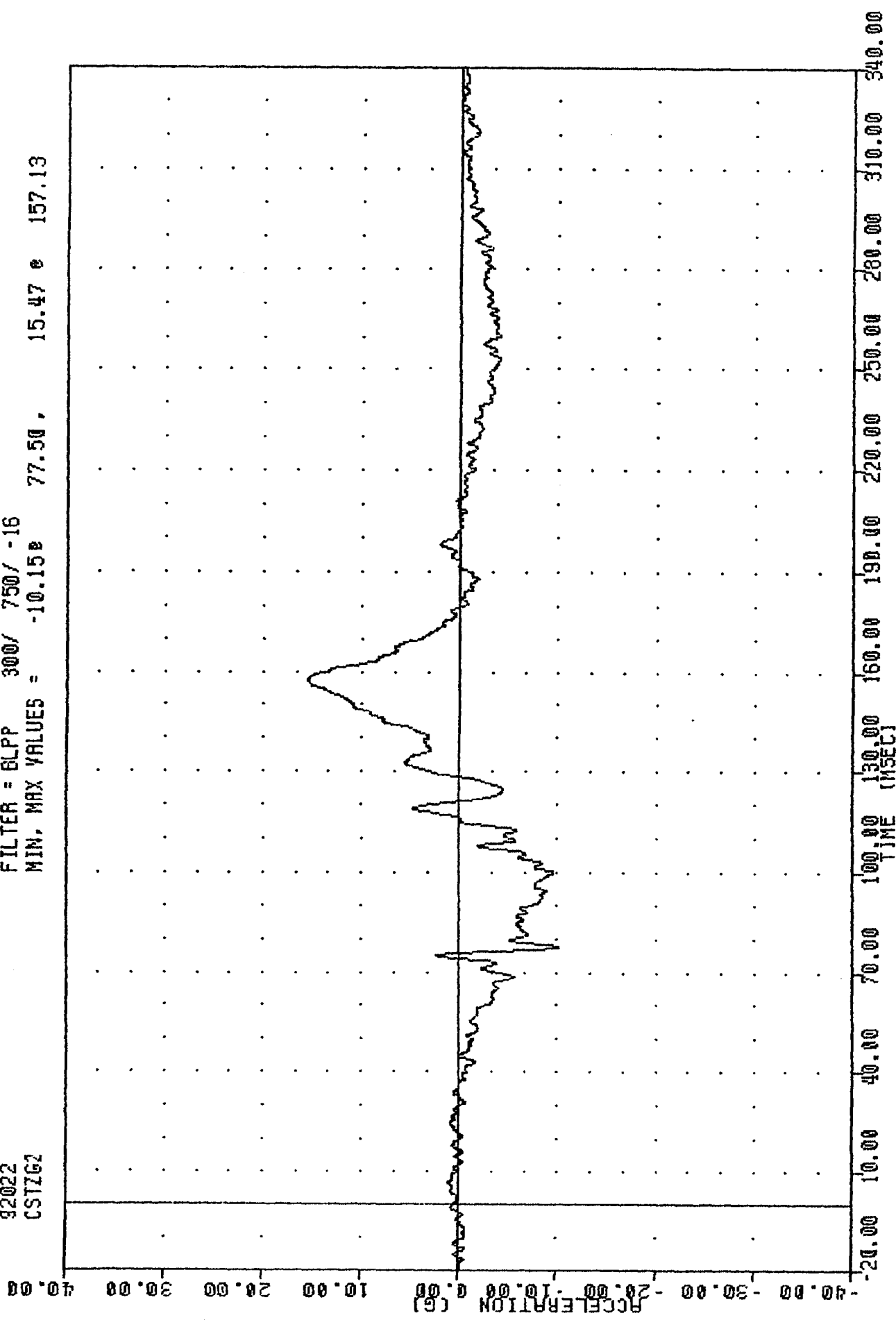
TRC 920122
 200 COMPLIANCE TESTING
 92022
 CSTYG2

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -11.73e 119.25. 15.75 e 106.50



TRC
208 COMPLIANCE TESTING
92022
CSTZG2

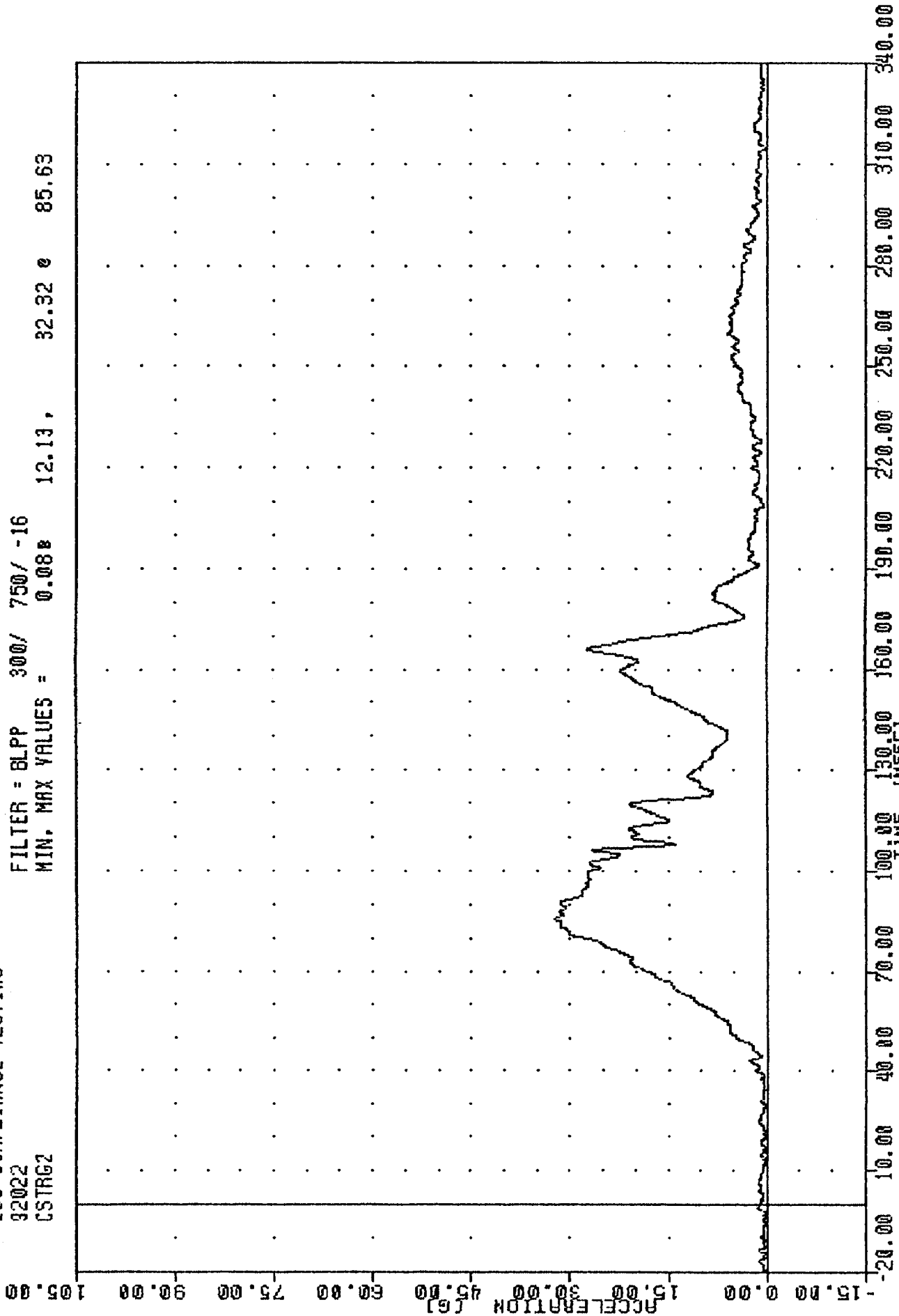
FILTER = BLPP 300/ 750/ -16
MIN, MAX VALUES = -10.15 77.50, 15.47 e 157.13



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER CHEST Z-AXIS ACCELERATION

TRC , 920122
 208 COMPLIANCE TESTING
 92022
 CSTRG2

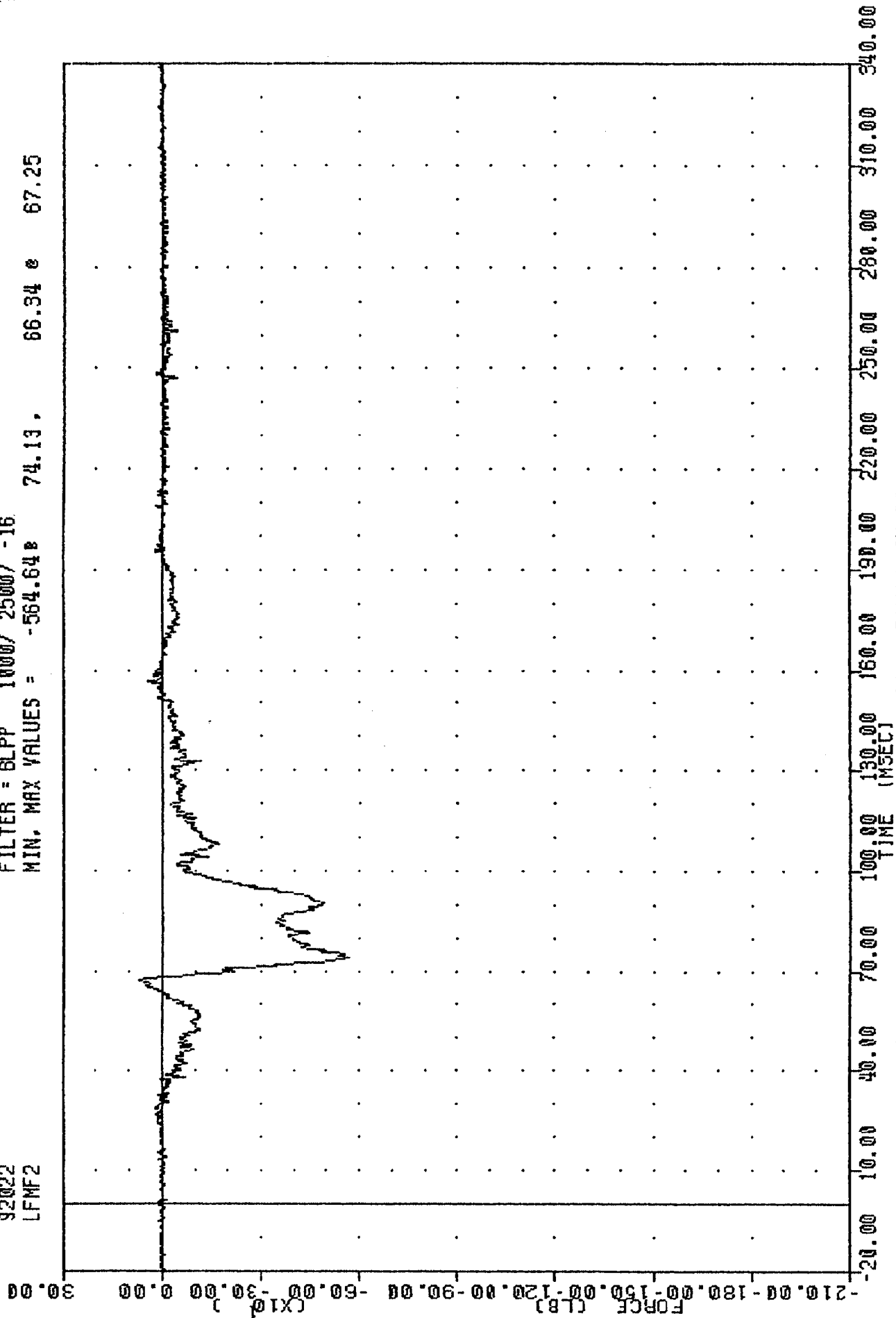
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.088 12.13, 32.32 85.63



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
 RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION

TRC
208 COMPLIANCE TESTING
92022
LFMF2

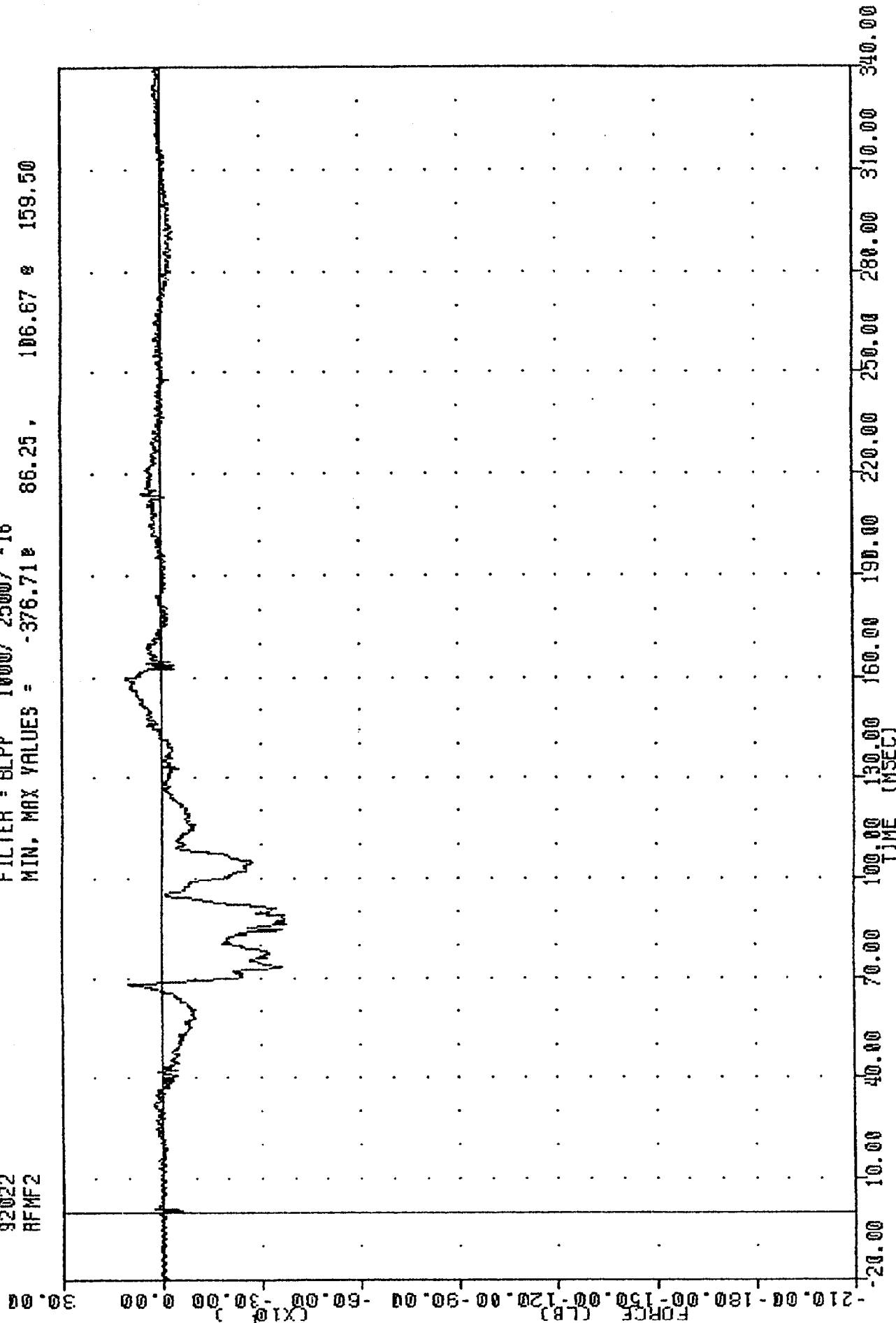
FILTER = BLPP 1000/ 2500/ -16
MIN. MAX VALUES = -564.64 8 74.13 66.34 67.25



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
RIGHT FRONT PASSENGER LEFT FEMUR FORCE

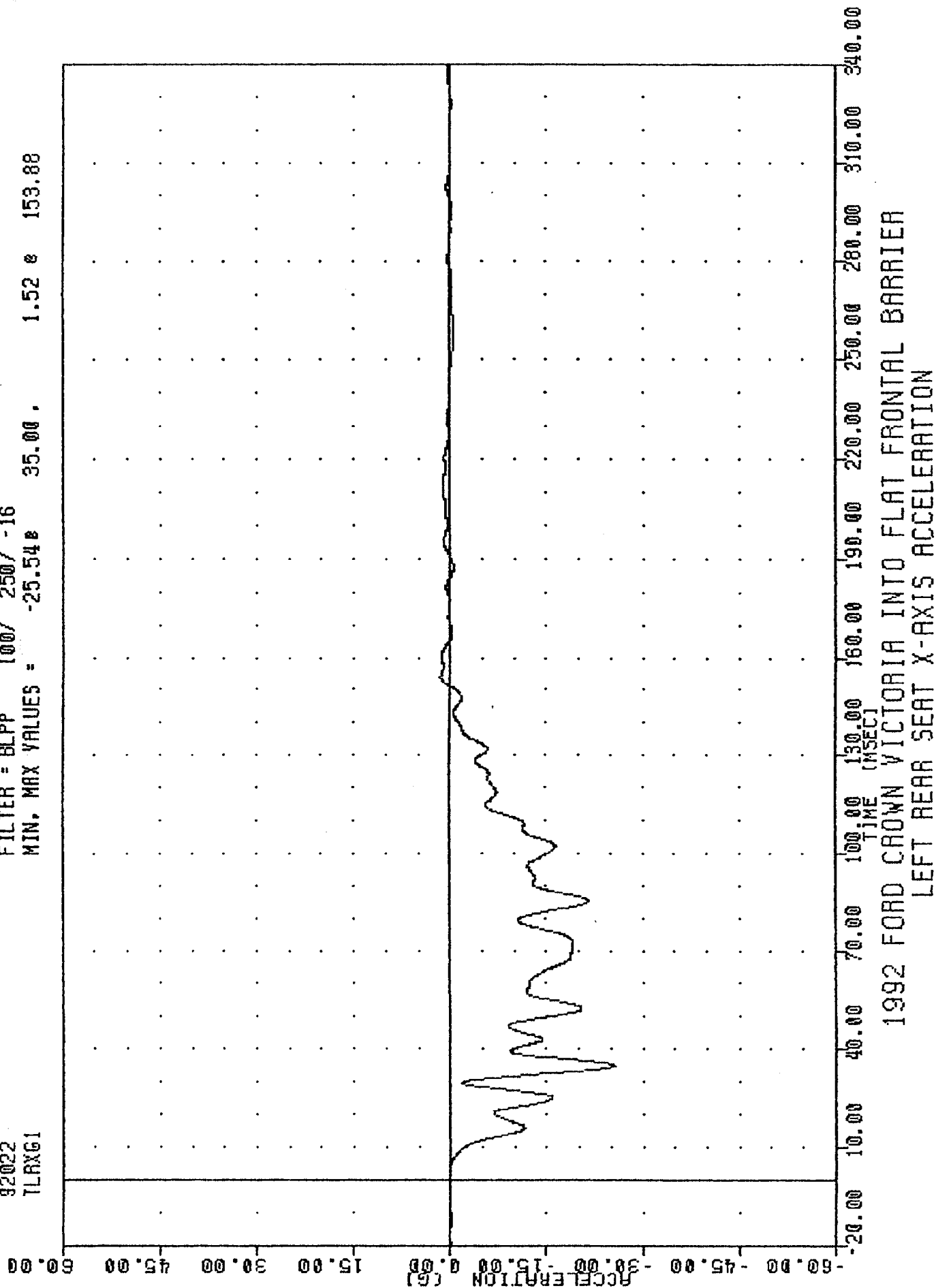
TRC , 920122
 208 COMPLIANCE TESTING
 92022
 RFMF2

FILTER = BLPP 1000/ 2500/ -16
 MIN, MAX VALUES = -376.71e 86.25 , 106.67 e 159.50



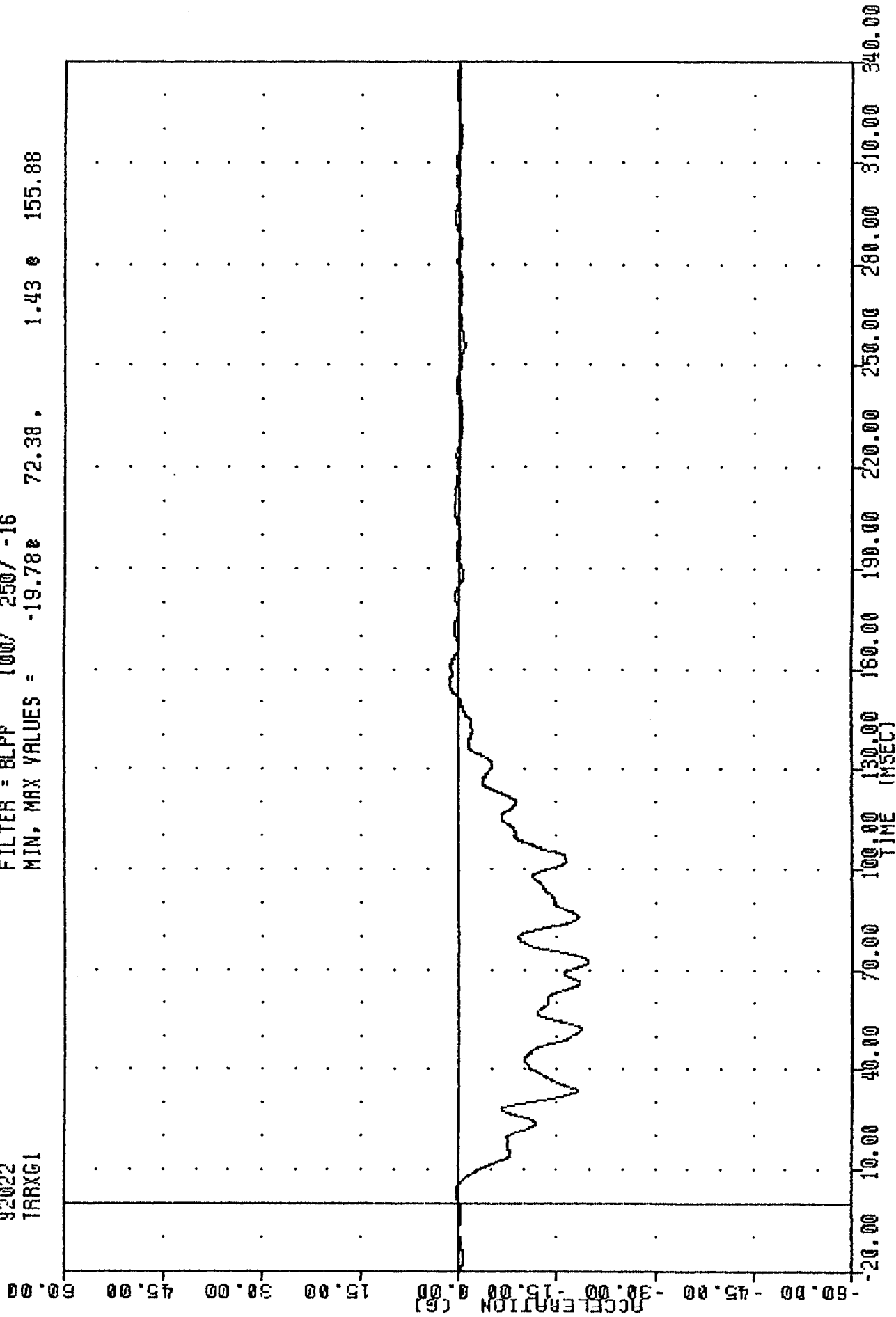
TRC , 920122
 208 COMPLIANCE TESTING
 92022
 TLRXG1

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -25.54 35.00 1.52 153.88



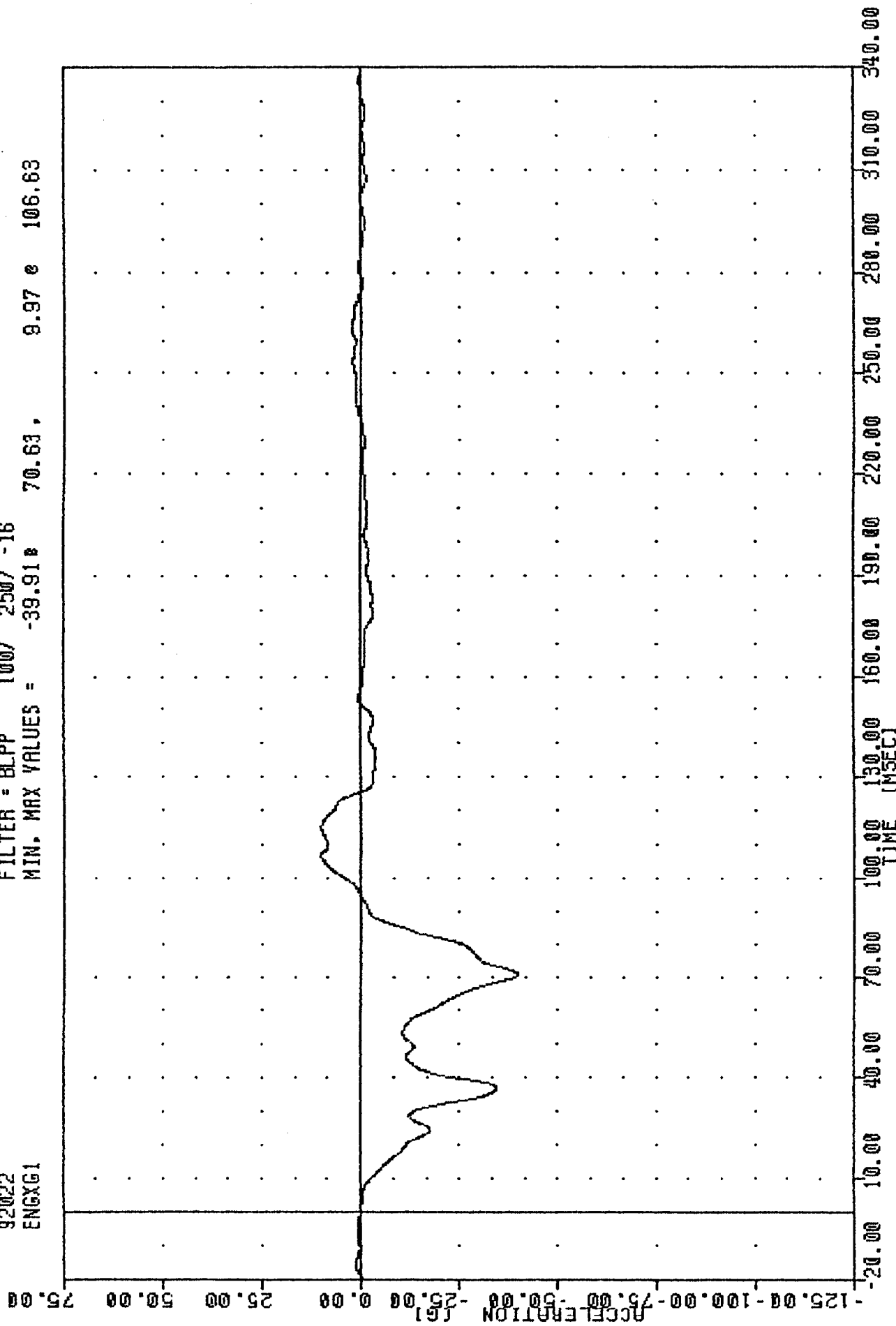
TRC 920122
 208 COMPLIANCE TESTING
 92022
 TRXG1

FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -19.78e 72.38, 1.43 e 155.88



TRC , 920122
 208 COMPLIANCE TESTING
 92022
 ENGCG1

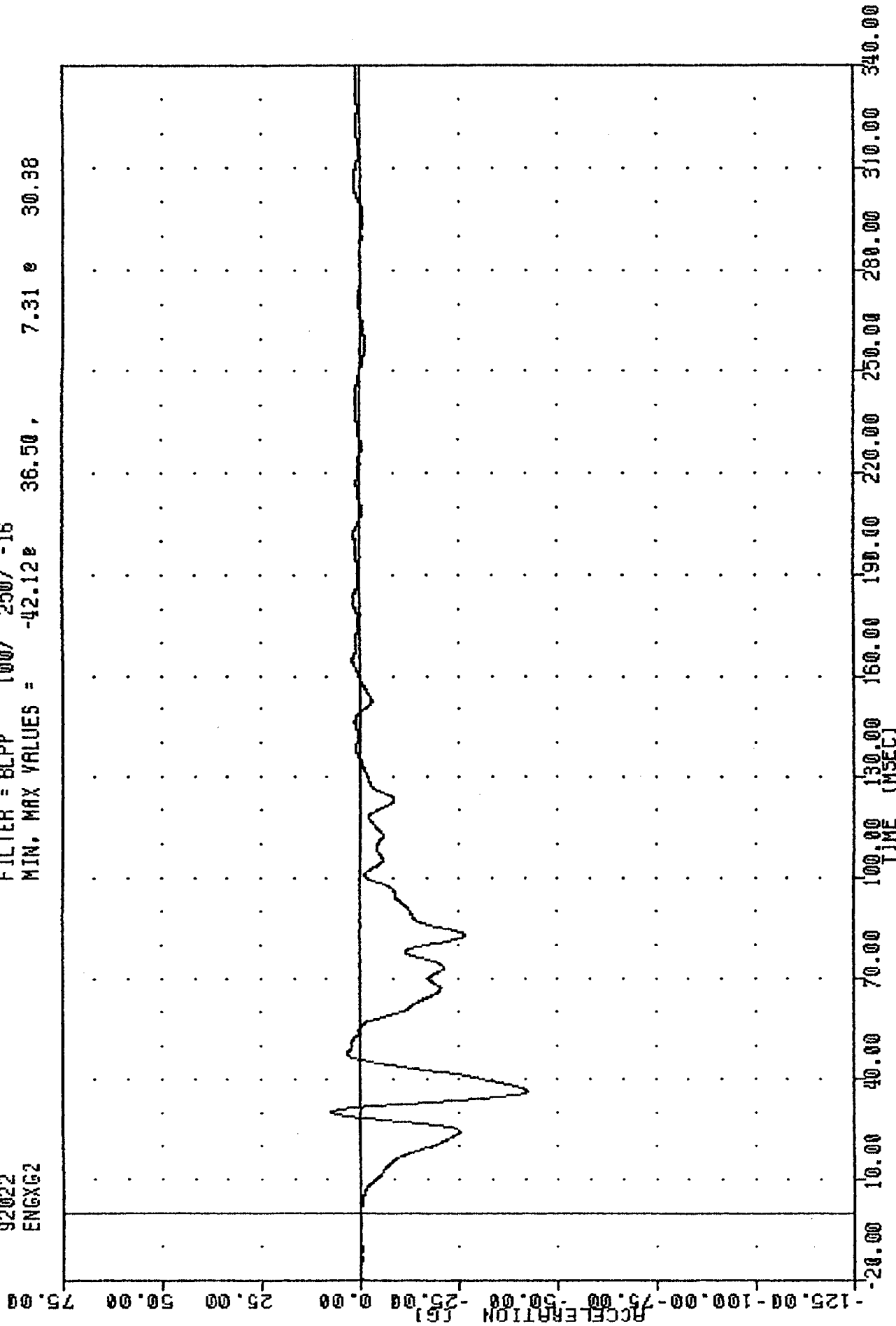
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -39.91 70.63 , 9.97 e 106.63



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
 ENGINE TOP X-AXIS ACCELERATION

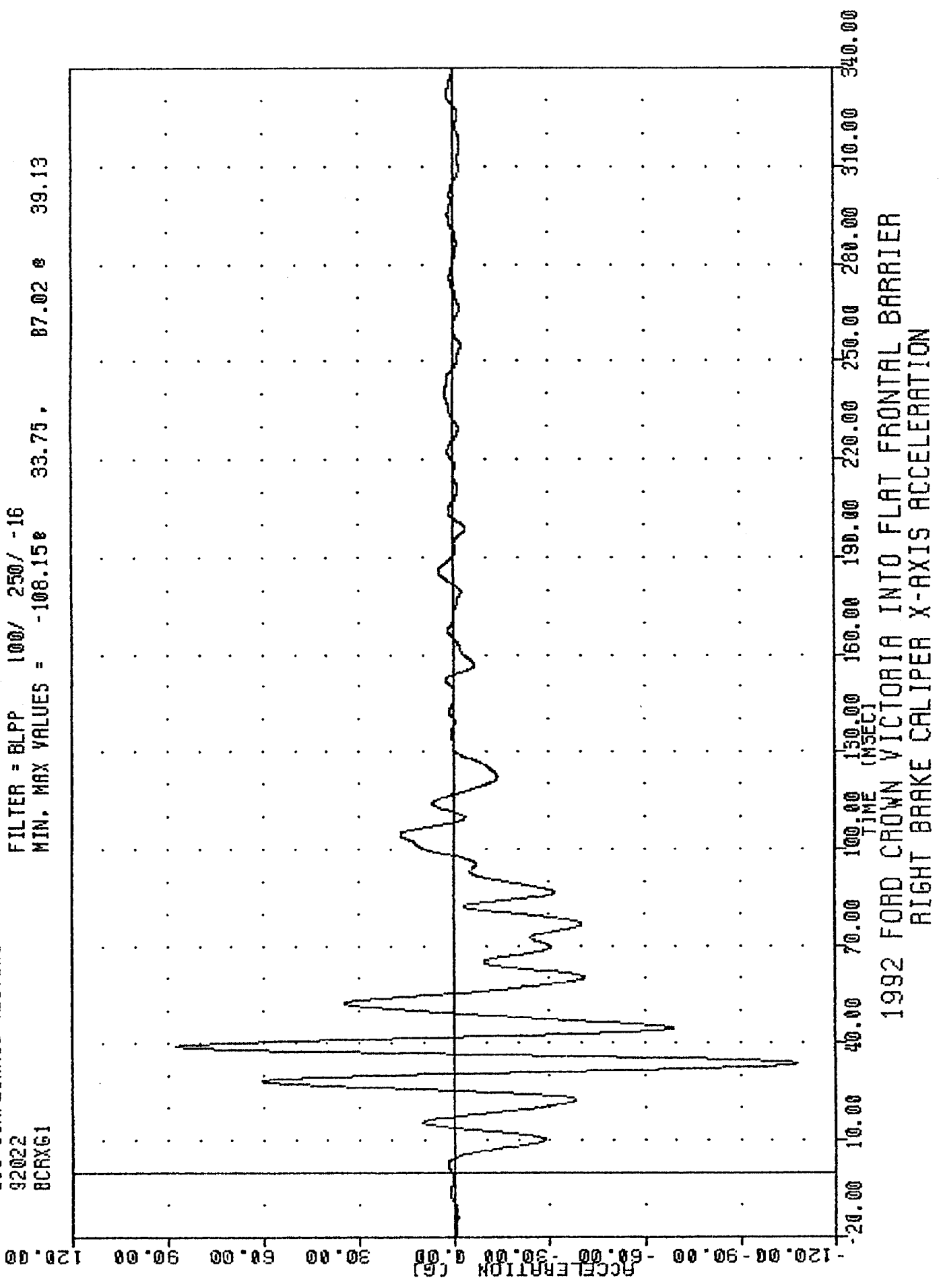
TRC
208 COMPLIANCE TESTING
92022
ENGXG2

FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -42.12e 36.50, 7.31 e 30.38



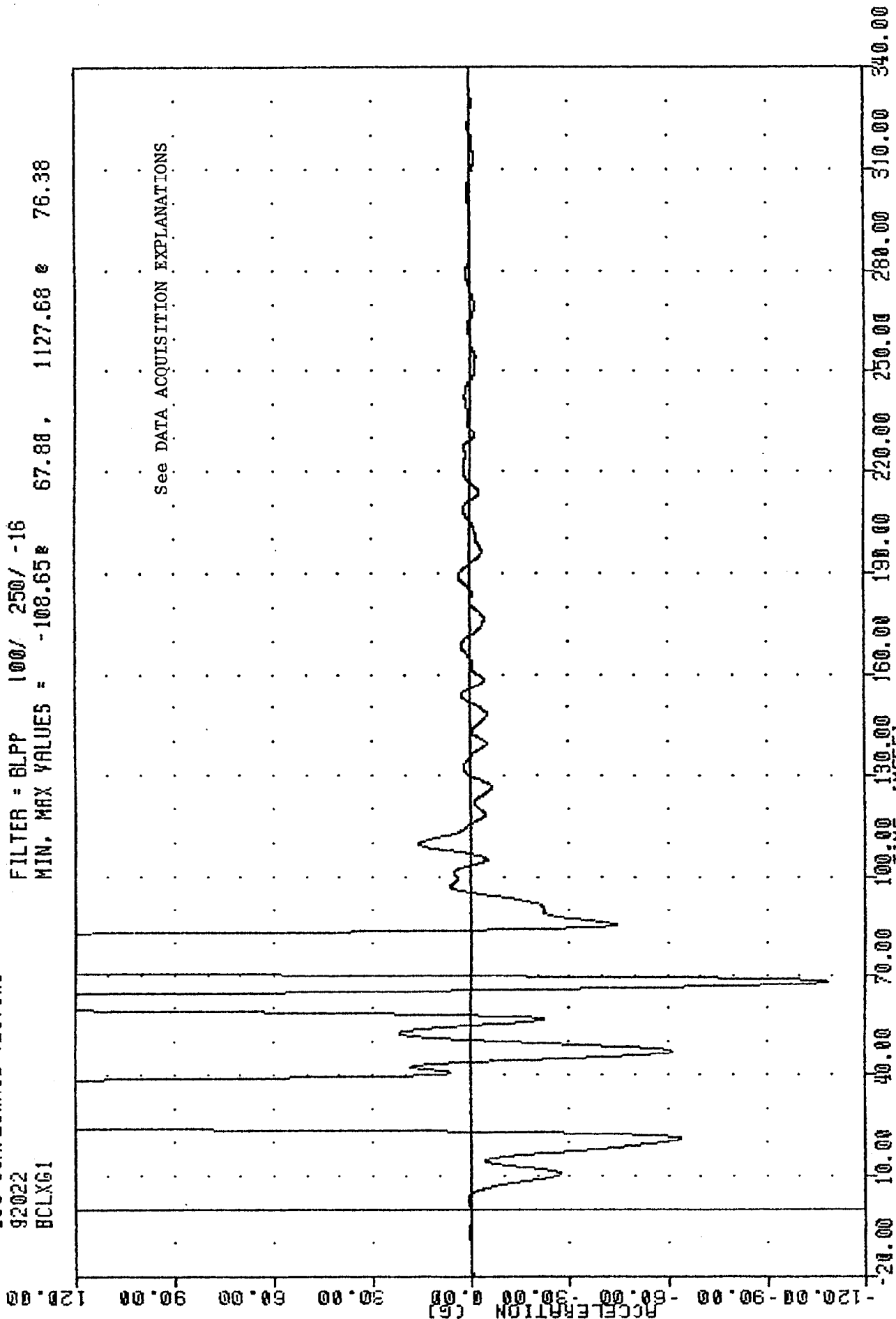
TRC , 920122
208 COMPLIANCE TESTING
92022
BCRXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -108.15e 33.75. 87.02 e 39.13



TRC , 920122
 208 COMPLIANCE TESTING
 92022
 BCLXG1

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -108.65 67.88 , 1127.68 e 76.38



1992 FORD CROWN VICTORIA INTO FLAT FRONTAL BARRIER
 LEFT BRAKE CALIPER X-AXIS ACCELERATION

TRC , 920122
200 COMPLIANCE TESTING
92022
DPCXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -50.62B 93.63, 18.16 @ 113.75

