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REPORT NO. 212-MSE-79-004-TR-04
219-MSE-79-004-TR-04
301-MSE-79-004-TR-04

NEW VEHICLE ASSESSMENT AND STANDARDS ENFORCEMENT INDICANT TESTING FMVSS NOS. 212, 219, AND 301-75

Ford-Werke AG
1979 Ford Fiesta
NHTSA - 790547

MOBILITY SYSTEMS AND EQUIPMENT COMPANY
6151 W. Century Boulevard
Los Angeles, California 90045

October 1979

FINAL REPORT

PREPARED FOR

U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Vehicle Safety Compliance
400 Seventh Street, S.W.
Washington, D.C. 20590

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Prepared by_____

Approved by_____

Date_____

Report Accepted by

Robert Krauss

Contract Technical Manager
Office of Vehicle Safety Compliance

11/26/79

Date

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16. ABSTRACT

A test was conducted on a 1979 Ford Fiesta vehicle to evaluate compliance with FMVSS 212, 219, 301-75 and the New Car Assessment Program.

The vehicle satisfied all requirements of FMVSS 212, 219, and 301-75.

Data were also collected for the Accident Investigation Division.

17. KEY WORDS FMVSS 212, 219, 301-75 Compliance Testing 1979 Ford Fiesta New Car Assessment Program	18. DISTRIBUTION STATEMENT Copies of this report are available from-- Technical Reference Division Nat'l Hwy Traffic Safety Admin. Room 5108, Nassif Building 400 7th St. SW, Wash. D.C. 20590

19. SECURITY CLASSIF. (of this report)	20. SECURITY CLASSIF. (of this report)	21.	22.

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SECTION 1

INTRODUCTION

This report presents information relative to the preparation and execution of a test of a 1979 Ford Fiesta, NHTSA No. 790547. The test was conducted under Contract No. DOT-HS-9-02136.

The test was conducted to address FMVSS 212, 219, 301-75 and the New Car Assessment Program (NCAP) requirements. The test date was October 15, 1979. The vehicle contained two Part 572 dummies fully instrumented and accelerometers were mounted as specified on the vehicle. The test was conducted at a velocity of 34.93 mph in accordance with the requirements of the NCAP.

The test results show that the vehicle satisfied the requirements of FMVSS 212, 219, and 301-75.

SECTION 2

TEST PREPARATION AND PROCEDURES

The test was conducted on a 1979 Ford Fiesta, NHTSA No. 790547. The vehicle is shown in Figures 1 through 5.

The test vehicle was prepared for testing in complete conformance with the requirements of NHTSA procedure TP-212-01 and the Mobility Systems corresponding procedure TP-212-MS01.

The vehicle was prepared such that evaluation of compliance with FMVSS 212, 219, and 301-75 could be accomplished in conjunction with acquisition of data for the NCAP. In accordance with these requirements, two Part 572 dummies were installed in the vehicle in the driver and right front passenger positions. Prior to preparation of the dummies for testing they were calibrated in accordance with specified procedures. Each dummy was instrumented with accelerometers to measure triaxial accelerations in the head and chest and with load cells in the femurs to measure knee impact loads. The vehicle was instrumented with load cells on the shoulder belts and vehicle accelerometers were installed as shown in Figure 6. The accelerometer locations on the engine and firewall are shown in Figure 7.

All test data were recorded on analog FM tape at a speed of 30 inches per second and a center frequency of 54 Khz. Three tape units were used.

In accordance with the requirements of TP-212-01, the analog tapes generated during the test event were converted to digital tapes. These tapes, in conjunction with the card deck prepared in accordance with the test procedure, were submitted to NHTSA.

In order to maintain the required temperature in the interior of the vehicle prior to testing, the vehicle was shaded with a canvas awning and the incoming air cooled to provide a test temperature of 80°F.

The high speed cameras were setup as required in the test procedure. The camera positions for the test event are as shown in Figure 8. Position descriptions are presented in Table 1. All high speed cameras were set to run at 600 fps except the extra camera which operated at 400 fps.

Pretest and posttest measurements of vehicle dimensions were made in accordance with Figure 9. The data are presented in Table 2.

Dummy position measurements were made in accordance with Figure 10. The data are presented in Table 3. The pretest positions are shown in Figure 11.

The vehicle windshield, pretest, is shown in Figure 12. The windshield template for the FMVSS 219 portion of the test was prepared in accordance with the procedure, (see Figure 13).

Underbody views of the vehicle were photographed pretest to show the primary components of the fuel system. These photographs are shown in Figures 14 through 17. The fuel filler cap is shown in Figure 18.

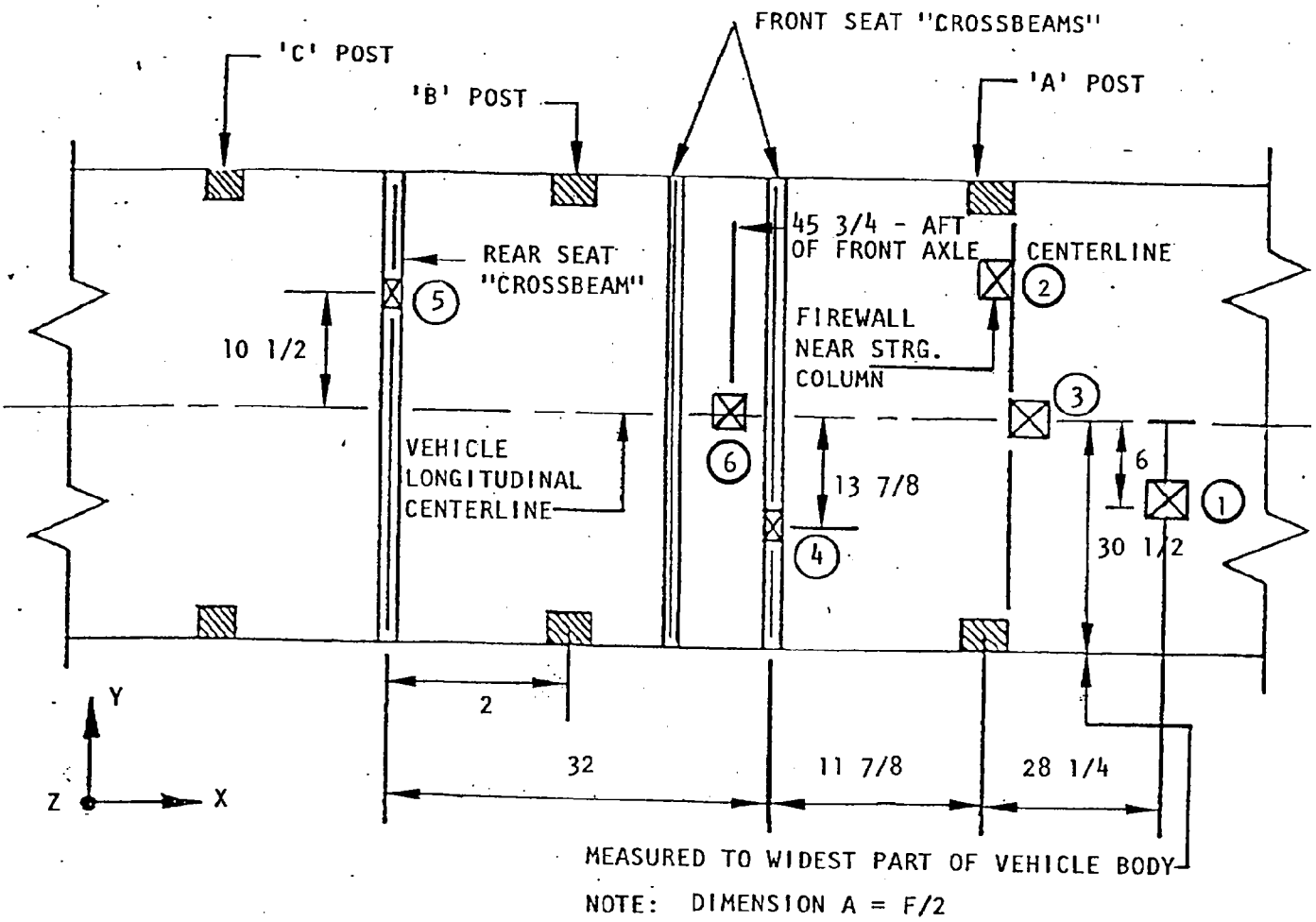
FIGURE 1 RIGHT FRONT 3/4 VIEW

FIGURE 2 LEFT REAR 3/4 VIEW

FIGURE 3 FRONT VIEW

FIGURE 4 SIDE VIEW

FIGURE 5 REAR VIEW



ACCELEROMETER NUMBER	ACCELEROMETER LOCATION	DIRECTION		
		X	Y	Z
(1)	ENGINE	×		×
(2)	FIREWALL ABOVE STEERING COLUMN	×		×
(3)	FIREWALL AT VEHICLE CENTERLINE	×		×
(4)	FRONT SEAT "CROSSBEAM"	×		
(5)	REAR SEAT "CROSSBEAM"	×		×
(6)	VEHICLE C.G.	×	×	×

FIGURE 6 TEST VEHICLE ACCELEROMETER LOCATIONS FOR FRONTAL IMPACTS

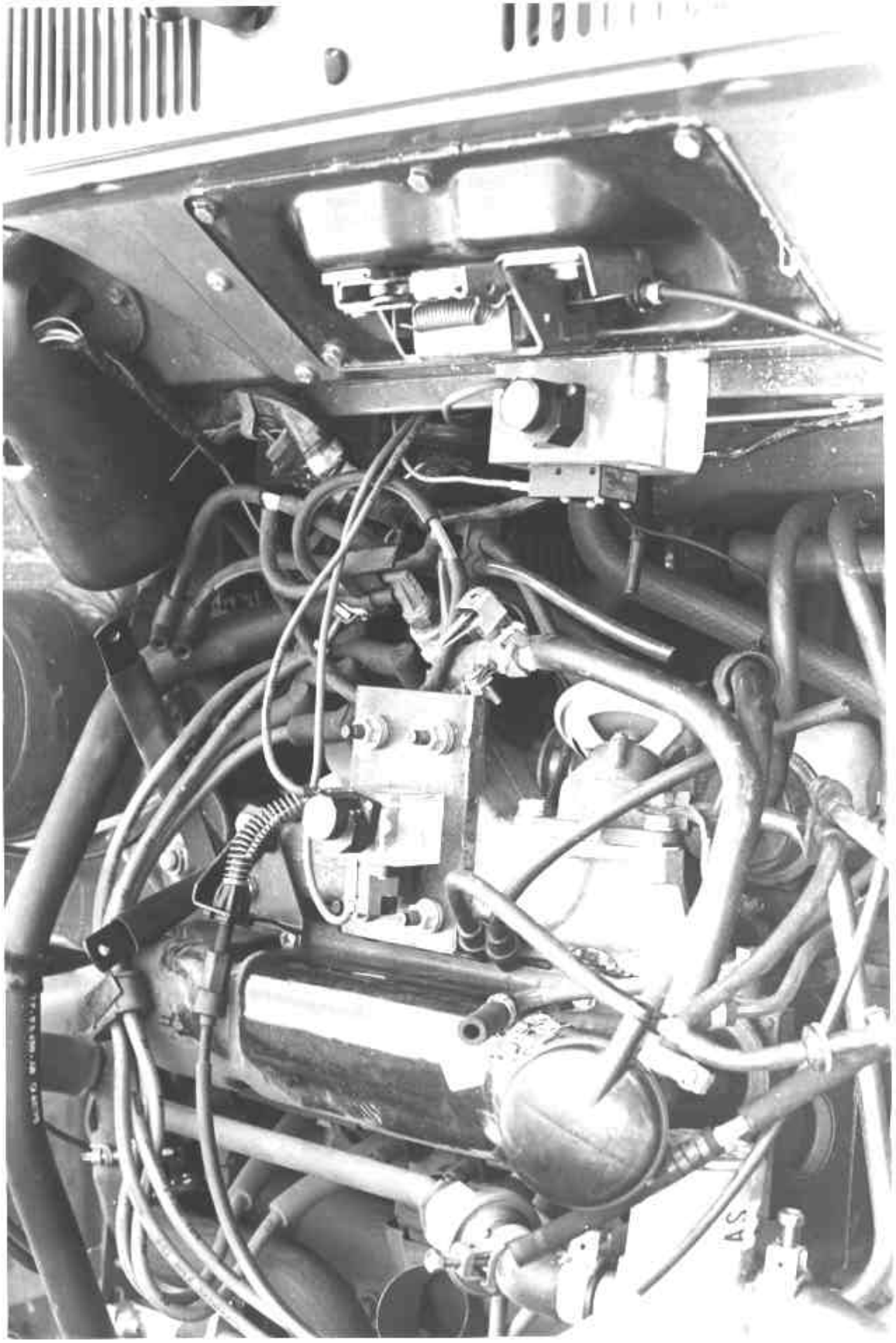


FIGURE 7 ENGINE AND FIREWALL ACCELEROMETER LOCATIONS

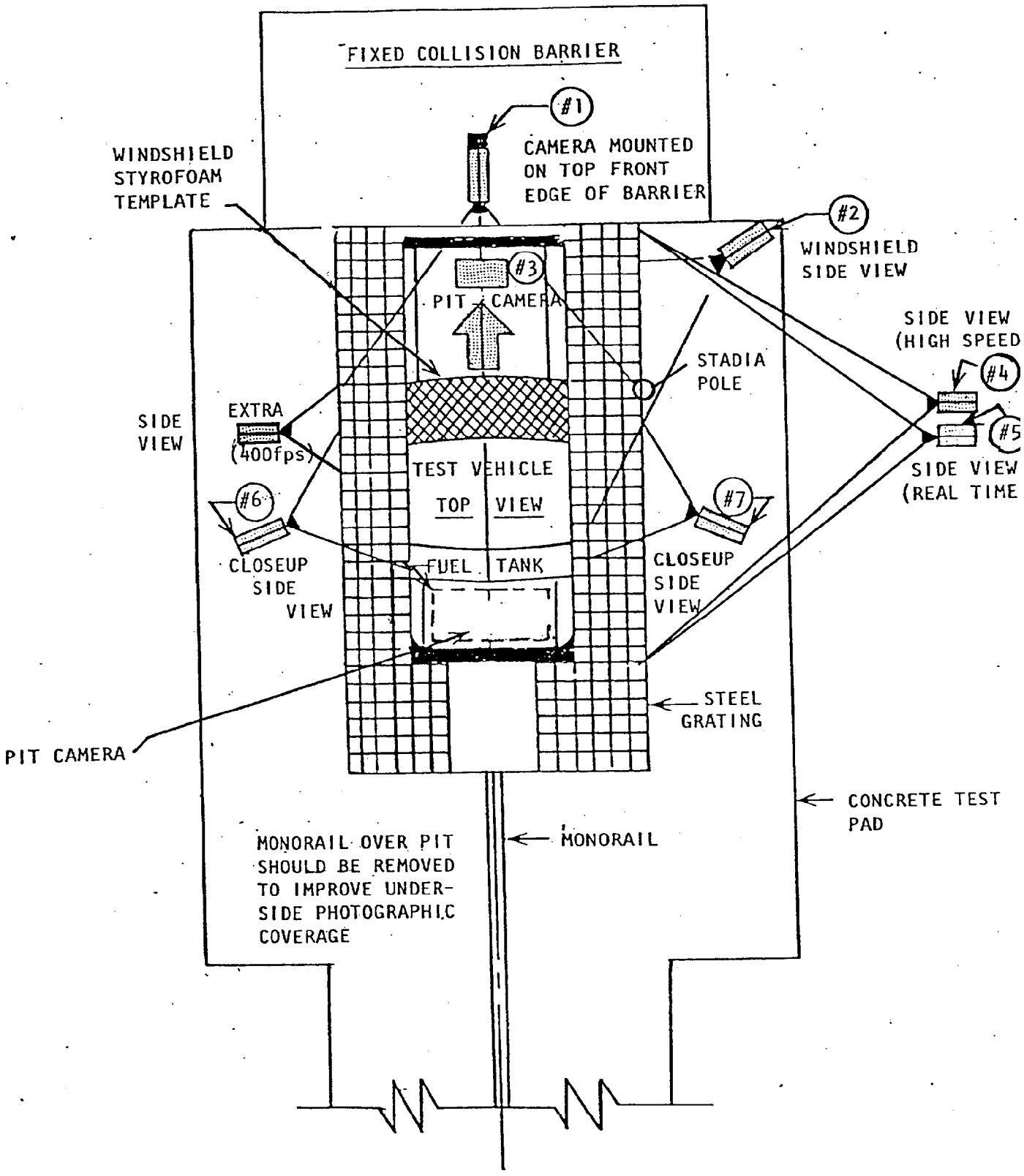


FIGURE 8 CAMERA POSITIONS

TABLE 1 CAMERA LOCATION DESCRIPTIONS FOR FIGURE 1 (FRONTAL & OBLIQUE IMPACTS

LOCATION	CAMERA NUMBER	DESCRIPTION
Frontview	(1)	High speed (minimum of 500 frames per second) camera shall be positioned along the top front edge of the barrier with contact between the vehicle and the barrier being included in the camer's field-of-view.
Surface	(2)	High speed camera to photograph the entire right side of the vehicle's windshield area.
	(4)	High speed sideview camera to photograph the complete left side of the test vehicle throughout the entire barrier impact event with the stadia pole in full view.
	(5)	"Real time" (24 fps) camera to follow the vehicle down the tow road and through the barrier impact event.
	(6)	High speed camera to photograph the motion of the driver dummy during the impact event.
	(7)	High speed camera to photograph the motion of the right front passenger dummy during the impact event.
	EXTRA	Camera operating at 400 fps with a wide angle lense to photograph the front half of the vehicle from the side view.
Pit	(3)	High speed camera shall be positioned beneath the vehicle's engine area to record the impact event and any solvent spillage from the fuel pump (if visible) or any fuel lines.
	(8)	High speed camera shall be positioned beneath the vehicle's fuel tank area to record any solvent spillage during and after the impact event. A "time zero" strobe light shall be located within the field-of-view of the camera.

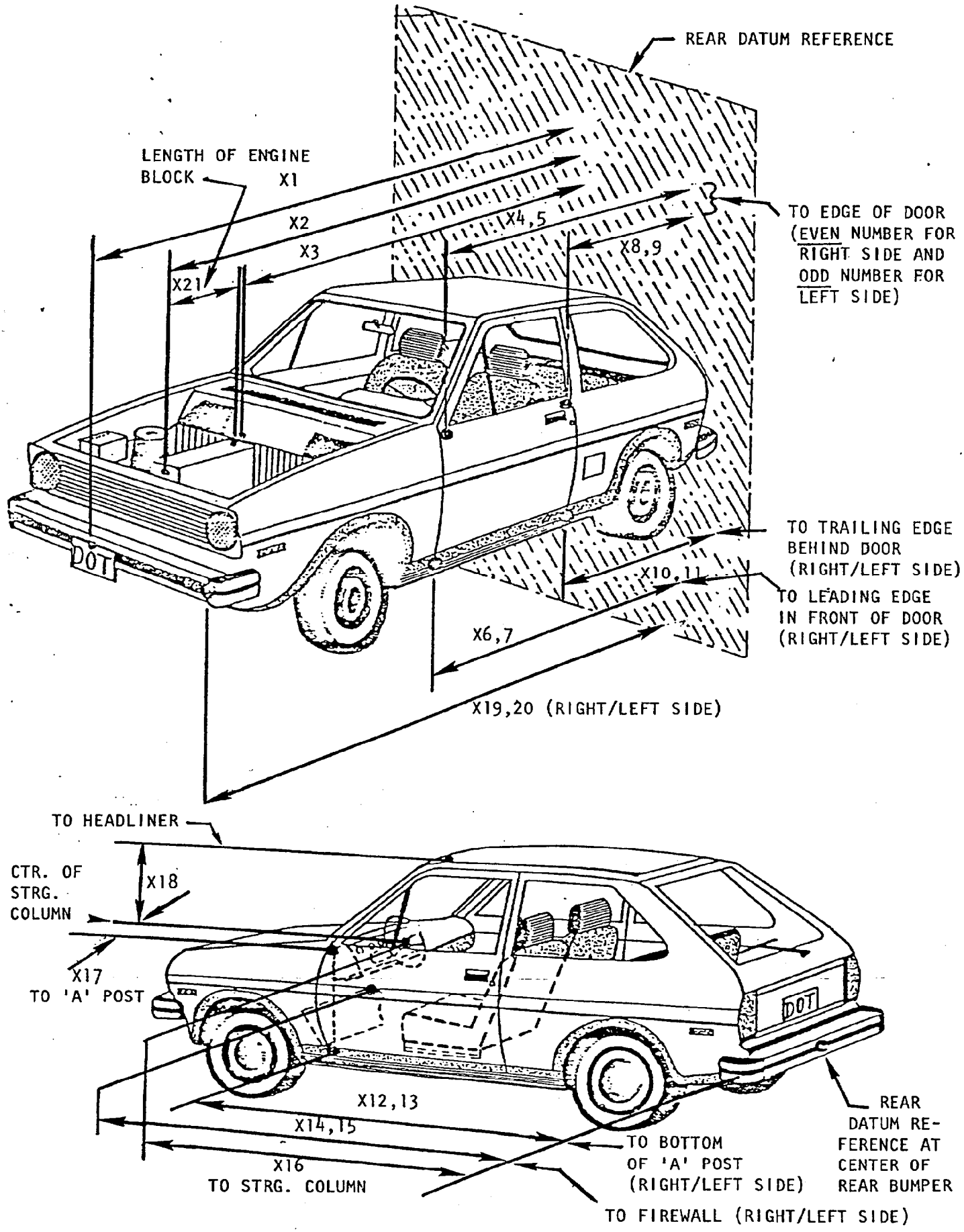
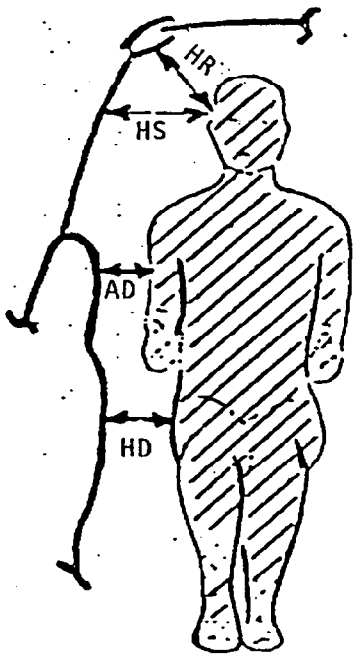


FIGURE 9 PRETEST AND POSTTEST MEASUREMENT POINTS

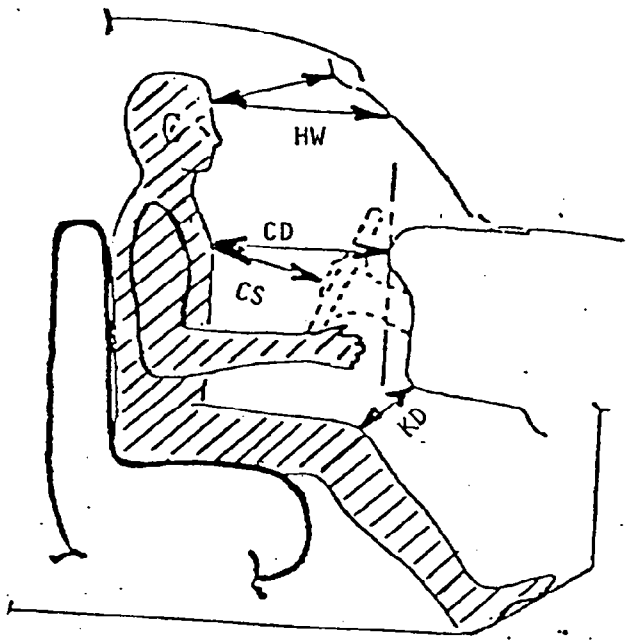
TABLE 2 PRETEST AND POSTTEST VEHICLE DIMENSIONAL MEASUREMENTS

MEASUREMENT*	PRETEST	POSTTEST	Δ
1	147 1/2	125 1/4	22 1/4
2	130 1/4	117 1/8	13 1/8
3	113 1/4	105 5/8	7 5/8
4	96 5/8	96 5/8	0
5	96 1/2	96 1/2	0
6	97 1/2	96 1/2	1
7	97 1/2	97 1/2	0
8	54	53 3/4	1/4
9	53 3/4	53 3/4	0
10	53 3/4	53 1/8	1/8
11	53 1/4	53 1/8	1/8
12	95 3/4	95 3/8	3/8
13	95 5/8	95 1/2	1/8
14	110 7/8	101 1/2	9 3/8
15	111	102	9
16	84 1/2	80 1/4	4 1/4
17	15 1/2	13 1/4	2 1/4
18	14 3/4	18 1/4	+3 1/2
19	142 1/2	121	21 1/2
20	143	120 1/8	22 7/8
21	5 7/8	5 7/8	0

*See Figure 9 for description



FRONT VIEW



SIDE VIEW

HH - HEAD TO WINDSHIELD HEADER
Distance from center of forehead to metal trim above windshield immediately in front of subject.

HW - HEAD TO WINDSHIELD
Horizontal distance from center of forehead to point on windshield immediately at front of subject.

HR - HEAD TO SIDE HEADER
Distance from side of head (just above ear) to point on window (or pillar) immediately to the side of the subject.

HS - HEAD TO SIDE WINDOW
Horizontal distance from side of head (just above ear) to point on window (or pillar) immediately to the side of subject.

CD - CHEST TO DASH
Horizontal distance from chest (near sterum) to vertical line tangent to dashpanel immediately in front of subject.

CS - CHEST TO STEERING WHEEL
Distance from chest (near sternum) to hub of steering wheel for a subject seated in driver's position.

AD - ARM TO DOOR
Horizontal distance from midpoint of upper arm to door (or other) surface immediately to side of subject.

HD - HIP TO DOOR
Horizontal distance from hip (H-point) to door (or other) surface immediately to the side of subject.

KD - KNEES TO DASH
Shortest distance from knees to lower dashpanel immediately in front of subject.

FIGURE 10 OCCUPANT CLEARANCE DIMENSIONS

TABLE 3 OCCUPANT CLEARANCE DIMENSIONS

DIMENSIONS (IN INCHES)	DRIVER	PASSENGER
HH	19	18 5/8
HW	15 3/8	15 1/4
HR	6 1/4	6 1/4
HS	7 5/8	7 7/8
CD	22 7/8	23 1/4
CS	15	NA
AD	4 1/8	3 3/4
HD	5 3/8	5 1/2
KD	5 3/4	6 1/8

*See Figure 10 for dimension descriptions

FIGURE 11 DRIVER DUMMY POSITION - PRETEST

FIGURE 11 (CONT) PASSENGER DUMMY POSITION - PRETEST

FIGURE 12 WINDSHIELD VIEW - PRETEST

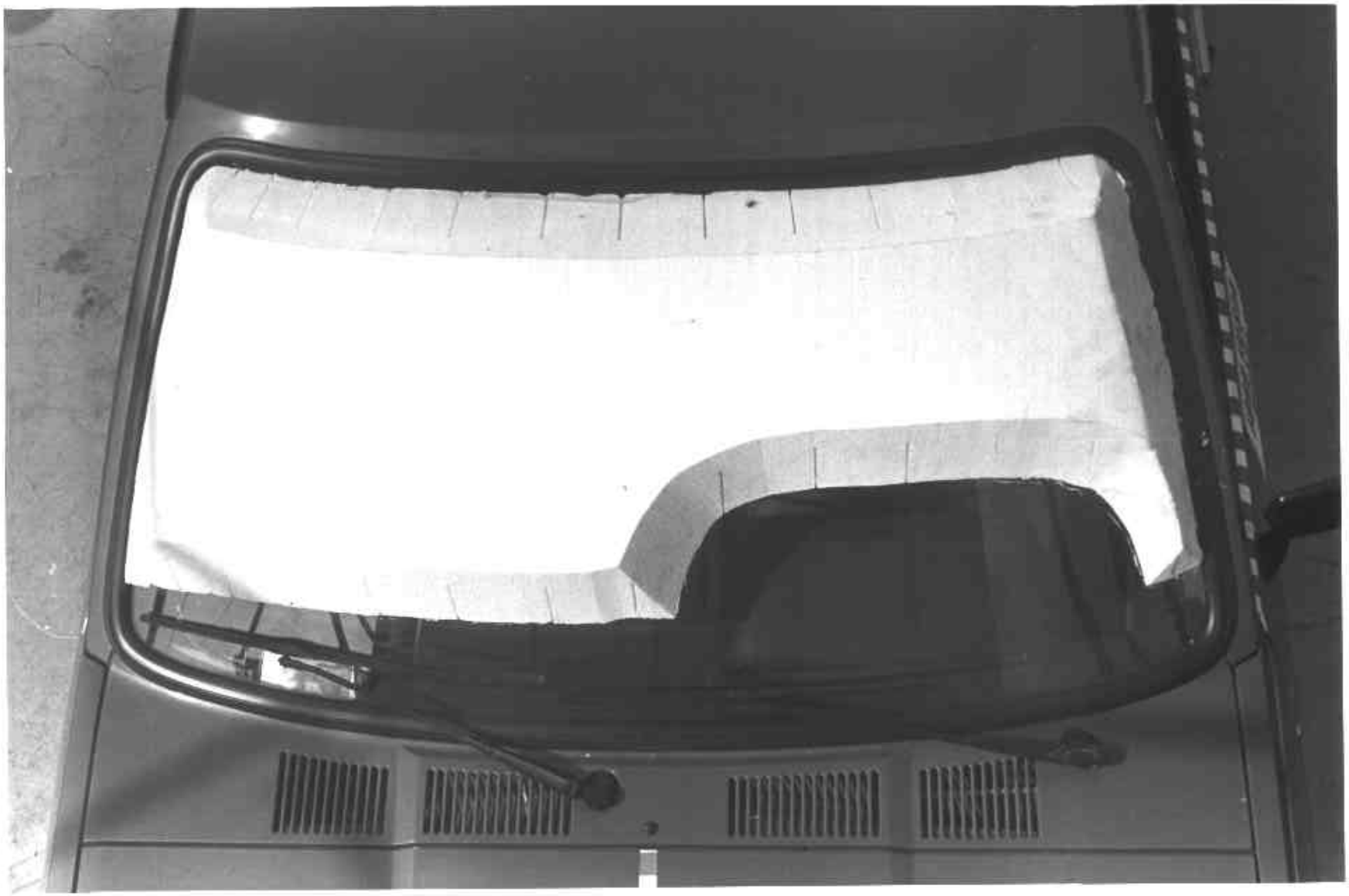


FIGURE 13 FMVSS 219 TEMPLATE - PRETEST

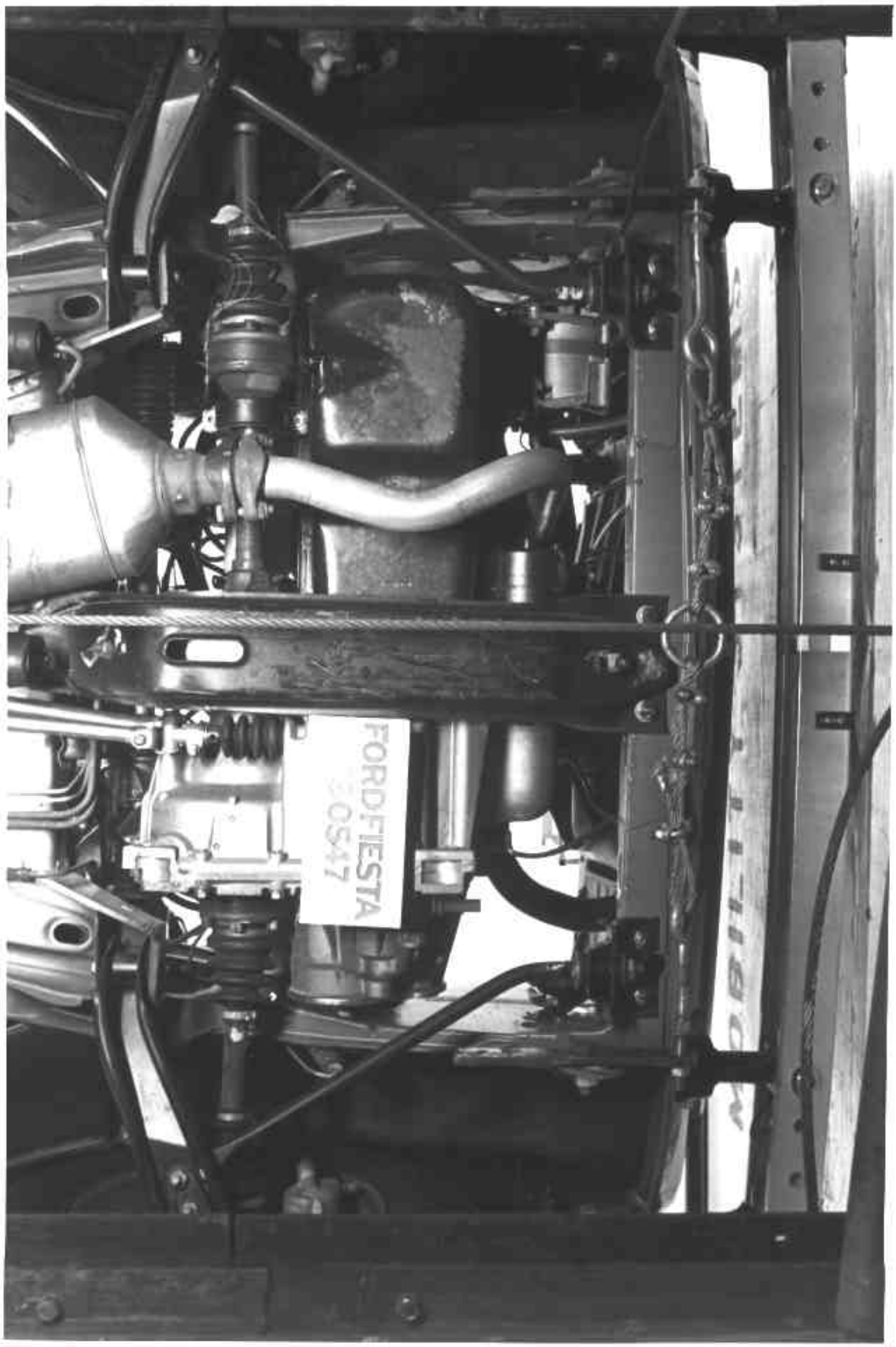


FIGURE 14 UNDERBODY VIEW - FORWARD SECTION - PRETEST

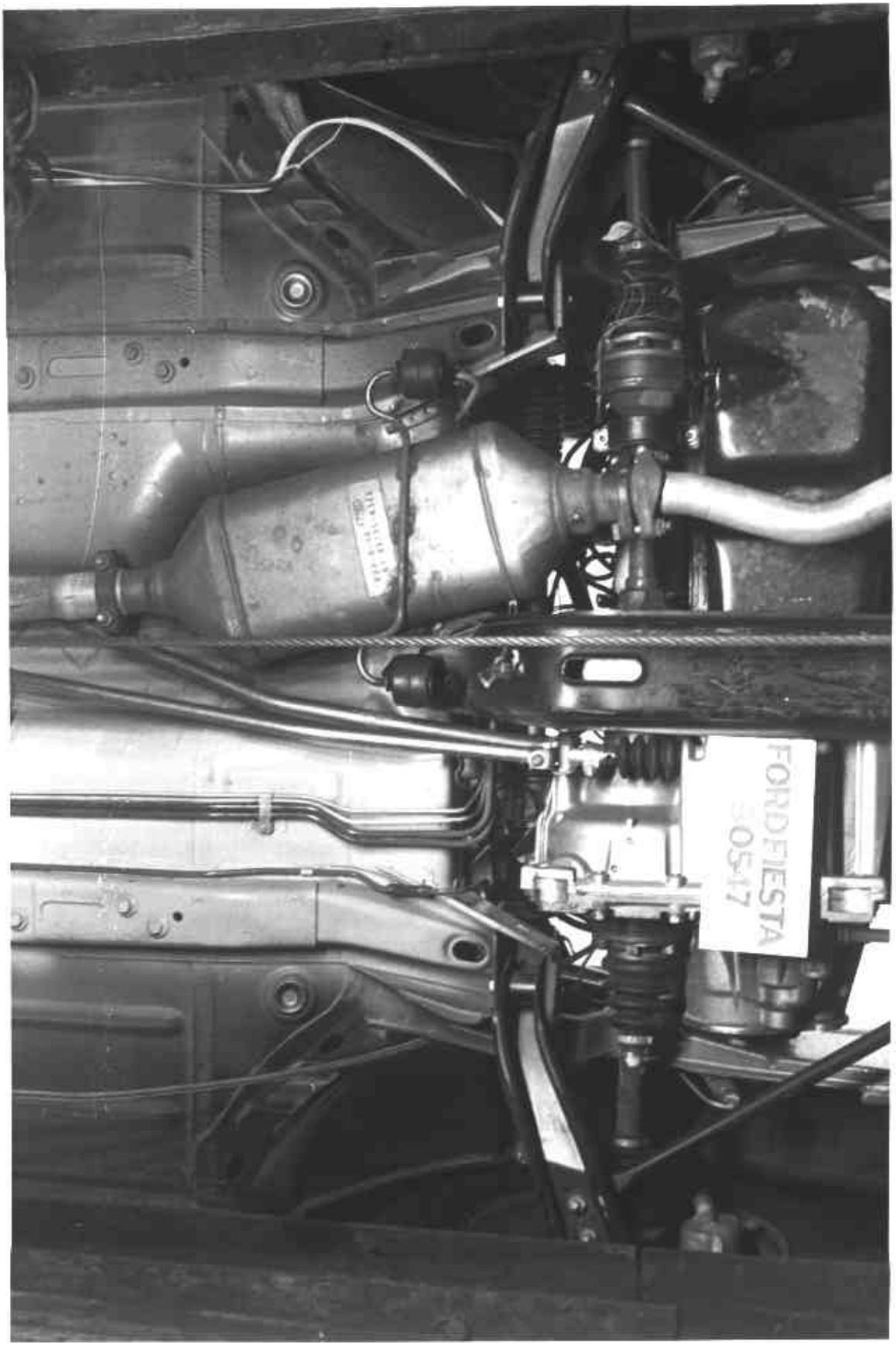


FIGURE 15 UNDERBODY VIEW - CENTER SECTION - PRETEST

FIGURE 15 (CONT) UNDERBODY VIEW - CENTER SECTION - PRETEST

FIGURE 16 UNDERBODY VIEW - REAR SECTION - PRETEST

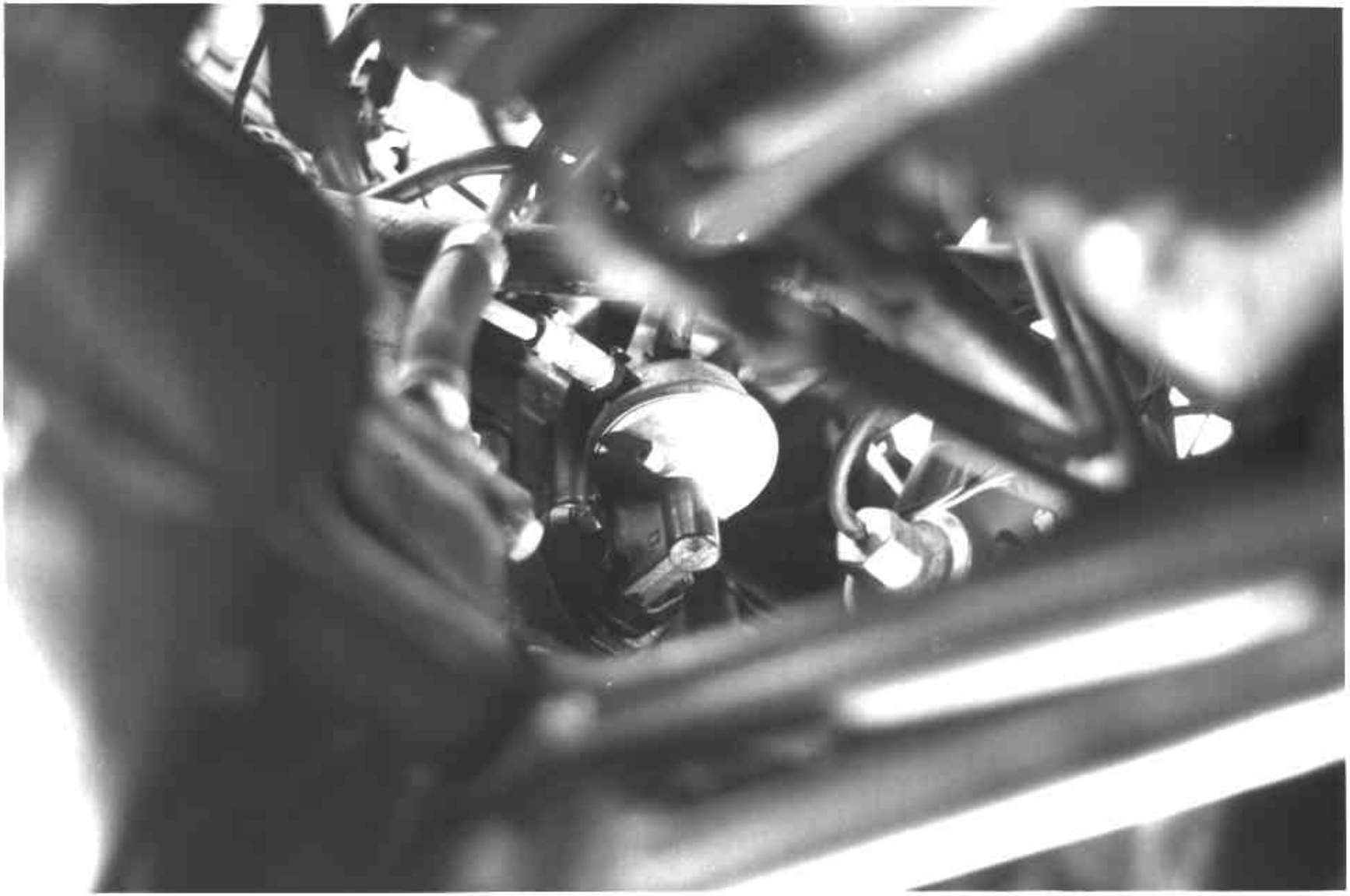


FIGURE 17 UNDERBODY VIEW - FUEL PUMP AREA - PRETEST

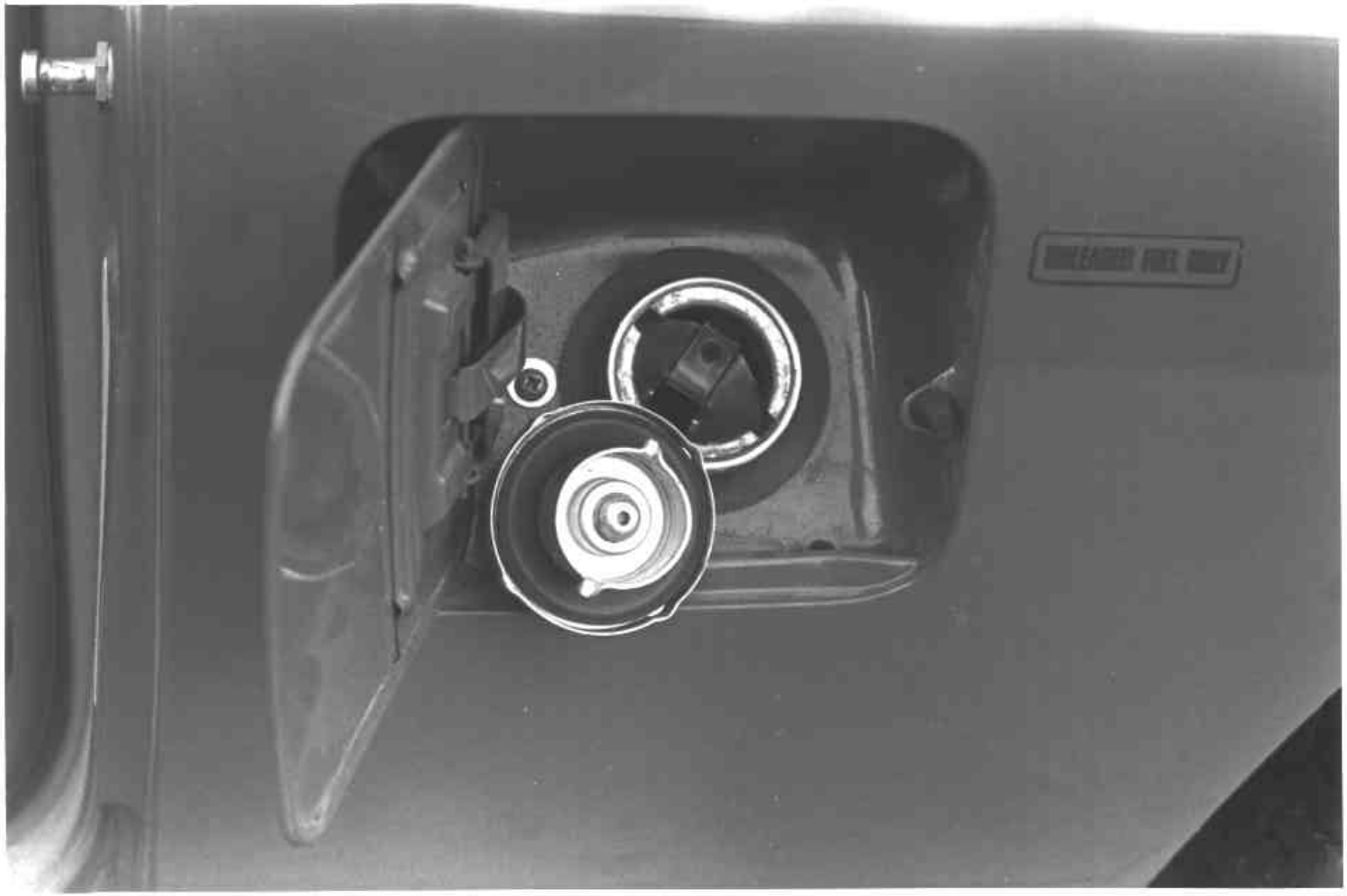


FIGURE 18 FUEL FILLER CAP - PRETEST

SECTION 3

COMPLIANCE TEST RESULTS

Vehicle compliance to three standards, FMVSS 212, 219, and 301-75, was evaluated during the test event. The vehicle satisfied the compliance requirements of all three standards at the 34.93 mph impact velocity.

The vehicle data and test data are presented in Tables 4 through 9. General posttest views of the vehicle are shown in Figures 19 and 20. The time interval measured for traverse through the 4.007 ft. time trap was 78.186 ms and through the 4.006 ft. trap was 78.217 ms. These data were used to calculate the impact speeds of 34.94 mph and 34.92 mph respectively. The average of the two, 34.93 mph, is the reported impact velocity. Based on past data the velocity at the point of impact could have varied from this measured velocity by $\pm$0.06 mph.

High speed film data was required from camera locations as shown in Figure 8. Data were not acquired from the camera located overhead (No 1). This camera failed because of loss of power to it during the test event.

The styrofoam template mounted on the winshield was not impinged by any object during the test, (see Figure 22).

The windshield pulled away from the vehicle in the lower right hand corner and lower left half as shown in Table 7 and Figure 23. The separation occurred as a result of the clips failing that held the rubber moulding to the vehicle. The posttest retention is 81%. The windshield was heavily cracked over approximately 70% of the surface as is shown in Table 7 and Figure 22 and 23.

As the data sheets show, there was no fuel loss of any measureable amount as a result of the test event. No fuel leakage was observed at any location during the rollover testing.

TABLE NO. 4 TEST VEHICLE INFORMATION

Vehicle Manufacturer: Ford - Werke AG

Make/Model: Ford Fiesta

Body Style: 2 door Model Year: 1979

VIN: GCFBUA53748 Build Date: 12/78

NHTSA No.: 790547 Color: Red

Engine Data: 4 Cylinders: 98 CID in3/cc Displacement

Transmission Data: 4 Speed (X) Manual/ ( ) Automatic

Date Vehicle Received by Laboratory: March 20, 1979

Dealer's Name & Address: Warren-Anderson, Riverside, California

DATA FROM CERTIFICATION LABEL ON LEFT DOOR REAR FACE OR 'B' POST

Vehicle Manufactured By: Ford - Werke AG

Date of Manufacturer: 12/78 VIN: GCFBUA53748

GVWR: 2690 lbs. GAWR: Front = 1490 lbs. Rear = 1375

DATA FROM "RECOMMENDED TIRE PRESSURE" LABEL ON DOOR, POST, GLOVE BOX. ETC.

Vehicle Load: Up to Capacity — FRONT 28 psi, REAR 28 psi

RECOMMENDED TIRE SIZE:	LOAD RANGE:
155 SR 12	(B) C D

Vehicle Capacity:

Type of Seats - [ ] Bench [X] Bucket [ ] Split Bench

CARGO LOAD = 100 lbs

TOTAL = 700 lbs

Number of Occupants = 2 Front, 2 Rear, 4 Total (Designated Seating Capacity)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with max. fluids):

Right Front = 567 lbs Right Rear = 337 lbs

Left Front = 553 lbs Left Rear = 321 lbs

TOTAL FRONT WEIGHT = 1120 lbs (63 % of Total Vehicle Weight)

TOTAL REAR WEIGHT = 657 lbs (37 % of Total Vehicle Weight)

TOTAL DELV. WEIGHT = 1777 lbs

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 0 lbs. CARGO:

Right Front = 670 lbs Right Rear = 465 lbs

Left Front = 630 lbs Left Rear = 420 lbs

TOTAL FRONT WEIGHT = 1300 lbs (60 % of Total Vehicle Weight)

TOTAL REAR WEIGHT = 885 lbs (40 % of Total Vehicle Weight)

TOTAL TEST WEIGHT = 2185 lbs

Weight of ballast secured in vehicle trunk area = 00 lbs

TEST CONDITIONS:

Date of Test: October 15, 1979 Time of Test: 3:34 am/(pm)

Ambient Temperature: 80 °F at impact area.

Temp. In Occ. Compart: 80 °F.: W/Shld. Mldg. Temp.: 80 °F.

TABLE NO. 4 TEST VEHICLE INFORMATION (CONT)

VEHICLE ATTITUDE: (all dimensions in inches)

Delivered Attitude: RF 24 LF 23 3/4 RR 24 LR 24

Test Attitude: RF 23 LF 23 1/8 RR 23 LR 23 1/8

VEHICLE TIRE DATA:

Recommended Cold Tire Pressure: Front = 28 psi

Rear = 28 psi

Recommended Tire Size: 155 SR 12

Load Range: B

Tires on Vehicle: 155 SR 12

Is Spare Tire a "Space Saver": NO (yes/no)

Is Spare Tire Standare Equipment: YES (yes/no)

TEST FLUID DATA:

Test Fluid Type: Red Stoddard Solvent Spec. Grav.: 0.764

Kinematic Viscosity:

Spill Point Volume:* 11.53 Gallons (SPV)

Test Volume: 10.44 Gallons (90 to 91% of SPV)

Fuel System Capacity (data from Owner's Manual): 10 gal.

Details of Fuel System: Mechanical fuel pump; tank mounted under vehicle approximately under rear seat.

Electric Fuel Pump: ___ Yes X No ; Fuel Injection: ___ Yes X No

Does electric fuel pump operate with ignition switch "on" and the engine not operating: ___ Yes: NA No

VEHICLE REBOUND AND CRUSH:

Overall Length of Test Vehicle: Pretest = R 146 1/2 L 146 1/2 inches

CRUSH=R 22 7/8/L 21 1/2 Posttest = R 123 5/8 L 125 inches

FOR FRONTAL IMPACTS, distance from front of test vehicle to the barrier after impact = 17 1/2 inches

* With entire fuel system filled from fuel tank through carburetor bowl.

TABLE NO. 5 POST IMPAACT DATA - STANDARDS 219 and 301-75

TYPE OF TEST: [X] FFrontal (90°) Impact

[ ] CObliique (__°) Impact on [ ] Left (Driver's) Side
[ ] Right Side

[ ] LLateral or Side Impact on [ ] Left (Driver's) Side
[ ] Right Side

[ ] RRear Impact

DATE OF TEST: October 15, 1979 TIME: 3:34 PM TEMP: 80 °F.

VEH. NHTSA NO: 790547 VIN: GCFBUA53748

REQUIRED VEH. VELOCITY RANGE: 34.5 to 35.5 mph

IMPACT VELOCITY: (Traps within 5 feet of impact event)

Trap #1 = 34.94 mph; Trap #2 = 34.92 mph

Distance from the vehicle's front bumper to the barrier face
entering the vehicle velocity measurement device = 5 FT.
exiting the vehicle velocity measurement device = 1 FT.

VEH. STATIC CRUSH: (For Frontal and Rear Impacts Only)

Driver's Side = 21 1/2 in. Passenger's Side = 22 7/8 in.

Average = 22 1/8 inches

Crush Details:

See attached sheet

VEH. STATIC CRUSH: (For Side Impacts Only)

Amount of Crush = - inches on - side

Crush Details:

VEH. REBOUND: (From Rigid Barrier Only)

Driver's Side = 18 1/8 inches; Pass. Side = 17 inches

Average = 17 1/2 inches

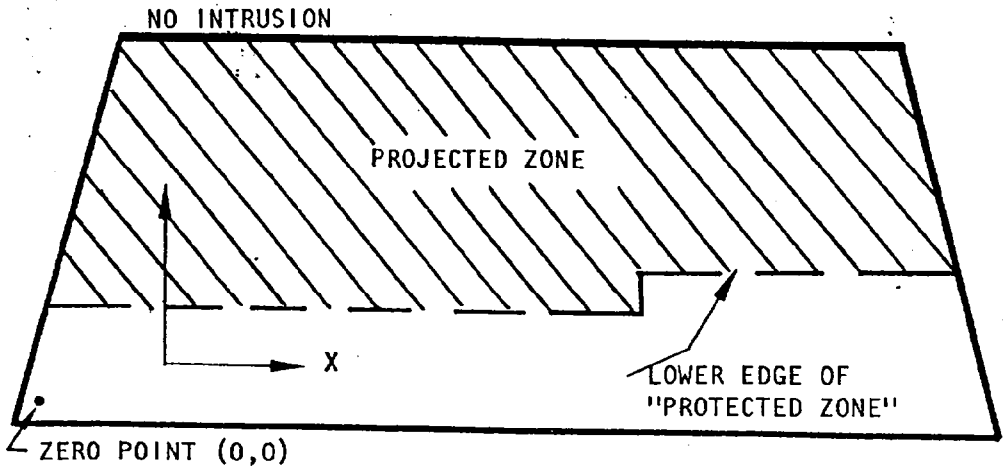
REMARKS:

TABLE NO 5 POST IMPACT DATA - STANDARDS 219 and 301-75 (CONT)

CRUSH DETAILS

The front of the vehicle was crushed to the point where it is essentially even with the front of the tires. The front wheels were pushed rearward approximately 6" during the impact. The engine, located laterally, was pushed into the firewall for approximately 6 inches causing the firewall to buckle in towards the passenger compartment and to pull the windshield with it causing severe cracking of the windshield. The passenger compartment sustained damage but not severe. The dash panel was damaged by the impact of the occupant. The steering wheel was bent severly by the driver occupant. Not only was the wheel rim bent around the center portion of the steering column but the shaft that protrudes back from the main column was bent downward by the impact. The steering column did not break away from the dash board during the test. Some roof buckling occurred above the 'B' pillars. The doors were opened without tools.

TABLE NO. 6 WINDSHIELD ZONE INTRUSION, FMVSS 219



FRONT VIEW

With the zero coordinate for the X-Y grid located at the lower right corner (passenger side) of the windshield, record the following positions:

(A) The area that the "Protected Zone" template was penetrated more than .25 inches by a vehicle component other than one which is normally in contact with the windshield.

Coordinates

X	Y

(B) The area beneath the "Protected Zone" that the inner surface of the windshield was penetrated by a vehicle component.

Coordinates

X	Y

(C) Record any windshield retention clips or brackets used to insure that the windshield would not disengage from the body.

TABLE 7 SUMMARY OF FMVSS 212 DATA

Details of windshield mounting (method of retention, type of trim, etc.)

Glass is bonded into rubber moulding. The rubber moulding is attached to the vehicle with clip retainers.

	WINDSHIELD PERIPHERY	
	PRETEST	POSTTEST
RIGHT SIDE	67 1/4"	55 1/4"
LEFT SIDE	67 1/4"	53 1/4"
TOTAL	134 1/2"	108 1/2"

The standard requires that POSTTEST be a minimum of 75 percent of the PRETEST total periphery measurement for vehicles not equipped with occupant passive restraints and 50 percent for each side of the windshield for vehicles which are equipped with occupant passive restraints.

AREA OF RETENTION FAILURE: Posttest retention = 81%

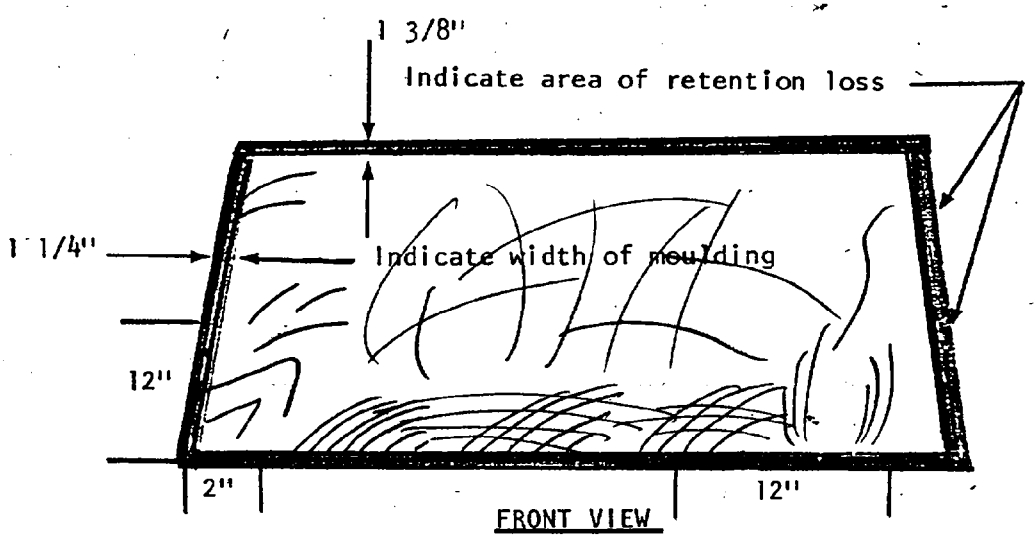
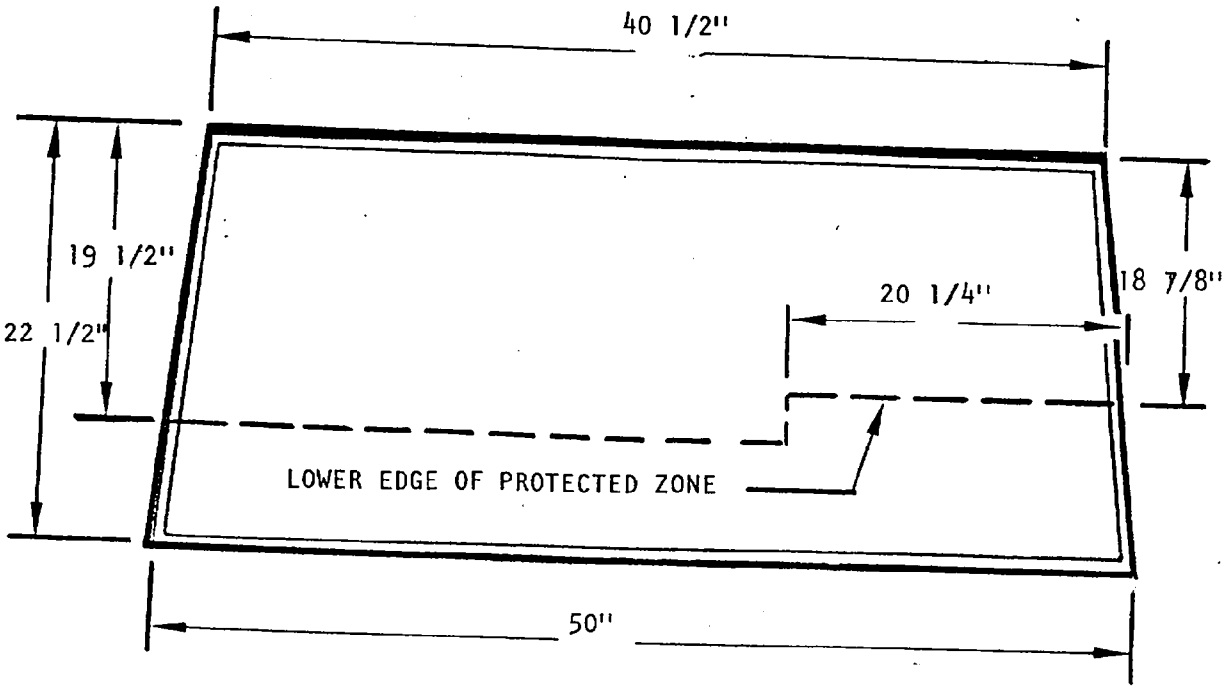


TABLE 8 FMVSS 219 TEMPLATE



FRONT VIEW OF WINDSHIELD

Provide all dimensions necessary to reproduce the protected zone.
Method of adhering styrofoam to the windshield:

Vertical strips of silicone rubber approximately every 3".

FIGURE 4 PROTECTED ZONE

TABLE 9 FMVSS NO. 301-75 STATIC ROLLOVER DATA SHEET

TEST VEHICLE NHTSA NO. 790547 TEST DATE 10/15/79

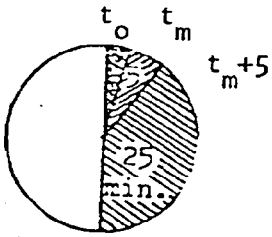
VEH. MFR/MAKE/MODEL Ford Fiesta

Test vehicle fuel tank filled to 90-91% of capacity with Stoddard Solvent and with electric fuel pump operating (if it will operate without engine operation. Part 572 test dummies located at each front designated seating position.

A. TEST VEHICLE IMPACT TYPE

- ☒ Frontal (35 mph)
- ☐ Oblique (35 mph) with ° barrier face first contacting (driver/passenger) side
- ☐ Rear Moving Barrier (35 mph)
- ☐ Lateral Moving Barrier (20 mph)

FUEL SPILLAGE MEASUREMENT - - -



	ACTUAL	MAX. ALLOW.
1. From impact until vehicle motion ceases - - - - - -	0	1 oz
2. For 5 minute period after veh. motion ceases - - -	0	5 oz
3. For next 25 minutes - - -	0	1 oz/1 min.

B. TEST VEHICLE STATIC ROLLOVER

DETAIL TEST RESULTS ARE RECORDED ON THE FOLLOWING DATA SHEETS:

(1) Rollover data for 0° to 90° test phase.
(2) Rollover data for 90° to 180° test phase.
(3) Rollover data for 180° to 270° test phase.
(4) Rollover data for 270° to 360° test phase.

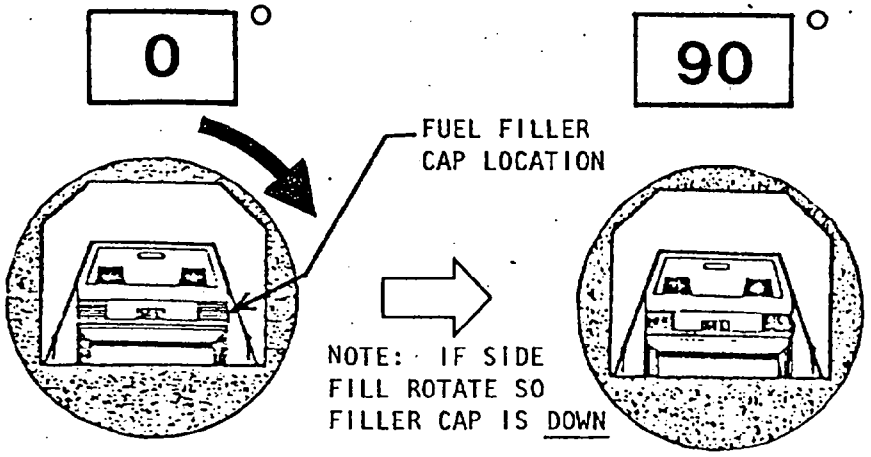
C. SOLVENT SPILLAGE DETAILS

TABLE 9 FMVSS NO. 301-75 STATIC ROLLOVER DATA SHEET (CONT)

TEST VEHICLE NHTSA NO. 790547 TEST DATE 10/15/79

VEH. MFR/MAKE/MODEL Ford Fiesta

TEST PHASE:



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time - - (Spec. Range = 1 to 3 minutes)	=	1 minutes	20	seconds
FMVSS 301-75 Position Hold Time - - -	+	5 minutes	00	seconds
TOTAL- - - - - - - - - - - - - - - - - -	=	6 minutes	20	seconds
Next Whole Minute Interval - - - - - -	=	7 minutes		

II. FMVSS 301-75 REQUIREMENTS:

(1) Time Period--

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

(2) Maximum Allowable Solvent Spillage--

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0

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

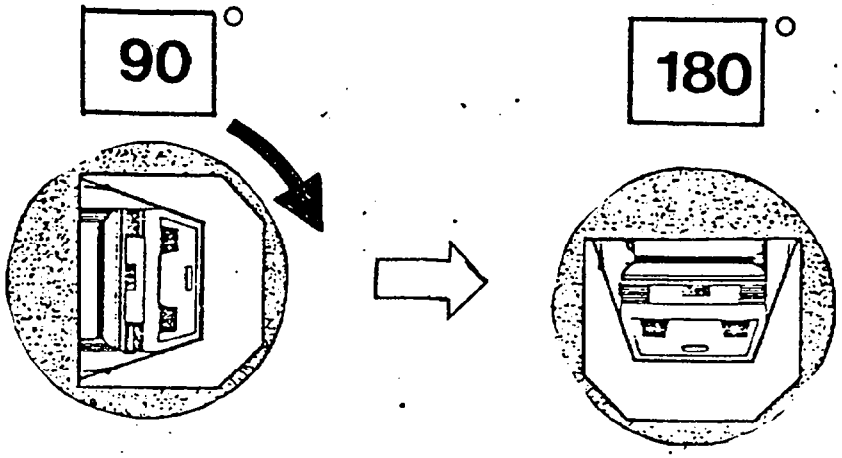
IV. SOLVENT SPILLAGE LOCATION(S):

TABLE 9 FMVSS NO. 301-75 STATIC ROLLOVER DATA SHEET (CONT)

TEST VEHICLE NHTSA NO. 790547 TEST DATE 10/15/79

VEH. MFR/MAKE/MODEL Ford Fiesta

TEST PHASE



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time - - = (Spec. Range - 1 to 3 minutes)	1 minutes	21 seconds
FMVSS 301-75 Position Hold Time - - - =	+ 5 minutes	00 seconds
TOTAL - - - - - - - - - - - - - - - - - =	6 minutes	21 seconds
Next Whole Minute Interval - - - - - - - =	7 minutes	

II. FMVSS 301-75 REQUIREMENTS:

(1) Time Period --

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

(2) Maximum Allowable Solvent Spillage --

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0

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

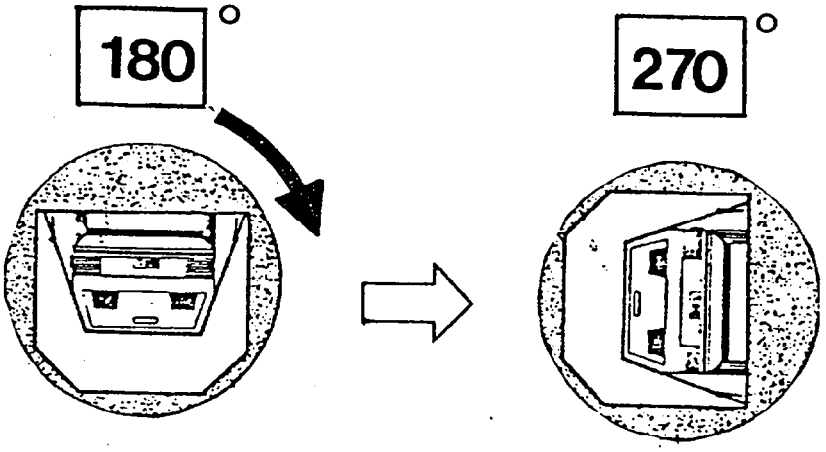
IV. SOLVENT SPILLAGE LOCATION(S):

TABLE 9 FMVSS NO. 301-75 STATIC ROLLOVER DATA SHEET (CONT)

TEST VEHICLE NHTSA NO. 790547 TEST DATE 10/15/79

VEH. MFR/MAKE/MODEL Ford Fiesta

TEST PHASE



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time - - = (Spec. Range - 1 to 3 minutes)	1 minutes	20 seconds
FMVSS 301-75 Position Hold Time - - - =	5 minutes	00 seconds
TOTAL - - - - - - - - - - - - - - - - - - =	6 minutes	20 seconds
Next Whole Minute Interval - - - - - - - =	7 minutes	

II. FMVSS 301-75 REQUIREMENTS:

(1) Time Period --

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

(2) Maximum Allowable Solvent Spillage --

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0

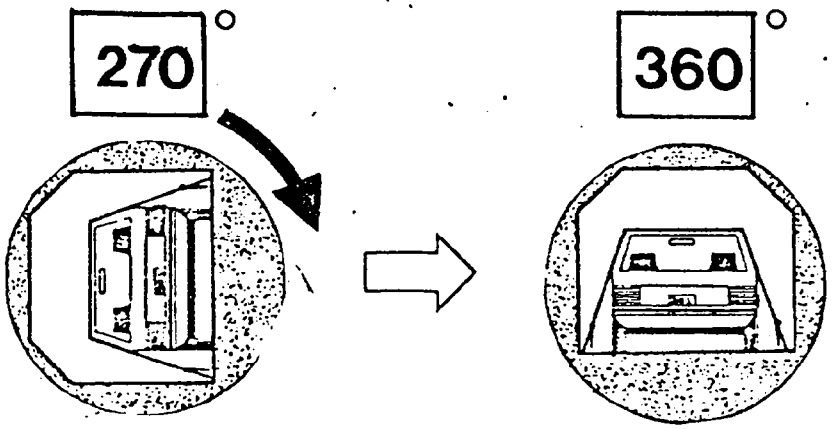
NOTE: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S):

TABLE 9 FMVSS NO. 301-75 STATIC ROLLOVER DATA SHEET (CONT)

TEST VEHICLE NHTSA NO. 790547 TEST DATE 10/15/79

VEH. MFR/MAKE/MODEL Ford Fiesta



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time - - - (Spec. Range - 1 to 3 minutes)	=	1	minutes	19 seconds
FMVSS 301-75 Position Hold Time - - - -	= +	5	minutes	00 seconds
TOTAL - - - - - - - - - - - - - - - - - -	=	6	minutes	19 seconds
Next Whole Minute Interval - - - - - - -	=	7	minutes	

II. FMVSS 301-75 REQUIREMENTS:

(1) Time Period --

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

(2) Maximum Allowable Solvent Spillage --

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0

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

IV. SOLVENT SPILLAGE LOCATION(S):

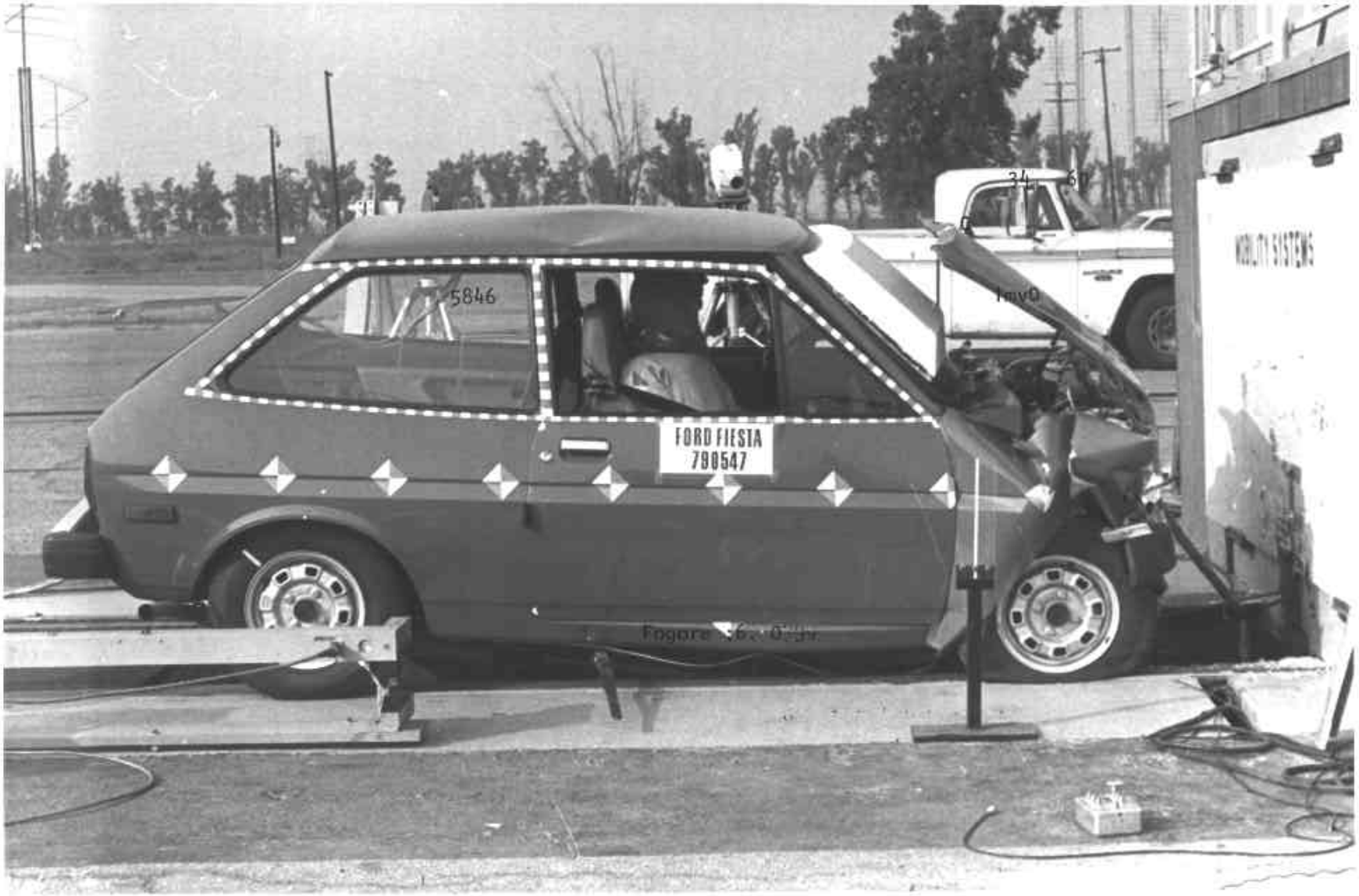


FIGURE 19 SIDE VIEW - POSTTEST

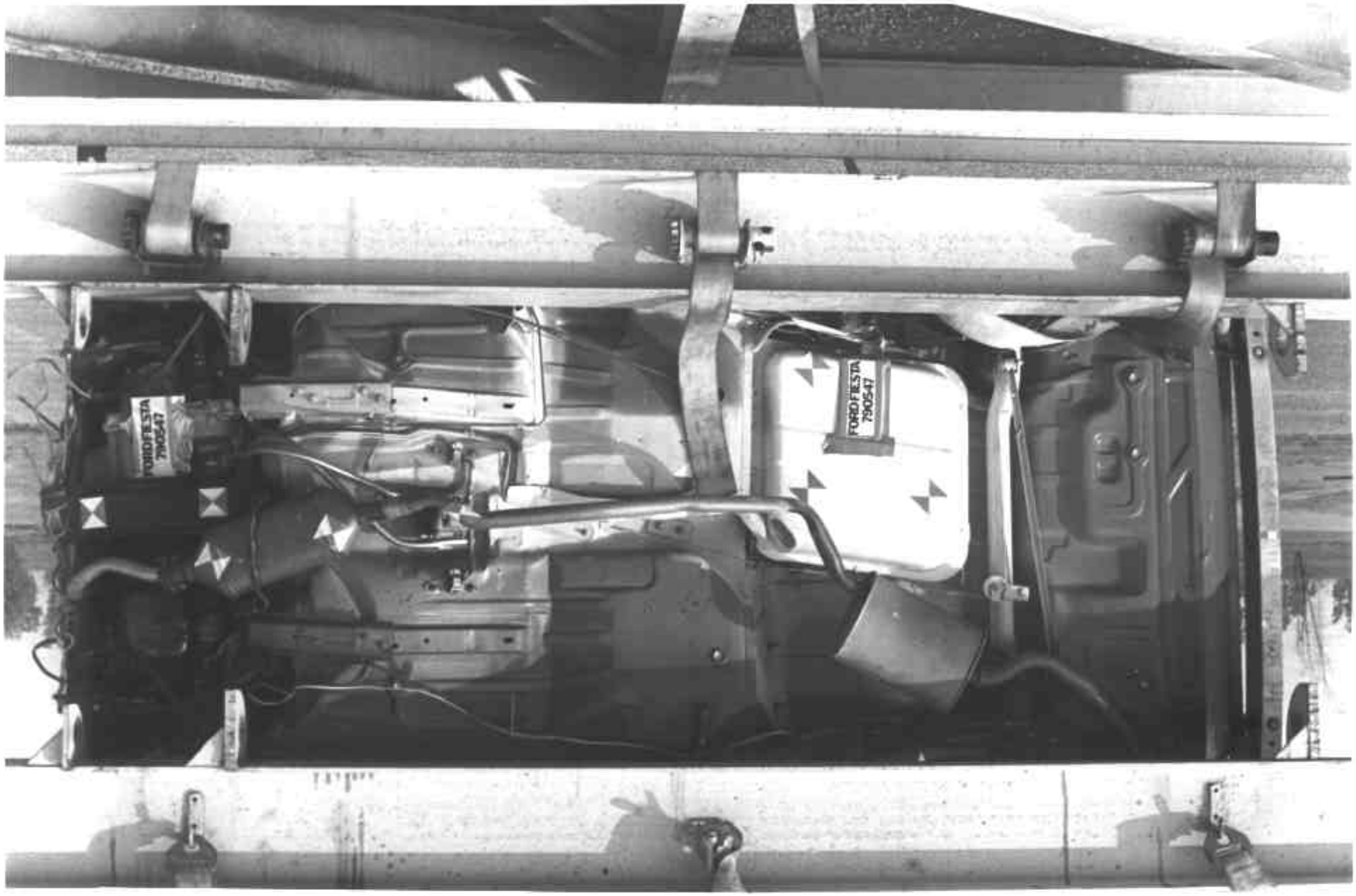


FIGURE 20 FULL UNDERBODY VIEW - POSTTEST

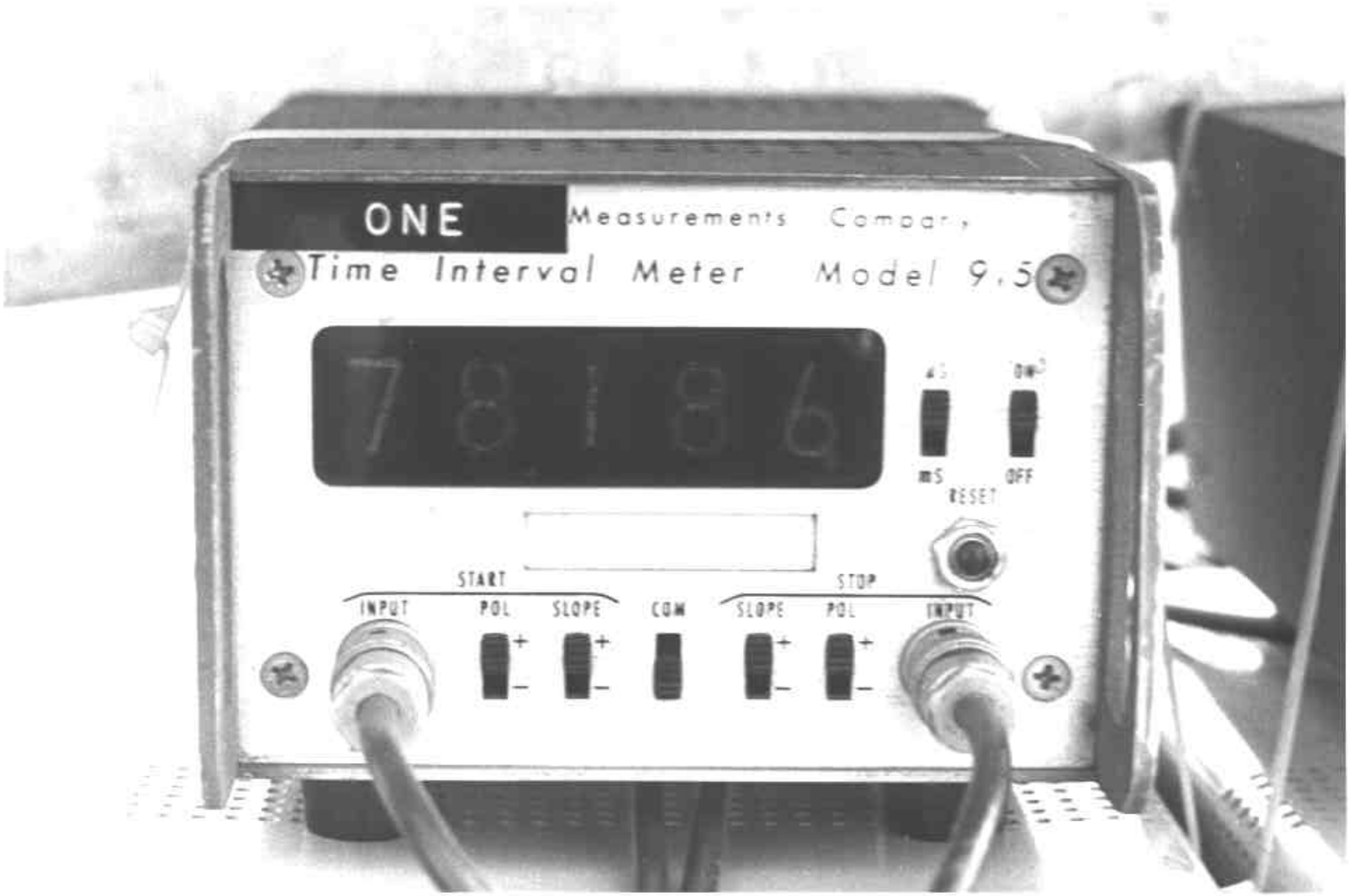


FIGURE 21 SPEED TRAP TIME INTERVAL METER

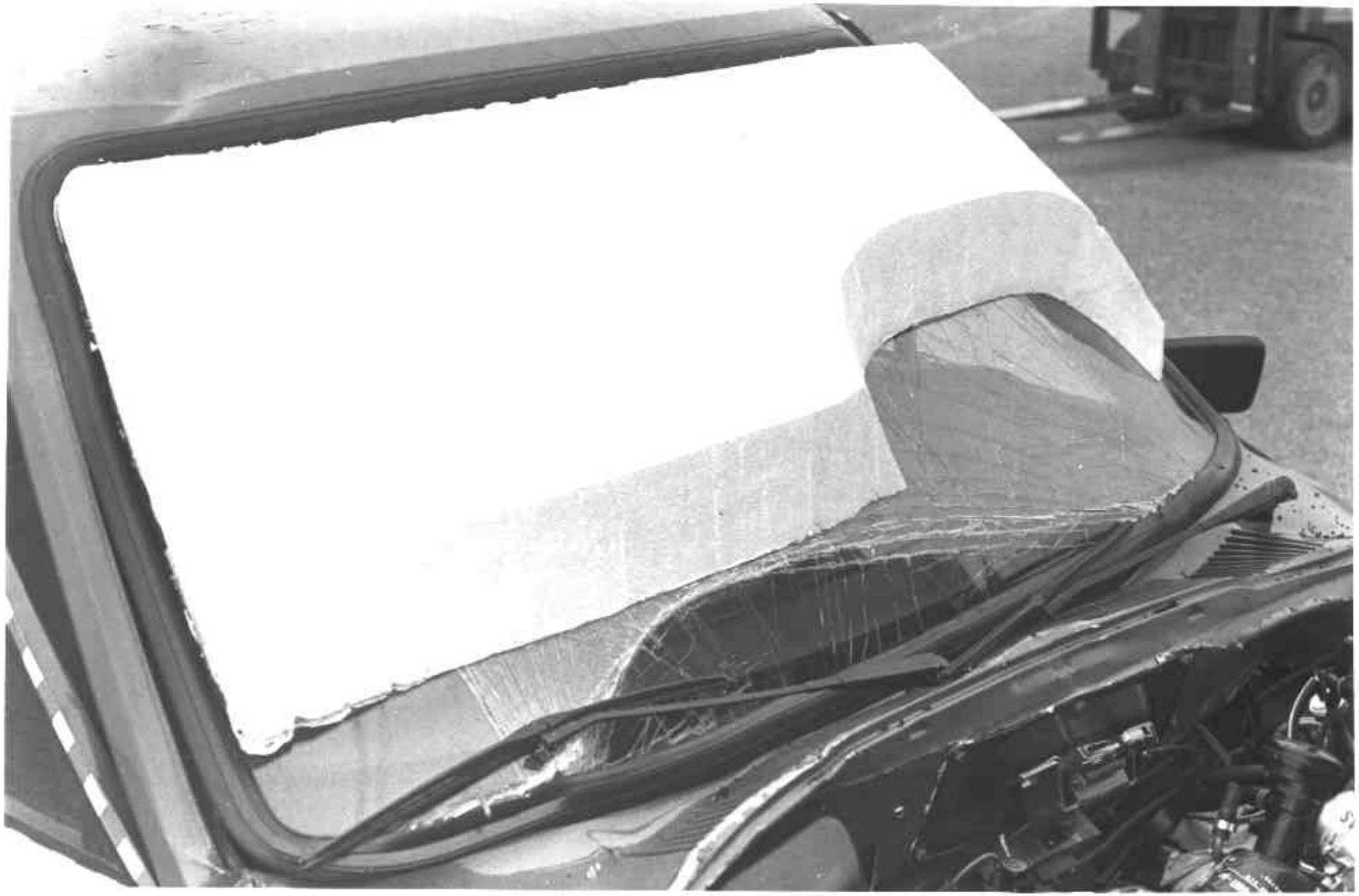


FIGURE 22 FMVSS 219 TEMPLATE - POSTTEST

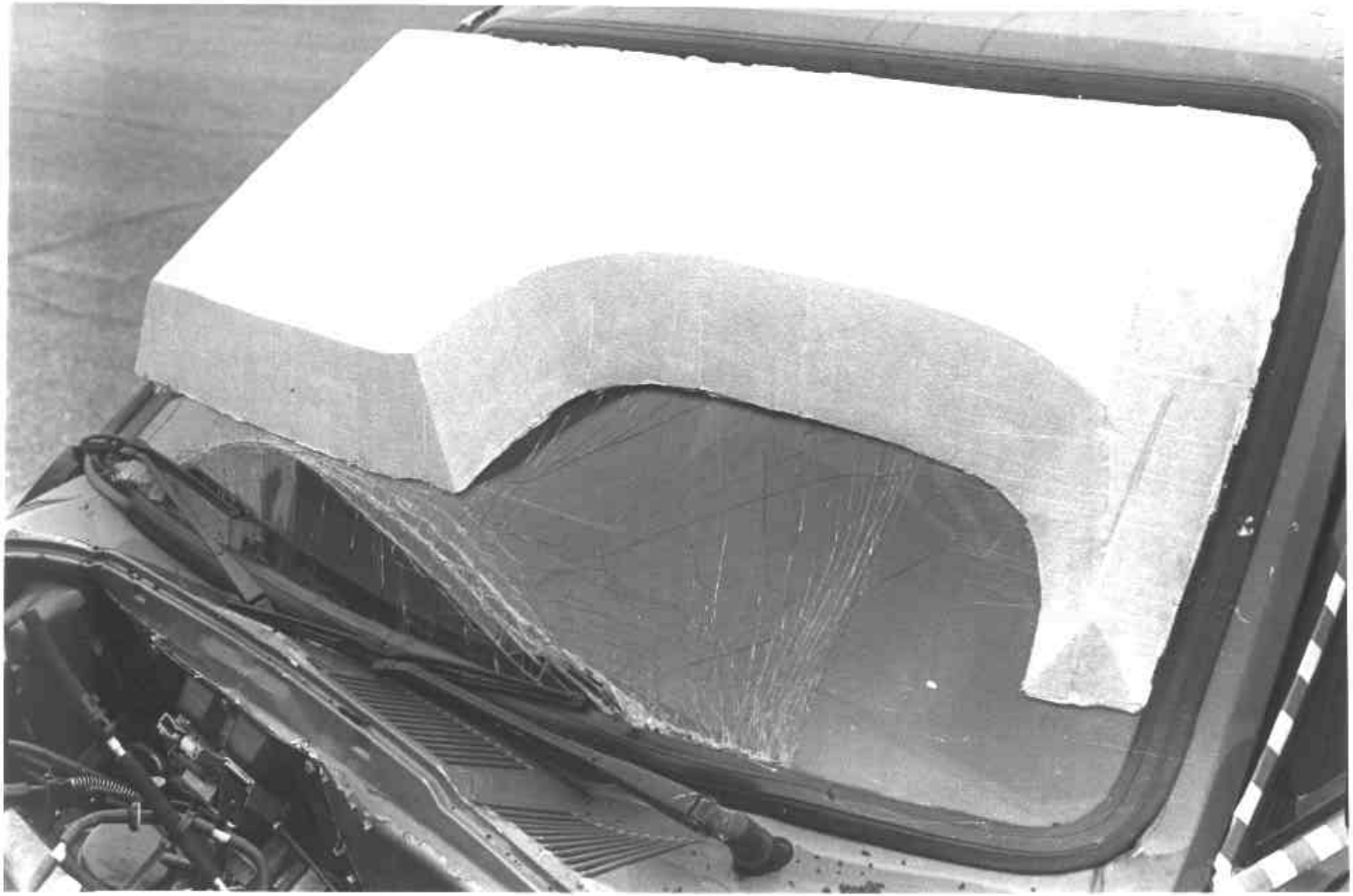


FIGURE 22 (CONT) FMVSS 219 TEMPLATE - POSTTEST

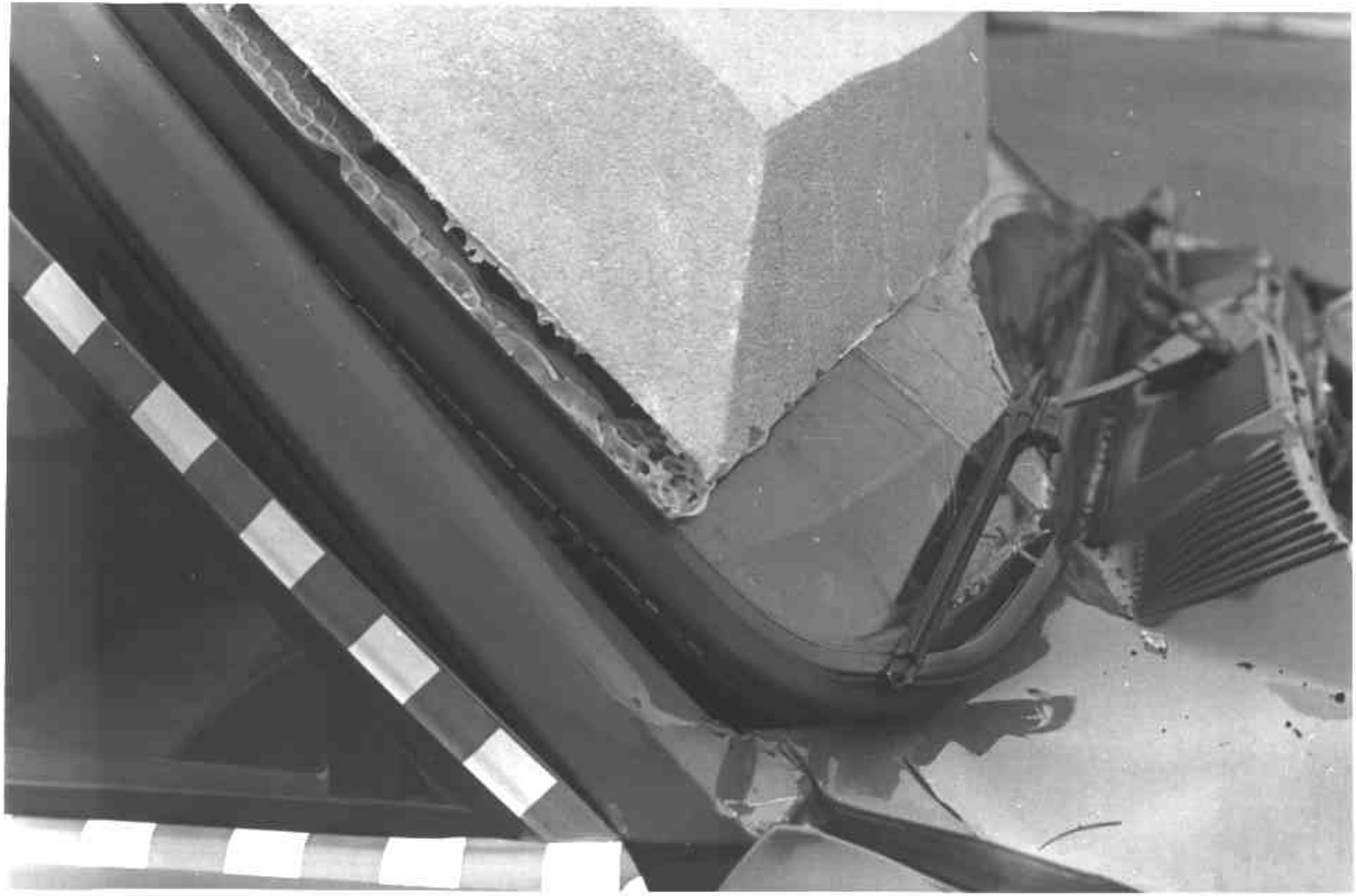


FIGURE 23 WINDSHIELD VIEW - POSTTEST

FIGURE 23 (CONT) WINDSHIELD VIEW - POSTTEST

SECTION 4

RESEARCH AND DEVELOPMENT AND OAR TEST RESULTS

The vehicle was prepared for testing such that information for the NCAP could be acquired. Data were recorded on the two Part 572 dummies that were installed in the vehicle at the driver and right front passenger locations. Data was measured from accelerometers mounted in the head and chest in three axes. Forces were measured from load cells in each of the femurs on each dummy. In addition to the data measured on the dummies, the shoulder belt loads were recorded and accelerations were recorded at specified locations throughout the vehicle. (See Fig. 6).

At the conclusion of the test the FM analog data were converted to a digital tape which was submitted to NHTSA with a corresponding card deck. Time histories for each of the test measurements and tabulated peak values were submitted to NHTSA under separate cover.

Posttest examination of the vehicle interior showed that the driver dummy's head struck the steering wheel at the top of the rim and the chest struck the hub and bent the lower half of the rim forward. The primary impact point for the passenger dummy's head was the top edge of the dash board. Contact was also made with the front (vertical) surface of the dash board. Posttest photographs of the dummies are shown in Figure 24. The damage to the instrument panel and dash board are also shown in Figure 24. As is shown the steering column remained attached to the instrument panel. The steering column shows very little collapse if any and the end of the column, where the steering wheel is attached, was bent downward significantly by the impact.

FIGURE 24 DRIVER DUMMY POSITION AND INTERIOR VIEW - POSTTEST

FIGURE 25. PASSENGER DUMMY POSITION AND INTERIOR VIEW - POSTTEST