V 3306

Report Number: 208S-TRC-00-003

Vehicle Safety Compliance Testing for FMVSS 208 for Occupant Crash Protection Sled Test

Ford Motor Company

2000 Ford Expedition

NHTSA Number: CY0204

TRC Test Number: 000317S

Transportation Research Center Inc.

10820 State Route 347

East Liberty, OH 43319

Test Date: March 17, 2000

Report Date: April 6, 2000

Final Report

Prepared For:

U. S. Department of Transportation

National Highway Traffic Safety Administration

Safety Assurance

Office of Vehicle Safety Compliance (NSA-30)

400 Seventh Street, S.W., Room No. 6115

Washington, DC 20590

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Report Prepared By:

Ronald D. Stoner Date 4/3/00

Ronald D. Stoner, Engineering Technician
Transportation Research Center Inc.

Report Approved By:

Jason D. Jenkins Date 4/4/2000

Jason D. Jenkins, Senior Project Engineer
Transportation Research Center Inc.

Final Report Accepted By:

Charles R. Case Date 5/22/00

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

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16. Abstract

An FMVSS 208 Section 13 compliance sled test was conducted on a 2000 Ford Expedition, NHTSA No. CY0204, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP208S-01 for the determination of FMVSS 208 compliance. Possible test failures identified were as follows:

None

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Purpose

This Federal Motor Vehicle safety Standard (FMVSS) 208 compliance sled test is part of the FMVSS compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by the Transportation Research Center Inc. (TRC) under Contract No. DTNH22-98-D-01055. The purpose of this test was to determine if the subject vehicle, a 2000 Ford Expedition MPV, NHTSA No. CY0204, meets the performance requirements of FMVSS 208, "Occupant Crash Protection," in the impact simulation sled test mode.

Test Procedure

This test was conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure No. TP-208S-01, dated January 15, 1998. Data was obtained relative to FMVSS 208, "Occupant Crash Protection," performance.

The sled test vehicle was instrumented with six (6) accelerometers to measure longitudinal axis accelerations.

The sled test vehicle contained two (2) Part 572 E 50th percentile adult male anthropomorphic test devices (dummies). The dummies were positioned in the front outboard designated seating positions according to the dummy placement procedure specified in Appendix B of the Laboratory Test Procedure. The dummies were not restrained by seat belts.

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

The forty (40) data channels were digitally sampled at 12,500 samples per second and processed per Sections 11.7 through 11.9 of the Laboratory Test Procedure.

The sled test event was recorded by one (1) real-time motion picture camera and six (6) high-speed motion picture cameras. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera.

Test Results Summary

This FMVSS 208 compliance sled test was conducted at TRC on March 17, 2000.

The test vehicle, a 2000 Ford Expedition, NHTSA No. CY0204, does appear to comply with the performance requirements of FMVSS 208 in the impact simulation sled test mode as measured by Hybrid III 50th percentile male dummies.

	FMVSS 208 Max. Allowable Injury Assessment Values	Driver 314	Passenger 230
HIC	1000	369	267
Chest g	60 g	35.1	41.8
Chest Displacement	3 inches	0.9	0.4
Left Femur	2250 lb	1401	1246
Right Femur	2250 lb	1313	1199
Neck Extension	57 Nm	9.6	9.5
Neck Flexion	190 Nm	56.8	78.2
Neck Tension	3300 N	1326	378
Neck Compression	4000 N	191	1922
Neck Shear	3100 N	901	1307

The subject vehicle, a 2000 Ford Expedition, NHTSA No. CY0204, appears to meet the other FMVSS 208 requirements for which it was tested. These results are shown in the data sheets that are included in this report.

The sled test vehicle was equipped with air bags at the driver and passenger seating positions. The dummies were not restrained by seat belts. The sled carriage was accelerated to 18.3 g with an integrated velocity change of 30.2 mph. The air bags were triggered at 20.2 milliseconds after 0.5 g acceleration was measured by the firing circuit. Following subsequent digital data processing and filtering the acceleration signal to Channel Class 60, the air bag event trigger signal was 21.8 ms after the 0.5 g acceleration level was indicated.

Data Acquisition Explanations

The measured velocity, SLDXV, from the light trap vane attached to the sled has recorded an anomaly in the peak velocity, believed to be caused by a seam in the velocity vane.

Sled Test Summary

NHTSA number:	CY0204
Test type:	FMVSS 208 Compliance Sled Test
Test date:	03/17/00
Test time:	14:47
Ambient temperature at impact area:	70° F
Vehicle year/make/ model/body style:	2000/Ford/Expedition/MPV

Dummy Info:	Driver #314	Passenger #230
Type:	Part 572 E	Part 572 E
Location:	Left front	Right front
Restraint:	Airbag	Airbag
Number of data channels:	15	15

Number of Cameras:	
Real-time:	1
High-speed:	6

Door Opening Data:	
Left Front:	Normal
Right Front:	Normal

Front Seat Data:

Seat track failure:	No apparent failure	No apparent failure
Seat back failure:	No apparent failure	No apparent failure

Visible Dummy Contact Points:

Head:	Airbag, sun visor/headliner and headrest	Airbag, sun visor/ headliner, and headrest
Chest:	Airbag	Airbag
Left knee:	Knee bolster	Knee bolster/Glove box
Right knee:	Knee bolster	Knee bolster/Glove box

General Test and Vehicle Parameter Data for the Sled Test Vehicle

Test Vehicle Information:

Vehicle year/make/ model/body style:	2000/Ford/Expedition/MPV			
Color:	Oxford White			
VIN:	1FMRU1563YLA66966			
NHTSA number:	CY0204			
Engine data:				
Placement:	Inline			
Cylinders:	8			
Displacement:	4.6 liters			
Transmission data:	_4_speed,	___manual,	_X_automatic,	_X_overdrive
Final drive:	___fwd,	_X_rwd,	___4wd	
Date vehicle received:	12/17/99			
Odometer reading:	63 miles			
Dealer's name and address:	Ricart Ford Inc. 4255 South Hamilton Road Columbus, OH 43327			

Major Options:

Power steering	Yes	Other: Tilt steering, power adjustable pedals,
Power brakes	Yes	antitheft system
Power windows	Yes	
Air conditioning	Yes	
Power door locks	Yes	

Remarks: None

General Test and Vehicle Parameter Data for the Sled Test Vehicle, Cont'd.

Data from Vehicle's Certification Label:

Vehicle manufactured by:		Ford Motor Co.
Date of manufacture:		11/99
VIN:		1FMRU1563YLA66966
GVWR:		6700 lbs
GAWR:	Front:	3050 lbs
	Rear:	3900 lbs

Data from Vehicle's Tire Placard:

Tire pressure with maximum capacity vehicle load:	
Front:	30 psi
Rear:	35 psi
Recommended tire size:	P225/70R16SL
Load range:	2271 lbs
Recommended cold tire pressure:	
Front:	30 psi
Rear:	35 psi
Size of tires on vehicle:	P255/70R16SL
Spare tire:	P255/70R16SL
Vehicle capacity data:	
Type of front seats:	60/40Bench
Number of occupants:	
Front	3
Rear	6
Total	9

Remarks: No capacity weight on tire load label.

General Test and Vehicle Parameter Data for the Sled Test Vehicle, Cont'd.

Weight of test vehicle as received (with maximum fluids):

Right front	1200	lbs	Right rear	1230	lbs
Left front	1280	lbs	Left rear	1200	lbs
Total front weight	2480	lbs	(51% of total vehicle weight)		
Total rear weight	2430	lbs	(49% of total vehicle weight)		
Total delivered weight	4910	lbs			

Calculation of test vehicle's target test weight:

RCLW = Rated Cargo and Luggage Weight

UDW = Unloaded Delivered Weight (4910 lbs)

DSC = Designated Seating Capacity (9)

RCLW = 590 lbs

Target test weight = UDW + RCLW + (Number of Hybrid III dummies x 167 lbs per dummy)

Target test weight = 4910 + 300 + 334 = 5544 lbs

Weight of test vehicle with two dummies and 300 lbs of cargo weight:

Right front	1294	lbs	Right rear	1454	lbs
Left front	1381	lbs	Left rear	1415	lbs
Total front weight	2675	lbs	(48% of total vehicle weight)		
Total rear weight	2869	lbs	(52% of total vehicle weight)		
Total test weight	5544	lbs			

Remarks:

Weight of ballast secured in vehicle cargo area: None

Components removed to meet target test weight: None

General Test and Vehicle Parameter Data for the Sled Test Vehicle, Cont'd.

Test Vehicle Attitude:

As delivered door sill angle:	1.3° Nose down
As tested door sill angle:	1.2° Nose down
Fully loaded door sill angle:	0.9° Nose down
Vehicle Wheelbase:	119 inches

Fuel System Data:

Fuel system capacity from owner's manual:	26 gallons
Useable capacity figure furnished by COTR:	26 gallons

Remarks: The roll angle measurement was within 1 inch. The left side measurement was 29.2 inches and the right side measurement was 29.3 inches.

Post-Impact Data

Test number:	000317S
NHTSA number:	CY0204
Test date:	03/17/00
Test time:	14:47
Test type:	FMVSS 208 Compliance Sled Test
Impact angle:	0°
Ambient temperature at impact area:	70° F
Temperature in occupant compartment:	70° F

Sled carriage velocity:

Integrated velocity from the integration of the entire sled acceleration:[2]	30.2 mph
Measured velocity from the light trap device attached to the sled (backup):[1]	30.8 mph
Specified integrated velocity range:	28 to 30 mph

The integrated velocity was not within the specified range.

Sled carriage acceleration:

Acceleration:[2]	18.3 g
Specified acceleration range:	16.0 g - 18.2 g

The sled acceleration was not within the specified range.

Sled carriage acceleration duration:

Time from T-0(-0.5 g) to 0.0 g:[2]	118.8 msec
Specified acceleration duration:	120.0 - 130.0 msec

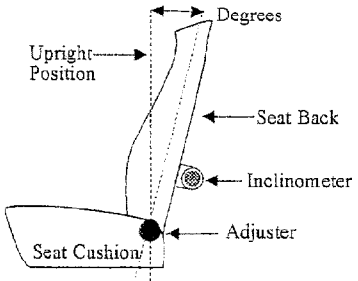
The sled acceleration curve was not within the specified corridor.

[1] See Data Acquisition Explanations

[2] The sled acceleration curve exceeded the peak g requirement and the duration was too short.

Seat and Steering Column Positioning Data

Vehicle: 2000 Ford/Expedition NHTSA No.: CY0204



Front Seat Assembly
Left Side View

Nominal Design Riding Position:

Driver Seat: Seat Back Angle = 18.2°

Passenger Seat: Seat Back Angle = 18.3°

Seat Fore and Aft Positions:

Driver Seat: The power seat track travel distance was 8 inches, and the seat track was positioned in the midpoint of 4 inches.

Passenger: The seat track had 19 total detents, and was positioned on the 10th detent.

Steering Column Adjustments:

The steering column was adjusted to the center detent position.

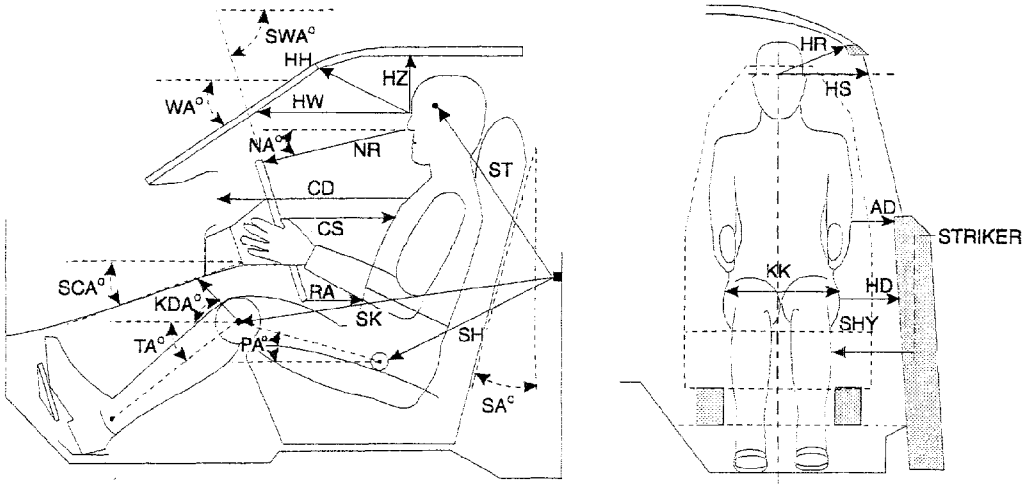
Dummy Measurement Data for Front Seat Occupants

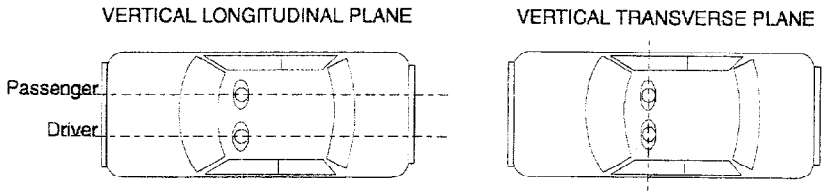
Designation	Type of Measurement	Driver (Serial #314)	Passenger (Serial #230)
WA	Windshield angle	33.3°	N/A
SWA	Steering wheel angle	19.6°	N/A
SCA	Steering column angle	20.0°	N/A
SA	Seat back angle	18.2°	18.3°
HZ	Head to roof	9.0 in	8.9 in
HH	Head to header	15.9 in	16.6 in
HW	Head to windshield	24.5 in	23.8 in
HR	Head to side header	10.0 in	10.1 in
NR	Nose to rim	15.3 in	N/A
NA	Nose to rim angle	16.0°	N/A
CD	Chest to dash	22.4 in	22.7 in
CS	Steering wheel to chest	11.4 in	N/A
RA	Rim to abdomen	8.1 in	N/A
KDL	Left knee to dash	5.8 in	6.3 in
KDR	Right knee to dash	5.6 in	6.4 in
KDA	Outboard knee to dash angle	15.0°	12.0°
PA	Pelvic angle	22.0°	24.2°
TA	Tibial angle	47.9°	62.0°
KK	Knee to knee	13.6 in	10.7 in
ST[1]	Striker to head	25.8 in	26.0 in
	Striker to head angle	83.1°	80.2°
SK[1]	Striker to knee	24.7 in	25.0 in
	Striker to knee angle	8.4°	7.5°
SH[1]	Striker to H-point	9.3 in	9.3 in
	Striker to H-point angle	-0.1°	-6.0°
SHY	Striker to H-point (Y dir.)	10.3 in	9.4 in
HS	Head to side window	13.5 in	13.3in
HD	H-point to door	7.1 in	7.1 in
AD	Arm to door	5.8 in	5.8 in

The seat back angle (SA°) is measured relative to vertical, all other angles are measured relative to horizontal.

[1] A negative angle indicates the measurement point was located below the striker.

Dummy Measurement Locations for Front Seat Occupants





Descriptions of Dummy Measurements

When a level is to be used, it is to ensure that the line containing the two points described is either parallel or perpendicular to the ground. If a measurement to be made is less than 10 inches ignore the directions to use a level and approximate a level measurement. Also, when a measurement is to be taken to or from the center of a bolt on the dummy, take the measurement from the center of the bolt hole if the bolt is recessed.

The following measurements are to be made within a vertical longitudinal plane.

* HH Head to Header, taken from the point where the dummy's nose meets his forehead (between his eyes) to the furthest point forward on the header.

* HW Head to Windshield, taken from the point where the dummy's nose meets his forehead (between his eyes) to a point on the windshield. Use a level.

HZ Head to Roof, taken from the point where the dummy's nose meets his forehead (between his eyes) to the point on the roof directly above it. Use a level.

* CS Steering Wheel to Chest, taken from the center of the steering wheel hub to the dummy's chest. Use a level.

* CD Chest to Dash, place a tape measure on the tip of the dummy's chin and rotate five inches of it downward toward the dummy to the point of contact on the transverse center of the dummy's chest. Then measure from this point to the closest point on the dashboard either between the upper part of the steering wheel between the hub and the rim, or measure to the dashboard placing the tape measure above the rim, whichever is a shorter measurement. See diagram.

RA Steering Wheel Rim to Abdomen, taken from the bottommost point of the steering wheel rim horizontally rearward to the dummy. Use a level.

NR Nose to Rim, taken from the tip of the dummy's nose to the closest point on the top of the steering wheel rim. Also indicate the angle this line makes with respect to the horizontal (NA).

*[1] KDL, KDR Left and Right Knees to Dashboard, taken from the center of the knee pivot bolt's outer surface to the closest point forward acquired by swinging the tape measure in continually larger arcs until it contacts the dashboard. Also reference the angle of this measurement with respect to the horizontal for the outboard knee (KDA). See diagram.

* Measurement used in Data Tape Reference Guide

[1] Only outboard measurement is referenced in Data Tape Reference Guide

SH, SK, ST — Striker to Hip, Knee, and Head, these measurements are to be taken in the X-Z plane measured from the forward most center point on the striker to the center of the H-point, outer knee bolt, and head target. When taking this measurement a firm device that can be rigidly connected to the striker should be used. Use a level. The angles of these measurements with respect to the horizontal should also be recorded. The measurement in the Y (transverse) direction from the striker to the H-point should also be taken (SHY). See diagram.

The following measurements are to be made within a vertical transverse plane.

HS — Head to Side Window, taken from the point where the dummy's nose meets his forehead (between his eyes) to the outside of the side window. In order to make this measurement, roll the window down to the exact height which allows a level measurement. Use a level. See diagram.

* AD — Arm to Door, taken from the outer surface of the elbow pivot bolt on a Hybrid II dummy to the first point it hits on the door. In the case of a Hybrid III dummy, measure from the bolt on the outer biceps. When a SID is used make the measurement from the center of the bottom of the arm segment where it meets the dummy's torso.

* HD — H-point to Door, taken from the H-point on the dummy to the closest point on the door. Use a level.

* HR — Head to Side Header, measure the shortest distance from the point where the dummy's nose meets his forehead (between his eyes) to the side edge of the header just above the window frame, directly adjacent to the dummy.

SHY — Striker to H-point, taken from a rod rigidly connected to the forward most center point on the striker to the H-point. Use a level. See diagram.

KK — Knee to Knee, for Hybrid II dummies measure the distance between knee pivot bolt head outer surfaces. For Hybrid III dummies measure the distance between the outboard knee clevis flange surfaces. (This measurement may not be exactly transverse.)

Angles

SA — Seat Back Angle, find this angle using the instructions provided by the manufacturer. If the manufacturer doesn't provide clear instructions contact the COTR.

* Measurement used in Data Tape Reference Guide

Descriptions of Dummy Measurements, Cont'd.

PA Pelvic or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the SID or the Hybrid III dummies and taking this angle with respect to the horizontal. Measure the angle of the line connecting the H-point hole and the outer knee pivot bolt hole on a Hybrid II dummy with respect to the horizontal, to find the femur angle.

SWA Steering Wheel Angle, find this by placing a straight edge against the steering wheel rim along the longitudinal plane. Then measure the acute angle of the straight edge with respect to the horizontal.

SCA Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column.

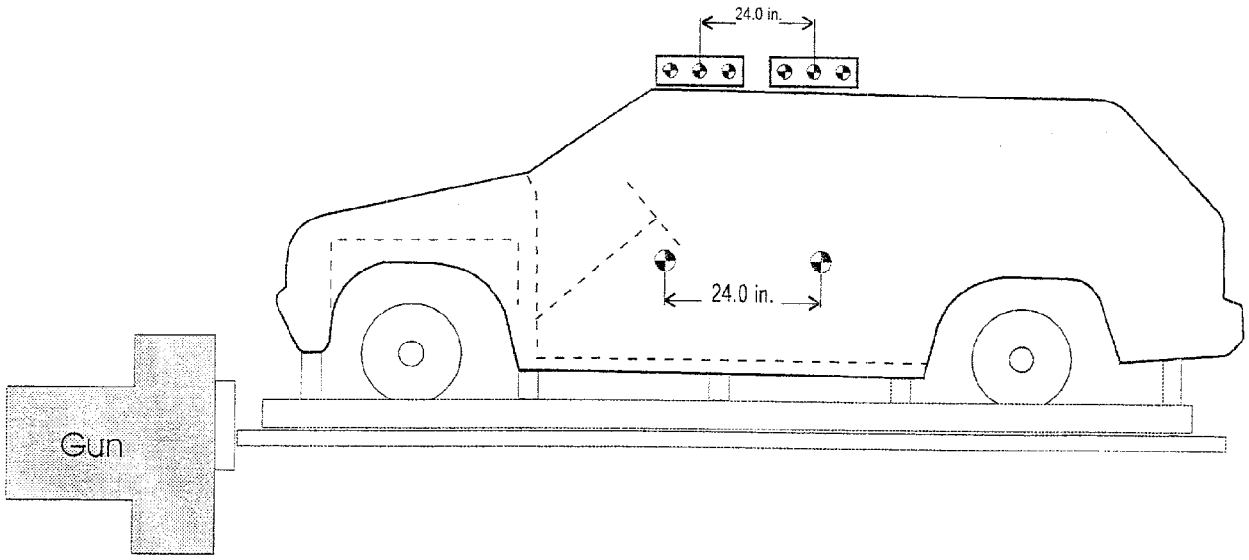
NA Measure the angle made when taking the measurement NR with respect to the horizontal.

KDA Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See diagram.

WA Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal).

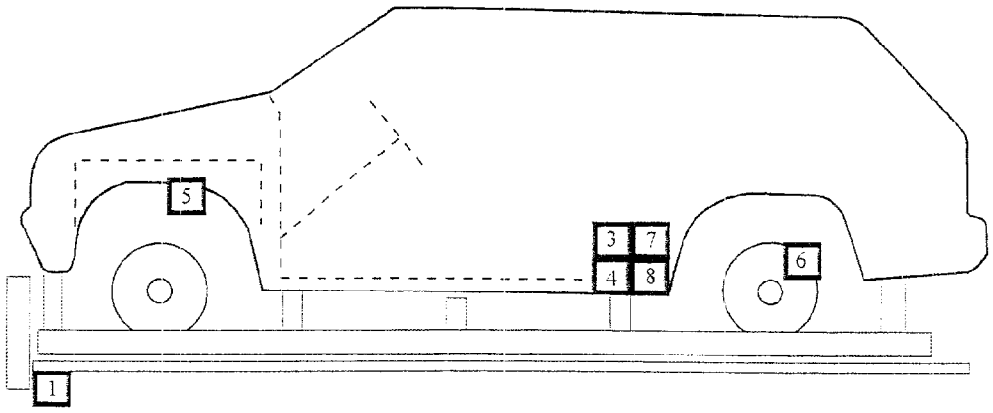
TA Tibial Angle, use a straight edge to connect the dummy's knee and ankle bolts. Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal.

REFERENCE PHOTO TARGETS

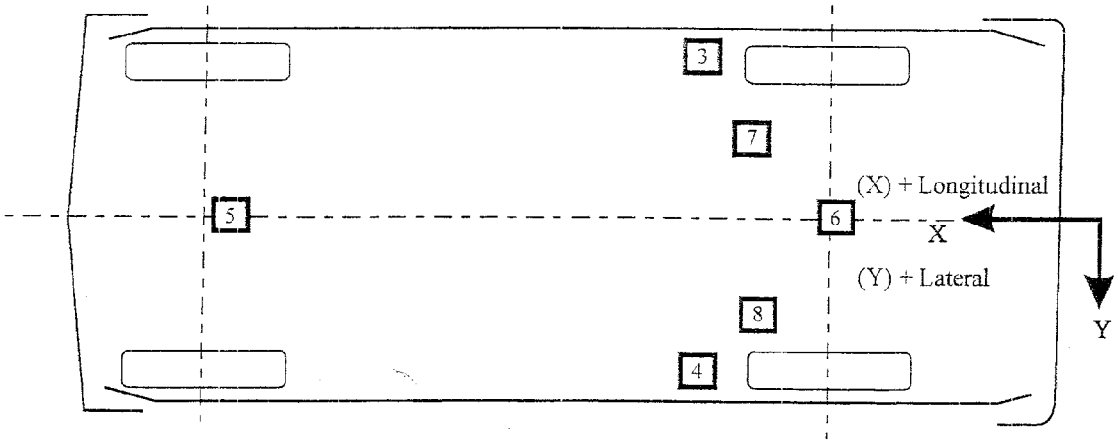


LEFT SIDE VIEW

Vehicle Accelerometer Placement



Side View



Bottom View

Vehicle Data Summary and Accelerometer Locations

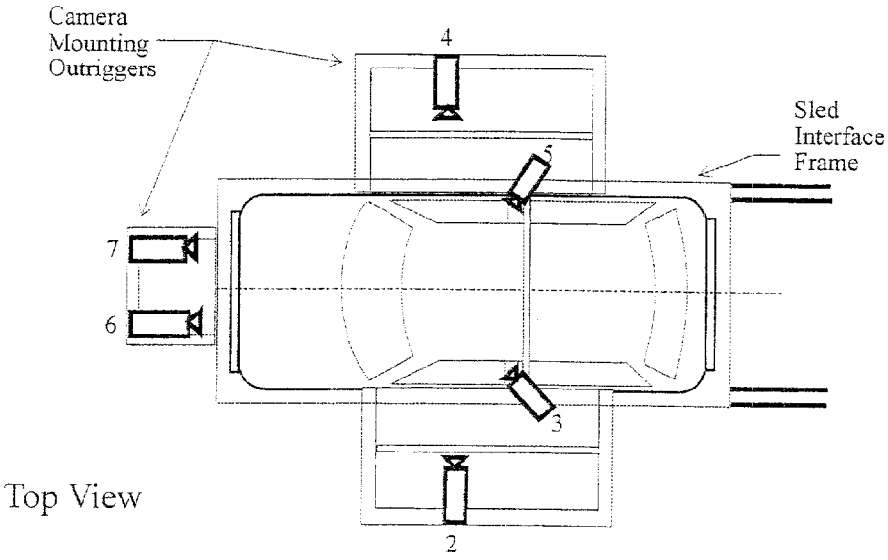
TEST NUMBER: 000317S No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
1 SLED ACCELERATION	165.6 in	-1.0 in					
PRIMARY				1.0 g	@ 122.8 ms	18.3 g	@ 52.2 ms
REDUNDANT				19.1 g	@ 51.1 ms	1.9 g	@ 158.2 ms
2 SLED VELOCITY							
MEASURED				0.1 mph	@ 6.7 ms	30.8 mph	@ 153.8 ms
INTEGRATED				0.0 mph	@ 6.7 ms	30.2 mph	@ 118.9 ms
3 LEFT REAR SEAT CROSSMEMBER	43.8 in	-28.3 in					
LONGITUDINAL				1.7 g	@ 126.2 ms	20.5 g	@ 61.0 ms
4 RIGHT REAR SEAT CROSSMEMBER	70.0 in	29.0 in					
LONGITUDINAL				1.4 g	@ 129.3 ms	20.6 g	@ 58.5 ms
5 BOTTOM ENGINE	158.0 in	0.1 in					
LONGITUDINAL				2.8 g	@ 128.6 ms	20.2 g	@ 59.4 ms
6 REAR AXLE	16.3 in	0.1 in					
LONGITUDINAL				1.5 g	@ 123.4 ms	18.9 g	@ 48.8 ms
7 LEFT VEHICLE FRAME	43.5 in	-23.3 in					
LONGITUDINAL				1.7 g	@ 123.8 ms	19.0 g	@ 54.4 ms

Vehicle Data Summary and Accelerometer Locations, Cont'd.

TEST NUMBER: 000317S No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
8 RIGHT VEHICLE FRAME LONGITUDINAL	68.8 in	27.8 in		1.9 g	@ 124.3 ms	19.1 g	@ 57.0 ms
9 DRIVER AIRBAG EVENT				1.0 volt	@ 21.8 ms	---	---
10 PASSENGER AIRBAG EVENT				1.0 volt	@ 21.8 ms	---	---

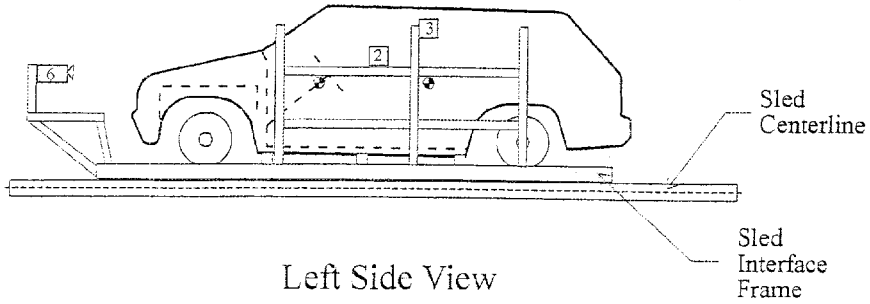
REFERENCE: X: + FORWARD FROM VEHICLE REAR SURFACE
Y: + RIGHTWARD FROM SLED CARRIAGE CENTERLINE

Camera Positions



Top View

Camera Frame Rates:
#1 = 24 fps
All Others = 1,000 fps



Left Side View

Motion Picture Camera Locations

Vehicle year/make/model/body style: 2000/Ford/Expedition/MPV NHTSA No. CY0204 Test Number: 000317S

Camera Number	View	Camera Positions[1] X	Y	Z	Camera Angle[2]	Film Plane to Head Target	Camera Lens	Film Speed
1	Left side view offboard	93.0 in	306.4 in	52.5 in	0°	287.8 in	10 mm	24 frames/s
2	Left side view wide	70.1 in	72.7 in	50.7 in	-1.9°	54.9 in	8 mm	1007 frames/s
3	Left side view over shoulder	89.3 in	50.0 in	63.1 in	13.6°	33.4 in	8 mm	1000 frames/s
4	Right side view wide	71.4 in	91.6 in	51.3 in	-4.1°	73.5 in	8 mm	987 frames/s
5	Right side view over shoulder	99.9 in	48.8 in	61.1 in	11.1°	33.8 in	8 mm	1000 frames/s
6	Front view - driver	28.0 in	17.5 in	62.0 in	6.4°	54.7 in	8 mm	997 frames/s
7	Front view - passenger	27.8 in	16.8 in	61.4 in	7.5°	55.8in	8 mm	1020 frames/s

[1] X: Film plane to front of sled
Y: Film plane to sled centerline
Z: Film plane to top of sled

[2] Angle: Film plane of camera downward from horizontal plane

FMVSS 208 Occupant Injury Data

Vehicle: 2000/Ford/Expedition/MPV NHTSA NO.: CY0204 Date: 03/17/00

Maximum Acceleration Values: (g's)	Driver Dummy #314	Passenger Dummy #230
Head Channel X	-58.9	-42.9
Head Channel Y	3.4	-33.7
Head Channel Z	24.1	27.4
HEAD RESULTANT	59.1	57.0
Chest Channel X	-33.7	-41.2
Chest Channel Y	3.8	-2.3
Chest Channel Z	11.6	25.2
CHEST RESULTANT	35.4	43.1

Head Injury Criteria (HIC) Values:

HIC	369	267
t_1 = (msec)	100.8	92.8
t_2 = (msec)	136.8	126.96

[The maximum time interval from t_1 to t_2 is 36 milliseconds.]

Chest Injury Criteria (Clip) Values: (g's)

CLIP	35.1	41.8
t^1 = (msec)	94.88	101.68
t^2 = (msec)	97.92	104.72
Chest Deflection (in)	0.9	0.4

FMVSS 208 Occupant Injury Data, Cont'd.

Vehicle: 2000/Ford/Expedition/MPV NHTSA NO.: CY0204 Date: 03/17/00

Units (lbs)

Max. Compressive Femur Forces:	Driver Dummy #314	Passenger Dummy #230
Left Side (lbs)	1401	1246
Right Side (lbs)	1313	1199

Neck Injury Criteria:	Driver Dummy #314	Passenger Dummy #230
Peak Flexion Bending Moment (N-m)	56.8	78.2
Peak Extension Bending Moment (N-m)	9.6	9.5
Peak Axial Tension (N)	1326	378
Peak Axial Compression (N)	191	1922
Peak Fore Shear (N)	901	1307
Peak Aft Shear (N)	59	200

FMVSS 208 SEAT BELT WARNING SYSTEM CHECK

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

Complete the following to determine which seat belt warning system option (S7.3(a)(1)) or (S7.3(a)(2)) is used. (Manufacturers may use either option.)

A. With occupant in driver's position and lap belt in stowed position and ignition switch placed in "Start/On" position:

A.1 S7.3(a)(1)
Time duration of audible warning signal = 6 seconds
(4 to 8 seconds)

Time duration of reminder light operation = 64 seconds
(no less than 60 seconds)

A.2 S7.3(a)(2)
Time duration of audible warning signal = seconds
(4 to 8 seconds) (see 49 USCS @ 30124)

Time duration of reminder light operation = seconds
(4 to 8 seconds)

B. With occupant in driver's position and lap belt in use and the ignition switch placed in "Start/On" position:

B.1 S7.3(a)(1)
Time duration of audible warning signal = 0 seconds
(audible warning should not operate)

Time duration of reminder light operation = 0 seconds
(reminder light does not operate)

B.2 S7.3(a)(2)
Time duration of audible warning signal = seconds
(audible warning should not operate)

Time duration of reminder light operation = seconds
(4 to 8 seconds)

C. Note wording of visual warning:
Fasten Seat Belt ___
Fasten Belt ___
Symbol 101 ☒

FMVSS 208 READINESS INDICATOR

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

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. (11/8/94 legal interpretation)

Is the system totally mechanical?

Yes-☐; No-☒

Describe the location of the readiness indicator: Lower 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-☒; No-☐;

FMVSS 208 Air Bag Labels

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

1. Air Bag Maintenance Label and Owner's Manual Instructions:

   1.1 Does the manufacturer recommend periodic maintenance or replacement of the air bag?

   ☐ Yes (Go to 1.2)

   ☒ No (Go to 2)

   1.2 Does the Vehicle have a maintenance or replacement label?

   ☐ Yes-Pass ☐ **No-Fail**

   1.3 Does the label contain one of the following? ☐ Yes-Pass ☐ **No-Fail**

   ☐ Schedule on label specifies month and year

   ☐ Schedule on label specifies vehicle mileage

   ☐ Schedule on label specifies interval measured from date on certification label

   1.4 Is the label permanently affixed within the passenger compartment?

   ☐ Yes-Pass ☐ **No-Fail**

   1.5 Is the label lettered in English?

   ☐ Yes-Pass ☐ **No-Fail**

   1.6 Is the label in block capitals and numerals?

   ☐ Yes-Pass ☐ **No-Fail**

   1.7 Are the letters and numerals at least 3/32 inch high?

   ☐ Yes-Pass ☐ **No-Fail**

   1.8 Does the owner's manual set forth the recommended schedule for maintenance or replacement?

   ☐ Yes-Pass ☐ **No-Fail**

2. Does the owner's manual: (S4.5.1 (f))

   2.1 Include a description of the vehicle's air bag system in an easily understandable format? ☒ Yes ☐ No

   2.2 Include a statement that the vehicle is equipped with an air bag and a lap/shoulder belt at the front outboard seating positions?

   ☒ Yes ☐ No

Air Bag Labels, Cont'd.

2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions? ☒Yes ☐No

2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an air bag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash? ☒Yes ☐No

2.5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to insure maximum safety protection for those occupants? ☒Yes ☐No

2.6 Explain that no objects should be place over or near the air bag on the steering wheel or on the instrument panel, because any such objects could cause harm if the vehicle is in a crash severe enough to cause the air bag to inflate? ☒Yes ☐No

3. Does the Vehicle:

3.1 Provide an automatic means to ensure that the air bag does not deploy when a child seat or child with a total mass of 30 kg or less is present on the front outboard seat? ☐Yes ☒No

3.2 Incorporate sensors, other than or in addition to weight sensors, which automatically prevent the passenger air bag from deploying in situations in which it might have an adverse effect on infants in rear-facing child seat, and unbelted or improperly belted children? ☐Yes ☒No

3.3 Have a passenger air bag designed to deploy in a manner that does not create a risk of serious injury to infants in rear-facing child seats, and unbelted or improperly belted children? ☐Yes ☒No

If yes to 3.1, or 3.2, or 3.3, the vehicle is not required to have a Sun Visor Warning Label (S4.5.1(b)), an air bag alert label (S4.5.1(c)) or a label on the dash (S4.5.1(e)) and **this check sheet is complete. (S4.5.1) If no to 3.1, 3.2, and 3.3, go to 4.**

Air Bag Labels, Cont'd.

4. Sun Visor Warning Label

4.1 Is the label permanently affixed (may be permanent marking or molding) to either side of the sun visor at each front outboard seating position with an air bag?

Driver side ☒ Yes-Pass ☐ **No-Fail**
Passenger side ☒ Yes-Pass ☐ **No-Fail**

4.2 Does the label conform in content **(vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children.")** (S4.5.1(b)(2)(v)) to the label shown in either Figure 6a or 6b as appropriate at each front outboard seating position with an air bag? (S4.5.1(b)(2))

4.2.1 Dual air bags

Driver side ☒ Yes-Pass ☐ **No-Fail**
Passenger side ☒ Yes-Pass ☐ **No-Fail**

4.2.2 Vehicles with driver air bag ONLY - either 4.2.1 or 4.2.2 is applicable, not both. (S4.5.1(b)(2)(iv))

4.2.2.1 Does the label conform on content to the label shown in either Figure 6a or 6b as appropriate?

☒ N/A
Driver side ☐ Yes-Pass ☐ **No-Fail**

4.2.2.2 Does the label conform in content to the label shown in Figure 6a where the label can be modified to omit the pictogram and the message may read:

DEATH or SERIOUS INJURY can occur.

- Sit as far back as possible from the air bag.
- ALWAYS use SEAT BELTS and CHILD RESTRAINTS.
- The BACK SEAT is the SAFEST place for children.

☒ N/A
Driver side ☐ Yes-Pass ☐ **No-Fail**

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION

LABEL OUTLINE, VERTICAL AND HORIZONTAL LINE BLACK

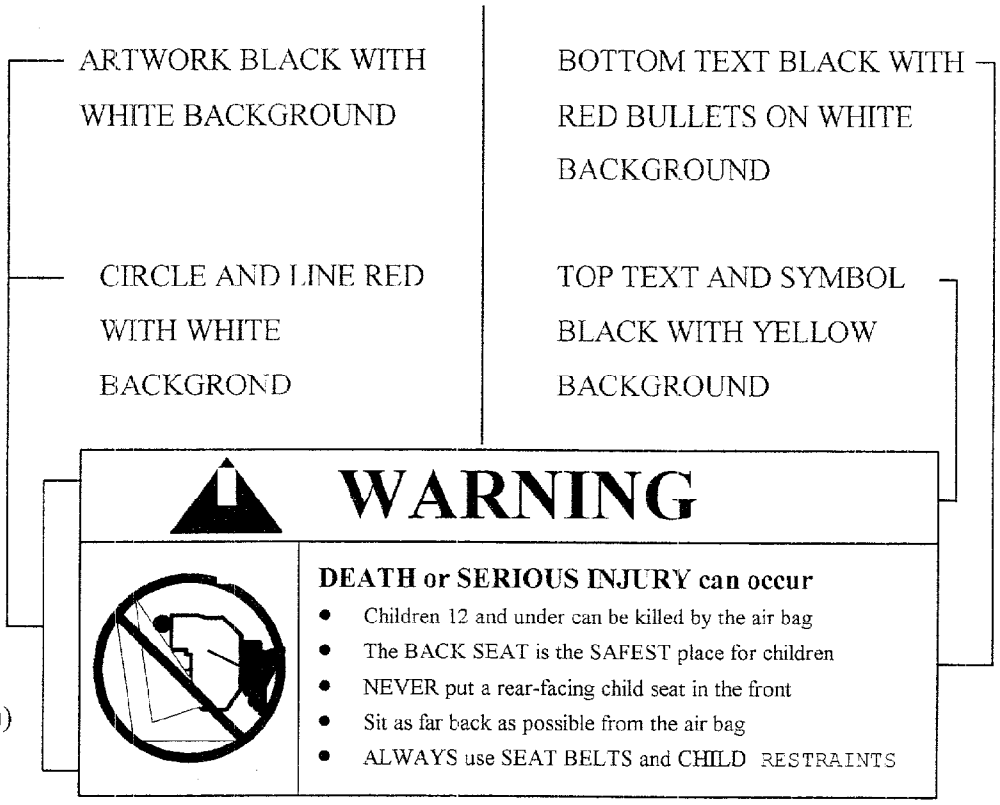


Figure 6a
(S4.5.1(b)(2))

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION

LABEL OUTLINE, VERTICAL AND HORIZONTAL LINE BLACK

ARTWORK BLACK WITH WHITE BACKGROUND

BOTTOM TEXT BLACK WITH RED BULLETS ON WHITE BACKGROUND

CIRCLE AND LINE RED WITH WHITE BACKGROND

TOP TEXT AND SYMBOL BLACK WITH YELLOW BACKGROUND

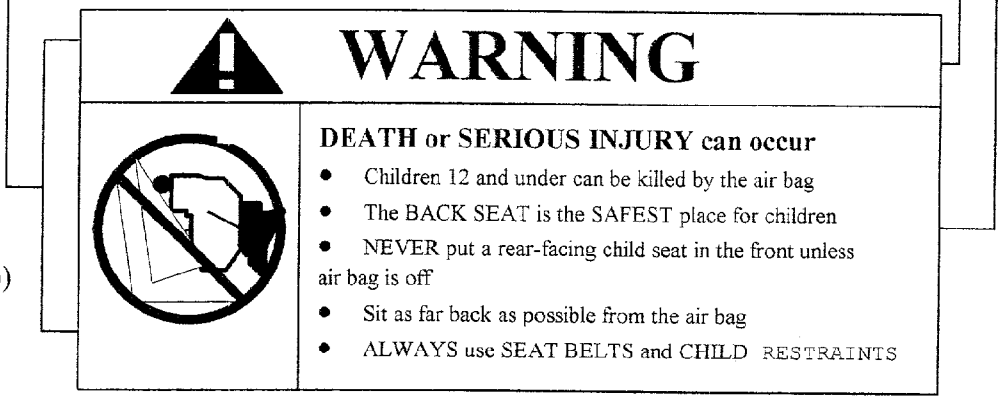


Figure 6b
(S4.5.1(b)(2))

4.3 Is the driver side label heading area yellow with the word "warning" and the alert symbol in black? (S4.5.1.(b)(2)(i))

Driver side ☒ Yes-Pass ☐ **No-Fail**

Passenger side ☒ Yes-Pass ☐ **No-Fail**

4.4 Is the message white with black text? (S4.5.1 (b)(2)(ii))

Driver side ☒ Yes-Pass ☐ **No-Fail**

Passenger side ☐ No air bag ☒ Yes-Pass ☐ **No-Fail**

4.5 Is the message area at least 30 cm^2? (S4.5.1(b)(2)(ii))

Actual message area **32.0** cm^2

Driver side ☒ Yes-Pass ☐ **No-Fail**

Passenger side ☐ No air bag ☒ Yes-Pass ☐ **No-Fail**

Air Bag Labels, Cont'd.

4.6 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(b)(2)(iii)) & (S4.5.1(b)(2)(iv))

For vehicles with driver side air bag ONLY ☐ N/A

Driver side ☒ Yes-Pass ☐ **No-Fail**

Passenger side ☐ No air bag ☒ Yes-Pass ☐ **No-Fail**

4.7 Is the pictogram at least 30 mm in diameter? (S4.5.1(b)(2)(iii))
Actual diameter **30.0** mm

For vehicles with driver side air bag ONLY ☐ N/A

Driver side ☒ Yes-Pass ☐ **No-Fail**

Passenger side ☐ No air bag ☒ Yes-Pass ☐ **No-Fail**

4.8 Is the same side of the sun visor to which the sun visor label is affixed free of other information with the exception of an air bag maintenance label? (S4.5.1(b)(3))

Driver side ☒ Yes-Pass ☐ **No-Fail**

Passenger side ☐ No air bag ☒ Yes-Pass ☐ **No-Fail**

4.9 Is the sun visor free of other information about air bags or the need to wear seat belts with the exception of the air bag alert label or the utility vehicle label?

Driver side ☒ Yes-Pass ☐ **No-Fail**

Passenger side ☐ No air bag ☒ Yes-Pass ☐ **No-Fail**

5. Air Bag Alert Label

5.1 Is the Sun Visor Warning Label visible when the sun visor is in the stowed position?

Driver ☐ Yes ☒ No Passenger ☒ Yes ☐ No **If yes, go to 6**

5.2 Does the label conform in content to the label shown in Figure 6c? (S4.5.1(c)(2))

☒ Yes-Pass ☐ **No-Fail**

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN UP POSITION

Circle and Line Red with White Background

Artwork Black with White Background

Text Yellow with Black Background

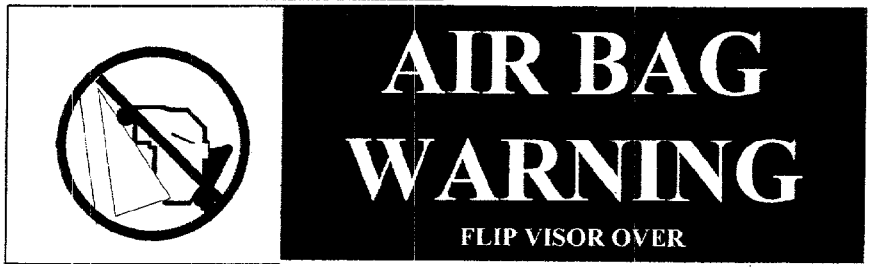


Figure 6c
(S4.5.1(c)(2))

Air Bag Labels, Cont'd.

5.3 Is the message area black with yellow text? (S4.5.1(c)(2)(i))

☒ Yes-Pass ☐ **No-Fail**

5.4 Is the message area at least 20 cm^2? (S4.5.1(c)(2)(i))

Actual message area **20** cm^2 ☒ Yes-Pass ☐ **No-Fail**

5.5 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(c)(2)(ii))

For vehicles with driver side air bag ONLY ☐ N/A

☒ Yes-Pass ☐ **No-Fail**

5.6 Is the pictogram at least 20 mm in diameter? (S4.5.1(c)(2)(ii))

Actual diameter is **25** mm

For vehicles with driver side air bag ONLY ☐ N/A

☒ Yes-Pass ☐ **No-Fail**

6. Label On the Dash

6.1 Does the vehicle have a passenger air bag?

☒ Yes ☐ No

If no, this check list is complete.

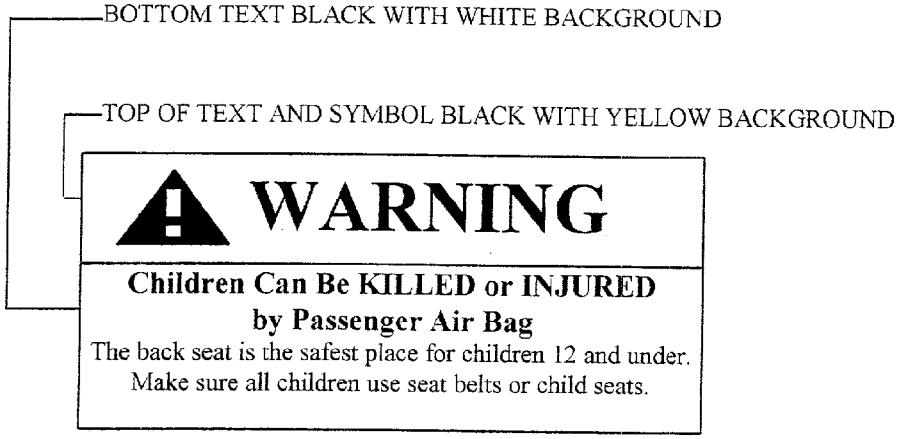
6.2 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e))

☒ Yes-Pass ☐ **No-Fail**

6.3 Does the label conform in content **(vehicles without back seats may omit the statement: "The back seat is the safest place for children 12 and under."** (S4.5.1(e)(iii)) to the label shown in Figure 7? (S4.5.1(e))

☒ Yes-Pass ☐ **No-Fail**

Figure 7
(S4.5.1(e))



Air Bag Labels, Cont'd.

6.4 Is the heading area yellow with the word "warning" and the alert symbol in black? (S4.5.1(e)(i))

☒ Yes-Pass ☐ **No-Fail**

6.5 Is the message white with black text? (S4.5.1(e)(ii))

☒ Yes-Pass ☐ **No-Fail**

6.6 Is the message area at least 30 cm^2? (S4.5.1(e)(ii))
Actual message area **40** cm^2 ☒ Yes-Pass ☐ **No-Fail**

FMVSS 208 REAR OUTBOARD SEATING POSITION SEAT BELTS

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

Do all rear outboard seating positions have type 2 seat belts?

Yes-☒; No-☐;

If NO, describe the seat belt installed, the seat location, and any other information about the seat that would explain why a type 2 belt was not installed.

FMVSS 208 Lap Belt Lockability

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Front right passenger seat

☒1. Record test seat position. Mid (S7.1.1.5(c)(1)) (Any position is acceptable.)

☒2. Buckle the seat belt. (S7.1.1.5(c)(1))

☒3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

☒4. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part to the vehicle? (S7.1.1.5(a)) ☒Yes-Pass ☐**No-Fail**

☒5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing? (S7.1.1.5(a)) ☒Yes-Pass ☐**No-Fail**

☒6. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?

If yes, go to 6.1. If no, go to 7. ☒Yes ☐No

6.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b)) ☒Yes-Pass ☐**No-Fail**

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Front right passenger seat.

☒7. Locate a reference point a on the seat belt buckle. (S7.1.1.5(c)(2))

☒8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

☒9. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2))

☒10. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2)) Measured distance between A and B **67** inches.

☒11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

☒12. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4)) Measured force application angle **10** degrees. (Spec. 5~15 degrees)

☒13. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4)) Measured distance between A and B **41** inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Right front passenger seat.

☒14. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate **25** lbs/sec (spec. 10 ~50 lb/sec)

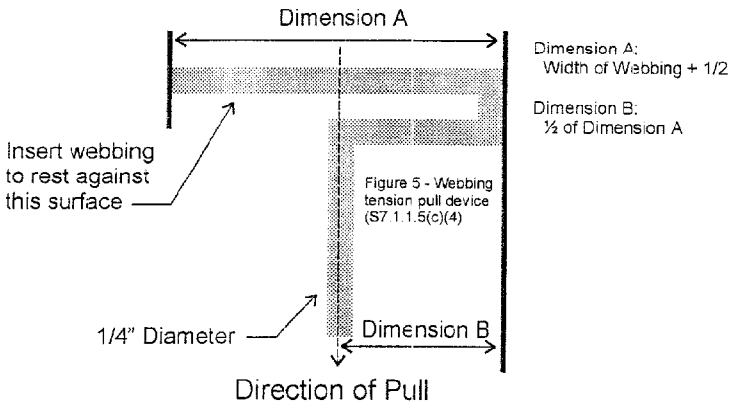
The measured distance between A and B is **41.25** inches (S7.1.1.5(c)(6))

☒15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5 (c)(7))

14-13= **0.25** inches ☒Yes-Pass ☐**No-Fail**

☒16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= **25.75** inches. ☒Yes-Pass ☐**No-Fail**



FMVSS 208 Lap Belt Lockability

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Middle right passenger seat

☒1. Record test seat position. Mid
(S7.1.1.5(c)(1)) (Any position is acceptable.)

☒2. Buckle the seat belt. (S7.1.1.5(c)(1))

☒3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

☒4. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part to the vehicle? (S7.1.1.5(a)) ☒Yes-Pass ☐**No-Fail**

☒5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing? (S7.1.1.5(a)) ☒Yes-Pass ☐**No-Fail**

☒6. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?

If yes, go to 6.1. If no, go to 7. ☒Yes ☐No

6.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b)) ☒Yes-Pass ☐**No-Fail**

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Middle right passenger seat

☒7. Locate a reference point a on the seat belt buckle. (S7.1.1.5(c)(2))

☒8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

☒9. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2))

☒10. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2)) Measured distance between A and B **59.5** inches.

☒11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

☒12. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4)) Measured force application angle **10** degrees. (Spec. 5~15 degrees)

☒13. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4)) Measured distance between A and B **28.75** inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Middle right passenger seat

☒14. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate **25** lbs/sec (spec. 10 ~50 lb/sec)

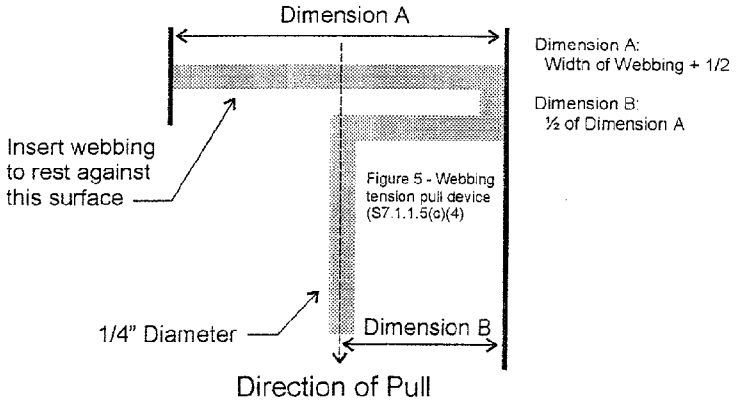
The measured distance between A and B is **29.5** inches (S7.1.1.5(c)(6))

☒15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5(c)(7))

14-13= **0.75** inches ☒Yes-Pass ☐**No-Fail**

☒16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= **30** inches. ☒Yes-Pass ☐**No-Fail**



FMVSS 208 Lap Belt Lockability

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Middle left passenger seat

☒1. Record test seat position. Mid
(S7.1.1.5(c)(1)) (Any position is acceptable.)

☒2. Buckle the seat belt. (S7.1.1.5(c)(1))

☒3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

☒4. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part to the vehicle? (S7.1.1.5(a)) ☒Yes-Pass ☐**No-Fail**

☒5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing? (S7.1.1.5(a)) ☒Yes-Pass ☐**No-Fail**

☒6. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?

If yes, go to 6.1. If no, go to 7. ☒Yes ☐No

6.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b)) ☒Yes-Pass ☐**No-Fail**

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Middle left passenger seat

☒7. Locate a reference point a on the seat belt buckle. (S7.1.1.5(c)(2))

☒8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

☒9. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2))

☒10. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2)) Measured distance between A and B **63** inches.

☒11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

☒12. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4)) Measured force application angle **10** degrees. (Spec. 5~15 degrees)

☒13. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4)) Measured distance between A and B **27** inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Middle left passenger seat

☒14. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate **25** lbs/sec (spec. 10 ~50 lb/sec)

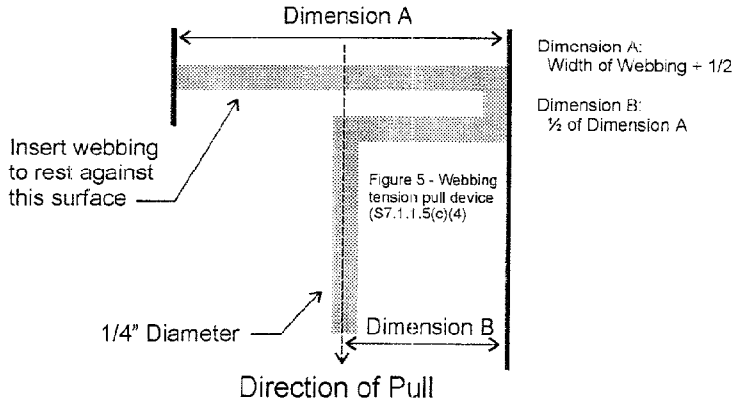
The measured distance between A and B is **27.25** inches (S7.1.1.5(c)(6))

☒15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5(c)(7))

14-13= **0.25** inches ☒Yes-Pass ☐**No-Fail**

☒16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= **35.75** inches. ☒Yes-Pass ☐**No-Fail**



FMVSS 208 Lap Belt Lockability

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Rear right passenger seat

☒1. Record test seat position. Mid
(S7.1.1.5(c)(1)) (Any position is acceptable.)

☒2. Buckle the seat belt. (S7.1.1.5(c)(1))

☒3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

☒4. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part to the vehicle? (S7.1.1.5(a)) ☒Yes-Pass ☐**No-Fail**

☒5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing? (S7.1.1.5(a)) ☒Yes-Pass ☐**No-Fail**

☒6. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?

If yes, go to 6.1. If no, go to 7. ☒Yes ☐No

6.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b)) ☒Yes-Pass ☐**No-Fail**

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Rear right passenger seat

☒7. Locate a reference point a on the seat belt buckle. (S7.1.1.5(c)(2))

☒8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

☒9. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2))

☒10. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2)) Measured distance between A and B **69.25** inches.

☒11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

☒12. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4)) Measured force application angle **10** degrees. (Spec. 5~15 degrees)

☒13. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4)) Measured distance between A and B **27.25** inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Rear right passenger seat

☒14. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate **25** lbs/sec (spec. 10 ~50 lb/sec)

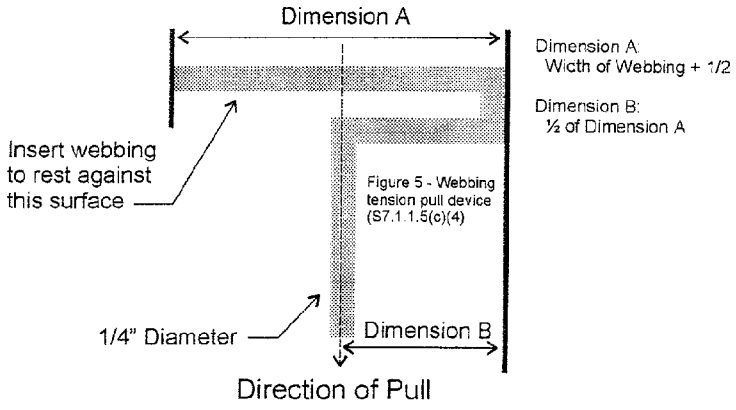
The measured distance between A and B is **27.75** inches (S7.1.1.5(c)(6))

☒15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5(c)(7))

14-13= **0.5** inches ☒Yes-Pass ☐**No-Fail**

☒16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= **31.5** inches. ☒Yes-Pass ☐**No-Fail**



FMVSS 208 Lap Belt Lockability

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Rear left passenger seat

☒1. Record test seat position. Mid
(S7.1.1.5(c)(1)) (Any position is acceptable.)

☒2. Buckle the seat belt. (S7.1.1.5(c)(1))

☒3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

☒4. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part to the vehicle? (S7.1.1.5(a)) ☒Yes-Pass ☐**No-Fail**

☒5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing? (S7.1.1.5(a)) ☒Yes-Pass ☐**No-Fail**

☒6. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?

If yes, go to 6.1. If no, go to 7. ☒Yes ☐No

6.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b)) ☒Yes-Pass ☐**No-Fail**

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Rear left passenger seat

☒7. Locate a reference point a on the seat belt buckle. (S7.1.1.5(c)(2))

☒8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

☒9. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2))

☒10. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2)) Measured distance between A and B **68.25** inches.

☒11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

☒12. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4)) Measured force application angle **10** degrees. (Spec. 5~15 degrees)

☒13. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4)) Measured distance between A and B **30.5** inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
NHTSA NO.: CY0204 Technician: R. Stoner Date: 02/08/00

DESIGNATED SEATING POSITION: Rear left passenger seat

☒14. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate **25** lbs/sec (spec. 10 ~50 lb/sec)

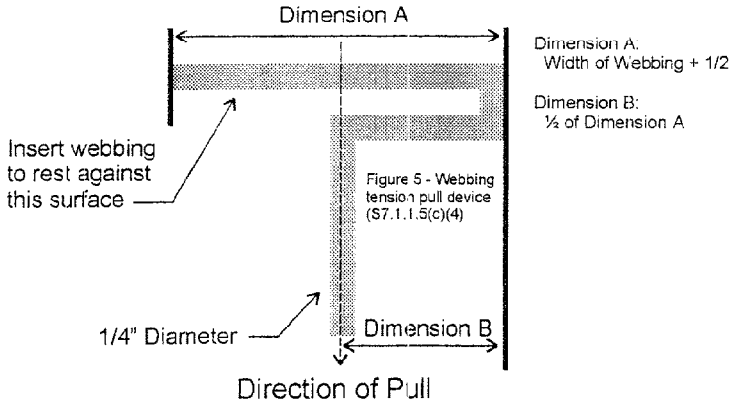
The measured distance between A and B is **31.25** inches (S7.1.1.5(c)(6))

☒15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5(c)(7))

14-13= **0.75** inches ☒Yes-Pass ☐**No-Fail**

☒16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= **37** inches. ☒Yes-Pass ☐**No-Fail**



FMVSS 208 Seat Belt Comfort And Convenience Test
Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
Designated Seating Position Tested: Driver
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Does the vehicle incorporate a webbing tension-relieving device?

   ☐ Yes-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☒ Check
   ☐ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☒ Check
   ☐ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☒ Check
   ☐ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☒ Check
   ☐ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☒ Check
☐ N/A

8. Position the test dummies according to dummy position placement instructions in Appendix B.

☒ Check

9. Fasten the seat belt latch. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0. 6** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

FMVSS 208 Seat Belt Comfort And Convenience Test, Cont'd.
Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
Designated Seating Position Tested: Right front passenger
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Does the vehicle incorporate a webbing tension-relieving device?

   ☐ Yes-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☒ Check
   ☐ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☒ Check
   ☐ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☒ Check
   ☐ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☒ Check
   ☐ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☐ Check
☒ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummies according to dummy position placement instructions in Appendix B.

☒ Check

9. Fasten the seat belt latch. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.6** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

FMVSS 208 Seat Belt Comfort And Convenience Test, Cont'd.
Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
Designated Seating Position Tested: Middle left passenger
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Does the vehicle incorporate a webbing tension-relieving device?

   ☐ Yes-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☐ Check
   ☒ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☐ Check
   ☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☐ Check
   ☒ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☒ Check
   ☐ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummies according to dummy position placement instructions in Appendix B.

☒ Check

9. Fasten the seat belt latch. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.6** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

FMVSS 208 Seat Belt Comfort And Convenience Test, Cont'd.
Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
Designated Seating Position Tested: Middle right passenger
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Does the vehicle incorporate a webbing tension-relieving device?

   ☐ Yes-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☐ Check
   ☒ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☐ Check
   ☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☐ Check
   ☒ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☒ Check
   ☐ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummies according to dummy position placement instructions in Appendix B.

☒ Check

9. Fasten the seat belt latch. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.6** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

FMVSS 208 Seat Belt Comfort And Convenience Test, Cont'd.
Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
Designated Seating Position Tested: Rear left passenger
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Does the vehicle incorporate a webbing tension-relieving device?

   ☐ Yes-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☐ Check
   ☒ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☐ Check
   ☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☐ Check
   ☒ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☒ Check
   ☐ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummies according to dummy position placement instructions in Appendix B.

☒ Check

9. Fasten the seat belt latch. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.6** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

FMVSS 208 Seat Belt Comfort And Convenience Test, Cont'd.
Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
Designated Seating Position Tested: Rear right passenger
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Does the vehicle incorporate a webbing tension-relieving device?

   ☐ Yes-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☐ Check
   ☒ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☐ Check
   ☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☐ Check
   ☒ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☒ Check
   ☐ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummies according to dummy position placement instructions in Appendix B.

☒ Check

9. Fasten the seat belt latch. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.6** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Latchplate Access (S7.4.4)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
Designated Seating Position Tested: Driver
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Position the seat in its forward most adjustment position. ☒ Check

2. Position the test dummy using the procedures in Appendix B. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position.)
☒Check

3. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant. ☒ Check

4. Attach the inboard and outboard reach string following the instructions on Figure 1C.
☒ Check

5. Place the latch plate in the stowed position. ☒ Check

6. Extend each line backward and outboard to generate arcs of the reach envelope of the test dummy's arms. Is the latchplate within the reach envelope?
Yes-☒Pass; No- ☐ **Fail**

7. Using the clearance test block, specified in Figure 2C of the test procedure, determine if there is sufficient clearance between the vehicle seat and the side of vehicle to allow the test block to move unhindered to the latchplate or buckle.
Yes-☒ Pass; No- ☐ **Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Latchplate Access (S7.4.4)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
Designated Seating Position Tested: Right front passenger
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Position the seat in its forward most adjustment position. ☒ Check

2. Position the test dummy using the procedures in Appendix B. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position.)
☒ Check

3. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant. ☒ Check

5. Attach the inboard and outboard reach string following the instructions on Figure 1C.
☒ Check

5. Place the latch plate in the stowed position. ☒ Check

6. Extend each line backward and outboard to generate arcs of the reach envelope of the test dummy's arms. Is the latchplate within the reach envelope?
Yes-☒ Pass; No- ☐ **Fail**

7. Using the clearance test block, specified in Figure 2C of the test procedure, determine if there is sufficient clearance between the vehicle seat and the side of vehicle to allow the test block to move unhindered to the latchplate or buckle.
Yes-☒ Pass; No- ☐ **Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Retraction (S7.4.5)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
Designated Seating Position Tested: Driver
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Is the vehicle a passenger car or walk-in van-type vehicle? ☐ Yes ☒ No

   If yes, go to seat belt guides and hardware.

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2) ☒ Check

3. If separately adjustable in a vertical direction, the seats are at the lowest position. ☒ Check

4. Place any adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer. ☒ Check

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR. ☒ Check

6. Place each adjustable head restraint in its highest adjustment position. ☒Check

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3) ☒ Check

8. Use anthropomorphic test dummies whose arms have been removed and position the dummies in the front outboard designated seating positions according to instructions in Appendix B. ☒ Check

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Retraction (S7.4.5)

9. Restrain the dummies using the belt systems for the position being tested. ☒ Check

10. Stow outboard armrests that are capable of being stowed. ☒ Check

11. Check the statement that applies to this test vehicle:

    (A) The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latchplate is released. ☐ Pass

    (B) The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latchplate is released. ☒ Pass

    (C) Neither A or B apply. ☐ **FAIL**

12. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?

    Yes-☒Pass; No- ☐ **Fail**

13. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated? ☒ N/A

    Yes-☐ Pass; No- ☐ **Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Retraction (S7.4.5)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: 2000/Ford/Expedition/MPV
Designated Seating Position Tested: Right front passenger
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Is the vehicle a passenger car or walk-in van-type vehicle? ☐ Yes ☒ No

   If yes, go to seat belt guides and hardware.

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2) ☒ Check

3. If separately adjustable in a vertical direction, the seats are at the lowest position. ☒ Check

4. Place any adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer. ☒ Check

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR. ☒ Check

6. Place each adjustable head restraint in its highest adjustment position. ☒ Check

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3) ☒ Check

8. Use anthropomorphic test dummies whose arms have been removed and position the dummies in the front outboard designated seating positions according to instructions in Appendix B. ☒ Check

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Retraction (S7.4.5)

9. Restrain the dummies using the belt systems for the position being tested. ☒ Check

10. Stow outboard armrests that are capable of being stowed. ☒ Check

13. Check the statement that applies to this test vehicle:

(A) The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latchplate is released. ☐ Pass

(B) The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latchplate is released. ☒ Pass

(C) Neither A or B apply. ☐ **FAIL**

14. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?

Yes-☒Pass; No- ☐ **Fail**

13. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated? ☒ N/A

Yes-☐ Pass; No- ☐ **Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Seat Belt Guides And Hardware (S7.4.6)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: Ford/Expedition/MVP
Designated Seating Position Tested: Driver
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

The requirements for accessibility **DO NOT APPLY** to:

A. Seats whose seat cushions are movable so that the seat back serves a function other than seating (S7.4.6.1(b)).

B. Seats which are removable.

C. Seats that are movable so that the space formerly occupied by the seat can be used for a secondary function.

If the seats in this vehicle are different than the criteria above, determine the following:

1. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? ☐ Yes: go to 2.
☒ No: this form is complete.

2. Does one of the following three parts, the seat belt latchplate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? Yes-☐ Pass; No- ☐ **Fail**

3. Are the remaining two seat belt parts accessible under normal conditions?
Yes-☐ Pass; No- ☐ **Fail**

4. The buckle and latchplate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order:

   (A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched.
   ☐ Check

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Seat Belt Guides And Hardware (S7.4.6)

(B) The seat is moved to any position to which it is designed to be adjusted.
☐ Check

(C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position. ☐ Check

Yes-☐ Pass; No- ☐ **Fail**

5. Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)? Yes-☐ Pass; No- ☐ **Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Seat Belt Guides And Hardware (S7.4.6)

Test Vehicle NHTSA No.: CY0204
Vehicle Model Year/Make/Model/Body Style: Ford/Expedition/MVP
Designated Seating Position Tested: Front right passenger
Date of Comfort and Convenience Check: 02/09/00
Technician Performing Check: R. Stoner
GVWR: 6700 pounds

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

The requirements for accessibility **DO NOT APPLY** to:

A. Seats whose seat cushions are movable so that the seat back serves a function other than seating (S7.4.6.1(b)).

B. Seats which are removable.

C. Seats that are movable so that the space formerly occupied by the seat can be used for a secondary function.

If the seats in this vehicle are different than the criteria above, determine the following:

1. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? ☒ Yes: go to 2.
☐ No: this form is complete.

2. Does one of the following three parts, the seat belt latchplate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? Yes-☒ Pass; No- ☐ **Fail**

3. Are the remaining two seat belt parts accessible under normal conditions?
Yes-☒ Pass; No- ☐ **Fail**

4. The buckle and latchplate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order:

   (A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched.
   ☒ Check

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Seat Belt Guides And Hardware (S7.4.6)

(B) The seat is moved to any position to which it is designed to be adjusted.
☒Check

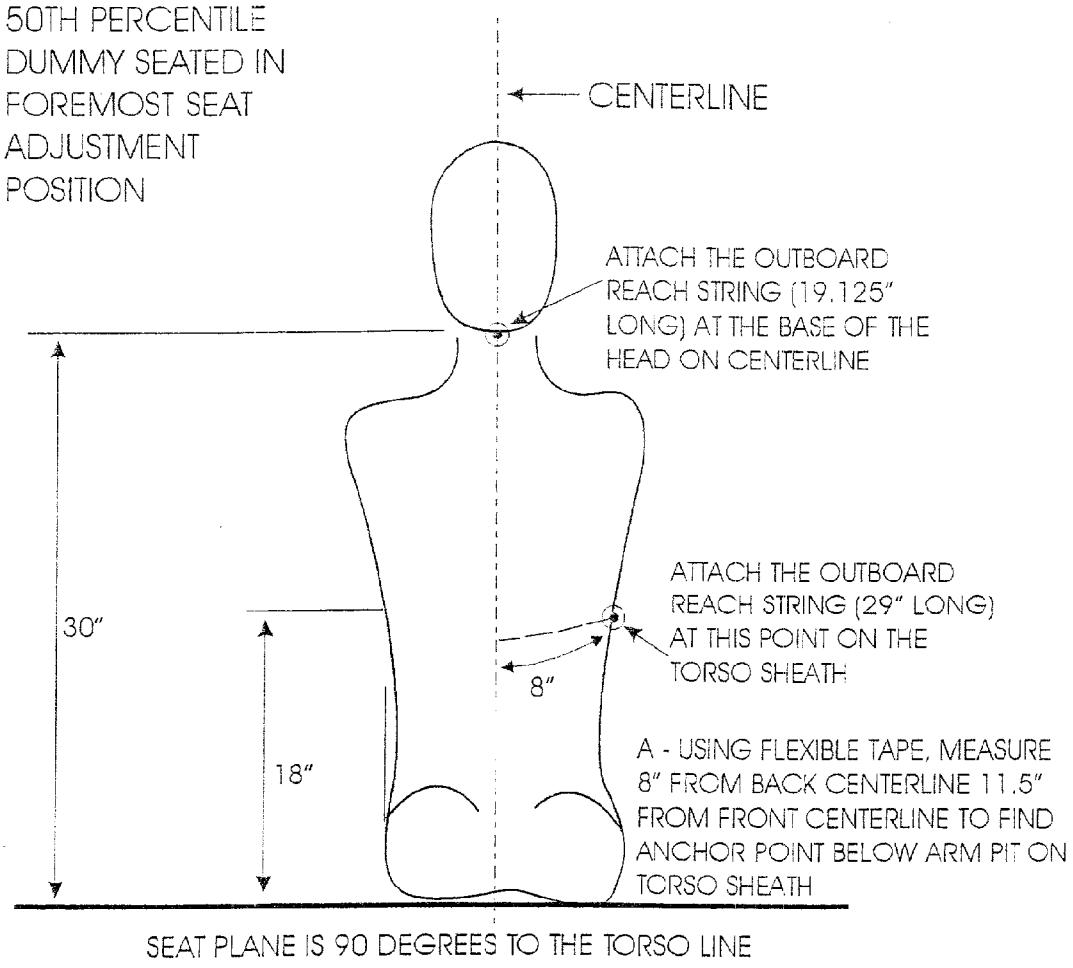
(C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position. ☒Check

Yes-☒ Pass; No- ☐ **Fail**

5. Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)? Yes-☒Pass; No- ☐ **Fail**

LOCATION OF ANCHORING POINTS FOR LATCHPLATE REACH LIMITING CHAINS OR STRINGS TO TEST FOR LATCHPLATE ACCESSIBILITY

PART 572E DUMMY



REAR VIEW

Figure 1C

USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

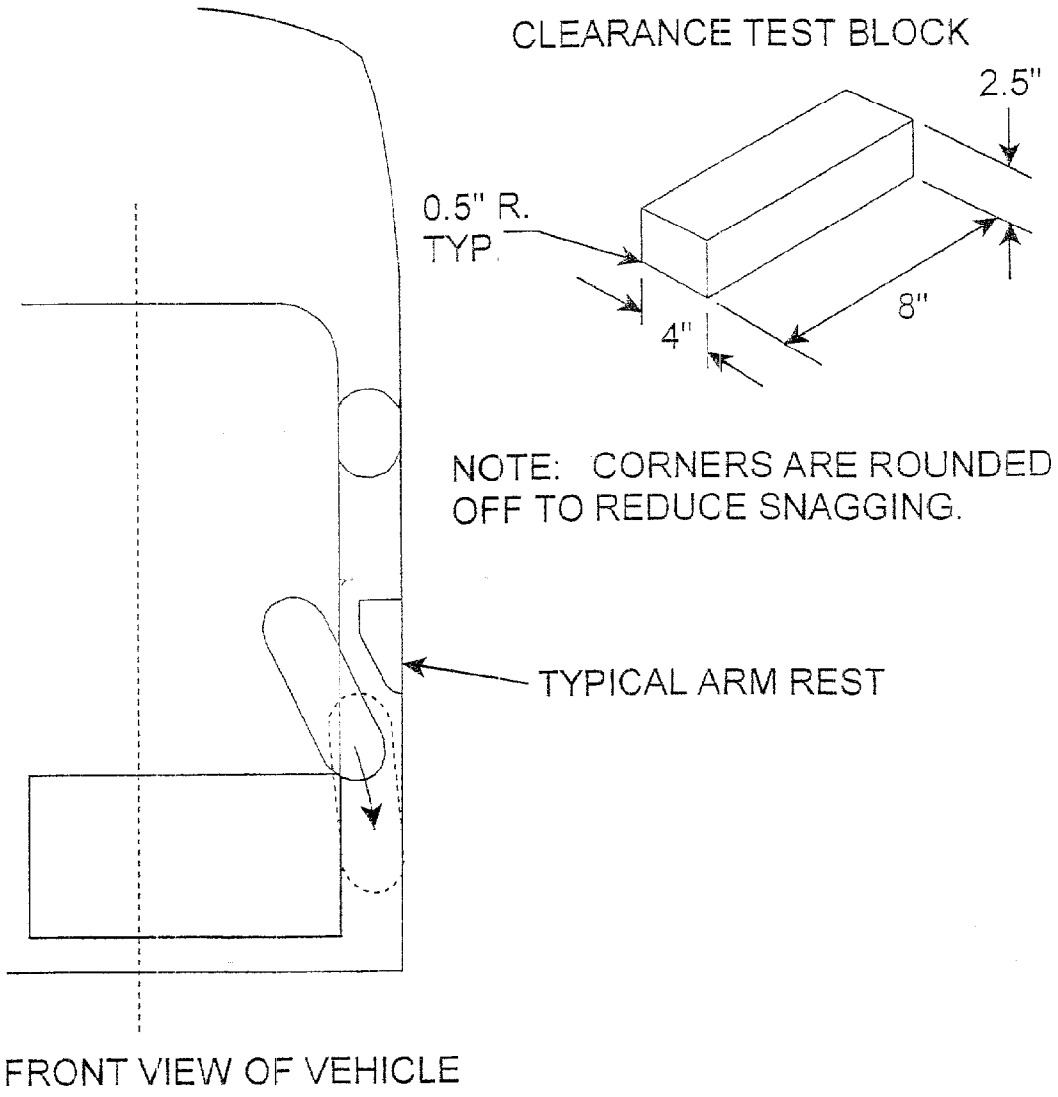


Figure 2C

Appendix A

Photographs

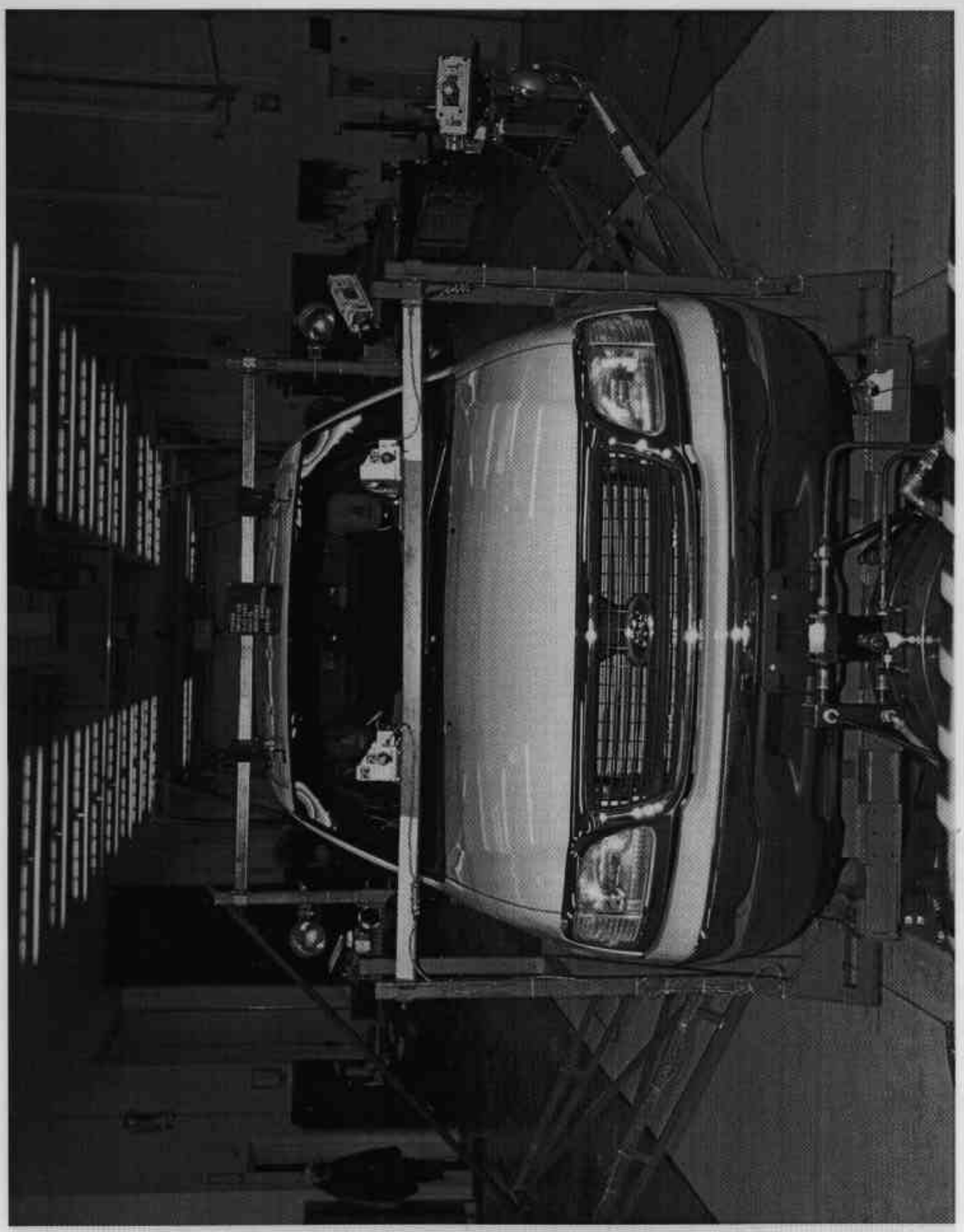


Figure A-1 Pre-Test Front View of Test Vehicle Mounted to Sled

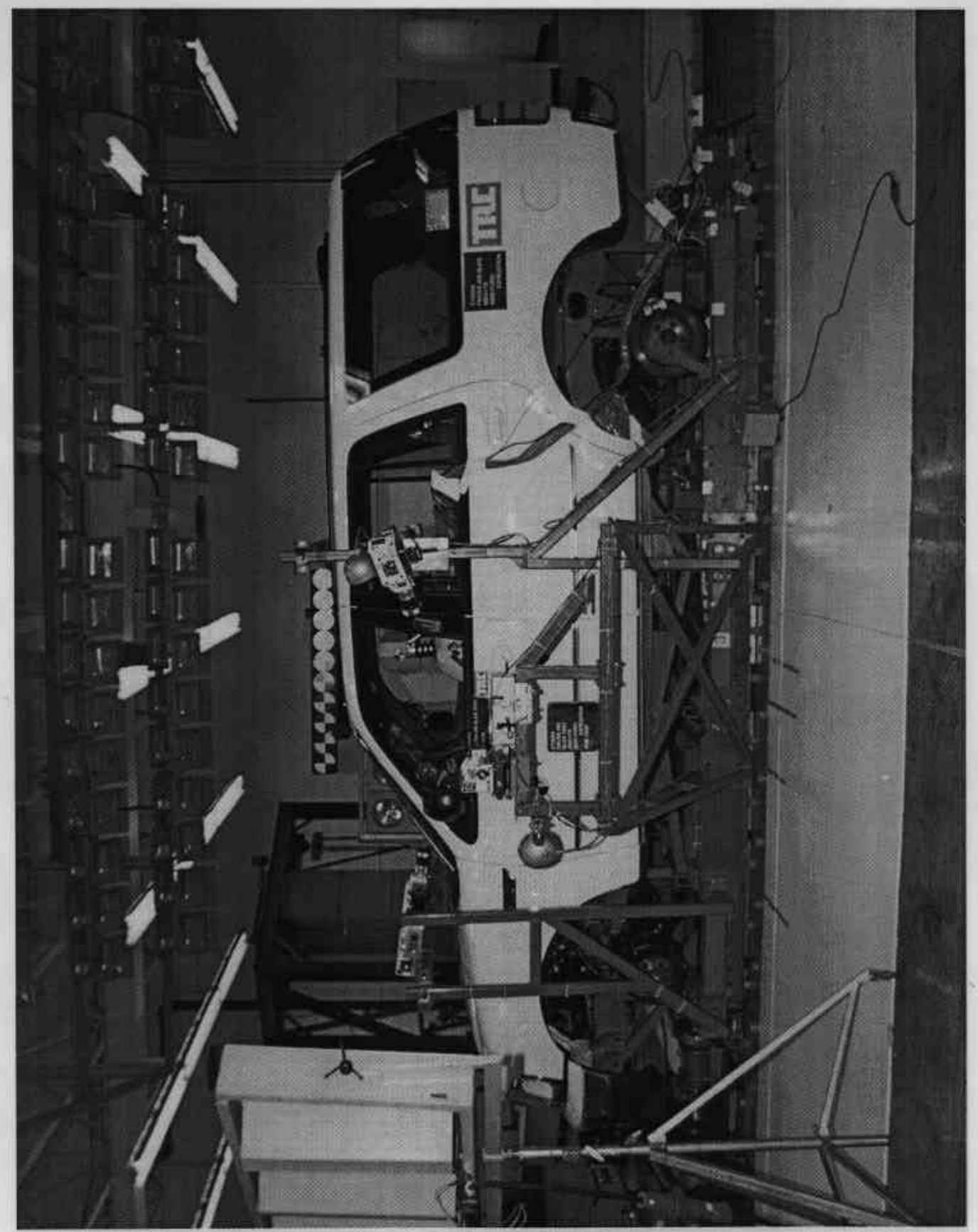


Figure A-2 Pre-Test Left Side View of Test Vehicle Mounted to Sled

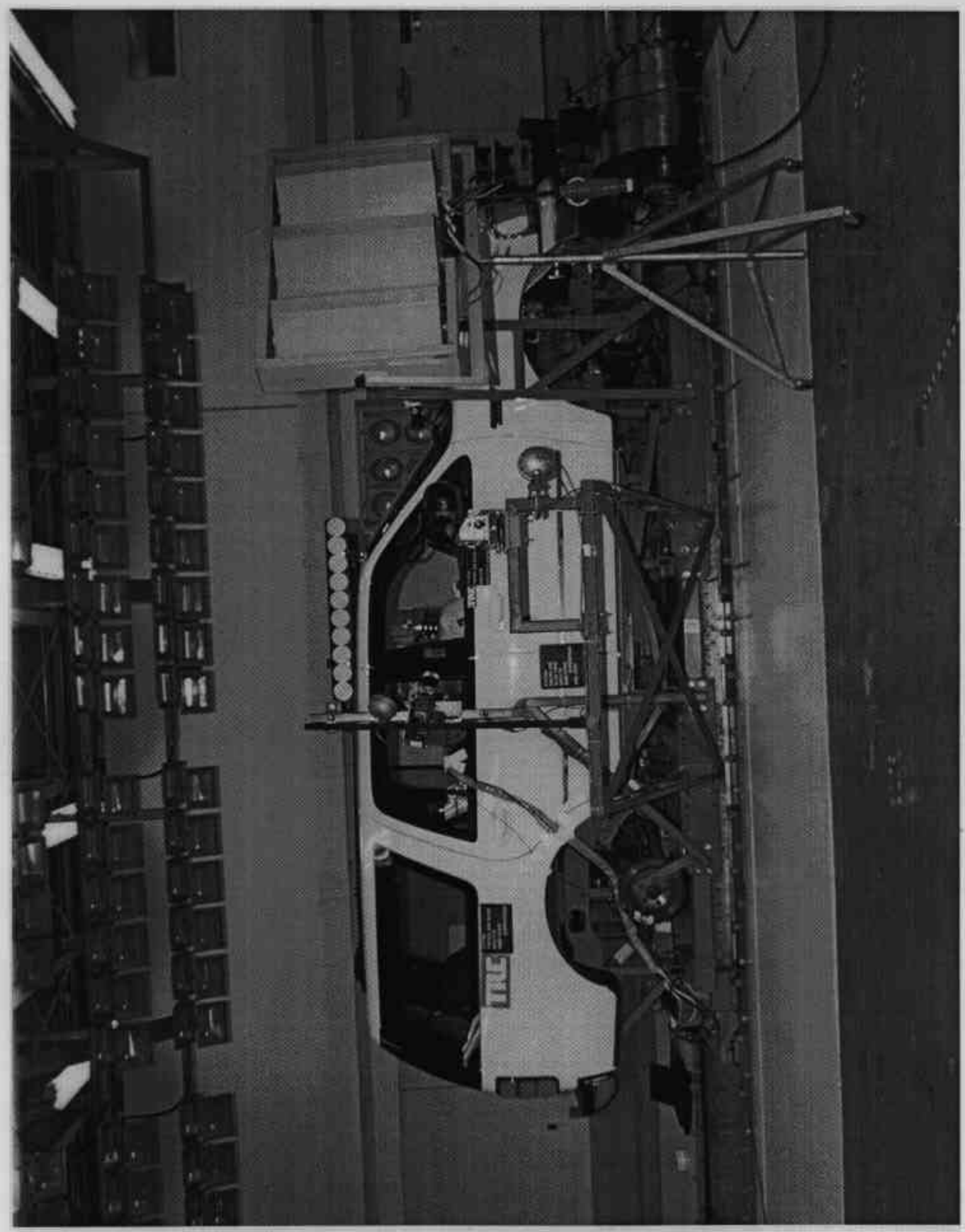


Figure A-3 Pre-Test Right Side View of Test Vehicle Mounted to Sled

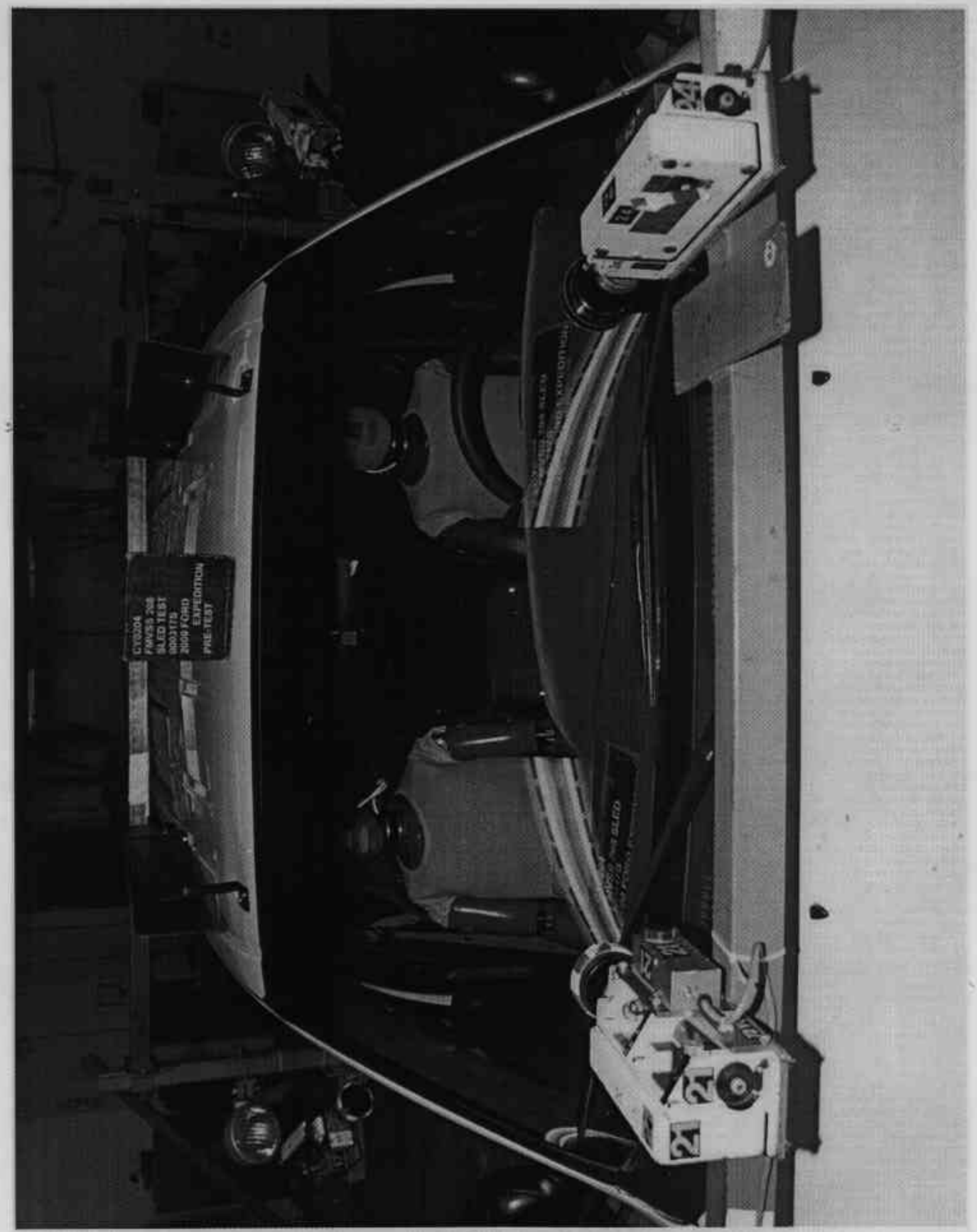


Figure A-4 Pre-Test Windshield View

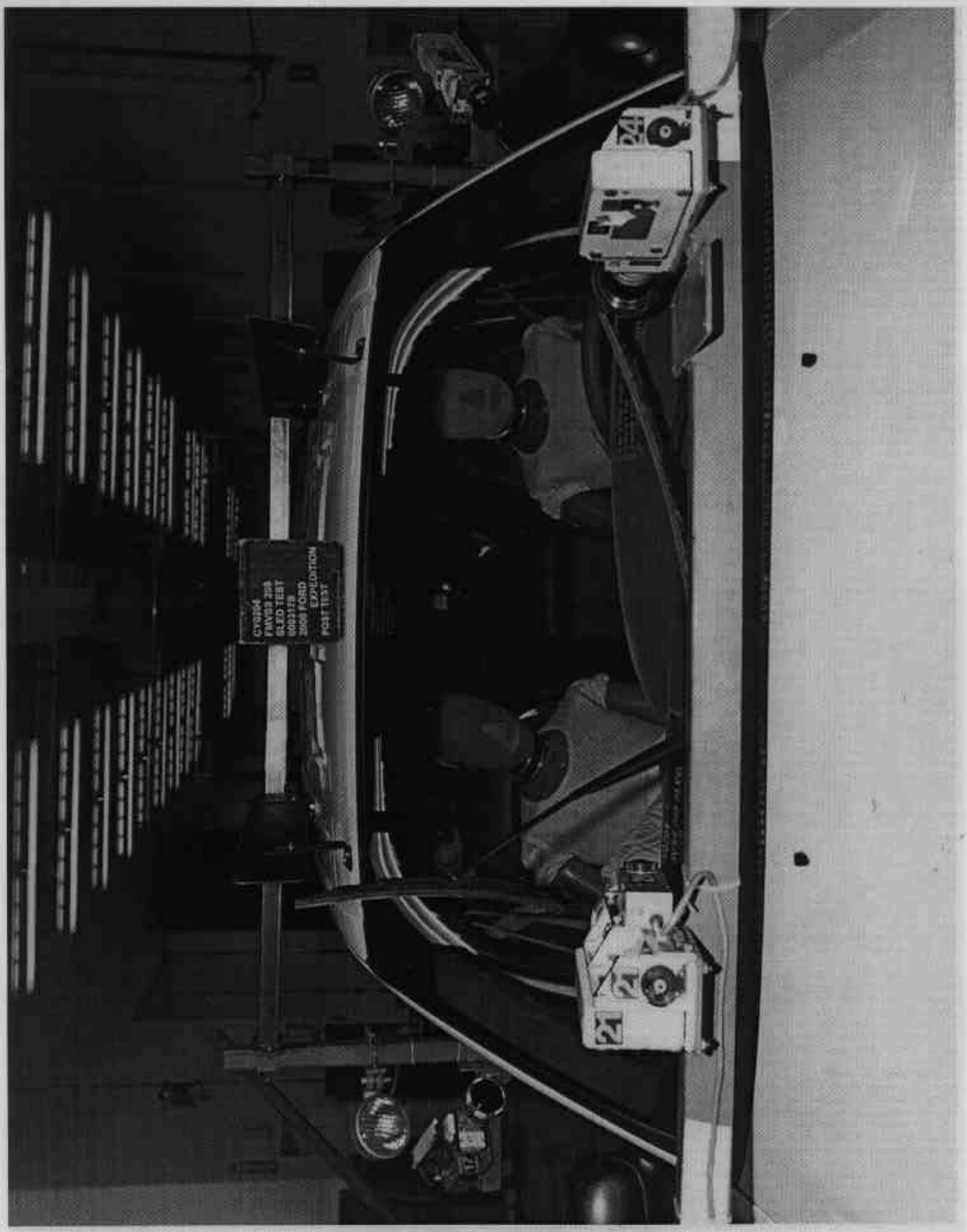


Figure A-5 Post-Test Windshield View

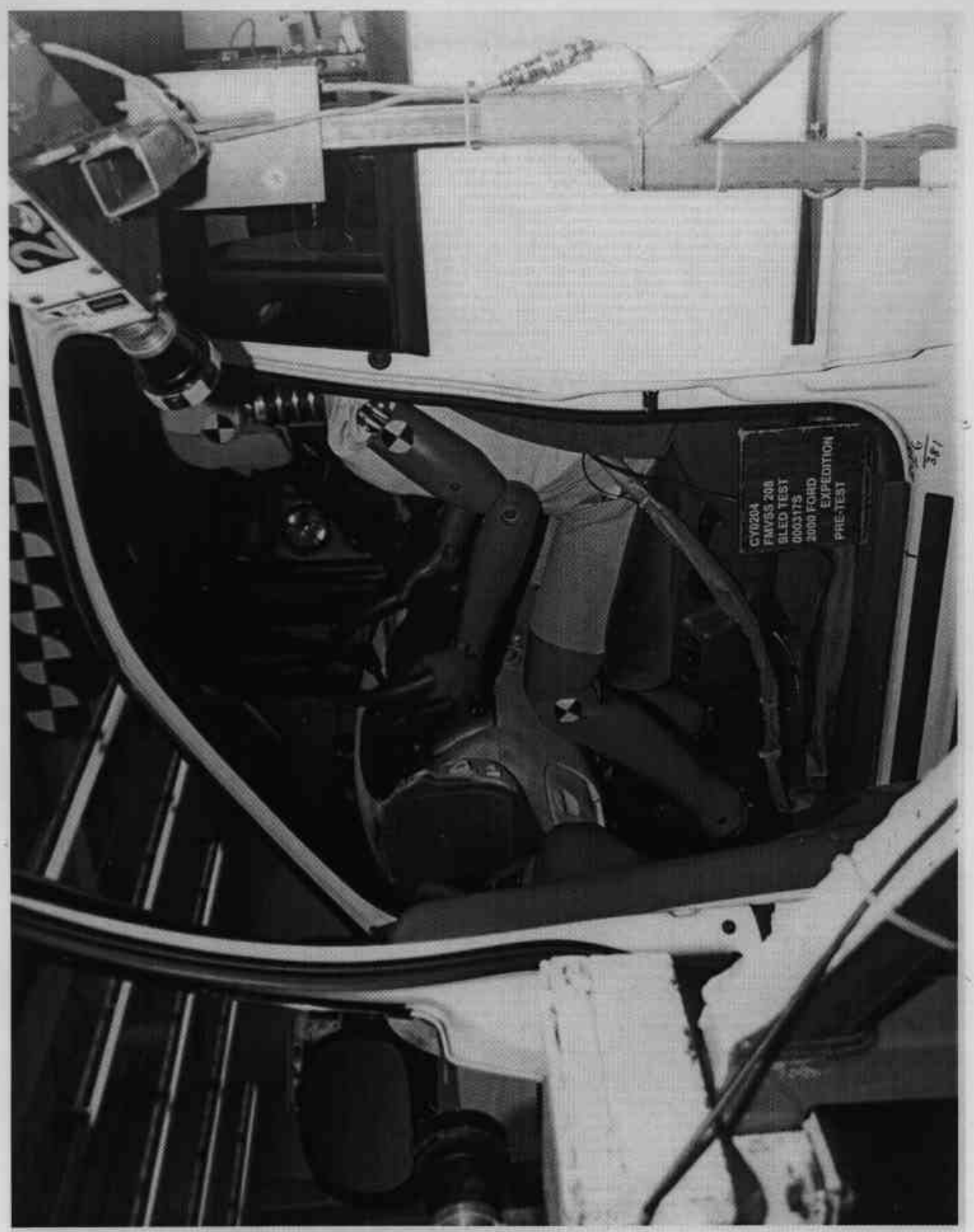


Figure A-6 Pre-Test Driver Dummy Position View with Door Open

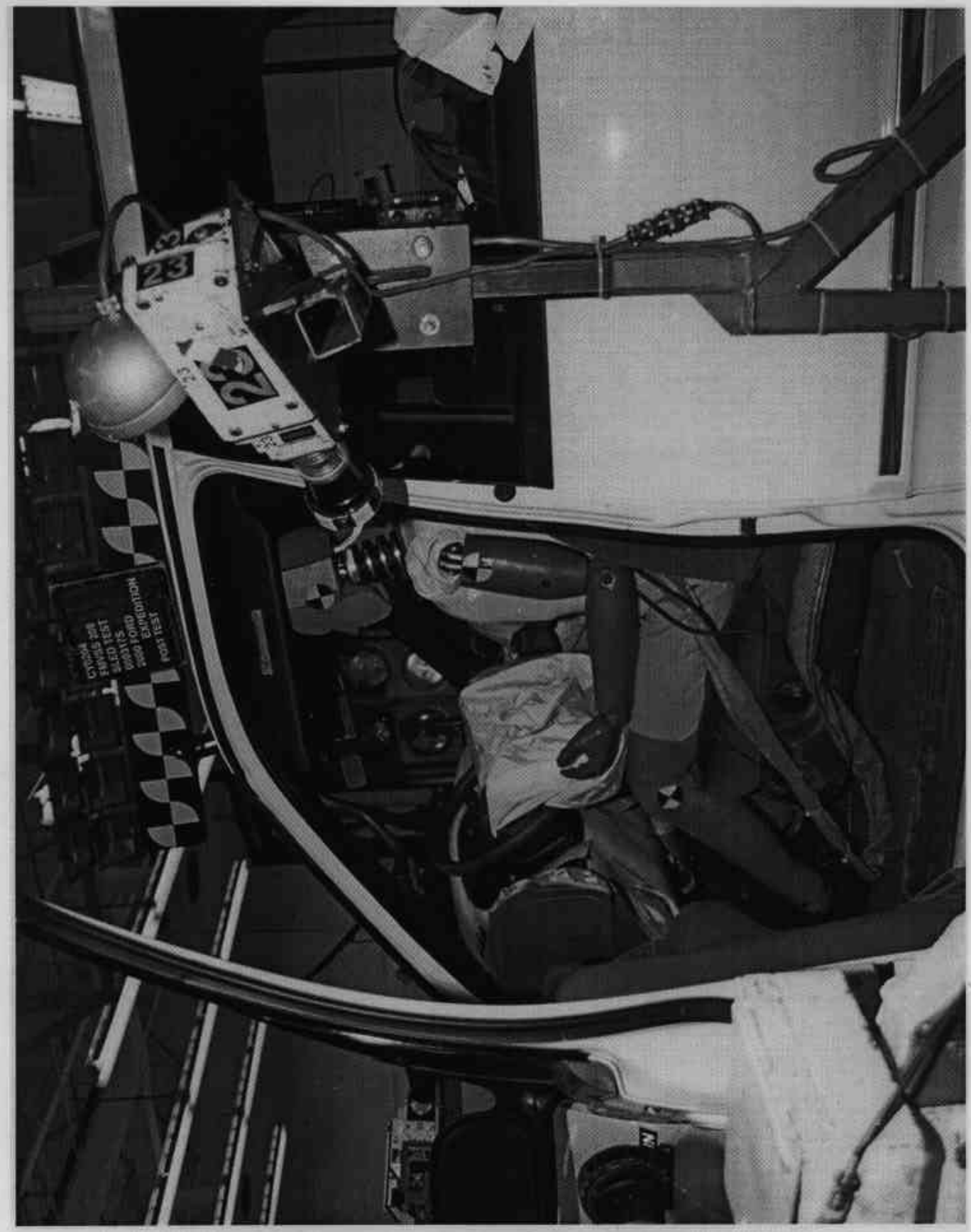


Figure A-7 Post-Test Driver Dummy Position View with Door Open

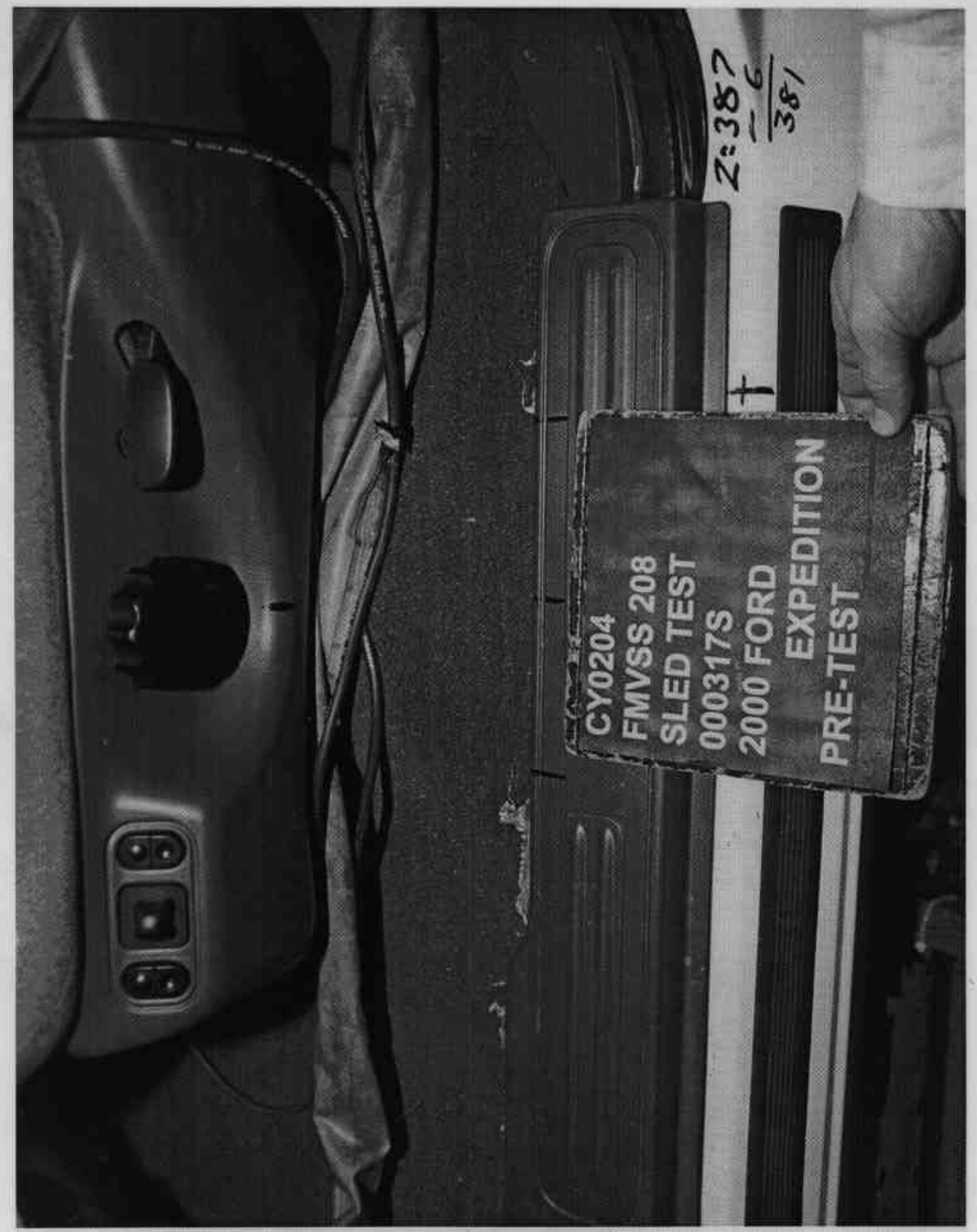


Figure A-8 Pre-Test Driver Seat Track Position View

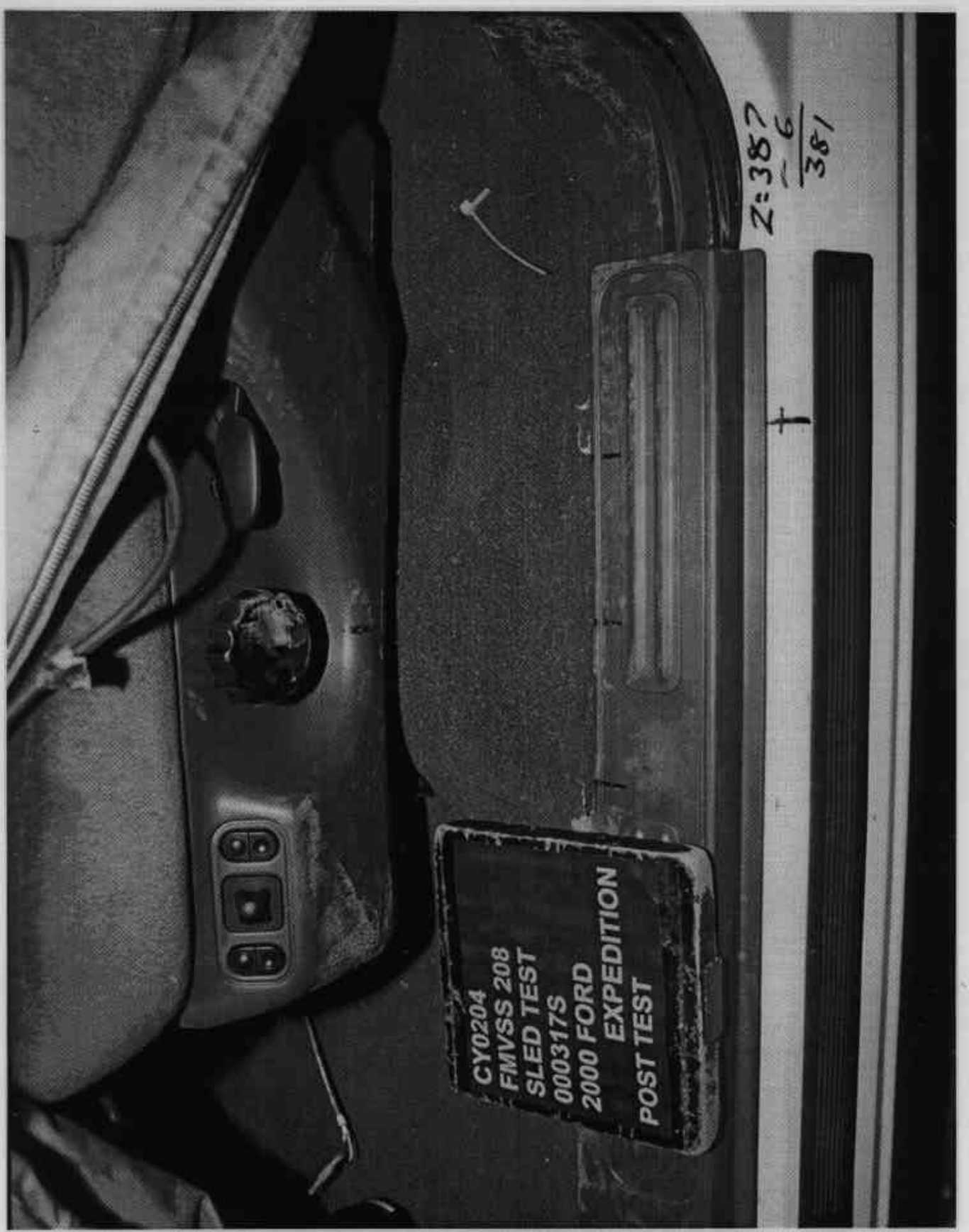


Figure A-9 Post-Test Driver Seat Track Position View

Figure A-10 Pre-Test Driver Dummy Position Front View

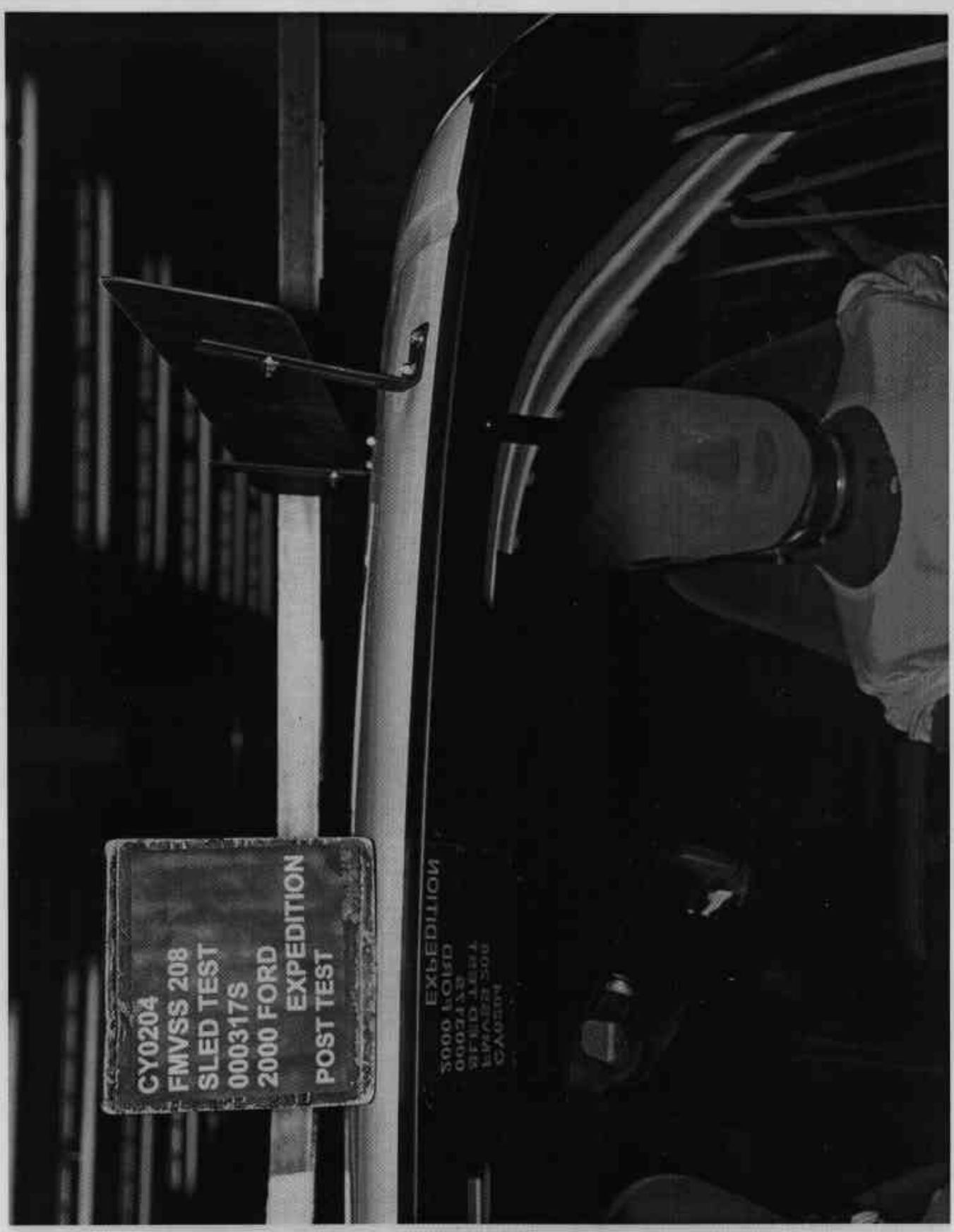


Figure A-11 Post-Test Driver Dummy Position Front View

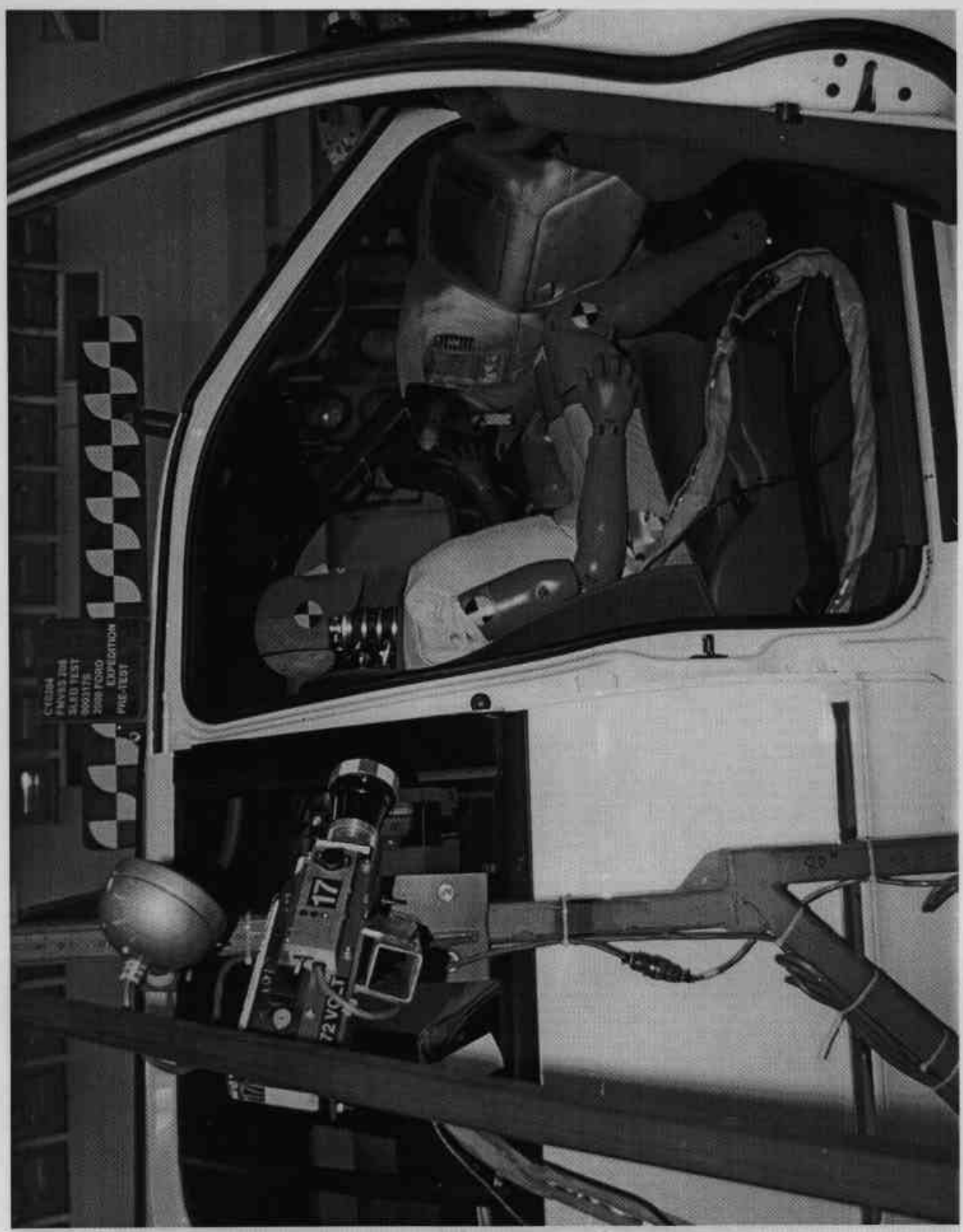


Figure A-12 Pre-Test Passenger Dummy Position View with Door Open

Figure A-13 Post-Test Passenger Dummy Position View with Door Open

Figure A-14 Pre-Test Passenger Seat Track Position View

Figure A-15 Post-Test Passenger Seat Track Position View

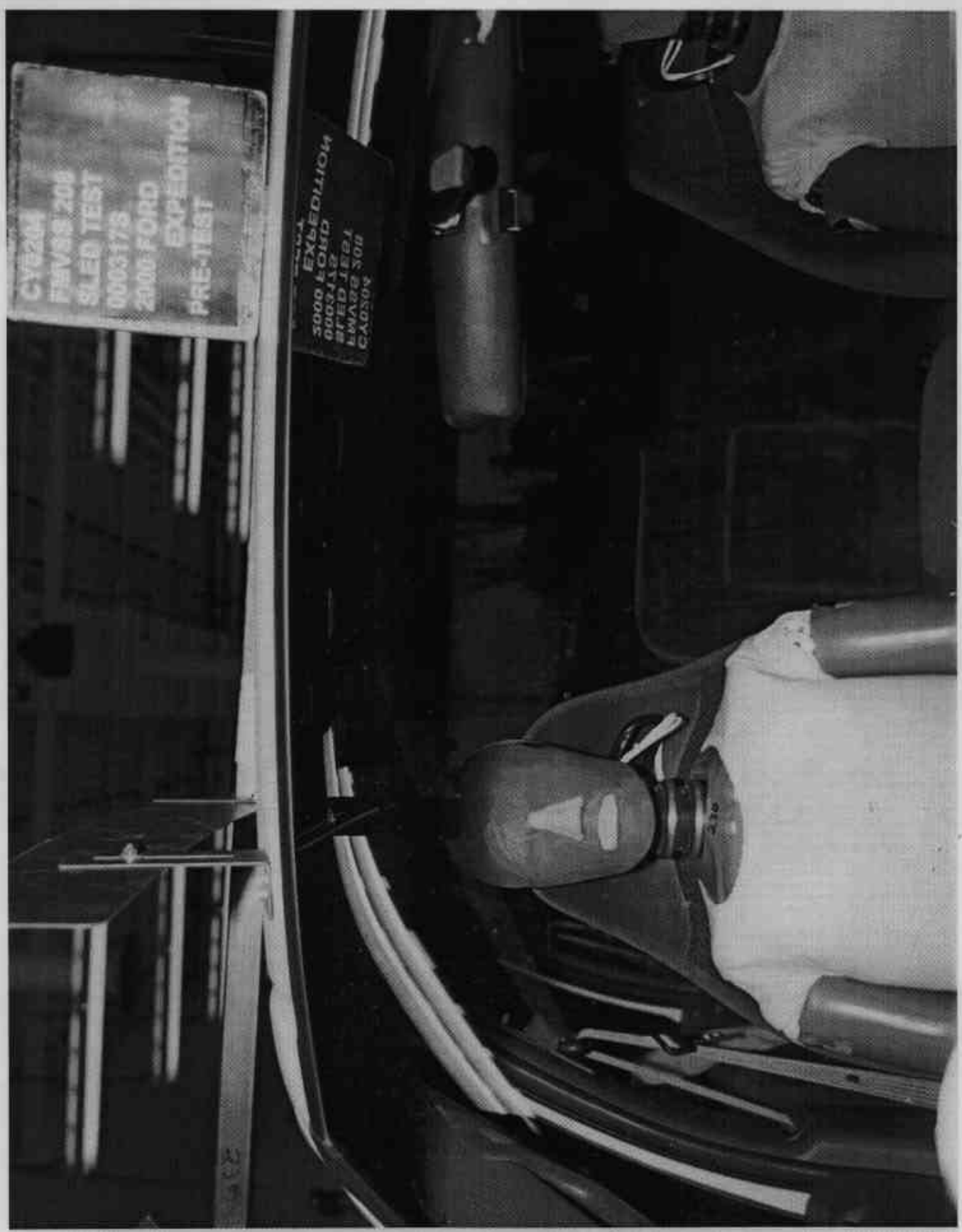


Figure A-16 Pre-Test Passenger Dummy Position Front View

Figure A-17 Post-Test Passenger Dummy Position Front View

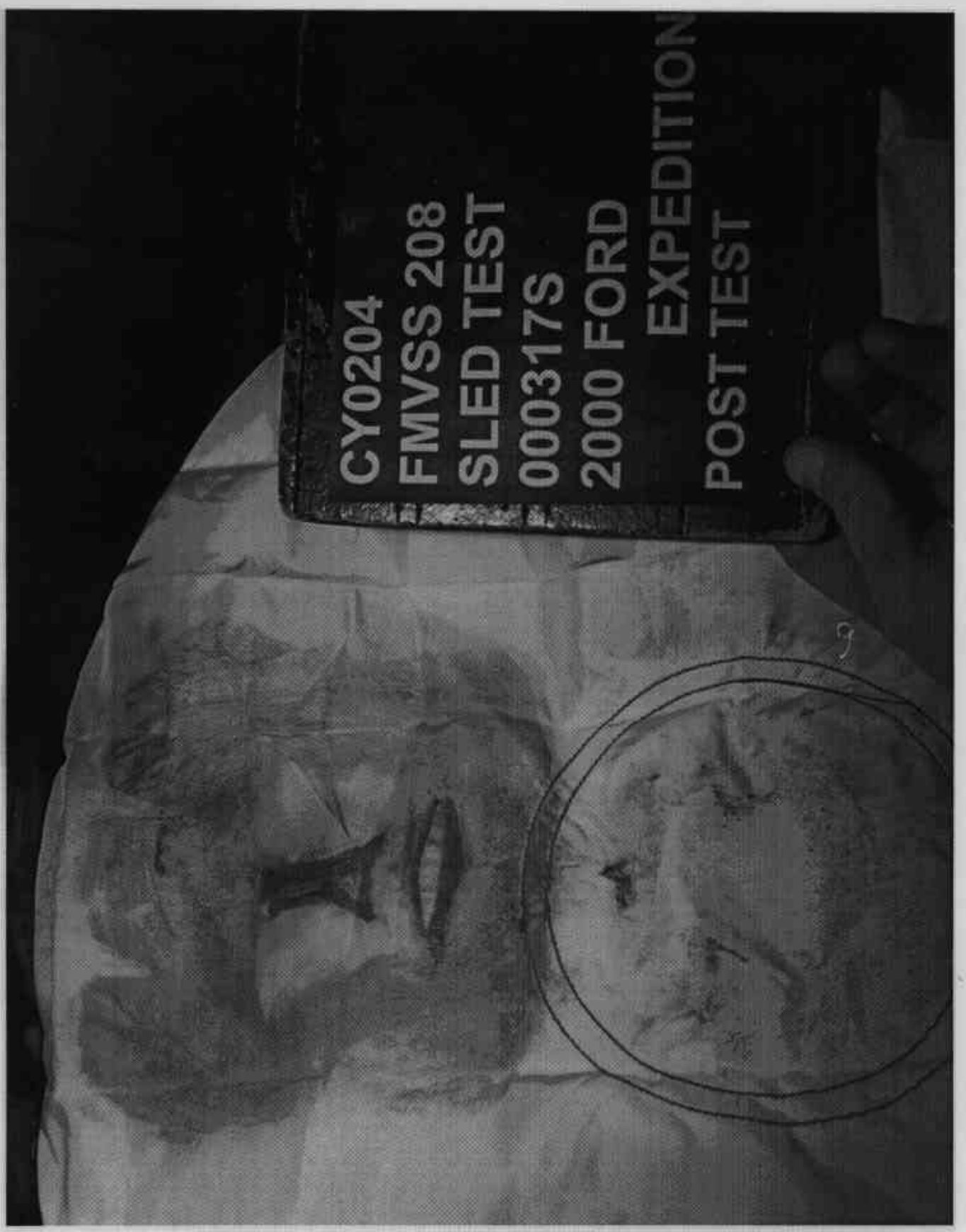


Figure A-18 Post-Test Driver Airbag View

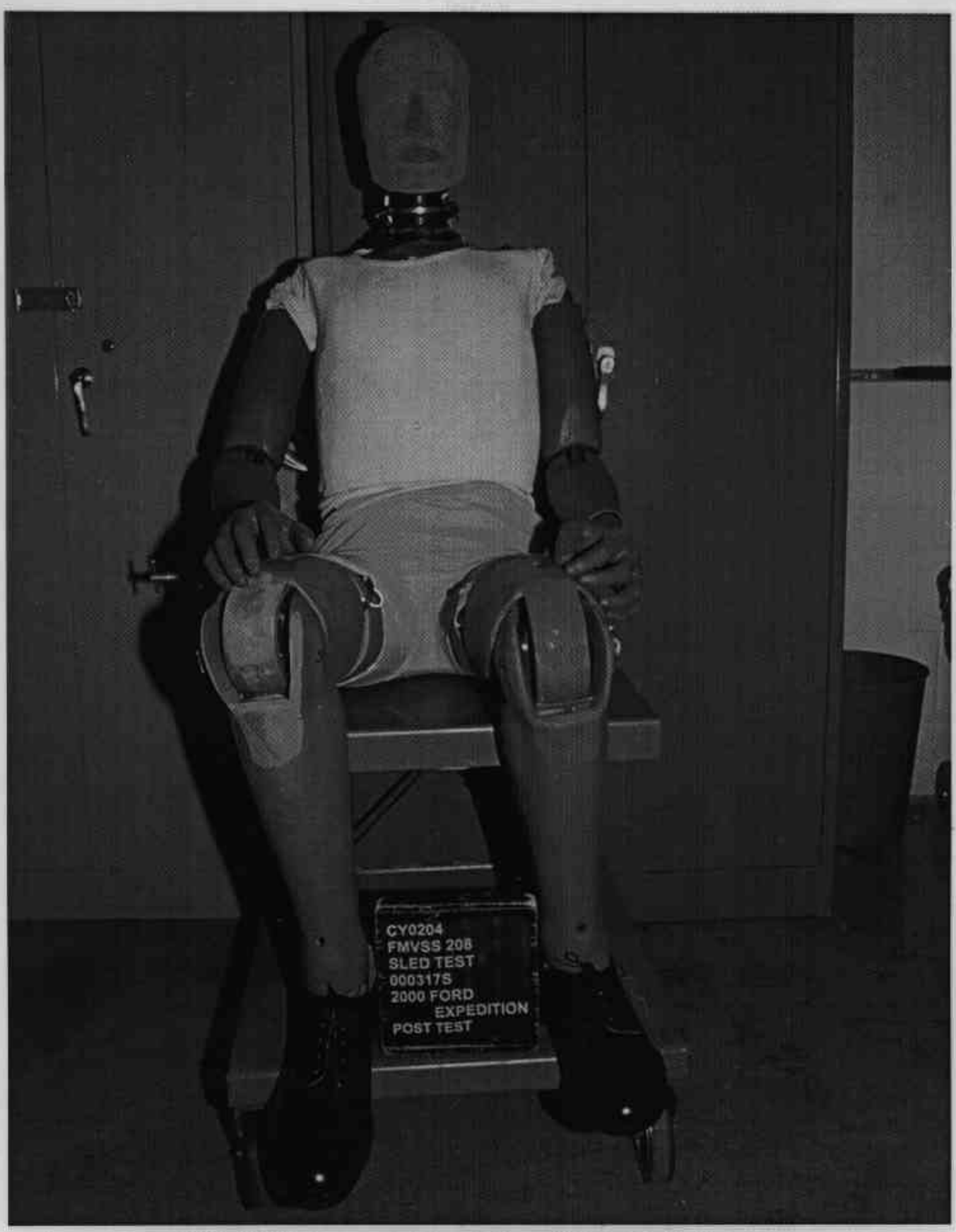


Figure A-19 Post-Test Driver Dummy Removed from Vehicle Overall View

Figure A-20 Post-Test Driver Head Contact View

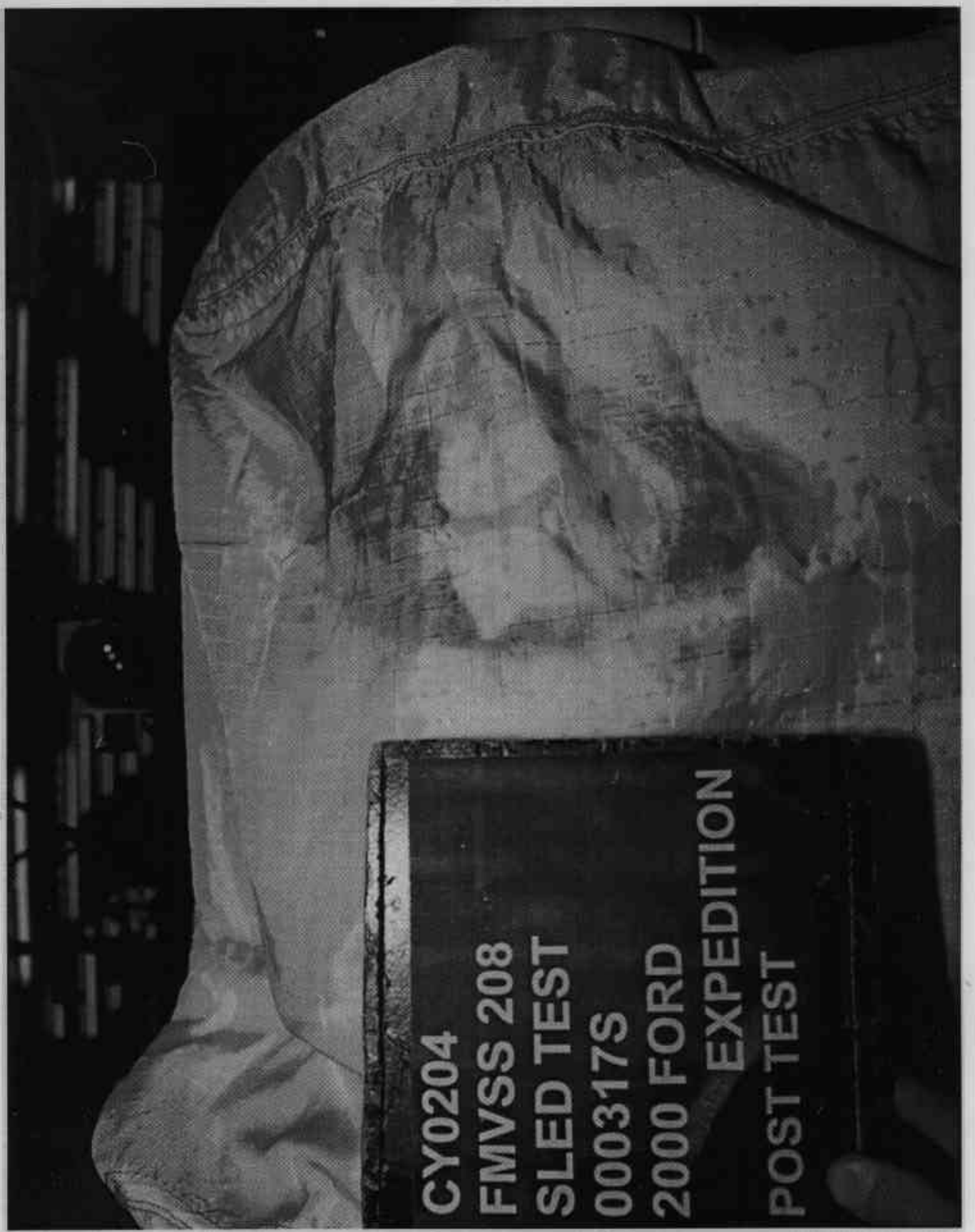


Figure A-21 Post-Test Passenger Airbag View

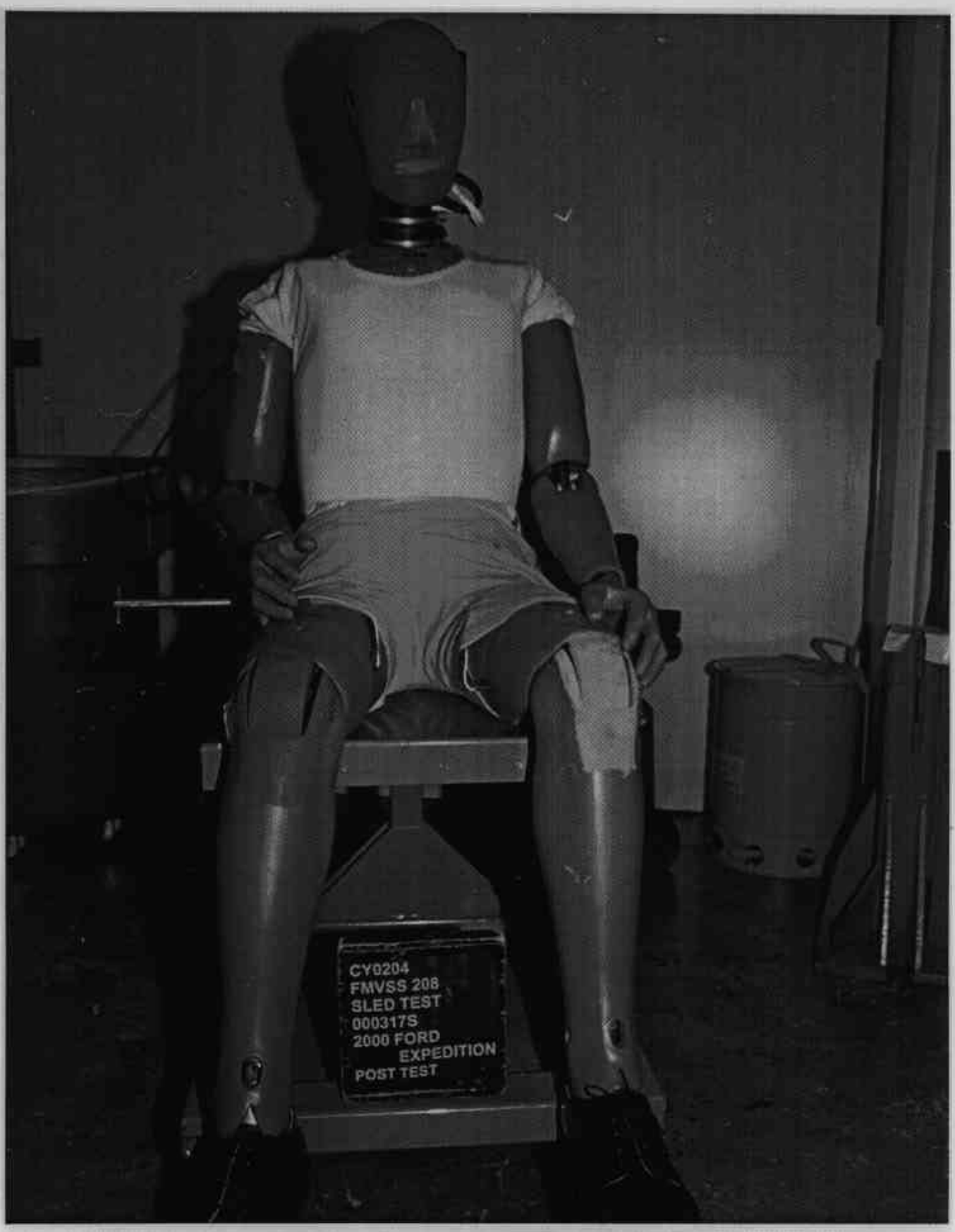


Figure A-22 Post-Test Passenger Dummy Removed from Vehicle Overall View

Figure A-23 Post-Test Passenger Head Contact View

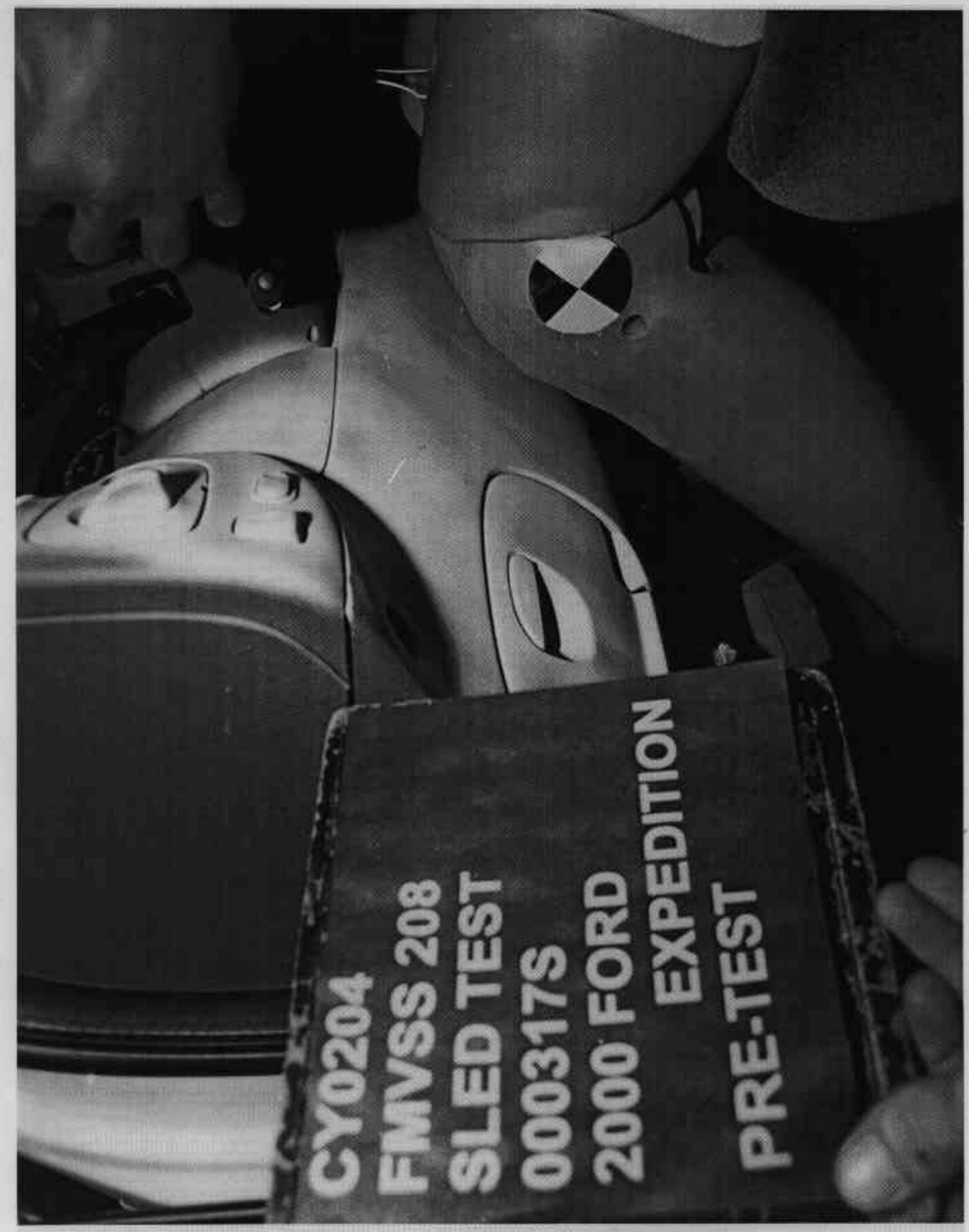


Figure A-24 Pre-Test Driver Knee Bolster View

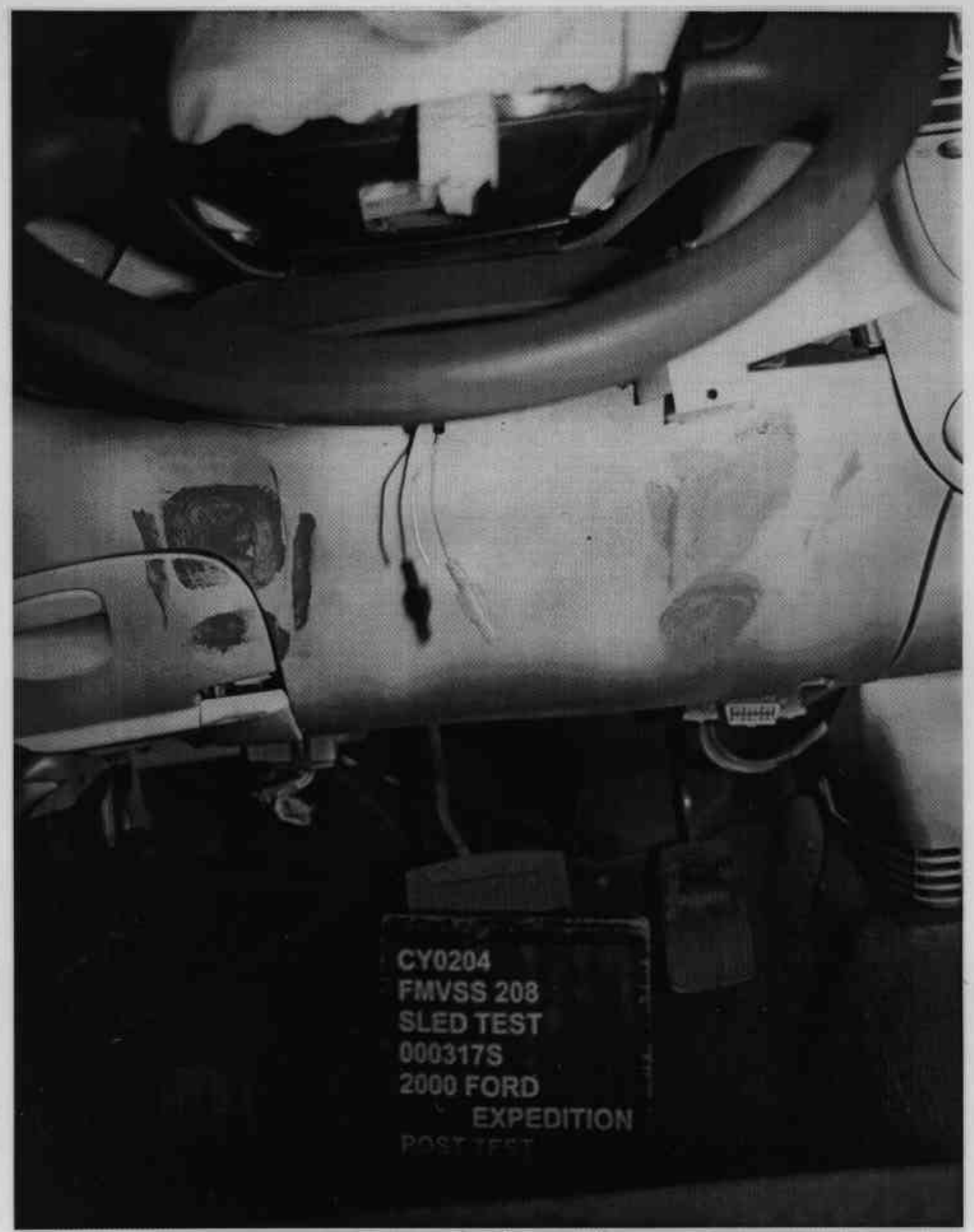


Figure A-25 Post-Test Driver Knee Bolster View

Figure A-26 Pre-Test Passenger Glove Box View

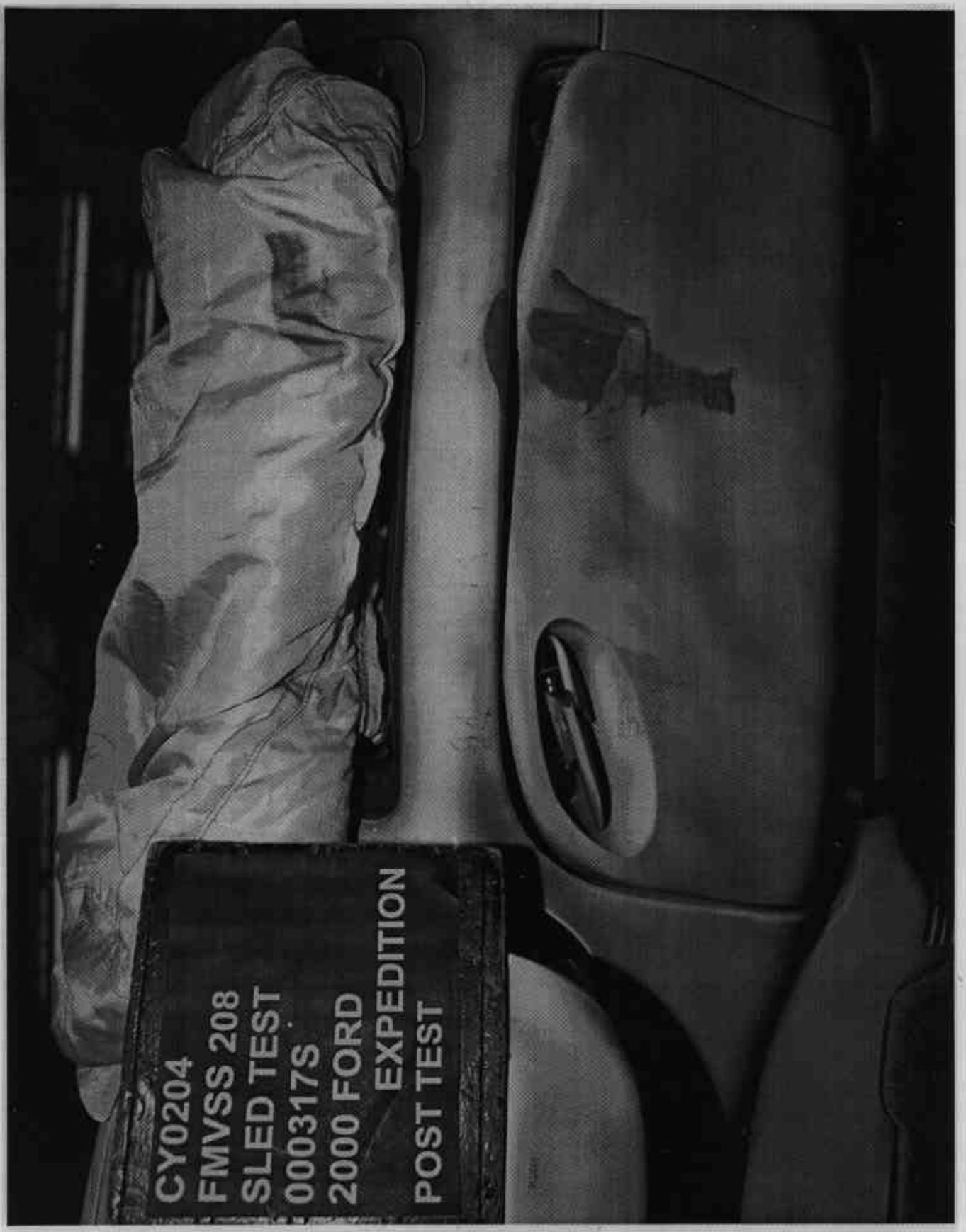


Figure A-27 Post-Test Passenger Glove Box View

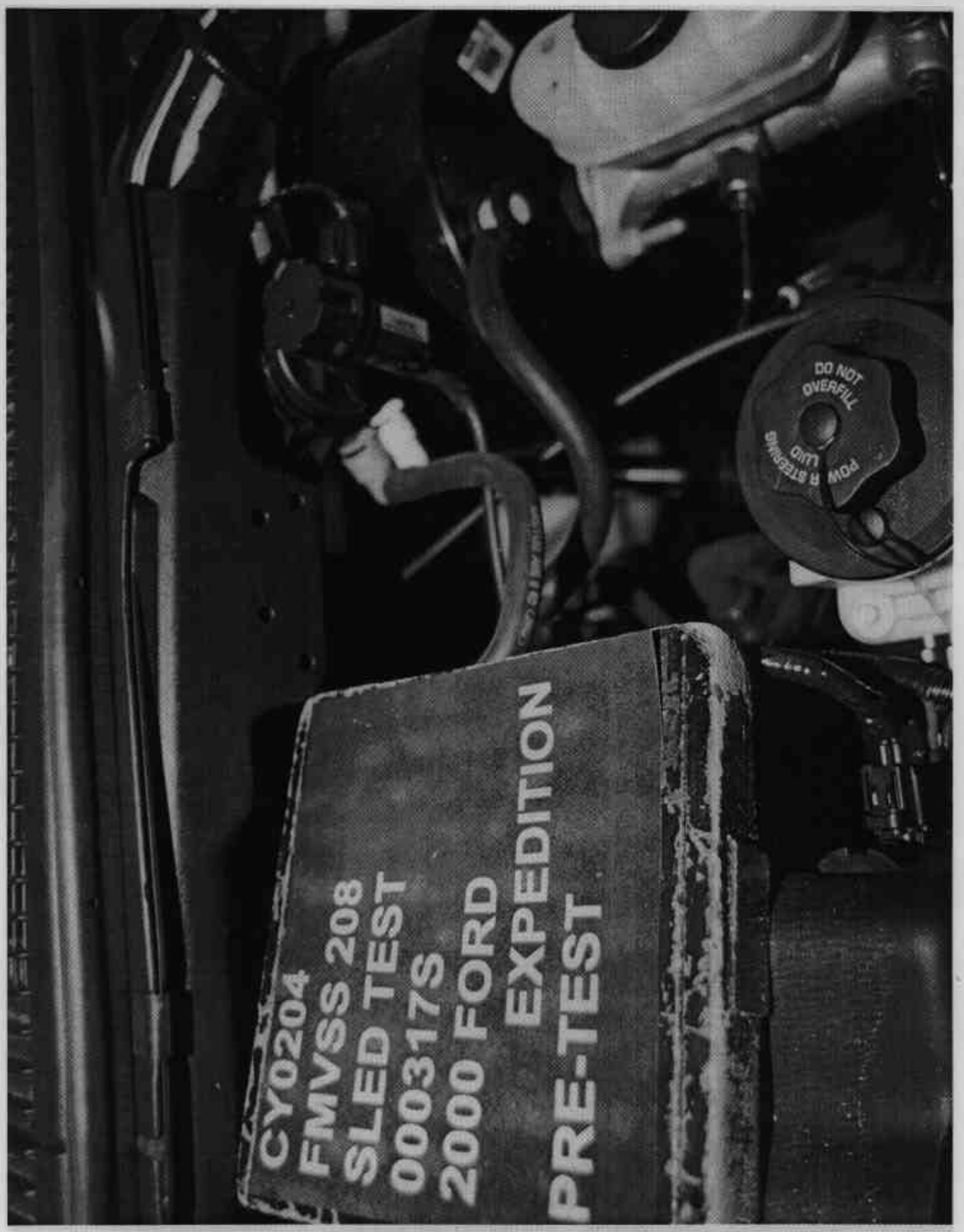


Figure A-28 Pre-Test Steering Column Linkage in Engine Compartment View

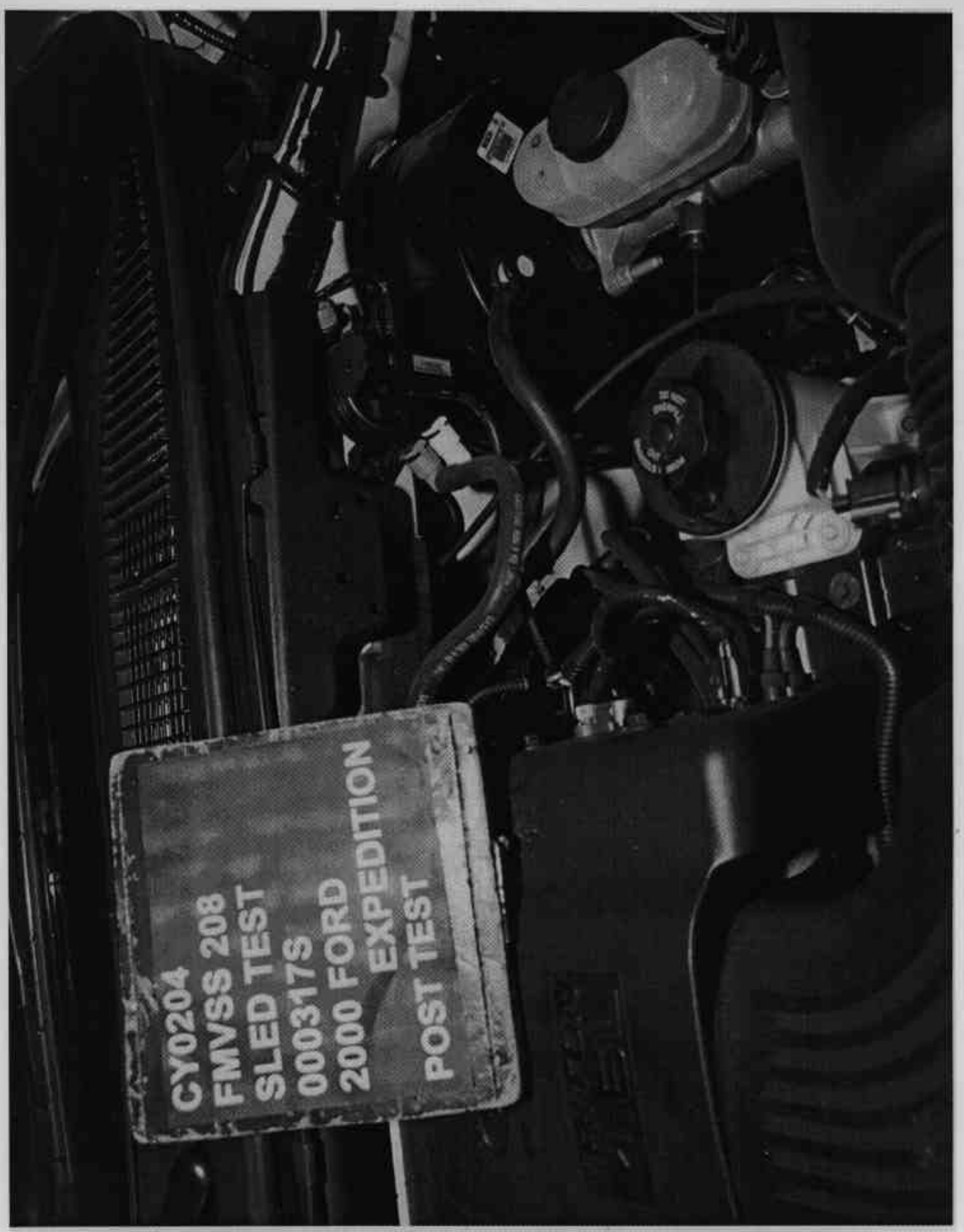


Figure A-29 Post-Test Steering Column Linkage in Engine Compartment View

Figure A-30 Pre-Test Vehicle Certification Label View

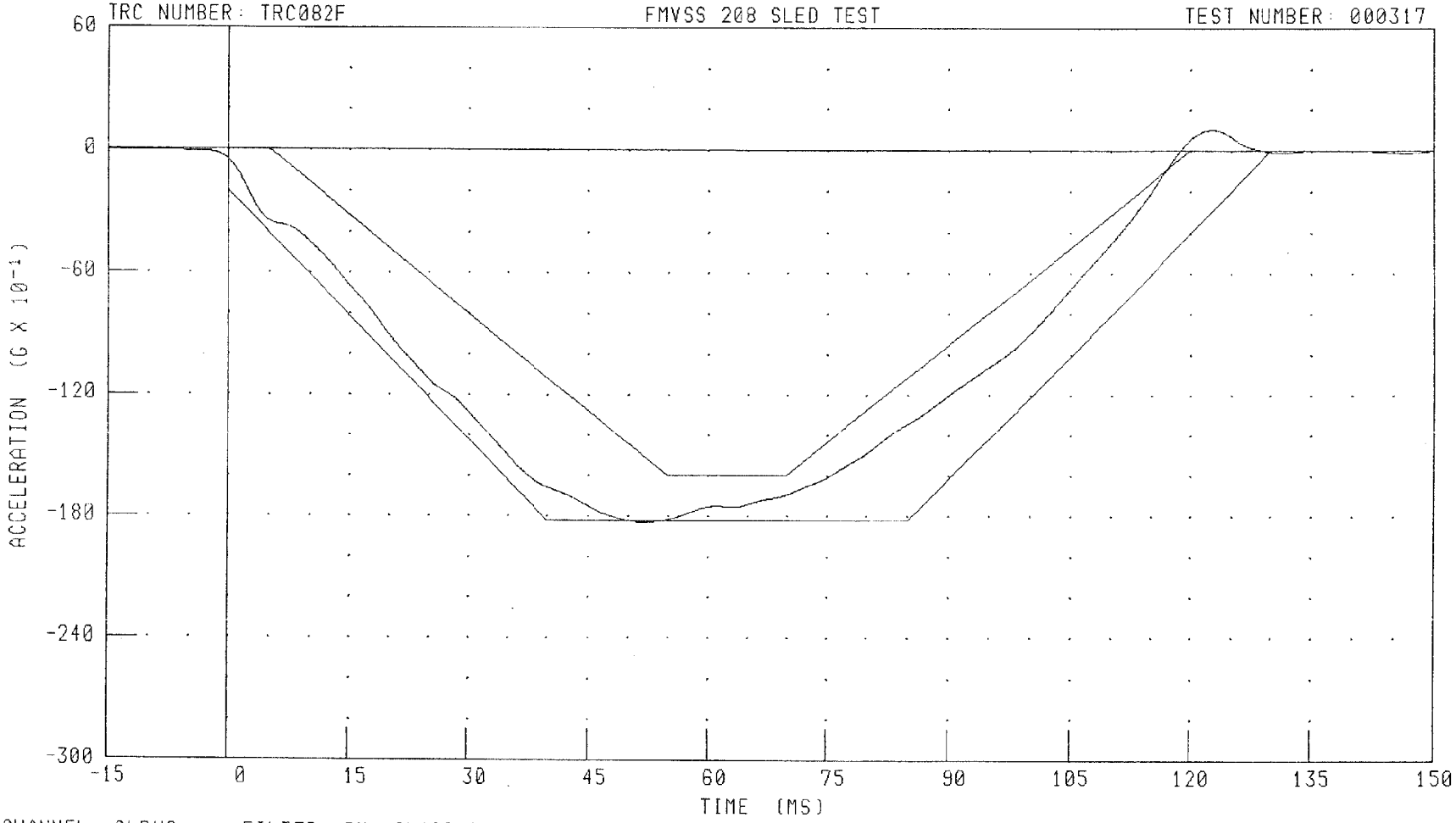
Appendix B

Data Plots

CY0204 / 2000 FORD EXPEDITION
SLED ACCELERATION
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

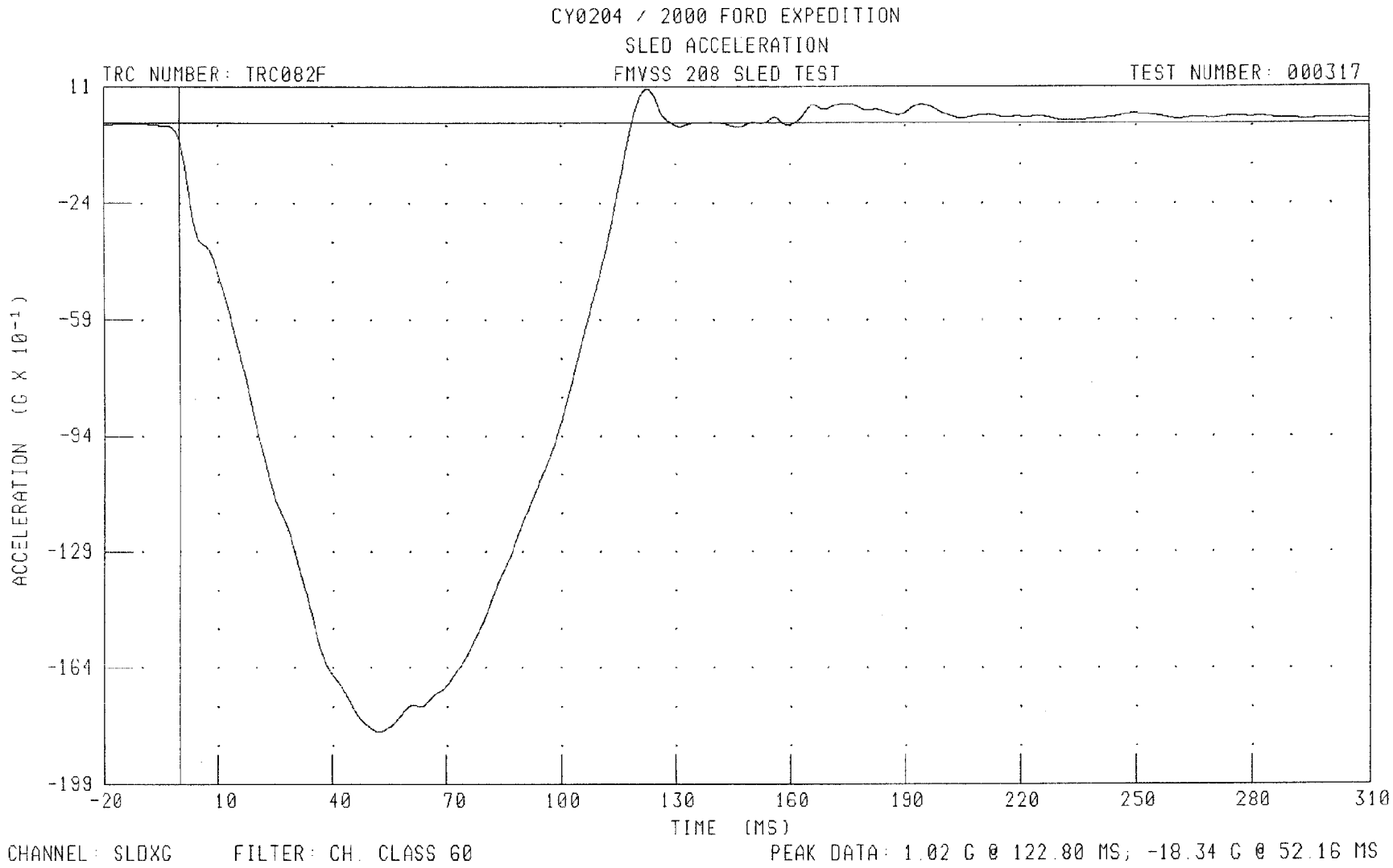
TEST NUMBER: 000317

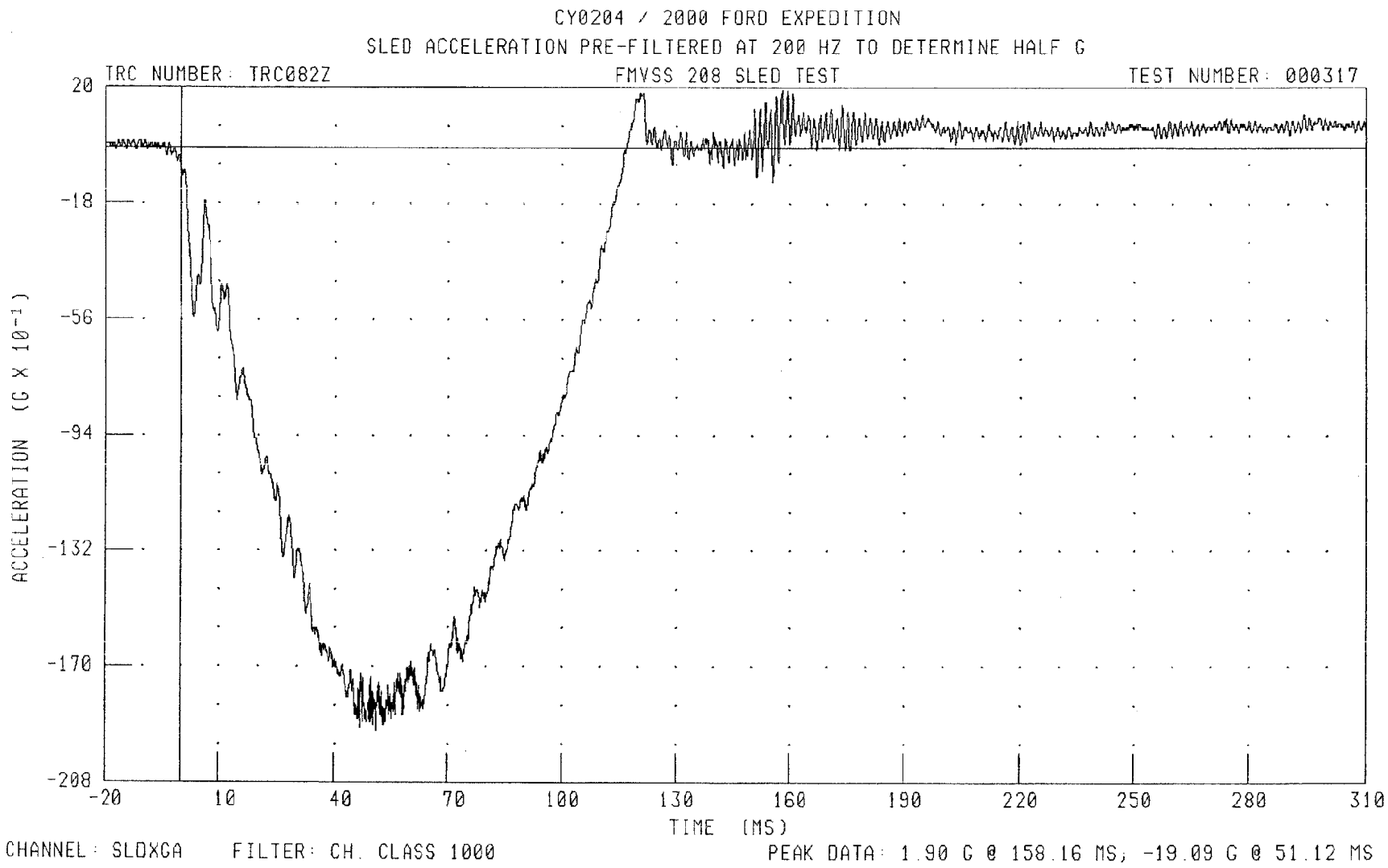


CHANNEL: SLDXG FILTER: CH. CLASS 60

PEAK DATA: 1.02 G @ 122.80 MS, -18.34 G @ 52.16 MS

000317

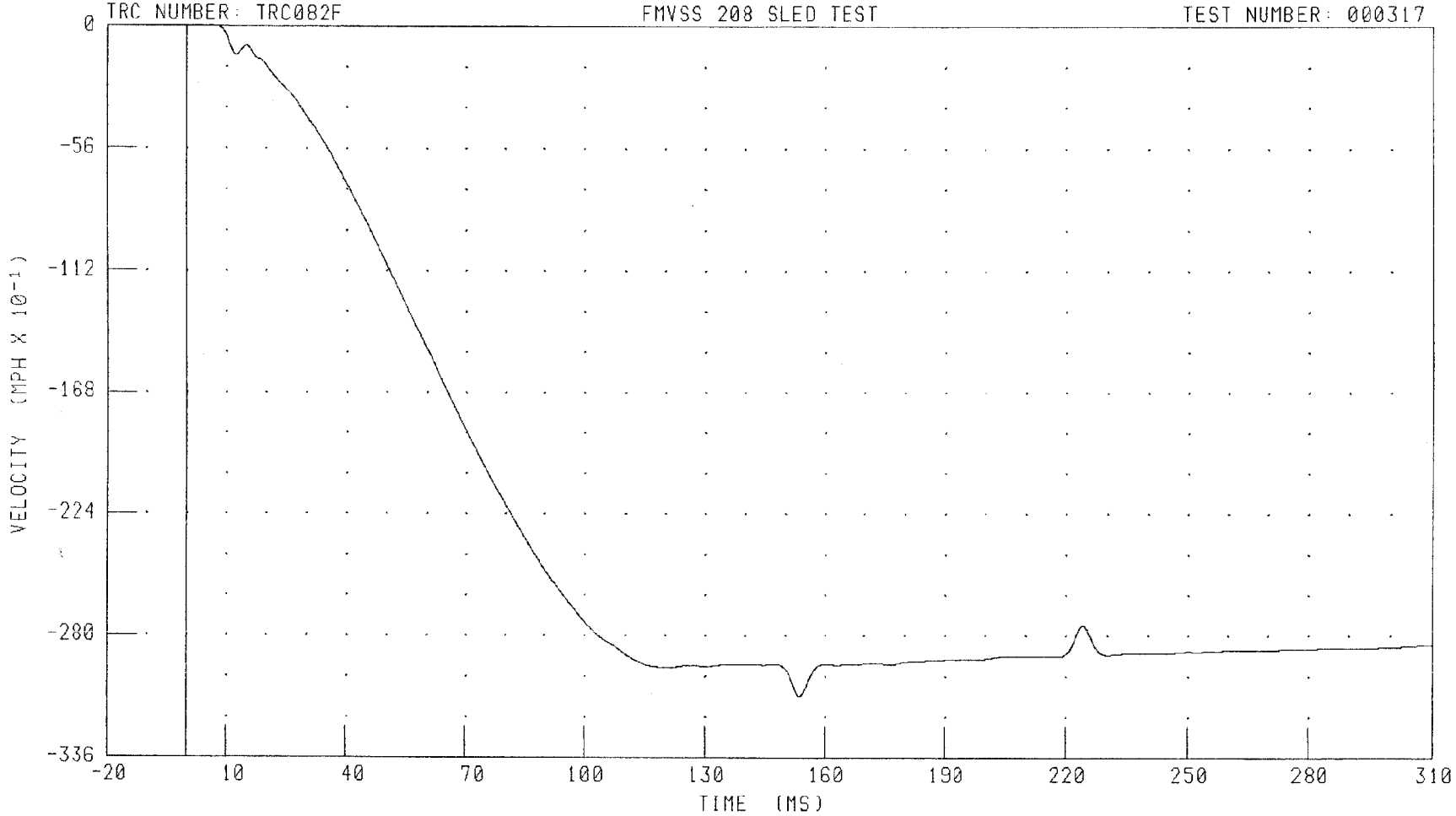

CY0204 / 2000 FORD EXPEDITION
SLED ACCELERATION
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
11
-24
-59
-94
-129
-164
-199
ACCELERATION (G X 10⁻¹)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: SLDXG
FILTER: CH. CLASS 60
PEAK DATA: 1.02 G @ 122.80 MS; -18.34 G @ 52.16 MS


CY0204 / 2000 FORD EXPEDITION
SLED ACCELERATION PRE-FILTERED AT 200 HZ TO DETERMINE HALF G
TRC NUMBER: TRC082Z
FMVSS 208 SLED TEST
TEST NUMBER: 000317
ACCELERATION (G X 10-1)
20
-18
-56
-94
-132
-170
-208
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: SLDXCA
FILTER: CH. CLASS 1000
PEAK DATA: 1.90 G @ 158.16 MS, -19.09 G @ 51.12 MS

CY0204 / 2000 FORD EXPEDITION
MEASURED VELOCITY TRAP
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

TEST NUMBER: 000317



CHANNEL: SLDXV FILTER: CH. CLASS 60

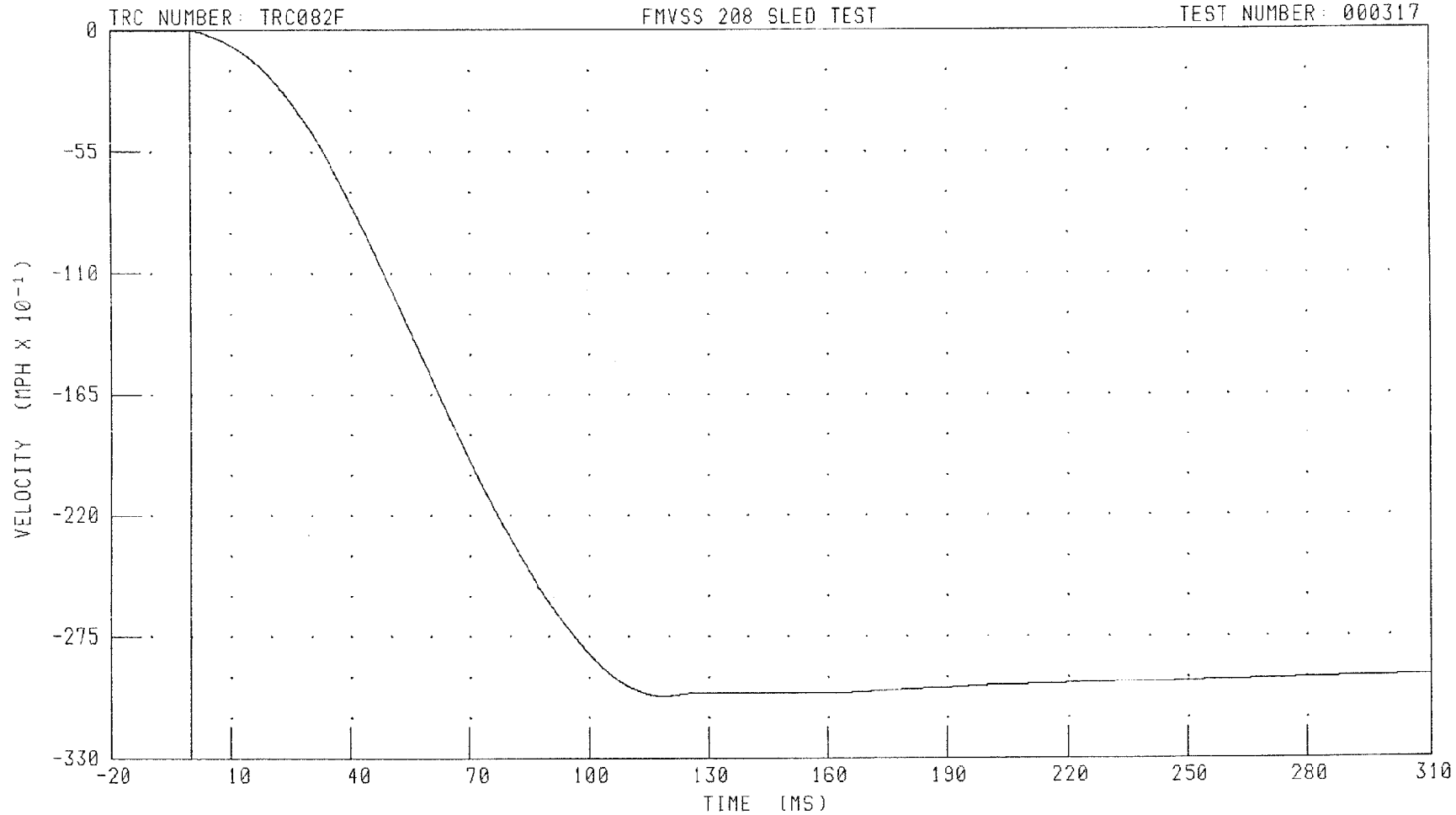
PEAK DATA: 0.06 MPH @ 6.72 MS, -30.81 MPH @ 153.76 MS

000317

CY0204 / 2000 FORD EXPEDITION
SLED VELOCITY (INTEGRATED)
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

TEST NUMBER: 000317



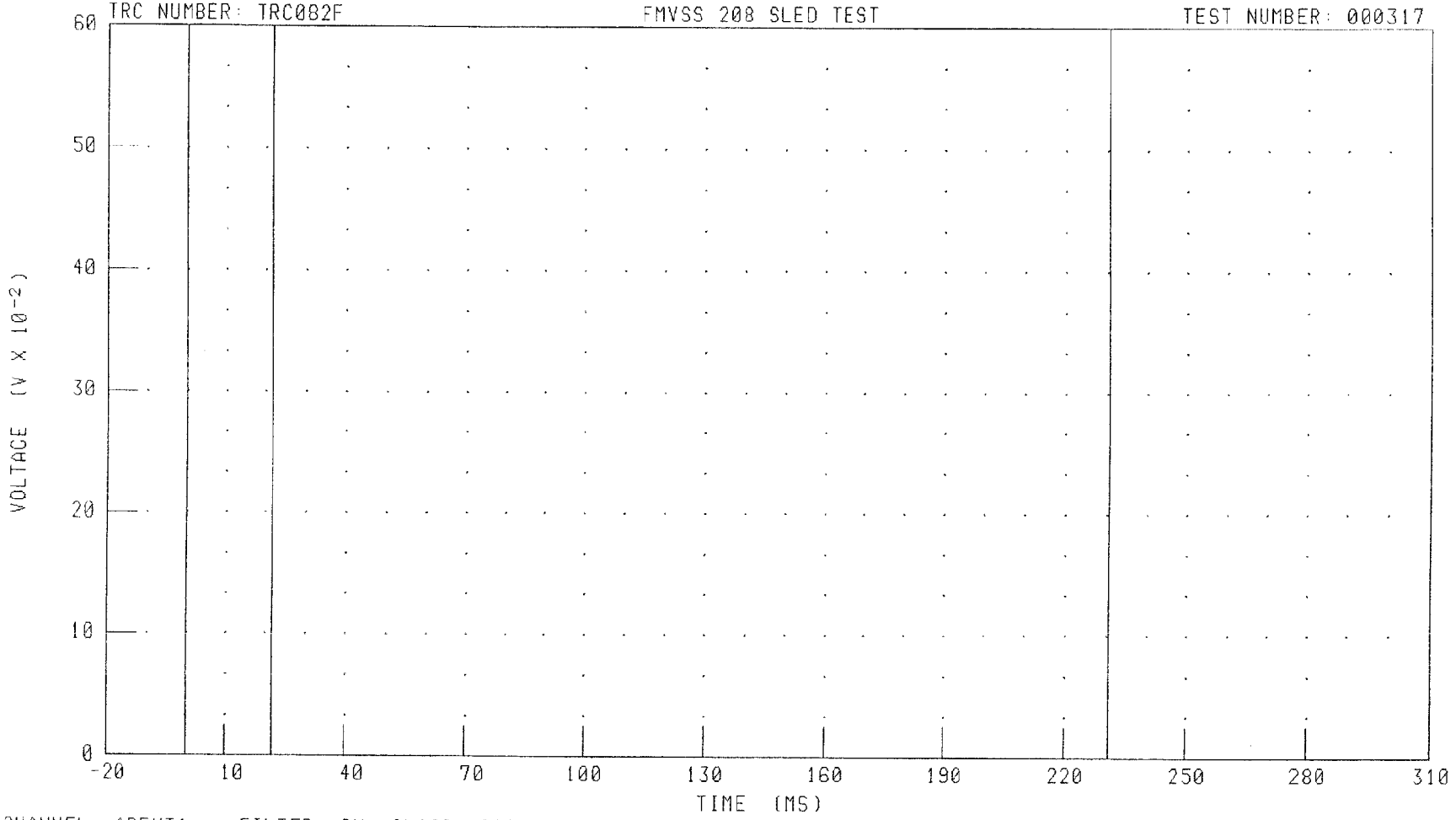
CHANNEL: SLDXVI FILTER: CH. CLASS 180

PEAK DATA: -0.01 MPH @ -20.00 MS; -30.20 MPH @ 118.88 MS

CY0204 / 2000 FORD EXPEDITION
DRIVER AIRBAG EVENT
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

TEST NUMBER: 000317



CHANNEL: ABEVT1 FILTER: CH. CLASS 1000

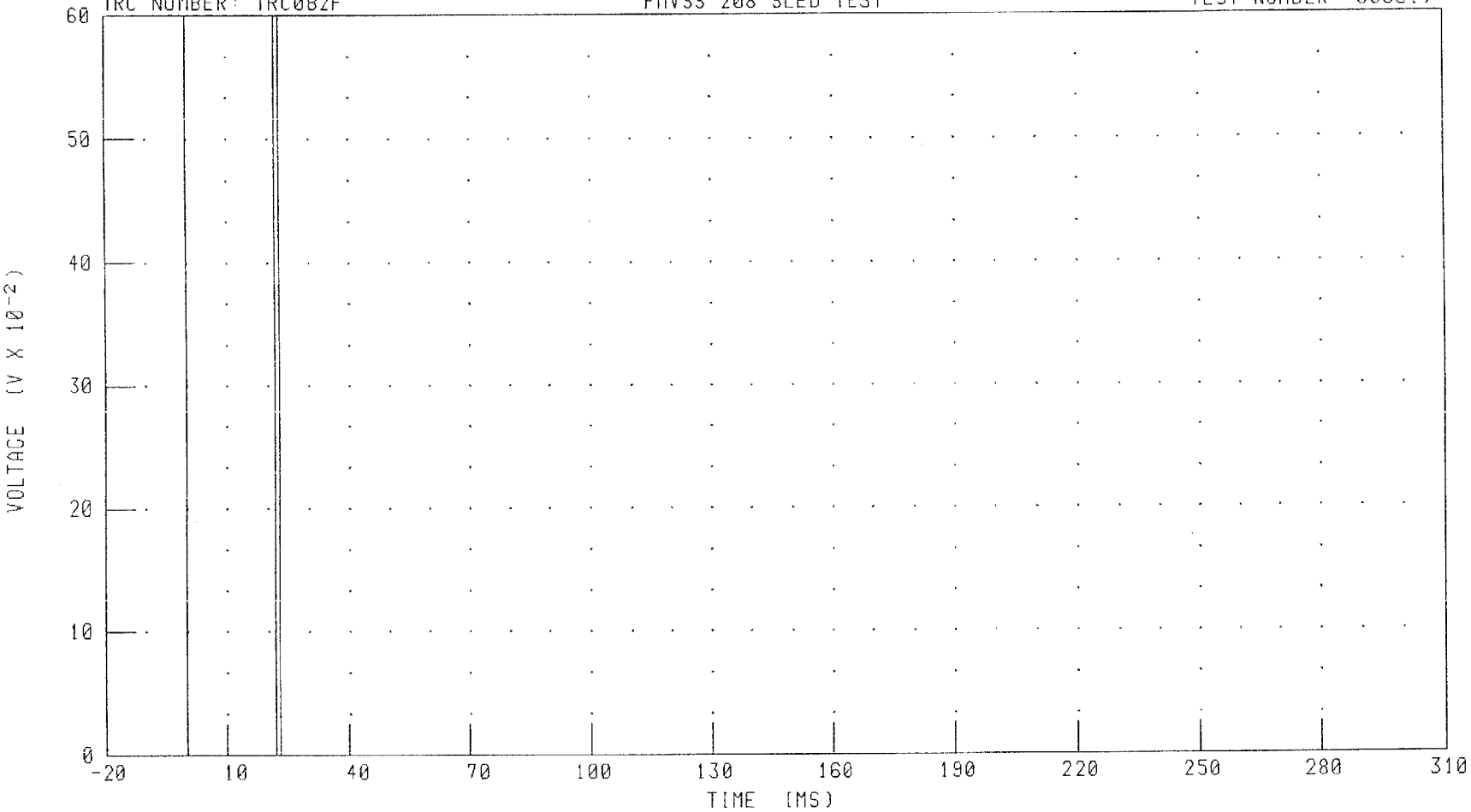
PEAK DATA: 1.00 V @ 21.84 MS; 0.00 V @ -20.00 MS

000317

CY0204 / 2000 FORD EXPEDITION
PASSENGER AIRBAG EVENT
FMVSS 208 SLED TEST

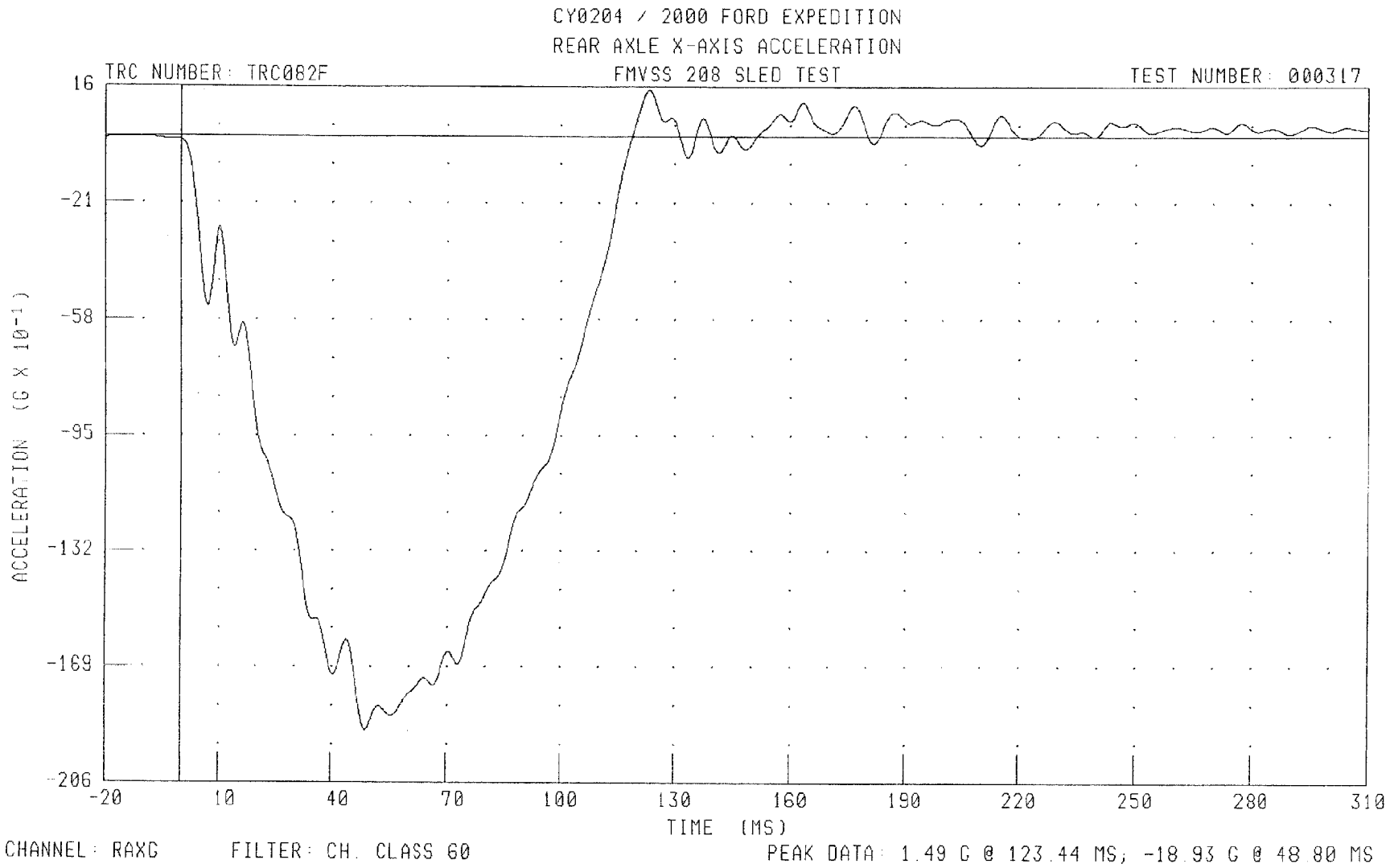
TRC NUMBER: TRC082F

TEST NUMBER: 000317

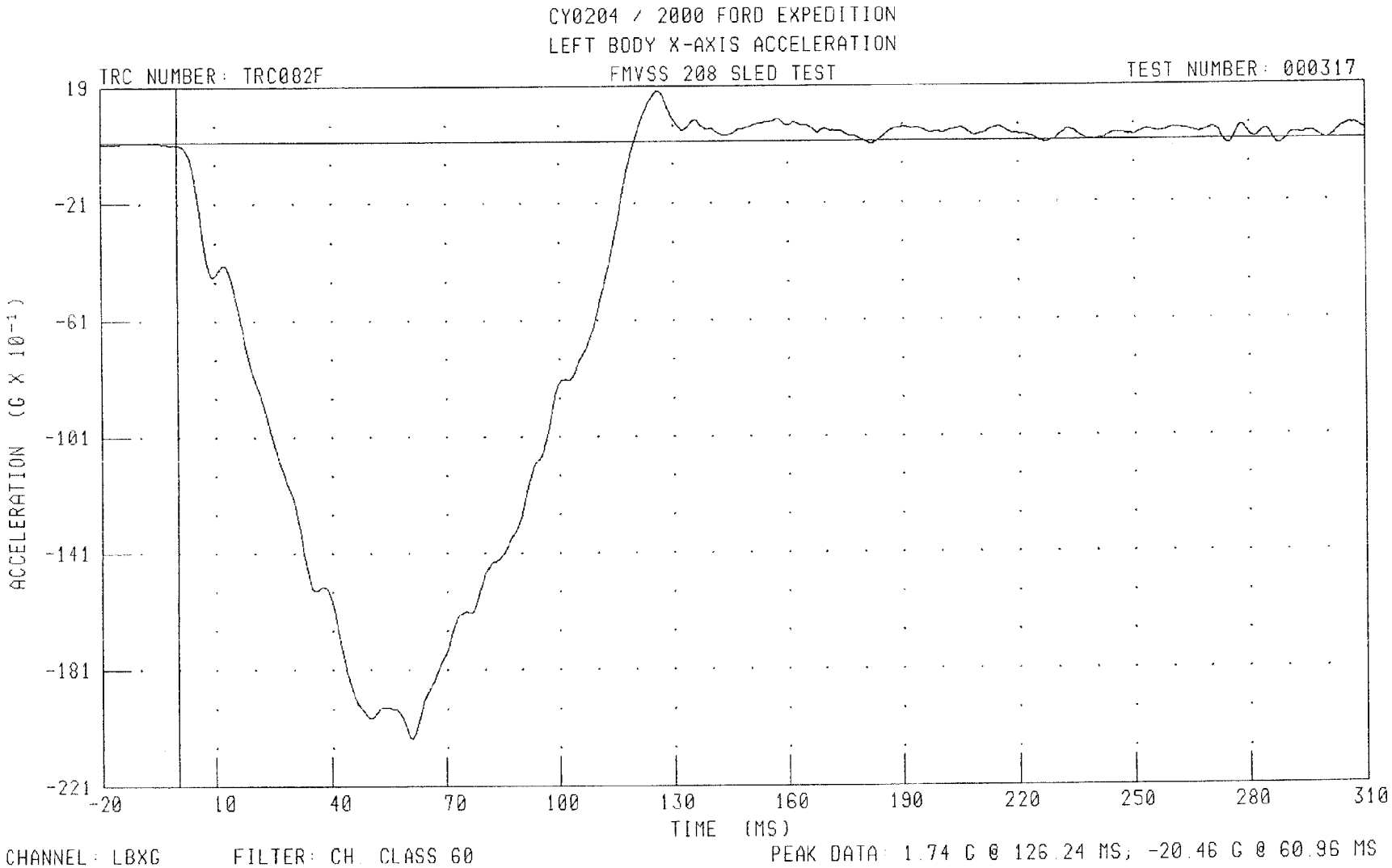


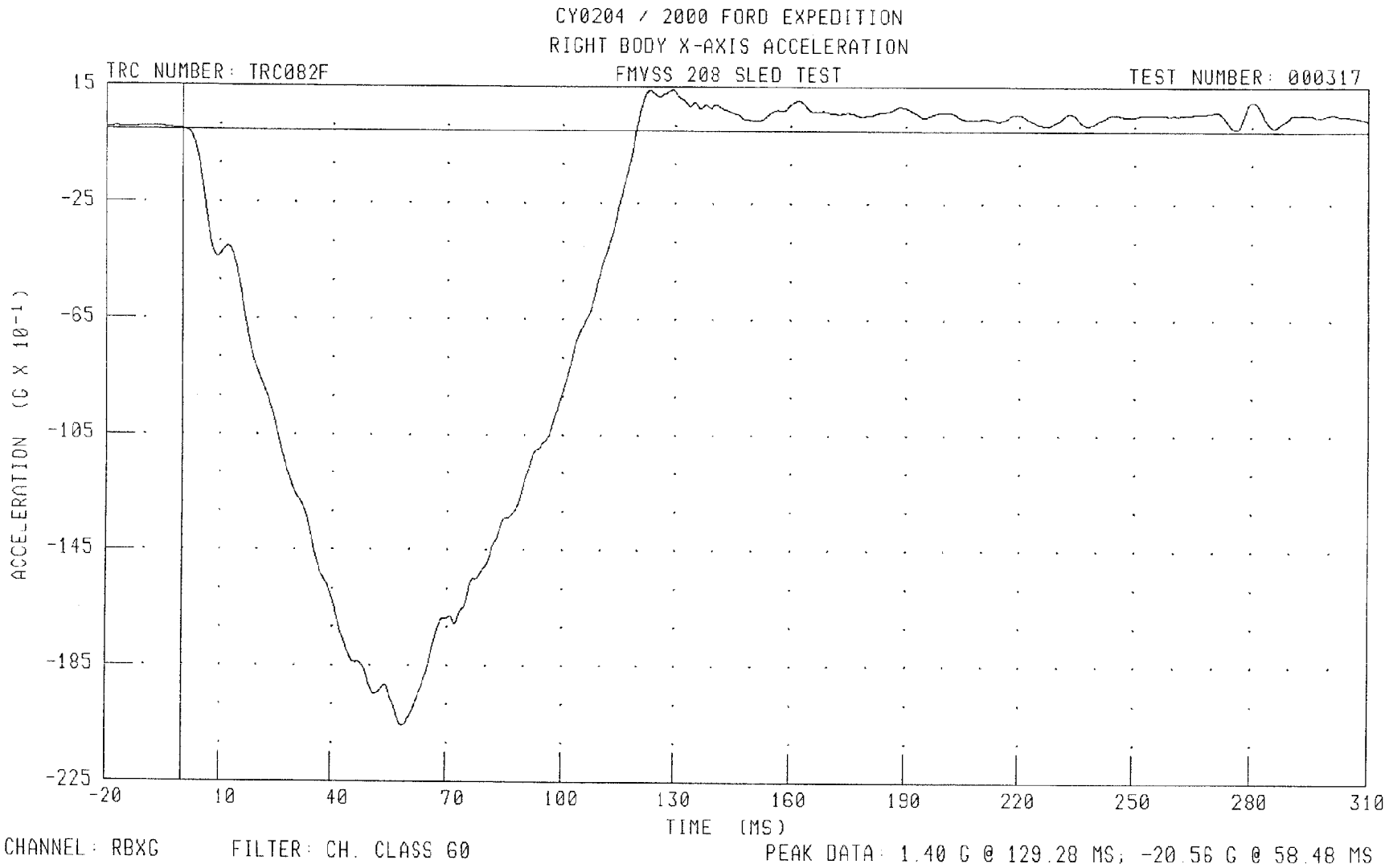
CHANNEL: ABEVT2 FILTER: CH. CLASS 1000

PEAK DATA: 1.00 V @ 21.84 MS; 0.00 V @ -20.00 MS


CY0204 / 2000 FORD EXPEDITION
REAR AXLE X-AXIS ACCELERATION
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
16
-21
-58
-95
-132
-169
-206
ACCELERATION (G X 10-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: RAXG
FILTER: CH. CLASS 60
PEAK DATA: 1.49 G @ 123.44 MS; -18.93 G @ 48.80 MS

000317


CY0204 / 2000 FORD EXPEDITION
LEFT BODY X-AXIS ACCELERATION
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
19
-21
-61
-101
-141
-181
-221
ACCELERATION (G X 10⁻¹)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: LBXG
FILTER: CH CLASS 60
PEAK DATA: 1.74 G @ 126.24 MS, -20.46 G @ 60.96 MS

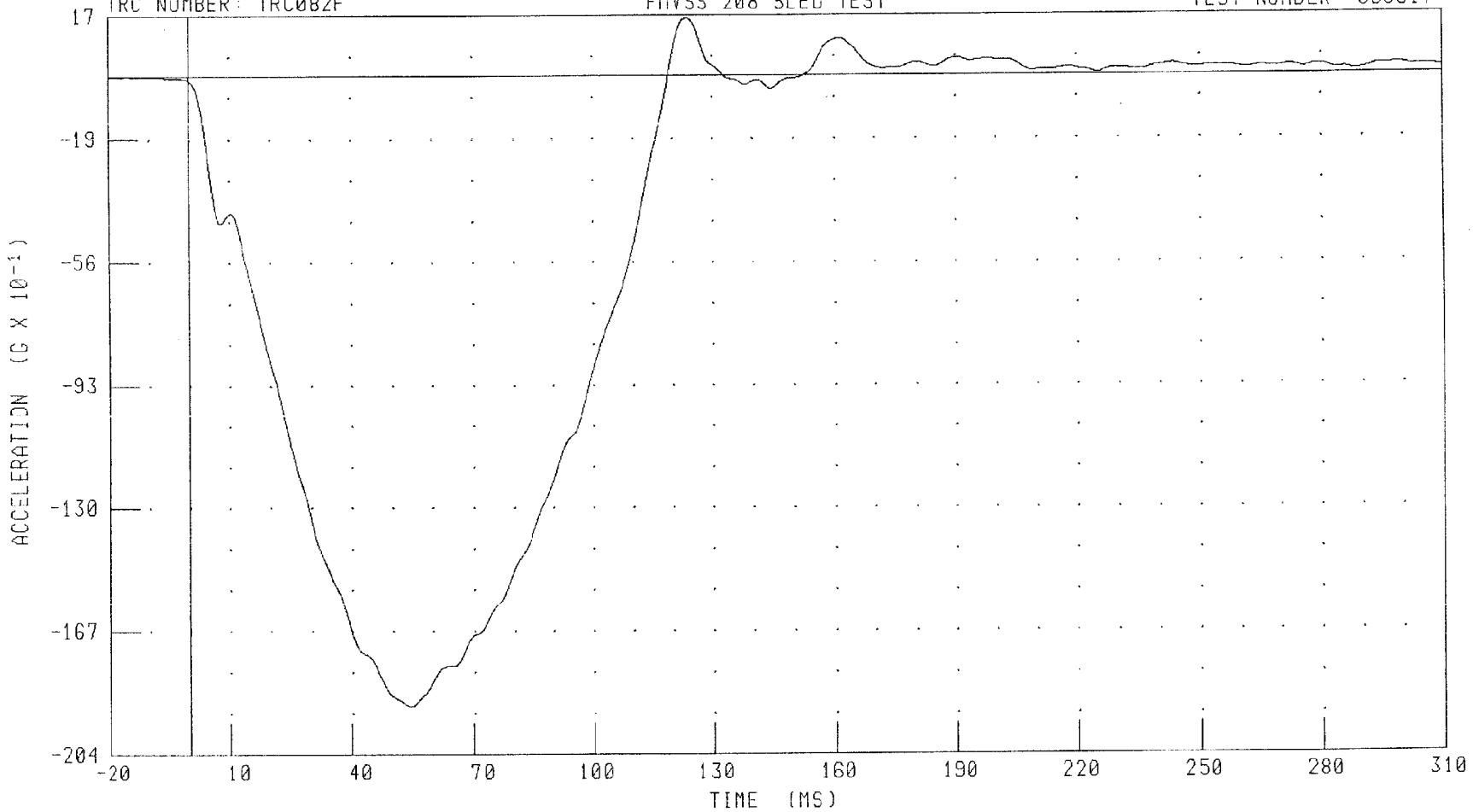

CY0204 / 2000 FORD EXPEDITION
RIGHT BODY X-AXIS ACCELERATION
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
15
-25
-65
-105
-145
-185
-225
ACCELERATION (G X 10-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: RBXG
FILTER: CH. CLASS 60
PEAK DATA: 1.40 G @ 129.28 MS; -20.56 G @ 58.48 MS

000317

CY0204 / 2000 FORD EXPEDITION
LEFT FRAME X-AXIS ACCELERATION
FMVSS 208 SLED TEST

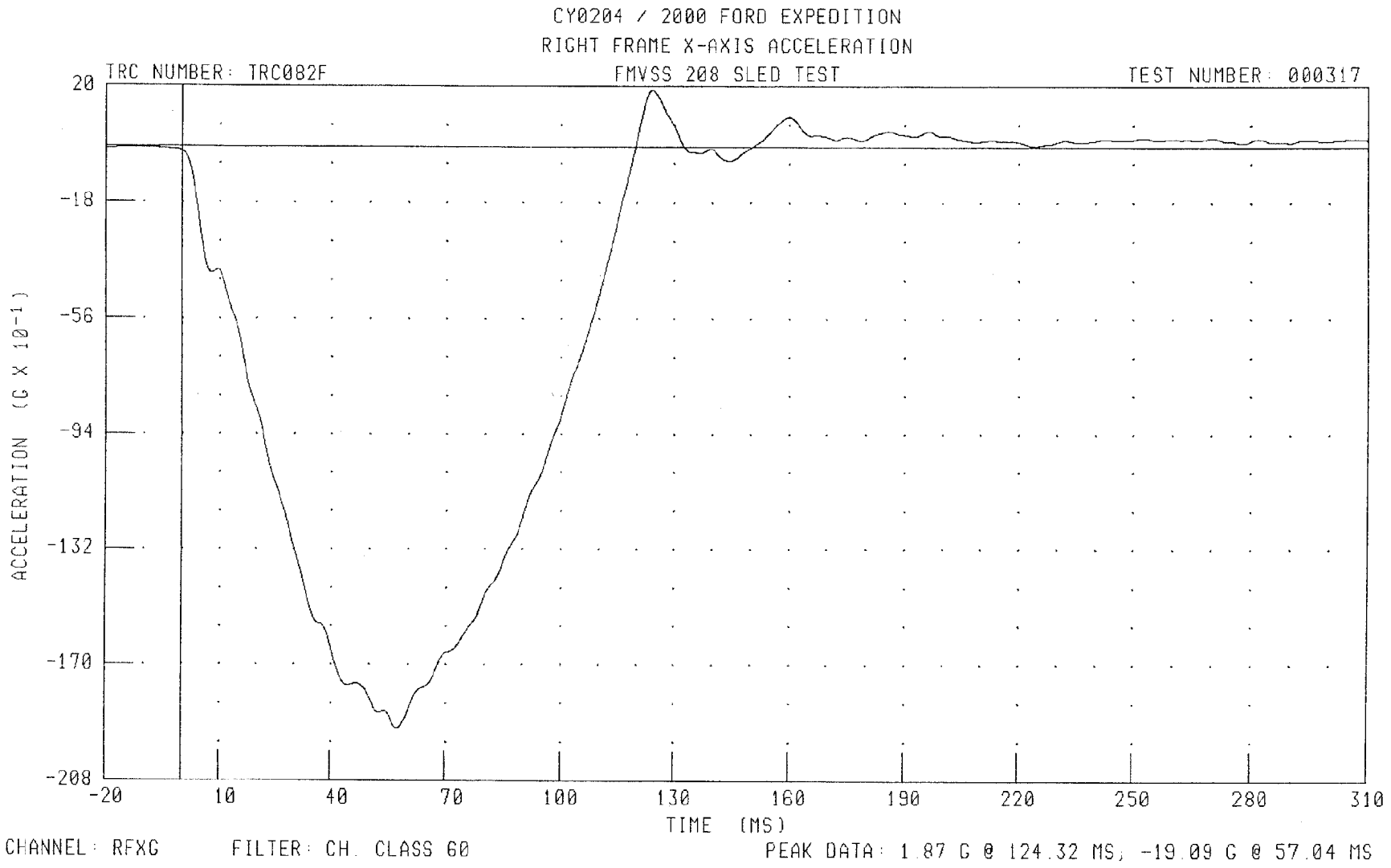
TRC NUMBER: TRC082F

TEST NUMBER: 000317



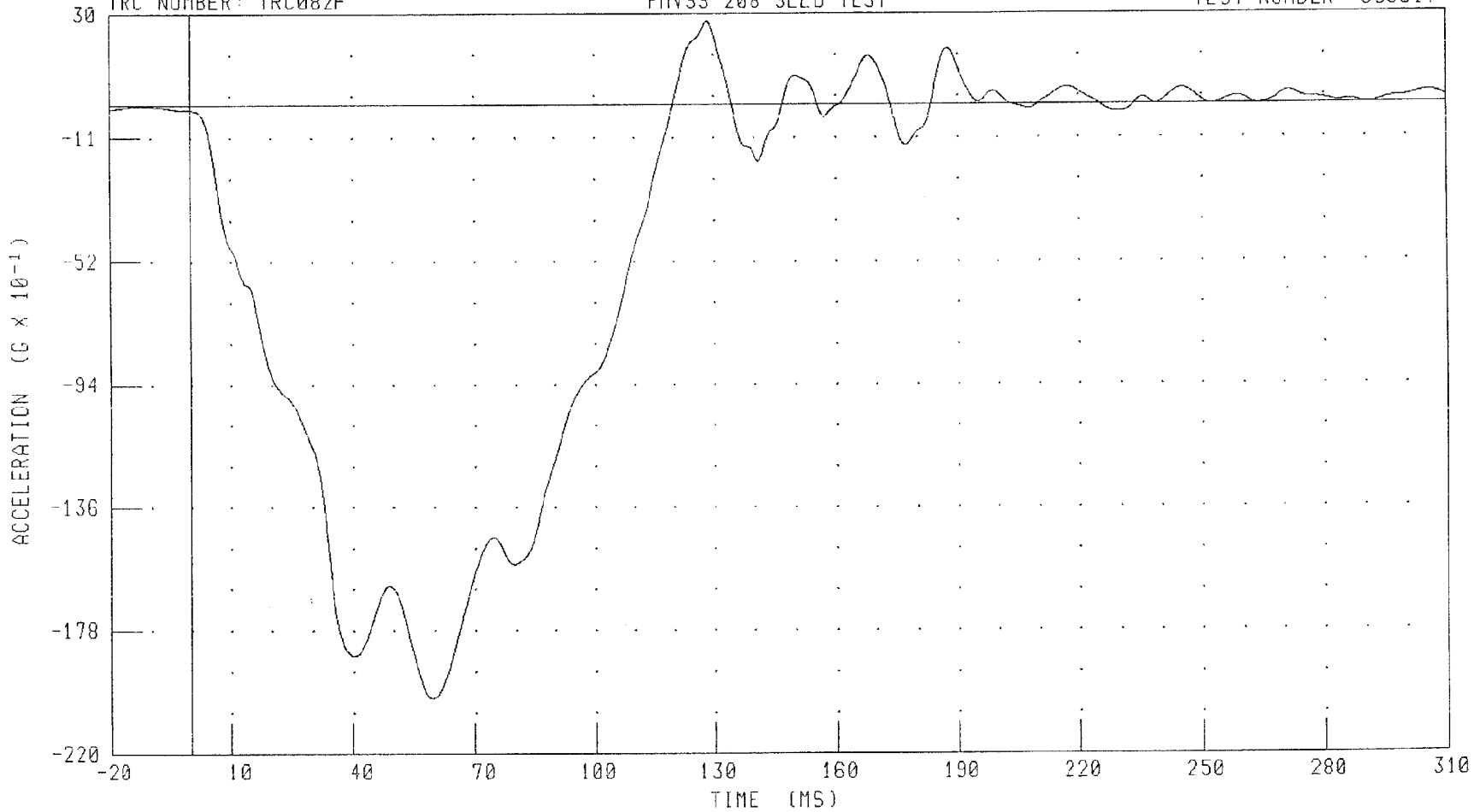
CHANNEL: LFXG FILTER: CH. CLASS 60

PEAK DATA: 1.71 G @ 123.84 MS; -18.97 G @ 54.40 MS


CY0204 / 2000 FORD EXPEDITION
RIGHT FRAME X-AXIS ACCELERATION
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
20
-18
-56
-94
-132
-170
-208
ACCELERATION (G X 10-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: RFXG
FILTER: CH. CLASS 60
PEAK DATA: 1.87 G @ 124.32 MS, -19.09 G @ 57.04 MS

CY0204 / 2000 FORD EXPEDITION
BOTTOM ENGINE X-AXIS ACCELERATION
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F TEST NUMBER: 000317



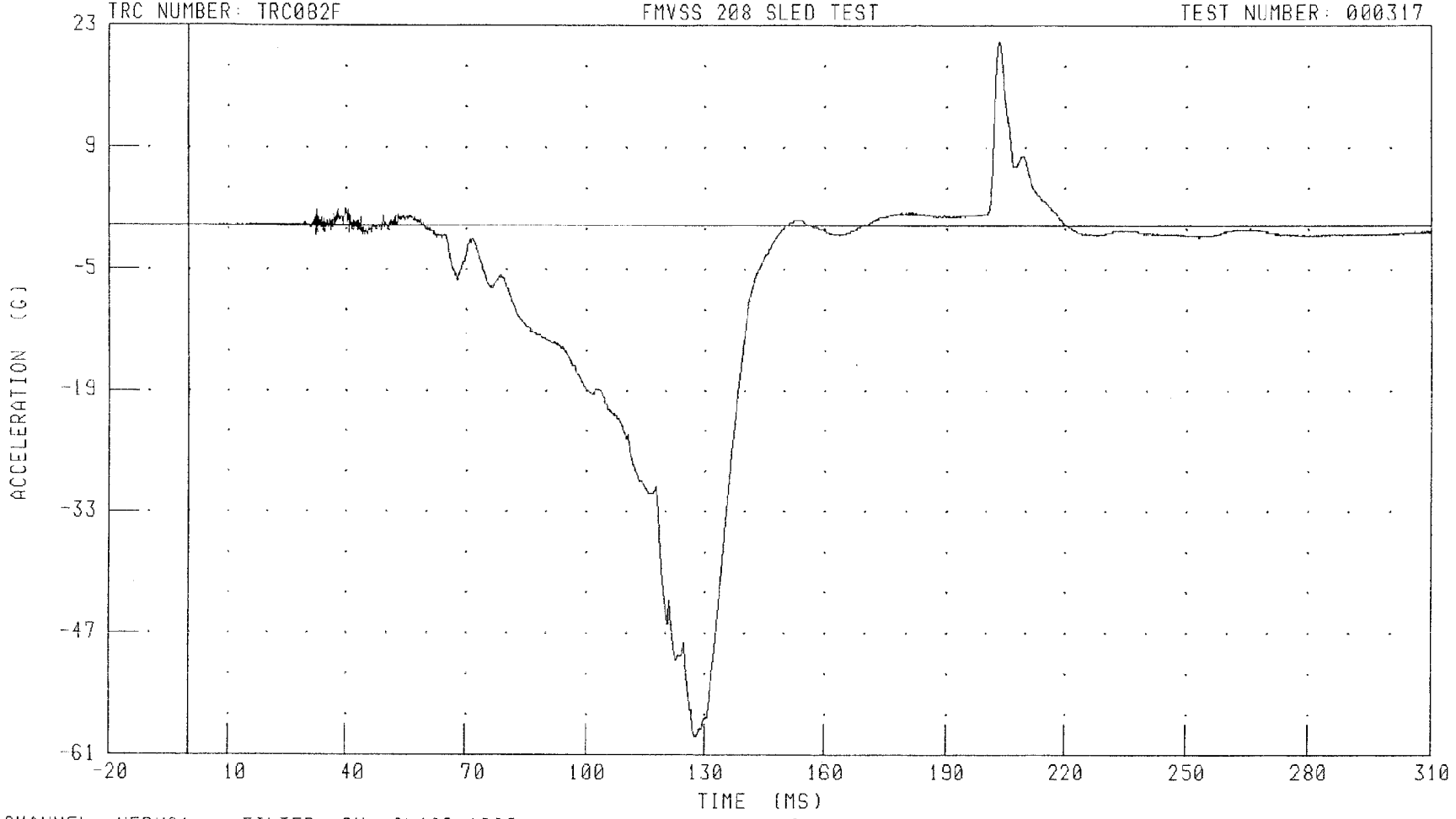
CHANNEL: BEXG FILTER: CH. CLASS 60 PEAK DATA: 2.85 G @ 128.64 MS, -20.20 G @ 59.44 MS

000317

CY0204 / 2000 FORD EXPEDITION
DRIVER HEAD X-AXIS ACCELERATION
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

TEST NUMBER: 000317

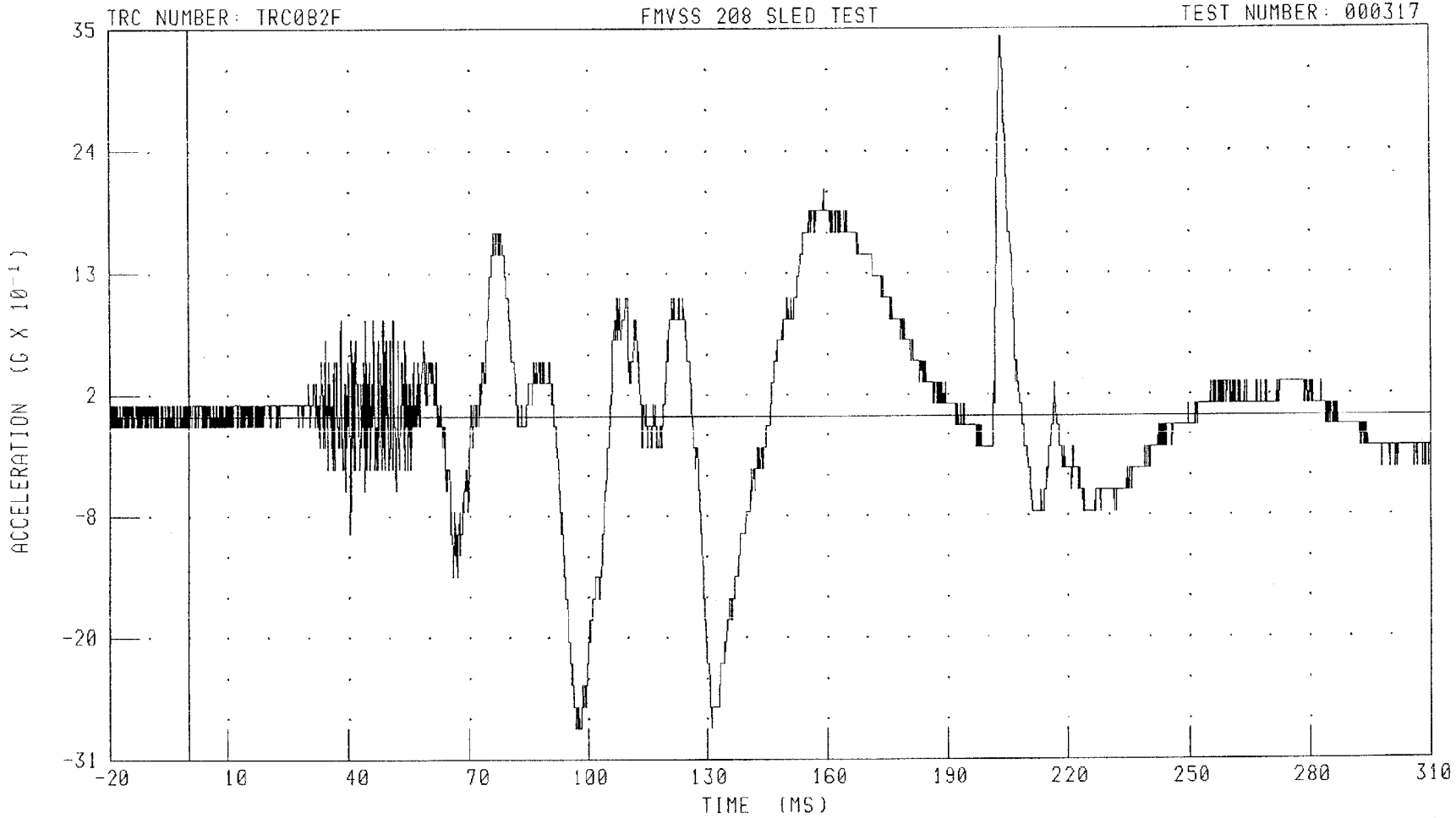


CHANNEL: HEDXC1 FILTER: CH. CLASS 1000

PEAK DATA: 21.12 G @ 203.44 MS, -58.88 G @ 127.52 MS

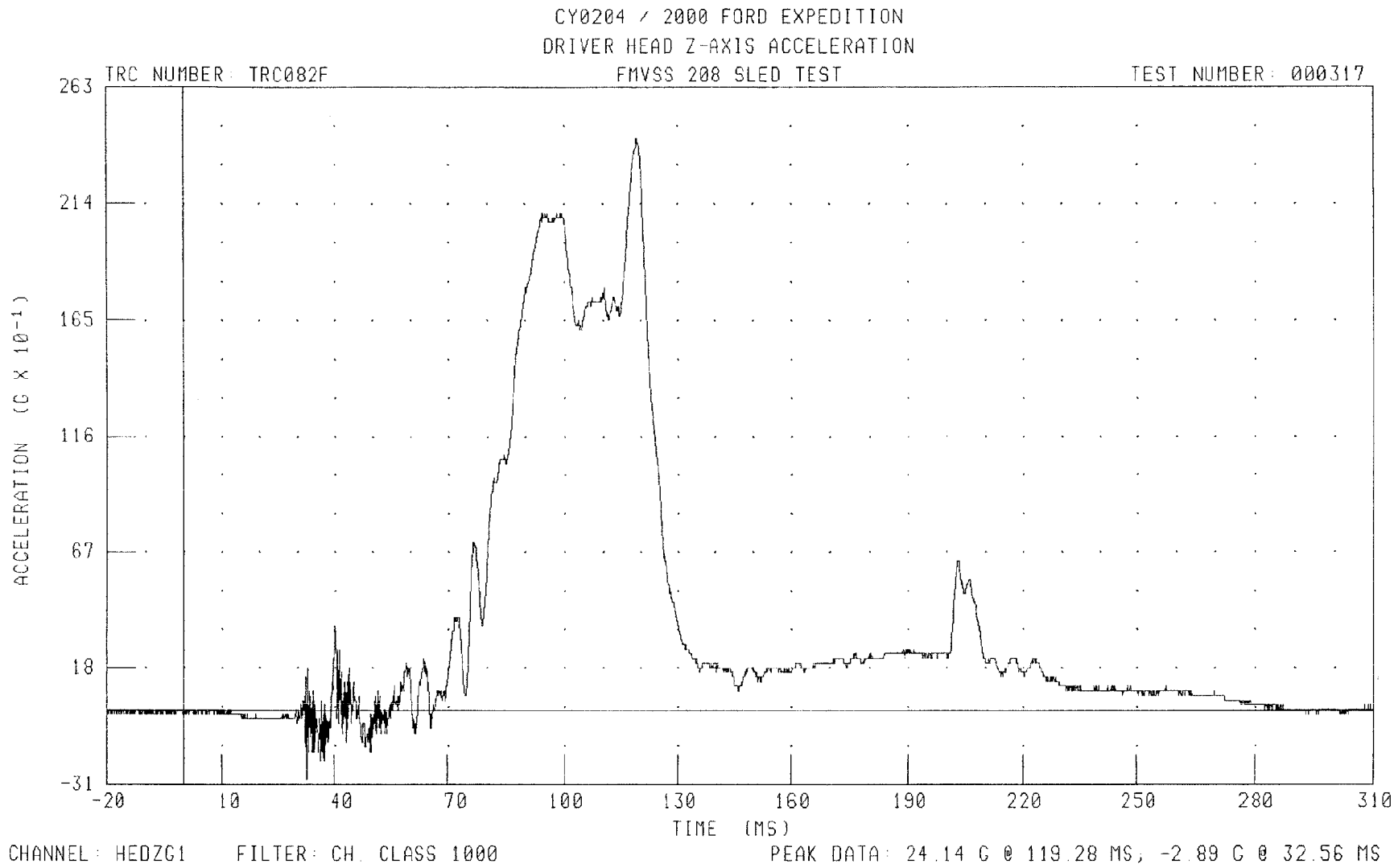
000317

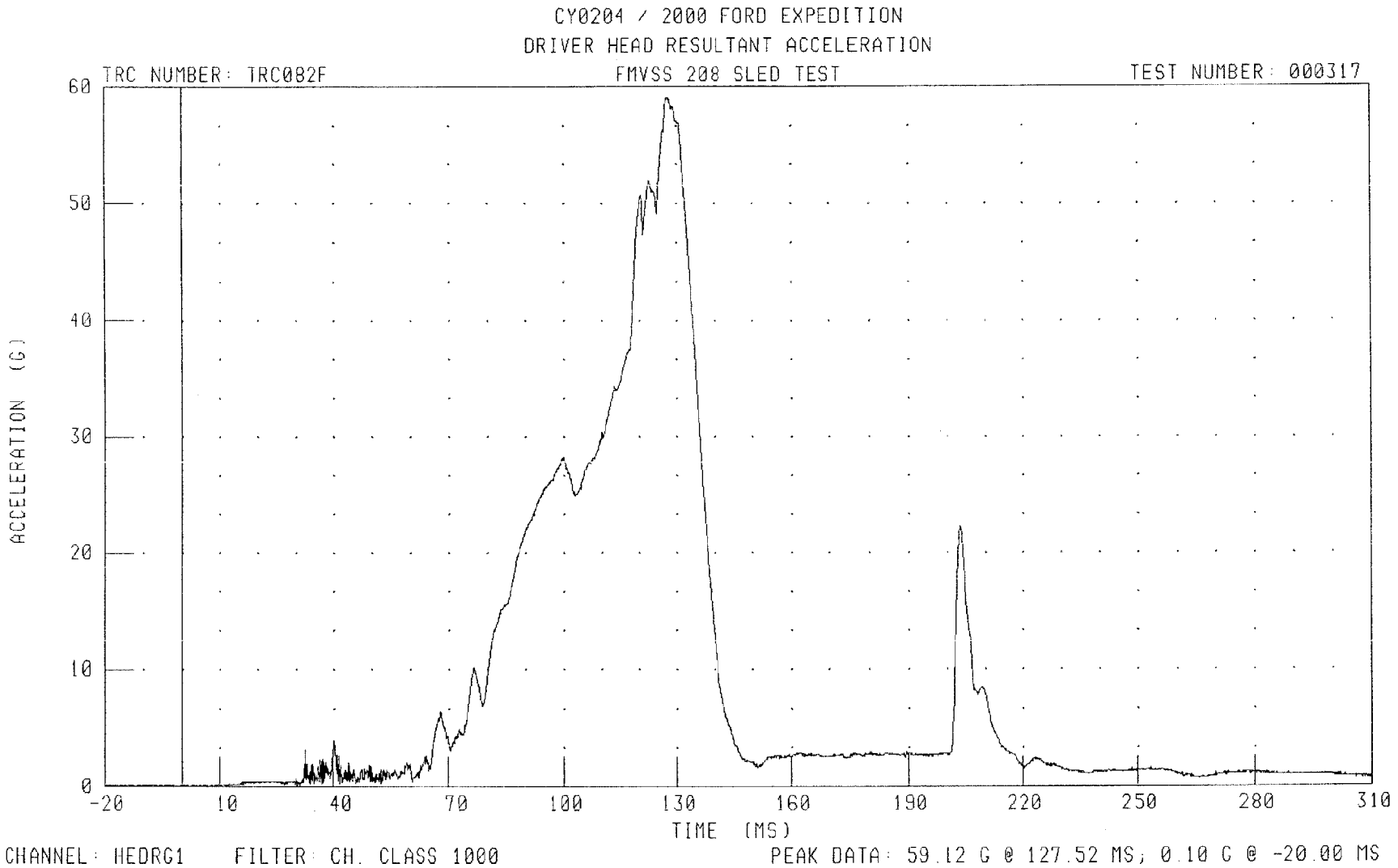
CY0204 / 2000 FORD EXPEDITION
DRIVER HEAD Y-AXIS ACCELERATION
TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317

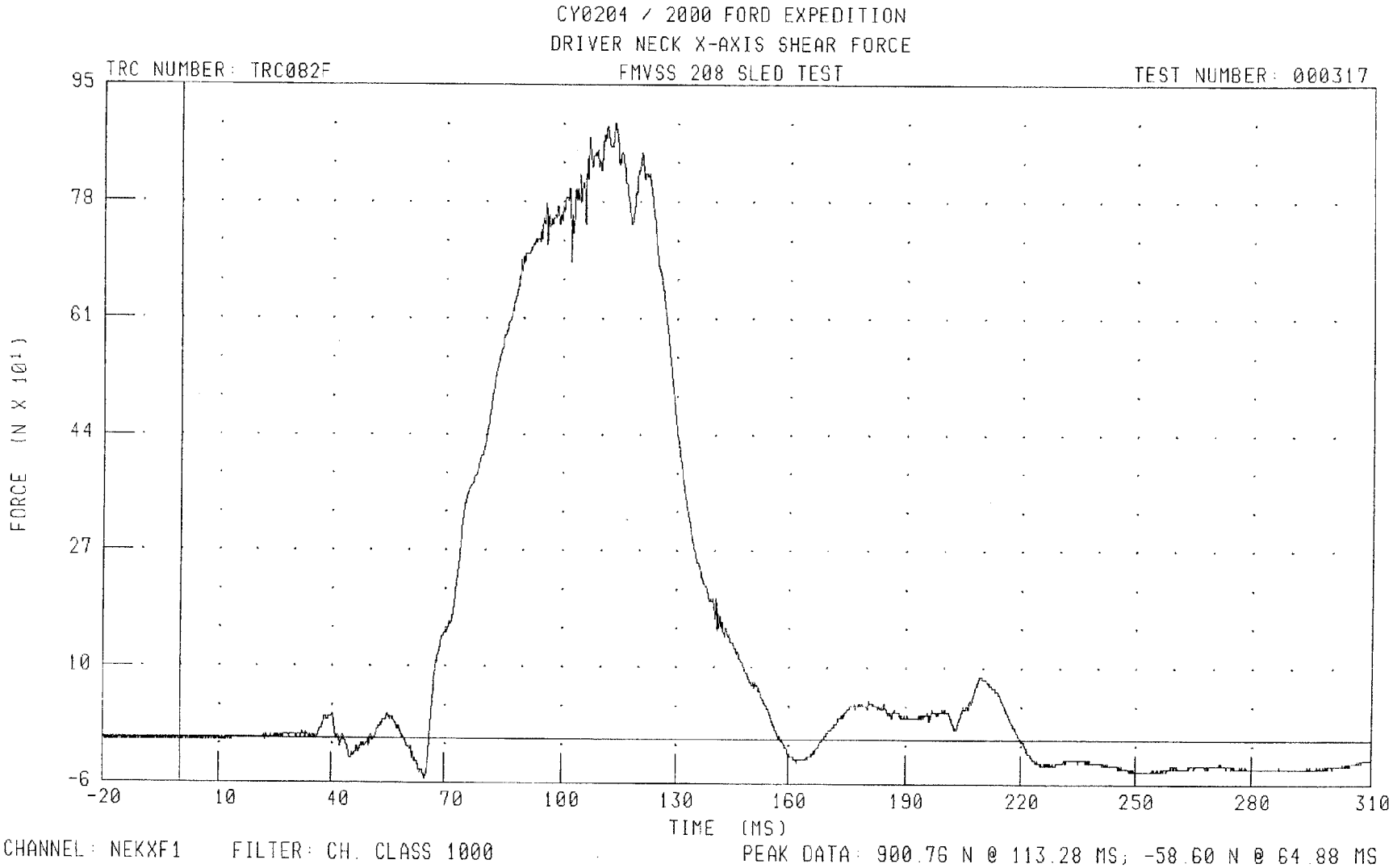


CHANNEL: HEDYG1 FILTER: CH. CLASS 1000 PEAK DATA: 3.43 G @ 203.60 MS, -2.82 G @ 96.88 MS

000317


CY0204 / 2000 FORD EXPEDITION
DRIVER HEAD Z-AXIS ACCELERATION
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
263
214
165
116
67
18
-31
ACCELERATION (G X 10-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: HEDZG1
FILTER: CH. CLASS 1000
PEAK DATA: 24.14 G @ 119.28 MS, -2.89 G @ 32.56 MS

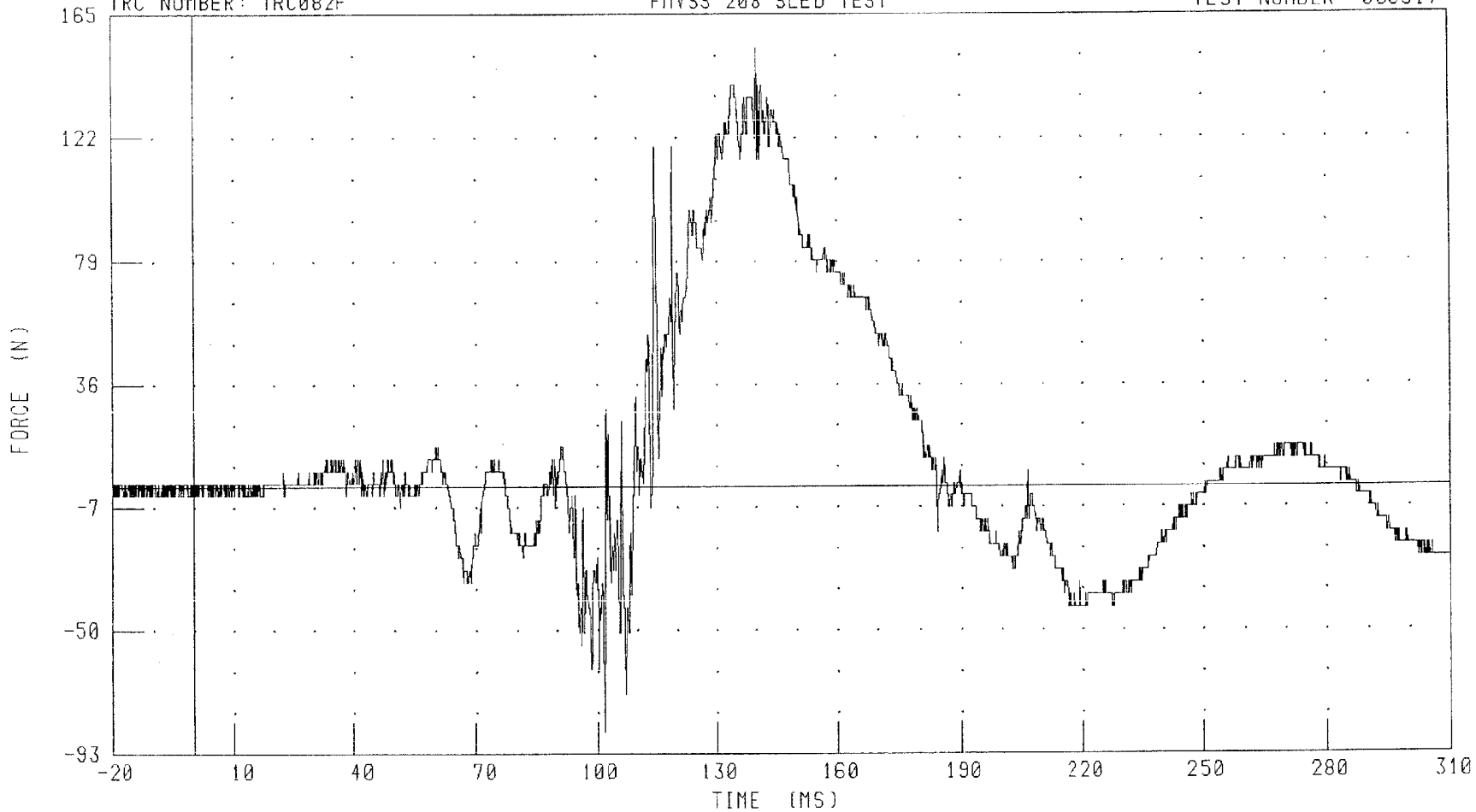

CY0204 / 2000 FORD EXPEDITION
DRIVER HEAD RESULTANT ACCELERATION
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
ACCELERATION (G)
60
50
40
30
20
10
0
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: HEDRG1
FILTER: CH. CLASS 1000
PEAK DATA: 59.12 G @ 127.52 MS; 0.10 G @ -20.00 MS


CY0204 / 2000 FORD EXPEDITION
DRIVER NECK X-AXIS SHEAR FORCE
FMVSS 208 SLED TEST
TRC NUMBER: TRC082F
TEST NUMBER: 000317
95
78
61
44
27
10
-6
FORCE (N X 10¹)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: NEKXF1
FILTER: CH. CLASS 1000
PEAK DATA: 900.76 N @ 113.28 MS; -58.60 N @ 64.88 MS

CY0201 / 2000 FORD EXPEDITION
DRIVER NECK Y-AXIS SHEAR FORCE
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

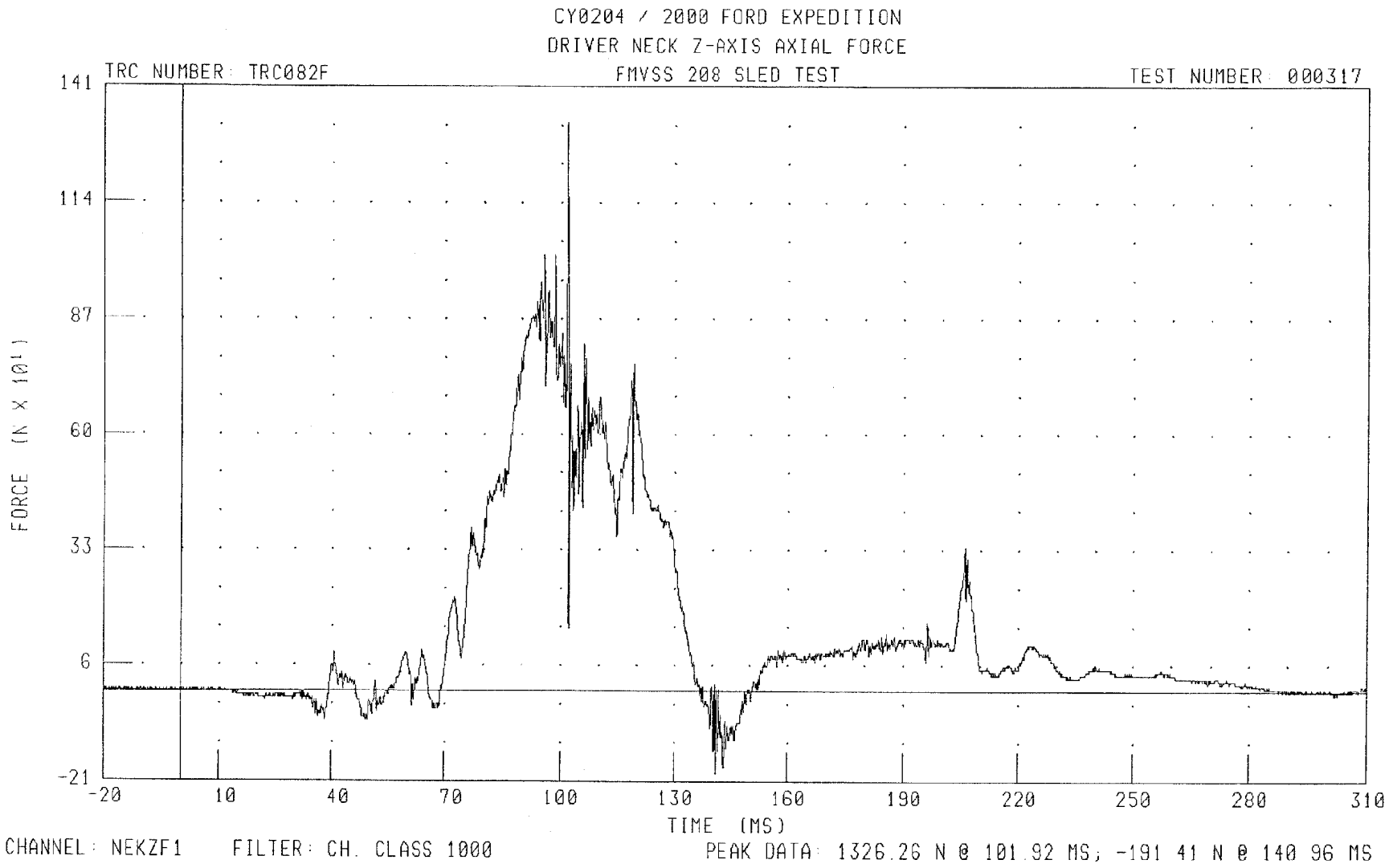
TEST NUMBER: 000317



CHANNEL: NEKYF1 FILTER: CH. CLASS 1000

PEAK DATA: 153.43 N @ 140.48 MS; -85.42 N @ 101.92 MS

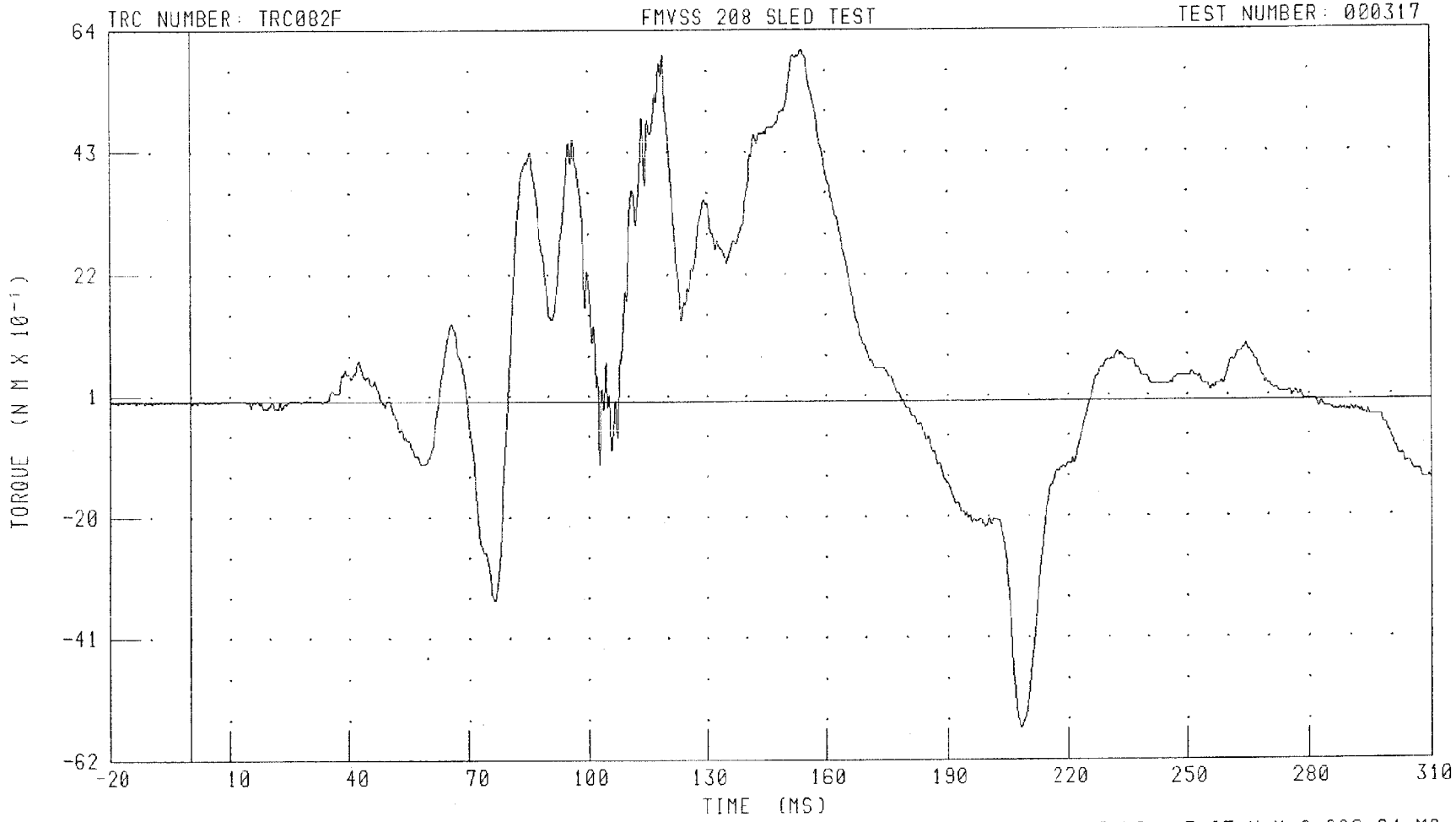
000317


CY0204 / 2000 FORD EXPEDITION
DRIVER NECK Z-AXIS AXIAL FORCE
FMVSS 208 SLED TEST
TRC NUMBER: TRC082F
TEST NUMBER: 000317
141
114
87
60
33
6
-21
FORCE (N X 10¹)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: NEKZF1
FILTER: CH. CLASS 1000
PEAK DATA: 1326.26 N @ 101.92 MS; -191.41 N @ 140.96 MS

CY0204 / 2000 FORD EXPEDITION
DRIVER NECK MOMENT ABOUT X AXIS
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

TEST NUMBER: 000317



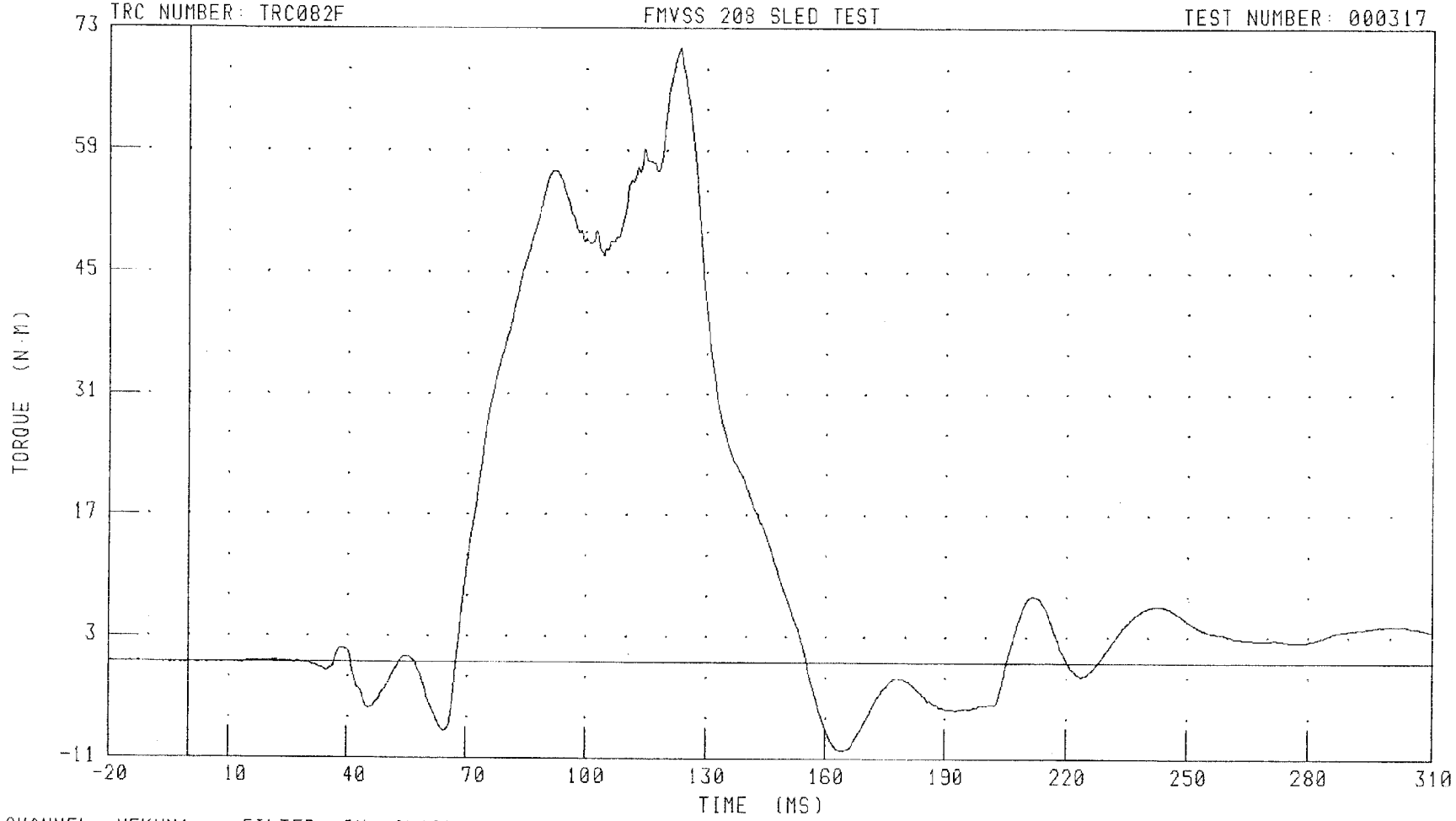
CHANNEL: NEKXM1 FILTER: CH. CLASS 600

PEAK DATA: 6.05 N-M @ 154.48 MS; -5.65 N-M @ 208.24 MS

CY0204 / 2000 FORD EXPEDITION
DRIVER NECK MOMENT ABOUT Y AXIS
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

TEST NUMBER: 000317



CHANNEL: NEKYM1 FILTER: CH. CLASS 600

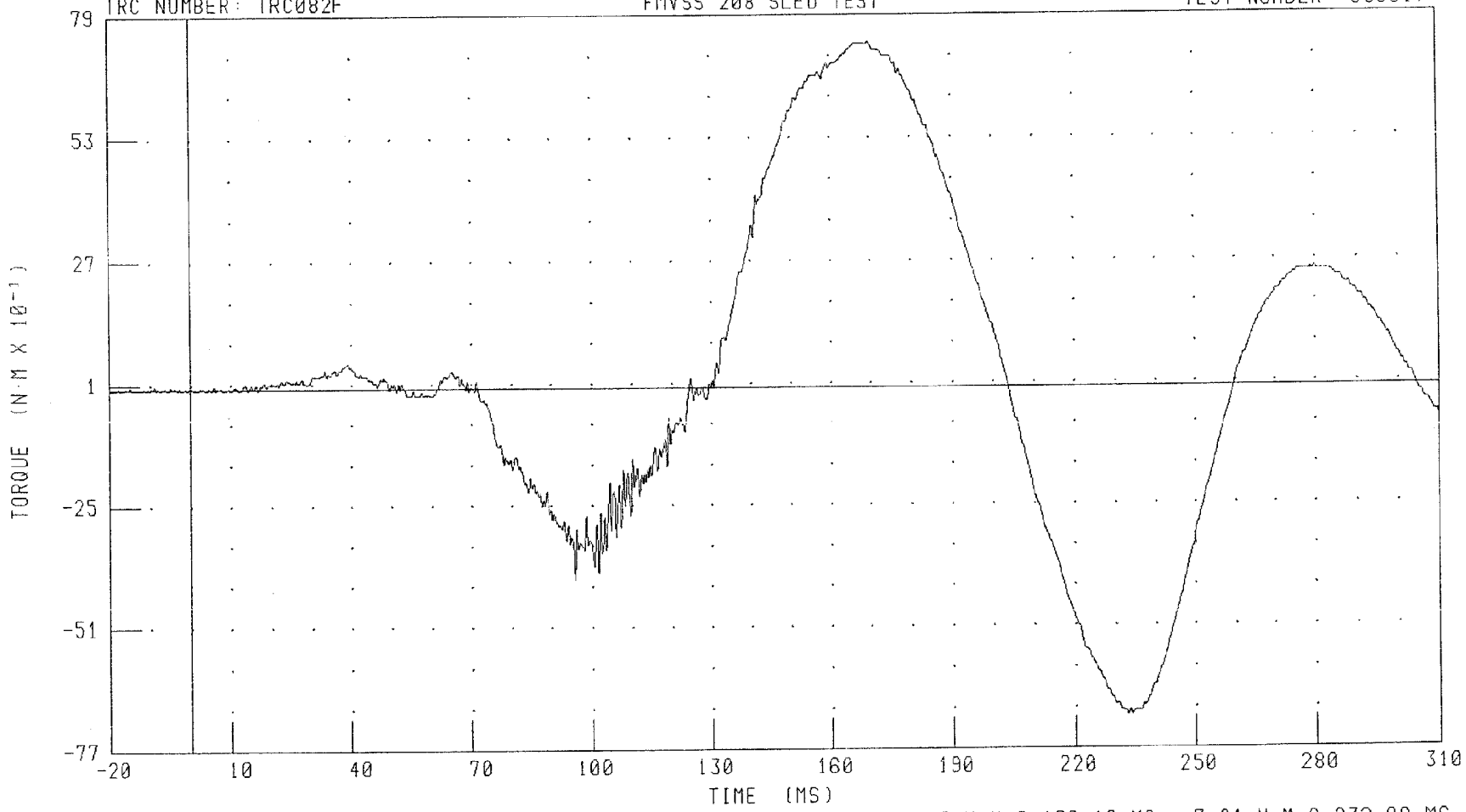
PEAK DATA: 70.77 N·M @ 123.44 MS; -10.12 N·M @ 164.24 MS

000317

CY0204 / 2000 FORD EXPEDITION
DRIVER NECK MOMENT ABOUT Z AXIS
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

TEST NUMBER: 000317

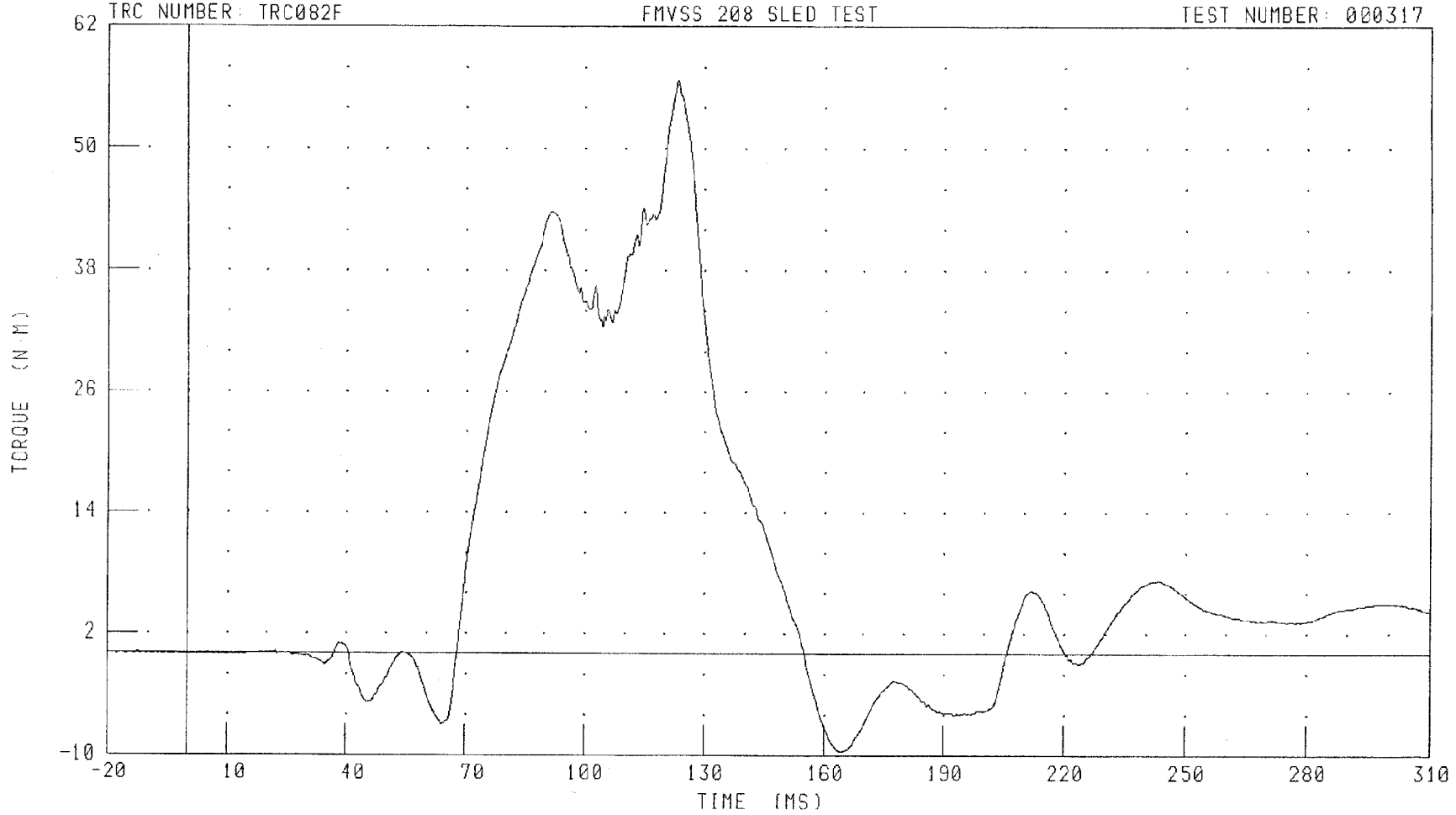


CHANNEL: NEKZM1 FILTER: CH. CLASS 600

PEAK DATA: 7.32 N·M @ 170.16 MS; -7.01 N·M @ 232.88 MS

CY0204 / 2000 FORD EXPEDITION
DRIVER NECK MOMENT ABOUT Y AXIS OCCIPITAL CONDYLE

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317



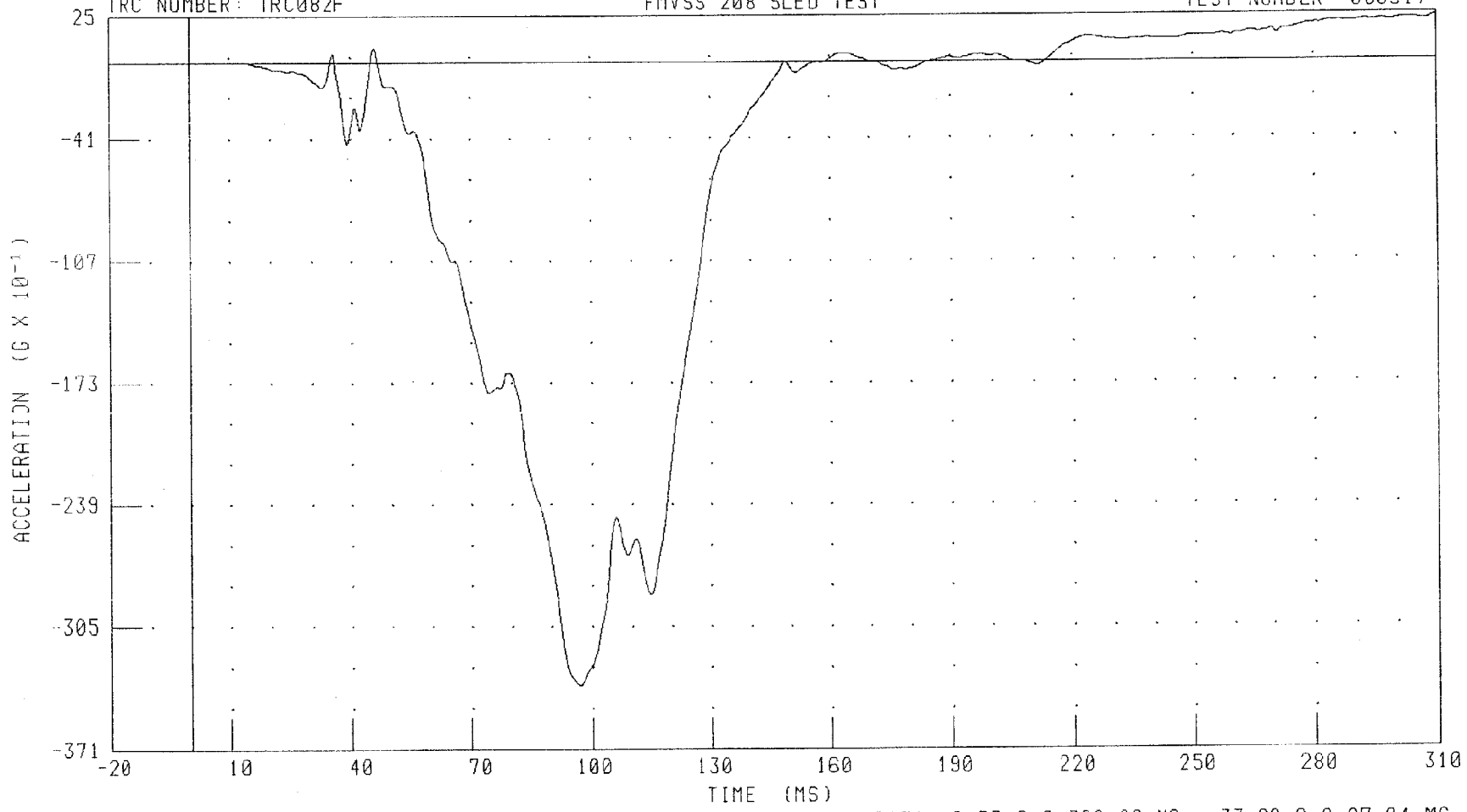
CHANNEL: NEKOM1 FILTER: CH. CLASS 600 PEAK DATA: 56.79 N-M @ 123.52 MS; -9.61 N-M @ 164.24 MS

000317

CY0204 / 2000 FORD EXPEDITION
DRIVER CHEST X-AXIS ACCELERATION
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

TEST NUMBER: 000317



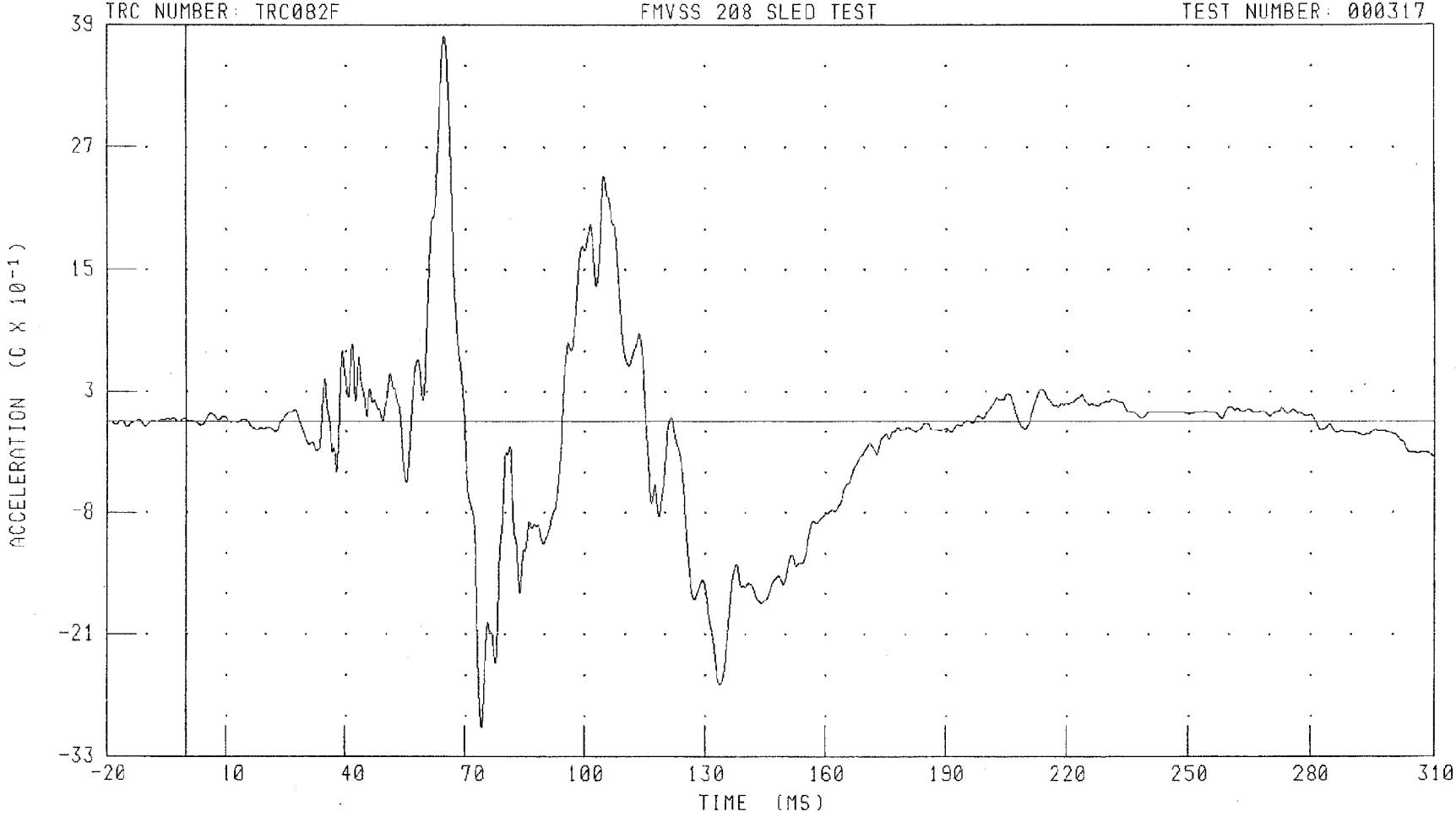
CHANNEL: CSTXC1 FILTER: CH. CLASS 180

PEAK DATA: 2.33 G @ 309.92 MS; -33.69 G @ 97.04 MS

000317

CY0204 / 2000 FORD EXPEDITION
DRIVER CHEST Y-AXIS ACCELERATION

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317

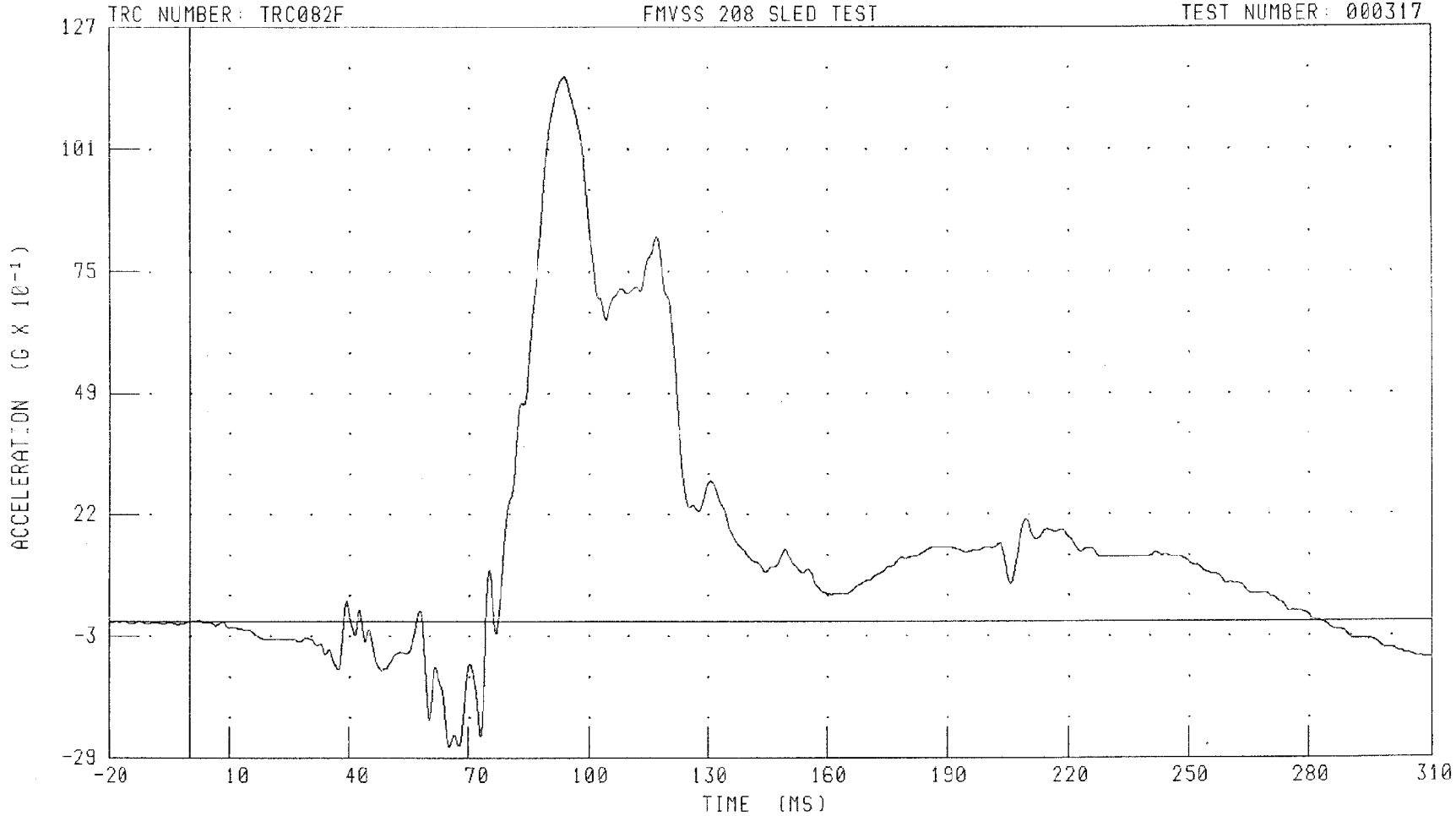


CHANNEL: CSTYC1 FILTER: CH. CLASS 180 PEAK DATA: 3.79 G @ 64.80 MS; -3.02 G @ 74.16 MS

CY0204 / 2000 FORD EXPEDITION
DRIVER CHEST Z-AXIS ACCELERATION
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

TEST NUMBER: 000317



CHANNEL: CSTZG1 FILTER: CH. CLASS 180

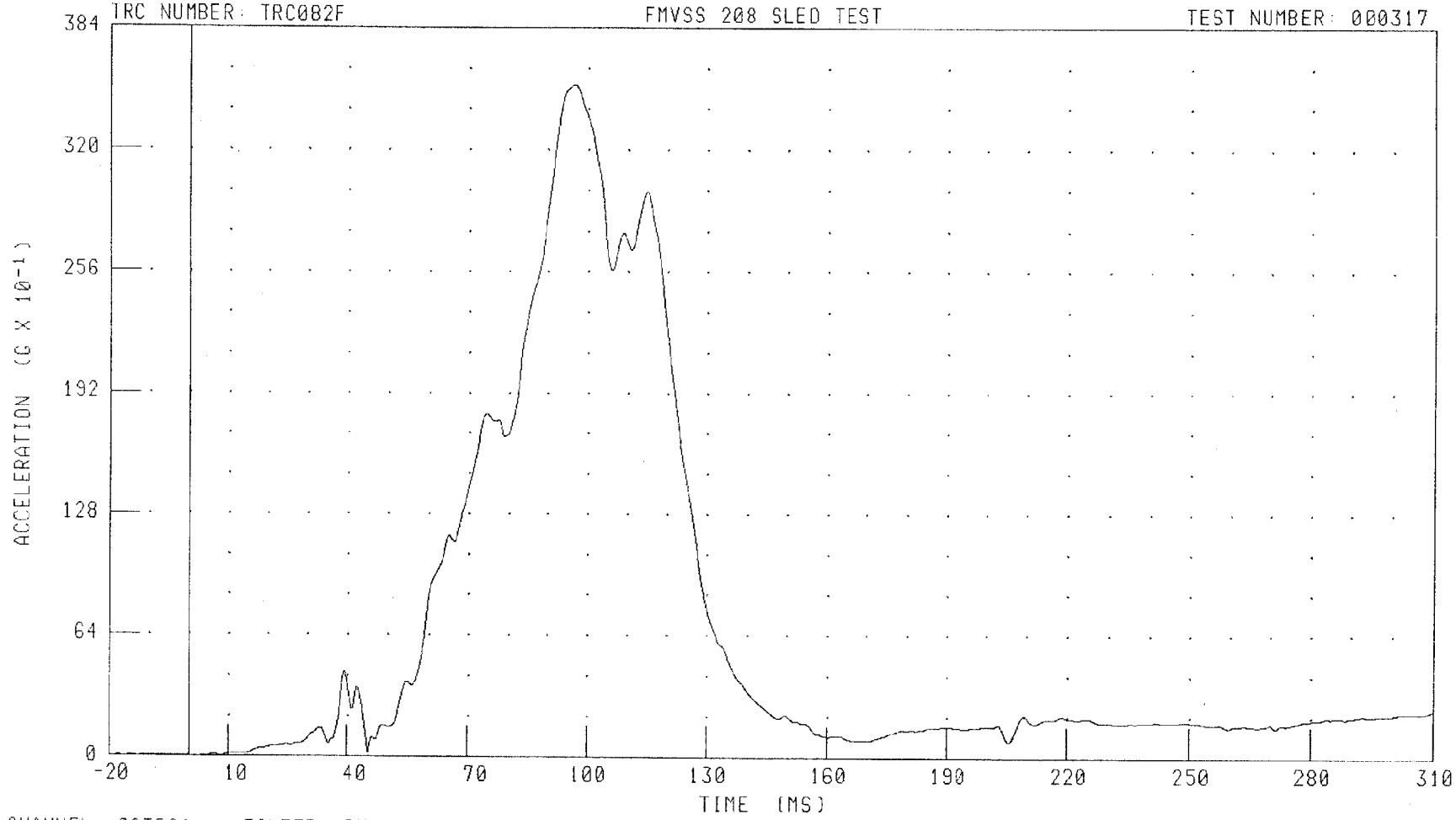
PEAK DATA: 11.64 G @ 94.16 MS; -2.66 G @ 65.20 MS

000317

CY0204 / 2000 FORD EXPEDITION
DRIVER CHEST RESULTANT ACCELERATION
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

TEST NUMBER: 000317



CHANNEL: CSTRG1 FILTER: CH. CLASS 180

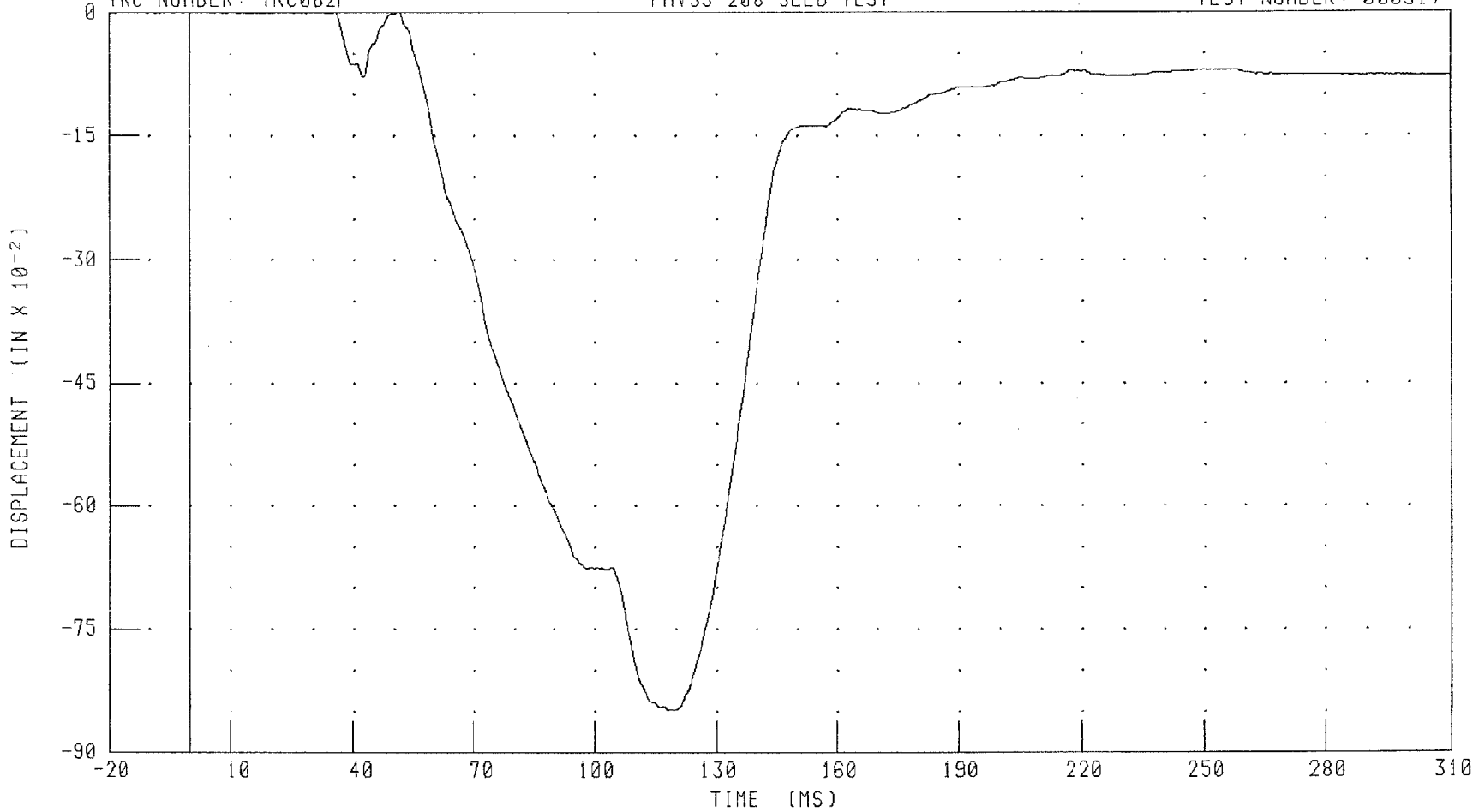
PEAK DATA: 35.40 G @ 96.80 MS; 0.01 G @ -18.80 MS

000317

CY0204 / 2000 FORD EXPEDITION
DRIVER CHEST DEFLECTION
FMVSS 208 SLED TEST

TRC NUMBER: TRC082F

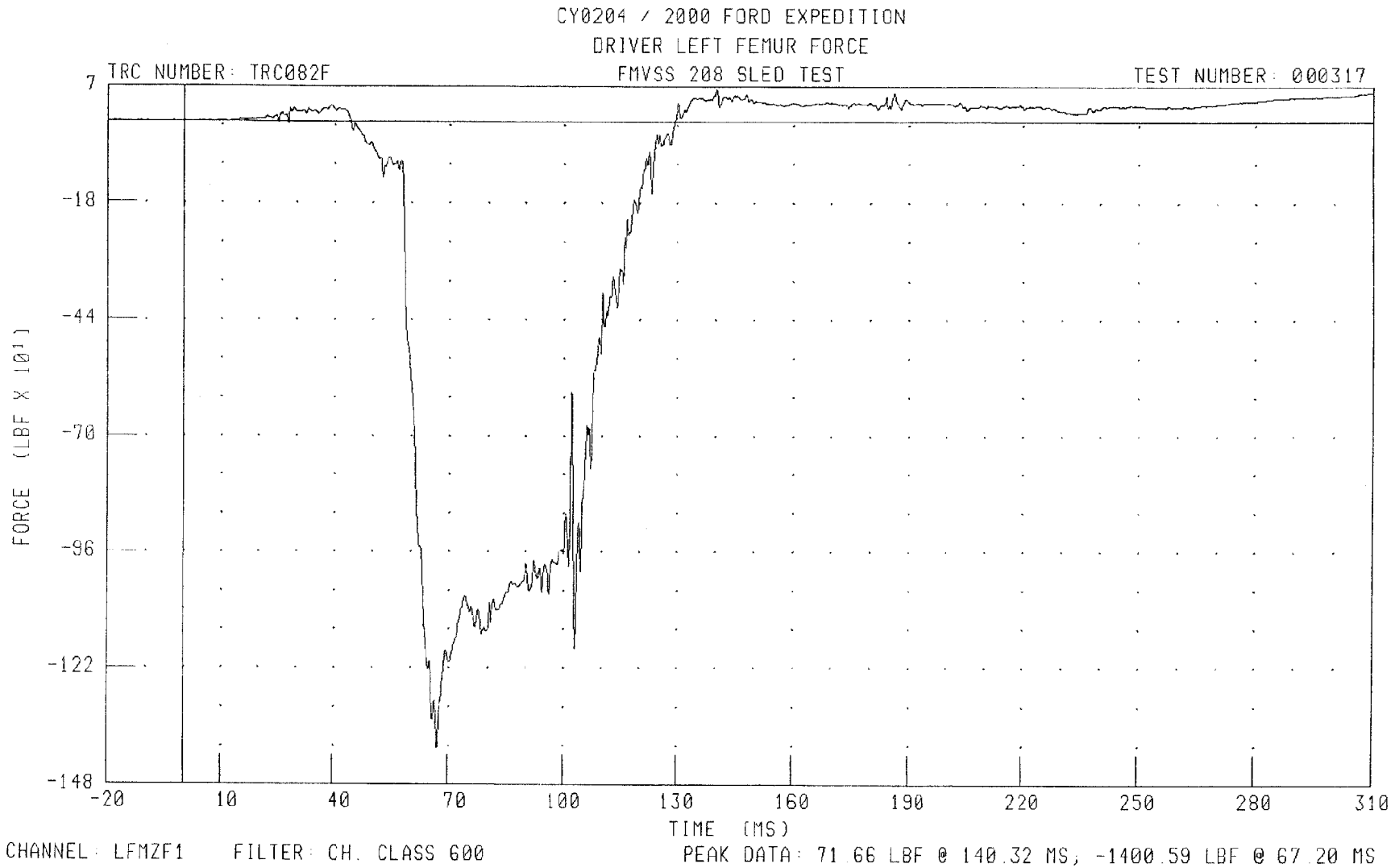
TEST NUMBER: 000317



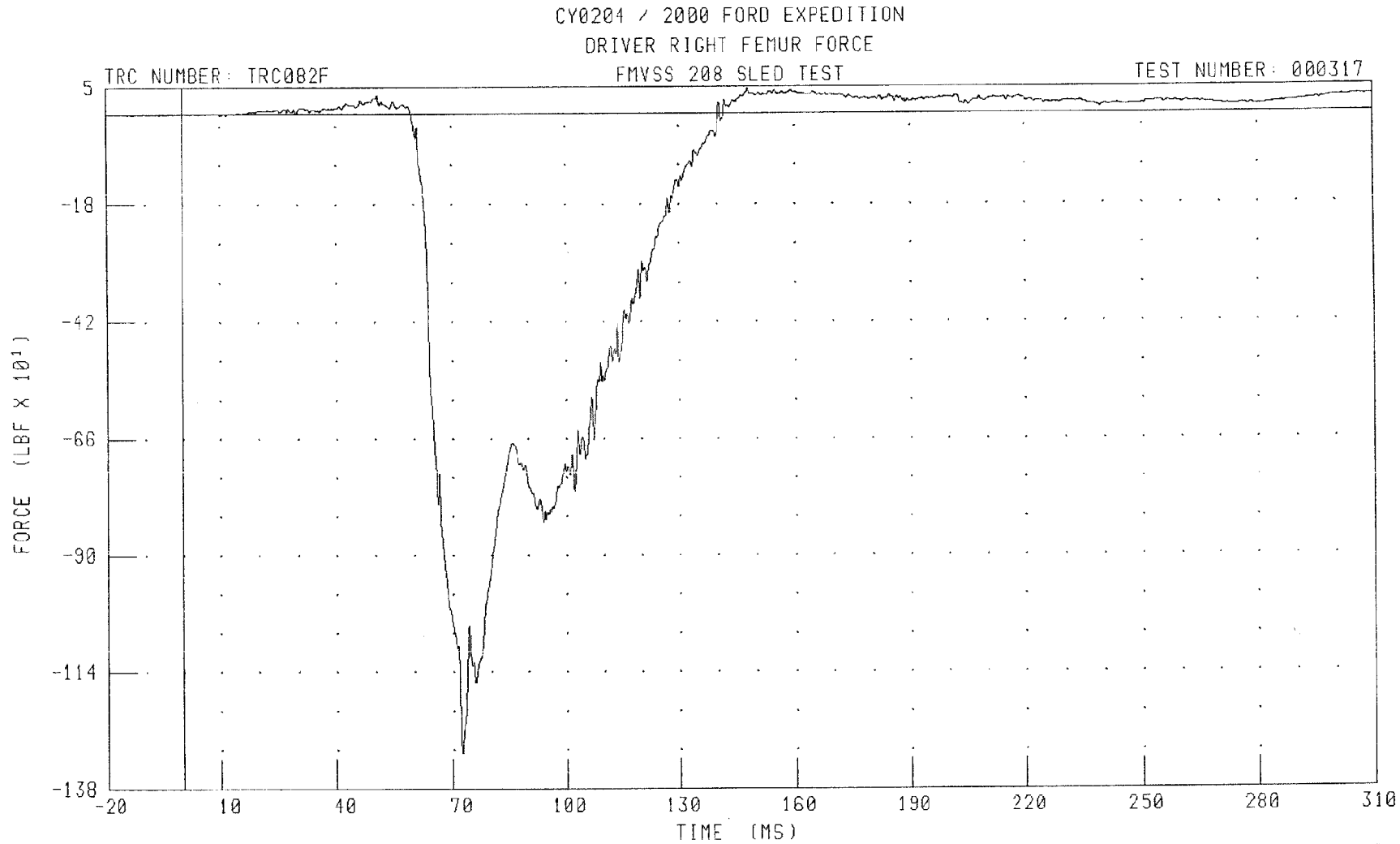
CHANNEL: CSTXD1 FILTER: CH. CLASS 600

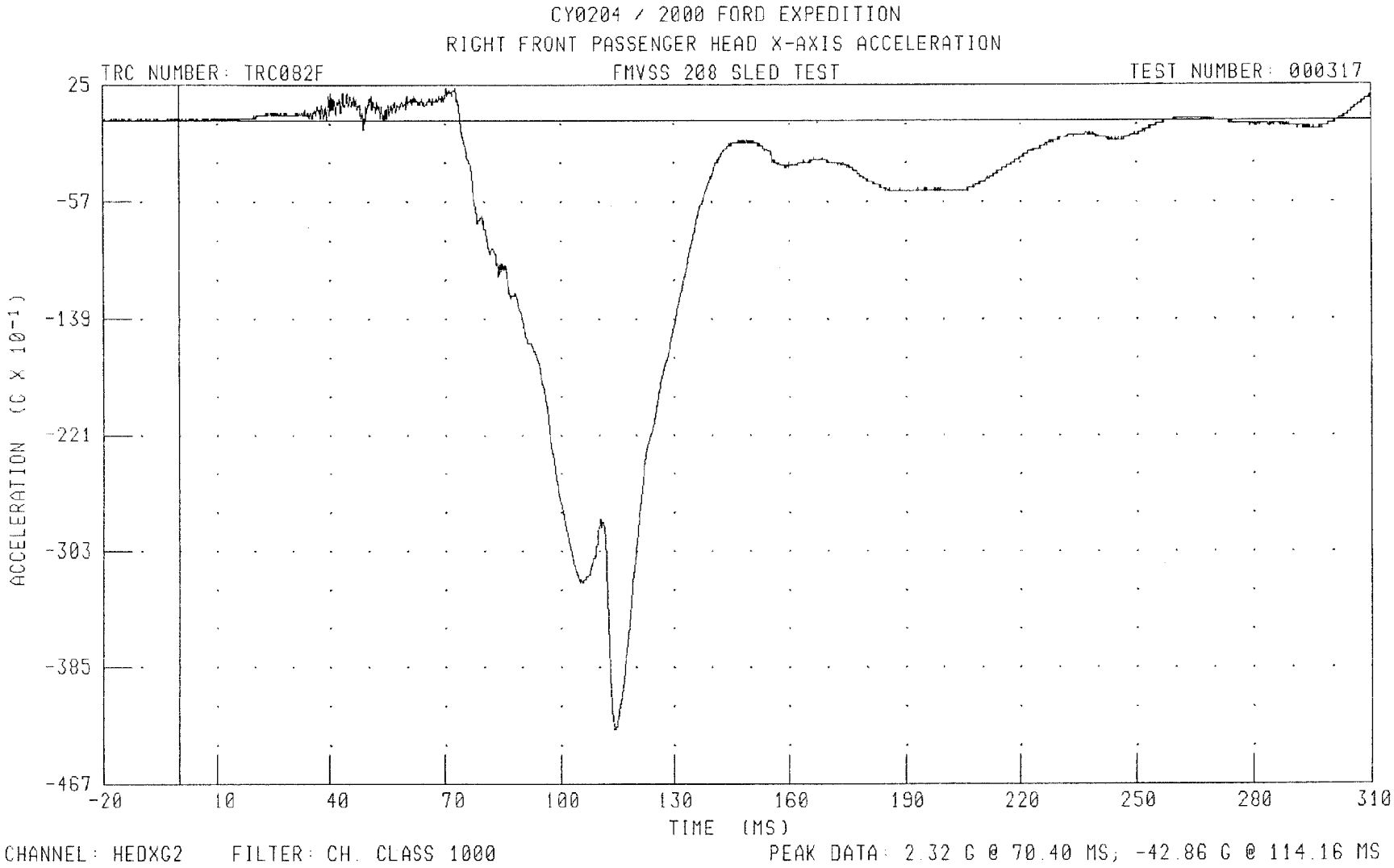
PEAK DATA: 0.00 IN @ 51.28 MS; -0.85 IN @ 118.40 MS

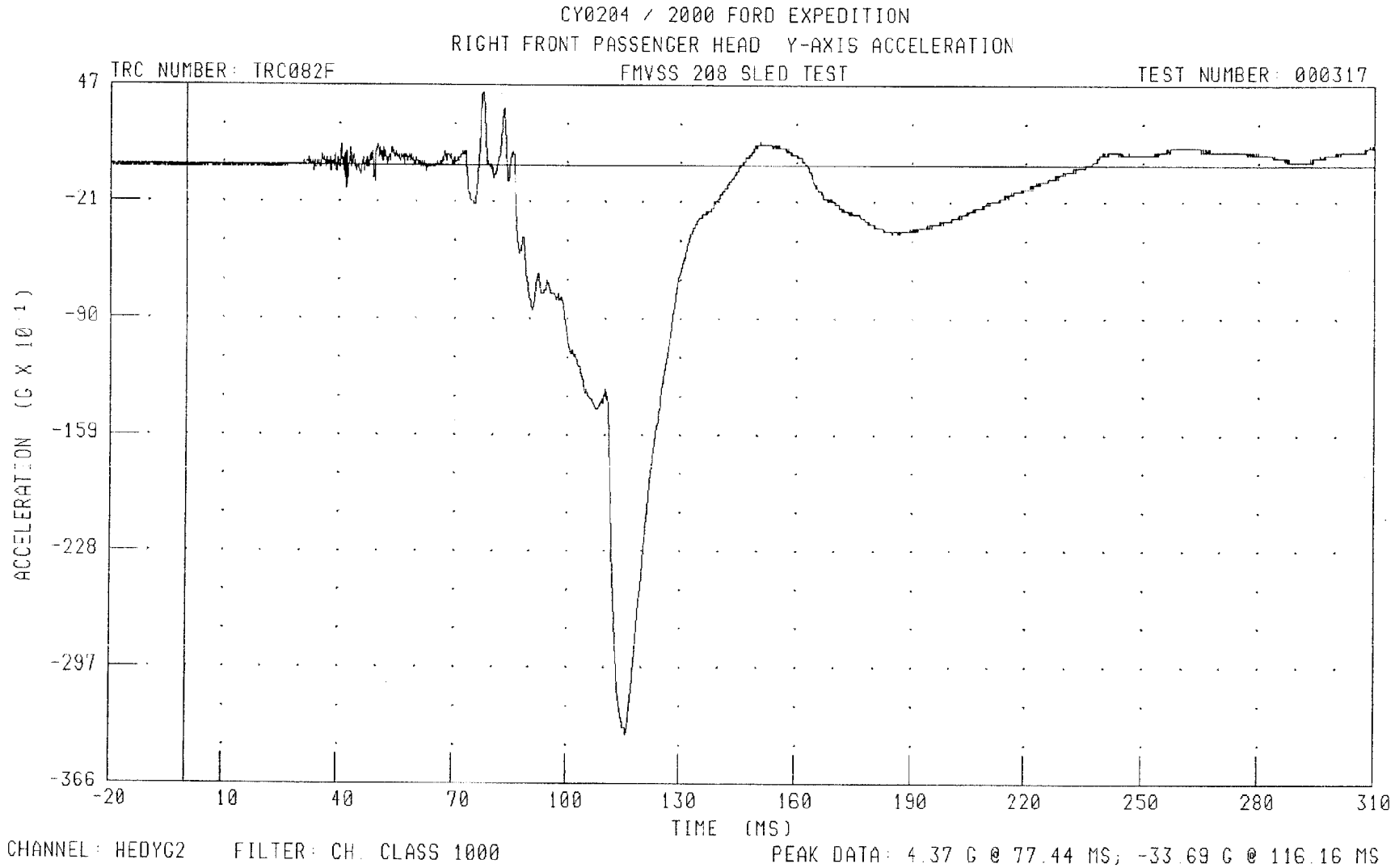
000317

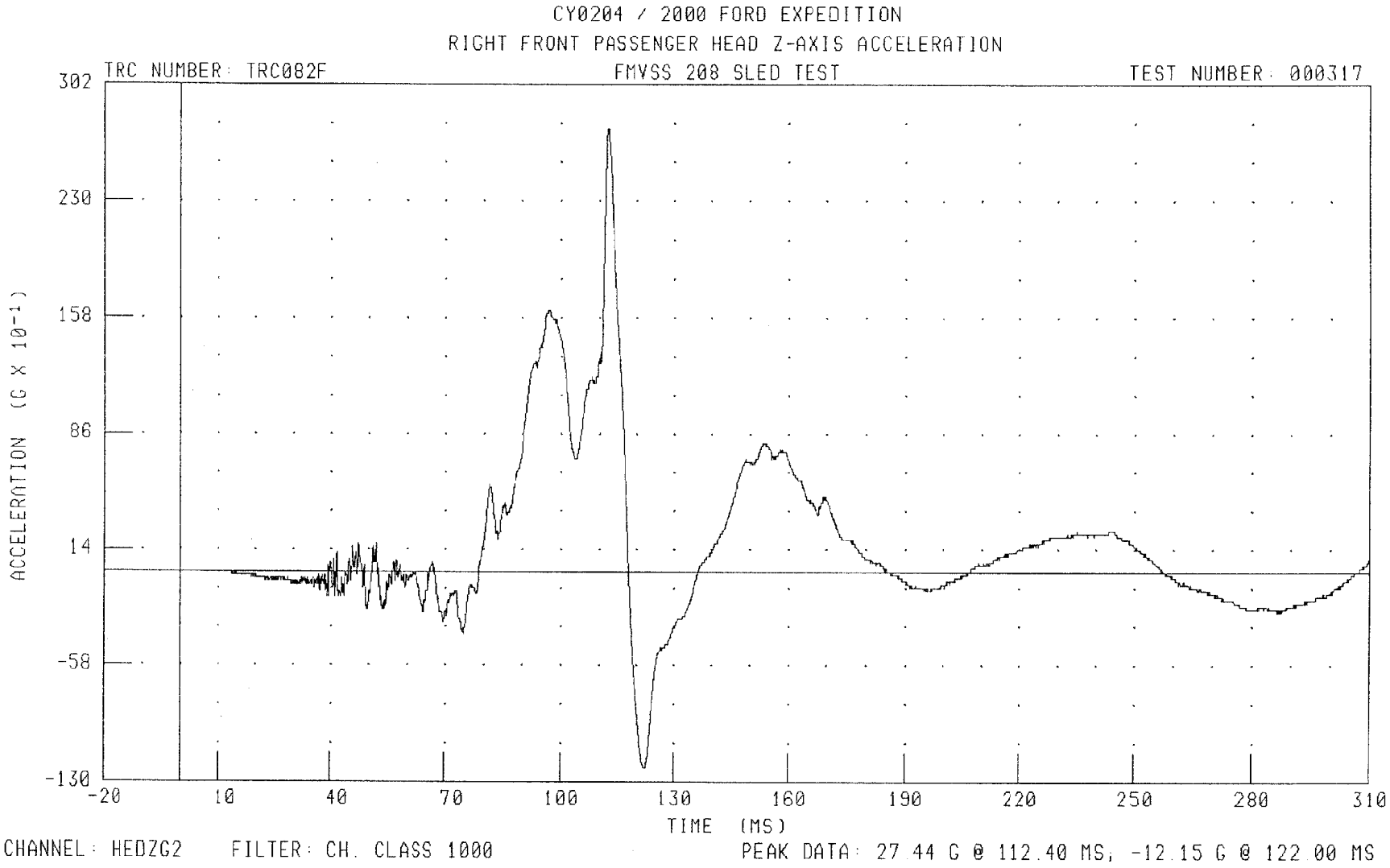

CY0204 / 2000 FORD EXPEDITION
DRIVER LEFT FEMUR FORCE
FMVSS 208 SLED TEST
TRC NUMBER: TRC082F
TEST NUMBER: 000317
7
-18
-44
-70
-96
-122
-148
FORCE (LBF X 10¹)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: LFMZF1
FILTER: CH. CLASS 600
PEAK DATA: 71.66 LBF @ 140.32 MS, -1400.59 LBF @ 67.20 MS

000317


CY0204 / 2000 FORD EXPEDITION
DRIVER RIGHT FEMUR FORCE
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
5
-18
-42
-66
-90
-114
-138
FORCE (LBF X 10¹)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: RFMZF1
FILTER: CH. CLASS 600
PEAK DATA: 50.78 LBF @ 148.32 MS; -1312.52 LBF @ 72.48 MS


CY0204 / 2000 FORD EXPEDITION
RIGHT FRONT PASSENGER HEAD X-AXIS ACCELERATION
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
25
-57
-139
-221
-303
-385
-467
ACCELERATION (G X 10-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: HEDXG2
FILTER: CH. CLASS 1000
PEAK DATA: 2.32 G @ 70.40 MS; -42.86 G @ 114.16 MS

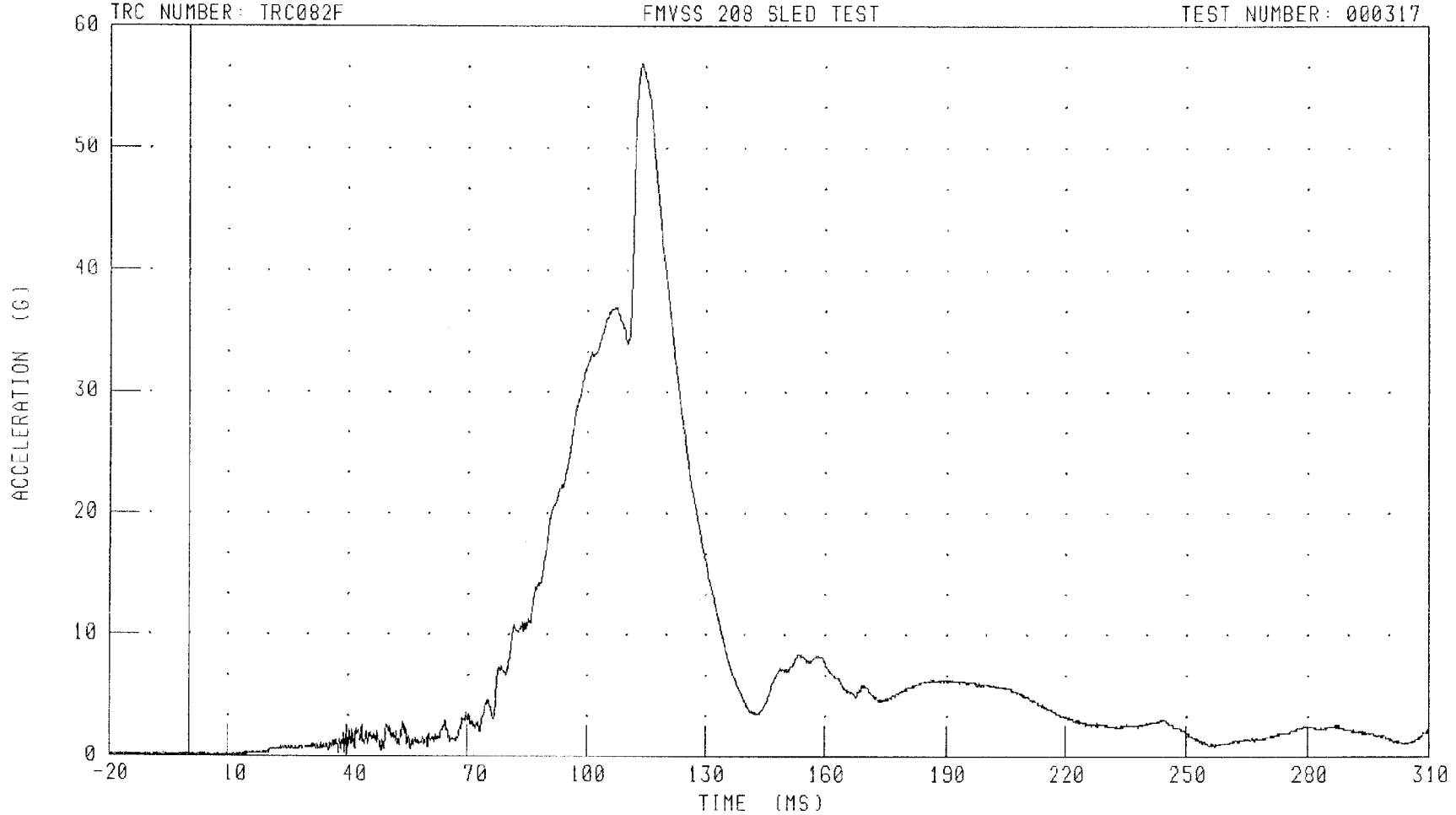

CY0204 / 2000 FORD EXPEDITION
RIGHT FRONT PASSENGER HEAD Y-AXIS ACCELERATION
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
47
-21
-90
-159
-228
-297
-366
ACCELERATION (G X 10^1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: HEDYG2
FILTER: CH. CLASS 1000
PEAK DATA: 4.37 G @ 77.44 MS; -33.69 G @ 116.16 MS


CY0204 / 2000 FORD EXPEDITION
RIGHT FRONT PASSENGER HEAD Z-AXIS ACCELERATION
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
302
230
158
86
14
-58
-130
ACCELERATION (G X 10-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: HEDZG2
FILTER: CH. CLASS 1000
PEAK DATA: 27.44 G @ 112.40 MS, -12.15 G @ 122.00 MS

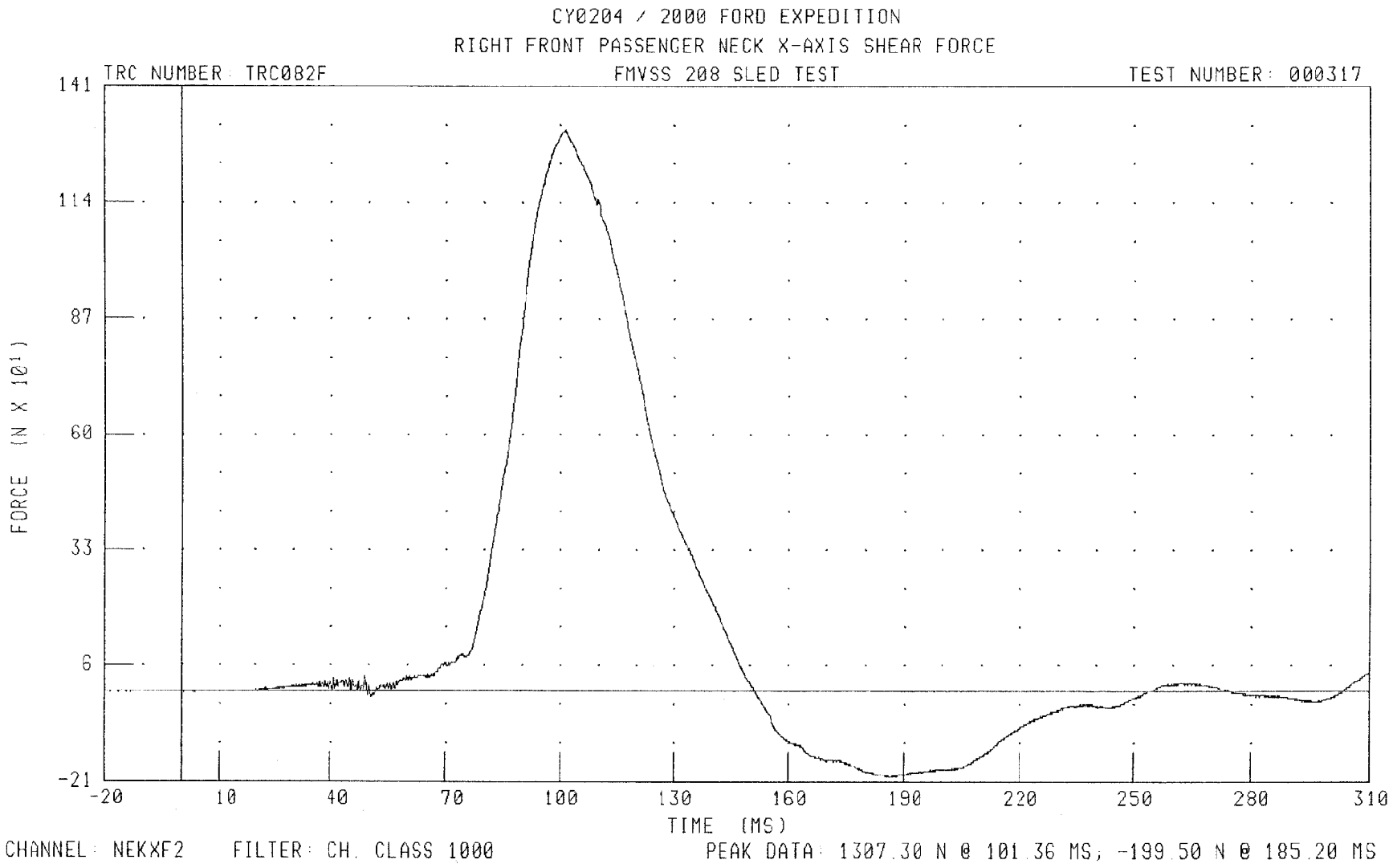
CY0204 / 2000 FORD EXPEDITION

RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317

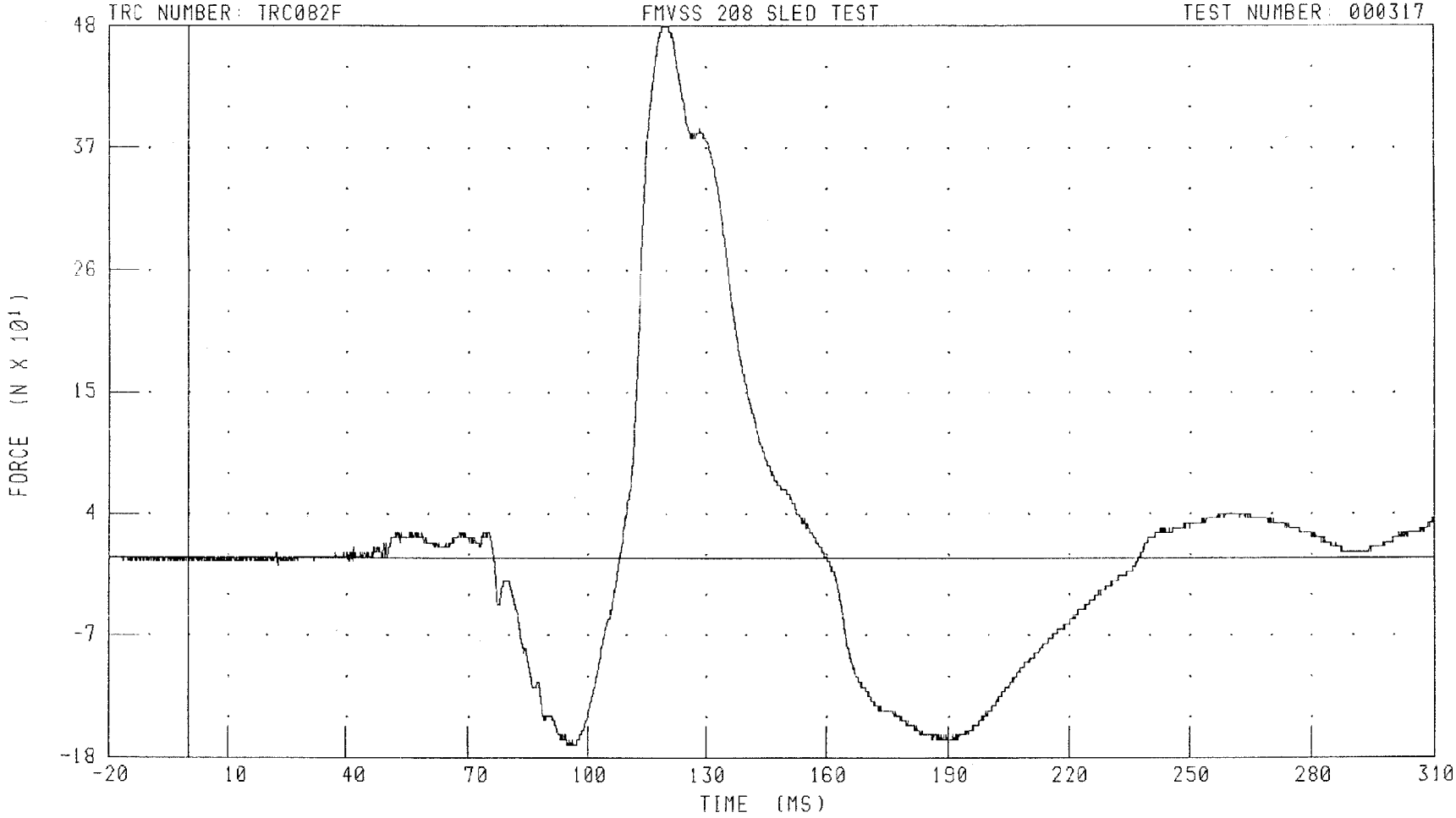


CHANNEL: HEDRG2 FILTER: CH. CLASS 1000 PEAK DATA: 56.98 G @ 114.08 MS, 0.07 G @ -19.92 MS


CY0204 / 2000 FORD EXPEDITION
RIGHT FRONT PASSENGER NECK X-AXIS SHEAR FORCE
TRC NUMBER: TRC082F
FMVSS 208 SLED TEST
TEST NUMBER: 000317
141
114
87
60
33
6
-21
FORCE (N X 10¹)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: NEKXF2
FILTER: CH. CLASS 1000
PEAK DATA: 1307.30 N @ 101.36 MS; -199.50 N @ 185.20 MS

CY0204 / 2000 FORD EXPEDITION
RIGHT FRONT PASSENGER NECK Y-AXIS SHEAR FORCE

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317

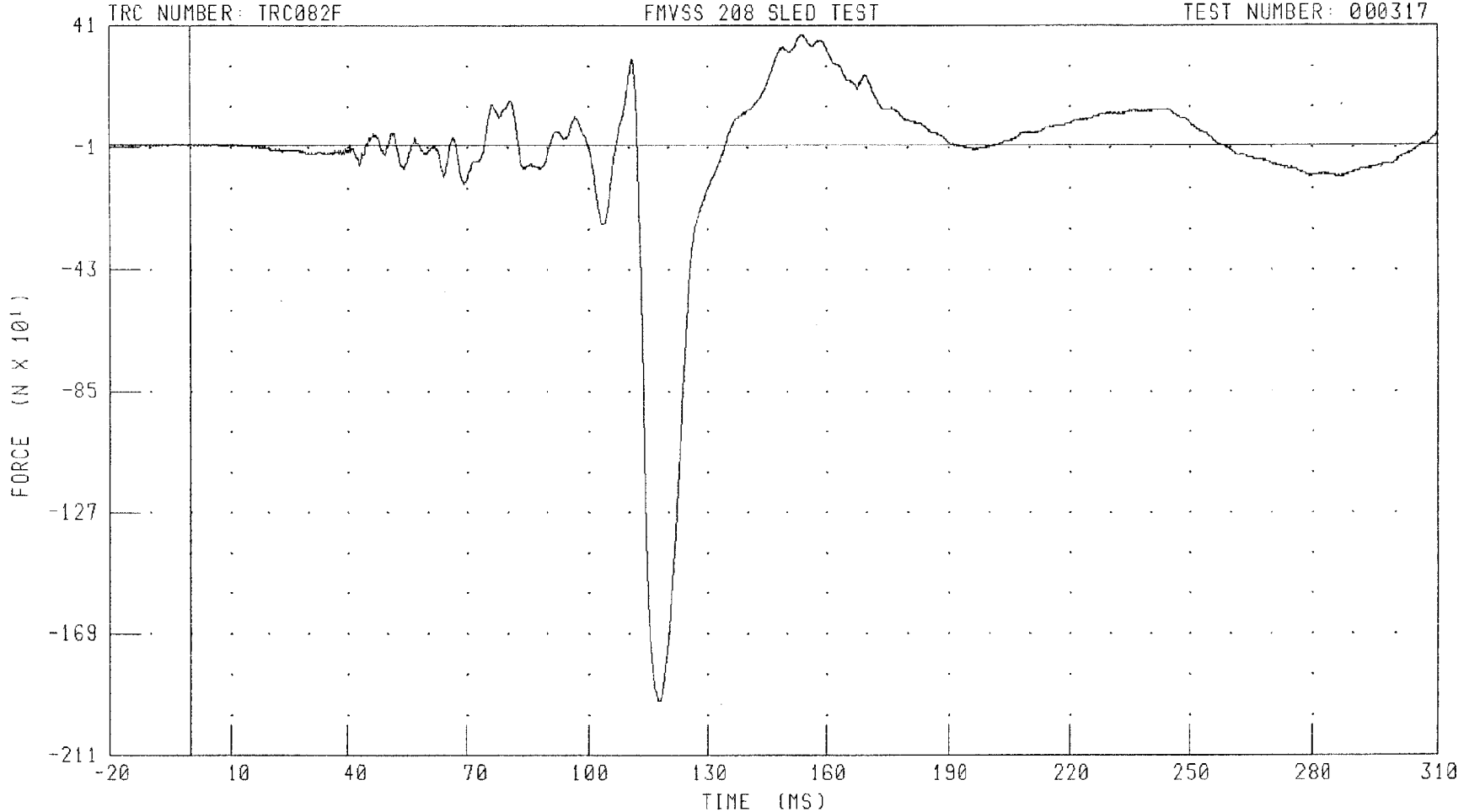


CHANNEL: NEKYF2 FILTER: CH. CLASS 1000 PEAK DATA: 483.40 N @ 119.52 MS; -168.53 N @ 94.48 MS

CY0204 / 2000 FORD EXPEDITION

RIGHT FRONT PASSENGER NECK Z-AXIS AXIAL FORCE

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317



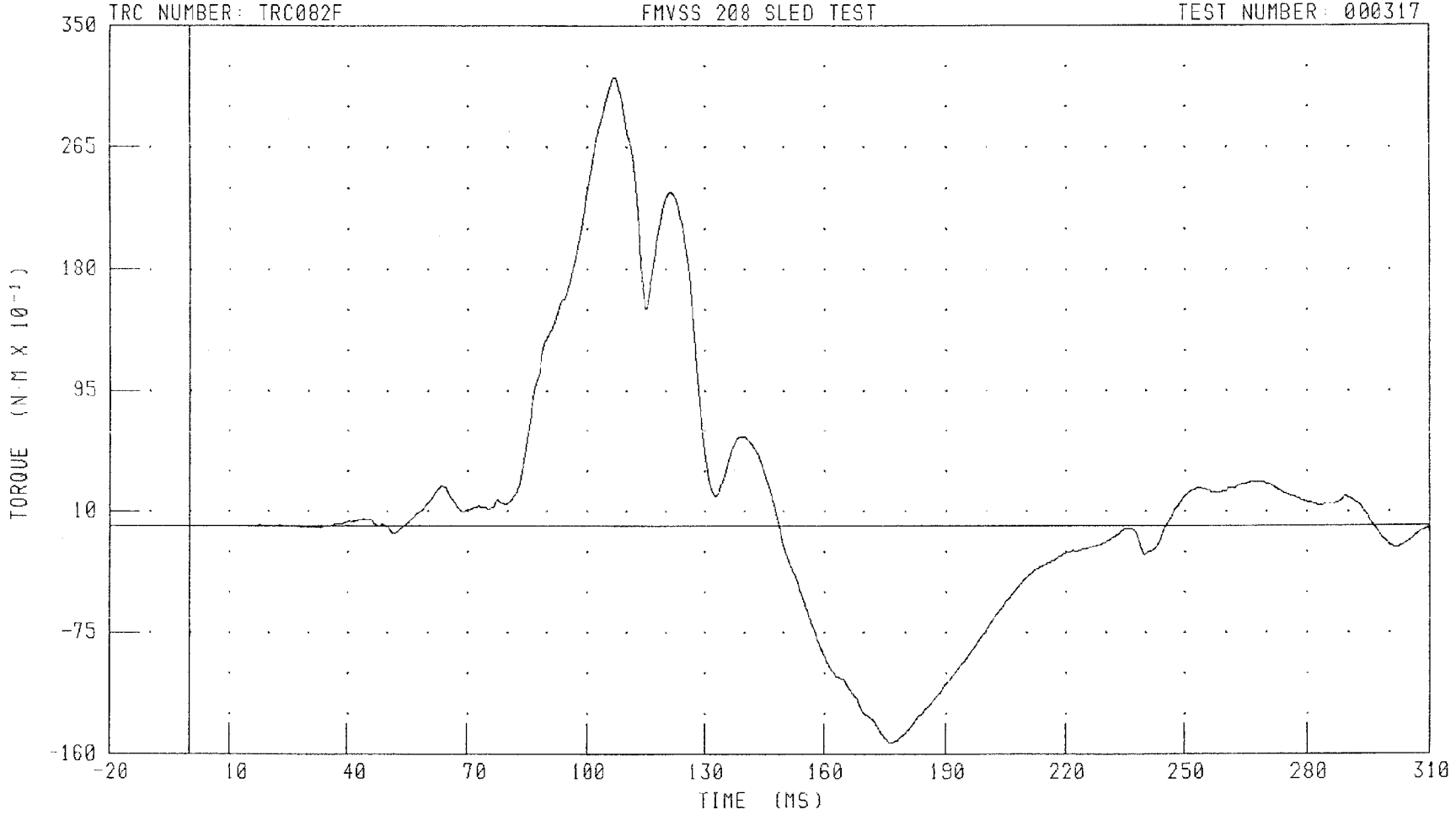
CHANNEL: NEKZF2 FILTER: CH. CLASS 1000 PEAK DATA: 378.34 N @ 153.68 MS; -1922.09 N @ 117.44 MS

000317

CY0204 / 2000 FORD EXPEDITION

RIGHT FRONT PASSENGER NECK MOMENT ABOUT X AXIS

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317

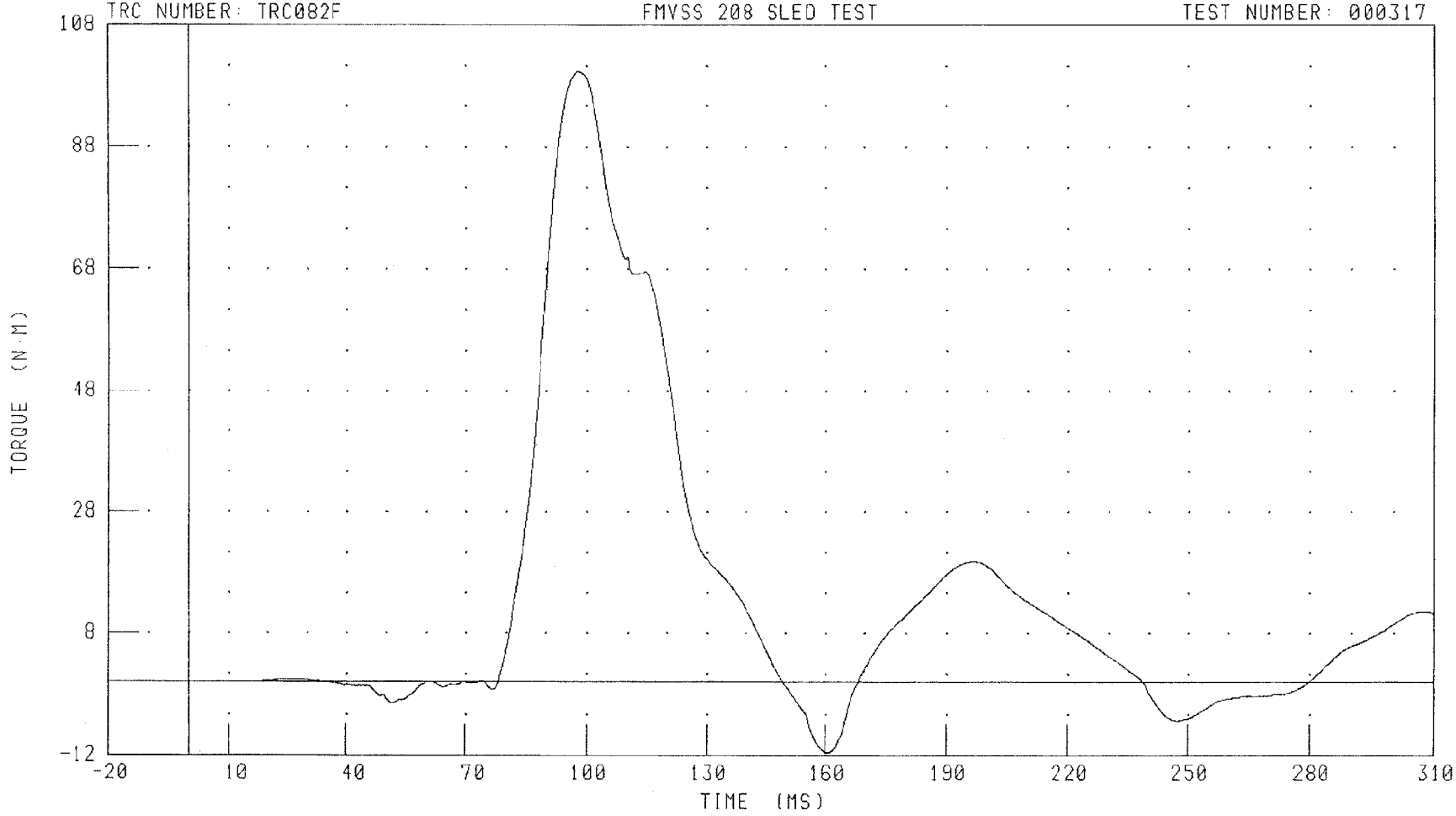


CHANNEL: NEKXM2 FILTER: CH. CLASS 600 PEAK DATA: 31.35 N-M @ 107.04 MS; -15.19 N-M @ 176.32 MS

CY0204 / 2000 FORD EXPEDITION

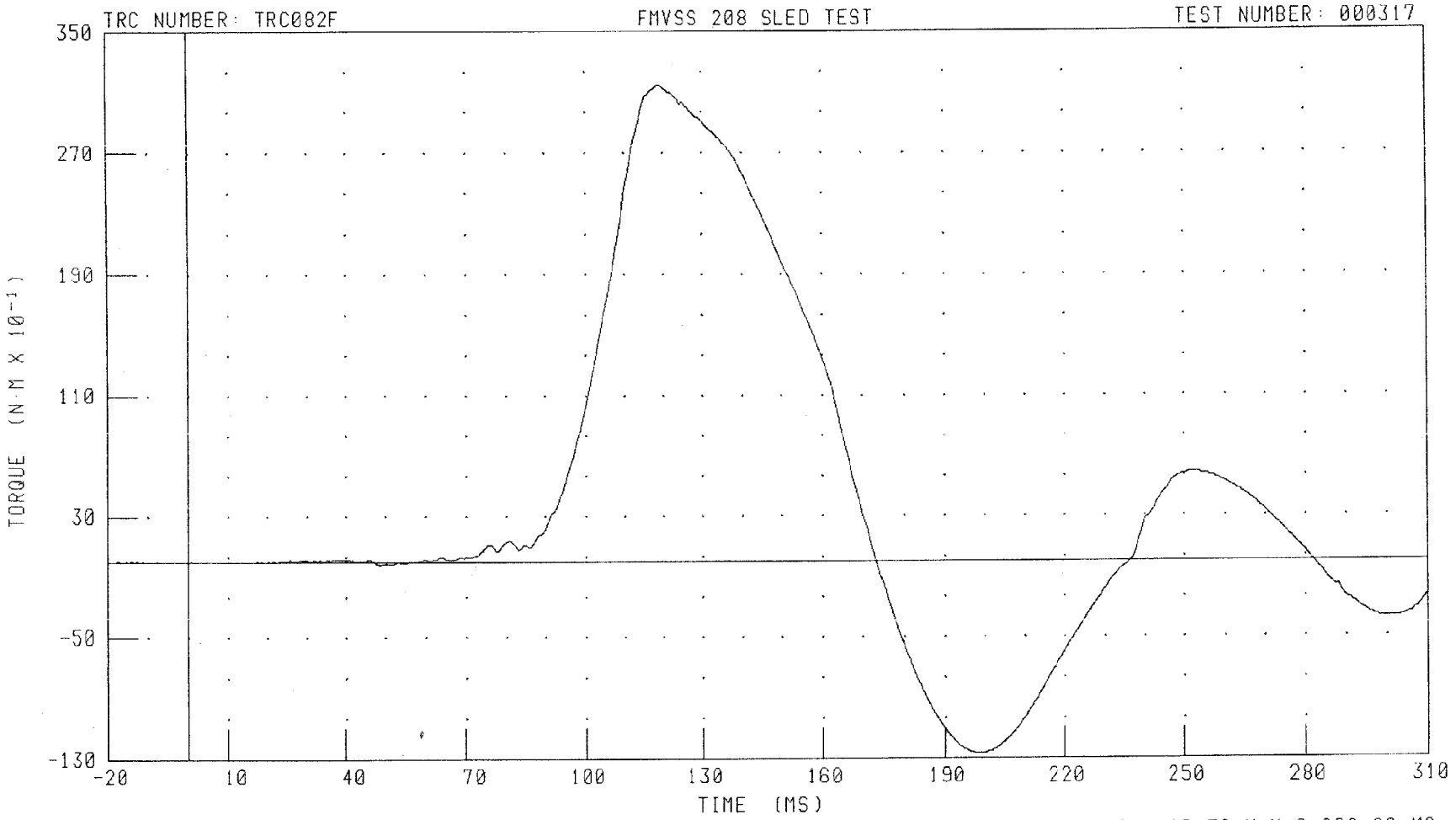
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317



CHANNEL: NEKYM2 FILTER: CH. CLASS 600 PEAK DATA: 100.36 N-M @ 98.08 MS; -11.60 N-M @ 160.56 MS

CY0204 / 2000 FORD EXPEDITION
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Z AXIS
FMVSS 208 SLED TEST



CHANNEL: NEKZM2 FILTER: CH. CLASS 600

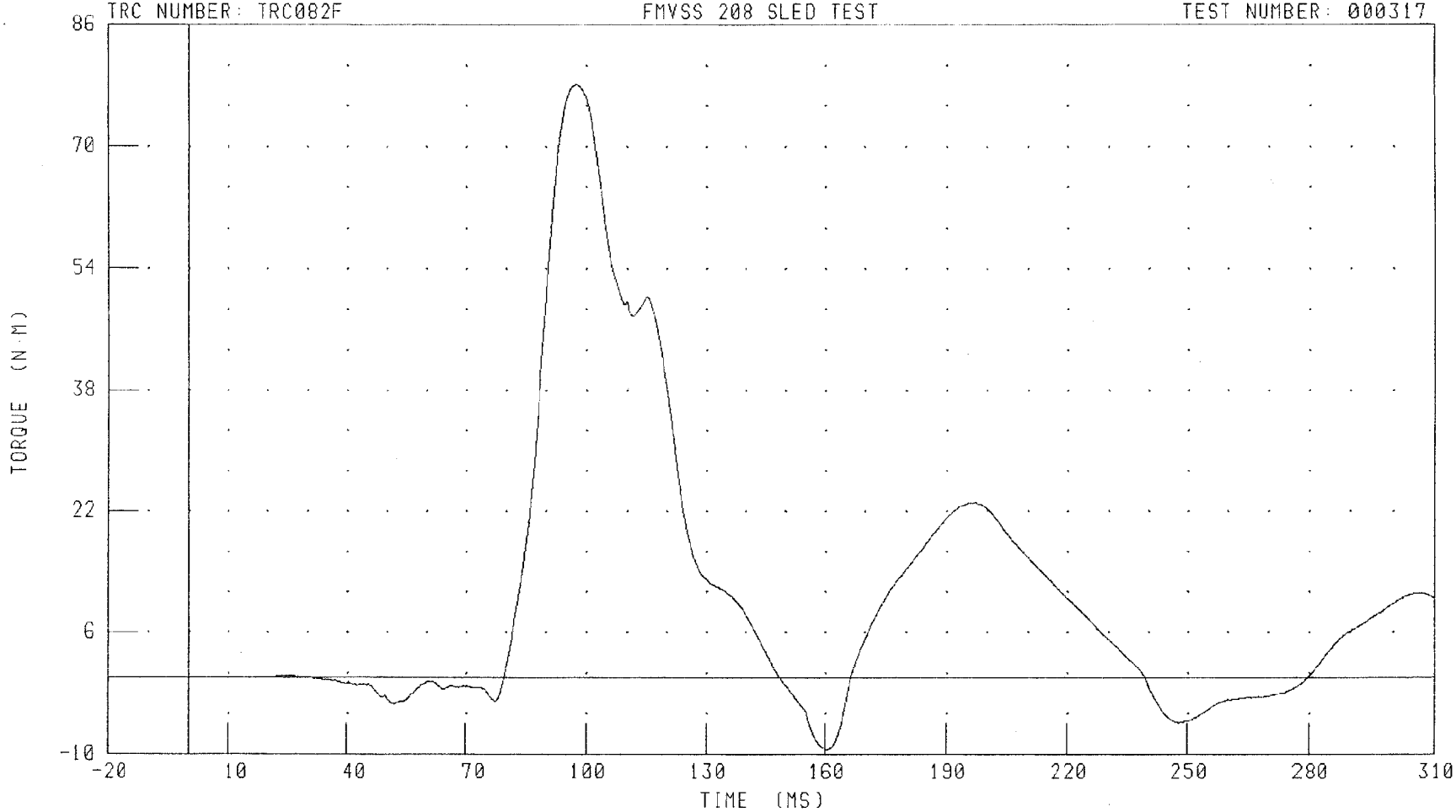
PEAK DATA: 31.40 N·M @ 118.72 MS, -12.70 N M @ 200.08 MS

000317

CY0204 / 2000 FORD EXPEDITION

RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS OCCIPITAL CONDYLE

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317



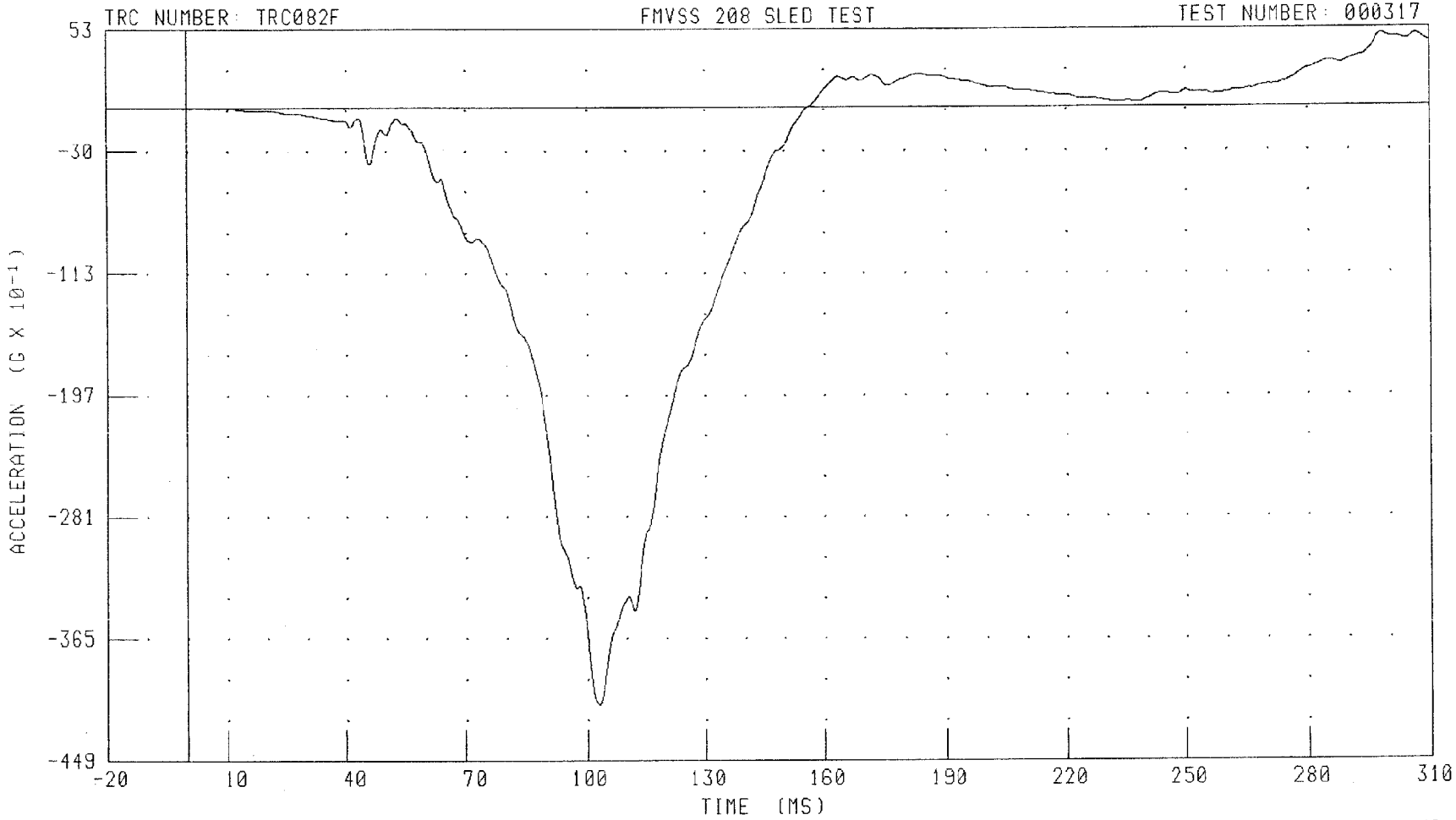
CHANNEL: NEKOM2 FILTER: CH. CLASS 600 PEAK DATA: 78.16 N-M @ 97.68 MS; -9.48 N-M @ 160.48 MS

000317

CY0204 / 2000 FORD EXPEDITION

RIGHT FRONT PASSENGER CHEST X-AXIS ACCELERATION

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317

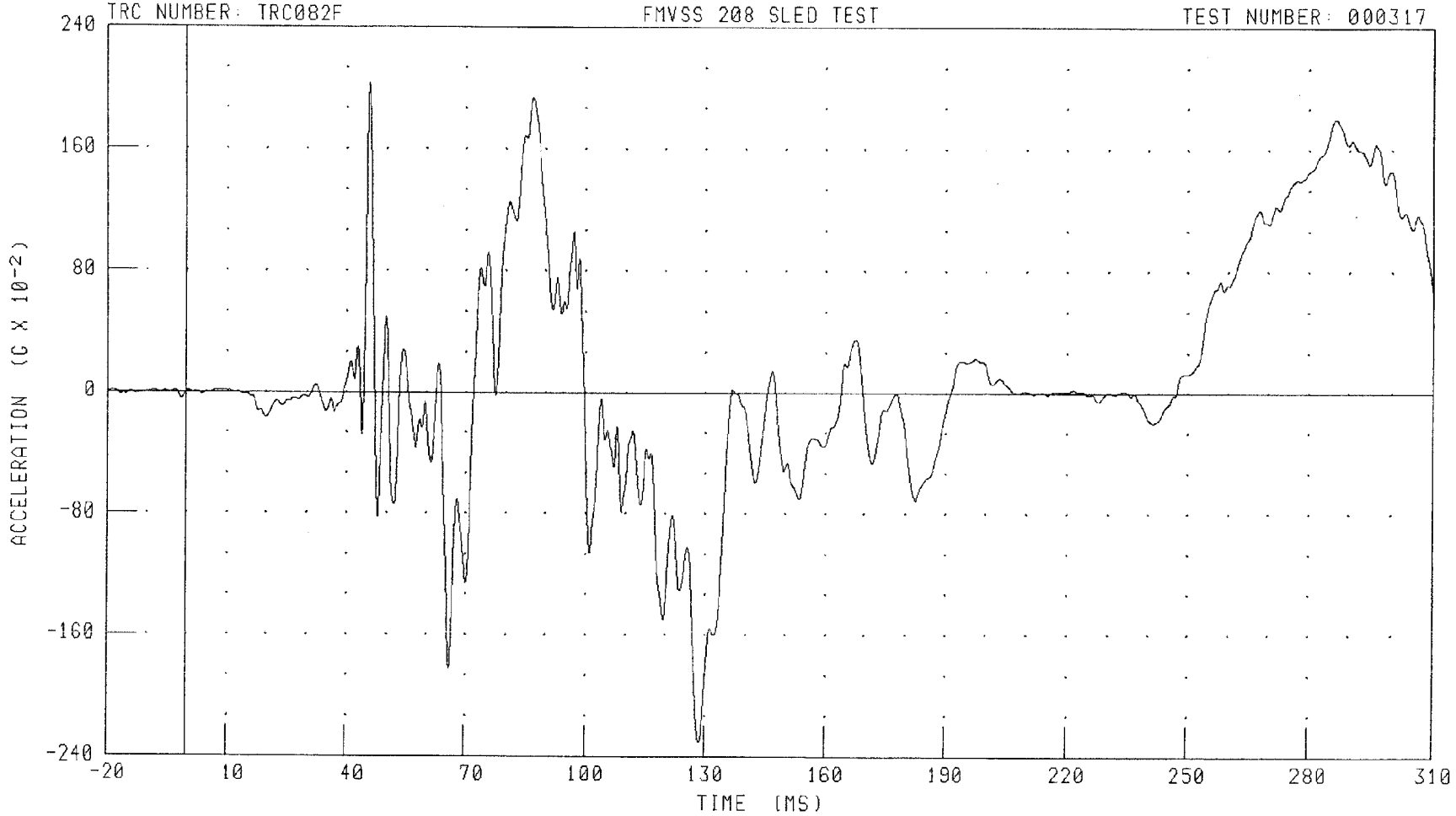


CHANNEL: CSIXG2 FILTER: CH. CLASS 180 PEAK DATA: 4.98 G @ 298.24 MS; -41.15 G @ 103.20 MS

CY0204 / 2000 FORD EXPEDITION

RIGHT FRONT PASSENGER CHEST Y-AXIS ACCELERATION

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317



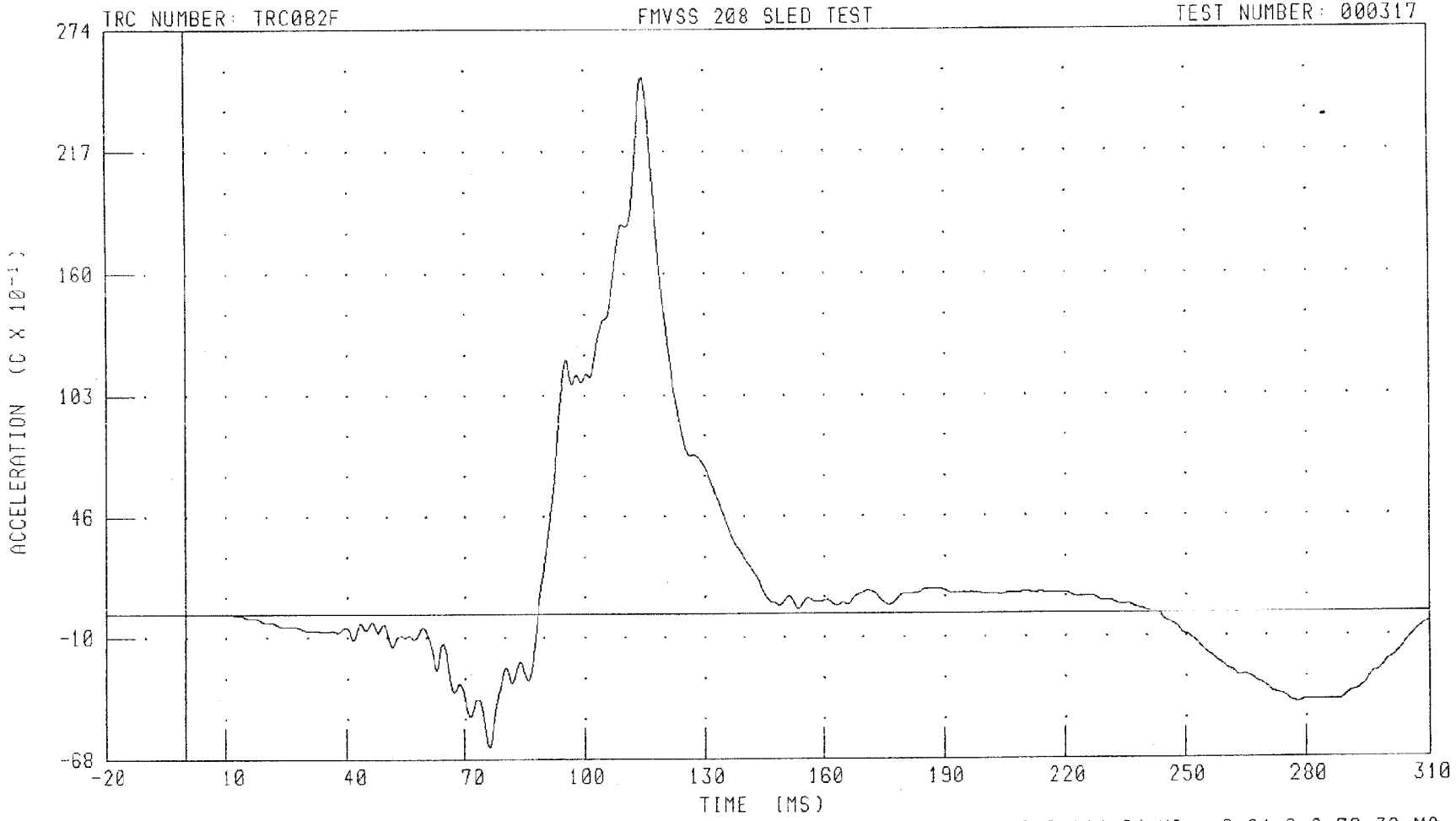
CHANNEL: CSTYG2 FILTER: CH. CLASS 180 PEAK DATA: 2.03 G @ 45.84 MS; -2.31 G @ 128.72 MS

000317

CY0204 / 2000 FORD EXPEDITION

RIGHT FRONT PASSENGER CHEST Z-AXIS ACCELERATION

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317

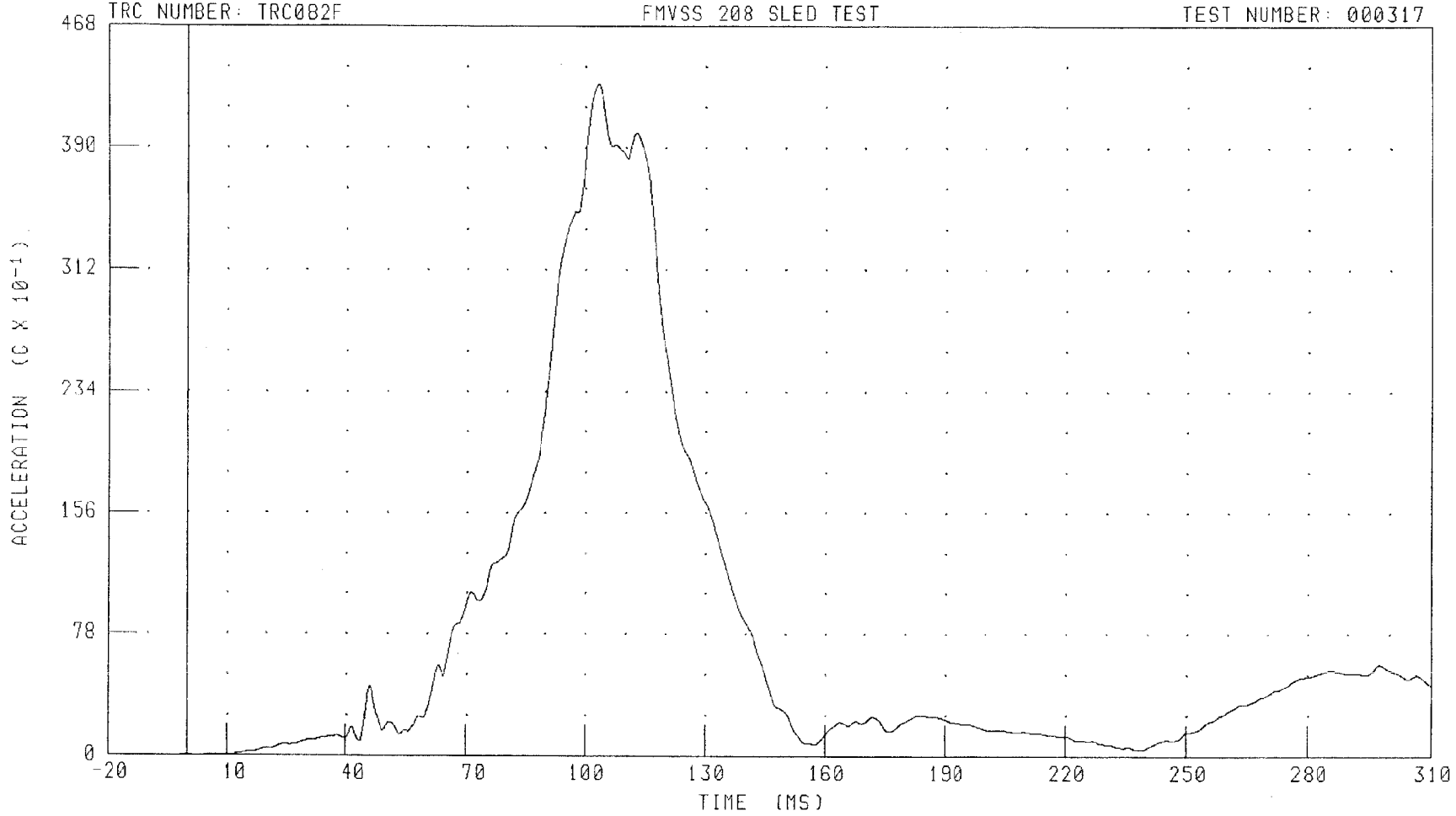


CHANNEL: CSTZG2 FILTER: CH. CLASS 180 PEAK DATA: 25.17 G @ 114.64 MS; -6.24 G @ 76.32 MS

CY0204 / 2000 FORD EXPEDITION

RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION

TRC NUMBER: TRC082F FMVSS 208 SLED TEST TEST NUMBER: 000317

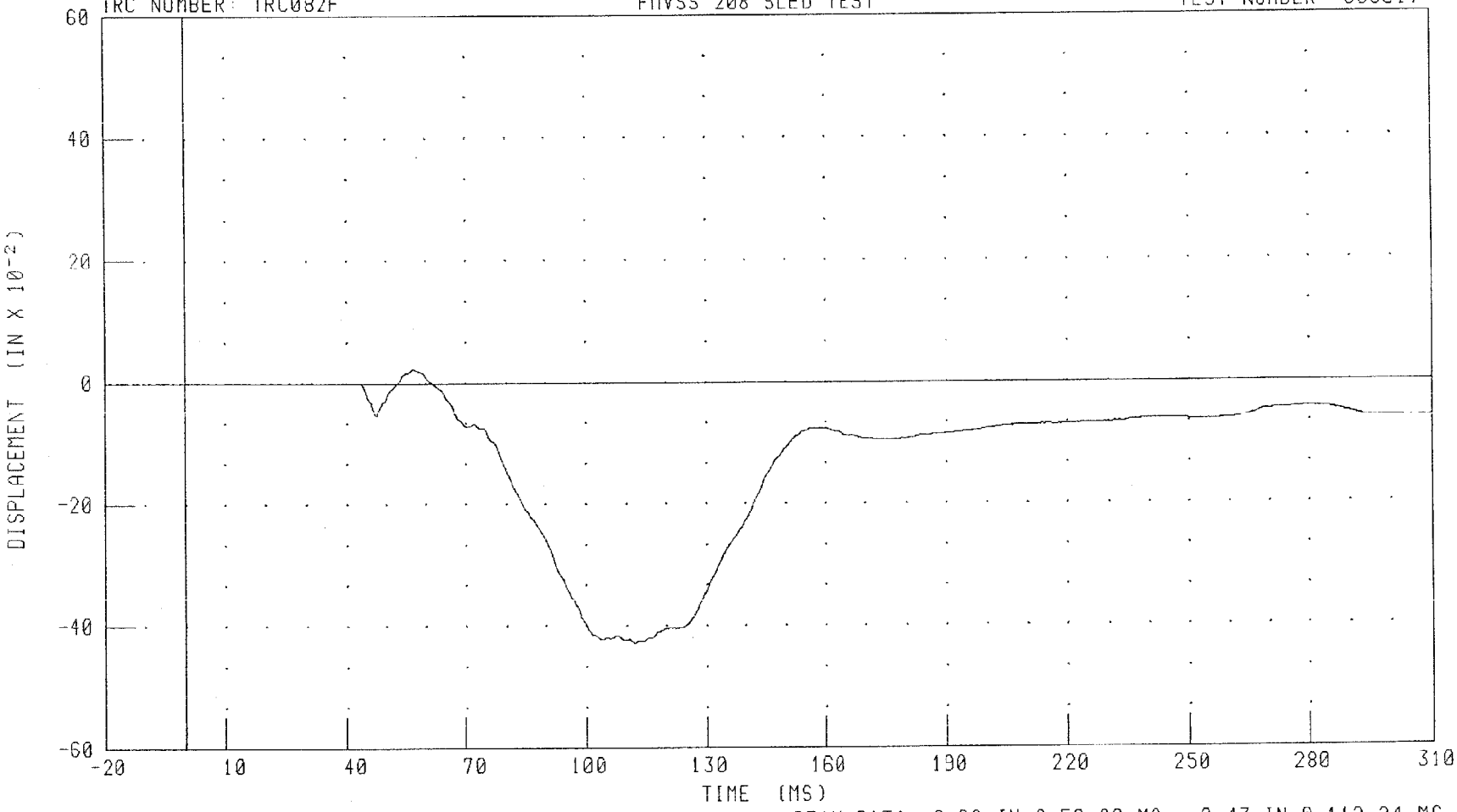


CHANNEL: CSTRG2 FILTER: CH. CLASS 180 PEAK DATA: 43.08 G @ 103.44 MS; 0.00 G @ -9.36 MS

CY0204 / 2000 FORD EXPEDITION
RIGHT FRONT PASSENGER CHEST DEFLECTION
FMVSS 208 SLED TEST

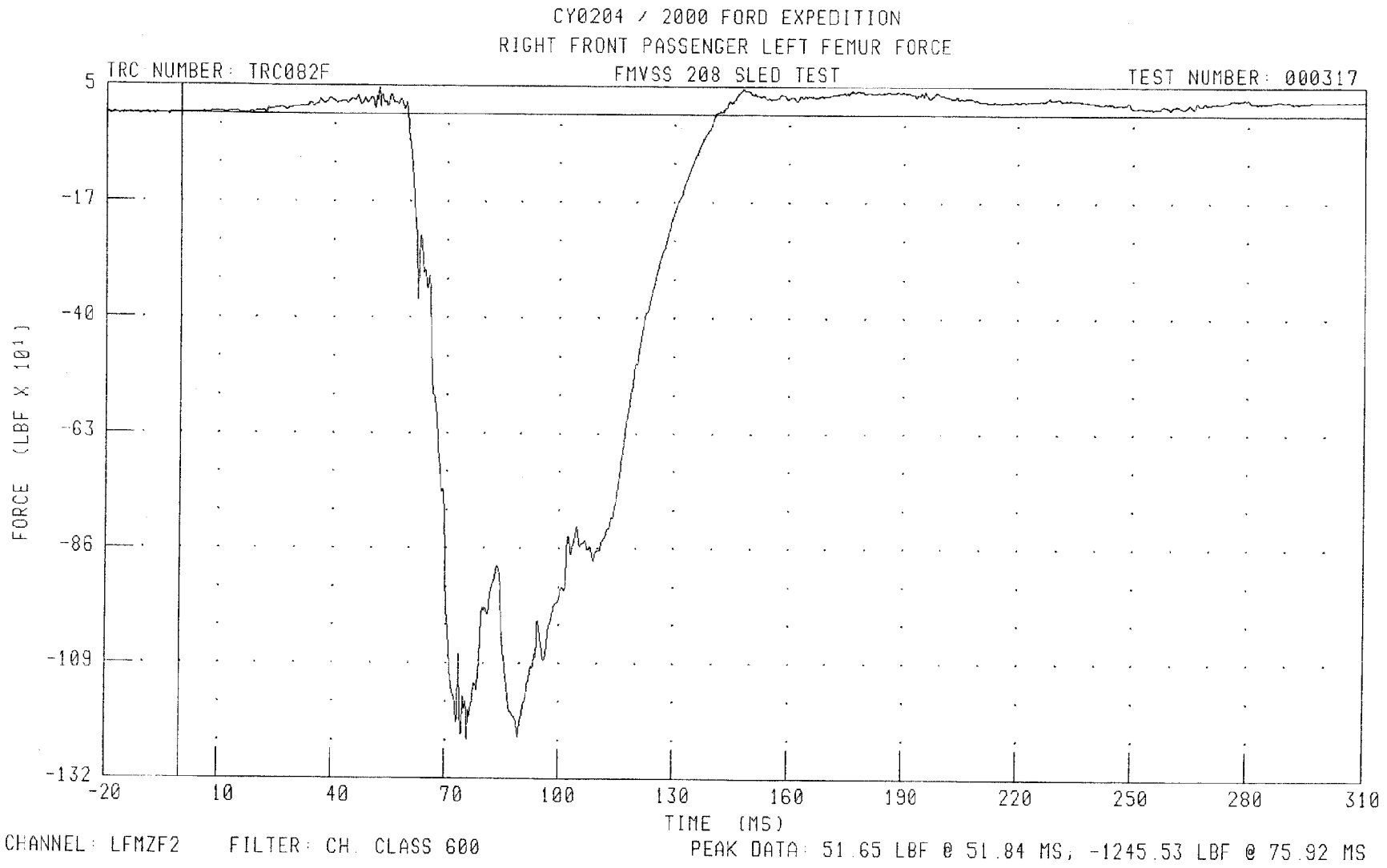
TRC NUMBER: TRC082F

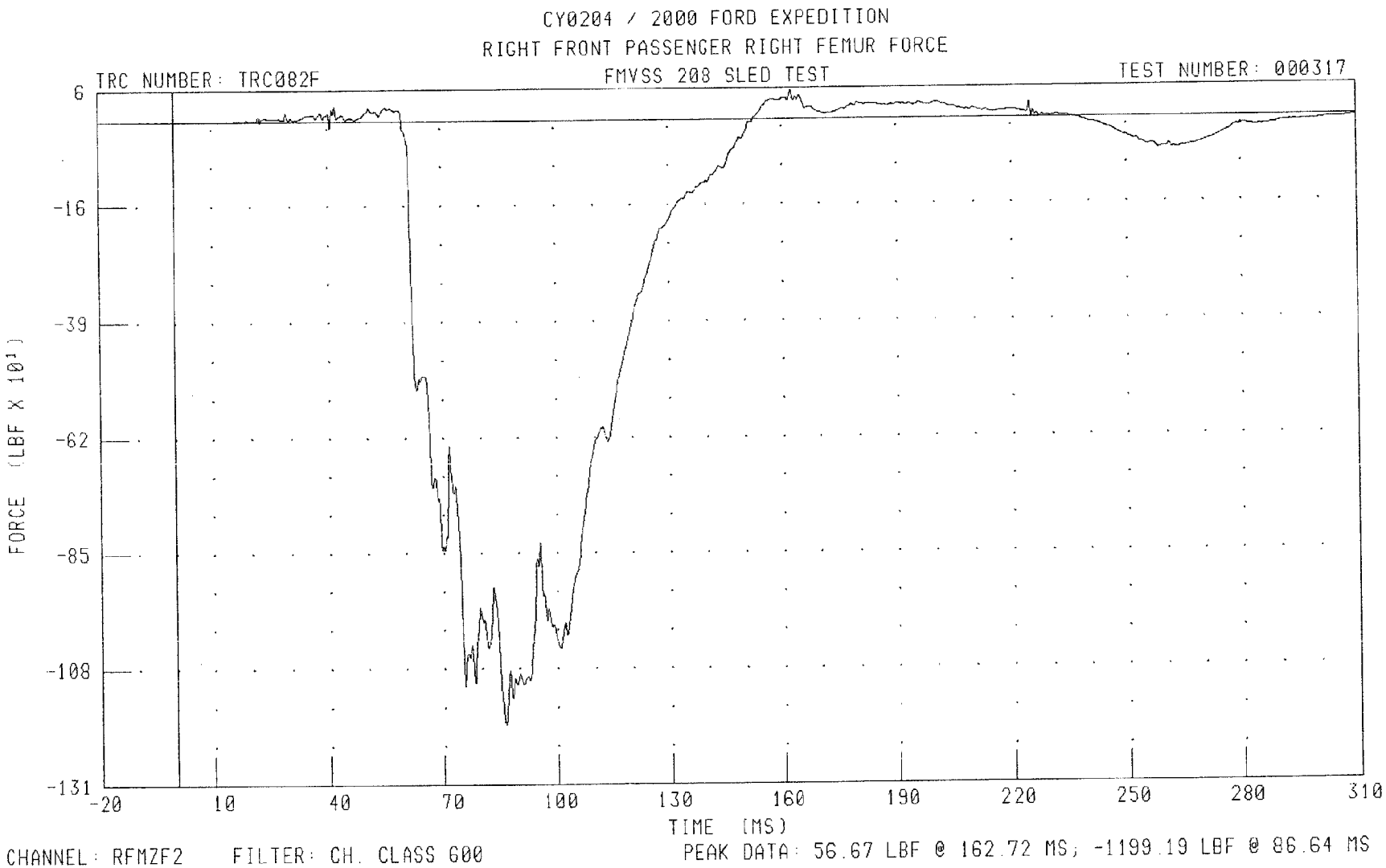
TEST NUMBER: 000317



CHANNEL: CSTXD2 FILTER: CH. CLASS 600

PEAK DATA: 0.02 IN @ 56.96 MS; -0.43 IN @ 112.24 MS


CY0204 / 2000 FORD EXPEDITION
RIGHT FRONT PASSENGER LEFT FEMUR FORCE
FMVSS 208 SLED TEST
TRC NUMBER: TRC082F
TEST NUMBER: 000317
5
-17
-40
-63
-86
-109
-132
FORCE (LBF X 10¹)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: LFMZF2
FILTER: CH. CLASS 600
PEAK DATA: 51.65 LBF @ 51.84 MS, -1245.53 LBF @ 75.92 MS


CY0204 / 2000 FORD EXPEDITION
RIGHT FRONT PASSENGER RIGHT FEMUR FORCE
FMVSS 208 SLED TEST
TRC NUMBER: TRC082F
TEST NUMBER: 000317
6
-16
-39
-62
-85
-108
-131
FORCE (LBF X 10¹)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: RFMZF2
FILTER: CH. CLASS 600
PEAK DATA: 56.67 LBF @ 162.72 MS; -1199.19 LBF @ 86.64 MS

Appendix C

Manufacturer's Vehicle Information

L. W. Camp
Director
Automotive Safety Office
Environmental And Safety Engineering

Ford Motor Company
330 Town Center Drive
Dearborn, Michigan 48126 USA

December 23, 1999

Ms. Marilynne Jacobs
Director
Office of Vehicle Safety Compliance
National Highway Traffic
Safety Administration
400 Seventh Street, S. W.
Washington, D.C. 20590

Dear Ms. Jacobs:

Subject: NSA-31CCa/OA:208991029H for FMVSS 208
Information on a 2000 Model Year Ford Expedition

This is in response to your letter of November 5, 1999, requesting information for possible compliance surveillance testing of the 2000 Model Year Ford Expedition to the requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 208, "Occupant Crash Protection".

The 2000 Model Year Ford Expedition is carryover from the 1998 Model Year relative to compliance to FMVSS No. 208. For your convenience, each request is listed followed by Ford's response.

Request No. 1

"Please inform OVSC if the air bag restraint system is certified to meet the requirements of S4.1.5.1(a)(1)or S13.

If the air bags were installed to meet the requirements of S4.1.5.1(a)(1) please provide a copy of the certification test reports for the frontal/angular barrier impact tests of the automatic restraint system with the manual safety belts unfastened and fastened.

If the air bags were installed to meet the requirements of S13 please provide a copy of the certification test reports for the frontal/angular barrier impact tests of the automatic restraint system with the manual safety belts fastened and the

certification test reports for the sled test using only the automatic restraint system."

Response

The air bag restraint systems for all 2000 Model Year Ford Expedition vehicles meet the requirements of S13 of FMVSS 208.

A Test Report Data Summary of the frontal barrier and sled tests is provided as Attachment I. Attachment II contains a copy of those portions of the final test report, relevant to the requirements of FMVSS No. 208, for Crash Test 10922: a 90 degree front fixed barrier impact test for the automatic restraint system with the manual safety belts fastened. Attachment III contains copies of those portions of the final test reports, relevant to the requirements of FMVSS No. 208, for Sled Test Numbers H18107 and H18137: dynamic sled tests utilizing a rigid sled test of a "body-in-white" simulating the Ford Expedition and using only the automatic restraint system.

Ford relied on the information provided in Attachments I, II and III of this response to demonstrate compliance of the 2000 Model Year Ford Expedition equipped with driver and right front passenger air bag restraint systems with the requirements of FMVSS No. 208. Note that the angular requirements were addressed by means of engineering judgment. Also, for the sled tests, as noted in the cover sheet for the sled test report in Attachment III, the sled test data is not in the test report but rather is retained electronically by the Safety Laboratories Department.

Request No. 2

"If this is a new design vehicle/model, describe any features that might affect performance with respect to children and out of position occupants.

If this is not a new design vehicle/model provide the following (1) state when the air bag was depowered, (2) describe the difference between the MY 2000 air bag system and the MY 1999 air bag system, (3) explain what other restraint changes have been made, and (4) explain what other vehicle changes have been made that might have affected FMVSS 208 performance. Explain which changes might affect performance with respect to children and out of position occupants."

Response

As previously stated, the 2000 MY Ford Expedition is carry over from the 1998 Model Year with respect to FMVSS 208 performance.

(1) Depowered Driver and Passenger Air Bags were installed beginning with Job #1 for the 1998 Model Year Ford Expedition.

(2), (3), and (4) There have been no airbag system changes, restraint system changes, or other vehicle changes that would affect FMVSS 208 performance since the Ford FMVSS 208 tests conducted for the 1998 Model Year Ford Crown Victoria. Additionally, there were no changes that affect performance with respect to children and out of position occupants.

Request No. 3

"State if these vehicles have crash event recorders. If yes, explain any procedures needed for the sled or barrier crash event to be recorded. In addition, explain how to retrieve the crash event data from the recorder."

Response

The 2000 model year Ford Expedition utilizes an Electronic Crash Sensor (ECS) module which, as one of its functions, records crash acceleration data. To accomplish this function, electrical power must be maintained to the ECS throughout the crash event. The ECS would need to be returned to Ford for retrieval of the acceleration data.

Request No. 4

"If the vehicle was certified with unrestrained dummies to meet the requirements of S 13, describe how to disconnect the air bags from the vehicle sensors and connect them to the triggering mechanism used in the sled test. Describe the method used in certification to determine when to trigger the air bag and the system used to trigger the air bag.

For more advanced air bag systems, explain how the triggering of the air bag system in the sled test is different from the triggering of the air bag in a crash, For example, if a multistage inflator is used, explain whether the stages are fired simultaneously in the sled test but fired in a staggered sequence in a similar crash situation."

Response

The air bag was disconnected by locating the squib wires going into the air bag and unhooking the connector between the vehicle wiring harness and the air bag. The squib wires were then connected to an extension cable which supplies the firing current

from the Programmable Time Fire Unit located in the Hyge sled control room. This system has an arming circuit and variable time delay (adjustable to 0.1 msec) which starts counting once time zero (T=0) has been triggered. At 20 msec after T=0, the Programmable Time Fire Unit sends current through the extension cable and into the air bag squib.

The Programmable Time Fire Unit has the capability of supplying between 12.0 and 12.5 volts with a momentary peak current draw of 20 amps. In testing conducted by Ford, the typical current draw is 3 to 6 amps. The time delay between T=0 and air bag deployment has been determined to be 20 msec. (An accelerometer is used on the sled to actually trigger T=0 when an acceleration of 0.5g is attained on the sled.)

The 2000 Model Year Ford Expedition does not contain an advanced air bag system.

Request No. 5

"State for any safety belt system in this vehicle whether or not it is equipped with a tension-relieving device. Provide a copy of the information furnished in accordance with S7.4.2 if the tension-relieving device is used."

Response

Tension-relieving devices are not used in 2000 MY Ford Expedition safety belt systems.

Request No. 6

"FMVSS No. 208, S8.1.5 allows the manufacturer the option of having movable vehicle windows and vents placed in the closed position. State whether the vehicle's movable windows and vents were opened or closed for the certification tests."

Response

The positions of moveable windows in fixed barrier crash impact tests, which were relied upon as a basis for certification to FMVSS 208 of 2000 Model Year Ford Expedition vehicles, were with all moveable windows and vents fully open for 90 degree perpendicular frontal impacts to facilitate photography. Ford prefers that the windows be in the closed (up) position for NHTSA testing.

Request No. 7

"Submit dummy placement measurements, including diagrams or photographs which show exactly where measurements were taken.

Enclosed is a diagram of some of OVSC's dummy measurements. Where possible, use the dimension shown in the diagram to provide the individual dummy placement measurements.

State whether the vehicle has a foot rest for the driver."

Response

Attachment VI contains dummy placement measurements applicable to the 2000 MY Ford Expedition.

The 2000 MY Ford Expedition has a foot rest for the driver.

Request No. 8

"Provide the seat positioning, steering column positioning, and fuel tank data on the enclosed form. If more than one front seating, steering column or fuel tank configuration are available on this vehicle, provide separate information for each. In addition, provide the seating reference point for each seat for the lockable seat belt requirement in S7.1.1.5."

Response

Attachment V contains the NHTSA form 1 enclosed with your letter, completed with the requested seat positioning, steering column positioning, and fuel tank data applicable to FMVSS No. 208 testing of the 2000 Model Year Ford Expedition.

Attachment VI contains a copy of a drawing showing the requested seating reference point information for the 2000 Model Year Ford Expedition.

Request No. 9

"If the vehicle is equipped with adjustable seat belt anchorages, provide the manufacturer's nominal design position for a 50th percentile adult male occupant."

Response

The 2000 MY Ford Expedition vehicles are equipped with adjustable seat belt anchorages. The nominal design position of the D-ring for the 50th percentile adult male occupant is in the mid position.

Request No. 10

"For barrier tests provide the speed at impact, vehicle test weight, and resulting injury criteria (i.e., HIC, chest

acceleration, chest compression, and femur loads) recorded for all certification tests conducted to meet the requirements of S4.1.5.1(a)(1). For sled tests provide the resulting injury criteria (i.e., HIC, chest acceleration, chest compression, femur loads, and neck moments and forces) recorded for all certification test conducted to meet the requirements of S13."

Response

This information is included in a Test Report Summary found in Attachment I.

Request No. 11

"When vehicle components must be removed to obtain the proper test weight for the barrier test, what components do you recommend for removal and in what priority order do you recommend removal?"

Response

The following is a suggested list of items which may be removed from the test vehicle for the barrier test. The list below is in order of removal priority:

- Spare Tire
- Rear Hatch
- Back seat
- Bumper
- Interior trim from B-pillar rearward
- Exhaust system from the "Y" pipe rearward

All onboard instrumentation should be included in the vehicle test weight.

Request No. 12

"If the vehicle uses a pressure vessel to inflate the air bag, provide a copy of the test reports or engineering analysis to demonstrate that it meets all the requirements of S9.1."

Response

The 2000 MY Ford Expedition vehicles do not use pressure vessels to inflate the air bags.

Request No. 13

"If the vehicle uses an explosive device to inflate the air bag, provide a copy of the test report or engineering analysis to demonstrate that it meets all requirements of S9.2."

Response

Attachment VII contains the engineering analyses and the related TRW test reports demonstrating compliance to S9.2 of FMVSS No. 208 for the 2000 MY Ford Expedition driver and passenger air bag systems.

Request No. 14

"Explain any leakage that has occurred from the onboard vapor recovery system pressure relief valve during any frontal impact development or certification testing performed by or for Ford Motor Company. If any leakage occurred, include the amount. Describe the method used to collect fluid from the onboard vapor recovery system pressure relief valve for the period from impact until motion of the vehicle has ceased."

Response No.14

A review of the test reports used both for the development and demonstration of compliance of the 2000 Model Year Ford Expedition indicates that no leakage occurred during any frontal impact barrier crash testing performed by or for Ford Motor Company.

If you have any questions, please call me.

Very truly yours,

Roger Nelson
for

L. W. Camp

Attachments

** TX CONFIRMATION REPORT ** AS OF DEC 24 '99 14:52 PAGE.01

ASESO (500 EAST)

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	CMD#	STATUS
06	12/24	14:52	NHTSA-OVSC	----S	00'00"	000	224	BUSY

** TX CONFIRMATION REPORT ** AS OF DEC 23 '99 16:16 PAGE.01

ASESO (500 EAST)

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	CMD#	STATUS
05	12/23	16:18	NHTSA-OVSC	----S	00'00"	000	222	BUSY

Automotive Safety Office
Production Vehicle Safety and Compliance
Compliance Engineering

Phone: 3237893
Fax: 5942268

Ford Motor Company
Automotive Safety Office
PVS&C
Compliance Engineering

To:	Charlie Case	From:	Kevin E. Kirchke/kkirschk@ford.com
Fax:		Date:	December 23, 1999
Phone:	(202) 366-5319	Pages:	15
Re:	FMVSS 208 2000MY Expedition & Focus	CC:	

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

•Comments:

Charlie:

Attached is Ford's response to OA-20899102 G & H, FMVSS 208 Test Inquires For 2000 MY Ford Expedition and Ford Focus.

The responses will be forwarded to your office via U.S. Mail.

Please call me if you have any questions.

Have happy holidays and a peaceful and safe new year.

CHARLIE A SECOND ATTEMPT
ON 24DEC99

** TOTAL PAGE.16 **

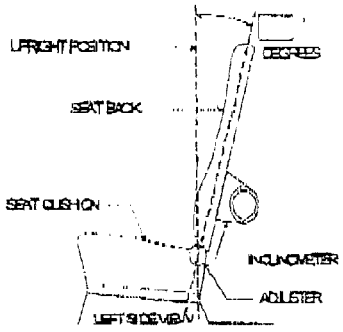
FMVSS 208, 214, 301

TEST VEHICLE INFORMATION

Vehicle Model Year and Make: 2000 MY Ford

Vehicle Model and Body Style: Expedition

1. NOMINAL DESIGN RIDING POSITION –
For adjustable driver and passenger seat backs, describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent if applicable.
Seat back angle for driver's seat = 18°.
Measurement Instructions:



Remove the back panel and position inclinometer as shown in the drawing, approx 13" above the back pivot point on the rear outboard seat frame. The seat back angle of 18 degrees will produce a dummy angle of 21 degrees.

Seat back angle for passenger's seat = 18°.
Measurement Instructions:

Same As Drivers Seat

2. SEAT FORE AND AFT POSITIONS –
Provide instructions for positioning the driver and front outboard passenger seat(s) in the center of fore and aft travel. For example, provide information to locate the detent in which the seat track is to be locked.
Position of the driver's seat:

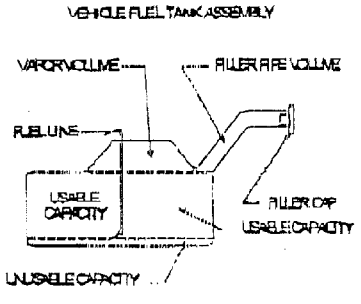
For all seats (driver & passenger, power and manual) : Position in the mechanical mid-position.

- Reference points are chosen on the seat and seat track.
- Total seat travel is measured
- The seat is positioned at the midpoint of seat travel (if manual dents do not allow for this, place the seat in the next rearward detent position from the midpoint).

Position of the passenger's seat (if applicable):

Same As Drivers Seat

3. FUEL TANK CAPACITY DATA –



3.1 A. "Usable Capacity" of standard equipment fuel tank = 26 gallons (4X2).
B. "Usable Capacity" of optional equipment fuel tank = 30 gallons (4X4, also optional on 4X2).
C. Capacity used when certification testing to requirements of FMVSS 301 30 gallons (4X4, also optional on 4X2).

FMVSS 208, 214, 301

3.2 Amount of Stoddard solvent added to vehicle for certification test = 28.5 gallons for 4X4 & 4X2 with optional tank or 24.7 gallons with 4X2.

3.3 Is vehicle equipped with electric fuel pump? X YES _____ NO

If YES, does pump normally operate when vehicle's electrical system is activated?
X YES _____ NO

4. STEERING COLUMN ADJUSTMENTS –

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions.

If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.
Operational Instructions:

Position the steering column in the center detent position.

5. SEATING REFERENCE POINT (SRP) –

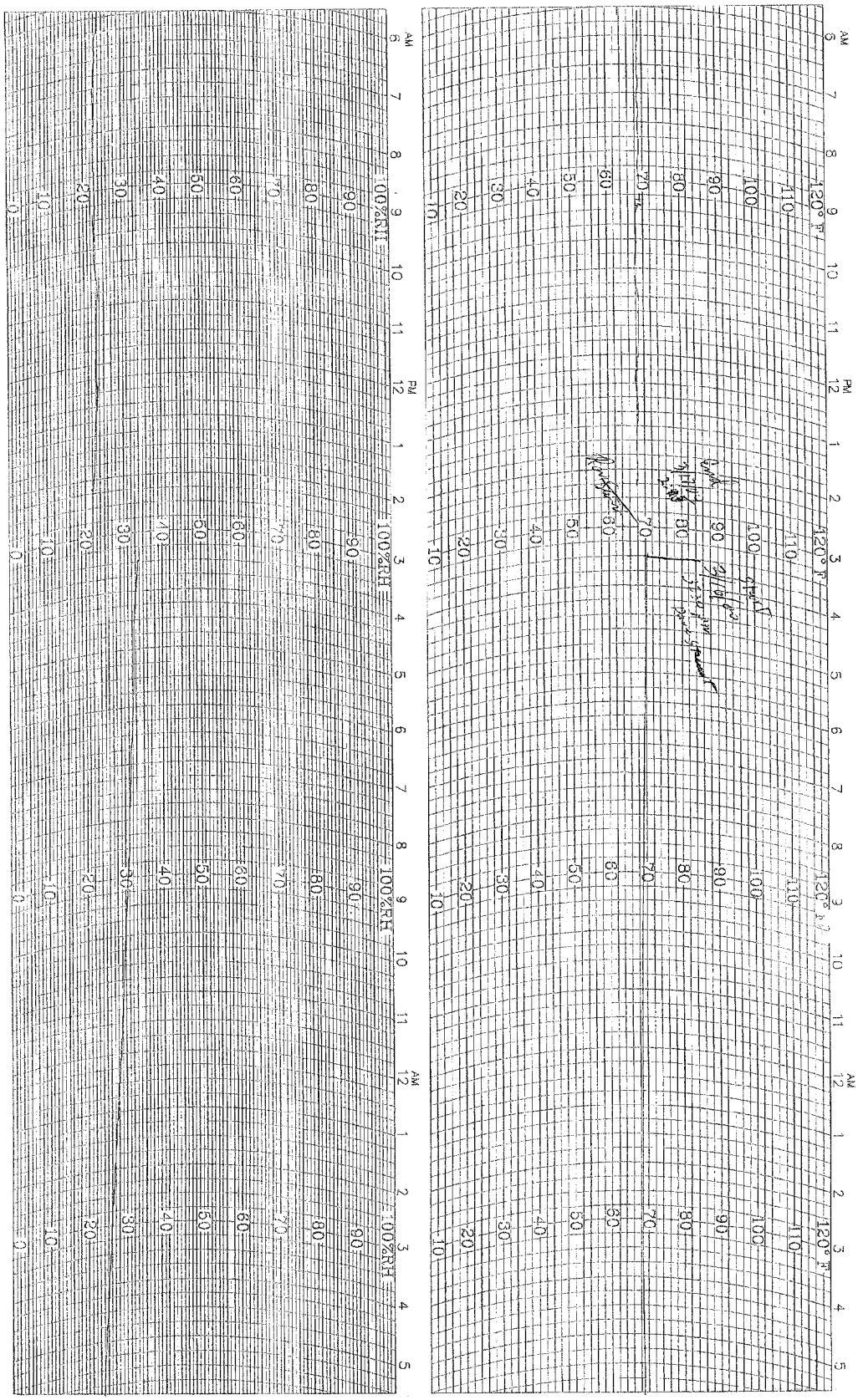
Provide drawing which shows the driver's SRP location.

Provided in Attachment VI

6. FUEL TANK LOCATION –

Provide drawing which shows the undercarriage view of the vehicle.

Attached are underbody photographs.



WeatherMeasure
WEATHERtronics
Division of QUALIMETRICS, Inc.

P.O. BOX 41039
SACRAMENTO, CA 95841
PHONE: (916) 923-0055

HYGROTHERMOGRAPH
1 DAY

CHART NO. M699123
C311-D-HF
ECN 2717
6-9-87

STATION _____ DATE ON 3/6/00 DATE OFF 3/10/00