

V2823 653237

REPORT NO. 208-MGA-98-008

SAFETY COMPLIANCE TESTING FOR FMVSS 208
OCCUPANT CRASH PROTECTION
(SLED TEST)

Chrysler Corporation
1998 Dodge Stratus 4 Door
NHTSA NO. CW0309

MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: April 14, 1998

Report Date: April 20, 1998

Final Report

Prepared For:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY ASSURANCE
OFFICE OF VEHICLE SAFETY COMPLIANCE
MAIL CODE: NSA-30
400 SEVENTH STREET, S.W., ROOM 6115
WASHINGTON, D.C. 20590

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

APPROVED BY: David Winkelbauer DATE: 4/22/98
David Winkelbauer, Project Engineer
MGA Research Corporation

FINAL REPORT ACCEPTED BY:
Charles R. Case
Contracting Officer's Technical Representative (COTR)
NHTSA, Office of Vehicle Safety Compliance

8/24/98
Date of Report Acceptance

4/22/98 10:45
4/22/98 10:45

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 208-MGA-98-008		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Final Report for FMVSS 208 Compliance Testing of a 1998 Dodge Stratus 4 Door (Sled Test) NHTSA No. CW0309				5. Report Date April 20, 1998	
				6. Performing Organization Code MGA	
7. Author(s) David Winkelbauer				8. Performing Organization Report No. MGA-DOT-208-08	
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105				10. Work Unit No.	
				11. Contract or Grant No. DTNH22-93-D-21089	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (Mail Code: NSA-30) 400 Seventh St., S.W., Room 6115 Washington, D.C. 20590				13. Type of Report and Period Covered Final Report April 14 - 30, 1998	
				14. Sponsoring Agency Code NSA-30	
15. Supplementary Notes					
16. Abstract Compliance tests (sled test) were conducted on the subject 1998 Dodge Stratus 4 Door in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP208S-00 for the determination of FMVSS 208 compliance. Test failures identified were as follows: NONE					
17. Key Words Compliance Testing FMVSS 208				18. Distribution Statement Copies of this report are available from: NHTSA Technical Reference Division, Room 5108 (NAD-52), 400 Seventh Street, S.W. Washington, D.C. 20590 Telephone No. (202) 366-4946	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 158	22. Price		

TABLE OF CONTENTS

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
1	Purpose of Compliance Test	1-1
2	Compliance Data Summary	2-1
3	Summary of Results for FMVSS 208	3-1
4	Occupant, Vehicle, and Camera Information	4-1
APPENDIX A	Photographs	
APPENDIX B	Data Plots	
APPENDIX C	Manufacturer's Vehicle Information	

LIST OF TABLES

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
1	Sled Test Summary	2-5
2	General Test and Vehicle Parameter Data	2-6
3	Vehicle Accelerometer Location and Data Summary	2-8
4	Report of Vehicle Condition at the Completion of Testing	2-9
5	FMVSS 208 Occupant Injury Criteria	3-2
6	Dummy Kinematic Summary	3-5
7	FMVSS 208 Seat Belt Comfort and Convenience Test Summary	3-6
8	FMVSS 208 Seat Belt Warning System Check	3-9
9	FMVSS 208 Readiness Indicator	3-10
10	FMVSS 208 Rear Outboard Seating Position Seat Belts	3-11
11	Lap Belt Lockability	3-12
12	Airbag Labels	3-24
13	Seat and Steering Column Positioning Data	4-2
14	Dummy Measurement Data for Front Seat Occupants	4-4
15	Camera Locations	4-7

LIST OF FIGURES

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
1	Dummy Measurement Locations for Front Seat Occupants	4-3
2	Vehicle Target Locations	4-5
3	Camera Positions	4-6
4	Air Probe Temperature	4-8

SECTION 1
PURPOSE AND TEST PROCEDURE

PURPOSE

This sled test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 208 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation (MGA) under Contract No. DTNH22-93-D-21089. The purpose of this test was to determine whether the subject vehicle, a 1998 Dodge Stratus 4 Door, NHTSA No. CW0309, meets the performance requirements of FMVSS 208, "Occupant Crash Protection". The compliance test was conducted using the requirements found in the OVSC Laboratory Test Procedure No. TP-208S-00 dated June 17, 1997.

TEST PROCEDURE

This test was conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure No. TP-208S-00 dated June 17, 1997. Data was obtained relative to FMVSS 208, "Occupant Crash Protection".

The test vehicle was instrumented with four (4) accelerometers to measure longitudinal axis accelerations.

The test vehicle contained two (2) Part 572 E 50th percentile adult male anthropomorphic test devices (ATDs). The dummies were positioned in the front outboard seating positions according to the dummy placement procedures specified in Appendix B of the Laboratory Test Procedure.

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

The thirty-seven (37) data channels were multiplexed and recorded on five IBM PC compatible computers with Metrabyte DAS-16F A/D converter boards. The data was digitally sampled at 10,000 samples per second and processed per Section 11.7 through 11.9 of the Laboratory Test Procedure.

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

The vehicle and occupant data are summarized in Section 2. The FMVSS 208 data is presented in Section 3. The vehicle, occupant, and camera measurements are presented in Section 4. Appendix A contains the still photographic prints. Appendix B contains the dummy and vehicle data plots. Appendix C contains the manufacturer's vehicle information.

SECTION 2
COMPLIANCE DATA SUMMARY

TEST RESULTS SUMMARY

This sled test was conducted at MGA Research Corporation on April 14, 1998.

The test vehicle, a 1998 Dodge Stratus 4 Door, NHTSA No. CW0309, appeared to comply with the performance requirements of FMVSS 208. The Head Injury Criteria (HIC) calculations were less than 1000, the chest resultant accelerations did not exceed 60 g's. The compressive forces transmitted through the upper legs did not exceed 2,250 pounds as measured by Part 572 E dummies seated in the front outboard designated seating positions. For each Part 572 E dummy, the chest deflection did not exceed 3.0 inches. For each Part 572E dummy, the maximum peak flexion bending moment about the occipital condyle did not exceed 190 N-m. The maximum peak extension bending moment did not exceed 57 N-m. The maximum peak axial tension did not exceed 3300 N. The maximum peak axial compression did not exceed 4000 N. The maximum peak fore and aft shear did not exceed 3100 N. The vehicle's restraint system met the applicable comfort and convenience requirements.

The test vehicle was equipped with an airbag and a Type 2 seat belt in the front outboard designated seating positions. Both dummies were restrained only by the airbag during the test.

The driver's HIC was 255. The maximum peak flexion bending moment about the occipital condyle was 41.1 N-m, the maximum peak extension bending moment was 6.5 N-m, the maximum peak axial tension was 708.5 N, the maximum peak axial compression was 612.3 N, the maximum peak fore/aft shear was 1032.6 N. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 46 g's. The driver's chest maximum deflection was 1.8 inches. The driver's left and right femur maximum compressive forces were 1024 pounds and 1113 pounds, respectively.

The right front passenger's HIC was 110. The maximum peak flexion bending moment about the occipital condyle was 56.9 N-m, the maximum peak extension bending moment was 14.9 N-m, the maximum peak axial tension was 1012.2 N, the maximum peak axial compression

was 635.8 N, the maximum peak fore/aft shear was 1118.1 N. The right front passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 40 g's. The right front passenger's chest maximum deflection was 0.8 inches. The right front passenger's left and right femur maximum compressive forces were 885 pounds and 950 pounds, respectively.

TEST NOTES

TABLE 1 SLED TEST SUMMARY

Vehicle Yr/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

Vehicle NHTSA No.: CW0309 Test Type: Sled Test

Test Date: April 14, 1998 Time: 1:30 p.m. Temp: 71°F

Vehicle Test Weight: 3515 lbs.

Sled Velocity Change: 29.1 mph

Airbag Fire Time: 21 msec

Dummies:	Driver	Passenger
Dummy Type	<u>Part 572E</u>	<u>Part 572E</u>
Serial Number	<u>340</u>	<u>312</u>
Restraint System	<u>Airbag</u>	<u>Airbag</u>
No. of Data Channels	<u>15</u>	<u>15</u>

Number of Cameras: 1 Real Time
6 High Speed

Door Opening Data:	Left Front:	<u>Opened</u>	Left Rear:	<u>Opened</u>
	Right Front:	<u>Opened</u>	Right Rear:	<u>Opened</u>

Front Seat(s) Data:	Driver	Passenger
Seat Track Failure	<u>0 in.</u>	<u>0 in.</u>
Seat Back Failure	<u>None</u>	<u>None</u>

Visible Dummy Contact Points:	Driver	Passenger
Head	<u>Airbag, visor, headrest</u>	<u>Airbag, visor, headrest</u>
Chest	<u>Airbag</u>	<u>Airbag</u>
Left Knee	<u>Instrument Panel</u>	<u>Glovebox</u>
Right Knee	<u>Instrument Panel</u>	<u>Glovebox</u>

TABLE 2 GENERAL TEST AND VEHICLE PARAMETER DATA

Vehicle Yr/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

NHTSA No: CW0309 VIN: 1B3EJ46X8WN112749 Body Color: Purple

Engine: 4 Cylinders; C.I.D.; 2.4 liters; CC

X Gas; Diesel; Turbocharged

 Longitudinal; X Transverse

Transmission: 4 Speed; Manual; X Automatic; Overdrive

Final Drive: X Front Wheel; Rear Wheel; Four Wheel

Major Option: X A/C; X P/S; X P/B; P/wdo; P/door locks;

 P/seats; X Tilt Wheel; Anti-skid Brakes; Cruise Control

Date Received: 3/02/98; Odometer Reading: 172 miles

Dealer's Name/Address: Belle Dodge
6940 Washington Avenue, P.O. Box 081578
Racine, WI 53408-1578

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Chrysler Corporation

Date of Manufacture: 8/97; VIN: 1B3EJ46X8WN112749

GVWR: 3990 lbs; GAWR Front: 1815 lbs. GAWR Rear: 2225 lbs.

DATA FROM TIRE PLACARD:

Tire Pressure with maximum capacity vehicle load: Front 30 psi Rear 30 psi

Recommended Tire Size: P195/70R14

Recommended Cold Tire Pressure: Front 30 psi Rear 30 psi

Tires on Vehicle: P195/70R14; Manufacturer: Michelin

Type of Spare Tire: Spacesaver

Number of Occupants: 2 Front; 3 Rear; 3rd Seat; 5 TOTAL

Type of Front Seats: X Bucket; Bench; Split Bench

Type of Front Seat Back: Fixed; X Adj. With; X Lever; Rot. Knob Power

TABLE 2 GENERAL TEST AND VEHICLE PARAMETER DATA (Cont.)

VEHICLE CAPACITY WEIGHT (VCW) = 865 lbs.
No. Of Occupants x 150 lbs = 750 lbs.
Rated Cargo/Luggage Weight (RCWL) = 115 lbs.

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER

(WITH MAXIMUM FLUIDS) = UDW:

Right Front = 935 lbs Right Rear = 561 lbs
Left Front = 992 lbs Left Rear = 556 lbs
TOTAL FRONT WEIGHT = 1927 lbs (63 % of Total Vehicle Weight)
TOTAL REAR WEIGHT = 1117 lbs (37 % of Total Vehicle Weight)
TOTAL UNLOADED DELIVERED WEIGHT (UDW) = 3044 lbs

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND CARGO WEIGHT:

Right Front = 1032 lbs Right Rear = 704 lbs
Left Front = 1082 lbs Left Rear = 697 lbs
TOTAL FRONT WEIGHT = 2114 lbs (60 % of Total Vehicle Weight)
TOTAL REAR WEIGHT = 1401 lbs (40 % of Total Vehicle Weight)
TOTAL TEST WEIGHT = 3515 lbs

VEHICLE ATTITUDE:

Delivered Door Sill Angle: -0.1°
Fully Loaded Door Sill Angle: 0.4°
Test Door Sill Angle: 0.1°
Wheel Base: 108.0 in

Fuel System Capacity From Owner's Manual = 16.0 gallons
Usable Capacity Figure Furnished by COTR = 16.0 gallons

TABLE 3 VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

Vehicle NHTSA No.: CW0309; Test Date: April 14, 1998

ACCELEROMETER LOCATION (inches)				
	Description	X	Y	Z
1	Engine	18.1	4.7 R	33.5
2	Left B-Post	90.4	27.6	10.8
3	Right B-Post	90.6	27.6	11.0
4	Rear Axle	136.2	0.4 L	11.8

Reference: X = Front of Sled Carriage
Y = Centerline of Sled Carriage
Z = Top of Sled Carriage

ACCELEROMETER DATA SUMMARY					
No.	DESCRIPTION	MAXIMUM (g's)	TIME (msec)	MINIMUM (g's)	TIME (msec)
1	Engine	4.6	130	-23.0	53
2	Left B-Post	1.9	127	-17.6	46
3	Right B-Post	2.6	129	-20.8	42
4	Rear Axle	2.9	139	-18.4	45

TABLE 4 REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

Contract Number: DTNH22-93-D-21089

From: MGA Research Corporation To: Mr. Charles Case, COTR
5000 Warren Road Office of Vehicle Safety Compliance
Burlington, WI 53105

The following vehicle has been subjected to testing for FMVSS 208. The vehicle was inspected upon arrival at the laboratory for the test and found to contain all of the equipment listed below. The vehicle was again inspected after the above test had been conducted, and all changes were noted below. The final condition of the vehicle was also noted in detail.

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

Vehicle NHTSA No.: CW0309 Body Color: Purple

VIN: 1B3EJ46X8WN112749 Cost: \$16,875

Odometer: Arrival Date: 3/02/98 Reading: 172 miles

Completion Date: 4/14/98 Reading: 177 miles

Engine: 4 Cylinders; 2.4 Liters; X Gas; Diesel

Transmission: 4 Speed; Manual; X Automatic

Final Drive: X Front Wheel; Rear Wheel; Four Wheel

Tire Size: P195/70R14; Manufacturer: Michelin

Air Conditioner	<u>Yes</u>	Console	<u>Yes</u>	Brakes	<u>Power</u>
Tinted Glass	<u>Yes</u>	Tachometer	<u>Yes</u>	Front	<u>Disc</u>
Power Steering	<u>Yes</u>	Cruise Control	<u>No</u>	Rear	<u>Drum</u>
Power Windows	<u>No</u>	Rear Window Def.	<u>No</u>	Front Seats	<u>Bucket</u>
Power Door Locks	<u>No</u>	Sun/Moon Roof	<u>No</u>	Seat Type	
Radio	<u>Yes</u>	T-Top	<u>No</u>	Front	<u>Adjustable</u>
Clock	<u>Yes</u>	Tilt Steering Wheel	<u>Yes</u>	Rear	<u>Non-adjustable</u>
Roof Rack	<u>No</u>	Other Options:	<u> </u>	No. of Seats	<u>5</u>

Equipment that is no longer on the vehicle as noted above: Spare tire, jack, rear seats, rear cargo area trim, rear deck lid, radiator, gas tank, and exhaust system.

Explanation:

Items removed to allow installation of data acquisition system and sled interface frame.

Vehicle Condition:

The vehicle was subjected to a sled test. The engine, suspension, and exhaust system have been fixed and have numerous beams and brackets welded to them. A steel framework is attached to the vehicle. Various interior and exterior portions of the vehicle have been painted and have had holes drilled to facilitate attachment of instrumentation. Various body parts have been removed. THE VEHICLE IS FOR SALVAGE ONLY AND IS NOT TO BE REPAIRED FOR HIGHWAY USE.

SECTION 3
SUMMARY OF RESULTS FOR FMVSS 208

TABLE 5 FMVSS 208 OCCUPANT INJURY CRITERIA

Veh. Yr./Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

Veh. NHTSA No.: CW0309 Test Date: April 14, 1998

MAXIMUM ACCELERATION VALUES: (g's)	DRIVER DUMMY #340	PASSENGER DUMMY #312
Head Channel X	-42.6	-32.5
Head Channel Y	-3.8	-9.2
Head Channel Z	11.7	14.5
HEAD RESULTANT	44.2	33.3
Chest Channel X	-45.8	-38.8
Chest Channel Y	3.8	-3.8
Chest Channel Z	9.8	11.8
CHEST RESULTANT	46.6	40.6

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	255	110
t_1 = (msec)	73.3	75.5
t_2 = (msec)	109.3	111.5

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

CHEST INJURY CRITERIA (CLIP) VALUES: (g's)

CLIP	46	40
t^1 = (msec)	96.0	95.0
t^2 = (msec)	99.1	98.1
CHEST DEFLECTION (in)	1.8	0.8

TABLE 5 FMVSS 208 OCCUPANT INJURY CRITERIA (Cont.)

Veh. Yr./Make/Model/Body Style:1998/Dodge/Stratus/4 Door

Veh. NHTSA No.:CW0309 Test Date:April 14, 1998

MAX. COMPRESSIVE FEMUR FORCES:	Units (lbs)	
	DRIVER DUMMY #340	PASSENGER DUMMY #312
Left Side (lbs)	1024	885
Right Side (lbs)	1113	950

NECK FORCES:

Neck Force X (N)	1032.6	1118.1
Neck Force Y (N)	42.1	330.1
Neck Force Z (N)	708.5	1012.2

NECK MOMENTS:

Neck Moment X (N-m)	-7.6	-19.9
Neck Moment Y (N-m)	59.3	76.5
Neck Moment Z (N-m)	4.1	23.1

TABLE 5 FMVSS 208 OCCUPANT INJURY CRITERIA (Cont.)

NECK INJURY CRITERIA:	DRIVER DUMMY #340	PASSENGER DUMMY #312
Peak Flexion Bending Moment (N-m) about the occipital condyle	41.1	56.9
Peak Extension Bending Moment (N-m) about the occipital condyle	6.5	14.9
Peak Axial Tension (N)	708.5	1012.2
Peak Axial Compression (N)	612.3	635.8
Peak Fore Shear (N)	1032.6	1118.1
Peak Aft Shear (N)	340.4	294.7

TABLE 6 DUMMY KINEMATIC SUMMARY

DRIVER DUMMY

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

RIGHT FRONT PASSENGER DUMMY

Upon impact, the right front passenger dummy translated forward on the seat impacting both knees into the dashboard. The dummy's head impacted the airbag and visor with the dummy's head rotating rearward. The right front passenger dummy was restrained by the airbag. The dummy rebounded rearward into the seat back with the dummy's head contacting the head restraint. The right front passenger dummy came to rest in the seat.

TABLE 7 FMVSS 208 SEAT BELT COMFORT AND CONVENIENCE TEST SUMMARY
FRONT OUTBOARD DESIGNATED SEATING POSITIONS

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

NHTSA No.: CW0309; Date of Comfort/Convenience Check: April 13, 1998

Technician Performing Check: Al Chalmers

GVWR: 3990 lbs

Automatic seat belts installed in any vehicle, other than a walk-in van-type vehicle which has a gross vehicle weight rating of 10,000 pounds or less, and is manufactured on or after September 1, 1986, shall meet the requirements for convenience hooks, webbing tension relieving devices, and belt contact force.

Manual seat belts installed for compliance with this standard in front outboard designated seating positions of any vehicle, other than a walk-in van-type vehicle which has a gross vehicle rating of 10,000 pounds or less, and is manufactured on or after September 1, 1989, shall meet the requirements for belt contact force, plate access, retraction and seat belt guides, and hardware.

VEHICLE EQUIPMENT:

The vehicle's front outboard seating positions were equipped with manual Type 2 seat belts which must comply with the dynamic test requirements of S5.1; requirements for webbing tension-relieving devices (S7.4.2), belt contact force (S7.4.3), latchplate access (S7.4.4), retraction (S7.4.5), and seat belt guides and hardware (S7.4.6) apply.

CONVENIENCE HOOKS (S7.4.1):

Not applicable, the vehicle was not equipped with automatic seat belts.

WEBBING TENSION-RELIEVING DEVICE (S7.4.2)

The seat belt assembly on the front outboard seating positions did not have webbing tension-relieving devices.

TABLE 7 FMVSS 208 SEAT BELT COMFORT AND CONVENIENCE TEST SUMMARY
FRONT OUTBOARD DESIGNATED SEATING POSITIONS. (Cont.)

BELT CONTACT FORCE (S7.4.3)

The belt contact force on the chest of the test dummy was 0.4 pounds.

LATCHPLATE ACCESS (S7.4.4)

The seat belt latchplates, in their normal stowed position, were within the reach envelope.

The clearance test block moved unhindered to the latchplate or buckle.

RETRACTION (S7.4.5):

The seat belt automatically retracted when the seat belt latchplate was released.

The stowed seat belt webbing and hardware were not pinched when the door was closed.

SEAT BELT GUIDES AND HARDWARE (S7.4.6)

The seat cushion was movable, but the seat back did not serve as a function other than seating.

The seat was not removable.

The seat was not movable so that the space formerly occupied by the seat could be used for a secondary function.

Note: If the seat or seat cushion is removable or if the seat is movable so that the space formerly occupied by the seat can be used for a secondary function, the seat belt guides and hardware requirements do not apply.

TABLE 7 FMVSS 208 SEAT BELT COMFORT AND CONVENIENCE TEST SUMMARY
FRONT OUTBOARD DESIGNATED SEATING POSITIONS. (Cont.)

SEAT BELT GUIDES AND HARDWARE (S7.4.6)(Cont.)

The webbing was not designed to pass through the seat cushion or between the cushion and seat back.

The remaining two parts (the seat belt latchplate and the buckle) were accessible under normal conditions.

The latchplate and buckle did not pass through the guides provided and fall behind the seat when the belt was completely retracted (or detached if not retractable) and the seat was moved to any position.

TABLE 8 FMVSS 208 SEAT BELT WARNING SYSTEM CHECK

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

NHTSA No.: CW0309; Technician: Al Chalmers; Date: April 13, 1998

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 = 5 seconds
(4 to 8 seconds)

Time duration of reminder light operation = 65 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 ignition switch placed in "Start/On" position:

B.1 S7.3(a)(1)

Time duration of audible warning signal = 0 seconds
(audible warning not required)

Time duration of reminder light operation = 5 seconds
(reminder light not required)

B.2 S7.3(a)(2)

Time duration of audible warning signal = _____ seconds
(audible warning not required)

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

A. Note wording of visual warning: ()Fasten seat belt ()Fasten Belt
(X)Symbol 101

Figure 1

0000-0001-9300-9300

- © 2000 Blackwell Science Ltd

— *Continued*

- Figure 1**

- 1000

- © 2000 Blackwell Science Ltd

—

TABLE 10 FMVSS 208 REAR OUTBOARD SEATING POSITION SEAT BELTS

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

NHTSA No.: CW0309; Technician: Al Chalmers; Date: April 13, 1998

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

(X)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.

TABLE 11 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 locking retractors. (S7.1.1.5(c))

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

NHTSA No.: CW0309; Technician: Al Chalmers; Date: April 13, 1998

Designated Seating Position Tested: Right Front Outboard

1. Record the seating position. Mid-Position
(Any position is acceptable.)
2. Buckle the seat belt.
3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature.
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 of the vehicle.
(X) 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.
(X) 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?
(X) Yes, go to 6.1 () No, go to 7.
 - 6.1 If yes, 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.
(X) Yes-Pass () No-FAIL
7. Locate a reference point A on the seat belt buckle.

TABLE 11 LAP BELT LOCKABILITY (Cont.)

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.
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.
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.
Measured distance between A and B is 58 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.
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. 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.
The measured force application angle = 12 degrees.

WEBBING TENSION PULL DEVICE

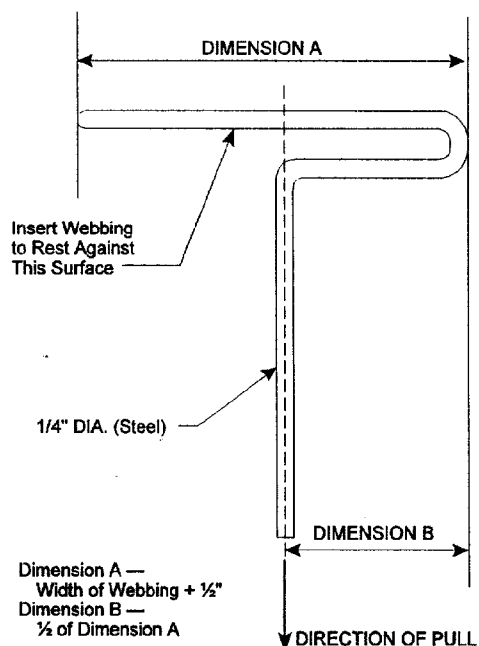


TABLE 11 LAP BELT LOCKABILITY (Cont.)

13. The length between points A and B along the longitudinal centerline of the webbing while the preload is being applied.
Measured distance between A and B is 51 inches.
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.
Record onset rate: 12 lb/sec.
Record the distance between points A and B: 52.3 inches
15. Subtract the measurement in 14 from the measurement in 13. Is the difference 2 inches or less? 14-13 = 1.3 inches (X)Yes-Pass () No-FAIL
16. Subtract the measurement in 10 from the measurement in 14. Is the difference 3 inches or more? 10-14 = 5.7 inches (X)Yes-Pass () No-FAIL

TABLE 11 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 locking retractors. (S7.1.1.5(c))

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

NHTSA No.: CW0309; Technician: Al Chalmers; Date: April 13, 1998

Designated Seating Position Tested: Left Rear Outboard

1. Record the seating position. Non-adjustable
(Any position is acceptable.)
2. Buckle the seat belt.
3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature.
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 of the vehicle.
(X) 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.
(X) 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?
(X) Yes, go to 6.1 () No, go to 7.
 - 6.1 If yes, 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.
(X) Yes-Pass () No-FAIL
7. Locate a reference point A on the seat belt buckle.

TABLE 11 LAP BELT LOCKABILITY (Cont.)

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.
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.
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.
Measured distance between A and B is 51 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.
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. 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.

The measured force application angle = 10 degrees.

WEBBING TENSION PULL DEVICE

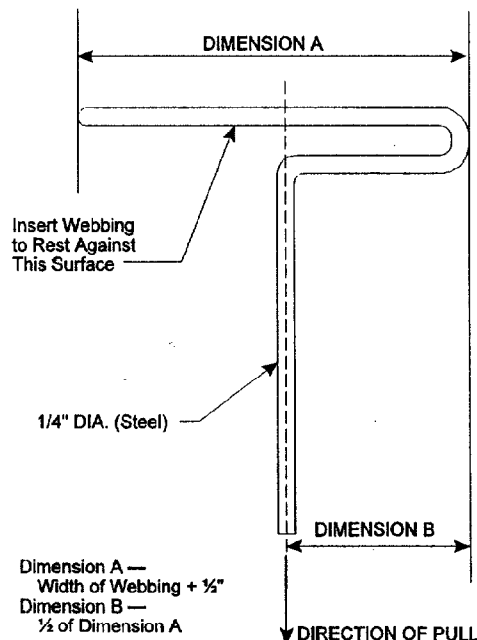


TABLE 11 LAP BELT LOCKABILITY (Cont.)

13. The length between points A and B along the longitudinal centerline of the webbing while the preload is being applied.
Measured distance between A and B is 44 inches.
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.
Record onset rate: 20 lb/sec.
Record the distance between points A and B: 45.5 inches
15. Subtract the measurement in 14 from the measurement in 13. Is the difference 2 inches or less? 14-13 = 1.5 inches (X)Yes-Pass () No-FAIL
16. Subtract the measurement in 10 from the measurement in 14. Is the difference 3 inches or more? 10-14 = 5.5 inches (X)Yes-Pass () No-FAIL

TABLE 11 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 locking retractors. (S7.1.1.5(c))

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

NHTSA No.: CW0309; Technician: Al Chalmers;

Date: April 13, 1998

Designated Seating Position Tested: Center Rear

1. Record the seating position. Non-adjustable
(Any position is acceptable.)
2. Buckle the seat belt.
3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature.
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 of the vehicle.
(X) 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.
(X) 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?
(X) Yes, go to 6.1 () No, go to 7.
 - 6.1 If yes, 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.
(X) Yes-Pass () No-FAIL
7. Locate a reference point A on the seat belt buckle.

TABLE 11 LAP BELT LOCKABILITY (Cont.)

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.
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.
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.
Measured distance between A and B is 33.5 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.
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. 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.
The measured force application angle = 10 degrees.

WEBBING TENSION PULL DEVICE

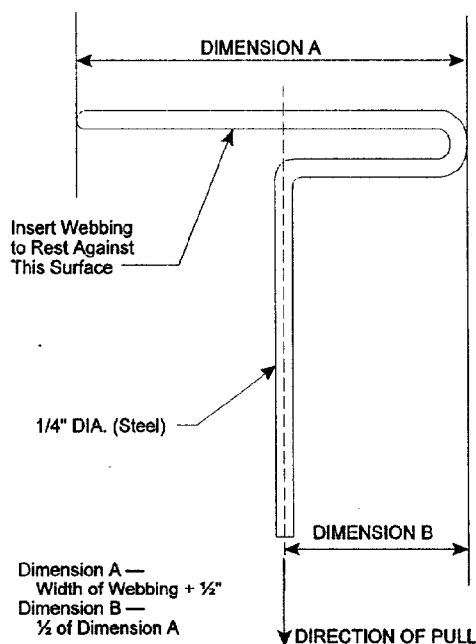


TABLE 11 LAP BELT LOCKABILITY (Cont.)

13. The length between points A and B along the longitudinal centerline of the webbing while the preload is being applied.
Measured distance between A and B is 25 inches.
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.
Record onset rate: 17 lb/sec.
Record the distance between points A and B: 25.5 inches
15. Subtract the measurement in 14 from the measurement in 13. Is the difference 2 inches or less? $14-13 = \underline{0.5 \text{ inches}}$ (X)Yes-Pass () No-FAIL
16. Subtract the measurement in 10 from the measurement in 14. Is the difference 3 inches or more? $10-14 = \underline{8.0 \text{ inches}}$ (X)Yes-Pass () No-FAIL

TABLE 11 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 locking retractors. (S7.1.1.5(c))

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

NHTSA No.: CW0309; Technician: Al Chalmers ; Date: April 13, 1998

Designated Seating Position Tested: Right Rear Outboard

1. Record the seating position. Non-adjustable
(Any position is acceptable.)
2. Buckle the seat belt.
3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature.
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 of the vehicle.
(X) 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.
(X) 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?
(X) Yes, go to 6.1 () No, go to 7.
 - 6.1 If yes, 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.
(X) Yes-Pass () No-FAIL
7. Locate a reference point A on the seat belt buckle.

TABLE 11 LAP BELT LOCKABILITY (Cont.)

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.
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.
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.
Measured distance between A and B is 45.5 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.
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. 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.
The measured force application angle = 14 degrees.

WEBBING TENSION PULL DEVICE

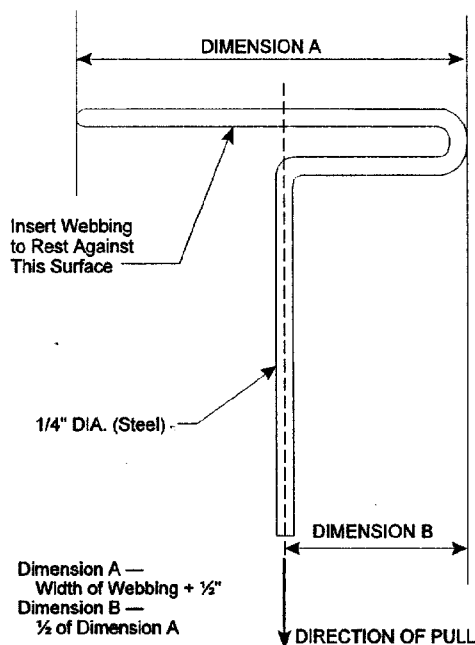


TABLE 11 LAP BELT LOCKABILITY (Cont.)

13. The length between points A and B along the longitudinal centerline of the webbing while the preload is being applied.
Measured distance between A and B is 38 inches.
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.
Record onset rate: 15 lb/sec.
Record the distance between points A and B: 39.5 inches
15. Subtract the measurement in 14 from the measurement in 13. Is the difference 2 inches or less? 14-13 = 1.5 inches (X)Yes-Pass () No-FAIL
16. Subtract the measurement in 10 from the measurement in 14. Is the difference 3 inches or more? 10-14 = 6.0 inches (X)Yes-Pass () No-FAIL

TABLE 12 AIR BAG LABELS

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

NHTSA No.: CW0309;

Technician: Al Chalmers;

Date: April 13, 1998

1. Air bag maintenance label and owner's manual instructions:
 - 1.1. Does the manufacturer recommend periodic maintenance or replacement of the airbag? ☐ 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 inches 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:
 - 2.1. Include a description of the vehicle's airbag system in an easily understandable format? ☒ Yes-Pass ☐ No-FAIL
 - 2.2. Include a statement that the vehicle is equipped with an airbag and a lap/shoulder belt at the front outboard seating positions?
☒ Yes-Pass ☐ No-FAIL

TABLE 12 AIR BAG LABELS (Cont.)

- 2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions?
(X) Yes-Pass () No-FAIL
- 2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an airbag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash?
(X) Yes-Pass () No-FAIL
- 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?
(X) Yes-Pass () No-FAIL
- 2.6 Explain that no objects should be placed 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?
(X) Yes-Pass () No-FAIL
3. Does the vehicle:
- 3.1. Provide an automatic means to ensure that the airbag does not deploy when a child seat or child with a total mass of 30 kg or less is present on the front outboard passenger? () Yes (X) 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 is might have an adverse effect on infants in rear-facing child seats, and unbelted or improperly belted children? () Yes (X) 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 (X) No

TABLE 12 AIR BAG LABELS (Cont.)

If yes to 3.1, or 3.2, or 3.3, the vehicle is not required to have a sunvisor warning label, an airbag alert label or a label on the dash and this check sheet is complete. If no to 3.1, 3.2, and 3.3, go to 4.

4. Sun Visor Warning Label

- 4.1. Is the label permanently affixed (may be permanent marking or molding) to either side of the sunvisor at each front outboard seating position with an airbag?

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.") to either label shown on the next page as appropriate at each front outboard seating position with an air bag?

- 4.2.1 **Dual air bags:** ☐ Not Applicable

Driver Side - ☒ Yes ☐ No-FAIL

Passenger Side - ☒ Yes ☐ No-FAIL

- 4.2.2 **Vehicle with driver air bag ONLY - either 3.2.1 or 3.2.2 is applicable, not both.**

- 4.2.2.1 Does the label conform in content to either label shown on the following page as appropriate?

☒ Not Applicable

Driver Side - ☐ Yes-Pass ☐ No-FAIL

- 4.2.2.2 Does the label conform in content to the first label shown on the following page where the label can be modified to omit the pictogram and the message text may read:

TABLE 12 AIR BAG LABELS (Cont.)

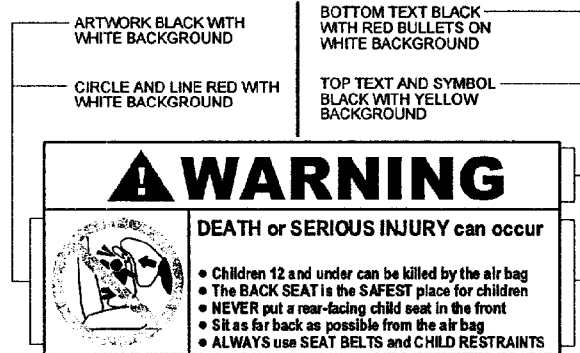
DEATH or SERIOUS INJURY can occur.

- 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.

(X) Not Applicable

Driver Side - () Yes-Pass () No-FAIL

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION
LABEL OUTLINE, VERTICAL AND HORIZONTAL LINE BLACK



SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION
LABEL OUTLINE, VERTICAL AND HORIZONTAL LINE BLACK

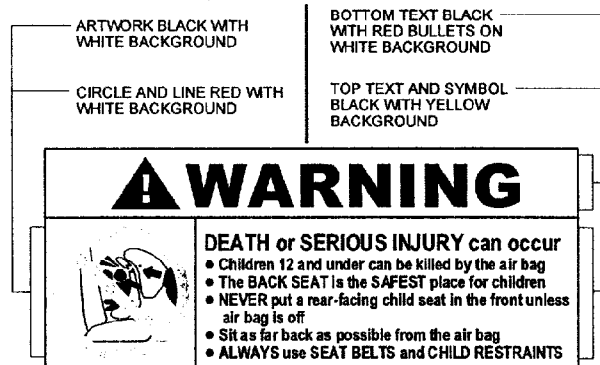


TABLE 12 AIR BAG LABELS (Cont.)

- 4.3 Is the label heading area yellow with the word “warning” and the alert symbol in black?
- Driver Side - (X)Yes-Pass () No-FAIL
- Passenger Side - (X)Yes-Pass () No-FAIL
- 4.4 Is the message white with black text?
- Driver Side - (X)Yes-Pass () No-FAIL
- Passenger Side - (X)Yes-Pass () No-FAIL
- 4.5 Is the message area at least 30 cm²? Actual message area: 32 cm²
- Driver Side - (X)Yes-Pass () No-FAIL
- Passenger Side - (X)Yes-Pass () No-FAIL
- 4.6 Is the pictogram black with a red circle and slash on a white background?
- For vehicles with driver side air bag ONLY () Not Applicable
- Driver Side - (X)Yes-Pass () No-FAIL
- Passenger Side - (X)Yes-Pass () No-FAIL
- 4.7 Is the pictogram at least 30 mm in diameter? Actual diameter: 30 mm
- For vehicles with driver side air bag ONLY () Not Applicable
- Driver Side - (X)Yes-Pass () No-FAIL
- Passenger Side - (X)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?
- Driver Side - (X)Yes-Pass () No-FAIL
- Passenger Side - (X)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 - (X)Yes-Pass () No-FAIL
- Passenger Side - (X)Yes-Pass () No-FAIL

TABLE 12 AIR BAG LABELS (Cont.)

5. Air Bag Alert Label

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

Driver Side - ☒ Yes, go to 6 ☐ No

Passenger Side - ☐ No air bag ☒ Yes ☐ No

5.2 Does the label conform in content to the label shown below?

Driver Side - ☐ Yes ☐ **No-FAIL**

Passenger Side - ☐ No air bag ☐ Yes-Pass ☐ **No-FAIL**

5.3 Is the message area black with yellow text?

Driver Side - ☐ Yes-Pass ☐ **No-FAIL**

Passenger Side - ☐ No air bag ☐ Yes-Pass ☐ **No-FAIL**

5.4 Is the message area at least 20 cm²? Actual message area: _____ cm²

Driver Side - ☐ Yes-Pass ☐ **No-FAIL**

Passenger Side - ☐ No air bag ☐ Yes-Pass ☐ **No-FAIL**

5.5 Is the pictogram black with a red circle and slash on a white background?

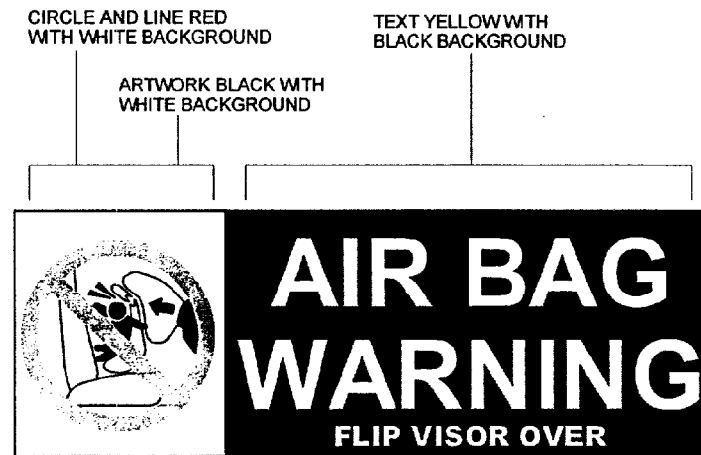
For vehicles with driver side air bag ONLY ☐ Not Applicable

☐ Yes-Pass ☐ **No-FAIL**

TABLE 12 AIR BAG LABELS (Cont.)

- 5.6 Is the pictogram at least 20 mm in diameter? Actual diameter _____ mm
For vehicles with driver side air bag ONLY () Not Applicable
() Yes-Pass () No-FAIL

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN UP POSITION

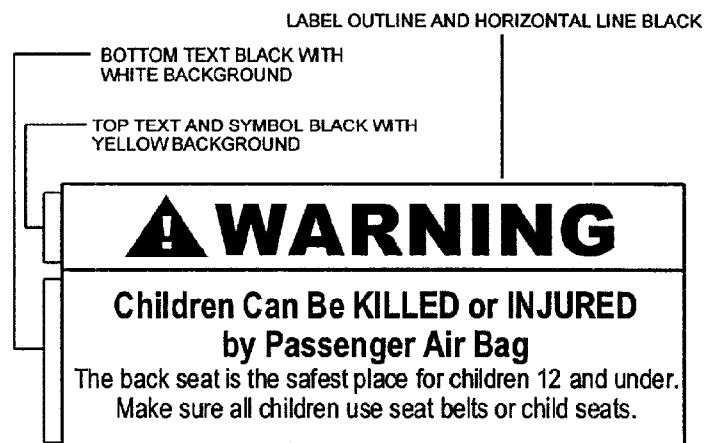


6. Label On the Dash
- 6.1 Does the vehicle have a passenger side air bag?
(X) Yes () No, check sheet is complete.
- 6.2 Does the vehicle have a label on the dash or steering wheel hub?
(X) Yes-Pass () No-FAIL
- 6.3 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children 12 and under." to the label shown below. (X) Yes-Pass () No-FAIL
- 6.4 Is the heading area yellow with the word "warning" and the alert symbol in black?
(X) Yes-Pass () No-FAIL

TABLE 12 AIR BAG LABELS (Cont.)

- 6.5 Is the message white with black text? (X)Yes-Pass () No-FAIL
- 6.6 Is the message area at least 30 cm²? Actual message area: 83 cm²
(X)Yes-Pass () No-FAIL

REMOVABLE LABEL ON DASH



SECTION 4
OCCUPANT, VEHICLE, AND CAMERA INFORMATION

TABLE 13 SEAT AND STEERING COLUMN POSITIONING DATA

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

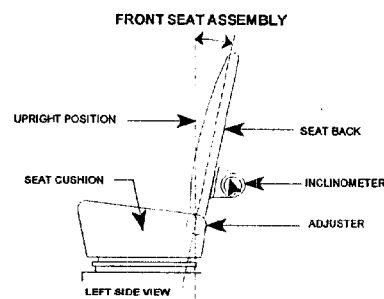
Vehicle NHTSA No.: CW0309 Test Date: April 14, 1998

NOMINAL DESIGN RIDING POSITION:

Driver Seat: Seat Back Angle = 10.0°

Passenger Seat: Seat Back Angle = 10.2°

* Seat back angles are referenced from full up position



SEAT FORE AND AFT POSITIONS:

Driver Seat: The seat track had a total position movement of 23 notches and was positioned 12 notches rearward from the foremost position with the forward most locking position as zero.

Passenger Seat: The seat track had a total position movement of 23 notches and was positioned 12 notches rearward from the foremost position with the forward most locking position as zero.

STEERING COLUMN ADJUSTMENTS:

The steering column was placed in the mid position.

FIGURE 1 DUMMY MEASUREMENT LOCATIONS FOR FRONT SEAT OCCUPANTS

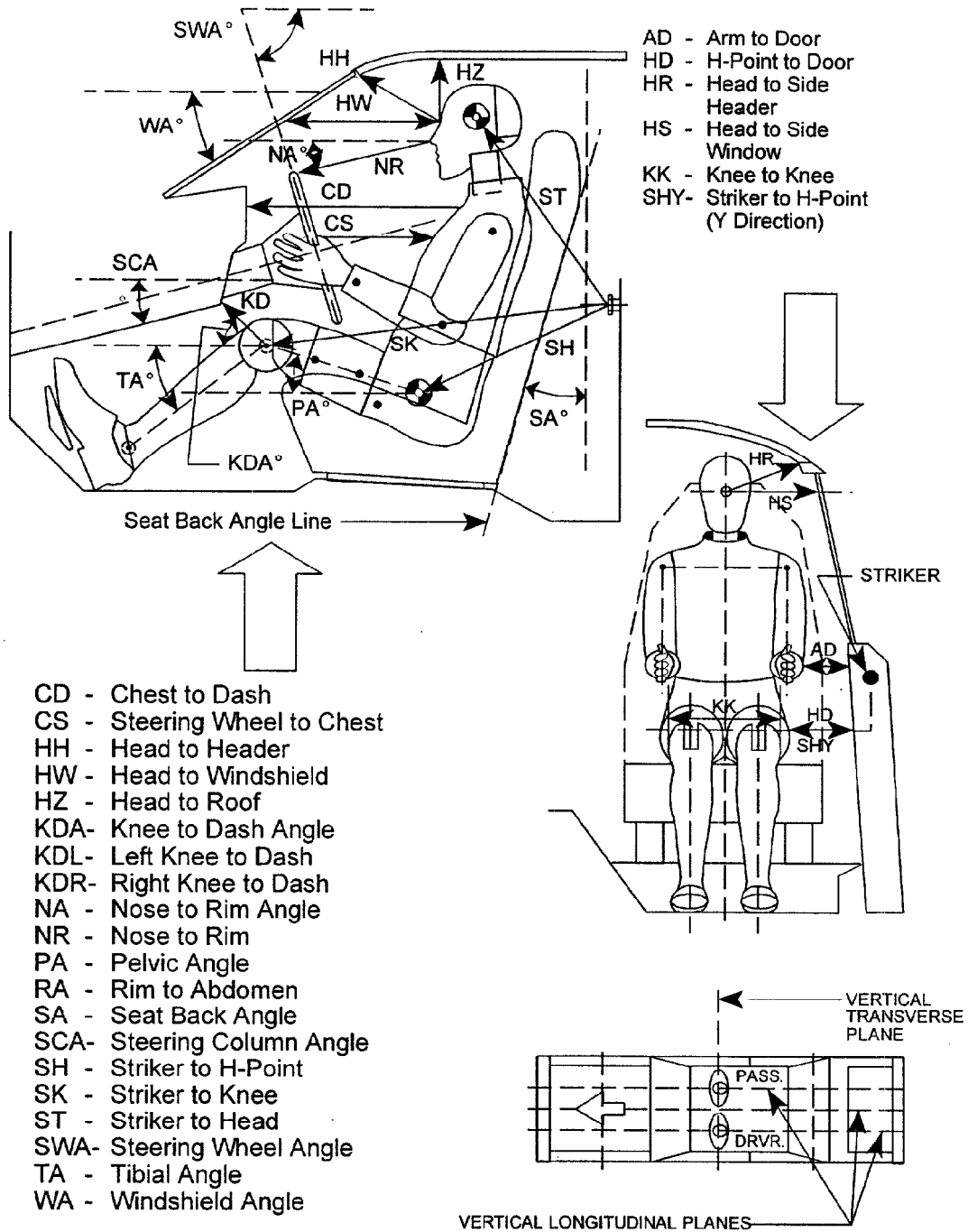


TABLE 14 DUMMY MEASUREMENT DATA FOR FRONT SEAT OCCUPANTS

Vehicle Year/Make/Model/Body Style: 1998/Dodge/Stratus/4 Door

Vehicle NHTSA No.: CW0309 Test Date: April 14, 1998

	DRIVER (Serial #340)	PASSENGER (Serial #312)
WA°	22.8°	
SWA°	68.4°	N/A
SCA°	21.0°	N/A
SA°	10.0°*	10.2°*
HZ	5.1 in.	5.0 in.
HH	12.4 in.	12.1 in.
HW	22.7 in.	21.4 in.
HR	9.3 in.	9.0 in.
NR	16.1 in. Angle (NA) 15.3°	N/A
CD	20.5 in.	20.3 in.
CS	13.2 in.	N/A
RA	8.1 in.	N/A
KDL	6.2 in Angle (KDA) 41.8°	6.1 in.
KDR	6.1 in.	6.0 in. Angle (KDA) 32.2°
PA°	22.9°	24.2°
TA°	39.2°	39.8°
KK	13.2 in.	9.5 in.
ST	22.0 in. Angle 9.0°	21.9 in. Angle 10.5°
SK	23.4 in. Angle 88.8°	24.9 in. Angle 89.7°
SH	9.7 in. Angle 114.7°	10.4 in. Angle 119.4°
SHY	10.5 in.	10.9 in.
HS	12.5 in.	12.6 in.
HD	5.3 in.	5.4 in.
AD	3.8 in.	3.9 in.

* from full up position

FIGURE 2 VEHICLE TARGET LOCATIONS

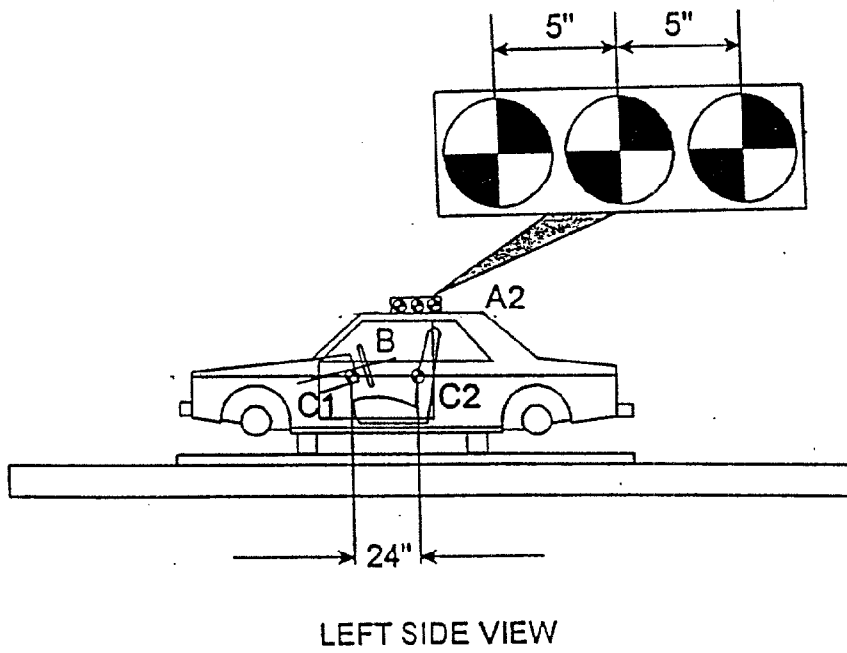
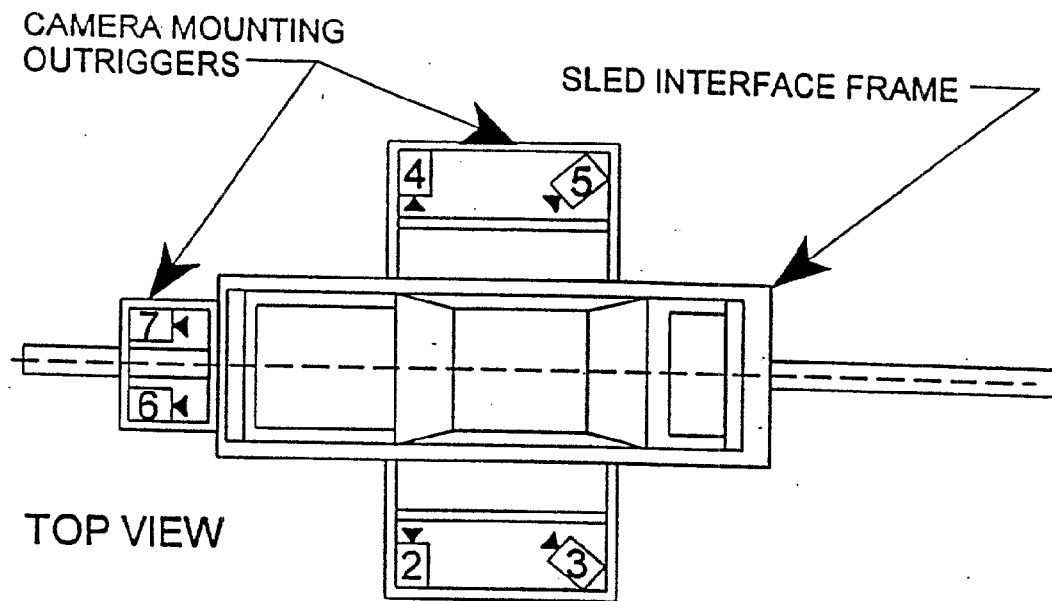


FIGURE 3 CAMERA POSITIONS



CAMERA FRAME RATES:

#1 = 24 fps

All Others = 1,000 fps

1 REAL TIME CAMERA

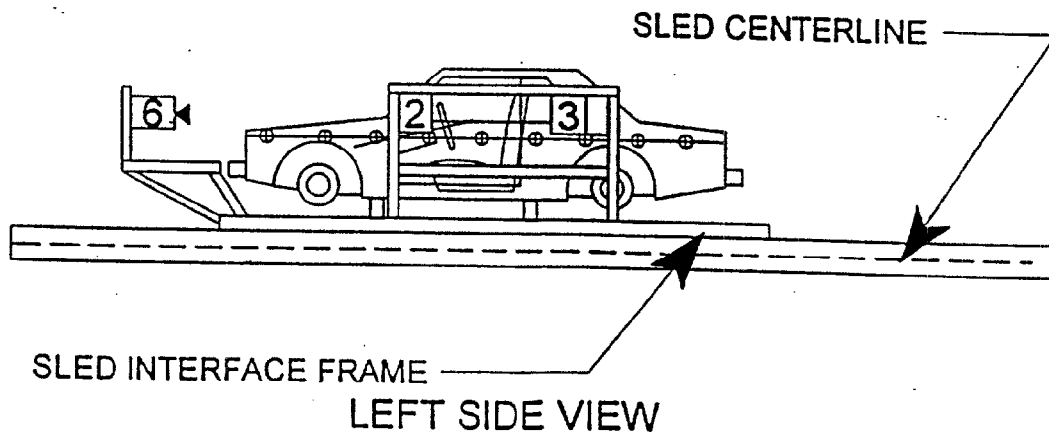


TABLE 15 CAMERA LOCATIONS

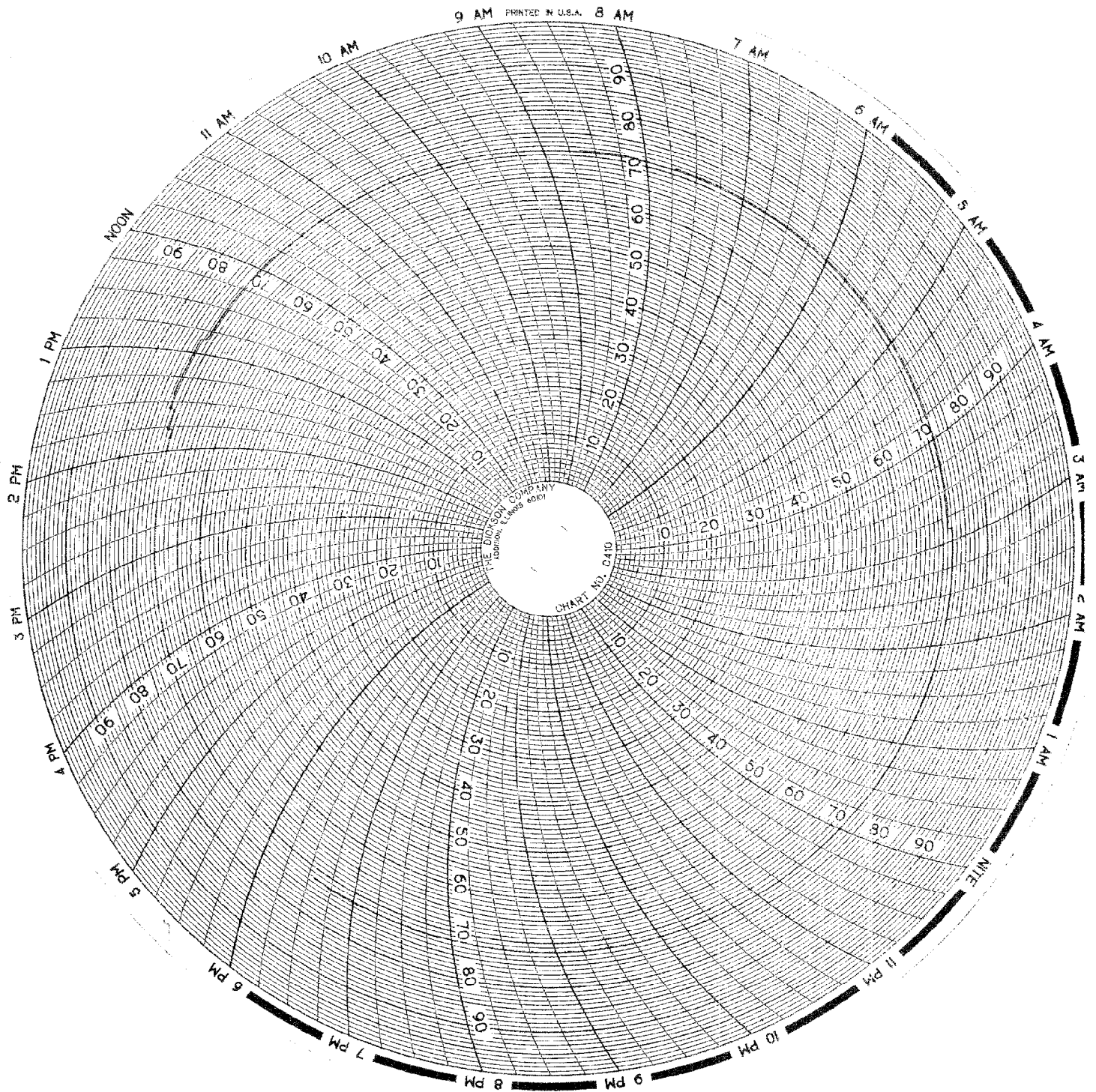
Veh. Year/Make/Model/Body Style:1998/Dodge/Stratus/4 Door

Vehicle NHTSA No.:CW0309; Test Date:April 14, 1998

	VIEW	CAMERA POSITIONS (inches)*			ANGLE (deg)	LENS (mm)	SPEED (fps)
		X	Y	Z			
1	Real-Time (Pre and Post)					10	24
2	Onboard Driver	78.3	87.8	37.0	90	13	1010
3	Onboard Driver Angle	145.3	87.0	47.2		13	1010
4	Onboard Passenger	74.4	86.6	39.0	90	13	649
5	Onboard Passenger Angle	144.8	85.4	47.6		13	1010
6	Onboard Windshield Driver	34.4	13.8	42.1		13	1020
7	Onboard Windshield Passenger	32.5	15.0	42.1		13	901

- * +X = Rearward of the front of the sled carriage
 +Y = Right of the sled carriage longitudinal centerline
 +Z = Above the top of the sled carriage

FIGURE 4 AIR PROBE TEMPERATURE



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

<u>Description</u>	<u>Page No.</u>
Photo No. A-1 - Pre-Test Front View	A-1
Photo No. A-2 - Post-Test Front View	A-2
Photo No. A-3 - Pre-Test Left Side View	A-3
Photo No. A-4 - Post-Test Left Side View	A-4
Photo No. A-5 - Pre-Test Right Side View	A-5
Photo No. A-6 - Post-Test Right Side View	A-6
Photo No. A-7 - Pre-Test 3/4 Left Rear View	A-7
Photo No. A-8 - Post-Test 3/4 Left Rear View	A-8
Photo No. A-9 - Pre-Test 3/4 Right Front View	A-9
Photo No. A-10 - Post-Test 3/4 Right Front View	A-10
Photo No. A-11 - Pre-Test Rear View	A-11
Photo No. A-12 - Post-Test Rear View	A-12
Photo No. A-13 - Pre-Test Windshield View	A-13
Photo No. A-14 - Post-Test Windshield View	A-14
Photo No. A-15 - Pre-Test Driver Dummy Position View	A-15
Photo No. A-16 - Post-Test Driver Dummy Position View	A-16
Photo No. A-17 - Pre-Test Driver Dummy Position View (Door Open)	A-17
Photo No. A-18 - Post-Test Driver Dummy Position View (Door Open)	A-18
Photo No. A-19 - Pre-Test Driver Windshield View	A-19
Photo No. A-20 - Post-Test Driver Windshield View	A-20
Photo No. A-21 - Pre-Test Driver Seat Position View	A-21
Photo No. A-22 - Post-Test Driver Seat Position View	A-22
Photo No. A-23 - Post-Test Driver Knee Bolster View	A-23
Photo No. A-24 - Post-Test Driver Airbag View	A-24
Photo No. A-25 - Post-Test Driver Head Contact View (sunvisor)	A-25
Photo No. A-26 - Post-Test Driver Head Contact View (headrest)	A-26
Photo No. A-27 - Post-Test Driver Knee Contact View	A-27

TABLE OF PHOTOGRAPHS (Cont.)

<u>Description</u>	<u>Page No.</u>
Photo No. A-28 - Pre-Test Passenger Dummy Position View	A-28
Photo No. A-29 - Pre-Test Passenger Dummy Position View (Door Open)	A-29
Photo No. A-30 - Post-Test Passenger Dummy Position View (Door Open)	A-30
Photo No. A-31 - Pre-Test Passenger Windshield View	A-31
Photo No. A-32 - Post-Test Passenger Windshield View	A-32
Photo No. A-33 - Pre-Test Passenger Seat Position View	A-33
Photo No. A-34 - Post-Test Passenger Seat Position View	A-34
Photo No. A-35 - Pre-Test Passenger Dummy Knee Bolster View	A-35
Photo No. A-36 - Post-Test Passenger Dummy Knee Bolster View	A-36
Photo No. A-37 - Post-Test Passenger Dummy Airbag View	A-37
Photo No. A-38 - Post-Test Passenger Dummy Head Contact View (visor)	A-38
Photo No. A-39 - Post-Test Passenger Dummy Head Contact View (headrest)	A-39
Photo No. A-40 - Post-Test Passenger Dummy Knee Contact View	A-40
Photo No. A-41 - Vehicle Certification Label	A-41
Photo No. A-42 - Tire Placard	A-42

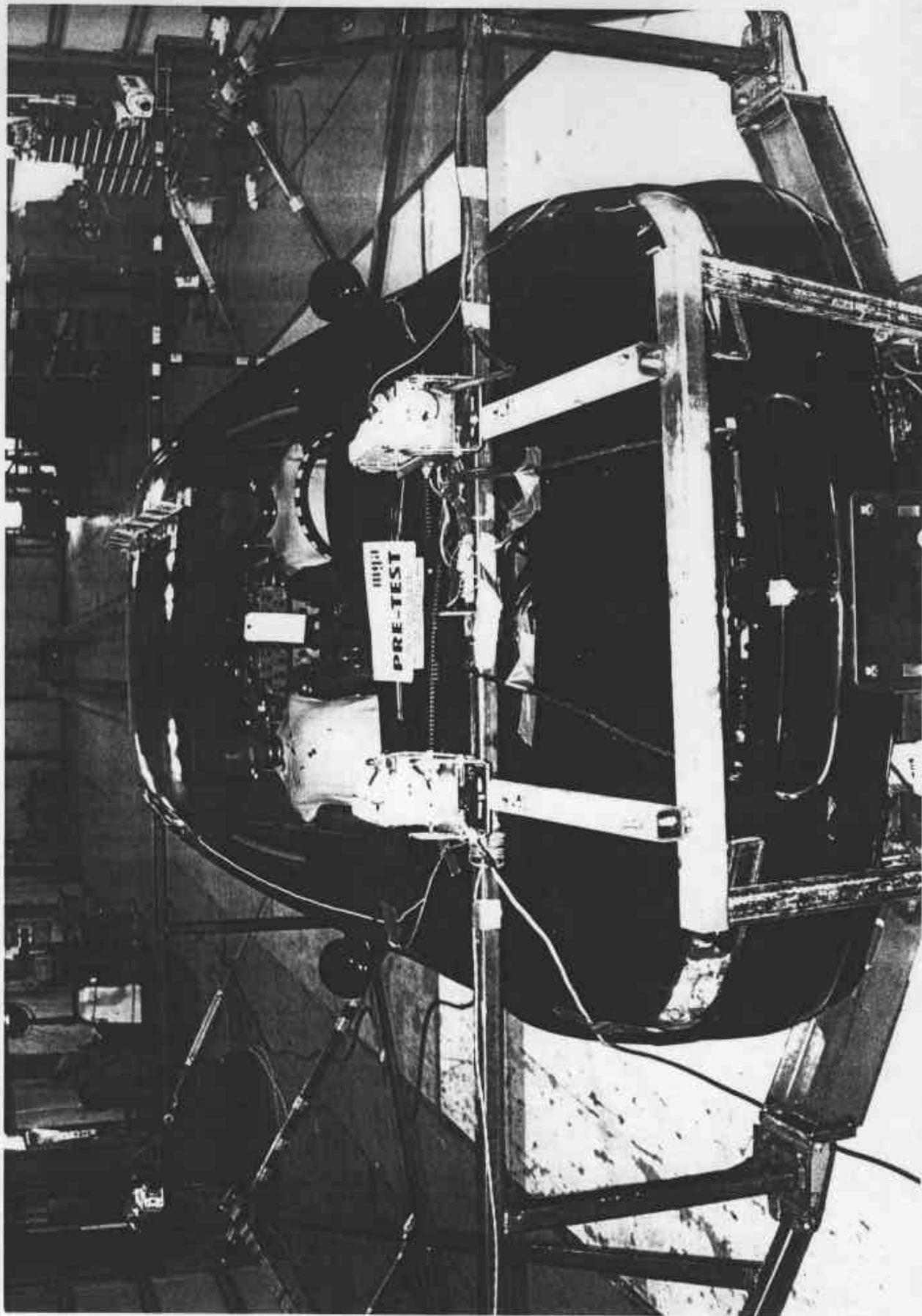


Photo No. A-1 - Pre-Test Front View

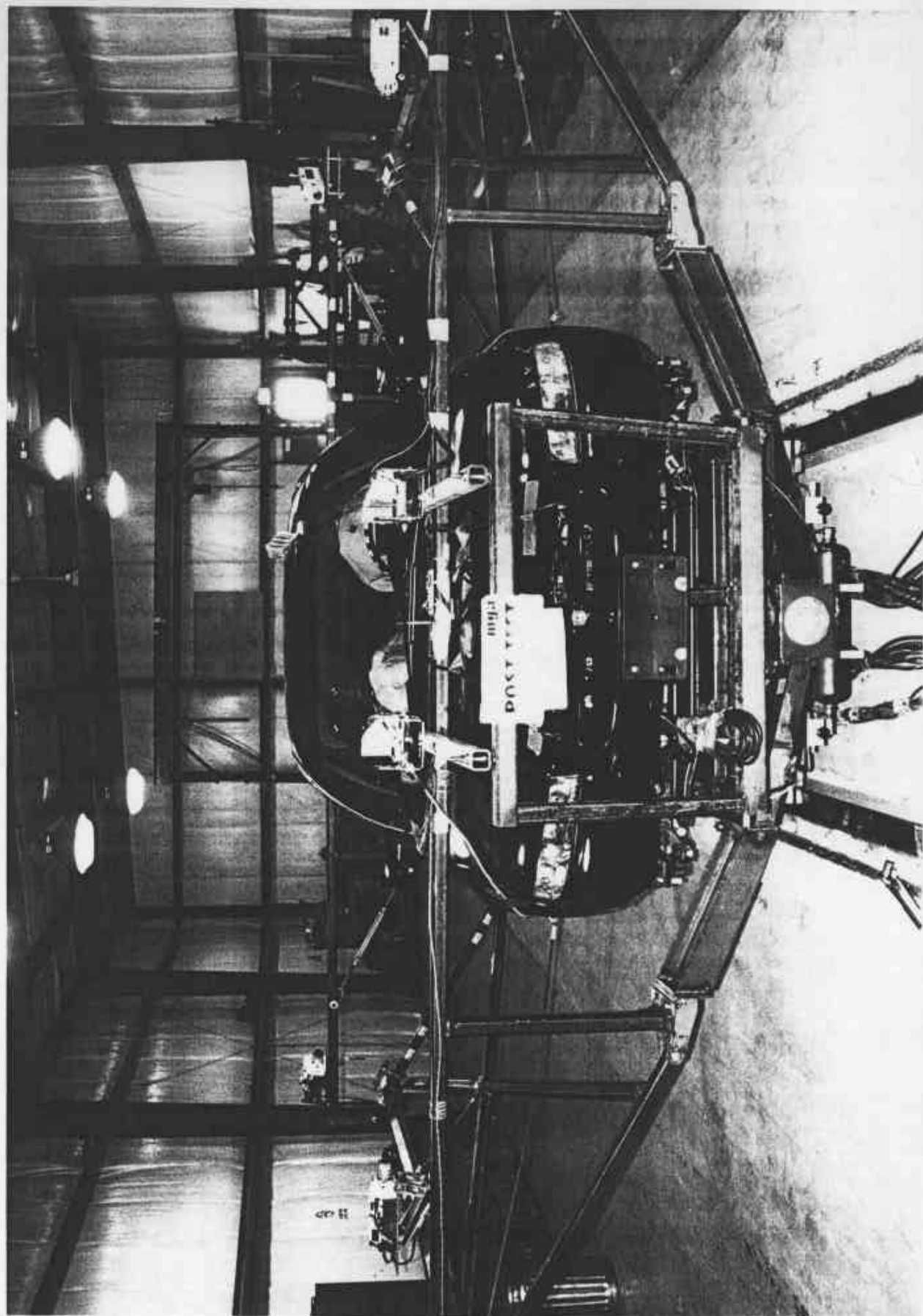


Photo No. A-2 - Post-Test Front View

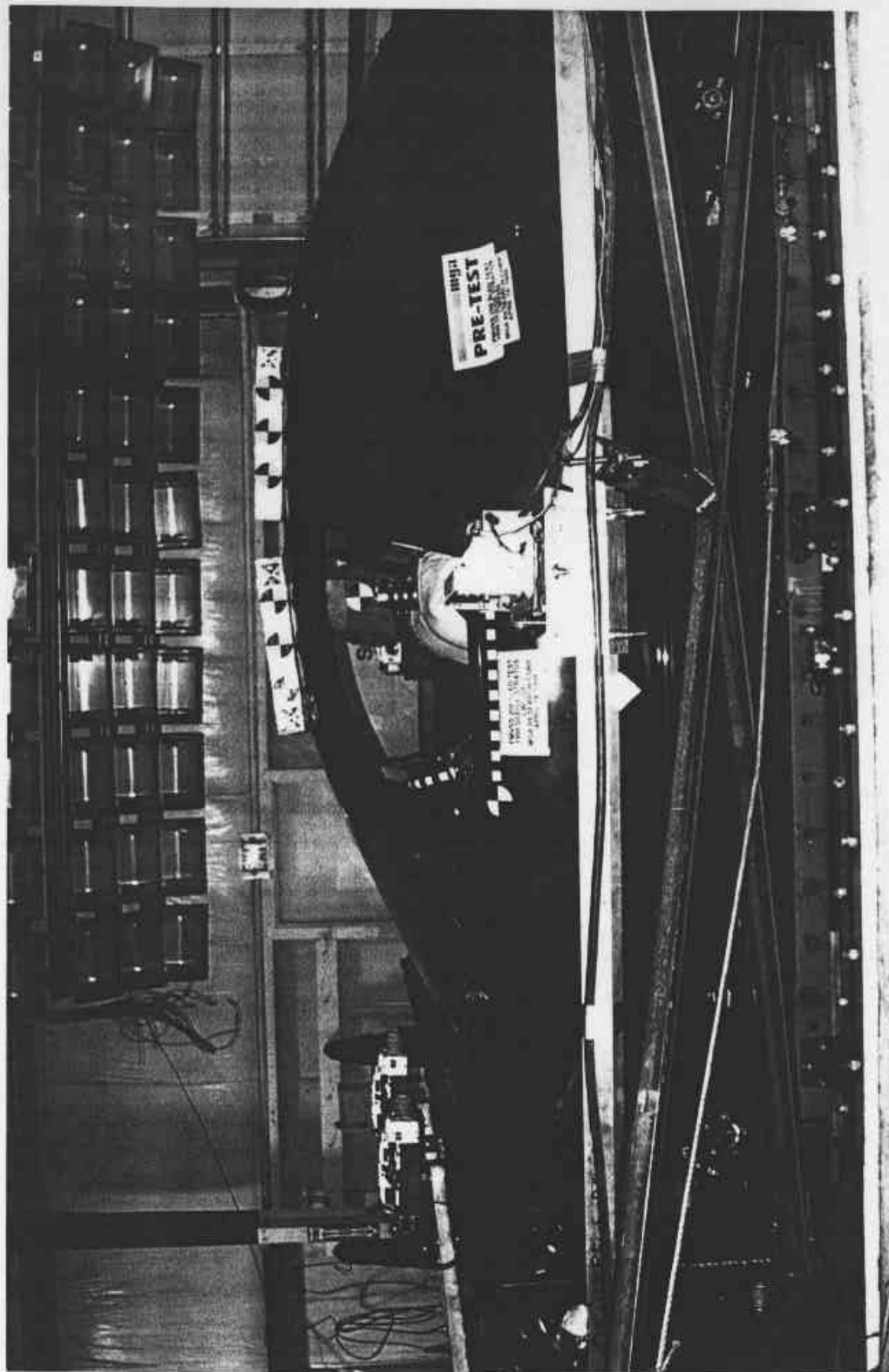


Photo No. A-3 - Pre-Test Left Side View

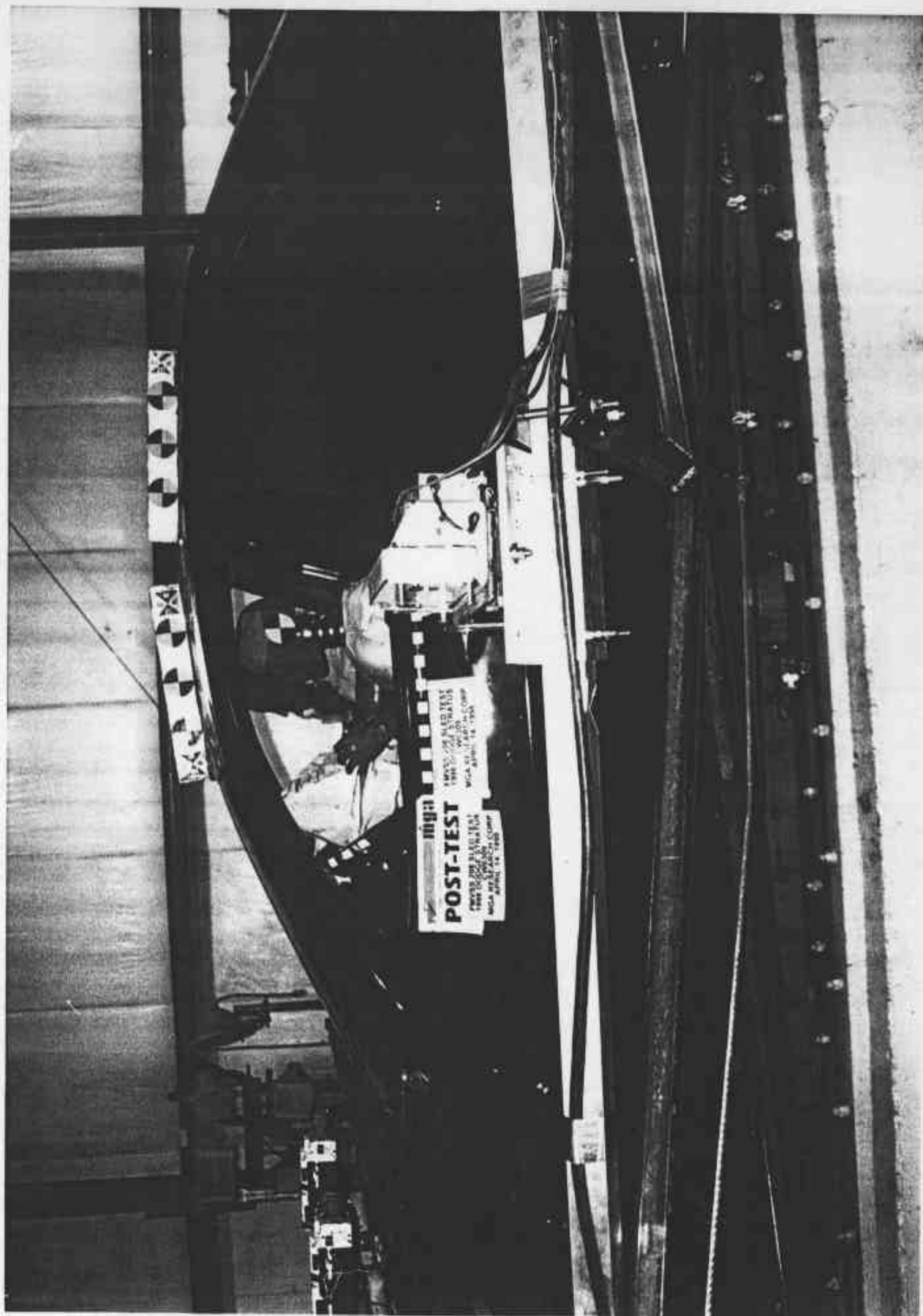


Photo No. A-4 - Post-Test Left Side View

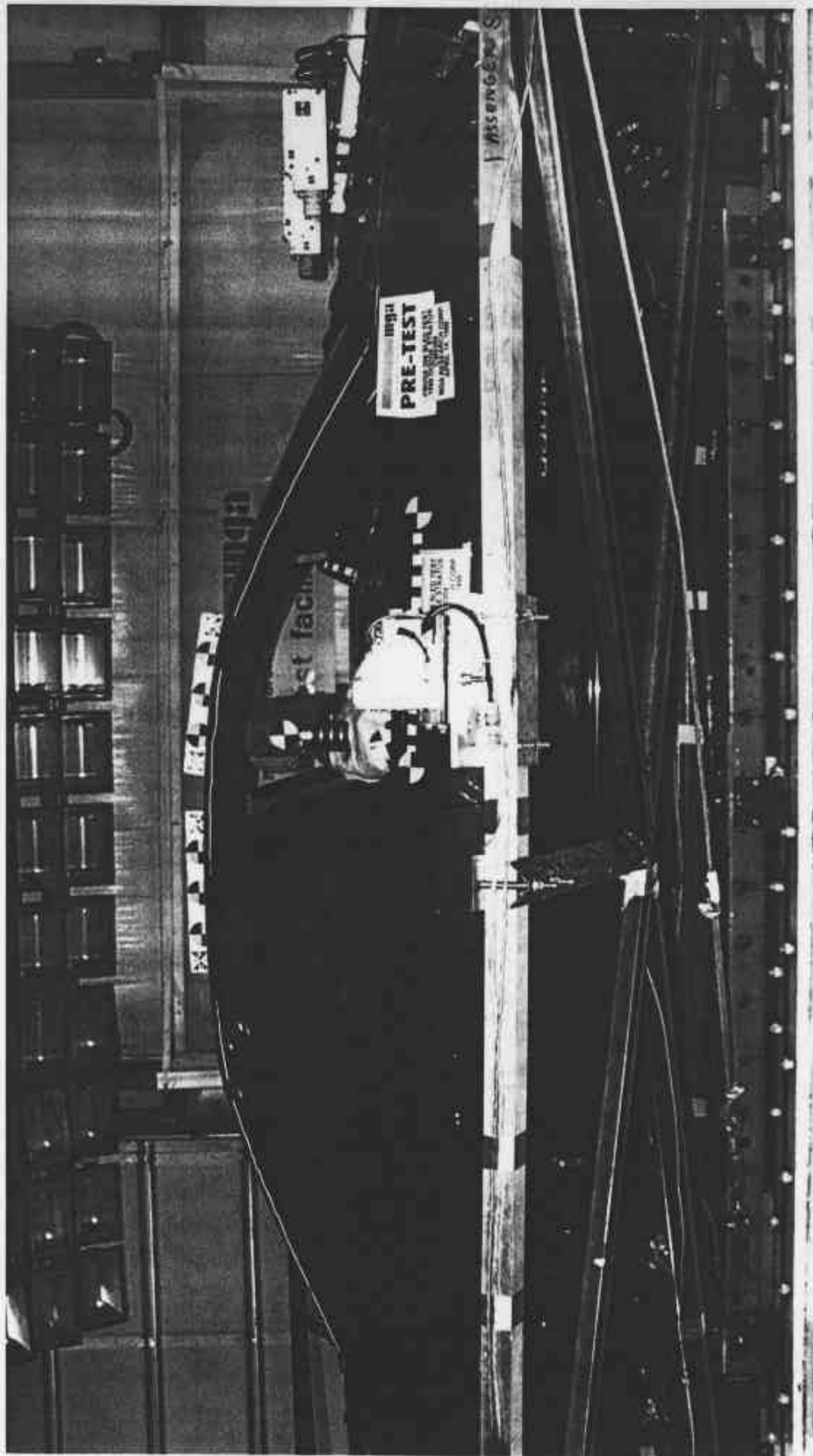


Photo No. A-5 - Pre-Test Right Side View

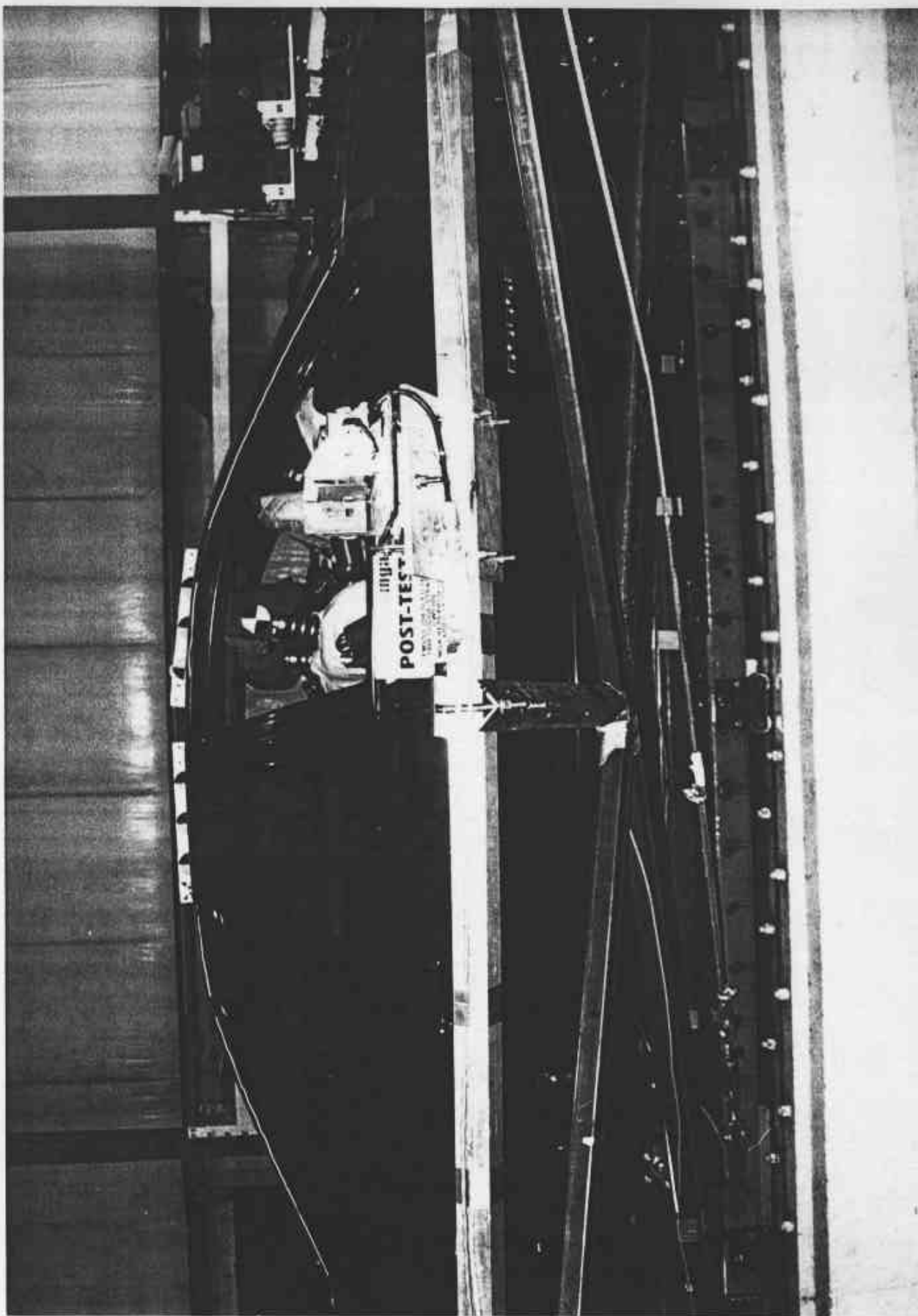


Photo No. A-6 - Post-Test Right Side View

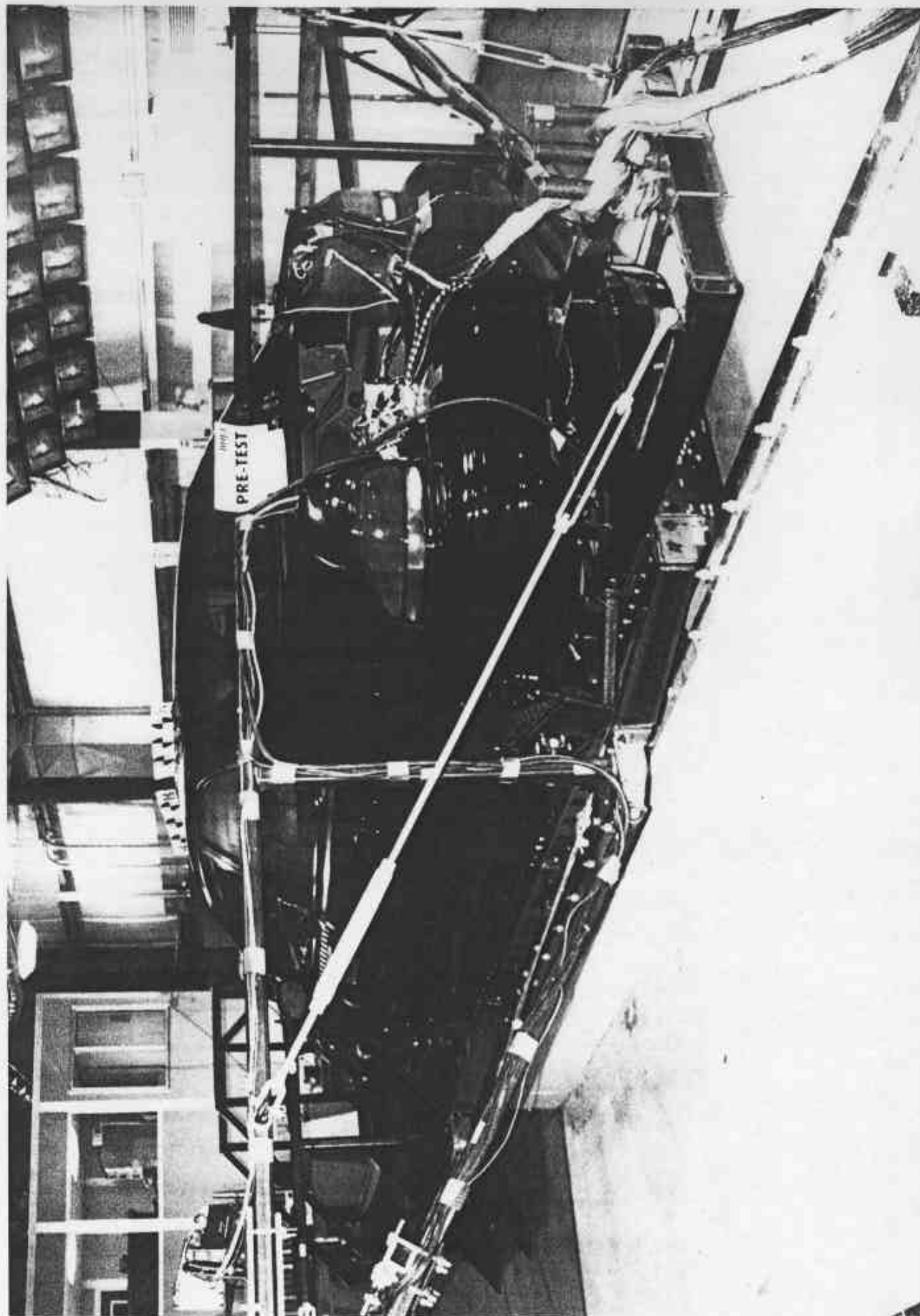


Photo No. A-7 - Pre-Test 3/4 Left Rear View

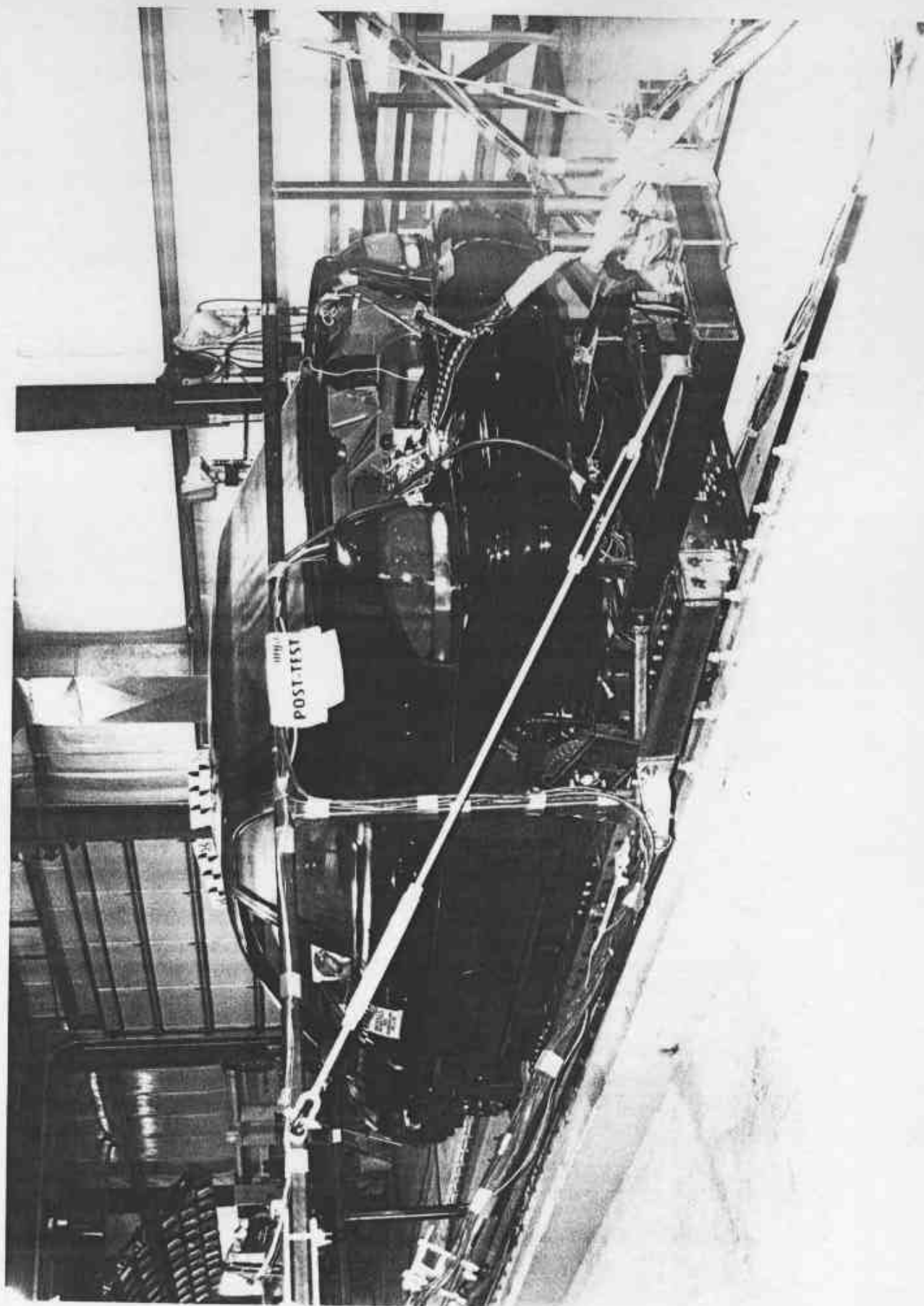


Photo No. A-8 - Post-Test 3/4 Left Rear View

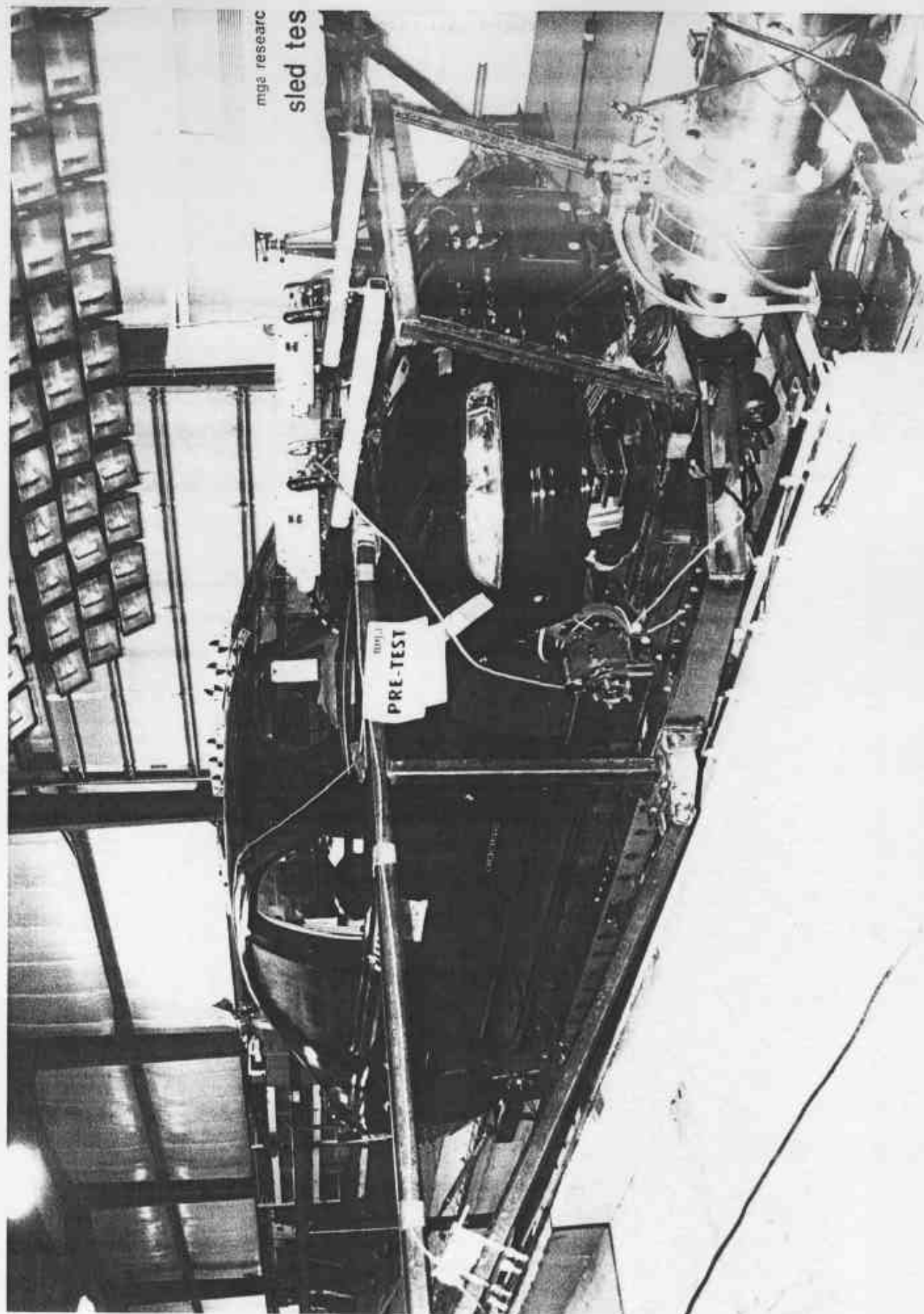


Photo No. A-9 - Pre-Test 3/4 Right Front View

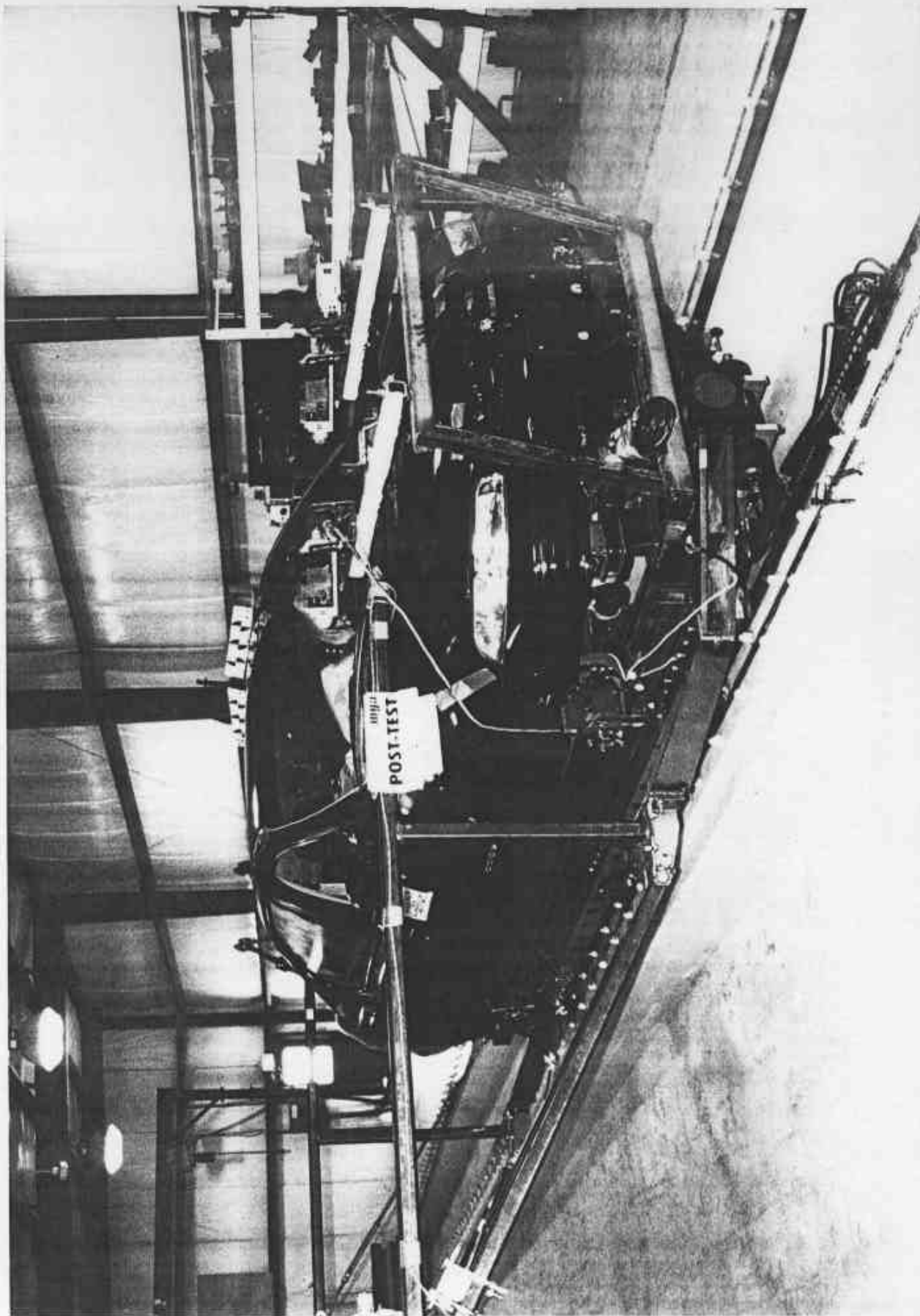


Photo No. A-10 - Post-Test 3/4 Right Front View

A-10

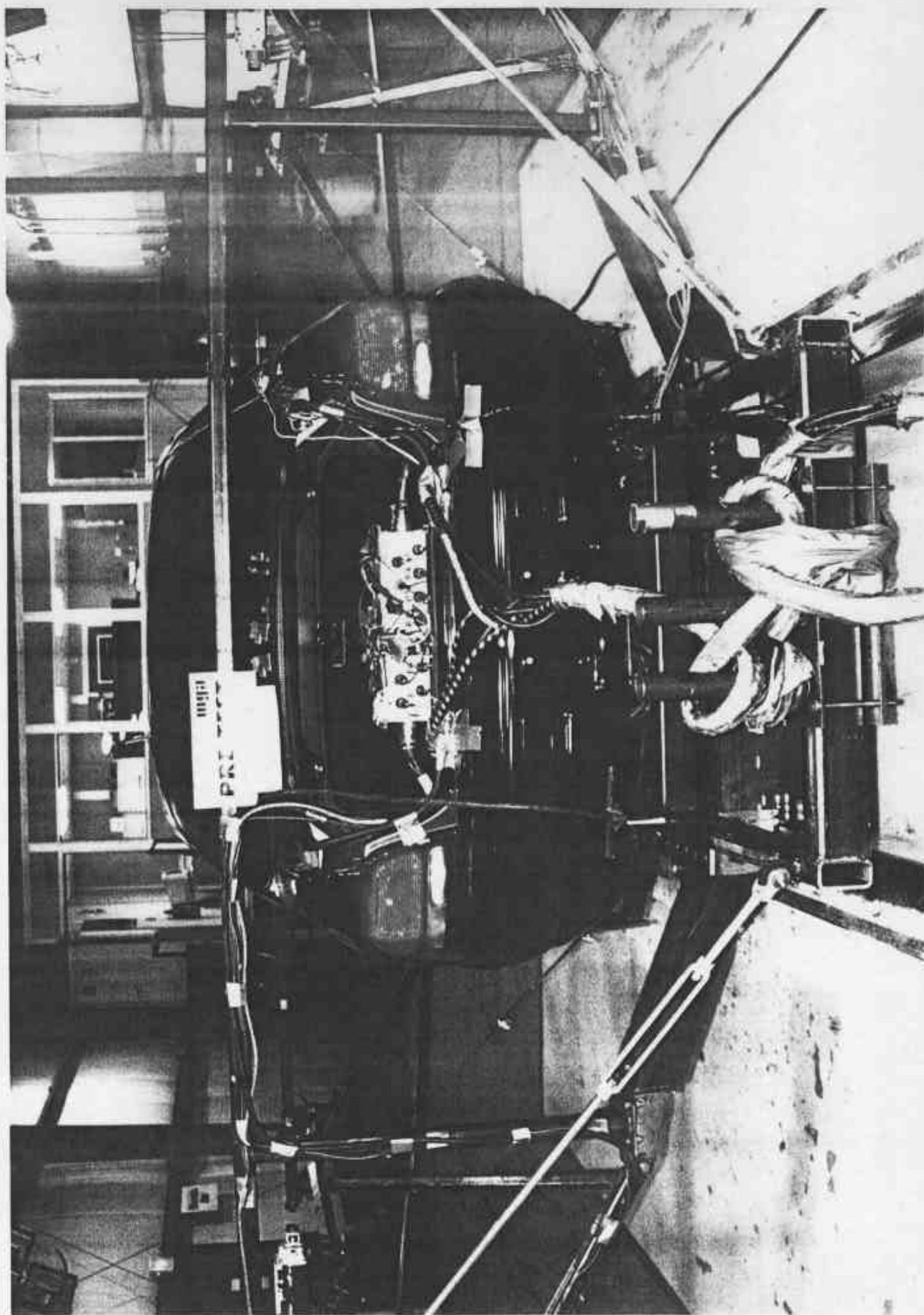


Photo No. A-11 - Pre-Test Rear View

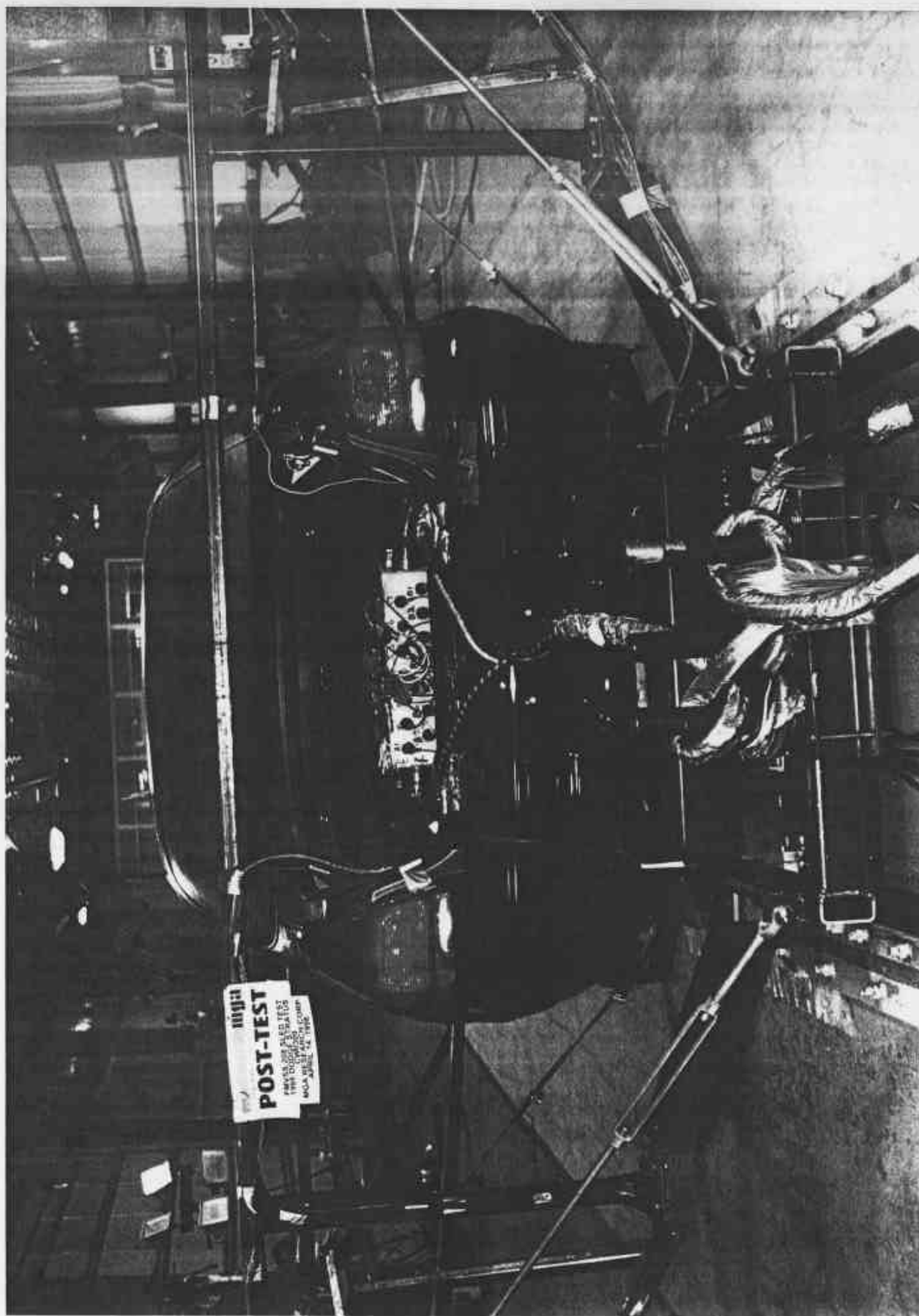


Photo No. A-12 - Post-Test Rear View

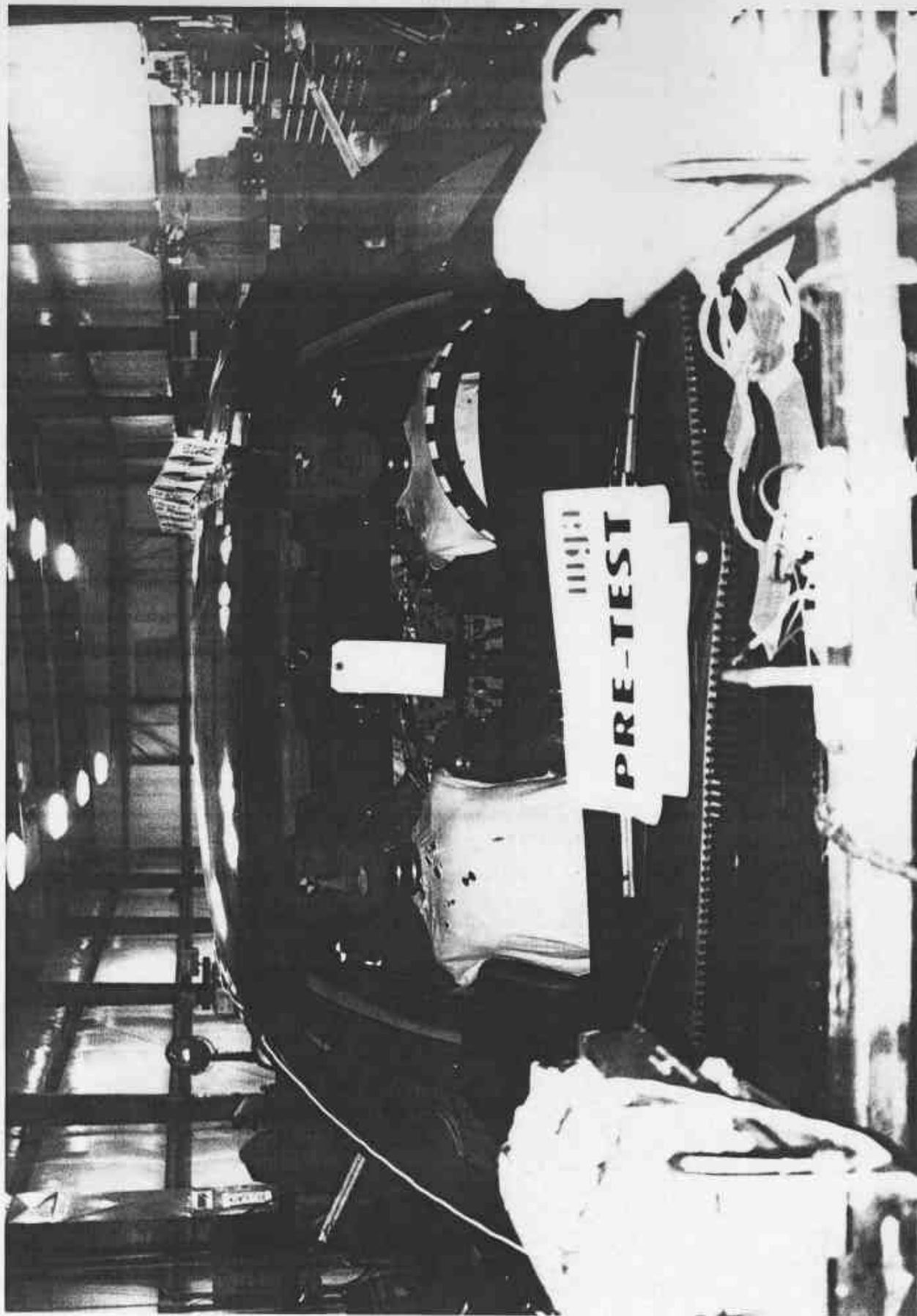


Photo No. A-13 - Pre-Test Windshield View

A-13

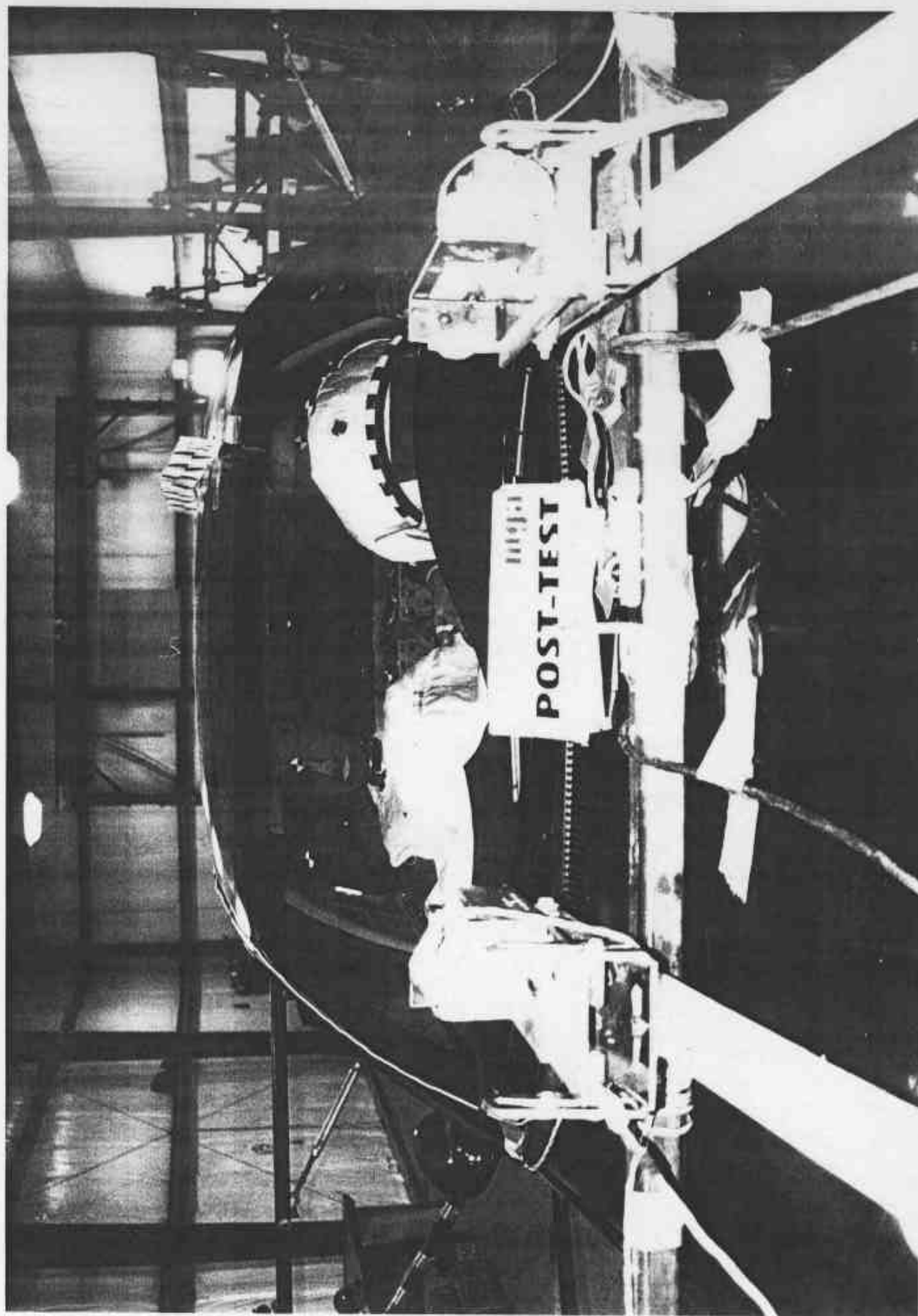


Photo No. A-14 - Post-Test Windshield View

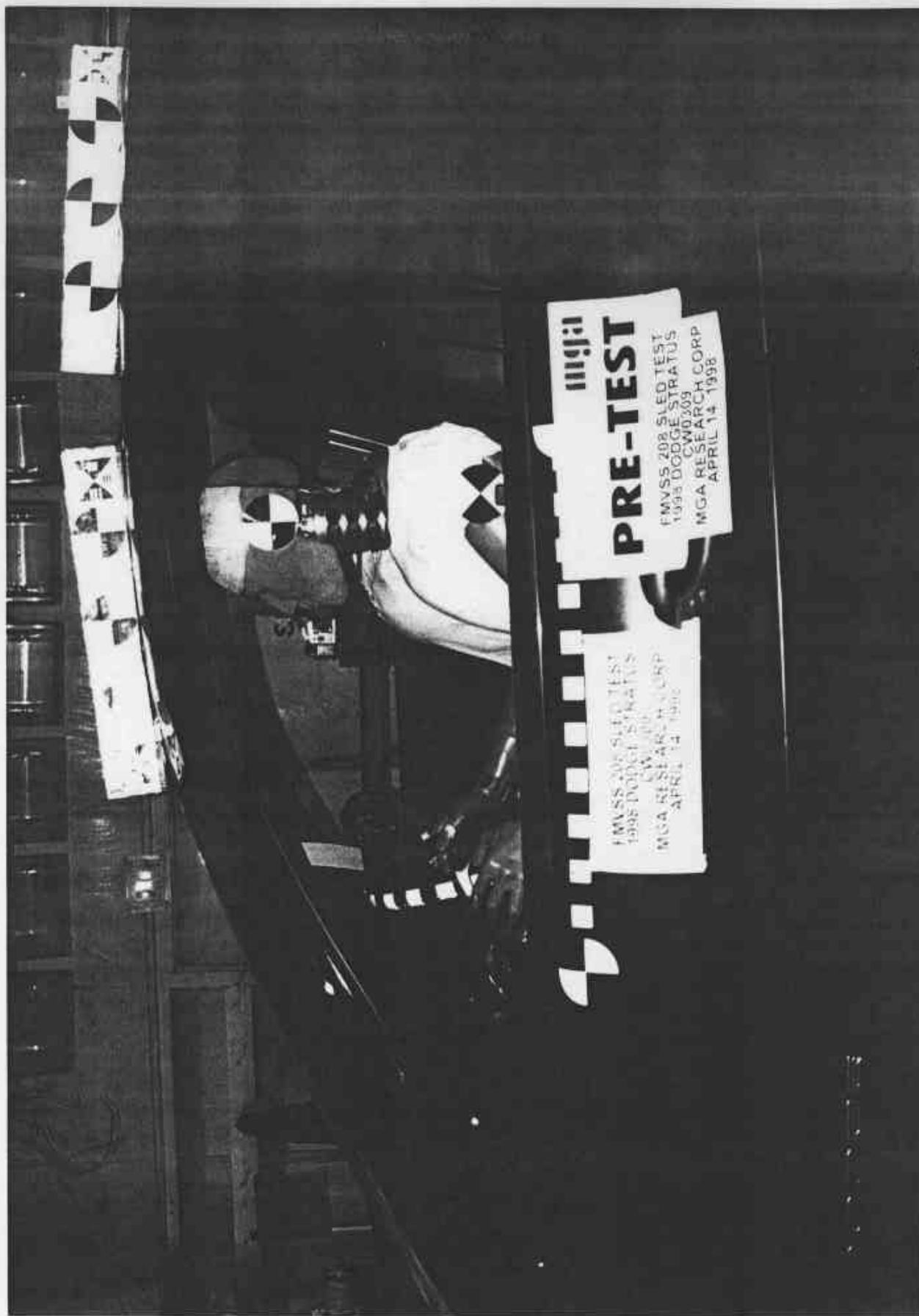


Photo No. A-15 - Pre-Test Driver Dummy Position View

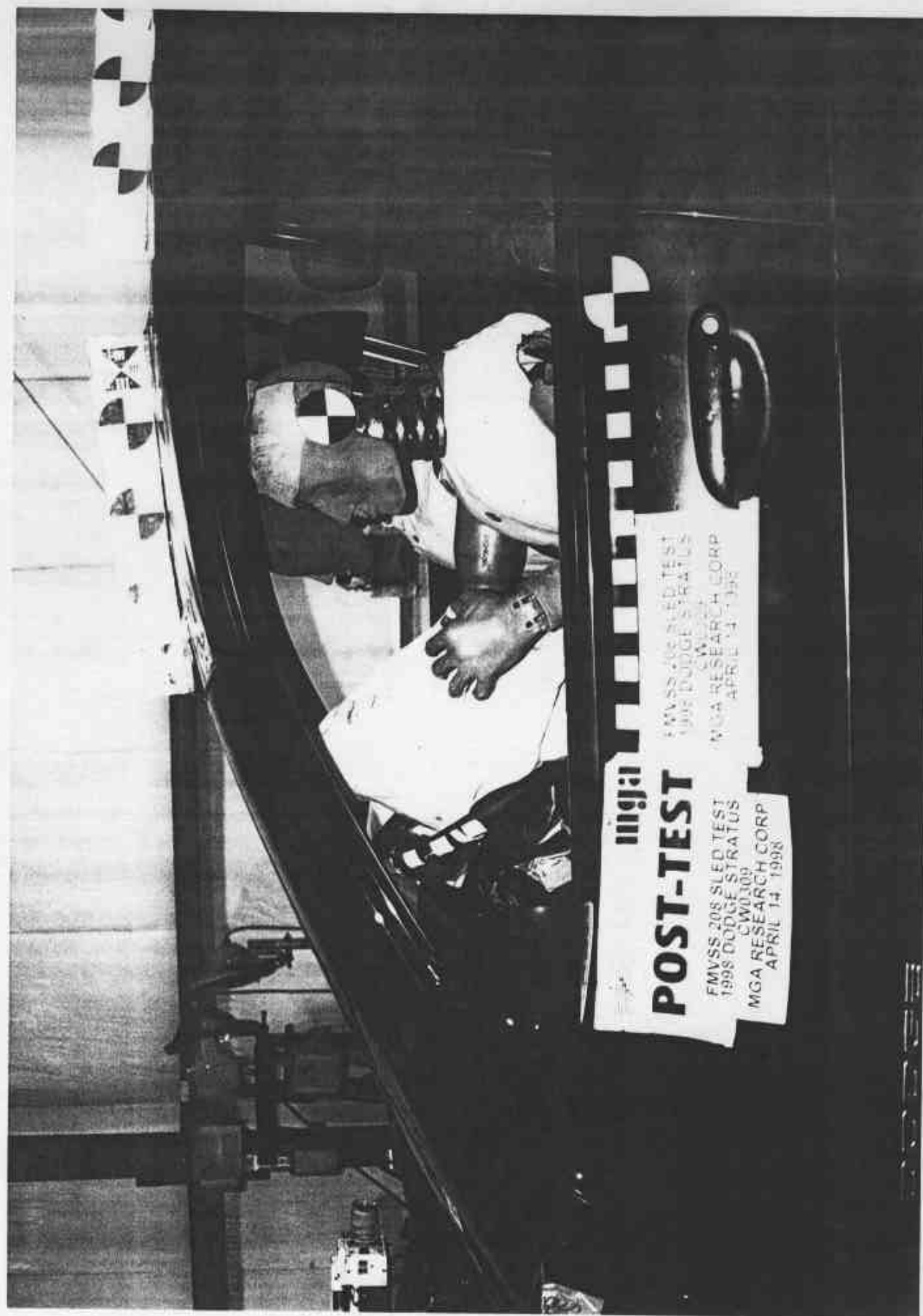


Photo No. A-16 - Post-Test Driver Dummy Position View

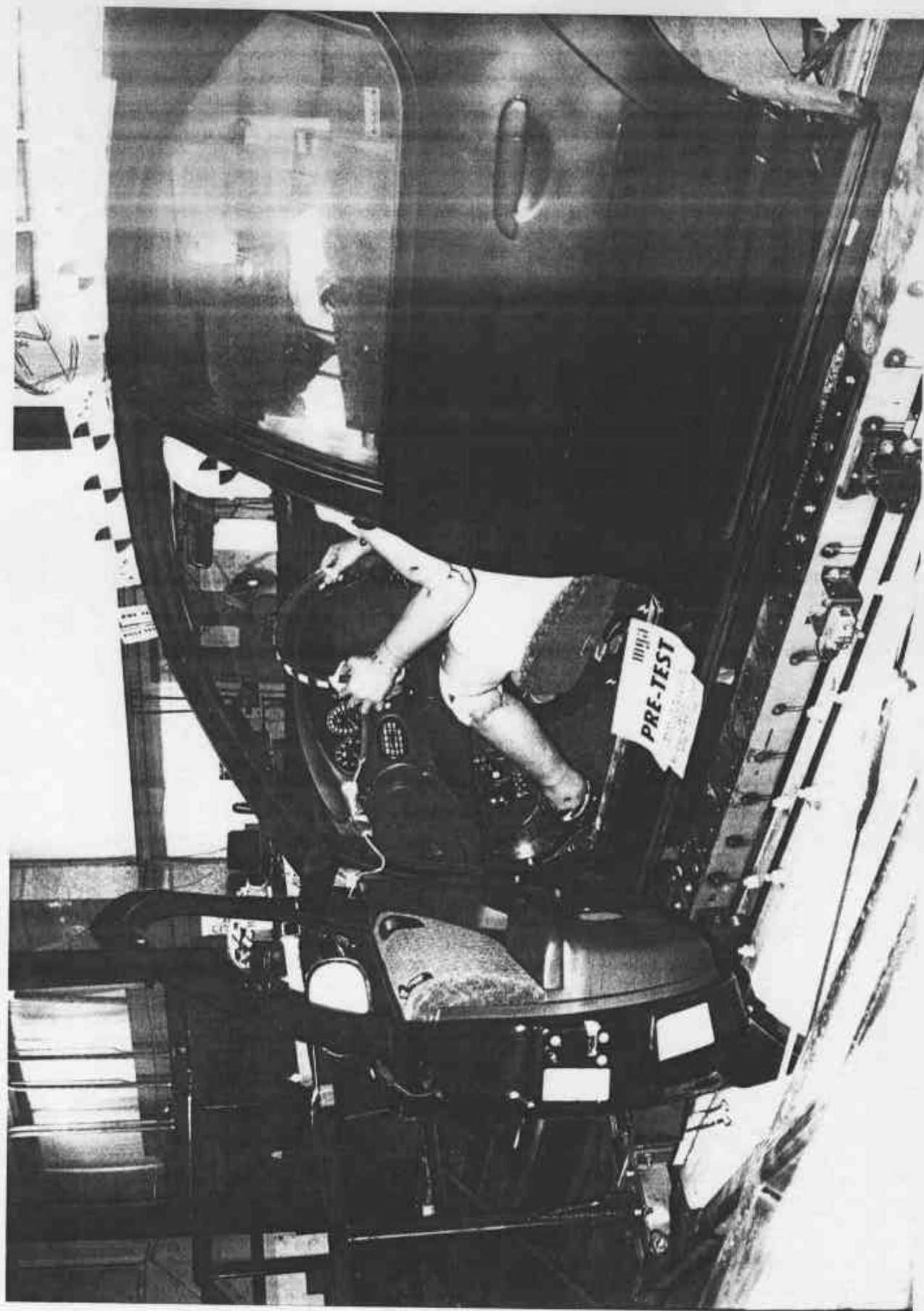


Photo No. A-17 - Pre-Test Driver Dummy Position View (Door Open)

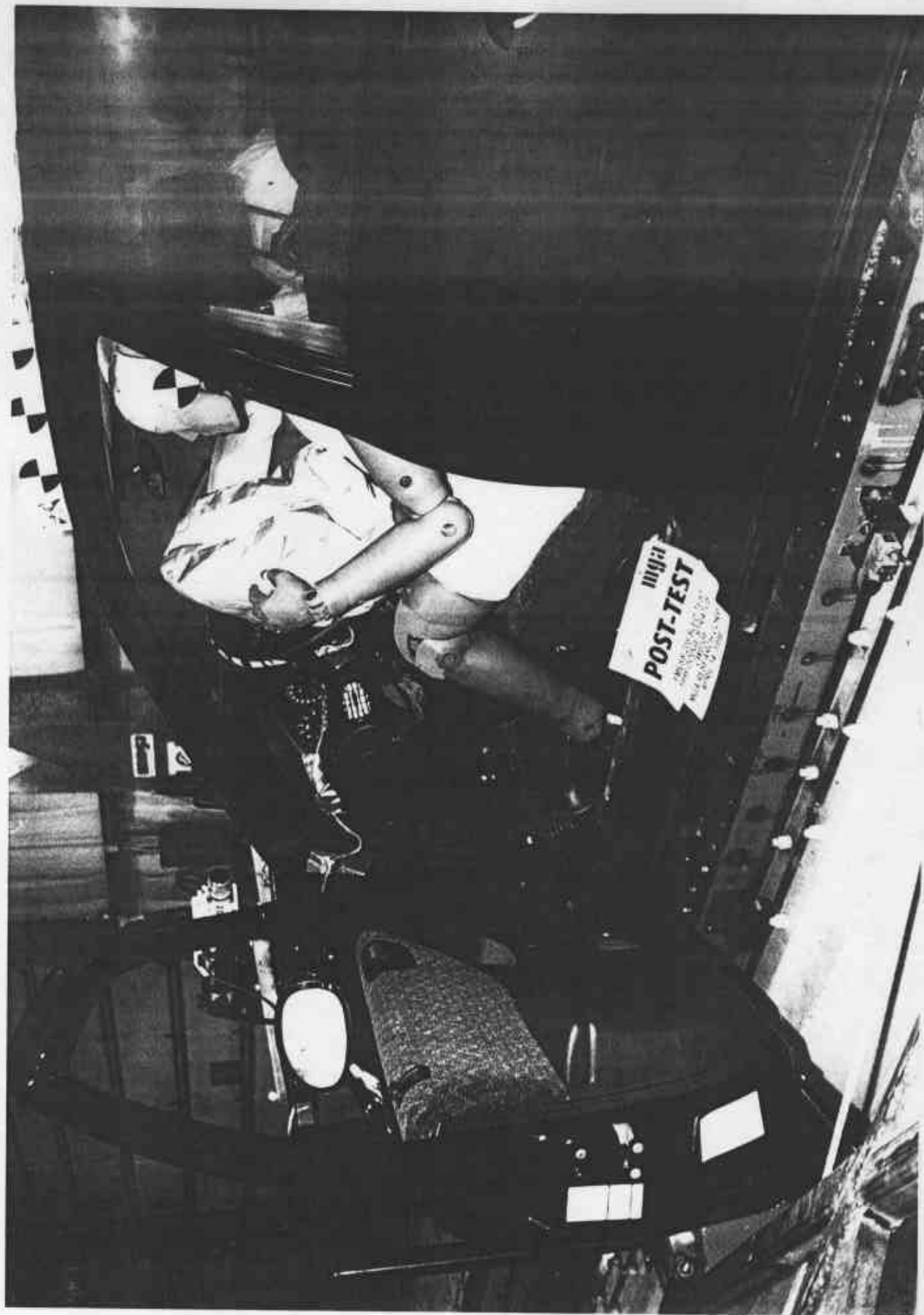


Photo No. A-18 - Post-Test Driver Dummy Position View (Door Open)

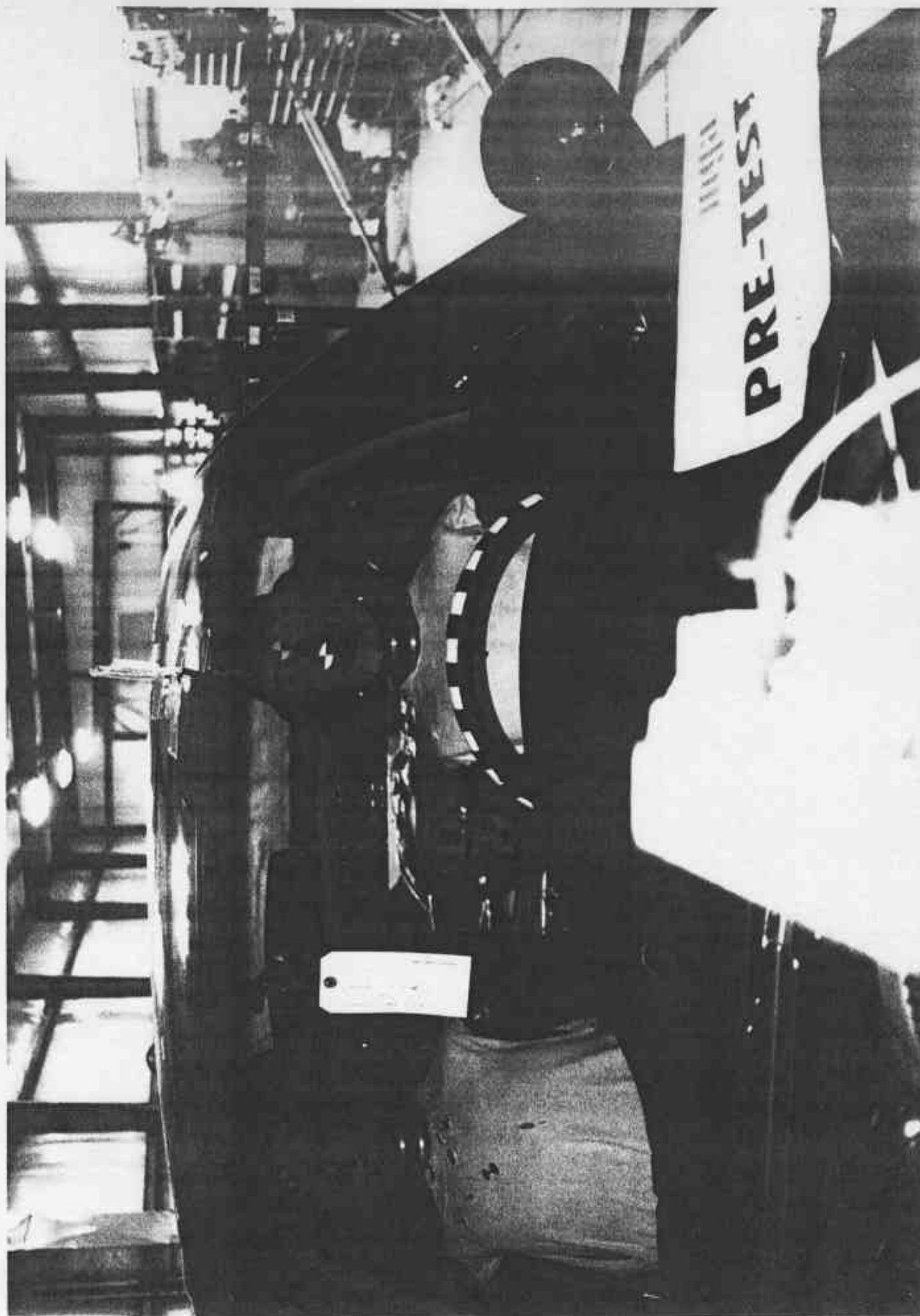


Photo No. A-19 - Pre-Test Driver Windshield View

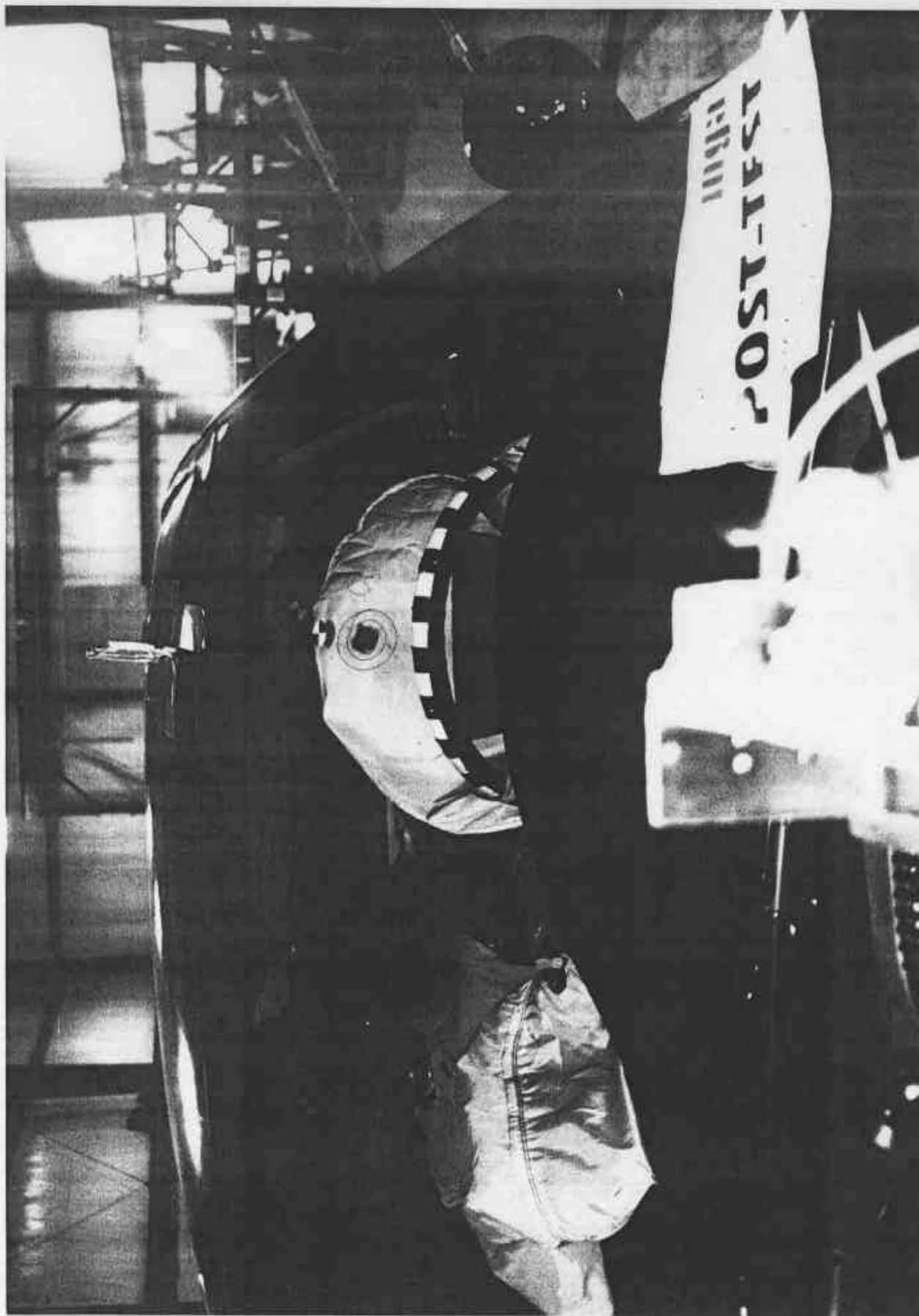


Photo No. A-20 - Post-Test Driver Windshield View



Photo No. A-21 - Pre-Test Driver Seat Position View



Photo No. A-22 - Post-Test Driver Seat Position View



Photo No. A-23 - Post-Test Driver Knee Bolster View



Photo No. A-24 - Post-Test Driver Airbag View



Photo No. A-25 - Post-Test Driver Head Contact View (sunvisor)



Photo No. A-26 - Post-Test Driver Head Contact View (headrest)



Photo No. A-27 - Post-Test Driver Knee Contact View



Photo No. A-28 - Pre-Test Passenger Dummy Position View

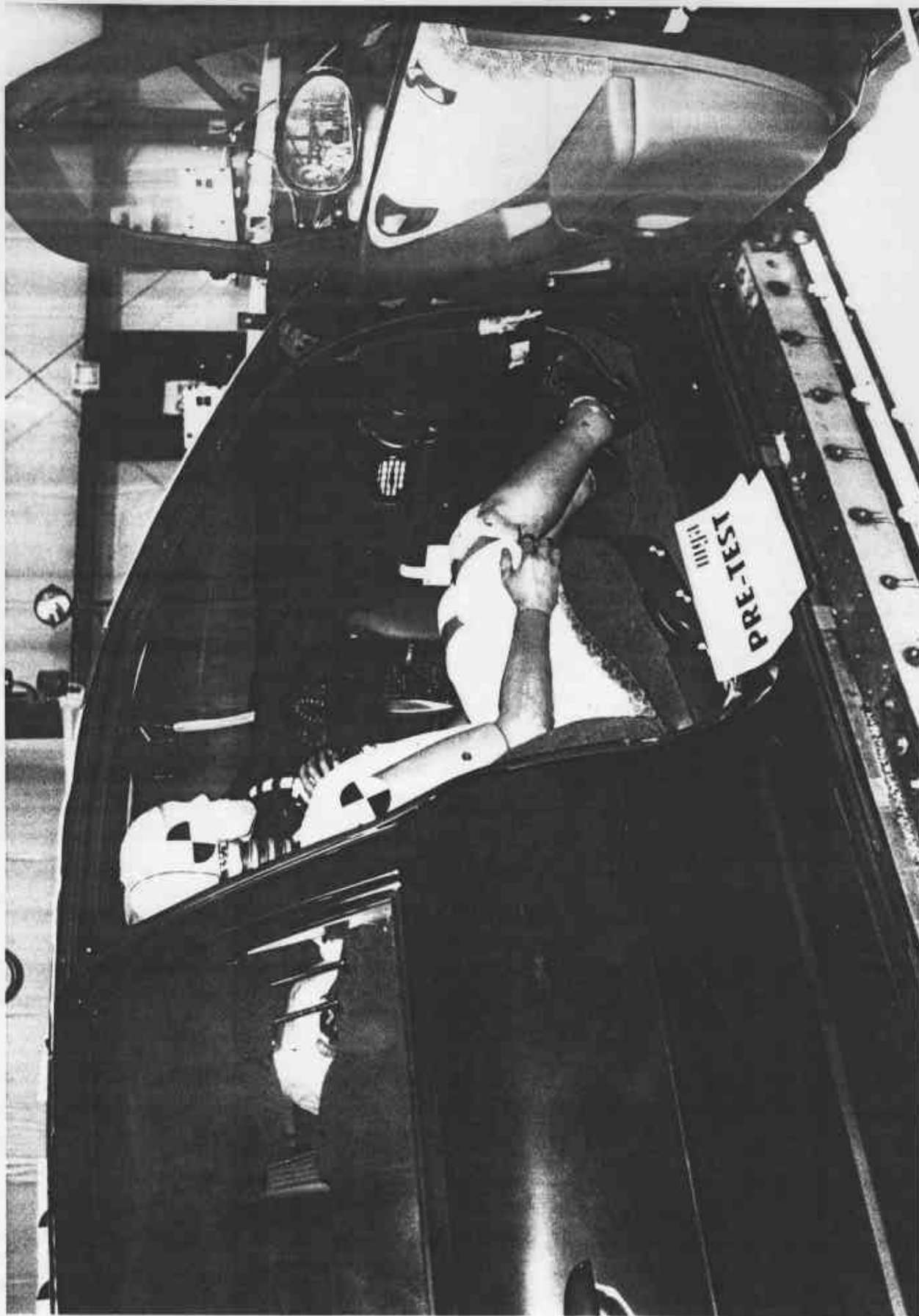


Photo No. A-29 - Pre-Test Passenger Dummy Position View (Door Open)

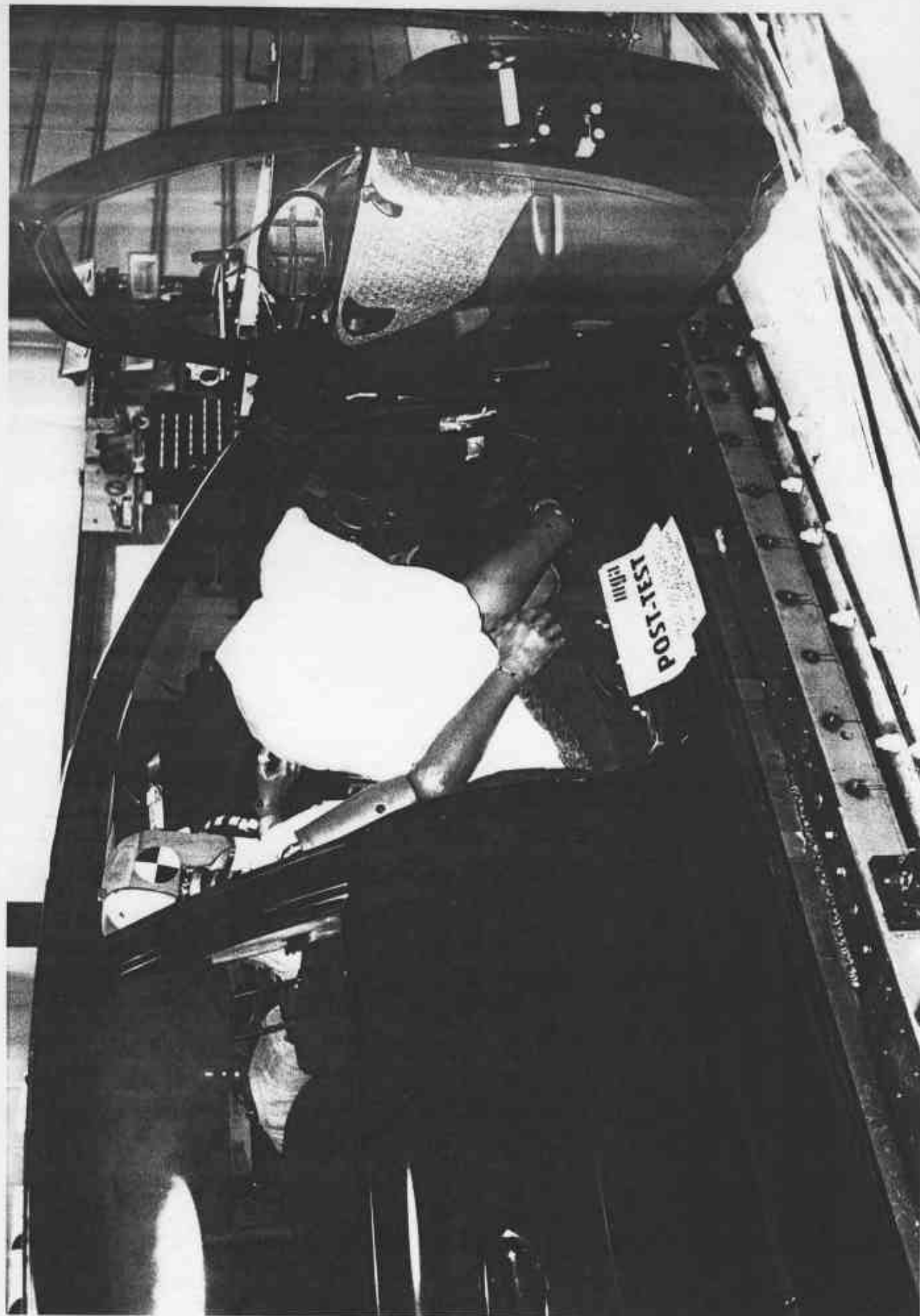


Photo No. A-30 - Post-Test Passenger Dummy Position View (Door Open)

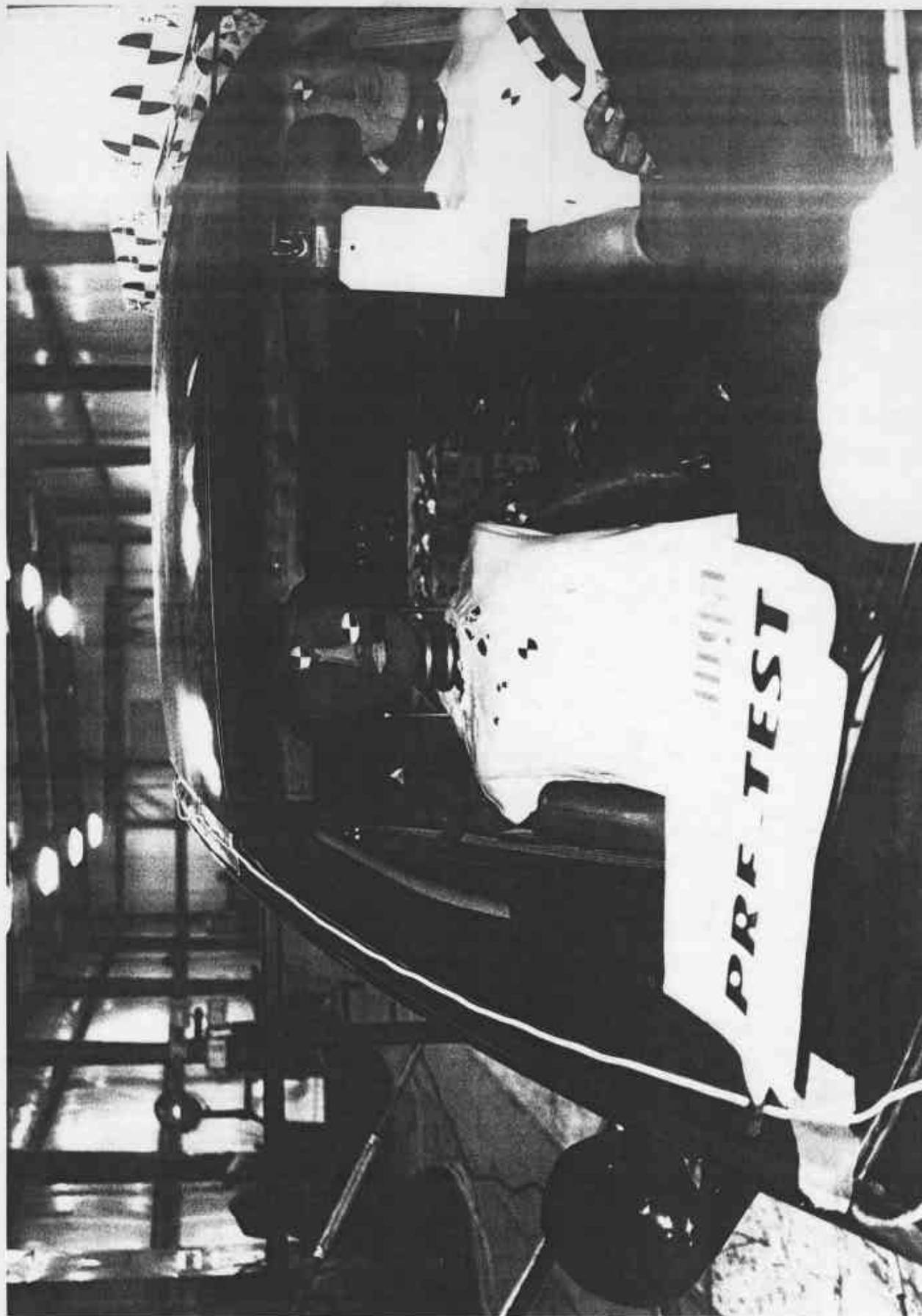


Photo No. A-31 - Pre-Test Passenger Windshield View

A-31

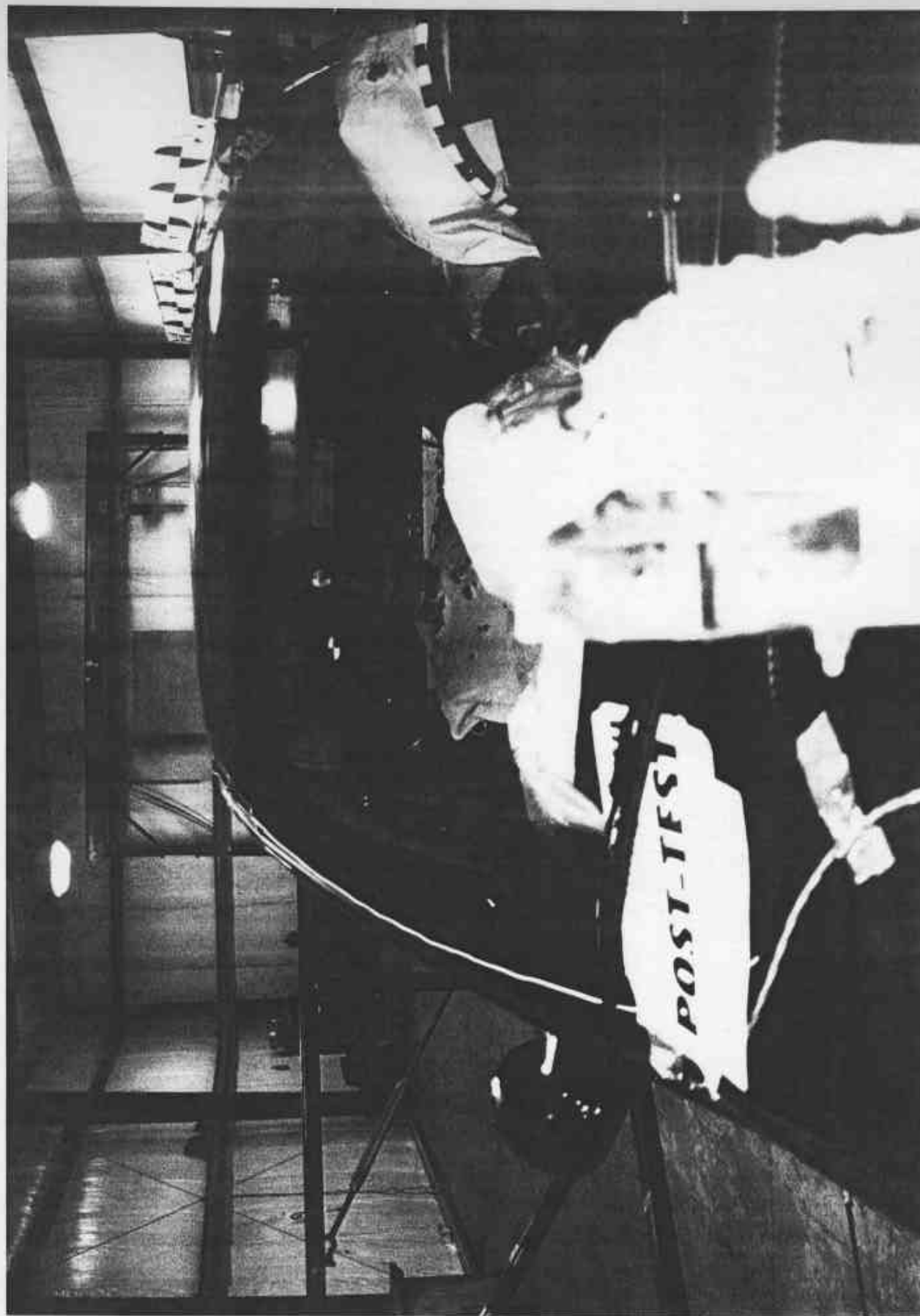


Photo No. A-32 - Post-Test Passenger Windshield View



Photo No. A-33 - Pre-Test Passenger Seat Position View



Photo No. A-34 - Post-Test Passenger Seat Position View



Photo No. A-35 - Pre-Test Passenger Dummy Knee Bolster View



Photo No. A-36 - Post-Test Passenger Dummy Knee Bolster View



Photo No. A-37 - Post-Test Passenger Dummy Airbag View



Photo No. A-38 - Post-Test Passenger Dummy Head Contact View (visor)

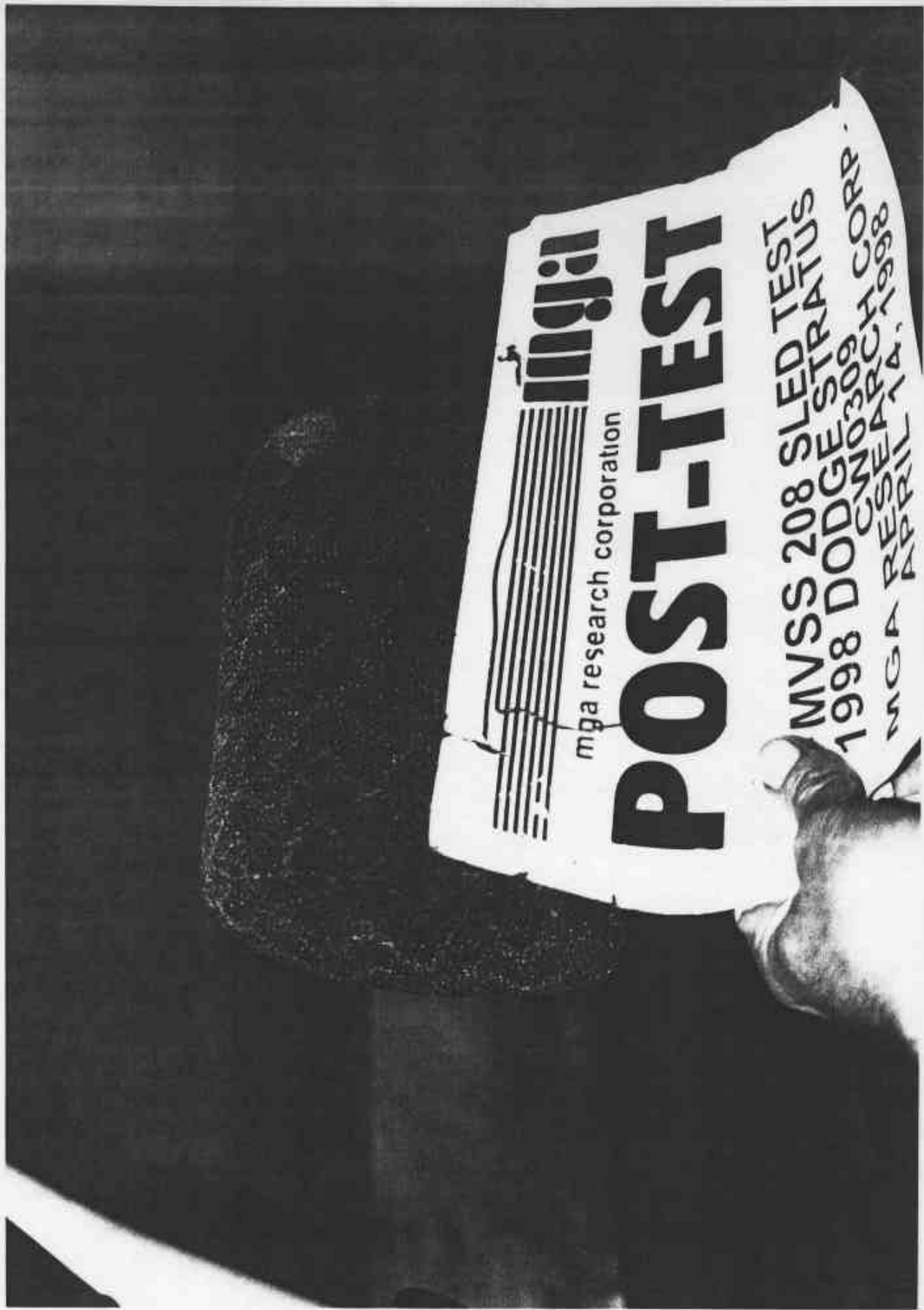


Photo No. A-39 - Post-Test Passenger Dummy Head Contact View (headrest)



Photo No. A-40 - Post-Test Passenger Dummy Knee Contact View

A-40

APPENDIX B

DATA PLOTS

TABLE OF DATA PLOTS

<u>Description</u>	<u>Page No.</u>
Figure B-1 - Driver Head X Acceleration vs. Time	B-1
Figure B-2 - Driver Head Y Acceleration vs. Time	B-2
Figure B-3 - Driver Head Z Acceleration vs. Time	B-3
Figure B-4 - Driver Head Resultant Acceleration vs. Time	B-4
Figure B-5 - Driver Neck Force X vs. Time	B-5
Figure B-6 - Driver Neck Force Y vs. Time	B-6
Figure B-7 - Driver Neck Force Z vs. Time	B-7
Figure B-8 - Driver Neck Moment X vs. Time	B-8
Figure B-9 - Driver Neck Moment Y vs. Time	B-9
Figure B-10 - Driver Neck Moment Z vs. Time	B-10
Figure B-11 - Driver Occipital Condyle Moment Y vs. Time	B-11
Figure B-12 - Driver Chest X Acceleration vs. Time	B-12
Figure B-13 - Driver Chest Y Acceleration vs. Time	B-13
Figure B-14 - Driver Chest Z Acceleration vs. Time	B-14
Figure B-15 - Driver Chest Resultant Acceleration vs. Time	B-15
Figure B-16 - Driver Chest Compression vs. Time	B-16
Figure B-17 - Driver Left Femur Force vs. Time	B-17
Figure B-18 - Driver Right Femur Force vs. Time	B-18
Figure B-19 - Passenger Head X Acceleration vs. Time	B-19
Figure B-20 - Passenger Head Y Acceleration vs. Time	B-20
Figure B-21 - Passenger Head Z Acceleration vs. Time	B-21
Figure B-22 - Passenger Head Resultant Acceleration vs. Time	B-22
Figure B-23 - Passenger Neck Force X vs. Time	B-23
Figure B-24 - Passenger Neck Force Y vs. Time	B-24
Figure B-25 - Passenger Neck Force Z vs. Time	B-25
Figure B-26 - Passenger Neck Moment X vs. Time	B-26

TABLE OF DATA PLOTS (Cont.)

<u>Description</u>	<u>Page No.</u>
Figure B-27 - Passenger Neck Moment Y vs. Time	B-27
Figure B-28 - Passenger Neck Moment Z vs. Time	B-28
Figure B-29 - Passenger Occipital Condyle Moment Y vs. Time	B-29
Figure B-30 - Passenger Chest X Acceleration vs. Time	B-30
Figure B-31 - Passenger Chest Y Acceleration vs. Time	B-31
Figure B-32 - Passenger Chest Z Acceleration vs. Time	B-32
Figure B-33 - Passenger Chest Resultant Acceleration vs. Time	B-33
Figure B-34 - Passenger Chest Compression vs. Time	B-34
Figure B-35 - Passenger Left Femur Force vs. Time	B-35
Figure B-36 - Passenger Right Femur Force vs. Time	B-36
Figure B-37 - Sled X Acceleration vs. Time	B-37
Figure B-38 - Sled X Velocity vs. Time	B-38
Figure B-39 - Sled X Displacement vs. Time	B-39
Figure B-40 - 1 Meter Sled Displacement	B-40
Figure B-41 - Airbag Timing vs. Time	B-41
Figure B-42 - Left B-Post X Acceleration vs. Time	B-42
Figure B-43 - Right B-Post X Acceleration vs. Time	B-43
Figure B-44 - Engine X Acceleration vs. Time	B-44
Figure B-45 - Rear Axle X Acceleration vs. Time	B-45

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

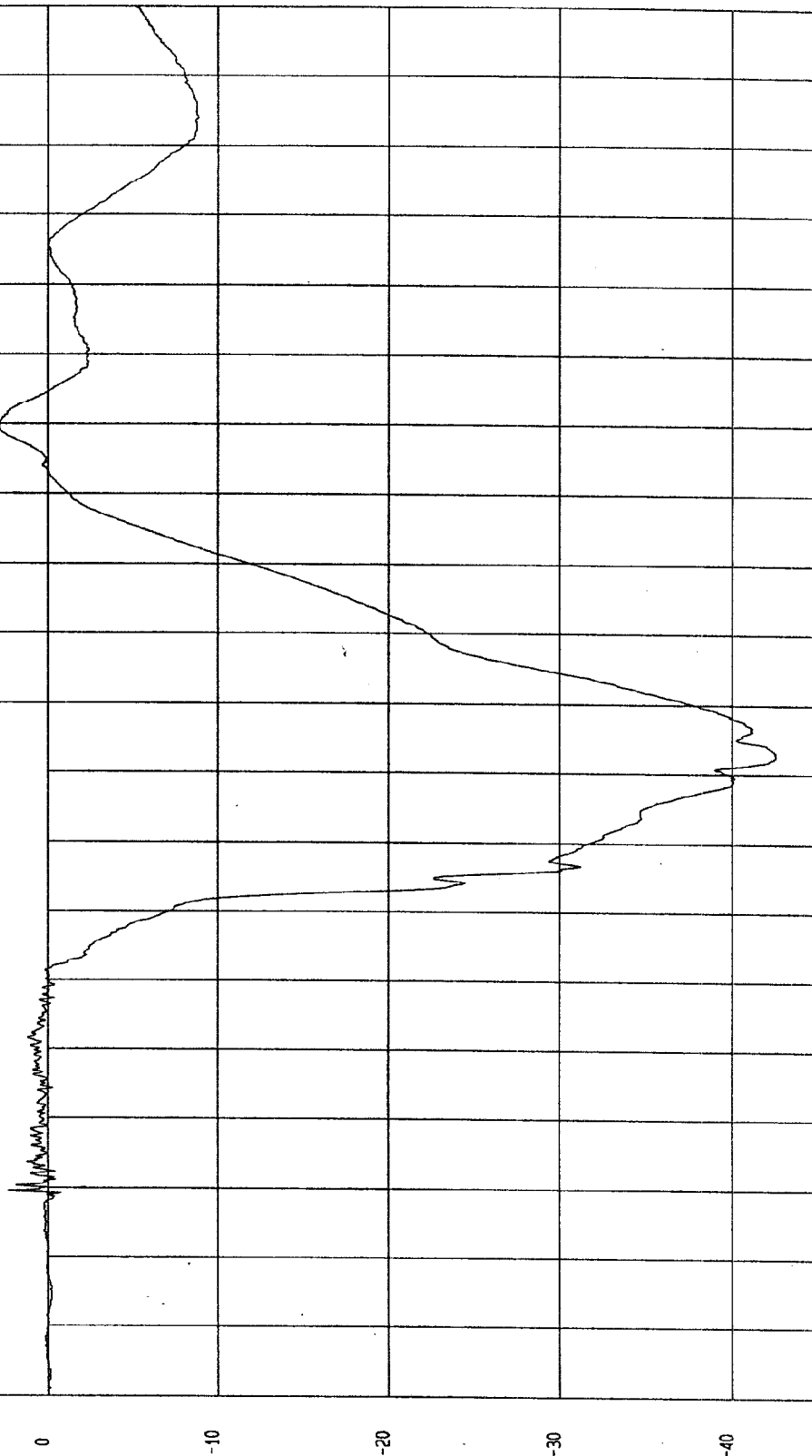
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-42.55467 G'S at 92. msec

YMAX= 2.977404 G'S at 139 msec

DRIVER HEAD X ACCELERATION

1 H9807BAT.A05 FilterClass (1000)



MSA Research
04-08-1998 12:17

TIME (SECONDS)

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

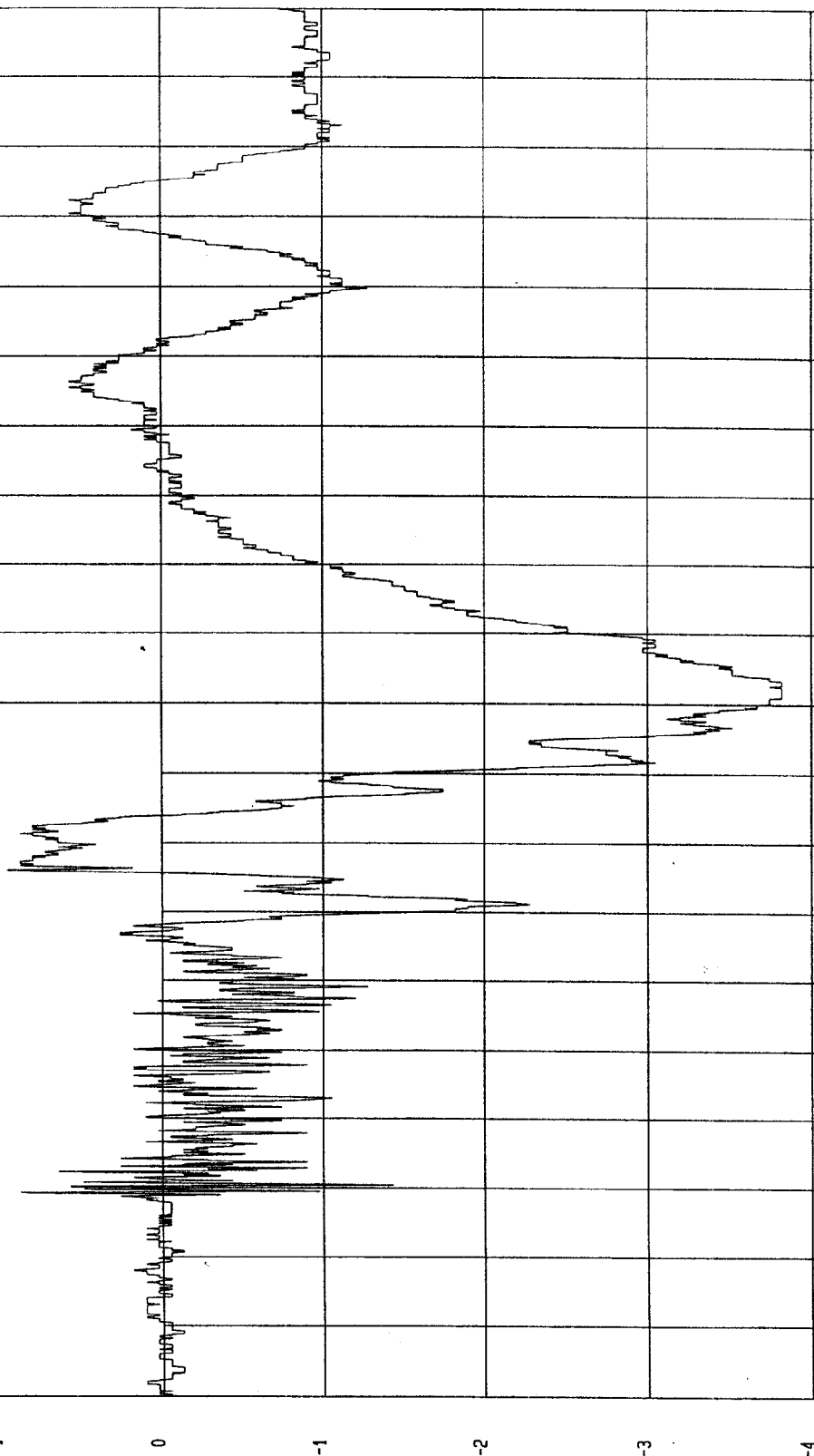
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-3.814599 G'S at 101 msec

YMAX=.9472495 G'S at 75 msec

DRIVER HEAD Y ACCELERATION

1 ——— H98078AT.A08 Filterclass (1000)



WCA Research
04-08-1998 13.17

TEST: FMVSS 208 SLED TEST

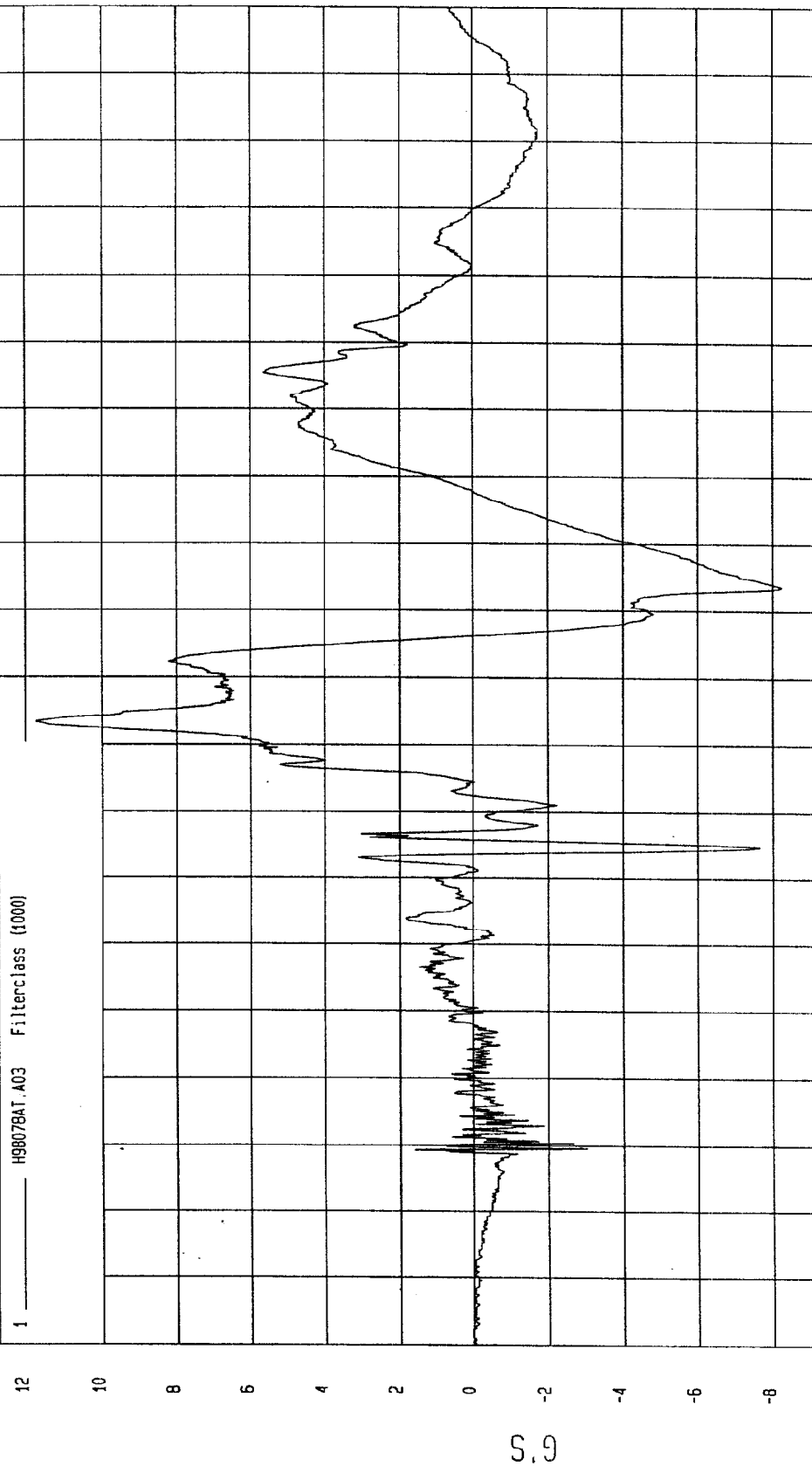
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-8.236921 G'S at 113 msec

YMAX= 11.71819 G'S at 93. msec

DRIVER HEAD Z ACCELERATION

1 _____ H9807BAT.A03 Filterclass (1000)



WCA Research
04-08-1998 13:18

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

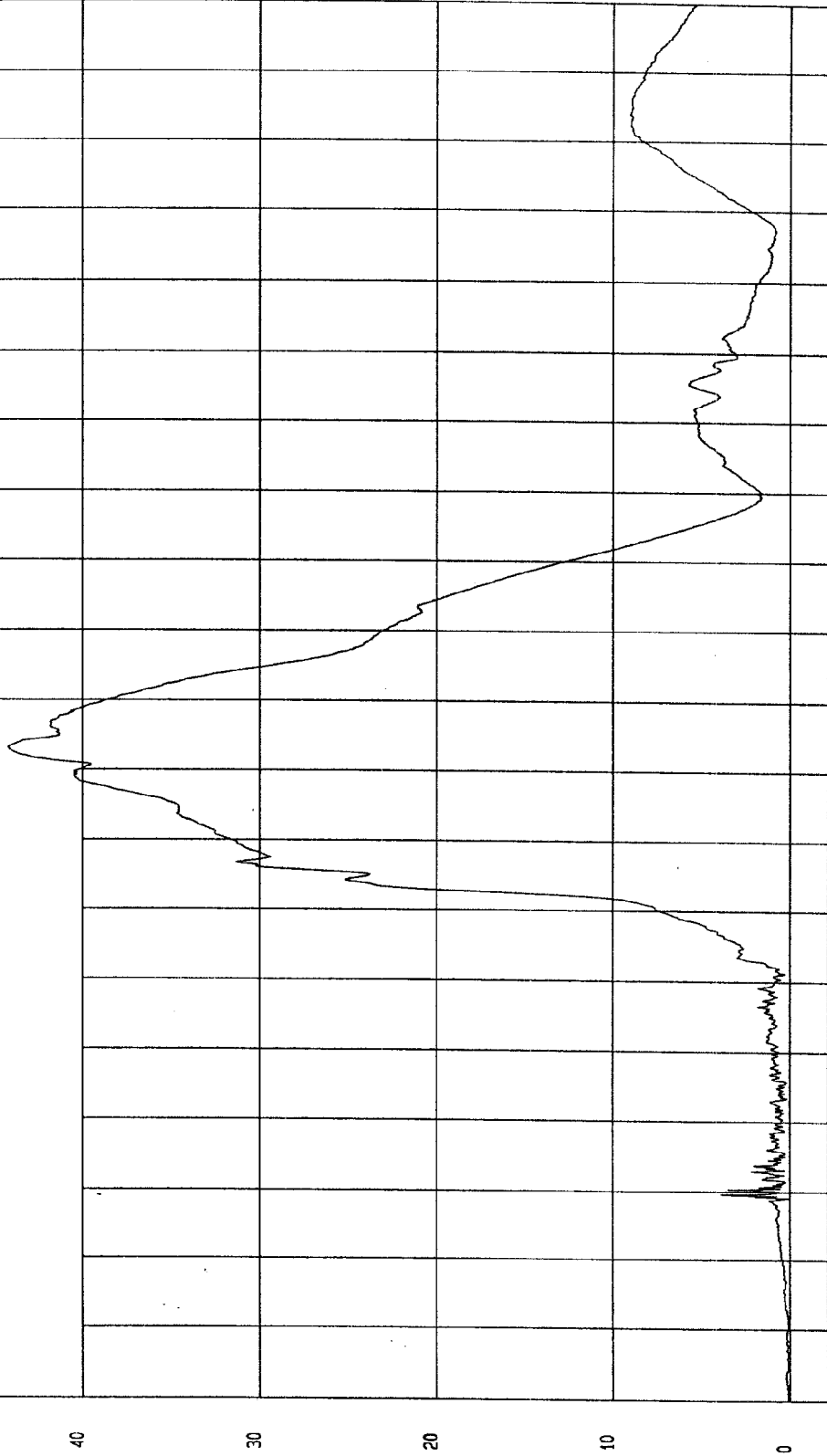
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN= 5.64939E-02 G'S at 6.7 msec

YMAX= 44.16592 G'S at 93. msec

DRIVER HEAD RESULTANT ACCELERATION

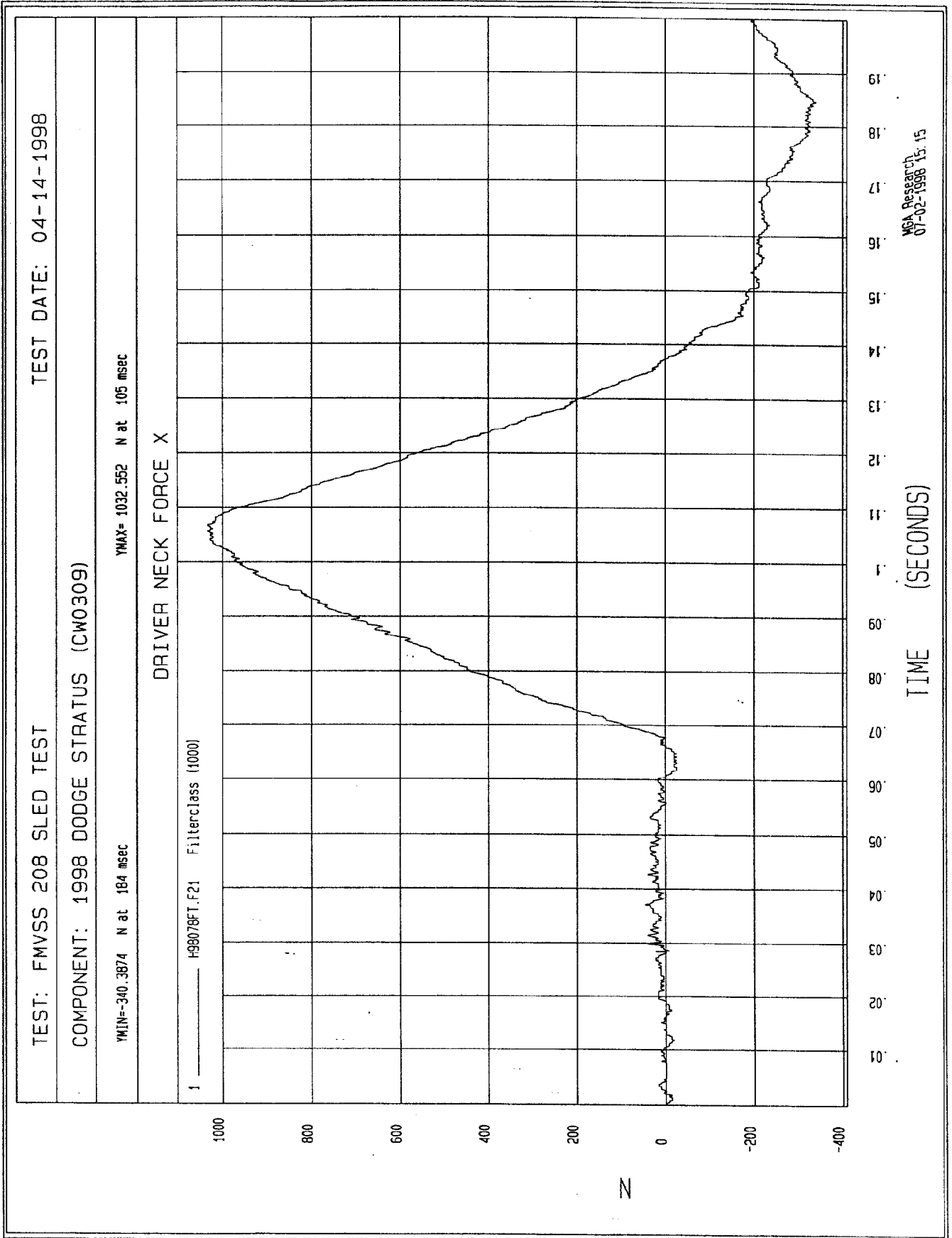
1 ——— H98078AV.A03 Filterclass (1000)



WCA Research
04-08-1998 13:18

TIME (SECONDS)

S.9



TEST DATE: 04-14-1998

TEST: FMVSS 208 SLED TEST

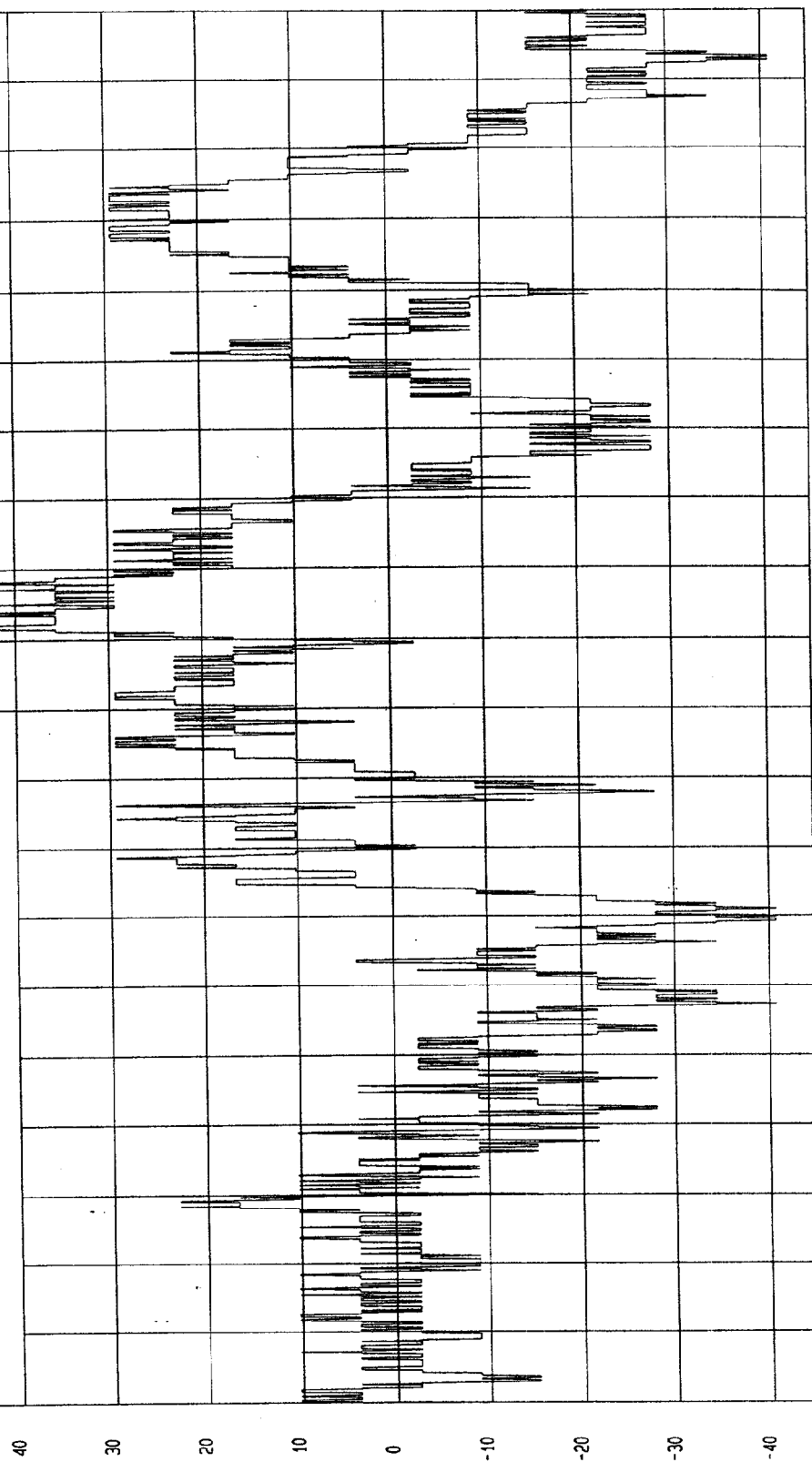
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMAX=42.10032 N at 111 msec

YMIN=-40.74847 N at 57. msec

DRIVER NECK FORCE Y

1 H98078T.F22 Filterclass (1000)



TIME (SECONDS)

NSA Research
01-02-1998 15.15

TEST DATE: 04-14-1998

TEST: FMVSS 208 SLED TEST

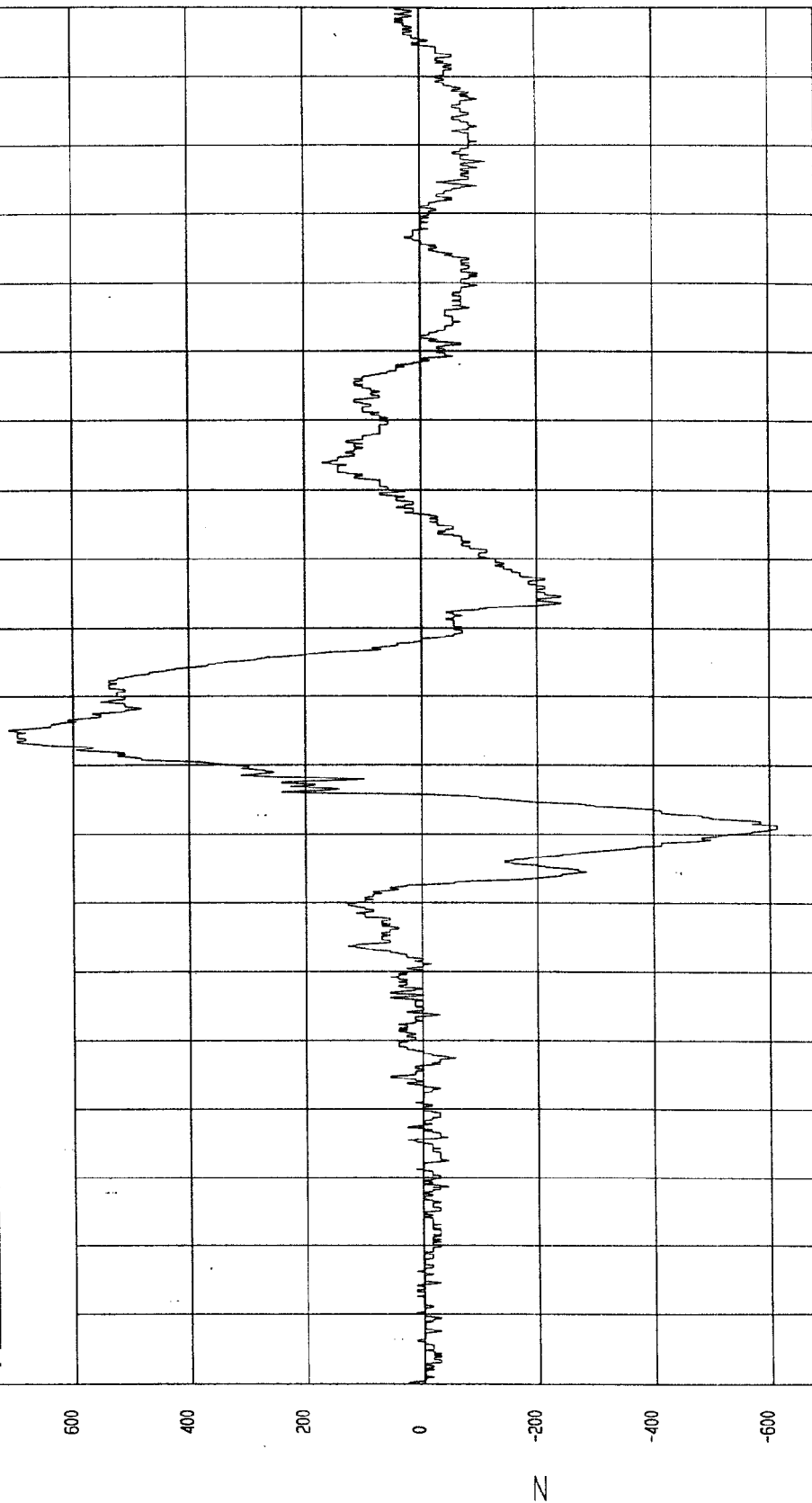
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMAX= 708.5489 N at 95 msec

YMIN= -612.2873 N at 80. msec

DRIVER NECK FORCE Z

1 _____ H98078T.F23 Filterclass (1000)



MCA Research
01-02-1998 15:15

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

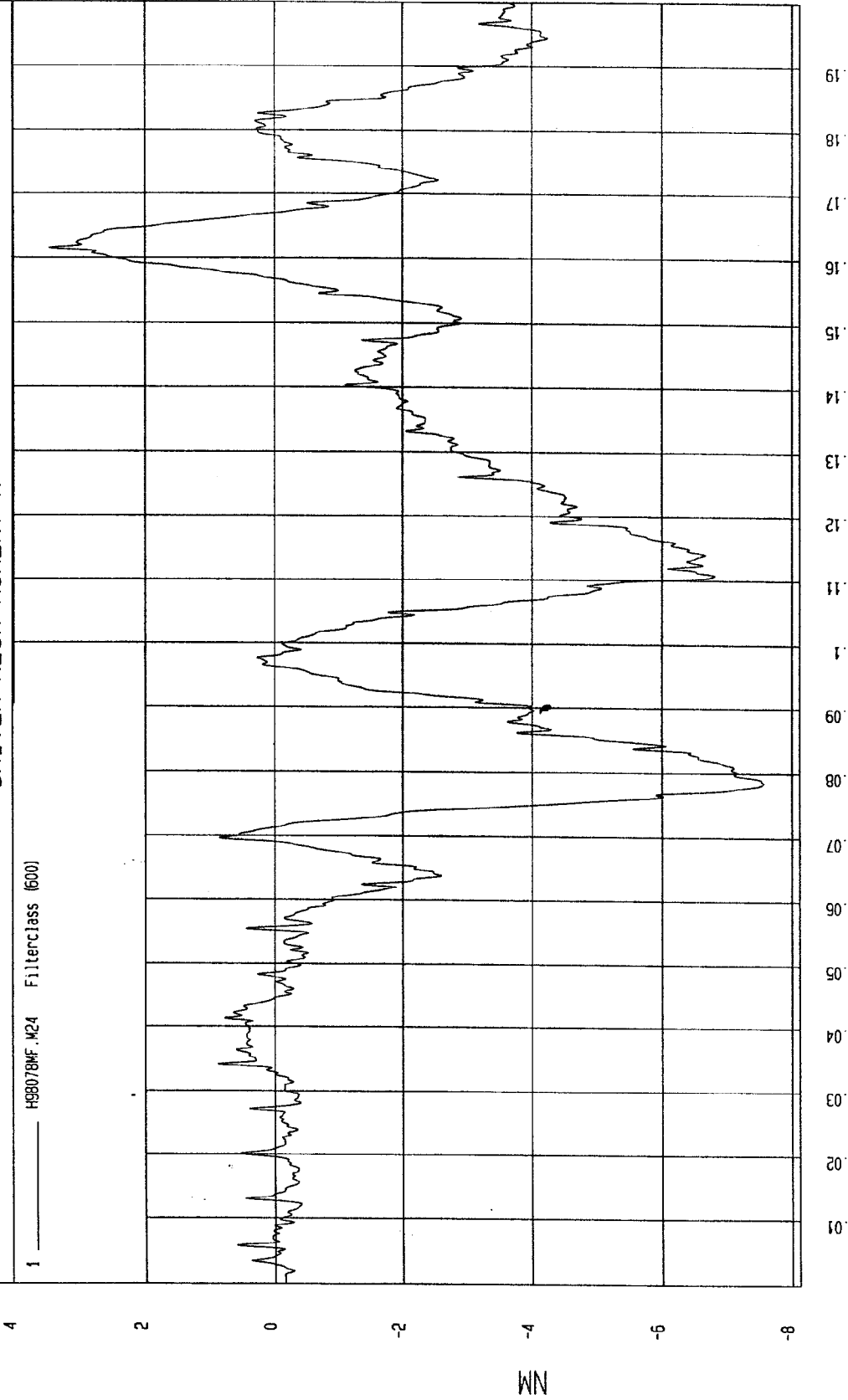
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-7.567866 NM at 78. msec

YMAX= 3.467096 NM at 161 msec

DRIVER NECK MOMENT X

1 ——— H98078MF.M24 Filterclass (600)



MCA Research
04-06-1998 13:19

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

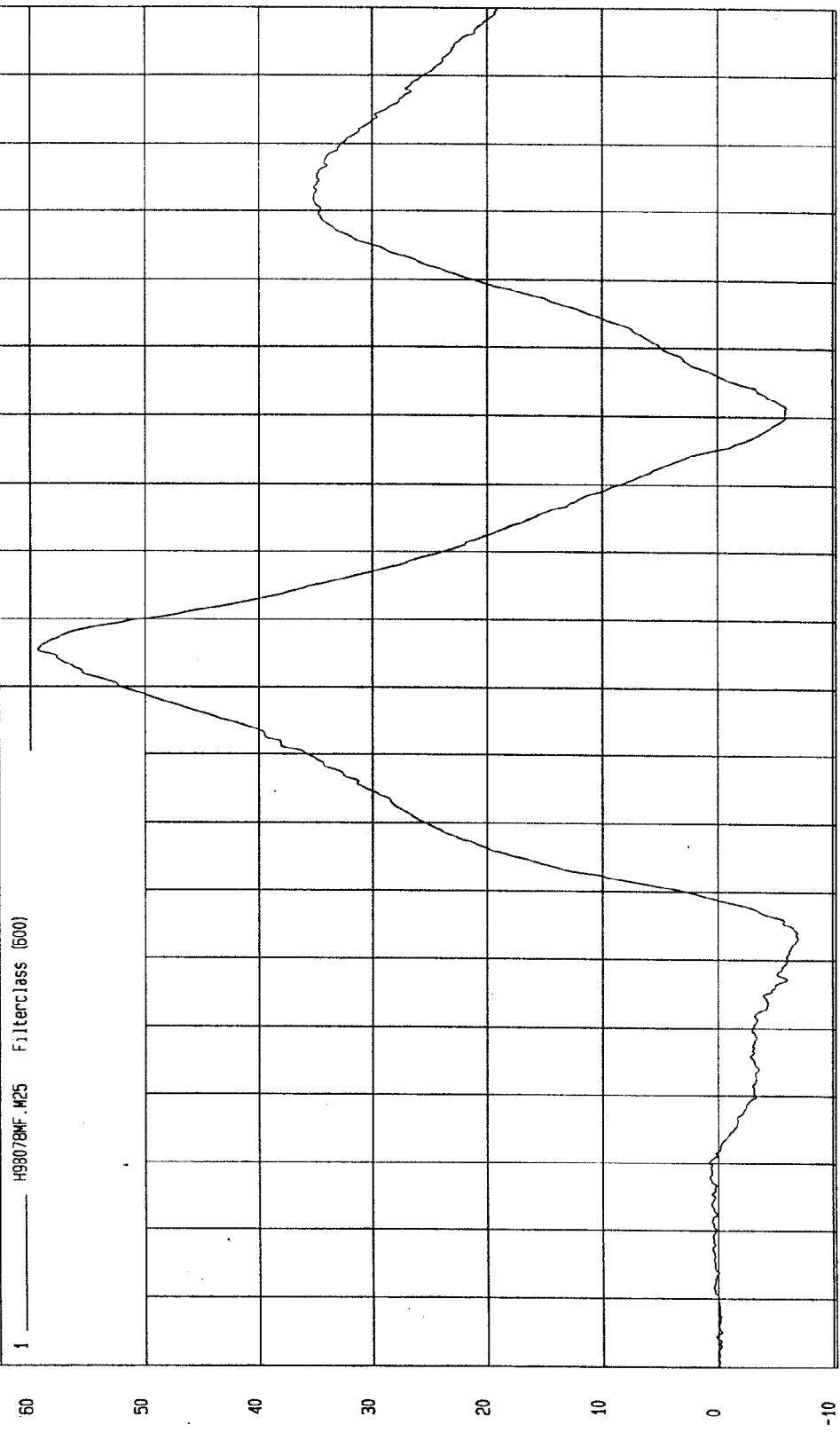
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-6.940534 NM at 63. msec

YMAX= 59.34978 NM at 105 msec

DRIVER NECK MOMENT Y

1 H99078NF.M25 Filterclass (500)



WCA Research
04-06-1998 13:20

TIME (SECONDS)

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

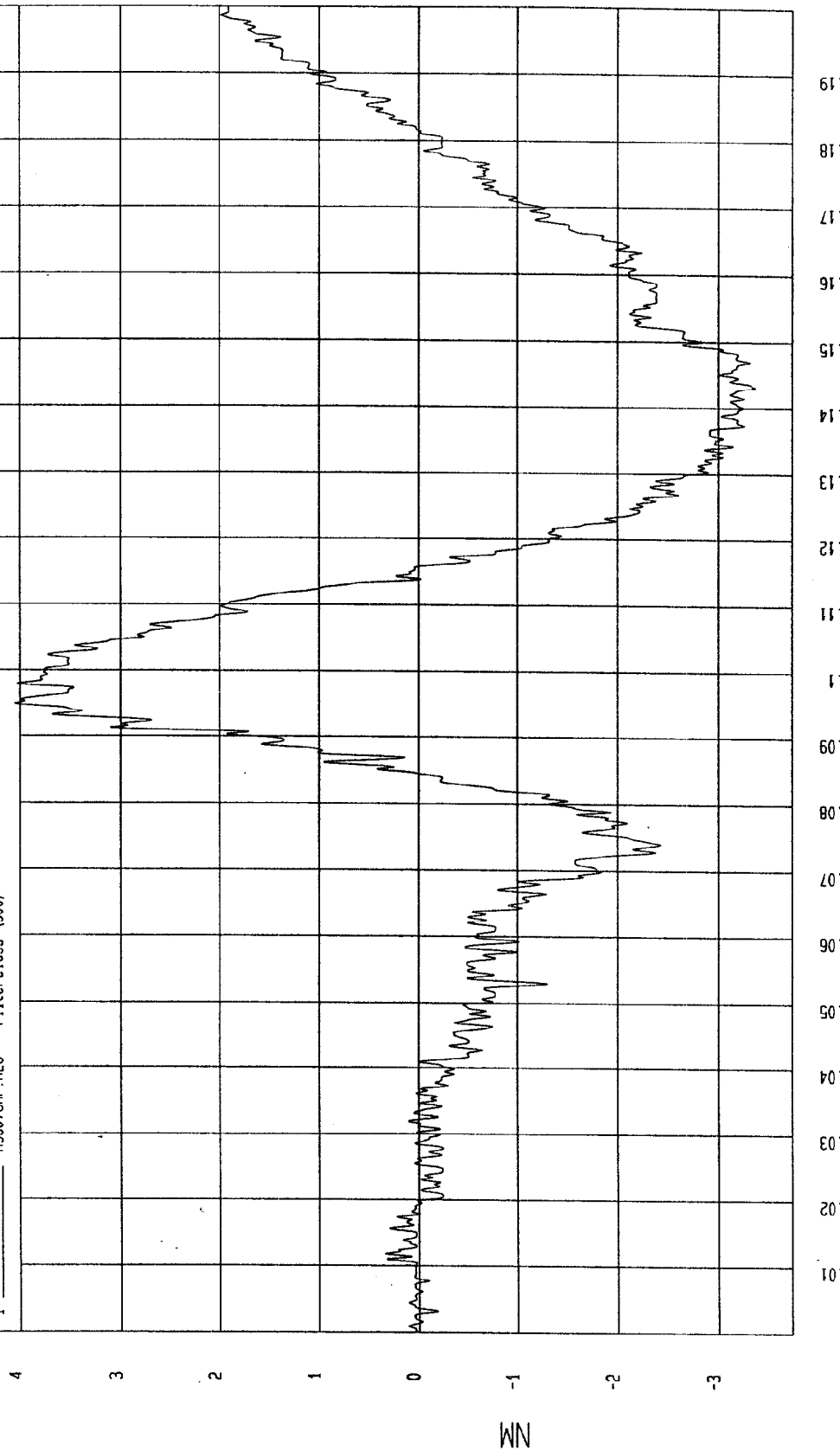
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-3.376356 NM at 143 msec

YMAX= 4.055928 NM at 95 msec

DRIVER NECK MOMENT Z

1 H99078MF.M26 Filterclass (500)



MOA Research
04-08-1998 13:21

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

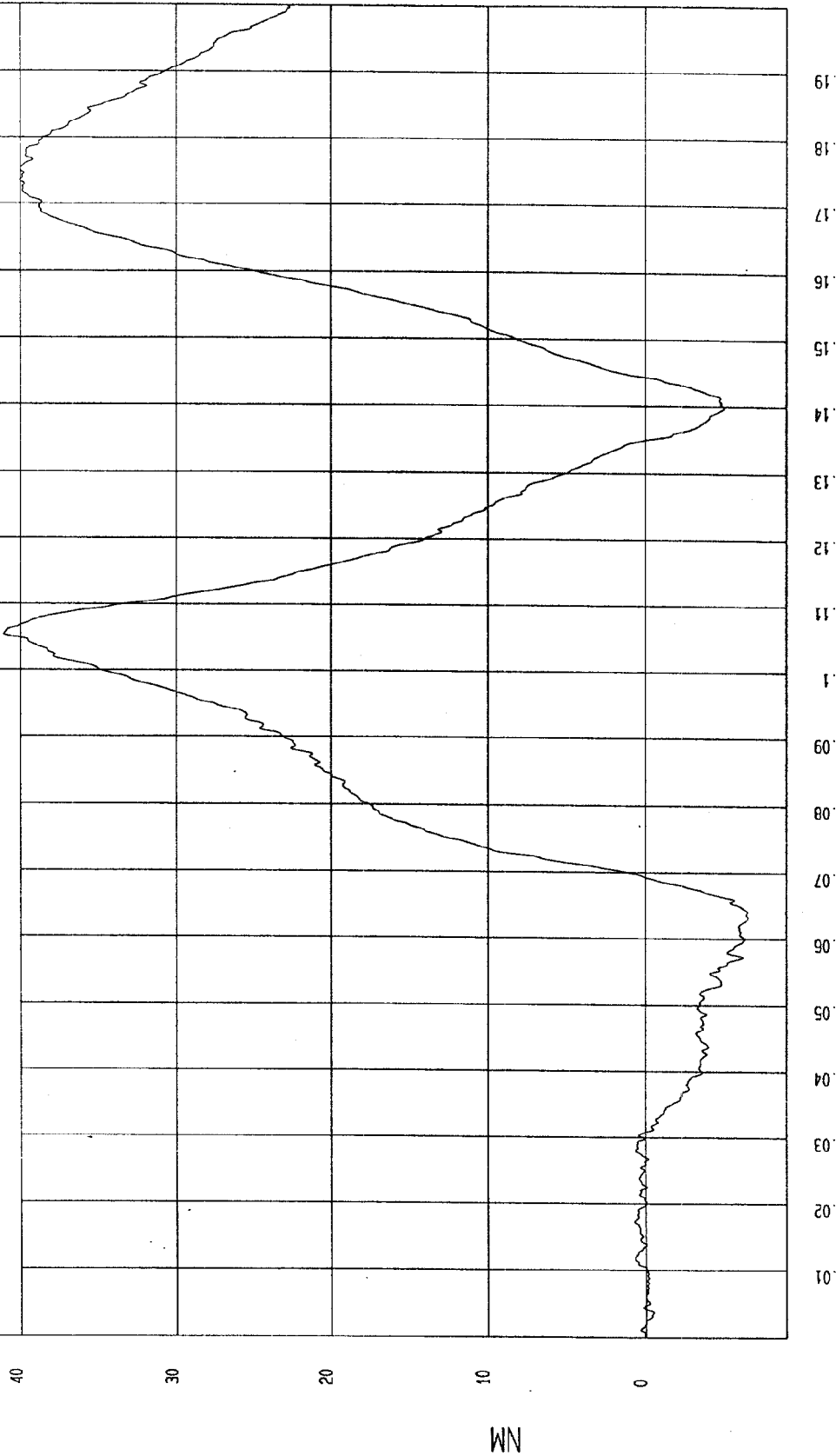
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-6.525227 NM at 63. msec

YMAX= 41.06144 NM at 105 msec

DRIVER OCCIPITAL CONDYLE MOMENT Y

1 H9807840.M25 Filterclass (600)



NCA Research
04-08-1998 13:42

TEST DATE: 04-14-1998

TEST: FMVSS 208 SLED TEST

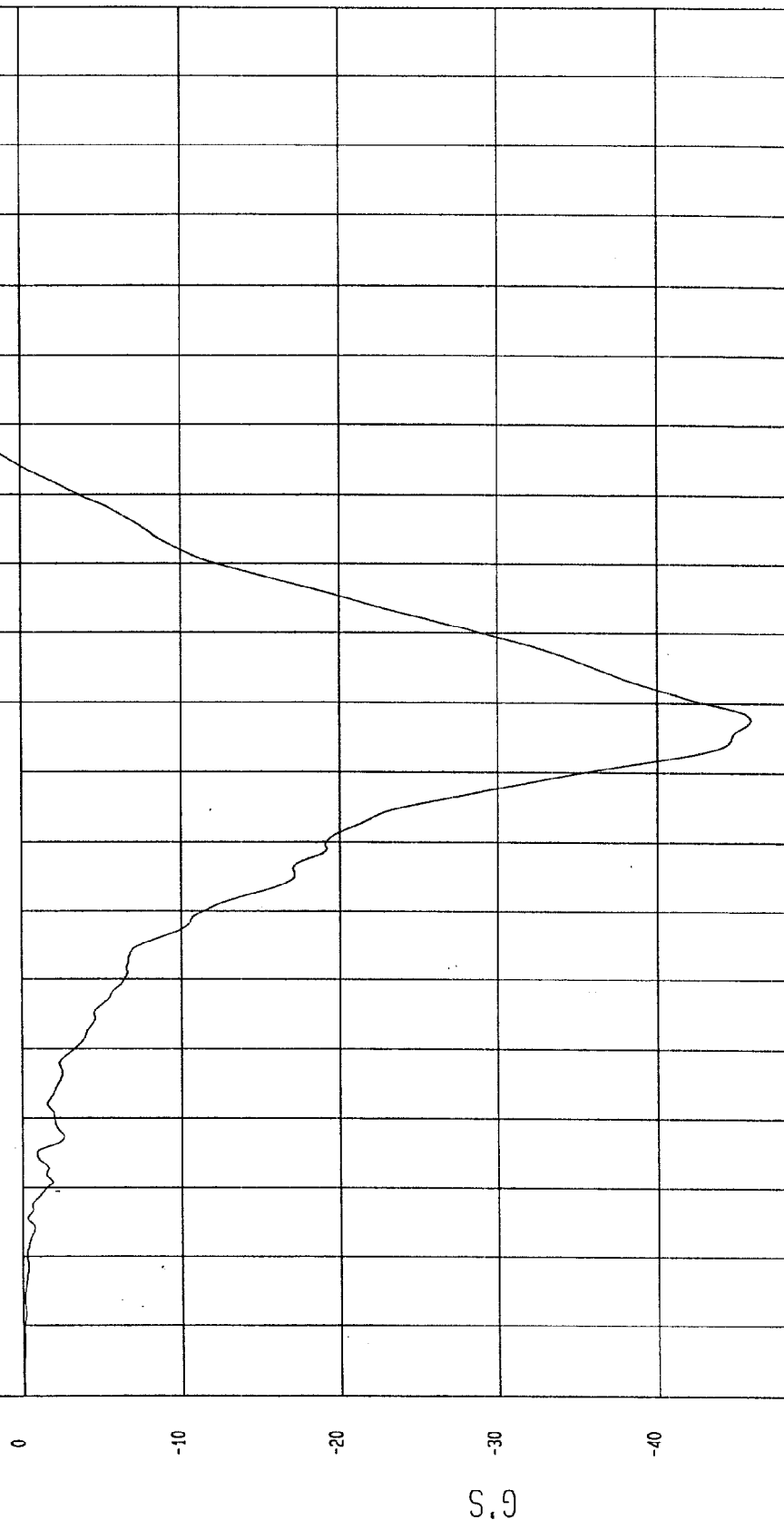
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-45.80918 G'S at 97. msec

YMAX= 2.990873 G'S at 146 msec

DRIVER CHEST X ACCELERATION

1 ——— H98078AF.A12 Filterclass (180)



MCA Research
04-08-1998 13:21

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

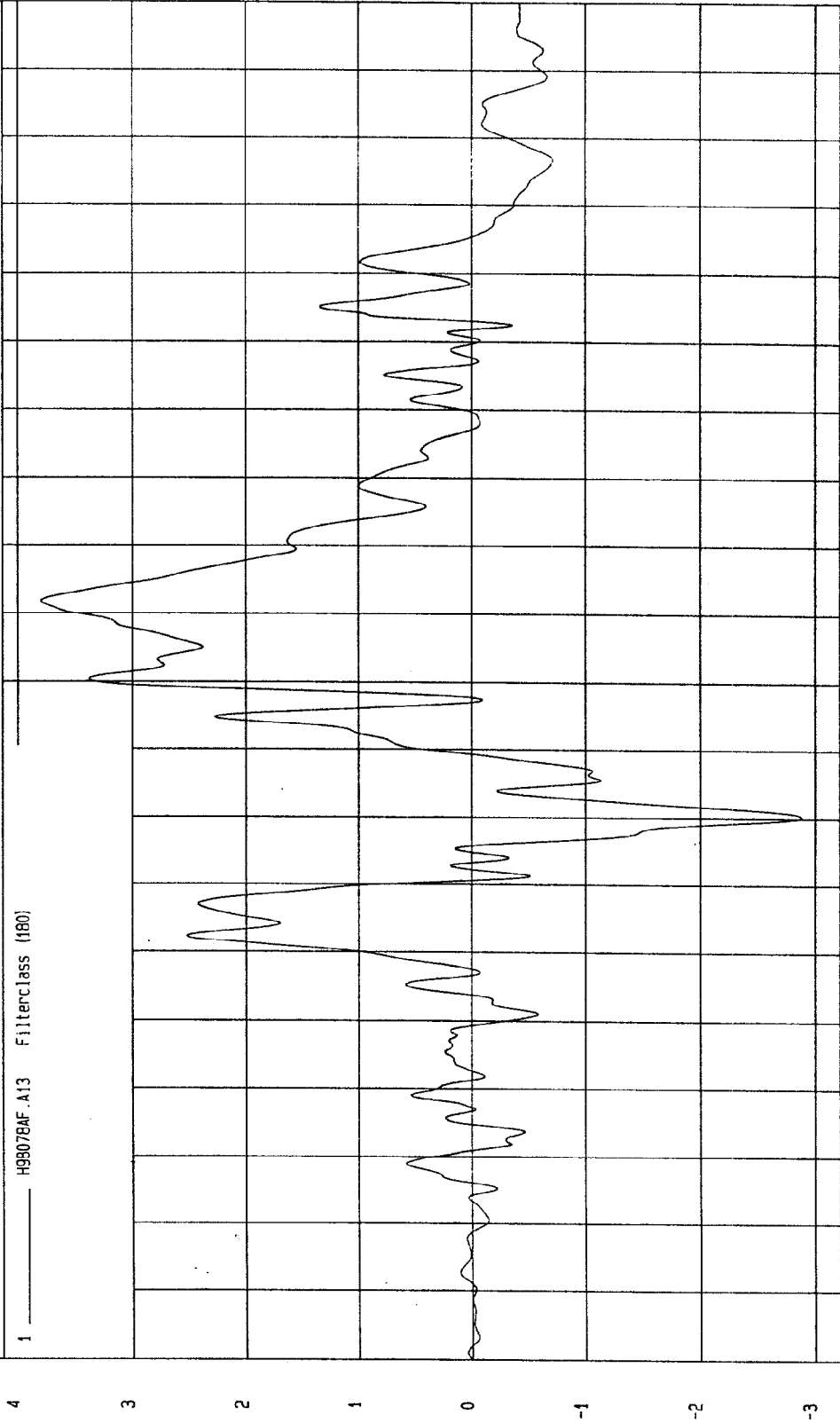
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-2.882325 G'S at 80. msec

YMAX= 3.795953 G'S at 111 msec

DRIVER CHEST Y ACCELERATION

1 H990784F.A13 Filterclass (180)



WCA Research
04-06-1998 13:21

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

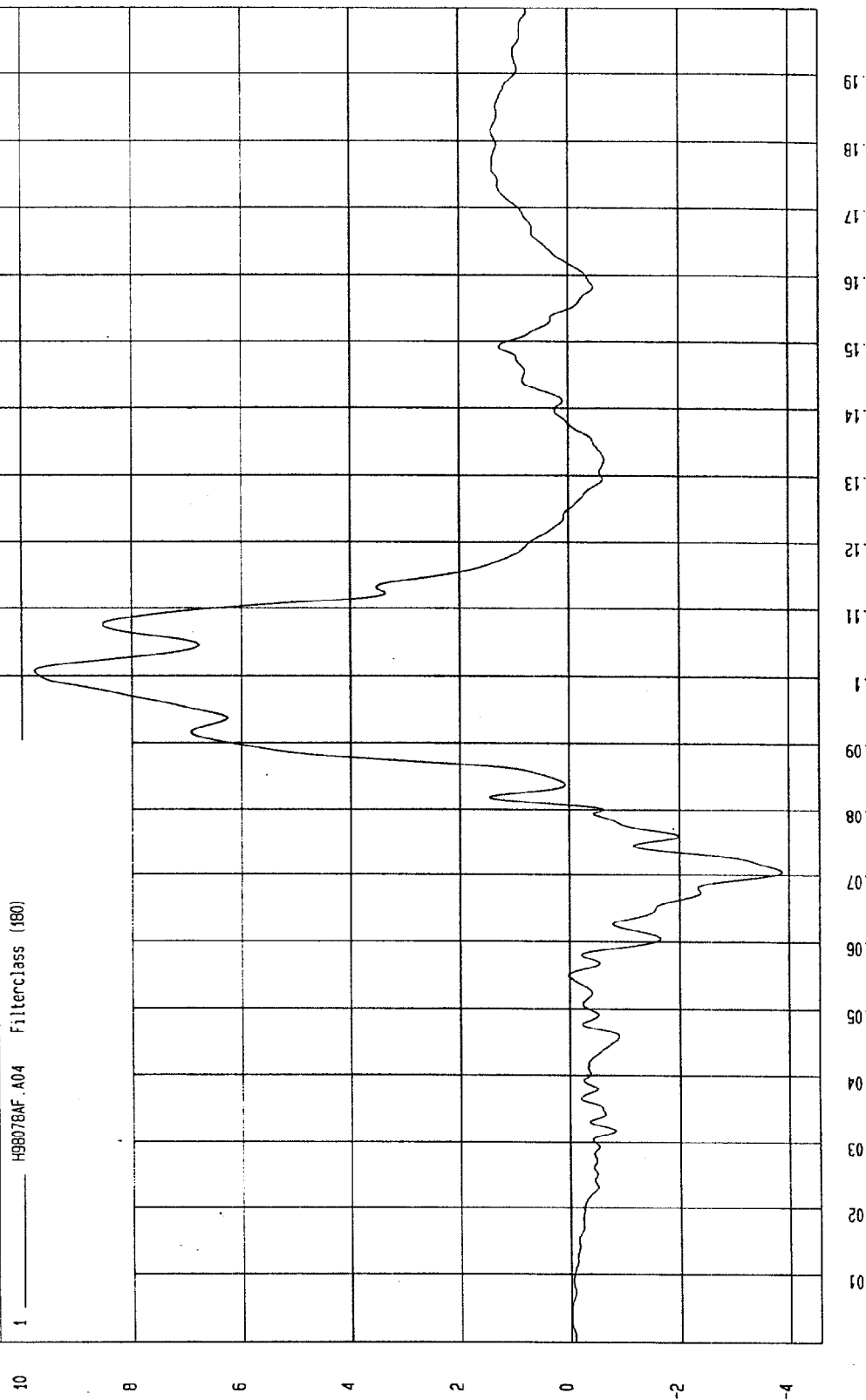
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-3.870532 G'S at 70. msec

YMAX= 9.768981 G'S at 100 msec

DRIVER CHEST Z ACCELERATION

1 H98078AF.A04 Filterclass (180)



MCA Research
04-08-1998 13:22

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN= 5.161632E-02 G'S at 2.5 msec

YMAX= 46.57328 G'S at 97. msec

DRIVER CHEST RESULTANT ACCELERATION

1 _____ H96078AV.A04 Filterclass (180)



MGA Research
04-08-1998 13:22

TEST: FMVSS 208 SLED TEST

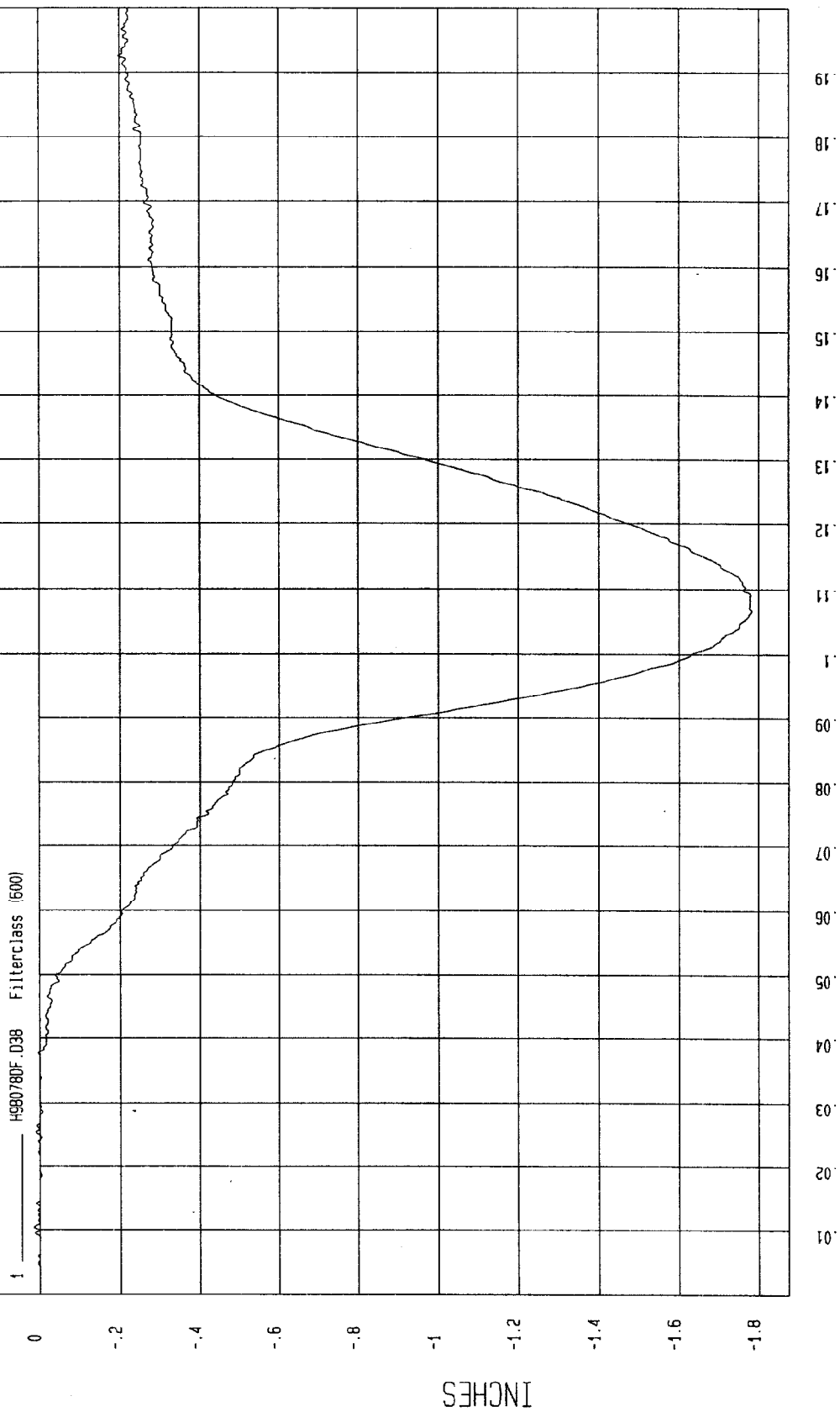
TEST DATE: 04-14-1998

COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-1.783298 INCHES at 105 msec

YMAX= 1.50412E-02 INCHES at 10. msec

DRIVER CHEST COMPRESSION



MCA Research
05-11-1998 09:13

TIME SECONDS

TEST: FMVSS 208 SLED TEST TEST DATE: 04-14-1998

COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-1023.724 LBS at 81. msec YMAX= 39.09581 LBS at 170 msec

DRIVER LEFT FEMUR FORCE

1 H98078FF.F15 Filterclass (500)



MCA Research
05-11-1998 09:13

TIME (SECONDS)

TEST: FMVSS 208 SLED TEST TEST DATE: 04-14-1998

COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-1113.031 LBS at 79. msec YMAX= 37.67068 LBS at 191 msec

DRIVER RIGHT FEMUR FORCE

1 H98078FF.F16 Filterclass (600)

LBS

0

-200

-400

-600

-800

-1000

TIME (SECONDS)

0.01

0.02

0.03

0.04

0.05

0.06

0.07

0.08

0.09

0.1

0.11

0.12

0.13

0.14

0.15

0.16

0.17

0.18

0.19

MGA Research
05-11-1998 09:13

TEST: FMVSS 208 SLED TEST

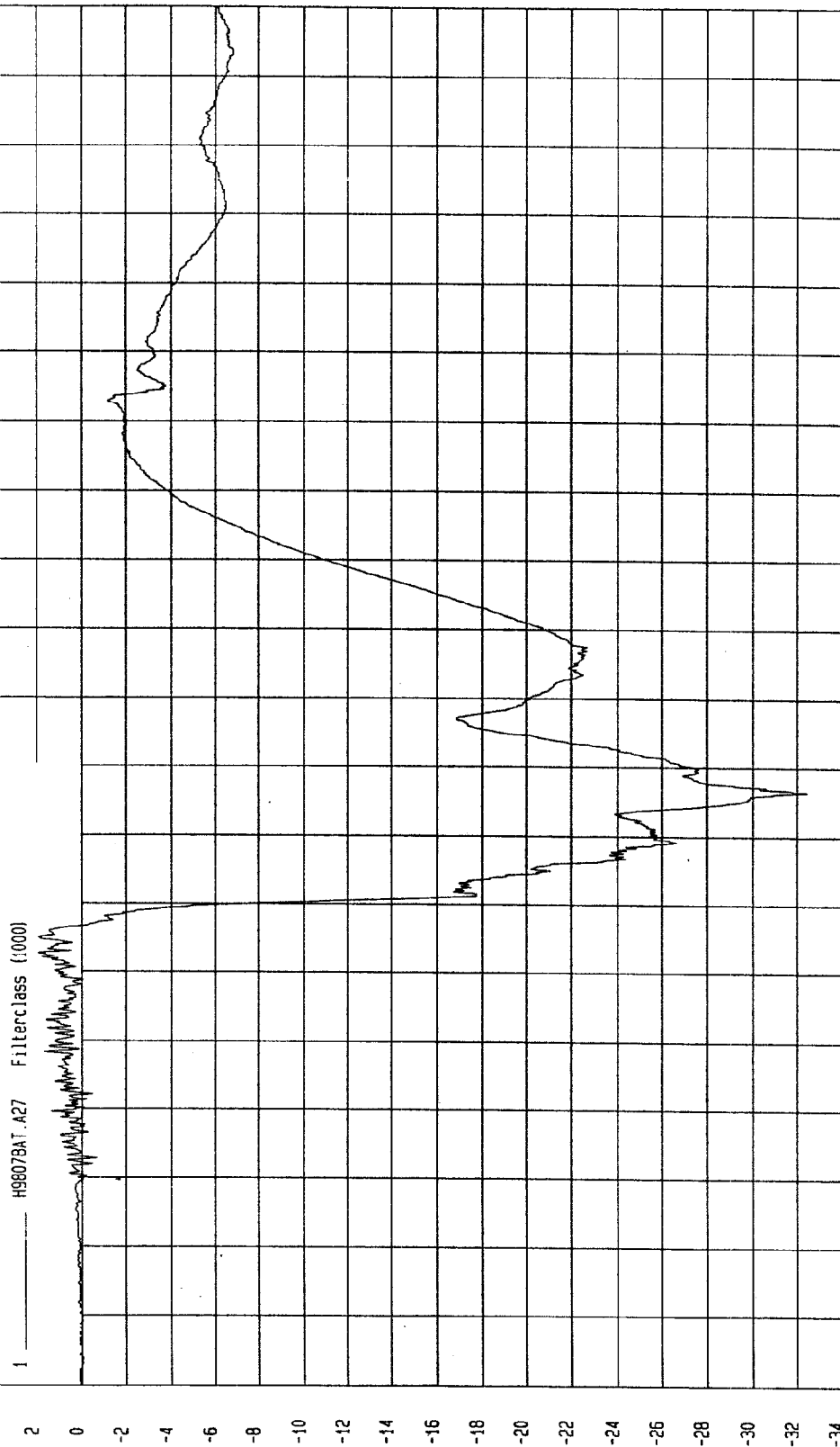
TEST DATE: 04-14-1998

COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-32.46692 G'S at 86. msec

YMAX= 1.936469 G'S at 62. msec

PASSENGER HEAD X ACCELERATION



MGA Research
04-08-1998 13:23

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

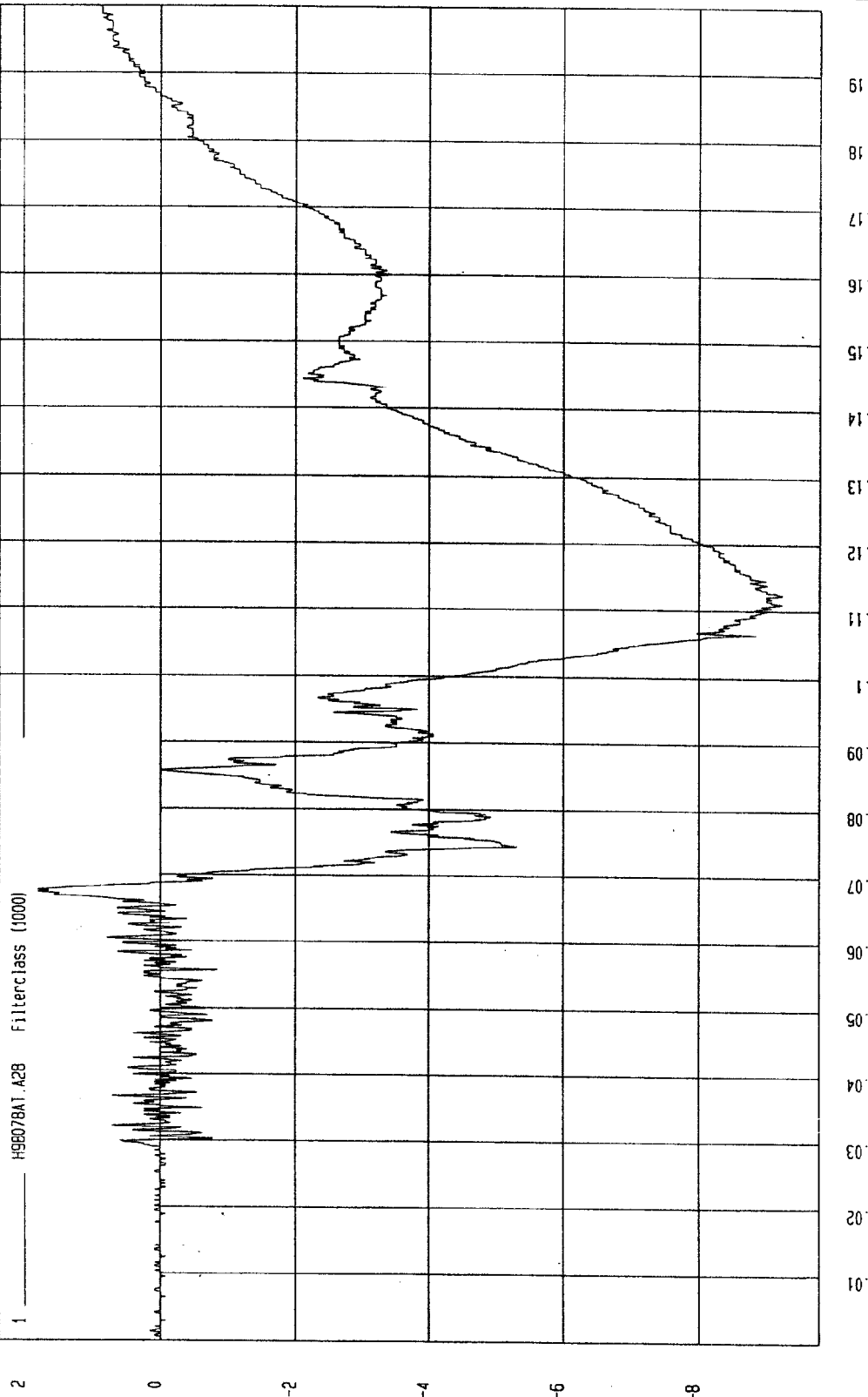
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-9.22637 G'S at 111 msec

YMAX= 1.803081 G'S at 67. msec

PASSENGER HEAD Y ACCELERATION

1 H96078A1.A28 Filterclass (1000)



MGA Research
04-08-1998 13:24

TIME (SECONDS)

G.S

TEST: FMVSS 208 SLED TEST

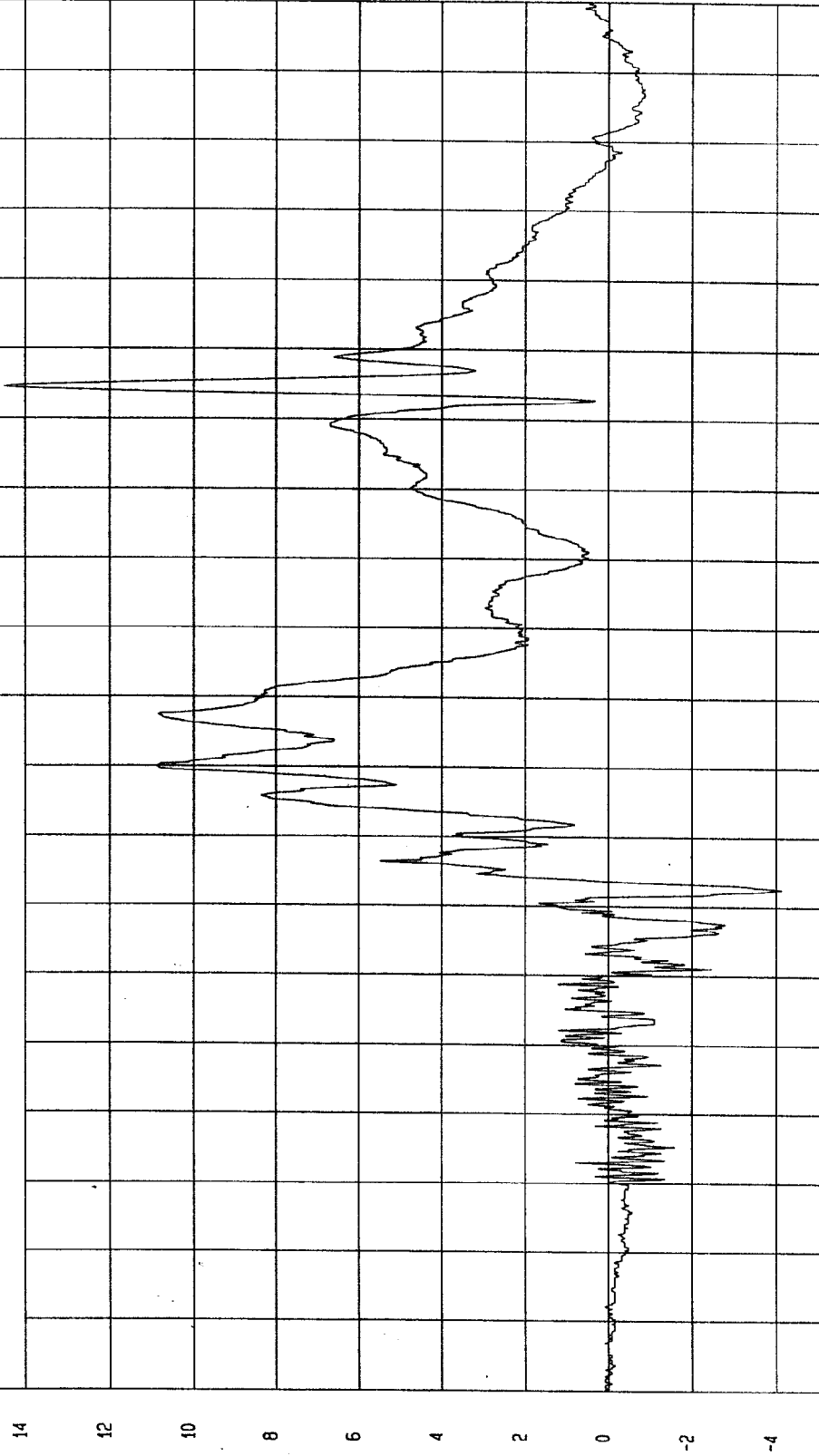
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-4.135736 G'S at 72. msec

YMAX= 14.48593 G'S at 144 msec

PASSENGER HEAD Z ACCELERATION

1 H98078AT.A29 Filterclass (1000)



WGA Research
04-08-1998 13:24

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

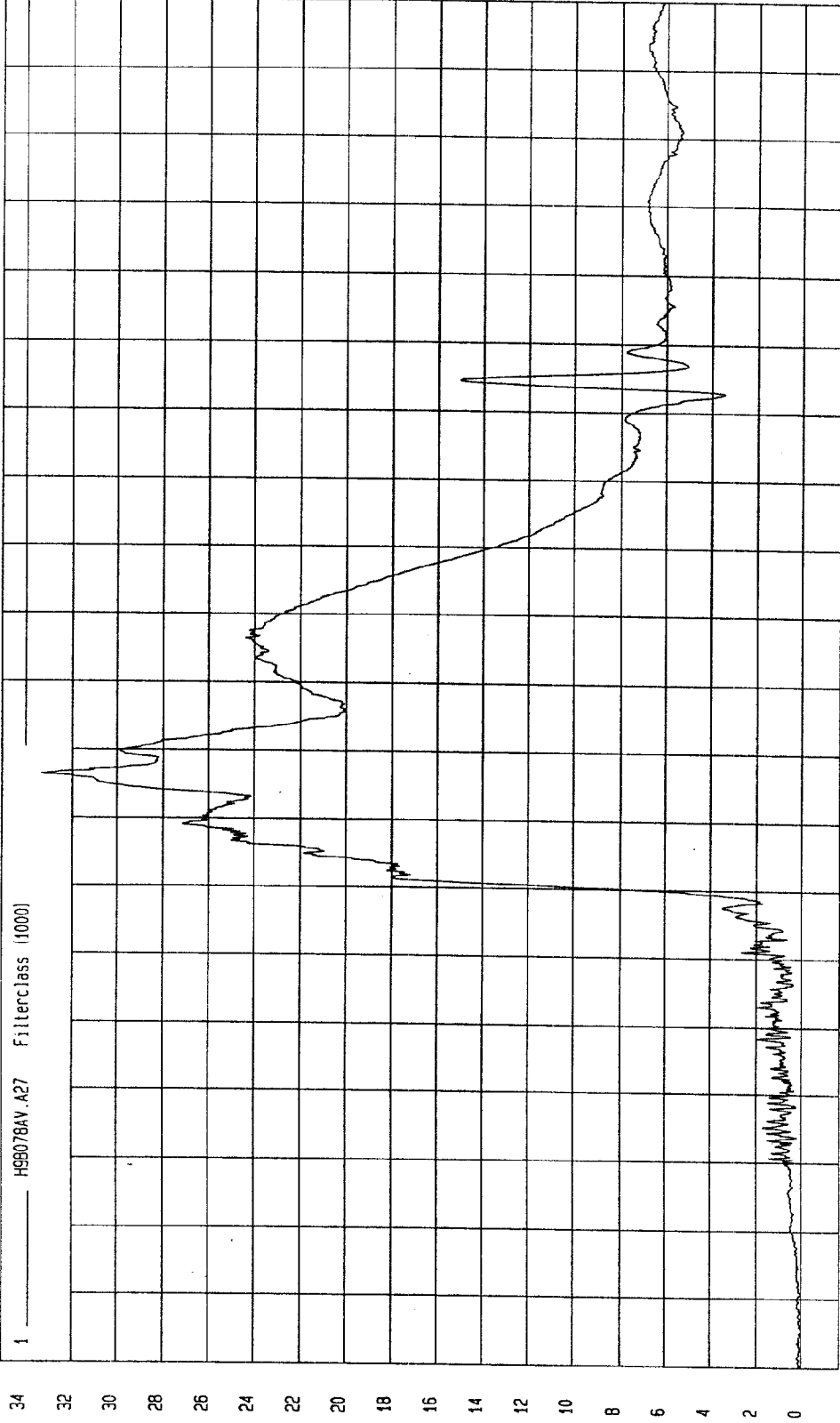
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN= 8.64952E-03 G'S at .3 msec

YMAX= 33.32367 G'S at 86. msec

PASSENGER HEAD RESULTANT ACCELERATION

1 ——— H98078AV.A27 Filterclass (1000)



WCA Research
04-06-1998 13:25

TIME (SECONDS)

G.S.

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

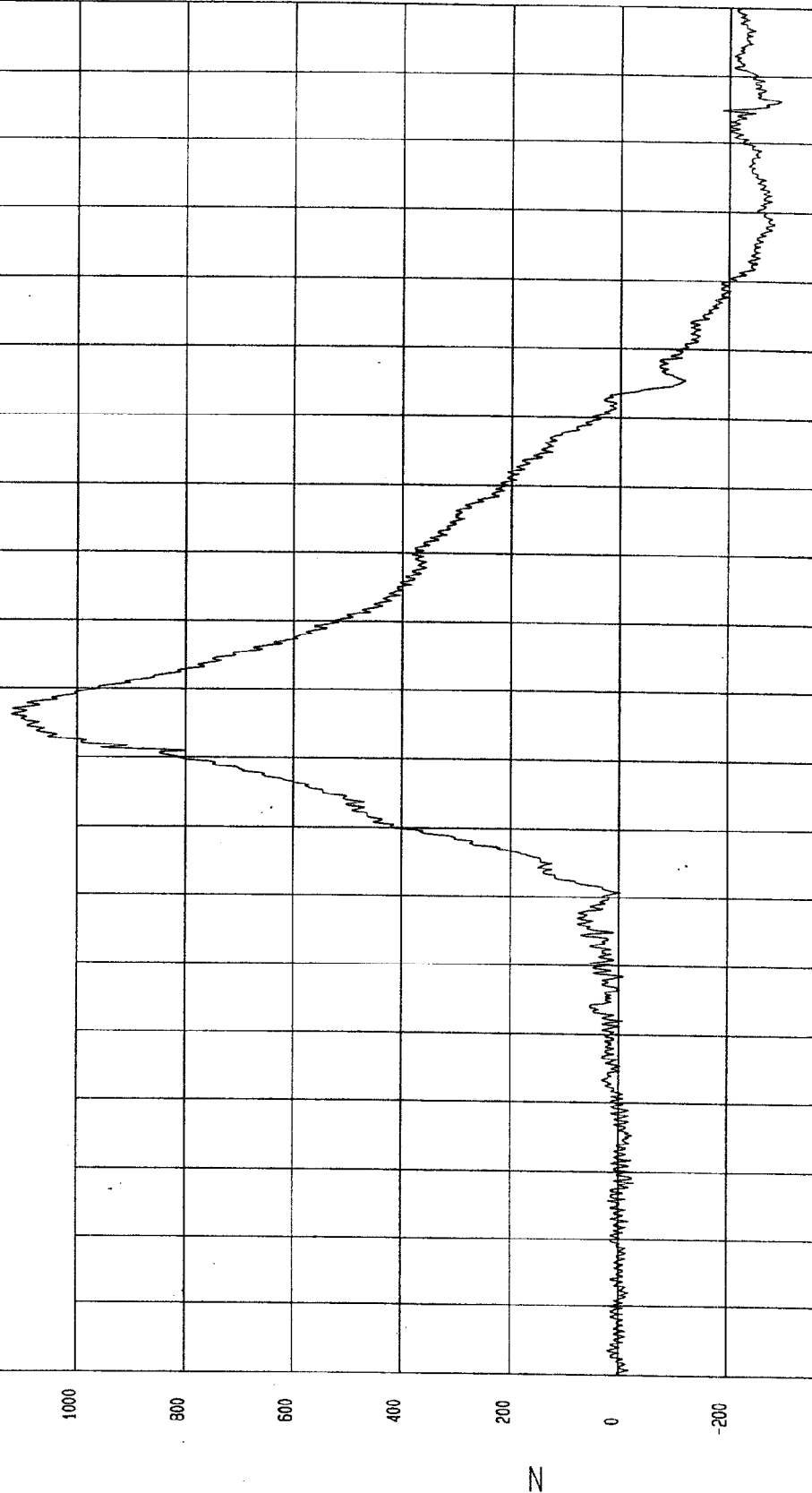
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-294.7191 N at 186 msec

YMAX= 1118.129 N at 96. msec

PASSENGER NECK FORCE X

1 _____ H98078T.F48 Filterclass (1000)



MCA Research
01-02-1998 15:15

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

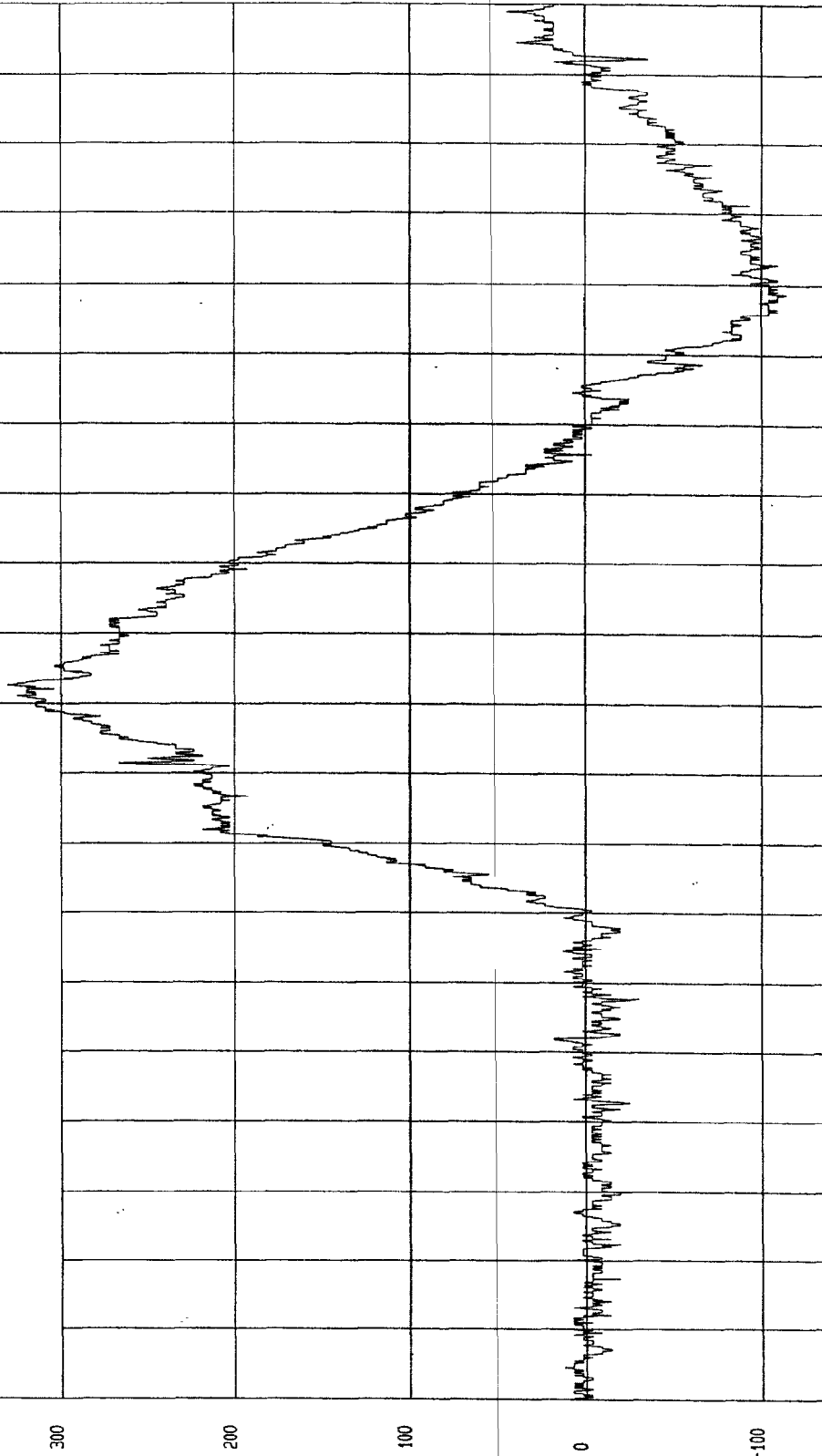
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-114.9016 N at 158 msec

YMAX= 330.1481 N at 102 msec

PASSENGER NECK FORCE Y

1 H98078T.F32 Filterclass (1000)



MGA Research
07-02-1998 15:16

TEST DATE: 04-14-1998

TEST: FMVSS 208 SLED TEST

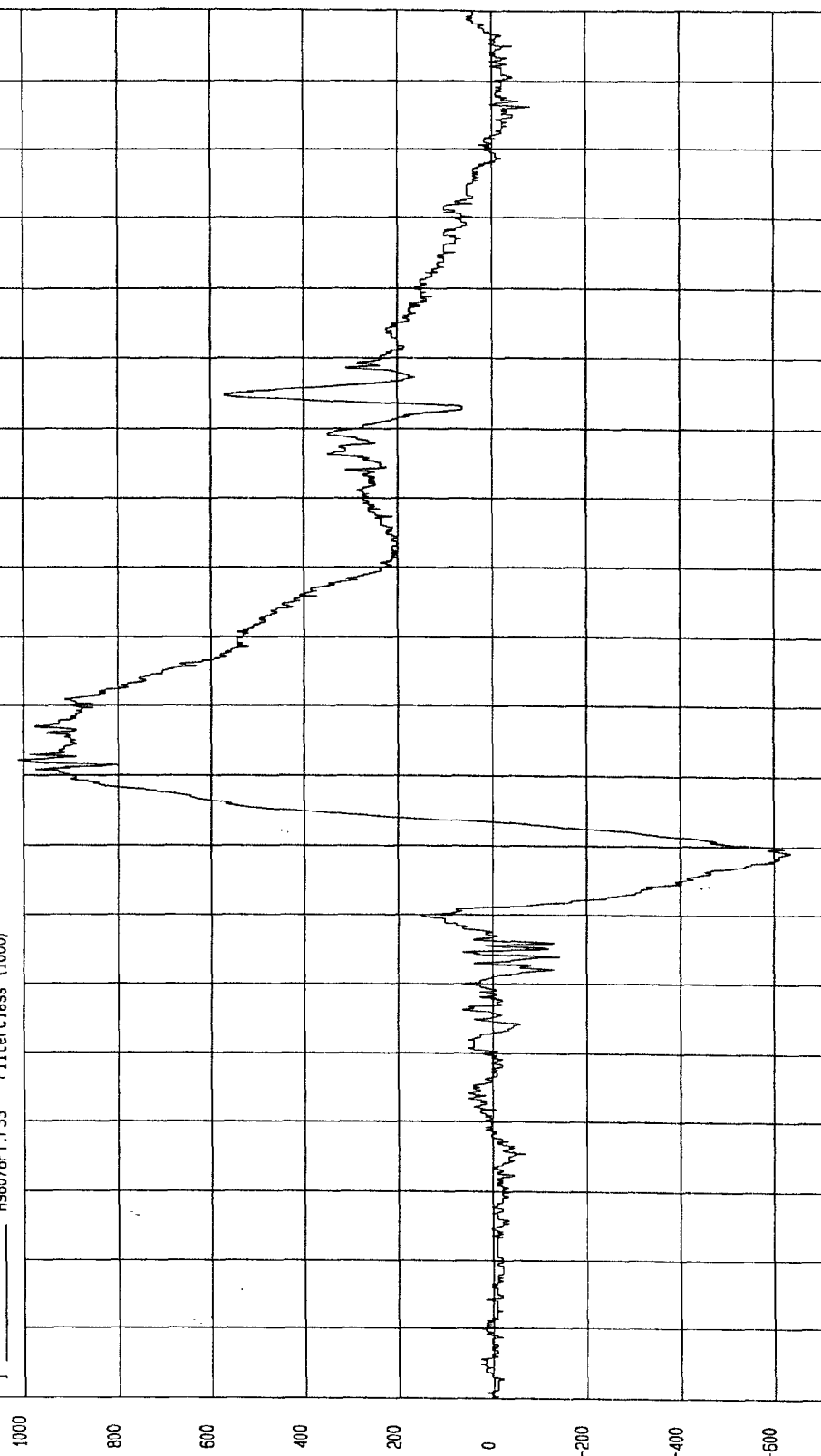
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMAX= 1012.213 N at 92. msec

YMIN=-635.8008 N at 79 msec

PASSENGER NECK FORCE Z

1 ——— H98078T1.F33 Filterclass (1000)



MGA Research
01-02-1998 15.16

TIME (SECONDS)

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

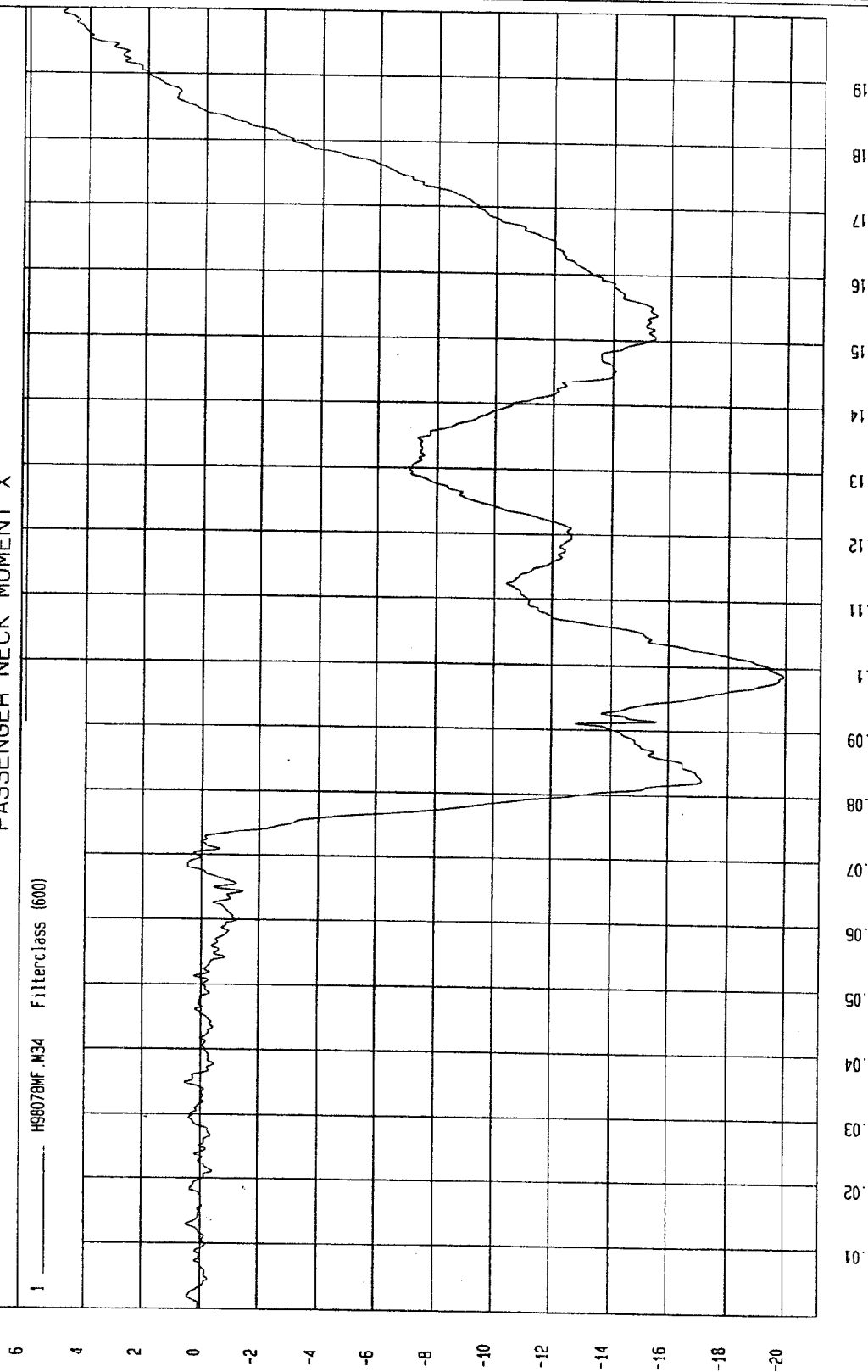
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-19.93338 NM at 98 msec

YMAX= 4.917052 NM at 199 msec

PASSENGER NECK MOMENT X

1 H98078MF.M34 Filterclass (600)



WCA Research
04-08-1998 13:26

TIME (SECONDS)

NM

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

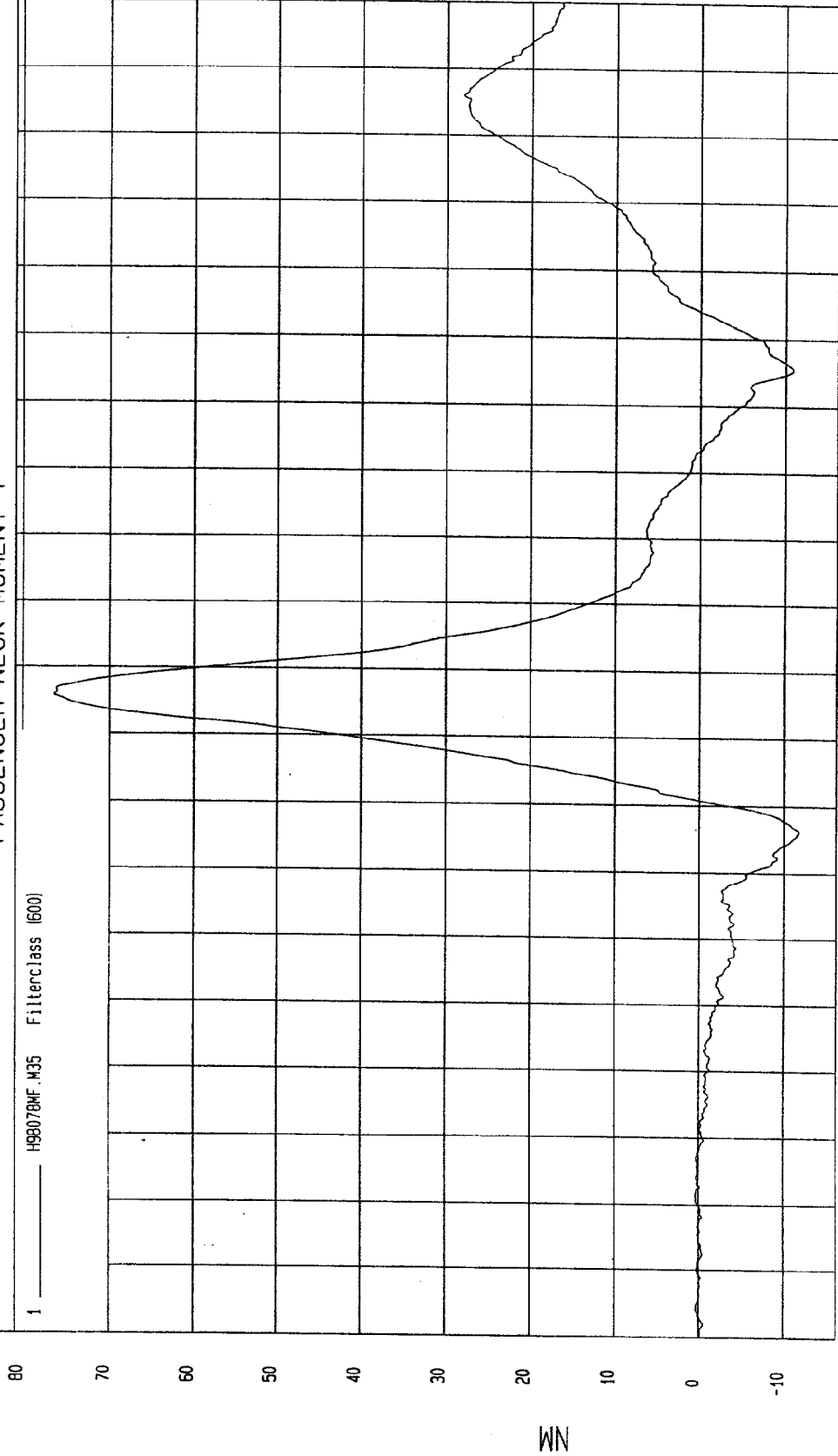
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-11.77913 NM at 76. msec

YMAX= 75.45295 NM at 95. msec

PASSENGER NECK MOMENT Y

1 _____ H98078MF.M35 Filterclass (600)



WCA Research
04-06-1998 13:27

TEST DATE: 04-14-1998

TEST: FMVSS 208 SLED TEST

COMPONENT: 1998 DODGE STRATUS (CW0309)

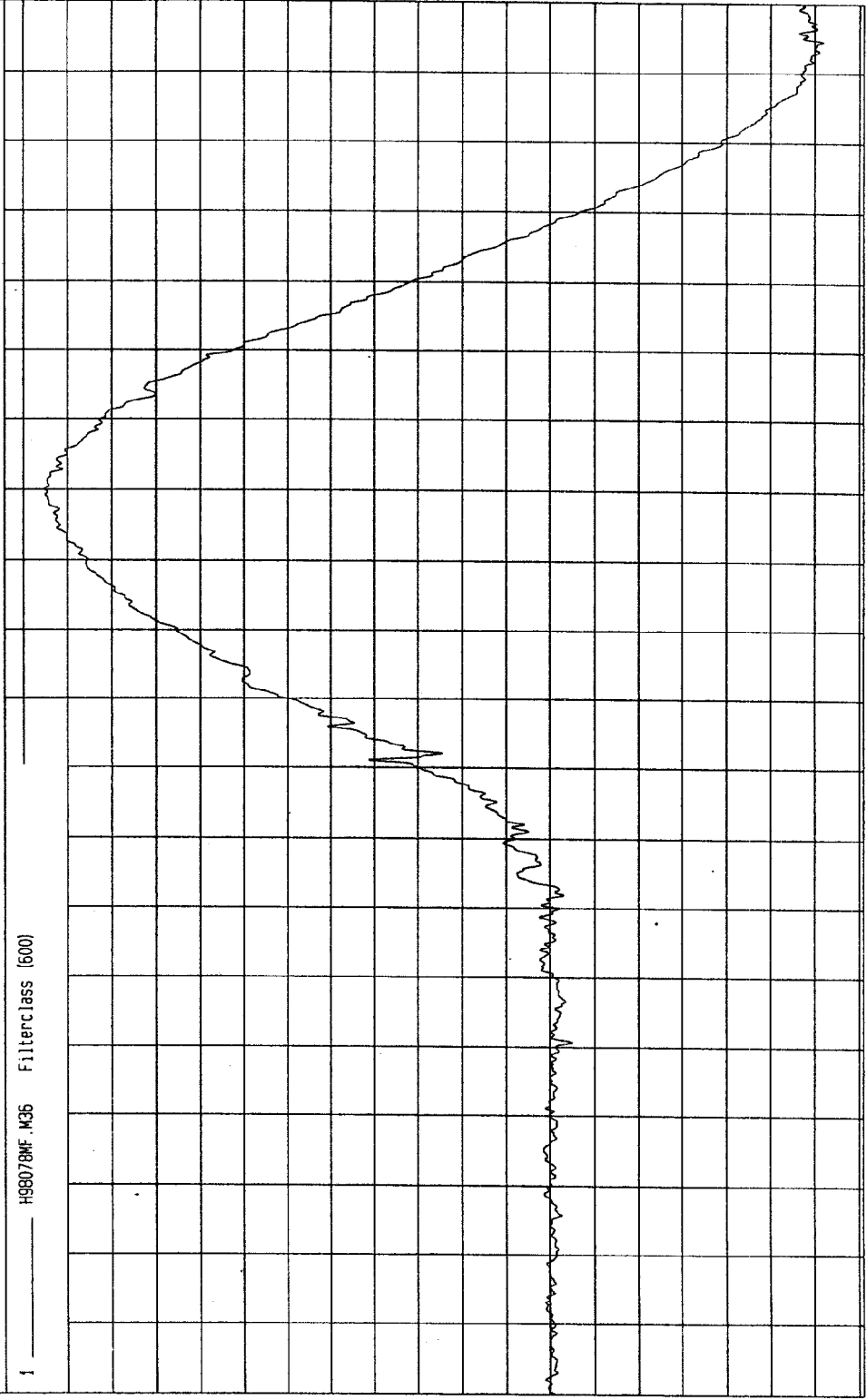
YMIN=-12.39473 NM at 194 msec

YMAX= 23.05574 NM at 130 msec

PASSENGER NECK MOMENT Z

1 H98078MF M36 Filterclass (600)

NM



MCA Research
04-08-1998 13:27

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

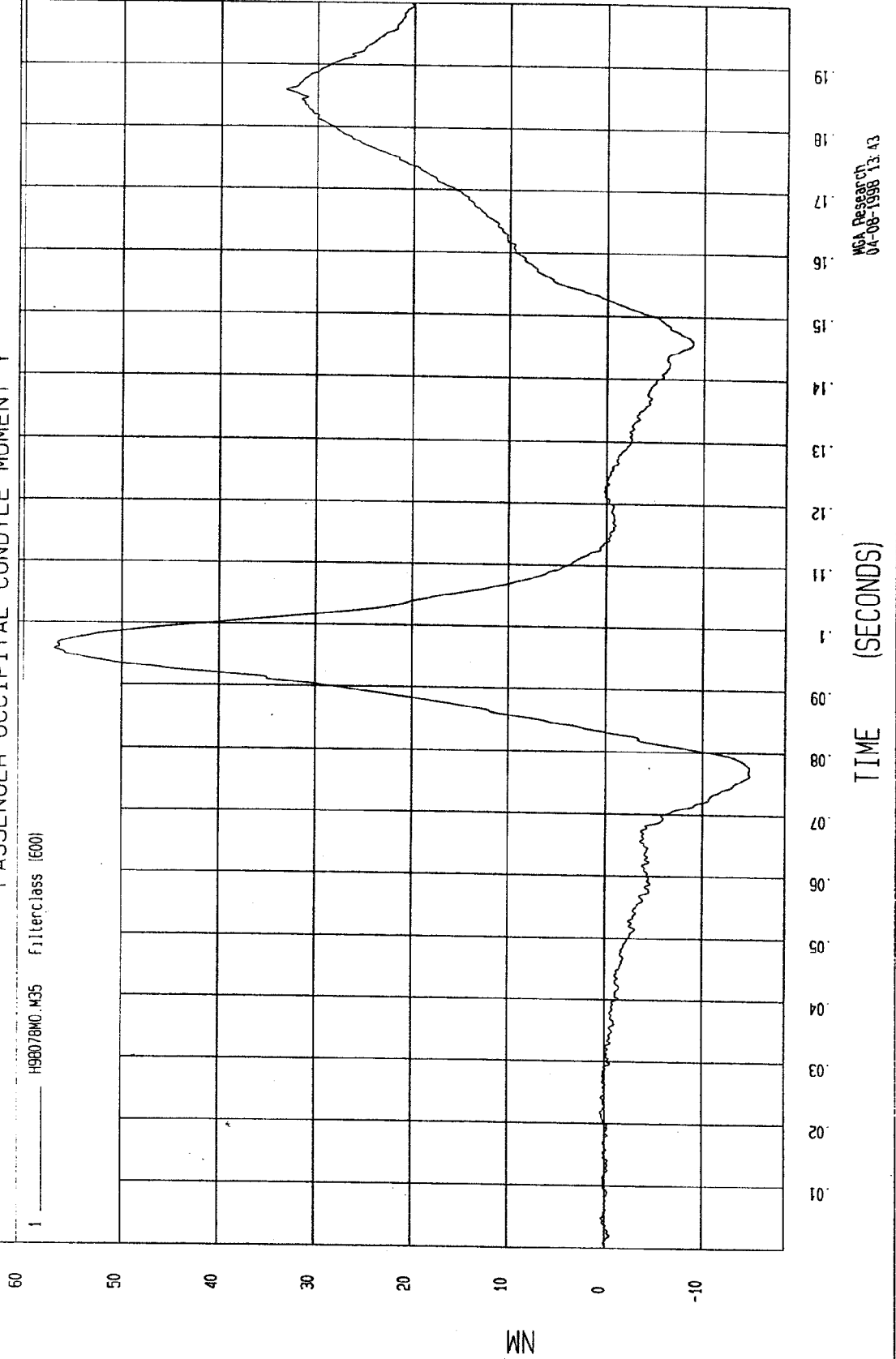
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-14.90609 NM at 76. msec

YMAX= 56.91851 NM at 95. msec

PASSENGER OCCIPITAL CONDYLE MOMENT Y

1 H98078M0.M35 filterclass (600)



WCA Research
04-08-1998 13.43

TEST DATE: 04-14-1998

TEST: FMVSS 208 SLED TEST

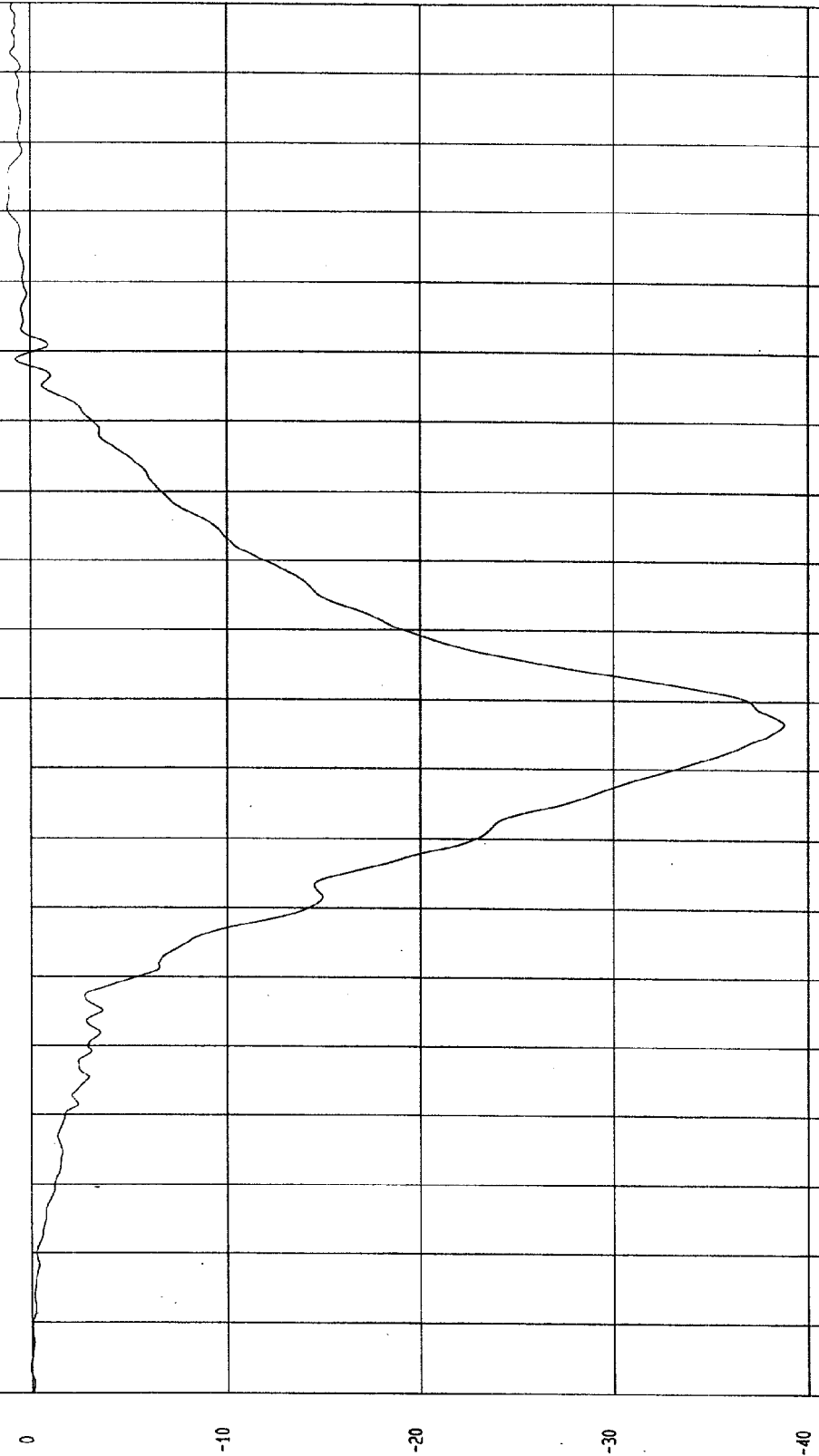
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-38.77195 G'S at 96. msec

YMAX= 1.202417 G'S at 170 msec

PASSENGER CHEST X ACCELERATION

1 H9807BAF.A17 Filterclass (180)



WGA Research
04-08-1998 13:27

TIME (SECONDS)

G.S

TEST DATE: 04-14-1998

TEST: FMVSS 208 SLED TEST

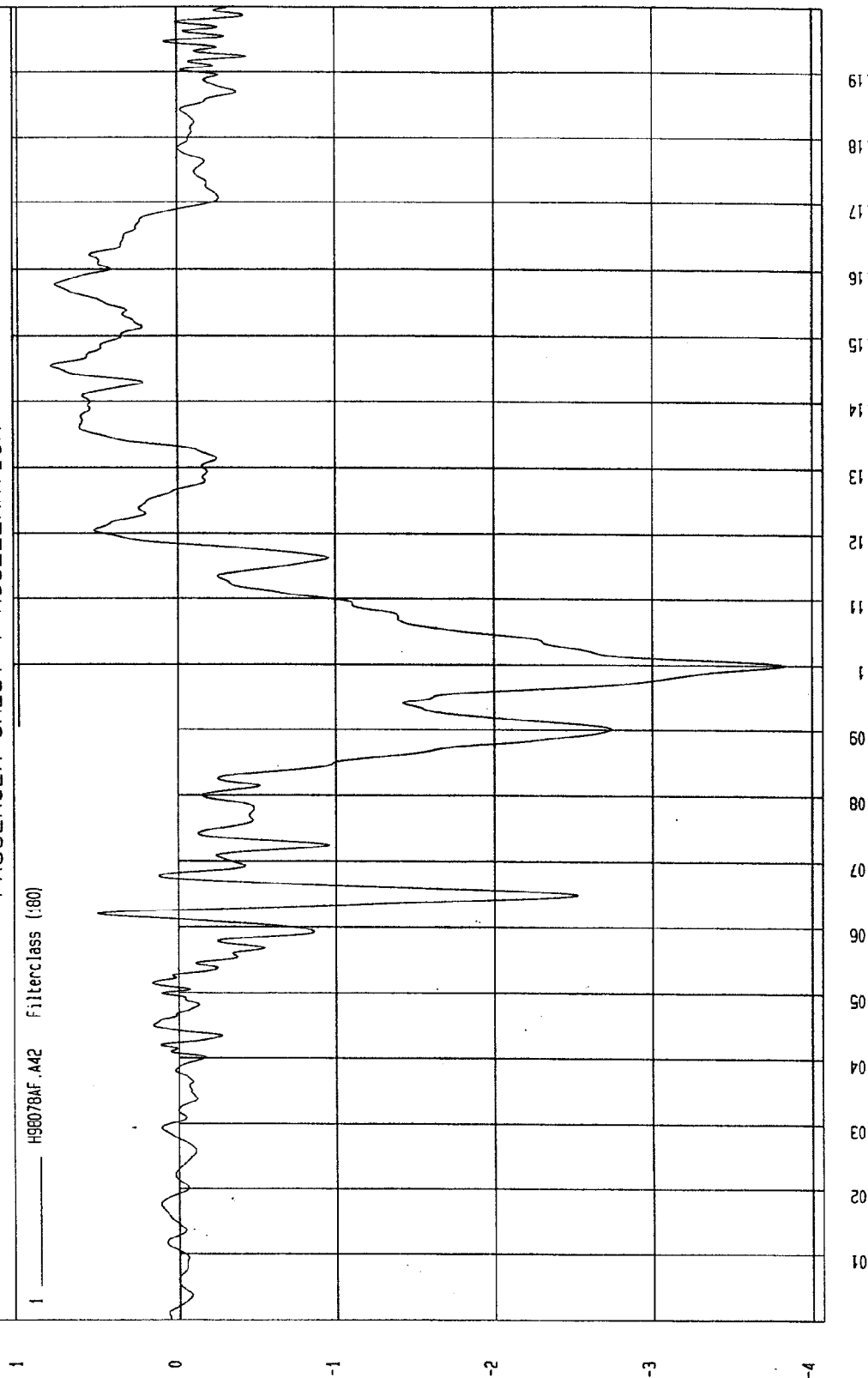
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMAX= .7996403 G'S at 145 msec

YMIN=-3.8338 G'S at 100 msec

PASSENGER CHEST Y ACCELERATION

1 _____ H98078AF.A42 Filterclass (.80)



MOA Research
04-08-1998 13:28

TIME (SECONDS)

G.S

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

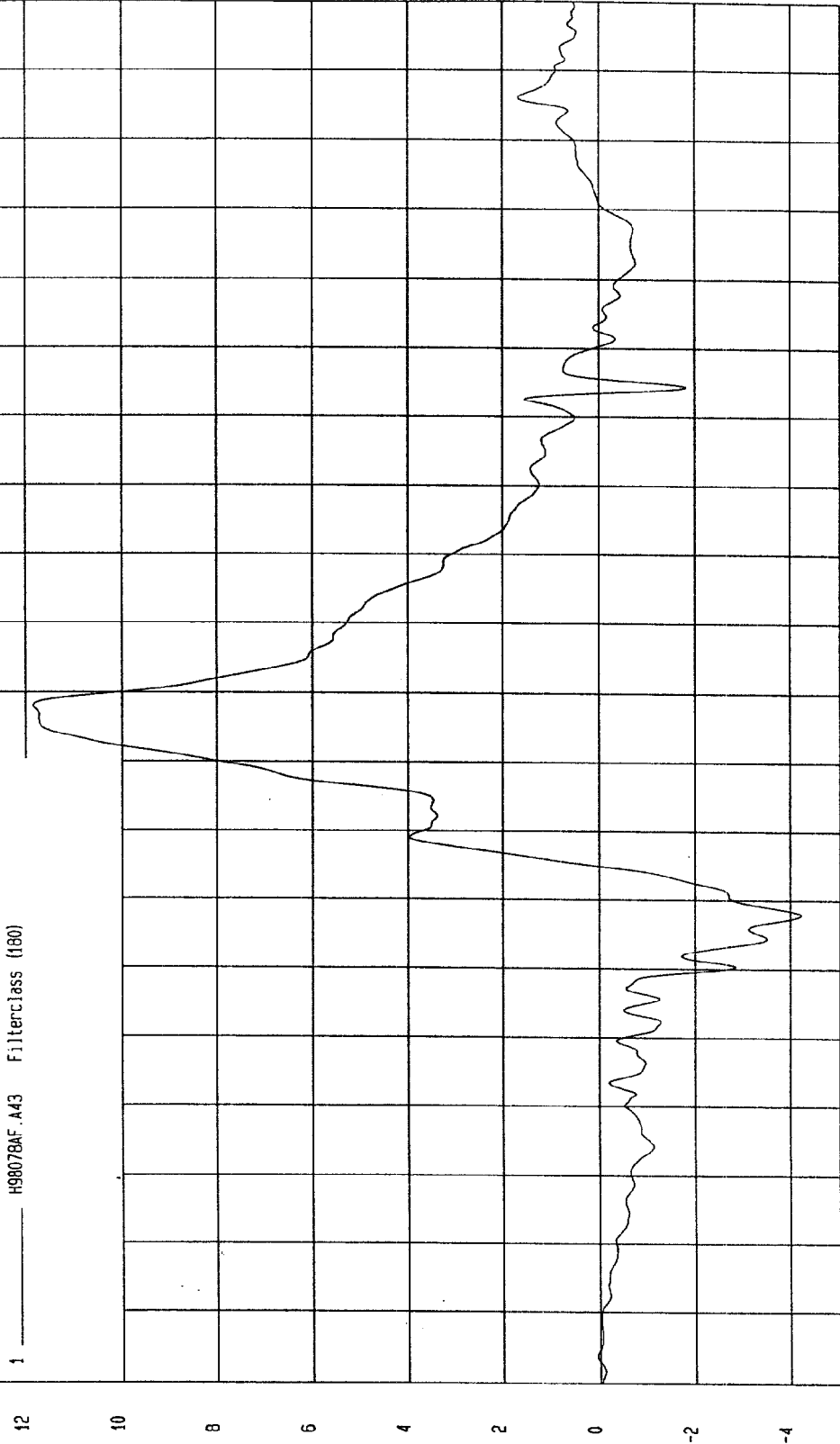
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-4.233846 G'S at 67. msec

YMAX= 11.8407 G'S at 98. msec

PASSENGER CHEST Z ACCELERATION

1 H98078AF.A43 Filterclass (180)



WCA Research
04-08-1998 13:28

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

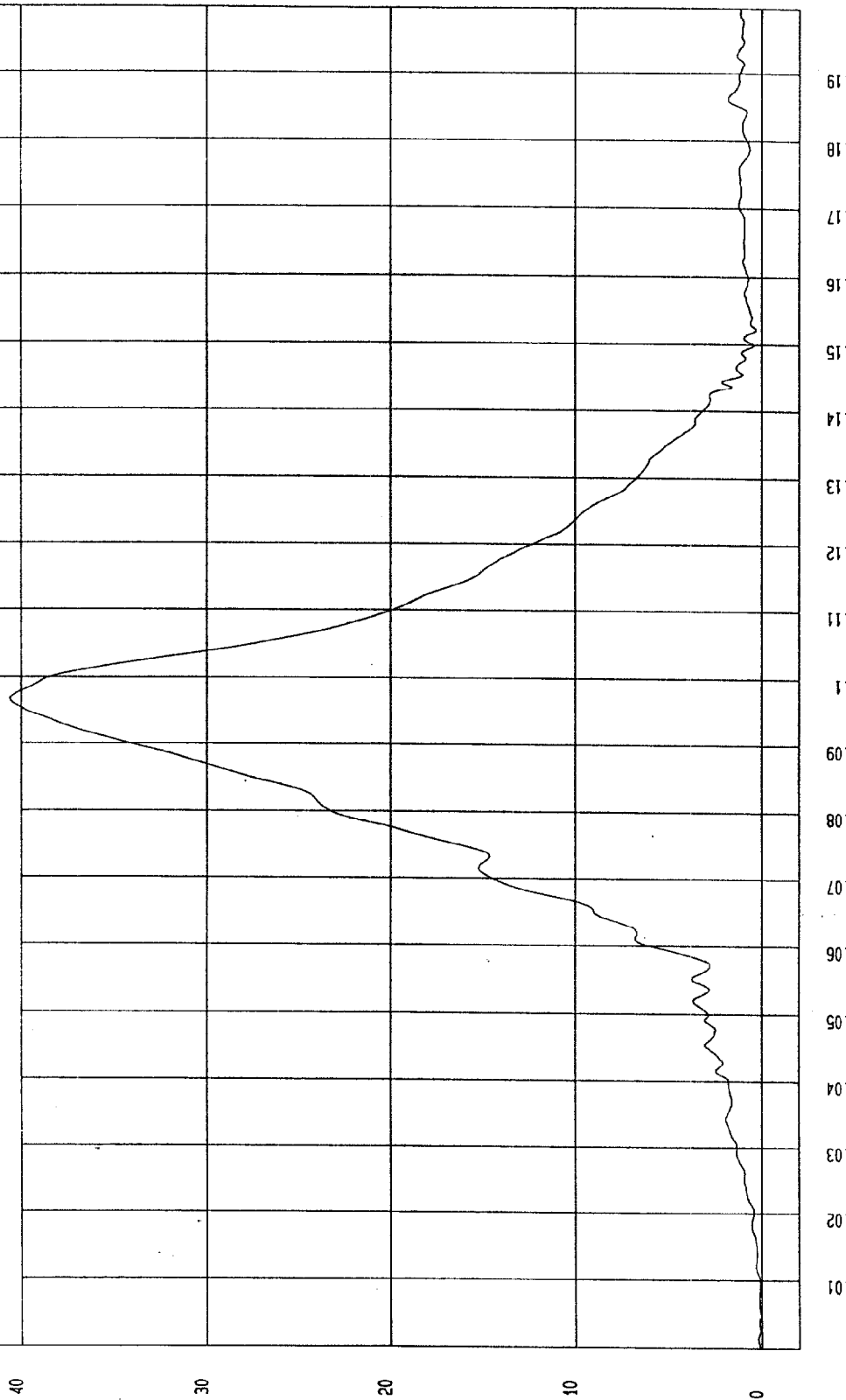
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN= 2.550357E-02 G'S at 4.8 msec

YMAX= 40.58815 G'S at 96. msec

PASSENGER CHEST RESULTANT ACCELERATION

1 H96078AV.A17 Filterclass (180)



NGA Research
04-08-1998 13:29

TIME (SECONDS)

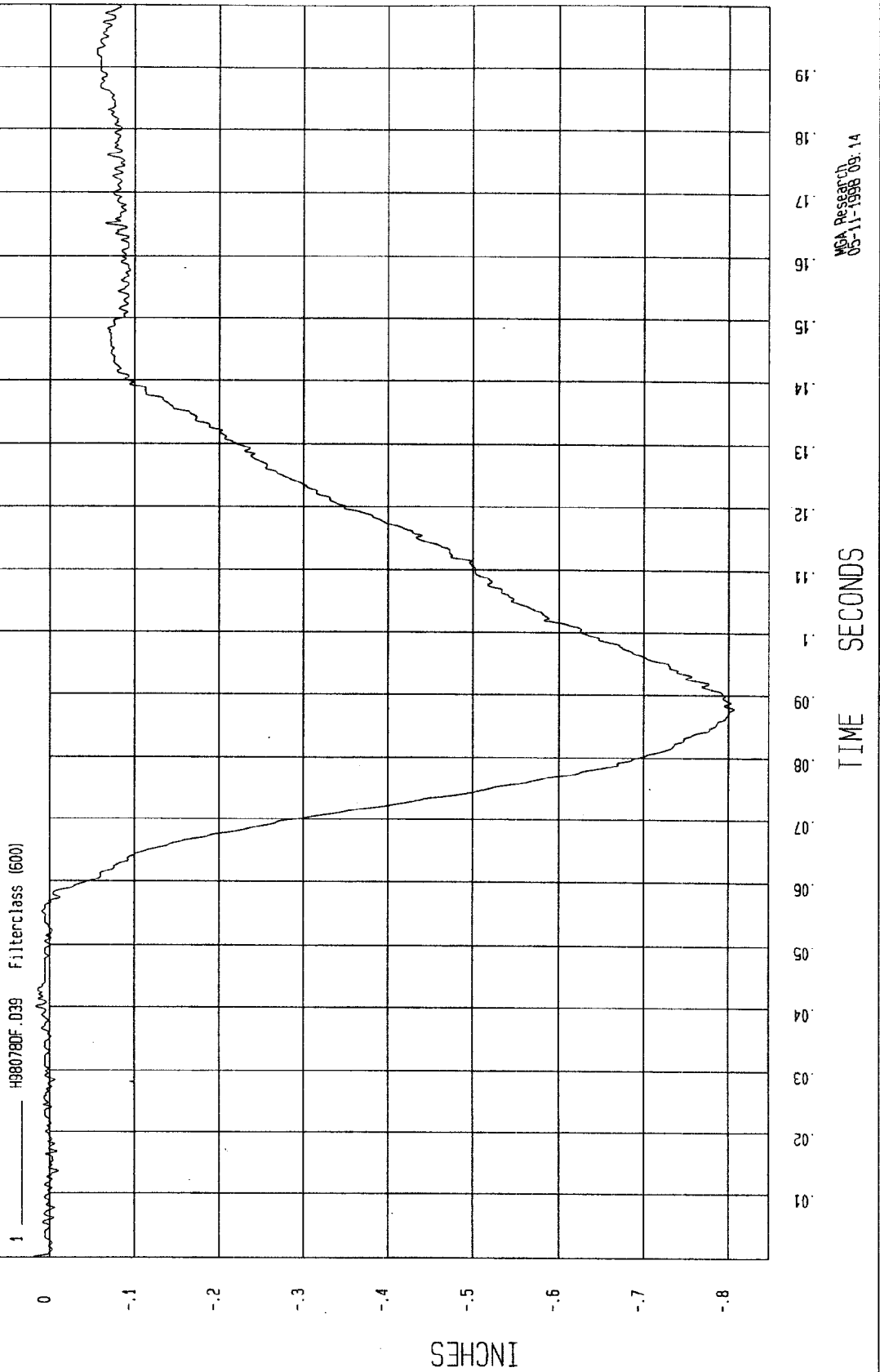
G.S

TEST: FMVSS 208 SLED TEST TEST DATE: 04-14-1998

COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-.8063782 INCHES at 87. msec YMAX= 1.878734E-02 INCHES at 9.9 msec

PASSENGER CHEST COMPRESSION



TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

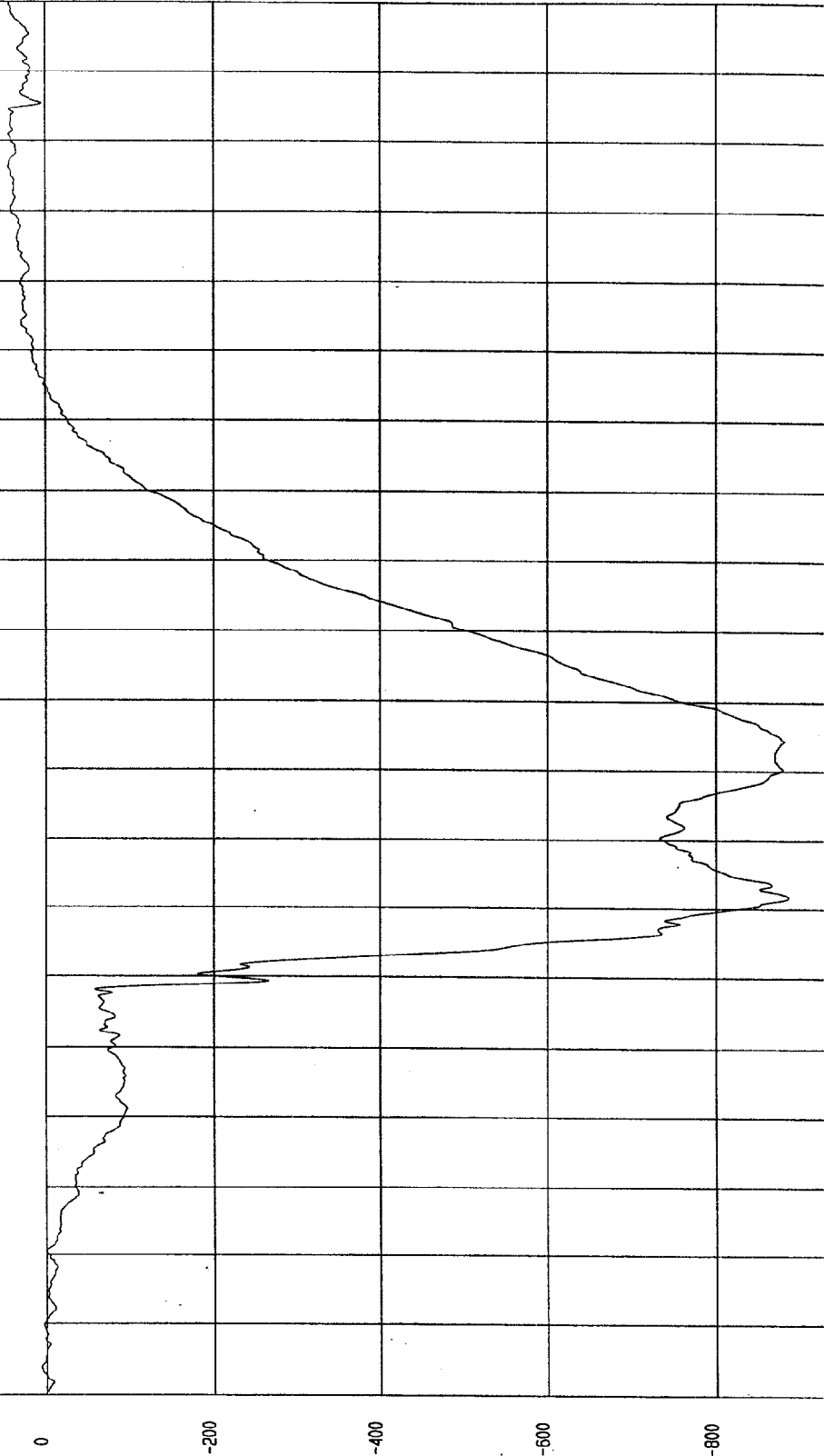
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-884.9516 LBS at 71. msec

YMAX= 43.66613 LBS at 176 msec

PASSENGER LEFT FEMUR FORCE

1 _____ H98078FF.F44 Filterclass (600)



MSA Research
04-06-1998 13:29

TIME (SECONDS)

LBS

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

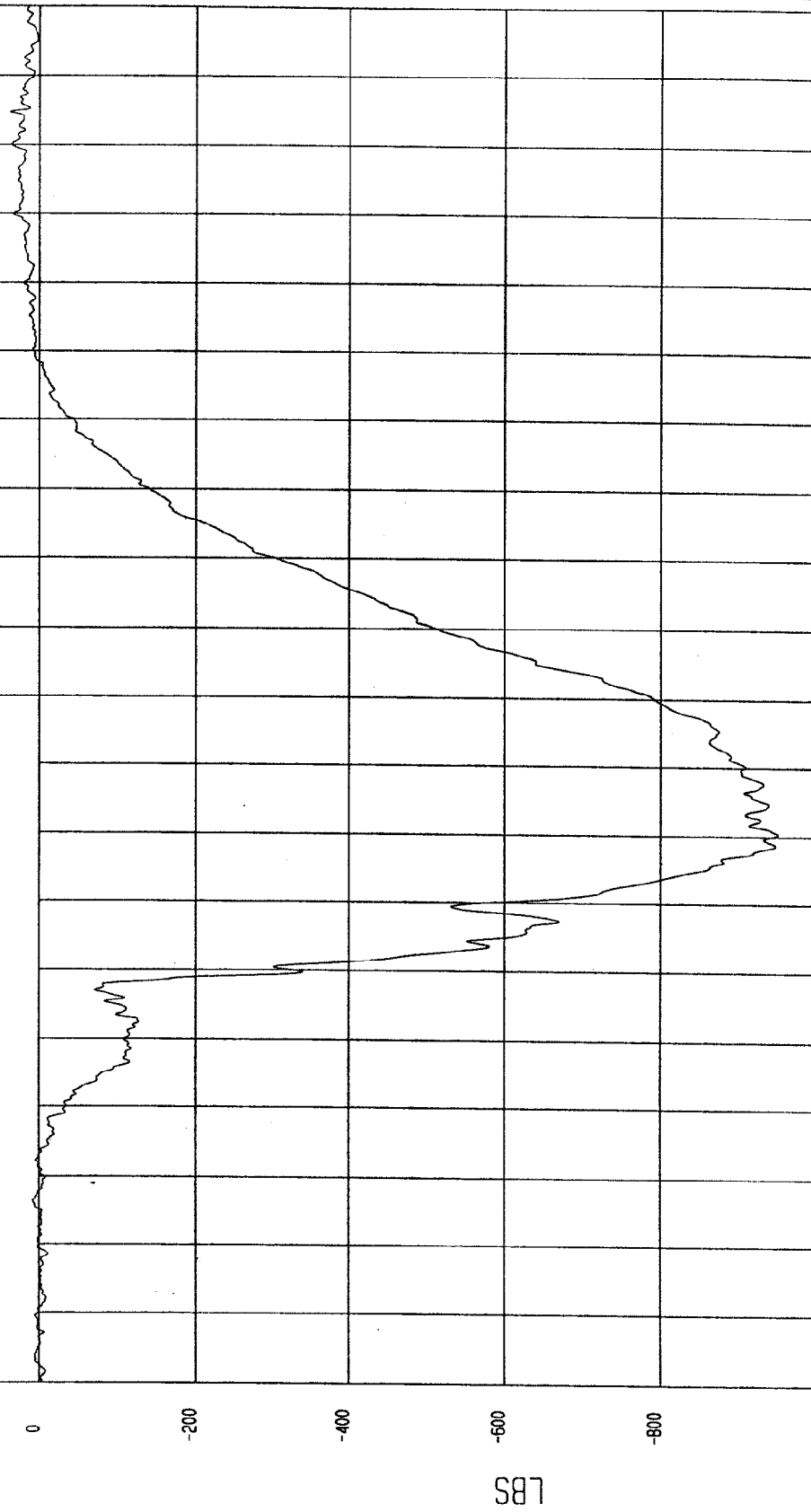
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-950.3778 LBS at 80. msec

YMAX= 37.93671 LBS at 184 msec

PASSENGER RIGHT FEMUR FORCE

1 ——— H98078F.F45 Filterclass (600)



MGA Research
04-08-1998 13:30

TIME (SECONDS)

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

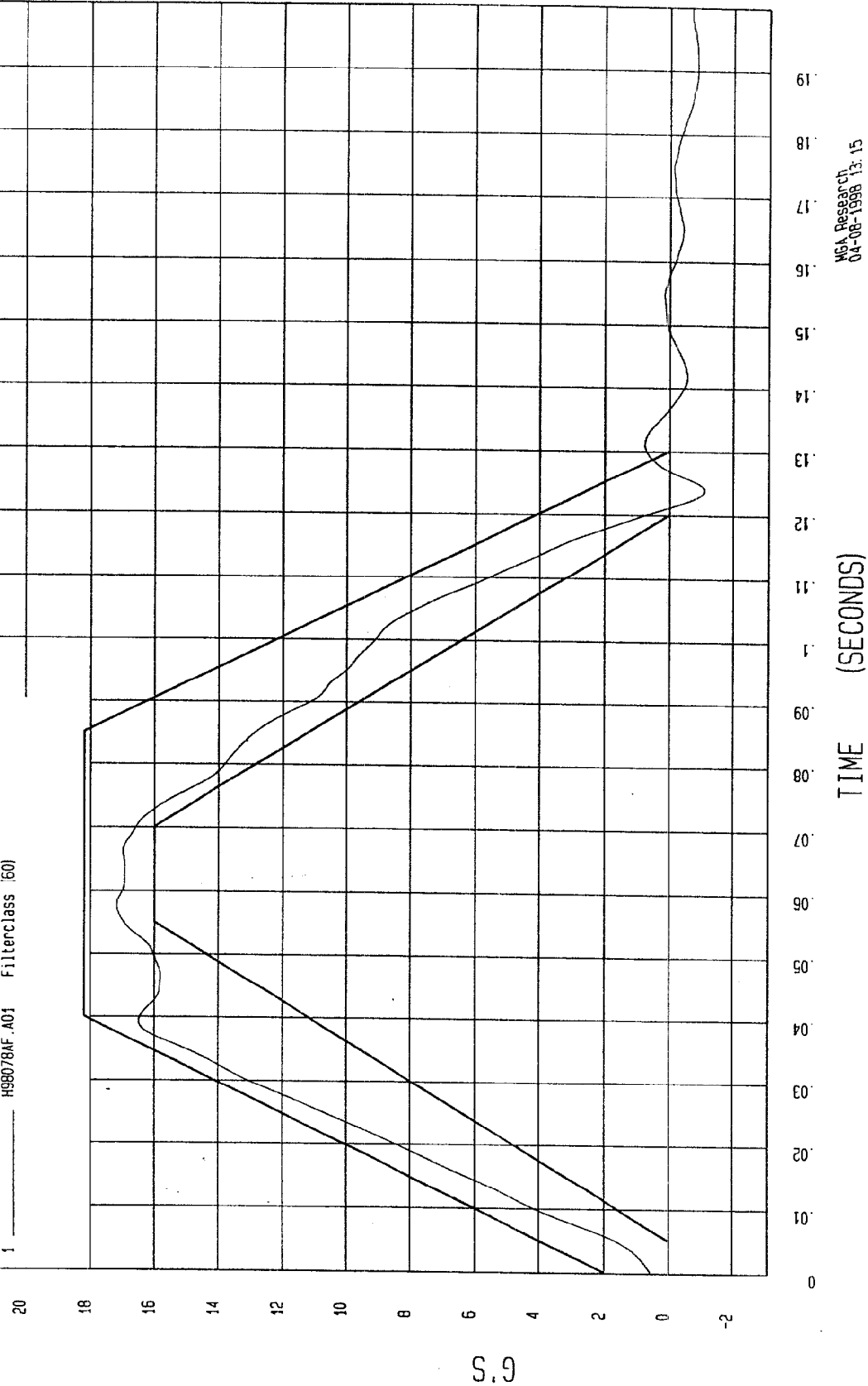
COMPONENT: 1998 DODGE STRATUS (CW0309)

Minimum = -1.10 G'S at 123.9 msec

Maximum = 17.17 G'S at 57.7 msec

SLED ACCELERATION

1 _____ H98078AF.A01 Filterclass (60)



WCA Research
04-08-1998 13:15

TEST: FMVSS 208 SLED TEST TEST DATE: 04-14-1998

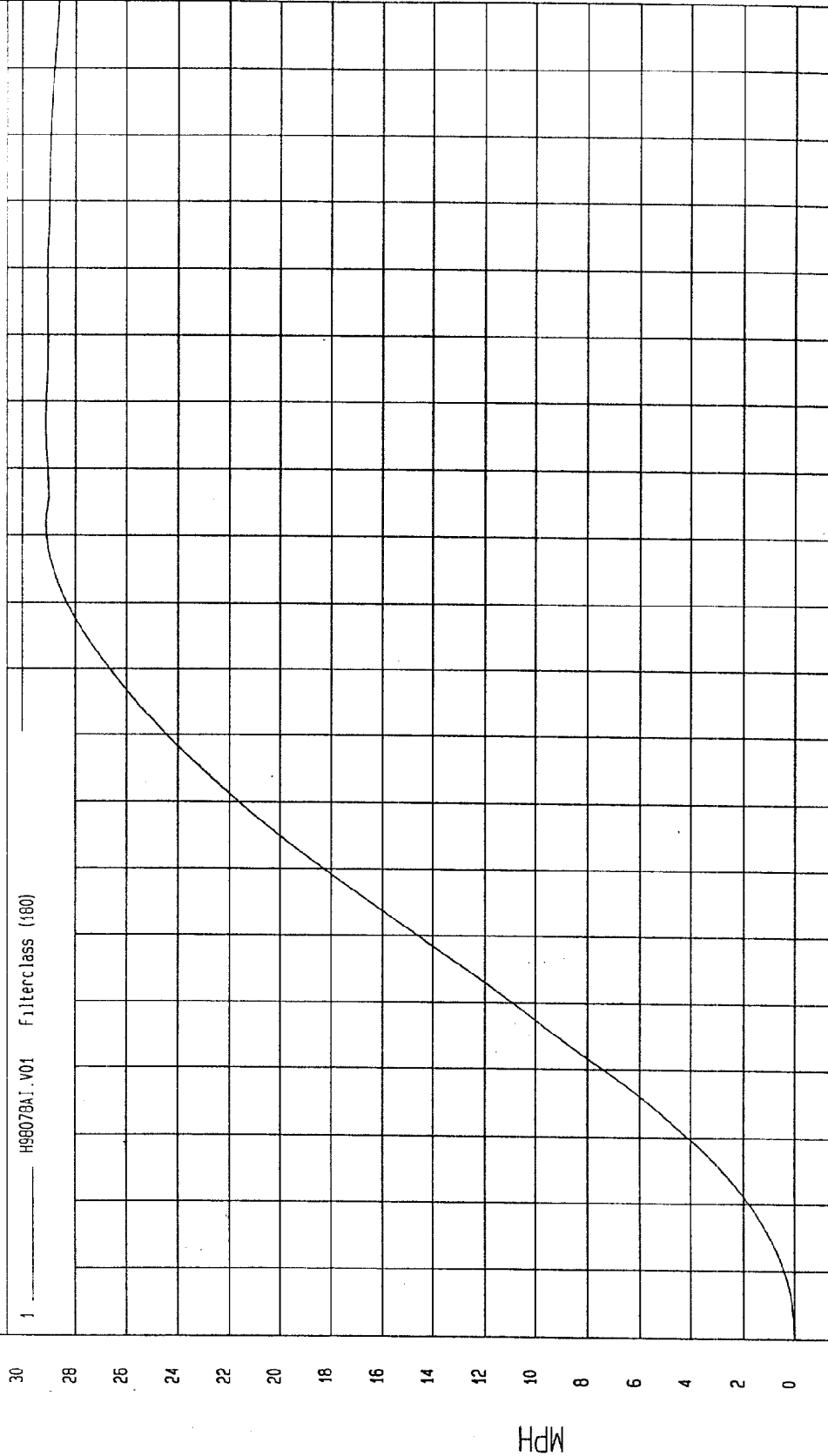
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN= 0 MPH at 9.9 msec

YMAX= 29.1197 MPH at 136 msec

SLED X VELOCITY

1 H9807BA1.V01 Filterclass (180)



MCA Research
04-08-1998 13.42

TIME Seconds

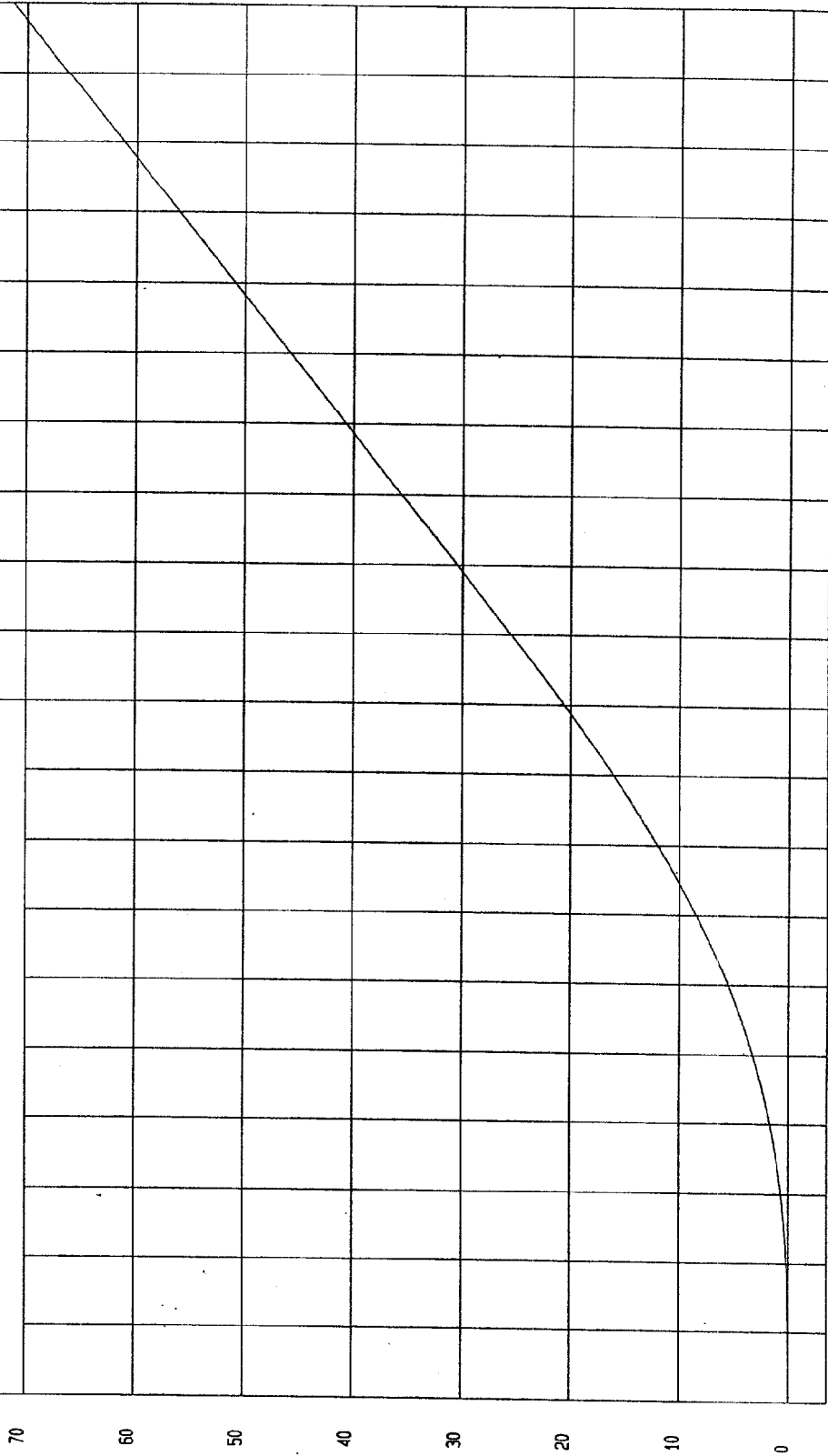
TEST: FMVSS 208 SLED TEST TEST DATE: 04-14-1998

COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN= 0 IN at 9.9 msec YMAX= 71.26834 IN at 200 msec

SLED X DISPLACEMENT

1 H98078AI.D01 Filterclass (180)



MOA Research
04-08-1998 13:13

TEST DATE: 04-14-1998

TEST: FMVSS 208 SLED TEST

COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-.2611811 VOLTS at 141 msec

YMAX= 3.901416 VOLTS at 137 msec

1 METER

1 H980780T.010 Filterclass (1000)

4

3

2

1

0

VOLTS

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

MGA Research
04-08-1998 13:39

TIME (SECONDS)

TEST DATE: 04-14-1998

TEST: FMVSS 208 SLED TEST

COMPONENT: 1998 DODGE STRATUS (CW0309)

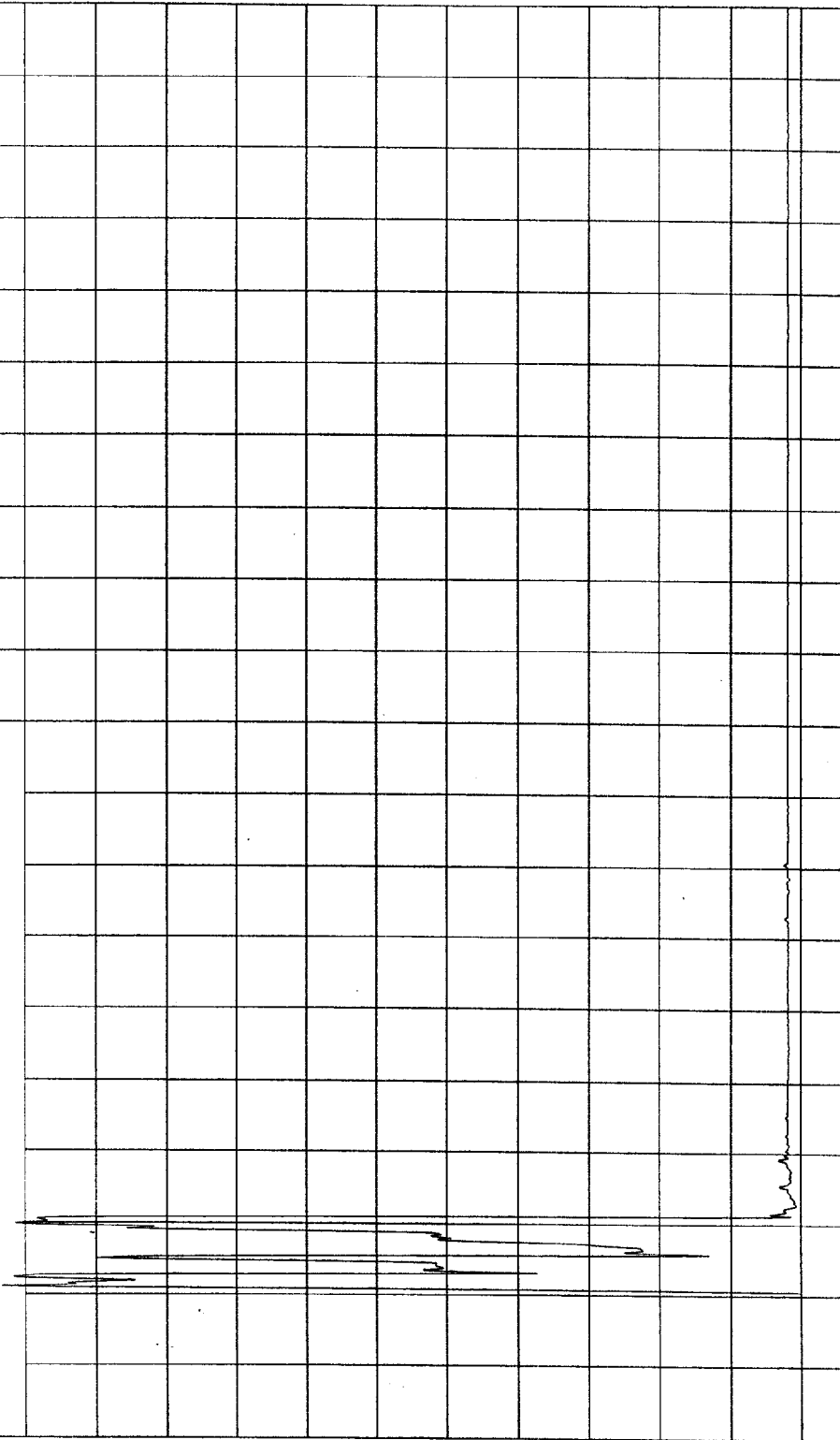
YMAX= 2.265551 VOLTS at 21. msec

YMIN=-2.515379E-03 VOLTS at 1.8 msec

AIRBAG TIMING

1 H9807801.005 Filterclass (1000)

VOLTS



TIME (SECONDS)

NCA Research
04-08-1998 13:39

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-17.58778 G'S at 46. msec

YMAX= 1.916419 G'S at 127 msec

LEFT B POST X ACCELERATION

1 _____ H98078AF.A18 Filterclass (60)

2

0

-2

-4

-6

-8

-10

-12

-14

-15

-18

G.S

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

MCA Research
04-08-1998 13:31

TIME (SECONDS)

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

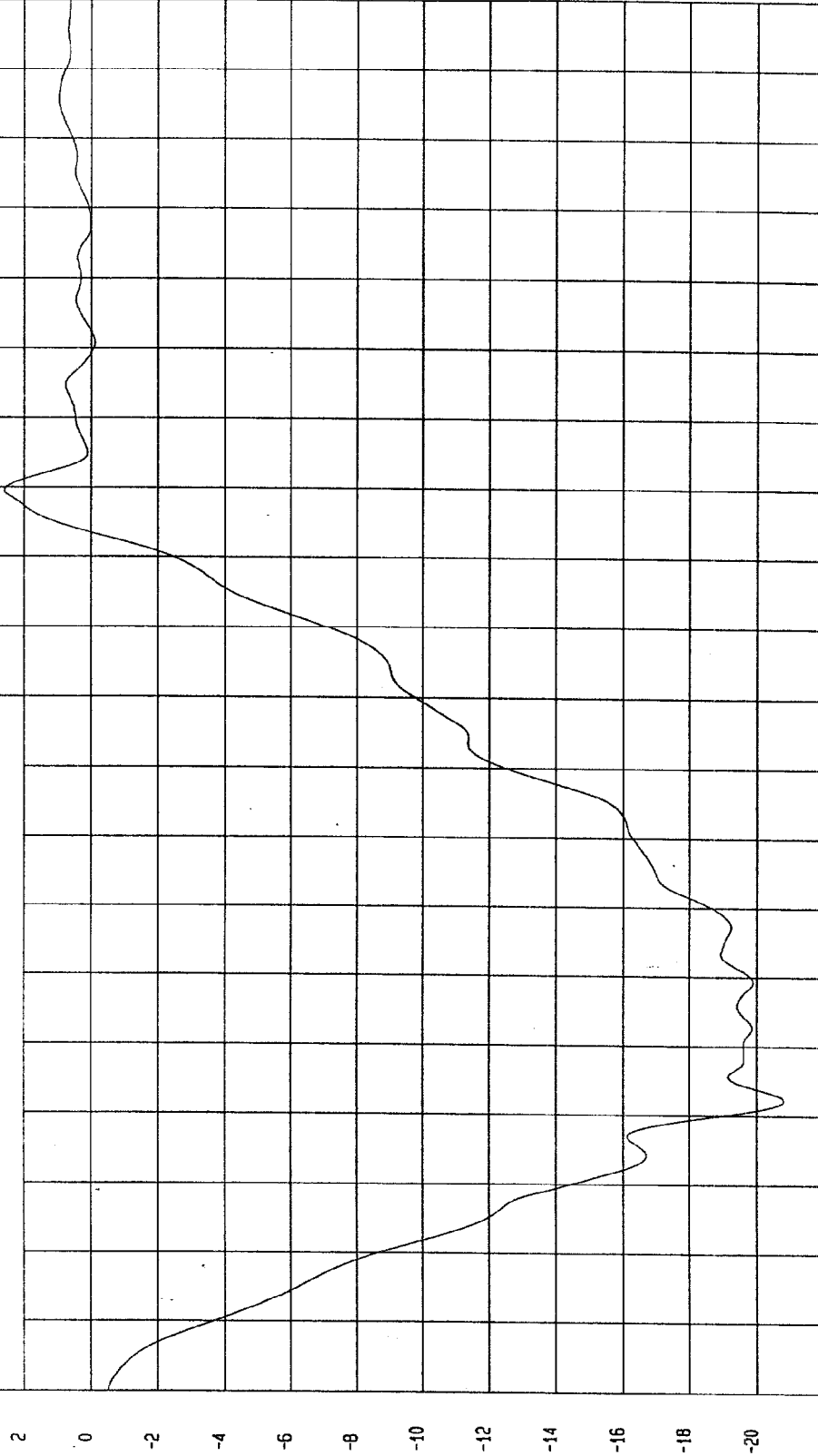
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-20.80722 G'S at 42. msec

YMAX= 2.580793 G'S at 129 msec

RIGHT B POST X ACCELERATION

1 H9807BAF.A19 Filterclass (60)



WCA Research
04-08-1998 13:39

TIME (SECONDS)

G

TEST: FMVSS 208 SLED TEST

TEST DATE: 04-14-1998

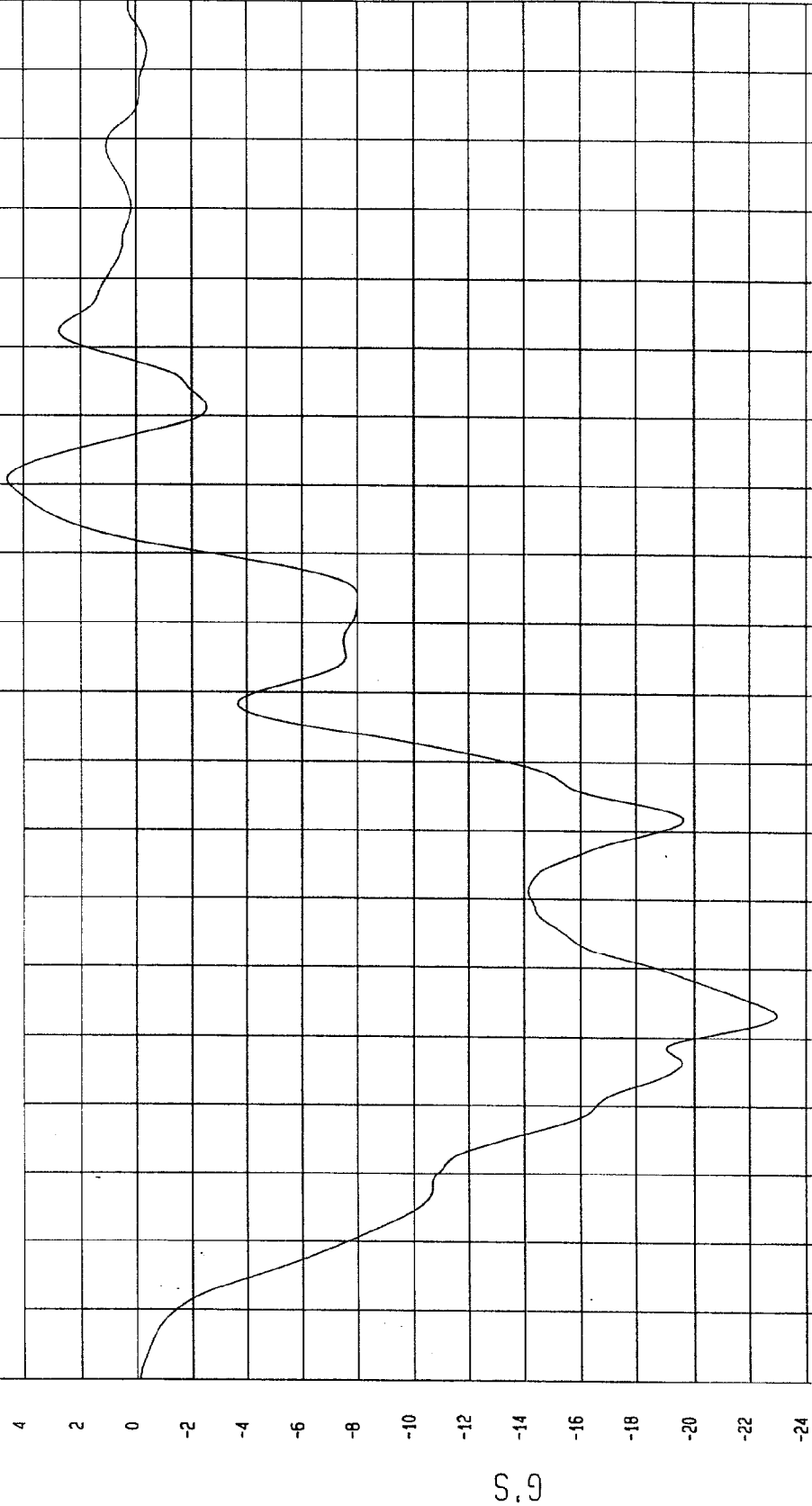
COMPONENT: 1998 DODGE STRATUS (CW0309)

YMIN=-22.96232 G'S at 53. msec

YMAX= 4.575408 G'S at 130 msec

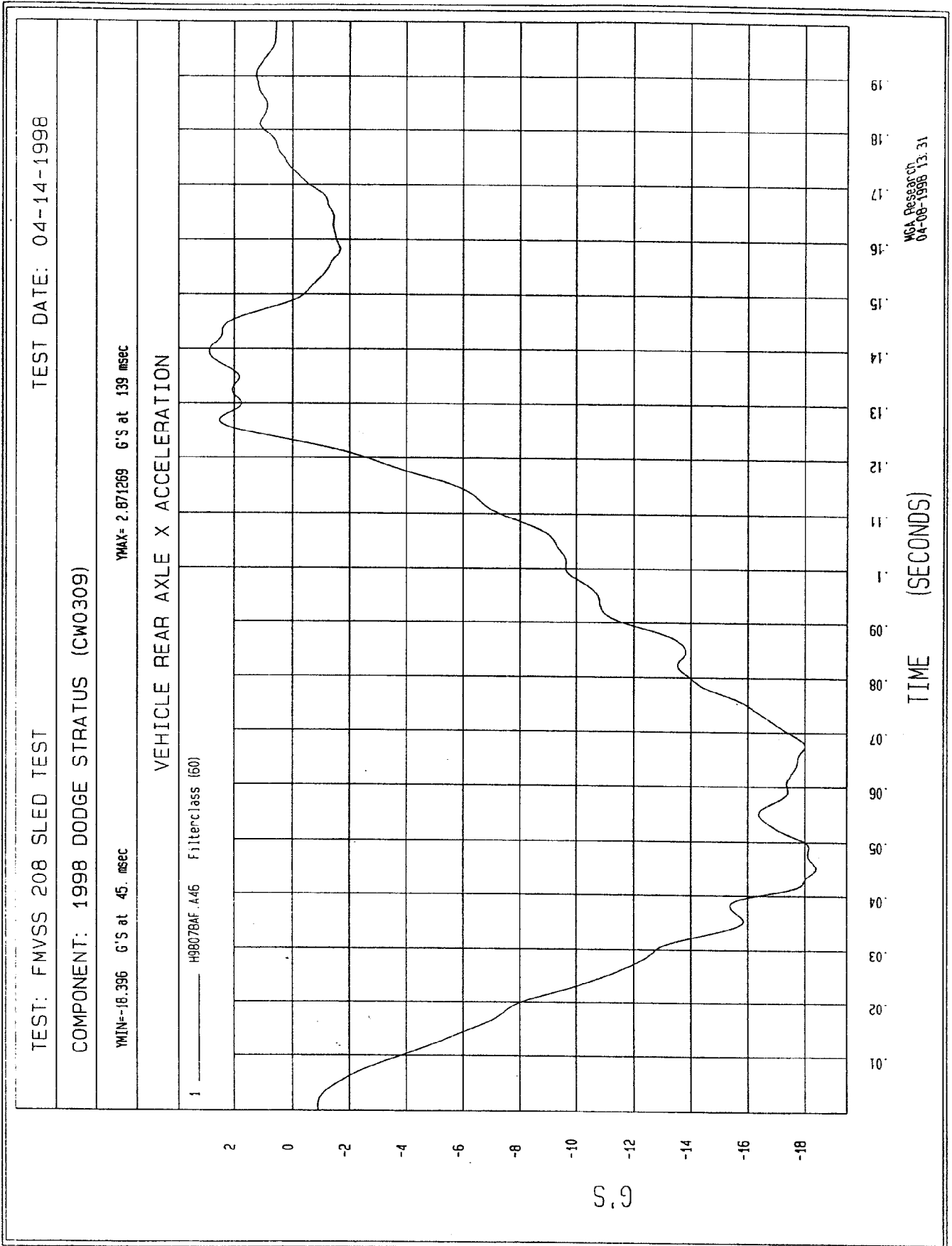
ENGINE X ACCELERATION

1 H98078AF.A49 Filterclass (60)



MCA Research
04-08-1998 13:38

TIME (SECONDS)



APPENDIX C
MANUFACTURER'S VEHICLE INFORMATION

Susan M Cischke
Executive Director
Vehicle Certification Compliance & Safety Affairs

17 OCT 14 10:28

October 8, 1997

Mr. Harry Thompson, Chief
Office of Vehicle Safety Compliance
National Highway Traffic Safety Administration
U.S. Department of Transportation
400 Seventh Street, S.W.
Washington, D.C. 20590

Dear Mr. Thompson:

Reference: NSA-31CCA OA:208970811E; FMVSS 208 - 1998 Dodge Stratus

The following is provided in response to your August 13, 1997 information request.

Q1. 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 with only the automatic restraint system.

A1. The 1998 Dodge Stratus is certified to meet the requirements of FMVSS 208 S13. A copy of the Compliance Report is provided in Attachment 1.

Q2. If the air bags are or will be depowered or changed from the previous model year, explain the changes.

A2. The depowered driver and passenger airbags have a reduced amount of inflator charge from 1997 model year.

Q3. If the air bag has been depowered or changed, explain how it can be determined, prior to purchase, that a particular vehicle has a depowered air bag.

- A3. The Monroney label will read "Airbags-Next Generation*" and include the footnote
**Certified to the new Federal Regulations that allow less forceful airbags."
- Q4. If the vehicle was certified with unrestrained dummies to meet the requirements of S13, 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.
- A4. Disconnect the battery and wait at least two minutes. Remove the driver air bag module from the steering wheel and unplug the connector; unplug the passenger air bag pigtail from the vehicle body wiring harness underneath the instrument panel. Once the air bags have been disconnected, cut the wires on the body wiring harness. Use the cut wires to construct an overlay harness, which will be used to deploy the air bags during the impact simulator test. Using the overlay harness, the air bags are wired in parallel to a 12 volt power supply controlled by an "air bag timer delay box" which is used to trigger the air bags 20 milliseconds following a ½ G carriage acceleration event.
- Q5. 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.
- A5. The safety belts are not equipped with tension-relieving devices.
- Q6. 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.
- A6. All tests were performed with the windows in the full down position.
- Q7. 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.

- A7. Dummy placement measurements, where available, are provided in Attachment 2.
Note that Chrysler measures knee offset (KDL/KDR) differently than does OVSC. Chrysler measures the shortest distance between the knee exterior surface (not the knee pivot) and the knee blocker surface.

A7. Continued

A driver foot rest is provided on the 1998 Dodge Stratus. Regarding FMVSS No. 208, S10.1.2.1, the driver's left heel is elevated relative to the right when placed on the foot rest. The 1998 Dodge Stratus was certified with the driver's left foot positioned on the floor, not on the foot rest.

Q8. Provide the seat positioning, steering column positioning, and fuel tank data on the enclosed form. If more than one front seating configuration, steering column, or fuel tank are available on this vehicle, provide separate information for each.

A8. The requested setup information is provided in Attachment 3.

Q9. If the vehicle is equipped with adjustable seatbelt anchorages, provide the manufacturer's nominal design position for a 50th percentile adult male occupant.

A9. The 1998 Dodge Stratus is equipped with 5-position adjustable seat belt at the front outboard seating positions. All certification tests were conducted with the anchorage adjusted to the fully up position.

Q10. 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 tests conducted to meet the requirements of S13.

A 10. The requested information is in the Compliance Report provided in Attachment 1.

Q11. 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?

A 11. If vehicle components are removed, this is the recommended order: trunk carpeting, spare tire and jack, rear fascia, rear bumper beam, decklid, rear window, rear seat, rear seat belt systems, C-pillar trim, carpet (aft of center pillar), headliner (aft of center pillar), rear door trim panels, rear door glass, and rear door hardware.

Q12. 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.

Mr. Harry Thompson
NSA-31CCA OA:208970811E
October 8, 1997
Page 4 of 4

A12. The 1998 Dodge Stratus does not utilize pressure vessels to inflate the driver or passenger air bags.

Q13. 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 the requirements of S9.2.

A13. Explosive devices are used to deploy the air bags. See Attachment 4 for the requested information.

If you have any questions regarding the information provided, please contact Mr. Archie J. Rock of my staff at (248) 576-7324.

Sincerely,



S. M. Cischke

Attachments

FMVSS 208

1998 DODGE STRATUS

NSA-31CCA ; OA:208970811E

ATTACHMENT 2

RESPONSE TO QUESTION #7

DUMMY PLACEMENT
MEASUREMENTS

**SUMMARY OF
DUMMY POSITIONING IN VEHICLE
FRONT SEAT MEASUREMENT TABLE**

	DRIVER	PASSENGER
WA°	N/A	N/A
SWA°	N/A	N/A
SGA°	N/A	N/A
SA°	N/A	N/A
HZ	N/A	N/A
HH	N/A	N/A
HW	N/A	N/A
HR	N/A	N/A
NR	15.8"	22.3"
CD	N/A	N/A
CS	11.3"	18.3"
RA	N/A	N/A
KDL	3.4"	3.9"
KDR	3.8"	3.8"
PA°	N/A	N/A
TA°	N/A	N/A
KK	N/A	N/A
ST	N/A	N/A
SK	N/A	N/A
SH	N/A	N/A
SHY	N/A	N/A
HS	N/A	N/A
HD	N/A	N/A
AD	N/A	N/A

Note: All dimensions are in inches
Chrysler measures knee offset (KDU/KDR) differently than does OVSC.
The shortest distance between the knee exterior surface (not the knee pivot)
and the knee blocker surface.

Driver

NR (tip of nose to rear surface of upper steering wheel rim)
CS (chest 9" down from chin forward to instrument panel)
KDL (left knee exterior surface to dash)
KDR (right knee exterior surface to dash)

Passenger

NR (bridge of nose forward to windshield)
CS (chest 9" down from chin forward to instrument panel)
KDL (left knee exterior surface to dash)
KDR (right knee exterior surface to dash)

FMVSS 208

1998 DODGE STRATUS

NSA-31CCA ; OA:208970811E

ATTACHMENT 3

RESPONSE TO QUESTION #8

GENERAL SETUP CONDITIONS

TEST VEHICLE INFORMATION

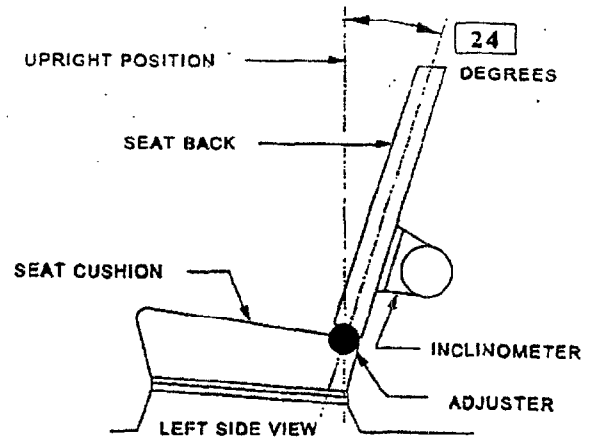
Vehicle Model Year & Make: 1998 Dodge
Vehicle Model & Body Style: Stratus, 4 Door Sedan

1. NOMINAL DESIGN RIDING POSITION --

For adjustable driver and passenger seat backs.
Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent if applicable. Indicate, if applicable, how the detents are numbered (Is the first detent "0" or "1"?). Indicate if the seat back angle is measured with the dummy in the seat.

Seat back angle for driver's seat = 24 degrees.
Measurement Instructions: **"NO DUMMY IN SEAT"**
Adjust seat to lowest position (if equipped with height adjuster). Adjust head restraint to full-up position. Using the head restraint post as a reference, recline the seat back 10 degrees from the fully erect position.

Seat back angle for passenger's seat = 24 degrees.
Measurement Instructions:
Same as drivers



2. SEAT FORE & AFT POSITIONS --

Provide instructions for positioning the driver and front outboard passenger seat(s) in the center of fore and aft travel. For example, indicate how the detents are numbered (Is the first detent "0" or "1"?). Provide information to locate the detent in which the seat track is to be locked.

Positioning of the driver's seat:
Position the seat 110mm forward of its rear-most position

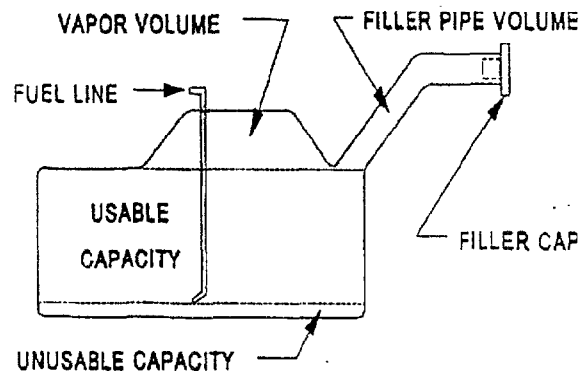
Positioning of the passenger's seat (if applicable):
Same as drivers

3. FUEL TANK CAPACITY DATA --

- 3.1 A. "Usable Capacity" of standard equipment fuel tank = 16.0 gallons.
B. "Usable Capacity" of optional equipment fuel tank = N/A gallons.
C. "Usable Capacity" of vehicle(s) used for certification testing to requirements of FMVSS 301 = 16.0 gallons.

Operational Instructions:
NONE

- 3.2.1 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 15.2 gallons



VEHICLE FUEL TANK ASSEMBLY

TEST VEHICLE INFORMATION

- 3.3 Is vehicle equipped with electric fuel pump? ☒ YES ☐ NO
If YES, does pump normally operate when vehicle's electrical system is activated? ☒ YES ☐ NO

4. ADJUSTABLE UPPER ANCHORAGE POSITION:

ATL is to be set to the full-up position.

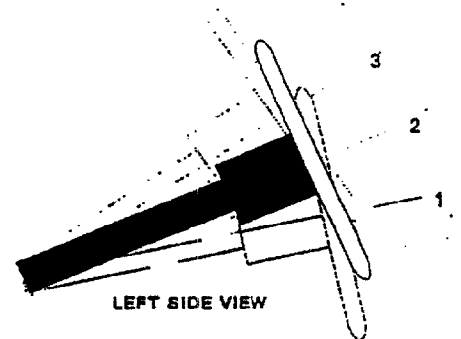
5. STEERING COLUMN ADJUSTMENTS --

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:

Measure total steering column travel (6.5 degrees) and adjust the column to its middle position. As a check, the final adjusted angle relative to the front door lower sill should measure 24+/- 1 degree.



STEERING COLUMN ASSEMBLY