V 2192

REPORT NO.: 208-MGA-95-001
212-MGA-95-001
301-MGA-95-001

VEHICLE SAFETY COMPLIANCE TESTING FOR FMVSS 208, OCCUPANT CRASH PROTECTION

FMVSS 212, WINDSHIELD MOUNTING

FMVSS 219, WINDSHIELD ZONE INTRUSION

FMVSS 301, FUEL SYSTEM INTEGRITY

DIAMOND-STAR MOTORS CORPORATION
1995 Mitsubishi Eclipse 3 Door
NHTSA NO. CS5600

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: September 6, 1994

Report Date: September 26, 1994

FINAL REPORT

Prepared For:

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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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: NEF-30) 400 Seventh St., S.W., Room 6115 Washington, D.C. 20590		13. Type of Report and Period Covered Final Report September 1994 14. Sponsoring Agency Code NEF-30
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16. Abstract Compliance tests were conducted on the subject 1995 Mitsubishi Eclipse 3 Door in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-208-09 for the determination of FMVSS 208 compliance. Test failures identified were as follows: None		
17. Key Words Frontal Impact 30 mph Vehicle Safety Compliance Testing: FMVSS 208, "Occupant Crash Protection" FMVSS 212, "Windshield Mounting" FMVSS 219 (partial), "Windshield Zone Intrusion" FMVSS 301, "Fuel System Integrity"		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 Attn: Robert Hornickle
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PREPARED BY: Homyoung Kim DATE: 09/25/94

Homyoung Kim
MGA Research Corporation

APPROVED BY: John Fleck DATE: 9/27/94

John Fleck
MGA Research Corporation

FINAL REPORT ACCEPTED BY:

Charles R. Case DATE: 3/1/95

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

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PURPOSE AND TEST PROCEDURE

PURPOSE

This 30 mph flat frontal barrier impact test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 208, 212, 219 (partial), and 301 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by the MGA Research Corporation (MGA) under Contract No. DTNH22-93-D-21089. The purpose of this test was to determine whether the subject vehicle, a 1995 Mitsubishi Eclipse 3 Door, NHTSA No. CS5600, meets the performance requirements of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Mounting"; FMVSS 219 (partial), "Windshield Zone Intrusion"; and FMVSS 301, "Fuel System Integrity," in the flat frontal barrier impact mode.

TEST PROCEDURE

This test was conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure No. TP-208-09 dated March 15, 1993. Data was obtained relative to FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Mounting"; FMVSS 219 (partial), "Windshield Zone Intrusion"; and FMVSS 301, "Fuel System Integrity," performance.

The test vehicle was instrumented with seven (7) accelerometers to measure longitudinal axis accelerations and one (1) accelerometer to measure vertical axis acceleration. The vehicle's specified impact velocity range was 28.9 to 29.9 mph. The vehicle impacted a fixed flat barrier of which face was covered with a sheet of 3/4 inch thick plywood.

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

Both dummies were instrumented with head and chest accelerometers to measure longitudinal, lateral, and vertical accelerations, and with left and right femur load cells to measure axial forces. Each Part 572 E dummy's instrumentation also included a chest potentiometer to measure longitudinal deflection.

The twenty-six (26) data channels were multiplexed and recorded on four IBM PC compatible computers with Metrobyte DAS-16F A/D converter boards. The data was digitally sampled at 8170 samples per second and processed per Section 11.13 through 11.15 of the Laboratory Test Procedure.

The crash event was recorded by one (1) real-time panning motion picture camera and fourteen (14) high-speed motion picture cameras. The pre-test and post-test conditions were recorded by the real-time motion picture camera.

The vehicle and occupant data are summarized in Section 2. The FMVSS 208, 212, 219 (partial) and 301 data are 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
SUMMARY OF FRONTAL BARRIER IMPACT TEST

TEST RESULTS SUMMARY

This flat frontal barrier test was conducted at MGA Research Corporation on September 6, 1994.

The test vehicle, a 1995 Mitsubishi Eclipse 3 Door, NHTSA No. CS56ØØ, appeared to comply with the performance requirements of FMVSS 2Ø8, 212, 219 (partial), and 3Ø1 in the flat frontal barrier impact mode. The Head Injury Criteria (HIC) calculations were less than 1ØØØ, the chest resultant accelerations did not exceed 6Ø g's, and the compressive forces transmitted through the upper legs did not exceed 2,25Ø 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.Ø inches. The vehicle's restraint system met the applicable comfort and convenience requirements. The windshield periphery retention on each side of the vehicle centerline was greater than 5Ø percent. There was no penetration into any portion of the windshield. No fluid spilled from the vehicle's fuel system following the impact or during the static rollover test.

The test vehicle was equipped with 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 vehicle's test weight was 3Ø5Ø pounds. The vehicle's impact speed was 29.4 mph. The vehicle's maximum static crush was 17.5 inches.

The driver's HIC was 155. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 35.7 g's. The driver's chest maximum deflection was Ø.9 inches. The driver's left and right femur maximum compressive forces were 954 pounds and 1Ø16 pounds, respectively.

The right front passenger's HIC was 252. The right front passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 3Ø.4 g's. The right front passenger's chest maximum deflection was Ø.7 inches. The right front passenger's left and right femur maximum compressive forces were 12Ø9 pounds and 11Ø9 pounds, respectively.

There was no loss of windshield periphery retention and no penetration through the windshield.

Following the impact, no fluid spilled from the vehicle's fuel system prior to the static rollover test or during any portion of the static rollover test.

TEST NOTES

The bottom of engine X-axis accelerometer lost data after 46 milliseconds as a result of the accelerometer's cable being cut by the vehicle's crush on impact.

TABLE 1 CRASH TEST SUMMARY

Vehicle Yr/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Vehicle NHTSA No.: CS5600 Test Type: Frontal Barrier Impact

Test Date: 09/06/94 Time: 13:22 Temp: 70°F

Vehicle Test Weight: 3050 lbs. Vehicle/Barrier Impact Angle: 0°

Impact Velocity: 29.4 mph Maximum Static Crush: 17.5 inches

Vehicle Rebound: 52.2 inches

Dummies:	Driver	Passenger
Dummy Type	Part 572E	Part 572E
Serial Number	401	403
Restraint System	Airbag	Airbag
No. of Data Channels	9	9

Number of Cameras: 1 Real Time

14 High Speed

Door Opening Data: Left Front: Easy

Right Front: Easy

Front Seat(s) Data:	Driver	Passenger
Seat Track Failure	None	None
Seat Back Failure	None	None

Visible Dummy Contact Points:	Driver	Passenger
Head	Airbag	Airbag
Chest	Airbag	Airbag
Left Knee	Instrument Panel	Instrument Panel
Right Knee	Instrument Panel	Instrument Panel

TABLE 2 GENERAL TEST AND VEHICLE PARAMETER DATA

Vehicle Yr/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

NHTSA No: CS5600 VIN: 4A3AK34Y8SE008768 Body Color: Everett Greeen

Engine: 4 Cylinders; __C.I.D.; 2.0 liters; ___CC

X Gas; __Diesel; __Turbocharged

__Longitudinal; X Transverse

Transmission: 5 Speed; X Manual; __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; __Other

Date Received: 08/30/94 ; Odometer Reading: 96 miles

Dealer's Name/Address: Capitol Import Autos, Inc.
9401 West Brown Deer Road
Milwaukee, WI 53224

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Diamond-Star Motors Corporation

Date of Manufacture: 05/94 ; VIN: 4A3AK34Y8SE008768

GVWR: 3726 lbs; GAWR Front: 2227 lbs. GAWR Rear: 1764 lbs.

DATA FROM TIRE PLACARD:

Recommended Tire Size: P195/70R14

Recommended Cold Tire Pressure: Front 32 Psi; Rear 29 Psi

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

Type of Spare Tire: Space Saver

Number of Occupants: 2 Front; 2 Rear; __3rd Seat; 4 TOTAL

Type of Front Seats: X Bucket; __Bench; __Split Bench

Type of Front Seat Back: __Fixed; X Adj. With; X Lever; __Rot. Knob

TABLE 2 GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (WITH MAXIMUM FLUIDS) = UDW:

Right Front = 838 lbs Right Rear = 491 lbs

Left Front = 836 lbs Left Rear = 500 lbs

TOTAL FRONT WEIGHT = 1674 lbs (62.8% of Total Vehicle Weight)

TOTAL REAR WEIGHT = 991 lbs (37.2% of Total Vehicle Weight)

TOTAL UNLOADED DELIVERED WEIGHT (UDW) = 2665 lbs

CALCULATION FOR TARGET TEST WEIGHT:

UDW (Unloaded Delivered Weight) = 2665 lbs

VCW (Vehicle Capacity Weight) = 661 lbs

DSC (Designated Seating Capacity) = 4

RCLW*(Rated Cargo/Luggage Weight) = VCW - 150 (DSC) = 661 - 150 (4) = 61 lbs

Target Test Weight = UDW + RCLW + (2 Dummies x Dummy Weight)

Target Test Weight = 2665 + 61 + 344 = 3070 lbs

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND CARGO WEIGHT:

Right Front = 884 lbs Right Rear = 633 lbs

Left Front = 892 lbs Left Rear = 641 lbs

TOTAL FRONT WEIGHT = 1776 lbs (58.2% of Total Vehicle Weight)

TOTAL REAR WEIGHT = 1274 lbs (41.8% of Total Vehicle Weight)

TOTAL TEST WEIGHT = 3050 lbs

Weight of ballast secured in vehicle = 20 lbs

Vehicle components removed to meet target weight: None

VEHICLE ATTITUDE (all dimensions in inches):

Delivered Attitude:	RF 28.5	LF 28.5	RR 28.5	LR 28.5
Fully Loaded Attitude:	RF 27.8	LF 28.0	RR 27.4	LR 27.3
Test Attitude:	RF 27.8	LF 28.0	RR 27.4	LR 27.3

Wheel Base: 99.2 in; C.G. = 41.4 in rearward of front wheel centerline

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

TABLE 3 POST-IMPACT DATA

Type of Test: Frontal Barrier Impact Impact Angle: Ø°

Test Date: Ø9/Ø6/94 Time: 13:22 Temperature: 7Ø°F

Vehicle NHTSA No.: CS56ØØ VIN: 4A3AK34Y8SEØØ8768

BARRIER IMPACT VELOCITY

Required Impact Velocity Range: 28.9 to 29.9 mph

Impact Velocity: Primary = 29.4 mph; Secondary = 29.4 mph

Distance From Front Bumper to Barrier Face When

Entering Speed Trap: 51.4 inches

Exiting Speed Trap: 12.Ø inches

VEHICLE STATIC CRUSH AND REBOUND (inches):

Vehicle Length:	Pre-test	= R 16Ø.6	C_L 17Ø.6	L 161.Ø
	Post-test	= R 149.5	C_L 153.1	L 147.6
	Crush	= R 11.1	C_L 17.5	L 13.4
	Average	= 14.Ø		

Distance from front of test vehicle to point of impact (rebound):

R 53.Ø in C_L 52.2 in L 54.6 in

TABLE 4 ACCIDENT INVESTIGATION DIVISION DATA

Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Veh. NHTSA No.: CS56ØØ ; VIN: 4A3AK34Y8SE008768

Build Date: Ø5/94 ; Test Date: Ø9/Ø6/94

Veh. Size Category: Compact ; Test Weight: 3Ø5Ø lbs

Veh. Wheelbase: 99.2 in ; Front Overhang: 36.2 in ;

Overall Width: 68.3 in

ACCELEROMETER DATA:

Location: As per measurements on pages 2-1Ø

Calibration Procedure: As per MGA Calibration Procedure

Linearity: >99.9% ; Integration Algorithm: Trapezoidal

Veh. Impact Speed: 29.4 mph ; Time of Separation: 75.9 msec ;

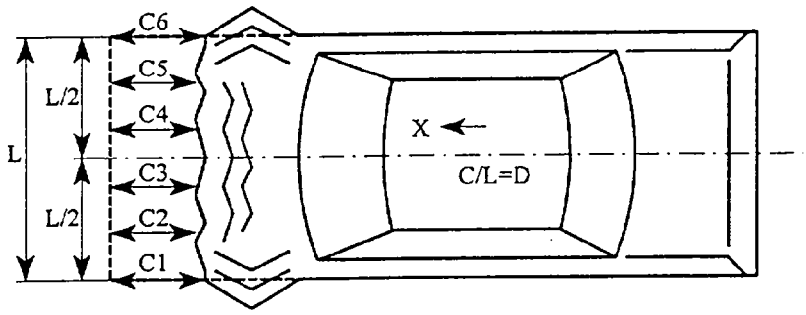
Velocity Change: 33.8 mph

COLLISION DEFORMATION CLASSIFICATION (CDC) CODE:

Impact Mode: Frontal Barrier

Crush Depth Dimensions:

C1 = 13.4 inches
C2 = 15.1 inches
C3 = 16.9 inches
C4 = 16.5 inches
C5 = 16.5 inches
C6 = 11.1 inches



Midpoint of Damage: D = Vehicle Longitudinal Centerline

Length of Damaged Region: L = 57.Ø inches

TABLE 5 POST TEST AIRBAG DATA

Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

NHTSA No: CS5600 ; Test Date: 09/06/94 ; Technician: Homyoung Kim

A. No of Vent Holes: Driver 2 ; Passenger 2

B. Size of Vent Holes: Driver 1.25 in. dia.; Passenger 2.5 in. dia.

C. Total Vent Area: Driver 2.45 in^2 ; Passenger 9.82 in^2

D. Deflated Airbag Length and Width Dimensions or, if Round, Diameter

Driver; Length __ in; Width __ in; Diameter 26.5 in

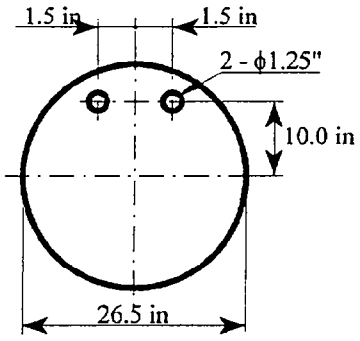
Passenger; Length 23.0 ; Width 19.0 ; Diameter _____

E. Is the Airbag Tethered?

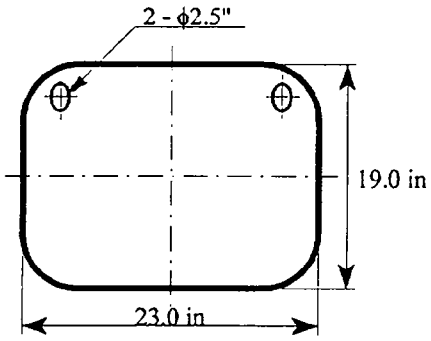
Driver; X Yes; __ No; If yes, record length of tether 8.5 in

Passenger; __ Yes; X No; If yes, record length of tether ___ in

Driver Airbag



Passenger Airbag



There were four (4) tethers in the driver's airbag. One end of each tether was attached to the front face center of the airbag and the other end to the rear face center.

F. Part Numbers and Manufacture Name of Airbag and Gas Generator

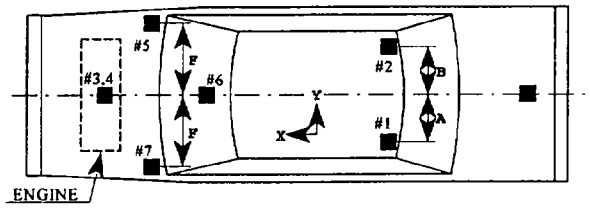
Driver; Mfr IZUMI ; Airbag PUT11179-01 ; Gen 4069XX-941

Passenger; Mfr N/A ; Airbag N/A ; Gen N/A

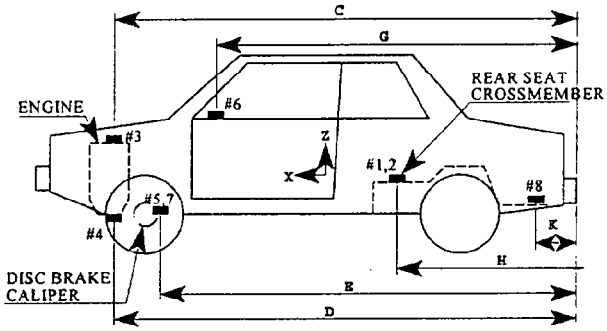
TABLE 6 VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Vehicle NHTSA No.: CS5600 ; Test Date: 09/06/94



TOP VIEW



LEFT SIDE VIEW

ACCELEROMETER LOCATION (inches)		
	PRE-TEST	POST-TEST
A	11.8	11.8
B	11.8	11.8
C	140.0	134.8
D	141.3	132.9
E	137.0	135.8
F	25.7	25.8
G	109.5	109.2
H	62.3	62.3
K	35.8	35.8

ACCELEROMETER DATA SUMMARY					
No.	DESCRIPTION	MAXIMUM (g's)	TIME (msec)	MINIMUM (g's)	TIME (msec)
1	Left Rear Seat Crossmember	1.4	131	-33.7	55
2	Right Rear Seat Crossmember	2.4	132	-27.5	53
3	Top of Engine Block	7.1	53	-71.6	31
4	Bottom of Engine	85.8	52	-95.1	37
5	Right Disc Brake Caliper	26.8	72	-81.7	55
6	Instrument Panel	18.2	33	-39.6	51
7	Left Disc Brake Caliper	9.2	7	-51.4	24
8	Trunk	24.4	42	-13.6	46

TABLE 7 REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

Contract Number: DTNH22-93-D-21089

From: MGA Research Corporation
5000 Warren Road
Burlington, WI 53105

To: Mr. Charles Case, COTR
Office of Vehicle Safety Compliance

The following vehicle has been subjected to testing for FMVSS 208. The vehicle was inspected upon arrival at the laboratory for the test and found to contain all of the equipment listed below. 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: 1995/Mitsubishi/Eclipse/3 Door
Vehicle NHTSA No.: CS5600 Body Color: Everett Green
VIN: 4A3AK34Y8SE008768 Cost: $15,000.00
Odometer: Arrival Date: 08/30/94 Reading: 96 miles
Completion Date: 09/06/94 Reading: 96 miles
Engine: 4 Cylinders; 2.0 Liters; X Gas; __ Diesel
Transmission: 5 Speed; X Manual; __ Automatic
Final Drive: X Front Wheel; __ Rear Wheel; __ Four Wheel
Tire Size: P195/70R14 ; Manufacturer: Bridgestone

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

TABLE 7 REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING, (Cont'd)

Equipment that is no longer on the vehicle as noted above:

Rear Seat Back and Cushion

Spare Tire

Trunk Trim and Carpet

Muffler

Explanation:

Items removed to allow installation of data acquisition system and to reduce test weight.

Vehicle Condition: The vehicle was subjected to a 30 mph frontal crash test. There is severe structural damage on the front body. 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. Stoddard solvent replaced the fuel in the fuel system and engine. THE VEHICLE IS FOR SALVAGE ONLY AND IS NOT TO BE REPAIRED FOR HIGHWAY USE.

SECTION 3
SUMMARY OF RESULTS FOR FMVSS 208 212, 219 (PARTIAL), AND 301

TABLE 8 FMVSS 208 OCCUPANT INJURY CRITERIA

Veh. Yr./Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Veh. NHTSA No.: CS5600 Test Date: 09/06/94

MAXIMUM ACCELERATION VALUES: (g's)	DRIVER DUMMY #401	PASSENGER DUMMY #403
Head Channel X	-43.1	-50.2
Head Channel Y	-8.5	21.3
Head Channel Z	9.6	26.2
HEAD RESULTANT	44.0	52.9
Chest Channel X	-36.1	-31.0
Chest Channel Y	6.2	-6.4
Chest Channel Z	-8.4	-13.5
CHEST RESULTANT	36.1	31.2

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	154.8	252.3
t_1 = (msec)	58.6	56.8
t_2 = (msec)	94.6	79.6

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

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

CLIP	35.7	30.4
t^1 = (msec)	84.2	70.9
t^2 = (msec)	87.3	73.9
CHEST DEFLECTION (in)	0.9	0.7

MAX. COMPRESSIVE FEMUR FORCES: (lbs)

Left Side	954	1209
Right Side	1016	1109

TABLE 9 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 and chest impacted the airbag 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 instrument panel. The dummy's head and chest impacted the airbag 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 10 FMVSS 208 SEAT BELT COMFORT AND CONVENIENCE TEST SUMMARY
FRONT OUTBOARD DESIGNATED SEATING POSITIONS

Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door
NHTSA No.: CS5600 ; Date of Comfort/Convenience Check: 09/02/94
Technician Performing Check: Homyoung Kim
GVWR: 3726 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 1Ø FMVSS 2Ø8 SEAT BELT COMFORT AND CONVENIENCE TEST SUMMARY
FRONT OUTBOARD DESIGNATED SEATING POSITIONS, (Cont'd)

BELT CONTACT FORCE (S7.4.3)

The belt contact force on the chest of the test dummy was Ø.3 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 not removable so that the seat back served 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 10 FMVSS 208 SEAT BELT COMFORT AND CONVENIENCE TEST SUMMARY
FRONT OUTBOARD DESIGNATED SEATING POSITIONS, (Cont'd)

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

The webbing was 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 11 FMVSS 208 EQUIPMENT DATA

Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door
Vehicle NHTSA No.: CS5600 Date of Check: 09/02/94
Technician Performing Check: Homyoung Kim
GVWR: 3726 lbs

FMVSS 208 SEAT BELT WARNING SYSTEM DATA

With an occupant in the driver's position and the lap belt/unibelt in stowed position and the ignition switch placed in the "start/on" position, the duration of audible warning signal and the reminder light were 6.9 and 6.2 seconds, respectively.

With an occupant in the driver's position and the lap belt/unibelt in use and the ignition switch placed in the "start/on" position, the duration of audible warning signal was 0 second and the duration of the reminder light operation was 6.2 seconds.

Note: The audible warning should not operate.

The wording of the visual seat belt warning was the symbol from Table 2 of FMVSS 101.

FMVSS 208 LABELING AND DRIVER'S MANUAL DATA

The labels which describe manufacturer's maintenance or replacement schedule for the crash-deployed occupant protection system were located on the sunvisors of the driver and the right front passengers.

The airbag system is required to be inspected in 10 years after the car manufacture date shown in the certification label.

Appropriate instructions concerning maintenance and/or replacement of this system were provided in the owner's manual on page 39.

A description of the functional operation of the system was provided in the owner's manual on pages 37-38.

A reference to the instructions and description of the system was included on the label.

TABLE 11 FMVSS 208 EQUIPMENT DATA, (Cont'd)

FMVSS 208 LABELING AND DRIVER'S MANUAL DATA (Cont'd)

An owner's manual was provided.

The owner's manual contained appropriate information concerning maintenance and/or replacement and a description of the functional operation of the systems on pages 36-40.

FMVSS 208 READINESS INDICATOR DATA

The vehicle contained a crash-deployed occupant protection system which was not totally mechanical. The readiness indicator was located on the left upper side of the instrument cluster.

The readiness indicator was clearly visible to the driver.

A list of the elements in the occupant restraint system, being monitored by the readiness indicator, was provided in the owner's manual on page 37.

TABLE 12 FMVSS 212, "WINDSHIELD MOUNTING", DATA SUMMARY

Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Vehicle NHTSA No.: CS5600 Test Date: 09/06/94

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

Rubber trim with glue retention

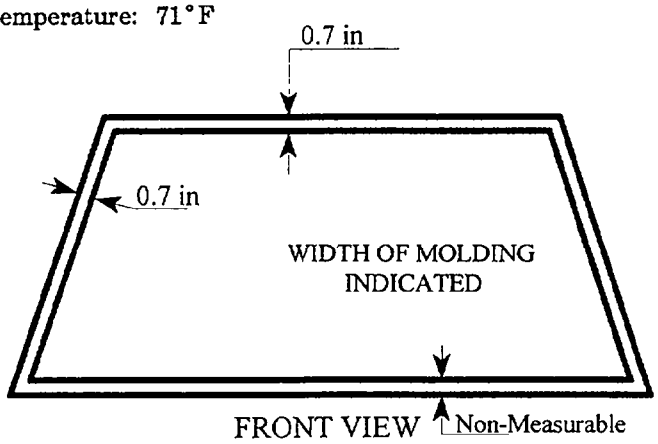
CLIPS OR BRACKETS USED TO RETAIN WINDSHIELD: None

FMVSS 212 REQUIREMENTS: The post-test periphery retention amount must be at least 75% of the pre-test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

FMVSS 212 TEST DATA:

	WINDSHIELD PERIPHERY (inches)		
	PRE-TEST	POST-TEST	PERCENT RETENTION
RIGHT SIDE	78.8	78.8	100%
LEFT SIDE	78.0	78.0	100%
TOTAL	156.8	156.8	100%

Pre-Test Windshield Mounting Material Temperature: 71°F



FAILURE DETAILS: None

TABLE 13 FMVSS 219, "WINDSHIELD ZONE INTRUSION", DATA SUMMARY

Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Vehicle NHTSA No.: CS5600 Test Date: 09/06/94

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 6.5" dia. rigid sphere weighing 15 pounds in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. Draw the locus of points on the inner surface of the windshield contacted by the sphere across the width of the instrument panel. From the outermost contact points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and 1/2" distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection onto the outer surface of the windshield of this line.

WINDSHIELD MEASUREMENTS:

A= 42.5 in

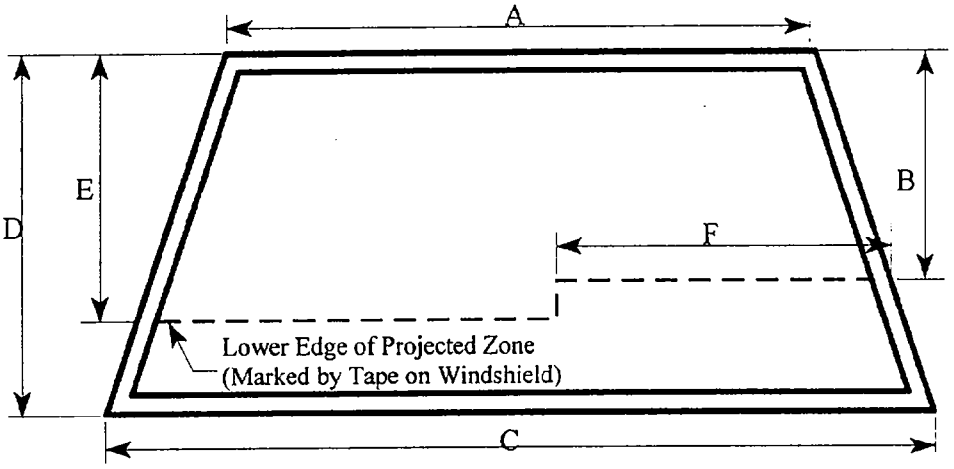
B= 16.7 in

C= 59.3 in

D= 27.6 in

E= 16.1 in

F= 24.8 in



FRONT VIEW

AREAS OF WINDSHIELD TEMPLATE PENETRATION GREATER THAN 1/4 IN:

None

AREAS OF WINDSHIELD PENETRATION, BELOW THE PROTECTED ZONE, THROUGH THE INNER SURFACE OF THE WINDSHIELD:

None

TABLE 14 FUEL SYSTEM DATA

Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Vehicle NHTSA No.: CS5600 Test Date: 09/06/94

Fuel System Capacity from Owner's Manual = 16 gallons

Usable Capacity Figure Furnished by COTR = 16.9 gallons

Test Volume Range (92 to 94% of Usable Capacity)

= 15.6 to 15.9 gallons

Actual Test Volume = 15.7 gallons

Test Fluid Type: Stoddard Solvent ; Spec. Grav. = 0.77

Kinematic Viscosity = 1.788 centistokes; Color = Purple

Type of Fuel Pump: X Electric; ___ Mechanical

Does electric pump operate with ignition switch "On" and engine "Off"?

__ Yes; X No

Details of Fuel System:

The fuel tank was located in front of the rear axle. The fuel filler pipe was located on the right side. The fuel lines ran along the right side to the front.

TABLE 15 FMVSS 301 POST IMPACT TEST DATA

Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Vehicle NHTSA No.: CS5600 Test Date: 09/06/94

TEST REQUIREMENTS:

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

TEST VEHICLE IMPACT TYPE:

_X_ Frontal (30 mph)

____ Oblique (30 mph) with ___° barrier face first contacting (driver/passenger) side

____ Rear Moving Barrier (30 mph)

____ Lateral Moving Barrier (20 mph)

FUEL SPILLAGE MEASUREMENT:

POST IMPACT TEST	TEST RESULTS	MAXIMUM ALLOWABLE
1. From impact until vehicle motion ceases	0 oz	1 oz
2. For 5 minute period after vehicle motion ceases	0 oz	5 oz
3. For next 25 minutes	0 oz	1 oz./1 min

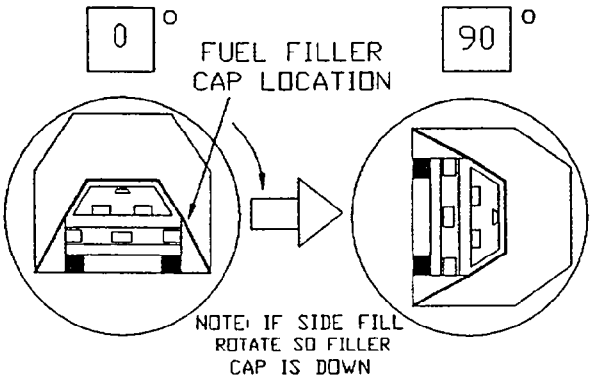
FUEL SPILLAGE LOCATION(S): None

TABLE 16 FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Vehicle NHTSA No.: CS5600 Test Date: 09/06/94

TEST PHASE: 0° - 90°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 53 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 53 seconds

Next Whole Minute Interval = 8 minutes

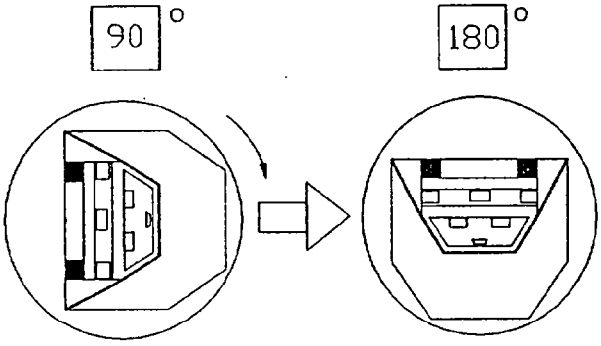
FUEL SPILLAGE MEASUREMENT:

0° TO 90° ROTATION (FILLER CAP DOWN)	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0 oz	5 oz
2. Sixth Minute From Onset of Rotation	0 oz	1 oz
3. Seventh Minute From Onset of Rotation	0 oz	1 oz
4. Eighth Minute if Required	N/A	1 oz

FUEL SPILLAGE LOCATIONS(S): None

TABLE 16 FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

TEST PHASE: 90° - 180°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 30 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 30 seconds

Next Whole Minute Interval = 8 minutes

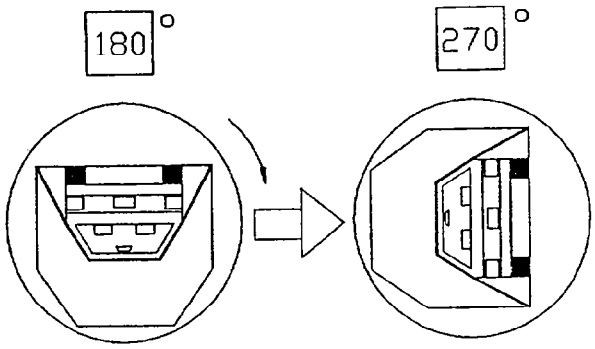
FUEL SPILLAGE MEASUREMENT:

90° TO 180° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0 oz	5 oz
2. Sixth Minute From Onset of Rotation	0 oz	1 oz
3. Seventh Minute From Onset of Rotation	0 oz	1 oz
4. Eighth Minute if Required	N/A	1 oz

FUEL SPILLAGE LOCATIONS(S): None

TABLE 16 FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

TEST PHASE: 180° - 270°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 12 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 12 seconds

Next Whole Minute Interval = 8 minutes

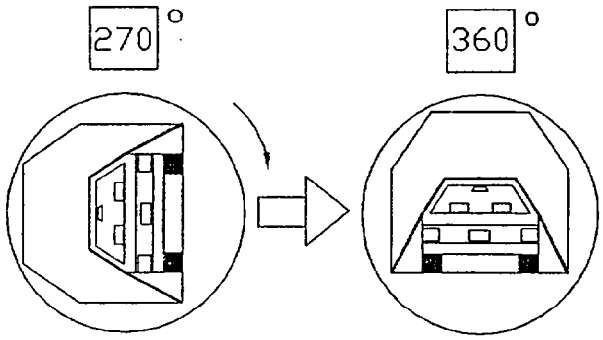
FUEL SPILLAGE MEASUREMENT:

180° TO 270° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0 oz	5 oz
2. Sixth Minute From Onset of Rotation	0 oz	1 oz
3. Seventh Minute From Onset of Rotation	0 oz	1 oz
4. Eighth Minute if Required	N/A	1 oz

FUEL SPILLAGE LOCATIONS(S): None

TABLE 16 FMVSS 301 STATIC ROLLOVER TEST DATA

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 38 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 38 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

270° TO 360° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0 oz	5 oz
2. Sixth Minute From Onset of Rotation	0 oz	1 oz
3. Seventh Minute From Onset of Rotation	0 oz	1 oz
4. Eighth Minute if Required	N/A	1 oz

FUEL SPILLAGE LOCATIONS(S): None

SECTION 4
OCCUPANT, VEHICLE, AND CAMERA INFORMATION

TABLE 17 SEAT AND STEERING COLUMN POSITIONING DATA

Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Vehicle NHTSA No.: CS5600 Test Date: 09/06/94

NOMINAL DESIGN RIDING POSITION:

Driver Seat: Seat Back Angle = 27°

The seat back angle was adjustable and was positioned at the 6th notch in accordance with the seat back set procedure in the manufacturer's information. The seat back angle was measured on the seat back frame with the inclinometer.

Passenger Seat: Same as driver's seat.

SEAT FORE AND AFT POSITIONS:

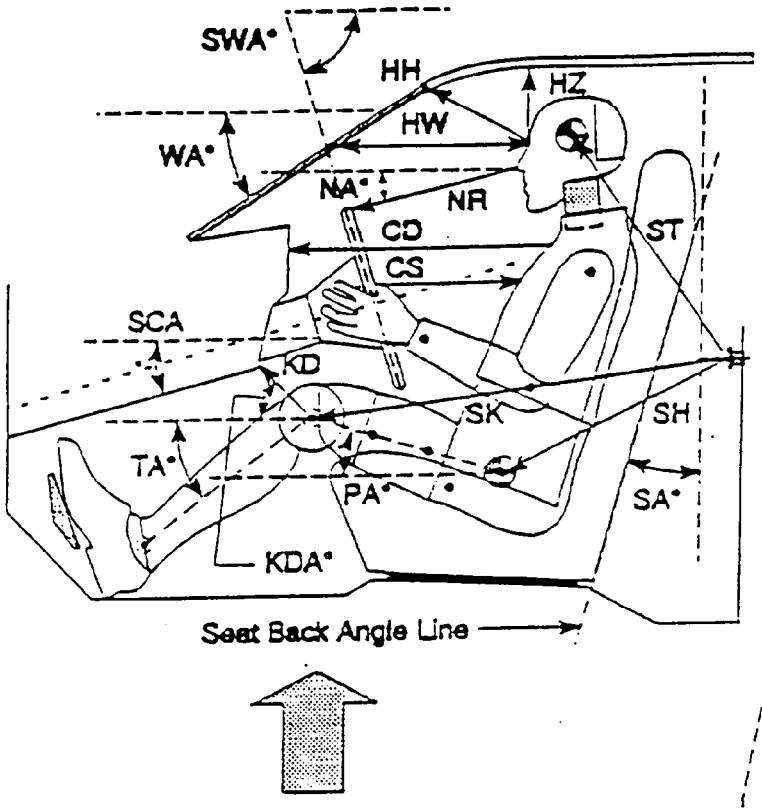
Driver Seat: The seat track had 25 detents and was positioned at the 13th notch rearward from the foremost position.

Passenger Seat: Same as driver's seat.

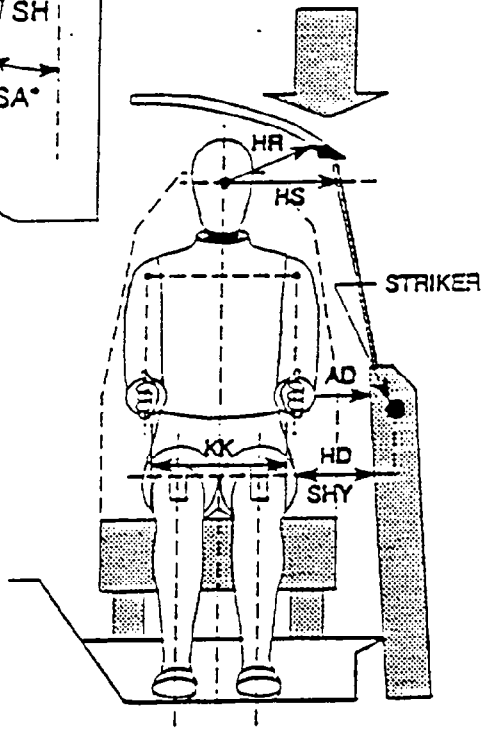
STEERING COLUMN ADJUSTMENTS:

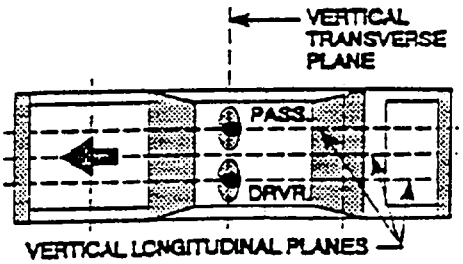
The steering column was positioned at the mid-point of its swing.

FIGURE 1 DUMMY MEASUREMENT LOCATIONS FOR FRONT SEAT OCCUPANTS



AD - Arm to Door
HD - H-Point to Door
HR - Head to Side Header
HS - Head to Side Window
KK - Knee to Knee
SHY- Striker to H-Point (Y Direction)





CD	-	Chest to Dash
CS	-	Steering Wheel to Chest
HH	-	Head to Header
HW	-	Head to Windshield
HZ	-	Head to Roof
KDA	-	Knee to Dash Angle
KDL	-	Left Knee to Dash
KDR	-	Right Knee to Dash
NA	-	Nose to Rim Angle
NR	-	Nose to Rim
PA	-	Pelvic Angle
RA	-	Rim to Abdomen
SA	-	Seat Back Angle
SCA	-	Steering Column Angle
SH	-	Striker to H-Point
SK	-	Striker to Knee
ST	-	Striker to Head
SWA	-	Steering Wheel Angle
TA	-	Tibial Angle
WA	-	Windshield Angle

TABLE 18 DUMMY MEASUREMENT DATA FOR FRONT SEAT OCCUPANTS

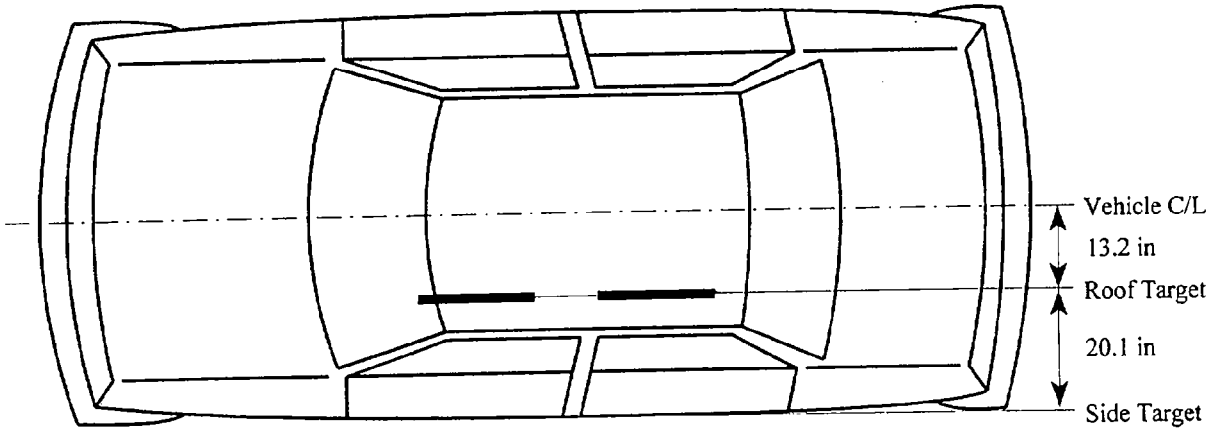
Vehicle Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Vehicle NHTSA No.: CS5600 Test Date: 09/06/94

	DRIVER (Serial #401)	PASSENGER (Serial #403)
WA°	24.6°	
SWA°	74.4°	N/A
SCA°	N/A	N/A
SA°	27°	27°
HZ	6.3 in	6.3 in
HH	14.5 in	14.6 in
HW	24.9 in	24.8 in
HR	7.3 in	7.1 in
NR	14.4 in	N/A
CD	21.5 in	23.4 in
CS	12.0 in	N/A
RA	8.4 in	N/A
KDL	7.3 in Angle (KDA) 26.9°	6.4 in
KDR	6.5 in	7.1 in Angle (KDA) 15.8°
PA°	24.0°	23.7°
TA°	28.4°	36.0°
KK	12.3 in	9.5 in
ST	20.1 in Angle 55.3°	20.1 in Angle 52.8°
SK	30.4 in Angle -5.9°	29.9 in Angle -7.4°
SH	17.7 in Angle -28.2°	17.7 in Angle -31.8°
SHY	9.8 in	9.8 in
HS	11.0 in	10.8 in
HD	7.0 in	6.3 in
AD	5.3 in	4.7 in

N/A = Not Applicable

FIGURE 2 VEHICLE TARGET LOCATIONS



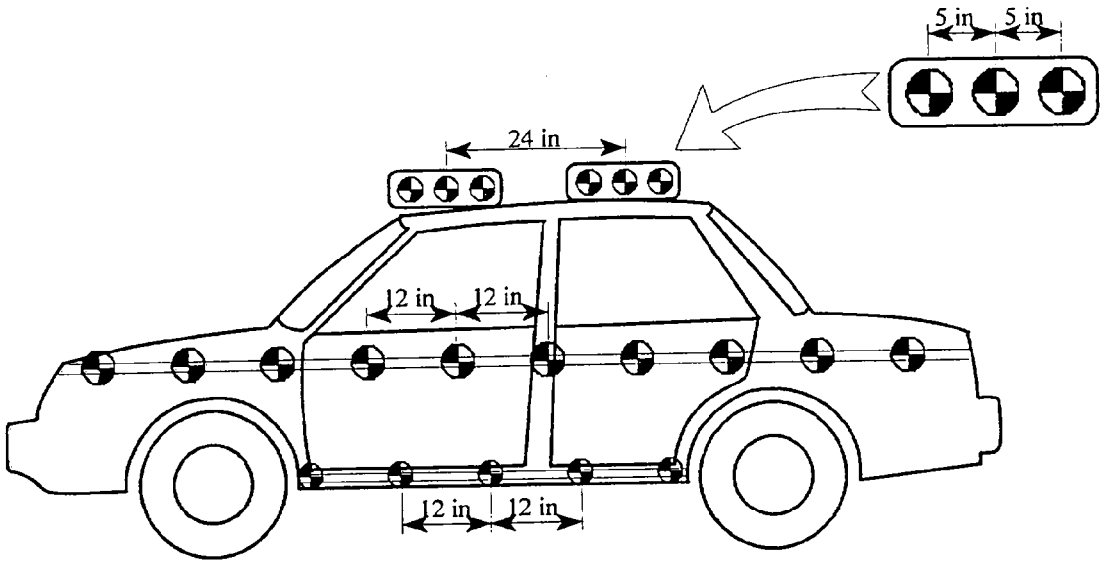


FIGURE 3 CAMERA POSITIONS

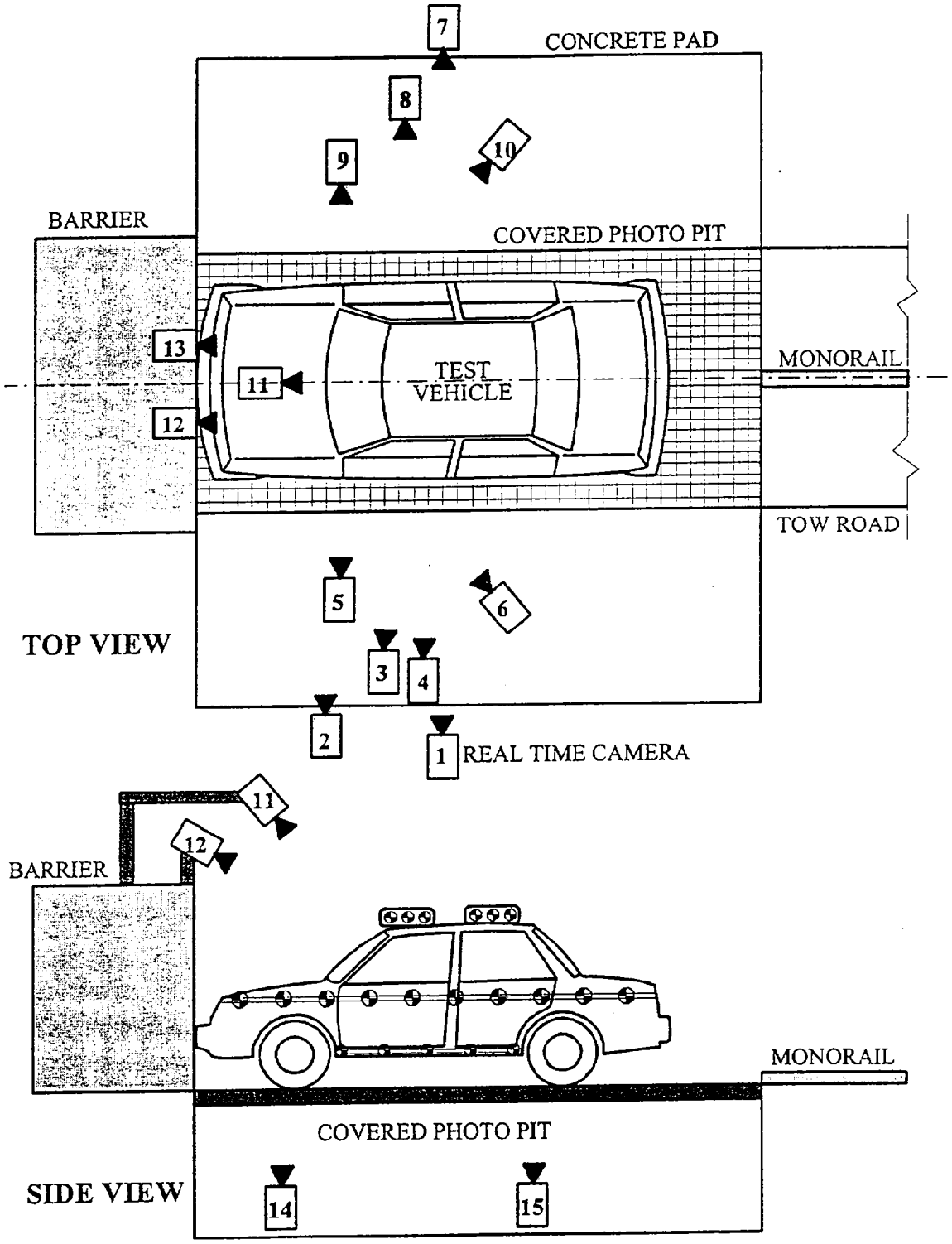


TABLE 19 CAMERA LOCATIONS

Veh. Year/Make/Model/Body Style: 1995/Mitsubishi/Eclipse/3 Door

Vehicle NHTSA No.: CS5600 ; Test Date: 09/06/94

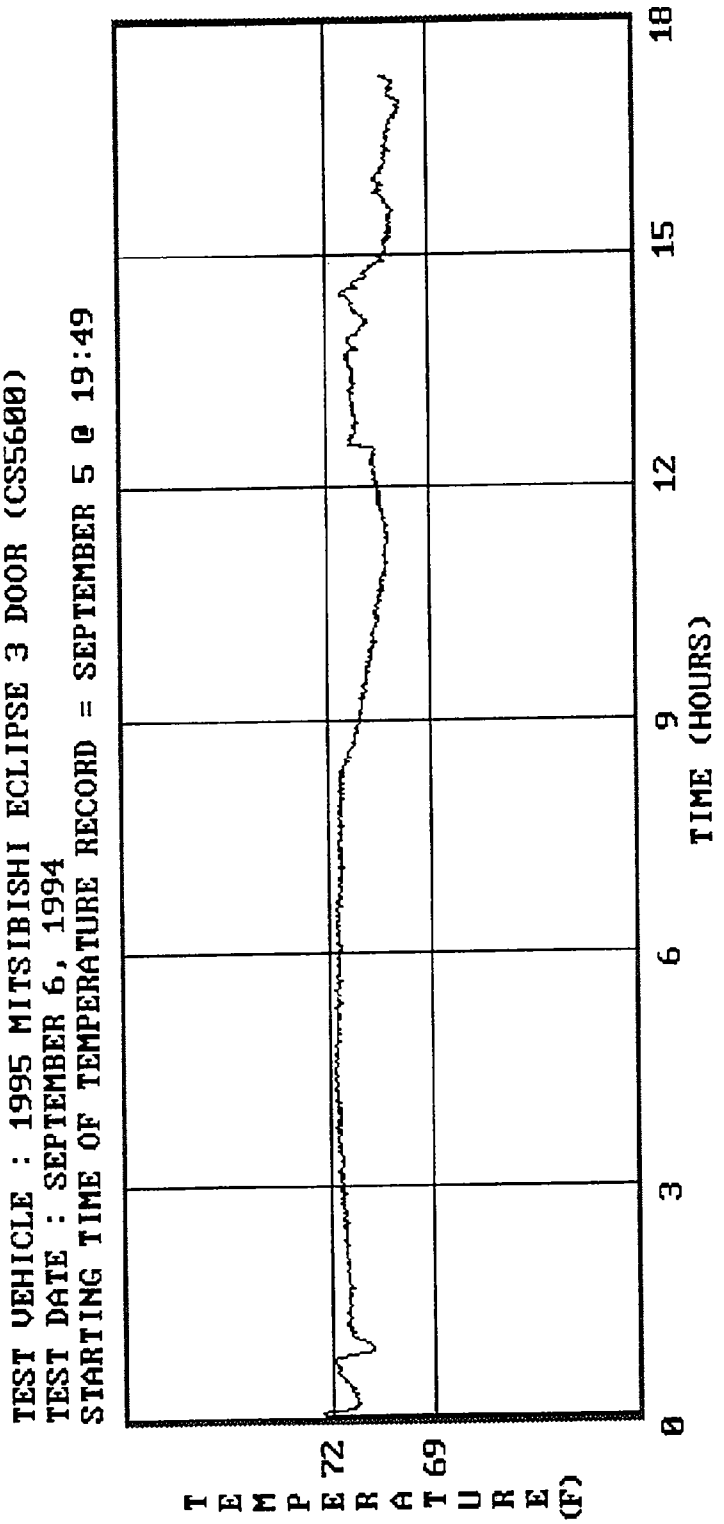
	VIEW	CAMERA POSITIONS (inches)*			ANGLE (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Left Side View						10	24
2	Left Vehicle Crush	33.1	324.0	46.3	90°	310.8	25	995
3	Left Steering Column Motion	42.1	298.0	61.4	90°	284.8	25	590
4	Left Steering Column Motion	42.9	297.2	40.6	90°	284.0	25	1000
5	Left Windshield Intrusion	54.3	243.3	39.0	90°	230.1	35	952
6	Left Driver Kinematics	169.7	196.9	72.0	50°		50	1010
7	Right Overall View	89.8	-286.2	39.4	90°	273.0	13	1111
8	Right Vehicle Crush	31.9	-306.3	39.6	90°	293.1	25	1000
9	Right Windshield Intrusion	52.0	-259.8	39.2	90°	246.6	50	457
10	Right Passenger Kinematics	161.0	-207.9	85.0	50°		35	1000
11	Front View Windshield	13.8	-0.4	172.2			13	1299
12	Front View Driver	-13.0	15.0	94.9			13	1005
13	Front View Passenger	-12.2	-16.1	95.7			13	952
14	Pit Camera Engine View	44.5	3.1	-125.4			13	1015
15	Pit Camera Fuel Tank View	84.6	3.5	-125.4			13	1053

* +X = Film plane rearward of barrier

+Y = Film plane to left of monorail centerline

+Z = Film plane to above ground level

FIGURE 4 TEST DUMMY TEMPERATURE



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

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

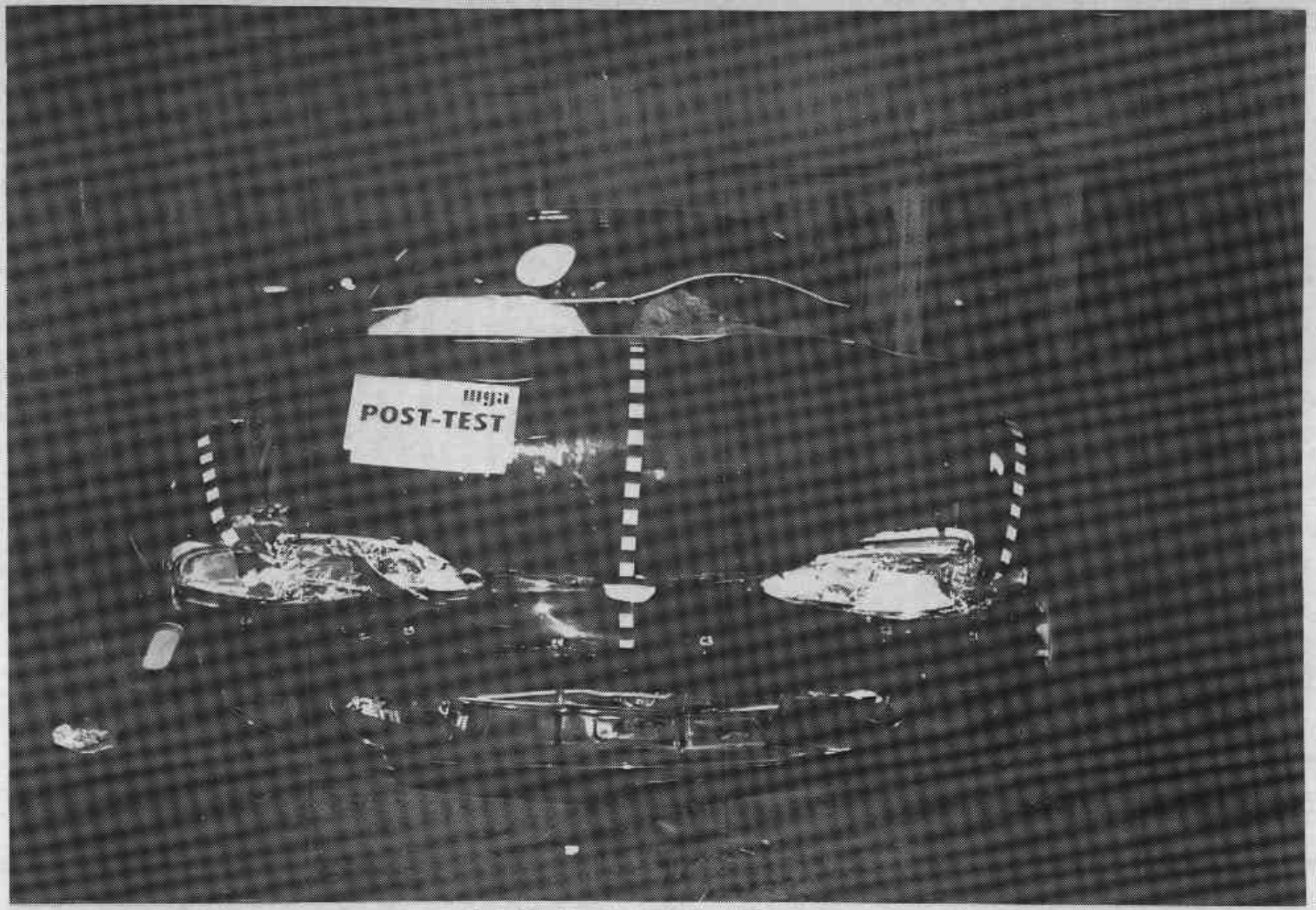


Photo No. A-2 - Post-Test Front View

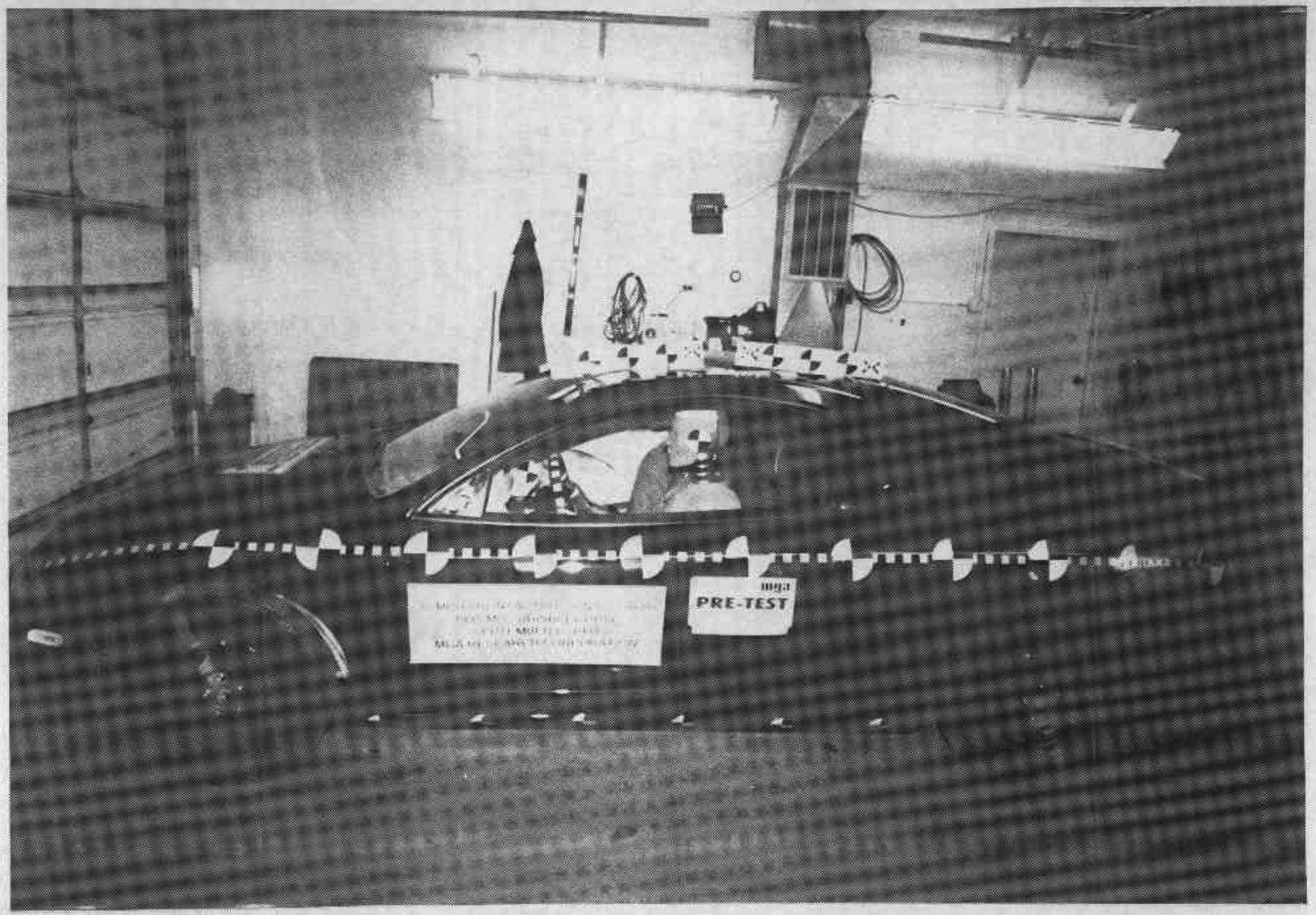


Photo No. A-3 - Pre-Test Left Side View

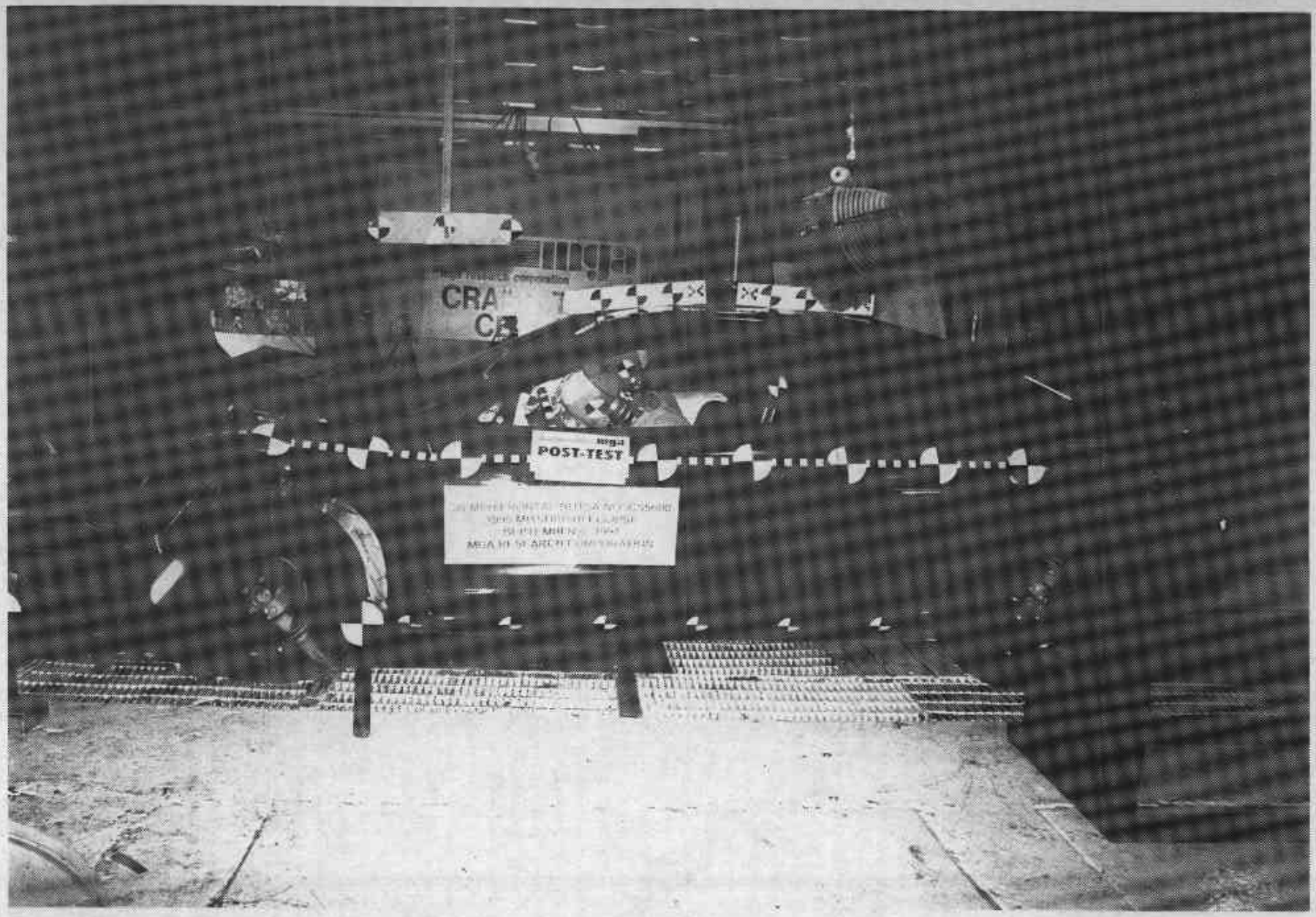


Photo No. A-4 - Post-Test Left Side View

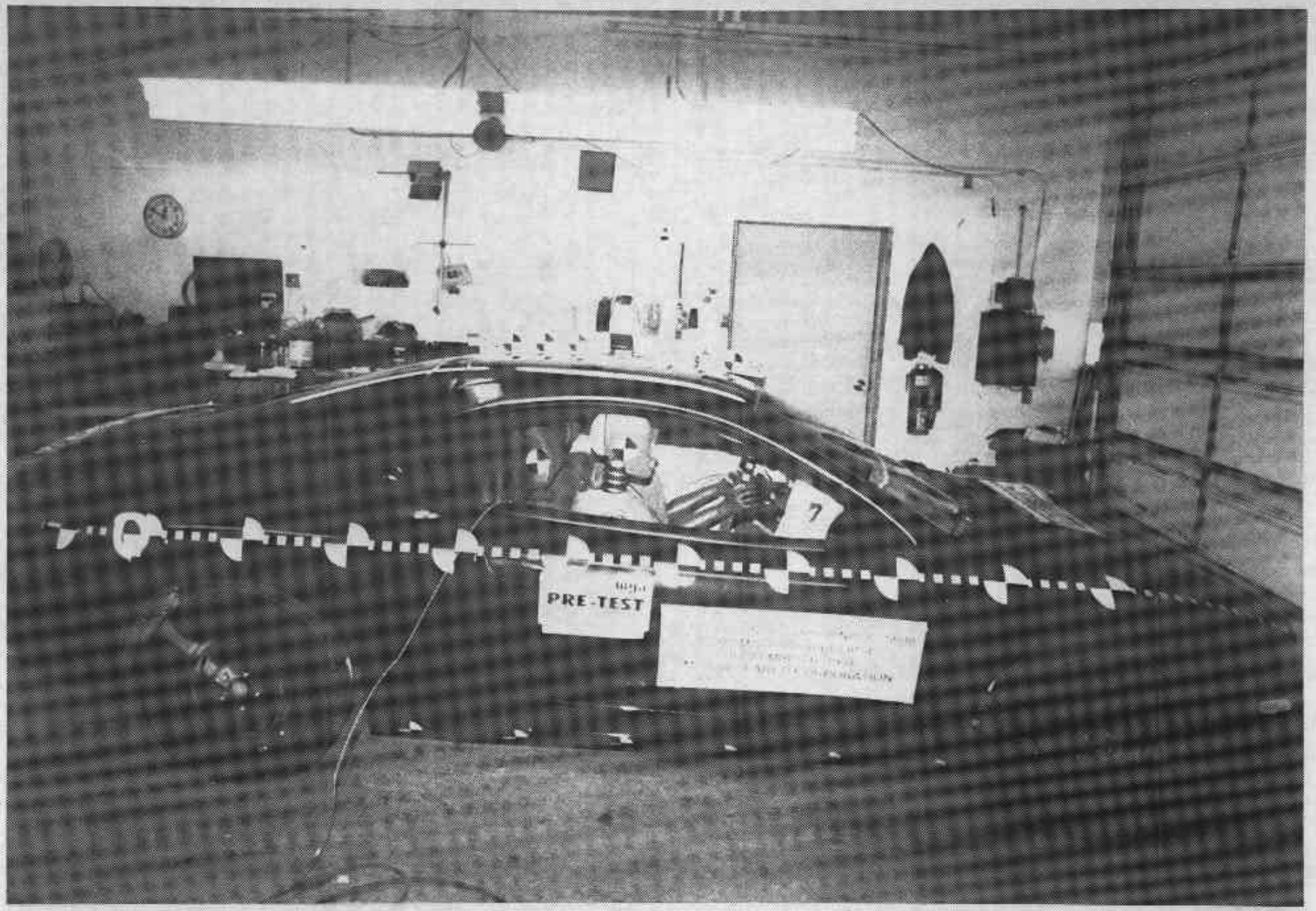


Photo No. A-5 - Pre-Test Right Side View

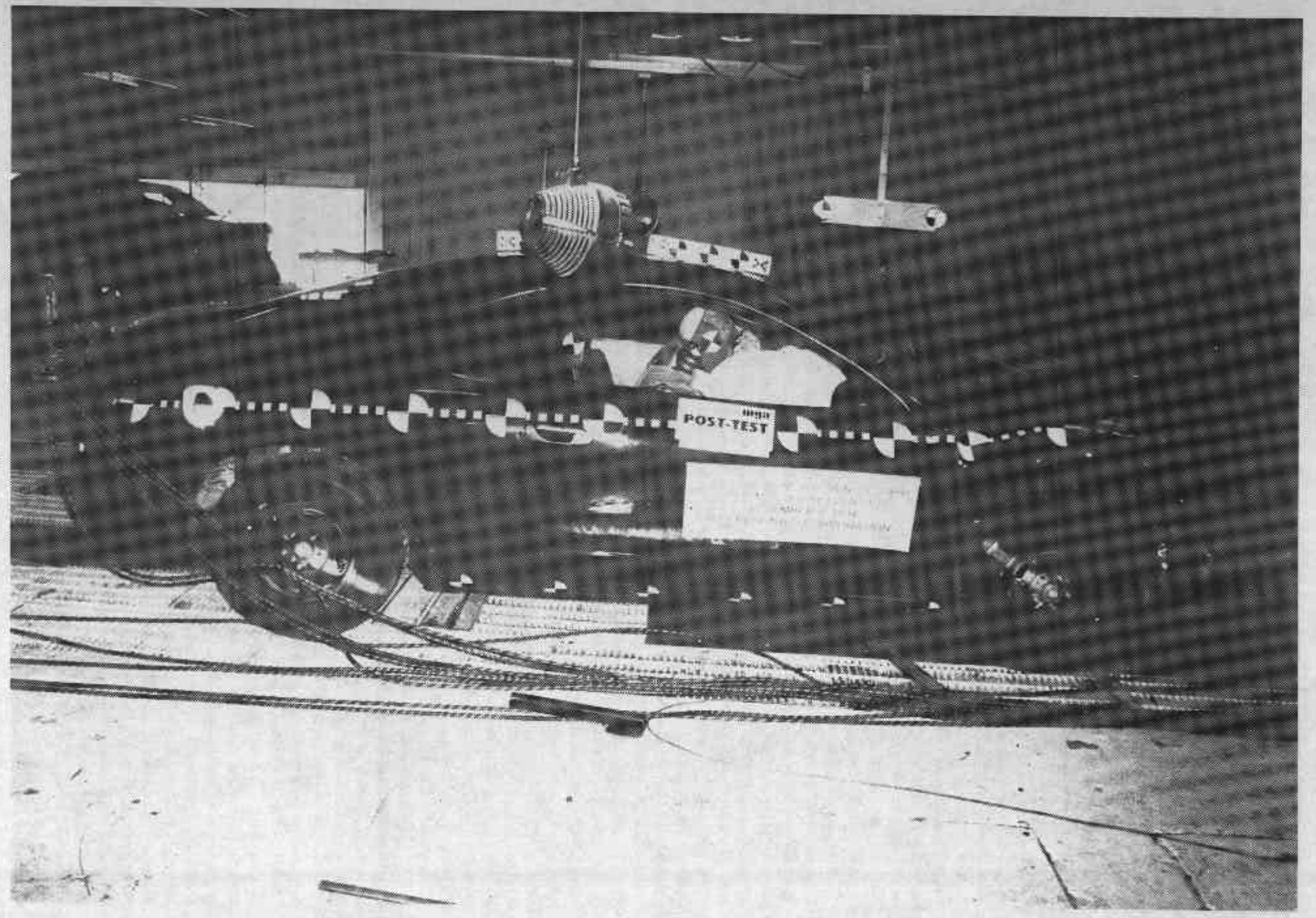


Photo No. A-6 - Post-Test Right Side View

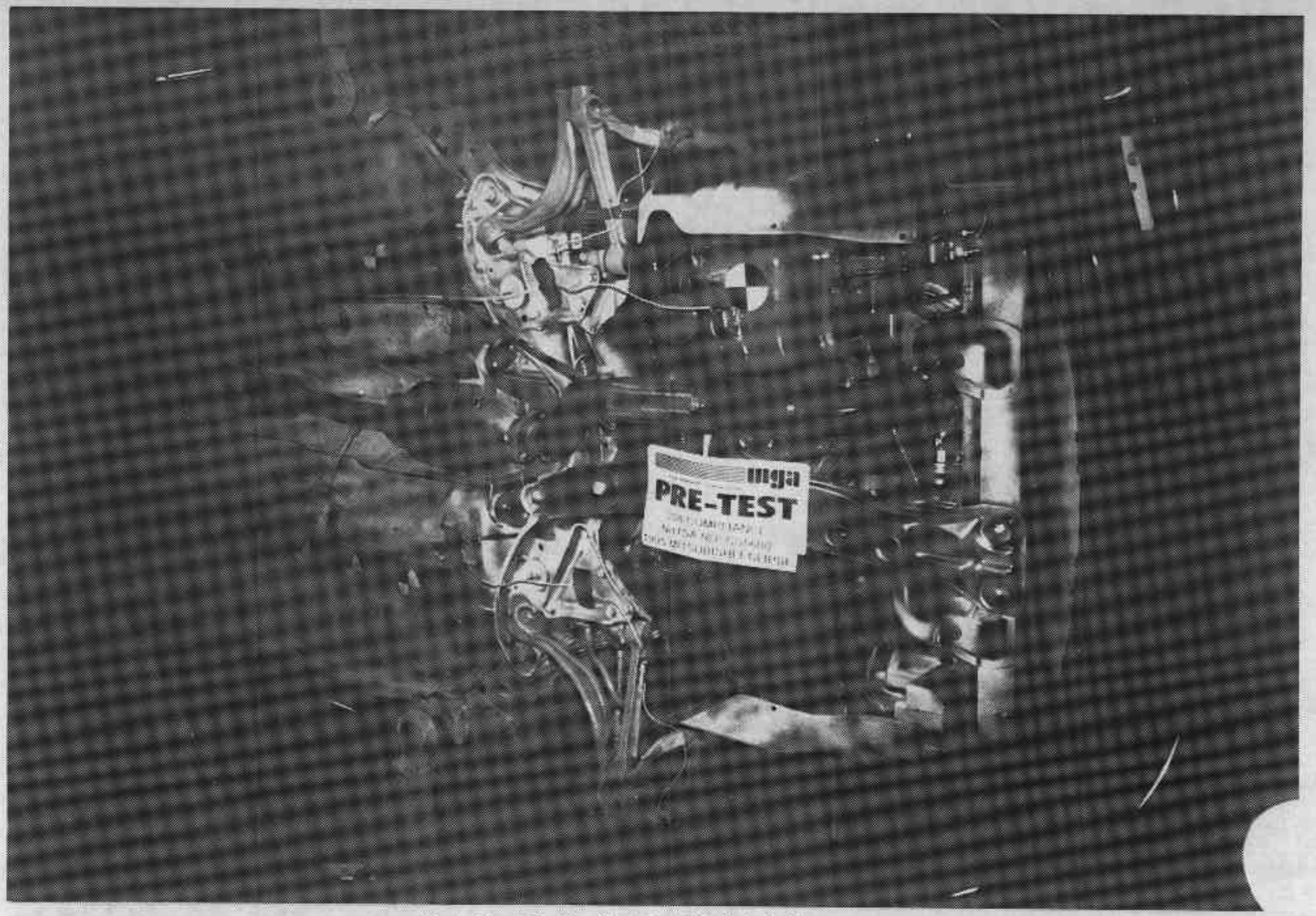


Photo No. A-7 - Pre-Test Front Underbody View

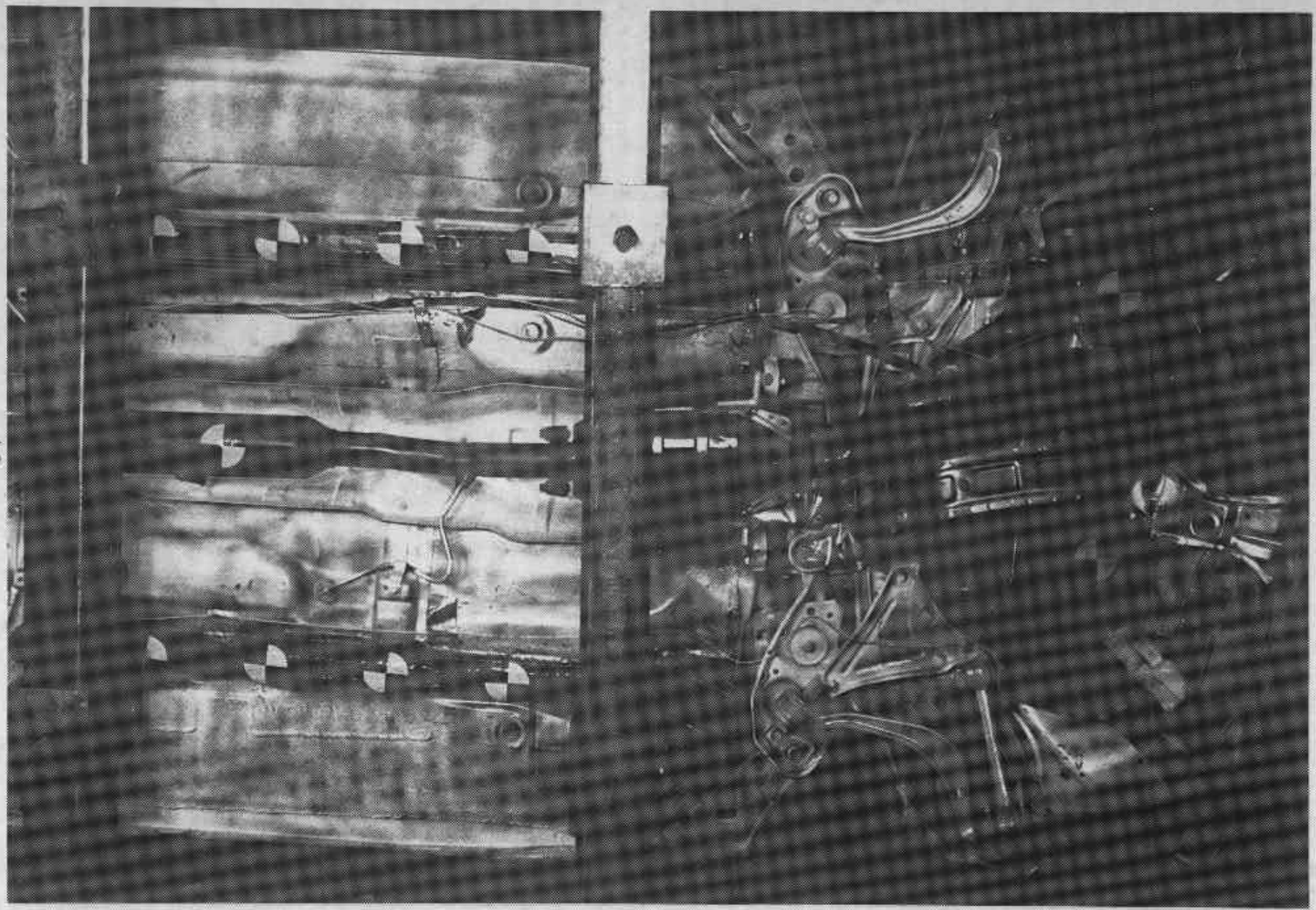


Photo No. A-8 - Post-Test Front Underbody View

Photo No. A-9 - Pre-Test Driver Dummy Position View

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

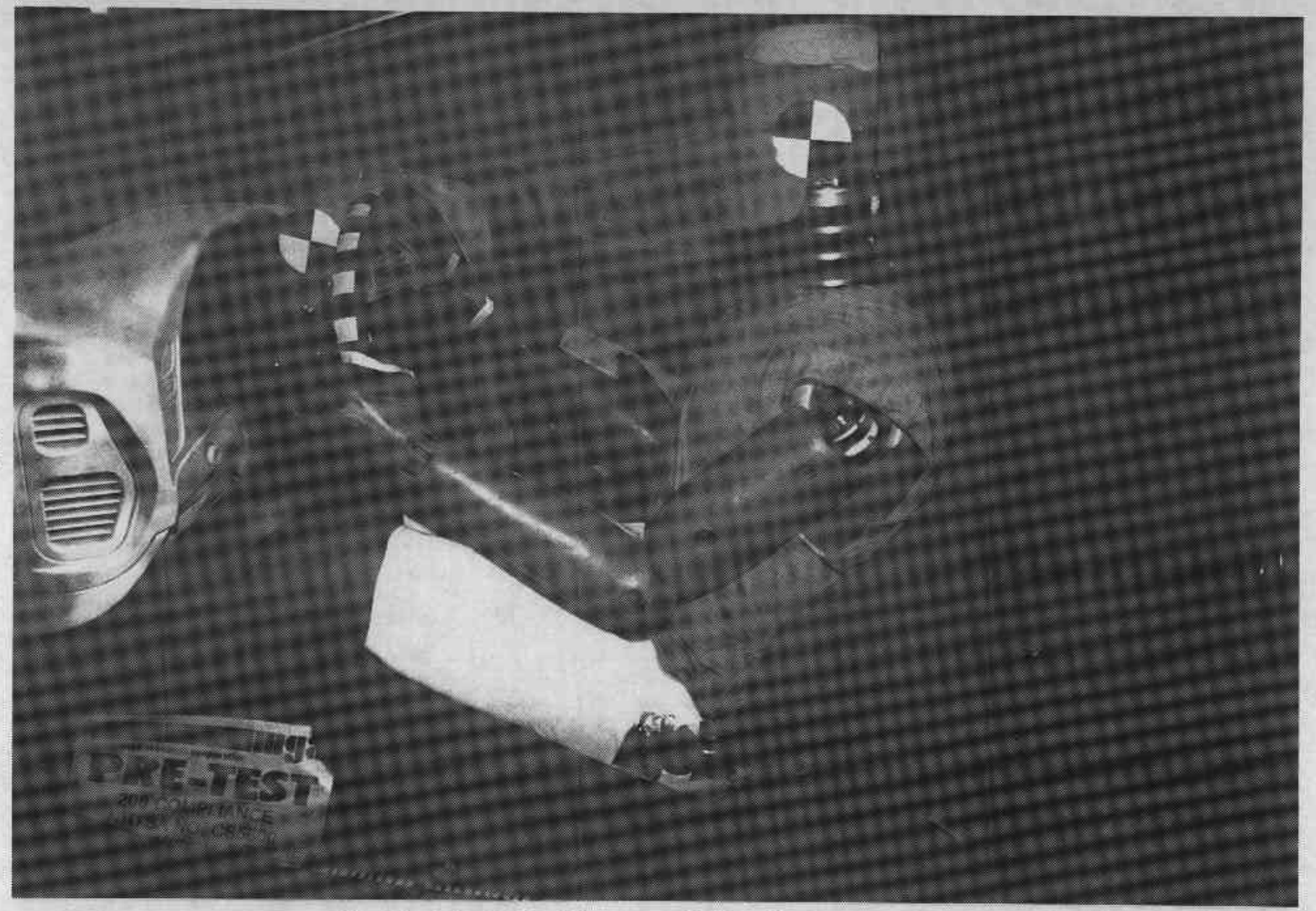


Photo No. A-11 - Pre-Test Driver Dummy Position View (Door Open)

Photo No. A-12 - Post-Test Driver Dummy Position View (Door Open)

Photo No. A-13 - Pre-Test Driver Seat Position View

Photo No. A-14 - Post-Test Driver Seat Position View

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

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

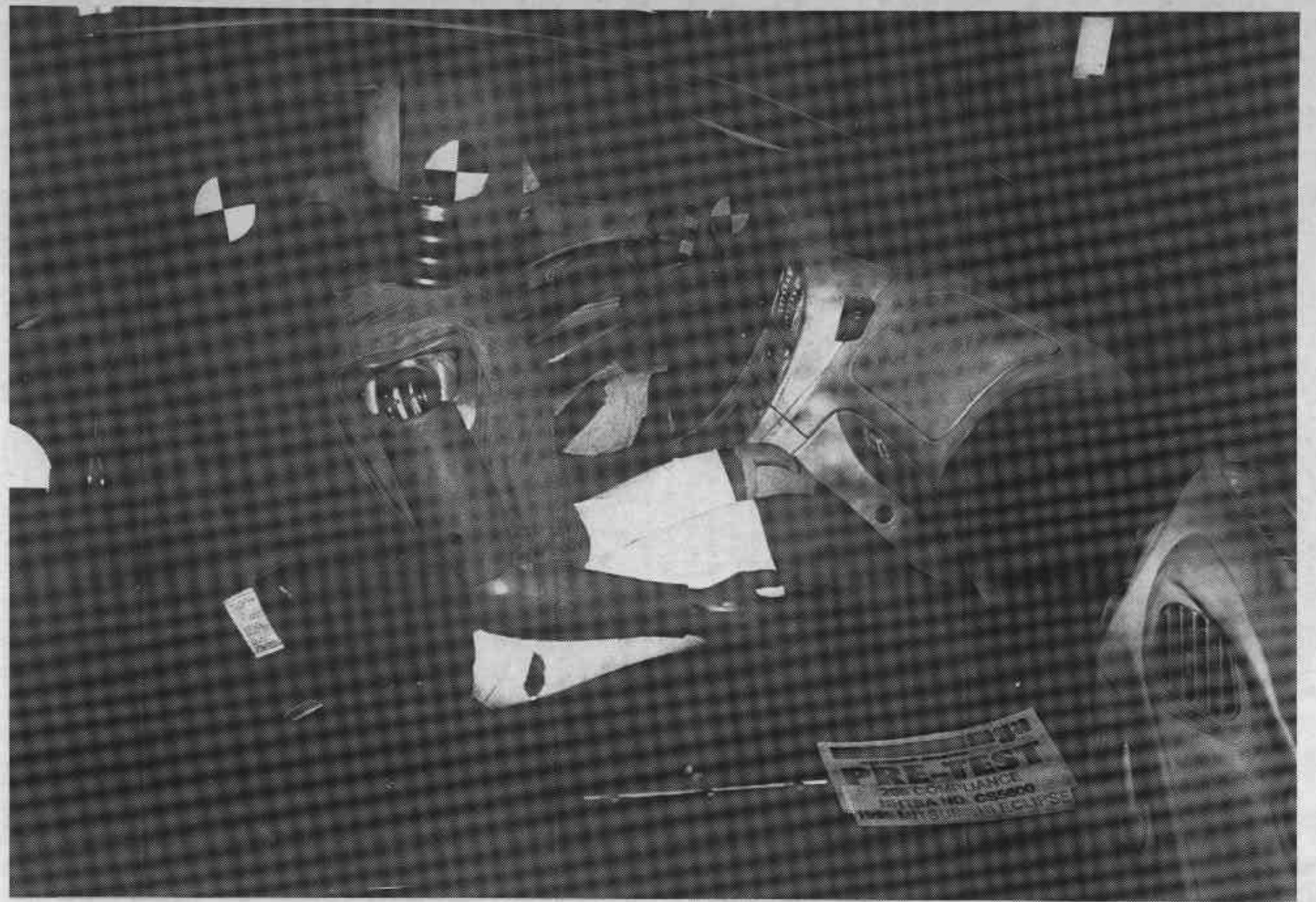


Photo No. A-17 - Pre-Test Passenger Dummy Position View (Door Open)

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

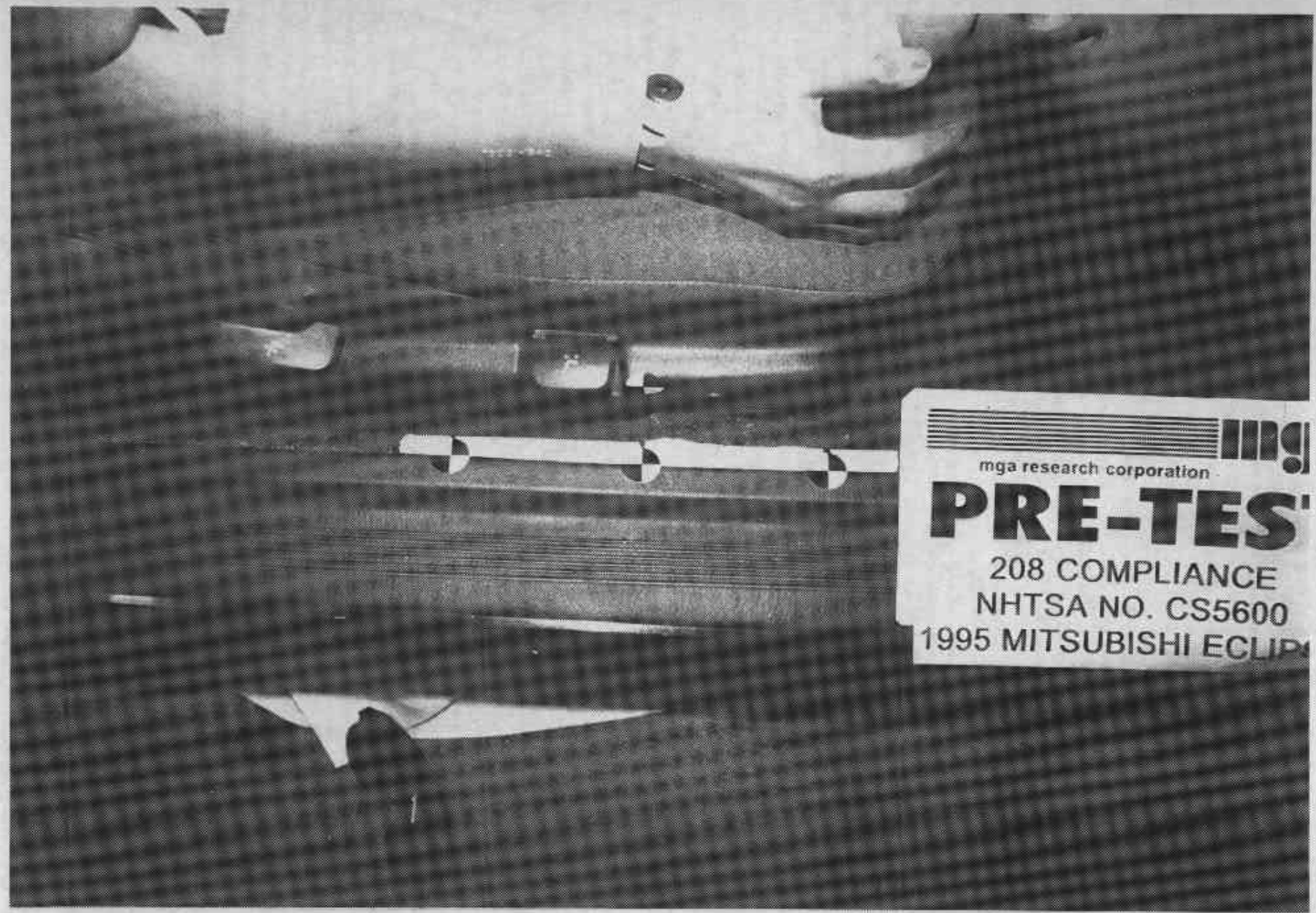


Photo No. A-19 - Pre-Test Passenger Seat Position View

Photo No. A-20 - Post-Test Passenger Seat Position View

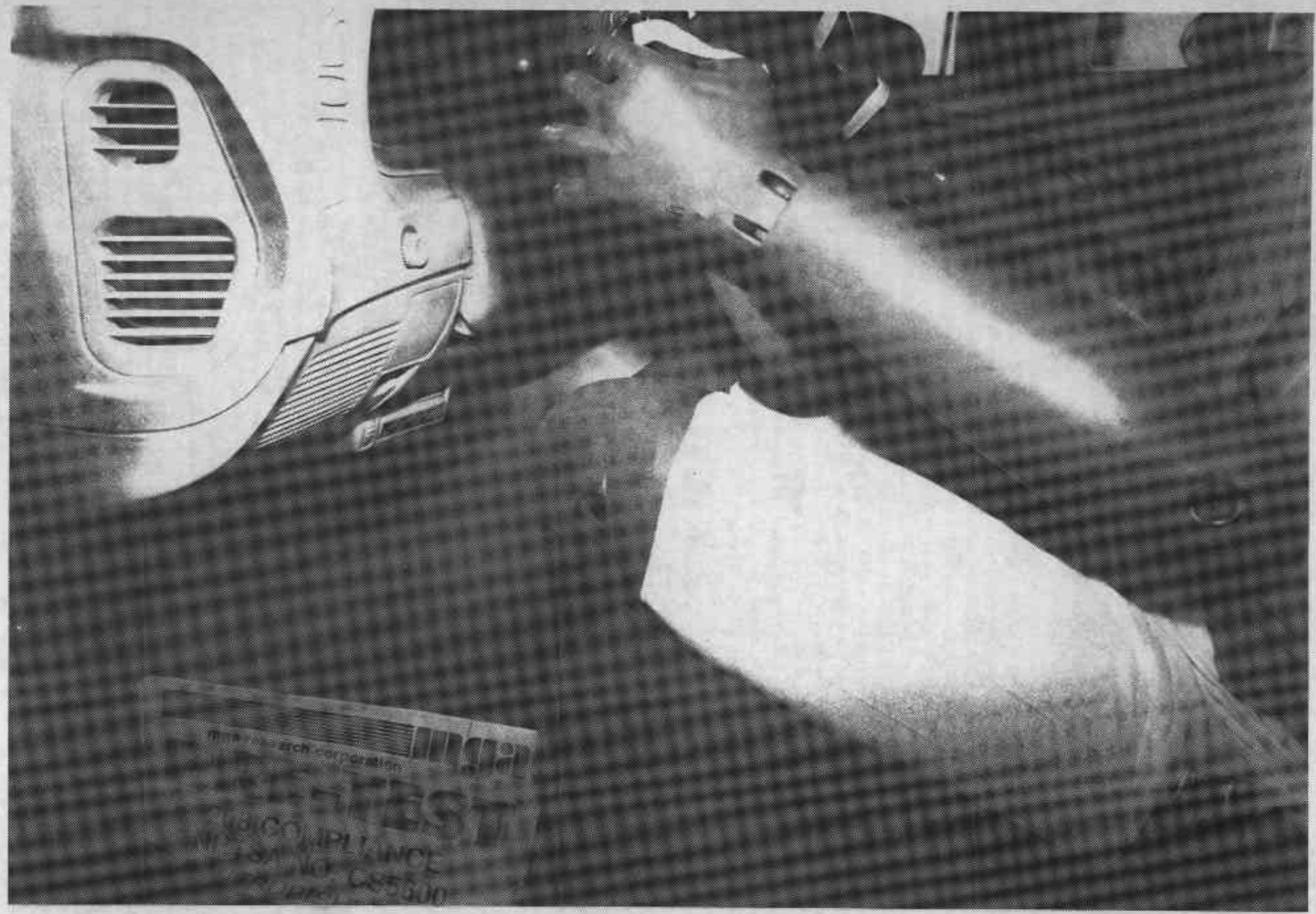


Photo No. A-21 - Pre-Test Driver Dummy Knee Bolster View

Photo No. A-22 - Post-Test Driver Dummy Knee Bolster View

Photo No. A-23 - Pre-Test Passenger Dummy Knee Bolster View

Photo No. A-24 - Post-Test Passenger Dummy Knee Bolster View

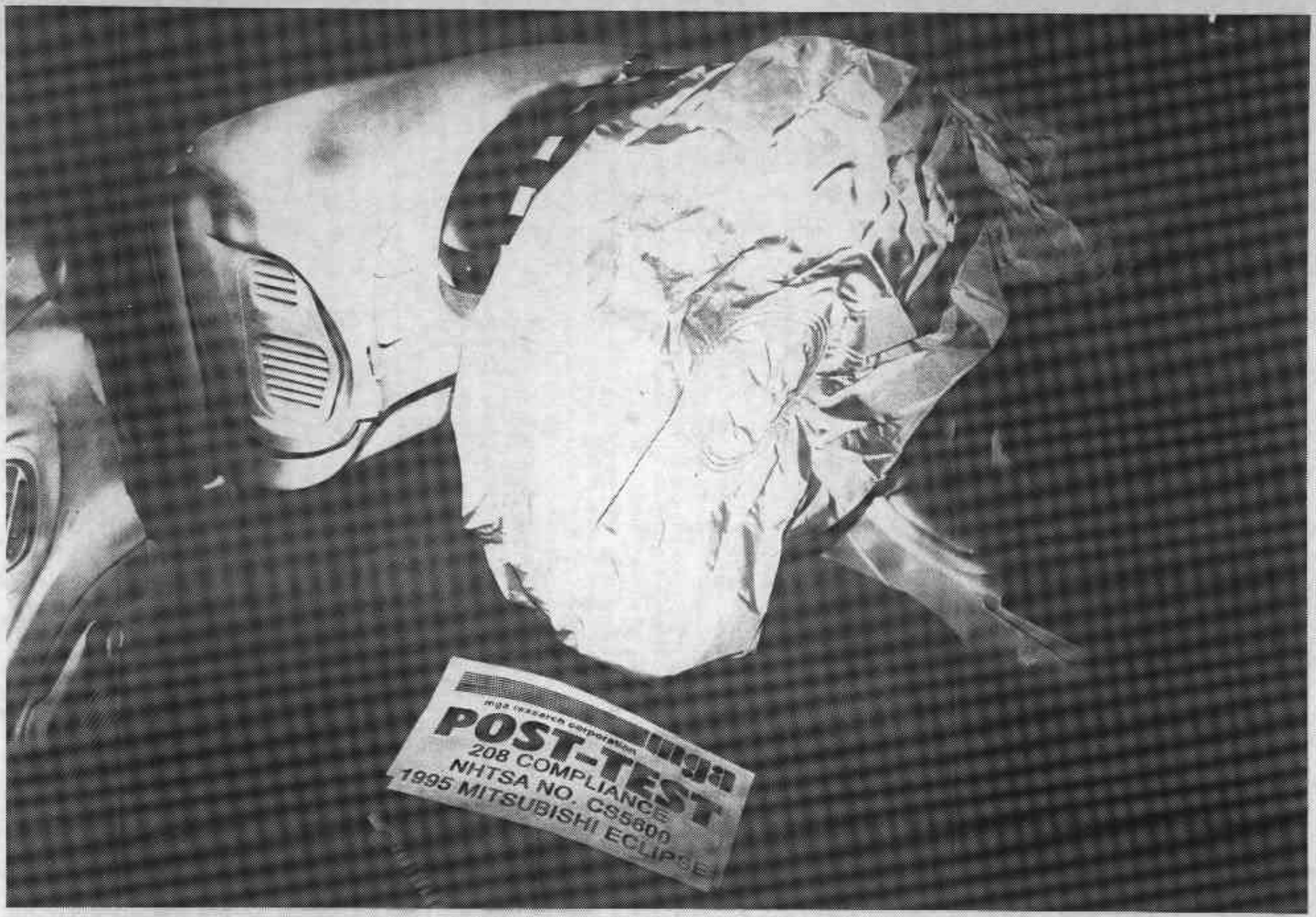


Photo No. A-25 - Driver Dummy Head Contact View - Airbag

Photo No. A-26 - Driver Dummy Head Contact View - Sunvisor

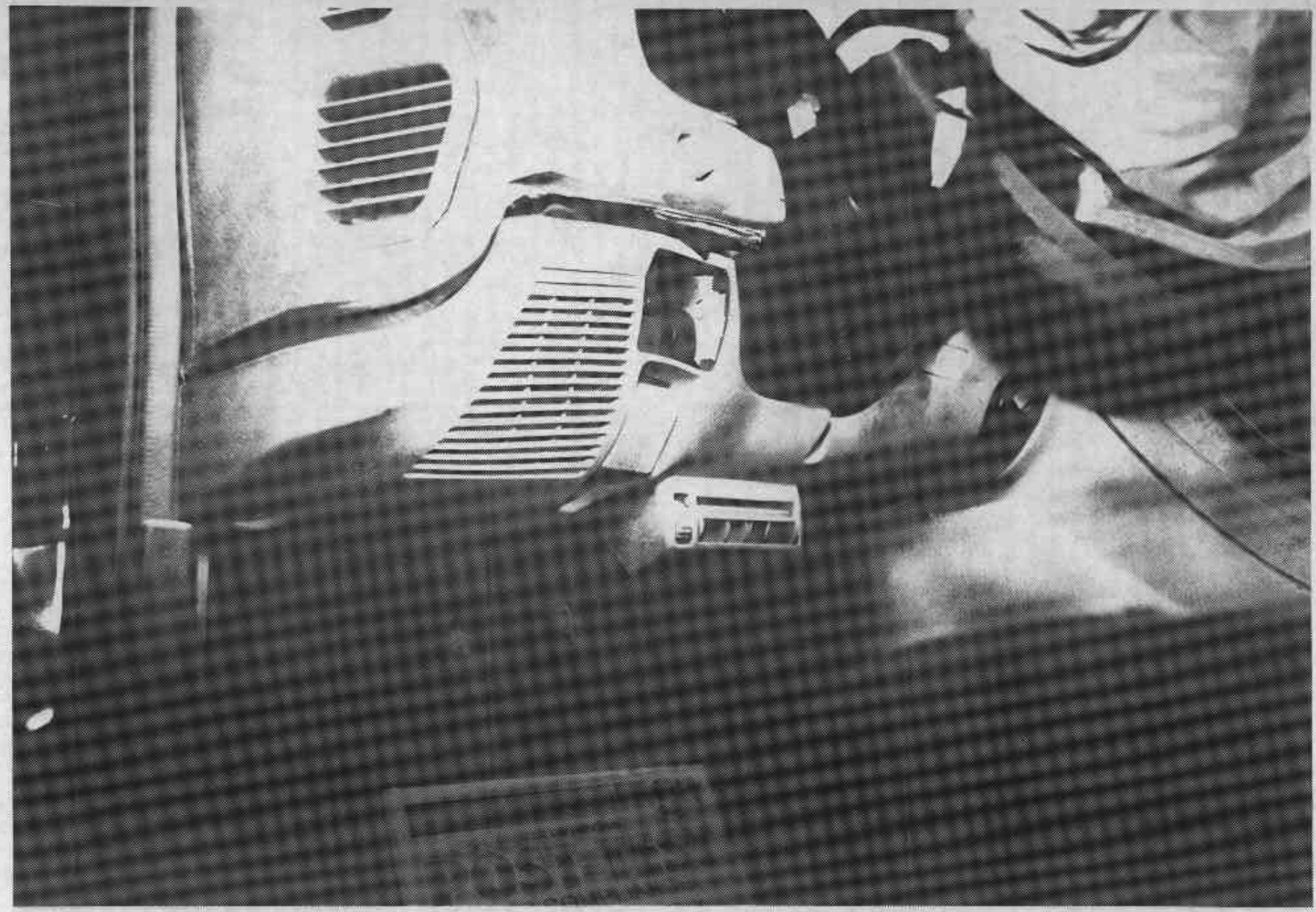


Photo No. A-27 - Driver Dummy Knee Contact View

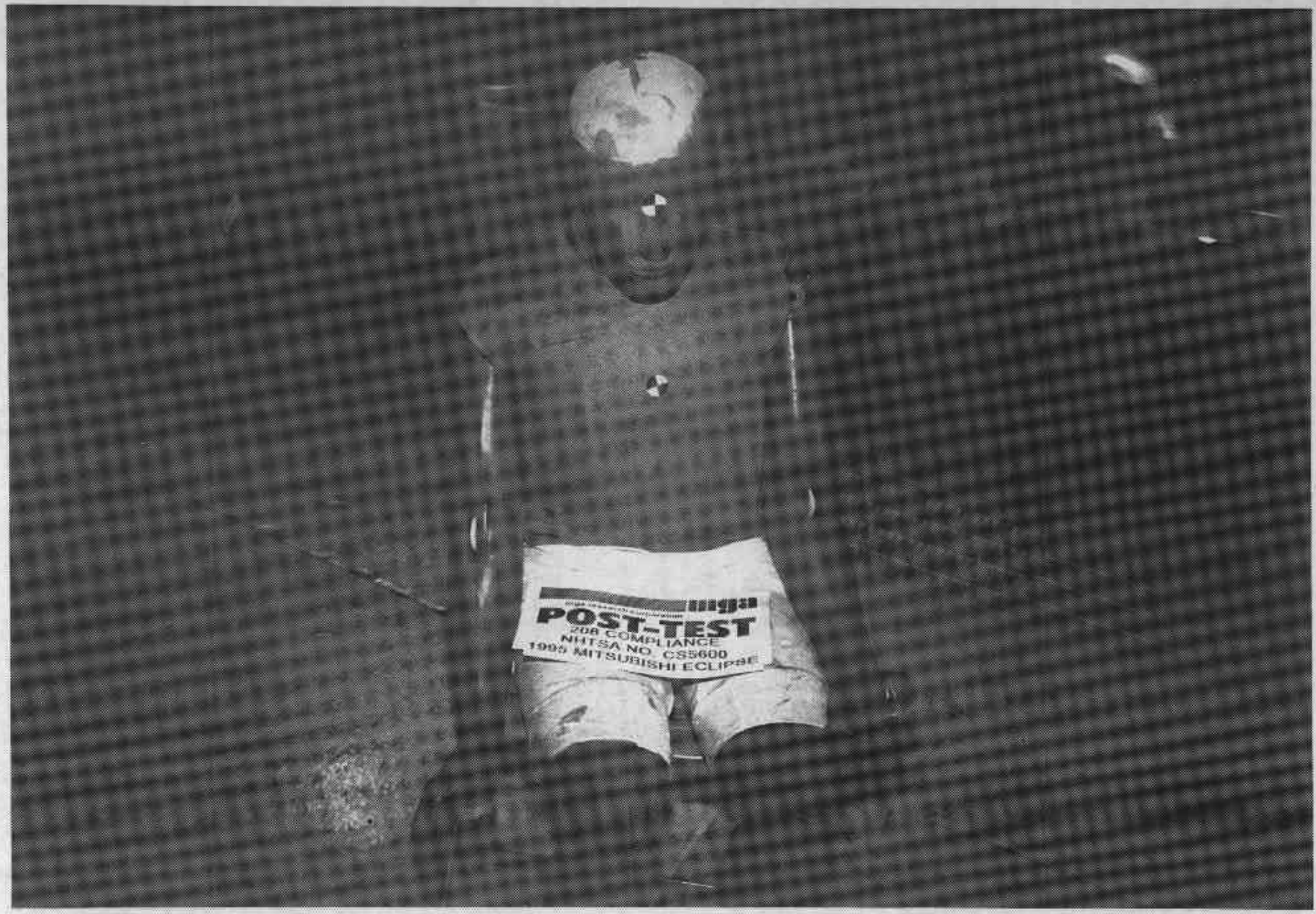


Photo No. A-28 - Post-Test Driver Dummy View

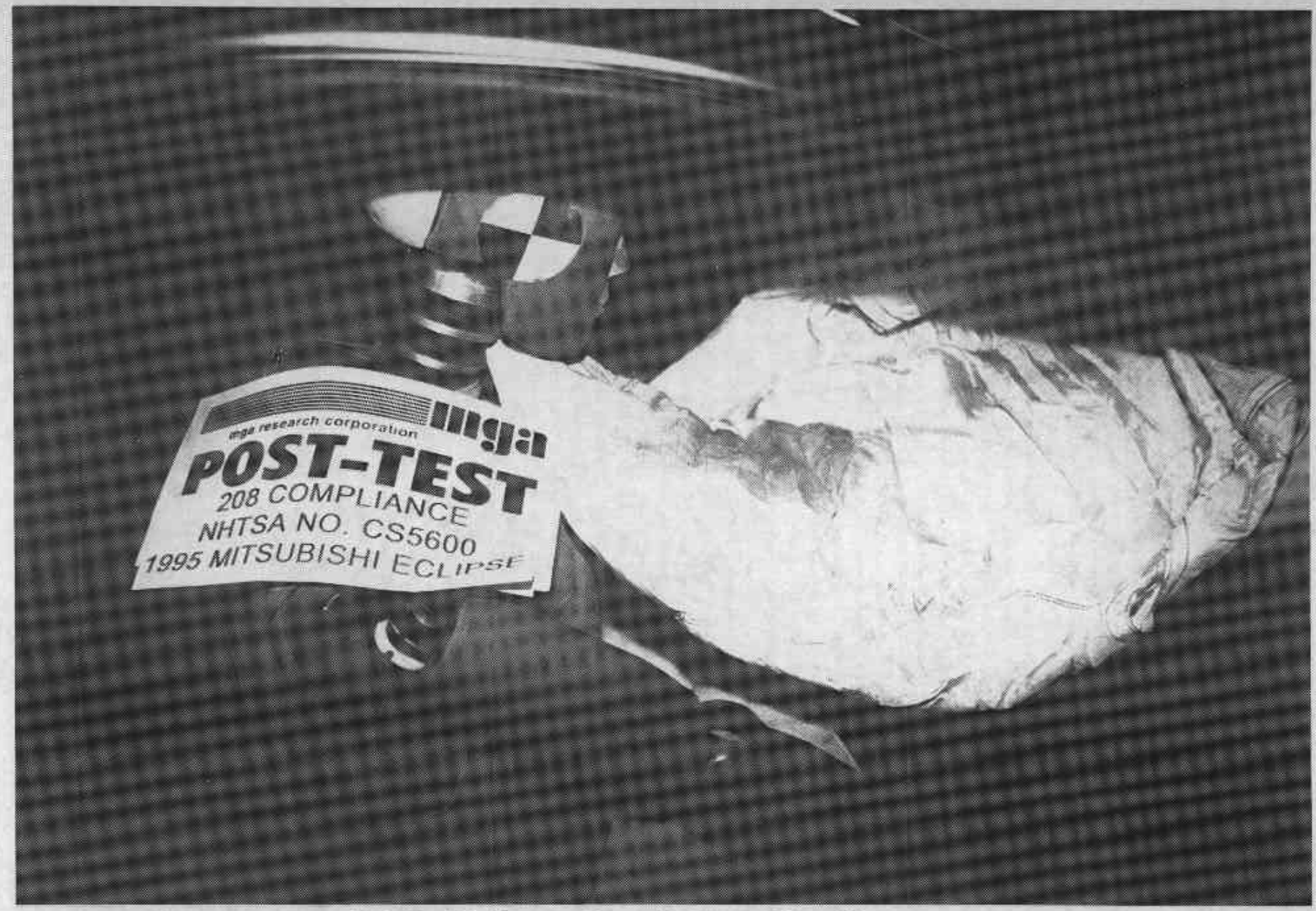


Photo No. A-29 - Passenger Dummy Head Contact View - Airbag

Photo No. A-39 - Passenger Dummy Head Contact View - Sunvisor

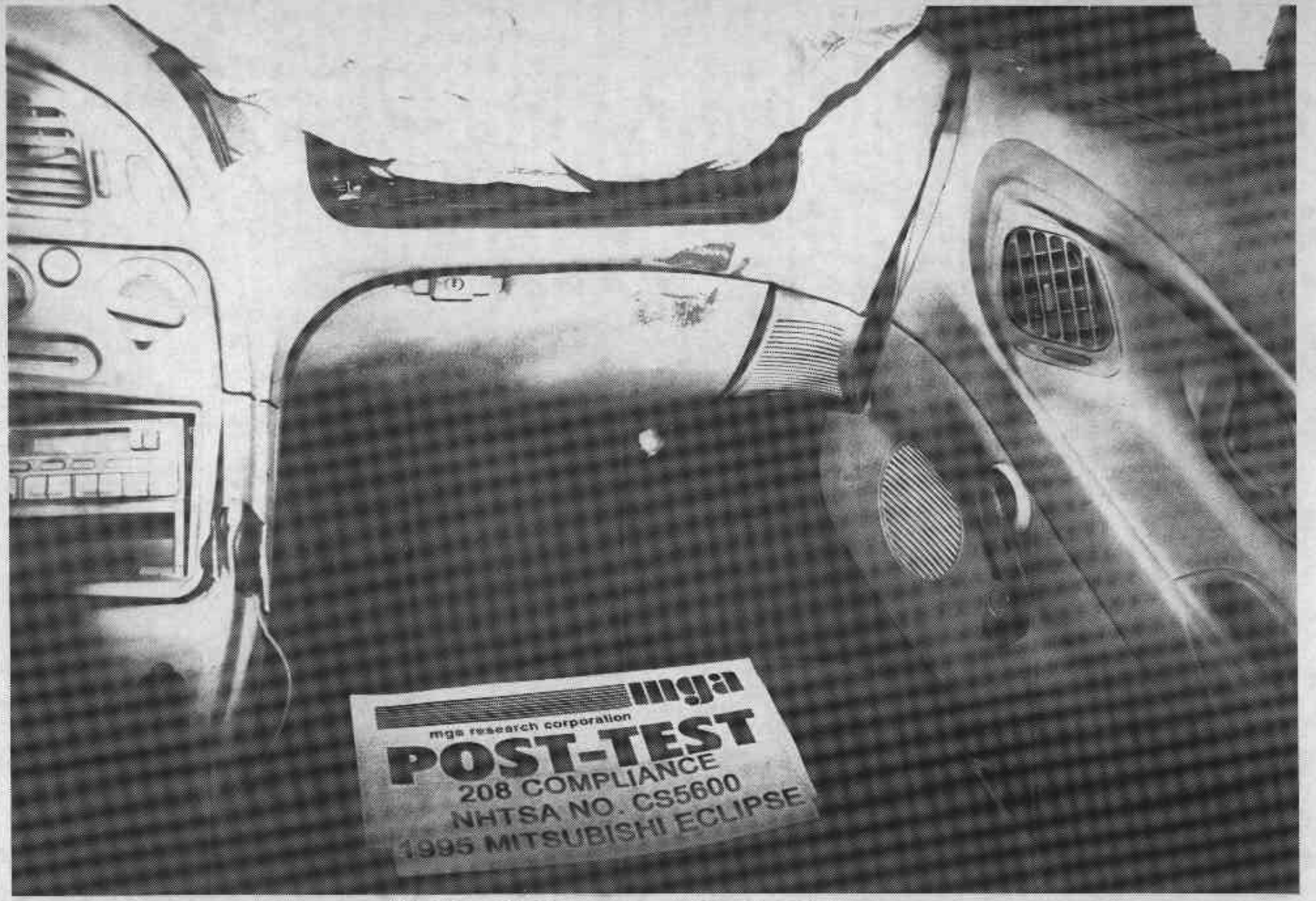


Photo No. A-31 - Passenger Dummy Knee Contact View

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

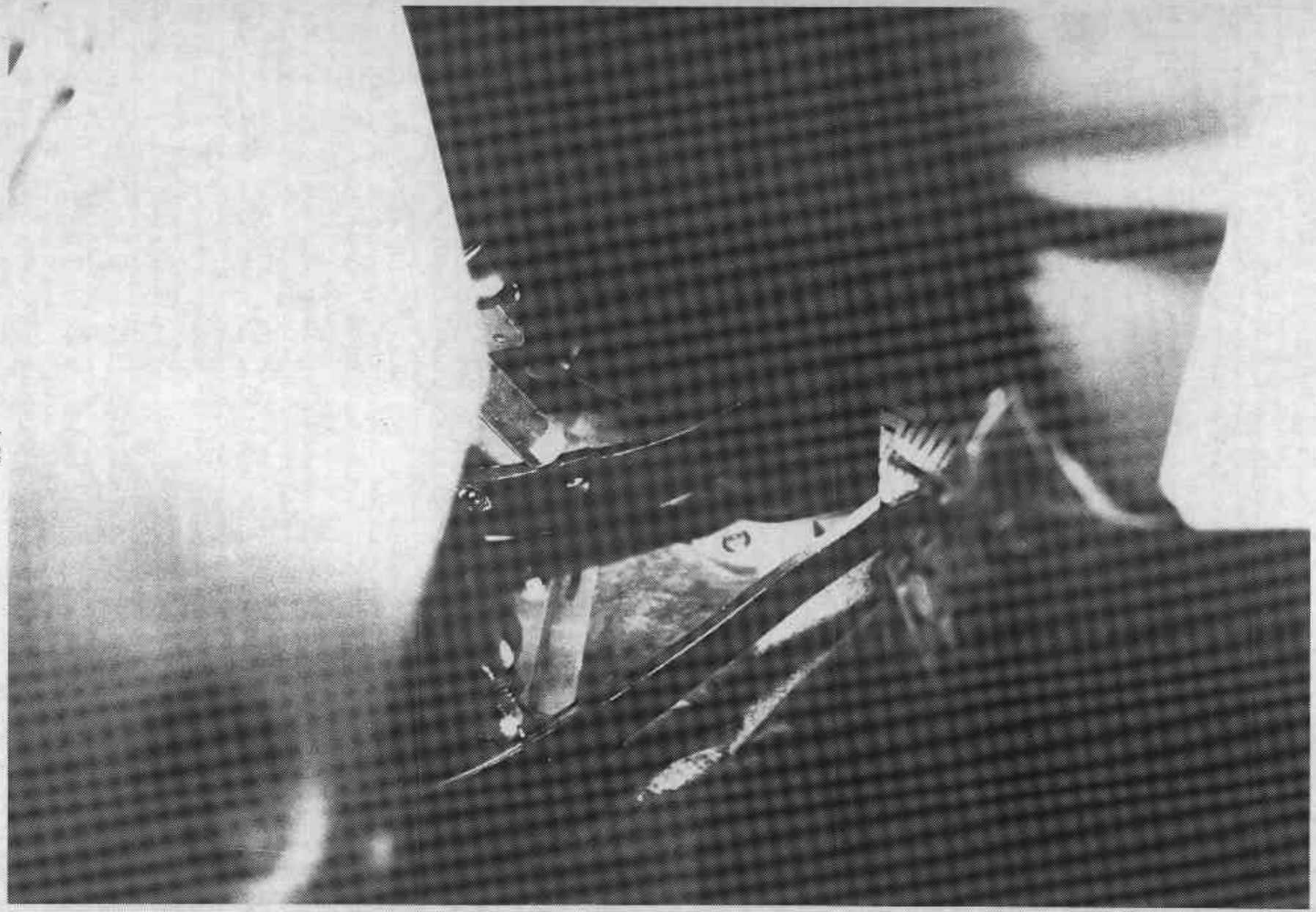
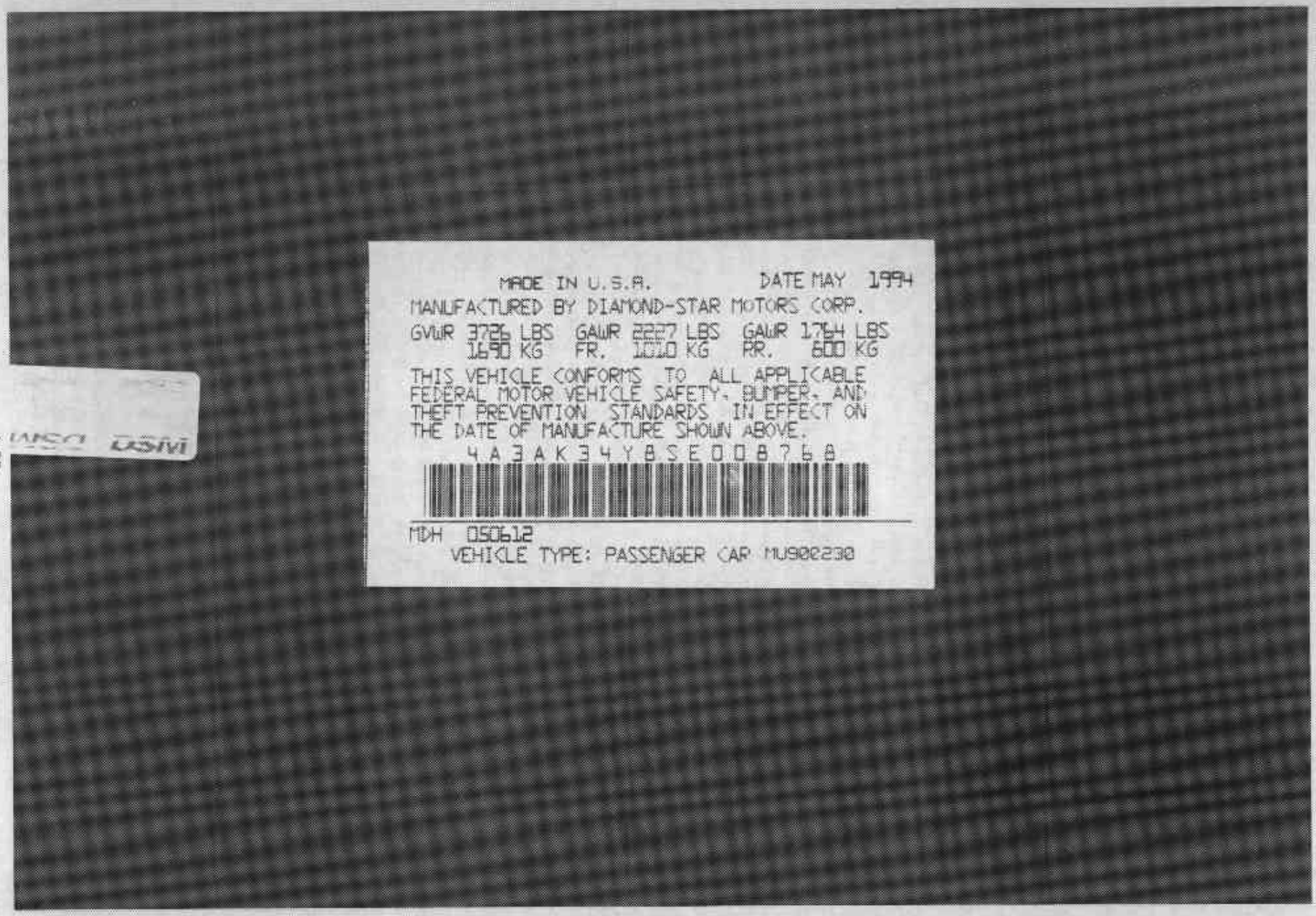


Photo No. A-33 - Pre-Test Steering Column at Firewall View - Interior

Photo No. A-34 - Post-Test Steering Column at Firewall View - Interior



A-35

Photo No. A-35 - Vehicle Certification Label

Photo No. A-36 - Tire Placard

APPENDIX B
DATA PLOTS

TABLE OF DATA PLOTS

(Filter Class: 1000)

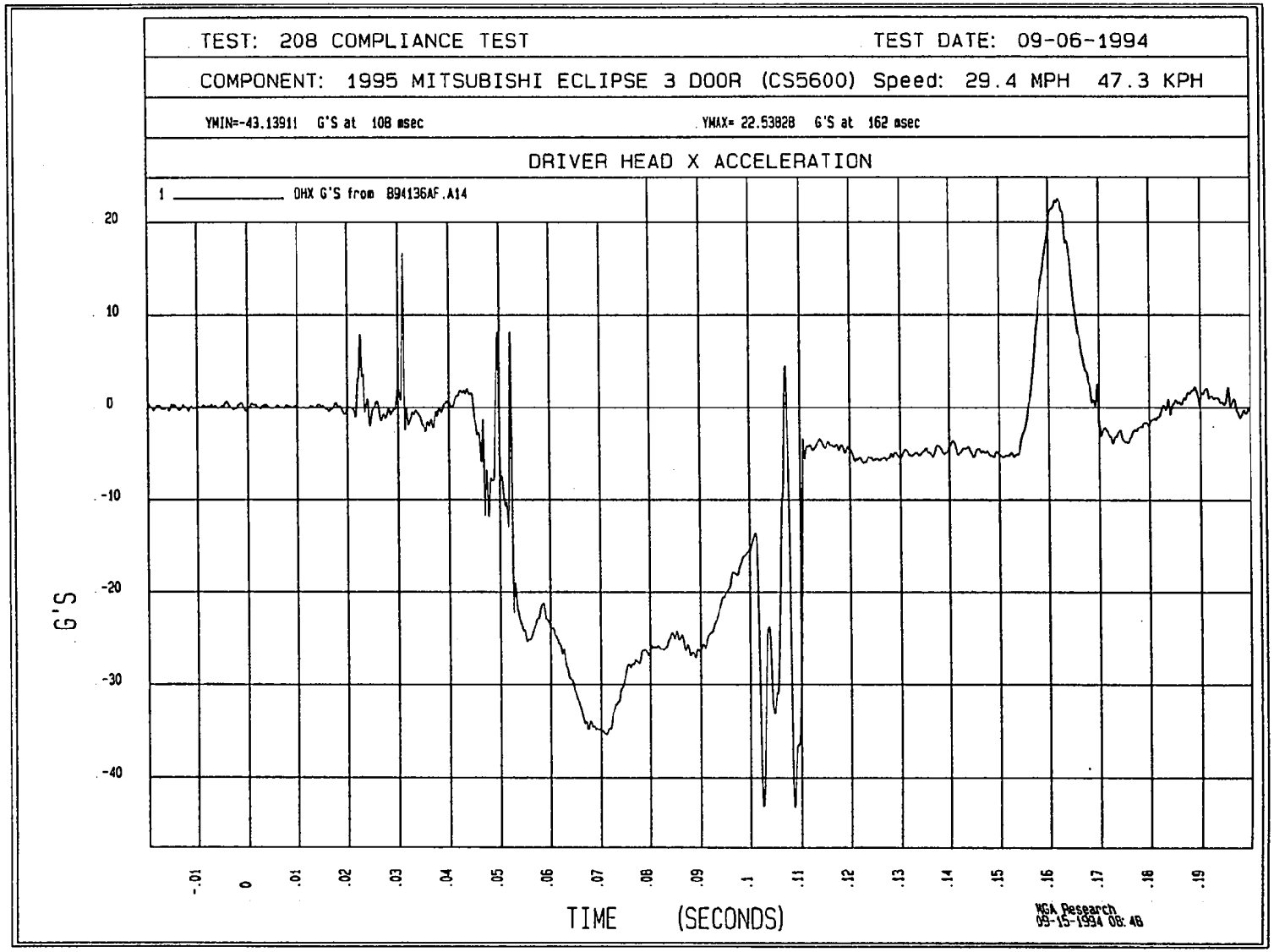


Figure B-1 - Driver Head X Acceleration vs. Time

(Filter Class: 1000)

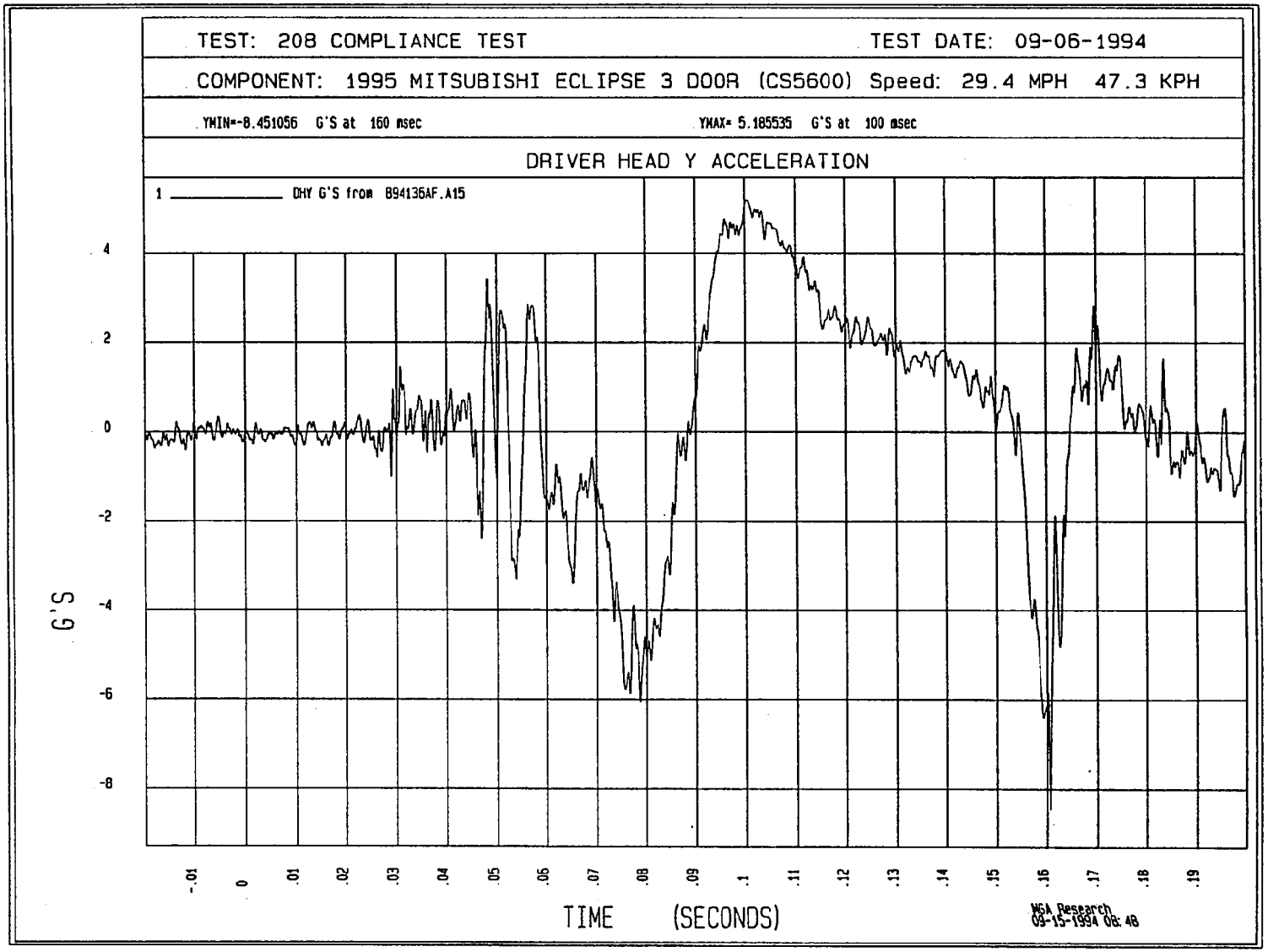


Figure B-2 - Driver Head Y Acceleration vs. Time

(Filter Class: 1000)

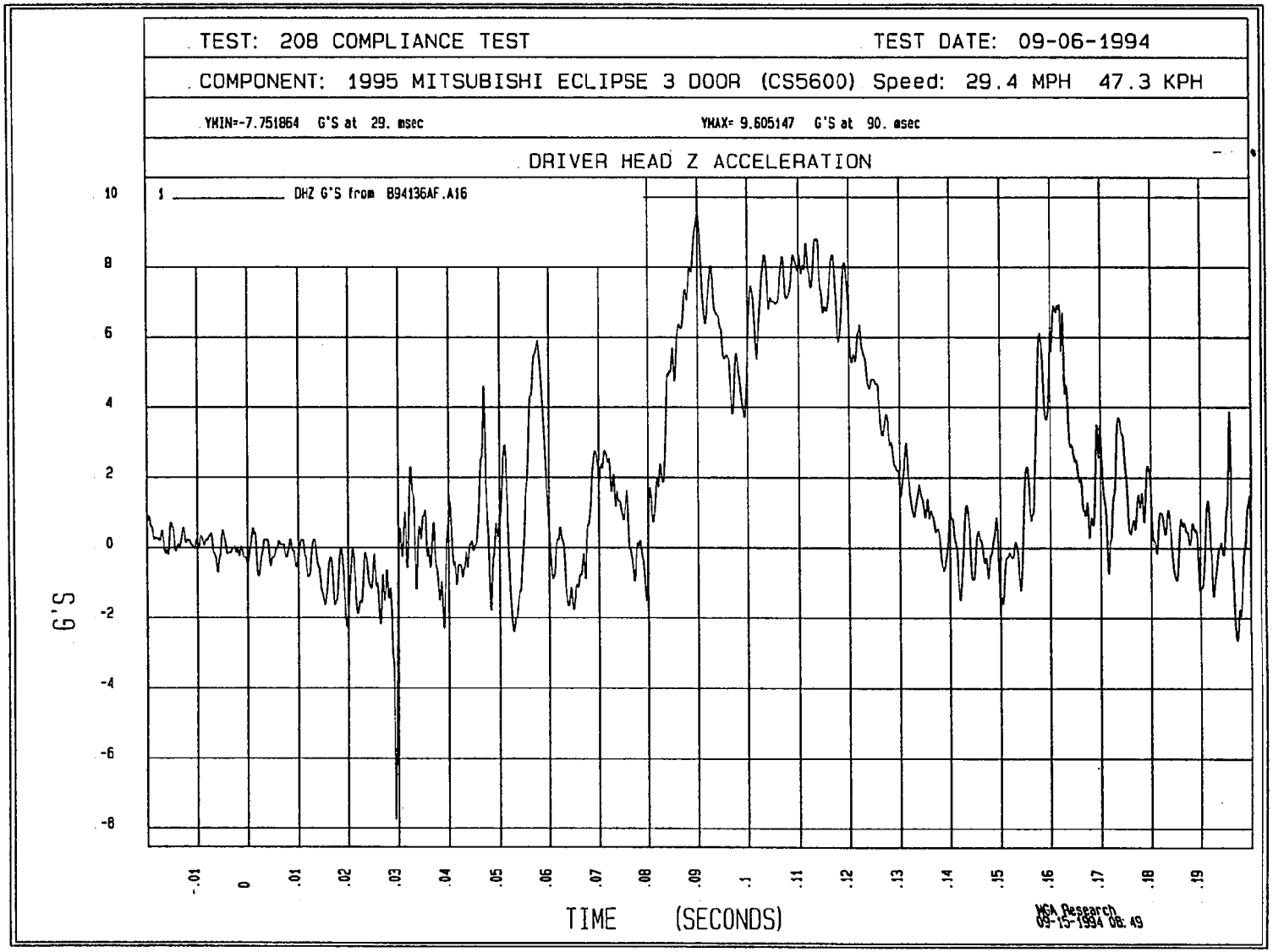


Figure B-3 - Driver Head Z Acceleration vs. Time

(Filter Class: 1000)

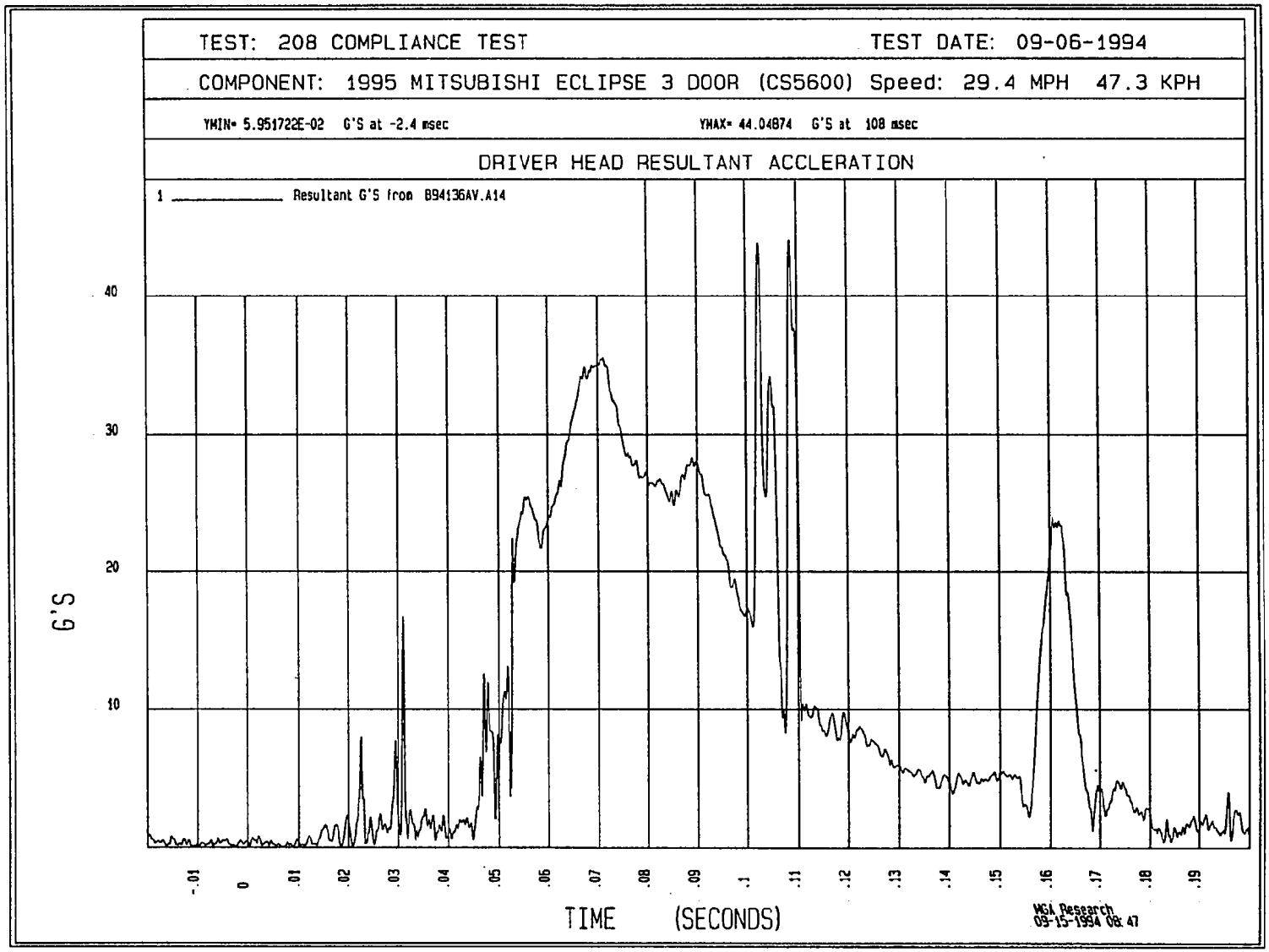


Figure B-4 - Driver Head Resultant Acceleration vs. Time

(Filter Class: 18Ø)

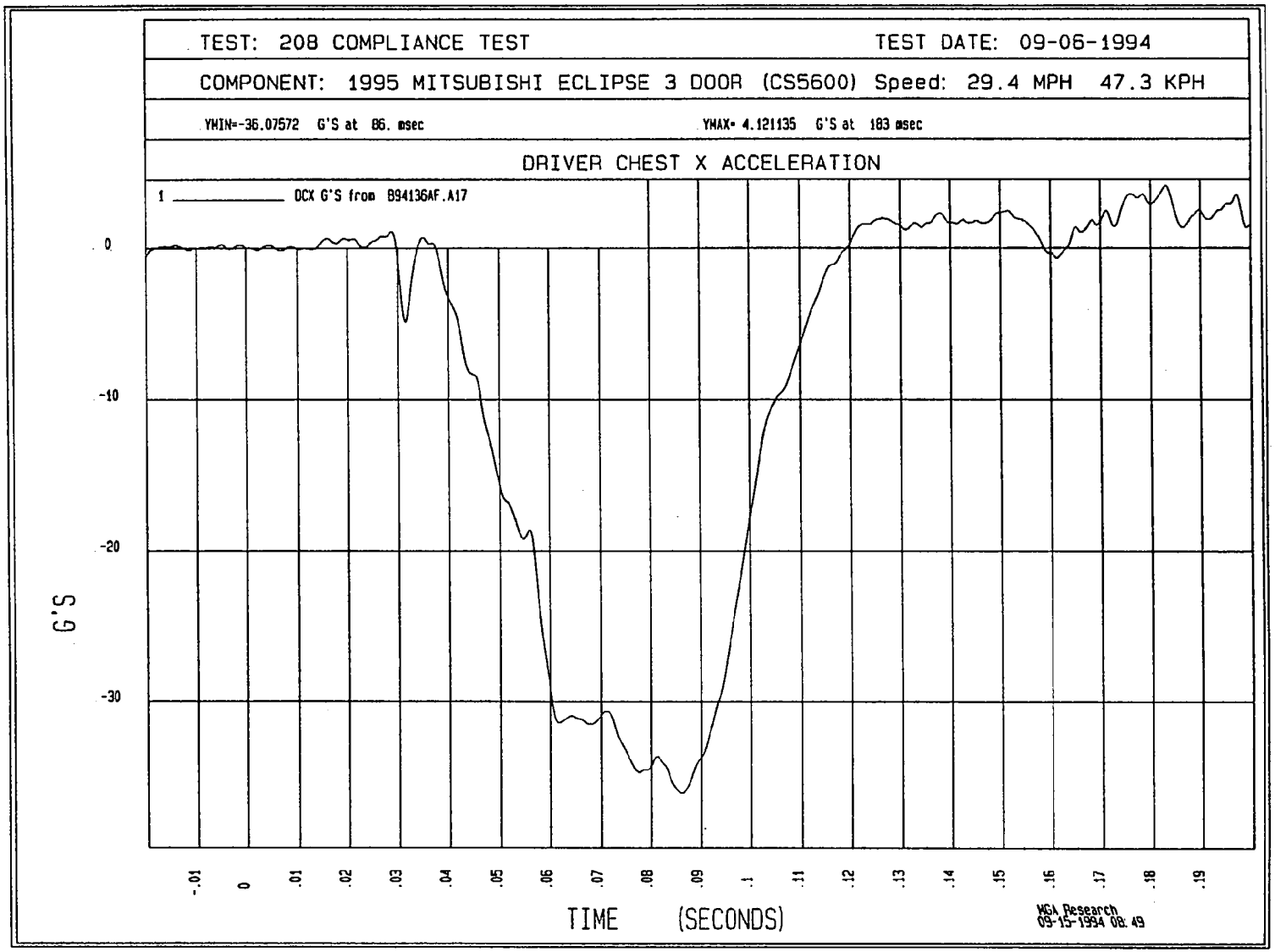


Figure B-5 - Driver Chest X Acceleration vs. Time

(Filter Class: 18Ø)

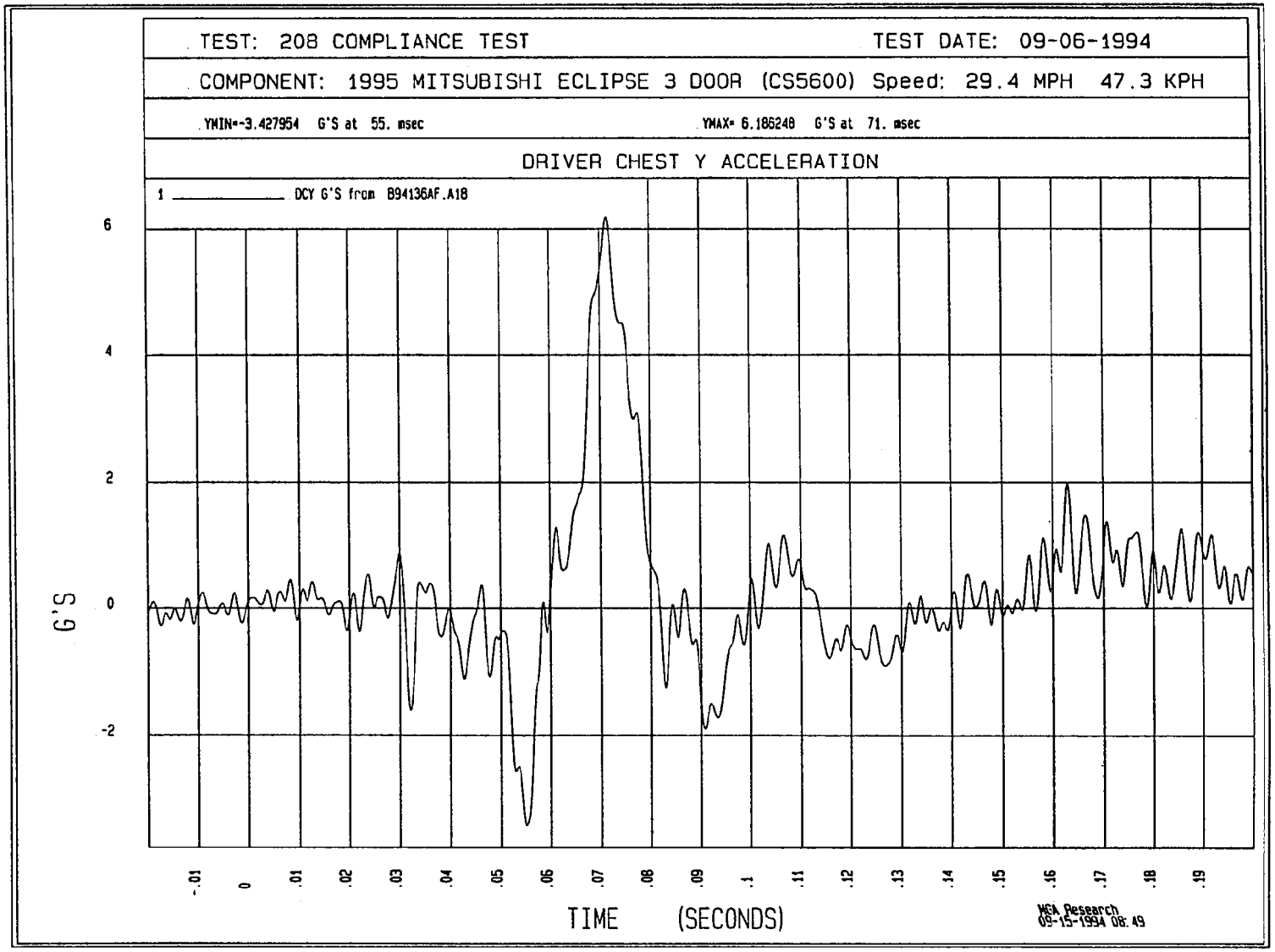


Figure B-6 - Driver Chest Y Acceleration vs. Time

(Filter Class: 18Ø)

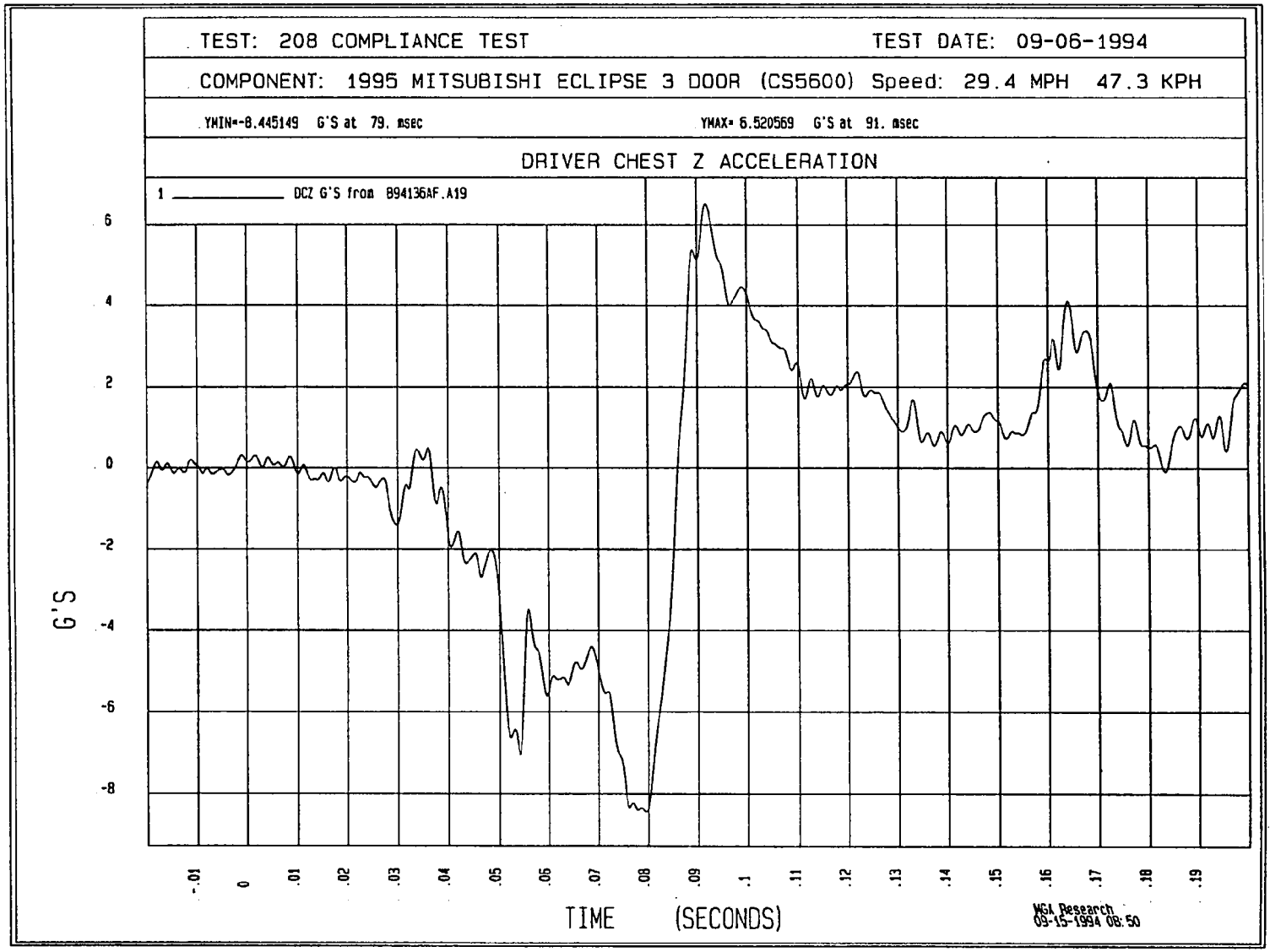


Figure B-7 - Driver Chest Z Acceleration vs. Time

(Filter Class: 18Ø)

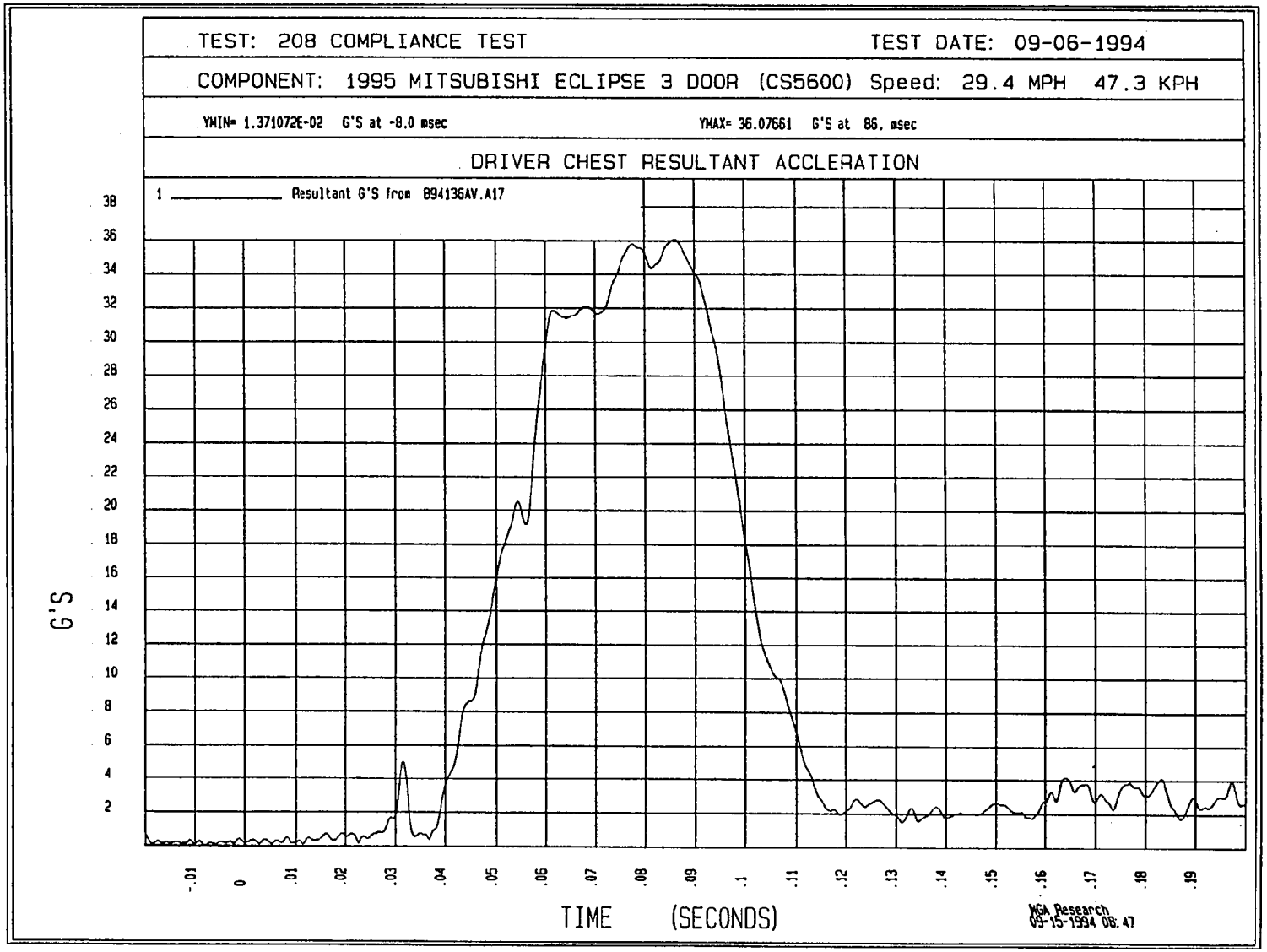


Figure B-8 - Driver Chest Resultant Acceleration vs. Time

(Filter Class: 180)

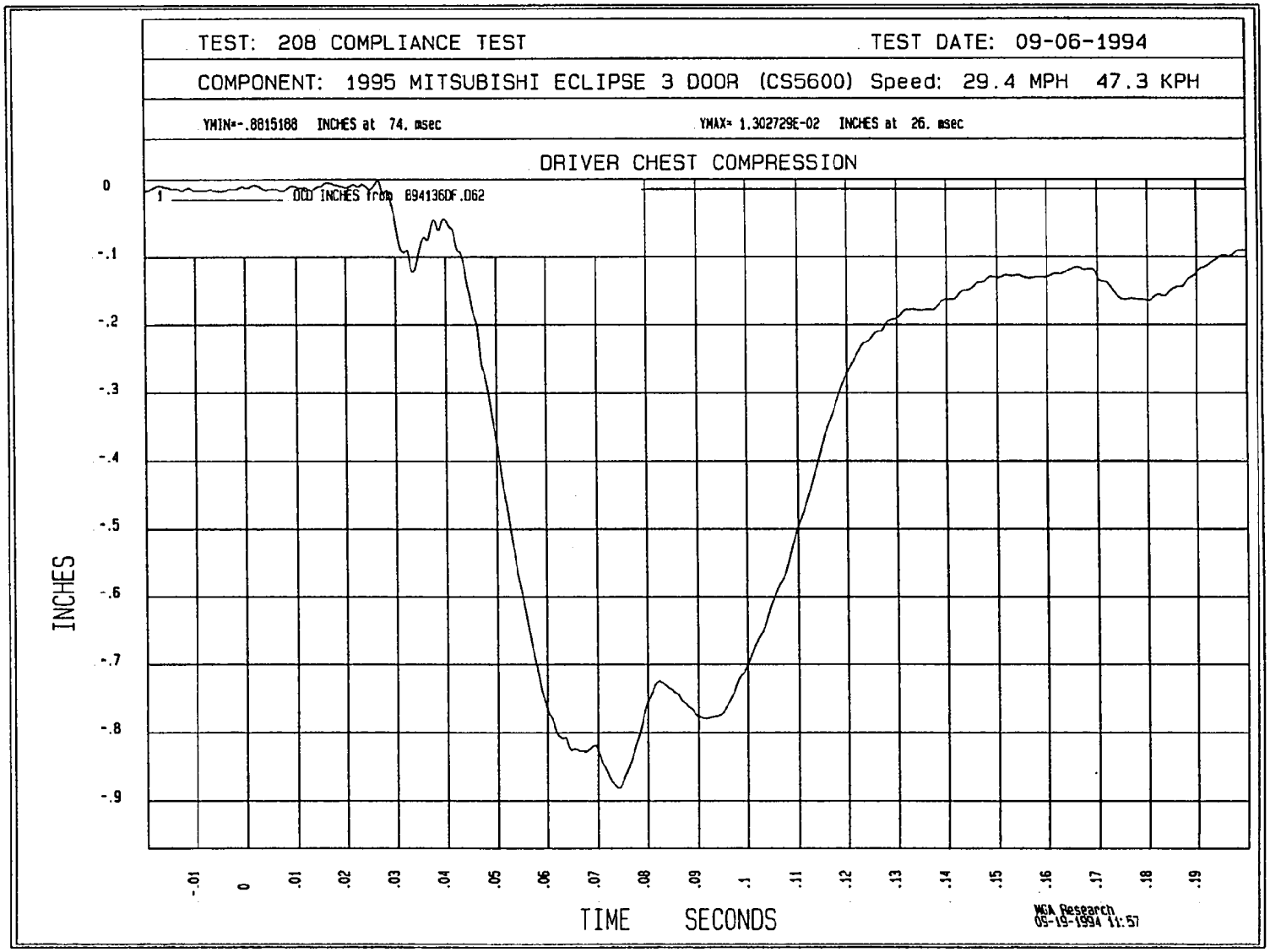


Figure B-9 - Driver Chest Compression vs. Time

(Filter Class: 6ØØ)

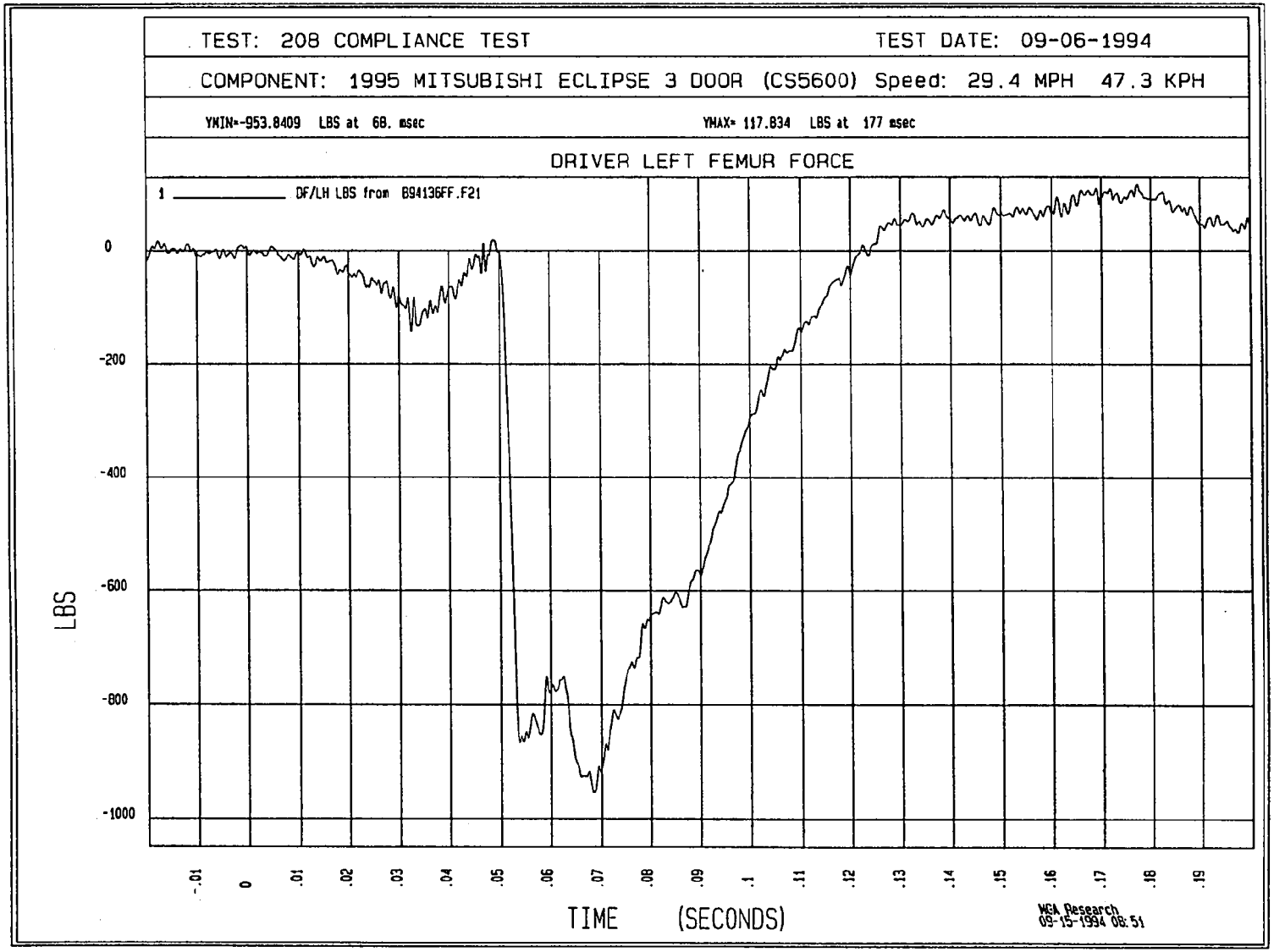


Figure B-1Ø - Driver Left Femur Force vs. Time

(Filter Class: 6ØØ)

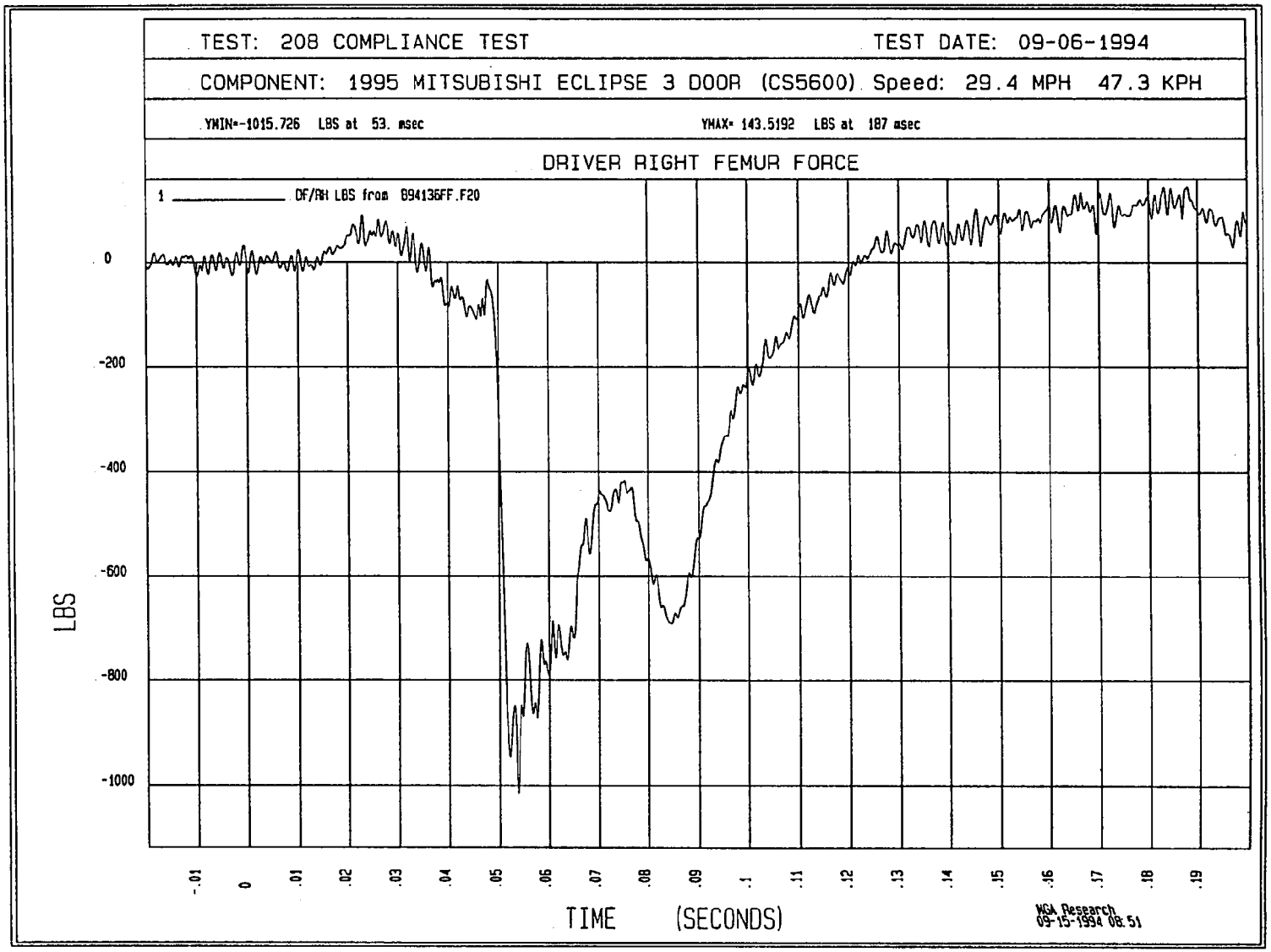


Figure B-11 - Driver Right Femur Force vs. Time

(Filter Class: 1000)

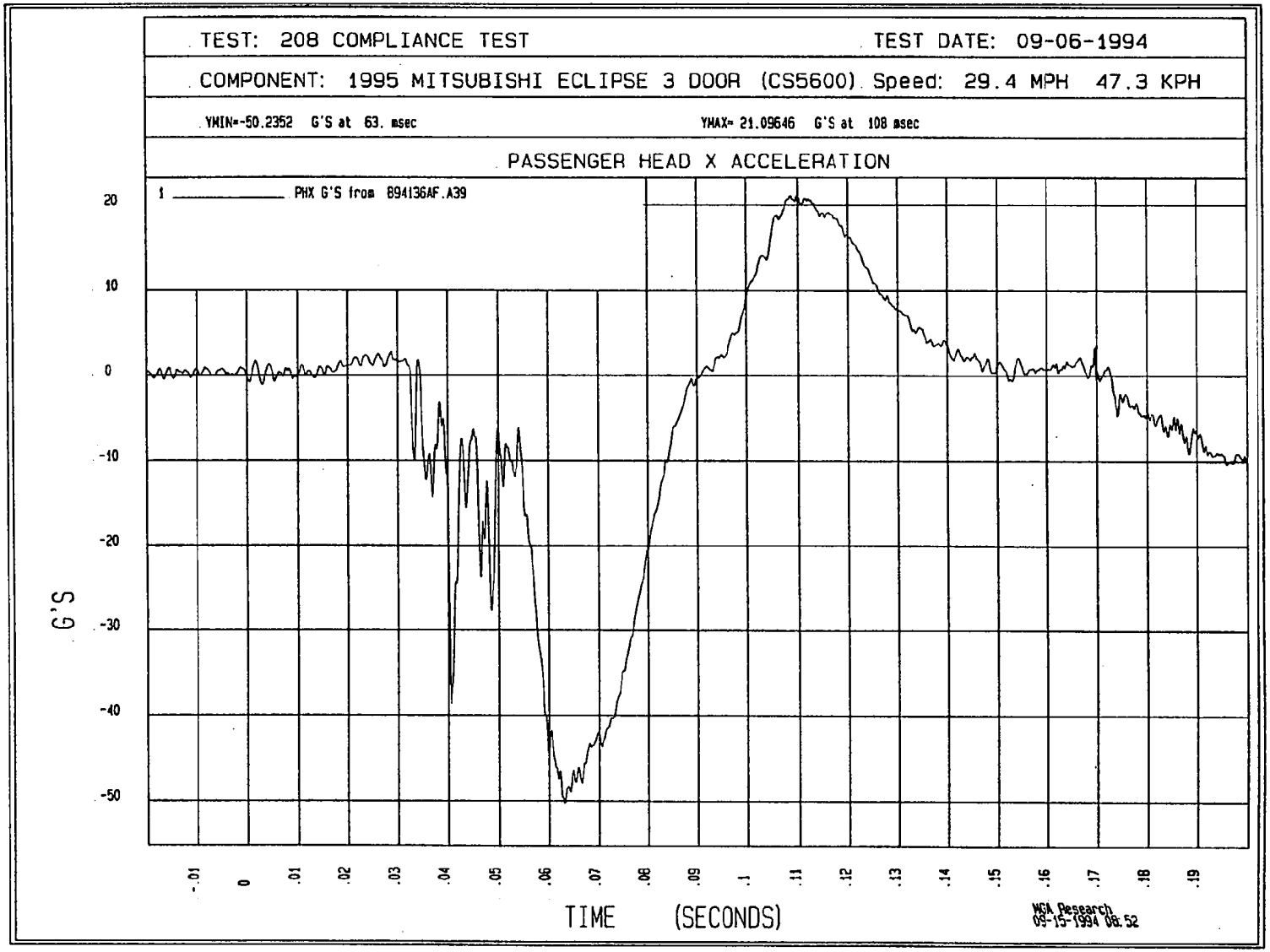


Figure B-12 - Passenger Head X Acceleration vs. Time

(Filter Class: 1000)

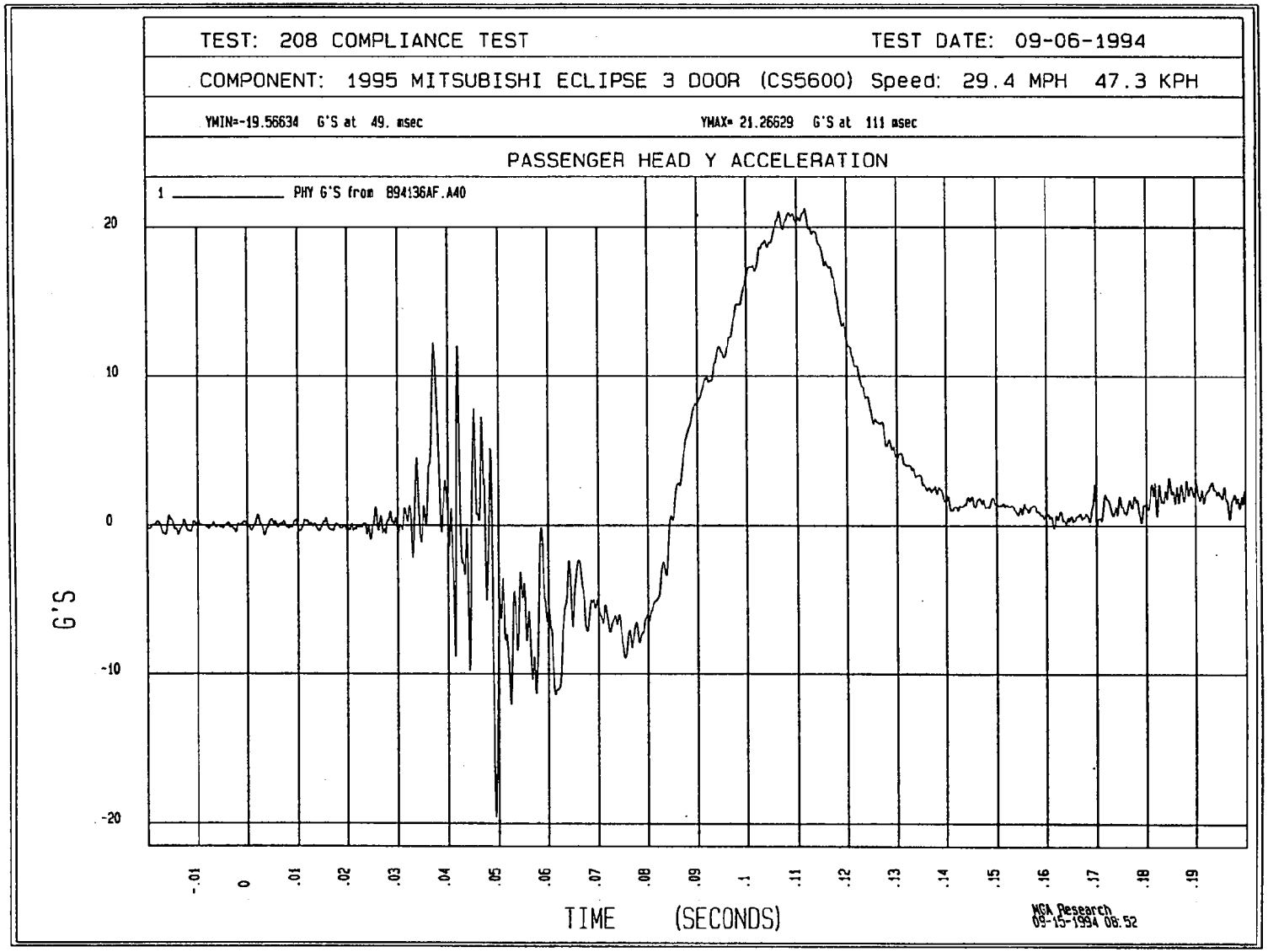


Figure B-13 - Passenger Head Y Acceleration vs. Time

(Filter Class: 1000)

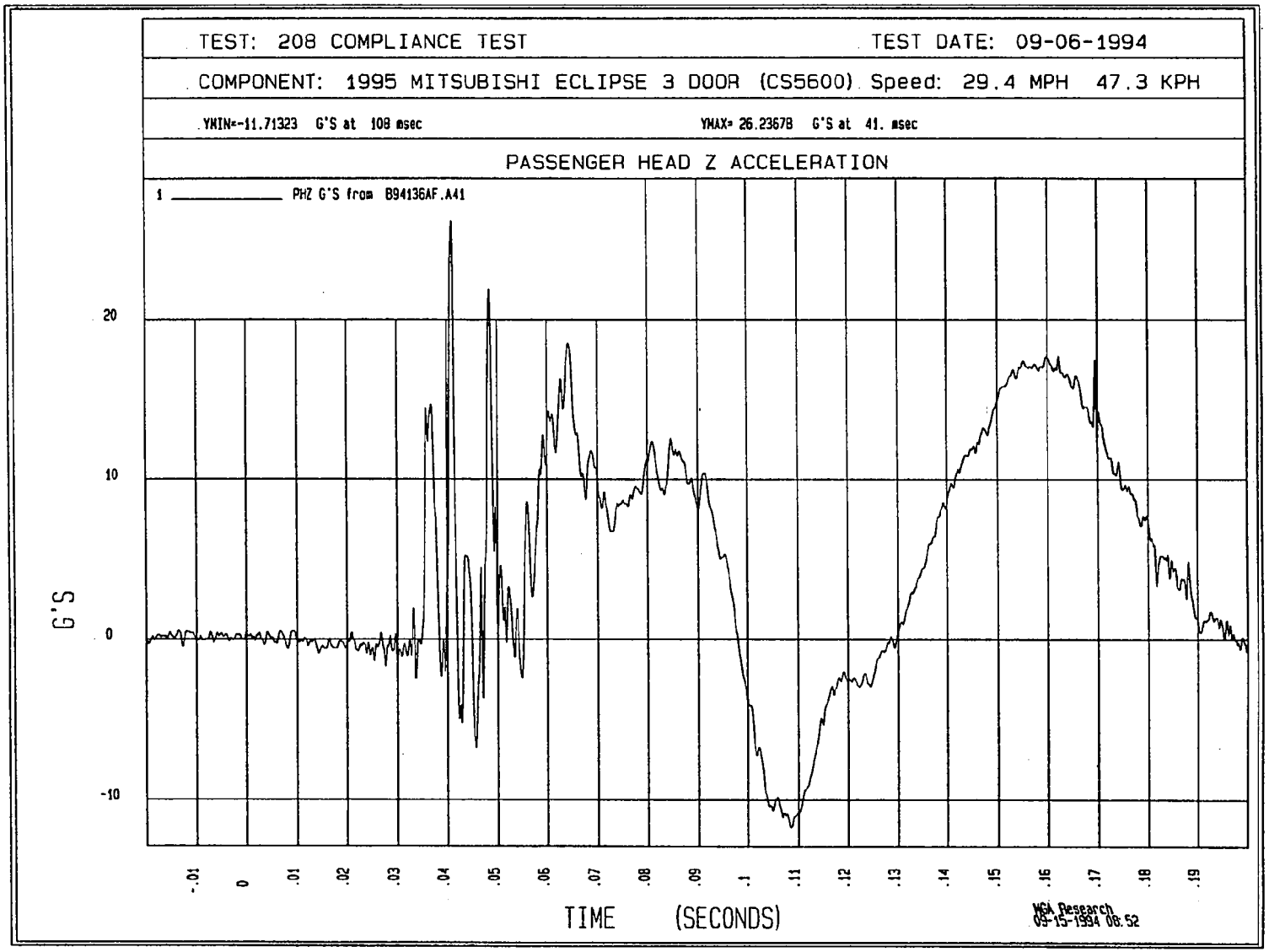


Figure B-14 - Passenger Head Z Acceleration vs. Time

(Filter Class: 1000)

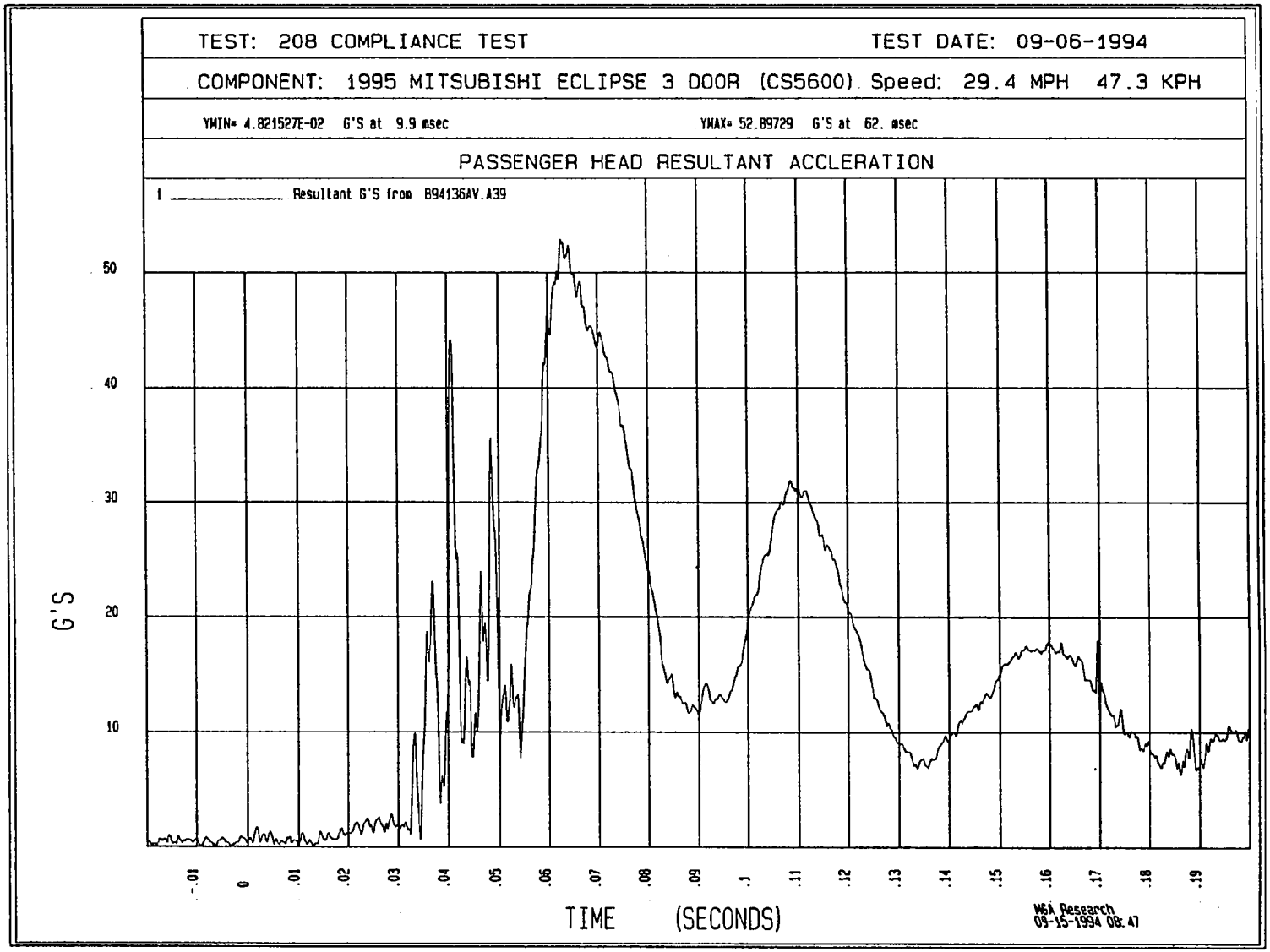


Figure B-15 - Passenger Head Resultant Acceleration vs. Time

(Filter Class: 18Ø)

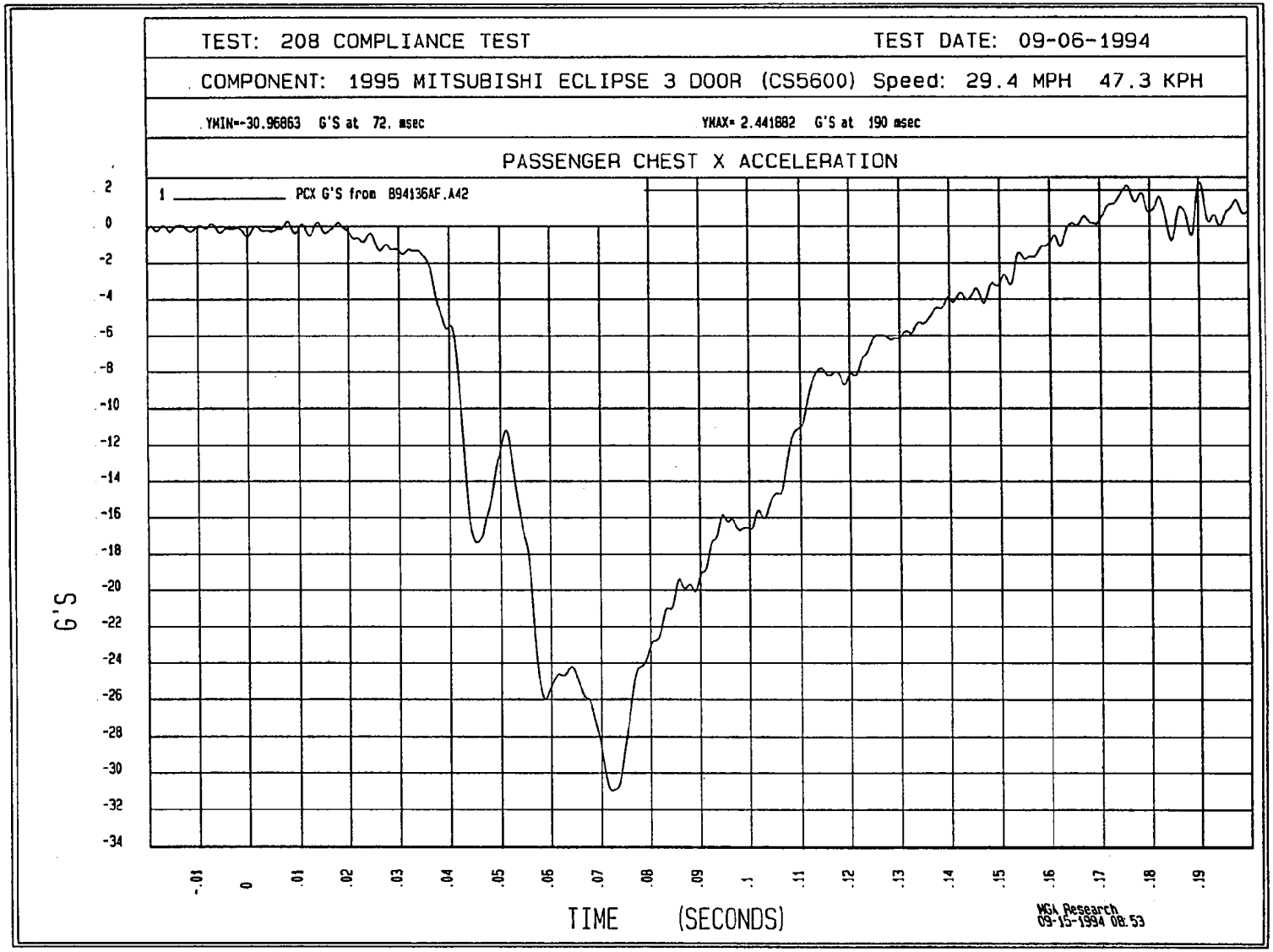


Figure B-16 - Passenger Chest X Acceleration vs. Time

(Filter Class: 180)

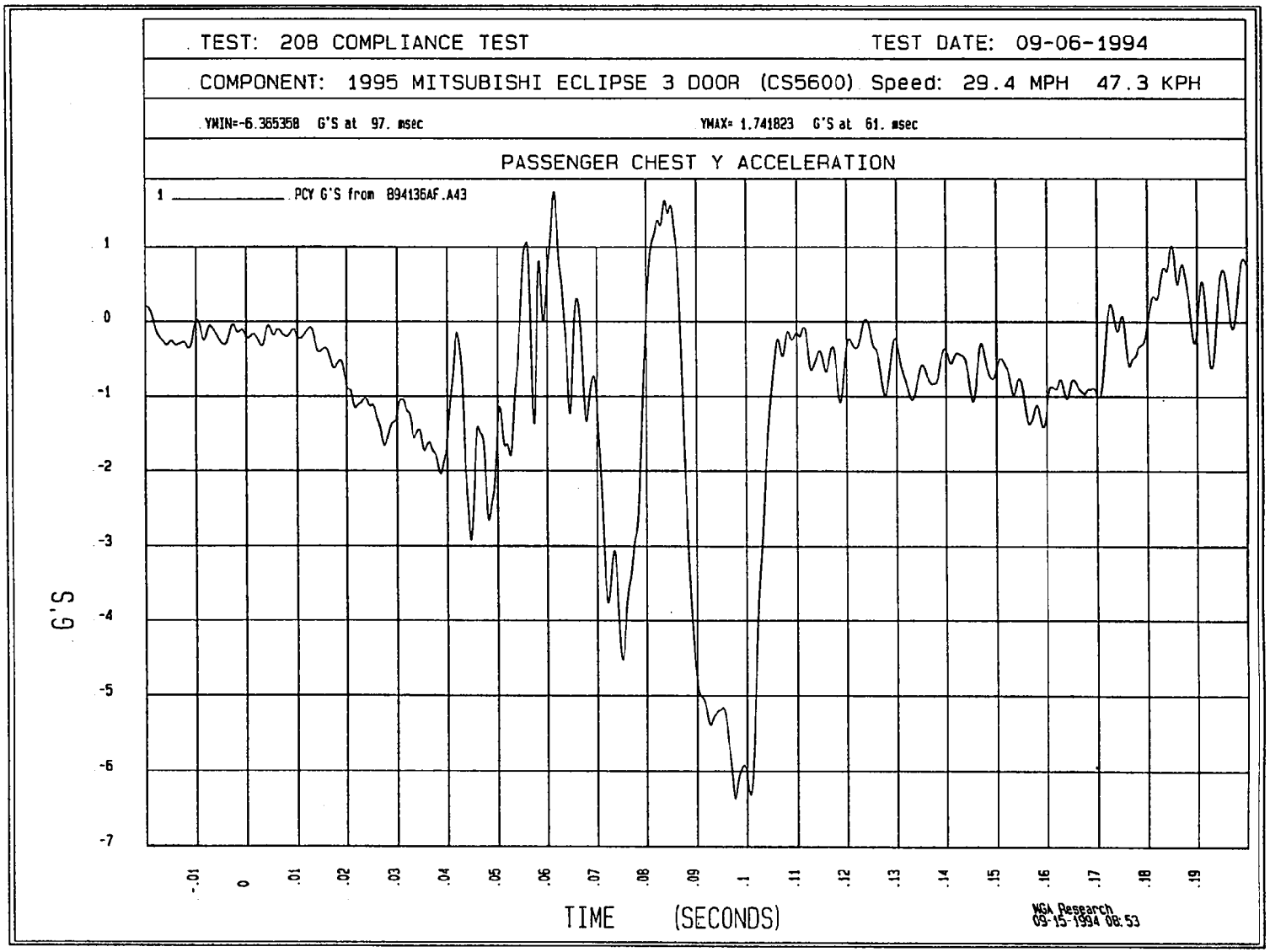


Figure B-17 - Passenger Chest Y Acceleration vs. Time

(Filter Class: 180)

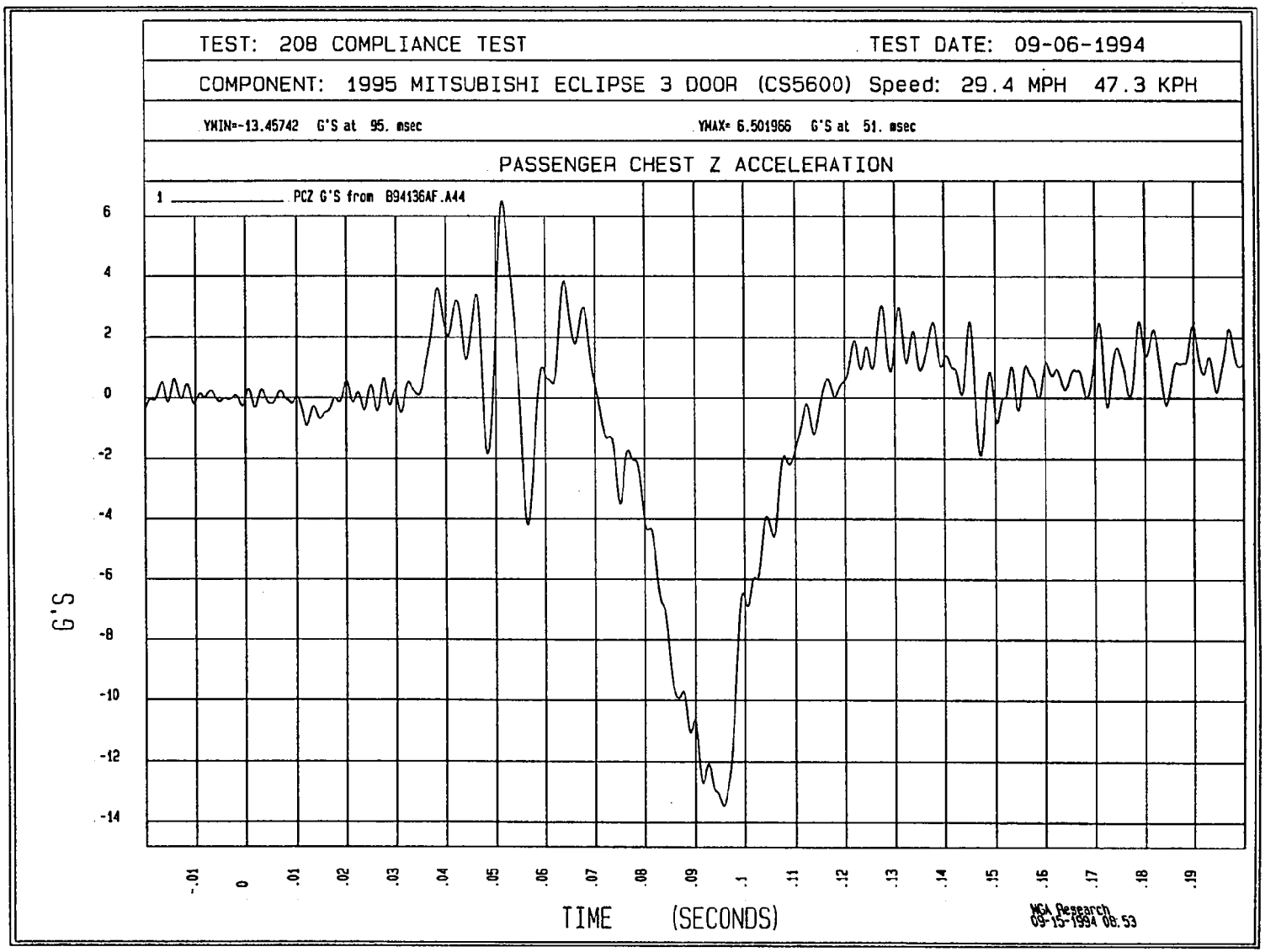


Figure B-18 - Passenger Chest Z Acceleration vs. Time

(Filter Class: 180)

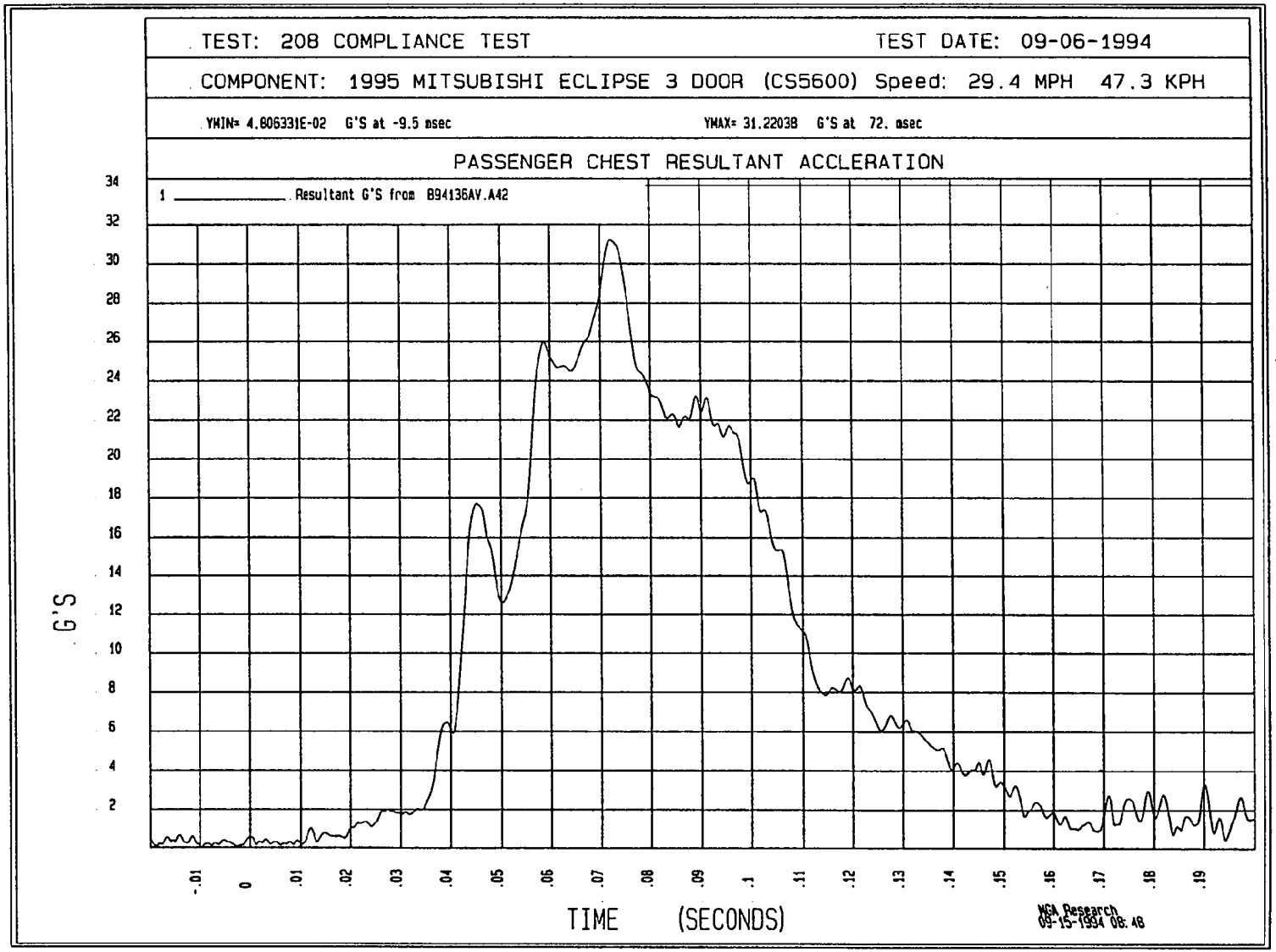


Figure B-19 - Passenger Chest Resultant Acceleration vs. Time

(Filter Class: 18Ø)

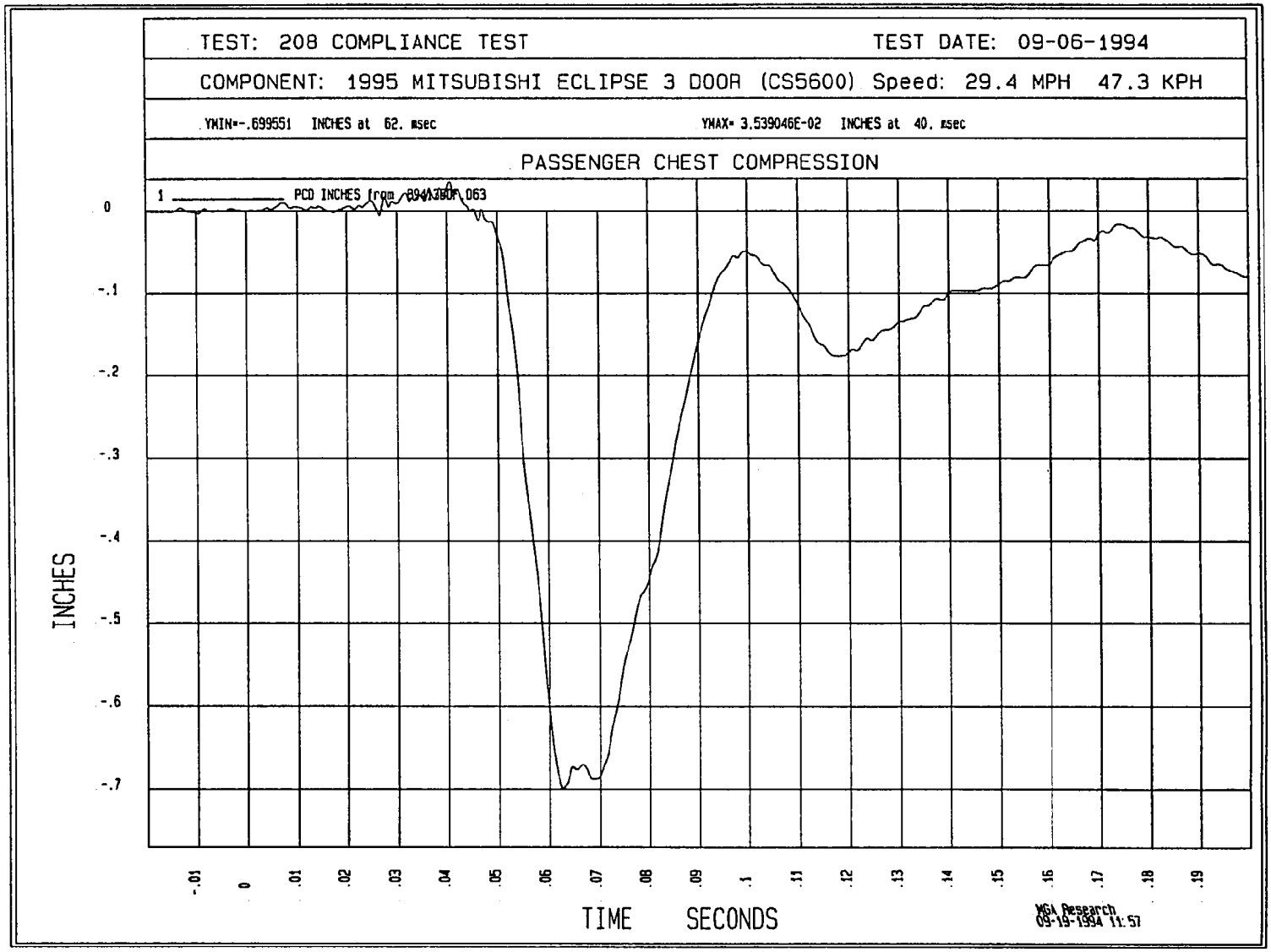


Figure B-2Ø - Passenger Chest Compression vs. Time

(Filter Class: 6ØØ)

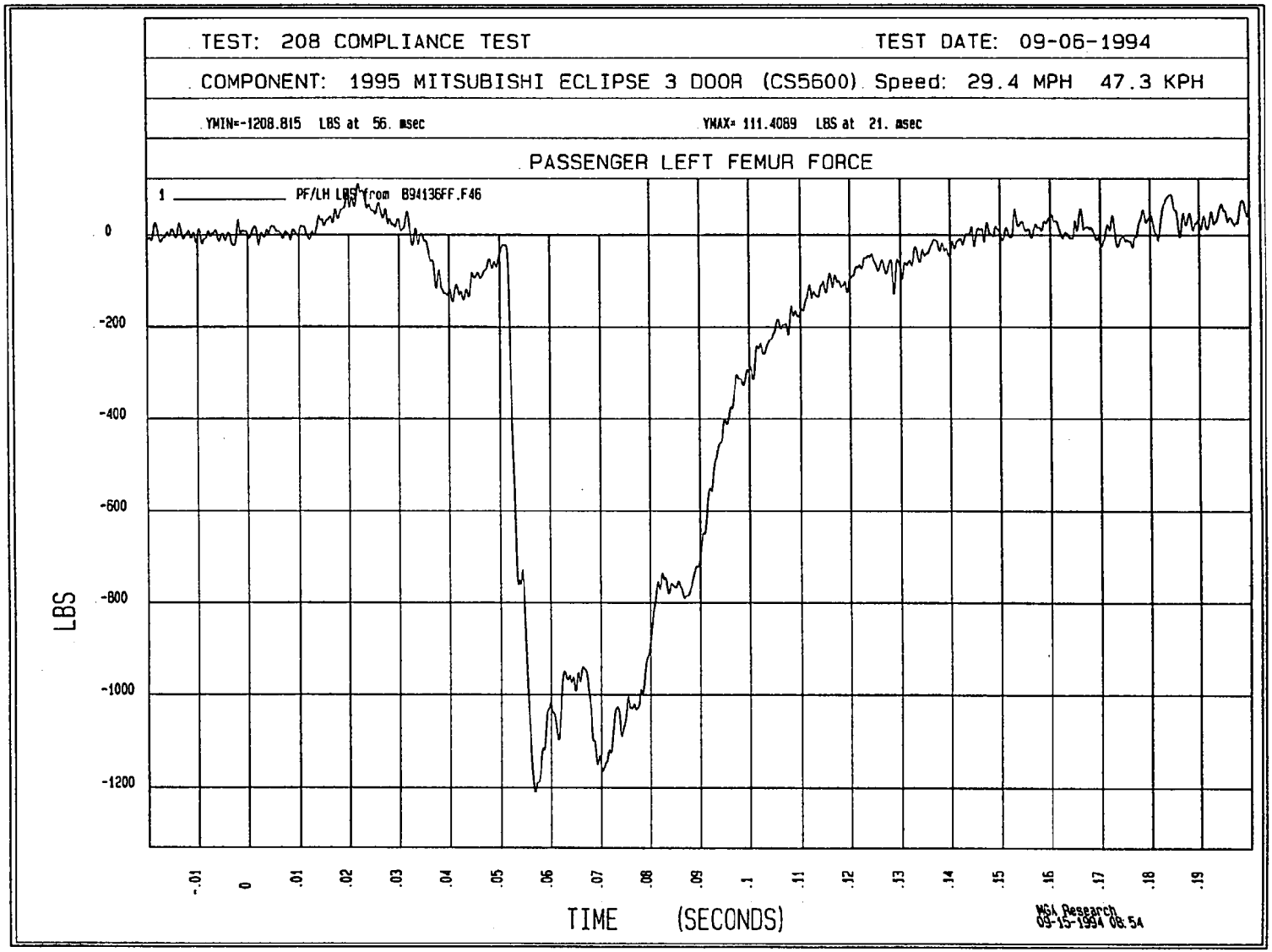


Figure B-21 - Passenger Left Femur Force vs. Time

(Filter Class: 6ØØ)

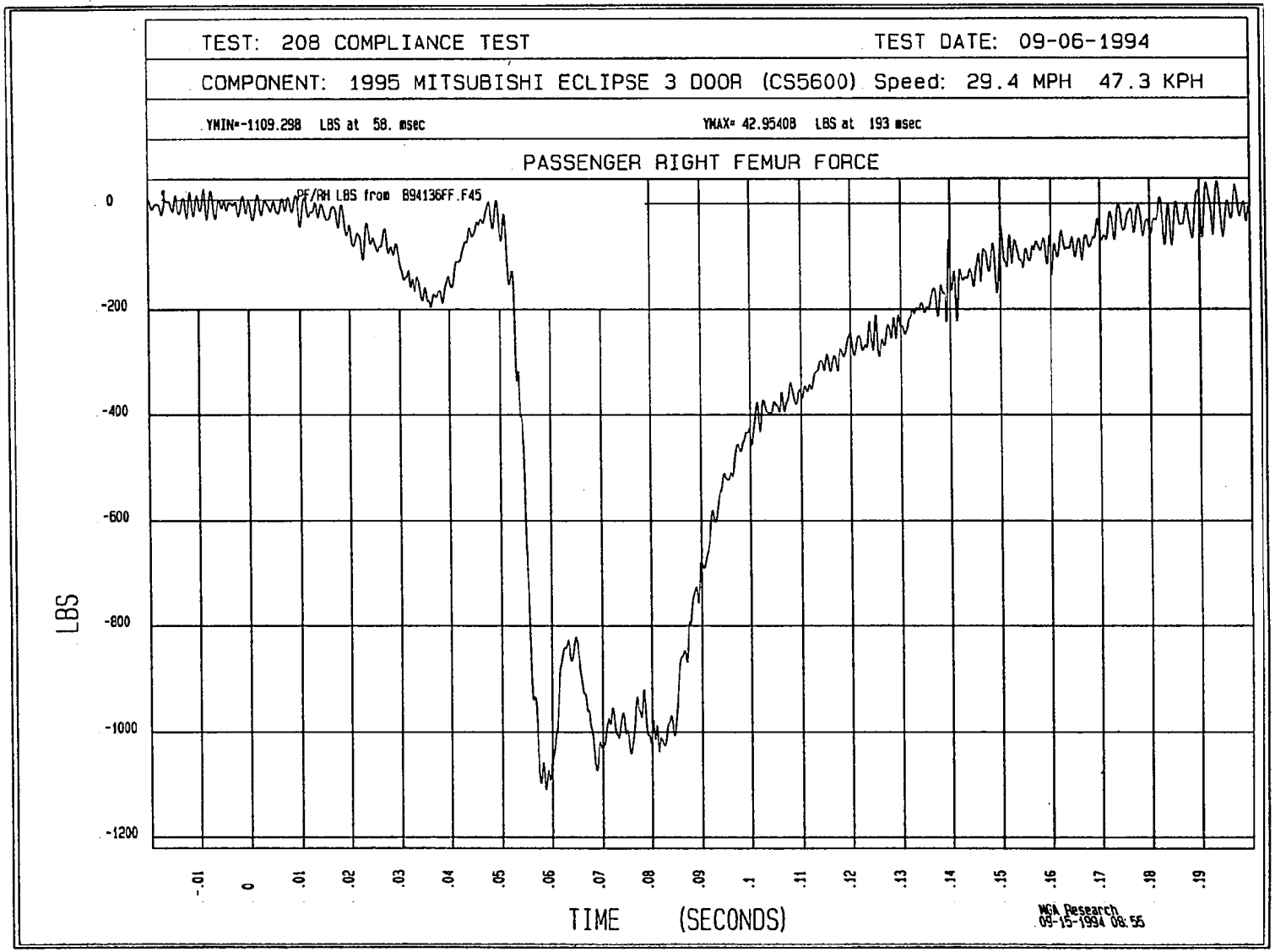


Figure B-22 - Passenger Right Femur Force vs. Time

(Filter Class: 60)

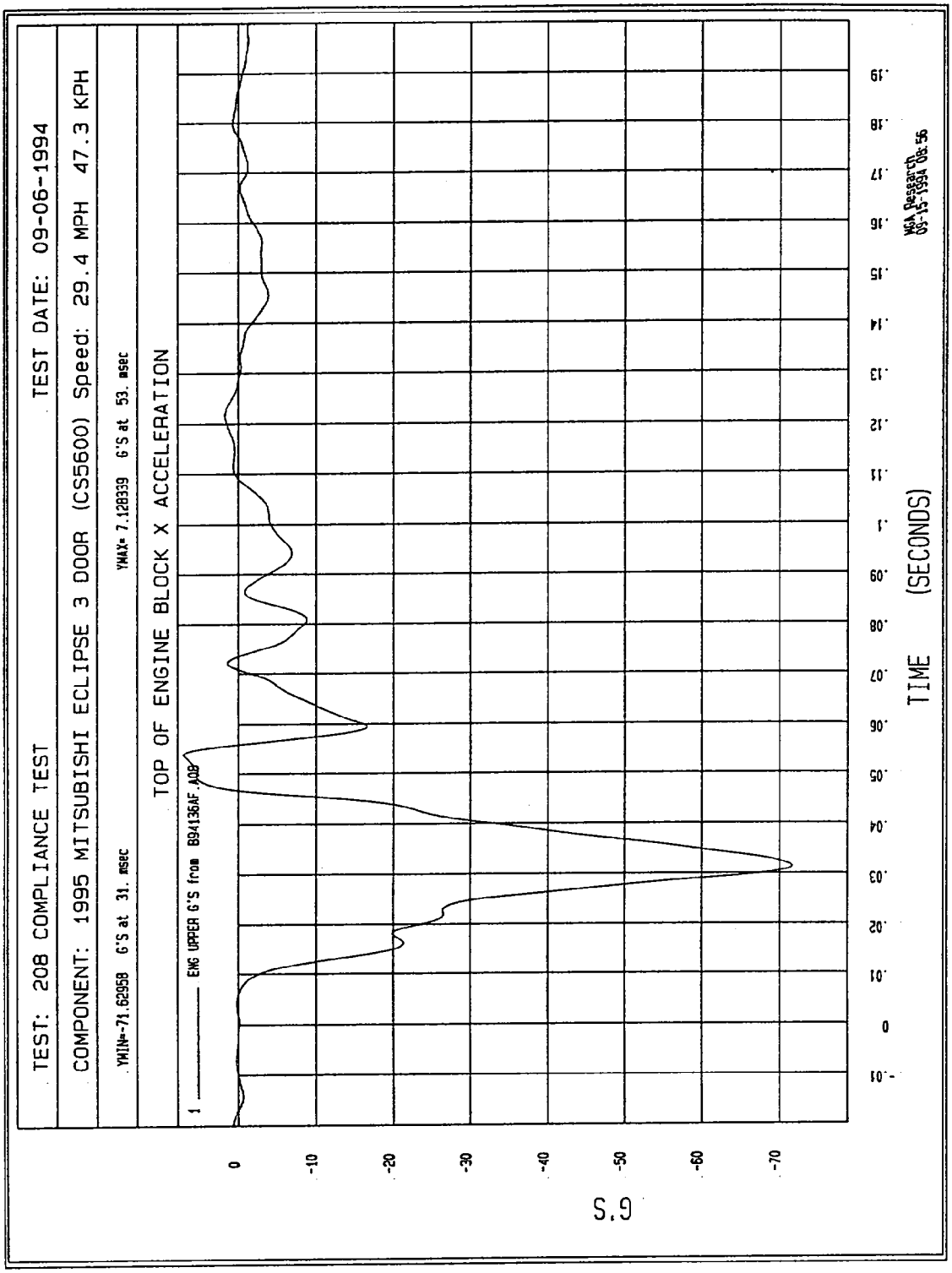


Figure B-23 - Top of Engine Block X Acceleration vs. Time

(Filter Class: 60)

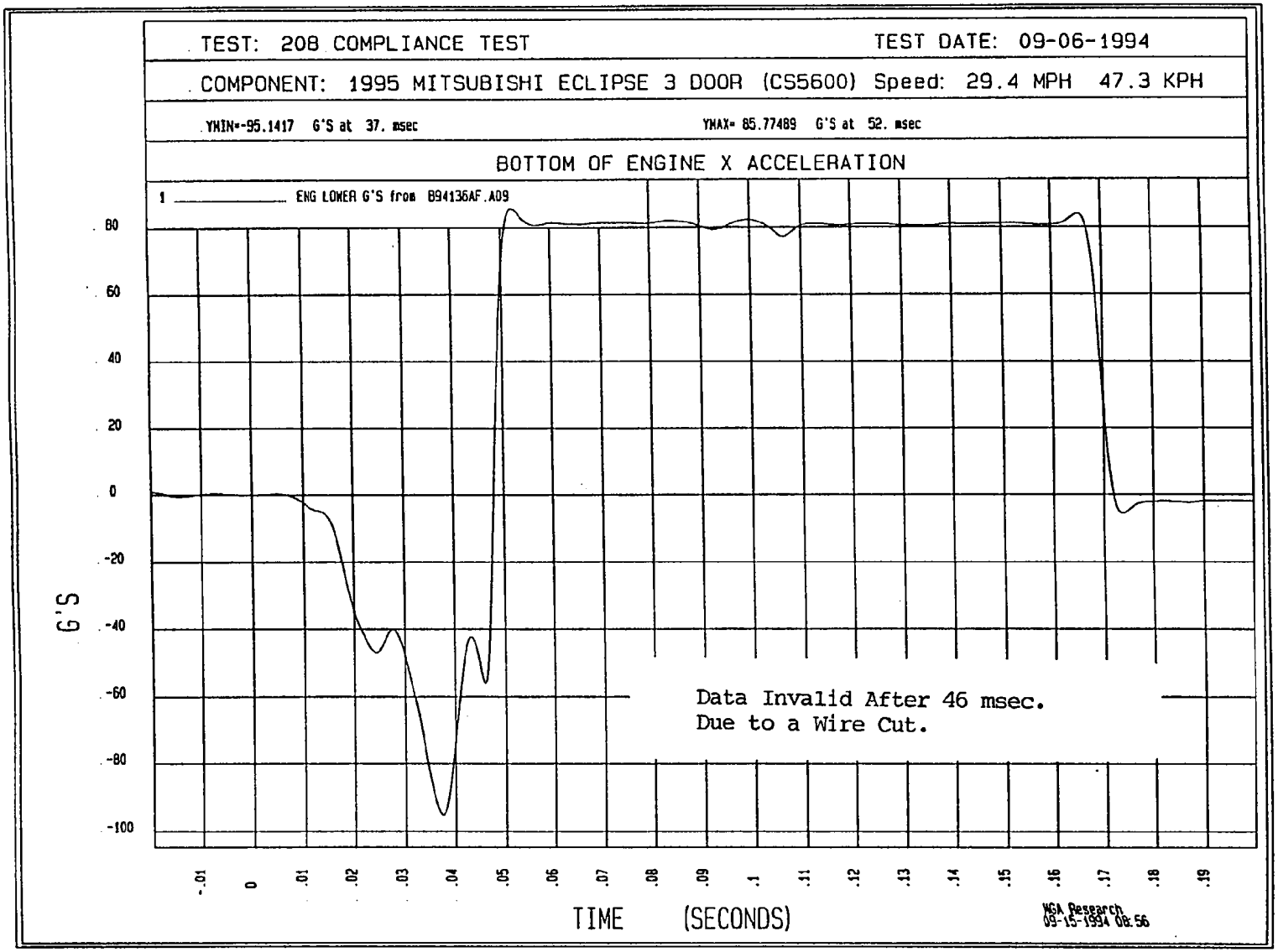


Figure B-24 - Bottom of Engine X Acceleration vs. Time

(Filter Class: 60)

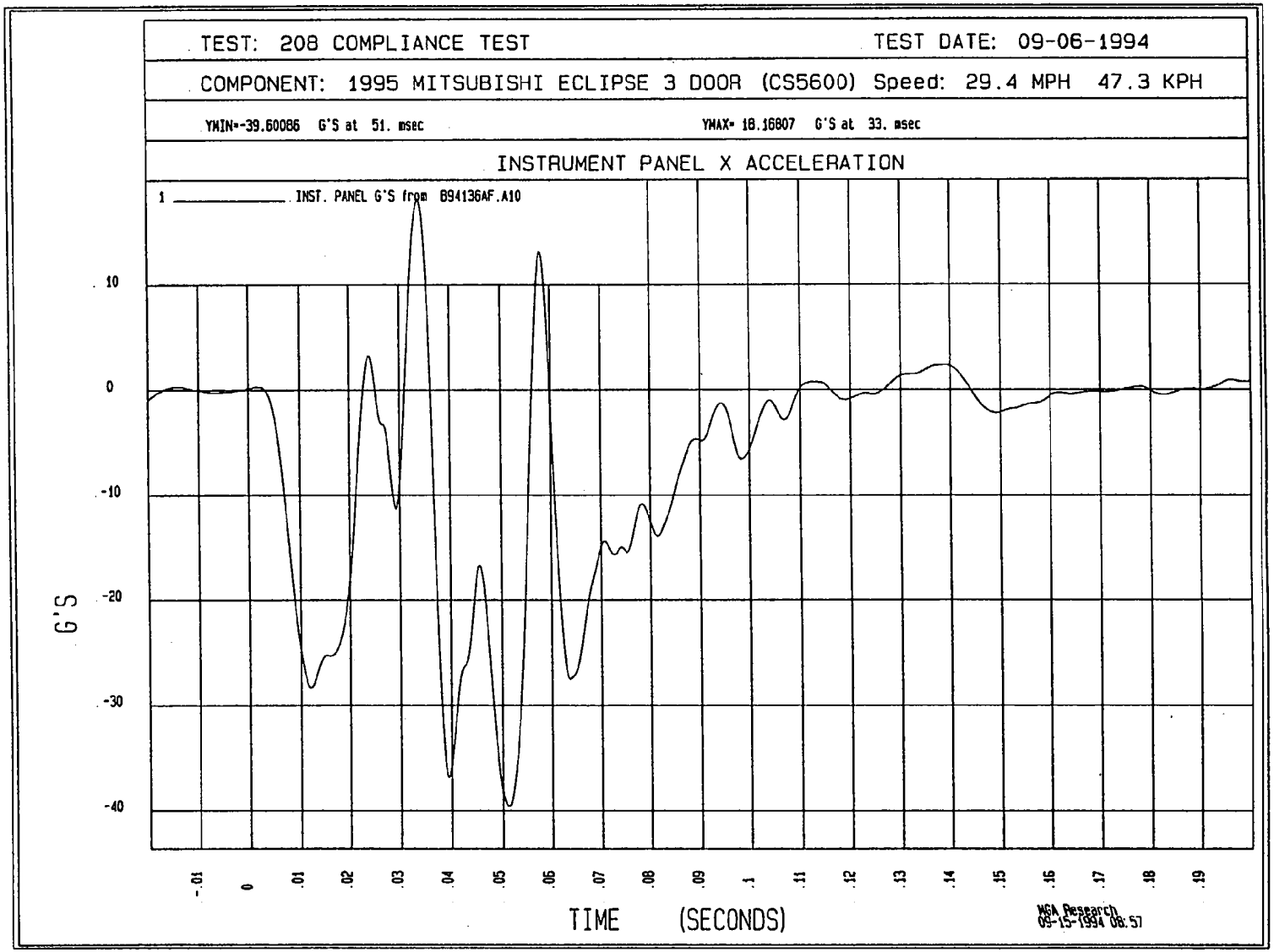


Figure B-25 - Instrument Panel X Acceleration vs. Time

(Filter Class: 60)

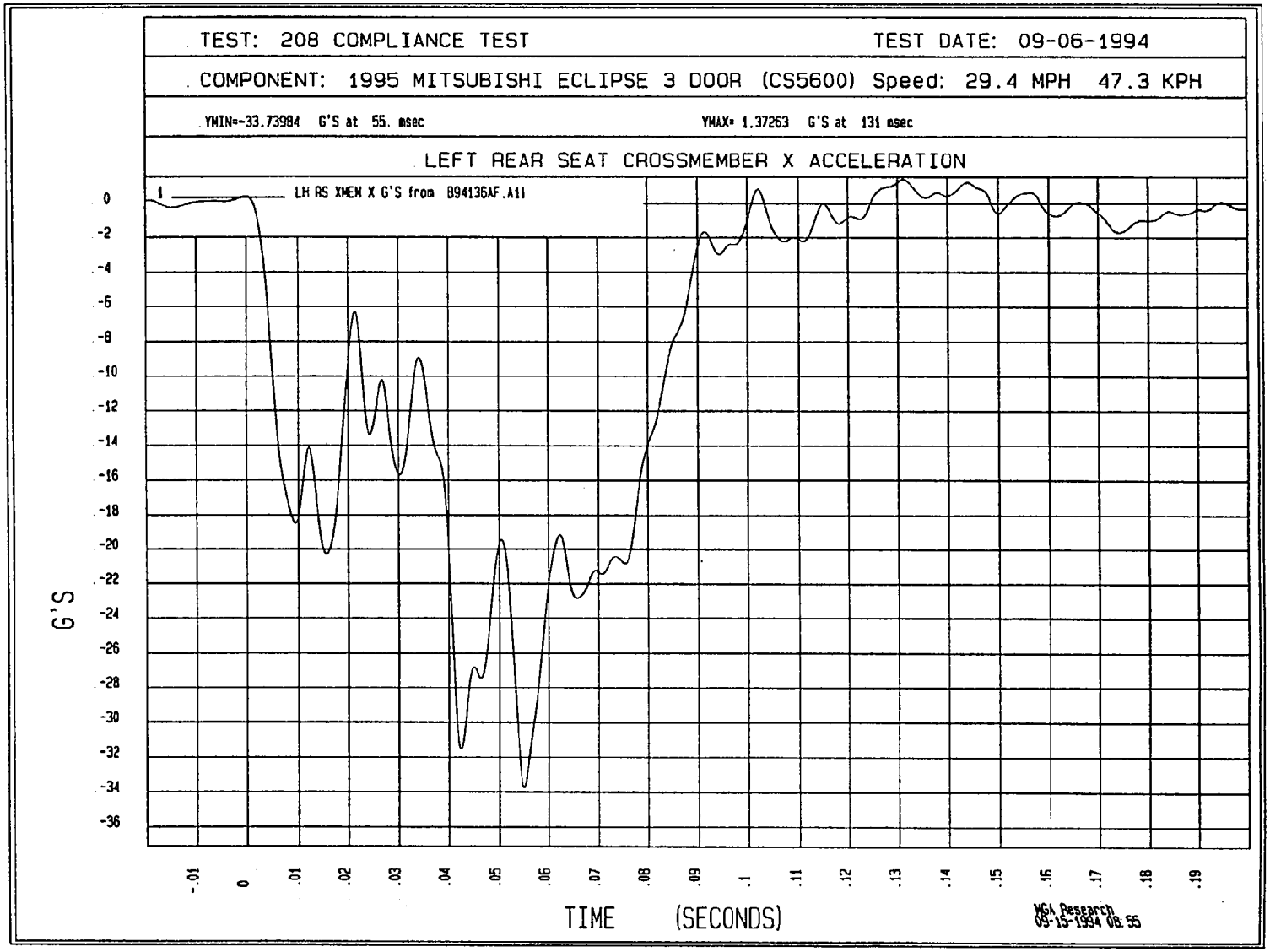


Figure B-26 - Left Rear Seat Crossmember X Acceleration vs. Time

(Filter Class: 6Ø)

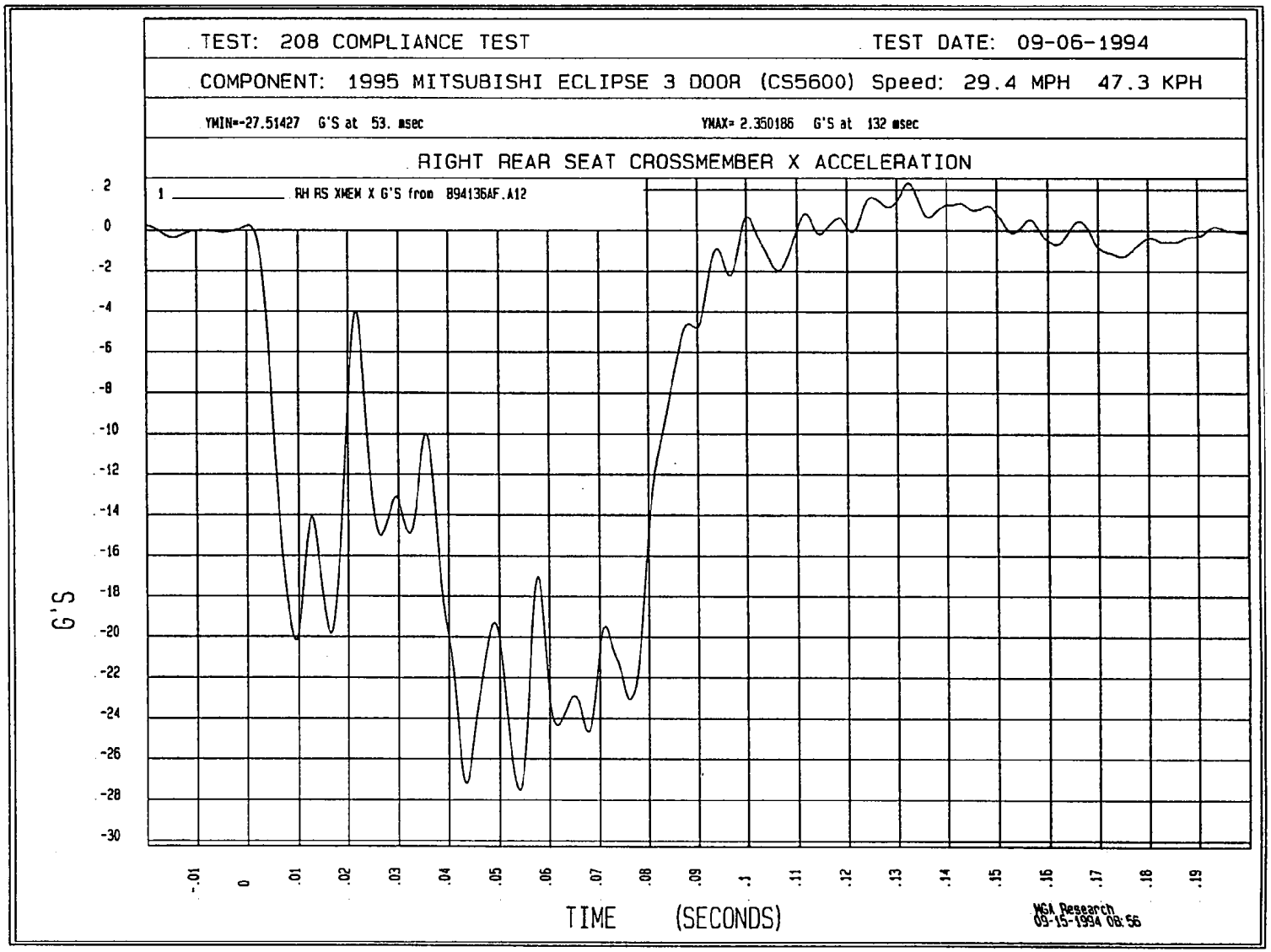


Figure B-27 - Right Rear Seat Crossmember X Acceleration vs. Time

(Filter Class: 60)

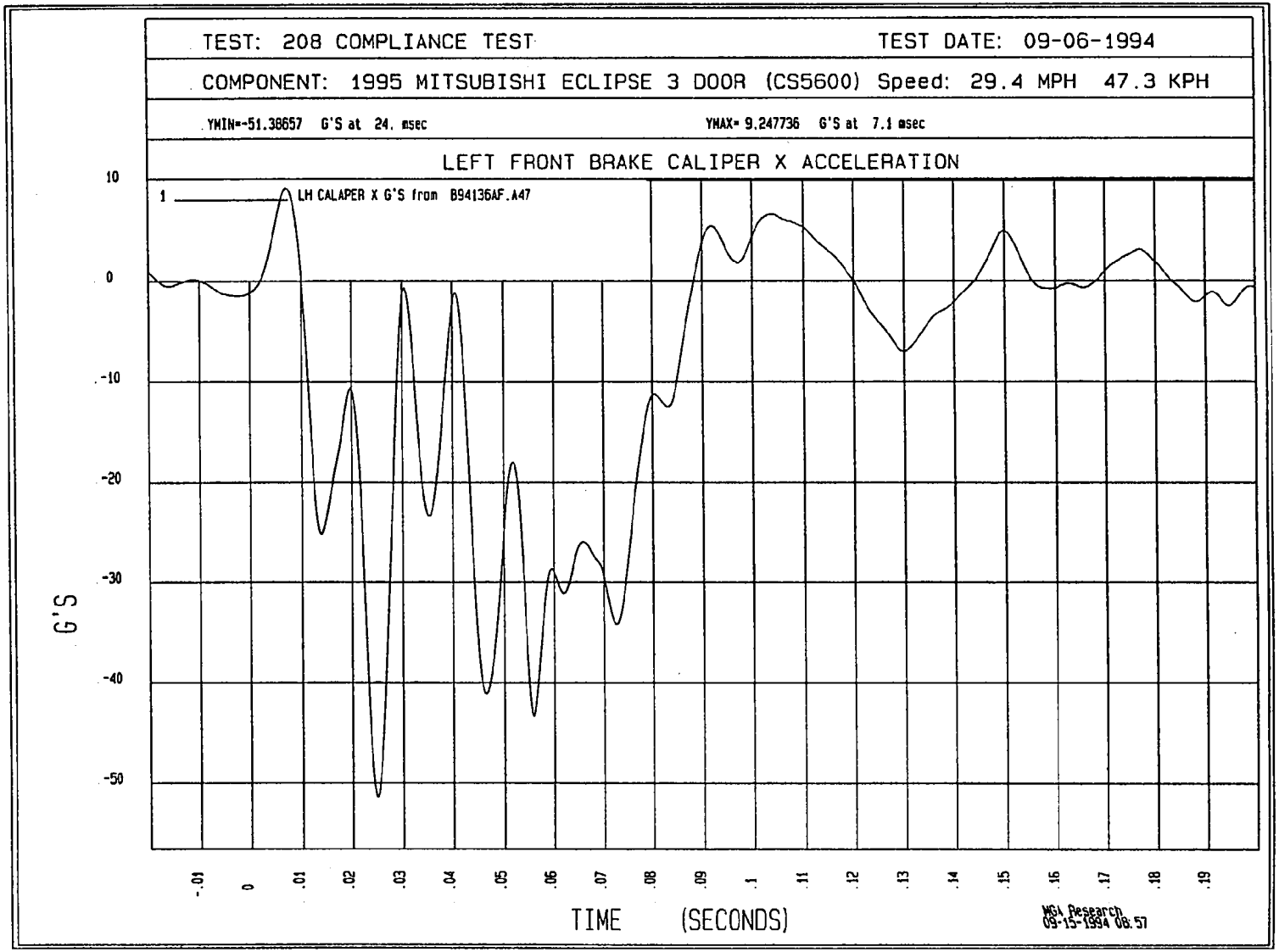


Figure B-28 - Left Brake Caliper X Acceleration vs. Time

(Filter Class: 60)

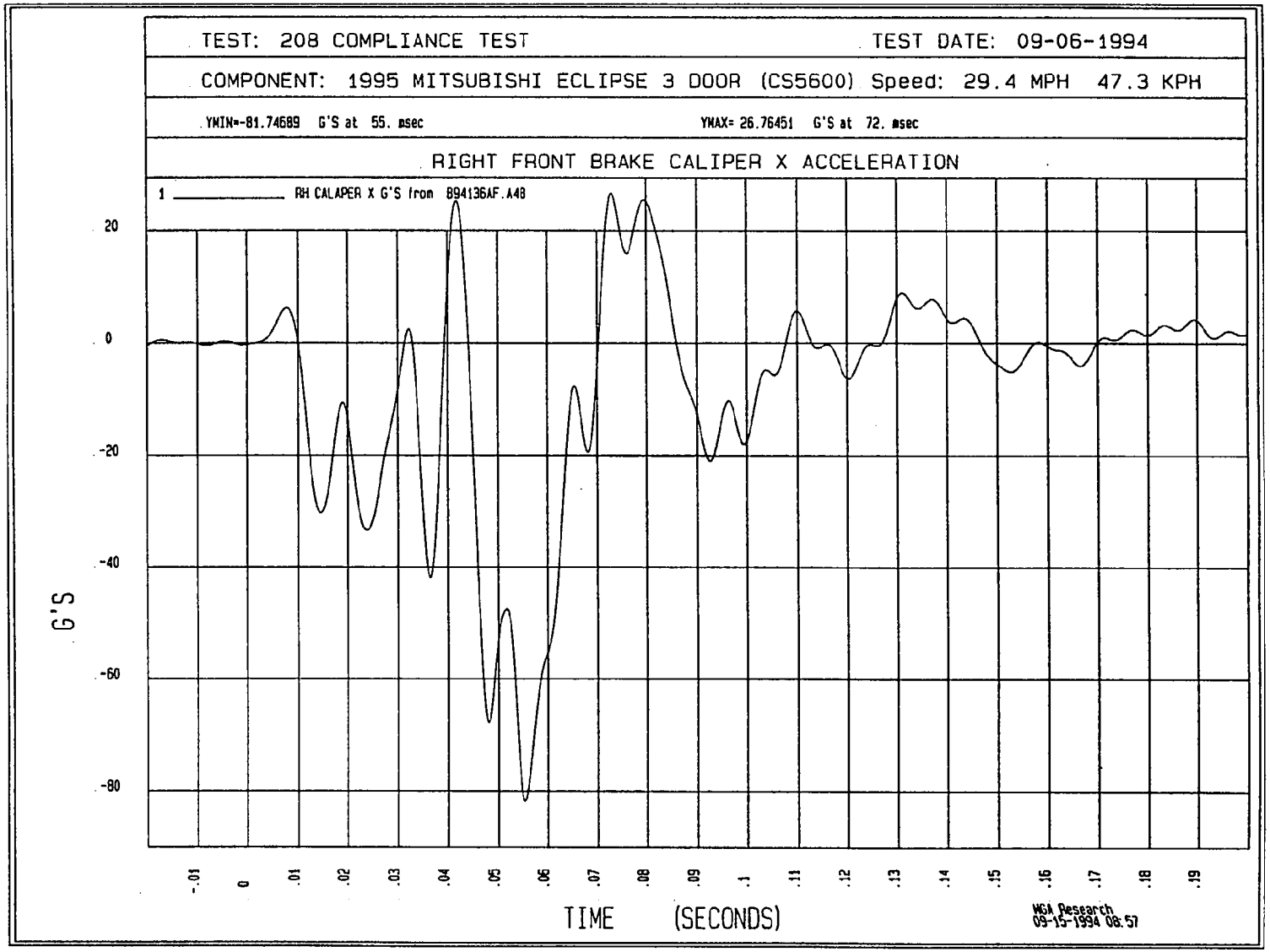


Figure B-29 - Right Brake Caliper X Acceleration vs. Time

(Filter Class: 6Ø)

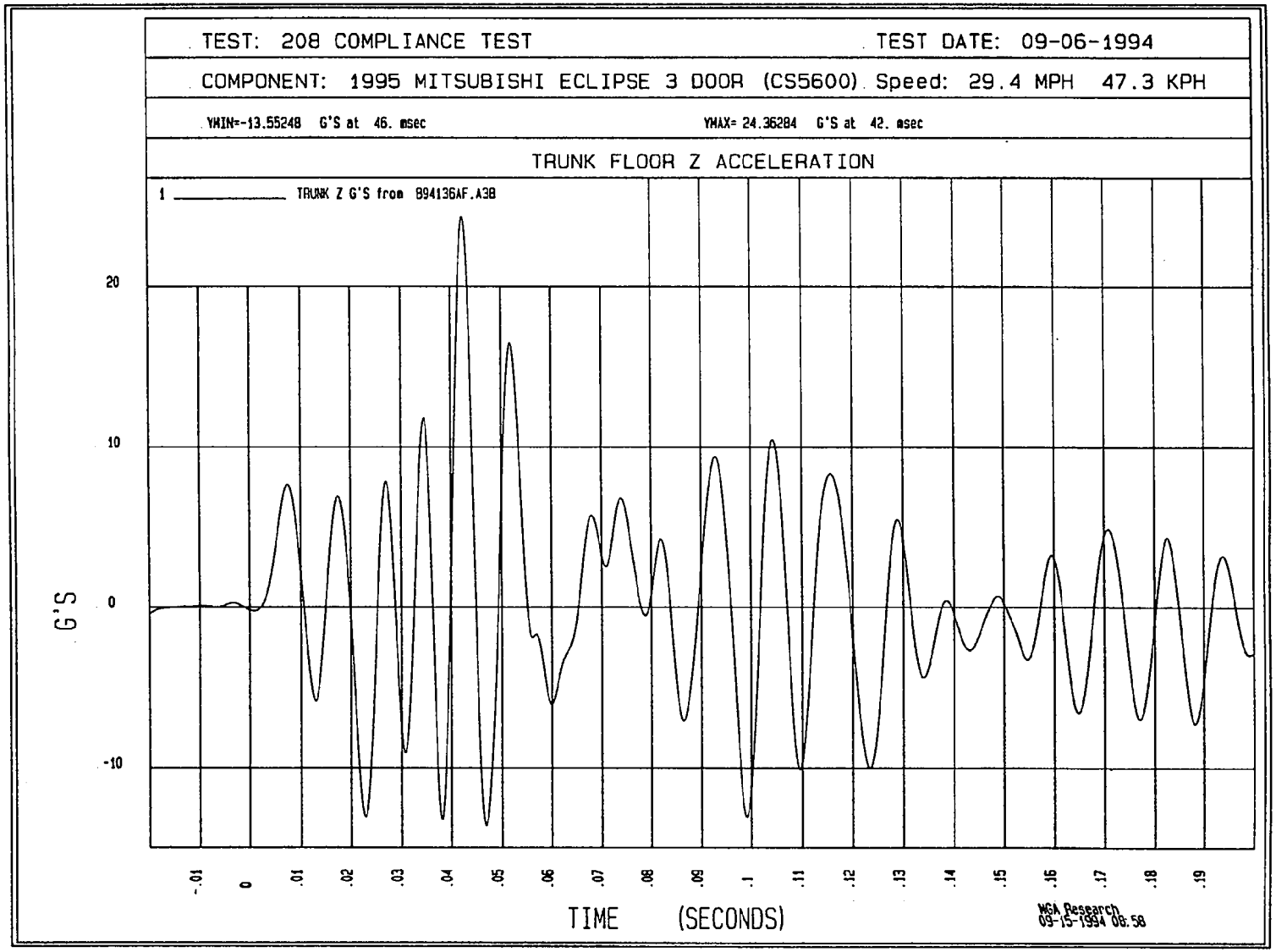


Figure B-3Ø - Trunk Floor Z Acceleration vs. Time

APPENDIX C

MANUFACTURER'S VEHICLE INFORMATION

MMC ANSWERS ABOUT OVSC QUESTIONS FOR '95 MITSUBISHI ECLIPSE FMVSS 208 COMPLIANCE TEST

<table>
<tr><th colspan="2">OVSC Question</th><th>MMC Answer</th></tr>
<tr><td>1</td><td>• Which does MMC air bag automatic restraint system meet the requirements of S4.1.2.1(c)(1) or S4.1.2.1(c)(2) ?</td><td>Our system meets the requirment of S4.1.2.1(c)(2).</td></tr>
<tr><td>2</td><td>• If the automatic restraint system meets the requirement of S4.1.2.1(c)(1)----?</td><td>N.A
(not applicable)</td></tr>
<tr><td>3</td><td>• If a manual 3-point safety belt is provided for the Dr. & Ps. automatic restraint system in order to meet S4.1.2.1(c)(2), provide a copy of MMC certification test reports.</td><td>We provide a copy of our certification test reports shown below.
<table>
<tr><th>Test Configuration</th><th>Seat Belt Condition</th><th>Test</th><th>Report No.</th></tr>
<tr><td rowspan="2">0 deg. Frontal</td><td>Fastened</td><td>× *</td><td>XH941145</td></tr>
<tr><td>Unfastened</td><td>×</td><td rowspan="5">XH941129</td></tr>
<tr><td rowspan="2">30 deg. Left Angular</td><td>Fastened</td><td>×</td></tr>
<tr><td>Unfastened</td><td>×</td></tr>
<tr><td rowspan="2">30 deg. Right Angular</td><td>Fastened</td><td>×</td></tr>
<tr><td>Unfastened</td><td>×</td></tr>
<tr><td colspan="2">Attachment No.</td><td colspan="2">1-1 (XH941145)
1-2 (XH941129)</td></tr>
</table>
× : Test was conducted
* : Conducted as 35mph test</td></tr>
<tr><td>4</td><td>• If the manual safety belt provided at the Dr. & Ps. seating positions was not installed to meet S4.1.2.1(c)(2), ----.</td><td>N.A</td></tr>
</table>

MMC ANSWERS ABOUT OVSC QUESTIONS FOR '95 MITSUBISHI ECLIPSE FMVSS 208 COMPLIANCE TEST (Cont'd)

	OVSC Question	MMC Answer
5	• If a pressure vessel is used to inflate the air bag, provide a copy of test reports or engineering analysis.	N.A. (not used)
6	• If an explosive device is used to inflate the air bag, provide a copy of test reports or engineering analysis to demonstrate that it meets S9.2.	• The explosive device (inflator) of our air bag system meets all the requirements of S9.2. • It is certified by the letters of Morton International Inc. and TRW Inc.. See Attachment No.2-1 (Driver's Side) See Attachment No.2-2 (Passenger's Side)
7	• For any automatic safety belt system, whether or not it is equipped with a tension-relieving device?	N.A.
8	• Whether the movable windows and vents were opened or closed for the certification tests?	• The movable windows and vent were positioned to full open condition on our test.
9	• Which test dummy was used in each seat for each of MMC certification tests ? • Submit dummy placement measurements including diagrams or photographs. • Whether the vehicle has a foot rest for the driver? • If the vehicle can be equipped with a split front bench seat, ---.	• Part 572 (E) (Hybrid-III) dummy was used in each front seat for the certification tests. • See Attachment No.3-1 (Driver's Side) See Attachment No.3-2 (Passenger's Side) • Yes • N.A. (not equipped)

MMC ANSWERS ABOUT OVSC QUESTIONS FOR '95 MITSUBISHI ECLIPSE FMVSS 208 COMPLIANCE TEST (Cont'd)

OVSC Question		MMC Answer
10	• Provide the seat positioning, steering column positioning, and fuel tank data.	See Attachment No. 4-1, 2
11	• If the vehicle is equipped with adjustable seat belt anchorages, provide MMC nominal design position for AM50%ile.	See Attachment No. 4-2
12	• Provide the impact speed, vehicle test weight and resulting injury criteria recorded for all certification tests conducted to meet S4.1.2.1.	See Attachment No. 5 (Test Data Summary for FMVSS No. 208) See Attachment No. 5-1 (30mph 0deg. Frontal, without Seat Belt Cond.) See Attachment No. 5-2 (35mph 0deg. Frontal, with Seat Belt Cond.)
13	• When vehicle components must be removed to obtain the proper test weight, what components and what priority order does MMC recommend for removal?	• Spare tire • Rear combination lamp • Cargo floor carpet • Rear seat cushion
14	• Provide FMVSS No. 204 data.	See Attachment No. 6 (Test Report XH941175) See Attachment No. 7 (Strg Energy Absorption Mechanism)
15	• If the vehicle have built-in child restraints either as standard equipment or optional equipment, ----.	• N.A. (not equipped)

FORM NO. 1

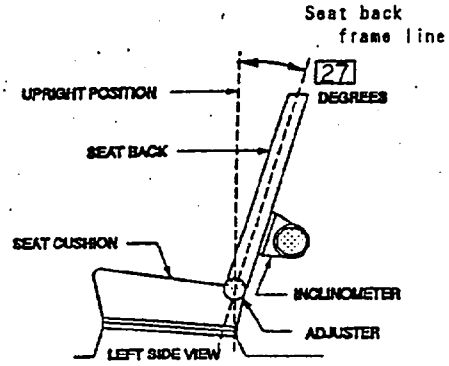
TEST VEHICLE INFORMATION

Vehicle Model Year & Make: 1995 DIAMOND STAR MOTORS CORPORATION
Vehicle Model & Body Style: MISTUBISHI ECLIPCE 2-DOOR HATCH BACK

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.

Seat back angle for driver's seat = 27 degrees.
Measurement Instructions:
Adjust the seat back to be 27° with inclinometer on the side frame pipe.
Or, locate the seat back to the 6th step from the first locking position as 1 step.

Seat back angle for passenger's seat = 27 degrees.
Measurement Instructions:
Same as driver's.



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, provide information to locate the detent in which the seat track is to be locked.

Positioning of the driver's seat:
The center position is 13th locking position from rearmost locking position as 1st. The pitch to be locked is 0.39 inches(10mm).

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

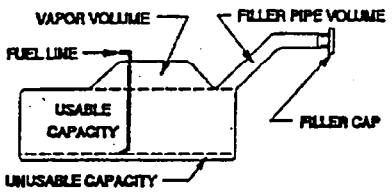
3. FUEL TANK CAPACITY DATA - -

3.1 A. "Usable Capacity" of standard equipment fuel tank = 16.9 gallons.

B. "Usable Capacity" of optional equipment fuel tank = —— gallons.

C. Capacity used when certification testing to requirements of FMVSS 301 = 15.9 gallons.

Operational Instructions:



VEHICLE FUEL TANK ASSEMBLY

3.2 Amount of Stoddard solvent added to vehicle for certification test = 15.9 gallons

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

FORM NO. 1. . . . Continued

Attachment No. 4-2

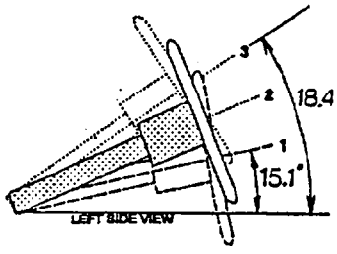
TEST VEHICLE INFORMATION

4. STEERING COLUMN ADJUSTMENTS - -

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions.
If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions:

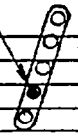
The steering column can be locked at any position from 15.1° to 18.4°.



STEERING COLUMN ASSEMBLY

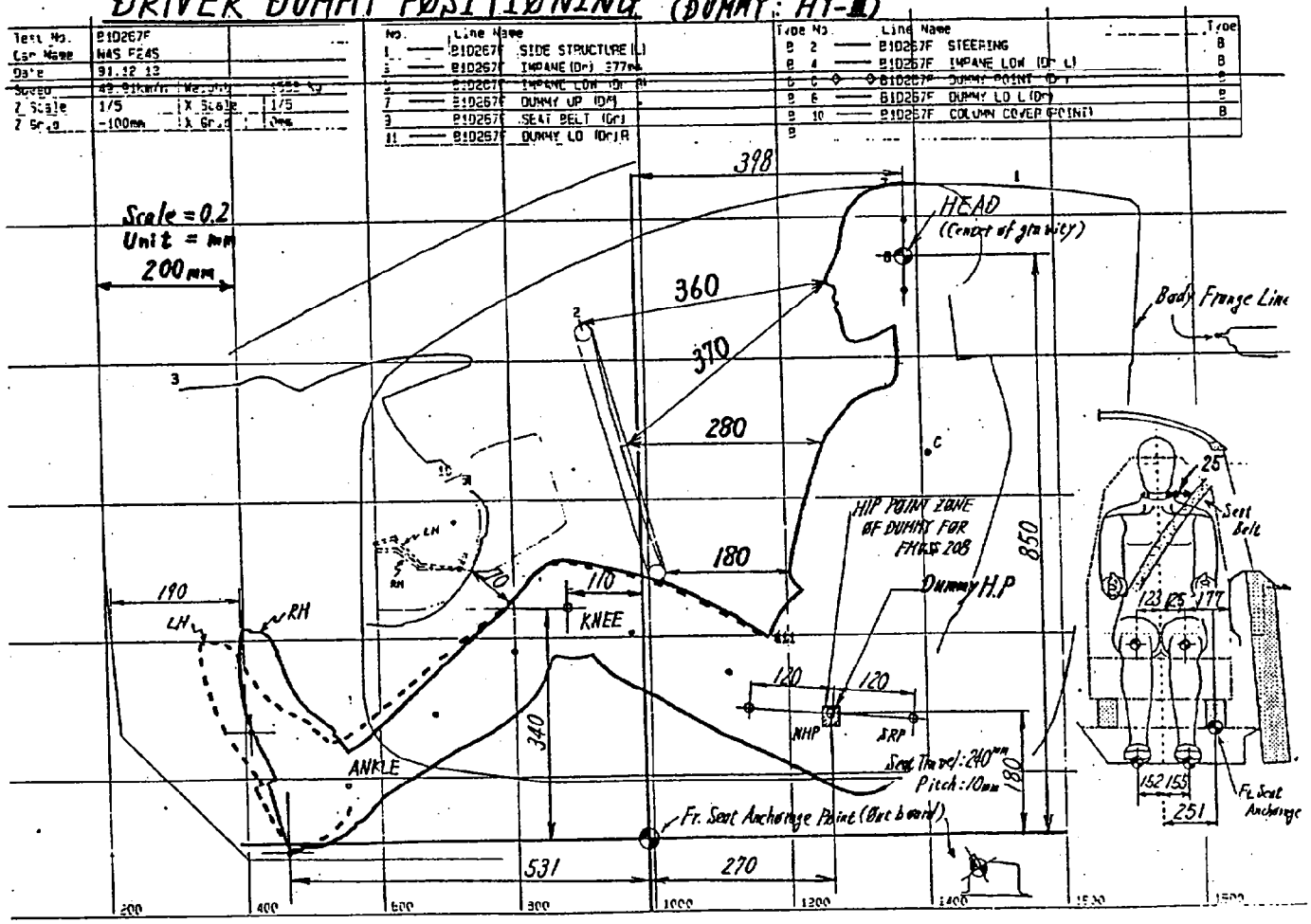
5. ADJUSTABLE UPPER ANCHORAGE POSITION
(☐ Not Applicable)

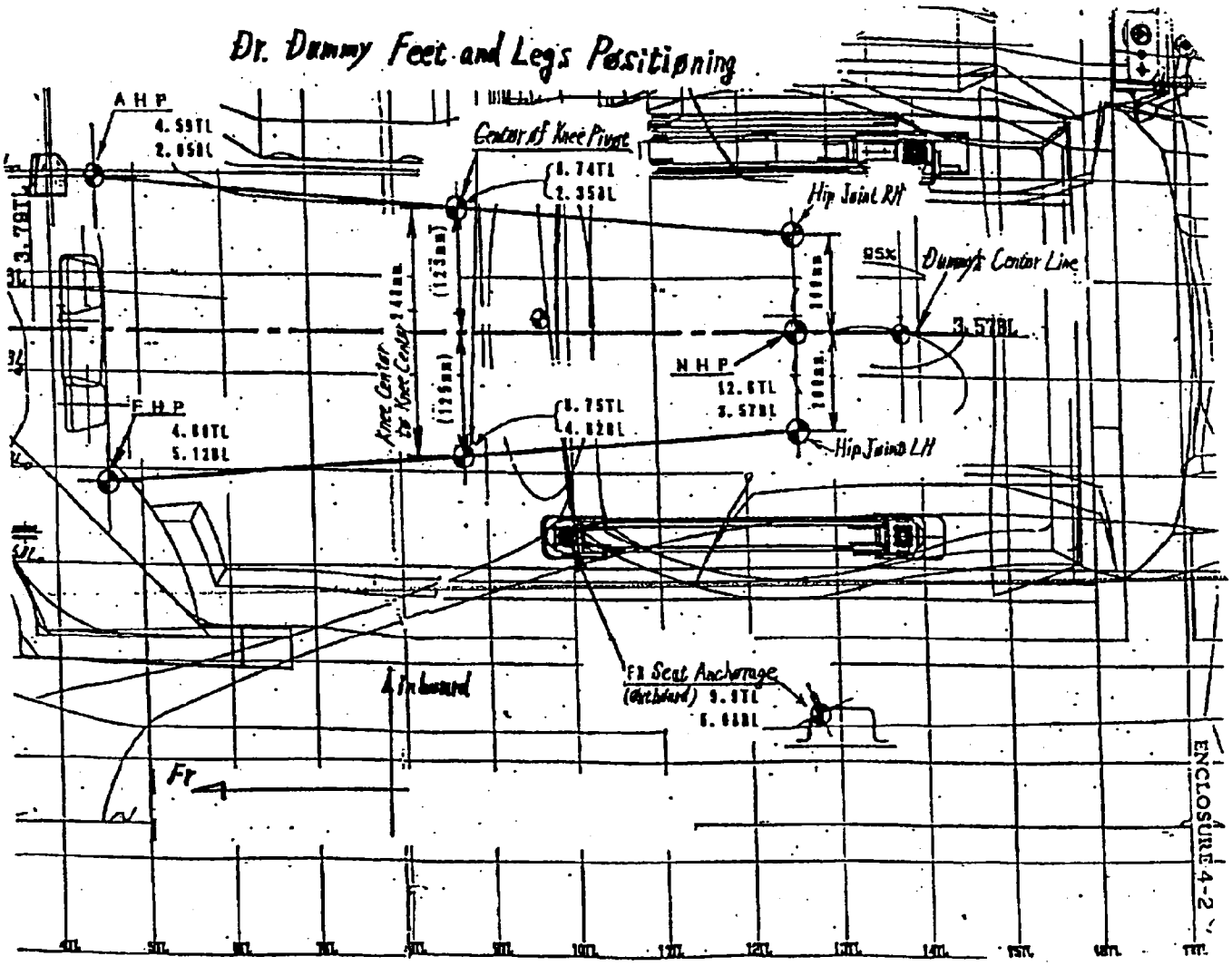
4th position from the top anchorage.



Attachment No. 3-1

DRIVER DUMMY POSITIONING (DUMMY: HY-III)




Dr. Dummy Feet and Legs Positioning
A H P
4. 59TL
2. 858L
3. 78TL
Center of Knee Pivot
8. 74TL
2. 358L
Hip Joint RH
95%
Dummy's Center Line
3. 578L
Knee Center to Knee Center
141mm
(123mm)
(126mm)
110mm
100mm
N H P
12. 6TL
3. 578L
F H P
4. 88TL
5. 128L
8. 75TL
4. 828L
Hip Joint LH
4 Inboard
Ft Seat Anchorage
(Outboard) 9. 8TL
5. 688L
Ft
ENCLOSURE 4-2

ttachment No. 3-2 PASSENGER DUMMY POSITIONING (DUMMY : HY-III)

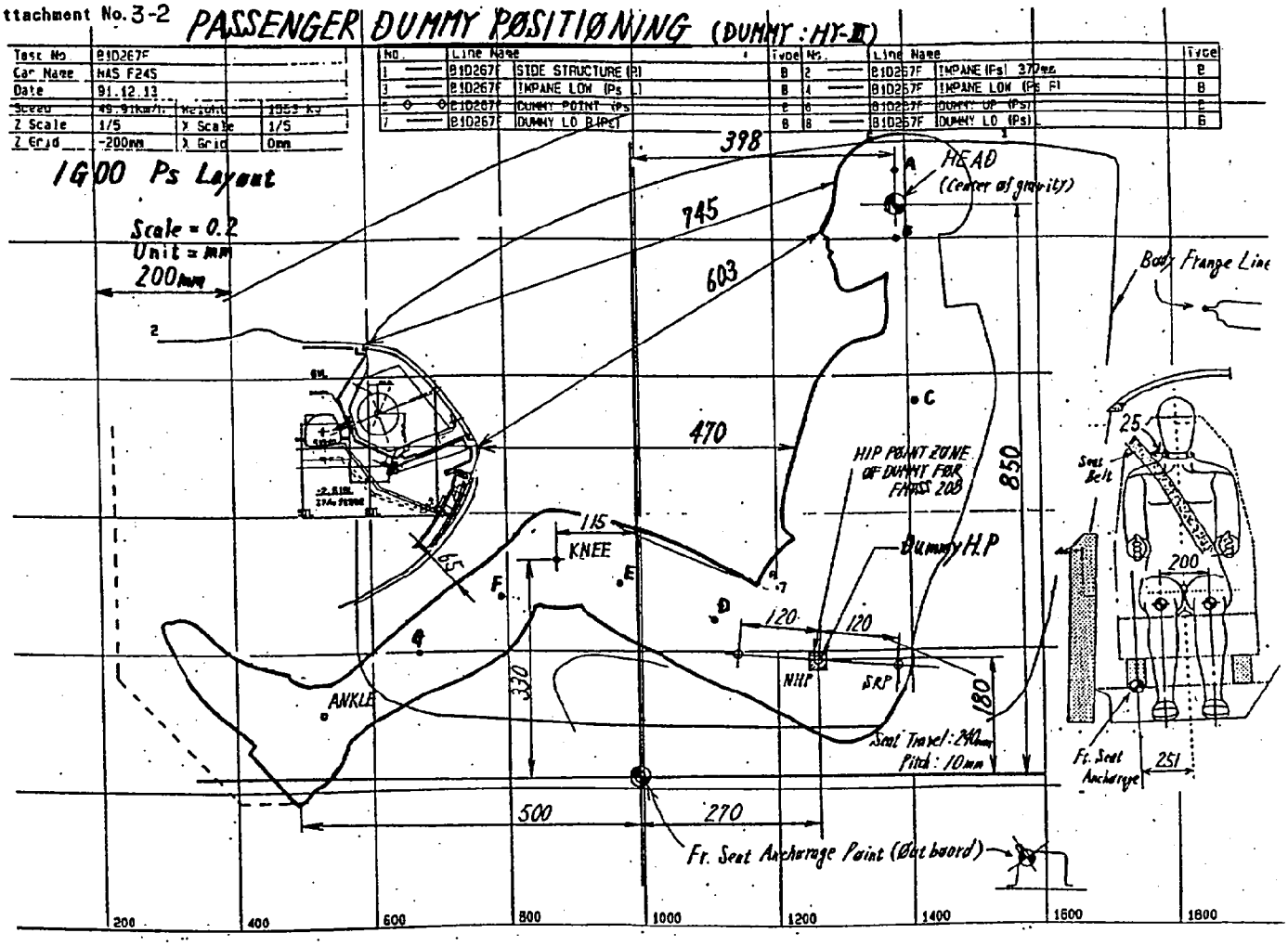
Test No	81D267F		
Car Name	HAS F24S		
Date	91.12.13		
Speed	49.91km/h	Weight	1053 kg
Z Scale	1/5	X Scale	1/5
Z Grid	-200mm	X Grid	0mm

No.	Line Name		Type
1	81D267F	SIDE STRUCTURE (P)	B
3	81D267F	IMPACT LOW (Ps)	B
5	81D267F	DUMMY POINT (Ps)	C
7	81D267F	DUMMY LO B (Ps)	B

No.	Line Name		Type
2	81D267F	IMPACT (Ps) 370mm	B
4	81D267F	IMPACT LOW (Ps F)	B
6	81D267F	DUMMY UP (Ps)	C
8	81D267F	DUMMY LO (Ps)	B

1G00 Ps Layout

Scale = 0.2
Unit = mm
200mm



Attachment No. 5 Test Data Summary for FMVSS No. 208

Test Item	Test Vehicle	Test Conditions			Dummy Injury					Evaluation
		Weight (kg)	Speed (mph)	Test No.		HIC	Chest Accel.	Chest Defl. (in.)	Femur Load L/R (lbs)	
1. 0 deg. Frontal Impact (without belt)	D31AMRHML4M 420A 4AT 2WD	1536	30.1	B3X316F	Dr. Ps.	149 165	42 G 25 G	1.10 0.55	1164/1052 979/ 882	Passed
2. 0 deg. Frontal Impact (without belt)	D32AMRGFL9M 4G63 4AT 2WD	1570	30.2	B41020F	Dr. Ps.	142 190	36 G 30 G	0.99 0.54	1460/1709 1050/ 986	Passed
3. 0 deg. Frontal Impact (without belt)	D33AMNGFL4E 4G63 5MT 4WD	1651	29.8	B3D364F	Dr. Ps.	145 235	46 G 29 G	0.98 0.67	1155/1171 1076/ 968	Passed
4. 30 deg. Left Oblique Impact (without belt)	D31AMRHML9M 420A 4AT 2WD	1539	30.3	B39259FL	Dr. Ps.	271 92	39 G 22 G	0.91 0.39	657/1400 772/1244	Passed
5. 30 deg. Right Oblique Impact (without belt)	D31AMRHML9M 420A 4AT 2WD	1507	30.3	B39261FR	Dr. Ps.	115 406	32 G 30 G	1.02 0.46	1323/ 915 1103/ 847	Passed
6. 30 deg. Left Oblique Impact (with belt)	D33AMRGFL9E 4G63 4AT 4WD	1696	30.1	B41021FL	Dr. Ps.	407 260	51 G 49 G	1.19 0.90	997/1195 939/1050	Passed
7. 30 deg. Right Oblique Impact (with belt)	D32AMNGFL9E 4G63 5MT 2WD	1568	30.3	B41022FR	Dr. Ps.	221 162	43 G 36 G	1.47 1.02	1808/ 665 397/ 906	Passed
8. 0 deg. Frontal Impact (with belt) *	D31AMNHML F6 420A 5MT 2WD	1491	35.3	B3D379F	Dr. Ps.	401 289	50 G 41 G	1.61 1.26	1333/ 888 780/ 808	Passed

* This test has conducted by Europe version car, but the body and main parts are the same as US version car.