V1975

REPORT NO. MGA-93-N001

NEW CAR ASSESSMENT PROGRAM (NCAP)

FRONTAL BARRIER IMPACT TEST

Mitsubishi
1994 Mitsubishi Galant
4 Door
NHTSA NO. MR5600

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: August 4, 1993

Report Date: August 25, 1993

FINAL REPORT

Prepared For:

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF MARKET INCENTIVES
400 SEVENTH STREET, S.W.
Room No. 5313 (NRM-22)
400 Seventh Street, S.W.
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 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.

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-90-D-12121. This document is disseminated under the sponsorship of the U.S. Dept. of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

PREPARED BY: John Fleck

John Fleck
MGA Research Corporation

APPROVED BY: Rudy H Arendt

Rudy H. Arendt
MGA Research Corporation

FINAL REPORT ACCEPTED BY:

Manager, New Car Assess. Program (NCAP)

OCT 21 1993

Date of Report Acceptance

Contracting Officer's Tech. Rep. (COTR)

OCT 21 1993

Date of Report Acceptance

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. MGA-93-N001	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle NHTSA New Car Assessment Program (NCAP) Frontal Barrier Impact Test on a 1994 Mitsubishi Galant to indicant requirements FMVSS No. 208, 212, 219 (partial) and 301.		5. Report Date August 25, 1993 6. Performing Organization Code MGA
7. Author(s) John Fleck		8. Performing Organization Report No. MGA-OMI-001
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		10. Work Unit No. MGA-93-DOT-1 11. Contract or Grant No. DTNH22-90-D-12121
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Market Incentives (NRM-20) 400 Seventh St., S.W. Washington, D.C. 20590		13. Type of Report and Period Covered Final Report February 1993 - August 1993 14. Sponsoring Agency Code DOT/NHTSA/RM/OMI

15. Supplementary Notes

16. Abstract

A 56 kph (35 mph) frontal barrier impact using a 30 load cell barrier was conducted on a 1994 Mitsubishi Galant 4-Door at the MGA Proving Grounds and Crash Test Center in Burlington, WI. on August 4, 1993.

The barrier impact velocity was 56 kph (34.8 mph), and the ambient temperature at the time of impact was 22° C. The post-test average crush was 479 mm.

The test vehicle appeared to comply with the requirements of the following Federal Motor Vehicle Safety Standards:

1. FMVSS 212, "Windshield Mounting"
2. FMVSS 219 (partial), "Windshield Zone Intrusion"
3. FMVSS 301, "Fuel System Integrity"

With regard to FMVSS 208, "Occupant Crash Protection" injury criteria, the driver's HIC was 553.0 and the 3 msec. Clip (Chest g's) was not calculated because of a data loss during impact. The left and right femur loads for the driver were 5959 and 5804 Newtons, respectively. The passenger's HIC was 532.9 and the 3 msec Clip was 51.7. The left femur maximum load was 4618 Newtons respectively and the right femur maximum load data was lost during impact.

17. Key Words	18. Distribution Statement
35 mph Frontal Barrier Impact Test New Car Assessment Program (NCAP) FMVSS 212 Indicant Testing FMVSS 219 (partial) Indicant Testing FMVSS 301 Indicant Testing	Copies of this report are available from: Technical Ref. Division, National Highway Traffic Safety Adm., NASSIF Building, Room 5108 400 Seventh Street, S.W. Washington, D.C. 20590

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified		

Form DOT F 1700.7 (8-69)

TABLE OF CONTENTS

SECTION 1

PURPOSE AND TEST PROCEDURE

This 35 mph frontal barrier impact test is part of the Composite FY'93 Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-90-D-12121. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 48 kph (30 mph) FMVSS 208/212/219/301-75 requirements.

The 56 kph (35 mph) frontal barrier impact test was conducted in accordance with the National Highway Traffic Safety Administration (NHTSA) Indicant Test Procedure for New Car Assessment Program (NCAP) dated January 1, 1990. Data for FMVSS No. 212, "Windshield Mounting", FMVSS No. 219 (Partial), "Windshield Zone Intrusion", FMVSS No. 301-75, "Fuel System Integrity," as well as occupant performance data are provided herein.

SECTION 2

SUMMARY OF FRONTAL BARRIER IMPACT TEST

A load cell barrier consisting of 3Ø load cells was impacted by a 1994 Mitsubishi Galant 4-Door at a velocity of 56 kph (34.8 mph). The test was performed at the MGA Proving Grounds and Crash Test Center on August 4, 1993. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by one real-time camera and 15 high speed cameras. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 5Øth percentile male anthropomorphic test devices (ATDs) were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with head and chest triaxial accelerometers and right/left femur load cells. Seat belt load cells were also on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. The driver ATD (Serial No. 36) and the right-front passenger ATD (Serial No. 37) were calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C and D.

The 52 channels of data were recorded on 5 computers. Appendix B contains the vehicle, load cell barrier and dummy response data traces.

The driver's head struck the inflated airbag. The driver HIC was 553.Ø. The maximum chest deceleration over 3 milliseconds was not calculated because of a data loss of the chest X acceleration data. The left and right femur loads were 5959 and 58Ø4 Newtons respectively.

The right front passenger's HIC was 532.9 and maximum chest deceleration over 3 milliseconds was 51.7 g's. The left femur load was 4618 Newtons, the right femur load data was lost during impact.

GENERAL TEST AND VEHICLE PARAMETER DATA

Vehicle Yr/Make/Model/Body Style: 1994/Mitsubishi/Galant/4-Door

NHTSA No.: MR5600 VIN.: 443AJ56G1RE00111

Body color: Silver Date of Manufacture: 3/93

Engine: 4 Cylinders; __C.I.D.; 2.4liters; __CC

X Gas; __Diesel; __Turbocharged

__Longitudinal; X Transverse

Transmission: 3 Speed; __Manual; X Automatic; __Overdrive

Final Drive: X Front Wheel; __Rear Wheel; __Four Wheel

Date Received: 7-1-93 Odometer Reading: 82

X A/C; X P/S; X P/B; X P/wdo;

__P/seats; X Tilt Wheel; X Cruise Control;

Type of Occupant Restraint: Three Point Seat Belts and Driver and Passenger Airbags.

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): Front 2.3 kg/cm^2; Rear 2.0 kg/cm^2

Recommended Tire Size: P185/70R14 87H

Recommended Cold Tire Pressure: Front 2.3 kg/cm^2; Rear 2.0 kg/cm^2

Tires on Vehicle: P185/70R14 87H; Manufacturer: Bridgestone

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 Level; __Rot. Knob

Vehicle Capacity Weight (VCW) = 375.1 kg. (A)

No. of Occupants x 67.5 kg. = 340.2 kg. (B)

Rated Cargo Weight (RCW) A-B = 34.9 kg.

GVWR 1780 kg. GAWR: Front 970.7 kg.; Rear 809.7 kg.

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

Right Front = 407.8 kg. Right Rear = 237.2 kg.

Left Front = 396.9 kg. Left Rear = 242.7 kg.

TOTAL FRONT WEIGHT = 804.7 kg. (62.6% of Total Vehicle Weight)

TOTAL REAR WEIGHT = 479.9 kg. (37.4% of Total Vehicle Weight)

TOTAL UNLOADED DELIVERED WEIGHT (UDW) = 1284.6 kg.

CALCULATION FOR TARGET TEST WEIGHT:

UDW = Unloaded Delivered Weight 1284.6 kg.

VCW = Vehicle Capacity Weight 375.1 kg.

DSC = Designated Seating Capacity 5

RCW = VCW - 68 (DSC) = 34.9 *kg.

Target Test Weight = UDW + RCW + (2 dummies x 74.4 kg./dummy)

Target Test Weight = 1468.3 kg.

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND CARGO:

Right Front = 444.1 kg. Right Rear = 278.9 kg.

Left Front = 442.3 kg. Left Rear = 305.7 kg.

TOTAL FRONT WEIGHT = 886.4 kg. (60.3% of Total Vehicle Weight)

TOTAL REAR WEIGHT = 584.6 kg. (39.7% of Total Vehicle Weight)

TOTAL TEST WEIGHT = 1471.0 kg.

Weight of ballast secured in vehicle trunk area = 0 kgs.

Vehicle components removed to meet target weight: Spare Tire, Rear Bumper, Rear Side Windows, Tail Light Assembly, Rear Inner Door Panels.

VEHICLE ATTITUDE (all dimensions in mm):

Delivered Attitude: RF 685 LF 683 RR 687 LR 679

Test Attitude: RF 665 LF 660 RR 653 LR 645

Wheel Base: 2640 mm.; C.G. = 1049 mm rearward of front wheel C/L

Remarks: None

*light trucks and MPVs RCW is 136 kgs. or manufacturer's value, whichever is less

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

POST-IMPACT DATA:

Type of Test: 35 mph Frontal Impact Impact Angle: 90°

Date of Test: August 4, 1993 Time of Test: 1:30 p.m.

Ambient Temperature: 22 °C (Spec. Range = 18.8 to 25.6°C)

Temperature in Occupant Compartment: 22 °C

Windshield Molding Temperature: 22 °C

Required Impact Velocity Range: 55.5 to 57.1 kph

Impact Velocity: primary = 56.0 kph; secondary = 55.9 kph

Distance From Front Bumper to Barrier Face When

Entering Speed Trap: 1203 mm

Exiting Speed Trap: 203 mm

VEHICLE REBOUND AND CRUSH (mm):

Vehicle Length: Pre-test = R 4381 C_L 4632 L 4381

Post-test = R 3945 C_L 4124 L 3889

Crush = R 436 C_L 508 L 492

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

R 1651 mm C_L 1429 mm L 1511 mm

VISIBLE DUMMY CONTACT POINTS:

	Driver	Passenger
Head	to airbag	to airbag
Chest	to airbag	none
Abdomen	to airbag	none
Left Knee	to instrument panel	to instrument panel
Right Knee	to instrument panel	to instrument panel

GENERAL TEST AND VEHICLE PARAMETER DATA (cont'd)

	Front		Rear	
Door Opening	Left	Right	Left	Right
(without use of tools)	Opened	Opened	Opened	Opened

	Front		Rear	
Seat Movement	Left	Right	Left	Right
Seat Back Movement	None	None	N/A	N/A
Seat Shift (mm)	None	None	N/A	N/A

Glazing Damage

Backlight/Windshield Windshield Cracked

Other Notable Impact Effects: None

SECTION 3

SUMMARY OF RESULTS FOR-------

FMVSS 212, "Windshield Mounting"

FMVSS 219 (Partial), "Windshield Zone Intrusion"

FMVSS 301-75, "Fuel System Integrity"

FMVSS NO. 212, "WINDSHIELD MOUNTING", DATA SHEET

Details of windshield mounting such as retention method, trim type, etc.:

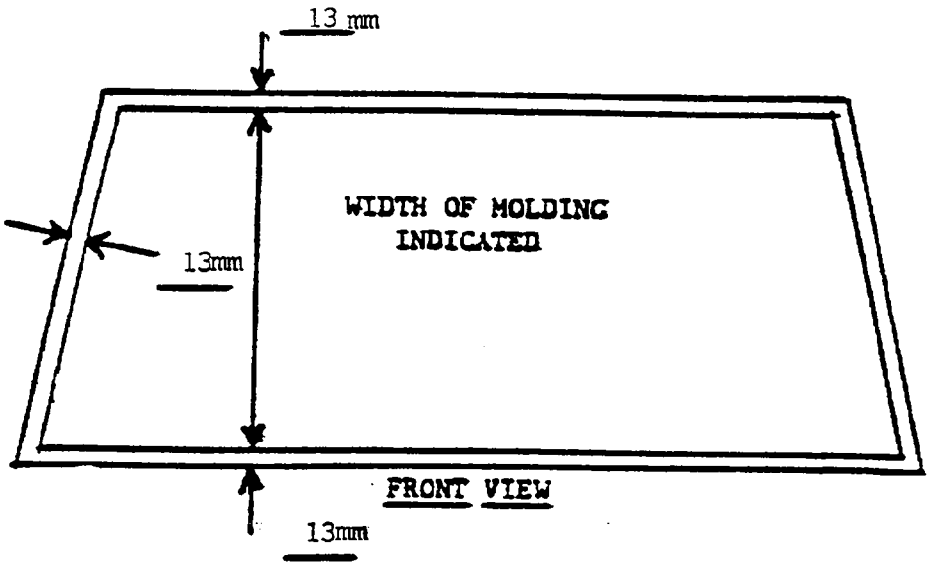
Steel trim with glue retention

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		
	PRE-TEST (mm)	POST-TEST (mm)	PERCENT RETENTION
RIGHT SIDE	2093	2093	100%
LEFT SIDE	2093	2093	100%
TOTAL	4186	4186	100%

AREA OF RETENTION FAILURE:



FAILURE DETAILS:

NONE

FMVSS NO. 219, "WINDSHIELD ZONE INTRUSION", DATA SHEET

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.

FMVSS 219 TEST DATA:

A= 1150 mm

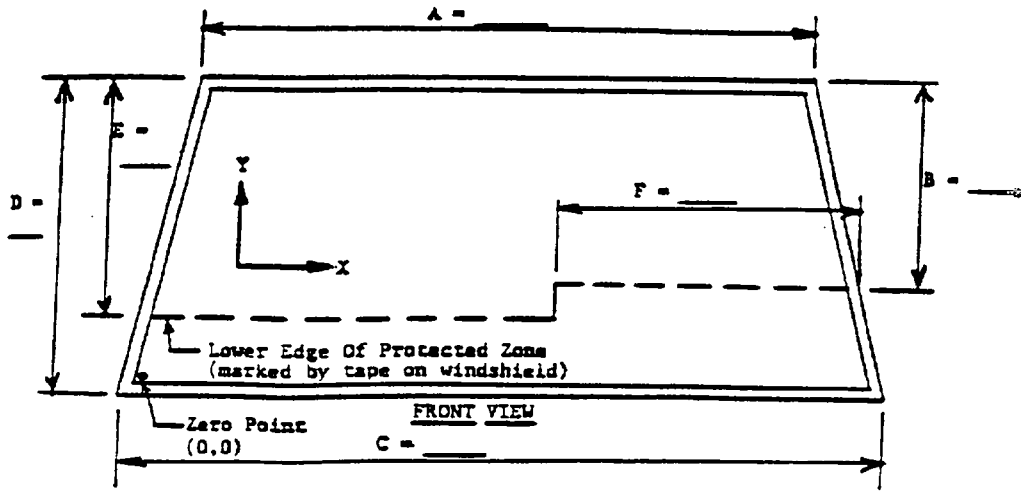
B= 525 mm

C= 1575 mm

D= 730 mm

E= 503 mm

F= 600 mm



DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 1/4":

(Show location of penetration)

NONE

FMVSS NO. 301-75, FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

FMVSS NO. 301

TEST VEHICLE NHTSA NO.: MR5600 Test Date: 8-4-93

Vehicle Mfgr./Make/Model: 1994 Mitsubishi Galant

Usable Capacity of Vehicle's Fuel Tank: 16.6 Liters
(figure furnished by vehicle manufacturer)

TEST REQUIREMENTS:

Test vehicle's engine operated to "run dry" condition, and then a small amount of stoddard solvent which has been dyed red shall be added to the vehicle's fuel tank. Operate the fuel pump enough to completely fill the fuel system ahead of the fuel tank, and add 92 to 94% of the stated USABLE CAPACITY to the fuel tank.

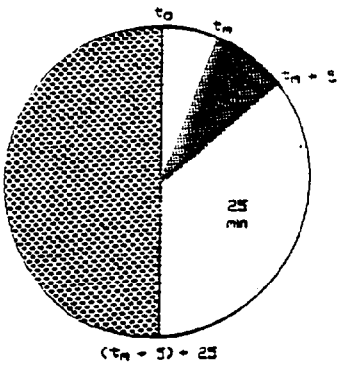
AMOUNT OF STODDARD SOLVENT ADDED TO VEHICLE'S FUEL TANK:

15.5 Liters which is 93 % of the stated USABLE CAPACITY.

TEST VEHICLE IMPACT TYPE:

- X Frontal (35 mph)
- ___ Oblique (30 mph) with __° barrier face first contacting (driver/passenger) side
- ___ Rear Moving Barrier (30 mph)
- ___ Side Impact MDB (33.2 mph)

FUEL SPILLAGE MEASUREMENT:



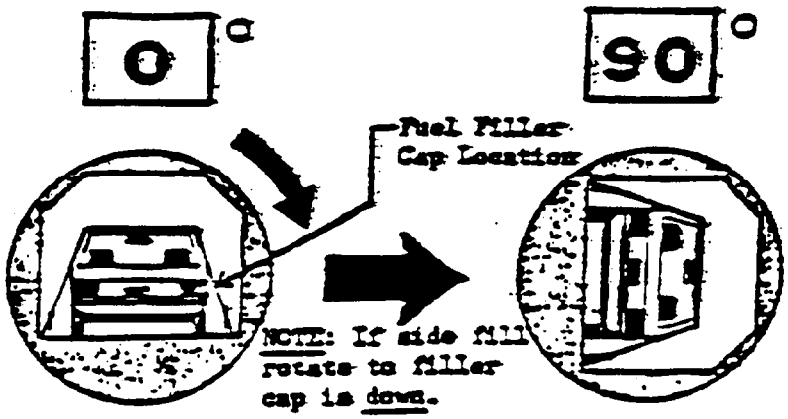
1. From impact until vehicle motion ceases
2. For 5 minute period after vehicle motion ceases
3. For next 25 minutes

	ACTUAL	MAX ALLOWED
1.	Ø	1 OZ
2.	Ø	5 OZ
3.	Ø	1 oz./1 MIN

SOLVENT SPILLAGE DETAILS:

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: Vehicle NHTSA ID No.: MR5600



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 50 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 50 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

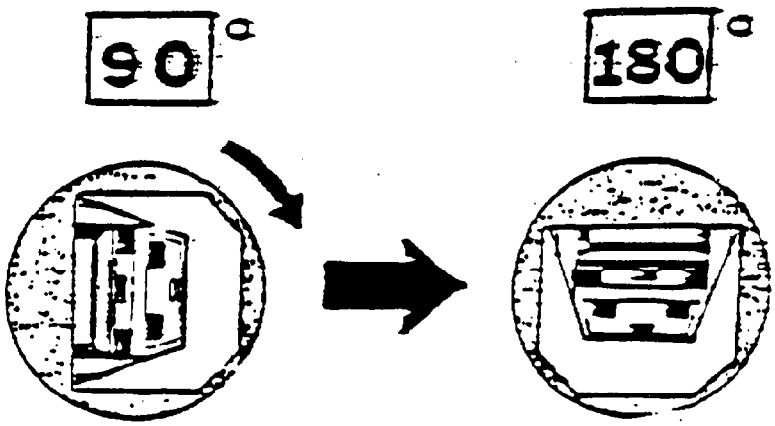
0	0	0	0

Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S):

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: Vehicle NHTSA ID No.: MR5600



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 40 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 40 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

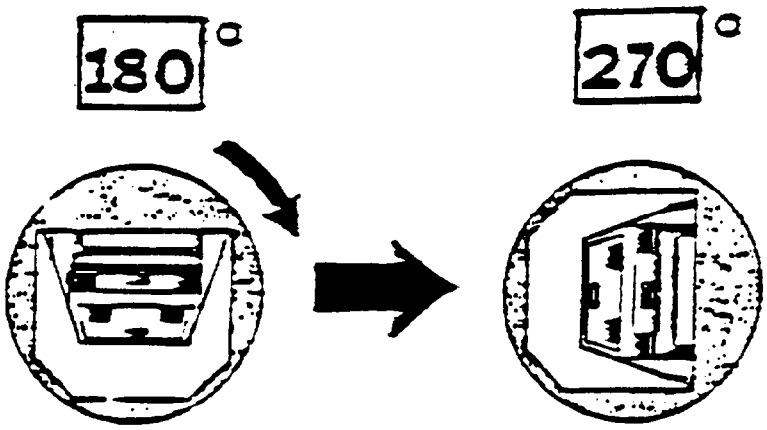
0	0	0	0

Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S):

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: Vehicle NHTSA ID No.: MR5600



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 55 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 55 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

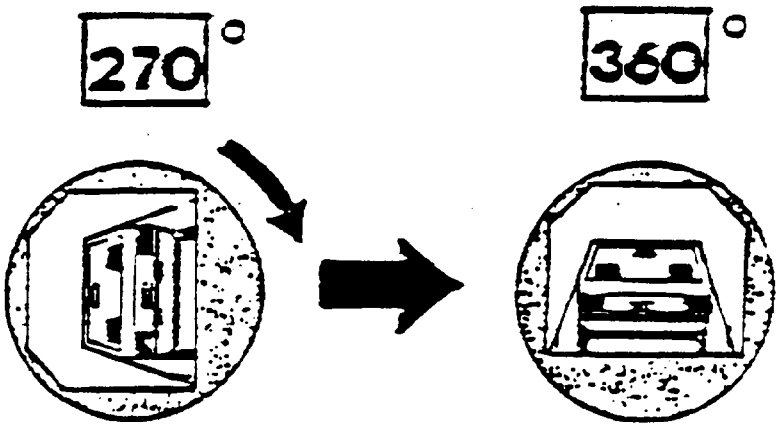
0	0	0	0

Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S):

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: Vehicle NHTSA ID No.: MR5600



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 25 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 25 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0

Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S):

SECTION 4

OMI FINAL DATA

Occupant and Vehicle Information

I. OMI DATA

1. Dummy Injury Criteria Data Summary
2. Dummy Positioning Data
3. Seat Belt Positioning Data
4. Seat Belt Performance Assessment Data
5. Driver Dummy to Steering Column Dimensions
6. Camera Locations
7. Vehicle Target Locations

II. OVR DATA

1. Load Cell Barrier Data
2. Vehicle Accelerometer Data
3. Test Vehicle Measurements

III. AID DATA

1. Accident Investigation Damage Data Summary

FMVSS NO. 208, "OCCUPANT CRASH PROTECTION", DATA SHEET

VEH. YR./MAKE/MODEL/BODY STYLE: 1994 Mitsubishi Galant 4-Door

VEH. NHTSA NO.: MR5600 TEST DATE: August 4, 1993

MAXIMUM ACCELERATION VALUES: (g's)	DRIVER DUMMY # 36	PASSENGER DUMMY # 37
Head Channel X	-62.4	-55.4
Head Channel Y	-11.7	-10.7
Head Channel Z	15.9	27.5
HEAD RESULTANT	63.1	60.4
Chest Channel X	*	-51.8
Chest Channel Y	11.5	-5.8
Chest Channel Z	8.3	8.3
CHEST RESULTANT (CLIP)	*	51.7
TIME INTERVAL (msec) [0.003 seconds minimum]	t_1 = * t_2 = *	t_1 = 69.6 t_2 = 72.6

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	553.0	532.9
t_1 = (msec)	59.7	56.8
t_2 = (msec)	93.8	87.9
Avg. Accel. t_1 to t_2 (g's)	48.3	49.4

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

MAXIMUM FEMUR FORCES:

Right Side (N)	-5804	*
Left Side (N)	-5959	-4617.7

MAXIMUM SEAT BELT FORCES:

Lap Belt (N)	3026	2372
Shoulder Belt (N)	7345	5848

NOTE: All values listed must occur during primary impact event.
(Head X,Y,Z and R listed must be during t_1 to t_2 HIC interval)

* Data Loss During Impact

HYBRID III NECK AND CHEST DATA SHEET

VEHICLE YR./MAKE/MODEL/BODY STYLE: 1994 Mitsubishi Galant 4-Door

VEHICLE NHTSA NO.: MR5600 TEST DATE: August 4, 1993

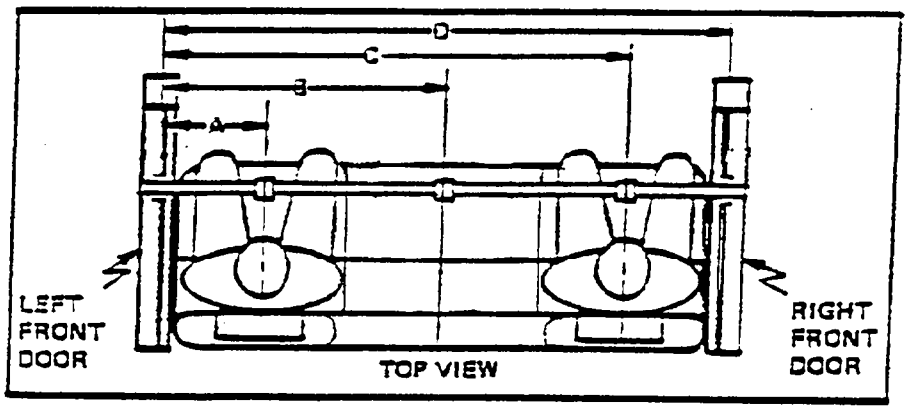
MAXIMUM VALUES	DRIVER DUMMY #36	PASSENGER DUMMY #37
Neck Load X (N)	-279.9	-641.2
Neck Load Y (N)	-341.3	-294.3
Neck Load Z (N)	-1787.2	1469.1
Neck Moment X (N.M)	22.9	-13.3
Neck Moment Y (N.M)	19.7	82.9
Neck Moment Z (N.M)	16.1	-8.9
Chest Deflection X (mm)	29.6	23.3
Time of Max. Occurrence	79.1	63.9

PART 572 DUMMY IN-VEHICLE POSITION

Test No.: MR5600 Vehicle: 1994 Mitsubishi Galant

SEAT TYPE:	ADJUSTER TYPE:	BUCKET SEAT BACK TYPE:
____Bench	__X__Manual	____Fixed
__X__Bucket	____Power	__X__Adjustable Reclining
____Split Bench		

Seat notch 11 from rear Seat notch 11 from rear



36 DUMMY ID 37

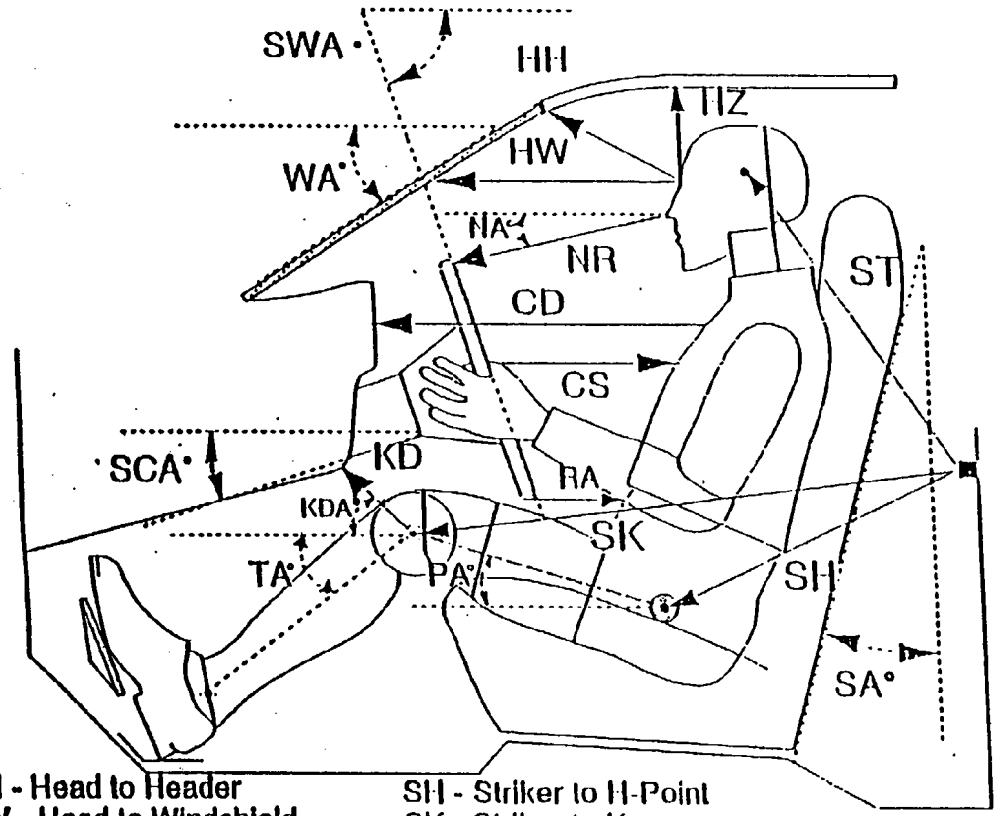
A	= Left Door to Driver Centerline	390 mm
B	= Left Door to Center Passenger Centerline	753 mm
C	= Left Door to Right Passenger Centerline	1120 mm
D	= Left Door to Right Door	1570 mm

FRONT SEAT MEASUREMENT TABLE

Units (mm)

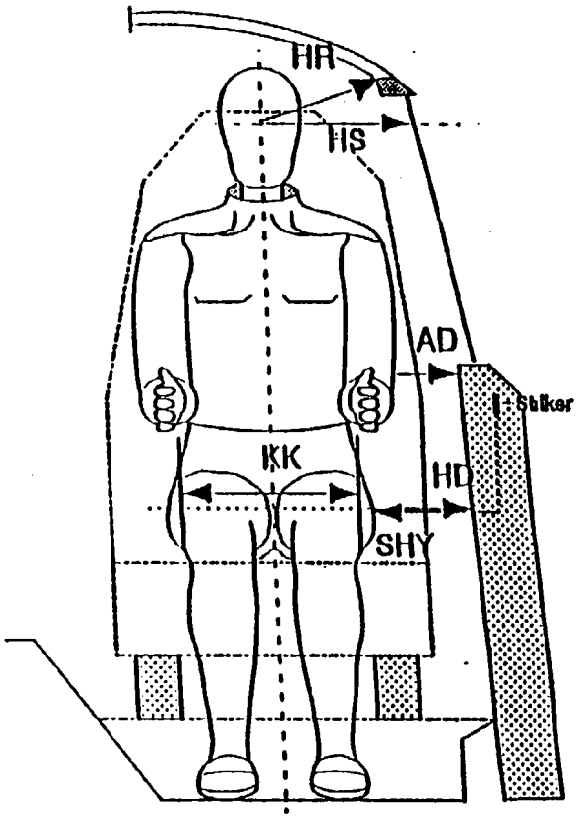
	DRIVER (Serial #36)	PASSENGER (Serial #37)
WA°	29.6	
SWA°	21.6	
SCA°	21.6	
SA°	24.6	N/A
HZ	196	185
HH	348	383
HW	622	605
HR	229	237
NR	416 Angle (NA) 10.3°	
CD	569	611
CS	305	
RA	205	
KDL	175 Angle (KDA) 21.8°	175
KDR	165	175 Angle (KDA) 24.1°
PA°	20.6°	24.1°
TA°	35.4°	35.8°
KK	278	225
ST	498 Angle 97°	502 Angle 95°
SK	579 Angle 3.4°	572 Angle 3.7°
SH	248 Angle 35.5°	231 Angle 37.6°
SHY	258	247
HS	270	275
HD	182	176
AD	126	125

DUMMY MEASUREMENTS FOR FRONT SEAT PASSENGERS

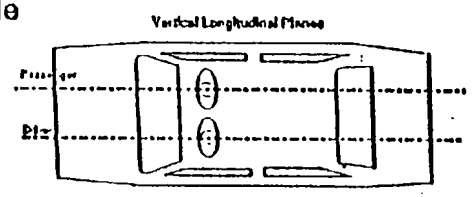


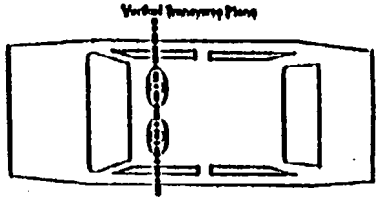
HH - Head to Header
HW - Head to Windshield
HZ - Head to Roof
NR - Nose to Rim
CS - Steering Wheel to Chest
CD - Chest to Dash
RA - Rim to Abdomen
KDL/KDR - Knee to Dash
KDA - Knee to Dash Angle

SH - Striker to H-Point
SK - Striker to Knee
ST - Striker to Head
NA - Nose to Rim Angle
TA - Tibial Angle
PA - Pelvic Angle
SA - Seat Back Angle
SCA - Steering Column Angle
SWA - Steering Wheel Angle
WA - Windshield Angle

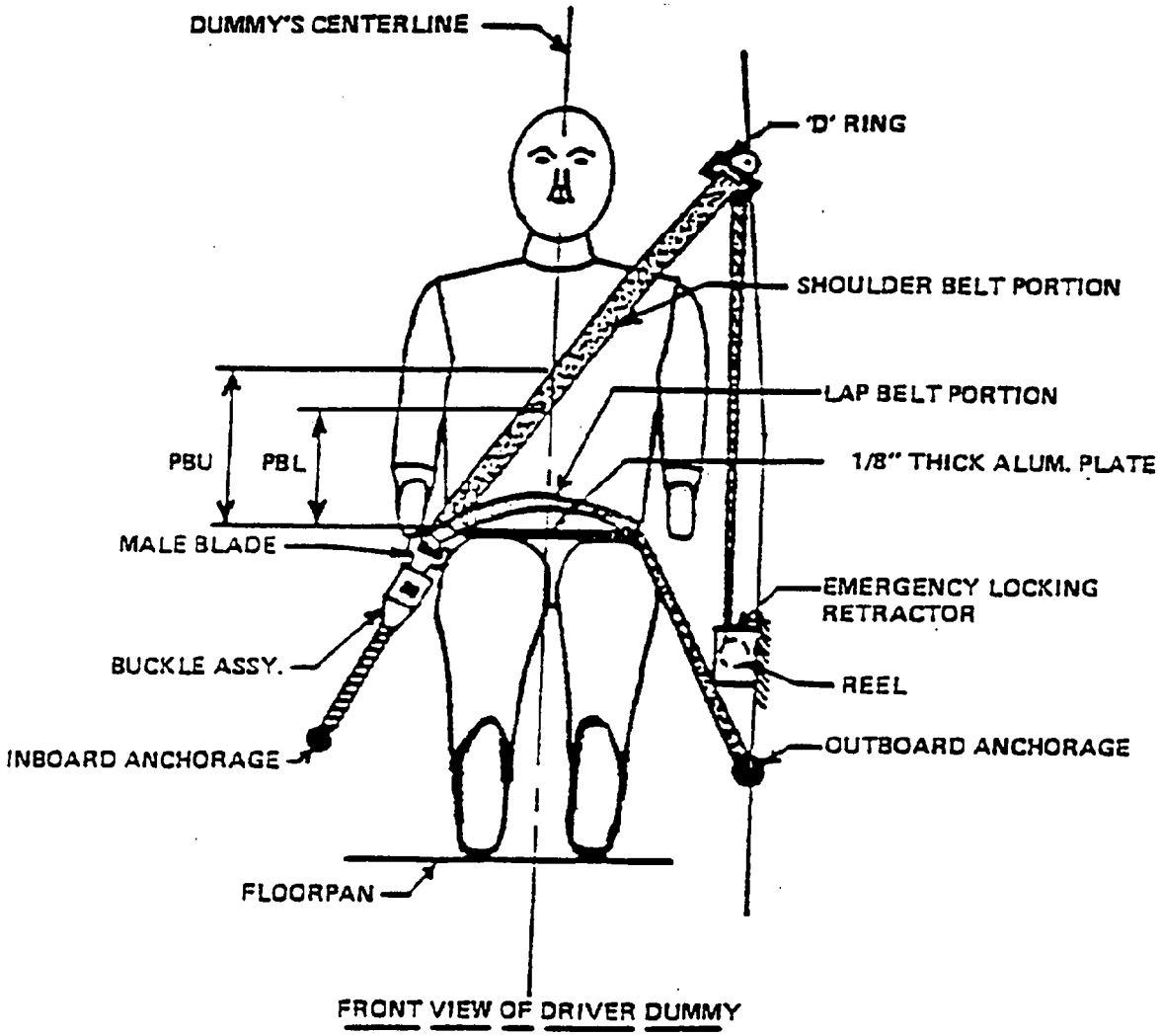


HR - Head to Side Header
HS - Head to Side Window
AD - Arm to Door
HD - H-Point to Door
SHY - Striker to H-Point (Y Dir.)
KK - Knee to Knee





SEAT BELT POSITIONING DATA



(illustration)

		DRIVER DUMMY	PASSENGER DUMMY
PBU --	Top surface of alum. plate to upper edge (mm)	365	355
PBL --	Top surface of alum. plate to belt lower edge (mm)	293	273
LAP BELT TENSION (kgs.)		4	4
SHOULDER BELT TENSION (kgs.)		< 2	< 2

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:	Driver	Passenger
Belt length from trim panel exit to bolt hole anchor point for continuous webbing systems.	1834 mm	1830 mm
Shoulder belt length as measured on Part 572 Dummy.	847 mm	840 mm
Lap belt length as measured on Part 572 Dummy.	782 mm	785 mm
SHOULDER BELT SPOOL-OFF DATA:		
As determined by film analysis	75 mm	65 mm
As determined mechanically	105 mm	102 mm
As determined electronically	NR	NR
BELT STRETCH DATA:		
Measured electronically between shoulder belt load cell and the "D" ring.	*	.1 mm/mm
Measured mechanically	0	0
RETRACTOR LOCK-UP TIME:		
As determined by shoulder belt spool-off observed in on-board cameras	60 msec	60 msec

* Data Loss During Impact

NR = Not Recorded

CAMERA LOCATIONS

VEH. NHTSA NO.: MR5600 ; TEST DATE: August 4, 1993 ; TIME: 4:10 pm

VEH. YEAR/MAKE/MODEL/BODY STYLE: 1994 Mitsubishi Galant 4-Door

CAMERA POSITION NO.	VIEW	CAMERA POSITIONS (mm.)*			ANGLE (deg)	FILM PLANE TO HEAD TARGET (mm)	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Left Side View	-	-	-	-	-	10	24
3	Left Front View	1060	4980	1070	90°	4625	13	667
15	Steering Column Top	1540	6245	1530	90°	5890	25	1000
16	Steering Column Bottom	1540	6245	1000	90°	5890	25	1000
12	Left Side-"A" Post	1320	5870	1270	90°	5515	35	1000
9	Left Side-"B" Post	5740	5300	1760	50°	---	50	892
13	Driver Onboard	---	---	---	---	---	25	952
14	Passenger Onboard	---	---	---	---	---	25	1000
2	Right Overall	2605	8275	1215	90°	7920	13	---
17	Right Front	995	7425	1060	90°	7070	25	1000
11	Right Side-"A" Post	1650	6055	1170	90°	5700	35	995
10	Right Side-"B" Post	6830	5900	1755	50°	---	50	1000
4	Top	390	0	4400	---	---	13	833
8	Top Driver	-190	300	2240	---	---	13	995
7	Top Passenger	-190	430	2395	---	---	13	800
5	Pit Front	910	0	-2500	---	---	13	966
6	Pit Rear	2920	0	-2975	---	---	13	---

COORDINATES:

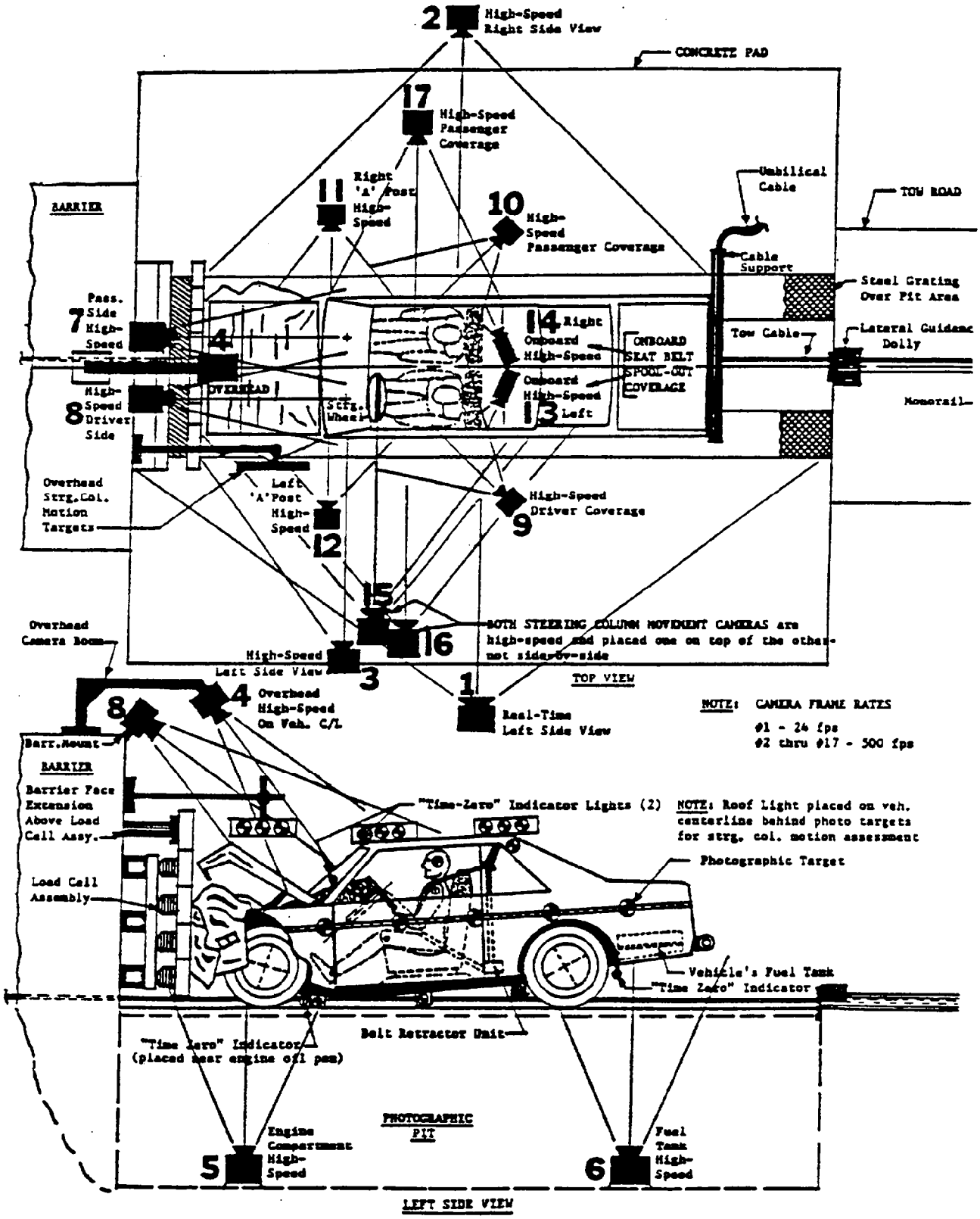
X = film plane to monorail centerline

Y = film plane to barrier face

Z = film plane to ground

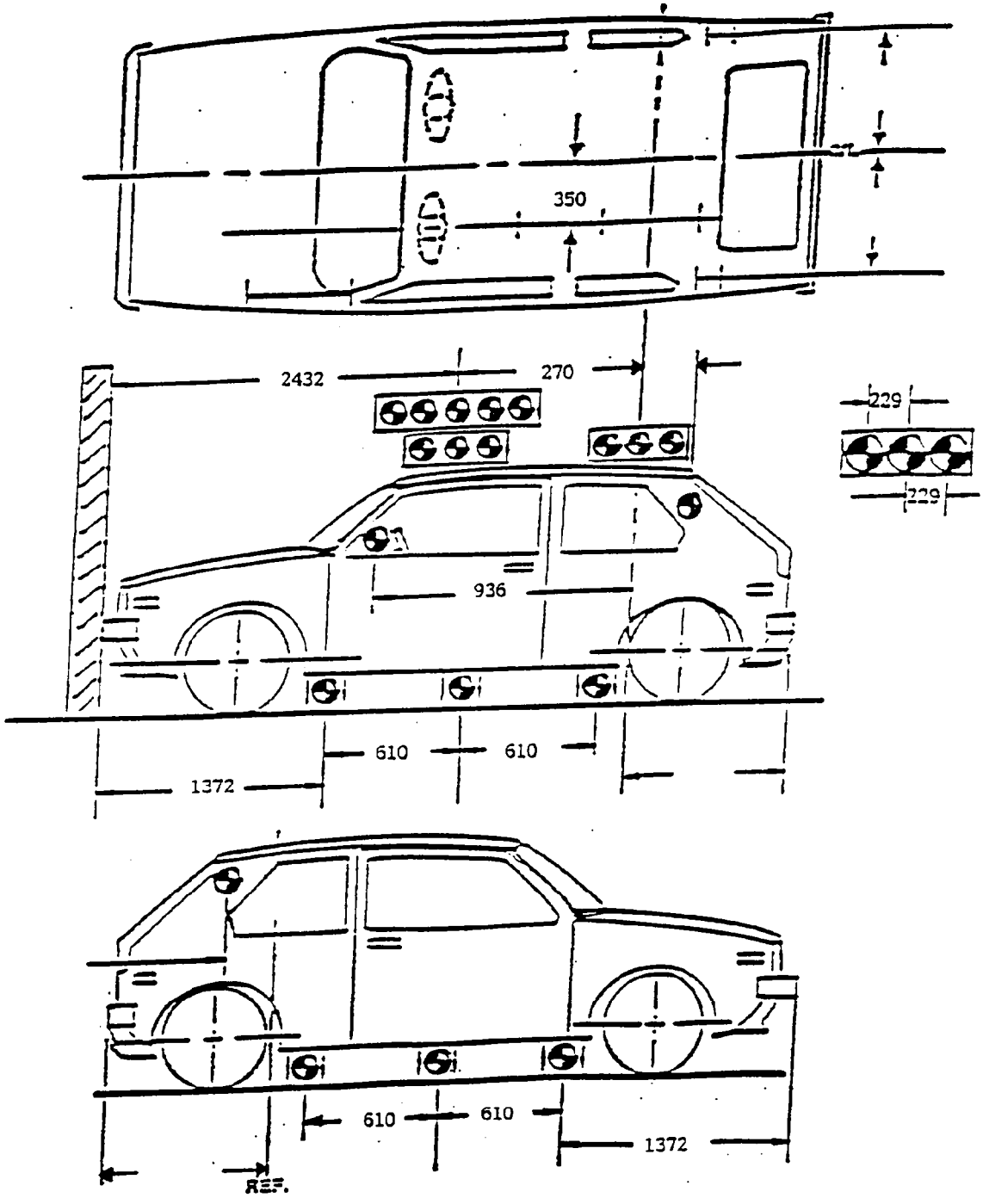
ORIGIN: For X and Y it is the Impact Point. For Z it is the Floor.

CAMERA REQUIREMENTS FOR 35 MPH FRONTAL BARRIER IMPACT ASSESSMENT PROGRAM TEST



LEFT SIDE VIEW

VEHICLE TARGET LOCATIONS



(DIMENSIONS IN MM)

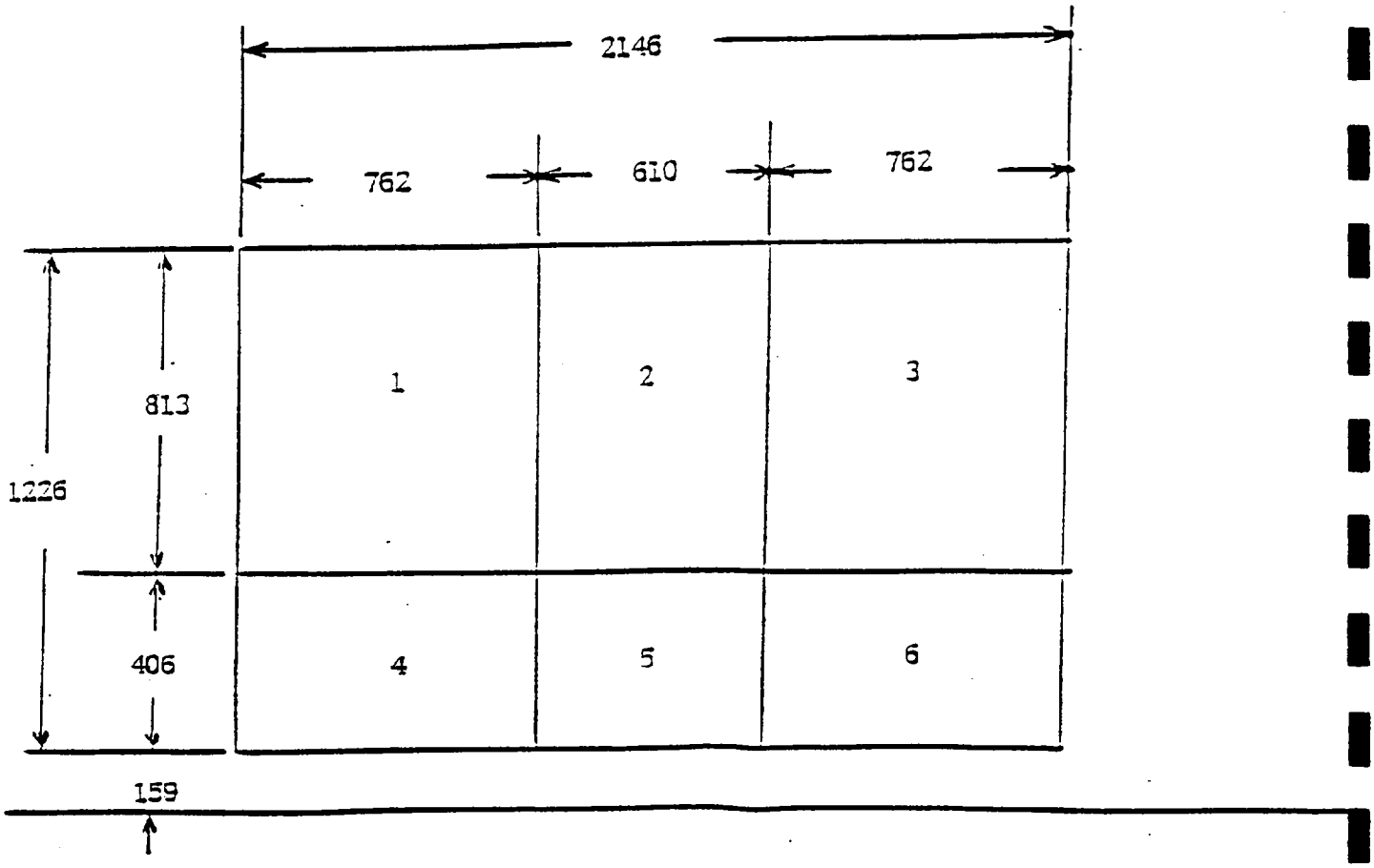
LOAD CELL LOCATIONS ON FIXED BARRIER

30 Load Cells

6 Rows

9 Columns

6 Groupings (5 cells/group)

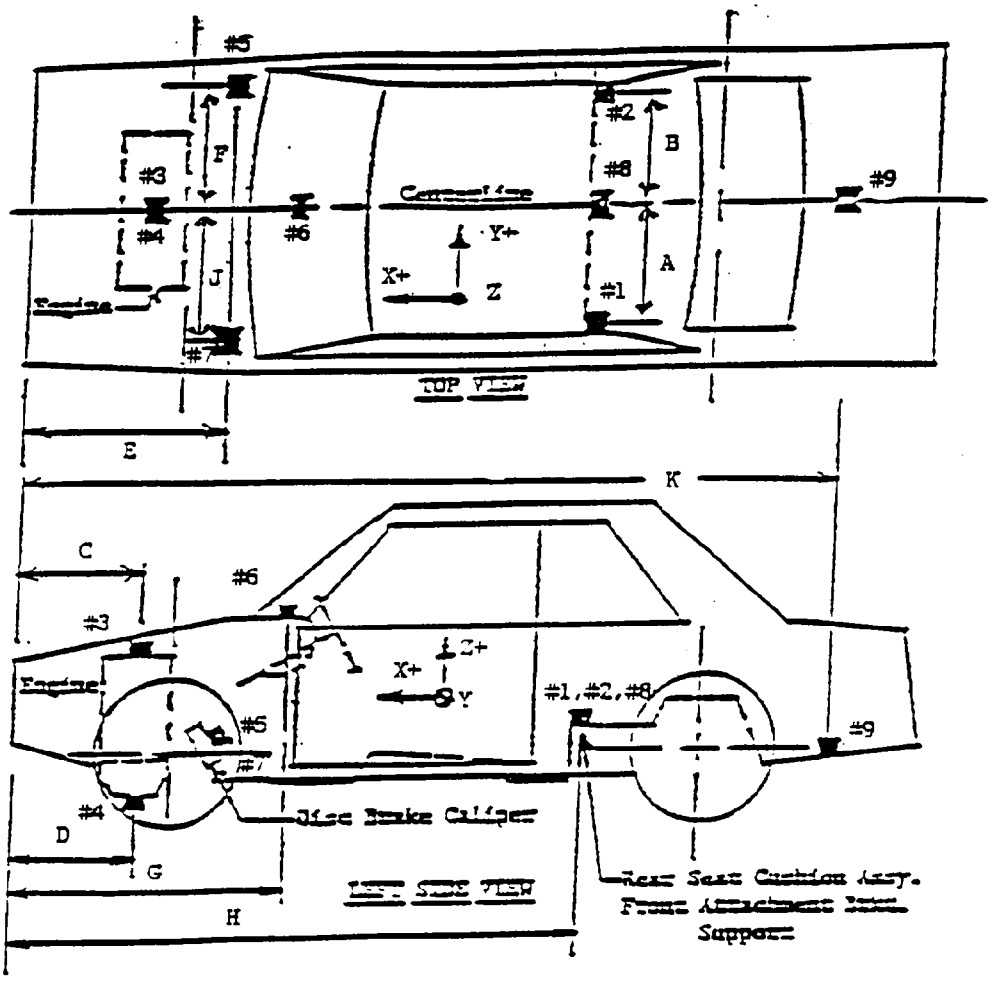


The following data is presented in Appendix B:

(1) Total or Sum of 30 individual load cells

(2) Data from 6 Groupings shown above (5 cells/group)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



Units: (mm)

Dimension	Length
A	590
B	590
C	1032
D	775
E	1045
F	1045
G	1640
H	2953
J	760

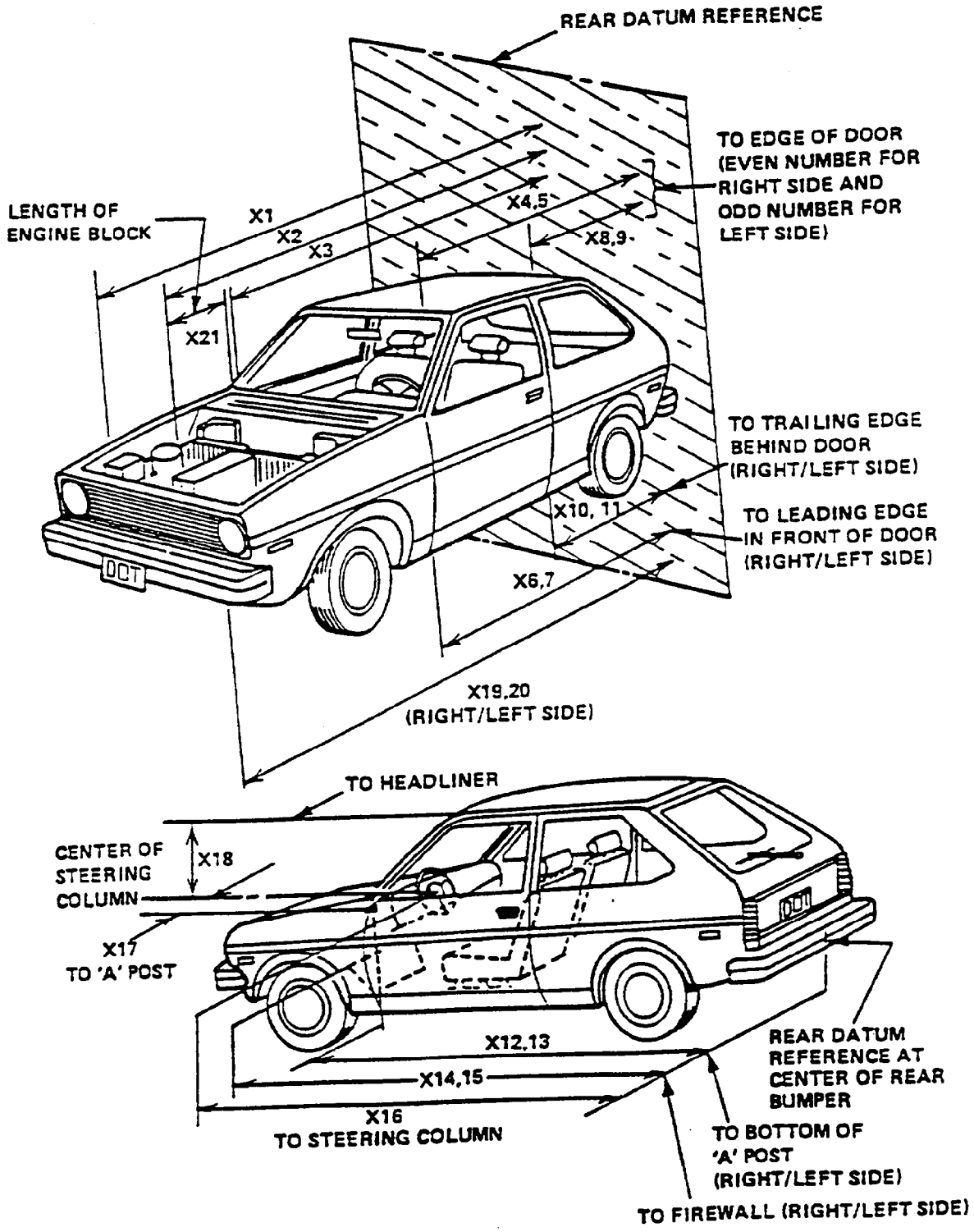
ACCELEROMETER	ACCELEROMETER LOCATION	DIRECTION
1 and 8	Left Rear Seat Crossmember	X
2 and 9	Right Rear Seat Crossmember	X
3	Top of Engine	X
4	Bottom of Engine	X
5	Right Side Brake Caliper	X
6	Instrument Panel	X
7	Left Disc Brake Caliper	X

* The accelerometer pack number can be correlated with the vehicle response data traces in Appendix B.

TEST VEHICLE MEASUREMENTS

No.	MEASUREMENT DESCRIPTION:	Pre-Test (mm)	Post-Test (mm)	Diff. (mm)
X1	Total Length of Test Vehicle at Centerline	4632	4124	508
X2	Rear Surface of Vehicle to Front of Engine	4000	3813	187
X3	Rear Surface of Vehicle to Firewall	3415	3338	77
X4	Rear Surface to Upr. Leading Edge of Rt. Door	2998	3007	-9
X5	Rear Surface to Upr. Leading Edge of Left Door	3000	2992	8
X6	Rear Surface to Lwr. Leading Edge of Rt. Door	3088	3075	13
X7	Rear Surface to Lwr. Leading Edge of Left Door	3085	3068	17
X8	Rear Surface to Upr. Trailing Edge of Rt. Door	2062	2070	-8
X9	Rear Surface to Upr. Trailing Edge of Left Door	2068	2068	0
X10	Rear Surface to Lwr. Trailing Edge of Rt. Door	2073	2050	23
X11	Rear Surface to Lwr. Trailing Edge of Left Door	2062	2070	-8
X12	Rear Surface to Bottom of 'A' Post on Rt. Side	3234	3244	-10
X13	Rear Surface to Bottom of 'A' Post on Left Side	3229	3205	24
X14	Rear Surface to Firewall on Right Side	3376	3337	39
X15	Rear Surface to Firewall on Left Side	3367	3270	-3
X16	Rear Surface to Steering Column	2626	2673	-47
X17	Center of Steering Column to 'A' Post	395	386	9
X18	Center of Steering Column to Headlining	430	415	15
X19	Rear Surface to Right Side of Front Bumper	4381	3945	436
X20	Rear Surface to Left Side of Front Bumper	4381	3889	492
X21	Length of Engine Block	460	460	0

TEST VEHICLE MEASUREMENTS



ACCIDENT INVESTIGATION DIVISION DATA

FOR 35 MPH FRONTAL BARRIER IMPACT

VEHICLE MAKE/MODEL/BODY STYLE: 1994 Mitsubishi Galant 4-Door

VEH. NHTSA NO.: MR5600 ; VIN: 443AJ5GG1RE001111

MODEL YEAR: 1994 ; BUILD DATE: 3/93 ; TEST DATE: 8/04/93

VEH. SIZE CATEGORY: Mid Size ; TEST WEIGHT: 1471 kg.

VEH. WHEELBASE: 2640 mm ; FRONT OVERHANG: 680 mm ; OVERALL WIDTH: 1530 mm

ACCELEROMETER DATA:

LOCATION: As per measurements on pages 4-13

CALIBRATION PROCEDURE: As per MGA Calibration Procedure

LINEARITY: >99.9% ; INTEGRATION ALGORITHM: Trapezoidal

VEH: IMPACT SPEED: 56.0 kph ; TIME OF SEPARATION: 75 msec

VELOCITY CHANGE: 67 kph

COLLISION DEFORMATION CLASSIFICATION (CDC) CODE:

F (Frontal)

CRUSH DEPTH DIMENSIONS:

C1 = 492 mm

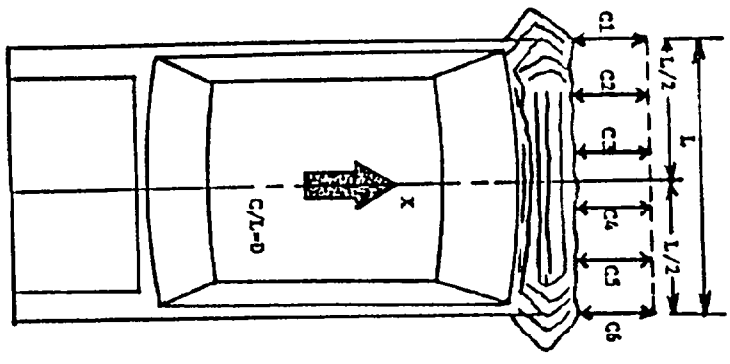
C2 = 493 mm

C3 = 551 mm

C4 = 486 mm

C5 = 469 mm

C6 = 436 mm



MIDPOINT OF DAMAGE: D = Vehicle Centerline (Longitude)

LENGTH OF DAMAGED REGION: L = 1530 mm

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS (Cont'd)

Photo No. 1
Pre-Test Front View

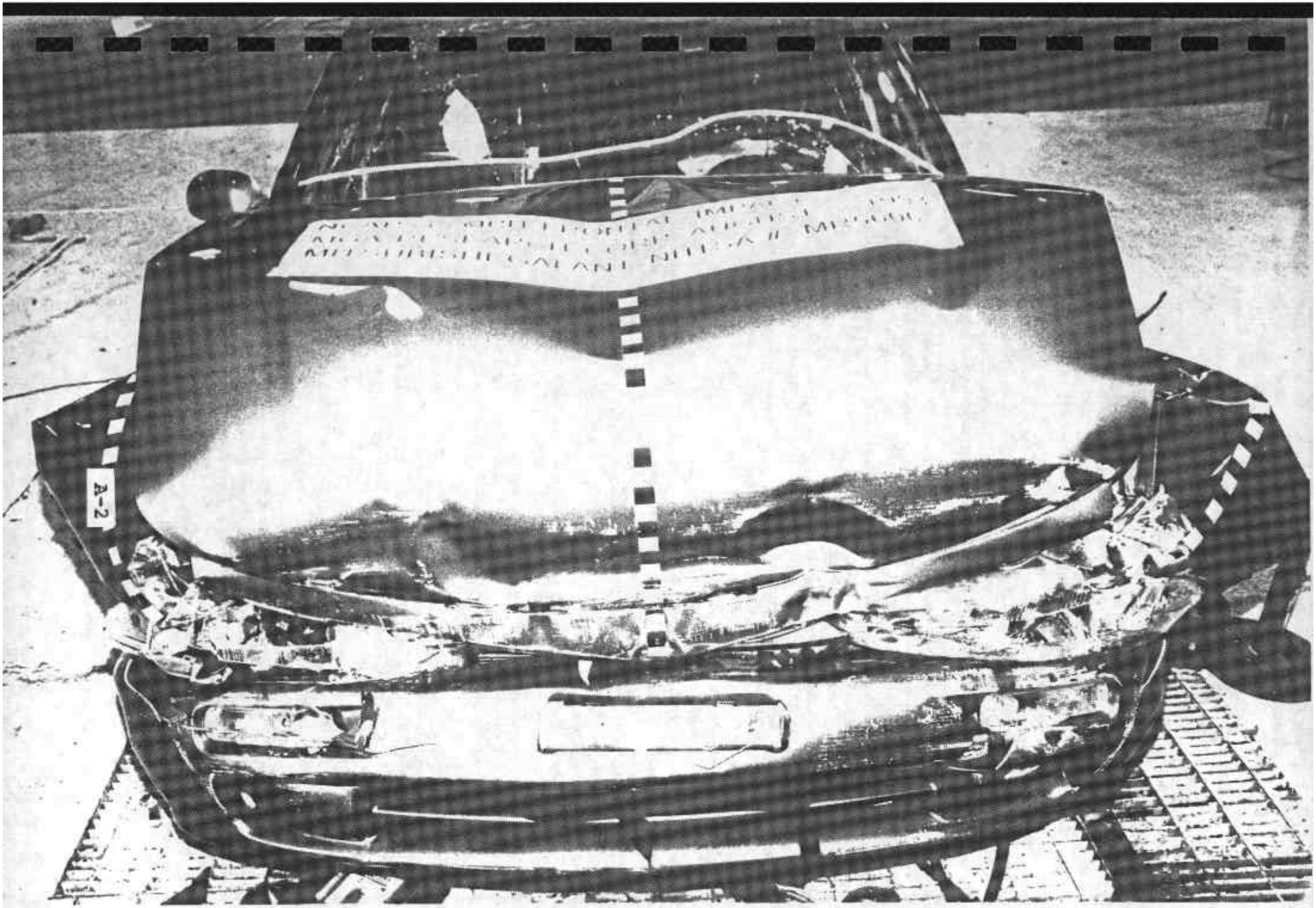


Photo No. 2
Post-Test Front View

Photo No. 3
Pre-Test Left Side View

Photo No. 4
Post-Test Left Side View

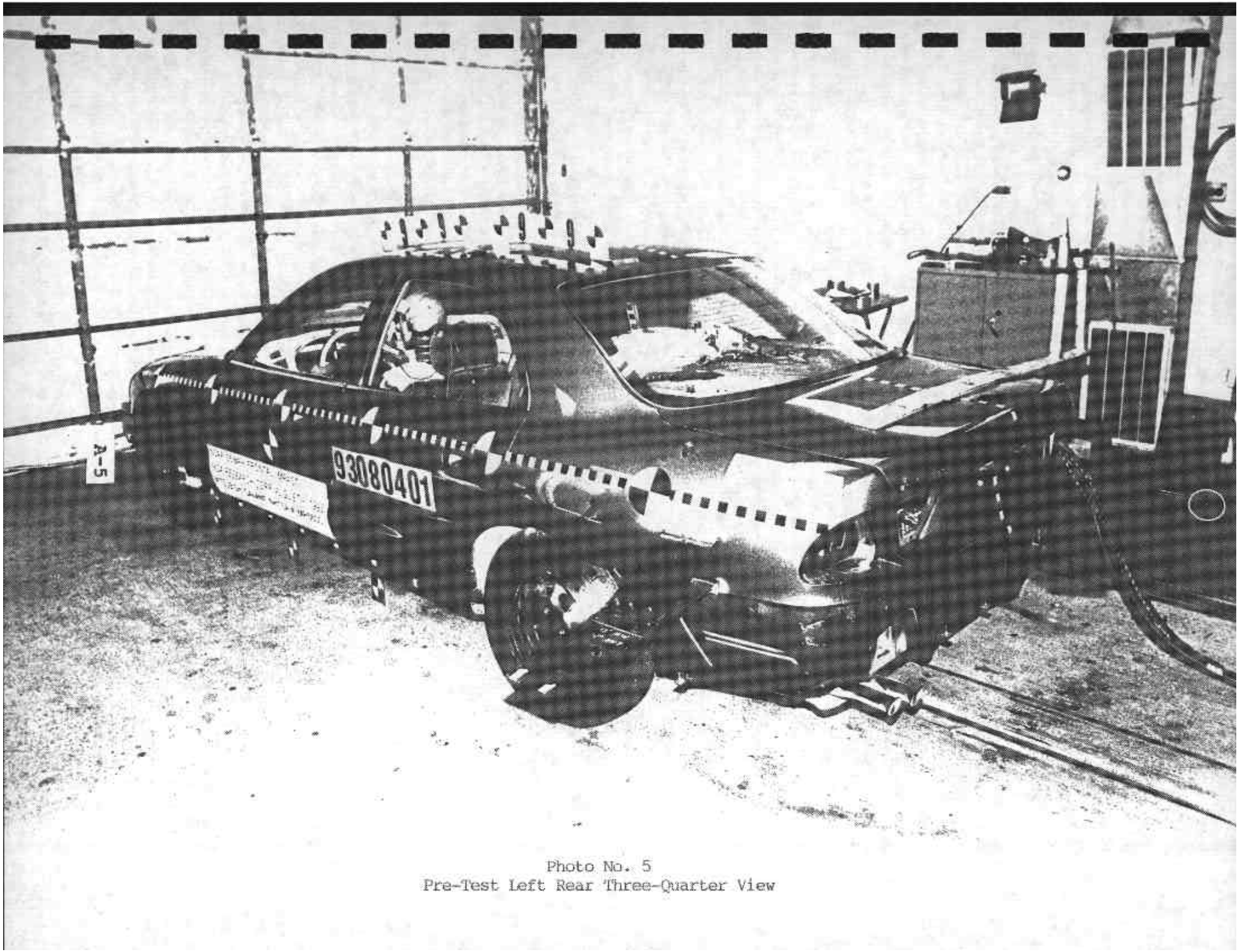


Photo No. 5
Pre-Test Left Rear Three-Quarter View

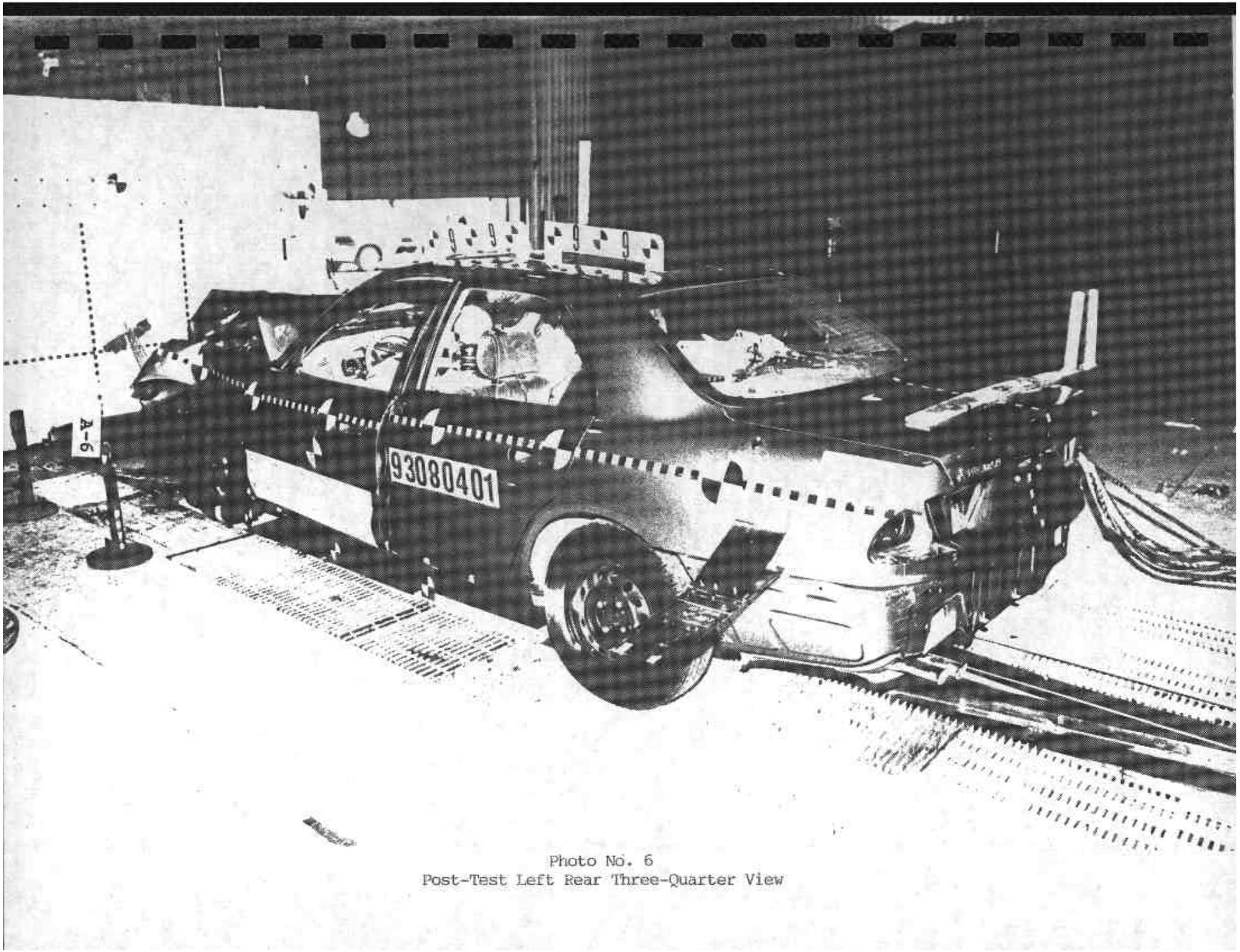


Photo No. 6
Post-Test Left Rear Three-Quarter View

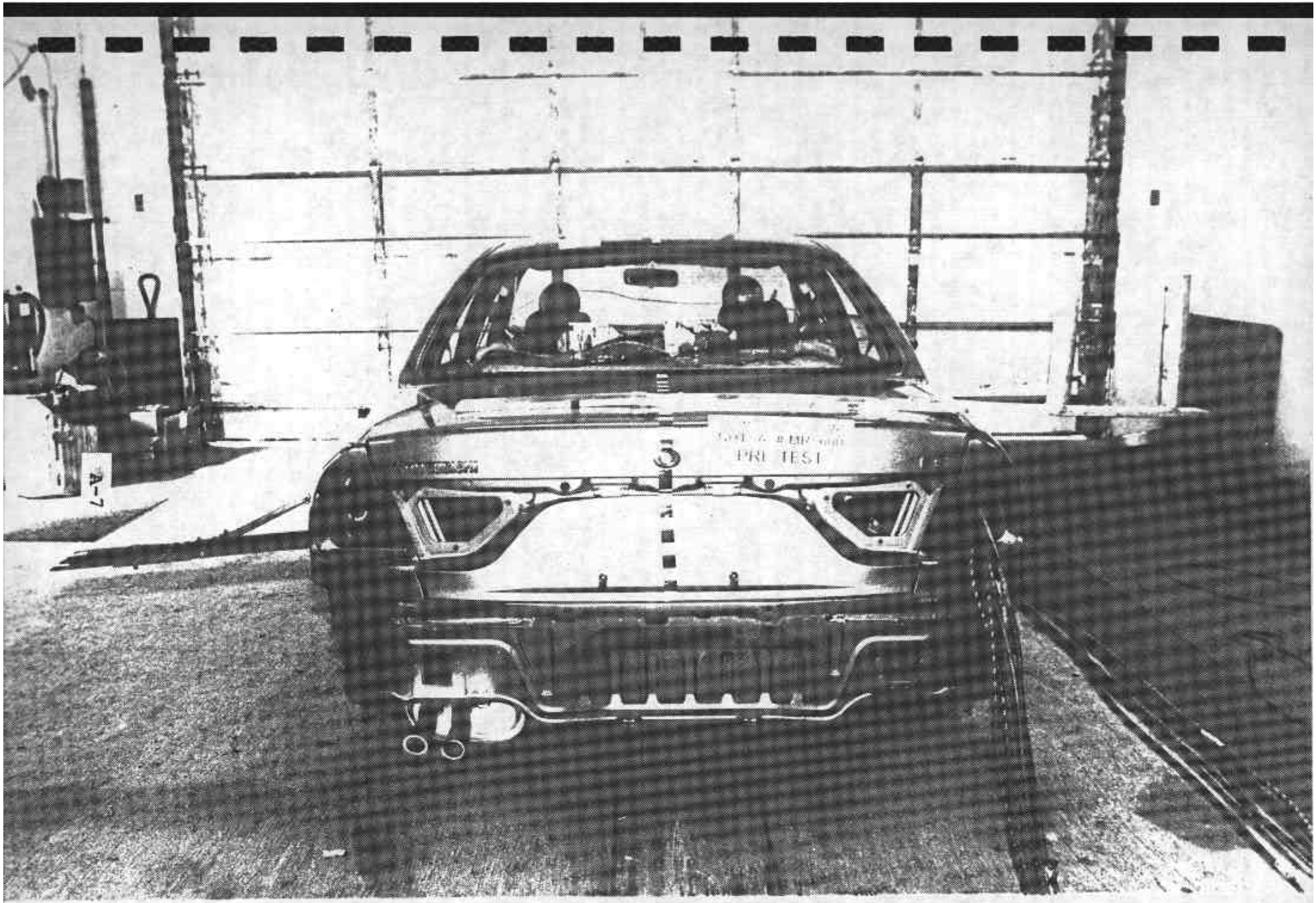


Photo No. 7
Pre-Test Rear View

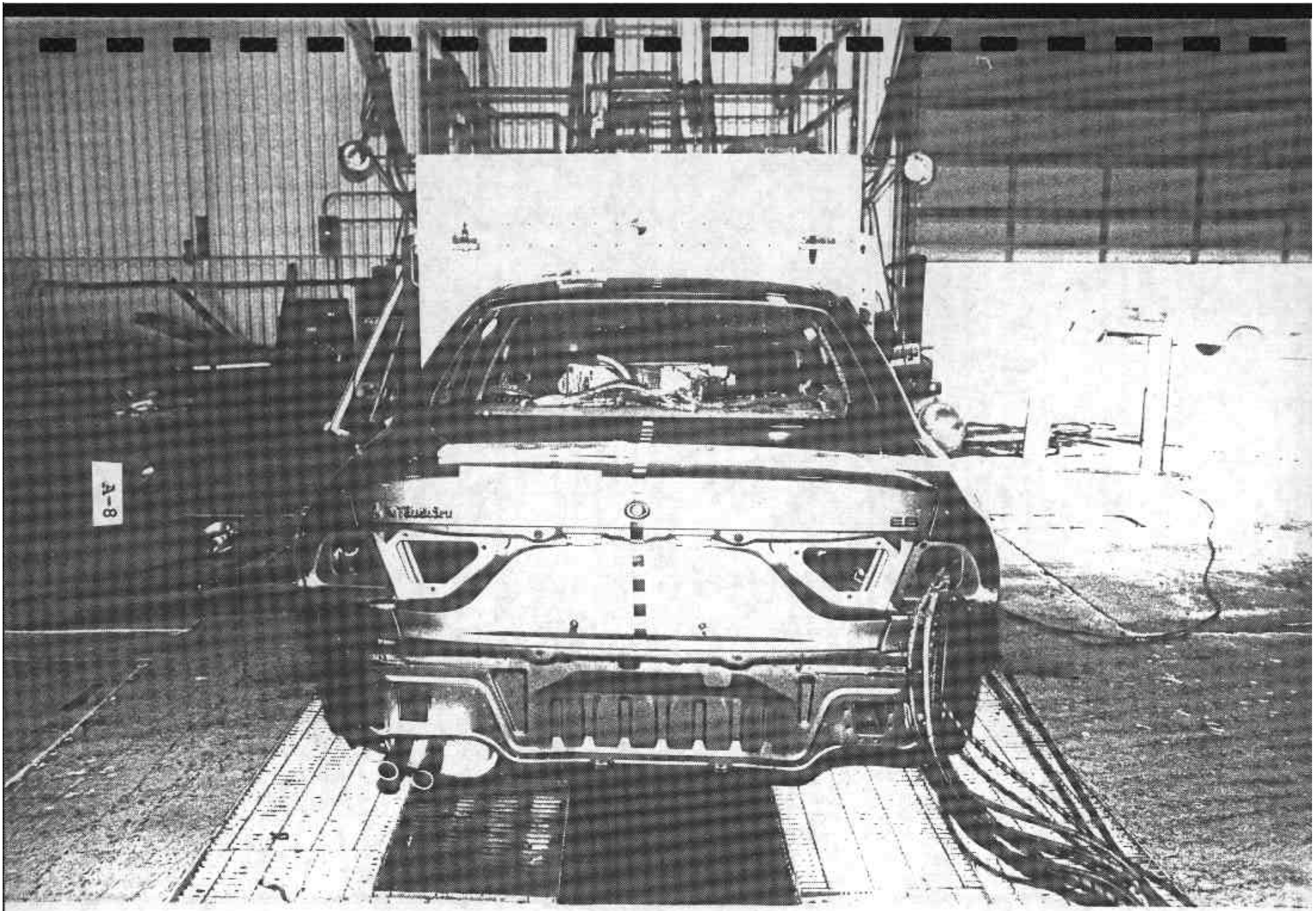


Photo No. 8
Post-Test Rear View

Photo No. 9
Pre-Test Right Side View

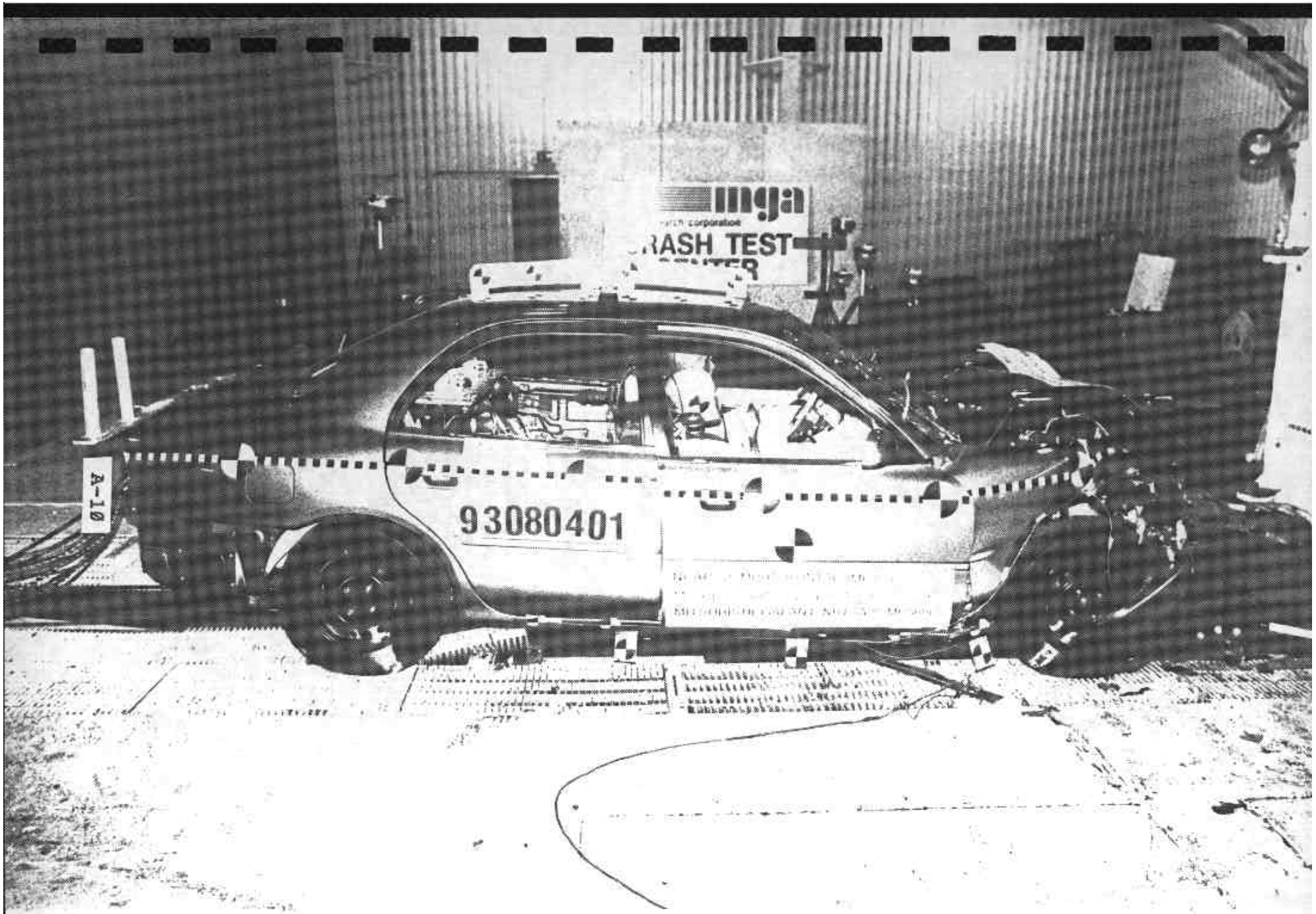


Photo No. 10
Post-Test Right Side View

Photo No. 11
Pre-Test Right Front Three-Quarter View

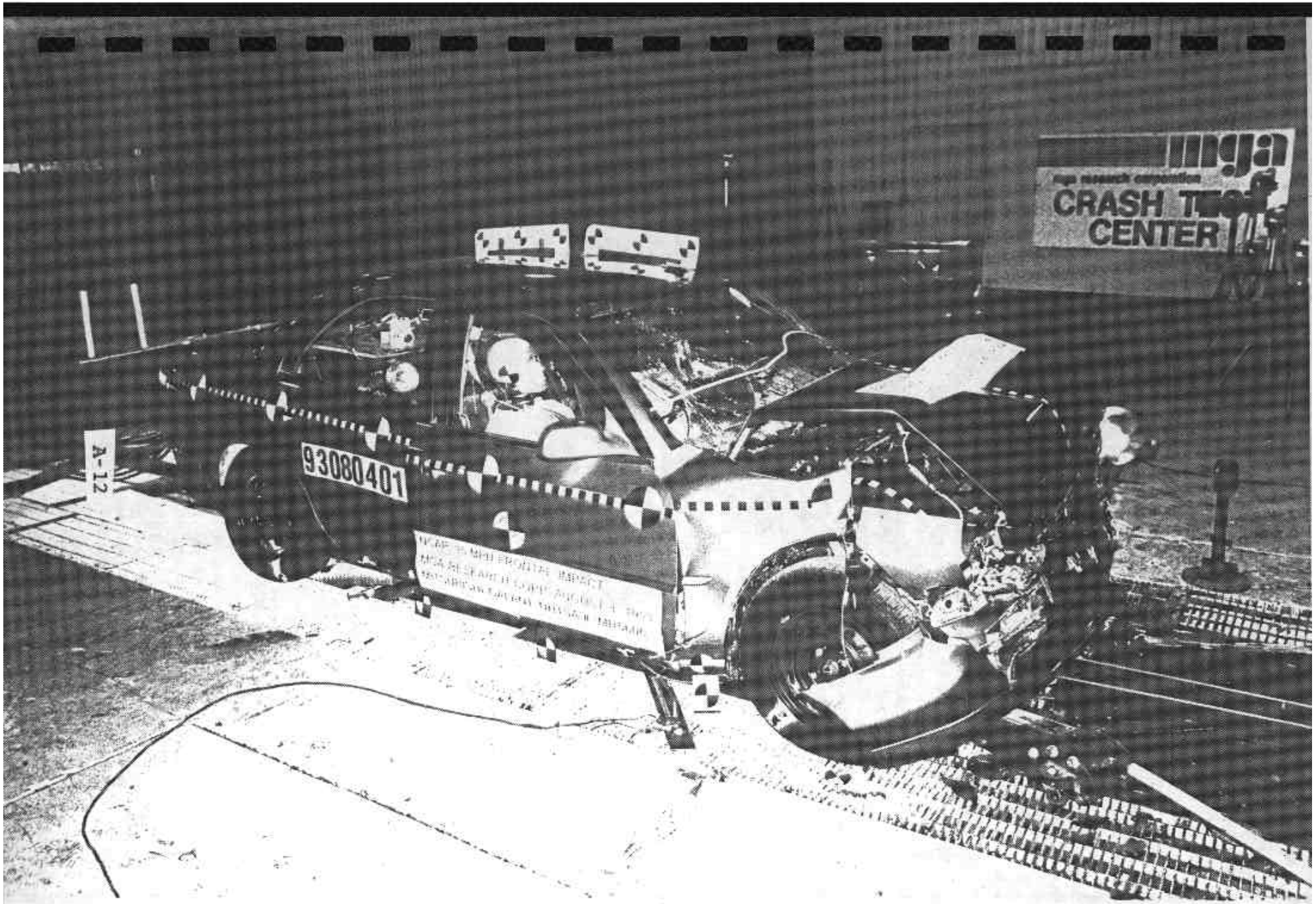


Photo No. 12
Post-Test Right Front Three-Quarter View

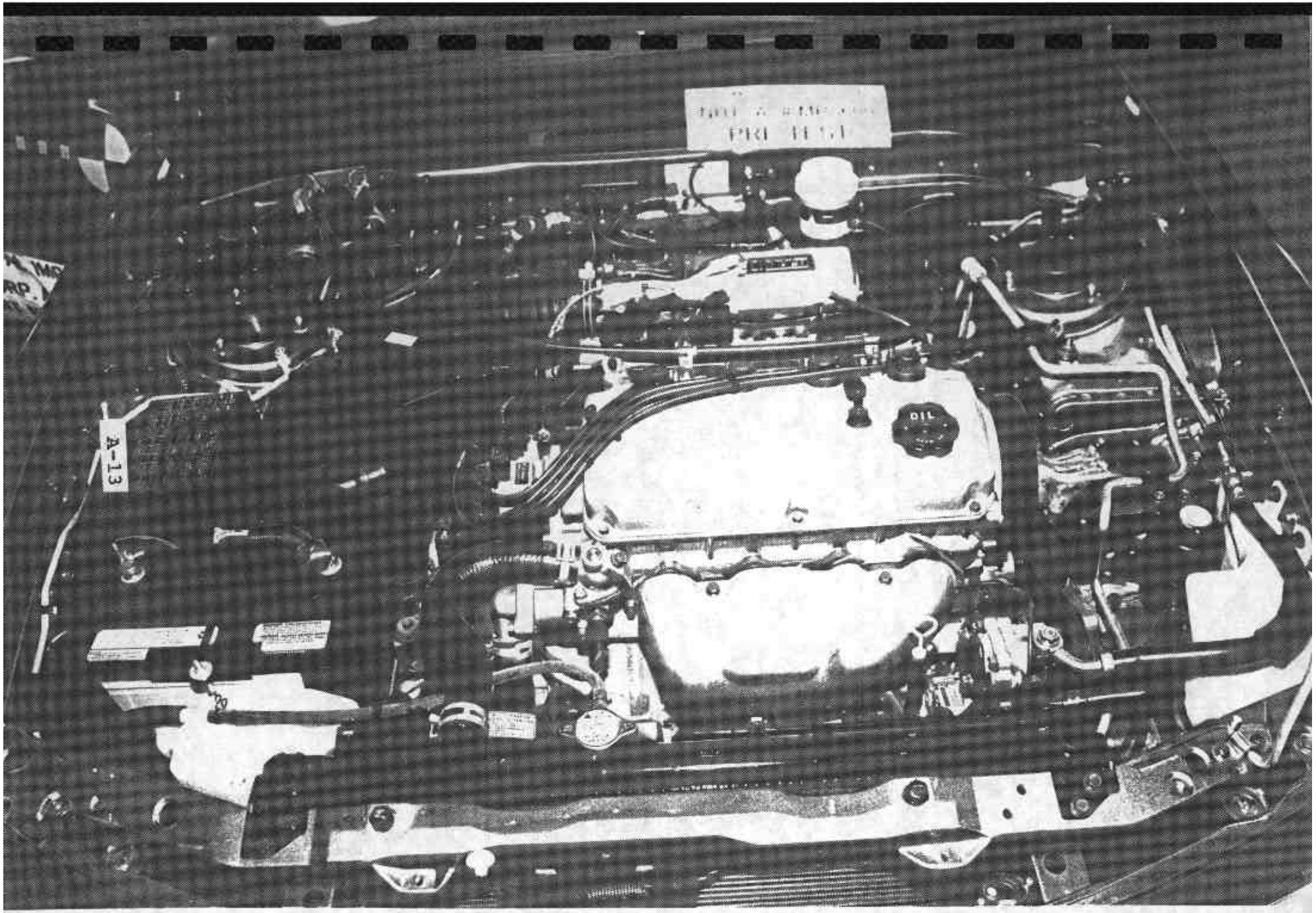


Photo No. 13
Pre-Test Engine Compartment View

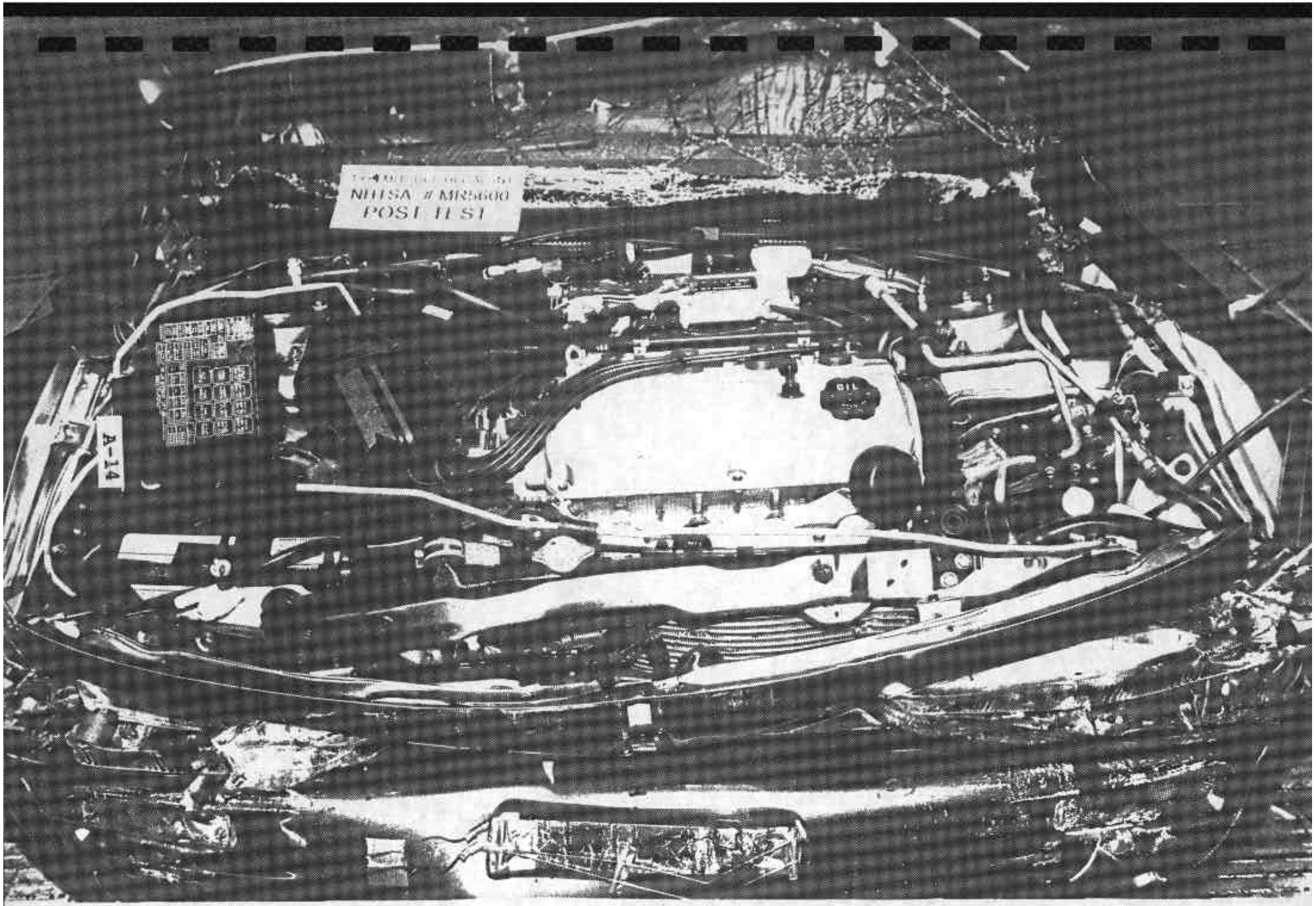


Photo No. 14
Post-Test Engine Compartment View

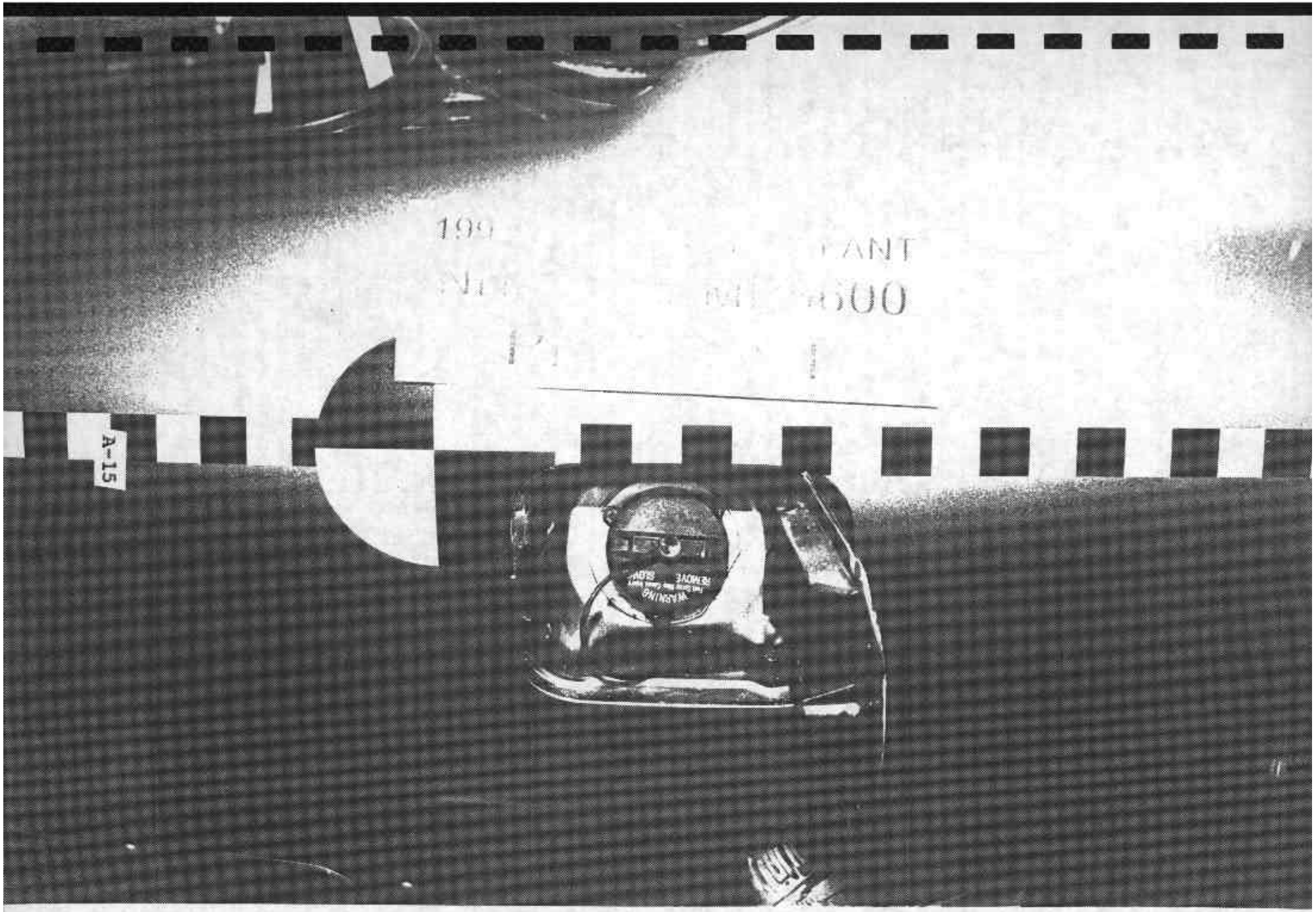


Photo No. 15
Pre-Test Fuel Filler Cap View

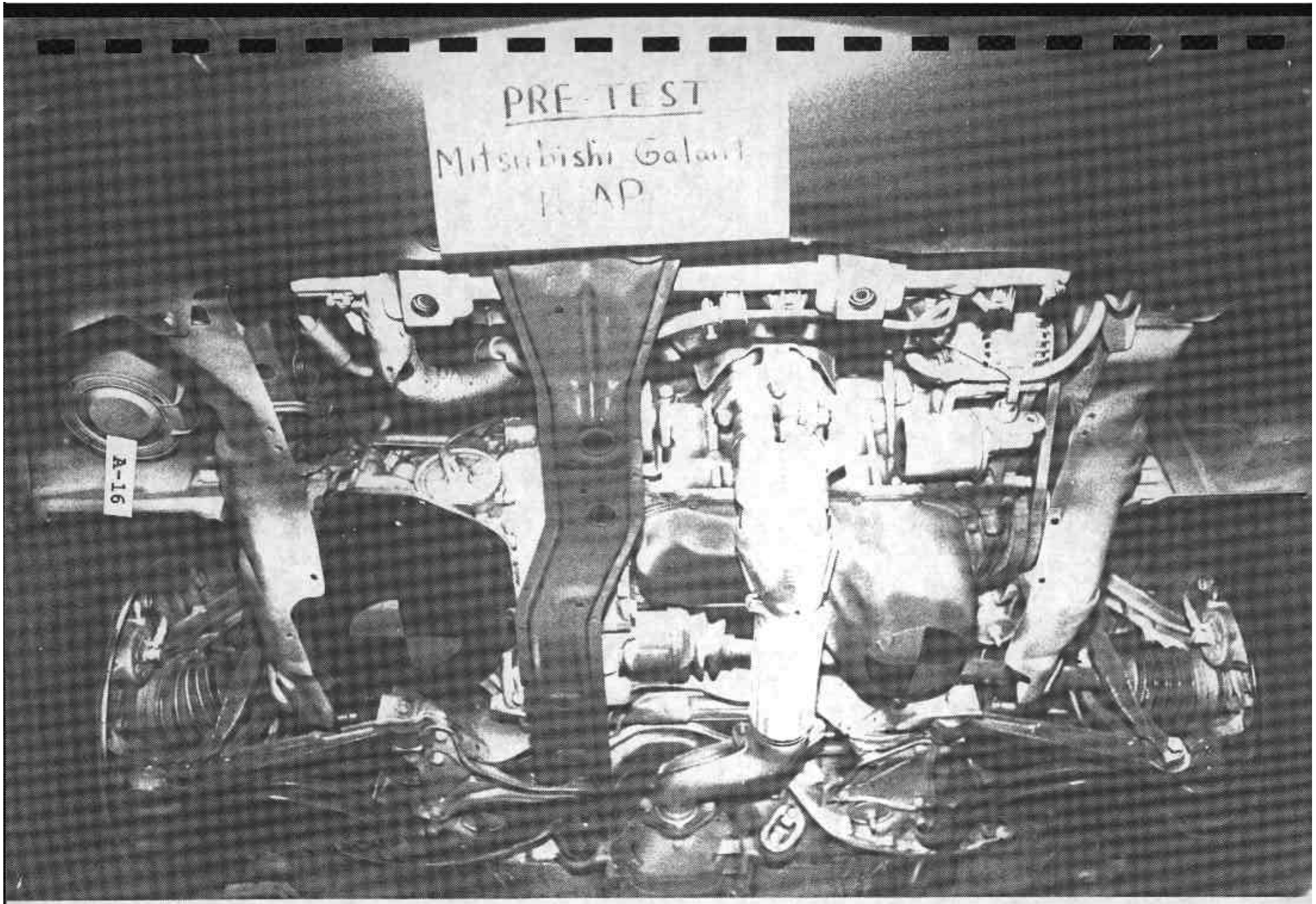


Photo No. 16
Pre-Test Front Underbody View

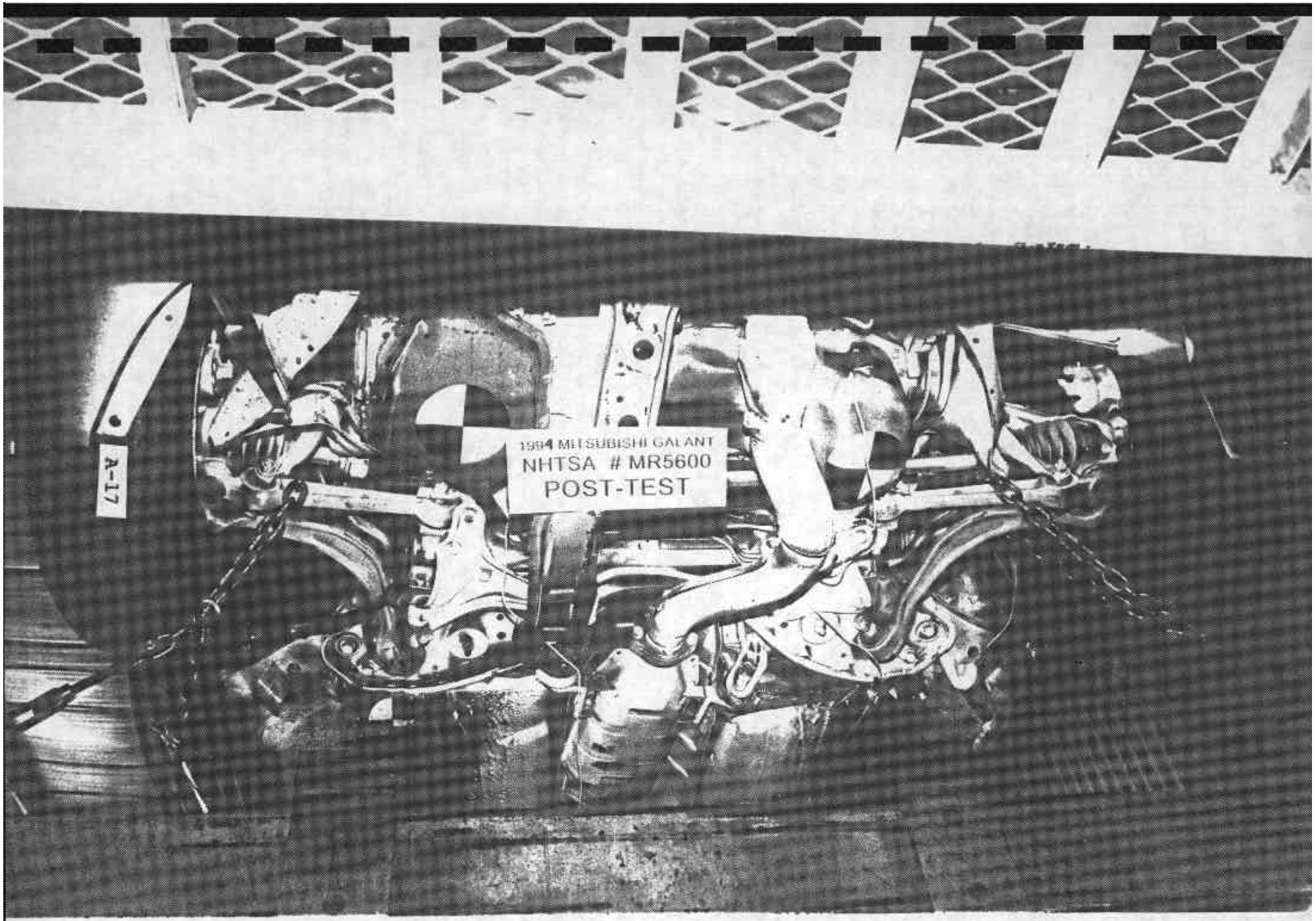


Photo No. 17
Post-Test Front Underbody View

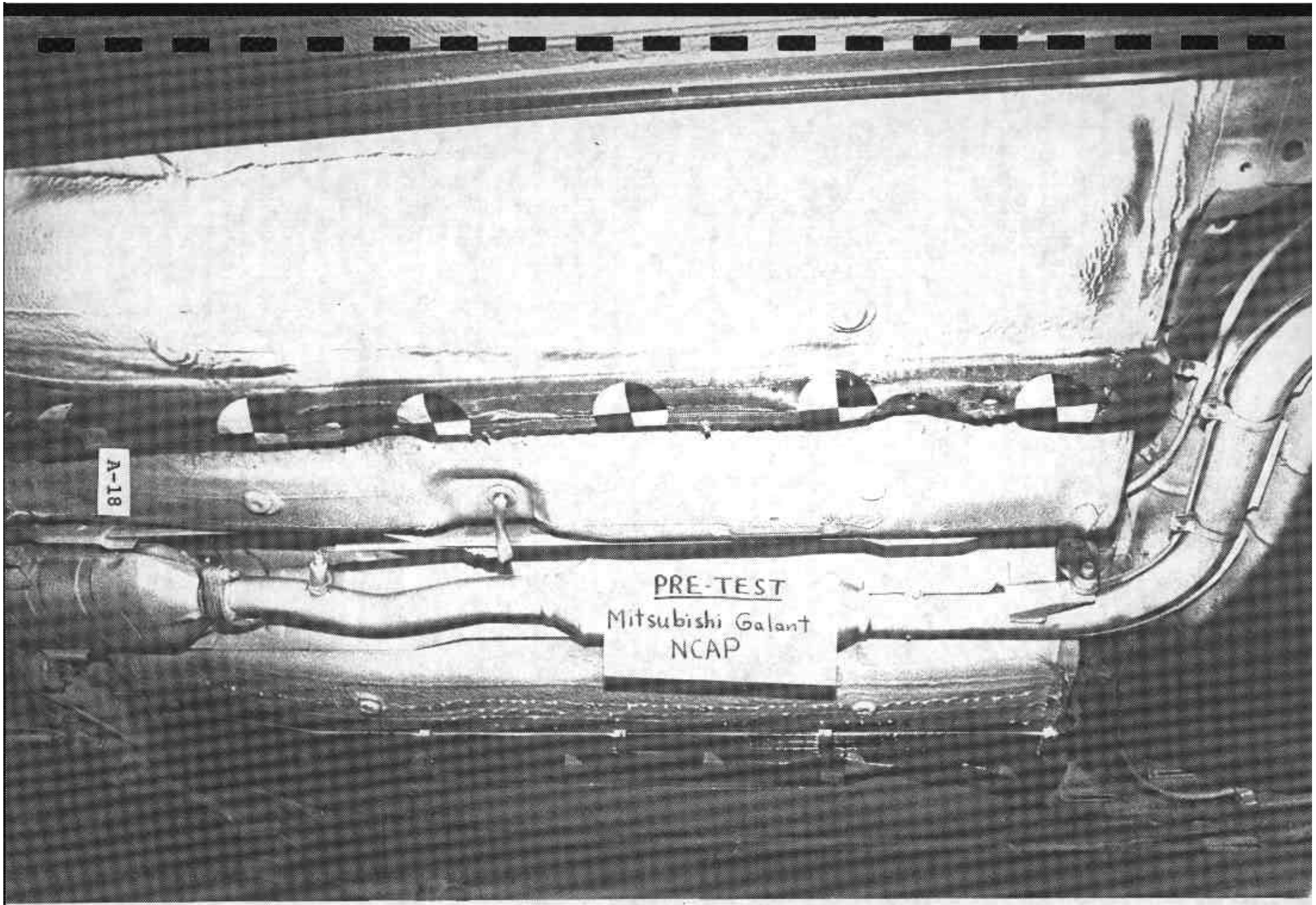


Photo No. 18
Pre-Test Mid Underbody View

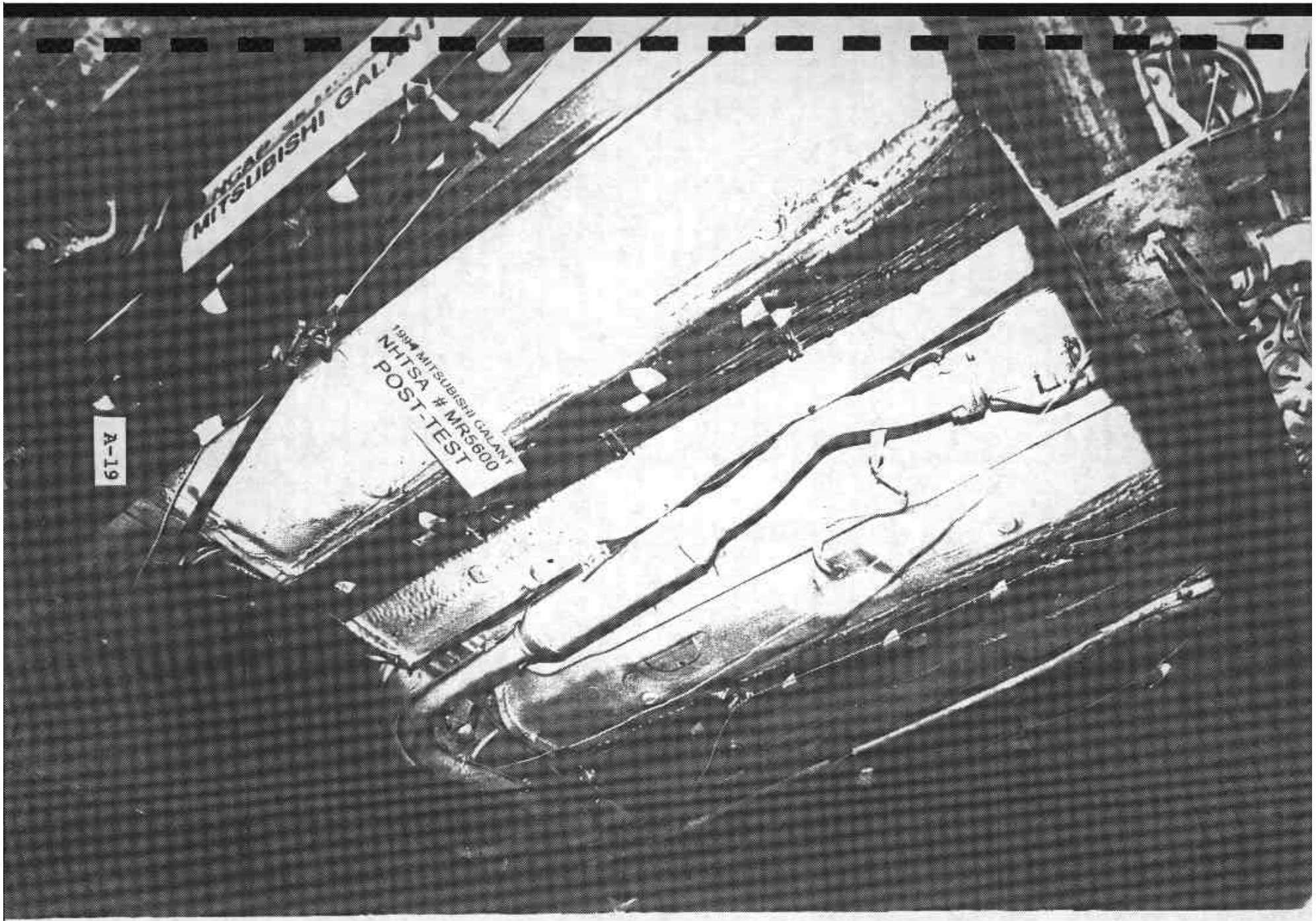


Photo No. 19
Post-Test Mid Underbody View

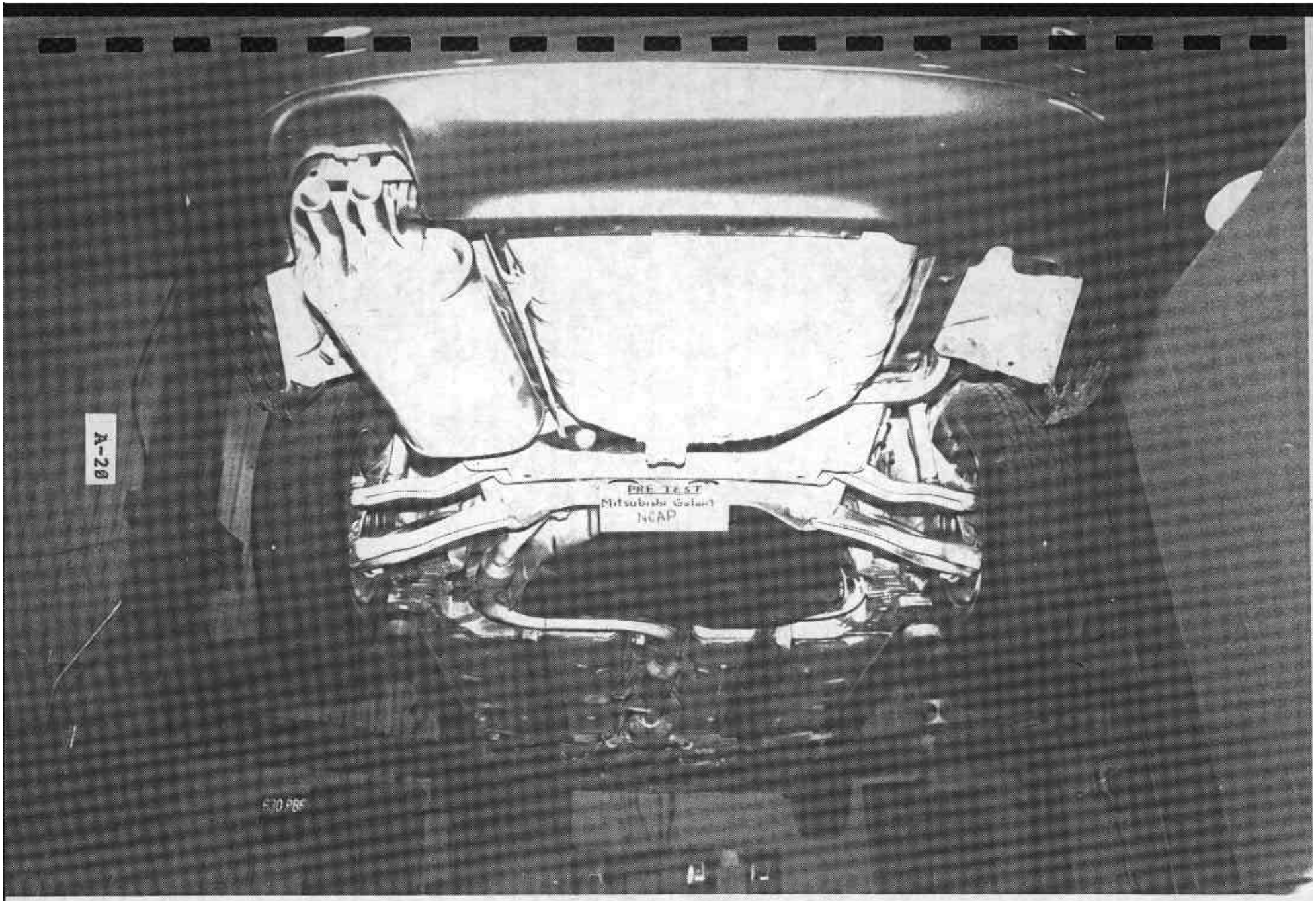


Photo No. 20
Pre-Test Rear Underbody View

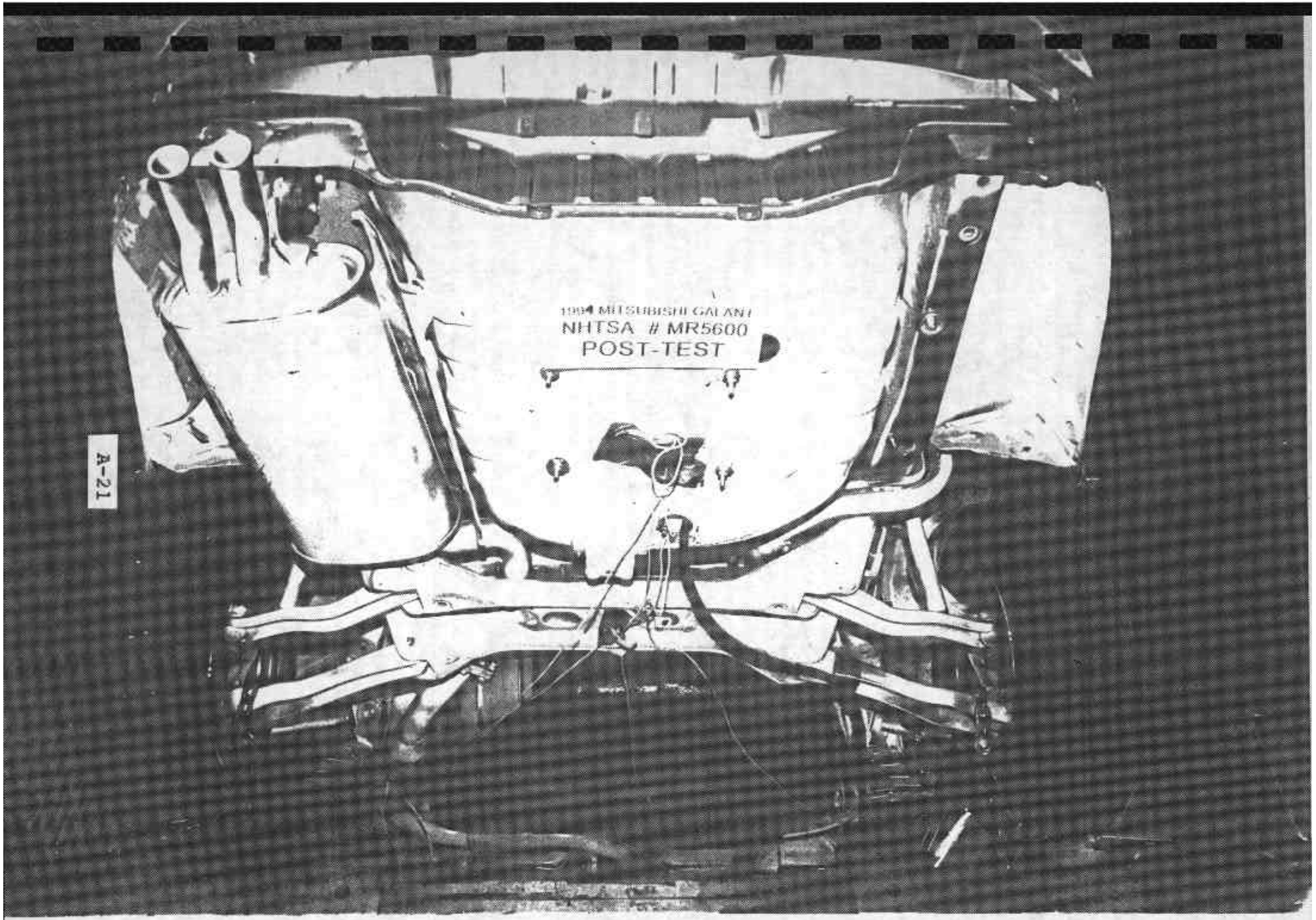


Photo No. 21
Post-Test Rear Underbody View

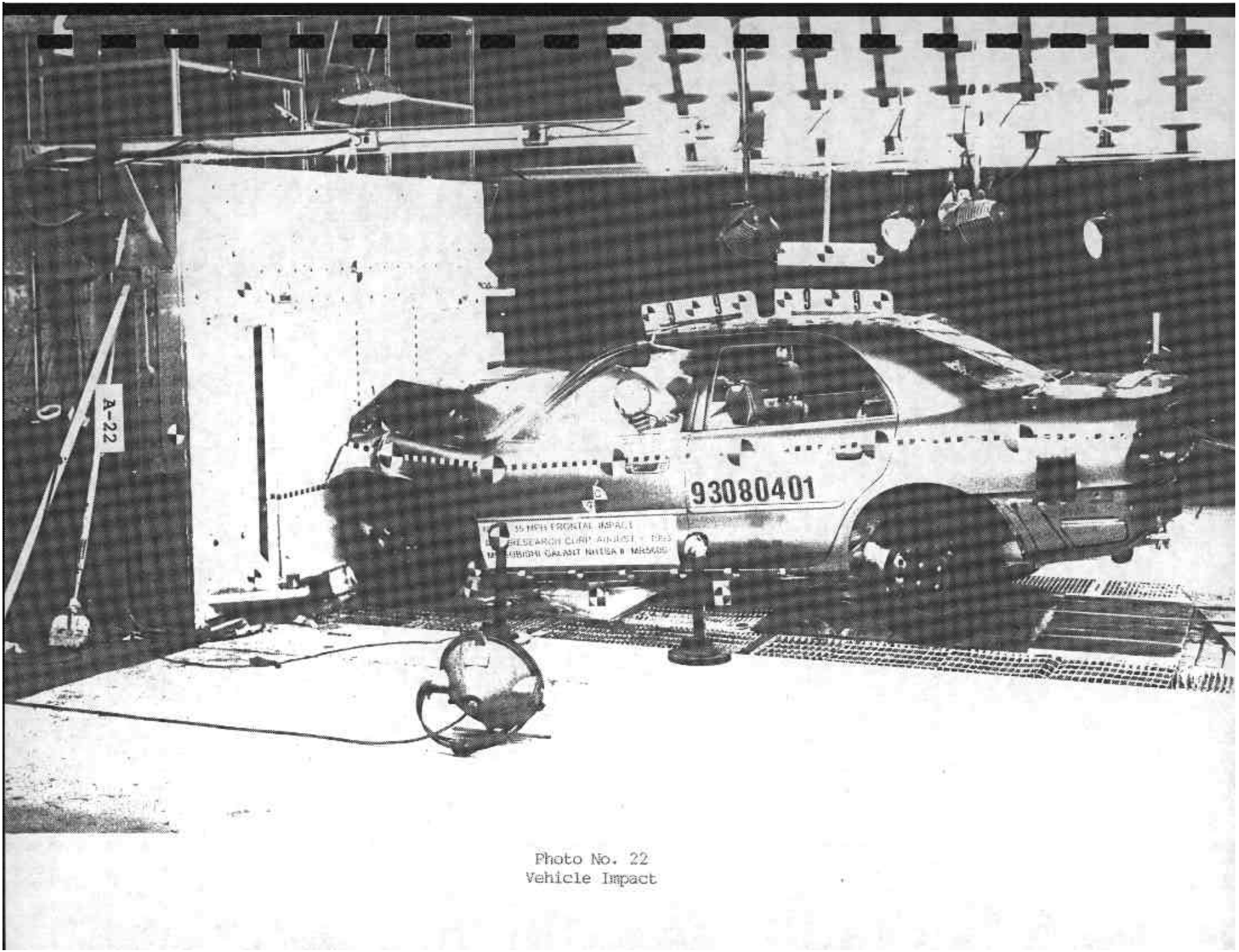


Photo No. 22
Vehicle Impact

Photo No. 23
Pre-Test Windshield View

Photo No. 24
Post-Test Windshield View

Photo No. 25
Pre-Test Driver Dummy Position View

Photo No. 26
Post-Test Driver Dummy Position View

Photo No. 27
Pre-Test Driver Dummy Position View
(Door Open)

Photo No. 28
Post-Test Driver Dummy Position View
(Door Open)

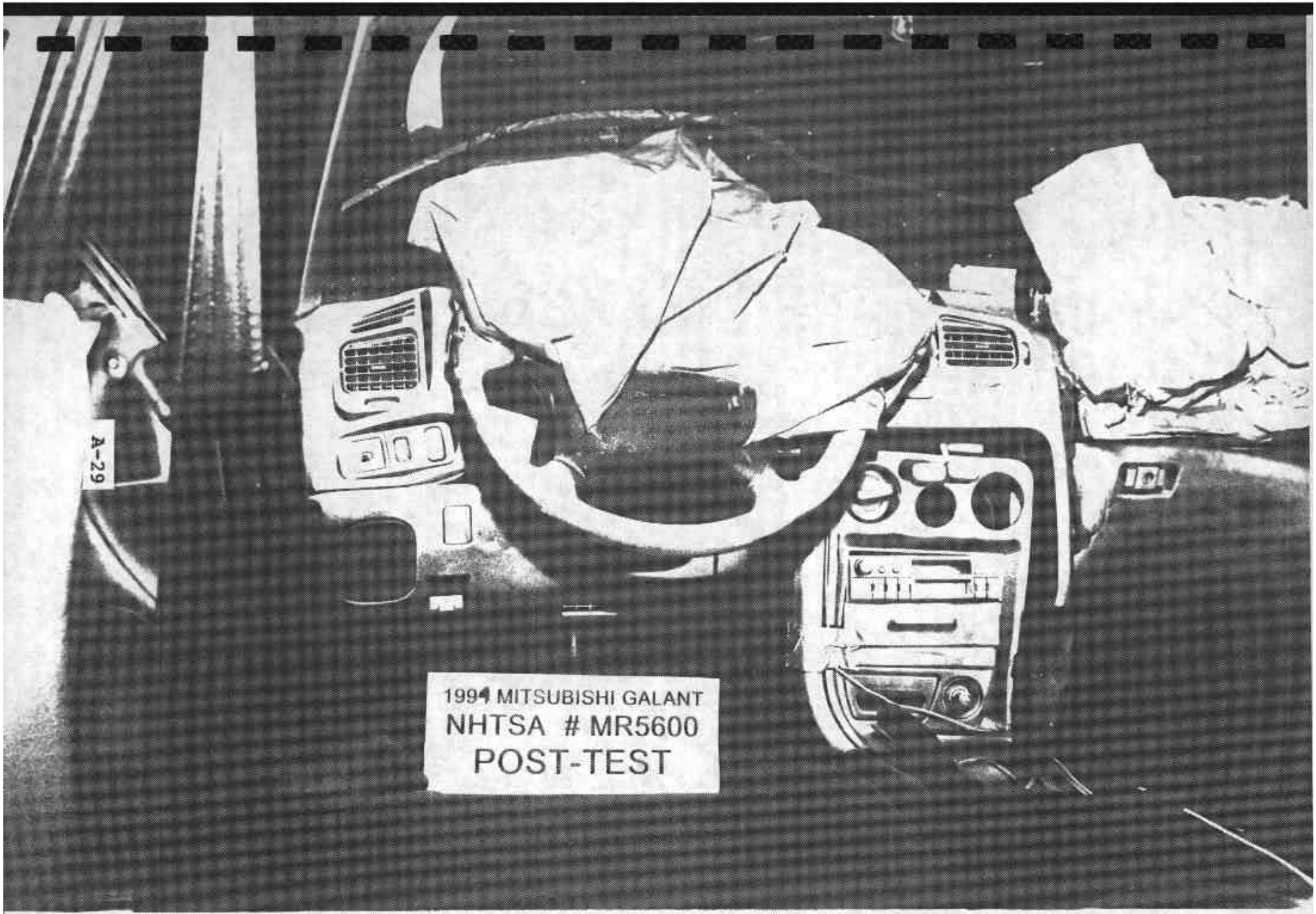


Photo No. 29
Post-Test Driver Airbag Contact

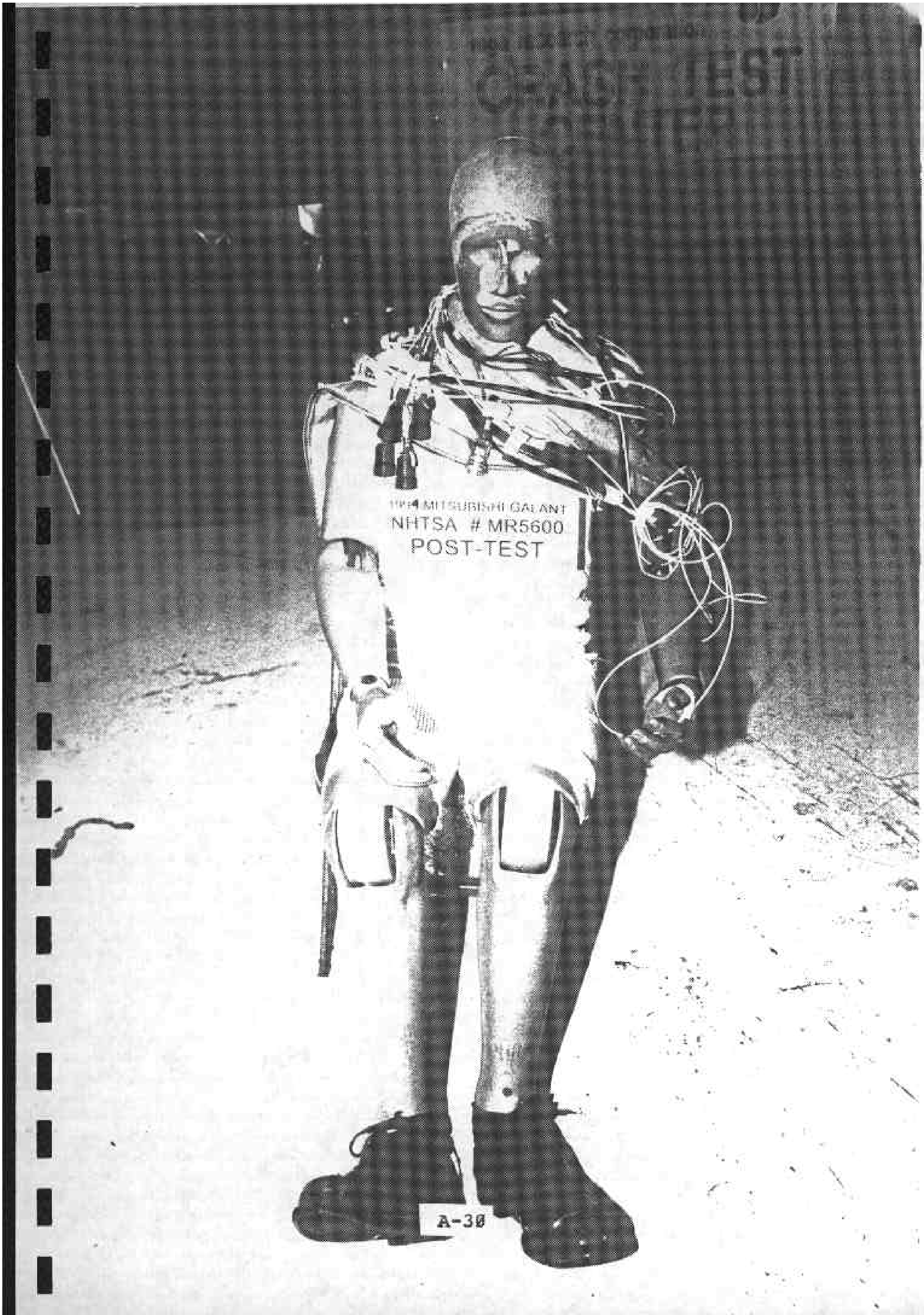


Photo No. 30
Post-Test Driver Dummy

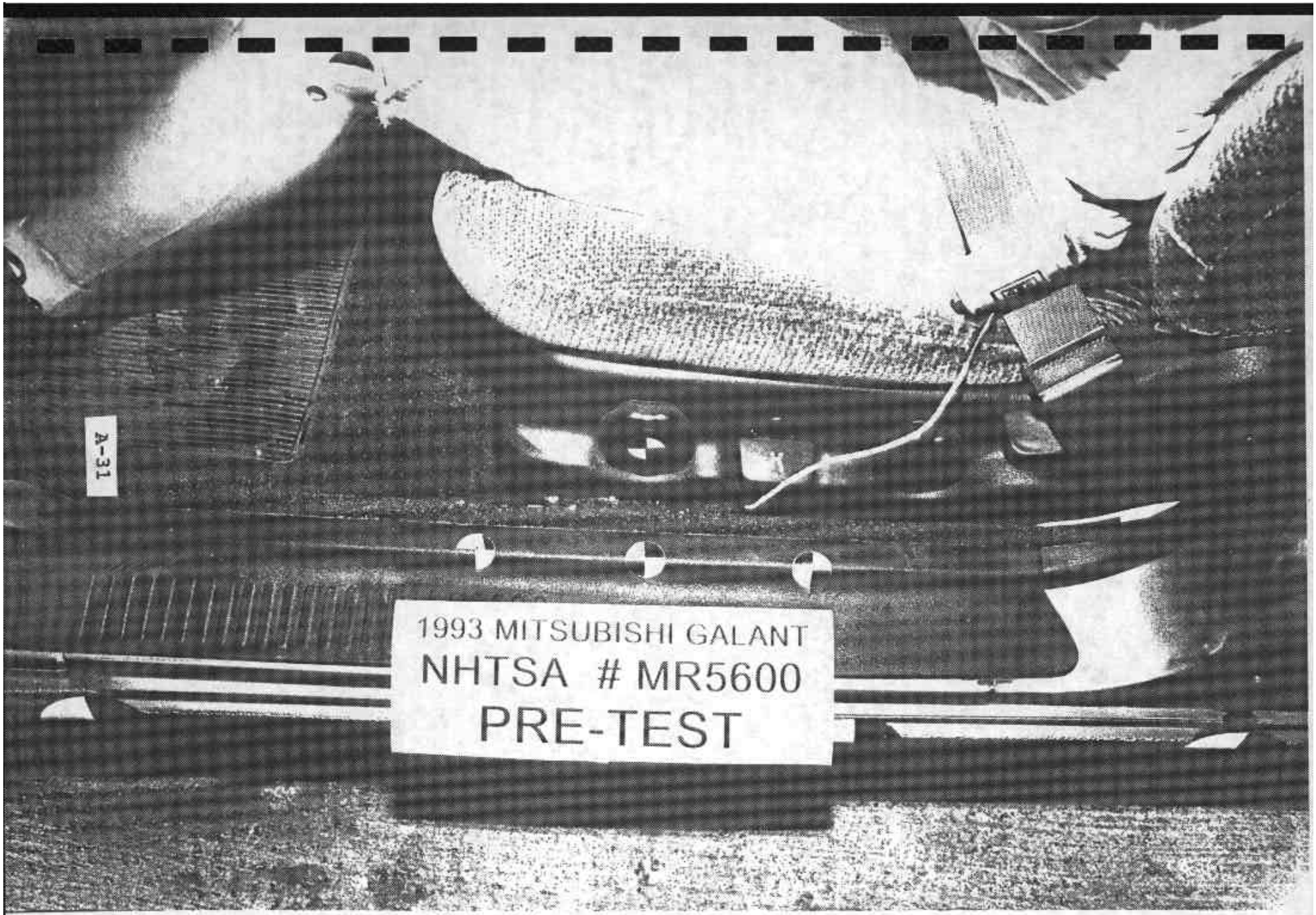


Photo No. 31
Pre-Test Driver Seat Position View

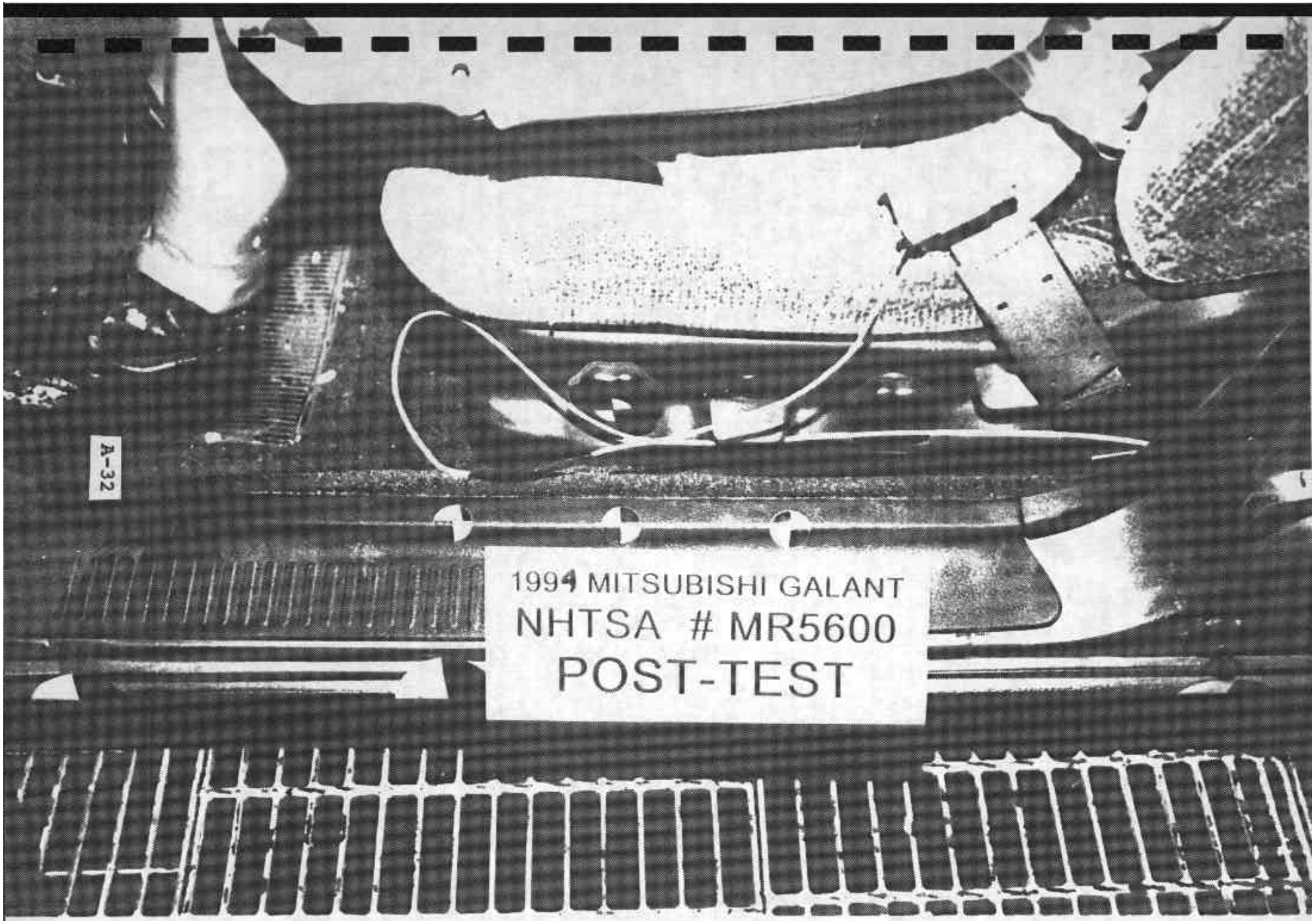


Photo No. 32
Post-Test Driver Seat Position View

Photo No. 33
Pre-Test Passenger Dummy Position View

Photo No. 34
Post-Test Passenger Dummy Position View

Photo No. 35
Pre-Test Passenger Dummy Position View
(Door Open)

Photo No. 36
Post-Test Passenger Dummy Position View
(Door Open)

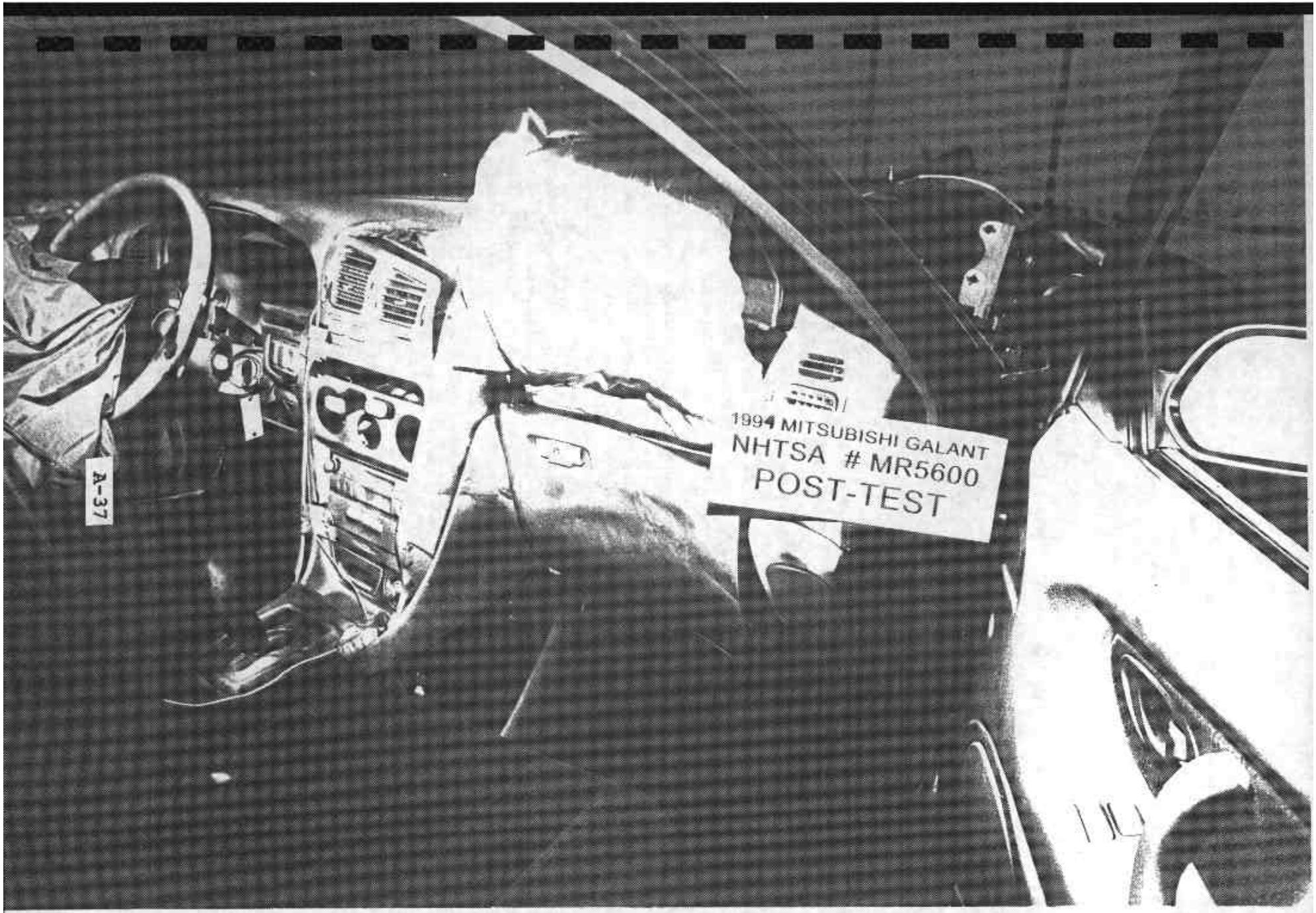


Photo No. 37
Post-Test Passenger Dash

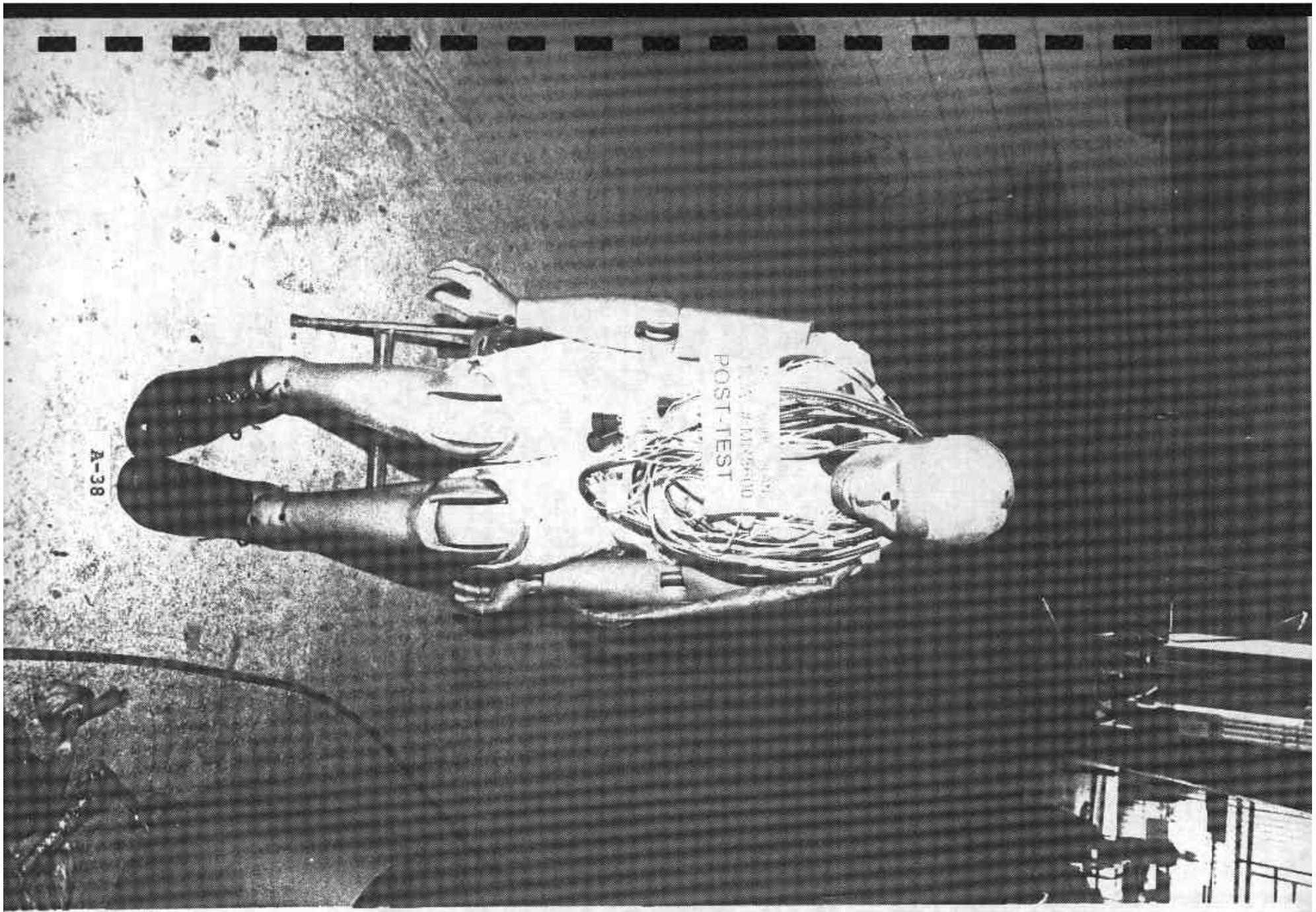


Photo No. 38
Post-Test Passenger Dummy

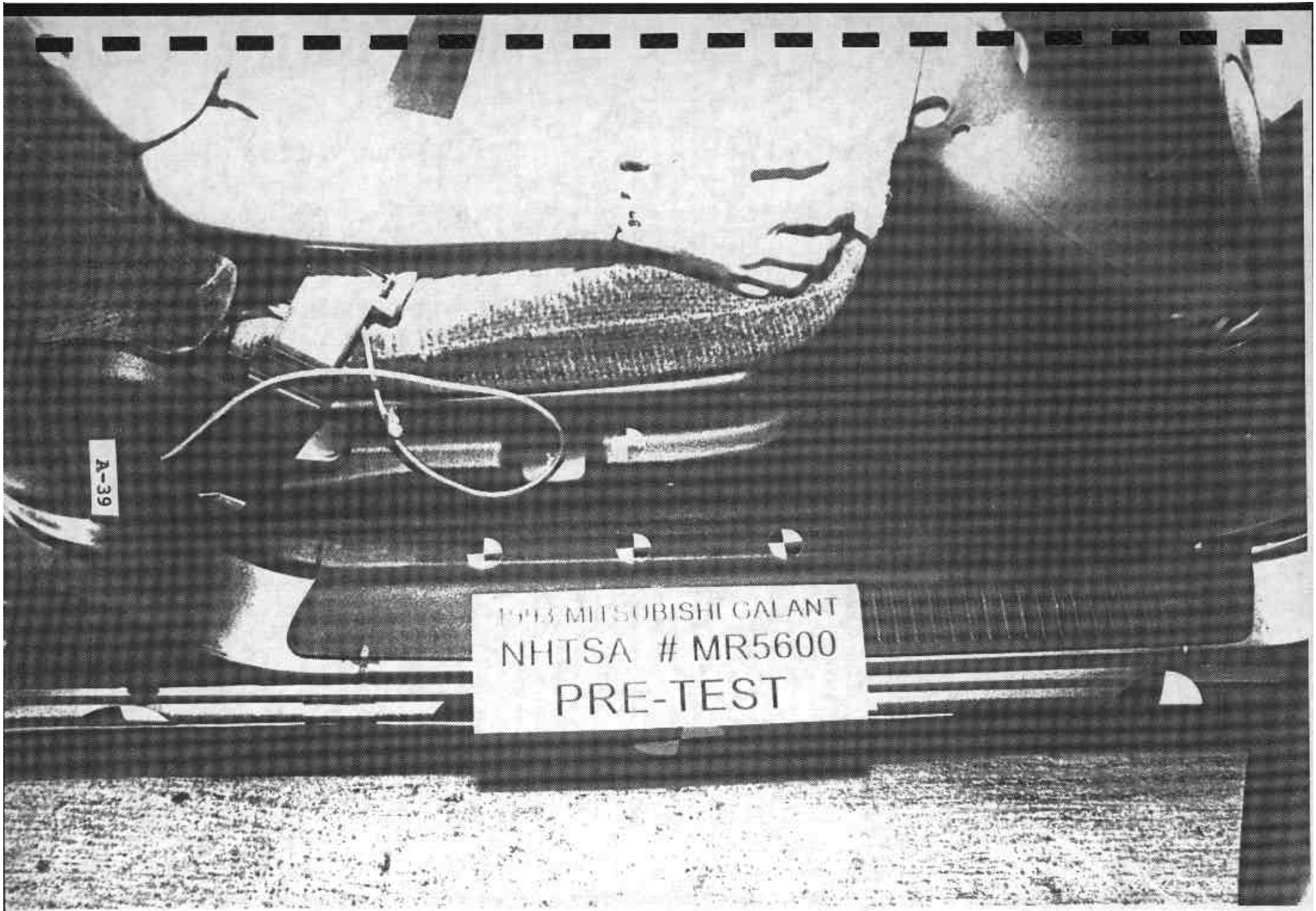


Photo No. 39
Pre-Test Passenger Seat Position View

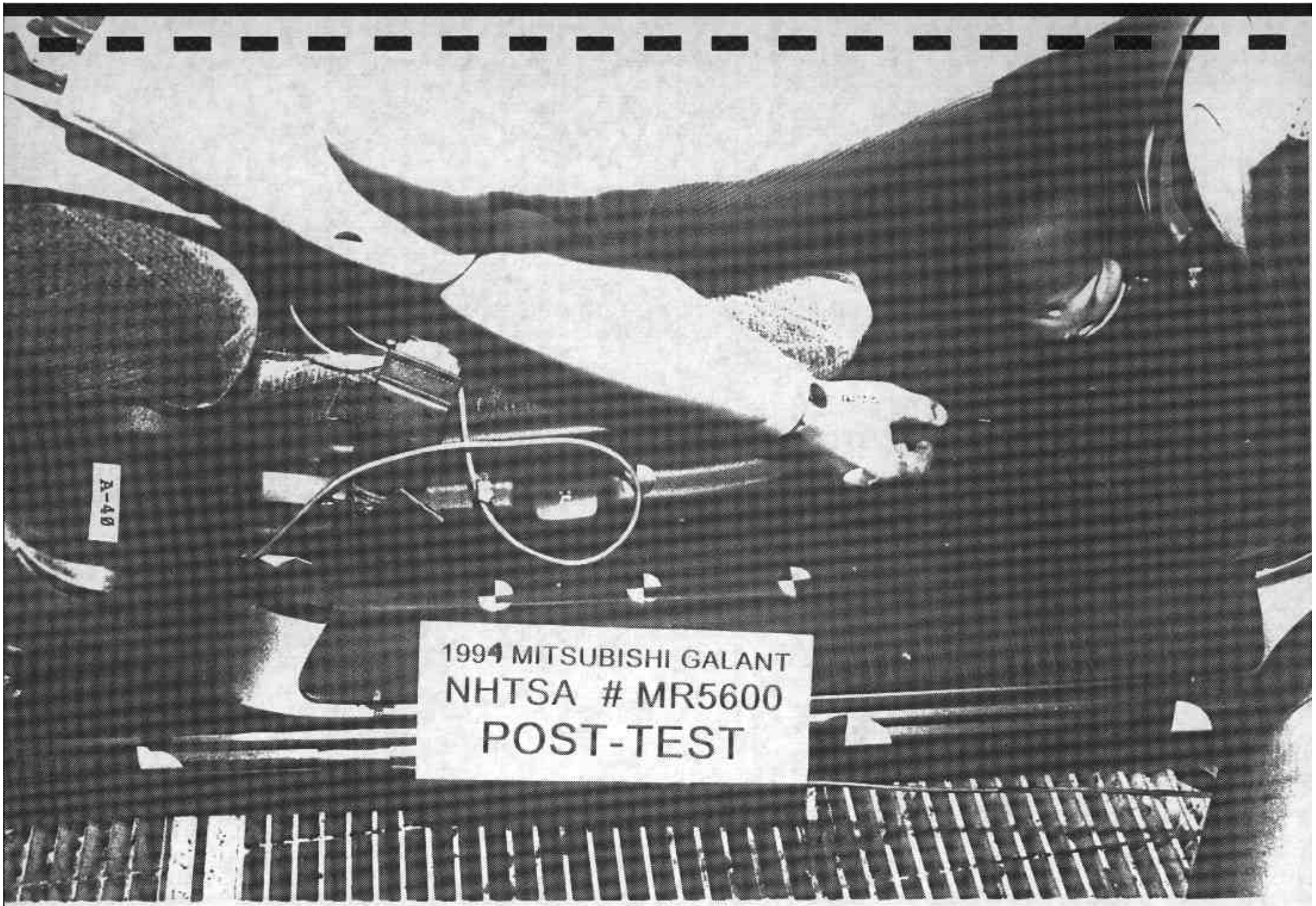


Photo No. 40
Post-Test Passenger Seat Position View

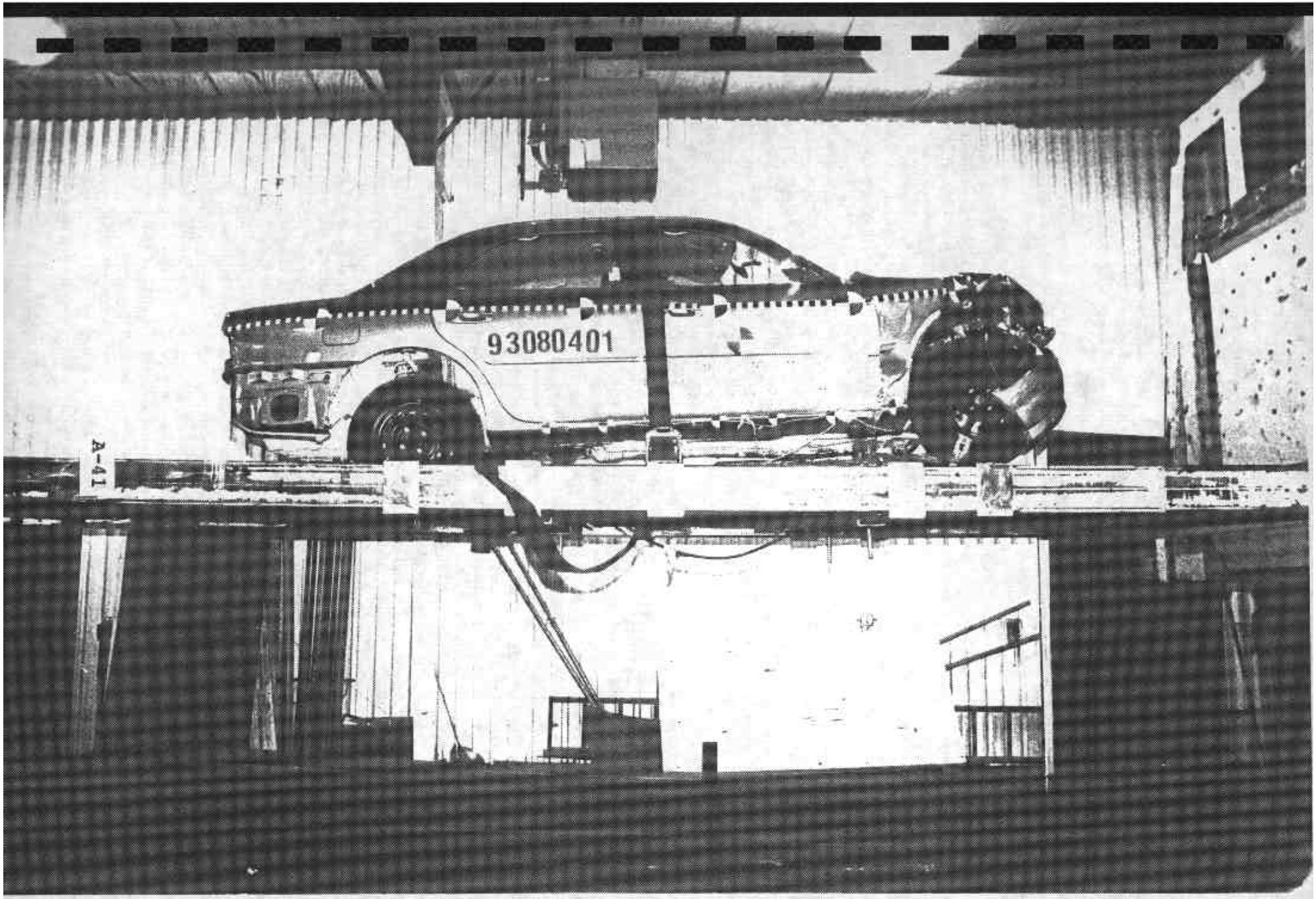


Photo No. 41
Rollover 0 Degrees

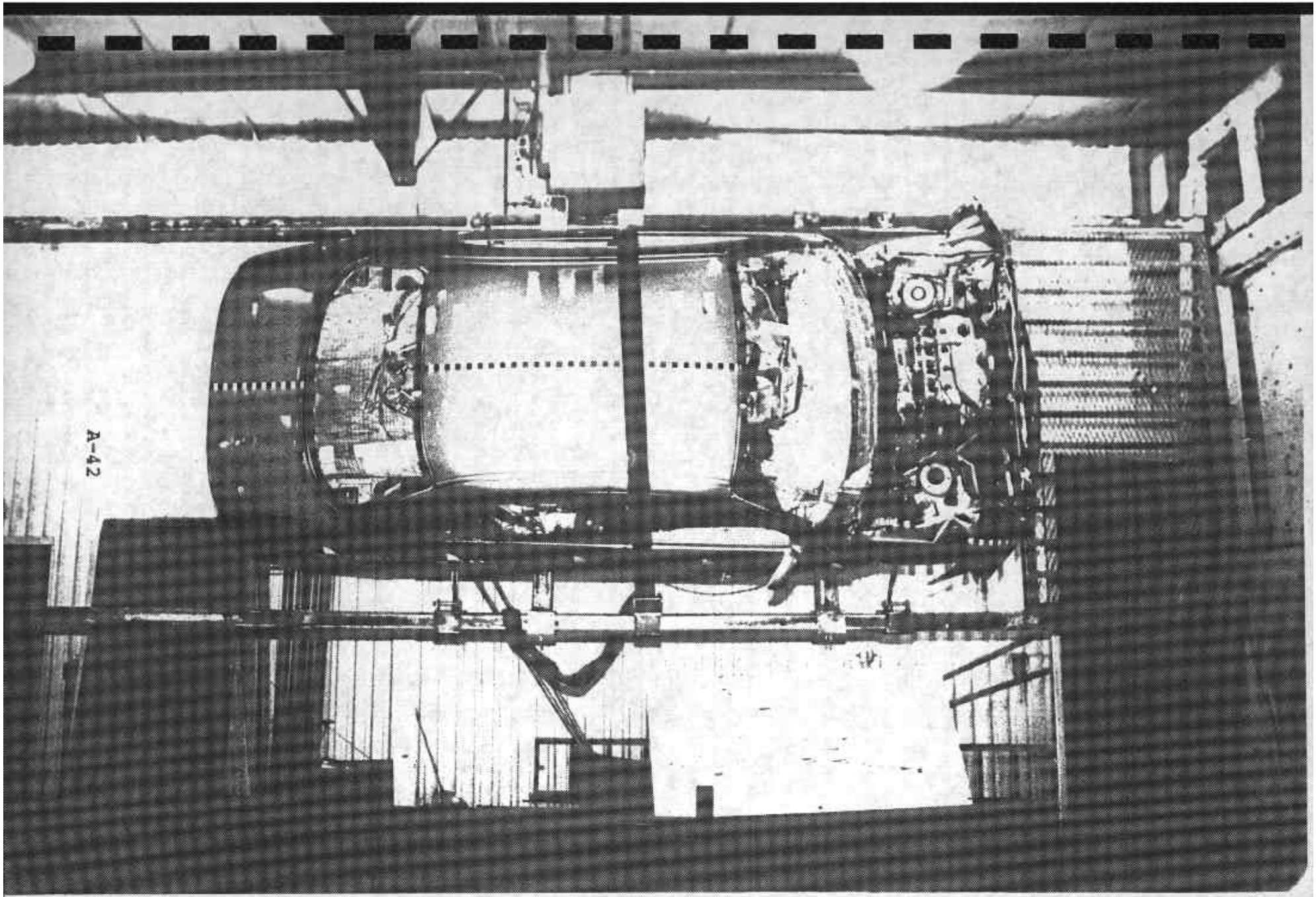


Photo No. 42
Rollover 90 Degrees

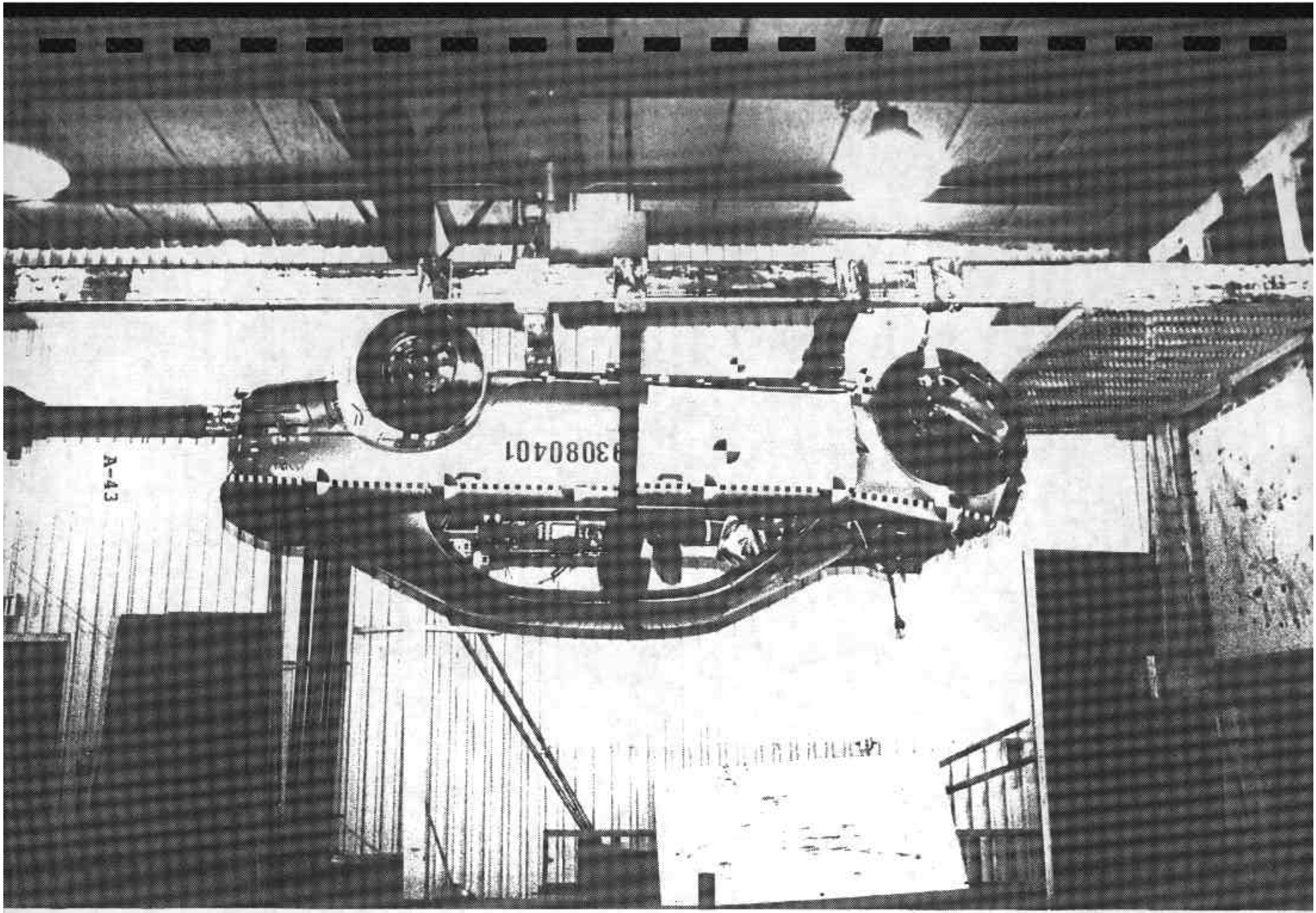
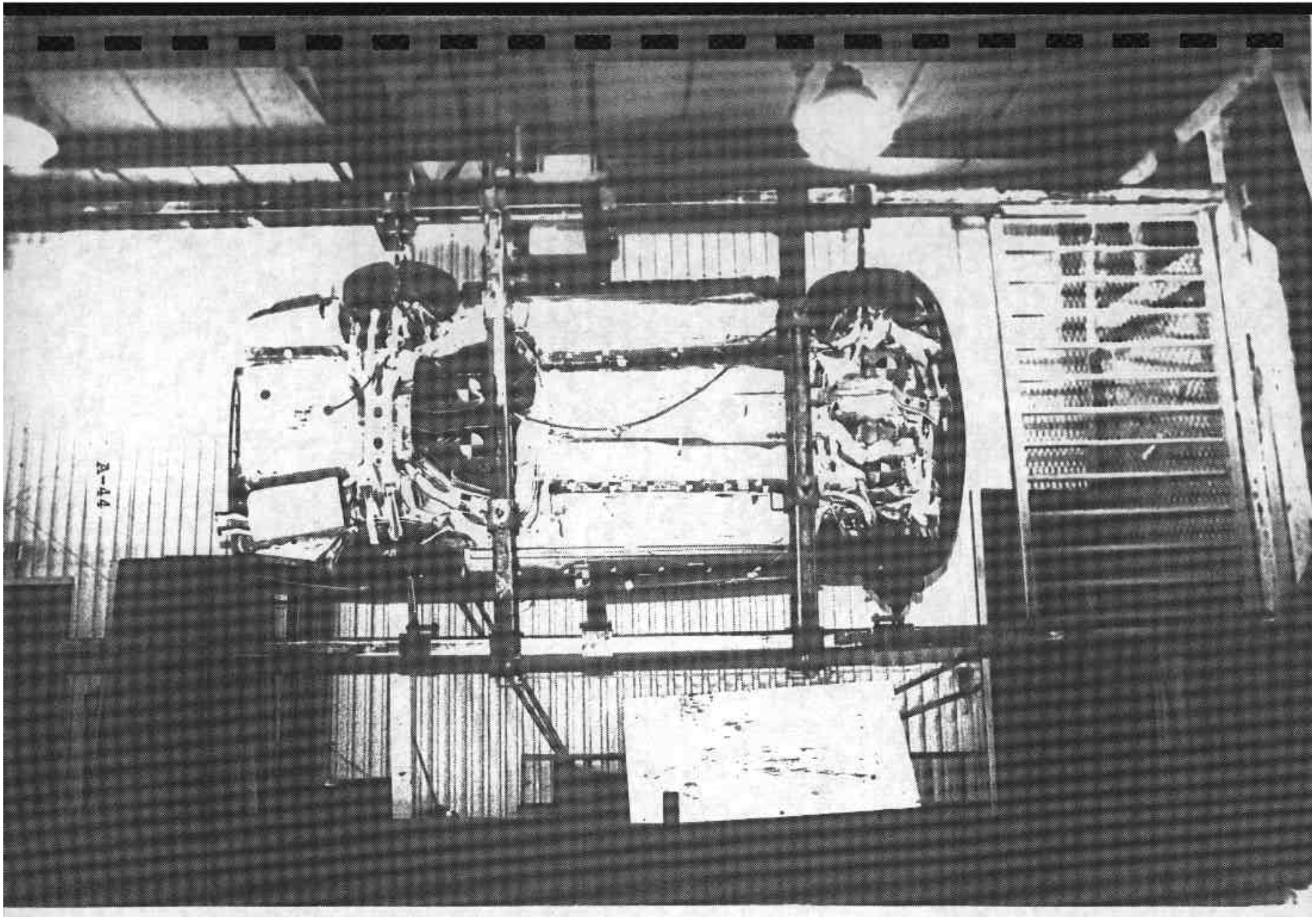


Photo No. 43
Rollover 180 Degrees



A-44

Photo No. 44
Rollover 360 Degrees

APPENDIX B

Vehicle, Load Cell Barrier and Dummy Response Data

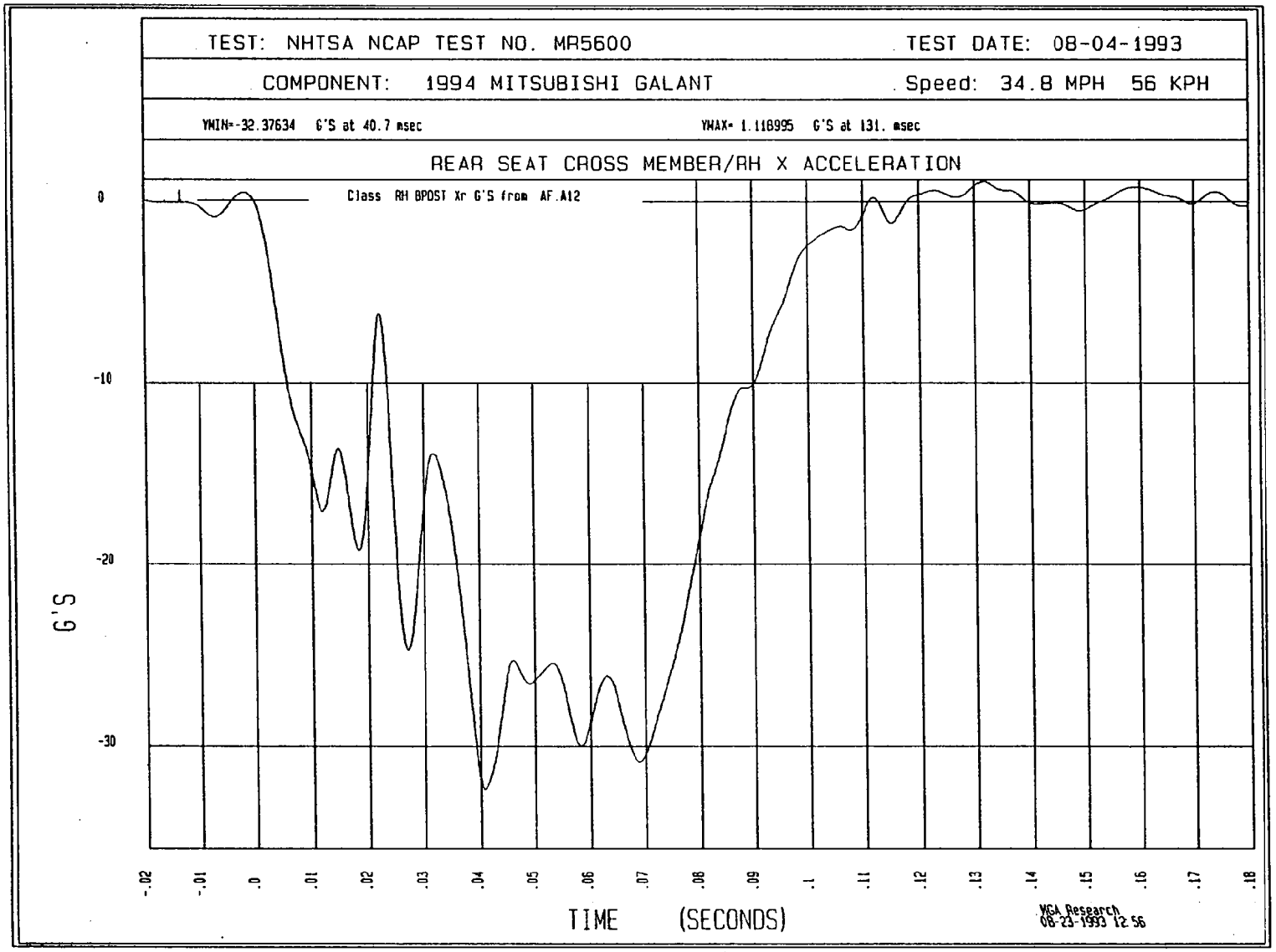
1994 MITSUBISHI GALANT 4-DOOR

NHTSA NO.: MR5600

VEHICLE DATA		FILTER CHANNEL CLASS
Head Accelerations	1000	(1650 Hz)
Chest Accelerometers	180	(300 Hz)
Vehicle Accelerometers	60	(100 Hz)
Barrier Load Cells	60	(100 Hz)
Femur Load Cells	600	(1000 Hz)
Lap and Torso Belts	60	(100 Hz)

* No Valid Data Collected

* No Valid Data Collected



B-1

Figure B-1 - Right Rear Seat Crossmember X Accel. vs. Time

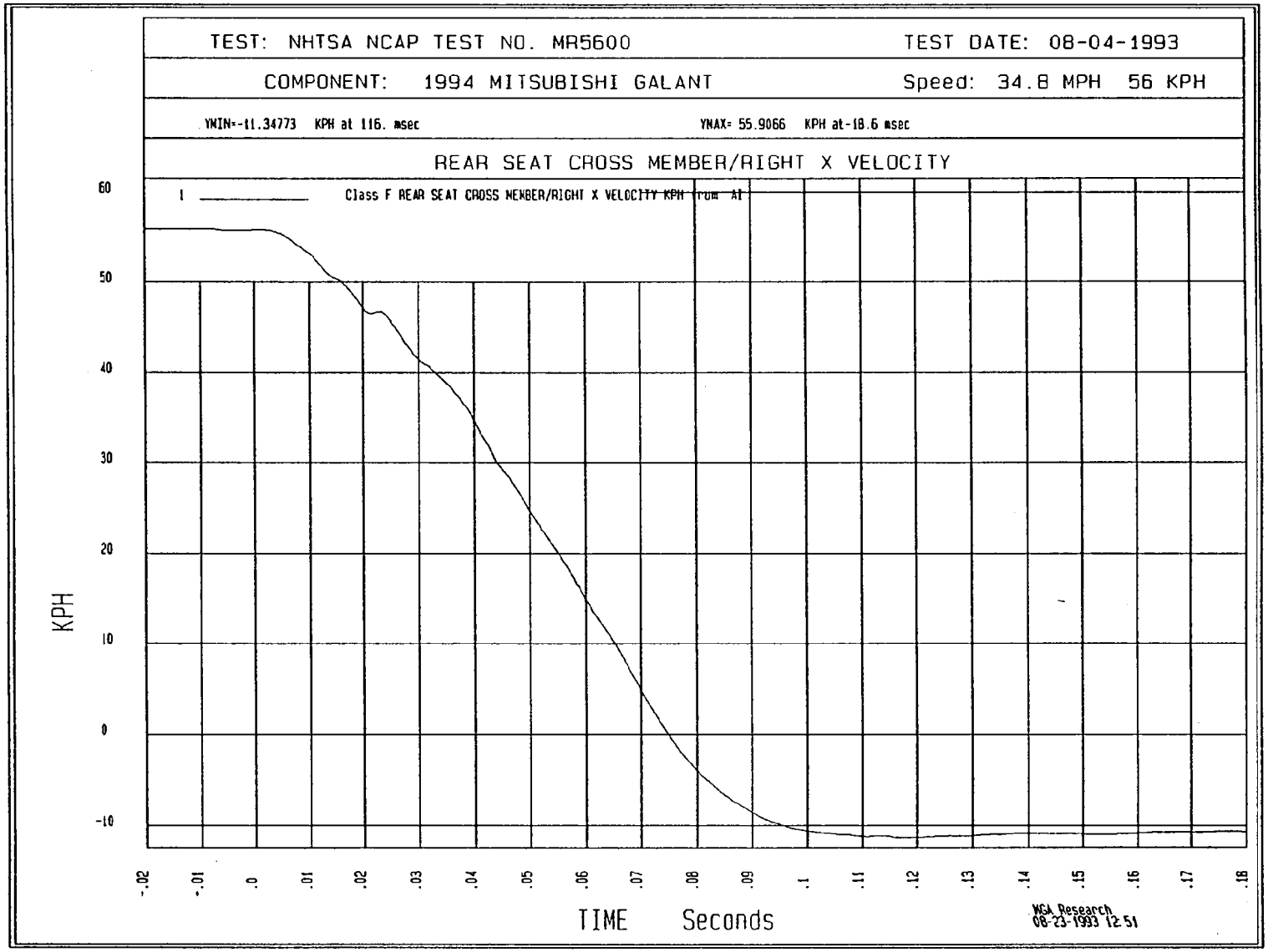


Figure B-2 - Right Rear Seat Crossmember X Velocity vs. Time

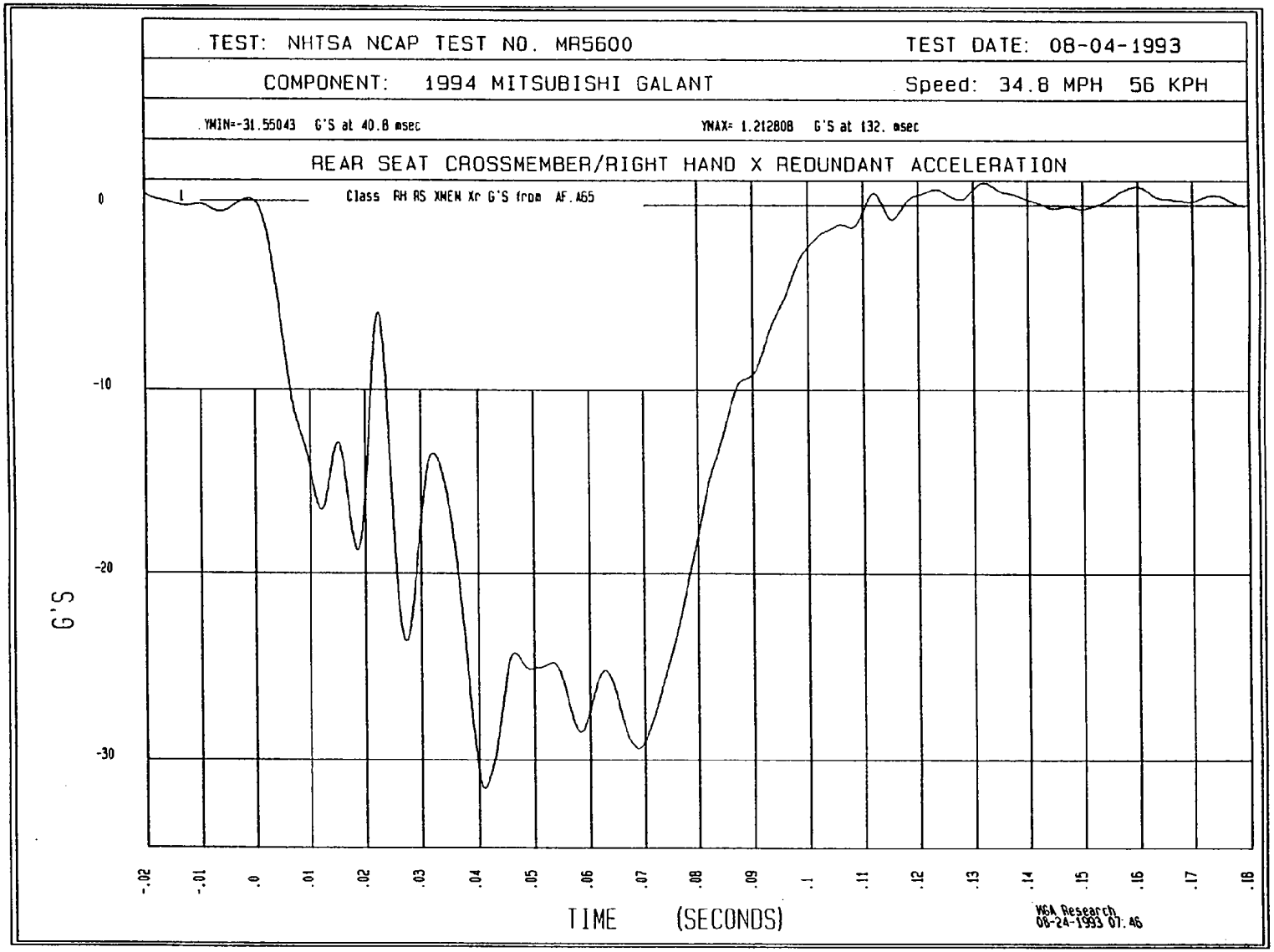


Figure B-3 - Right Rear Seat Crossmember X Red. Accel. vs. Time

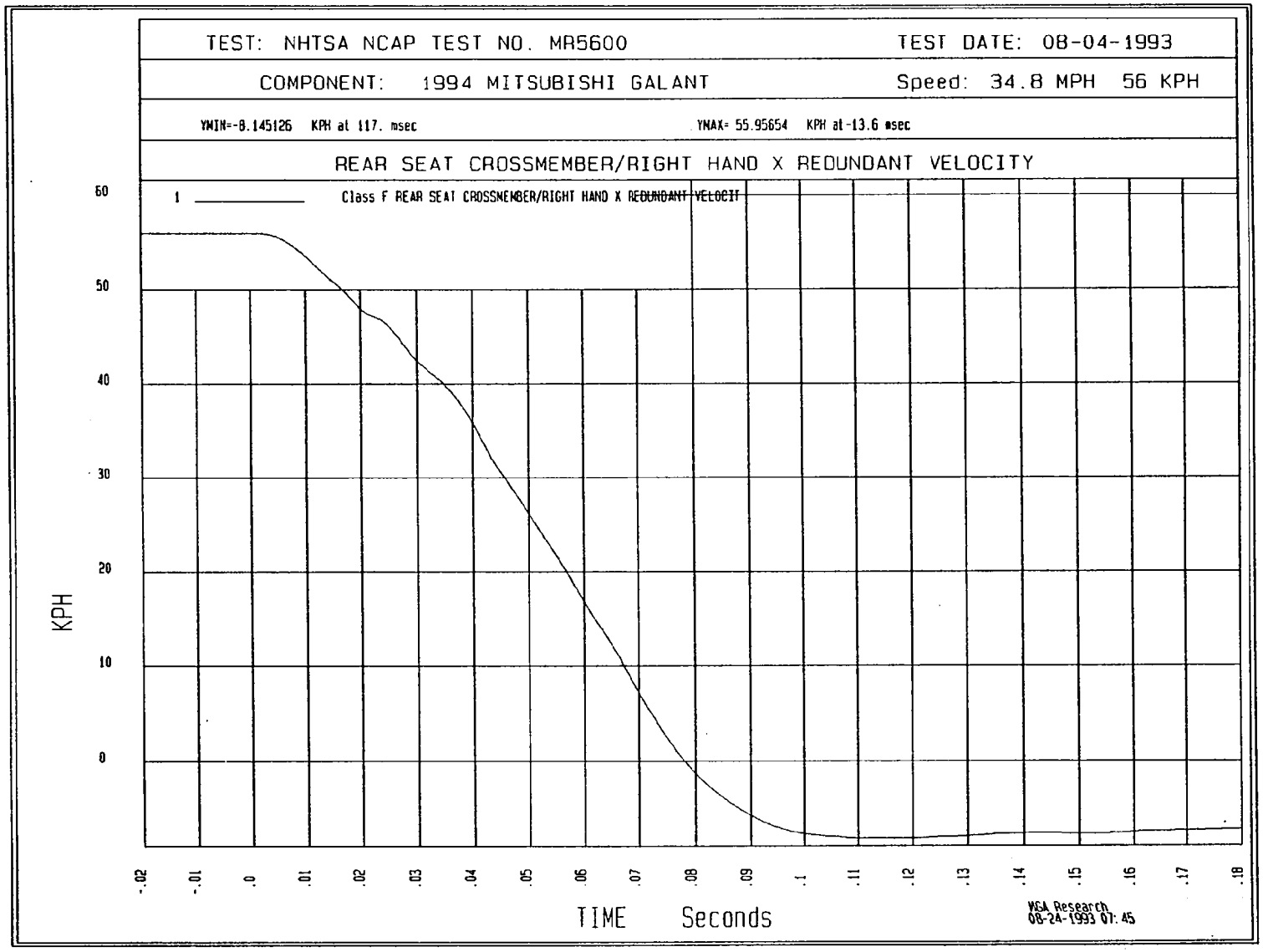


Figure B-4 - Right Rear Seat Crossmember X Red. Vel. vs. Time

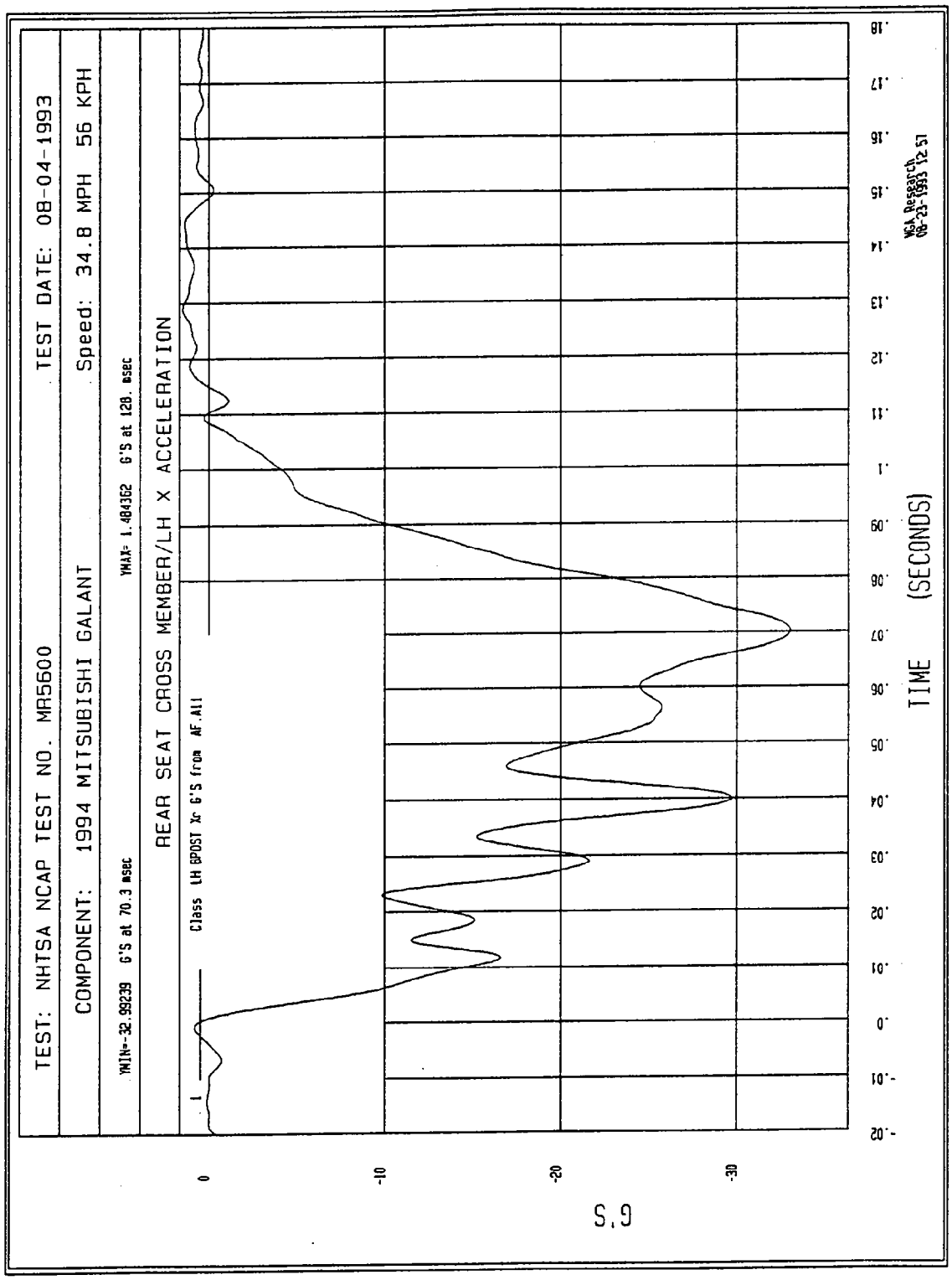


Figure B-5 - Left Rear Seat Crossmember X Acceleration vs. Time

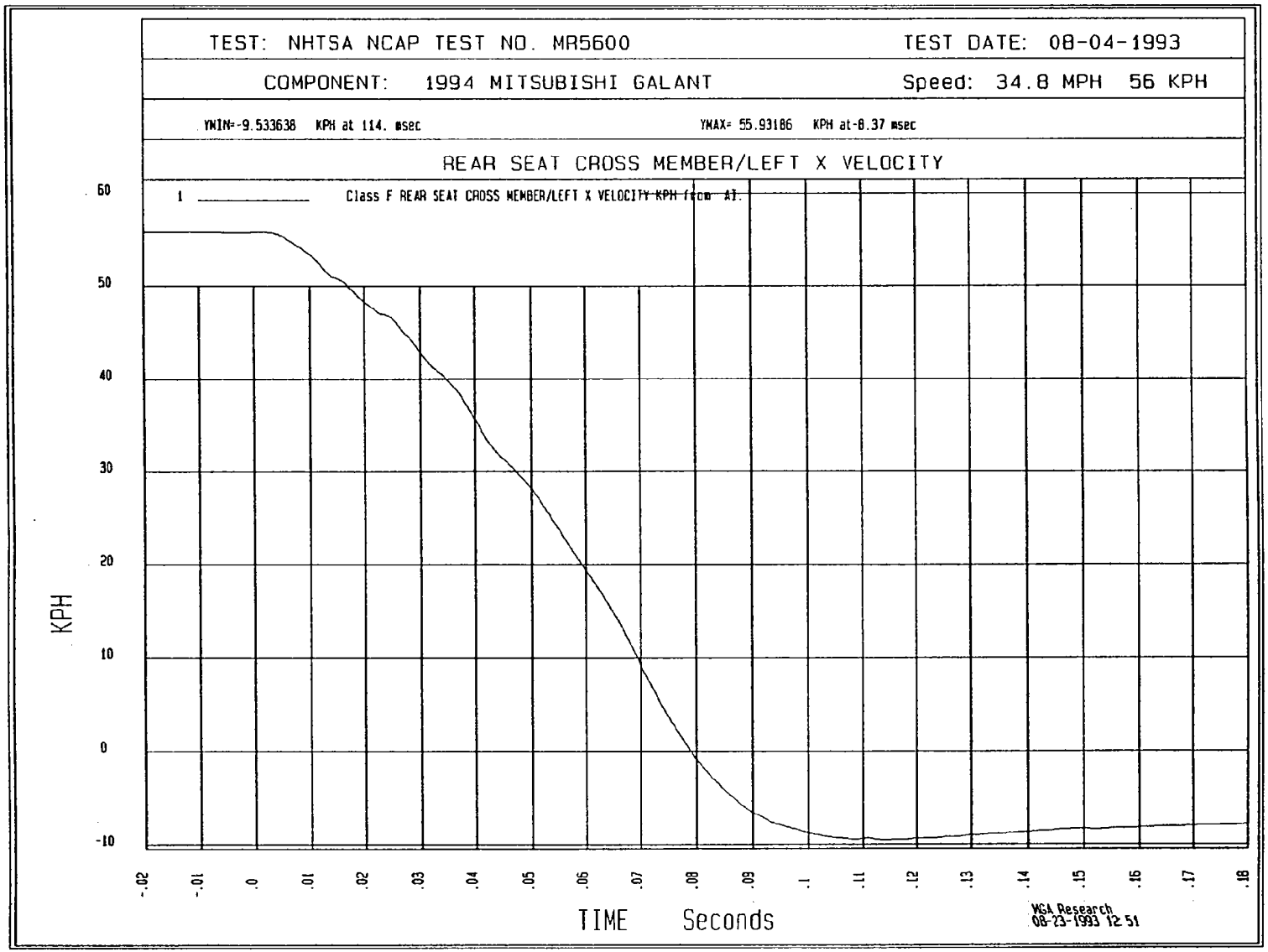
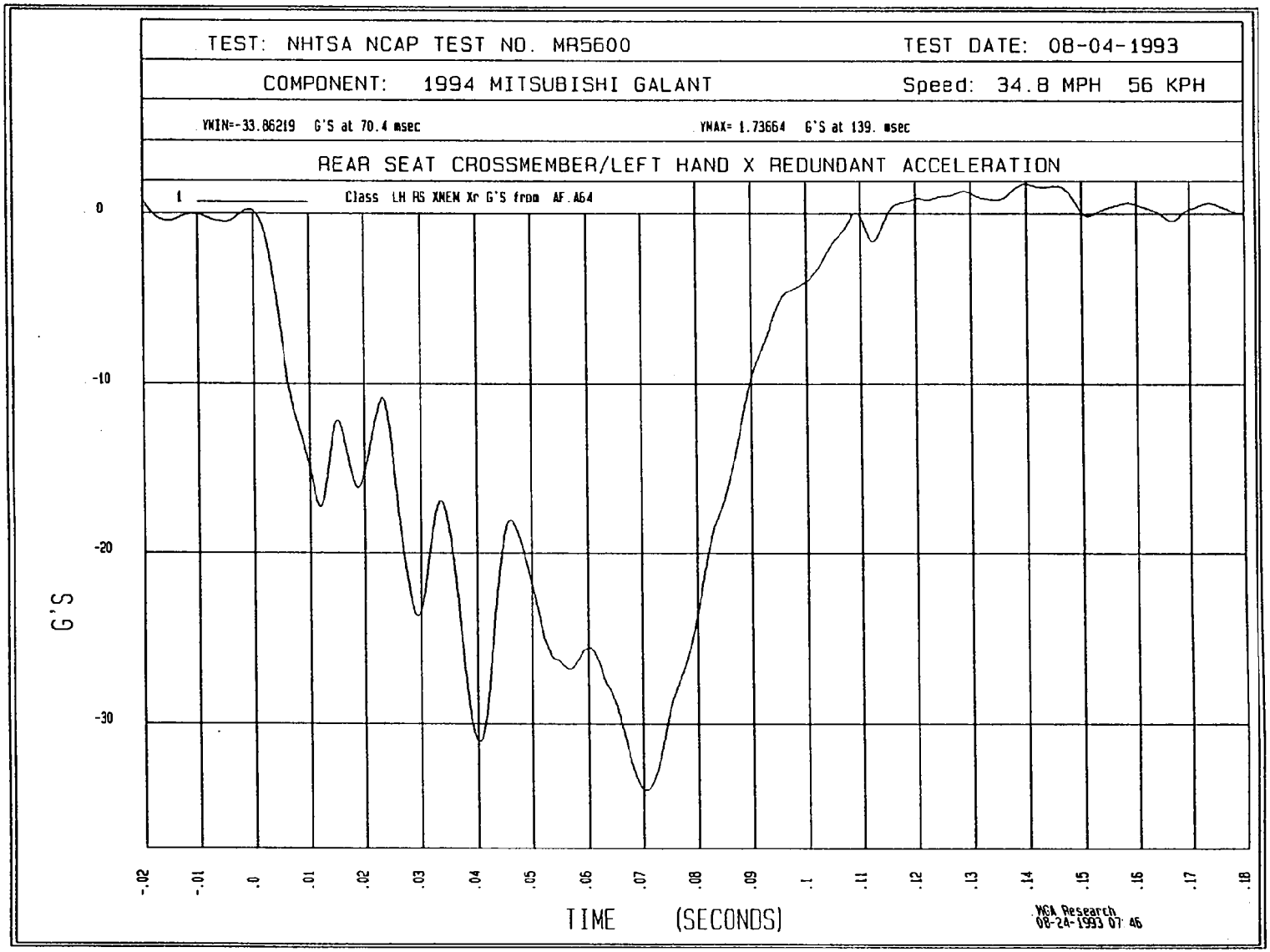


Figure B-6 - Left Rear Seat Crossmember X Velocity vs. Time



B-7

Figure B-7 - Left Rear Seat Crossmember X Redundant Accel. vs. Time

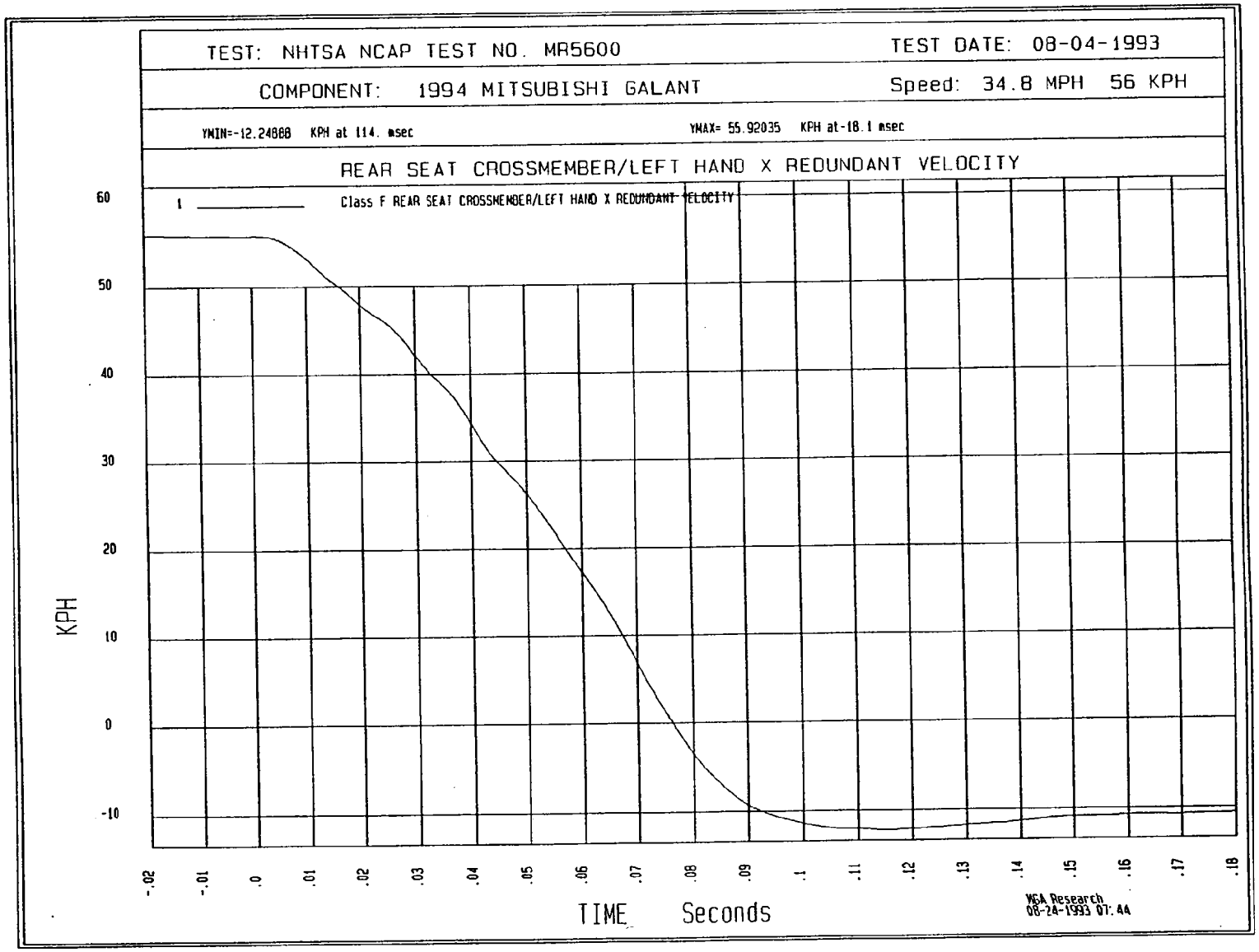


Figure B-8 - Left Rear Seat Crossmember X Redundant Vel. vs. Time

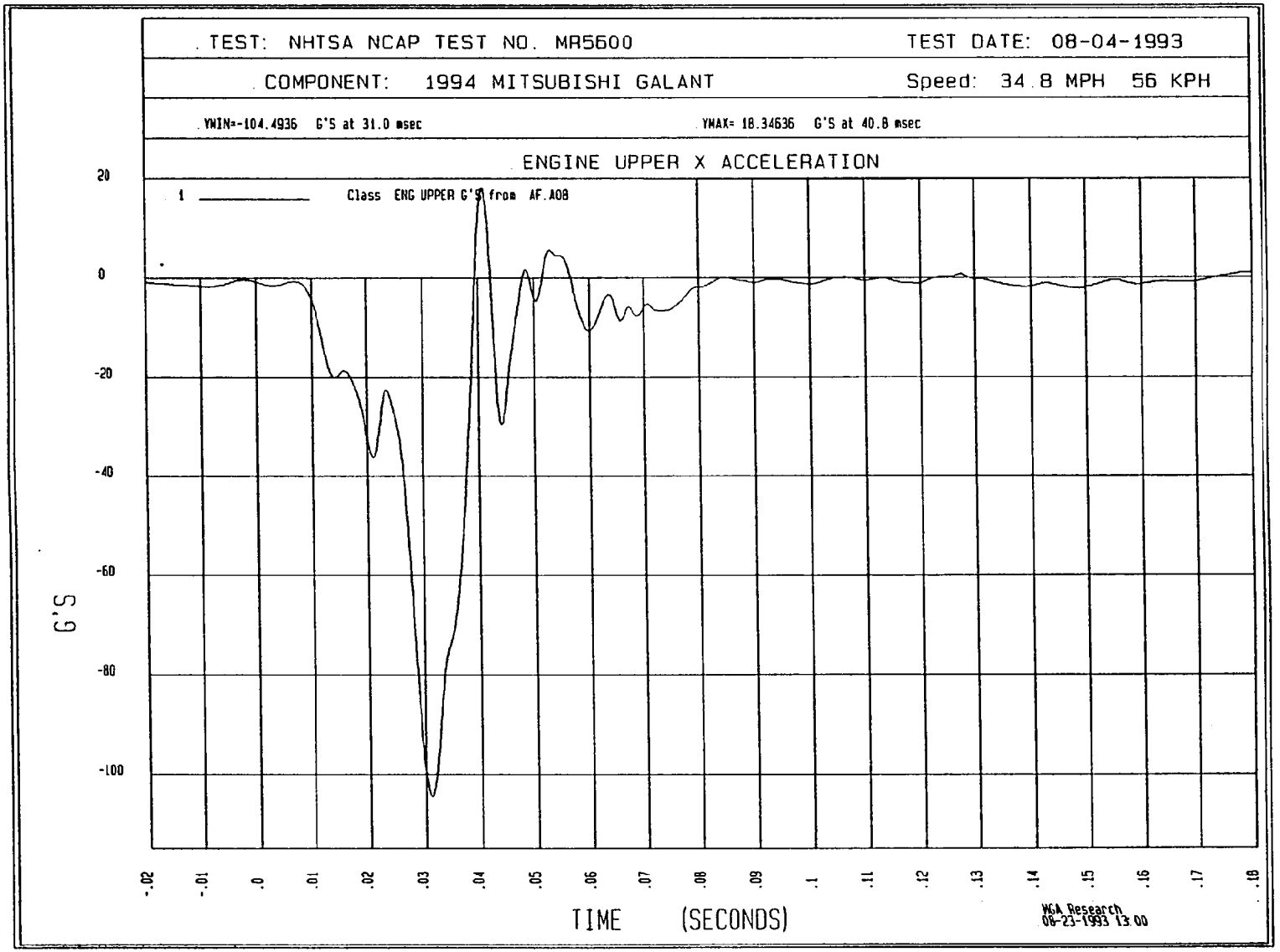


Figure B-9 - Upper Engine Block X Acceleration vs. Time

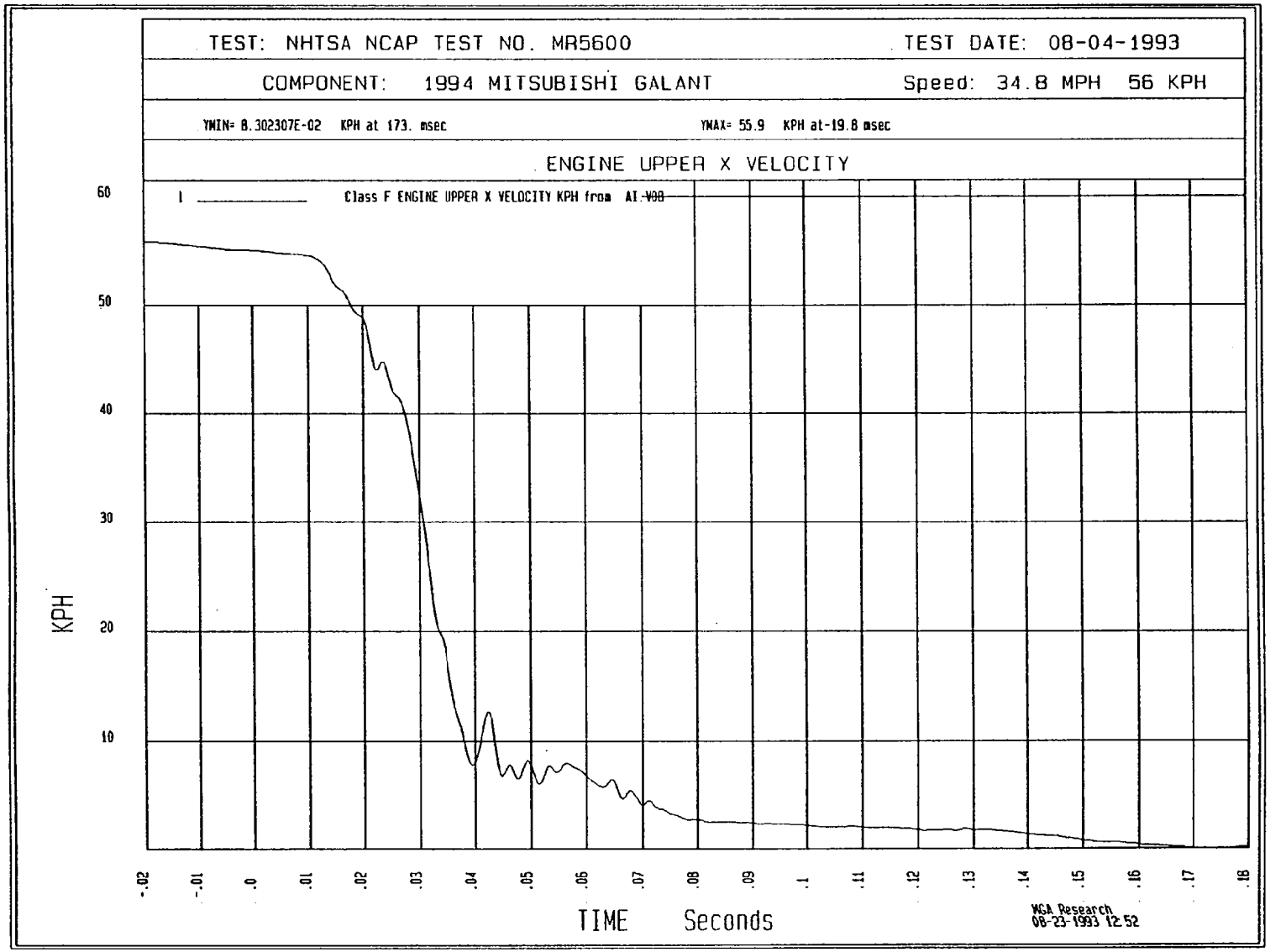


Figure B-10 - Upper Engine Block X Velocity vs. Time

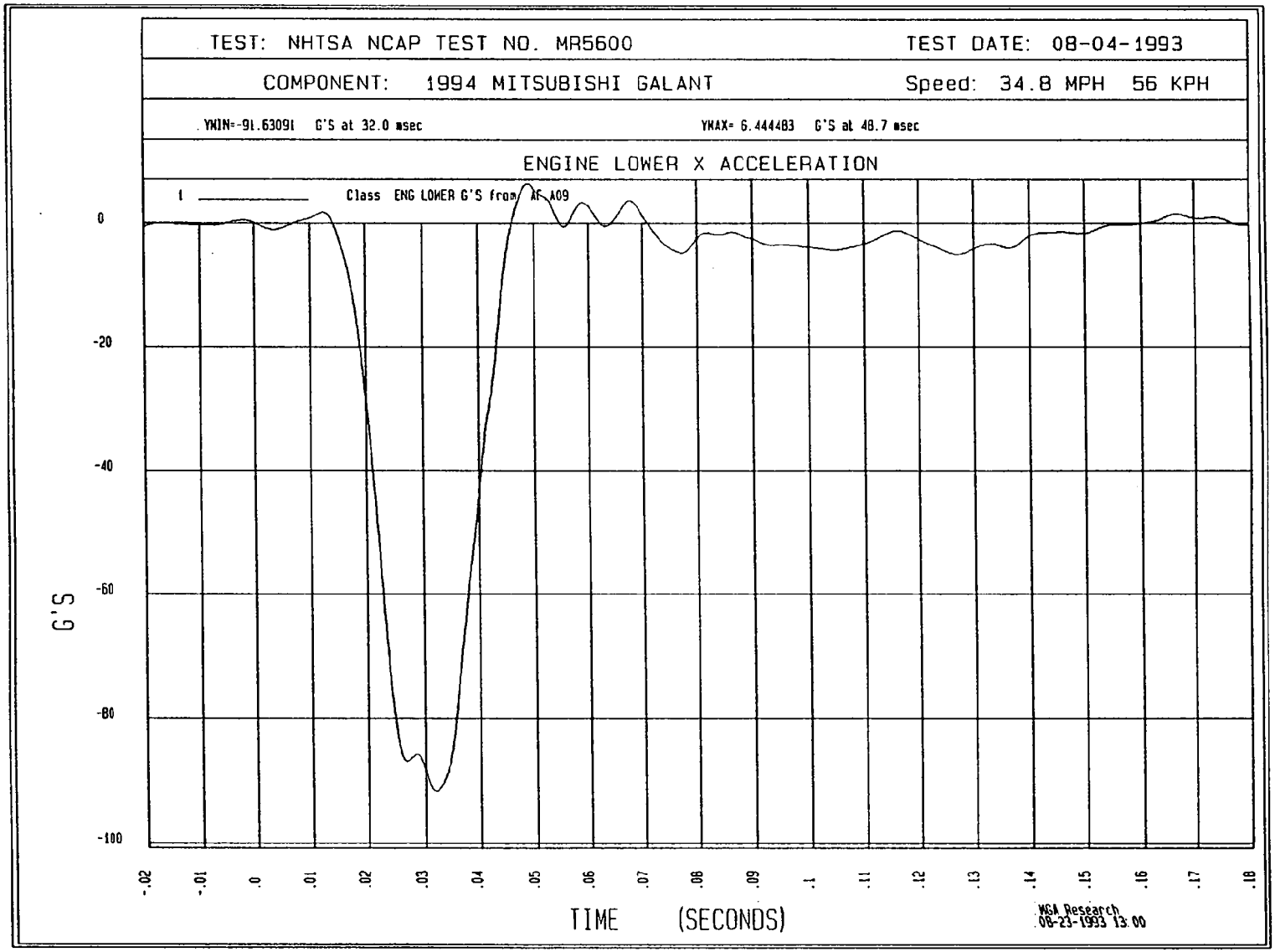


Figure B-11 - Bottom of Engine Block X Acceleration vs. Time

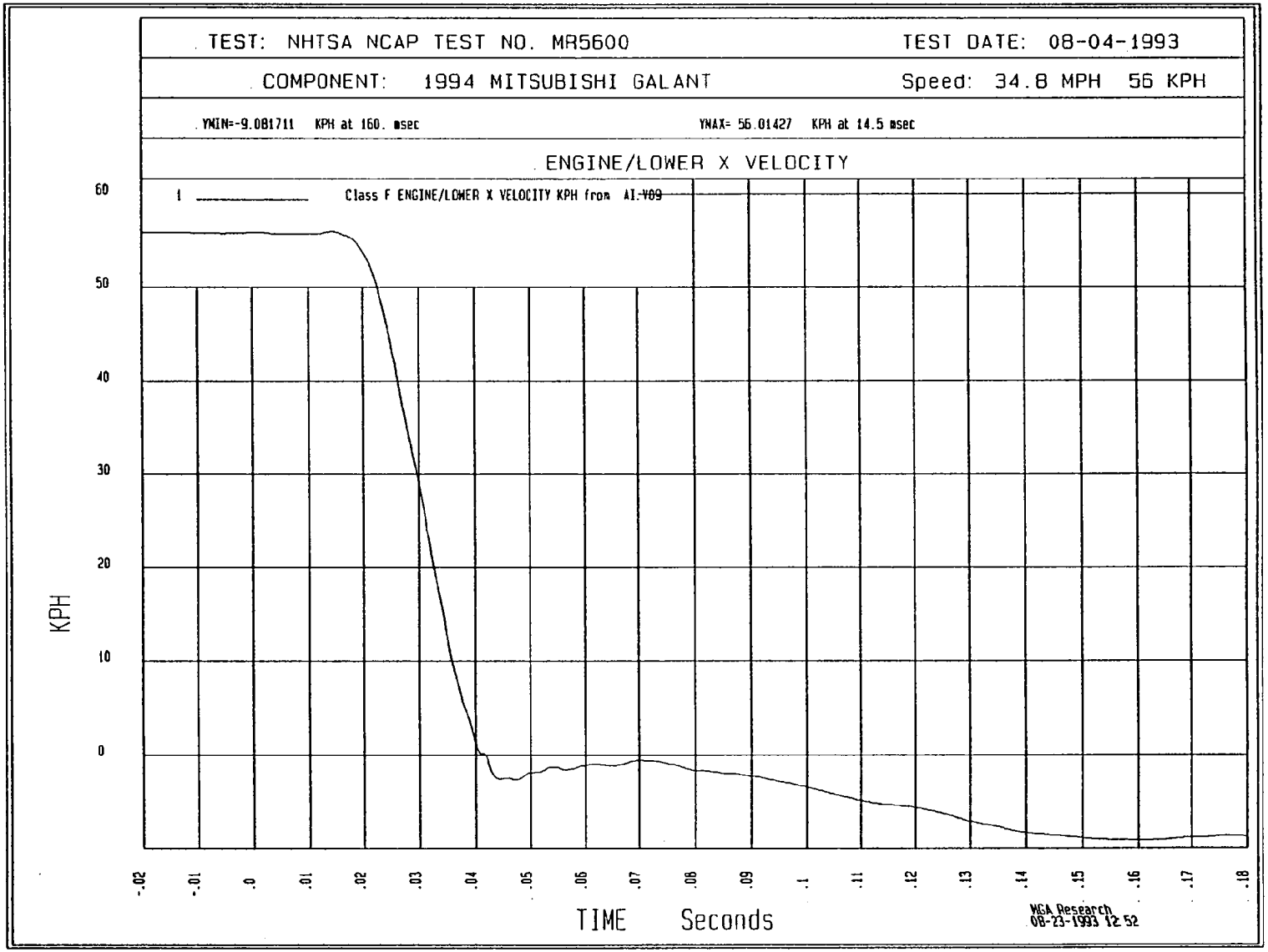


Figure B-12 - Bottom of Engine Block X Velocity vs. Time

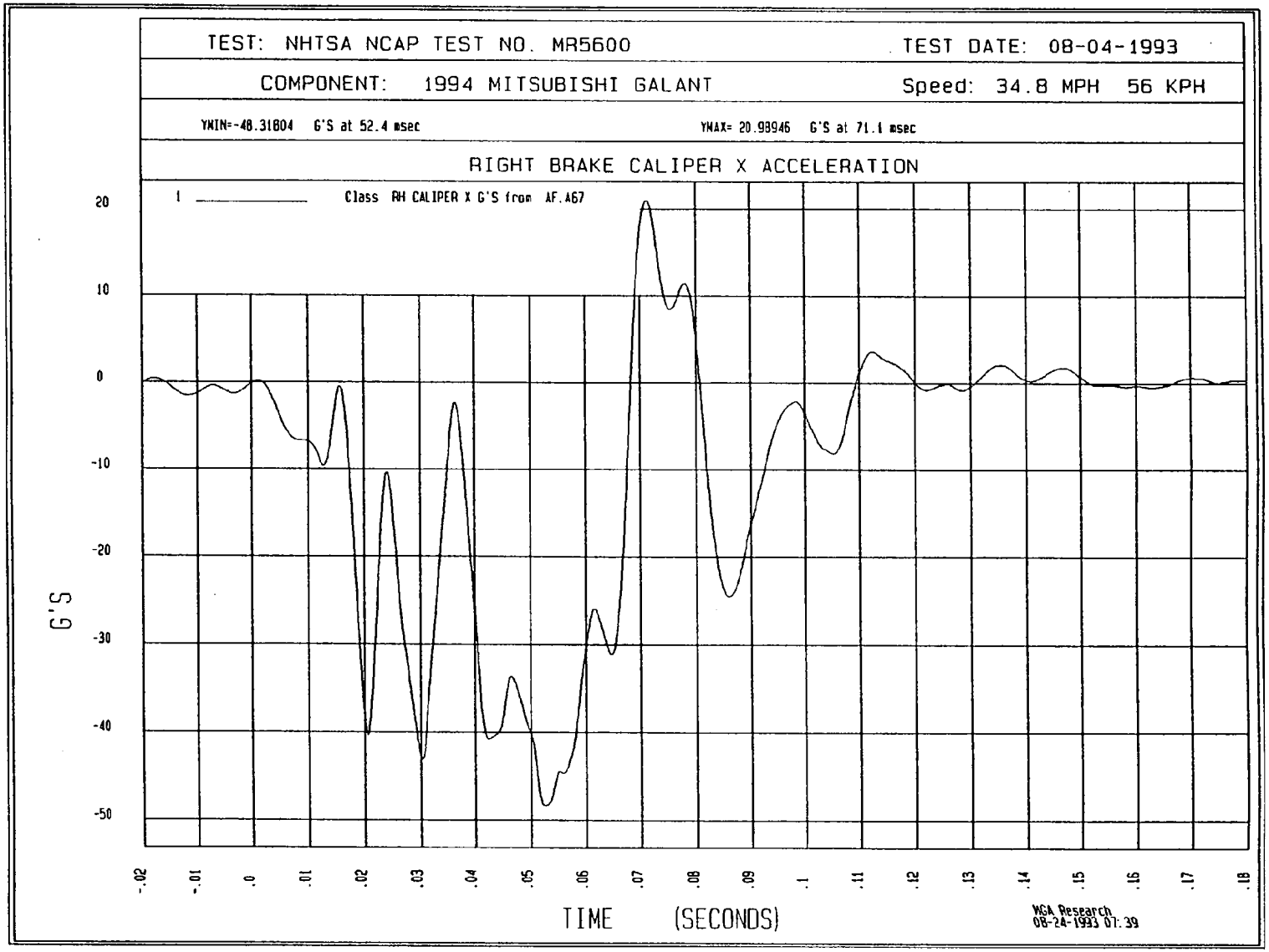


Figure B-13 - Right Front Disc Brake Caliper X Accel. vs. Time

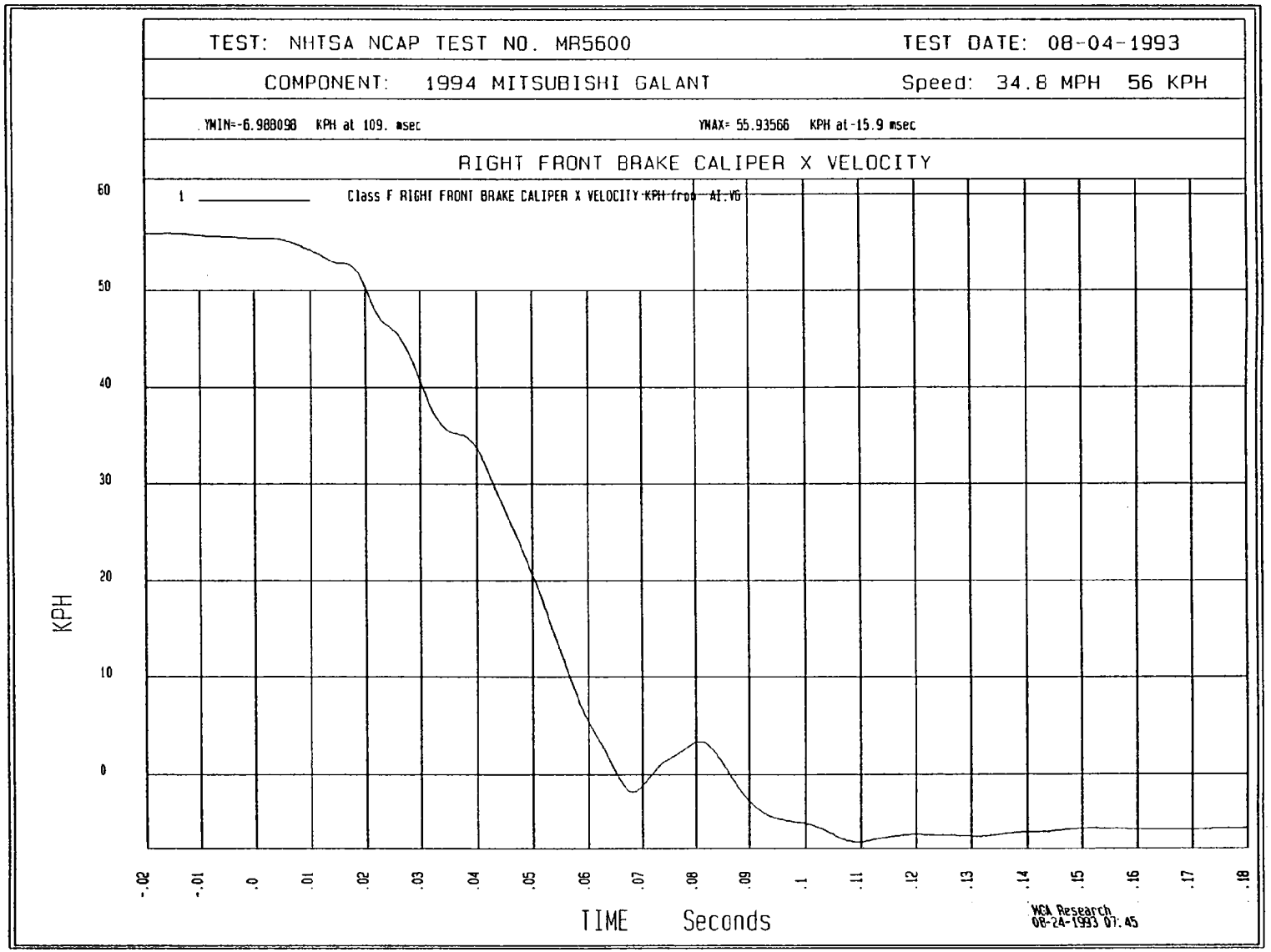


Figure B-14 - Right Front Disc Brake Caliper X Velocity vs. Time

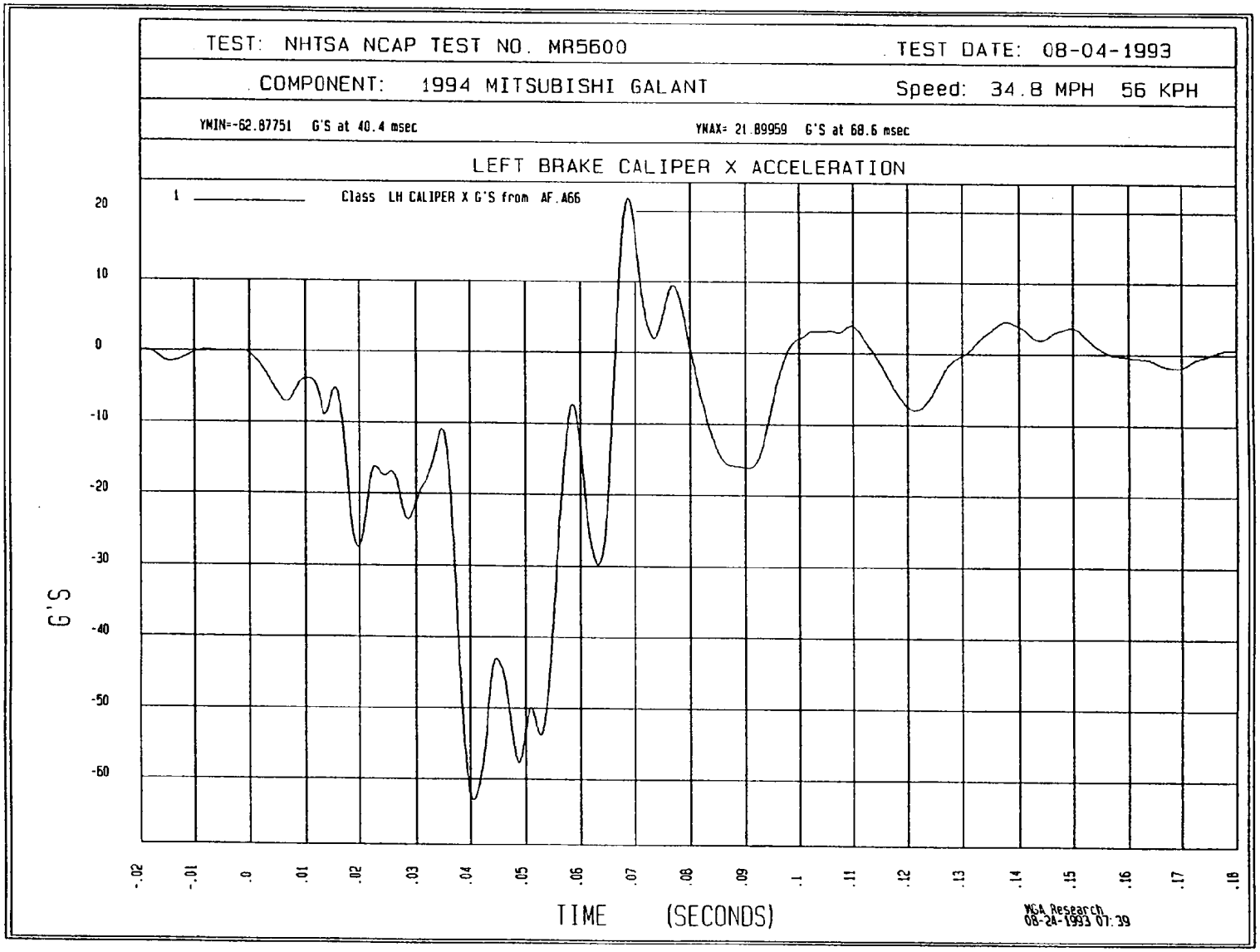


Figure B-15 - Left Front Disc Brake Caliper X Accel. vs. Time

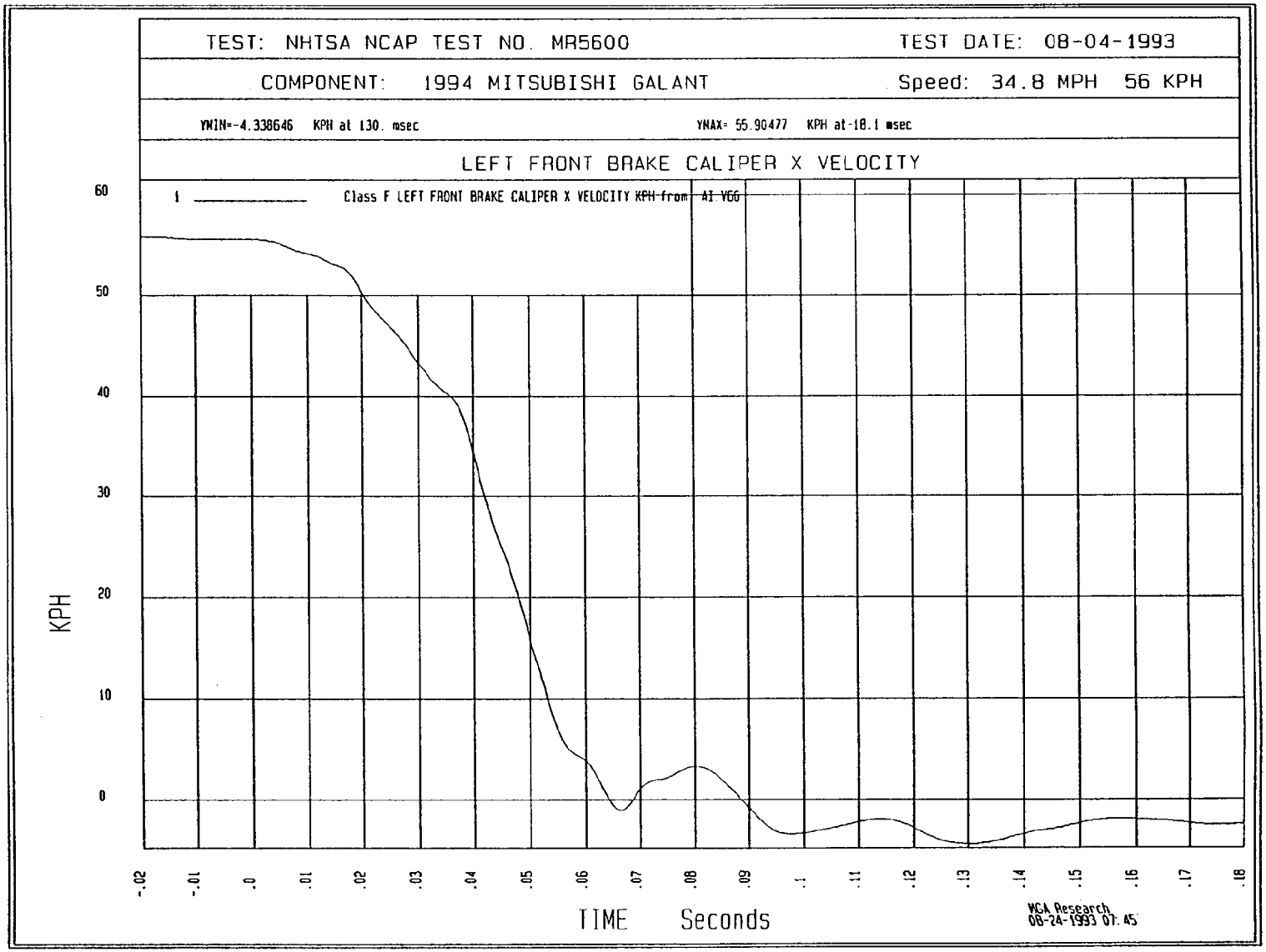


Figure B-16 - Left Front Disc Brake Caliper X Velocity vs. Time

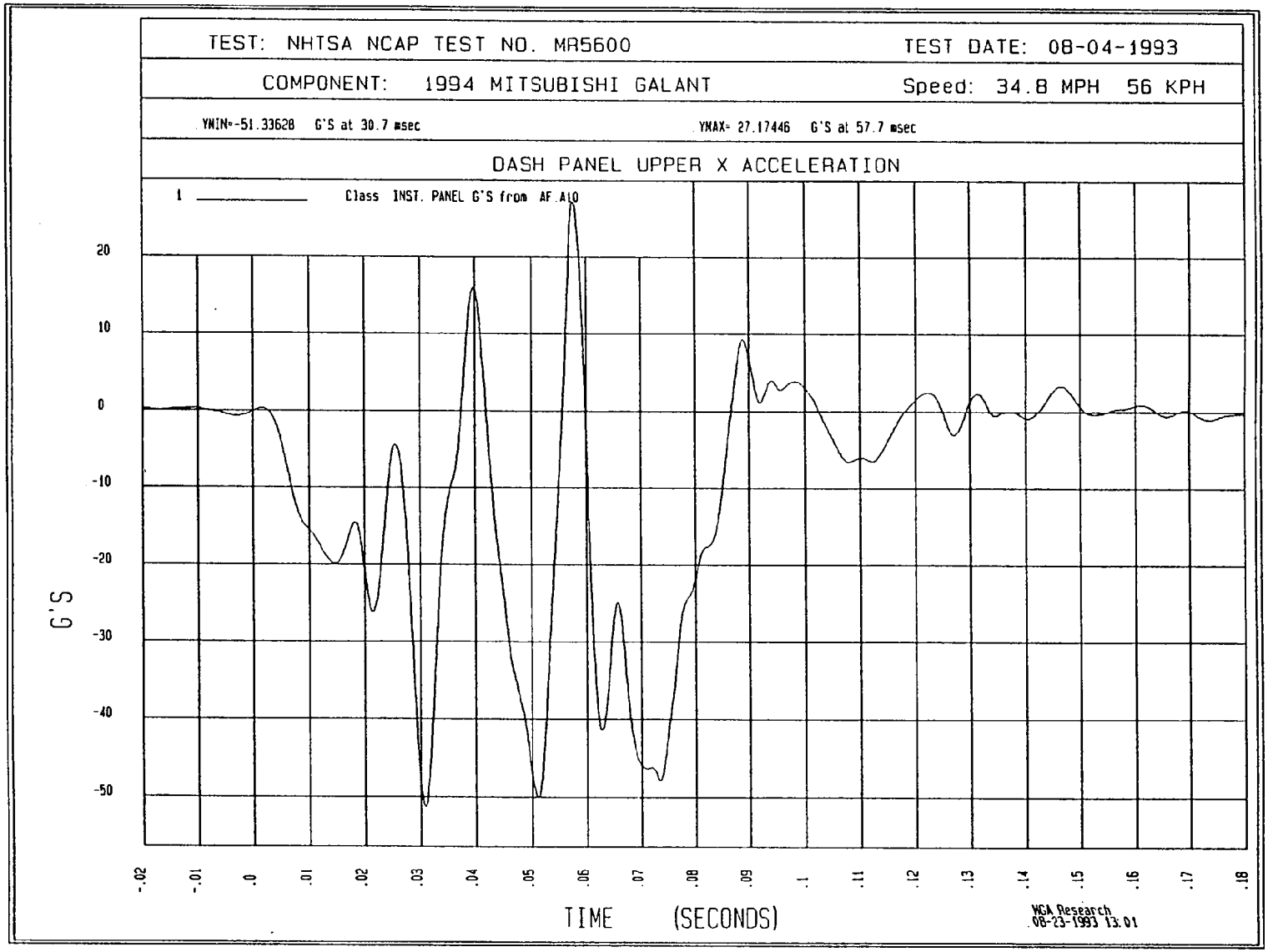


Figure B-17 - Ctr of Instrument Panel Top Surface X Accel. vs. Time

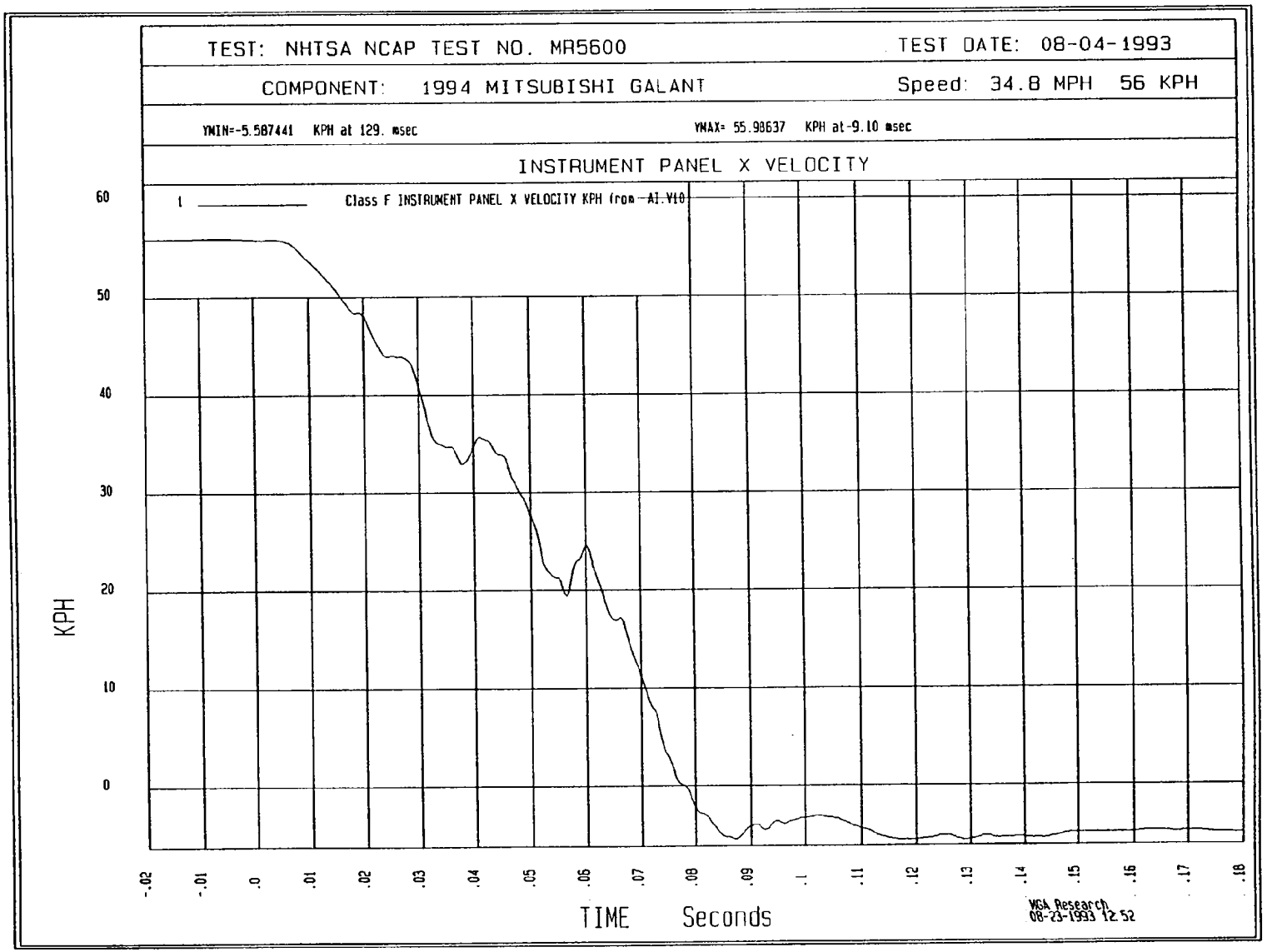


Figure B-18 - Ctr of Instrument Panel Top Surface X Velocity vs. Time

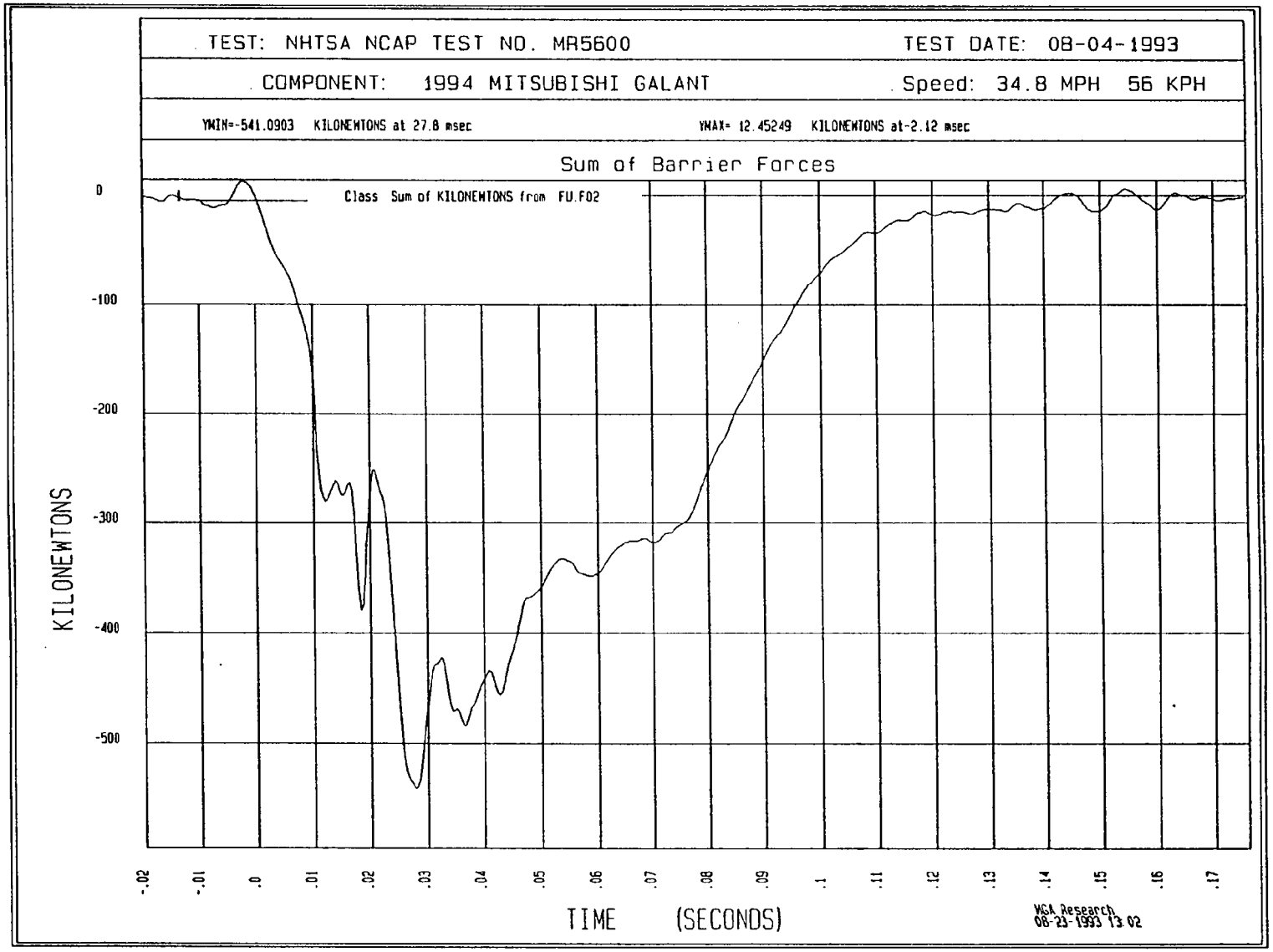


Figure B-19 - Sum of Barrier Load Cells Force vs. Time

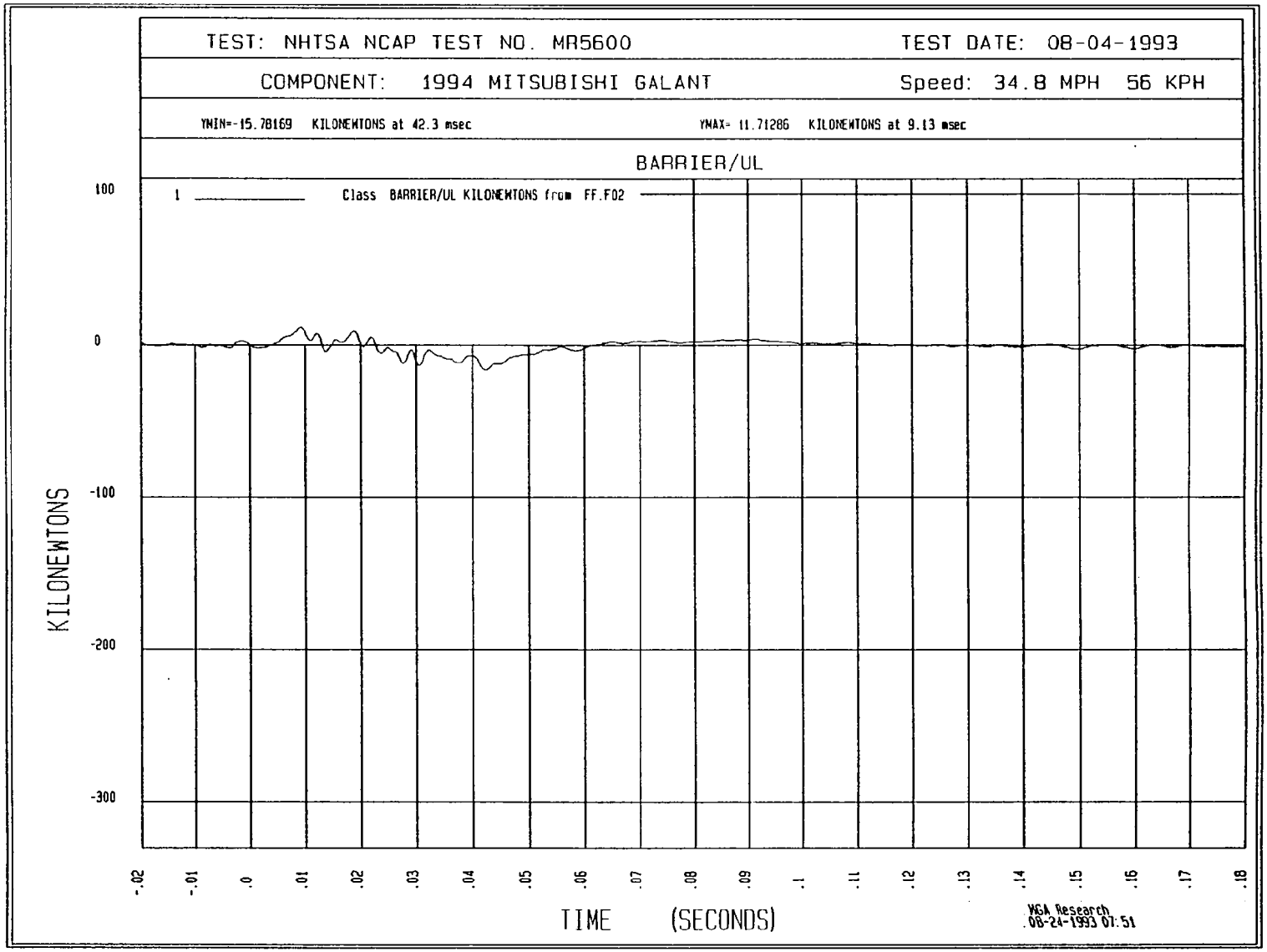


Figure B-20 - Sum of Load Cells A1-B3 Force vs. Time

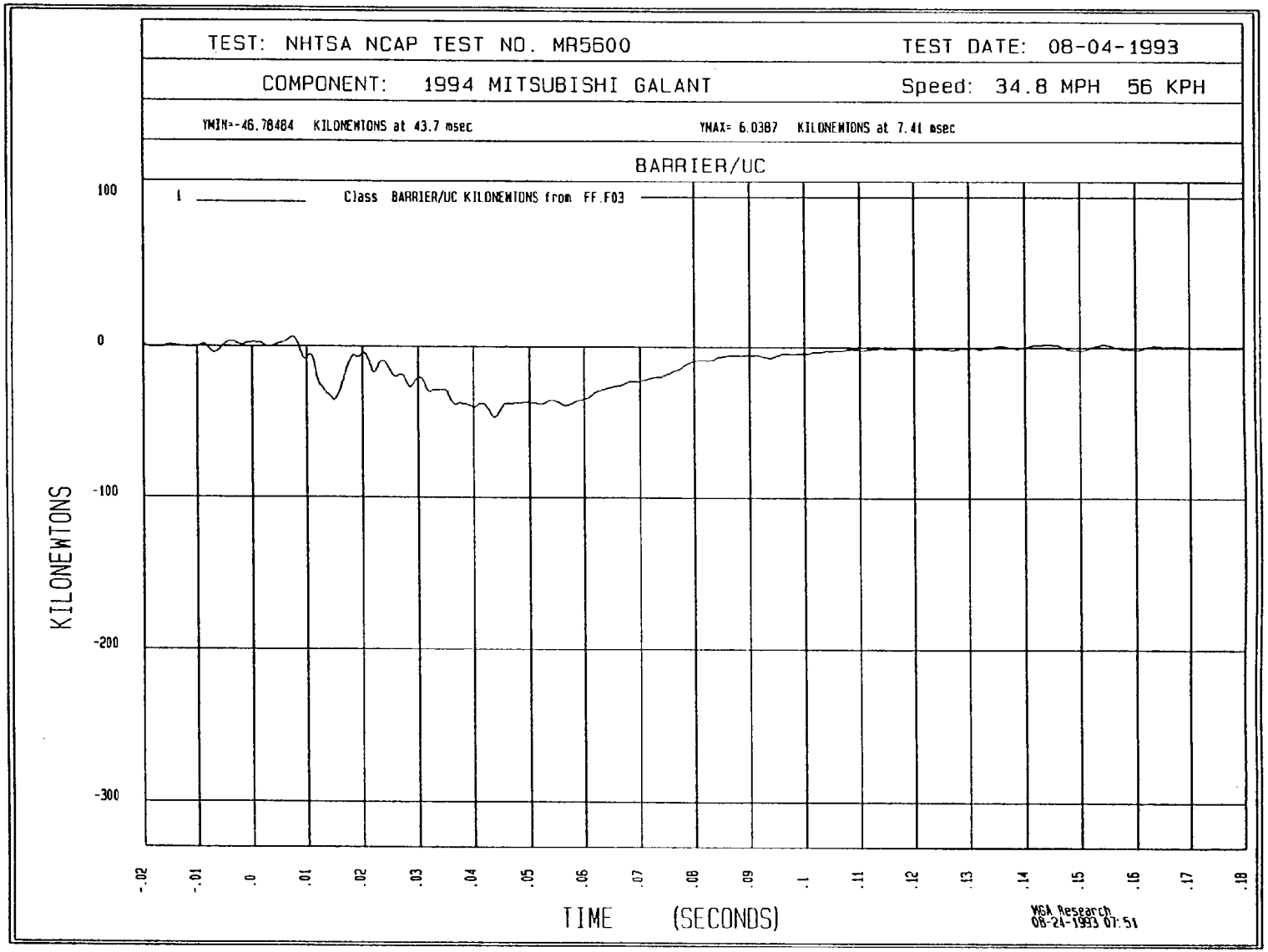


Figure B-21 - Sum of Load Cells A4-B6 Force vs. Time

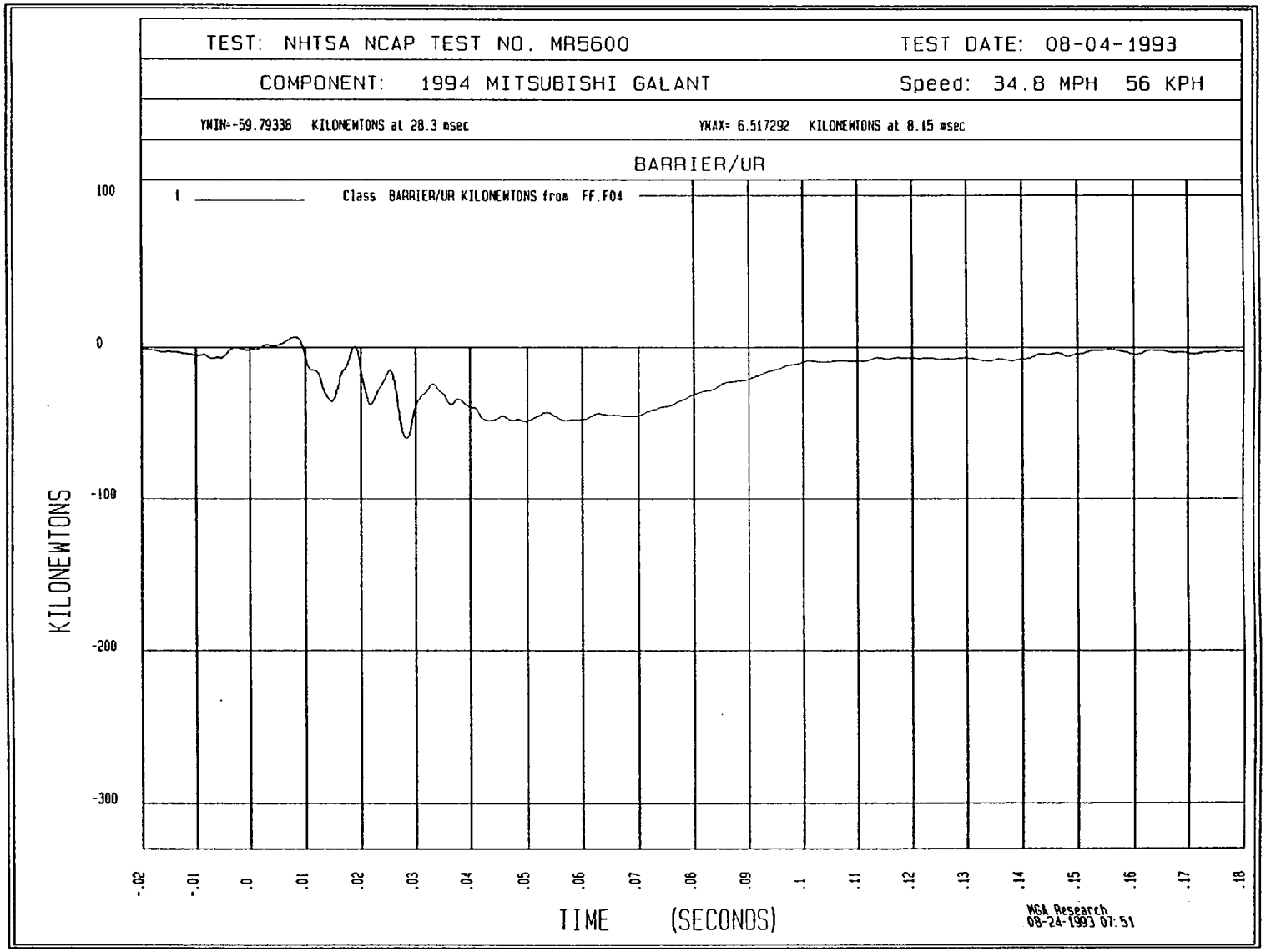


Figure B-22 - Sum of Load Cells A7-B9 Force vs. Time

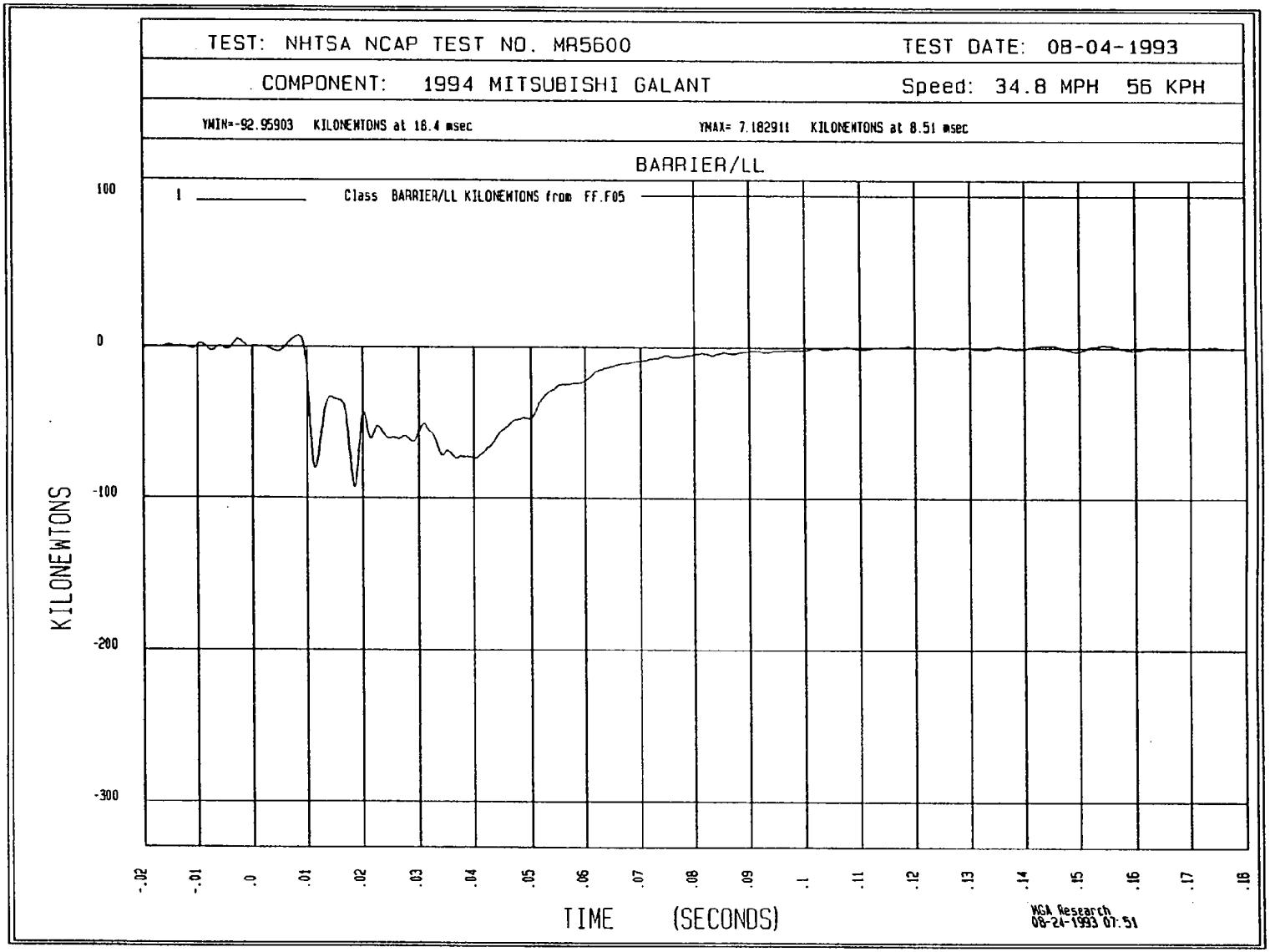


Figure B-23 - Sum of Load Cells C1-D3 Force vs. Time

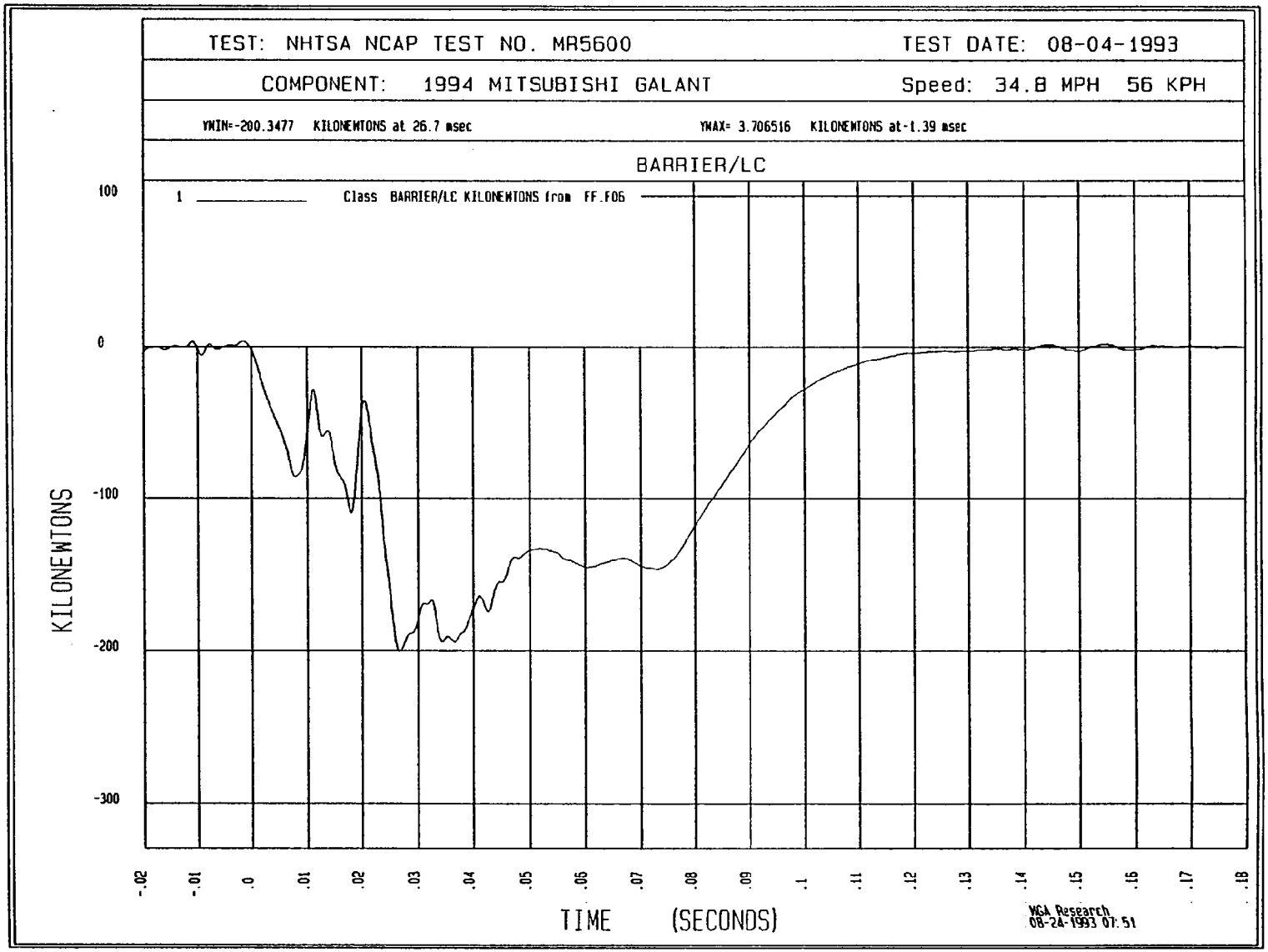


Figure B-24 - Sum of Load Cells C4-D6 Force vs. Time

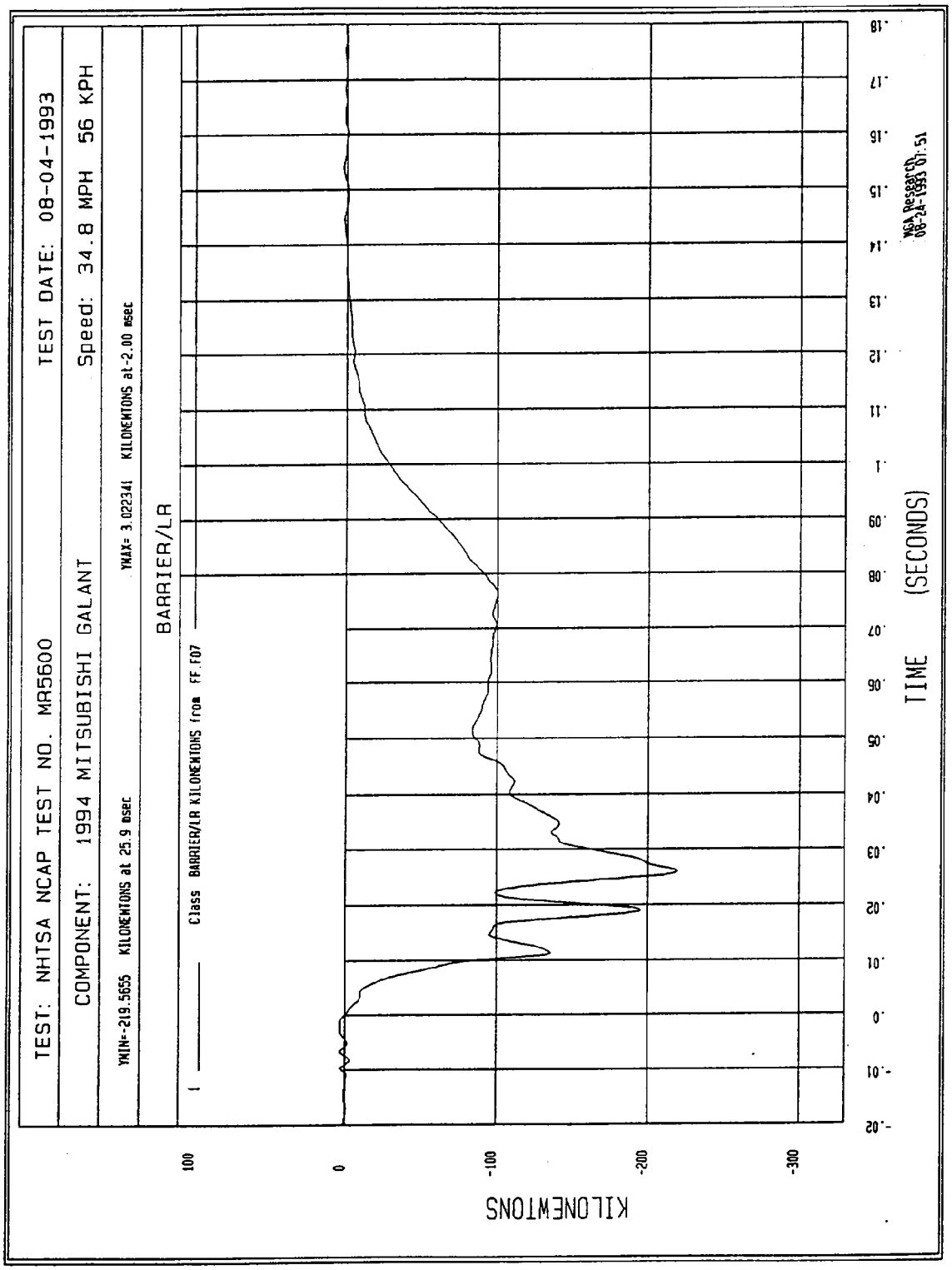


Figure B-25 - Sum of Load Cells C7-D9 Force vs. Time

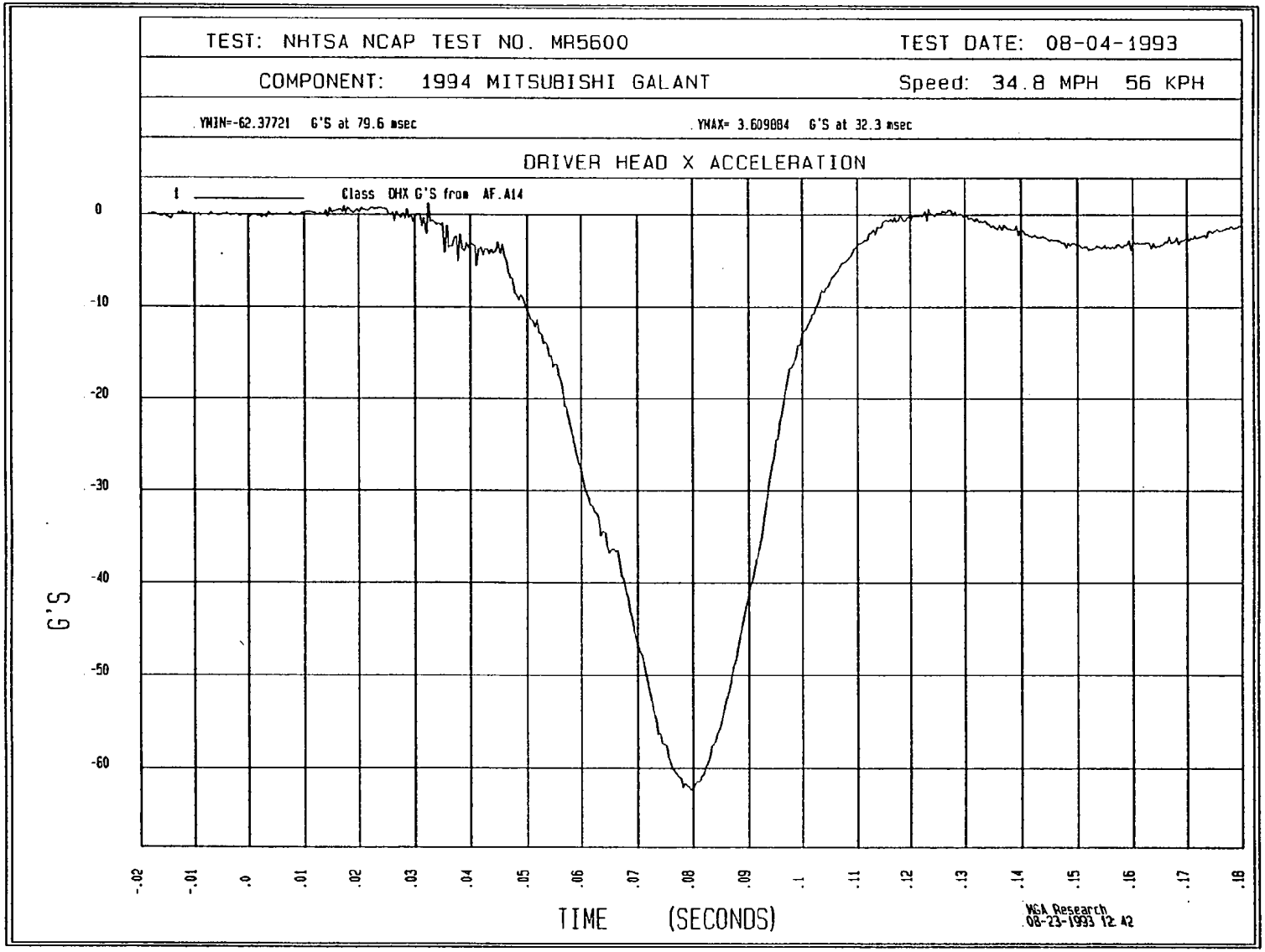


Figure B-26 - Driver Head X Acceleration vs. Time

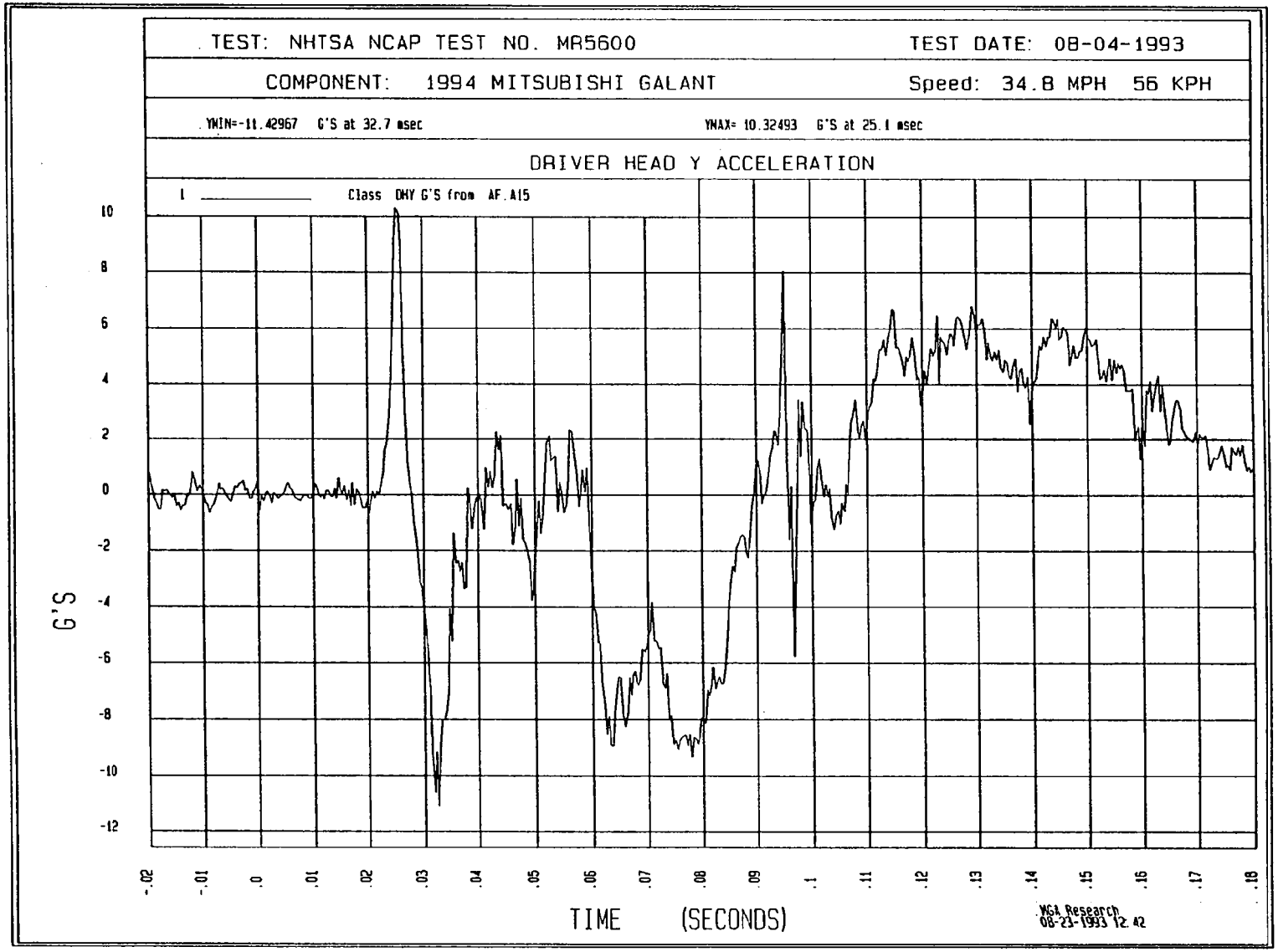


Figure B-27 - Driver Head Y Acceleration vs. Time

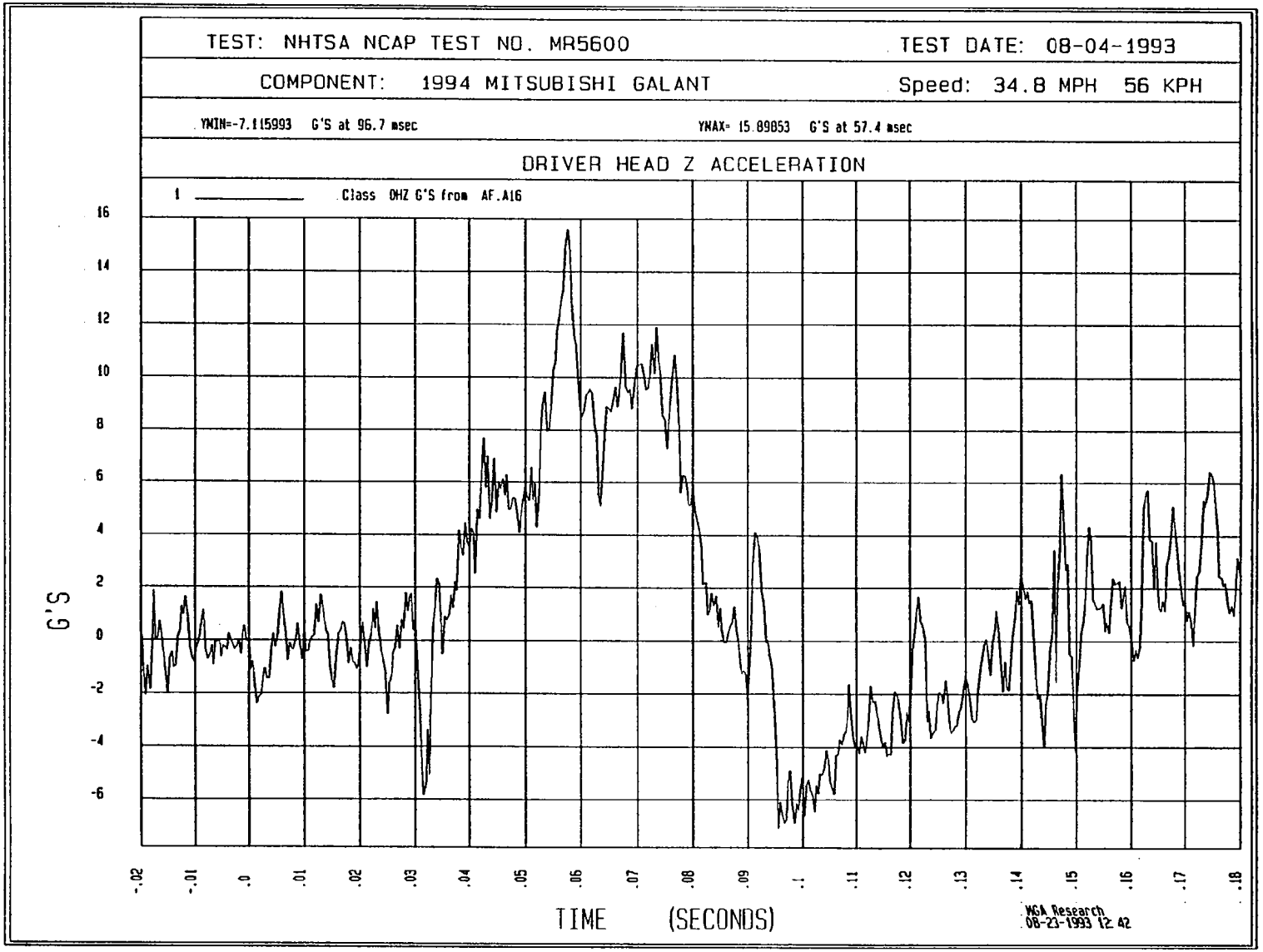


Figure B-28 - Driver Head Z Acceleration vs. Time

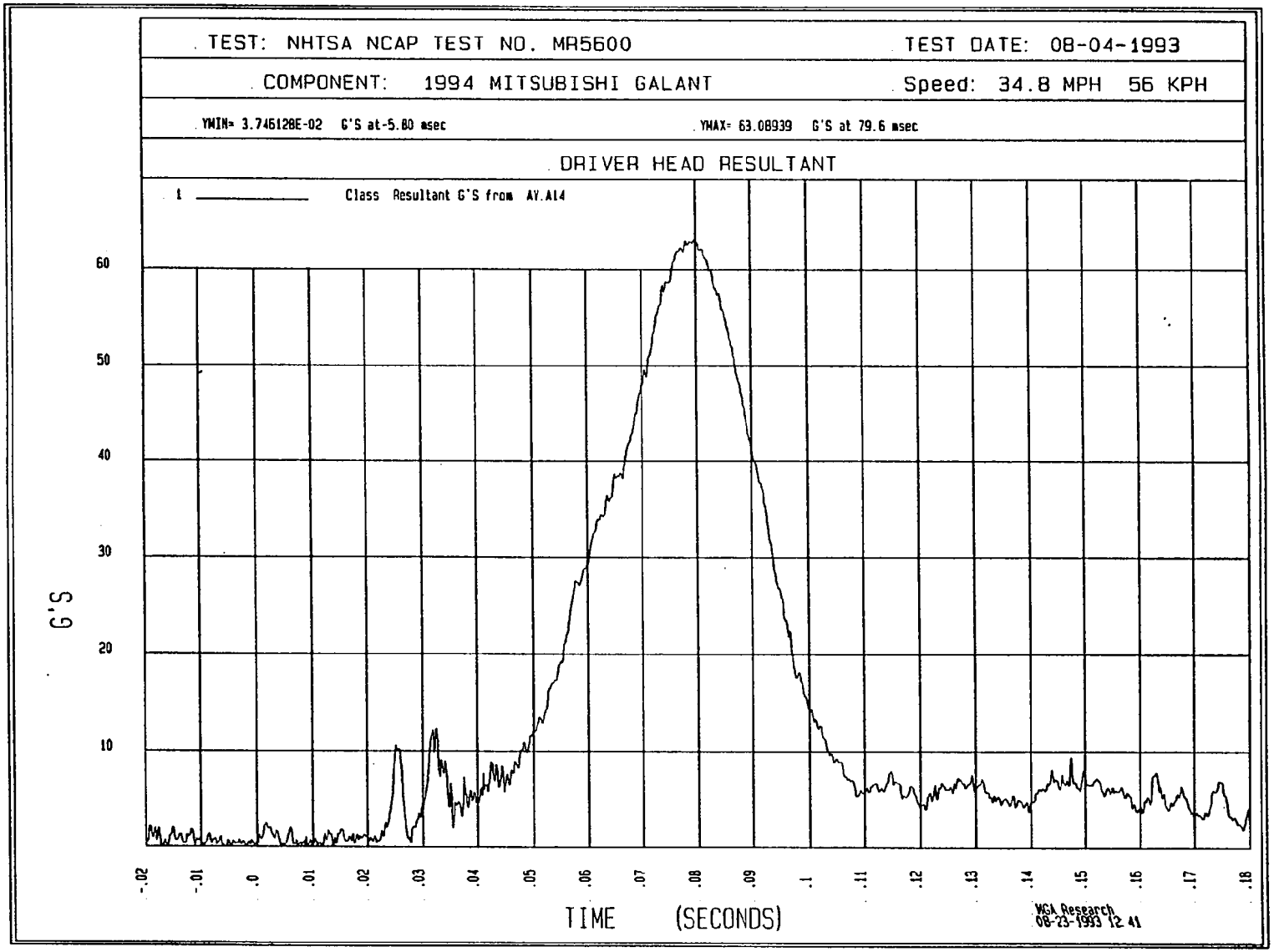


Figure B-29 - Driver Head Resultant Acceleration vs. Time

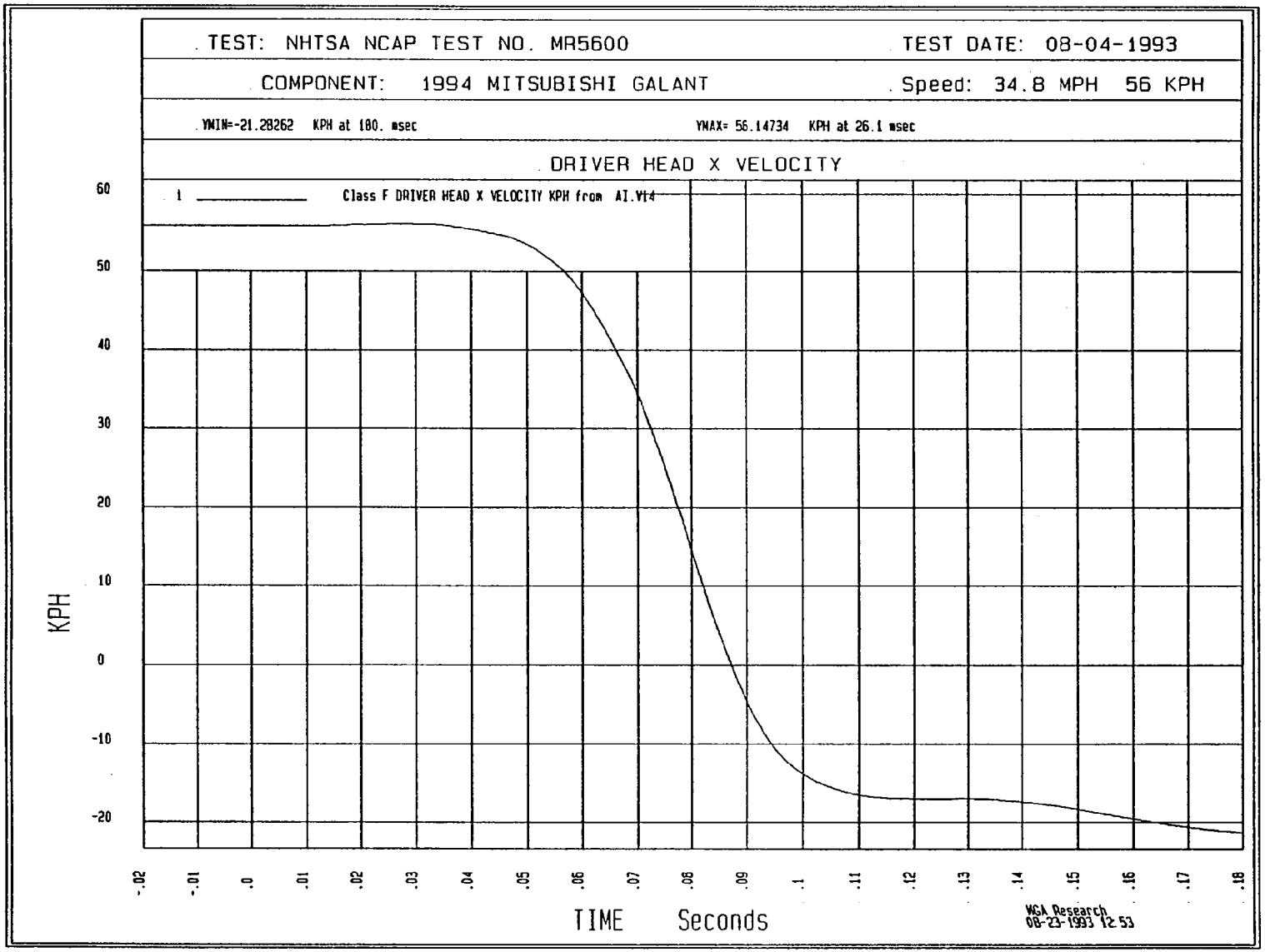


Figure B-30 - Driver Head X Velocity vs. Time

NO VALID DATA COLLECTED

Figure B-31 - Driver Chest X Acceleration vs. Time

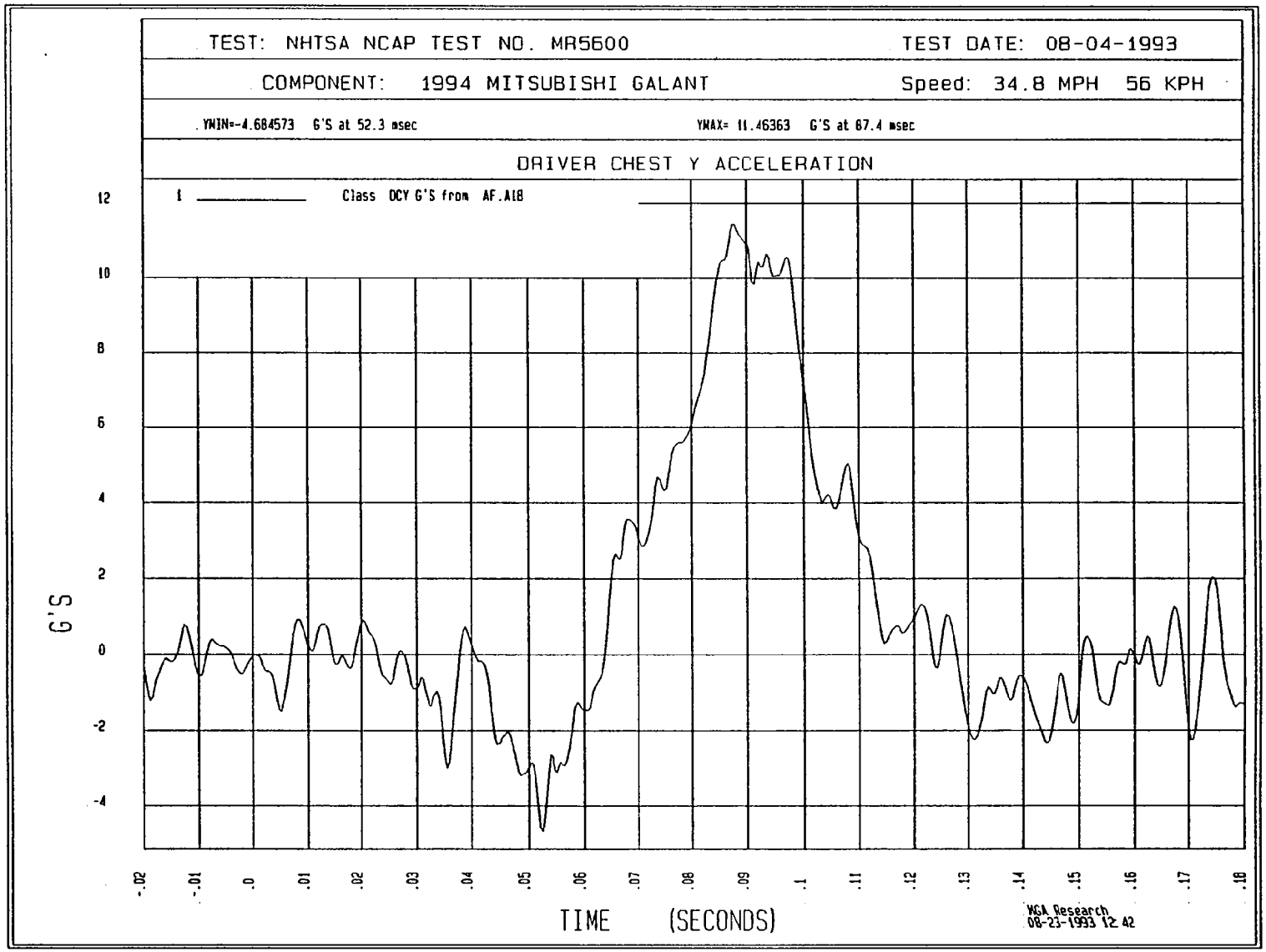


Figure B-32 - Driver Chest Y Acceleration vs. Time

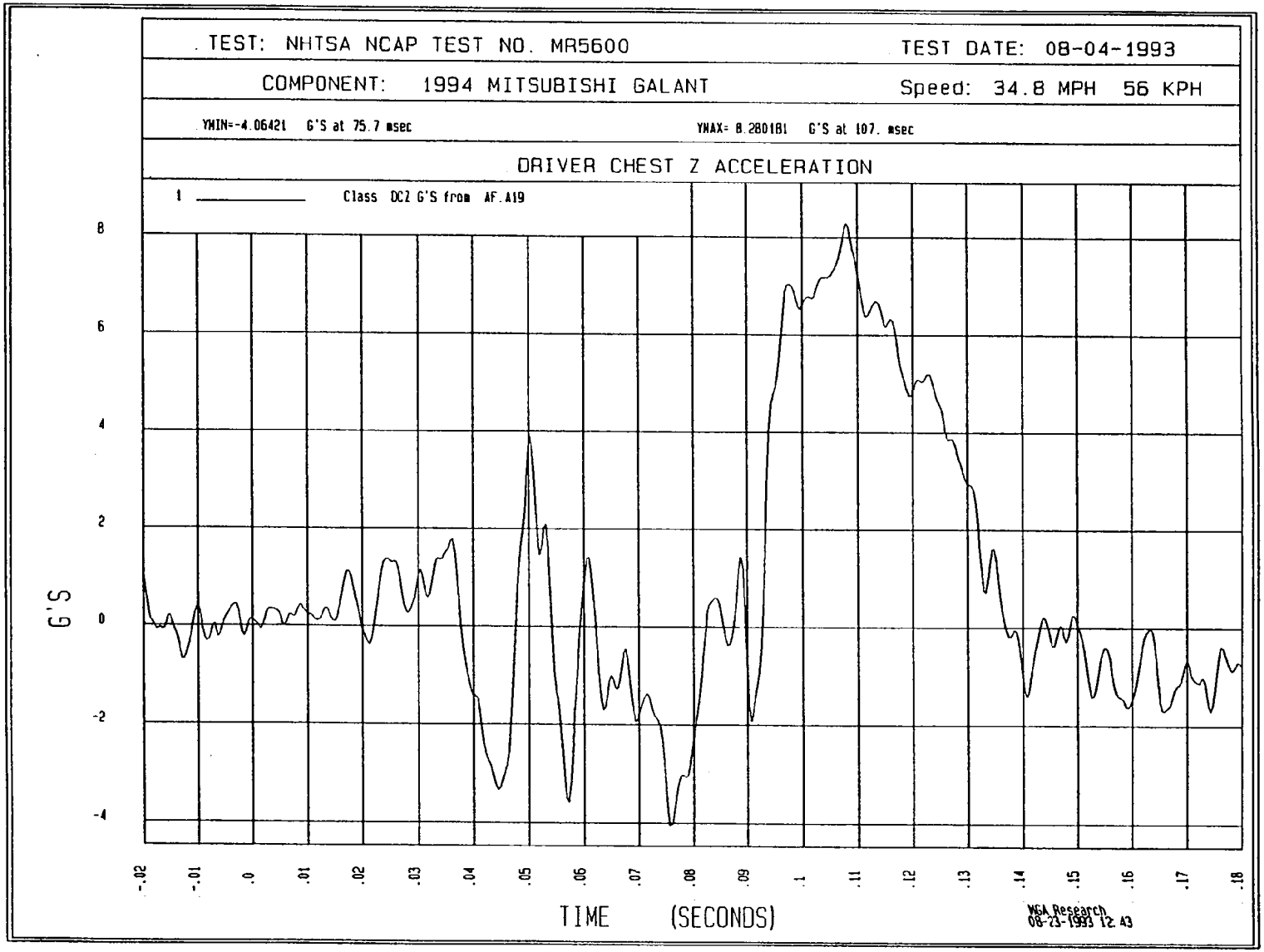


Figure B-33 - Driver Chest Z Acceleration vs. Time

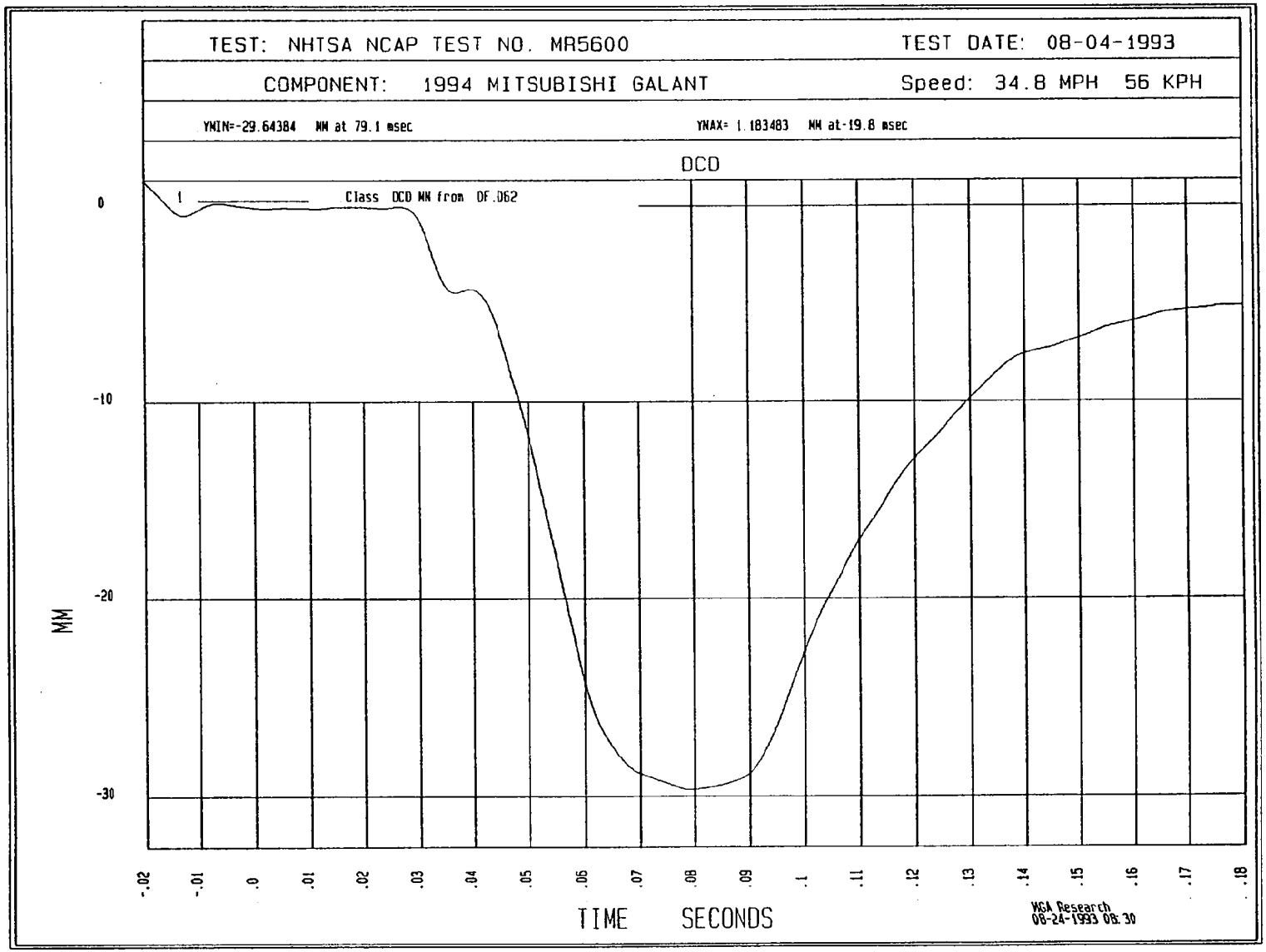


Figure B-34 - Driver Chest X Displacement vs. Time

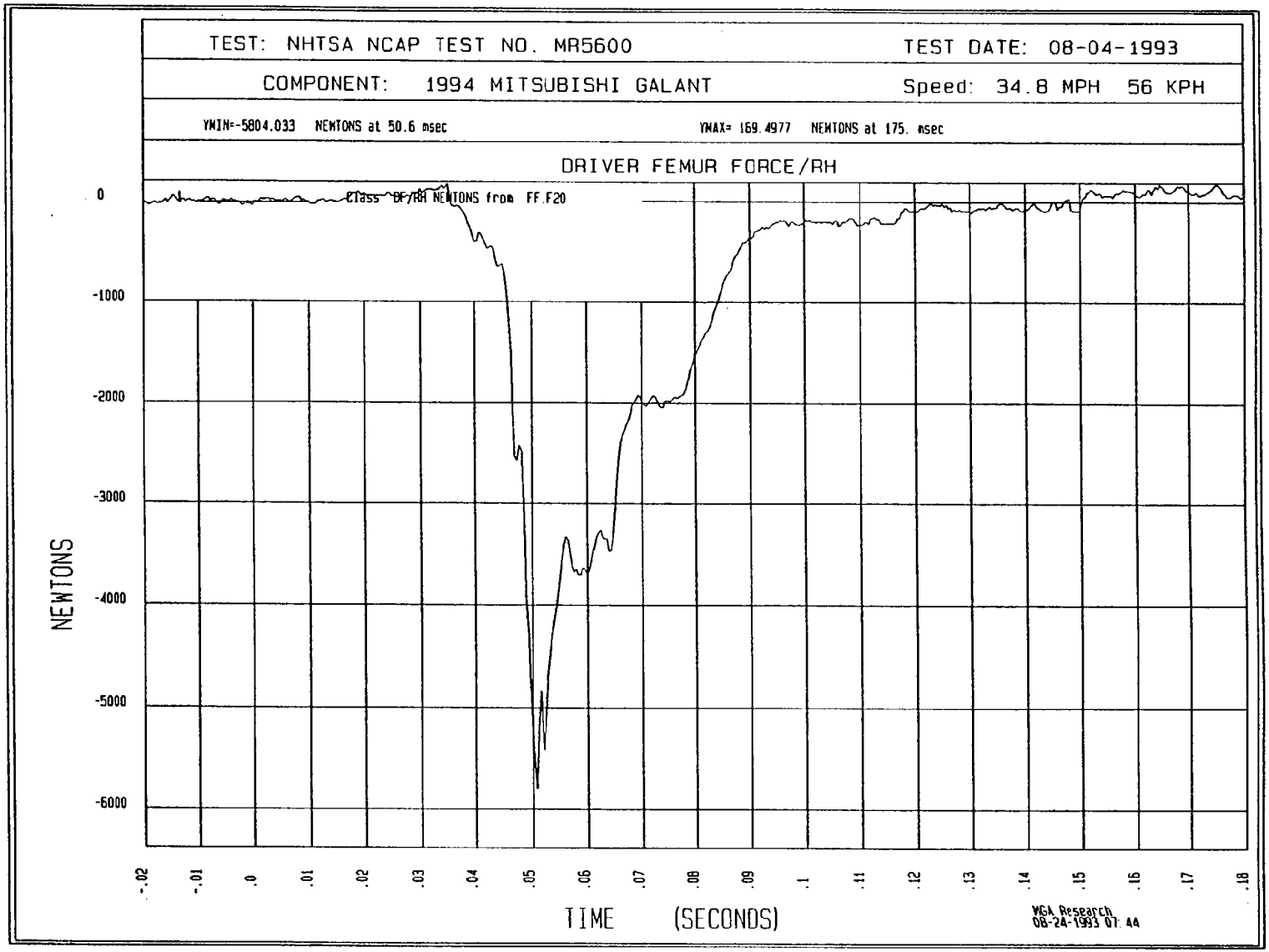


Figure B-35 - Driver Right Femur Force vs. Time

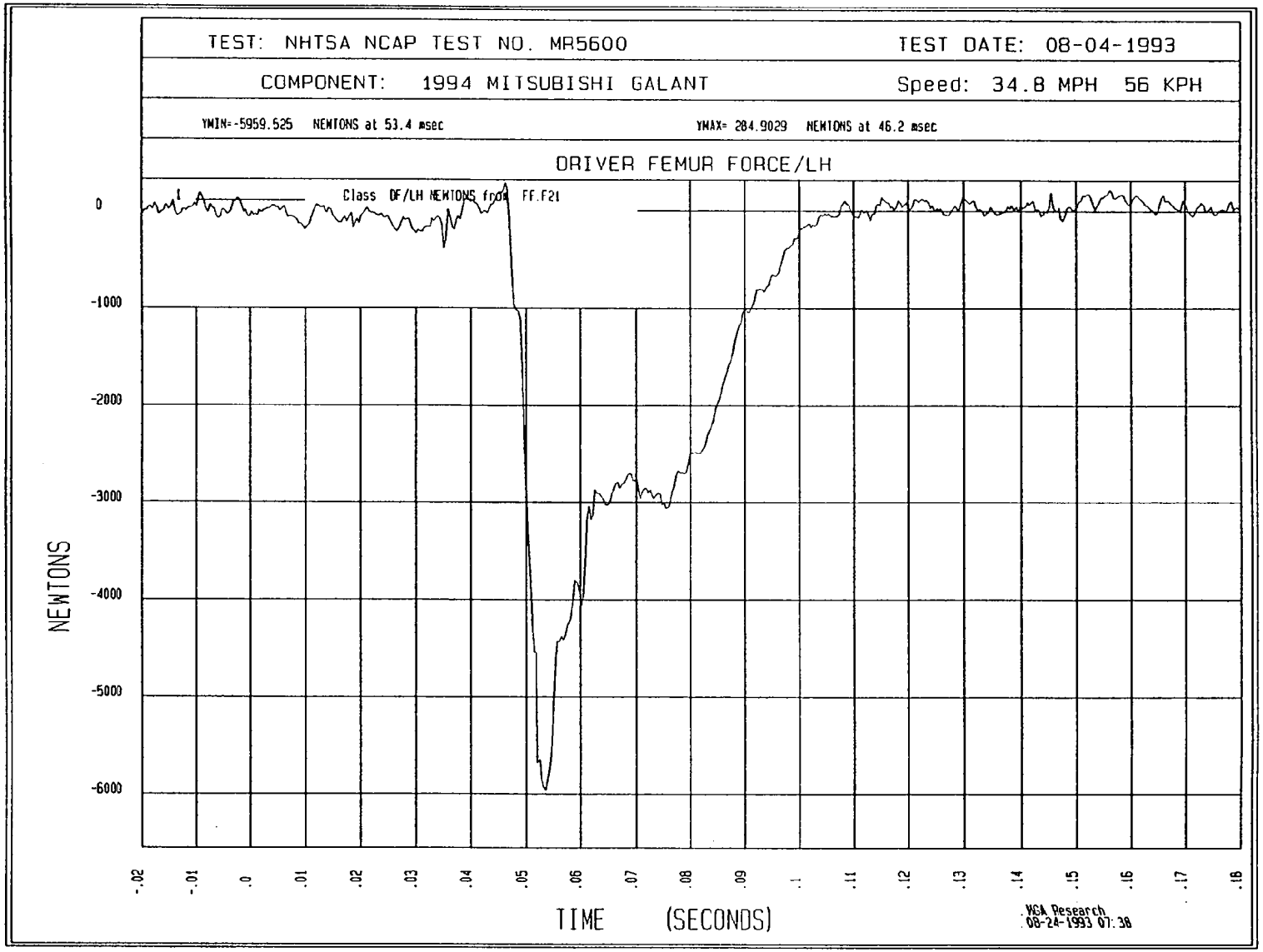


Figure B-36 - Driver Left Femur Force vs. Time

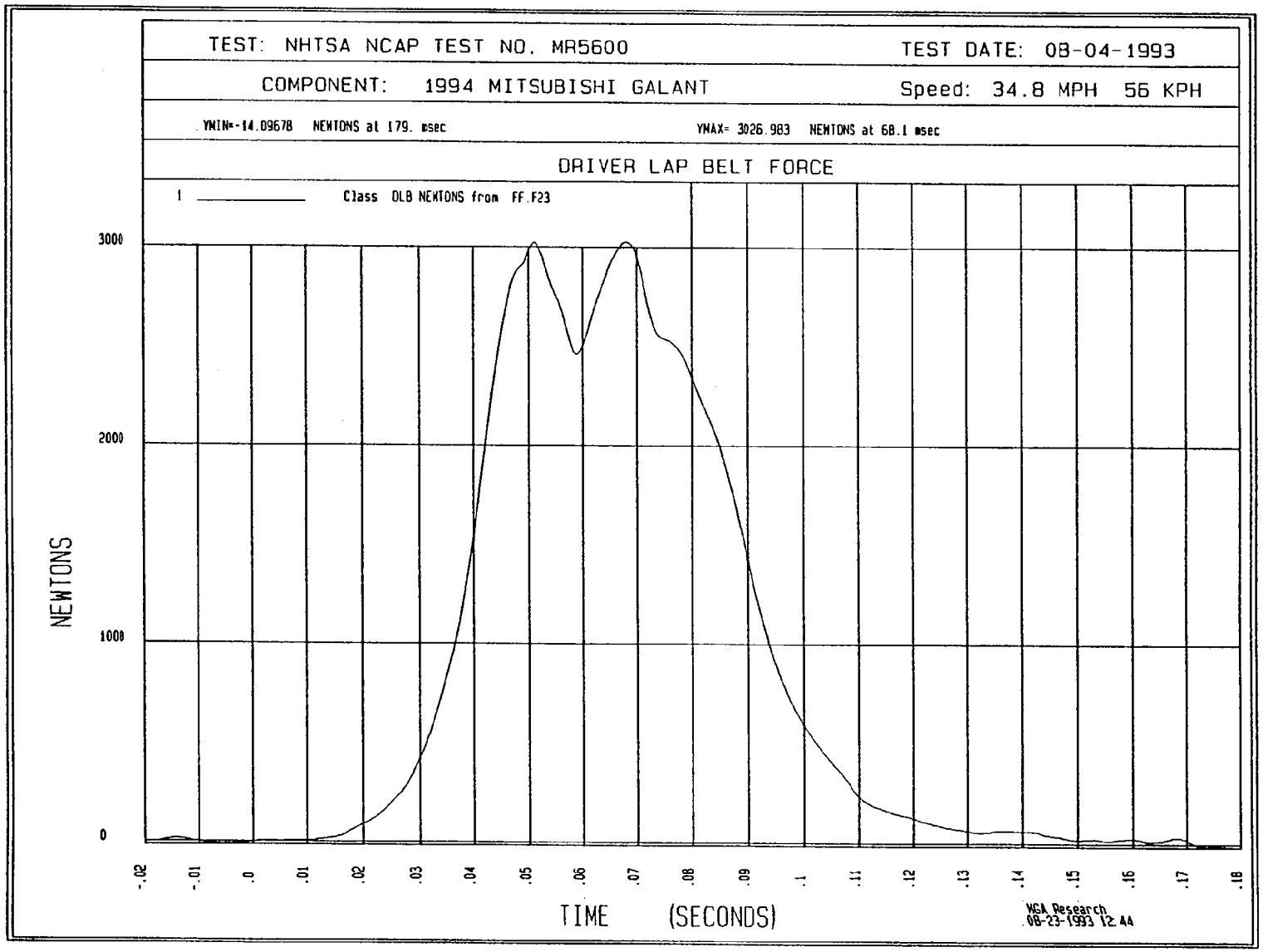


Figure B-37 - Driver Lap Belt Force vs. Time

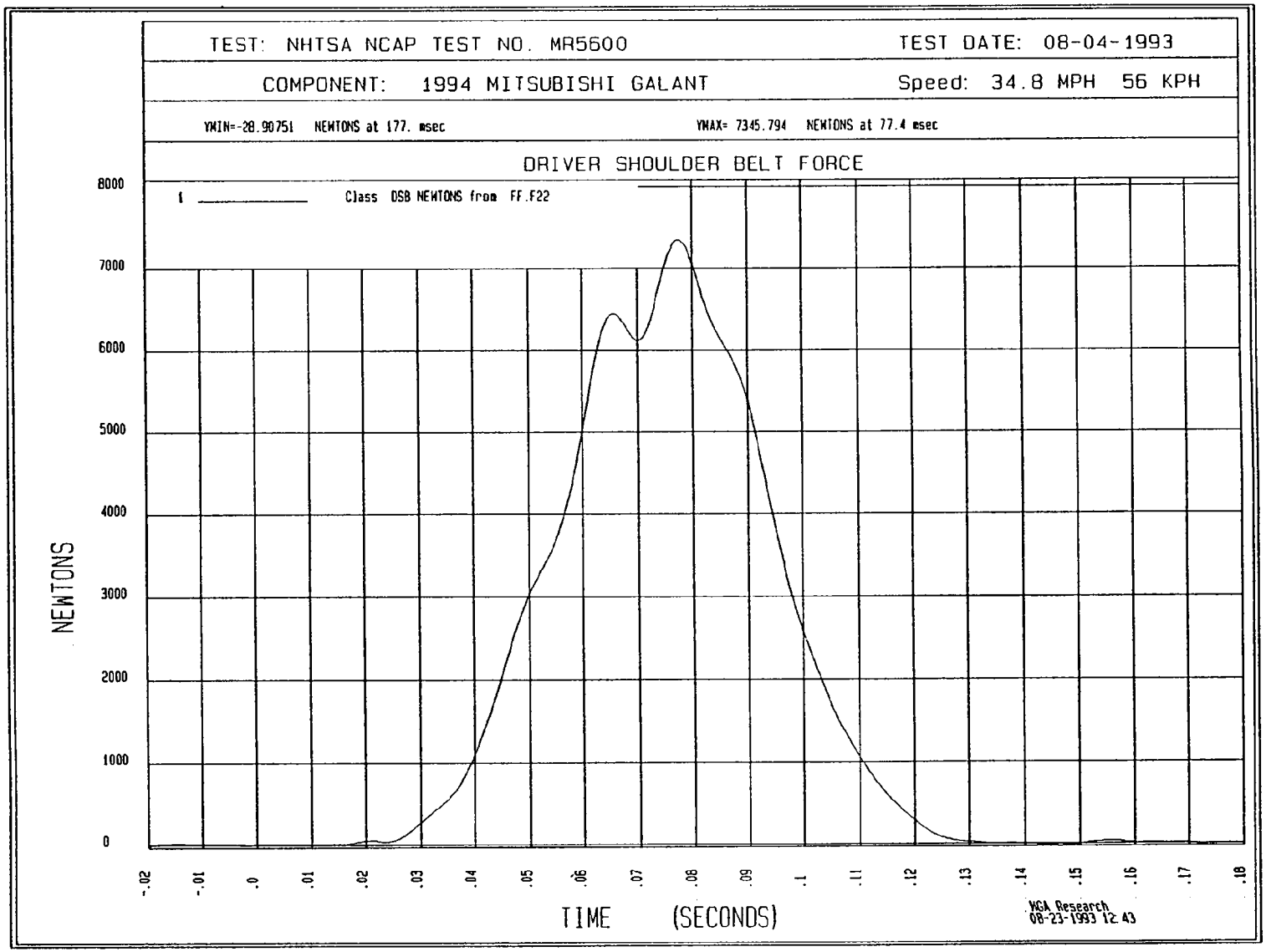


Figure B-38 - Driver Torso Belt Force vs. Time

NO VALID DATA COLLECTED

Figure B-39 - Driver Torso Belt Stretch vs. Time

NO VALID DATA COLLECTED

Figure B-40 - Driver Torso Belt Spool Out vs. Time

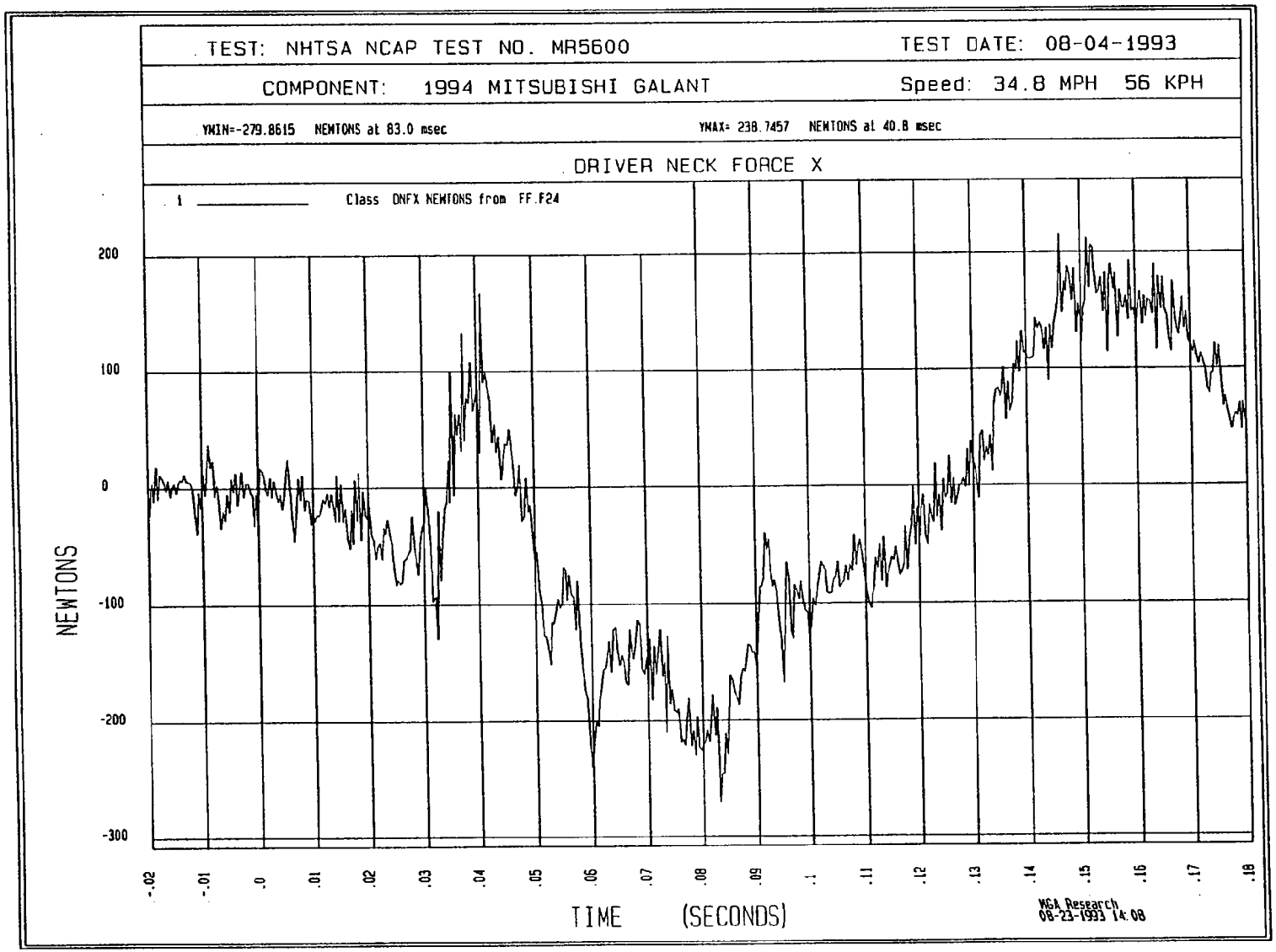


Figure B-41 - Driver Neck Force X vs. Time

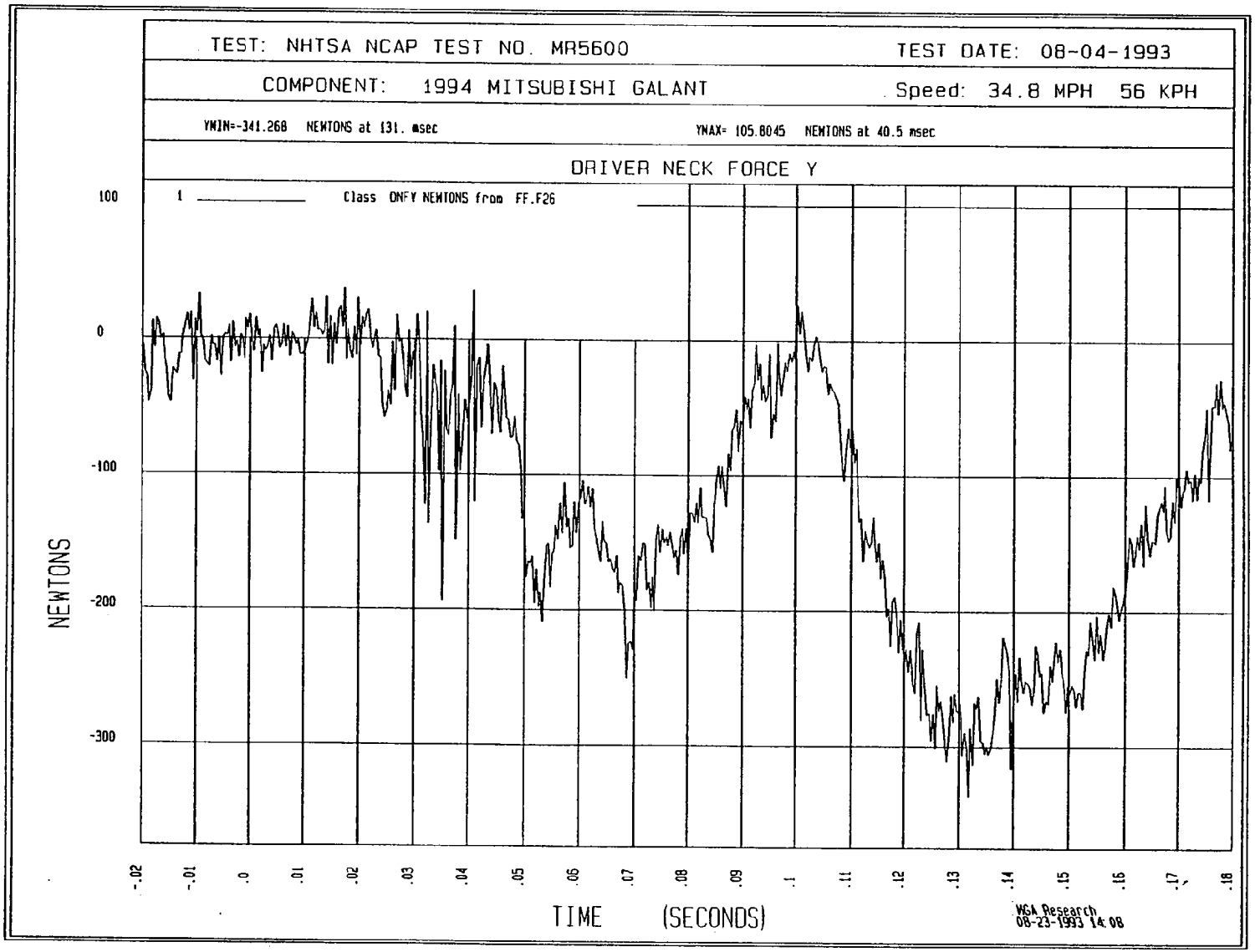


Figure B-42 - Driver Neck Force Y vs. Time

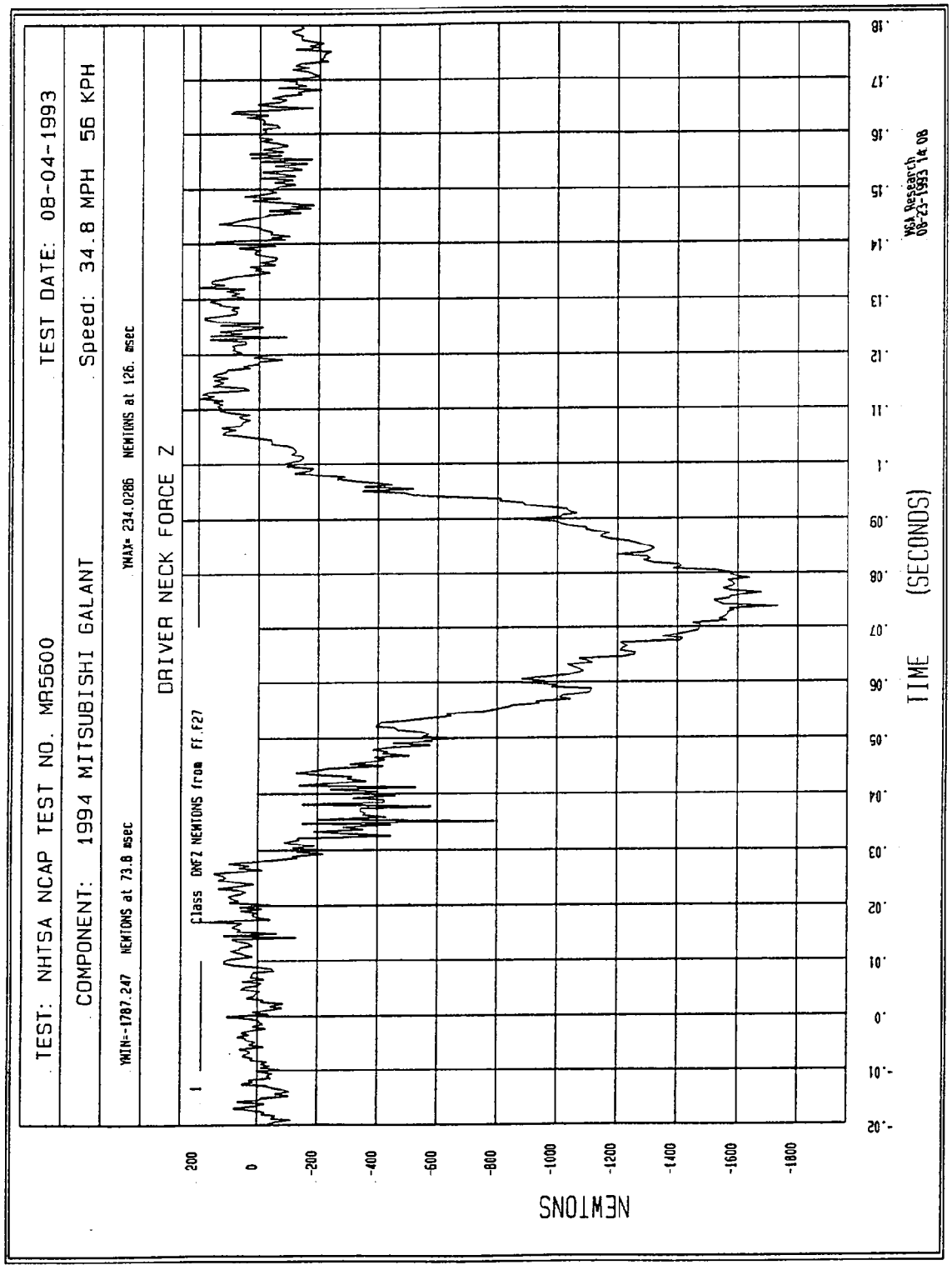


Figure B-43 - Driver Neck Force Z vs. Time

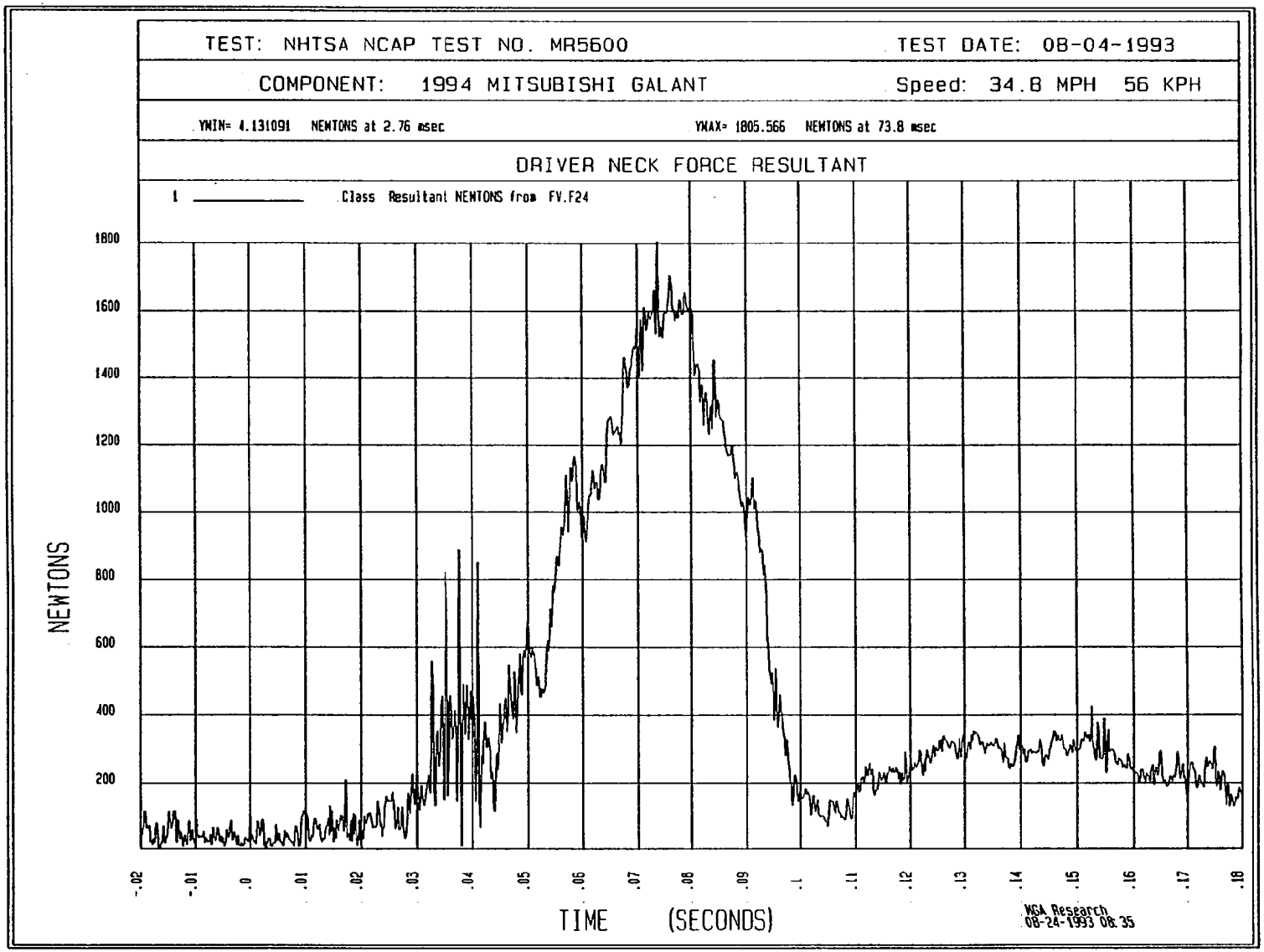


Figure B-44 - Driver Neck Force Resultant vs. Time

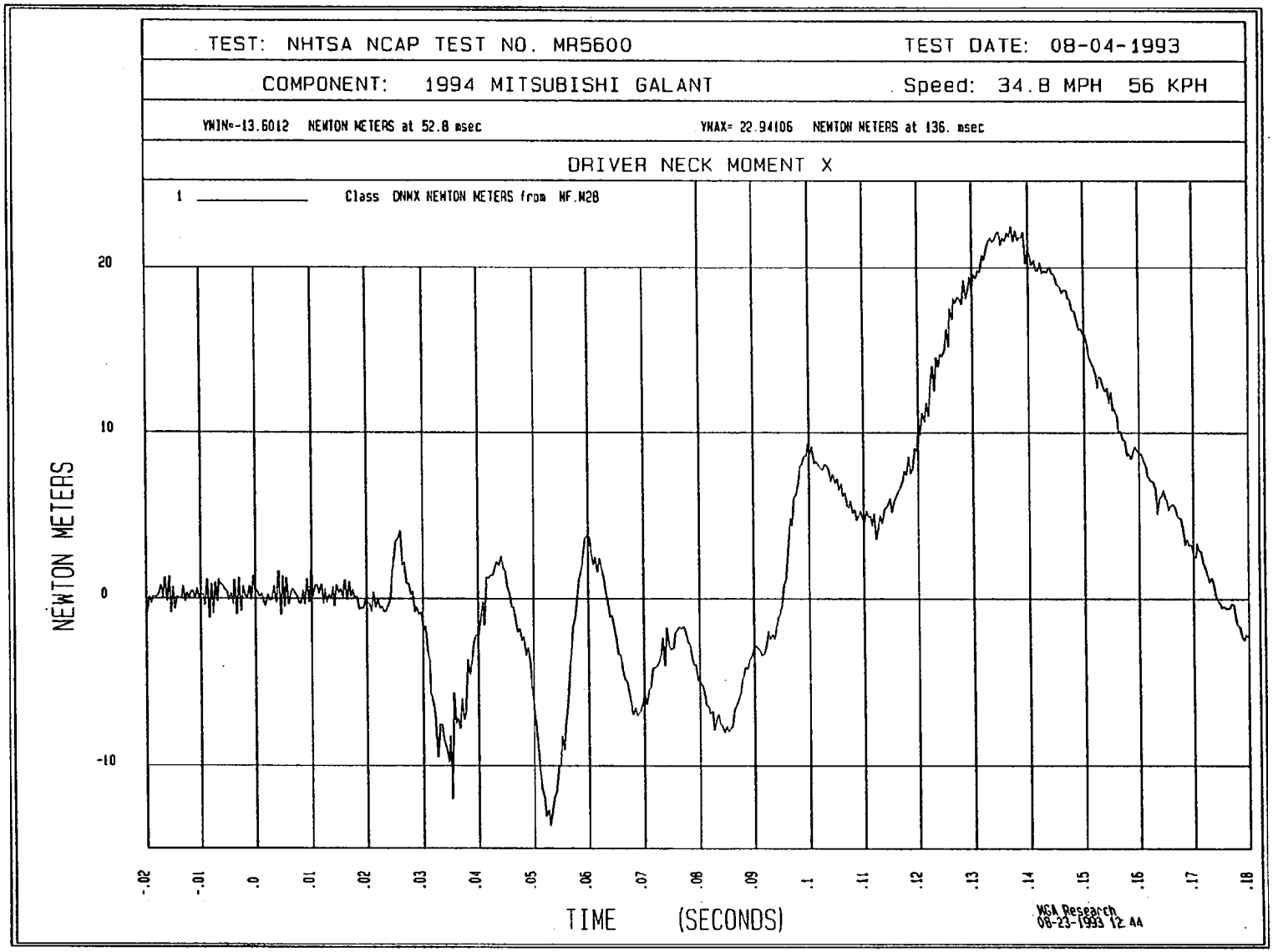


Figure B-45 - Driver Neck Moment X vs. Time

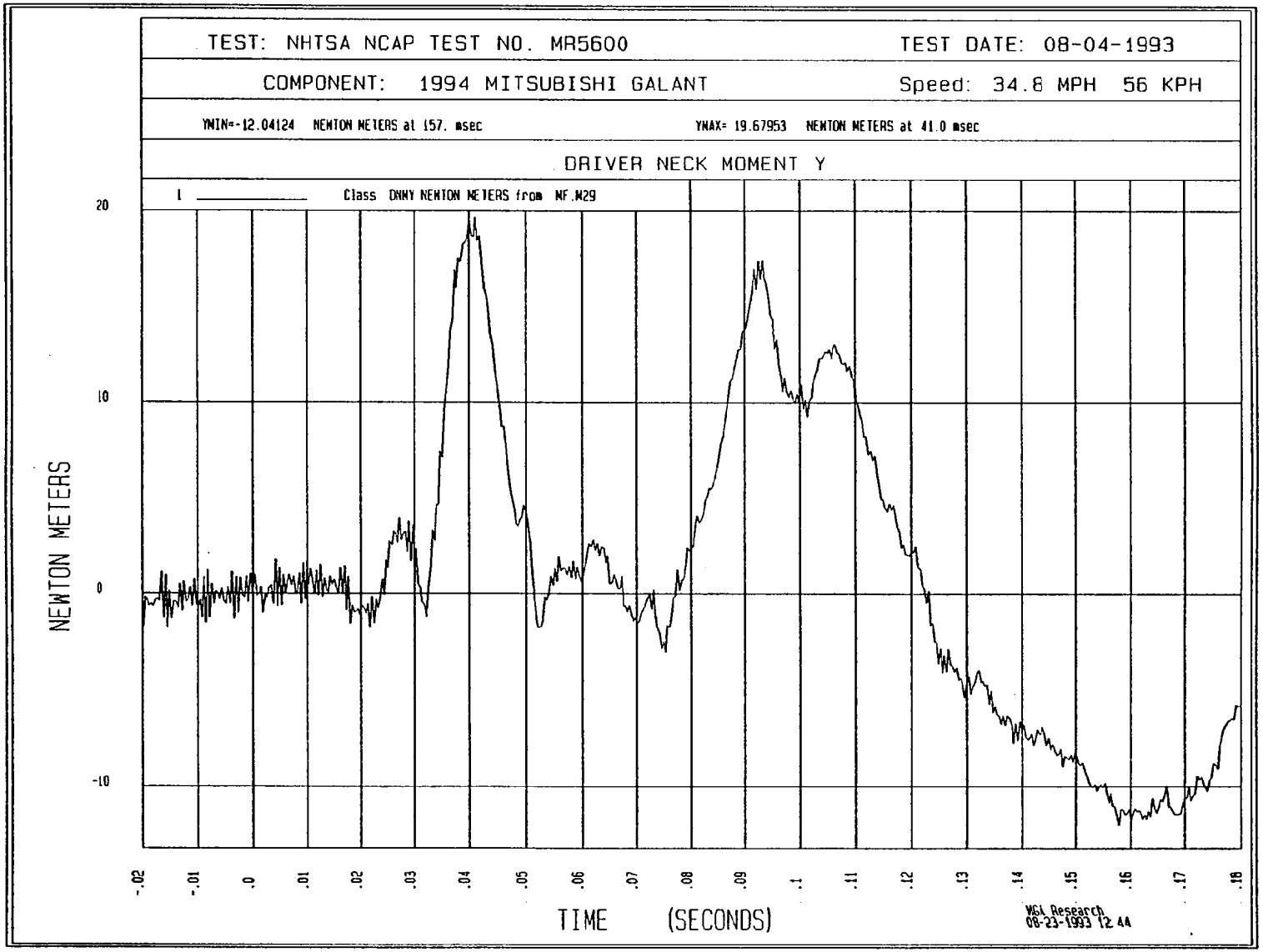


Figure B-46 - Driver Neck Moment Y vs. Time

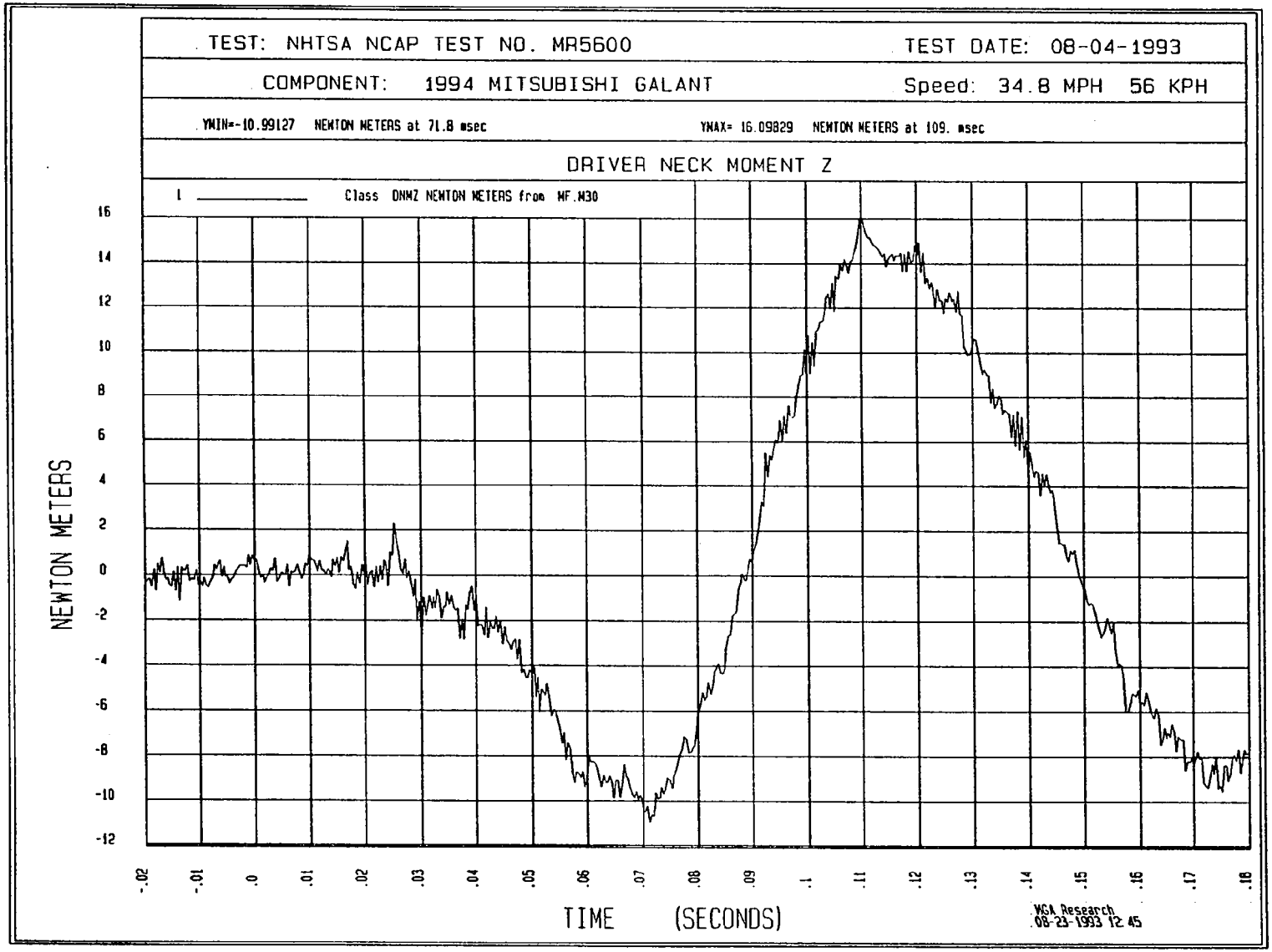


Figure B-47 - Driver Neck Moment Z vs. Time

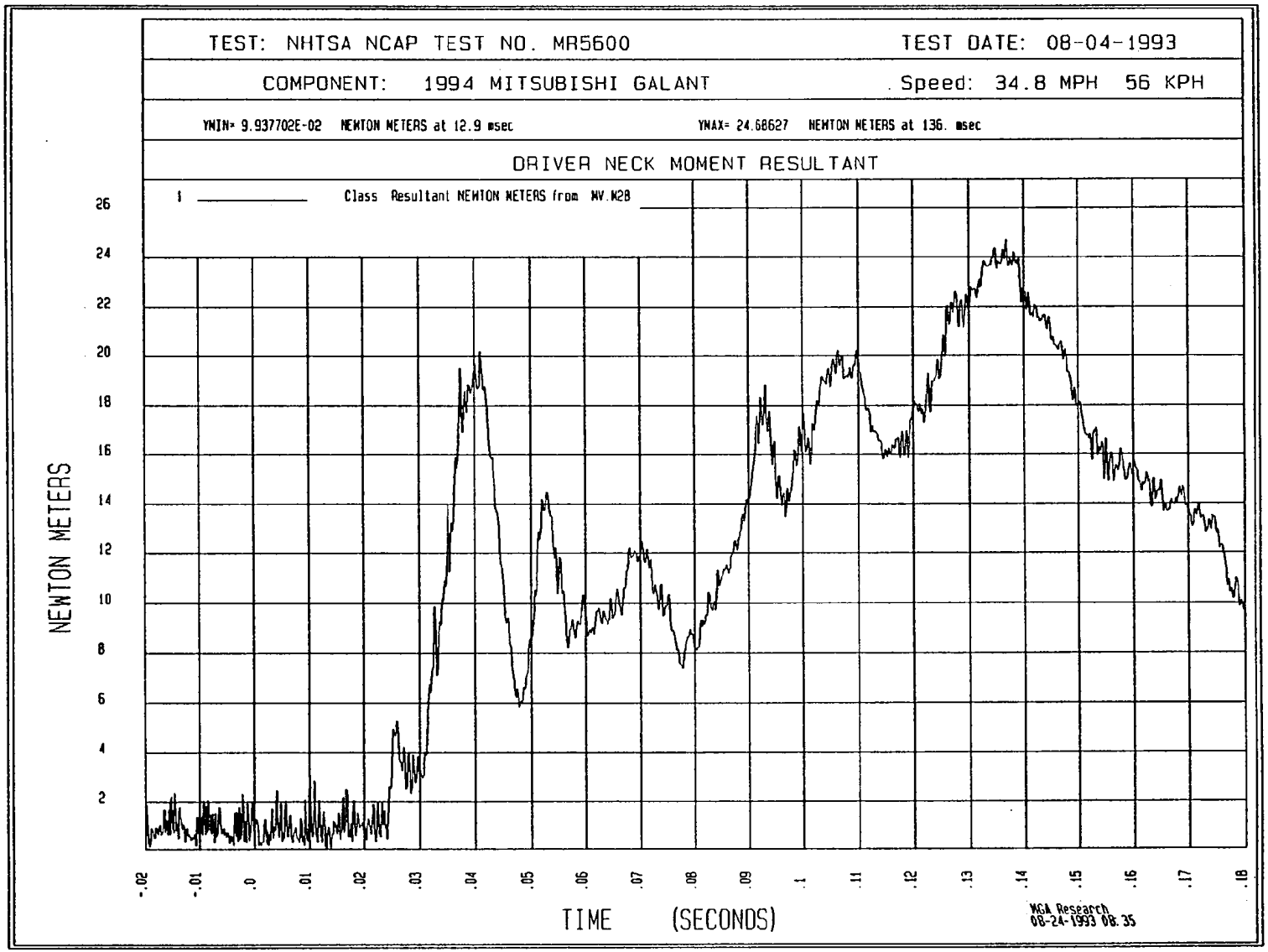


Figure B-48 - Driver Neck Moment Resultant vs. Time

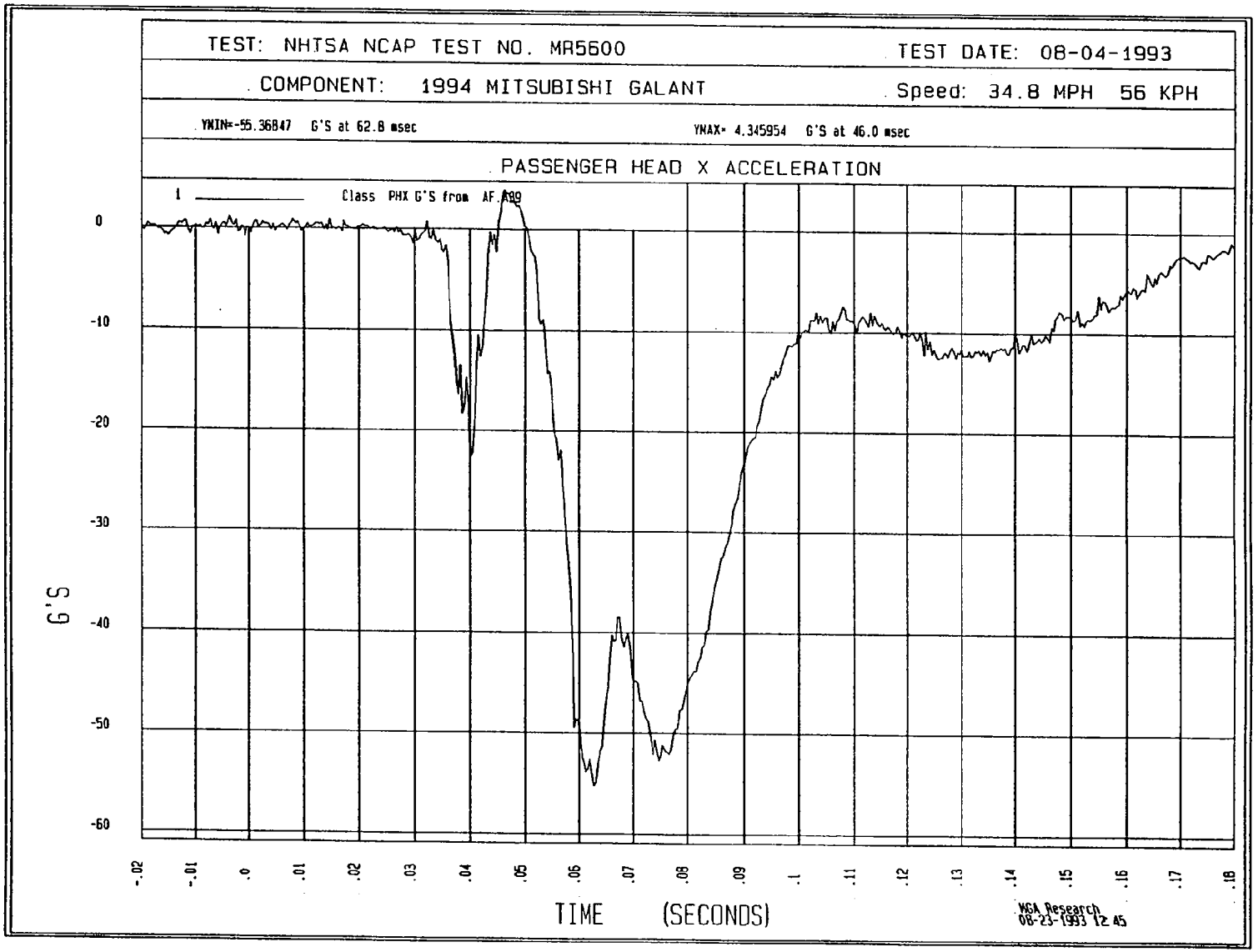
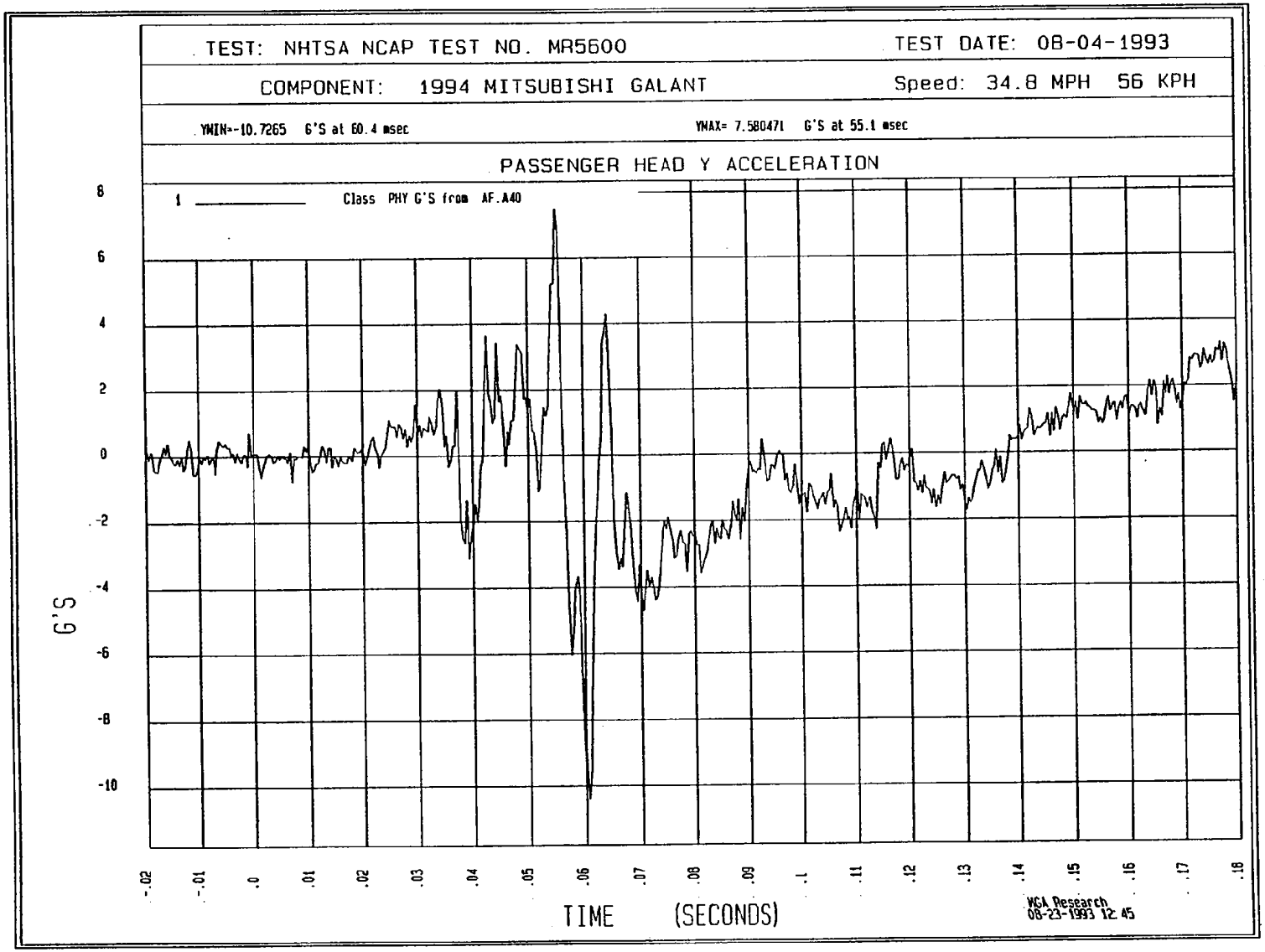


Figure B-49 - Passenger Head X Acceleration vs. Time



B-50

Figure B-50 - Passenger Head Y Acceleration vs. Time

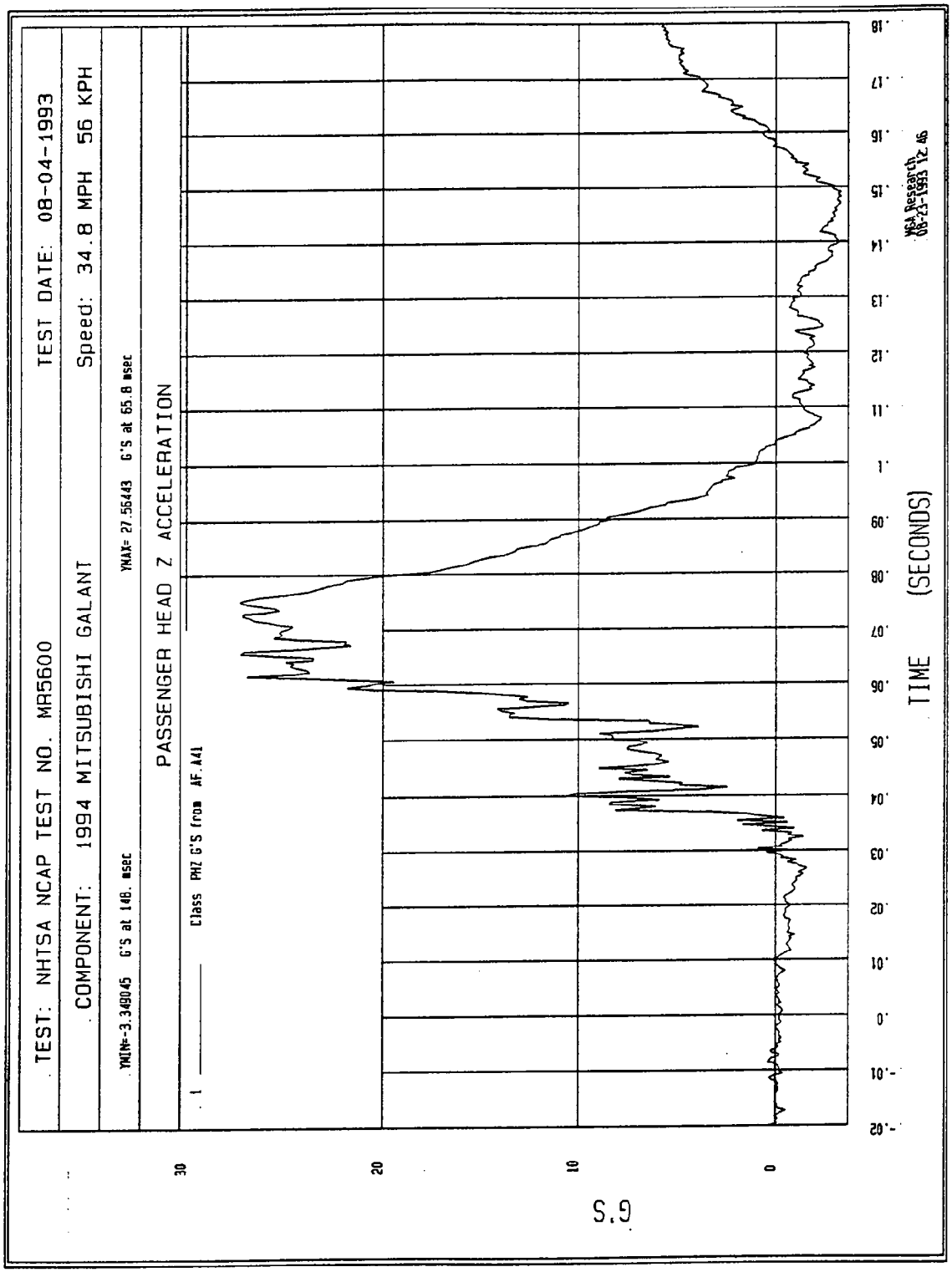


Figure B-51 - Passenger Head Z Acceleration vs. Time

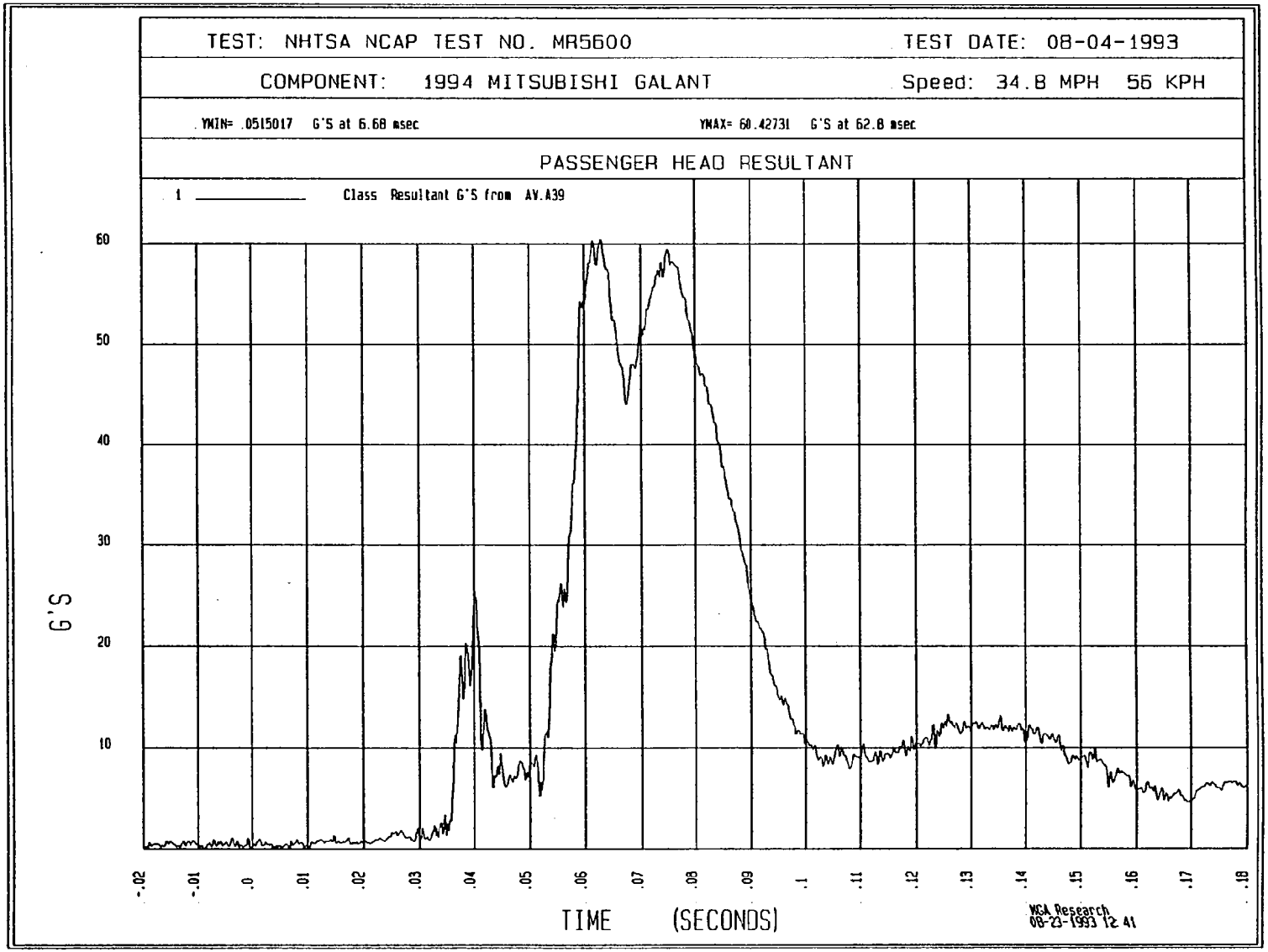


Figure B-52 - Passenger Head Resultant Acceleration vs. Time

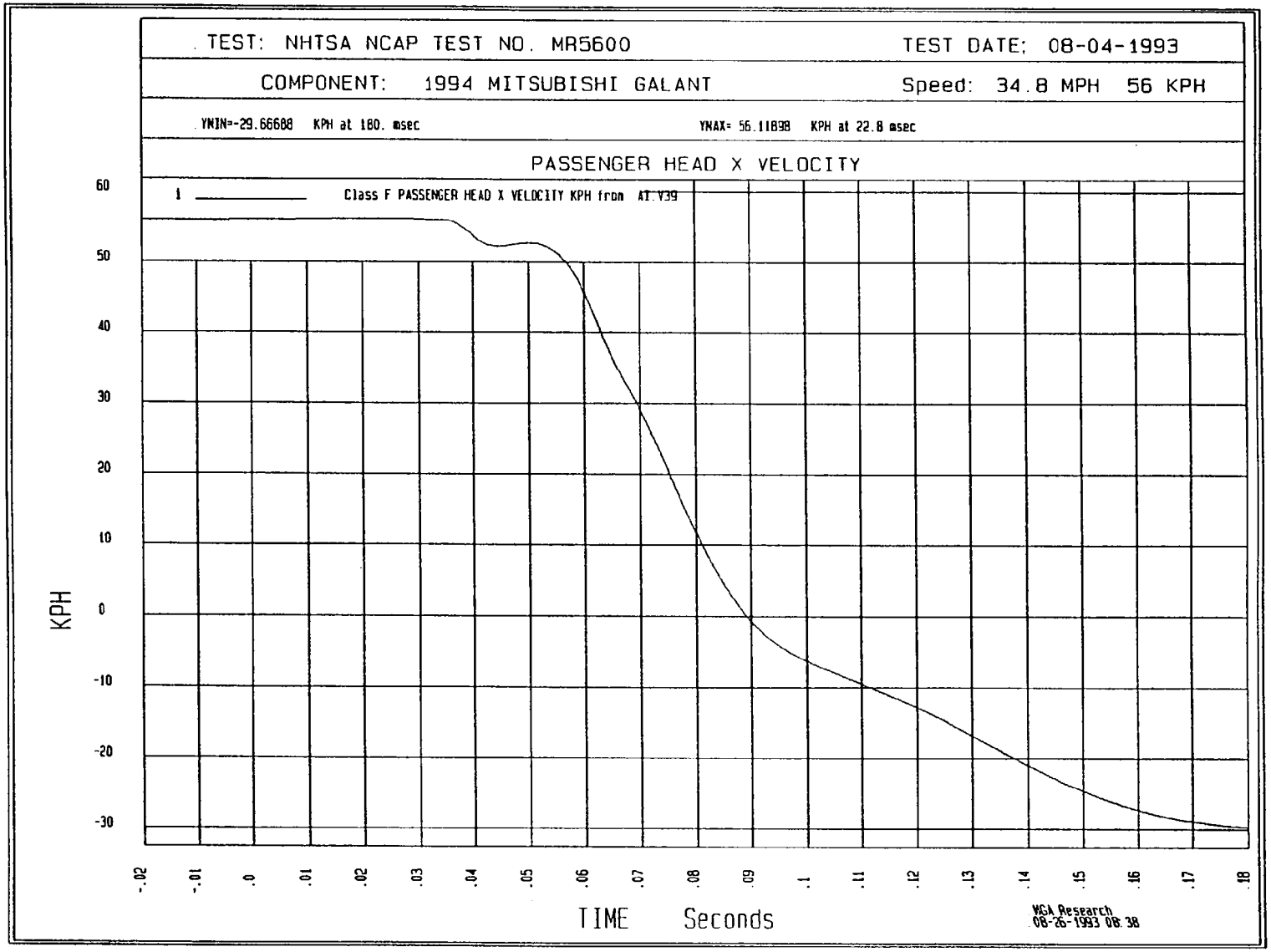


Figure B-53 - Passenger Head X Velocity vs. Time

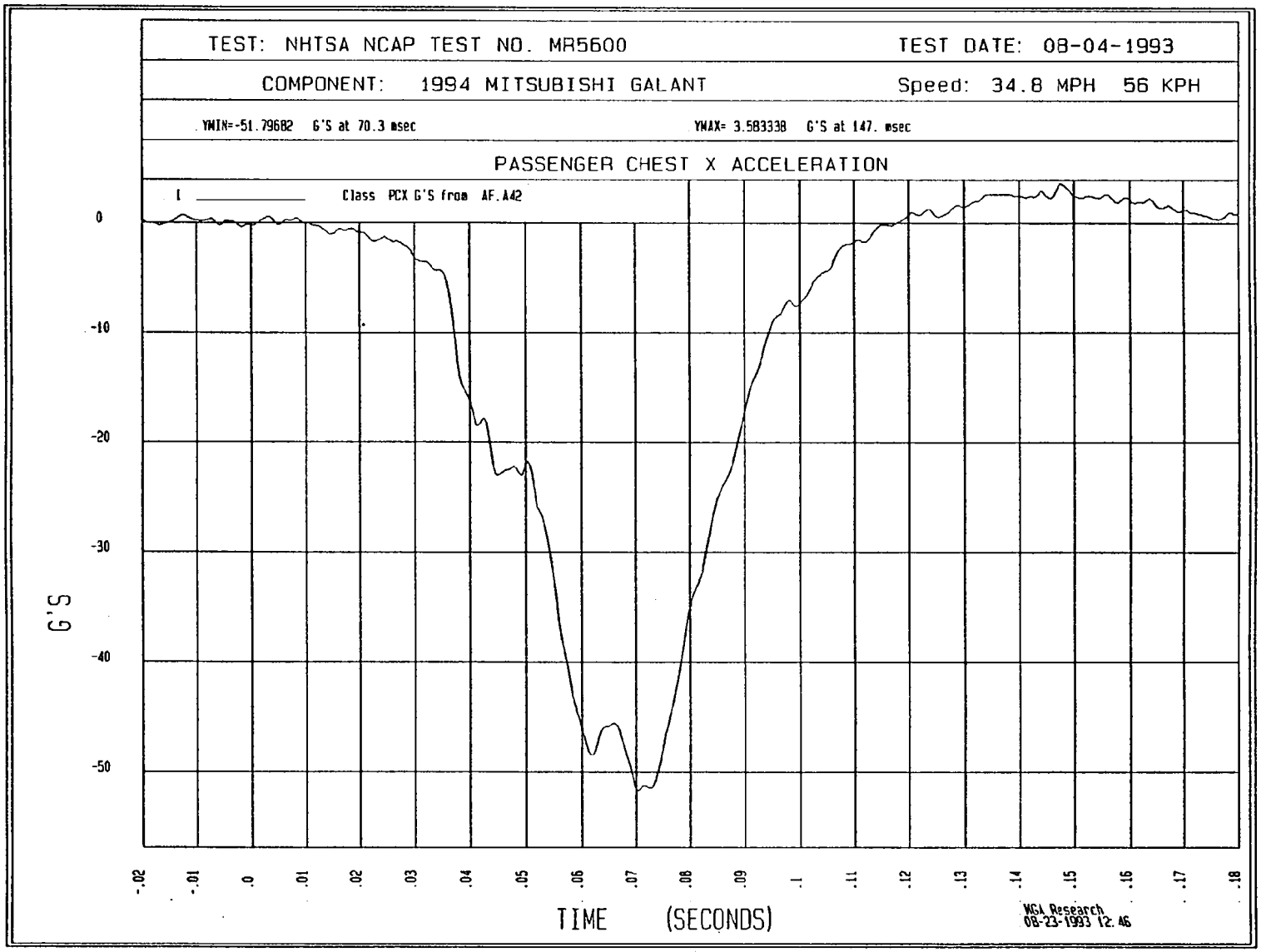


Figure B-54 - Passenger Chest X Acceleration vs. Time

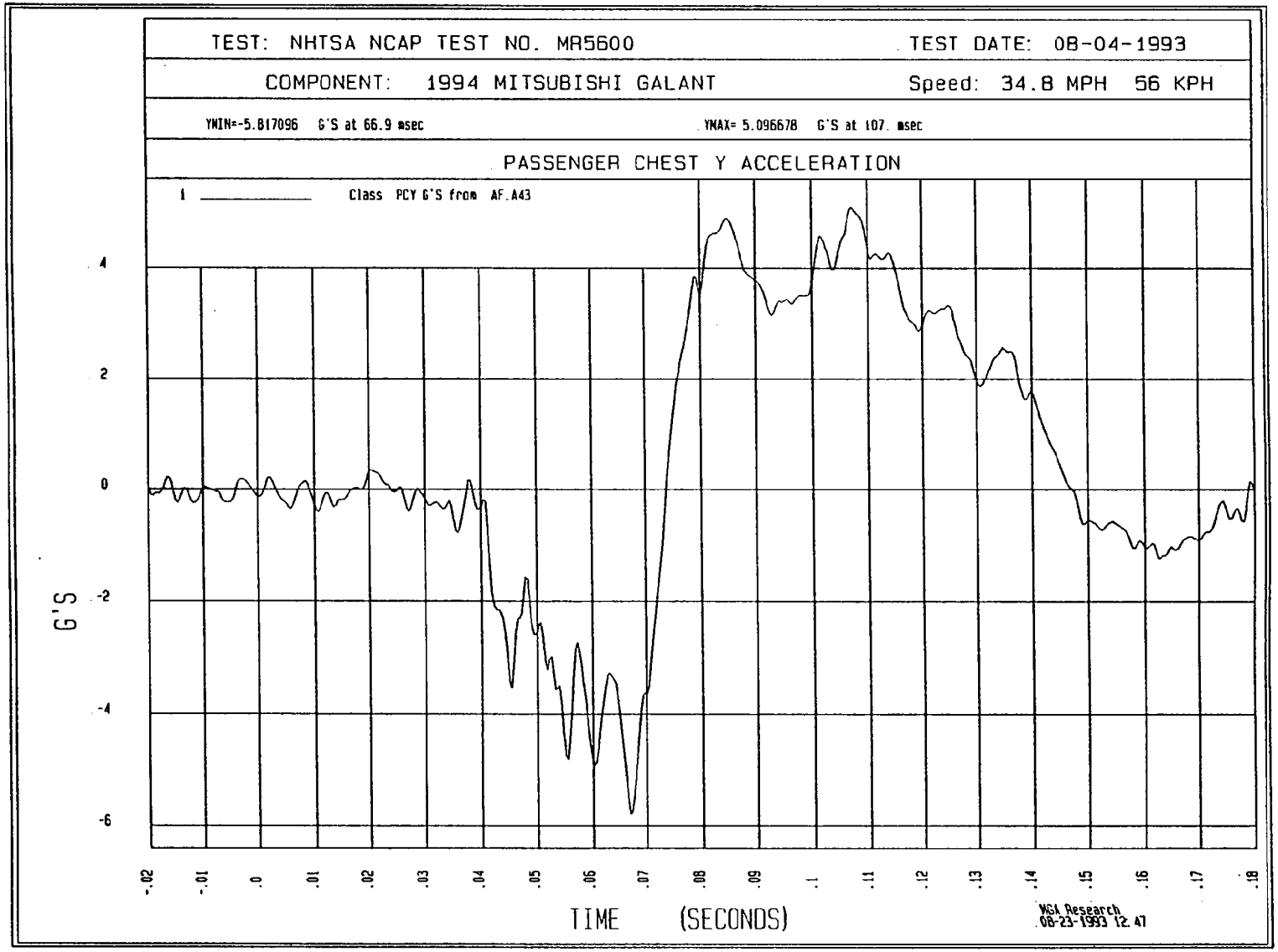


Figure B-55 - Passenger Chest Y Acceleration vs. Time

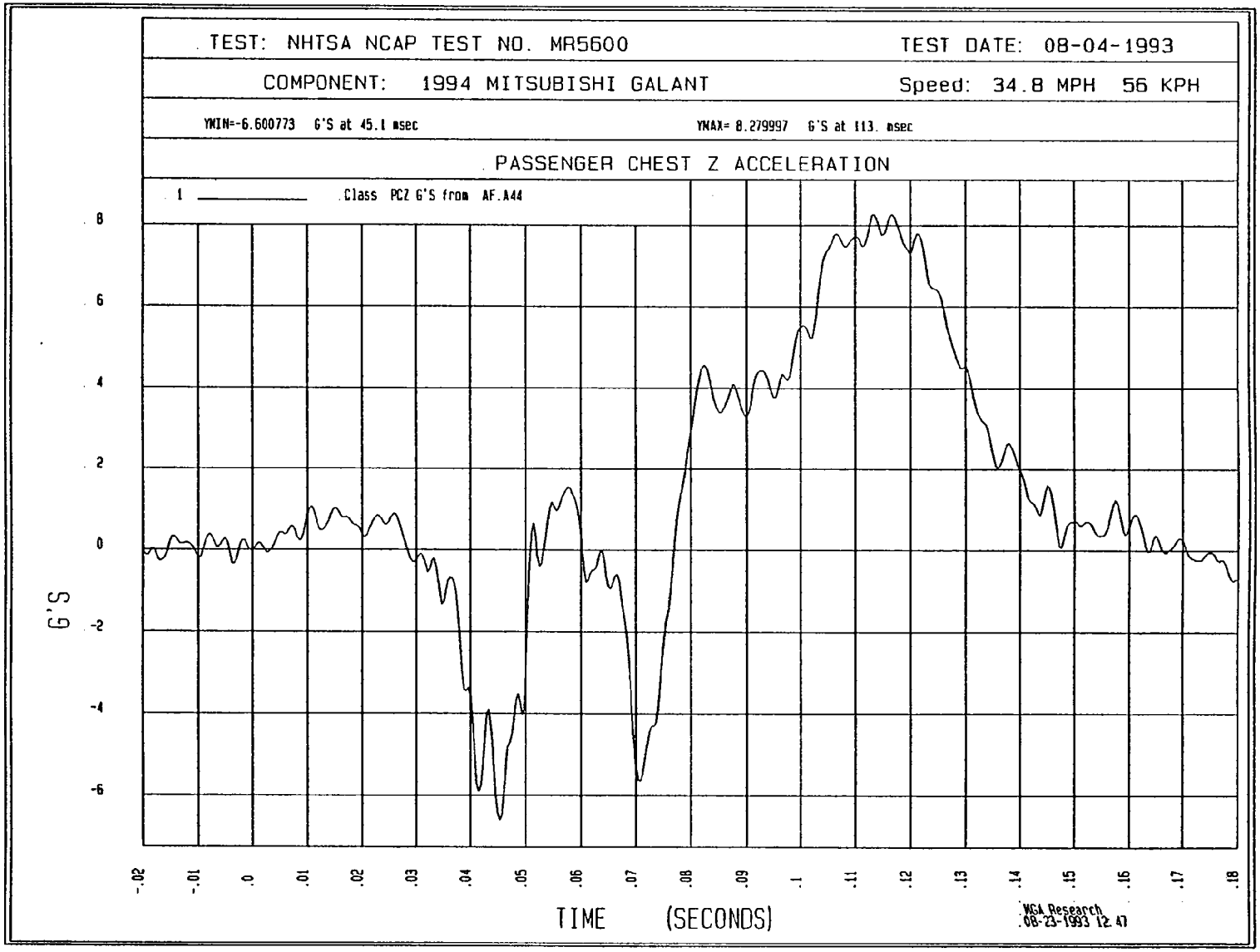


Figure B-56 - Passenger Chest Z Acceleration vs. Time

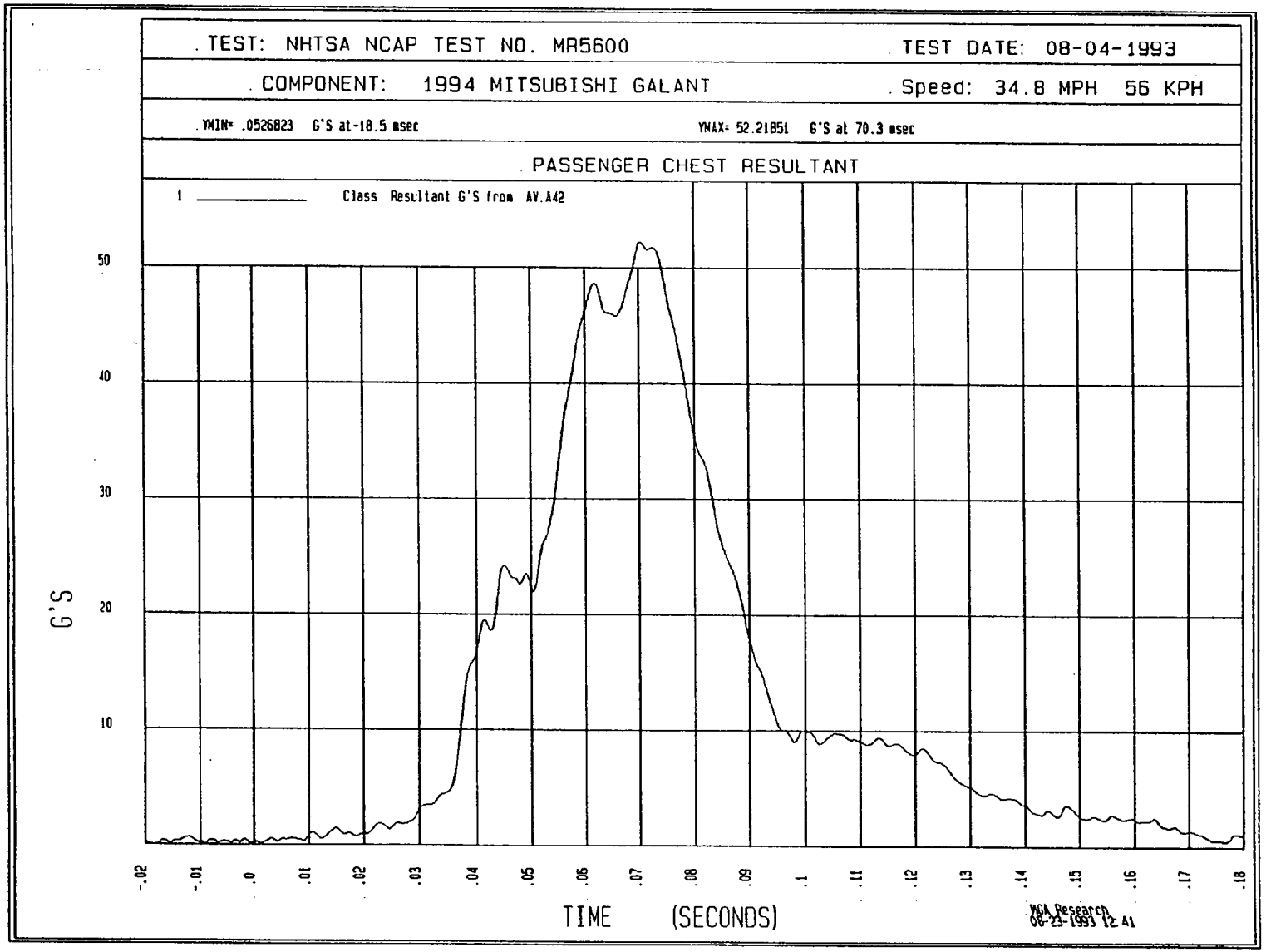


Figure B-57 - Passenger Chest Resultant Acceleration vs. Time

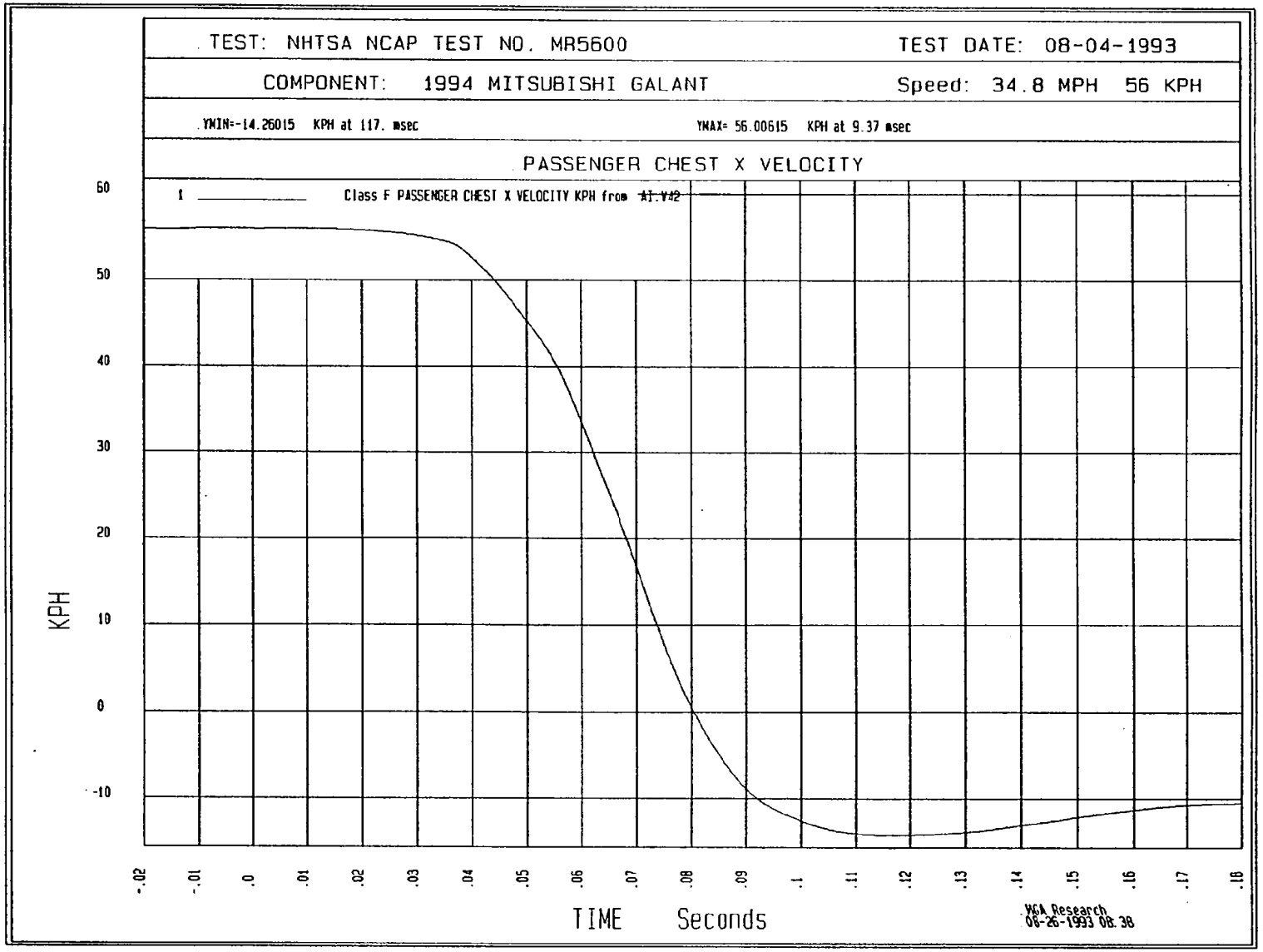


Figure B-58 - Passenger Chest X Velocity vs. Time

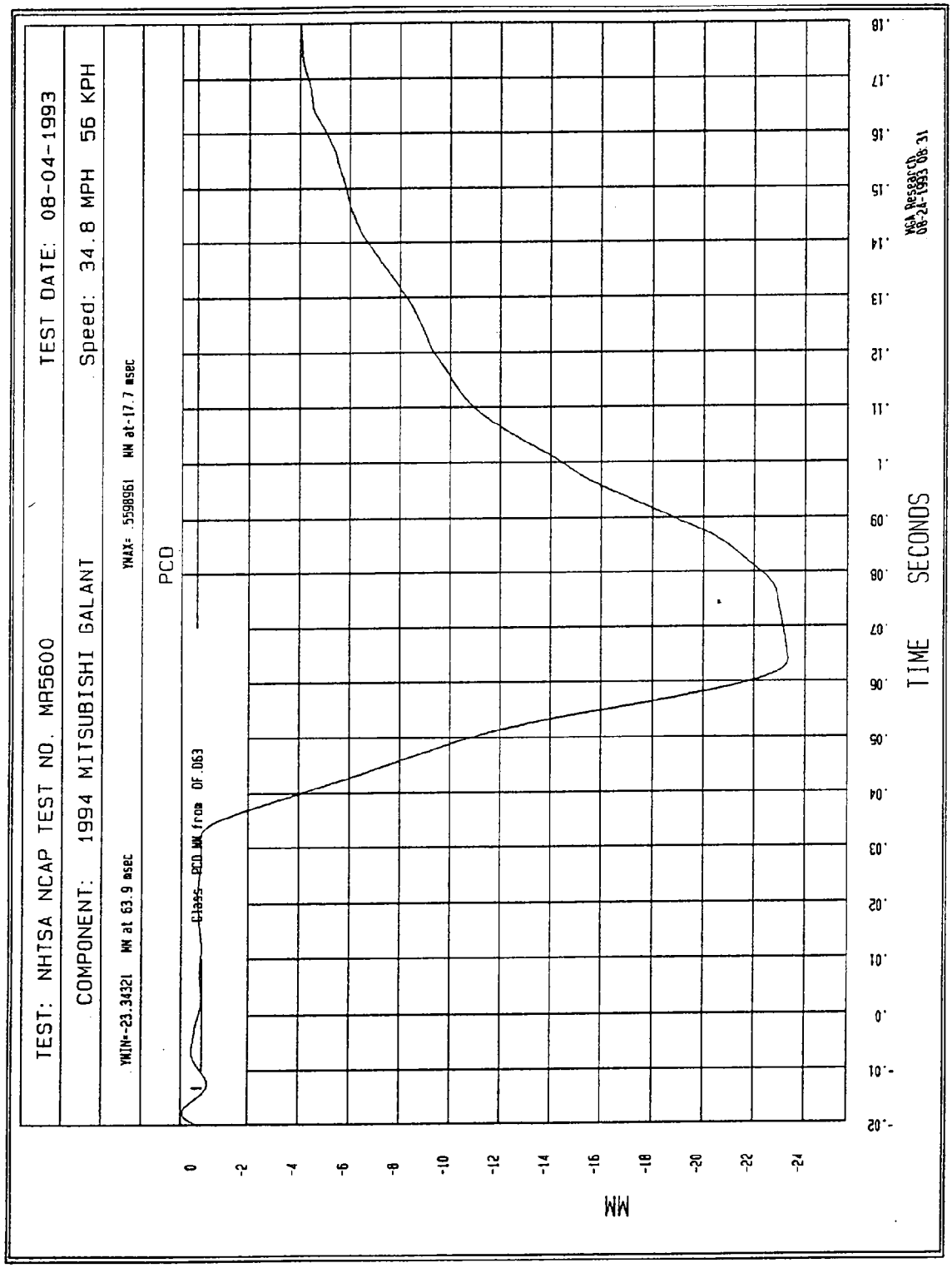


Figure B-59 - Passenger Chest Displacement vs. Time

NO VALID DATA COLLECTED

Figure B-60 - Passenger Right Femur Force vs. Time

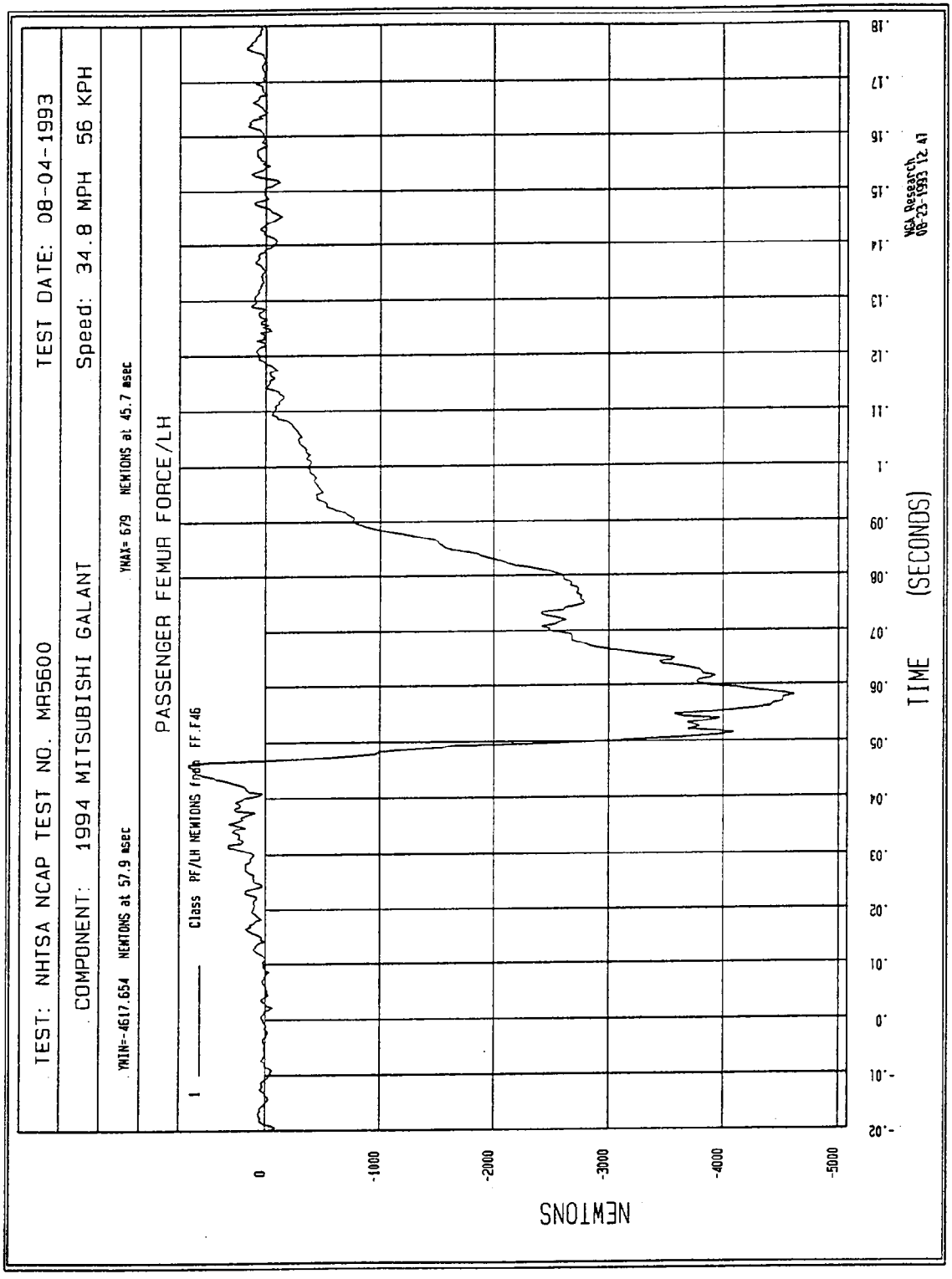


Figure B-61 - Passenger Left Femur Force vs. Time

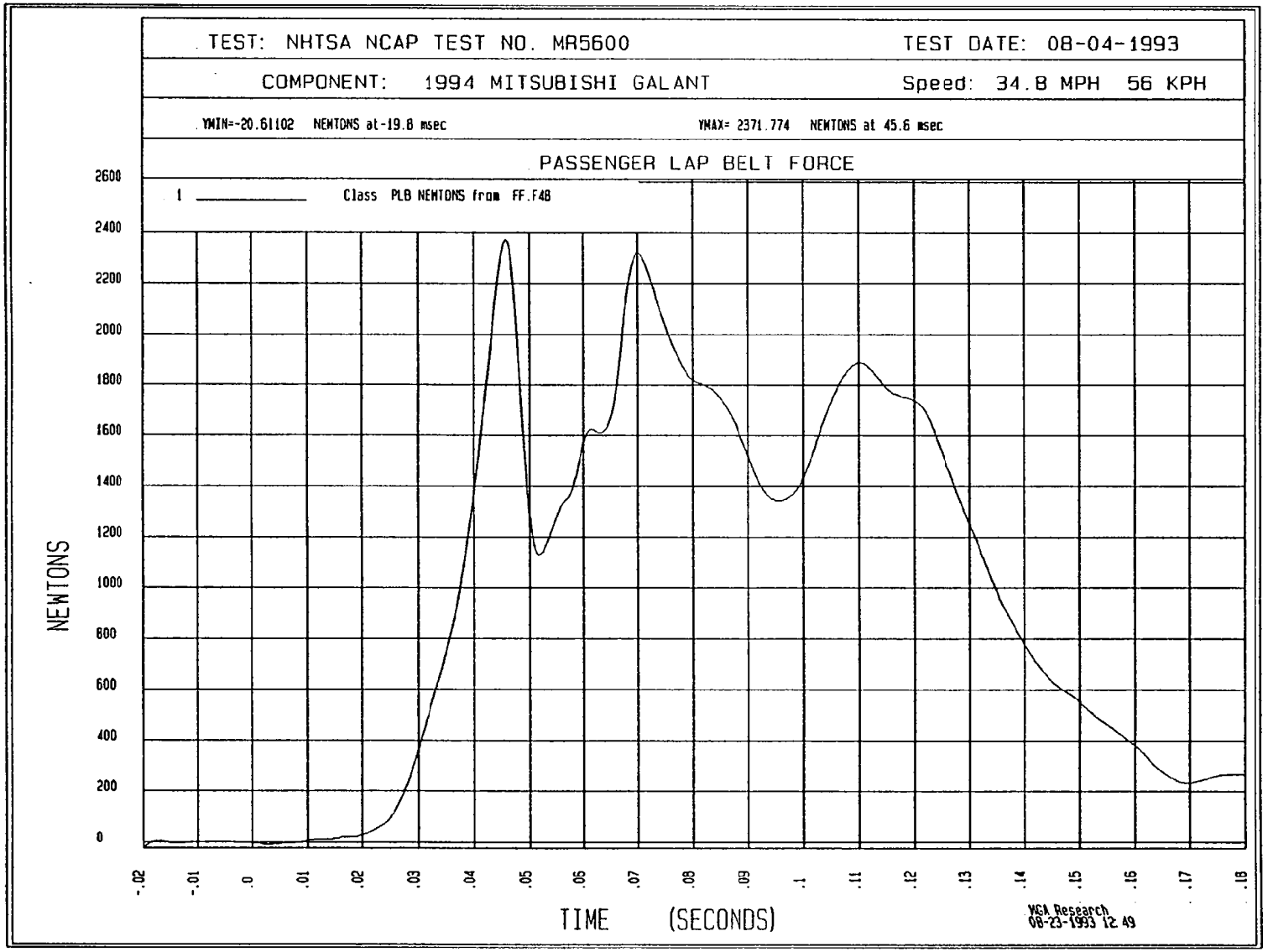


Figure B-62 - Passenger Lap Belt Force vs. Time

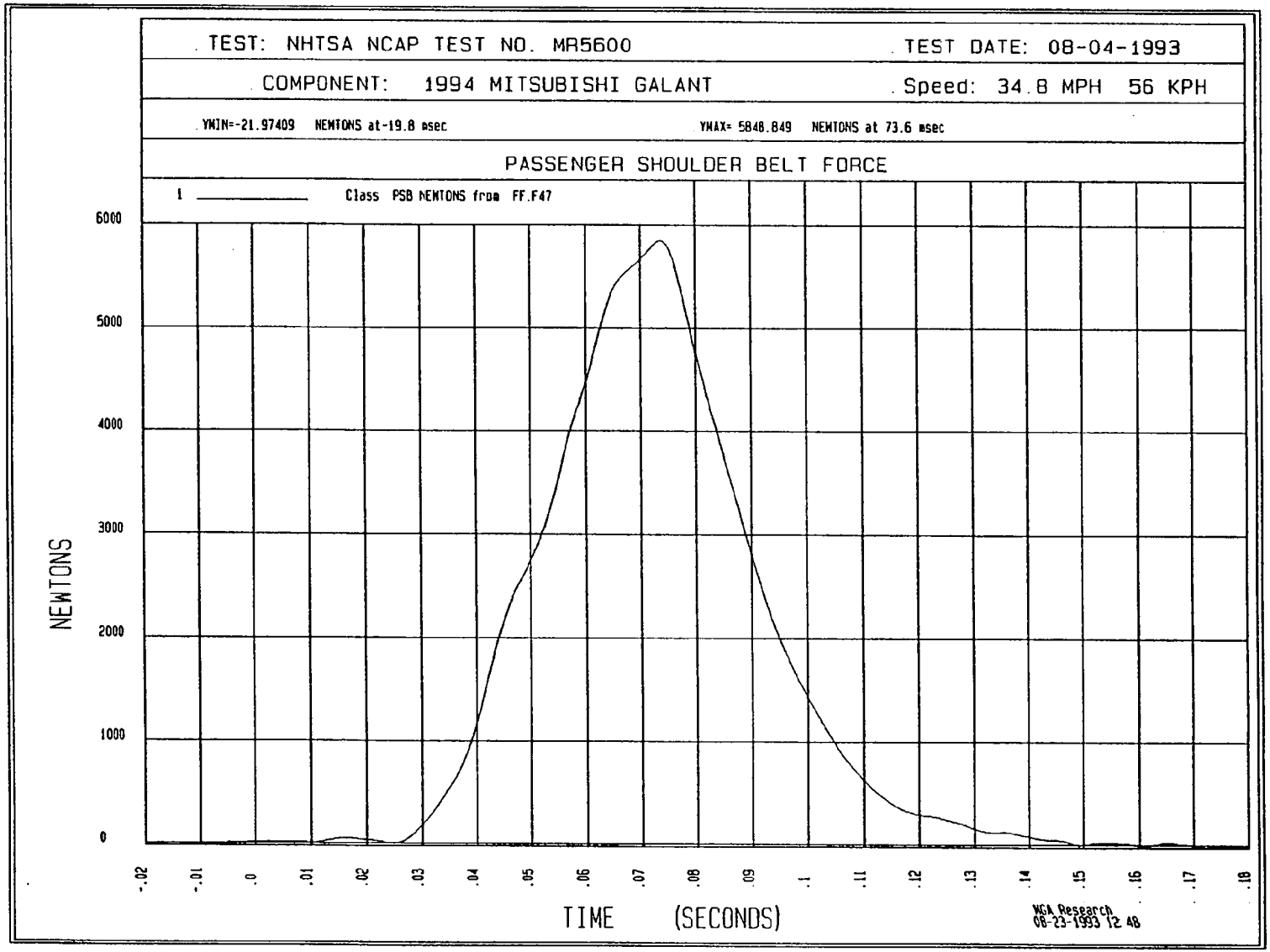


Figure B-63 - Passenger Torso Belt Force vs. Time

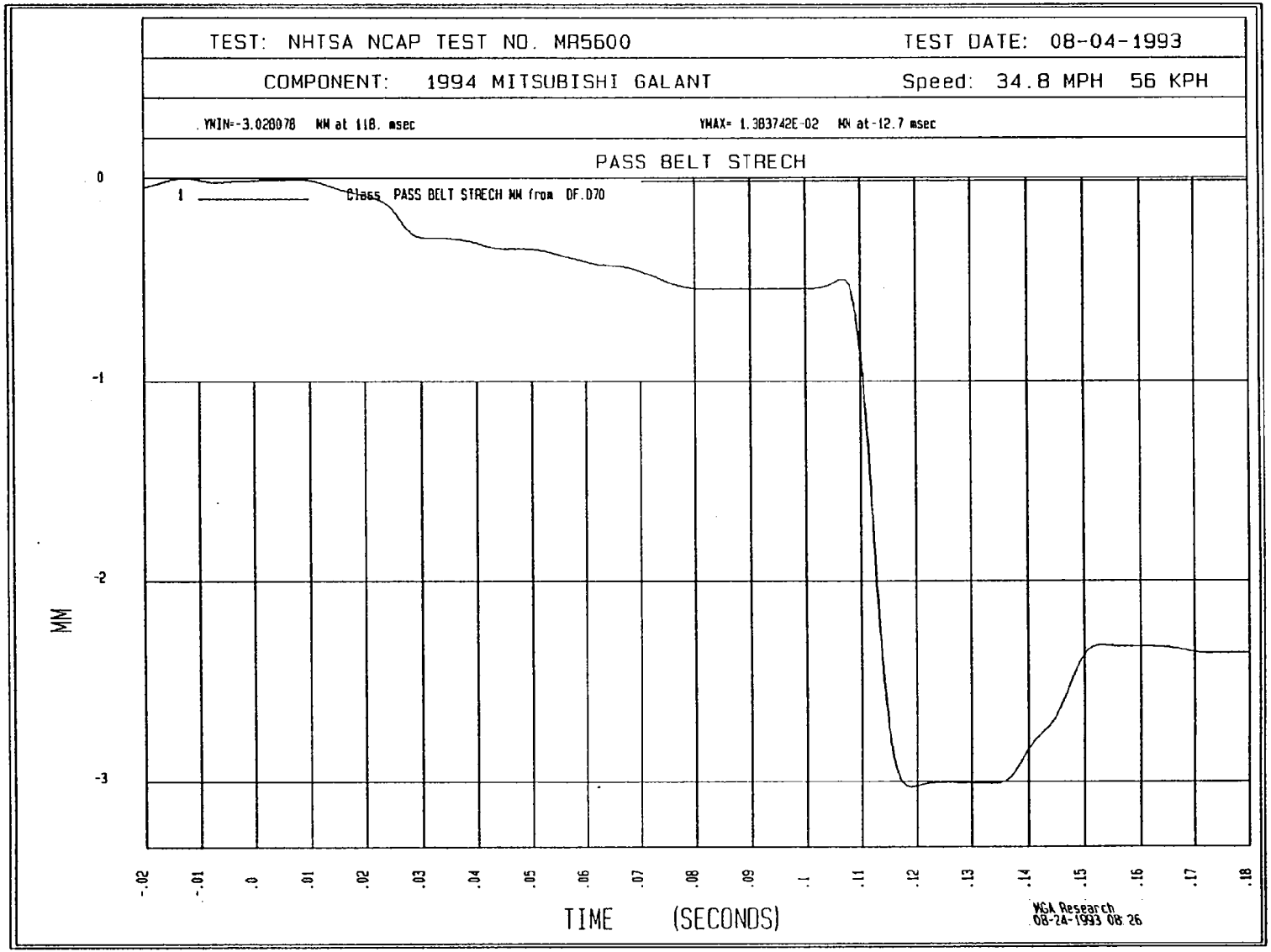


Figure B-64 - Passenger Torso Belt Stretch vs. Time

NO VALID DATA COLLECTED

Figure B-65 - Passenger Torso Belt Spool Out vs. Time

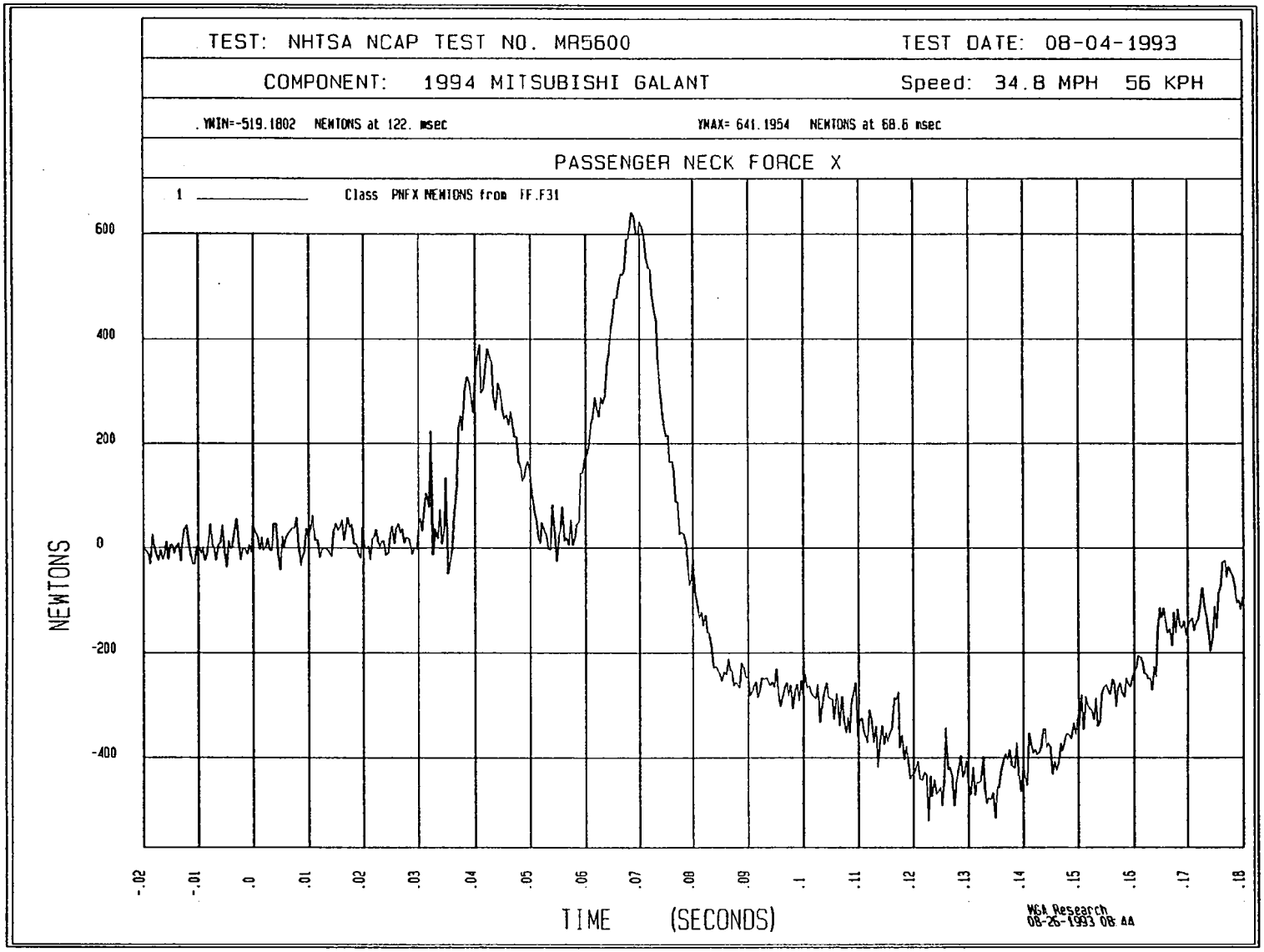


Figure B-66 - Passenger Neck Force X vs. Time

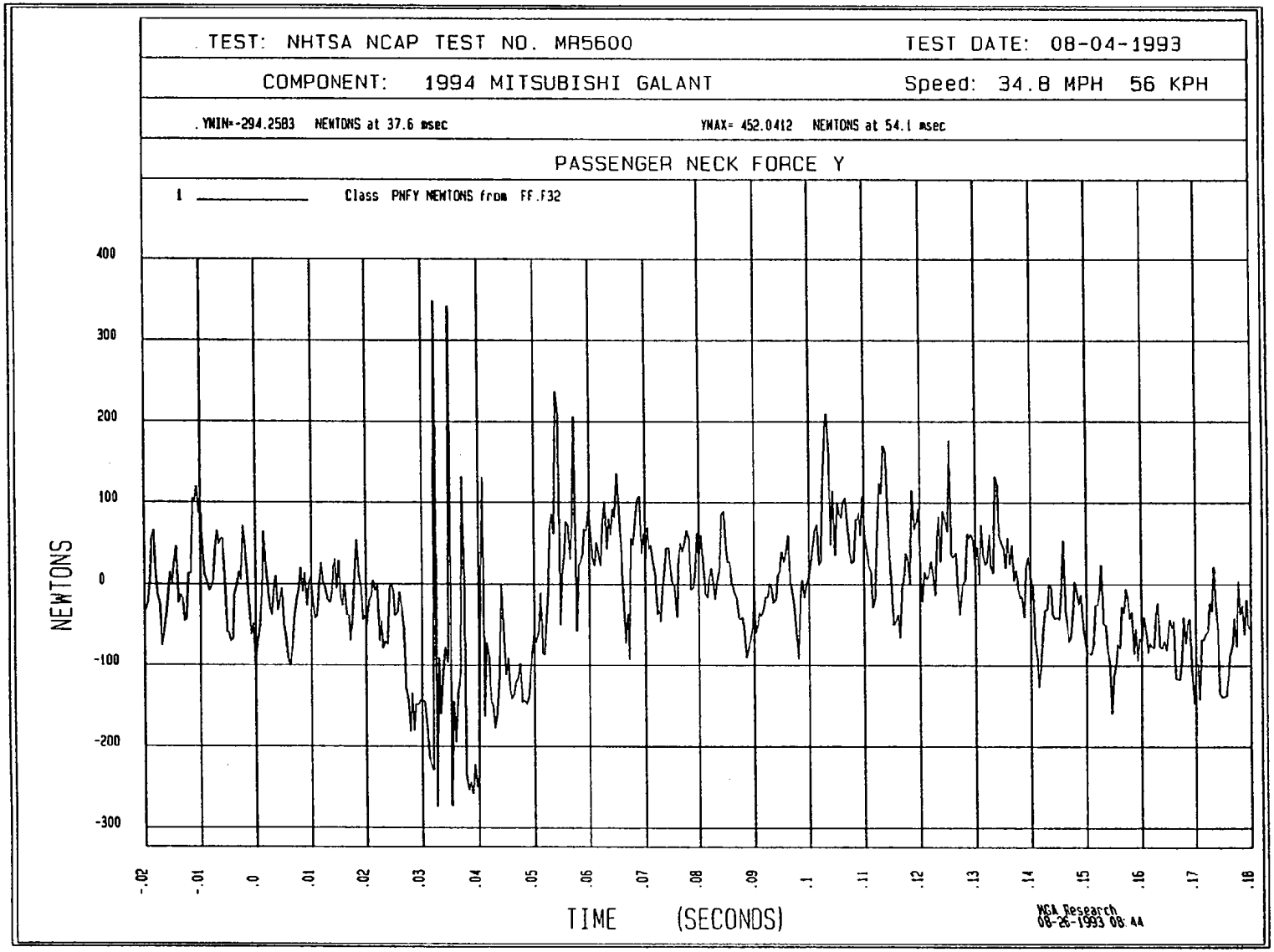


Figure B-67 - Passenger Neck Force Y vs. Time

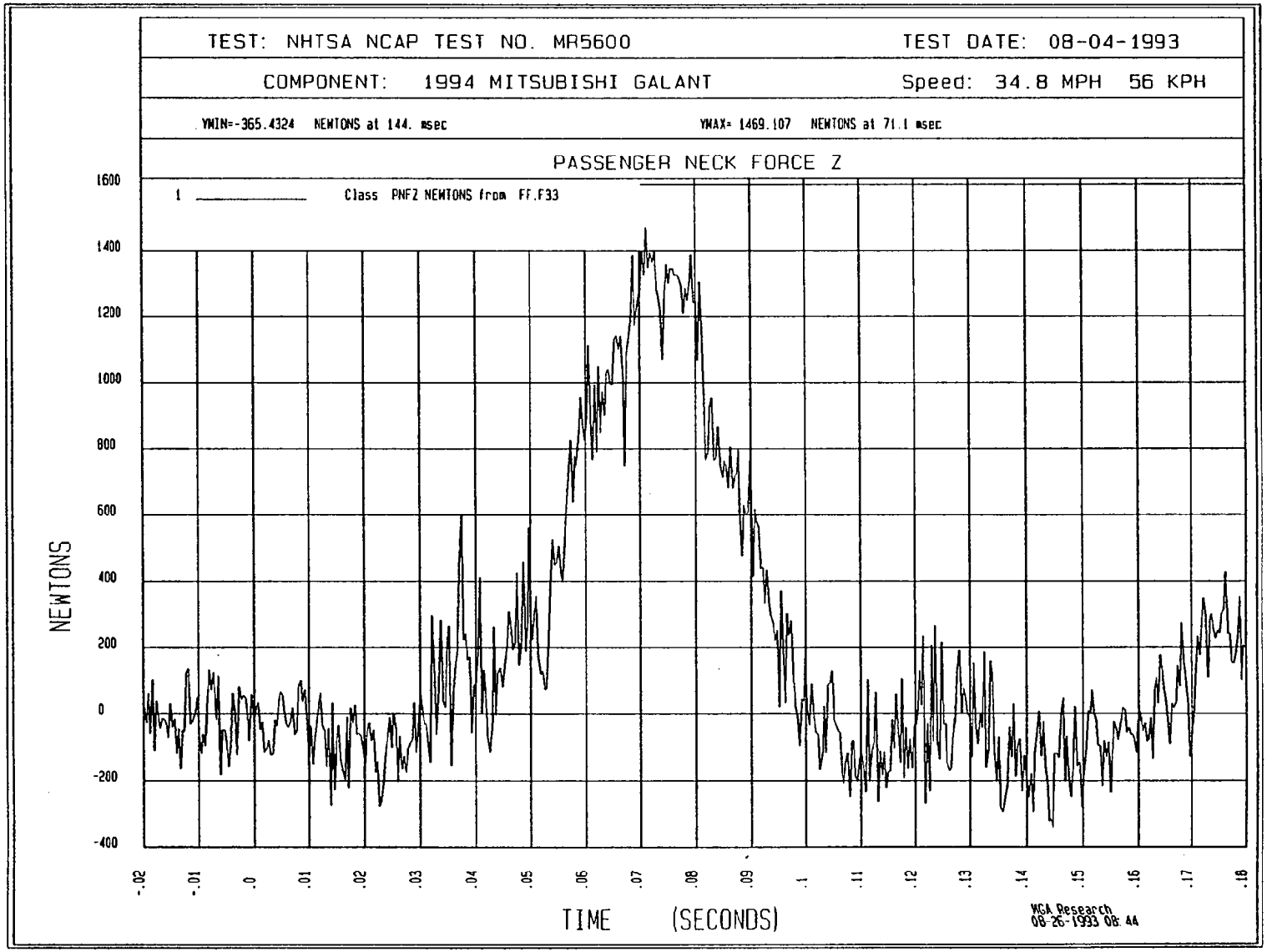


Figure B-68 - Passenger Neck Force Z vs. Time

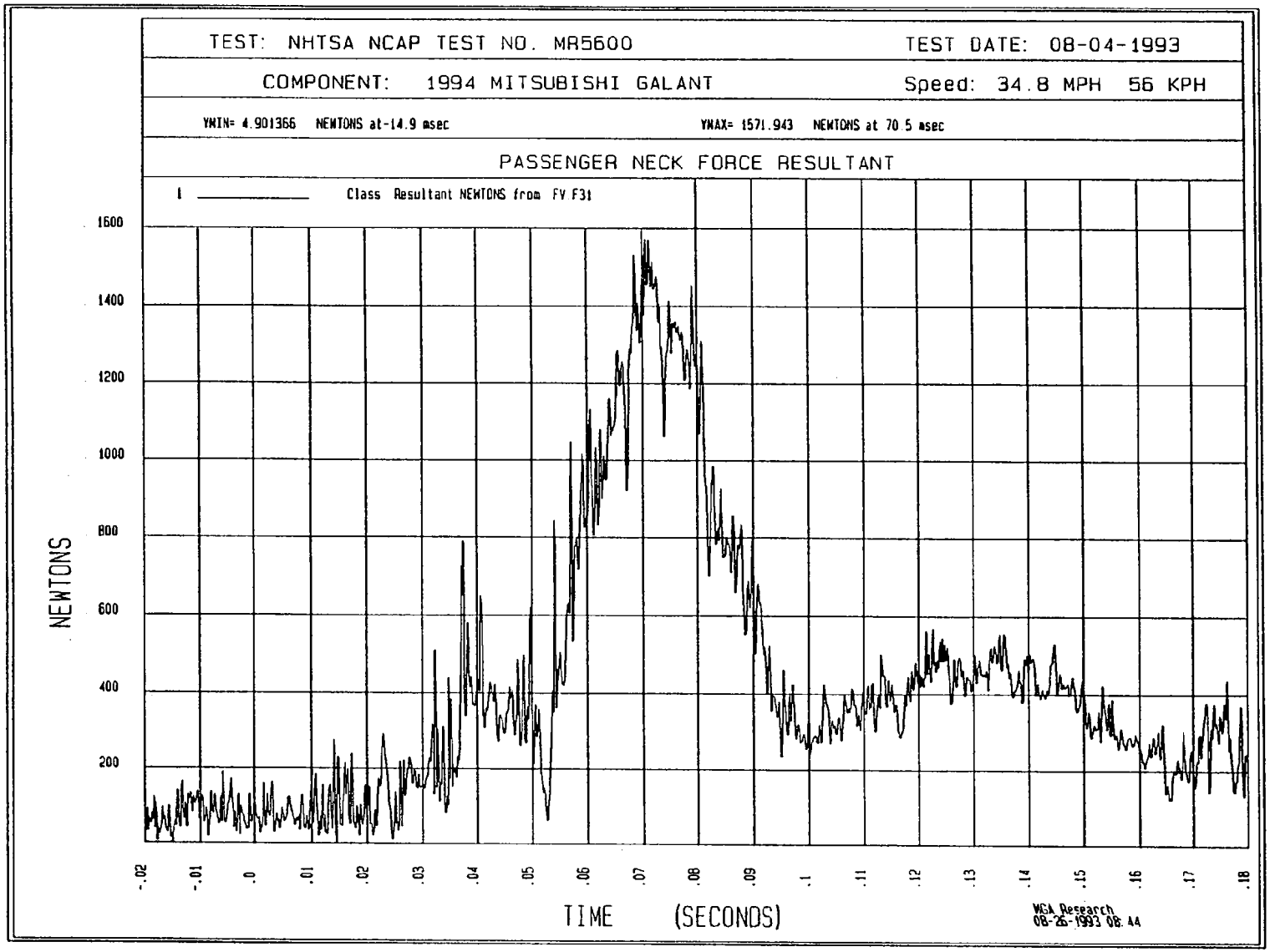


Figure B-69 - Passenger Neck Force Resultant vs. Time

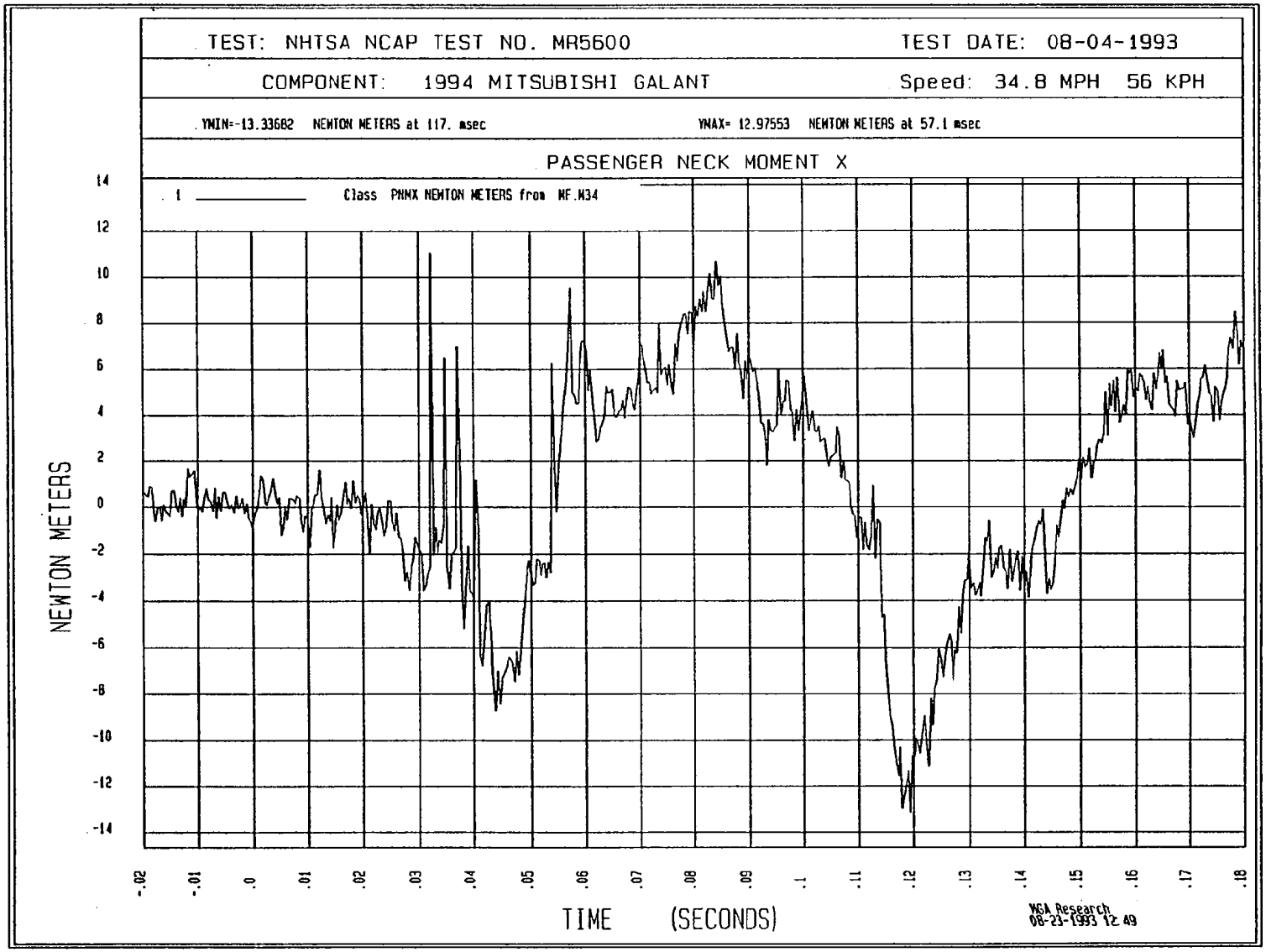


Figure B-70 - Passenger Neck Moment X vs. Time

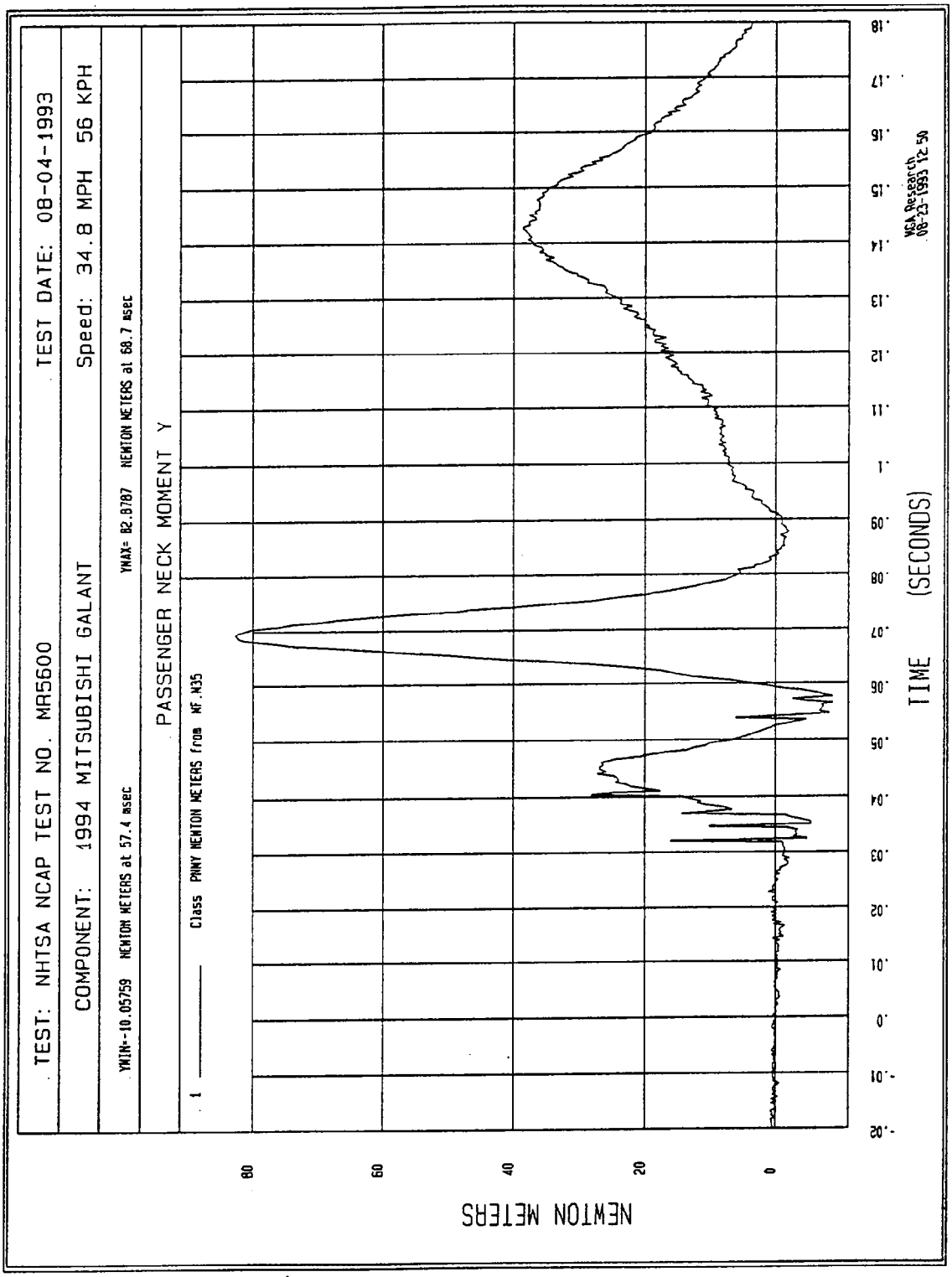


Figure B-71 - Passenger Neck Moment Y vs. Time

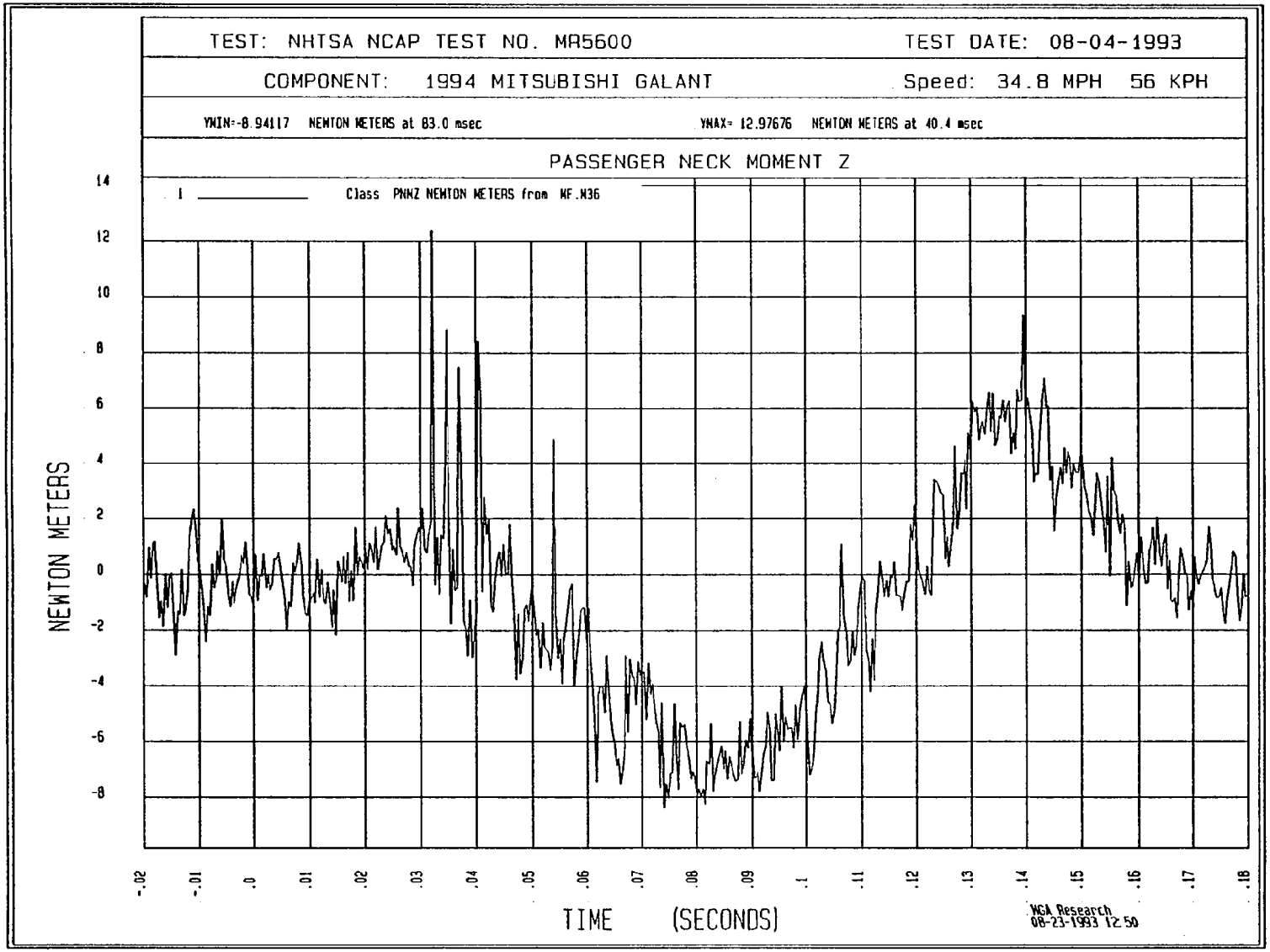


Figure B-72 - Passenger Neck Moment Z vs. Time

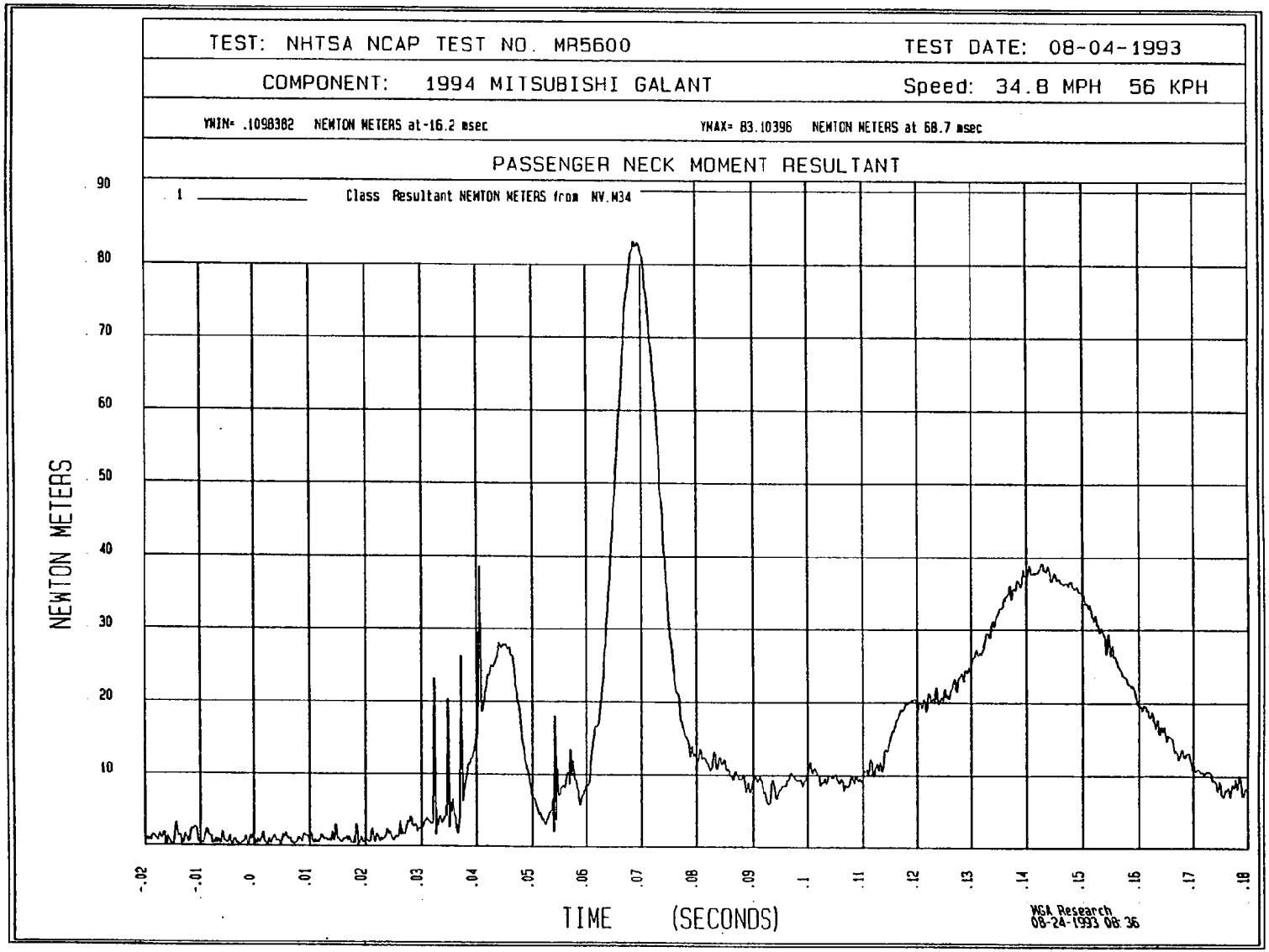


Figure B-73 - Passenger Neck Moment Resultant vs. Time

APPENDIX C

Dummy Configuration & Performance Verification Data

HYBRID III DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 36 DUMMY CALIBRATION BY: Rod McClelland

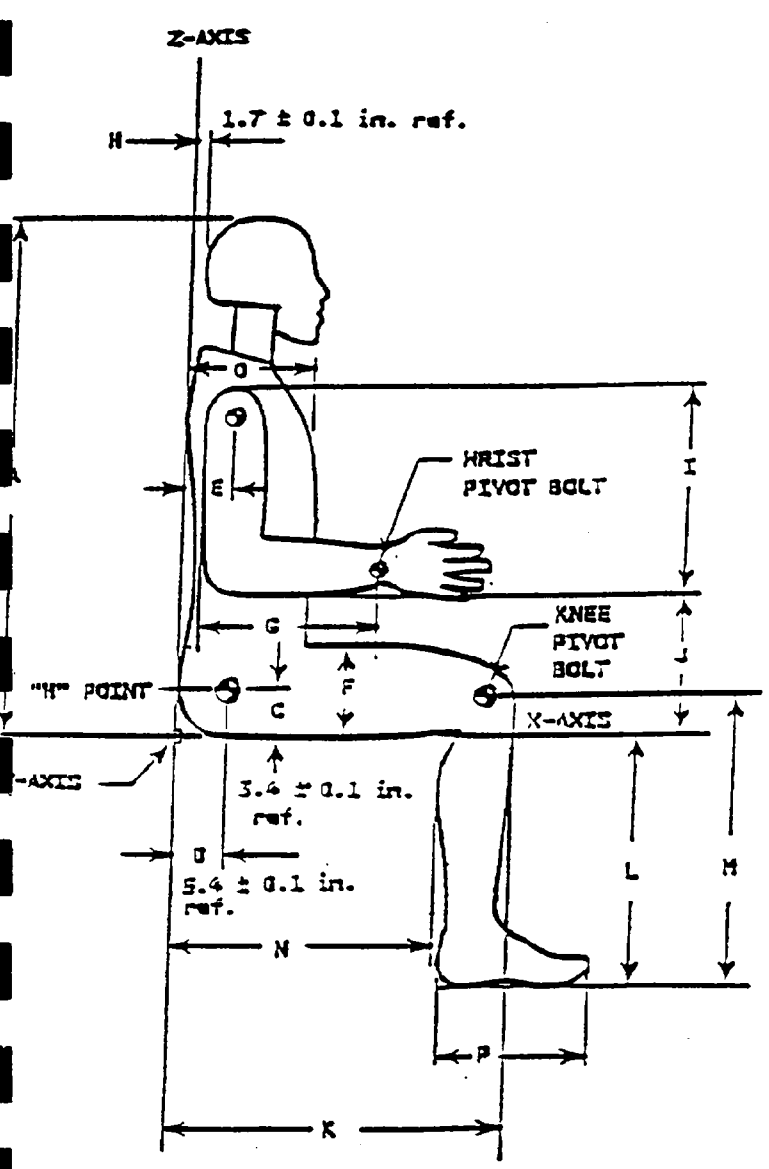
I. CONFIGURATION VERIFICATION DATA

DATE OF VERIFICATION: 08-03-93

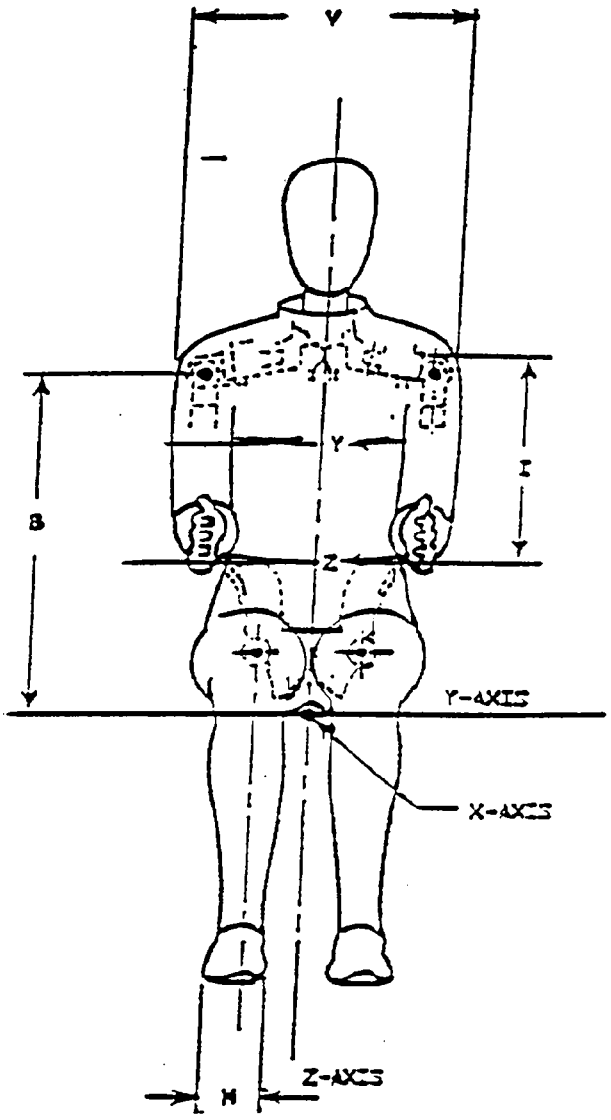
DESCRIPTION	SPECIFICATION (inches)	ACTUAL MEASUREMENT (inch4s)
A - Total Sitting Height	34.6 - 35.0	34.8
B - Shoulder Pivot Height	19.9 - 20.5	20.5
C - "H" Point Height	3.3 - 3.5	3.5
D - "H" Point from Seat Back	5.3 - 5.5	5.5
E - Shoulder Pivot From Backline	3.3 - 3.7	3.5
F - Thigh Clearance	5.5 - 6.1	6.1
G - Back of Elbow to Wrist Pivot	11.4 - 12.0	11.5
H - Skull Cap Skin to Backline	1.6 - 1.8	1.7
I - Shoulder - Elbow Length	13.0 - 13.6	13.0
J - Elbow Rest Height	7.5 - 8.3	8.0
K - Buttock to Knee Length	22.8 - 23.8	23.5
L - Popliteal Height	16.9 - 17.9	17.0
M - Knee Pivot Height	19.1 - 19.9	19.5
N - Buttock Popliteal Length	17.8 - 18.8	18.5
O - Chest Depth at 3rd Rib	8.4 - 9.0	8.8
P - Foot Length	9.9 - 10.5	10.3
V - Shoulder Breadth	16.6 - 17.2	16.8
W - Foot Breadth	3.6 - 4.2	4.0
Y - Chest Circumference	38.2 - 39.4	39.0
Z - Waist Circumference	32.9 - 34.1	33.5

Note: (See next page for external dimensions)

HYBRID III EXTERNAL DIMENSIONS



SIDE VIEW



FRONT VIEW

Note: Figure is referenced to the erect seated position. The curved lumbar does not allow the hybrid III to be positioned in a perfect erect attitude.

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET

DUMMY NO.: 36 DUMMY CALIBRATION BY: Rod McClelland

VERIFICATION DATE: 08-03-93

VERIFICATION LABORATORY TEMPERATURE (66° - 78°): 70°

1.0 HEAD DROP TEST

	SPECIFICATION	MEASUREMENT
Peak Resultant Acceleration	225 - 275 G	260
Peak Lateral Acceleration	15 G. MAX	3
Time above 100 g.	0.9 - 1.5 MSEC	1.39

2.0 NECK FLEXION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		22.6 - 23.4 FT/SEC	22.90
Pendulum Deceleration	10 MS	22.50 - 27.50 G	22.92
	20 MS	17.60 - 22.60 G	20.33
	30 MS	12.50 - 18.50 G	12.59
Max. Pendulum G Above 30 MS		29.0 G MAX	13.6
Deceleration - Time Curve Decay Time to 5 G		34 - 42 MS	40
D Plane Rotation	MAX	64 - 78 DEG.	70
	TIME	57 - 64 MS	59
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 MS	122
Moment About Occipital Condyle	MIN.	65 - 80 FT.LBS	74
	TIME	47 - 58 MS	52
Positive Moment - Time Curve Decay Time to Zero		97 - 107 MS	100

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

3.0 NECK EXTENSION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		19.50 - 20.30 F/S	19.73
Pendulum Deceleration	10 MS	17.20 - 21.20 G	20.09
	20 MS	14.00 - 19.00 G	17.98
	30 MS	11.00 - 16.00 G	15.86
Max. Pendulum G Above 30 MS		22 G Max	16
Deceleration - Time Curve Decay Time to 5 G		38 - 46 MS	41
D Plane Rotation	MAX	81 - 106 DEG.	97
	TIME	72 - 82 MS	76
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 MS	162
Moment About Occipital Condyle	MIN.	-59.0/-39.0 FT LBS	-42
	TIME	65 - 79 MS	73
Positive Moment - Time Curve Decay Time to Zero		120 - 148 MS	131

4.0 CHEST IMPACT TESTS

	SPECIFICATION	MEASUREMENT
Probe Speed	21.6 to 22.4 F/S	21.9
Peak Deflection	2.50 to 2.86 IN.	2.75
Peak Resistive Force	1160 to 1325 LBS.	1303
Internal Hysteresis	69 to 85%	72

5.0 KNEE IMPACT TESTS

LEFT KNEE	SPECIFICATION	MEASUREMENT
Probe Speed	6.8 to 7.0 F/S	6.9
Maximum Force	1060 - 1300 LBS.	1168

RIGHT KNEE	SPECIFICATION	MEASUREMENT
Probe Speed	6.8 to 7.0 F/S	6.91
Maximum Force	1060 - 1300 LBS.	1068

HYBRID III DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 37 DUMMY CALIBRATION BY: Rod McClelland

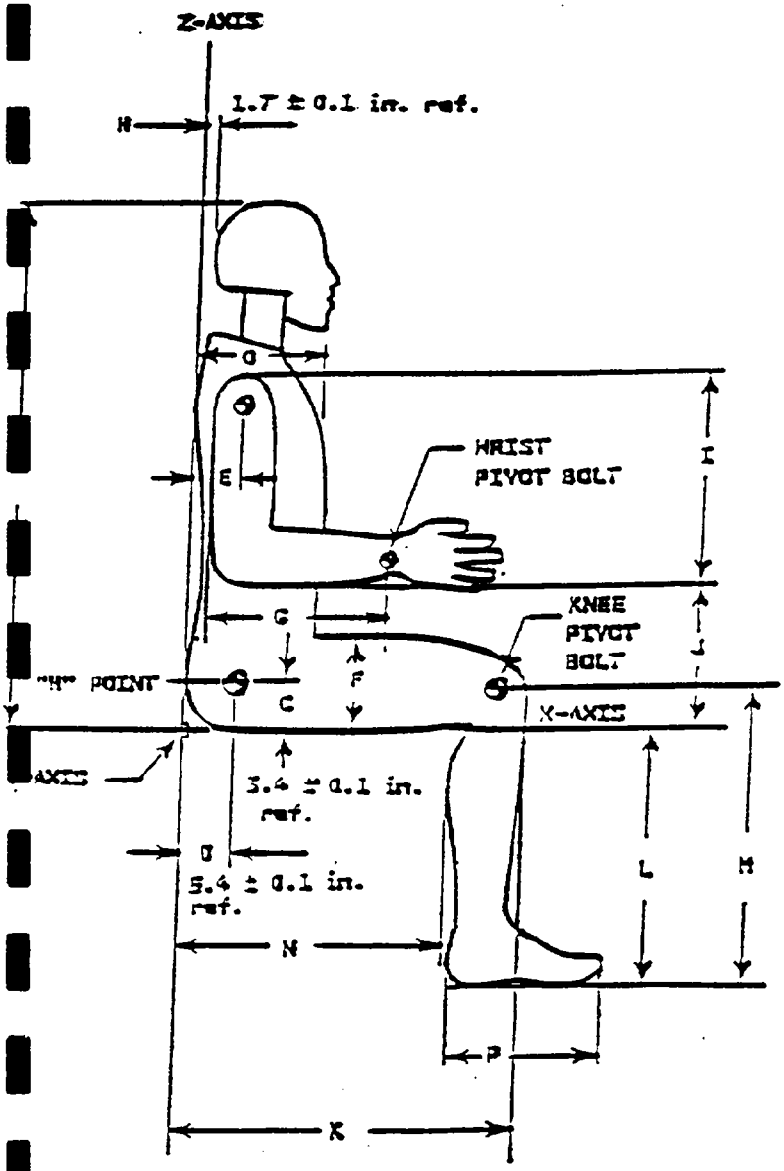
I. CONFIGURATION VERIFICATION DATA

DATE OF VERIFICATION: 08-03-93

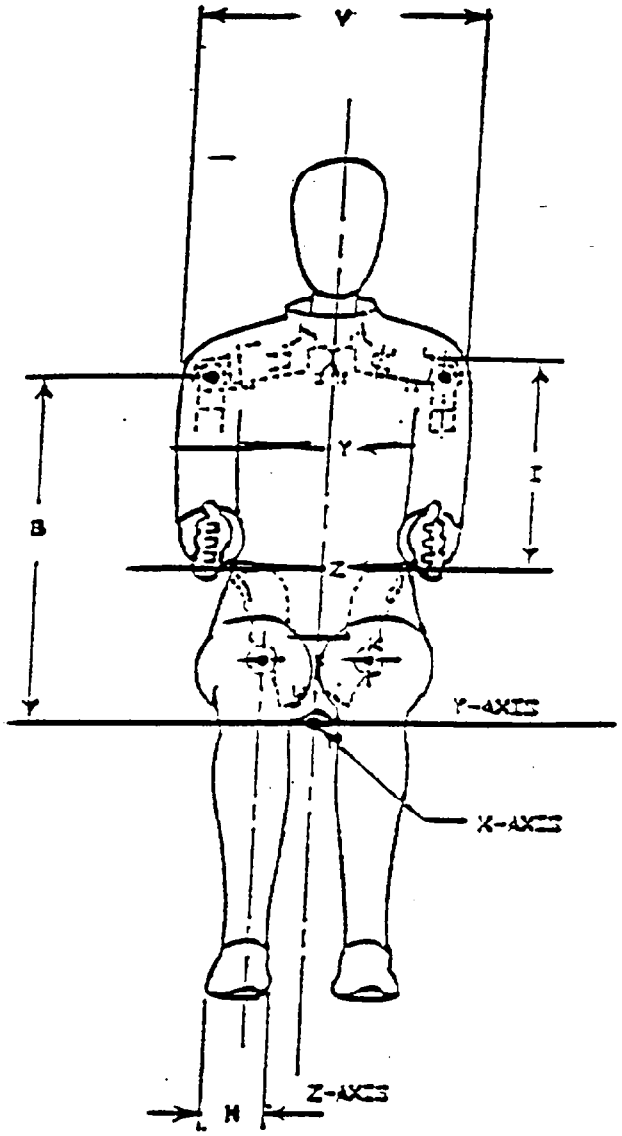
DESCRIPTION	SPECIFICATION (Inches)	ACTUAL MEASUREMENT (inches)
A - Total Sitting Height	34.6 - 35.0	34.9
B - Shoulder Pivot Height	19.9 - 20.5	20.5
C - "H" Point Height	3.3 - 3.5	3.5
D - "H" Point from Seat Back	5.3 - 5.5	5.5
E - Shoulder Pivot From Backline	3.3 - 3.7	3.5
F - Thigh Clearance	5.5 - 6.1	6.1
G - Back of Elbow to Wrist Pivot	11.4 - 12.0	11.5
H - Skull Cap Skin to Backline	1.6 - 1.8	1.7
I - Shoulder Elbow Length	13.0 - 13.6	13.0
J - Elbow Rest Height	7.5 - 8.3	8.0
K - Buttock Knee Length	22.8 - 23.8	23.5
L - Popliteal Height	16.9 - 17.9	17.0
M - Knee Pivot Height	19.1 - 19.9	19.5
N - Buttock Popliteal Length	17.8 - 18.8	18.5
O - Chest Depth at 3rd Rib	8.4 - 9.0	8.8
P - Foot Length	9.9 - 10.5	10.3
V - Shoulder Breadth	16.6 - 17.2	16.8
W - Foot Breadth	3.5 - 4.2	4.0
Y - Chest Circumference	38.2 - 39.4	39.0
Z - Waist Circumference	32.9 - 34.1	33.5

Note: (See next page for external dimensions)

HYBRID III EXTERNAL DIMENSIONS



SIDE VIEW



FRONT VIEW

Note: Figure is referenced to the erect seated position. The curved lumbar does not allow the hybrid III to be positioned in a perfect erect attitude.

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

DUMMY NO.: 37 DUMMY CALIBRATION BY: Rod McClelland

VERIFICATION DATE: 08-03-93

VERIFICATION LABORATORY TEMPERATURE (66° - 78°): 70°

1.0 HEAD DROP TEST

	SPECIFICATION	MEASUREMENT
Peak Resultant Acceleration	225 - 275 G	249
Peak Lateral Acceleration	-15 G. MAX	3
Time above 100 g.	0.9 - 1.5 MSEC	1.42

2.0 NECK FLEXION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		22.6 - 23.4 FT/SEC	23.01
Pendulum Deceleration	10 MS	22.50 - 27.50 G	24.91
	20 MS	17.60 - 22.60 G	19.85
	30 MS	12.50 - 18.50 G	17.13
Max. Pendulum G Above 30 MS		29.0 G MAX	17
Deceleration - Time Curve Decay Time to 5 G		34 - 42 MS	35
D Plane Rotation	MAX	64 - 78 DEG.	76
	TIME	57 - 64 MS	58
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 MS	115
Moment About Occipital Condyle	MIN.	65 - 80 FT.LBS	71
	TIME	47 - 58 MS	51
Positive Moment - Time Curve Decay Time to Zero		97 - 107 MS	100

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

3.0 NECK EXTENSION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		19.50 - 20.30 F/S	19.90
Pendulum Deceleration	10 MS	17.20 - 21.20 G	19.08
	20 MS	14.00 - 19.00 G	17.19
	30 MS	11.00 - 16.00 G	14.90
Max. Pendulum G Above 30 MS		22 G Max	14.83
Deceleration - Time Curve Decay Time to 5 G		38 - 46 MS	46
D Plane Rotation	MAX	81 - 106 DEG.	94
	TIME	72 - 82 MS	77
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 MS	159
Moment About Occipital Condyle	MIN.	-59.0/-39.0 FT LBS	-48
	TIME	65 - 79 MS	71
Positive Moment - Time Curve Decay Time to Zero		120 - 148 MS	145

4.0 CHEST IMPACT TESTS

	SPECIFICATION	MEASUREMENT
Probe Speed	21.6 to 22.4 F/S	21.7
Peak Deflection	2.50 to 2.86 IN.	2.74
Peak Resistive Force	1160 to 1325 LBS.	1301
Internal Hysteresis	69 to 85%	70

5.0 KNEE IMPACT TESTS

LEFT KNEE	SPECIFICATION	MEASUREMENT
Probe Speed	6.8 to 7.0 F/S	6.91
Maximum Force	1060 - 1300 LBS.	1139

RIGHT KNEE	SPECIFICATION	MEASUREMENT
Probe Speed	6.8 to 7.0 F/S	6.88
Maximum Force	1060 - 1300 LBS.	1168

APPENDIX D

Dummy, Vehicle and Laboratory Calibration Data

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 36

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	ACDE7	Endevco	7/26/93
Head Y	ACC7Ø	Endevco	7/26/93
Head Z	ACCW9	Endevco	7/26/93
Chest X	ACC78	Endevco	7/26/93
Chest Y	ACCE6	Endevco	7/26/93
Chest Z	ACC93	Endevco	7/28/93
Right Femur Load Cell	259	GSE	8/3/93
Left Femur Load Cell	26Ø	GSE	8/3/93
*Neck Load Cell X	442	Denton	7/26/93
*Neck Load Cell Y	442	Denton	7/26/93
*Neck Load Cell Z	442	Denton	7/26/93
*Neck Moment X	442	Denton	7/26/93
*Neck Moment Y	442	Denton	7/26/93
*Neck Moment Z	442	Denton	7/26/93
*Chest Deflection Gauge	36G	Bourns	8/2/93
Lap Belt Load Cell	211	Lebow	8/9/93
Torso Belt Load Cell	69Ø	Lebow	8/9/93
Spool-Out Potentiometer	Ø1	Bourns	N/A
Belt Stretch Transducer	Ø1	Bourns	8/4/93

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 37

	PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	ACCY6	Endevco	7/26/93
Head Y	ACCH1	Endevco	7/26/93
Head Z	AAMW5	Endevco	7/26/93
Chest X	ACCY1	Endevco	7/26/93
Chest Y	ACCC8	Endevco	7/26/93
Chest Z	ACCT7	Endevco	7/26/93
Right Femur Load Cell	261	GSE	8/3/93
Left Femur Load Cell	262	GSE	8/3/93
*Neck Load Cell X	443	Denton	7/27/93
*Neck Load Cell Y	443	Denton	7/27/93
*Neck Load Cell Z	443	Denton	7/27/93
*Neck Moment X	443	Denton	7/27/93
*Neck Moment Y	443	Denton	7/27/93
*Neck Moment Z	443	Denton	7/27/93
*Chest Deflection Gauge	37G	Bourns	8/2/93
Lap Belt Load Cell	657	Lebow	8/9/93
Torso Belt Load Cell	691	Lebow	8/9/93
Spool-Out Potentiometer	Ø2	Bourns	N/A
Belt Stretch Transducer	Ø2	Bourns	8/4/93

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Rear Seat Crossmember X	AC8J9	Endevco	5/17/93
Right Rear Seat Crossmember X	DK21	Endevco	5/21/93
Top of Engine X	MGA074	Entran	5/11/93
Bottom of Engine X	MGA063	Entran	5/10/93
Left Brake Caliper X	ENTRAN	Entran	5/10/93
Right Brake Caliper X	MGA067	Entran	5/19/93
Instrument Panel X	MGA078	Entran	5/10/93
Redundant Left Rear Seat Crossmember X	S11	Endevco	7/21/93
Redundant Right Rear Seat Crossmember X	MGA083	Entran	5/10/93

	LABORATORY INSTRUMENTS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Neck Bending Pendulum Accelerometer	MGA077	Entran	5/17/93
Neck Bending Rotary Potentiometer	N/A	Bourns	PRIOR TO USE
Neck Bending Linear Potentiometer	N/A	Bourns	PRIOR TO USE
Femur/Chest/Thorax Probe Accelerometer	MGA077	Entran	5/17/93
Abdomen Compression Force Gauge	N/A	Transducers Inc.	N/A

APPENDIX E

Vehicle Owner's Occupant Restraint System Instructions

WARNING!
Driving with the head restraints removed is dangerous. Always have them mounted when operating the car. Failure to having them properly mounted may increase the chance and severity of injury in the event of a collision.

Seat belts

ND06A-AF

Seat belts are installed in your car for the protection of the driver and passengers. Always use the seat belts. In the event of an accident, injury to the driver and passengers may be reduced if seat belts are properly used.

NOTE
Legislation in your state may require seat belt usage, but even if not required, they should always be used.The following pages contain the recommended procedure for fastening, adjusting, and wearing of the belts for comfort and safety.

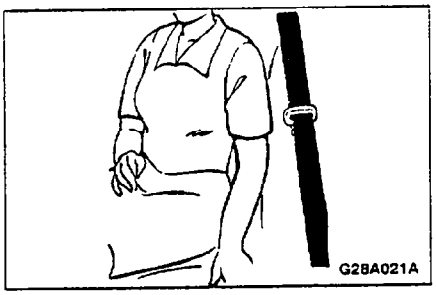
WARNING!
(1) Never use one seat belt for more than one occupant.
(2) Never wear the shoulder belt under the arm or otherwise out of position.
Always wear both the seat and shoulder belt and in the proper position.
(3) Do not make any modifications that could change the effectiveness of the seat belts.
(4) Never attempt to repair or replace the seat belt assemblies on your own.
All repairs and replacements should be made by an authorized dealer.

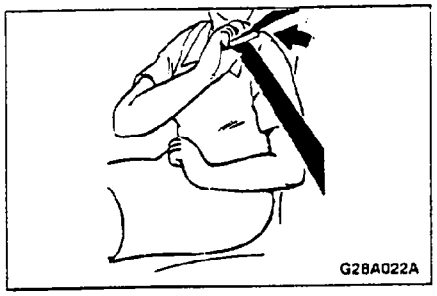
Seat unibelt restraint system

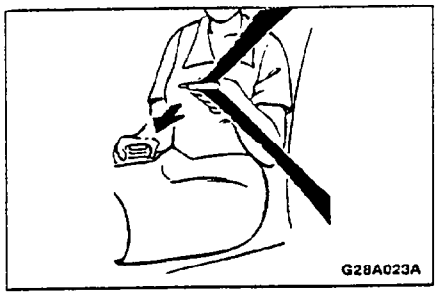
ND06B-R

Front seats and both sides of the rear seat are equipped with a UNIBELT system which uses a single belt and an emergency locking retractor.
This system is designed to provide comfort and safety by permitting full extension and automatic retraction of the belts during normal car operation. A sensing device inside the belt retractor is designed to lock the retractor in the event of an abrupt change in car motion.

NOTE
For instruction on how to install a child restraint system to the rear seat, see "Installing a child restraint system to a UNIBELT" on page 27.


G28A021A


G28A022A


G28A023A

Unibelt instructions

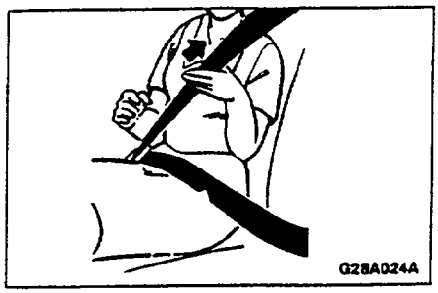
ND06D-AE

1. Get in the car and sit in the normal correct posture.

WARNING!
To minimize risk of personal injury in event of a collision or sudden stop, both the driver and passenger seatbacks should always be in a nearly upright position while the car is in motion. The protection provided by the seat belts may be reduced significantly when the seatback is reclined.
There is greater risk that the passenger will slide under the belt resulting in serious injury, when the seatback is reclined.

2. Grasp the movable latch plate and slide it up the webbing as far as necessary so that it will be easy to pull across your body.
After a couple of tries, this will become an automatic one-handed operation.

3. Pull the webbing, and move the movable latch plate toward the buckle. This system will not lock up if you stop or hesitate, so relax and continue to "buckle-up".
Push the latch plate into the buckle until a "click" is heard.

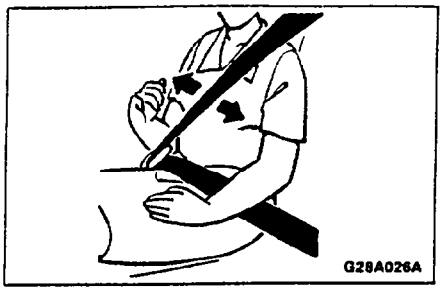


4. Pull up on the shoulder belt to ensure that there is no slack in the seat belt. The seat belt will not tighten during use; therefore, you can set it once for safe, comfortable snugness.

WARNING!

Be sure the seat belt portion is fitted snugly and as low as possible around the hips, not around the waist.
Failure to do so may increase the chance or severity of injury in the event of a collision.

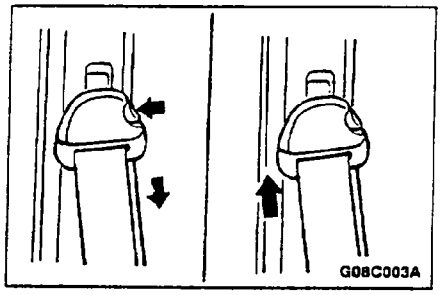
5. Check the belt slackness. The belt will retain the small amount of slack necessary for comfort when you return to your normal seating position. If the belt is still too tight, pull out 6" or 8" of webbing, let it return to your chest, and repeat the above motion.



6. The shoulder belt will allow unrestricted movement under normal conditions. The belt will lock in the event of an abrupt change in car motion. To release the belt, push the button on the buckle. To return the belt to its stowed position, pull the shoulder belt down slightly and release immediately.

WARNING!

Be sure to lock all doors before driving. Locking the doors and properly using the seat belts provided will minimize the risk of injury or ejection in an accident.

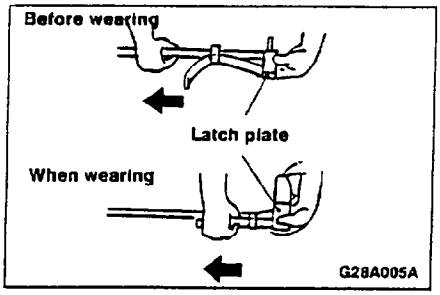


Adjustable seat belt anchor (front seats) ND06E-C

The seat belt anchor height can be adjusted.
Move the seat belt anchor down with the lock knob depressd. To move the anchor up, slide it without depressing the lock knob.

WARNING!

When adjusting the seat belt anchor set it at a position that is sufficiently high so that the belt will make full contact with your shoulder but will not touch your neck.

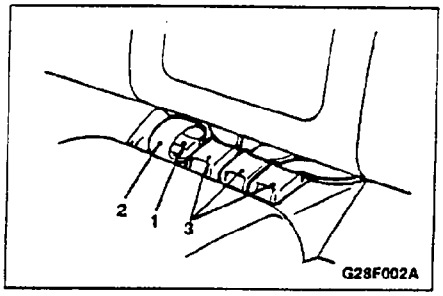


Rear seat lap belt ND06C-CD

Center belt

The center belt should be adjusted by holding the belt and latch plate at right angles to each other, and then pulling the belt as illustrated above to a snug fit around the occupant.
NEVER USE THE SAME LAP BELT ON MORE THAN ONE PERSON AT A TIME.

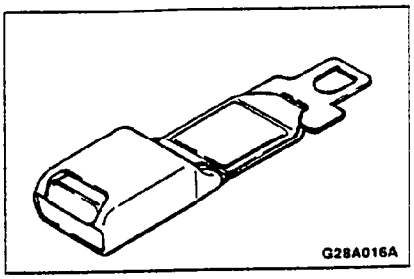
NOTE
The buckle and plate of the center lap belt are marked with "CENTER". Be sure to check the marking before wearing the center lap belt.
The outboard restraint system buckle and center restraint system tongue are not compatible and will not engage with one another.



Rear seat belt pocket (if so equipped) ND06I-EA

When the seat belt is not in use, place it in the storage pocket.
For compact storage of the plate side seat belt, coil it around the latch plate.

1- Latch plate
2- Belt
3- Buckle


G28A016A

Seat belt extender (for Unibelt)
ND06J-AC

If the seat belt is too short, even when fully extended, a seat belt extender is available from your dealer. The extender may be used for either front seating position. This extender should only be used if the existing belt is not long enough. When not required, it must be removed and stowed because the use of the extender when not required may deactivate the seat belt locking mechanism.

WARNING!

Persons who can use the standard seat belt should not use an extender. Such unnecessary use could result in serious personal injury in the event of an accident.

Child restraint
ND06FFW8

When transporting children in your car, some type of child restraint system should be used according to the size of the child. This is required by law in most states.

WARNING!

(1) Accident statistics indicate that children are safer when properly restrained in the rear seat rather than in the front seat. Accordingly Mitsubishi Motor Sales of America, Inc. recommends the child be restrained in the rear seat.

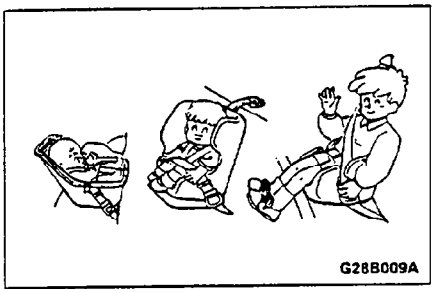
(2) Holding a child in your arms is no substitute for a restraint system.
Failure to use a proper restraint system can result in severe or fatal injury to your child.

(3) This car is also equipped with a passenger airbag.
REAR-FACING INFANT SEATS SHOULD ONLY BE USED IN THE REAR SEAT.
In rear-facing infant seats, the infant's head is closer to the passenger airbag. The force of the rapidly inflating airbag could push the top of the rear facing seat against the car seat back.

Forward facing child seats used in the front seat must have the passenger seat moved as far back from the instrument panel as possible.

Infants and small children

For children small enough for infant seats, an infant carrier should be used. For small children, a child seat should be used. Both types of seats are generally available from your authorized dealer or from most automotive parts and accessory supply outlets.
The child restraint system should be appropriate for your child's weight and height and properly fit the car seat. For a higher degree of safety, THE CHILD RESTRAINT SYSTEM SHOULD BE INSTALLED IN THE REAR SEAT.
When installing a child restraint system, refer to the instructions provided by the manufacturer of the restraint system and follow the directions listed under the following illustrations.
Failure to do so can result in severe or fatal injury to your child.
When not in use, keep your child or infant seat secured with the seat belt or remove it from the car in order to prevent injury to your child.


G28B009A

NOTE
Before purchasing a child seat or infant carrier, try installing it in the rear seat to ensure a good fit. Due to the location of the seat belt buckles in the seat cushion, it may be difficult to securely install some child restraint systems.
If the child restraint system can be pulled forward easily on the seat cushion after the belt has been tightened, choose another child restraint system.

Installing a child restraint system to the rear center seat

Installation:
1. Fasten the center lap belt to secure the child restraint system.

WARNING!

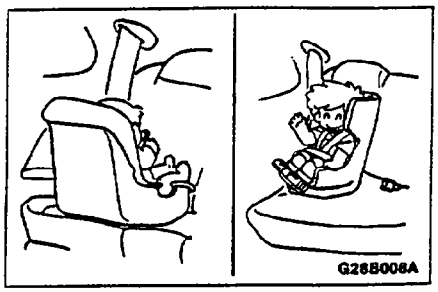
For safety, an infant carrier should face backward; a child seat should face forward.

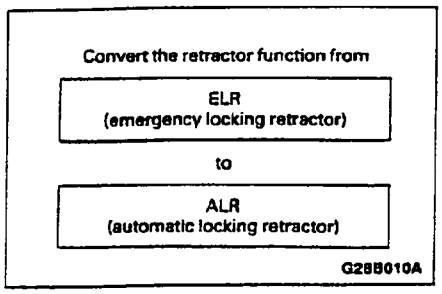
2. Pull the excess webbing through the belt's adjustment feature.
3. Push and pull the child restraint in all directions to be sure it is secure.

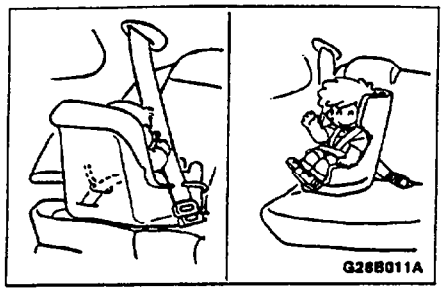
If your child restraint system requires the use of a top strap refer to "Anchors for the child restraint system" on page 29.

Installing a child restraint system to a UNIBELT (Combination lap/shoulder belt)

Accident statistics indicate that children are safer when properly restrained in the rear seat of a car rather than in the front seat. For this reason Mitsubishi Motor Sales of America Inc. recommends that child be restrained in the rear seat.







Installation:

1. Place the child restraint system in the seating position as shown in the illustration.

WARNING!

(1) Rear-facing infant seats must always be secured in the rear seat.

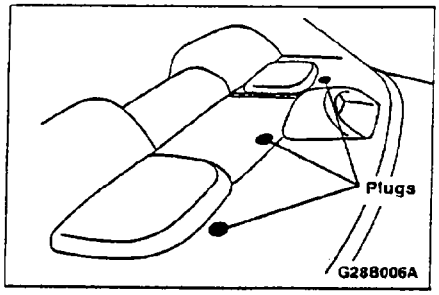
(2) Foward facing child seats used in the front seat must have the passenger seat moved as far back from the instrument panel as possible.

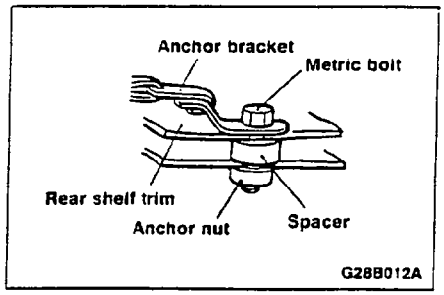
2. Pull the seat belt to it's fully extended position. Hold the belt taut (extended) then, fasten the seat belt around or through the child restraint system according to the restraint manufacturer's instructions and insert the latch plate into the buckle. Check that the webbing is rolled up steadily to securely fix the restraint system.
When the belt is released, it will be in the proper ALR position. When the child restraint system is removed and the belt released to its retracted position, it will automatically prevent back to ELR.

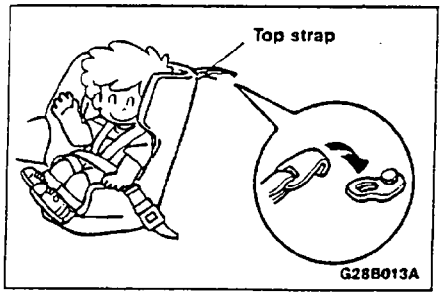
WARNING!

(1) Be absolutely sure to make the conversion of the retractor from the ELR function to the ALR function. By doing so, the child restraint system is always tightly secured to the seat by the automatic lock. If the conversion to ALR is not made, the infant carrier or child seat will move forward in the event of sudden braking or an accident.

(2) Follow the infant carrier manufacturer's installation instructions for attaching the child restraint system to the seat belt.
Be sure the seat belt is not twisted.







Anchors for the child restraint system

If you choose to use a top-strap-equipped child restraint in the rear seat, ask your dealer how to attach it.
Your car is provided with anchors to secure the top strap of a child restraint system.
The anchor nuts are welded to the back of the sheet metal of the rear shelf and concealed by the plugs on the rear shelf trim.
Before installing the anchor bracket, remove the plug.

A metric bolt is required to install the anchor bracket.

NOTE
(1) The bolt provided with the child restraint system may not be a metric type. You can damage the anchor nuts on your car if you force bolts with different thread into the anchor nuts.
(2) Anchoring hardware (anchor bracket, metric bolt and spacer) and installation instructions are available from authorized dealers.

Hook the top strap to the anchor bracket and tighten the top strap.

WARNING!

After installation shake the child seat back and forth, and side to side to see that it is positively secured. If the child restraint system is not restrained securely, it may cause injury to the child in case of a car accident or sudden stop.

Children who have outgrown child restraint

Children who have outgrown a child restraint system should be seated in the rear seat and wear combination UNI-BELT. If the shoulder belt crosses the face or neck a child restraint system should be used according to the size of the child.

WARNING!

A child should never be left unattended in your car.

Pregnant woman restraint ND06G-BC

WARNING!

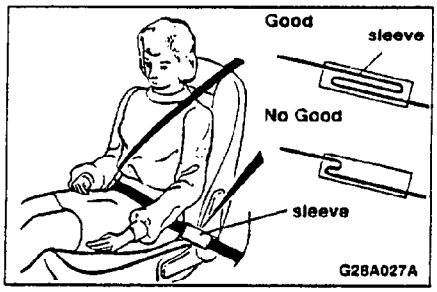
Mitsubishi Motor Sales of America, Inc. recommends that pregnant women use the available seat belts. This will reduce the likelihood of injury to both the woman and the unborn child. The lap belt should be worn across the thighs and as snug against the hips as possible but not across the waist.
The woman's doctor should be consulted if there are any questions.

Maintenance and inspection of seat belts ND06H-GA

The webbing used in belts may be cleaned with a hydrocarbon dry cleaner or with soap or detergent in water.
Do not attempt to bleach or re-dye belts. The resulting color may rub off and webbing strength could be affected.

Regularly check lap belt buckles and release mechanisms for positive action.

Check that the anchor mounting bolts are tight. If the seat belt webbing shows obvious cuts, protruding broken fibers causing a local increase in webbing thickness, or severe fading which indicates weakening by exposure to sunlight, the seat belt should be replaced.



The lap belt portions of the front seat belts has on it a sleeve inside which the seat belt webbing is folded back over itself in a loop. This allows it to absorb the energy of a shock by pulling loose, and releasing slack. In the event that the loop inside the sleeve has come loose, replace the seat belt.

WARNING!

All seat belt assemblies including retractors and attaching hardware should be inspected by an authorized dealer after any collision. We recommend that all seat belt assemblies in use during a collision be replaced unless the collision was minor and the belts show no damage and continue to operate properly.

Supplemental Restraint System (SRS) ND10A-B

This car is equipped with a Supplemental Restraint System (SRS) which includes driver and front passenger air bags.
The SRS is designed to supplement the seat belts to provide those occupants with protection against head and chest injuries in certain moderate to severe frontal collisions.
The SRS is NOT a substitute for the seat belts; seat belt should ALWAYS be worn.

WARNING!

IT IS VERY IMPORTANT TO ALWAYS WEAR YOUR SEAT BELT, EVEN WITH AN AIR BAG:
(1) Seat belts help keep the driver and front passenger properly positioned when the air bag inflates.
(2) Seat belts reduce the risk of injury in rollovers, side or rear impact collisions, and in lower-speed frontal collisions, because the air bag is not designed to inflate in those situations.
(3) Seat belts reduce the risk of being thrown from your vehicle in a collision.

WARNING!

IT IS VERY IMPORTANT TO BE PROPERLY SEATED, EVEN WITH AN AIR BAG:
(1) Air bags inflate very fast, and with great force.
If you are not properly seated, the air bag may not protect you properly, and could cause injury when deployed.
(2) Before driving, adjust the driver's seat as far back as possible while still maintaining complete control of the car.
(3) Before driving, adjust the passenger seat as far back as possible.
(4) With your seat belt properly fastened, sit in an upright position, with your back against the seat back.
(5) Do not lean with your head or chest close to the steering wheel or instrument panel.

WARNING!

If any of following conditions occur, the SRS is not working properly, and you should immediately have it inspected by an authorized dealer:

- **The SRS warning light does not illuminate when you start the car.**
- **The SRS warning light does not go off after about 7 seconds.**
- **The SRS warning light illuminates while driving.**

SRS servicing

ND10C-C

The entire SRS system must be inspected by an authorized dealer 10 years after the car manufacture date shown on the certification label located on the center pillar on the driver's side.

WARNING!

(1) Any maintenance performed on or near the components of the SRS must be performed only by an authorized dealer. Do not permit anyone else to do service, inspection, maintenance or repair on any SRS components or wiring, similarly, no part of the SRS system should ever be handled or disposed of by anyone except an authorized dealer. Improper work on the SRS components or wiring could result in inadvertent deployment of the air bags, or could render the SRS system inoperative; either situation could result in serious injury.

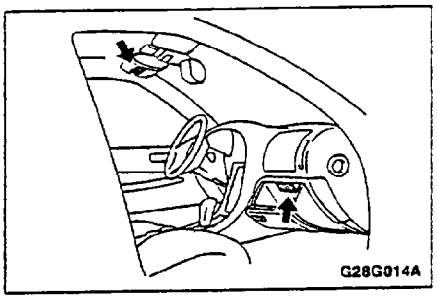
(2) Do not modify your steering wheel or any other SRS components. For example, replacement of the steering wheel, or modifications to the front bumper or body structure can adversely affect SRS performance and lead to possible injury.

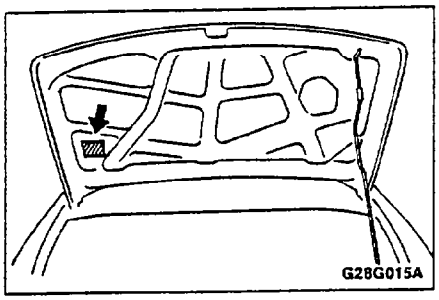
(3) If your car has received any front-end damage, you should have the SRS system inspected by an authorized dealer to ensure it is in proper working order.

NOTE

(1) When you transfer ownership of the car to some other person, we urge you to alert the new owner that it is equipped with the SRS system and refer that owner to the applicable section in this owner's manual.

(2) If you junk or scrap the car, we urge you to first take the car to an authorized dealer so that the SRS system can be rendered safe.

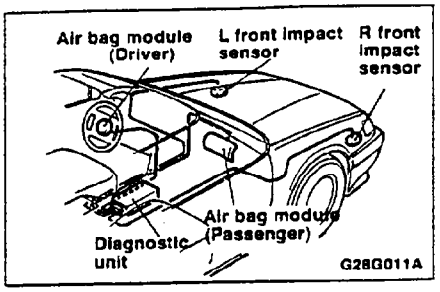




Service and information label

Service and information labels are attached as shown in the illustration.

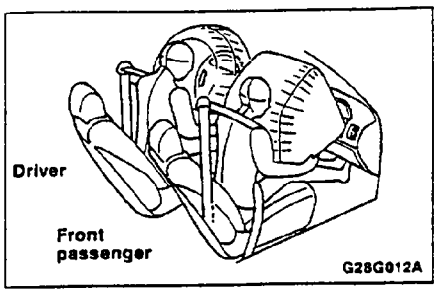
(6) Infants and small children should be properly seated in a child restraint system. See the "Child Restraints" section of this owner's manual.
● REAR- FACING CHILD RESTRAINTS must NOT be used in the front seat of this car, because the force of an inflating passenger air bag could push that restraint into the seat back, causing serious injury. Rear-facing child restraints should only be used in the rear seat.
● FRONT- FACING CHILD RESTRAINTS should be used in the rear seat whenever possible; if used in the front seat, adjust the seat as far back as possible.



How the Supplemental Restraint System works

ND108-C

The SRS includes the following components:
—Impact sensors
—Diagnostic unit
—SRS warning light
—Air bag modules
—Interconnecting wiring

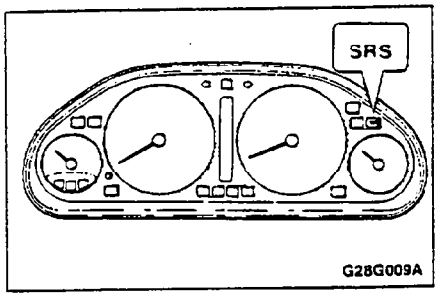


Air bag system

The driver's air bag is located under the padded cover in the middle of the steering wheel. The front passenger air bag is contained in the instrument panel above the glove compartment.
The air bags are designed to inflate only in severe frontal collision.
The air bags are not designed to inflate in certain lower-speed frontal collisions, in rollovers, or in side or rear impact collisions.
When the impact sensors detect an impact of sufficient frontal force, their switches close a circuit which ignites materials in the inflator to generate nitrogen gas and inflate the air bags.
The air bags deflate very rapidly after deployment, so there is little danger of obscured vision.

The air bag deployment produces a sudden, fairly loud noise, and releases some smoke and powder, but these conditions are not injurious, and do not indicate a fire in the car. Mild discomfort may result from the deployment of the air bag due to the sudden inflation of the device. The driver air bag and the front passenger air bag are designed to inflate at the same time. Air bags may not inflate in certain frontal collisions, even though the car may be severely damage.
Such non-inflation does not mean that something is wrong with the SRS system, but rather that the collision forces were not severe enough to activate it.

WARNING!
(1) Do not attach anything to the steering wheel padded cover, such as trim material, badges, etc.. It might injure the driver if the air bag inflates.
(2) Do not set anything on, or attach anything to the instrument panel above the glove compartment. It might injure the passenger if the air bag inflates.
(3) Do not attach accessories to or put them in front of the windshield. These objects could restrict air bag inflation or be hurled against an occupant and cause serious injury.
(4) Following the air bag inflation, several air bag system components will be hot. Do not touch them after inflation.
(5) The SRS system is designed to work only once. After the air bags deploy, they will not work again. They must promptly be replaced and the entire SRS system inspected, by an authorized dealer.



SRS warning light

There is a supplemental restraint system ("SRS") warning light on the instrument panel. The system checks itself and the light tells you if there is a problem.
When the ignition key is turned to the "ON" or "START" position, the warning light should illuminate for about 7 seconds and then should go out. This means the system is ready.