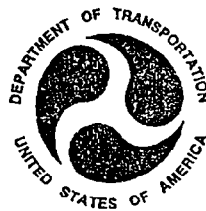


V 2364

REPORT NO.: 214-MGA-96-009
SAFETY COMPLIANCE TESTING FOR
FMVSS 214 "SIDE IMPACT PROTECTION -
PASSENGER CARS"

MITSUBISHI MOTORS CORPORATION
1996 MITSUBISHI ECLIPSE RS
NHTSA NO: CT5602

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: December 13, 1995

Report Date: December 22, 1995

FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
MAIL CODE: NSA-30
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WASHINGTON, D.C. 20590

This Final Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-93-C-02047.

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Approval Date: 1-3-96

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Acceptance Date: 2/6/96

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 214-MGA-96-009		2. Government Accession No.		3. Recipient's Catalog No.																			
4. Title and Subtitle Final Report of FMVSS No.214 Compliance Side Impact Protection Testing of a 1996 Mitsubishi Eclipse RS NHTSA No. CT5602				5. Report Date December 22, 1995																			
				6. Performing Organization Code MGA																			
7. Author(s) John Fleck, Project Manager David Winkelbauer, Project Engineer				8. Performing Organization Report No. MGA-DOT-214-009																			
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105				10. Work Unit No.																			
				11. Contract or Grant No. DTNH22-93-C-02047																			
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (Mail Code: NSA-30) 400 Seventh St., S.W., Room 6115 Washington, D.C. 20590				13. Type of Report and Period Covered Final Test Report December 13 to December 22, 1995																			
				14. Sponsoring Agency Code NSA-30																			
15. Supplementary Notes																							
16. Abstract A 48/24 kph 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject 1996 Mitsubishi Eclipse RS in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-04 for the determination of FMVSS No. 214 Side Impact Protection compliance. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on December 13, 1995. The impact velocity of the Moving Deformable Barrier (MDB) was 52.8 kph, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 21°C. The target vehicle post test maximum crush was 304 mm at level 2. The test vehicle's performance follows: <table border="1"> <thead> <tr> <th></th> <th><u>DRIVER</u></th> <th><u>PASS.</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td>86</td> <td>48</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td>84</td> <td>68</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td>79</td> <td>52</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td>82</td> <td>60</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td>86</td> <td>51</td> </tr> </tbody> </table> The rear passenger dummy could not be seated according to the seating procedures of S7, therefore the data reported is only for informational purposes. The door on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite door did not open during the side impact event.							<u>DRIVER</u>	<u>PASS.</u>	Left Upper Rib (LUR) Accel., g	86	48	Left Lower Rib (LLR) Accel., g	84	68	Lower Spine (T ₁₂) Accel., g	79	52	Thoracic Trauma Index (TTI)	82	60	Pelvis (PEV) Accel., g	86	51
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17. Key Words Compliance Testing Side Impact Protection FMVSS 214 Side Impact Dummy (SID)				18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, Room 5108 (NAD-52) 400 Seventh Street, S.W. Washington, D.C. 20590 Telephone No. 202-366-4946 Attn: Robert Hornickle																			
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages																			
				22. Price																			

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SECTION 1
PURPOSE AND TEST PROCEDURE

This side impact test is part of the FY 96 FMVSS 214 Side Impact Protection Compliance Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-93-C-02047. The purpose of this test was to evaluate side impact protection in a 1996 Mitsubishi Eclipse RS.

This side impact test was conducted in accordance with the Vehicle Safety Compliance's FMVSS 214 test procedure (TP-214D-04, dated September 1, 1995).

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes only.

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 1996 Mitsubishi Eclipse RS was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 32.8 mph (52.8 kph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by MGA Research Corporation in Burlington, Wisconsin, on December 13, 1995. Pre- and post-test photographs of the test vehicle, the MDB and the side impact dummies (SIDs) are included in Appendix A.

Two Side Impact Dummies (SIDs) were placed in the driver and left rear designated seating positions according to instructions specified in the OVSC Side Impact Laboratory Test Procedure which is dated September 1, 1995. The side impact event was documented by nine high speed cameras. Camera locations and other pertinent camera information can be found in this report.

The SIDs were instrumented with the following accelerometers.

1. Left Upper Rib (LUR) uniaxial accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial accelerometer (Y-direction)
3. Lower Thoracic Spine (T₁₂) uniaxial accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial accelerometer (Y-direction)

Appendix B contains the vehicle and dummy response data traces. A summary of the side impact dummy (SID) configuration and performance verification test data is shown in Appendix C. Dummy and vehicle calibration data can be found in Appendix D of this report.

The following table summarizes the results of the test:

Injury Criteria	Front SID	Rear SID
TTI (g)	82	60
Pelvis (g)	86	51

TEST NOTES

The following accelerometers were not used for this test:

- Left Front Door on Centerline
- Midrear of Left Front Door
- Left Front Door Upper Centerline
- Midrear of Left Rear Door
- Left Rear Door Upper Centerline
- Rear Seat Track

Post-test measurements B, C, D, E, F, G, K, L, M, N, and S are not available because the bumpers were removed for weight.

The left rear passenger dummy had the head removed.

The left rear passenger dummy was not able to be positioned with a pelvic angle between 23 and 25 degrees.

SECTION 3
SIDE IMPACT DUMMY (SID) AND
VEHICLE TEST DATA

DATA SHEET NO. 1

GENERAL VEHICLE TEST PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door
Vehicle NHTSA No.: CT5602 VIN: 4A3AK34YOTE308189
Vehicle Body Color: red Build Date: 10/95
Engine Data: 4 Cylinders; CID; 2.0 Liter; cc
Placement Longitudinal; X Lateral
Transmission: 5 speed; X Manual; Automatic; Overdrive
Final Drive: Rear Wheel Drive; X Frt. Wheel Drive; Four Wheel Drive

Odometer Reading 145 miles
Options: X A/C; X Pwr. Steering.; X Pwr. Brakes; Pwr. Windows;
 Cruise Control; X Tilt Wheel; Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 32 Psi FRONT
 29 Psi REAR
Recommended Tire Size: P195/70R14
Tires on Test Vehicle: P195/70R14 Manufacturer: Bridgestone

Vehicle Capacity Data:

Number of Occupants: 2 Front; 2 Rear; 3rd Seat 4 Total
Type of Front Seats: X Bucket; Bench; Split Bench
Type of Front Seat Back: Fixed; X Adjustable with X Lever
Vehicle Maximum Capacity Loading = 300 kg (A)
No. of Occupants x 68.04 kg. = 272 kg (B)
Cargo Capacity (A-B) = 28 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS:

Right Front	=	<u>385.6</u> kg	Right Rear	=	<u>235.9</u> kg
Left Front	=	<u>386.0</u> kg	Left Rear	=	<u>234.5</u> kg
TOTAL FRONT	=	<u>771.6</u> kg	TOTAL REAR	=	<u>470.4</u> kg
% of Total Vehicle Weight =		<u>62.1</u> %;	% of Total Weight =		<u>37.9</u> %
TOTAL WEIGHT =		<u>1242.0</u> kg			

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids = 1242.0 kg

Cargo Carrying Capacity of Test Vehicle = 28.0 kg

Weight of 2 Side Impact Dummies (2 x 80.7 kg.) = 161.4 kg

TEST VEHICLE TARGET WEIGHT = 1431.4 kg

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES AND CARGO:

Right Front = 396.4 kg Right Rear = 293.5 kg

Left Front = 419.6 kg Left Rear = 313.9 kg

TOTAL FRONT = 816.0 kg TOTAL REAR = 607.4 kg

% of Total Weight = 57.3 % % of Total Weight = 42.7 %

TOTAL TEST WEIGHT = 1423.4 kg

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 720 mm Left Front 714 mm Right Rear 715 mm Left Rear 711 mm

FULLY LOADED WEIGHT ATTITUDE:

Right Front 719 mm Left Front 701 mm Right Rear 699 mm Left Rear 682 mm

TEST ATTITUDE:

Right Front 717 mm Left Front 703 mm Right Rear 705 mm Left Rear 683 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2506 mm

C.G. = 1069 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 4105 mm

Centerline = 4381 mm

Left Side = 4105 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 240 mm

Test Position: 13th detent rearward out of 25 total

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 6th notch

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: Non-Adjustable

Seat Back Adjustment Position: Non-Adjustable

ADJUSTABLE STEERING COLUMN POSITION: Mid Position

WINDOW POSITIONS: Left Front Closed Left Rear Closed

Right Front Open Right Rear Open

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

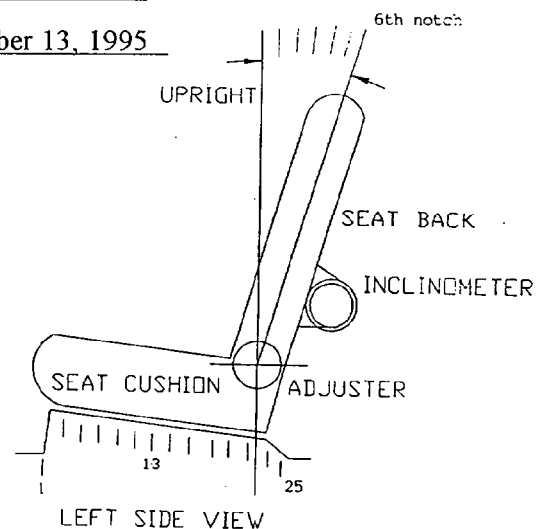
Fuel system usable capacity = 64 liters

Test Volume: 59.5 liters 93 % of capacity

LOCATIONS OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED:

Wheelbase: = 2506 mm

Impact Point is 313 mm rearward of front axle centerline



DATA SHEET NO. 2
TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

Overall Length = 4381 mm; Overall Width = 1735 mm

TEST WEIGHT:

Right Front = 396.4 kg

Right Rear = 293.5 kg

Left Front = 419.6 kg

Left Rear = 313.9 kg

TOTAL FRONT = 816.0 kg

TOTAL REAR = 607.4 kg

% of Total Weight = 57.3 %

% of Total Weight = 42.7 %

TOTAL VEHICLE WEIGHT = 1423.4 kg

Wheelbase = 2506 mm

Longitudinal C.G. from Center of Front Axle = 1069 mm

Impact Angle with Respect to Impactor = 90° degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (230 mm above ground) = 178 mm

2. LEVEL 2 (450 mm above ground) = 304 mm

3. LEVEL 3 (580 mm above ground) = 296 mm

4. LEVEL 4 (855 mm above ground) = 199 mm

5. LEVEL 5 (1225 mm above ground) = 31 mm

Maximum Post-Test Intrusion = 304 mm

OCCUPANTS:

Type of Dummy

Left Front Passenger Left Rear Passenger

SID

SID

Restraints Used

type II belt

type II belt

system

system

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

INSTRUMENTATION:

Number of Vehicle Data Channels:	=	<u>19</u>
Number of Cameras: Onboard Vehicle	=	<u>3</u>
Offboard Vehicle	=	<u>4</u>
Deformable Barrier	=	<u>2</u>
TOTAL	=	<u>9</u>

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

Overall Width of Framework Carriage	= <u>1252 mm</u>
Overall Length of MDB (incl. honeycomb impact face)	= <u>4115 mm</u>
Wheelbase of Framework Carriage	= <u>2591 mm</u>
Tread of Framework Carriage (Front & Rear)	= <u>1880 mm</u>
C.G. Location Rearward of Front Axle	= <u>1102 mm</u>
C.G. Location From Center Line	= <u>-8 mm</u>
C.G. Location Above Ground Level	= <u>488 mm</u>

MDB WEIGHT:

Left Front	= <u>496.7 kg</u>	Left Rear	= <u>187.3 kg</u>
Right Front	= <u>283.0 kg</u>	Right Rear	= <u>389.2 kg</u>
TOTAL FRONT	= <u>779.7 kg</u>	TOTAL REAR	= <u>576.5 kg</u>
TOTAL MDB WEIGHT = <u>1356.2 kg</u>			

Impact Angle (MDB C/L to Target Vehicle C/L) = 90° degrees

Impact Speed = Primary: 32.8 mph (52.8 kph) Secondary: 32.8 mph (52.8 kph)

CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

- | | | |
|----|---------------------------------|-----------------|
| 1. | Row A Top of Stack (813 mm) | = <u>131</u> mm |
| 2. | Row B Mid Stack (686 mm) | = <u>146</u> mm |
| 3. | Row C Top of Bumper (533 mm) | = <u>87</u> mm |
| 4. | Row D Center of Bumper (432 mm) | = <u>102</u> mm |

INSTRUMENTATION:

Number of MDB Data Channels = 7

DATA SHEET NO. 4
POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door
Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

VISIBLE DUMMY CONTACT POINTS:

	<u>LEFT FRONT SID</u>	<u>LEFT REAR SID</u>
Head	<u>to door, headrest</u>	<u>to C Post</u>
Arm	<u>to door</u>	<u>to trim</u>
Pelvis	<u>to door</u>	<u>to trim</u>
Left Knee	<u>to door</u>	<u>to trim</u>
Right Knee	<u>to left knee</u>	<u>to left knee</u>

DOOR OPENING:

	<u>LEFT SIDE</u>	<u>RIGHT SIDE</u>
Front	<u>remained closed</u>	<u>remained closed</u>
Rear	<u>N/A</u>	<u>N/A</u>

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal: 18 mm forward Vertical: 10 mm high

ARM REST LOCATIONS:

Front: 300 mm Below window opening
Rear: 410 mm Below window opening

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 75 mm Front Seat Cushion: 110 mm

Left Rear Seat Back: 28 mm Rear Seat Cushion: 118 mm

GLAZING DAMAGE:

Both left side windows broke

PILLAR PERFORMANCE:

No failure noted

SILL SEPARATION:

No failure noted

OTHER NOTABLE IMPACT EFFECTS:

None

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5

SIDE IMPACT DUMMY (SID) INSTRUMENTATION DATA

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

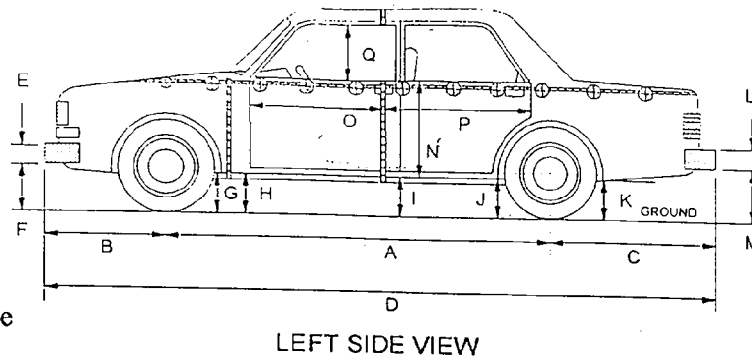
Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

	Front Dummy ID #271				Rear Dummy ID #270			
	Pos. Direct.		Neg. Direct		Pos. Direct.		Neg. Direct	
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
RIB ACCELERATIONS								
Left Upper Rib (LUR) Y	85.6	40	19.0	78	47.7	42	8.2	91
Left Lower Rib (LLR) Y	84.5	40	12.4	78	68.1	40	13.6	70
SPINE ACCELERATIONS								
Lower Lateral Y	79.0	35	18.3	74	51.6	46	10.5	109
PELVIS ACCELERATIONS								
Lateral Y	86.0	32	9.5	58	51.1	48	7.7	116

REFERENCE: Positive Direction- Longitudinal (X) = forward
 Lateral (Y) = to right
 Vertical (Z) = down

Negative Direction - Longitudinal (X) = rearward
 Lateral (Y) = to left
 Vertical (Z) = up

DATA SHEET NO. 6
VEHICLE PRE AND POST-TEST MEASUREMENTS



D = Length at Centerline

R = Right Side Length

S = Left Side Length

T = Width at B Post

E & L = Bumper Thickness

J1 = To Pinch Weld

J2 = To Sill

ALL MEASUREMENTS IN (mm)

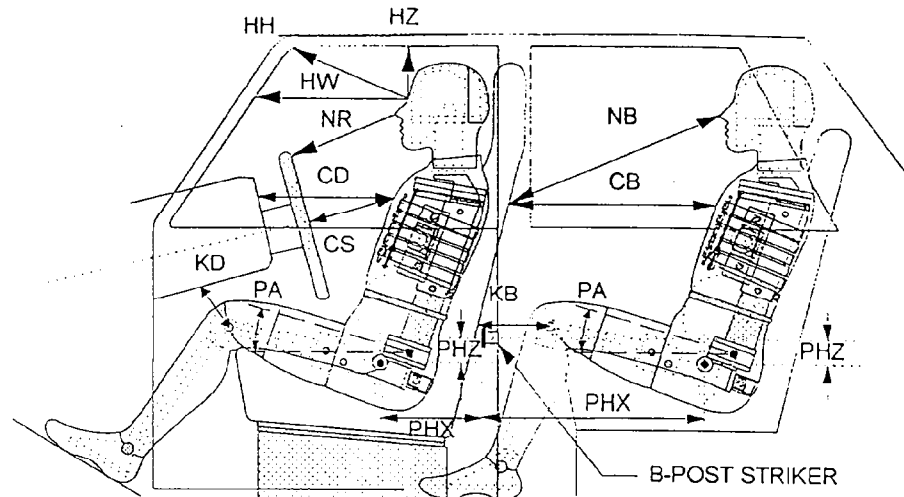
	PRE-TEST	POST-TEST	Δ CHANGE
A	2506	2477	29
B	975	N/A	N/A
C	900	N/A	N/A
D	4381	N/A	N/A
E	230	N/A	N/A
F	393	N/A	N/A
G	170	N/A	N/A
H	171	177	6
I	151	154	3
J1/J2	157/163	164/164	7/1
K	252	N/A	N/A
L	485	N/A	N/A
M	312	N/A	N/A
N	605	512	93
O	662	643	19
P	635	629	6
Q	373	356	17
R	4105	N/A	N/A
S	4105	N/A	N/A
T	1735	1549	186

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

NHTSA NO.: CT5602 Test Date: December 13, 1995



NOTE: All dimensions are in mm with tolerance of ± 3 mm

	FRONT SID ID #271
HH	442
HW	650
HZ	154
NR	432
CD	559
CS	334
KDL(KDA°)	160 (17.3)
KDR(KDA°)	160 (15.7)
PA°	24.0
PHX	400
PHZ	208

	REAR PASSENGER SID ID #270
HZ	126
NB	521
CB	372
KBL (KBA)	58 (19.3)
KBR (KBA)	60 (8.5)
PA°	33.4
PHX	475
PHZ	128

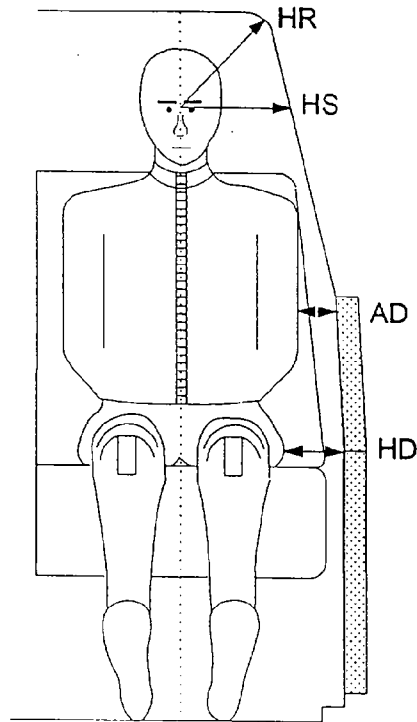
Rear passenger had the head removed. Measurements were taken from the top of the neck

NOTE: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as reference point.

DATA SHEET NO. 8
SIDE IMPACT DUMMY (SID) LATERAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

NHTSA NO.: CT5602 Test Date: December 13, 1995



NOTE: All dimensions are in mm

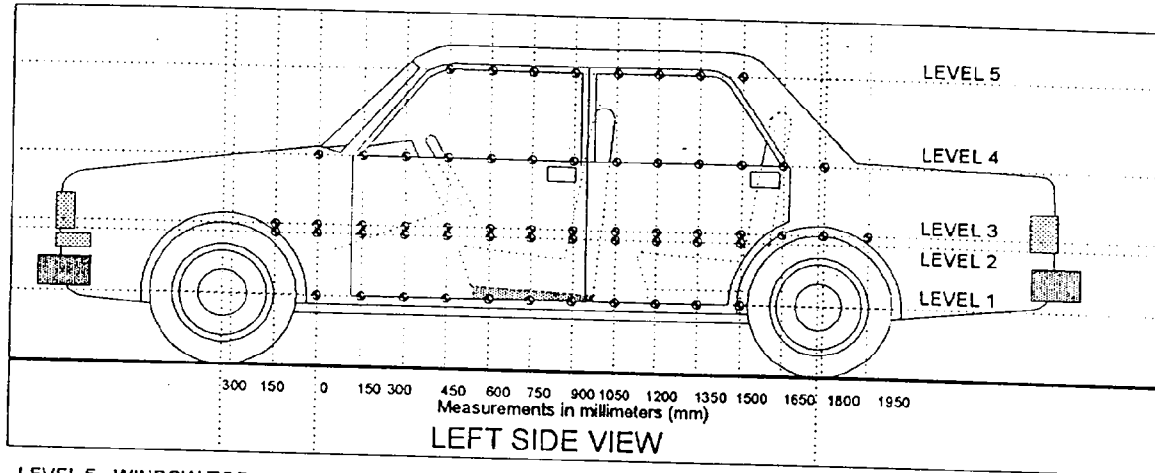
	DRIVER ID #271	LEFT REAR PASSENGER ID #270
HR	188	163
HS	300	226
AD	140	105
HD	134	133

Left rear passenger had the head removed.
Measurements were taken from the top of the neck

DATA SHEET NO. 9
VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

NHTSA NO.: CT5602 Test Date: December 13, 1995



LEVEL 5 - WINDOW TOP
LEVEL 4 - WINDOW SILL
LEVEL 3 - MID-DOOR
LEVEL 2 - OCCUPANT H-POINT
LEVEL 1 - AXLE CENTERLINE HEIGHT or SILL TOP HEIGHT

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED"
CONFIGURATION

MEASUREMENTS ALONG THE VERTICAL 750 mm. LINE SHOWN ABOVE

Level 5 @ Window Top	=	<u>1225</u> mm
Level 4 @ Window Sill	=	<u>855</u> mm
Level 3 @ Mid Door	=	<u>580</u> mm
Level 2 @ Occupant H-Point	=	<u>450</u> mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>230</u> mm

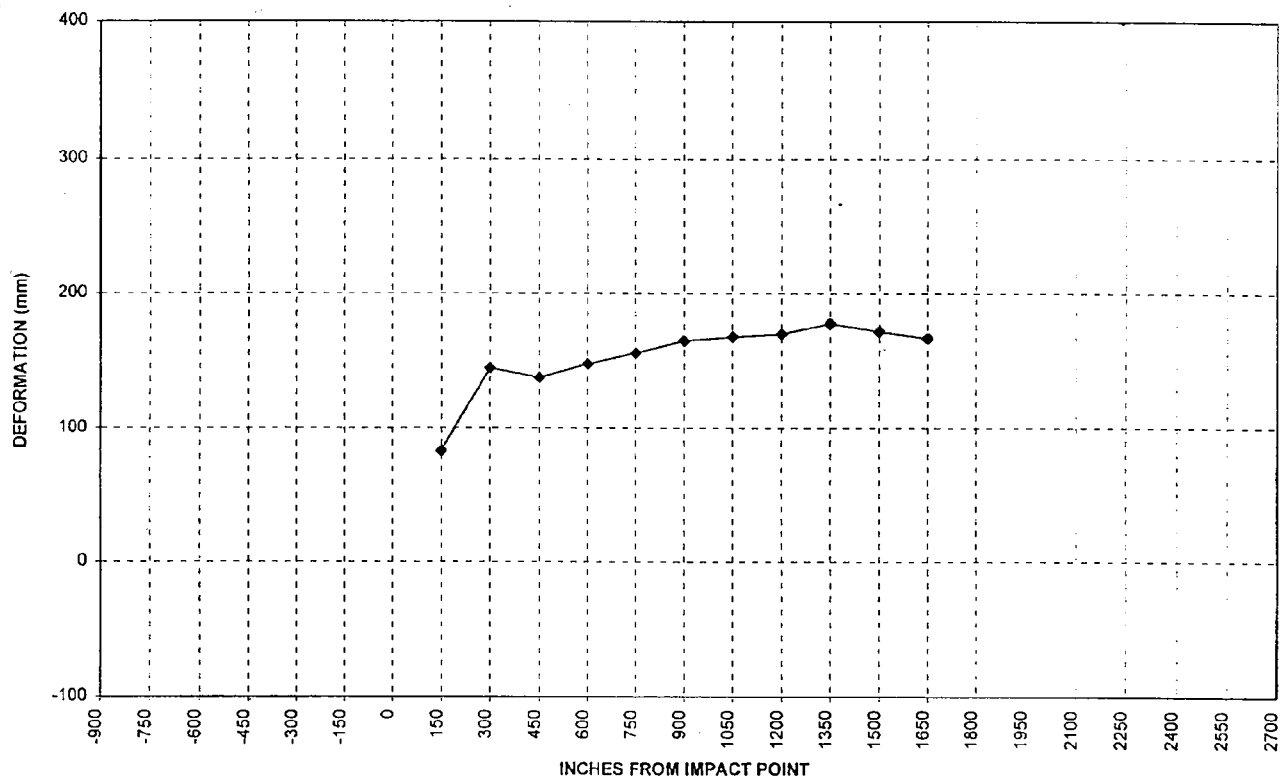
DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS
 Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

NHTSA NO.: CT5602 Test Date: December 13, 1995

Longitudinal Distance (mm)	Level 1 - Axle Centerline		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	712	795	83
300	717	862	145
450	725	863	138
600	730	878	148
750	733	889	156
900	733	898	165
1050	728	896	168
1200	725	895	170
1350	717	895	178
1500	709	881	172
1650	704	871	167
1800			
1950			
2100			
2250			
2400			
2550			
2700			

Reference plane is parallel to test vehicle longitudinal centerline.
 Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 1 - AXLE CENTERLINE

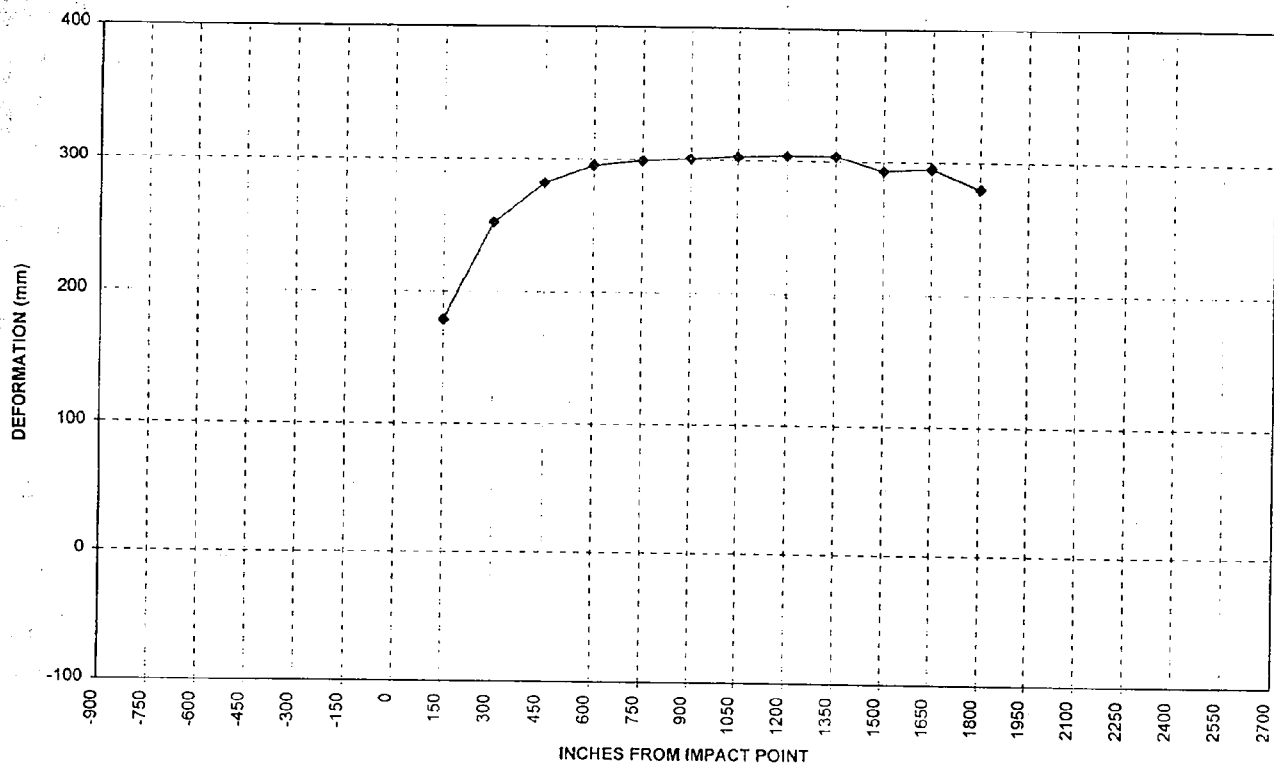
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELSYear/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 DoorNHTSA NO.: CT5602 Test Date: December 13, 1995

Longitudinal Distance (mm)	Level 2 - Occupant H-Point		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	681	860	179
300	686	938	252
450	690	972	282
600	691	986	295
750	692	991	299
900	692	993	301
1050	690	993	303
1200	688	992	304
1350	685	989	304
1500	683	976	293
1650	679	974	295
1800	677	957	280
1950			
2100			
2250			
2400			
2550			
2700			

Reference plane is parallel to test vehicle longitudinal centerline.
 Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 2 - OCCUPANT H-POINT

DATA SHEET NO. 10

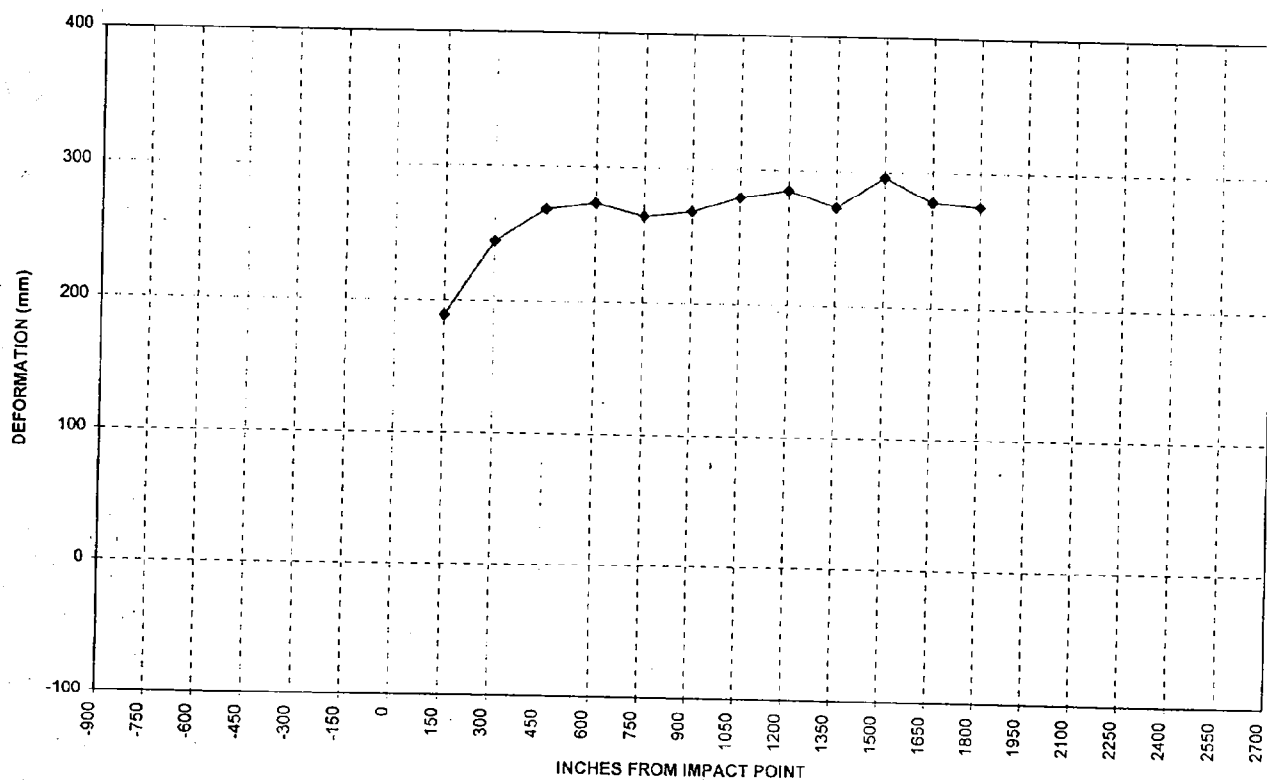
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELSYear/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 DoorNHTSA NO.: CT5602 Test Date: December 13, 1995

Longitudinal Distance (mm)	Level 3 - Mid Door		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	671	860	189
300	675	919	244
450	678	946	268
600	679	952	273
750	682	946	264
900	682	950	268
1050	680	959	279
1200	679	964	285
1350	677	950	273
1500	672	968	296
1650	670	948	278
1800	669	944	275
1950			
2100			
2250			
2400			
2550			
2700			

Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 3 - MID DOOR

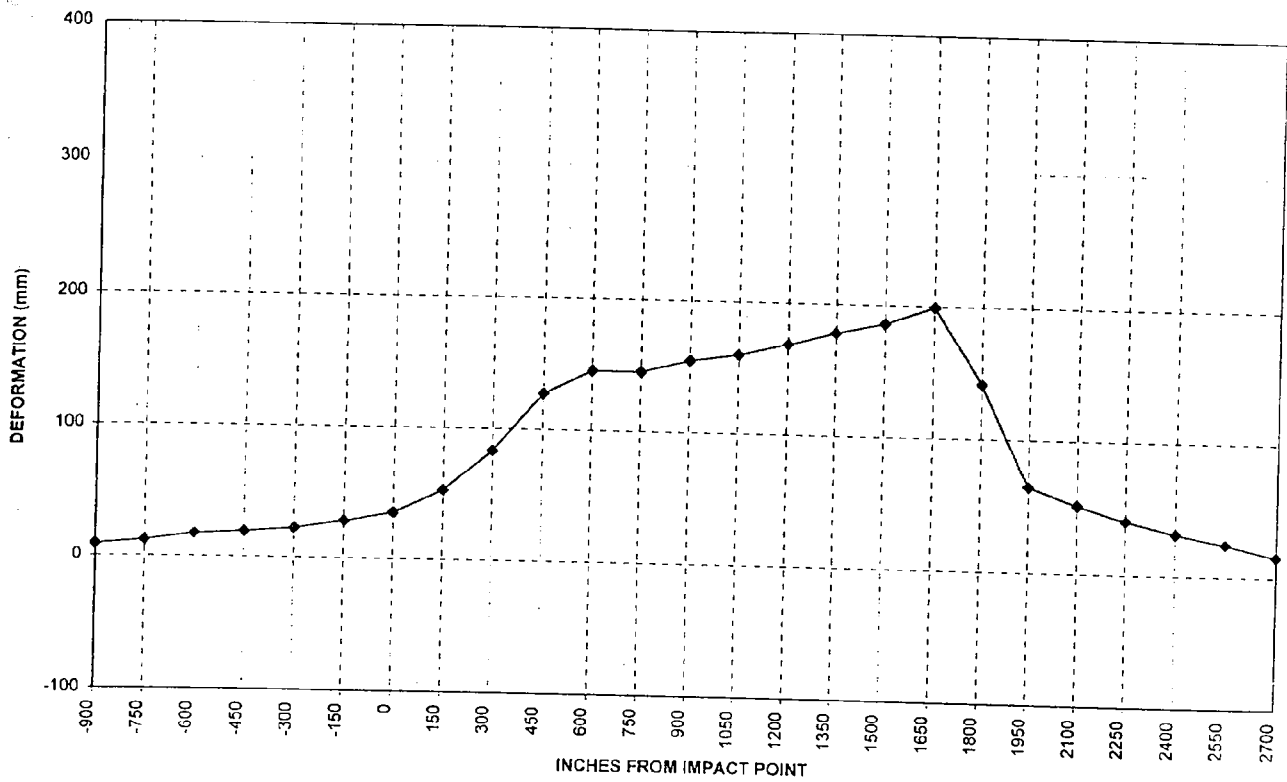
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELSYear/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 DoorNHTSA NO.: CT5602 Test Date: December 13, 1995

Level 4 - Window Sill			
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-900	828	837	9
-750	801	813	12
-600	779	796	17
-450	762	781	19
-300	758	780	22
-150	751	779	28
0 (impact point)	752	787	35
150	748	800	52
300	748	831	83
450	748	875	127
600	748	893	145
750	751	896	145
900	746	900	154
1050	744	903	159
1200	742	910	168
1350	740	918	178
1500	739	925	186
1650	742	941	199
1800	741	882	141
1950	744	808	64
2100	746	797	51
2250	749	789	40
2400	758	789	31
2550	777	801	24
2700	802	817	15

Reference plane is parallel to test vehicle longitudinal centerline.
 Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 4 - WINDOW SILL

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

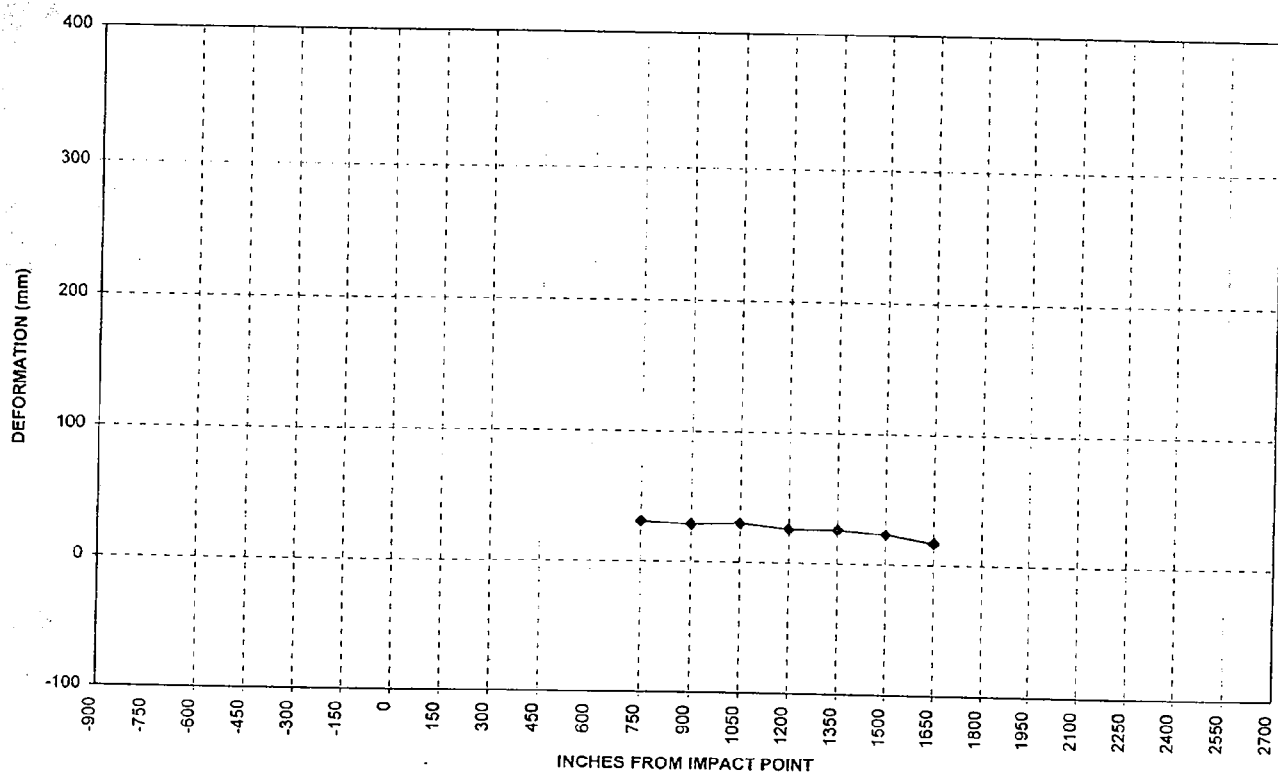
NHTSA NO.: CT5602 Test Date: December 13, 1995

Level 5 - Window Top			
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150			
300			
450			
600			
750	997	1028	31
900	990	1019	29
1050	995	1025	30
1200	1000	1026	26
1350	1009	1035	26
1500	1019	1042	23
1650	1034	1051	17
1800			
1950			
2100			
2250			
2400			
2550			
2700			

Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH



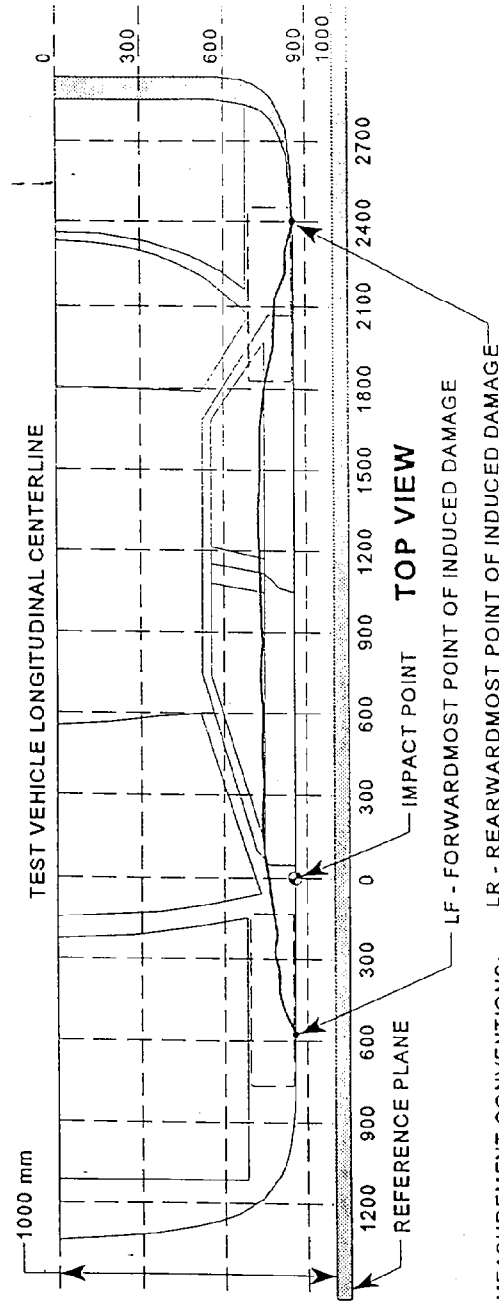
LEVEL 5 - WINDOW TOP

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

NHTSA NO.: CT5602 Test Date: December 13, 1995



MEASUREMENT CONVENTIONS: LR - REARWARD MOST POINT OF INDUCED DAMAGE
Forward of the impact point (towards front of vehicle) is considered negative (-).
Rearward of the impact point (towards rear of vehicle) is considered positive (+).

DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1. (LF = 150 mm)	676	676	0.0
2. 481 mm	979	684	295
3. 812 mm	988	687	301
4. 1143 mm	993	684	309
5. 1474 mm	989	677	312
6. (LR = 1800 mm)	673	673	0.0

DATA SHEET NO. 12

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

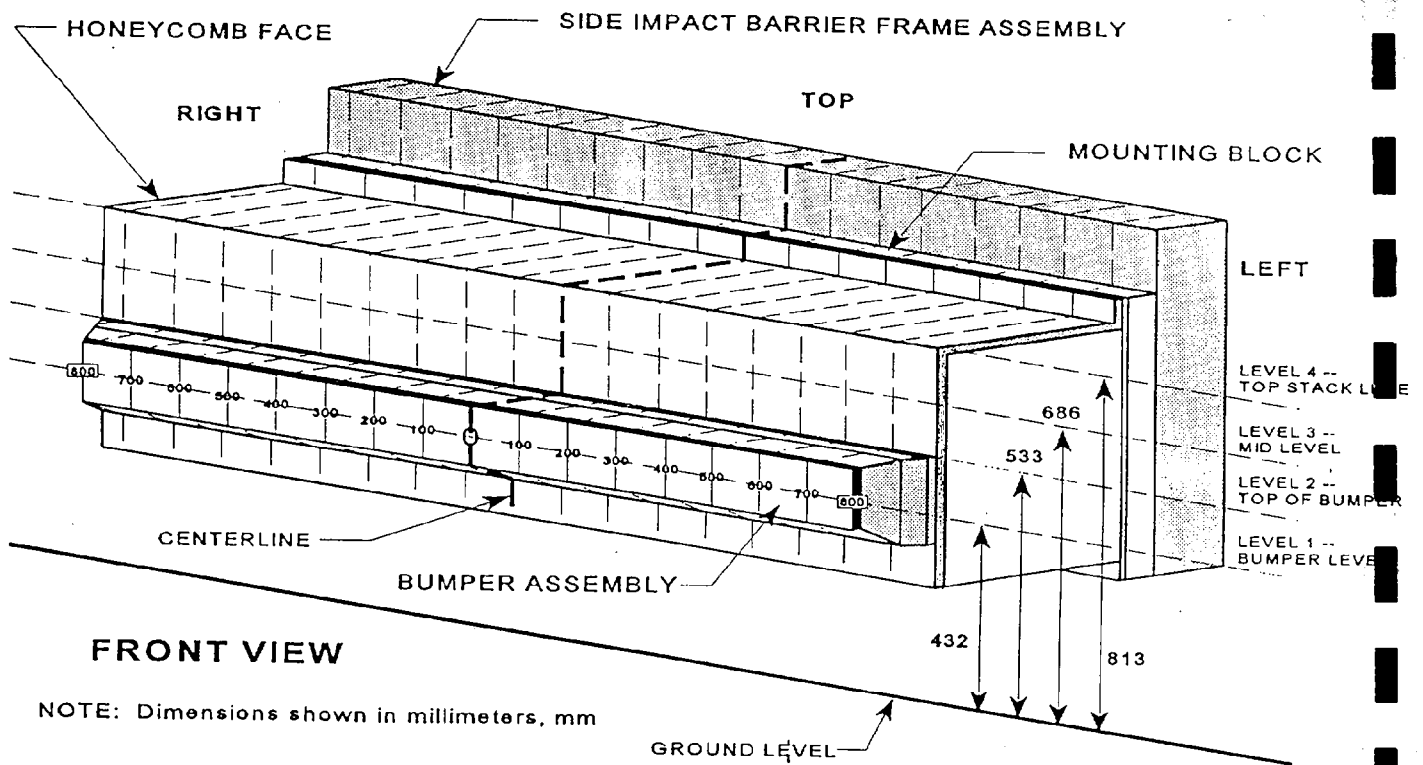
Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

Location	Height at CL*	Distance Right of Center (mm)									Distance Left of Center (mm)							
		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level 4	813 mm	69	19	3	4	2	3	3	5	6	7	9	12	17	37	65	97	131
Mid Level Level 3	686 mm	12	2	2	7	7	5	6	7	9	11	14	16	18	24	43	82	146
Top Bumper Level 2	533 mm	22	16	13	9	9	14	14	18	19	19	23	27	35	45	47	60	87
Mid Bumper Level 1	432 mm	44	39	30	23	22	22	23	24	28	30	33	38	43	48	63	90	102

See next page for Barrier Face Graphic

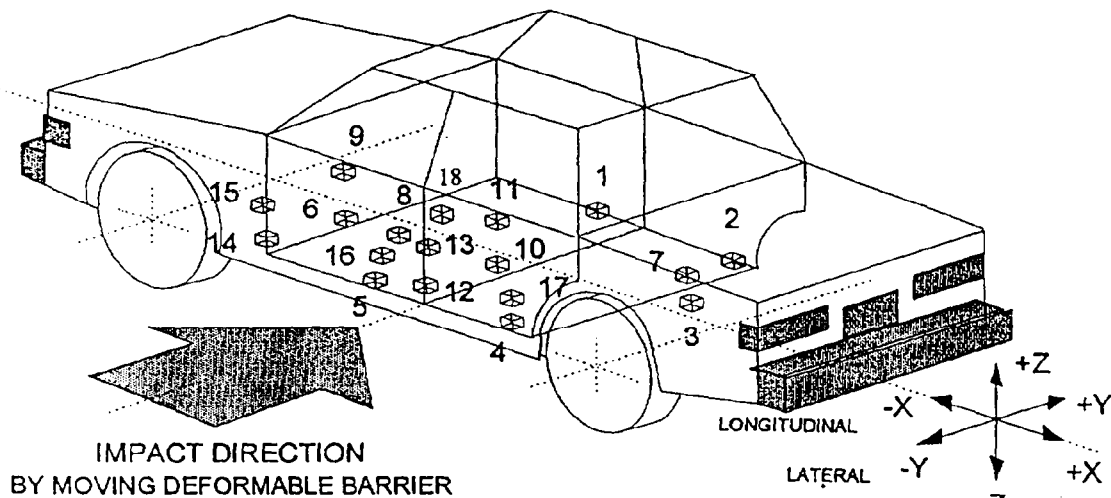
DATA SHEET NO. 12 (Cont'd)



DATA SHEET 13
TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995



- | | |
|--------------------------------|---------------------------------|
| 1-Rt. Side Sill @ Frt Seat | 10-Midrear of Left Rear Door |
| 2-Rt. Side Sill @ Rr. Seat | 11-Left Rear Door Upper Ctrline |
| 3-Rr. Floorpan Above Axle | 12-Left Lower B-Post |
| 4-Left Side Sill @ Rr. Seat | 13-Left Middle B-Post |
| 5-Left Side Sill @ Frt. Seat | 14-Left Lower A-Post |
| 6-Left Frt. Door On Centerline | 15-Left Middle A-Post |
| 7-Rt. Rr. Occ Compartment | 16-Front Seat Track |
| 8-Midrear of Left Frt. Door | 17-Rear Seat Track |
| 9-Left Frt. Door Upper Ctrline | 18-Vehicle C.G. |

DATA SHEET NO. 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

Accel. No.	Description	Coordinates (mm)*			Long. (X) Maximums (g's)		Lat. (Y) Maximums (g's)		Vert. (Z) Maximums (g's)		Resultant (g's)
		X	Y	Z	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	
1	Rt. Side Sill @ Front Seat	2343	650	194	4.6	3.7	18.0	3.5	6.9	2.4	18.2
2	Rt. Side Sill @ Rear Seat	1671	600	194	3.8	5.7	19.0	3.6	4.1	6.7	19.1
3	Rr. Floorpan Above Axle	854	12	506	15.5	13.5	25.1	2.7	5.9	8.8	25.3
4	Left Side Sill @ Rr. Seat	1652	-600	195	---	---	43.6	17.3	---	---	---
5	Left Side Sill @ Frt. Seat	2355	-650	197	---	---	22.6	5.0	---	---	---
7	Right Rear Occupant Compartment	1703	445	382	---	---	20.3	4.5	---	---	---
12	Left Lower B-Post	1748	-685	272	---	---	104.4	46.9	---	---	---
13	Left Mid B-Post	1647	-730	764	---	---	87.7	30.1	---	---	---
14	Left Lower A-Post	2882	-685	410	---	---	91.1	53.8	---	---	---
15	Left Mid A-Post	2902	-770	795	---	---	**	**	---	---	---
16	Driver Left Seat Track	2048	-570	222	---	---	55.9	22.7	---	---	---
18	Vehicle CG	2403	0	380	4.4	1.1	19.2	2.3	9.9	5.5	19.9

*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To right)

Z - Ground Level (+ Up)

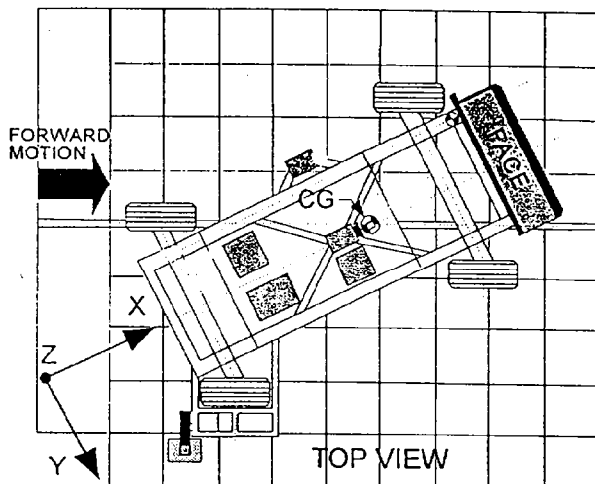
** No valid data collected

DATA SHEET NO. 14

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995



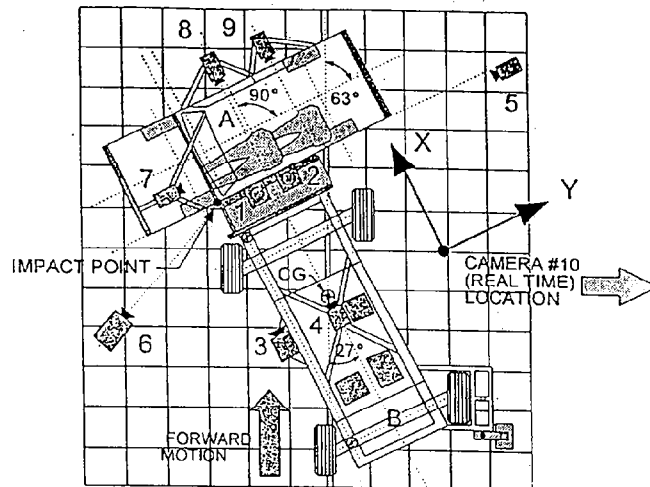
Accel. No.	Description	Coordinates (mm)*			(+) Positive		(-) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time (msec)
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	1.0	89	16.2	34
	Lateral (Y)	---	---	---	2.3	60	7.4	50
	Vertical (Z)	---	---	---	17.7	29	10.8	25
	Resultant (R)	---	---	---	23.2	29	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	2.0	90	21.1	35
	Lateral (Y)	---	---	---	3.4	50	2.0	62

*Reference: X - Front Axle (+ Forward)
Y - Vehicle Centerline (+ To right)
Z - Ground Level (+ Up)

DATA SHEET NO. 15
HIGH SPEED CAMERA LOCATIONS AND DATA

Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995



Camera No.	View	Coordinates (mm)*			Angle	Lens (mm)	Film Speed (fps)
		X	Y	Z			
	Real Time					13	24
1	Top Impact	-350	850	5400		13	909
2	Top Wide	-700	0	5130		8	1176
3	Cart Pointer					35	1005
4	Cart					13	NR
5	Right Impact	-3310	-8130	1835	90°	25	1143
6	Left Overall	3140	2420	1890	90°	13	990
7	Onboard Driver					8	922
8	Onboard Hood					8	1026
9	Onboard Passenger					13	909

* Reference: (from point of impact)
 +X = Forward
 +Y = To Right
 +Z = Upward

DATA SHEET 16
FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

Vehicle Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

TEST REQUIREMENTS:

Drain the test vehicle's fuel system and operate the engine until the fuel system is dry. Add Stoddard solvent, which has been dyed purple, until 92-94% of the stated usable capacity is reached. Operate the engine to assure the Stoddard solvent is present throughout the entire fuel system.

TEST VEHICLE IMPACT TYPE: X Side Impact MDB 32.8 mph (52.8 kph)

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATION(S): None

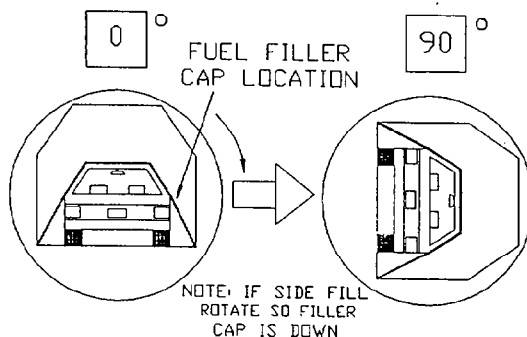
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

TEST PHASE: 0° - 90°



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 TIME = 7 minutes 40 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

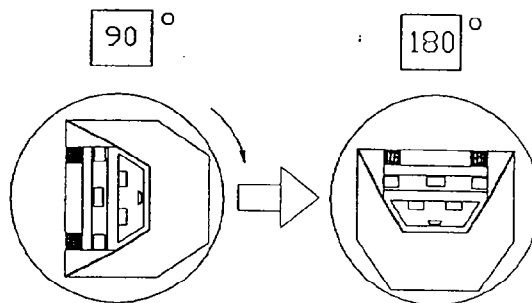
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

TEST PHASE: 90° - 180°



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 TIME = 7 minutes 25 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

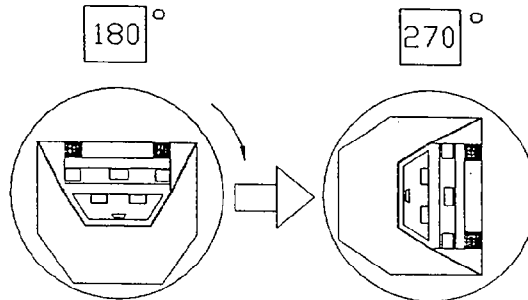
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

TEST PHASE: 180° - 270°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 20 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 20 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

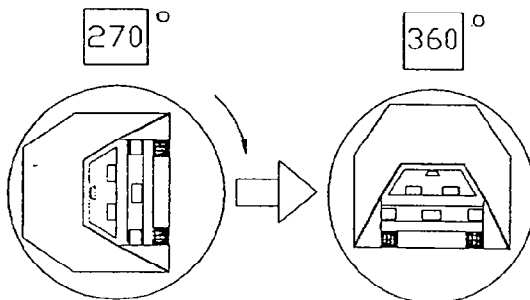
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1996/Mitsubishi/Eclipse RS/2 Door

Vehicle NHTSA No.: CT5602 Test Date: December 13, 1995

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 35 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 35 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

APPENDIX A - PHOTOGRAPHS

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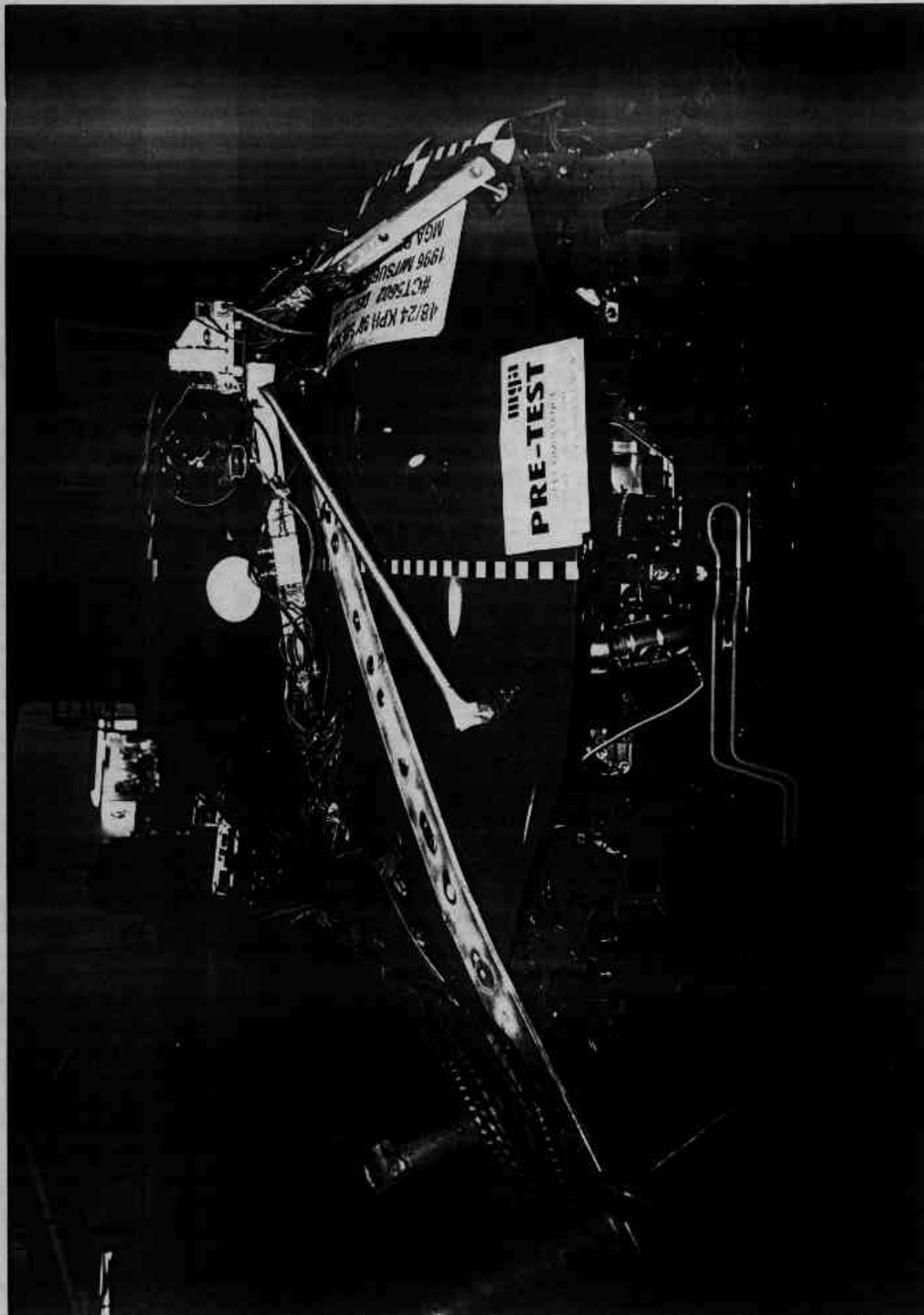


Photo No. A-1 - Pre-Test Front View of Test Vehicle

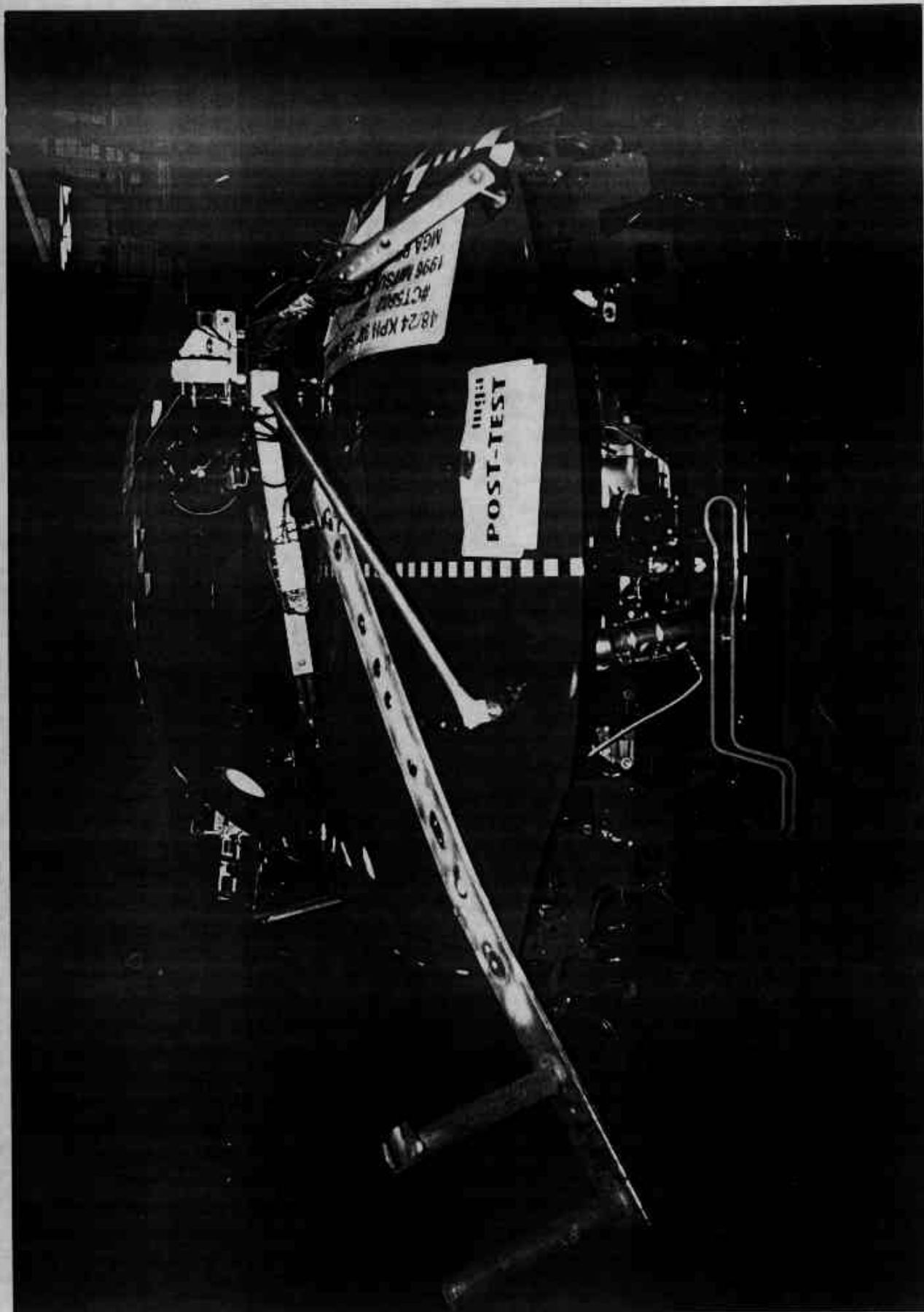


Photo No. A-2 - Post-Test Front View of Test Vehicle

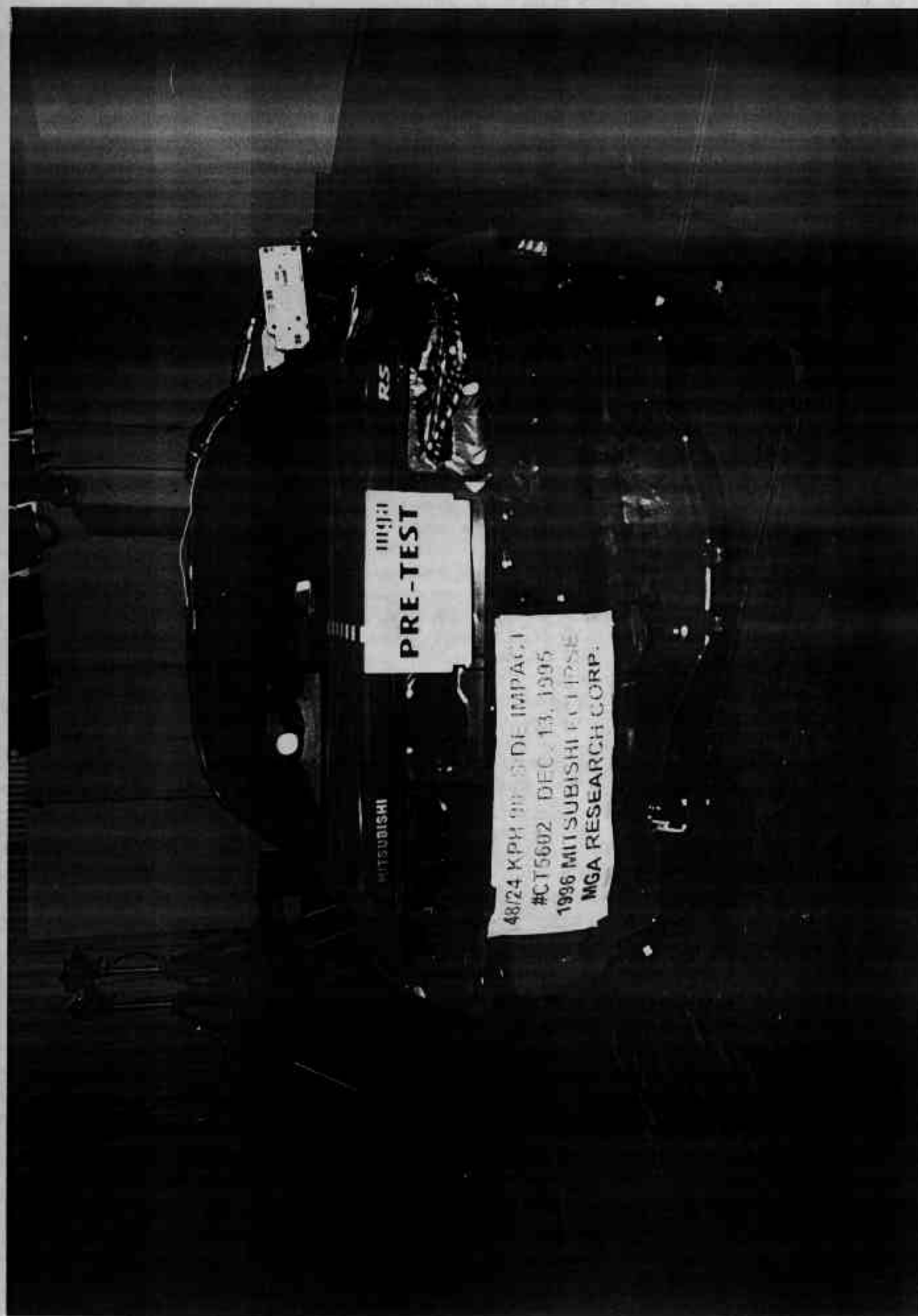


Photo No. A-3 - Pre-Test Rear View of Test Vehicle

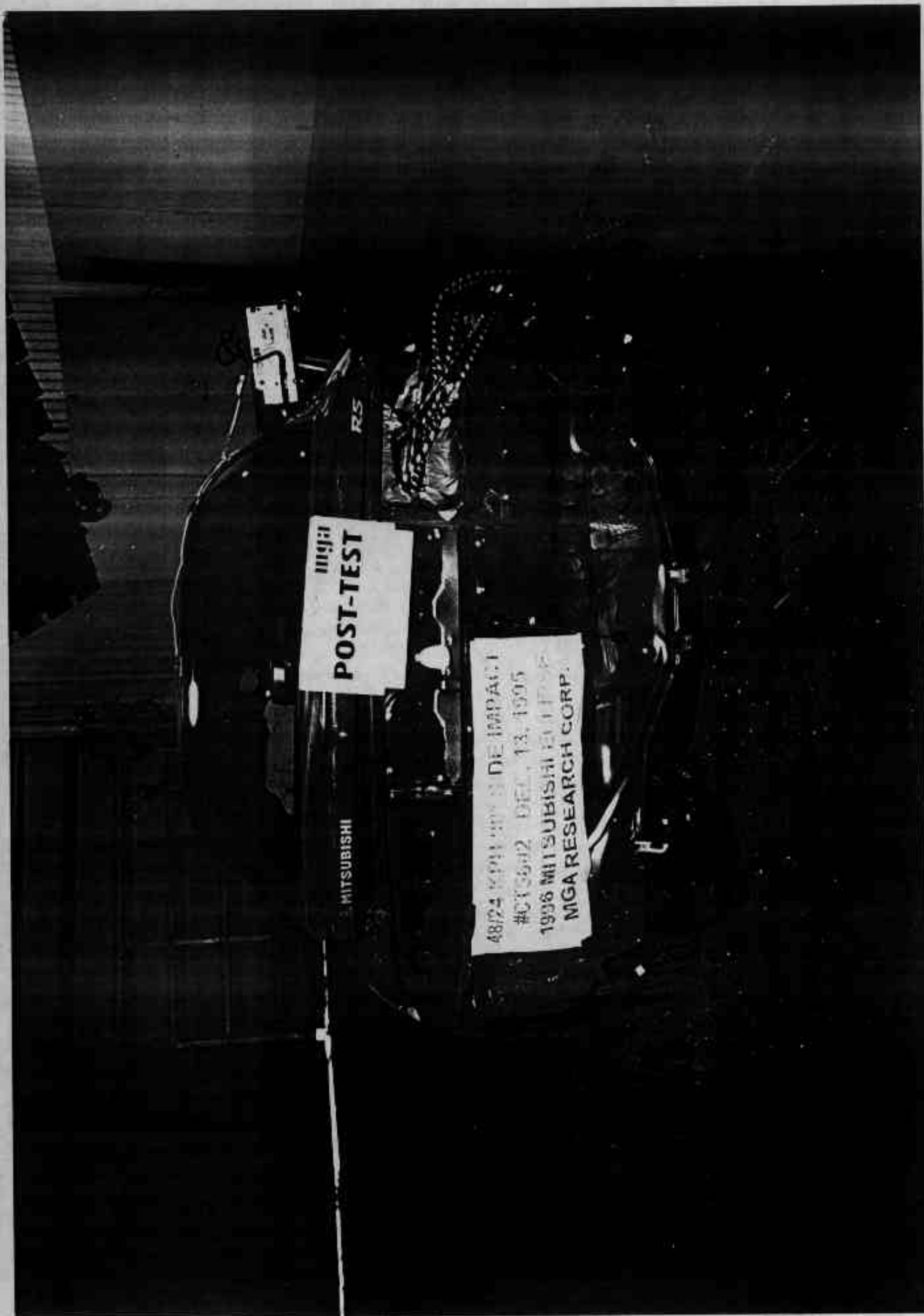


Photo No. A-4 - Post-Test Rear View of Test Vehicle

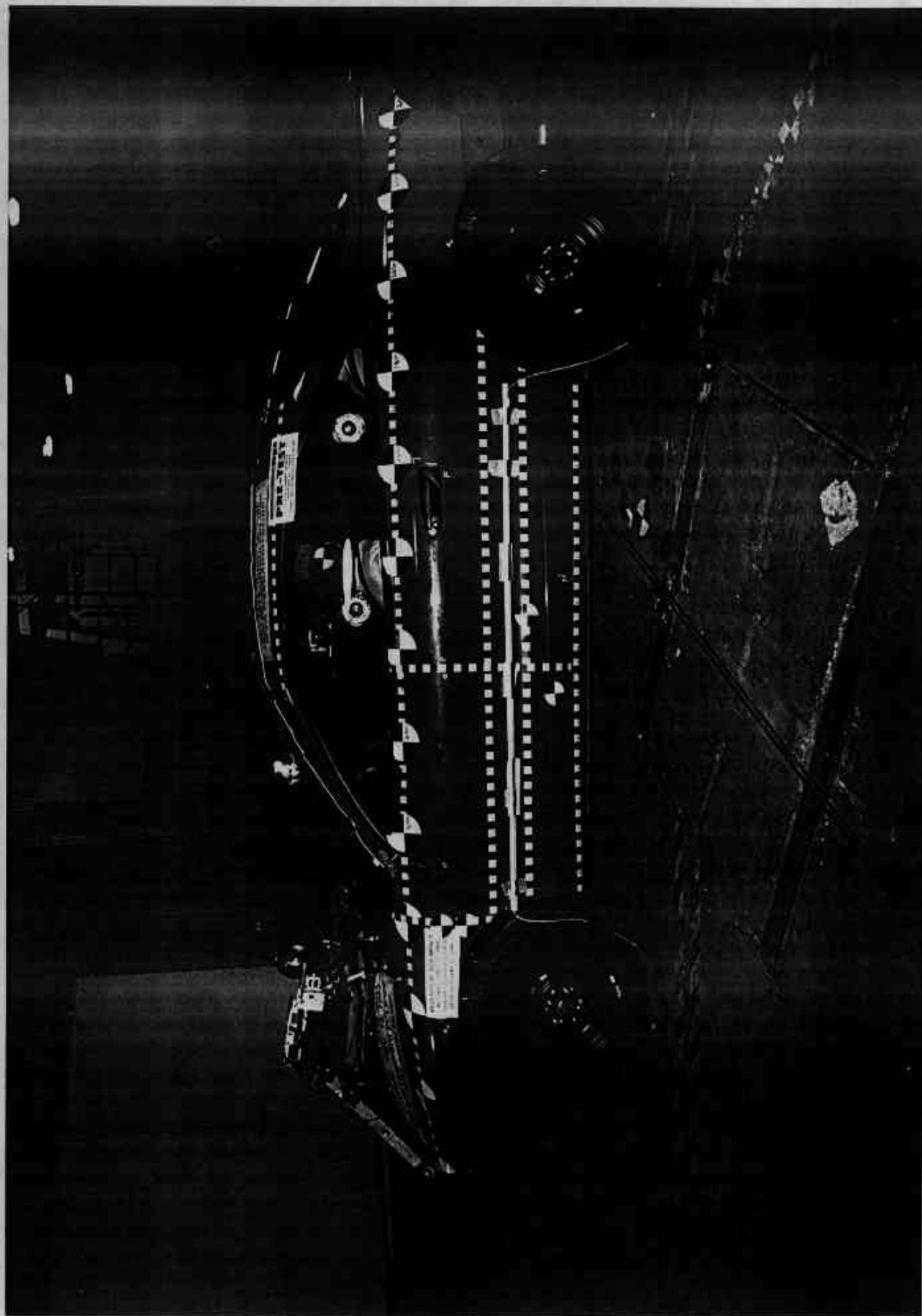


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

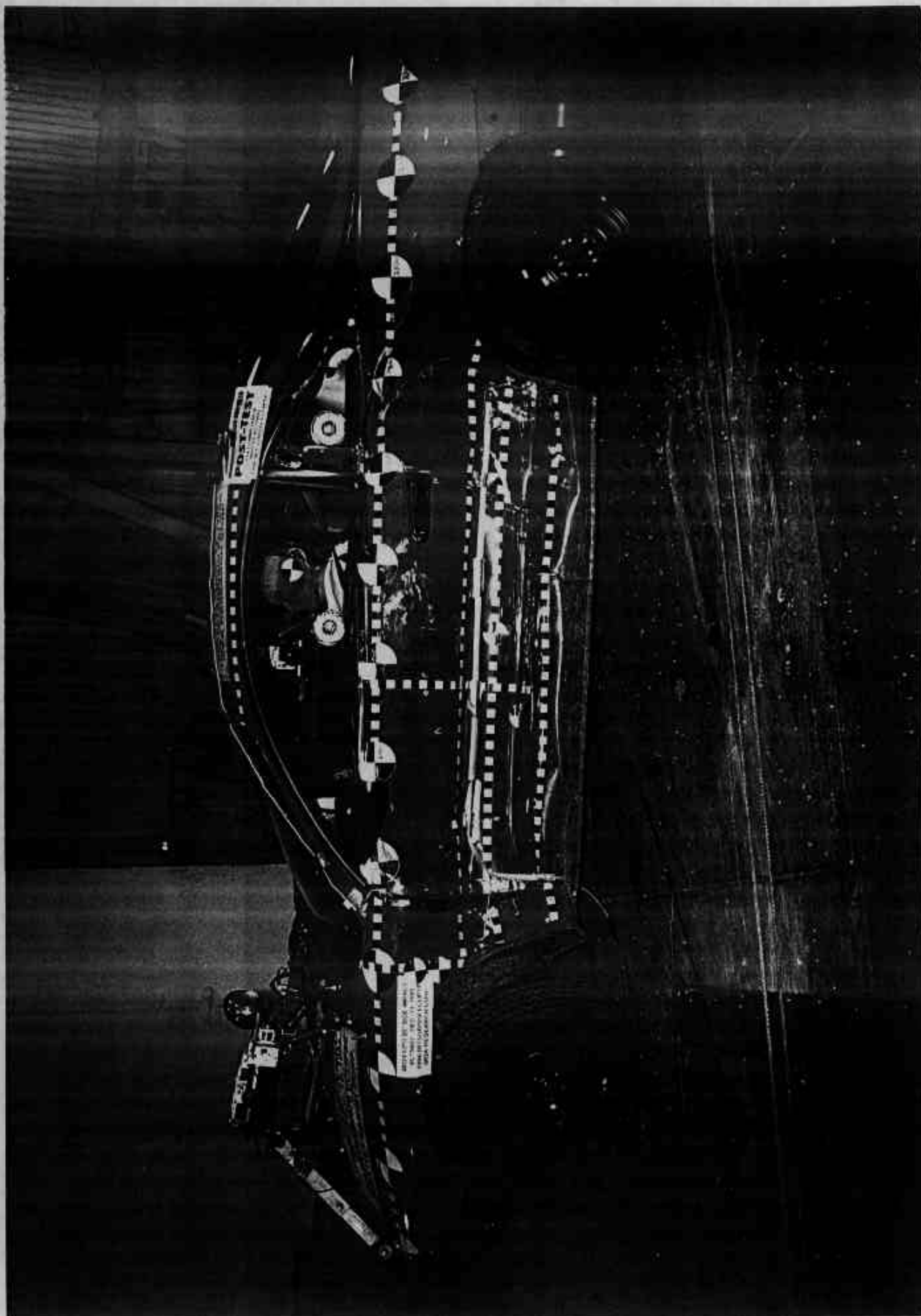


Photo No. A-6 - Post-Test Left Side View of Test Vehicle

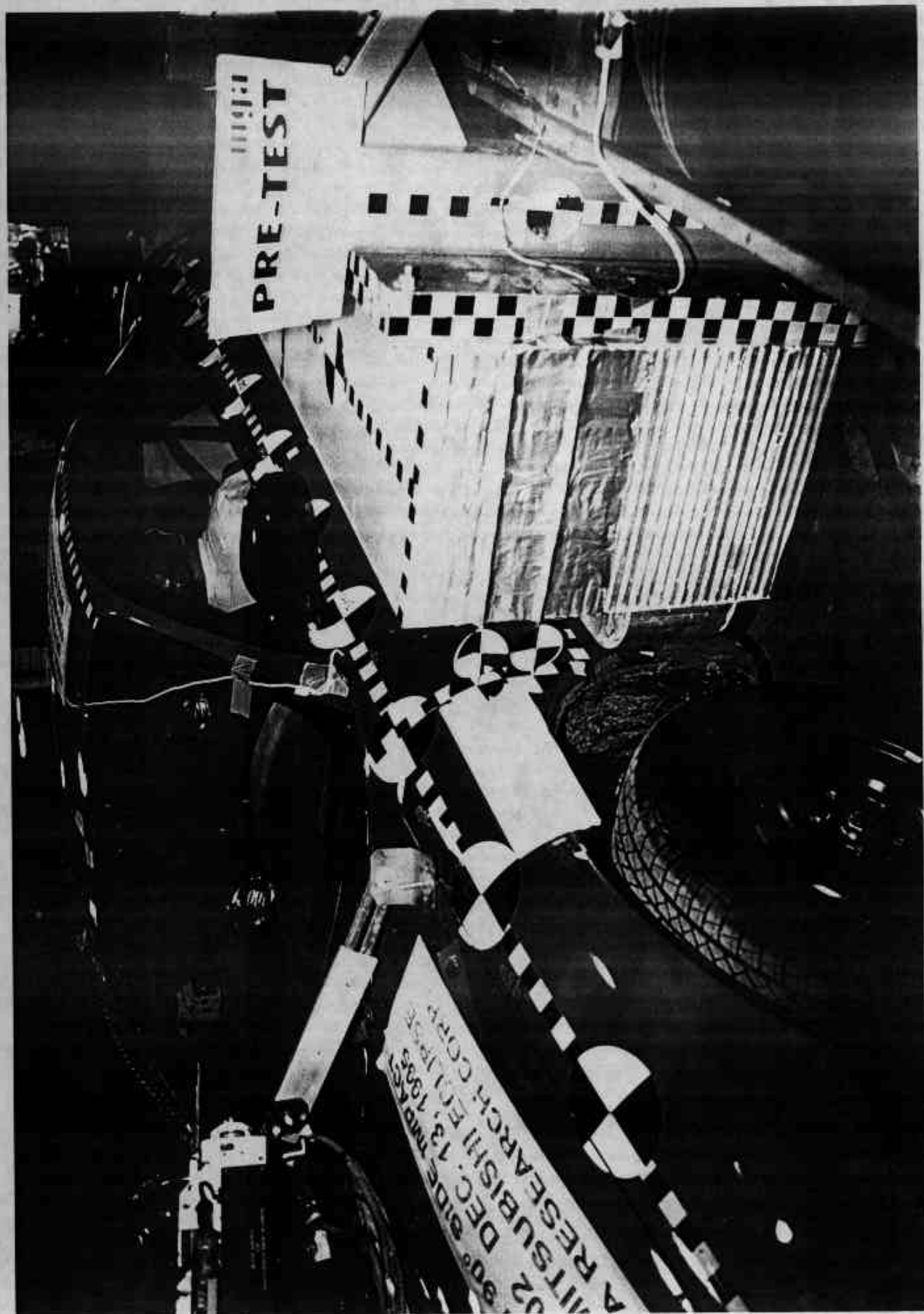


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (left side)

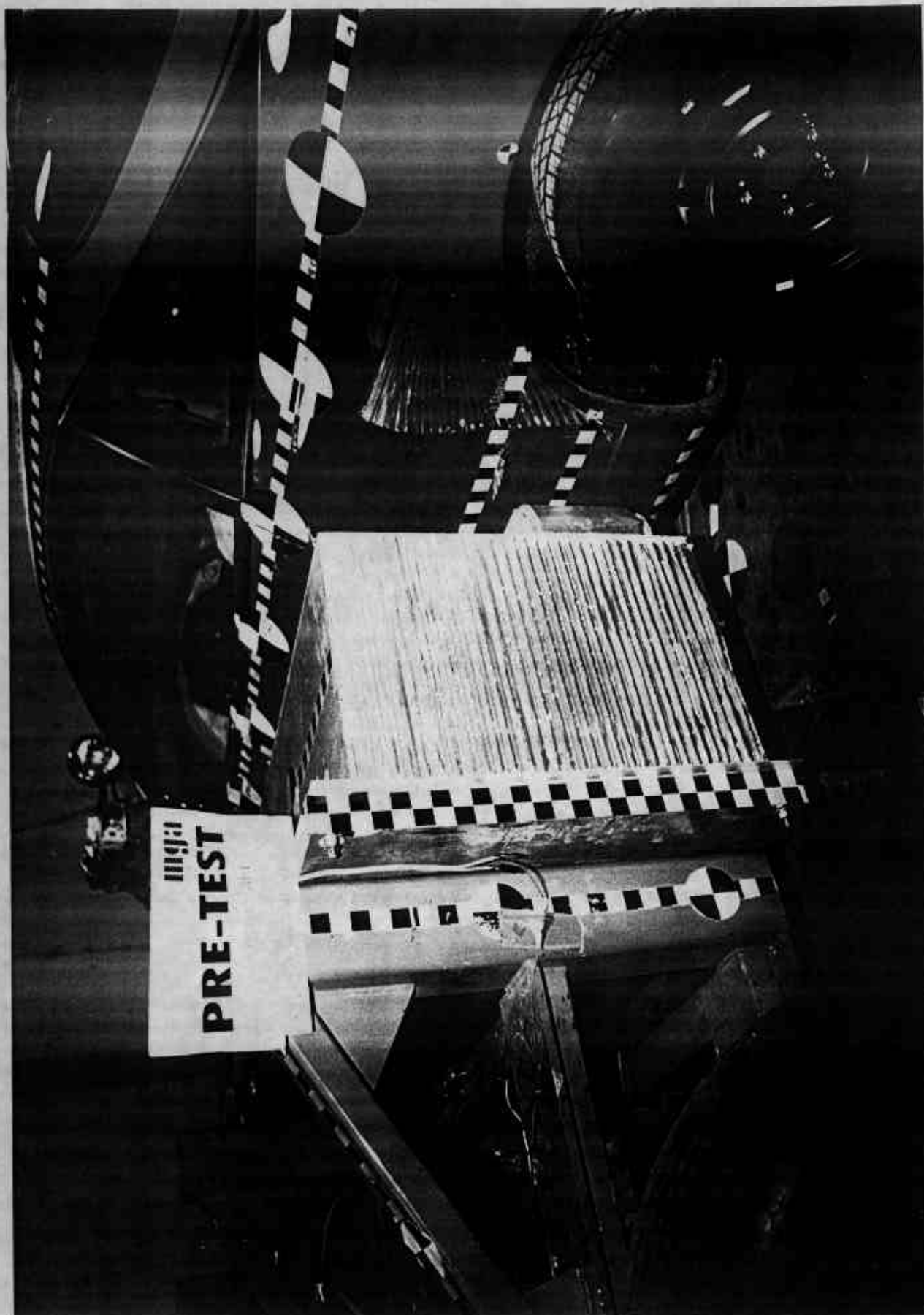


Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (right side)

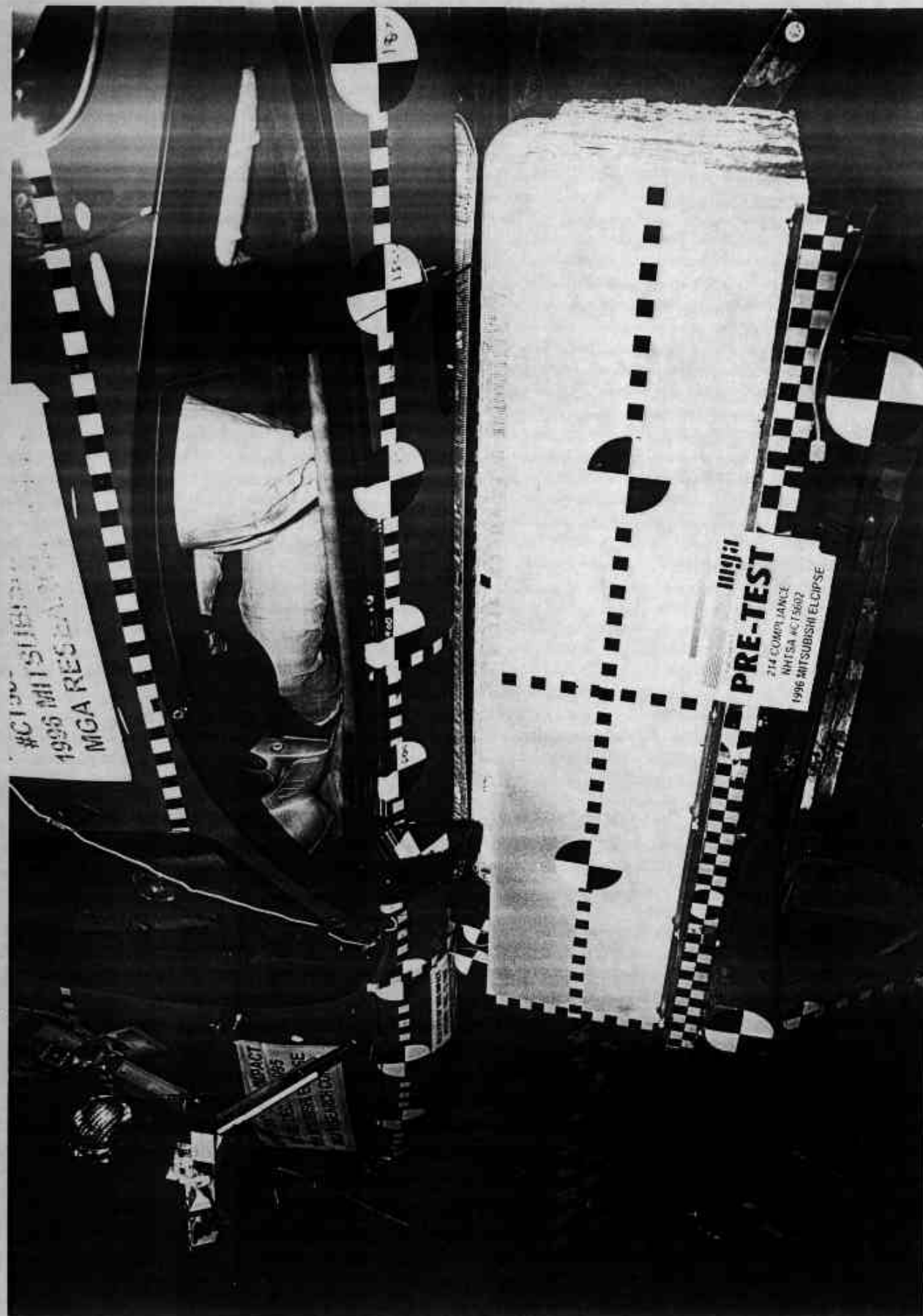


Photo No. A-9 - Pre-Test MDB Positioned Against Vehicle Overhead View

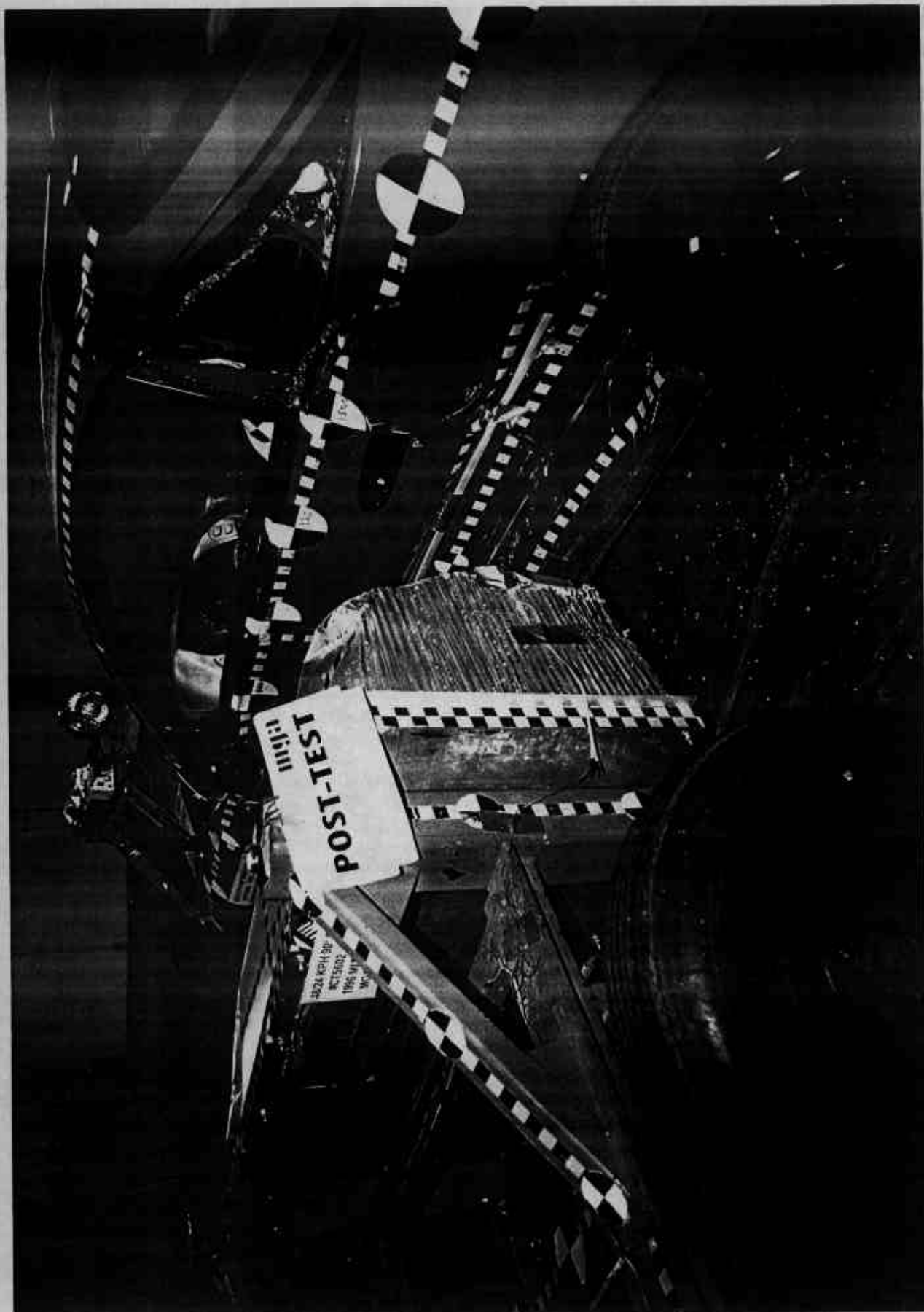


Photo No. A-11 - Post-Test MDB Positioned Against Vehicle (right side)

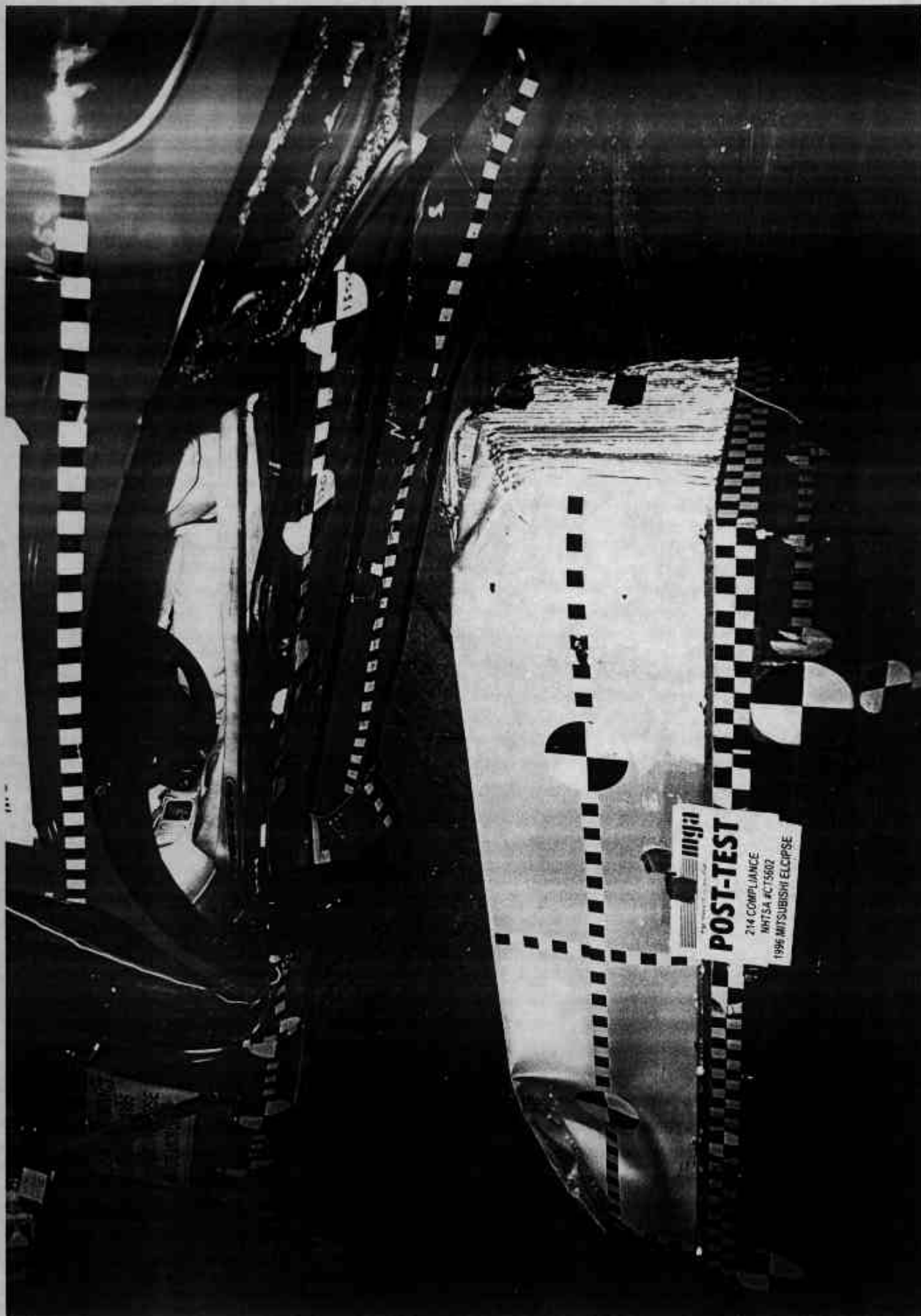


Photo No. A-12 - Post-Test MDB Positioned Against Vehicle Overhead View

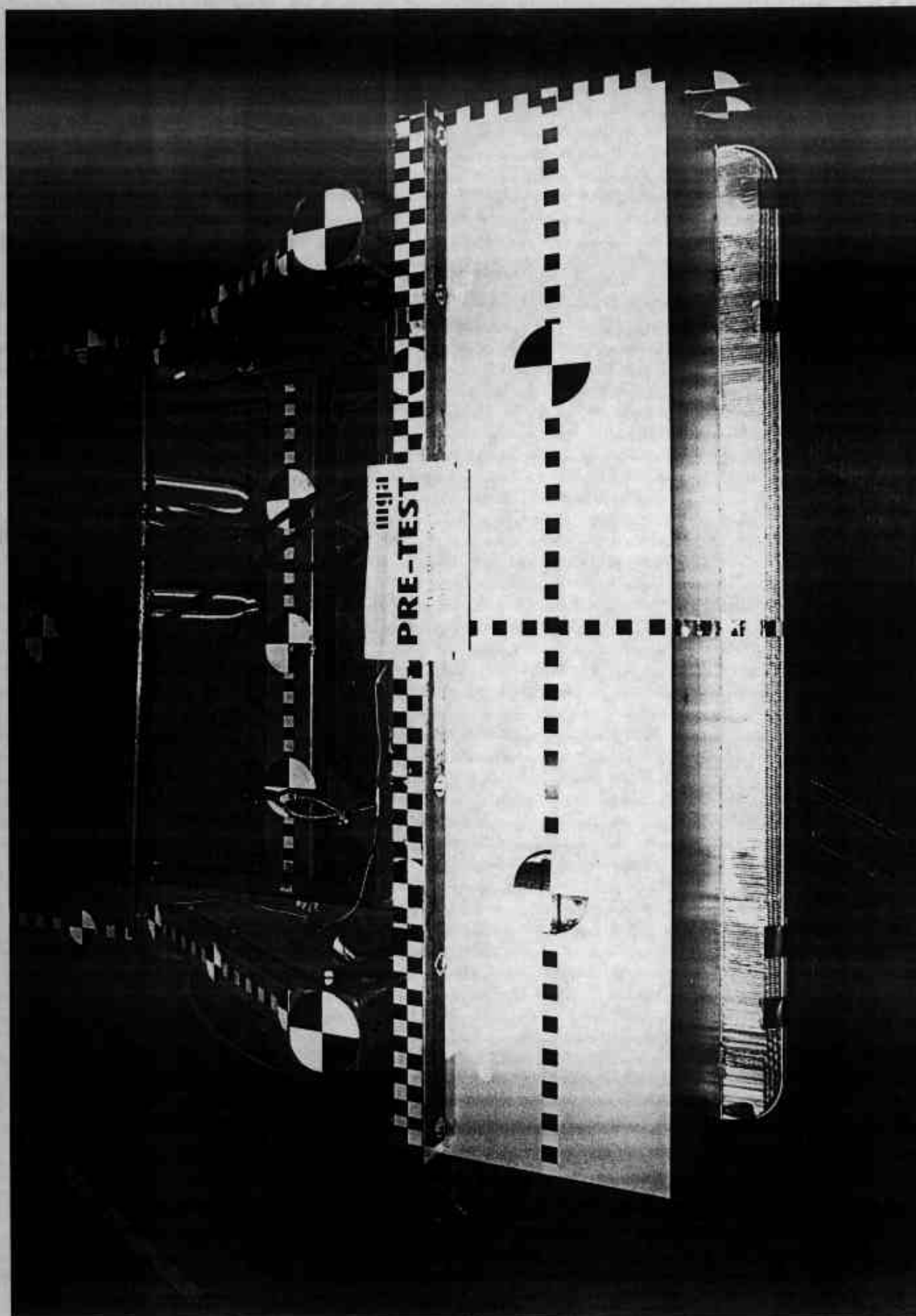


Photo No. A-13 - Pre-Test MDB Top View

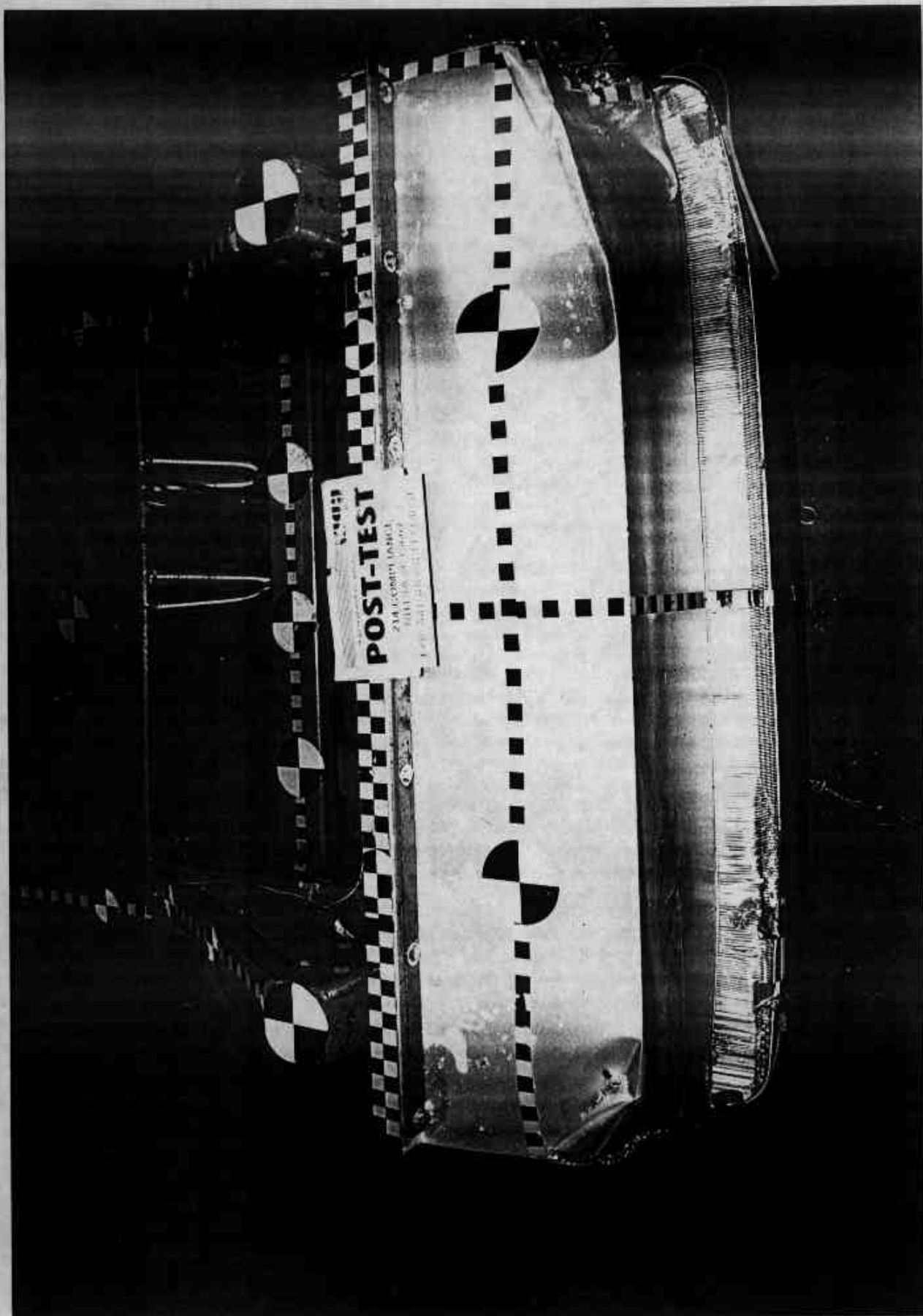


Photo No. A-14 - Post-Test MDB Top View

A-14

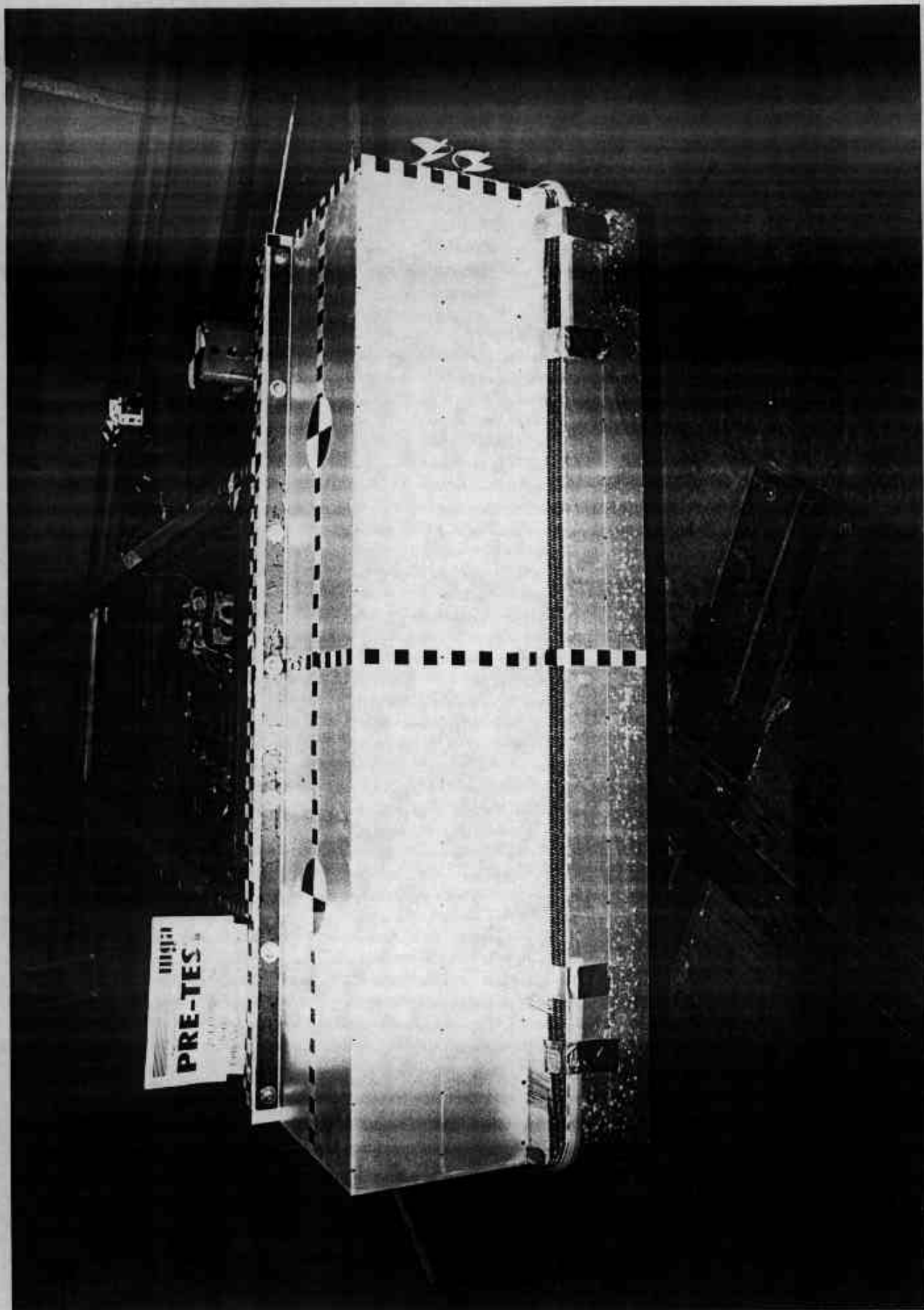


Photo No. A-15 - Pre-Test MDB Front View

A-15

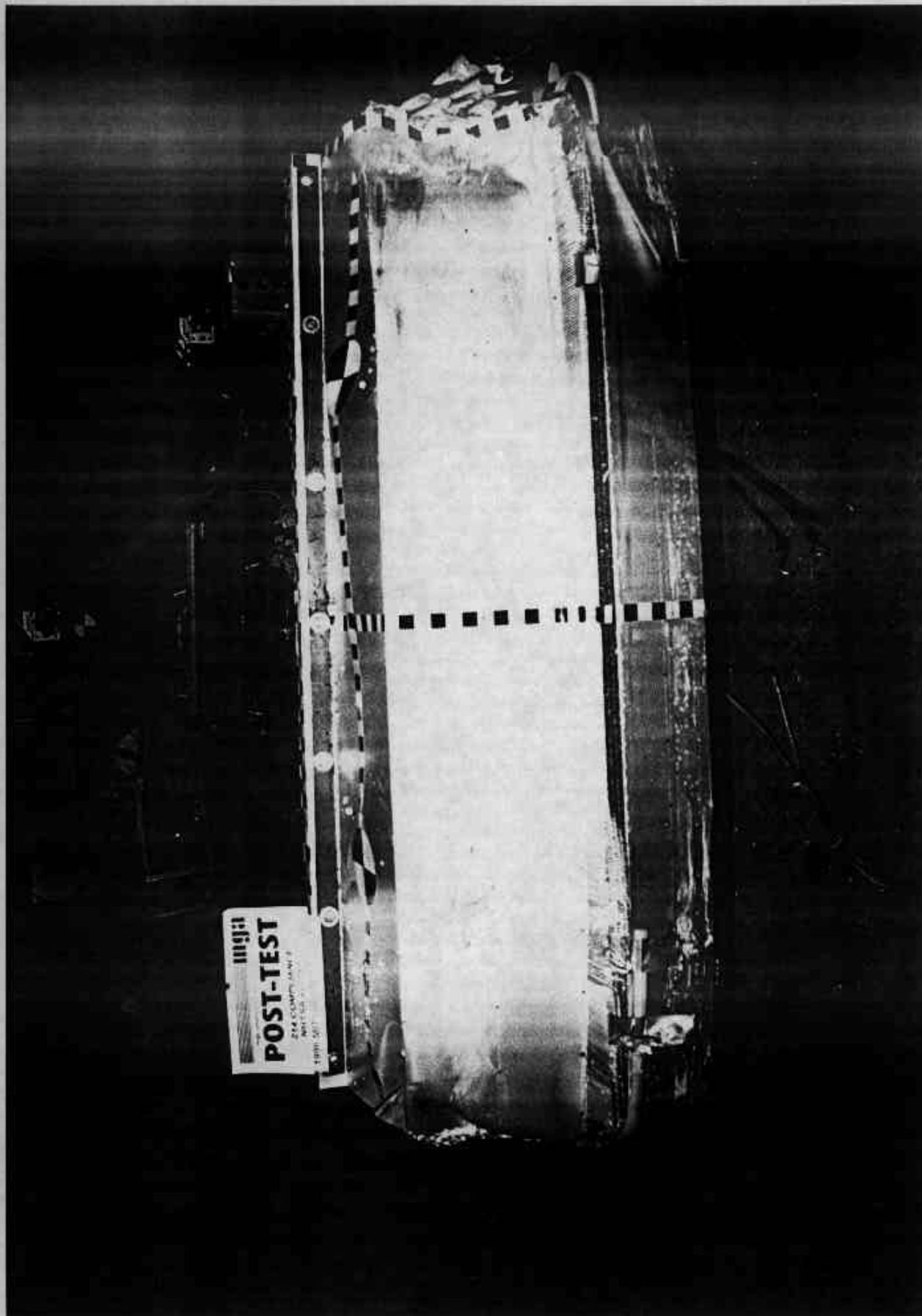


Photo No. A-16 - Post-Test MDB Front View

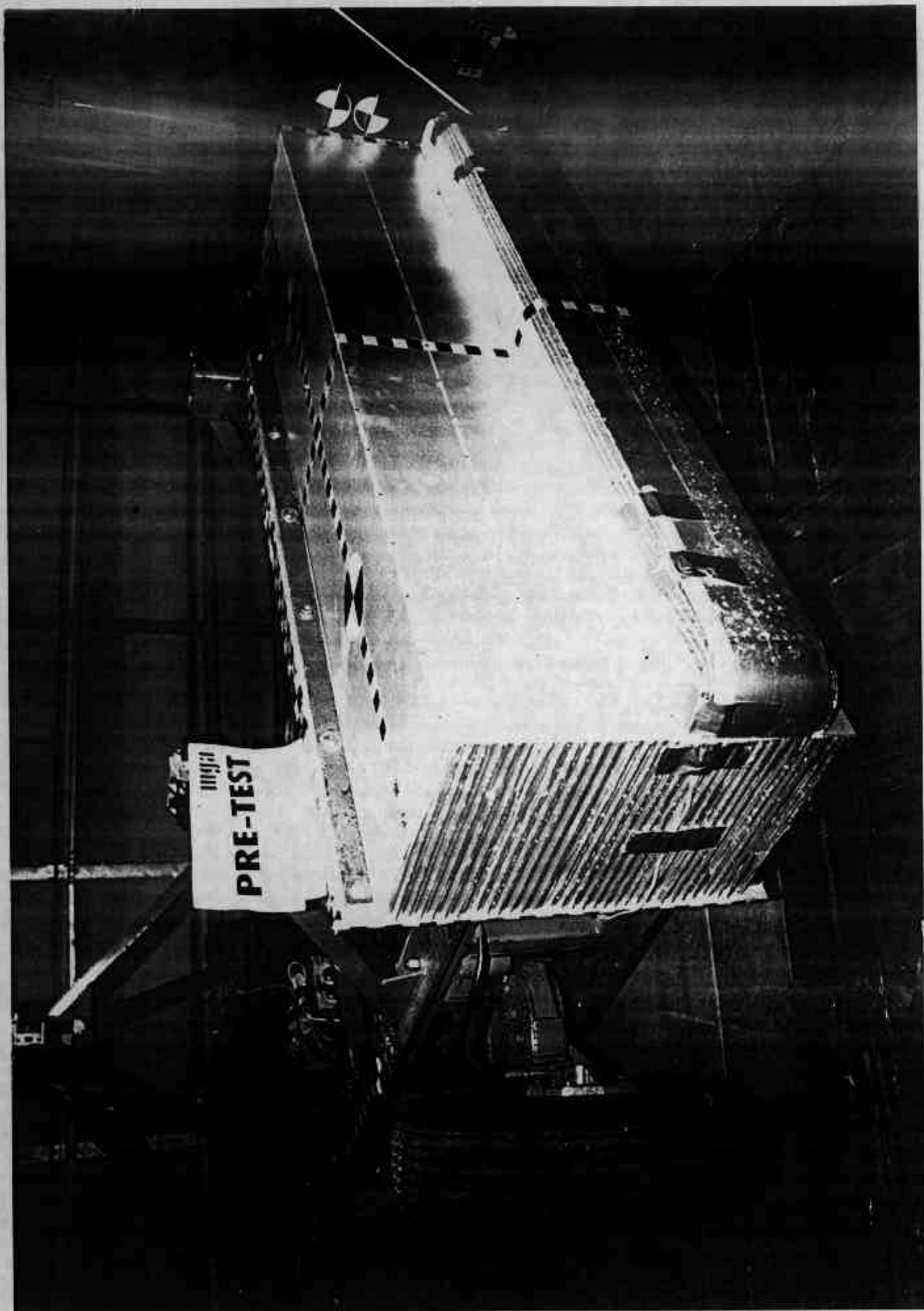


Photo No. A-17 - Pre-Test MDB Right Side View

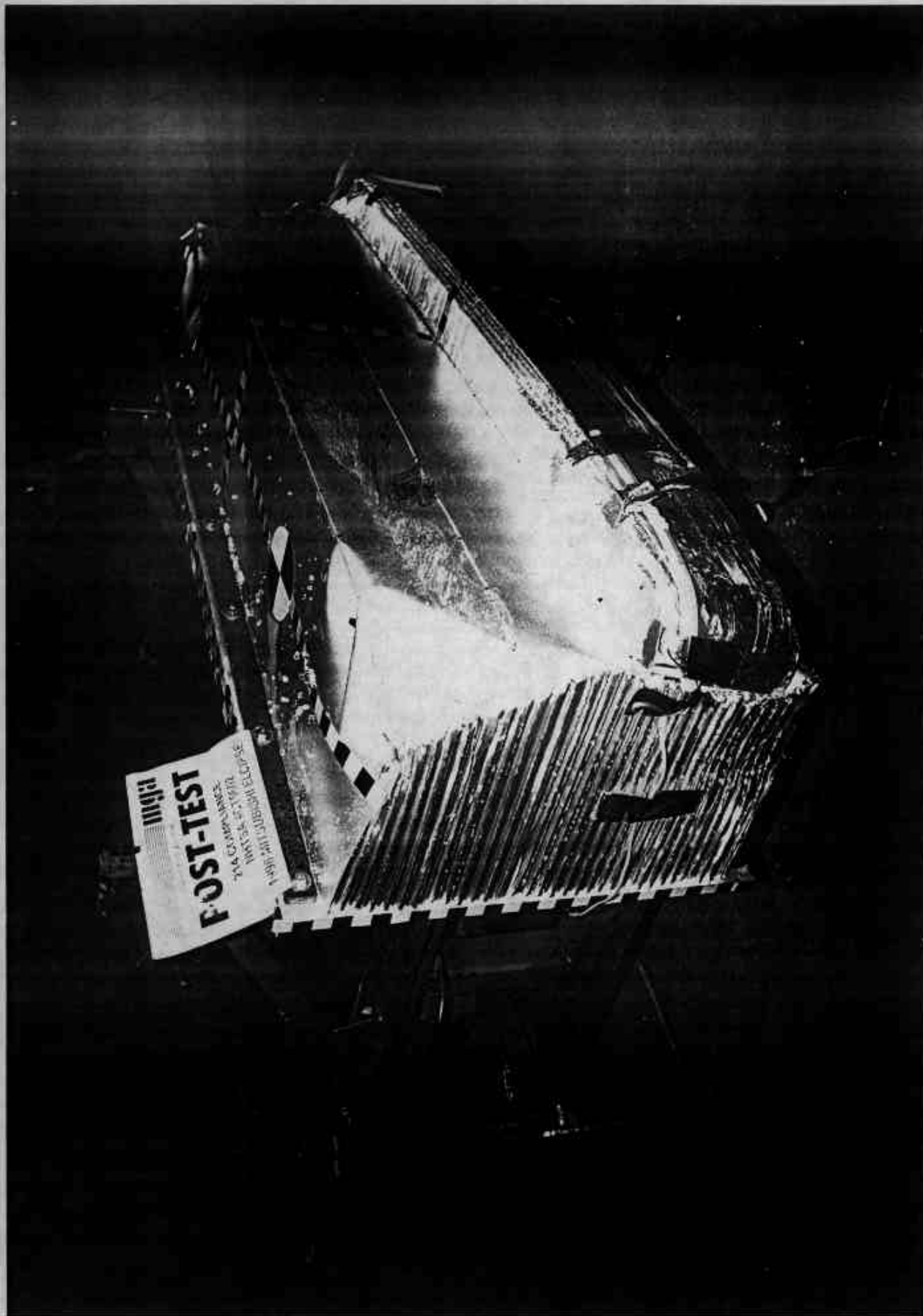


Photo No. A-18 - Post-Test MDB Right Side View

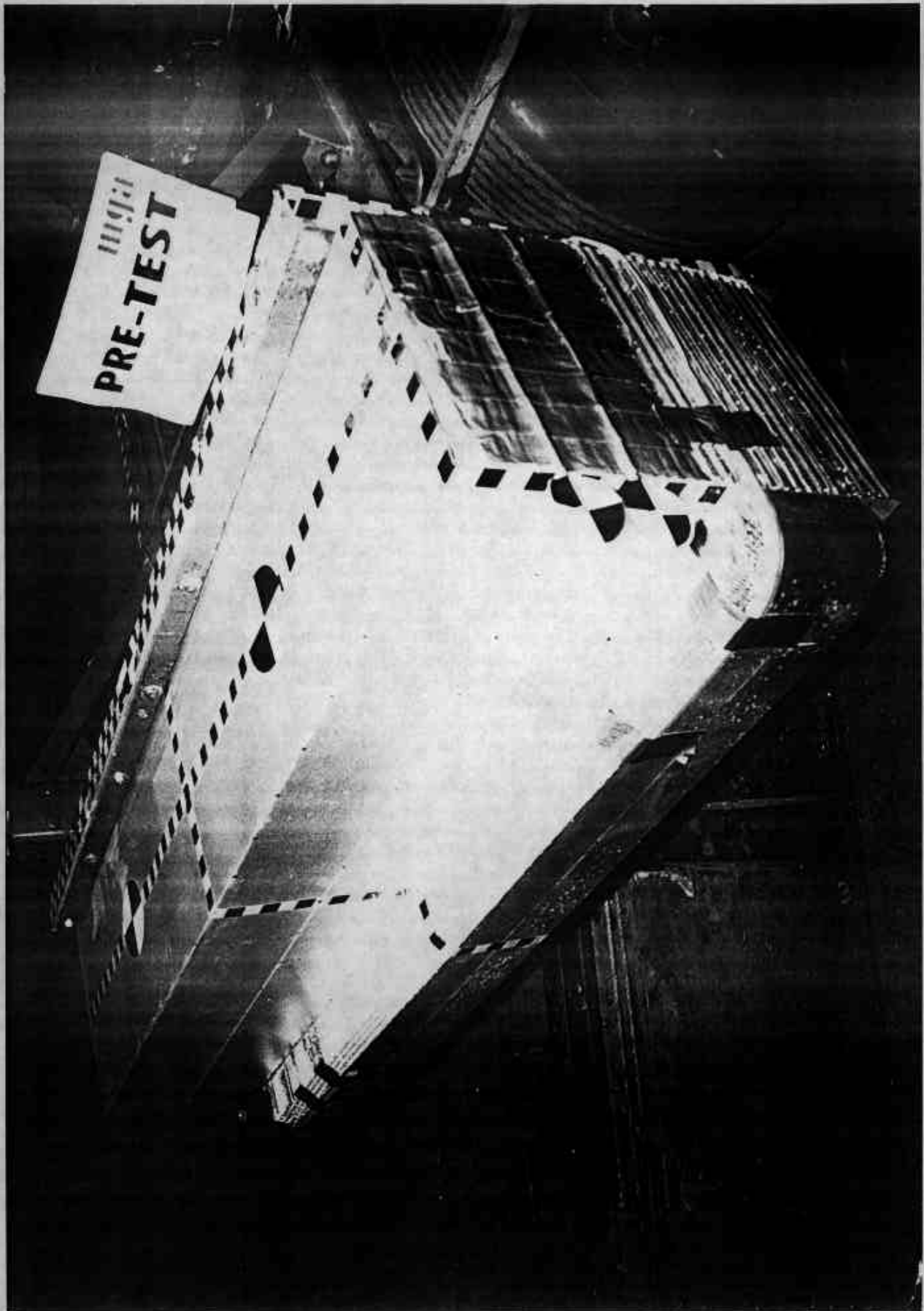


Photo No. A-19 - Pre-Test MDB Left Side View

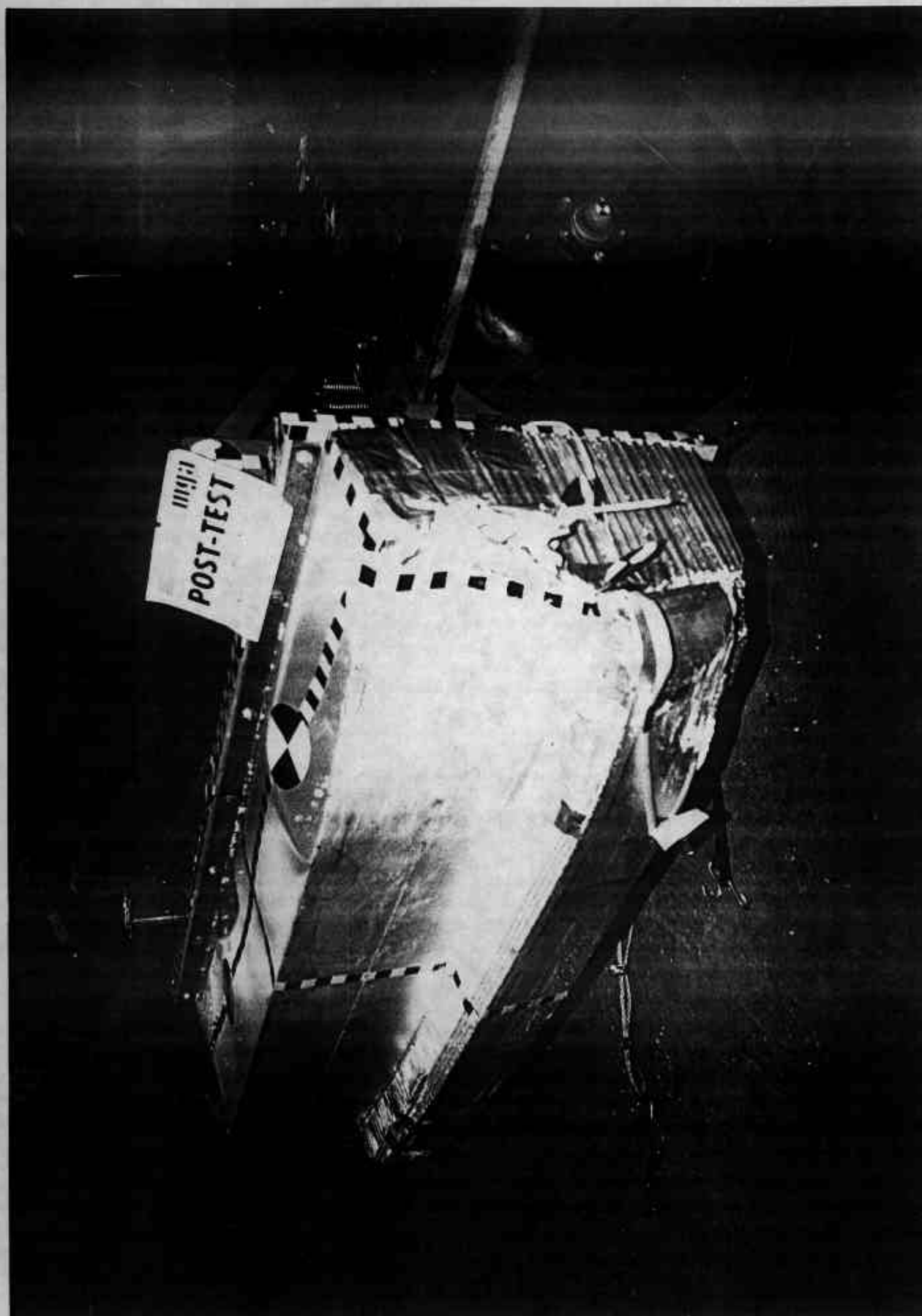


Photo No. A-20 - Post-Test MDB Left Side View

A-20

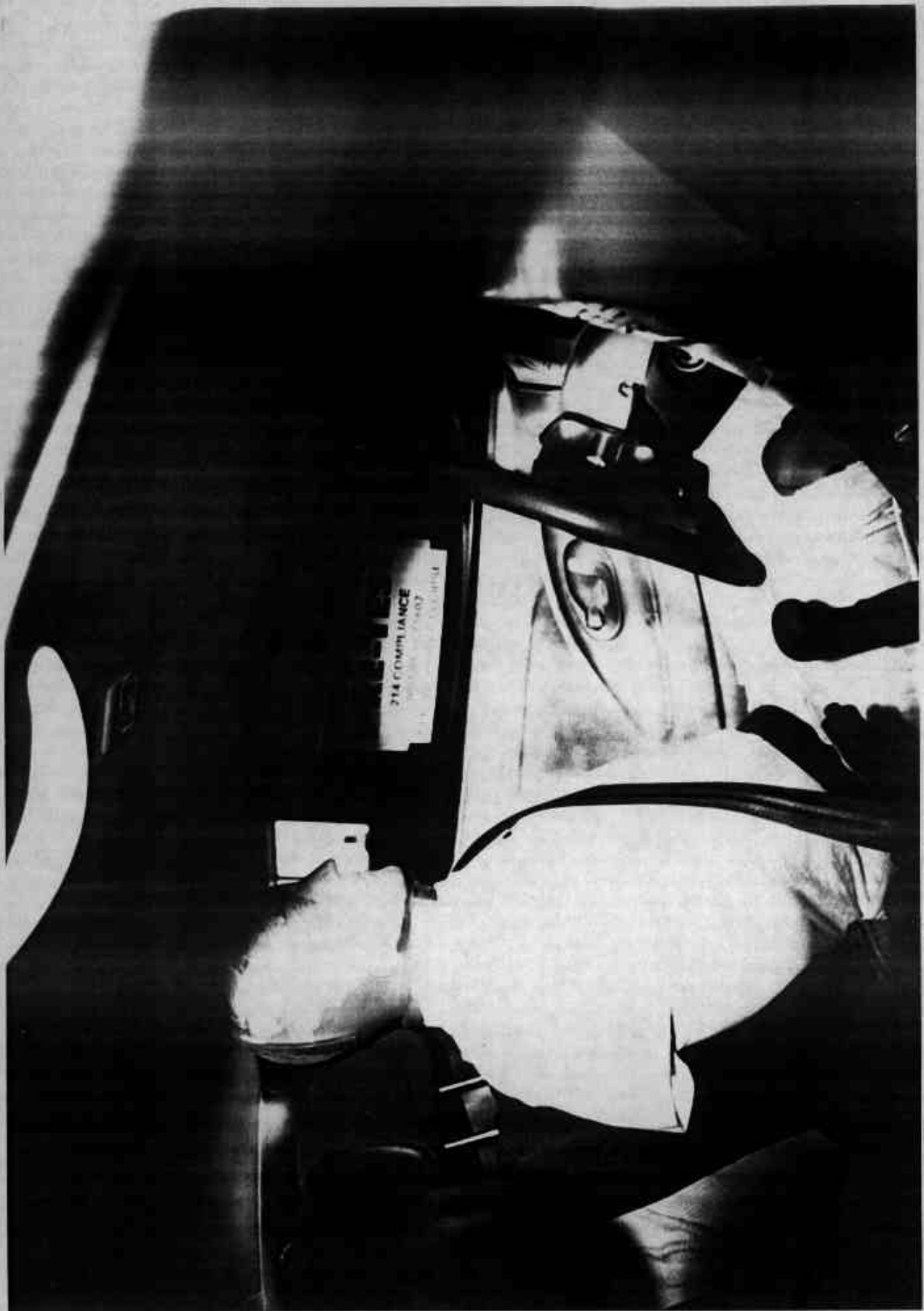


Photo No. A-21 - Pre-Test Driver Dummy Right Side View



Photo No. A-22 - Post-Test Driver Dummy Right Side View

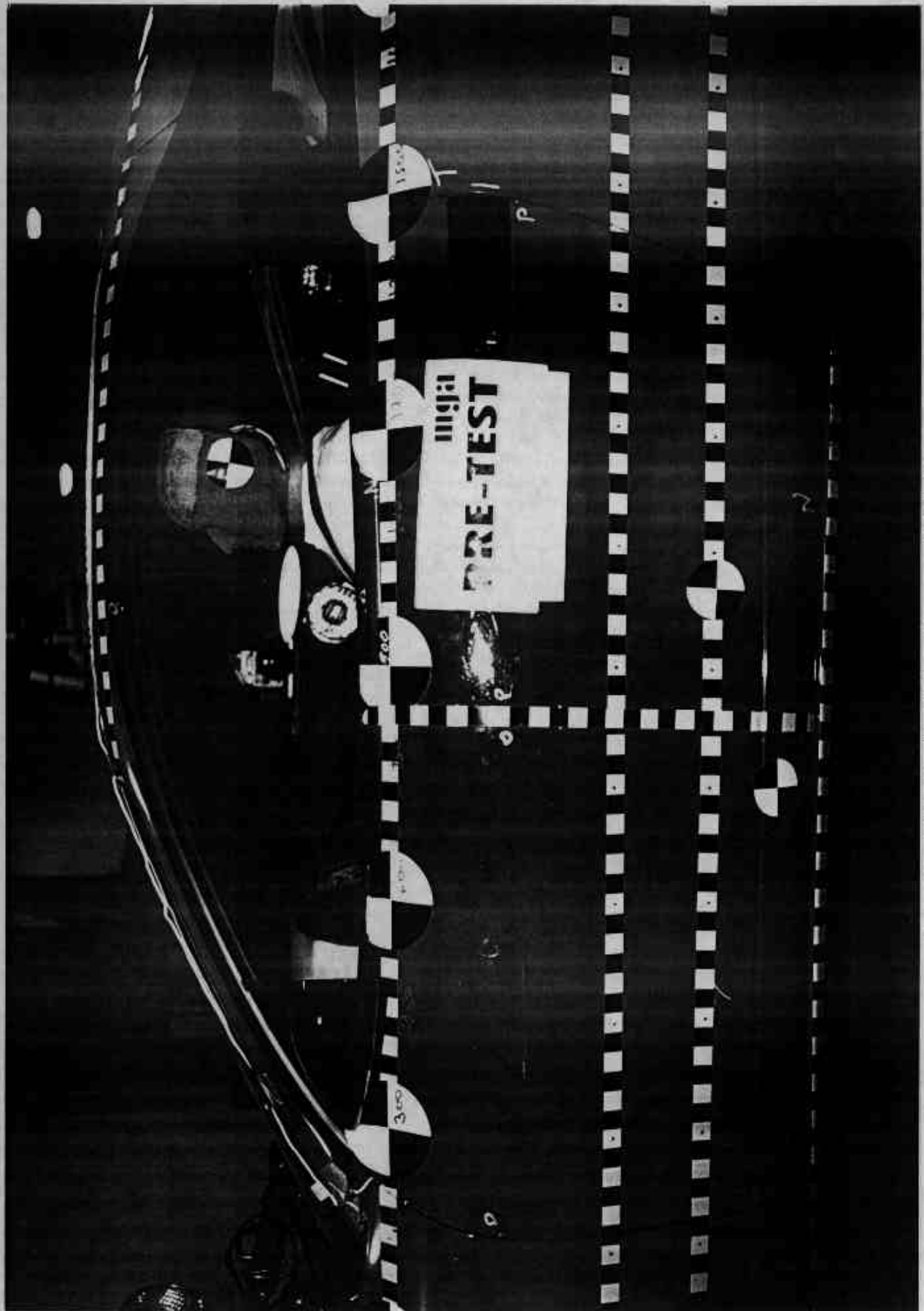


Photo No. A-23 - Pre-Test Driver Dummy Left Side View

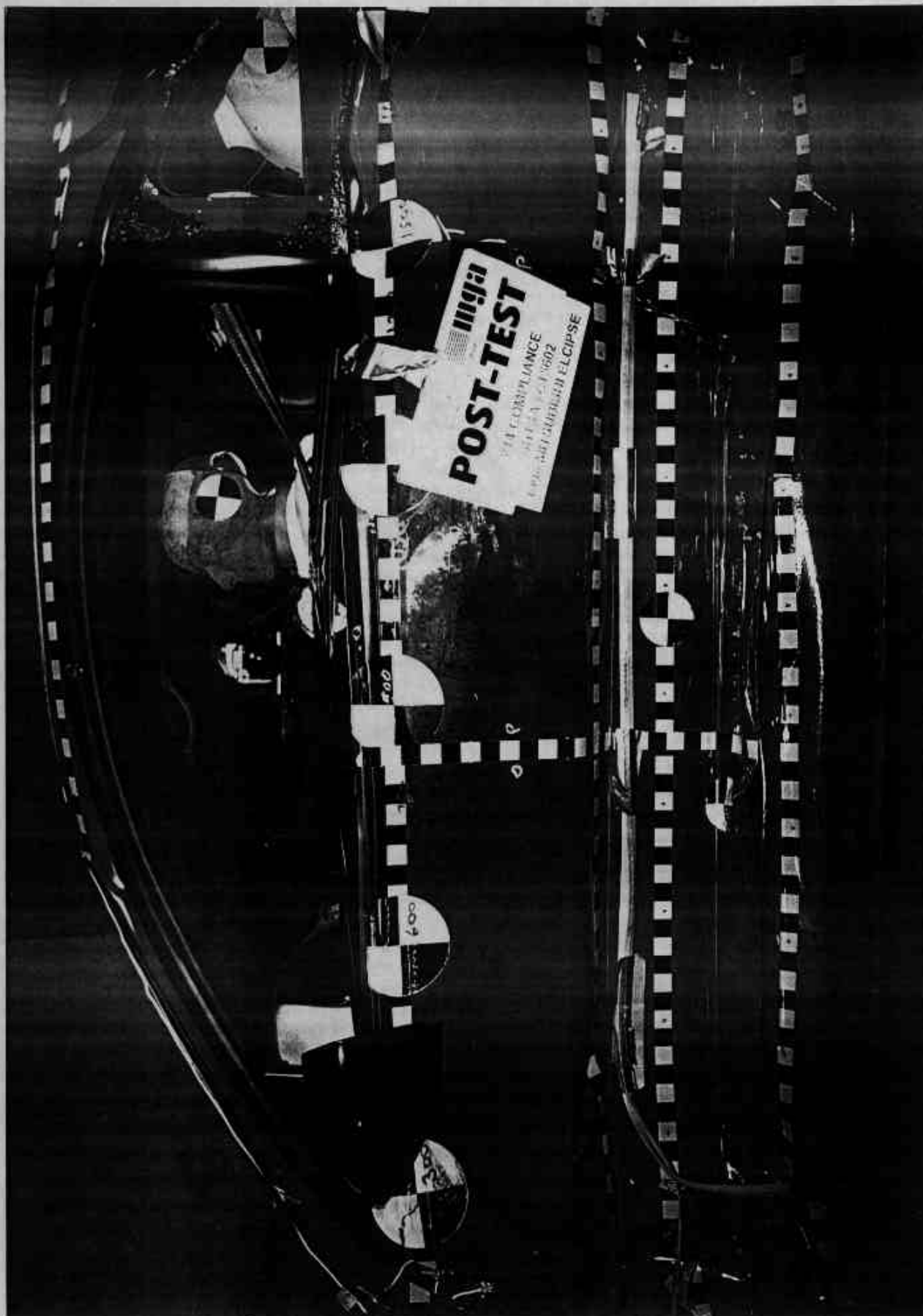


Photo No. A-24 - Post-Test Driver Dummy Left Side View



Photo No. A-25 - Pre-Test Driver Dummy Left Side View (Door Open)



Photo No. A-26 - Pre-Test Driver Dummy Shoulder and Door Top View



Photo No. A-27 - Post-Test Driver Dummy Shoulder and Door Top View



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



Photo No. A-29 - Post-Test Driver Dummy Head Contact

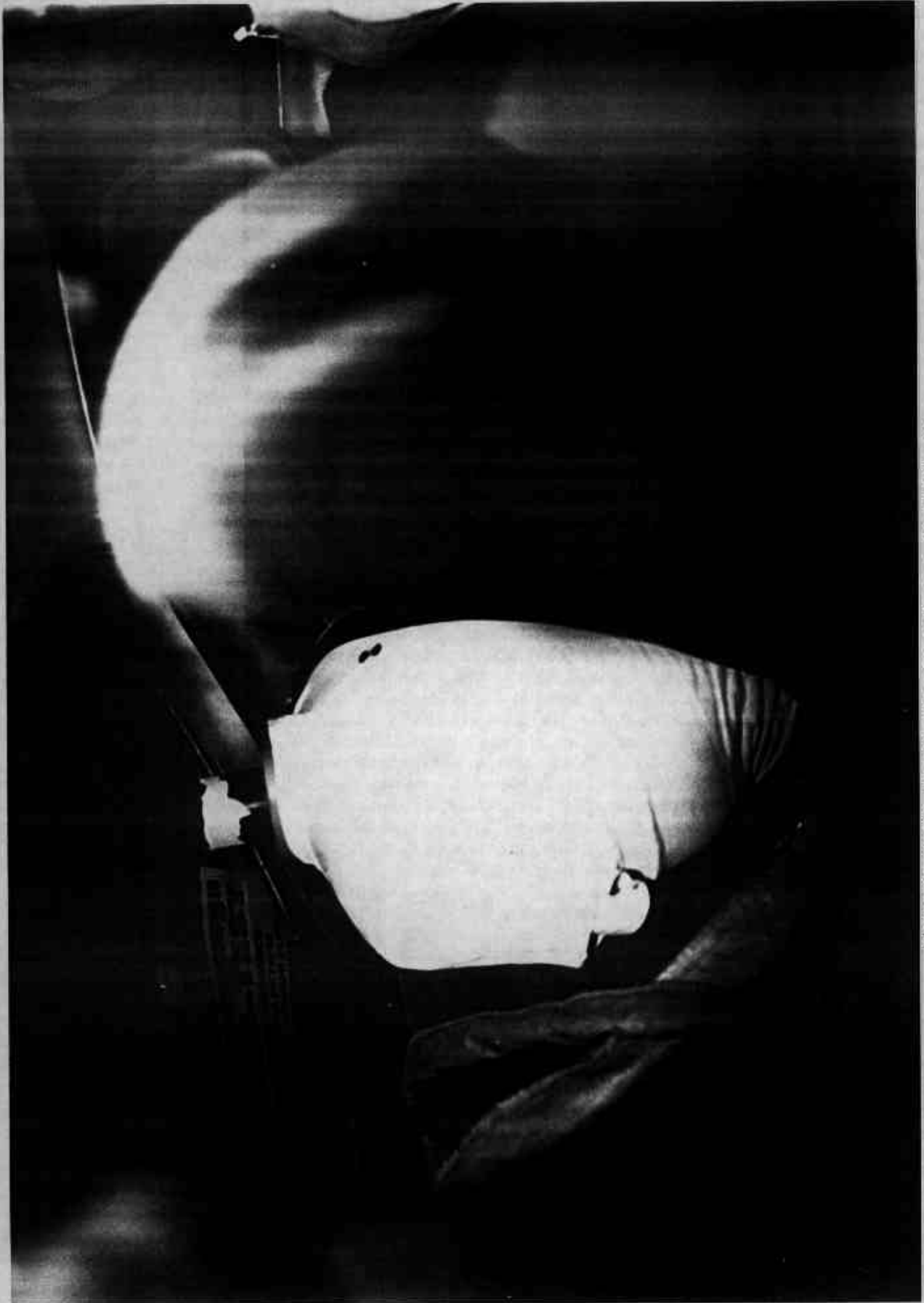


Photo No. A-30 - Pre-Test Passenger Dummy Right Side View

A-30



Photo No. A-31 - Post-Test Passenger Dummy Right Side View

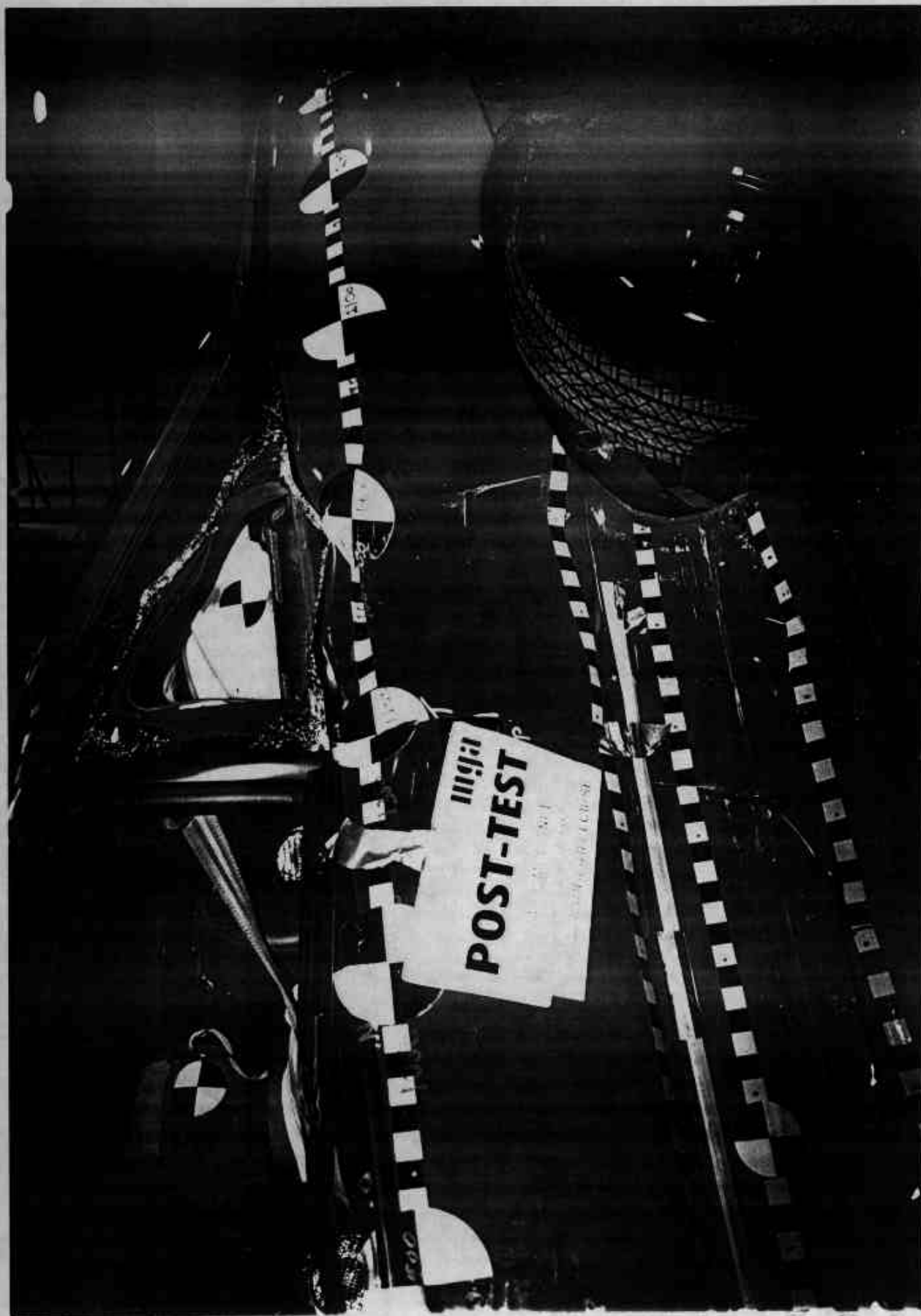


Photo No. A-32 - Post-Test Passenger Dummy Left Side View



Photo No. A-33 - Pre-Test Passenger Dummy Shoulder and Door Top View



Photo No. A-34 - Post-Test Passenger Dummy Shoulder and Door Top View



Photo No. A-35 - Post-Test Passenger Dummy Contact



Photo No. A-36 - Post-Test Passenger Dummy Head Contact

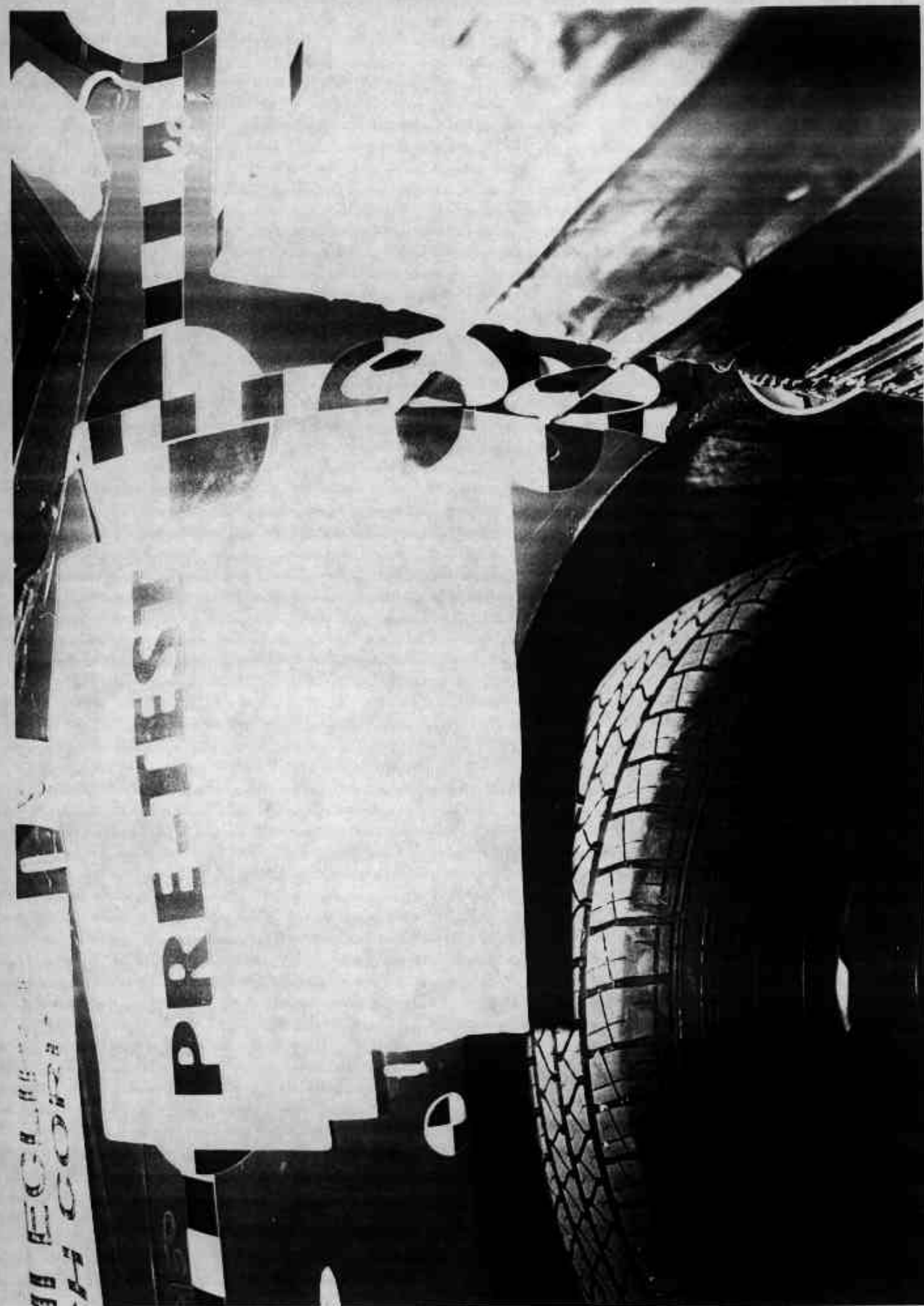


Photo No. A-37 - Pre-Test Left Front Impact Point on Vehicle

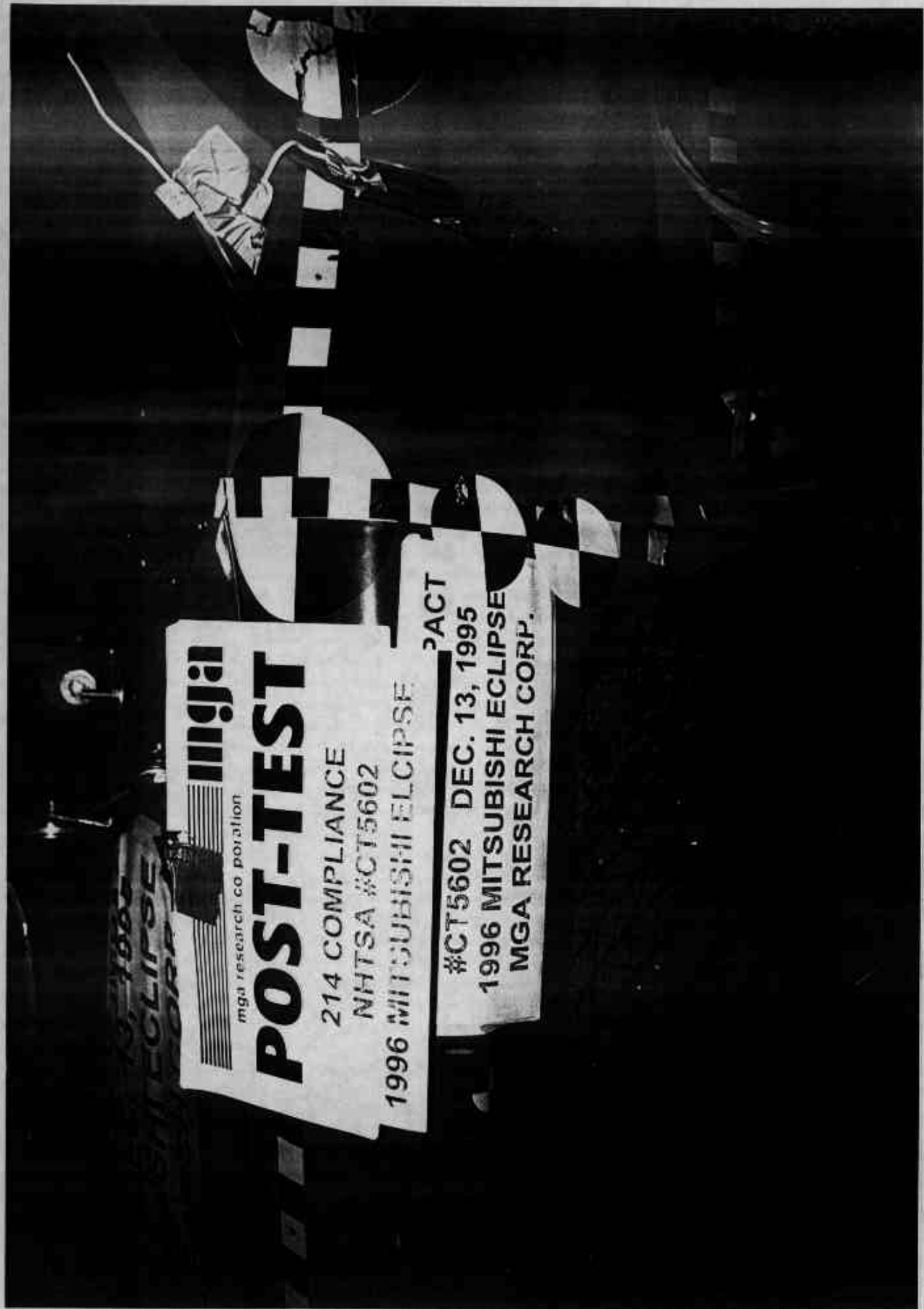


Photo No. A-38 - Post-Test Left Front Impact Point on Vehicle



Photo No. A-39 - Impact

A-39

14-11

MADE IN U.S.A.
MFD BY MITSUBISHI MOTOR MFG.
GVWR 3725 LBS GAWR 2227 LBS
1500 KG 1010 KG

THIS VEHICLE CONFORMS TO ALL
FEDERAL MOTOR VEHICLE SAFETY
THEFT PREVENTION STANDARDS
THE DATE OF MANUFACTURE SHOWS

FDH 112518
VEHICLE TYPE: PASSENGER CAR MUB00230

EX-308189

TIRE INFLATION PRESSURE (COLD)

STANDARD INFLATION
PRESSURE FOR ALL LOAD

1ST SEAT 2 PASS.

2ND SEAT 2 PASS.

TOTAL 4 PASS.

LUGGAGE 28kg (62 LBS)

TOTAL WEIGHT 300kg (661 LBS)

TIRE SIZE P195/70R14 90H

FRONT REAR

220kPa 200kPa

(32psi) (29psi)

TIRE SIZE T125/70D15

TEMPORARY USE ONLY

420kPa (60psi)

PART NO. MR102371

Photo No. A-41 - Tire Placard

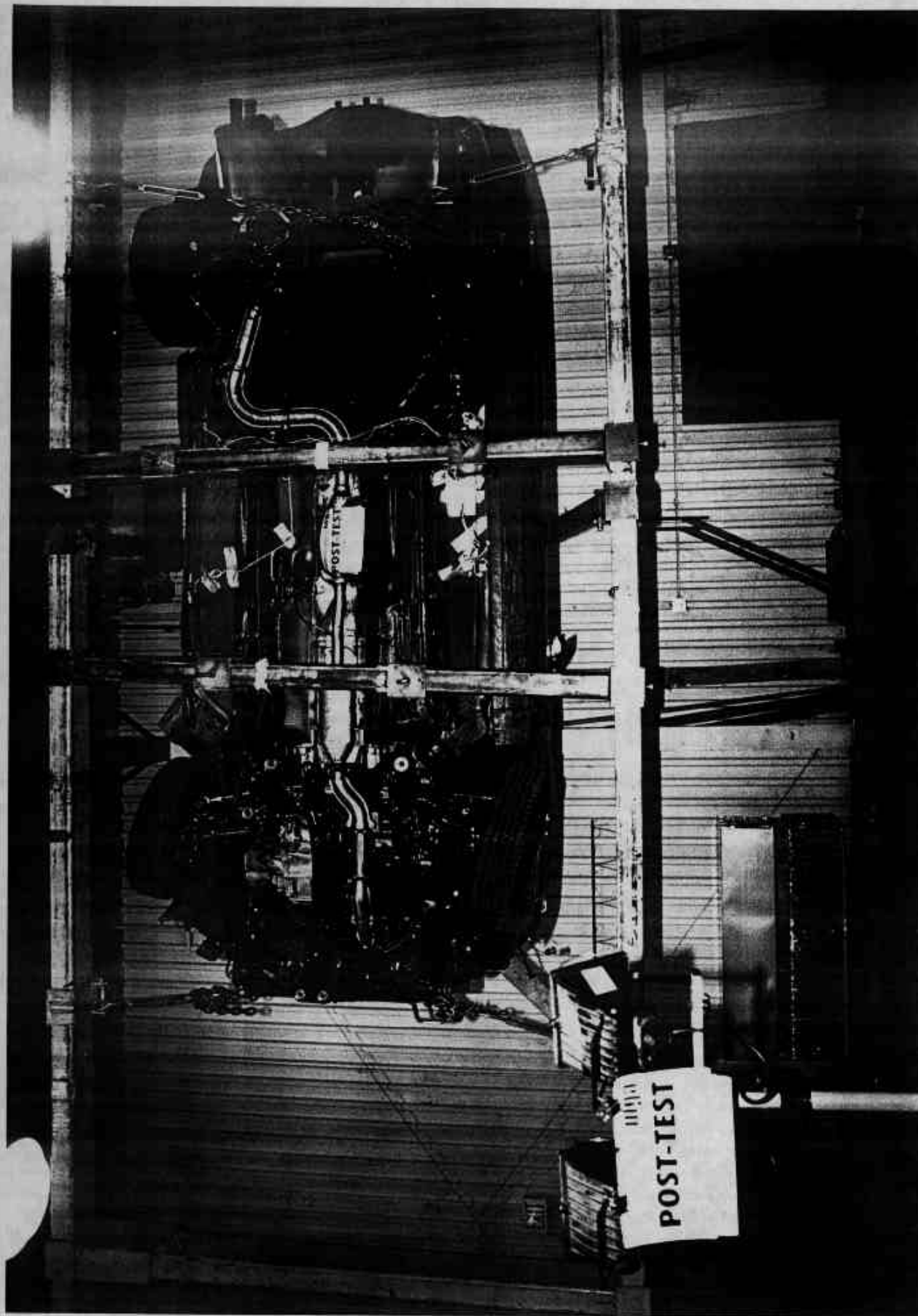


Photo No. A-42 - Rollover 90°

A-42

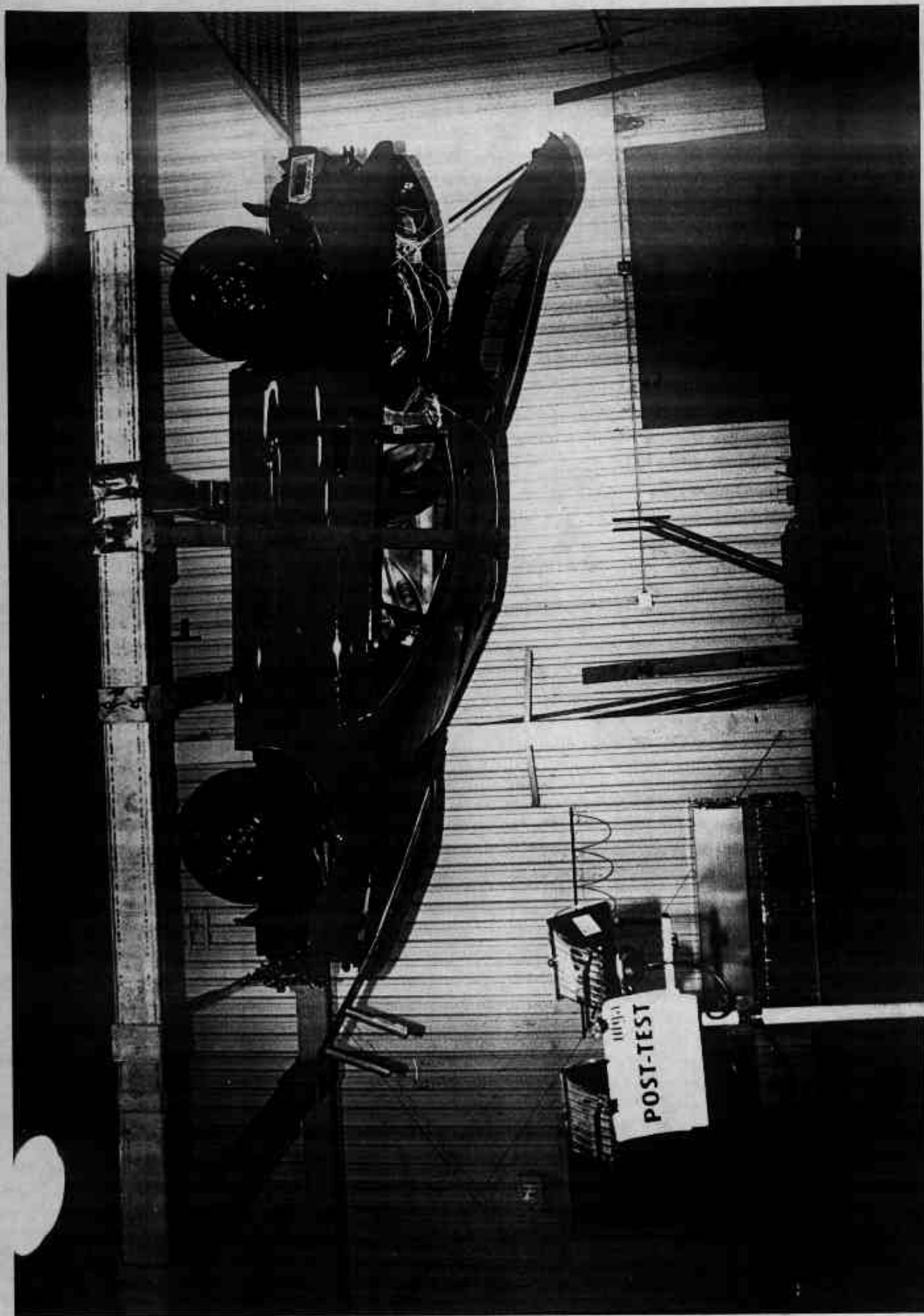


Photo No. A-43 - Rollover 180°

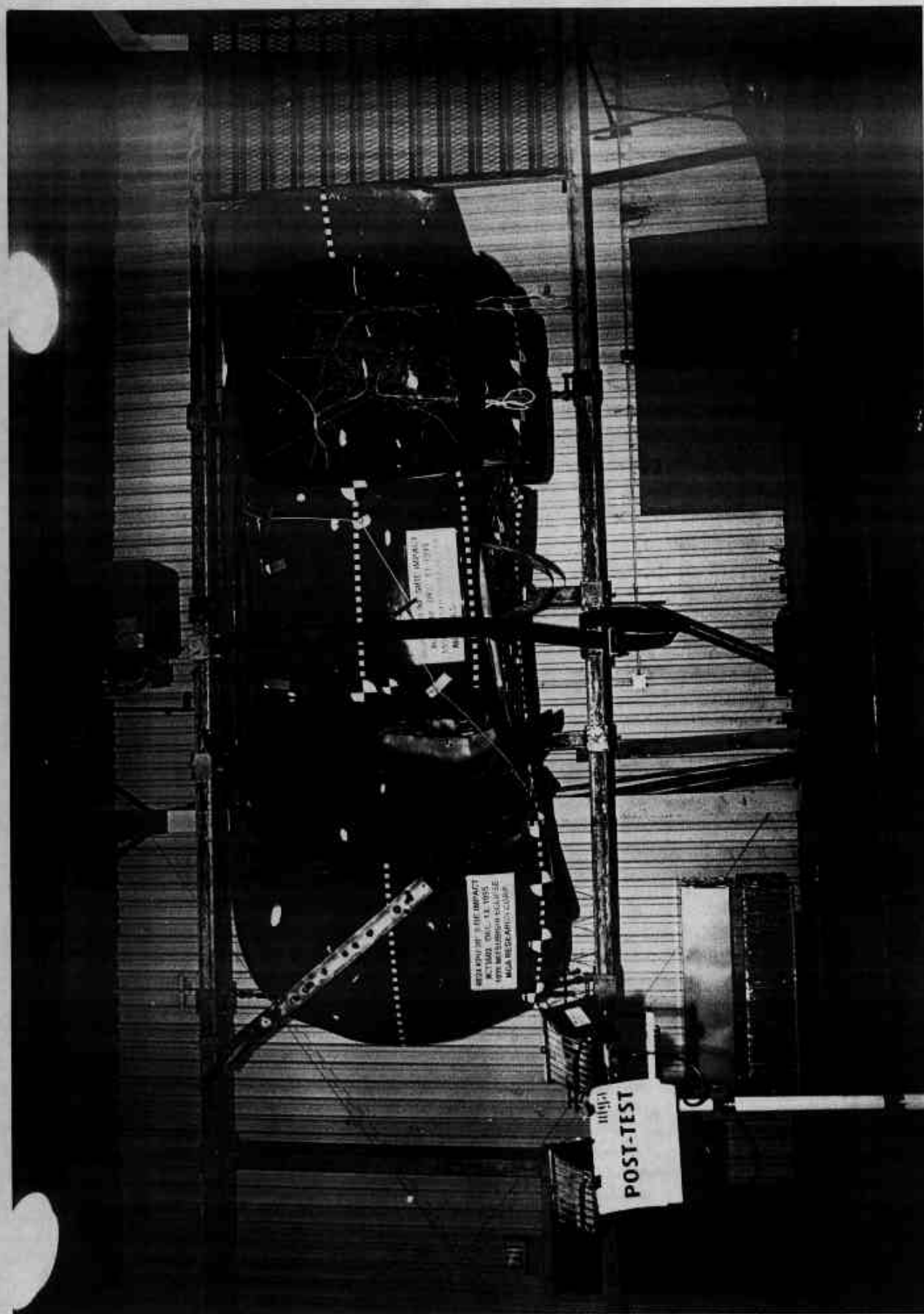


Photo No. A-44 - Rollover 270°

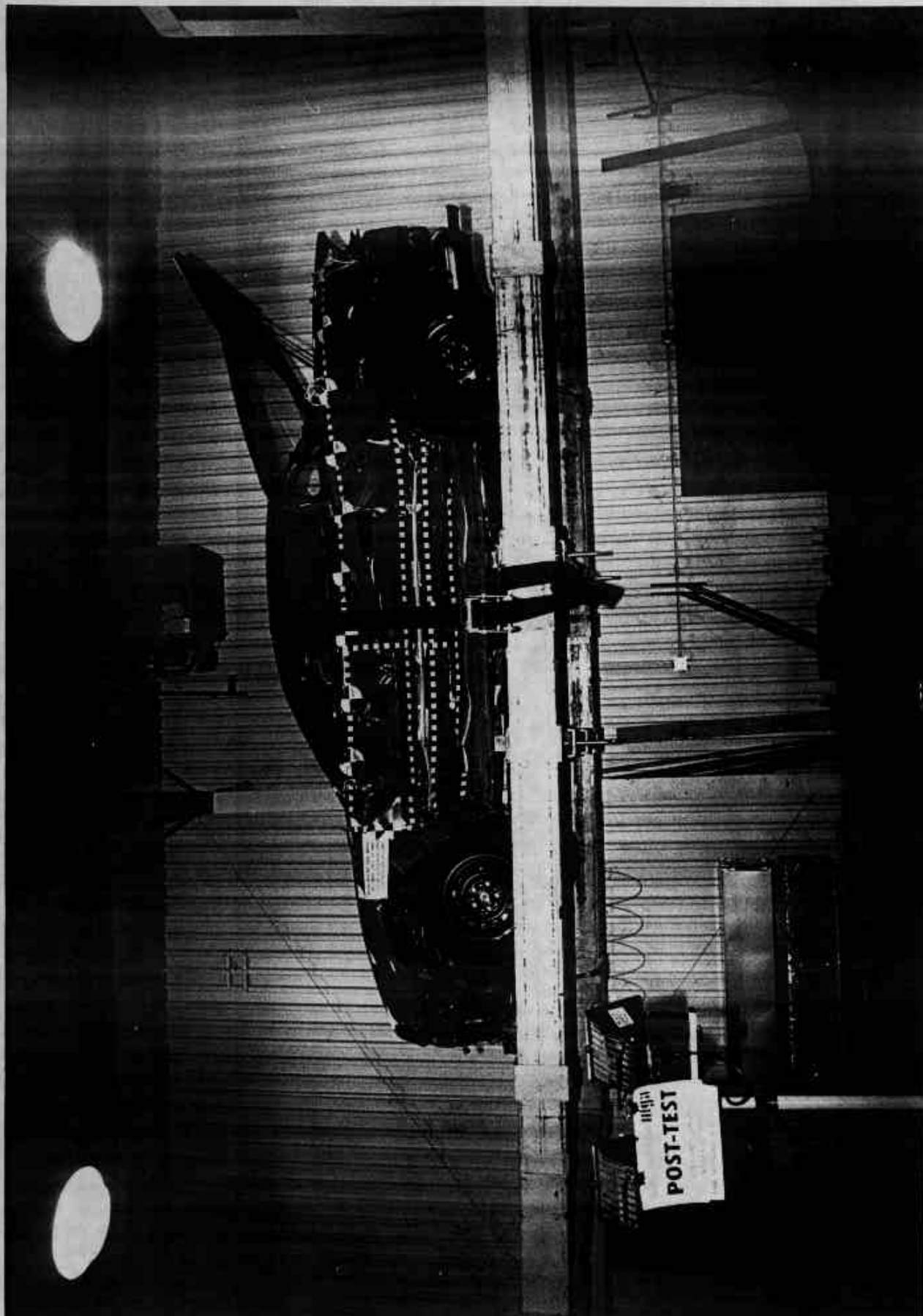


Photo No. A-45 - Rollover 360°

A-45

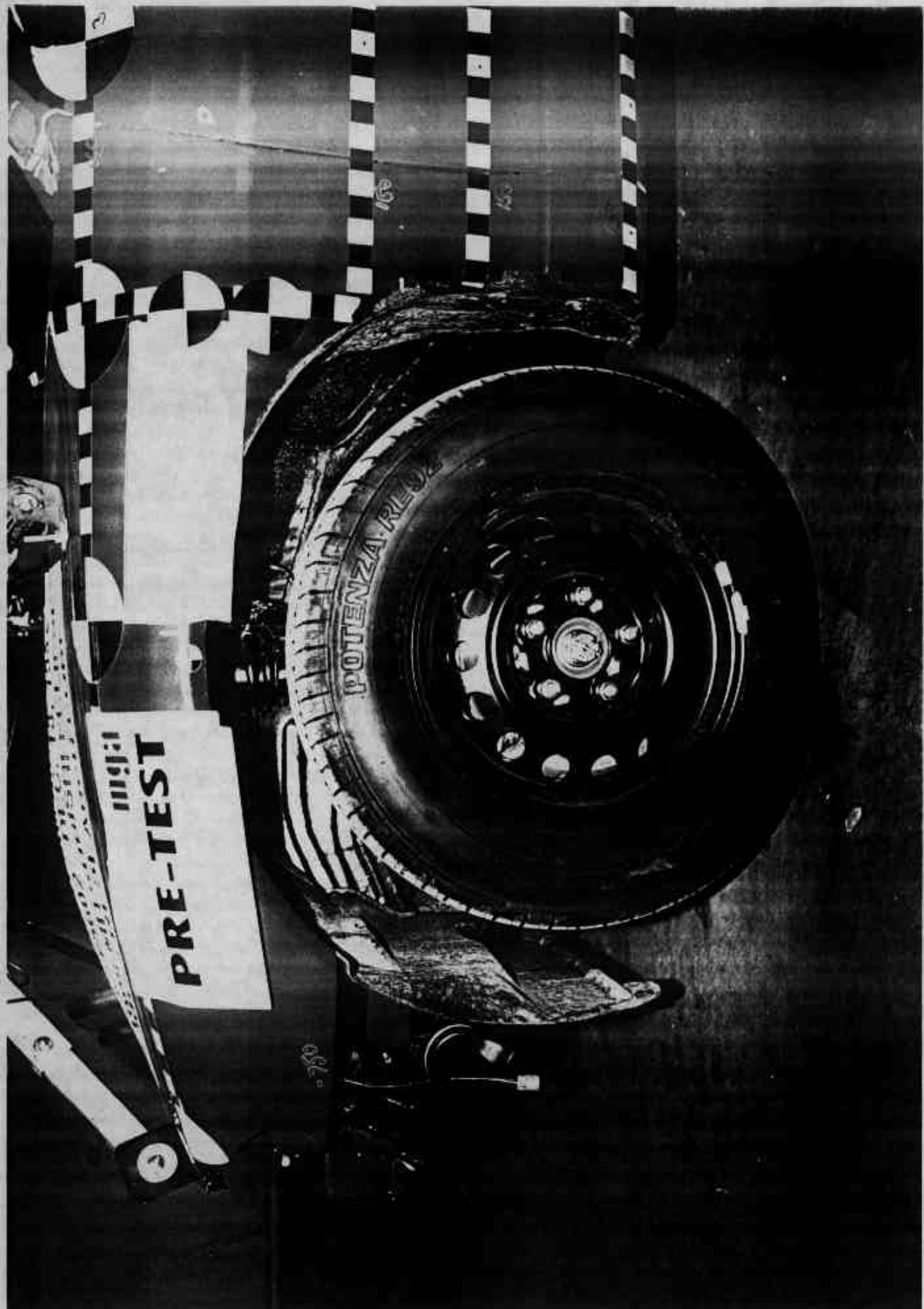


Photo No. A-46 - Left Front Attitude Point



Photo No. A-47 - Right Front Attitude Point

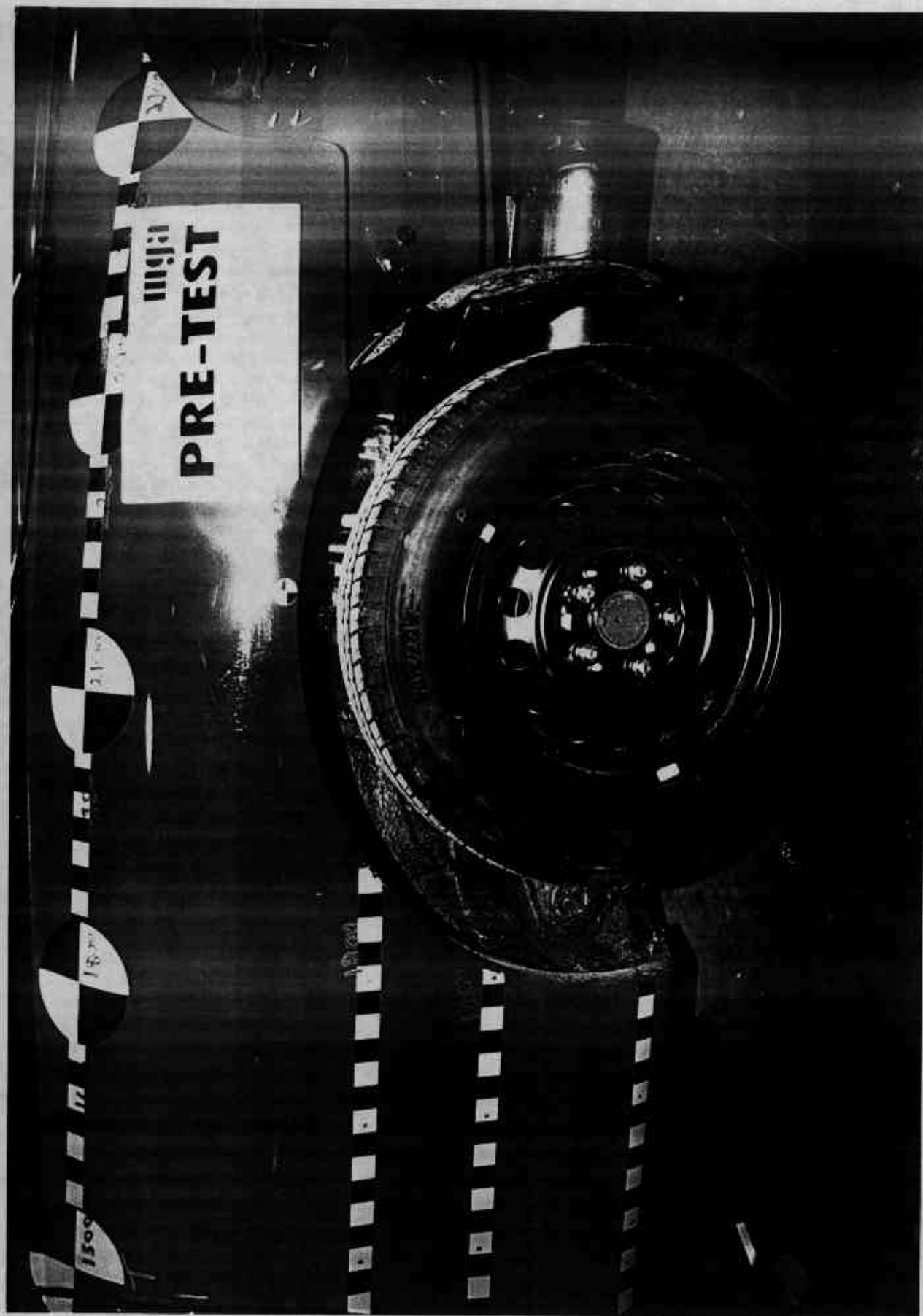


Photo No. A-48 - Left Rear Attitude Point

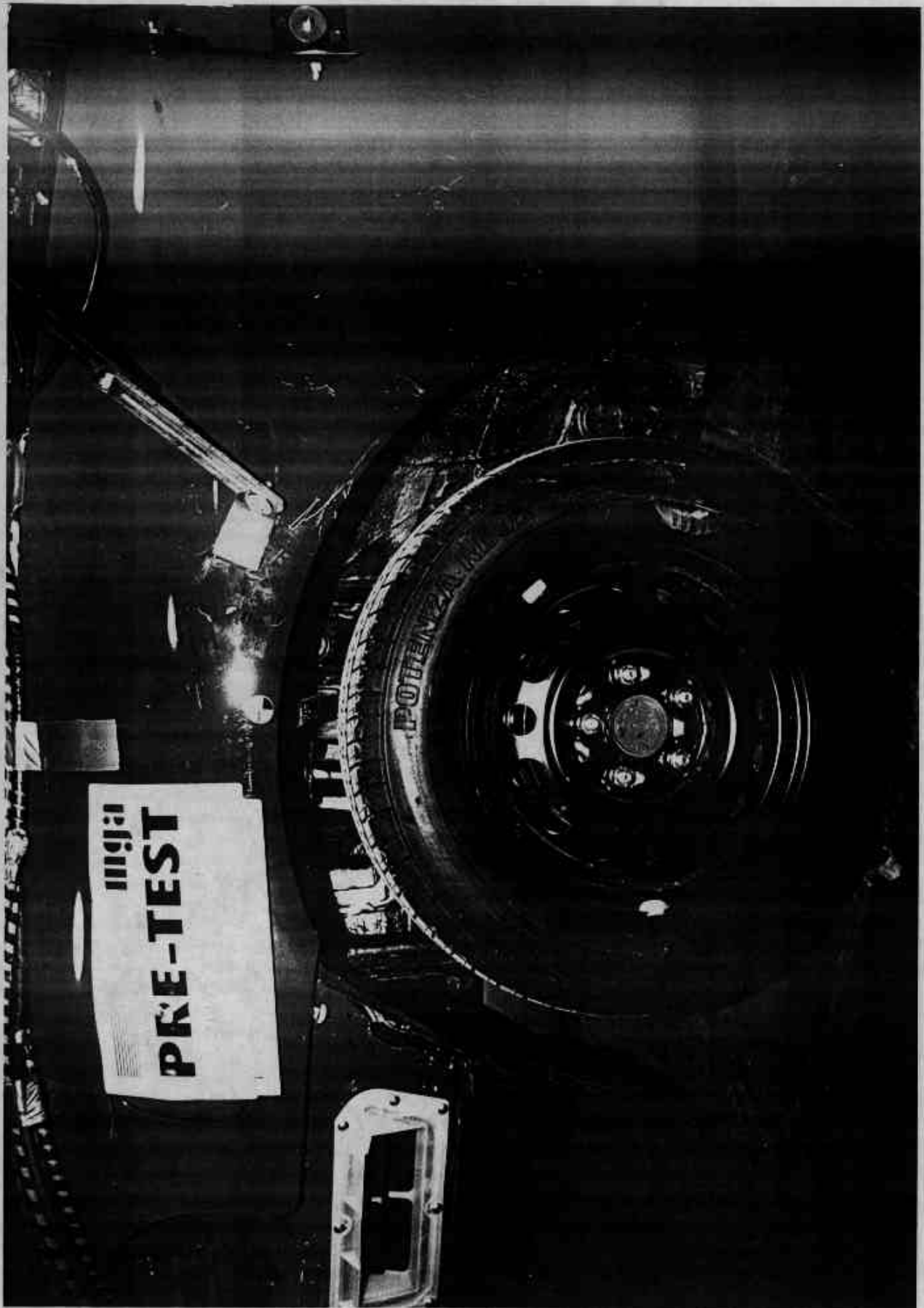


Photo No. A-49 - Right Rear Attitude Point

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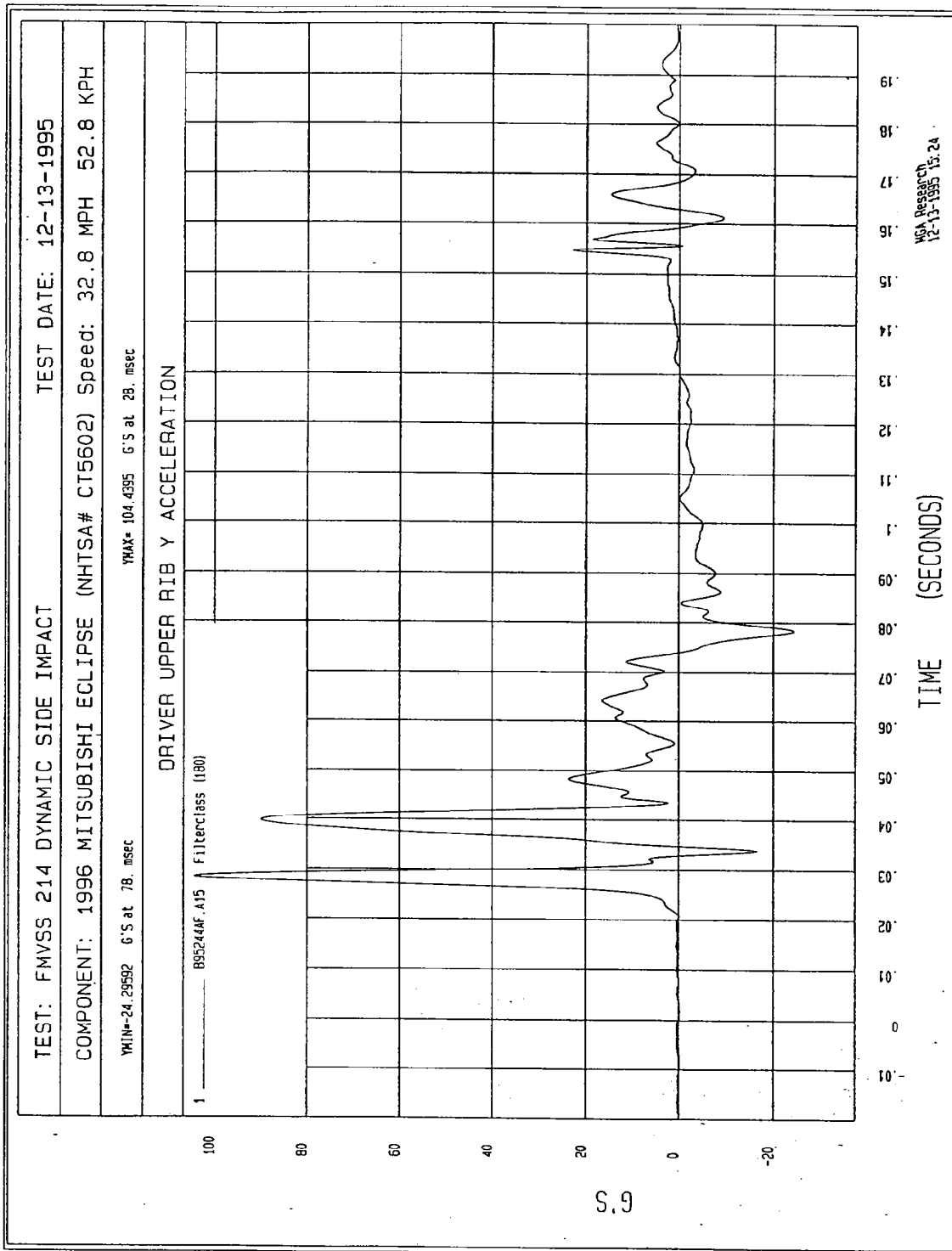
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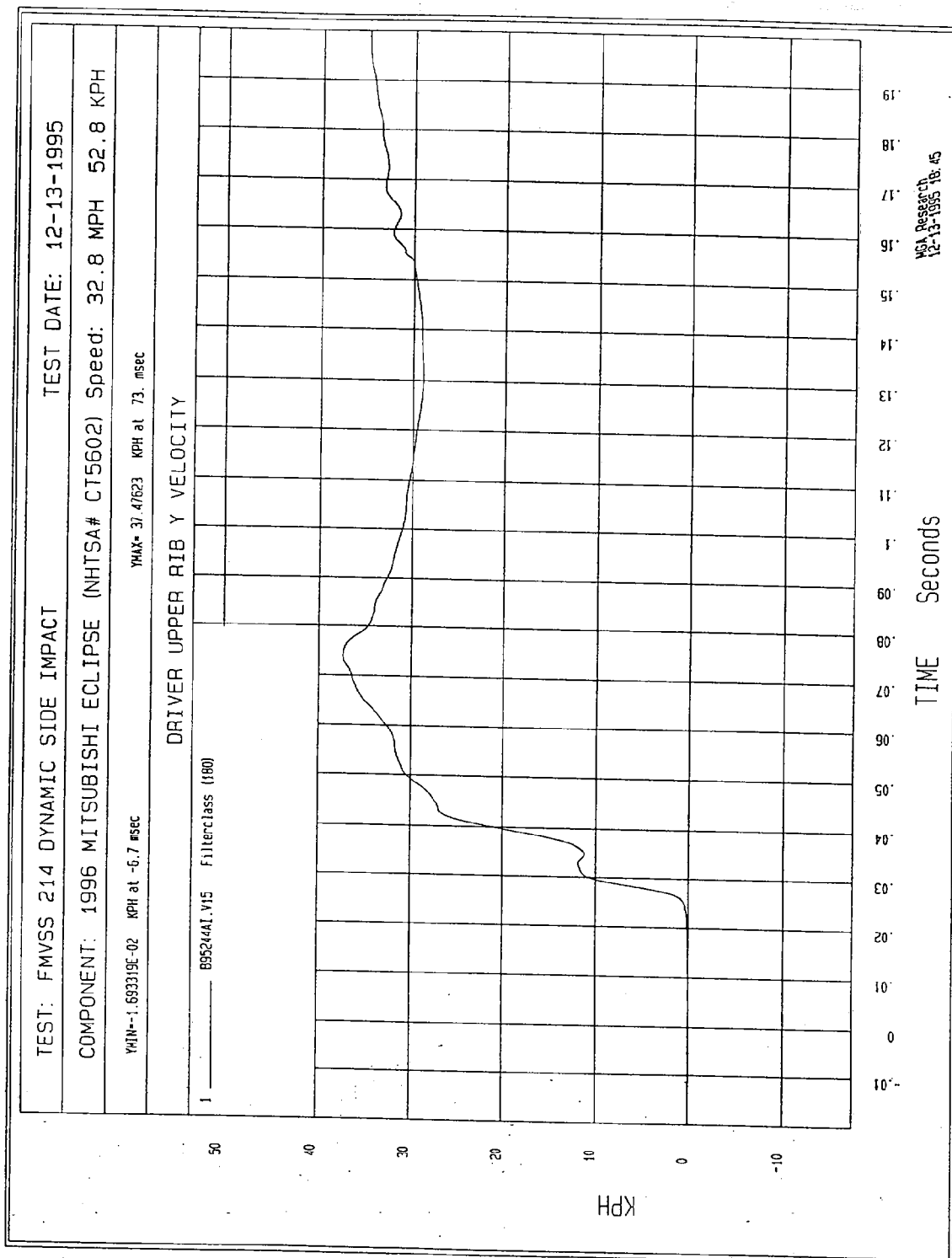
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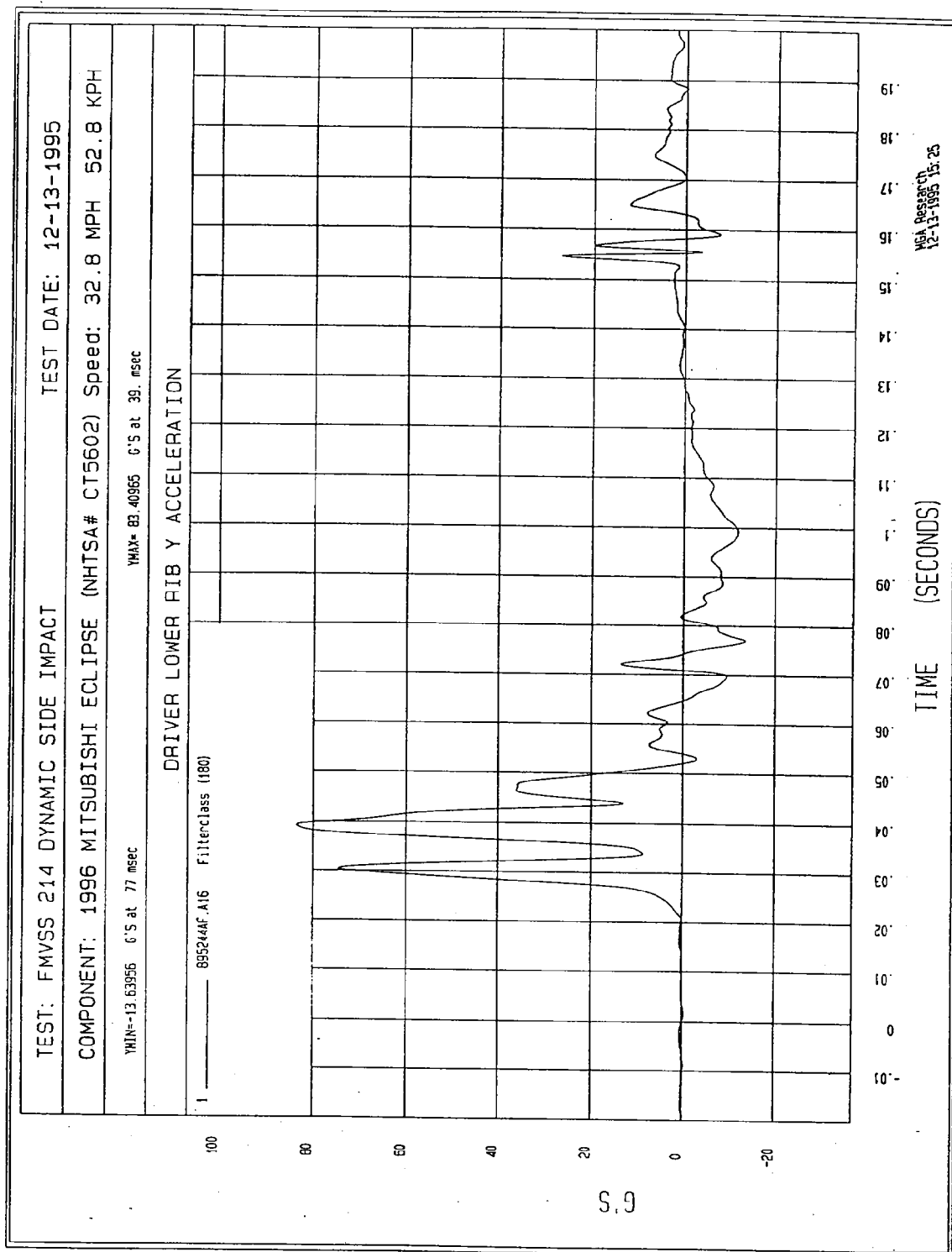
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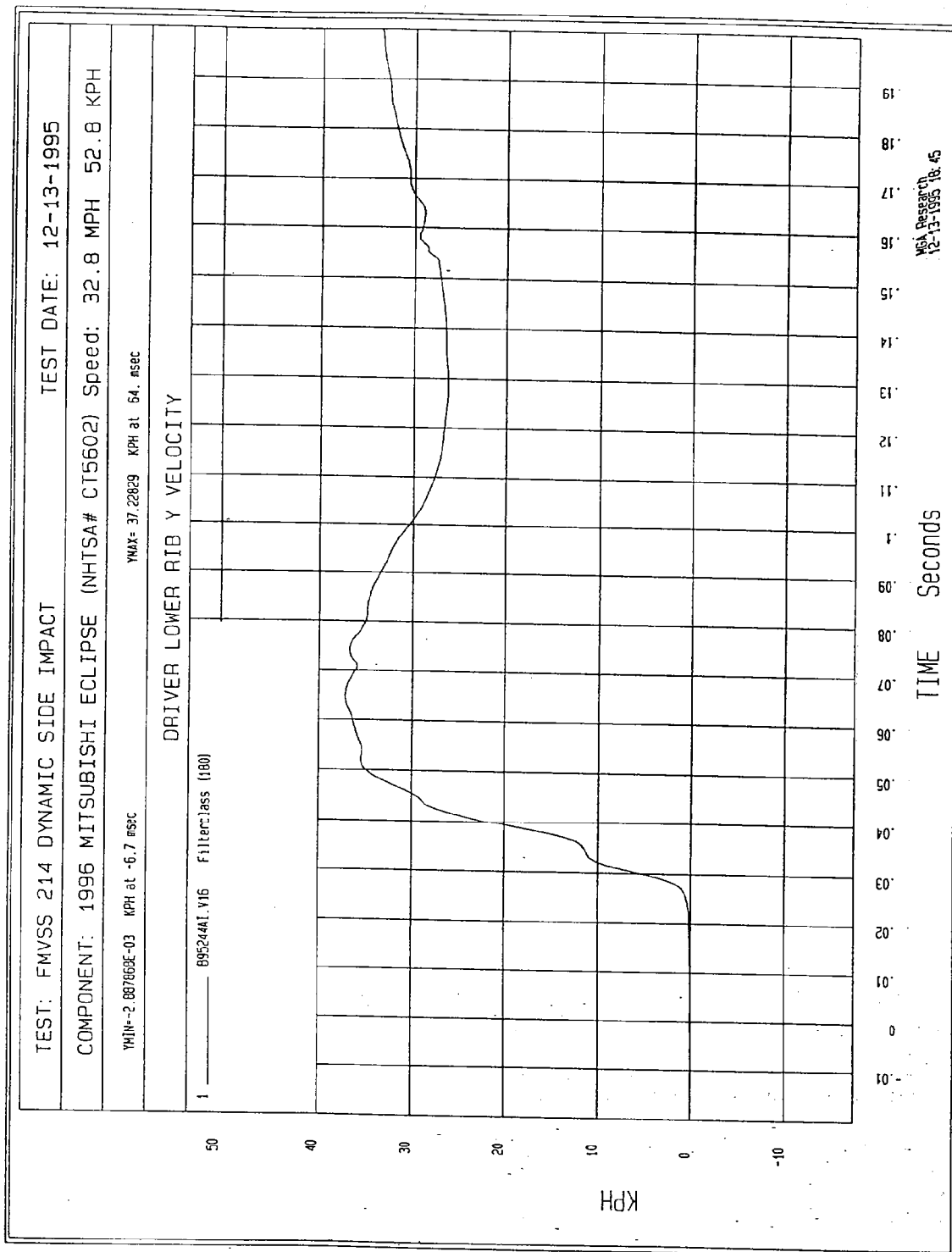
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TEST: FMVSS 214 DYNAMIC SIDE IMPACT

TEST DATE: 12-13-1995

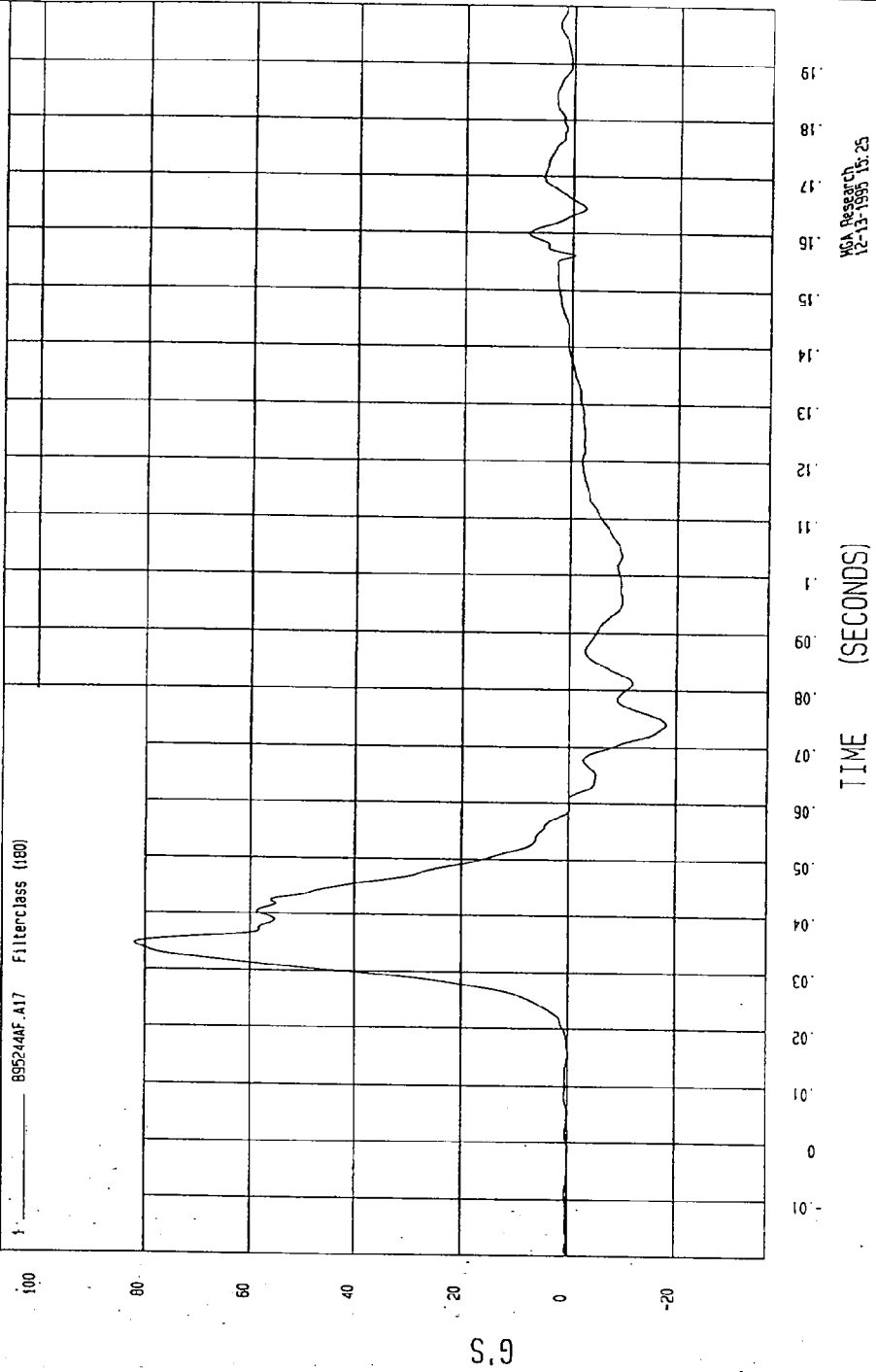
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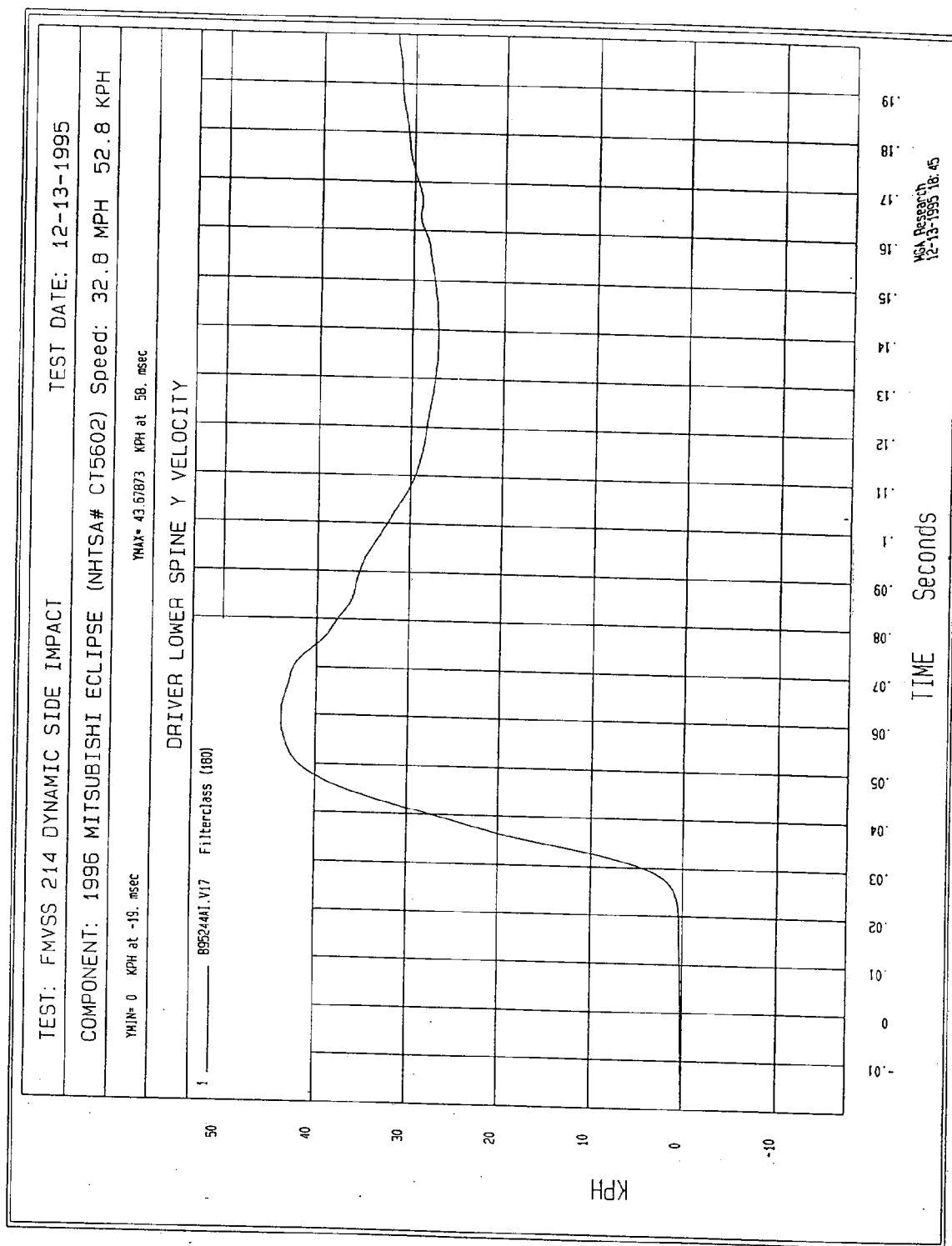
YMAX= 82.04797 G'S at 34. msec

DRIVER LOWER SPINE Y ACCELERATION

1. 895244F.A17 FilterClass (180)



MSA Research
12-13-1995 13:25



TEST DATE: 12-13-1995

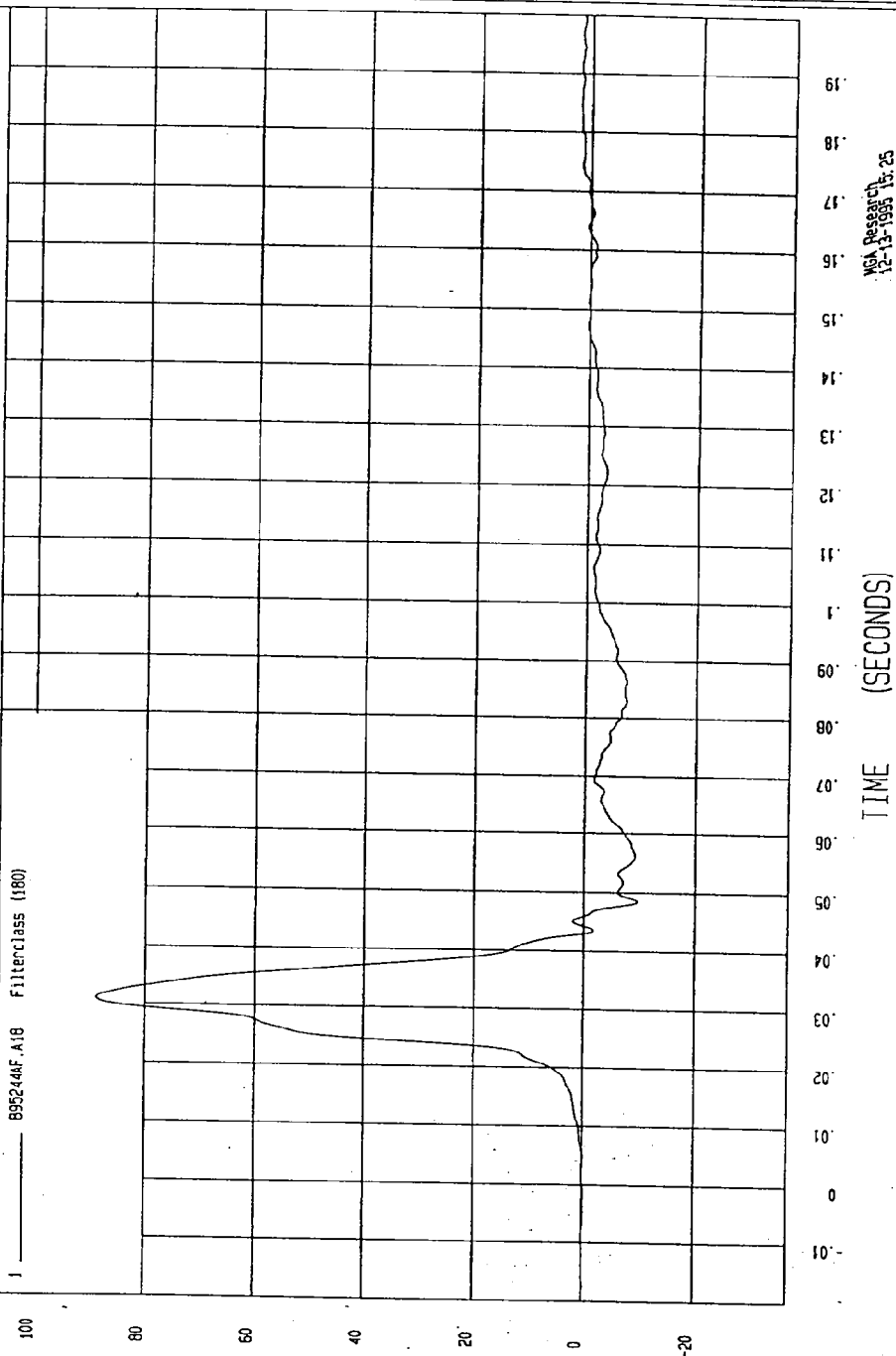
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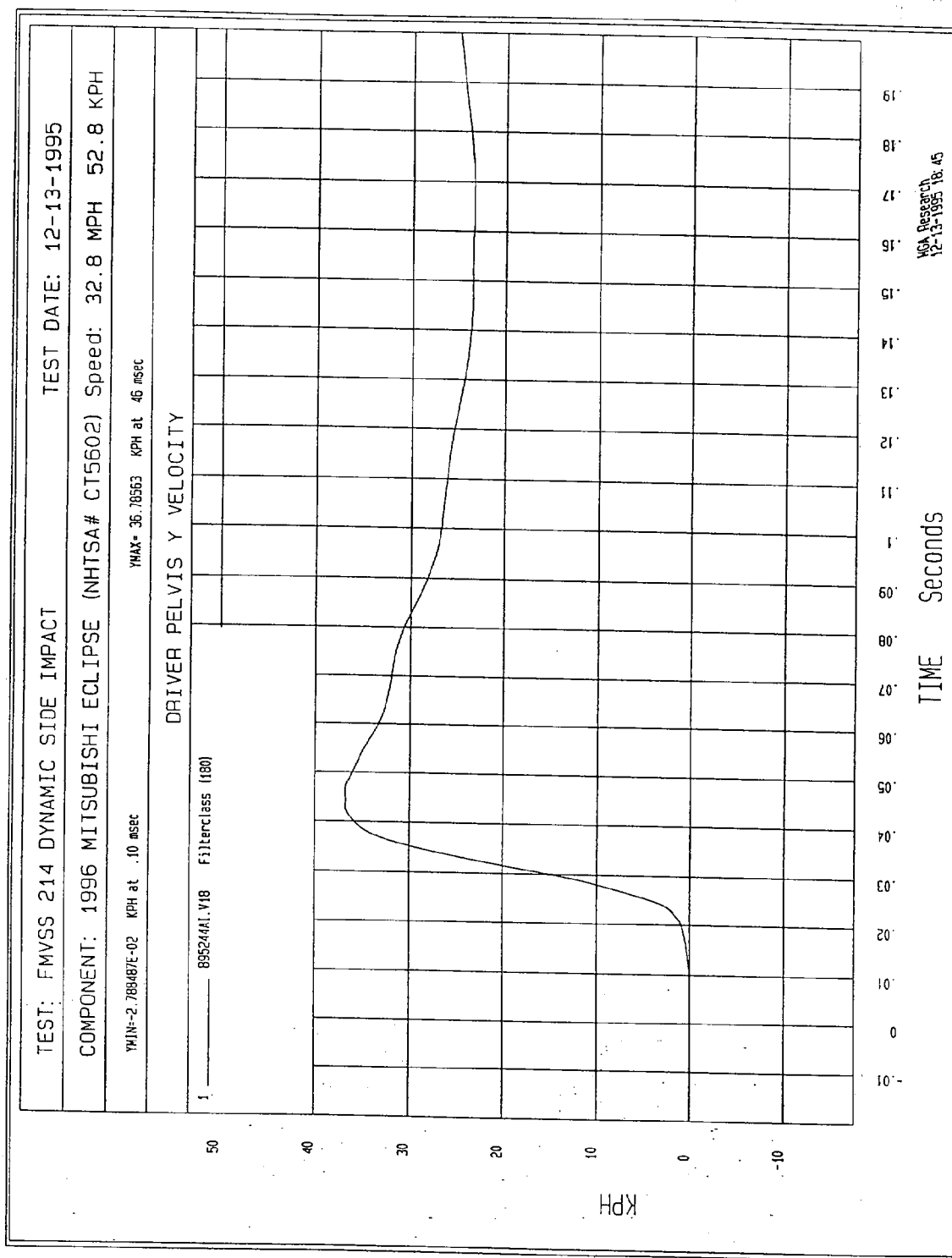
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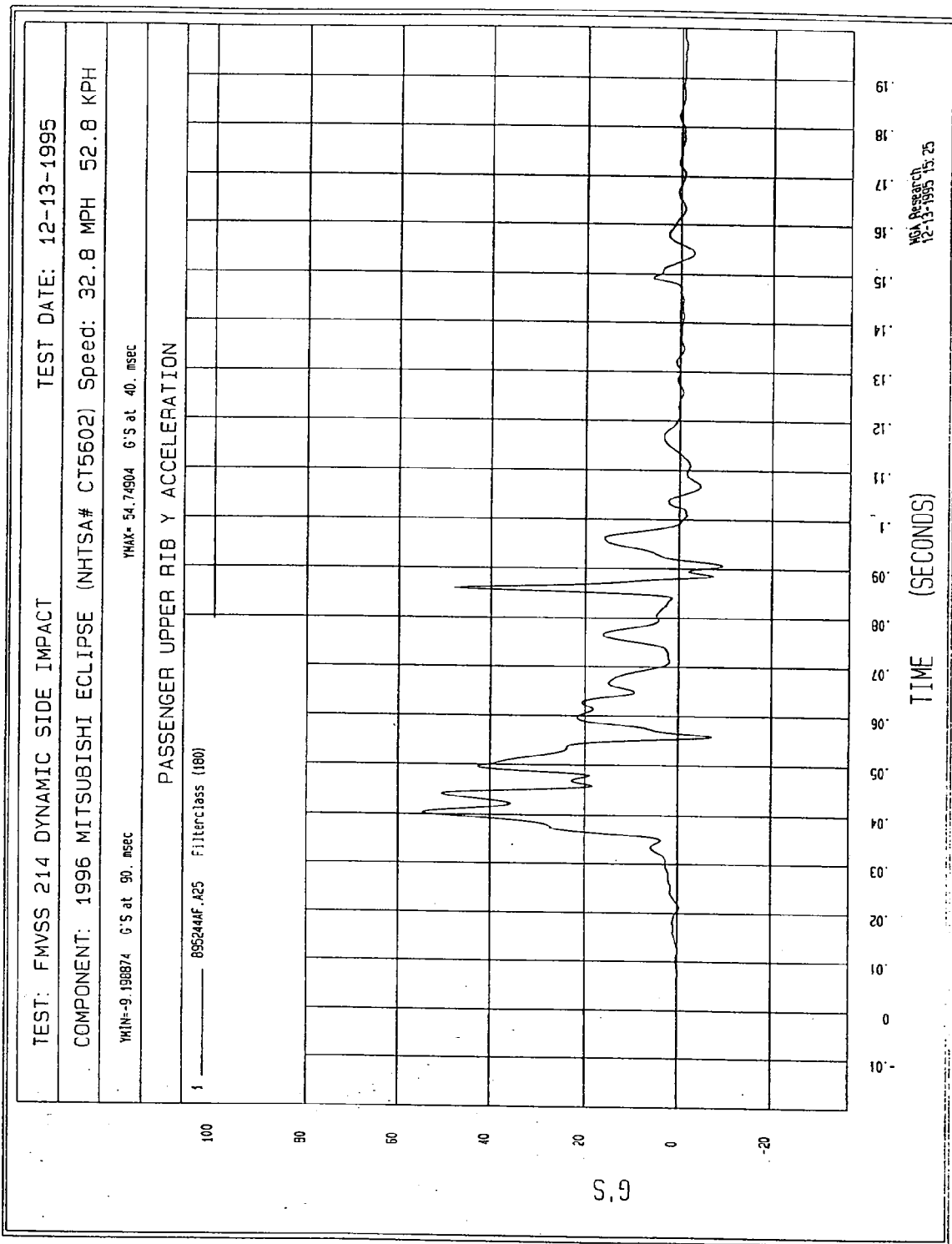
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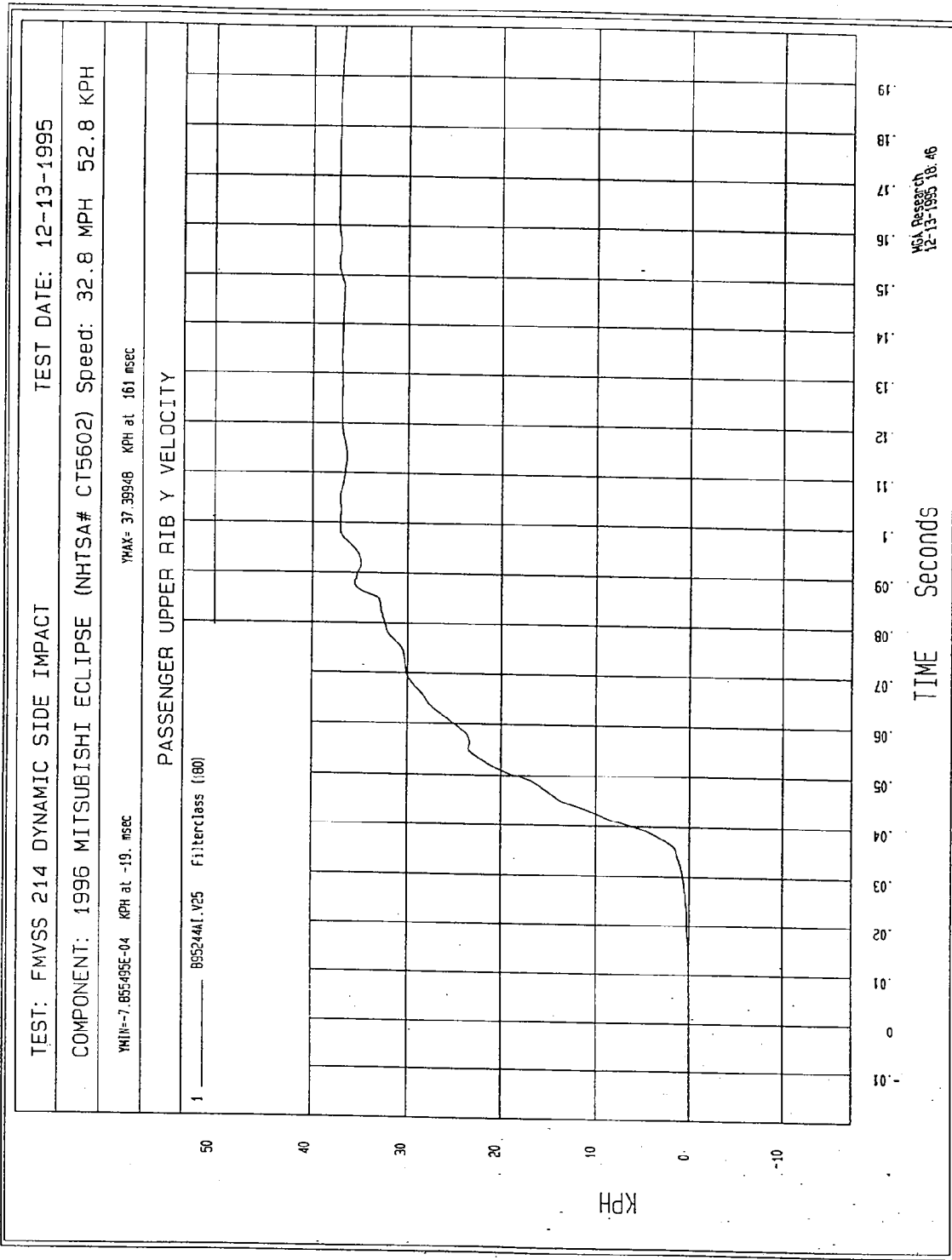
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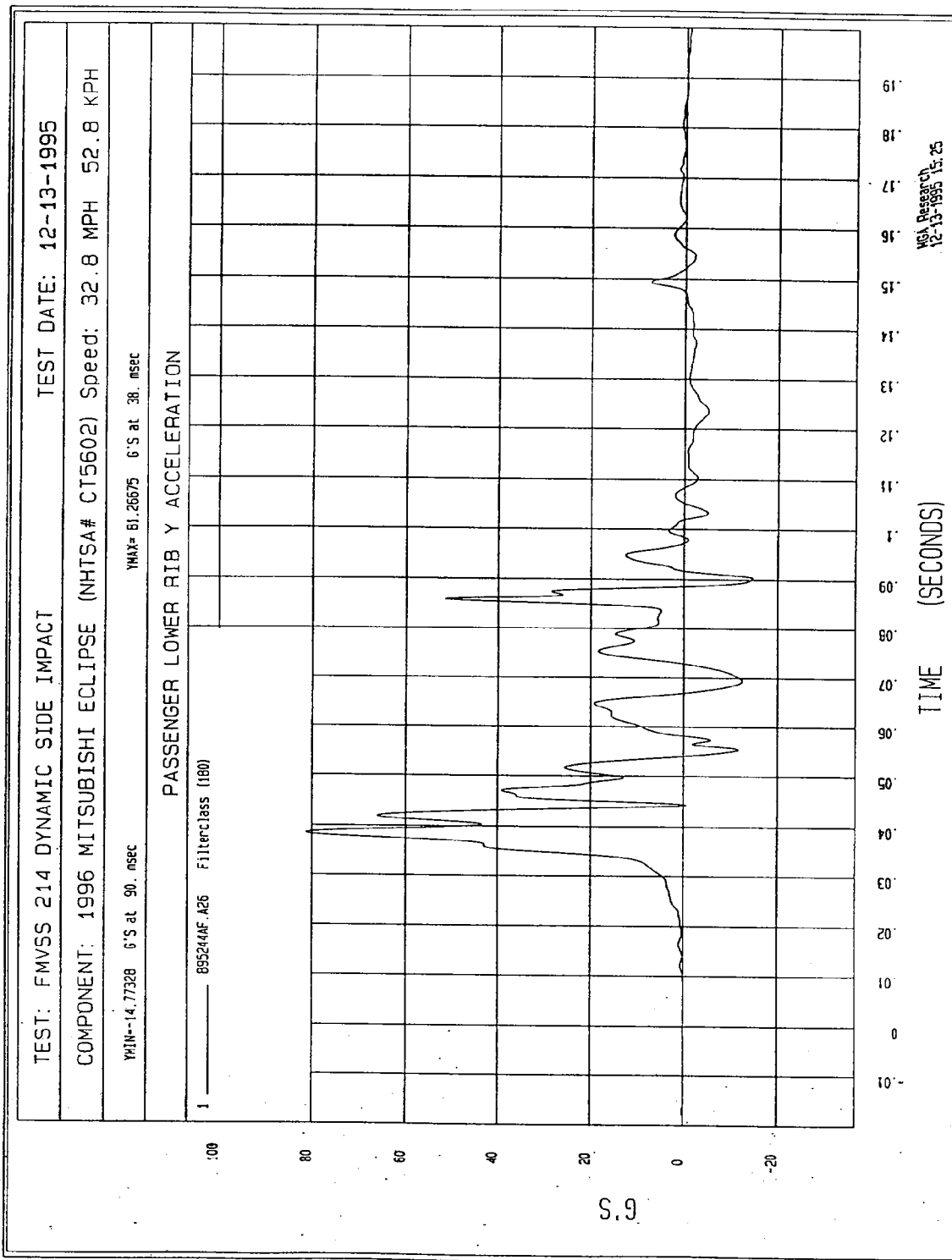


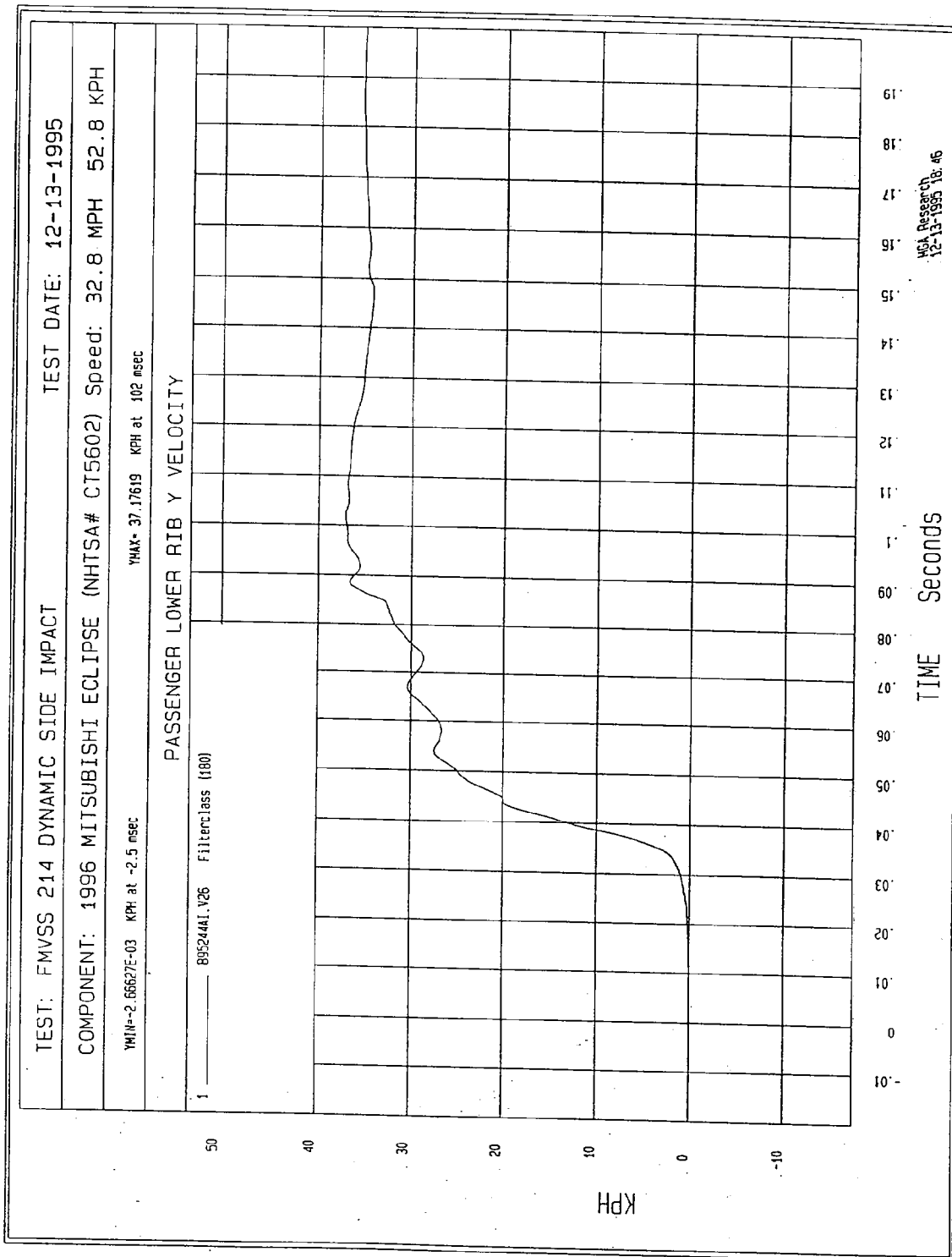
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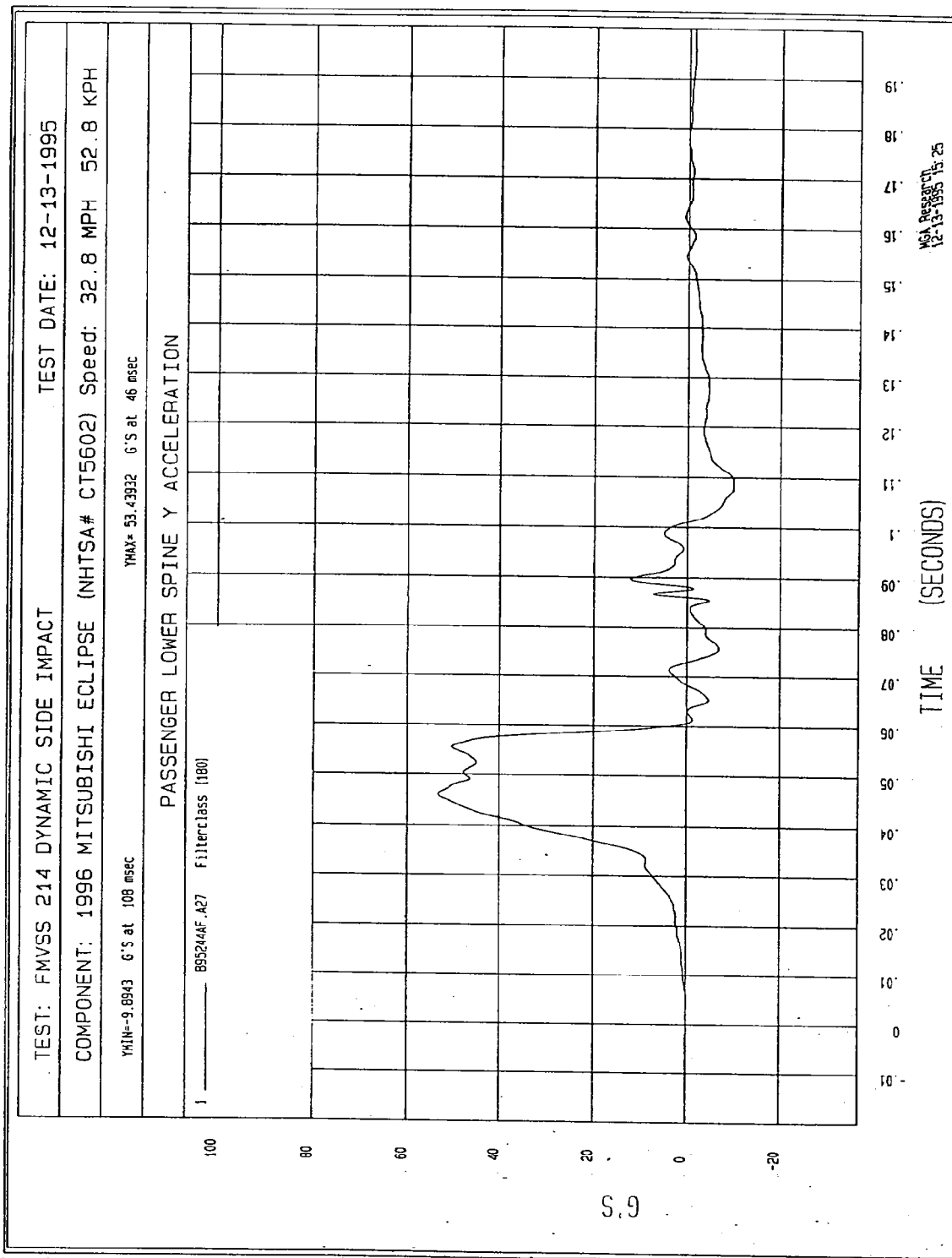


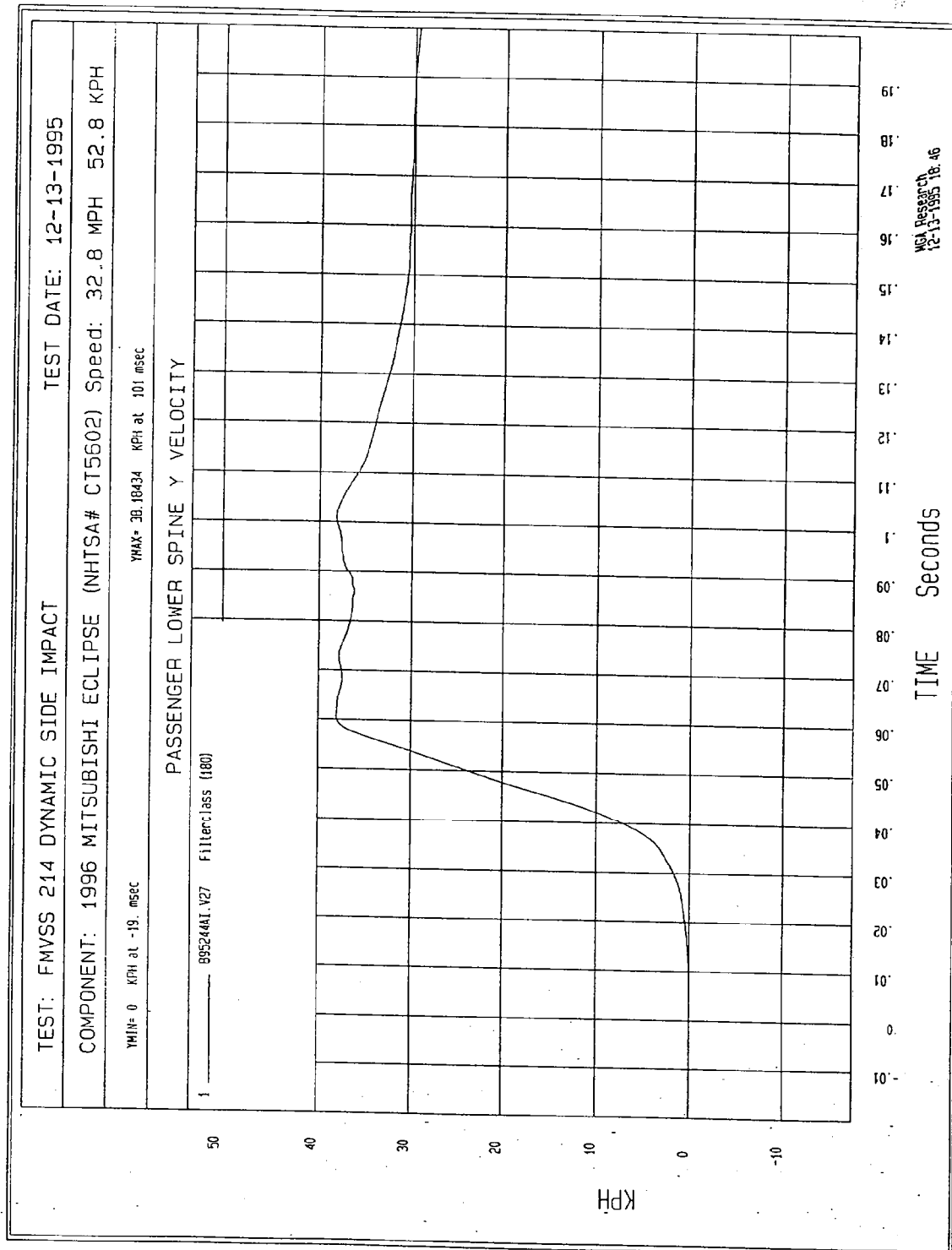


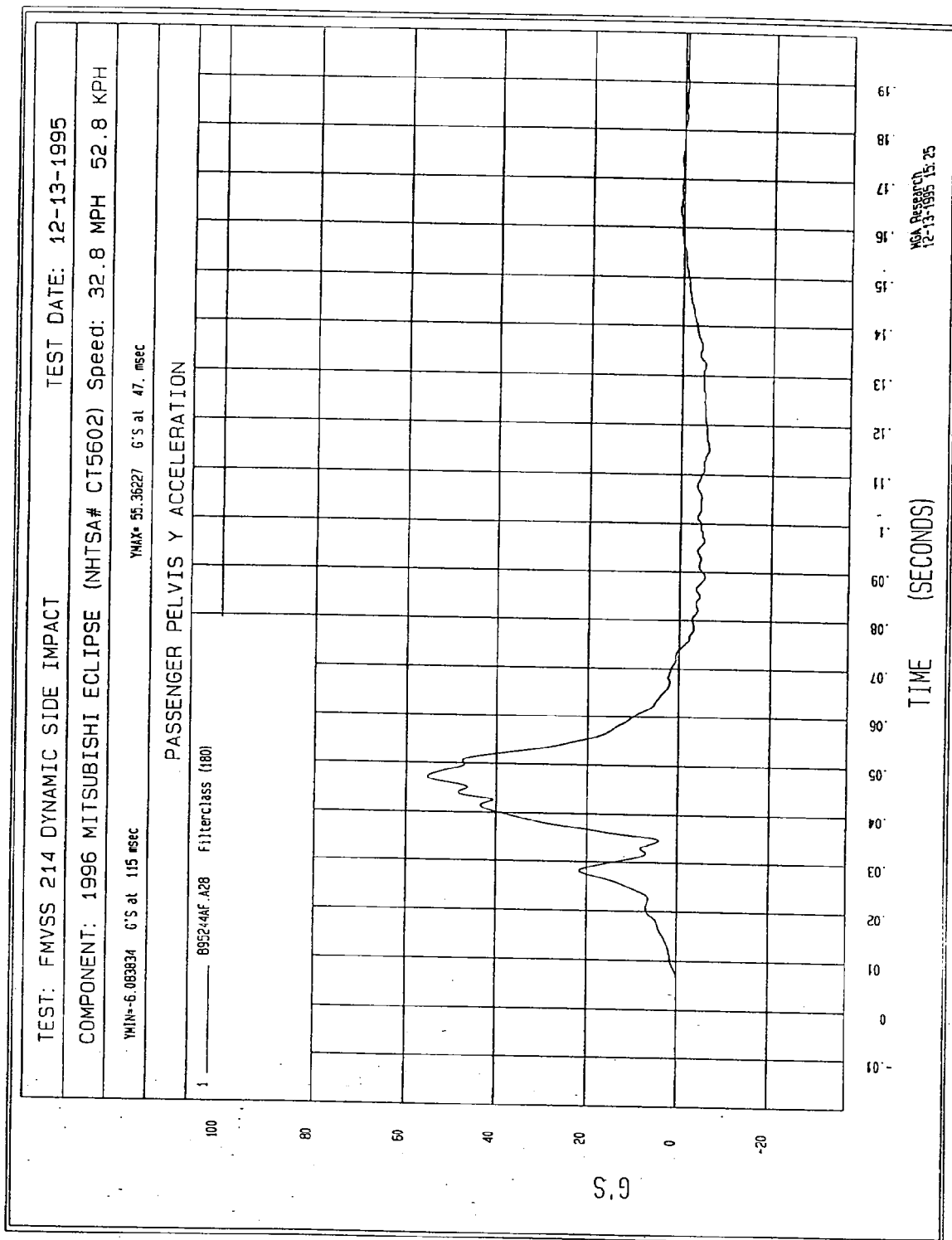


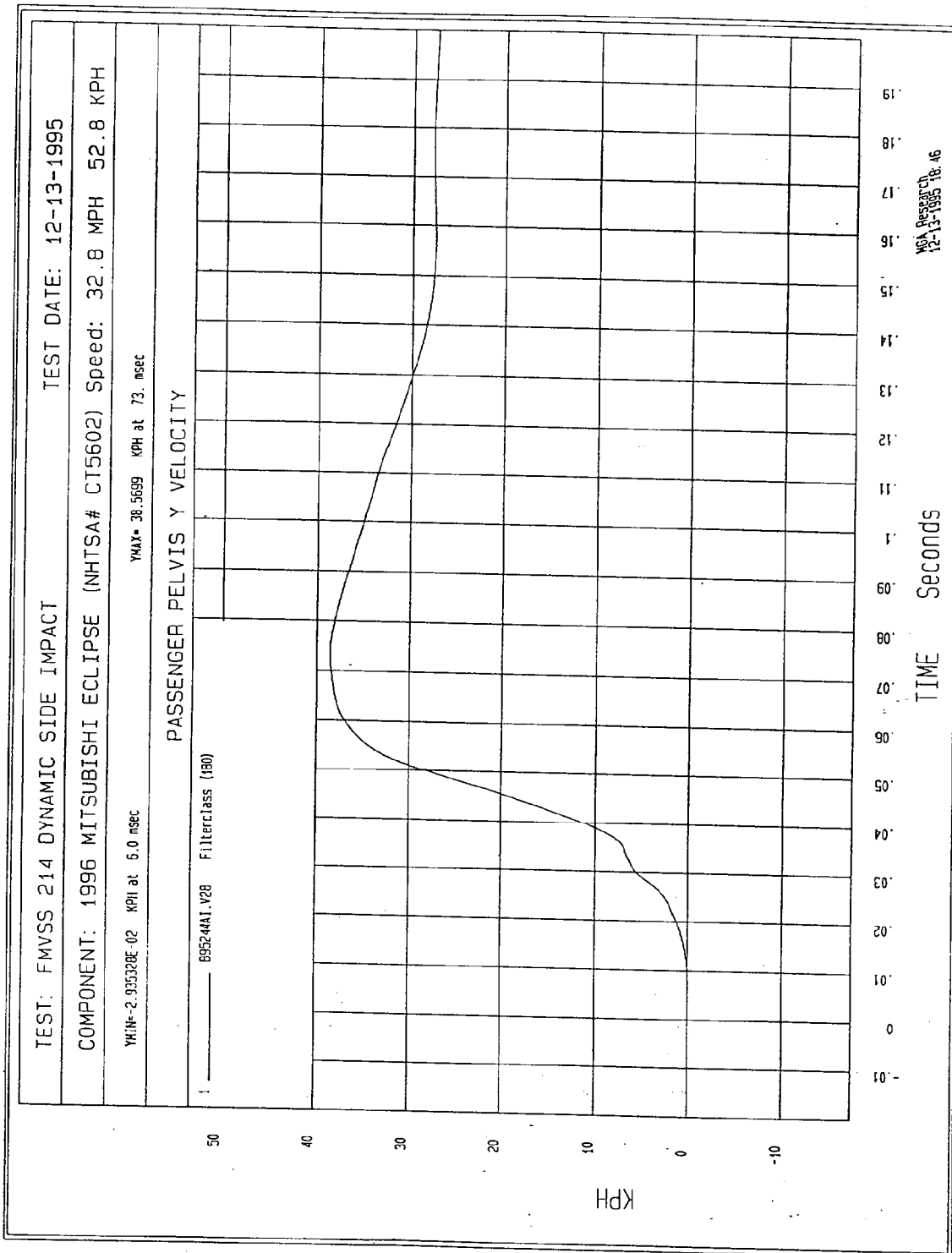


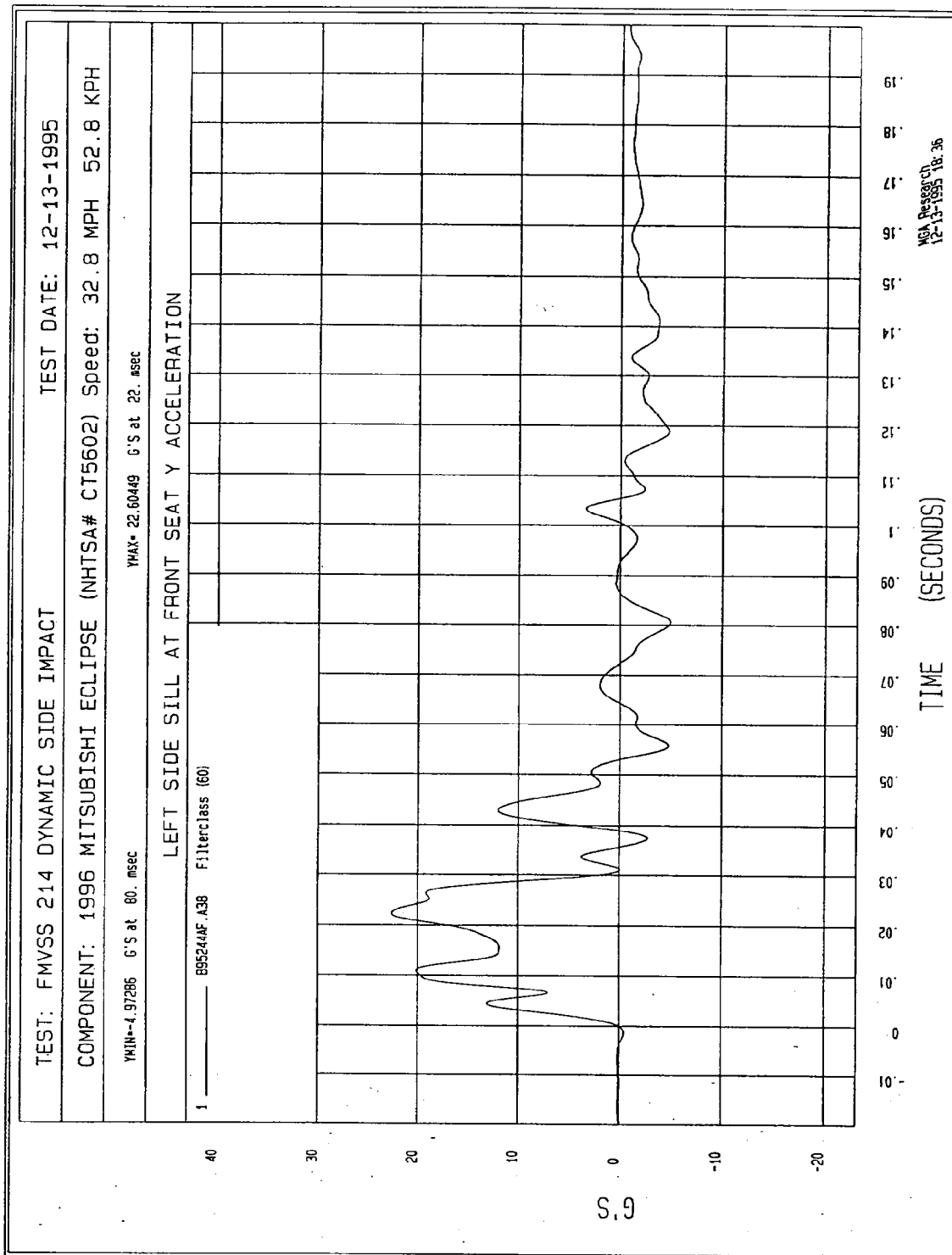


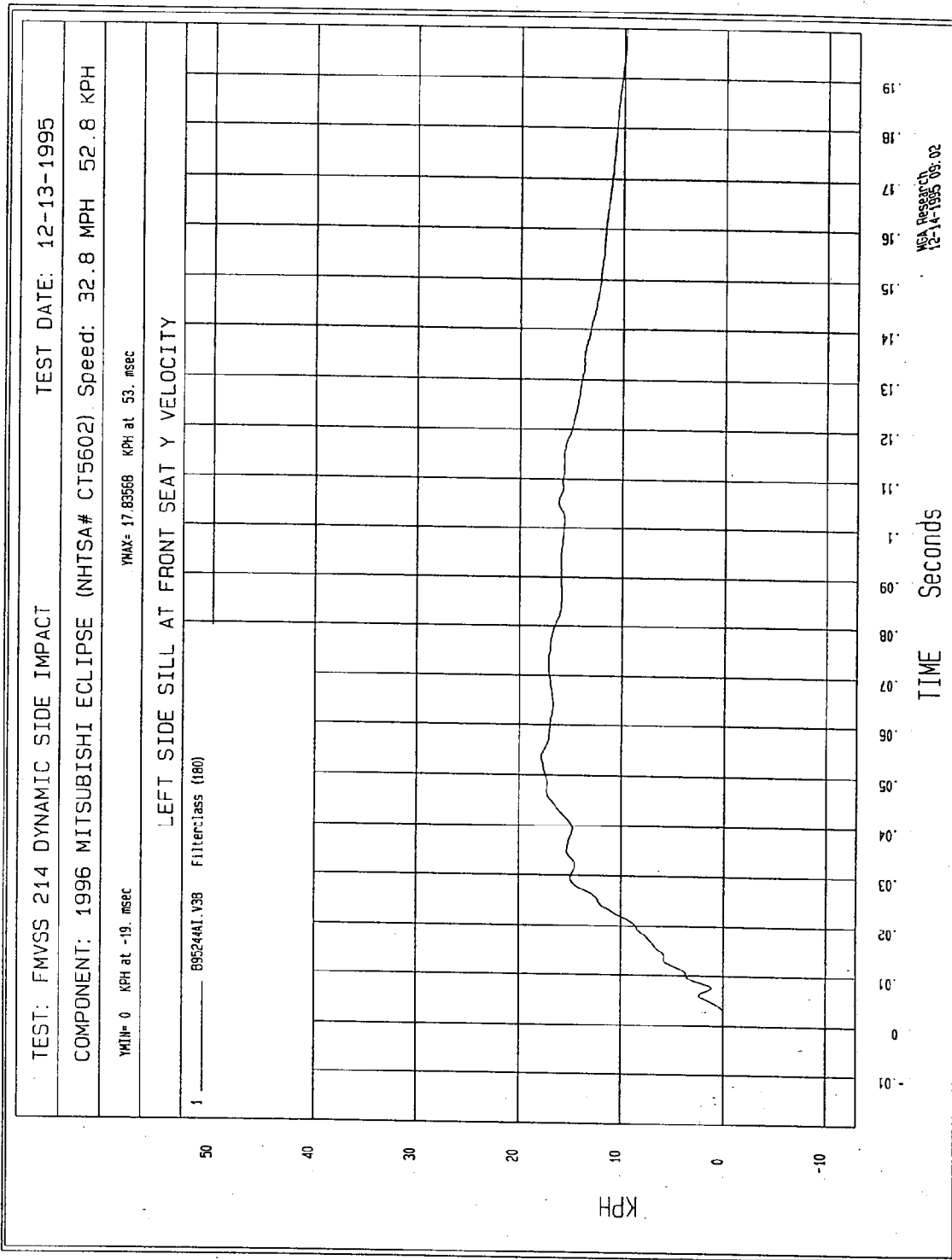


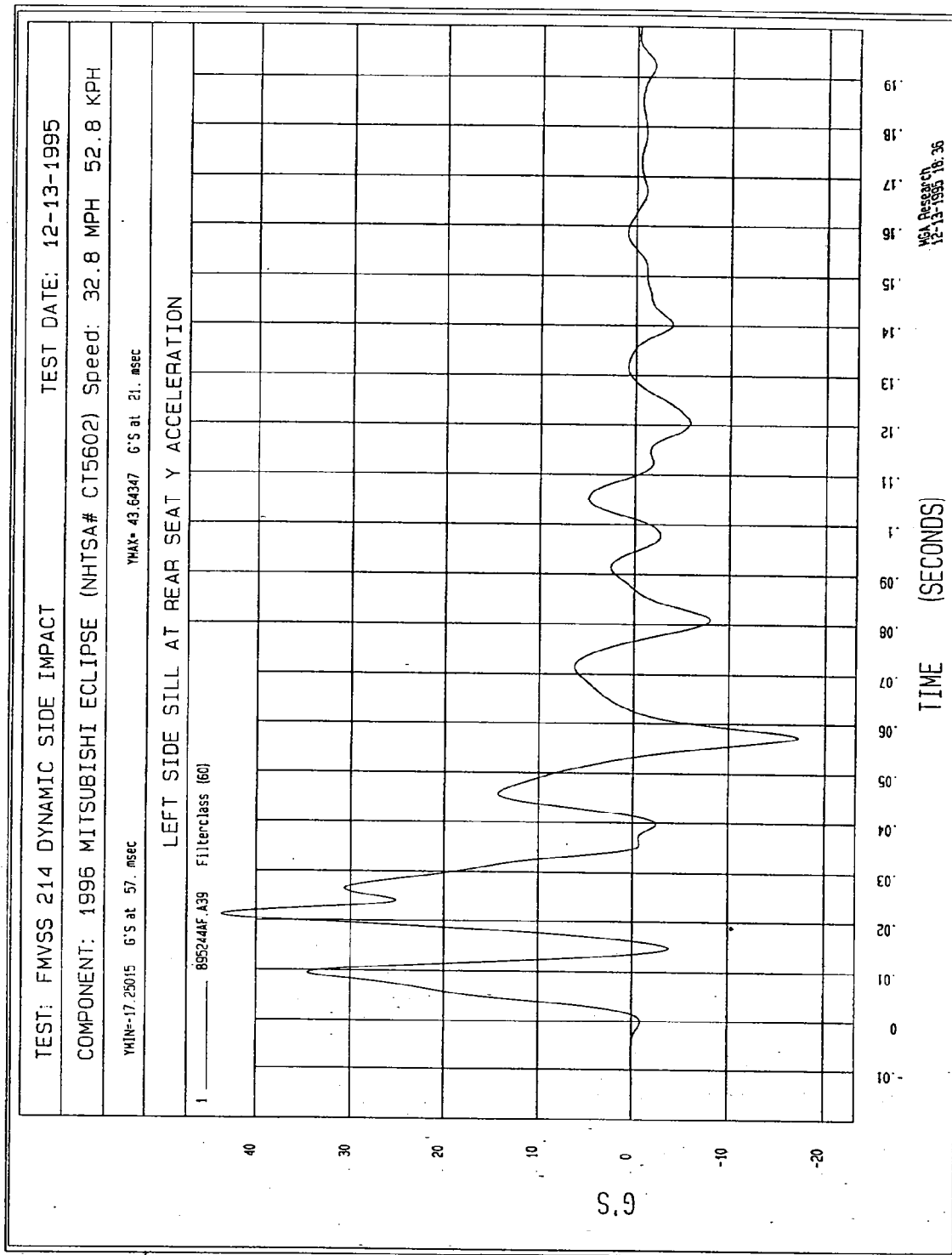


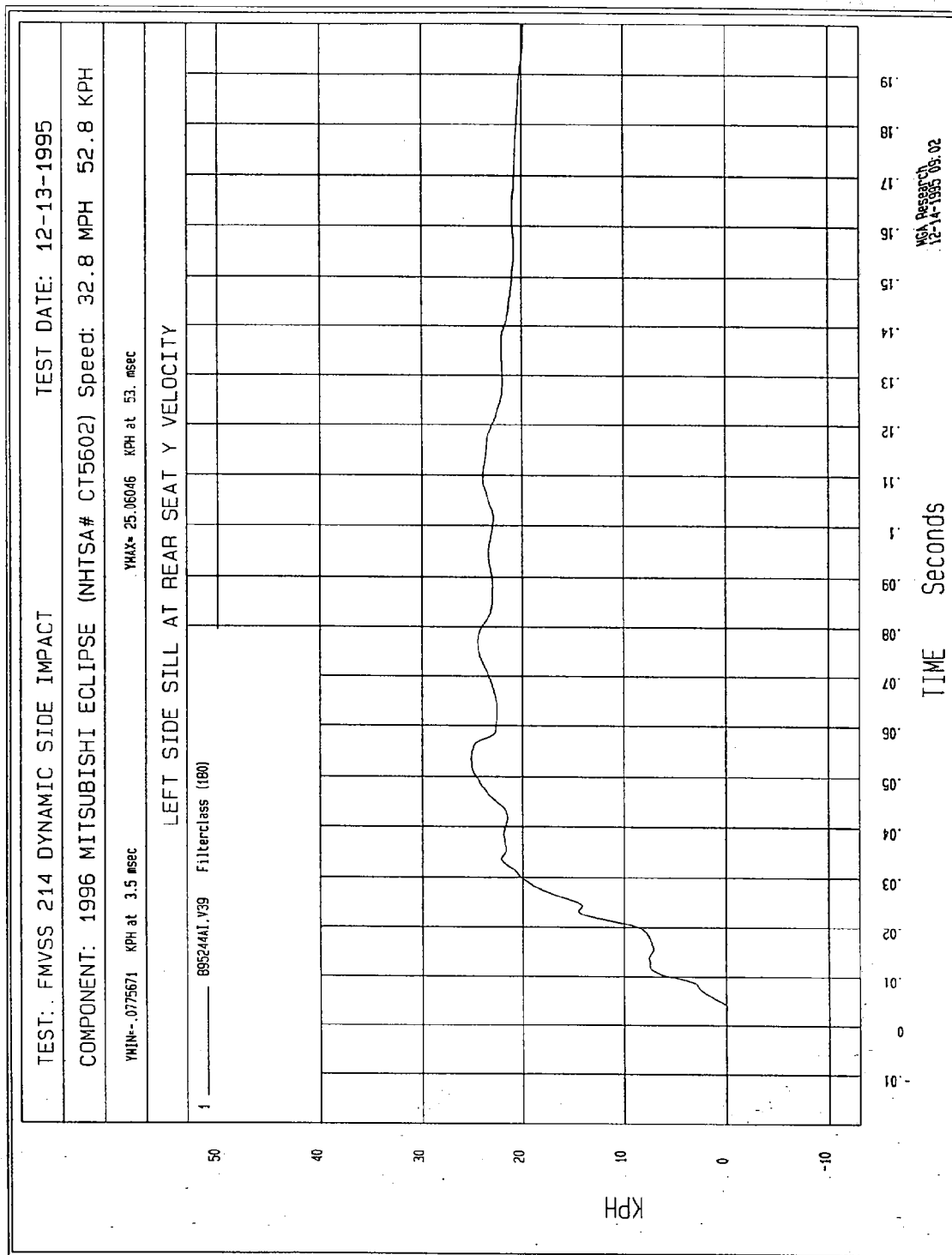


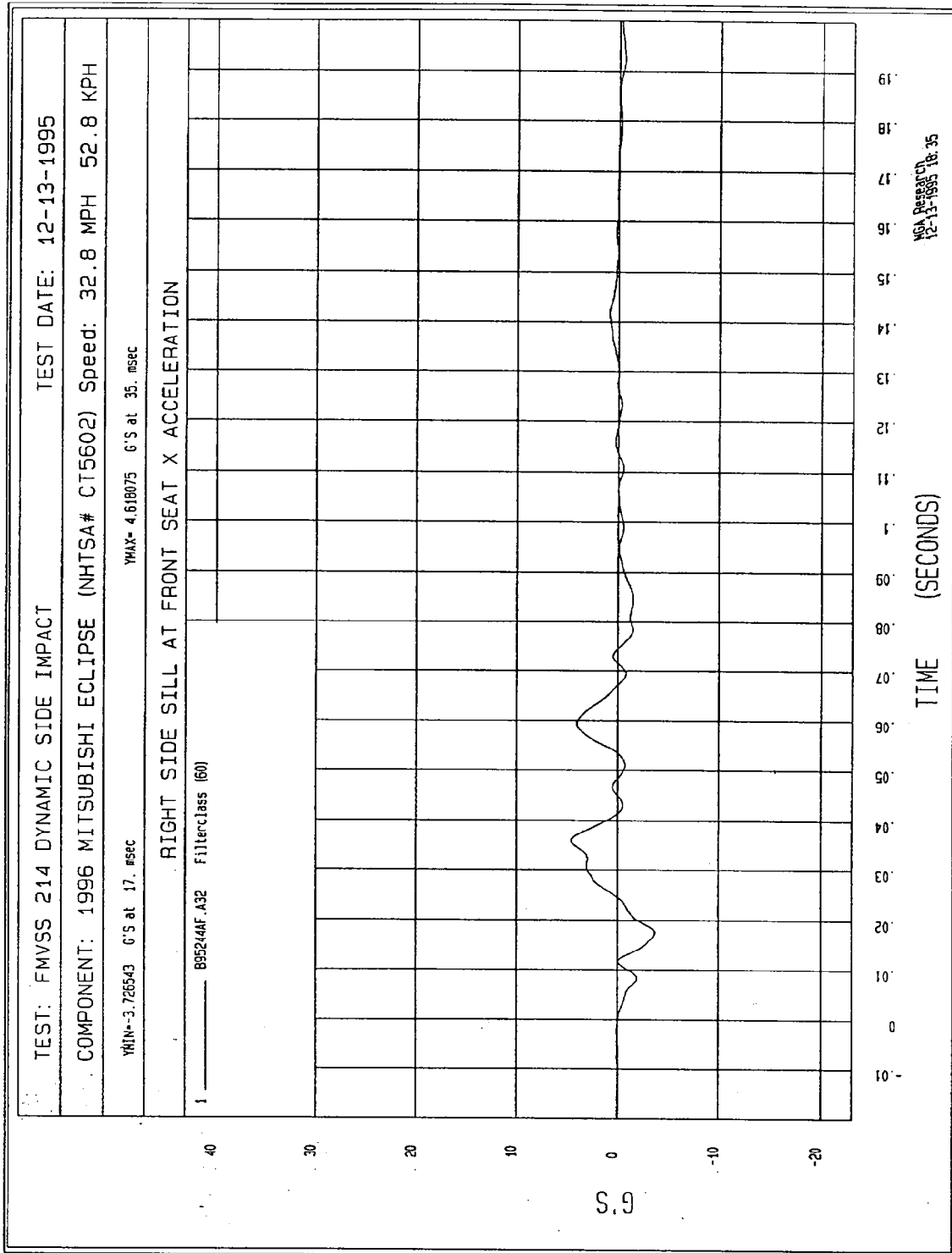


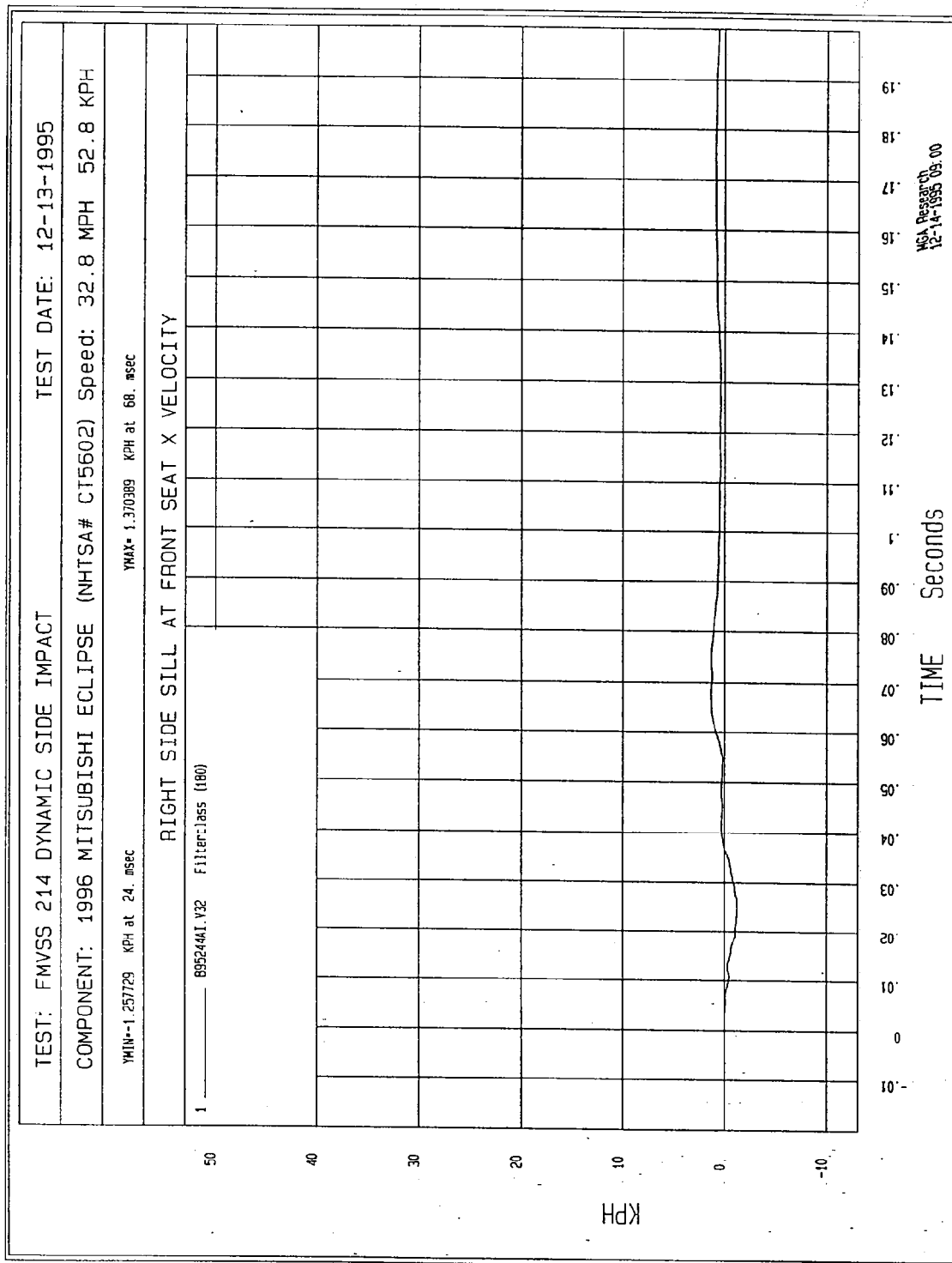


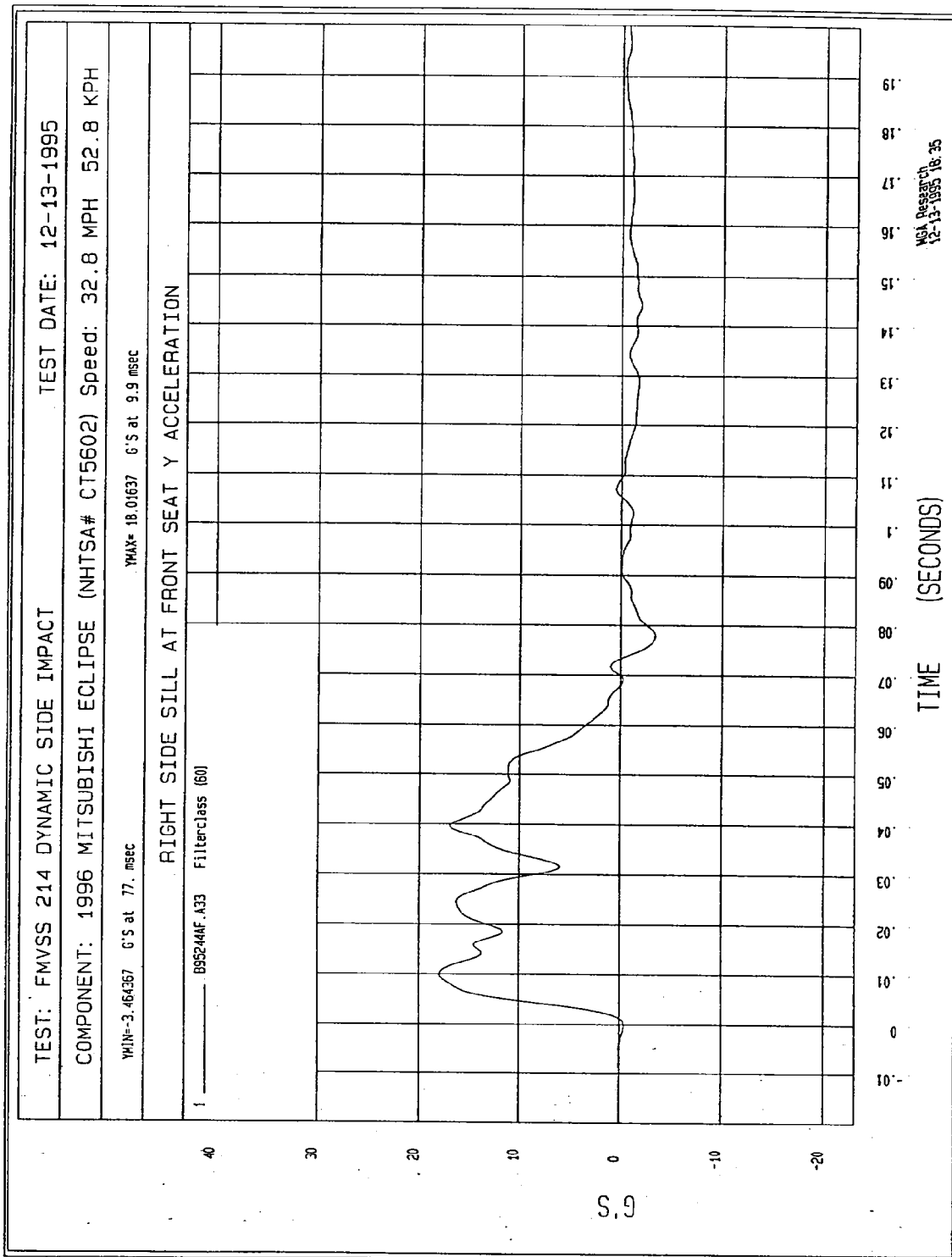


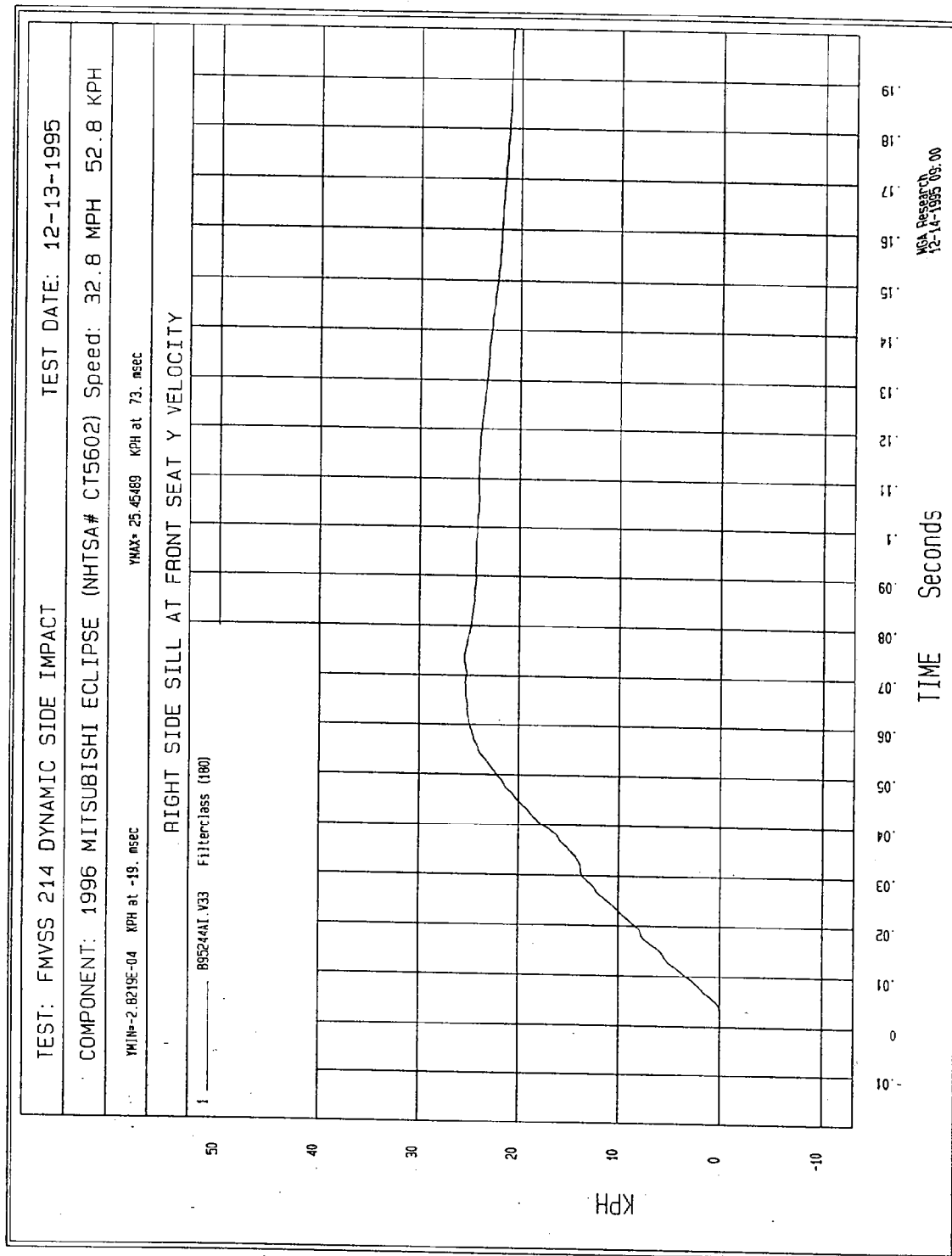


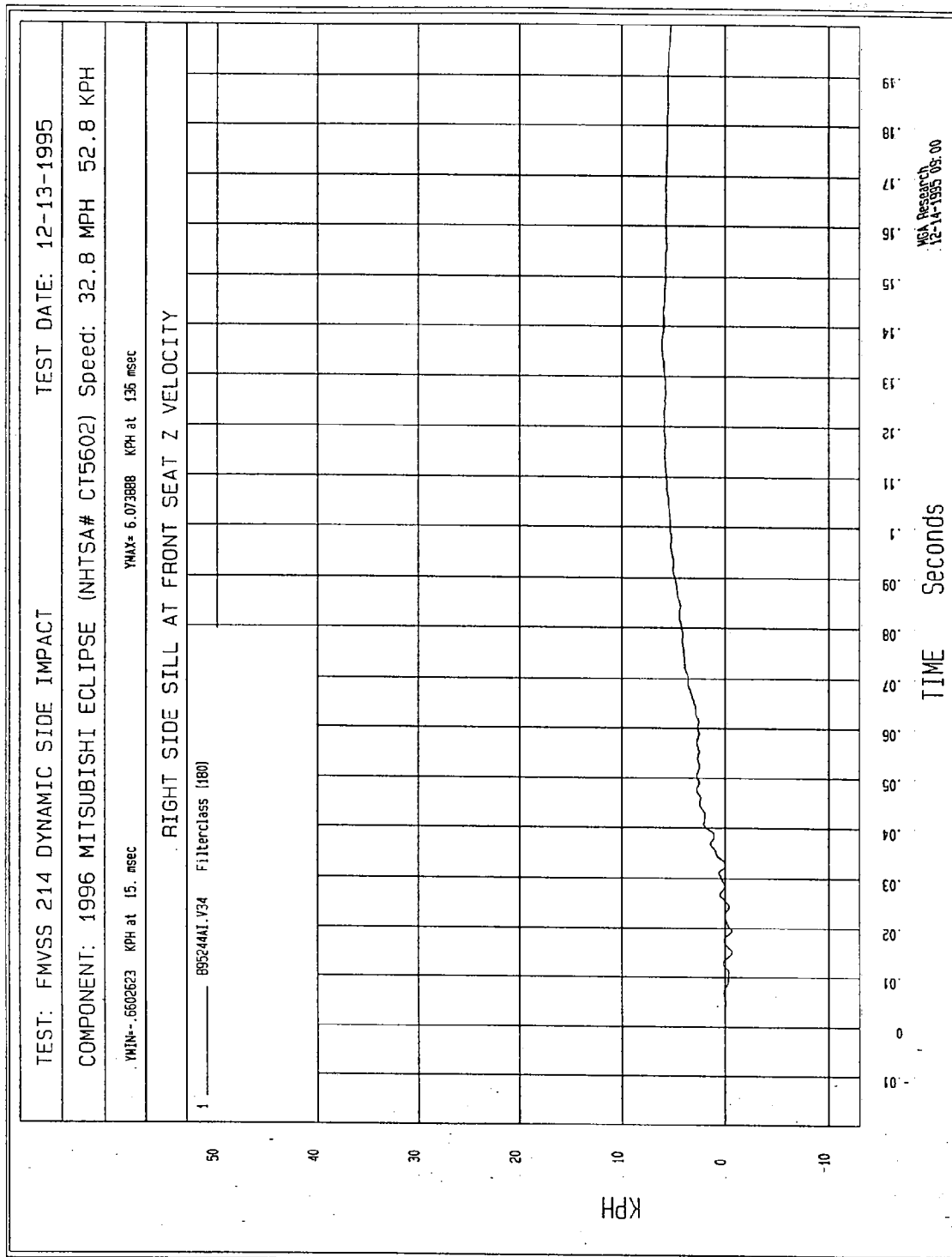


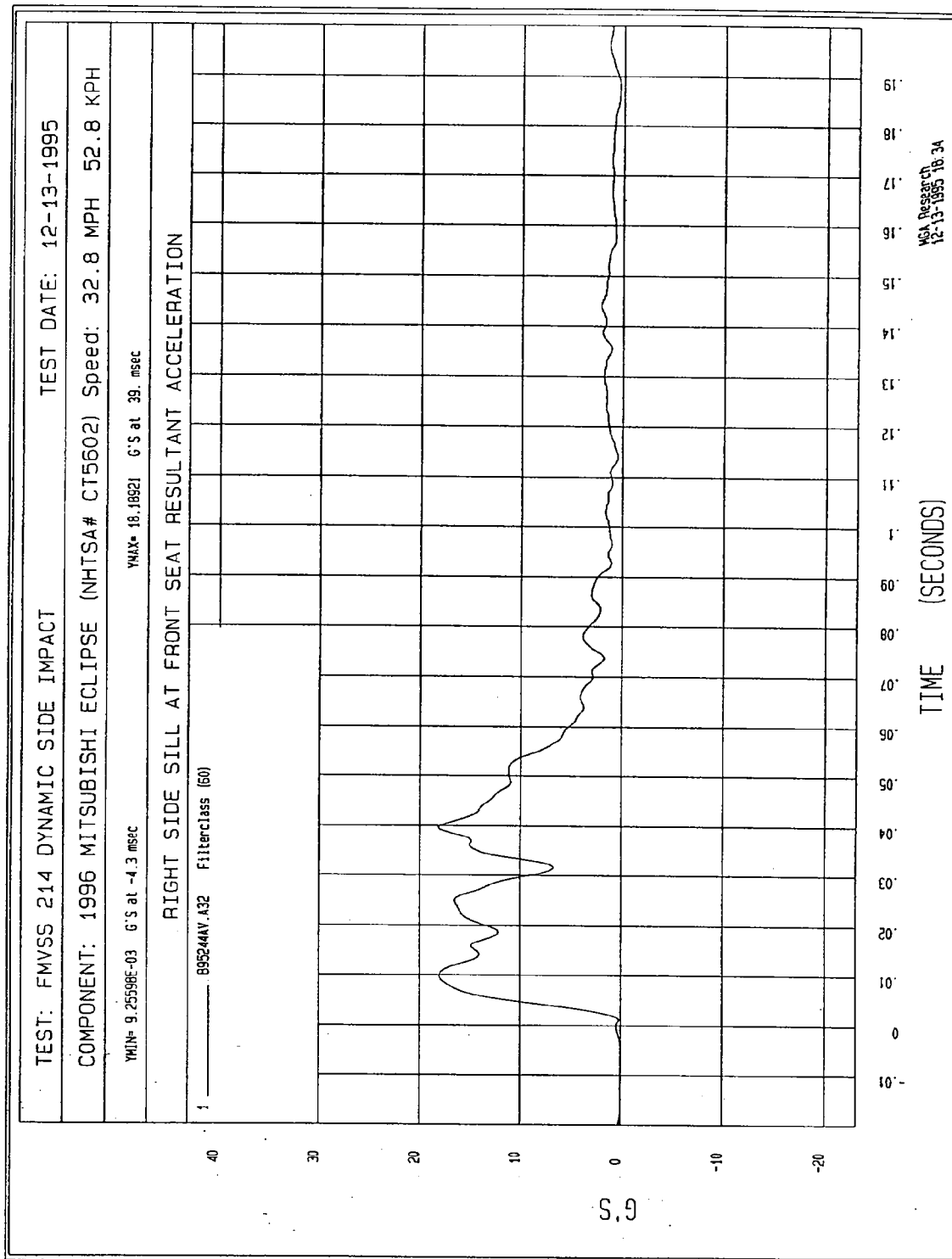


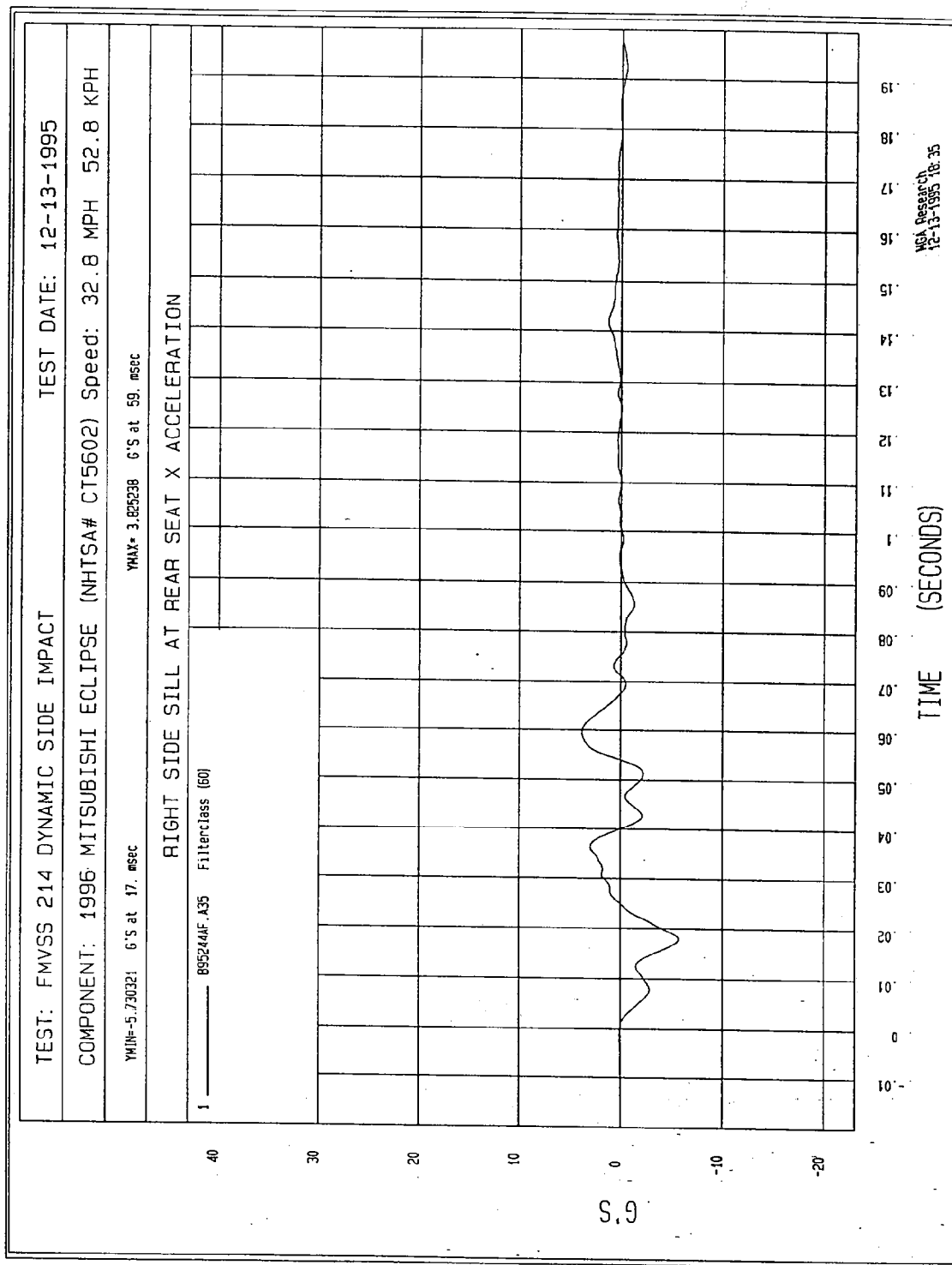


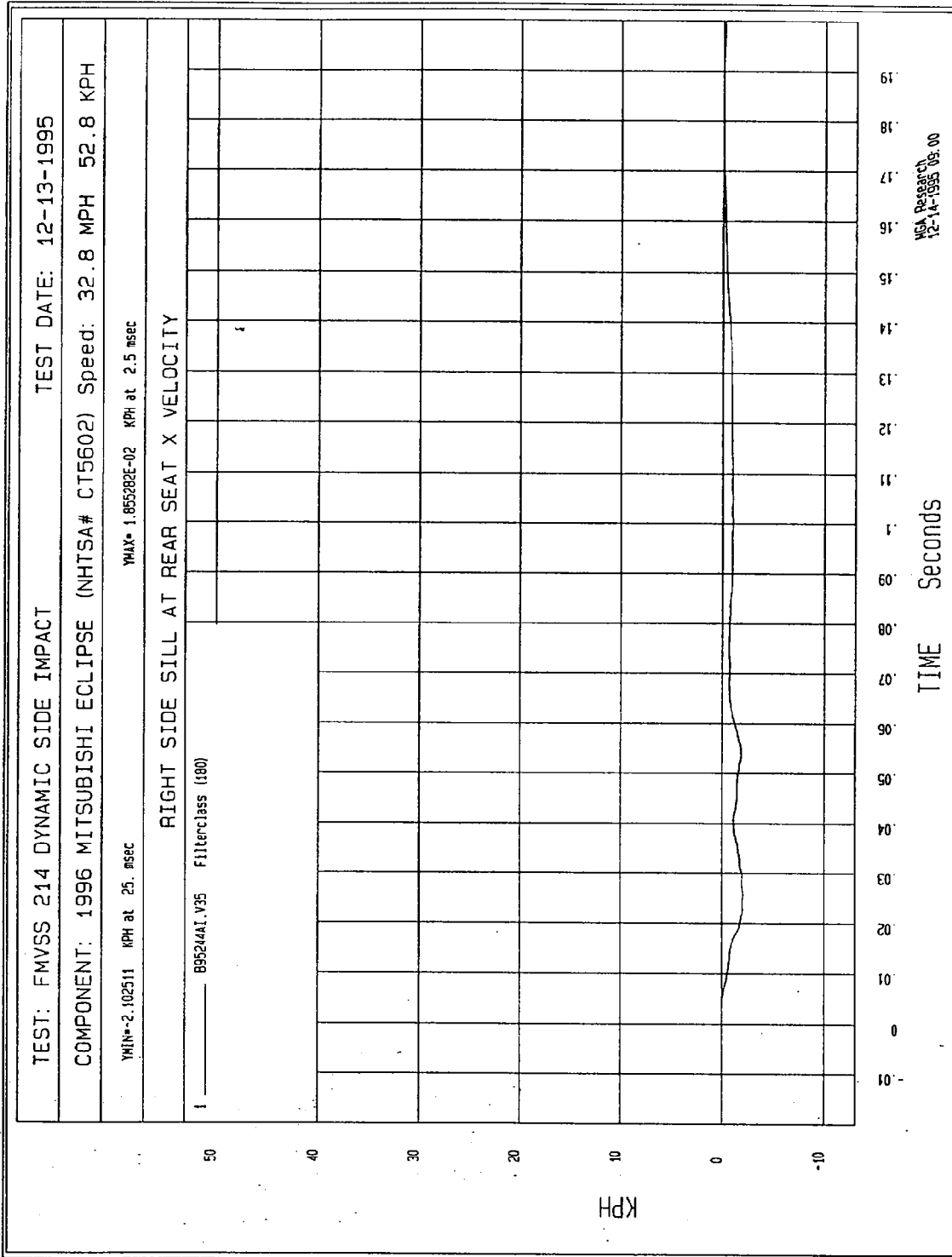


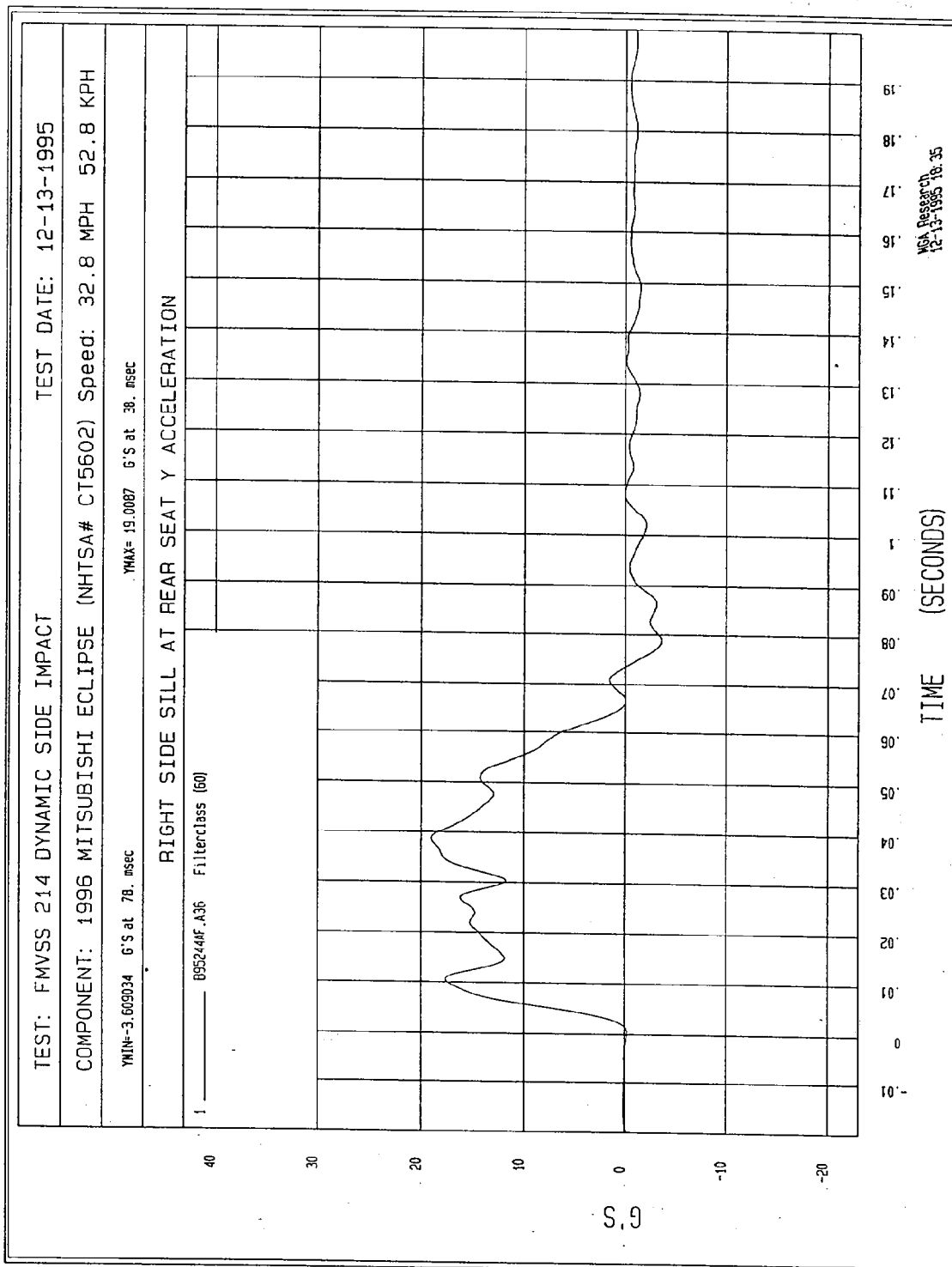


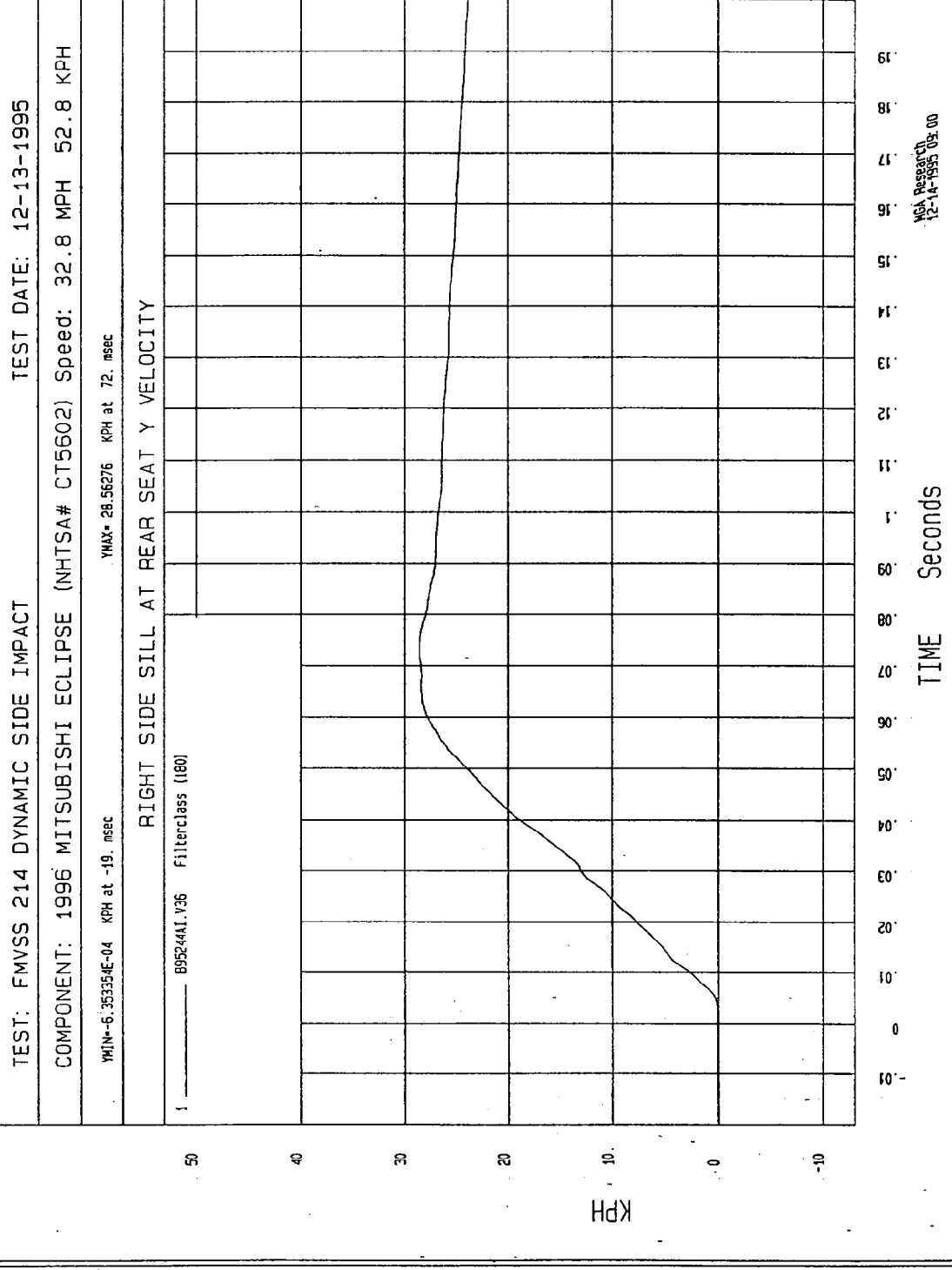


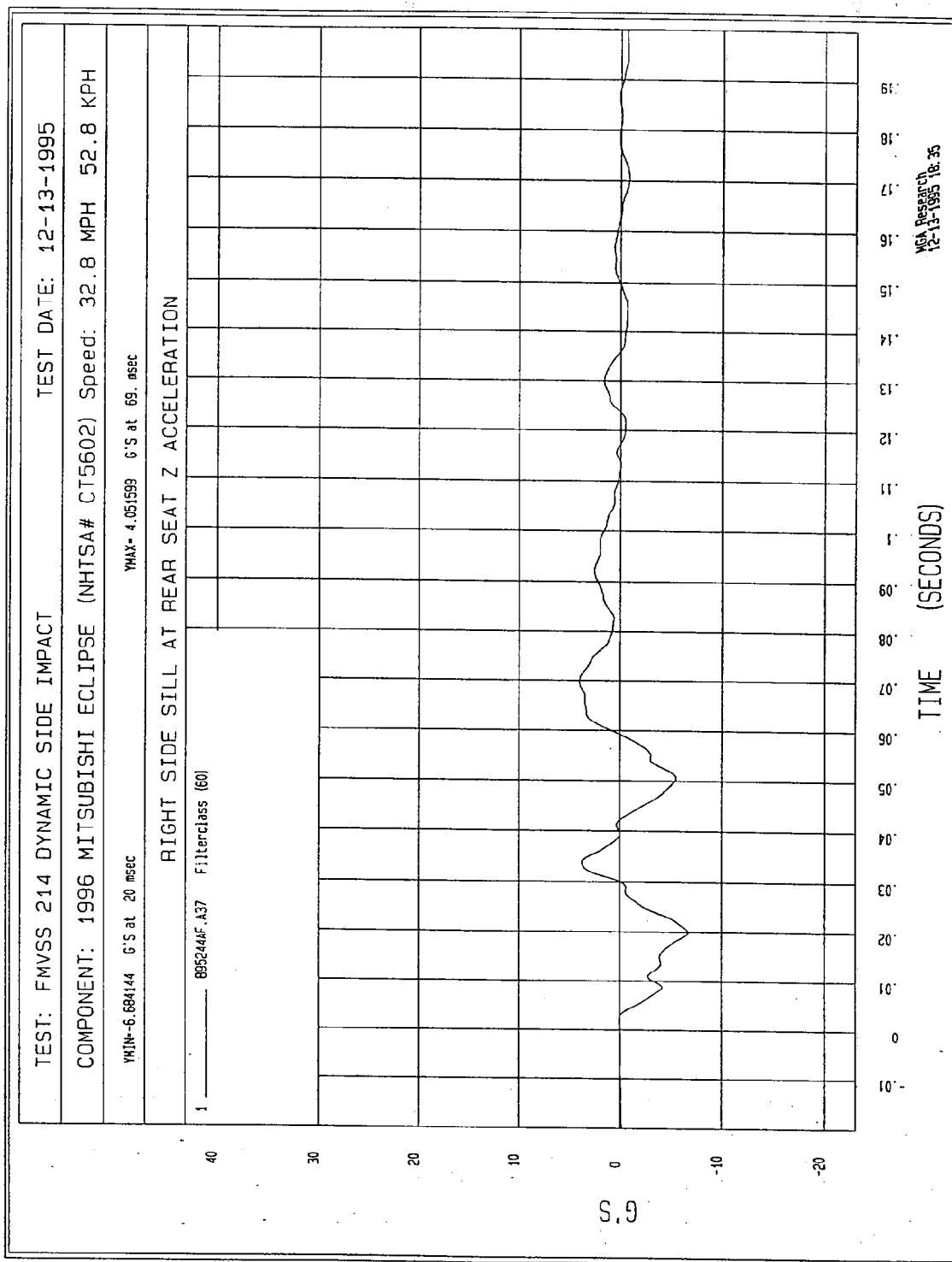


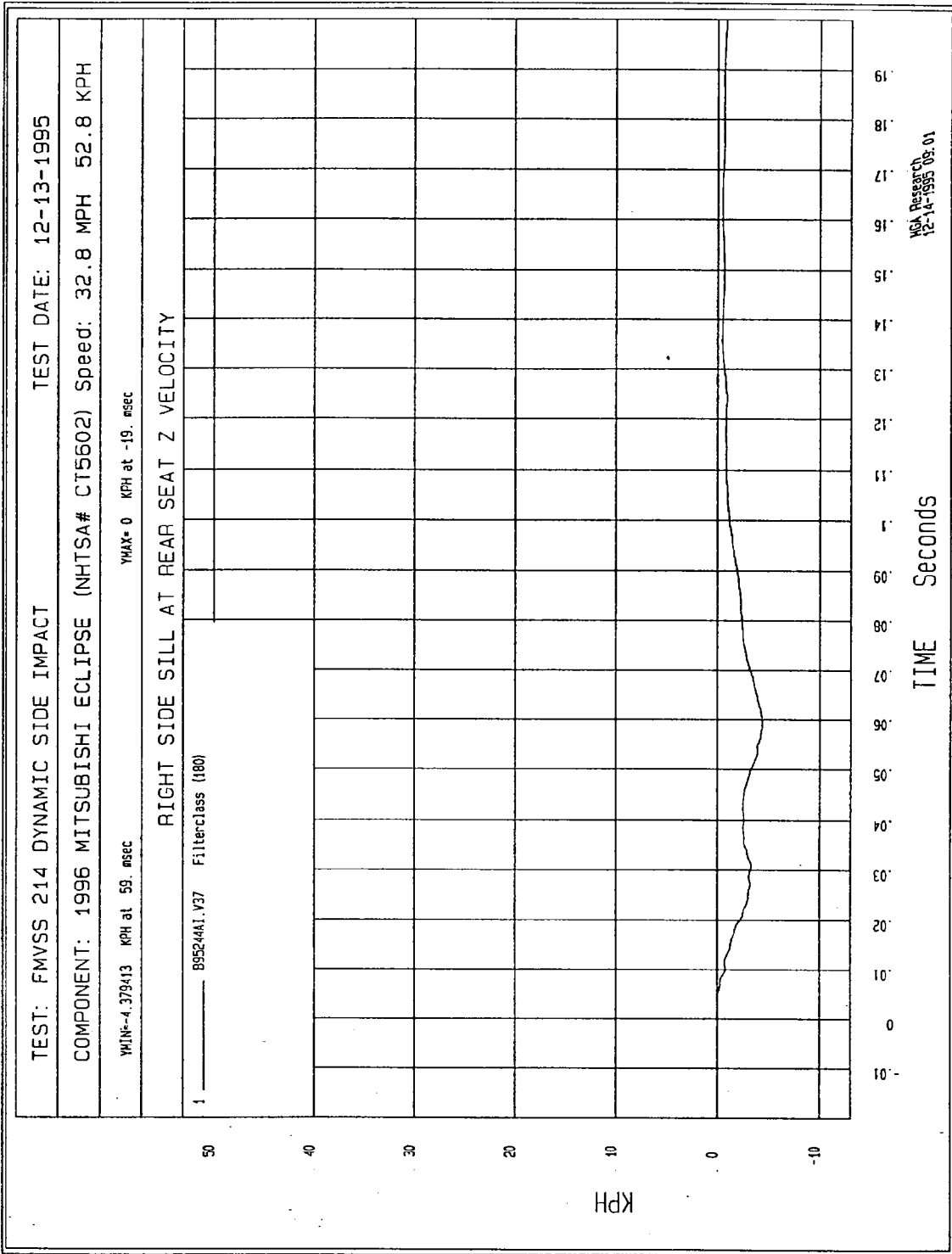


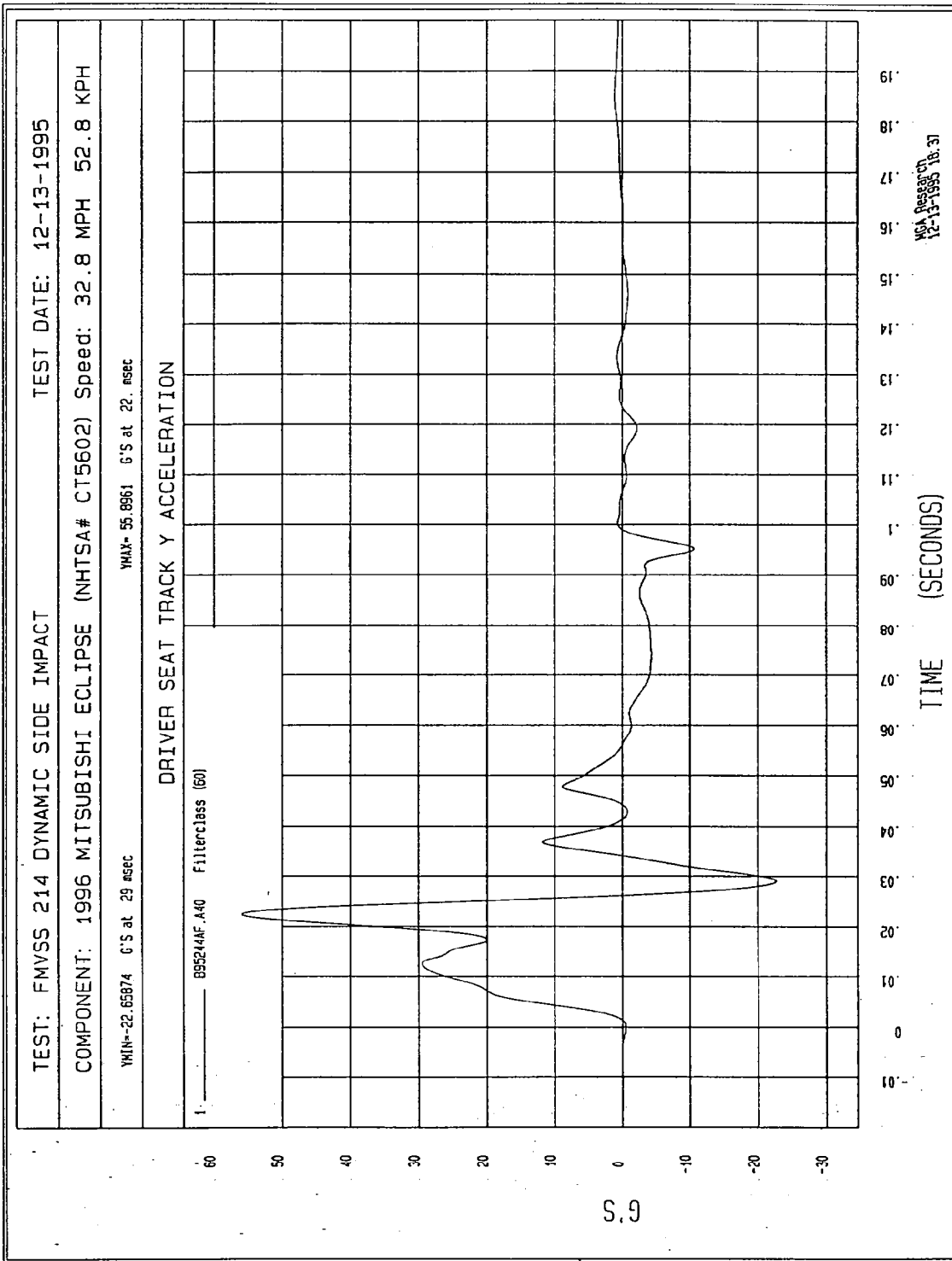


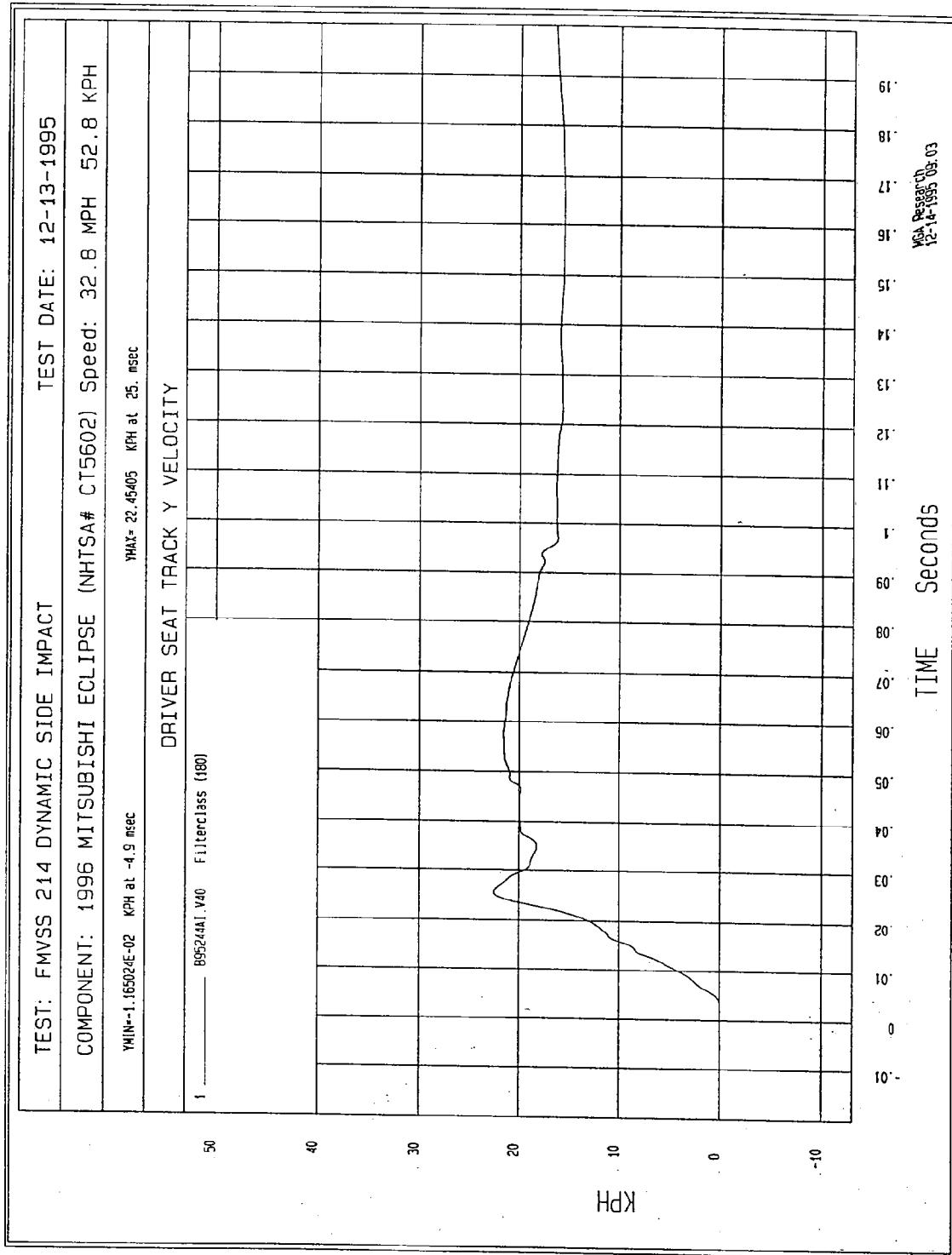


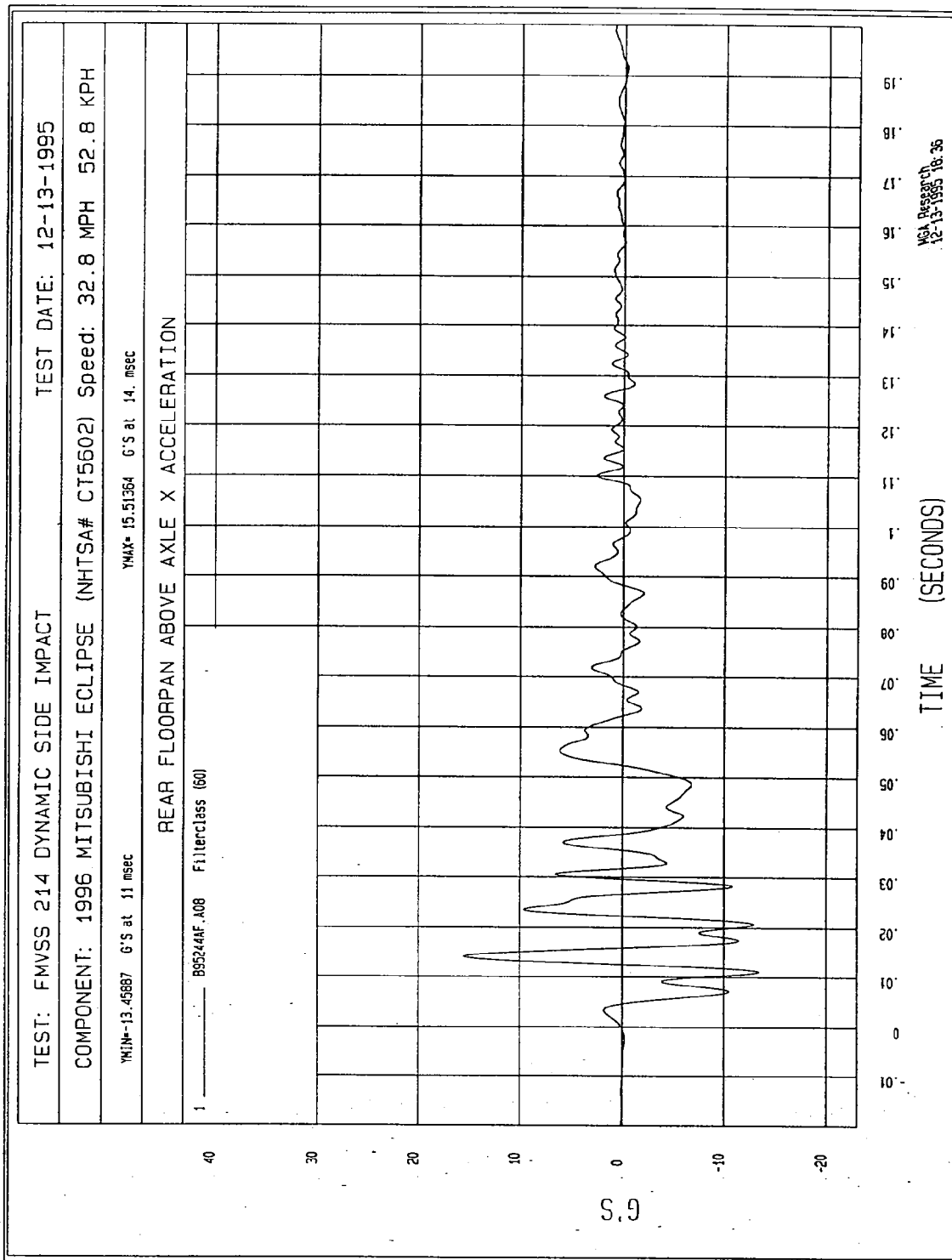


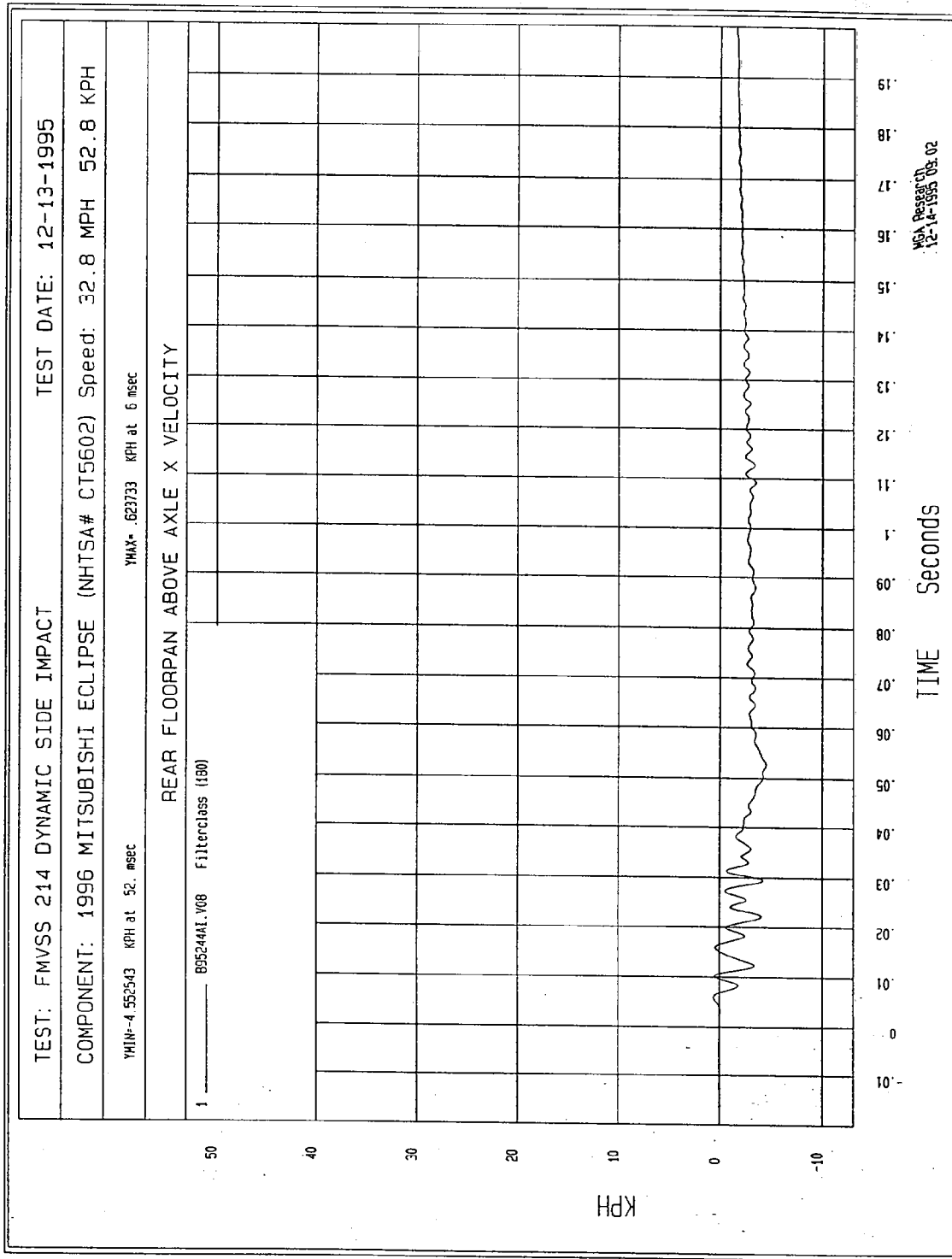


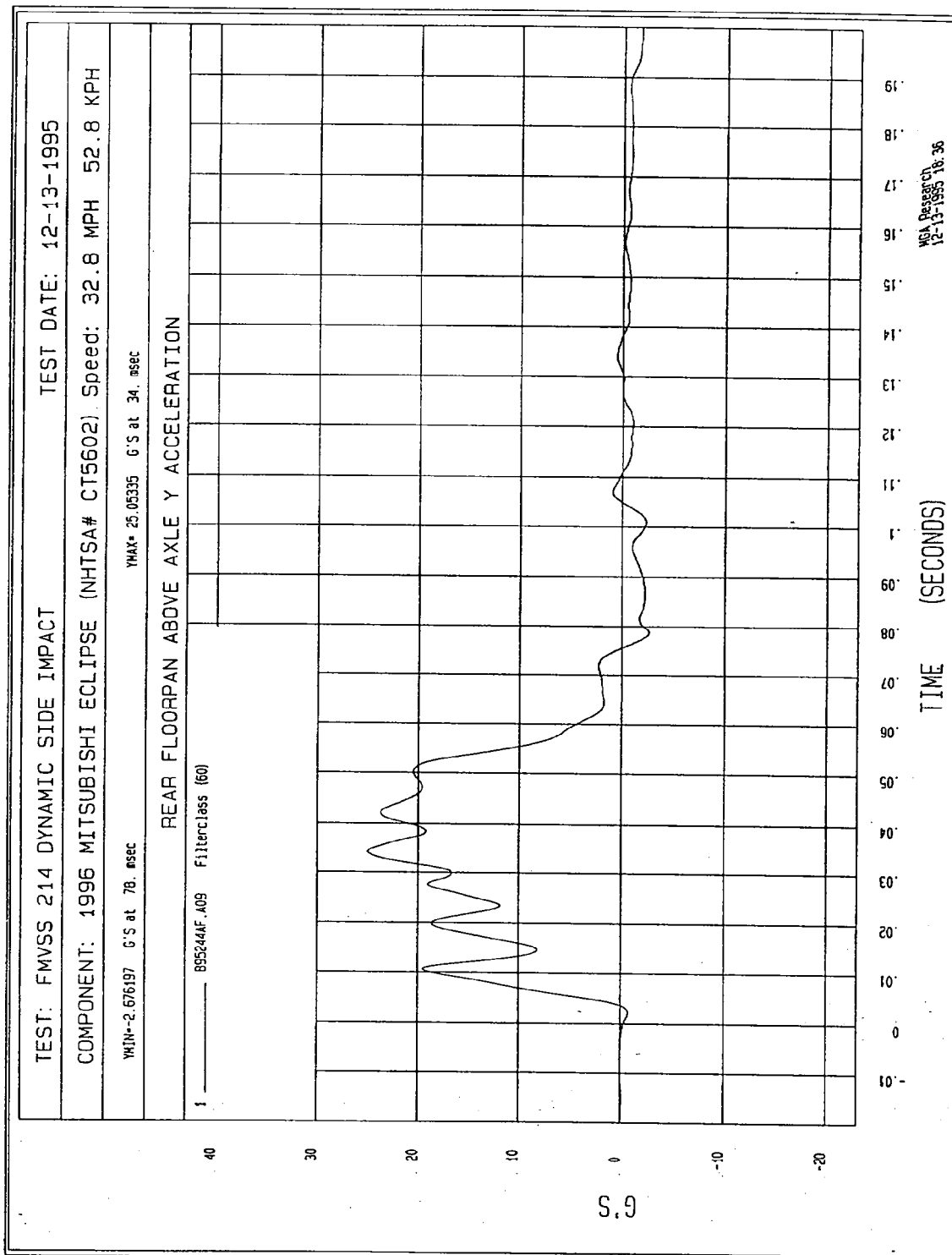


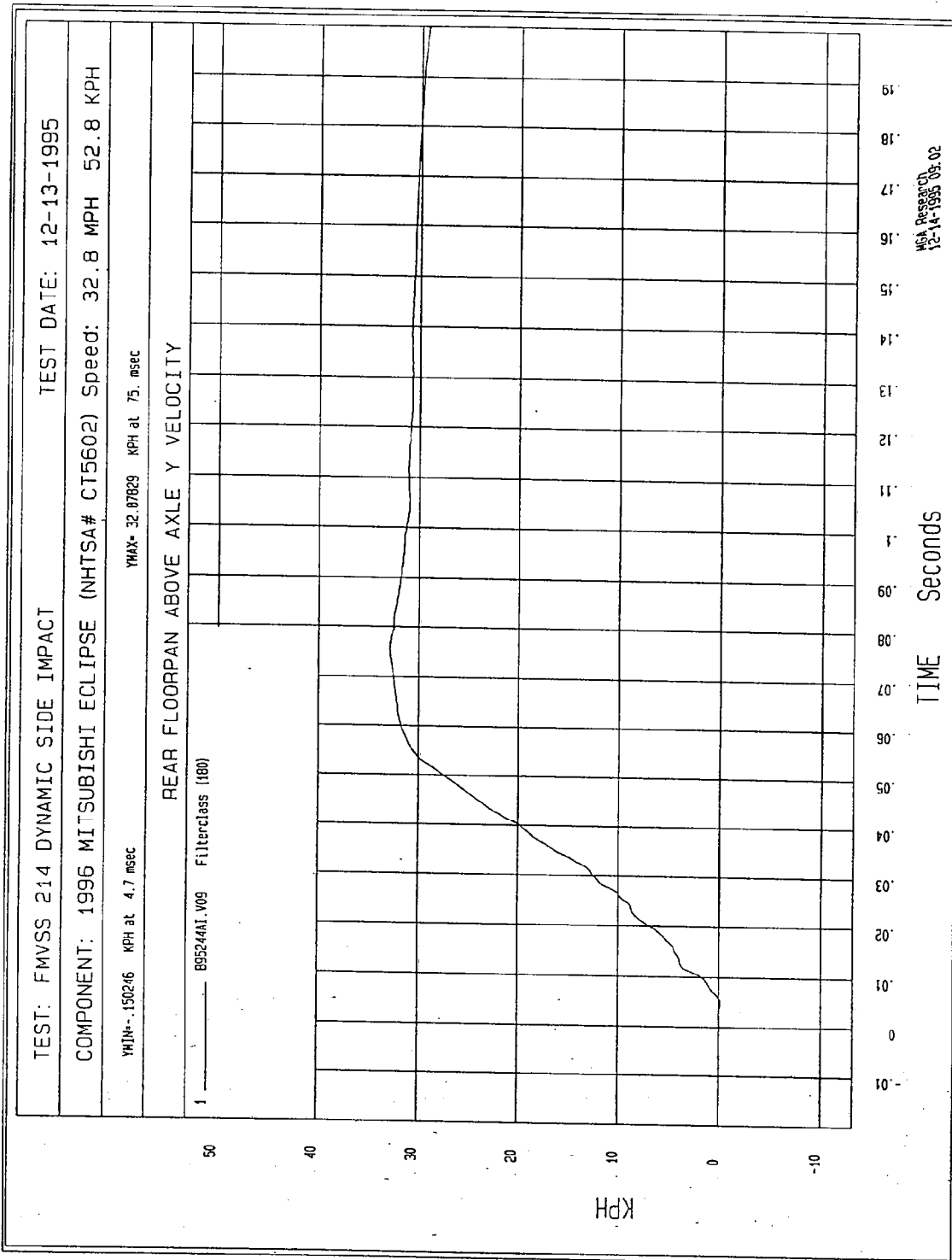


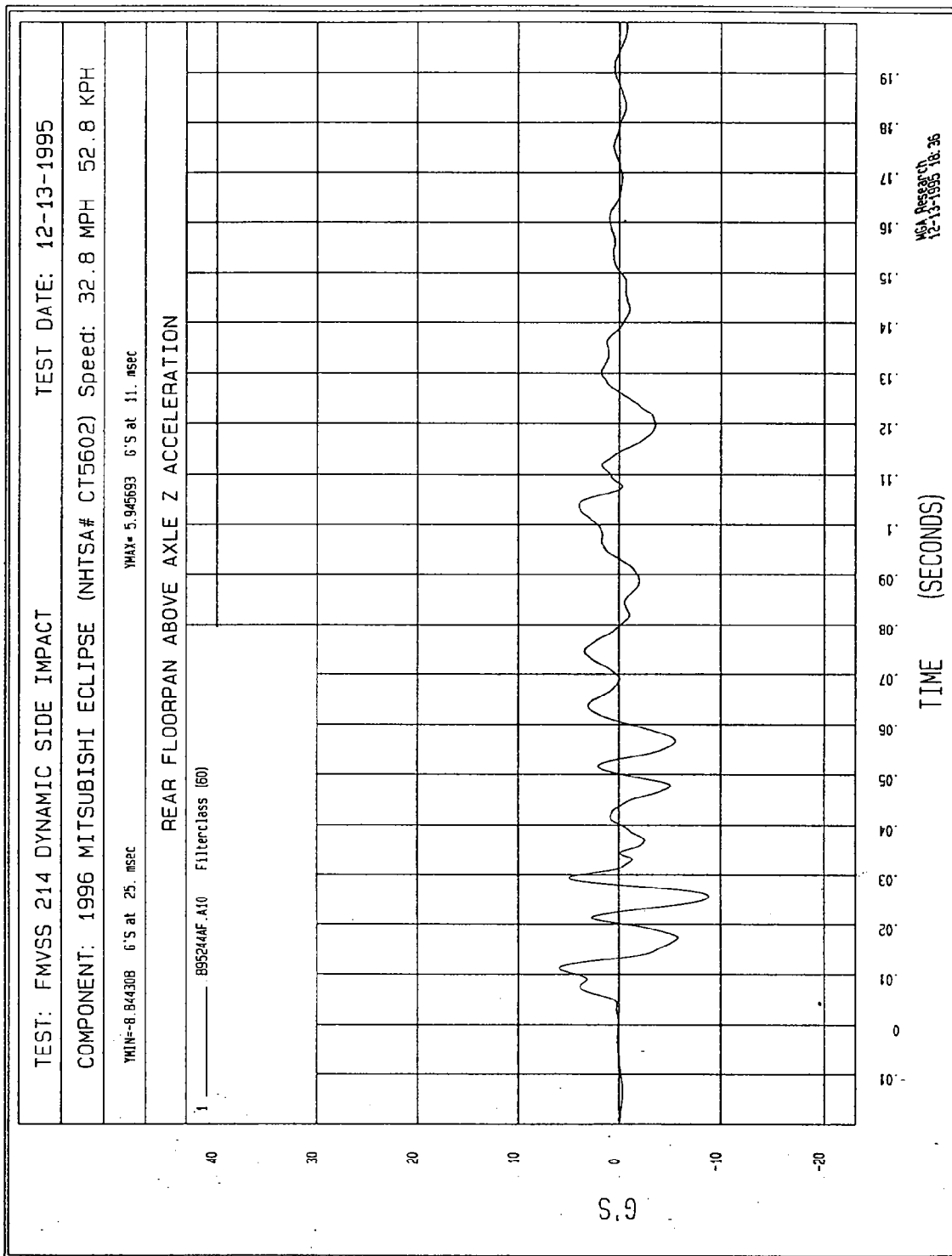


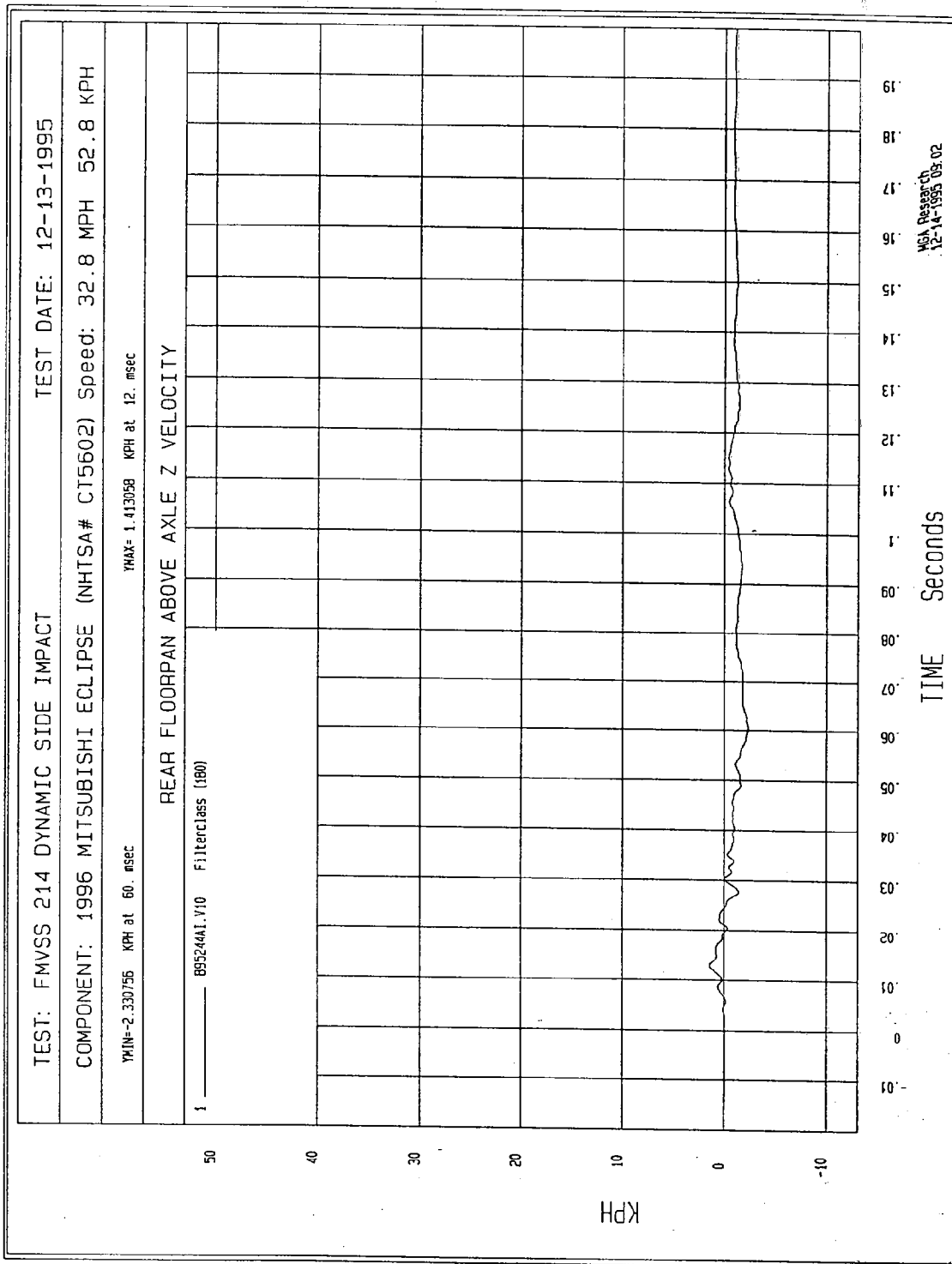


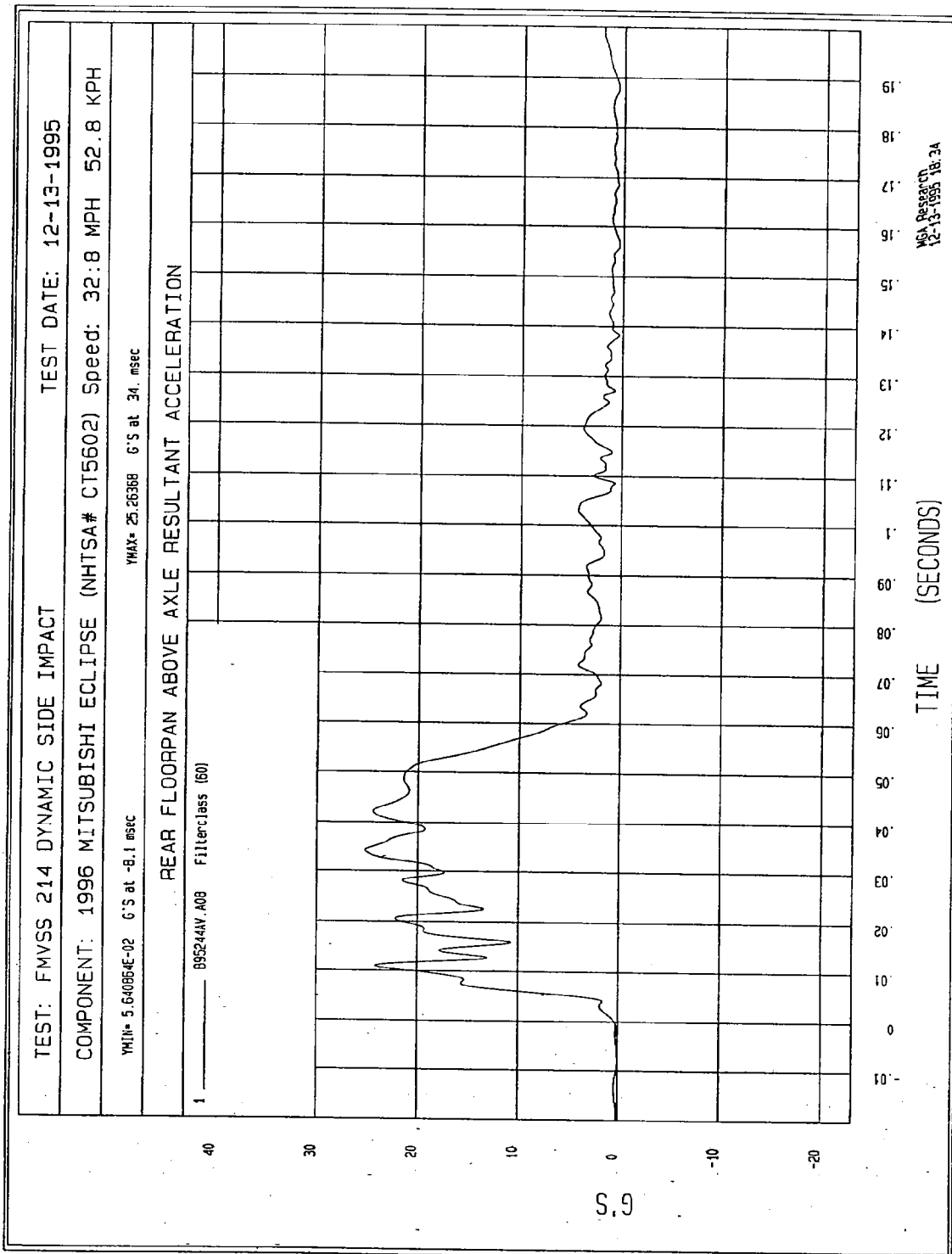


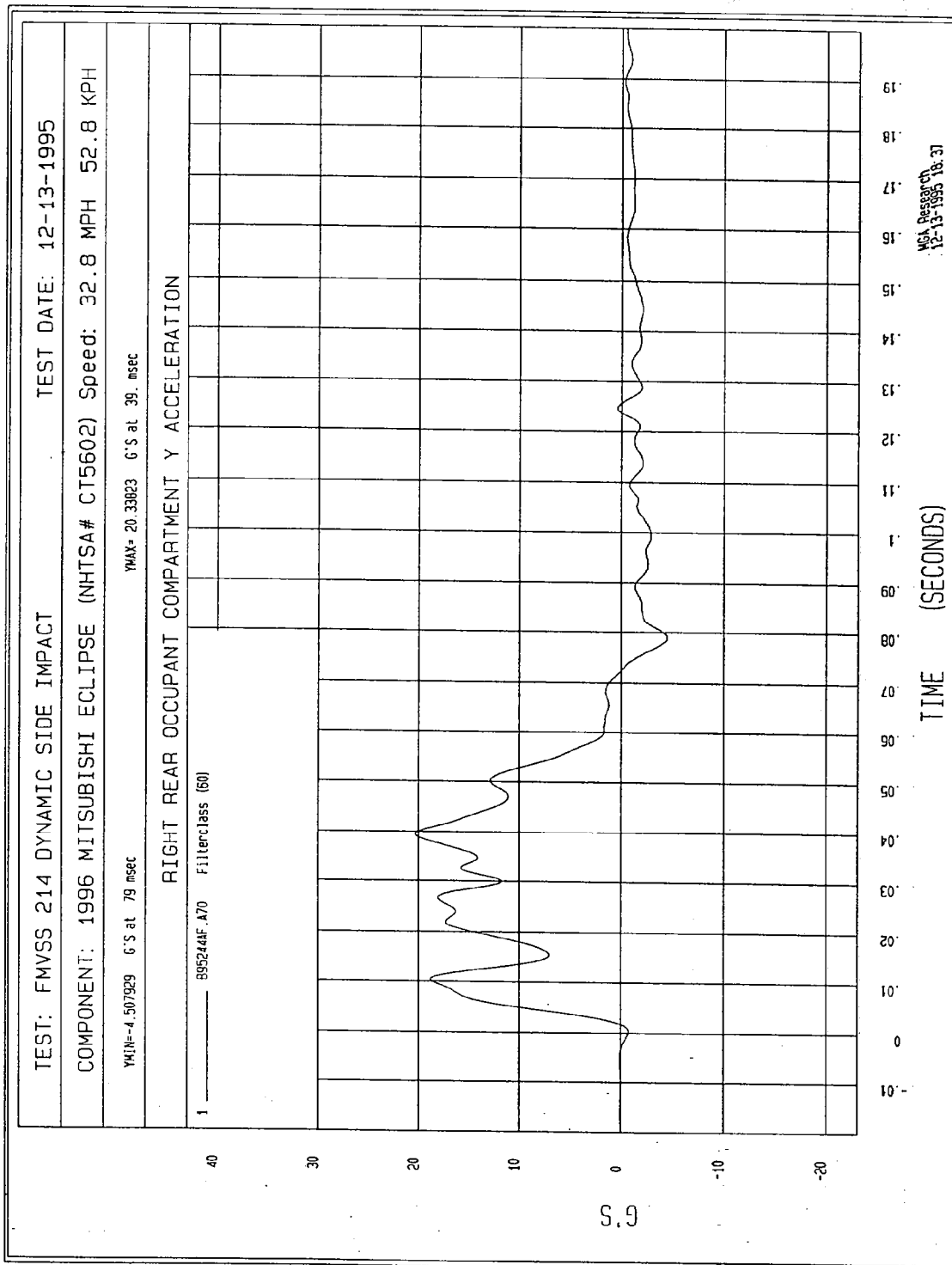


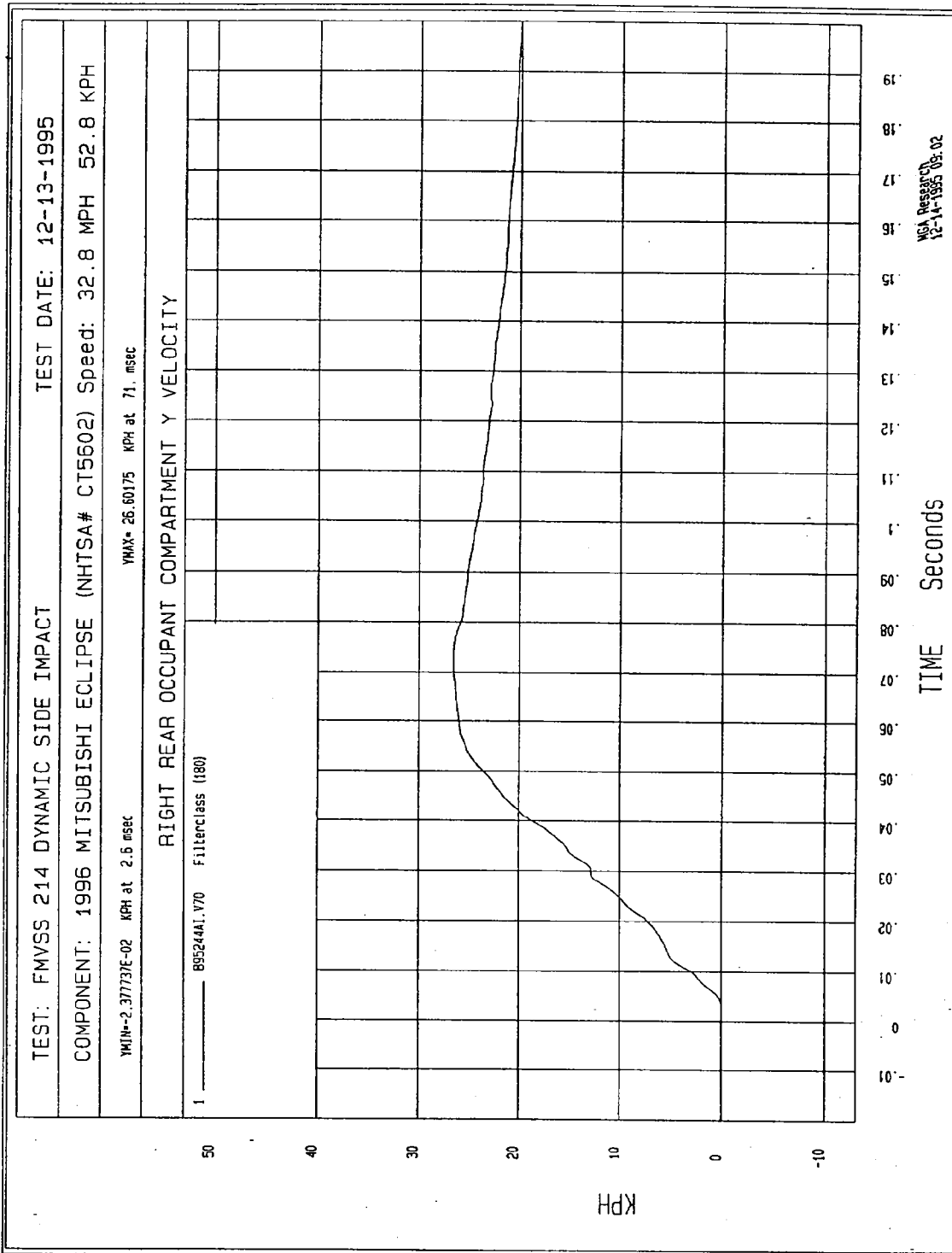






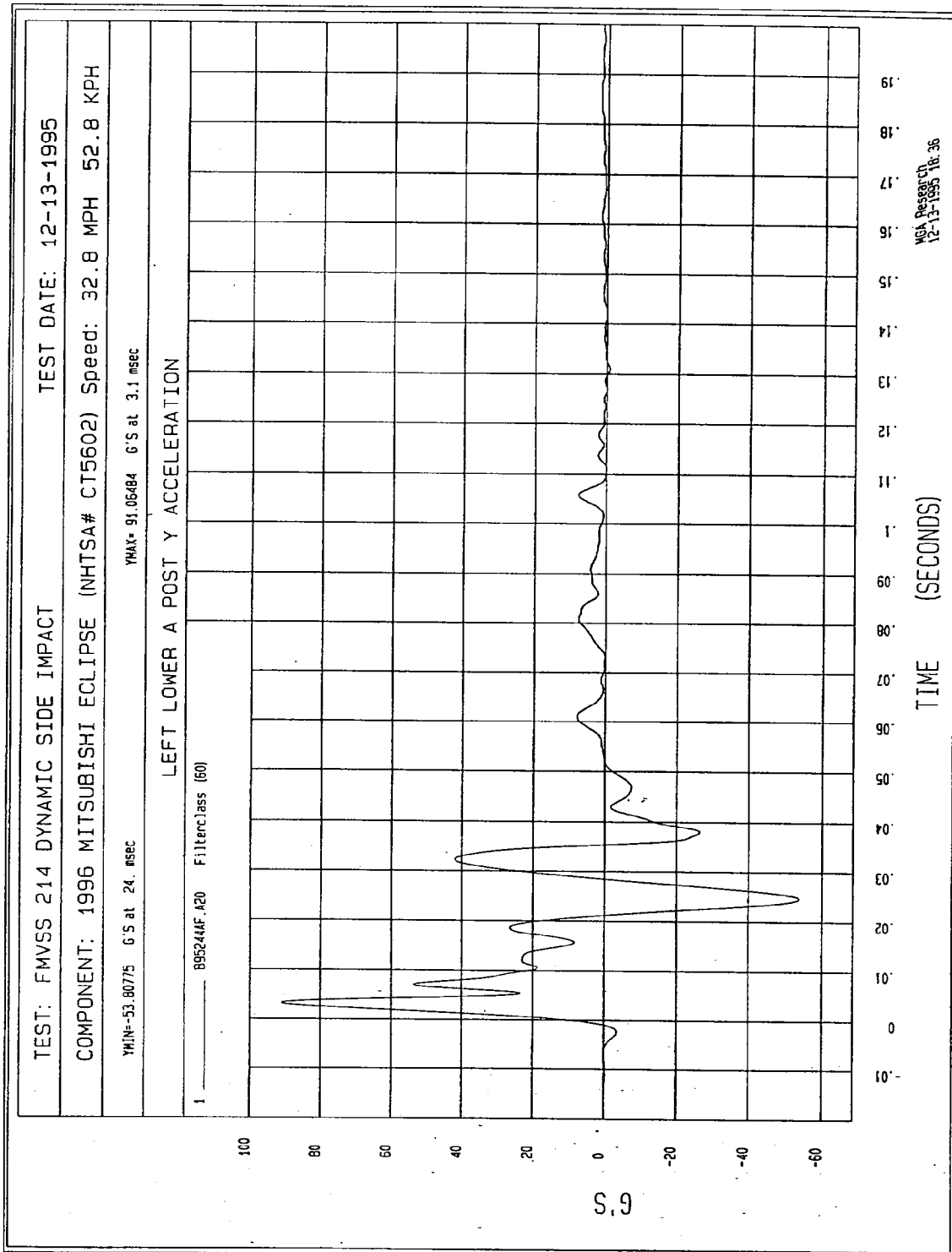


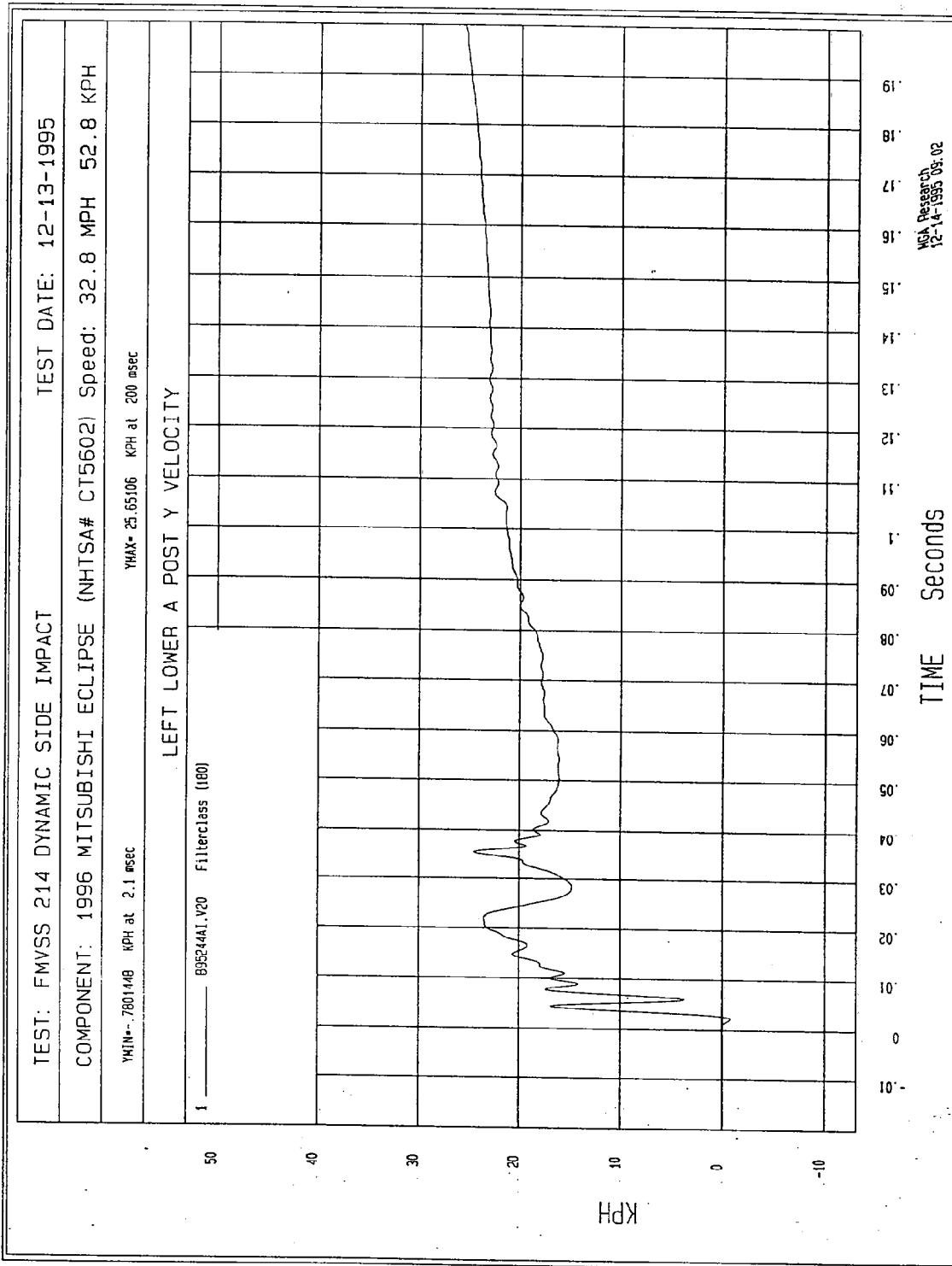


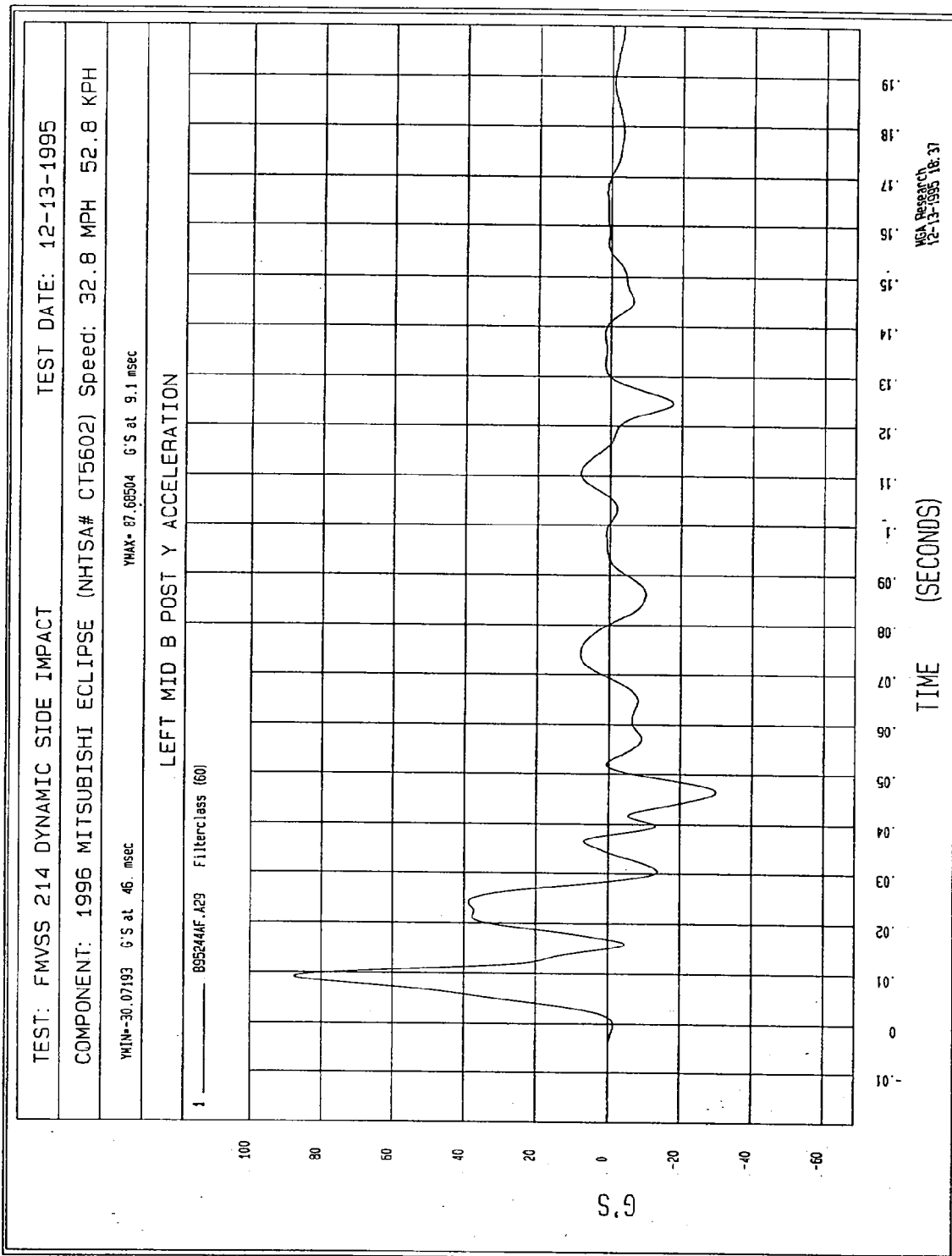


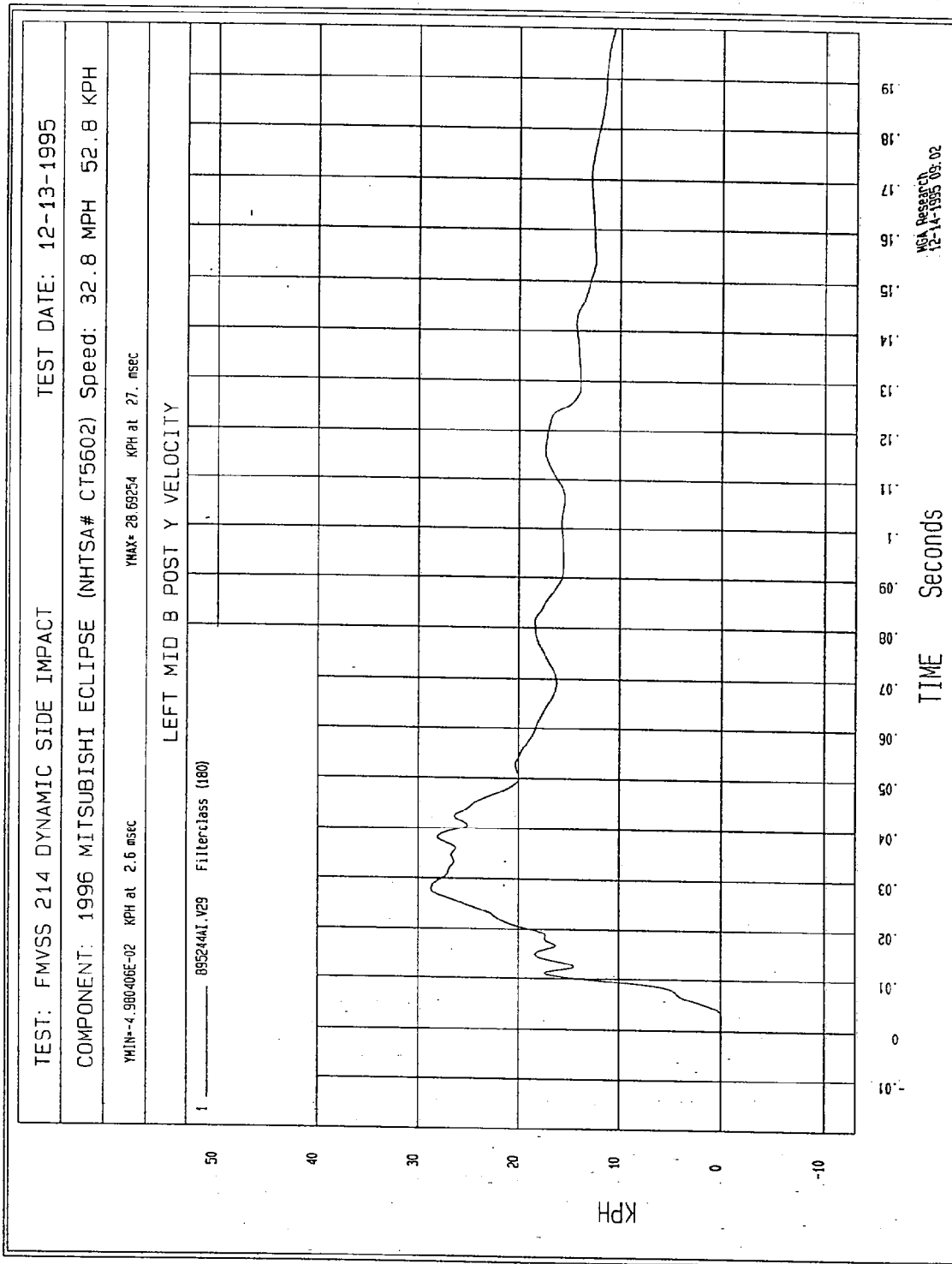
LEFT MID A POST Y ACCELERATION VS. TIME

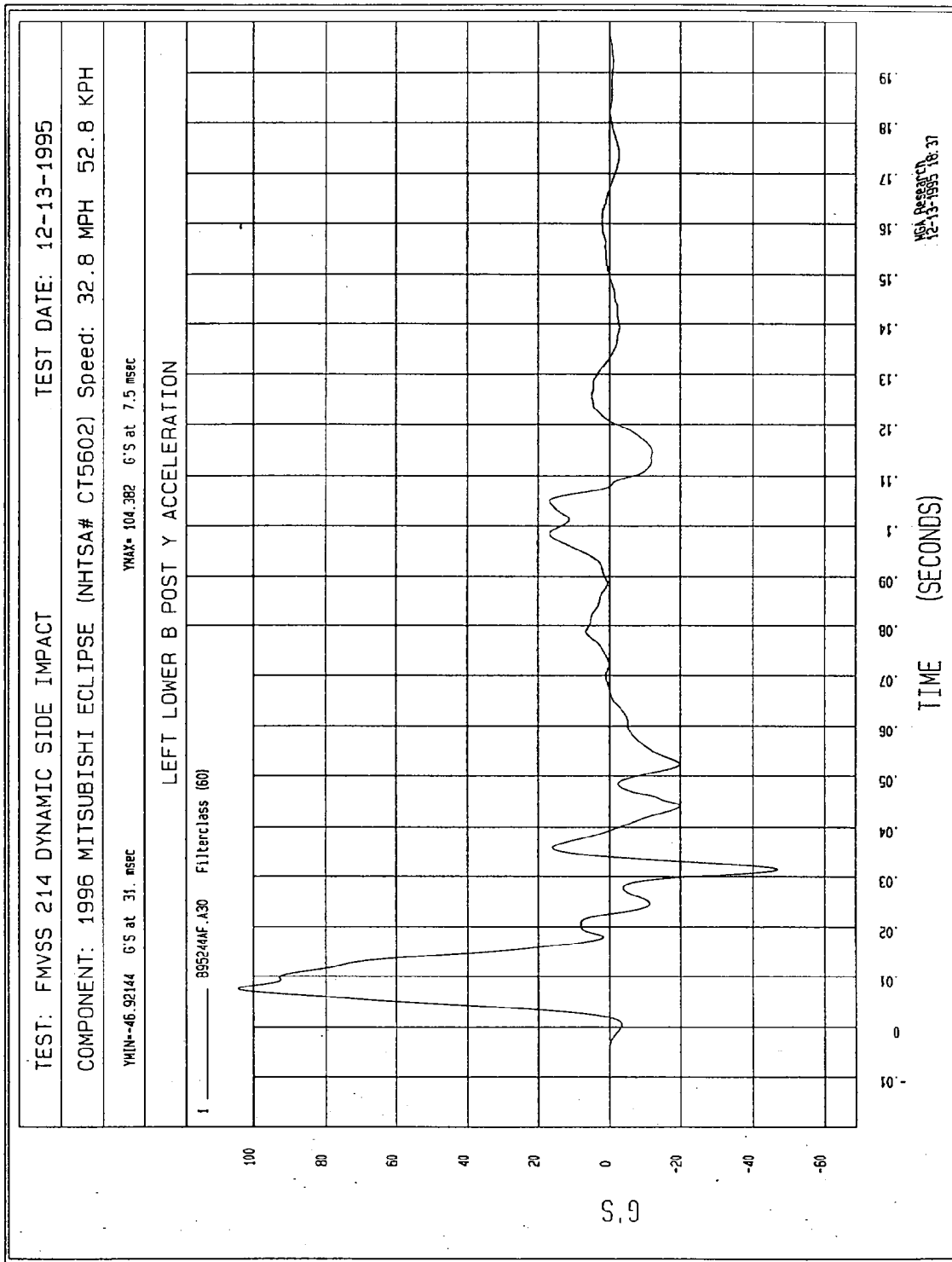
NO VALID DATA COLLECTED

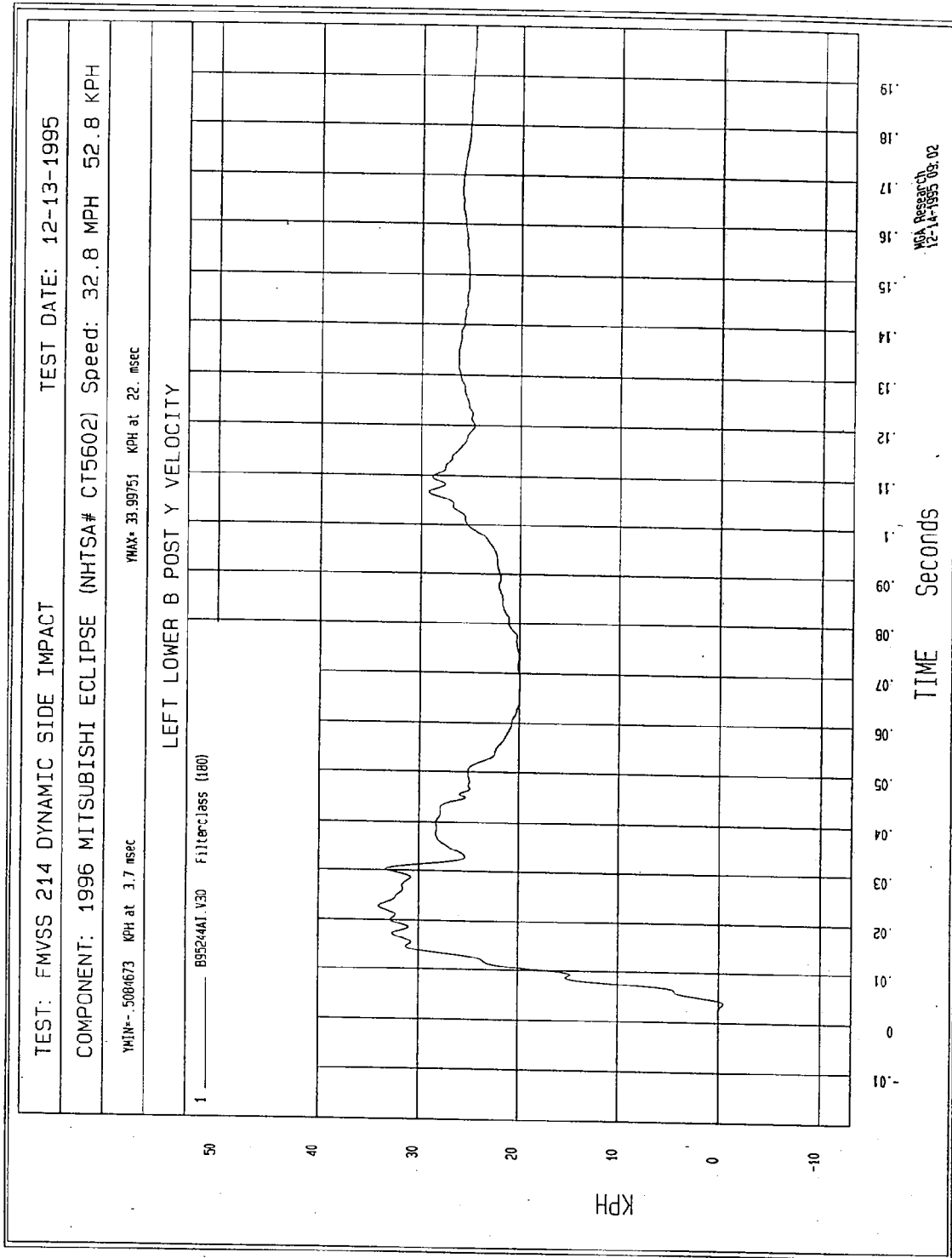


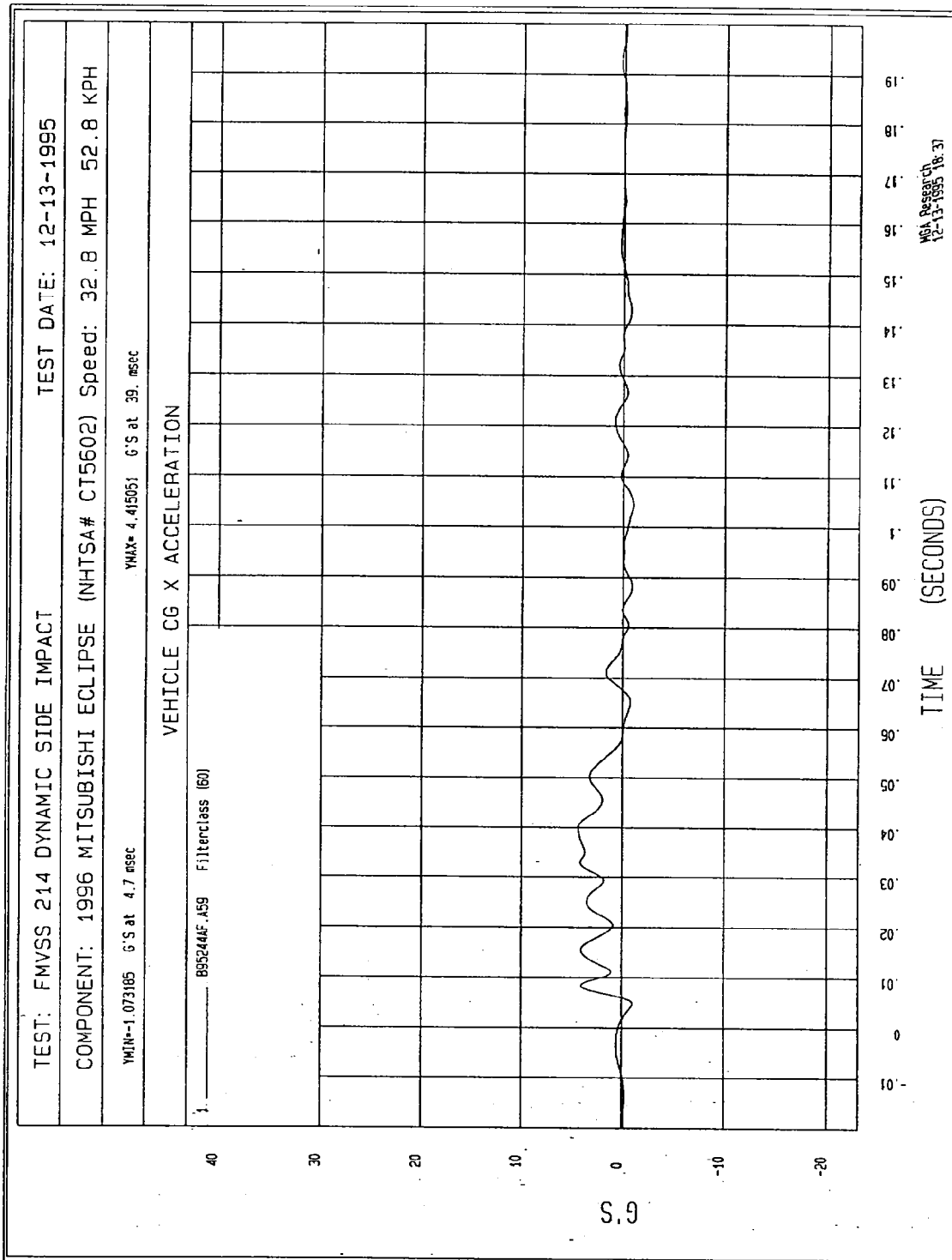


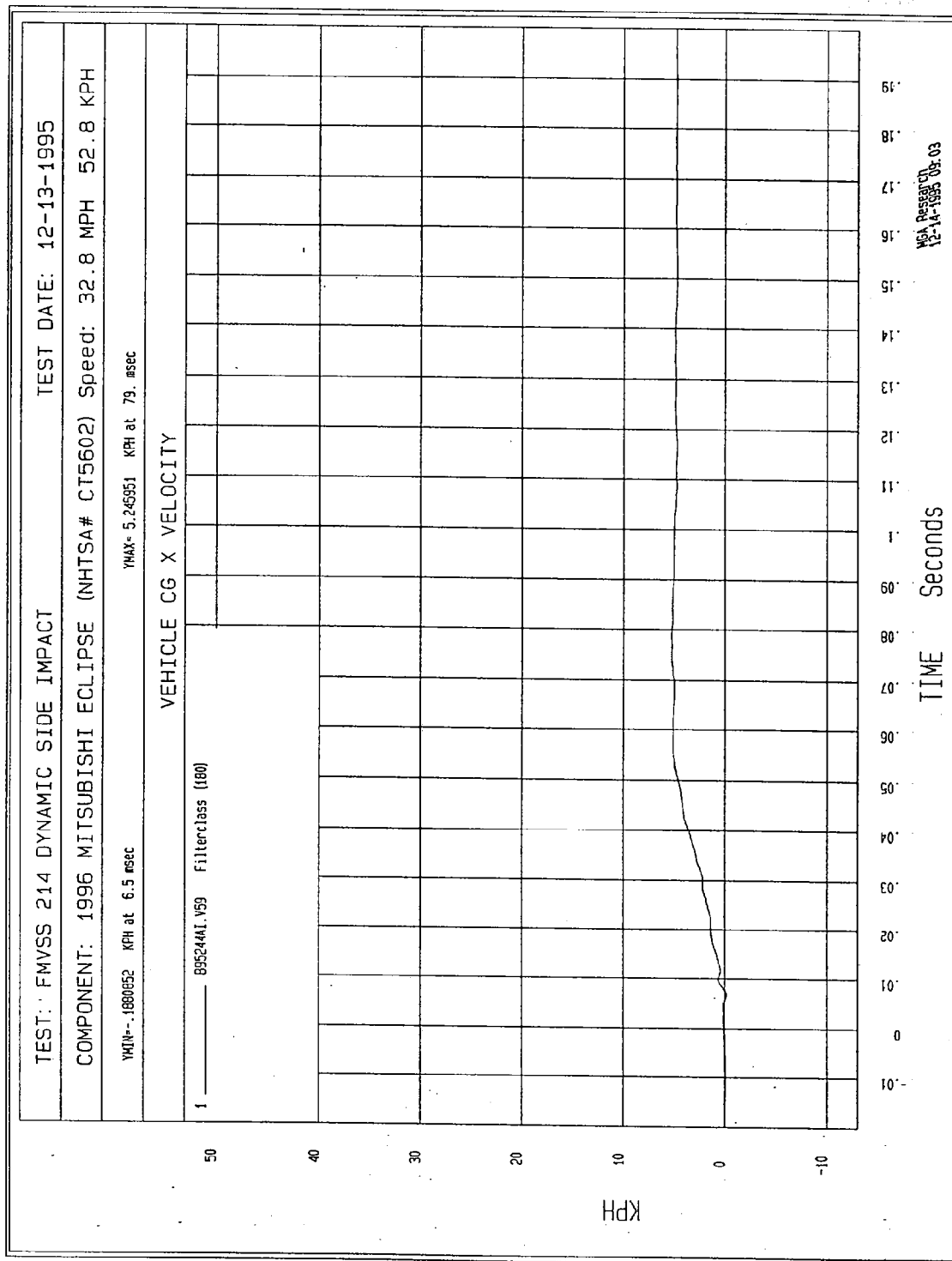


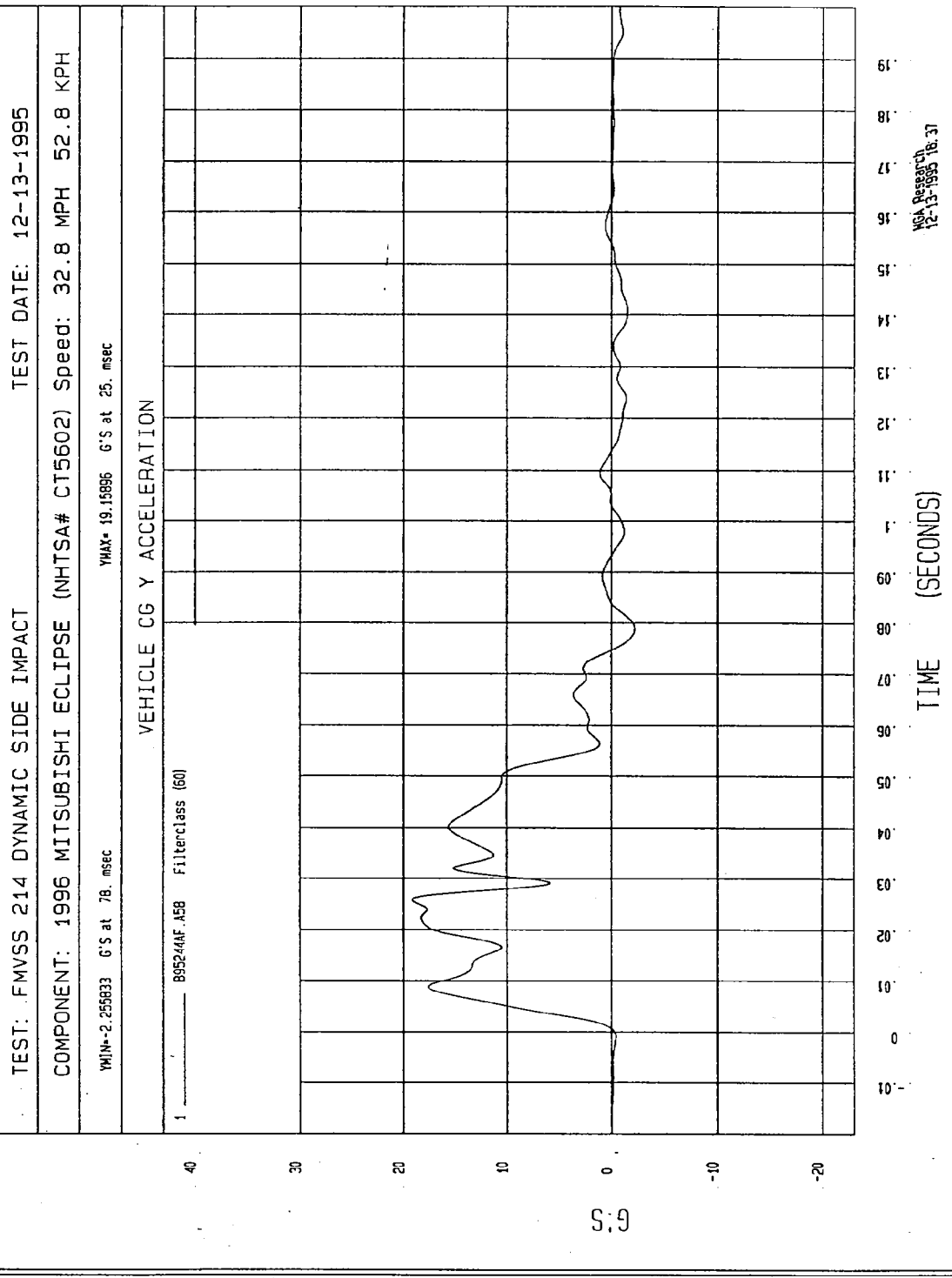


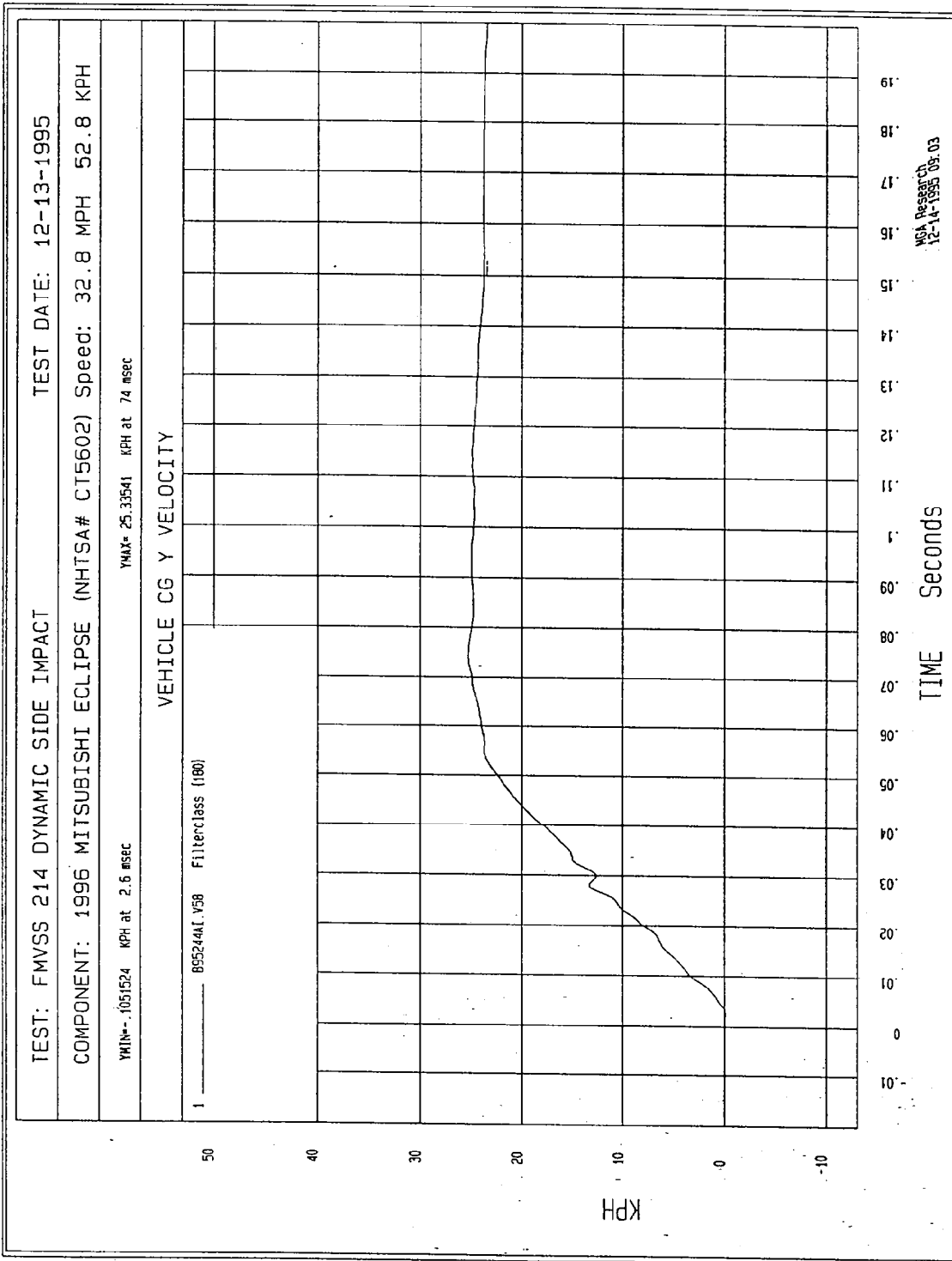


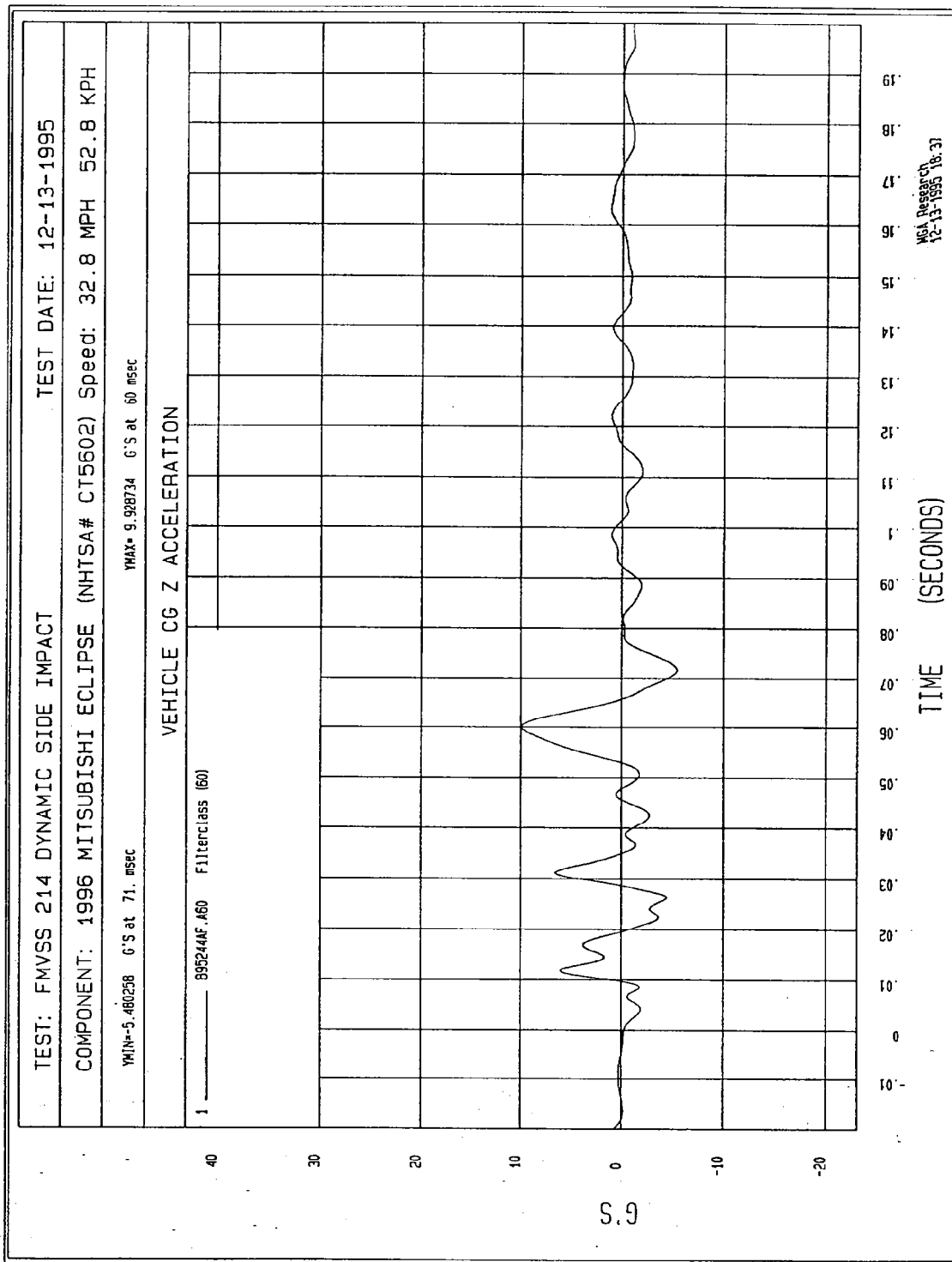


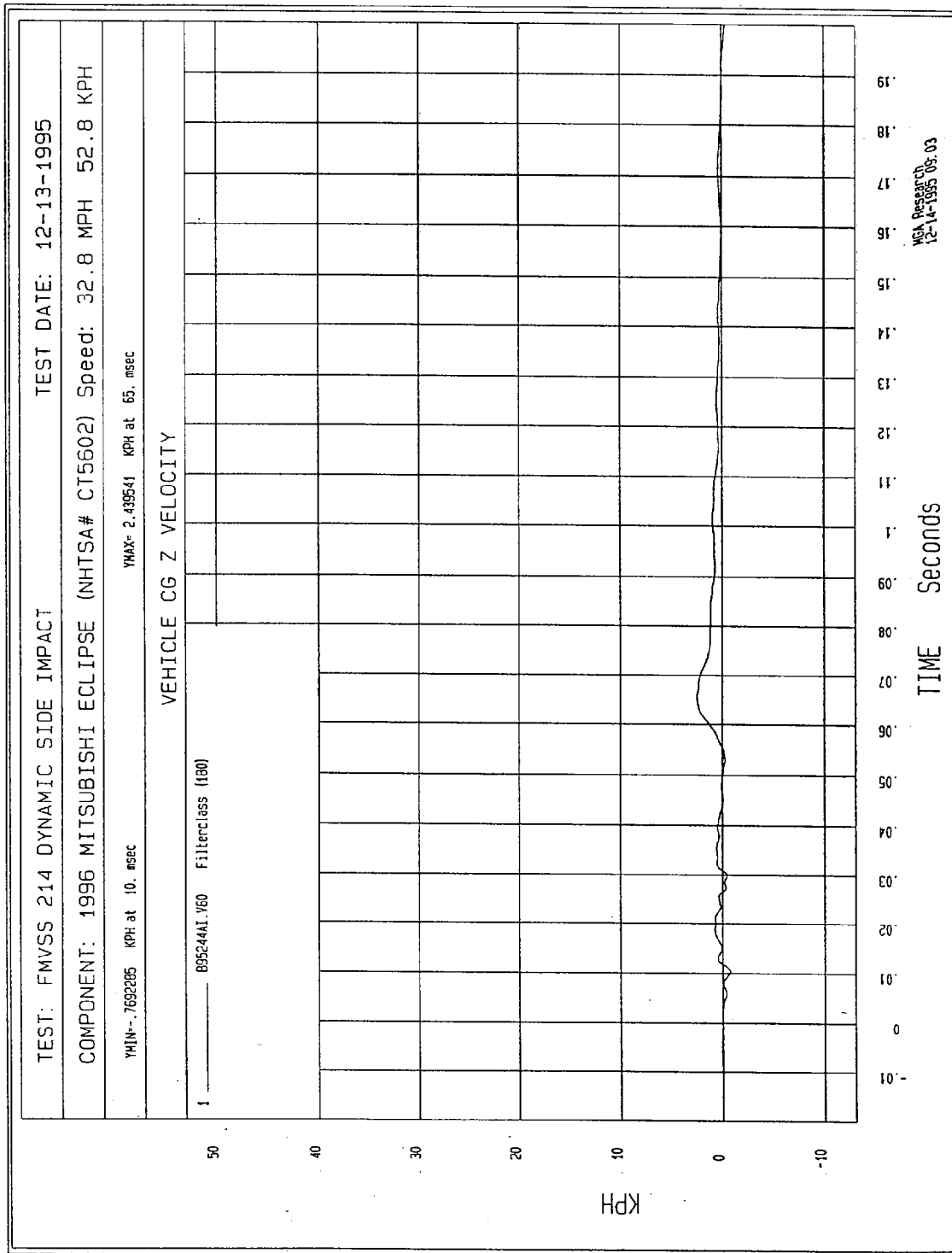


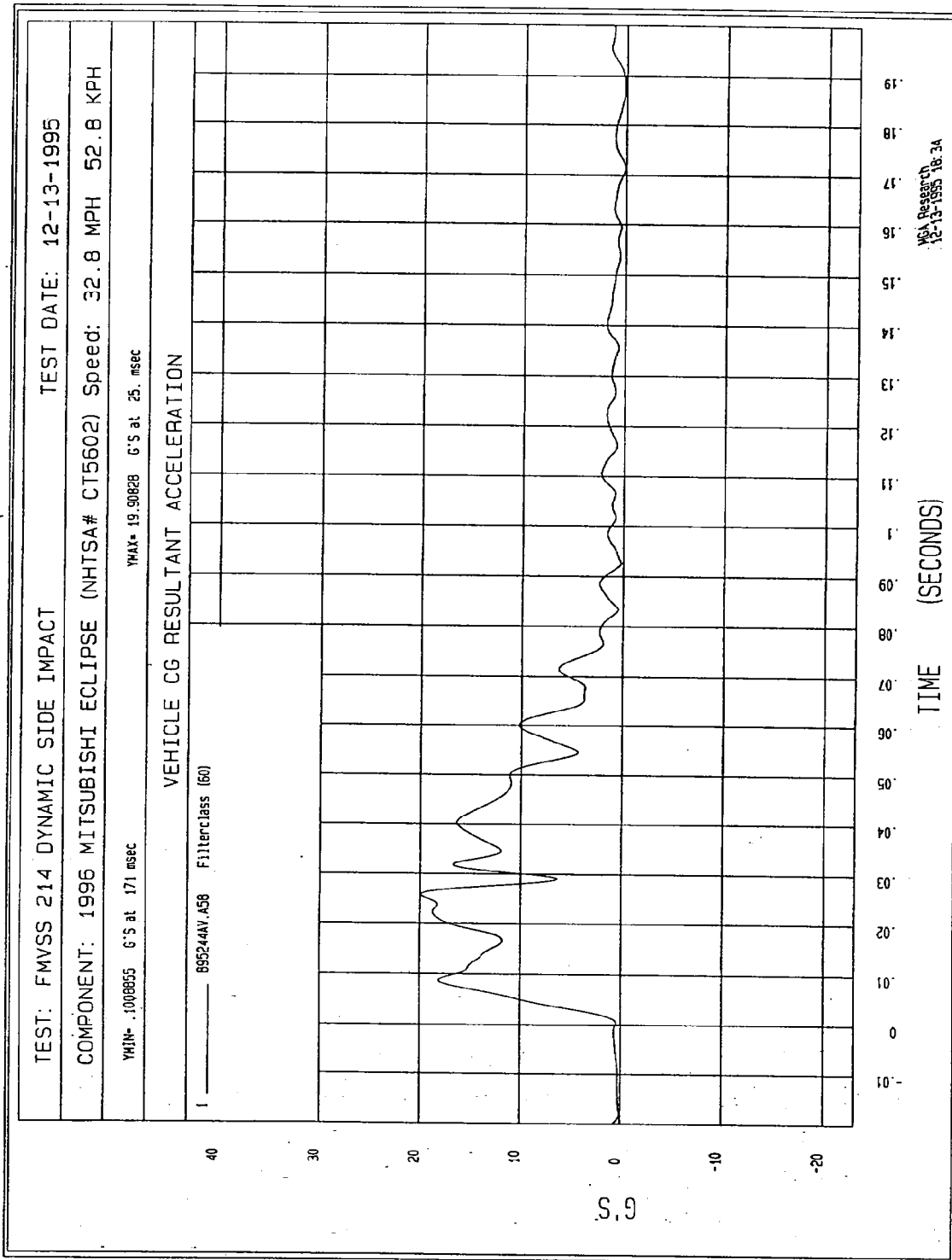












TEST DATE: 12-13-1995

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

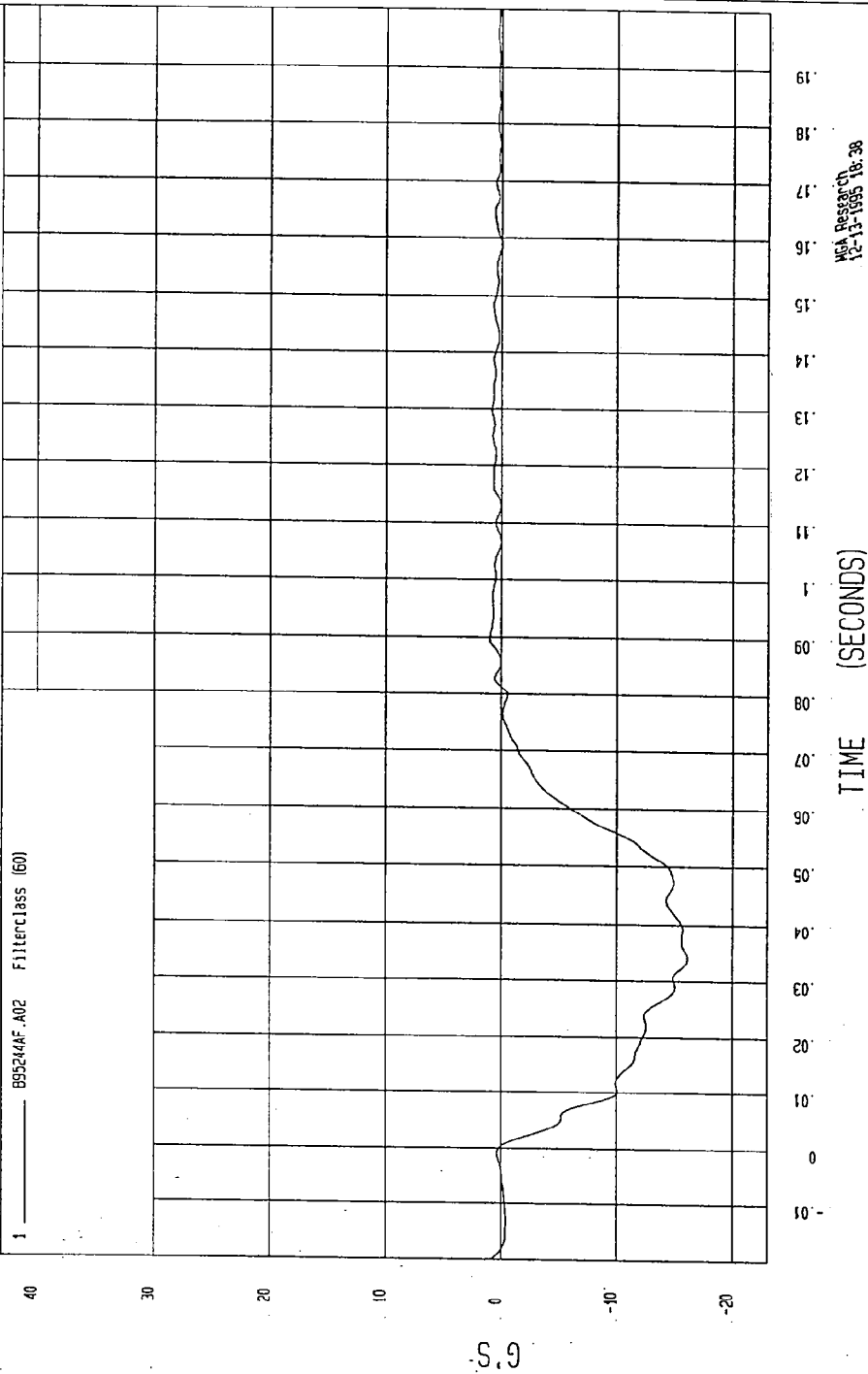
COMPONENT: 1996 MITSUBISHI ECLIPSE (NHTSA# CT5602) Speed: 32.8 MPH 52.8 KPH

YMIN=-16.15301 0'S at 34 msec

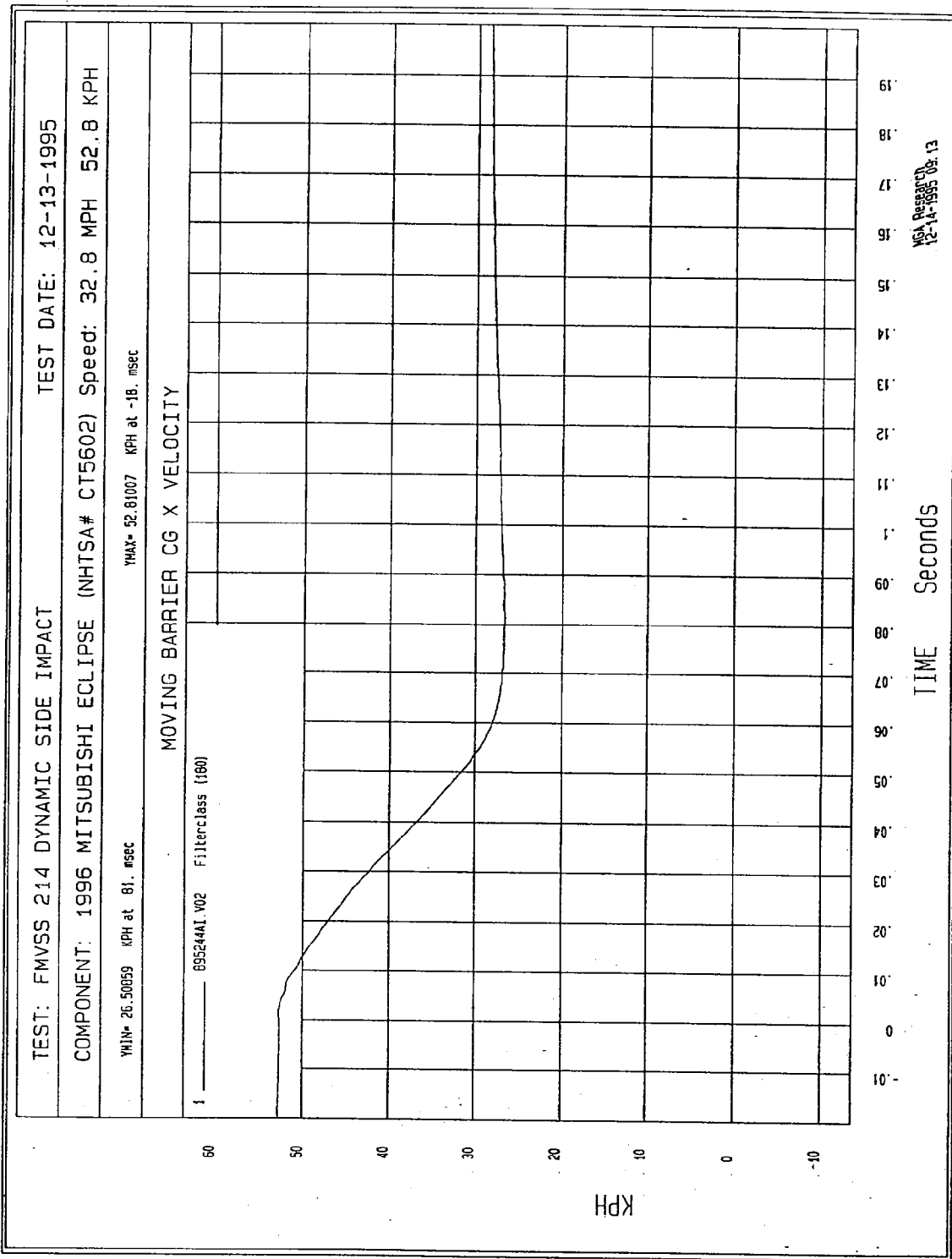
YMAX= 1.043017 G'S at 89. msec

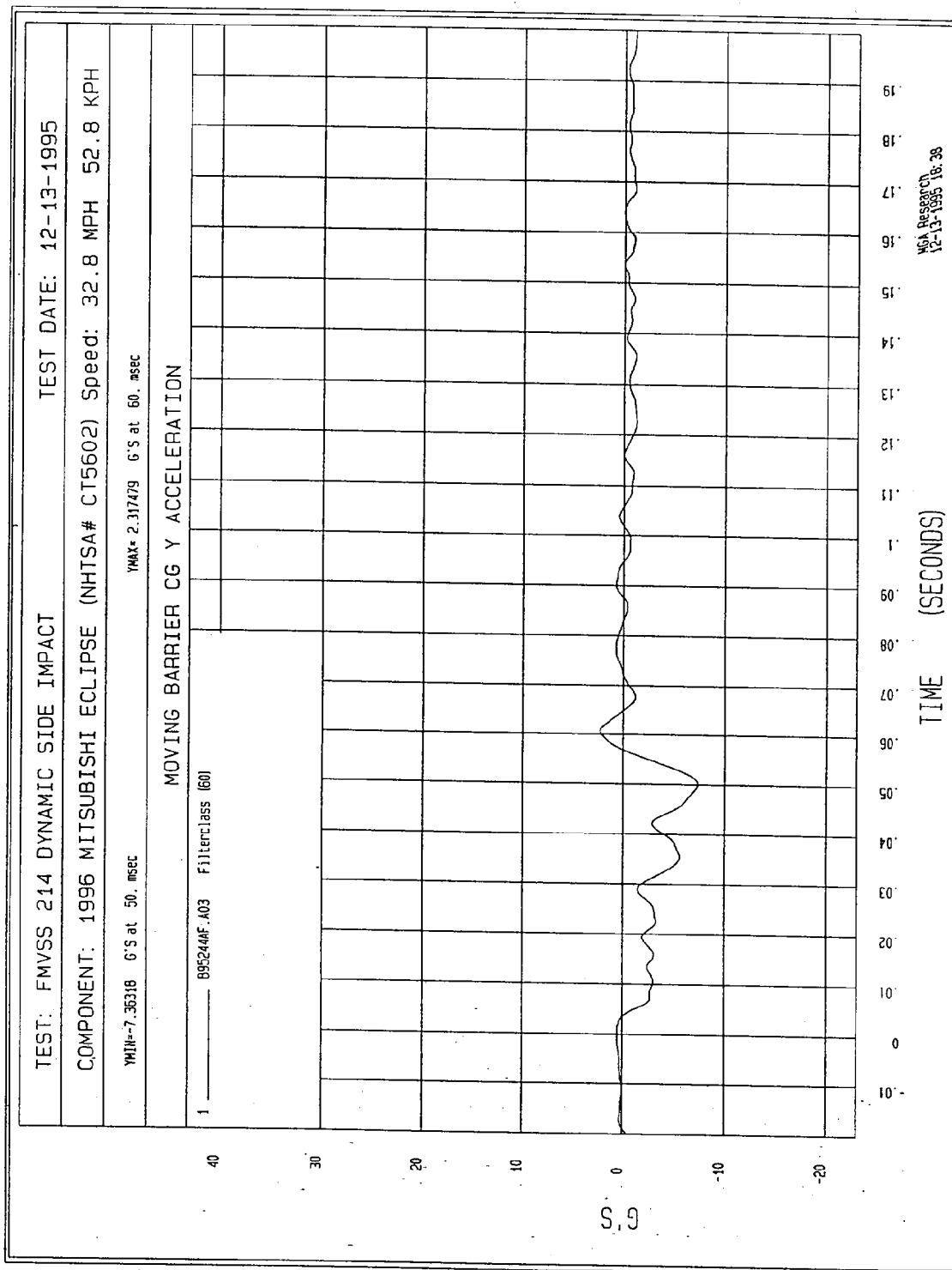
MOVING BARRIER CG X ACCELERATION

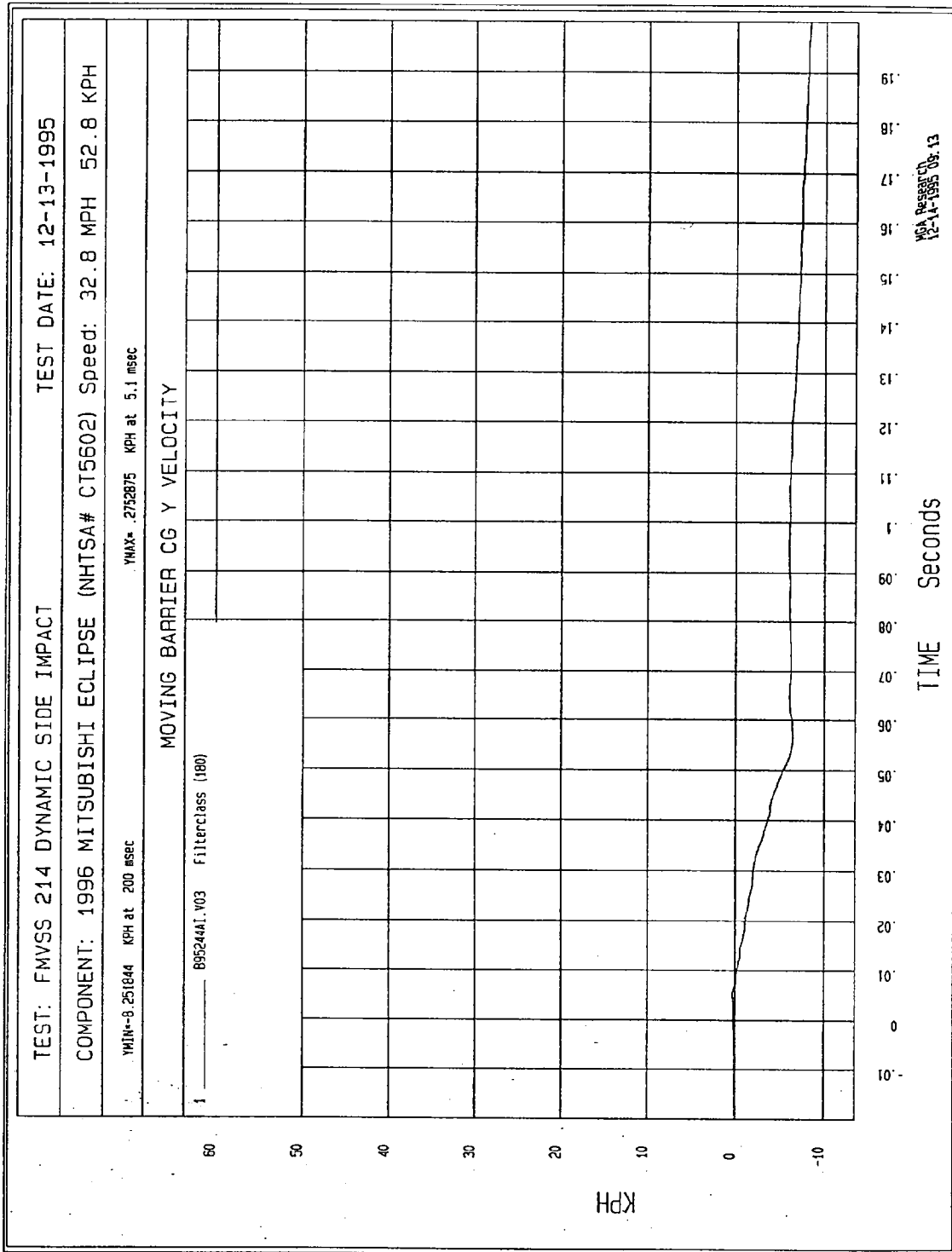
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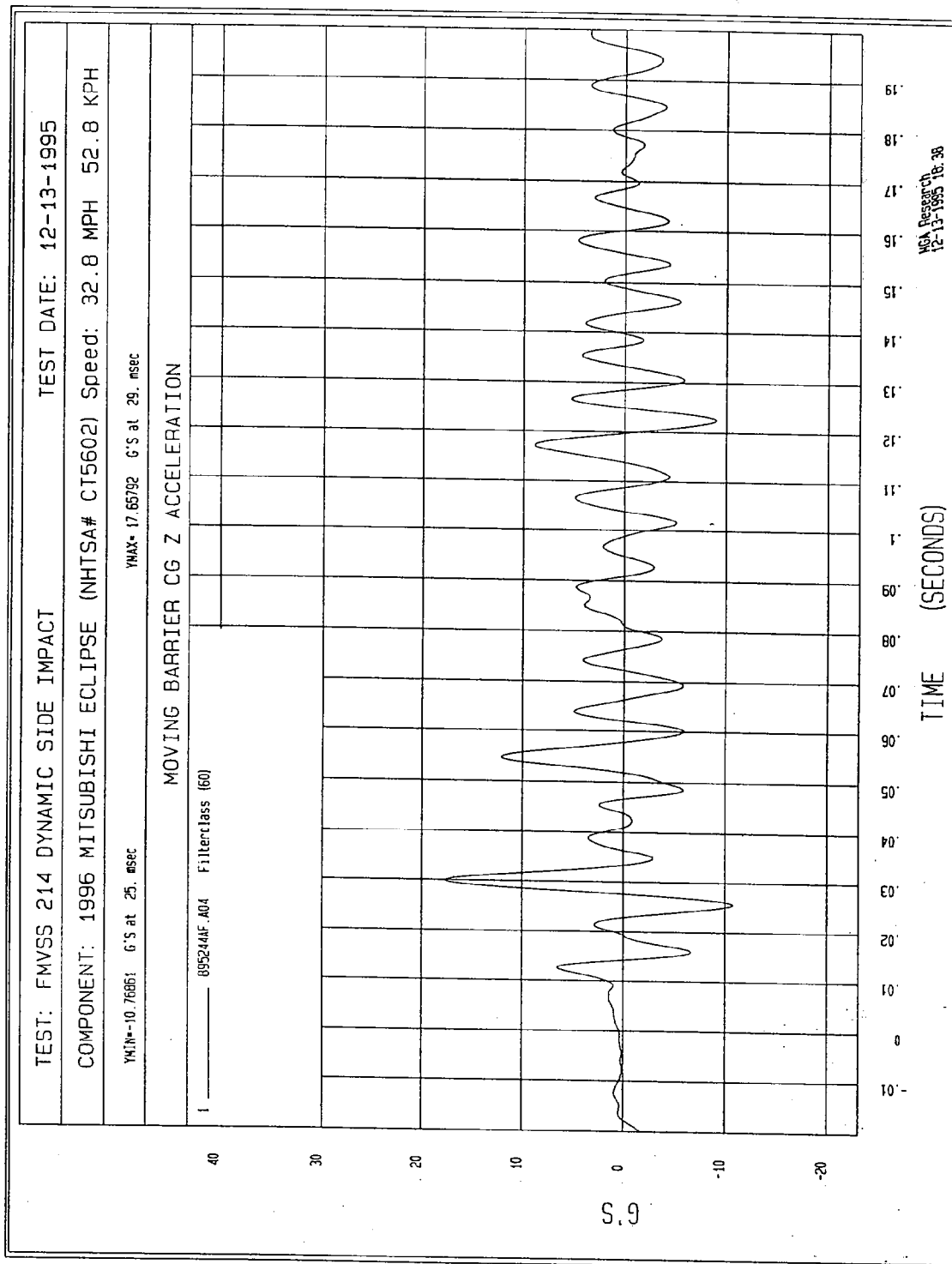


WGA Research
12-13-1995 18:38









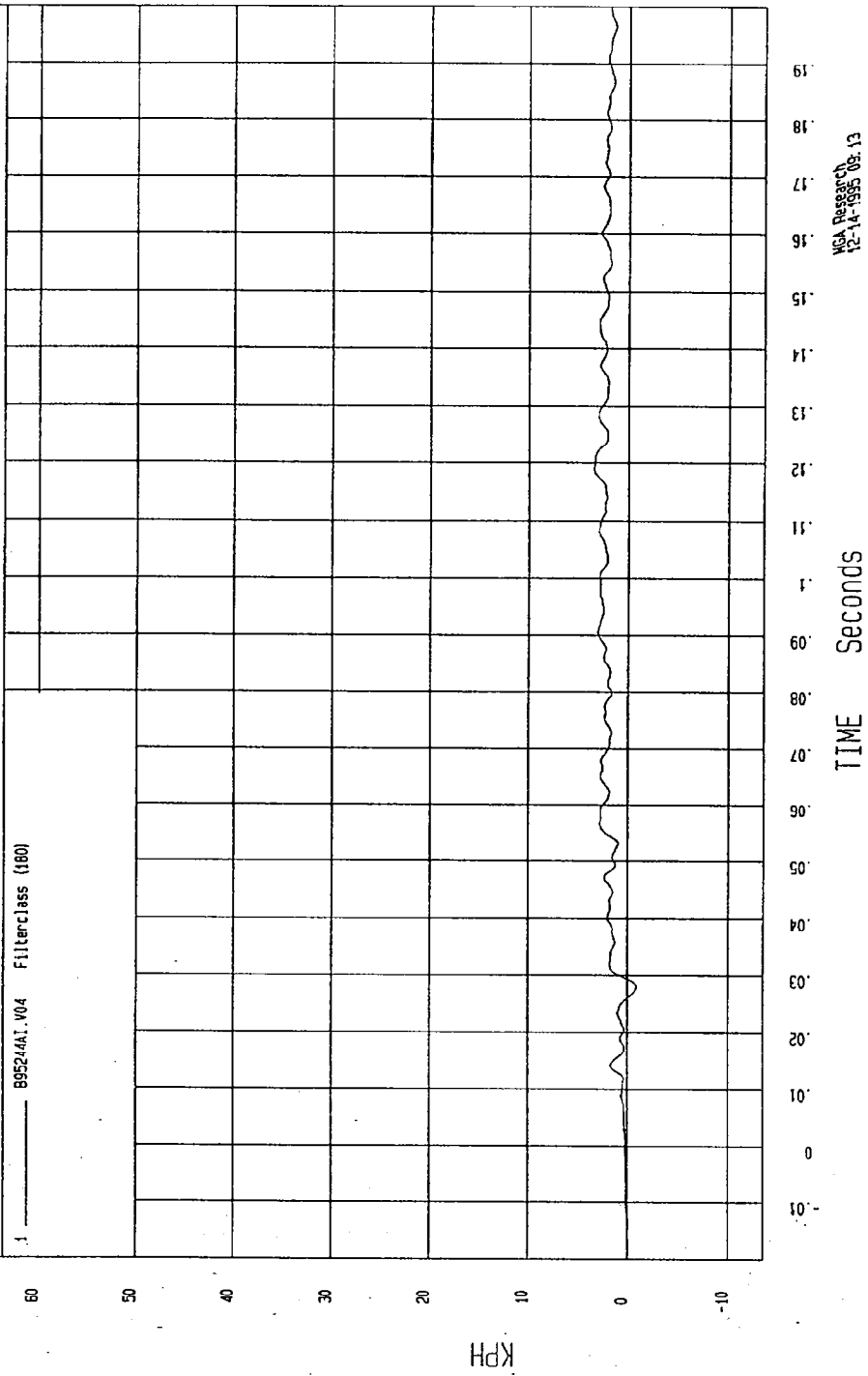
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 12-13-1995

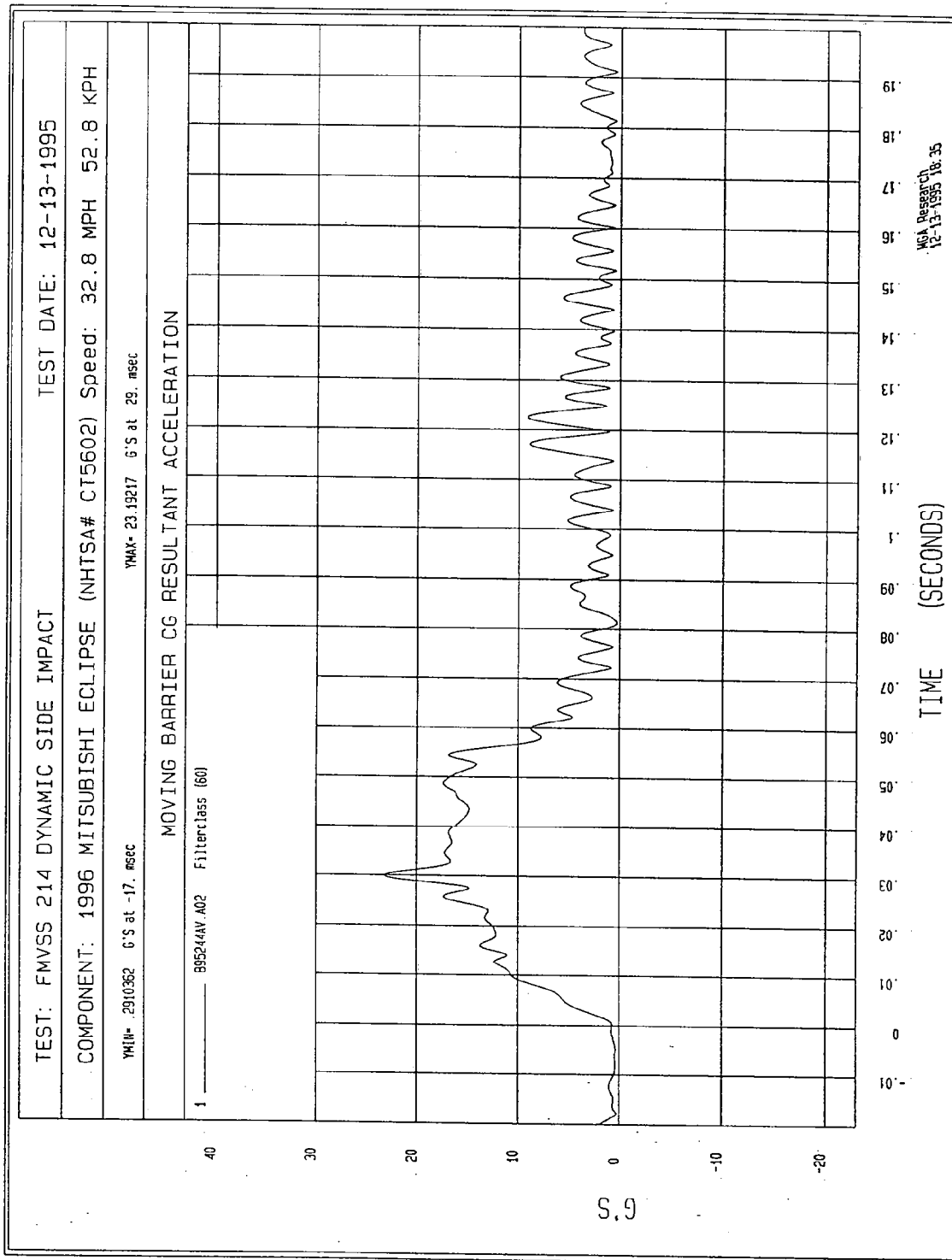
COMPONENT: 1996 MITSUBISHI ECLIPSE (NHTSA# CT5602) Speed: 32.8 MPH 52.8 KPH

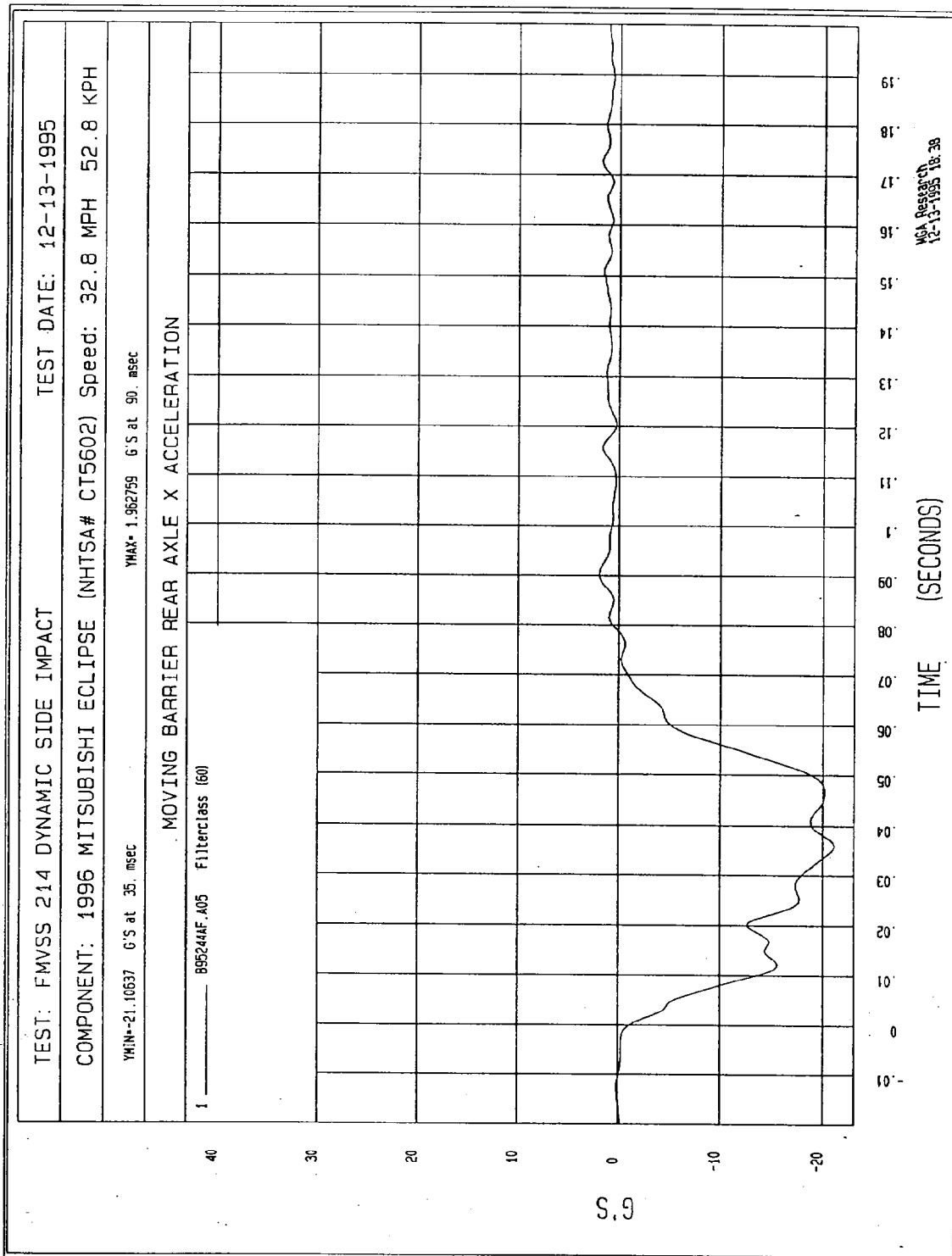
YIN= .899163 KPH at 28 msec

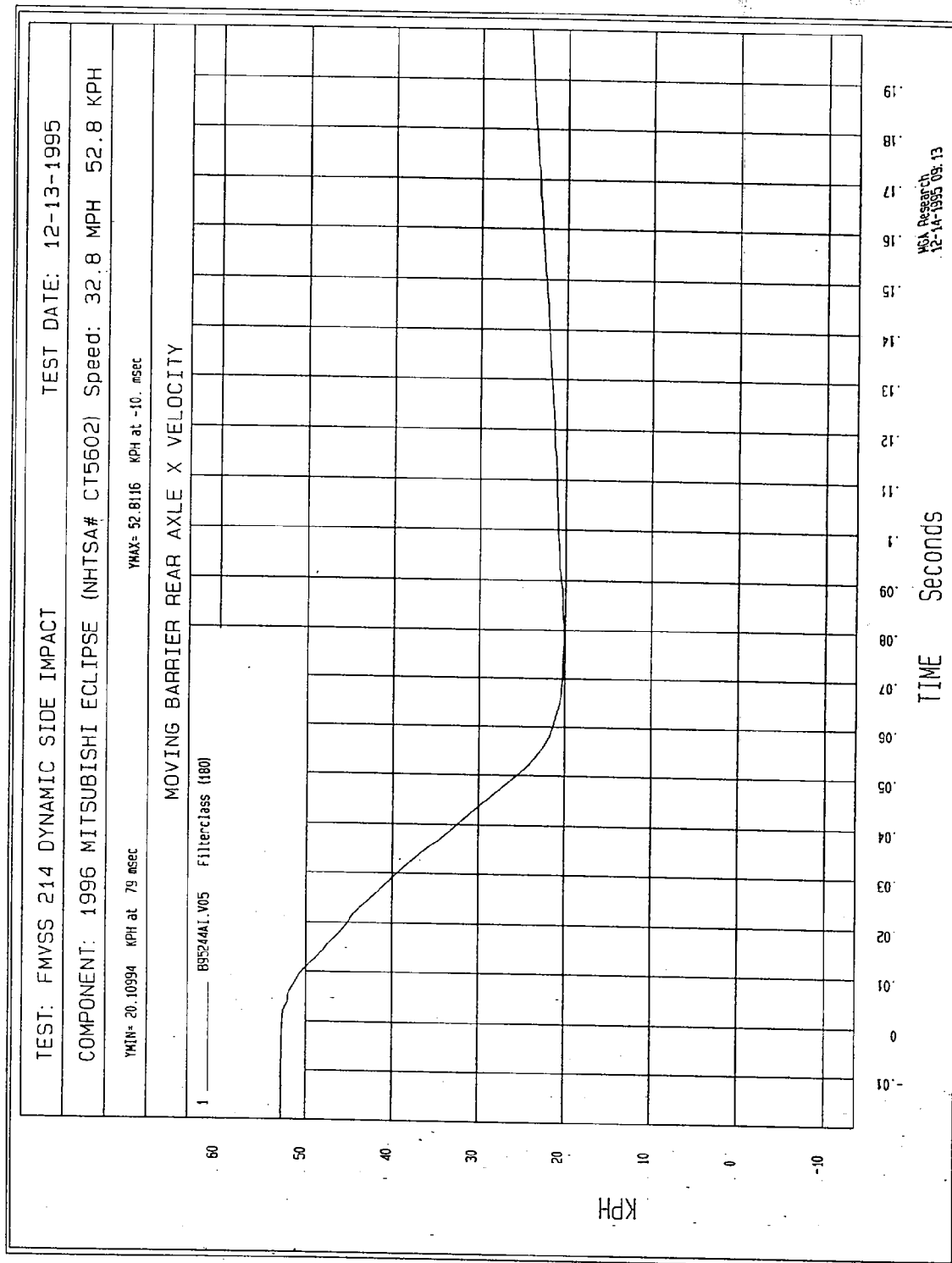
YMAX= 3.508296 KPH at 118 msec

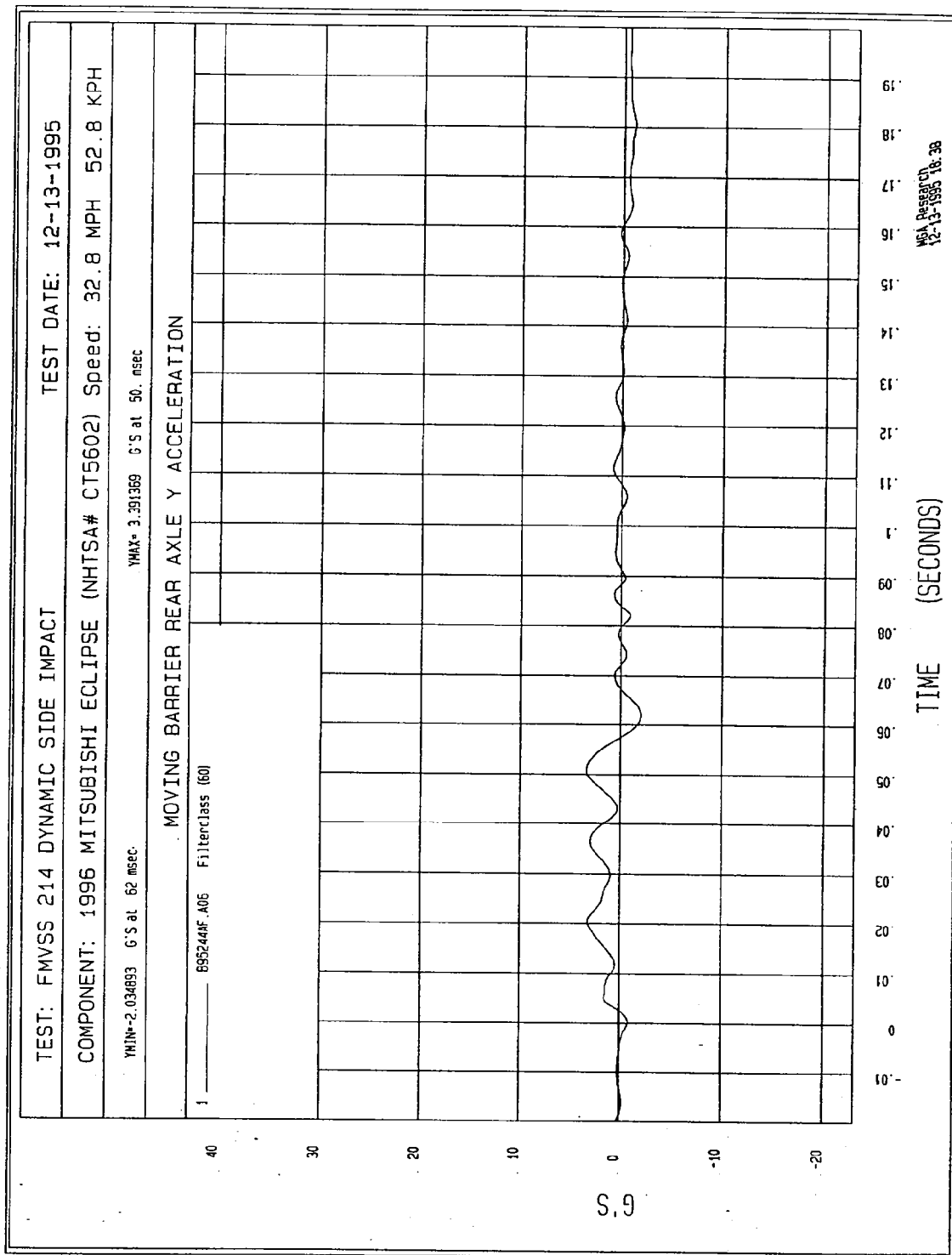
MOVING BARRIER CG Z VELOCITY

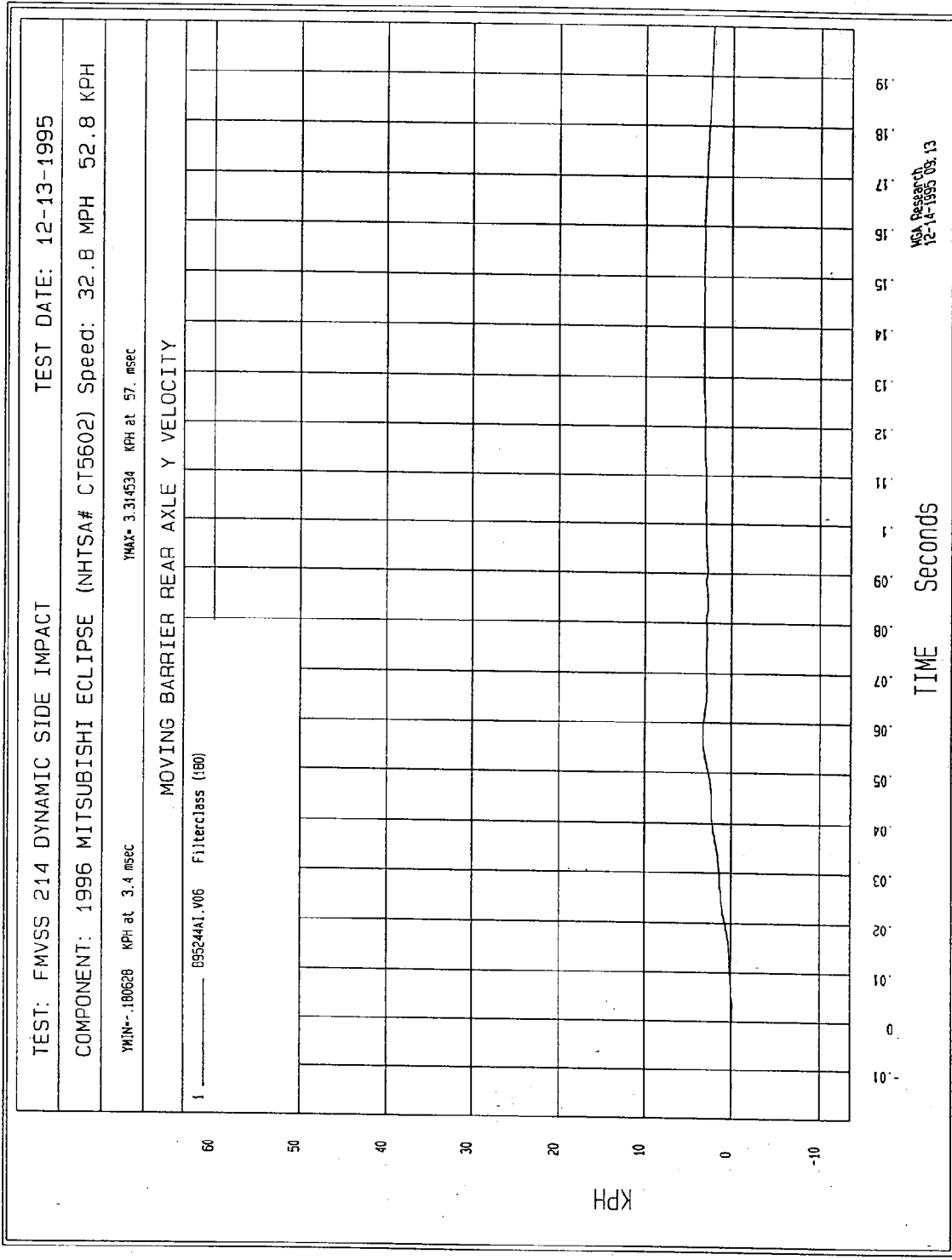


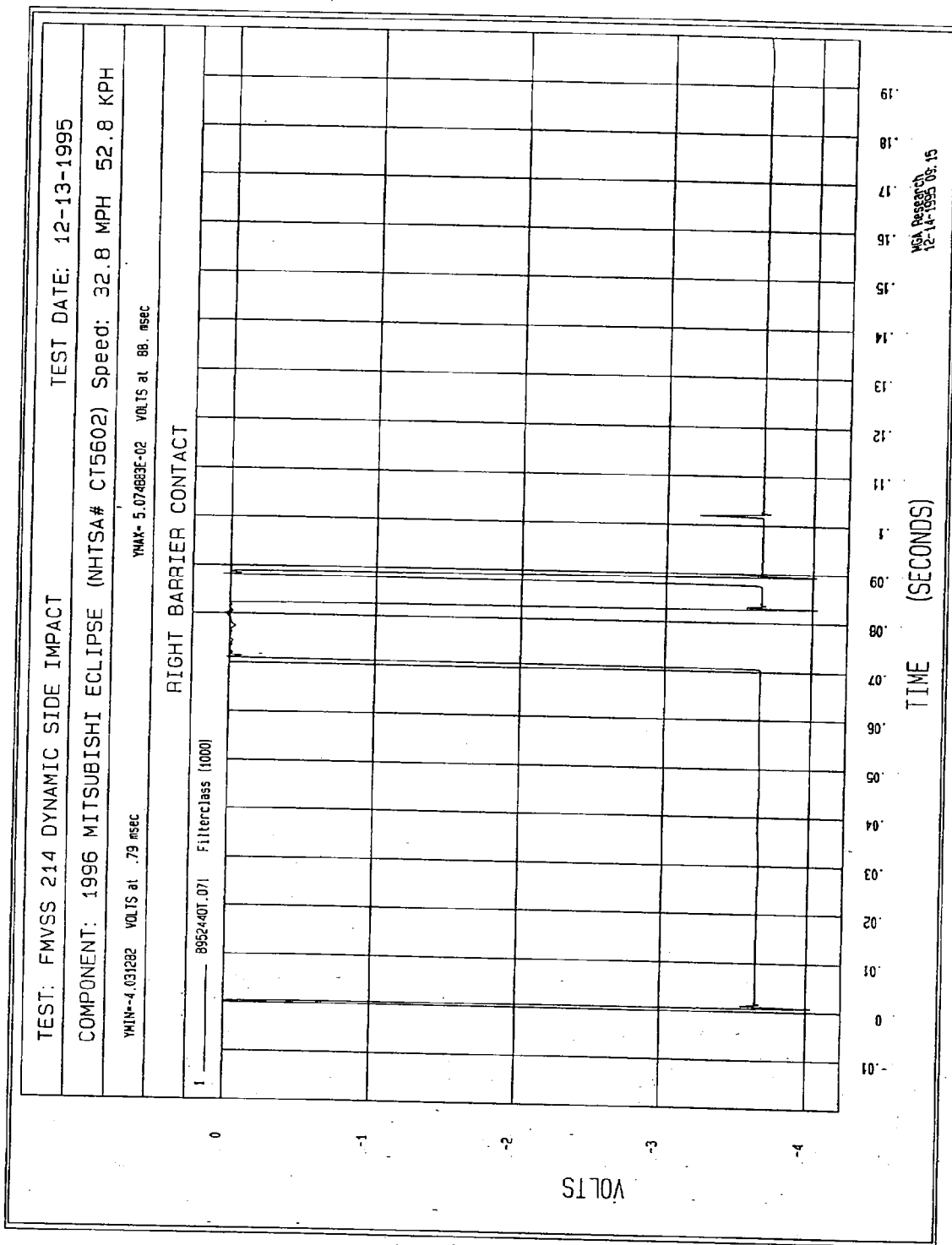


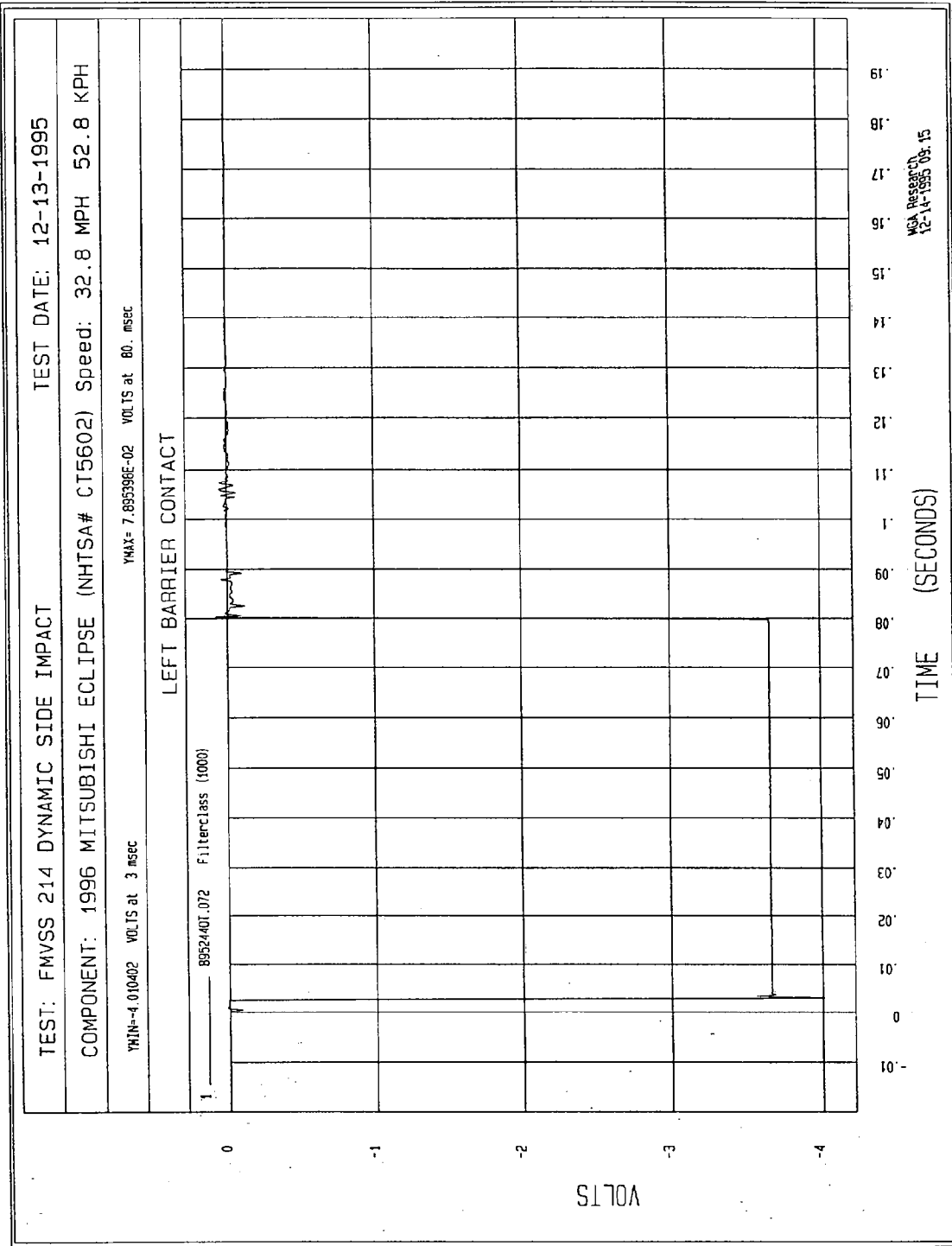


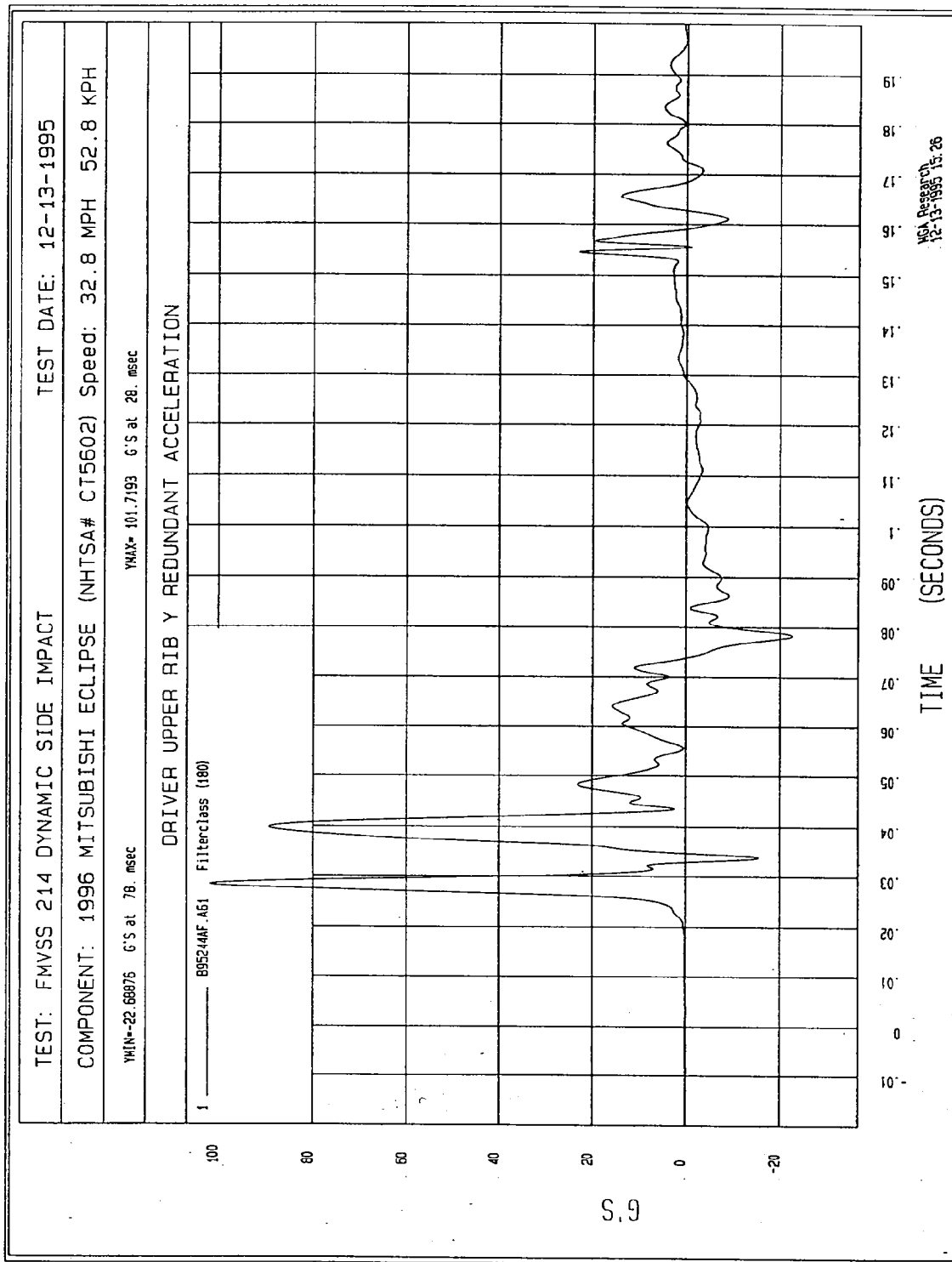


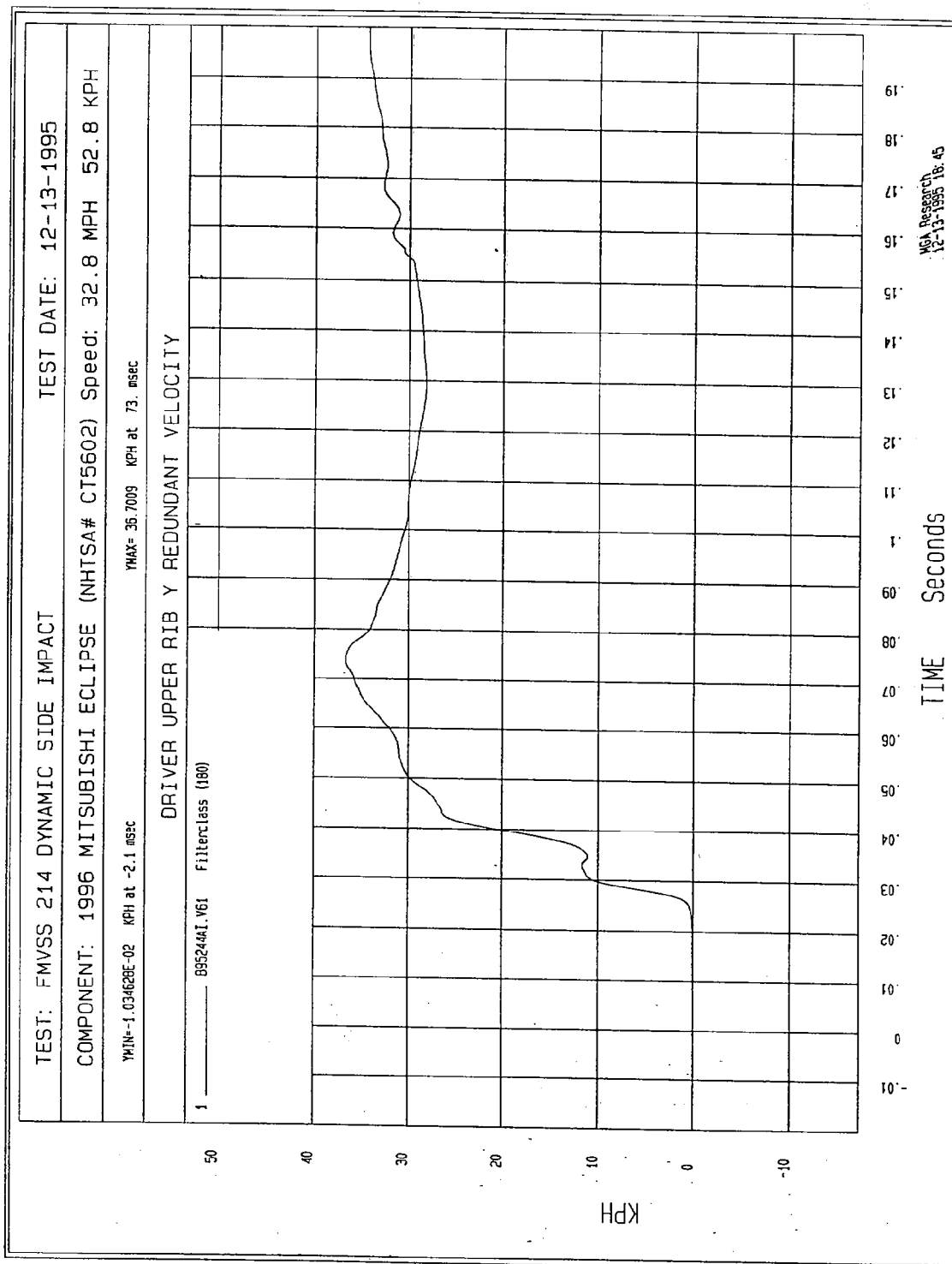


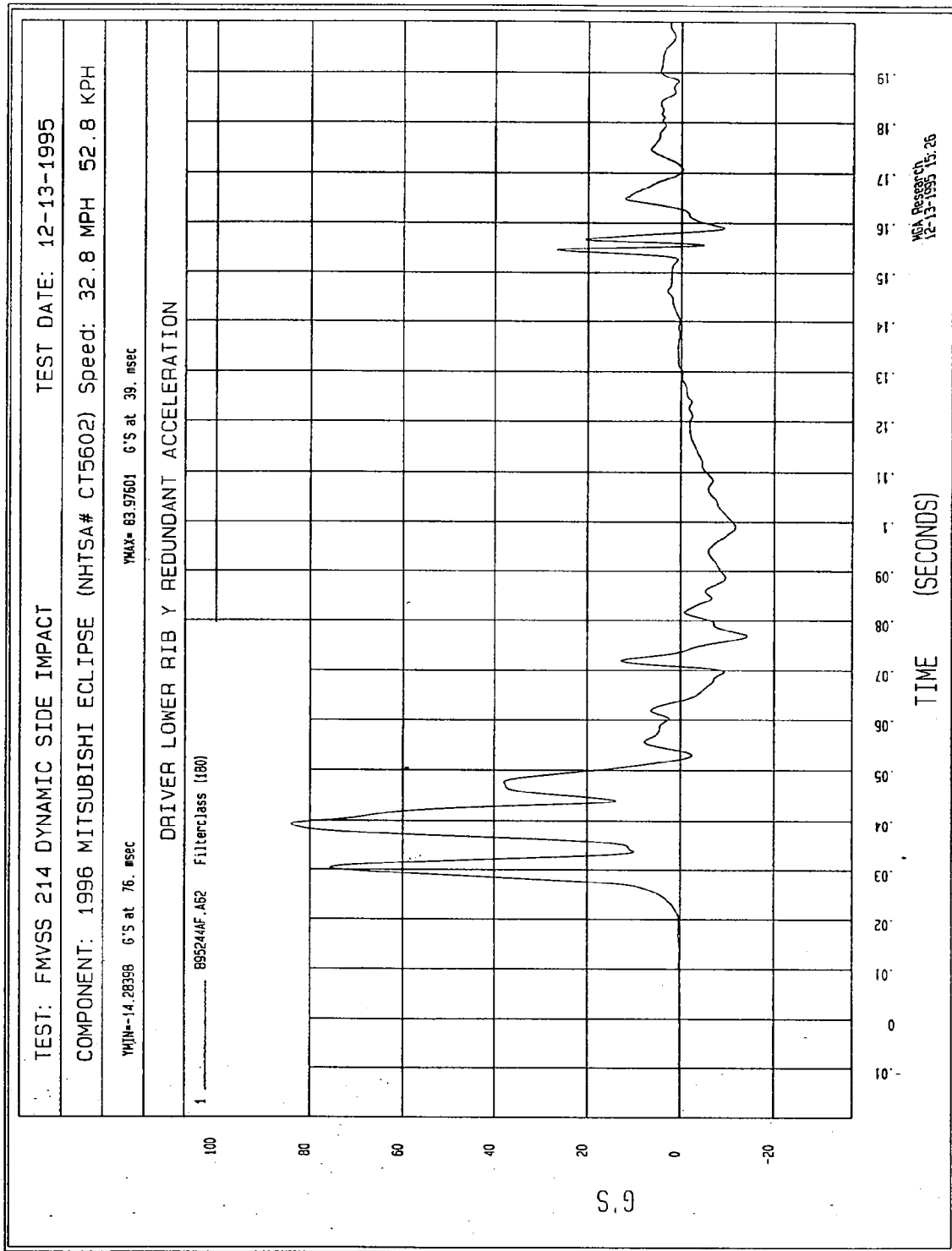


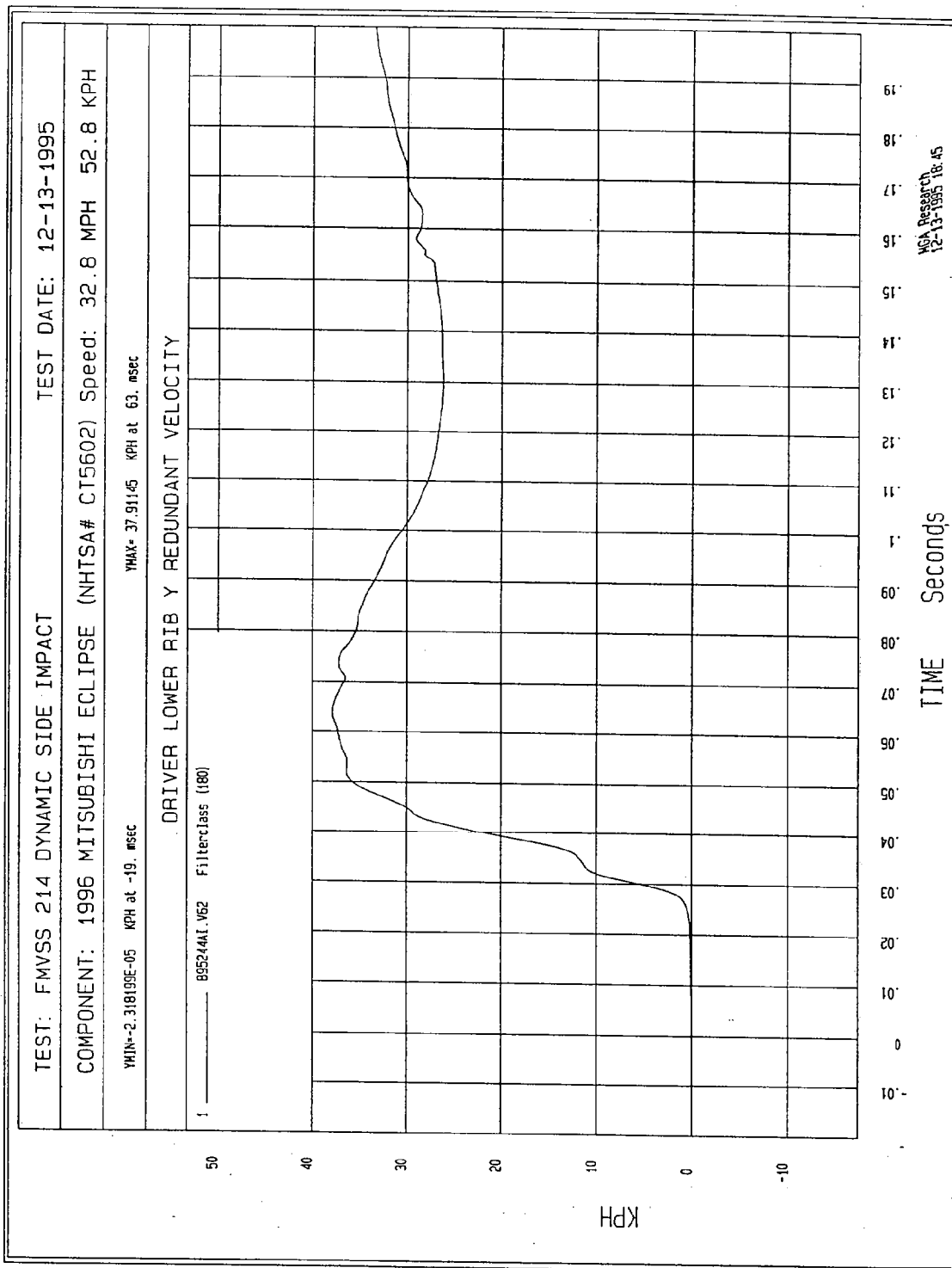


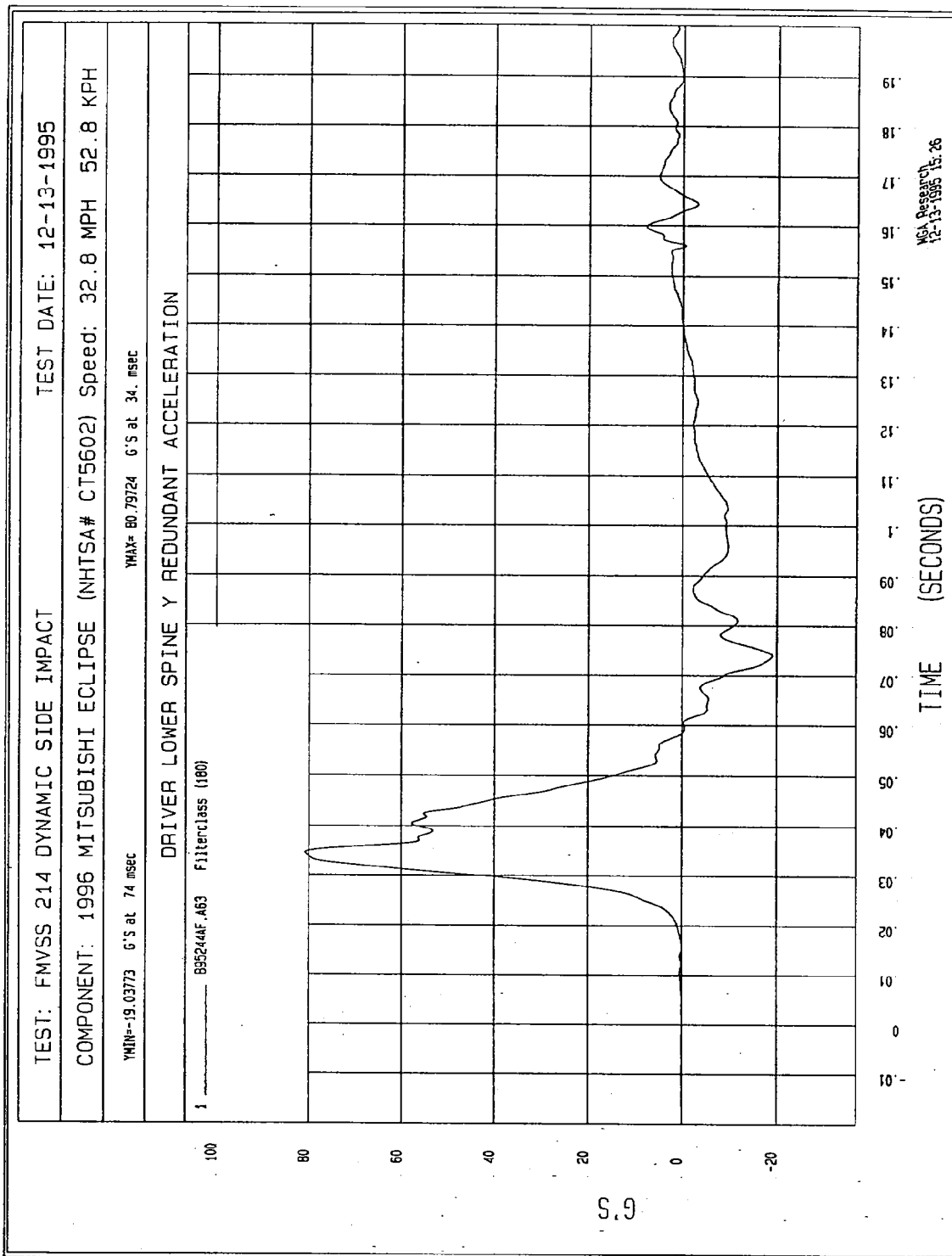


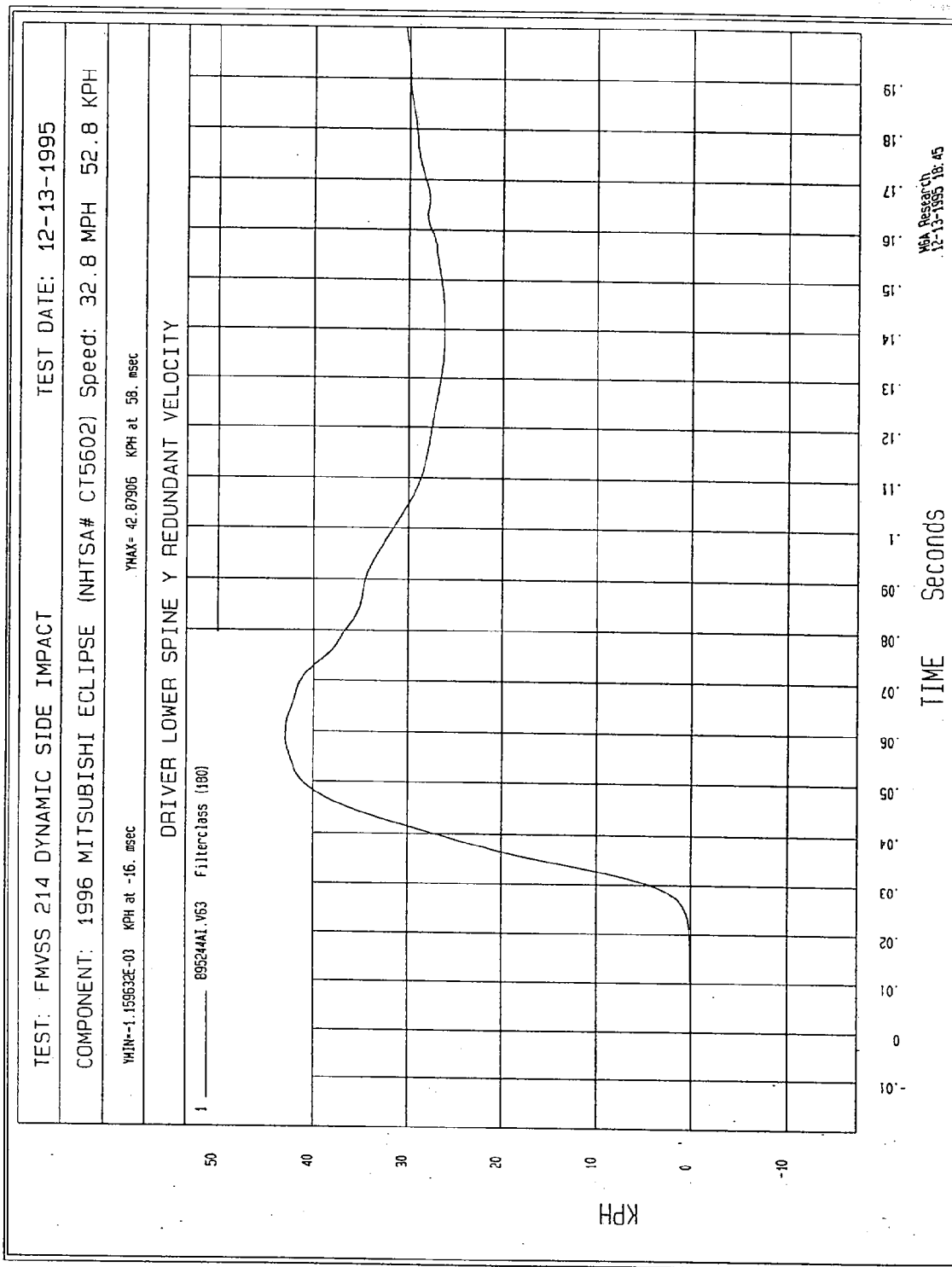


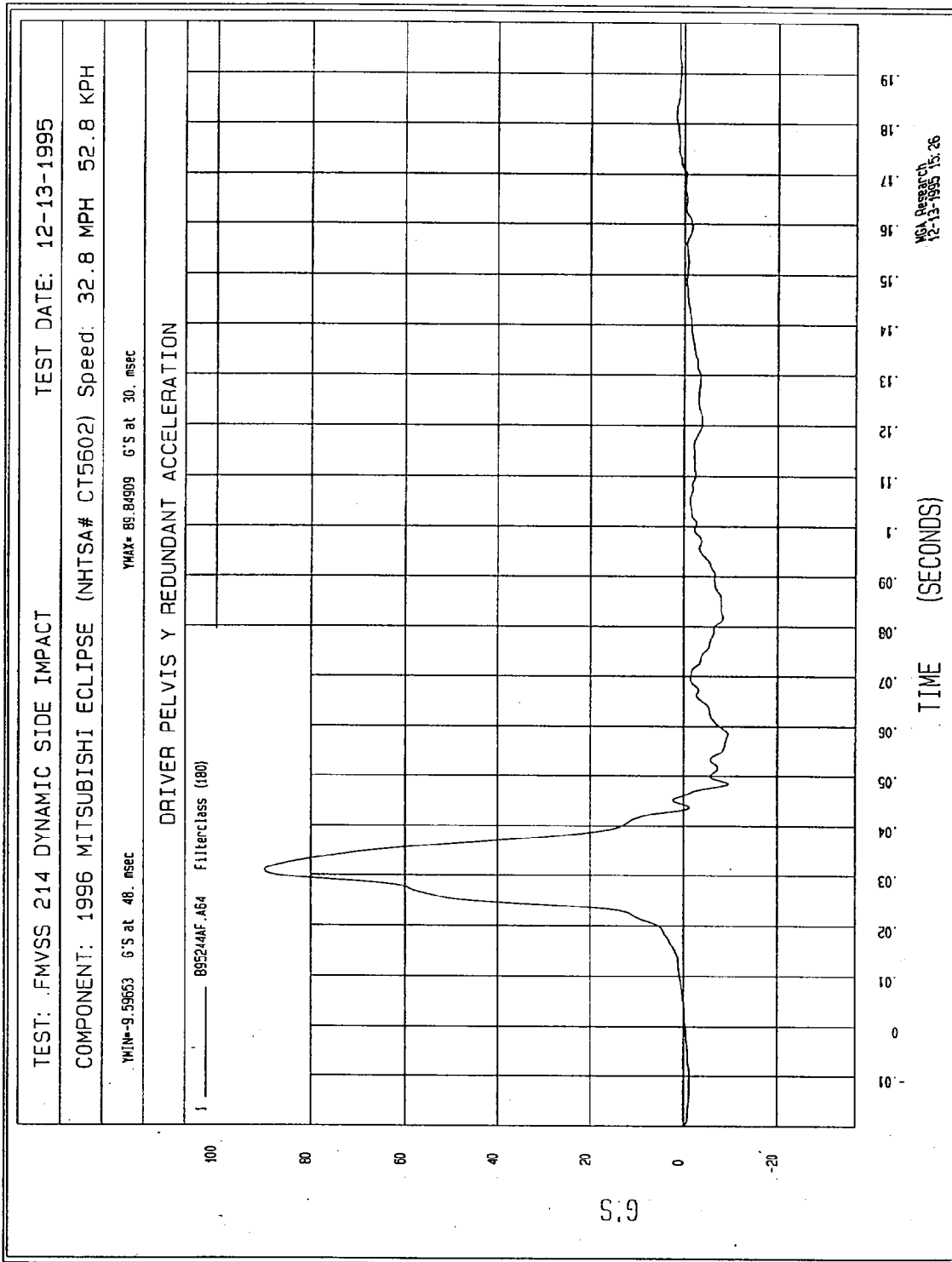


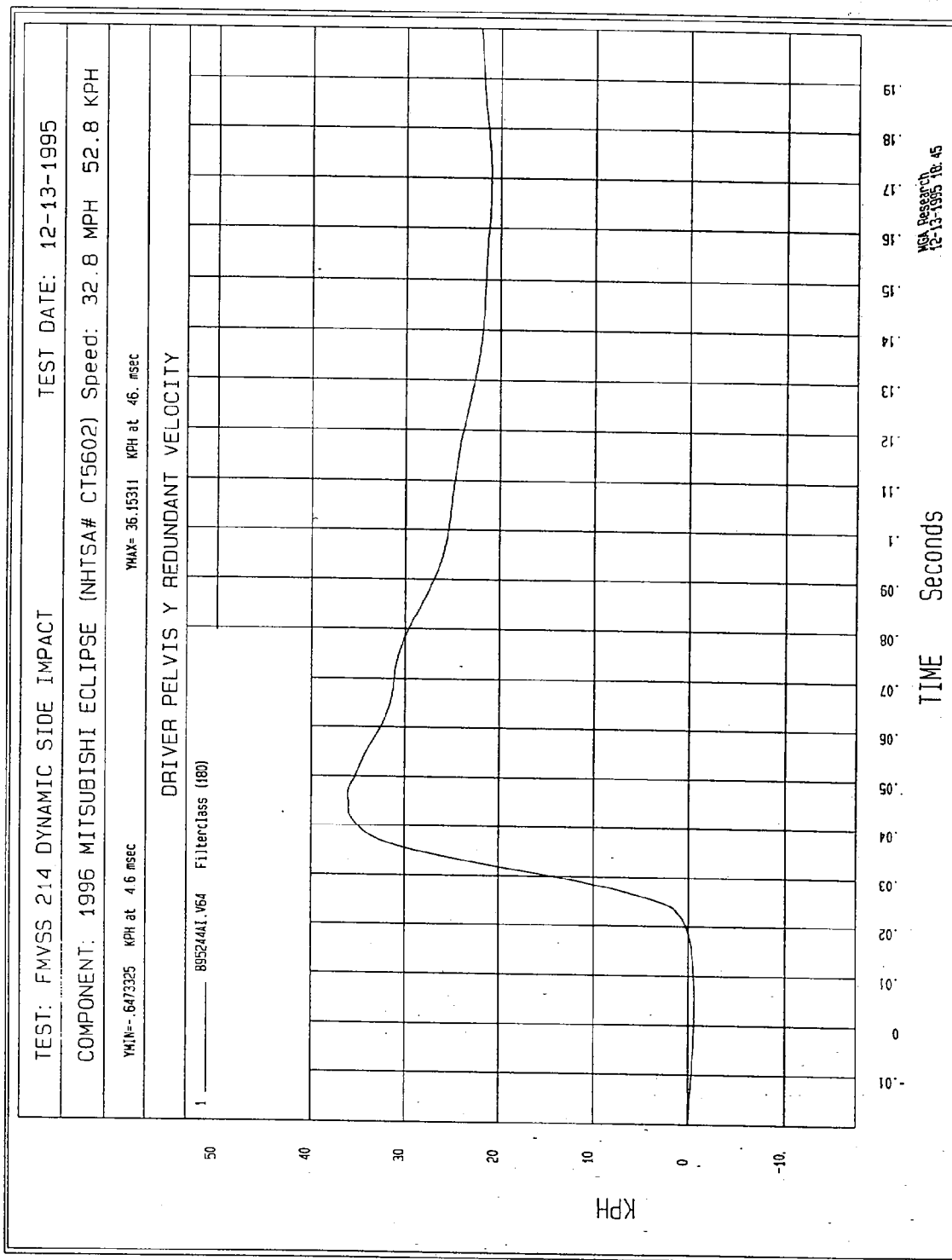


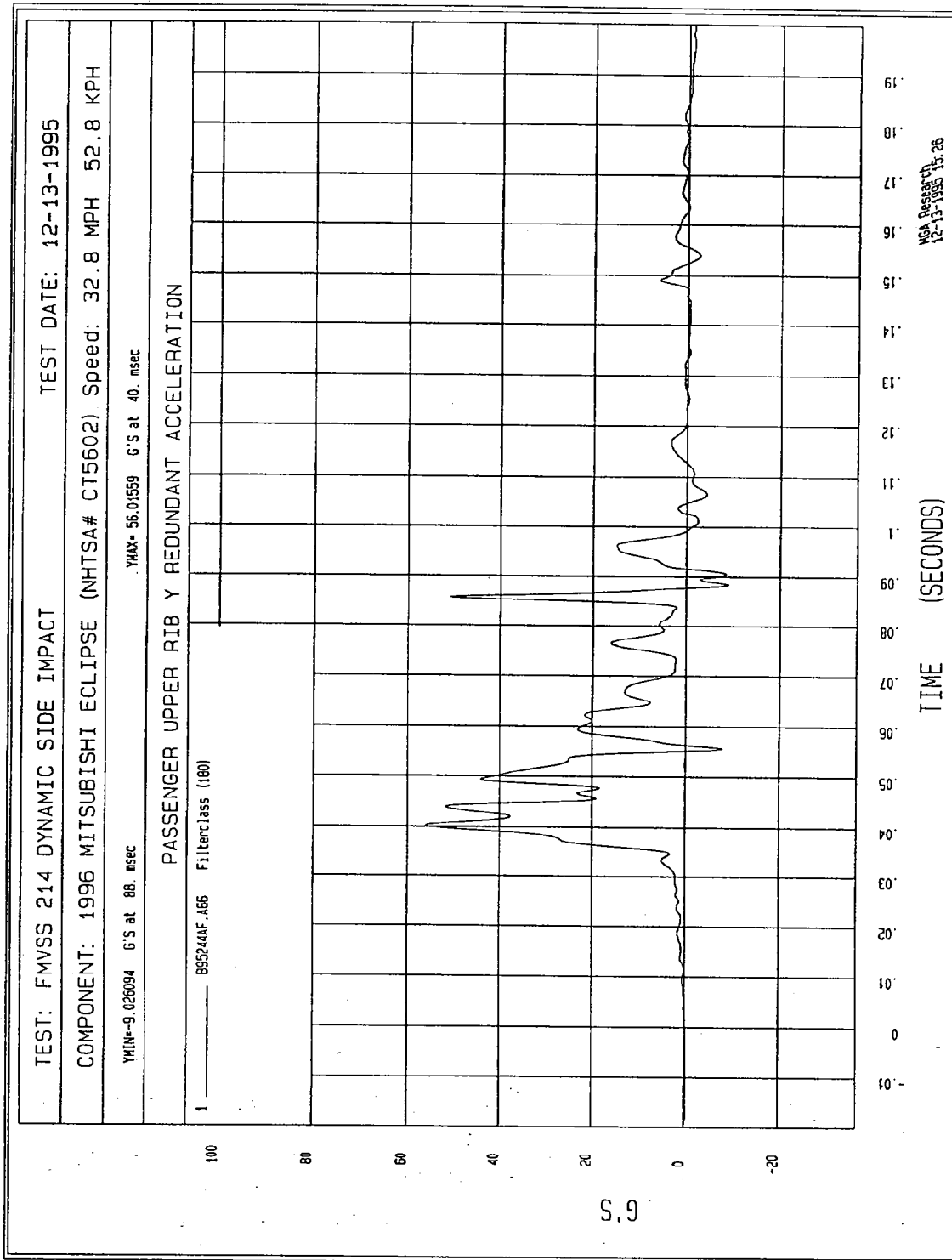


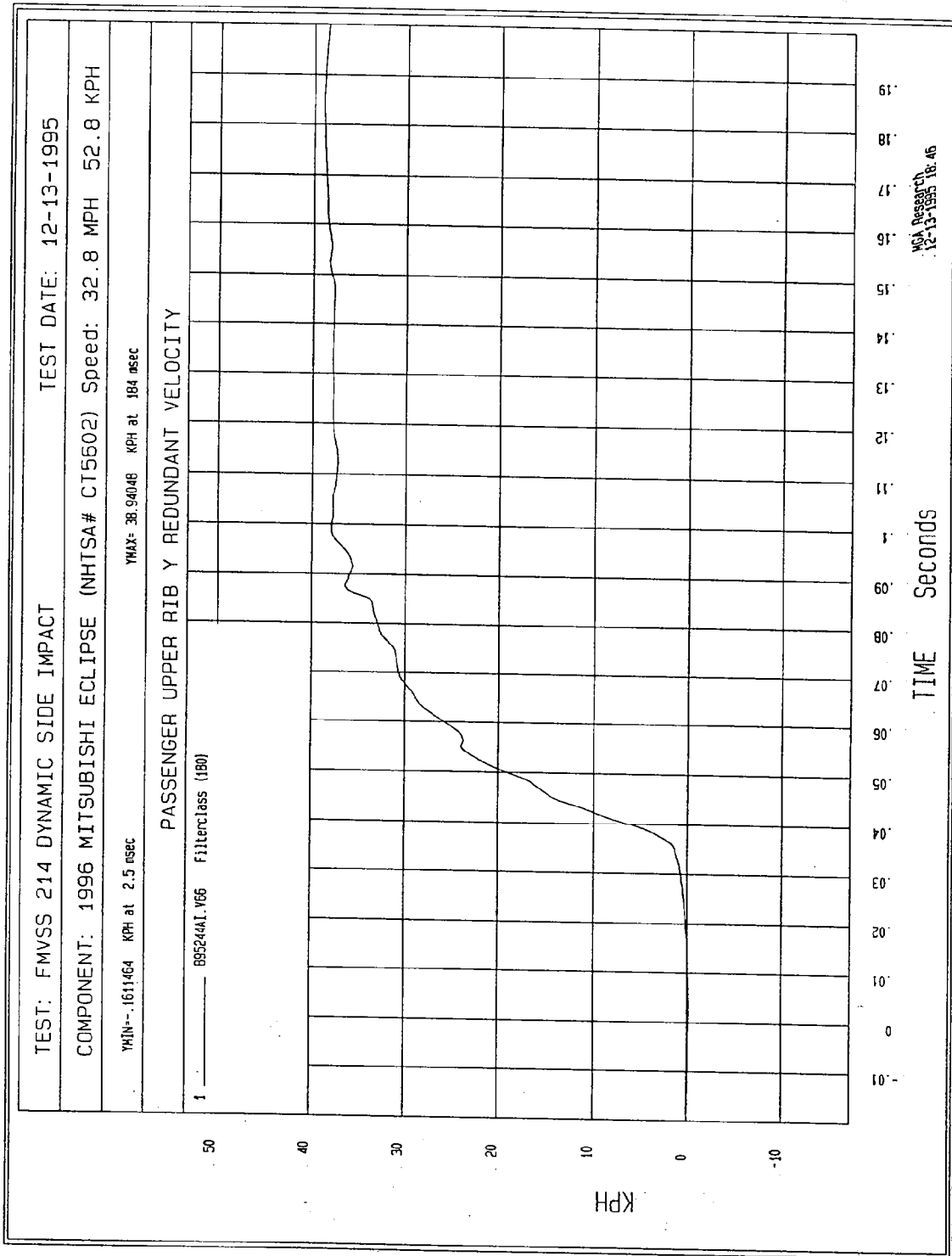


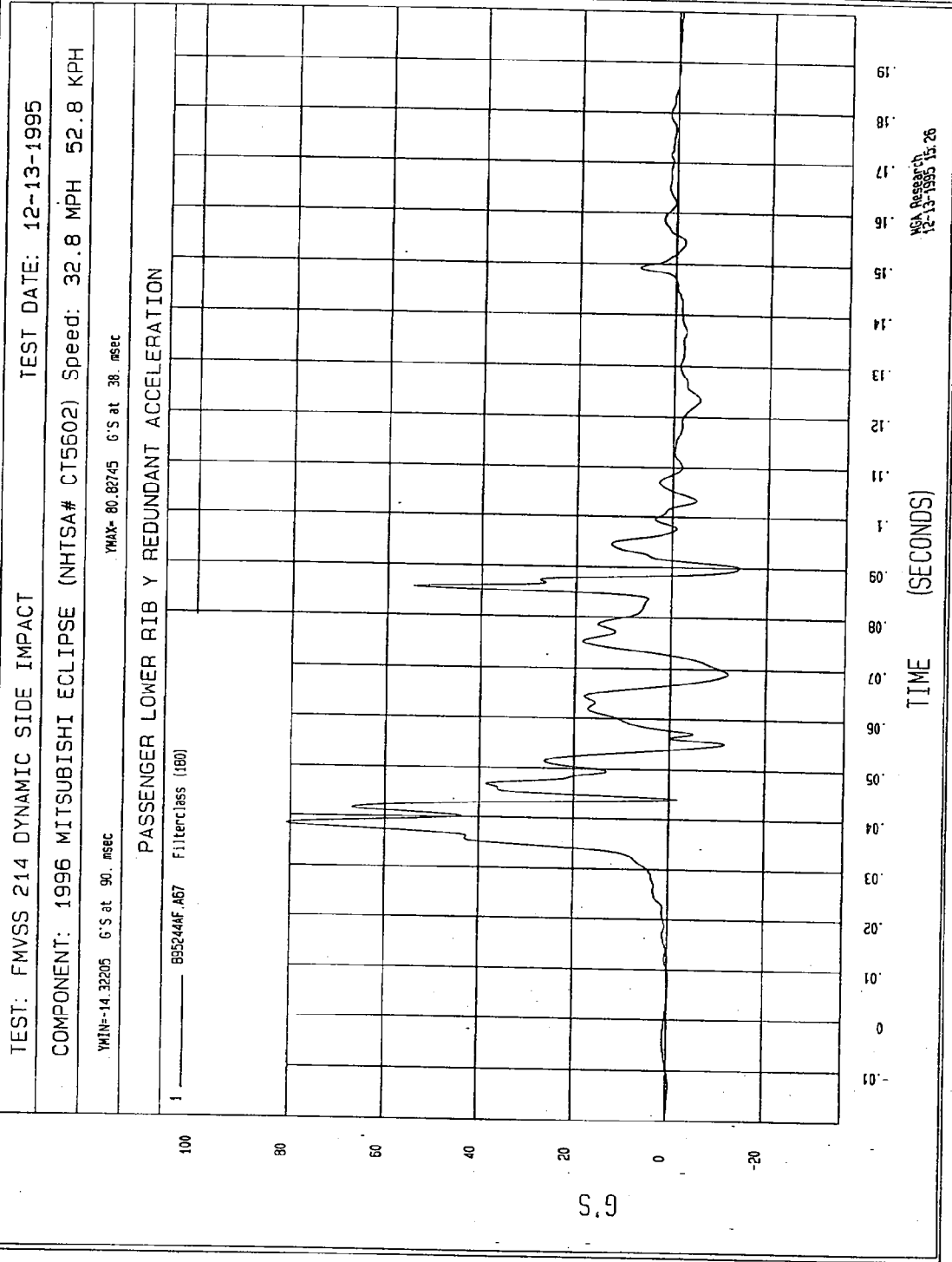


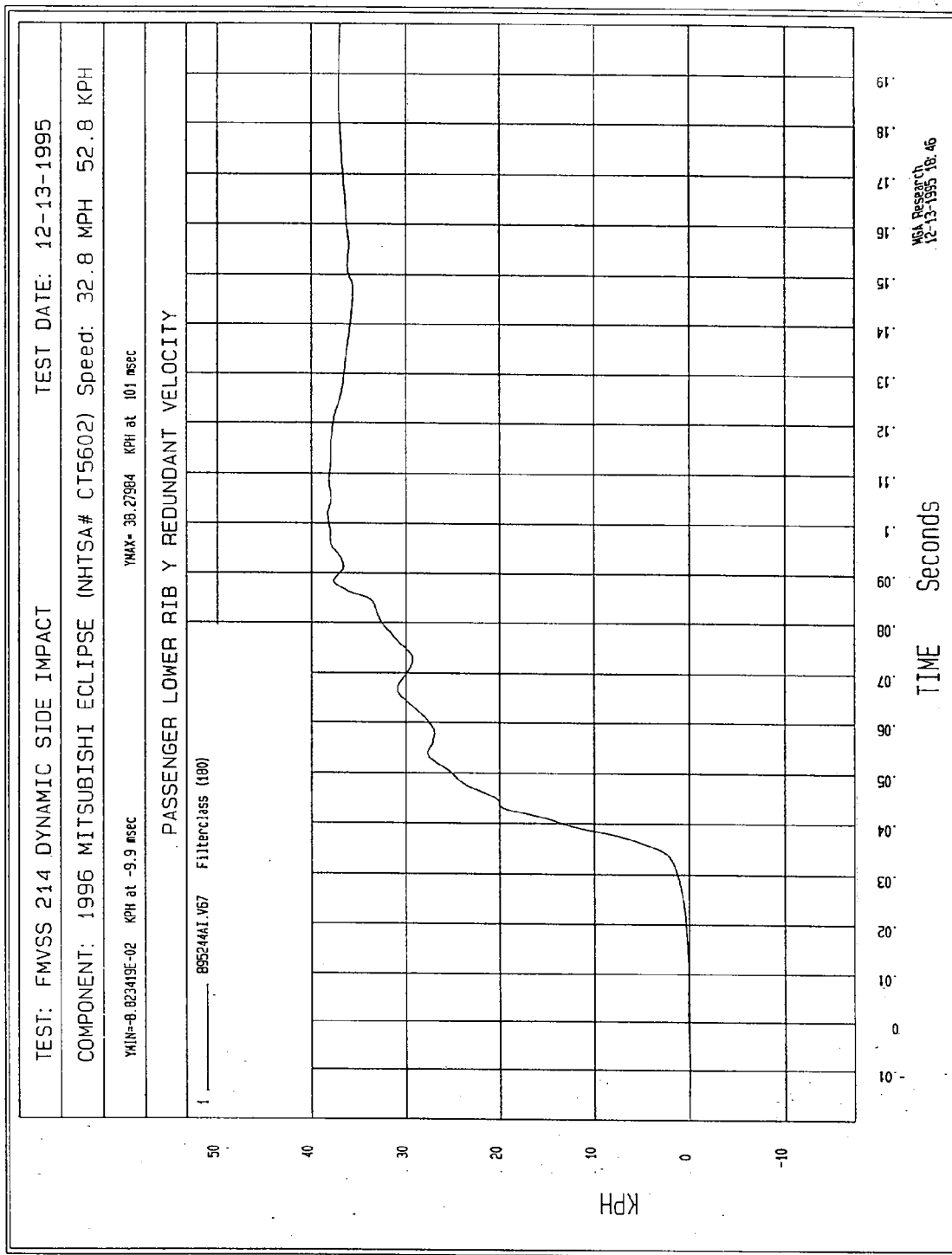












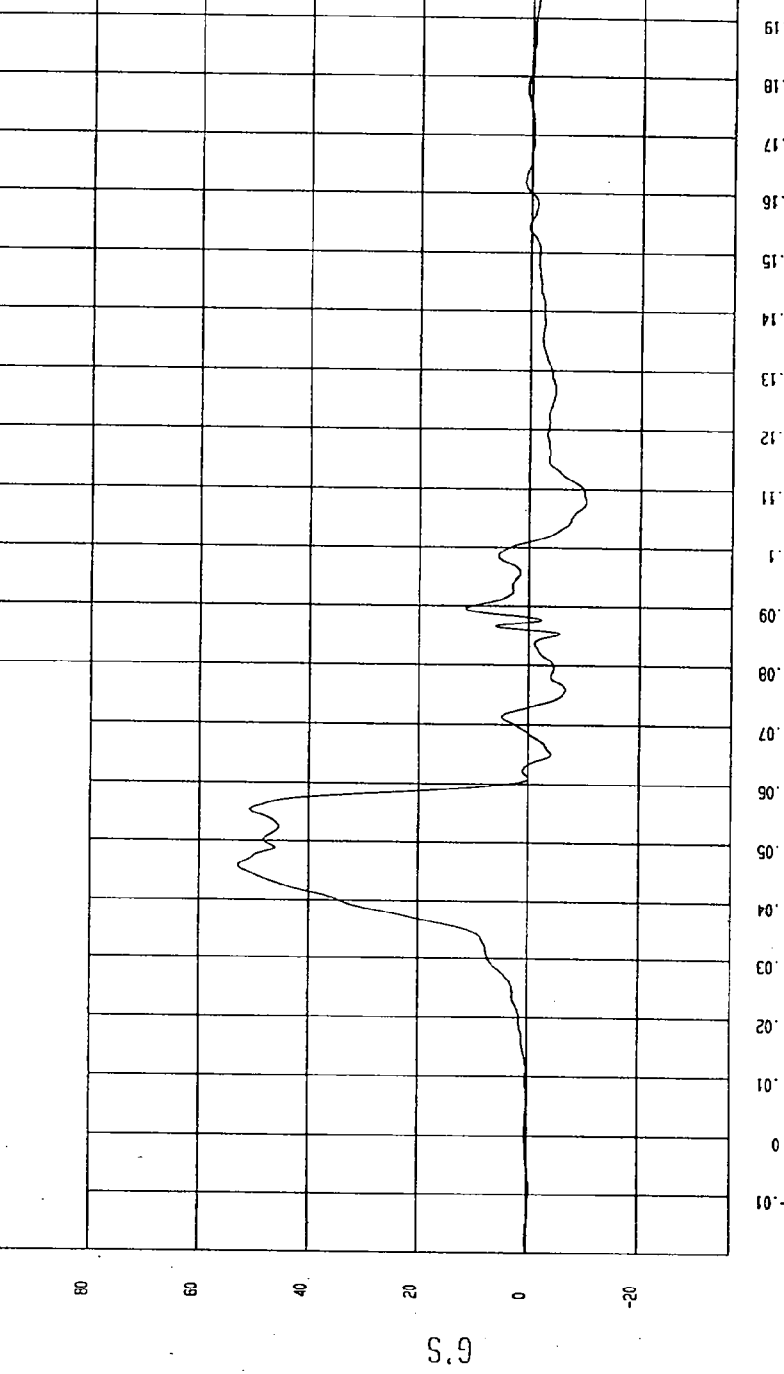
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 12-13-1995

COMPONENT: 1996 MITSUBISHI ECLIPSE (NHTSA# CT5602) Speed: 32.8 MPH 52.8 KPH

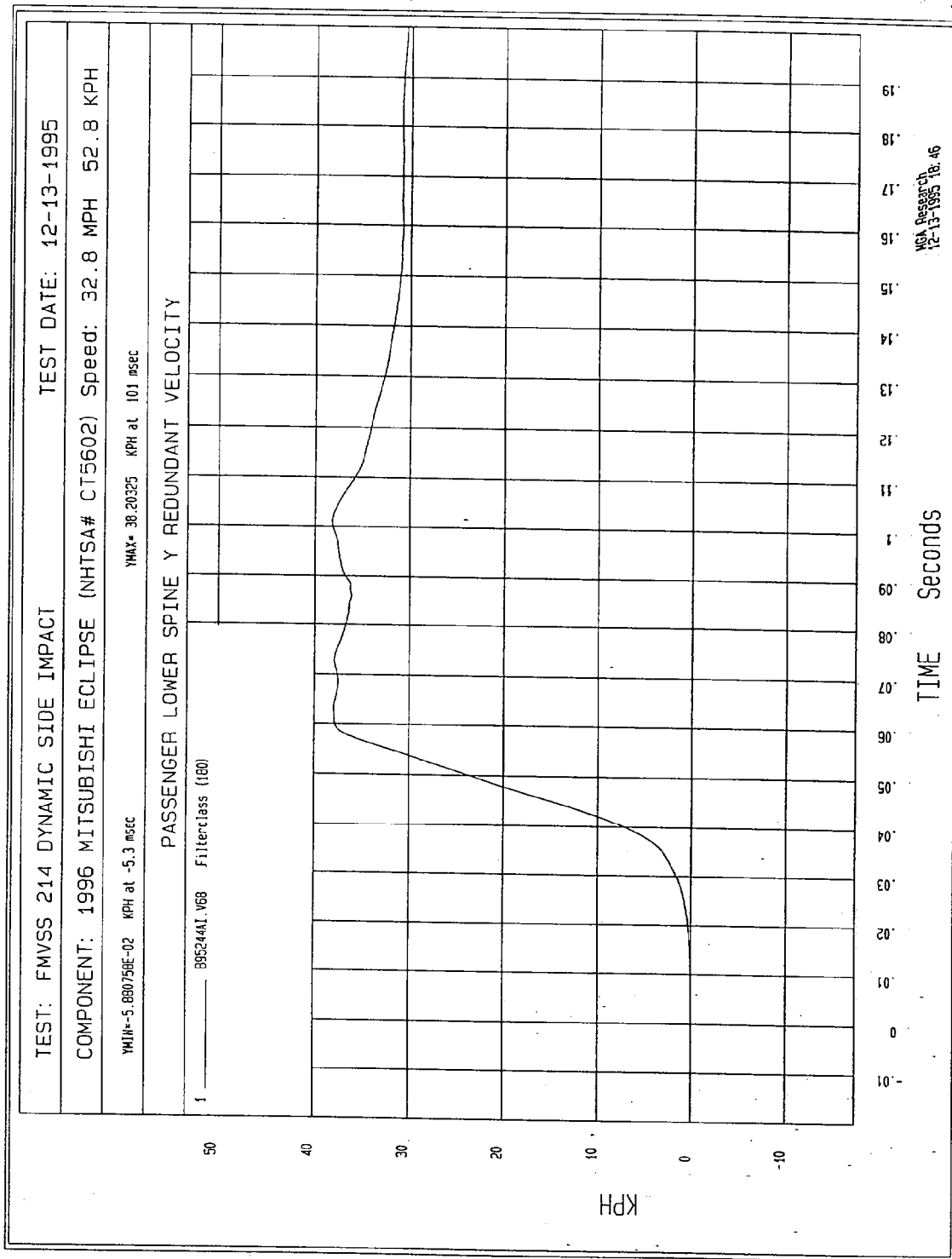
YMIN=-10.20272 G'S at 107 msec YMAX= 52.95391 G'S at 45 msec

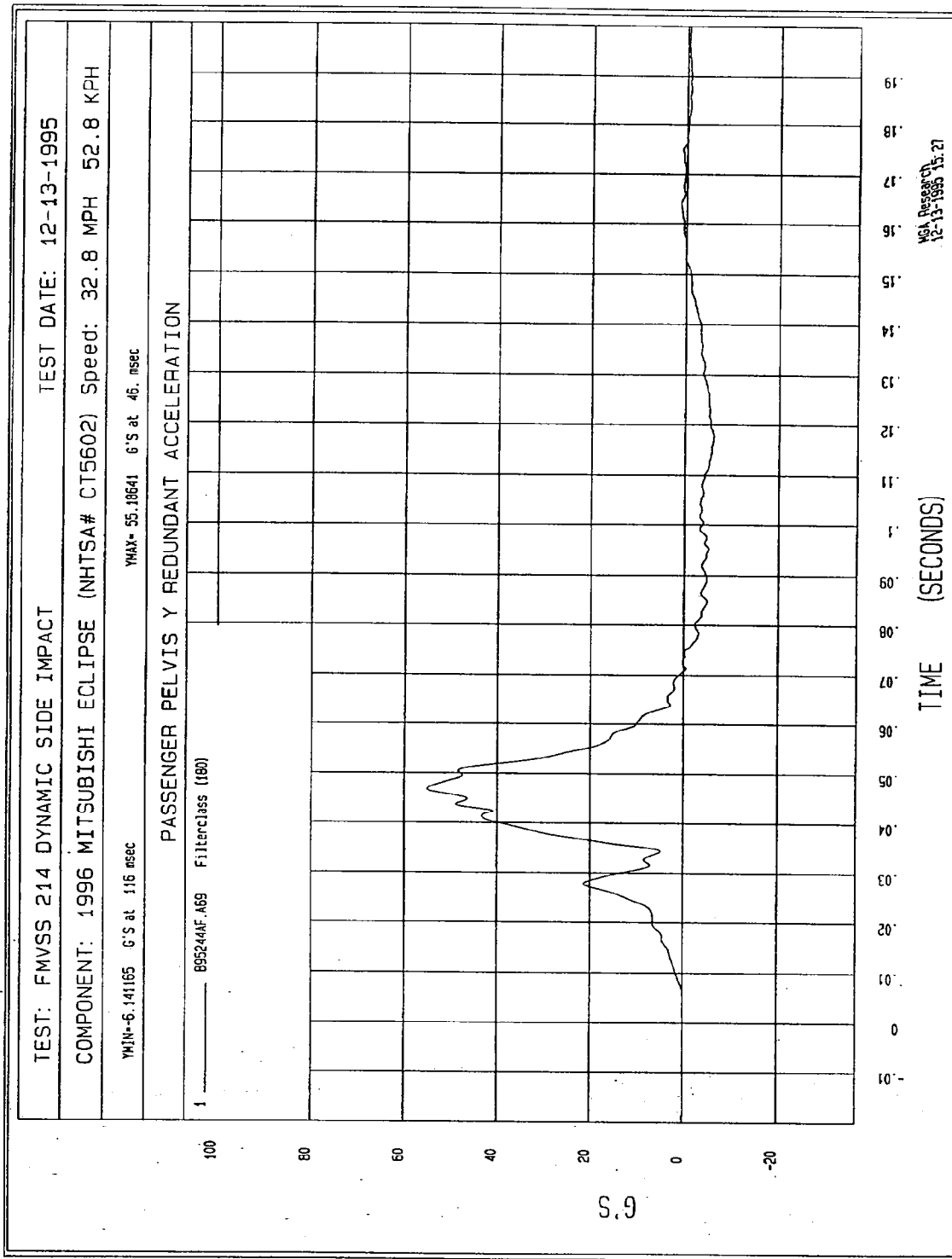
PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

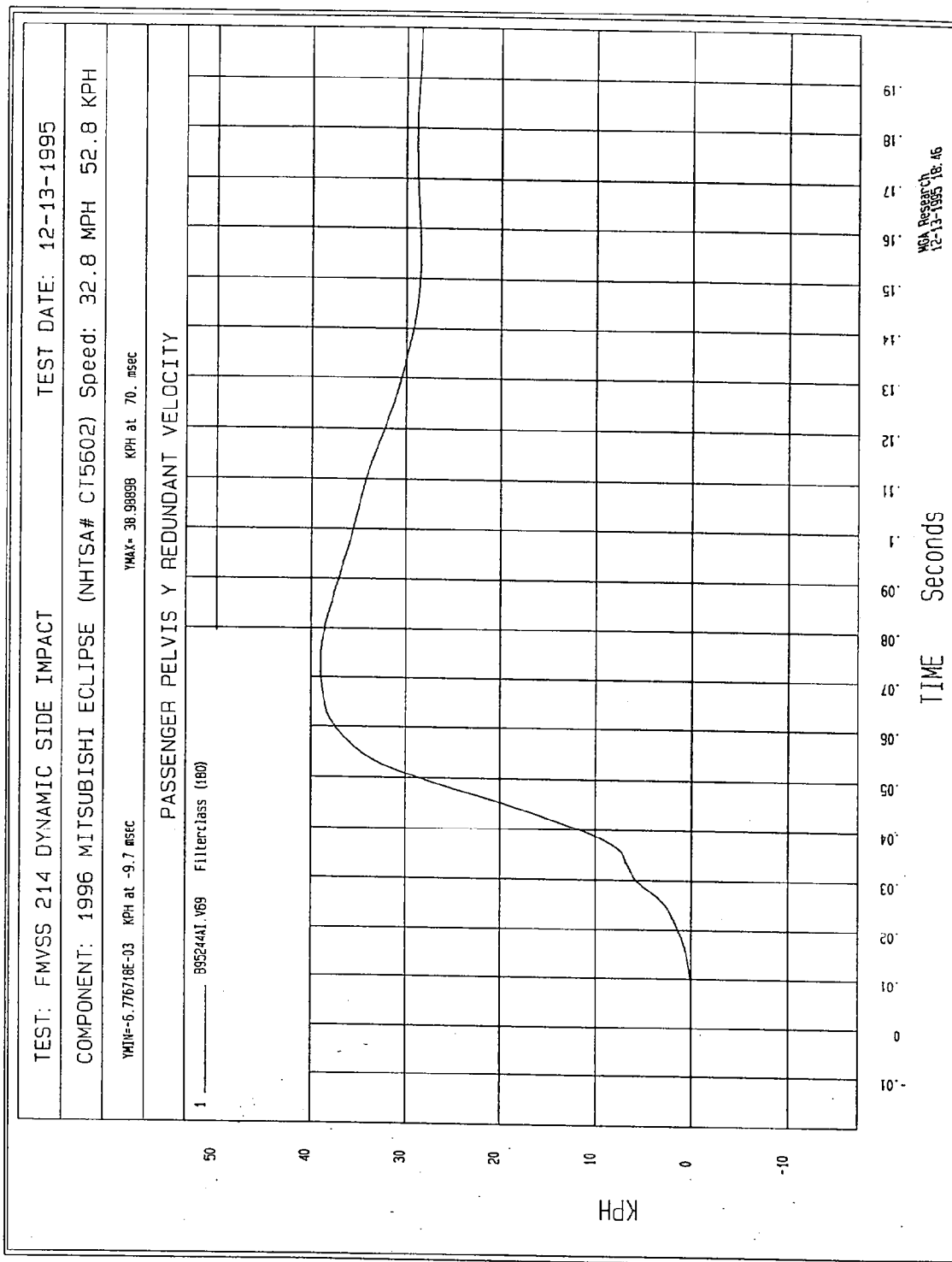
1. B95244F.A68 FilterClass (180)



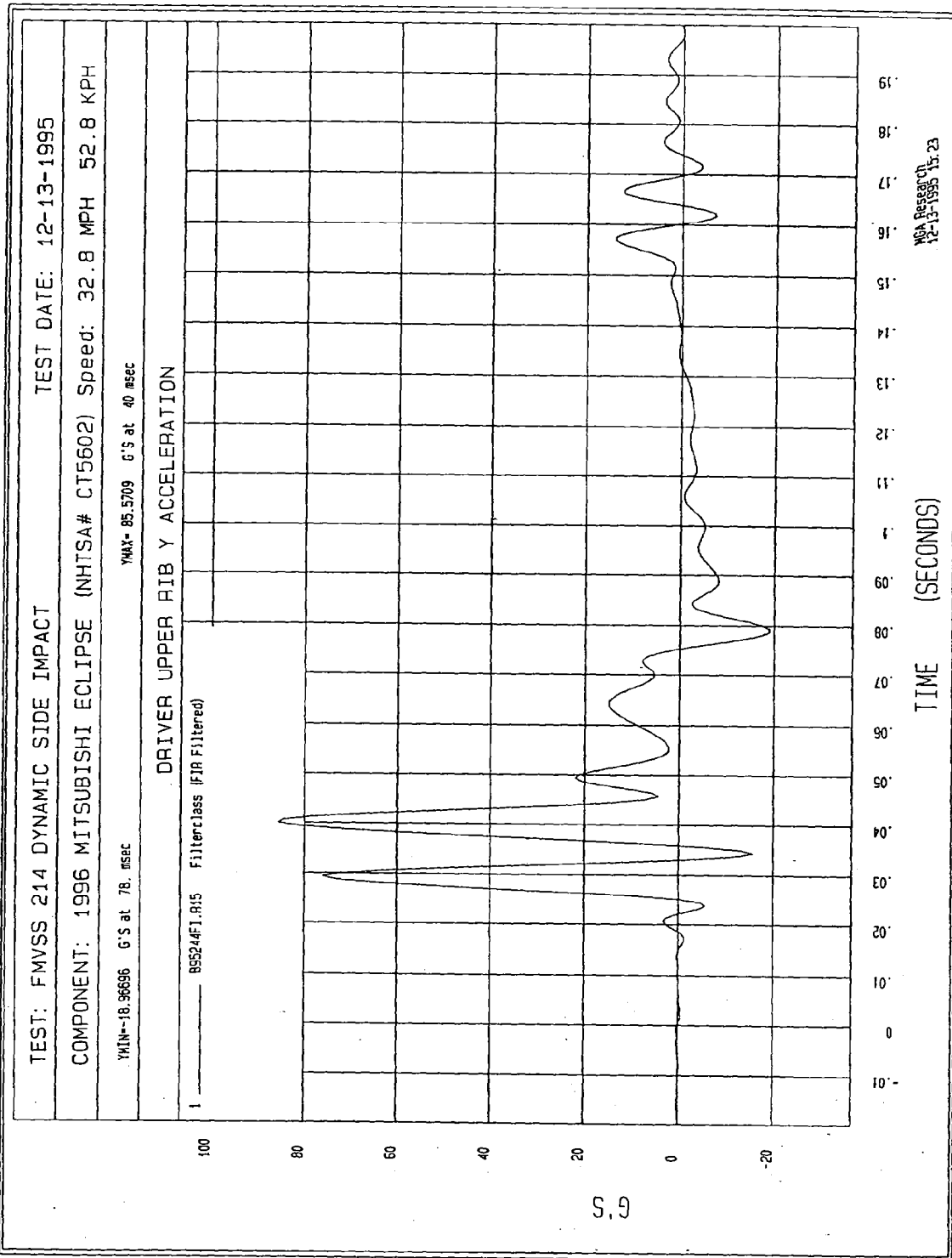
MEA Research
12-13-1995 15:25

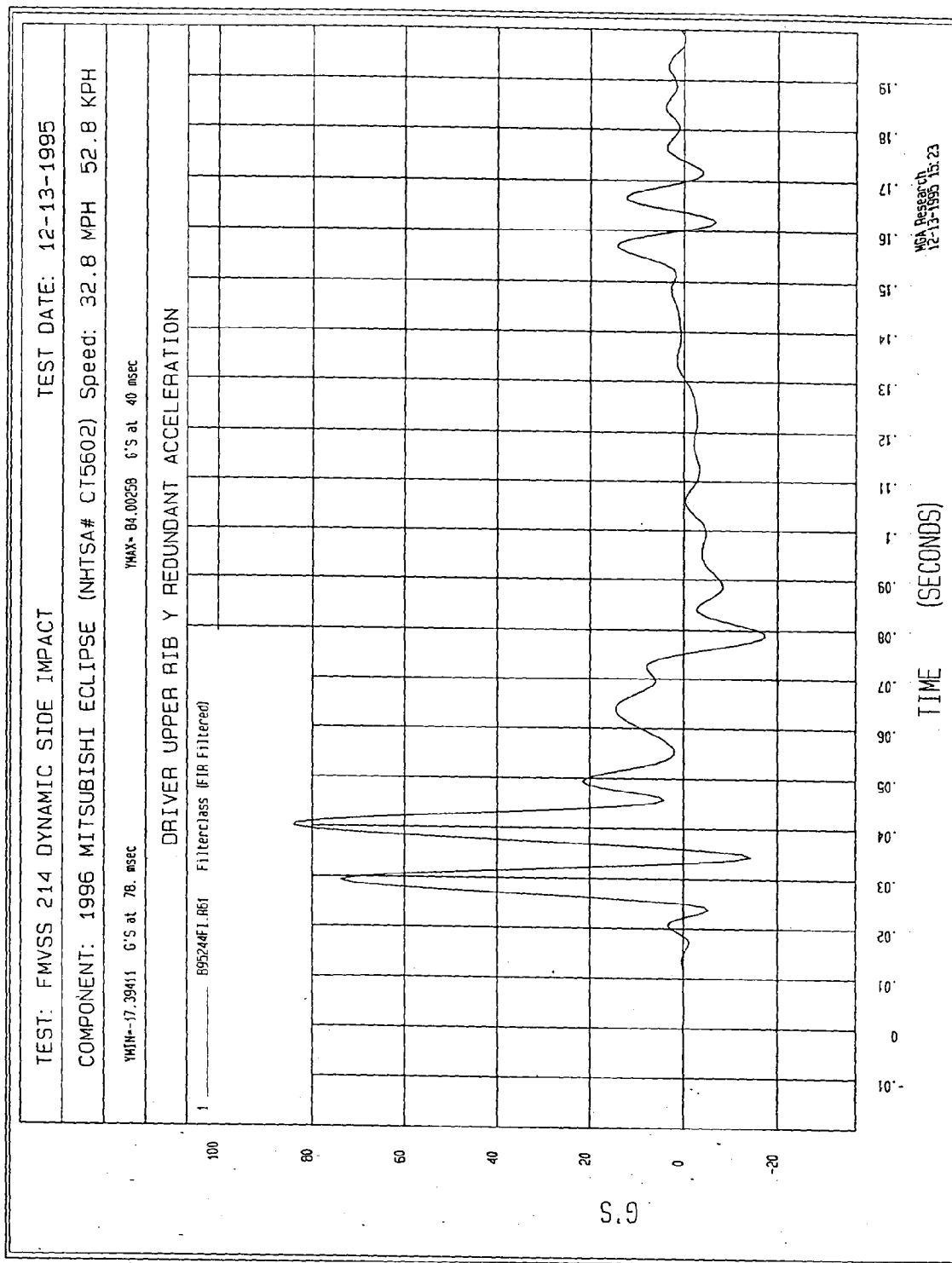


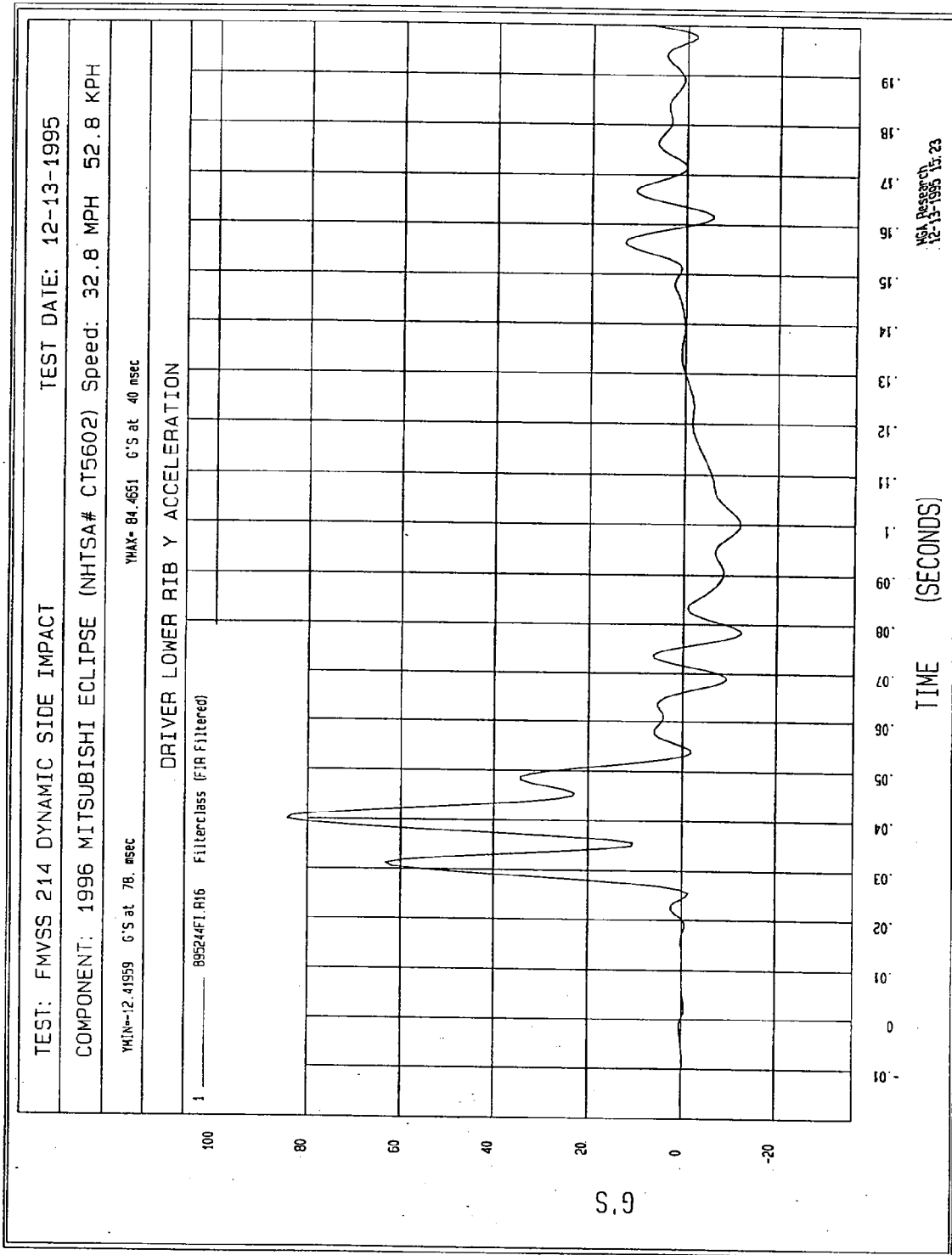


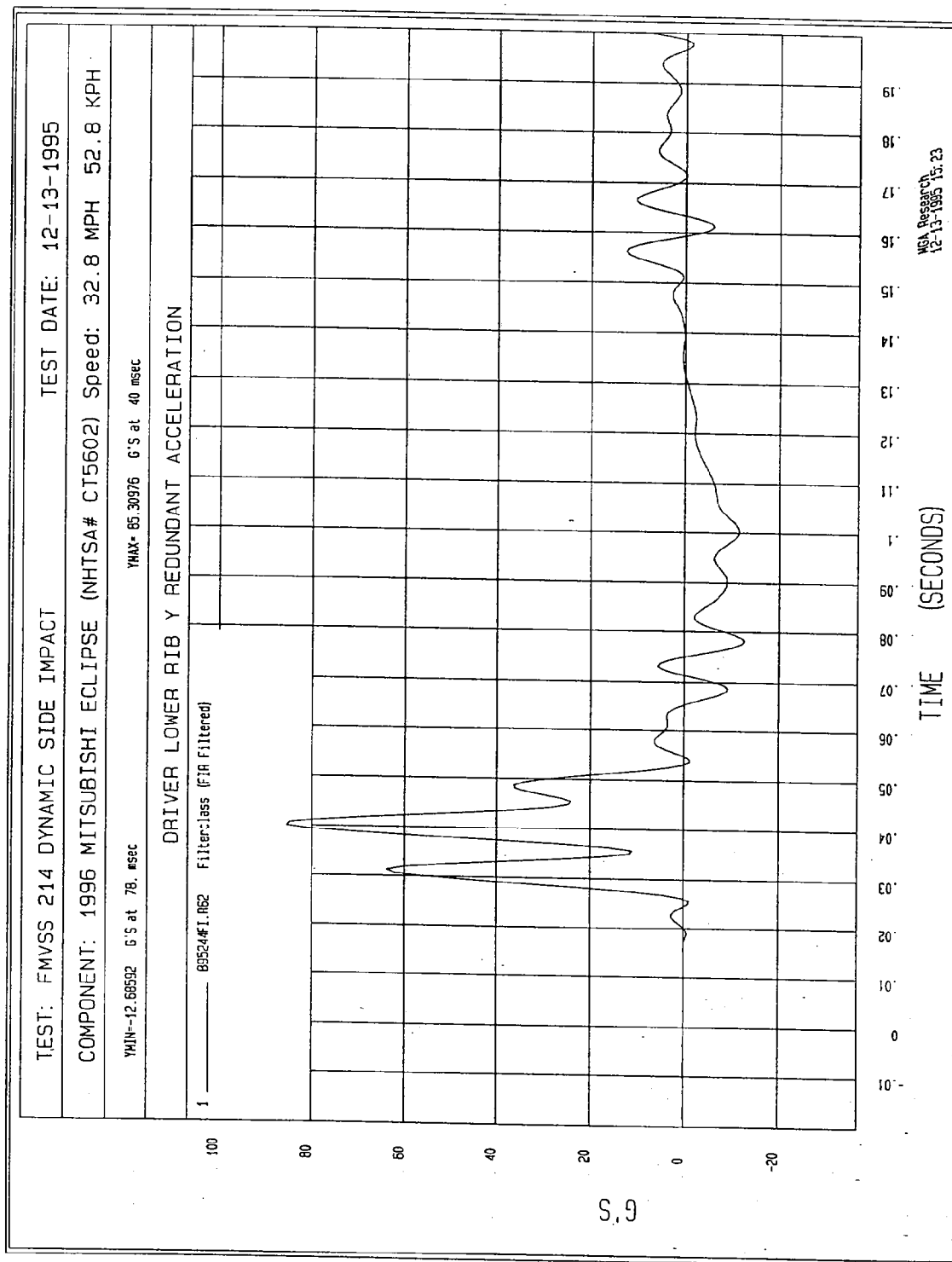


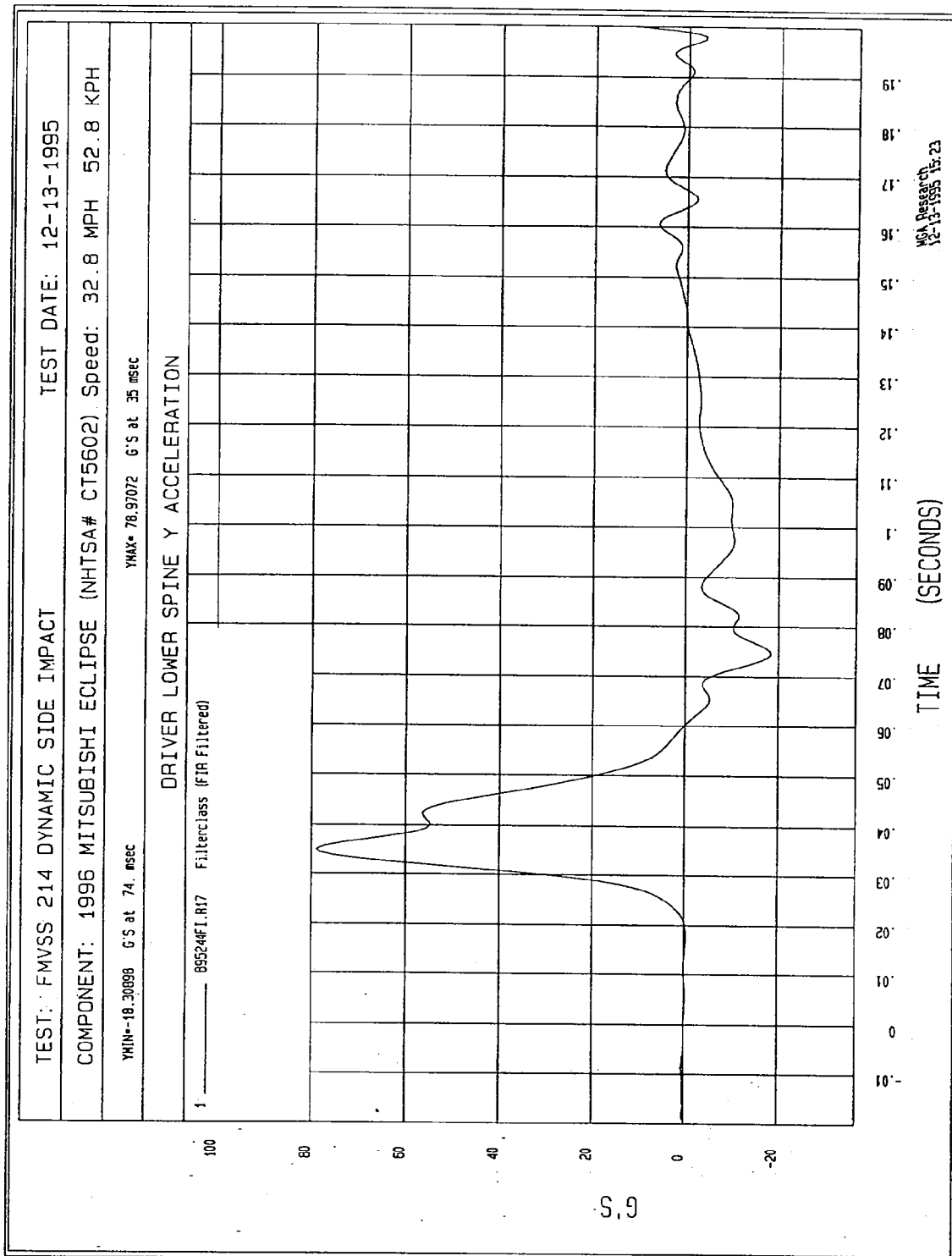
FINITE IMPULSE RESPONSE (FIR) FILTERED DATA

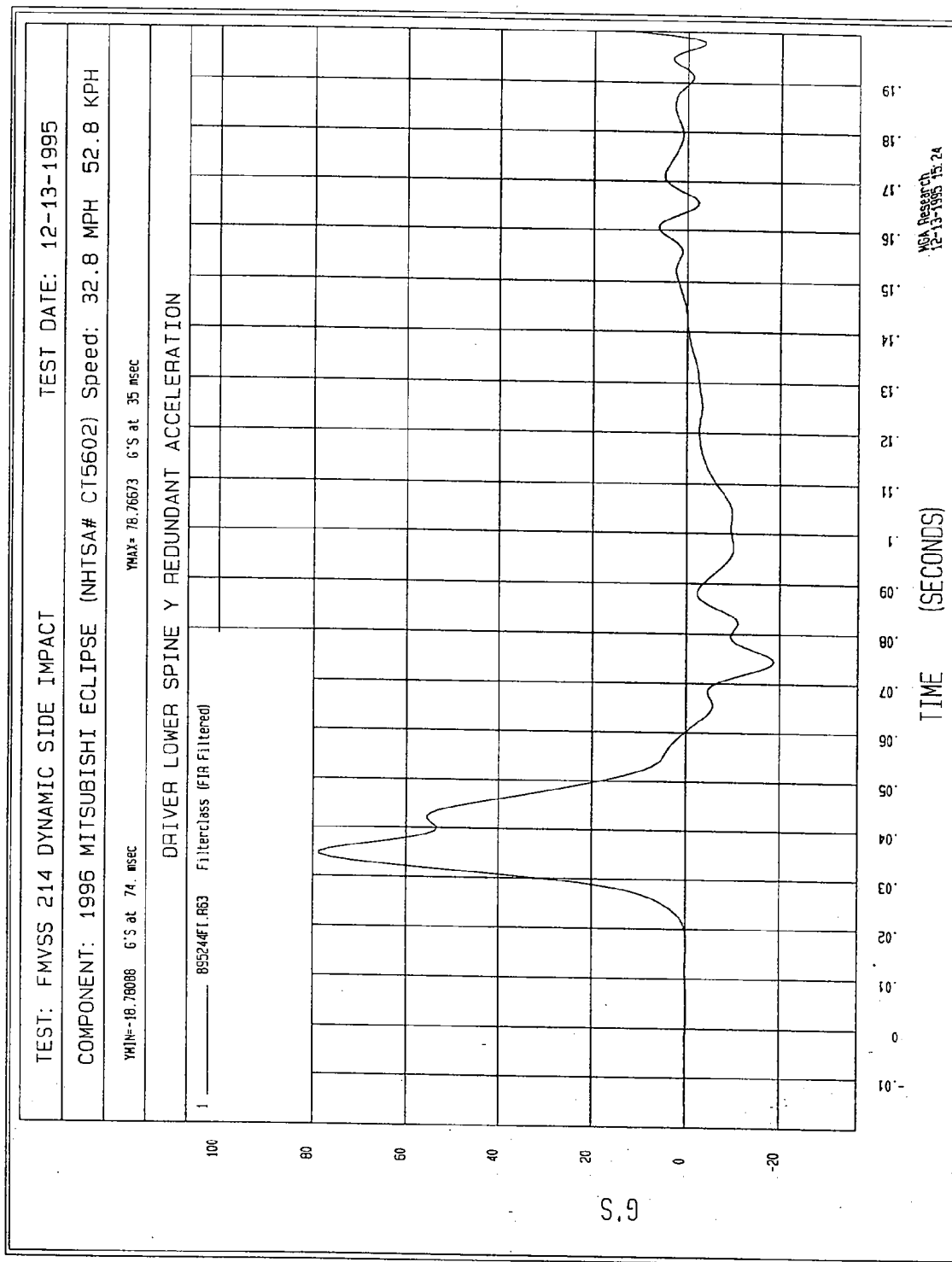


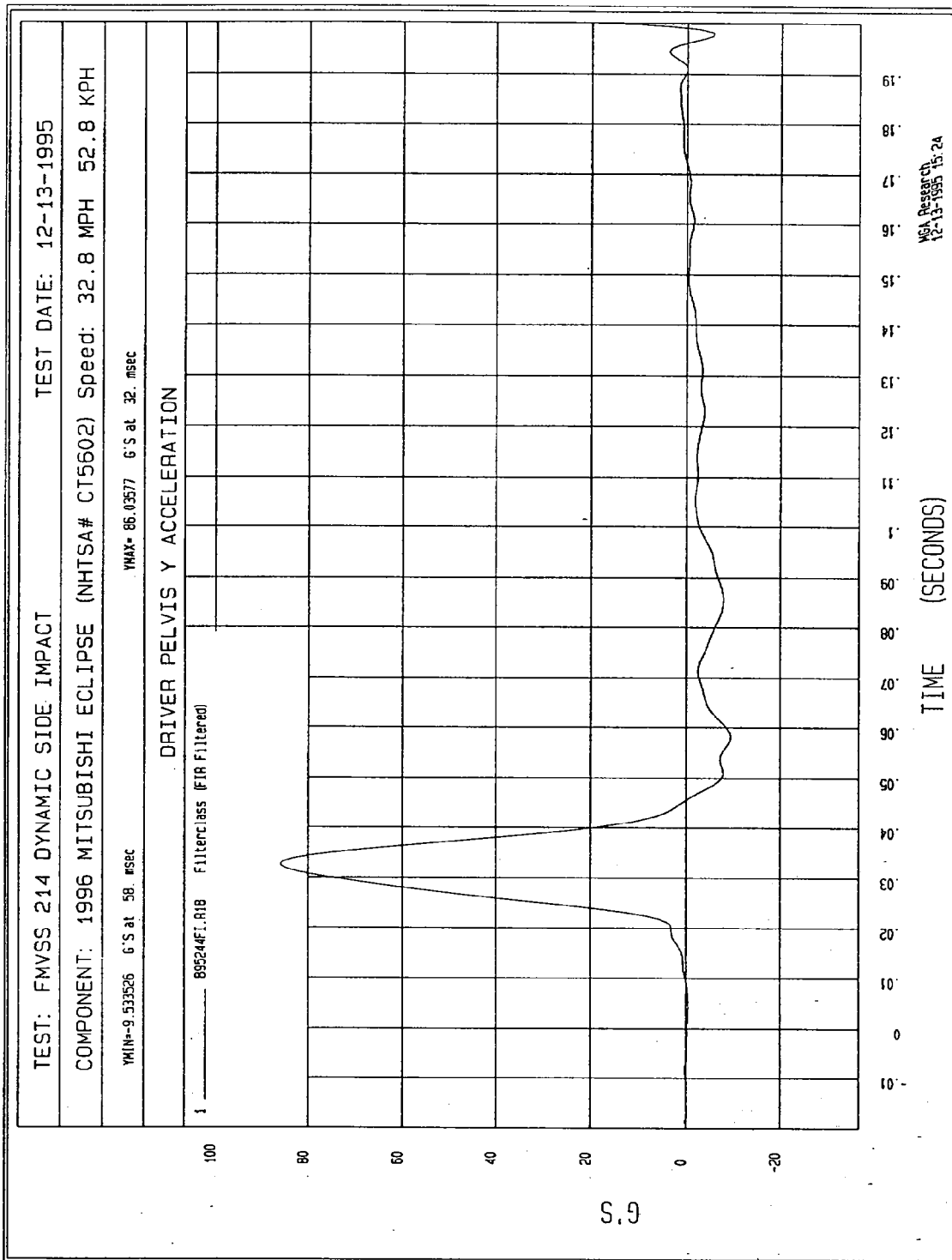


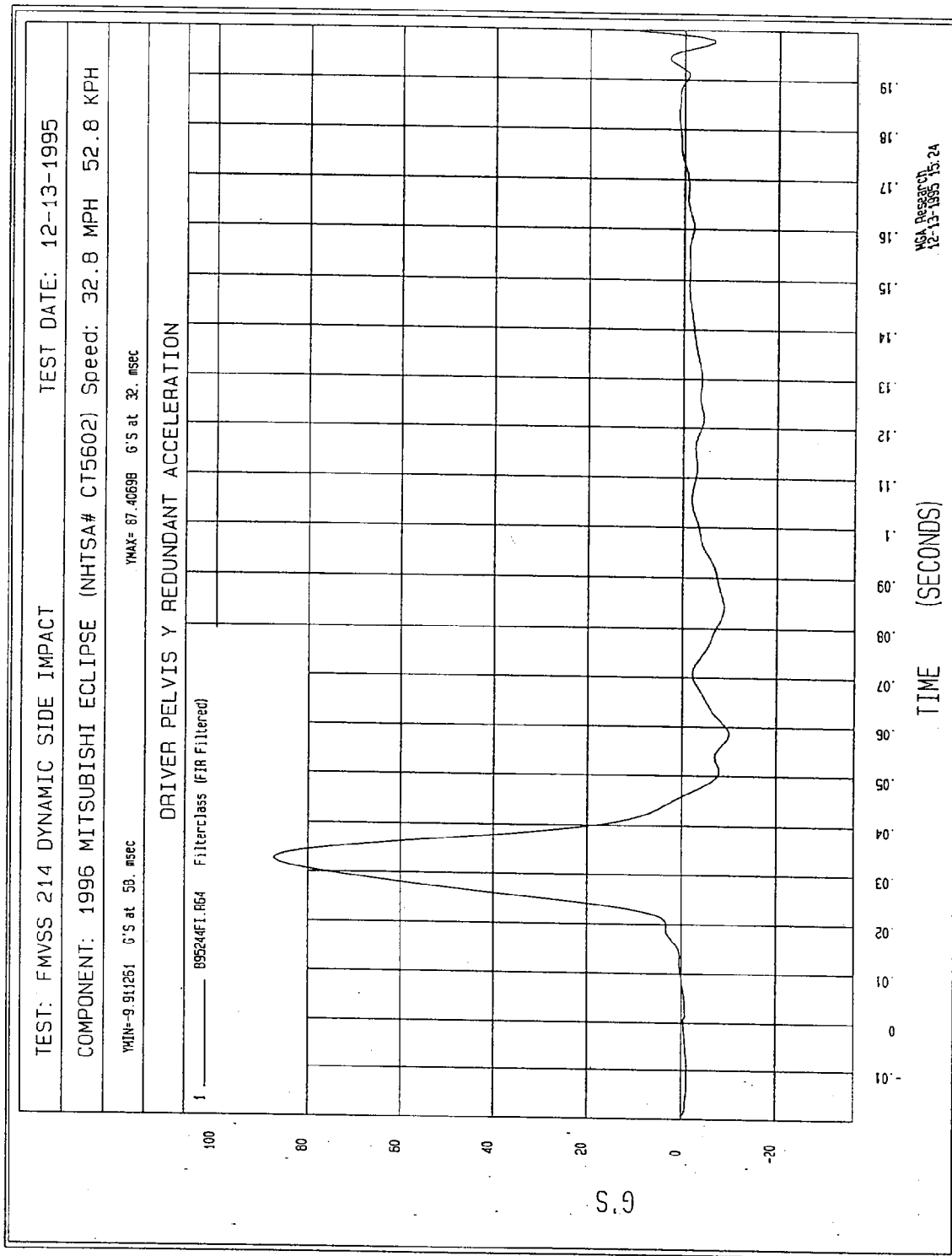


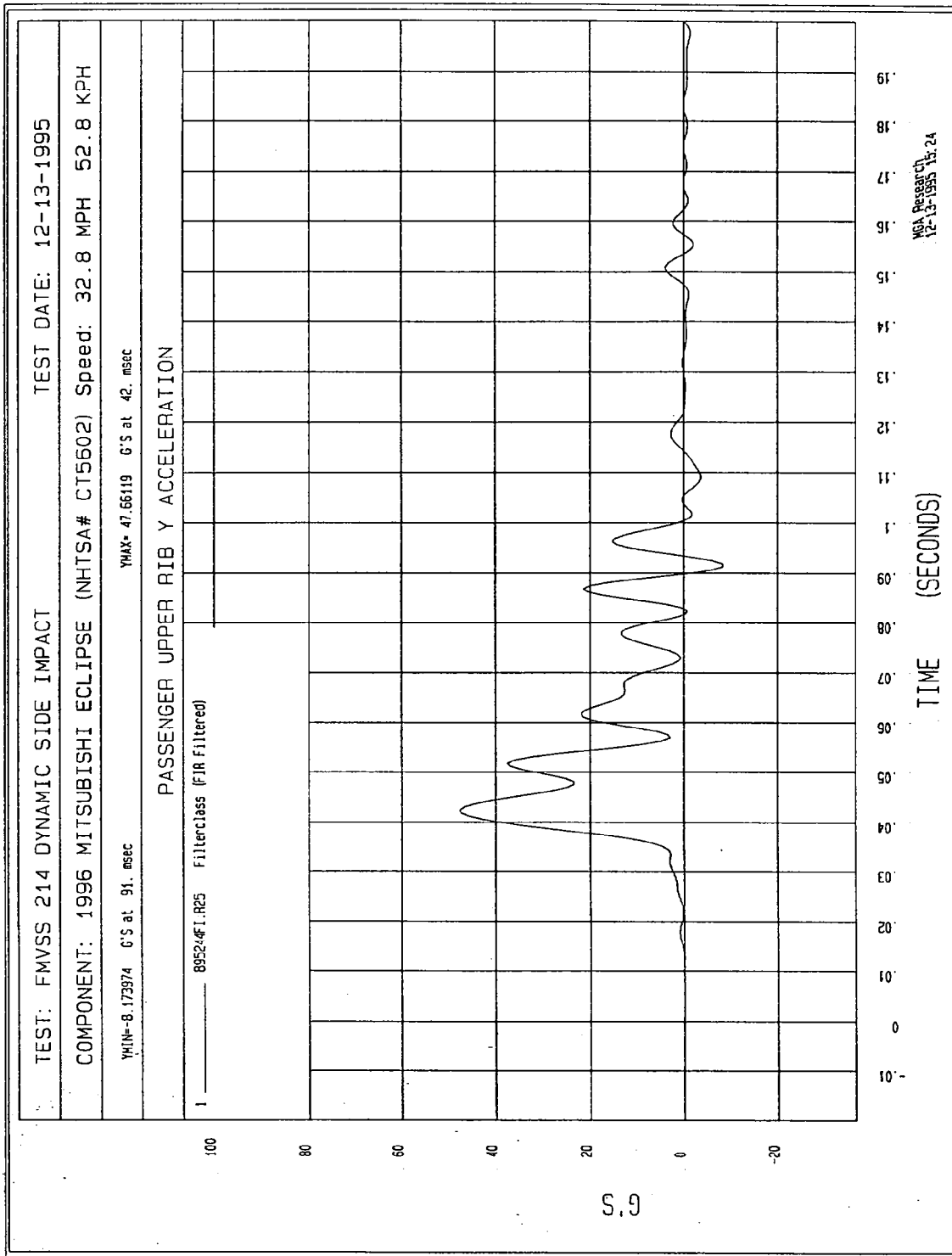


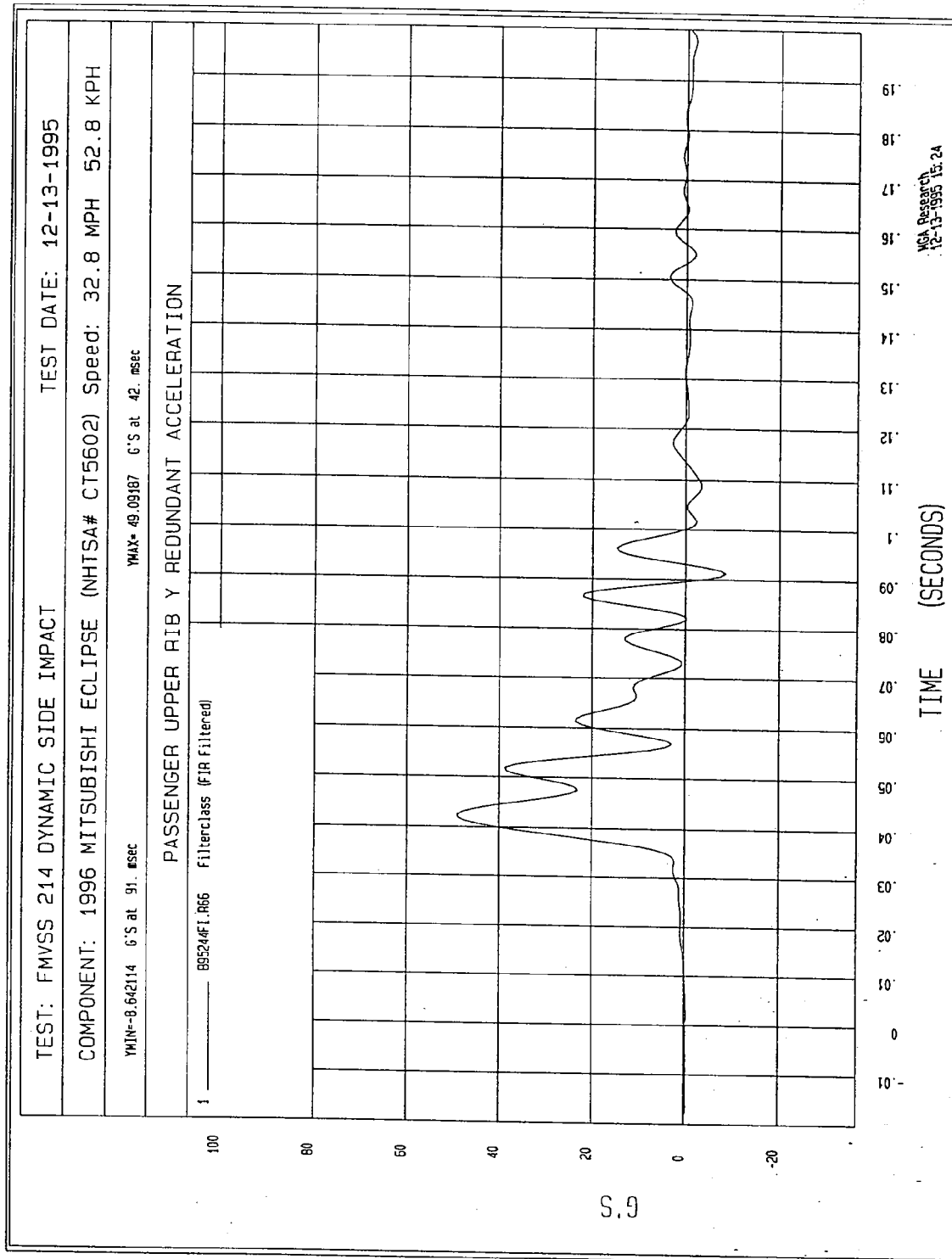












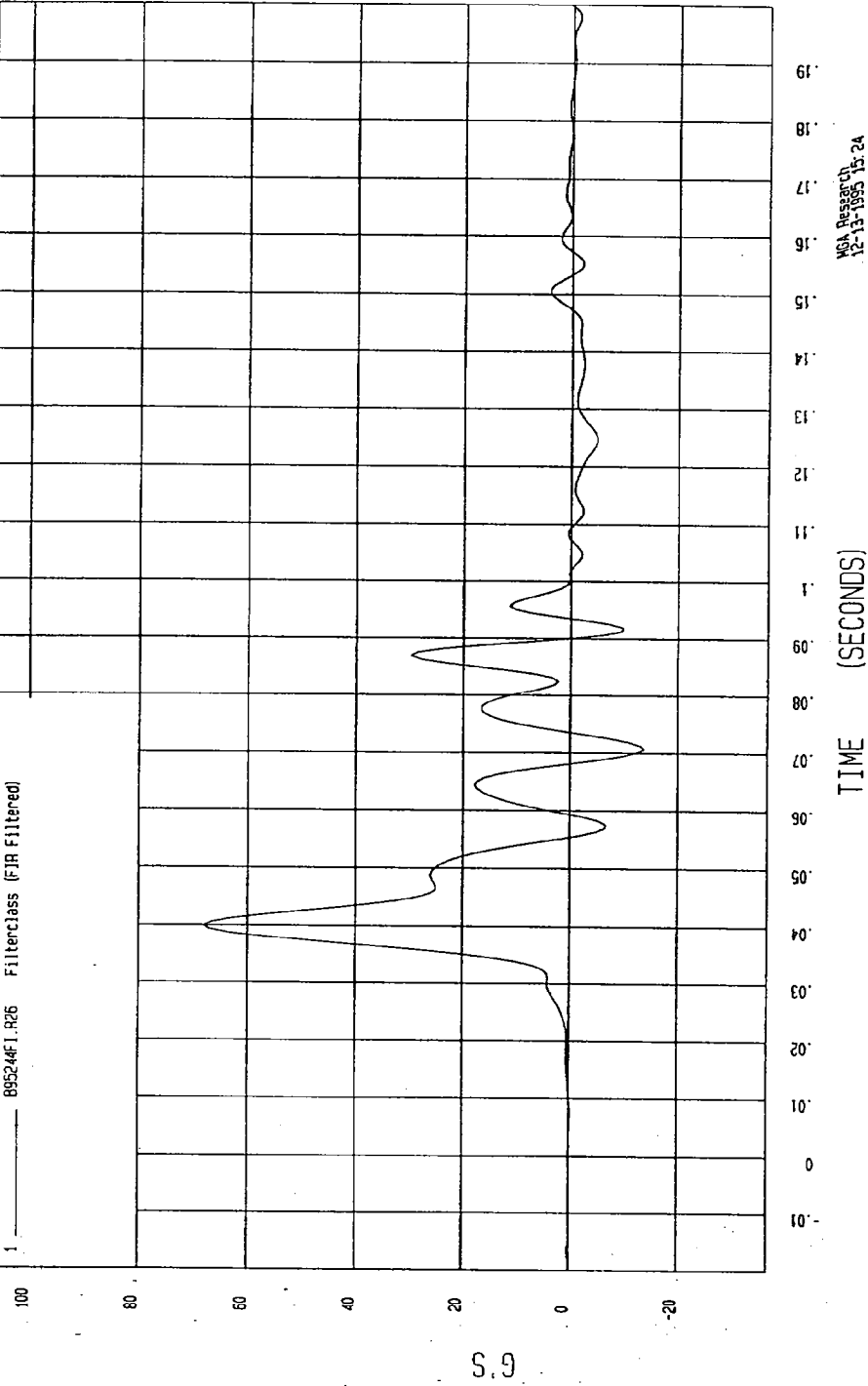
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 12-13-1995

COMPONENT: 1996 MITSUBISHI ECLIPSE (NHTSA# CT5602) Speed: 32.8 MPH 52.8 KPH

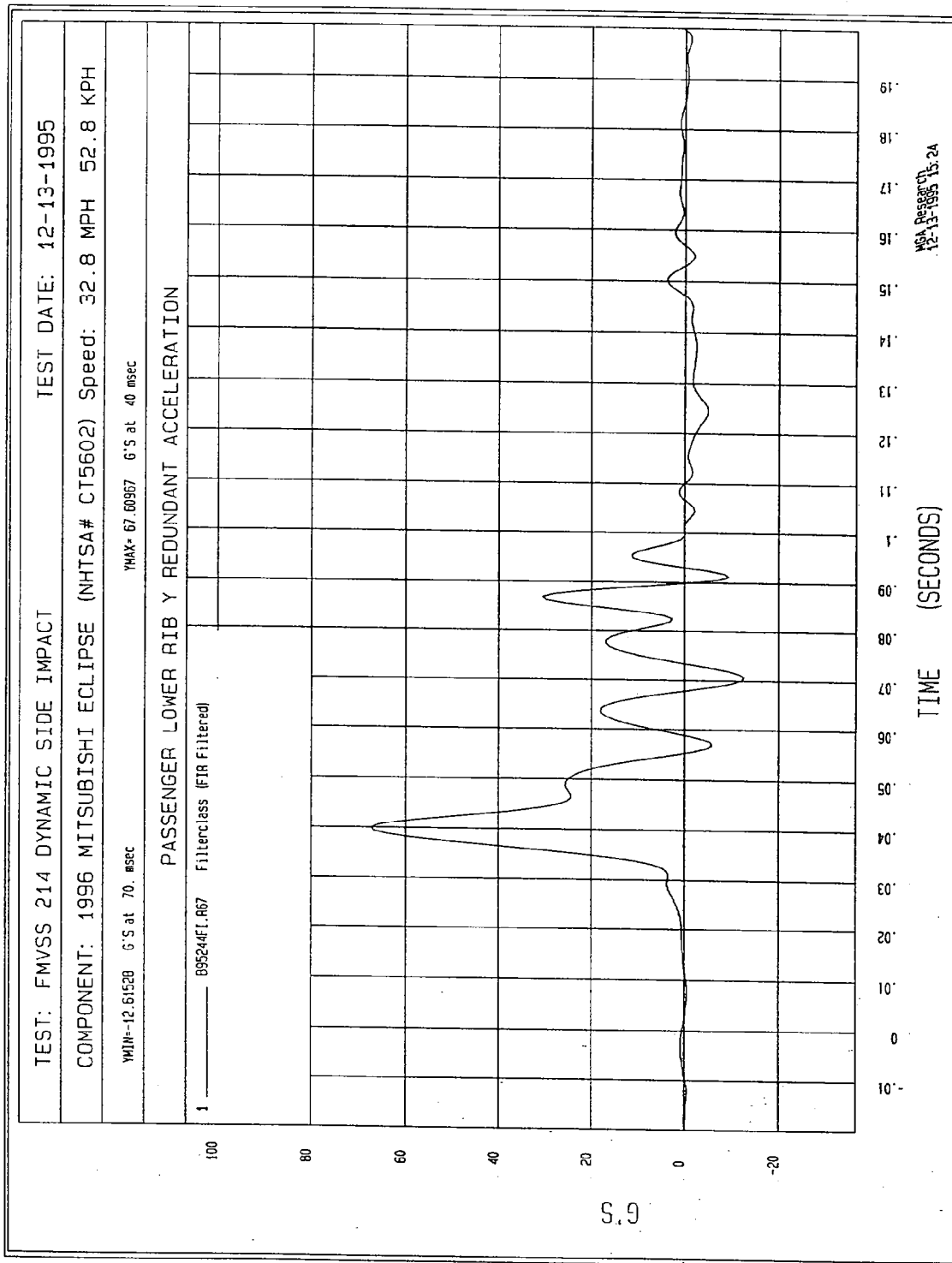
YMIN=-13.63055 G'S at 70.85sec YMAX=68.0528 G'S at 40 msec

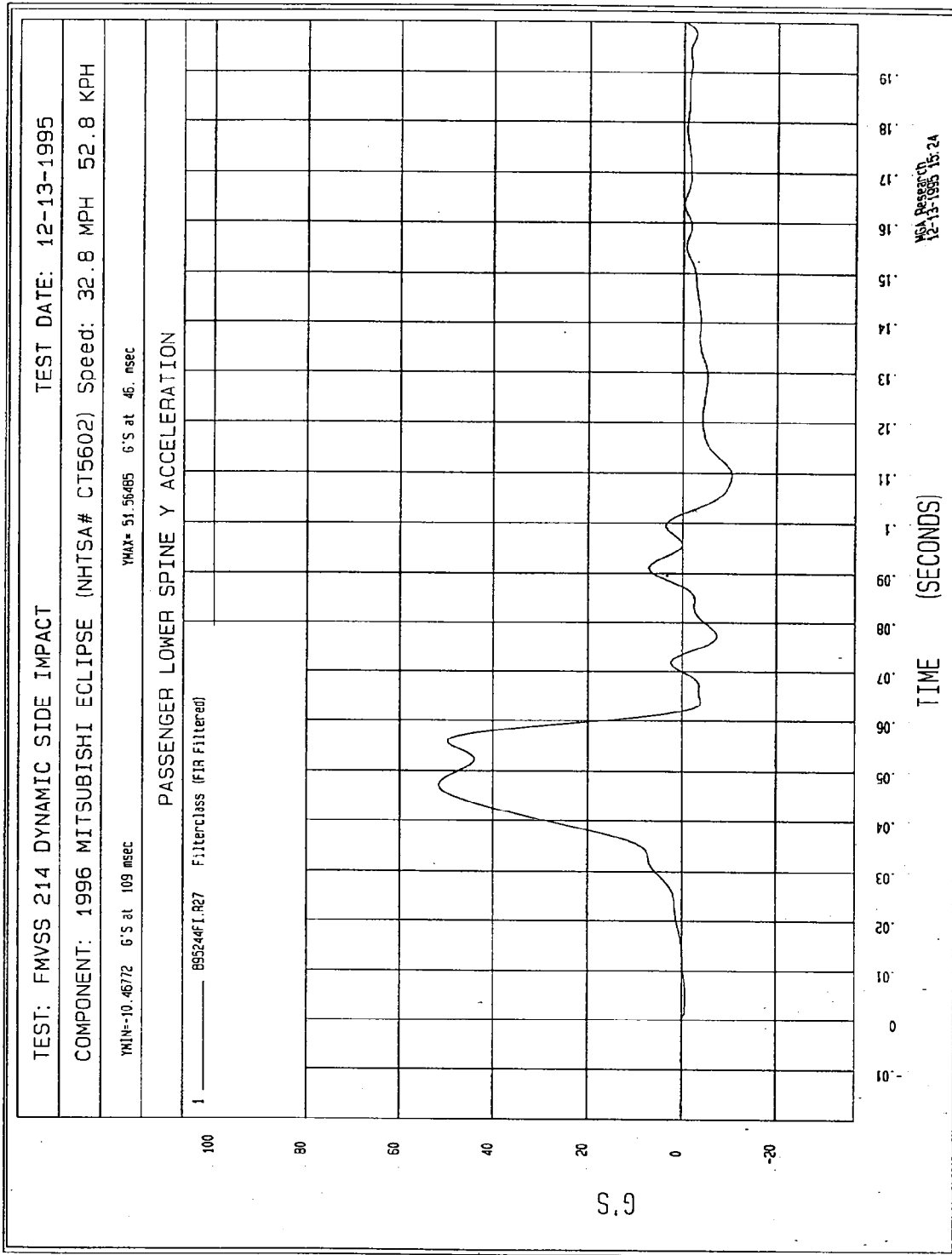
PASSENGER LOWER RIB Y ACCELERATION

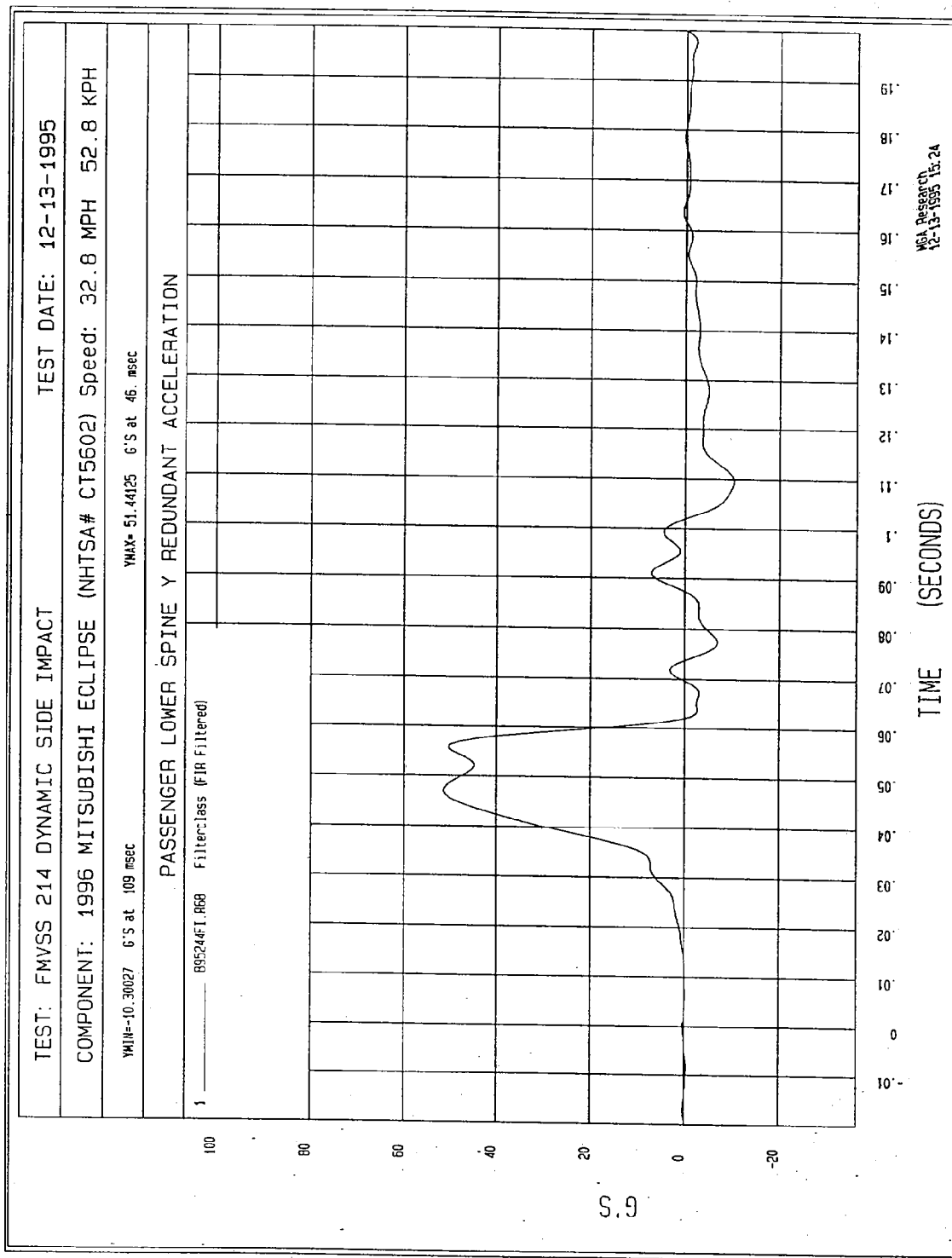
1 — B95244F1.R26 FilterClass (FIR Filtered)

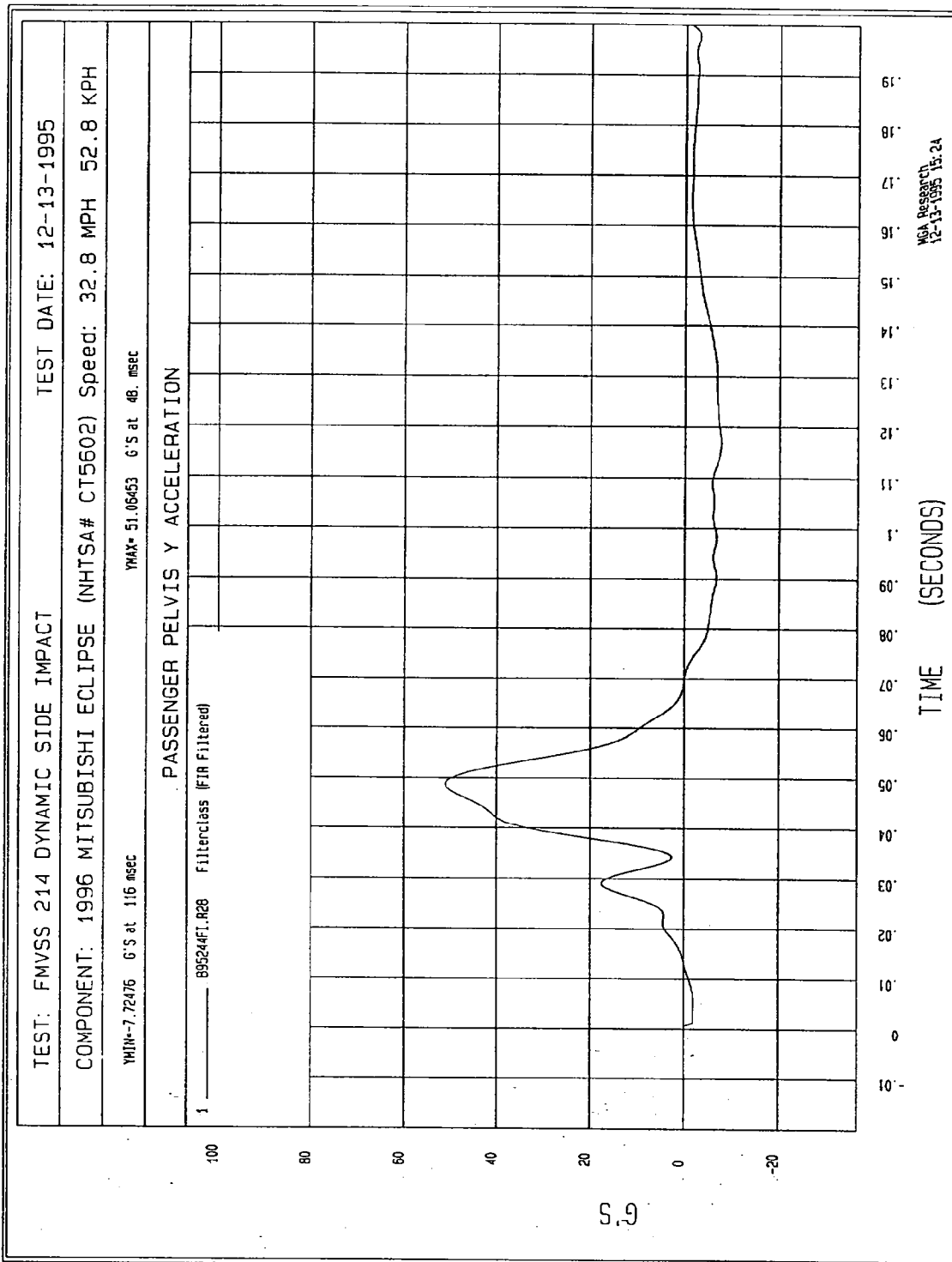


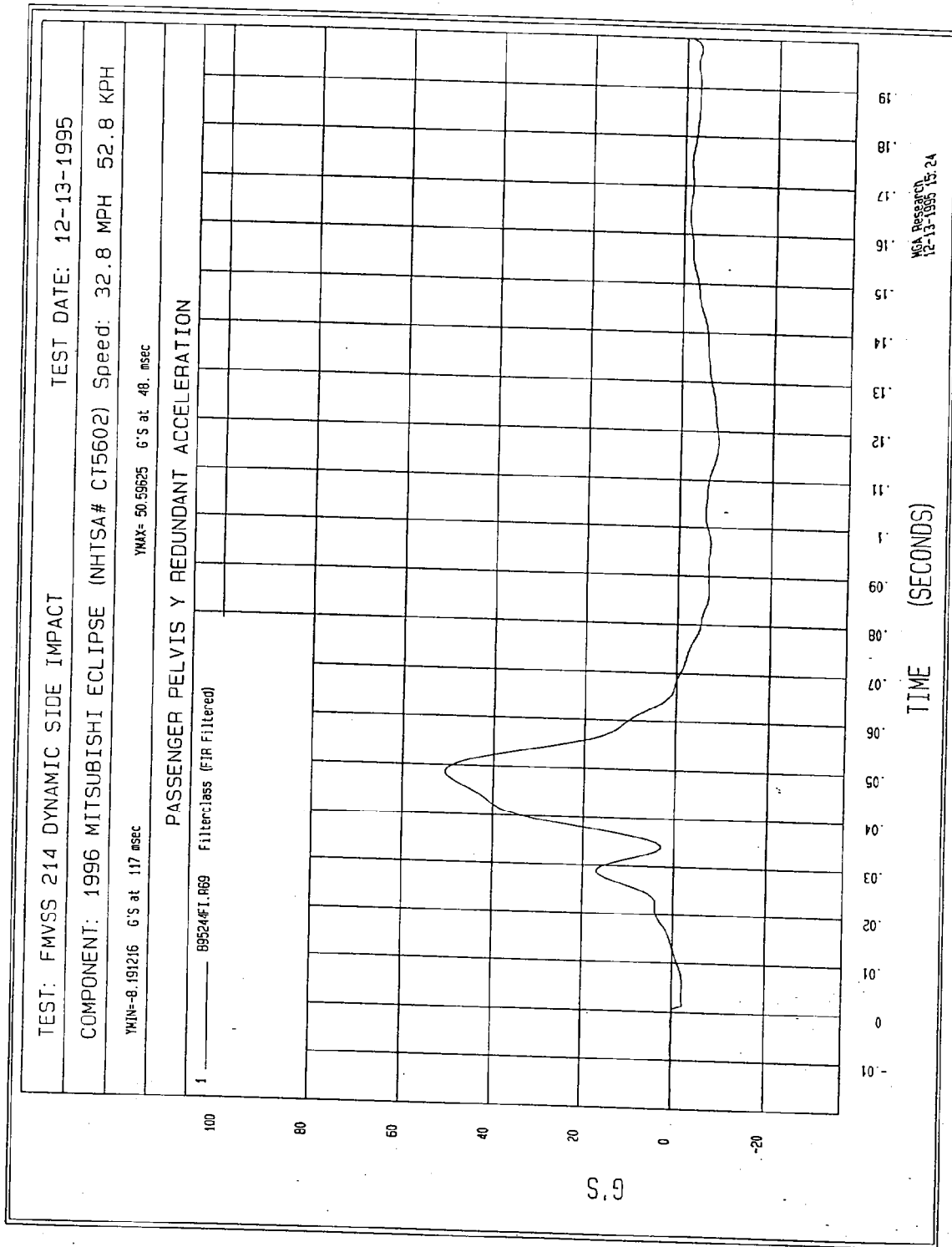
NGA Research
12-13-1995 15:24











APPENDIX C
SID CONFIGURATION AND PERFORMANCE VERIFICATION

REPORT NO. MGA-96-DC09

DUMMY PERFORMANCE CALIBRATIONS

FMVSS 214 - SIDE IMPACT TEST

MITSUBISHI MOTORS CORPORATION
1996 MITSUBISHI ECLIPSE RS
NHTSA NO. CT5602

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: December 13, 1995

Report Date: December 22, 1995

FINAL REPORT

Prepared For:

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

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DUMMY S/N: 270	PRE-TEST CERTIFICATION DATA	2-1
DUMMY S/N: 271	POST-TEST CERTIFICATION DATA	3-1
DUMMY S/N: 270	POST-TEST CERTIFICATION DATA	4-1
DUMMY S/N: 271	POST-TEST INSPECTION CHECKLIST	5-1
DUMMY S/N: 270	POST-TEST INSPECTION CHECKLIST	6-1

PRE-TEST CERTIFICATION DATA

Driver Dummy Serial Number: 271

Calibration Test Results Summary

Dummy Serial Number: 271

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 271

DATE OF VERIFICATION: December 12, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.4
RH - Rib Height	19.75" - 20.50"	20.40
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.4
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.4
SW - Knee Pivot to Floor	19.3" - 19.9"	19.5
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: Tim W. O.

APPROVED BY: David Hochstetler

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 12, 1995

DUMMY NUMBER: 271

TEST NUMBER: D952102

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 fps	14.0
UPPER RIB	37 - 46 g's	46
LOWER RIB	37 - 46 g's	46
LOWER SPINE	15 - 22 g's	22

TEST MEETS SPECIFICATIONS

TECHNICIAN Jim M. [Signature]

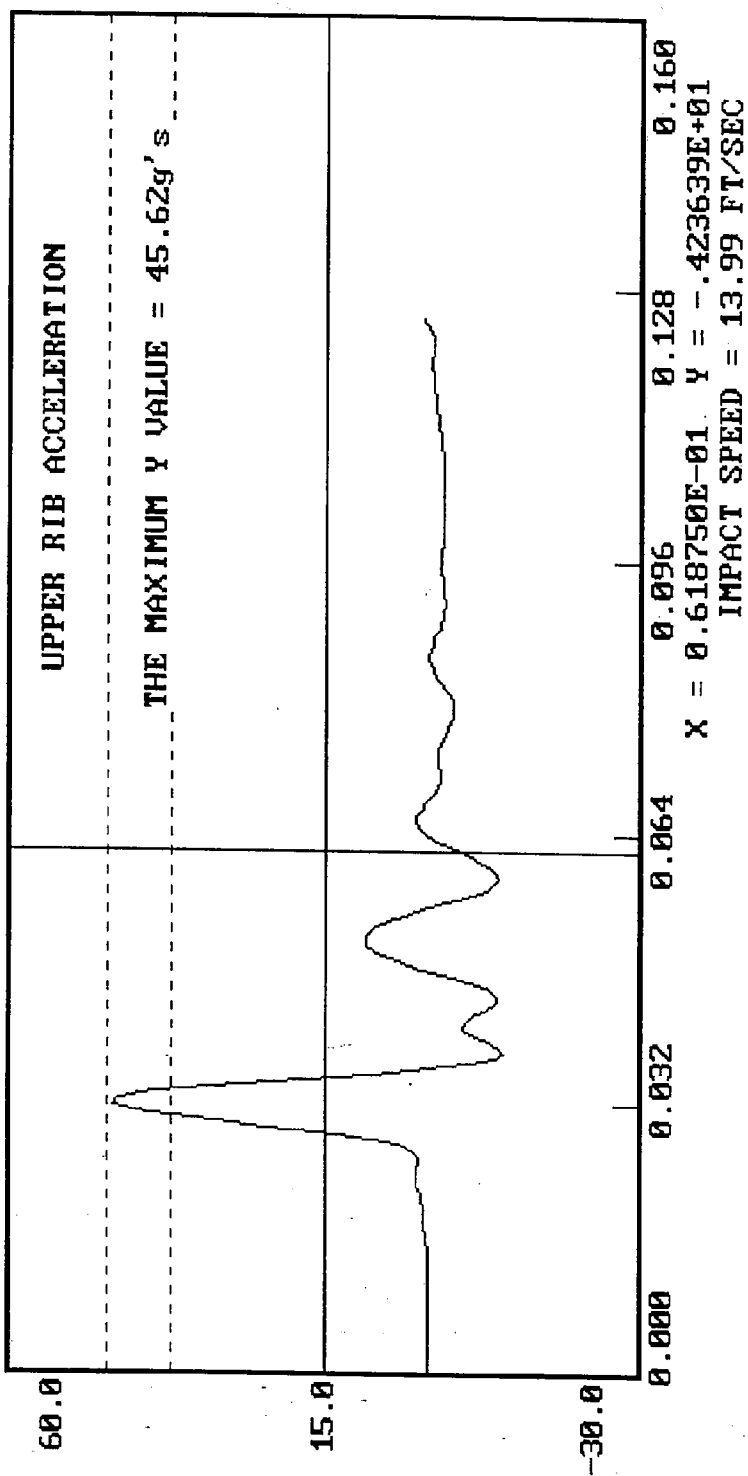
APPROVED BY [Signature]

12-12-1995 09:44

DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 271

ACCELERATION (G'S) VS. TIME ((SECONDS))

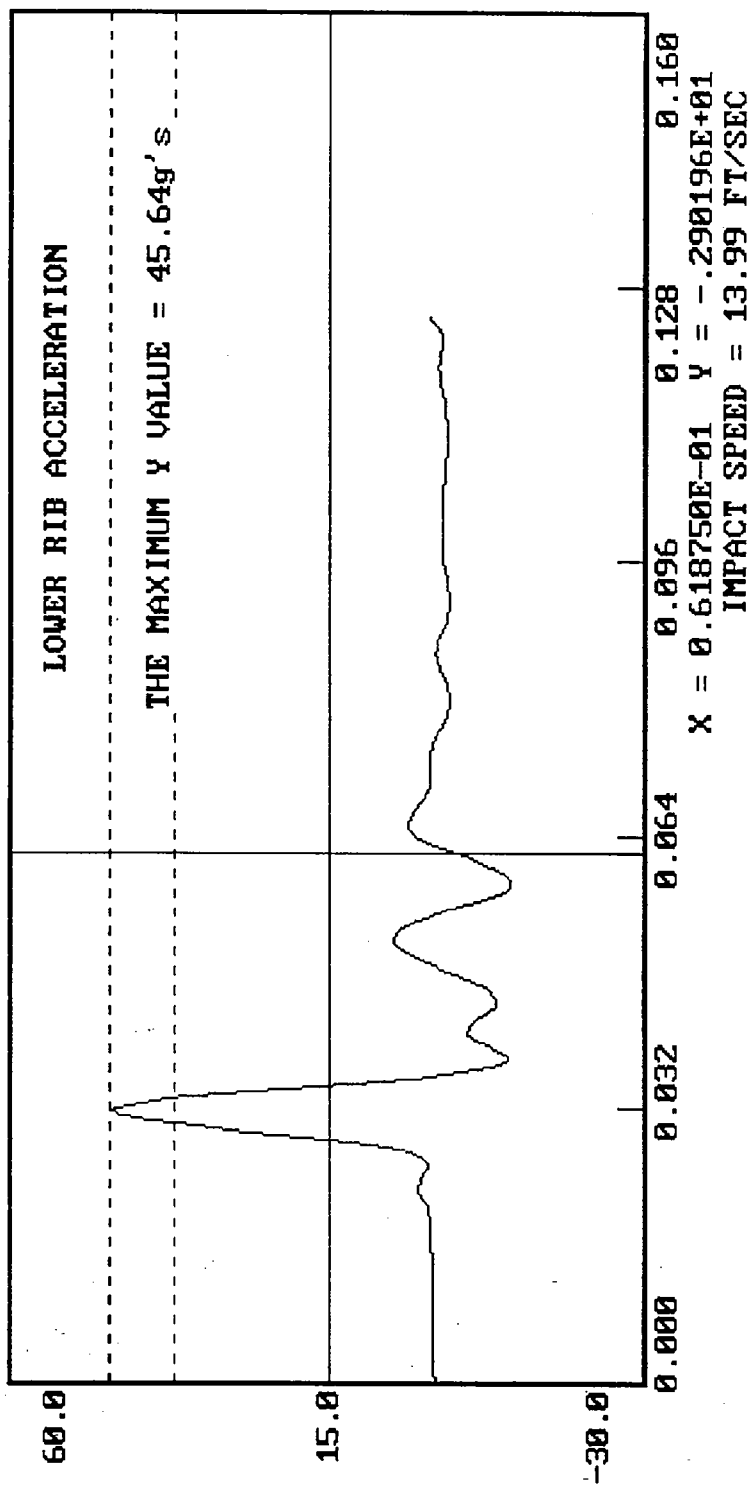


12-12-1995 09:44

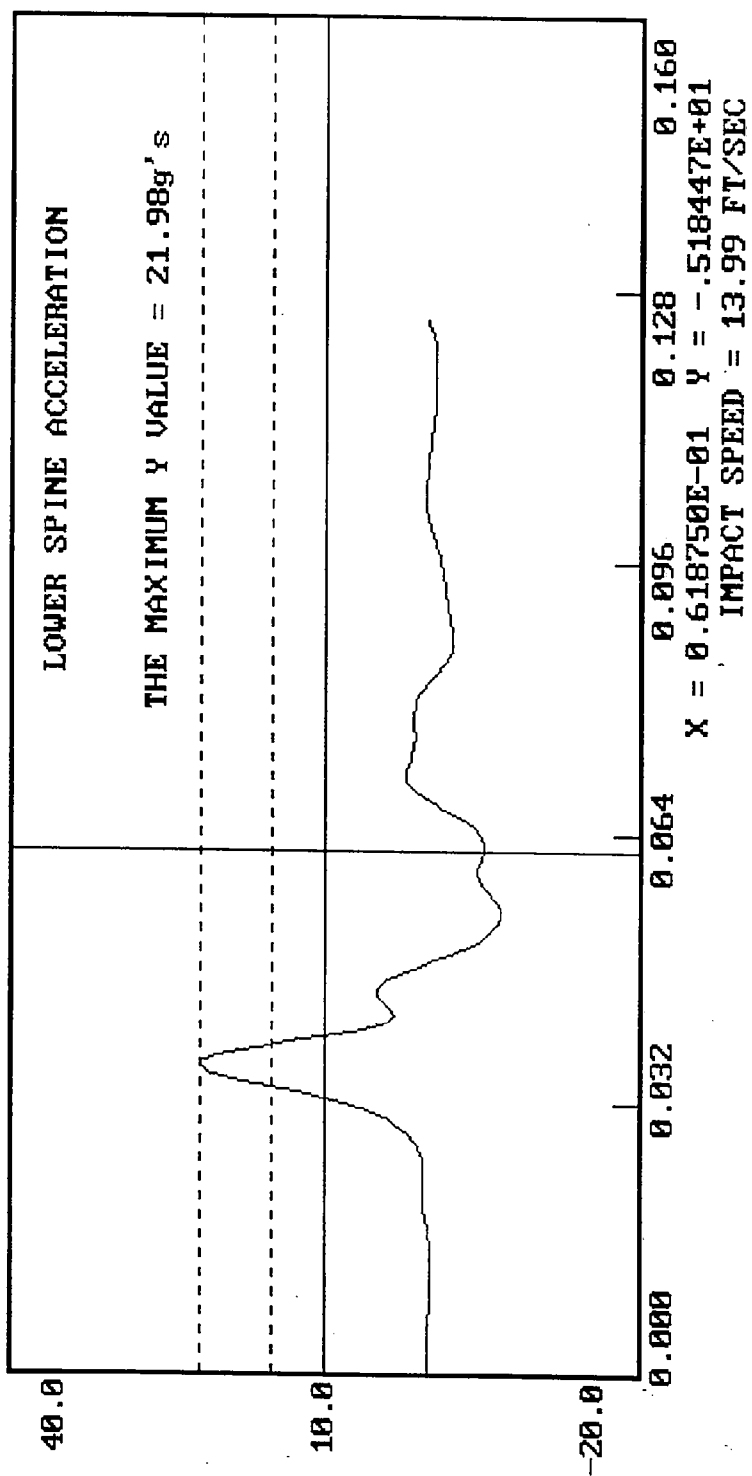
DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 271

ACCELERATION (G'S) VS. TIME ((SECONDS))



DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 271
 12-12-1995 09:44
 ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 12, 1995

DUMMY NUMBER: 271

TEST NUMBER: D952103

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 f/s	14.0
PELVIS ACCELERATION	40 - 60 g's	59

TEST MEETS SPECIFICATIONS

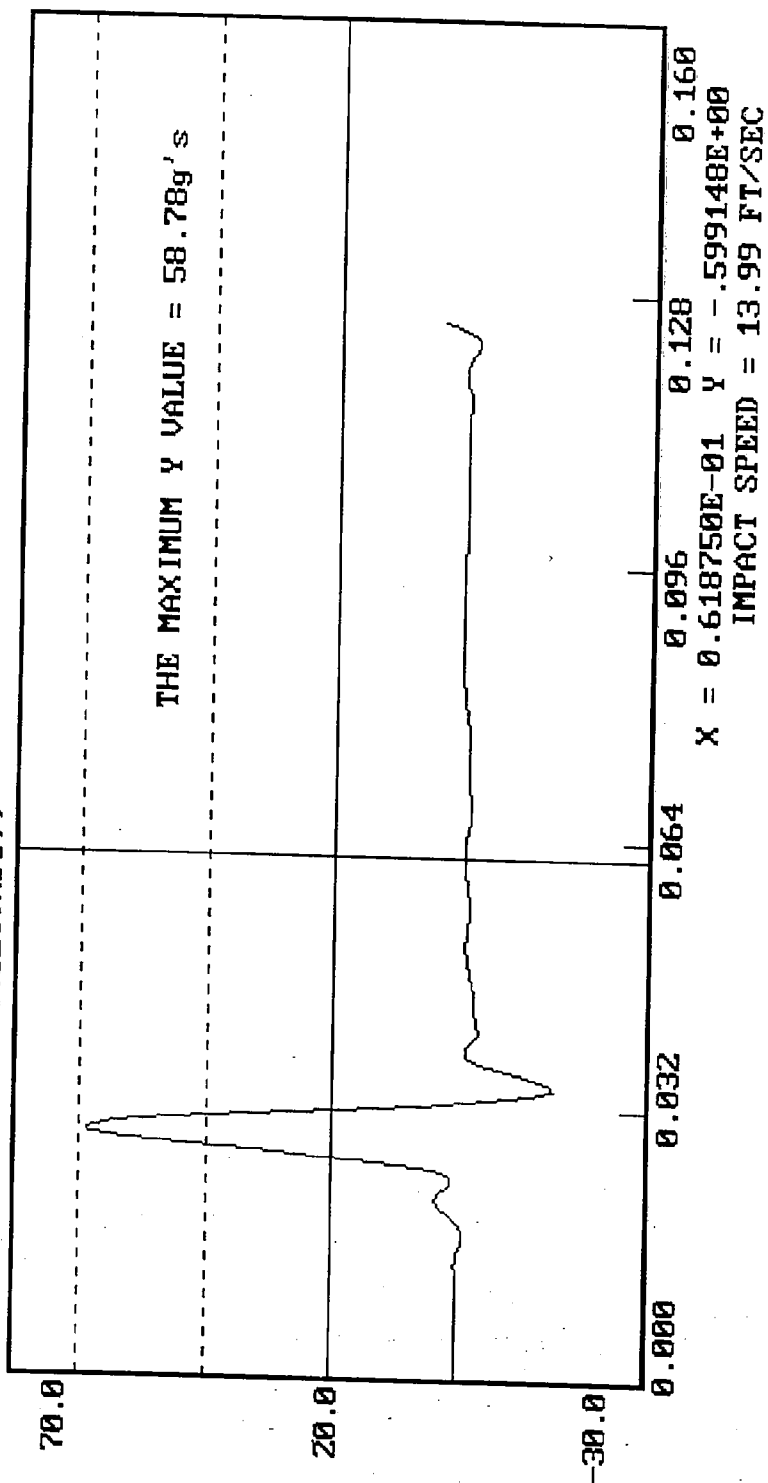
TECHNICIAN Tim Wilson

APPROVED BY Dave Koschke

DUMMY CALIBRATION - PELVIS IMPACT
DUMMY # 271

12-12-1995 10:11

ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION
ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)
SIDE IMPACT DUMMY (SID)

DATE: December 12, 1995

DUMMY NUMBER: 271

TEST NUMBER: D952104

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0.5 in	23.3 - 36.5 lbs	32.4
FORCE @ 0.75 in	36.7 - 49.8 lbs	46.4
FORCE @ 1.0 in	50 - 63 lbs	61
FORCE @ 1.3 in	73 - 88 lbs	83

TEST MEETS SPECIFICATIONS

TECHNICIAN

Jim M. Quinn

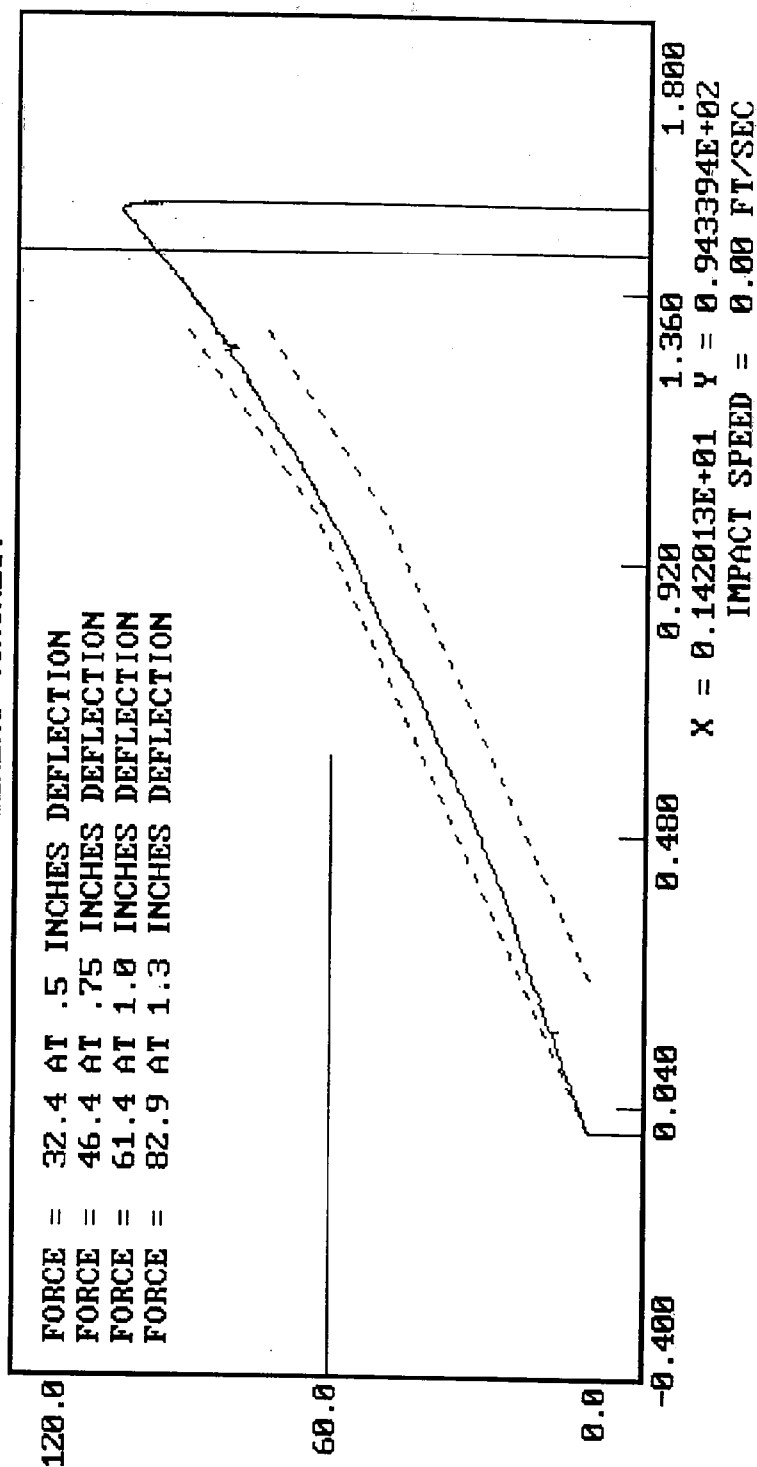
APPROVED BY

Dave Koshake

DUMMY CALIBRATION - ABDOMEN COMPRESSION
 DUMMY # 271

12-12-1995 11:18

ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: December 12, 1995

DUMMY NUMBER: 271

TEST NUMBER: D952105

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	26
FORCE @ 30°	34 - 46 lbs	38
FORCE @ 40°	46 - 58 lbs	50
RETURN ANGLE	12° maximum	4°

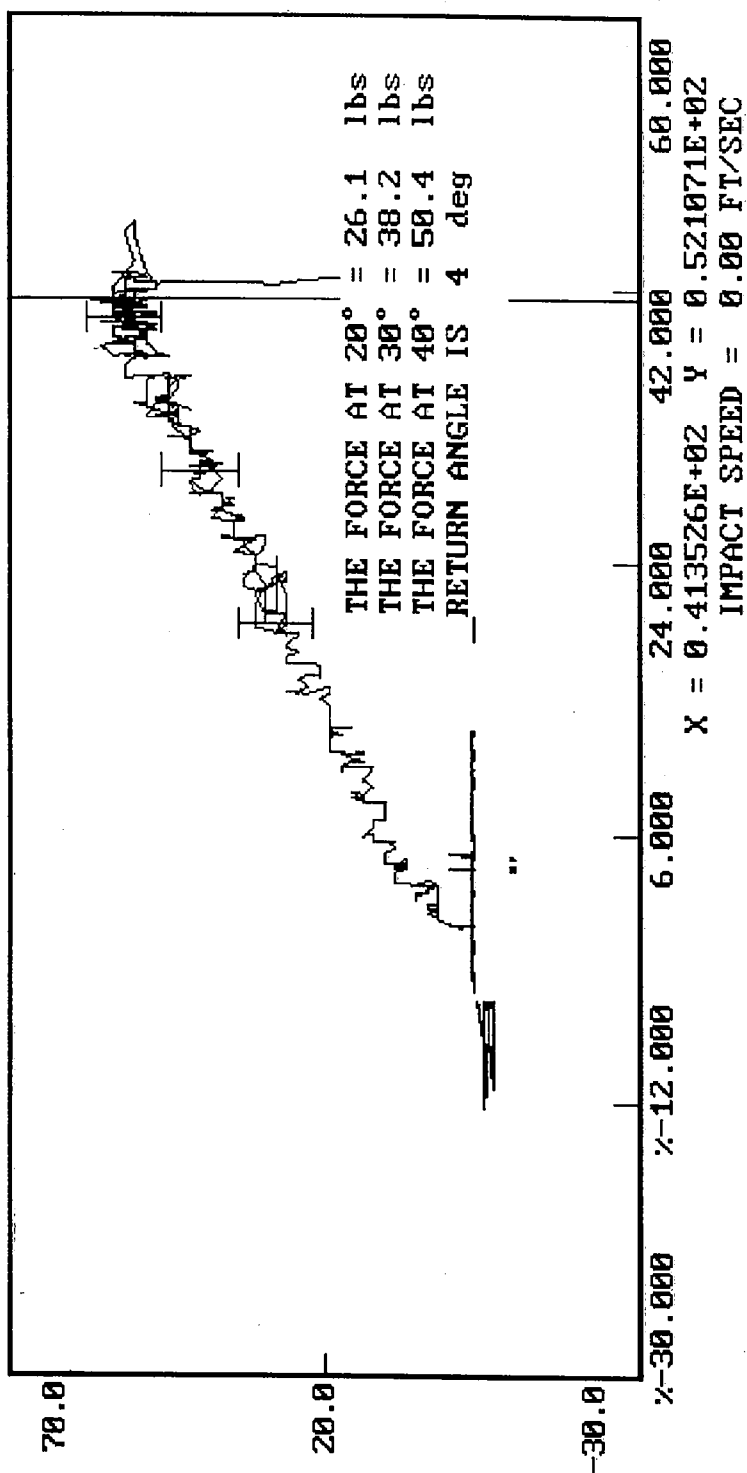
TEST MEETS SPECIFICATIONS

TECHNICIAN Tim White

APPROVED BY Dave Korbake

12-12-1995 10:37

DUMMY CALIBRATION - LUMBAR FLEXION
DUMMY # 271
FORCE (LBS) VS. TORSO ROTATION (DEGREES)



PRE-TEST CERTIFICATION DATA

Passenger Dummy Serial Number: 270

Calibration Test Results Summary

Passenger Serial Number: 270

Pre-Test Calibration

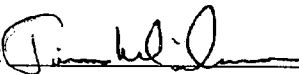
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

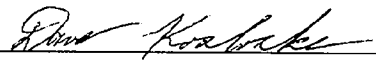
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 270

DATE OF VERIFICATION: December 12, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.3
RH - Rib Height	19.75" - 20.50"	20.50
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.5
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.7
SW - Knee Pivot to Floor	19.3" - 19.9"	19.5
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: 

APPROVED BY: 

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 12, 1995

DUMMY NUMBER: 270

TEST NUMBER: D952092

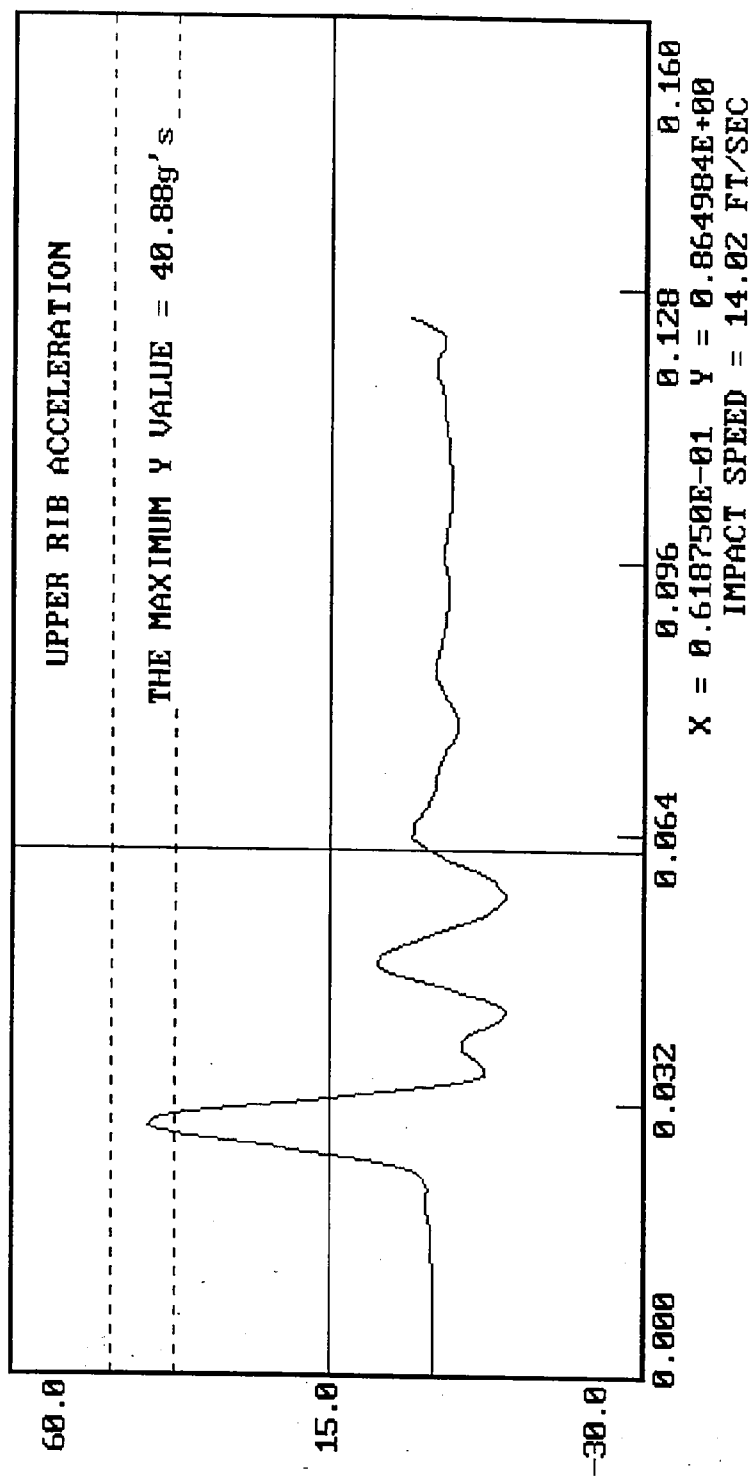
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 fps	14.0
UPPER RIB	37 - 46 g's	41
LOWER RIB	37 - 46 g's	41
LOWER SPINE	15 - 22 g's	21

TEST MEETS SPECIFICATIONS

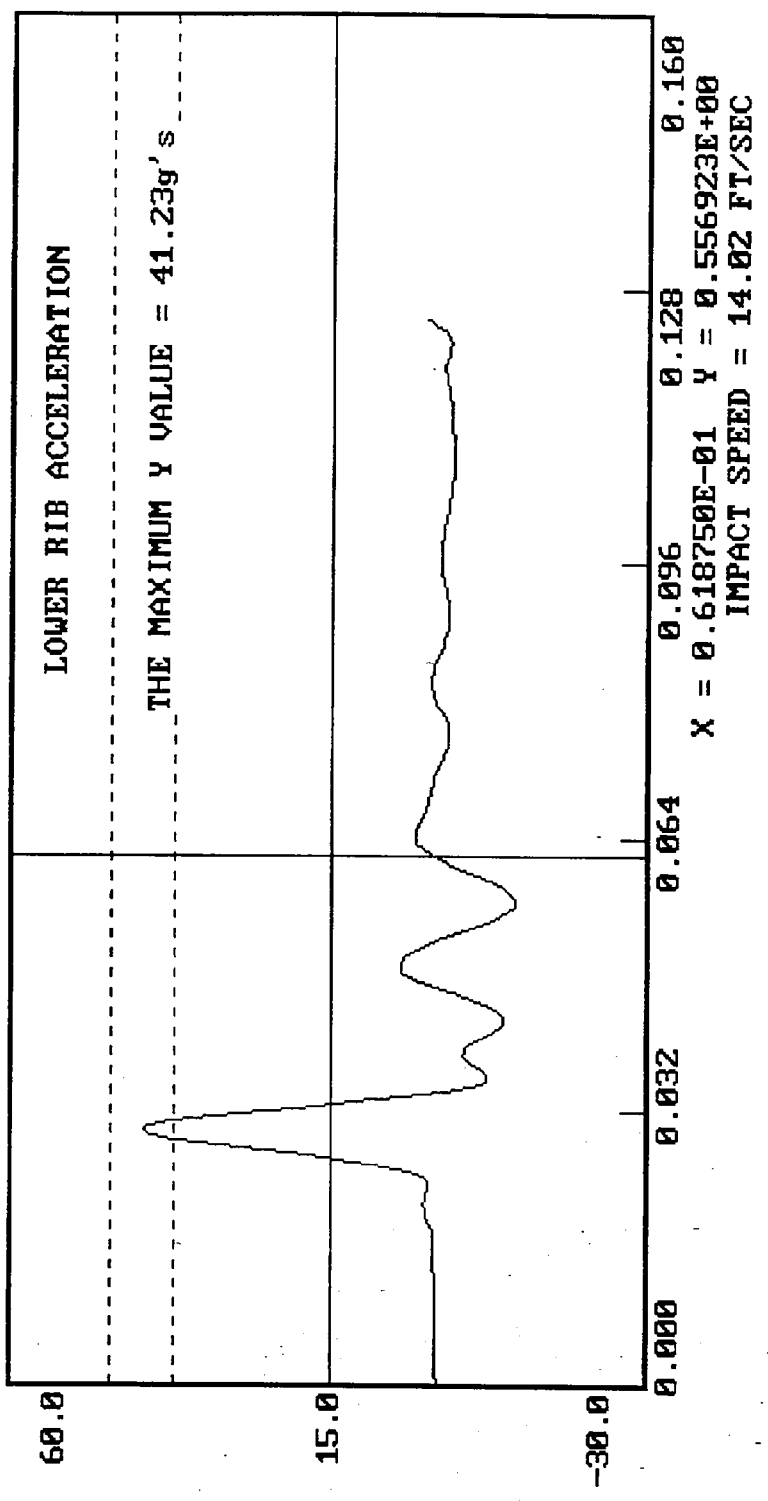
TECHNICIAN J. W. I.

APPROVED BY Rene K. K. K.

DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 270
 12-12-1995 09:05
 ACCELERATION (G'S) VS. TIME ((SECONDS))



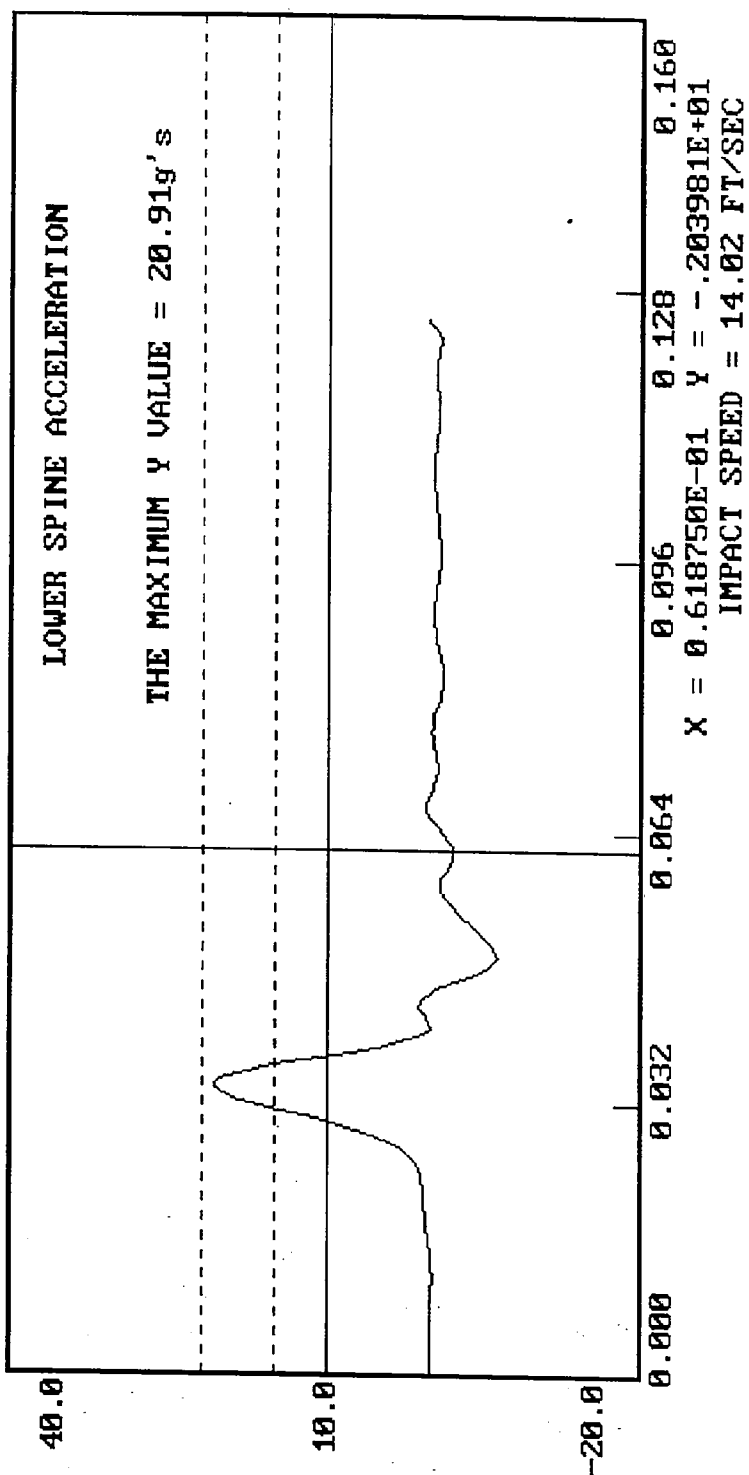
DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 270
 12-12-1995 09:05
 ACCELERATION (G'S) VS. TIME ((SECONDS))



DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 270

12-12-1995 09:05

ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 12, 1995

DUMMY NUMBER: 270

TEST NUMBER: D952093

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 f/s	14.0
PELVIS ACCELERATION	40 - 60 g's	59

TEST MEETS SPECIFICATIONS

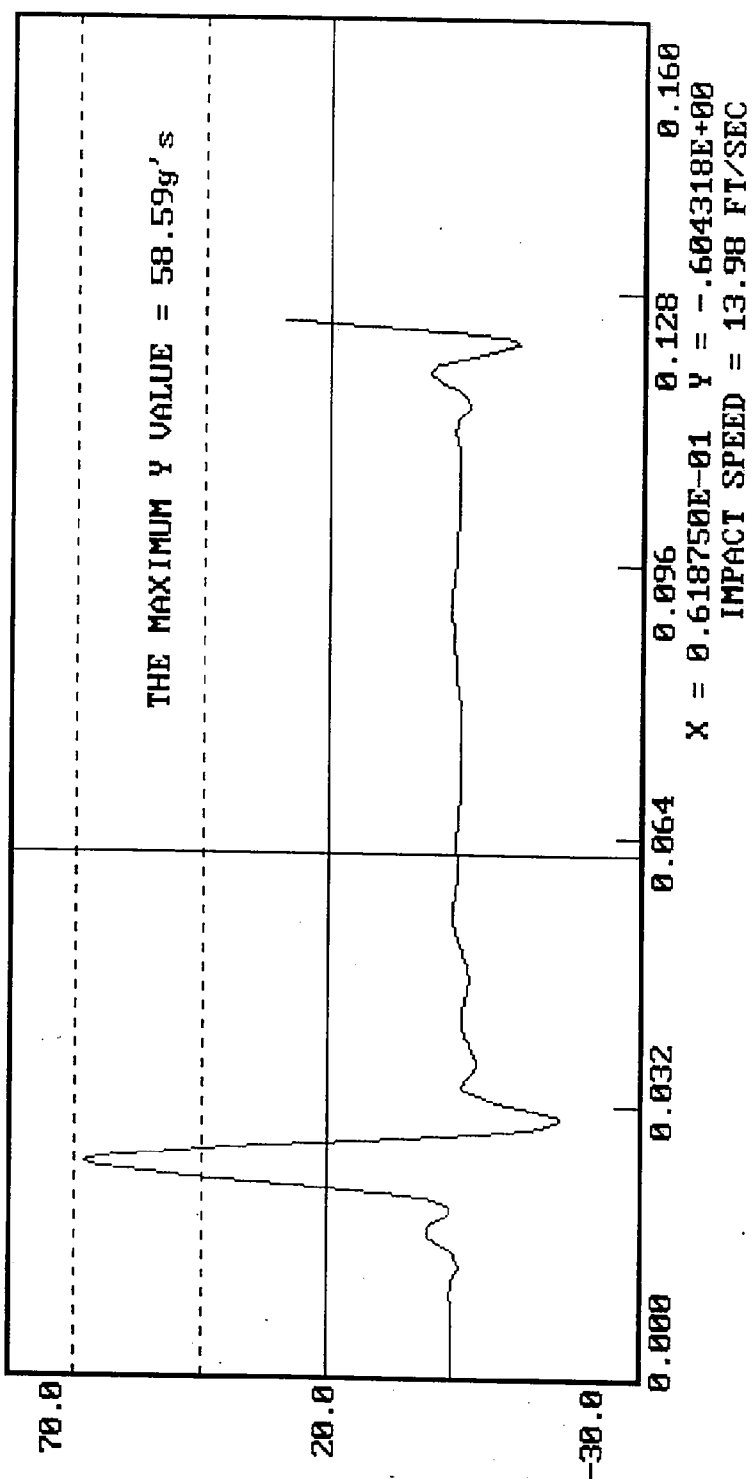
TECHNICIAN

Timothy J. Smith

APPROVED BY

Dave Kosloske

DUMMY CALIBRATION - PELVIS IMPACT
DUMMY # 270
12-12-1995 09:19
ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION
ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)
SIDE IMPACT DUMMY (SID)

DATE: December 12, 1995

DUMMY NUMBER: 270

TEST NUMBER: D952094

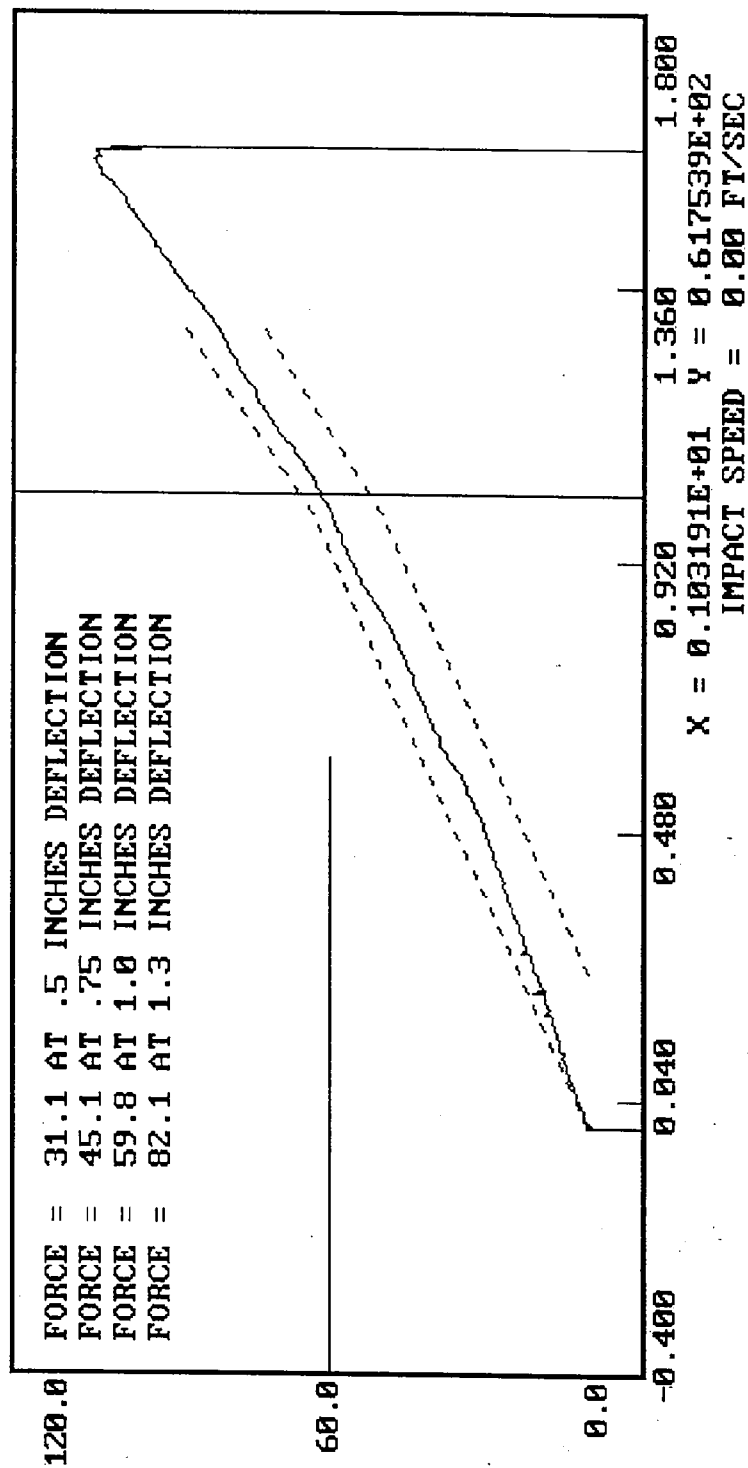
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0.5 in	23.3 - 36.5 lbs	31.1
FORCE @ 0.75 in	36.7 - 49.8 lbs	45.1
FORCE @ 1.0 in	50 - 63 lbs	60
FORCE @ 1.3 in	73 - 88 lbs	82

TEST MEETS SPECIFICATIONS

TECHNICIAN Jim Wilcox

APPROVED BY Dave Koebke

DUMMY CALIBRATION - ABDOMEN COMPRESSION
 DUMMY # 270
 12-12-1995 11:13
 ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: December 12, 1995

DUMMY NUMBER: 270

TEST NUMBER: D952095

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	26
FORCE @ 30°	34 - 46 lbs	40
FORCE @ 40°	46 - 58 lbs	56
RETURN ANGLE	12° maximum	2°

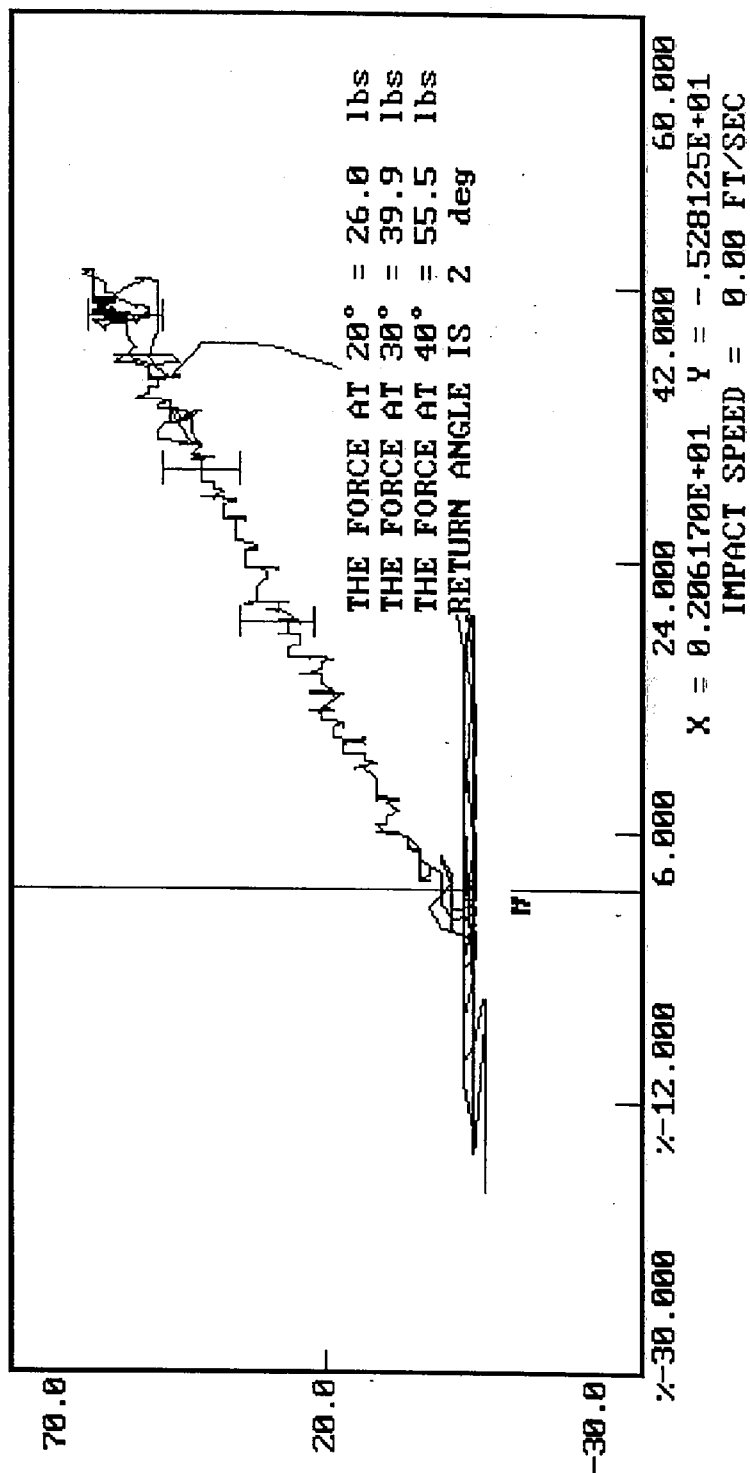
TEST MEETS SPECIFICATIONS

TECHNICIAN Jim Hel-ler

APPROVED BY Paul Koslaka

12-12-1995 10:26

DUMMY CALIBRATION - LUMBAR FLEXION
DUMMY # 270
FORCE (LBS) VS. TORSO ROTATION (DEGREES)



POST-TEST CERTIFICATION DATA

Driver Dummy Serial Number: 271

Calibration Test Results Summary

Dummy Serial Number: 271

Post-Test Calibration

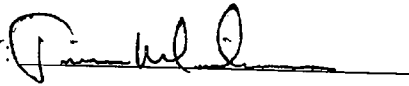
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

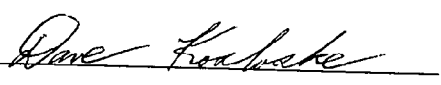
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 271

DATE OF VERIFICATION: December 18, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.4
RH - Rib Height	19.75" - 20.50"	20.40
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.4
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.4
SW - Knee Pivot to Floor	19.3" - 19.9"	19.5
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: 

APPROVED BY: 

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 14, 1995

DUMMY NUMBER: 271

TEST NUMBER: D952102

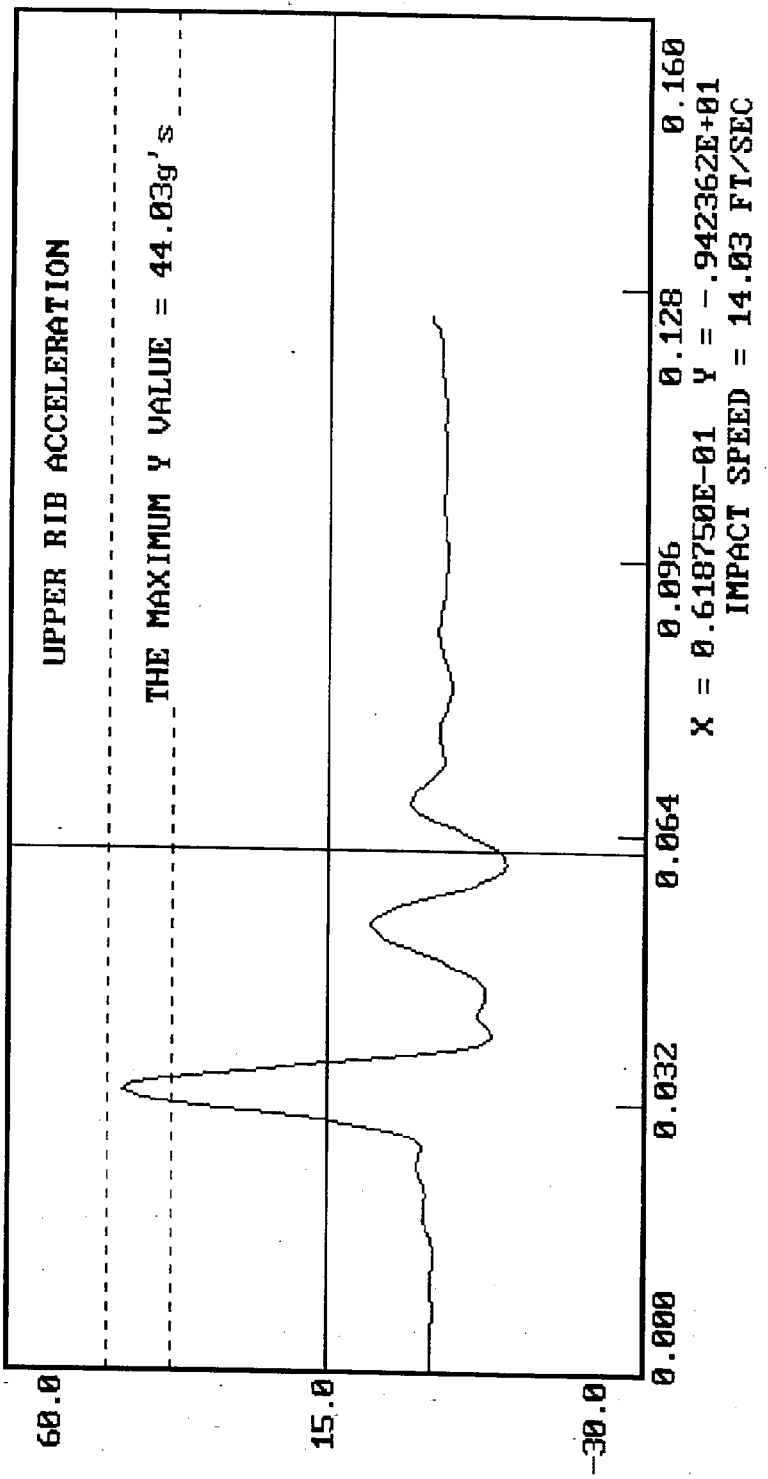
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	23%
PROBE SPEED	13.8 - 14.2 fps	14.0
UPPER RIB	37 - 46 g's	44
LOWER RIB	37 - 46 g's	38
LOWER SPINE	15 - 22 g's	20

TEST MEETS SPECIFICATIONS

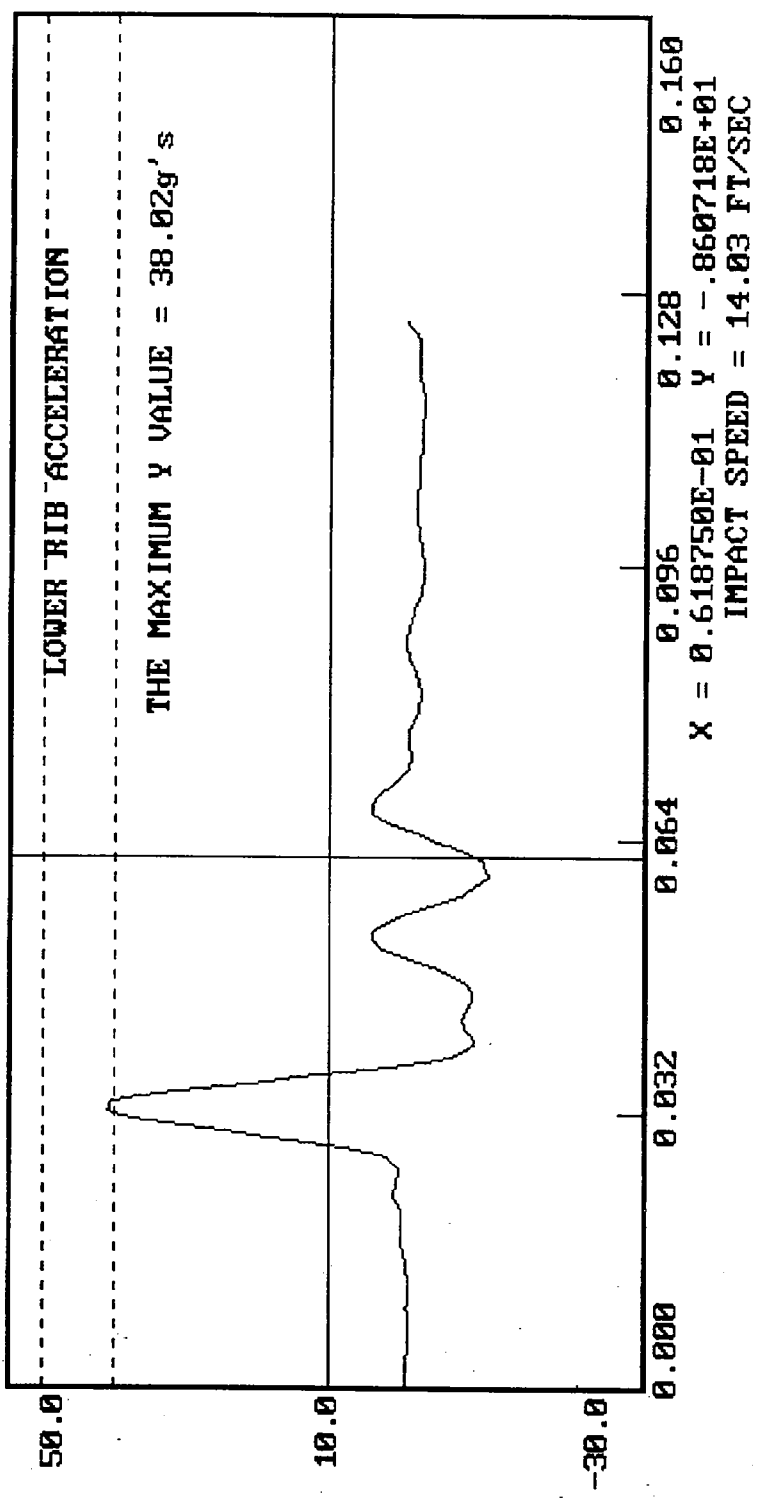
TECHNICIAN Jim White

APPROVED BY Steve Korbake

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 271
12-14-1995 11:30
ACCELERATION (G'S) VS. TIME ((SECONDS))



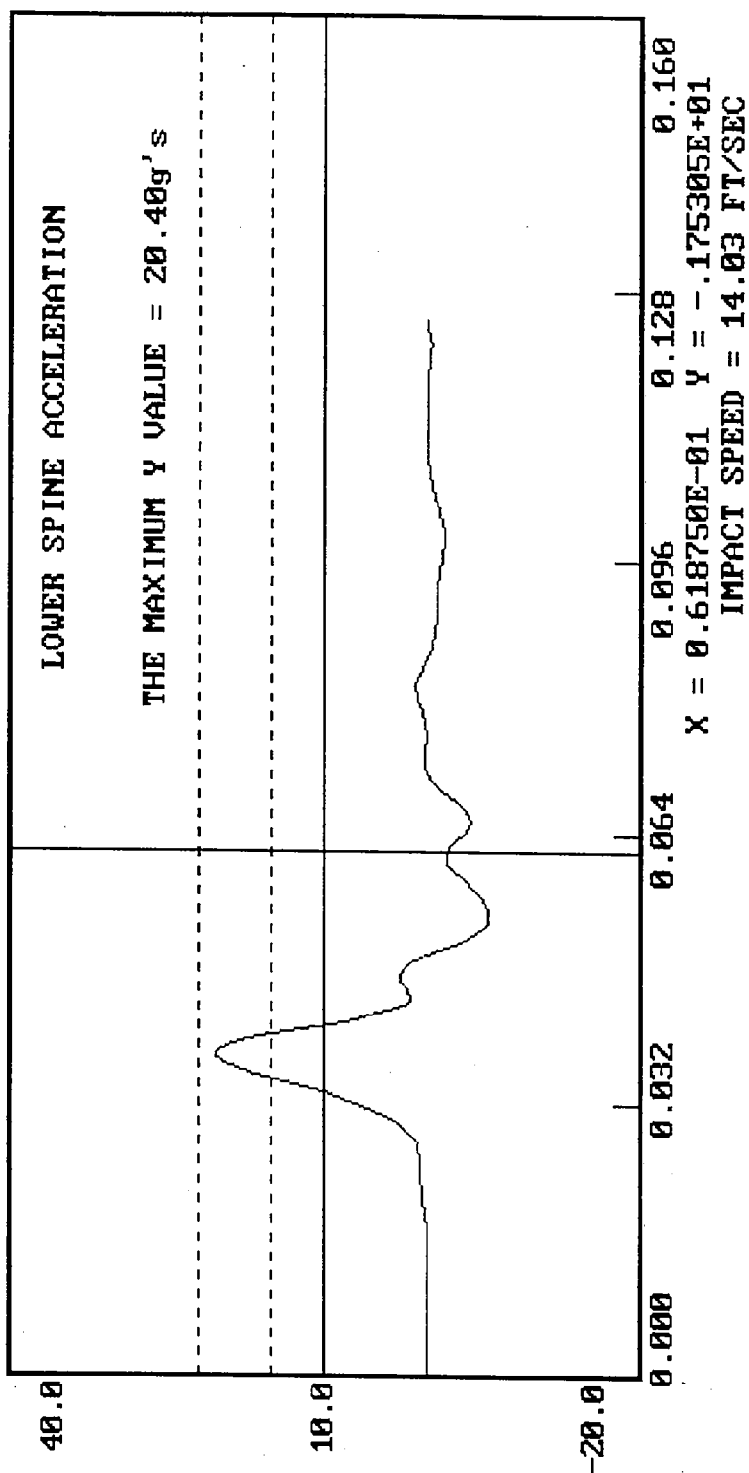
DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 271
 12-14-1995 11:30
 ACCELERATION (G'S) VS. TIME ((SECONDS))



DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 271

12-14-1995 11:30

ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 19, 1995

DUMMY NUMBER: 271

TEST NUMBER: D952103

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
PROBE SPEED	13.8 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	56

TEST MEETS SPECIFICATIONS

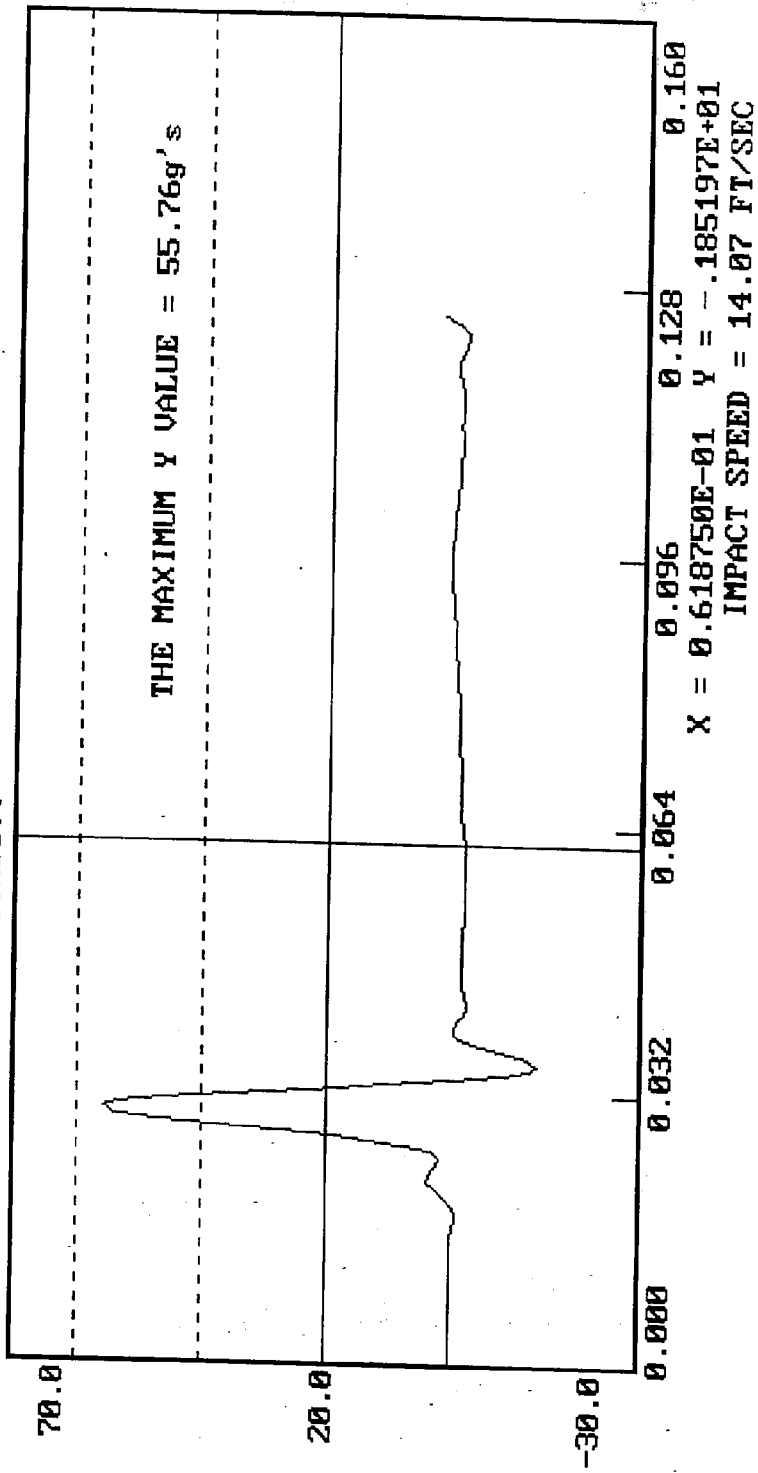
TECHNICIAN

Jim W. O.

APPROVED BY

Dave K. Korte

DUMMY CALIBRATION - PELVIS IMPACT
 DUMMY # 271
 12-19-1995 09:10
 ACCELERATION (G'S) VS. TIME (SECONDS))



MGA RESEARCH CORPORATION
ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)
SIDE IMPACT DUMMY (SID)

DATE: December 15, 1995

DUMMY NUMBER: 271

TEST NUMBER: D952104

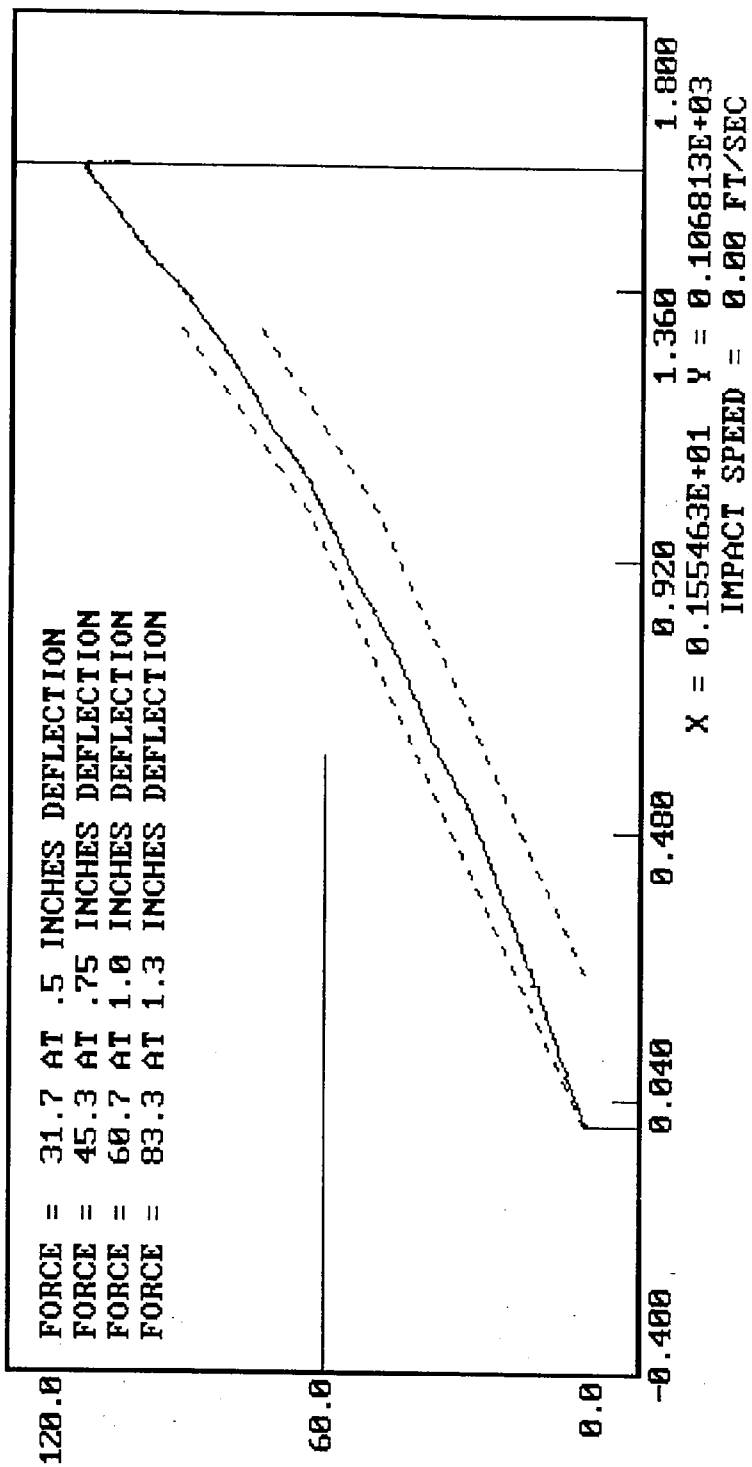
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0.5 in	23.3 - 36.5 lbs	31.7
FORCE @ 0.75 in	36.7 - 49.8 lbs	45.3
FORCE @ 1.0 in	50 - 63 lbs	61
FORCE @ 1.3 in	73 - 88 lbs	83

TEST MEETS SPECIFICATIONS

TECHNICIAN Jim McIl

APPROVED BY Eme Kabaka

DUMMY CALIBRATION - ABDOMEN COMPRESSION
 DUMMY # 271
 12-15-1995 11:00
 ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: December 15, 1995

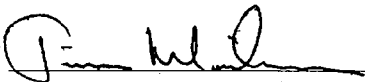
DUMMY NUMBER: 271

TEST NUMBER: D952105

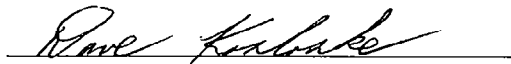
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	25
FORCE @ 30°	34 - 46 lbs	43
FORCE @ 40°	46 - 58 lbs	49
RETURN ANGLE	12° maximum	4°

TEST MEETS SPECIFICATIONS

TECHNICIAN

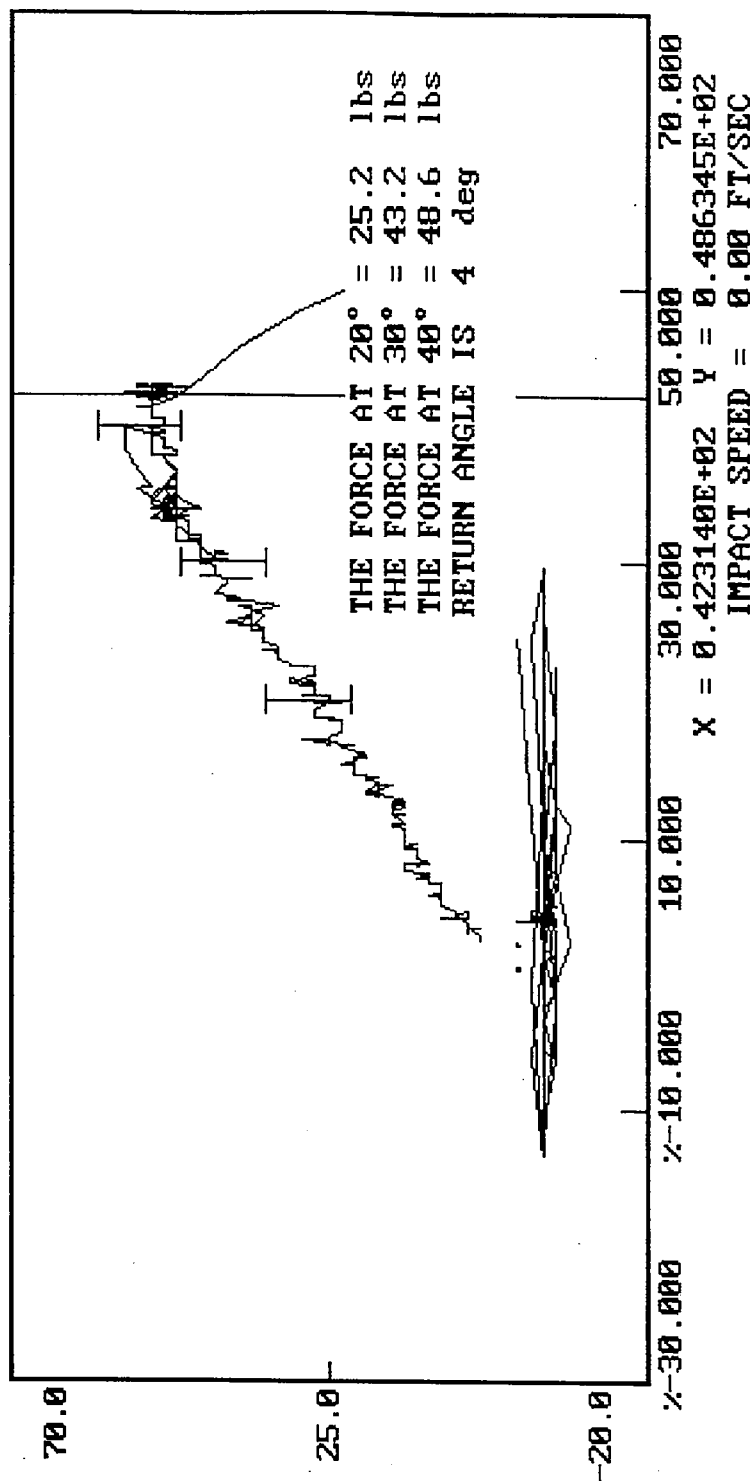


APPROVED BY



12-15-1995 13:52

DUMMY CALIBRATION - LUMBAR FLEXION
DUMMY # 271
FORCE (LBS) VS. TORSO ROTATION (DEGREES)



POST-TEST CERTIFICATION DATA

Passenger Dummy Serial Number: 270

Calibration Test Results Summary

Dummy Serial Number: 270

Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 270

DATE OF VERIFICATION: December 18, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.3
RH - Rib Height	19.75" - 20.50"	20.50
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.5
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.7
SW - Knee Pivot to Floor	19.3" - 19.9"	19.5
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: Tim Weil

APPROVED BY: Rene Korbach

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

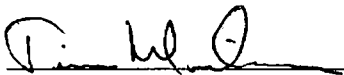
DATE: December 14, 1995

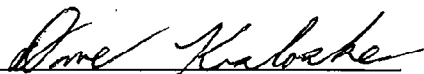
DUMMY NUMBER: 270

TEST NUMBER: D952092

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	23%
PROBE SPEED	13.8 - 14.2 fps	14.0
UPPER RIB	37 - 46 g's	40
LOWER RIB	37 - 46 g's	41
LOWER SPINE	15 - 22 g's	21

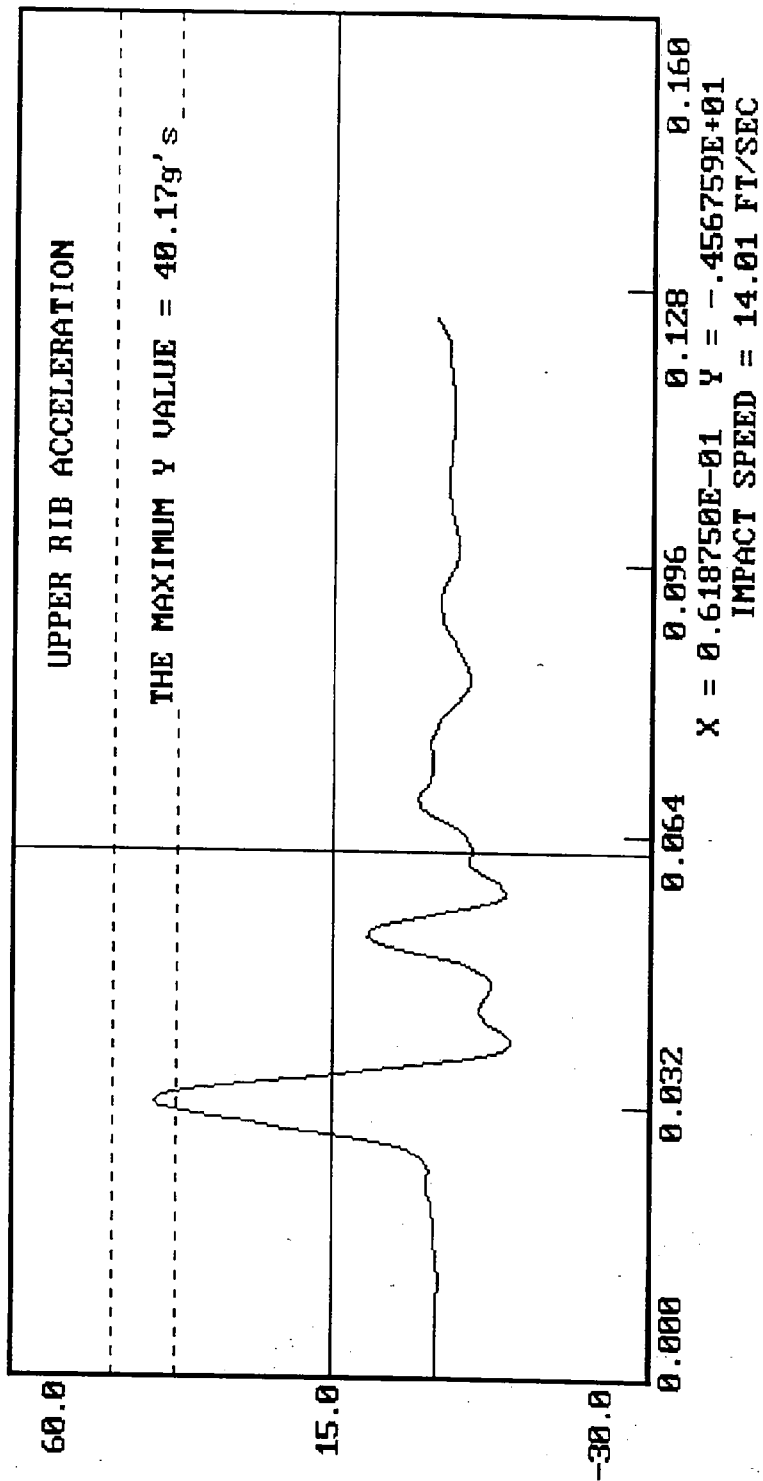
TEST MEETS SPECIFICATIONS

TECHNICIAN 

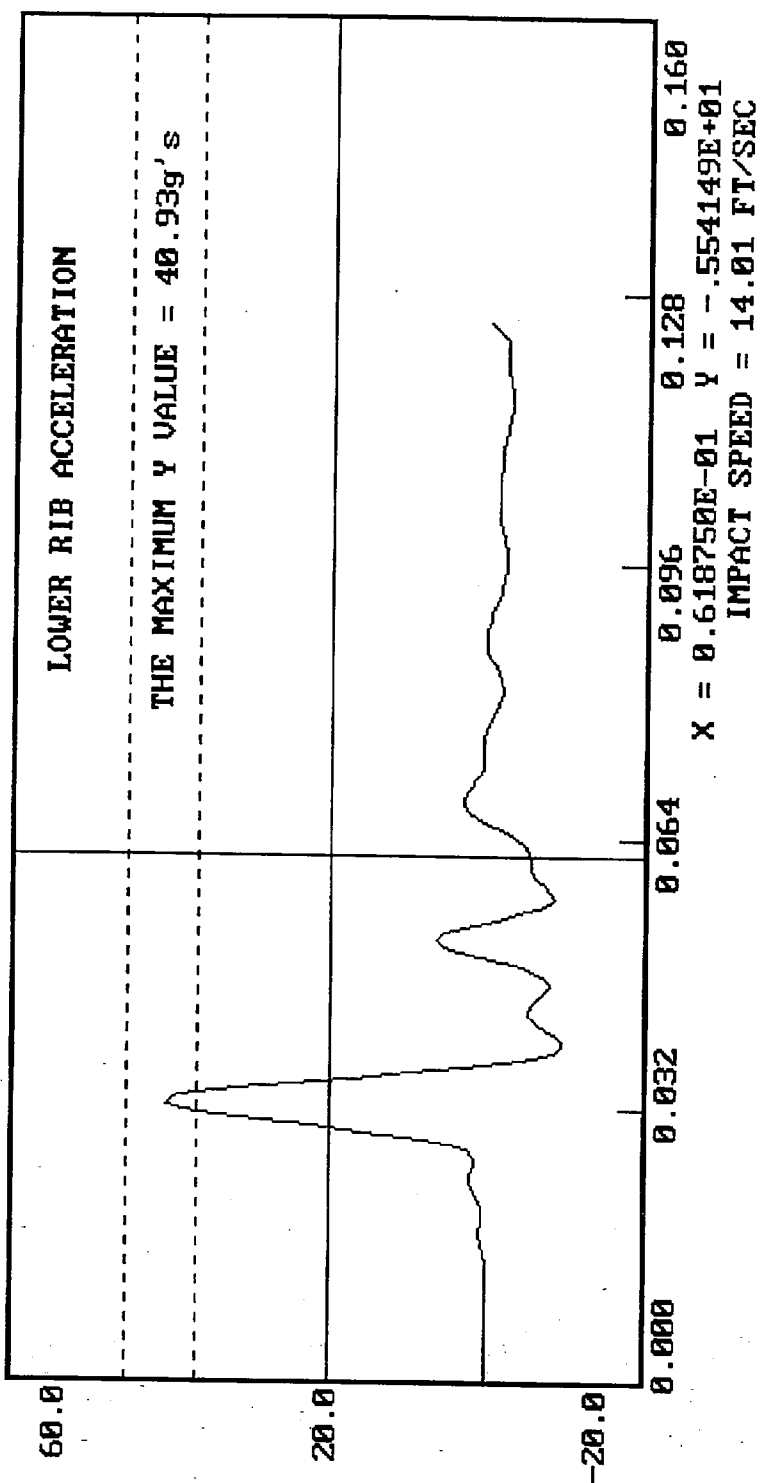
APPROVED BY 

DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 270
 ACCELERATION (G'S) VS. TIME ((SECONDS))

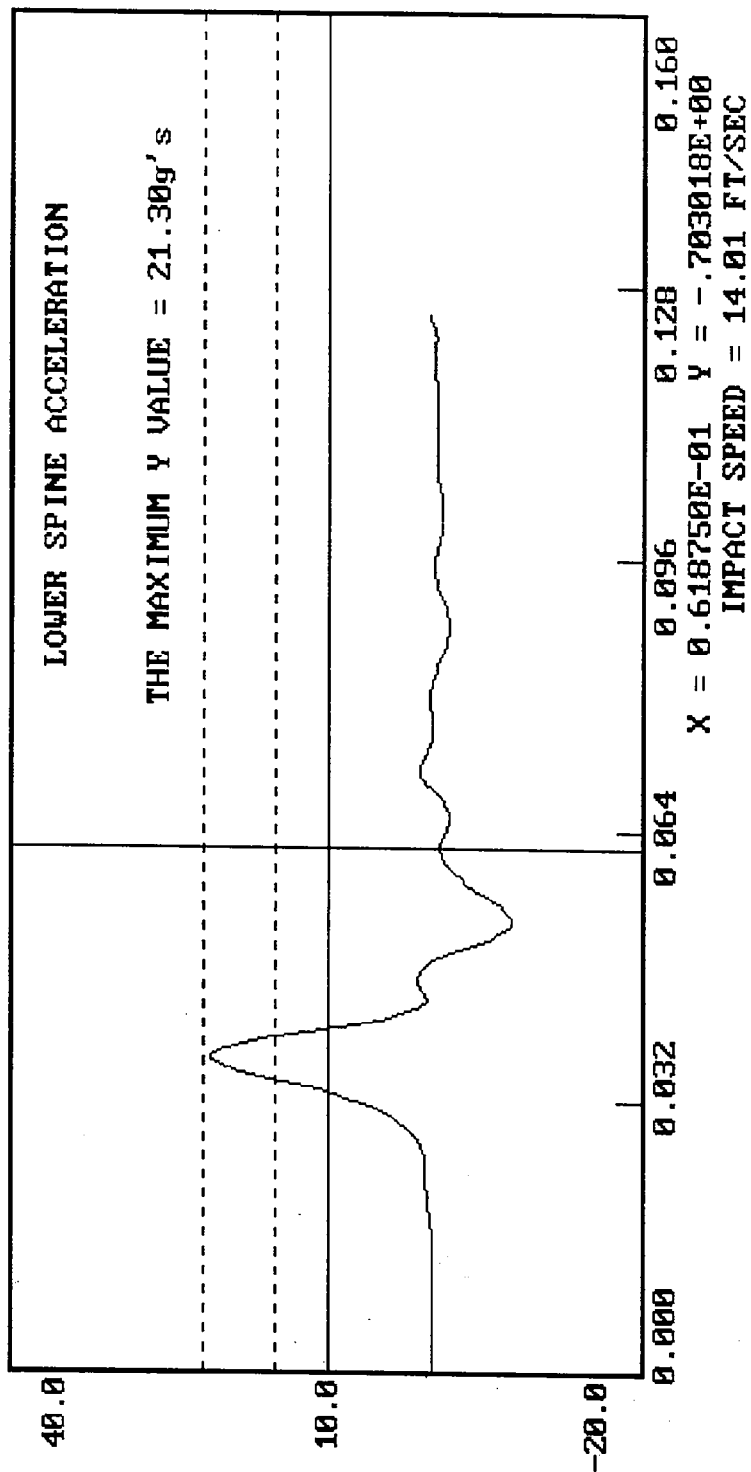
12-14-1995 10:48



DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 270
 12-14-1995 10:48
 ACCELERATION (G'S) VS. TIME ((SECONDS))



DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 270
 12-14-1995 10:48
 ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 14, 1995

DUMMY NUMBER: 270

TEST NUMBER: D952093

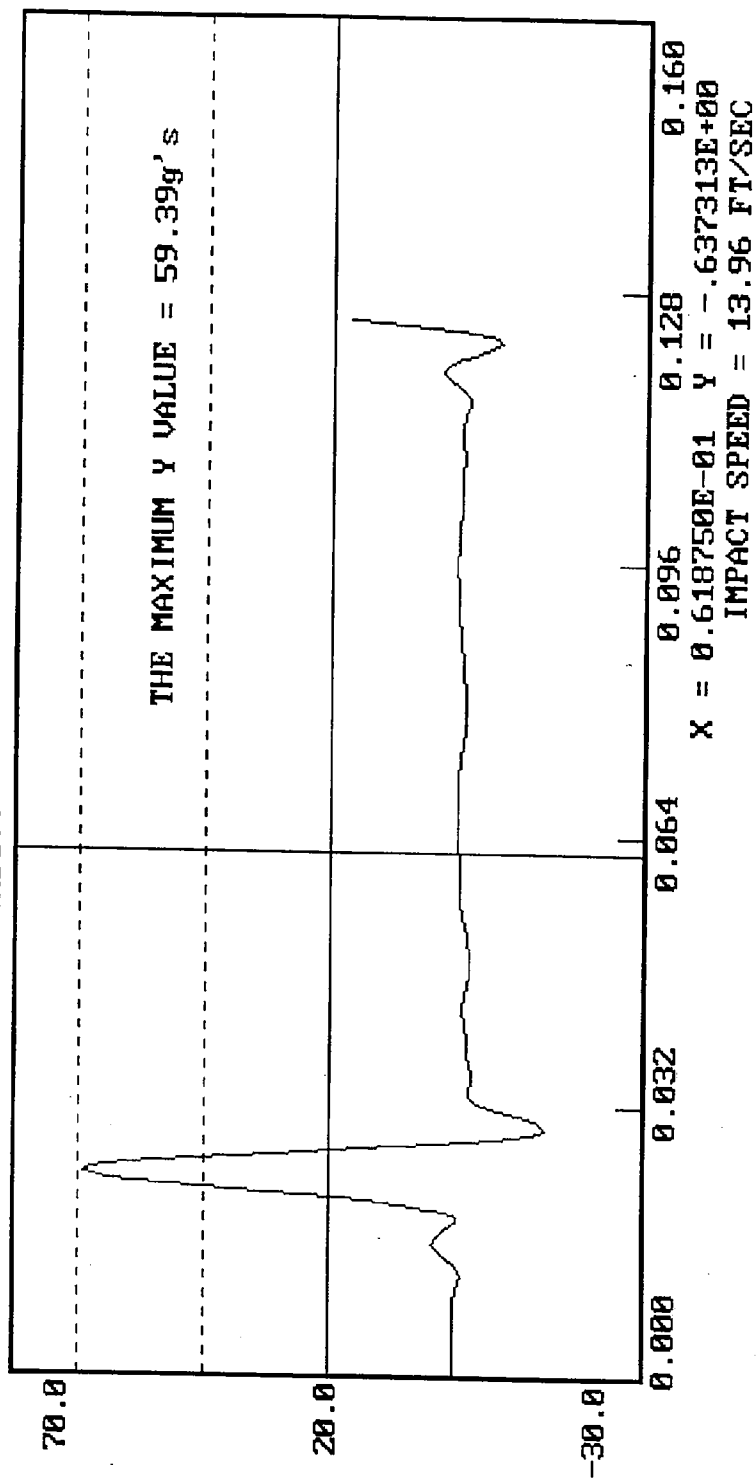
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	23%
PROBE SPEED	13.8 - 14.2 f/s	14.0
PELVIS ACCELERATION	40 - 60 g's	59

TEST MEETS SPECIFICATIONS

TECHNICIAN Jim H. O.

APPROVED BY Dave K. H. H.

DUMMY CALIBRATION - PELVIS IMPACT
DUMMY # 270
12-14-1995 11:04
ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION
ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)
SIDE IMPACT DUMMY (SID)

DATE: December 15, 1995

DUMMY NUMBER: 270

TEST NUMBER: D952094

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0.5 in	23.3 - 36.5 lbs	30.3
FORCE @ 0.75 in	36.7 - 49.8 lbs	43.2
FORCE @ 1.0 in	50 - 63 lbs	58
FORCE @ 1.3 in	73 - 88 lbs	80

TEST MEETS SPECIFICATIONS

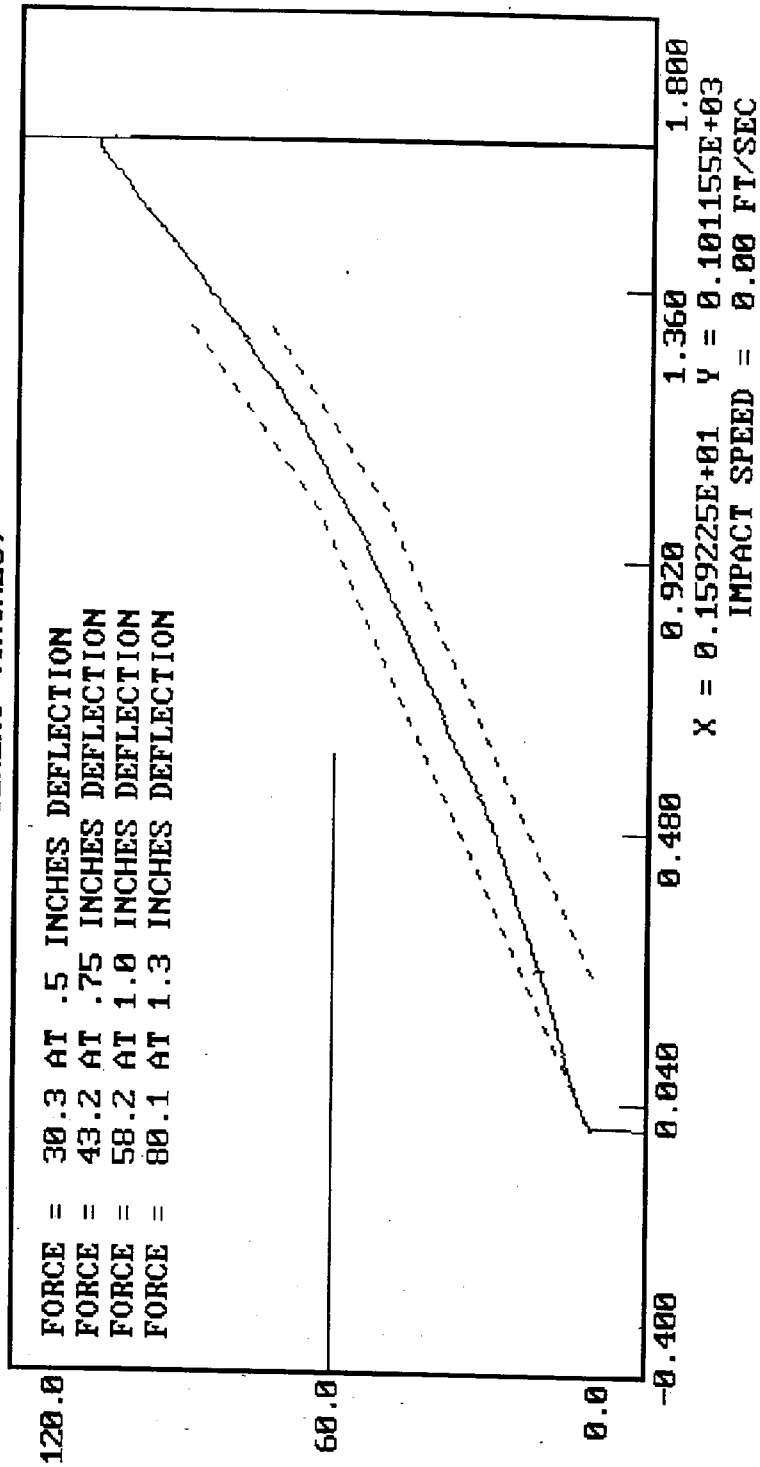
TECHNICIAN Tim Helton

APPROVED BY Dave Kosloski

DUMMY CALIBRATION - ABDOMEN COMPRESSION
 DUMMY # 270

12-15-1995 11:06

ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: December 15, 1995

DUMMY NUMBER: 270

TEST NUMBER: D952095

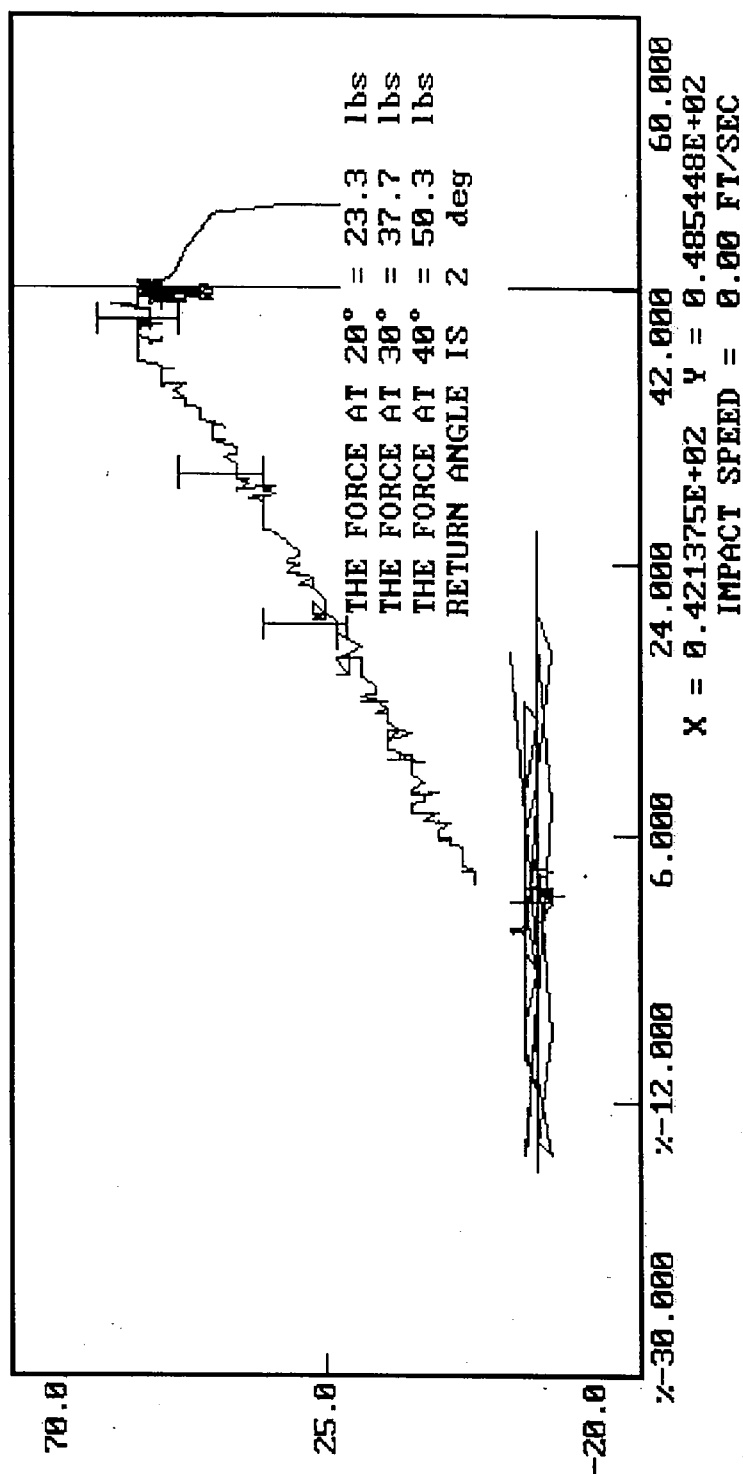
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	23
FORCE @ 30°	34 - 46 lbs	38
FORCE @ 40°	46 - 58 lbs	50
RETURN ANGLE	12° maximum	2°

TEST MEETS SPECIFICATIONS

TECHNICIAN *Tim Phil*

APPROVED BY *Dore Kralake*

DUMMY CALIBRATION - LUMBAR FLEXION
 DUMMY # 270
 12-15-1995 14:08
 FORCE (LBS) VS. TORSO ROTATION (DEGREES)



POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 271

Inspected By: Al Chalmers

Date: December 14, 1995

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure	OK
Sternum	visual	OK
Lumbar spine	visual	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual	OK
Knees	visual	OK
Lower legs	visual, range of motion	OK
Ankles	visual, range of motion	OK
Feet	visual, range of motion	OK
Joints	1 to 2 g range	OK
Other		

NOTES: (include component/problem/action/reason):

POST-TEST PASSENGER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 270

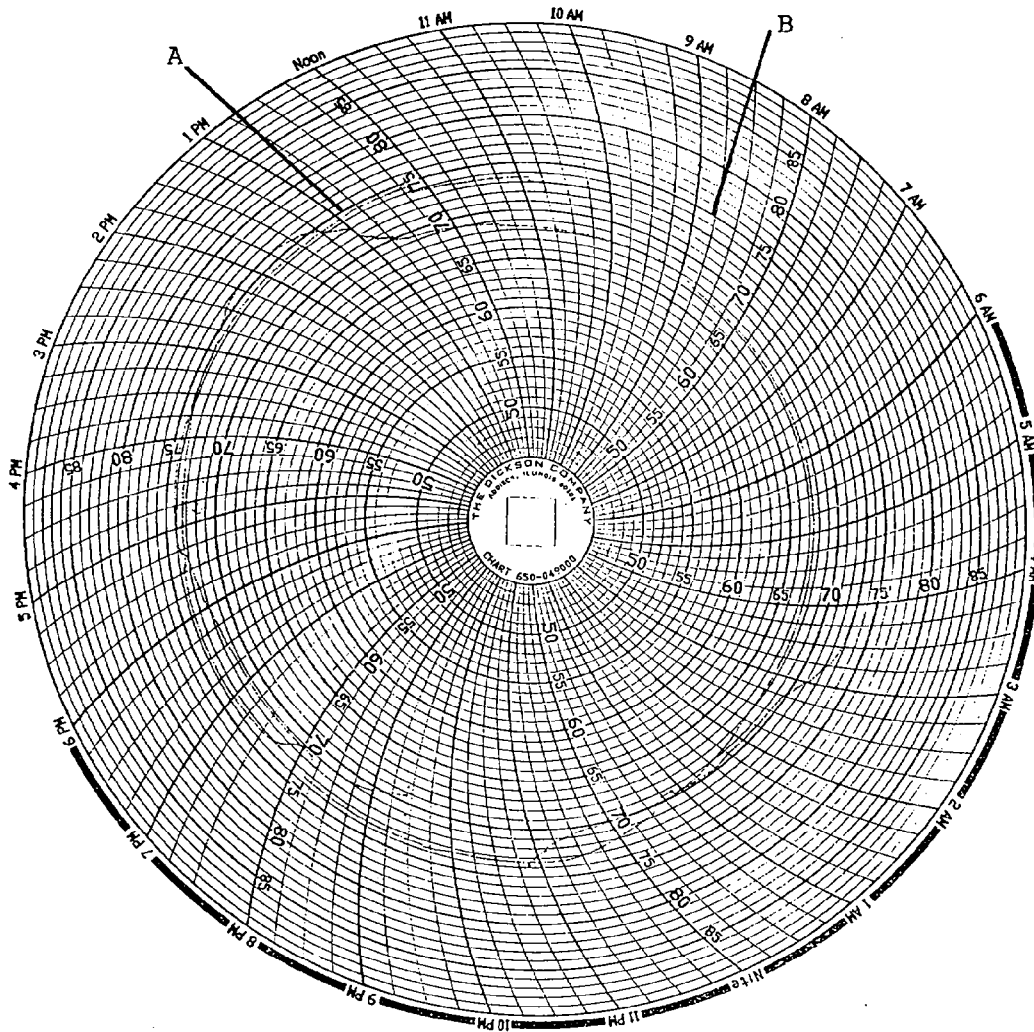
Inspected By: Al Chalmers

Date: December 14, 1995

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure	OK
Sternum	visual	OK
Lumbar spine	visual	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual	OK
Knees	visual	OK
Lower legs	visual, range of motion	OK
Ankles	visual, range of motion	OK
Feet	visual, range of motion	OK
Joints	1 to 2 g range	OK
Other		

NOTES: (include component/problem/action/reason):

VEHICLE AND DUMMY TEMPERATURE



A = Test Conducted

B = Dummies Placed in Vehicle

APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA
INSTRUMENTS FOR DRIVER DUMMY NO. 271

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AP2A4	Endevco	September 14, 1995
Lower Rib Y	AP1B3	Endevco	September 25, 1995
Lower Spine Y	ANAP1	Endevco	November 08, 1995
Pelvis Y	AJ417	Endevco	July 10, 1995
Upper Rib Redundant Y	AP2D8	Endevco	September 14, 1995
Lower Rib Redundant Y	AP1C6	Endevco	September 25, 1995
Lower Spine Redundant Y	ANAT6	Endevco	November 08, 1995
Pelvis Redundant Y	ABP20	Endevco	July 10, 1995

INSTRUMENTS FOR PASSENGER DUMMY NO. 270

LEFT REAR PASSENGER			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AP1H2	Endevco	September 25, 1995
Lower Rib Y	AJ9C2	Endevco	September 25, 1995
Lower Spine Y	AP2D7	Endevco	September 25, 1995
Pelvis Y	ALCH7	Endevco	September 15, 1995
Upper Rib Redundant Y	AH0B0	Endevco	September 25, 1995
Lower Rib Redundant Y	AHTT2	Endevco	September 25, 1995
Lower Spine Redundant Y	AP1T8	Endevco	September 25, 1995
Pelvis Redundant Y	AJ420	Endevco	September 15, 1995

VEHICLE INSTRUMENT CALIBRATION

VEHICLE ACCELEROMETERS			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier CG X	L14-D14	Entran	October 24, 1995
Moving Barrier CG Y	L18-E07	Entran	October 23, 1995
Moving Barrier CG Z	C27-B02	Entran	September 28, 1995
Moving Barrier Rear Axle X	H07-A24	Entran	September 15, 1995
Moving Barrier Rear Axle Y	C06-G19	Entran	September 05, 1995
Left Mid A-Post Y	F10-D08	Entran	August 01, 1995
Left Lower A-Post Y	C25-A05	Entran	September 29, 1995
Left Mid B-Post Y	E25-G07	Entran	June 26, 1995
Left Lower B-Post Y	J07-X14	Entran	July 20, 1995
Rear Floorpan Above Axle X	L14-D04	Entran	October 23, 1995
Rear Floorpan Above Axle Y	H07-A25	Entran	September 25, 1995
Rear Floorpan Above Axle Z	D06-A15	Entran	October 23, 1995
Driver Seat Track Y	H07-A17	Entran	September 29, 1995
Right Side Sill at Front Seat X	L14-G13	Entran	October 05, 1995
Right Side Sill at Front Seat Y	D06-A10	Entran	June 09, 1995
Right Side Sill at Front Seat Z	F07-A19	Entran	September 29, 1995
Right Side Sill at Rear Seat X	H07-A01	Entran	September 05, 1995
Right Side Sill at Rear Seat Y	F07-A02	Entran	August 01, 1995
Right Side Sill at Rear Seat Z	C06-G09	Entran	October 24, 1995
Left Side Sill at Front Seat Y	F12-X10	Entran	August 01, 1995

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Left Side Sill at Rear Seat Y	C18-G12	Entran	September 29, 1995
Right Rear Occupant Compartment Y	B12-G14	Entran	October 24, 1995
Vehicle CG X	H07-A11	Entran	September 05, 1995
Vehicle CG Y	E25-G10	Entran	June 28, 1995
Vehicle CG Z	F07-A09	Entran	August 01, 1995

Note: All Endevco accelerometers are Model No. 7264-2000 All Entran accelerometers are Model No. EGE-72