

REPORT NO.: 214-MGA-97-010
SAFETY COMPLIANCE TESTING FOR
FMVSS 214 "SIDE IMPACT PROTECTION -
PASSENGER CARS"

V2500

FORD MOTOR COMPANY
1997 FORD ASPIRE 3 DOOR
NHTSA NO: CV0207

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: November 15, 1996

Report Date: December 6, 1996

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, SW ROOM 6115
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.

This document is disseminated under the sponsorship of the U. S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its content or use thereof.

Prepared By: A. W. Hauschild
Hans Hauschild, Project Engineer

Approved By: John Fleck
John Fleck, Facility Director

Approval Date: 12-11-96

97 FEB 19 P 1: 16
RECEIVED NHTSA-30

FINAL REPORT ACCEPTED BY (OVSC):

Accepted By: Jeff M. Giugliano
Contract Technical Manager

Acceptance Date: 2/25/97

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 214-MGA-97-010		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 1997 Ford Aspire 3 Door NHTSA No. CV0207				5. Report Date December 6, 1996																			
				6. Performing Organization Code MGA																			
7. Author(s) Hans Hauschild, Project Engineer				8. Performing Organization Report No. MGA-DOT-214-010																			
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 November 15 to December 6, 1996																			
				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 1997 Ford Aspire 3 Door 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 November 15, 1996. The impact velocity of the Moving Deformable Barrier (MDB) was 53.1 kph, and the ambient temperature at the struck side of the target vehicle at the time of impact was 20°C. The target vehicle post test maximum crush was 303 mm at level 2. The test vehicle's performance follows: <table border="0" style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>RIGHT FRONT PASS.</u></th> <th style="text-align: center;"><u>RIGHT REAR PASS.</u></th> </tr> </thead> <tbody> <tr> <td>Right Upper Rib (RUR) Accel., g</td> <td style="text-align: center;">56</td> <td style="text-align: center;">52</td> </tr> <tr> <td>Right Lower Rib (RLR) Accel., g</td> <td style="text-align: center;">62</td> <td style="text-align: center;">52</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td style="text-align: center;">86</td> <td style="text-align: center;">77</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td style="text-align: center;">74</td> <td style="text-align: center;">65</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td style="text-align: center;">98</td> <td style="text-align: center;">74</td> </tr> </tbody> </table> The door on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.							<u>RIGHT FRONT PASS.</u>	<u>RIGHT REAR PASS.</u>	Right Upper Rib (RUR) Accel., g	56	52	Right Lower Rib (RLR) Accel., g	62	52	Lower Spine (T ₁₂) Accel., g	86	77	Thoracic Trauma Index (TTI)	74	65	Pelvis (PEV) Accel., g	98	74
	<u>RIGHT FRONT PASS.</u>	<u>RIGHT REAR PASS.</u>																					
Right Upper Rib (RUR) Accel., g	56	52																					
Right Lower Rib (RLR) Accel., g	62	52																					
Lower Spine (T ₁₂) Accel., g	86	77																					
Thoracic Trauma Index (TTI)	74	65																					
Pelvis (PEV) Accel., g	98	74																					
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																			

TABLE OF CONTENTS

<u>Section</u>		<u>Page No.</u>
1	PURPOSE AND TEST PROCEDURE	1-1
2	SUMMARY OF SIDE IMPACT TEST	2-1
3	SIDE IMPACT DUMMY (SID) AND VEHICLE TEST DATA	3-1
4	OCCUPANT AND VEHICLE INFORMATION	4-1
APPENDIX A	PHOTOGRAPHS	
APPENDIX B	VEHICLE AND SID RESPONSE DATA	
APPENDIX C	SID CONFIGURATION AND PERFORMANCE VERIFICATION	
APPENDIX D	TEST EQUIPMENT LIST AND CALIBRATION INFORMATION	

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 of a 1997 Ford Aspire 3 Door.

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 1997 Ford Aspire 3 Door was impacted on the right 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 33.0 mph (53.1 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 November 15, 1996. 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 right front and right 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. Right Upper Rib (RUR) uniaxial accelerometer (Y-direction)
2. Right Lower Rib (RLR) 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 FMVSS 214 Right Side Impact test:

Injury Criteria	Front SID	Rear SID
TTI (g)	74.2	64.5
Pelvis (g)	98.0	74.3

TEST NOTES

1. The following accelerometers were not used for this test:

Right Front Door on Centerline

Midrear of Right Front Door

Right Front Door Upper Centerline

Midrear of Right Rear Door

Right Rear Door Upper Centerline

Rear Seat Track

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: 1997/Ford/Aspire/3 Door
Vehicle NHTSA No.: CV0207 VIN: KNJLT05HXV6201361
Vehicle Body Color: Green Build Date: 8/96
Engine Data: 4 Cylinders; CID; 1.4 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 103 miles
Options: A/C; Pwr. Steering; X Pwr. Brakes; Pwr. Windows;
 Cruise Control; Tilt Wheel; Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 32 Psi FRONT
32 Psi REAR
Recommended Tire Size: P165/70R13
Tires on Test Vehicle: P165/70R13 Manufacturer: Yokohama

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 = 308.4 kg (A)
No. of Occupants x 68.04 kg. = 272.2 kg (B)
Cargo Capacity (A-B) = 36.2 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS:

Right Front	=	<u>280.7</u> kg	Right Rear	=	<u>170.5</u> kg
Left Front	=	<u>288.9</u> kg	Left Rear	=	<u>180.0</u> kg
TOTAL FRONT	=	<u>569.6</u> kg	TOTAL REAR	=	<u>350.5</u> kg
% of Total Vehicle Weight = <u>61.9</u> %;		% of Total Weight = <u>38.1</u> %			
TOTAL WEIGHT = <u>920.1</u> kg					

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids = 920.1 kg

Cargo Carrying Capacity of Test Vehicle = 36.2 kg

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

TEST VEHICLE TARGET WEIGHT = 1117.7 kg

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES AND CARGO:

Right Front = 313.4 kg Right Rear = 269.8 kg

Left Front = 300.2 kg Left Rear = 228.6 kg

TOTAL FRONT = 613.6 kg TOTAL REAR = 498.4 kg

% of Total Weight = 55.2 % % of Total Weight = 44.8 %

TOTAL TEST WEIGHT = 1112.0 kg

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 620 mm Left Front 613 mm Right Rear 650 mm Left Rear 642 mm

FULLY LOADED WEIGHT ATTITUDE:

Right Front 602 mm Left Front 606 mm Right Rear 587 mm Left Rear 602 mm

TEST ATTITUDE:

Right Front 603 mm Left Front 604 mm Right Rear 612 mm Left Rear 614 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2310 mm

C.G. = 952 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 3476 mm

Centerline = 3702 mm

Left Side = 3476 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 25 detents

Test Position: 13th position rearward out of 25 total

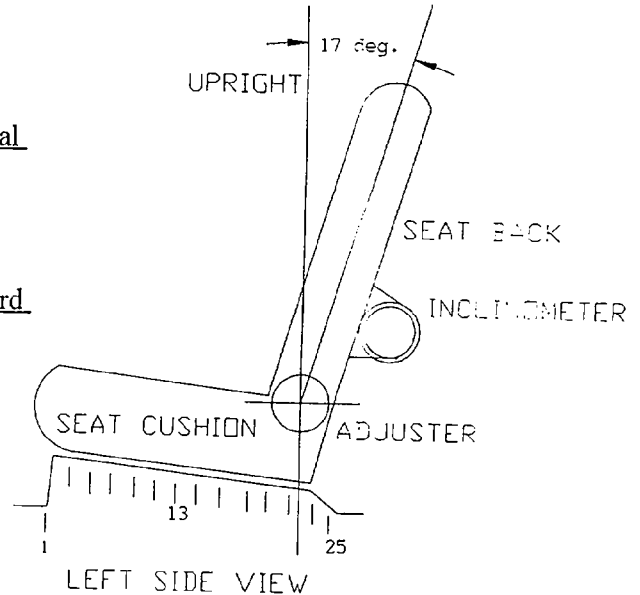
FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 17° from the vertical position 3rd
notch from upright

REAR POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: 0

Seat Back Adjustment Position: Non-Adjustable



ADJUSTABLE STEERING COLUMN POSITION: N/A

WINDOW POSITIONS: Left Front Open Left Rear Opened
Right Front Closed Right Rear Closed

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel system usable capacity = 35.0 liters

Test Volume: 32.6 liters 93.0% of capacity

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

Wheelbase: = 2310 mm

Impact Point is 215 mm rearward of front axle centerline

DATA SHEET NO. 2
TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

Overall Length = 3702 mm; Overall Width = 1674 mm

TEST WEIGHT:

Right Front = 331.9 kg Right Rear = 235.4 kg
Left Front = 321.1 kg Left Rear = 222.7 kg
TOTAL FRONT = 653.0 kg TOTAL REAR = 458.1 kg
% of Total Weight = 58.8% % of Total Weight = 41.2%
TOTAL VEHICLE WEIGHT = 1111.1 kg
Wheelbase = 2310 mm
Longitudinal C.G. from Center of Front Axle = 952 mm
Impact Angle with Respect to Impactor = 0° degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (264 mm above ground) = 150 mm
 2. LEVEL 2 (520 mm above ground) = 303 mm
 3. LEVEL 3 (585 mm above ground) = 258 mm
 4. LEVEL 4 (875 mm above ground) = 119 mm
 5. LEVEL 5 (1356 mm above ground) = 26 mm
- Maximum Post-Test Intrusion = 303 mm

OCCUPANTS:

	<u>Right Front Passenger</u>	<u>Right Rear Passenger</u>
Type of Dummy	<u>SID</u>	<u>SID</u>
Restraints Used	<u>type II belt</u>	<u>type II belt</u>

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

INSTRUMENTATION:

Number of Vehicle Data Channels:	=	<u>20</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: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to right

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>1106 mm</u>
C.G. Location From Center Line	= <u>14.7 mm</u>
C.G. Location Above Ground Level	= <u>488 mm</u>

MDB WEIGHT:

Left Front	= <u>434.5 kg</u>	Left Rear	= <u>233.2 kg</u>
Right Front	= <u>342.9 kg</u>	Right Rear	= <u>346.0 kg</u>
TOTAL FRONT	= <u>777.4 kg</u>	TOTAL REAR	= <u>579.2 kg</u>
TOTAL MDB WEIGHT = <u>1356.6 kg</u>			

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

Impact Speed = Primary: 33.0 mph (52.9 kph) Secondary: 32.9 mph (52.9 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>119</u> mm |
| 2. | Row B Mid Stack (686 mm) | = <u>93</u> mm |
| 3. | Row C Top of Bumper (533 mm) | = <u>63</u> mm |
| 4. | Row D Center of Bumper (482 mm) | = <u>139</u> mm |

INSTRUMENTATION:

Number of MDB Data Channels = 5

DATA SHEET NO. 4
POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

VISIBLE DUMMY CONTACT POINTS:

	<u>RIGHT FRONT SID</u>	<u>RIGHT REAR SID</u>
Head	<u>to top of window sill</u>	<u>to C Post, window & front head to hatch frame opening</u>
Arm	<u>to door & armrest</u>	<u>to side panel</u>
Pelvis	<u>to door panel</u>	<u>to side panel</u>
Left Knee	<u>to right knee</u>	<u>to right knee</u>
Right Knee	<u>to door panel</u>	<u>to B Post</u>

DOOR OPENING:

	<u>LEFT SIDE</u>	<u>RIGHT SIDE</u>
Front	<u>Opens</u>	<u>Jammed</u>
Rear	<u>N/A</u>	<u>N/A</u>

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal: 5 mm rearward Vertical: 13 mm high

ARM REST LOCATIONS:

Front: 228 mm from bottom of window
Rear: 267 mm from bottom of window

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 34 mm Front Seat Cushion: 8 mm

Left Rear Seat Back: 18 mm Rear Seat Cushion: 50 mm

GLAZING DAMAGE:

Right side door glass

PILLAR PERFORMANCE:

None noted

SILL SEPARATION:

None noted

OTHER NOTABLE IMPACT EFFECTS:

Rear seat crossmember protruding from sheetmetal

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5
SIDE IMPACT DUMMY (SID) INSTRUMENTATION DATA

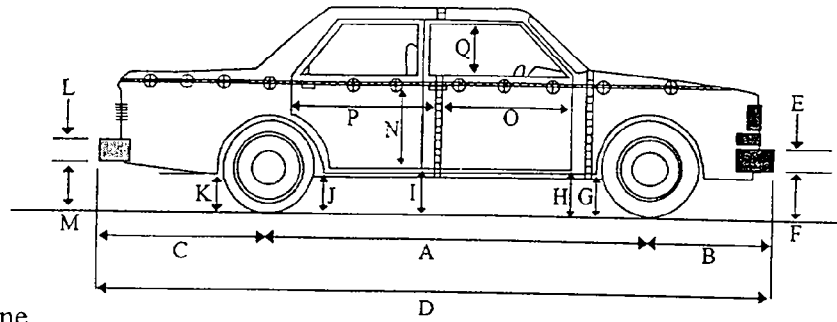
Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door
Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

	Front SID ID #272			Rear SID ID #271		
	Pos. Direct.		Neg. Direct	Pos. Direct.		Neg. Direct
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
RIB ACCELERATIONS						
Right Upper Rib (RUR) Y	6.6	86	-56.0	44	4.4	-51.8
Right Lower Rib (RLR) Y	16.8	71	-62.2	41	5.0	-51.5
SPINE ACCELERATIONS						
Lower Lateral Y	13.1	58	-86.1	40	21.8	-77.1
PELVIS ACCELERATIONS						
Lateral Y	5.2	120	-98.0	38	6.9	-74.3
						39

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)

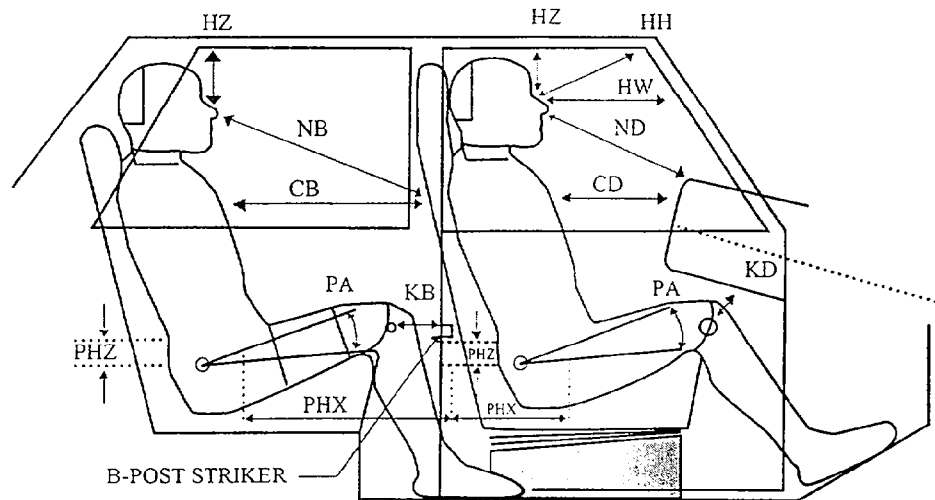
	PRE-TEST	POST-TEST	Δ CHANGE
A	2312	2304	8
B	796	790	6
C	594	588	6
D	3702	3682	20
E	134	135	-1
F	403	390	13
G	226	207	19
H	187	200	-13
I	188	196	-8
J1/J2	189/185	207/200	-18/-15
K	371	378	-7
L	N/A	N/A	N/A
M	303	300	3
N	668	612	56
O	660	653	7
P	600	598	2
Q	435	388	47
R	3476	3474	2
S	3476	3499	-23
T	1674	1456	218

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

NHTSA NO.: CV0207 Test Date: November 15, 1996



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

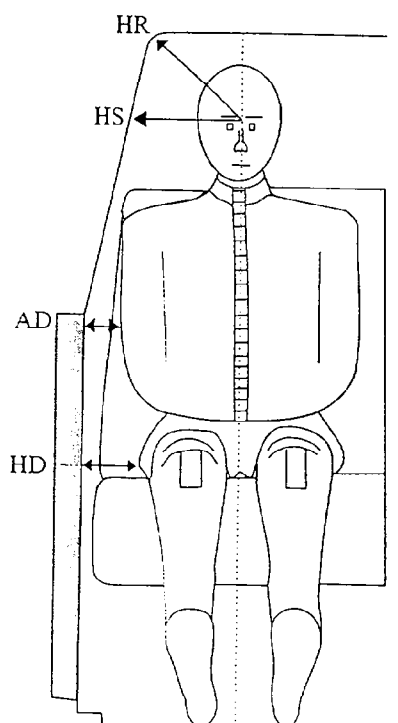
	FRONT PASSENGER ID #272		REAR PASSENGER SID ID #271
HH	327	HZ	103
HW	986	NB	503
HZ	124	CB	456
ND	707	KBL (KBA)	194 (0°)
CD	577	KBR (KBA)	209 (0°)
CS	N/A	PA°	24.0°
KDL(KDA°)	136 (30.5°)	PHX	439
KDR(KDA°)	134 (35.7°)	PHZ	-77
PA°	23.4°		
PHX	434		
PHZ	102		

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: 1997/Ford/Aspire/3 Door

NHTSA NO.: CV0207 Test Date: November 15, 1996



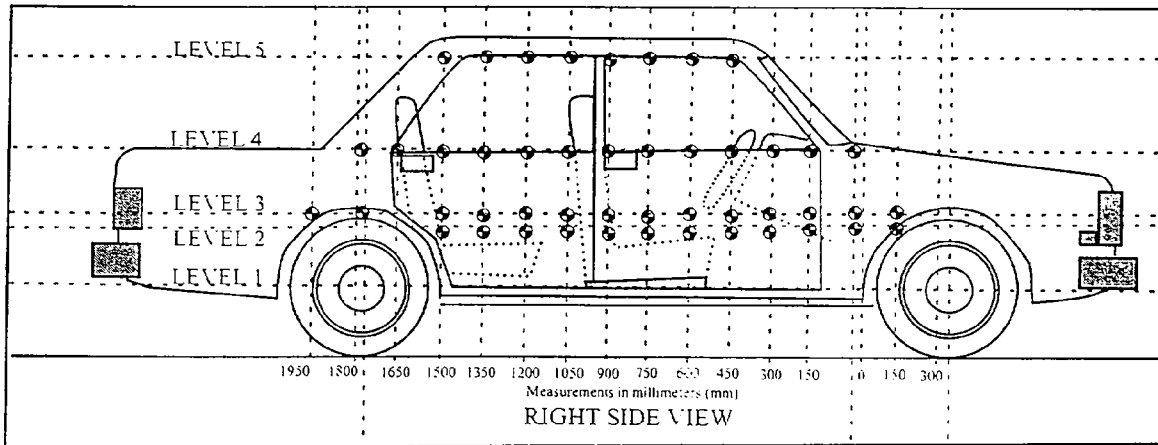
NOTE: All dimensions are in mm

	FRONT PASSENGER ID #272	REAR PASSENGER ID #271
HR	184	242
HS	254	277
AD	76	79
HD	131	98

DATA SHEET NO. 9
VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

NHTSA NO.: CV0207 Test Date: November 15, 1996



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 1 @ Axle Centerline Height

(or Sill Top Height) = 264 mm

Level 2 @ Occupant H-Point = 520 mm

Level 3 @ Mid Door = 585 mm

Level 4 @ Window Sill = 875 mm

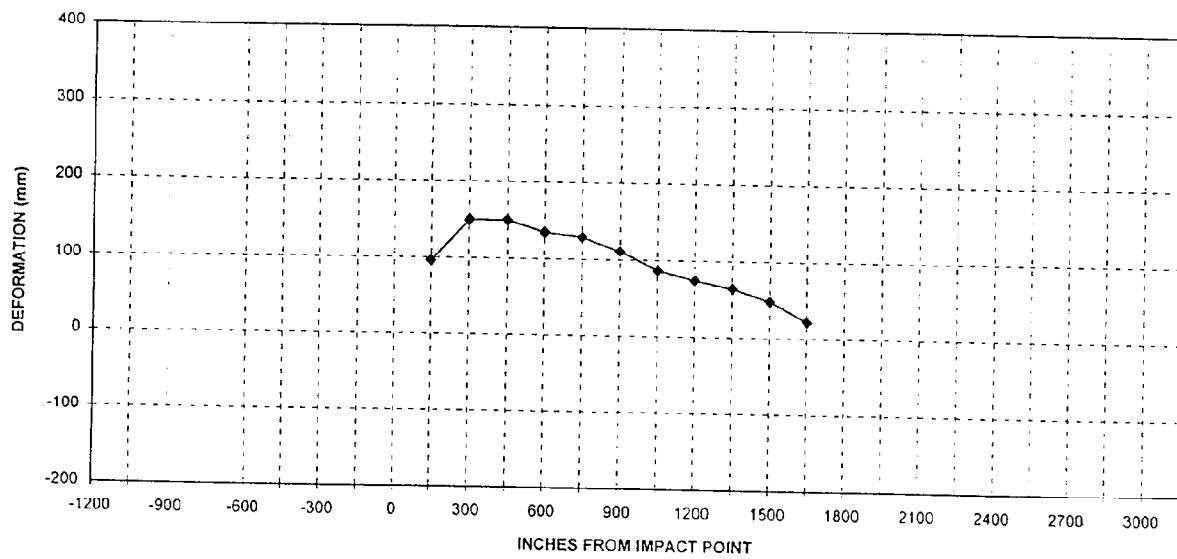
Level 5 @ Window Top = 1356 mm

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Longitudinal Distance (mm)	Level 1 - Axle Centerline		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	800	896	96
300	798	948	150
450	798	948	150
600	802	937	135
750	804	933	129
900	805	916	111
1050	806	892	86
1200	802	876	74
1350	798	862	64
1500	796	844	48
1650	800	822	22
1800			
1950			
2100			
2250			
2400			
2550			
2700			
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



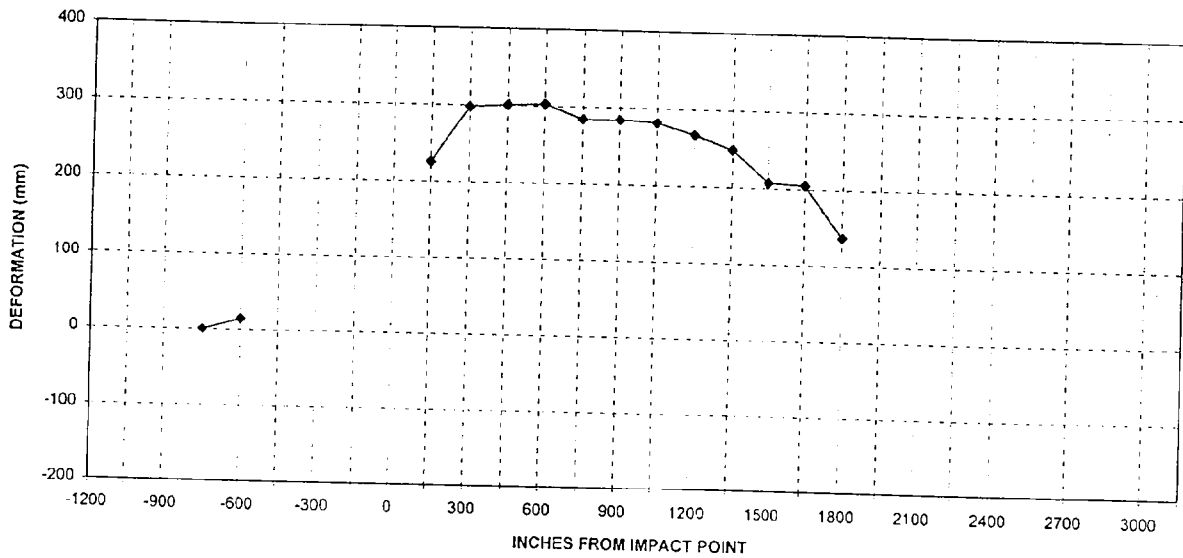
LEVEL 1 - AXLE CENTERLINE

DATA SHEET NO. 10 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Longitudinal Distance (mm)	Level 2 - Occupant H Point		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750	788	788	0
-600	748	762	14
-450			
-300			
-150			
0 (impact point)			
150	727	982	255
300	728	1026	298
450	728	1029	301
600	725	1028	303
750	726	1010	284
900	722	1006	284
1050	722	1003	281
1200	723	989	266
1350	724	972	248
1500	722	929	207
1650	722	927	205
1800	722	860	138
1950			
2100			
2250			
2400			
2550			
2700			
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



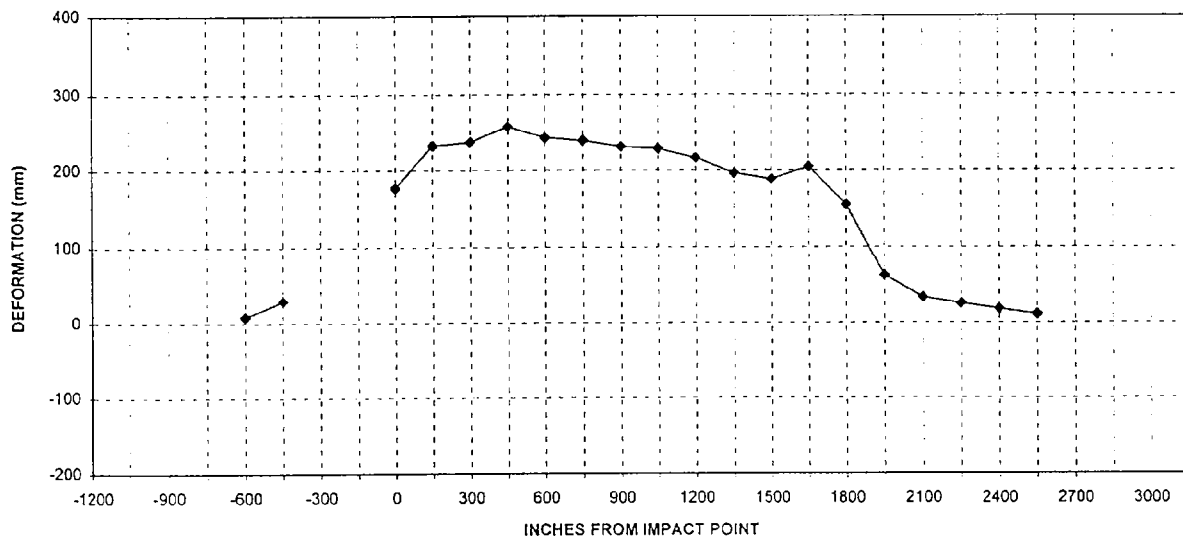
LEVEL 2 - OCCUPANT H-POINT

DATA SHEET NO. 10 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Longitudinal Distance (mm)	Level 3 - Mid Door		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600	766	774	8
-450	741	770	29
-300			
-150			
0 (impact point)	718	895	177
150	720	952	232
300	721	958	237
450	718	976	258
600	720	963	243
750	718	957	239
900	720	951	231
1050	718	946	228
1200	718	934	216
1350	718	914	196
1500	718	906	188
1650	716	920	204
1800	718	873	155
1950	713	775	62
2100	724	757	33
2250	735	760	25
2400	752	770	18
2550	786	797	11
2700			
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



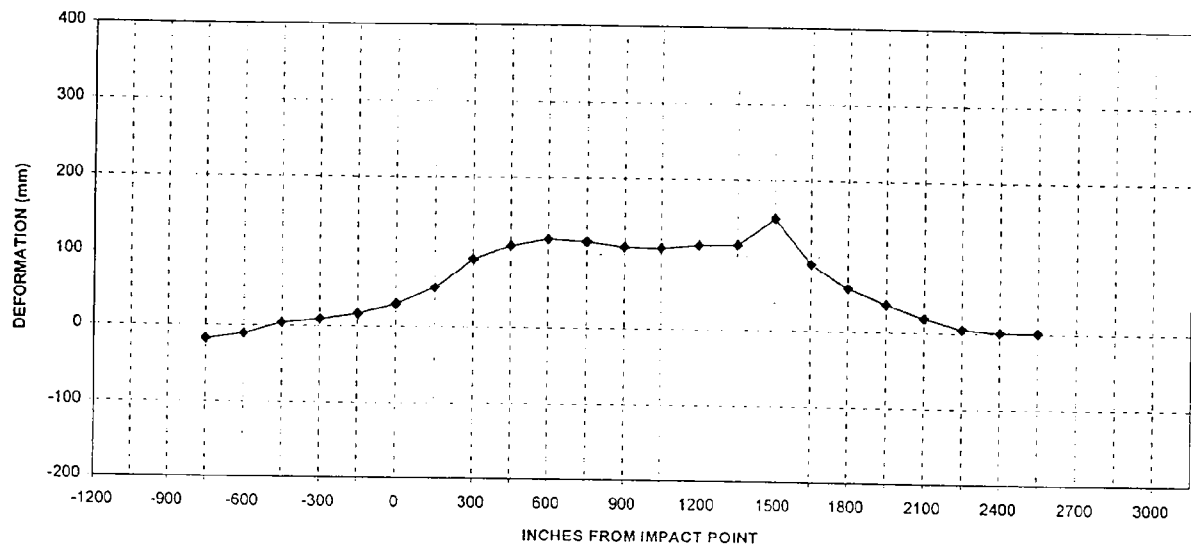
LEVEL 3 - MID DOOR

DATA SHEET NO. 10 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Longitudinal Distance (mm)	Level 4 - Window Sill		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750	886	868	-18
-600	861	850	-11
-450	837	841	4
-300	824	833	9
-150	809	826	17
0 (impact point)	800	830	30
150	804	857	53
300	801	893	92
450	804	914	110
600	808	927	119
750	810	926	116
900	815	925	110
1050	814	923	109
1200	812	925	113
1350	813	927	114
1500	814	963	149
1650	820	910	90
1800	824	882	58
1950	827	864	37
2100	829	848	19
2250	834	839	5
2400	841	842	1
2550	863	864	1
2700			
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



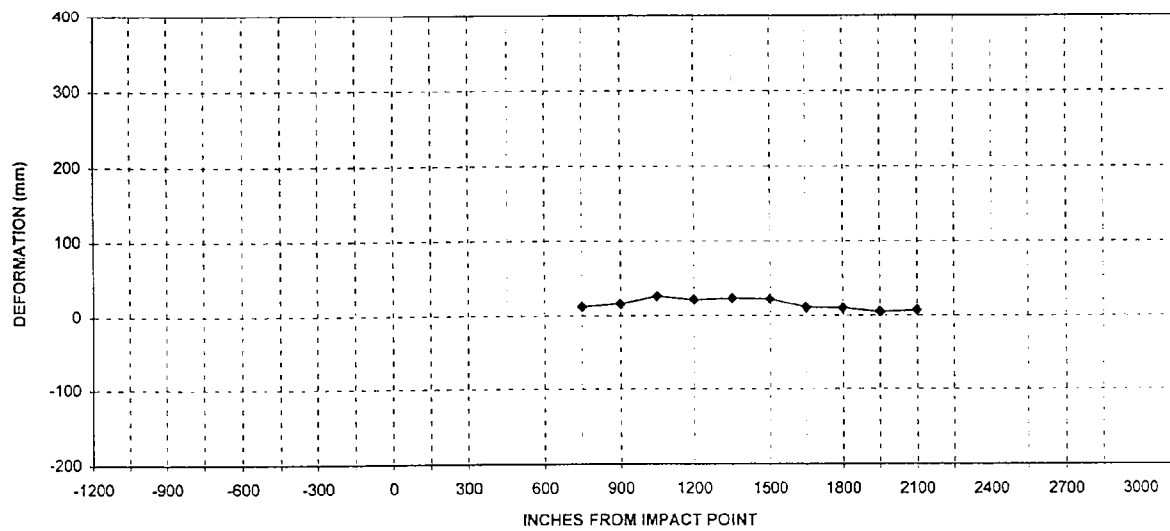
LEVEL 4 - WINDOW SILL

DATA SHEET NO. 10 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150			
300			
450			
600			
750	1029	1041	12
900	1026	1042	16
1050	1021	1047	26
1200	1019	1040	21
1350	1017	1040	23
1500	1013	1035	22
1650	1012	1023	11
1800	1014	1024	10
1950	1019	1024	5
2100	1013	1020	7
2250			
2400			
2550			
2700			
2850			
3000			

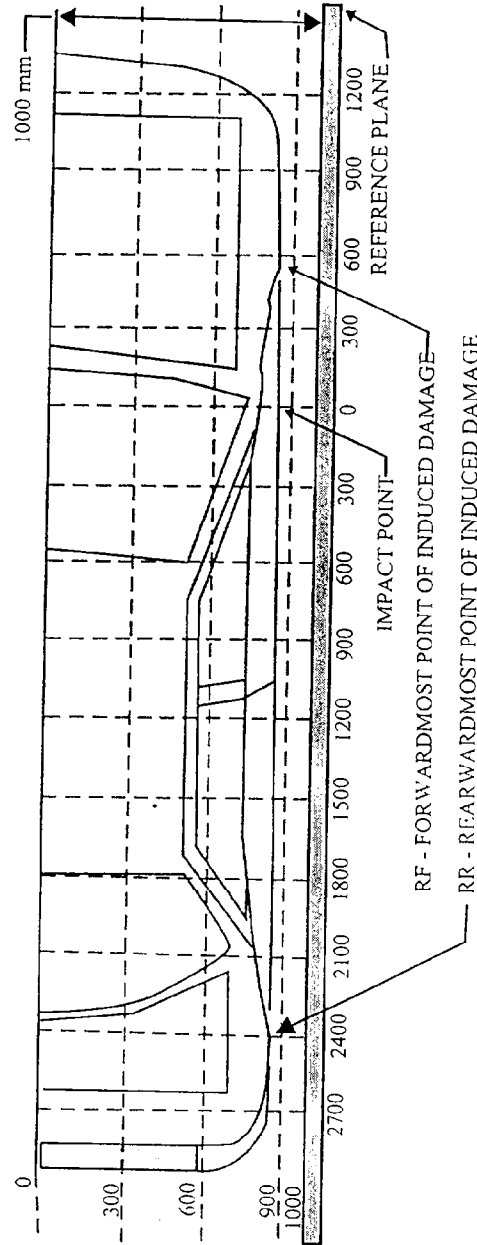
Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



LEVEL 5 - WINDOW TOP

DATA SHEET NO. 11
 VEHICLE DAMAGE PROFILE DISTANCES
 Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door
 NHTSA NO.: CV0207 Test Date: November 15, 1996



DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1. (RF = 600 mm)	774	774	0
2. 29 mm	901	718	183
3. 635 mm	1025	725	300
4. 1270 mm	990	723	267
5. 1910 mm	812	714	98
6. (RR = 2556 mm)	797	797	0

DATA SHEET NO. 12

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

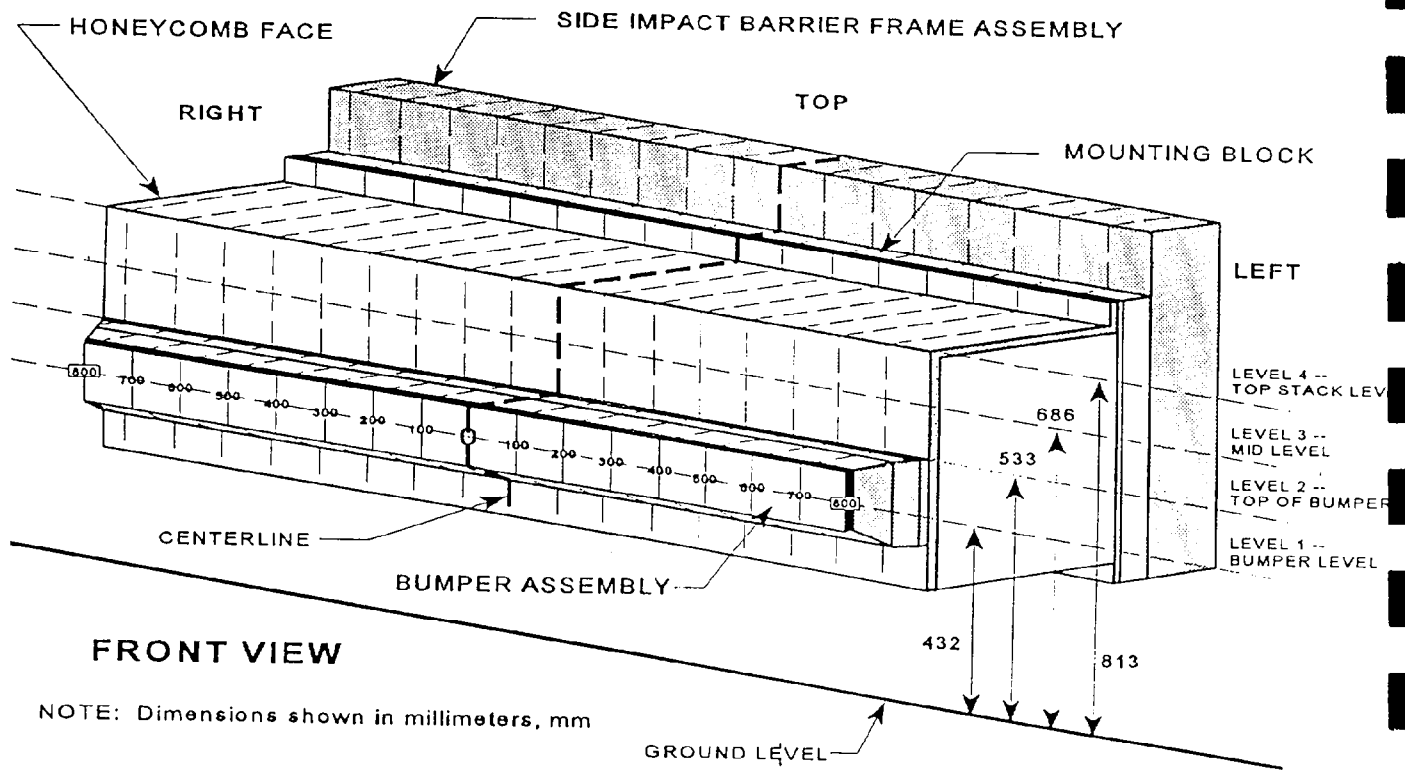
Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

Location	Height at CL*	Distance Right of Center (mm)								0	Distance Left of Center (mm)							
		800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
Top Stack Level 4	813 mm	119	82	49	33	16	5	4	3	3	1	0	1	1	-1	4	18	49
Mid Level Level 3	686 mm	93	71	17	4	2	1	-1	-1	-2	-1	-1	-1	0	8	1	1	27
Top Bumper Level 2	533 mm	36	22	11	5	5	5	5	6	6	7	5	7	17	41	56	60	63
Mid Bumper Level 1	432 mm	44	41	30	19	20	23	25	30	32	38	47	65	92	114	125	133	139

See next page for Barrier Face Graphic

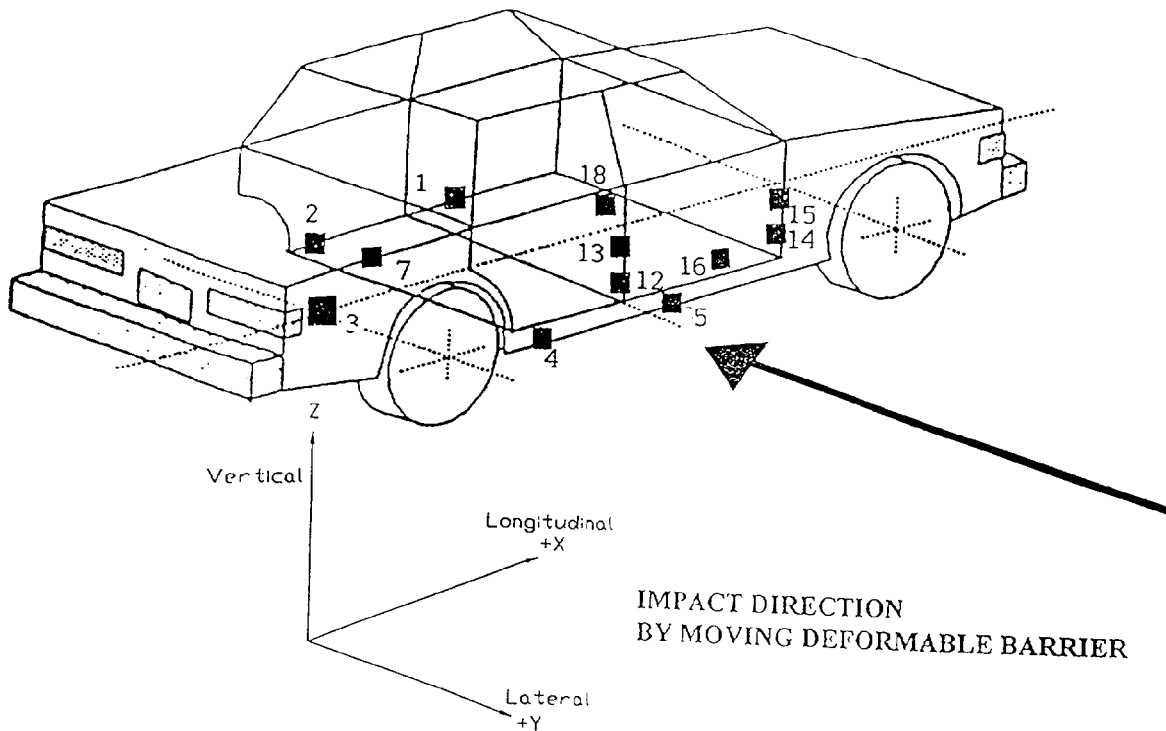
DATA SHEET NO. 12 (Cont'd)



DATA SHEET 13
TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996



- 1 - Left Side Sill @ Front Seat
- 2 - Left Side Sill @ Rear Seat
- 3 - Rear Floorpan Above Axle
- 4 - Right Side Sill @ Rear Seat
- 5 - Right Side Sill @ Front Seat
- 7 - Left Rear Occupant Compartment

- 12 - Right Lower B-Post
- 13 - Right Mid B-Post
- 14 - Right Lower A-Post
- 15 - Right Mid A-Post
- 16 - Front Seat Track
- 18 - Vehicle C.G.

DATA SHEET NO. 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

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	Left Side Sill @ Front Seat	1923	-608	212	9.7	-5.9	2.8	-38.1	5.3	-6.9	39.4
2	Left Side Sill @ Rear Seat	1167	-587	240	3.6	-8.7	3.4	-54.1	4.5	-11.1	54.2
3	Rr. Floorpan Above Axle	828	30	454	2.0	-7.3	4.5	-56.1	24.4	-11.1	56.7
4	Right Side Sill @ Rr. Seat	1192	587	234	---	---	3.4	-43.1	---	---	---
5	Right Side Sill @ Frt. Seat	1920	608	220	---	---	4.4	-28.7	---	---	---
7	Left Rear Occupant Compartment	1247	-394	324	---	---	3.3	-48.7	---	---	---
12	Right Lower B-Post	1308	628	318	---	---	151.7	-73.2	---	---	---
13	Right Mid B-Post	1228	626	902	---	---	109.5	-105.3	---	---	---
14	Right Lower A-Post	2372	638	322	---	---	53.7	-57.8	---	---	---
15	Right Mid A-Post	2442	734	808	---	---	10.5	-87.2	---	---	---
16	Right Front Passenger Seat Track	1589	503	333	---	---	11.3	-61.9	---	---	---
18	Vehicle CG	1912	0	380	3.3	-7.9	2.1	-32.5	6.8	-10.3	32.8

*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To right)

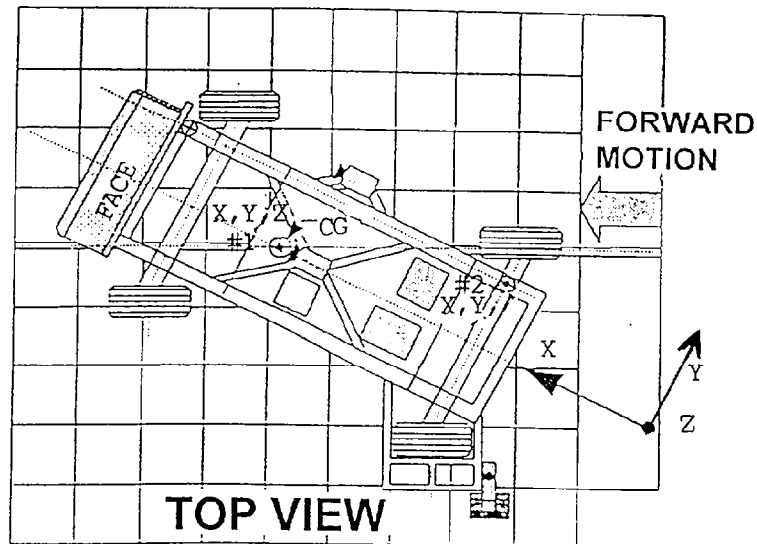
Z - Ground Level (+ Up)

DATA SHEET NO. 14

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996



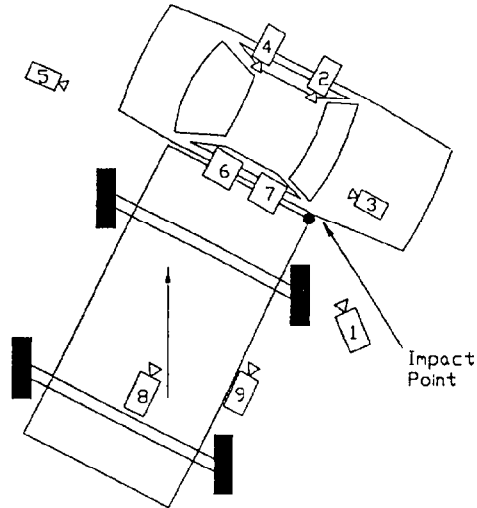
Accel. No.	Description	Coordinates (mm)*			(+) Positive		(-) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time (msec)
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	1.5	97	-15.5	39
	Lateral (Y)	---	---	---	5.5	37	-.8	86
	Vertical (Z)	---	---	---	10.7	35	-12.1	57
	Resultant (R)	---	---	---	18.4	35	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	1.4	94	-18.6	36
	Lateral (Y)	---	---	---	1.4	139	-4.4	38

*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: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996



Camera No.	View	Coordinates (mm)*			Angle	Lens (mm)	Film Speed (fps)
		X	Y	Z			
	Real Time					13	24
1	Right Impact	-1200	-2150	1685	90°	13	971
2	Onboard Front Passenger					8	870
4	Onboard Rear Passenger					8	971
3	Onboard Hood					13	1000
5	Left Impact	50	9230	1940	90°	25	1020
6	Top Wide	-130	1200	5200		8	1020
7	Top Impact	-80	-10	5200		13	909
8	Cart Wide					13	1020
9	Cart Impact					35	952

* Reference: (from impact point)

+X = Forward

+Y = To Right

+Z = Upward from floor level

DATA SHEET 16
FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

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 32.9 mph (52.9 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

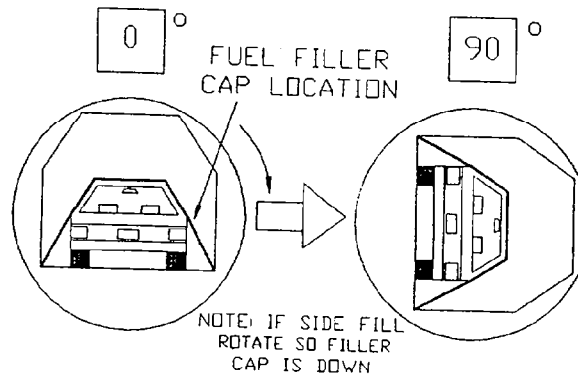
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

TEST PHASE: 0° - 90°



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:

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	0 oz	1 oz

FUEL SPILLAGE LOCATIONS(S): None

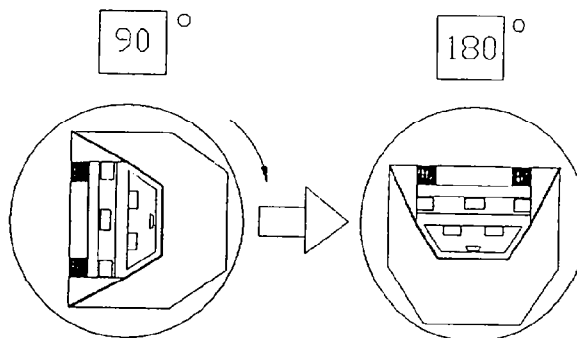
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

TEST PHASE: 90° - 180°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 30 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 30 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

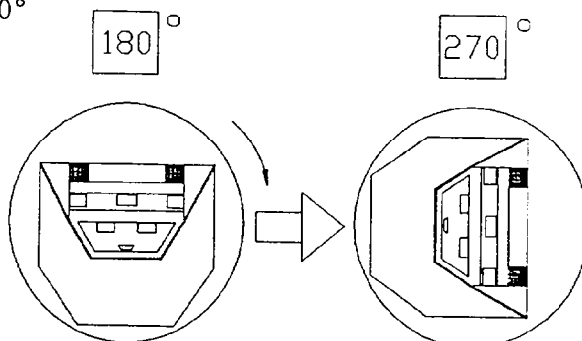
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

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	0 oz	1 oz

FUEL SPILLAGE LOCATIONS(S): None

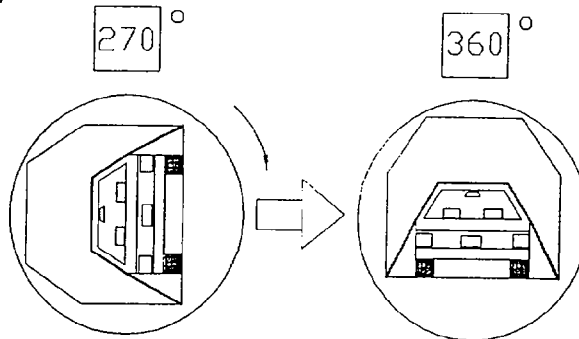
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Ford/Aspire/3 Door

Vehicle NHTSA No.: CV0207 Test Date: November 15, 1996

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 36 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 36 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	0 oz	1 oz

FUEL SPILLAGE LOCATIONS(S): None

APPENDIX A - PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

	<u>Page No.</u>
Photo No. A-1 - Pre-Test Front View of Test Vehicle	A-1
Photo No. A-2 - Post-Test Front View of Test Vehicle	A-2
Photo No. A-3 - Pre-Test Rear View of Test Vehicle	A-3
Photo No. A-4 - Post-Test Rear View of Test Vehicle	A-4
Photo No. A-5 - Pre-Test Right Side View of Test Vehicle	A-5
Photo No. A-6 - Post-Test Right Side View of Test Vehicle	A-6
Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (right side)	A-7
Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (left side)	A-8
Photo No. A-9 - Pre-Test MDB Positioned Against Vehicle Overhead View	A-9
Photo No. A-10 - Post-Test MDB Position and Vehicle (right side)	A-10
Photo No. A-11 - Post-Test MDB Position and Vehicle (left side)	A-11
Photo No. A-12 - Post-Test MDB Position and Vehicle Overhead View	A-12
Photo No. A-13 - Pre-Test MDB Top View	A-13
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	A-16
Photo No. A-17 - Pre-Test MDB Left Side View	A-17
Photo No. A-18 - Post-Test MDB Left Side View	A-18
Photo No. A-19 - Pre-Test MDB Right Side View	A-19
Photo No. A-20 - Post-Test MDB Right Side View	A-20
Photo No. A-21 - Pre-Test Right Front Seat Position View	A-21
Photo No. A-22 - Pre-Test Front Passenger Dummy Left Side View	A-22
Photo No. A-23 - Post-Test Front Passenger Dummy Left Side View	A-23
Photo No. A-24 - Pre-Test Front Passenger Dummy Right Side View	A-24
Photo No. A-25 - Post-Test Front Passenger Dummy Right Side View	A-25
Photo No. A-26 - Pre-Test Front Passenger Dummy Right Side View (Door Open)	A-26
Photo No. A-27 - Pre-Test Front Passenger Shoulder and Door Top View	A-27
Photo No. A-28 - Post-Test Front Passenger Dummy Shoulder and Door Top View	A-28
Photo No. A-29 - Post-Test Front Passenger Dummy Contact	A-29

TABLE OF PHOTOGRAPHS

	<u>Page No.</u>
Photo No. A-30 - Post-Test Front Passenger Head Contact	A-30
Photo No. A-31 - Pre-Test Rear Passenger Dummy Left Side View	A-31
Photo No. A-32 - Post-Test Rear Passenger Dummy Left Side View	A-32
Photo No. A-33 - Pre-Test Rear Passenger Dummy Right Side View	A-33
Photo No. A-34 - Post-Test Rear Passenger Dummy Right Side View	A-34
Photo No. A-35 - Pre-Test Rear Passenger Dummy Shoulder and Window View	A-35
Photo No. A-36 - Post-Test Rear Passenger Dummy Shoulder and Window View	A-36
Photo No. A-37 - Post-Test Rear Passenger Dummy Contact	A-37
Photo No. A-38 - Post-Test Rear Passenger Dummy Head Contact	A-38
Photo No. A-39 - Pre-Test Right Front Impact Point on Vehicle	A-39
Photo No. A-40 - Post-Test Right Front Impact Point on Vehicle	A-40
Photo No. A-41 - Impact	A-41
Photo No. A-42 - Vehicle Certification Label	A-42
Photo No. A-43 - Tire Placard	A-43
Photo No. A-44 - Rollover 90°	A-44
Photo No. A-45 - Rollover 180°	A-45
Photo No. A-46 - Rollover 270°	A-46
Photo No. A-47 - Rollover 360°	A-47
Photo No. A-48 - Right Front Attitude Point	A-48
Photo No. A-49 - Left Front Attitude Point	A-49
Photo No. A-50 - Right Rear Attitude Point	A-50
Photo No. A-51 - Left Rear Attitude Point	A-51

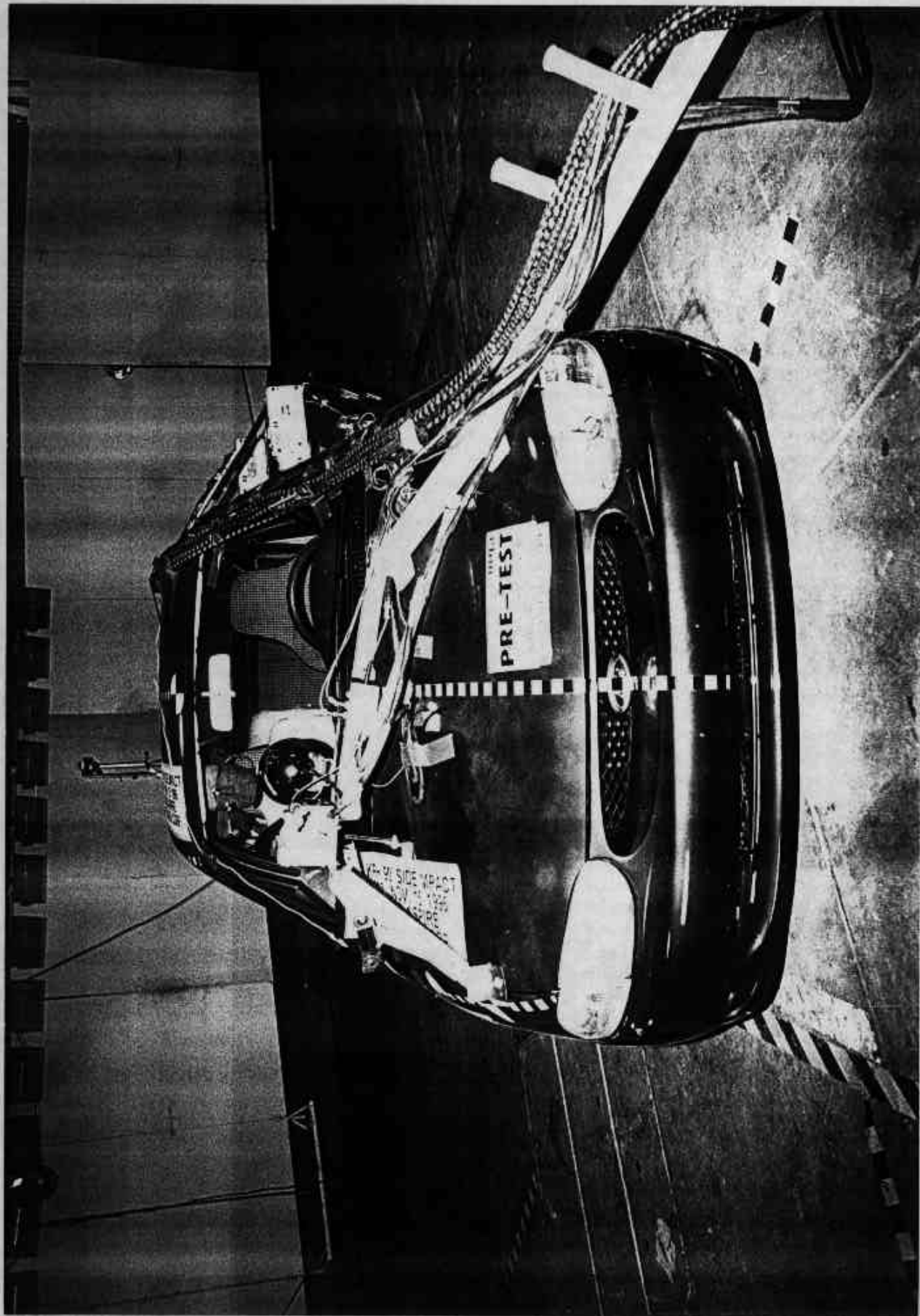


Photo No. A-1 - Pre-Test Front View of Test Vehicle

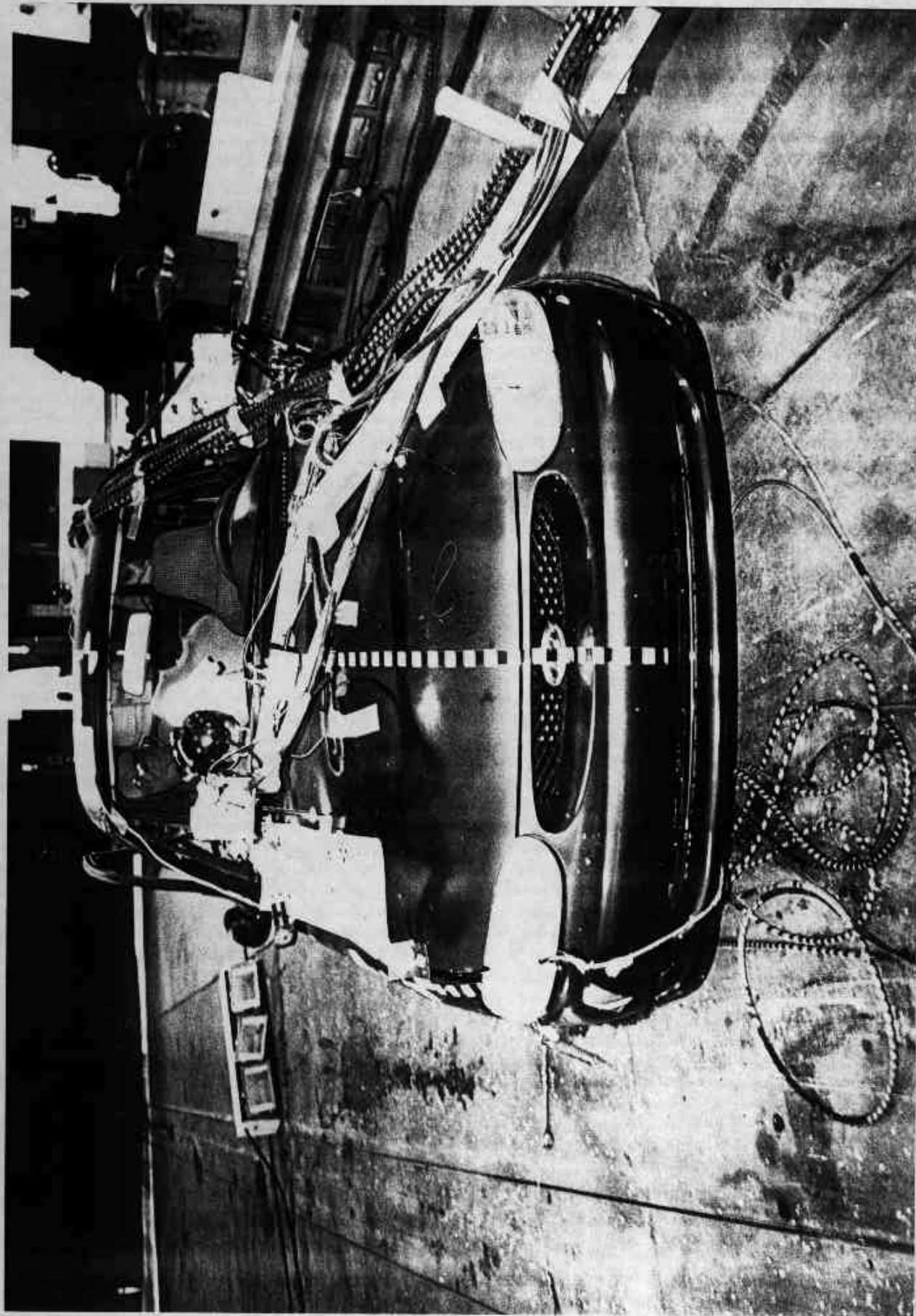


Photo No. A-2 - Post-Test Front View of Test Vehicle

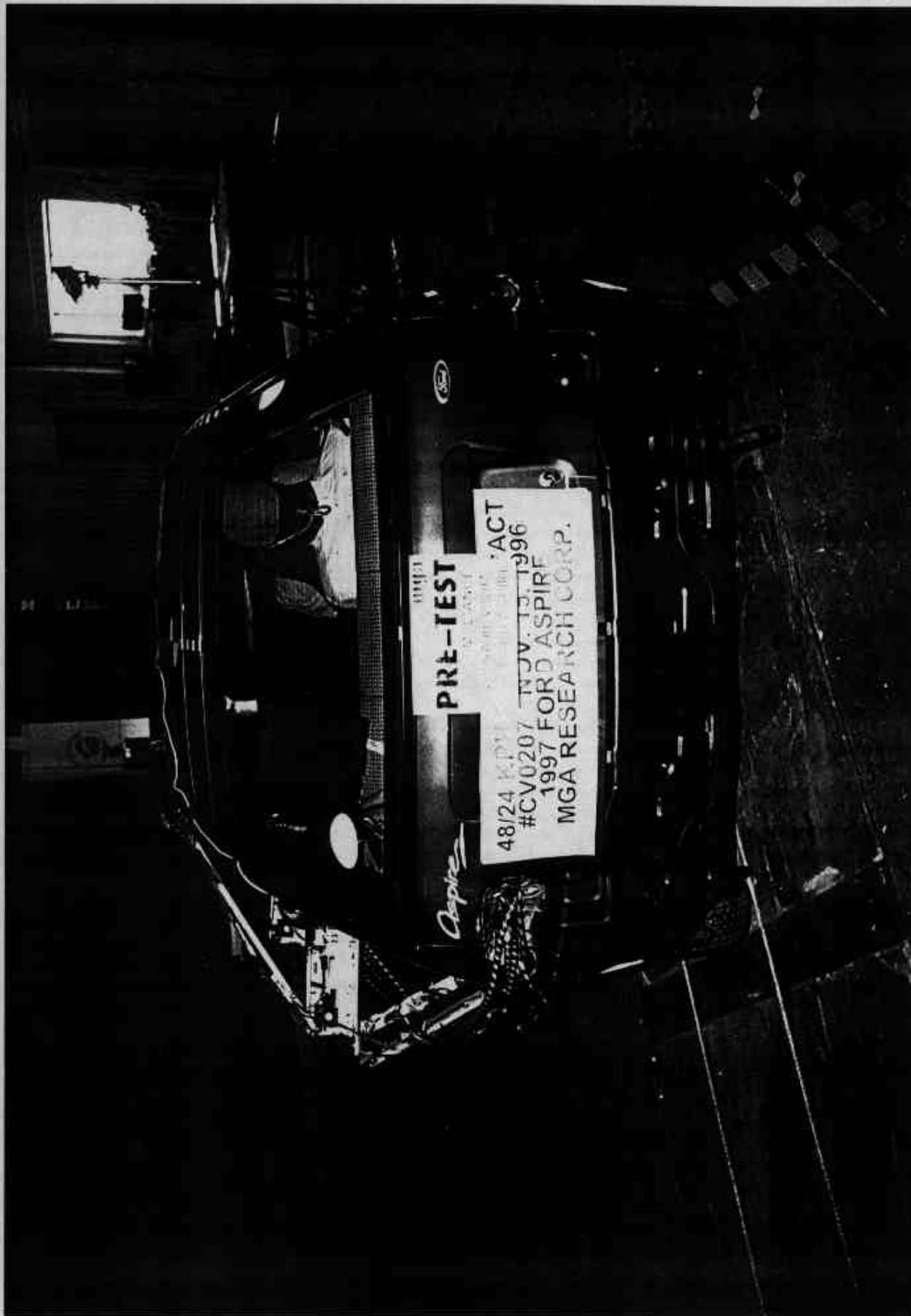


Photo No. A-3 - Pre-Test Rear View of Test Vehicle



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

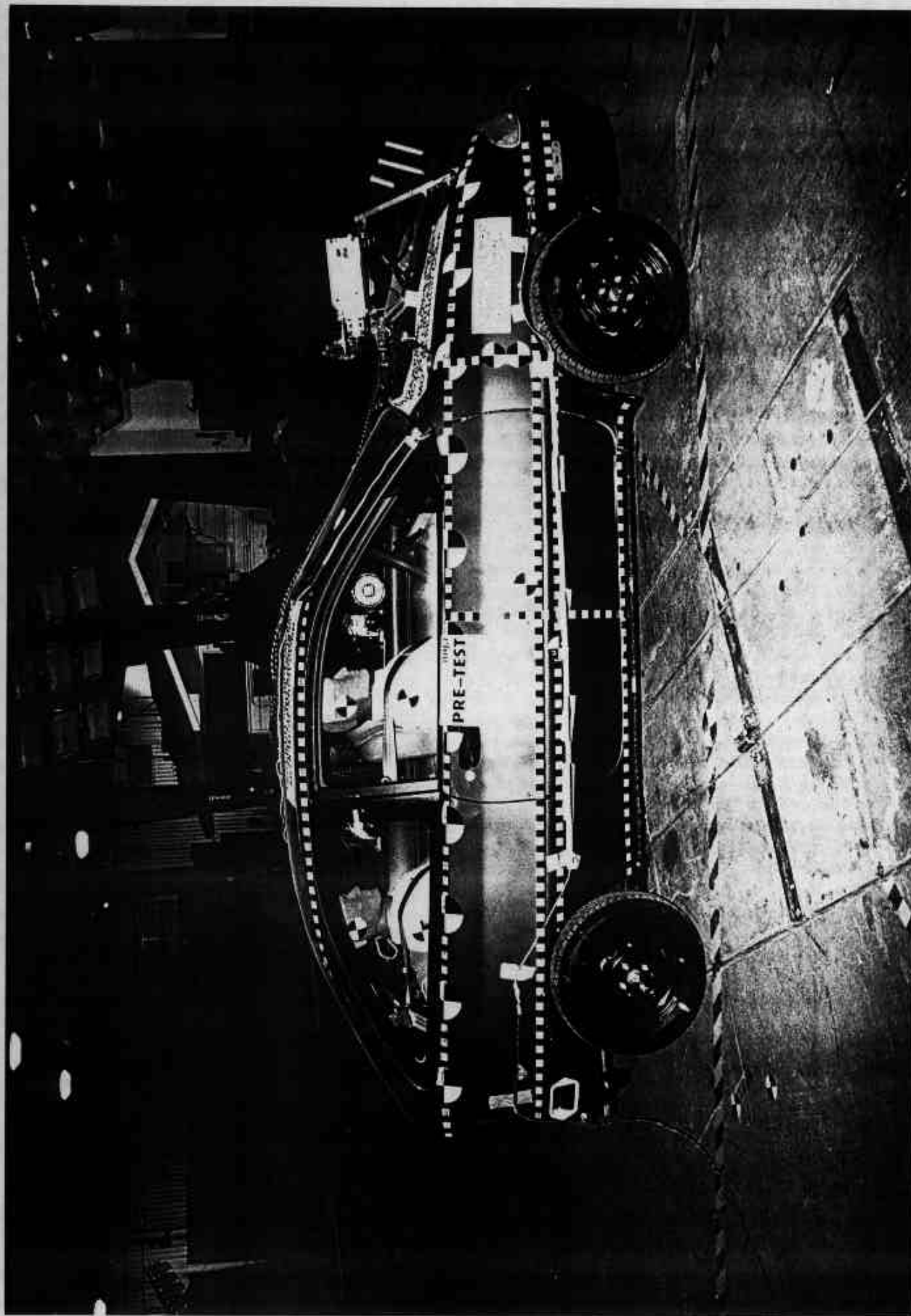


Photo No. A-5 - Pre-Test Right Side View of Test Vehicle

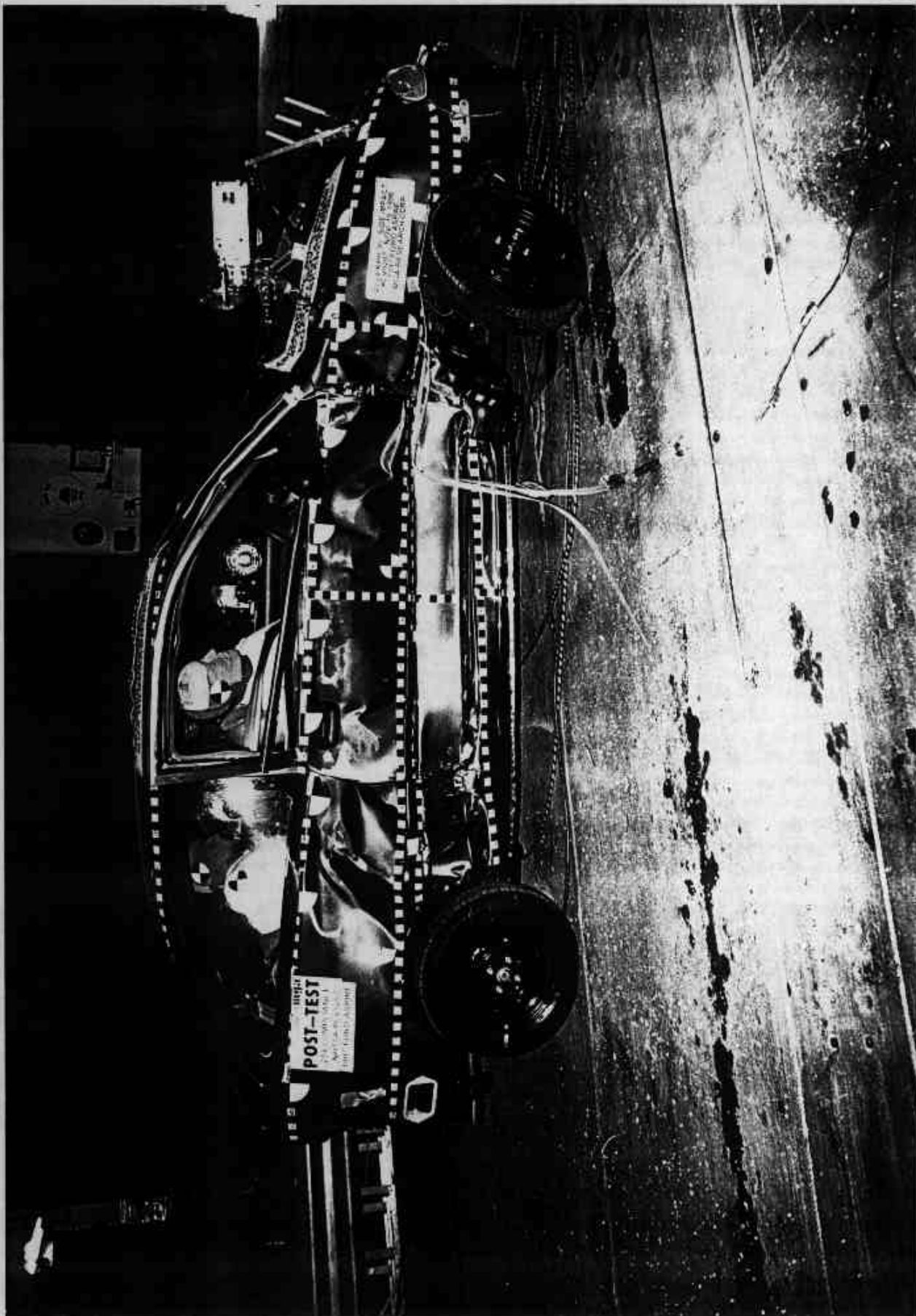


Photo No. A-6 - Post-Test Right Side View of Test Vehicle

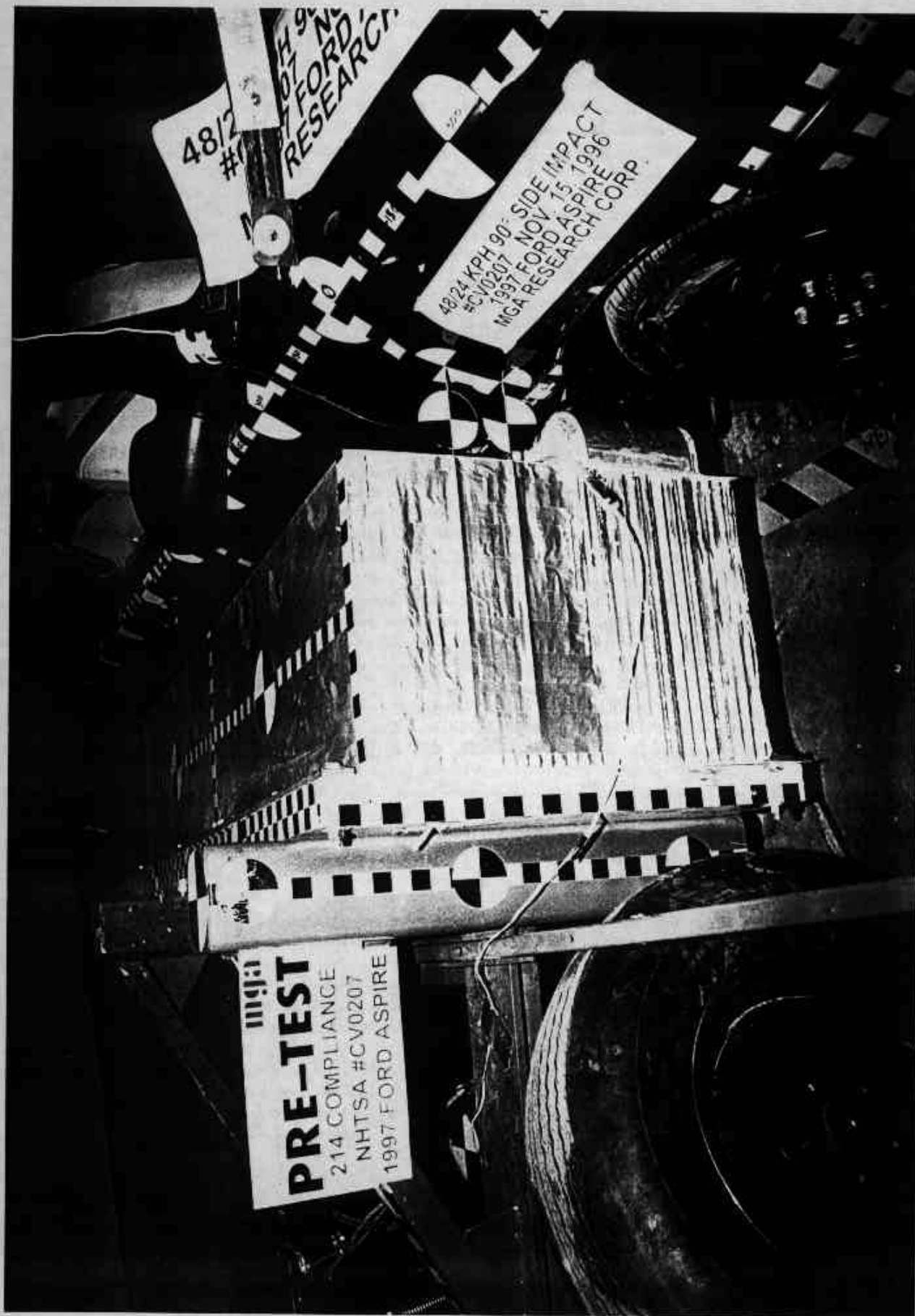


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (right side)

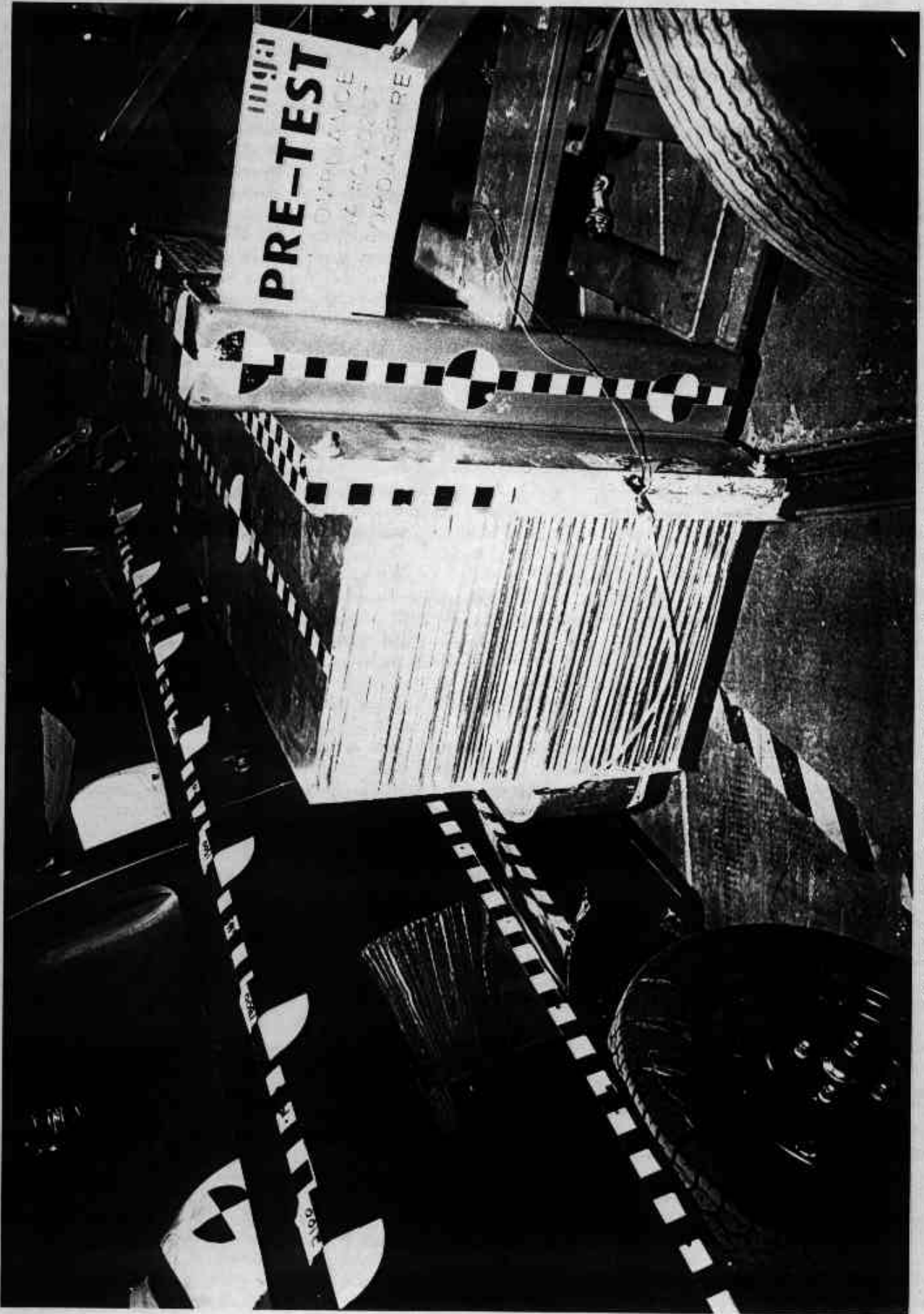


Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (left side)



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



Photo No. A-10 - Post-Test MDB Position and Vehicle (right side)



Photo No. A-11 - Post-Test MDB Position and Vehicle (left side)

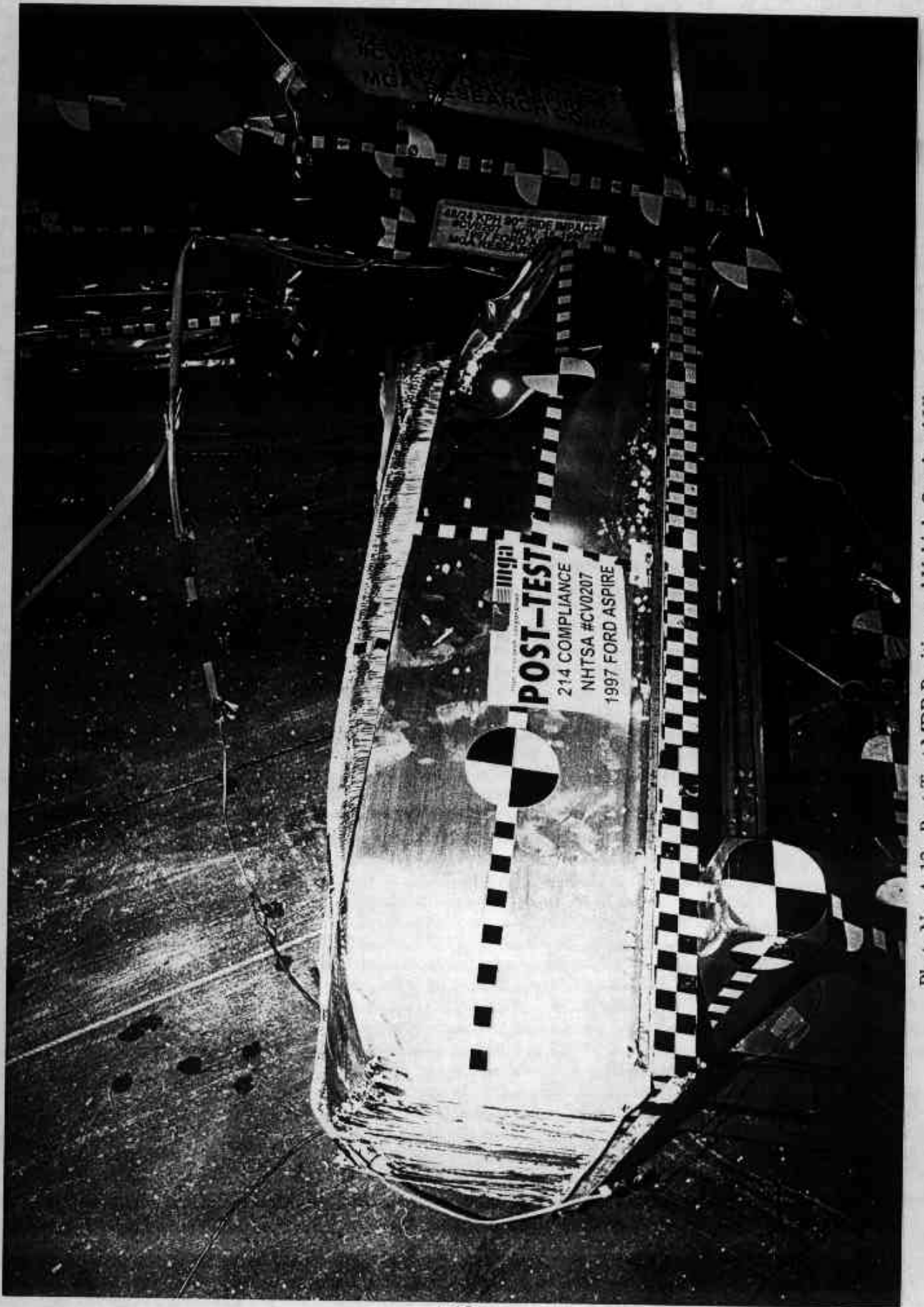


Photo No. A-12 - Post-Test MDB Position and Vehicle Overhead View

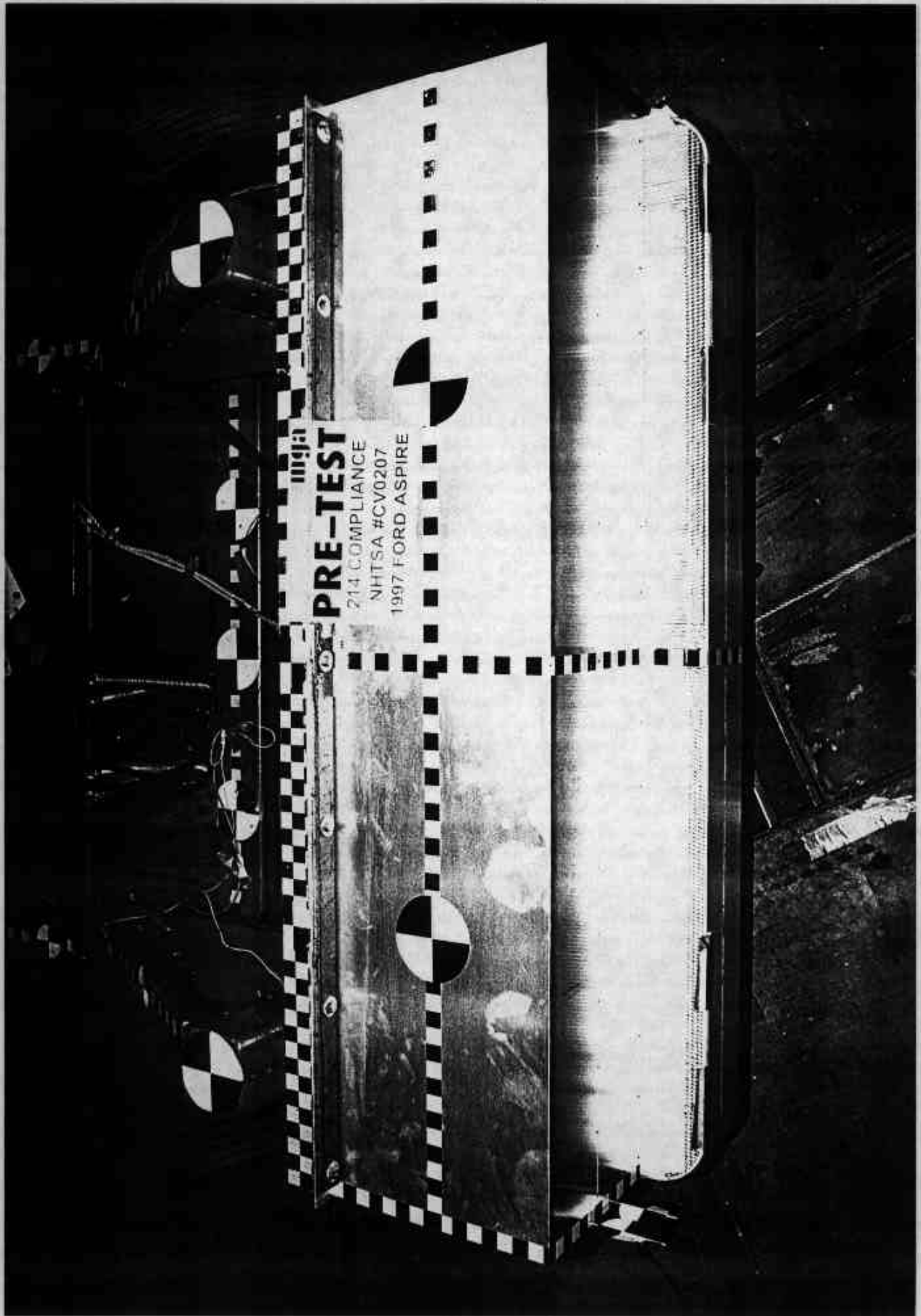


Photo No. A-13 - Pre-Test MDB Top View

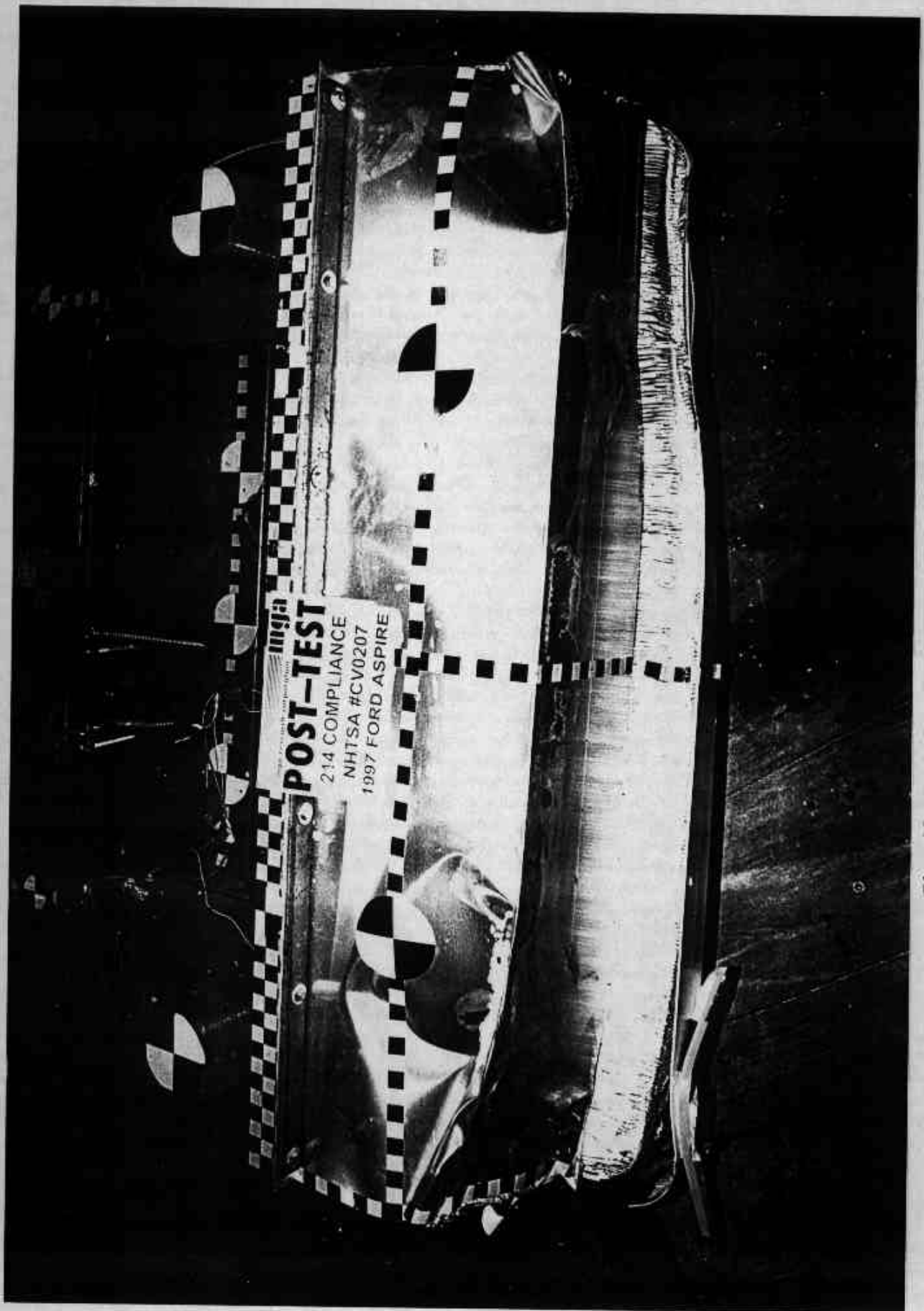


Photo No. A-14 - Post-Test MDB Top View

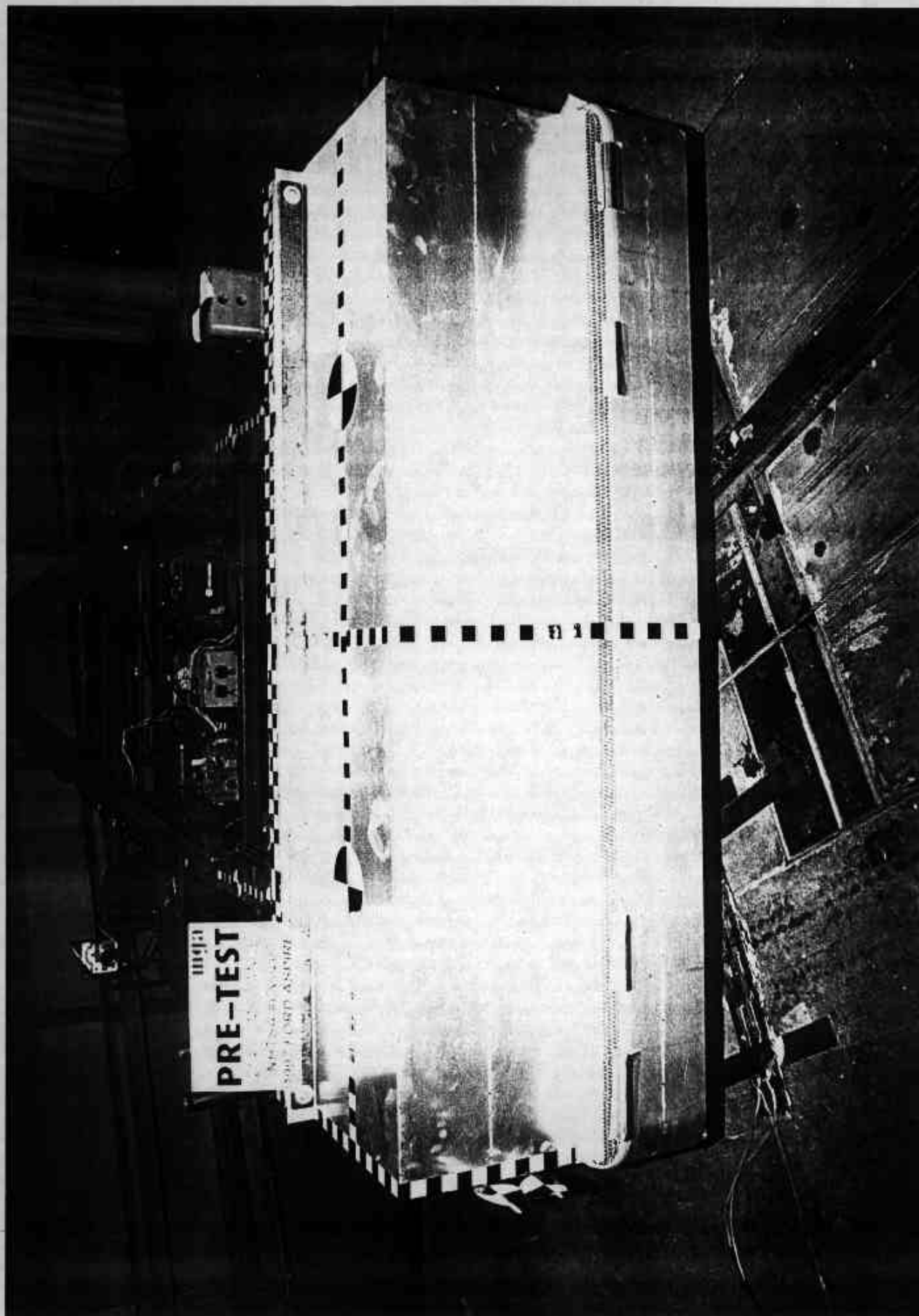


Photo No. A-15 - Pre-Test MDB Front View

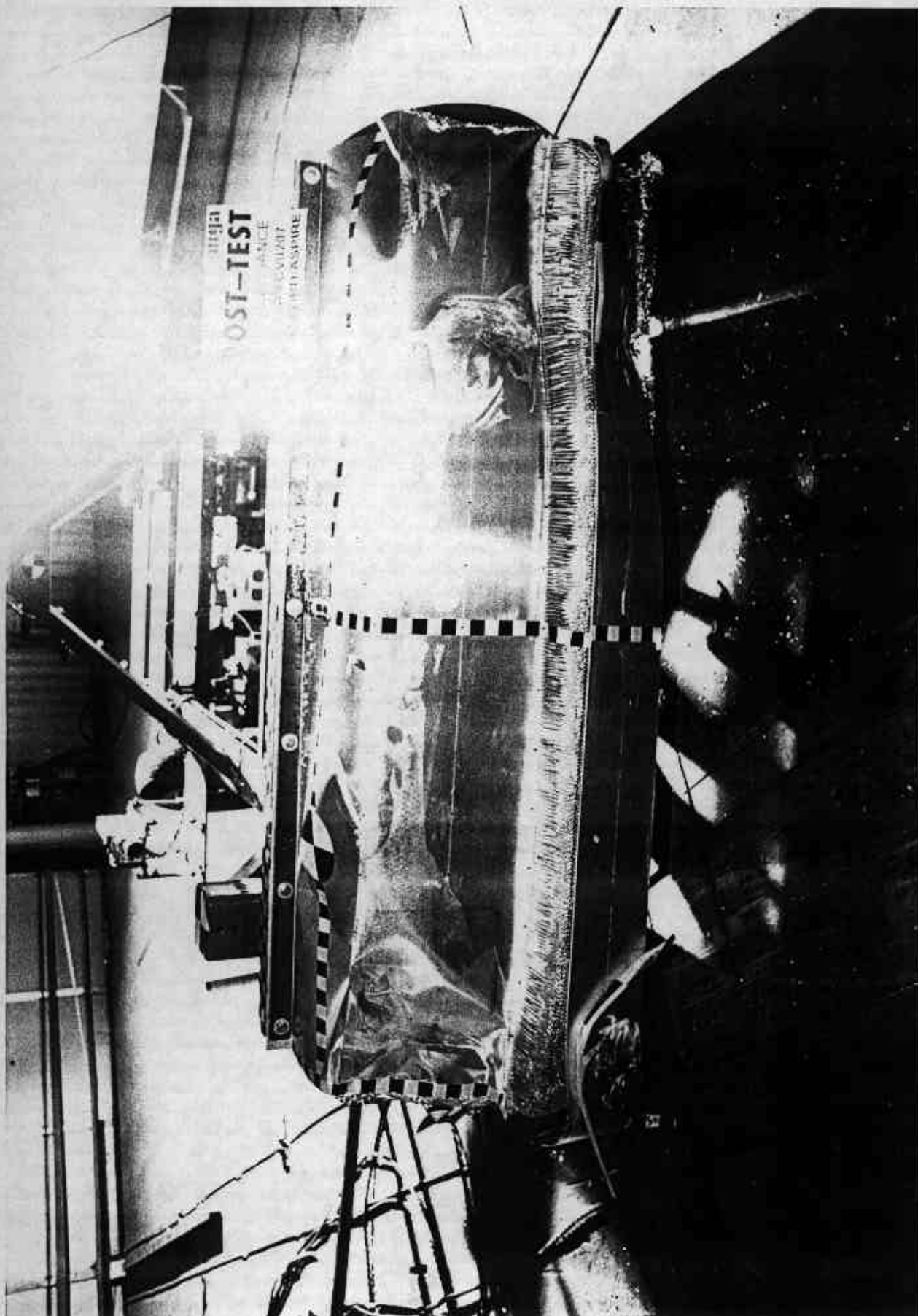


Photo No. A-16 - Post-Test MDB Front View

A-16

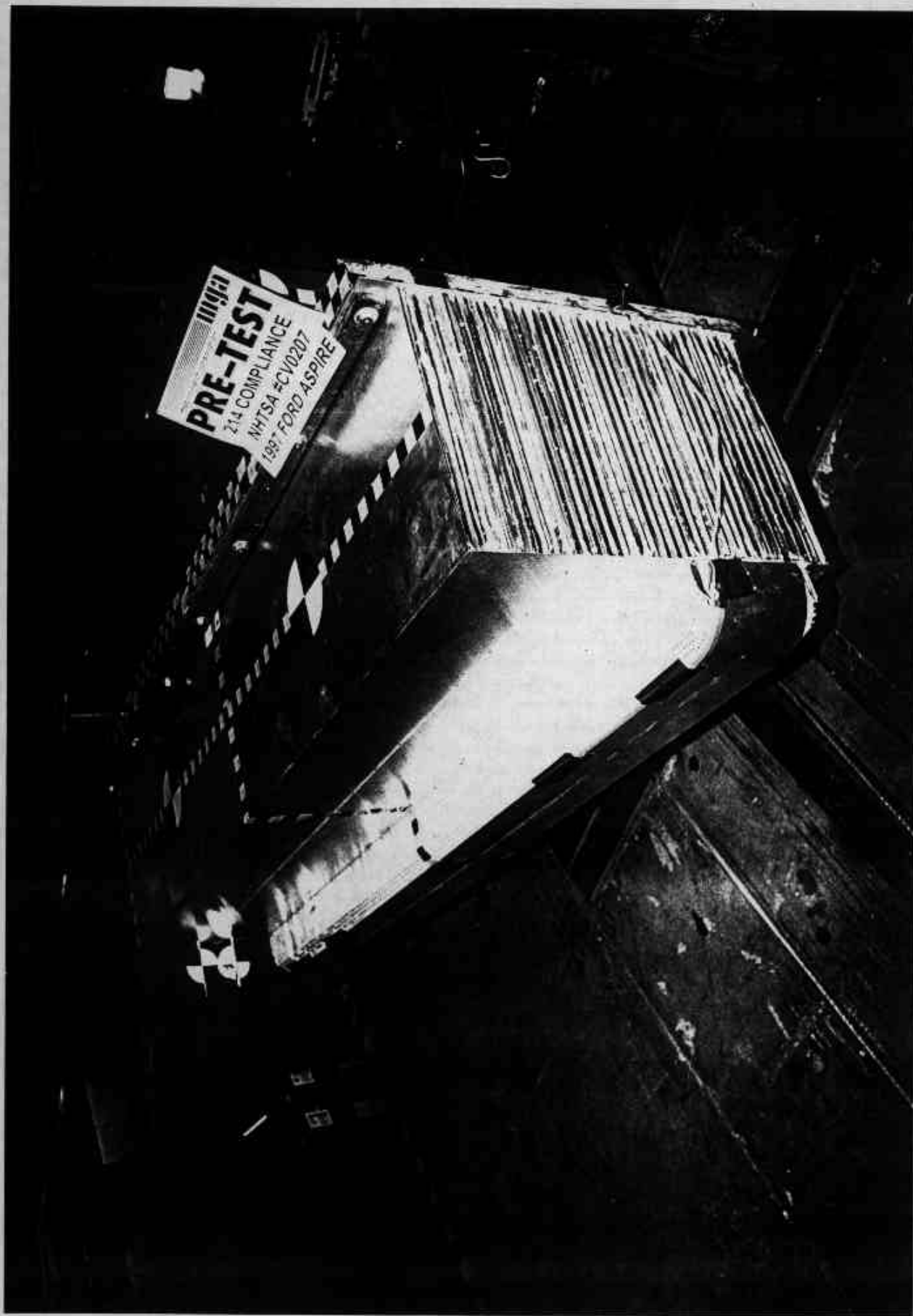


Photo No. A-17 - Pre-Test MDB Left Side View



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

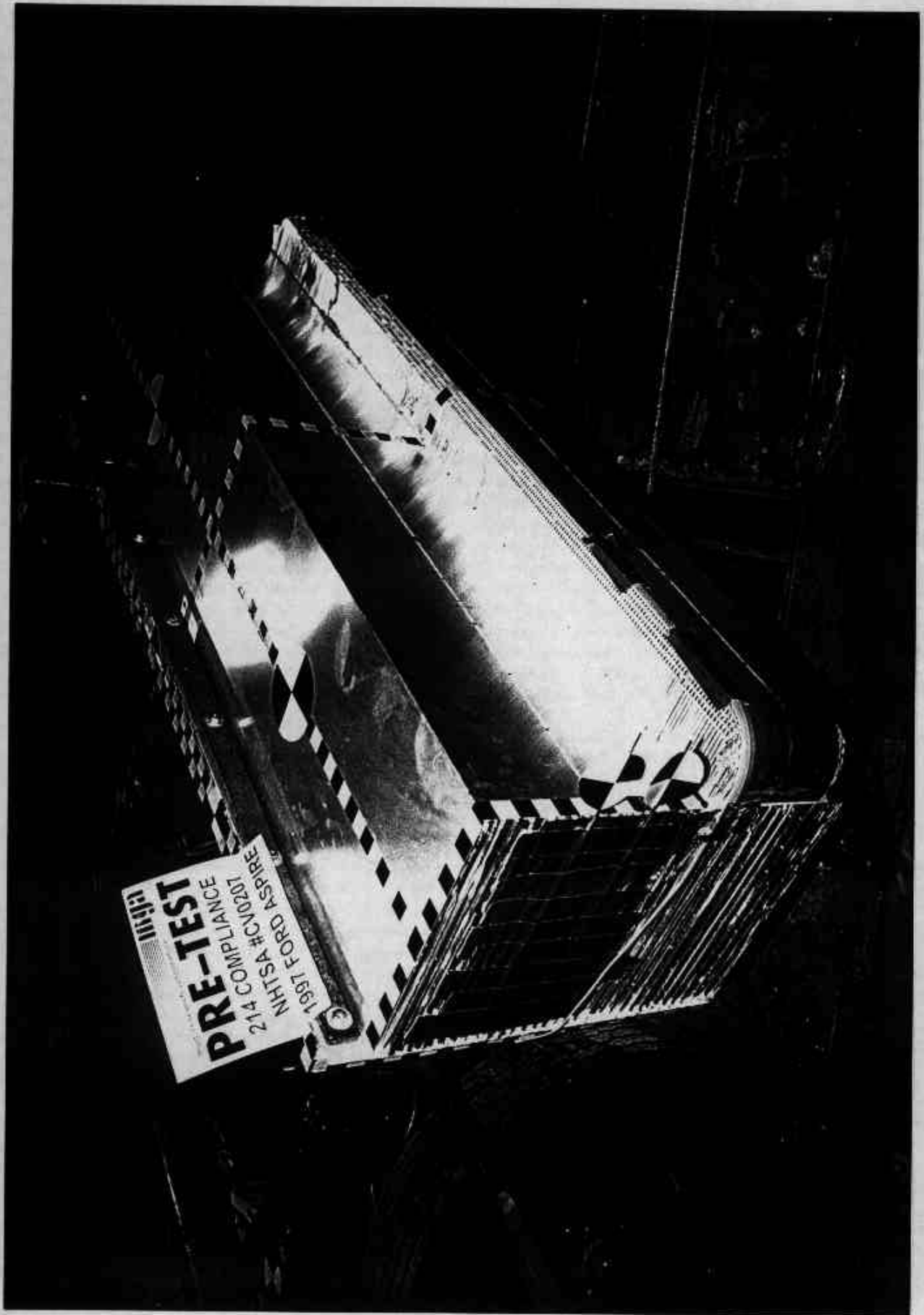


Photo No. A-19 - Pre-Test MDB Right Side View

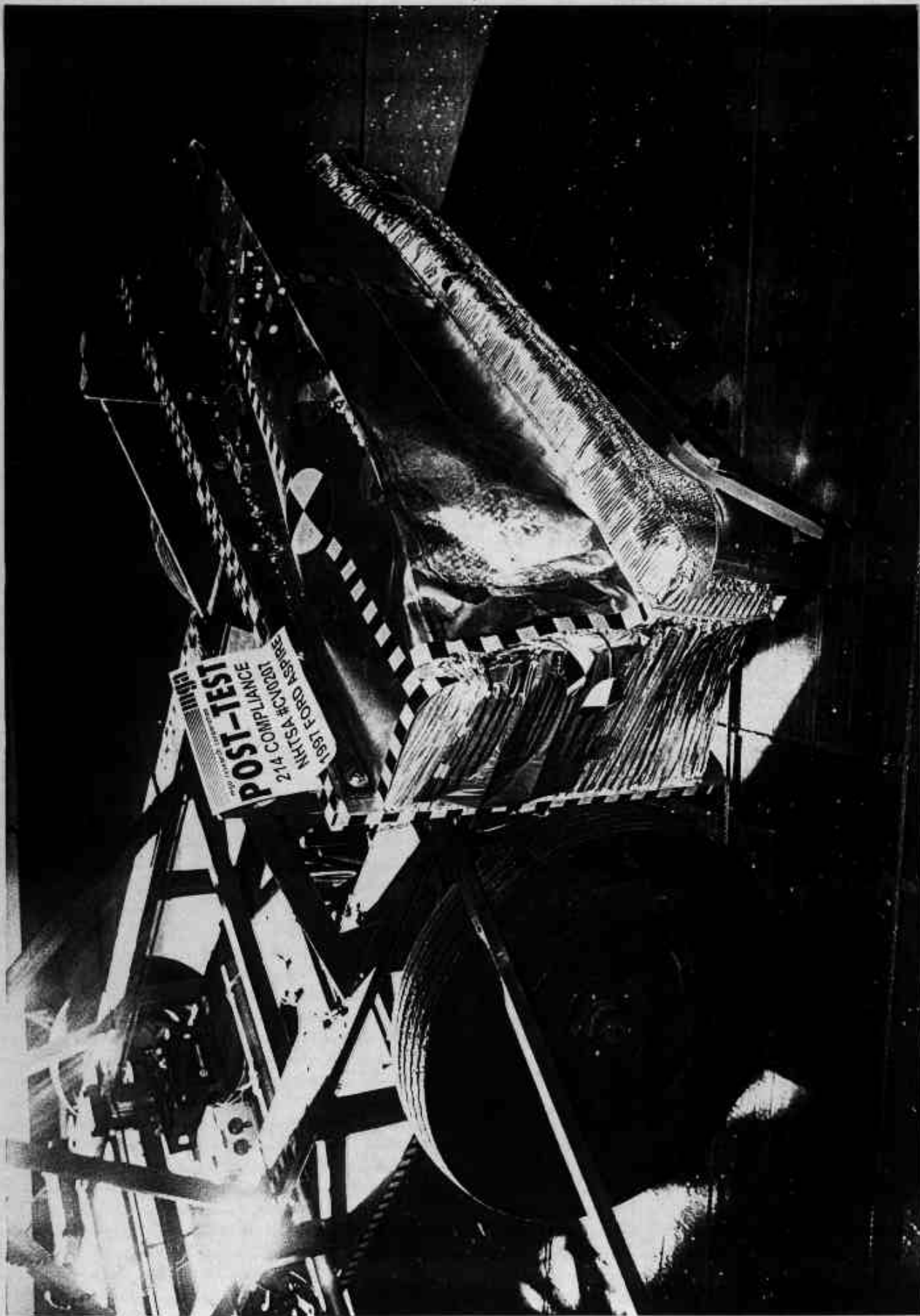


Photo No. A-20 - Post-Test MDB Right Side View



Photo No. A-21 - Pre-Test Right Front Seat Position View

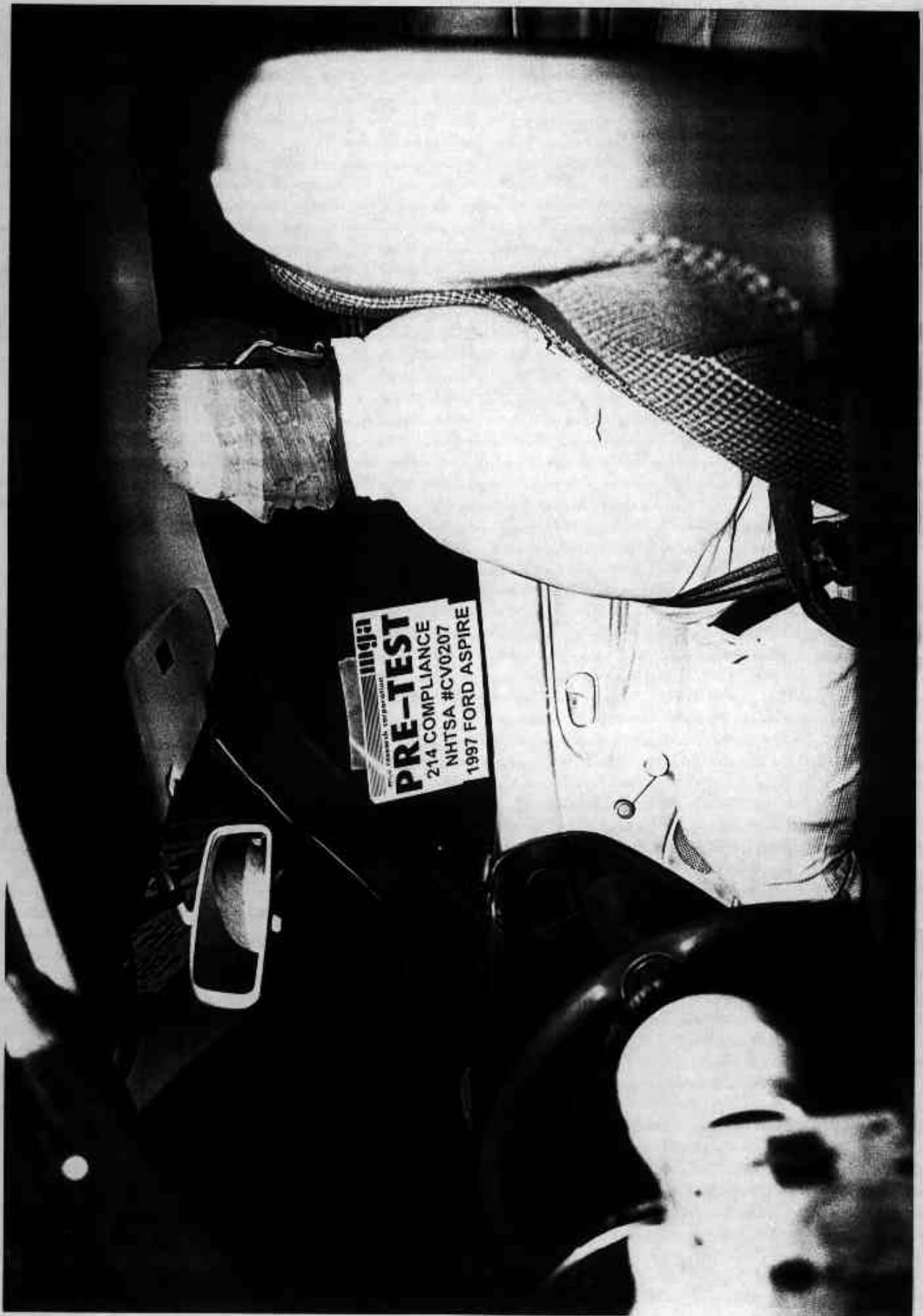


Photo No. A-22 - Pre-Test Front Passenger Dummy Left Side View



Photo No. A-23 - Post-Test Front Passenger Dummy Left Side View

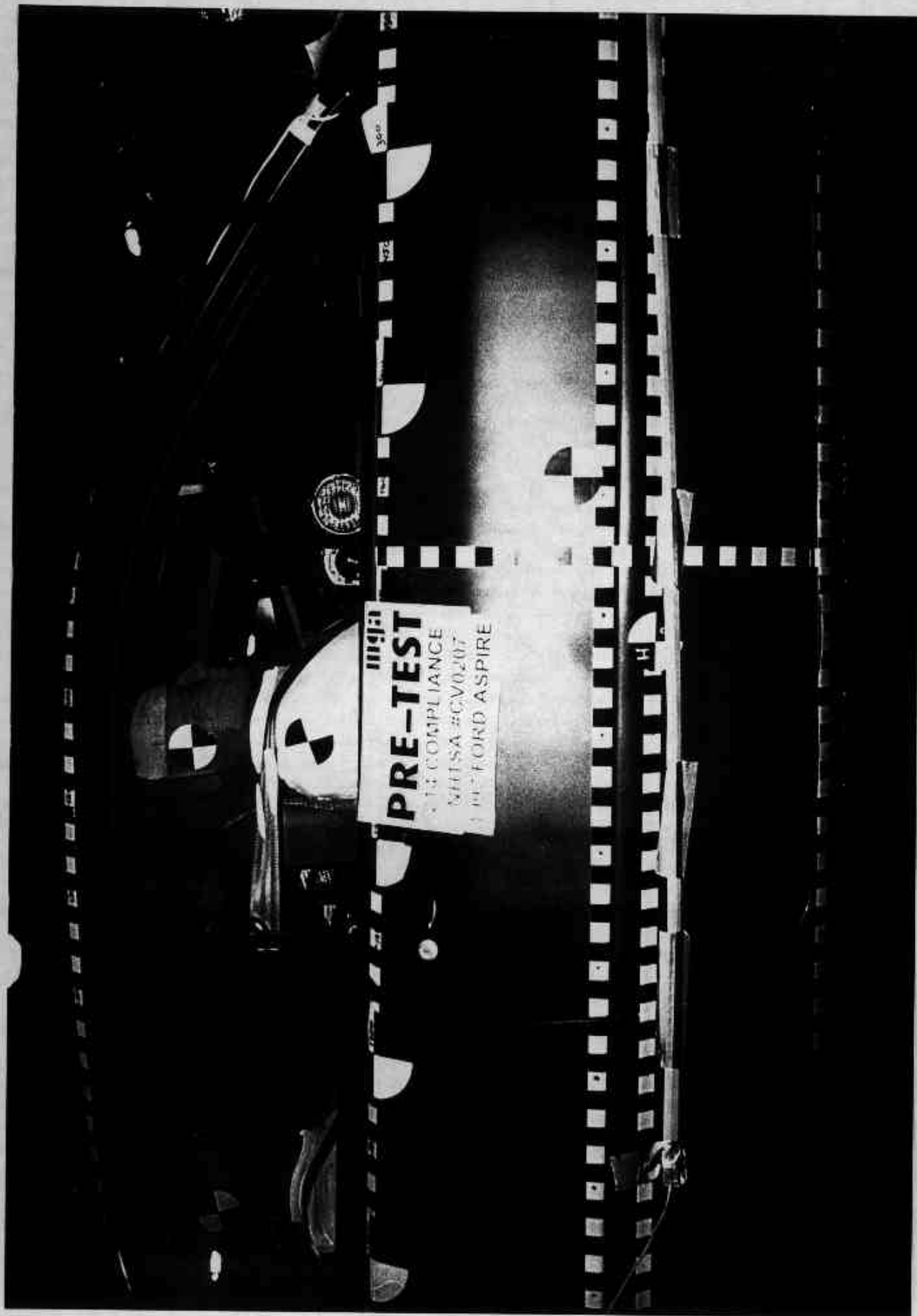
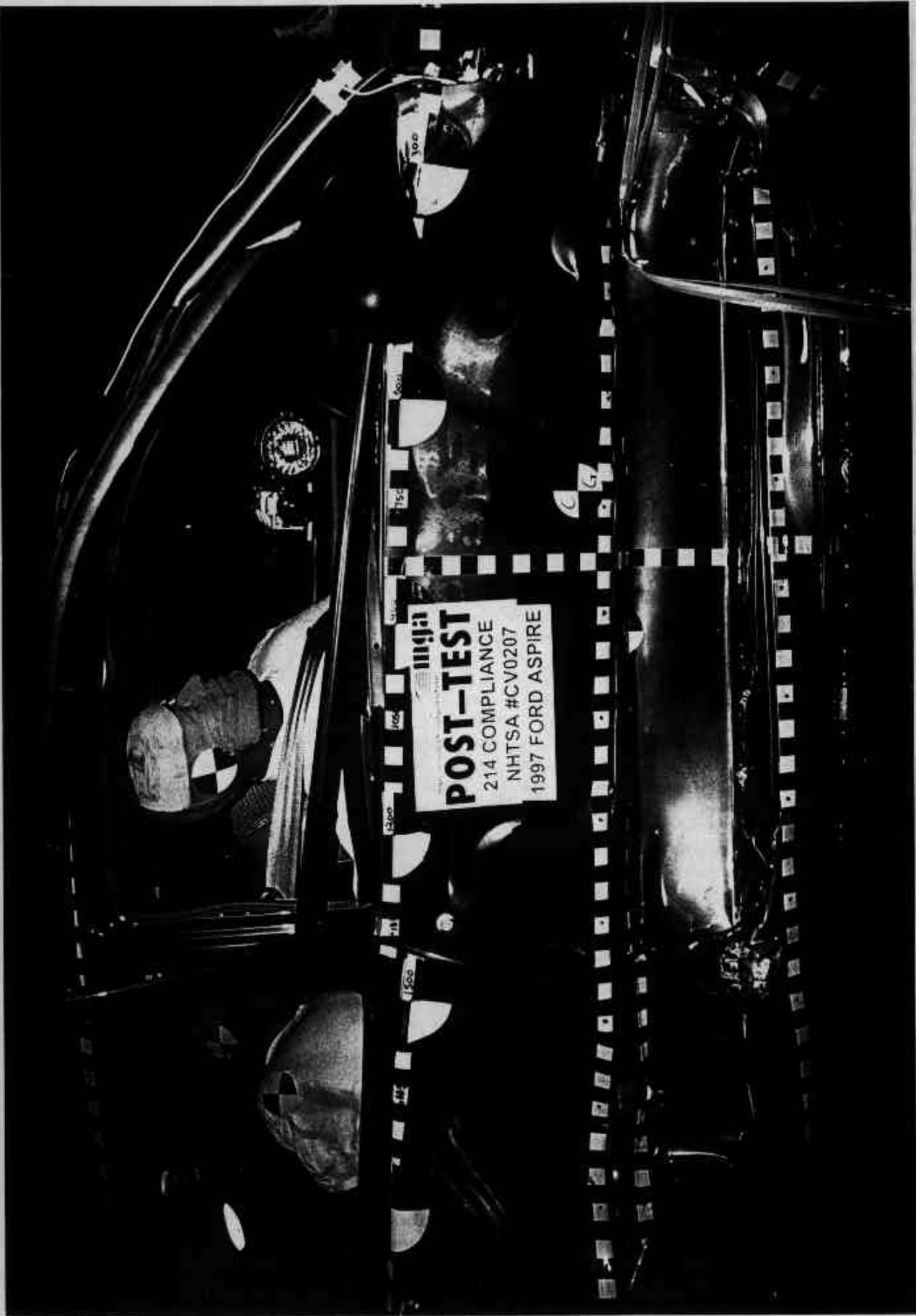


Photo No. A-24 - Pre-Test Front Passenger Dummy Right Side View



A-25

Photo No. A-25 - Post-Test Front Passenger Dummy Right Side View



A-26

Photo No. A-26 - Pre-Test Front Passenger Dummy Right Side View (Door Open)



Photo No. A-27 - Pre-Test Front Passenger Shoulder and Door Top View



A-28

Photo No. A-28 - Post-Test Front Passenger Dummy Shoulder and Door Top View



Photo No. A-29 - Post-Test Front Passenger Dummy Contact

POST-TEST

214 COMPLIANCE

NHTSA #CV0207

1997 FORD ASPIRE

Photo No. A-30 - Post-Test Front Passenger Head Contact



Photo No. A-31 - Pre-Test Rear Passenger Dummy Left Side View



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

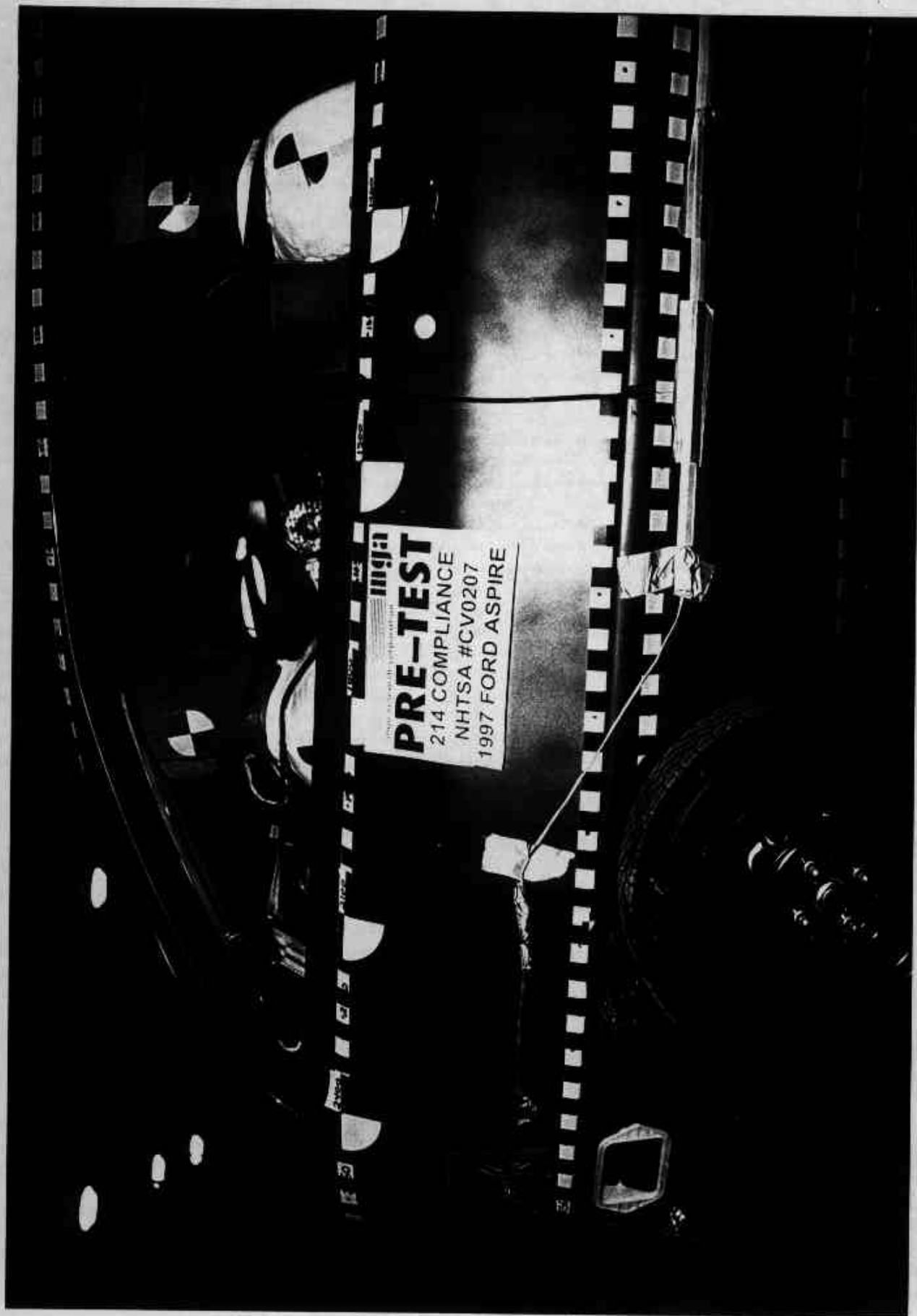


Photo No. A-33 - Pre-Test Rear Passenger Dummy Right Side View



A-34

Photo No. A-34 - Post-Test Rear Passenger Dummy Right Side View

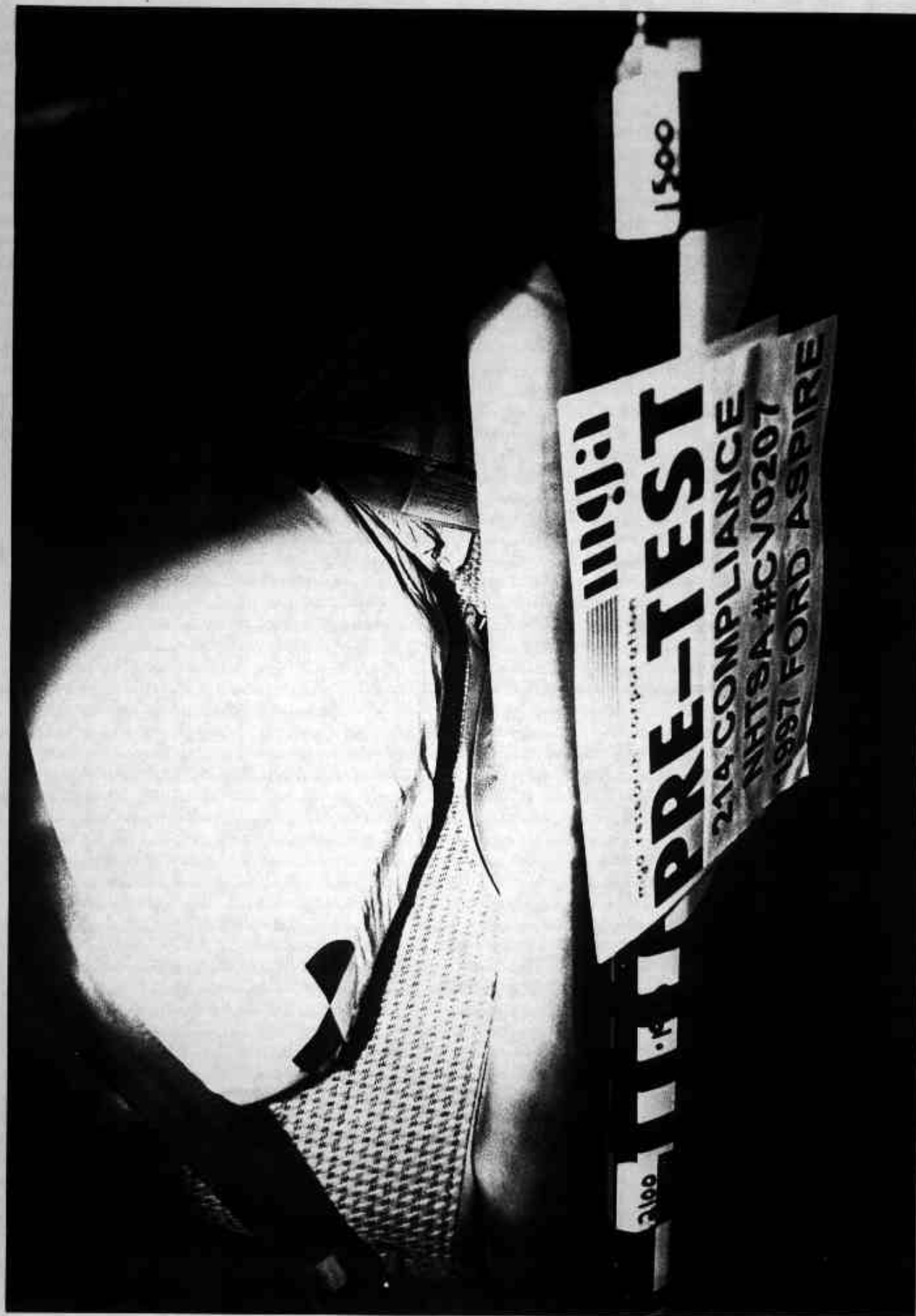
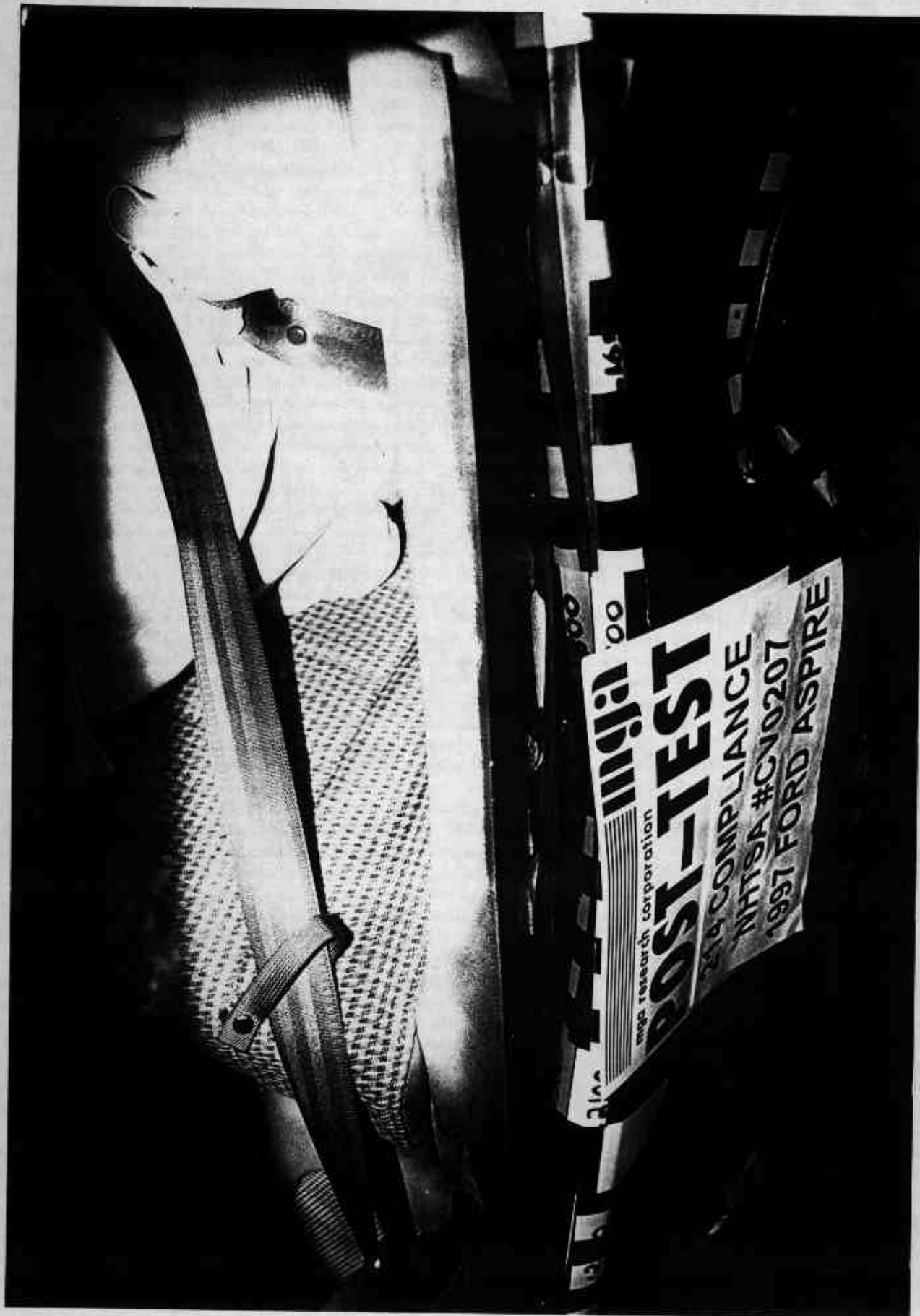


Photo No. A-35 - Pre-Test Rear Passenger Dummy Shoulder and Window View



A-36

Photo No. A-36 - Post-Test Rear Passenger Dummy Shoulder and Window View



Photo No. A-37 - Post-Test Rear Passenger Dummy Contact



Photo No. A-38 - Post-Test Rear Passenger Dummy Head Contact

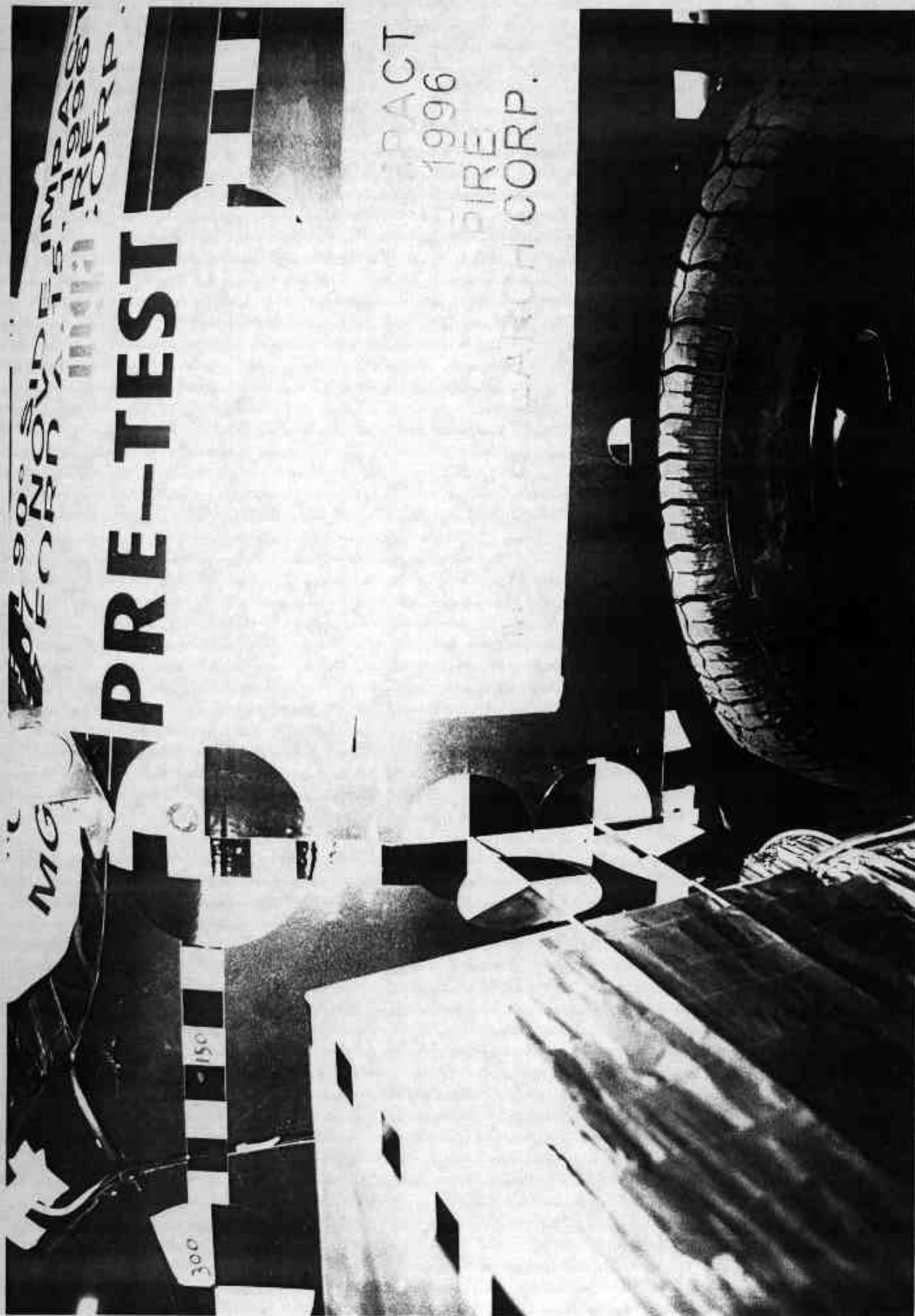


Photo No. A-39 - Pre-Test Right Front Impact Point on Vehicle



Photo No. A-40 - Post-Test Right Front Impact Point on Vehicle

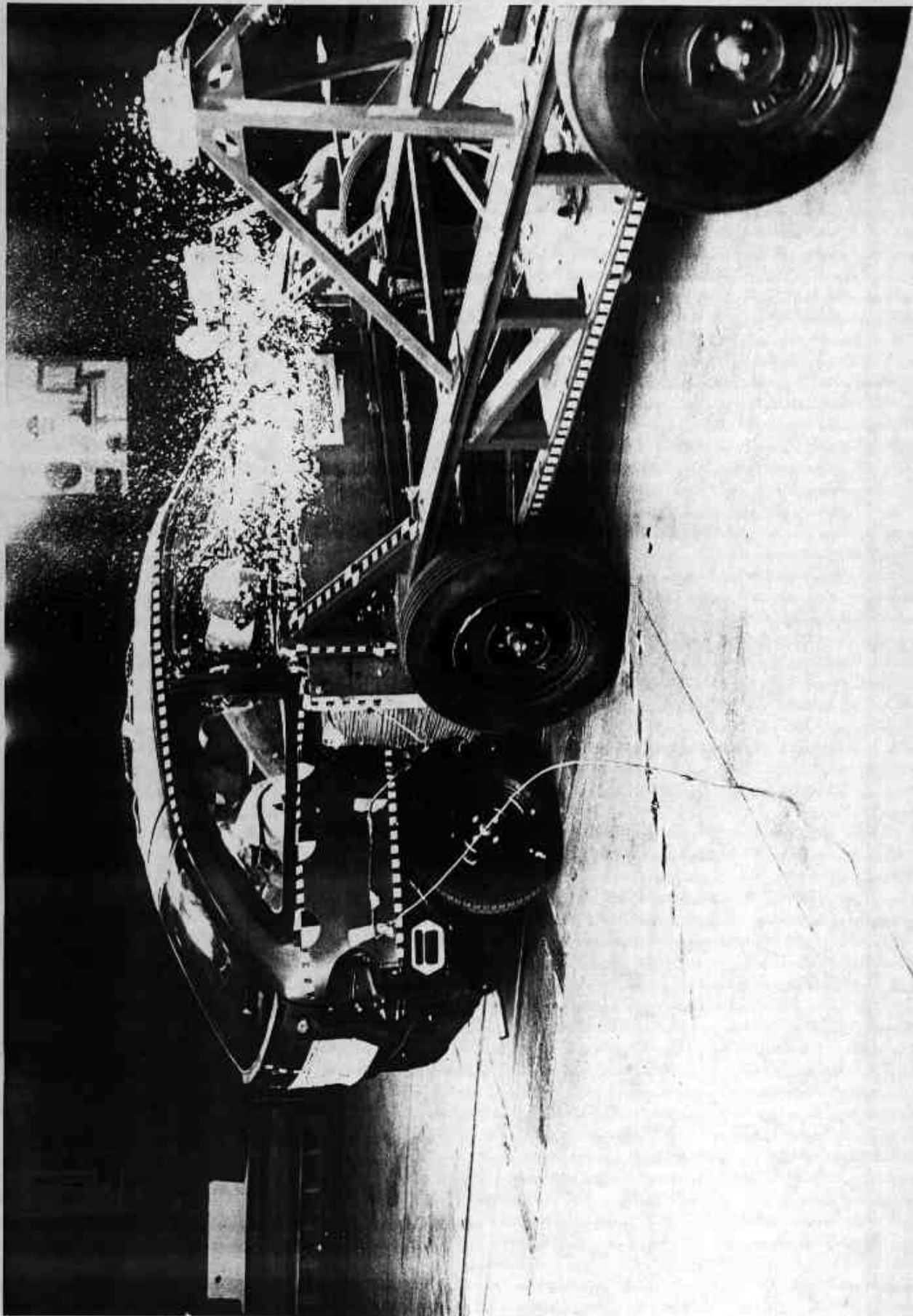


Photo No. A-41 - Impact

A-41



MFD. BY KIA MOTORS CO.
FOR FORD MOTOR CO.

DATE: 08/13/96 PNBA 1339 KG PNBE FRT 1638 LB GAWR RR 1314 LB
596 KG

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY, BUMPER, AND THEFT
PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN KNJLT05HXV6201361
TYPE PASSENGER

P8

EXTERIOR PAINT COLORS

BODY

VR

MLDG.

P8

INT. TRIM

A6

TAPE

R

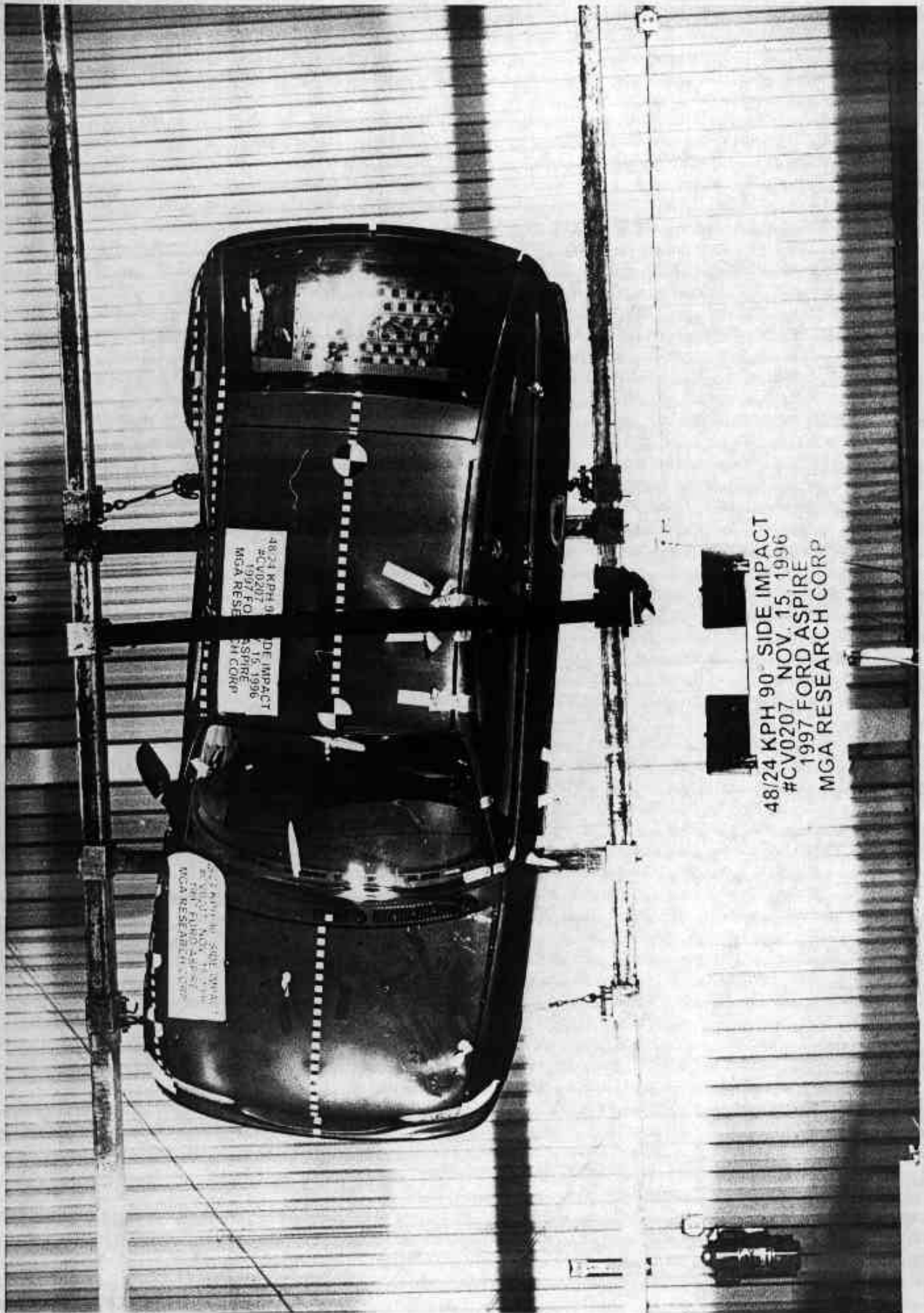
S

AX

1

5

DSO



48/24 KPH 90° SIDE IMPACT
#CV0207 NOV. 15, 1996
1997 FORD ASPIRE
MGA RESEARCH CORP

Photo No. A-44 - Rollover 90°

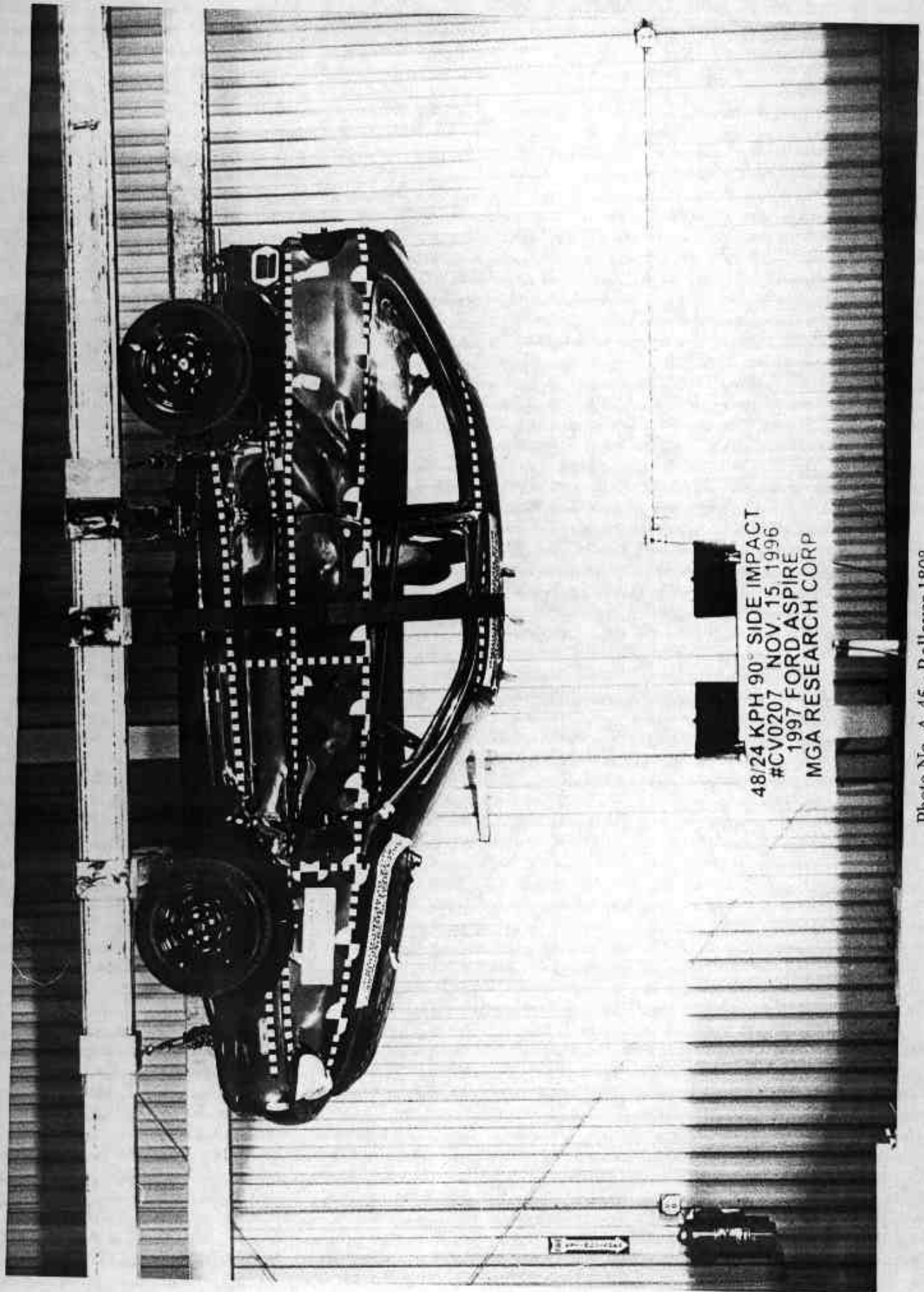
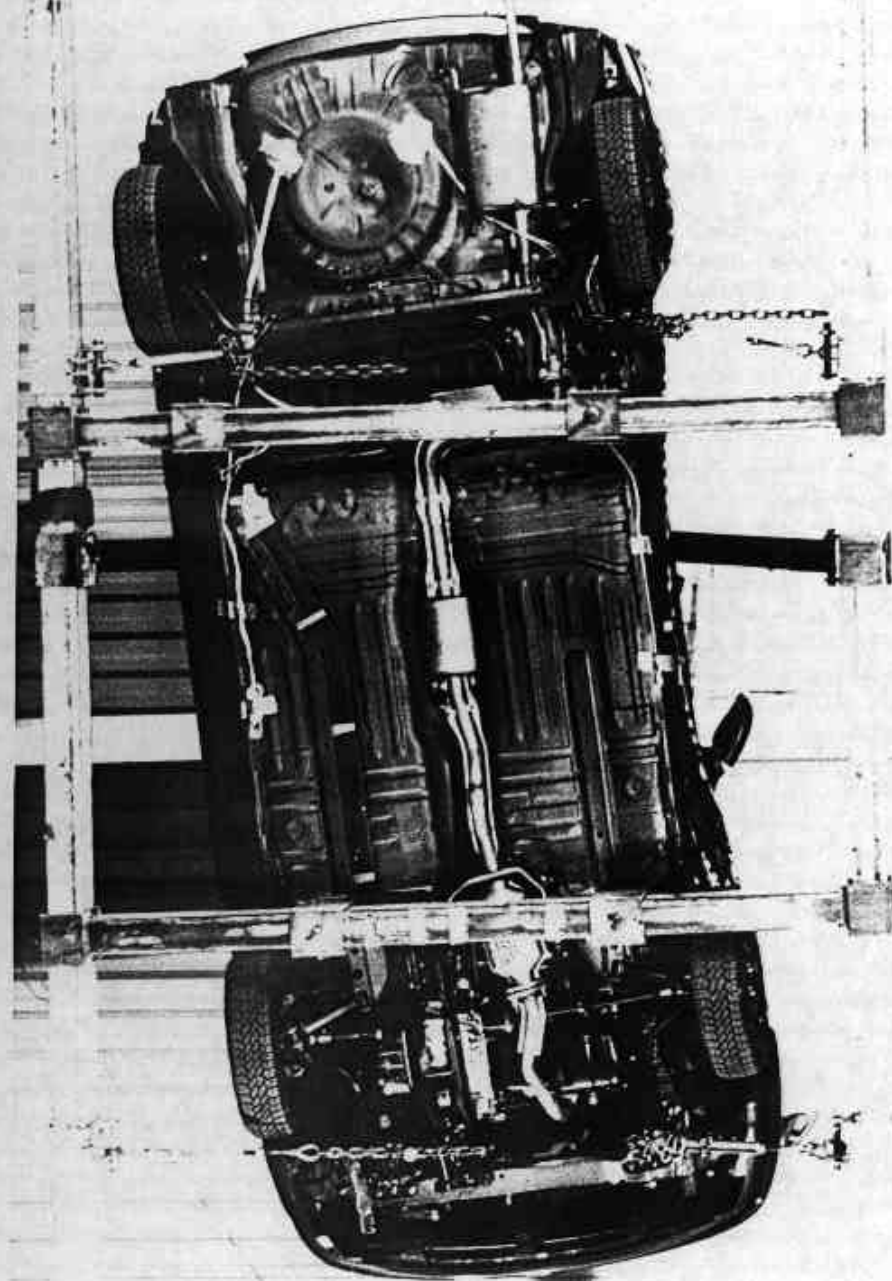


Photo No. A-45 - Rollover 180°



48.24 KPH 40 SIDE IMPACT
#CV0207 NOV 1 1997
1997 FORD ASPIRE
MGA RESEARCH

Photo No. A-46 - Rollover 270°

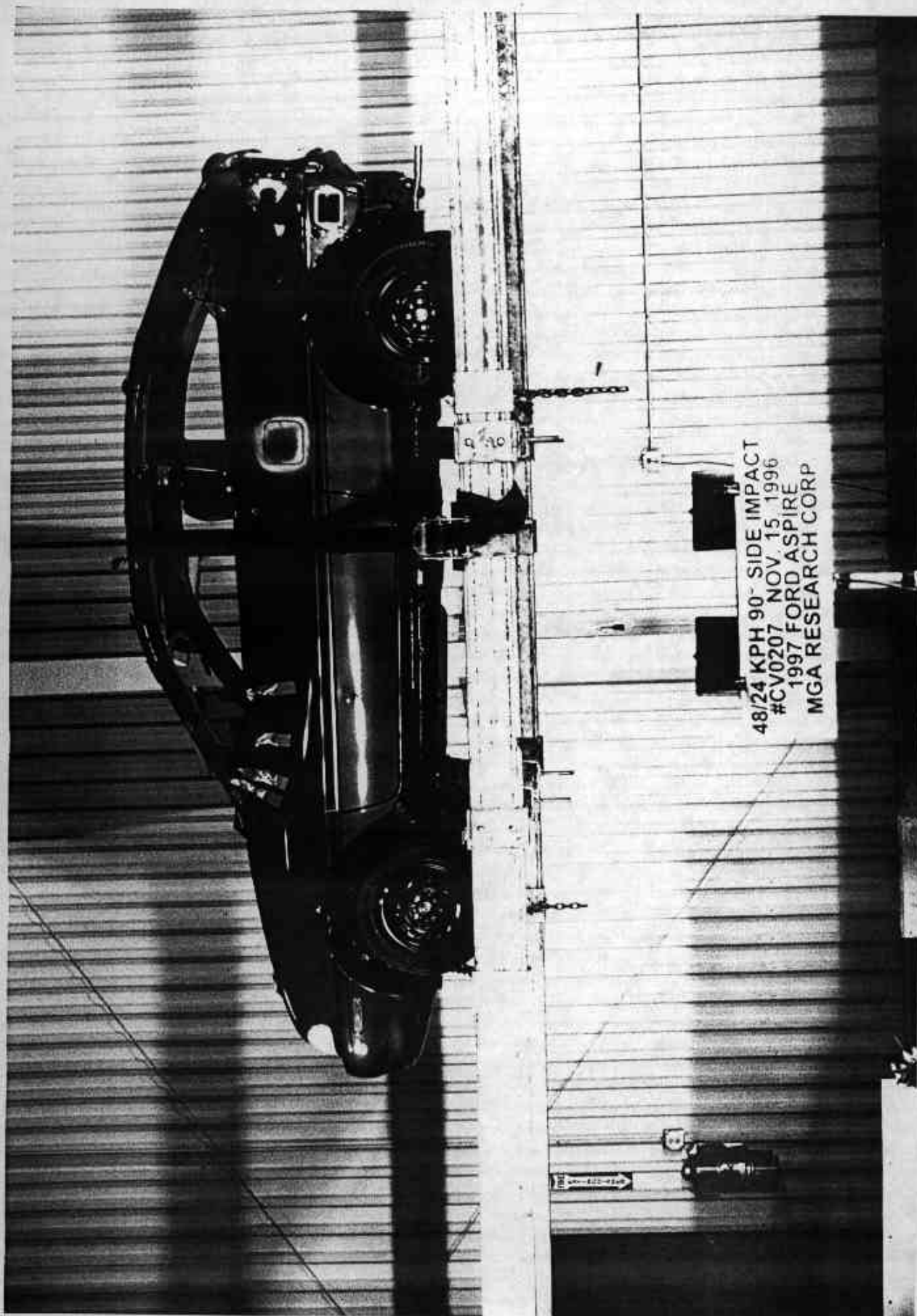


Photo No. A-47 - Rollover 360°



Photo No. A-48 - Right Front Attitude Point



Photo No. A-49 - Left Front Attitude Point

A-49

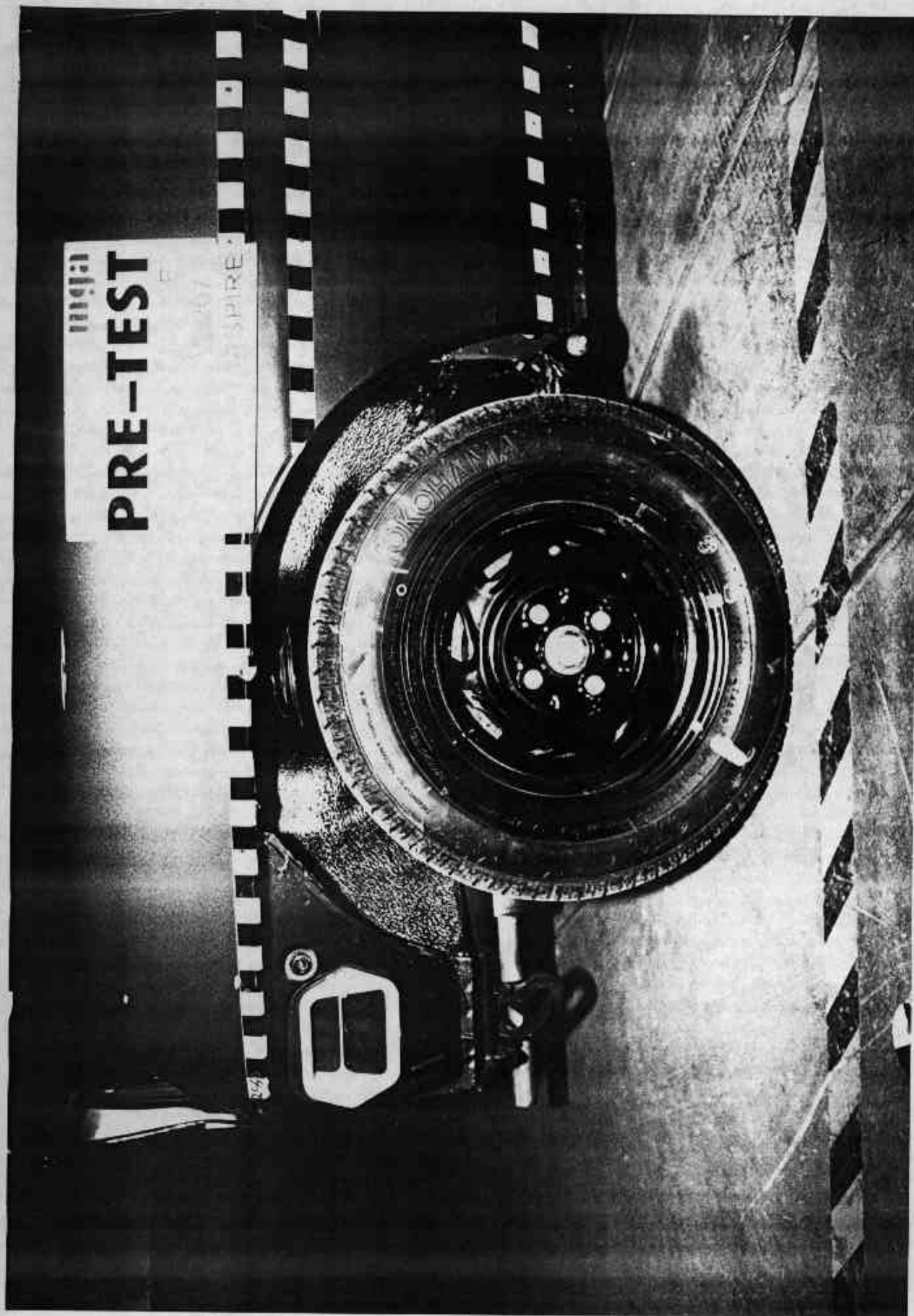


Photo No. A-50 - Right Rear Attitude Point

A-50

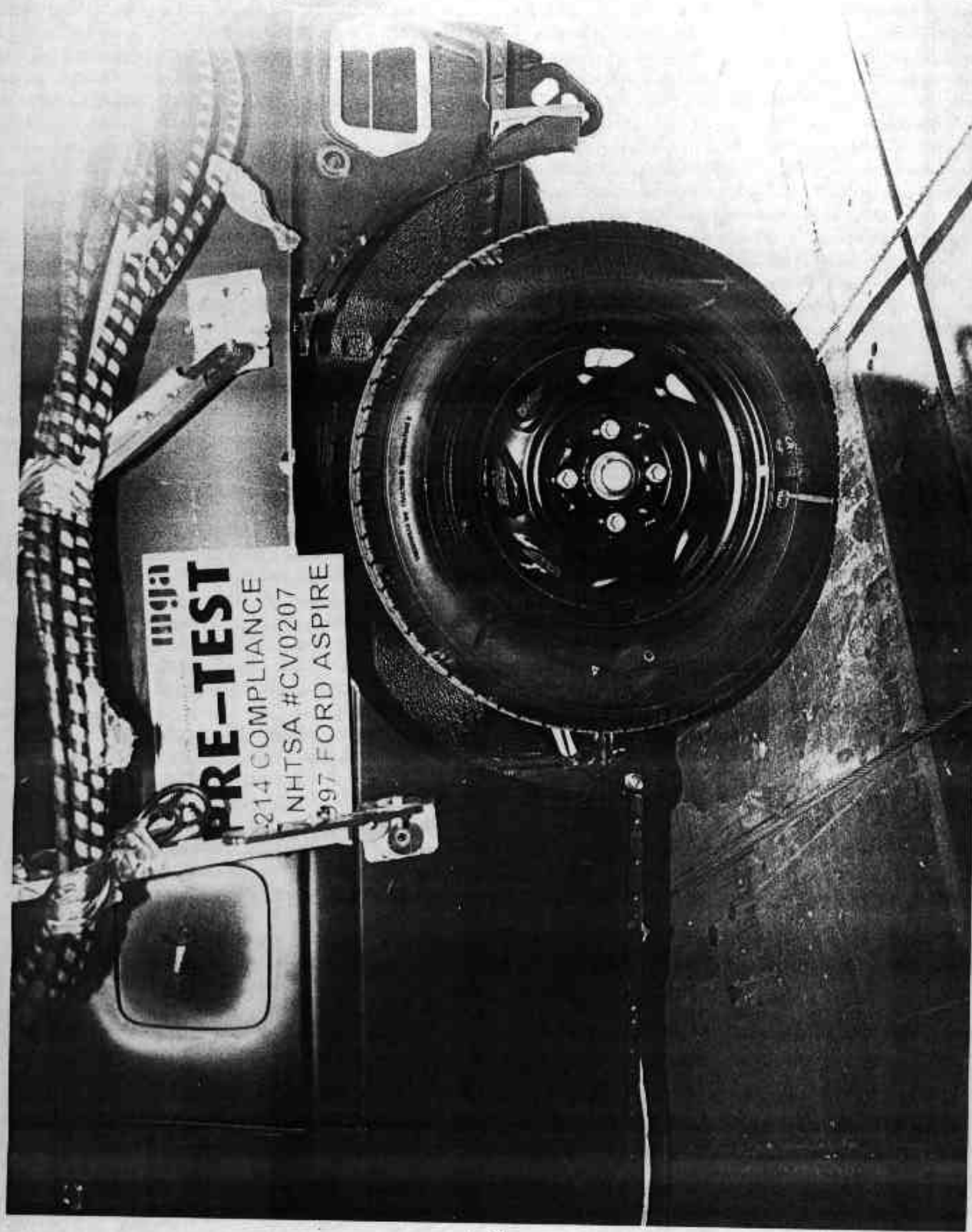


Photo No. A-51 - Left Rear Attitude Point

APPENDIX B - VEHICLE AND SID RESPONSE DATA

Table of Data Plots

<u>Occupant:</u>	<u>Page No.</u>
Figure B-1 - Front Passenger Upper Rib Y Acceleration vs. Time	B-1
Figure B-2 - Front Passenger Upper Rib Y Velocity vs. Time	B-2
Figure B-3 - Front Passenger Lower Rib Y Acceleration vs. Time	B-3
Figure B-4 - Front Passenger Lower Rib Y Velocity vs. Time	B-4
Figure B-5 - Front Passenger Lower Spine Y Acceleration vs. Time	B-5
Figure B-6 - Front Passenger Lower Spine Y Velocity vs. Time	B-6
Figure B-7 - Front Passenger Pelvis Y Acceleration vs. Time	B-7
Figure B-8 - Front Passenger Pelvis Y Velocity vs. Time	B-8
Figure B-9 - Rear Passenger Upper Rib Y Acceleration vs. Time	B-9
Figure B-10 - Rear Passenger Upper Rib Y Velocity vs. Time	B-10
Figure B-11 - Rear Passenger Lower Rib Y Acceleration vs. Time	B-11
Figure B-12 - Rear Passenger Lower Rib Y Velocity vs. Time	B-12
Figure B-13 - Rear Passenger Lower Spine Y Acceleration vs. Time	B-13
Figure B-14 - Rear Passenger Lower Spine Y Velocity vs. Time	B-14
Figure B-15 - Rear Passenger Pelvis Y Acceleration vs. Time	B-15
Figure B-16 - Rear Passenger Pelvis Y Velocity vs. Time	B-16
 <u>Vehicle:</u>	
Figure B-17 - Right Side Sill at Front Seat Y Acceleration vs. Time	B-17
Figure B-18 - Right Side Sill at Front Seat Y Velocity vs. Time	B-18
Figure B-19 - Right Side Sill at Rear Seat Y Acceleration vs. Time	B-19
Figure B-20 - Right Side Sill at Rear Seat Y Velocity vs. Time	B-20
Figure B-21 - Left Side Sill at Front Seat X Acceleration vs. Time	B-21
Figure B-22 - Left Side Sill at Front Seat X Velocity vs. Time	B-22
Figure B-23 - Left Side Sill at Front Seat Y Acceleration vs. Time	B-23
Figure B-24 - Left Side Sill at Front Seat Y Velocity vs. Time	B-24
Figure B-25 - Left Side Sill at Front Seat Z Acceleration vs. Time	B-25
Figure B-26 - Left Side Sill at Front Seat Z Velocity vs. Time	B-26
Figure B-27 - Left Side Sill at Front Seat Resultant Acceleration vs. Time	B-27
Figure B-28 - Left Side Sill at Rear Seat X Acceleration vs. Time	B-28

Table of Data Plots

<u>Vehicle (Cont'd):</u>	<u>Page No.</u>
Figure B-29 - Left Side Sill at Rear Seat X Velocity vs. Time	B-29
Figure B-30 - Left Side Sill at Rear Seat Y Acceleration vs. Time	B-30
Figure B-31 - Left Side Sill at Rear Seat Y Velocity vs. Time	B-31
Figure B-32 - Left Side Sill at Rear Seat Z Acceleration vs. Time	B-32
Figure B-33 - Left Side Sill at Rear Seat Z Velocity vs. Time	B-33
Figure B-34 - Left Side Sill at Rear Seat Resultant Acceleration vs. Time	B-34
Figure B-35 - Right Front Passenger Seat Track Y Acceleration vs. Time	B-35
Figure B-36 - Right Front Passenger Seat Track Y Velocity vs. Time	B-36
Figure B-37 - Rear Floorpan above Axle X Acceleration vs. Time	B-37
Figure B-38 - Rear Floorpan above Axle X Velocity vs. Time	B-38
Figure B-39 - Rear Floorpan above Axle Y Acceleration vs. Time	B-39
Figure B-40 - Rear Floorpan above Axle Y Velocity vs. Time	B-40
Figure B-41 - Rear Floorpan above Axle Z Acceleration vs. Time	B-41
Figure B-42 - Rear Floorpan above Axle Z Velocity vs. Time	B-42
Figure B-43 - Rear Floorpan above Axle Resultant Acceleration vs. Time	B-43
Figure B-44 - Left Rear Occupant Compartment Y Acceleration vs. Time	B-44
Figure B-45 - Left Rear Occupant Compartment Y Velocity vs. Time	B-45
Figure B-46 - Right Lower A Post Y Acceleration vs. Time	B-46
Figure B-47 - Right Lower A Post Y Velocity vs. Time	B-47
Figure B-48 - Right Mid A Post Y Acceleration vs. Time	B-48
Figure B-49 - Right Mid A Post Y Velocity vs. Time	B-49
Figure B-50 - Right Lower B Post Y Acceleration vs. Time	B-50
Figure B-51 - Right Lower B Post Y Velocity vs. Time	B-51
Figure B-52 - Right Mid B Post Y Acceleration vs. Time	B-52
Figure B-53 - Right Mid B Post Y Velocity vs. Time	B-53
Figure B-54 - Vehicle Center of Gravity X Acceleration vs. Time	B-54
Figure B-55 - Vehicle Center of Gravity X Velocity vs. Time	B-55
Figure B-56 - Vehicle Center of Gravity Y Acceleration vs. Time	B-56
Figure B-57 - Vehicle Center of Gravity Y Velocity vs. Time	B-57

Table of Data Plots

Vehicle (Cont'd):

Page No.

Figure B-58 - Vehicle Center of Gravity Z Acceleration vs. Time	B-58
Figure B-59 - Vehicle Center of Gravity Z Velocity vs. Time	B-59
Figure B-60 - Vehicle Center of Gravity Resultant Acceleration vs. Time	B-60

Barrier:

Figure B-61 - Moving Barrier Center of Gravity X Acceleration vs. Time	B-61
Figure B-62 - Moving Barrier Center of Gravity X Velocity vs. Time	B-62
Figure B-63 - Moving Barrier Center of Gravity Y Acceleration vs. Time	B-63
Figure B-64 - Moving Barrier Center of Gravity Y Velocity vs. Time	B-64
Figure B-65 - Moving Barrier Center of Gravity Z Acceleration vs. Time	B-65
Figure B-66 - Moving Barrier Center of Gravity Z Velocity vs. Time	B-66
Figure B-67 - Moving Barrier Center of Gravity Resultant Acceleration vs. Time	B-67
Figure B-68 - Moving Barrier Rear Axle X Acceleration vs. Time	B-68
Figure B-69 - Moving Barrier Rear Axle X Velocity vs. Time	B-69
Figure B-70 - Moving Barrier Rear Axle Y Acceleration vs. Time	B-70
Figure B-71 - Moving Barrier Rear Axle Y Velocity vs. Time	B-71
Figure B-72 - Left Barrier Contact	B-72
Figure B-73 - Right Barrier Contact	B-73

Redundant:

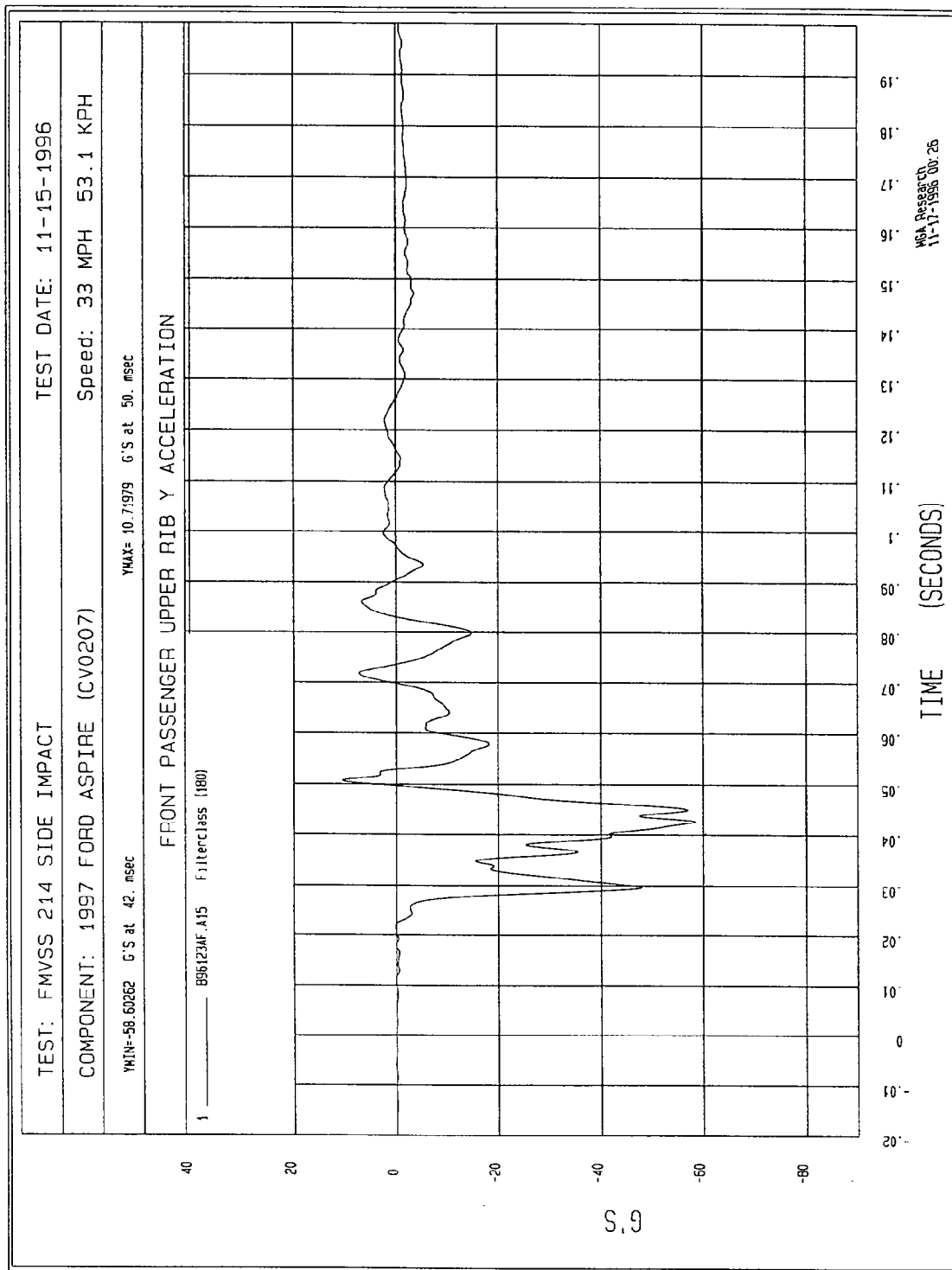
Figure B-74 - Front Passenger Upper Rib Y Redundant Acceleration vs. Time	B-74
Figure B-75 - Front Passenger Upper Rib Y Redundant Velocity vs. Time	B-75
Figure B-76 - Front Passenger Lower Rib Y Redundant Acceleration vs. Time	B-76
Figure B-77 - Front Passenger Lower Rib Y Redundant Velocity vs. Time	B-77
Figure B-78 - Front Passenger Lower Spine Y Redundant Acceleration vs. Time	B-78
Figure B-79 - Front Passenger Lower Spine Y Redundant Velocity vs. Time	B-79
Figure B-80 - Front Passenger Pelvis Y Redundant Acceleration vs. Time*	B-80
Figure B-81 - Rear Passenger Upper Rib Y Redundant Acceleration vs. Time	B-81

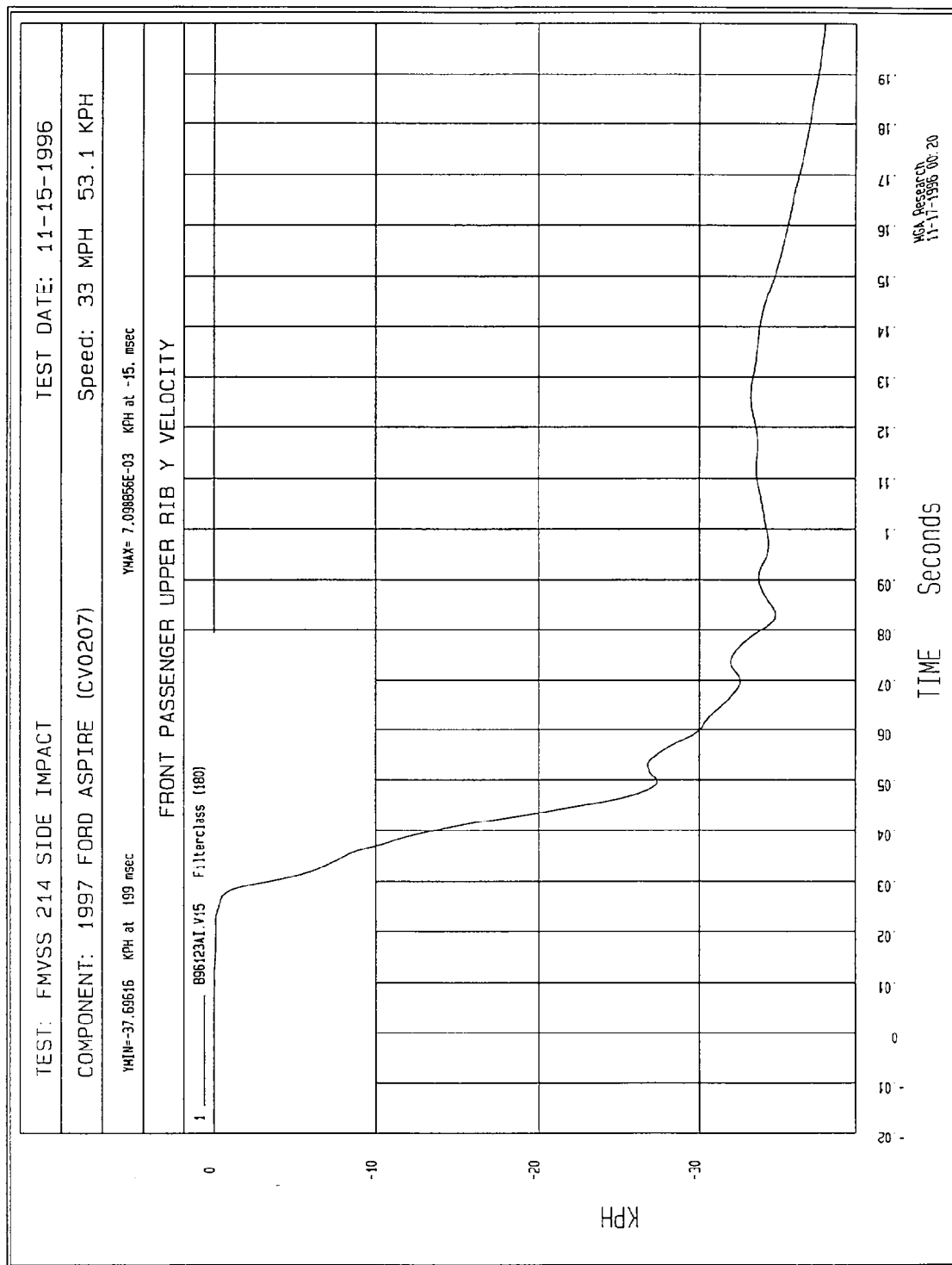
* No valid data collected

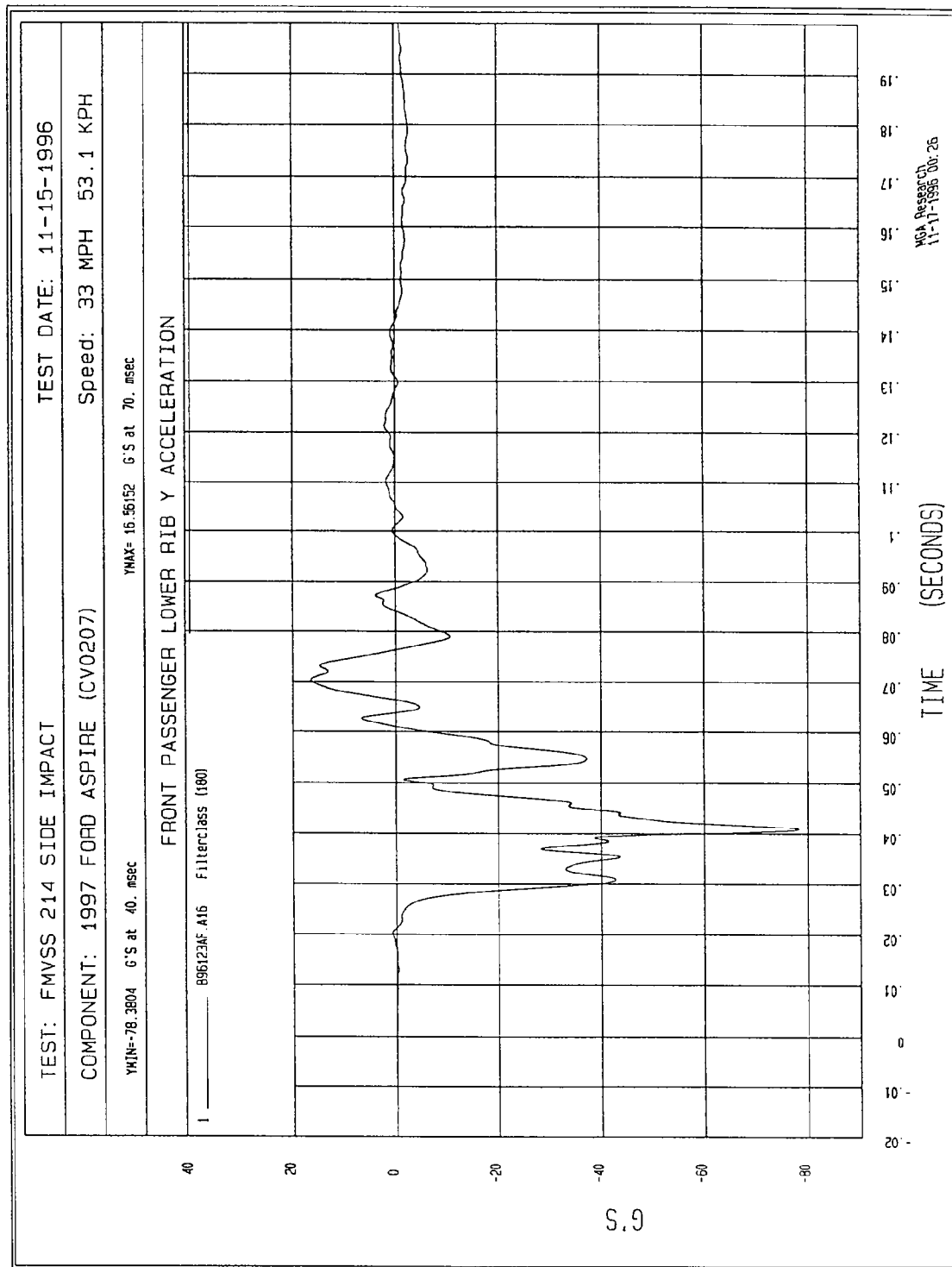
Table of Data Plots

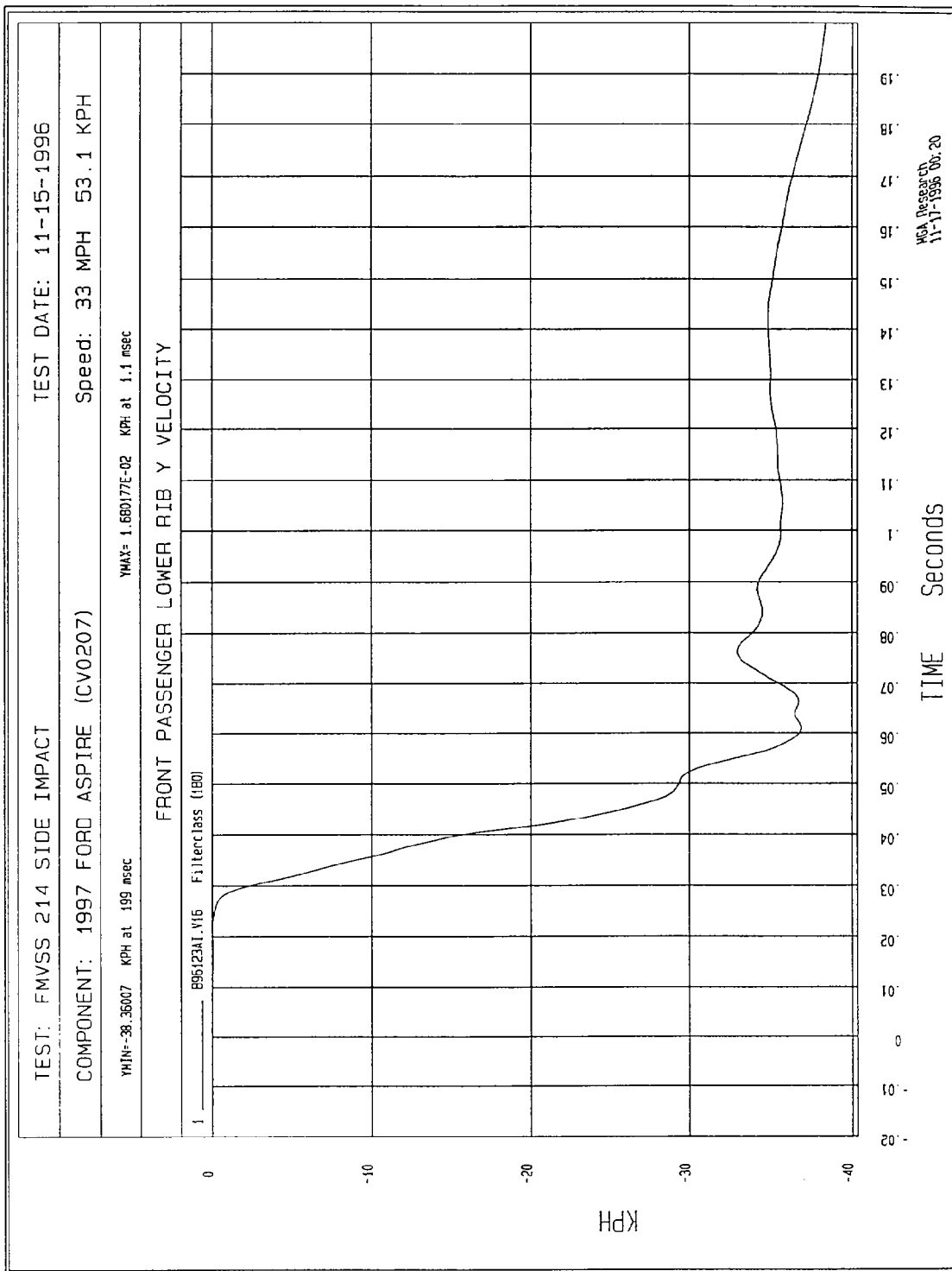
<u>Redundant (Cont'd):</u>	<u>Page No.</u>
Figure B-82 - Rear Passenger Upper Rib Y Redundant Velocity vs. Time	B-82
Figure B-83 - Rear Passenger Lower Rib Y Redundant Acceleration vs. Time	B-83
Figure B-84 - Rear Passenger Lower Rib Y Redundant Velocity vs. Time	B-84
Figure B-85 - Rear Passenger Lower Spine Y Redundant Acceleration vs. Time	B-85
Figure B-86 - Rear Passenger Lower Spine Y Redundant Velocity vs. Time	B-86
Figure B-87 - Rear Passenger Pelvis Y Redundant Acceleration vs. Time	B-87
Figure B-88 - Rear Passenger Pelvis Y Redundant Velocity vs. Time	B-88
 <u>FIR Filter</u>	
Figure B-89 - Front Passenger Upper Rib Y Acceleration vs. Time	B-89
Figure B-90 - Front Passenger Upper Rib Y Redundant Acceleration vs. Time	B-90
Figure B-91 - Front Passenger Lower Rib Y Acceleration vs. Time	B-91
Figure B-92 - Front Passenger Lower Rib Y Redundant Acceleration vs. Time	B-92
Figure B-93 - Front Passenger Lower Spine Y Acceleration vs. Time	B-93
Figure B-94 - Front Passenger Lower Spine Y Redundant Acceleration vs. Time	B-94
Figure B-95 - Front Passenger Pelvis Y Acceleration vs. Time	B-95
Figure B-96 - Front Passenger Pelvis Y Redundant Acceleration vs. Time*	B-96
Figure B-97 - Rear Passenger Upper Rib Y Acceleration vs. Time	B-97
Figure B-98 - Rear Passenger Upper Rib Y Redundant Acceleration vs. Time	B-98
Figure B-99 - Rear Passenger Lower Rib Y Acceleration vs. Time	B-99
Figure B-100 - Rear Passenger Lower Rib Y Redundant Acceleration vs. Time	B-100
Figure B-101 - Rear Passenger Lower Spine Y Acceleration vs. Time	B-101
Figure B-102 - Rear Passenger Lower Spine Y Redundant Acceleration vs. Time	B-102
Figure B-103 - Rear Passenger Pelvis Y Acceleration vs. Time	B-103
Figure B-104 - Rear Passenger Pelvis Y Redundant Acceleration vs. Time	B-104

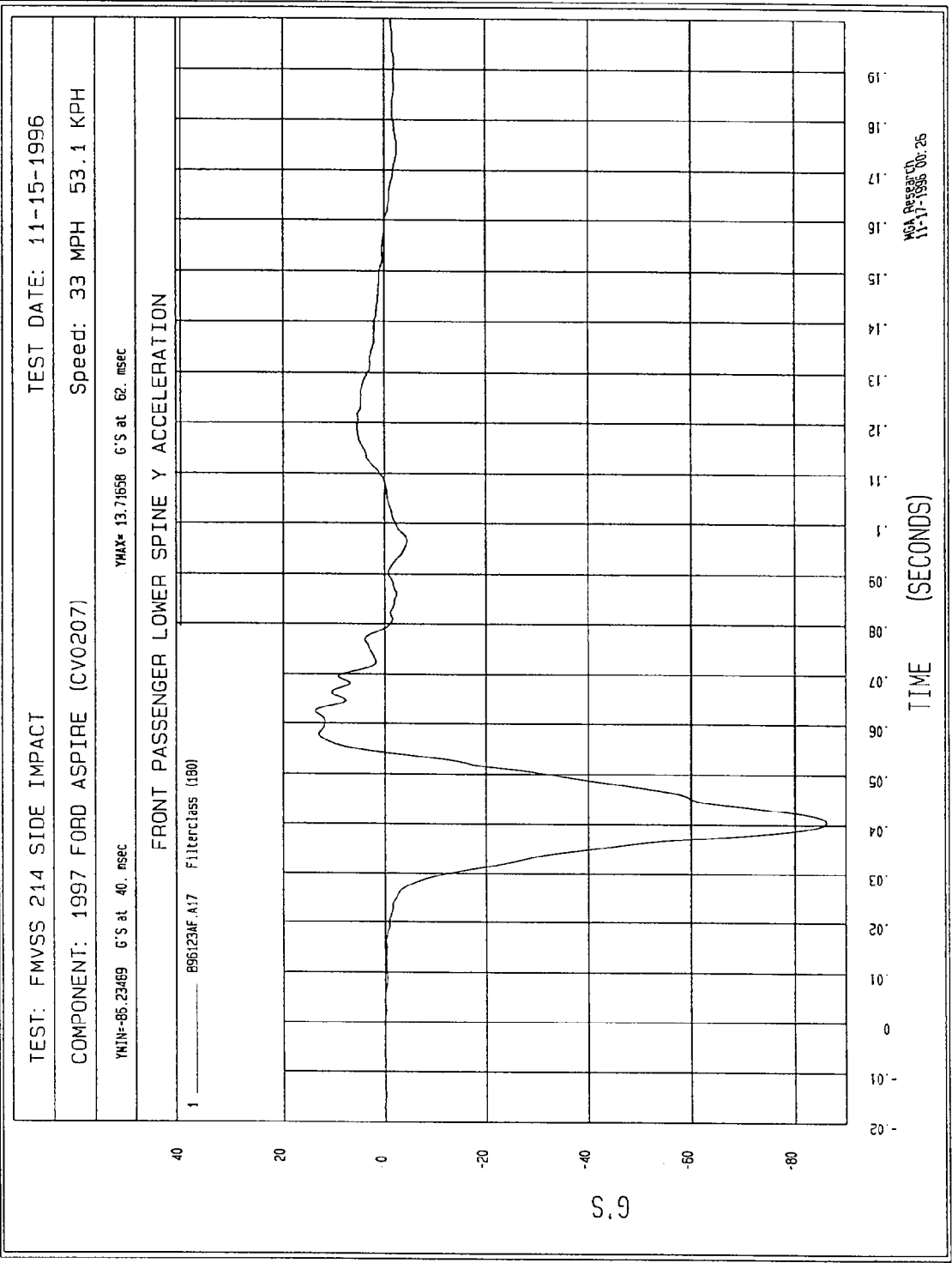
* No valid data collected

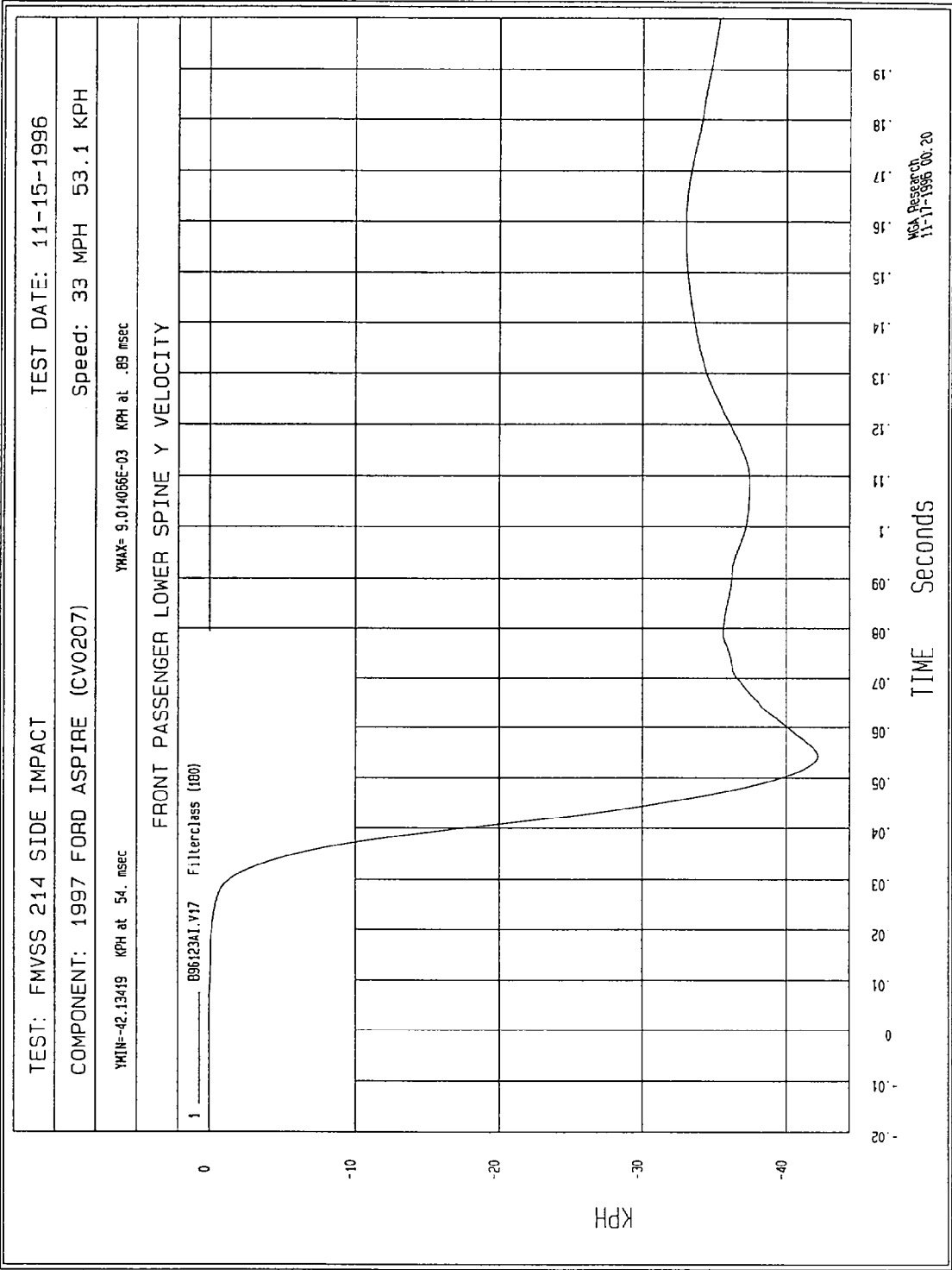


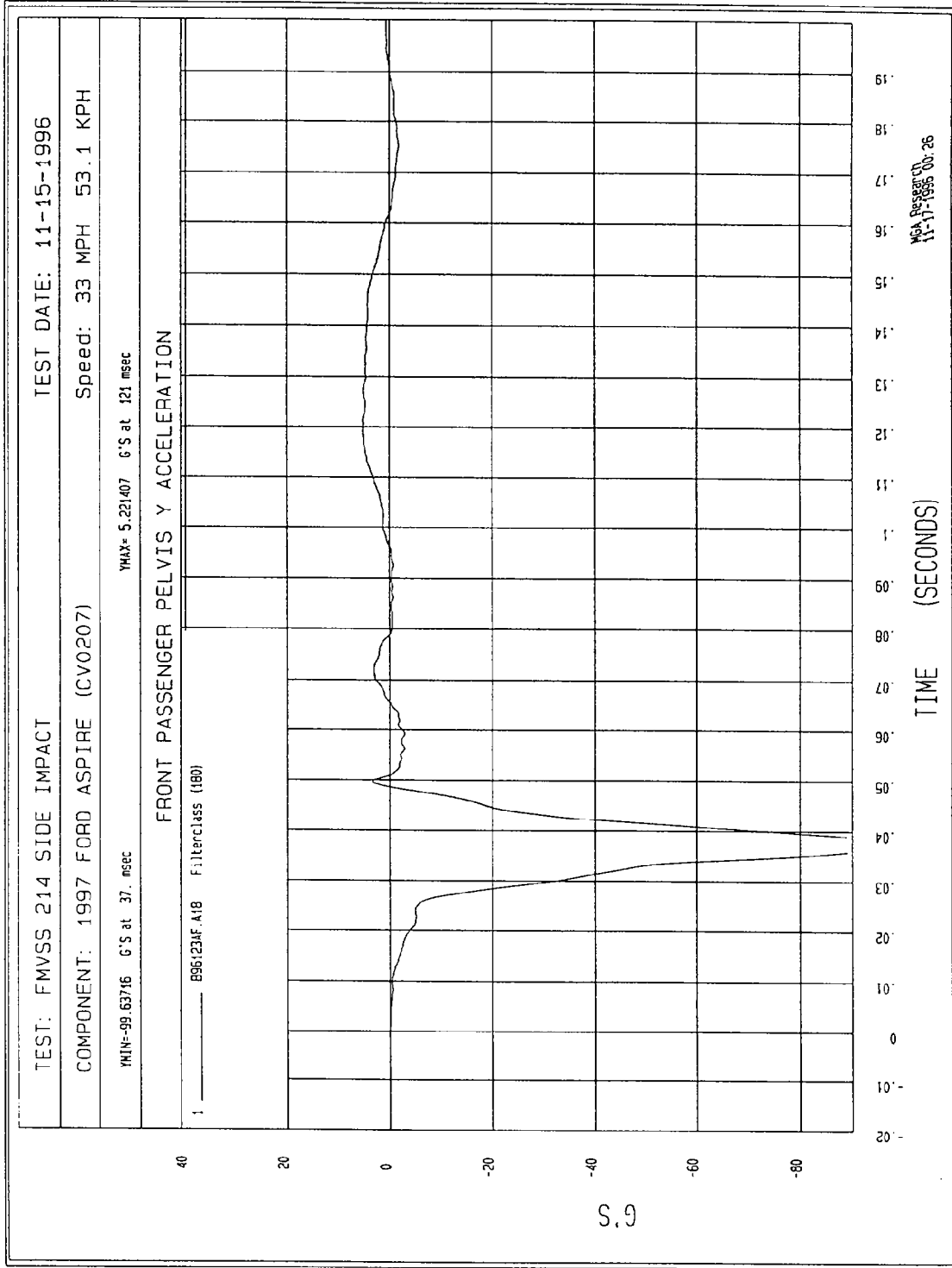


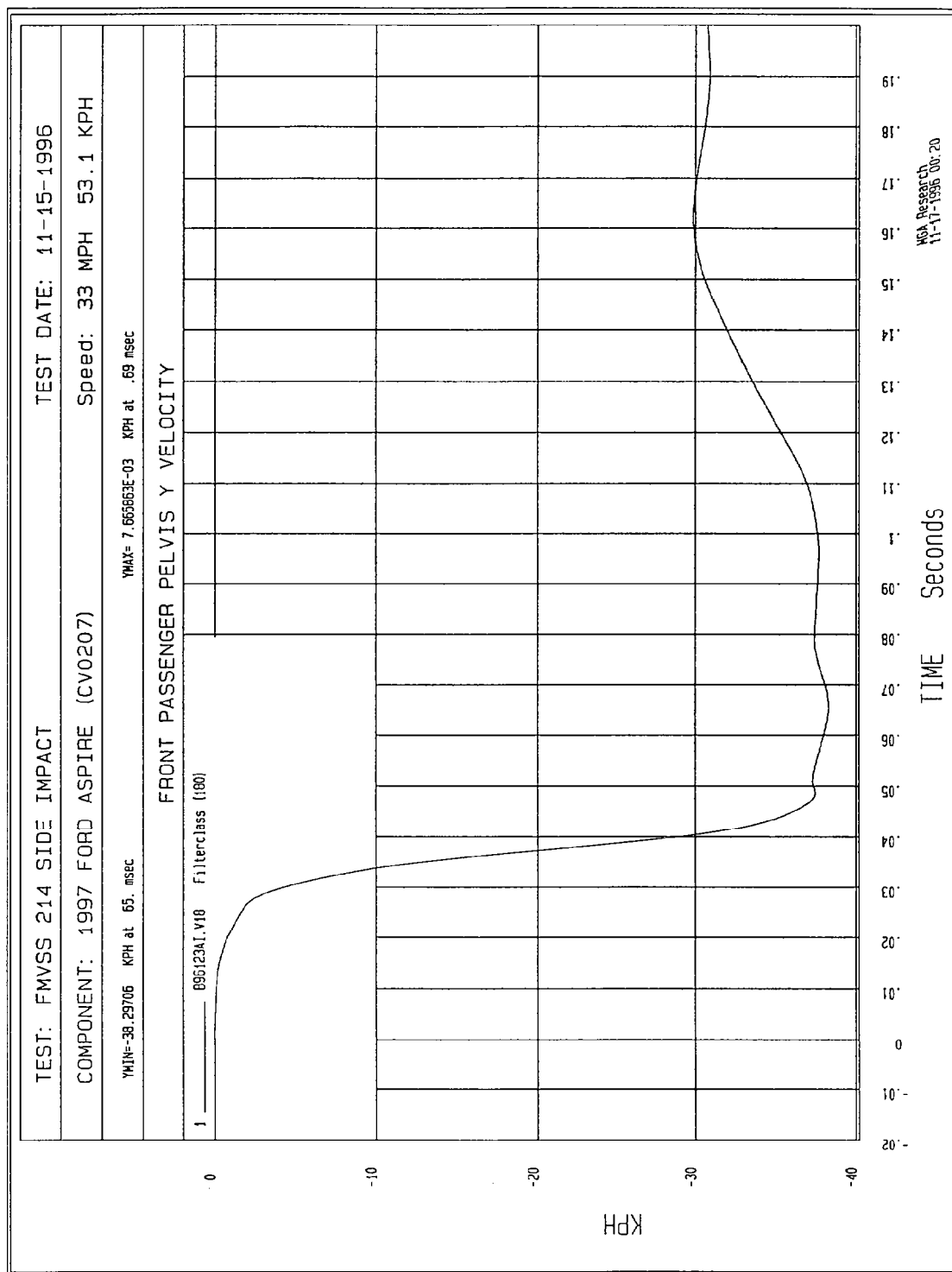


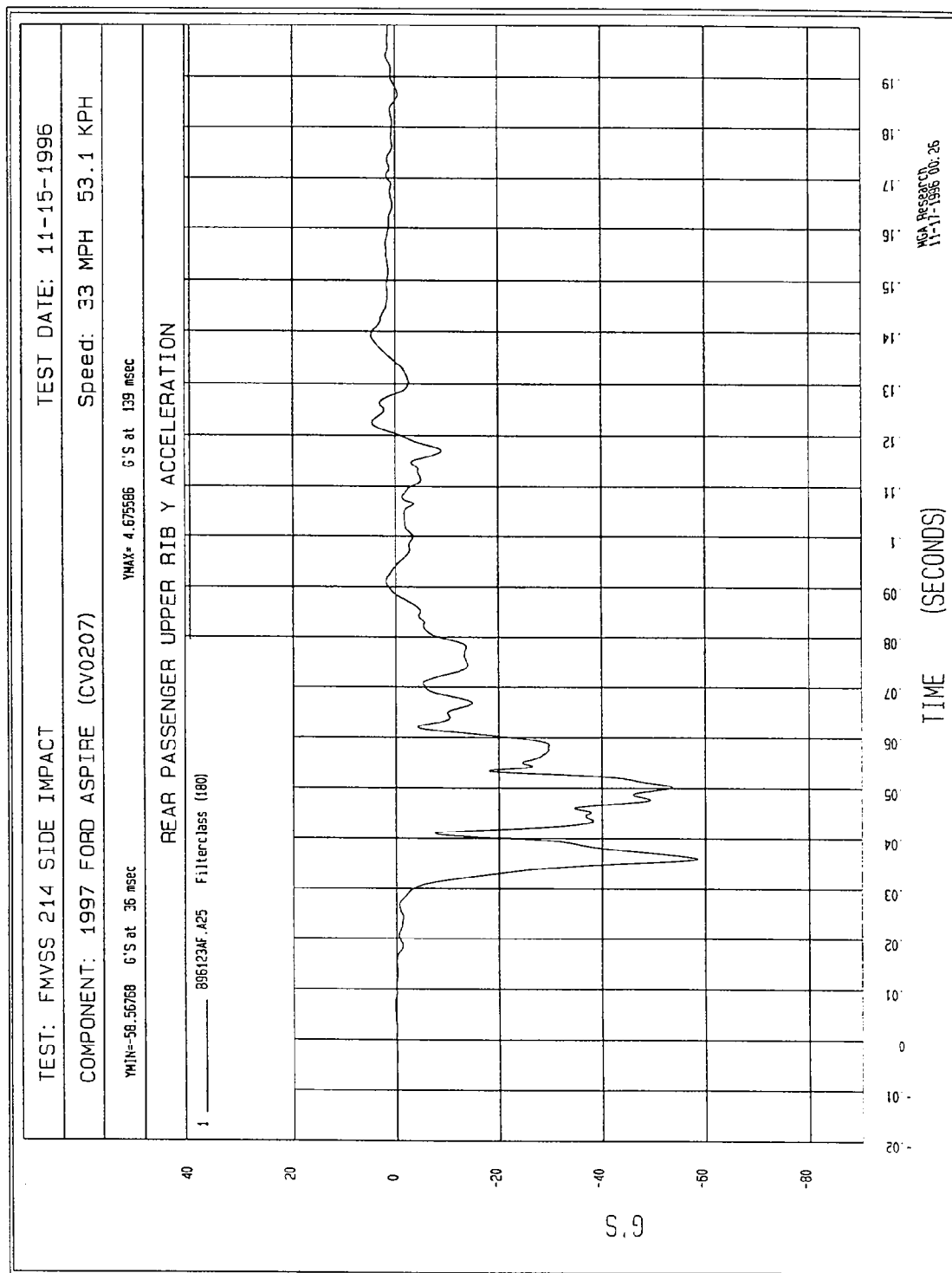


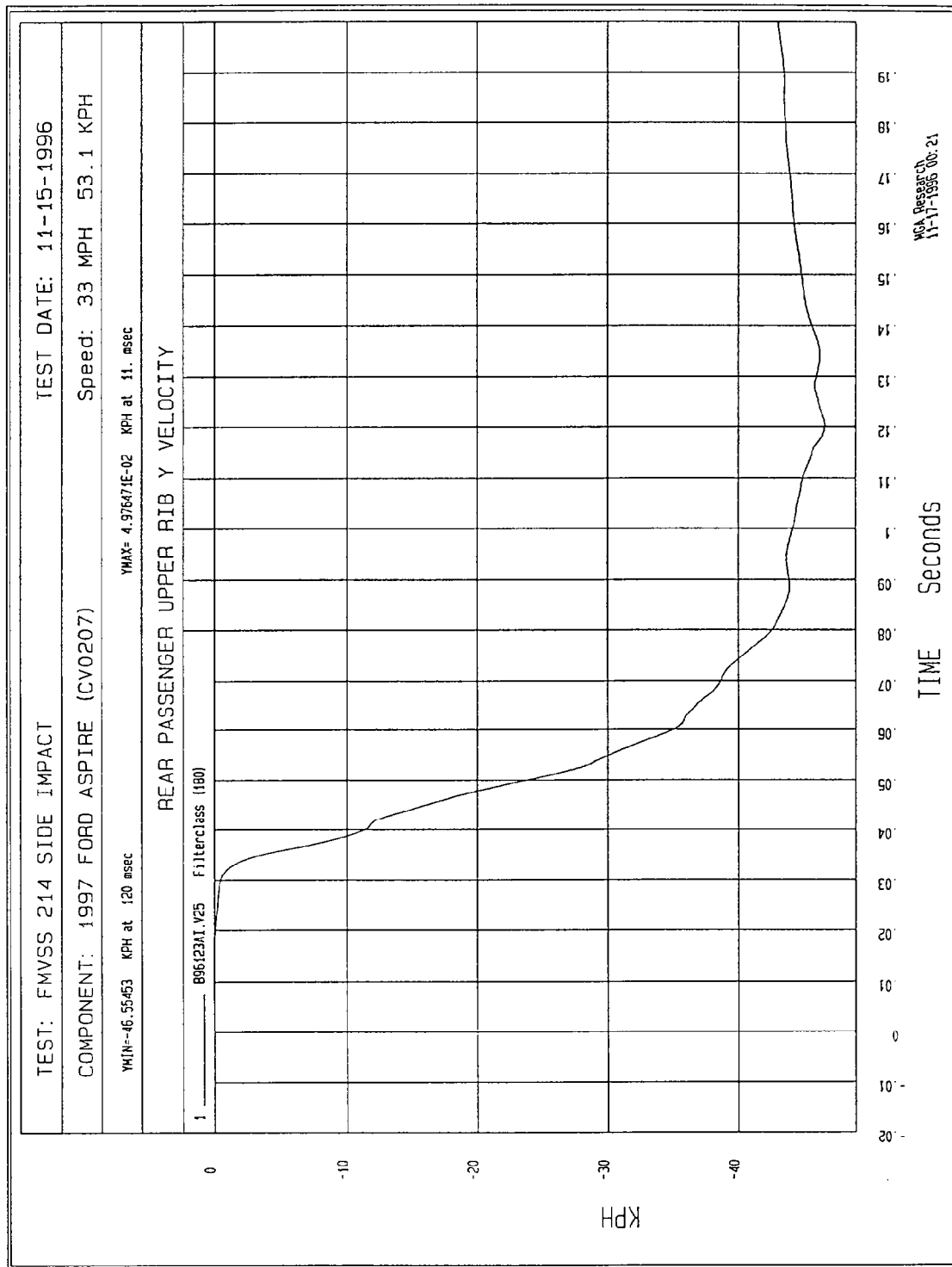


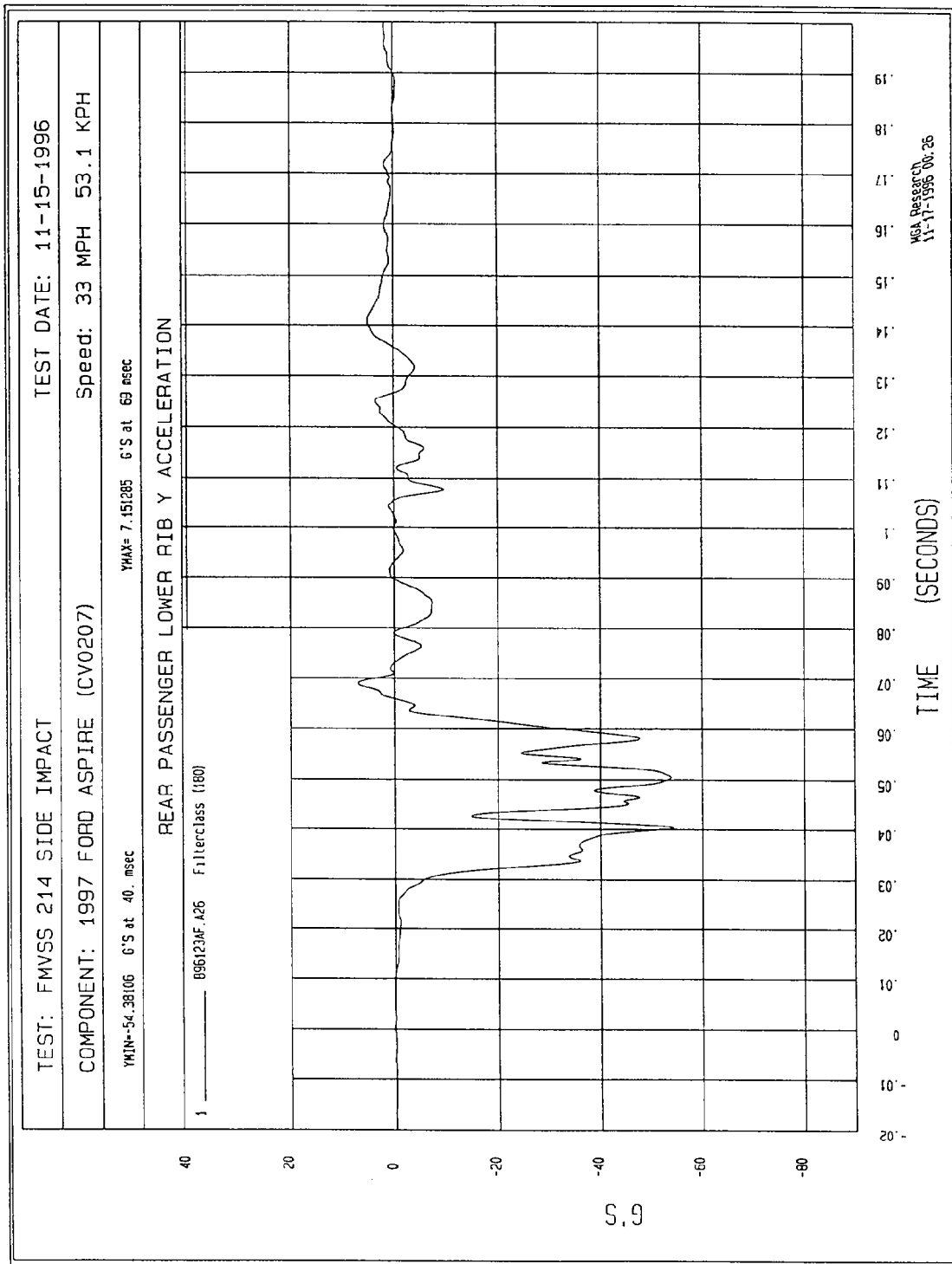


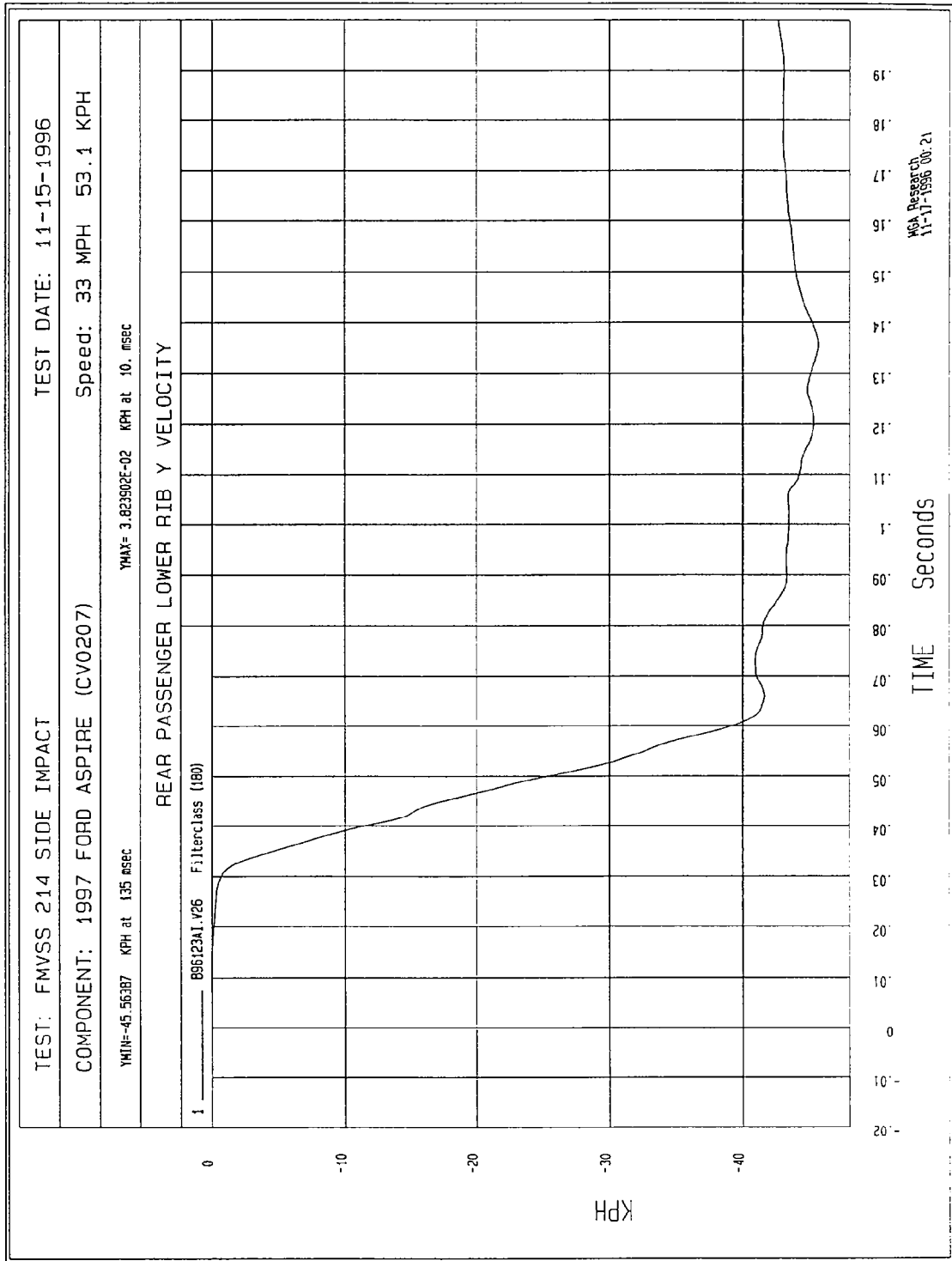


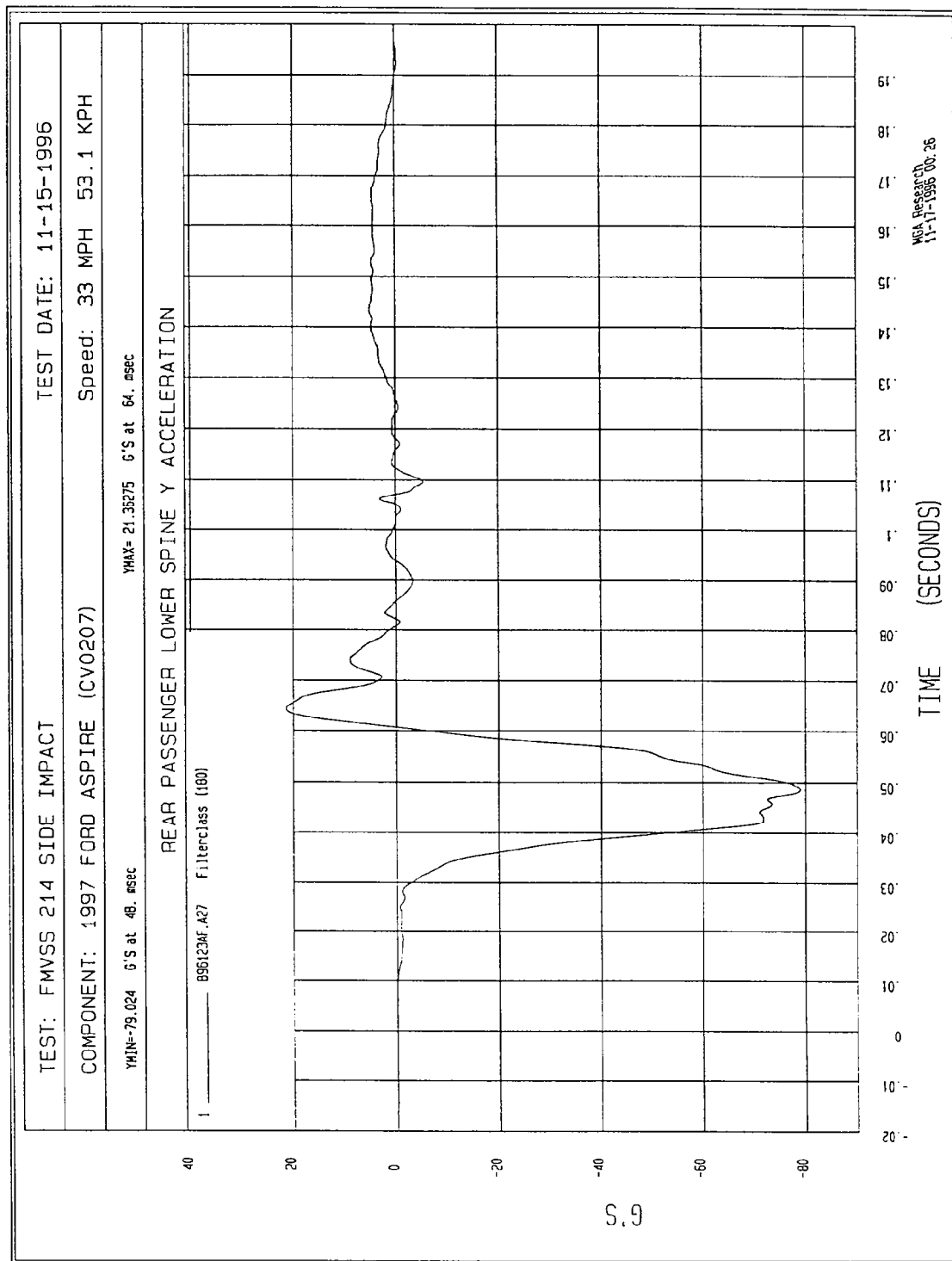


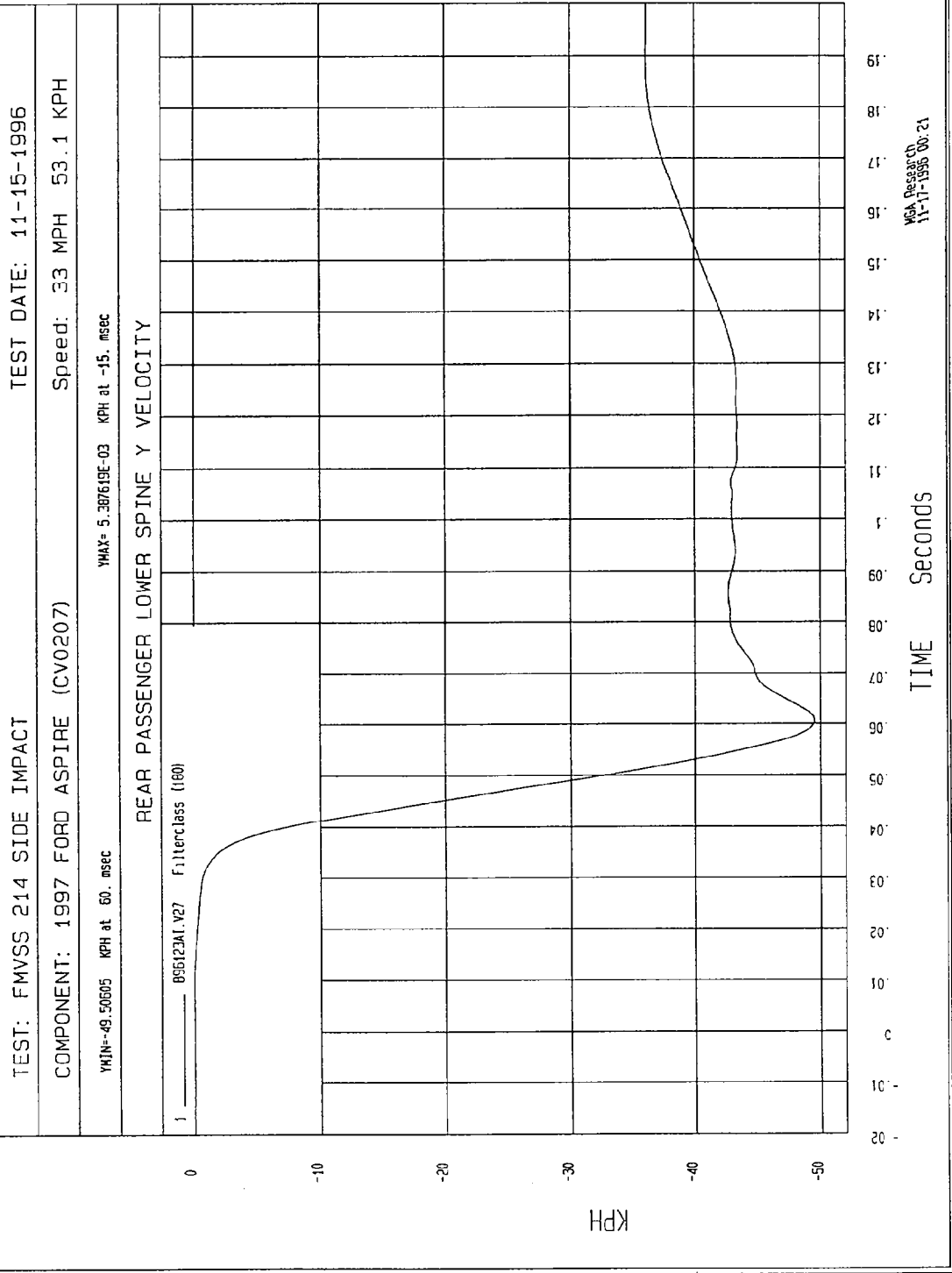


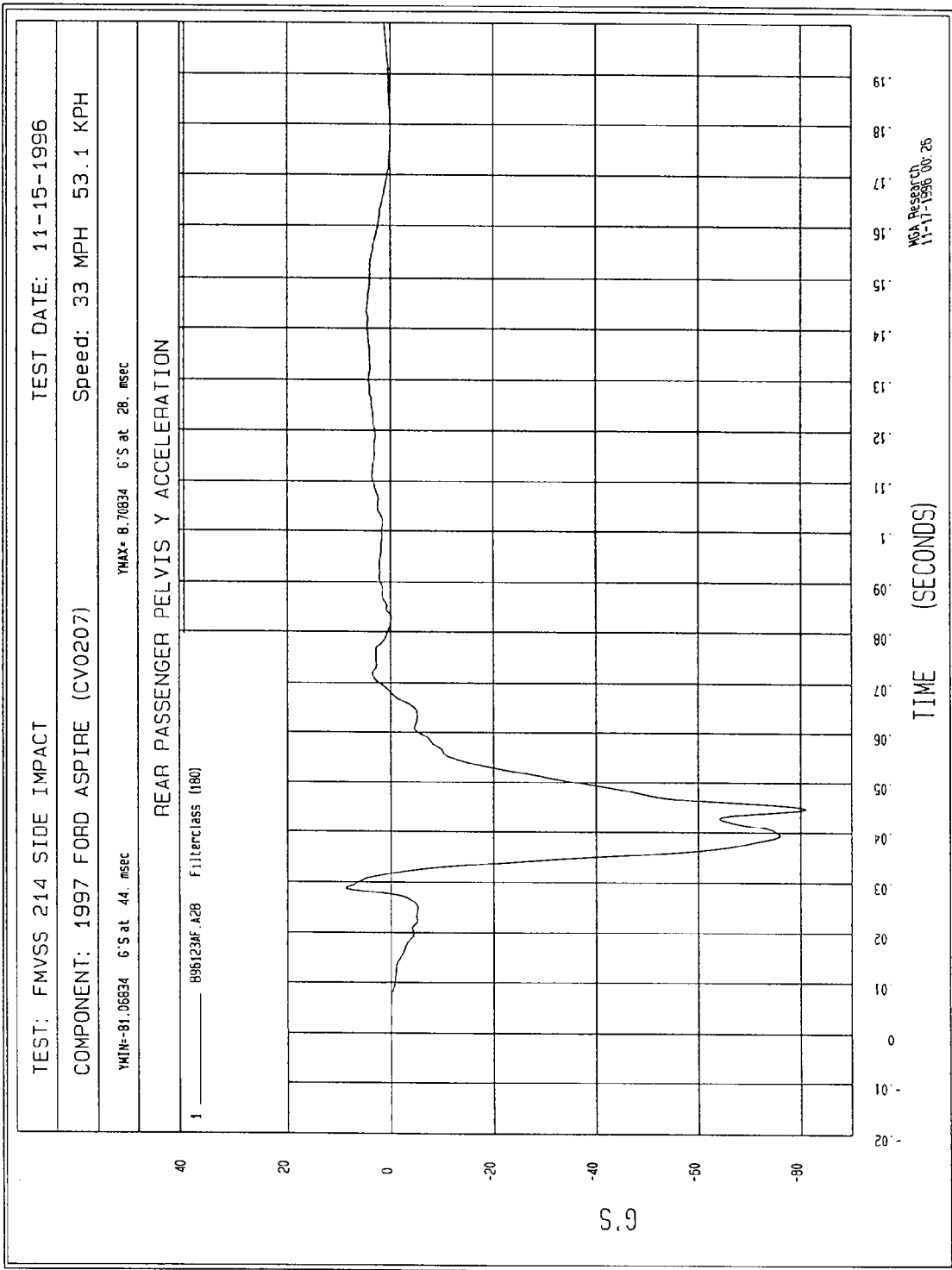


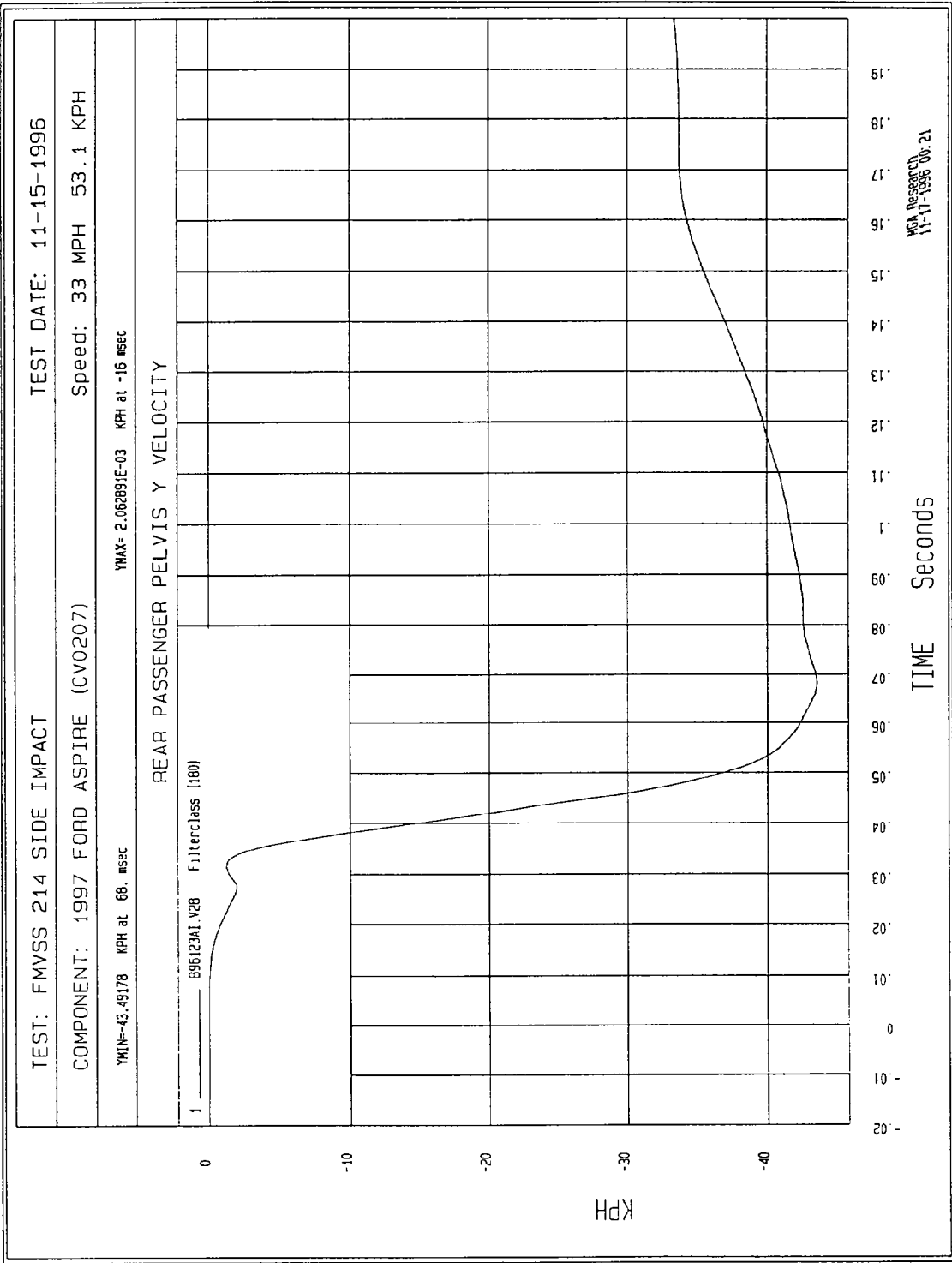


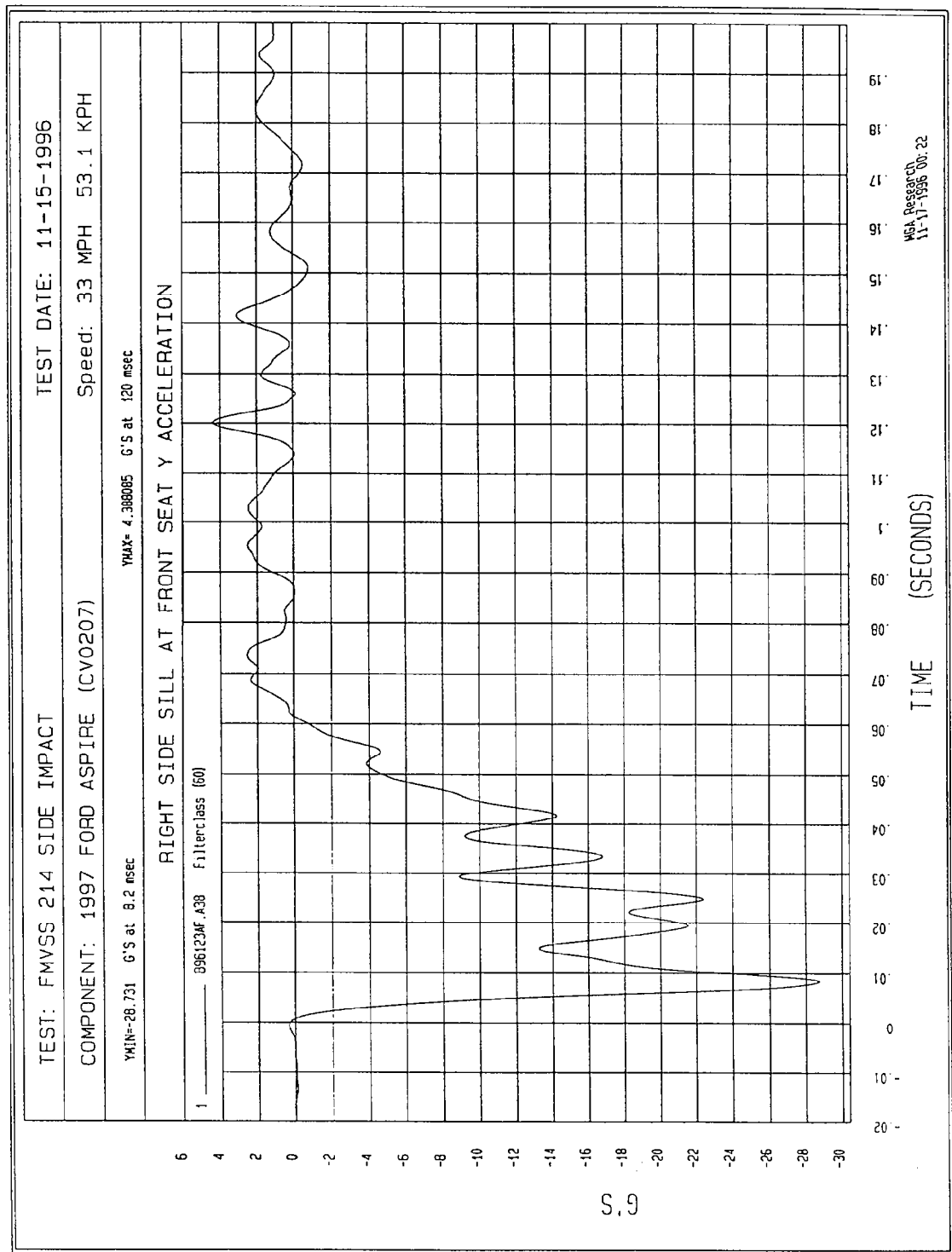


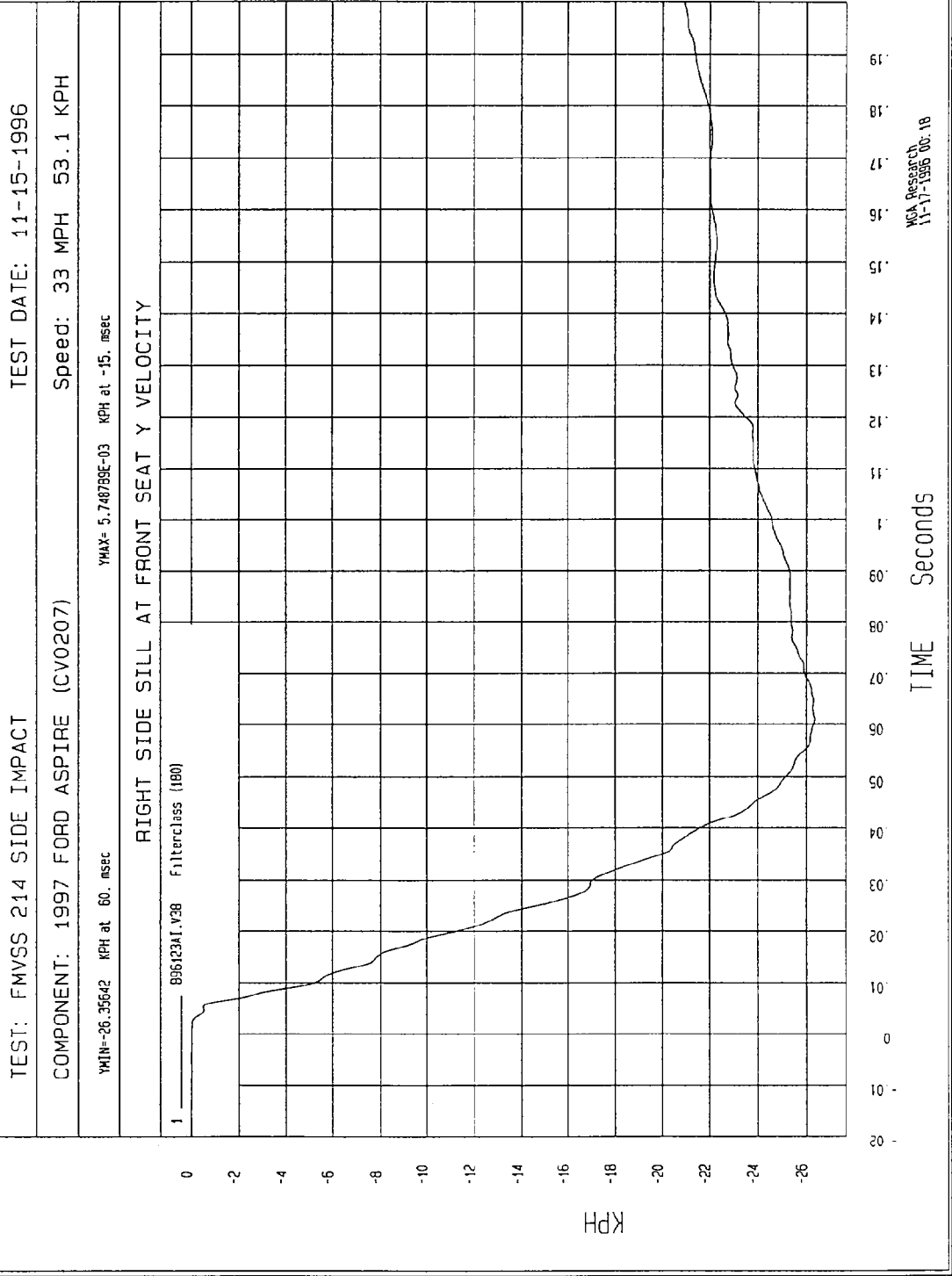


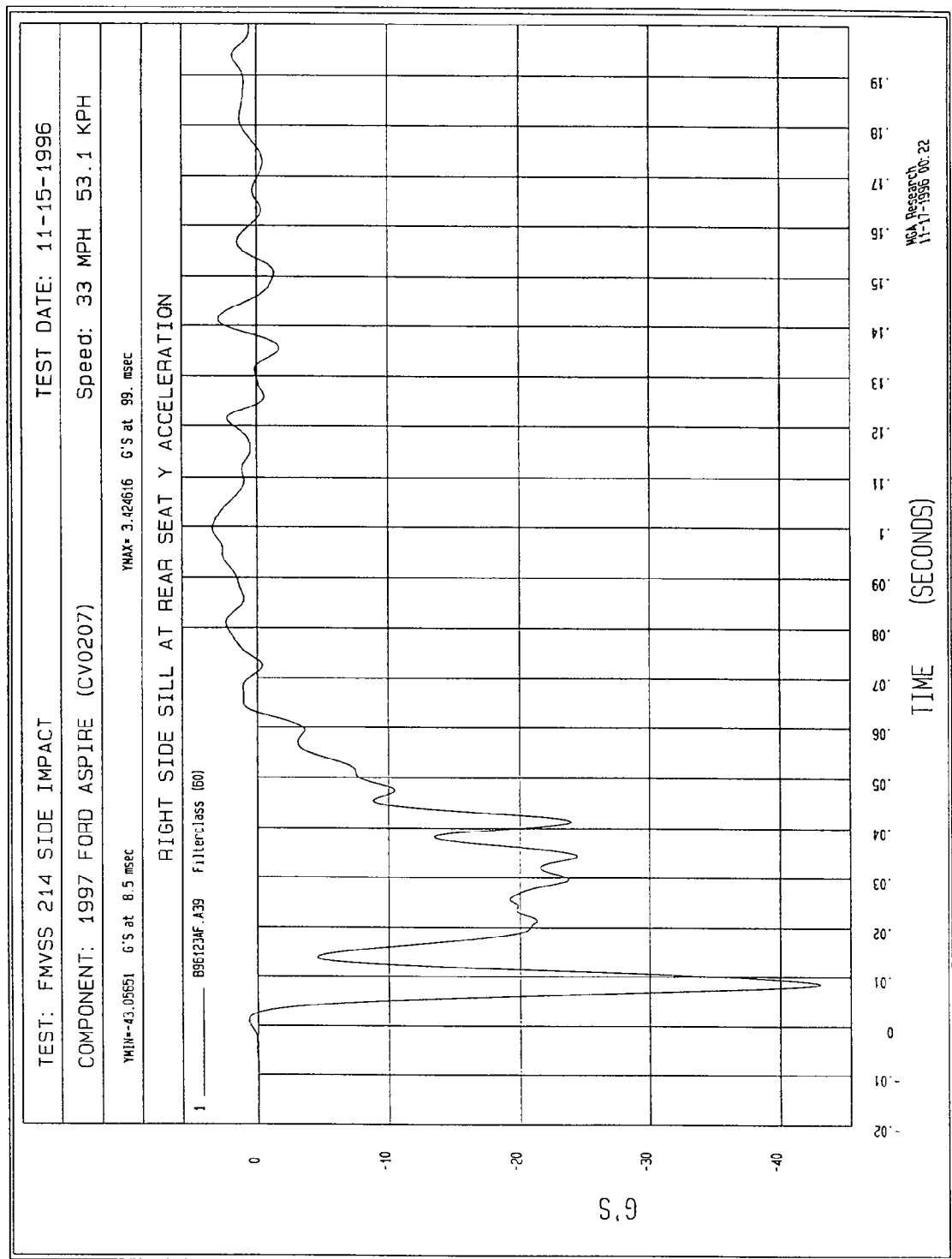


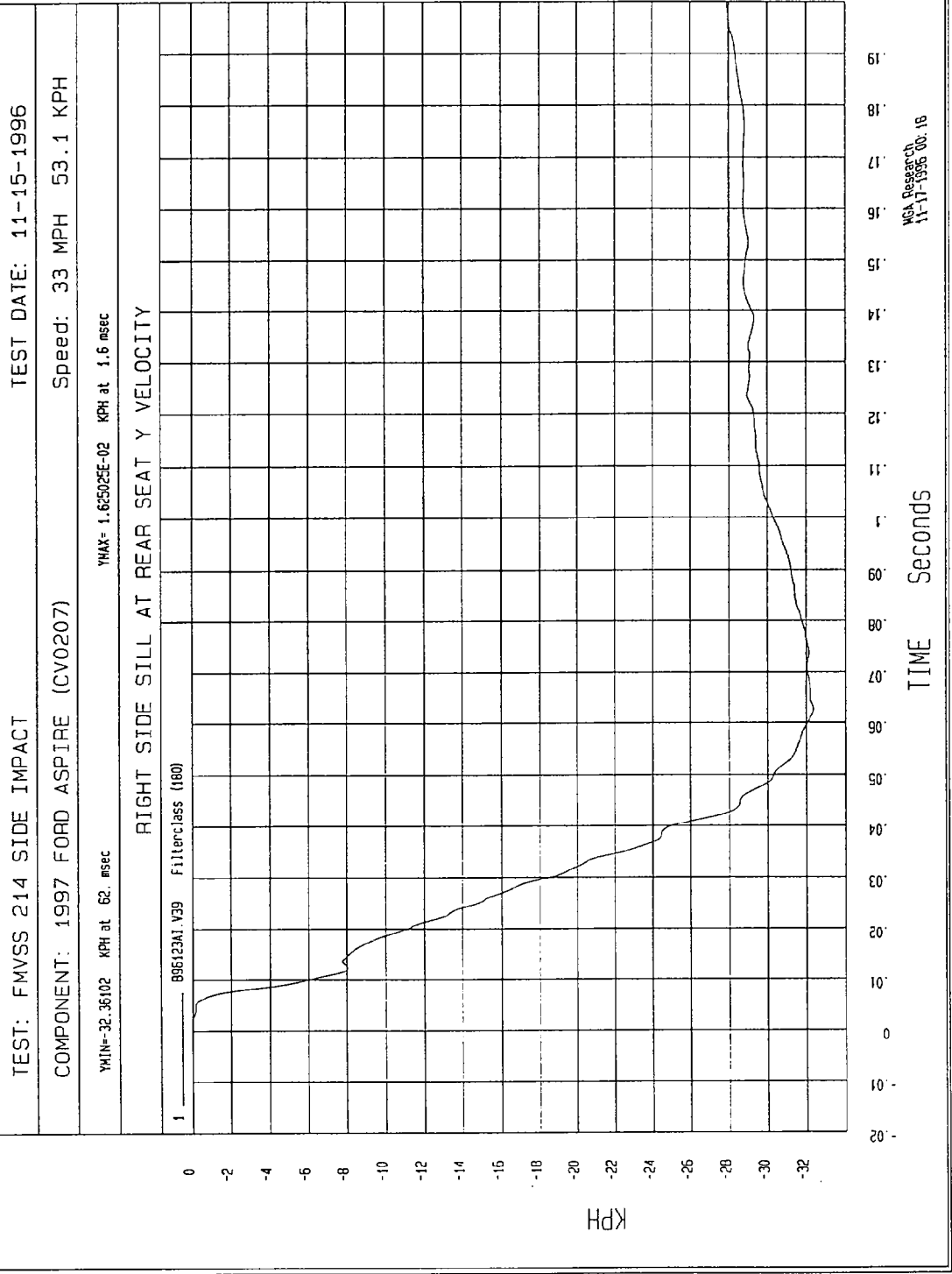


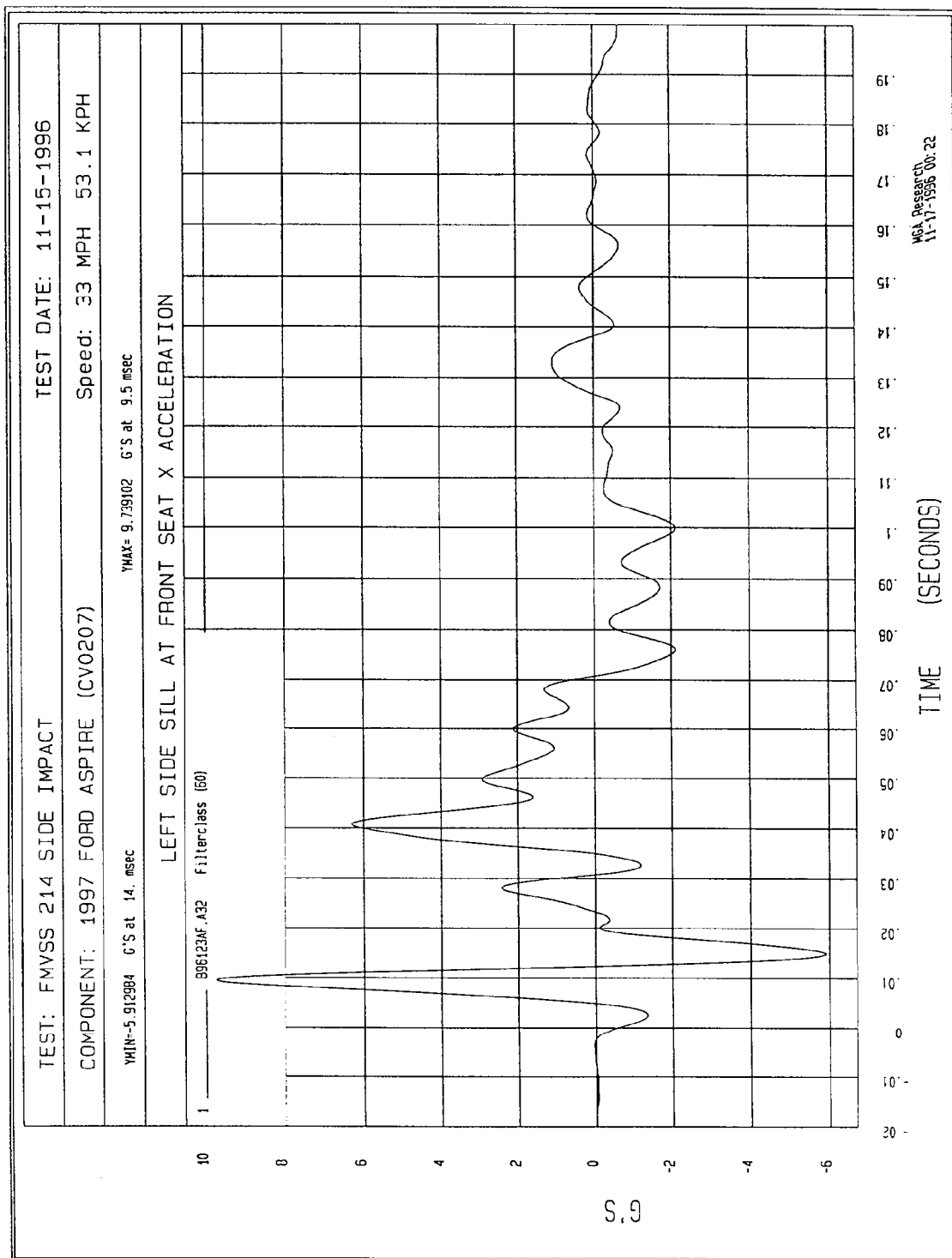


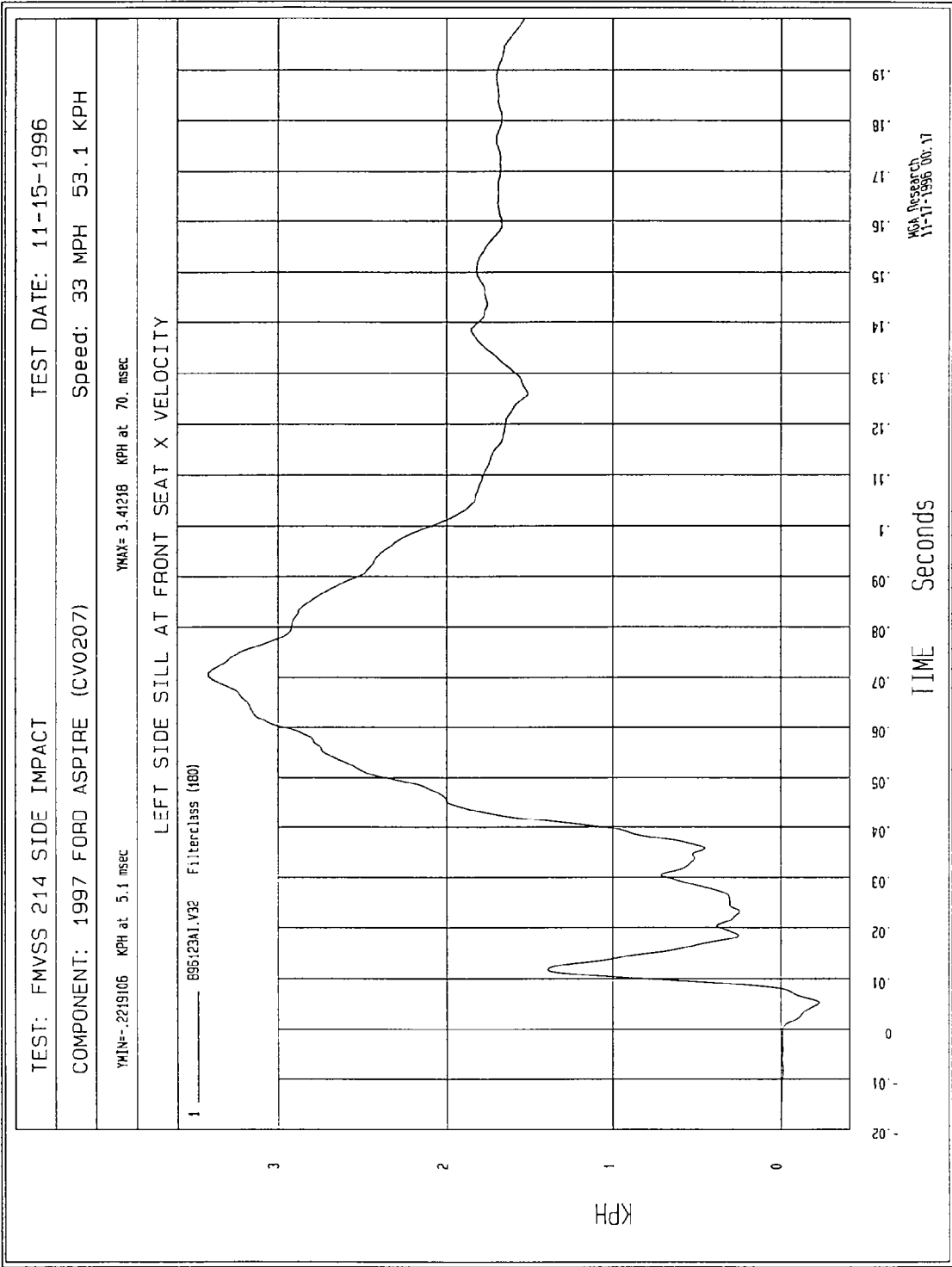


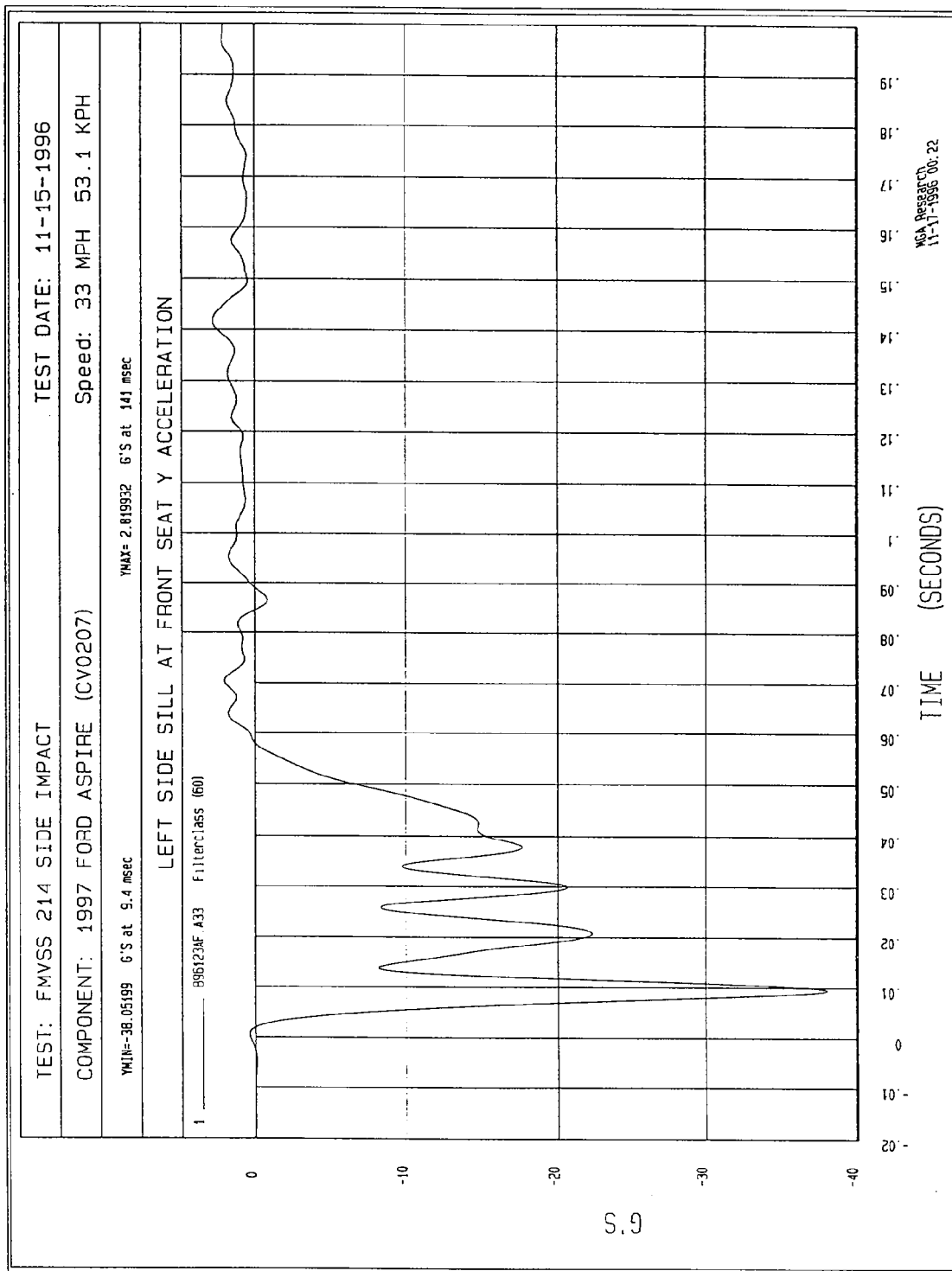


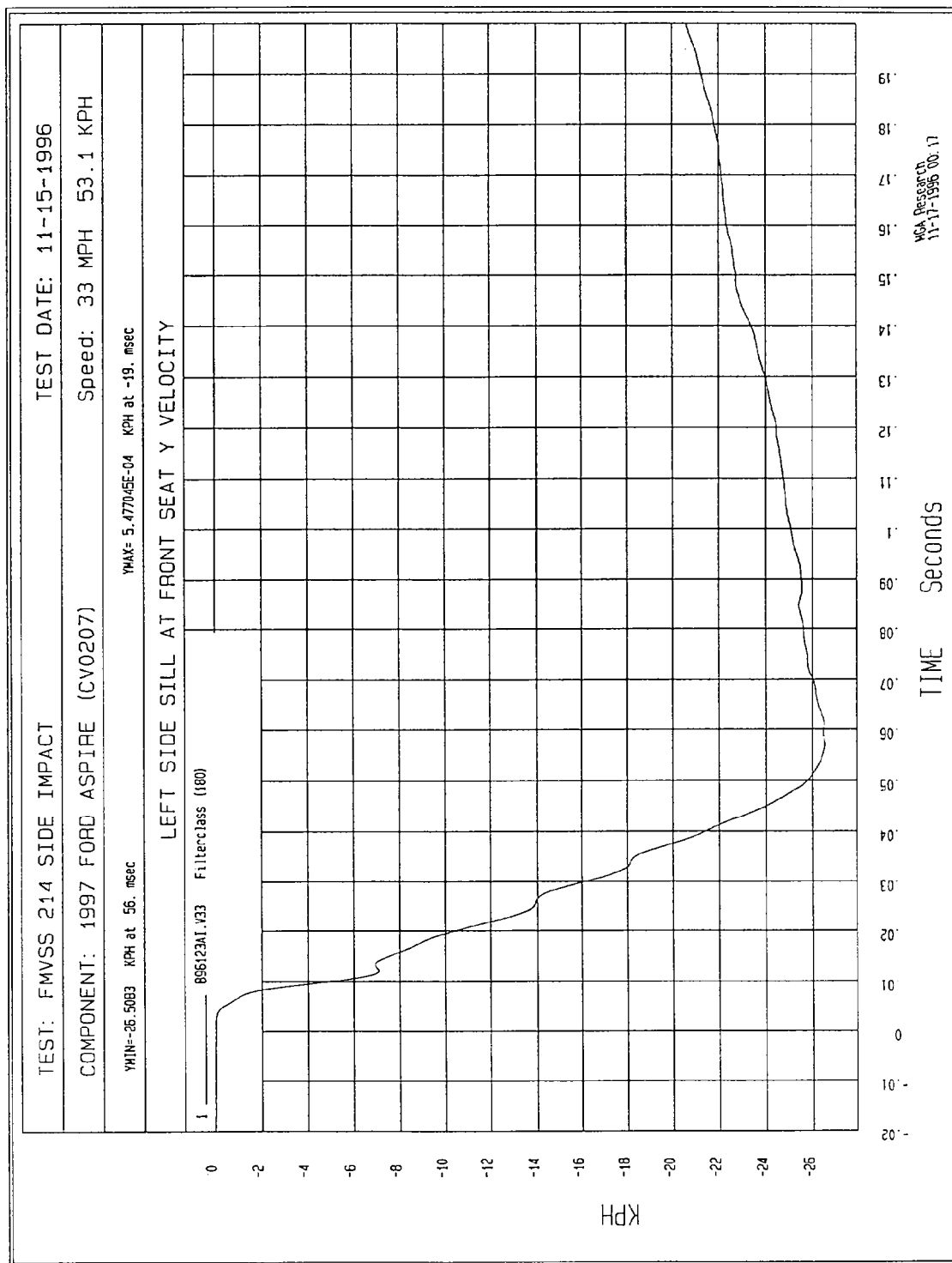


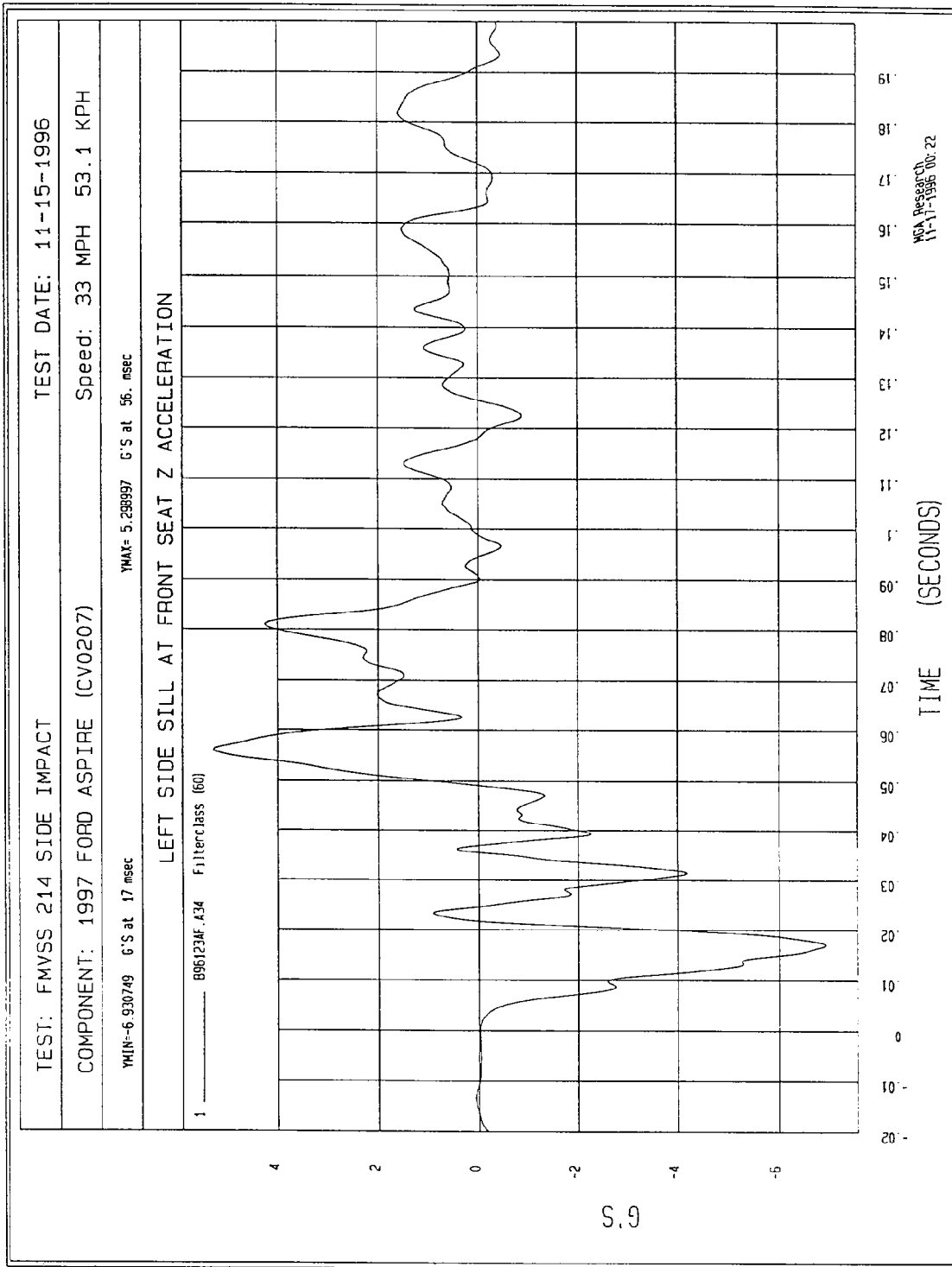


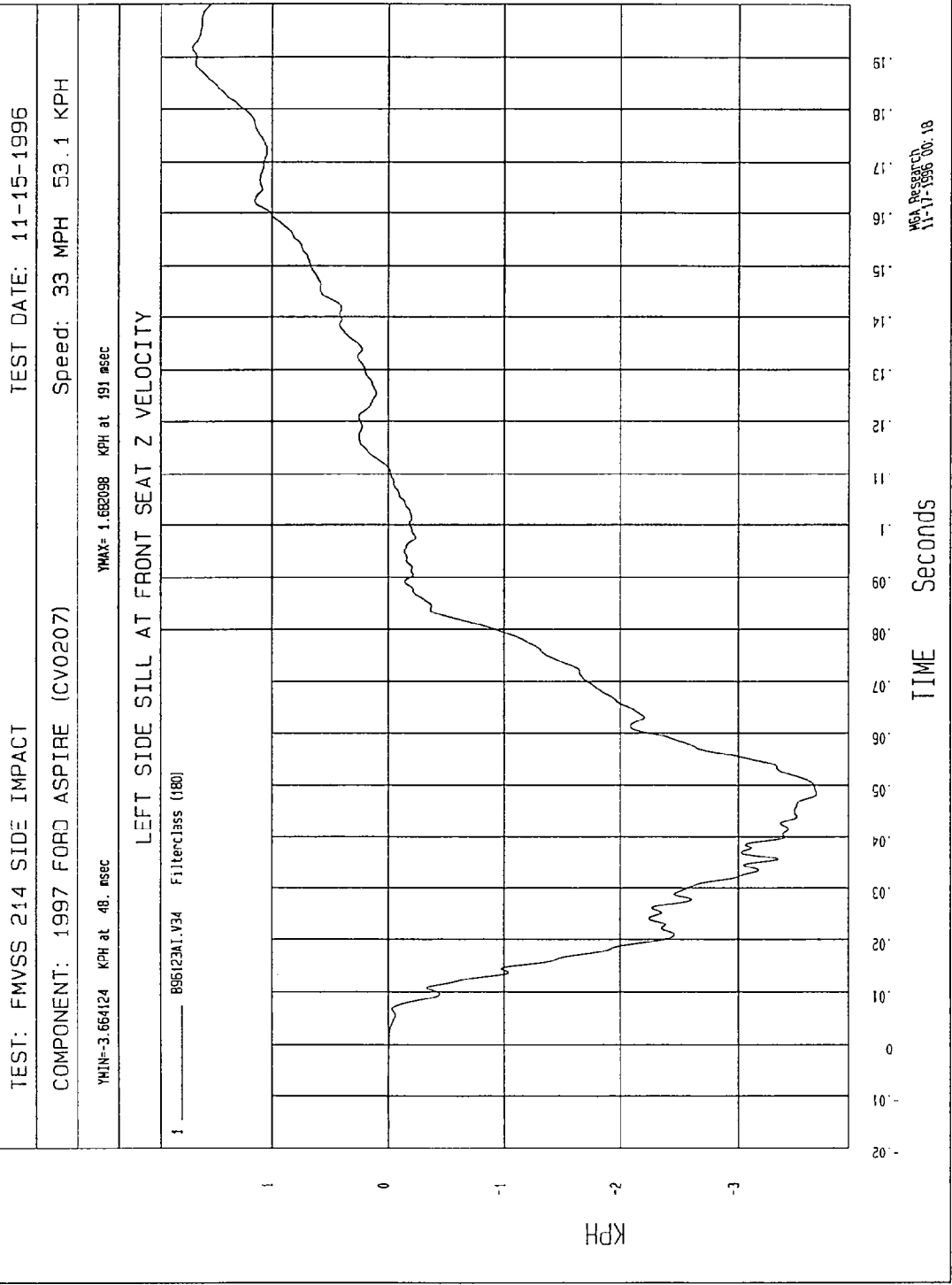


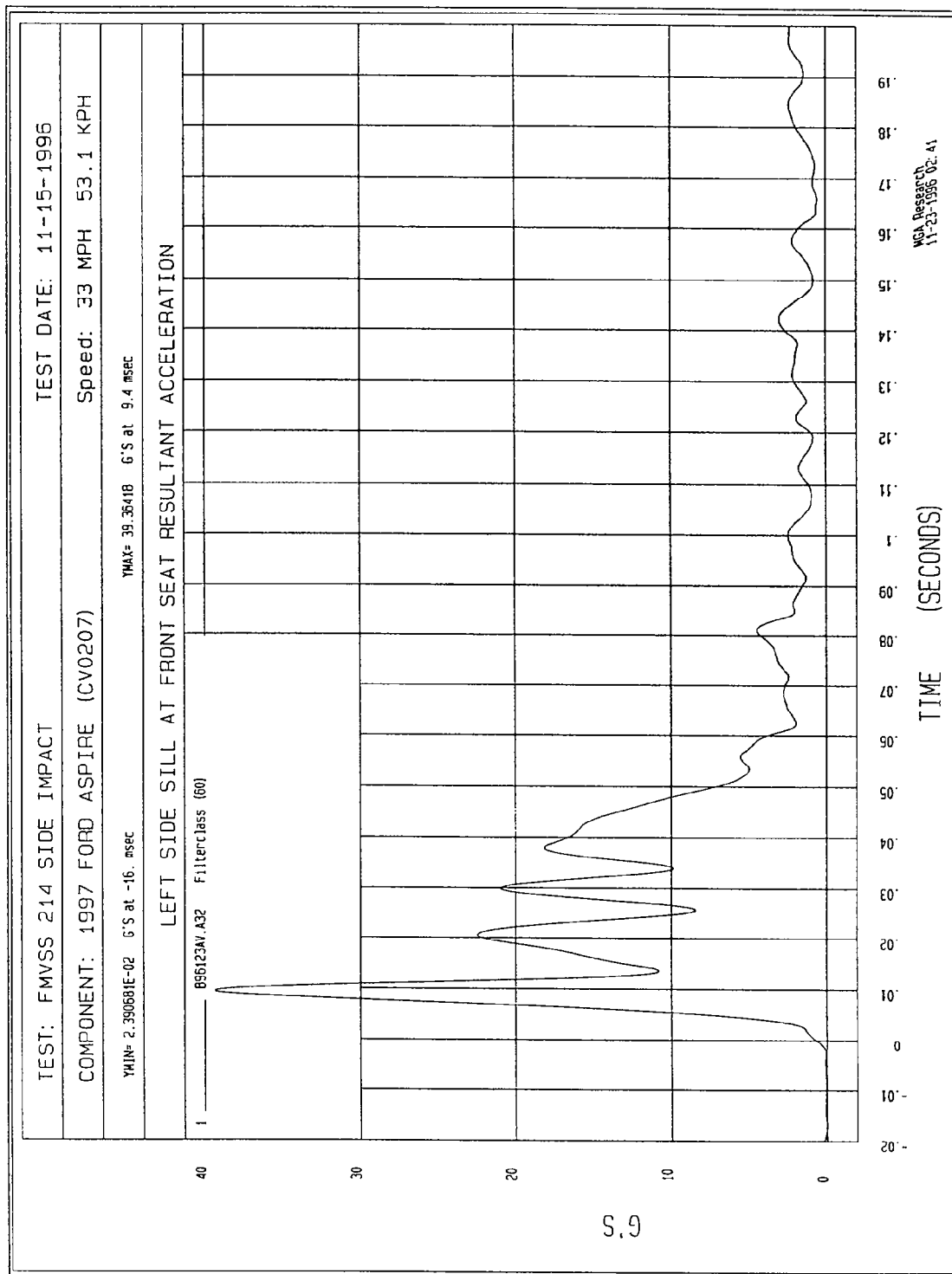












TEST: FMVSS 214 SIDE IMPACT

TEST DATE: 11-15-1996

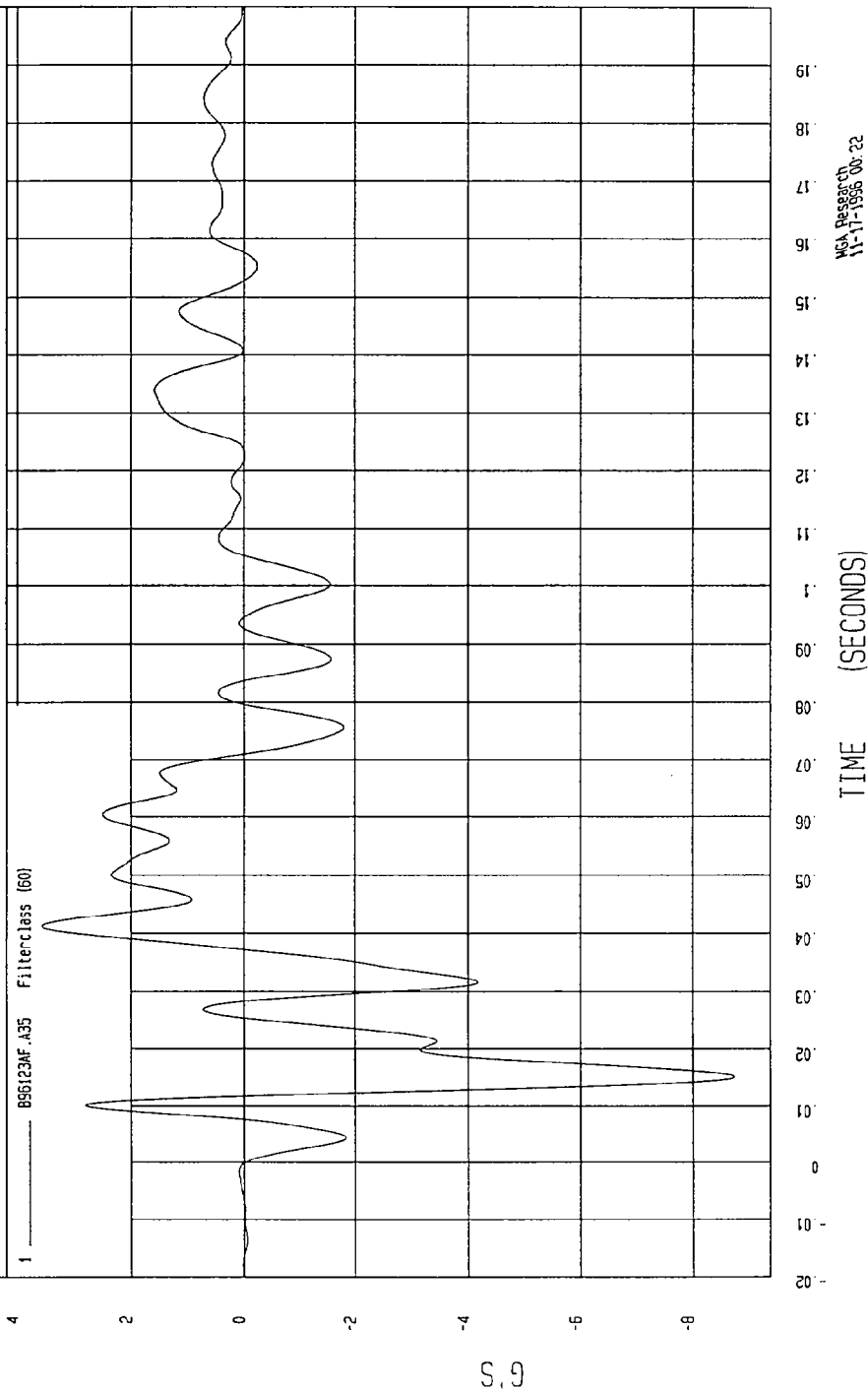
Speed: 33 MPH 53.1 KPH

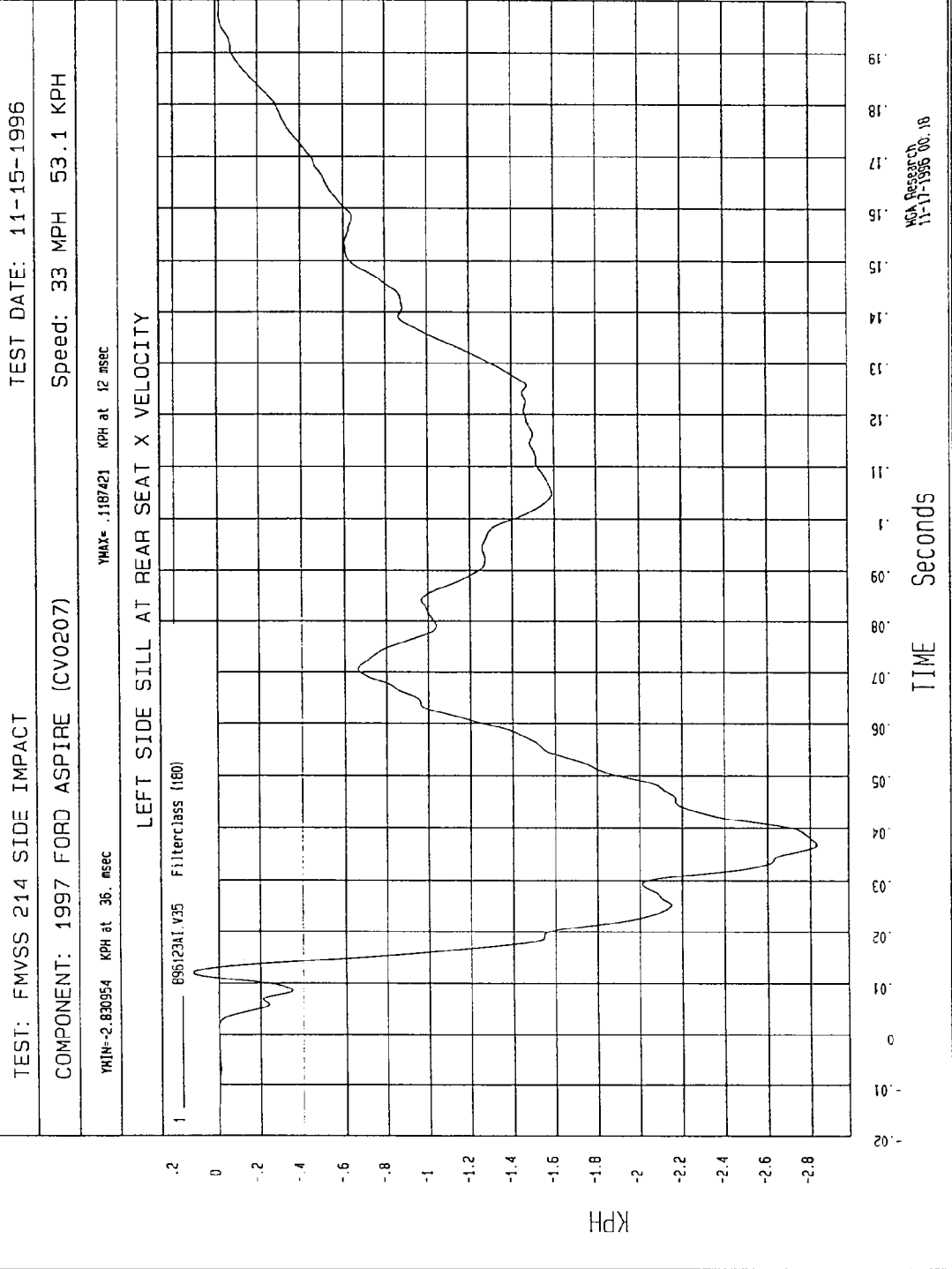
COMPONENT: 1997 FORD ASPIRE (CV0207)

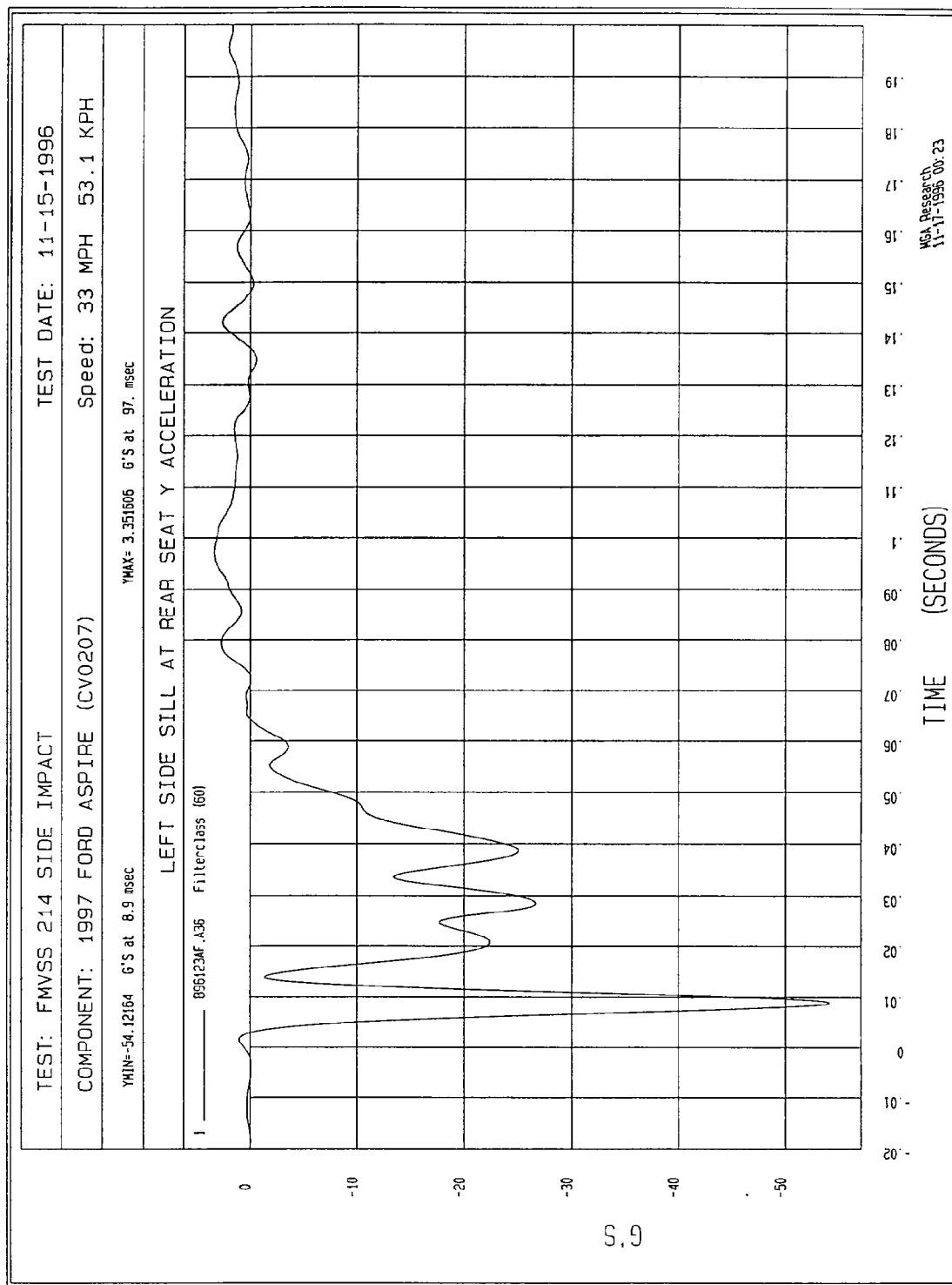
YMAX= 3.570594 G'S at 41. msec

YMIN= -8.733549 G'S at 15. msec

LEFT SIDE SILL AT REAR SEAT X ACCELERATION







TEST: FMVSS 214 SIDE IMPACT TEST DATE: 11-15-1996

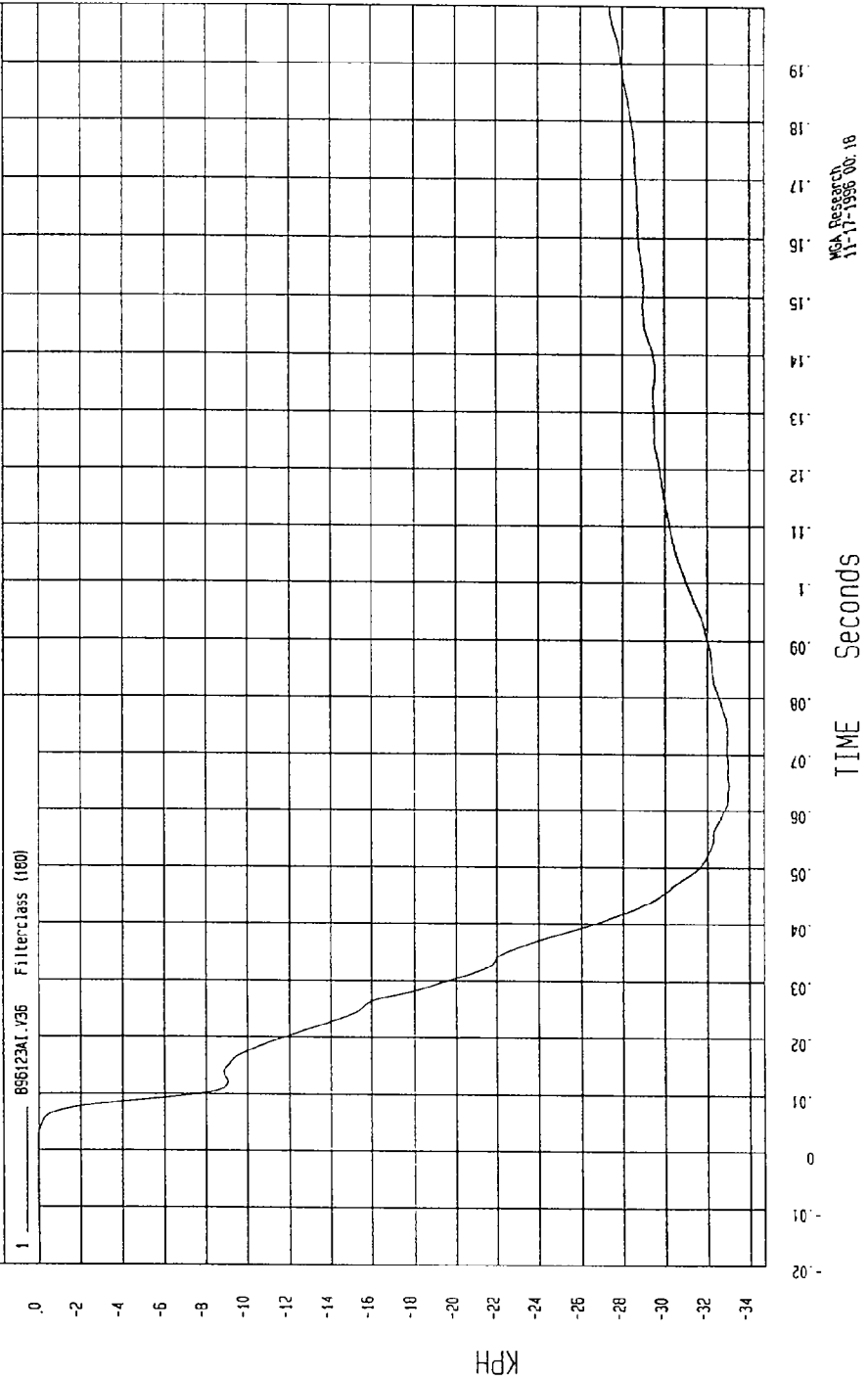
SPEED: 33 MPH 53.1 KPH

COMPONENT: 1997 FORD ASPIRE (CV0207)

YMAX= 5.69547E-02 KPH at -6.4 msec

YMIN=-33.03371 KPH at 64. msec

LEFT SIDE SILL AT REAR SEAT Y VELOCITY



TEST: FMVSS 214 SIDE IMPACT

TEST DATE: 11-15-1996

COMPONENT: 1997 FORD ASPIRE (CV0207)

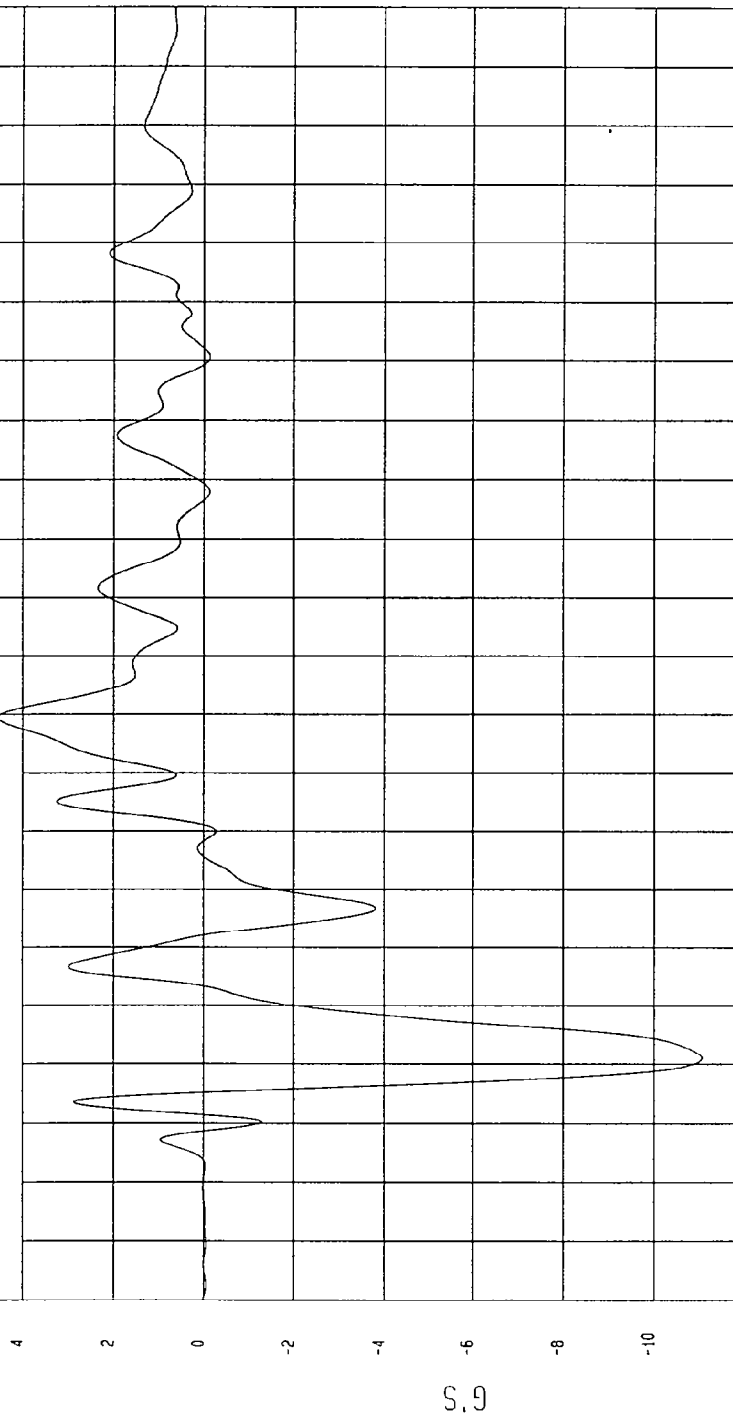
Speed: 33 MPH 53.1 KPH

YMIN=-11.06947 G'S at 21 msec

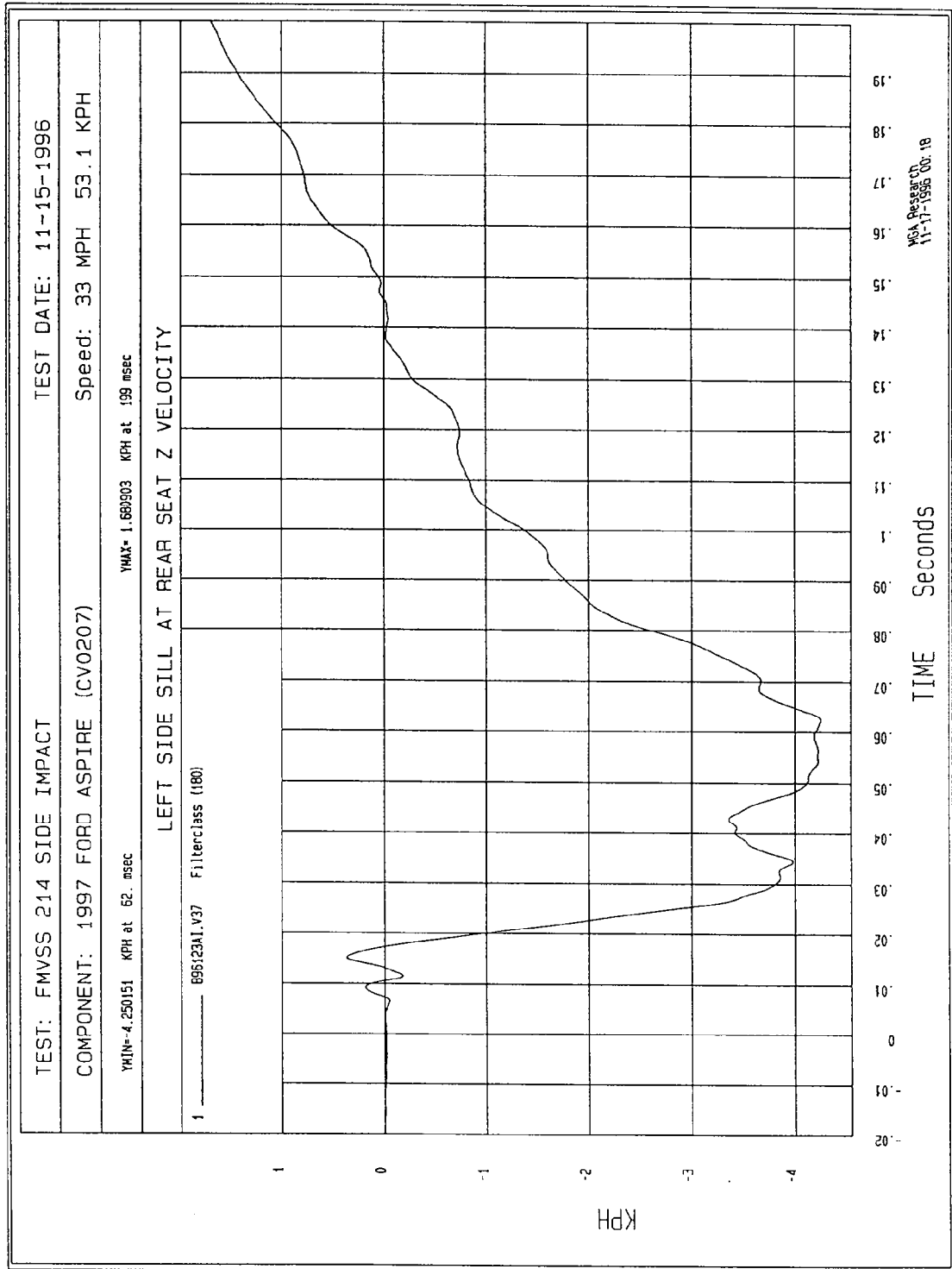
YMAX= 4.548245 G'S at 79. msec

LEFT SIDE SILL AT REAR SEAT Z ACCELERATION

1 ——— 896123AF.A37 Filterclass (60)



MOA Research
11-17-1996 00:23



TEST: FMVSS 214 SIDE IMPACT

TEST DATE: 11-15-1996

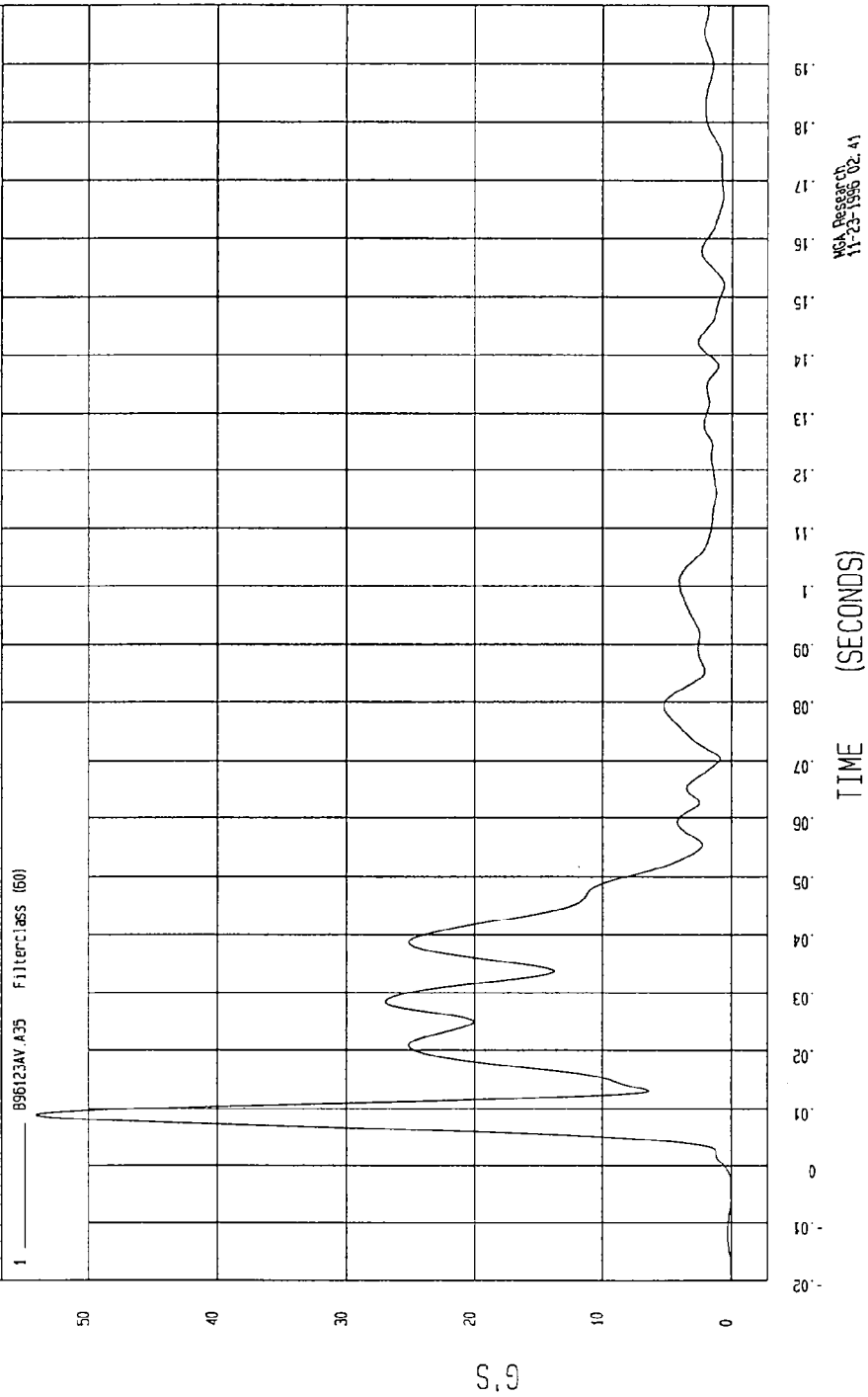
Speed: 33 MPH 53.1 KPH

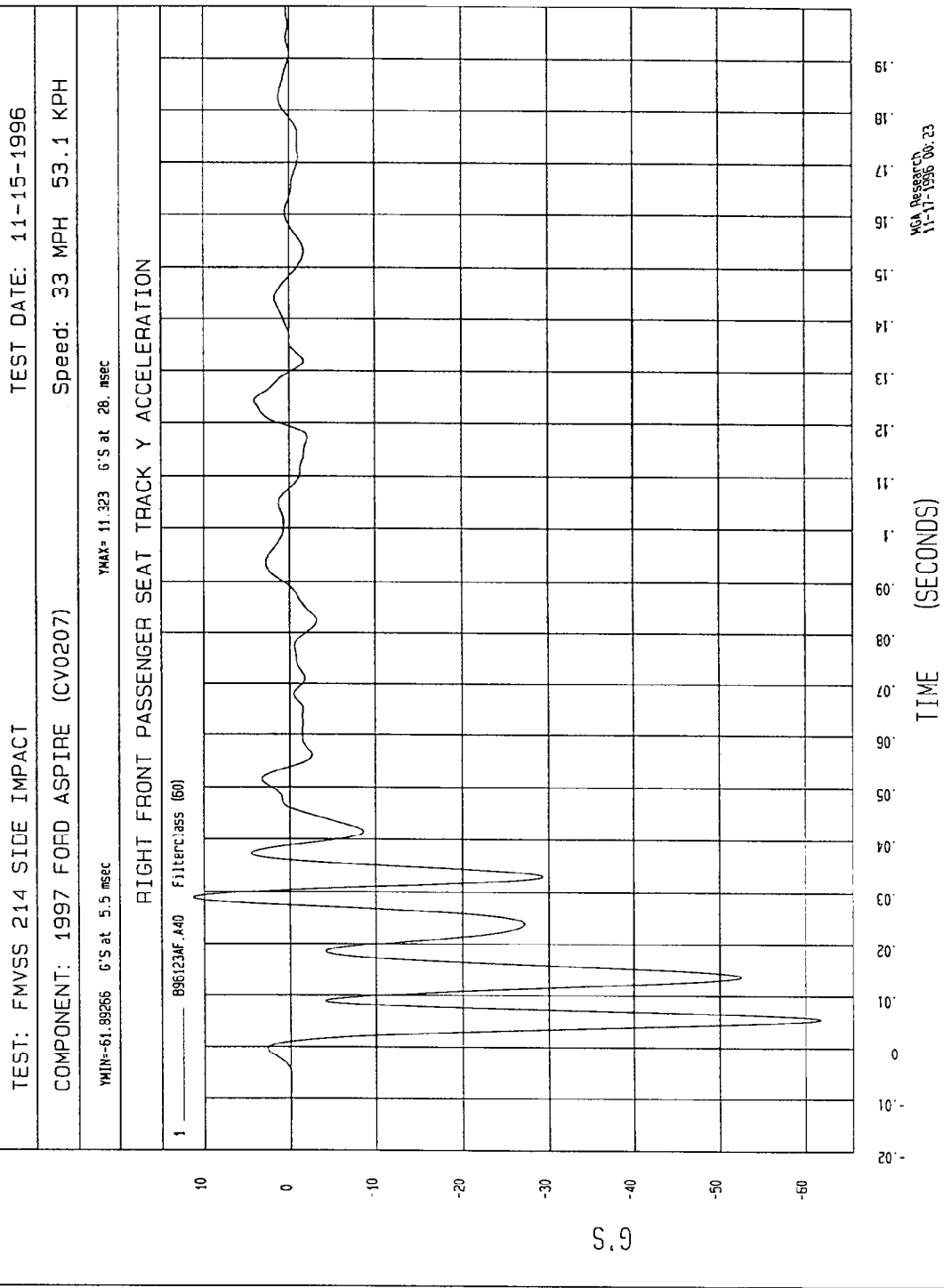
COMPONENT: 1997 FORD ASPIRE (CV0207)

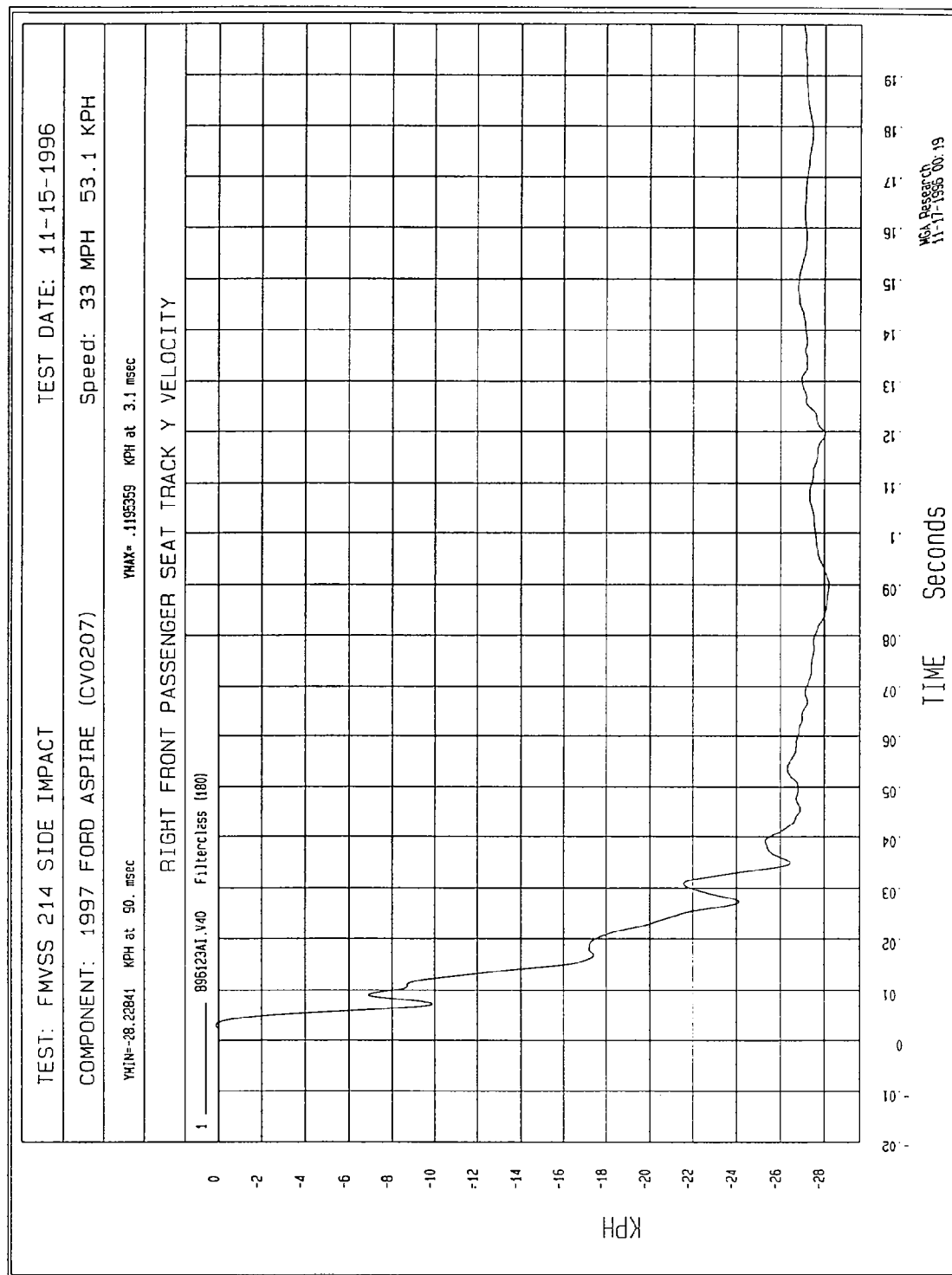
YMAX= 54.15076 G'S at 8.9 msec

YMIN= 1.248952E-02 G'S at -19. msec

LEFT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION





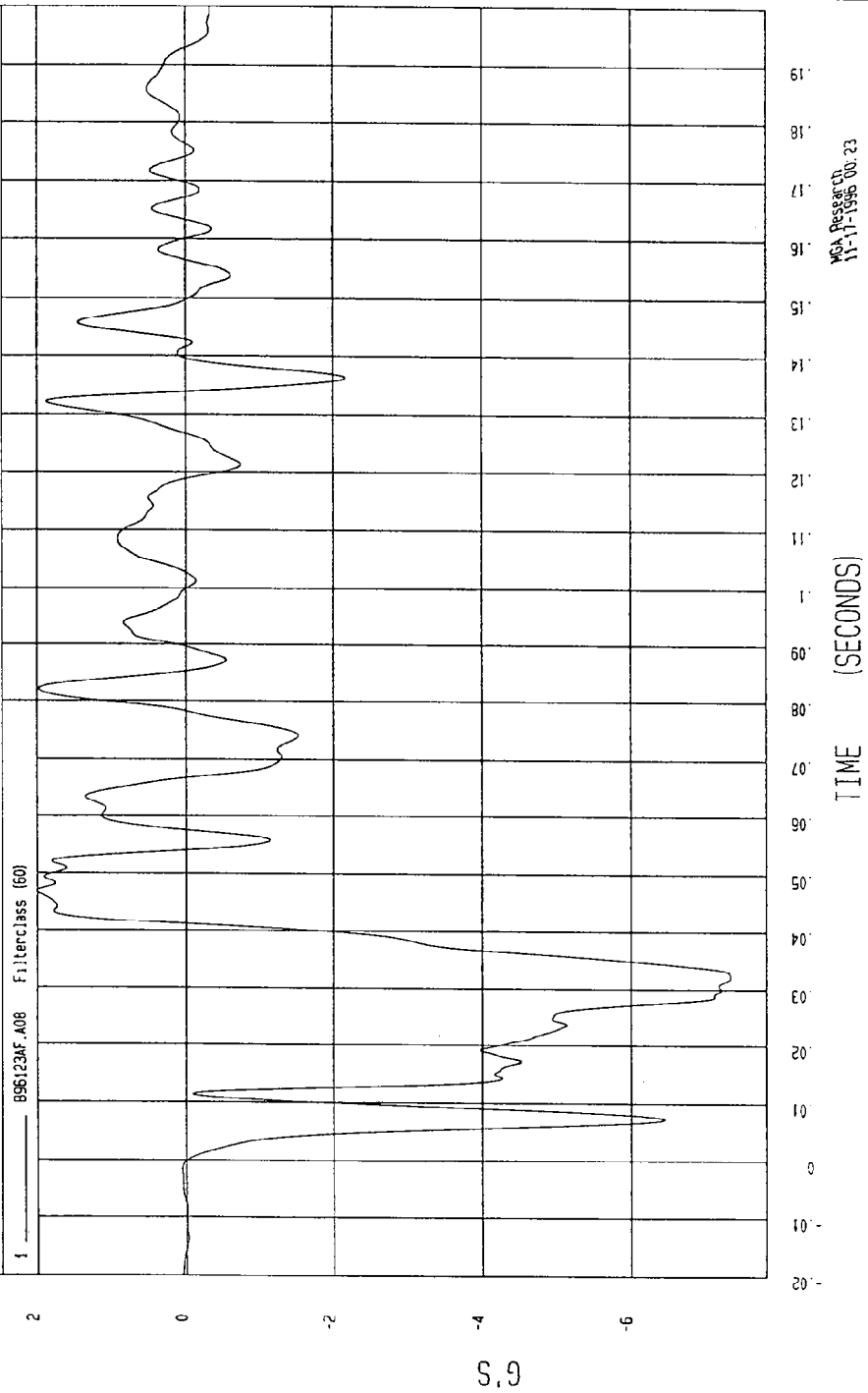


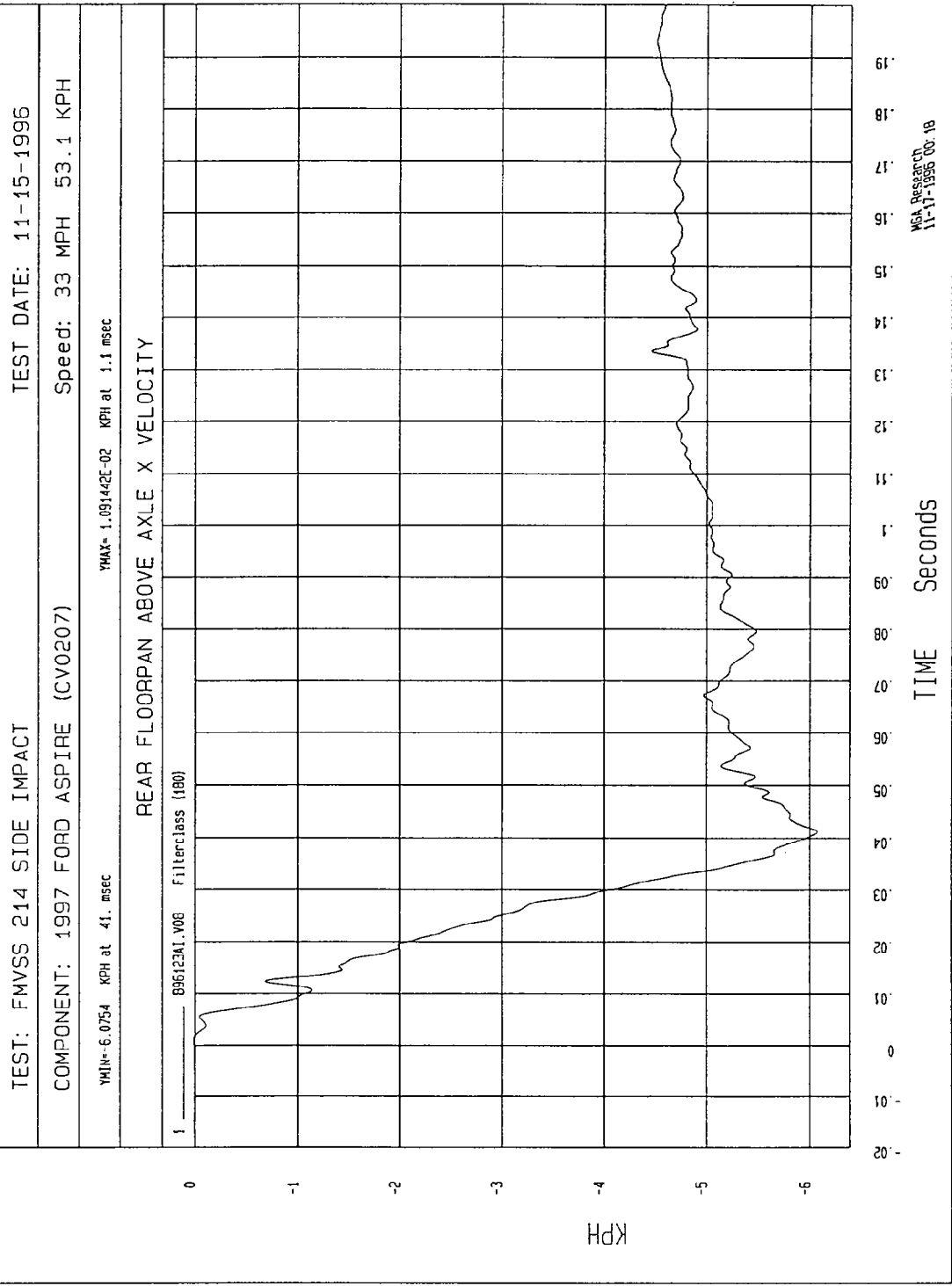
TEST DATE: 11-15-1996

Speed: 33 MPH 53.1 KPH

YMAX= 2.009811 G'S at 45. msec

Filterclass	Filterclass (60)
896123AF.A08	



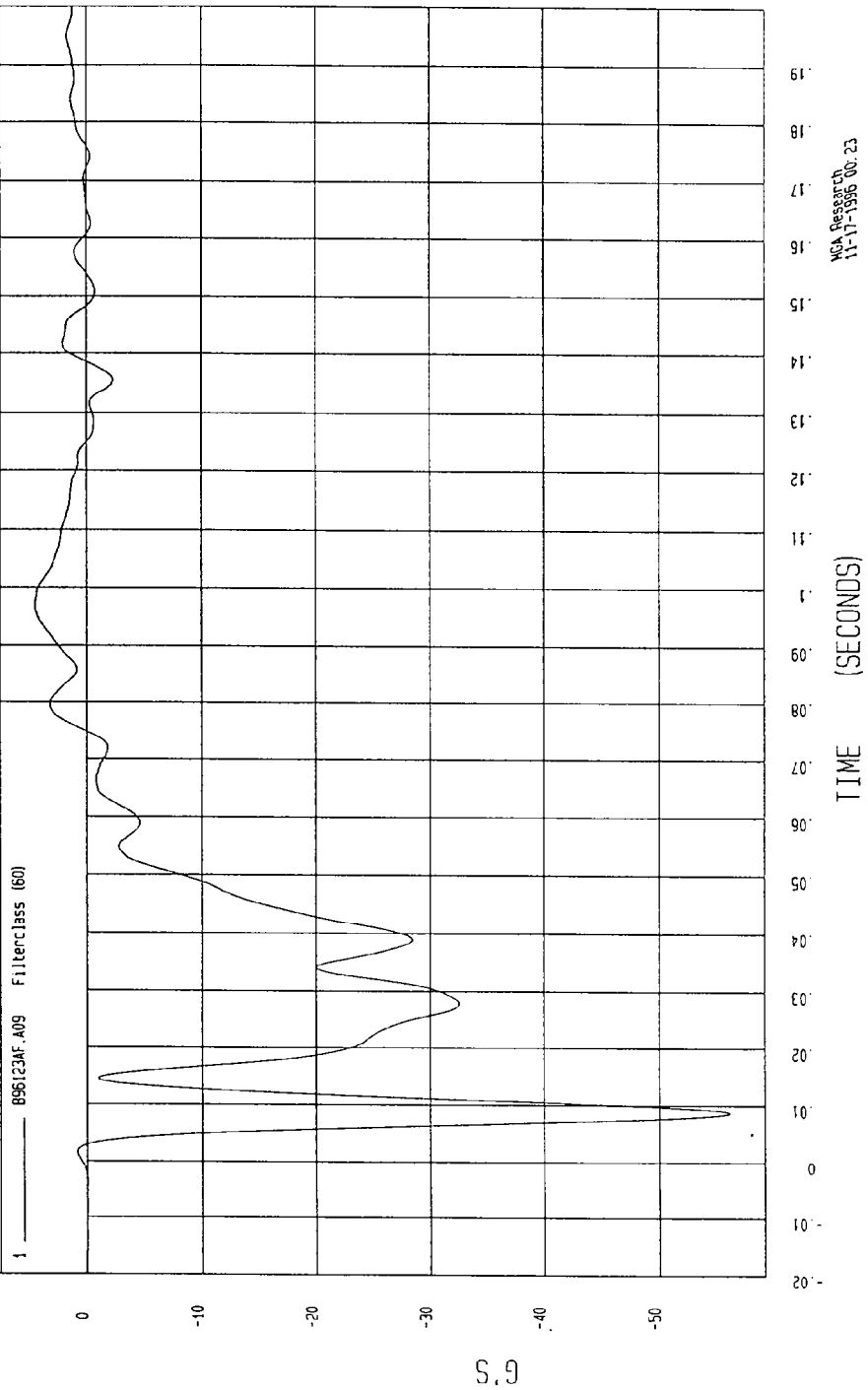


TEST DATE: 11-15-1996

Speed: 33 MPH 53.1 KPH

YMAX= 4.47148 G'S at 96. msec

1	896123AF.A09	Filterclass (60)



MGA Research
11-17-1996 00:23

TEST: FMVSS 214 SIDE IMPACT

TEST DATE: 11-15-1996

SPEED: 33 MPH 53.1 KPH

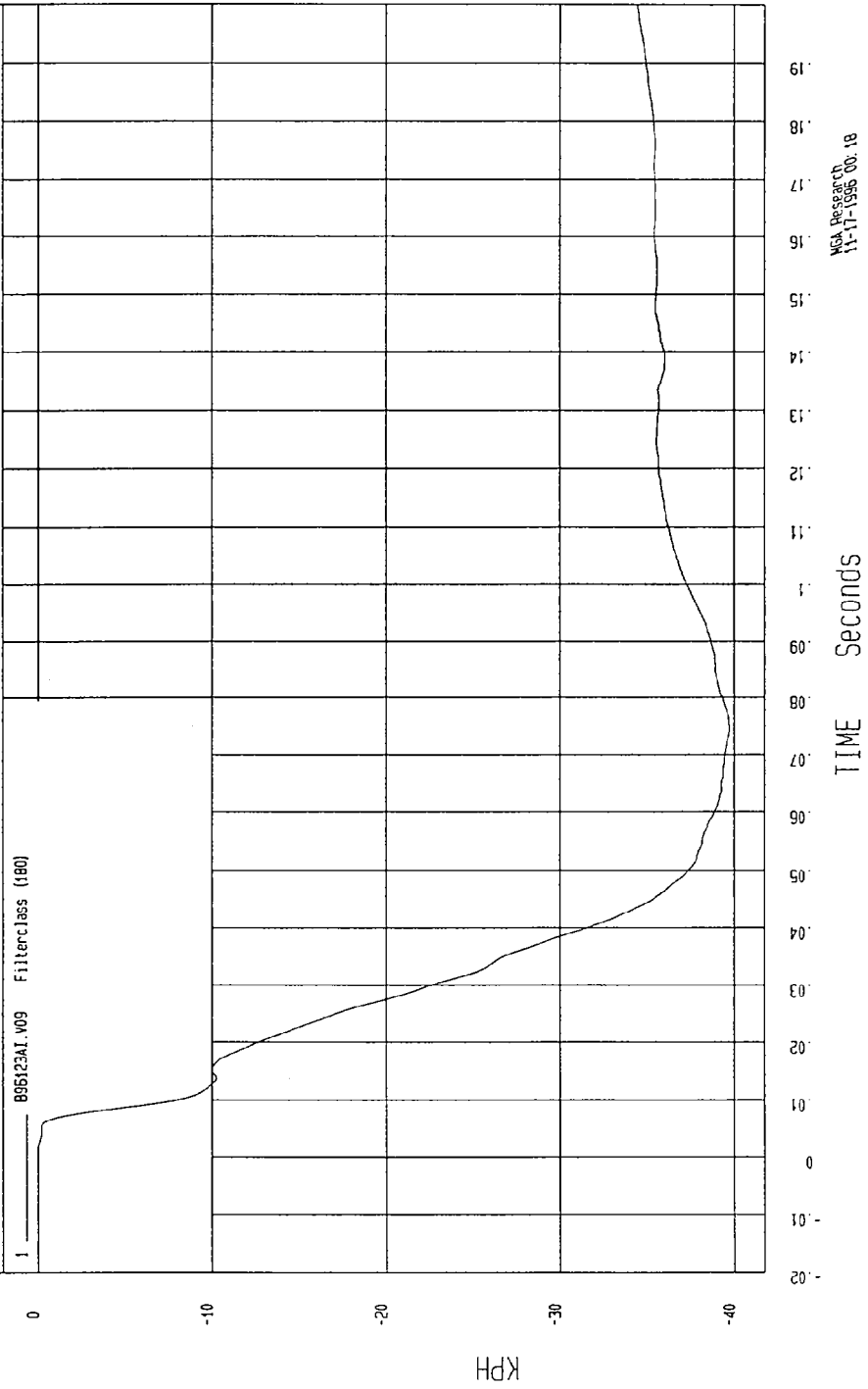
COMPONENT: 1997 FORD ASPIRE (CV0207)

YMIN=-39.73431 KPH at 74. msec

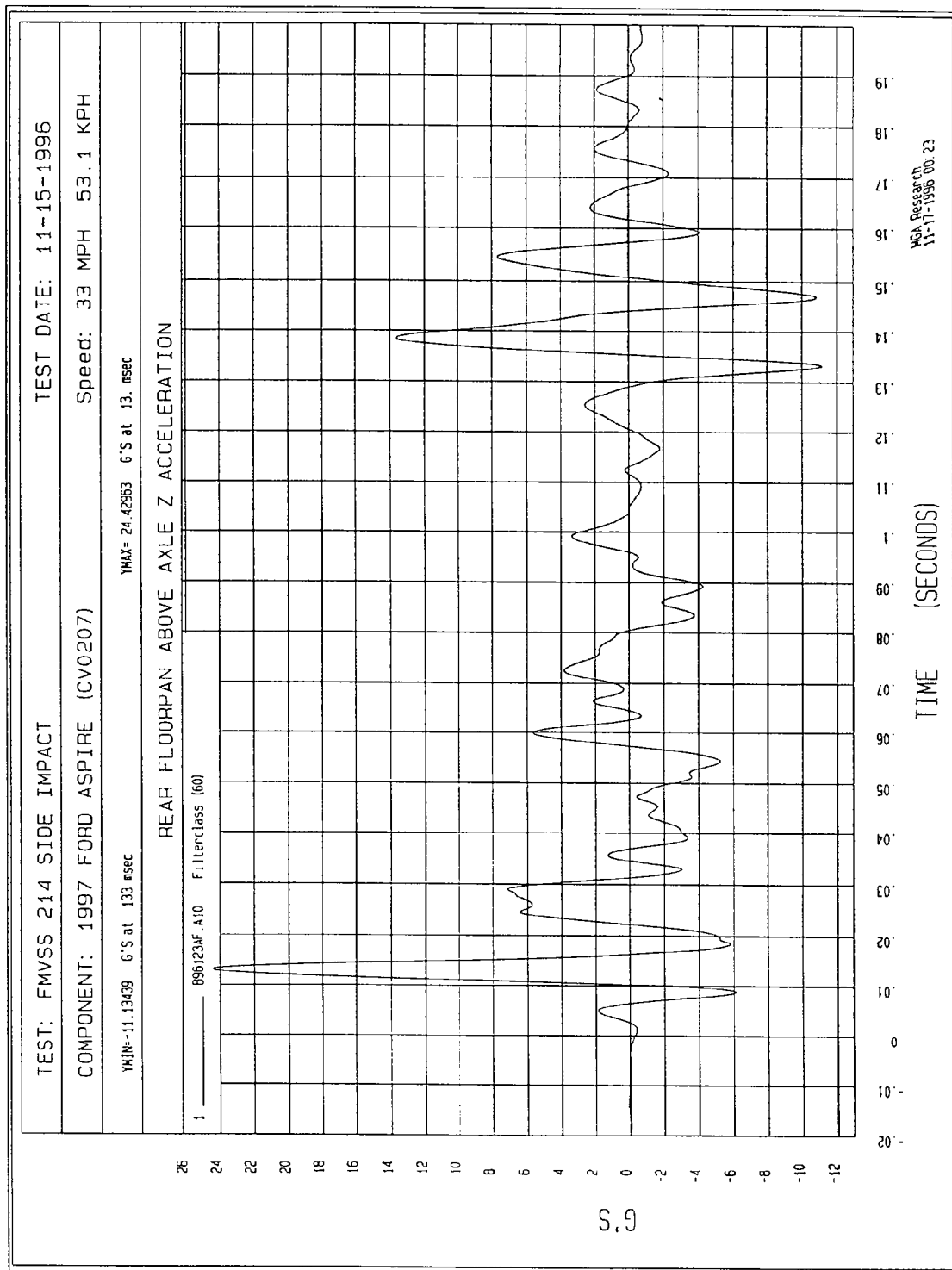
YMAX= 9.4605E-03 KPH at -15. msec

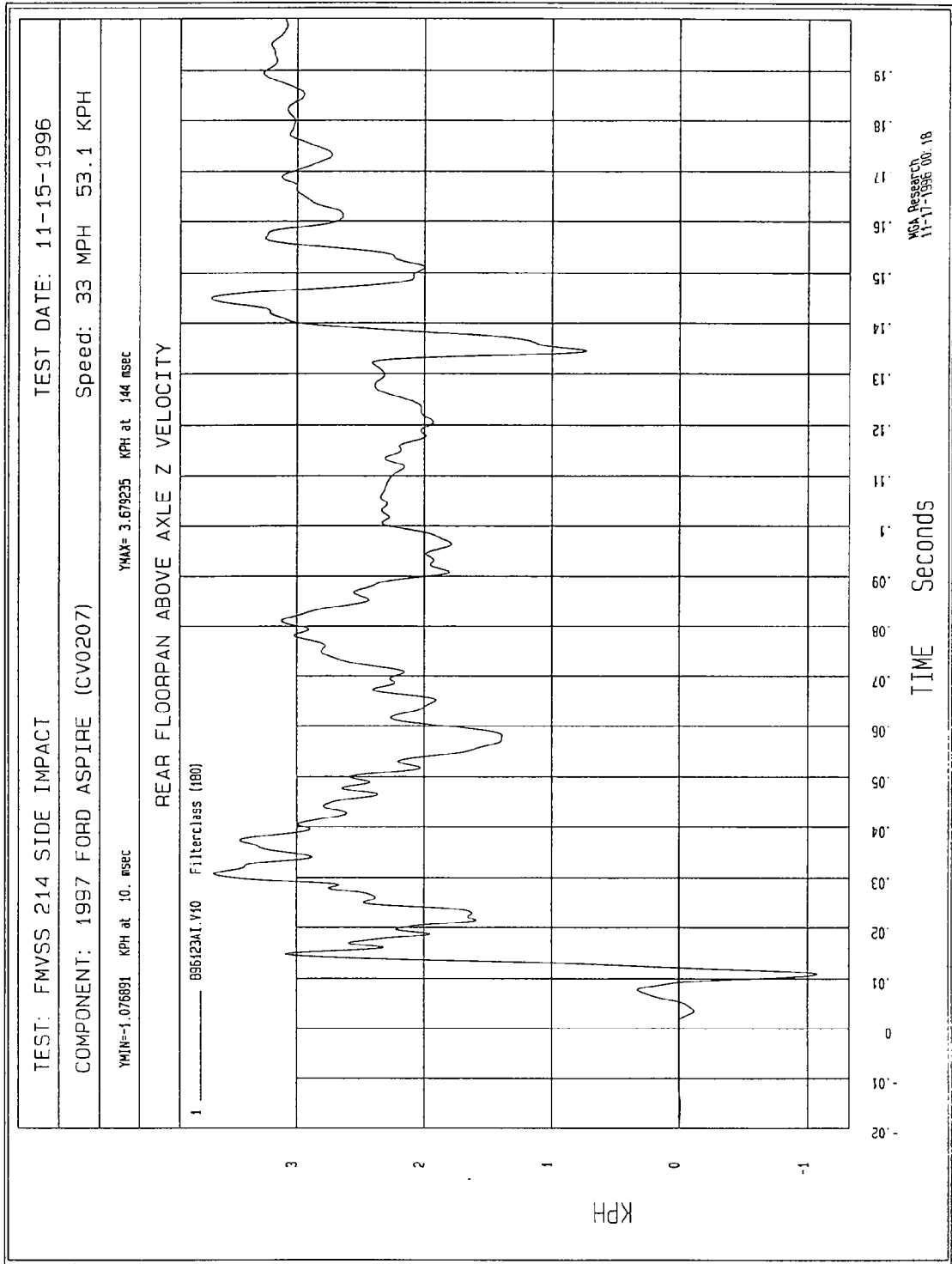
REAR FLOORPAN ABOVE AXLE Y VELOCITY

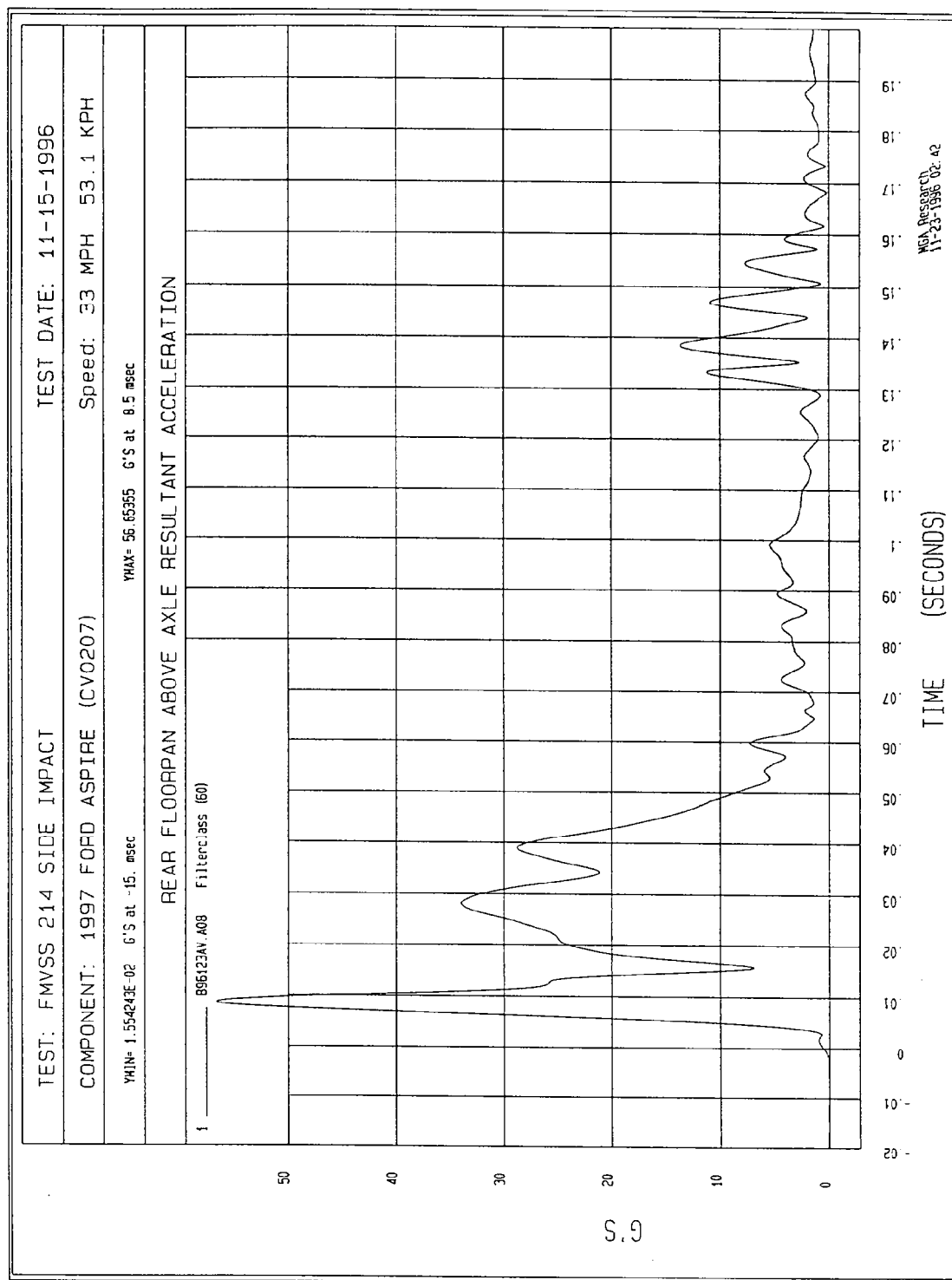
1 895123A1.V09 Filterclass (180)

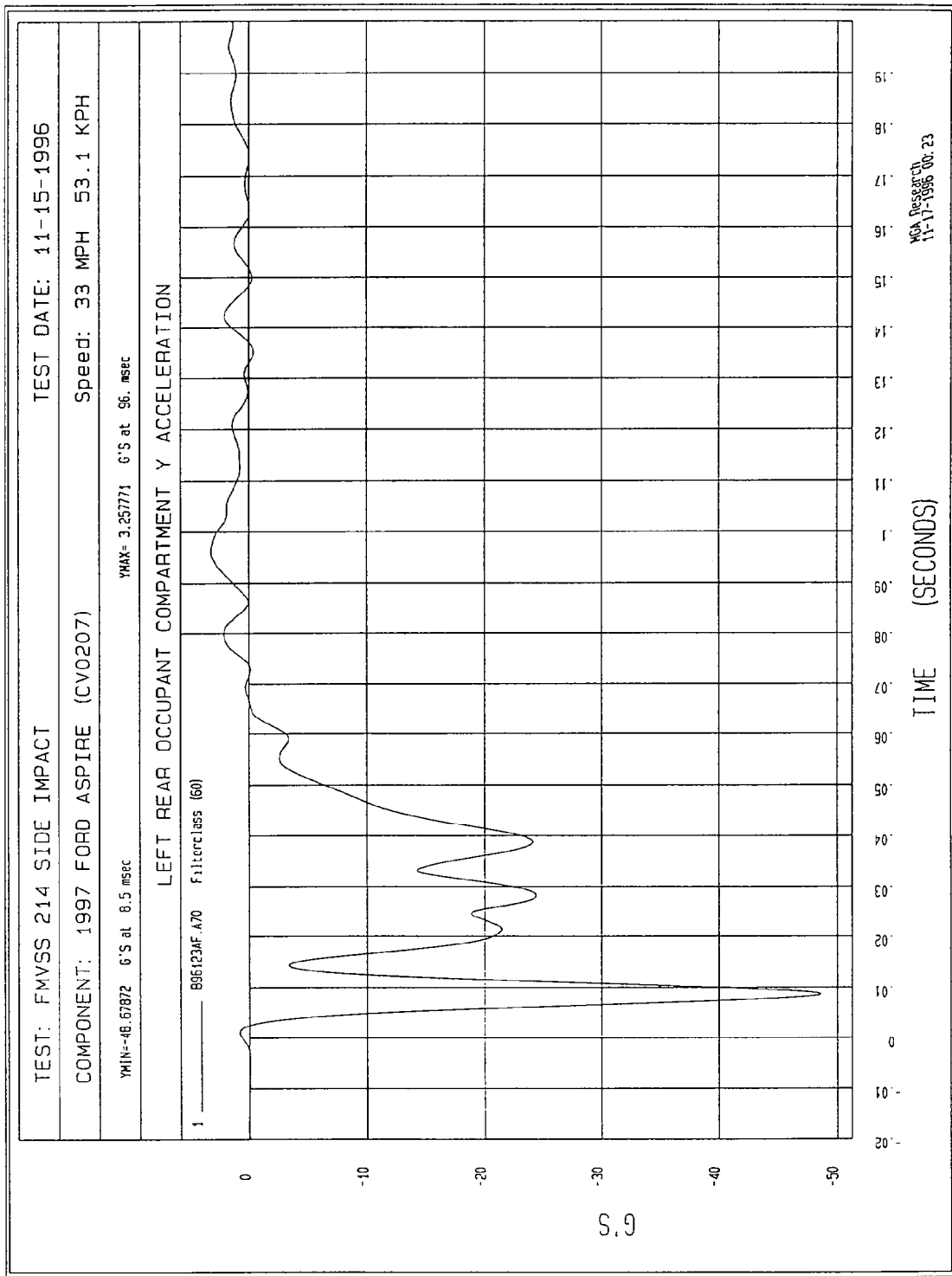


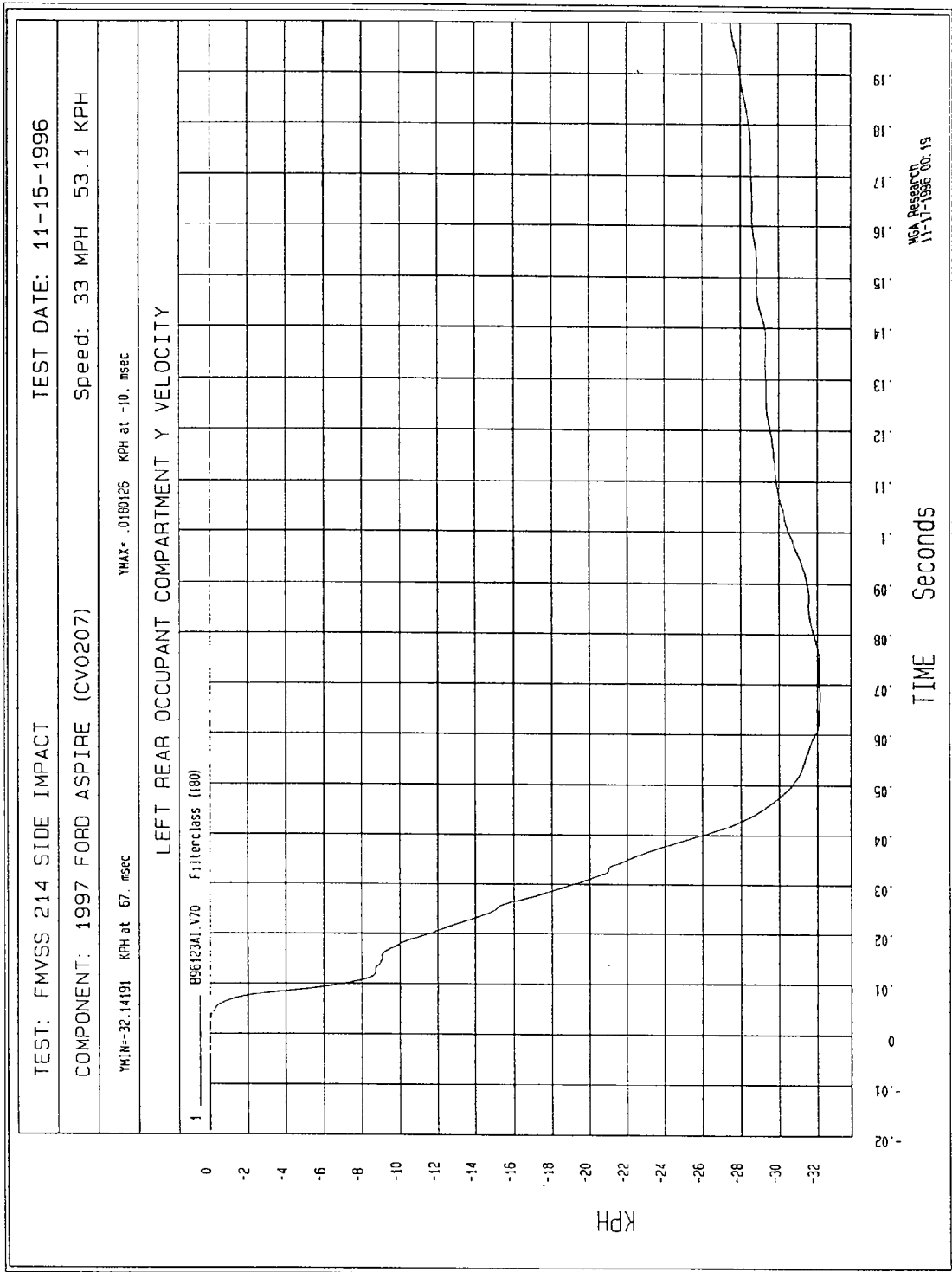
NCA Report
11-17-1996 00:18

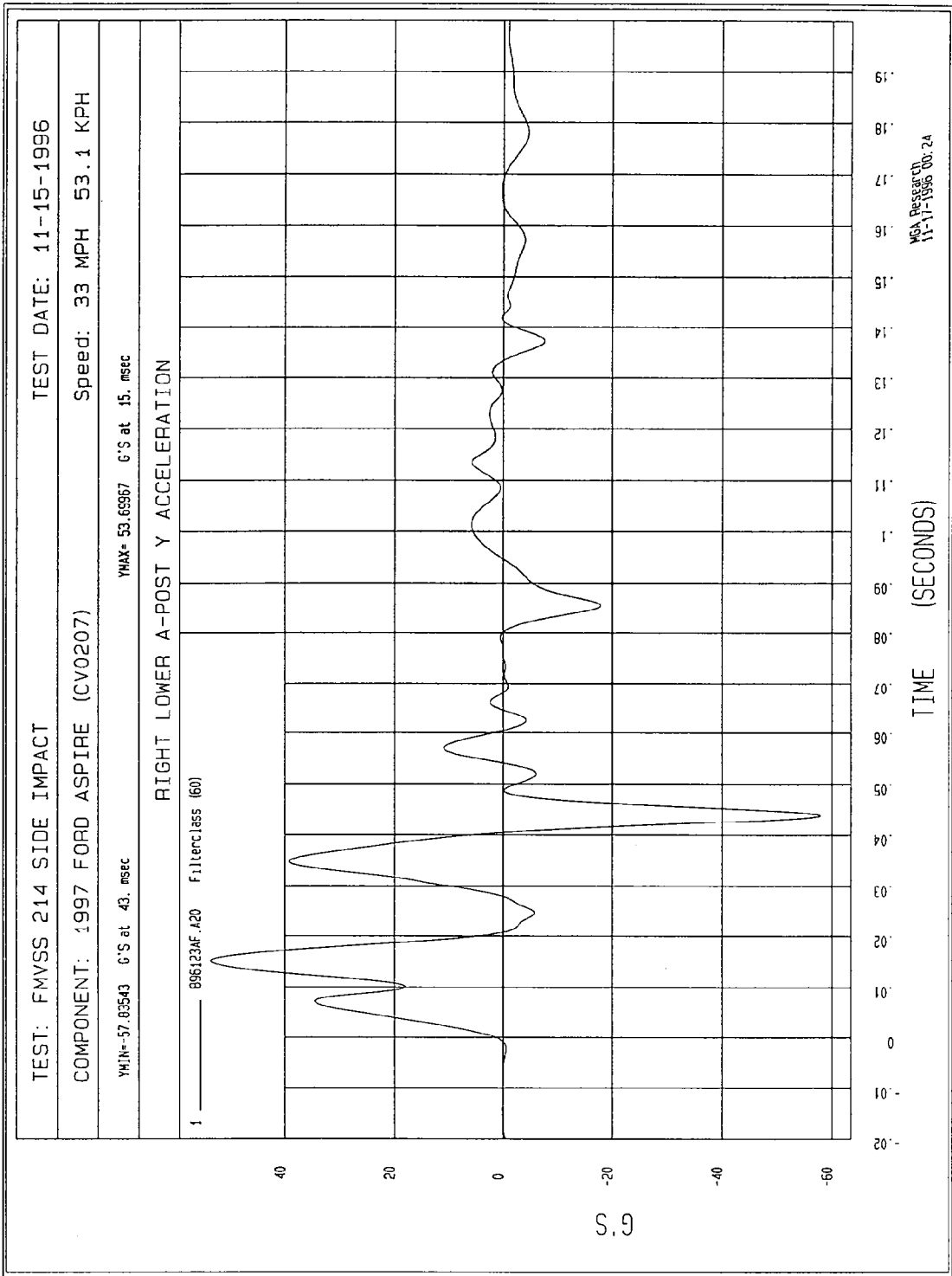


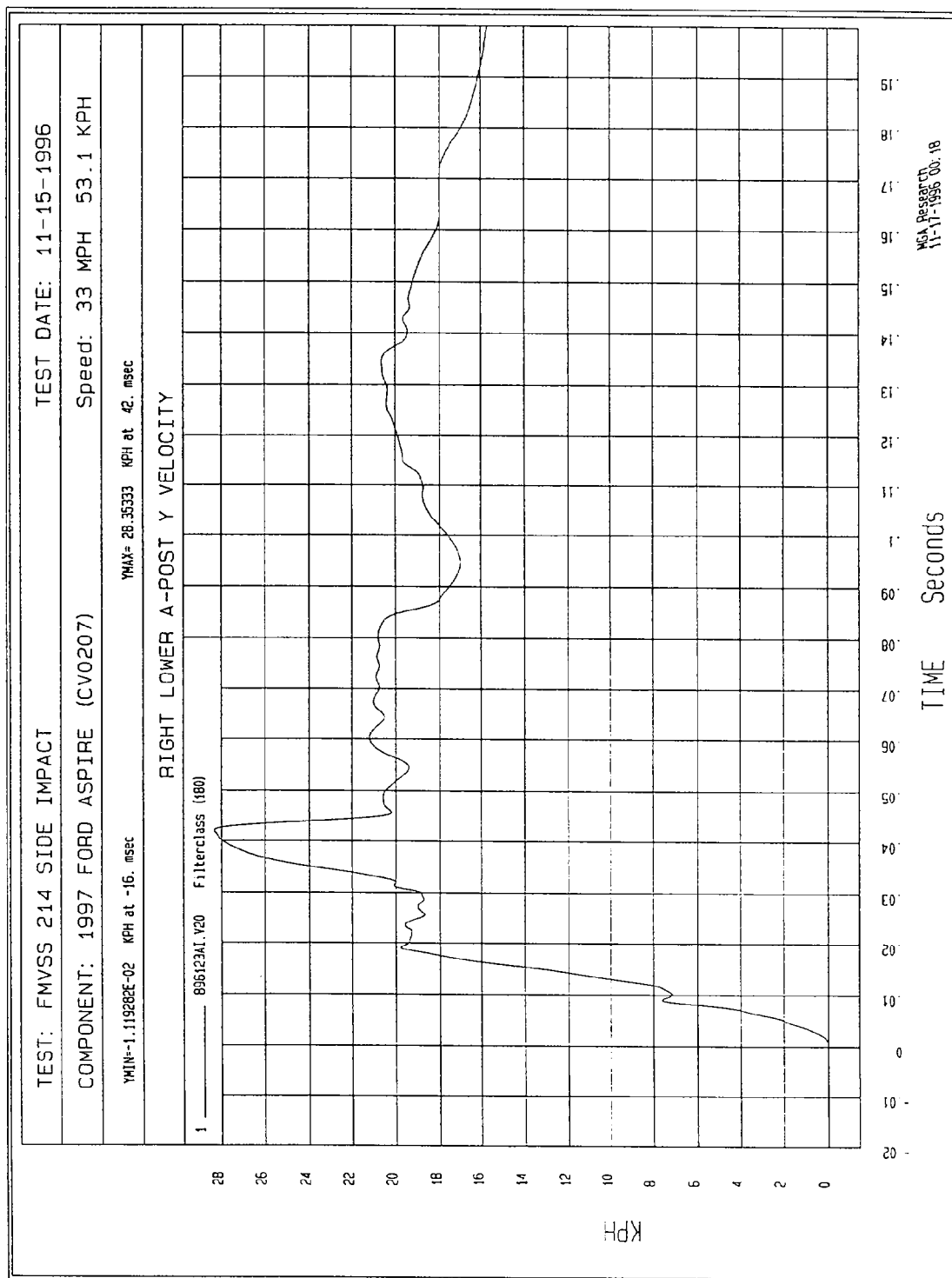


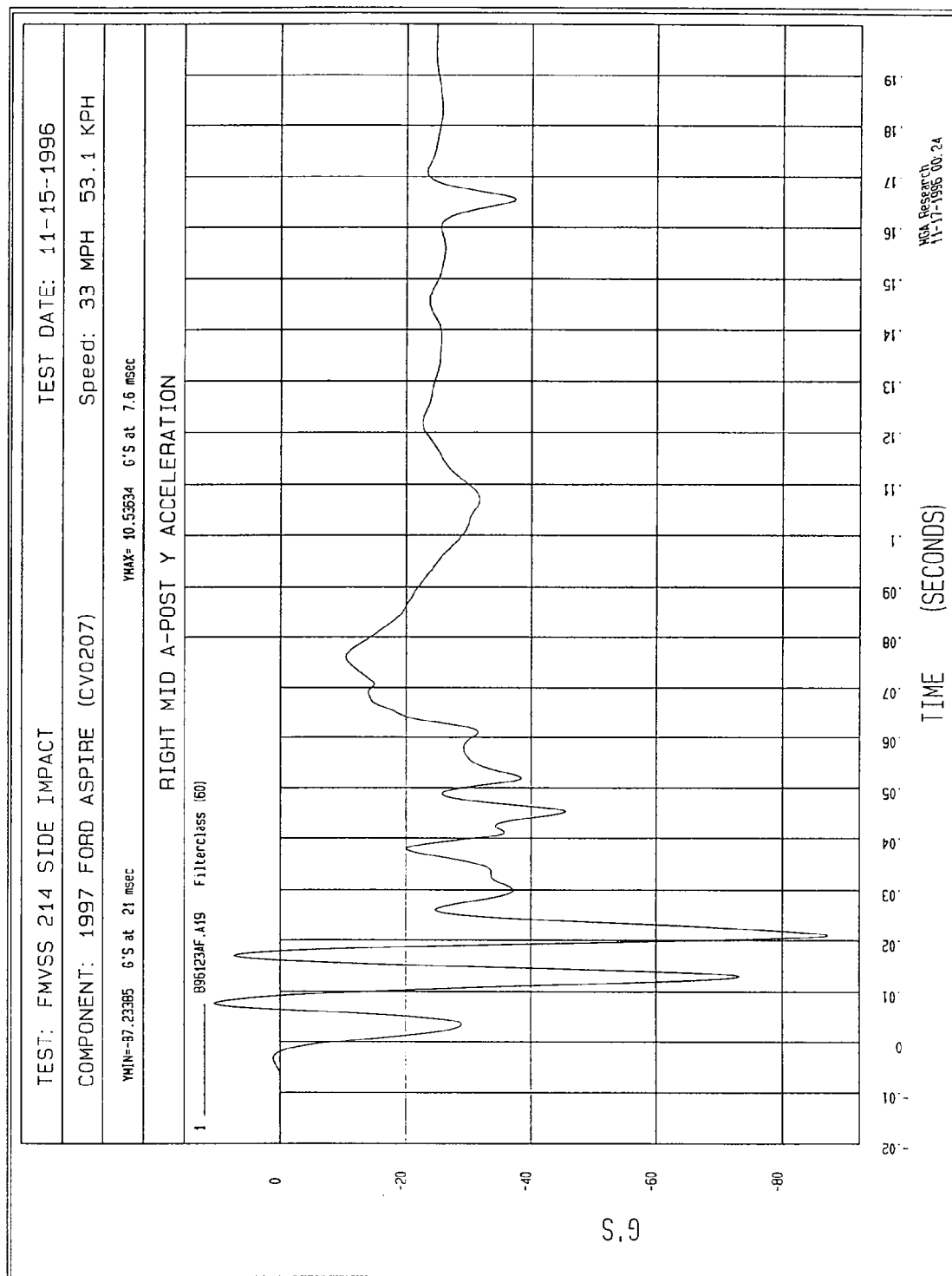


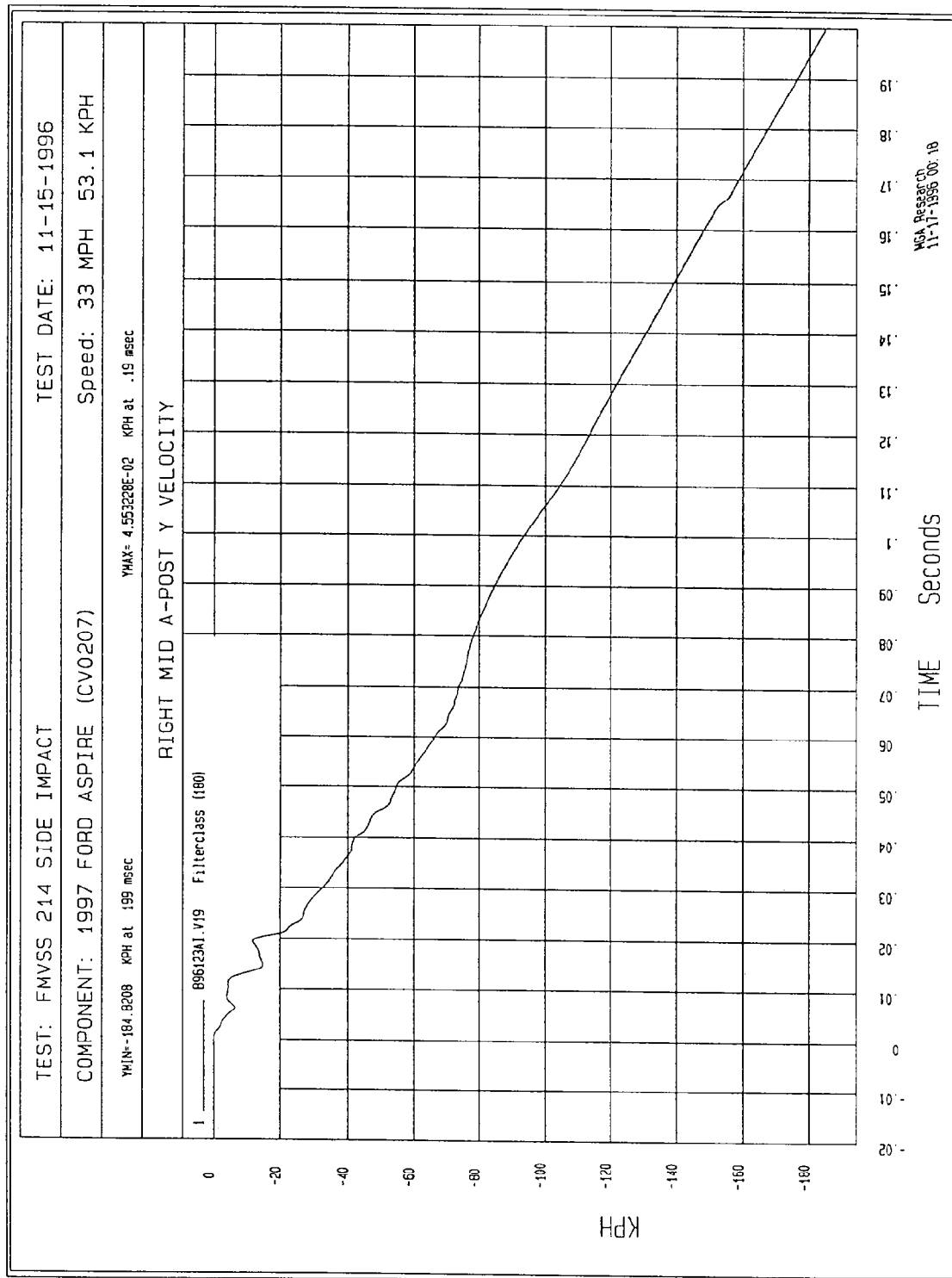


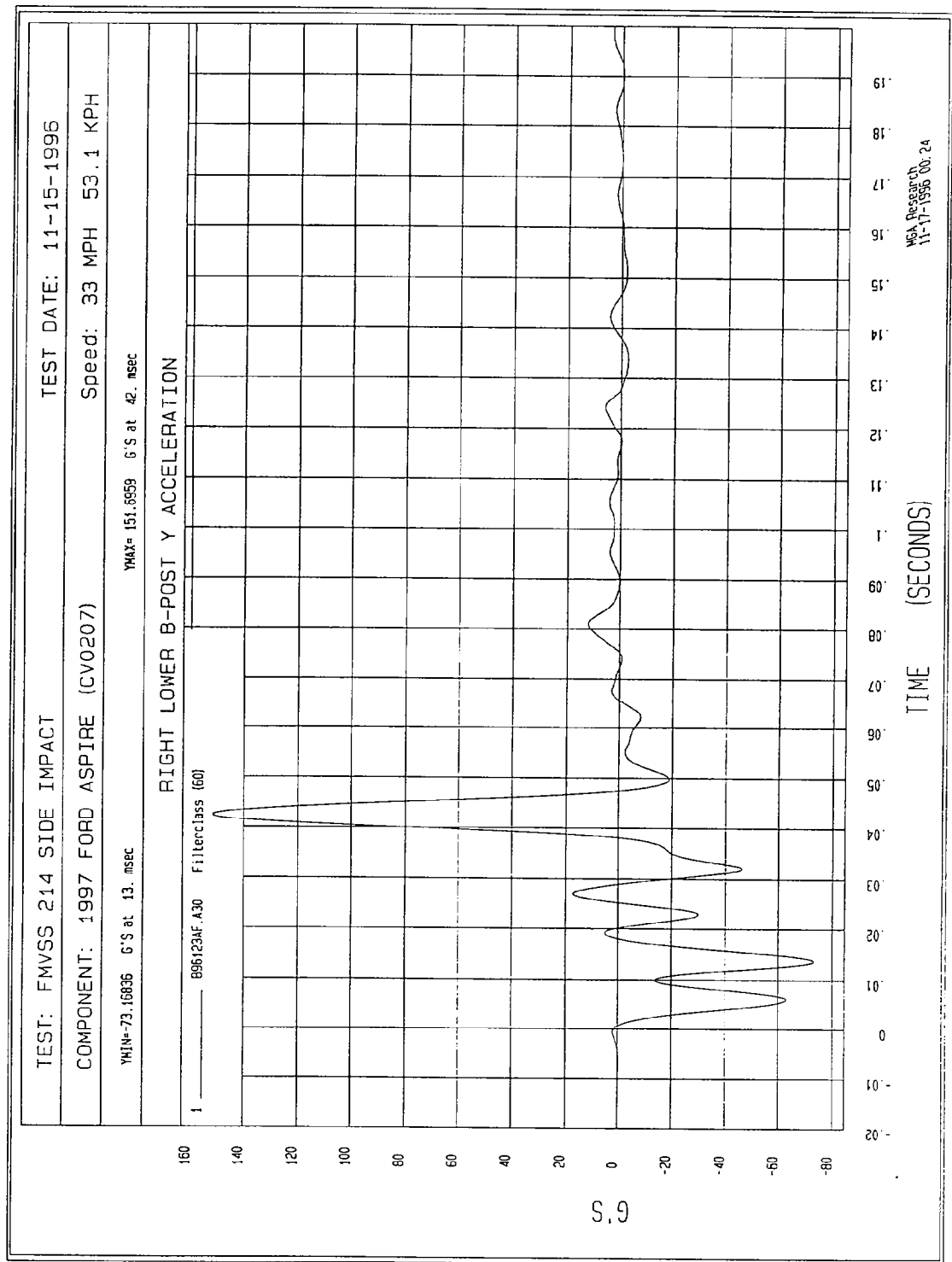


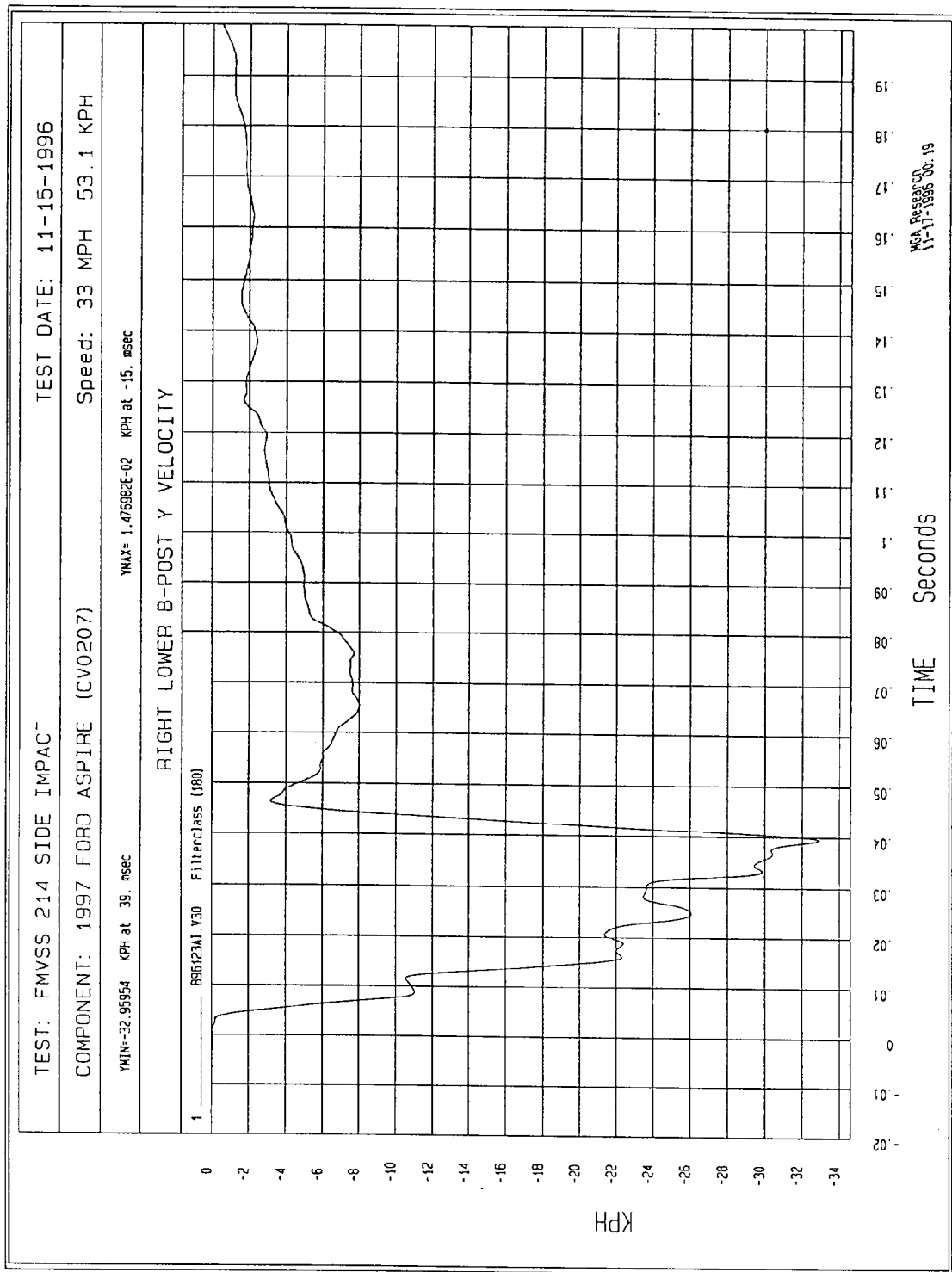


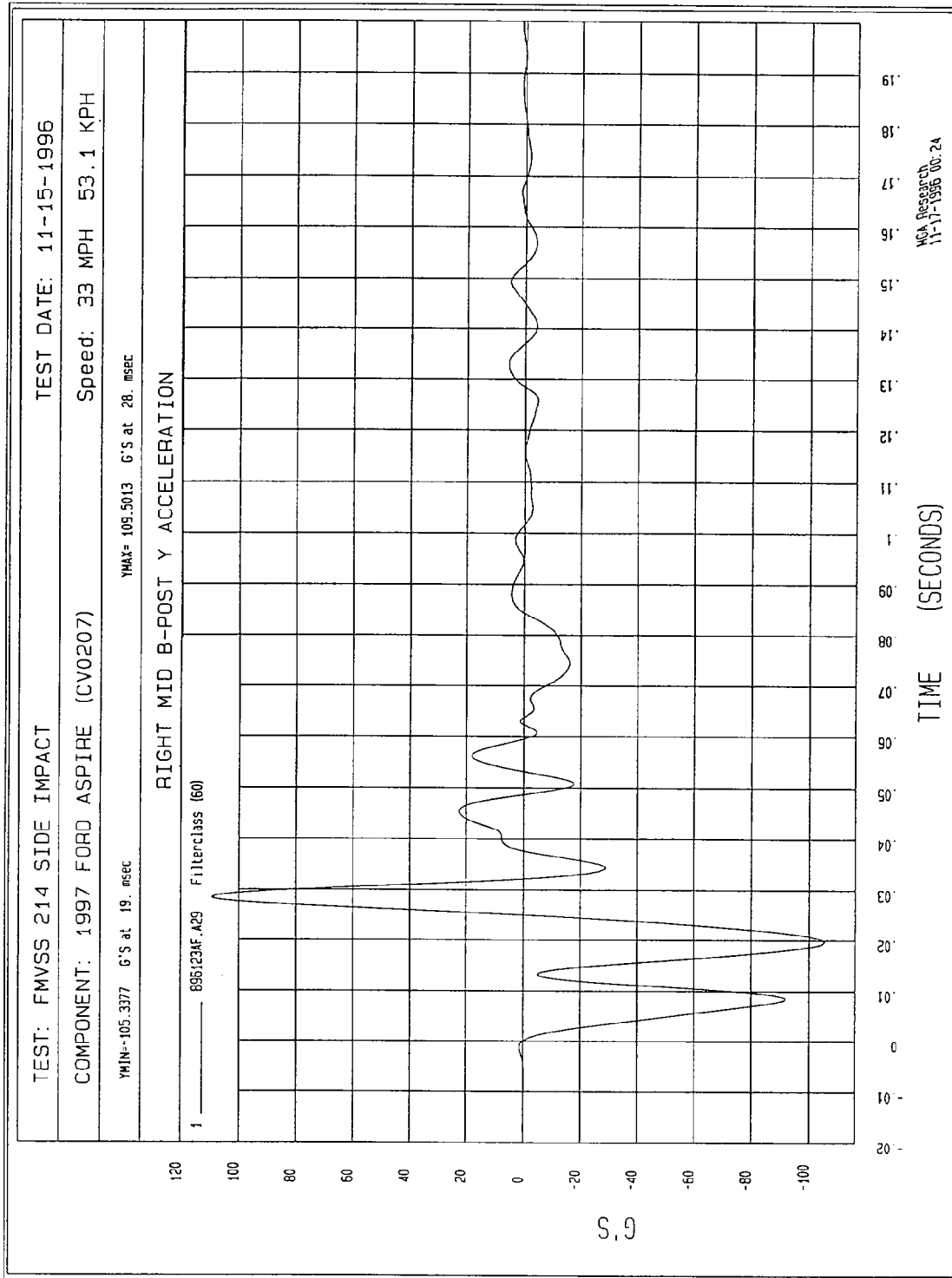


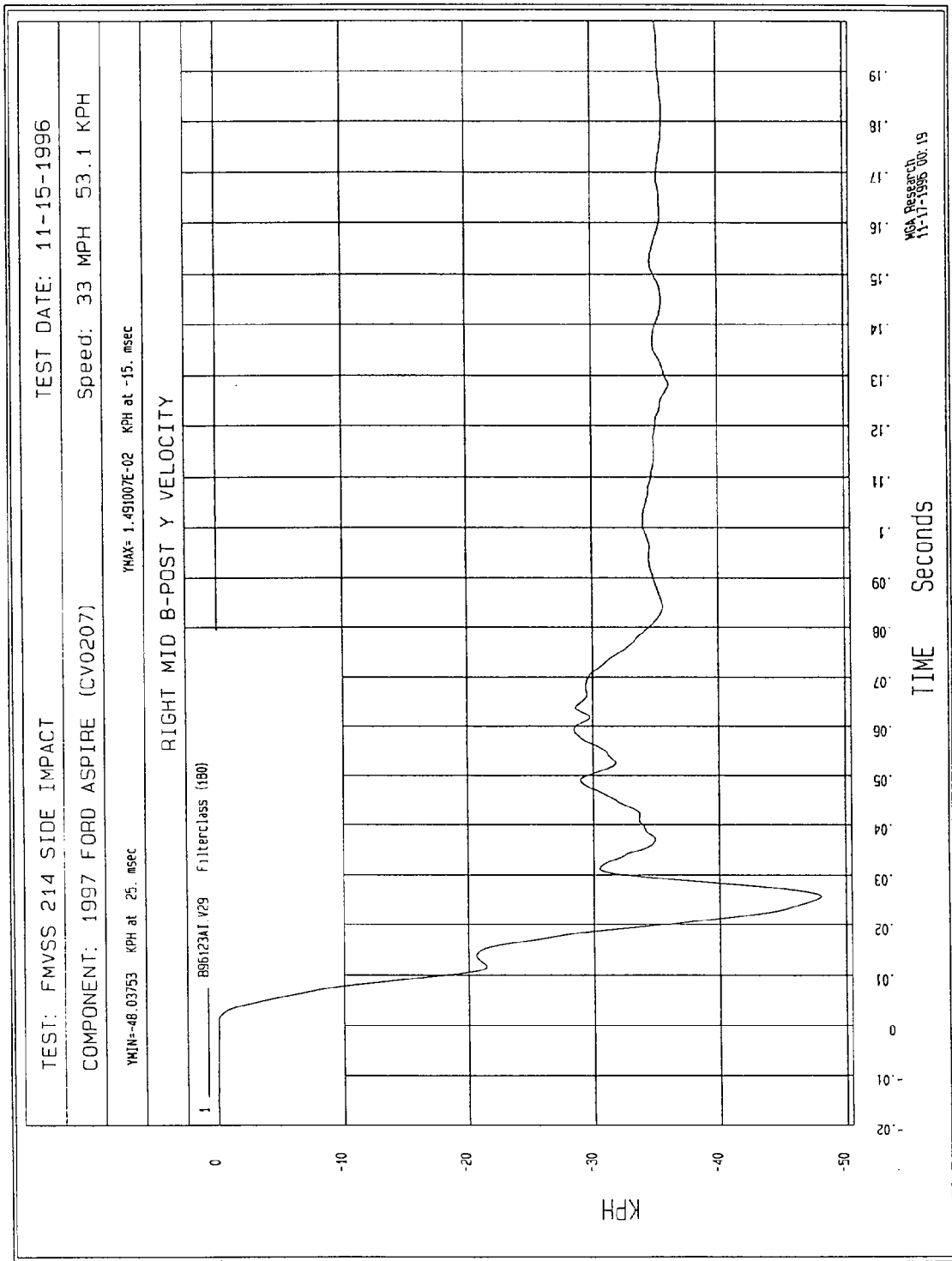


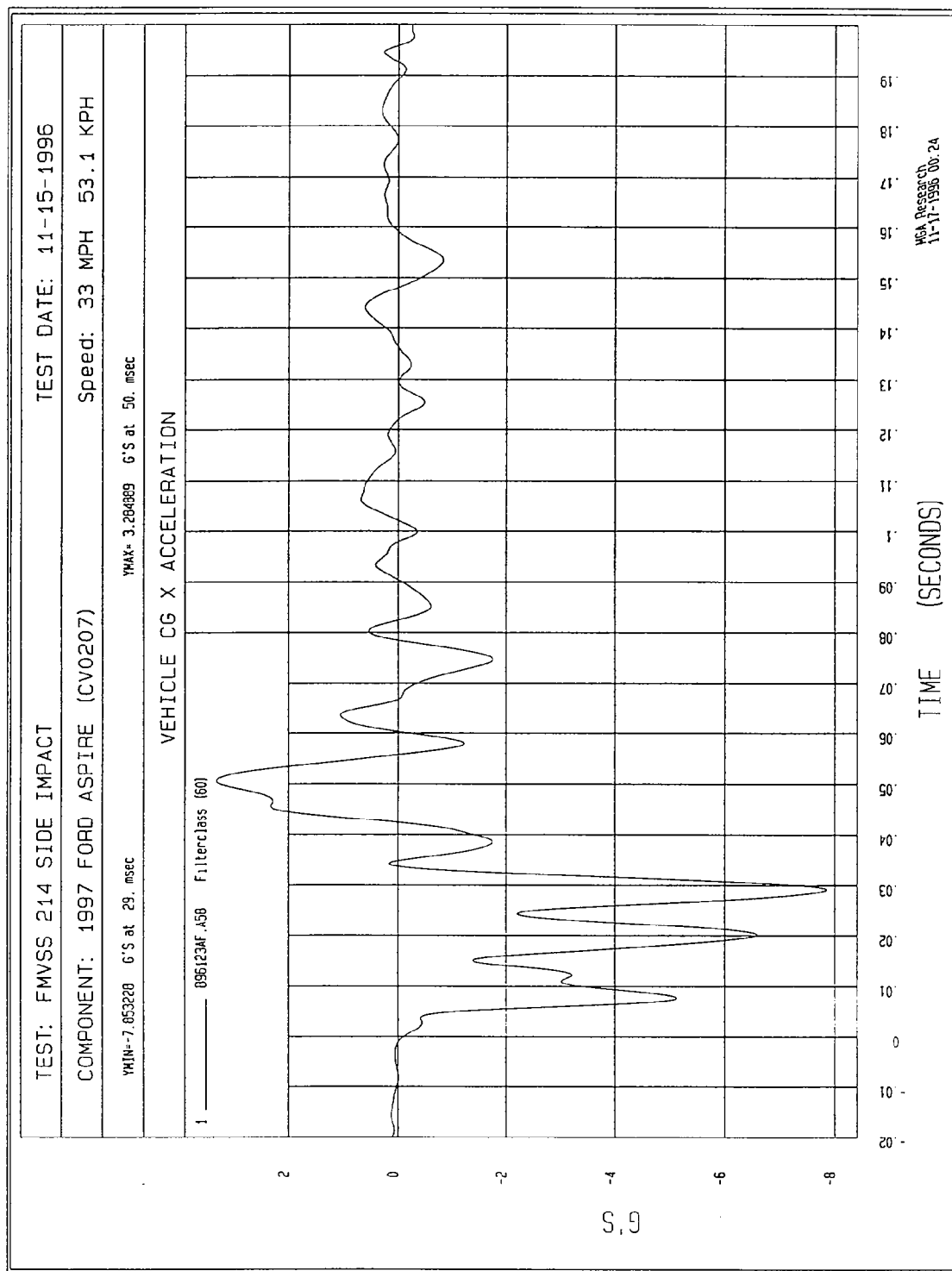


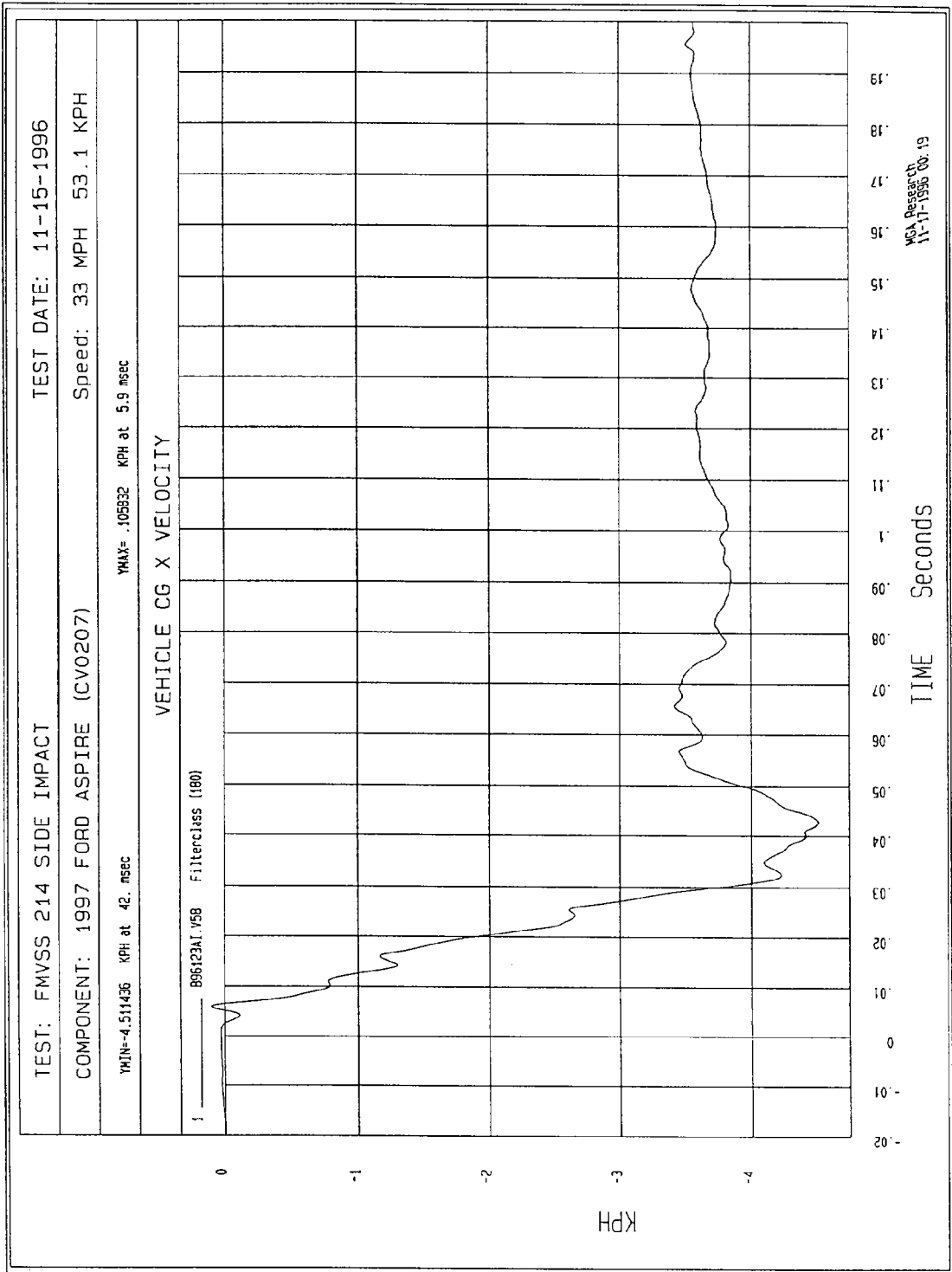


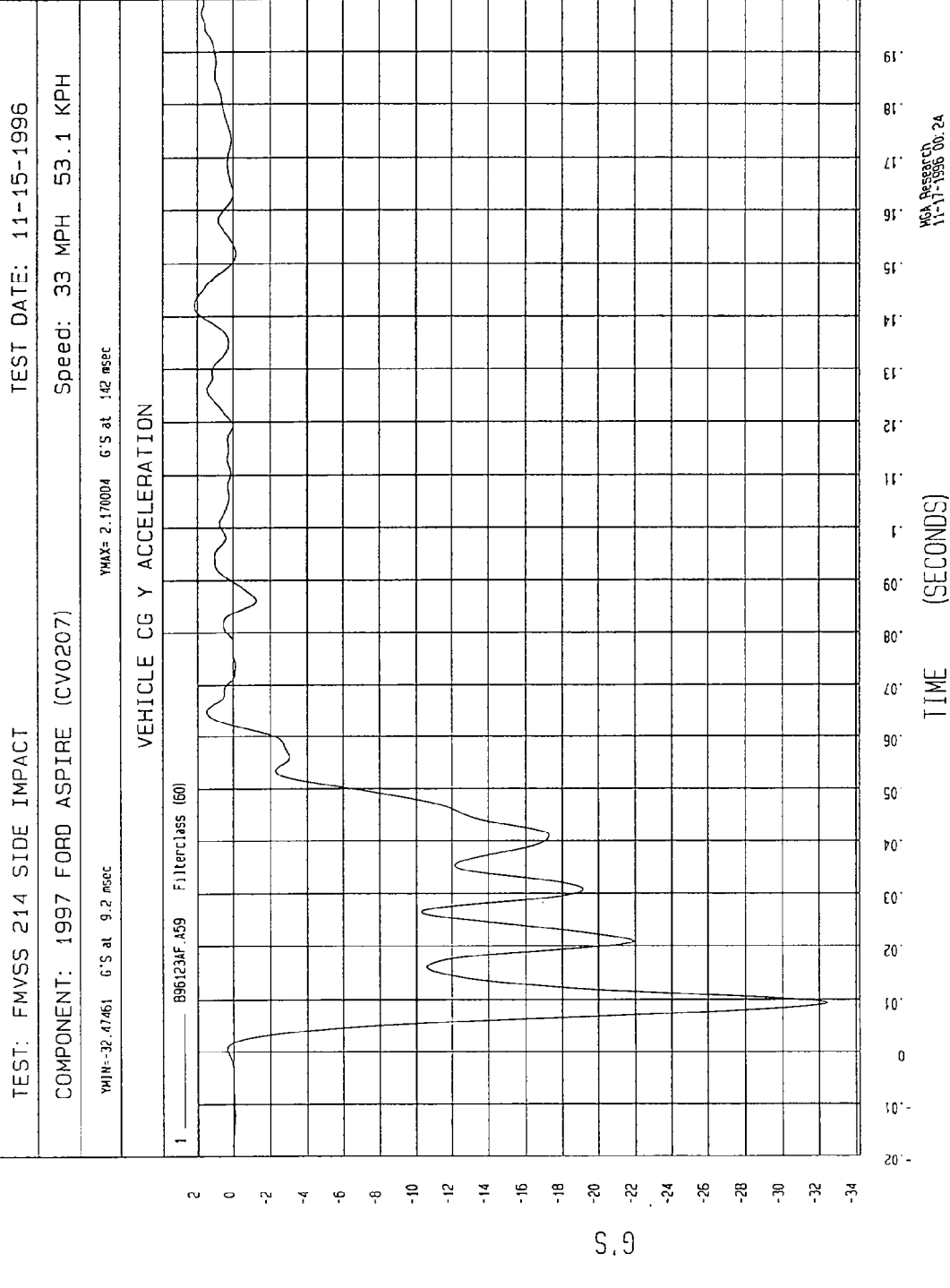


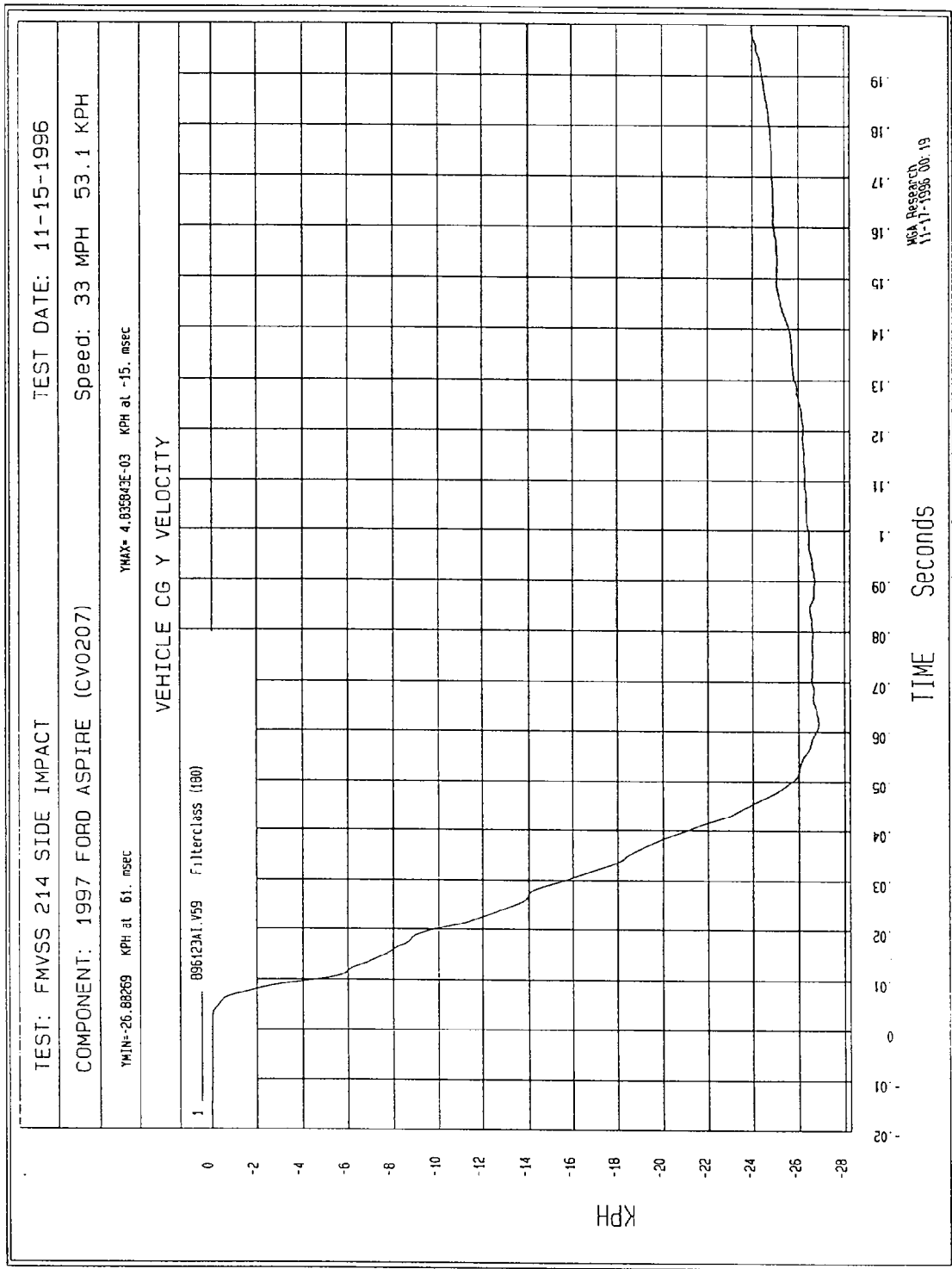


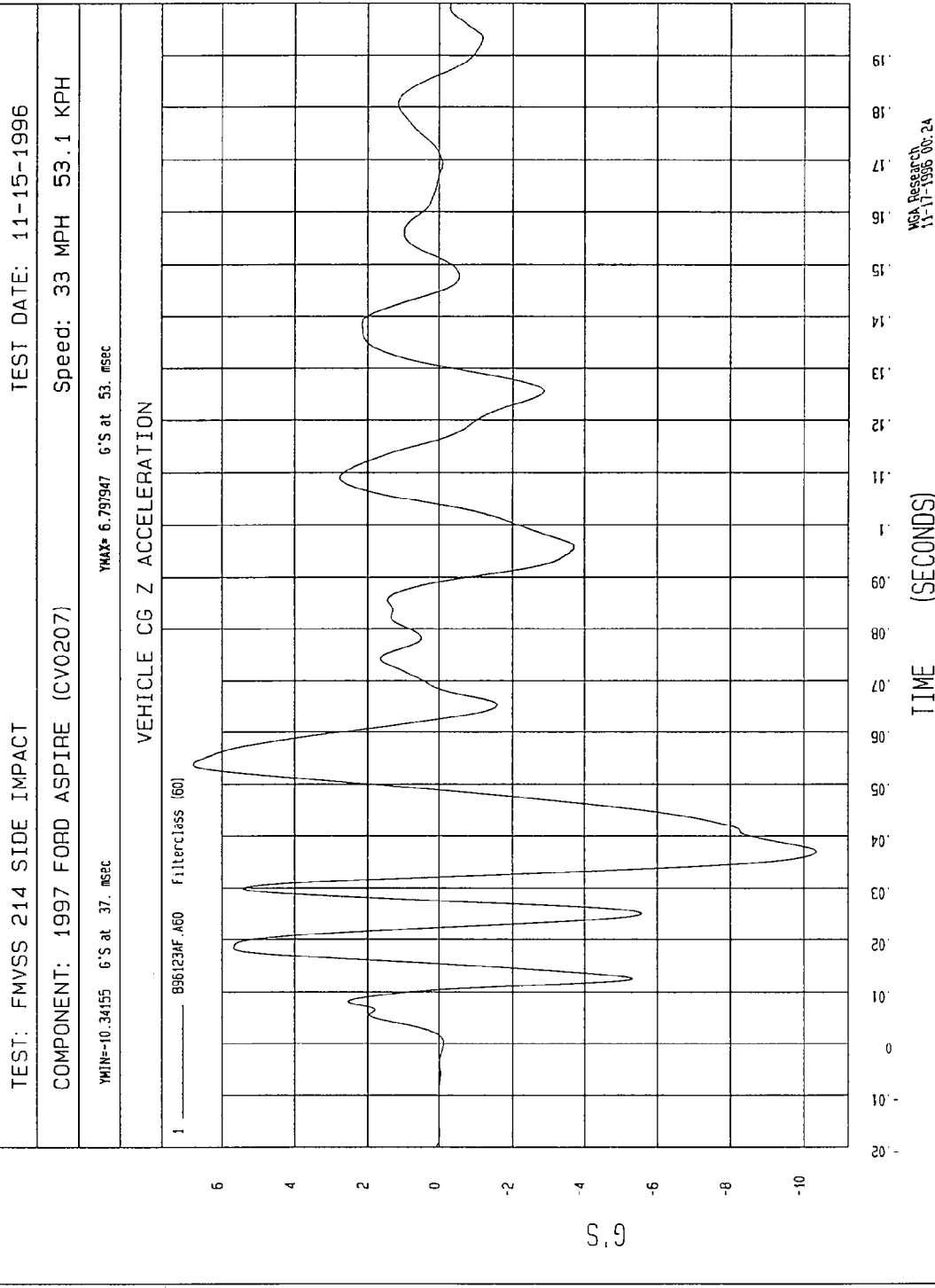


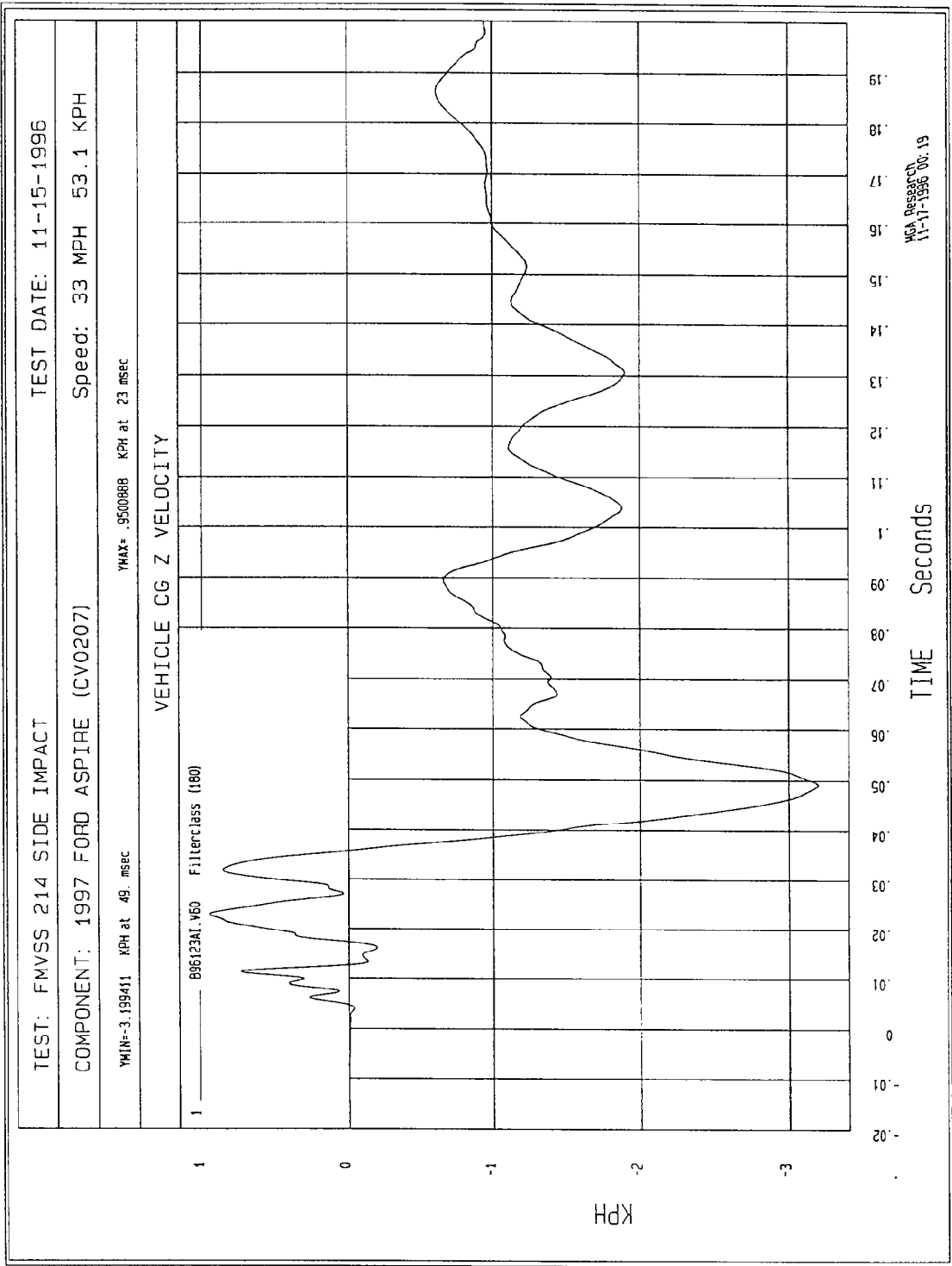


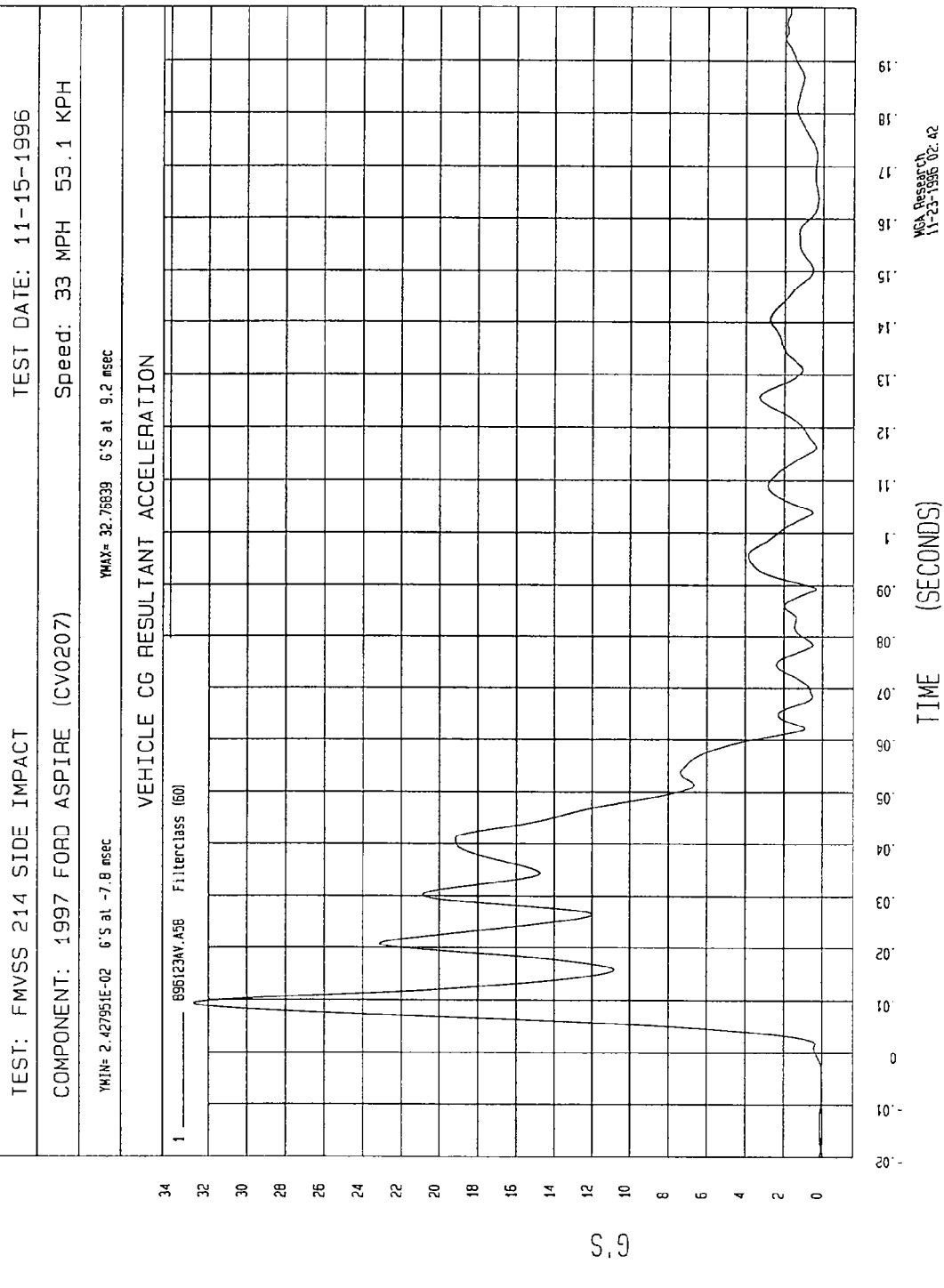


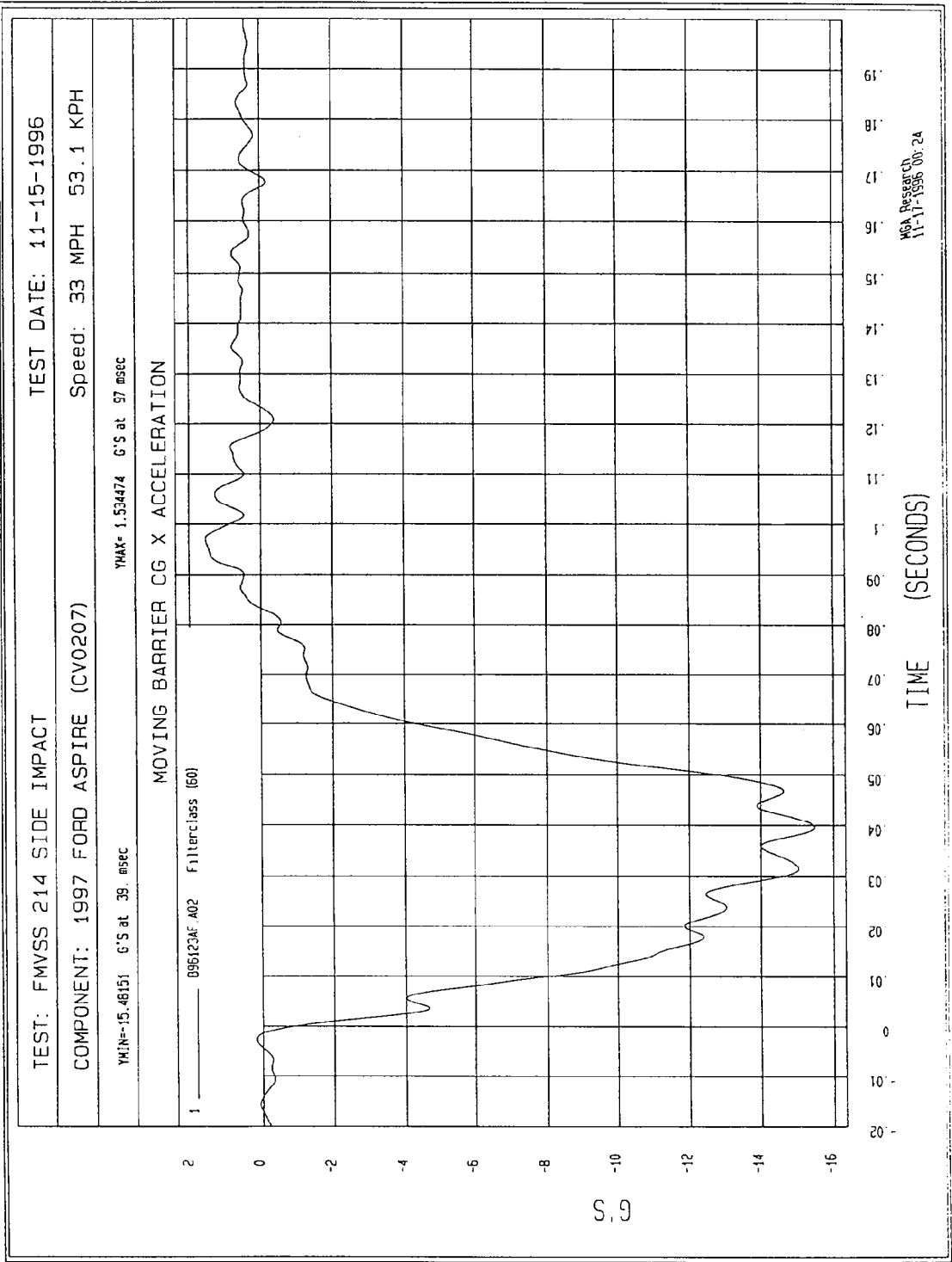












TEST: FMVSS 214 SIDE IMPACT

TEST DATE: 11-15-1996

Speed: 33 MPH 53.1 KPH

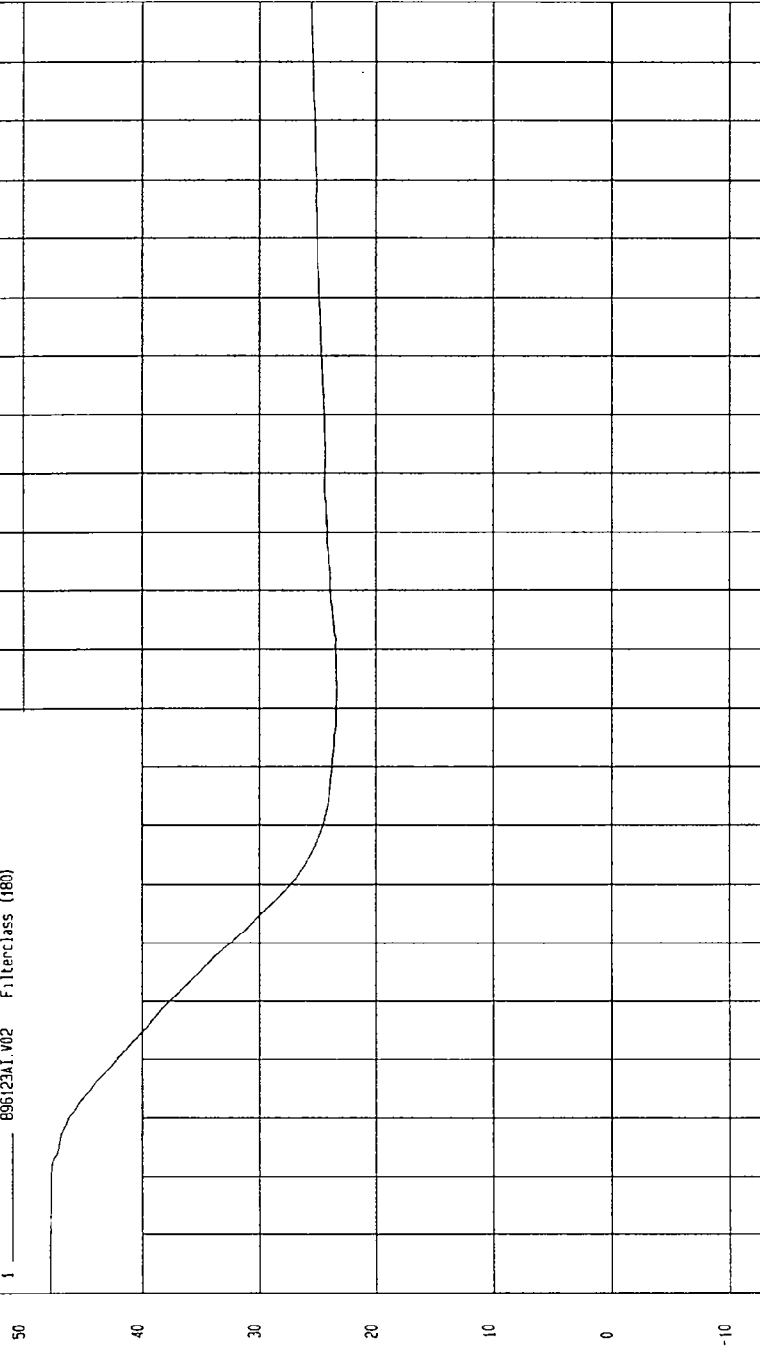
COMPONENT: 1997 FORD ASPIRE (CV0207)

YMIN= 23.33031 KPH at 83. msec

YMAX= 47.7036 KPH at -14. msec

MOVING BARRIER CG X VELOCITY

1 ——— B96123A1.V02 Filterclass (180)



61'

81'

41'

91'

51'

41'

13'

21'

11'

1'

60'

80'

70'

90'

0

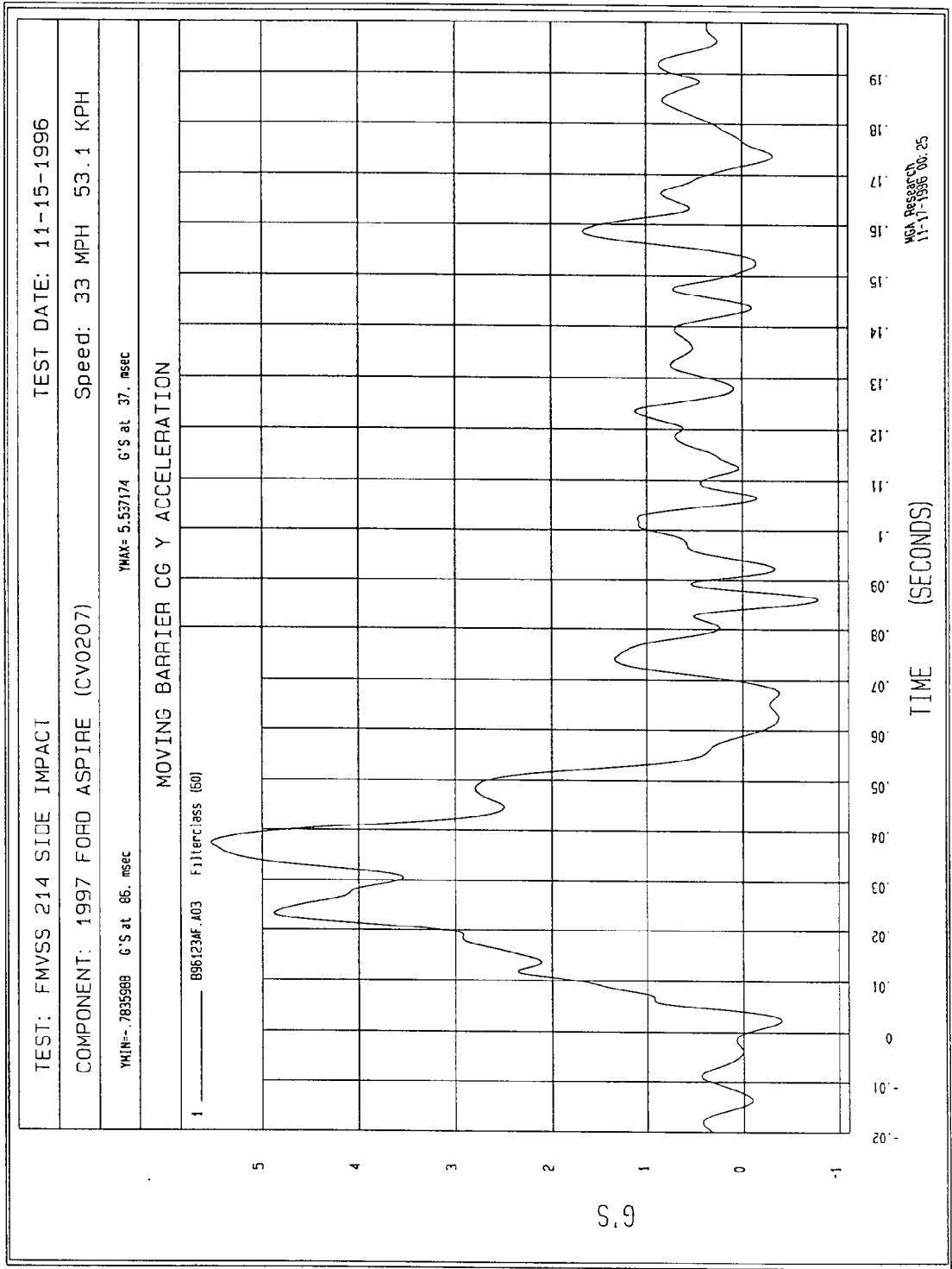
10'

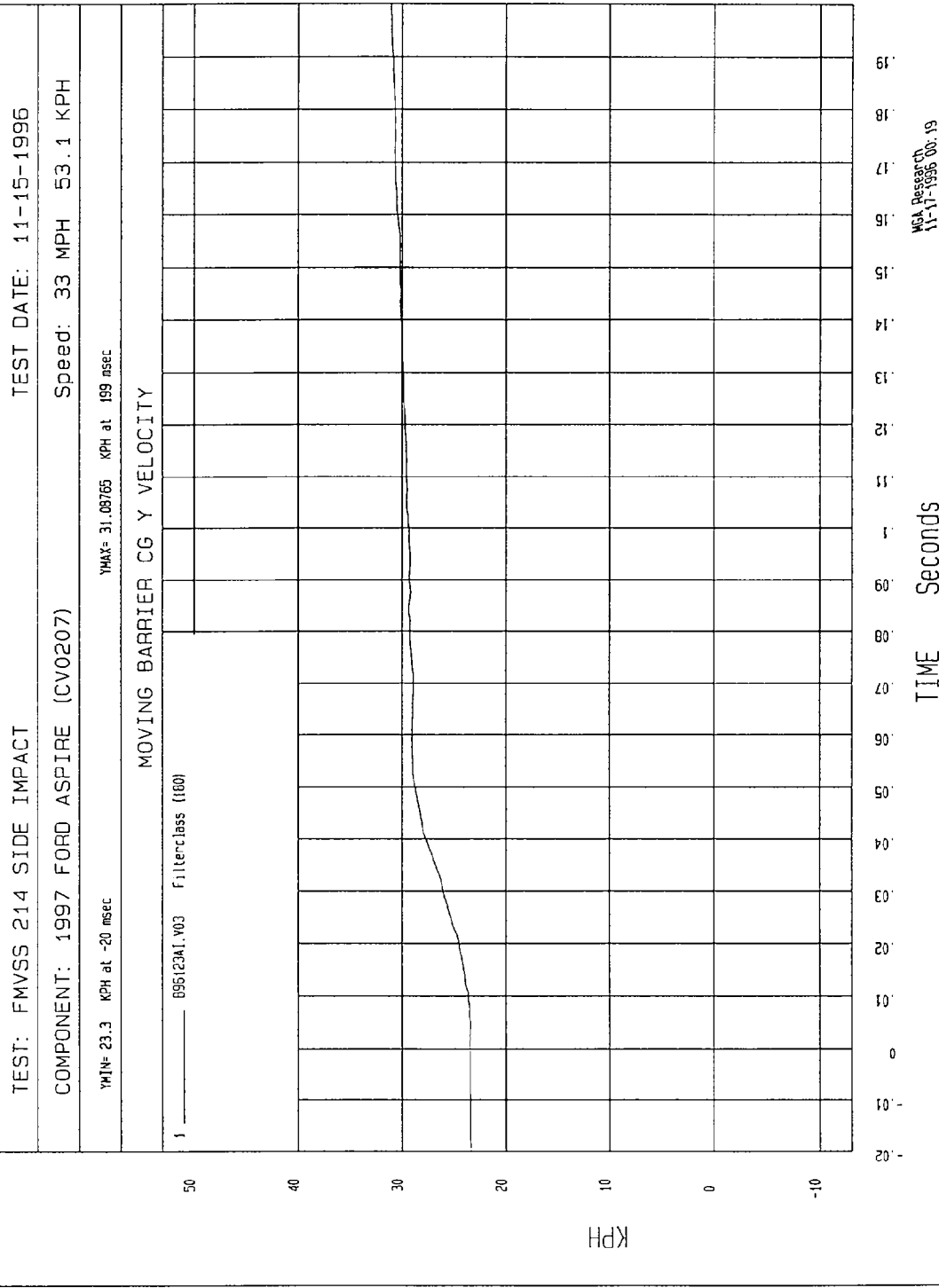
-10'

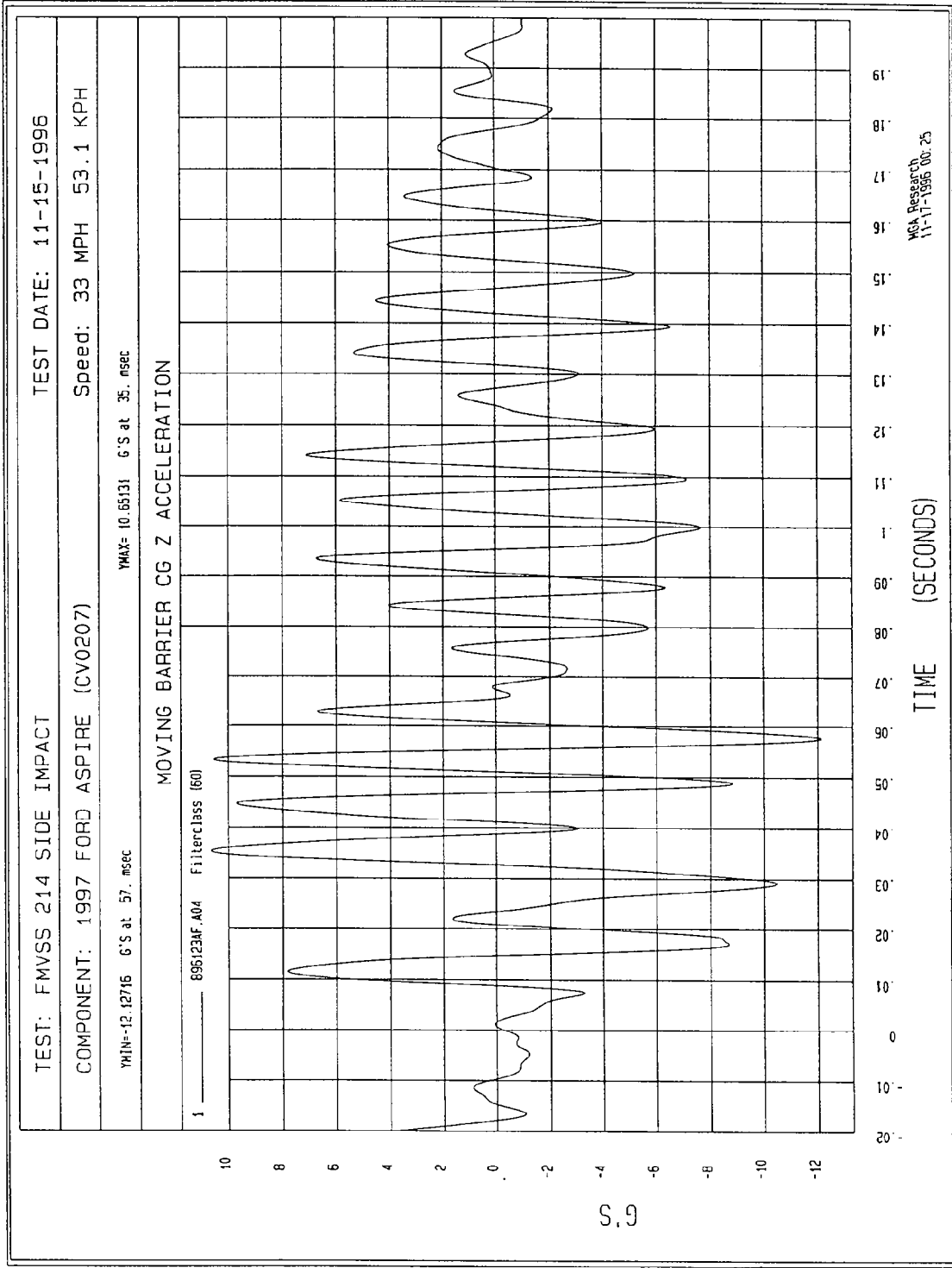
-20'

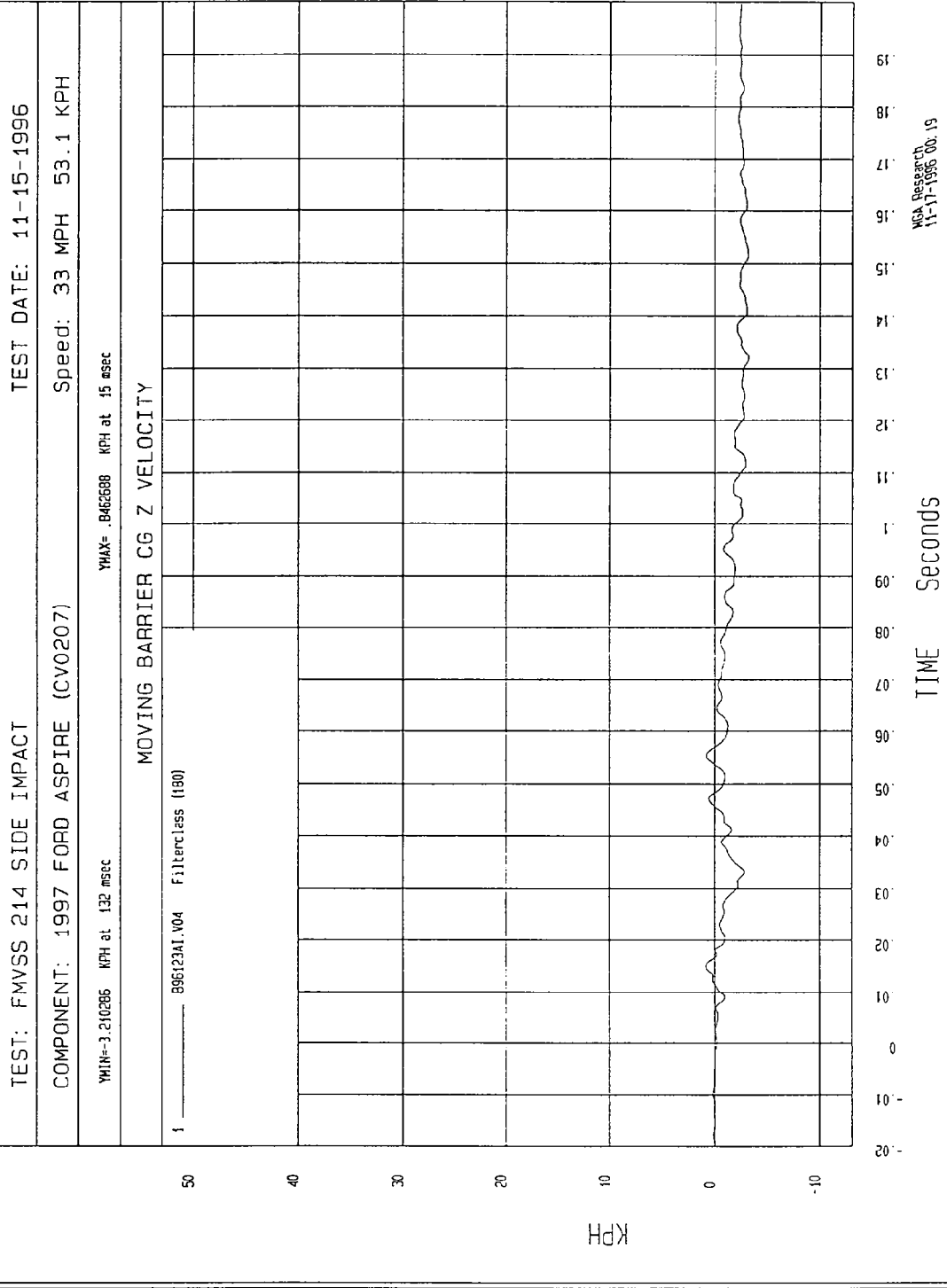
TIME Seconds

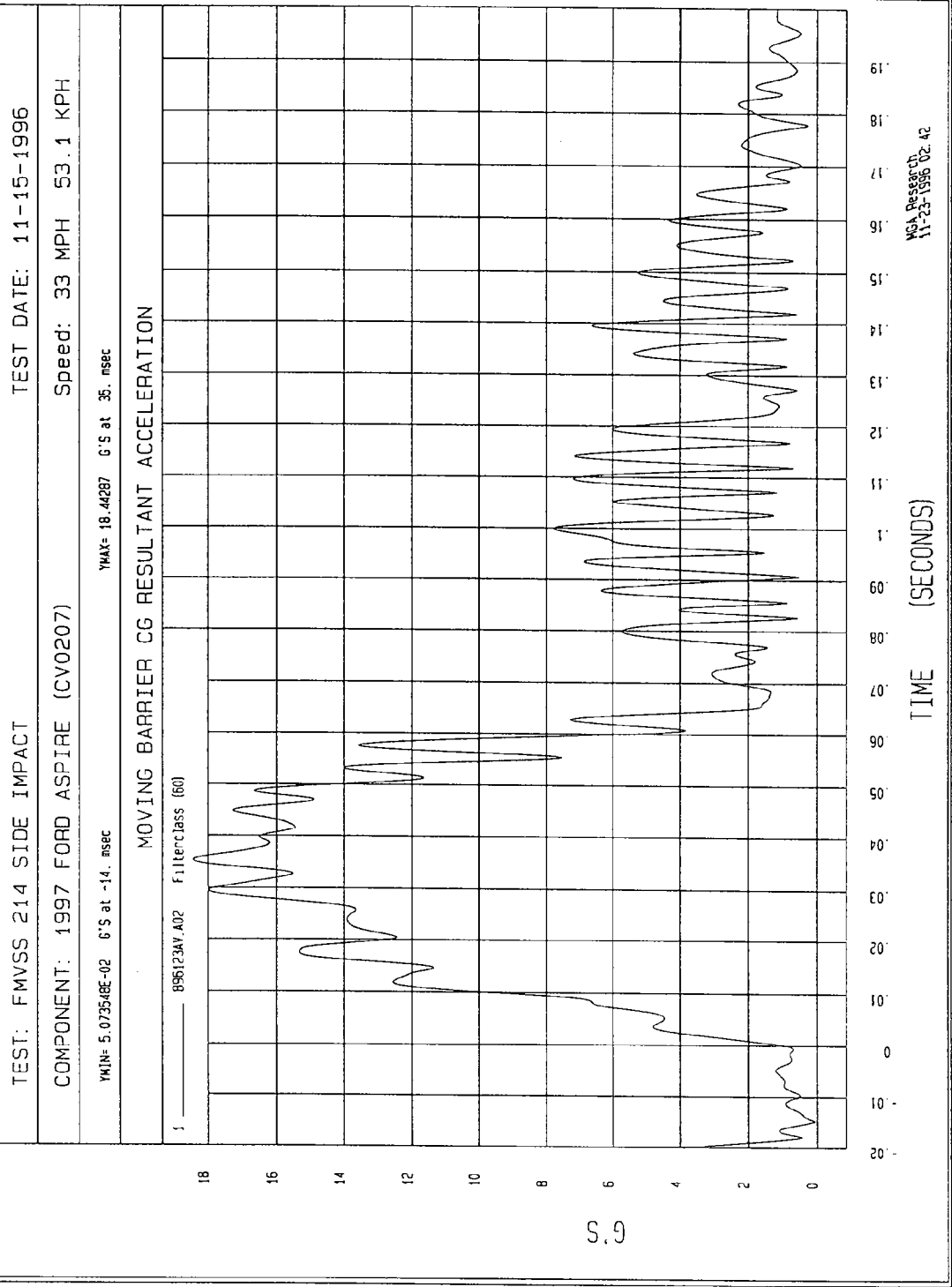
HGA Research
11-17-1996 06:19

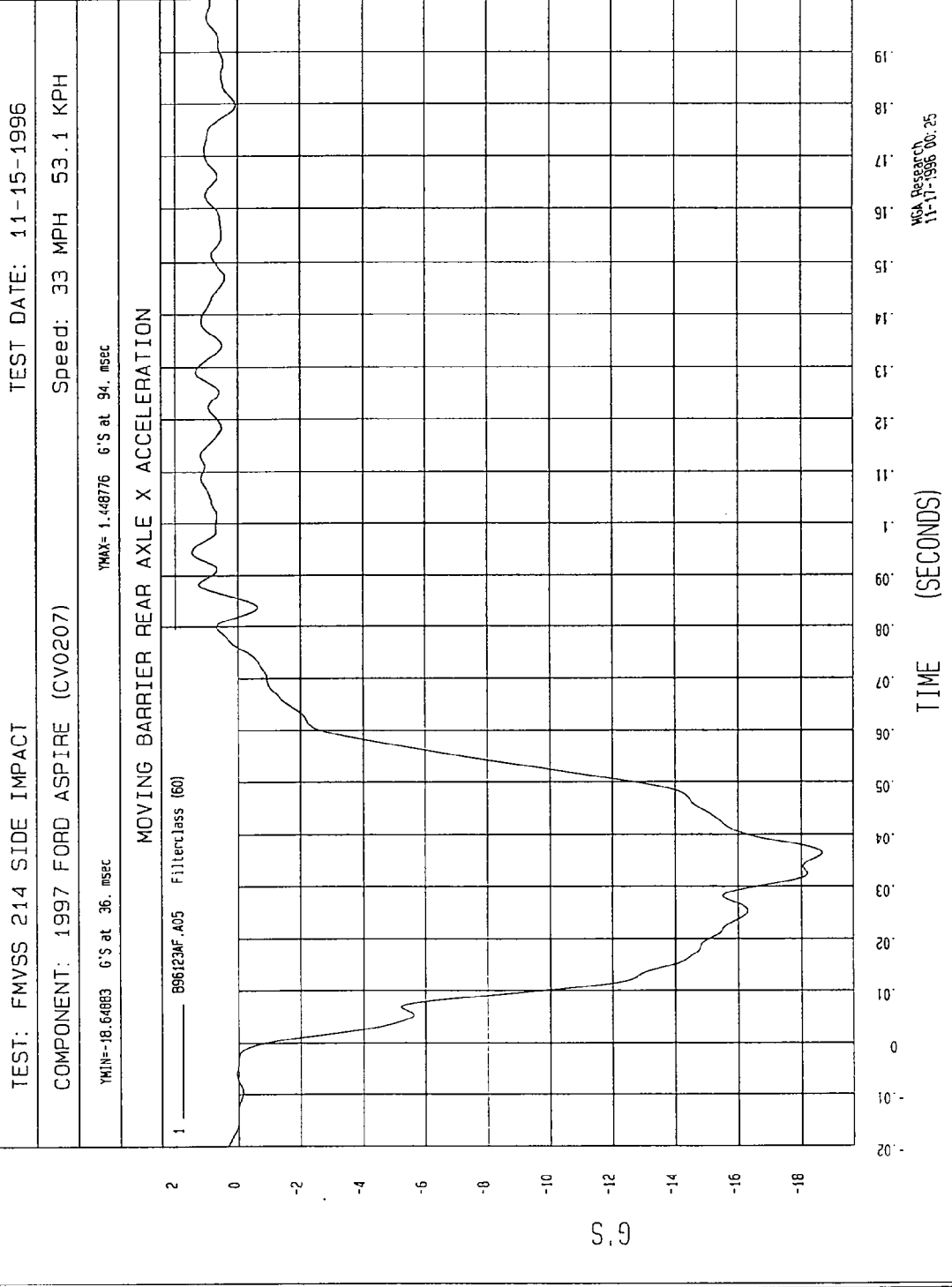


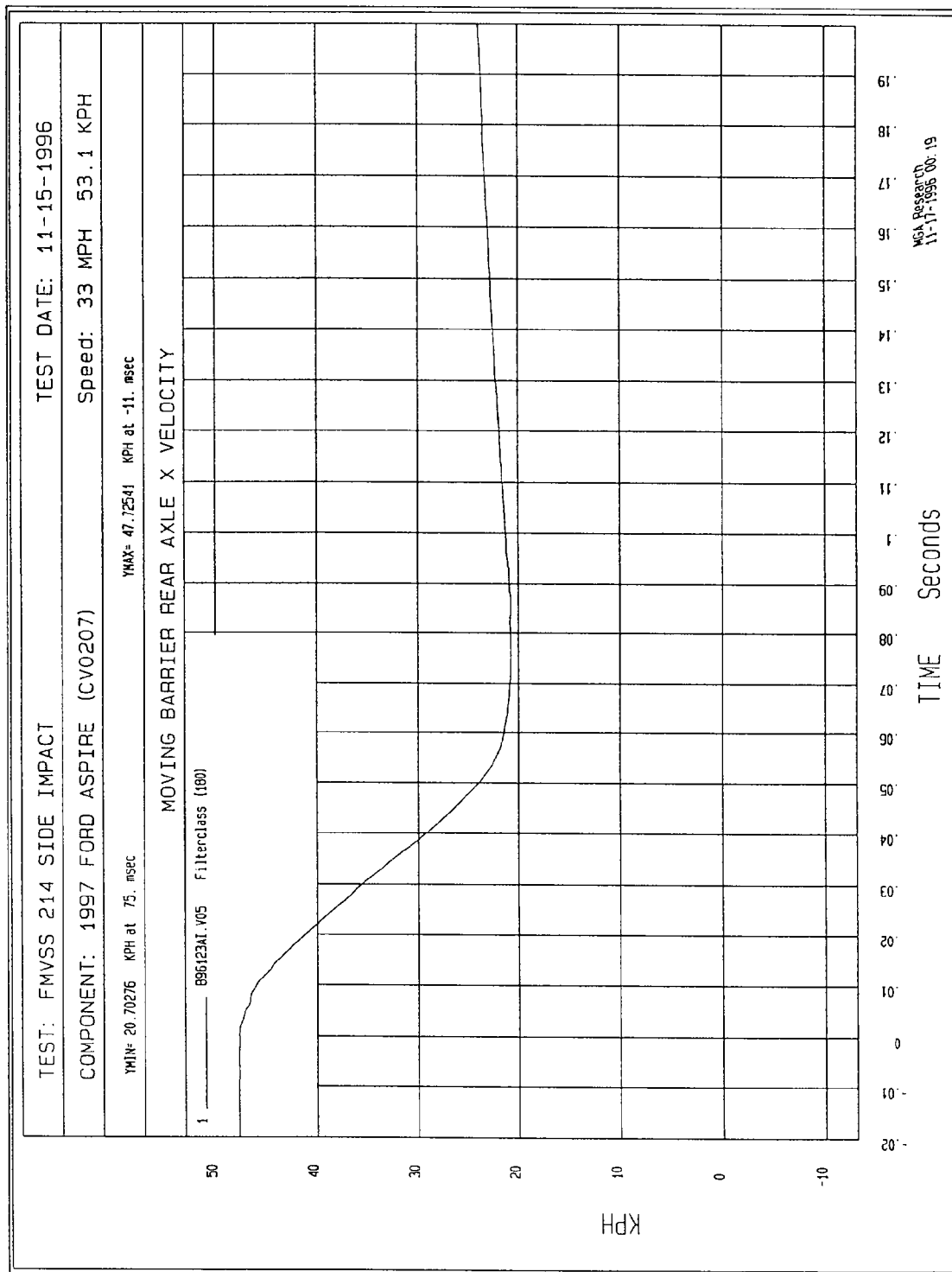


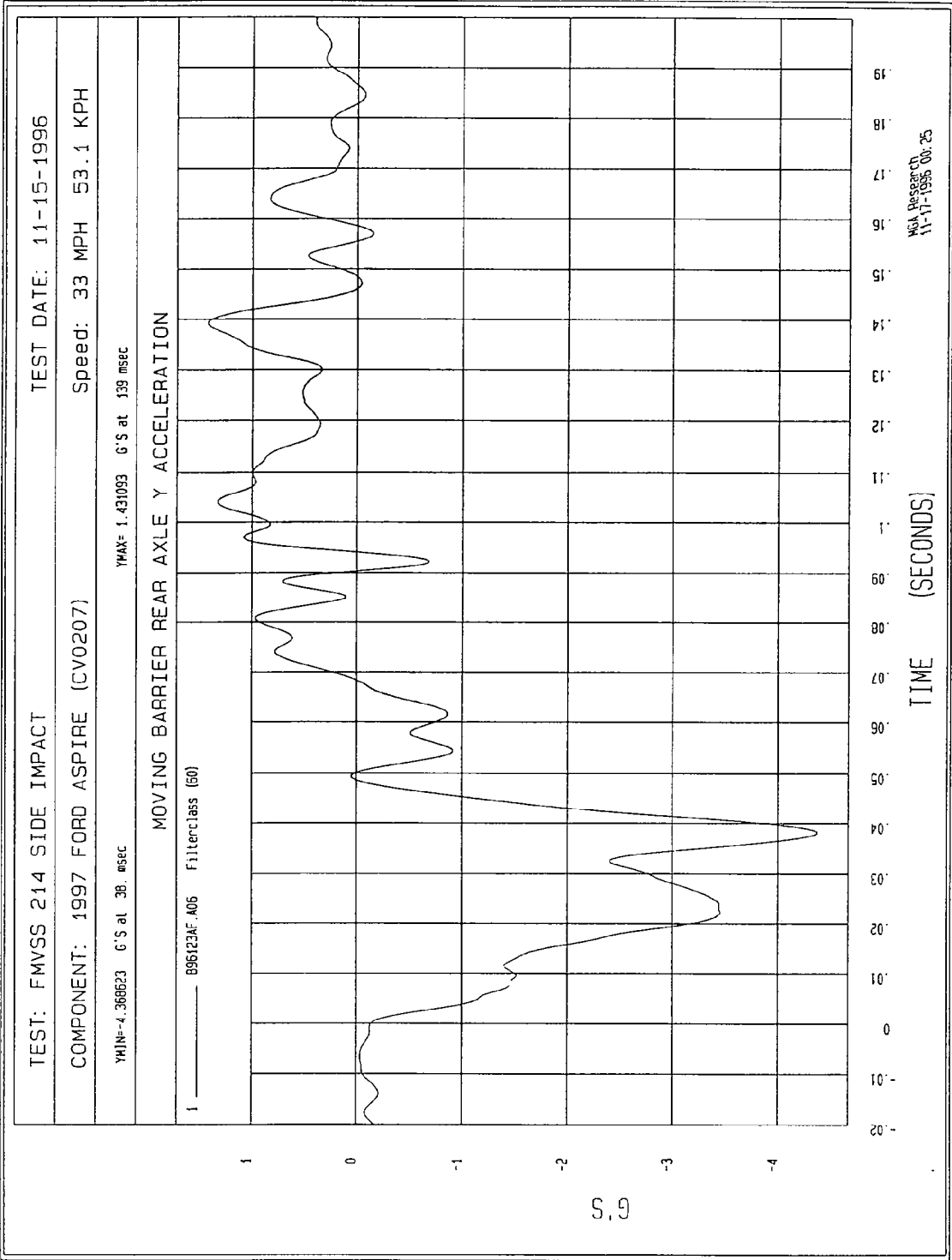


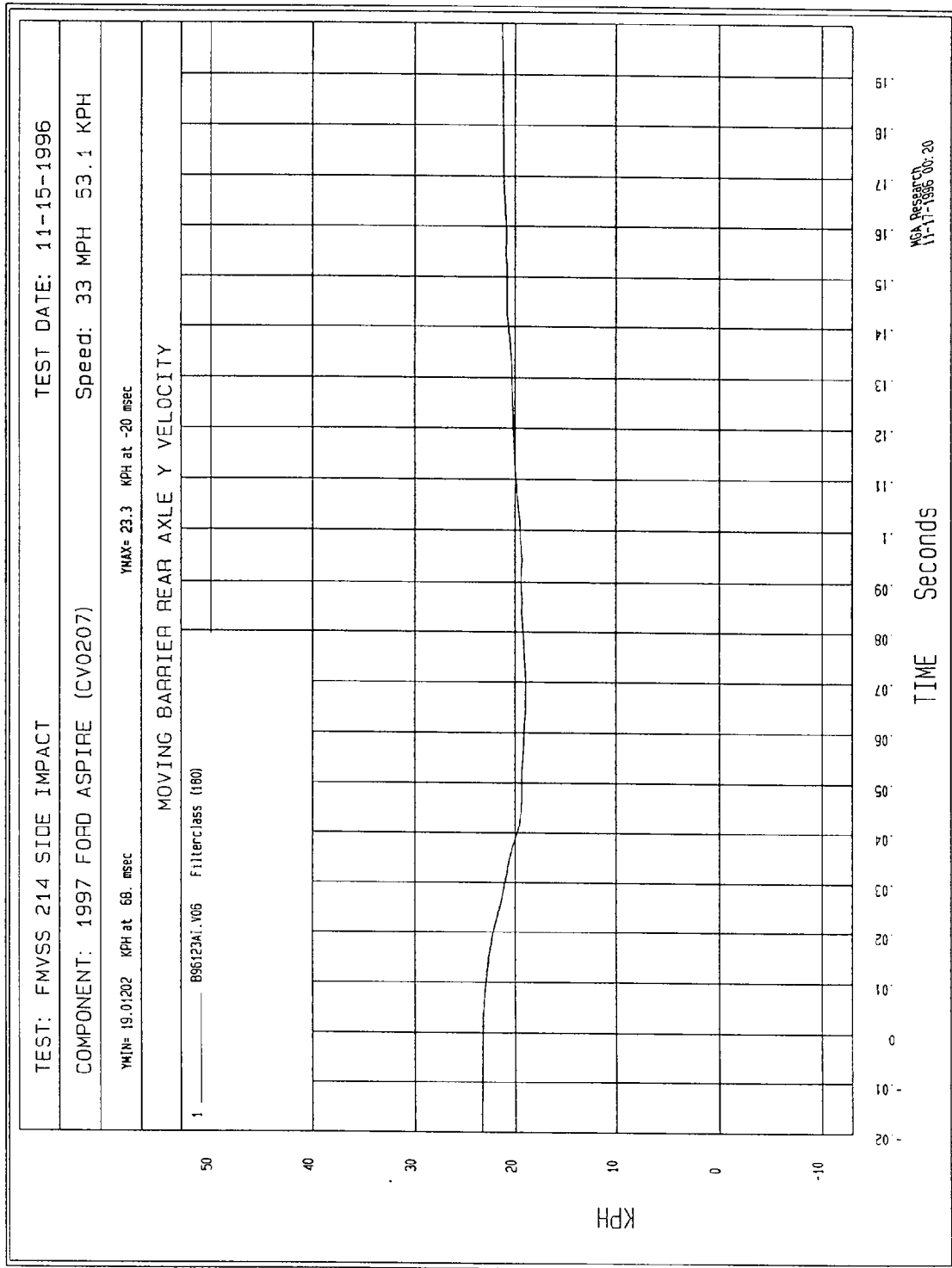


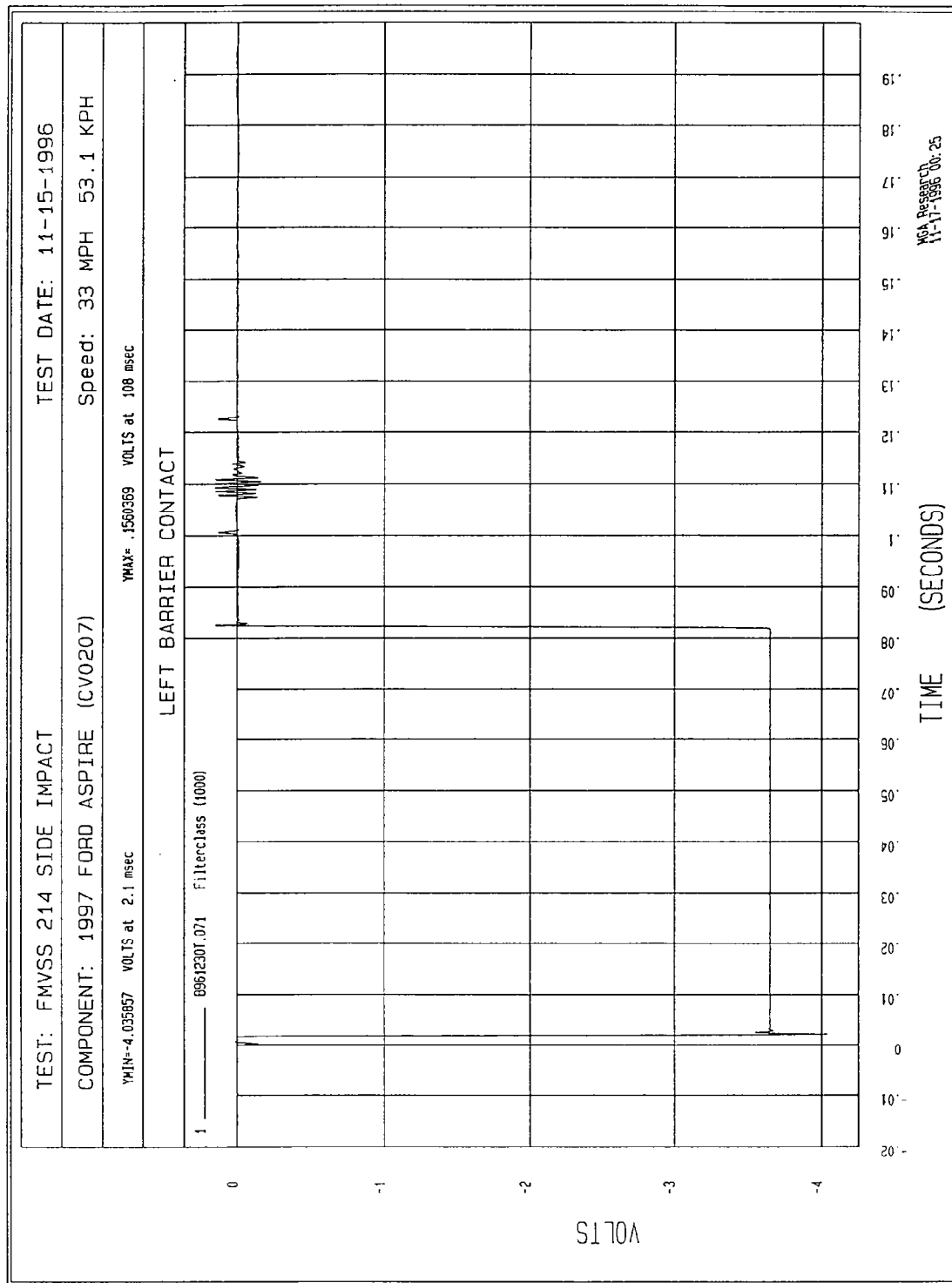


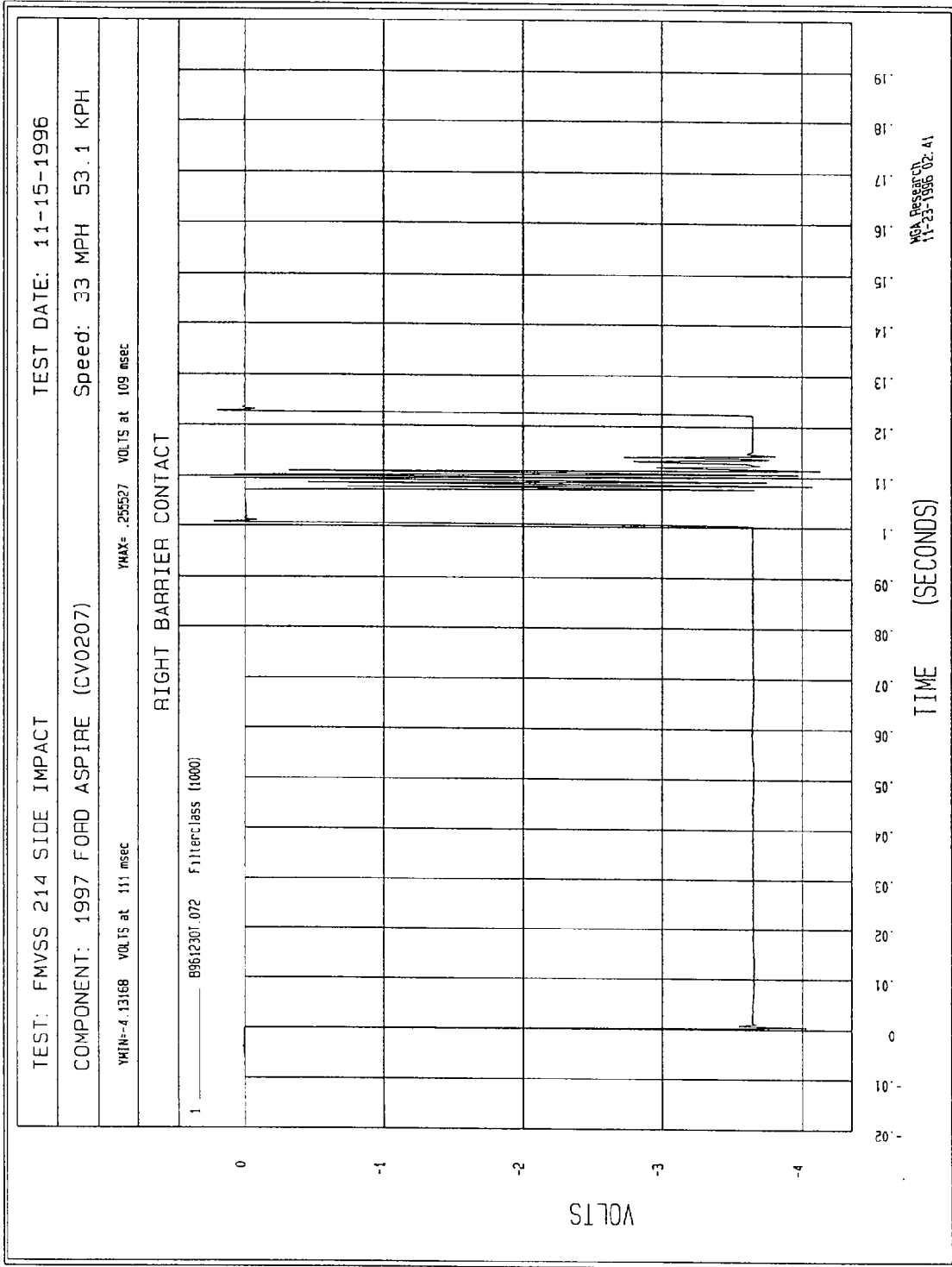












TEST: FMVSS 214 SIDE IMPACT

TEST DATE: 11-15-1996

COMPONENT: 1997 FORD ASPIRE (CV0207)

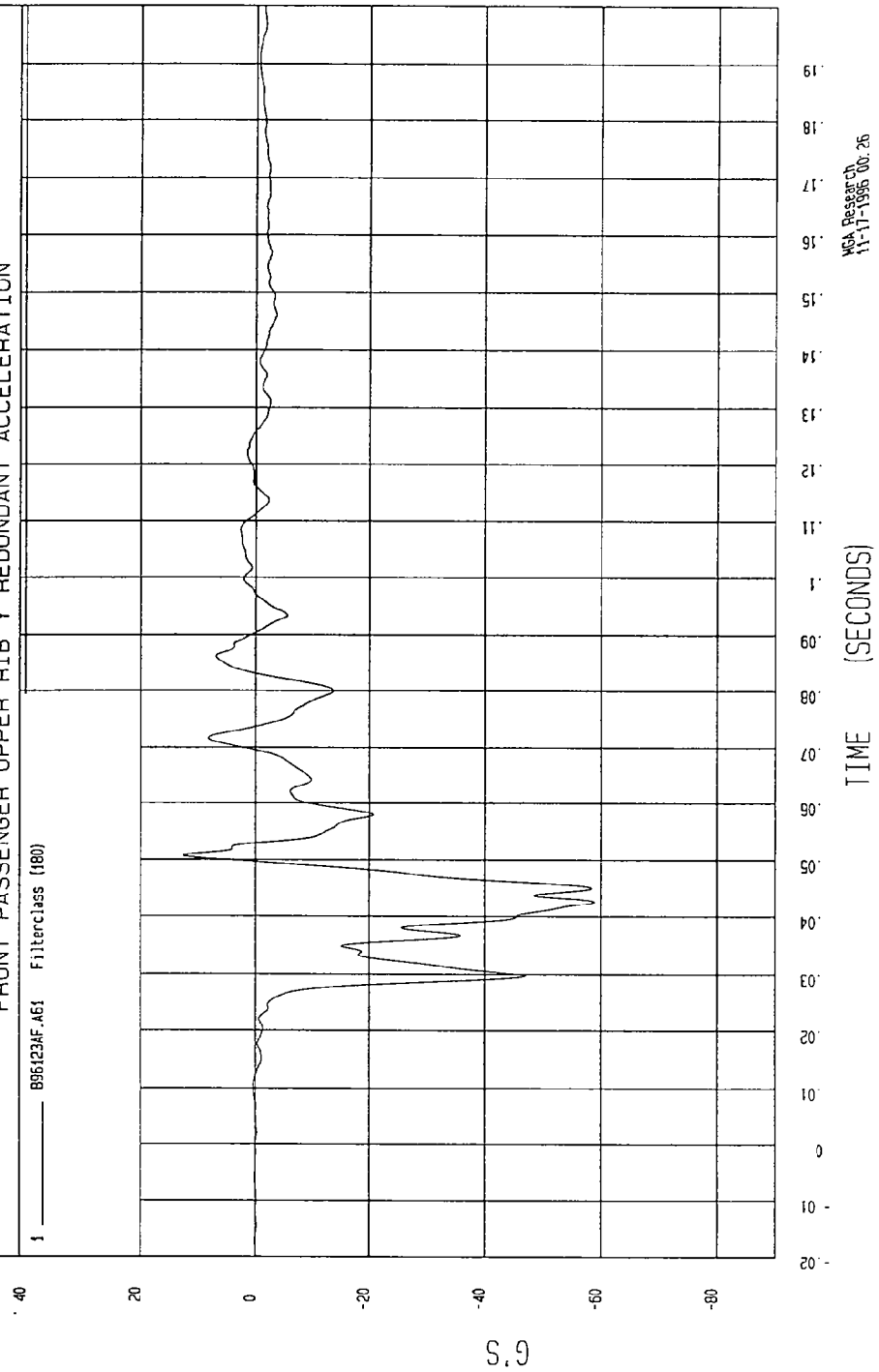
Speed: 33 MPH 53.1 KPH

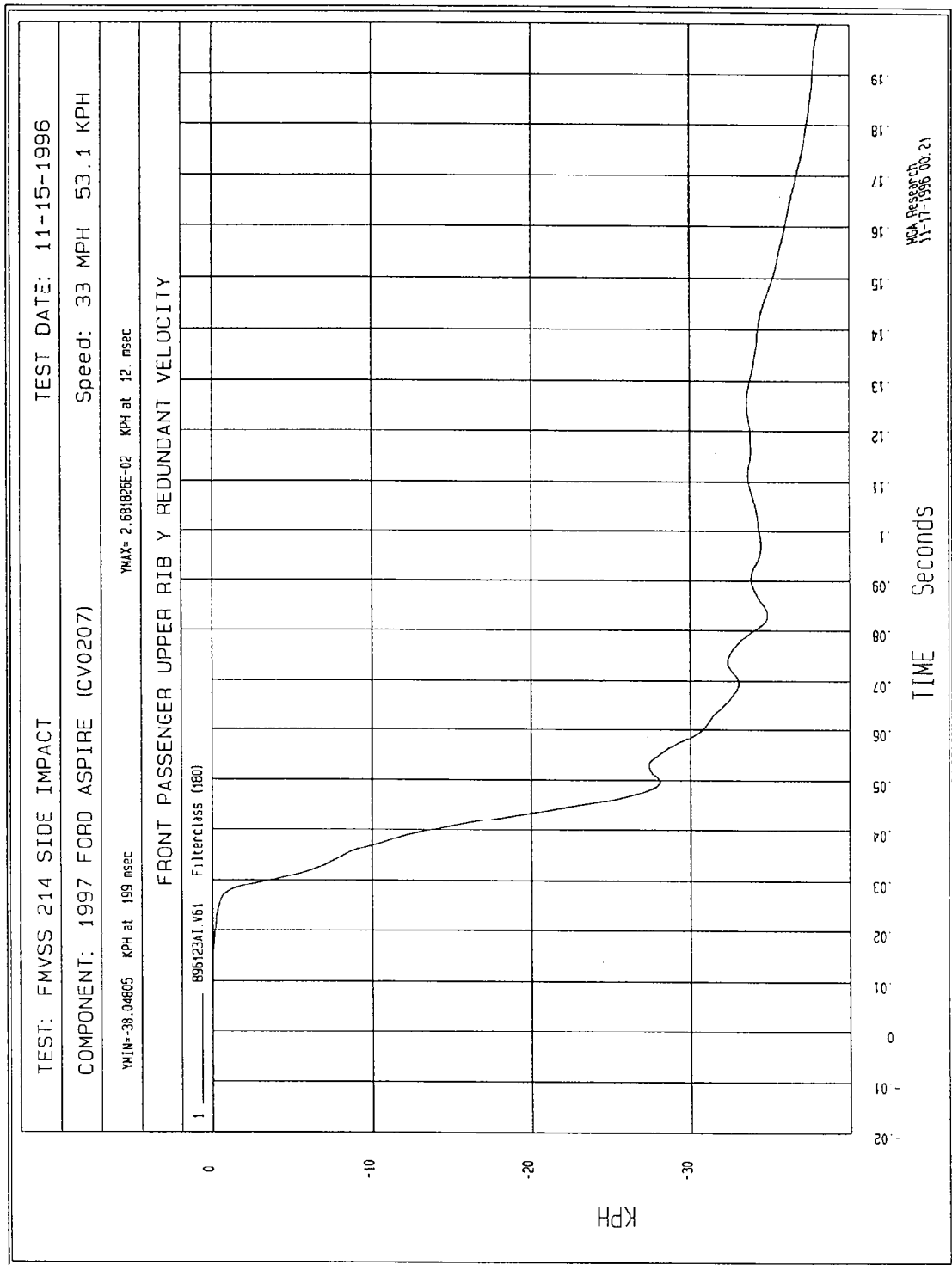
YMIN=-58.97834 6'S at 42. msec

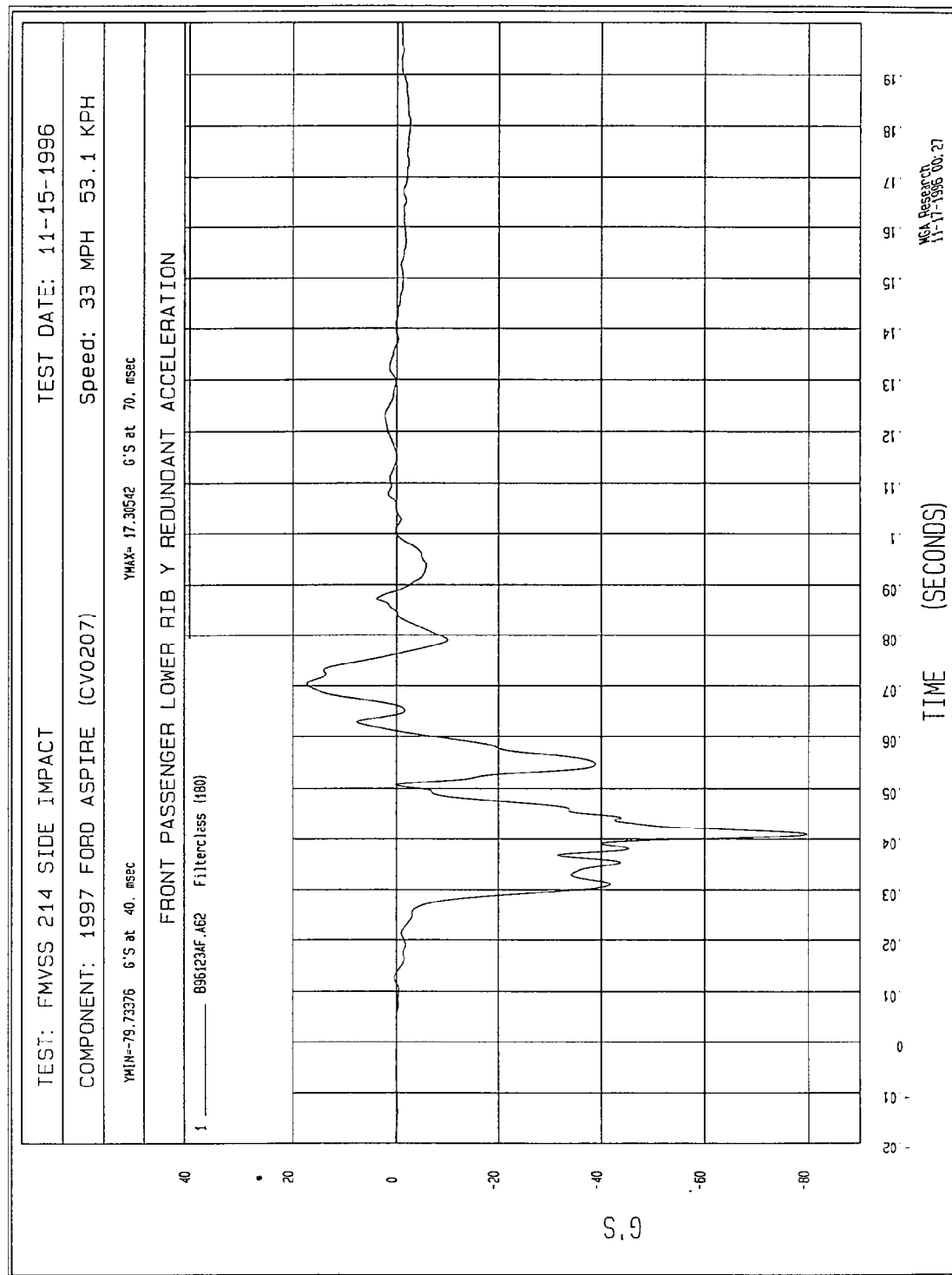
YMAX= 12.63101 6'S at 50. msec

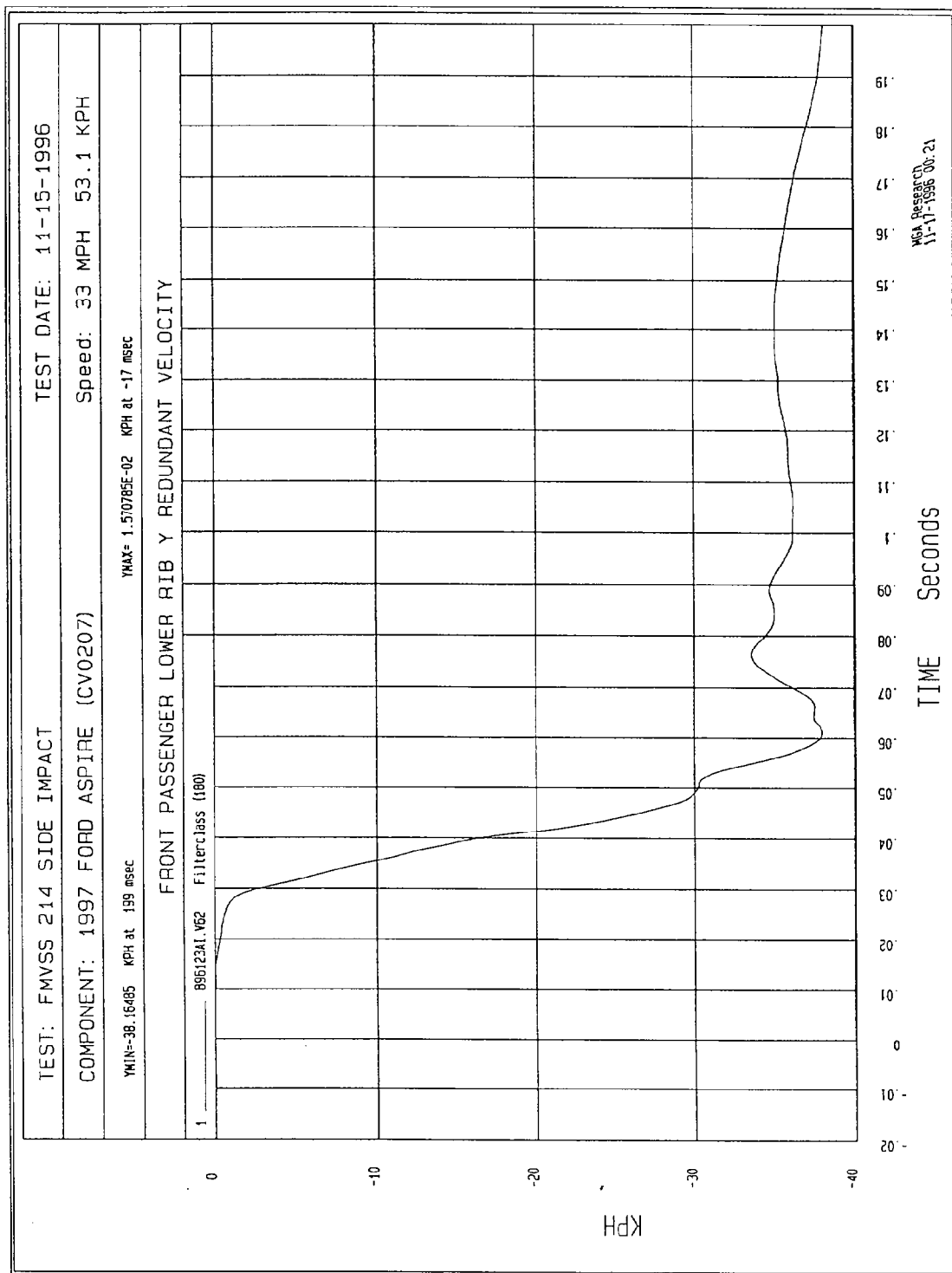
FRONT PASSENGER UPPER RIB Y REDUNDANT ACCELERATION

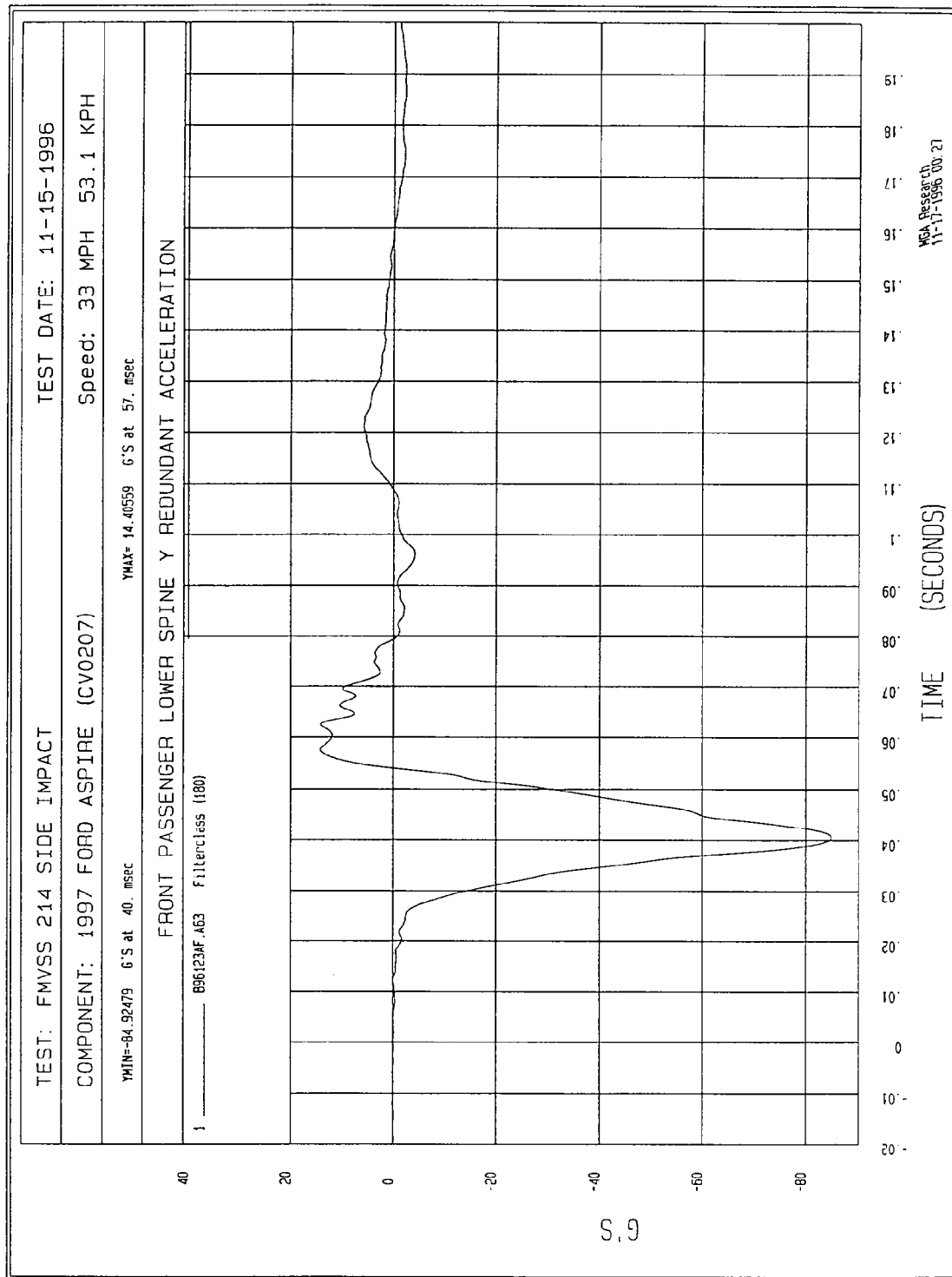
1 ——— B96123AF.A61 Filterclass (180)

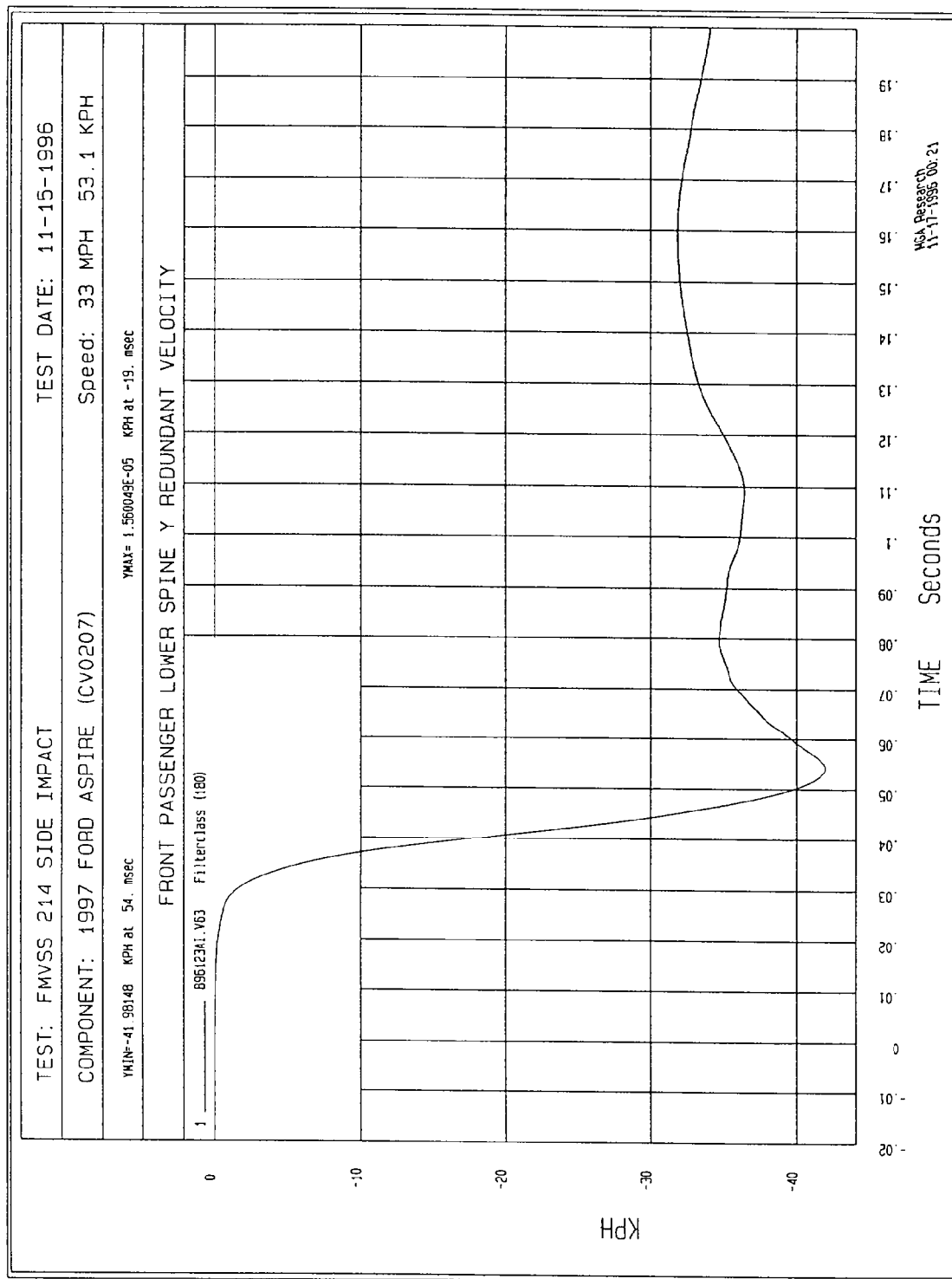




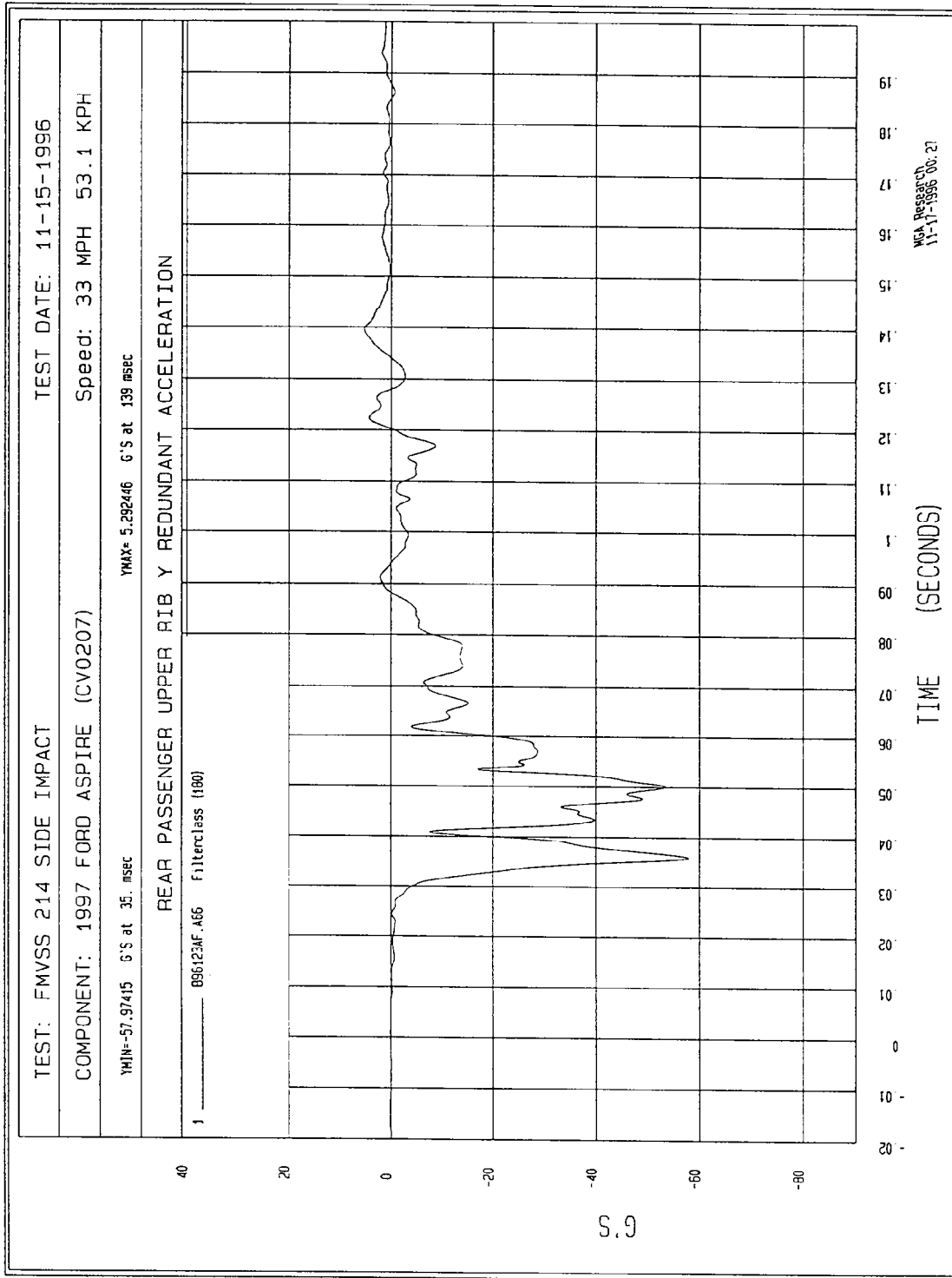








FRONT PASSENGER PELVIS Y REDUNDANT ACCELERATION VS. TIME
NO VALID DATA COLLECTED



TEST: FMVSS 214 SIDE IMPACT

TEST DATE: 11-15-1996

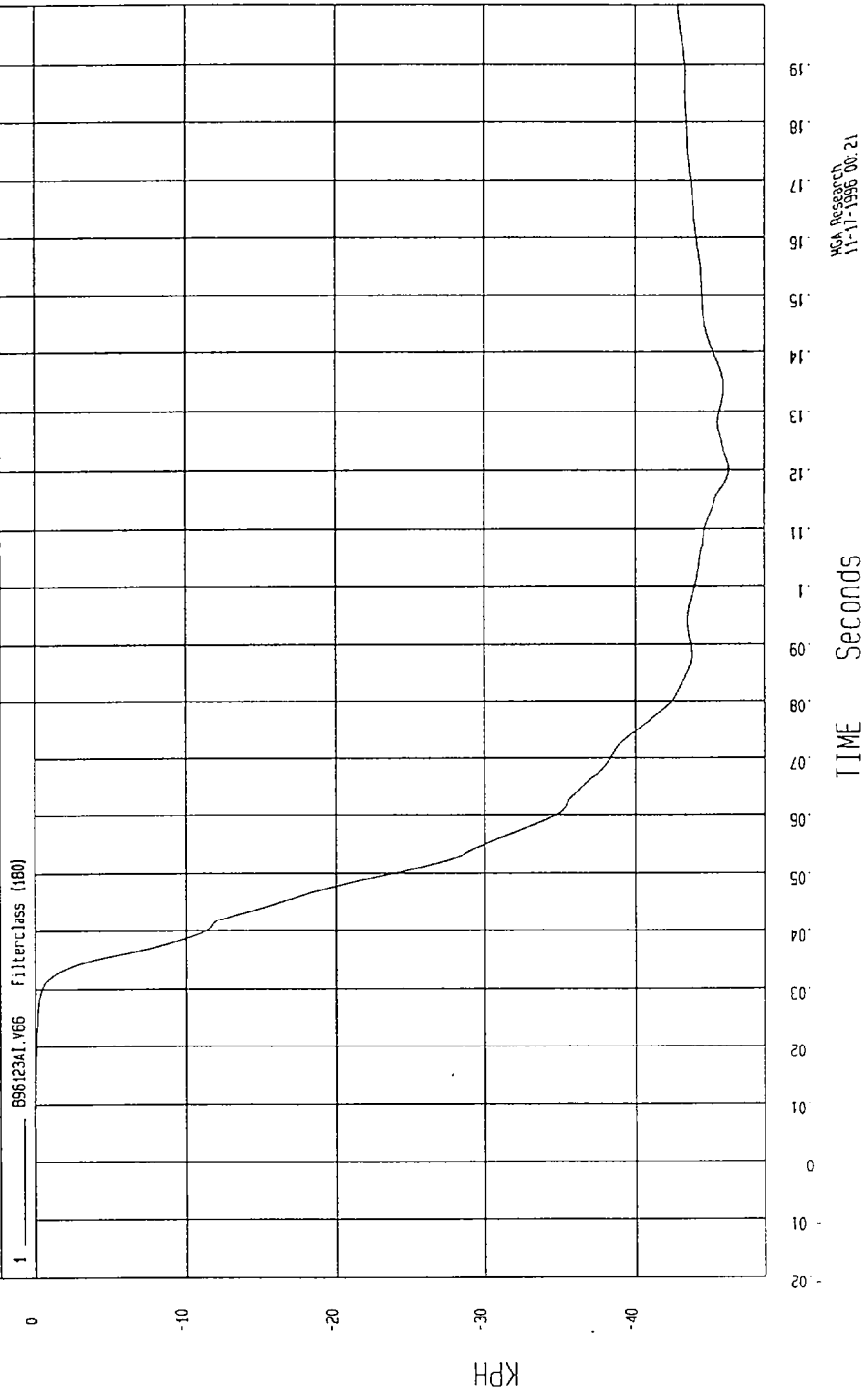
COMPONENT: 1997 FORD ASPIRE (CV0207)

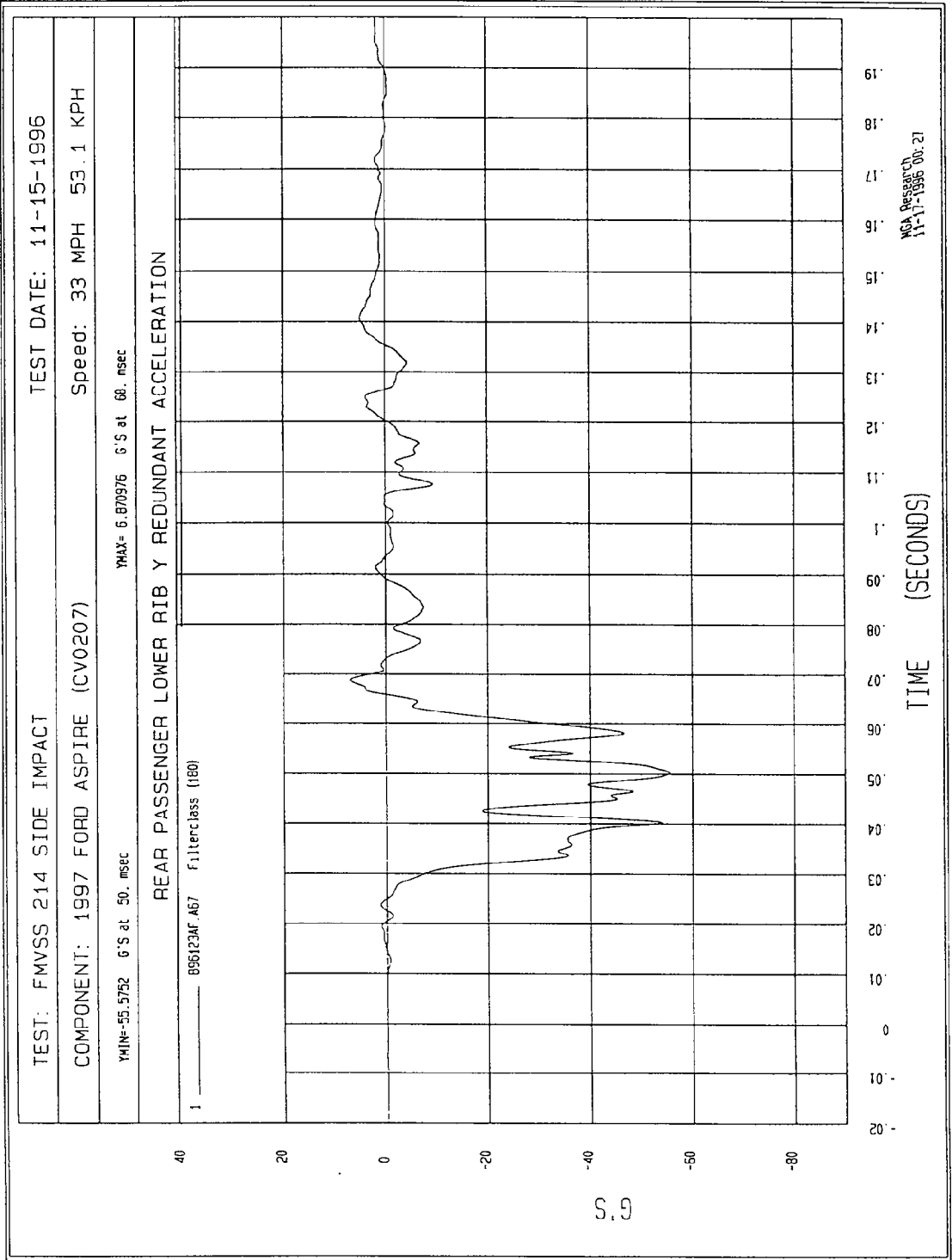
Speed: 33 MPH 53.1 KPH

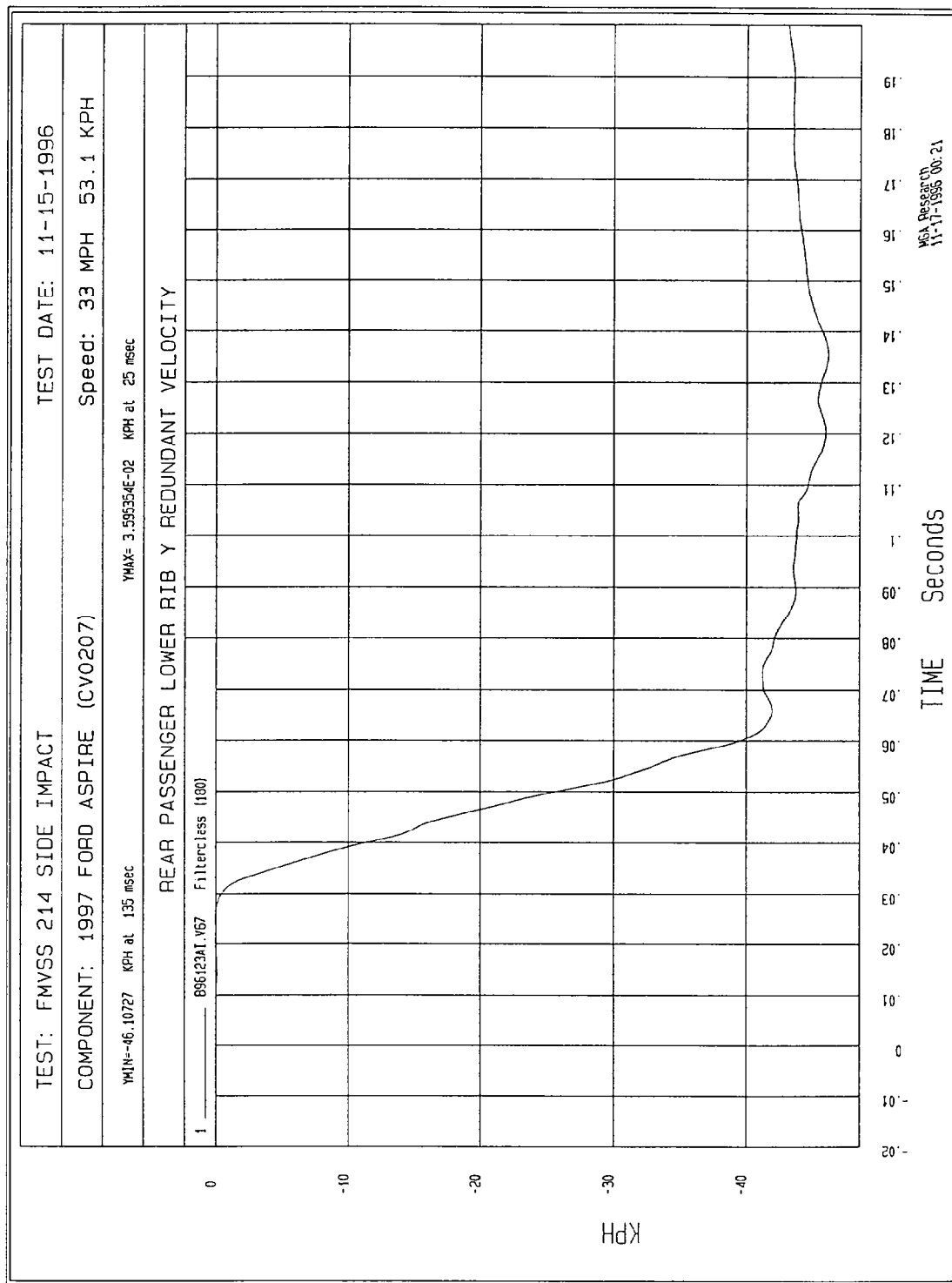
YMIN=-46.14314 KPH at 120 msec

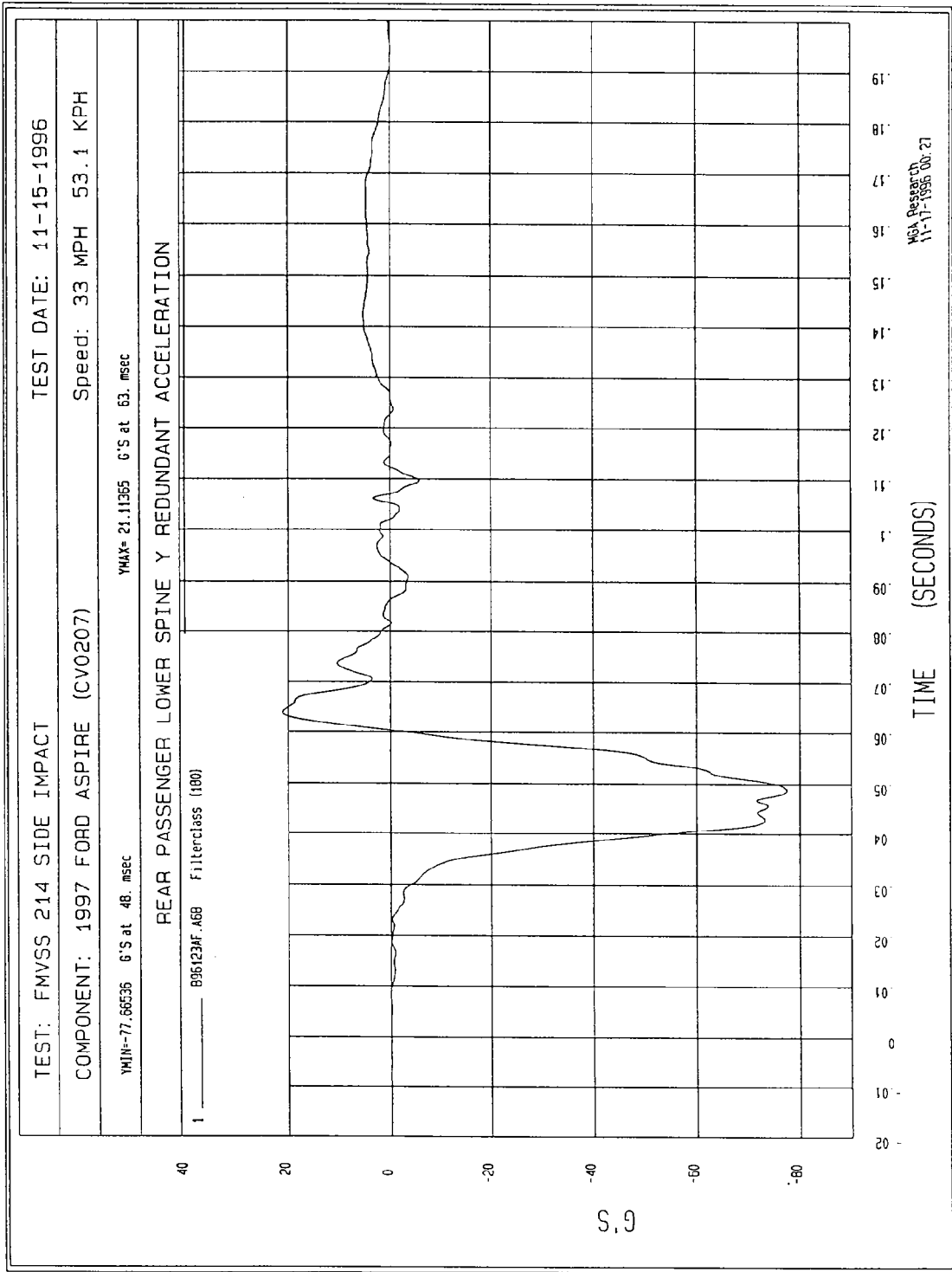
YMAX= .0545664 KPH at 7.5 msec

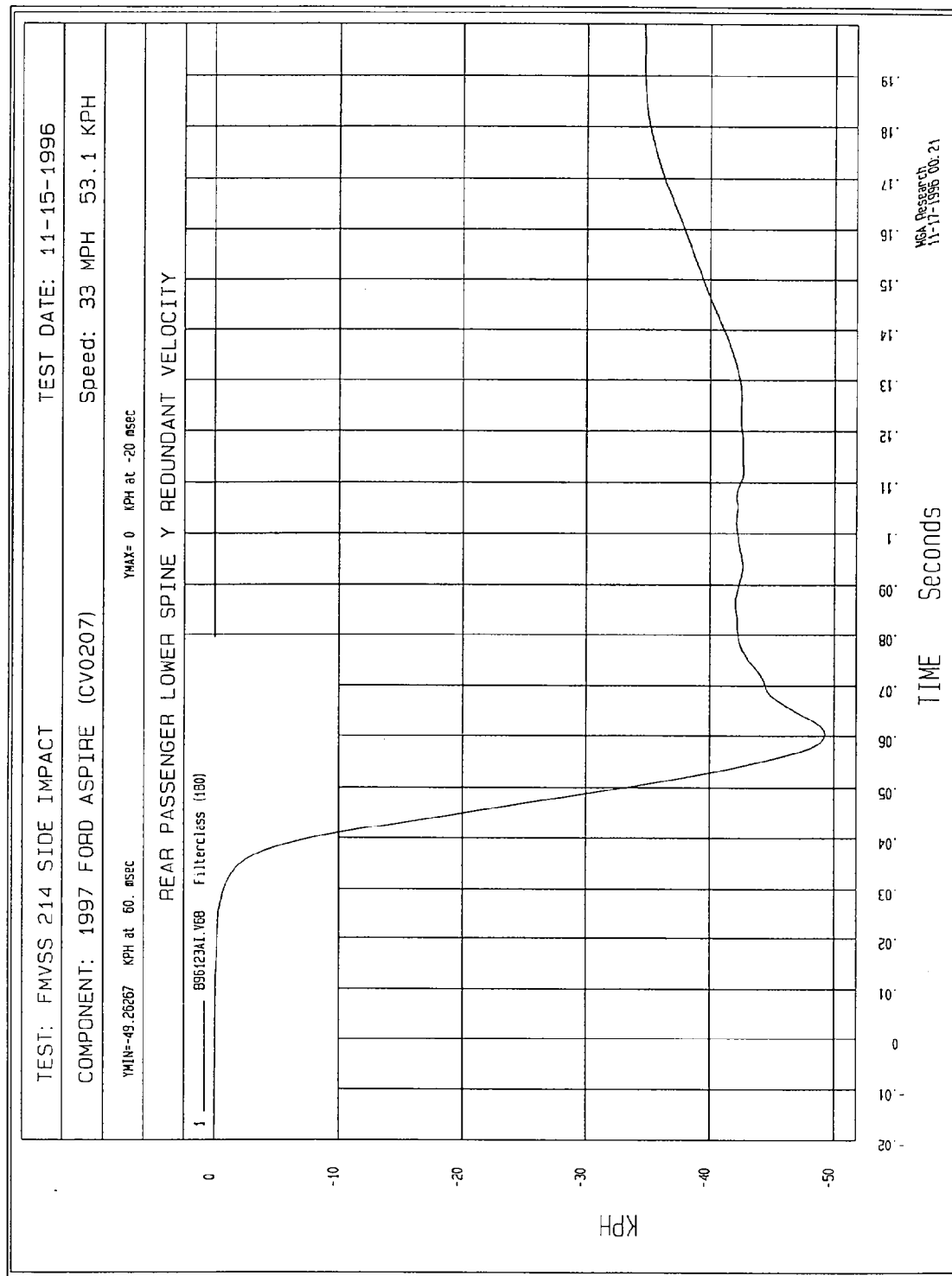
REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY

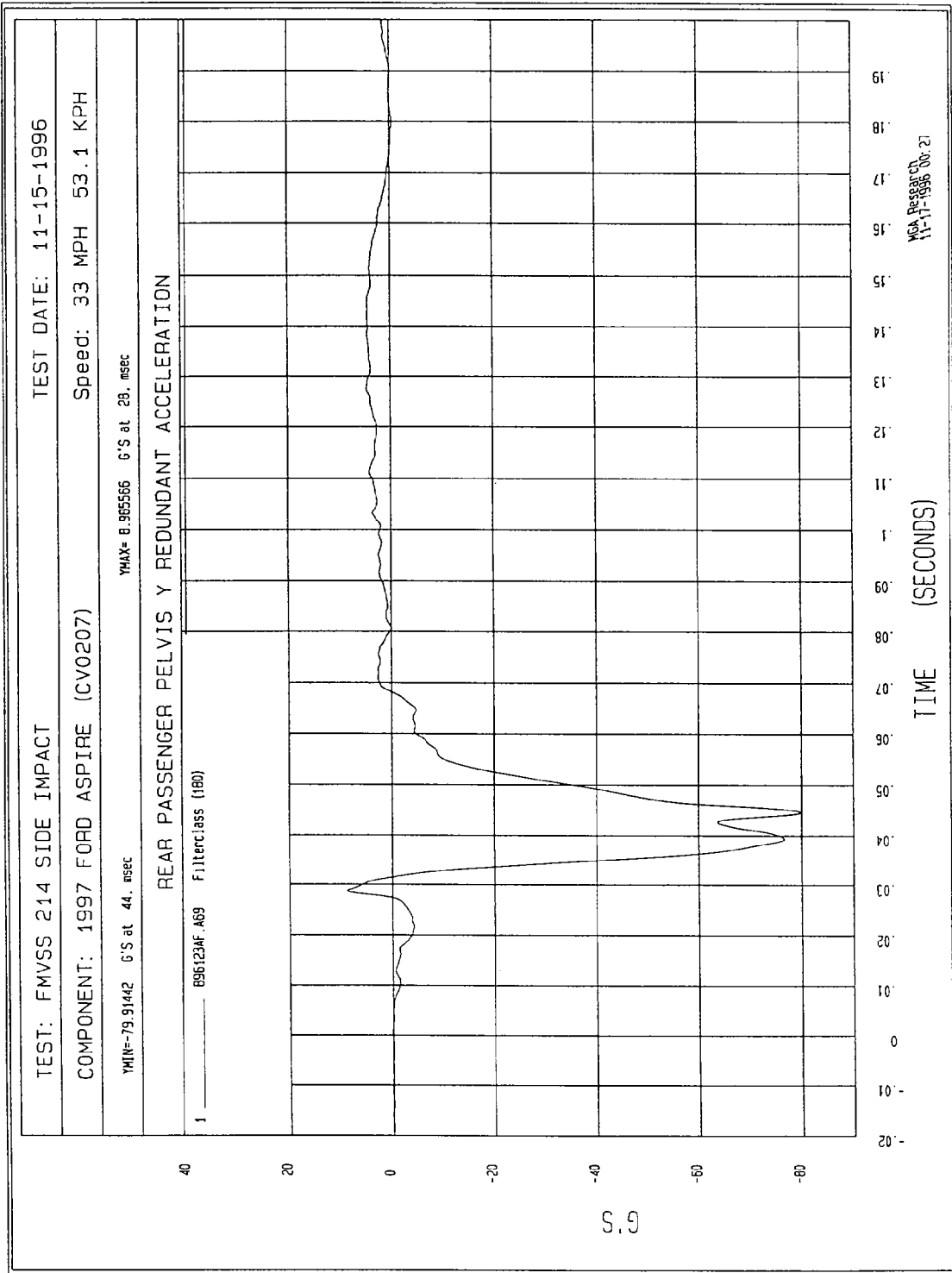


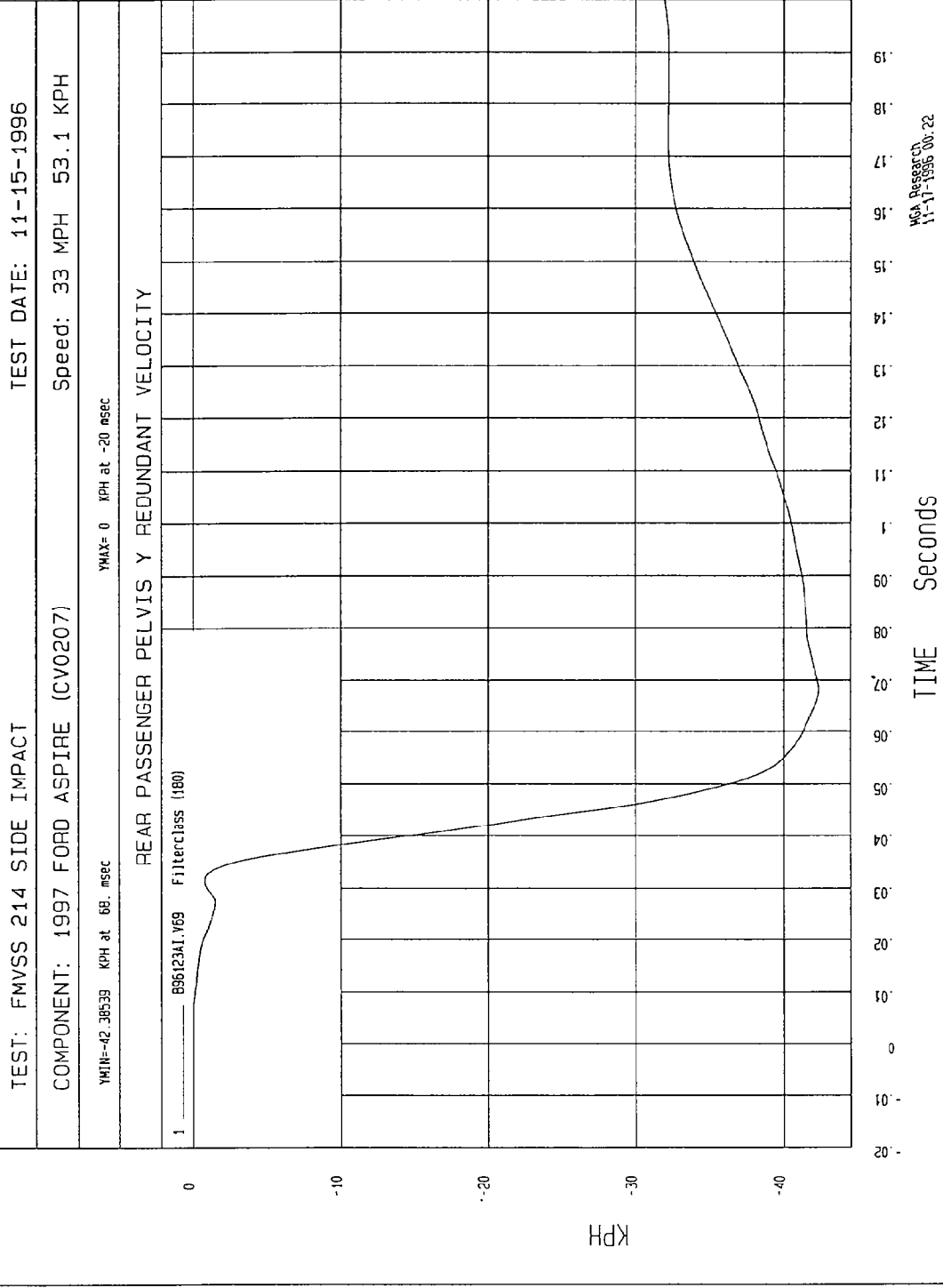


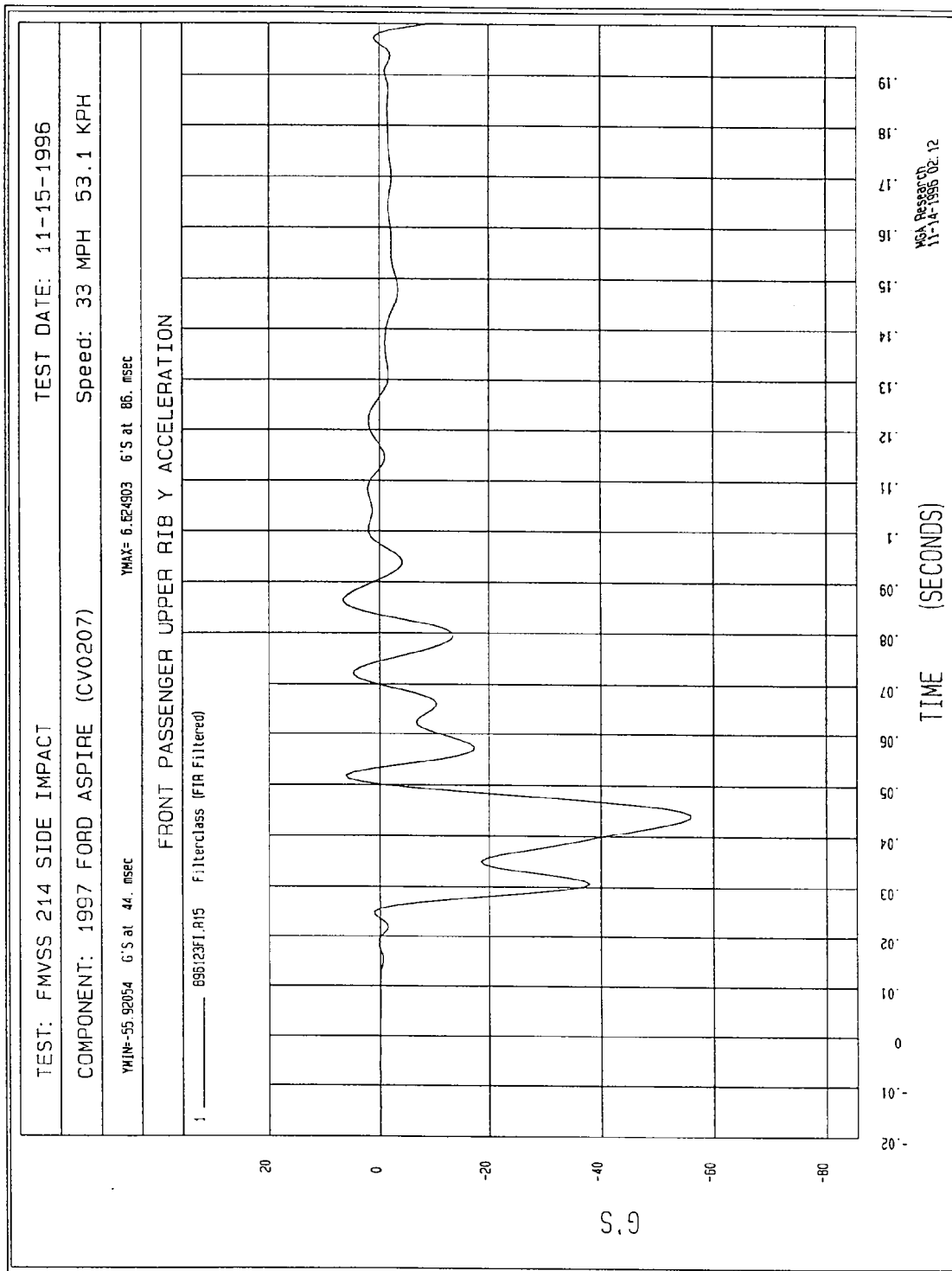




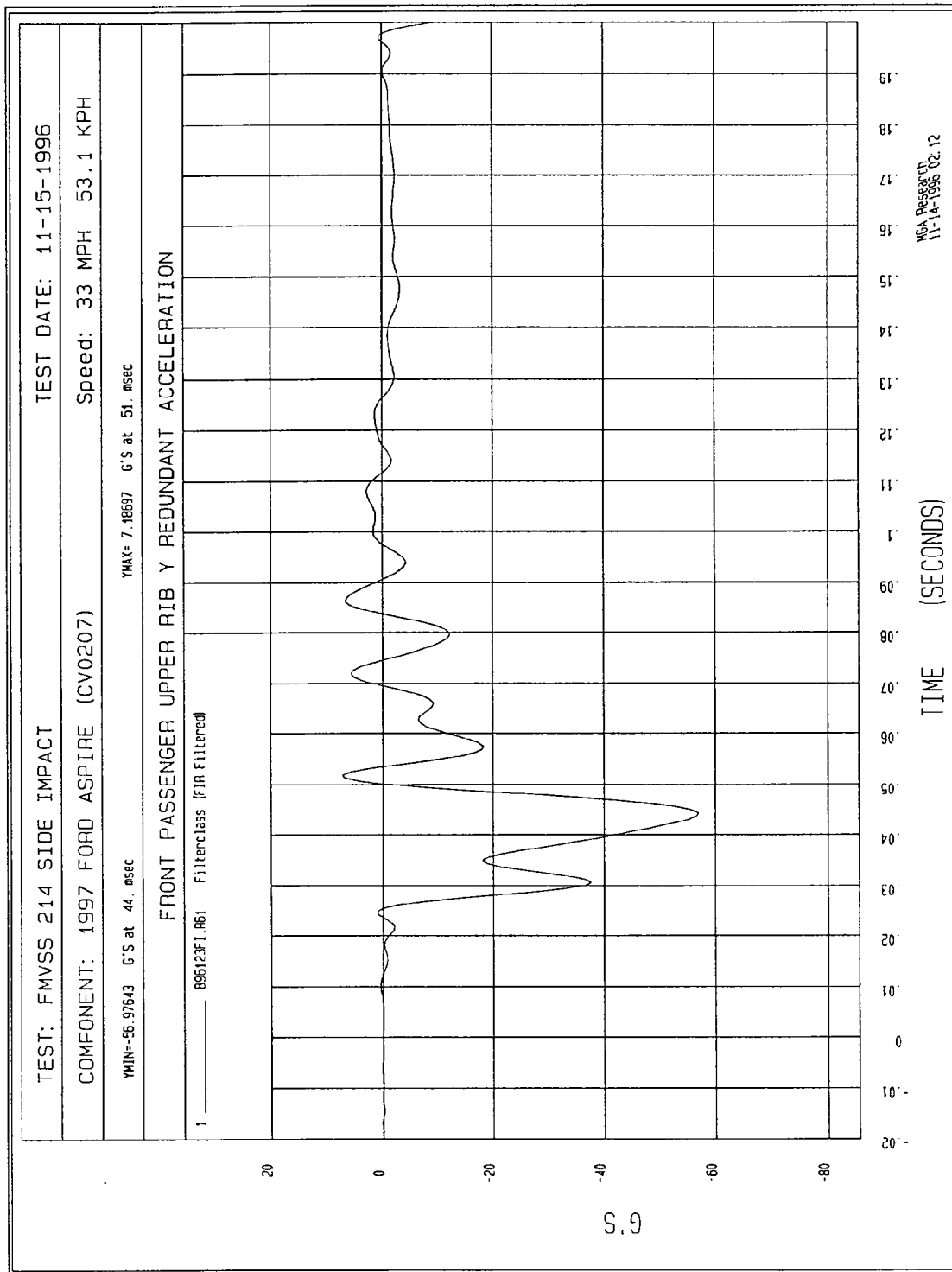


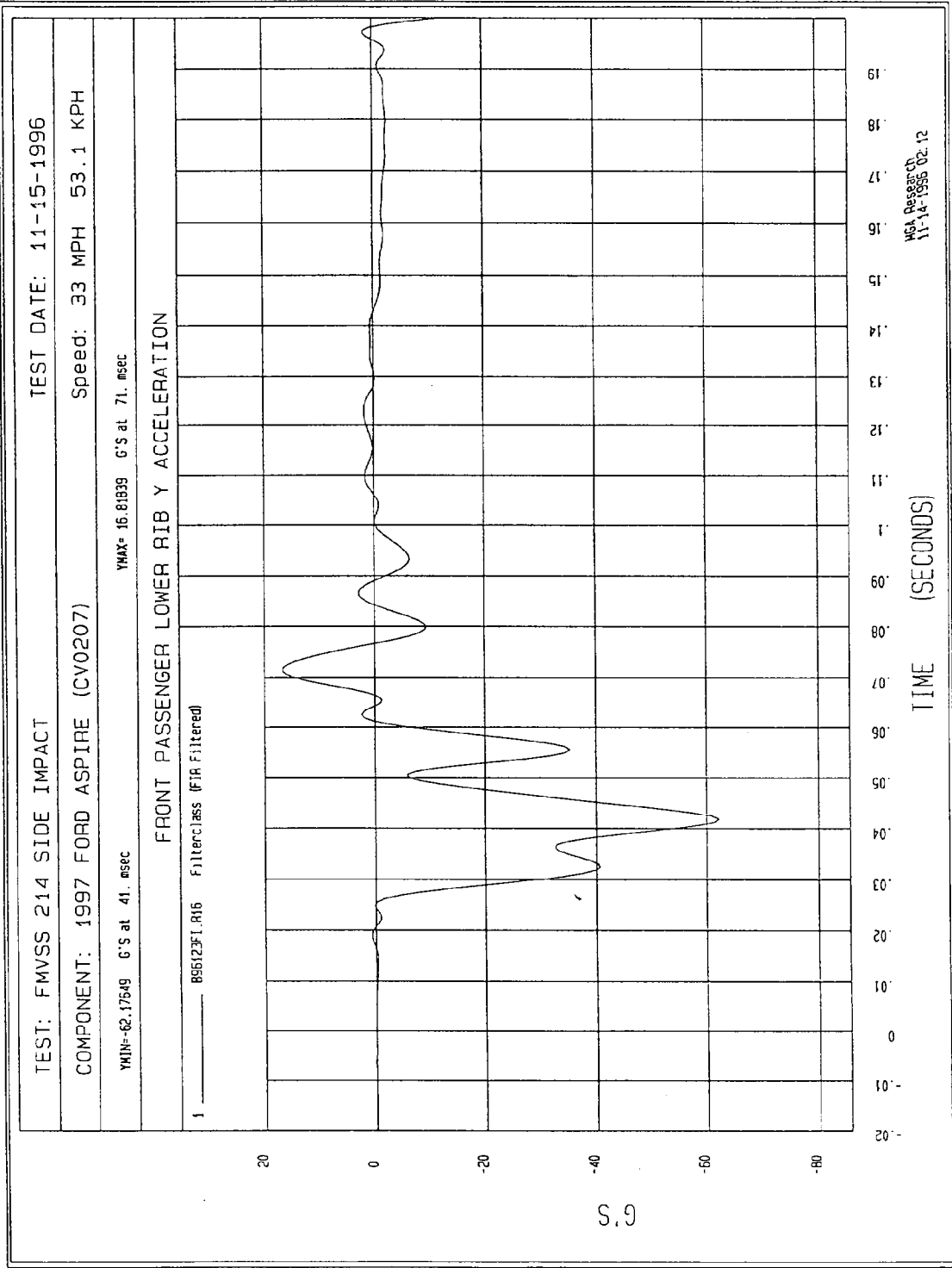


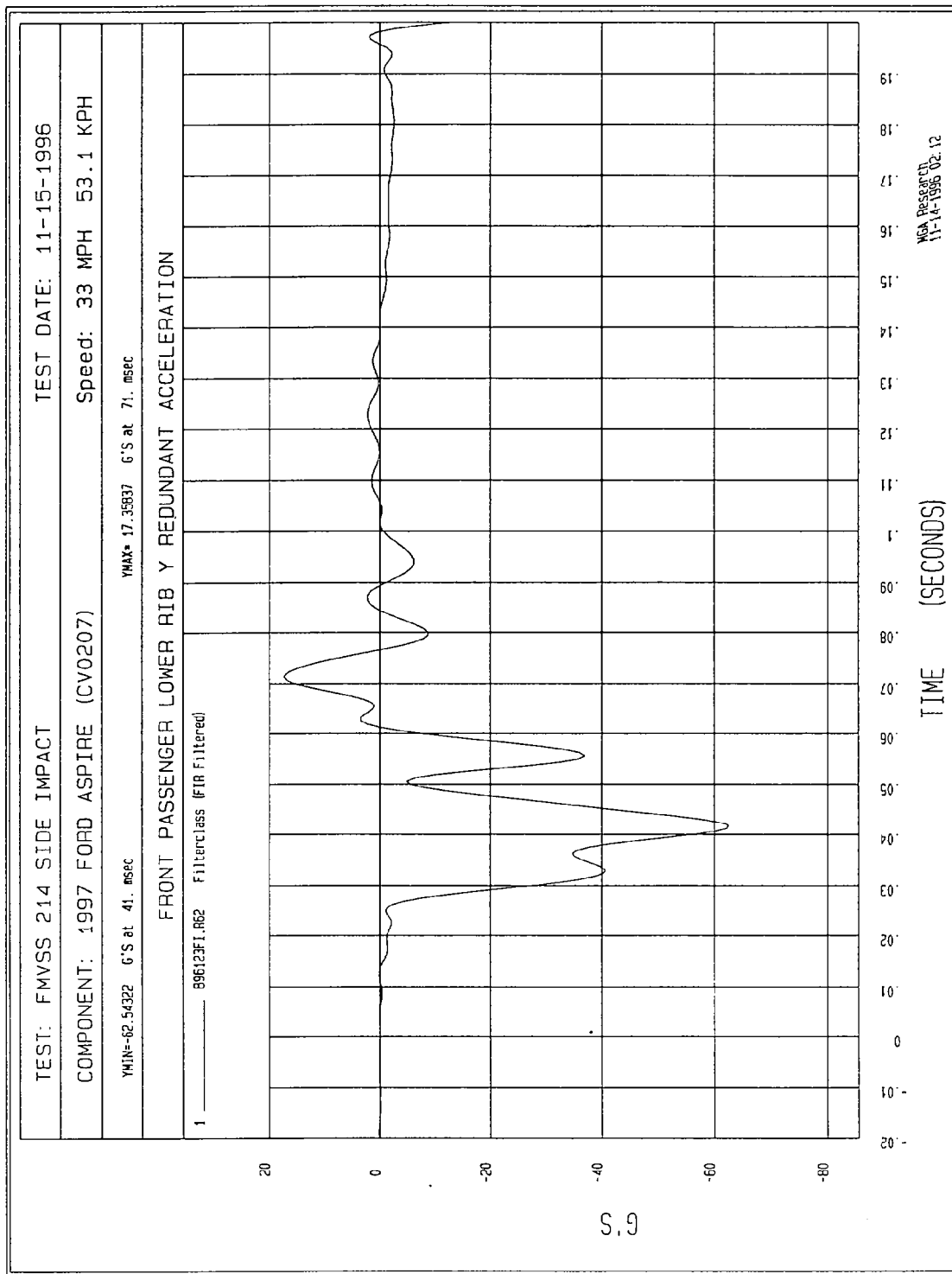


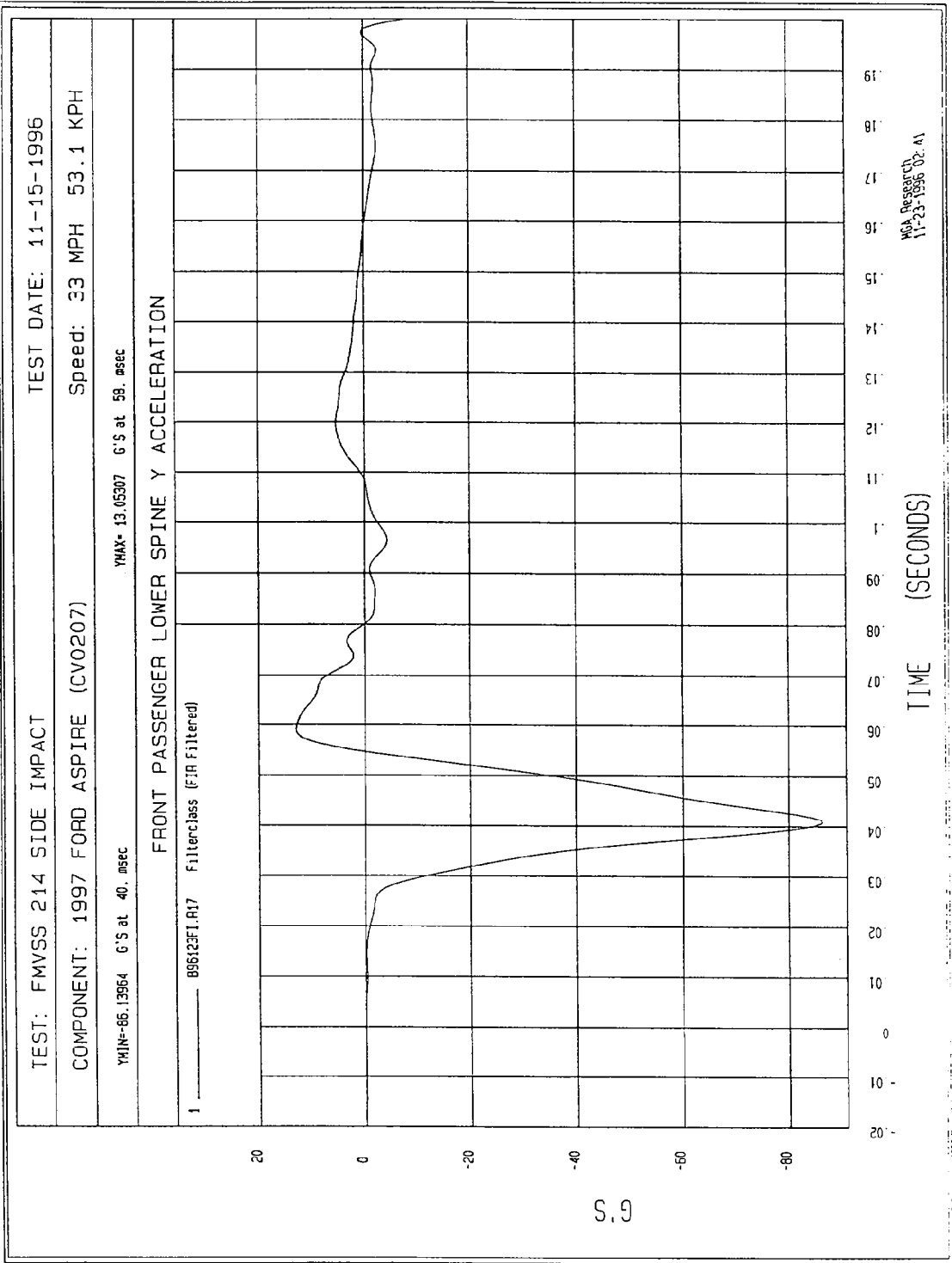


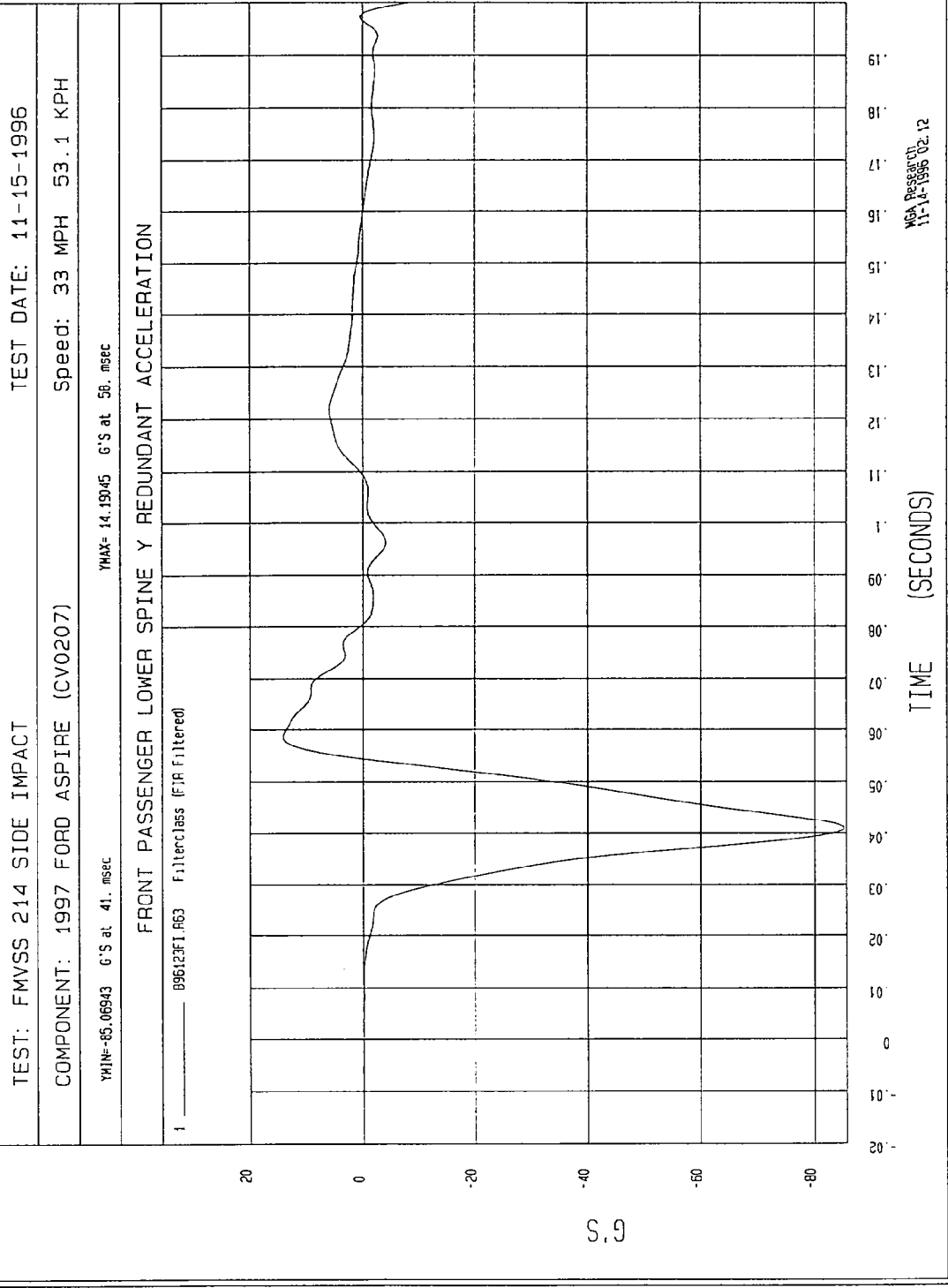
FINITE IMPULSE RESPONSE (FIR) FILTERED DATA

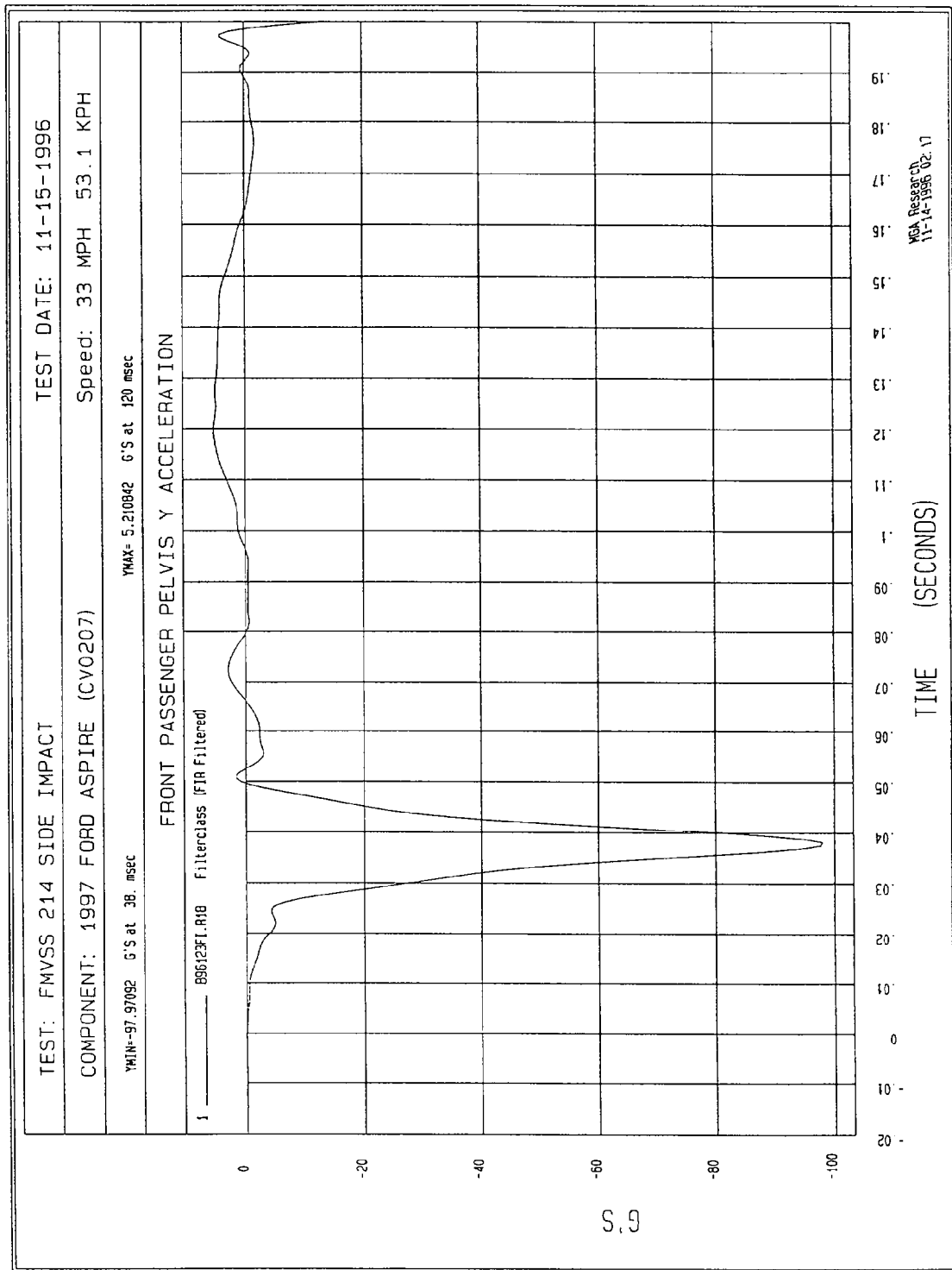






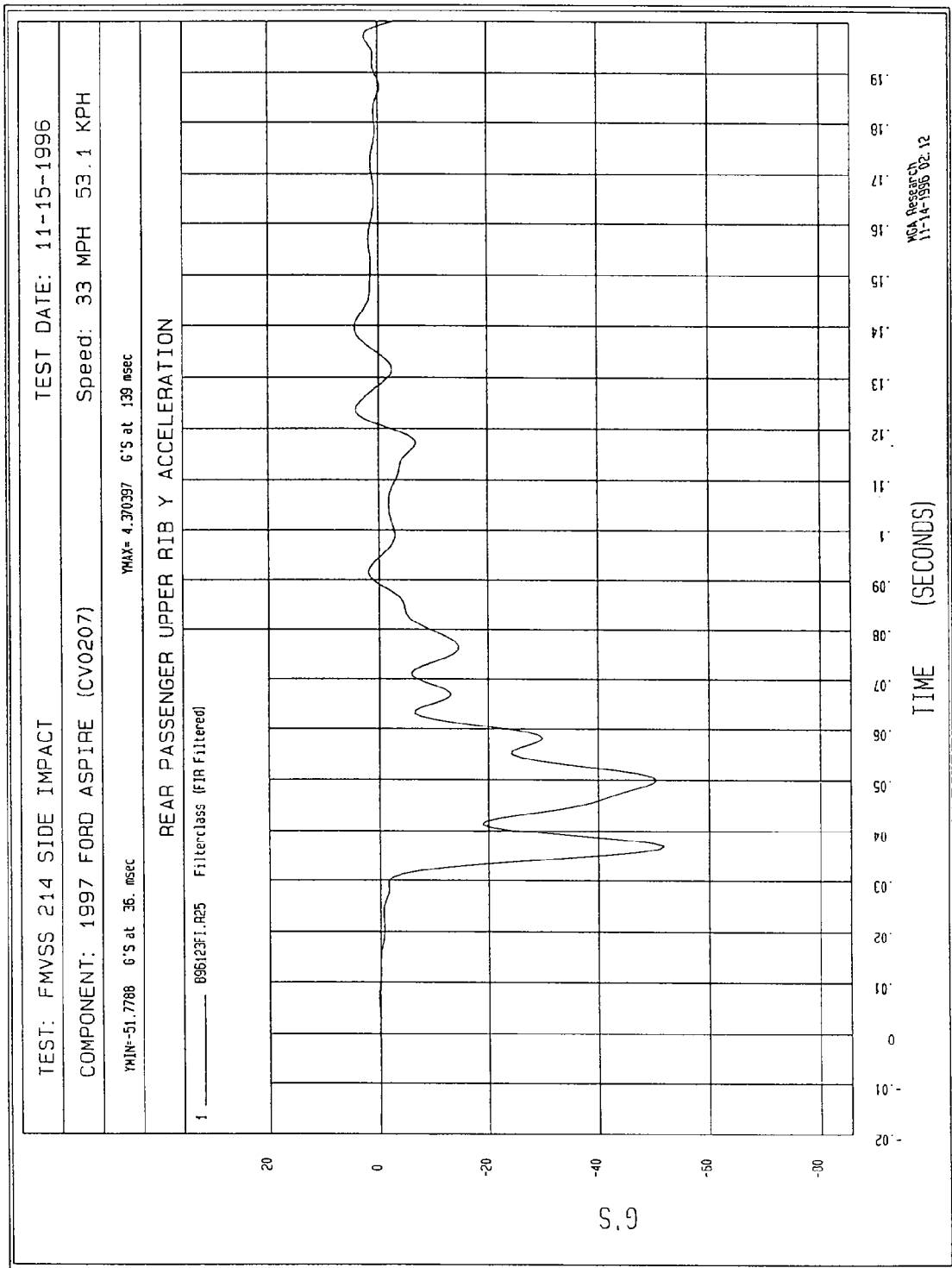


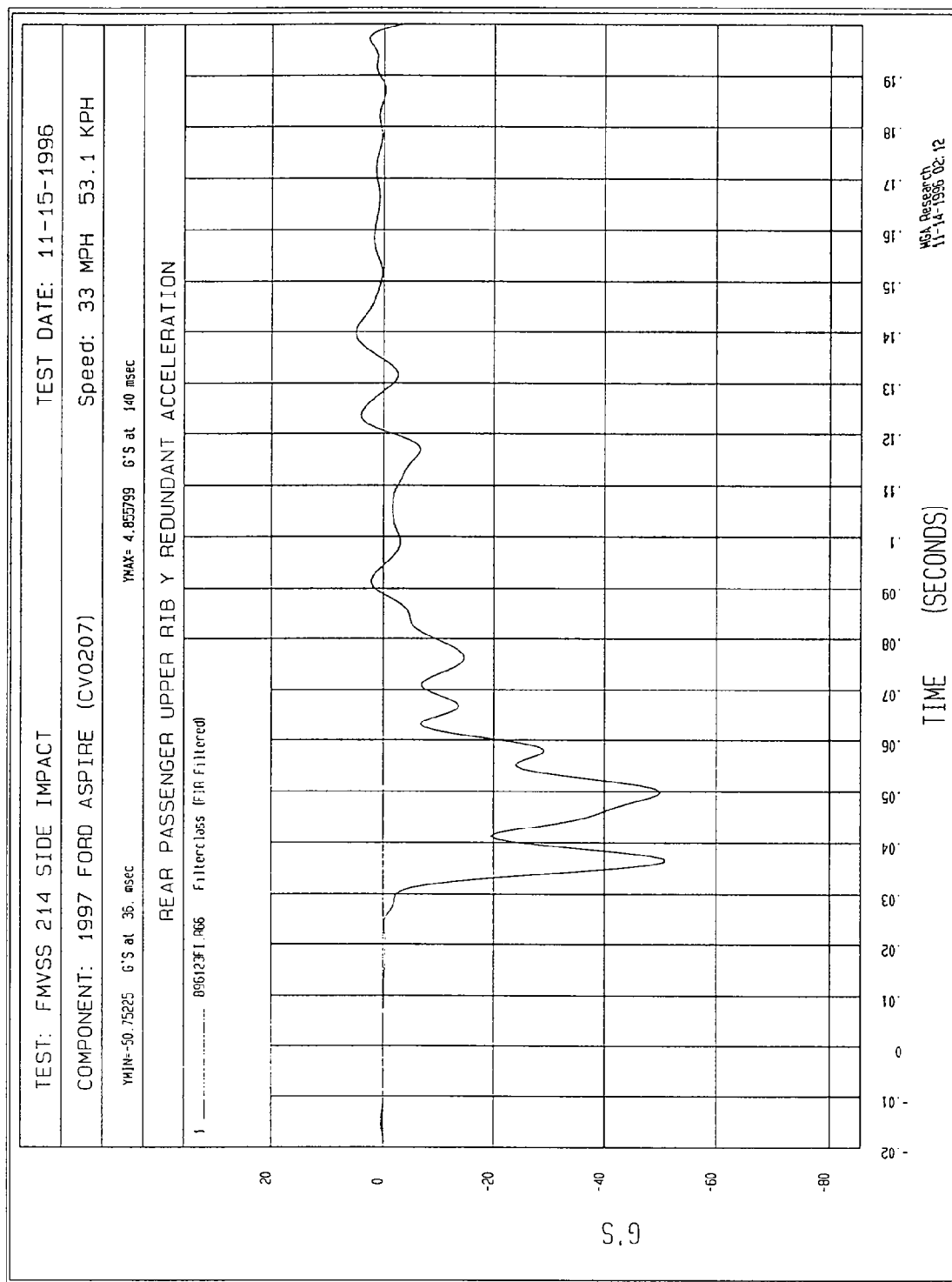


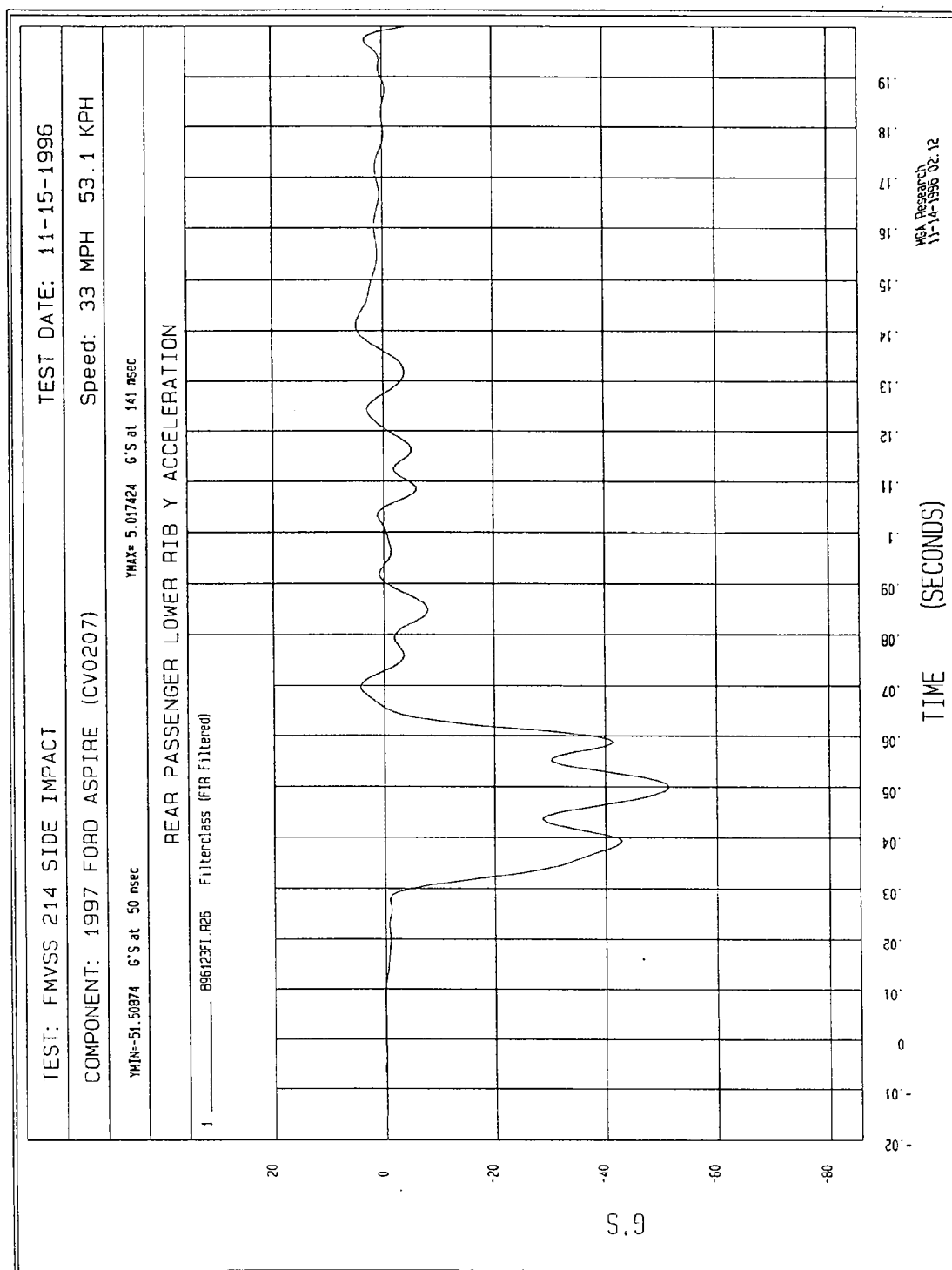


FRONT PASSENGER PELVIS Y REDUNDANT ACCELERATION VS. TIME

NO VALID DATA COLLECTED







TEST: FMVSS 214 SIDE IMPACT

TEST DATE: 11-15-1996

Speed: 33 MPH 53.1 KPH

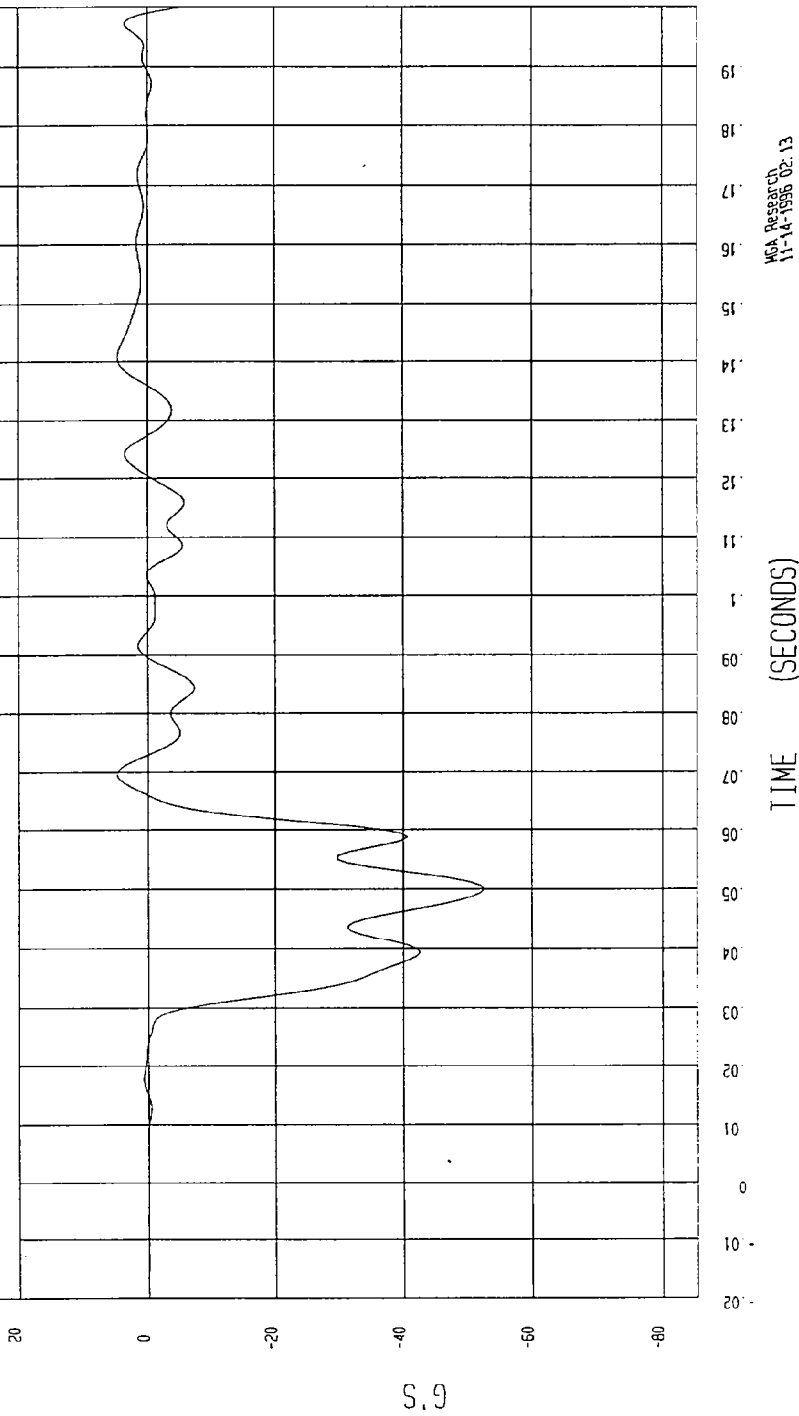
COMPONENT: 1997 FORD ASPIRE (CV0207)

YMAX= 4.718278 G'S at 69. msec

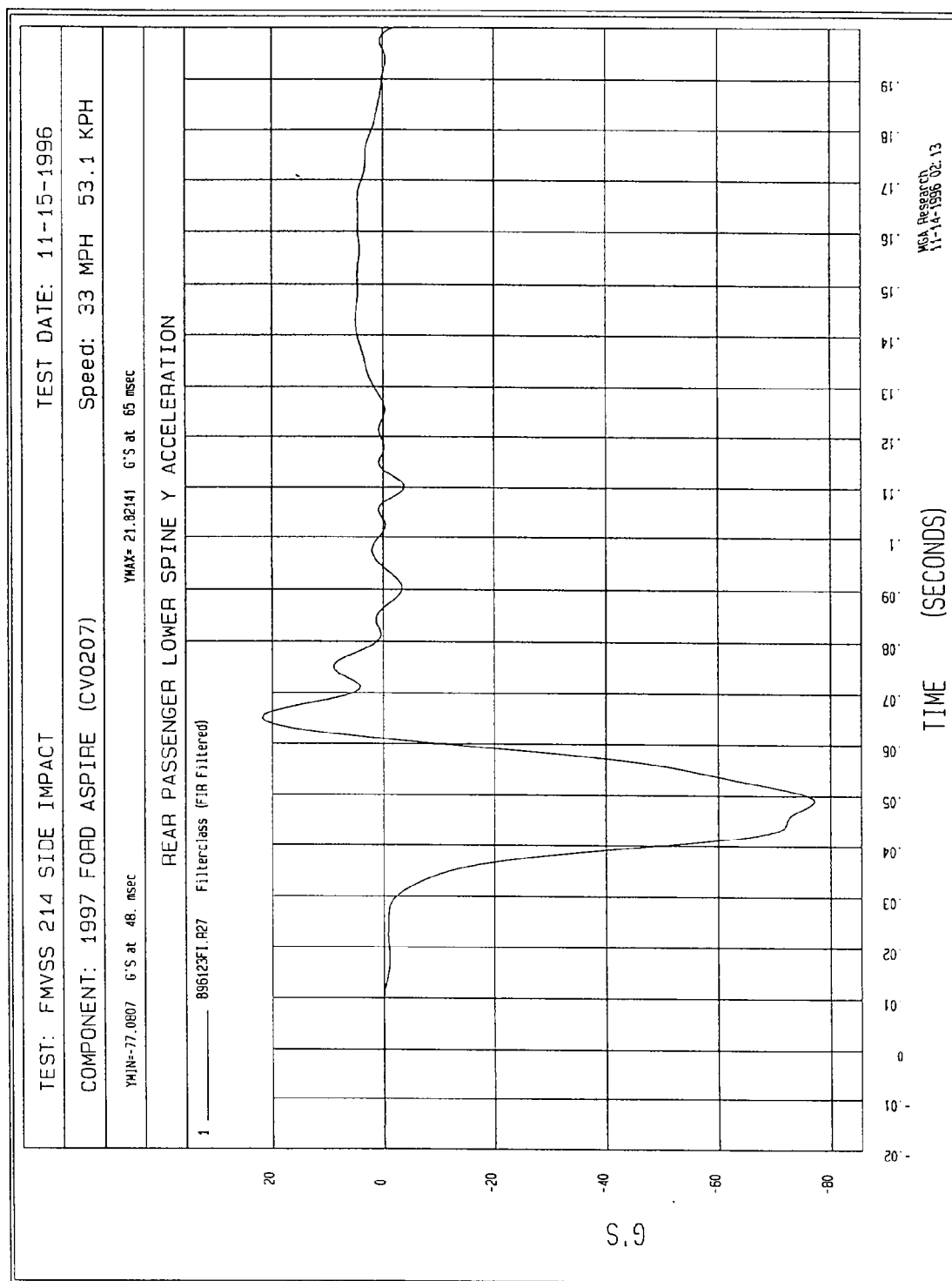
YMIN= -52.61927 G'S at 50 msec

REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION

1 896123F1 R67 Filterclass (FIR Filtered)



MCA Research
11-14-1996 02:13



TEST: FMVSS 214 SIDE IMPACT

TEST DATE: 11-15-1996

COMPONENT: 1997 FORD ASPIRE (CV0207)

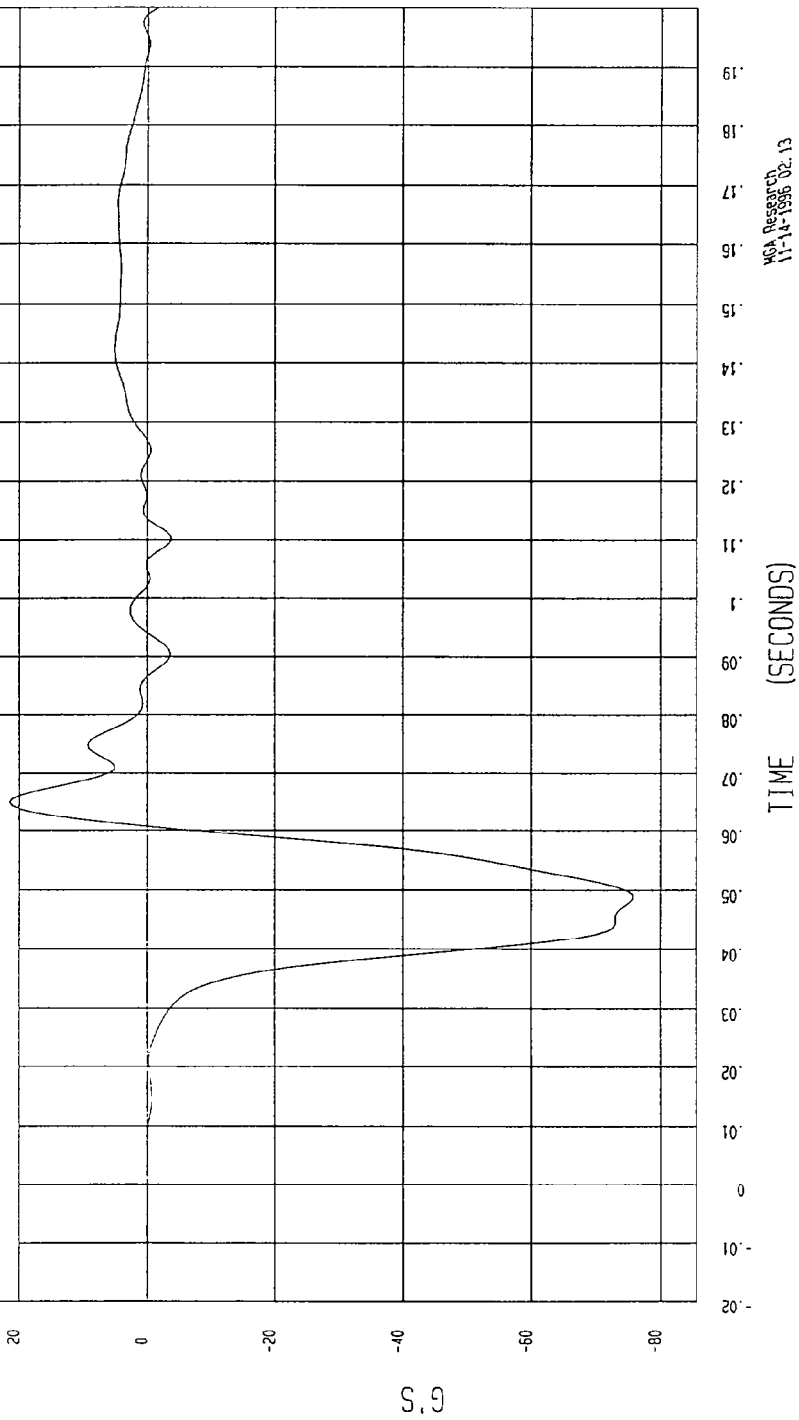
Speed: 33 MPH 53.1 KPH

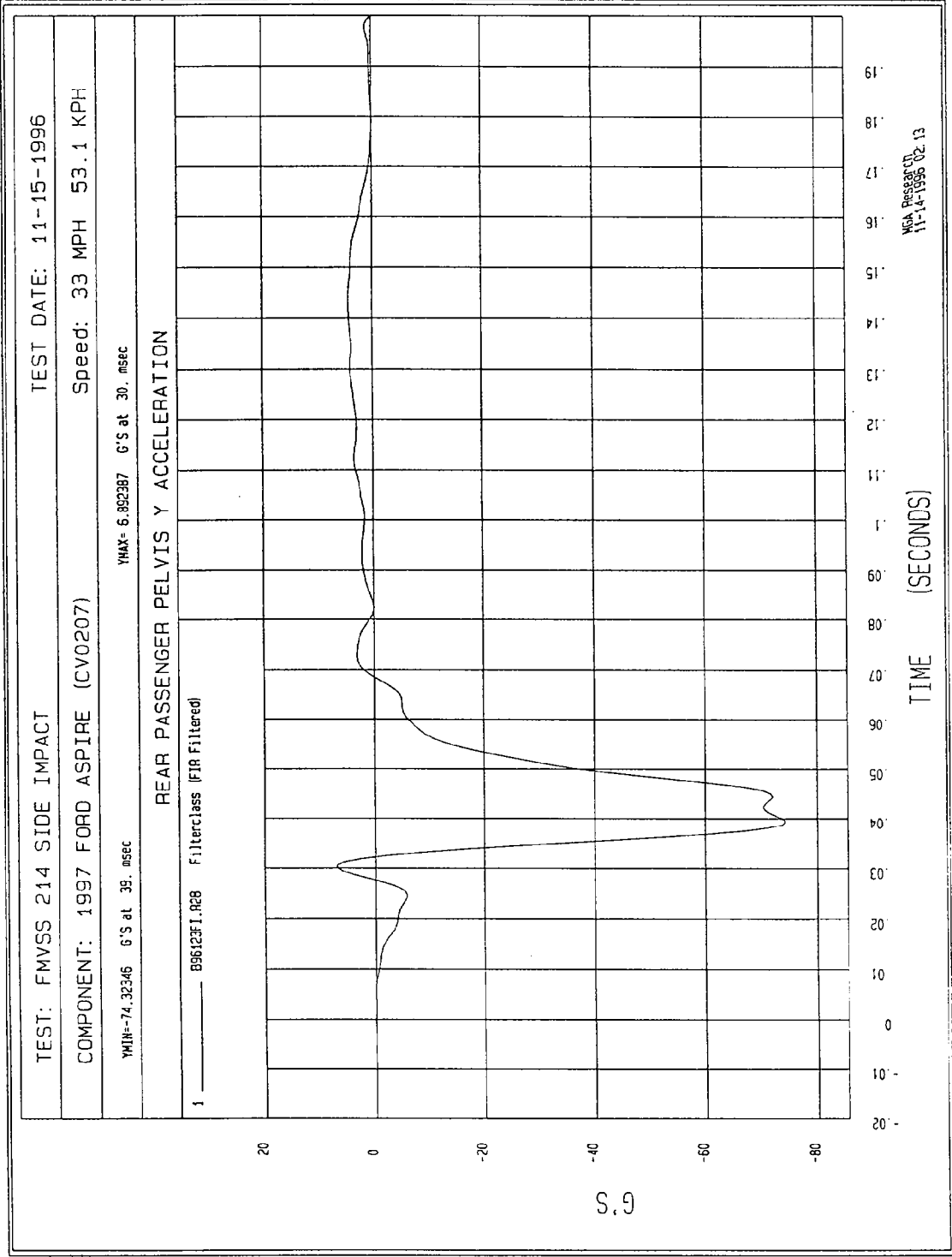
YMIN=-75.87028 G'S at 48. msec

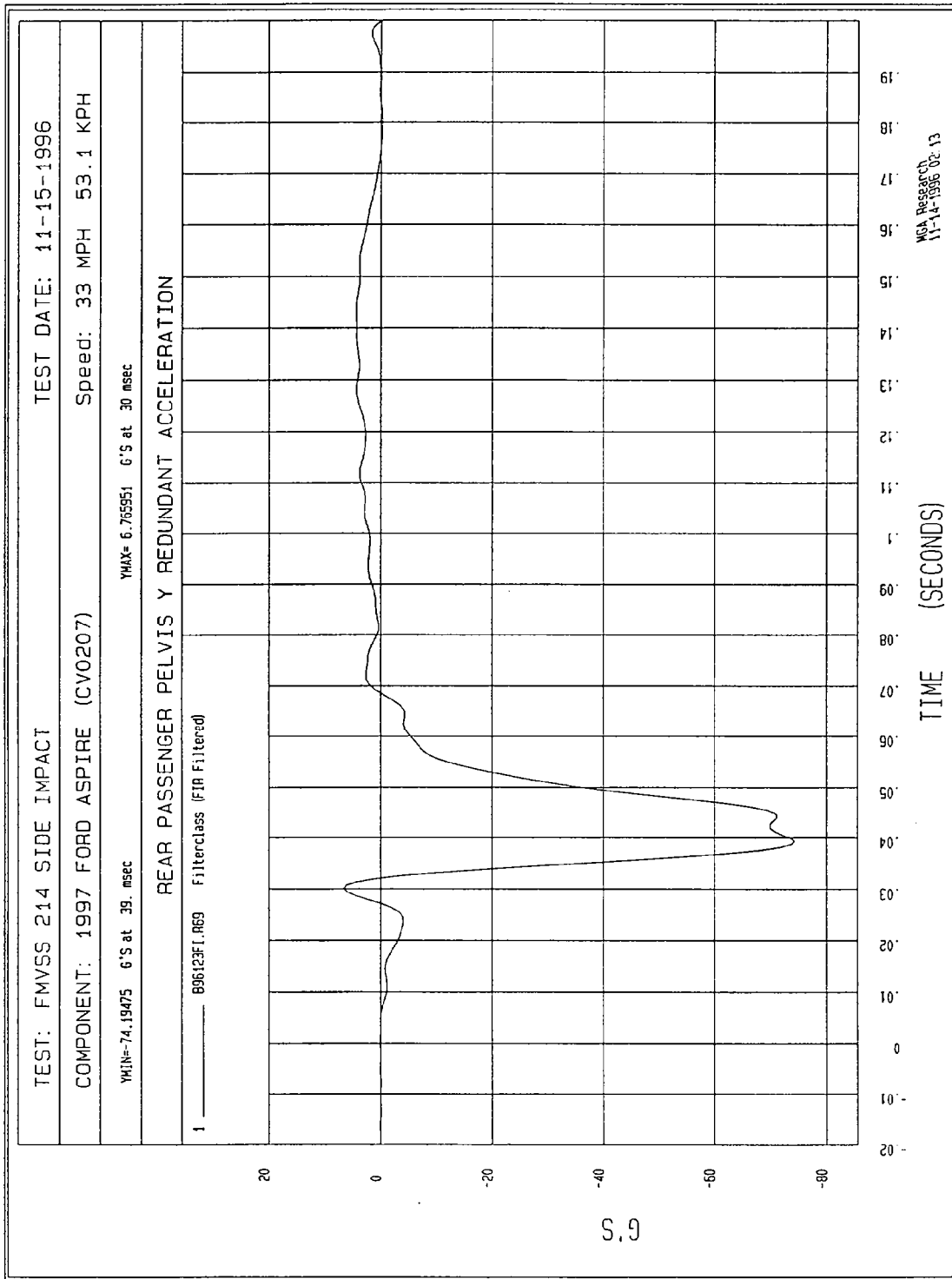
YMAX= 21.46798 G'S at 65 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

1 ——— 896123F1.868 FilterClass (FIR Filtered)







APPENDIX C
SID CONFIGURATION AND PERFORMANCE VERIFICATION

REPORT NO. MGA-96-DC10

DUMMY PERFORMANCE CALIBRATIONS

FMVSS 214 - SIDE IMPACT TEST

FORD MOTOR COMPANY
1997 FORD ASPIRE 3 DOOR
NHTSA NO. CV0207

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: November 15, 1996

Report Date: December 6, 1996

FINAL REPORT

Prepared For:

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

TABLE OF CONTENTS

		<u>Page No.</u>
DUMMY S/N: 272	PRE-TEST CERTIFICATION DATA	1-1
DUMMY S/N: 271	PRE-TEST CERTIFICATION DATA	2-1
DUMMY S/N: 272	POST-TEST CERTIFICATION DATA	3-1
DUMMY S/N: 271	POST-TEST CERTIFICATION DATA	4-1
DUMMY S/N: 272	POST-TEST INSPECTION CHECKLIST	5-1
DUMMY S/N: 271	POST-TEST INSPECTION CHECKLIST	6-1
	VEHICLE AND DUMMY TEMPERATURE	7-1

PRE-TEST CERTIFICATION DATA

Front Dummy Serial Number: 272

Calibration Test Results Summary

Dummy Serial Number: 272

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.: 272

DATE OF VERIFICATION: November 14, 1996

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.2
RH - Rib Height	19.75" - 20.50"	20.20
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"	20.7
SW - Knee Pivot to Floor	19.3" - 19.9"	19.6
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: Jim Melillo

APPROVED BY: Paul Knapke

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 14, 1996

DUMMY NUMBER: 272

TEST NUMBER: D961792

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
PROBE SPEED	13.8 - 14.2 fps	14.0
UPPER RIB	37 - 46 g's	42
LOWER RIB	37 - 46 g's	43
LOWER SPINE	15 - 22 g's	22

TEST MEETS SPECIFICATIONS

TECHNICIAN Tom Mahan

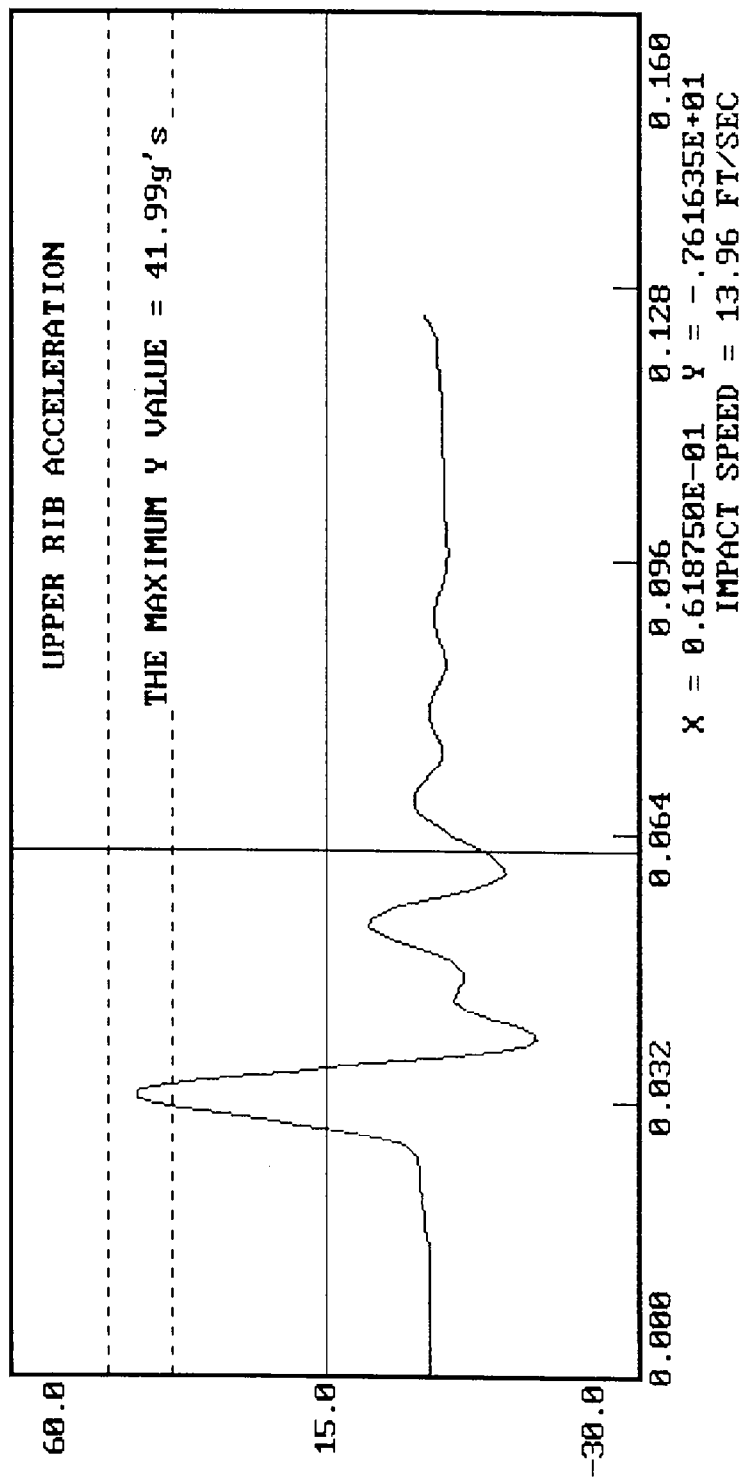
APPROVED BY Steve Kurbake

11-14-1996 15:08

DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 272

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

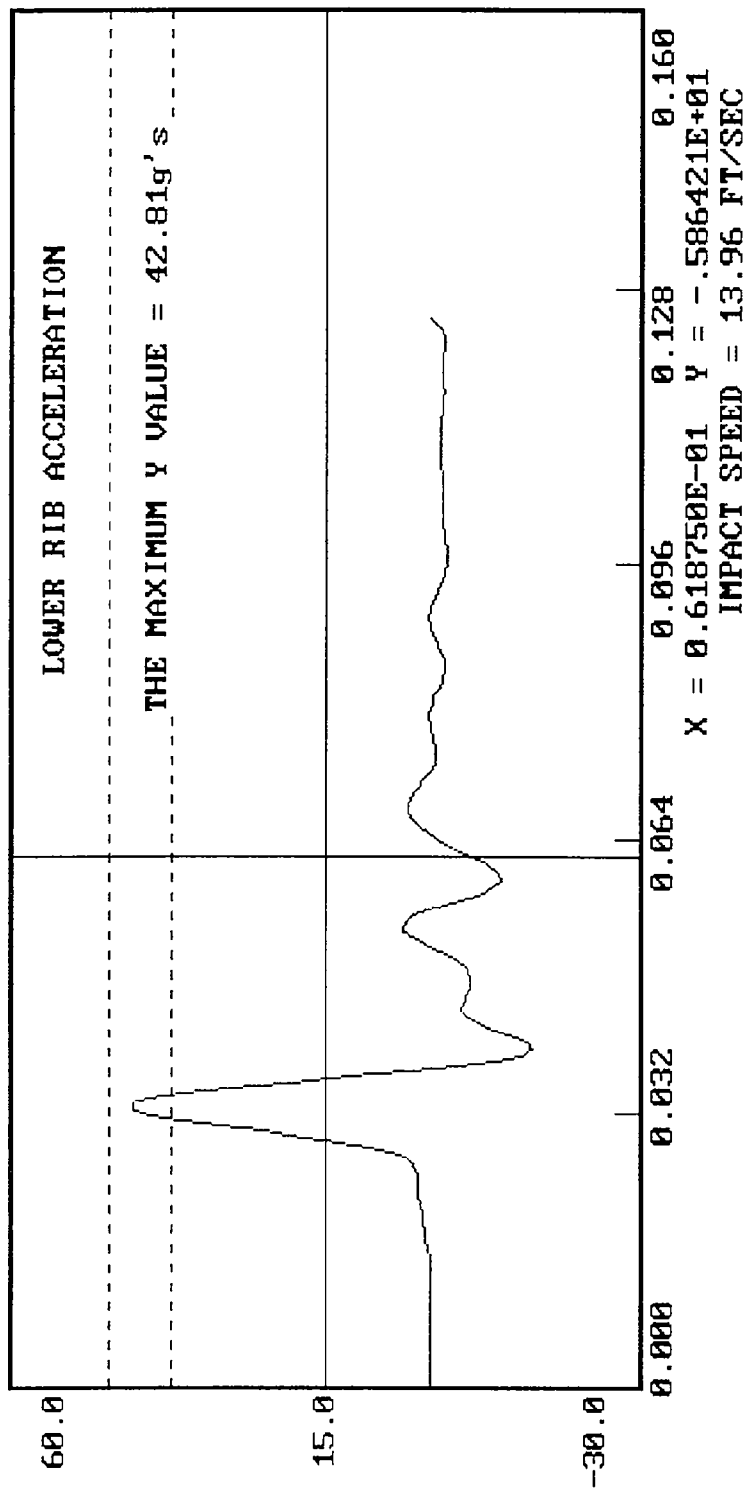


11-14-1996 15:08

DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 272

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

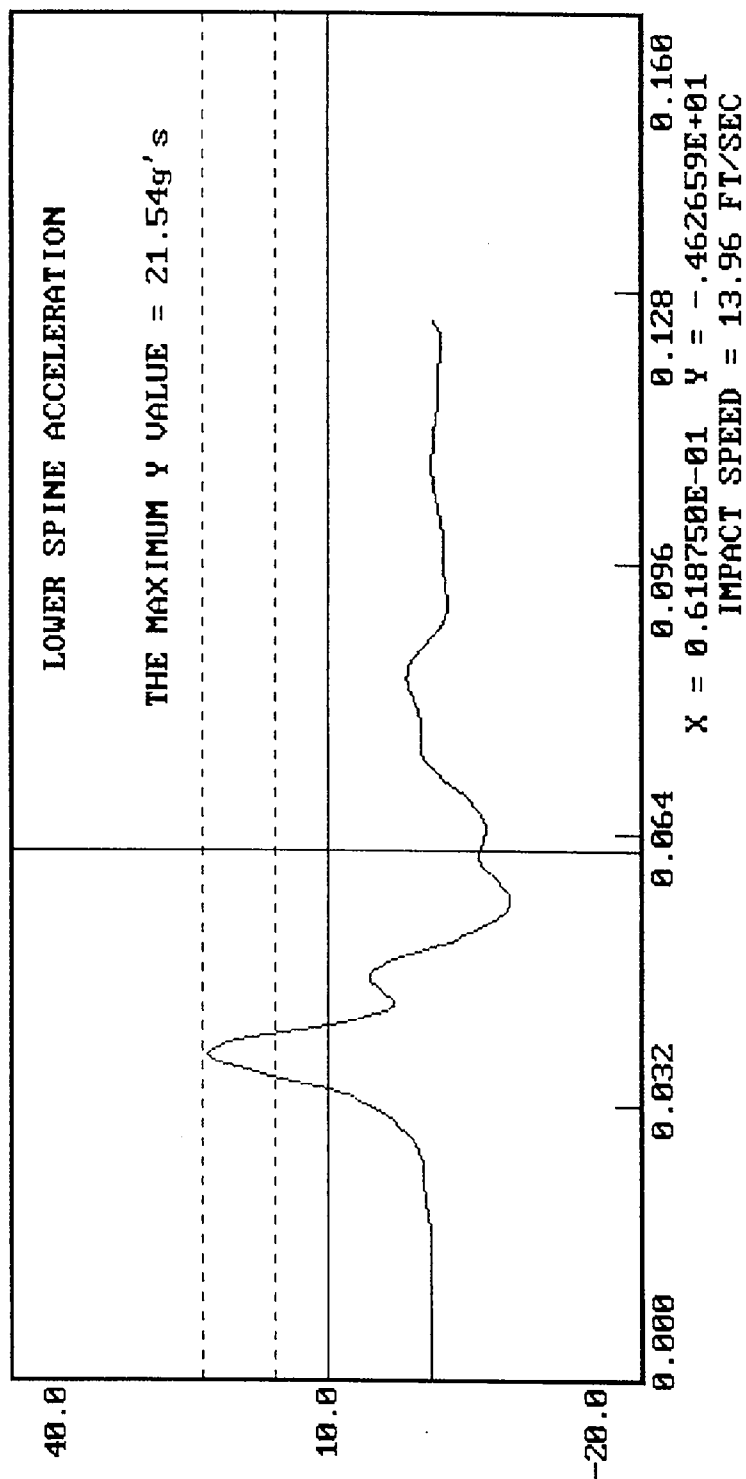


DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 272

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

11-14-1996 15:08



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 14, 1996

DUMMY NUMBER: 272

TEST NUMBER: D961793

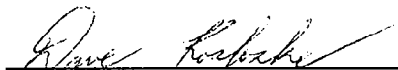
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	18%
PROBE SPEED	13.8 - 14.2 f/s	14.0
PELVIS ACCELERATION	40 - 60 g's	57

TEST MEETS SPECIFICATIONS

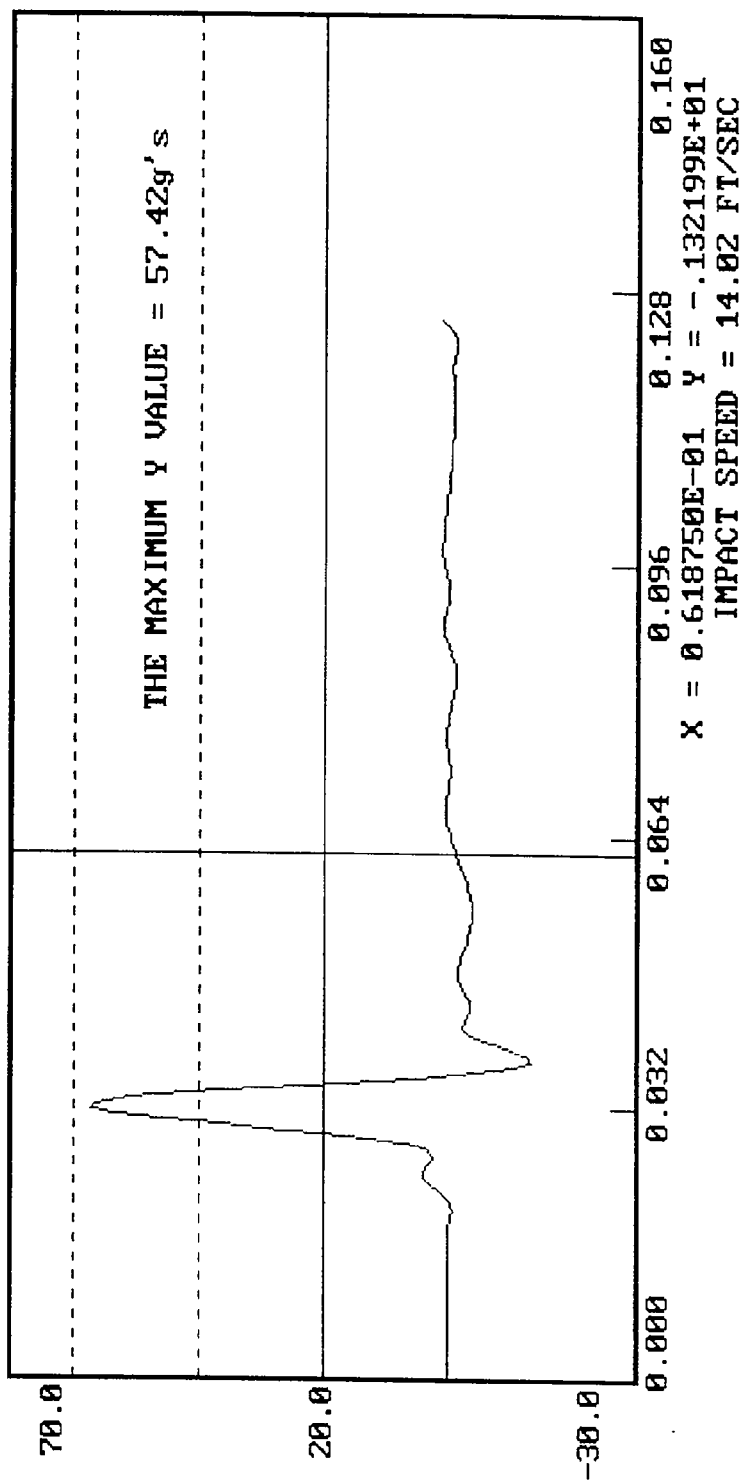
TECHNICIAN



APPROVED BY



DUMMY CALIBRATION - PELVIS IMPACT
DUMMY # 272
ACCELERATION (G'S) VS. TIME ((SECONDS))
11-14-1996 15:15



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

DATE: November 14, 1996

DUMMY NUMBER: 272

TEST NUMBER: D961794

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0.5 in	23.3 - 36.5 lbs	30.0
FORCE @ 0.75 in	36.7 - 49.8 lbs	42.3
FORCE @ 1.0 in	50 - 63 lbs	54
FORCE @ 1.3 in	73 - 88 lbs	74

TEST MEETS SPECIFICATIONS

TECHNICIAN Tim Halpin

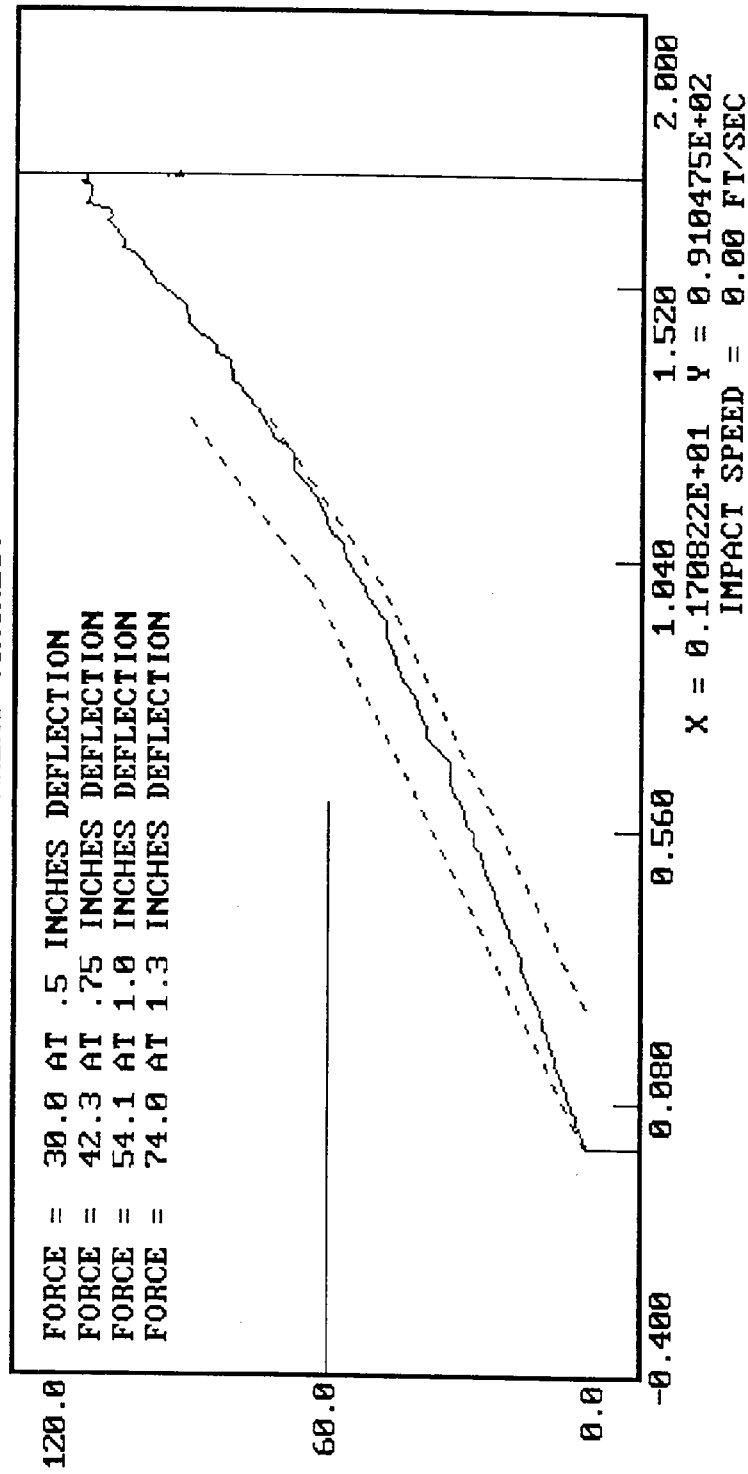
APPROVED BY Steve Korbake

DUMMY CALIBRATION - ABDOMEN COMPRESSION

DUMMY # 272

11-14-1996 22:21

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



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: November 14, 1996

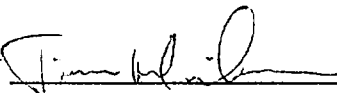
DUMMY NUMBER: 272

TEST NUMBER: D961795

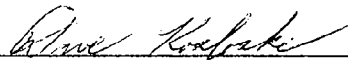
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	26
FORCE @ 30°	34 - 46 lbs	37
FORCE @ 40°	46 - 58 lbs	57
RETURN ANGLE	12° maximum	4°

TEST MEETS SPECIFICATIONS

TECHNICIAN

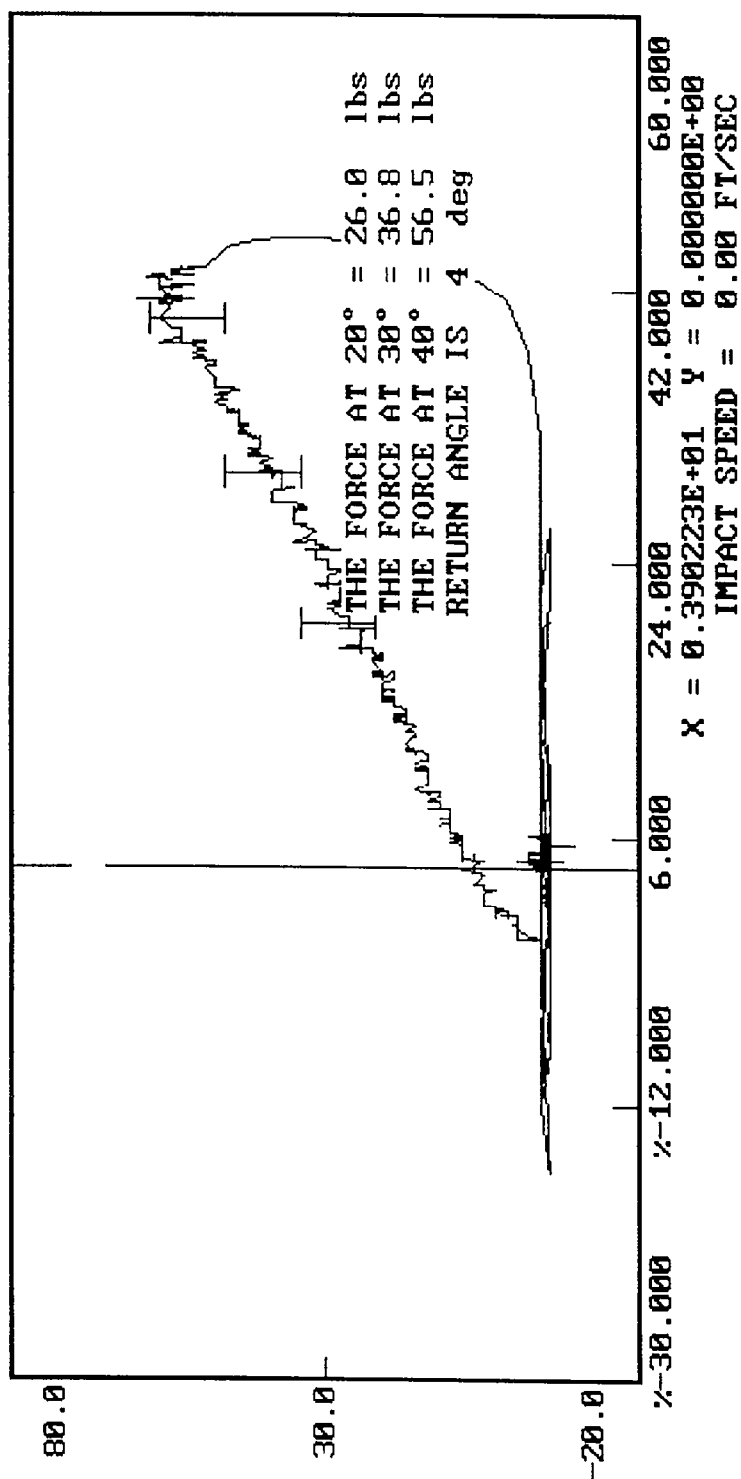


APPROVED BY



11-14-1996 17:47

DUMMY CALIBRATION - LUMBAR FLEXION
DUMMY # 272
FORCE (LBS) VS. TORSO ROTATION (DEGREES)



PRE-TEST CERTIFICATION DATA

Rear Dummy Serial Number: 271

Calibration Test Results Summary

Passenger 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: November 14, 1996

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:

Jim Walsh

APPROVED BY:

Steve Kischke

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

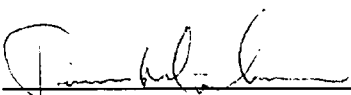
DATE: November 14, 1996

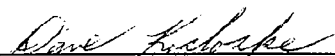
DUMMY NUMBER: 271

TEST NUMBER: D961782

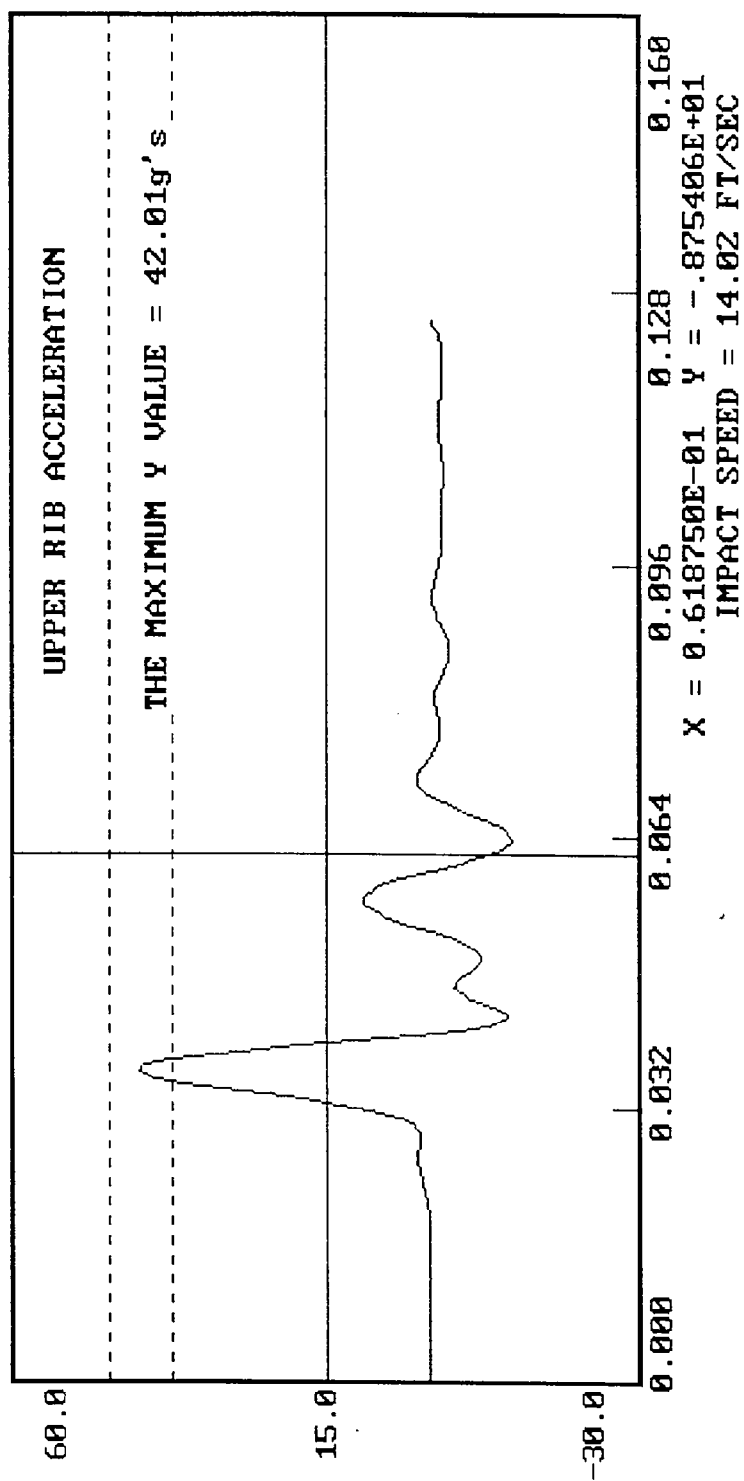
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	18%
PROBE SPEED	13.8 - 14.2 fps	14.0
UPPER RIB	37 - 46 g's	42
LOWER RIB	37 - 46 g's	44
LOWER SPINE	15 - 22 g's	22

TEST MEETS SPECIFICATIONS

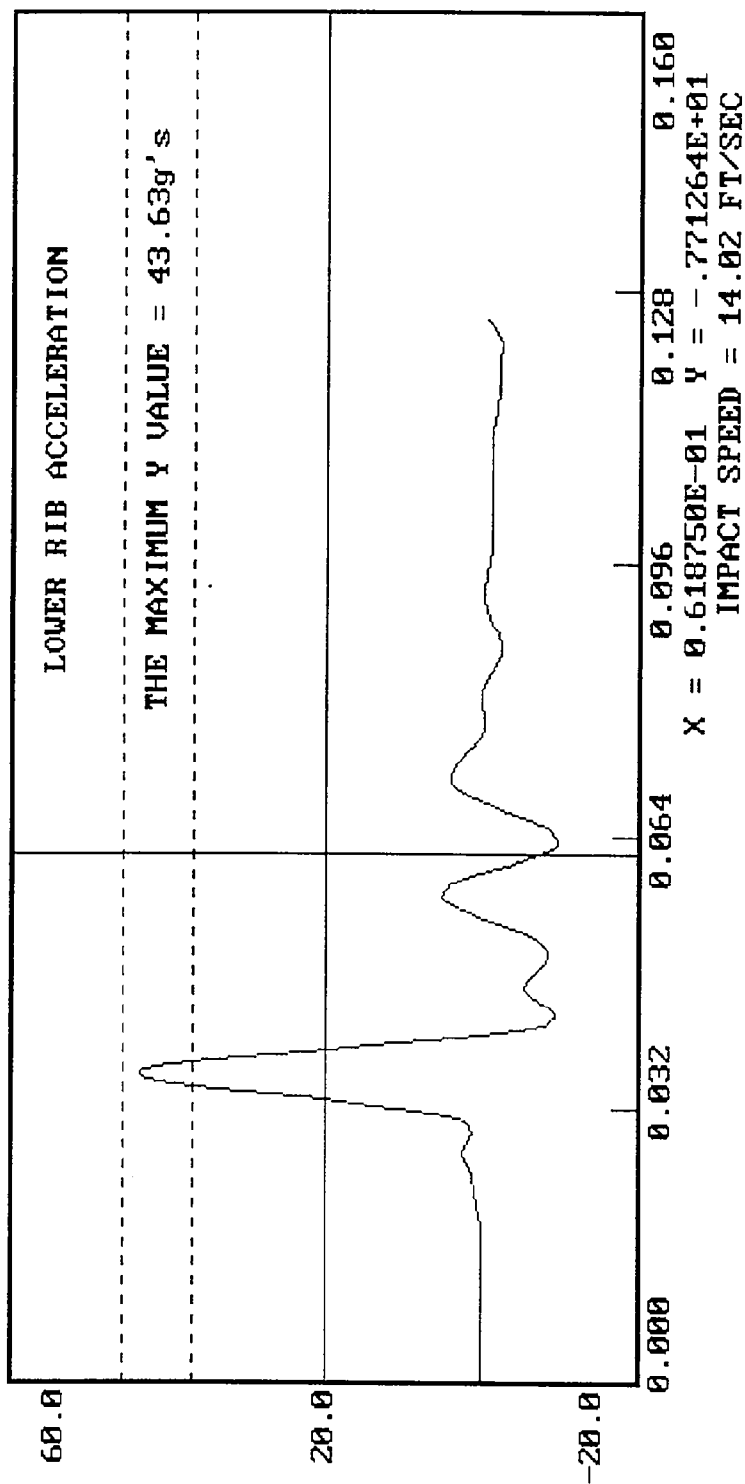
TECHNICIAN 

APPROVED BY 

DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 271
 11-14-1996 14:08
 ACCELERATION (G'S) VS. TIME ((SECONDS))

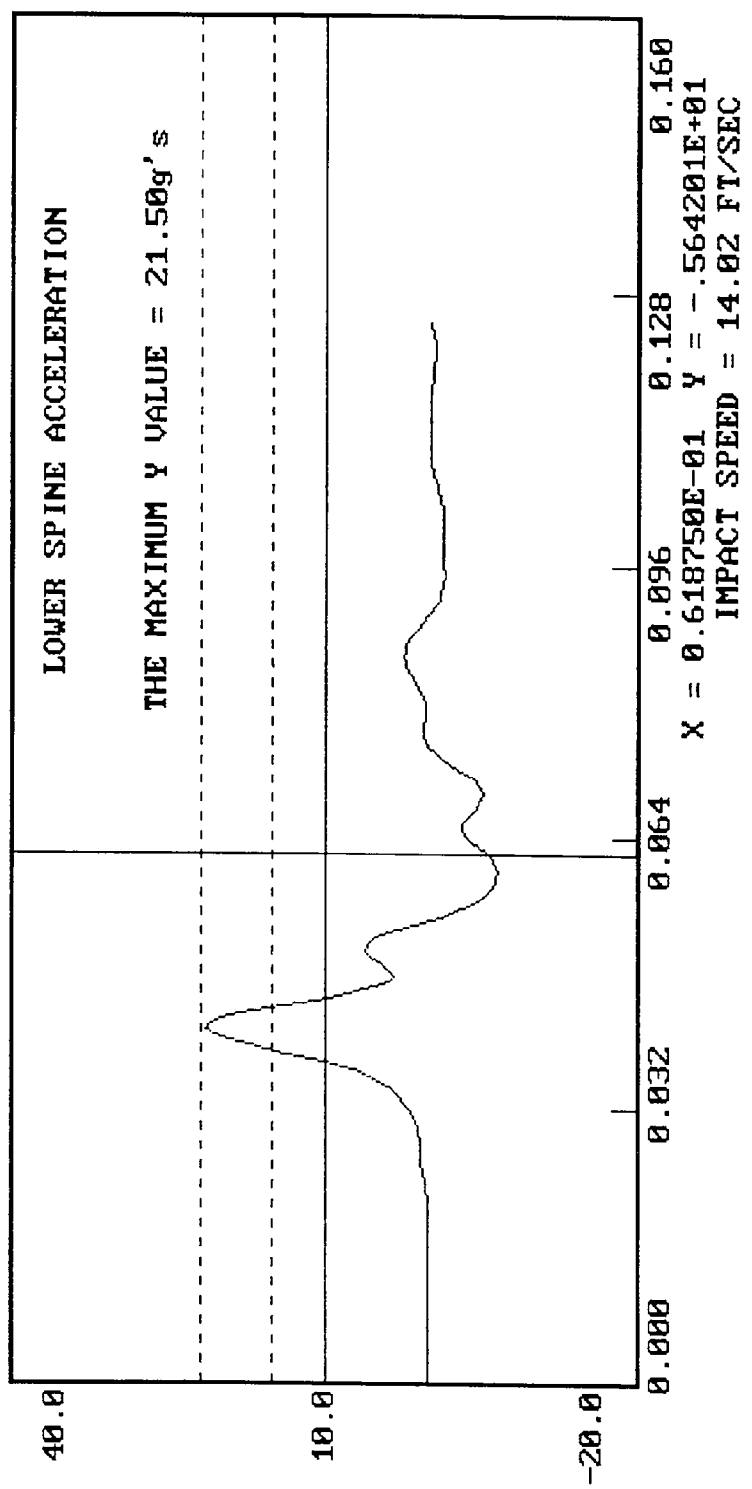


DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 271
 11-14-1996 14:08
 ACCELERATION (G'S) VS. TIME ((SECONDS))



11-14-1996 14:08

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 271
ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

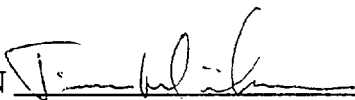
DATE: November 14, 1996

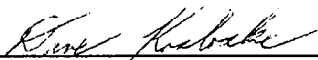
DUMMY NUMBER: 271

TEST NUMBER: D961783

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
PROBE SPEED	13.8 - 14.2 f/s	14.0
PELVIS ACCELERATION	40 - 60 g's	57

TEST MEETS SPECIFICATIONS

TECHNICIAN 

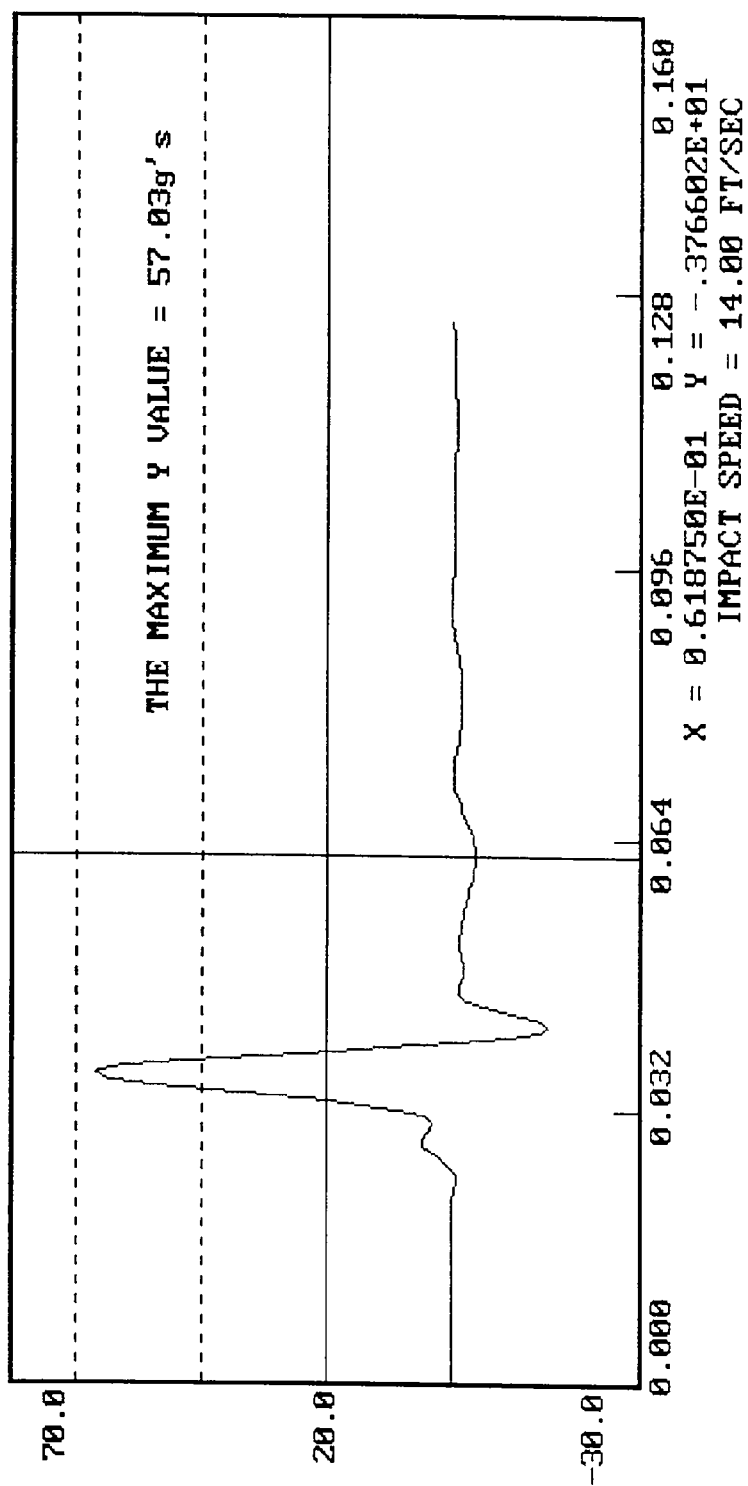
APPROVED BY 

11-14-1996 14:17

DUMMY CALIBRATION - PELVIS IMPACT

DUMMY # 271

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



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

DATE: November 14, 1996

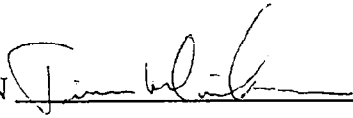
DUMMY NUMBER: 271

TEST NUMBER: D961784

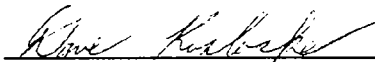
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0.5 in	23.3 - 36.5 lbs	32.3
FORCE @ 0.75 in	36.7 - 49.8 lbs	45.5
FORCE @ 1.0 in	50 - 63 lbs	59
FORCE @ 1.3 in	73 - 88 lbs	79

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY

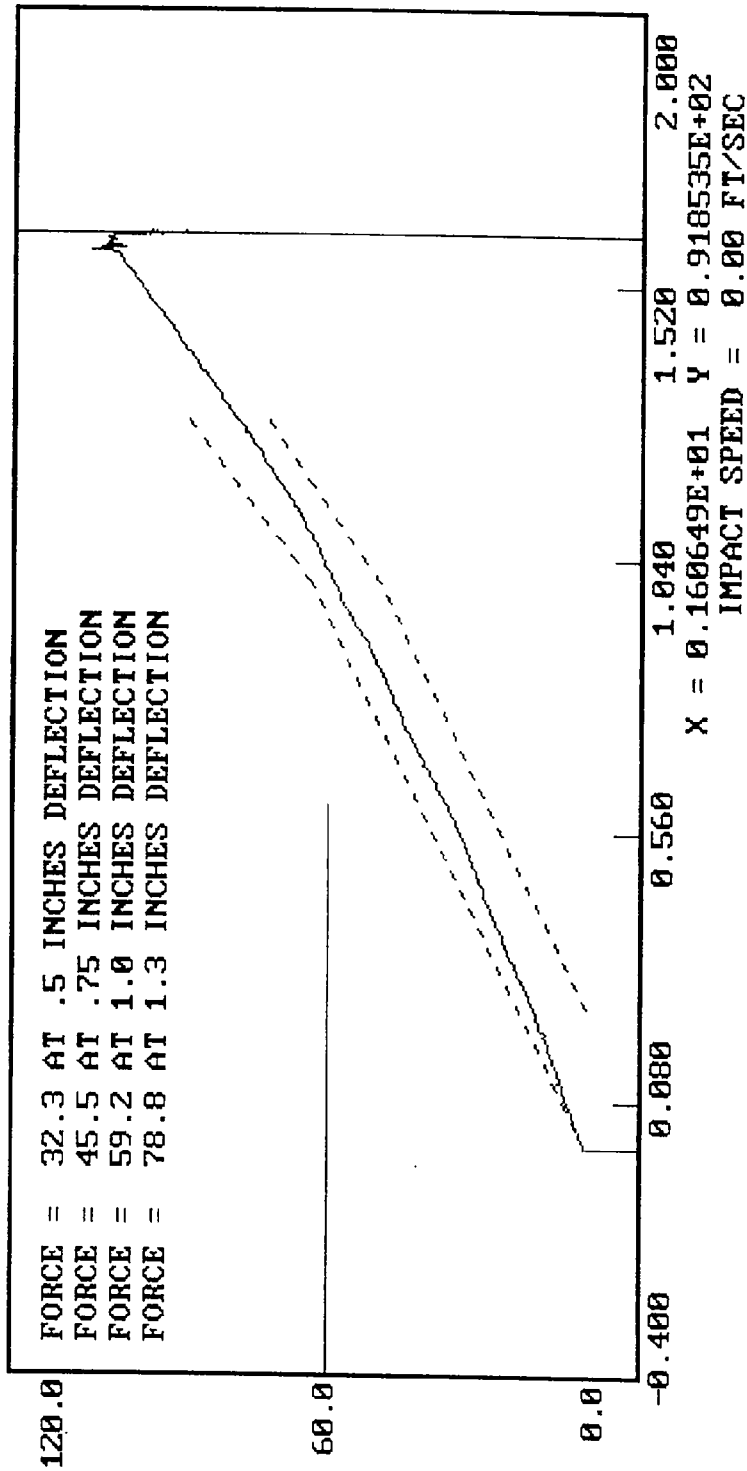


DUMMY CALIBRATION - ABDOMEN COMPRESSION

DUMMY # 271

11-14-1996 22:26

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



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: November 14, 1996

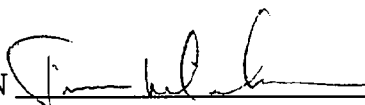
DUMMY NUMBER: 271

TEST NUMBER: D961785

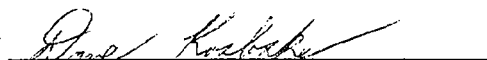
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	24
FORCE @ 30°	34 - 46 lbs	37
FORCE @ 40°	46 - 58 lbs	53
RETURN ANGLE	12° maximum	7°

TEST MEETS SPECIFICATIONS

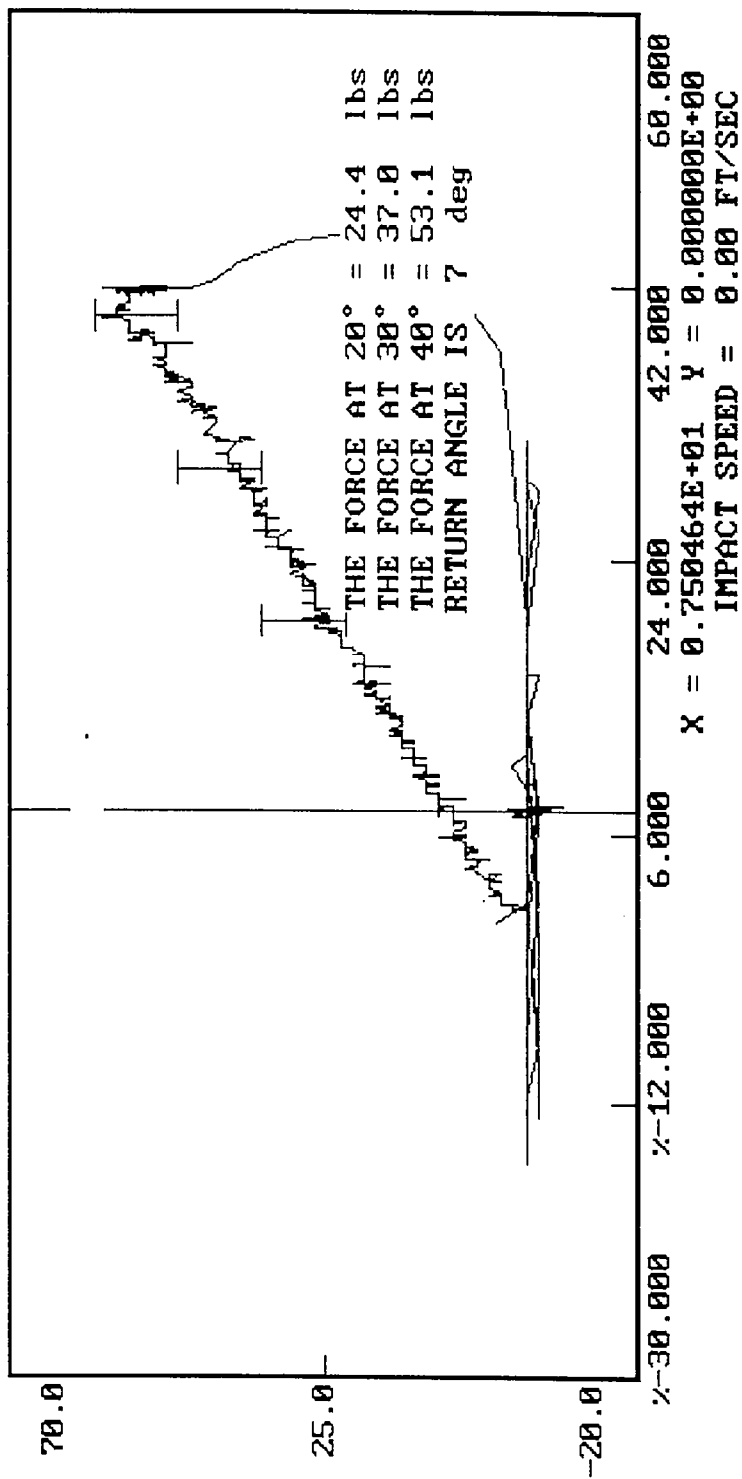
TECHNICIAN



APPROVED BY



DUMMY CALIBRATION - LUMBAR FLEXION
 DUMMY # 271
 11-14-1996 17:57
 FORCE (LBS) VS. TORSO ROTATION (DEGREES)



POST-TEST CERTIFICATION DATA

Front Dummy Serial Number: 272

Calibration Test Results Summary

Dummy Serial Number: 272

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.: 272

DATE OF VERIFICATION: November 22, 1996

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.2
RH - Rib Height	19.75" - 20.50"	20.20
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"	20.7
SW - Knee Pivot to Floor	19.3" - 19.9"	19.6
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: Jim Walsh

APPROVED BY: Gene Kucharski

MGA RESEARCH CORPORATION
THORACIC SHOCK ABSORBER TEST
SIDE IMPACT DUMMY (SID)

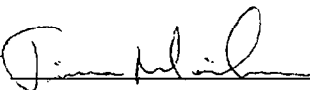
DATE: November 22, 1996

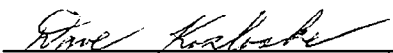
DUMMY NUMBER: 272

TEST NUMBER: D96189678

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		66° - 78° F	70°
RELATIVE HUMIDITY		10 - 70%	25%
VELOCITY 10 ft/s	FORCE (lb.)	188 - 253	228
	DISPLACEMENT (in.)	1.18 - 1.38	1.20
VELOCITY 14 ft/s	FORCE (lb.)	389 - 472	413
	DISPLACEMENT (in.)	1.26 - 1.47	1.31
VELOCITY 20 ft/s	FORCE (lb.)	841 - 1000	879
	DISPLACEMENT (in.)	1.30 - 1.57	1.42

TEST MEETS SPECIFICATIONS

TECHNICIAN 

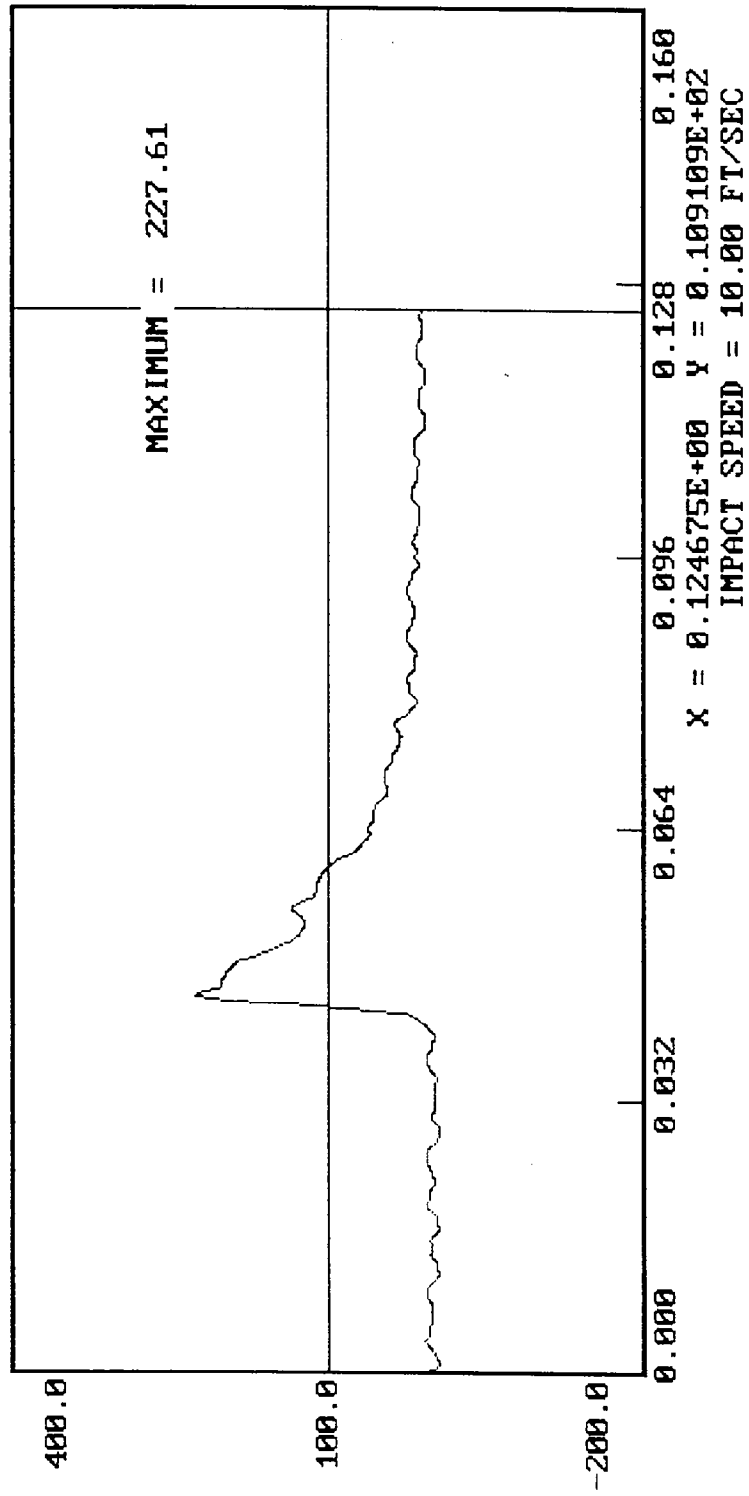
APPROVED BY 

11-22-1996 11:15

DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 272

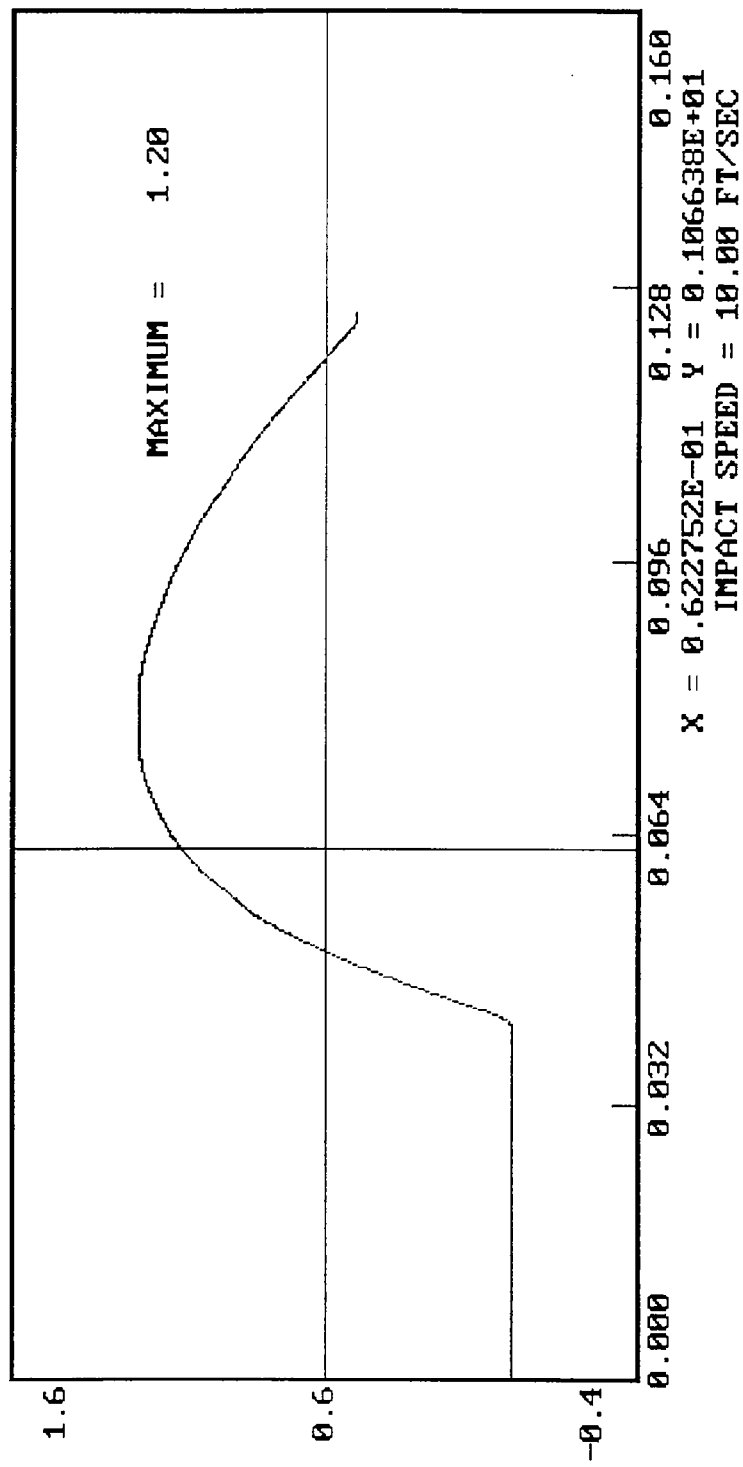
FORCE (LBS) VS. TIME ((SECONDS))



DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 272

DISPLACEMENT (IN) VS. TIME ((SECONDS))

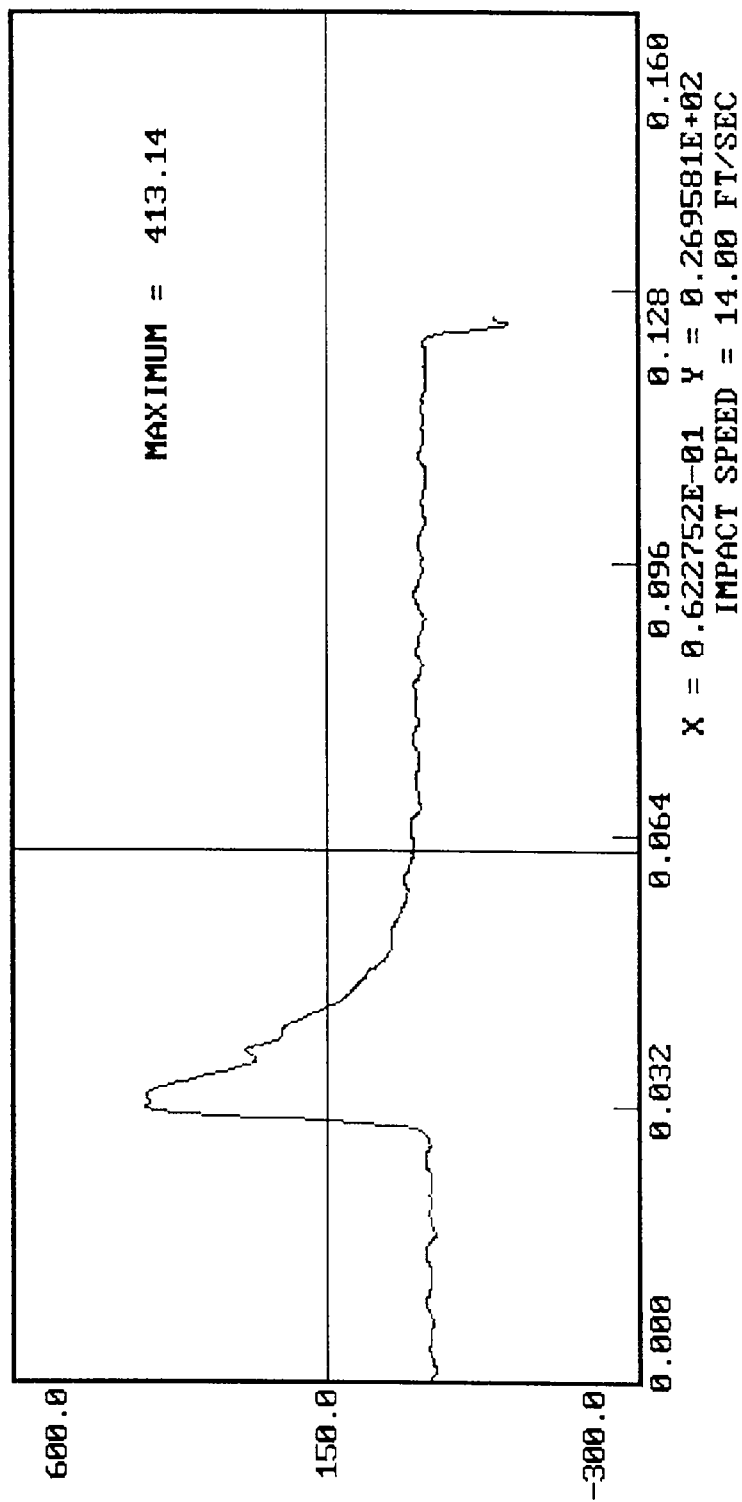


11-22-1996 11:25

DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 272

FORCE (LBS) VS. TIME ((SECONDS))

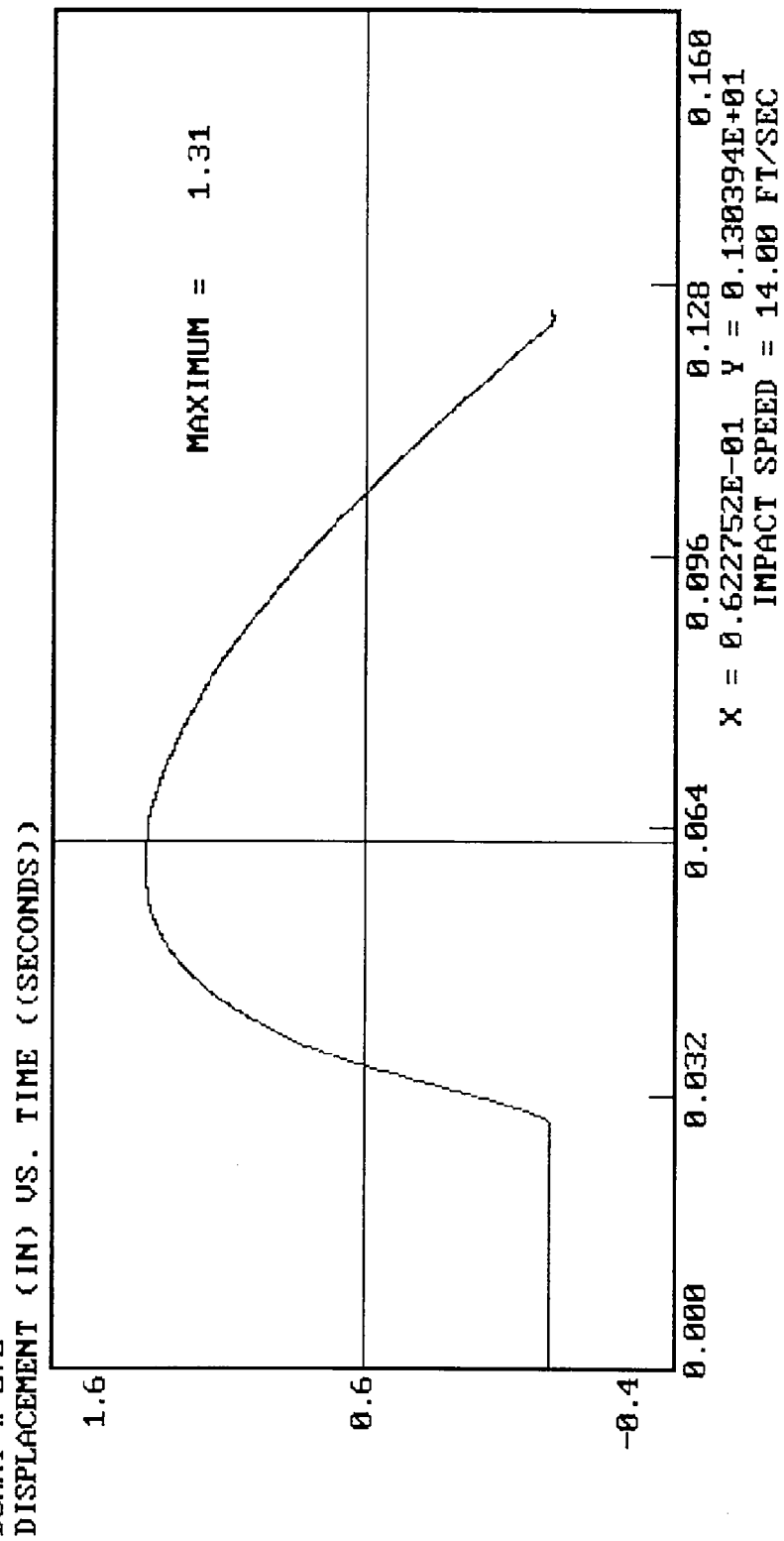


DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 272

DISPLACEMENT (IN) VS. TIME ((SECONDS))

11-22-1996 11:25

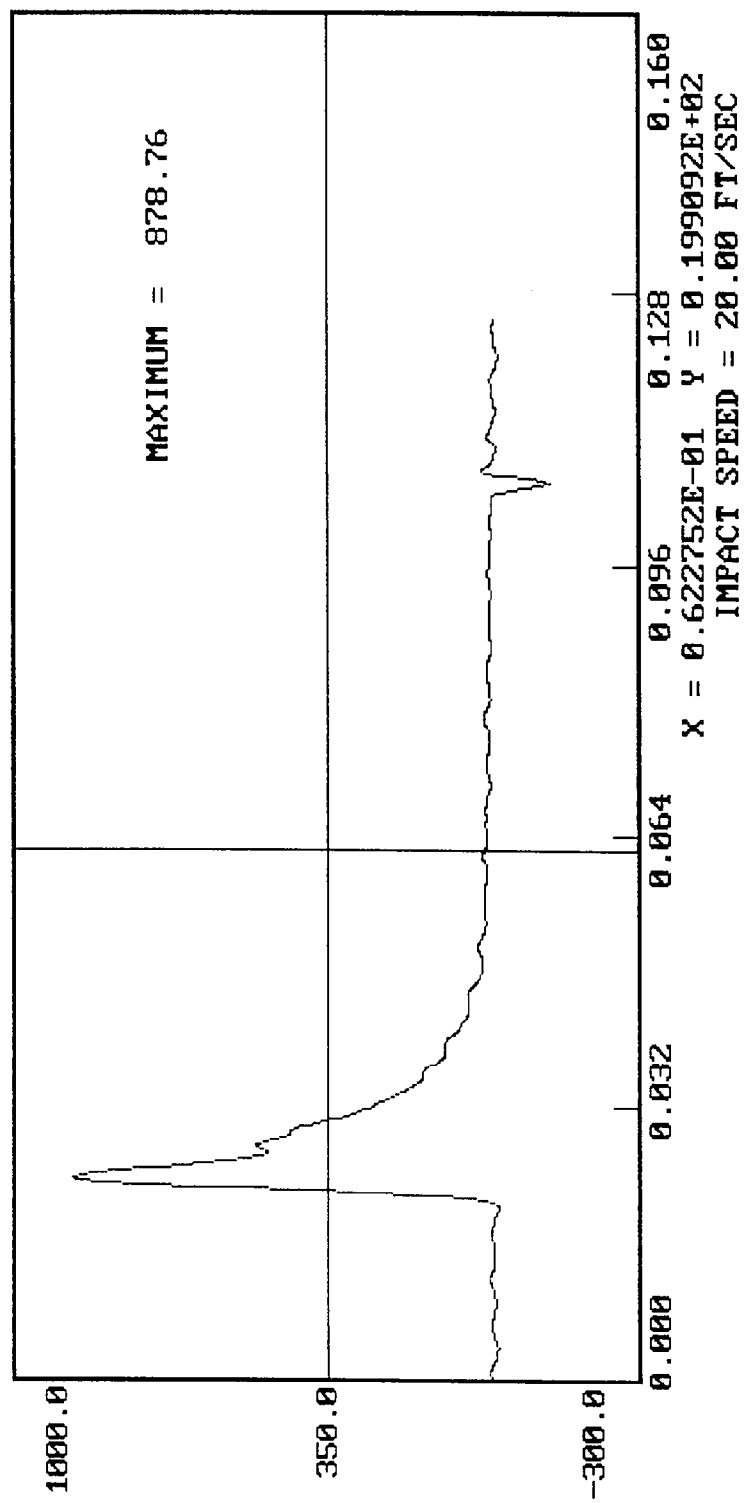


11-22-1996 11:56

DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 272

FORCE (LBS) VS. TIME ((SECONDS))

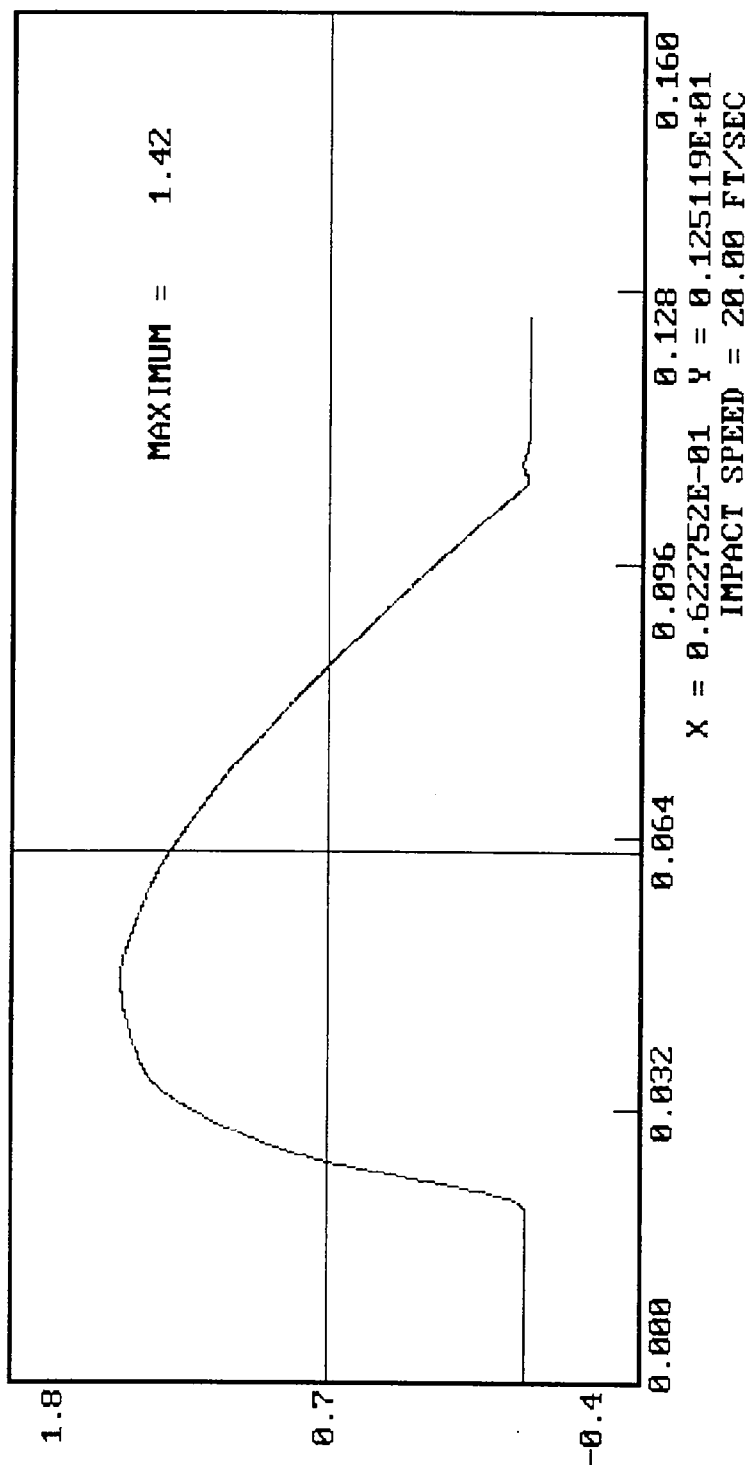


11-22-1996 11:56

DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 272

DISPLACEMENT (IN) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 22, 1996

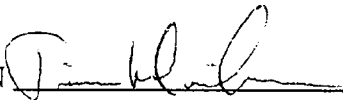
DUMMY NUMBER: 272

TEST NUMBER: D961892

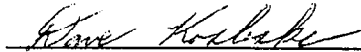
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
PROBE SPEED	13.8 - 14.2 fps	14.1
UPPER RIB	37 - 46 g's	43
LOWER RIB	37 - 46 g's	44
LOWER SPINE	15 - 22 g's	21

TEST MEETS SPECIFICATIONS

TECHNICIAN

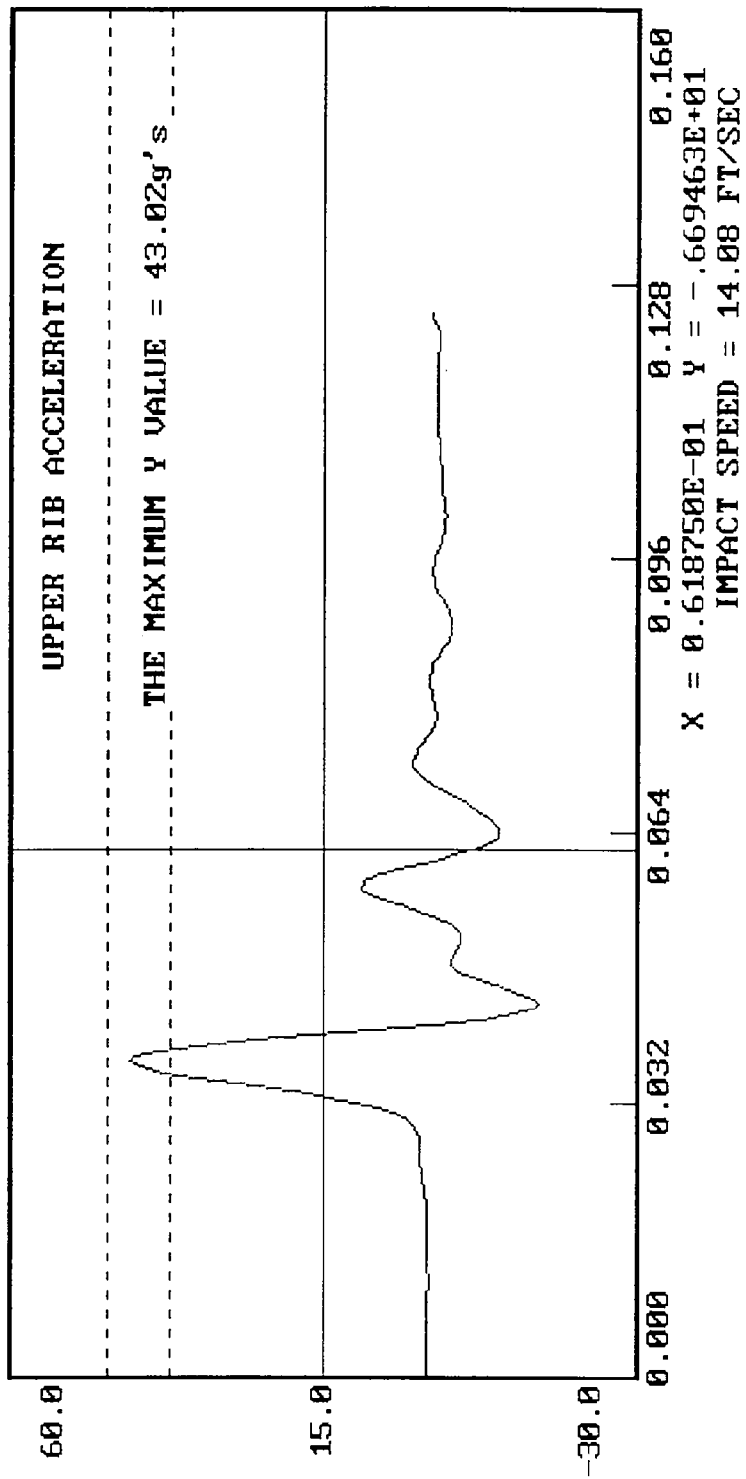


APPROVED BY

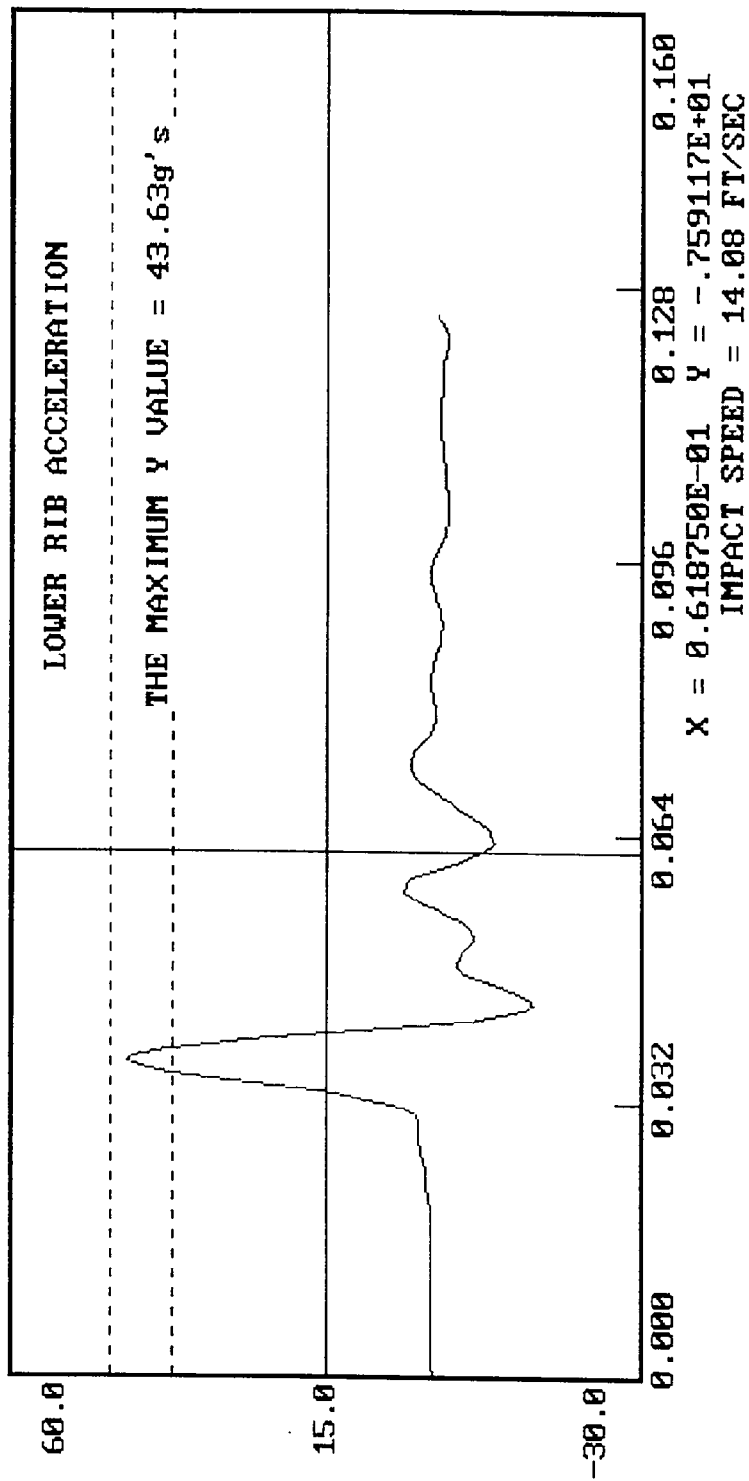


11-22-1996 17:43

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 272
ACCELERATION (G'S) VS. TIME ((SECONDS))



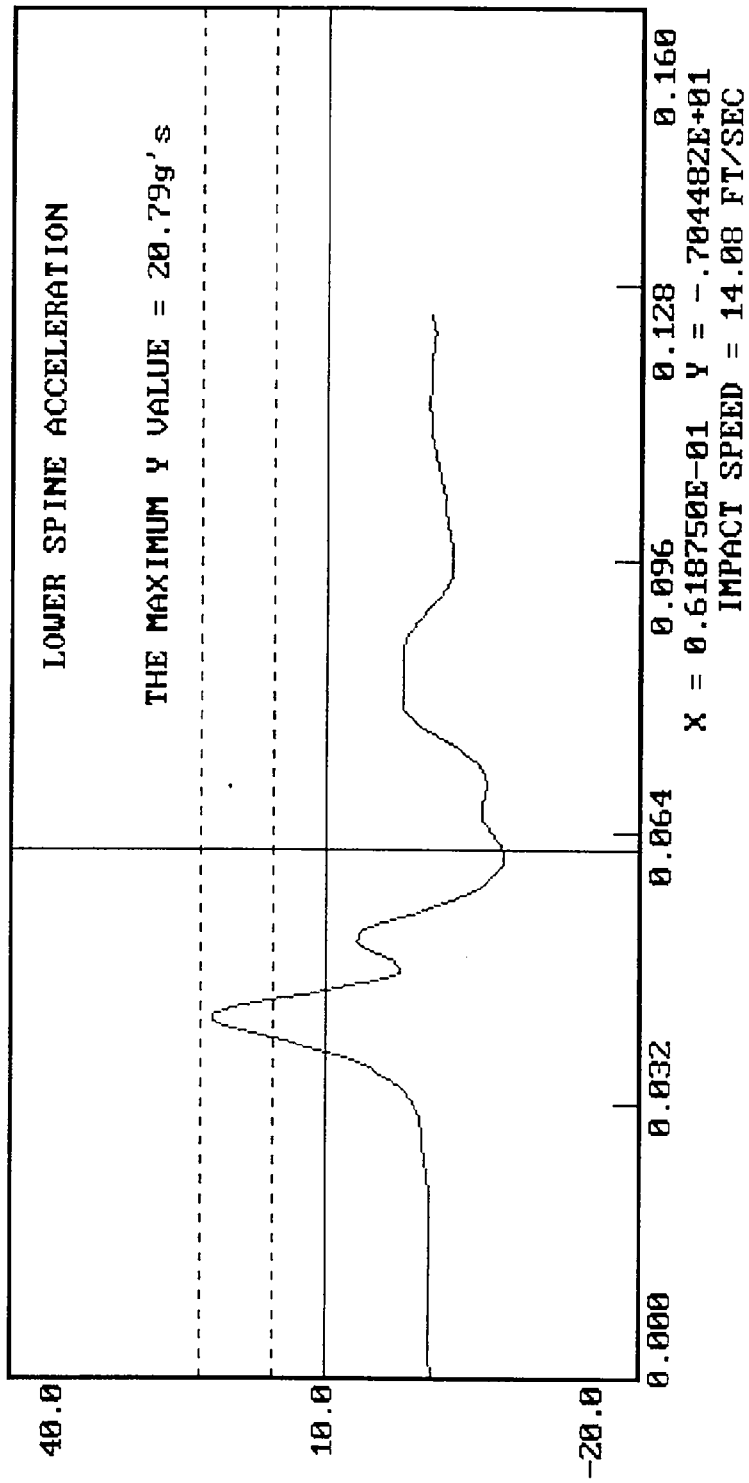
DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 272
 11-22-1996 17:43
 ACCELERATION (G'S) VS. TIME ((SECONDS))



DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 272

11-22-1996 17:43

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



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 22, 1996

DUMMY NUMBER: 272

TEST NUMBER: D961893

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
PROBE SPEED	13.8 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	54

TEST MEETS SPECIFICATIONS

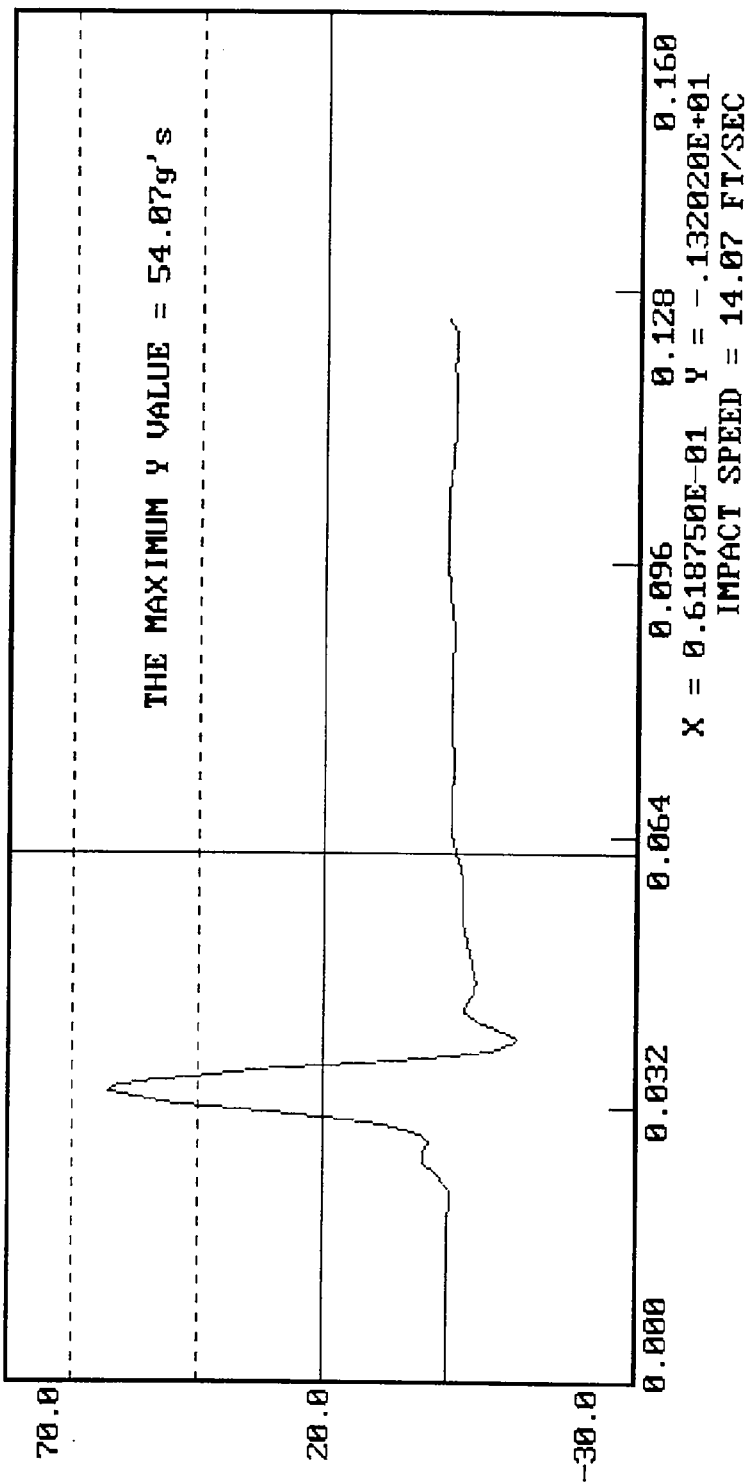
TECHNICIAN

Jim White

APPROVED BY

Rene Kabeke

DUMMY CALIBRATION - PELVIS IMPACT
 DUMMY # 272
 11-22-1996 17:49
 ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: November 22, 1996

DUMMY NUMBER: 272

TEST NUMBER: D961894

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
FORCE @ 0.5 in	23.3 - 36.5 lbs	31.2
FORCE @ 0.75 in	36.7 - 49.8 lbs	42.9
FORCE @ 1.0 in	50 - 63 lbs	57
FORCE @ 1.3 in	73 - 88 lbs	80

TEST MEETS SPECIFICATIONS

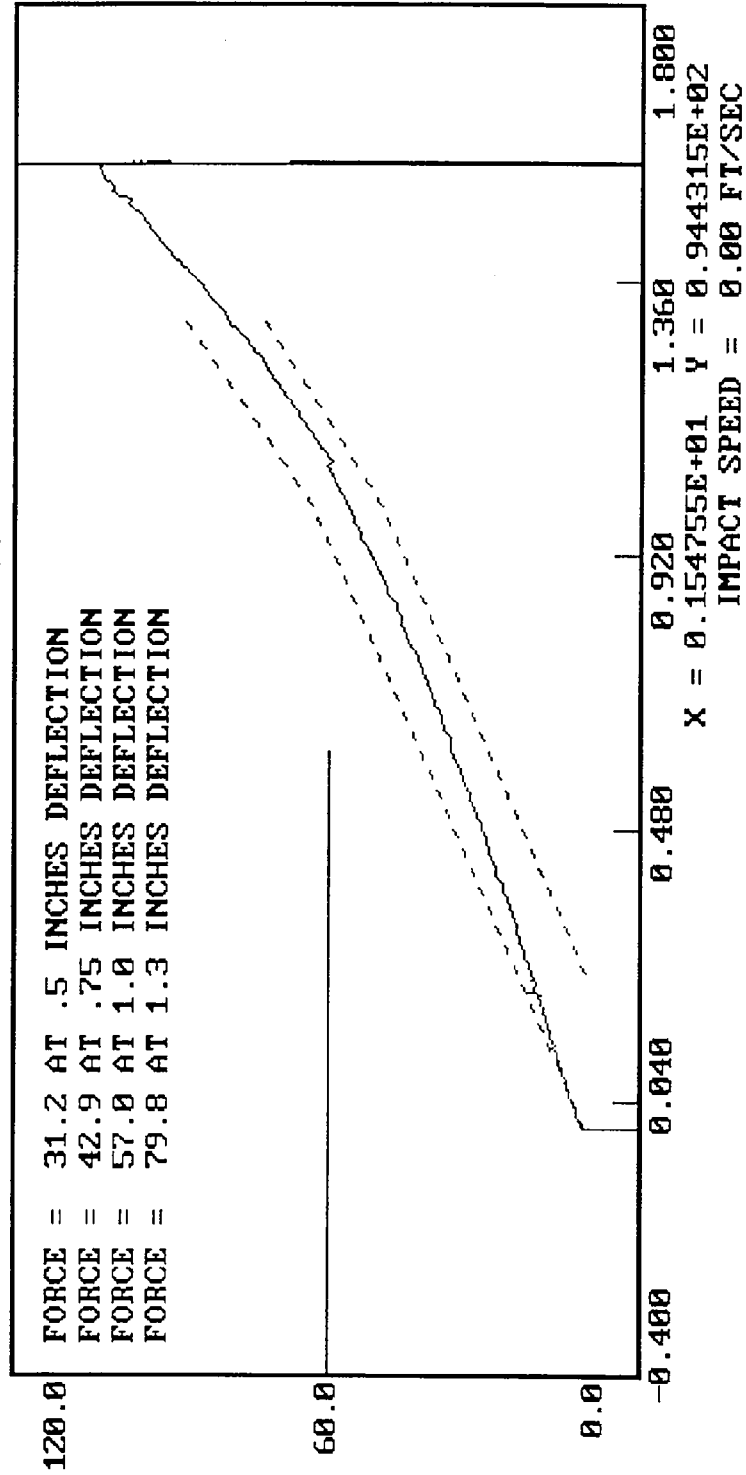
TECHNICIAN

Tim Kuhlman

APPROVED BY

Dave Kalsche

DUMMY CALIBRATION - ABDOMEN COMPRESSION
 DUMMY # 272
 11-22-1996 18:35
 ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: November 22, 1996

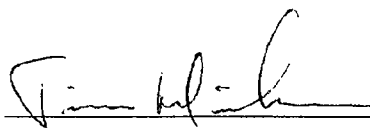
DUMMY NUMBER: 272

TEST NUMBER: D961895

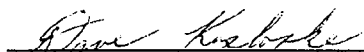
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	25
FORCE @ 30°	34 - 46 lbs	38
FORCE @ 40°	46 - 58 lbs	54
RETURN ANGLE	12° maximum	3°

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY

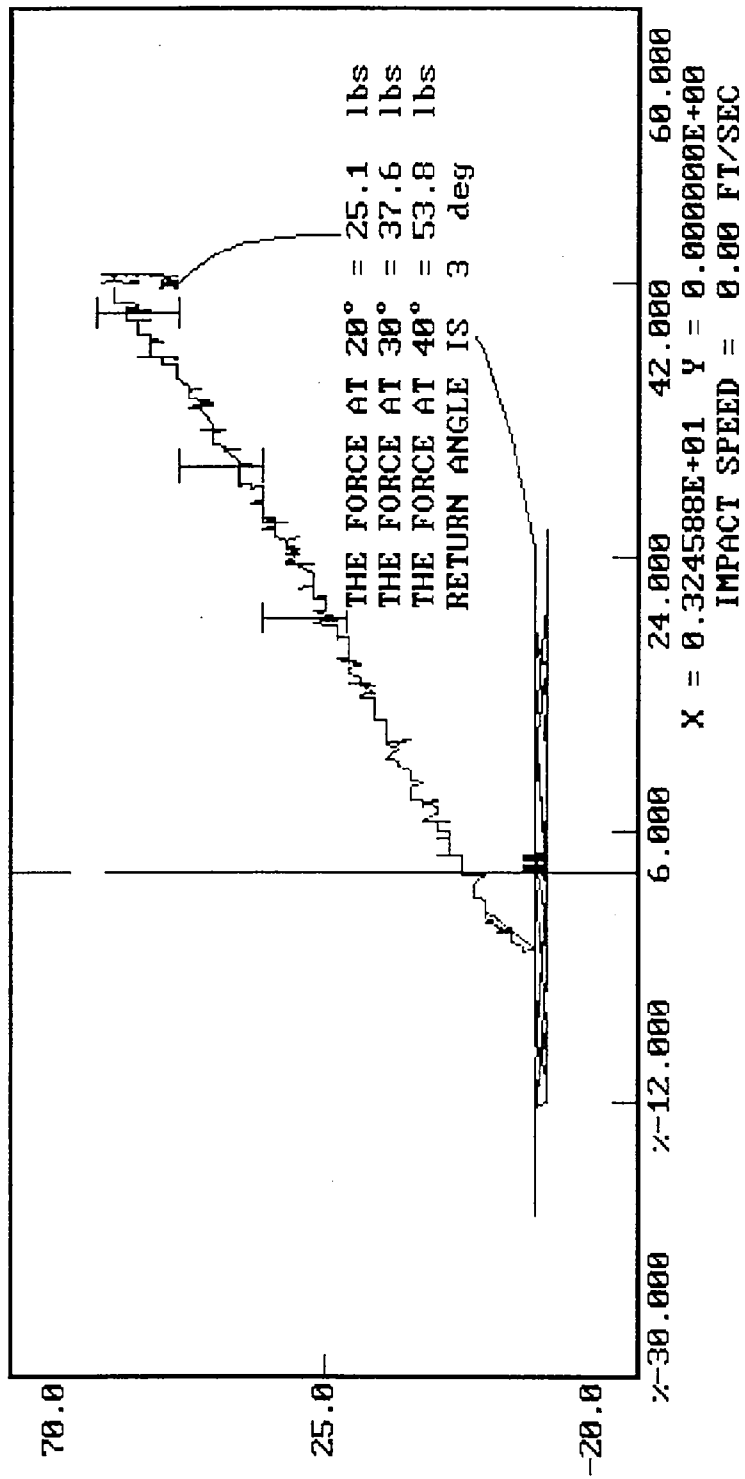


11-22-1996 18:09

DUMMY CALIBRATION - LUMBAR FLEXION

DUMMY # 272

FORCE (LBS) VS. TORSO ROTATION (DEGREES)



POST-TEST CERTIFICATION DATA

Rear Dummy Serial Number: 271

Calibration Test Results Summary

Dummy Serial Number: 271

Post-Test Calibration

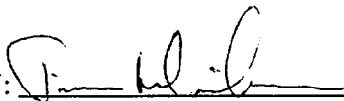
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion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

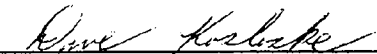
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 271

DATE OF VERIFICATION: November 22, 1996

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
THORACIC SHOCK ABSORBER TEST
SIDE IMPACT DUMMY (SID)

DATE: November 21, 1996

DUMMY NUMBER: 271

TEST NUMBER: D9688678

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		66° - 78° F	70°
RELATIVE HUMIDITY		10 - 70%	25%
VELOCITY 10 ft/s	FORCE (lb.)	188 - 253	219
	DISPLACEMENT (in.)	1.18 - 1.38	1.24
VELOCITY 14 ft/s	FORCE (lb.)	389 - 472	399
	DISPLACEMENT (in.)	1.26 - 1.47	1.35
VELOCITY 20 ft/s	FORCE (lb.)	841 - 1000	858
	DISPLACEMENT (in.)	1.30 - 1.57	1.33

TEST MEETS SPECIFICATIONS

TECHNICIAN Tim M. [Signature]

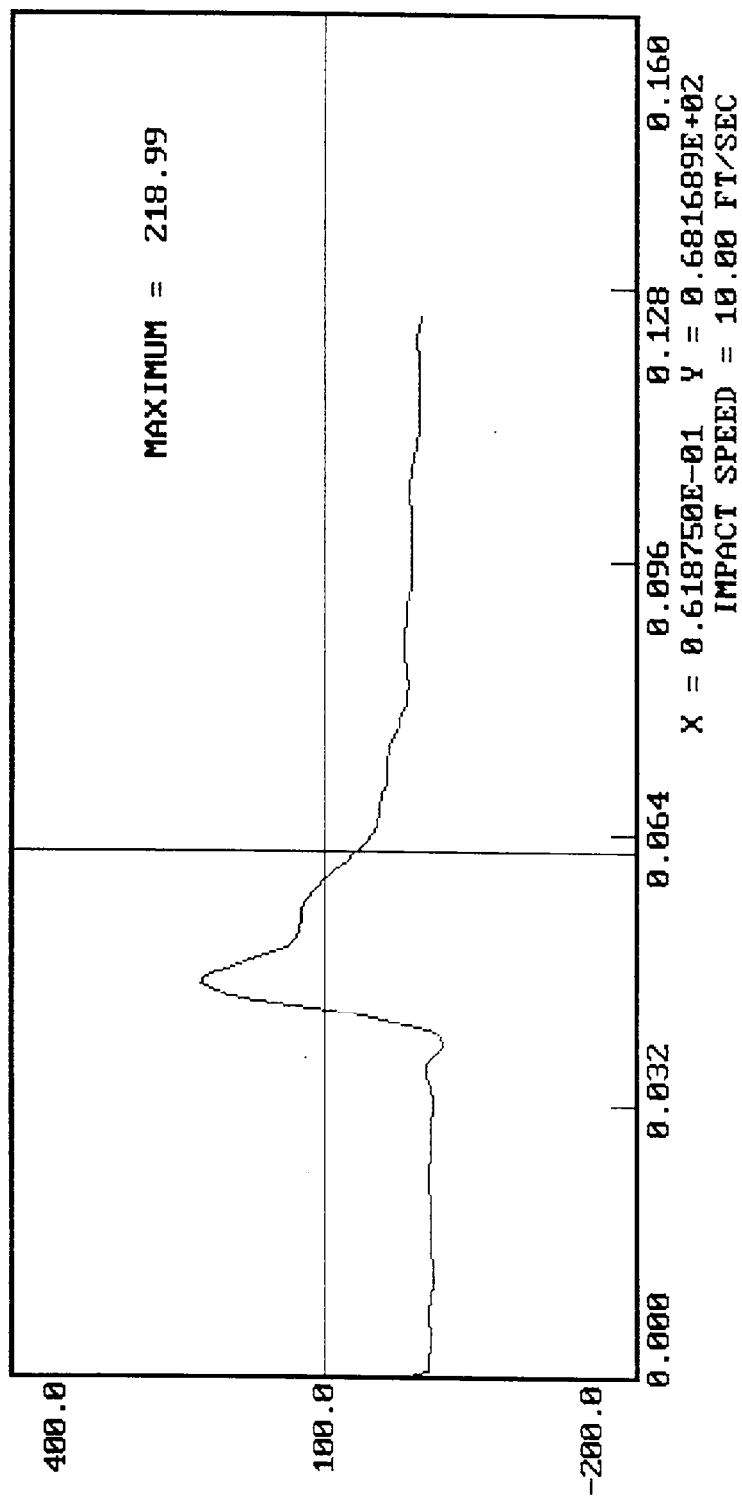
APPROVED BY [Signature]

11-21-1996 18:33

DUMMY CALIBRATION - DAMPENER BENCH TEST

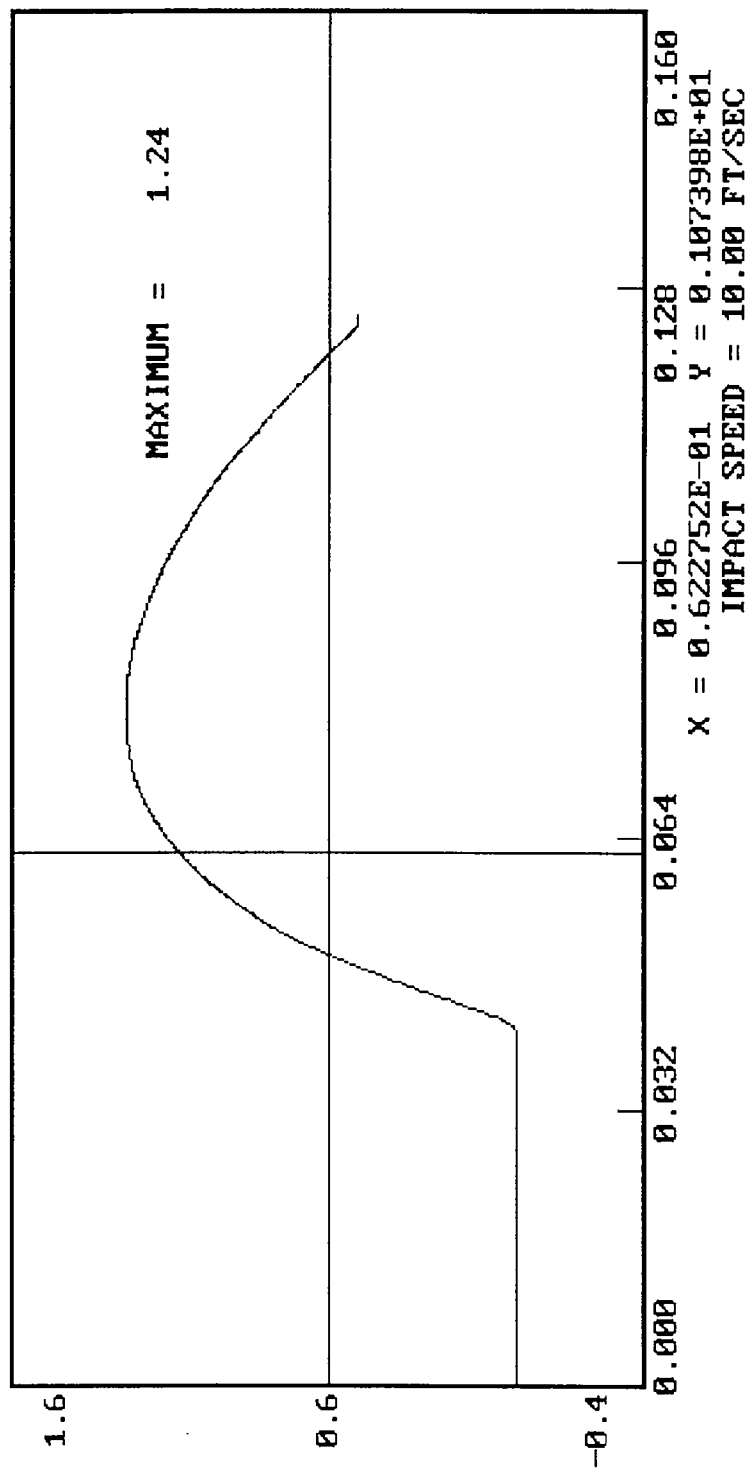
DUMMY # 271

FORCE (LBS) VS. TIME ((SECONDS))



DUMMY CALIBRATION - DAMPENER BENCH TEST
 DUMMY # 271
 DISPLACEMENT (IN) VS. TIME ((SECONDS))

11-21-1996 18:33

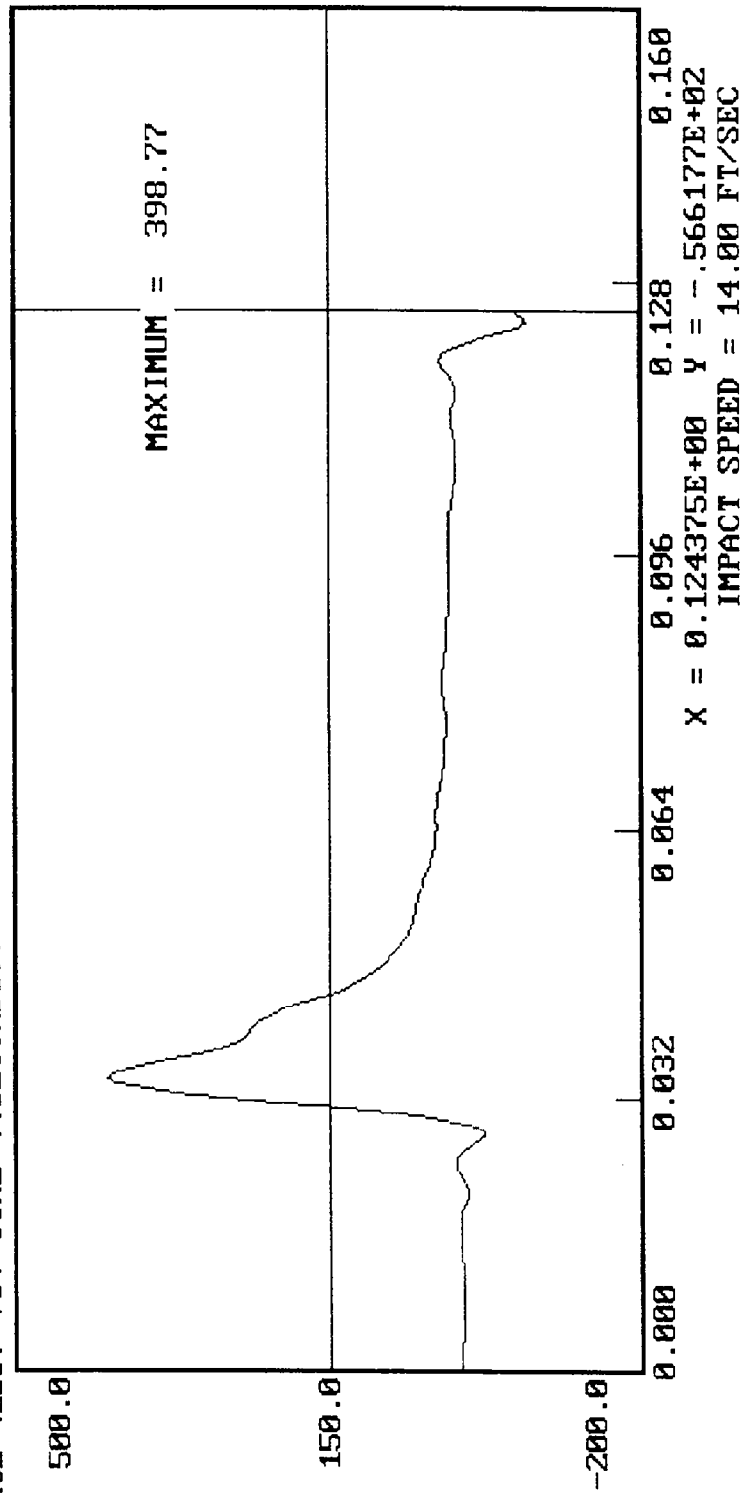


11-21-1996 18:36

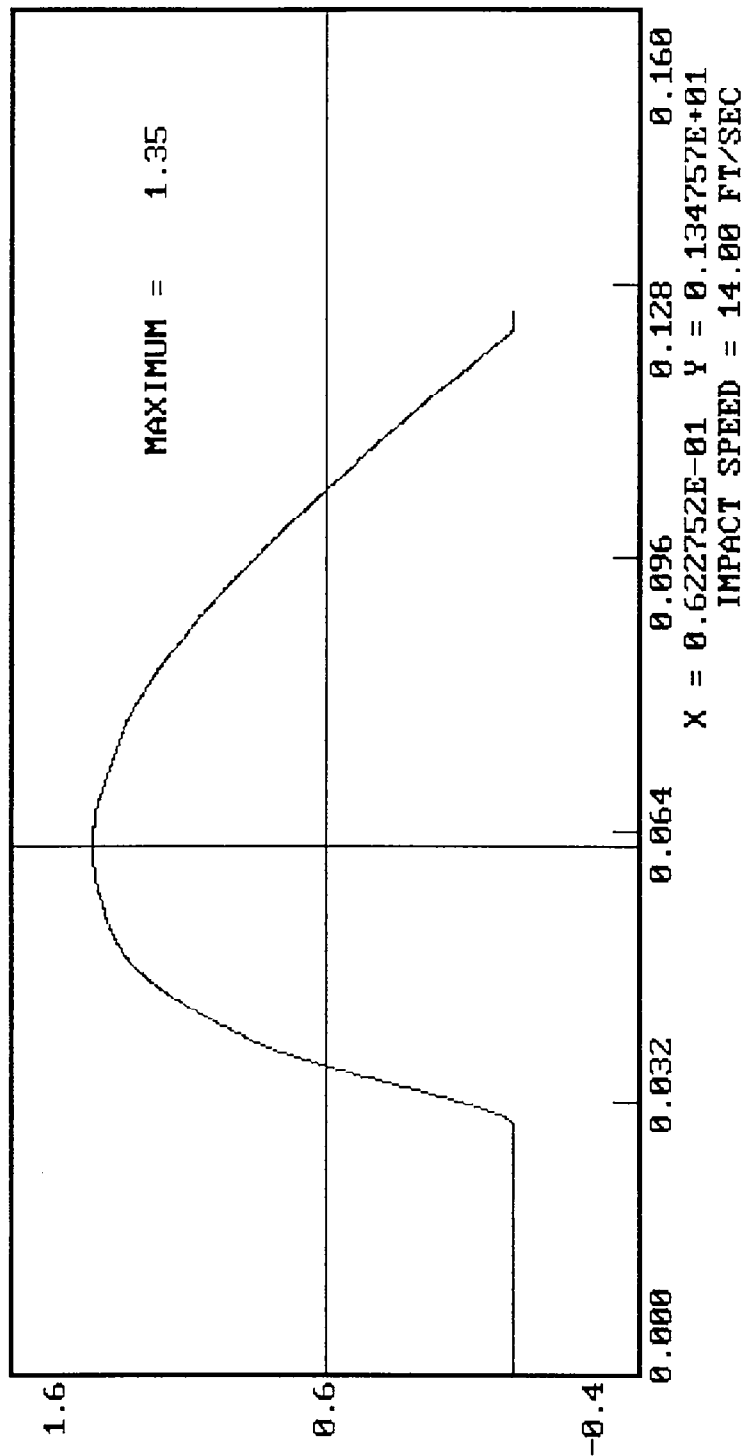
DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 271

FORCE (LBS) VS. TIME ((SECONDS))



DUMMY CALIBRATION - DAMPENER BENCH TEST
 DUMMY # 271
 11-21-1996 18:36
 DISPLACEMENT (IN) VS. TIME ((SECONDS))

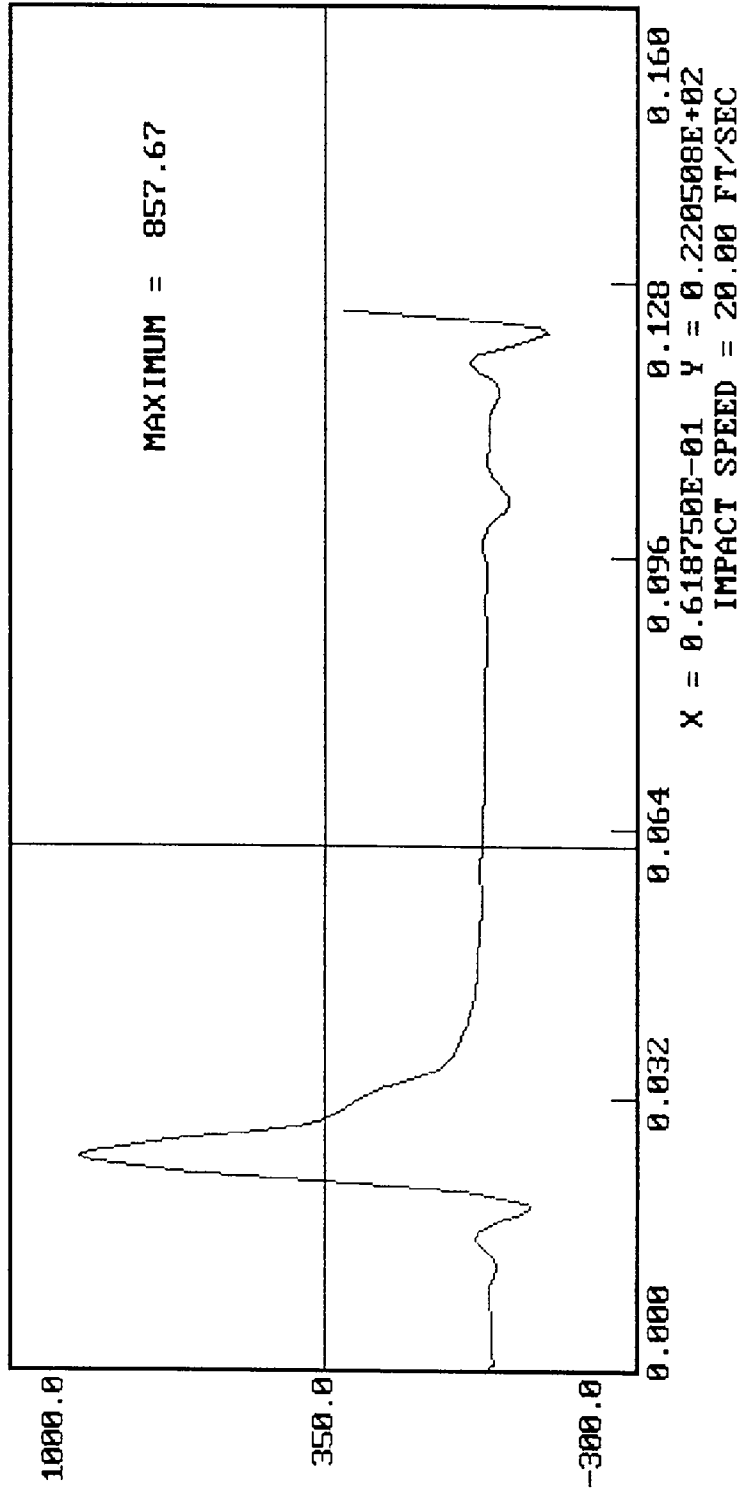


11-22-1996 09:15

DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 271

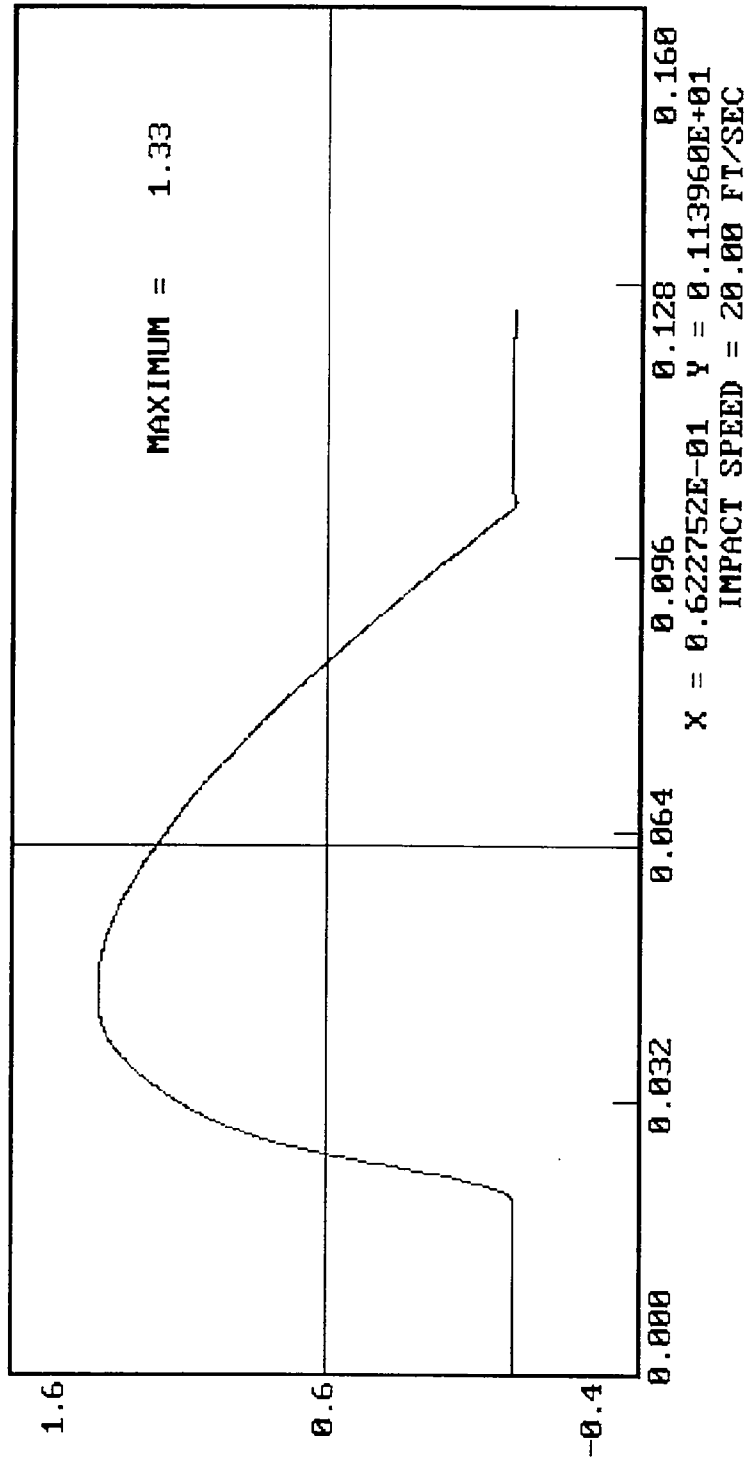
FORCE (LBS) VS. TIME ((SECONDS))



11-22-1996 09:15

DUMMY CALIBRATION - DAMPENER BENCH TEST
DUMMY # 271

DISPLACEMENT (IN) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 22, 1996

DUMMY NUMBER: 271

TEST NUMBER: D961882

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
PROBE SPEED	13.8 - 14.2 fps	14.1
UPPER RIB	37 - 46 g's	39
LOWER RIB	37 - 46 g's	38
LOWER SPINE	15 - 22 g's	20

TEST MEETS SPECIFICATIONS

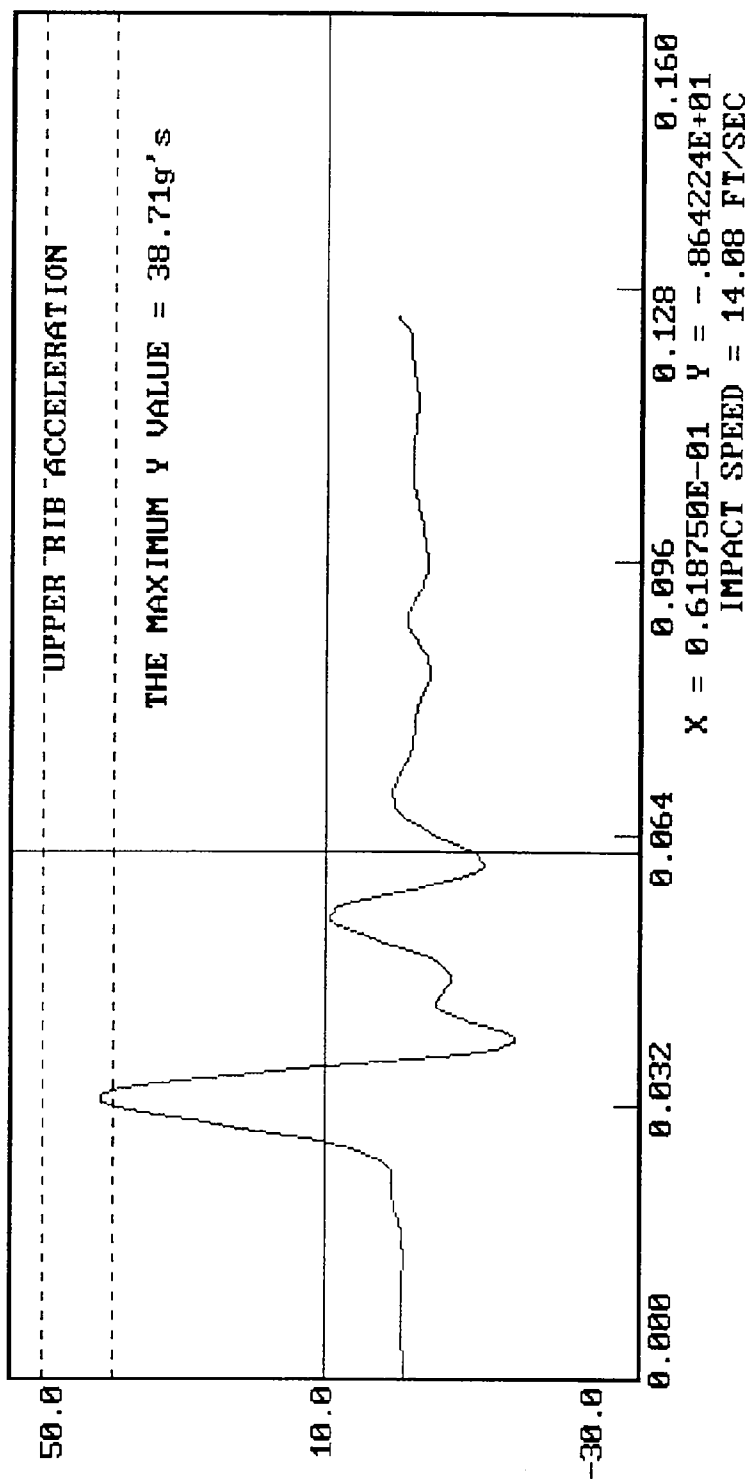
TECHNICIAN

Tim Killion

APPROVED BY

Dave Koolbake

DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 271
 11-22-1996 17:13
 ACCELERATION (G'S) VS. TIME ((SECONDS))

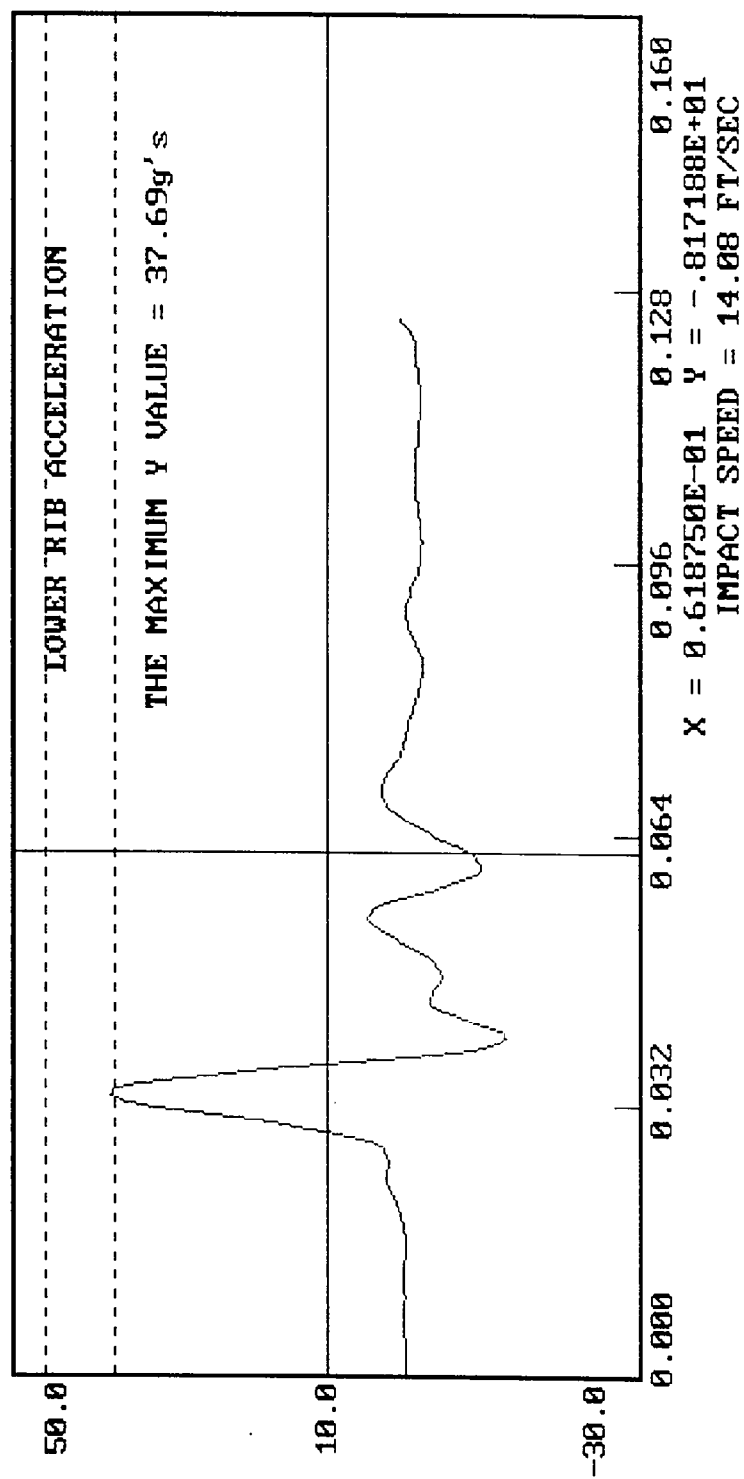


11-22-1996 17:13

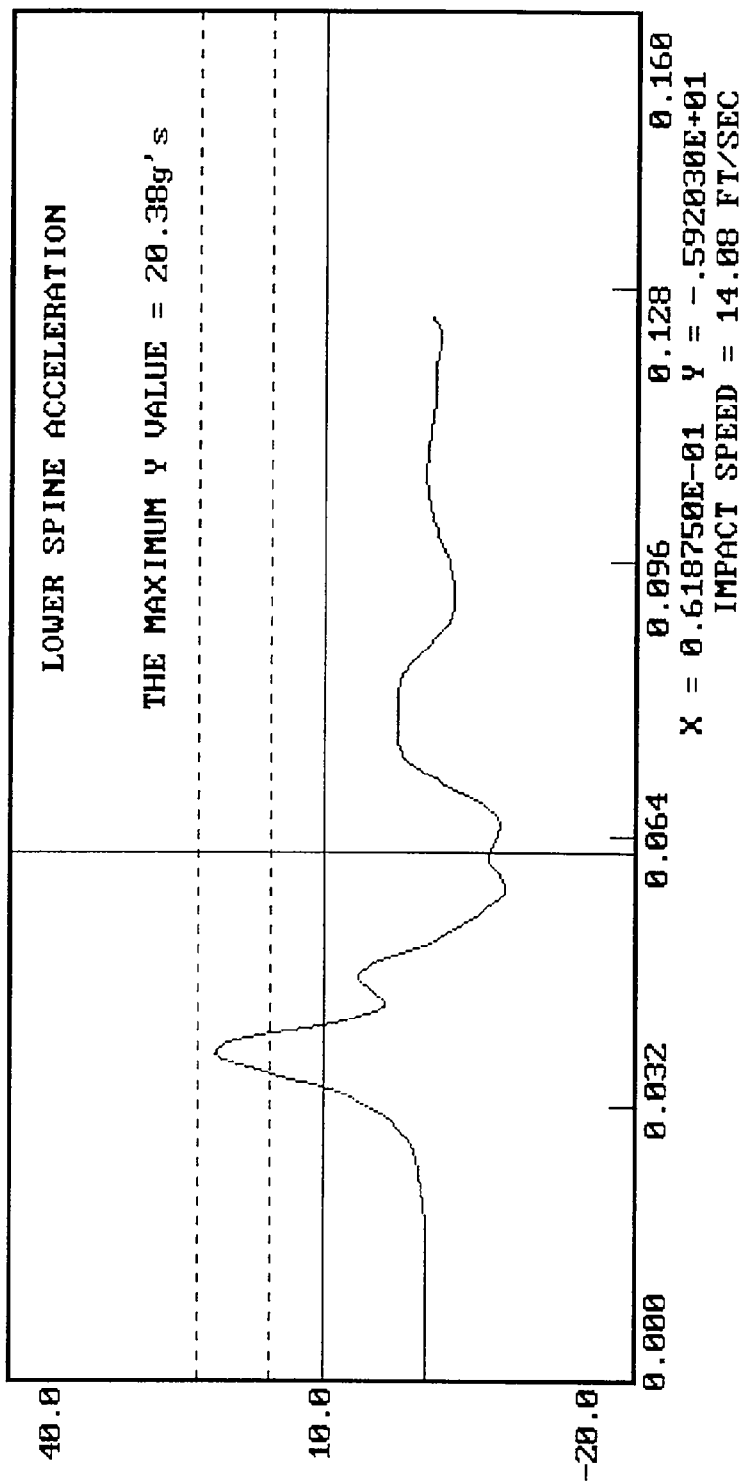
DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 271

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



DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 271
 11-22-1996 17:13
 ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 22, 1996

DUMMY NUMBER: 271

TEST NUMBER: D961883

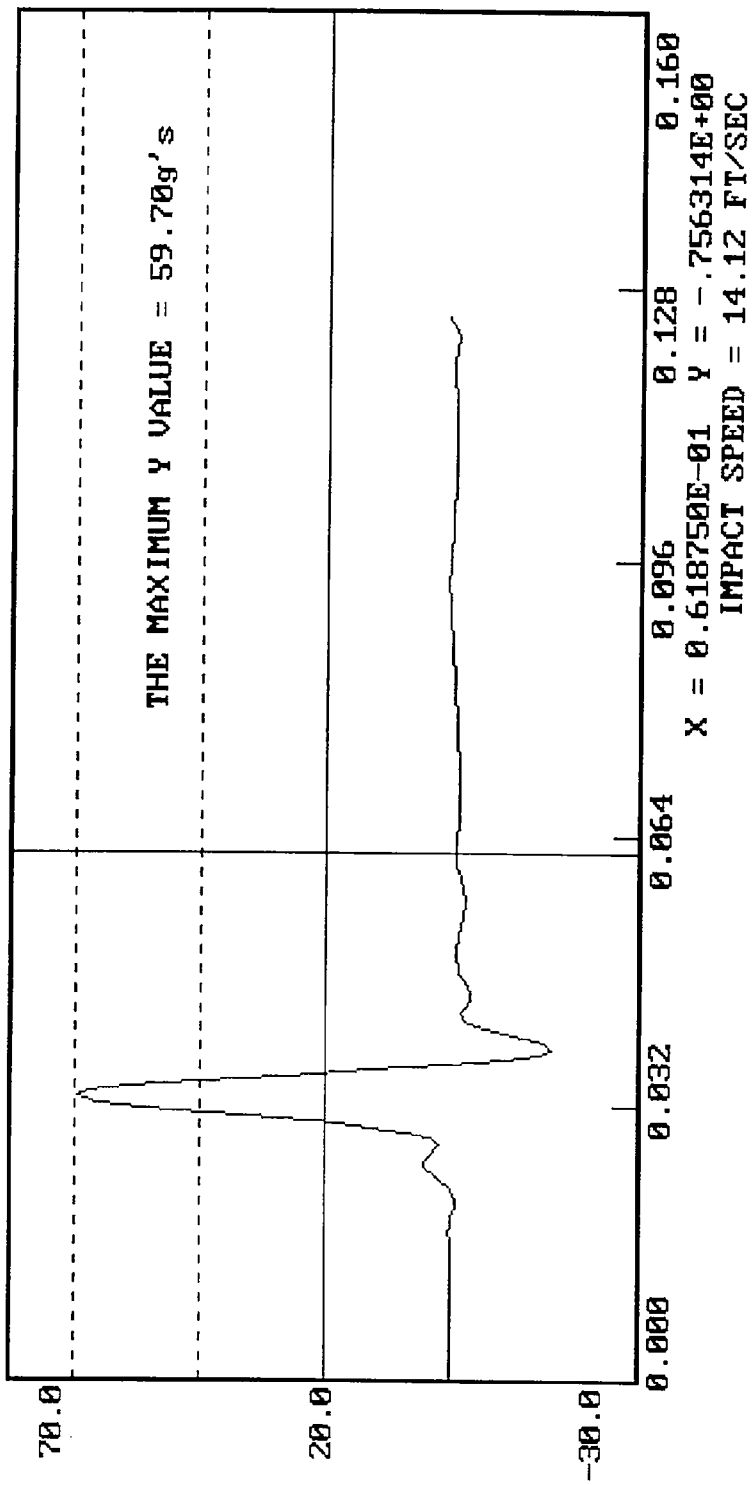
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
PROBE SPEED	13.8 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	60

TEST MEETS SPECIFICATIONS

TECHNICIAN Tim Wilson

APPROVED BY Gene Kachake

DUMMY CALIBRATION - PELVIS IMPACT
 DUMMY # 271
 11-22-1996 17:21
 ACCELERATION (G'S) VS. TIME ((SECONDS))



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

DATE: November 22, 1996

DUMMY NUMBER: 271

TEST NUMBER: D961884

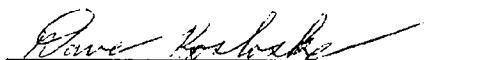
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
FORCE @ 0.5 in	23.3 - 36.5 lbs	31.2
FORCE @ 0.75 in	36.7 - 49.8 lbs	42.6
FORCE @ 1.0 in	50 - 63 lbs	57
FORCE @ 1.3 in	73 - 88 lbs	79

TEST MEETS SPECIFICATIONS

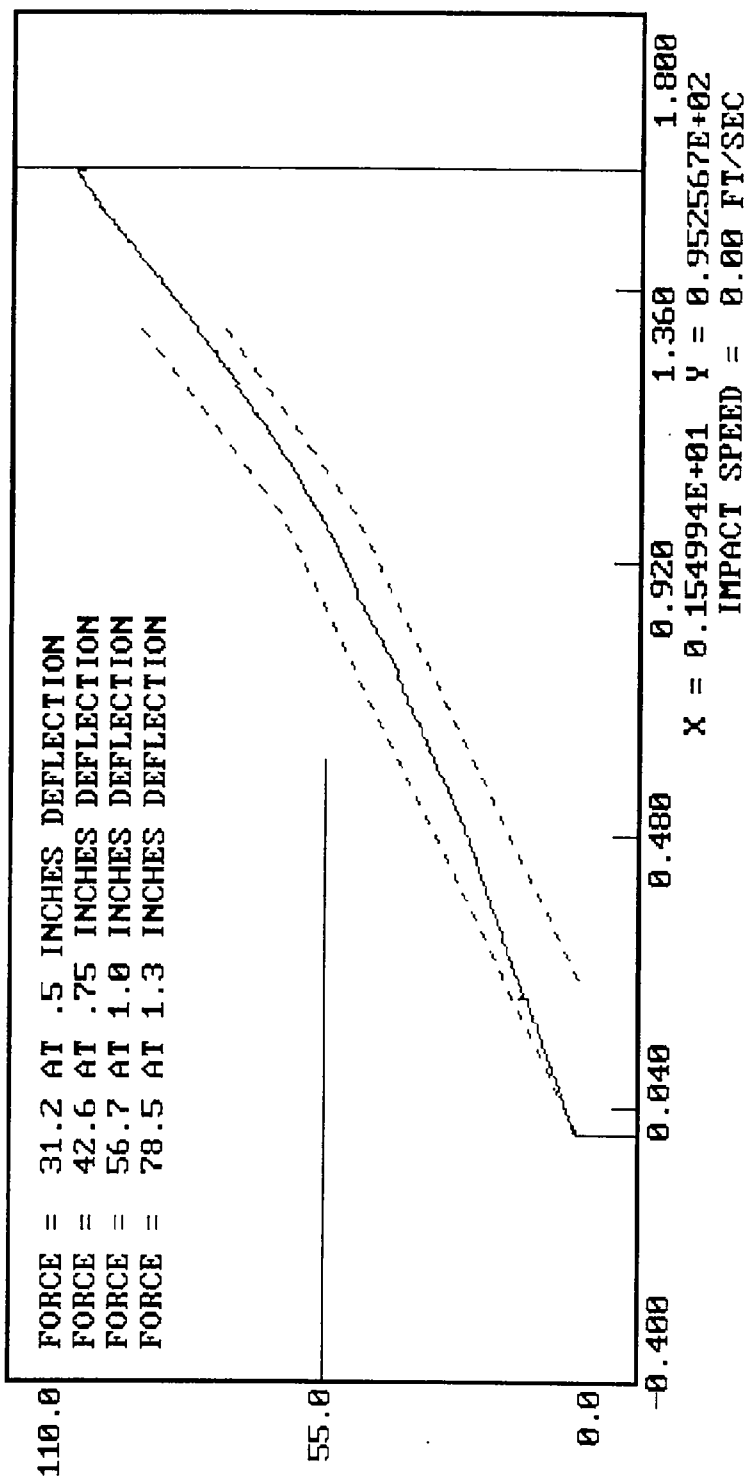
TECHNICIAN



APPROVED BY



DUMMY CALIBRATION - ABDOMEN COMPRESSION
 DUMMY # 271
 11-22-1996 18:32
 ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: November 22, 1996

DUMMY NUMBER: 271

TEST NUMBER: D961885

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	25
FORCE @ 30°	34 - 46 lbs	34
FORCE @ 40°	46 - 58 lbs	50
RETURN ANGLE	12° maximum	8°

TEST MEETS SPECIFICATIONS

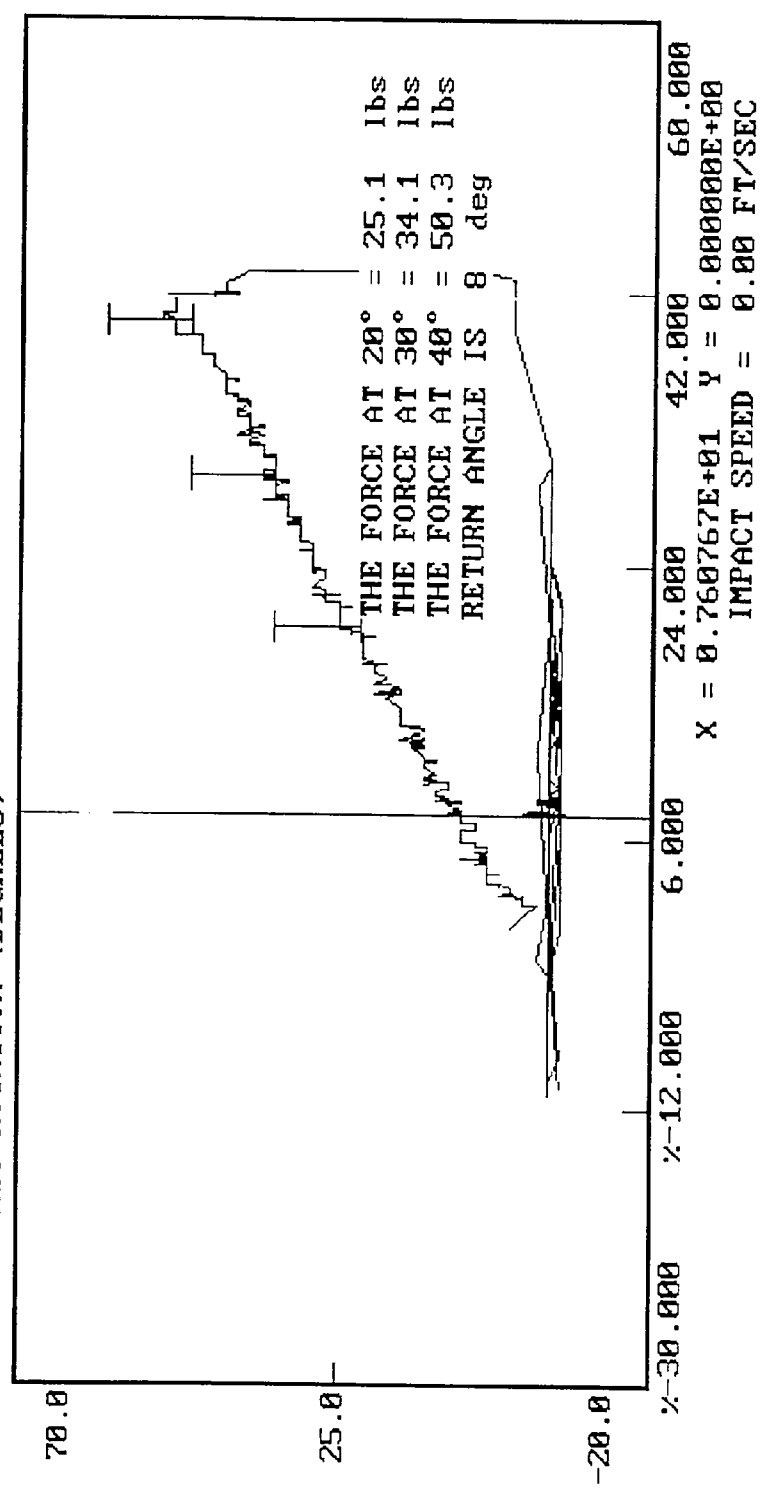
TECHNICIAN

Jim Wilkins

APPROVED BY

Gene Heston

DUMMY CALIBRATION - LUMBAR FLEXION
 DUMMY # 271
 11-22-1996 18:21
 FORCE (LBS) VS. TORSO ROTATION (DEGREES)



POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 272

Inspected By: Tim Michnay

Date: November 22, 1996

<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: 271

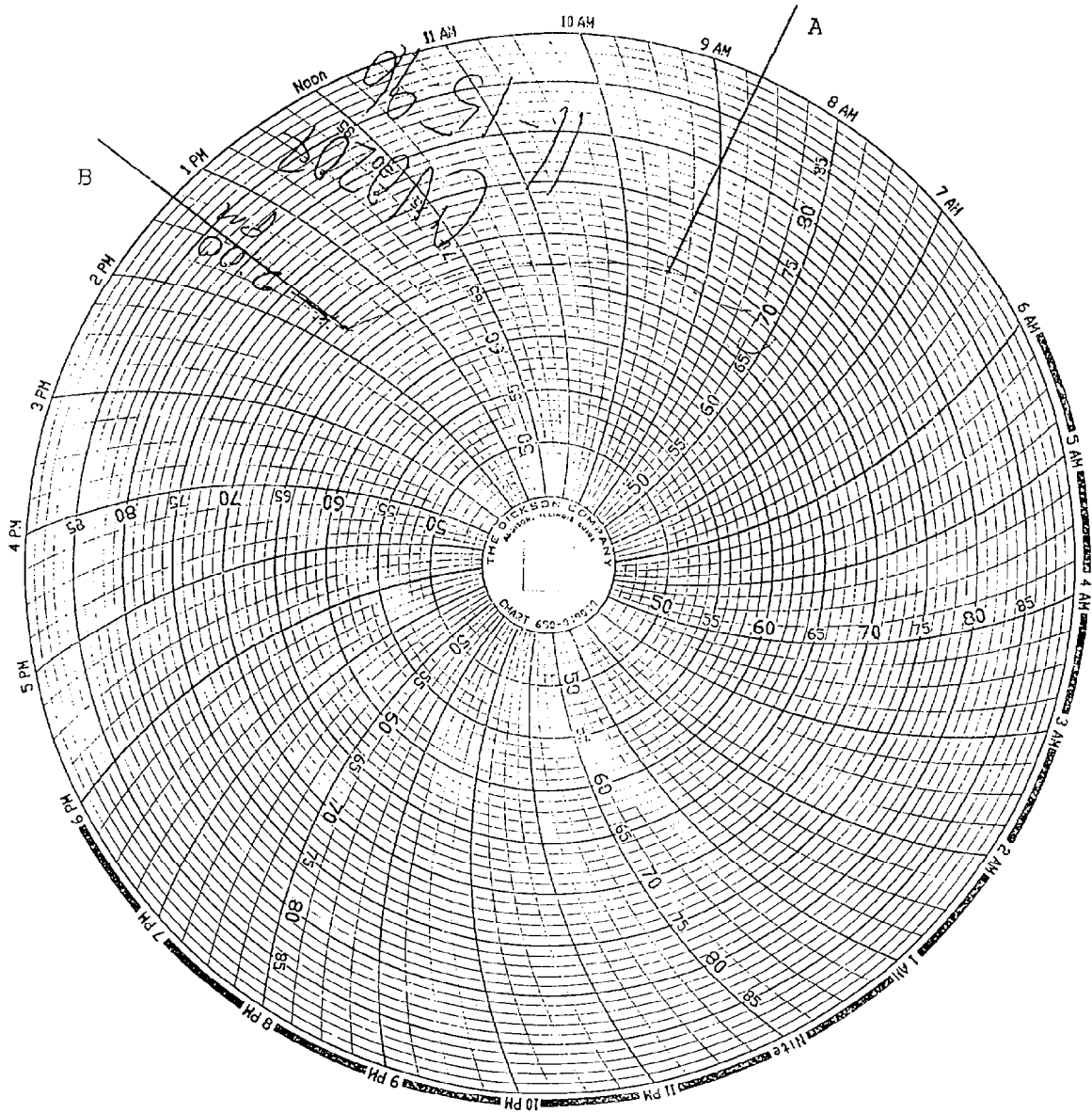
Inspected By: Tim Michnay

Date: November 22, 1996

<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 = dummies installed in vehicle
B = test conducted

APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA
INSTRUMENTS FOR RIGHT FRONT PASSENGER DUMMY NO. 272

	RIGHT FRONT PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	ALFJ7	Endevco	July 12, 1996
Lower Rib Y	APYN0	Endevco	June 07, 1996
Lower Spine Y	AP0G2	Endevco	July 12, 1996
Pelvis Y	APY15	Endevco	September 16, 1996
Upper Rib Redundant Y	ALDD6	Endevco	July 12, 1996
Lower Rib Redundant Y	APYN3	Endevco	June 07, 1996
Lower Spine Redundant Y	AP138	Endevco	June 12, 1996
Pelvis Redundant Y	APY16	Endevco	September 16, 1996

INSTRUMENTS FOR RIGHT REAR PASSENGER DUMMY NO. 271

	RIGHT REAR PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AP2A4	Endevco	September 16, 1996
Lower Rib Y	AP1B3	Endevco	September 16, 1996
Lower Spine Y	ANAP1	Endevco	September 16, 1996
Pelvis Y	AHTC3	Endevco	September 16, 1996
Upper Rib Redundant Y	AP2D8	Endevco	September 16, 1996
Lower Rib Redundant Y	AP1C6	Endevco	September 16, 1996
Lower Spine Redundant Y	ANAT6	Endevco	September 16, 1996
Pelvis Redundant Y	AGP53	Endevco	September 16, 1996

VEHICLE INSTRUMENT CALIBRATION

VEHICLE AND MDB ACCELEROMETERS			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier CG X	C14-Z10	Entran	July 12, 1996
Moving Barrier CG Y	B14-R01	Entran	July 15, 1996
Moving Barrier CG Z	B14-R16	Entran	July 11, 1996
Moving Barrier Rear Axle X	B14-R03	Entran	July 11, 1996
Moving Barrier Rear Axle Y	A10-G01	Entran	June 04, 1996
Right Mid A-Post Y	J23-E04	Entran	July 11, 1996
Right Lower A-Post Y	D05-R24	Entran	June 04, 1996
Right Mid B-Post Y	D05-R13	Entran	June 04, 1996
Right Lower B-Post Y	L22-G05	Entran	July 11, 1996
Rear Floorpan Above Axle X	J06-D17	Entran	July 10, 1996
Rear Floorpan Above Axle Y	D05-R12	Entran	July 12, 1996
Rear Floorpan Above Axle Z	J10-E14	Entran	July 10, 1996
Right Front Passenger Seat Track Y	E25-G08	Entran	October 02, 1996
Left Side Sill at Front Seat X	C14-Z08	Entran	July 11, 1996
Left Side Sill at Front Seat Y	B14-R09	Entran	July 15, 1996
Left Side Sill at Front Seat Z	E25-G11	Entran	October 01, 1996
Left Side Sill at Rear Seat X	B13-Z02	Entran	July 11, 1996
Left Side Sill at Rear Seat Y	D05-R23	Entran	July 11, 1996
Left Side Sill at Rear Seat Z	C14-Z05	Entran	June 04, 1996
Right Side Sill at Front Seat Y	E13-D07	Entran	July 10, 1996

VEHICLE INSTRUMENT CALIBRATION

VEHICLE AND MDB ACCELEROMETERS			
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Right Side Sill at Rear Seat Y	L14-D08	Entran	July 03, 1996
Left Rear Occupant Compartment Y	C05-Z13	Entran	June 04, 1996
Vehicle CG X	A10-G02	Entran	July 12, 1996
Vehicle CG Y	B13-Z03	Entran	July 15, 1996
Vehicle CG Z	A09-G10	Entran	July 12, 1996

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