

REPORT NO.: 214-MGA-97-11  
SAFETY COMPLIANCE TESTING FOR  
FMVSS 214 "SIDE IMPACT PROTECTION -  
PASSENGER CARS"

V2490

FORD MOTOR COMPANY  
1997 FORD CROWN VICTORIA  
NHTSA NO: CV0206

MGA PROVING GROUNDS  
5000 WARREN ROAD  
BURLINGTON, WI 53105



Test Date: November 25, 1996

Report Date: December 30, 1996

FINAL REPORT

Prepared For:

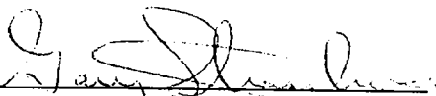
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4. Title and Subtitle  Final Report of FMVSS No.214 Compliance Side Impact Protection Testing of a 1997 Ford Crown Victoria 4 Door NHTSA No. CV0206				5. Report Date December 30, 1996																			
				6. Performing Organization Code MGA																			
7. Author(s) Gary Strassburg, Project Engineer				8. Performing Organization Report No. MGA-DOT-214-11																			
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105				10. Work Unit No.																			
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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 25 to December 30, 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 Crown Victoria 4 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 25, 1996.  The impact velocity of the Moving Deformable Barrier (MDB) was 53.5 kph, and the ambient temperature at the struck side of the target vehicle at the time of impact was 21°C. The target vehicle post test maximum crush was 395 mm at level 2. The test vehicle's performance follows:																							
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 25%; text-align: center;"><u>RIGHT FRONT PASS.</u></th> <th style="width: 25%; text-align: center;"><u>RIGHT REAR PASS.</u></th> </tr> </thead> <tbody> <tr> <td>Right Upper Rib (BUR) Accel., g</td> <td style="text-align: center;">43</td> <td style="text-align: center;">35</td> </tr> <tr> <td>Right Lower Rib (RLR) Accel., g</td> <td style="text-align: center;">44</td> <td style="text-align: center;">41</td> </tr> <tr> <td>Lower Spine (T<sub>12</sub>) Accel., g</td> <td style="text-align: center;">54</td> <td style="text-align: center;">46</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td style="text-align: center;">49</td> <td style="text-align: center;">43</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td style="text-align: center;">50</td> <td style="text-align: center;">82</td> </tr> </tbody> </table>							<u>RIGHT FRONT PASS.</u>	<u>RIGHT REAR PASS.</u>	Right Upper Rib (BUR) Accel., g	43	35	Right Lower Rib (RLR) Accel., g	44	41	Lower Spine (T <sub>12</sub> ) Accel., g	54	46	Thoracic Trauma Index (TTI)	49	43	Pelvis (PEV) Accel., g	50	82
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The doors 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.																							
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																			
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Approval Date: 1-14-97

FINAL REPORT ACCEPTED BY (OVSC):

Accepted By:   
Contract Technical Manager

Acceptance Date: 2/25/97

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## 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 Crown Victoria 4 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 Crown Victoria 4 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 33.25 mph (53.5 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 25, 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 rear right 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 (T<sub>12</sub>) 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.

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/Crown Victoria/4 Door  
Vehicle NHTSA No.: CV0206 VIN: 2FALP73W0VX110269  
Vehicle Body Color: Silver Build Date: 9/96  
Engine Data: 8 Cylinders;     CID; 3.1 Liter;     cc  
Placement  Longitudinal;  Lateral  
Transmission: 3 speed;  Manual;  Automatic;  Overdrive  
Final Drive:  Rear Wheel Drive;  Frt. Wheel Drive;  Four Wheel Drive  
  
Odometer Reading 51 miles  
Options:  A/C;  Pwr. Steering;  Pwr. Brakes;  Pwr. Windows;  
 Cruise Control;  Tilt Wheel;  Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 32 Psi FRONT  
35 Psi REAR  
Recommended Tire Size: P215/70R15  
Tires on Test Vehicle: P215/70R15 Manufacturer: Michelin

Vehicle Capacity Data:

Number of Occupants: 3 Front; 3 Rear;  3rd Seat 6 Total  
Type of Front Seats:  Bucket;  Bench;  Split Bench  
Type of Front Seat Back:  Fixed;  Adjustable with  Power  
Vehicle Maximum Capacity Loading = 499.0 kg (A)  
No. of Occupants x 68.04 kg. = 408.2 kg (B)  
Cargo Capacity (A-B) = 90.8 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS:

Right Front = 492.6 kg      Right Rear = 386.9 kg  
Left Front = 485.4 kg      Left Rear = 387.8 kg  
TOTAL FRONT = 978.0 kg      TOTAL REAR = 774.7 kg  
% of Total Vehicle Weight = 55.8%;      % of Total Weight = 44.2%  
TOTAL WEIGHT = 1752.7 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids	= <u>1752.7</u> kg
Cargo Carrying Capacity of Test Vehicle	= <u>90.8</u> kg
Weight of 2 Side Impact Dummies (2 x <u>80.7</u> kg.)	= <u>161.4</u> kg
TEST VEHICLE TARGET WEIGHT	= <u>2004.9</u> kg

FULLY LOADED WEIGHT OF VEHICLE:

Right Front	= <u>550.2</u> kg	Right Rear	= <u>505.8</u> kg
Left Front	= <u>469.5</u> kg	Left Rear	= <u>478.1</u> kg
TOTAL FRONT	= <u>1019.7</u> kg	TOTAL REAR	= <u>983.9</u> kg
% of Total Weight	= <u>51.0</u> %	% of Total Weight	= <u>49.0</u> %
TOTAL TEST WEIGHT	= <u>2003.6</u> kg		

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 746 mm Left Front 749 mm Right Rear 739 mm Left Rear 742 mm

FULLY LOADED WEIGHT ATTITUDE:

Right Front 730 mm Left Front 749 mm Right Rear 682 mm Left Rear 700 mm

TEST ATTITUDE:

Right Front 733 mm Left Front 741 mm Right Rear 695 mm Left Rear 695 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2904 mm

C.G. = 1404 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 5149 mm

Centerline = 5230 mm

Left Side = 5149 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996

FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 260 mm

Test Position: 11th position rearward out of 21 total

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 20.7° from the vertical position

REAR POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: None

Seat Back Adjustment Position: None

ADJUSTABLE STEERING COLUMN POSITION: Non adjustable

WINDOW POSITIONS: Left Front Down Left Rear Down

Right Front Up Right Rear Up

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

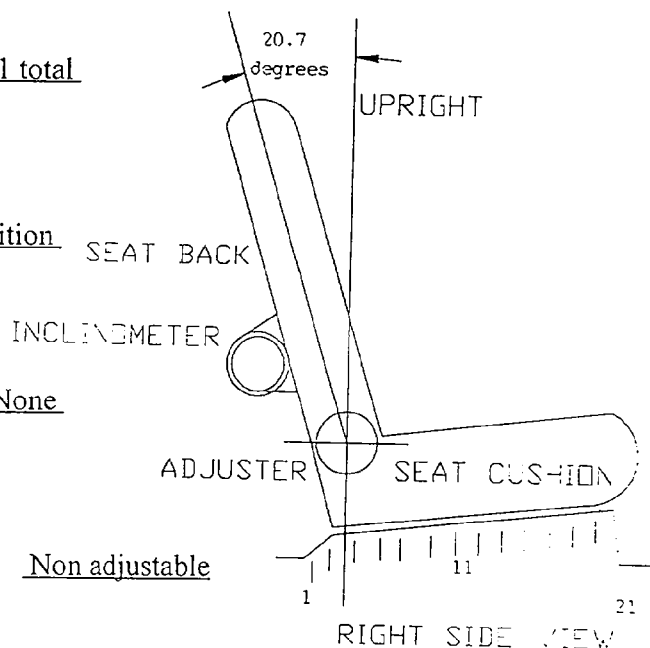
Fuel system usable capacity = 75.7 liters

Test Volume: 70.4 liters 93 % of capacity

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

Wheelbase: = 2904 mm

Impact Point is 508 mm rearward of front axle centerline



DATA SHEET NO. 2

TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996

Overall Length = 5230 mm; Overall Width = 1913 mm

TEST WEIGHT:

Right Front = 487.6 kg                      Right Rear = 484.0 kg  
Left Front = 544.3 kg                      Left Rear = 481.7 kg  
TOTAL FRONT = 1031.9 kg              TOTAL REAR = 965.7 kg  
% of Total Weight = 51.7%              % of Total Weight = 48.3%  
TOTAL VEHICLE WEIGHT = 1997.6 kg  
Wheelbase = 2904 mm  
Longitudinal C.G. from Center of Front Axle = 1404 mm  
Impact Angle with Respect to Impactor = 0° degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 ( 284 mm above ground) = 282 mm
  2. LEVEL 2 ( 533 mm above ground) = 395 mm
  3. LEVEL 3 ( 613 mm above ground) = 369 mm
  4. LEVEL 4 ( 927 mm above ground) = 276 mm
  5. LEVEL 5 ( 1410 mm above ground) = 100 mm
- Maximum Post-Test Intrusion = 395 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>with airbag</u>	<u>type II belt</u>

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

INSTRUMENTATION:

Number of Vehicle Data Channels: = 19

Number of Cameras: Onboard Vehicle = 3

Offboard Vehicle = 4

Deformable Barrier = 2

TOTAL = 9

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 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>1096 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: 33.26 mph (53.5 kph) Secondary: 33.24 mph (53.5 kph)

CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A Top of Stack (813 mm) = 118 mm
2. Row B Mid Stack (686 mm) = 111 mm
3. Row C Top of Bumper (533 mm) = 97 mm
4. Row D Center of Bumper (432 mm) = 125 mm

INSTRUMENTATION:

Number of MDB Data Channels = 5

DATA SHEET NO. 4  
POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door  
Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996

VISIBLE DUMMY CONTACT POINTS:

	<u>RIGHT FRONT SID</u>	<u>RIGHT REAR SID</u>
Head	<u>none noted</u>	<u>to C Post and header</u>
Arm	<u>to door</u>	<u>to door</u>
Pelvis	<u>to armrest</u>	<u>none noted</u>
Left Knee	<u>to right knee</u>	<u>to right knee</u>
Right Knee	<u>to armrest</u>	<u>to door</u>

DOOR OPENING:

	<u>LEFT SIDE</u>	<u>RIGHT SIDE</u>
Front	<u>No</u>	<u>No</u>
Rear	<u>No</u>	<u>No</u>

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal: 4 mm forward      Vertical: 13 mm high

ARM REST LOCATIONS:

Front: 234 mm from bottom of window  
Rear: 260 mm from bottom of window

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 32 mm Front Seat Cushion: 55 mm

Left Rear Seat Back: 69 mm Rear Seat Cushion: 110 mm

GLAZING DAMAGE:

Right side windows broken. windshield cracked

PILLAR PERFORMANCE:

No failure noted

SILL SEPARATION:

No failure noted

OTHER NOTABLE IMPACT EFFECTS:

\_\_\_\_\_

SECTION 4  
OCCUPANT AND VEHICLE INFORMATION

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

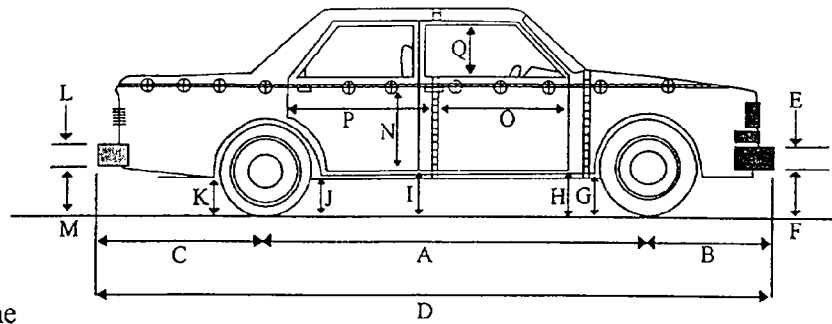
Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 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)	Max (g)	Time (msec)
<b>RIB ACCELERATIONS</b>								
Right Upper Rib (RUR) Y	7.6	100	-42.7	40	7.2	121	-34.6	56
Right Lower Rib (RLR) Y	9.6	111	-44.3	41	13.3	84	-40.9	53
<b>SPINE ACCELERATIONS</b>								
Lower Lateral Y	12.6	109	-53.5	45	13.1	81	-45.8	53
<b>PELVIS ACCELERATIONS</b>								
Lateral Y	15.6	99	-49.5	41	8.6	98	-82.4	47

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

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)

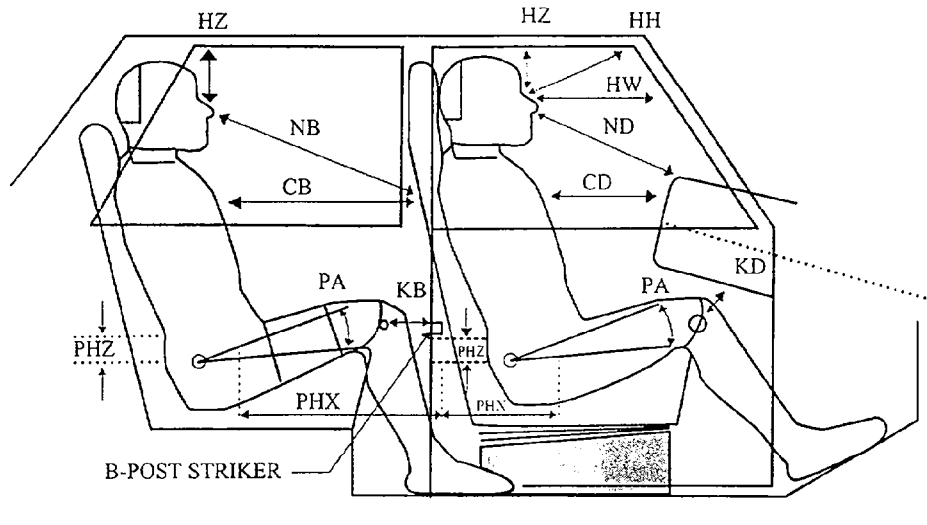
	PRE-TEST	POST-TEST	Δ CHANGE
A	2911	2912	-1
B	1058	1050	8
C	1361	1299	62
D	5330	5261	69
E	210	208	2
F	405	414	-9
G	264	268	-4
H	192	168	24
I	196	203	-7
J1/J2	188/196	186/194	-2/2
K	259	286	-27
L	279	271	8
M	279	197	82
N	728	635	93
O	719	694	25
P	1227	1130	97
Q	448	432	16
R	5149	5060	11
S	5149	5149	0
T	1913	1652	261

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

NHTSA NO.: CV0206 Test Date: November 25, 1996



NOTE: All dimensions are in mm with tolerance of  $\pm 3$  mm

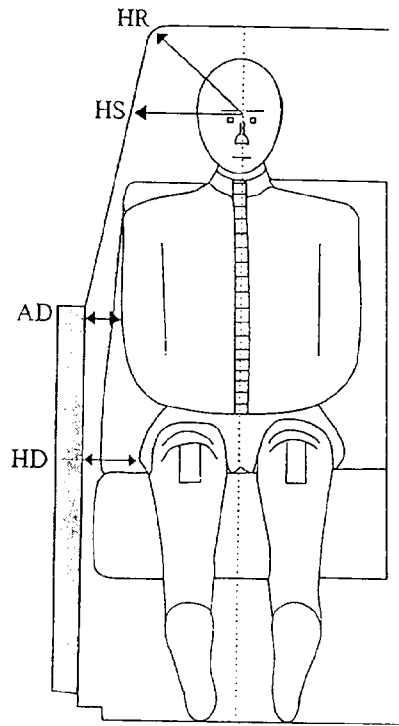
	FRONT PASSENGER ID #272	REAR PASSENGER SID ID #271	
HH	363	HZ	185
HW	601	NB	645
HZ	180	CB	552
ND	636	KBL (KBA)	228 (0°)
CD	564	KBR (KBA)	265 (0°)
CS	N/A	PA°	232°
KDL(KDA°)	176 (0°)	PHX	172
KDR(KDA°)	209 (0°)	PHZ	326
PA°	23.3°		
PHX	178		
PHZ	123		

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/Crown Victoria/4 Door

NHTSA NO.: CV0206 Test Date: November 25, 1996



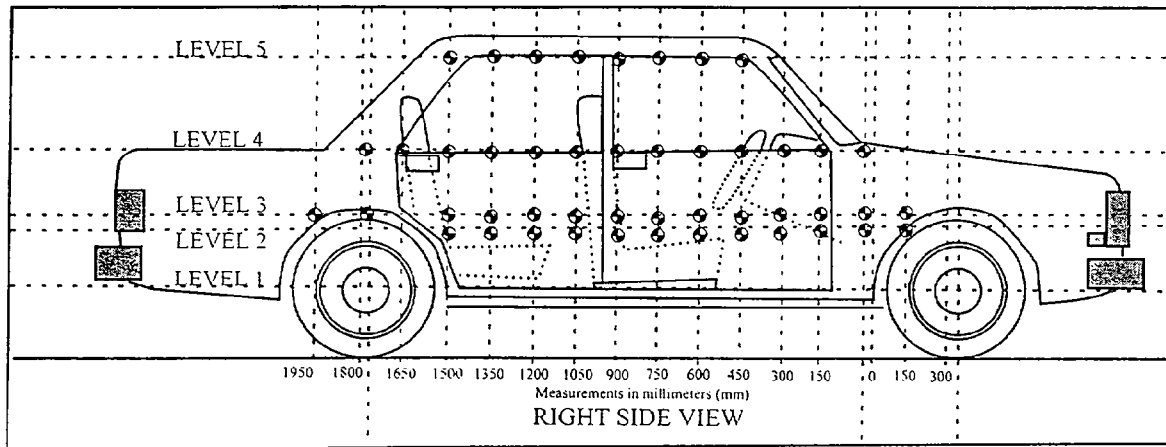
NOTE: All dimensions are in mm

	FRONT PASSENGER ID #272	REAR PASSENGER ID #271
HR	188	211
HS	328	338
AD	143	128
HD	196	188

DATA SHEET NO. 9  
VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

NHTSA NO.: CV0206 Test Date: November 25, 1996



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

MEASUREMENTS ALONG THE VERTICAL 750 mm. LINE SHOWN ABOVE

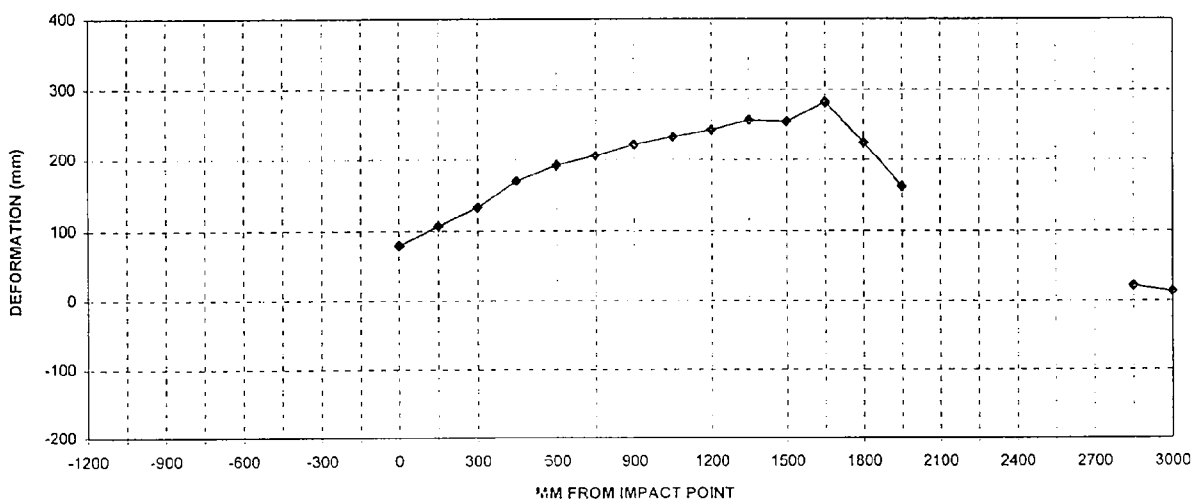
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>284</u> mm
Level 2 @ Occupant H-Point	=	<u>533</u> mm
Level 3 @ Mid Door	=	<u>613</u> mm
Level 4 @ Window Sill	=	<u>927</u> mm
Level 5 @ Window Top	=	<u>1410</u> mm

DATA SHEET NO. 10  
VEHICLE EXTERIOR CRUSH PROFILES

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)	653	732	79
150	650	757	107
300	647	780	133
450	643	813	170
600	642	834	192
750	644	850	206
900	641	864	222
1050	643	876	233
1200	644	887	243
1350	644	901	257
1500	645	900	255
1650	648	930	282
1800	648	873	225
1950	652	814	162
2100			
2250			
2400			
2550			
2700			
2850	662	683	21
3000	669	682	13

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



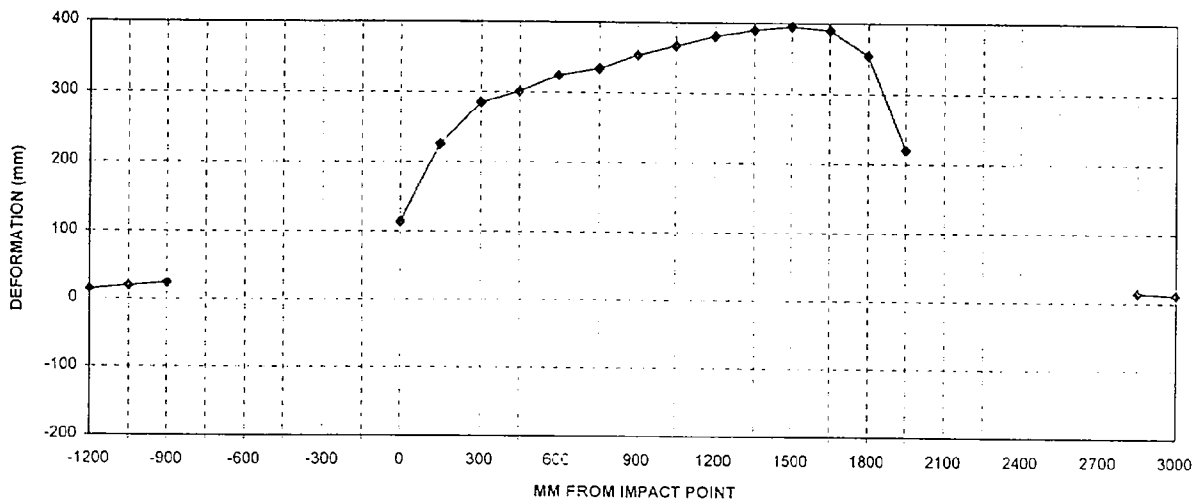
LEVEL 1 - AXLE CENTERLINE

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

Longitudinal Distance (mm)	Level 2 - Occupant H Point		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200	663	677	14
-1050	640	659	19
-900	621	644	23
-750			
-600			
-450			
-300			
-150			
0 (impact point)	577	691	114
150	573	798	225
300	568	853	285
450	565	866	301
600	563	887	324
750	560	894	334
900	559	912	353
1050	557	924	367
1200	556	937	381
1350	556	946	390
1500	558	953	395
1650	560	950	390
1800	562	916	354
1950	564	784	220
2100			
2250			
2400			
2550			
2700			
2850	598	612	14
3000	608	619	11

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



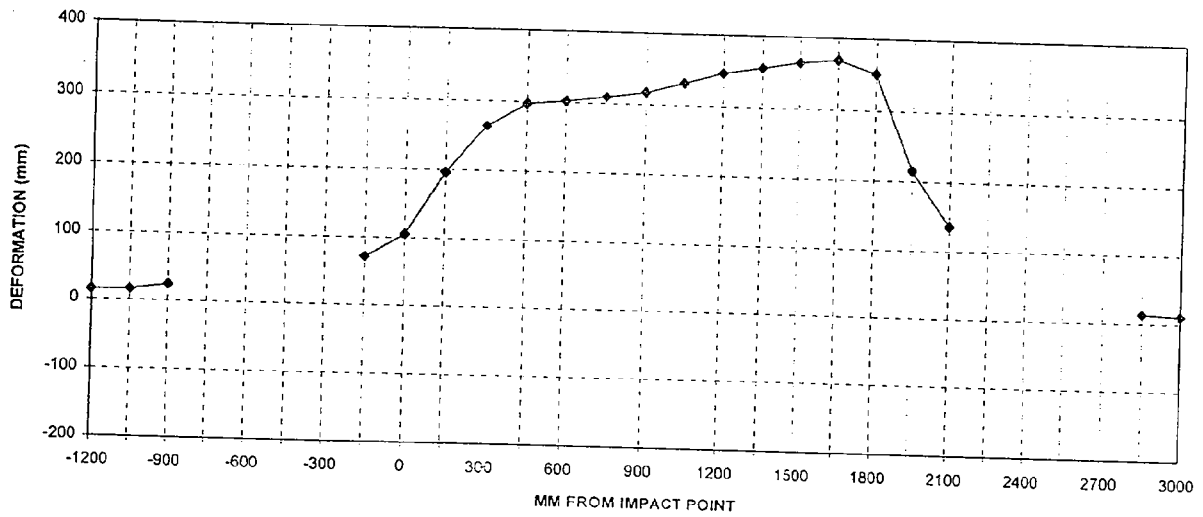
LEVEL 2 - OCCUPANT H-POINT

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

Longitudinal Distance (mm)	Level 3 - Mid Door		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200	687	702	15
-1050	659	675	16
-900	634	658	24
-750			
-600			
-450			
-300			
-150	589	660	71
0 (impact point)	582	687	105
150	578	774	196
300	572	836	264
450	568	865	297
600	566	868	302
750	564	873	309
900	563	880	317
1050	561	892	331
1200	560	906	346
1350	561	916	355
1500	561	925	364
1650	563	932	369
1800	565	916	351
1950	569	784	215
2100	570	706	136
2250			
2400			
2550			
2700			
2850	594	608	14
3000	604	615	11

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



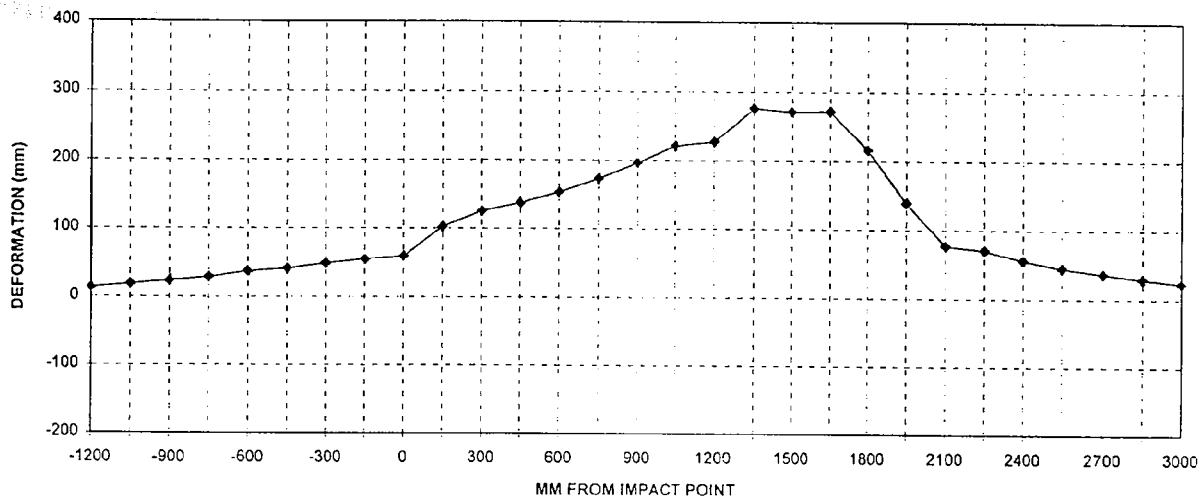
LEVEL 3 - MID DOOR

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

Longitudinal Distance (mm)	Level 4 - Window Sill		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200	750	763	13
-1050	732	750	18
-900	712	735	23
-750	699	727	28
-600	684	720	36
-450	675	715	40
-300	664	712	48
-150	659	713	54
0 (impact point)	651	710	59
150	645	747	102
300	641	766	125
450	640	777	137
600	643	796	153
750	643	816	173
900	640	836	196
1050	642	863	221
1200	637	894	227
1350	639	915	276
1500	640	911	271
1650	647	909	272
1800	648	864	216
1950	649	788	139
2100	651	728	77
2250	657	728	71
2400	660	715	55
2550	665	709	44
2700	666	702	36
2850	671	700	29
3000	675	698	23

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



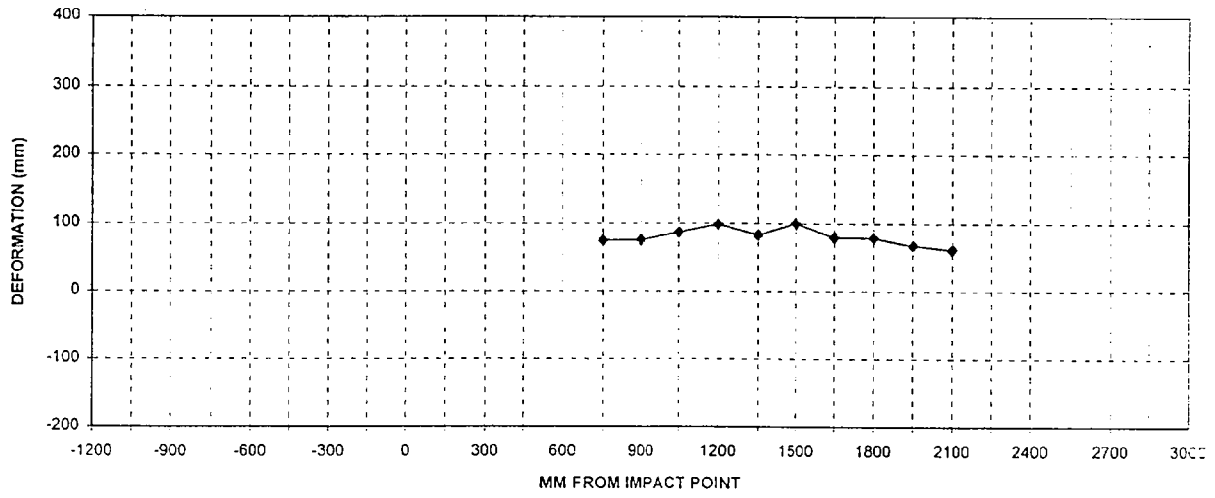
LEVEL 4 - WINDOW SILL

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

Longitudinal Distance (mm)	Level 5 - Window Top		
	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	988	1063	75
900	984	1060	76
1050	978	1065	87
1200	976	1075	99
1350	973	1056	83
1500	974	1074	100
1650	974	1054	80
1800	976	1055	79
1950	975	1043	68
2100	984	1046	62
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/Crown Victoria/4 Door

NHTSA NO.: CV0206 Test Date: November 25, 1996

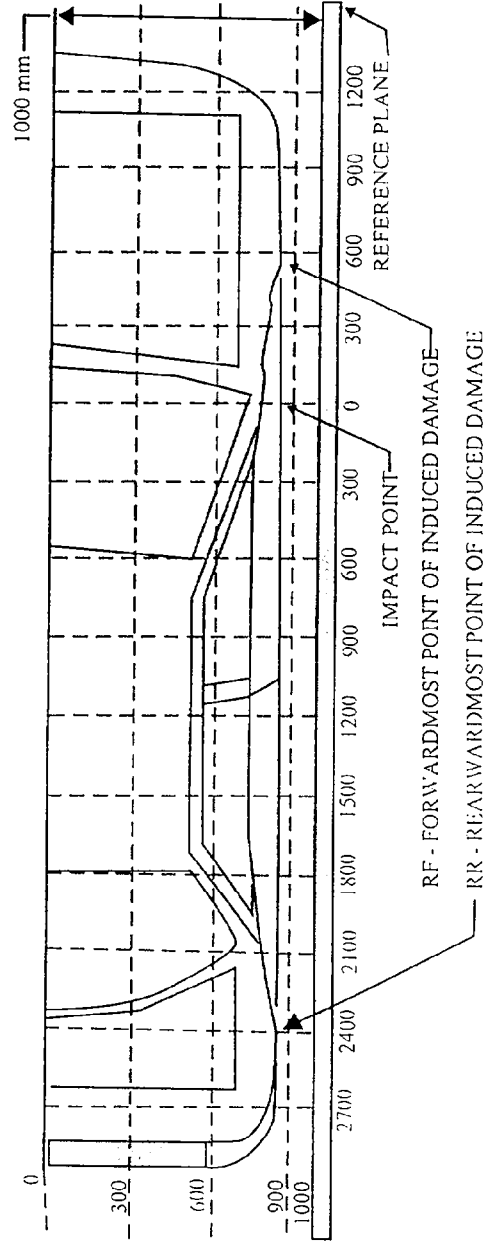


Figure is not representative of the actual test configuration

DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1. (RF = <u>1200</u> mm)	763	750	13
2. <u>310</u> mm	710	664	46
3. <u>595</u> mm	885	563	322
4. <u>1555</u> mm	949	558	391
5. <u>2543</u> mm	706	665	41
6. (RR = <u>3450</u> mm)	(699)	(699)	0

DATA SHEET NO. 12

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

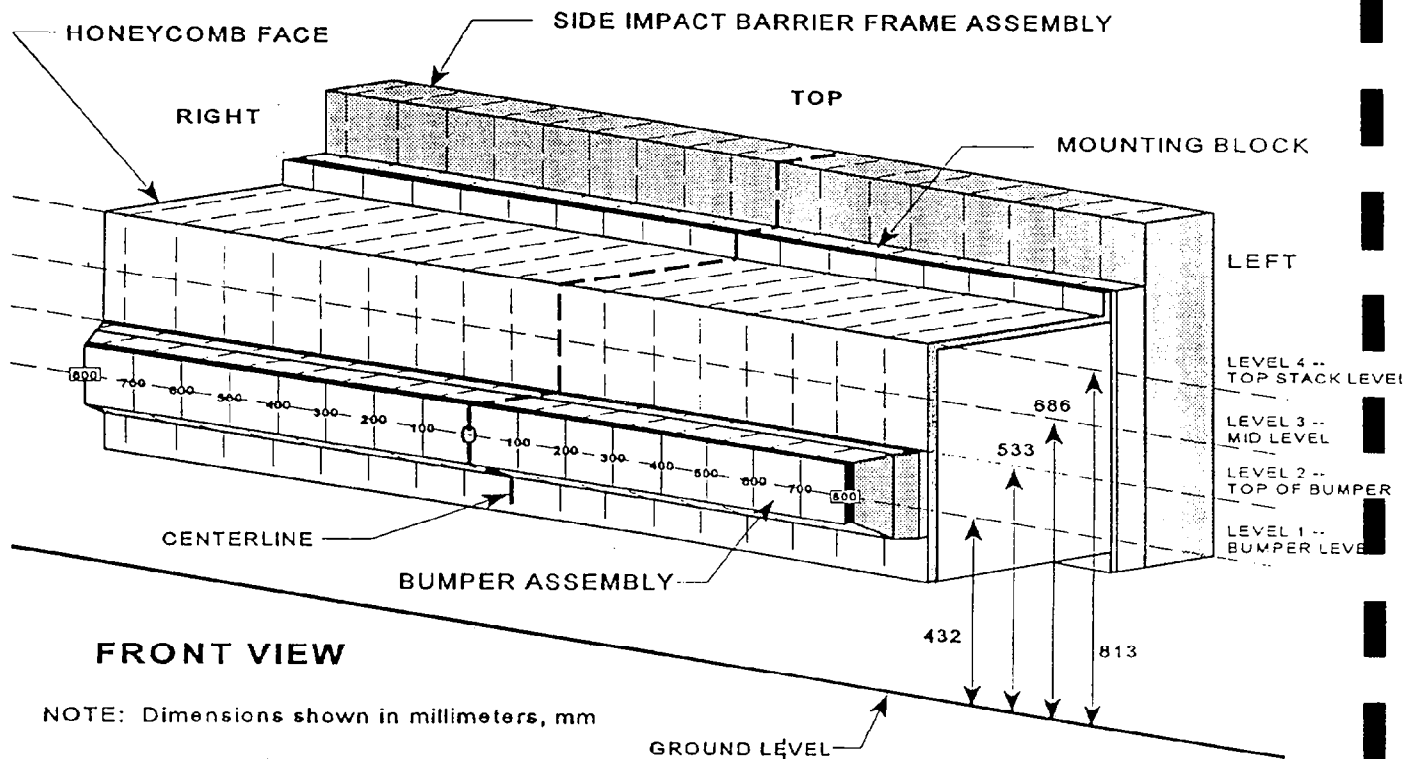
Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996

Location	Height at CL*	Distance Right of Center (mm)								Distance Left of Center (mm)								
		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level 4	813 mm	118	51	37	27	22	16	12	9	6	6	7	12	1	0	0	1	18
Mid Level Level 3	686 mm	111	54	15	6	5	4	4	3	1	1	1	2	0	0	-2	-3	1
Top Bumper Level 2	533 mm	97	77	54	40	39	36	32	26	22	21	20	20	20	23	22	26	32
Mid Bumper Level 1	432 mm	125	107	69	47	38	33	28	24	22	18	18	17	17	16	19	29	46

See next page for Barrier Face Graphic

DATA SHEET NO. 12 (Cont'd)

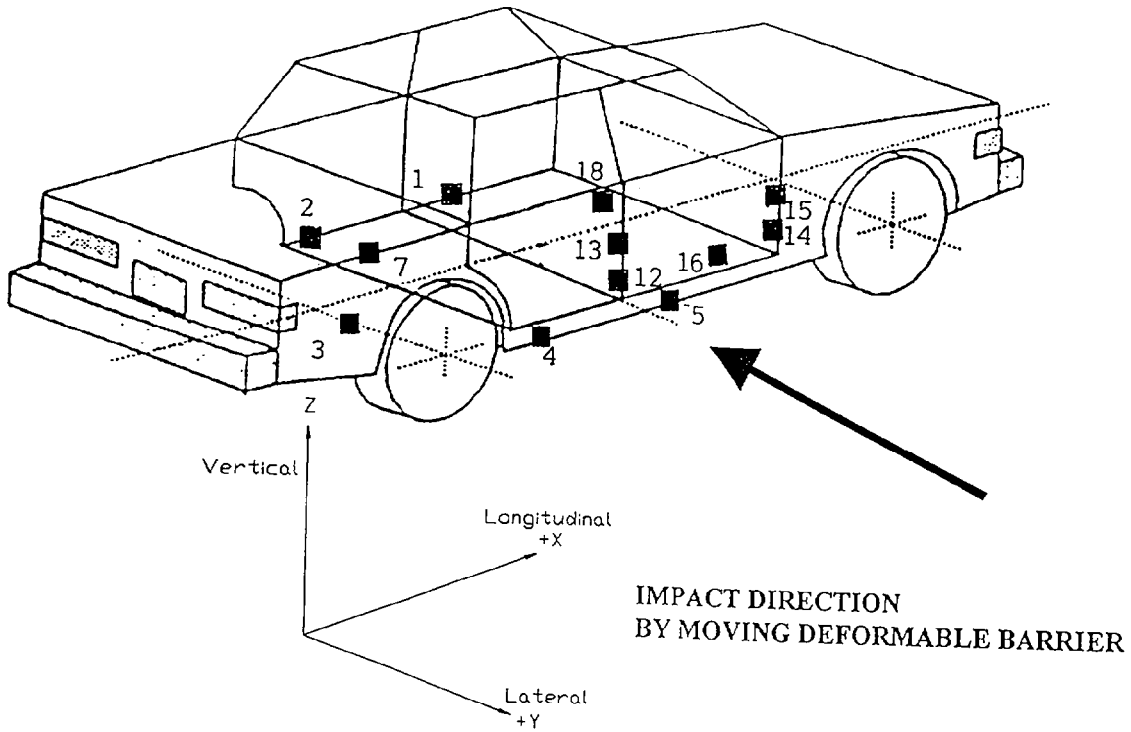


NOTE: Dimensions shown in millimeters, mm

DATA SHEET 13  
TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996



- |                                    |                         |
|------------------------------------|-------------------------|
| 1 - Left Side Sill @ Front Seat    | 12 - Right Lower B-Post |
| 2 - Left Side Sill @ Rear Seat     | 13 - Right Mid B-Post   |
| 3 - Rear Floorpan Above Axle       | 14 - Right Lower A-Post |
| 4 - Right Side Sill @ Rear Seat    | 15 - Right Mid A-Post   |
| 5 - Right Side Sill @ Front Seat   | 16 - Front Seat Track   |
| 7 - Left Rear Occupant Compartment | 18 - Vehicle C.G.       |

DATA SHEET NO. 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 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	2776	-784	206	3.2	-4.1	3.2	-18.4	3.2	-4.3	18.4
2	Left Side Sill @ Rear Seat	1904	-784	193	4.4	-4.3	13.0	-17.1	4.3	-5.3	17.4
3	Rr. Floorpan Above Axle	1356	-45	646	9.3	-12.9	3.8	-14.3	24.0	-18.2	26.0
4	Right Side Sill @ Rr. Seat	1888	784	204	---	---	22.1	-99.1	---	---	---
5	Right Side Sill @ Frt. Seat	2800	784	206	---	---	20.5	-96.4	---	---	---
7	Left Rear Occupant Compartment	2248	-492	283	---	---	4.1	-16.7	---	---	---
12	Right Lower B-Post	2436	776	352	---	---	16.1	-87.2	---	---	---
13	Right Mid B-Post	2448	776	948	---	---	26.9	-112.8	---	---	---
14	Right Lower A-Post	3515	738	394	---	---	25.2	-152.0	---	---	---
15	Right Mid A-Post	3582	846	842	---	---	25.9	-88.9	---	---	---
16	Right Front Passenger Seat Track	3669	598	234	---	---	20.1	-67.2	---	---	---
18	Vehicle CG	2891	0	385	8.4	-21.0	6.2	-28.3	25.6	-28.4	35.7

\*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To right)

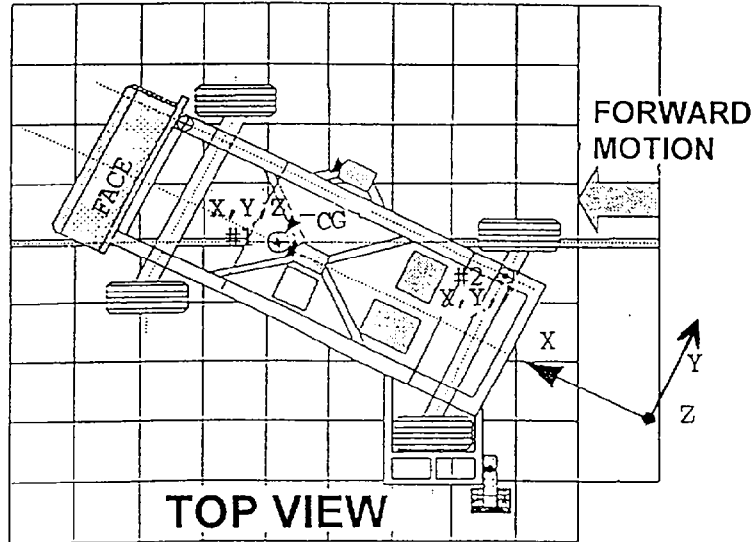
Z - Ground Level (+ Up)

DATA SHEET NO. 14

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996



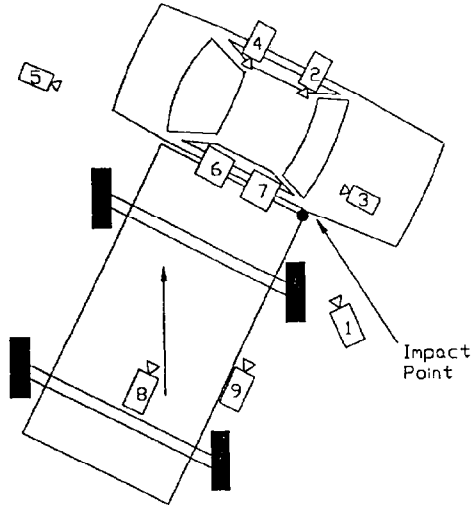
Accel. No.	Description	Coordinates (mm)*			(+ ) Positive		(-) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time (msec)
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	1.0	146	-14.7	43
	Lateral (Y)	---	---	---	6.2	36	-.5	59
	Vertical (Z)	---	---	---	13.3	60	-18.4	24
	Resultant (R)	---	---	---	24.0	24	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	1.4	151	-19.2	37
	Lateral (Y)	---	---	---	1.7	97	-5.4	37

\*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/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996



Camera No.	View	Coordinates (mm)*			Angle	Lens (mm)	Film Speed (fps)
		X	Y	Z			
	Real Time					13	24
1	Right Impact	-1000	2150	1690	90°	13	1015
2	Onboard Front Passenger					8	901
3	Onboard Rear Passenger					8	966
4	Onboard Hood					13	1000
5	Rear Impact	175	-9250	1710	90°	25	1010
6	Top Overall	-180	-1200	5000	90°	8	1031
7	Top Impact	-120	35	5000	90°	13	930
8	Cart Wide					13	1026
9	Cart Impact					35	971

\* 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/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 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 33.25 mph (53.5 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

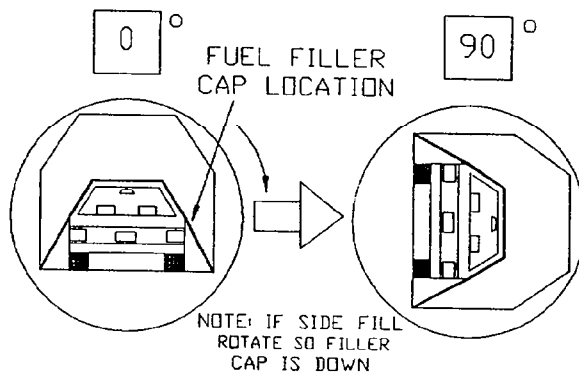
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996

TEST PHASE: 0° - 90°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 55 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 55 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

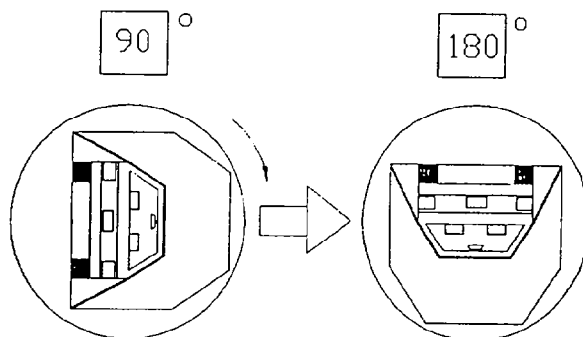
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996

TEST PHASE: 90° - 180°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 32 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 32 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

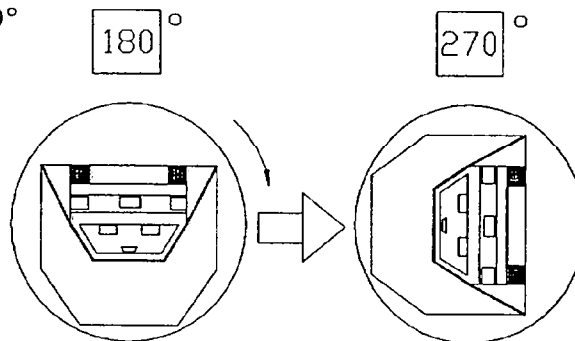
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996

TEST PHASE: 180° - 270°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 15 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 15 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

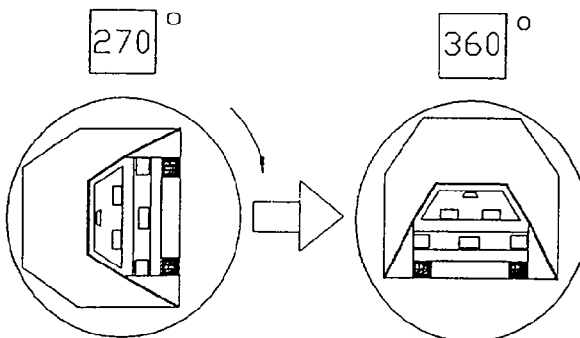
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Ford/Crown Victoria/4 Door

Vehicle NHTSA No.: CV0206 Test Date: November 25, 1996

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 40 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 40 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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 Positioned Against Vehicle (right side)	A-10
Photo No. A-11 - Post-Test MDB Positioned Against Vehicle (left side)	A-11
Photo No. A-12 - Post-Test MDB Positioned Against 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 Front Passenger 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

## TABLE OF PHOTOGRAPHS

	<u>Page No.</u>
Photo No. A-28 - Post-Test Front Passenger Shoulder and Door Top View	A-28
Photo No. A-29 - Post-Test Front Passenger Dummy Contact	A-29
Photo No. A-30 - Pre-Test Rear Passenger Dummy Left Side View	A-30
Photo No. A-31 - Post-Test Rear Passenger Dummy Left Side View	A-31
Photo No. A-32 - Pre-Test Rear Passenger Dummy Right Side View	A-32
Photo No. A-33 - Post-Test Rear Passenger Dummy Right Side View	A-33
Photo No. A-34 - Pre-Test Rear Passenger Dummy Right Side View (Door Open)	A-34
Photo No. A-35 - Pre-Test Rear Passenger Dummy Shoulder and Door Top View	A-35
Photo No. A-36 - Post-Test Rear Passenger Dummy Shoulder and Door Top 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

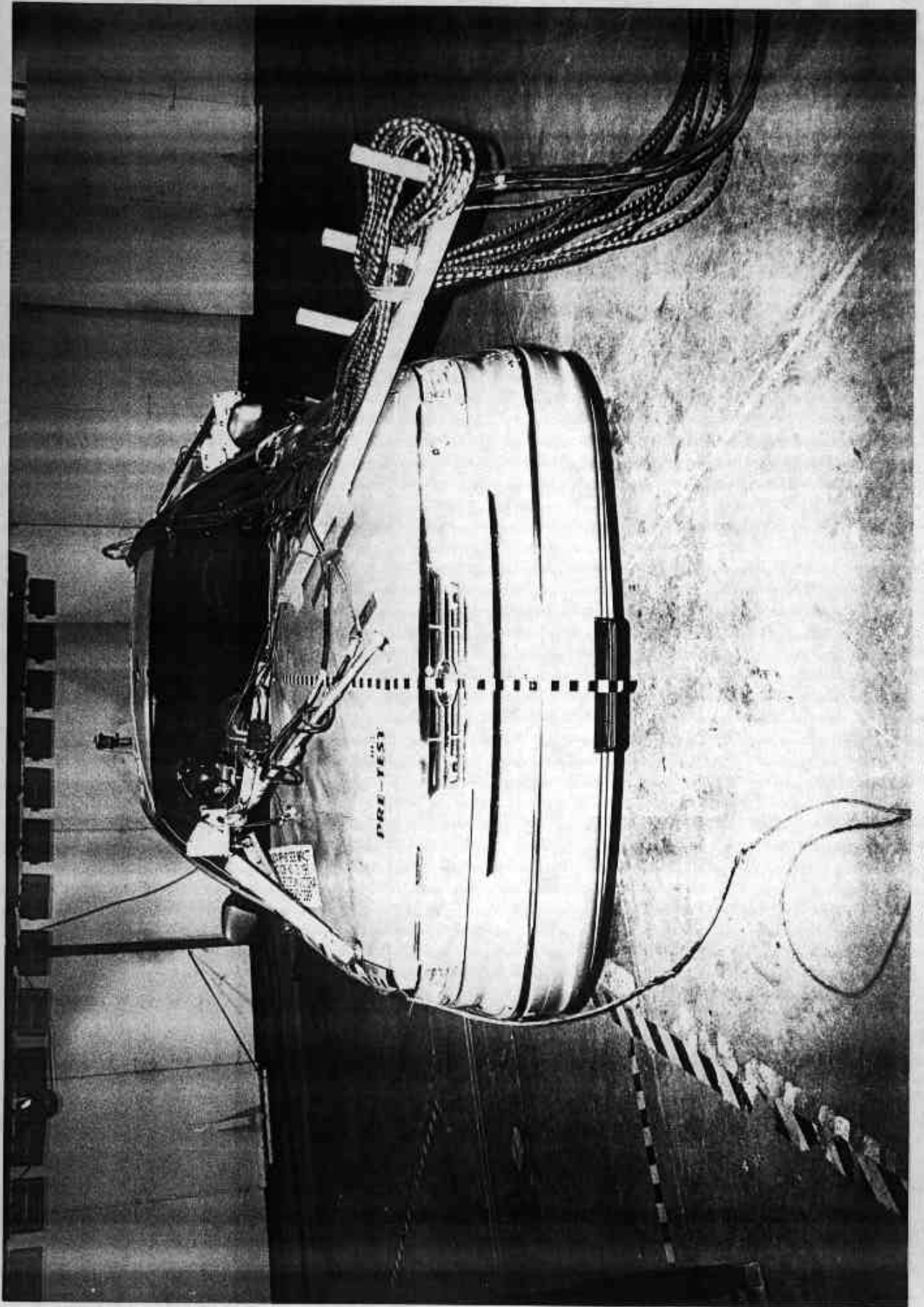


Photo No. A-1 - Pre-Test Front View of Test Vehicle

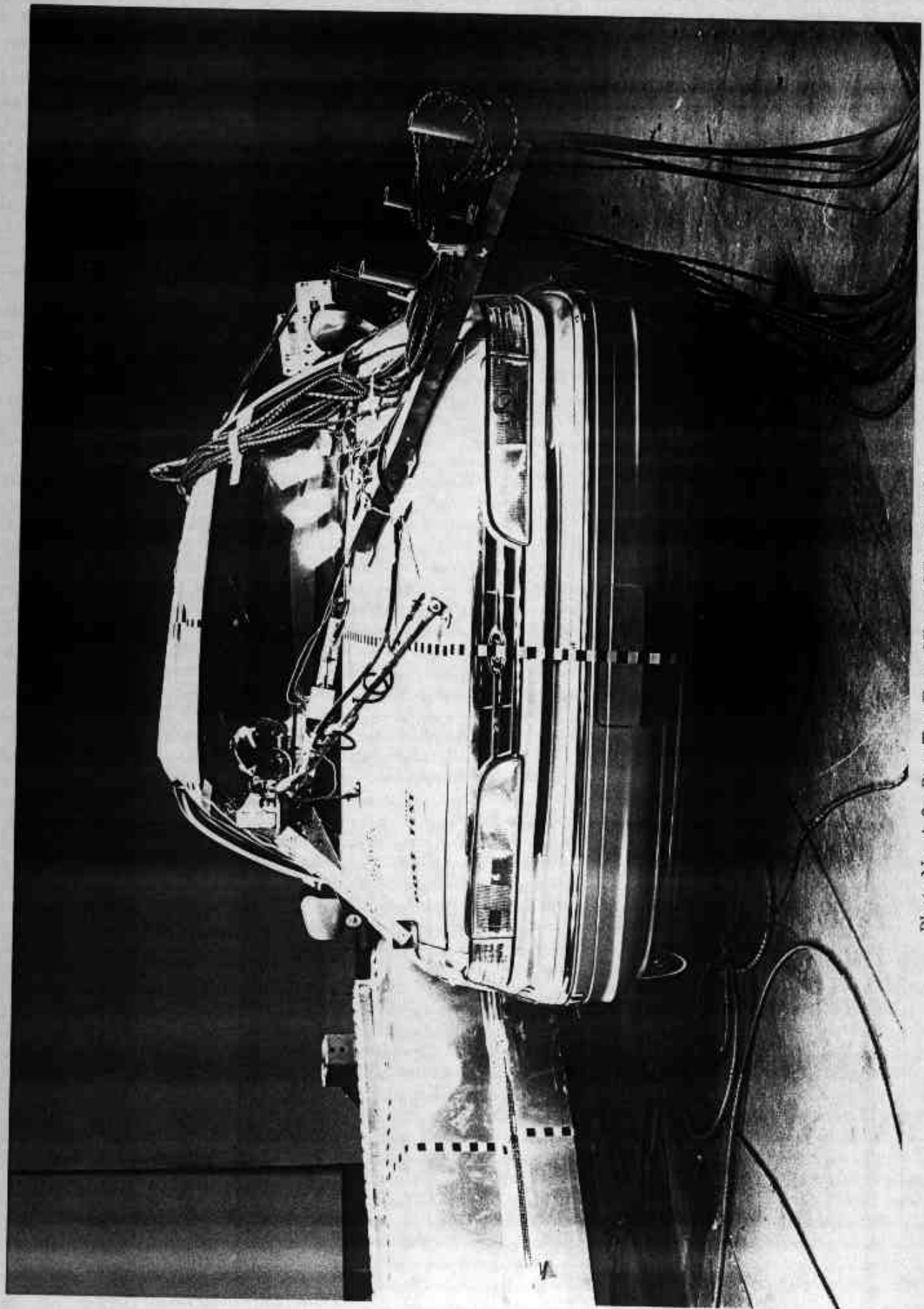


Photo No. A-2 - Post-Test Front View of Test Vehicle

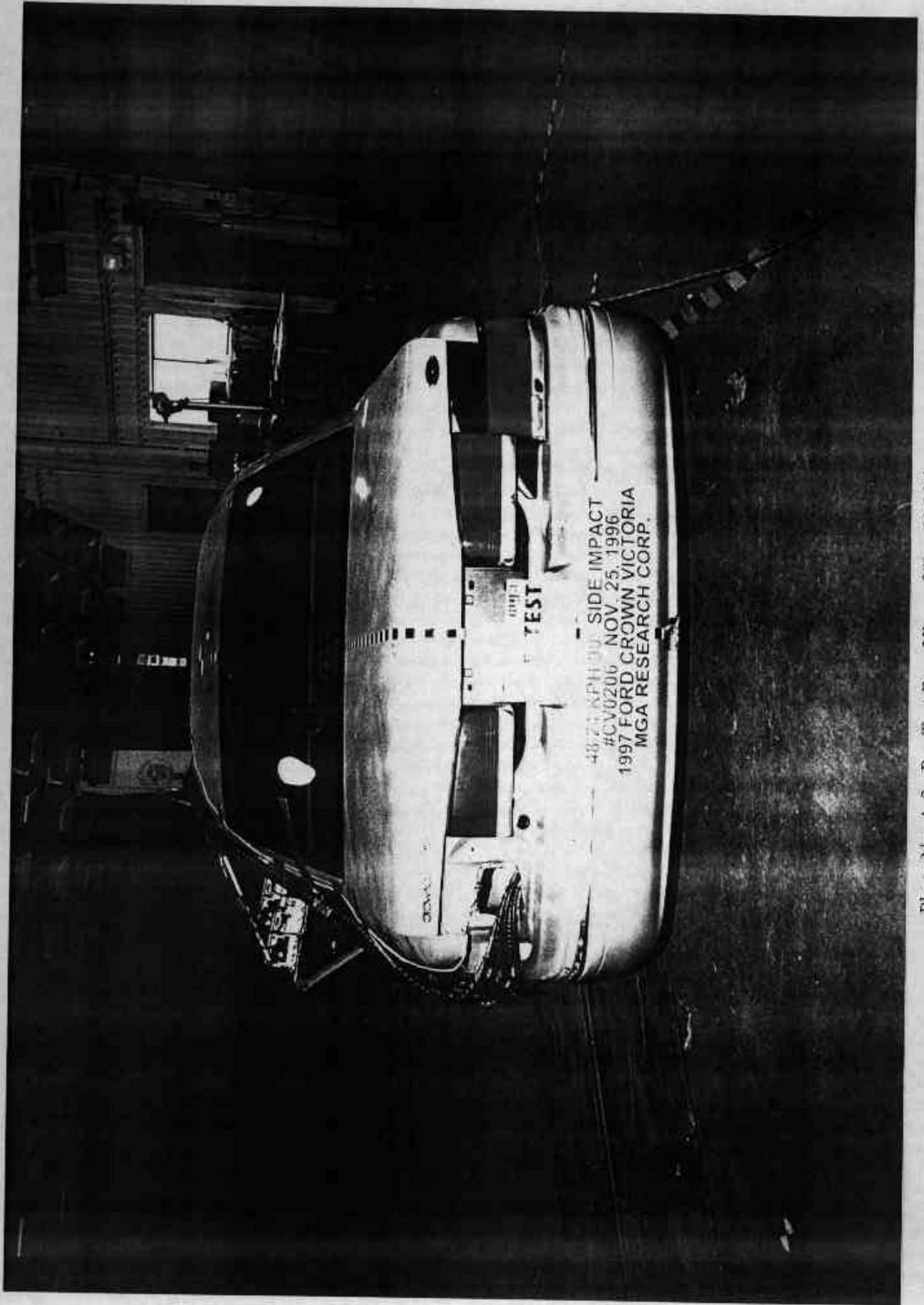


Photo No. A-3 - Pre-Test Rear View of Test Vehicle



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

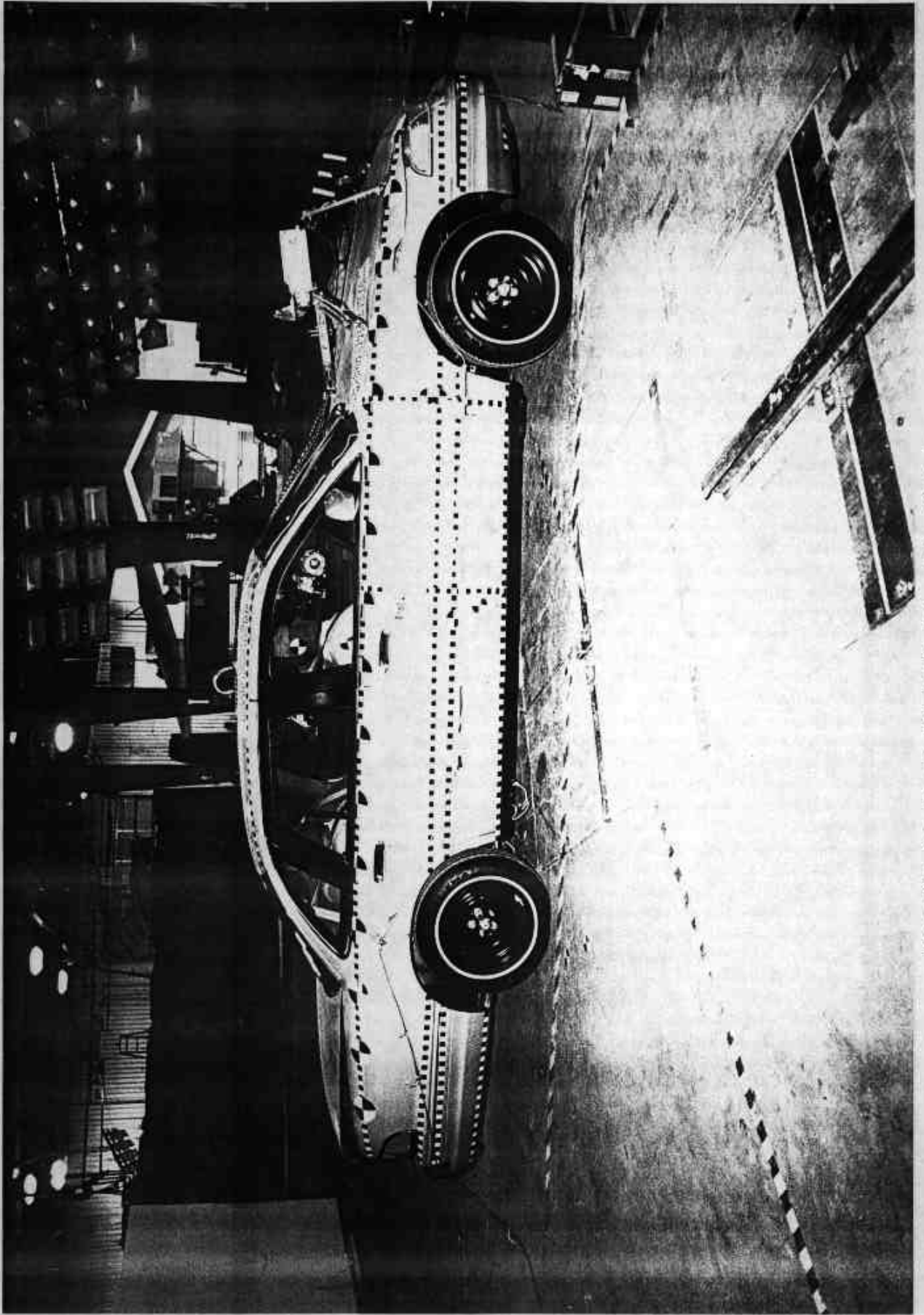


Photo No. A-5 - Pre-Test Right Side View of Test Vehicle

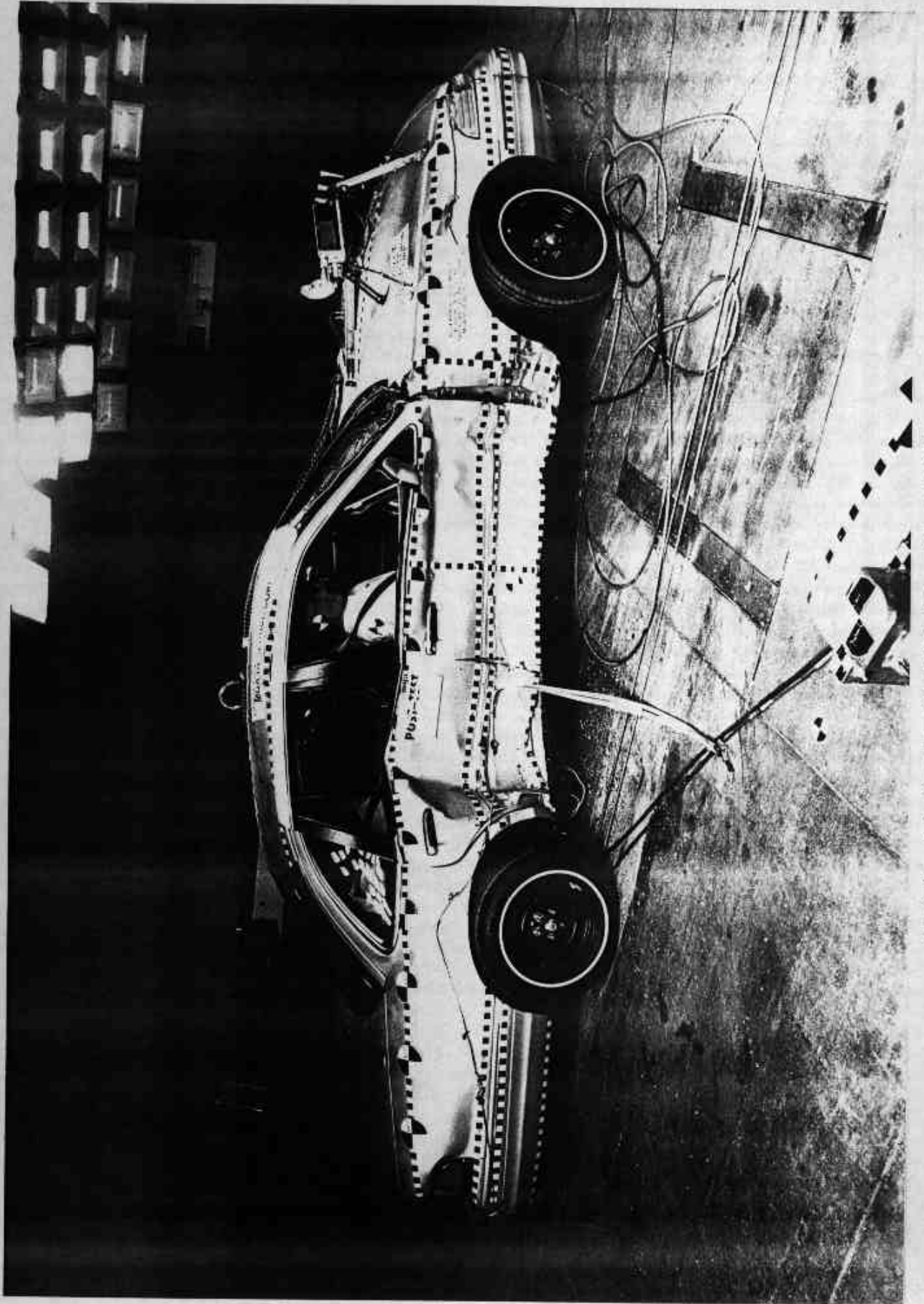


Photo No. A-6 - Post-Test Right Side View of Test Vehicle

A-6



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

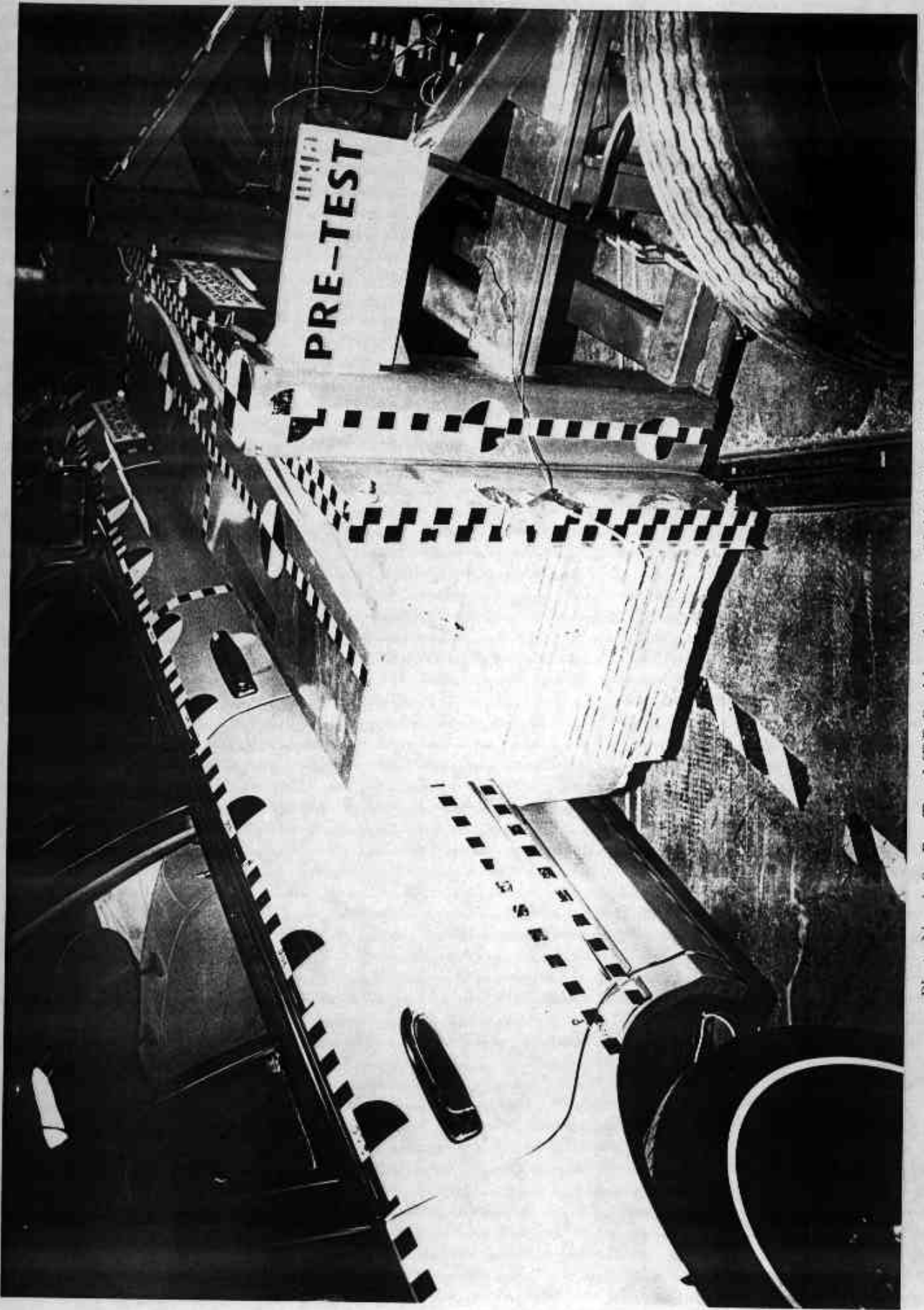


Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (left side)

A-8

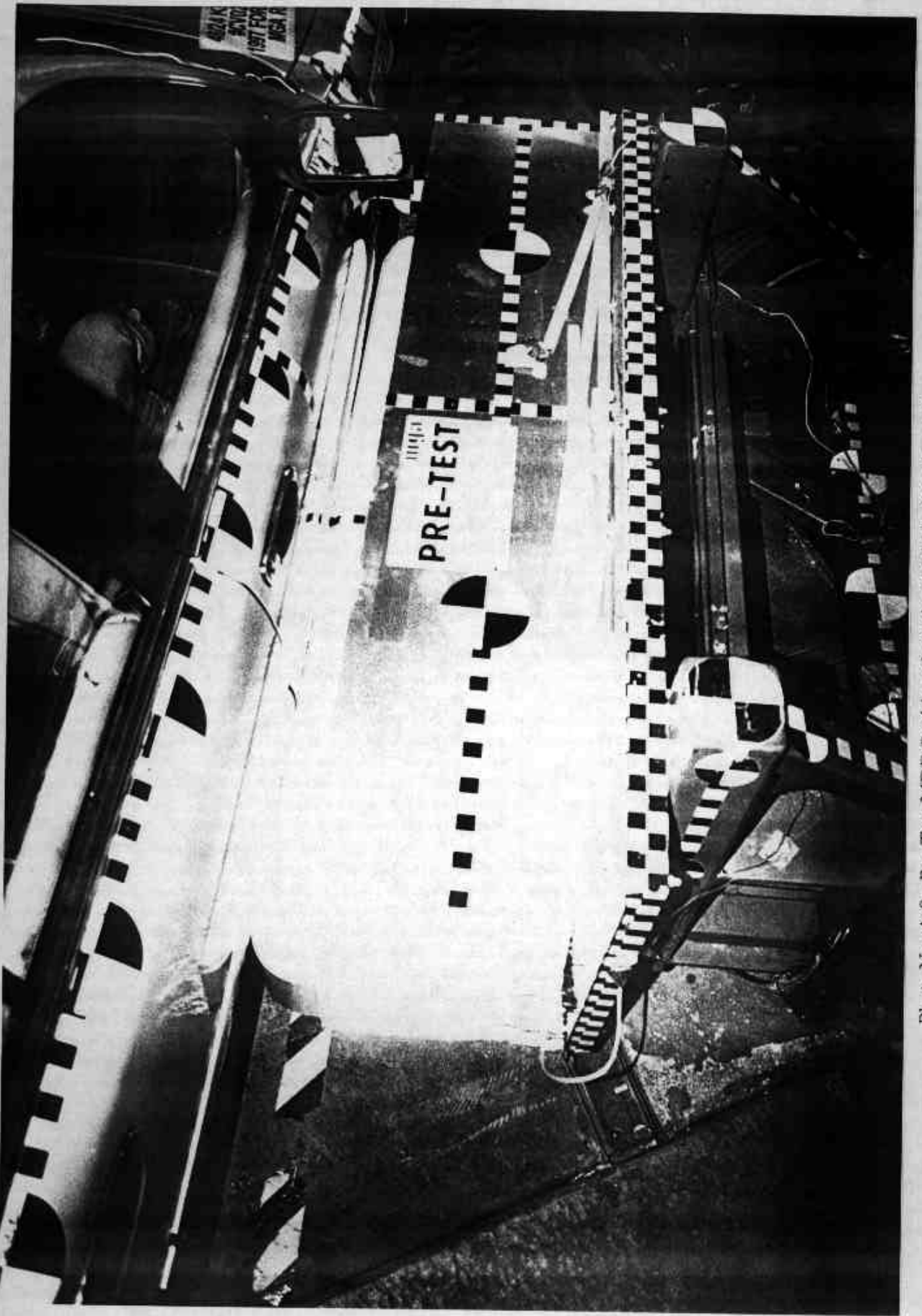


Photo No. A-9 - Pre-Test MDB Positioned Against Vehicle Overhead View

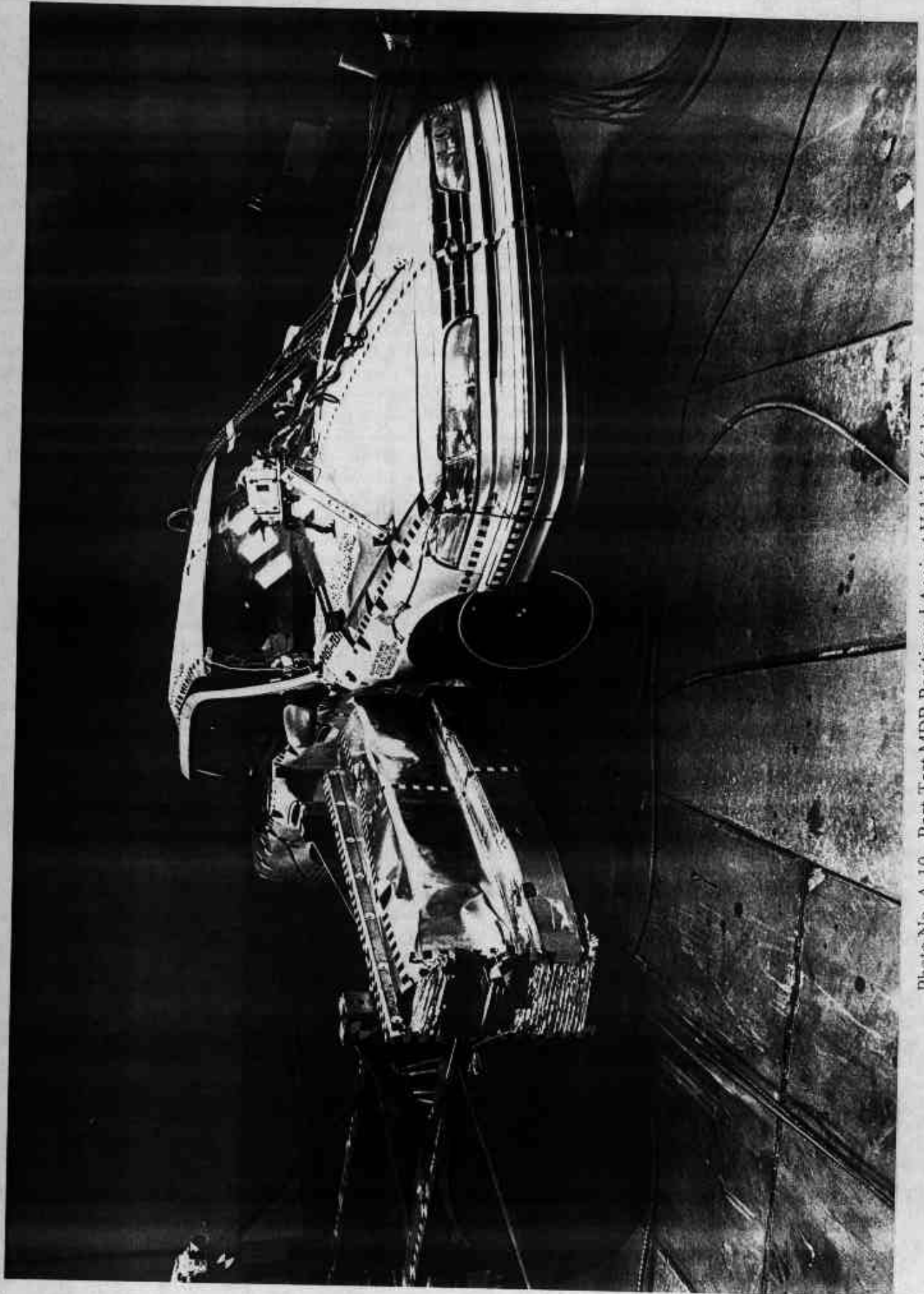


Photo No. A-10 - Post-Test MDB Positioned Against Vehicle (right side)

A-10

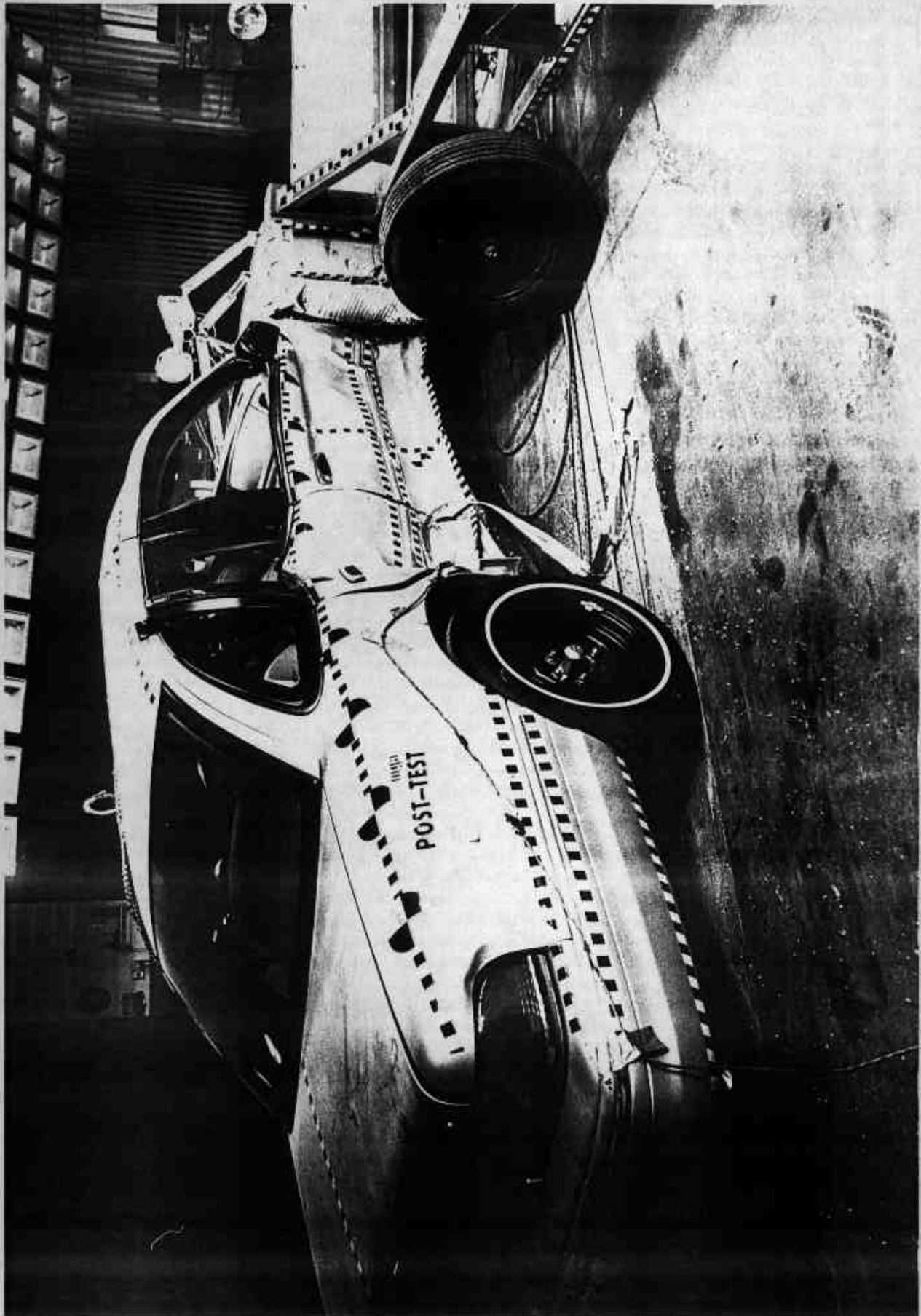


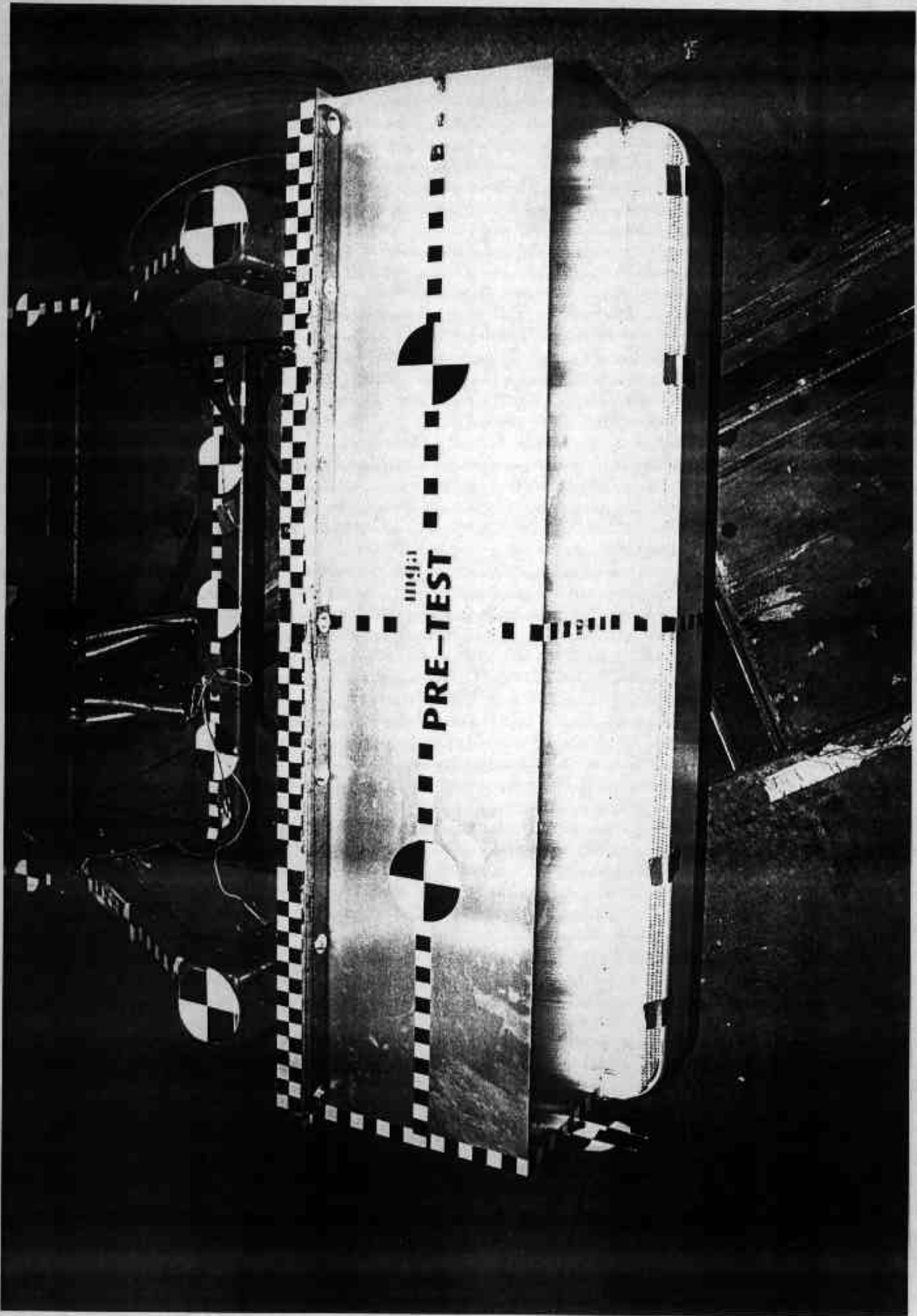
Photo No. A-11 - Post-Test MDB Positioned Against Vehicle (left side)



**MGA** Research Corporation  
**POST-TEST**  
214 COMPLIANCE  
NHTSA #CV0206  
1997 FORD CROWN VICTORIA

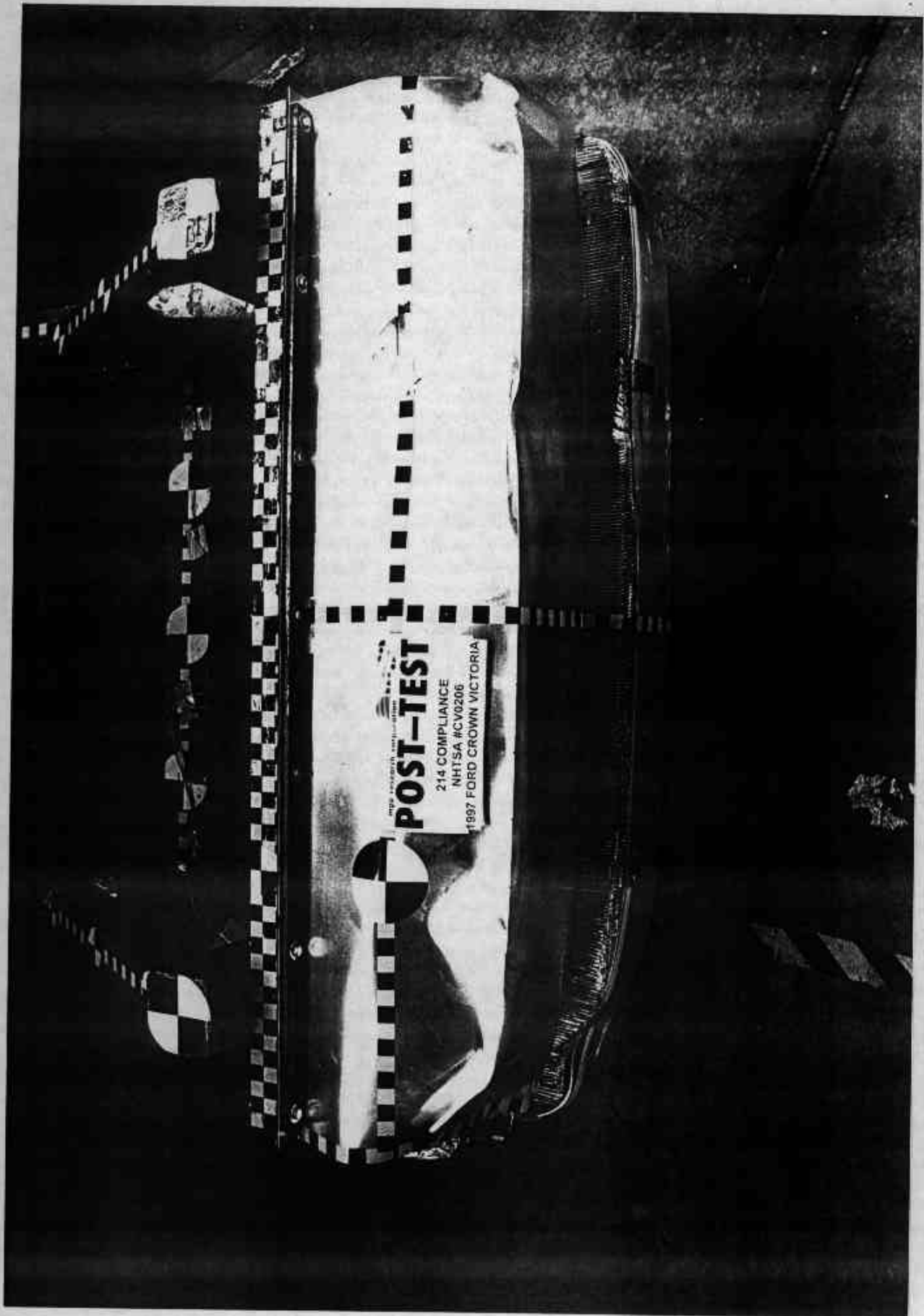
48/24 KPH 90° SIDE IMPACT  
#CV0206  
NOV. 25, 1996  
1997 FORD CROWN VICTORIA  
MGA RESEARCH CORP.

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



A-13

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



A-14

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

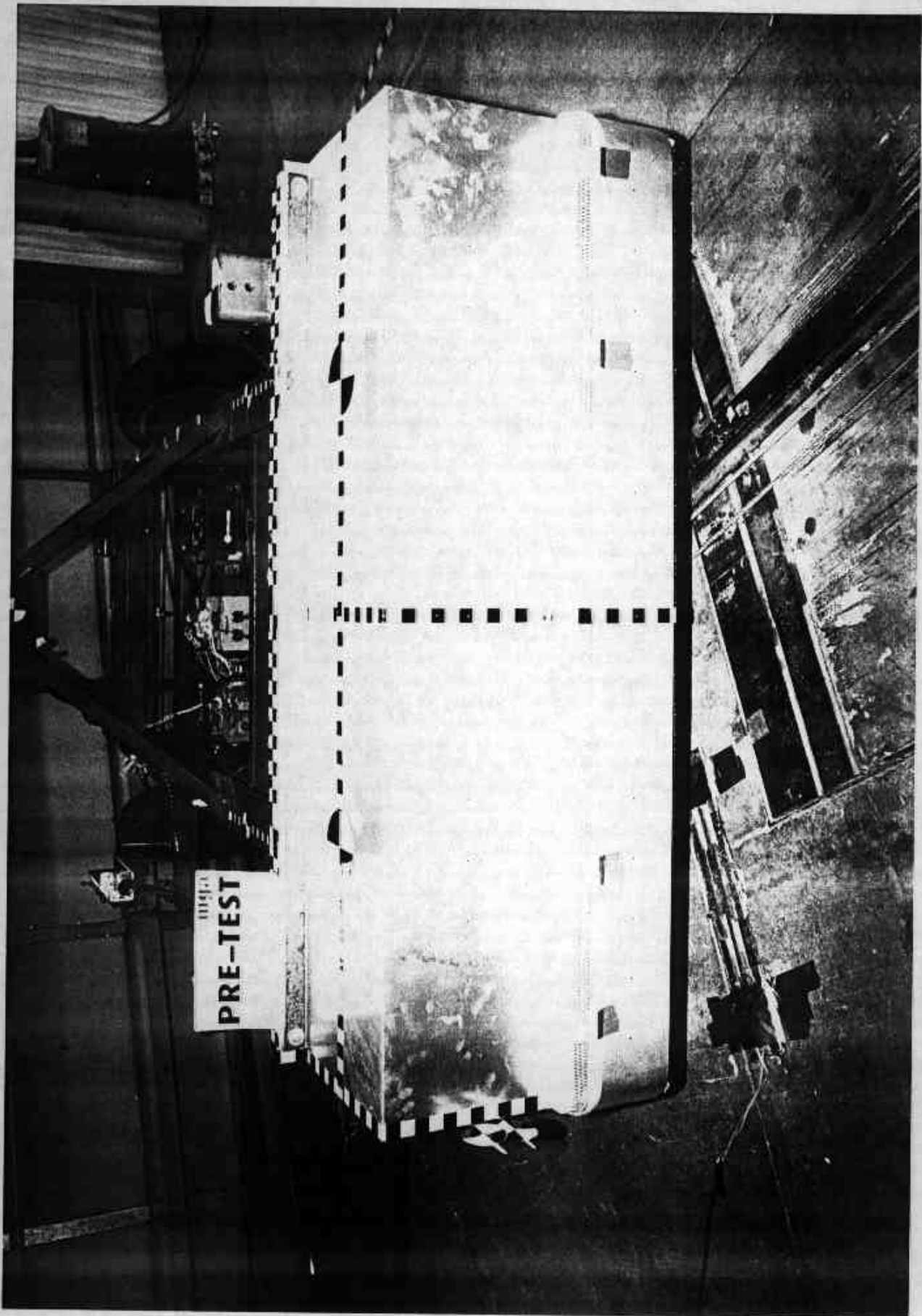


Photo No. A-15 - Pre-Test MDB Front View

A-15

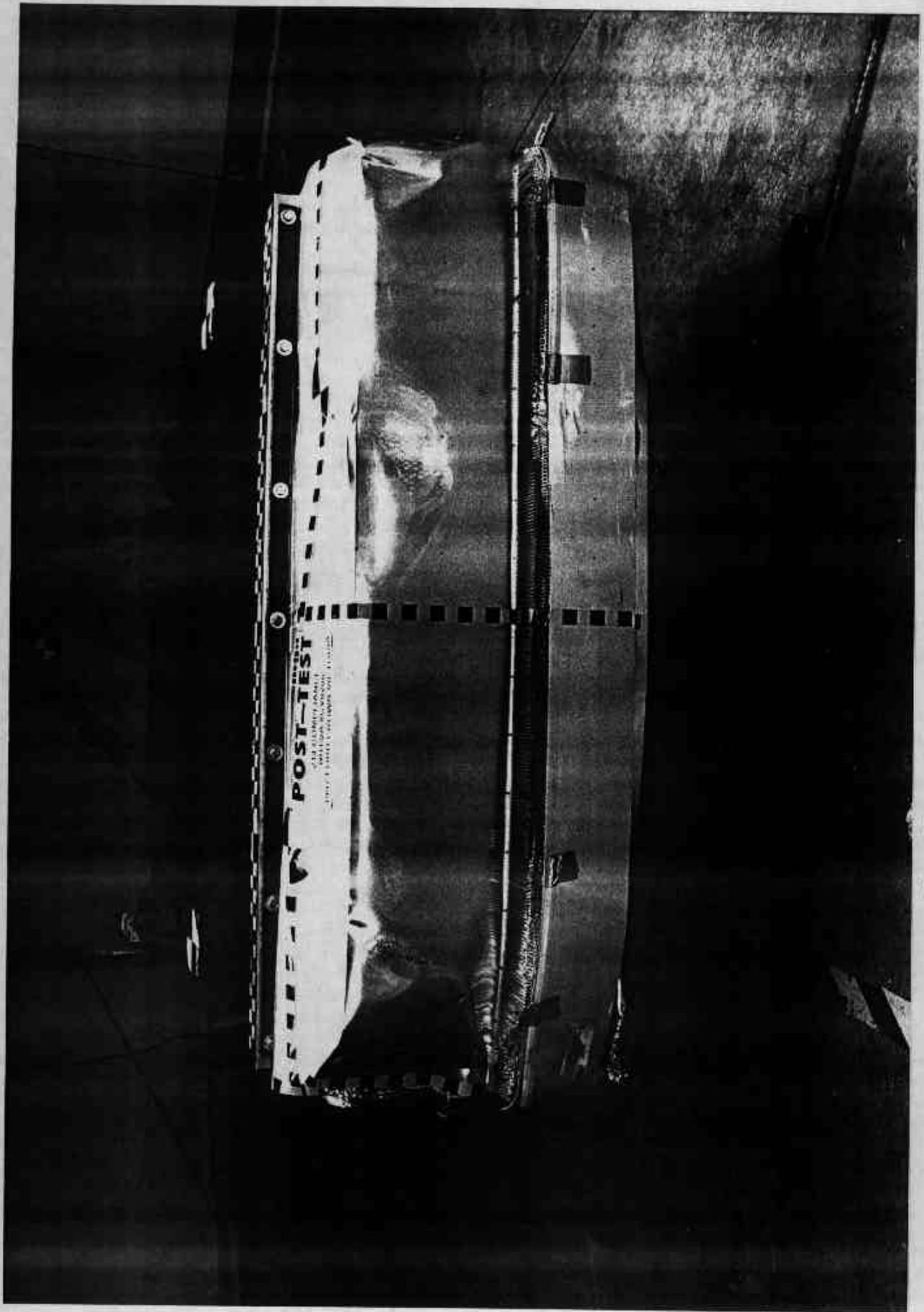


Photo No. A-16 - Post-Test MDB Front View

A-16

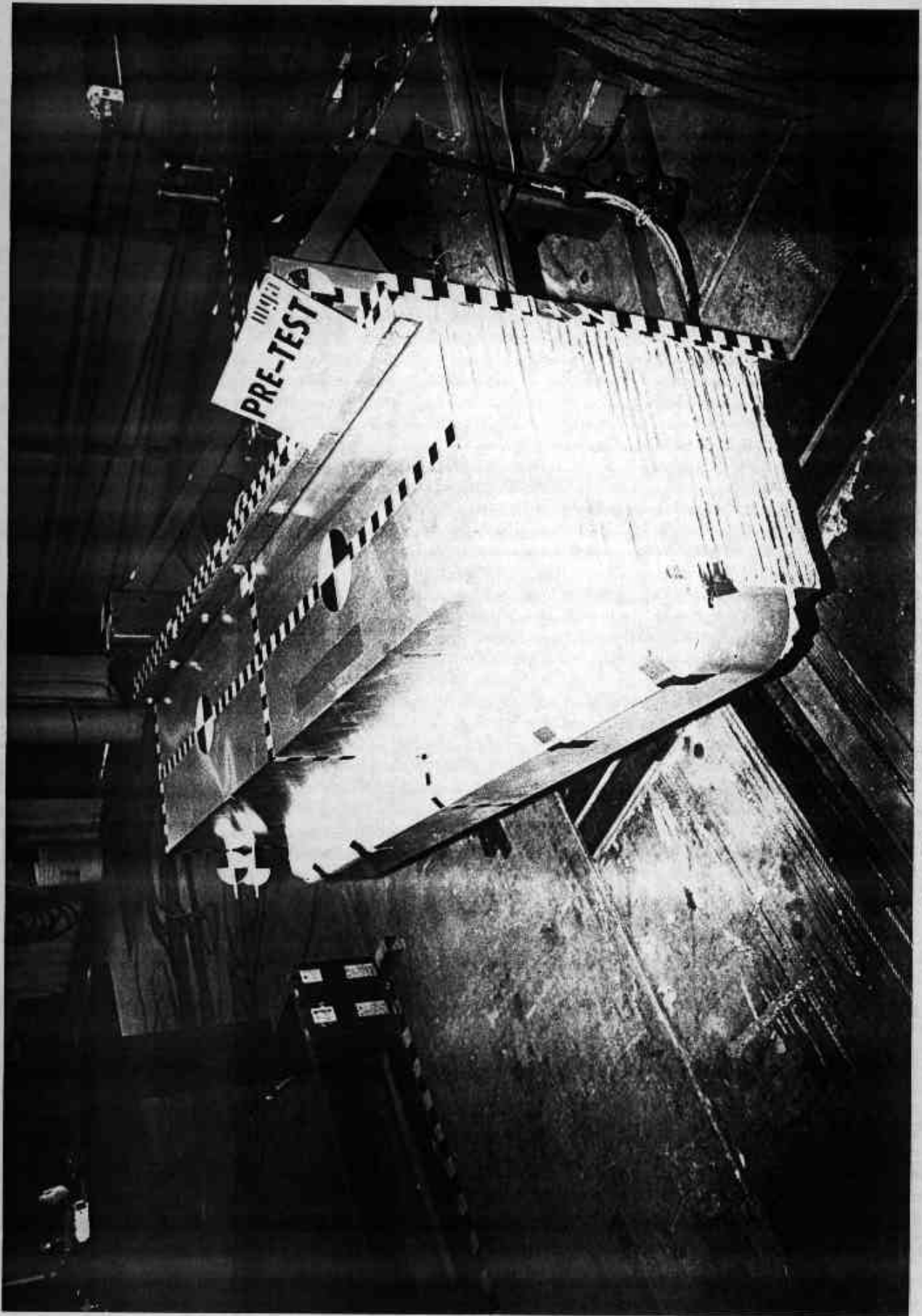


Photo No. A-17 - Pre-Test MDB Left Side View

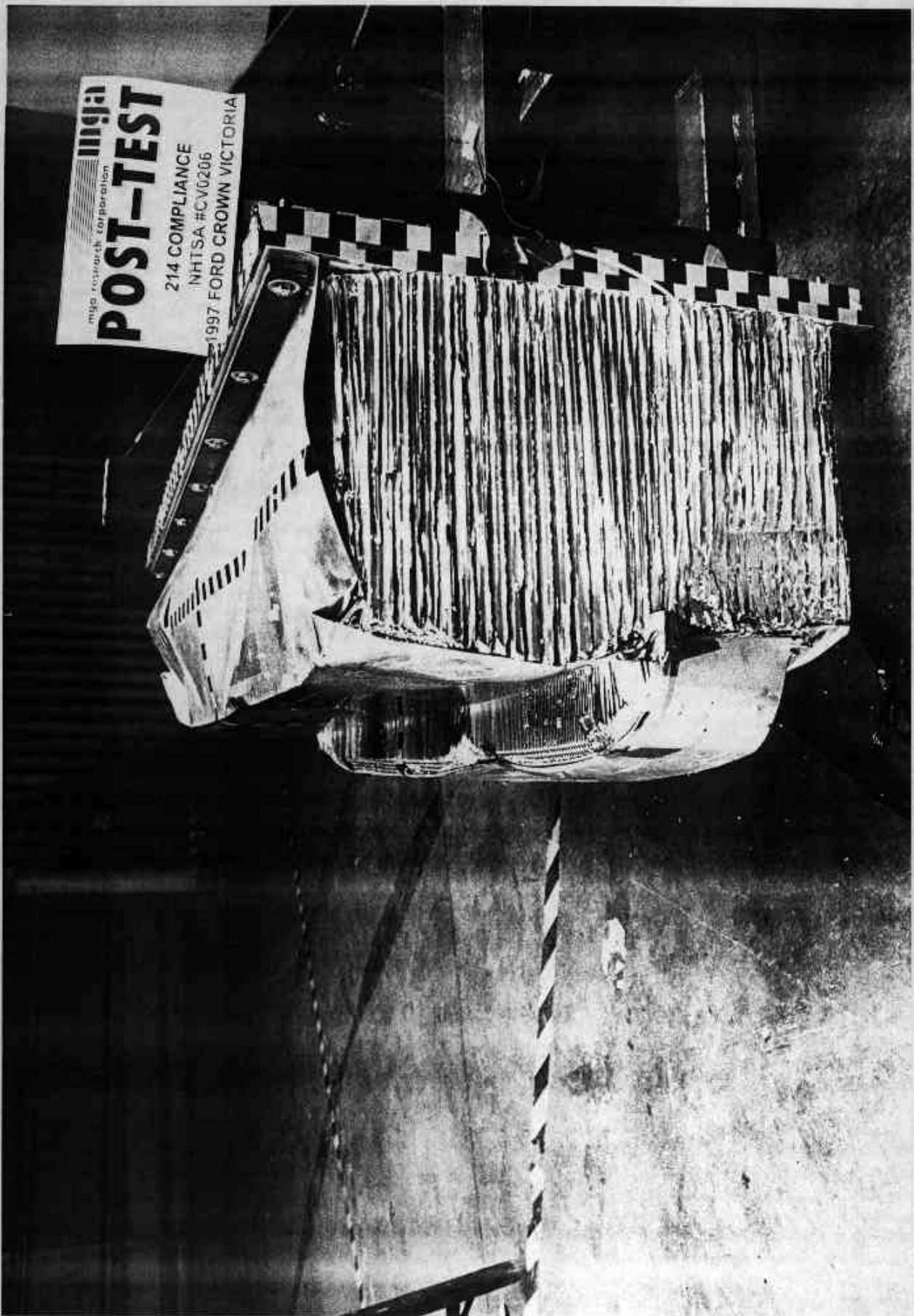


Photo No. A-18 - Post-Test MDB Left Side View

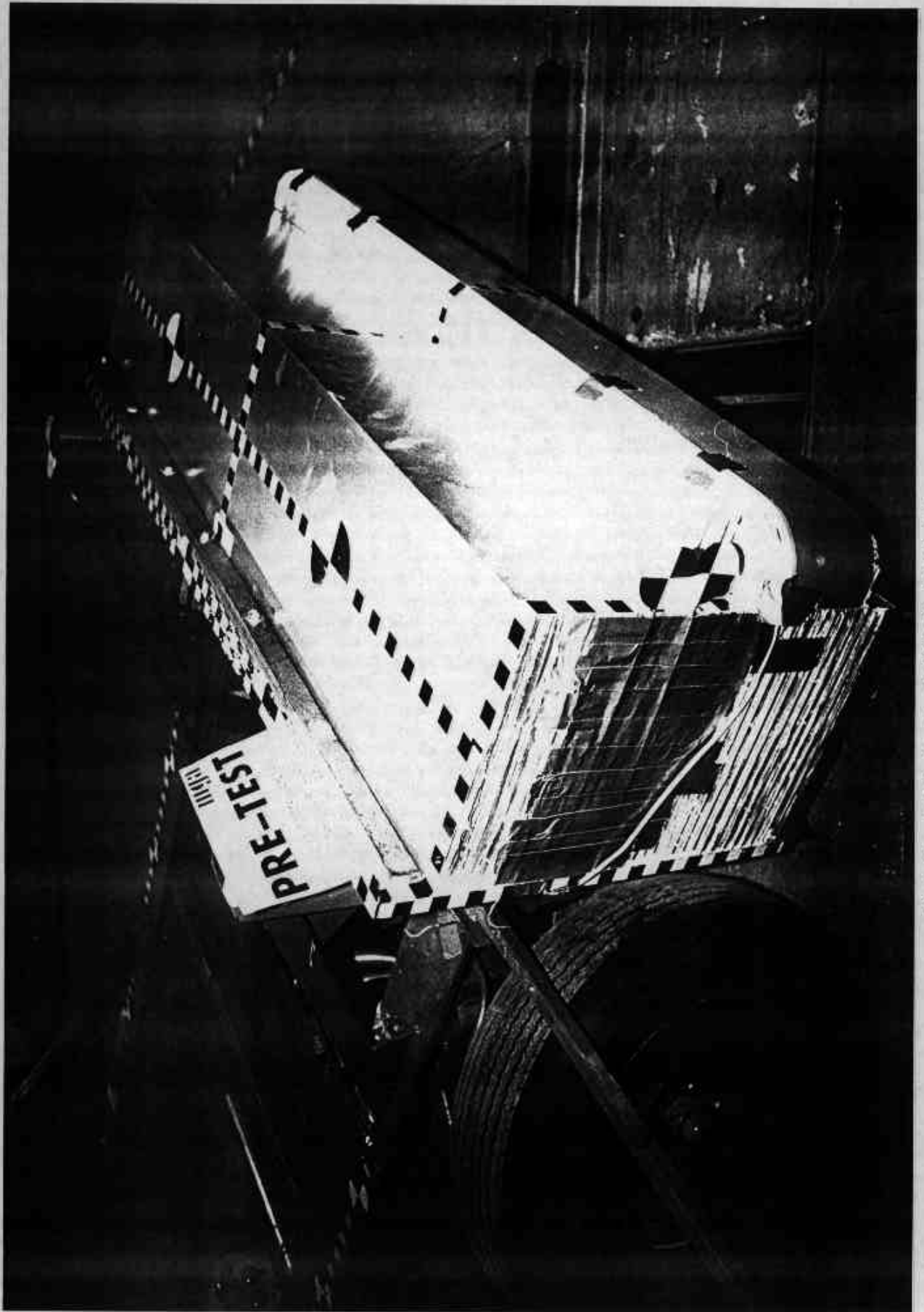


Photo No. A-19 - Pre-Test MDB Right Side View



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



A-21

Photo No. A-21 - Pre-Test Front Passenger 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

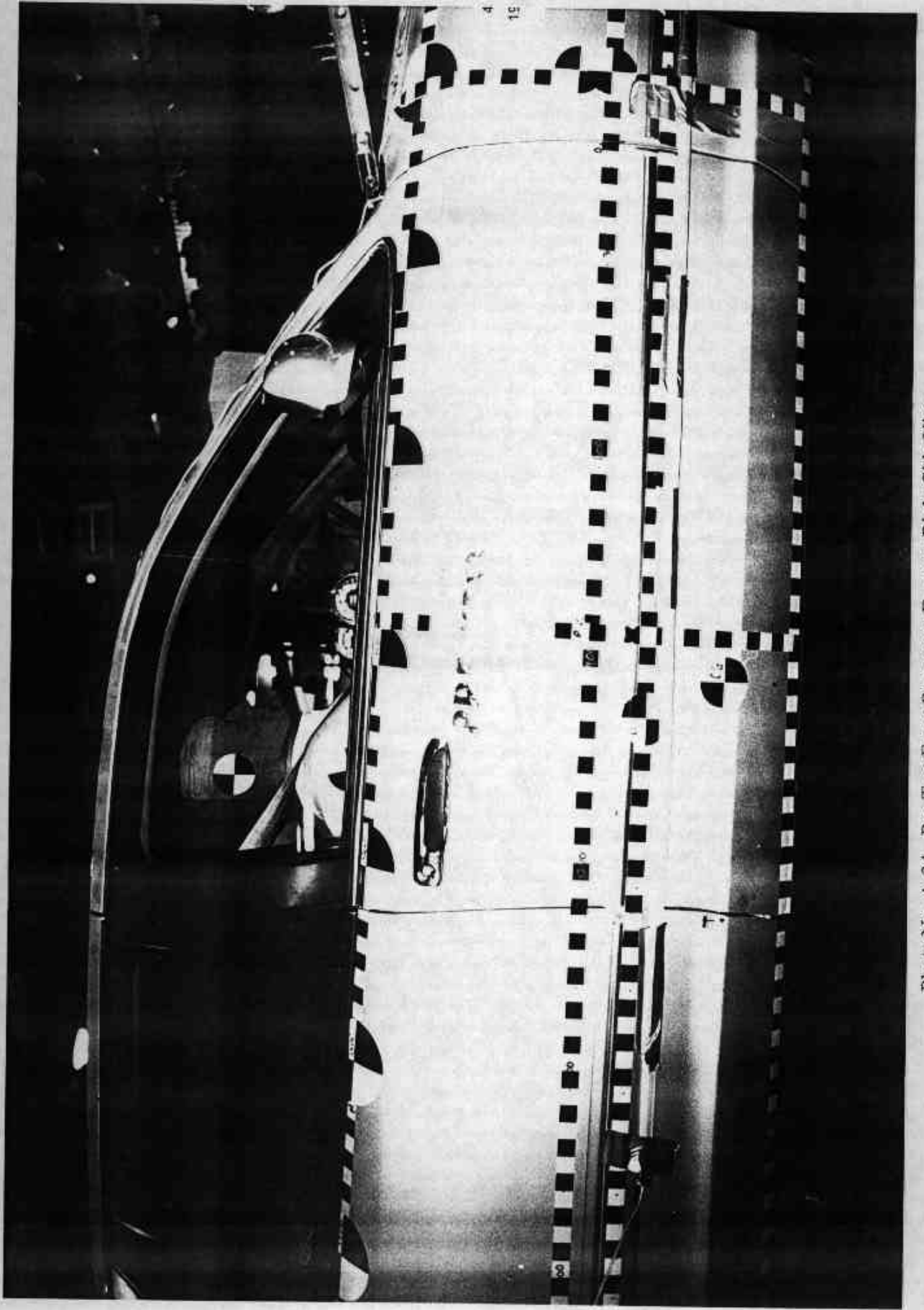
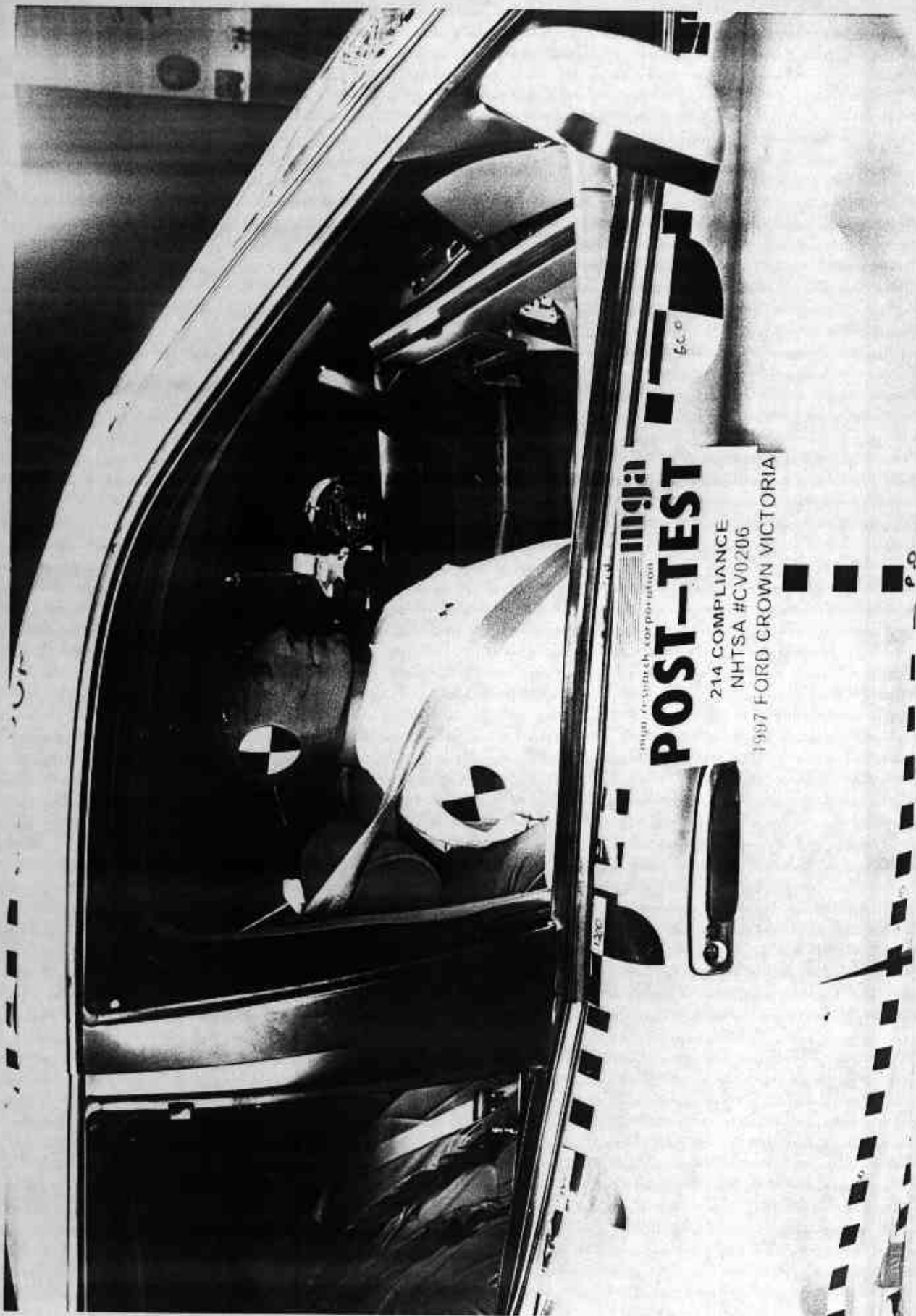


Photo No. A-24 - Pre-Test Front Passenger Dummy Right Side View

A-24



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214 COMPLIANCE  
NHTSA #CV0206  
1997 FORD CROWN VICTORIA

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



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



A-27

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

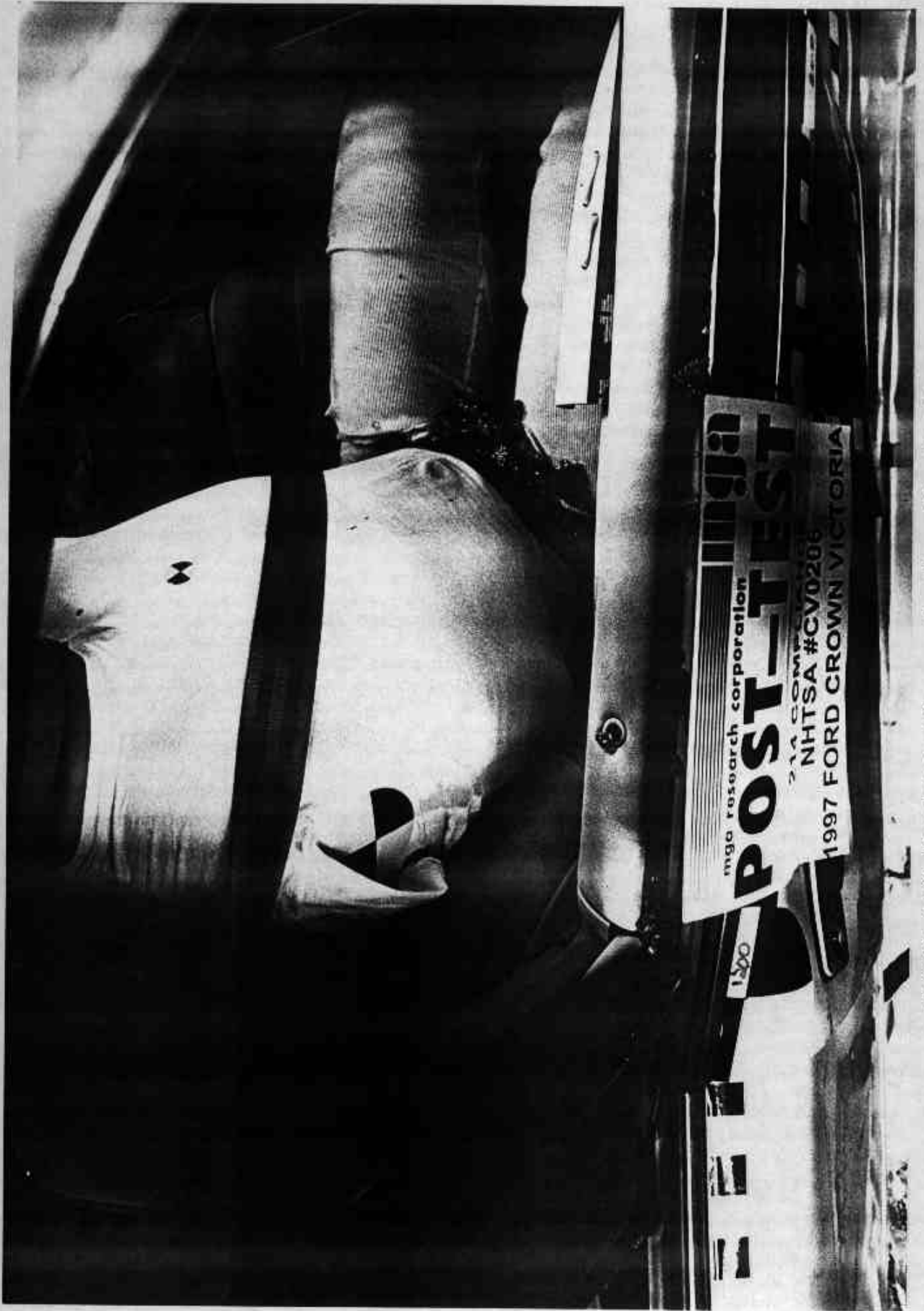


Photo No. A-28 - Post-Test Front Passenger Shoulder and Door Top View

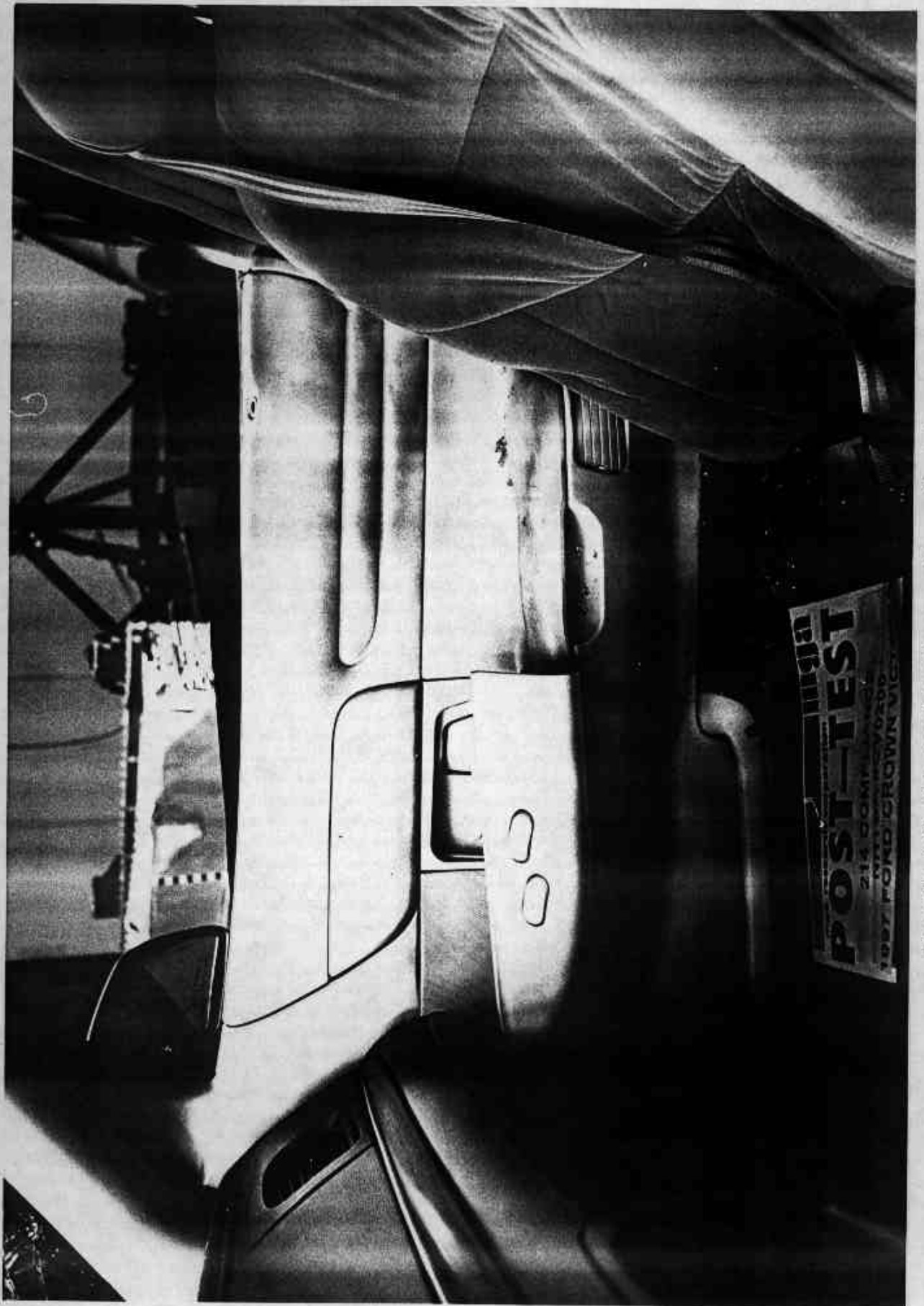


Photo No. A-29 - Post-Test Front Passenger Dummy Contact

A-29



A-30

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



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

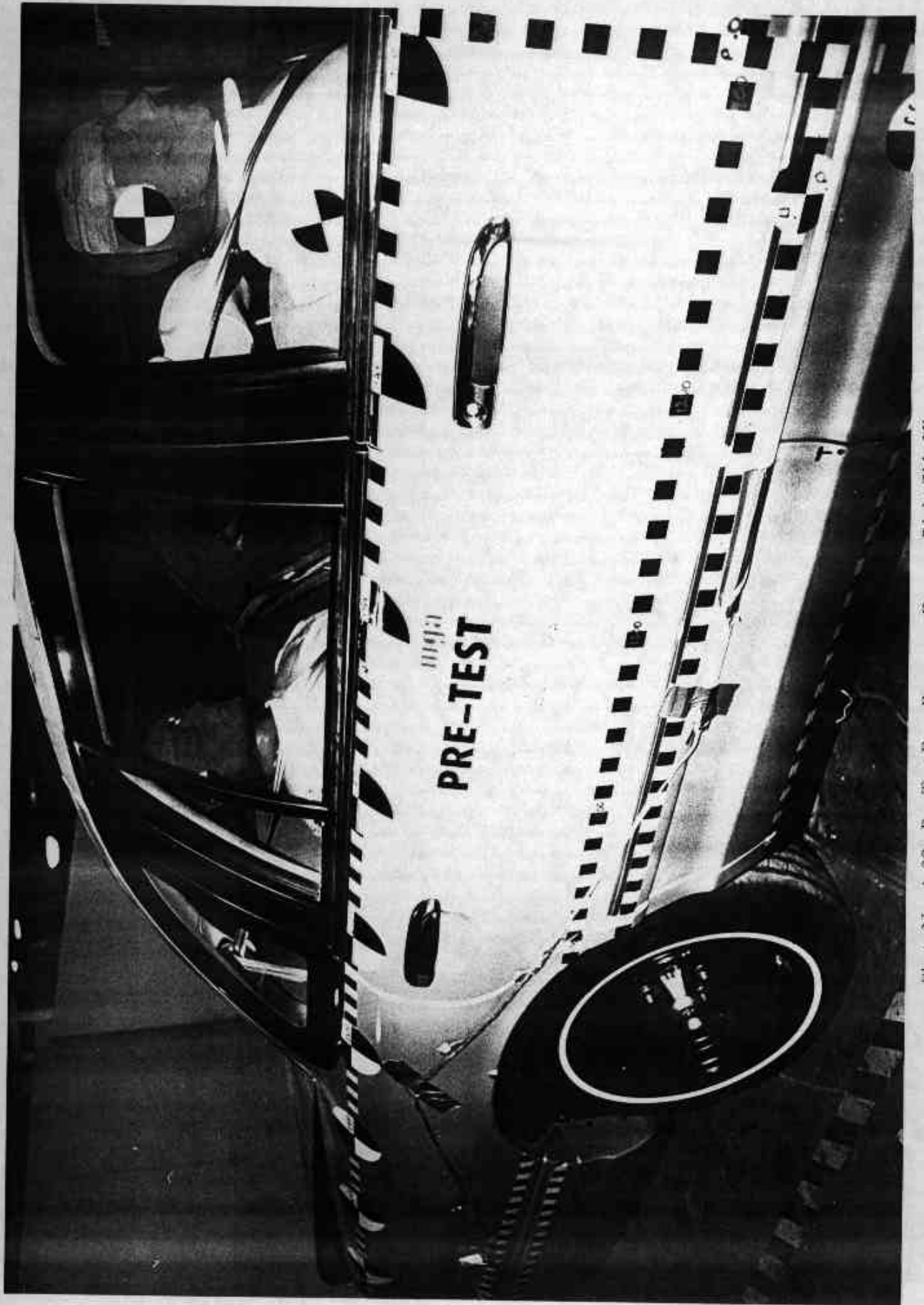


Photo No. A-32 - Pre-Test Rear Passenger Dummy Right Side View

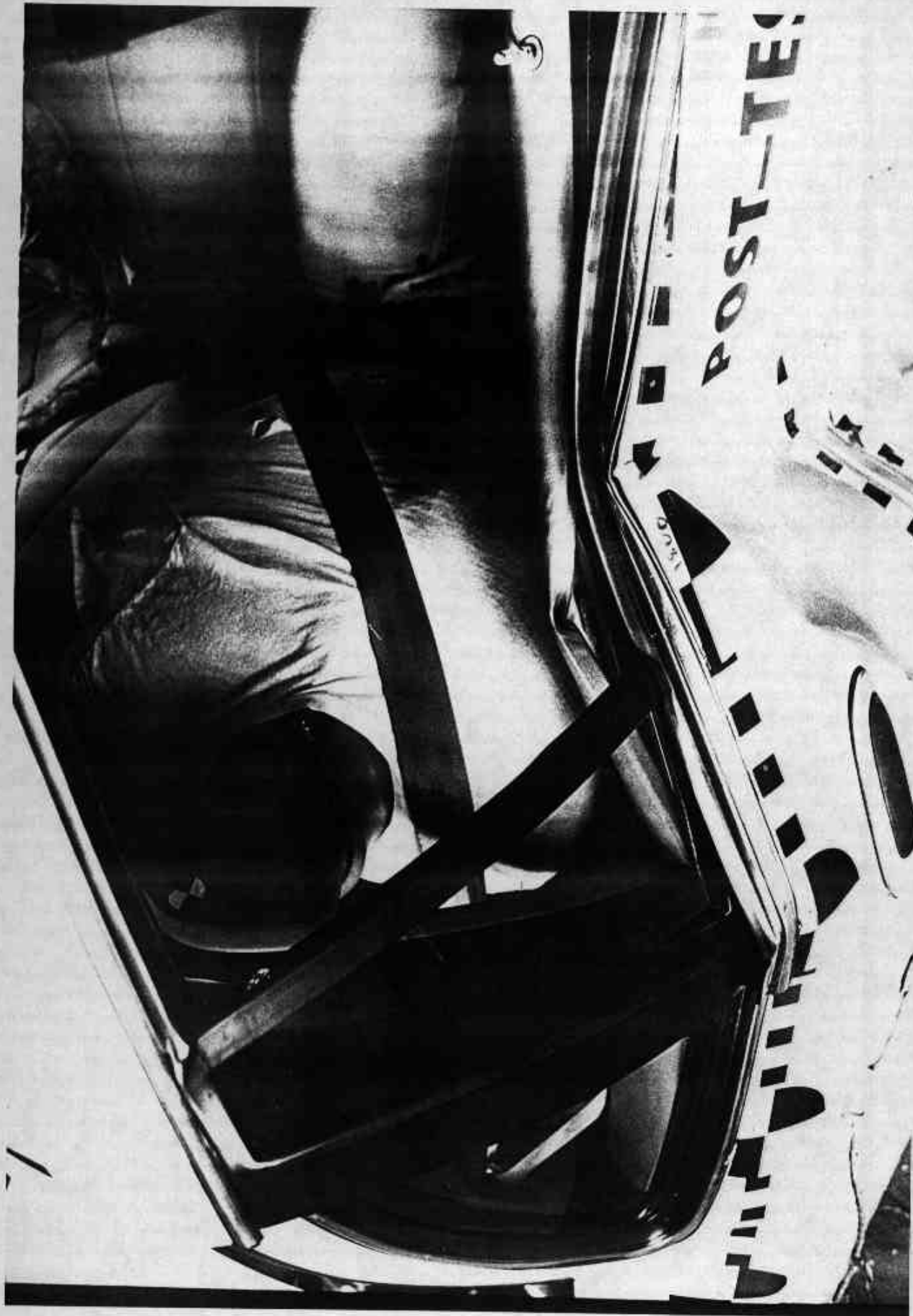


Photo No. A-33 - Post-Test Rear Passenger Dummy Right Side View

A-33

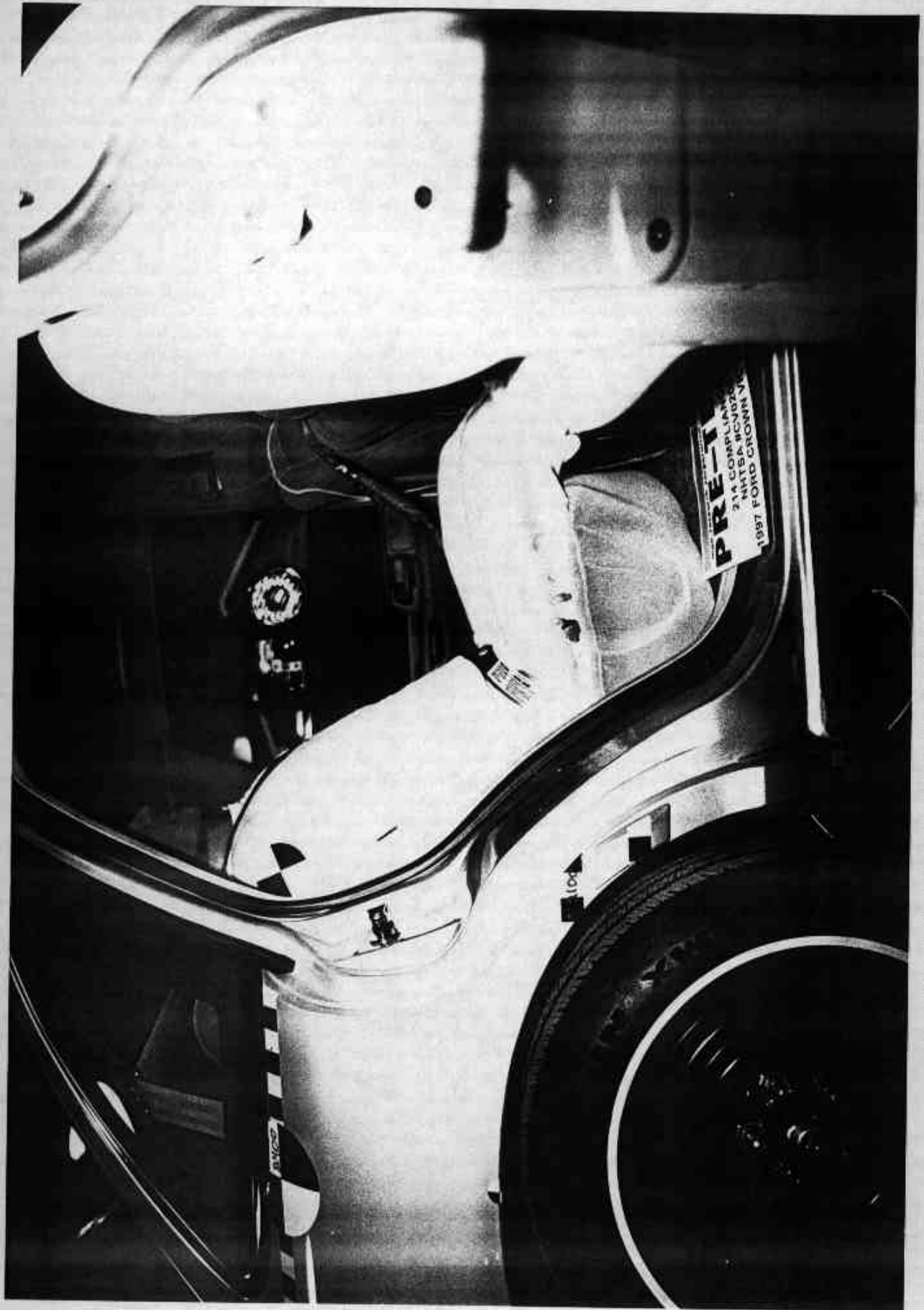


Photo No. A-34 - Pre-Test Rear Passenger Dummy Right Side View (Door Open)

A-34



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





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

A-37

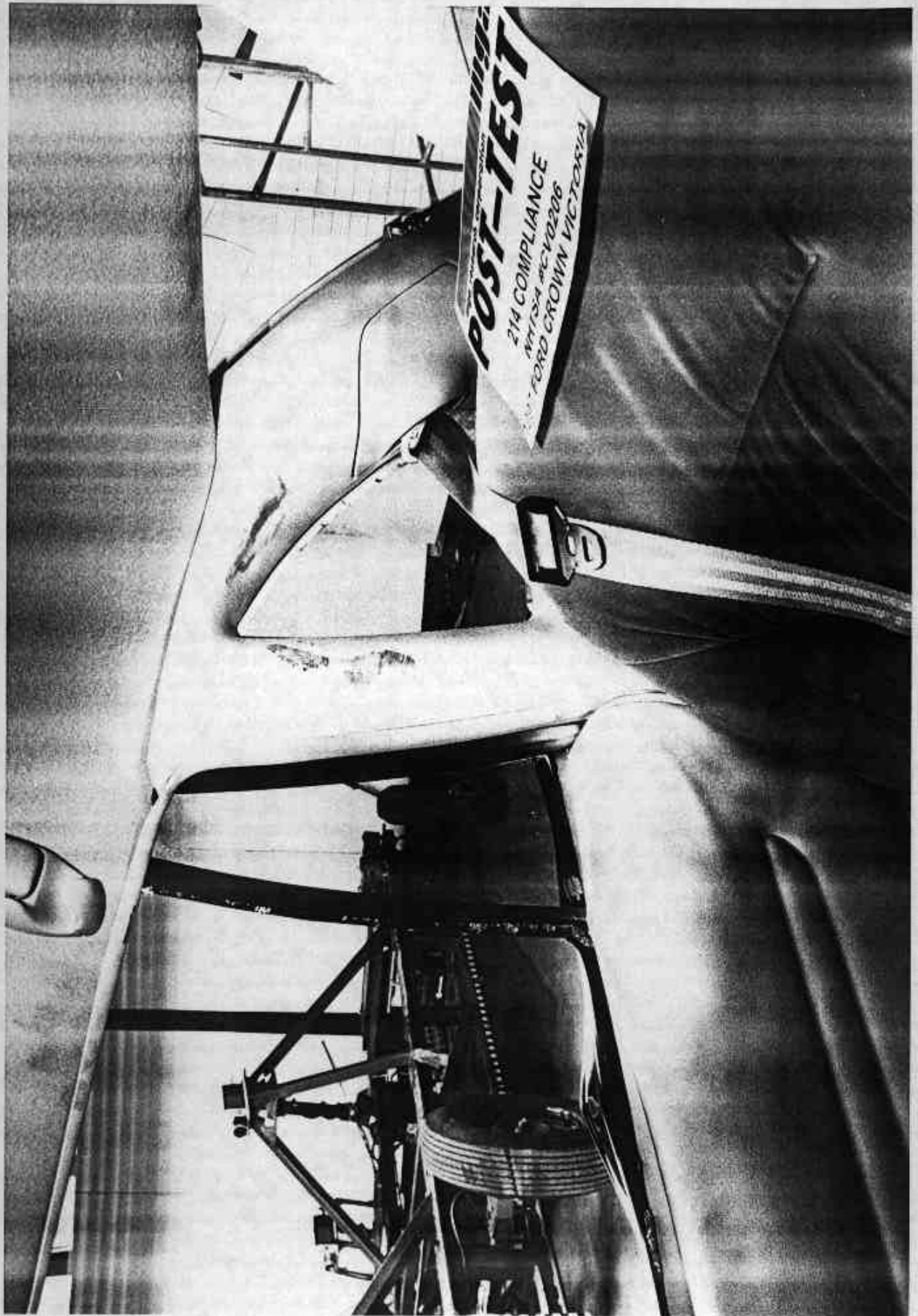


Photo No. A-38 - Post-Test Rear Passenger Dummy Head Contact

A-38



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



mga research corporation

# POST-TEST

214 COMPLIANCE  
NHTSA #CV0206

1997 FORD CROWN VICTORIA

48/24 KPH 90° SIDE IMPAC  
#CV0206 NOV. 25, 1996  
1997 FORD CROWN VICTOI  
MGA RESEARCH CORP.

300

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

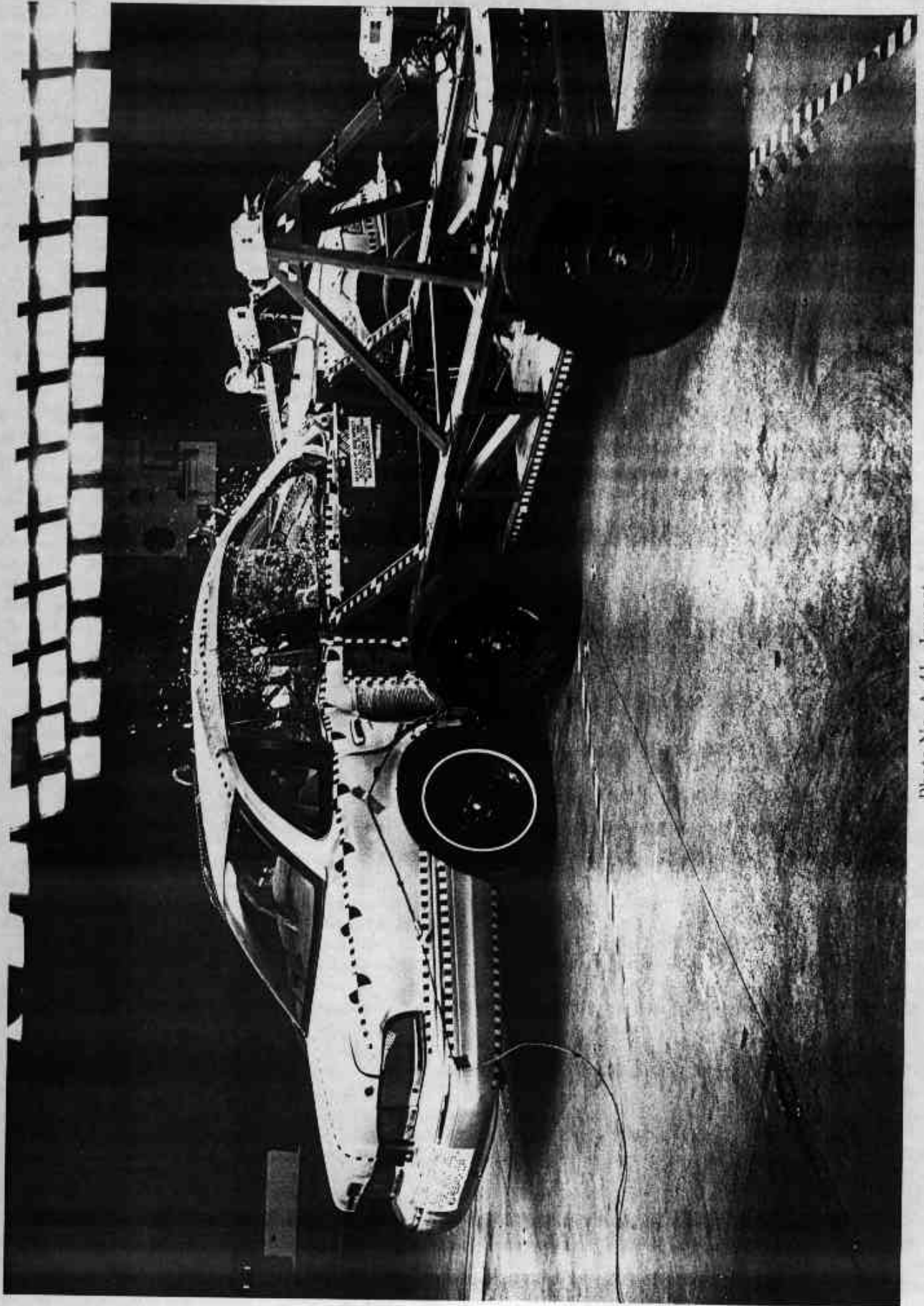


Photo No. A-41 - Impact

A-41

MFD. BY FORD MOTOR CO., OF CANADA, LTD.

DATE: 09/96

GWR: 5427LB/2461KG

FRONT GAWR: 2678LB 1214KG

REAR GAWR: 2774LB 1258KG

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: 2FALP73W0VX110269

TYPE: PASSENGER

F0214  
R0281



EXT PNT TS

JRC 41 DSO

BDY|BRK|HLD|INT TR|TP/PS|R|AXLE|TR|SPR

BA 3

K2

H 8

U

43KK

MADE IN CANADA

CPC

VF 608-5-20472-AA

# FORD / MERCURY

RECOMMENDED TIRE SIZE and INFLATION PRESSURE (COLD)  
 DIMENSIONS DES PNEUS et PRESSIONS DE GONFLAGE  
 RECOMMANDÉES (À FROID)

TIRE SIZE DIMENSIONS DES PNEUS	TIRE PRESSURE PRESSION DES PNEUS	
	FRONT AVANT	REAR ARRIÈRE
P215/70R15 97S*	32 PSI 32 lb/po <sup>2</sup> 220 kPa	35 PSI 35 lb/po <sup>2</sup> 240 kPa
P225/70R15 100S* P225/60R16 97T*	32 PSI 32 lb/po <sup>2</sup> 220 kPa	35 PSI 35 lb/po <sup>2</sup> 240 kPa
T125/80R16	60 PSI 60 lb/po <sup>2</sup> 415 kPa	60 PSI 60 lb/po <sup>2</sup> 415 kPa
P225/70R15 100V*	35 PSI 35 lb/po <sup>2</sup> 240 kPa	35 PSI 35 lb/po <sup>2</sup> 240 kPa

\* MUST BE REPLACED WITH AN EQUIVALENT TYPE SPEED RATED TIRE.  
 \* NE REMPLACER QUE PAR UN PNEU DONT L'INDICE DE VITESSE EST LE MÊME

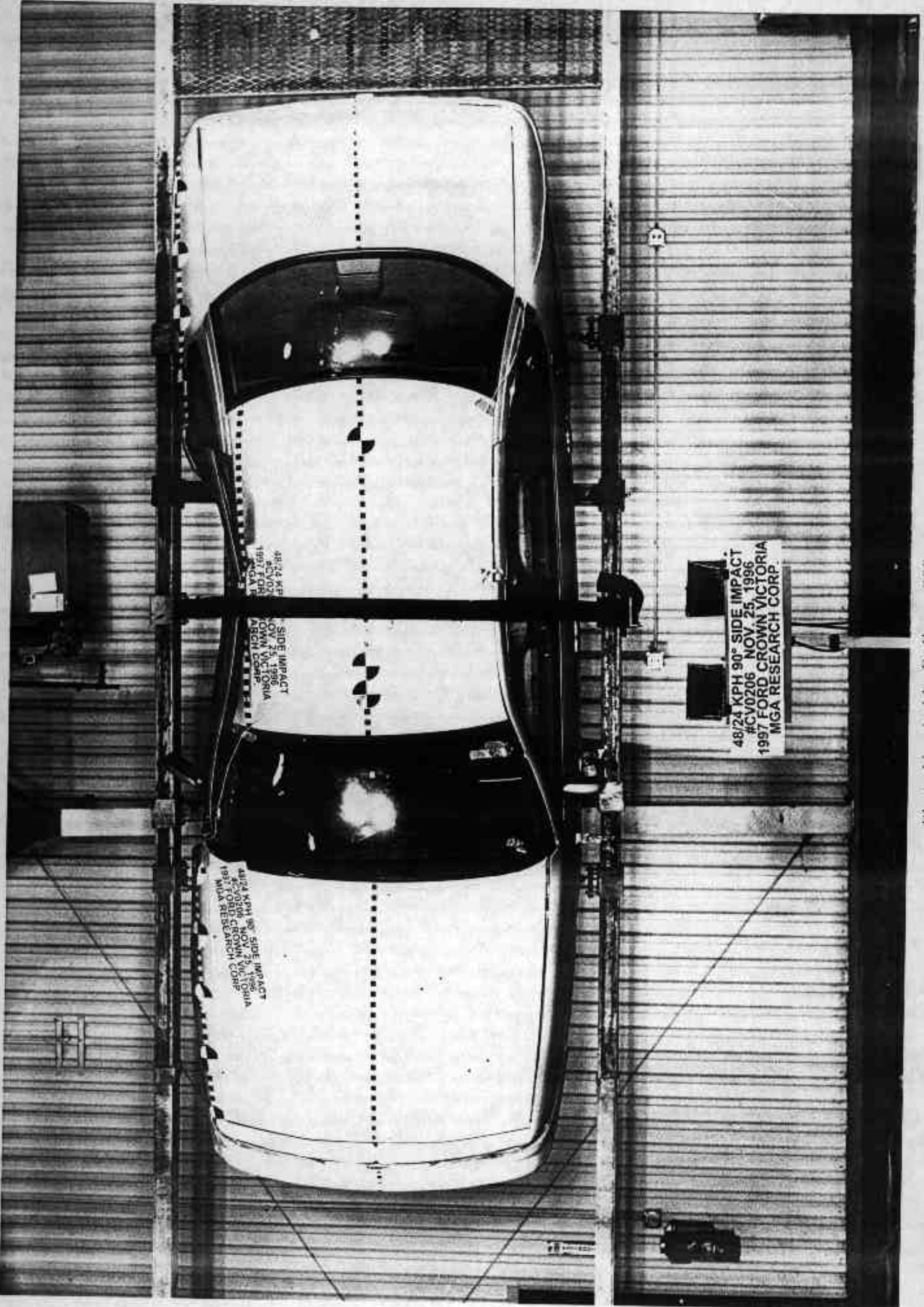
TOTAL LOAD = OCCUPANTS PLUS LUGGAGE CHARGE GLOBALE = OCCUPANTS PLUS BAGAGES

MAXIMUM LOAD CHARGE MAXIMALE	OCCUPANTS OCCUPANTS		DISTRIBUTION RÉPARTITION	
	FRONT AVANT	REAR ARRIÈRE	FRONT AVANT	REAR ARRIÈRE
1100 lb/499 kg	3	3	3	3
996 lb/431 kg	2	3	2	3

POLICE ONLY - POLICE SEULEMENT

FOR UNE PAIRÉD HIGH SPEED TRAILER TOWING, RECREATIONAL ACCESSORIES AND TEMPORAL SPARE USAGE - SEE OWNER GUIDE  
 POUR UNE PAIRÉD HAUTES VITESSES SOUTENUES REMORQUES, ACCESSOIRES DE PLAISANCE ET PNEU DE SECOURS PROVISOIRE

VF5AC-1532-AB



48/24 KPH  
NOV 25 1996  
1997 FORD  
CROWN VICTORIA  
MGA RESEARCH CORP.

SIDE IMPACT  
NOV 25 1996  
1997 FORD  
CROWN VICTORIA  
MGA RESEARCH CORP.

48/24 KPH 90° SIDE IMPACT  
NOV 25 1996  
1997 FORD CROWN VICTORIA  
MGA RESEARCH CORP.

48/24 KPH 90° SIDE IMPACT  
NOV 25 1996  
1997 FORD CROWN VICTORIA  
MGA RESEARCH CORP.

Photo No. A-44 - Rollover 90°

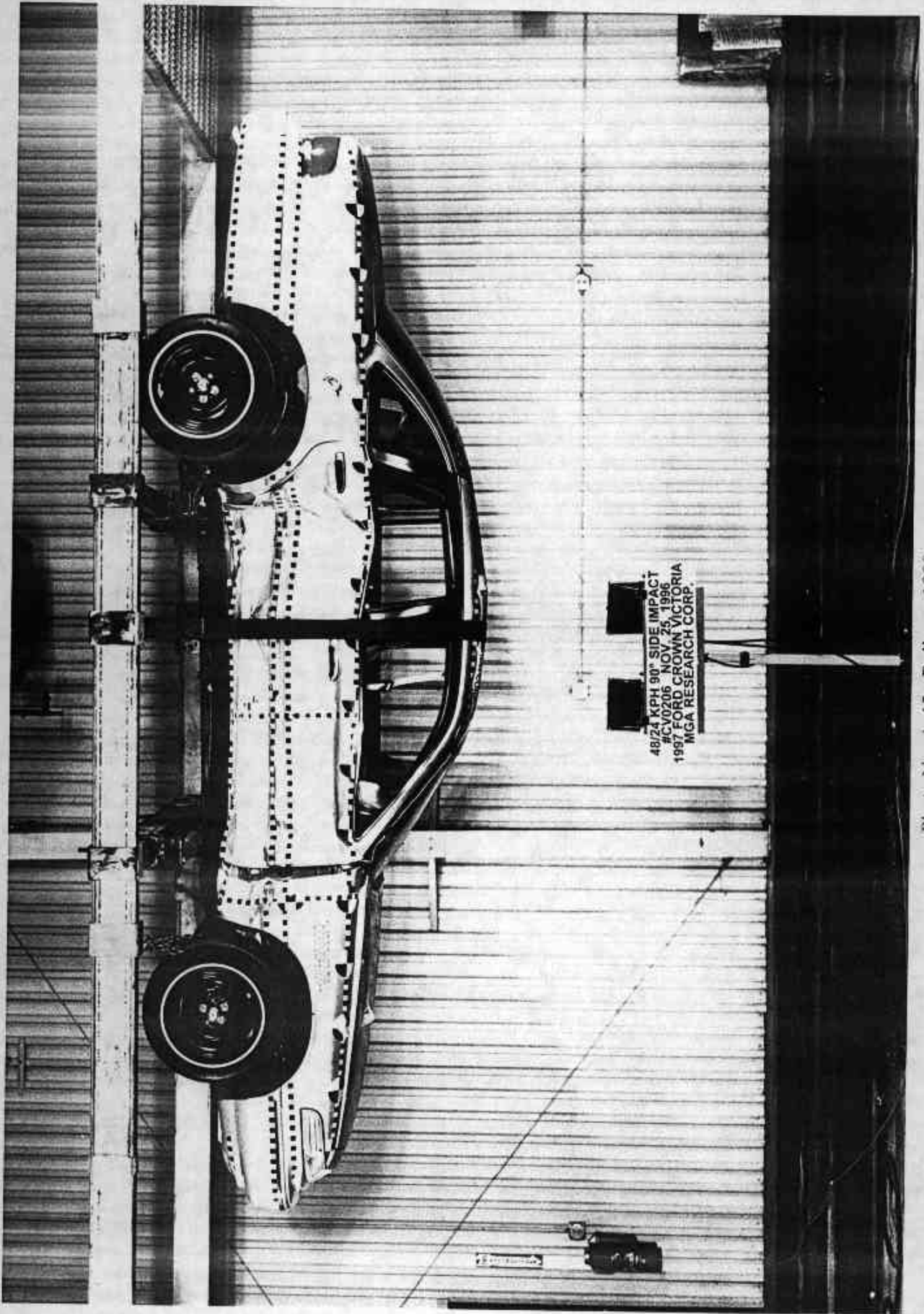
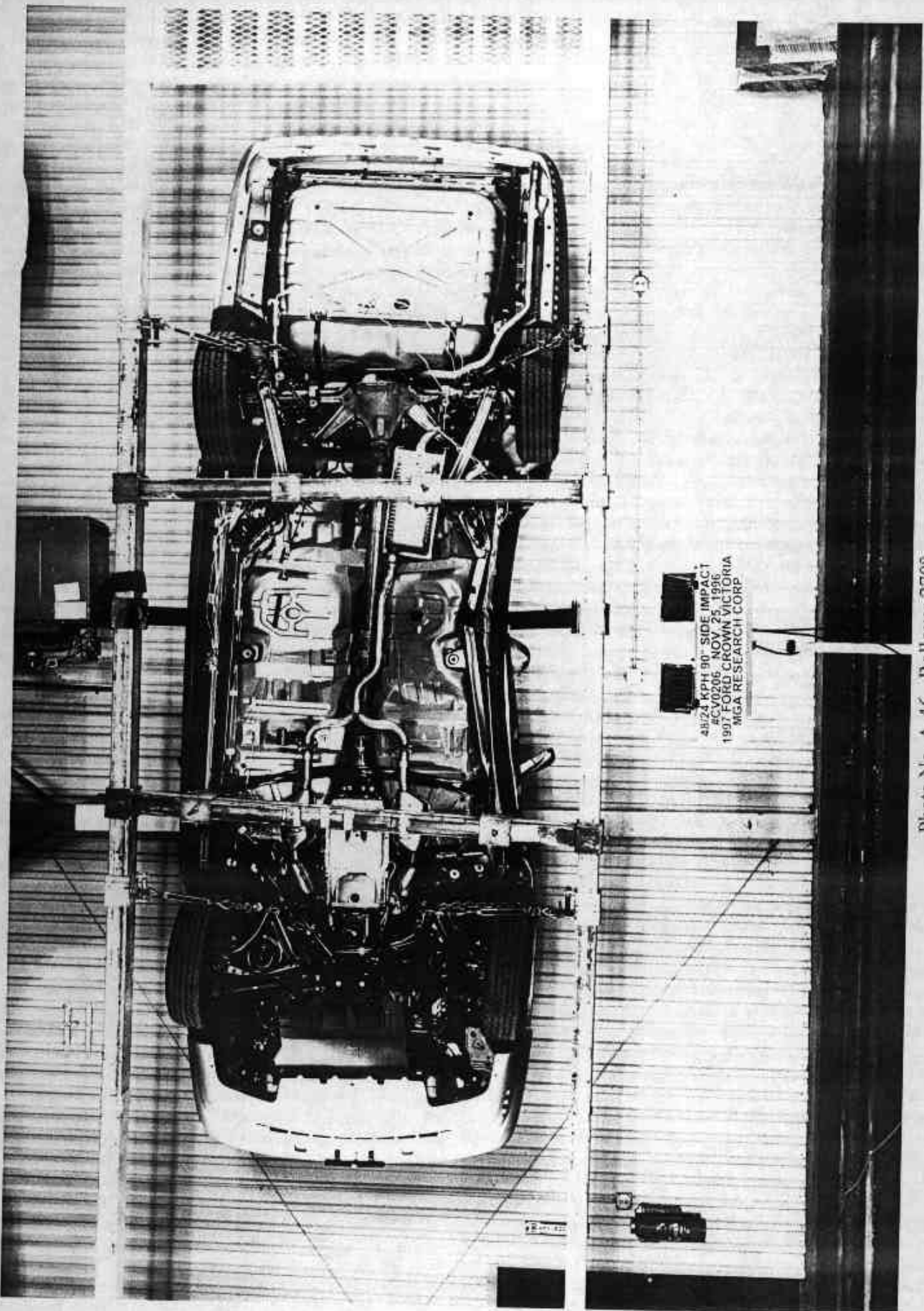


Photo No. A-45 - Rollover 180°

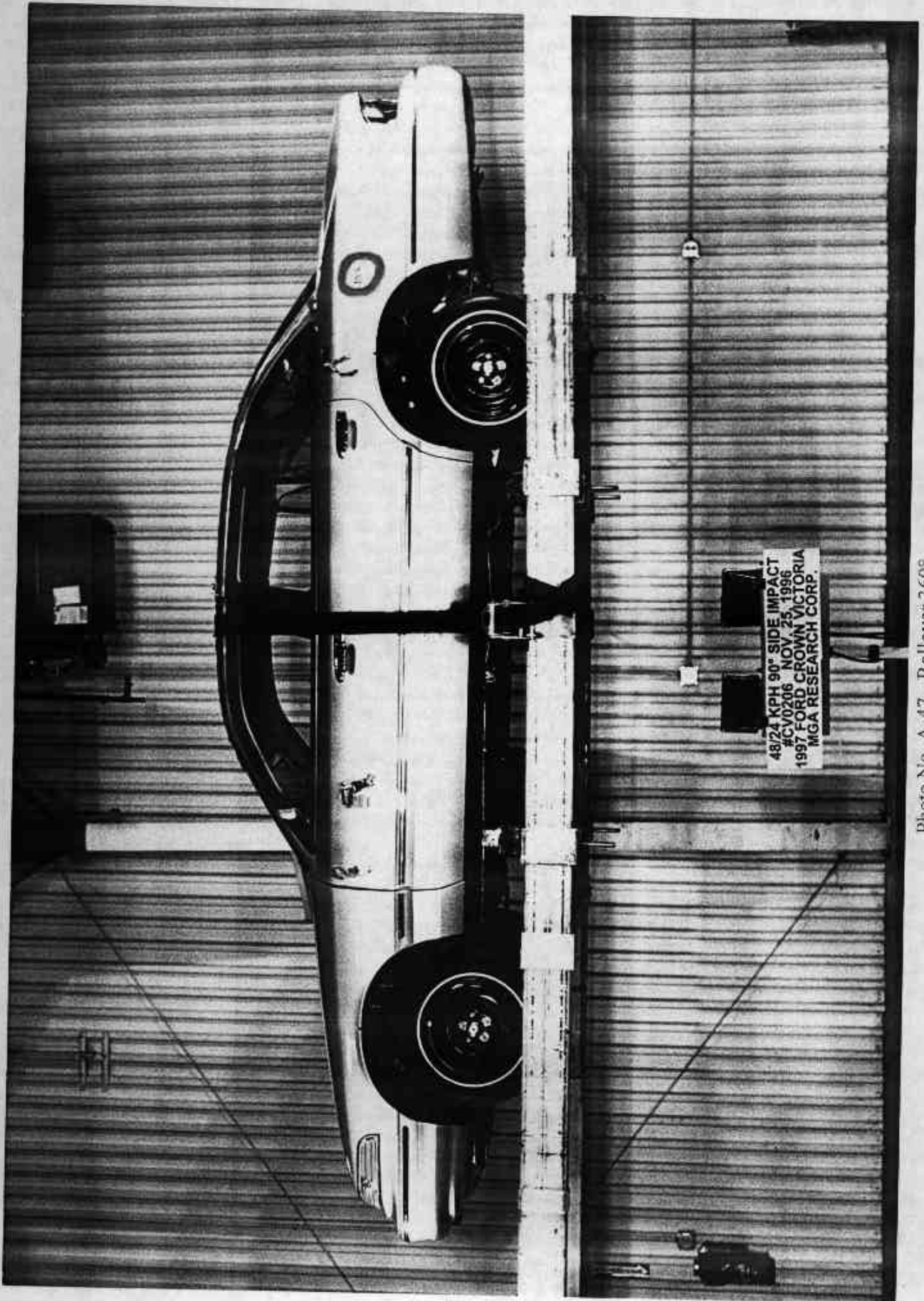
A-45



48/24 KPH 90° SIDE IMPACT  
#CV0206 NOV. 25, 1996  
1991 FORD CROWN VICTORIA  
MGA RESEARCH CORP

A-46

Photo No. A-46 - Rollover 270°



48/24 KPH 90° SIDE IMPACT  
#CV0206 NOV 25, 1996  
1997 FORD CROWN VICTORIA  
MGA RESEARCH CORP.

Photo No. A-47 - Rollover 360°

A-47

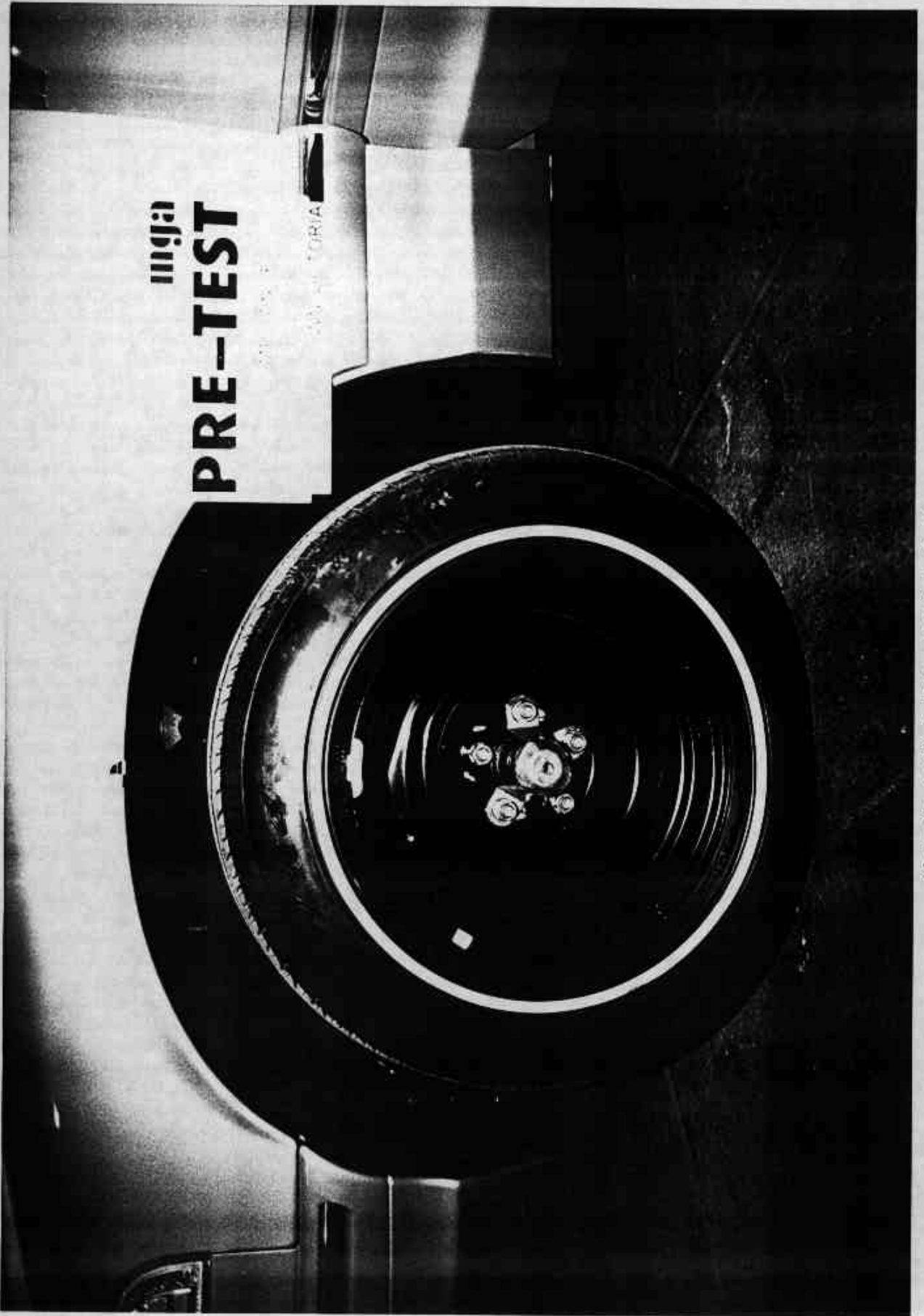
48/24 APT 30  
#CV0206 NOV 25 1996  
1997 FORD CROWN VICTORIA  
MGA RESEARCH CO

mga

PRE-TEST



Photo No. A-48 - Right Front Attitude Point



PRE-TEST  
TORIA

Photo No. A-49 - Left Front Attitude Point

A-49



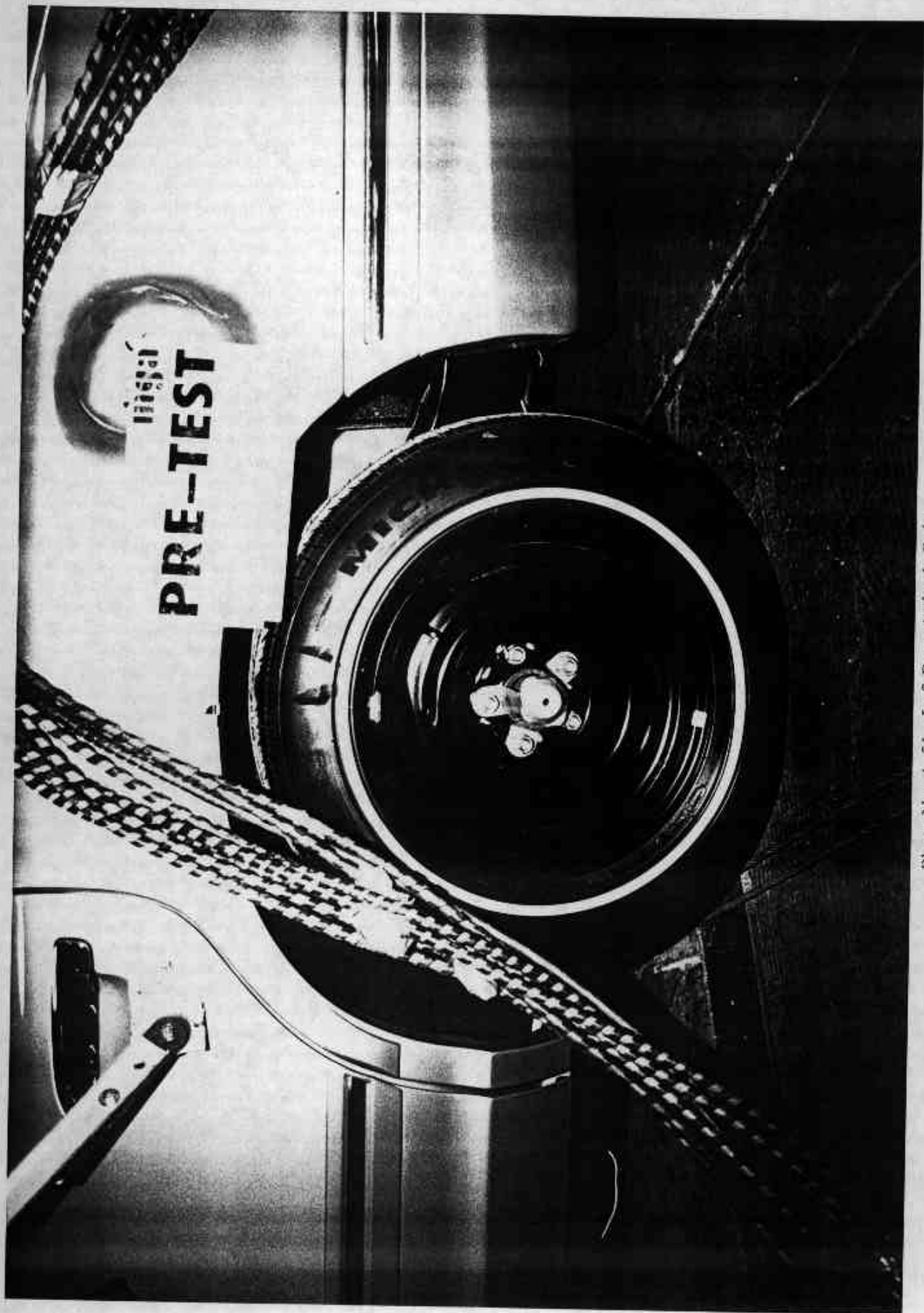
mgd 488-0111  
**PRE-TEST**

214 COMPLIANCE  
NHTSA #CV120P

1997 FORD CROWN VICTORIA

A-50

Photo No. A-50 - Right Rear Attitude Point



**PRE-TEST**

**MIG-1**

**MIG**

Photo No. A-51 - Left Rear Attitude Point

A-51

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

<u>Vehicle (Cont'd):</u>	<u>Page No.</u>
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
 <u>Barrier:</u>	
Figure B-61 - Moving Barrier Center of Gravity X Acceleration vs. Time	B-63
Figure B-62 - Moving Barrier Center of Gravity X Velocity vs. Time	B-64
Figure B-63 - Moving Barrier Center of Gravity Y Acceleration vs. Time	B-65
Figure B-64 - Moving Barrier Center of Gravity Y Velocity vs. Time	B-66
Figure B-65 - Moving Barrier Center of Gravity Z Acceleration vs. Time	B-67
Figure B-66 - Moving Barrier Center of Gravity Z Velocity vs. Time	B-68
Figure B-67 - Moving Barrier Center of Gravity Resultant Acceleration vs. Time	B-69
Figure B-68 - Moving Barrier Rear Axle X Acceleration vs. Time	B-70
Figure B-69 - Moving Barrier Rear Axle X Velocity vs. Time	B-71
Figure B-70 - Moving Barrier Rear Axle Y Acceleration vs. Time	B-72
Figure B-71 - Moving Barrier Rear Axle Y Velocity vs. Time	B-73
Figure B-72 - Left Barrier Contact	B-74
Figure B-73 - Right Barrier Contact	B-73
 <u>Redundant:</u>	
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

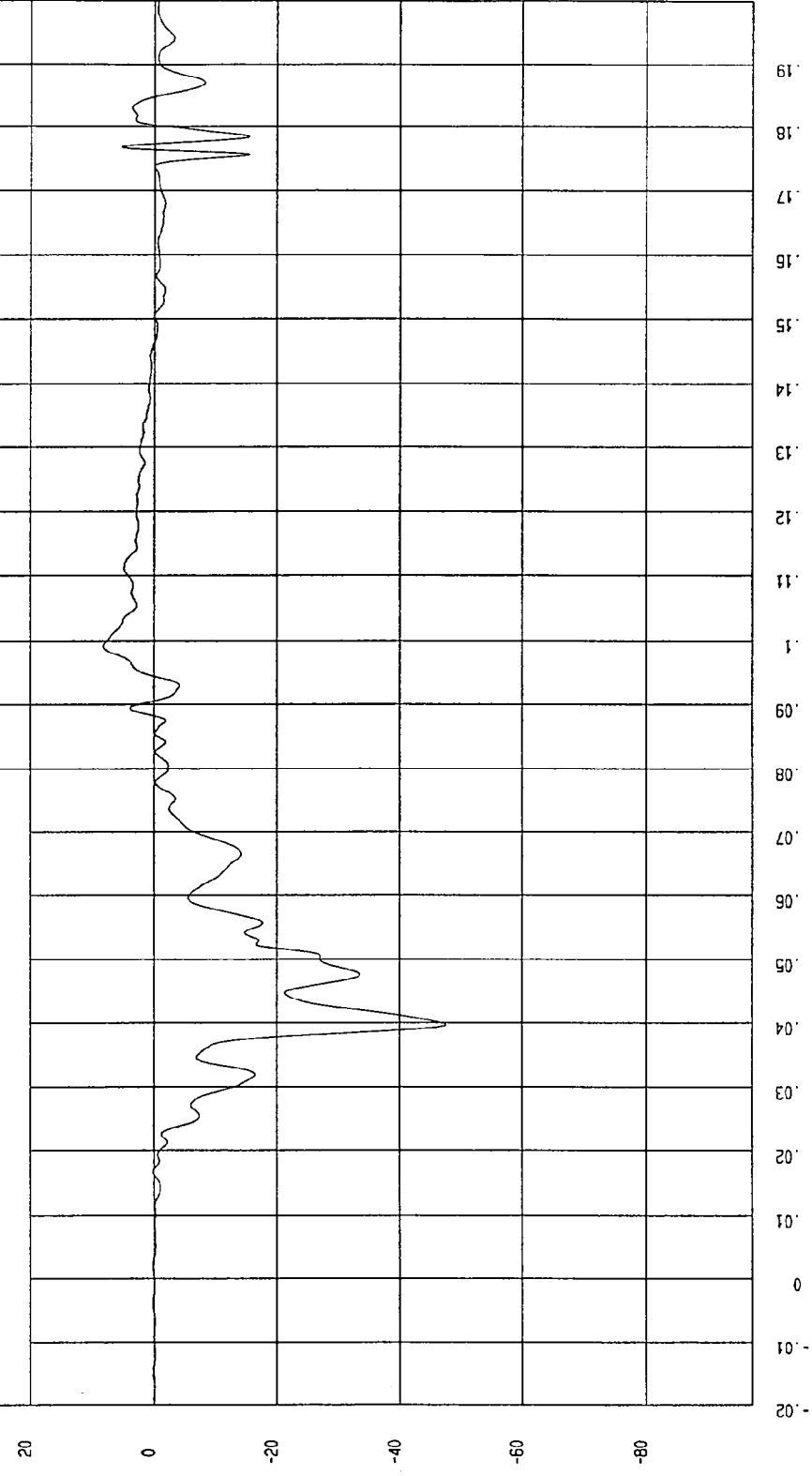
Table of Data Plots

<u>Redundant (Cont'd):</u>	<u>Page No.</u>
Figure B-81 - Front Passenger Pelvis Y Redundant Velocity vs. Time	B-81
Figure B-82 - Rear Passenger Upper Rib Y Redundant Acceleration vs. Time	B-82
Figure B-83 - Rear Passenger Upper Rib Y Redundant Velocity vs. Time	B-83
Figure B-84 - Rear Passenger Lower Rib Y Redundant Acceleration vs. Time	B-84
Figure B-85 - Rear Passenger Lower Rib Y Redundant Velocity vs. Time	B-85
Figure B-86 - Rear Passenger Lower Spine Y Redundant Acceleration vs. Time	B-86
Figure B-87 - Rear Passenger Lower Spine Y Redundant Velocity vs. Time	B-87
Figure B-88 - Rear Passenger Pelvis Y Redundant Acceleration vs. Time	B-88
Figure B-89 - Rear Passenger Pelvis Y Redundant Velocity vs. Time	B-89
 <u>FIR Filter</u>	
Figure B-90 - Front Passenger Upper Rib Y Acceleration vs. Time	B-90
Figure B-91 - Front Passenger Upper Rib Y Redundant Acceleration vs. Time	B-91
Figure B-92 - Front Passenger Lower Rib Y Acceleration vs. Time	B-92
Figure B-93 - Front Passenger Lower Rib Y Redundant Acceleration vs. Time	B-93
Figure B-94 - Front Passenger Lower Spine Y Acceleration vs. Time	B-94
Figure B-95 - Front Passenger Lower Spine Y Redundant Acceleration vs. Time	B-95
Figure B-96 - Front Passenger Pelvis Y Acceleration vs. Time	B-96
Figure B-97 - Front Passenger Pelvis Y Redundant Acceleration vs. Time	B-97
Figure B-98 - Rear Passenger Upper Rib Y Acceleration vs. Time	B-98
Figure B-99 - Rear Passenger Upper Rib Y Redundant Acceleration vs. Time	B-99
Figure B-100 - Rear Passenger Lower Rib Y Acceleration vs. Time	B-100
Figure B-101 - Rear Passenger Lower Rib Y Redundant Acceleration vs. Time	B-101
Figure B-102 - Rear Passenger Lower Spine Y Acceleration vs. Time	B-102
Figure B-103 - Rear Passenger Lower Spine Y Redundant Acceleration vs. Time	B-103
Figure B-104 - Rear Passenger Pelvis Y Acceleration vs. Time	B-104
Figure B-105 - Rear Passenger Pelvis Y Redundant Acceleration vs. Time	B-105

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
 COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH  
 YMIN=-47.59799 G'S at 39. msec YMAX= 8.028355 G'S at 99. msec

FRONT PASSENGER UPPER RIB Y ACCELERATION

1 896127AF.A15 Filterclass (180)



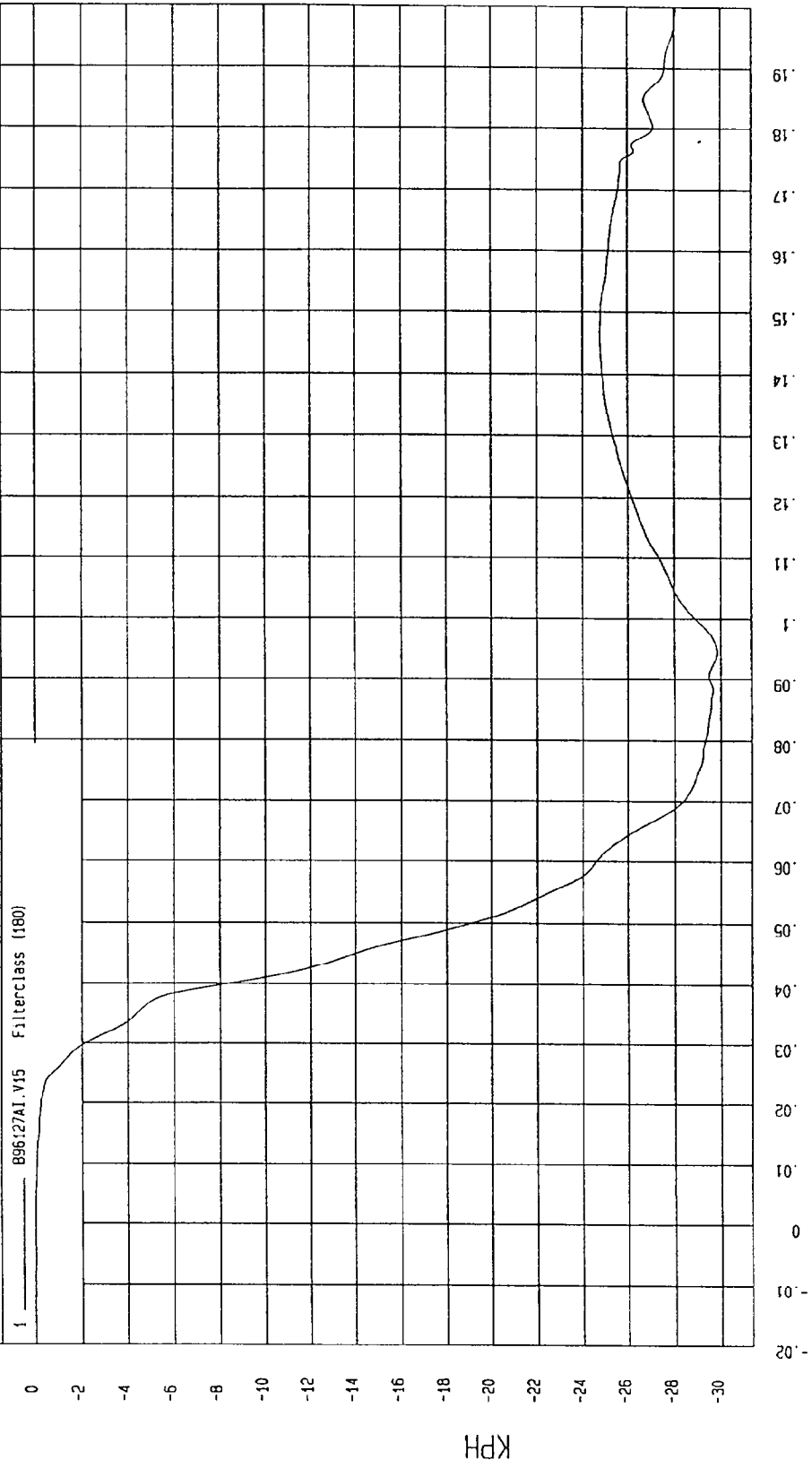
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 12-15-1996 13:59

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-29.86028 KPH at 94. msec YMAX= 7.135533E-03 KPH at -13. msec

FRONT PASSENGER UPPER RIB Y VELOCITY



MCA Research  
12-15-1996 14:00

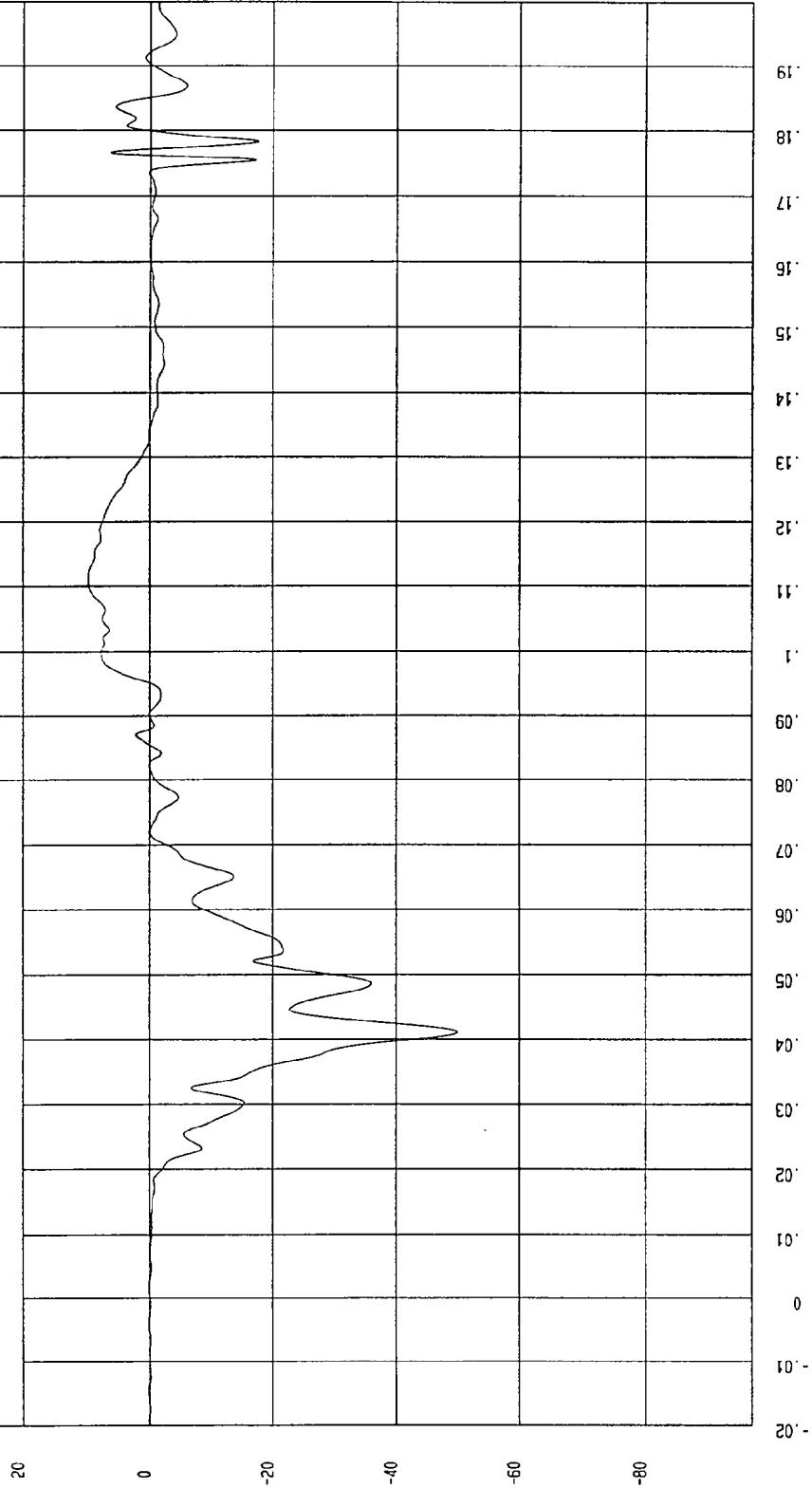
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-49.93616 G'S at 41 msec YMAX= 9.570042 G'S at 111 msec

FRONT PASSENGER LOWER RIB Y ACCELERATION

1 \_\_\_\_\_ 896127AF.A16 Filterclass (180)



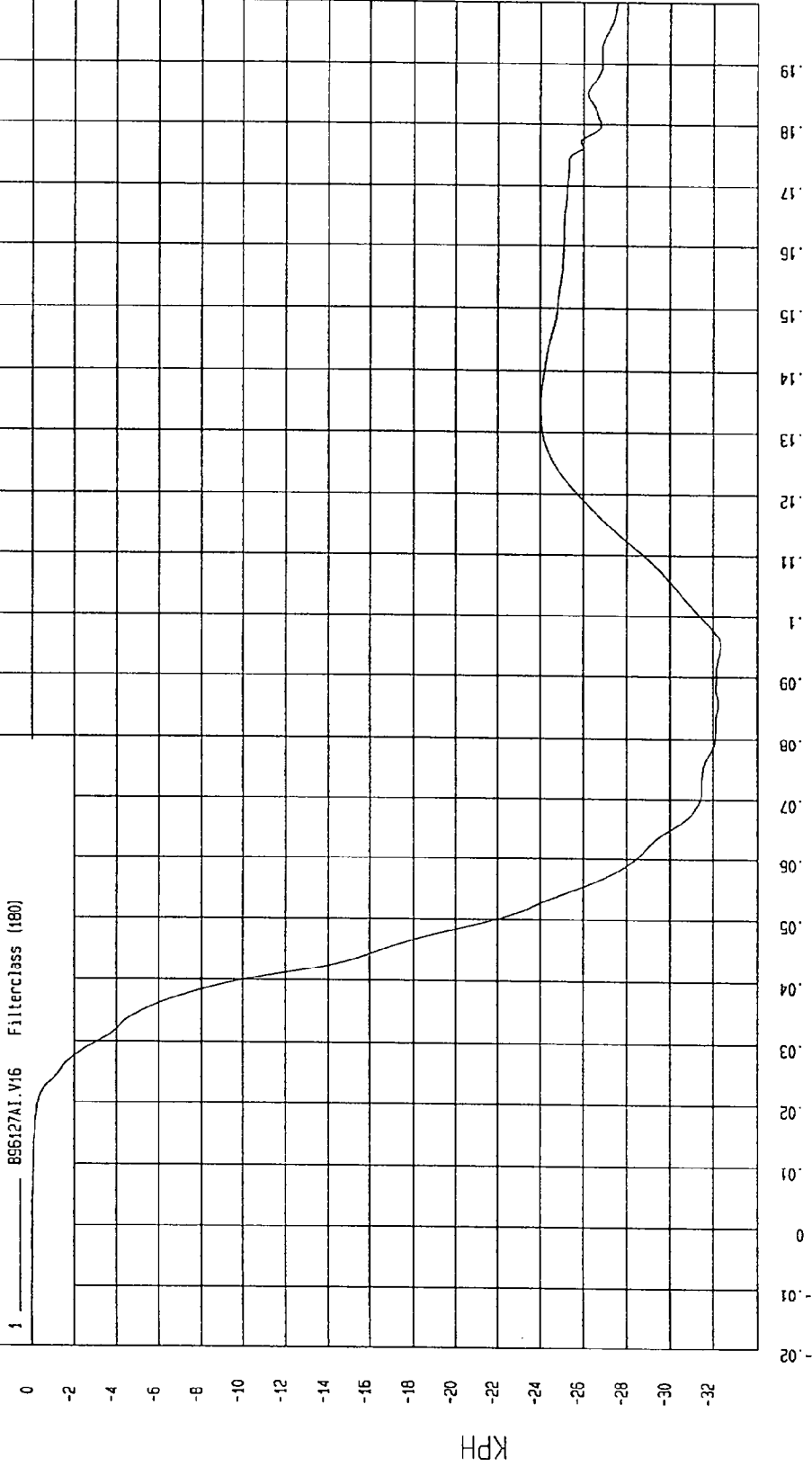
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12-13-1996 13:59

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-32.34287 KPH at 95. msec YMAX= 8.676575E-03 KPH at -13. msec

FRONT PASSENGER LOWER RIB Y VELOCITY



MGA Research  
12-15-1996 14.01

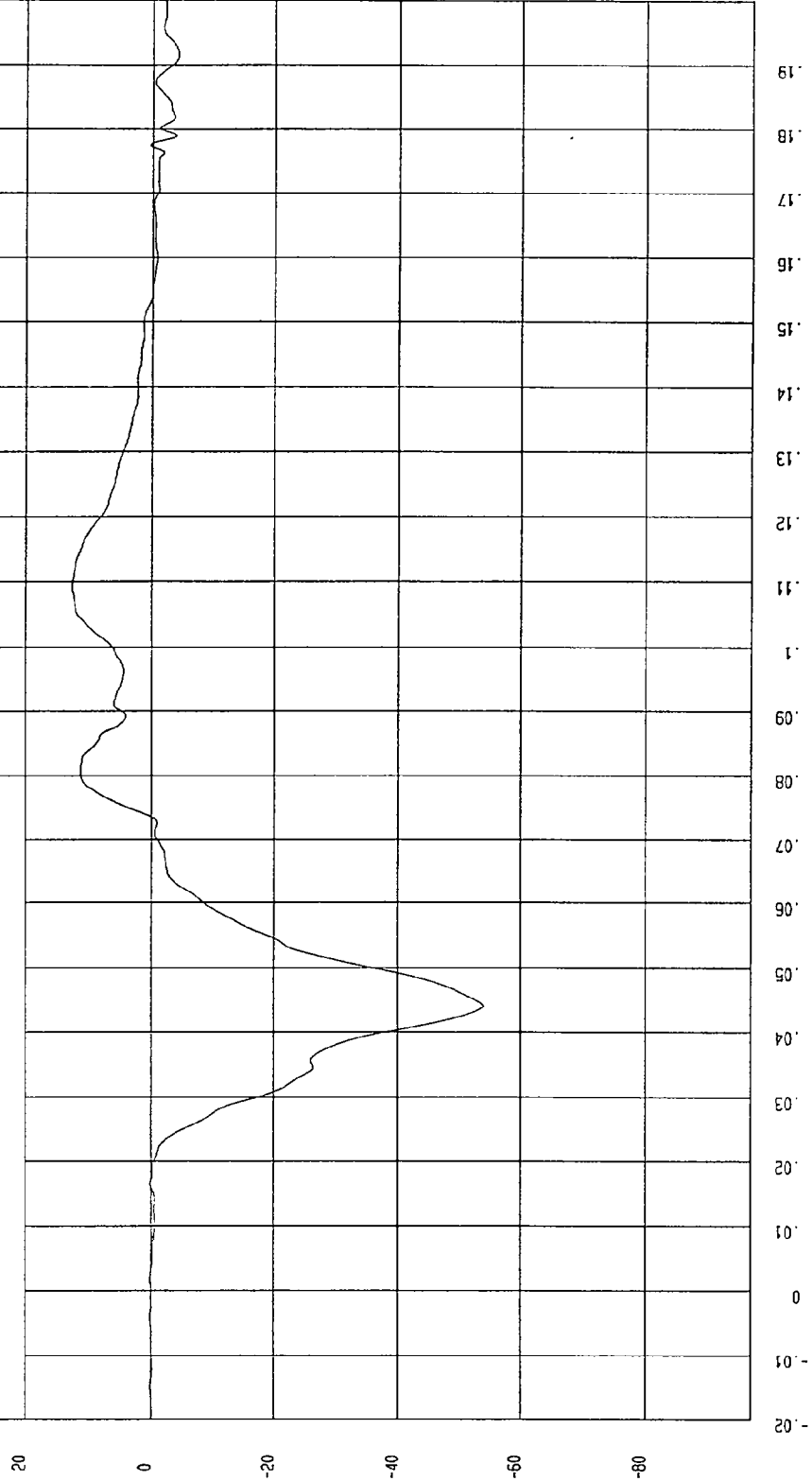
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-54.06148 G'S at 44. msec YMAX= 12.7206 G'S at 109 msec

FRONT PASSENGER LOWER SPINE Y ACCELERATION

1 896127AF.A17 FilterClass (180)



MOA Research Co.  
12-15-1996 13:59

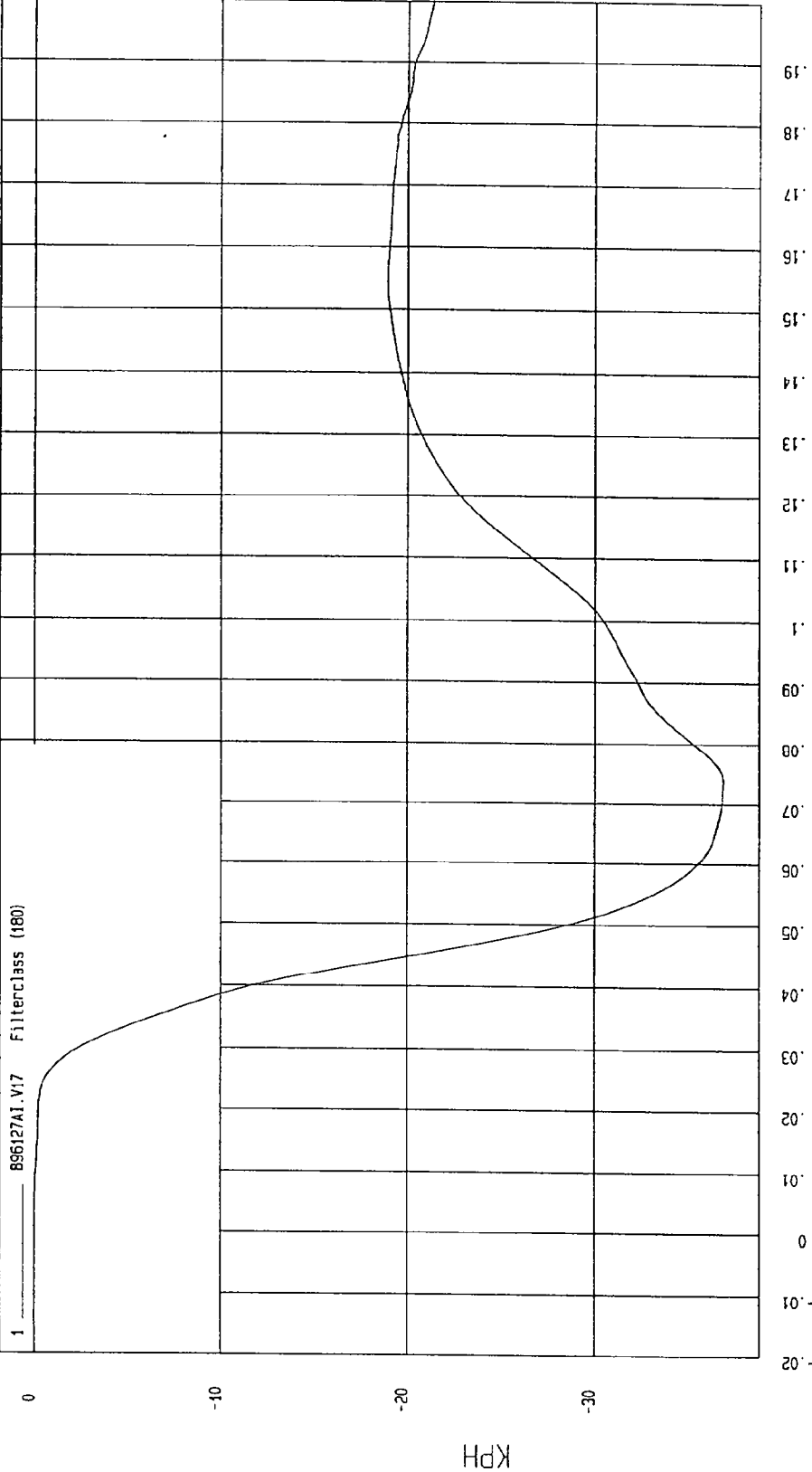
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-36.77955 KPH at 73. msec YMAX= 3.633665E-03 KPH at -13. msec

FRONT PASSENGER LOWER SPINE Y VELOCITY

1 896127A1.V17 FilterClass (160)



NEA Research  
12-15-1996 14.01

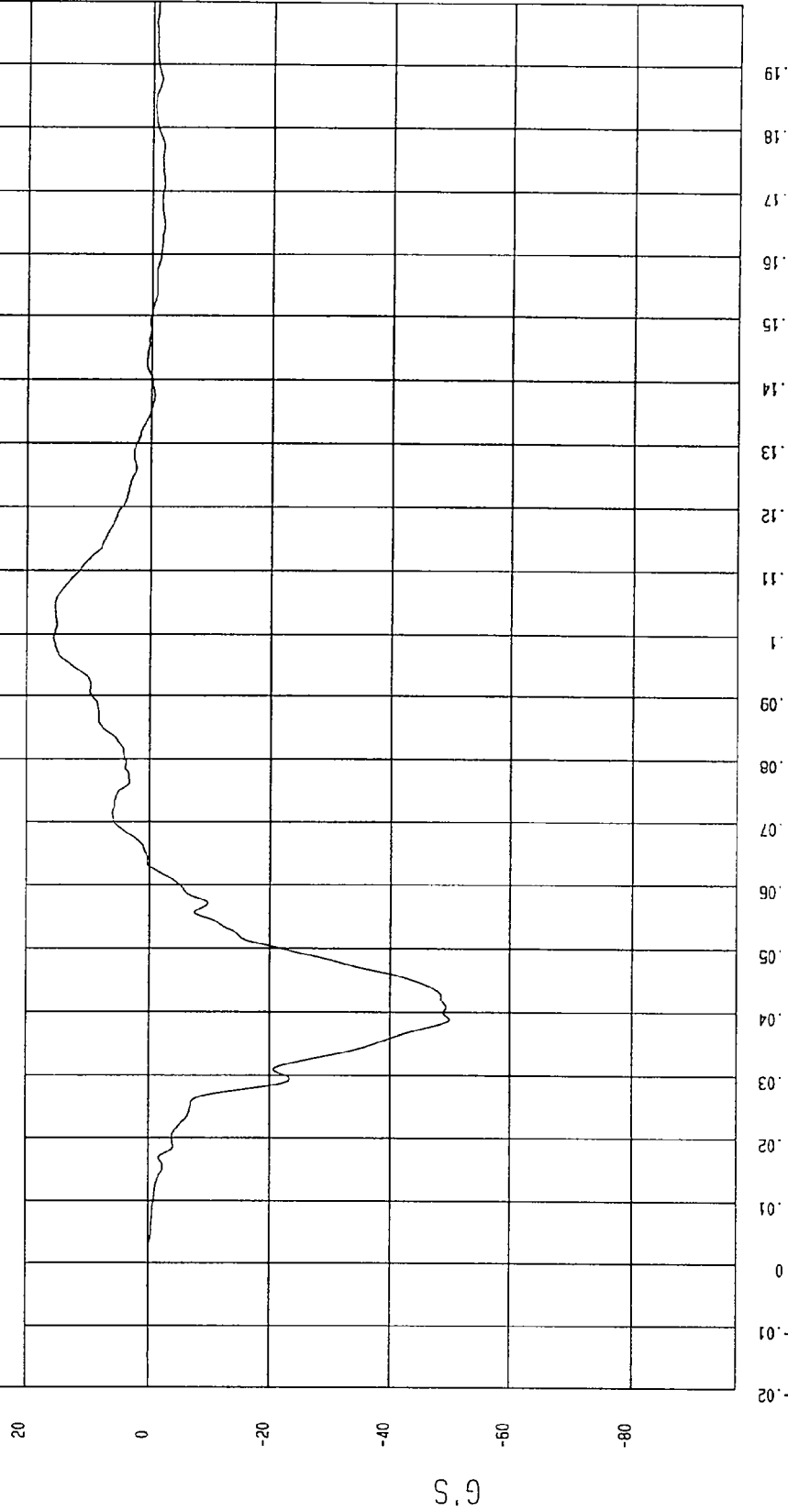
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-49.92972 G'S at 38. msec YMAX= 15.64689 G'S at 99. msec

FRONT PASSENGER PELVIS Y ACCELERATION

1 \_\_\_\_\_ 895127AF.A18 Filterclass (180)

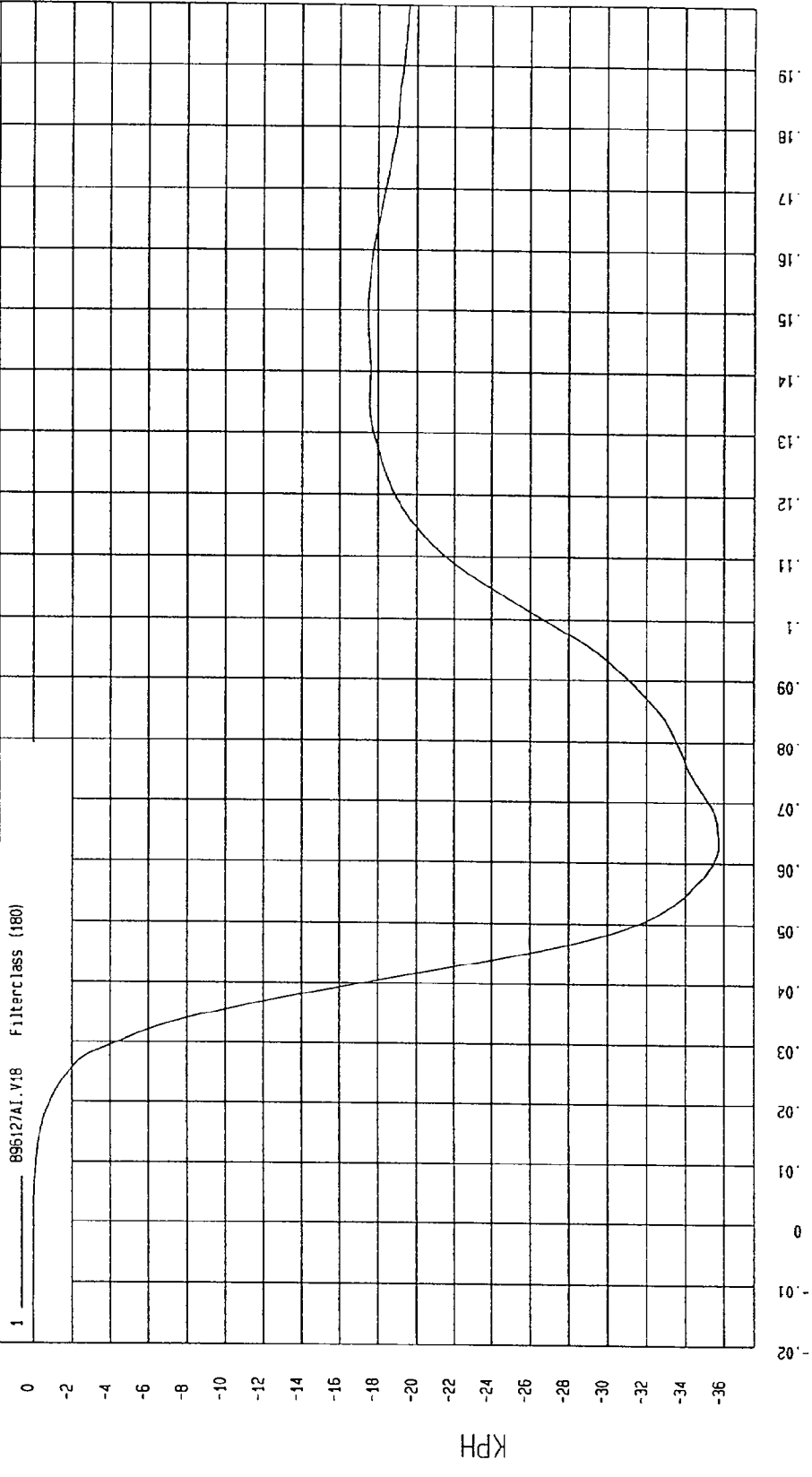


MCA Research  
12-15-1996 13:59

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
 COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-35.7069 KPH at 63 msec YMAX= 5.254173E-03 KPH at -13. msec

FRONT PASSENGER PELVIS Y VELOCITY



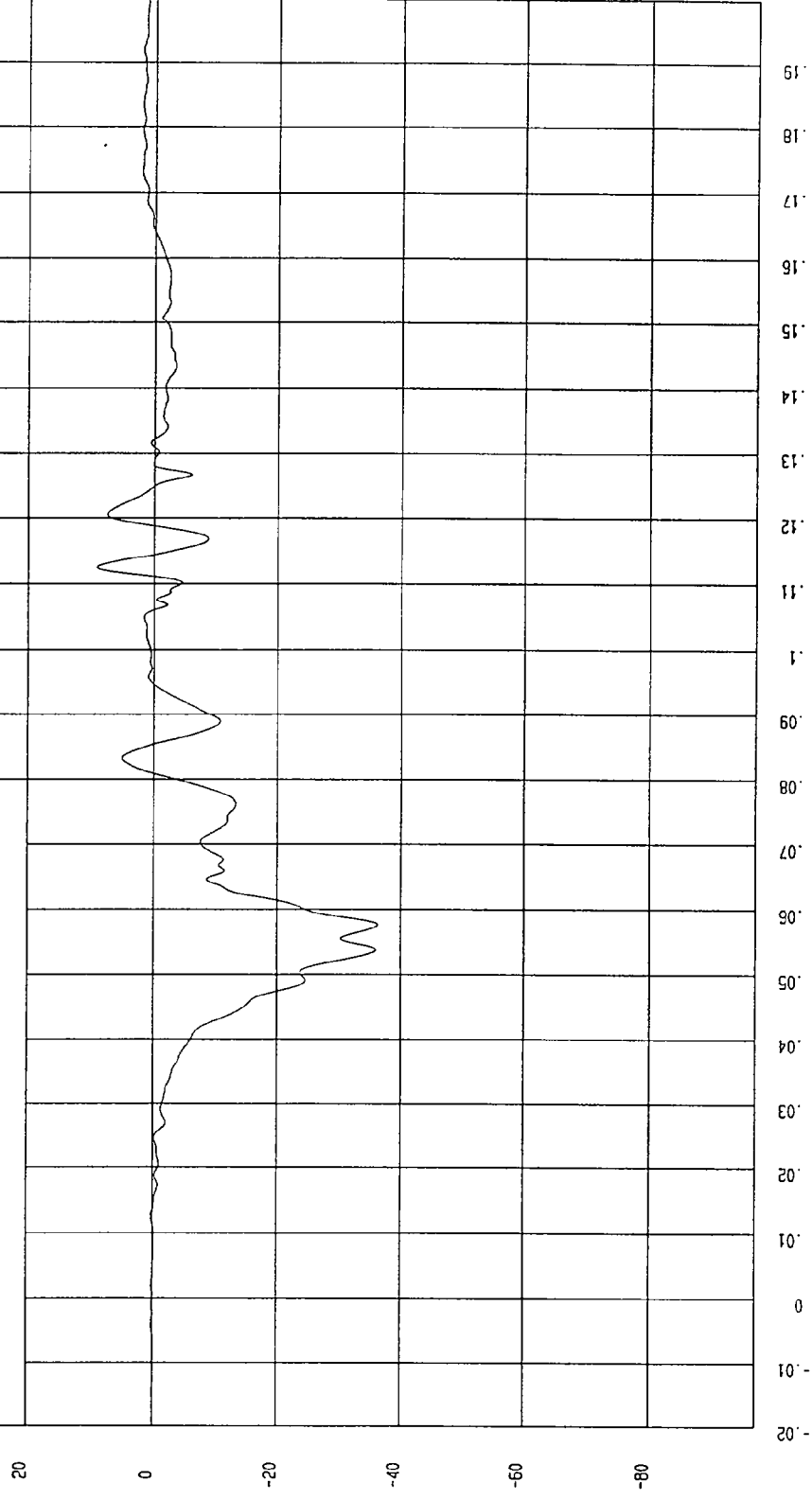
MCA Research  
12-15-1996 14:01

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-36.41911 G'S at 57. msec YMAX= 9.007871 G'S at 112 msec

REAR PASSENGER UPPER RIB Y ACCELERATION

1 B96127AF.A25 Filterclass (180)



MCA Research  
12-15-1996 13:59

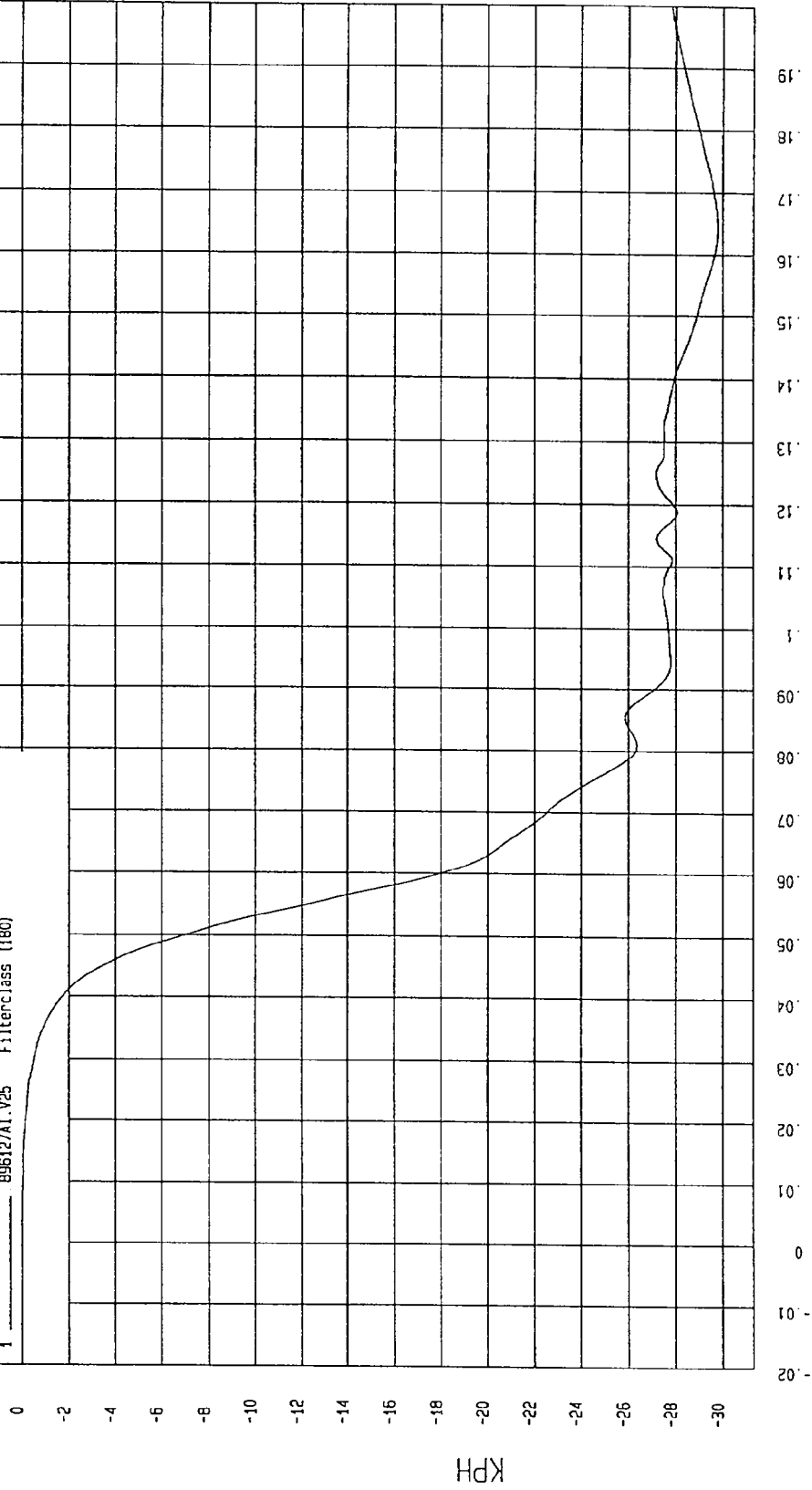
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-29.71475 KPH at 154 msec YMAX= 2.145524E-03 KPH at -13. msec

REAR PASSENGER UPPER RIB Y VELOCITY

1 896127A1.V25 Filterclass (180)

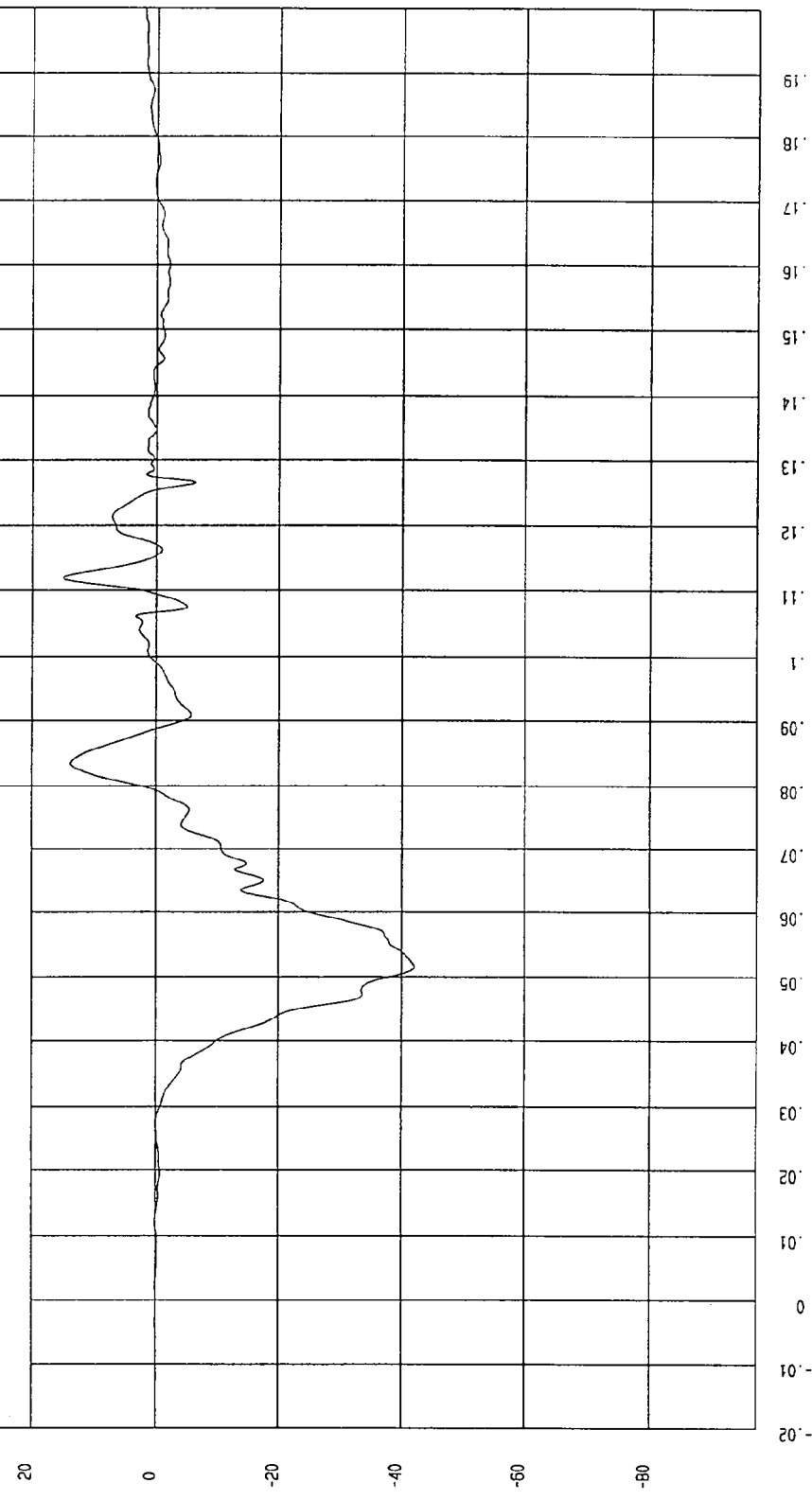


MCA Research  
12-15-1996 14:01

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
 COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH  
 YMIN=-42.02497 G'S at 51. msec YMAX= 14.9219 G'S at 111 msec

REAR PASSENGER LOWER RIB Y ACCELERATION

1 ——— 896127AF.A26 Filterclass (160)



MCA Research  
 12-15-1996 13:59

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

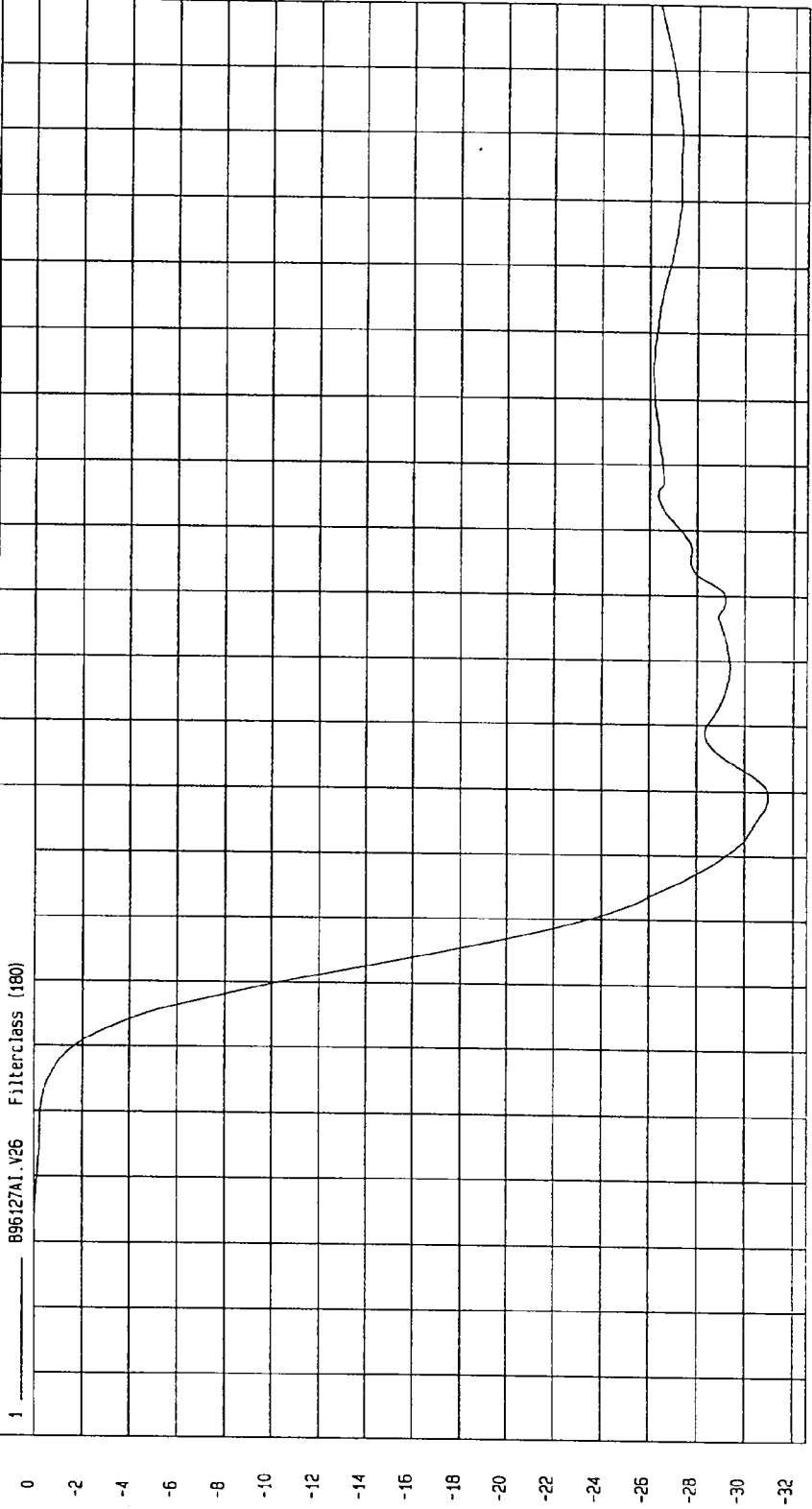
TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-30.99894 KPH at 79. msec YMAX= 1.401724E-02 KPH at 3.4 msec

REAR PASSENGER LOWER RIB Y VELOCITY

1 B96127A1.V26 Filterclass (180)



MGA Research  
12-15-1996 14: 01

TIME Seconds

KPH

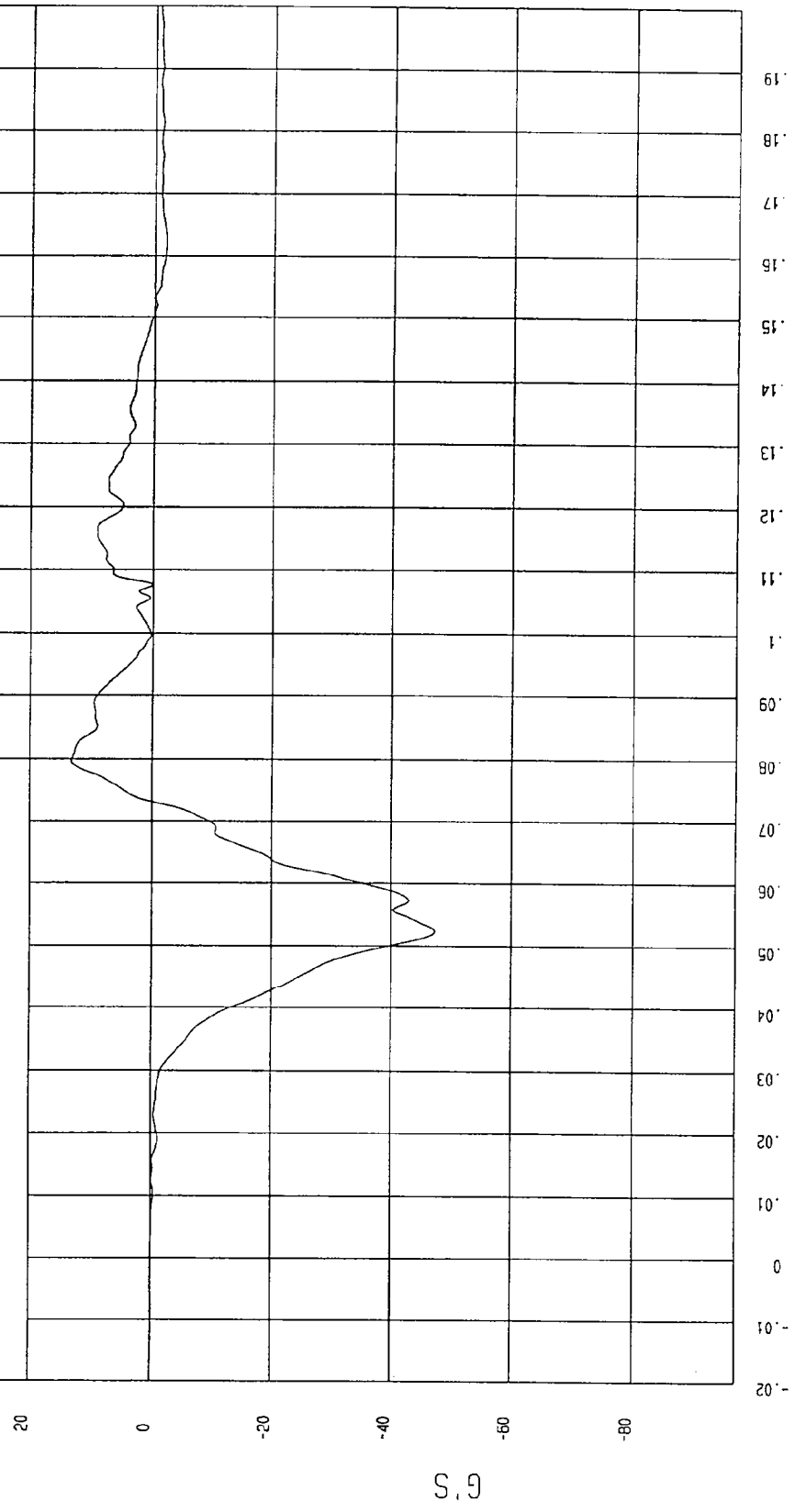
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-47.35953 G'S at 52. msec YMAX= 13.19688 G'S at 79. msec

REAR PASSENGER LOWER SPINE Y ACCELERATION

1 \_\_\_\_\_ 896127AF.A27 Filterclass (180)



MGA Research  
12-15-1996 13:59

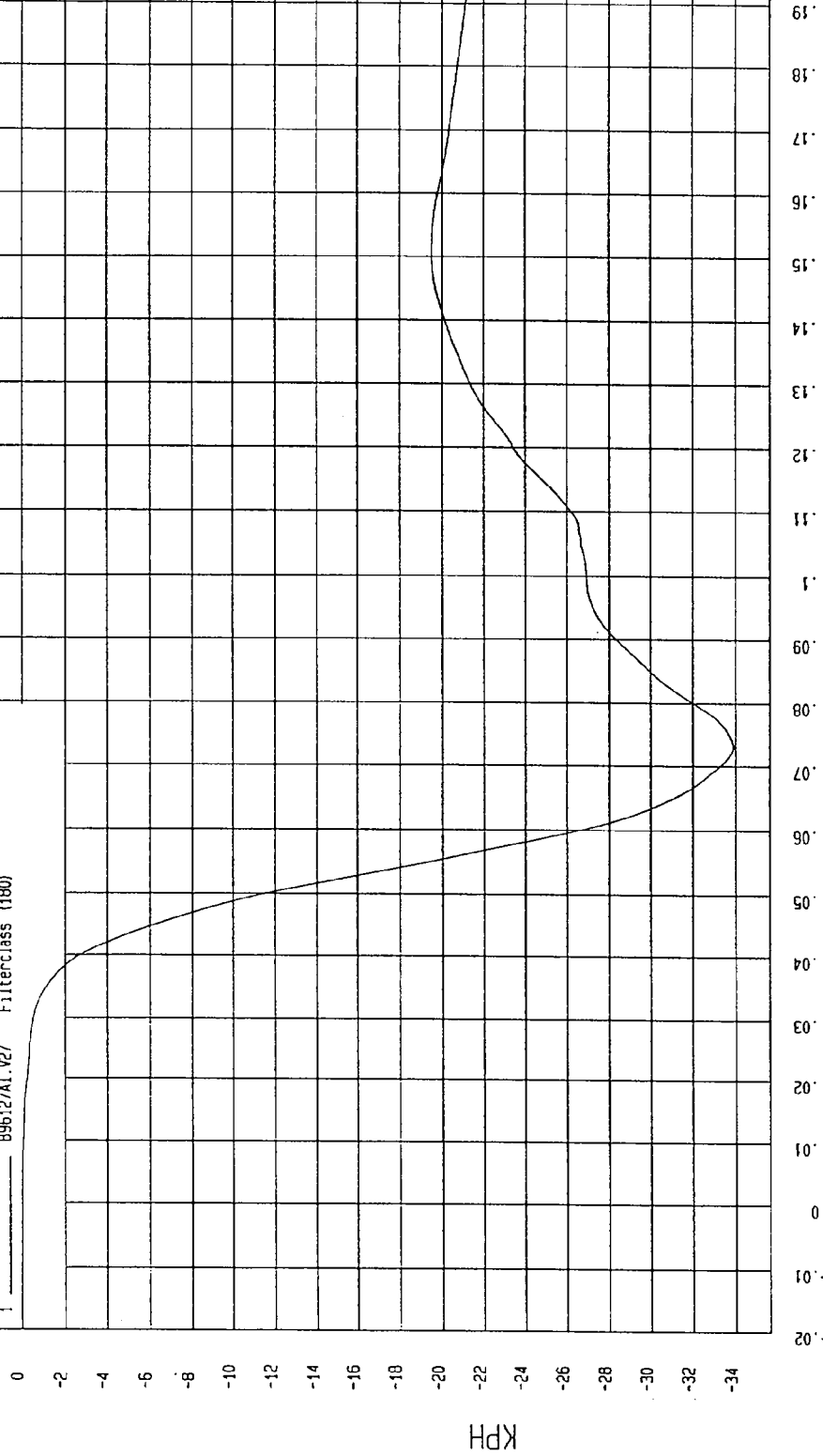
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-33.87339 KPH at 73. msec YMAX= 5.049761E-03 KPH at -16. msec

REAR PASSENGER LOWER SPINE Y VELOCITY

1 896127A1.V27 Filterclass (180)



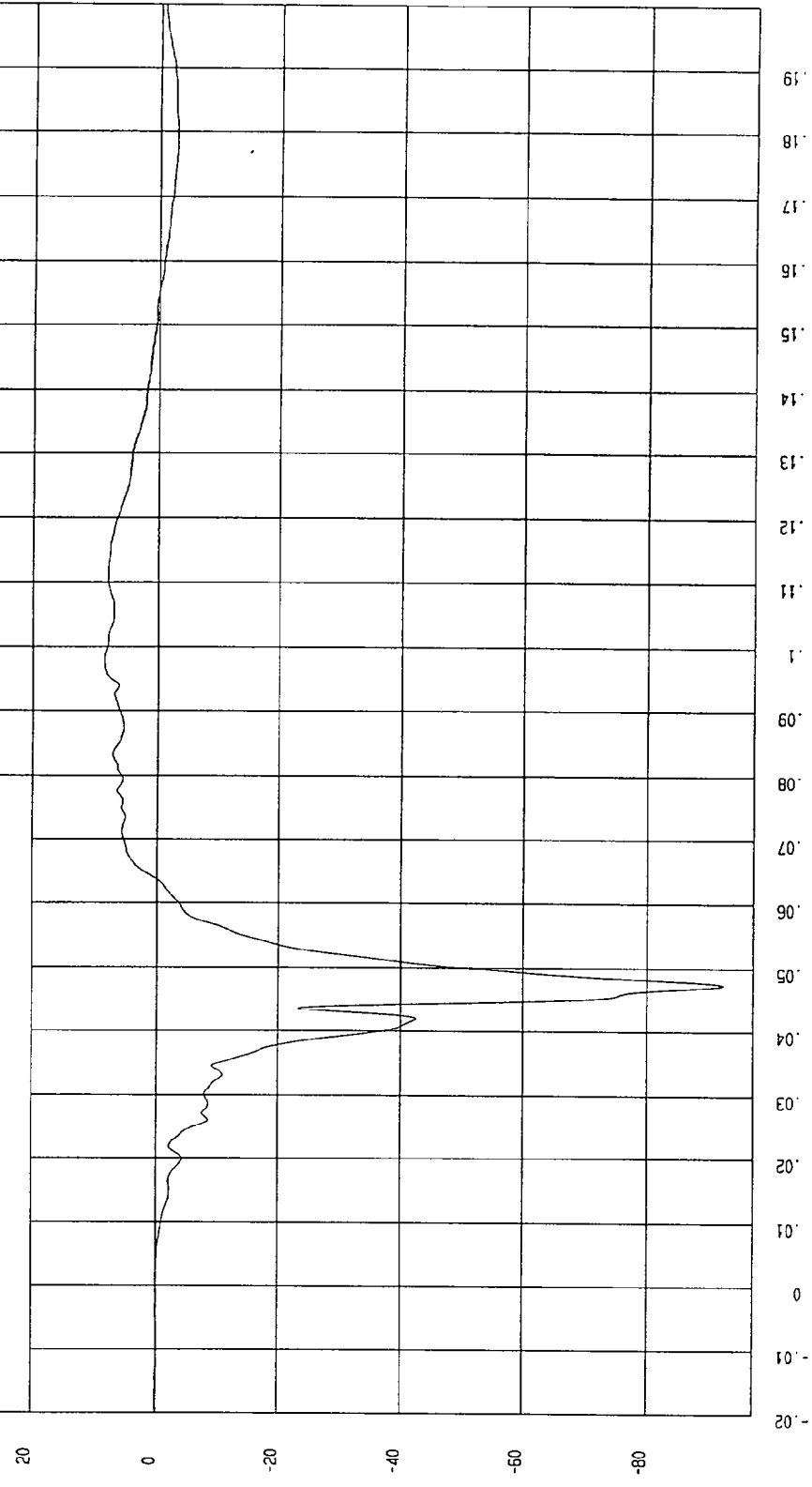
MCA Research  
12-15-1996 1A: 01

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-92.13136 G'S at 47. msec YMAX= 8.604396 G'S at 98. msec

REAR PASSENGER PELVIS Y ACCELERATION

1 896127AF.A28 Filterclass (180)



WGA Research  
12-15-1996 13:59

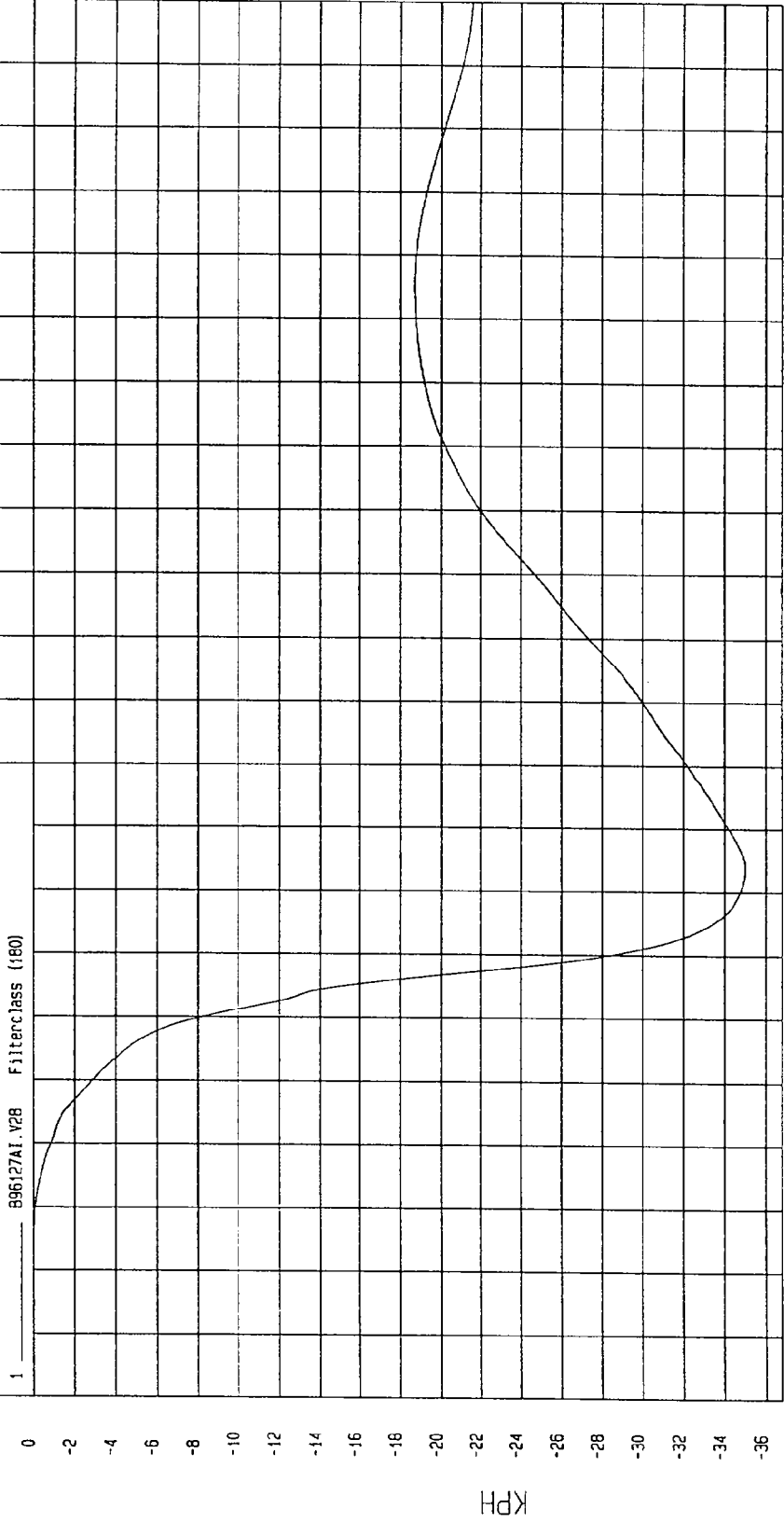
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-34.9956 KPH at 63. msec YMAX= 1.616662E-02 KPH at 2.9 msec

REAR PASSENGER PELVIS Y VELOCITY

1 896127AI.V28 Filterclass (180)



TIME Seconds

MCA Research  
12-15-1996 14: 01

TEST DATE: 11-25-1996

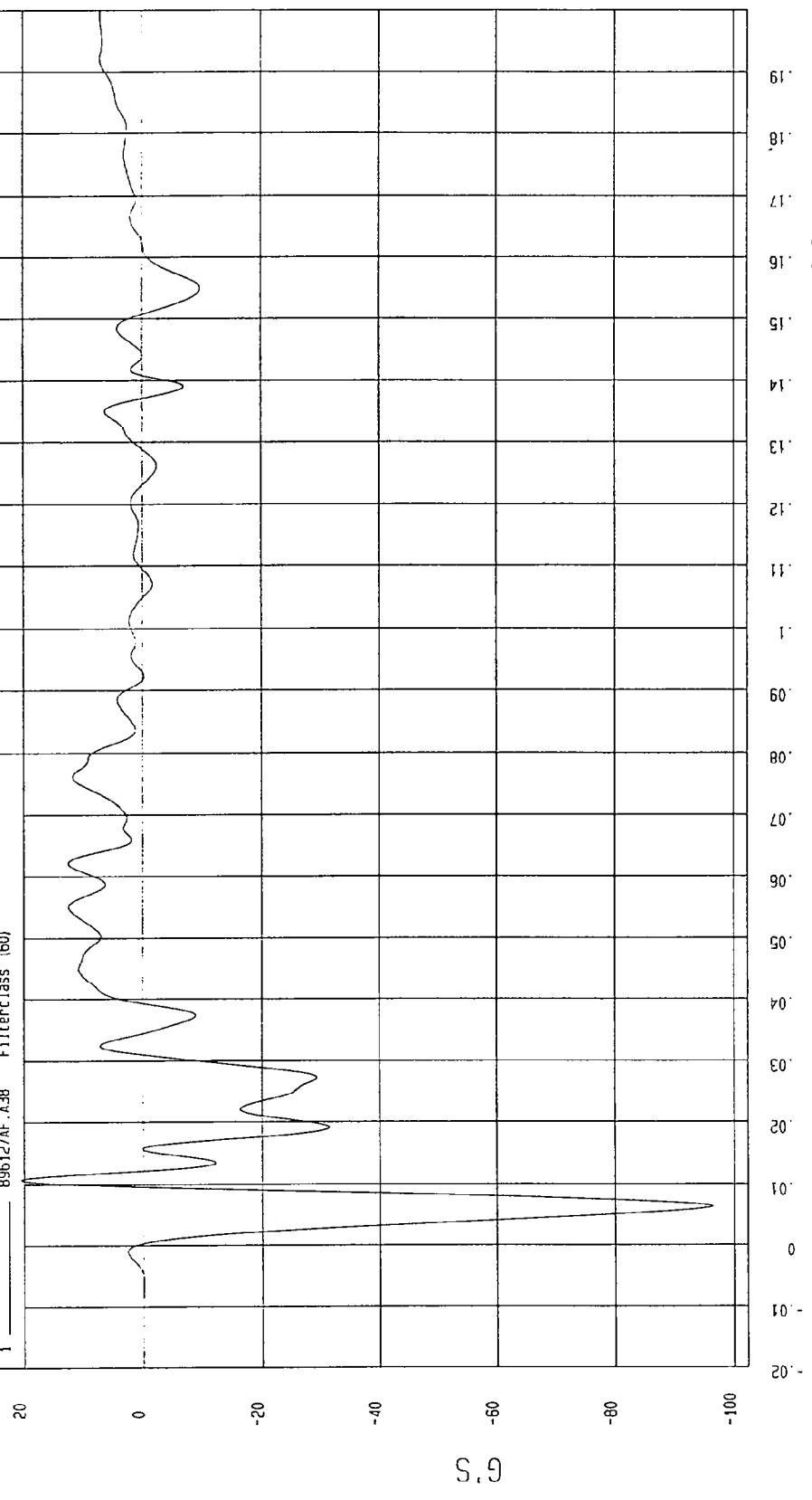
TEST: FMVSS 214 DYNAMIC SIDE IMPACT

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-96.41826 G'S at 6.2 msec YMAX= 20.54932 G'S at 10. msec

RIGHT SIDE SILL AT FRONT SEAT Y ACCELERATION

1 896127AF.A38 Filterclass (60)



MGA Research  
12-19-1996 12:05

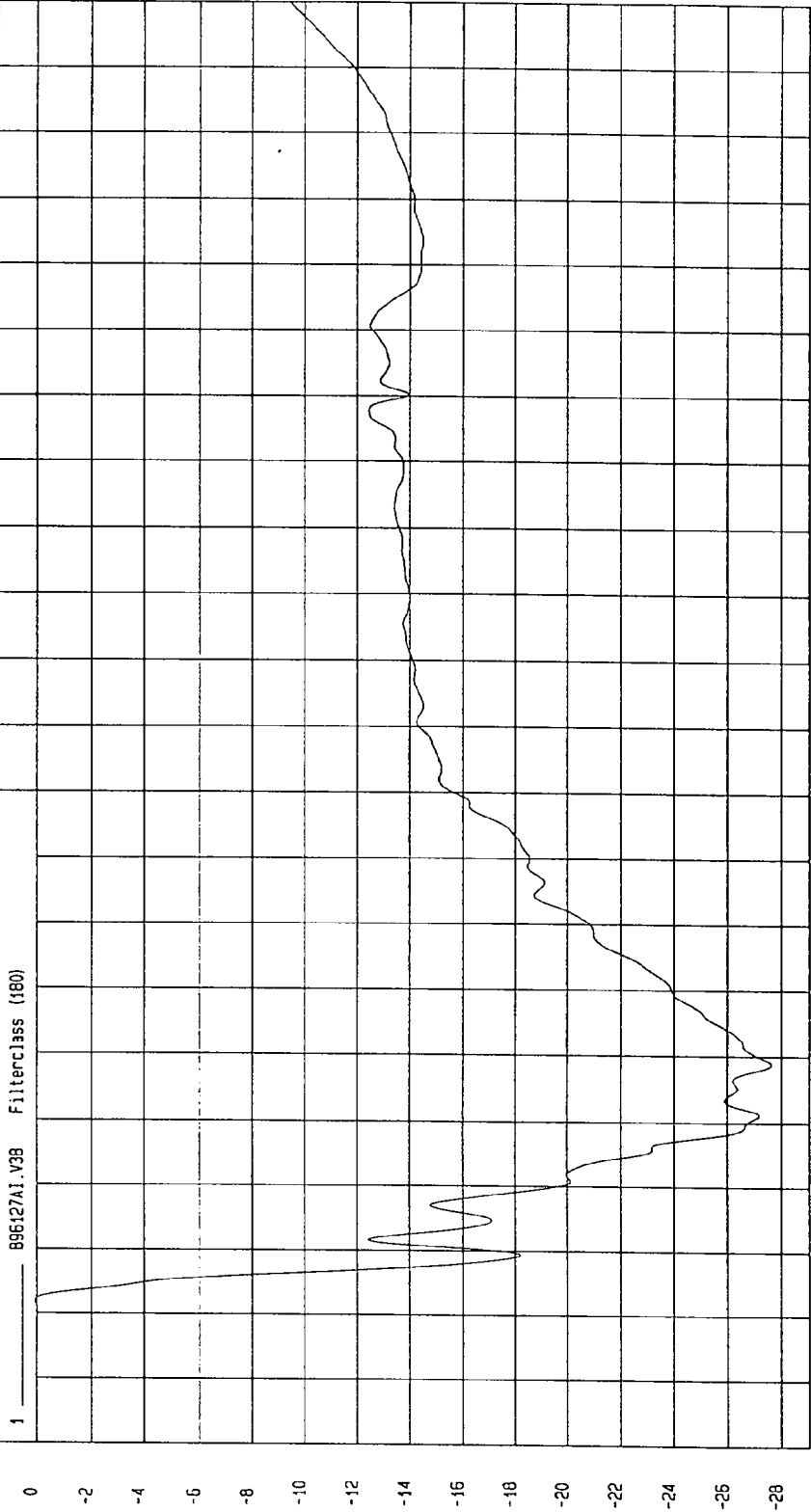
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-27.63177 KPH at 38. msec YMAX= 4.773656E-02 KPH at 1.9 msec

RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY

1 896127A1.V38 Filterclass (180)



MGA Research  
12-19-1996 12:05

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

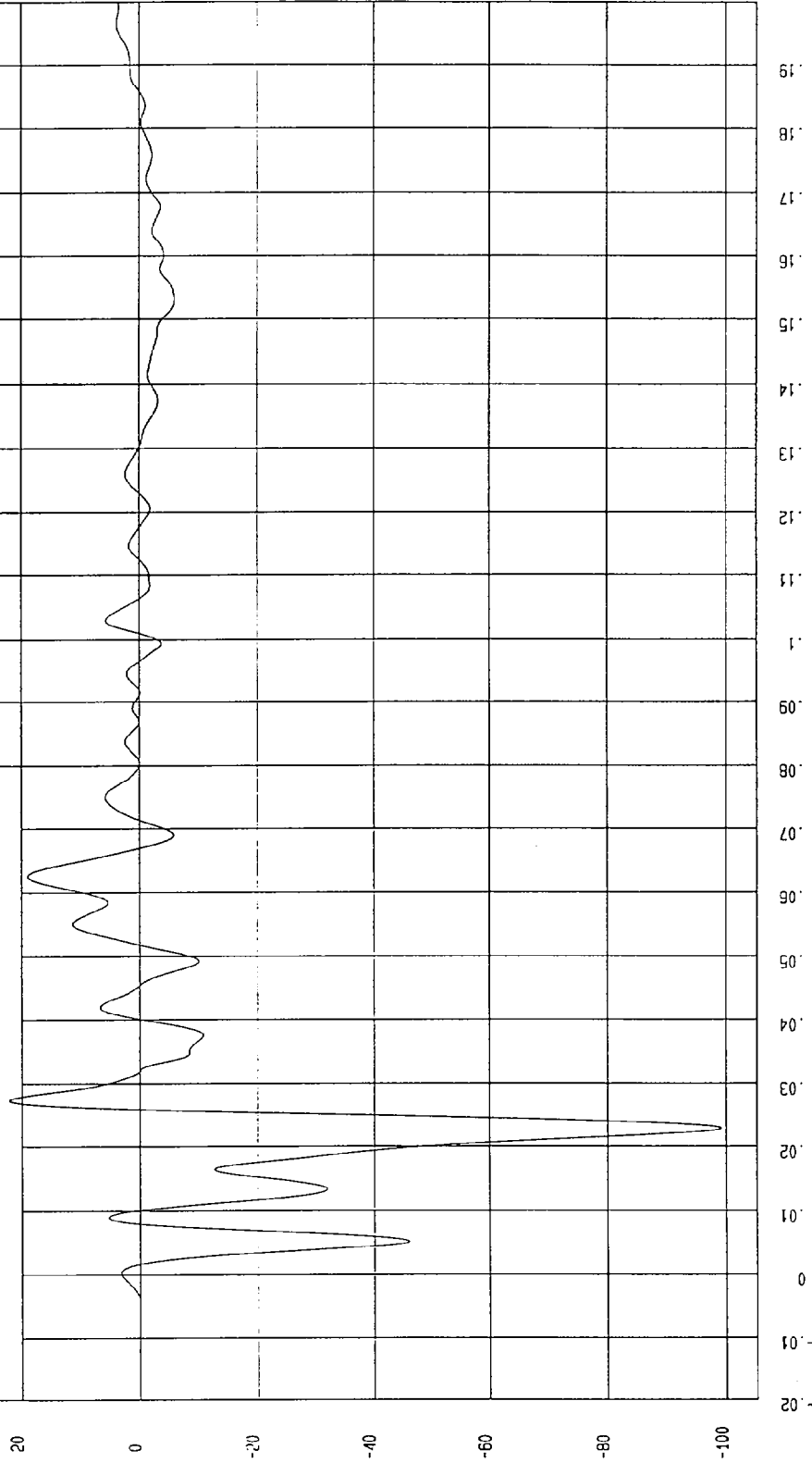
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-99.10161 G'S at 23 msec

YMAX= 22.1136 G'S at 27. msec

RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION

1 896127AF.A39 Filterclass (60)



MGA Research  
12-19-1996 14:19

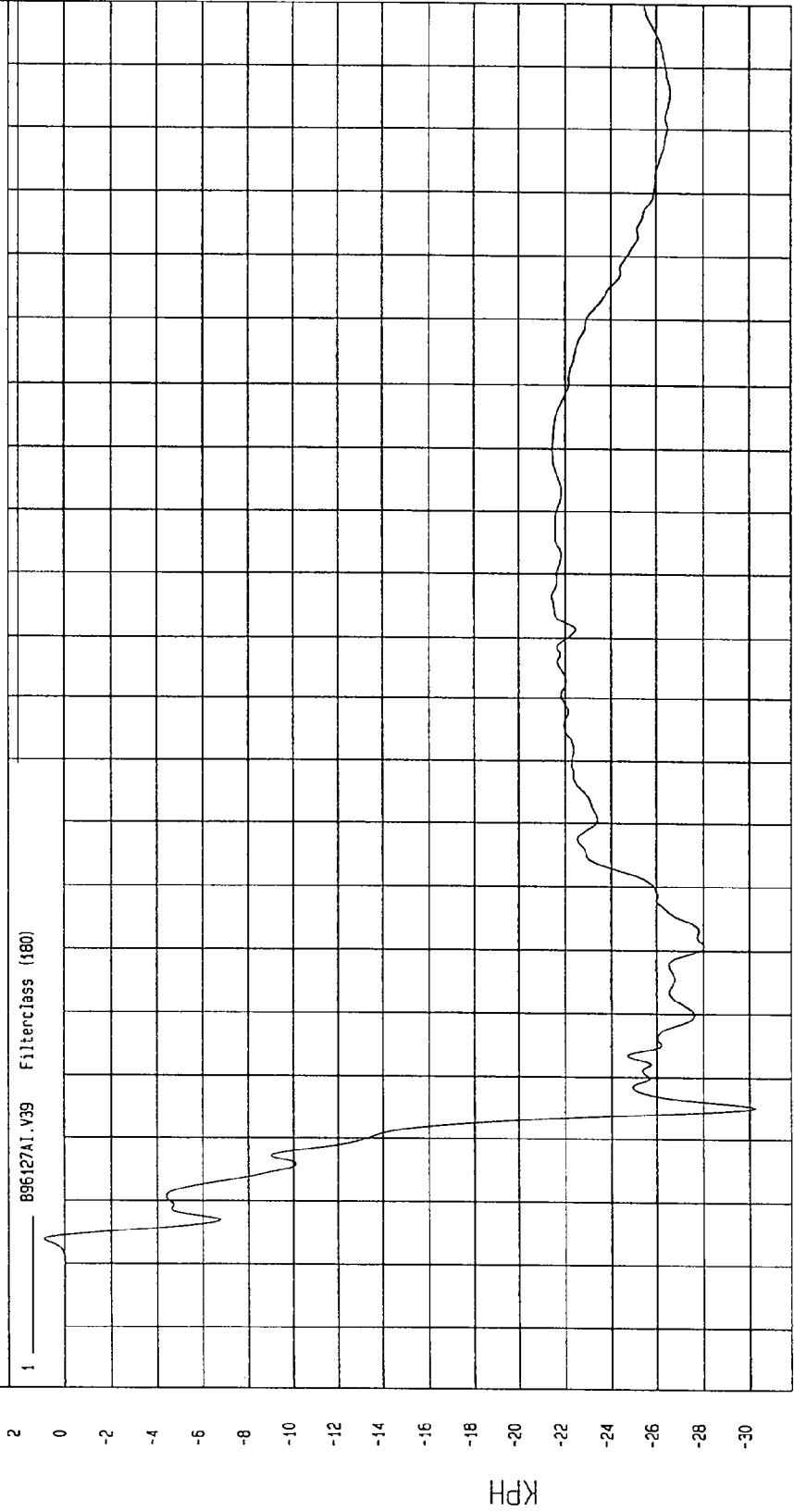
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-30.2519 KPH at 25. msec YMAX= .8722488 KPH at 3.7 msec

RIGHT SIDE SILL AT REAR SEAT Y VELOCITY

1 896127A1.V39 Filterclass (180)



MOA Research  
12-15-1996 13:56

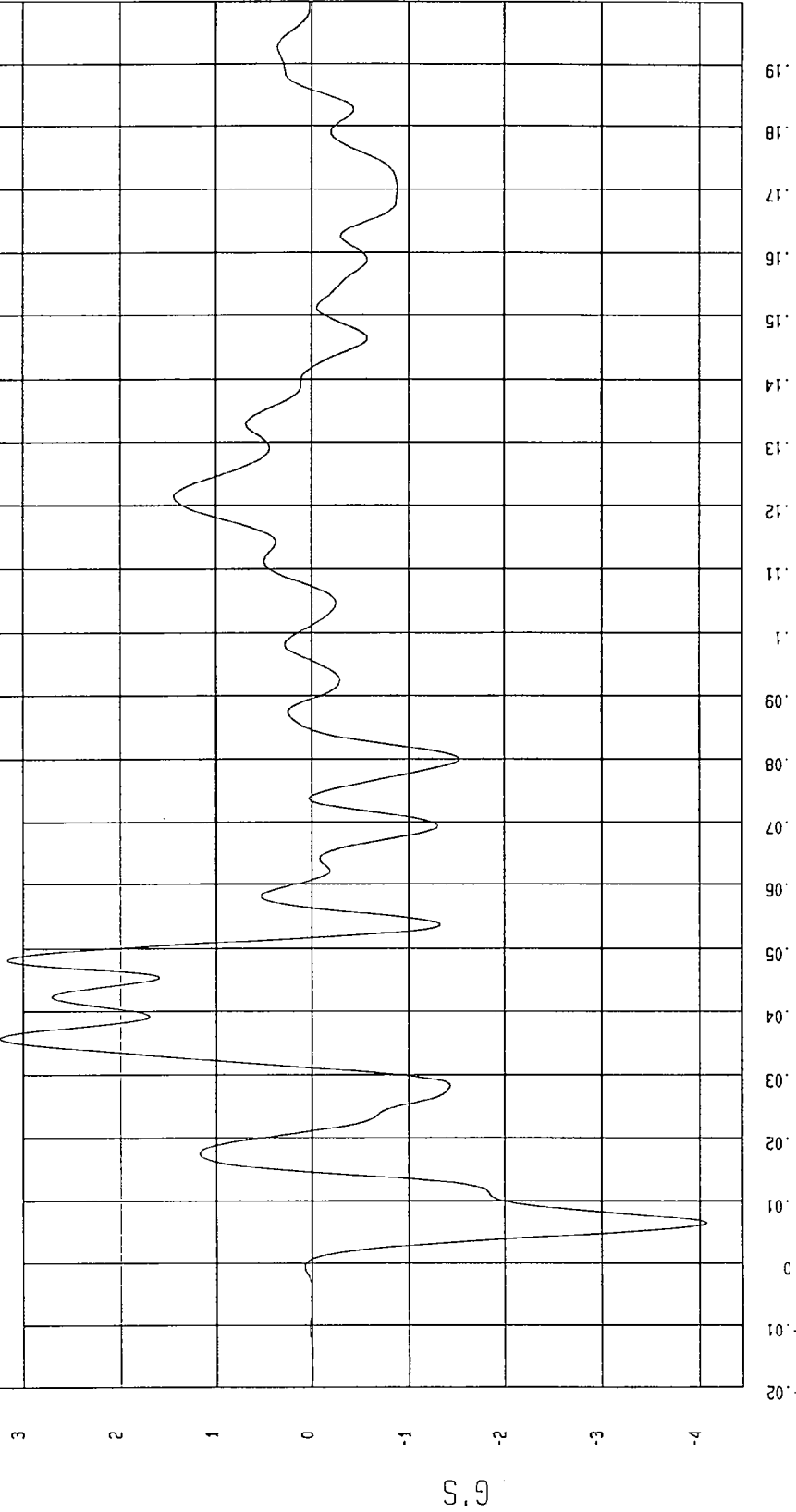
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-4.069552 G'S at 6.4 msec YMAX= 3.232273 G'S at 35. msec

LEFT SIDE SILL AT FRONT SEAT X ACCELERATION

1 896127AF A32 FilterClass (50)



HGA Research  
12-19-1995 14:19

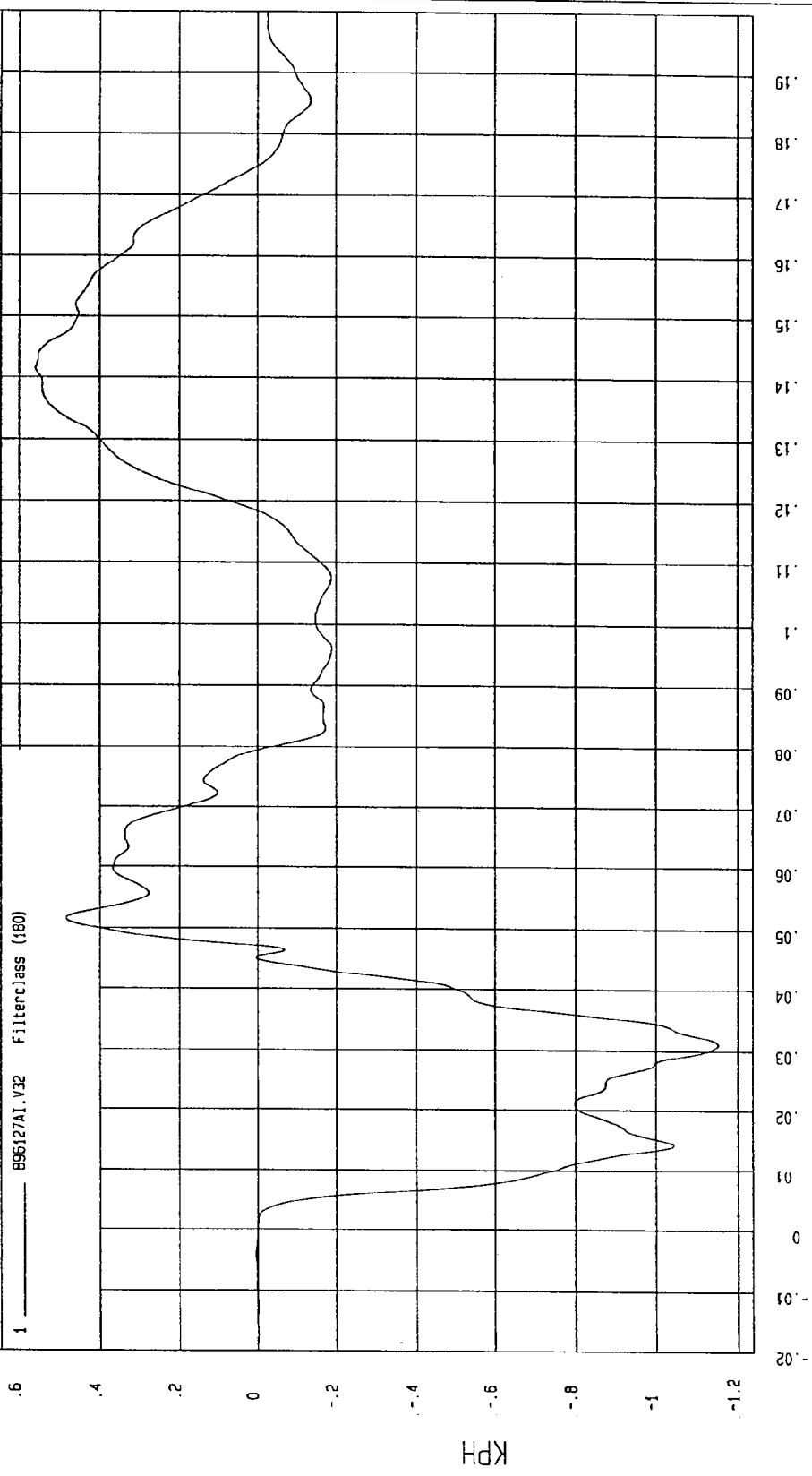
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-1.150946 KPH at 31. msec YMAX=.5601624 KPH at 141 msec

LEFT SIDE SILL AT FRONT SEAT X VELOCITY

1 896127A1.V32 Filterclass (180)

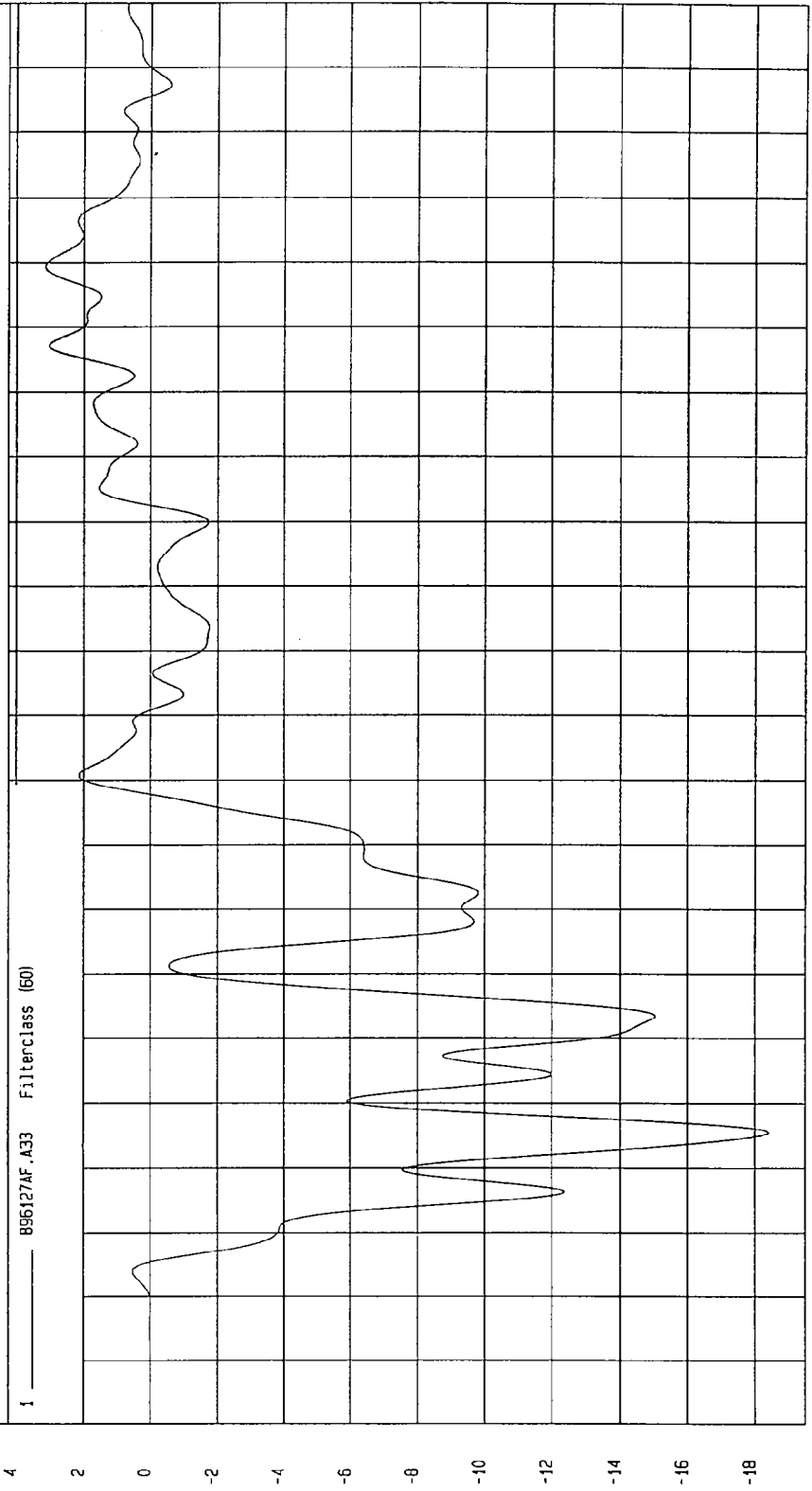


MCA Research  
12-15-1996 13:57

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
 COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH  
 YMIN=-18.39561 G'S at 25. msec YMAX= 3.160788 G'S at 159 msec

LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION

1 ——— B96127AF.A33 Filterclass (60)



TIME (SECONDS) 0.19 0.18 0.17 0.16 0.15 0.14 0.13 0.12 0.11 0.10 0.09 0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0 -0.01 -0.02

MGA Research  
12-19-1996 14:20

S.G

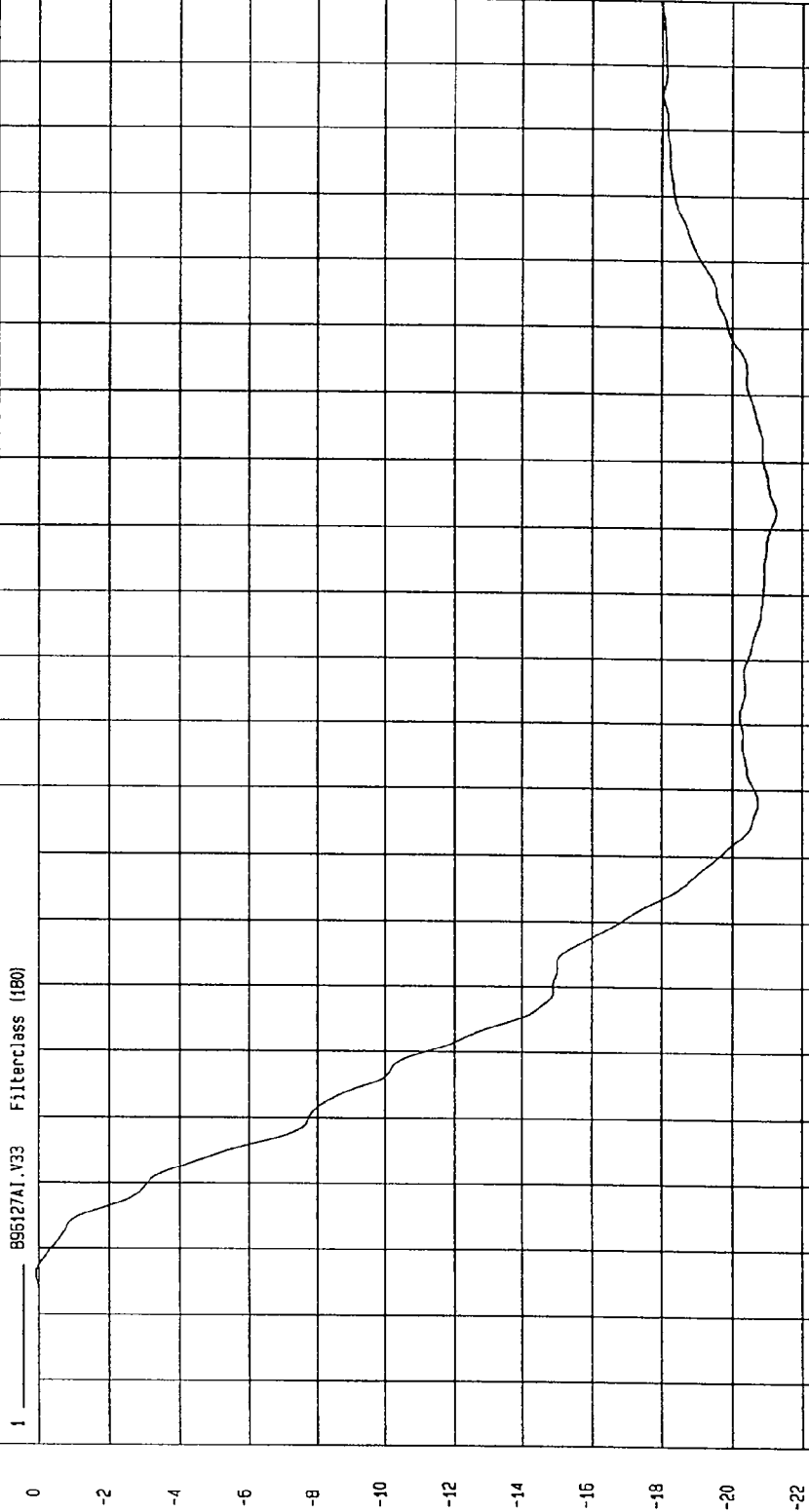
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-21.26389 KPH at 122 msec YMAX= 8.94744E-02 KPH at 6.0 msec

LEFT SIDE SILL AT FRONT SEAT Y VELOCITY

1 895127A1.V33 FilterClass (180)



MCA Research  
12-15-1996 13:57

TIME Seconds

KPH

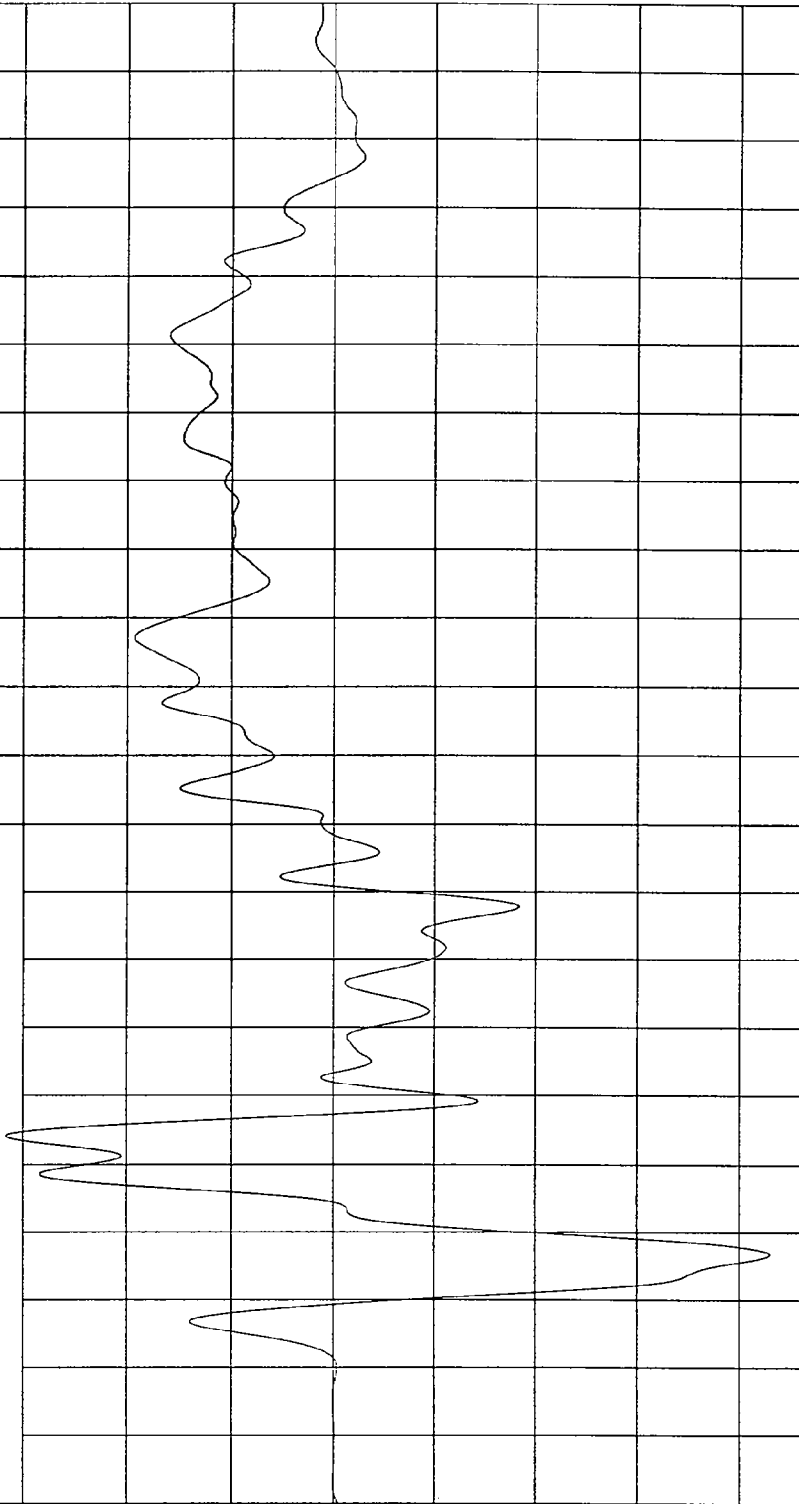
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-4.288603 G'S at 16. msec YMAX= 3.164988 G'S at 34. msec

LEFT SIDE SILL AT FRONT SEAT Z ACCELERATION

1 096127AF.A34 Filterclass (60)



TIME (SECONDS)

MGA Research  
12-19-1996 14:20

G.S

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

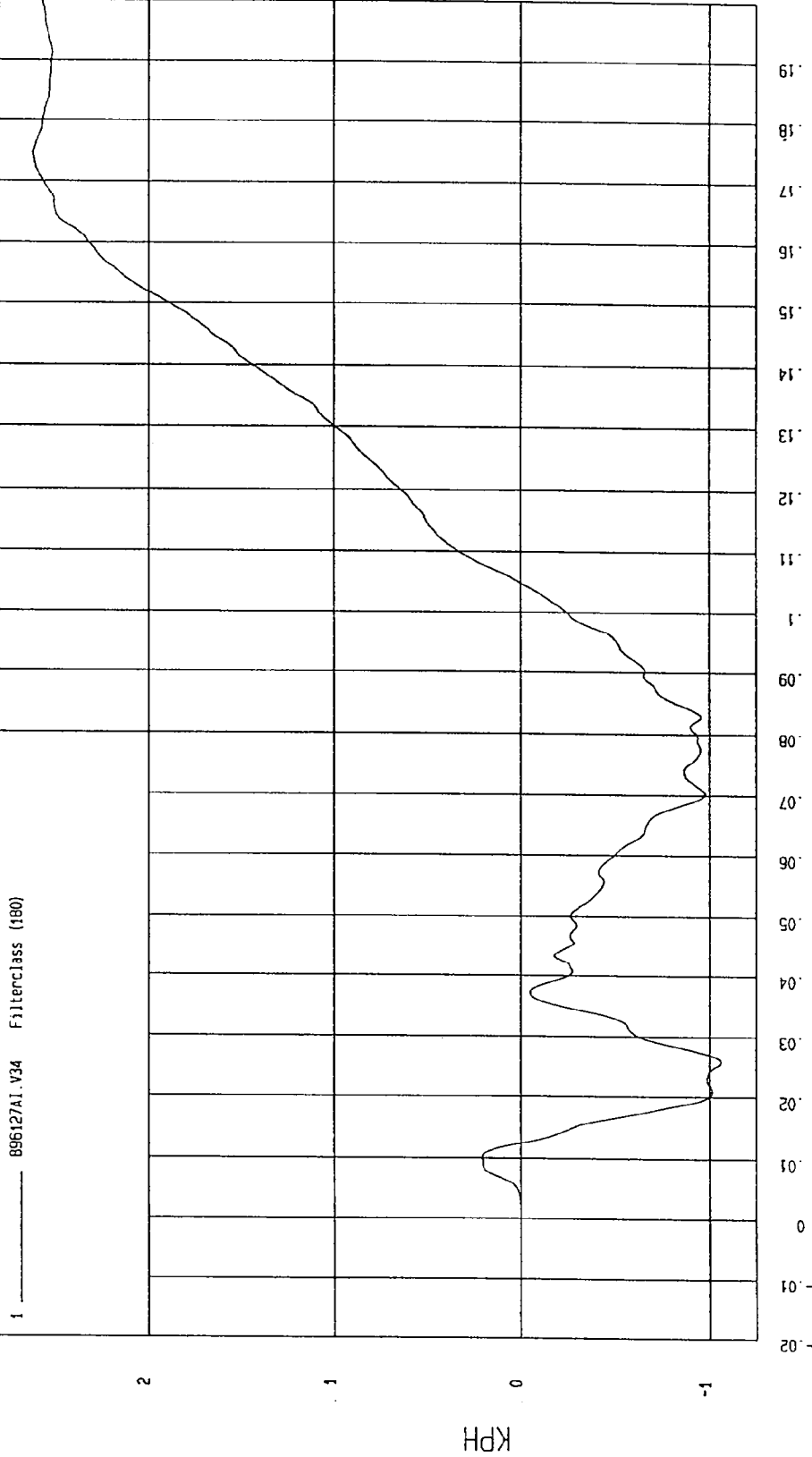
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-1.061796 KPH at 25. msec

YMAX= 2.608444 KPH at 174 msec

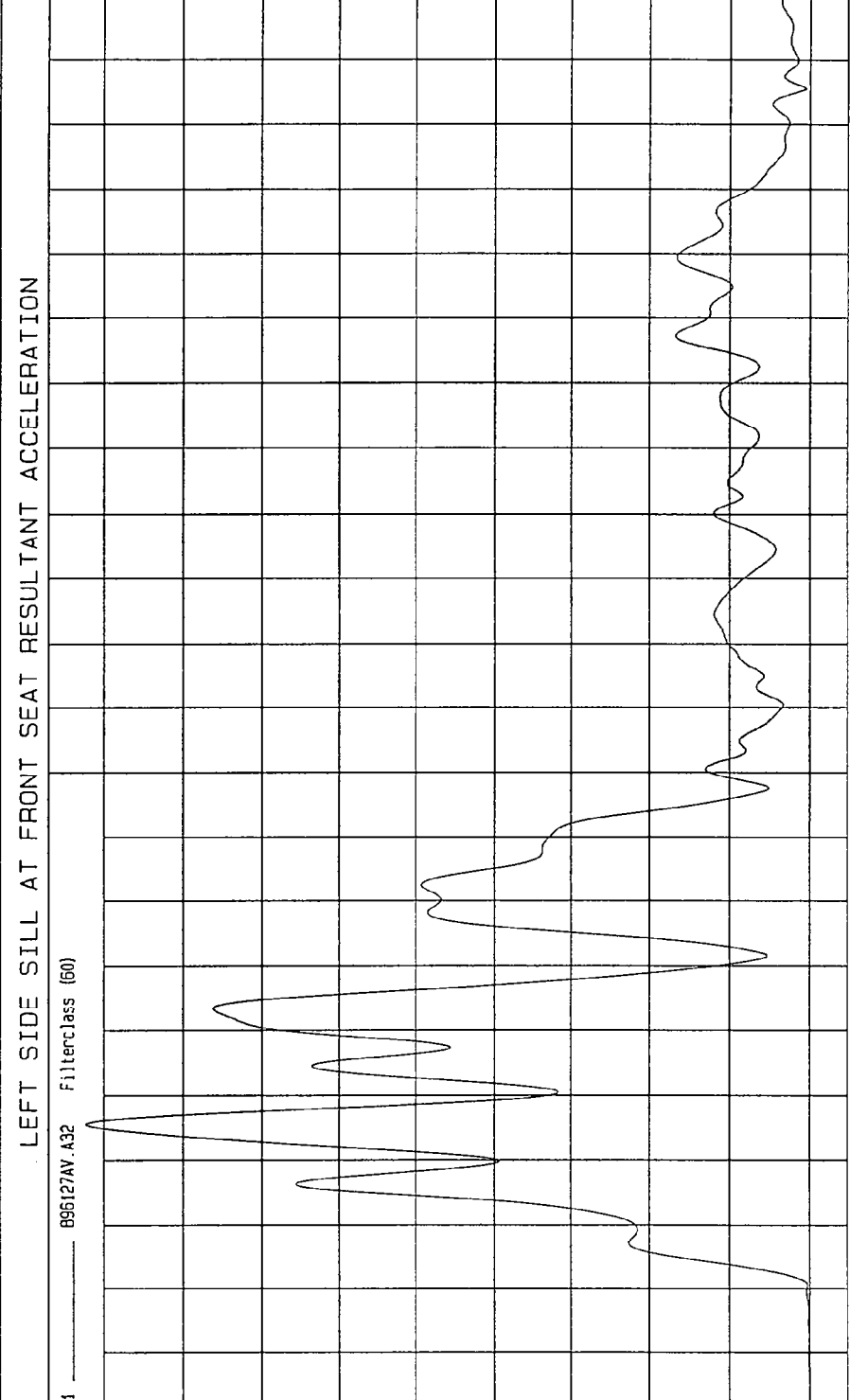
LEFT SIDE SILL AT FRONT SEAT Z VELOCITY

1 896127A1.V34 FilterClass (180)



MGA Research  
12-15-1996 13:57

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
 COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH  
 YMIN= 3.278359E-03 G'S at -18. msec YMAX= 18.43406 G'S at 25. msec



TIME (SECONDS)

MGA Research  
12-14-1996 11:04

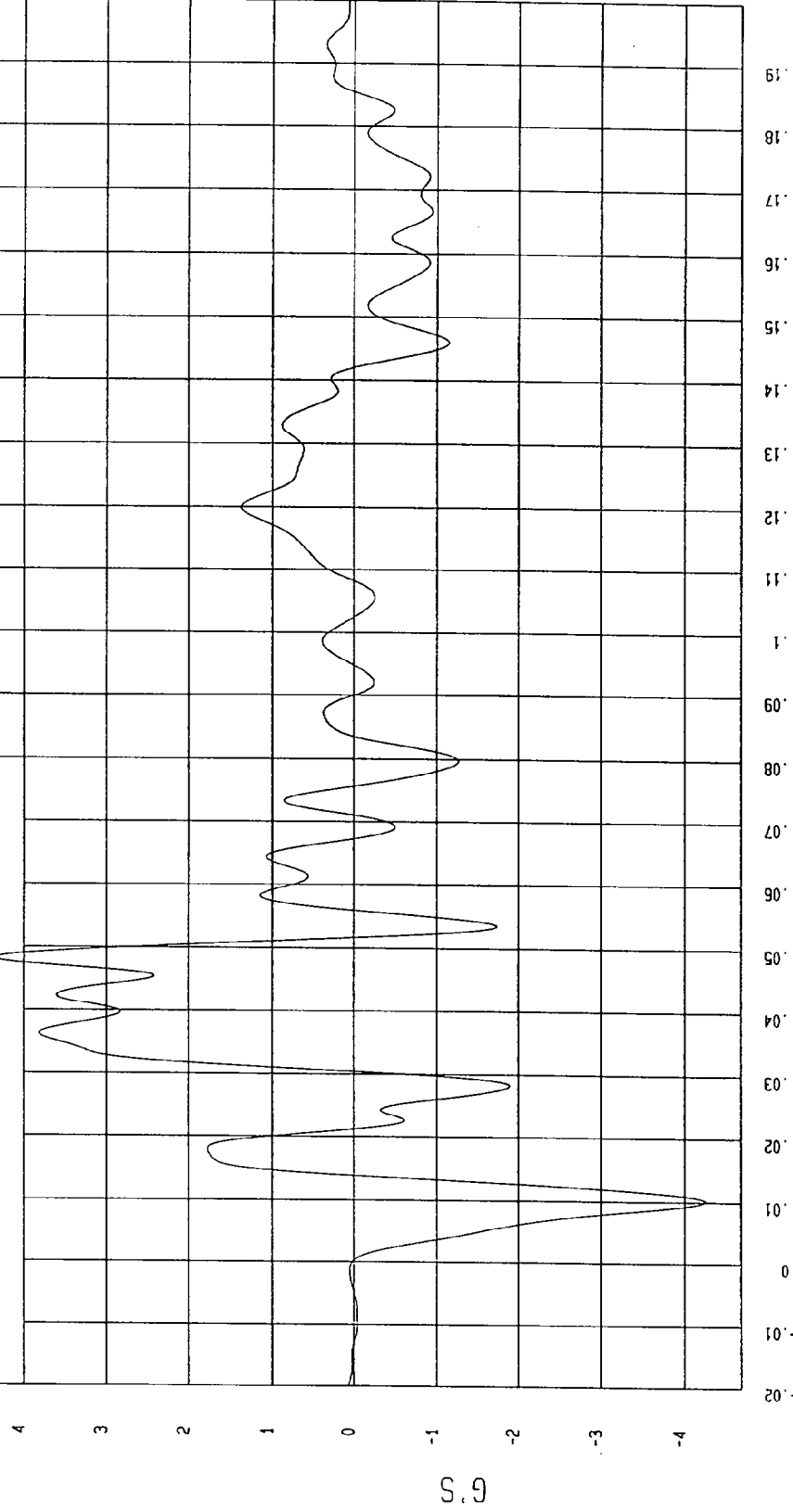
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-4.254256 G'S at 10. msec YMAX= 4.359343 G'S at 48. msec

LEFT SIDE SILL AT REAR SEAT X ACCELERATION

1 ——— 8961274F.A35 Filterclass (60)



MGA Research  
12-19-1996 14:20

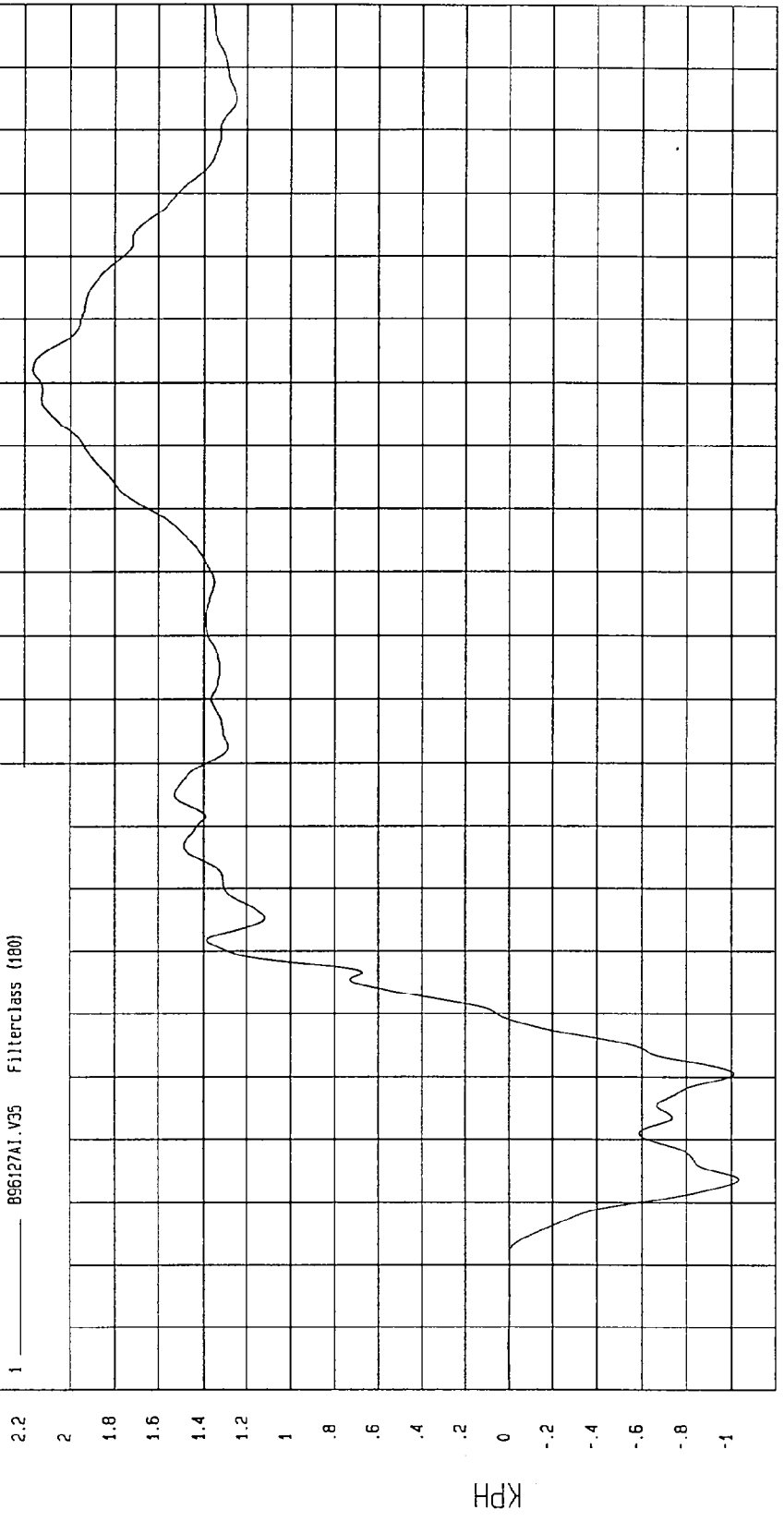
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-1.035174 KPH at 13. msec YMAX= 2.163845 KPH at 142 msec

LEFT SIDE SILL AT REAR SEAT X VELOCITY

1 ——— 896127A1.V35 Filterclass (180)



MGA Research  
12-15-1996 13:57

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

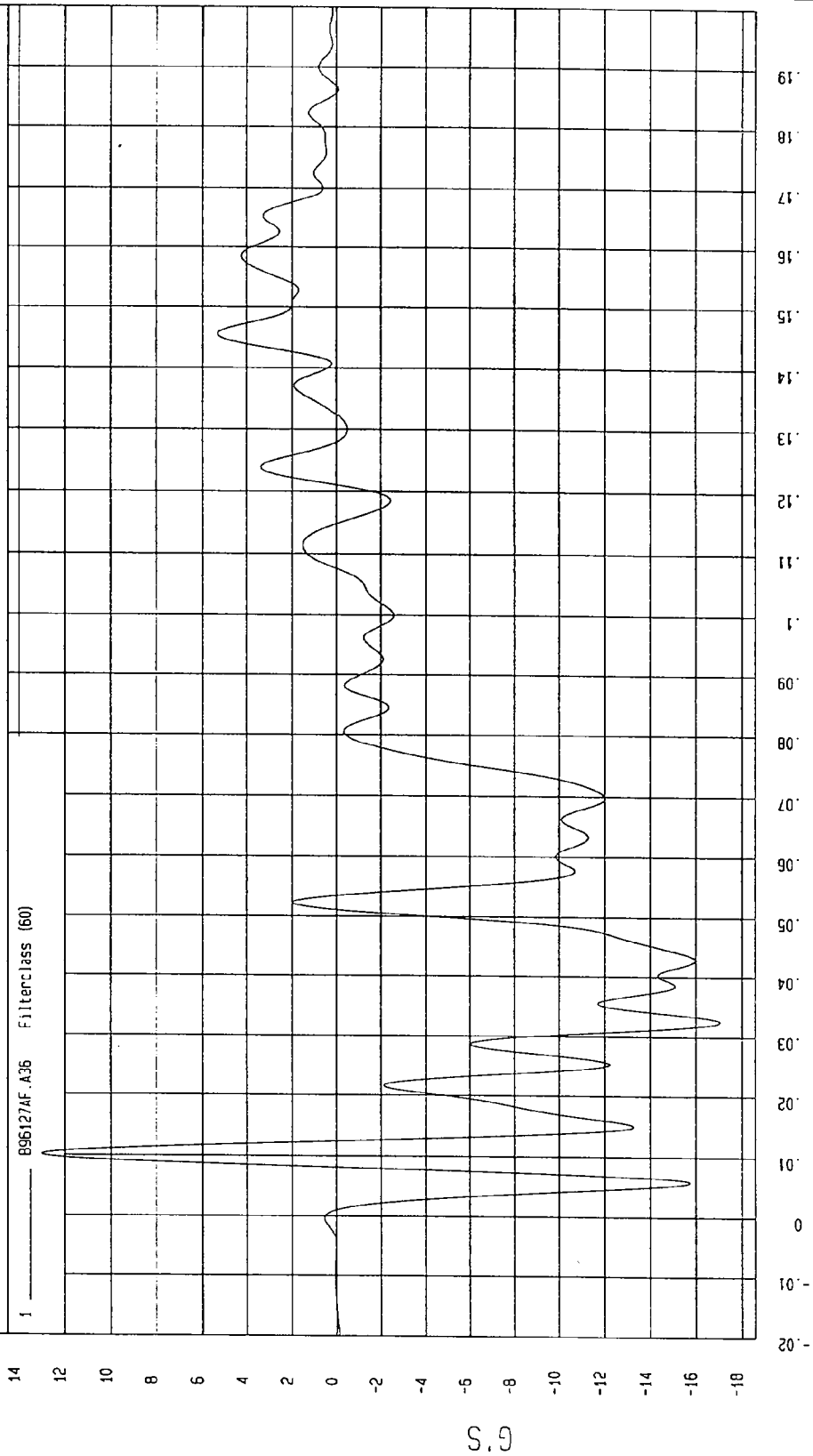
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-17.07377 G'S at 32. msec

YMAX= 12.99629 G'S at 10. msec

LEFT SIDE SILL AT REAR SEAT Y ACCELERATION

1 896127AF.A36 Filter: 1/30 (60)



MGA Research  
12-19-1996 14:20

TEST: FMVSS 214 DYNAMIC SIDE IMPACT  
TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206)  
Speed: 33.25 MPH 53.5 KPH  
YMIN=-24.71827 KPH at 121 msec  
YMAX= 7.583248E-03 KPH at -4.8 msec

LEFT SIDE SILL AT REAR SEAT Y VELOCITY



TIME Seconds  
MGA Research  
12-15-1996 13:57

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

TEST DATE: 11-25-1996

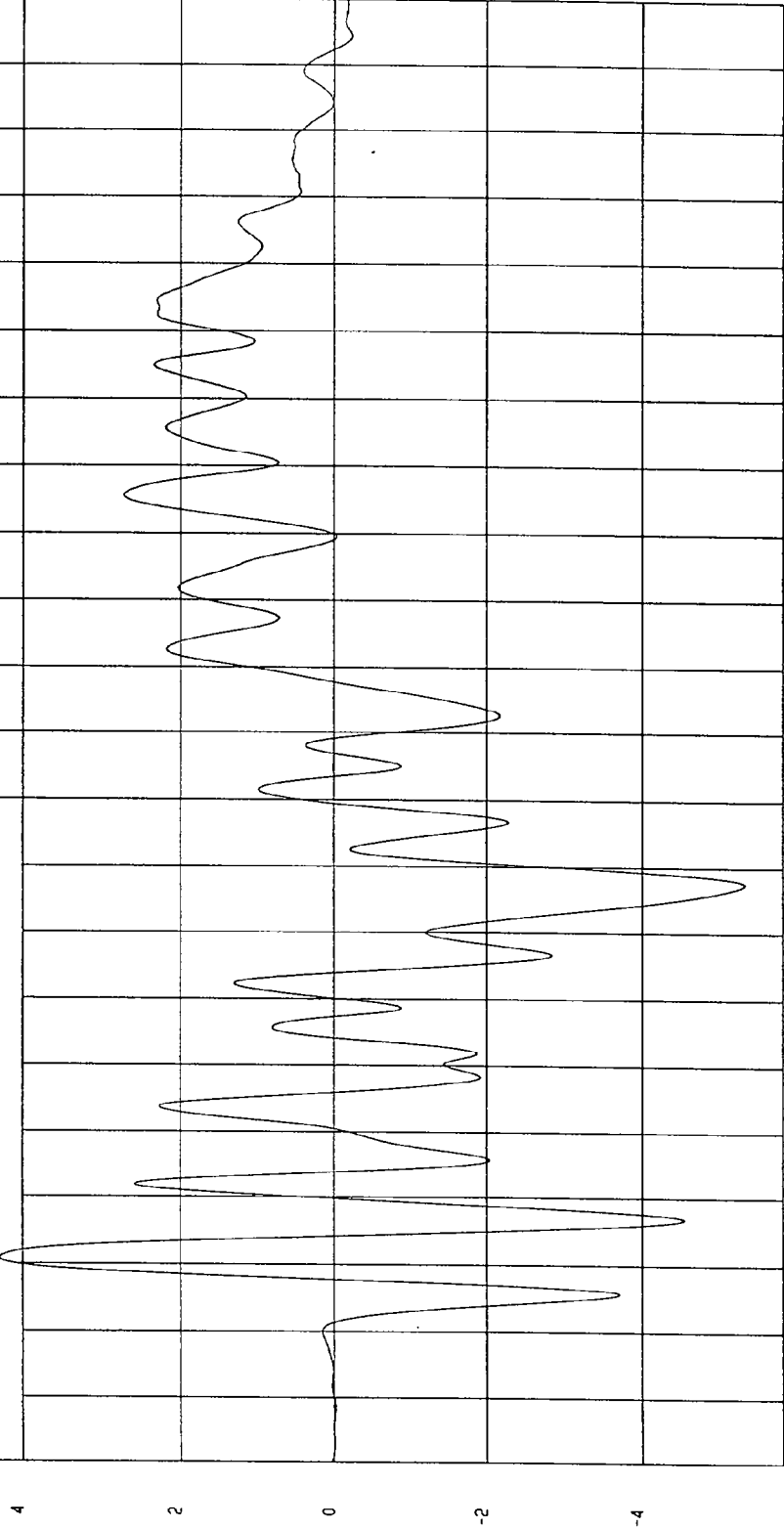
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-5.33004 G'S at 67. msec

YMAX= 4.295079 G'S at 10. msec

LEFT SIDE SILL AT REAR SEAT Z ACCELERATION

1 ——— B96127AF.A37 FilterClass (60)

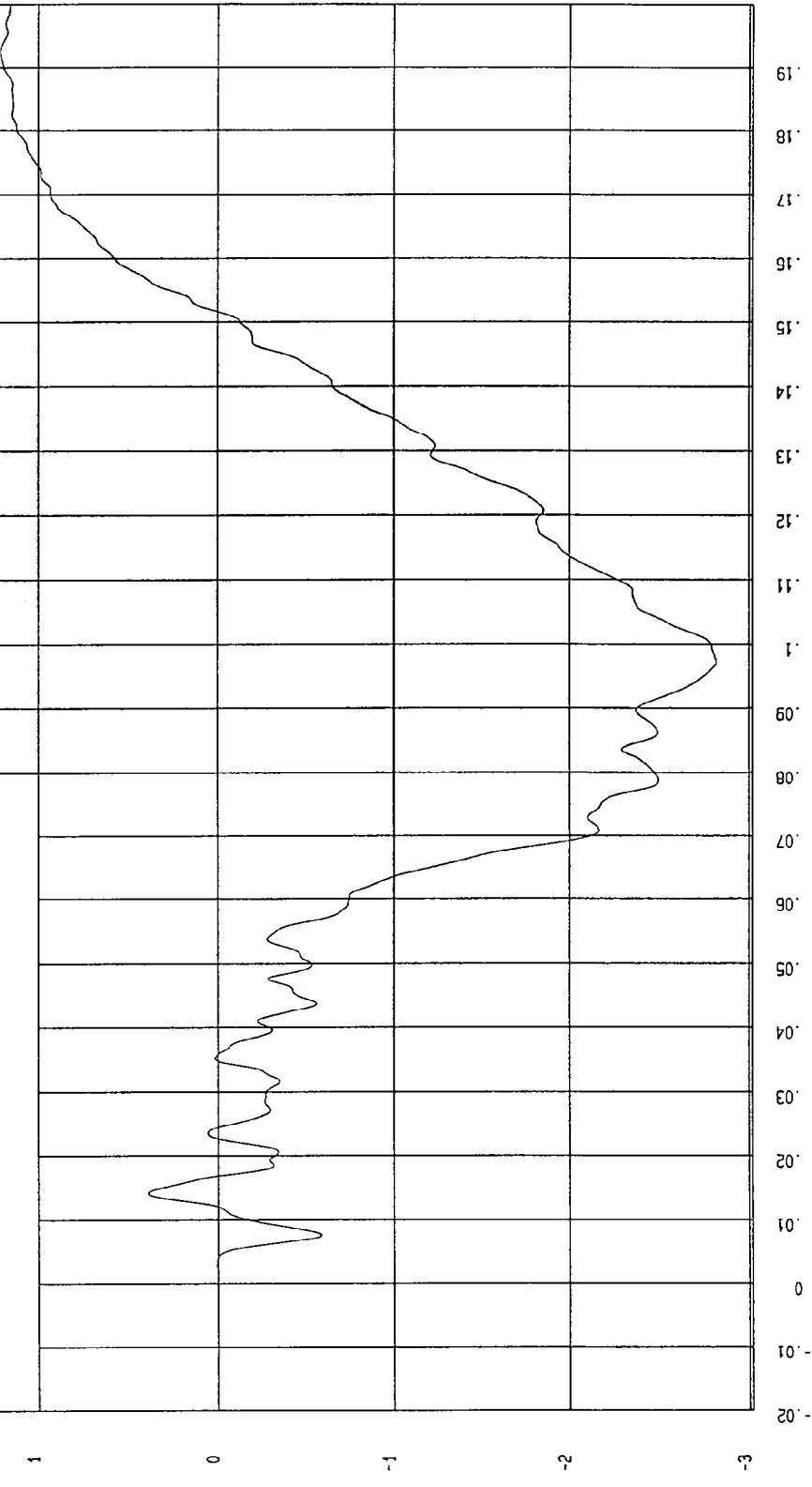


MGA Research  
12-19-1996 1A:20

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
 COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH  
 YMIN=-2.815323 KPH at 97. msec YMAX= 1.206745 KPH at 192 msec

LEFT SIDE SILL AT REAR SEAT Z VELOCITY

1 ——— 896127AI.V37 Filterclass (180)



MCA Research  
 12-15-1996 13:58

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

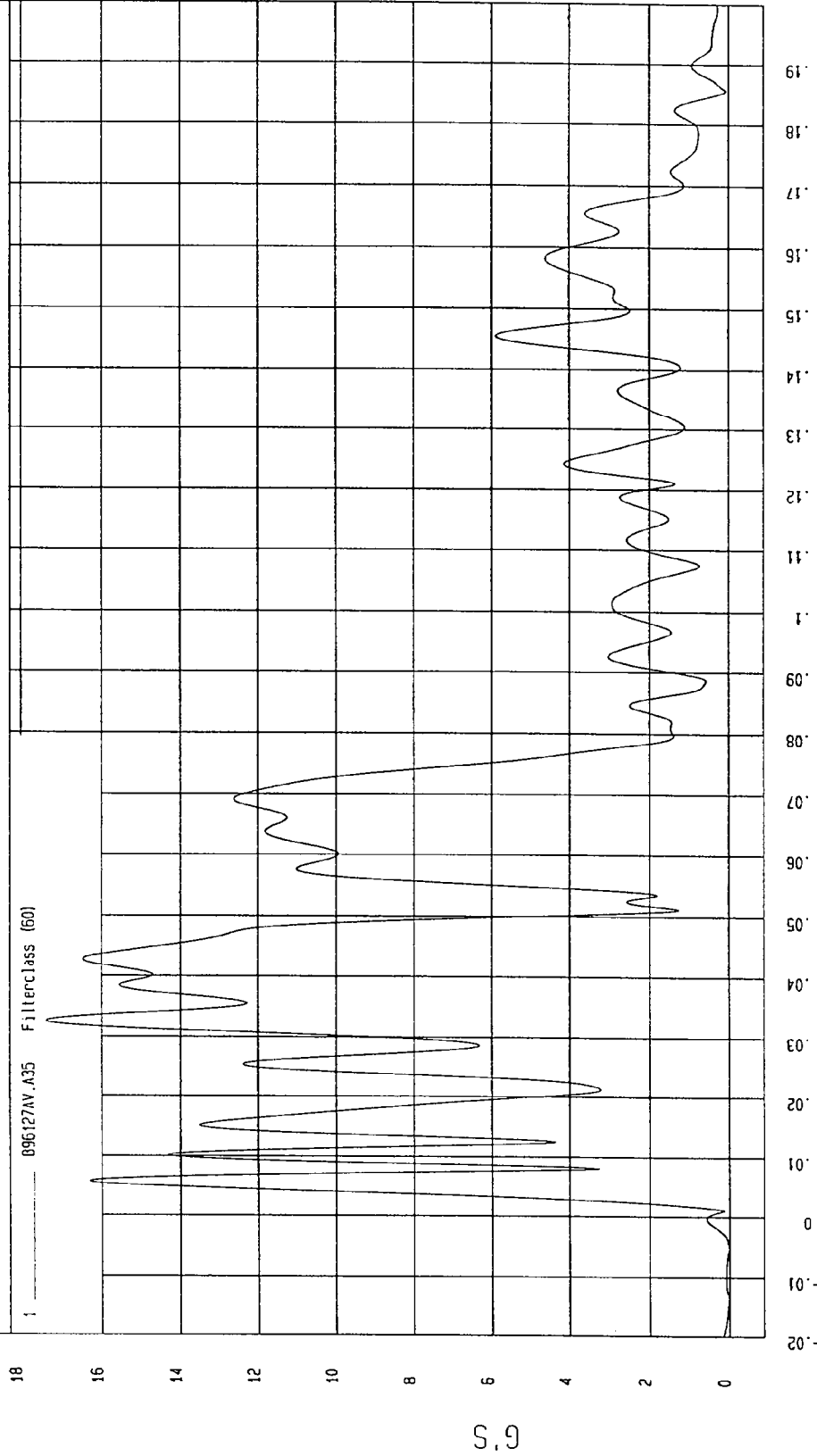
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN= 1.445580E-02 G'S at -5.2 msec

YMAX= 17.39895 G'S at 32. msec

LEFT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

096127AV.A35 Filterclass (60)



HGA Research  
12-14-1996 11:05

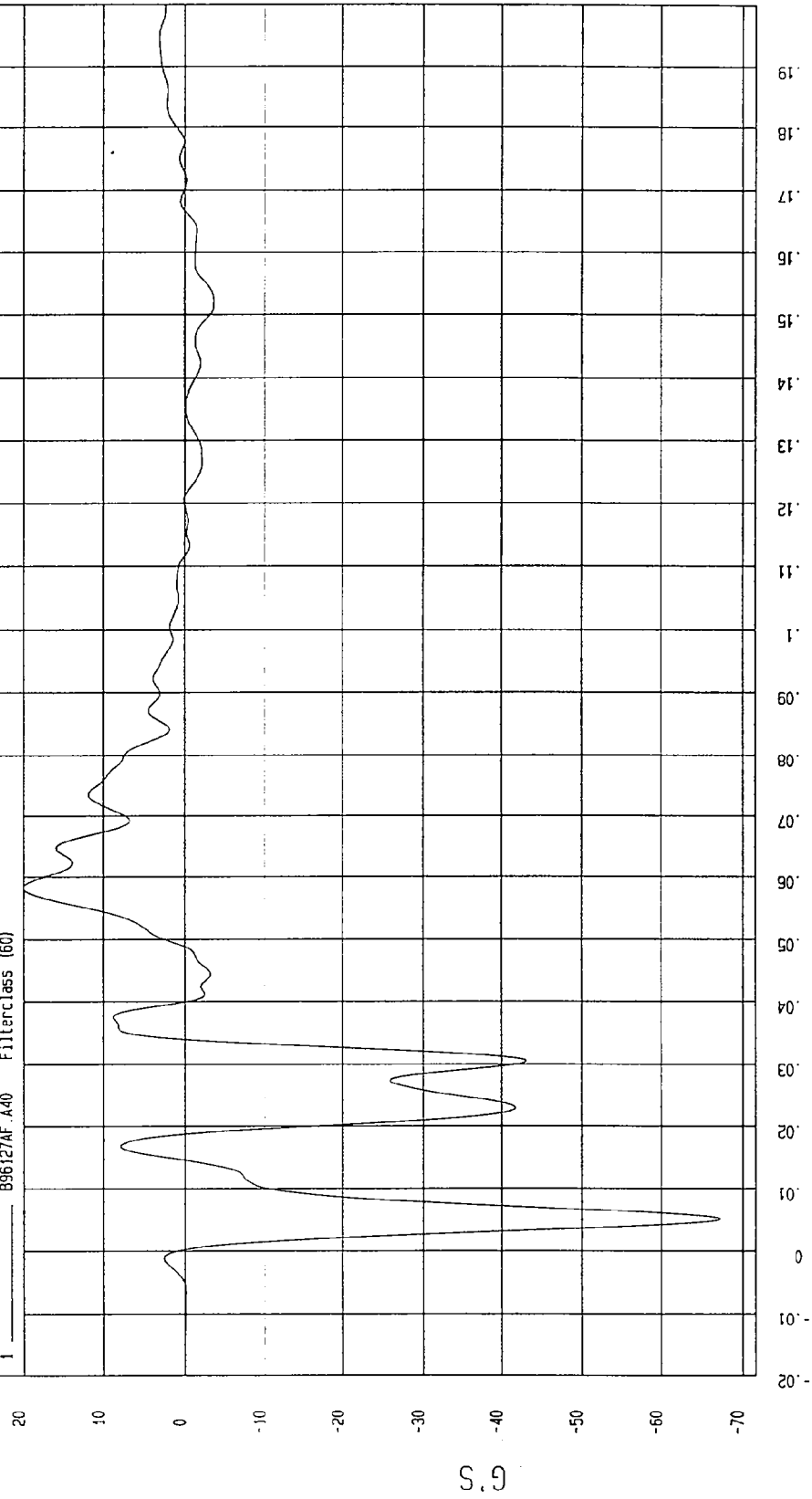
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-67.21449 G'S at 5 msec YMAX= 20.08884 G'S at 58. msec

RIGHT FRONT PASSENGER SEAT TRACK Y ACCELERATION

1 896127AF.A40 Filterclass (60)



MGA Research  
12-19-1996 14:20

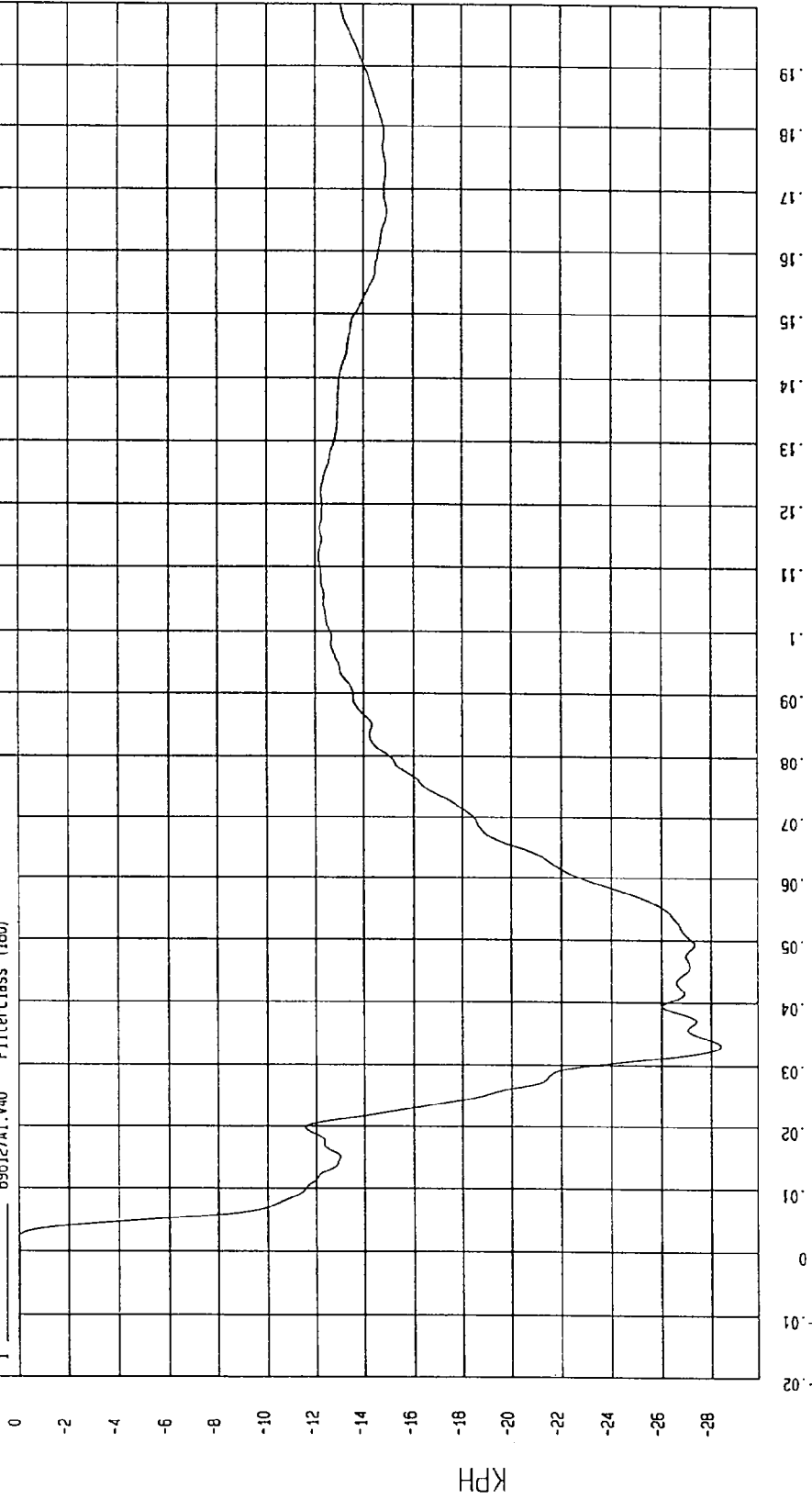
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-28.39588 KPH at 33. msec YMAX= 2.39409E-02 KPH at 2.1 msec

RIGHT FRONT PASSENGER SEAT TRACK Y VELOCITY

1 896127A1.V40 FilterClass (180)



MOA Present Co.  
12-15-1996 13:58

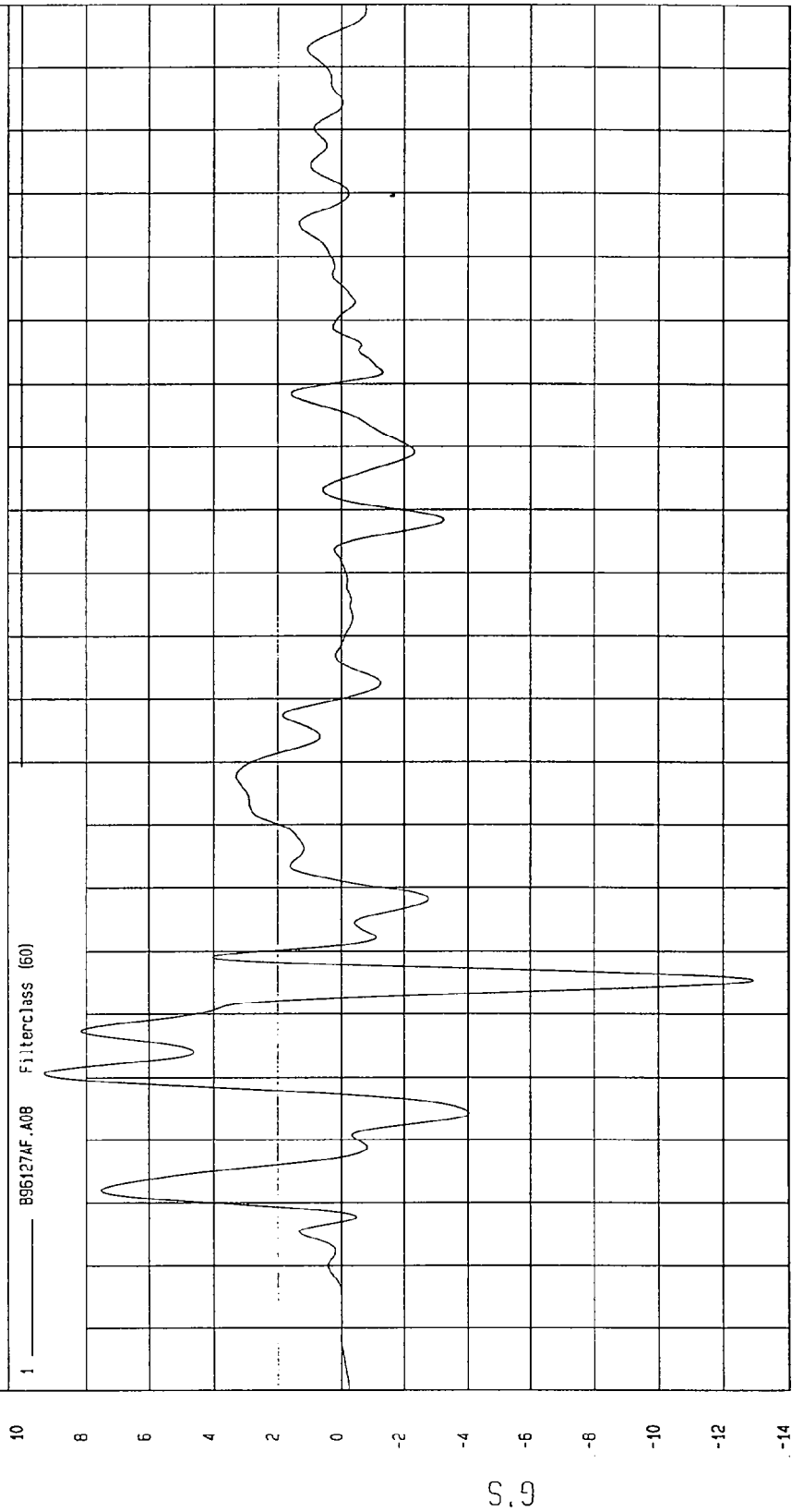
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-12.93575 G'S at 45. msec YMAX= 9.312763 G'S at 30. msec

REAR FLOORPAN ABOVE AXLE X ACCELERATION

1 896127AF.A08 Filterclass (60)



MCA Research  
12-19-1996 14:20

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

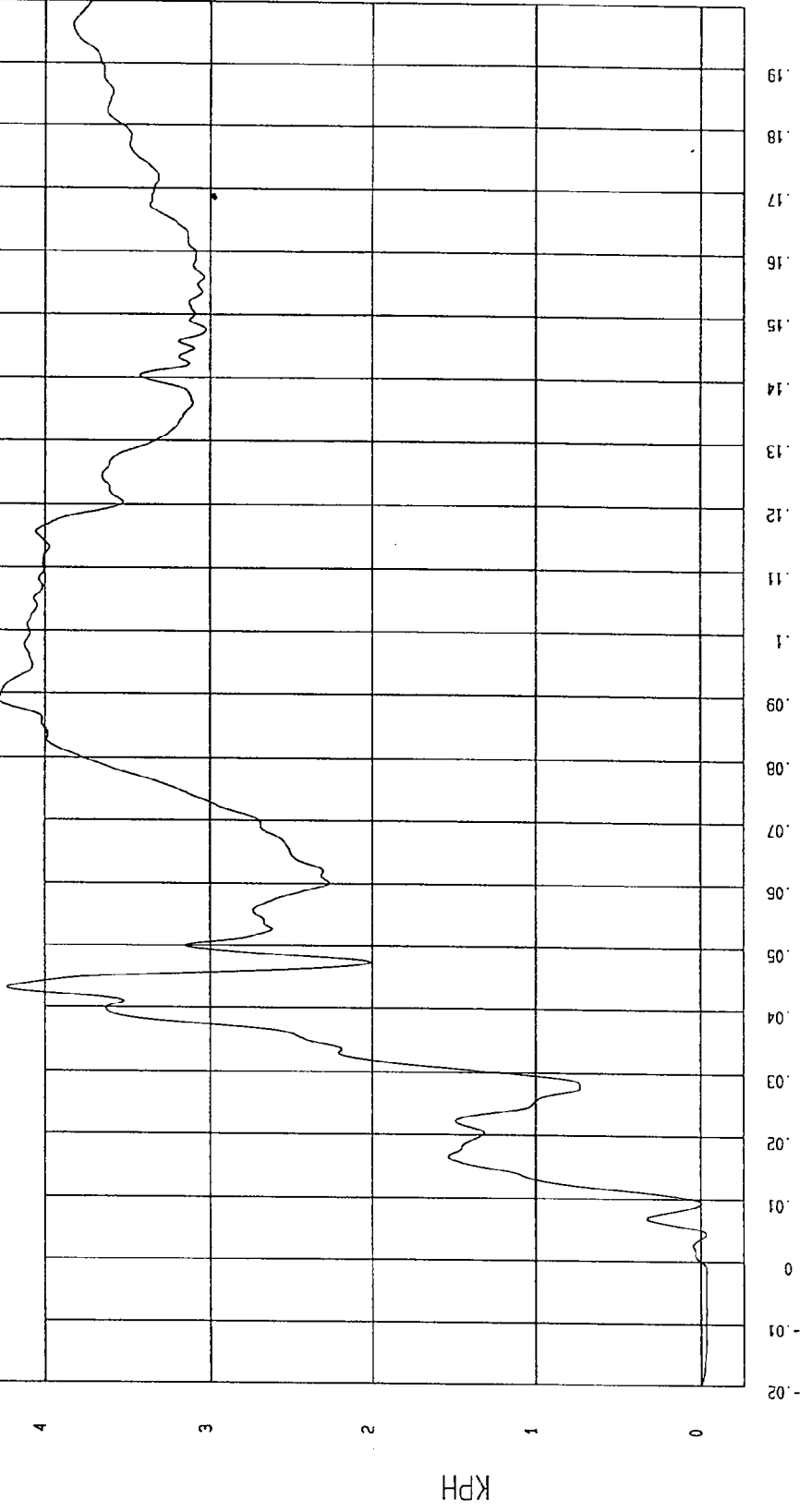
TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-3.599765E-02 KPH at -1.7 msec YMAX= 4.278657 KPH at 89. msec

REAR FLOORPAN ABOVE AXLE X VELOCITY

1 896127A1.V08 Filterclass (180)



MVA Research  
12-15-1996 13:56

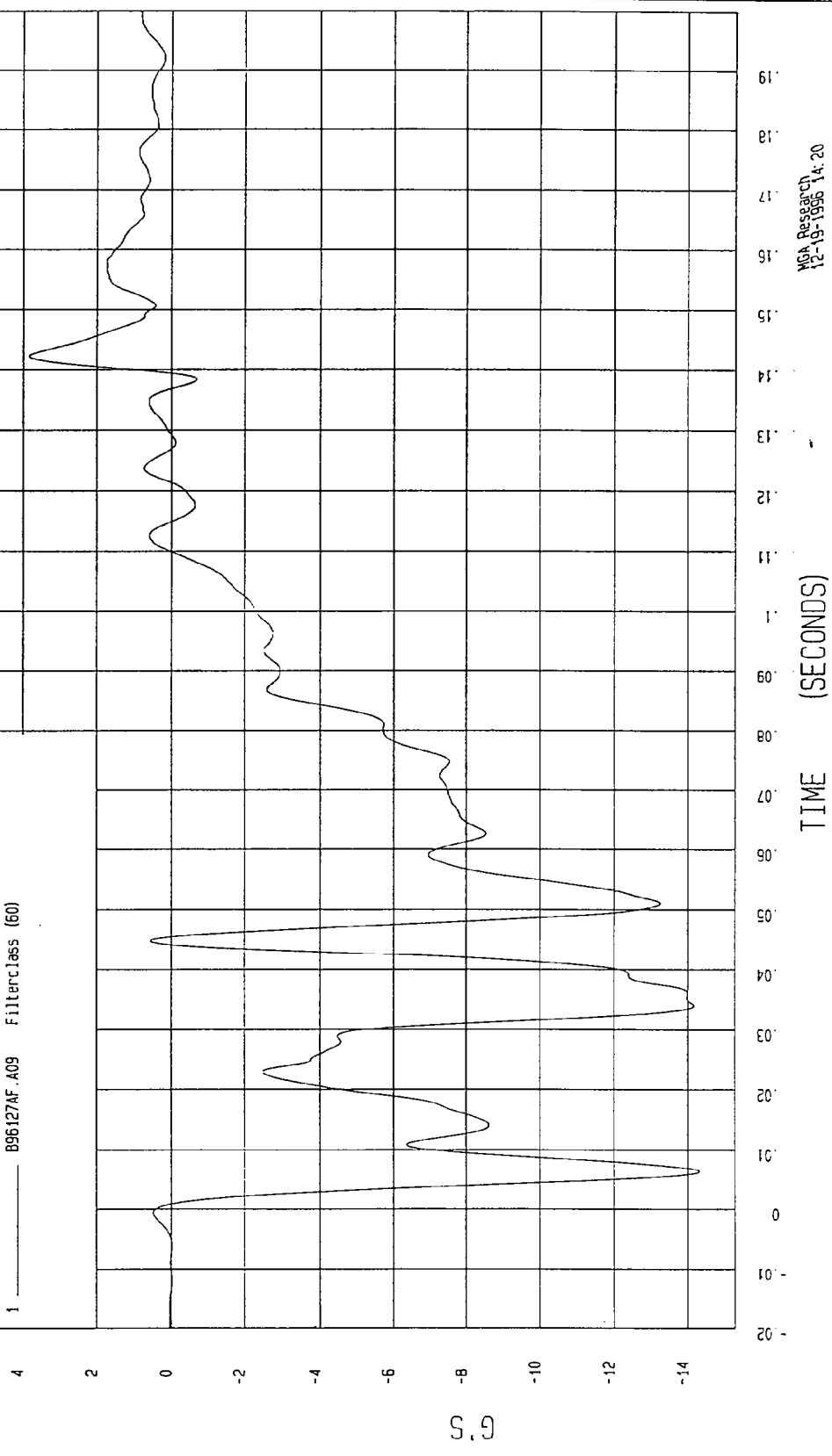
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-14.32458 G'S at 6.2 msec YMAX= 3.838292 G'S at 142 msec

REAR FLOORPAN ABOVE AXLE Y ACCELERATION

1 ——— B96127AF.A09 Filterclass (60)



MGA Research  
12-19-1996 14:20

TEST DATE: 11-25-1996

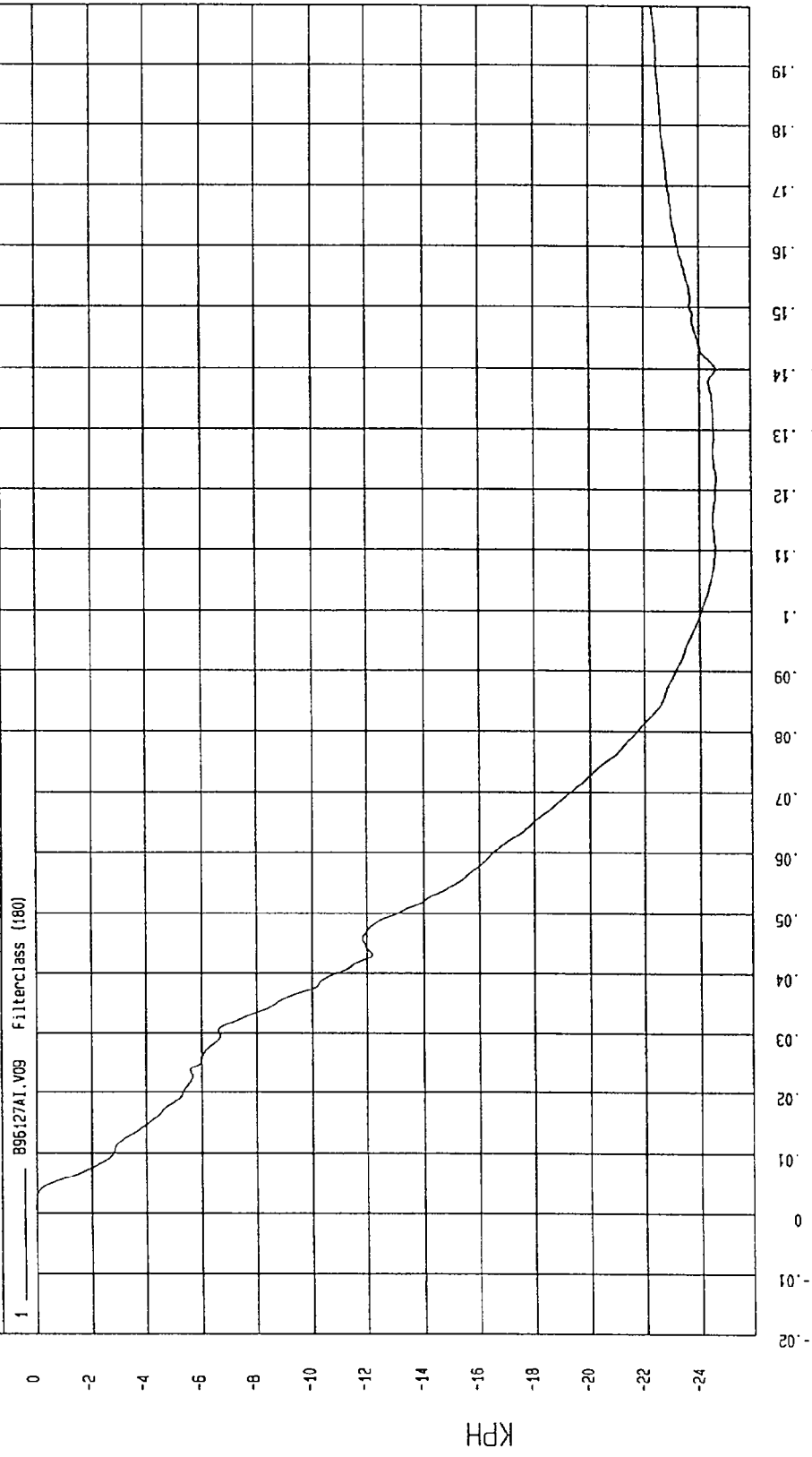
TEST: FMVSS 214 DYNAMIC SIDE IMPACT

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-24.6:528 KPH at 121 msec YMAX= 1.522905E-02 KPH at 1.2 msec

REAR FLOORPAN ABOVE AXLE Y VELOCITY

1 896127A1.V09 FilterClass (180)



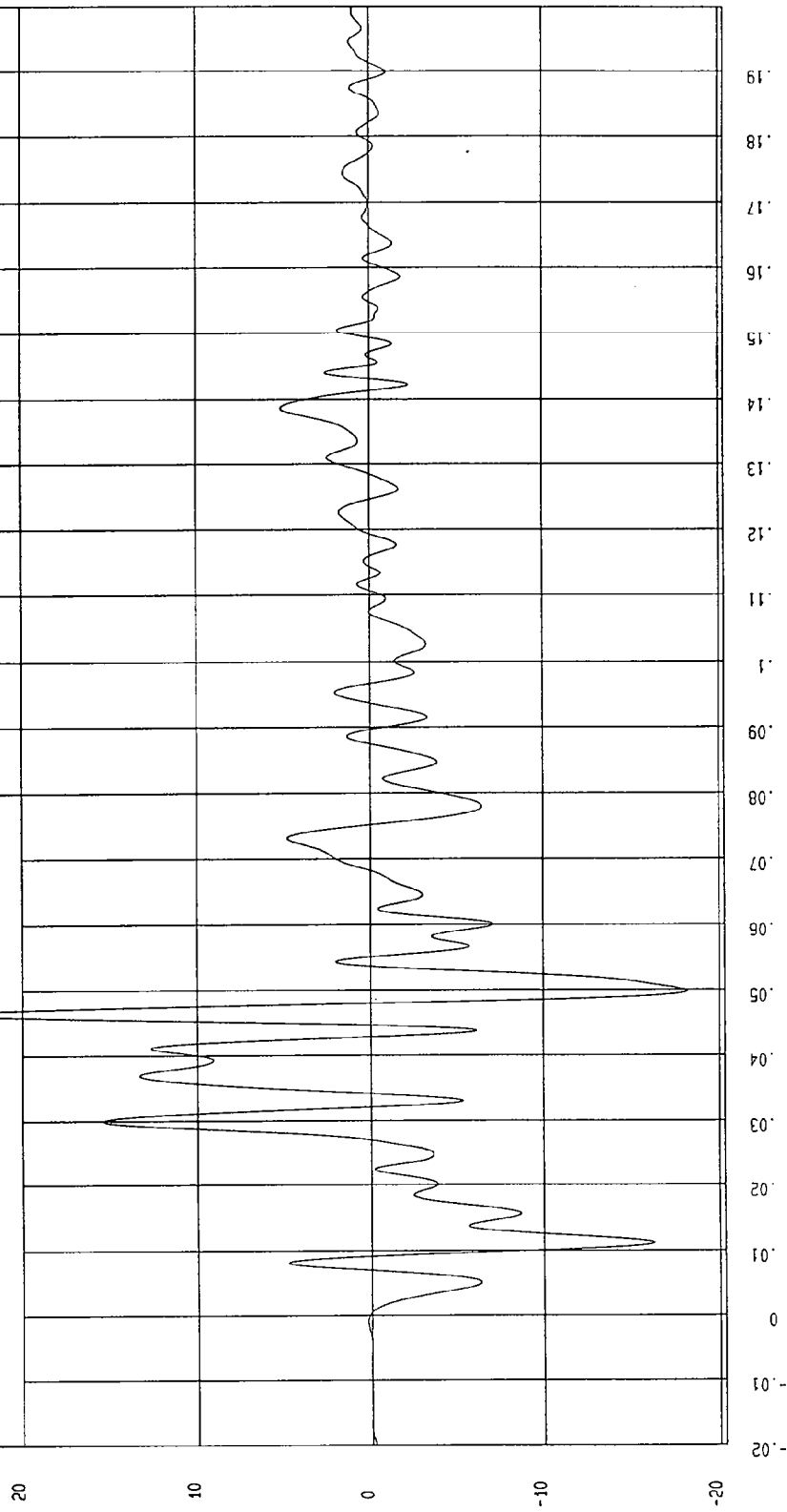
MGA Research  
12-15-1996 13.56

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-18.10905 G'S at 49. msec YMAX= 23.97351 G'S at 46. msec

REAR FLOORPAN ABOVE AXLE Z ACCELERATION

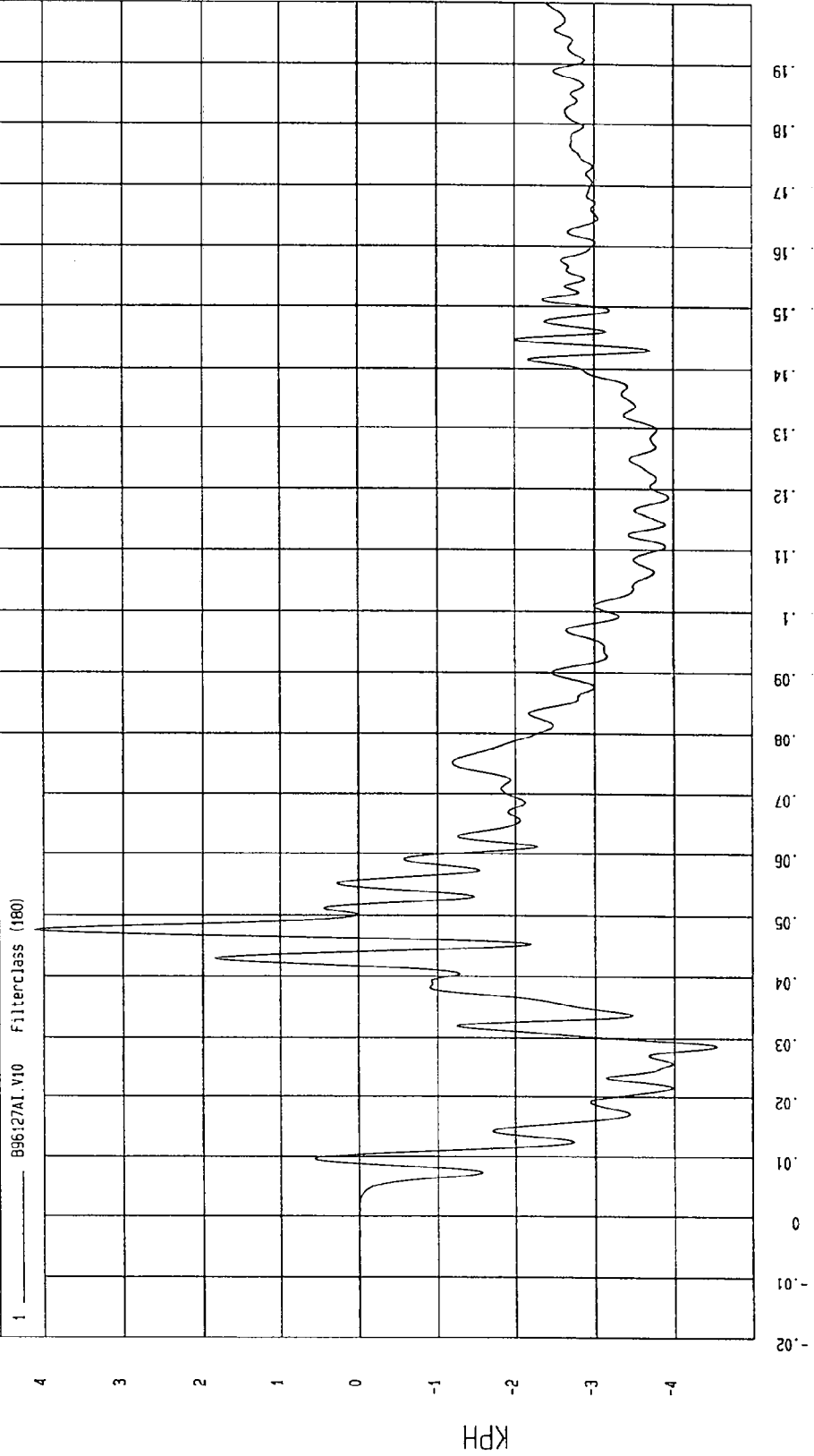
1 \_\_\_\_\_ 896127AF.A10 FilterClass (60)



MCA Research  
12-19-1996 14: 21

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
 COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH  
 YMIN=-4.53182 KPH at 28. msec YMAX= 4.123517 KPH at 47. msec

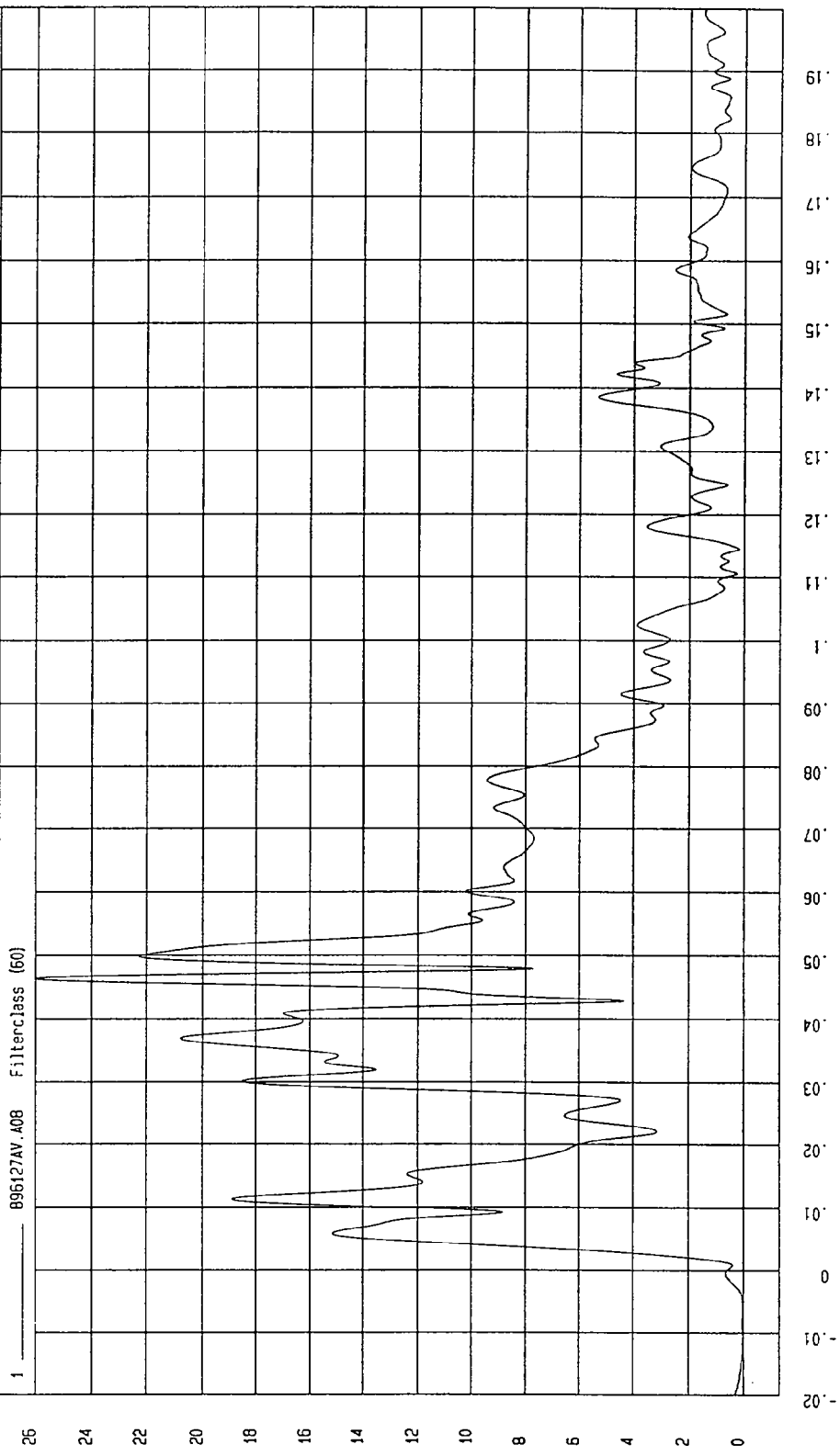
REAR FLOORPAN ABOVE AXLE Z VELOCITY



M&A Research  
12-15-1996 13.56

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
 COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH  
 YMIN= 1.381462E-02 G'S at -10. msec YMAX= 26.01586 G'S at 46. msec

REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION



WGA Research Co.  
 12-14-1996 11:05

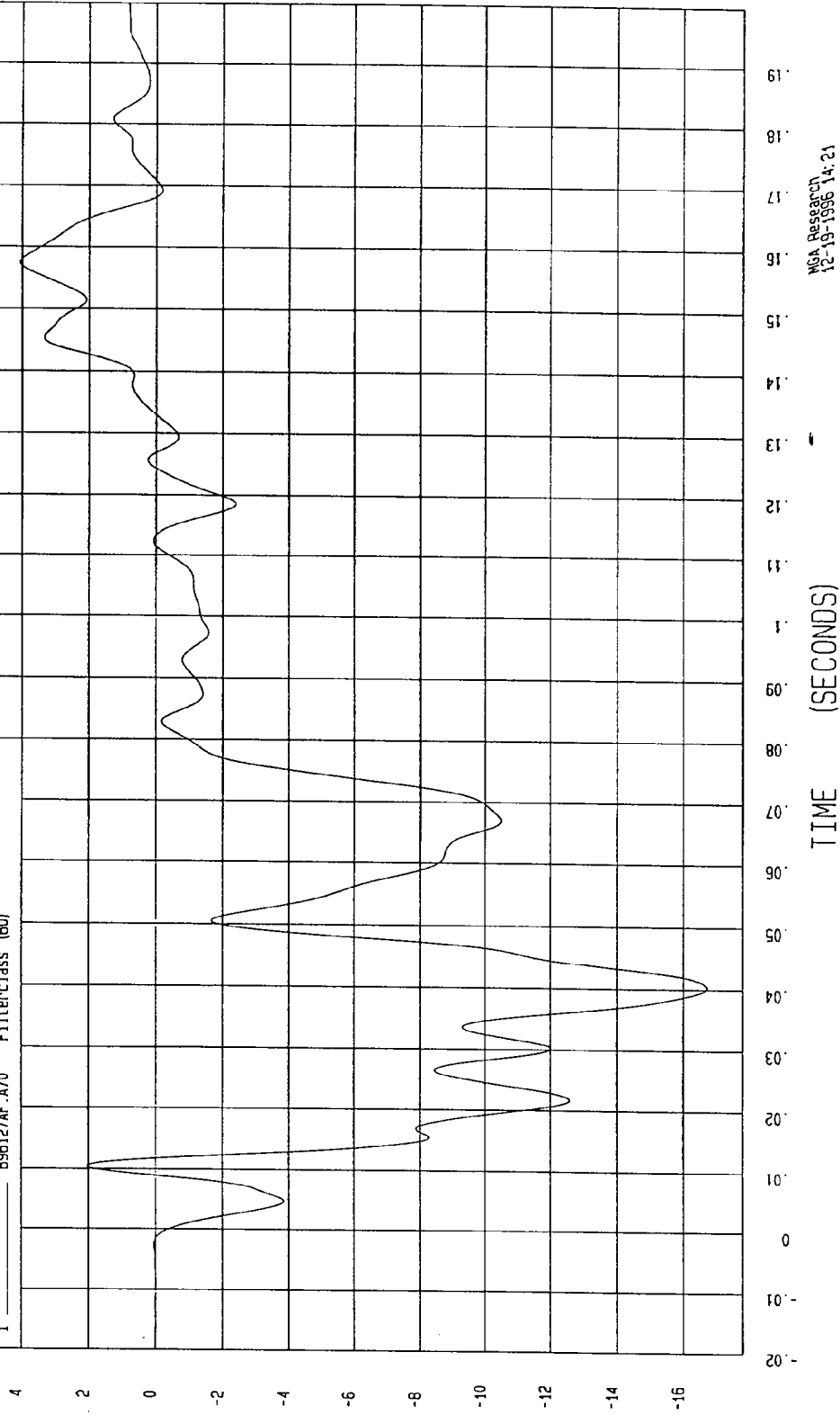
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-16.72593 G'S at 40. msec . YMAX= 4.055563 G'S at 157 msec

LEFT REAR OCCUPANT COMPARTMENT Y ACCELERATION

1 896127AF.A70 Filterclass (60)



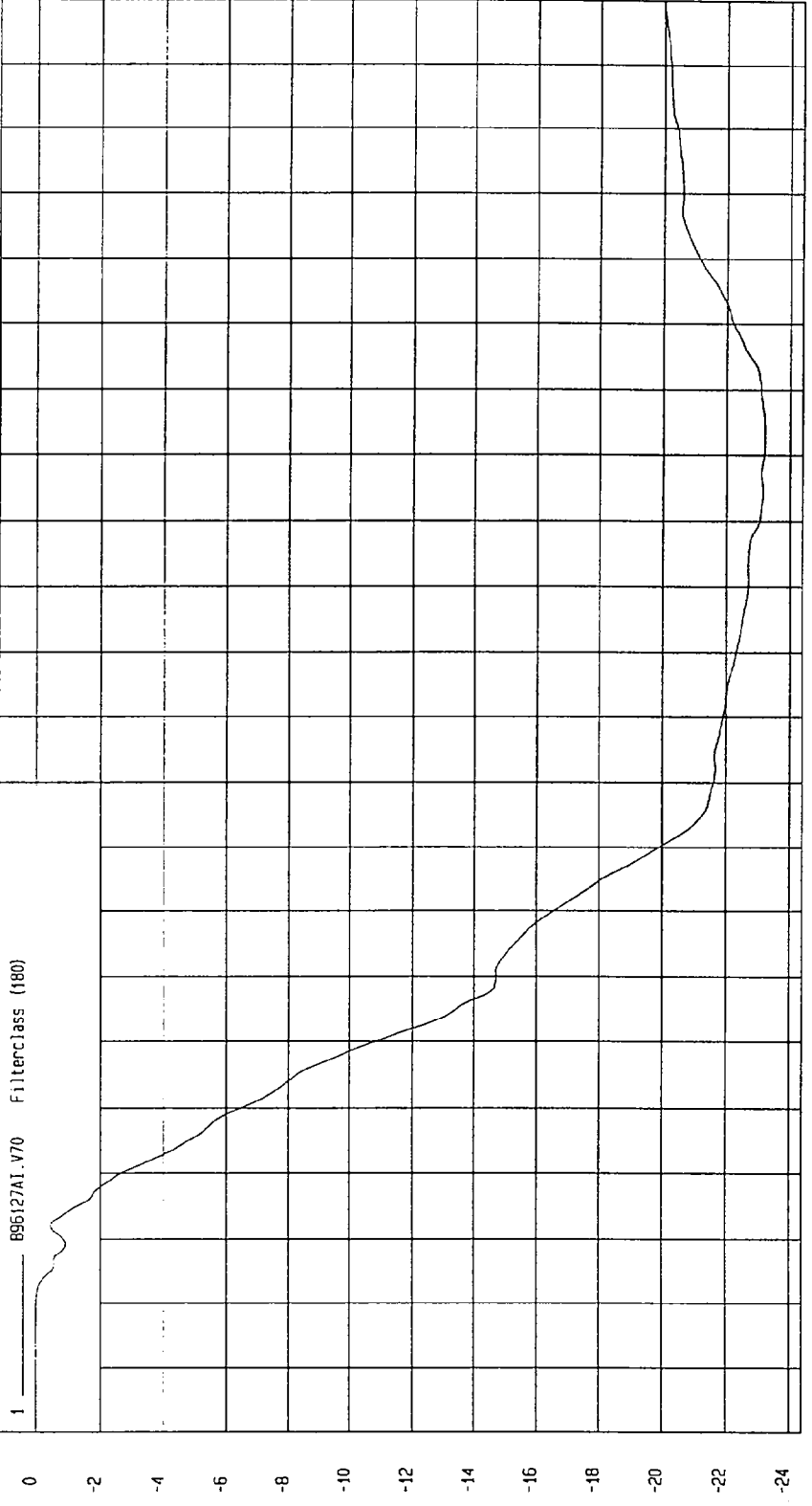
MGA Research  
12-19-1996 14:21

S.9

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-23.22707 KPH at 131 msec YMAX= 7.654004E-03 KPH at -10. msec

LEFT REAR OCCUPANT COMPARTMENT Y VELOCITY



MSA Research  
12-15-1996 13:58

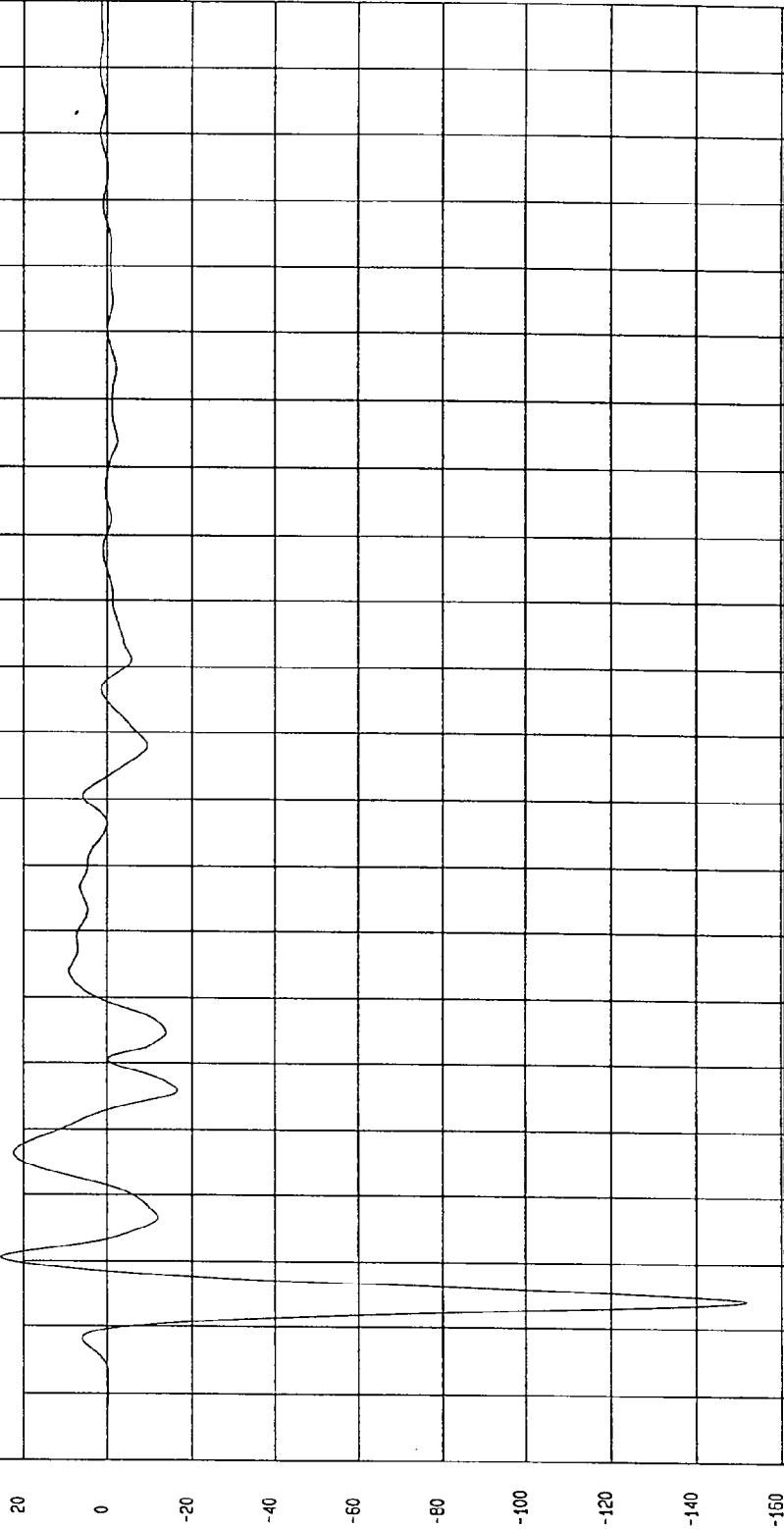
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-151.9574 G'S at 4.0 msec YMAX= 25.22196 G'S at 10. msec

RIGHT LOWER A-POST Y ACCELERATION

1 896127AF.A20 Filterclass (60)



MCA Research  
12-19-1996 14:21

TEST DATE: 11-25-1996

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

Speed: 33.25 MPH 53.5 KPH

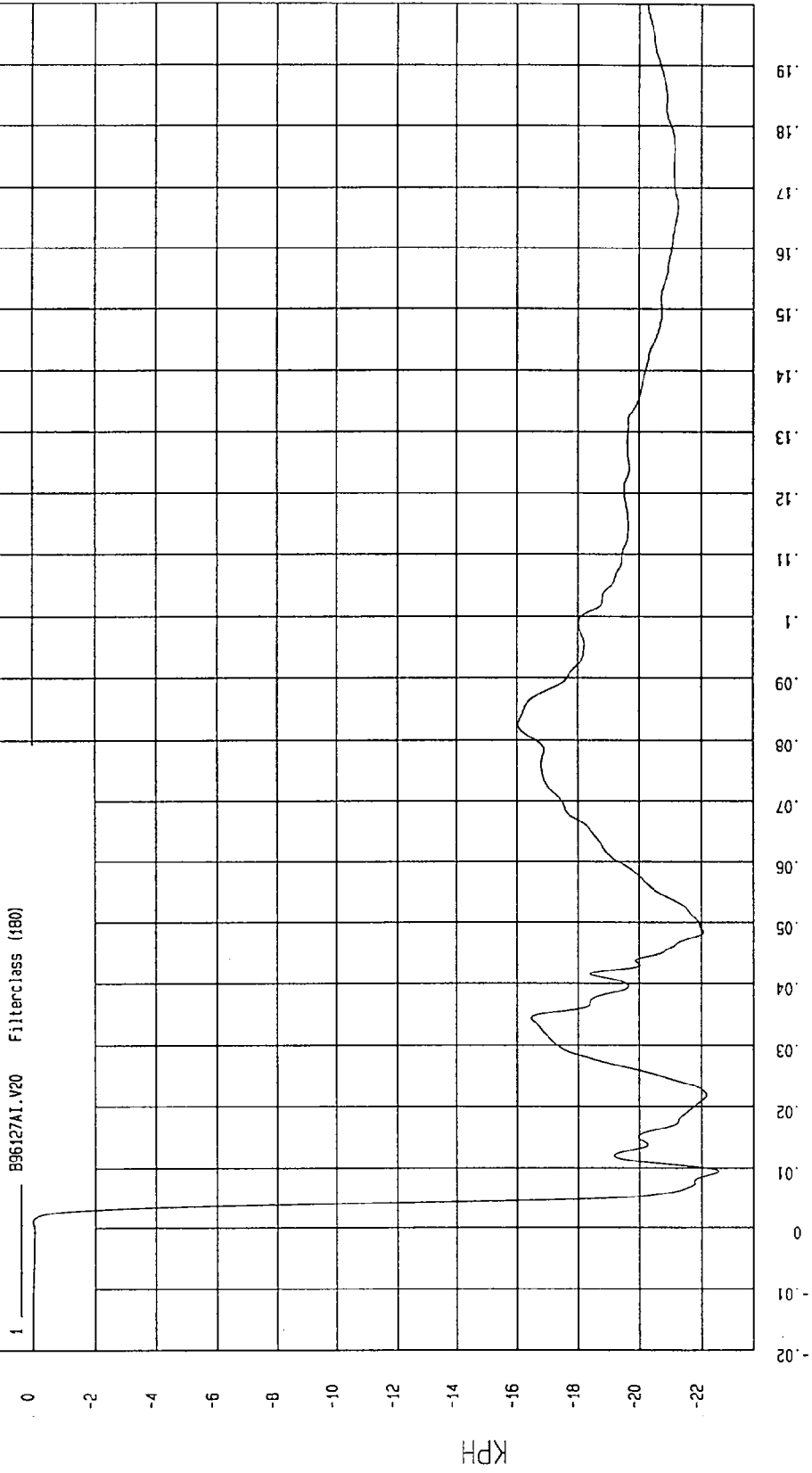
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206)

YMIN=-22.55522 KPH at 9.4 msec

YMAX= 0 KPH at -20 msec

RIGHT LOWER A-POST Y VELOCITY

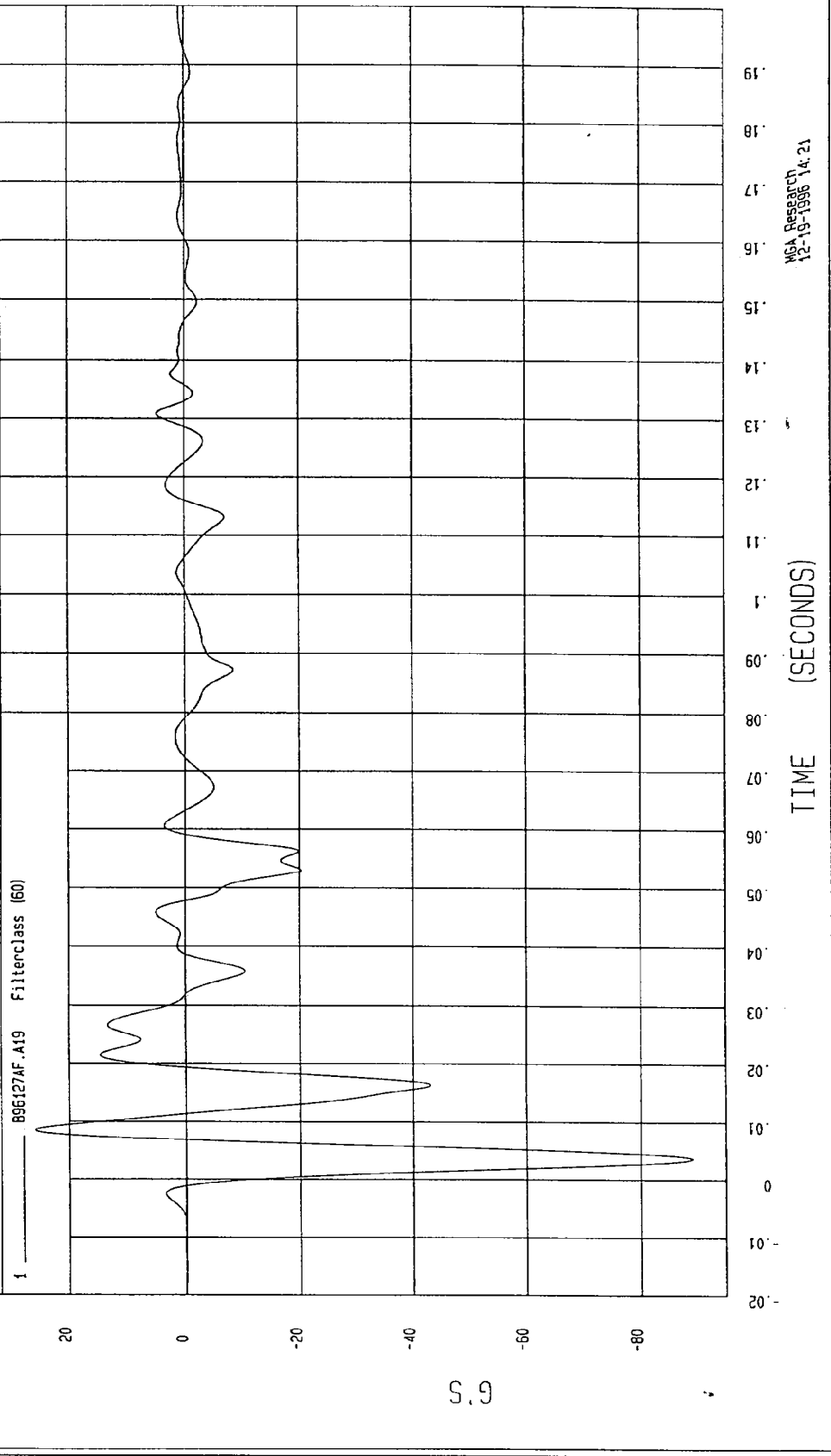
1 B96127A1.V20 Filterclass (180)



MCA Research  
12-15-1996 13:57

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
 COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH  
 YMIN=-88.87979 G'S at 3.5 msec YMAX= 25.88358 G'S at 8.5 msec

RIGHT MID A-POST Y ACCELERATION



TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

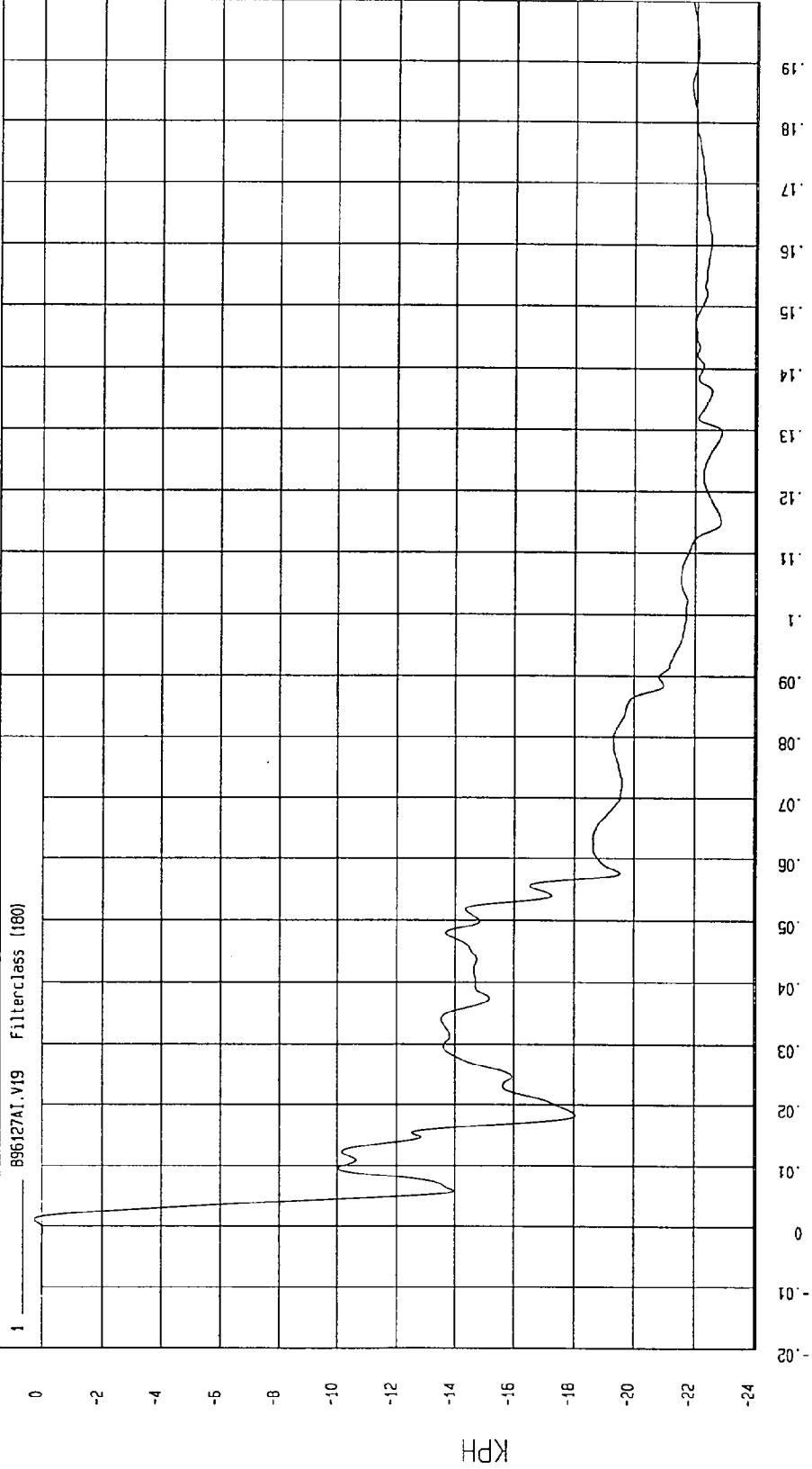
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-22.09352 KPH at 129 msec

YMAX=.2392191 KPH at 1 msec

RIGHT MID A-POST Y VELOCITY

1 896127A1.V19 Filterclass (180)



MGA Research  
12-15-1996 13:56

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

TEST DATE: 11-25-1996

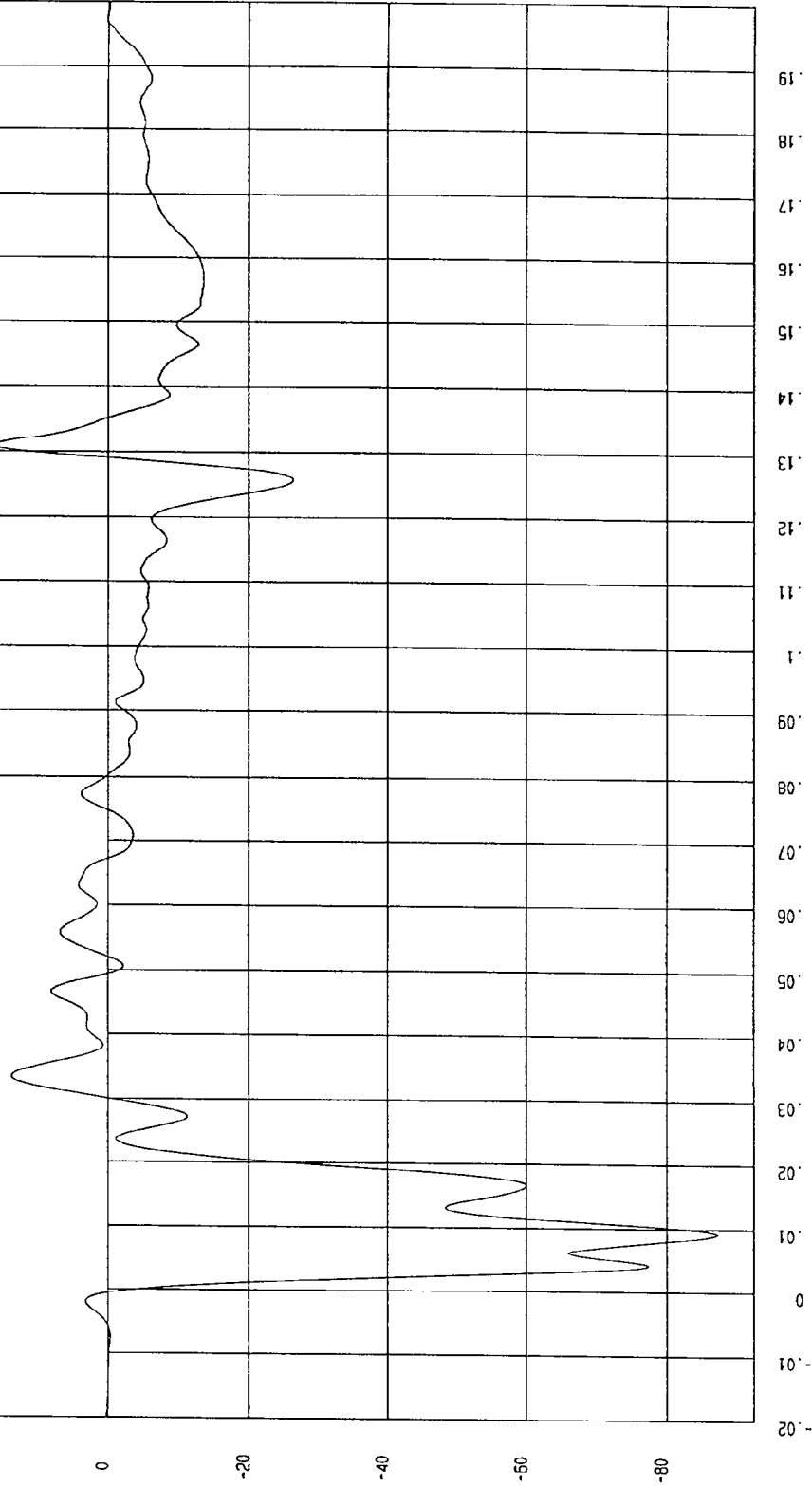
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-87.15128 6'S at 9.1 msec

YMAX= 16.16524 6'S at 130 msec

RIGHT LOWER B-POST Y ACCELERATION

1 896127AF.A30 Filterclass (60)



MGA Research  
12-19-1996 14.21

G.S.

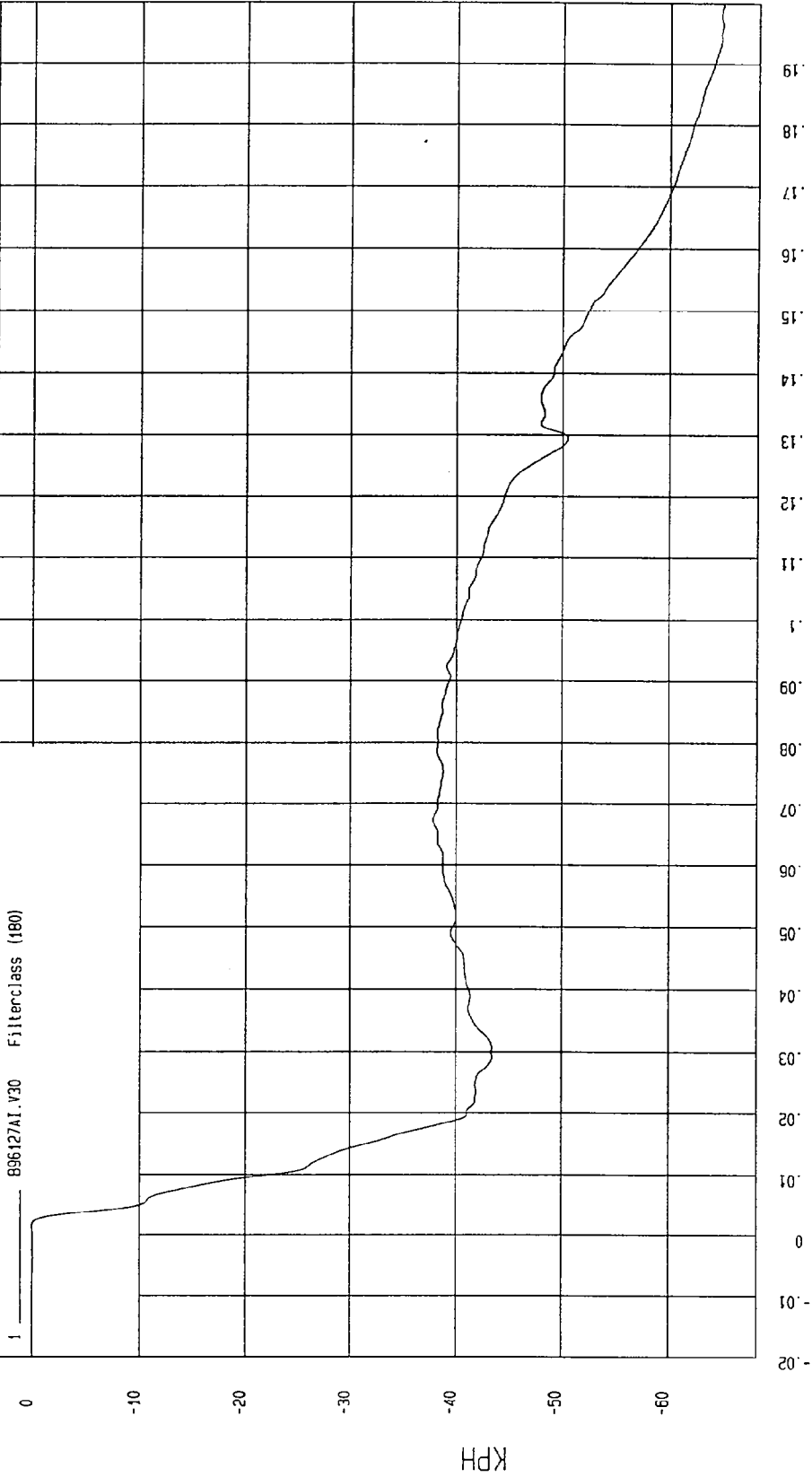
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-64.8732 KPH at 199 msec YMAX= 1.669842E-02 KPH at -13 msec

RIGHT LOWER B-POST Y VELOCITY

896127A1.V30 Filterclass (180)



MCA Research  
12-15-1996 13:57

TIME Seconds

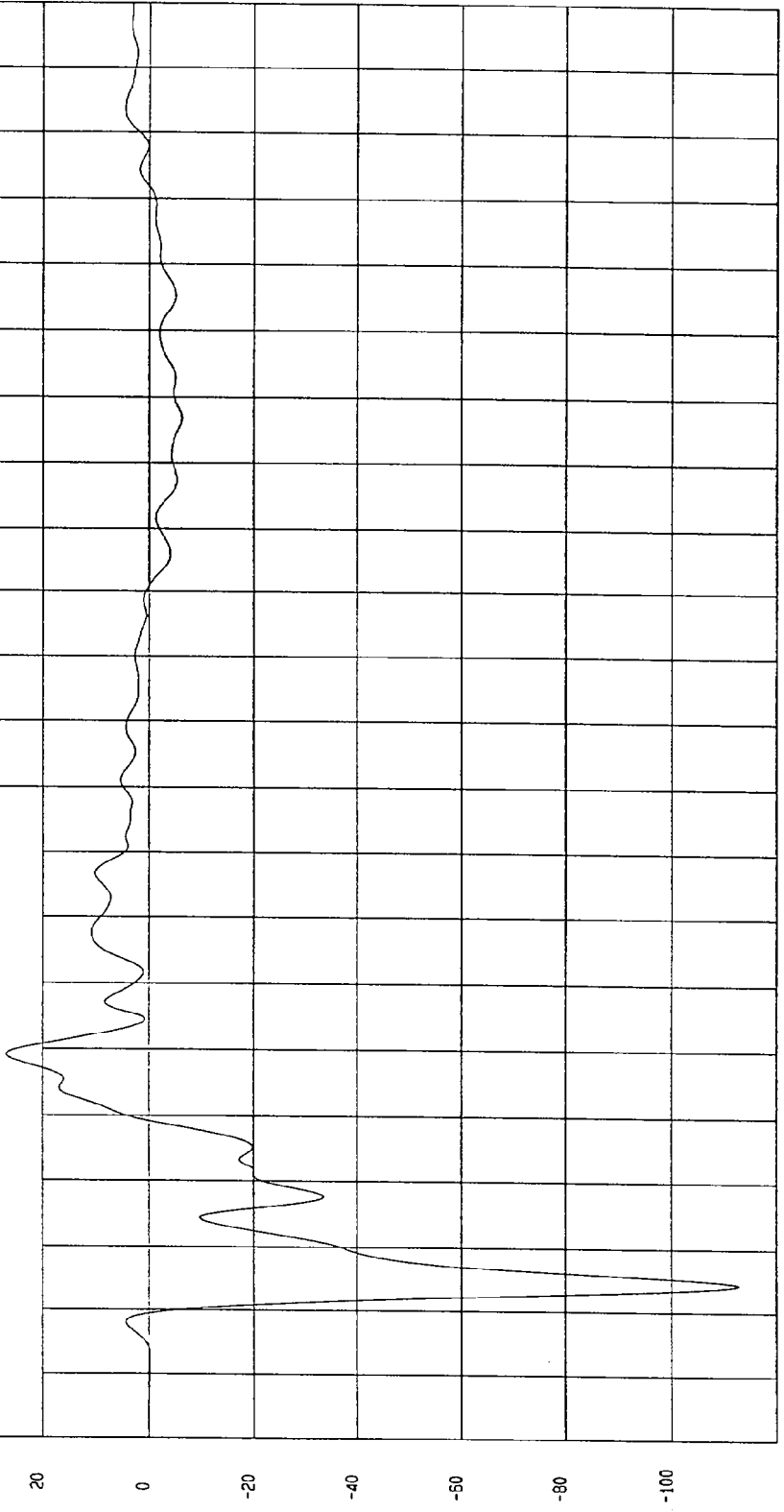
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-112.772 G'S at 4.2 msec YMAX= 26.86751 G'S at 39. msec

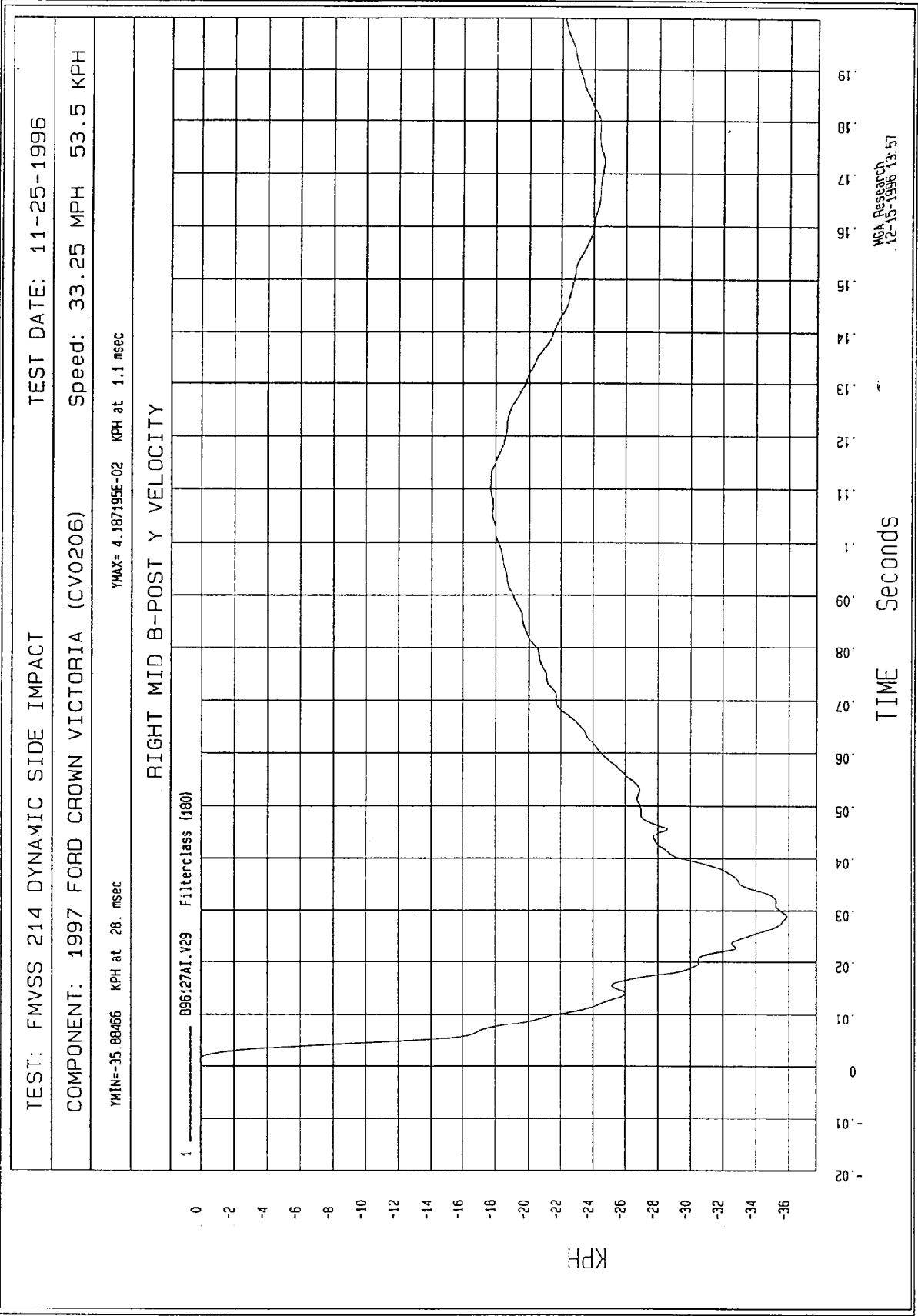
RIGHT MID B-POST Y ACCELERATION

1 B96127AF.A29 Filterclass (60)



TIME (SECONDS)

MGA Research  
12-19-1996 14:21



MSA Research  
12-13-1996 13:57

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

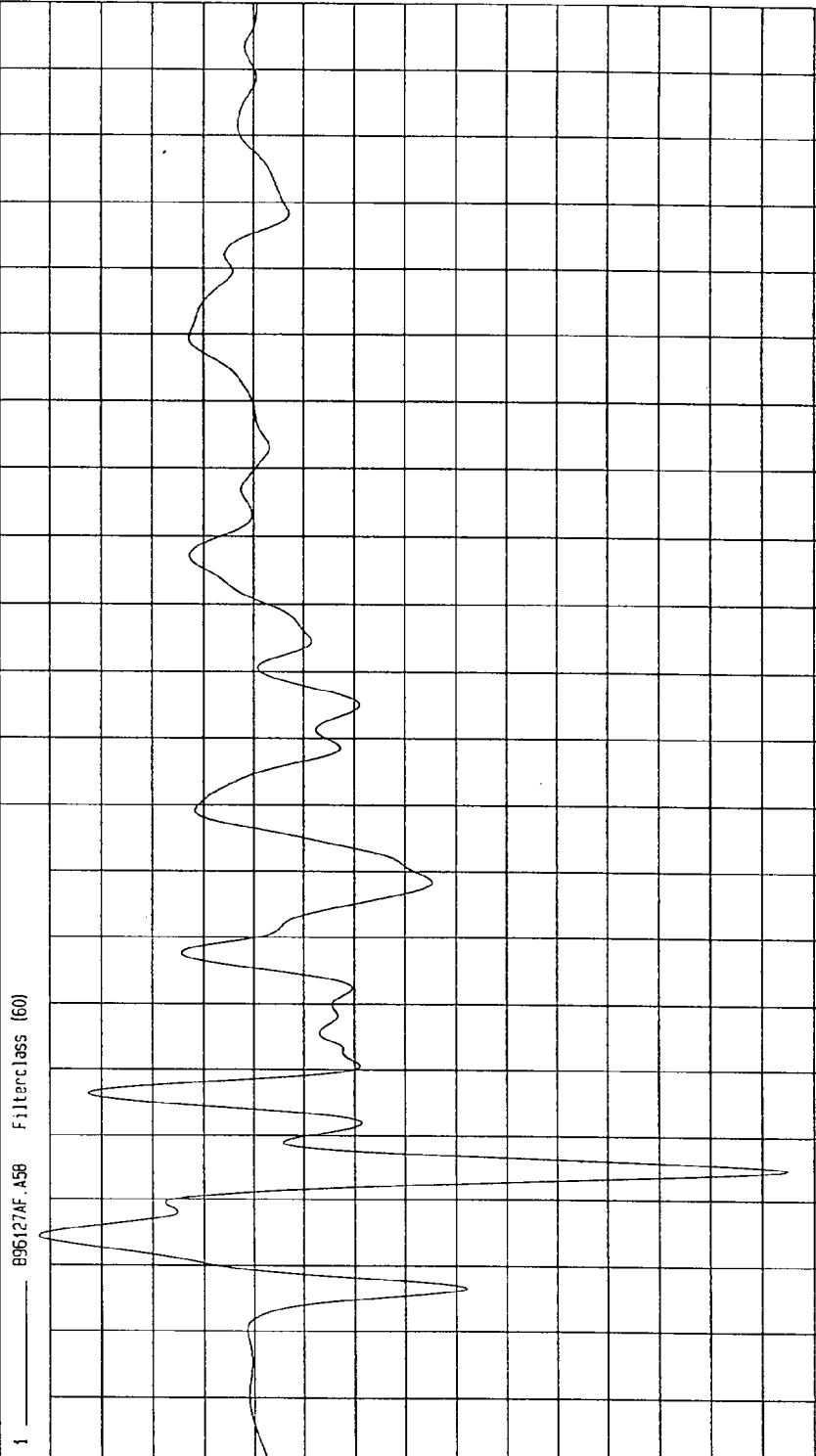
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-20.96399 G'S at 24. msec

YMAX= 8.414158 G'S at 14. msec

VEHICLE CG X ACCELERATION

1 896127AF.A58 Filterclass (60)



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MOA Research  
12-19-1996 14:21

TIME (SECONDS)

S.G

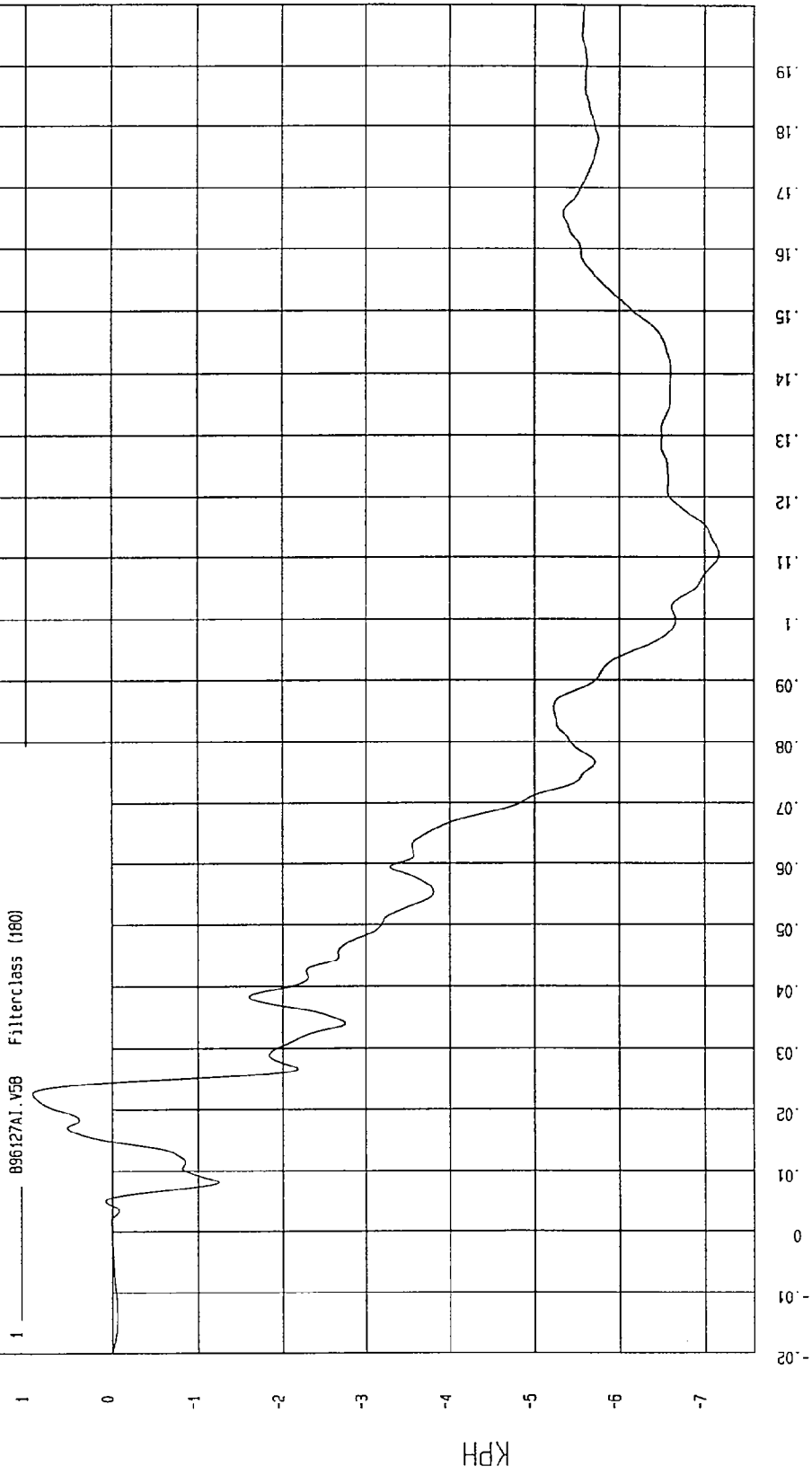
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-7.169676 KPH at 110 msec YMAX=.9280663 KPH at 22. msec

VEHICLE CG X VELOCITY

1 896127A1.V58 FilterClass (180)



WCA Research  
12-15-1996 13:58

TIME Seconds

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

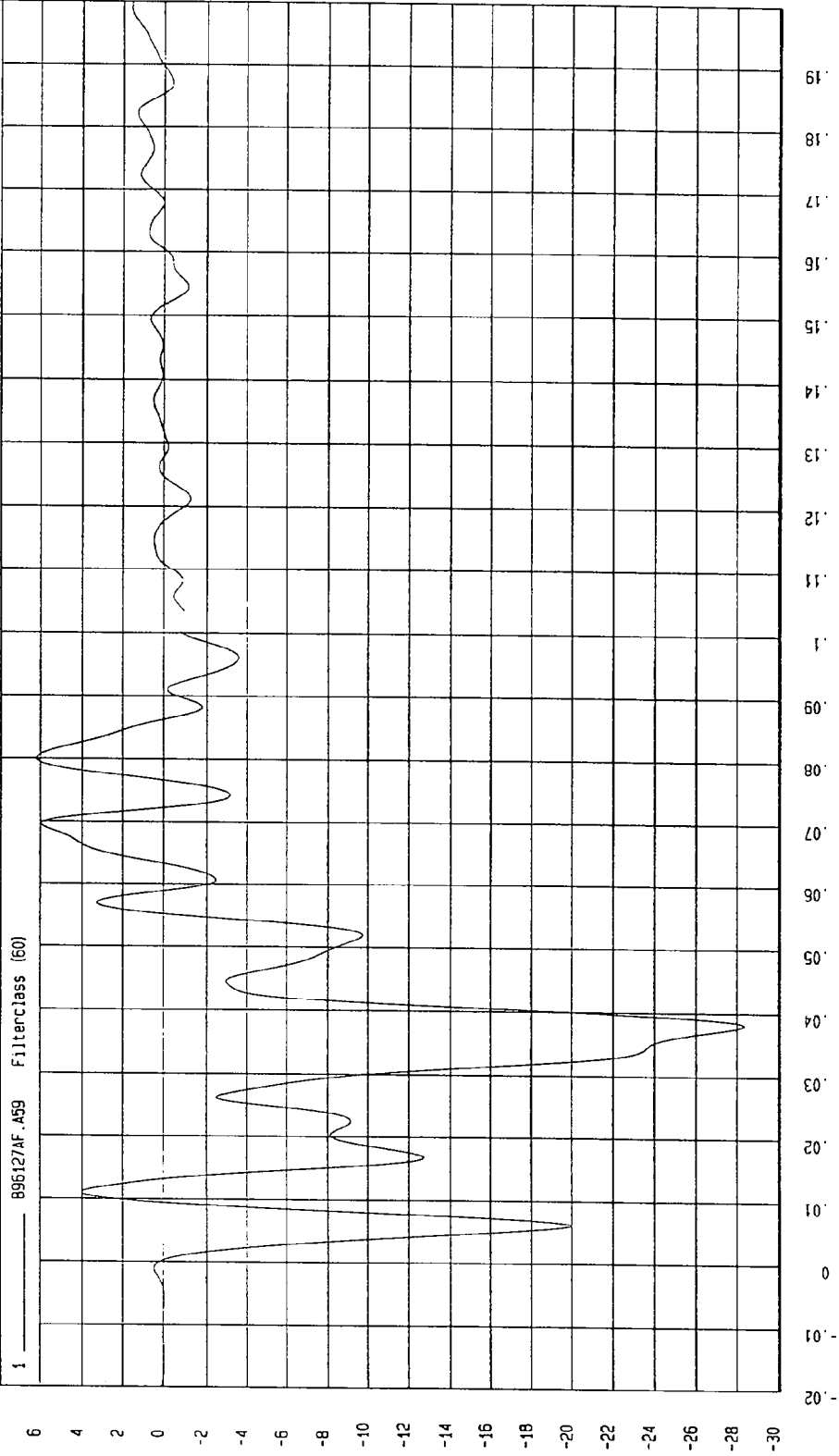
TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-28.34799 G'S at 38. msec

YMAX= 6.166589 G'S at 80 msec

VEHICLE CG Y ACCELERATION



MCA Research  
12-15-1998 14:21

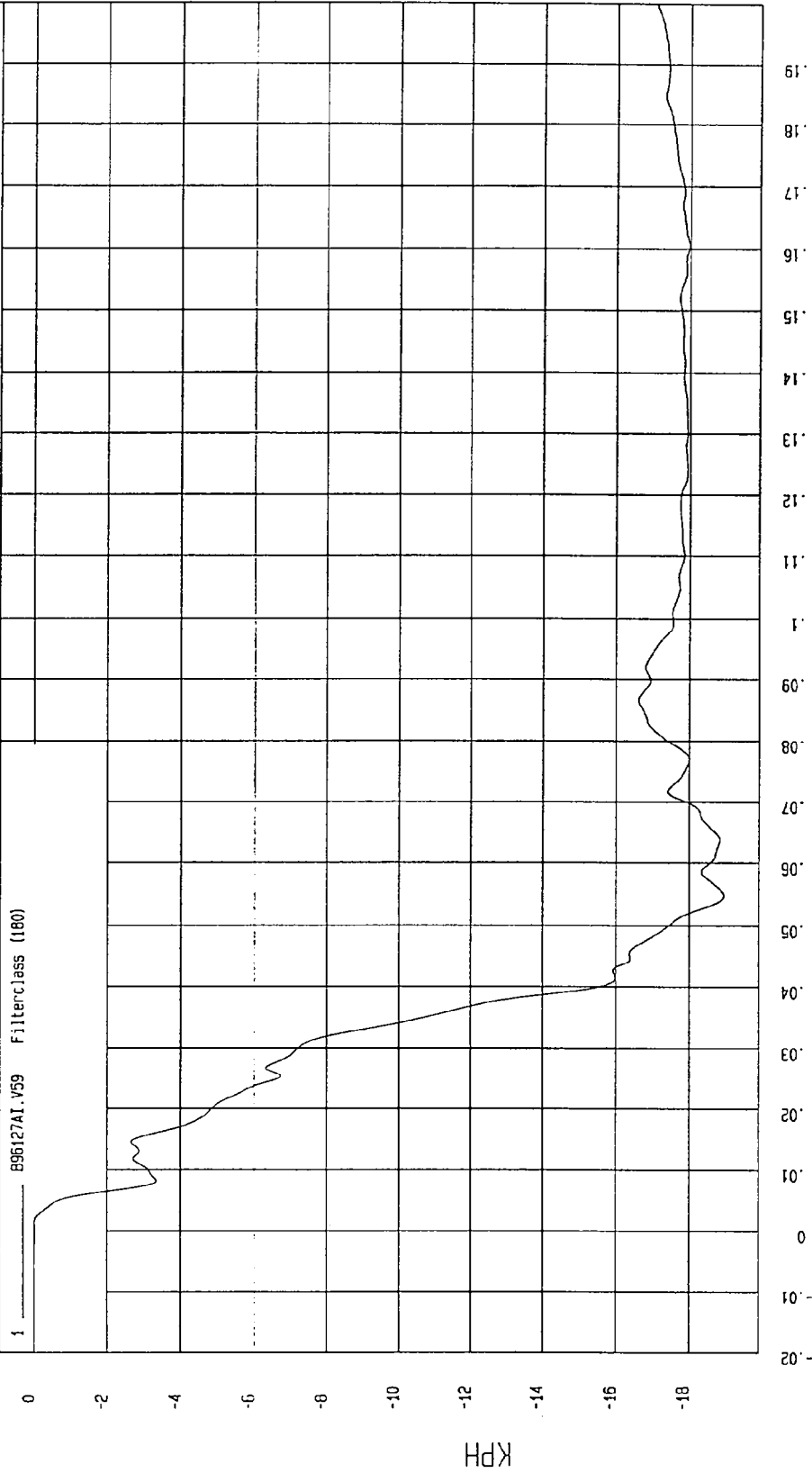
G.S

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-18.95501 KPH at 54. msec YMAX= 0 KPH at -20 msec

VEHICLE CG Y VELOCITY

1 896127A1.V59 Filterclass (180)



MCA Research  
12-15-1996 13:58

TEST DATE: 11-25-1996

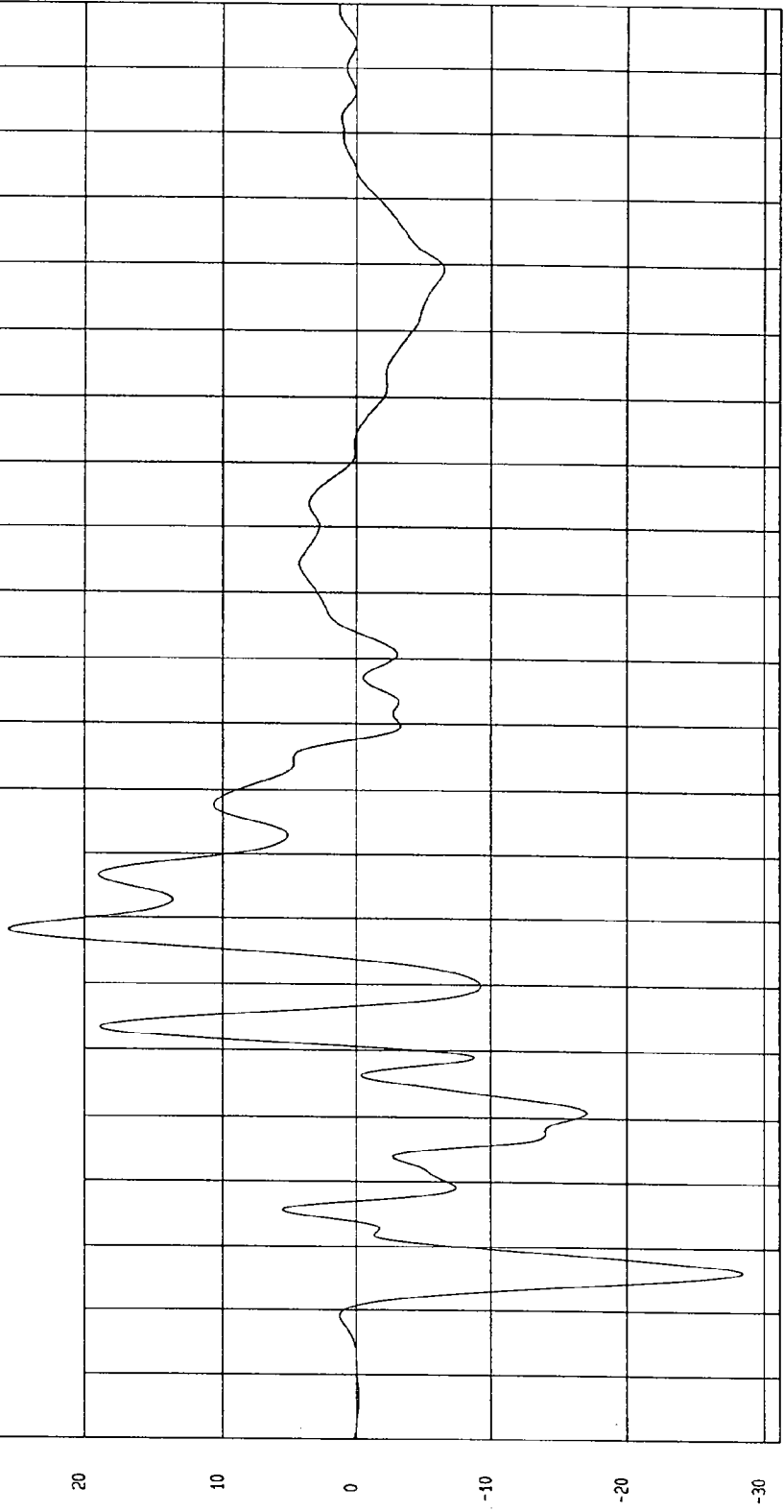
TEST: FMVSS 214 DYNAMIC SIDE IMPACT

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-28.41886 G'S at 6.0 msec YMAX= 25.5947 G'S at 58. msec

VEHICLE CG Z ACCELERATION

1 ——— B96127AF.A60 FilterClass (60)



MCA Research  
12-19-1996 14:22

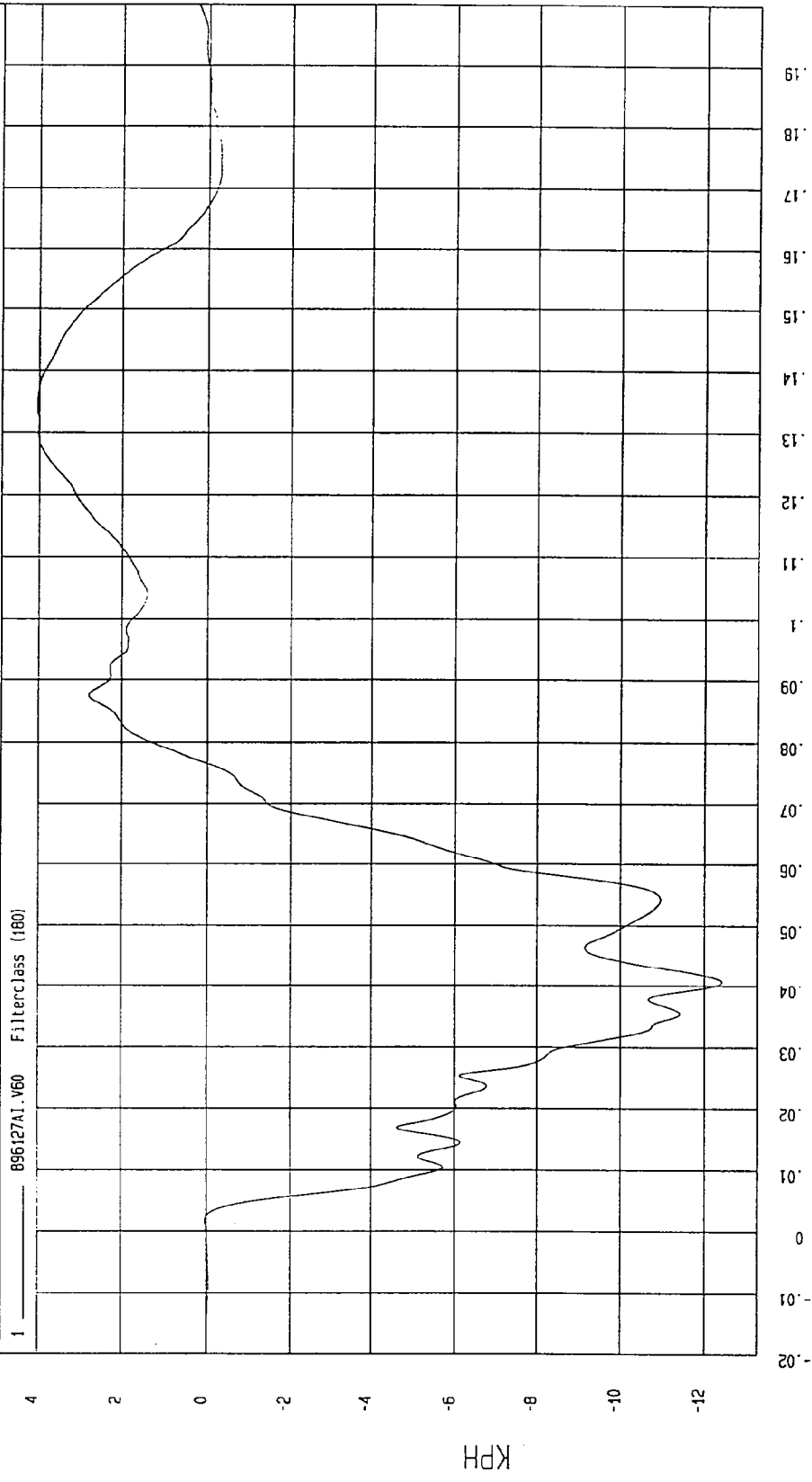
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-12.41355 KPH at 40. msec YMAX= 4.053142 KPH at 134 msec

VEHICLE CG Z VELOCITY

1 896127A1.V60 Filterclass (180)



MGA Research  
12-15-1996 13:58

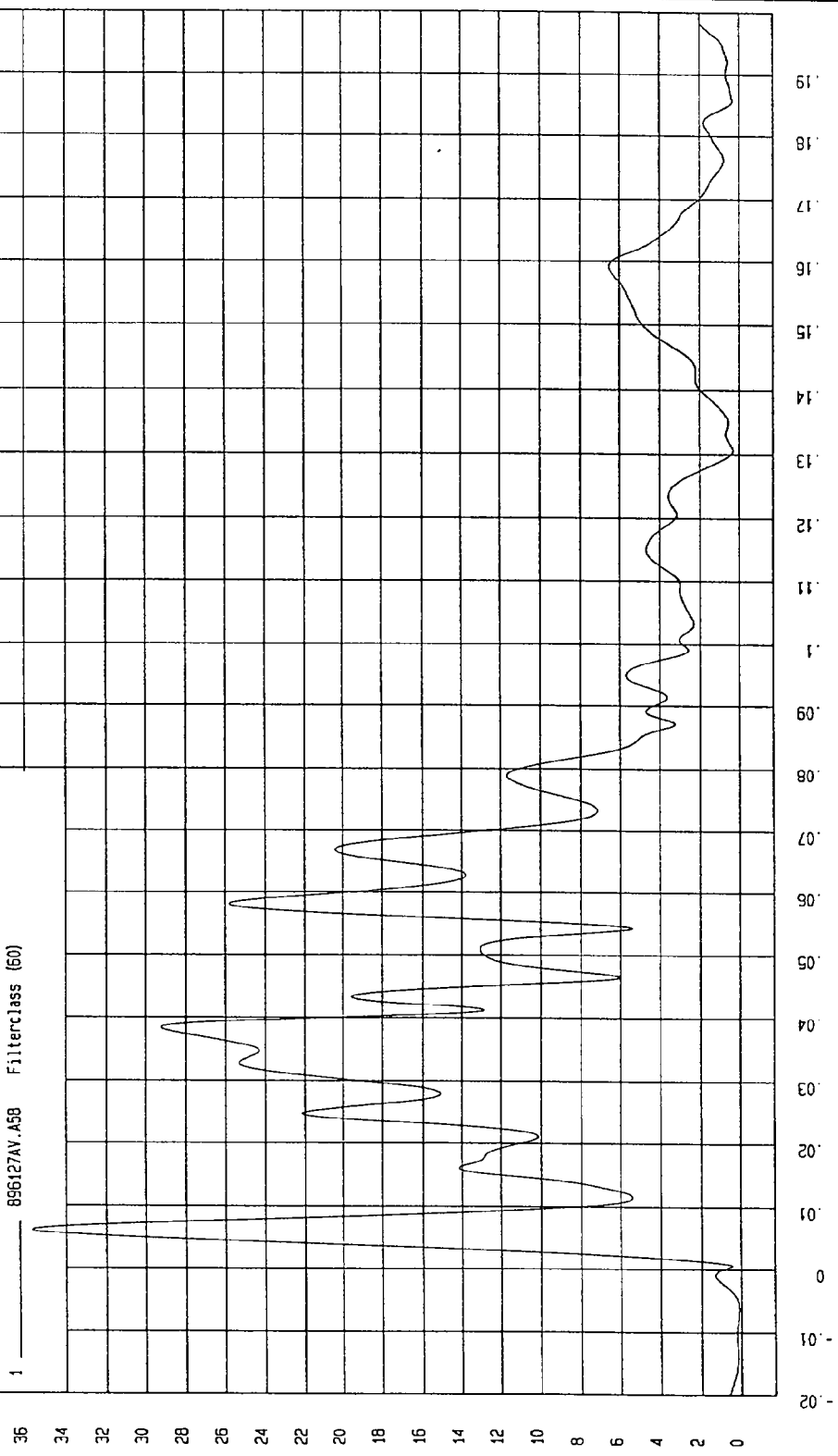
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN= .1091576 G'S at -6.3 msec YMAX= 35.67269 G'S at 6.0 msec

VEHICLE CG RESULTANT ACCELERATION

1 896127AV.A58 Filterclass (60)

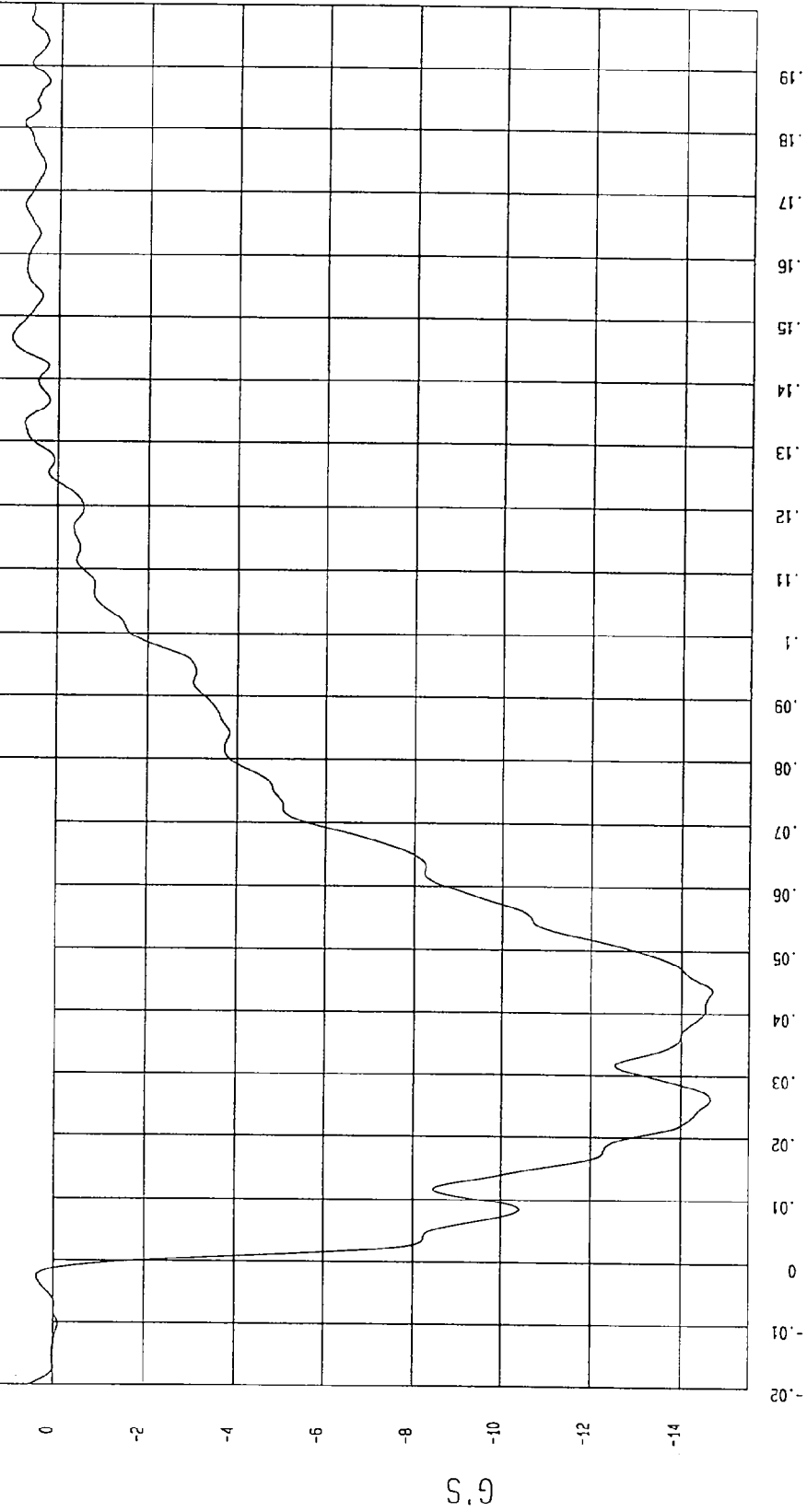


MGA Research  
12-14-1996 11:05

TEST: FMVSS 214 DYNAMIC SIDE IMPACT  
TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206)  
Speed: 33.25 MPH 53.5 KPH

Minimum = -14.68 G'S at 44 msec  
Maximum = 1.01 G'S at 146 msec

MOVING BARRIER CG X ACCELERATION  
1 ——— 896127AF.A02 Filterclass (60)



MCA Research  
12-19-1996 14:36

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

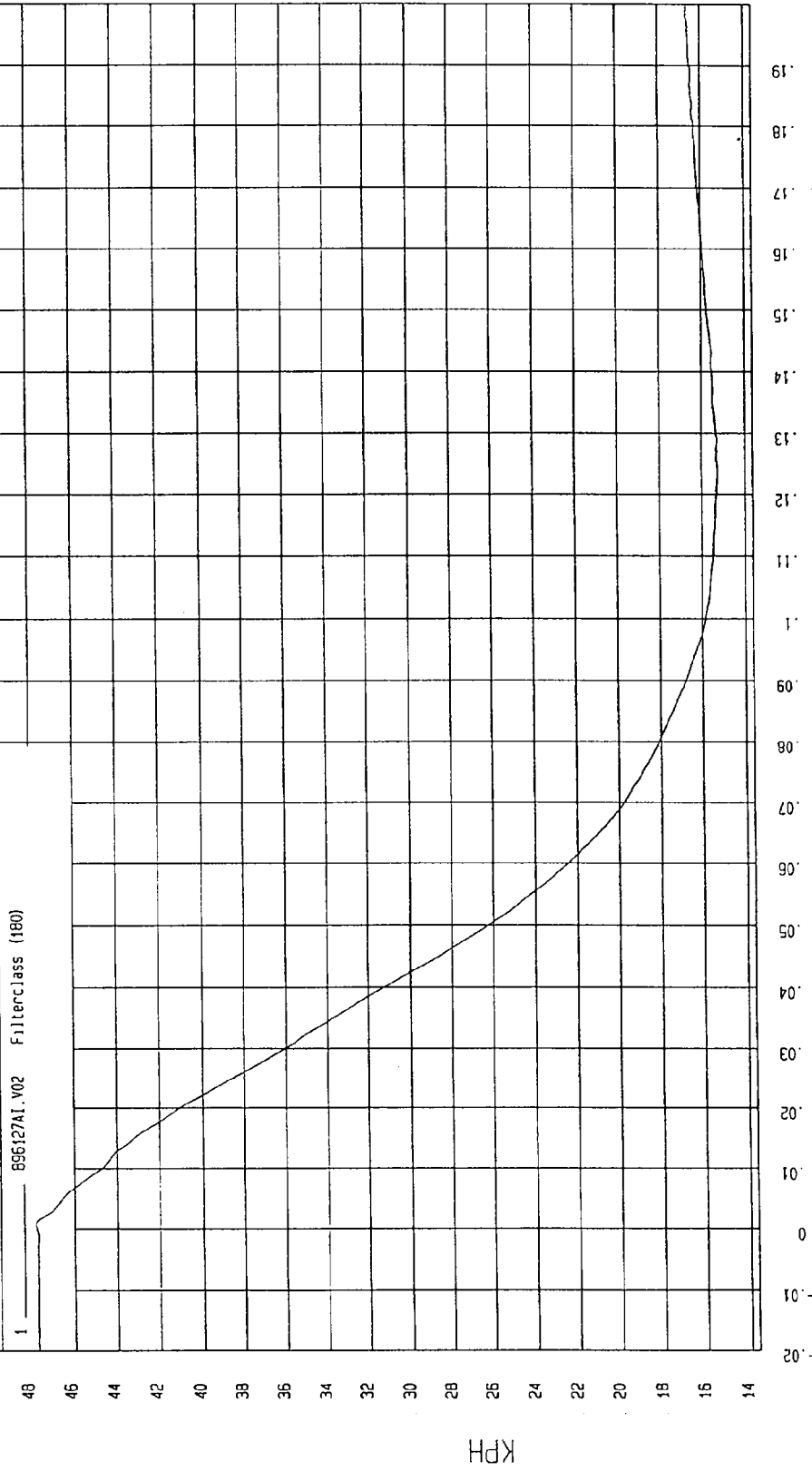
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN= 15.2782 KPH at 123 msec

YMAX= 47.81025 KPH at .69 msec

MOVING BARRIER CG X VELOCITY

1 896127A1.V02 Filterclass (180)



MSA RESEARCH  
12-19-1996 14.19

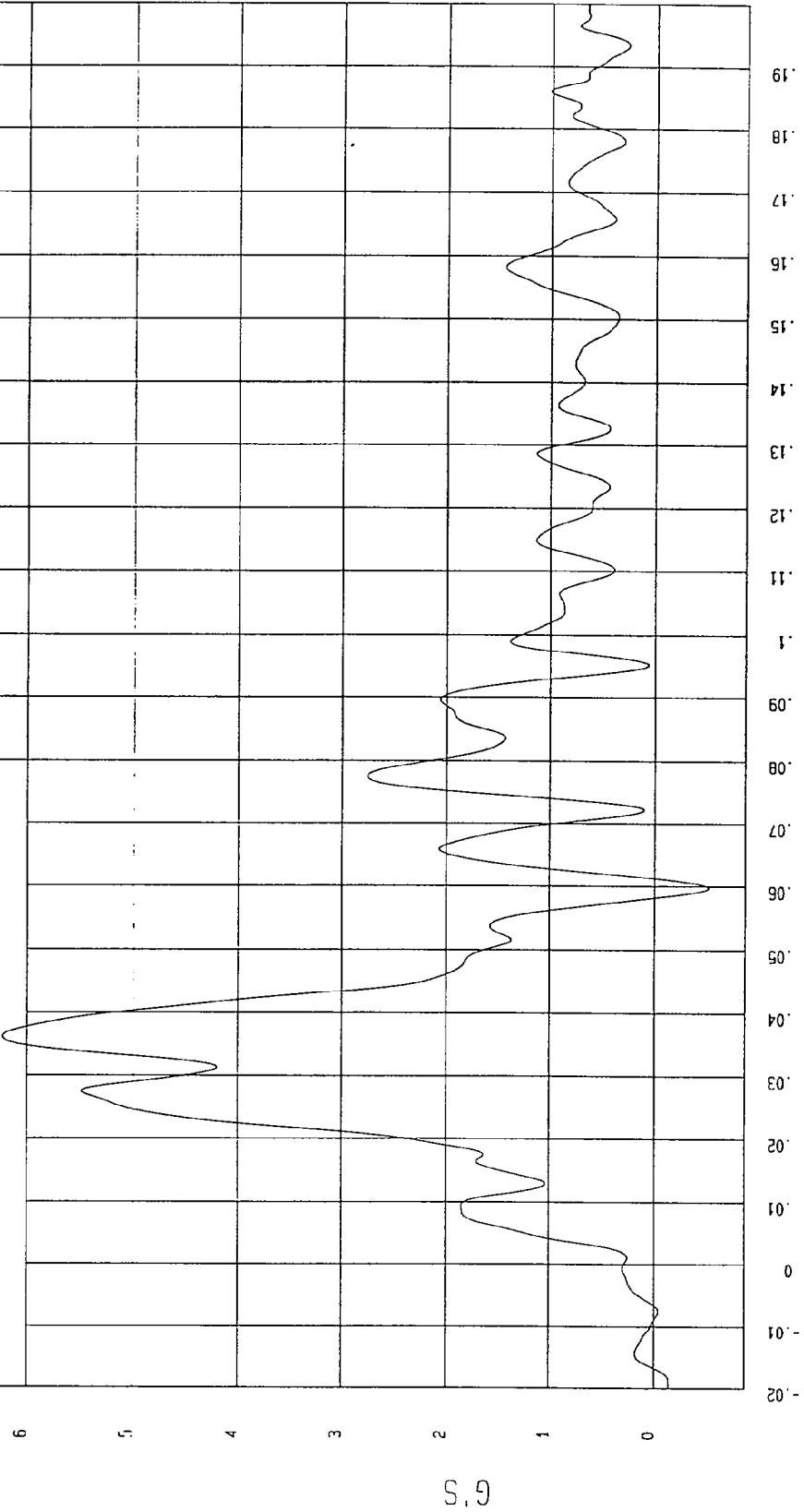
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

Minimum = -.50 G'S at 60 msec Maximum = 6.22 G'S at 36 msec

MOVING BARRIER CG Y ACCELERATION

1 896127AF.A03 FilterClass (60)



MGA Research  
12-19-1996 14:36

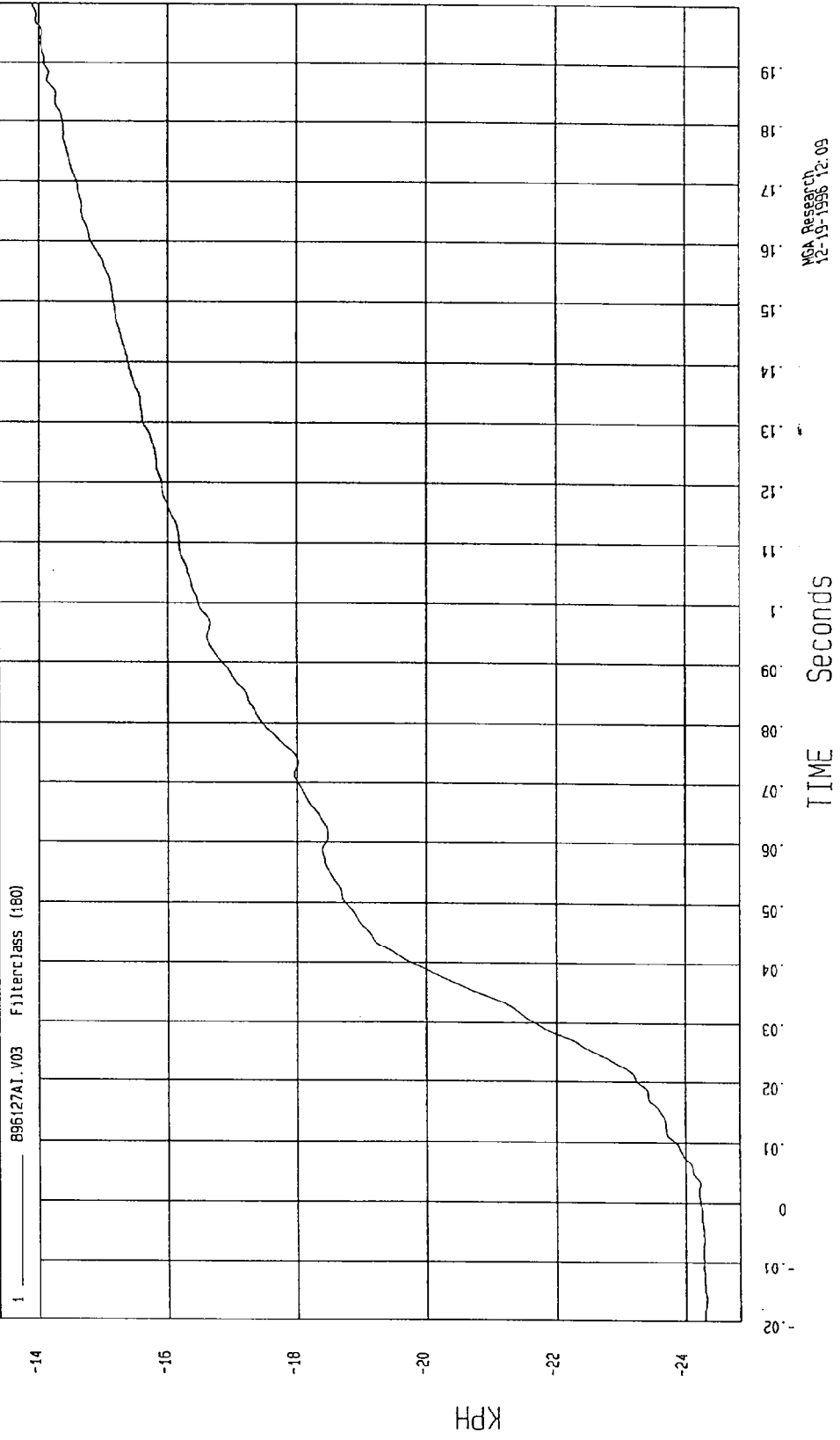
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-24.32125 KPH at -16. msec

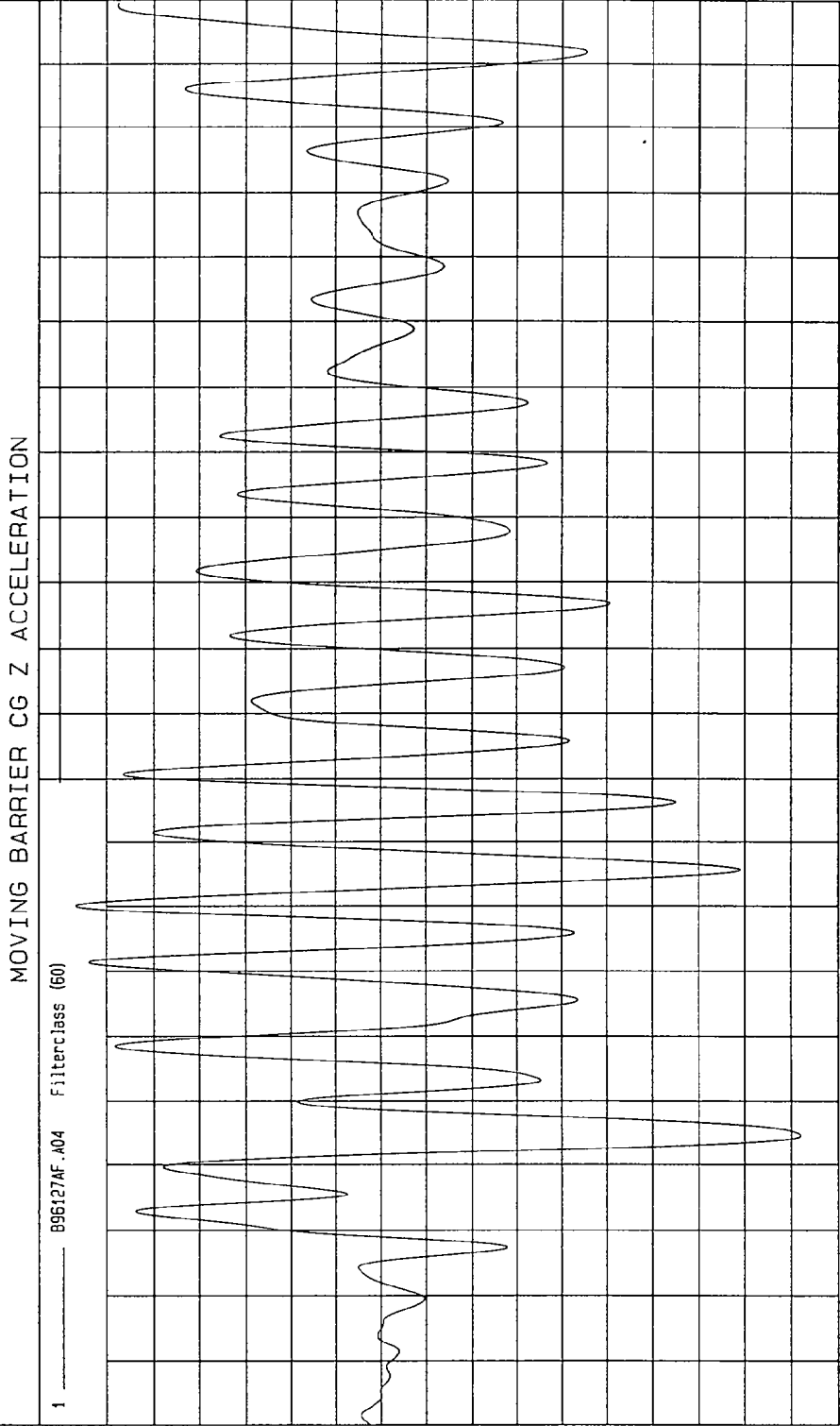
YMAX=-13.89532 KPH at 199 msec

MOVING BARRIER CG Y VELOCITY



TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

Minimum = -18.42 G'S at 25 msec Maximum = 13.32 G'S at 60 msec



MCA Research  
12-19-1996 14:36

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

TEST DATE: 11-25-1996

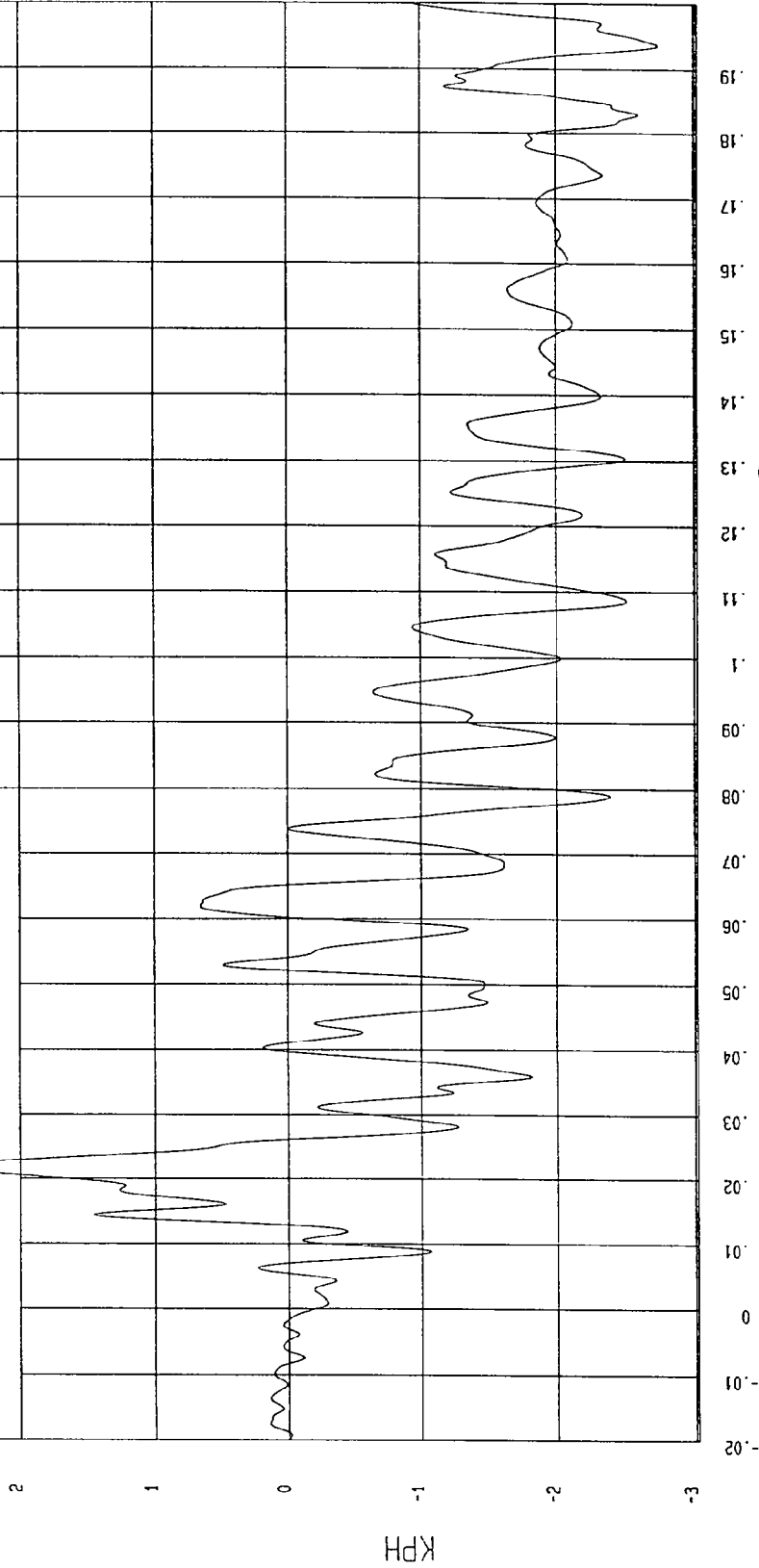
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-2.746791 KPH at 193 msec

YMAX= 2.70541 KPH at 21. msec

MOVING BARRIER CG Z VELOCITY

1 895127AI.V04 Filterclass (180)



MCA Research  
12-19-1996 14:19

TEST DATE: 11-25-1996

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

Speed: 33.25 MPH 53.5 KPH

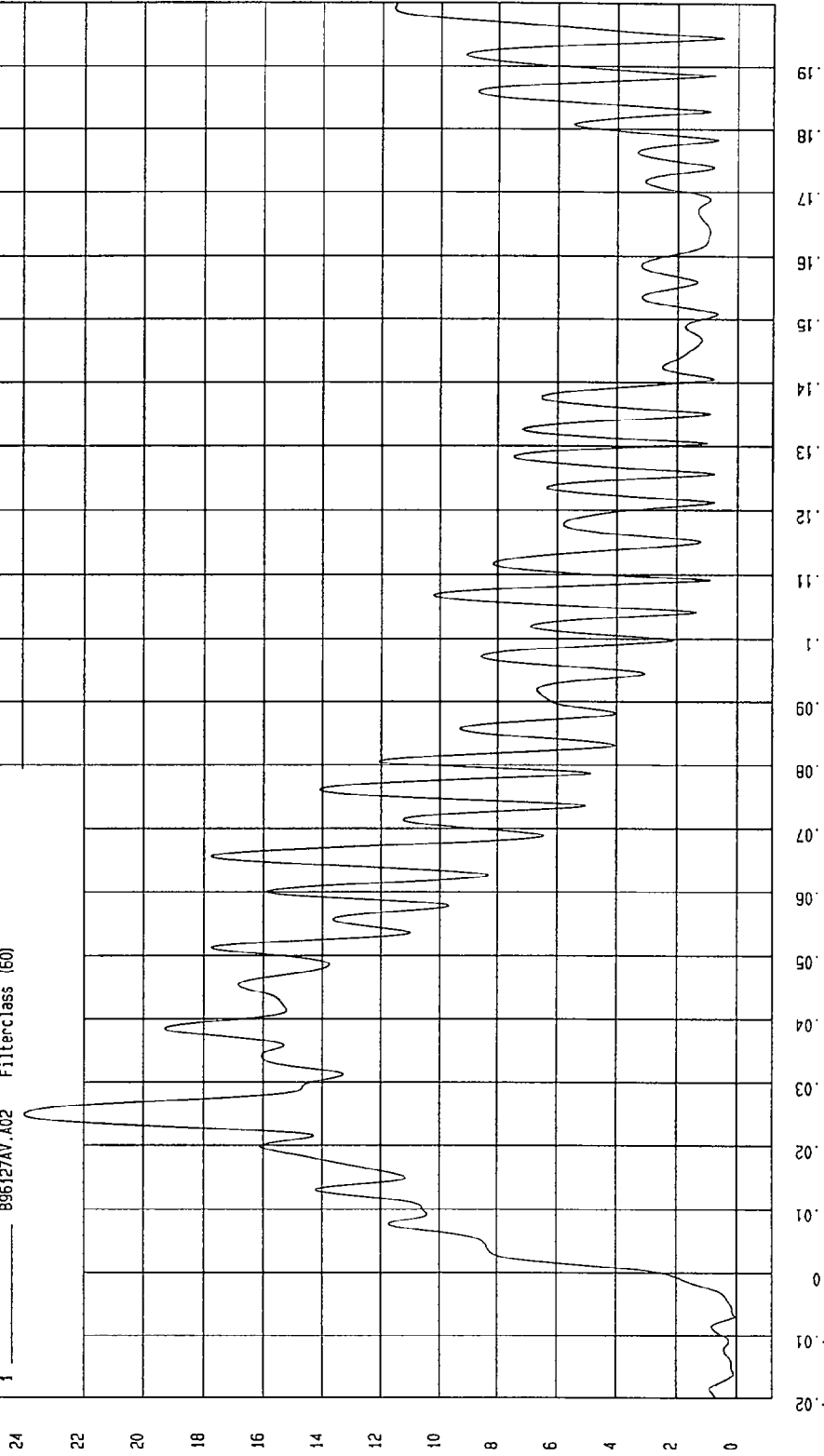
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206)

YMAX= 23.95304 G'S at 24. msec

YMIN= 2.608108E-02 G'S at -6.9 msec

MOVING BARRIER CG RESULTANT ACCELERATION

1 896127AV.A02 Filterclass (50)



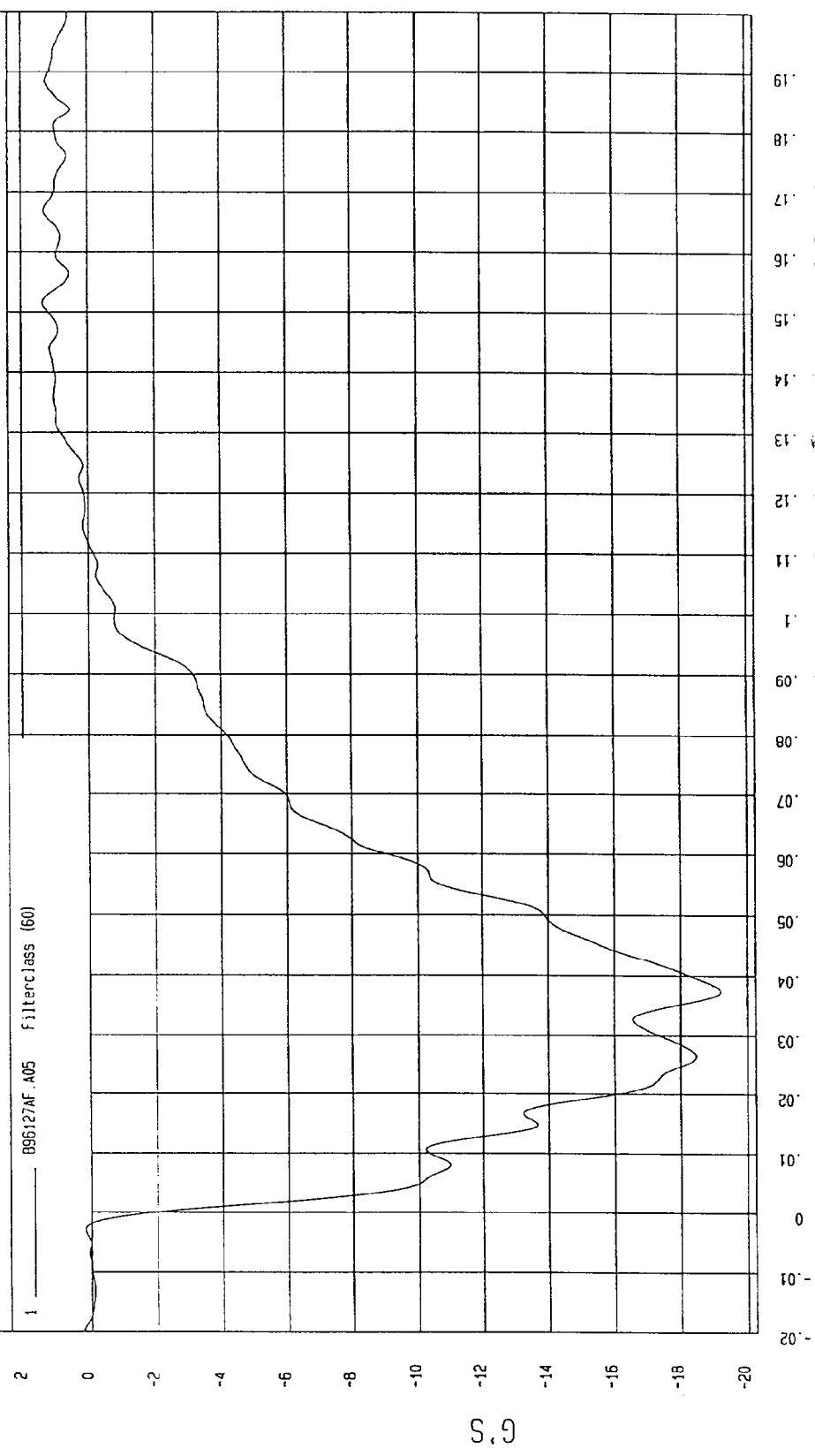
MCA Research  
12-14-1996 11:05

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

Minimum = -19.21 G'S at 37 msec Maximum = 1.37 G'S at 152 msec

MOVING BARRIER REAR AXLE X ACCELERATION

1 096127AF.A05 filterclass (60)

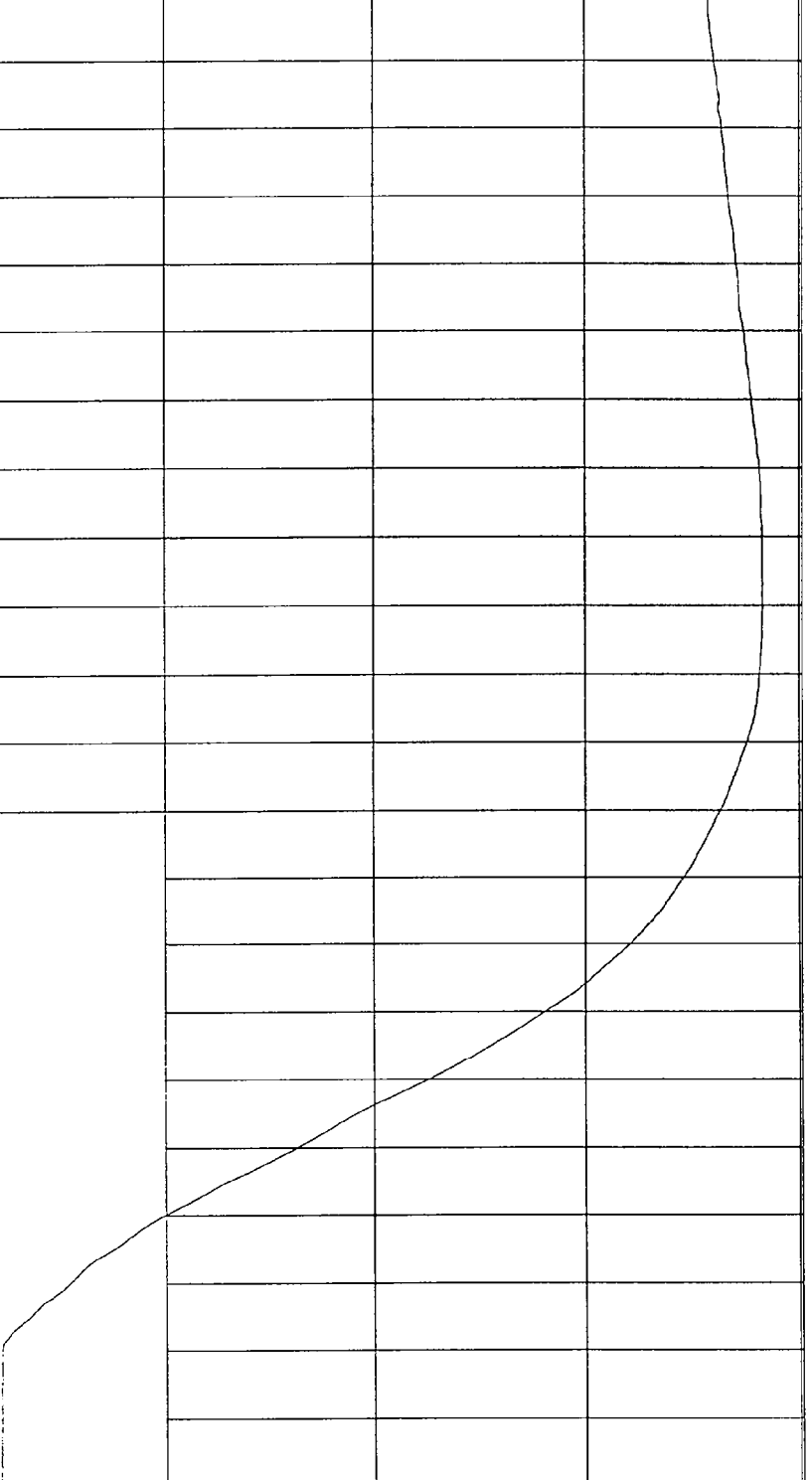


MGA Research  
12-19-1996 14.36

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN= 11.67143 KPH at 113 msec YMAX= 47.71569 KPH at -18. msec

MOVING BARRIER REAR AXLE X VELOCITY



TIME Seconds

MGA Research  
12-19-1996 14: 19

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

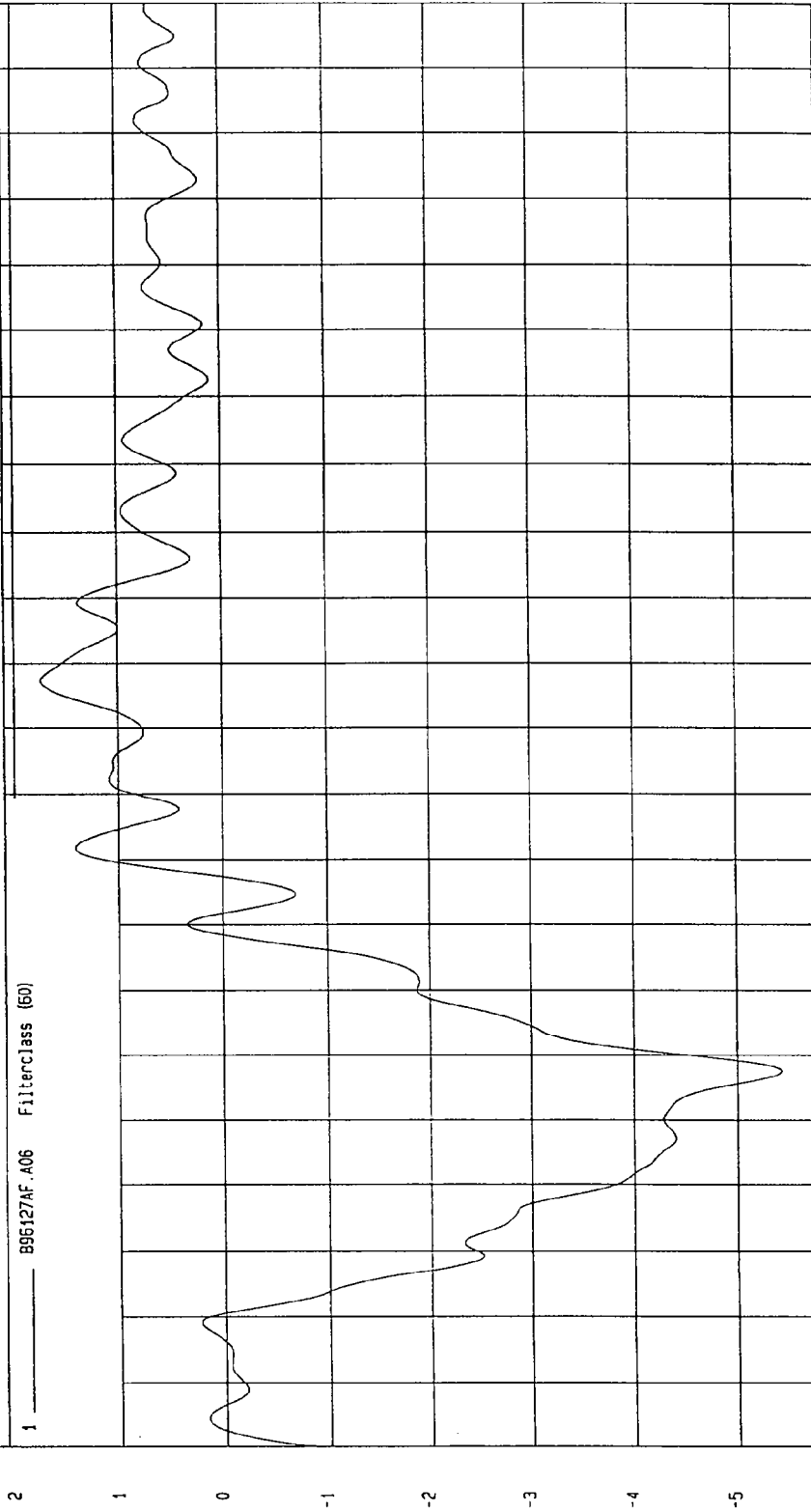
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

Minimum = -5.43 G'S at 38 msec

MOVING BARRIER REAR AXLE Y ACCELERATION

1 ——— 896127AF.A06 Filterclass (50)

Maximum = 1.73 G'S at 97 msec



MGA Research  
12-19-1996 14.36

TEST DATE: 11-25-1996

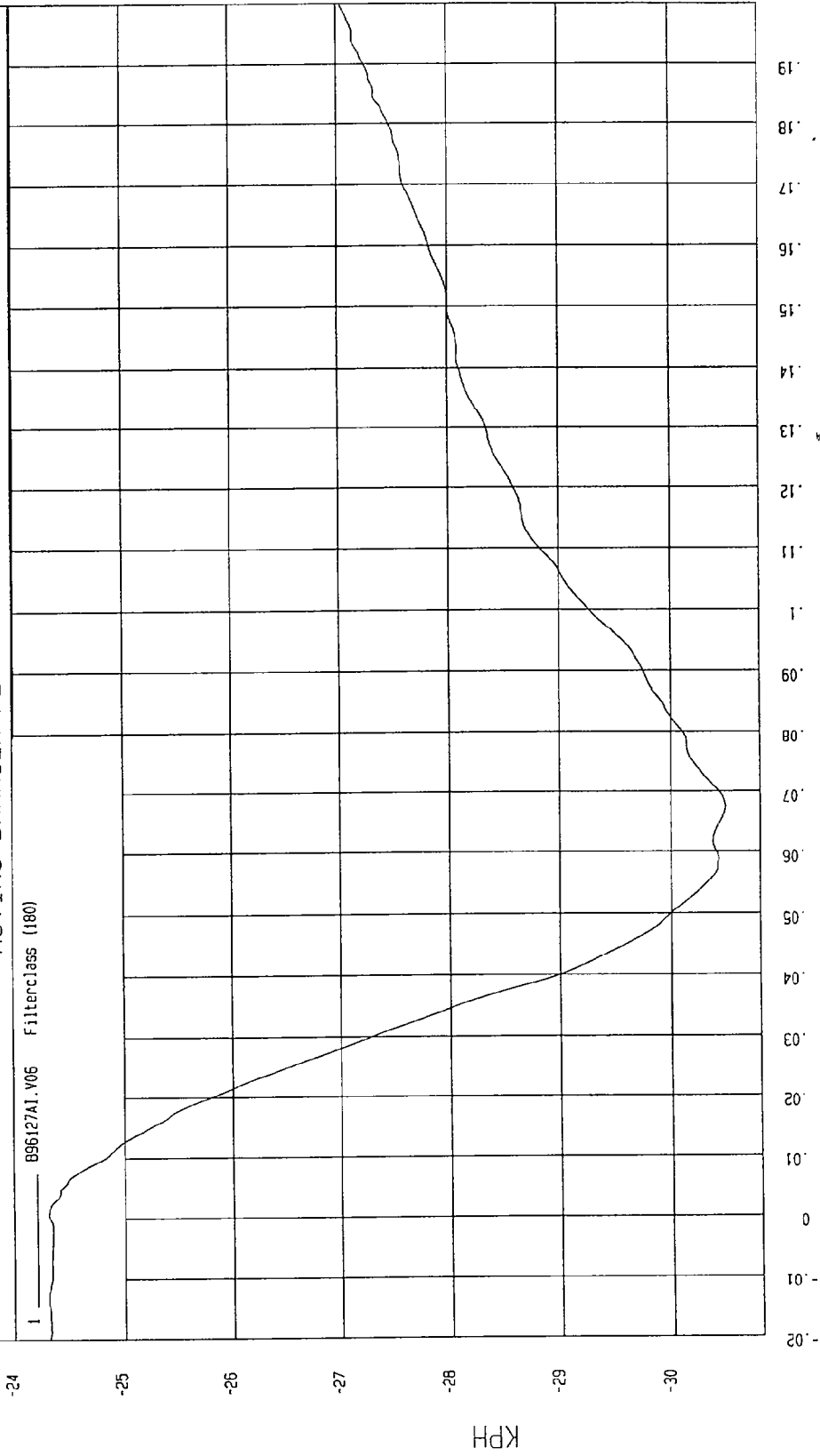
TEST: FMVSS 214 DYNAMIC SIDE IMPACT

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-30.40097 KPH at 67. msec YMAX=24.29632 KPH at -13 msec

MOVING BARRIER REAR AXLE Y VELOCITY

1 B96127A1.V06 Filterclass (180)



MCA Research  
12-19-1996 12:09

TEST DATE: 11-25-1996

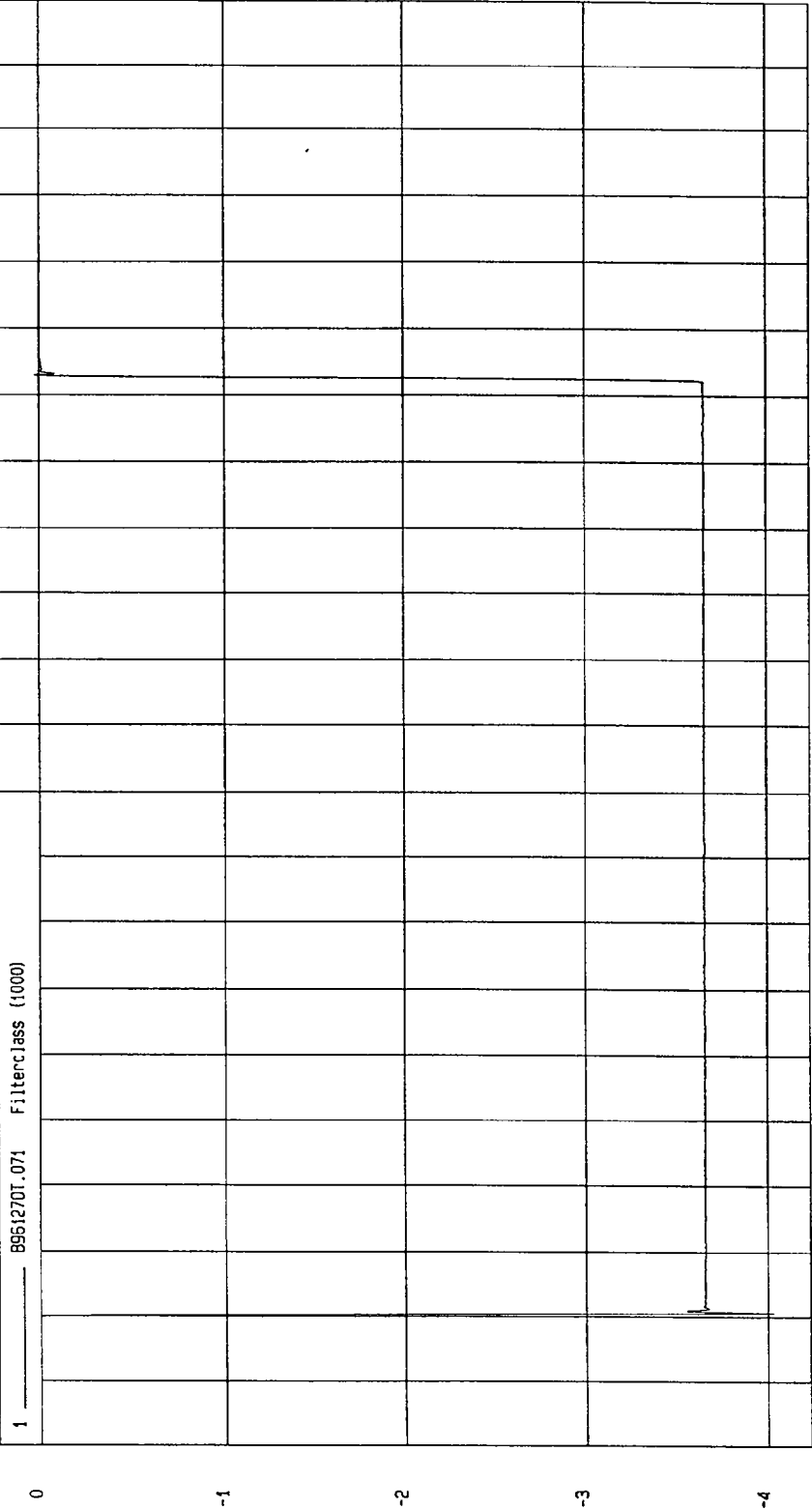
TEST: FMVSS 214 DYNAMIC SIDE IMPACT

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-4.026232 VOLTS at .60 msec YMAX= 2.20511E-02 VOLTS at 142 msec

LEFT BARRIER CONTACT

1 8951270T.071 FilterClass (1000)



MCA Research  
12-15-1996 13:56

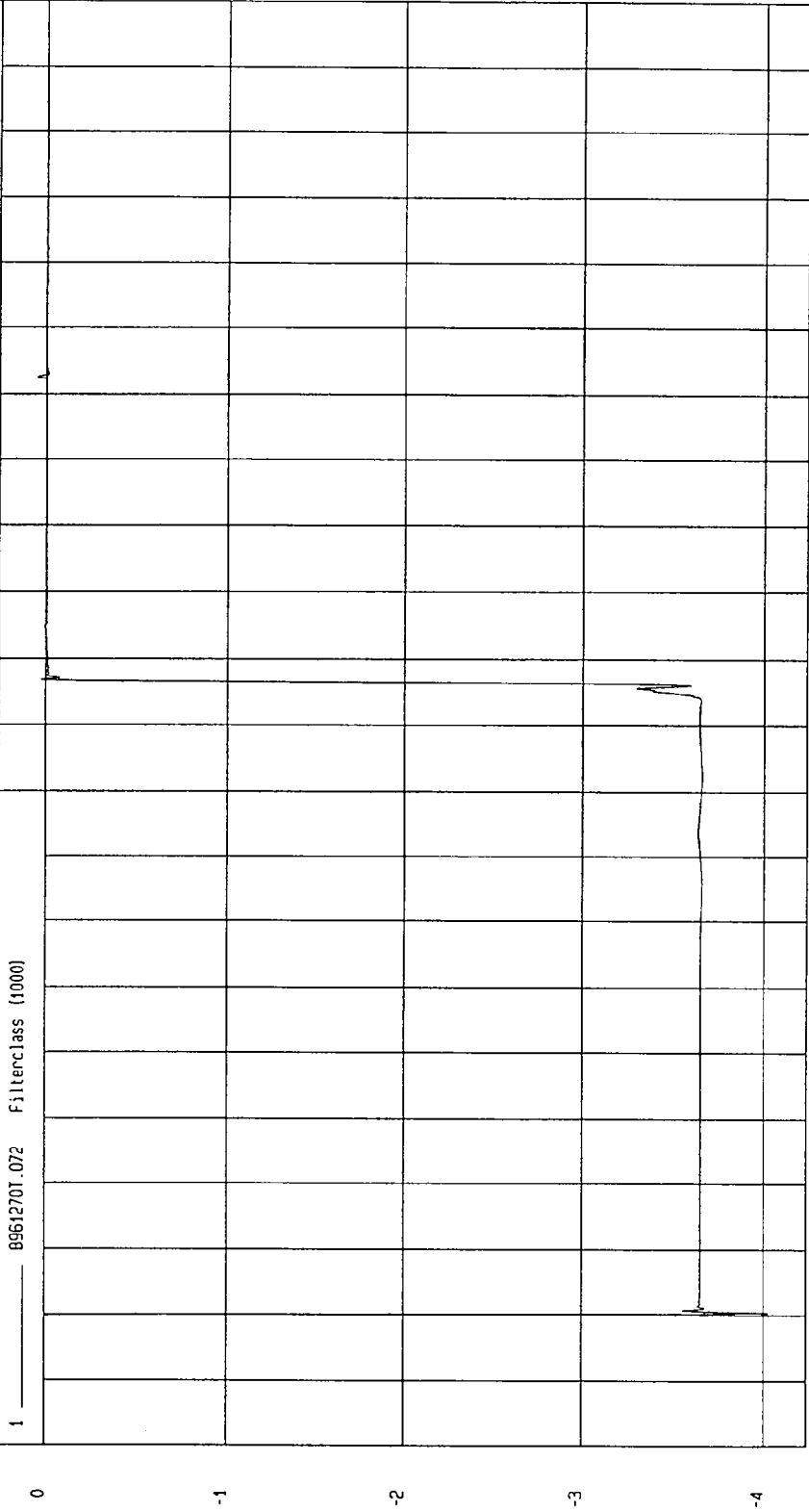
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-4.026525 VOLTS at .29 msec YMAX= 5.106401E-02 VOLTS at 142 msec

RIGHT BARRIER CONTACT

1 99612701.072 Filterclass (1000)



MGA Research  
12-15-1996 13:58

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

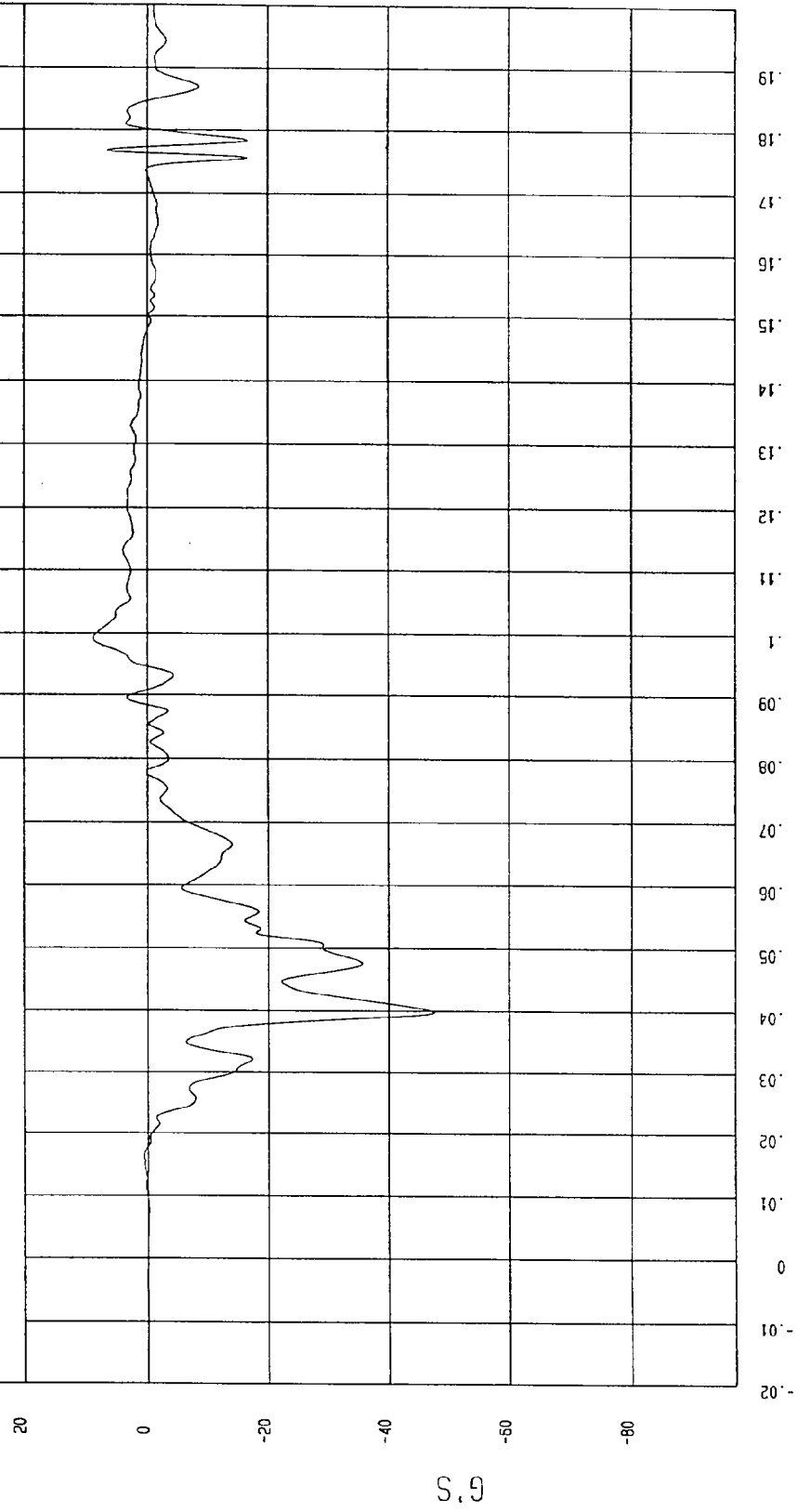
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-47.60453 G'S at 39. msec

YMAX= 8.700763 G'S at 99. msec

FRONT PASSENGER UPPER RIB Y REDUNDANT ACCELERATION

1 \_\_\_\_\_ B96127AF.A61 Filterclass (180)



HGA Research  
12-15-1996 14:00

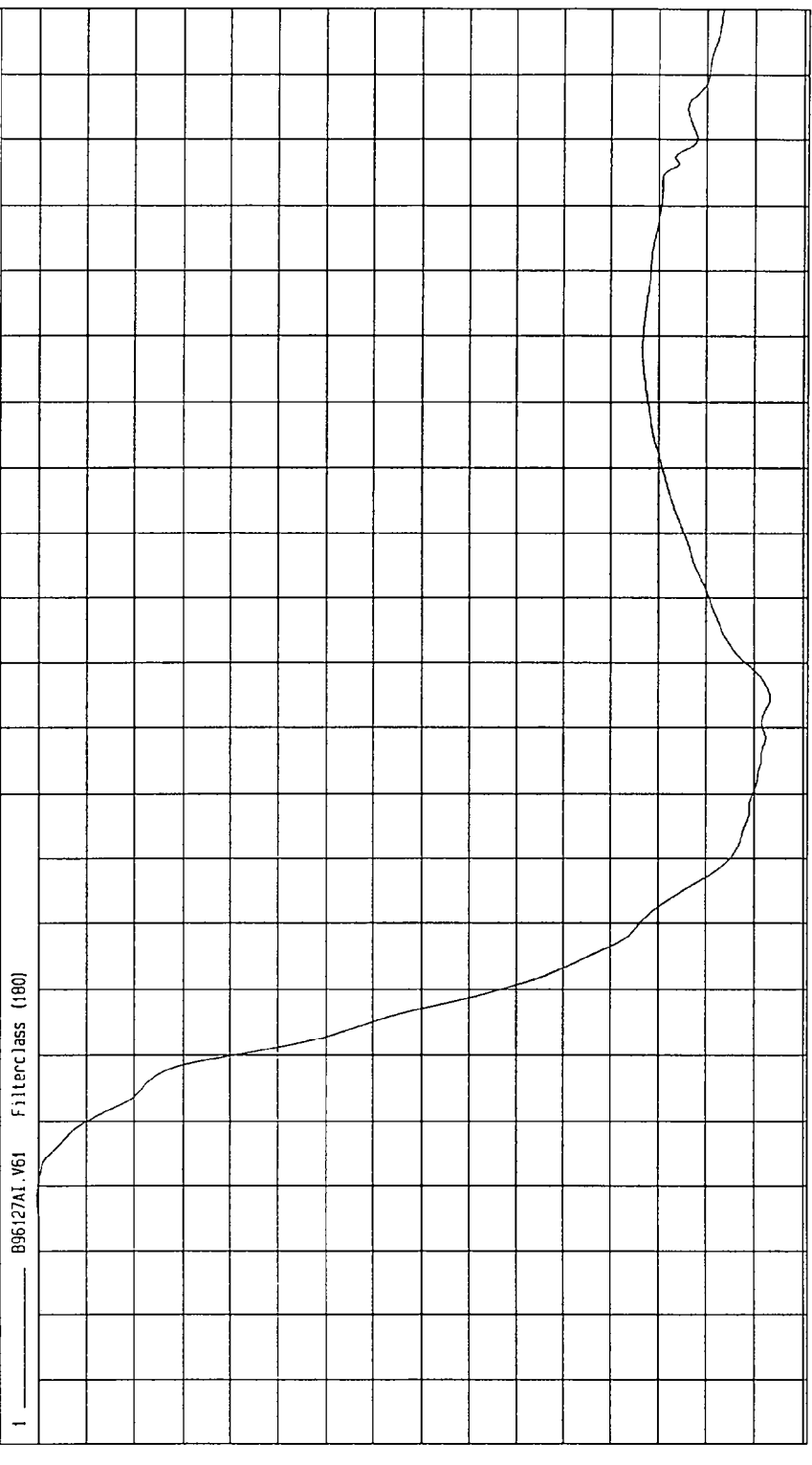
TEST DATE: 11-25-1996

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-30.63304 KPH at 94. msec YMAX= .0583335 KPH at 17. msec

FRONT PASSENGER UPPER RIB Y REDUNDANT VELOCITY



TIME Seconds

M&A Research  
12-15-1996 14: 01

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

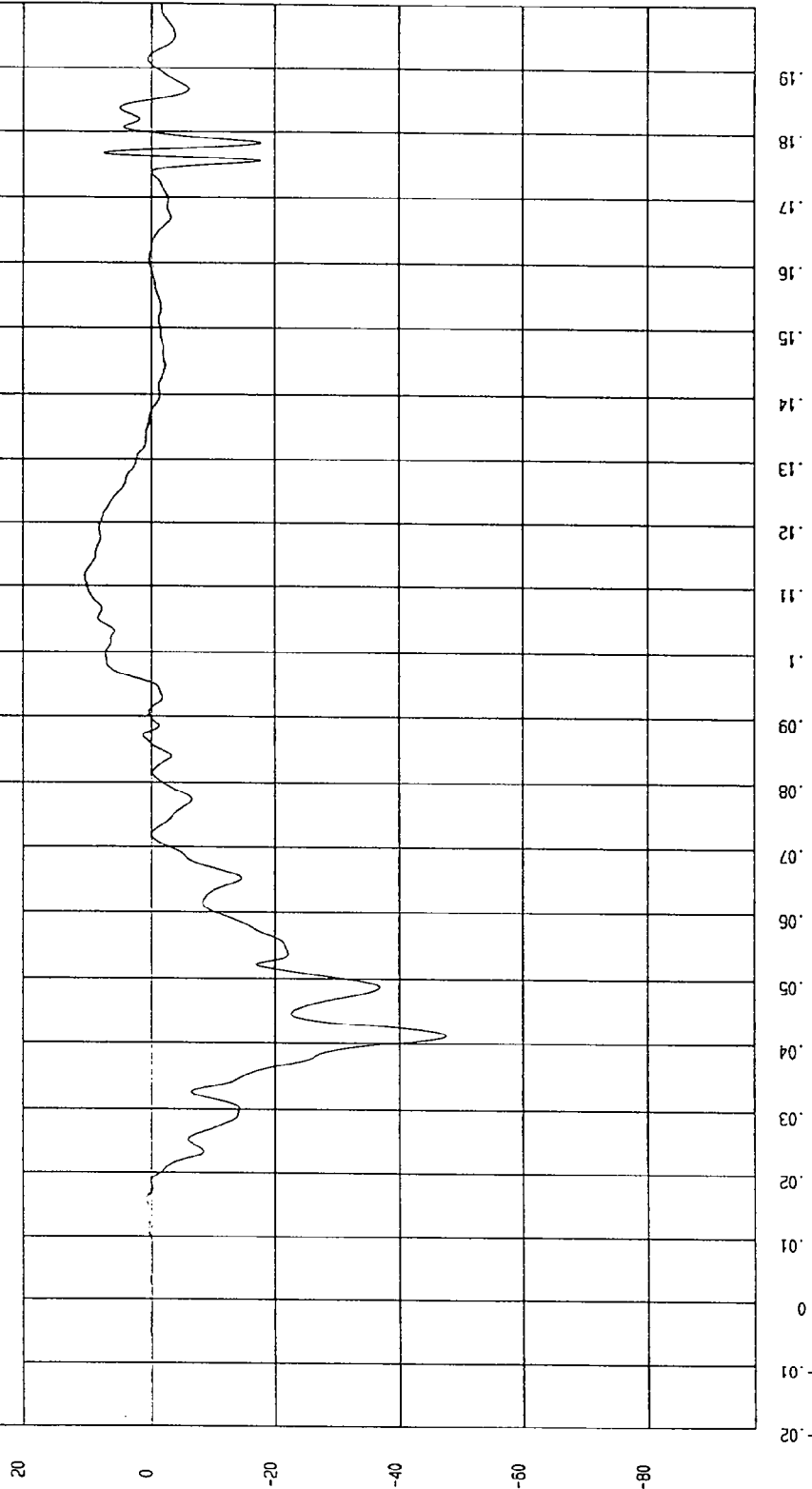
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-47.72078 G'S at 41. msec

YMAX= 10.16157 G'S at 111 msec

FRONT PASSENGER LOWER RIB Y REDUNDANT ACCELERATION

1 B96127AF.AG2 Filterclass (180)



MCA Research  
12-15-1996 14:00

G.S

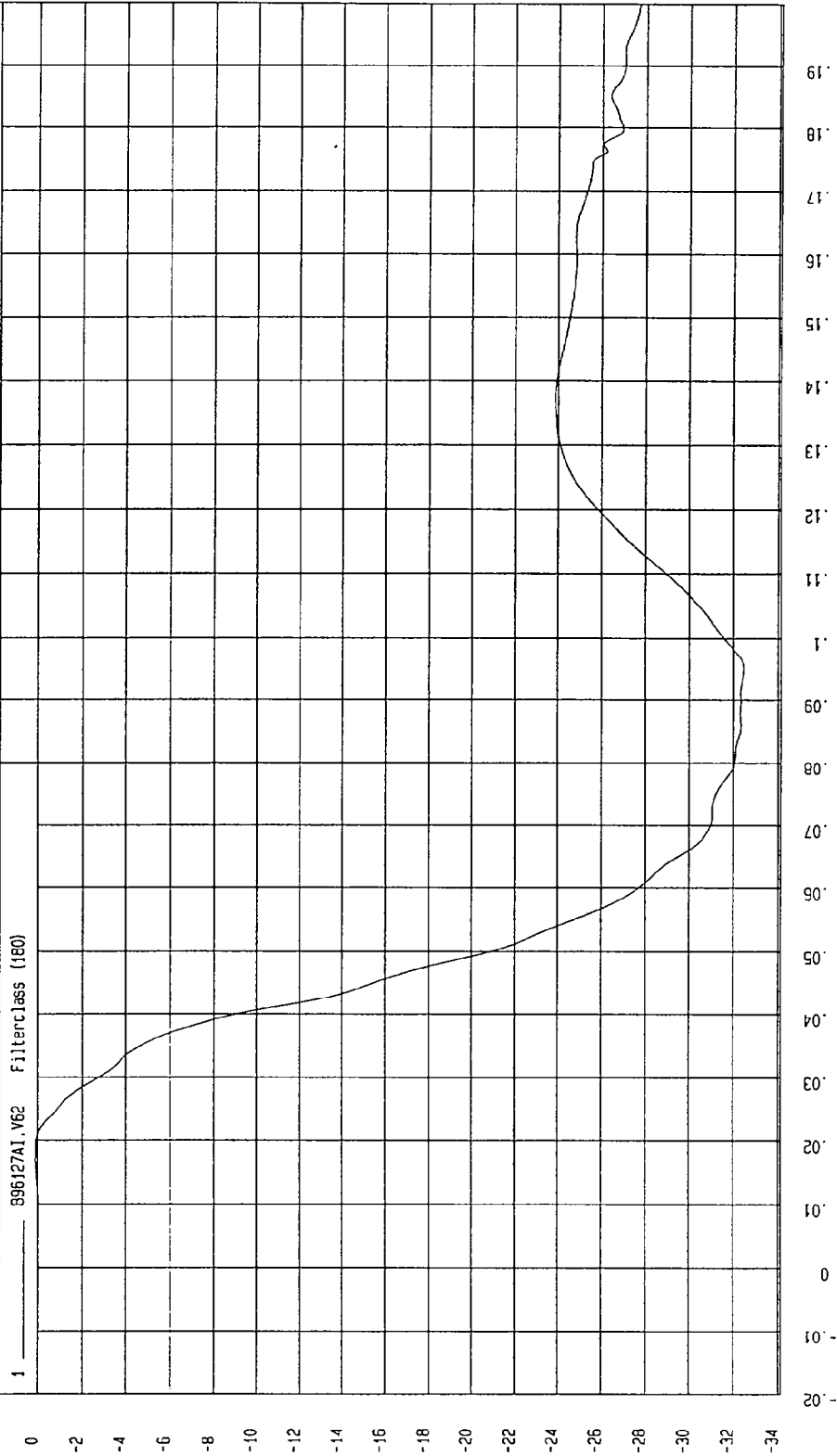
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-32.47866 KPH at 95. msec YMAX= .1004348 KPH at 17 msec

FRONT PASSENGER LOWER RIB Y REDUNDANT VELOCITY

1 896127A1.V62 Filterclass (180)



MGA Research  
12-15-1996 1A:01

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

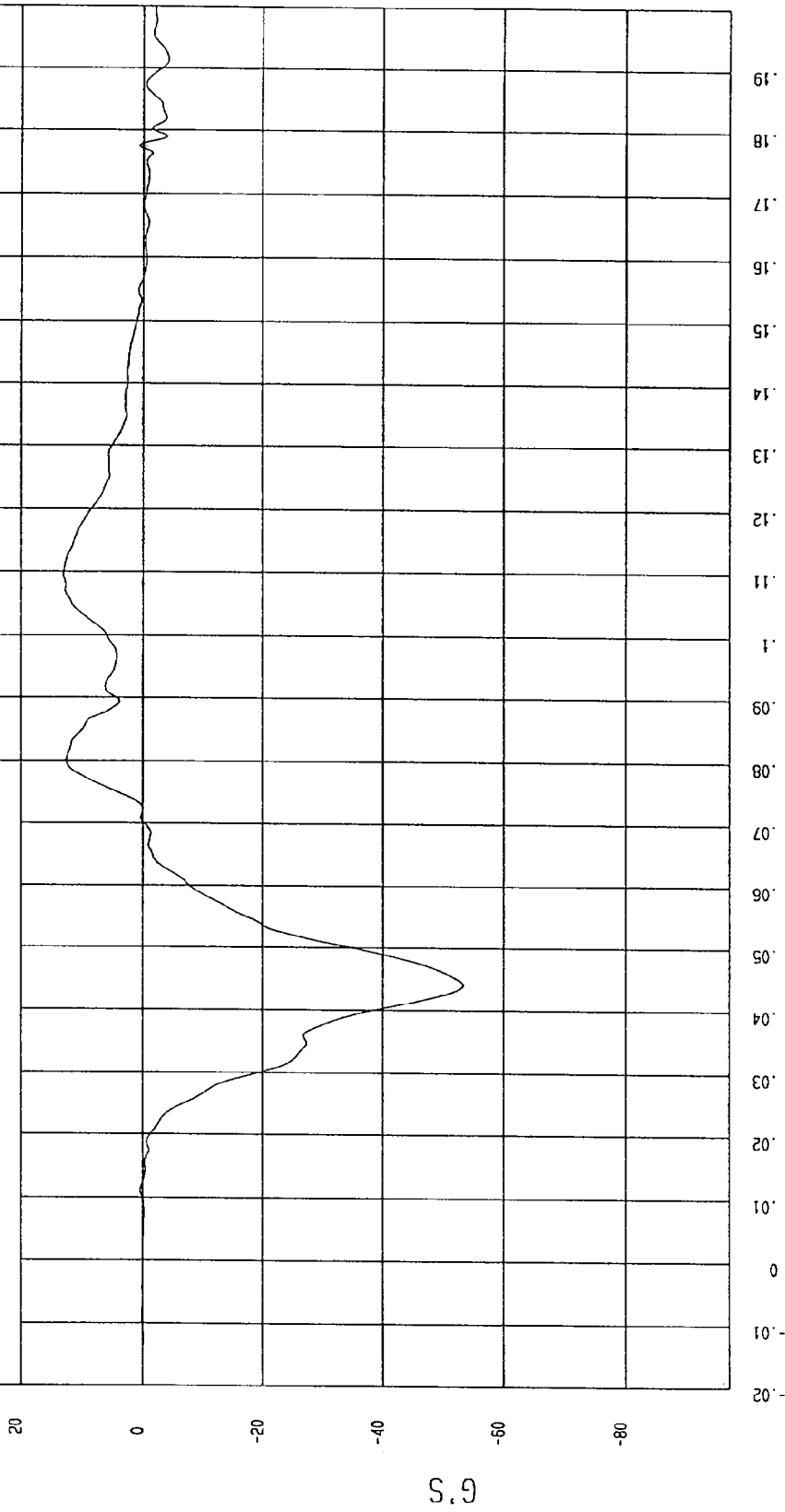
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-53.41342 G'S at 44. msec

YMAX= 13.1351 G'S at 109 msec

FRONT PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

1 096127AF.A63 Filterclass (180)



MSA Research  
12-15-1996 14:00

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206)

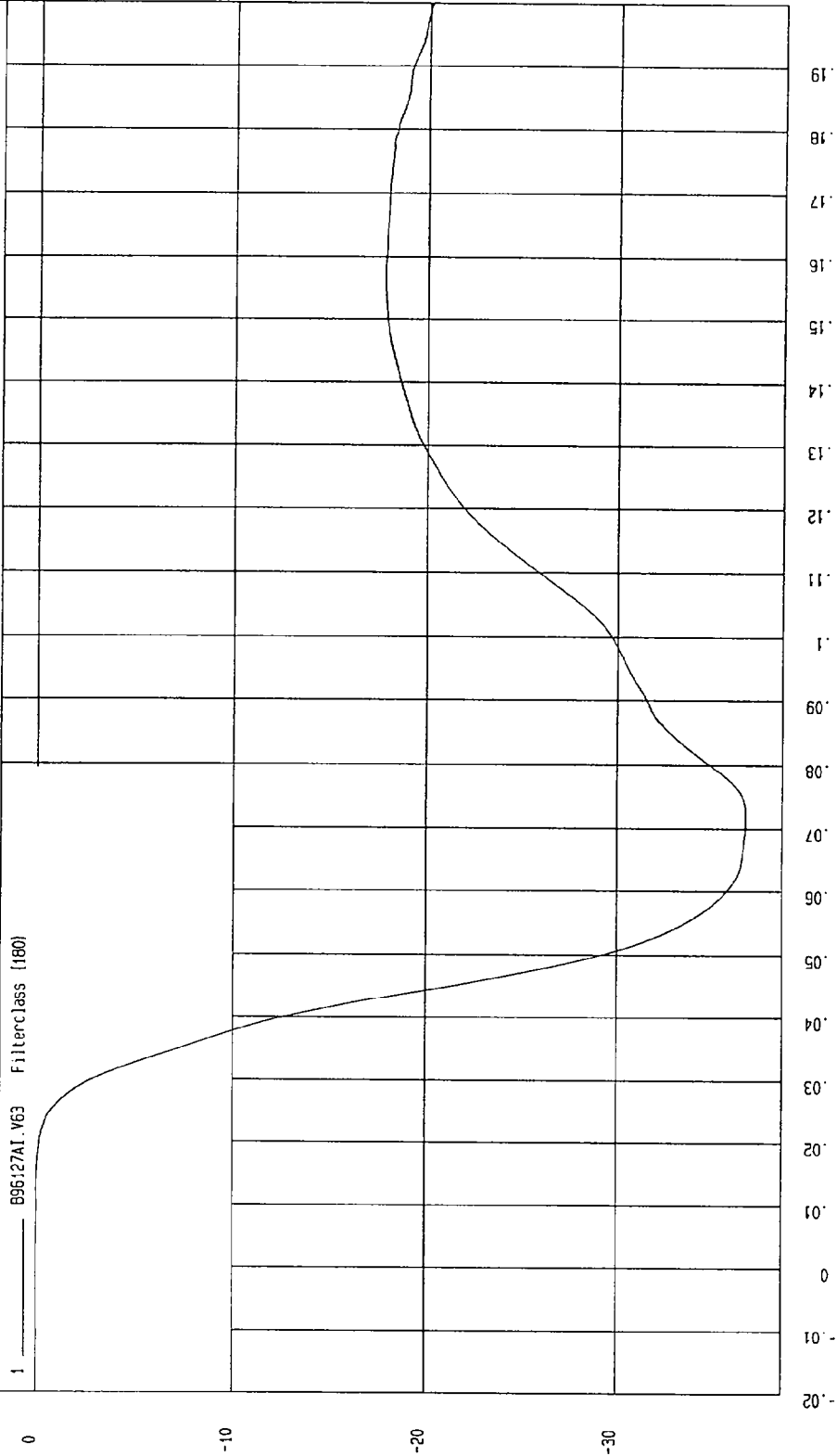
Speed: 33.25 MPH 53.5 KPH

YMIN=-36.5791 KPH at 70. msec

YMAX= 1.060779E-02 KPH at -3.2 msec

FRONT PASSENGER LOWER SPINE Y REDUNDANT VELOCITY

1 ——— 896127A1.V63 Filterclass (180)



MCA Research  
12-15-1996 14:02

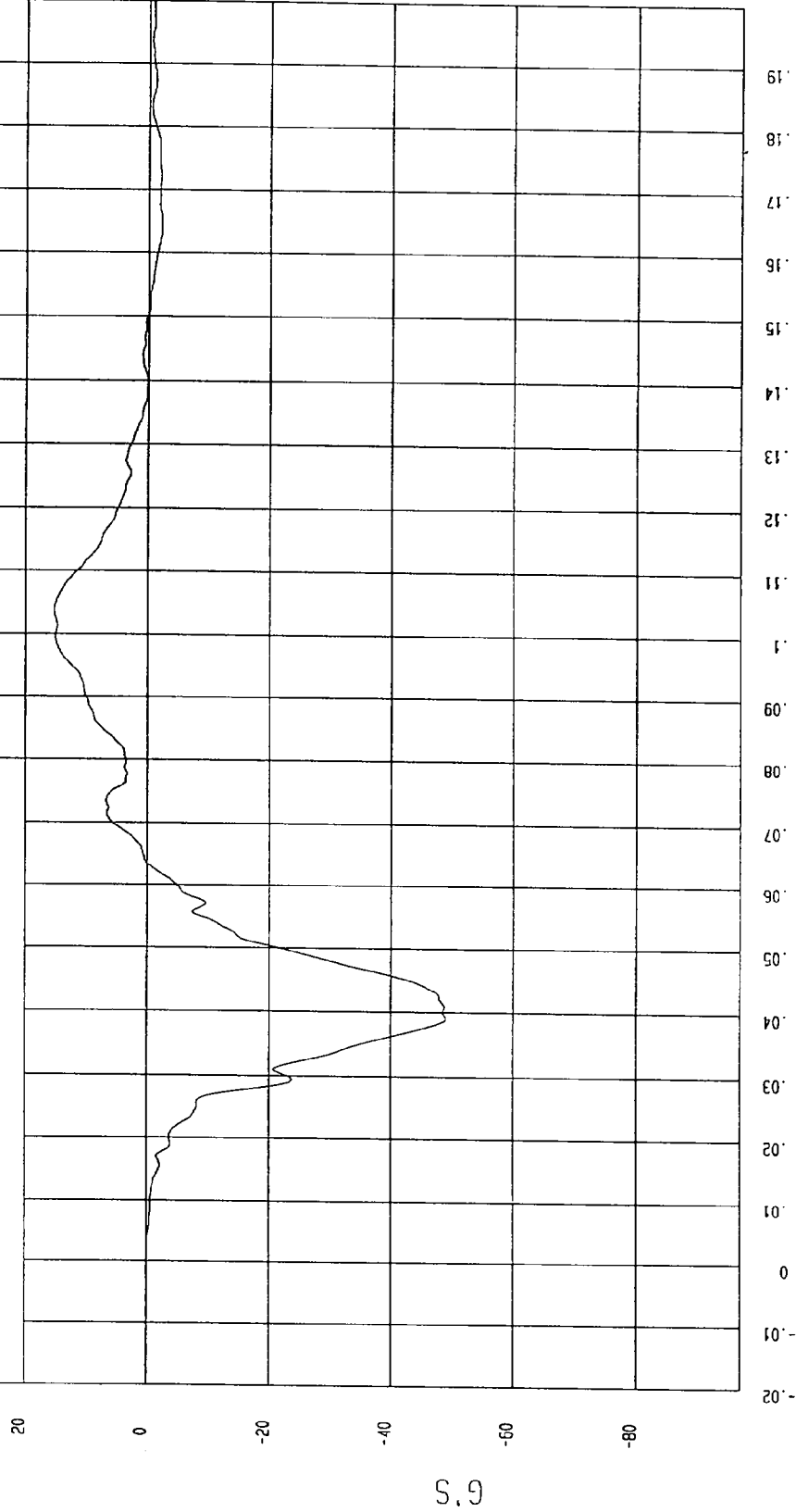
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-49.23012 G'S at 39 msec YMAX= 15.40379 G'S at 103 msec

FRONT PASSENGER PELVIS Y REDUNDANT ACCELERATION

1 ——— 896127AF.A64 Filterclass (180)



MGA Research  
12-15-1996 14:00

TEST DATE: 11-25-1996

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

Speed: 33.25 MPH 53.5 KPH

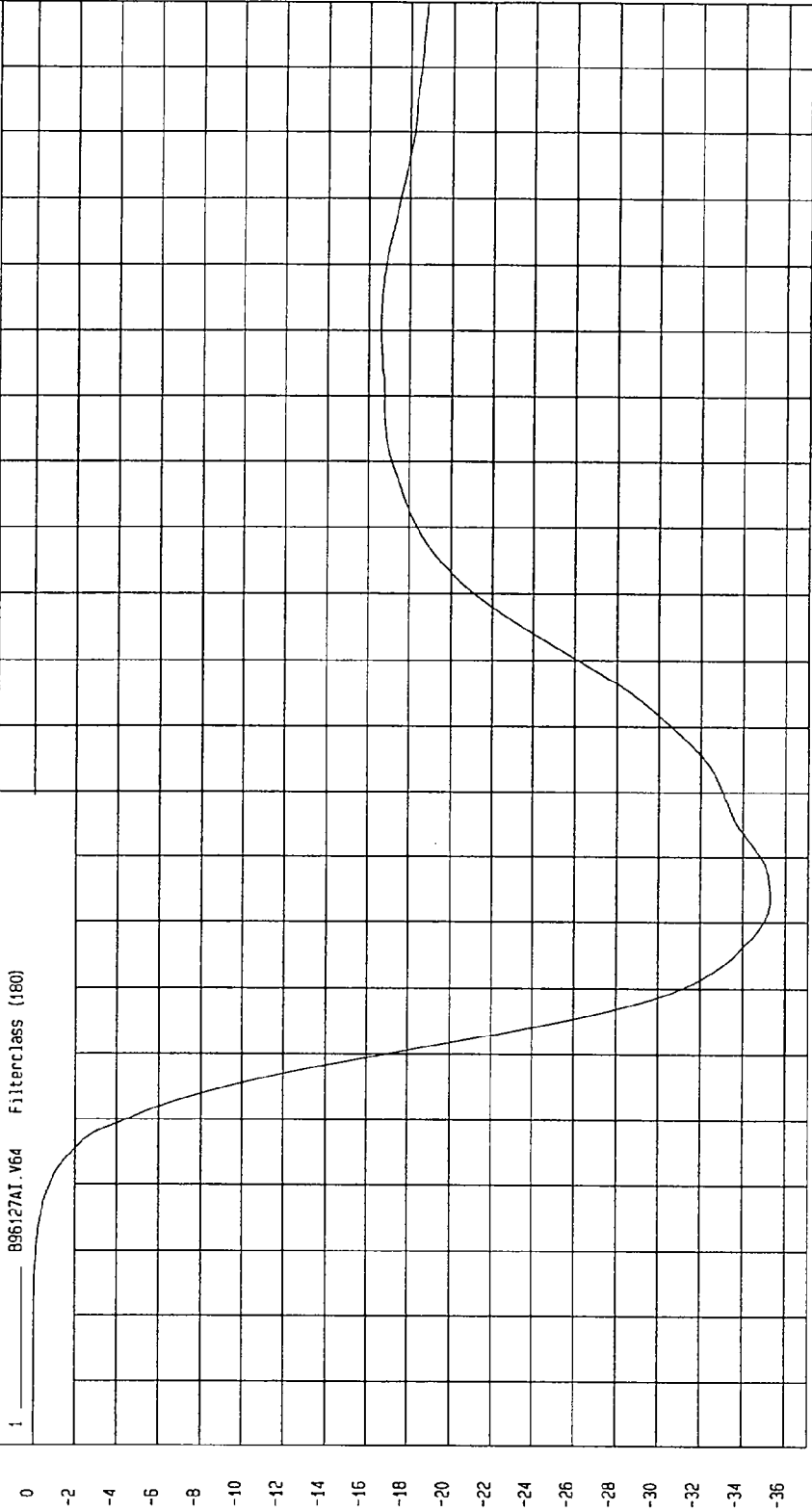
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206)

YMIN=-35.29466 KPH at 63. msec

YMAX= 3.268779E-03 KPH at -15. msec

FRONT PASSENGER PELVIS Y REDUNDANT VELOCITY

1 896127AI.V64 Filterclass (180)



MCA Research  
12-15-1996 14:02

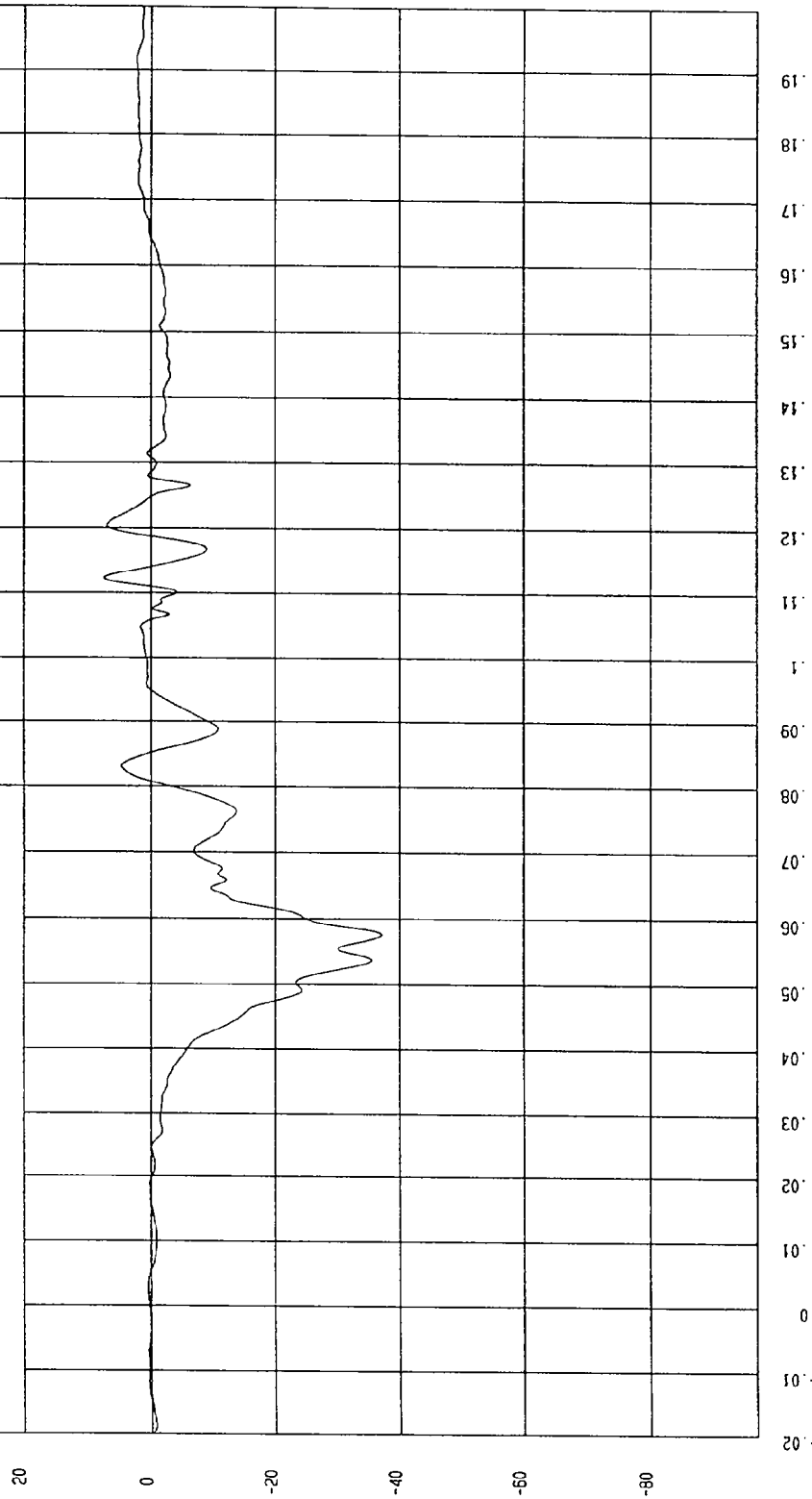
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-37.1231 G'S at 57. msec YMAX= 7.460777 G'S at 112 msec

REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION

1 896127AF.A66 filterclass (180)



MCA Research  
12-15-1996 14:00

TIME (SECONDS)

G.S

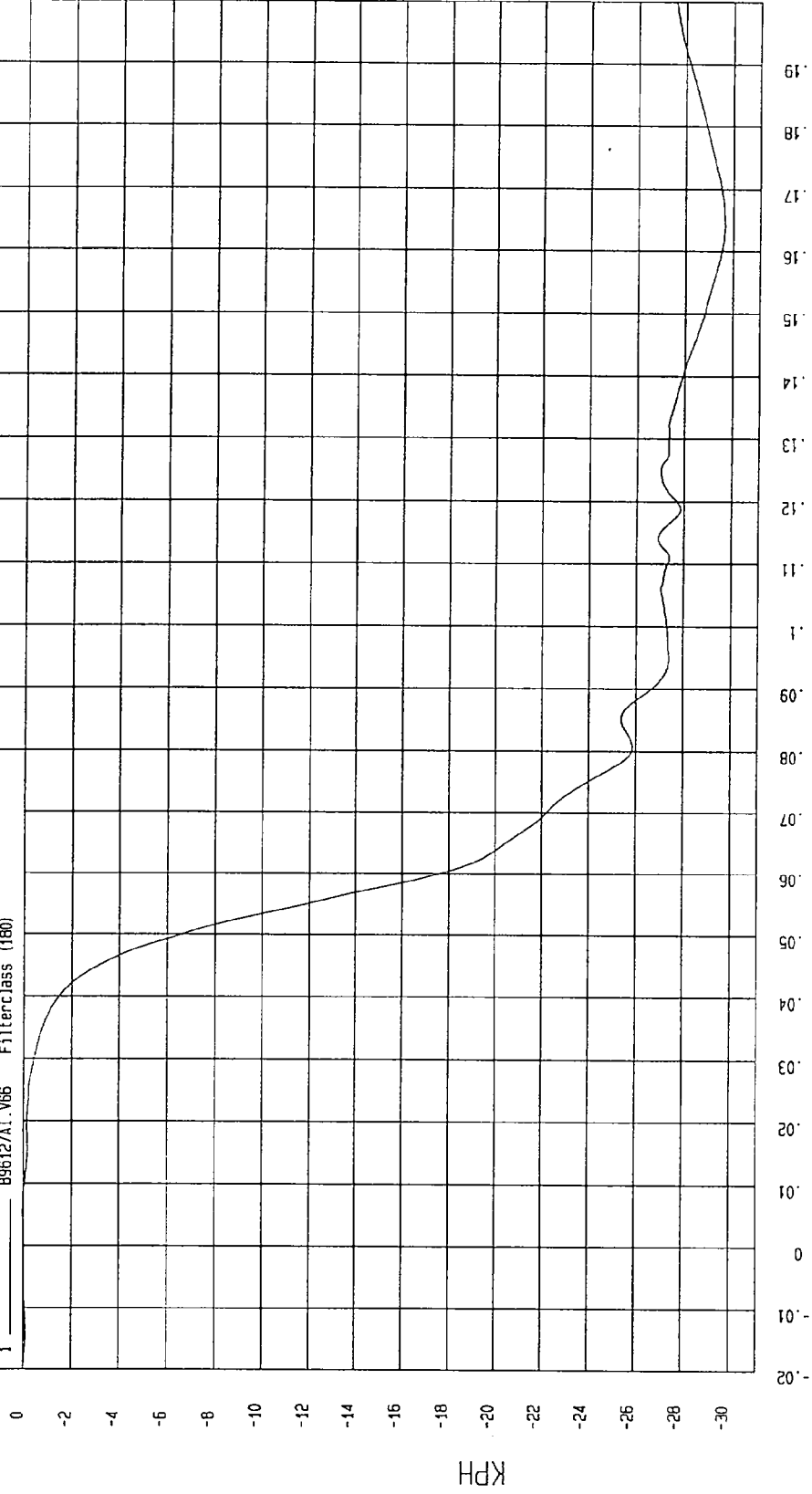
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-29.64579 KPH at 164 msec YMAX= 5.267338E-02 KPH at 5.5 msec

REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY

1 896127A1.V66 Filterclass (160)



MSA Research  
12-15-1996 14:02

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

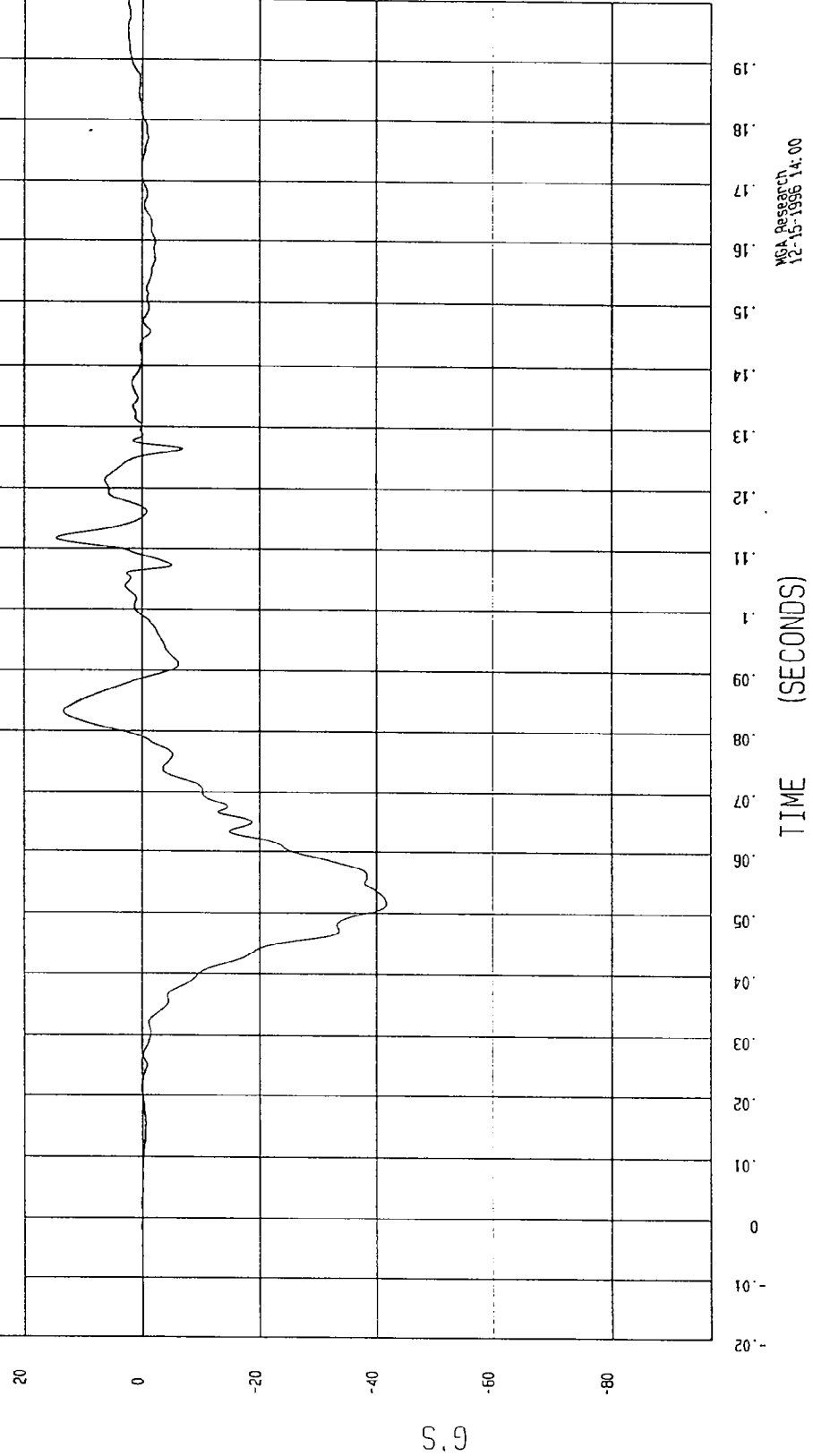
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-41.7254 G'S at 51. msec

YMAX= 14.48369 G'S at 111 msec

REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION

1 \_\_\_\_\_ 896127AF.A67 Filterclass (180)



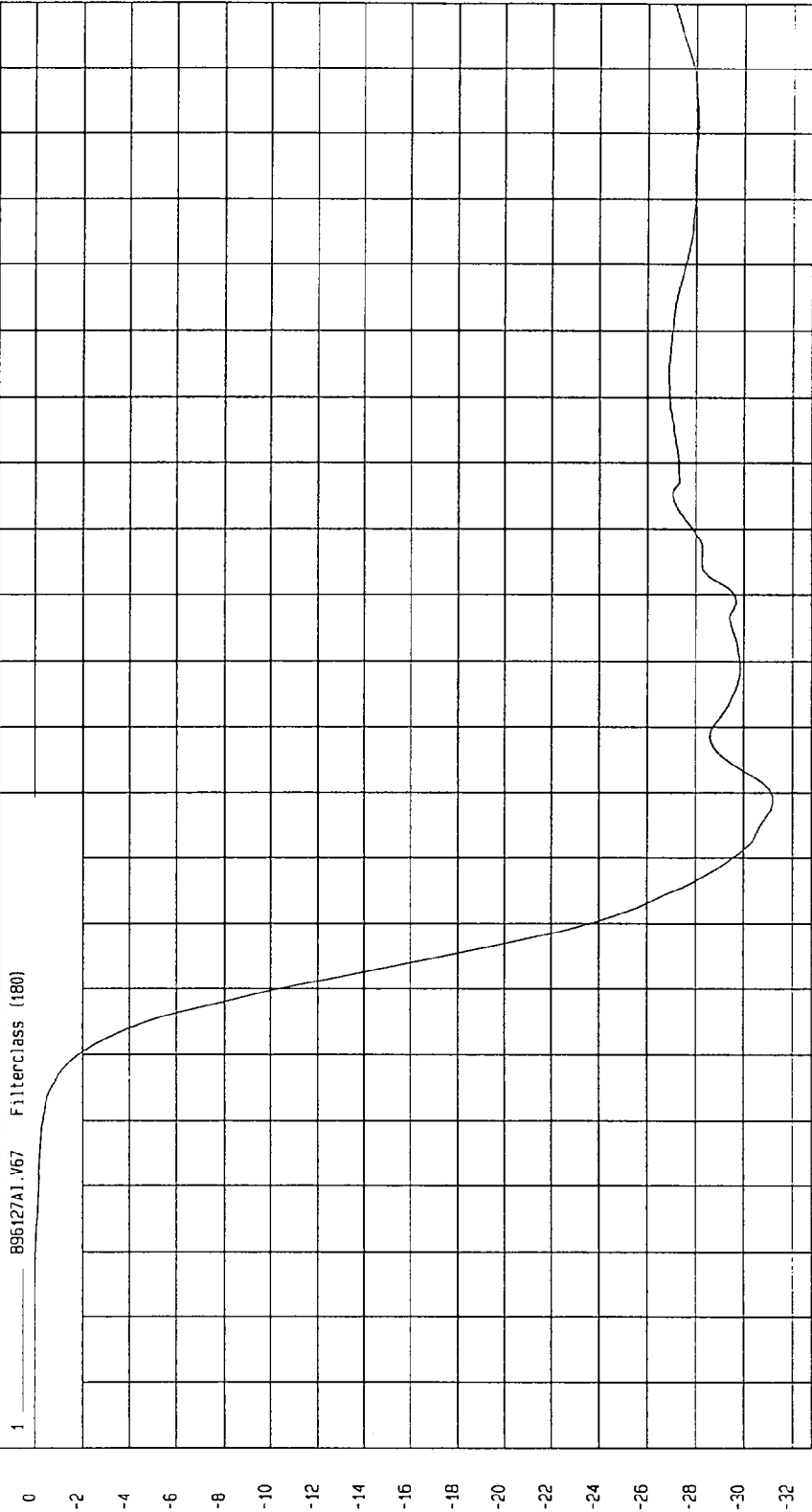
NSA Research  
12-15-1996 14:00

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-31.19199 KPH at 79 msec YMAX= 1.779394E-03 KPH at 3.2 msec

REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY

1 896127A1.V67 Filterclass (180)



MCA Research  
12-15-1996 14.02

TIME Seconds

KPH

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

TEST DATE: 11-25-1996

Speed: 33.25 MPH 53.5 KPH

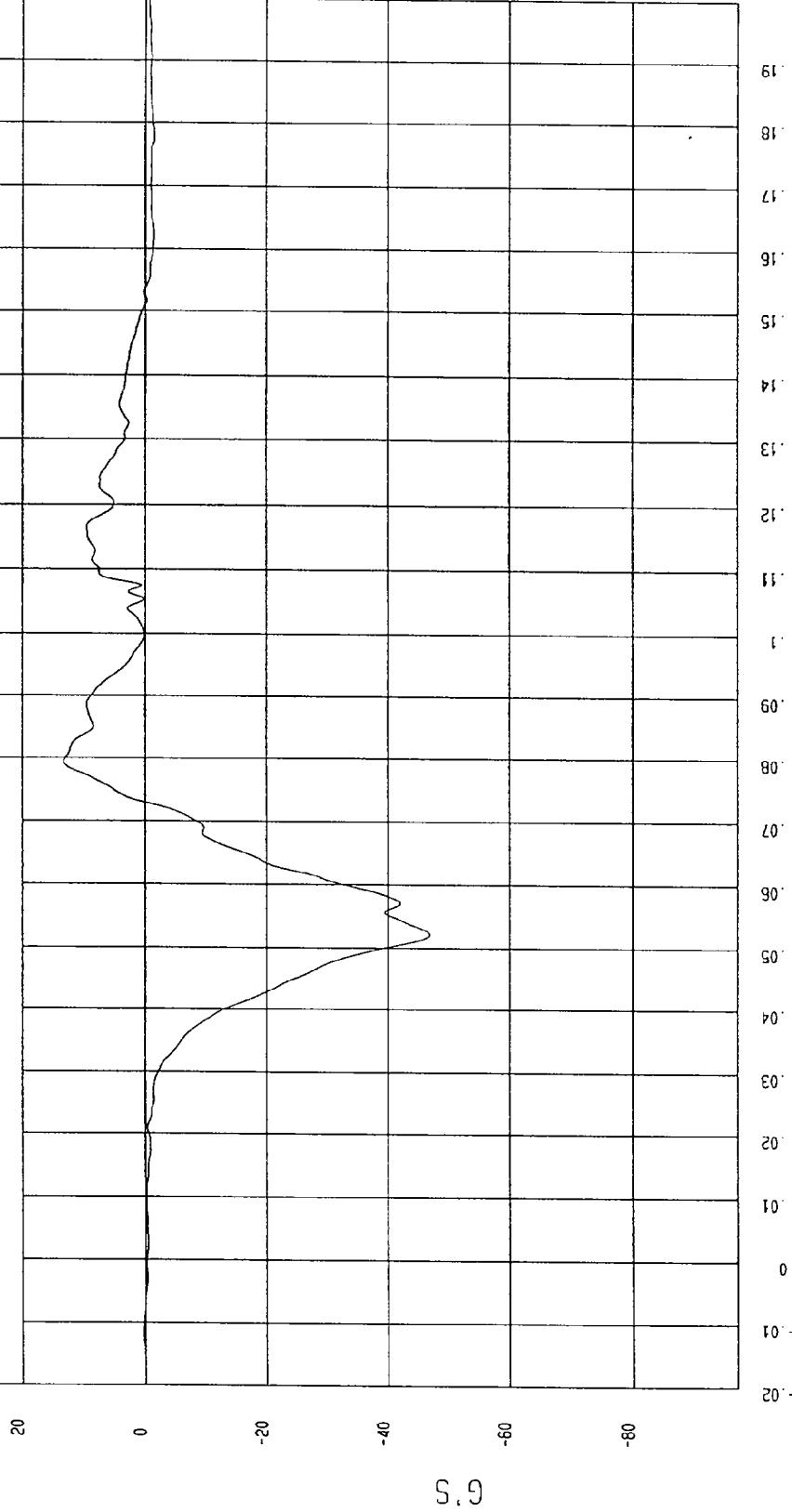
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206)

YMIN=-7.03209 G'S at 52. msec

YMAX=13.3554 G'S at 79. msec

REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

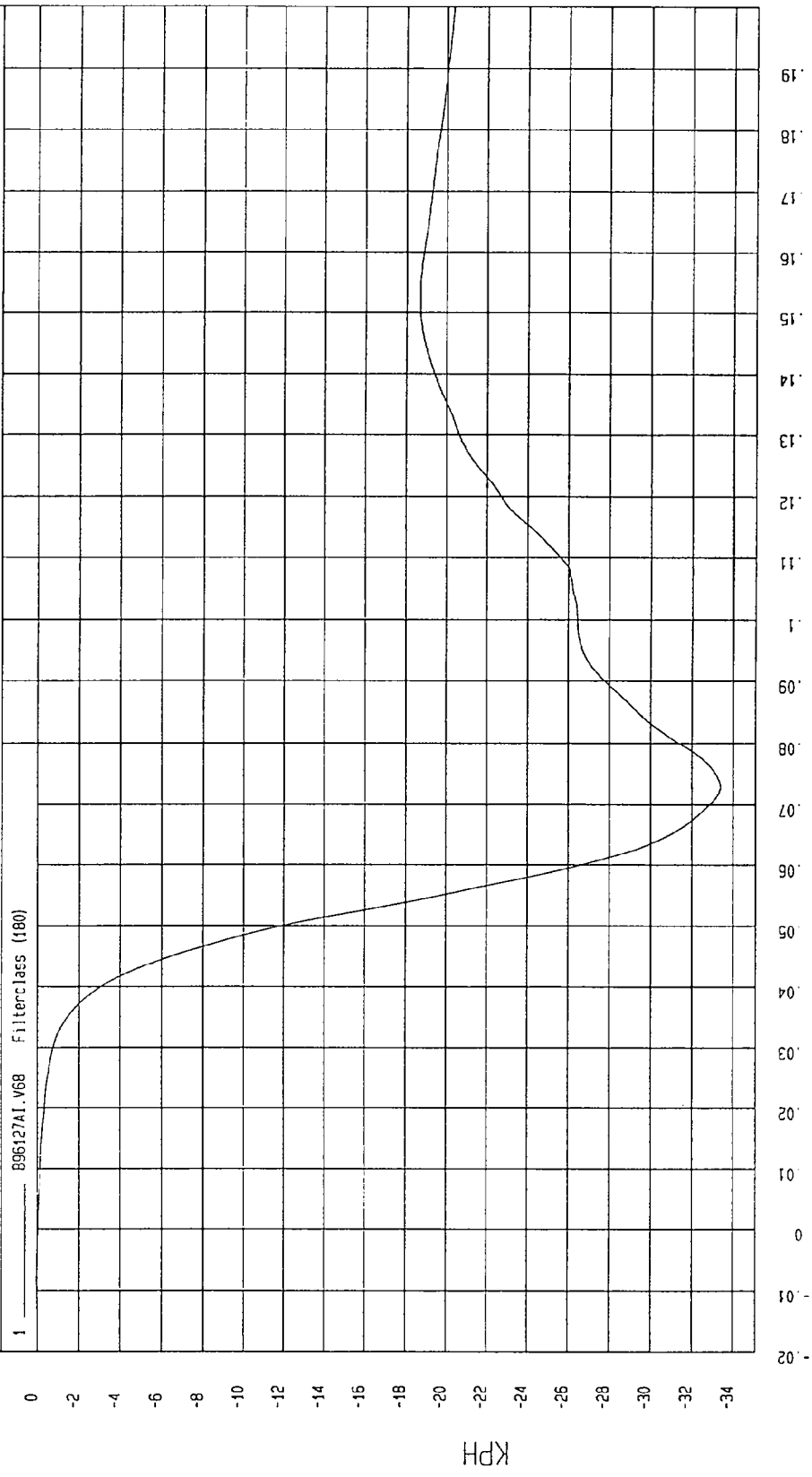
1 896127AF.A68 Filterclass (180)



MGA Research  
12-15-1996 14:00

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
 COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH  
 YMIN=-33.38379 KPH at 72. msec YMAX= 3.127125E-02 KPH at -7.9 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY



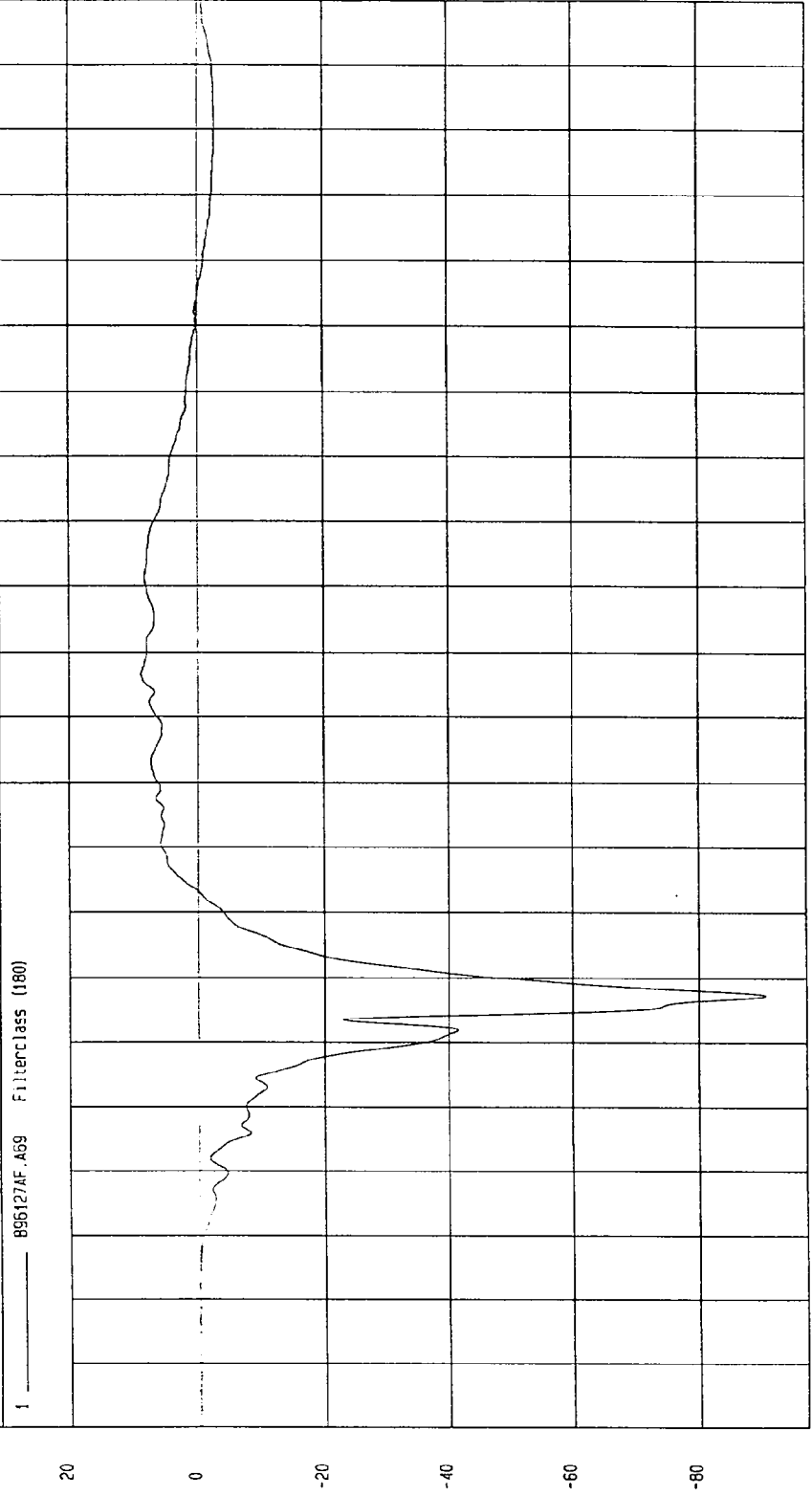
MCA Research  
 12-15-1996 14:02

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-90.55694 G'S at 47. msec YMAX= 8.636199 G'S at 96. msec

REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION



TIME (SECONDS)

NBA Research  
12-15-1996 14:00

G.S

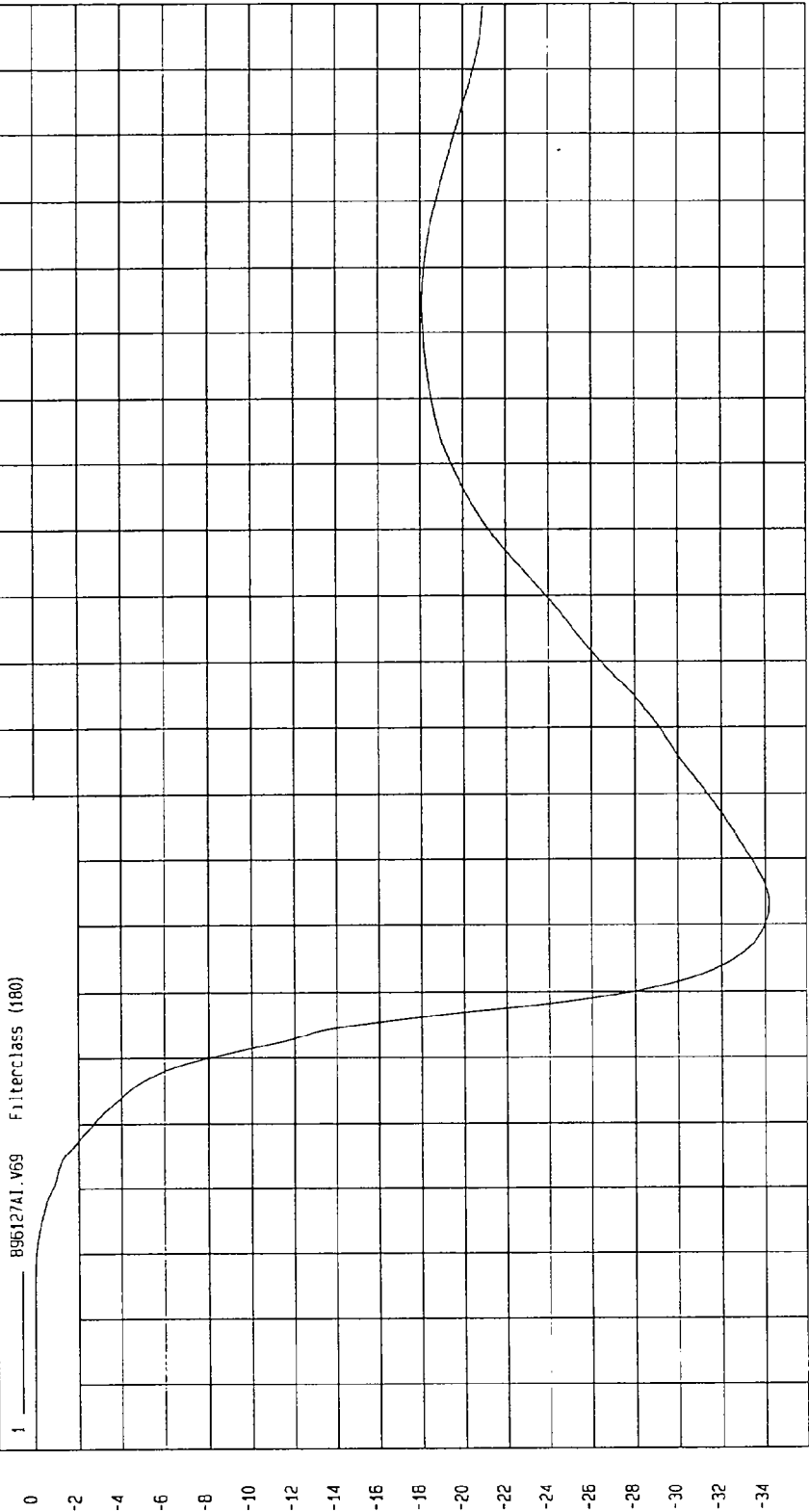
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-34.19196 KPH at 63. msec YMAX= 0 KPH at -20 msec

REAR PASSENGER PELVIS Y REDUNDANT VELOCITY

1 89612741.V69 Filterclass (180)



MOA Research  
12-15-1996 14: 02

FINITE IMPULSE RESPONSE (FIR) FILTERED DATA

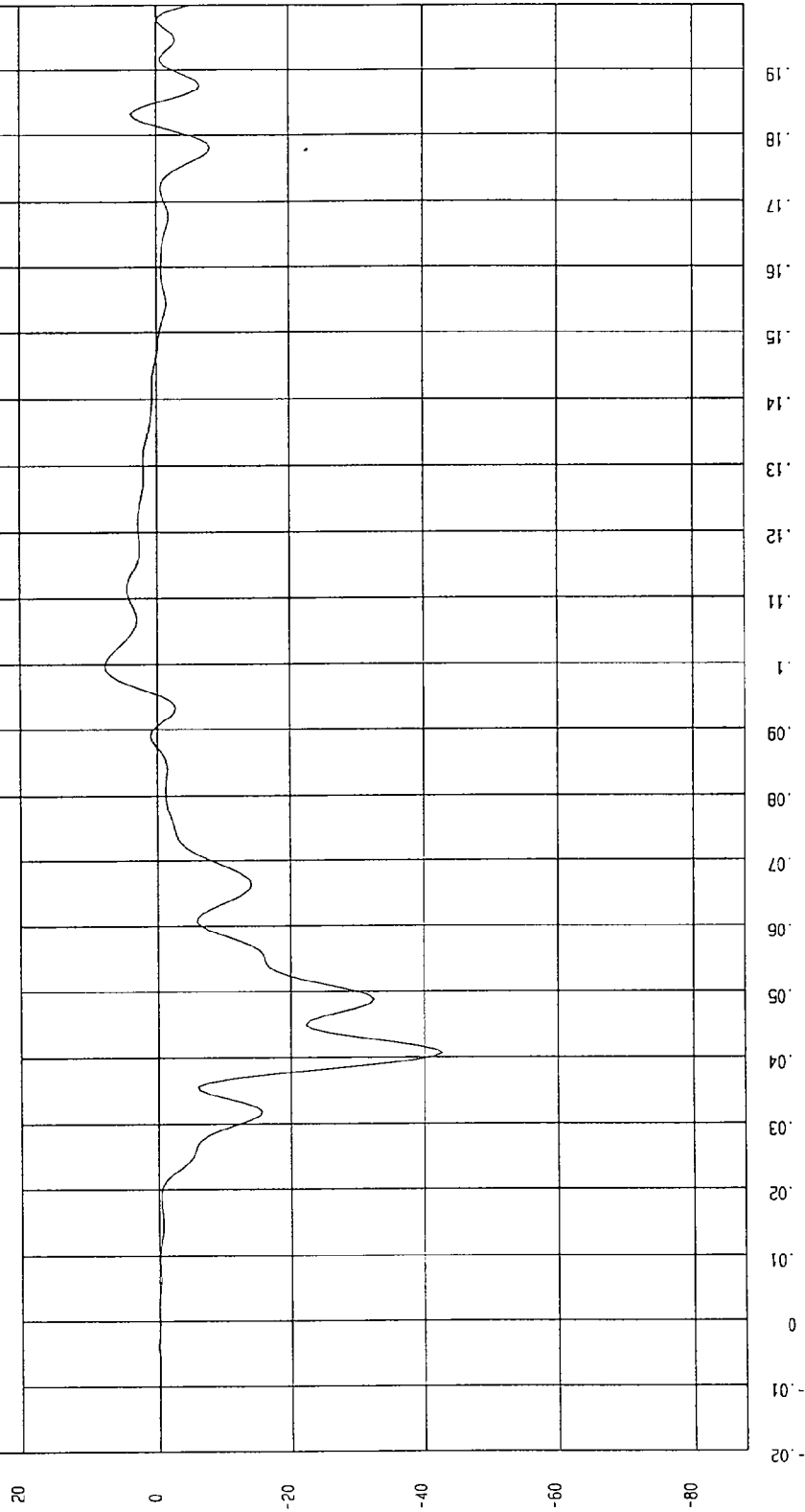
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-42.74747 G'S at 40. msec YMAX= 7.553815 G'S at 100 msec

FRONT PASSENGER UPPER RIB Y ACCELERATION

1 896127I.R15 Filterclass (FIR Filtered)

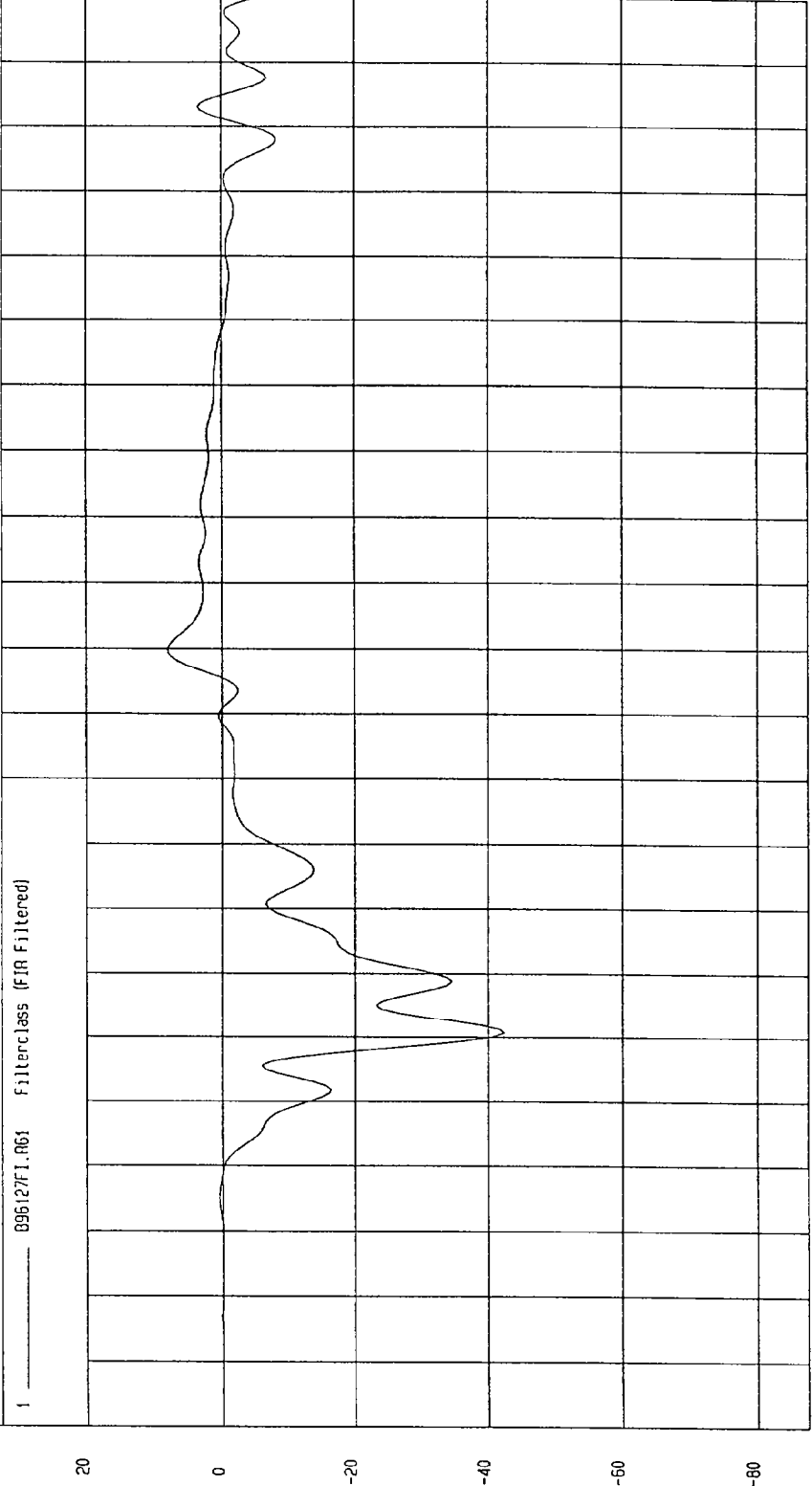


MGA Research  
11-25-1996 04:58

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996  
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-42.353 G'S at 40. msec YMAX= 8.096025 G'S at 100 msec

FRONT PASSENGER UPPER RIB Y REDUNDANT ACCELERATION



TIME (SECONDS)

MCA Research  
11-25-1996 04:58

G.S.

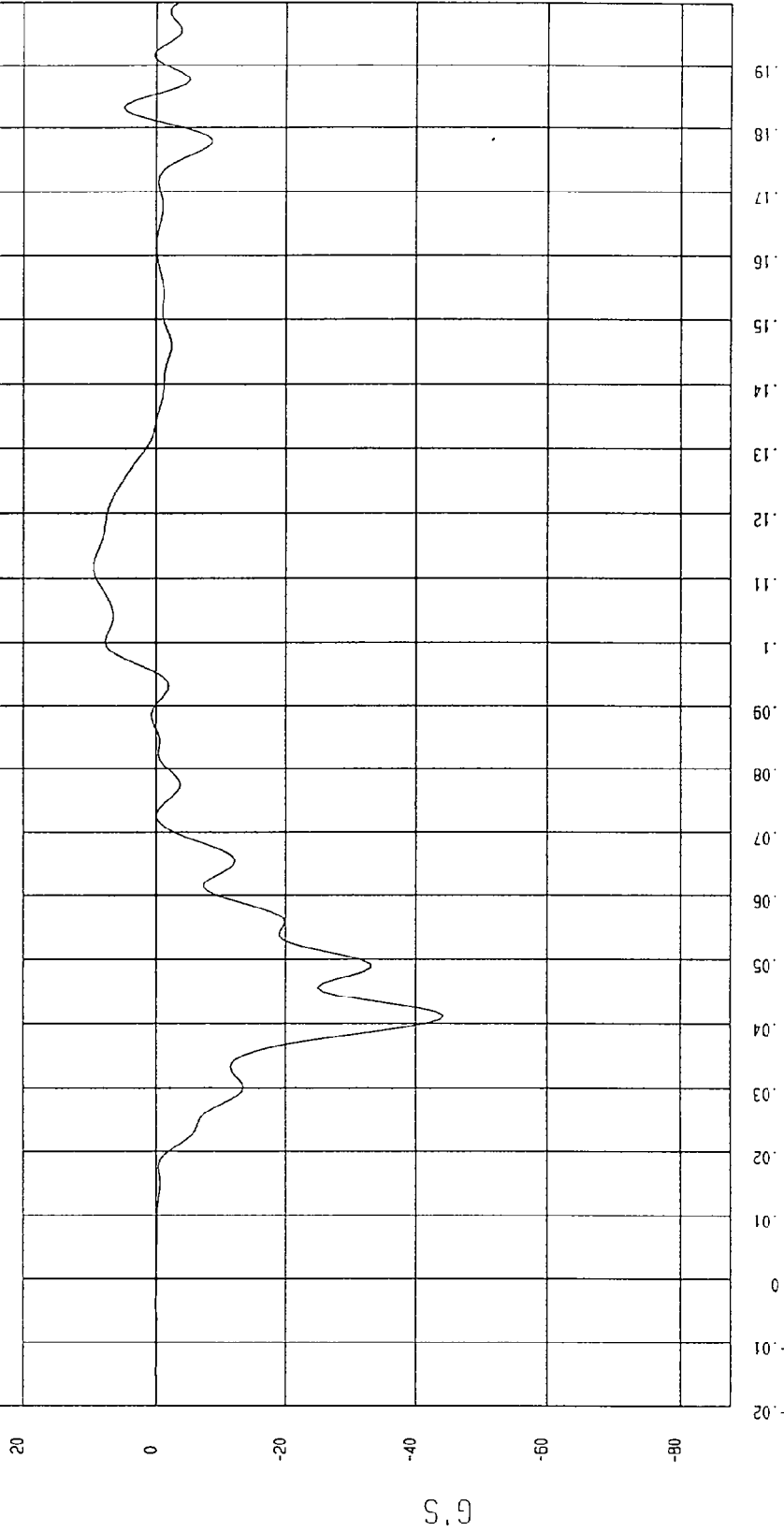
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-44.30907 G'S at 41. msec YMAX= 9.570628 G'S at 111 msec

FRONT PASSENGER LOWER RIB Y ACCELERATION

1 896127F1.R16 Filterclass (FIR Filtered)



MCA Research  
11-25-1996 04:58

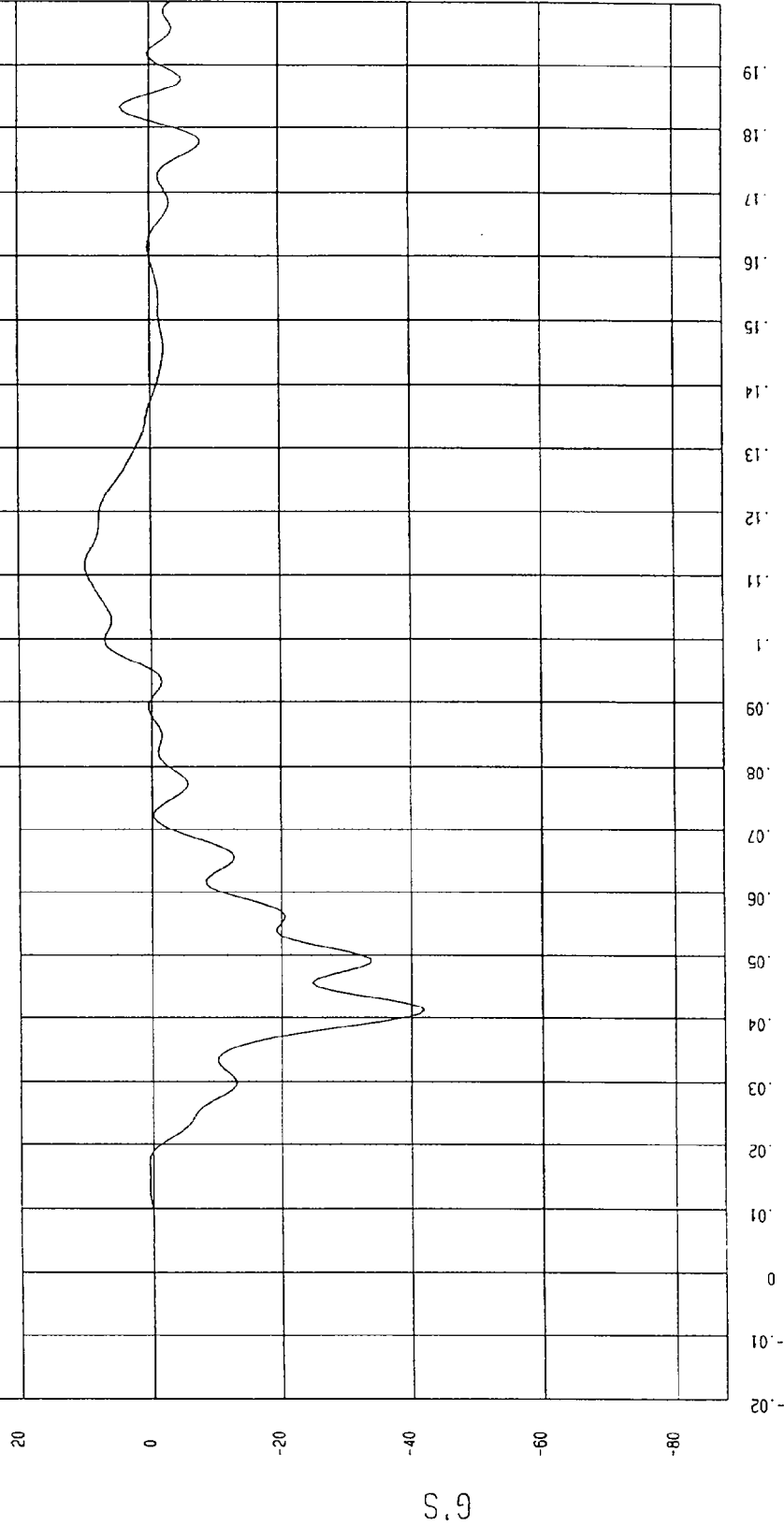
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-42.02689 G'S at 41. msec YMAX= 9.960465 G'S at 111 msec

FRONT PASSENGER LOWER RIB Y REDUNDANT ACCELERATION

1 896127F1.R62 Filterclass (FIR Filtered)



NCA Research  
11-25-1996 04:58

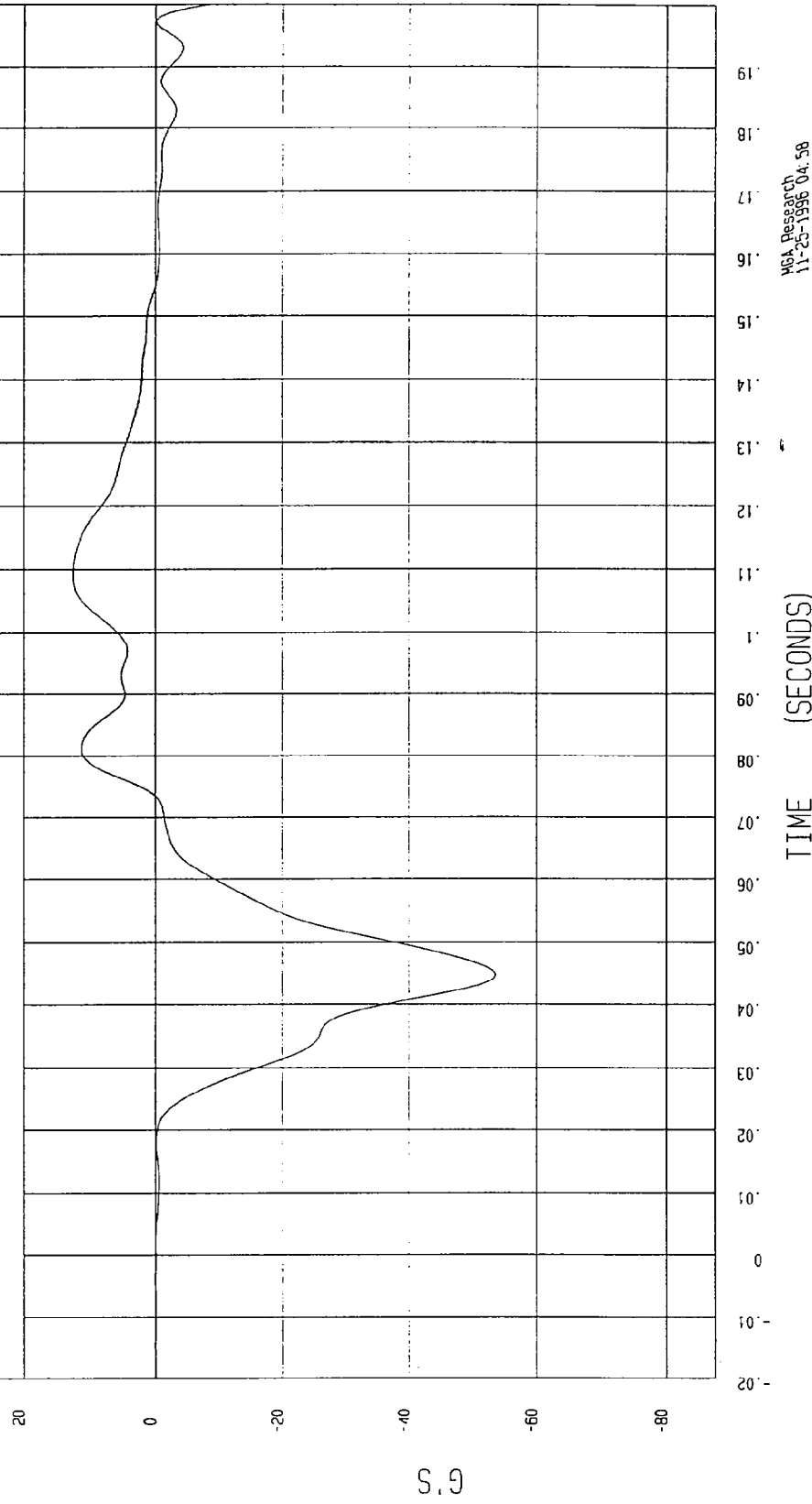
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-53.53569 G'S at .45 msec YMAX= 12.55237 G'S at .109 msec

FRONT PASSENGER LOWER SPINE Y ACCELERATION

1 8961271.R17 Filterclass (FIR Filtered)



MCA Research  
11-25-1996 04:58

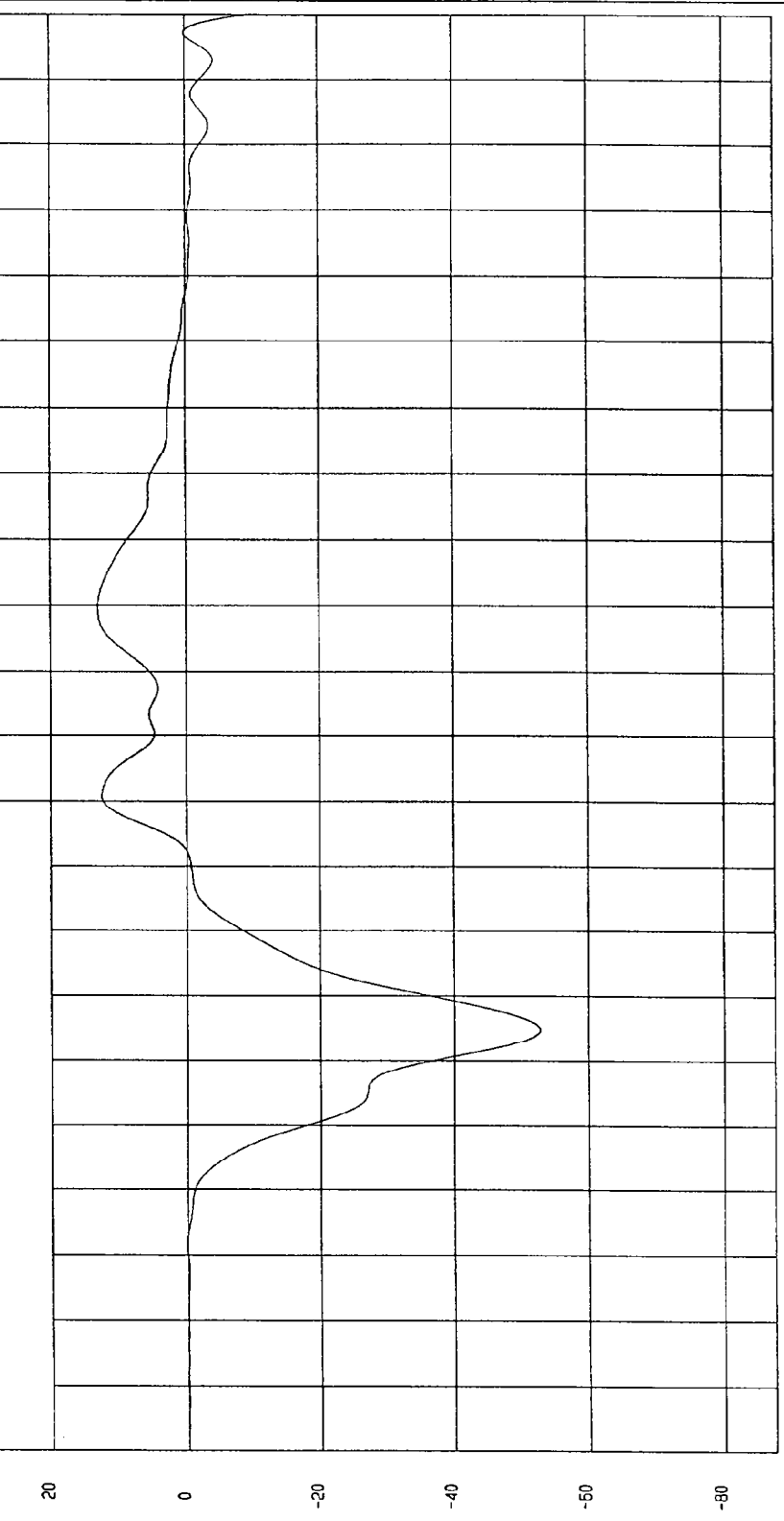
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-52.87507 G'S at 45 msec YMAX= 12.99684 G'S at 109 msec

FRONT PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

1 896127F1.R63 Filterclass (FIR Filtered)



MCA Research  
11-25-1996 04:58

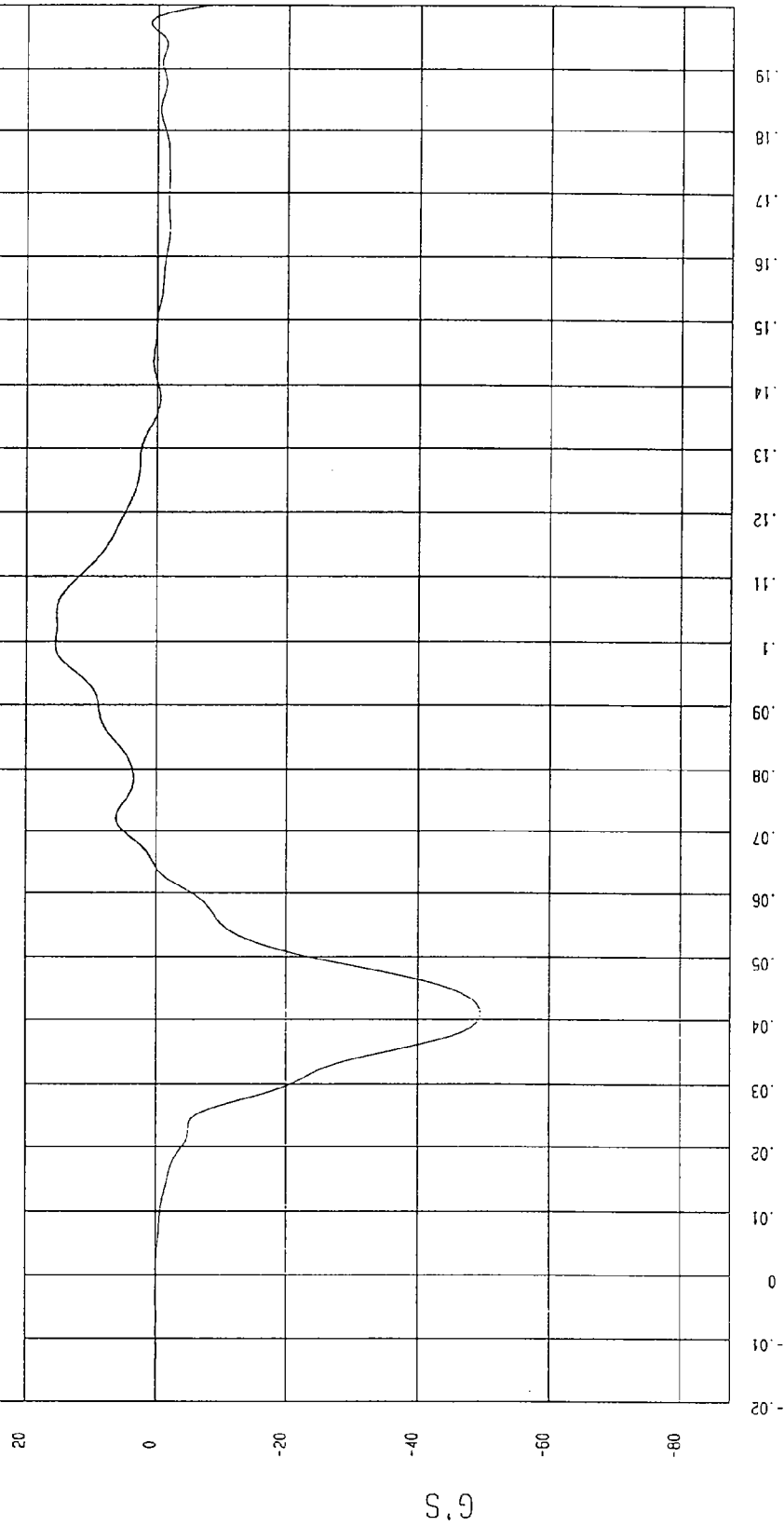
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-49.49472 G'S at 41. msec YMAX= 15.55862 G'S at 99. msec

FRONT PASSENGER PELVIS Y ACCELERATION

1 \_\_\_\_\_ 896127F1.R18 Filterclass (FIR Filtered)



MCA Research  
11-25-1996 04:59

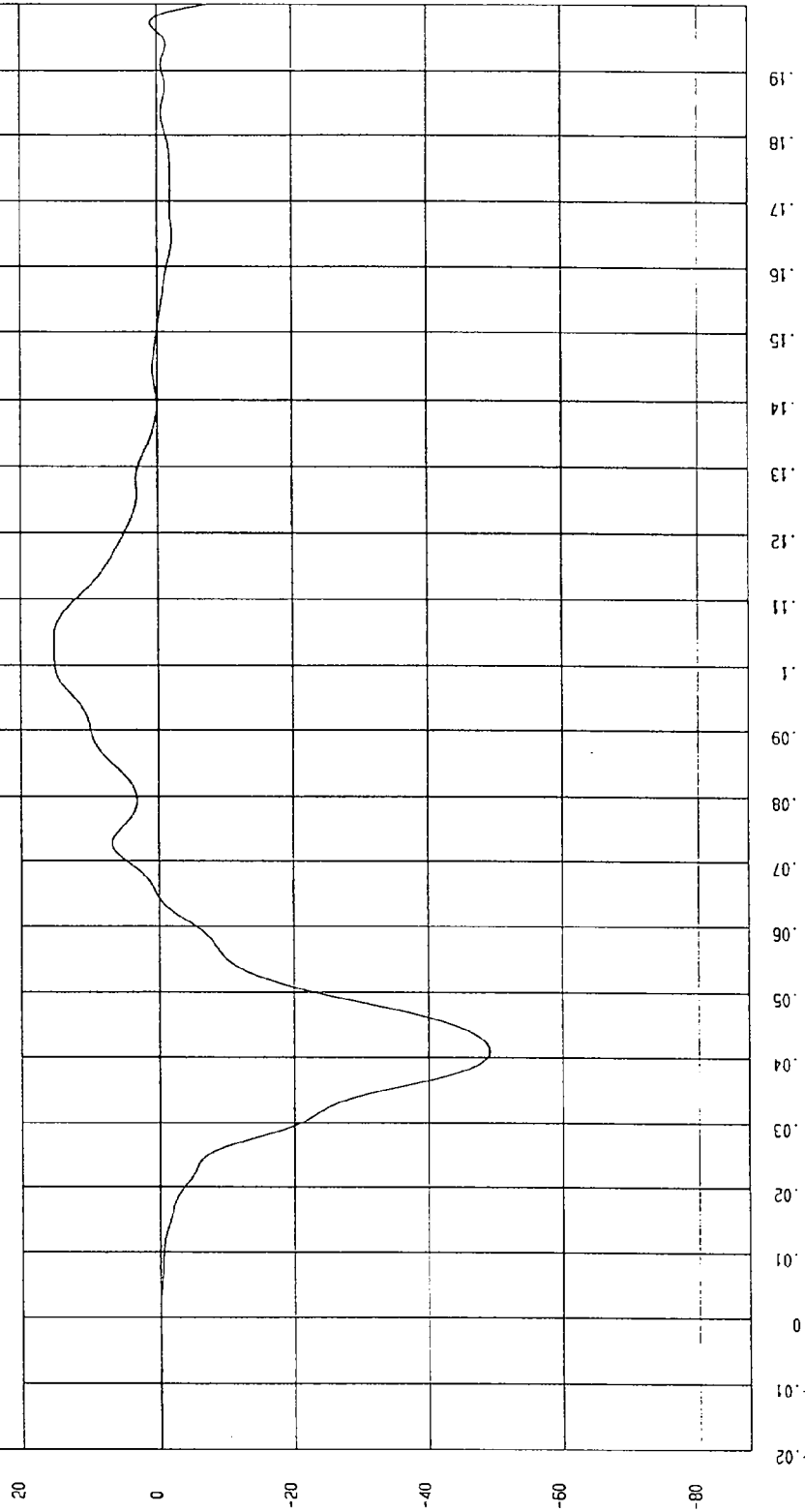
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-49.21055 G'S at 40. msec YMAX= 15.13237 G'S at 104 msec

FRONT PASSENGER PELVIS Y REDUNDANT ACCELERATION

1 896127F1.R64 Filterclass (FIR Filtered)



MVA Research Co.  
11-25-1996 04:59

G.S

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

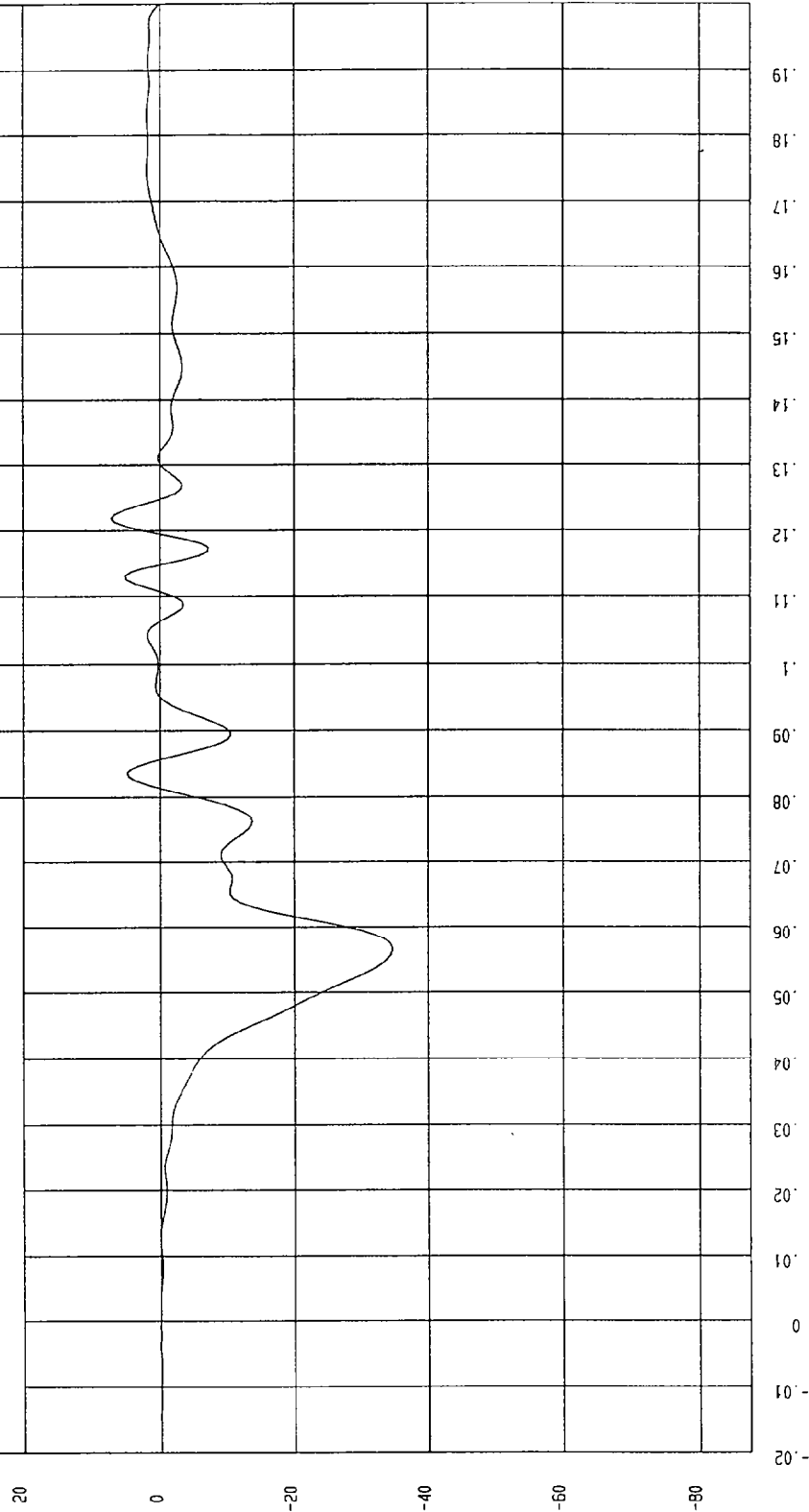
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN = 34.15475 G'S at 56. msec

YMAX = 7.216196 G'S at 121 msec

REAR PASSENGER UPPER RIB Y ACCELERATION

1 8961271.R25 Filterclass (FIR Filtered)



NGA Research  
11-25-1996 04:59

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

TEST DATE: 11-25-1996

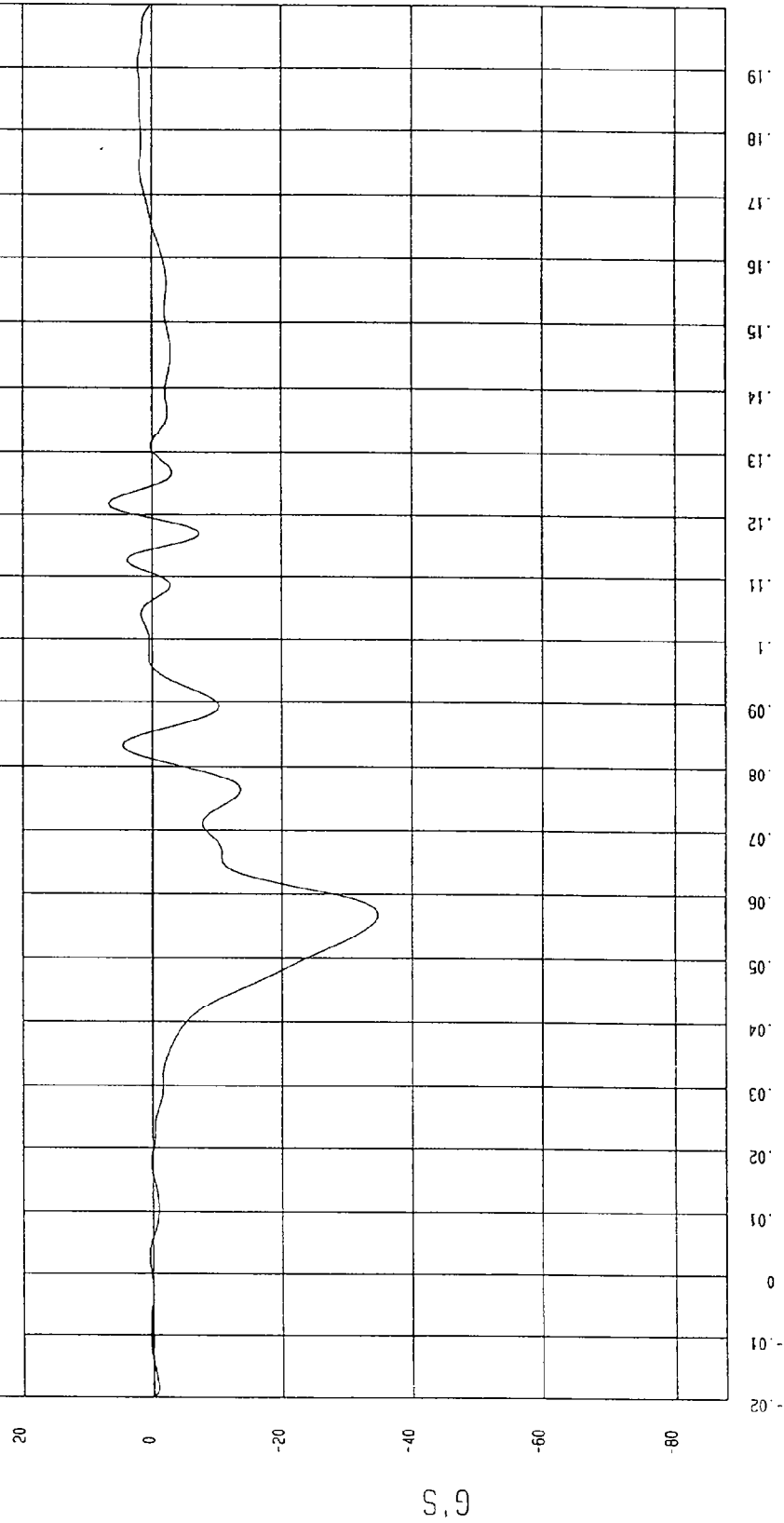
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-34.7156 G'S at 56. msec

YMAX= 6.763404 G'S at 121 msec

REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION

1 896127f1.R66 FilterClass (FIR Filtered)



NCA Research  
11-25-1996 04:59

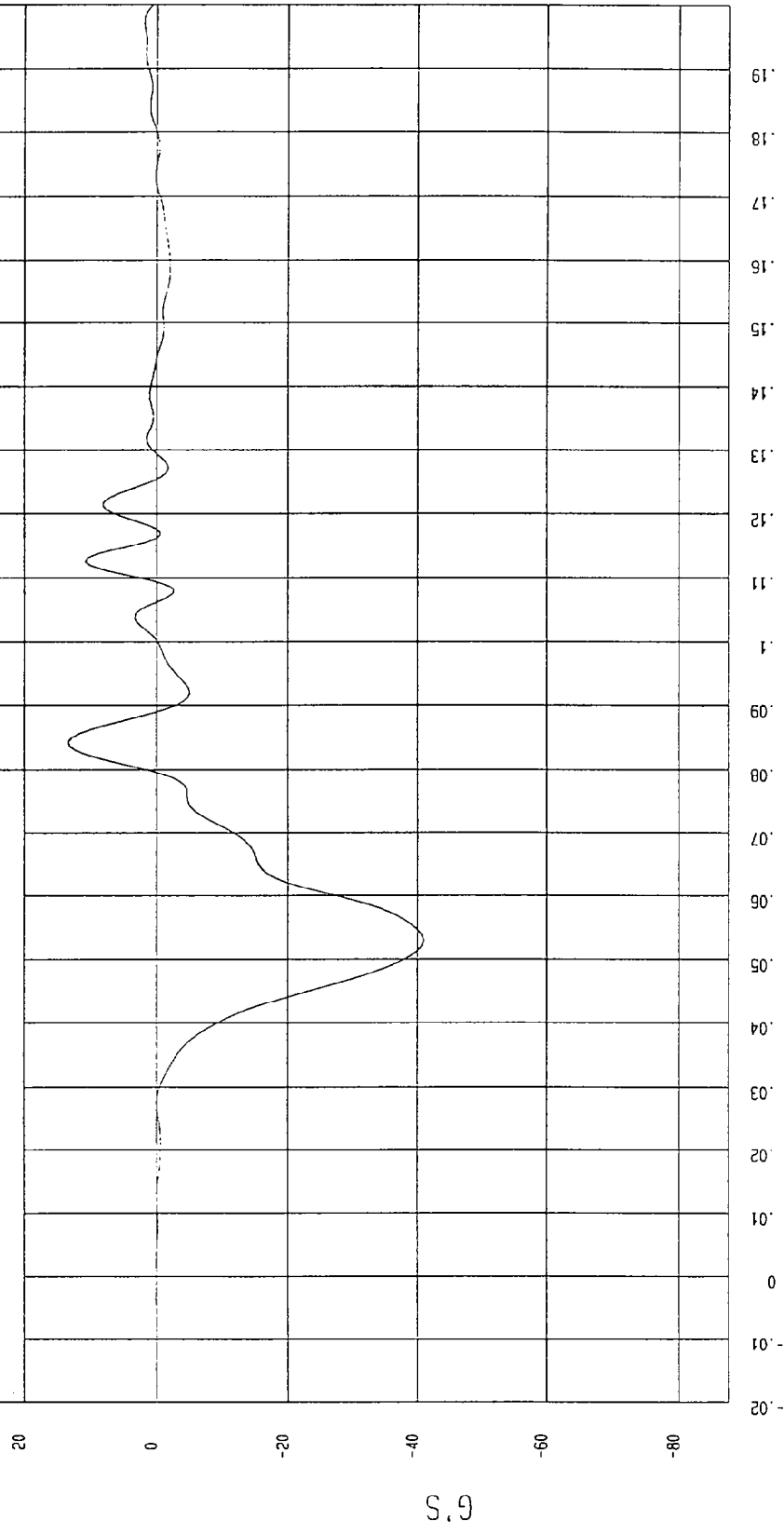
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-40.93186 G'S at 53. msec YMAX= 13.27737 G'S at 84. msec

REAR PASSENGER LOWER RIB Y ACCELERATION

1 \_\_\_\_\_ 896127I.026 Filterclass (FIR Filtered)



MGA Research  
11-25-1996 04:59

TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

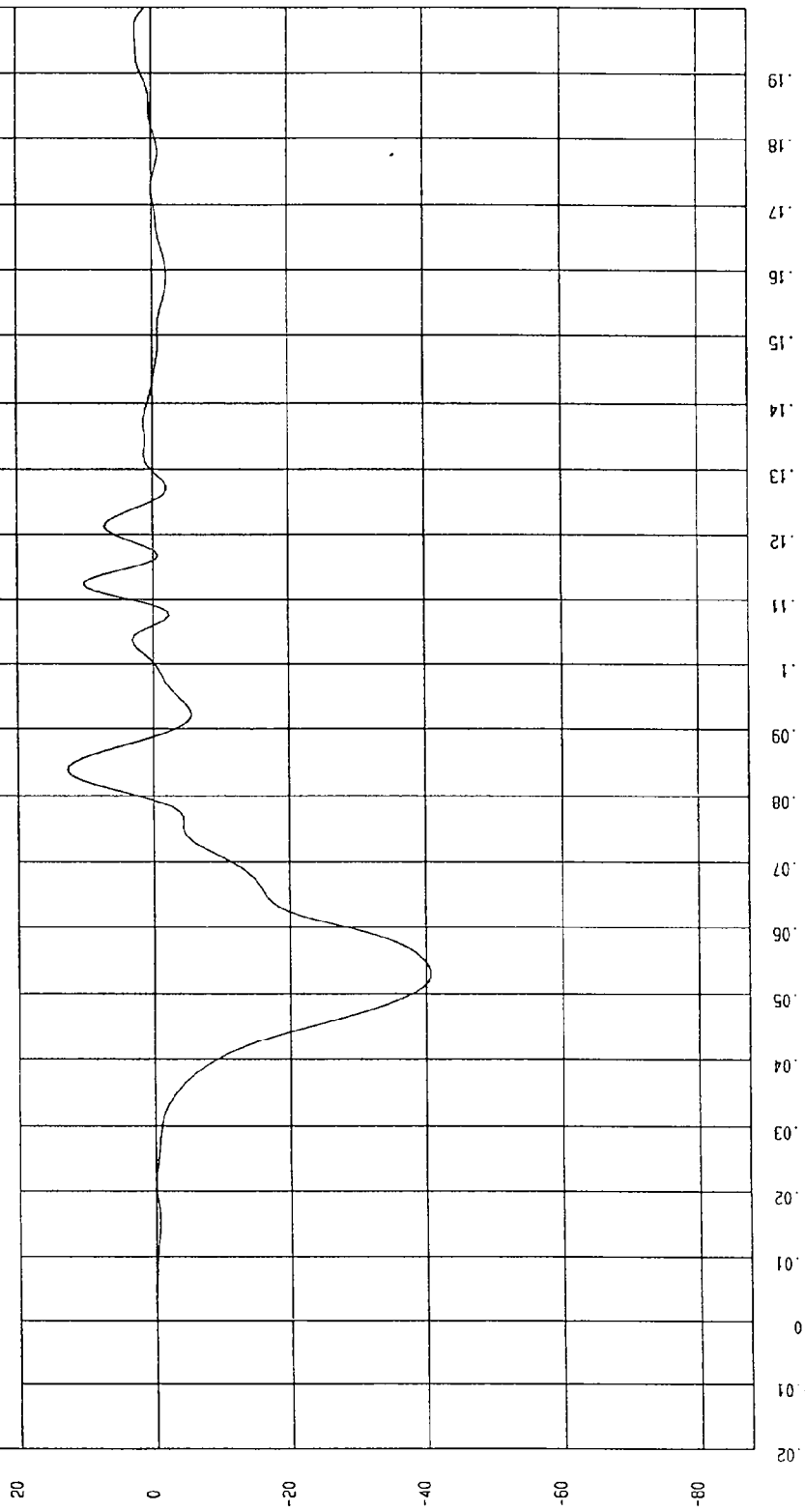
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-40.73338 G'S at 53. msec

YMAX= 12.67177 G'S at 83. msec

REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION

1 \_\_\_\_\_ 896127I.R67 Filterclass (FIR Filtered)



M&A Research Co.  
11-25-1996 04:59

TEST DATE: 11-25-1996

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

Speed: 33.25 MPH 53.5 KPH

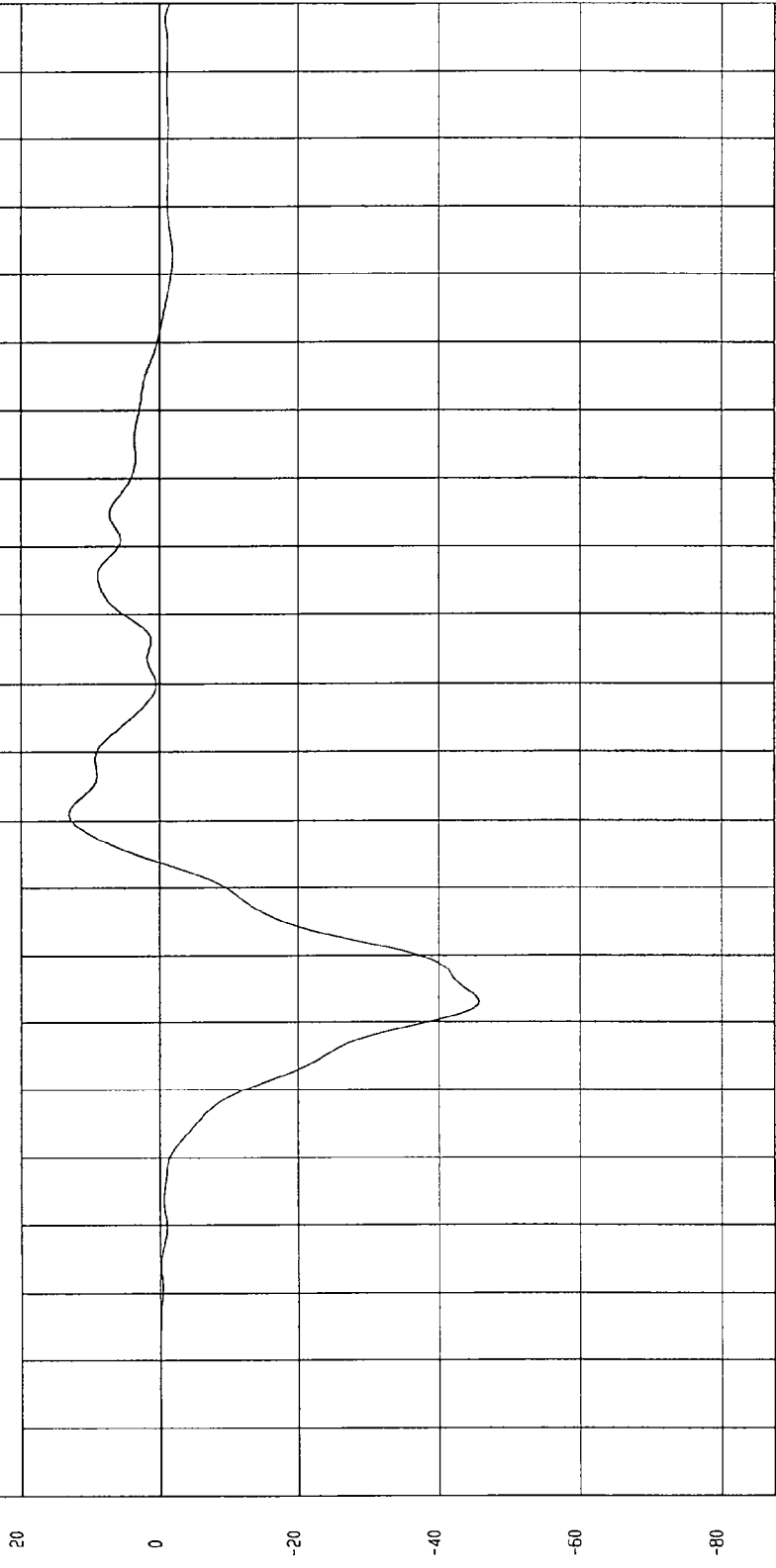
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206)

YMAX= 13.08806 G'S at 81. msec

YMIN=-45.02272 G'S at 53. msec

REAR PASSENGER LOWER SPINE Y ACCELERATION

1 896127F1.R27 Filterclass (FIR Filtered)



NSA Research  
11-25-1996 04:59

TIME (SECONDS)

G.S

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

TEST DATE: 11-25-1996

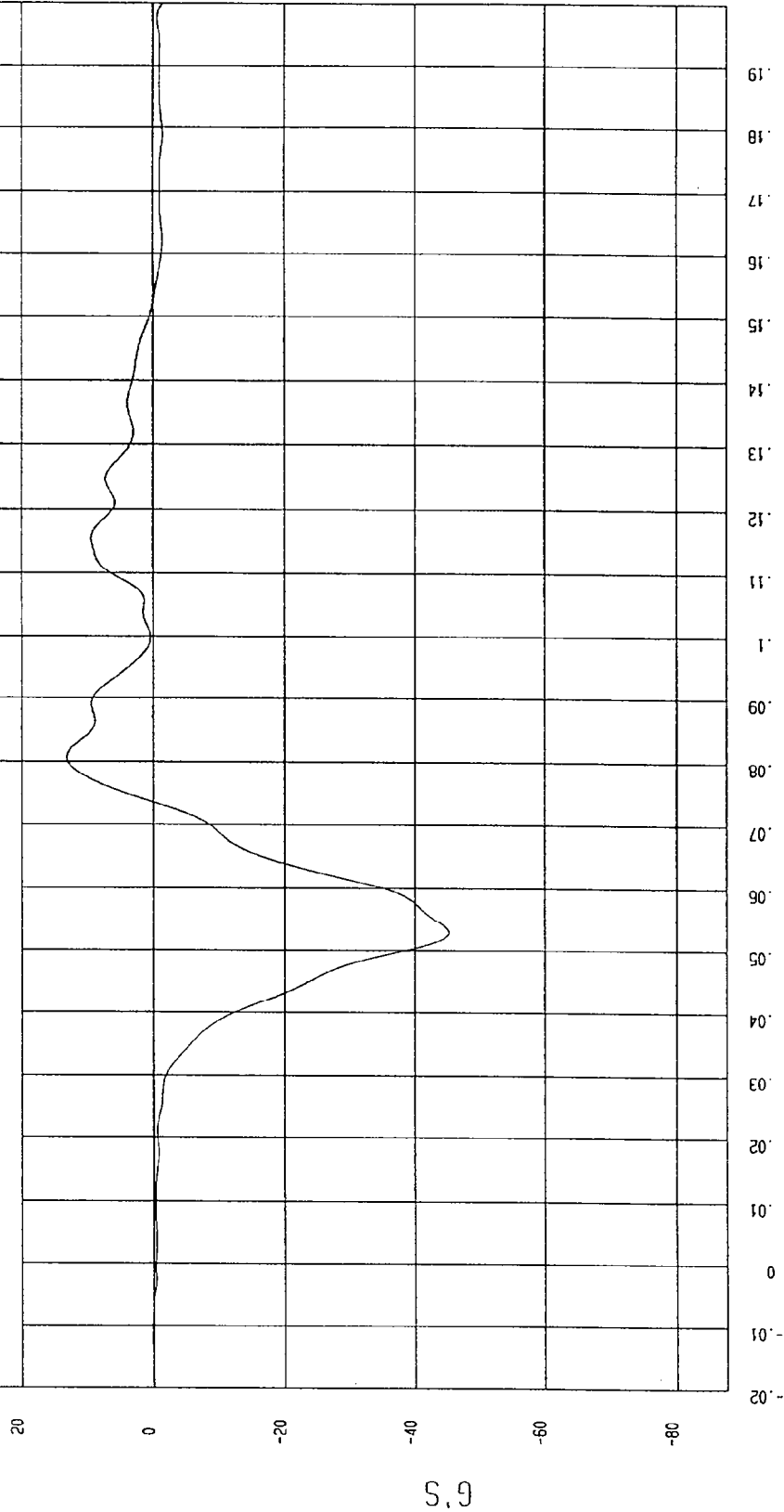
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-45.2042 G'S at 53. msec

YMAX= 13.11177 G'S at 80. msec

REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

1 896127F1.P68 Filterclass (FIR Filtered)



WGA Research  
11-25-1996 04.59

TIME (SECONDS)

G

TEST DATE: 11-25-1996

TEST: FMVSS 214 DYNAMIC SIDE IMPACT

Speed: 33.25 MPH 53.5 KPH

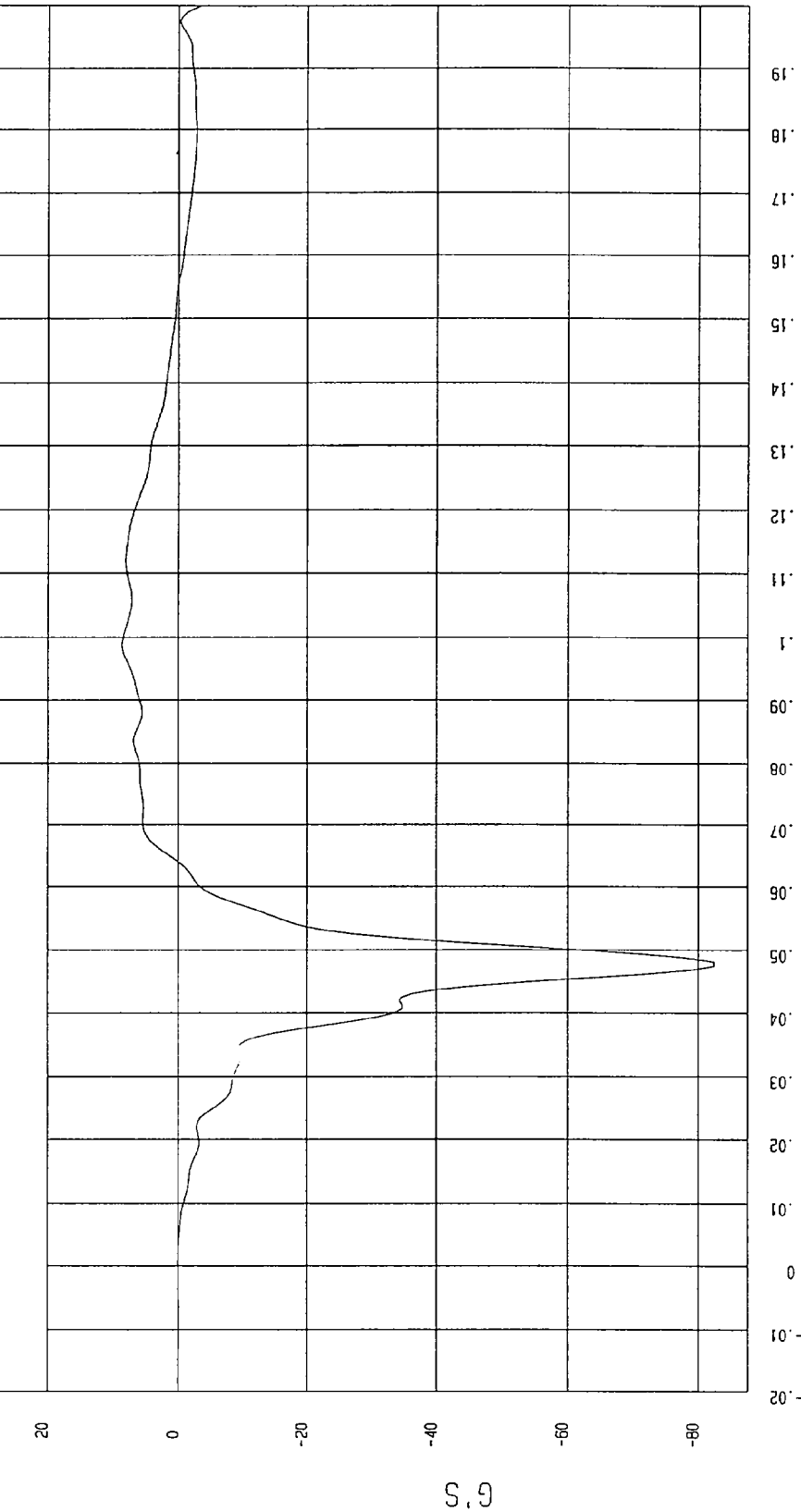
COMPONENT: 1997 FORD CROWN VICTORIA (CV0206)

YMAX= 8.590934 G'S at 98. msec

YMIN=-82.40405 G'S at 47. msec

REAR PASSENGER PELVIS Y ACCELERATION

1 896127FL.R26 Filterclass (FIR Filtered)



MCA Research  
11-25-1996 04: 59

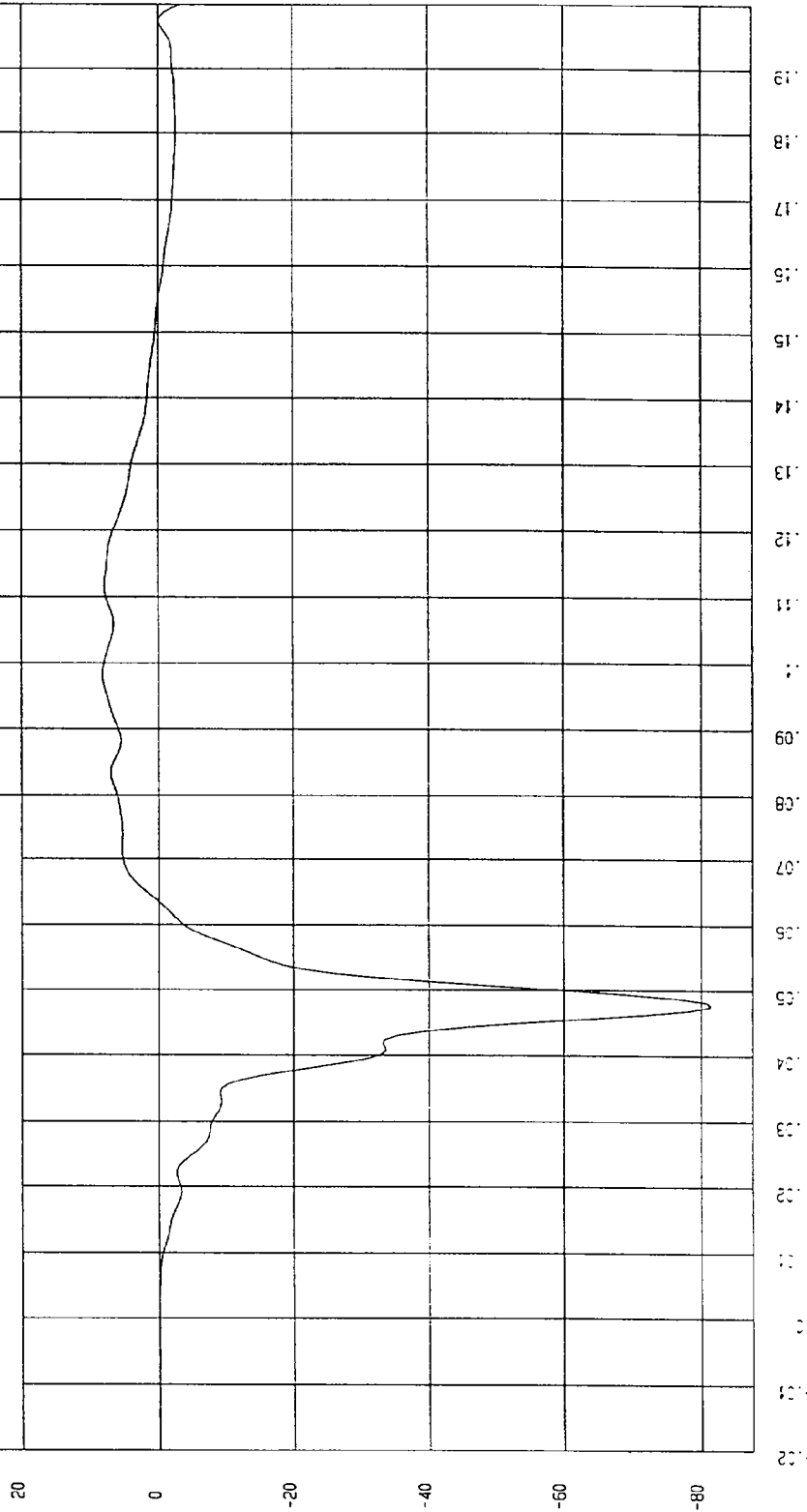
TEST: FMVSS 214 DYNAMIC SIDE IMPACT TEST DATE: 11-25-1996

COMPONENT: 1997 FORD CROWN VICTORIA (CV0206) Speed: 33.25 MPH 53.5 KPH

YMIN=-81.37127 G'S at 47. msec YMAX= 8.299704 G'S at 98. msec

REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION

1 896127FI.R69 Filterclass (FIR Filtered)



MCA Research  
11-25-1996 04:59

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION

REPORT NO. MGA-96-DC11

DUMMY PERFORMANCE CALIBRATIONS

FMVSS 214 - SIDE IMPACT TEST

FUJI HEAVY INDUSTRIES LTD.

1997 FORD CROWN VICTORIA

NHTSA NO. CV0206

MGA PROVING GROUNDS

5000 WARREN ROAD

BURLINGTON, WI 53105



Test Date: November 25, 1996

Report Date: December 30, 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

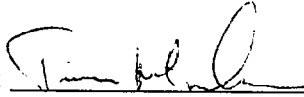
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion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

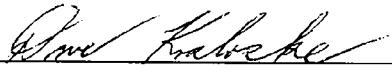
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 272

DATE OF VERIFICATION: November 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: 

APPROVED BY: 

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

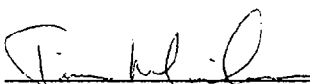
DATE: November 22, 1996

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 

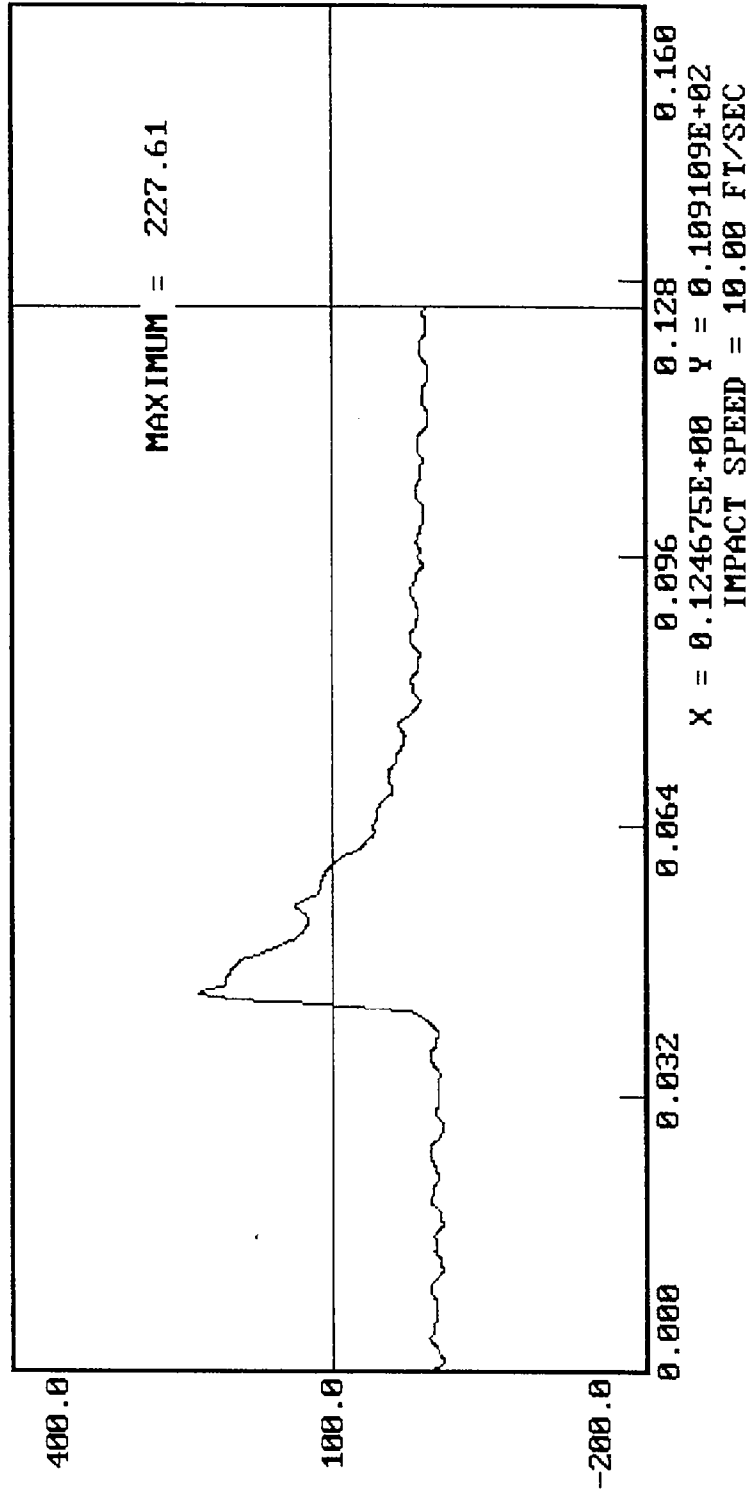
APPROVED BY 

11-22-1996 11:15

DUMMY CALIBRATION - DAMPENER BENCH TEST

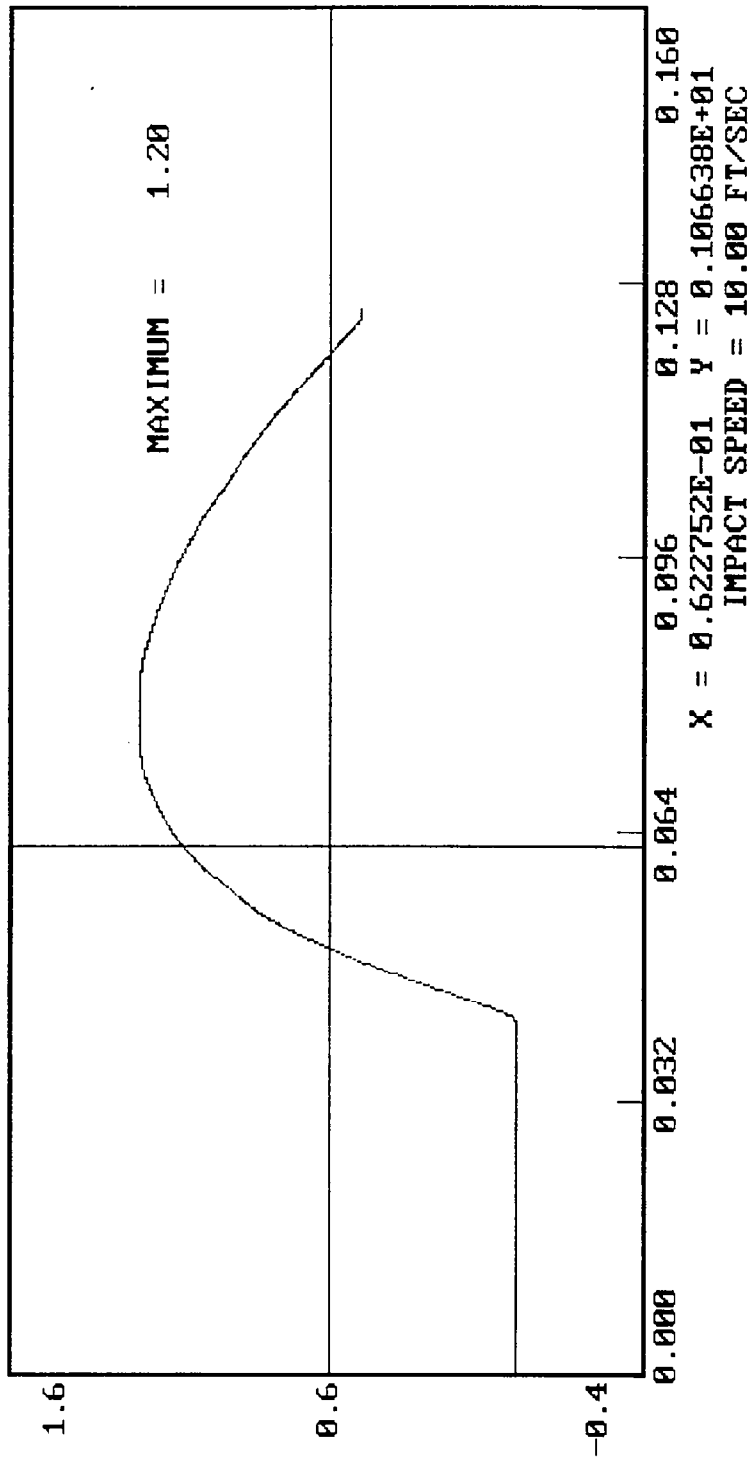
DUMMY # 272

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



DUMMY CALIBRATION - DAMPENER BENCH TEST  
DUMMY # 272  
DISPLACEMENT (IN) VS. TIME ((SECONDS))

11-22-1996 11:15

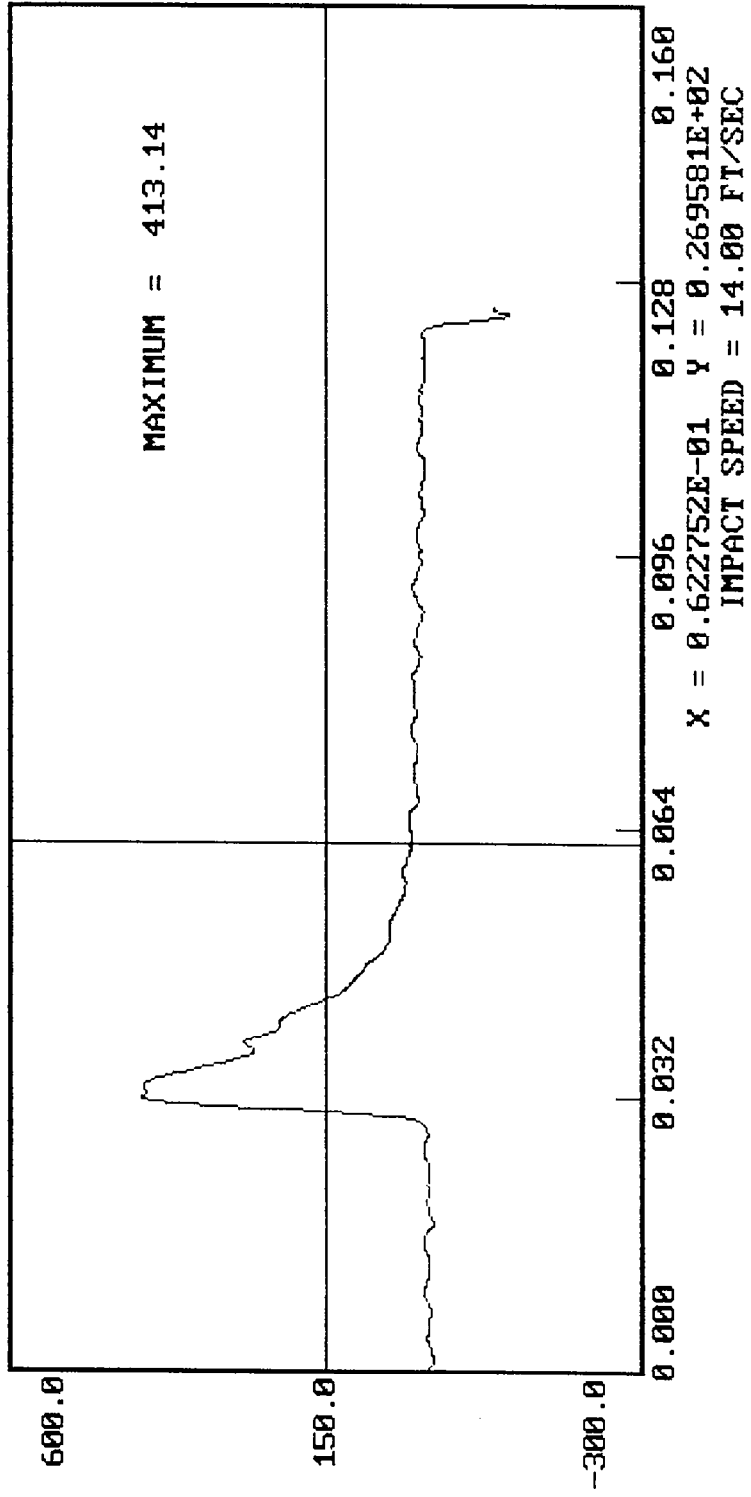


11-22-1996 11:25

DUMMY CALIBRATION - DAMPENER BENCH TEST

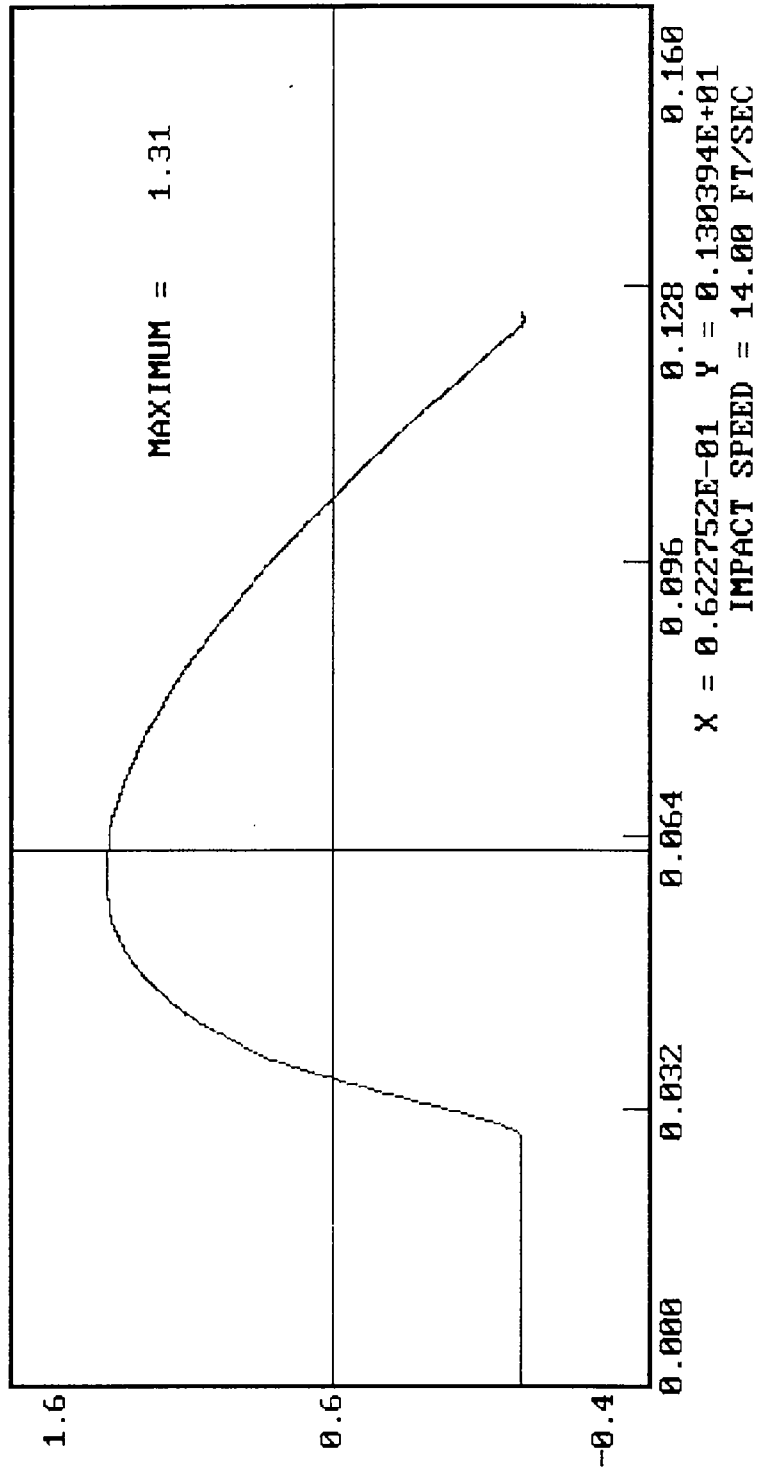
DUMMY # 272

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



11-22-1996 11:25

DUMMY CALIBRATION - DAMPENER BENCH TEST  
DUMMY # 272  
DISPLACEMENT (IN) VS. TIME (SECONDS)

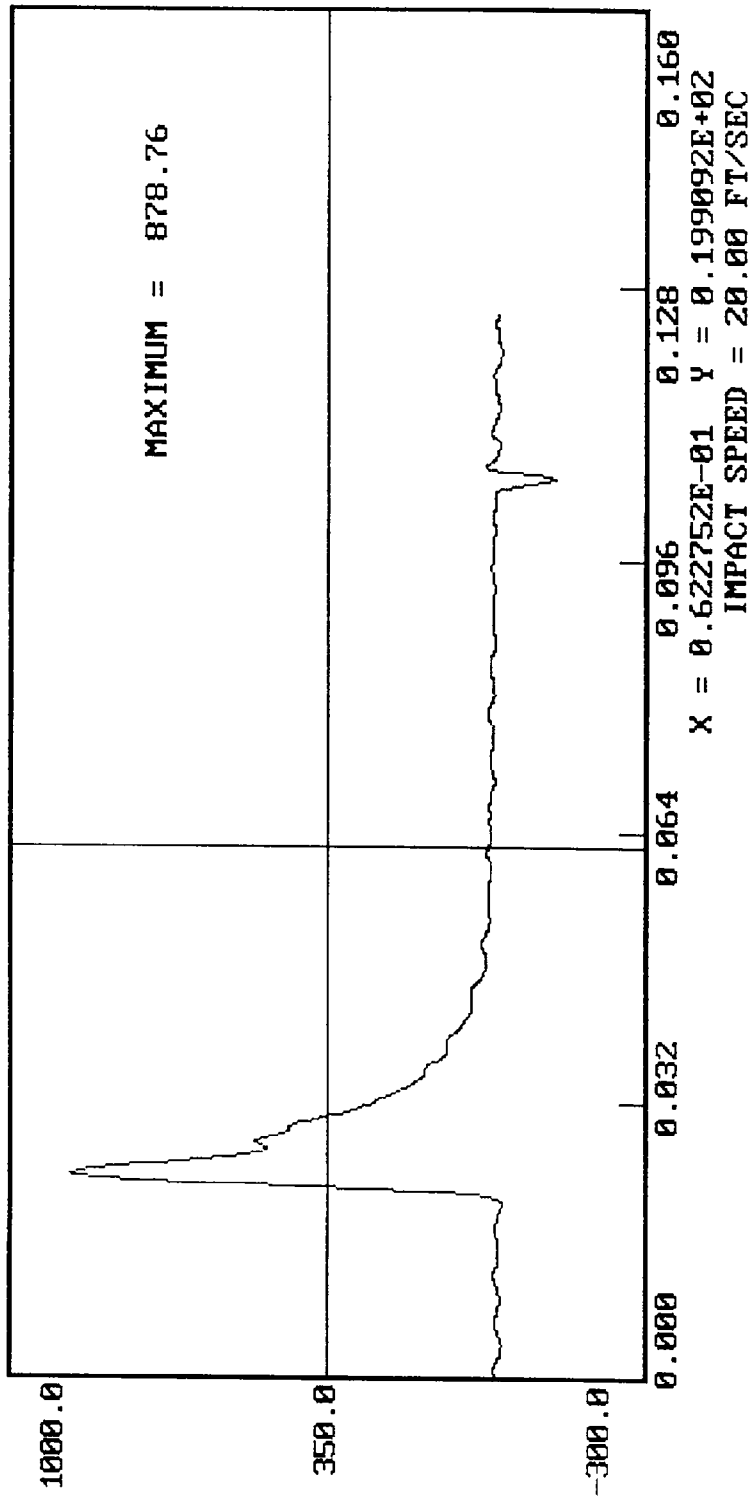


11-22-1996 11:56

DUMMY CALIBRATION - DAMPENER BENCH TEST

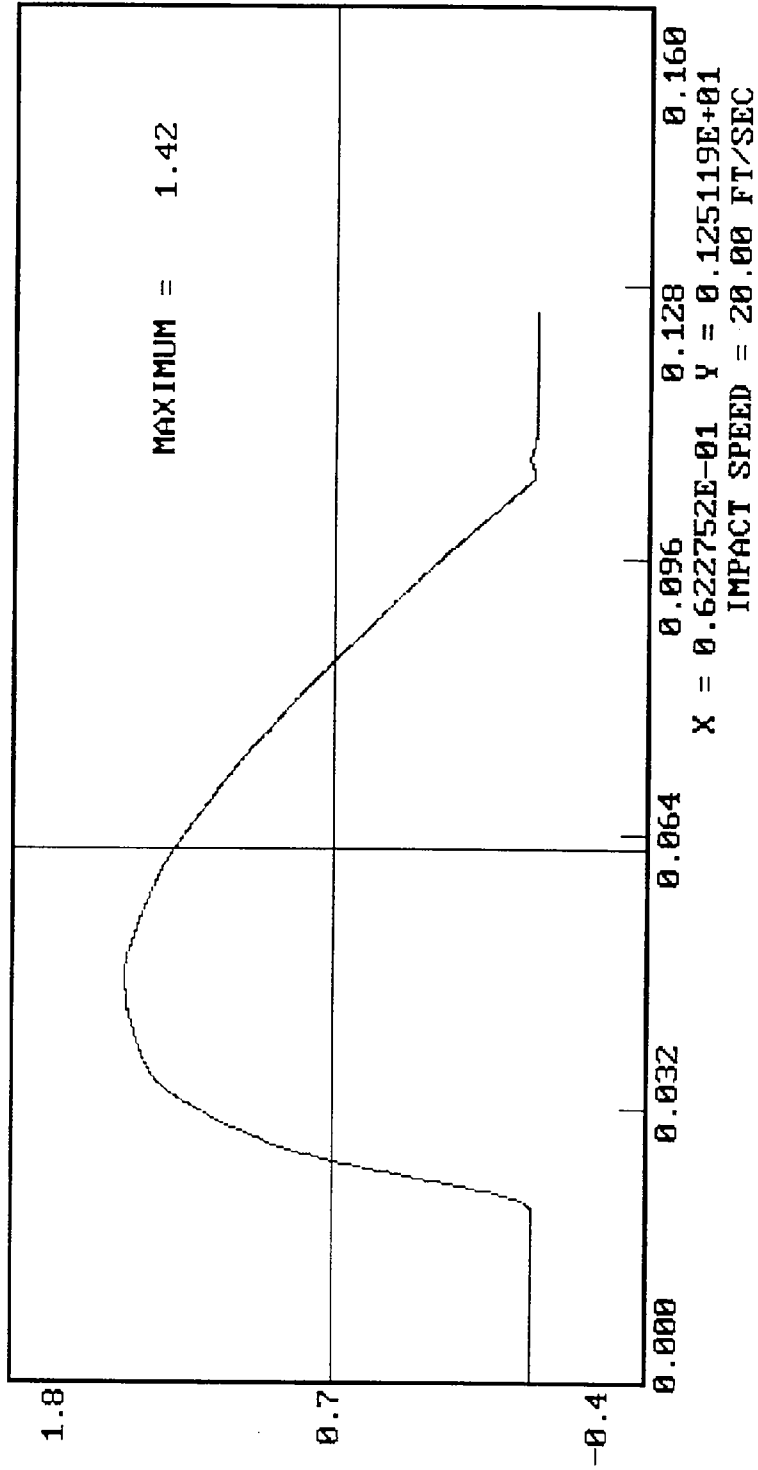
DUMMY # 272

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

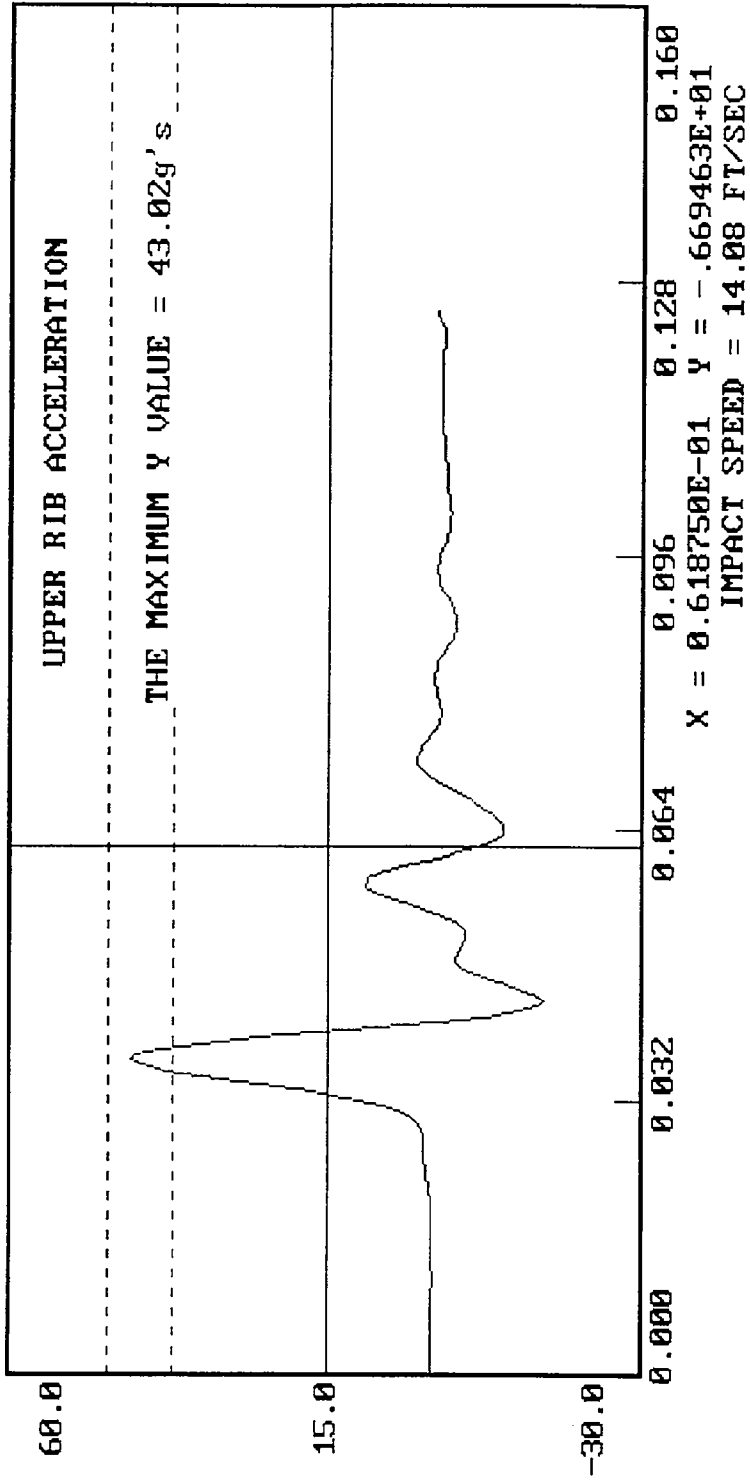
TECHNICIAN *Jim Kilo*

APPROVED BY *Gene Kobake*

DUMMY CALIBRATION - THORAX IMPACT  
DUMMY # 272

11-22-1996 17:43

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

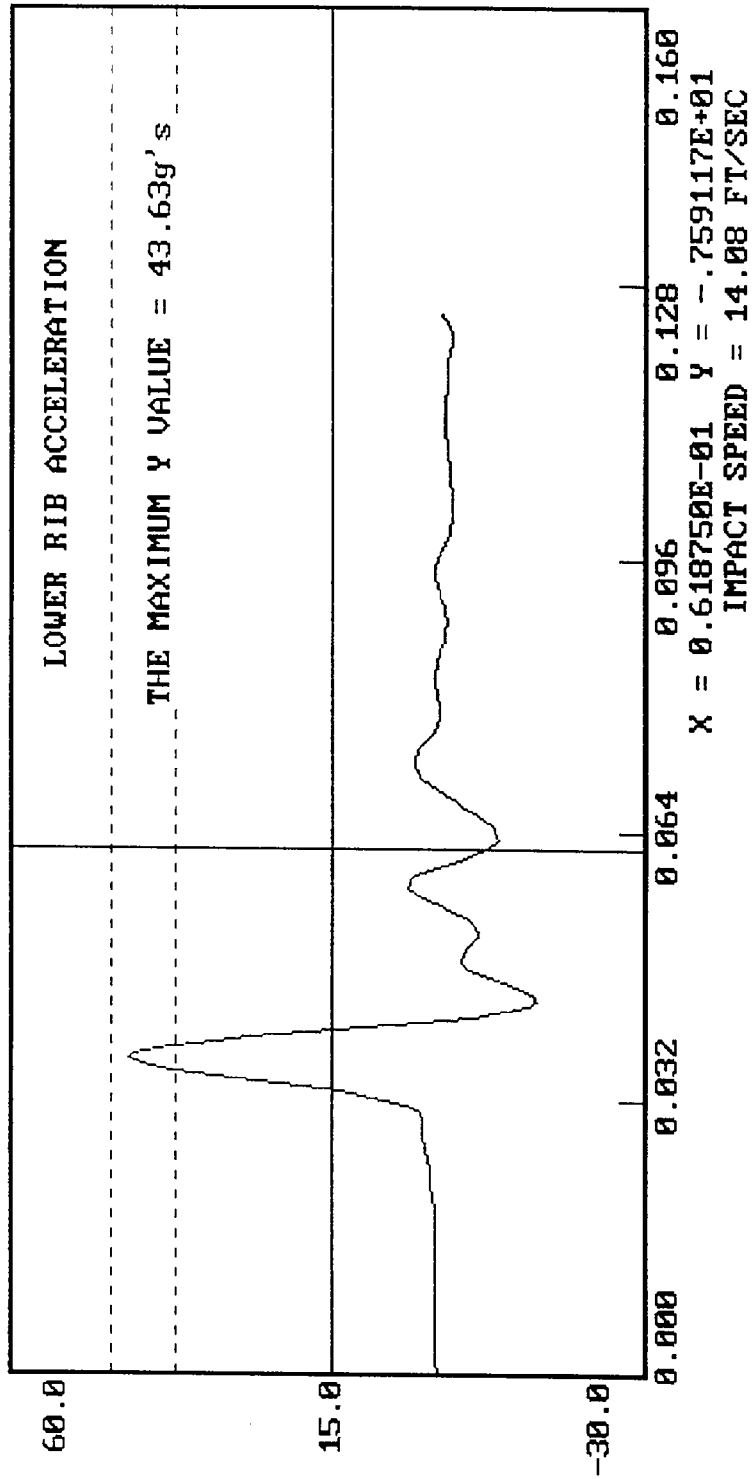


DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 272

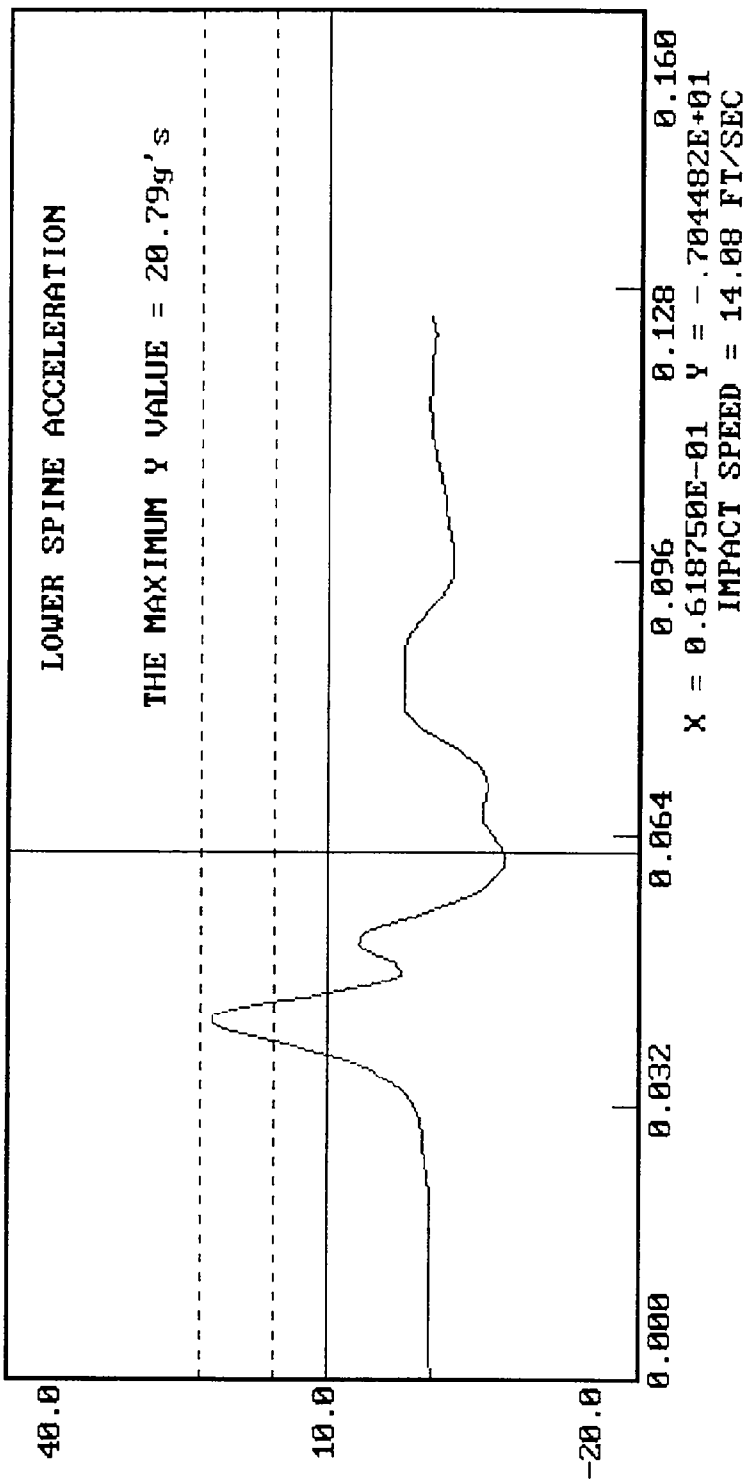
ACCELERATION (G'S) VS. TIME ((SECONDS))

11-22-1996 17:43



11-22-1996 17:43

DUMMY CALIBRATION - THORAX IMPACT  
DUMMY # 272  
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

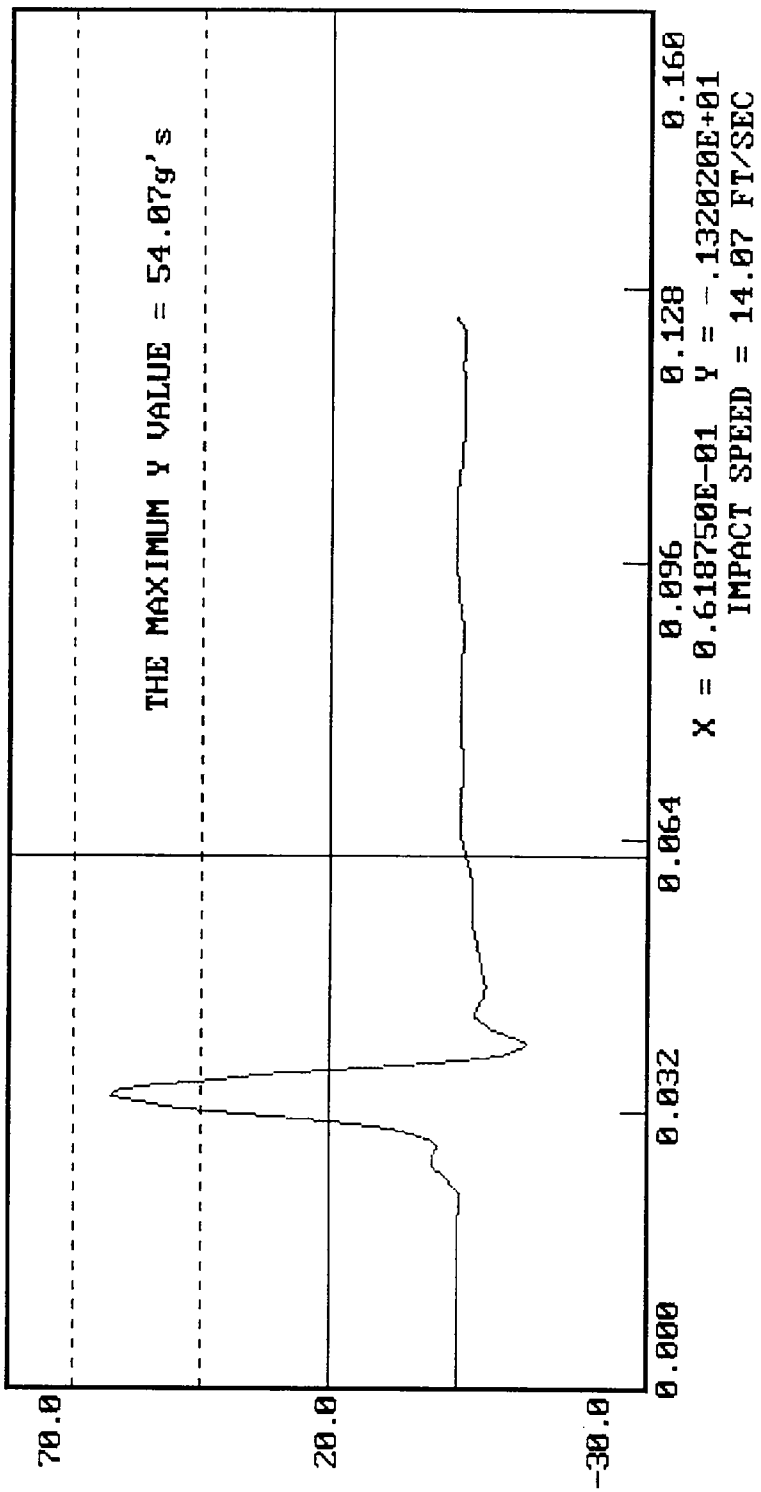
TEST MEETS SPECIFICATIONS

TECHNICIAN Jim Melillo

APPROVED BY Paul Kabiske

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 

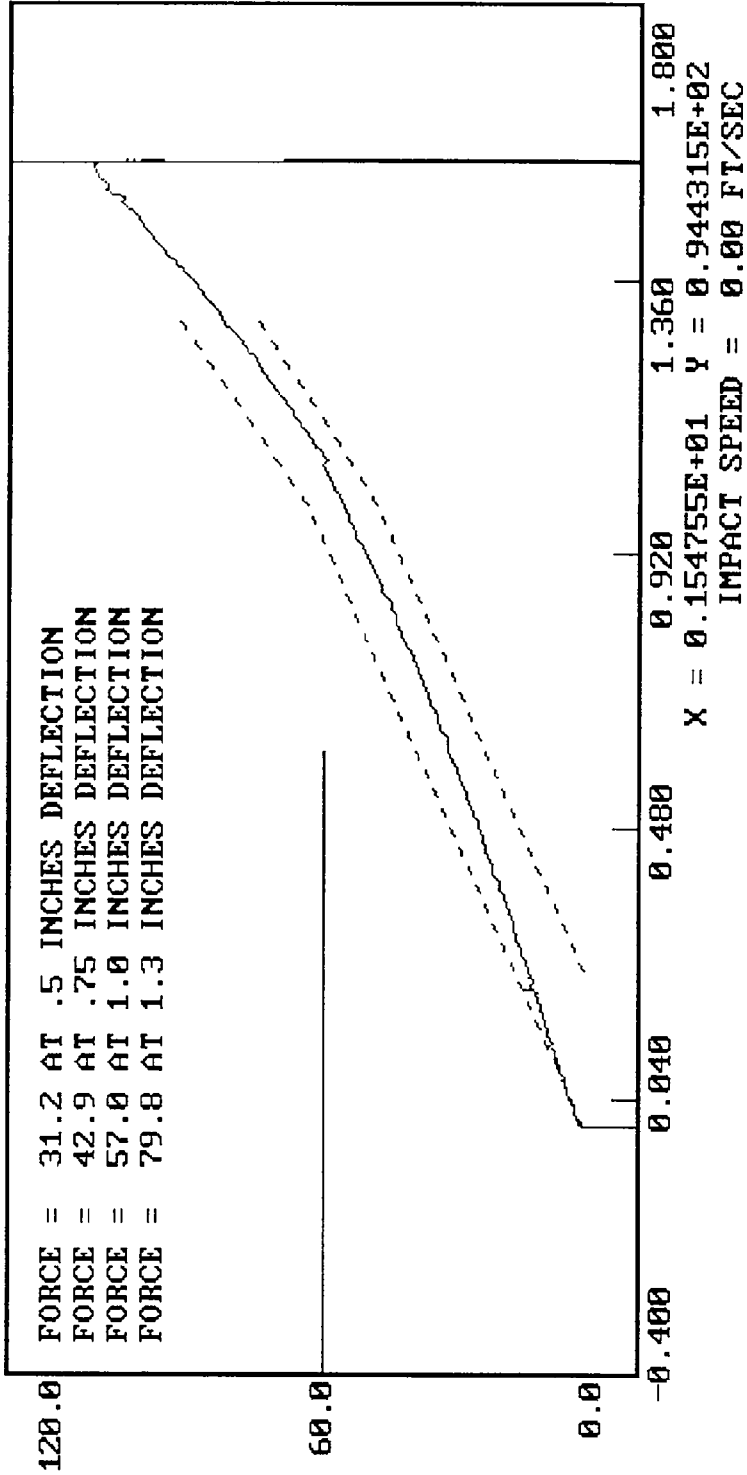
APPROVED BY 

DUMMY CALIBRATION - ABDOMEN COMPRESSION  
DUMMY # 272

11-22-1996 18:35

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

FORCE = 31.2 AT .5 INCHES DEFLECTION  
FORCE = 42.9 AT .75 INCHES DEFLECTION  
FORCE = 57.0 AT 1.0 INCHES DEFLECTION  
FORCE = 79.8 AT 1.3 INCHES DEFLECTION



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 Jim White

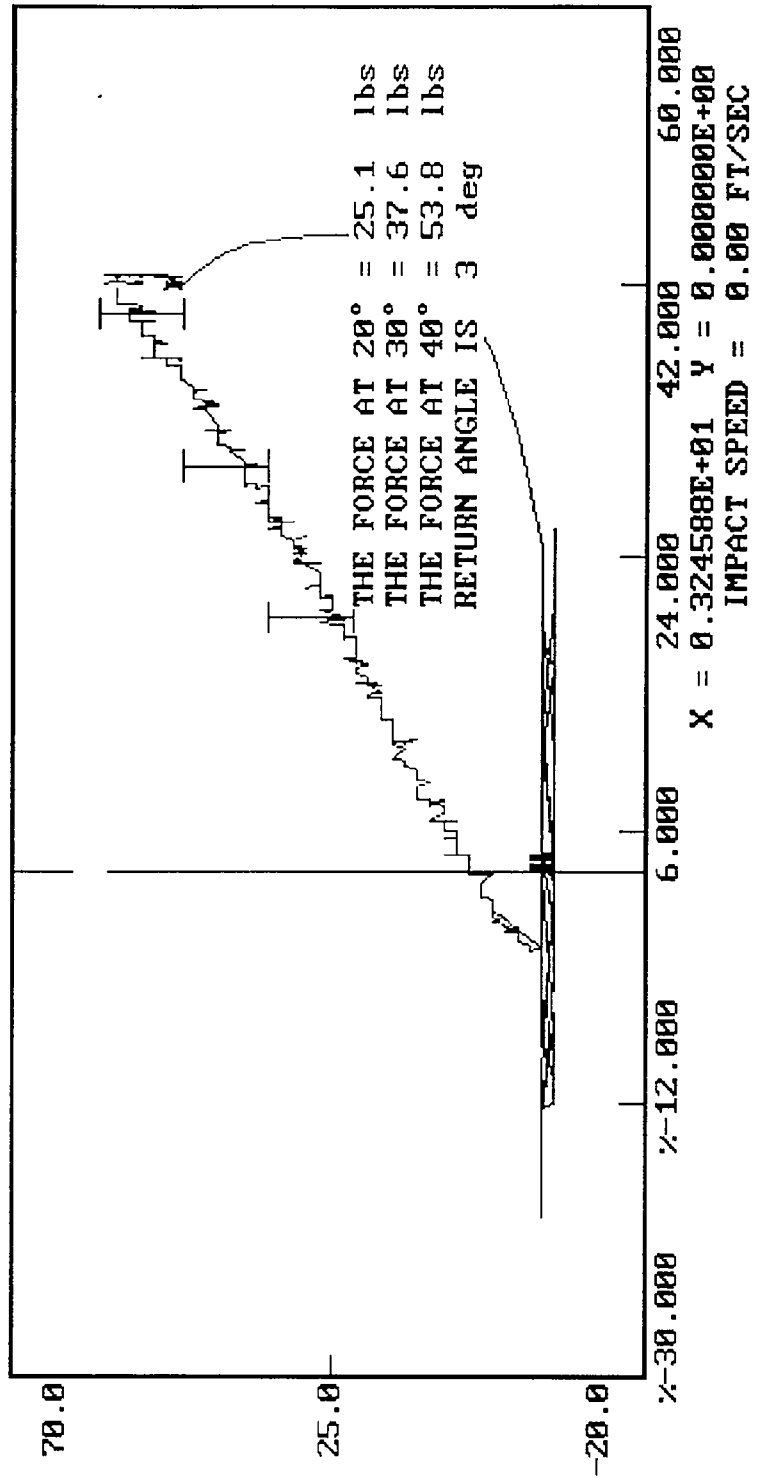
APPROVED BY Rene Kabeke

11-22-1996 18:09

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 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)

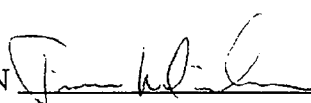
DATE: November 21, 1996

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 

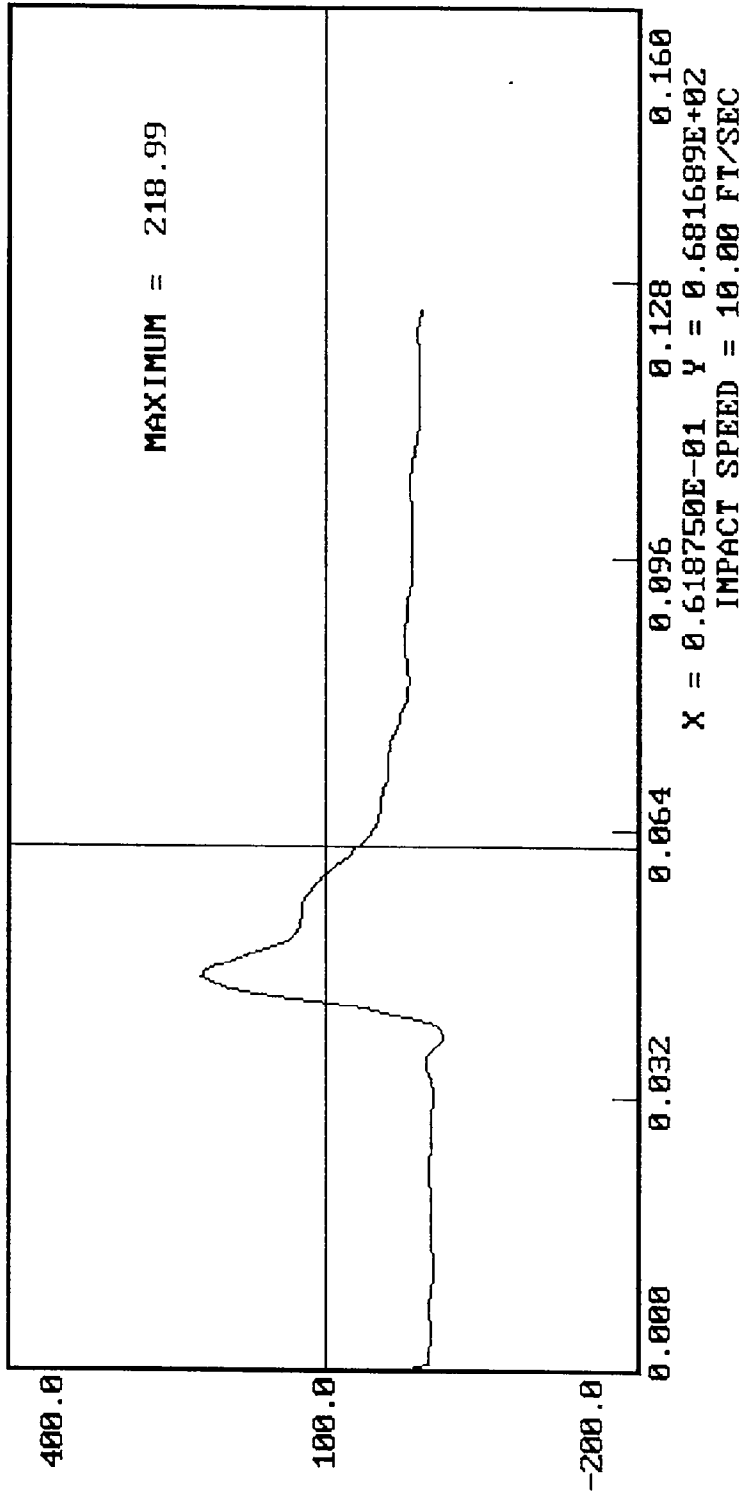
APPROVED BY 

11-21-1996 18:33

DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 271

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

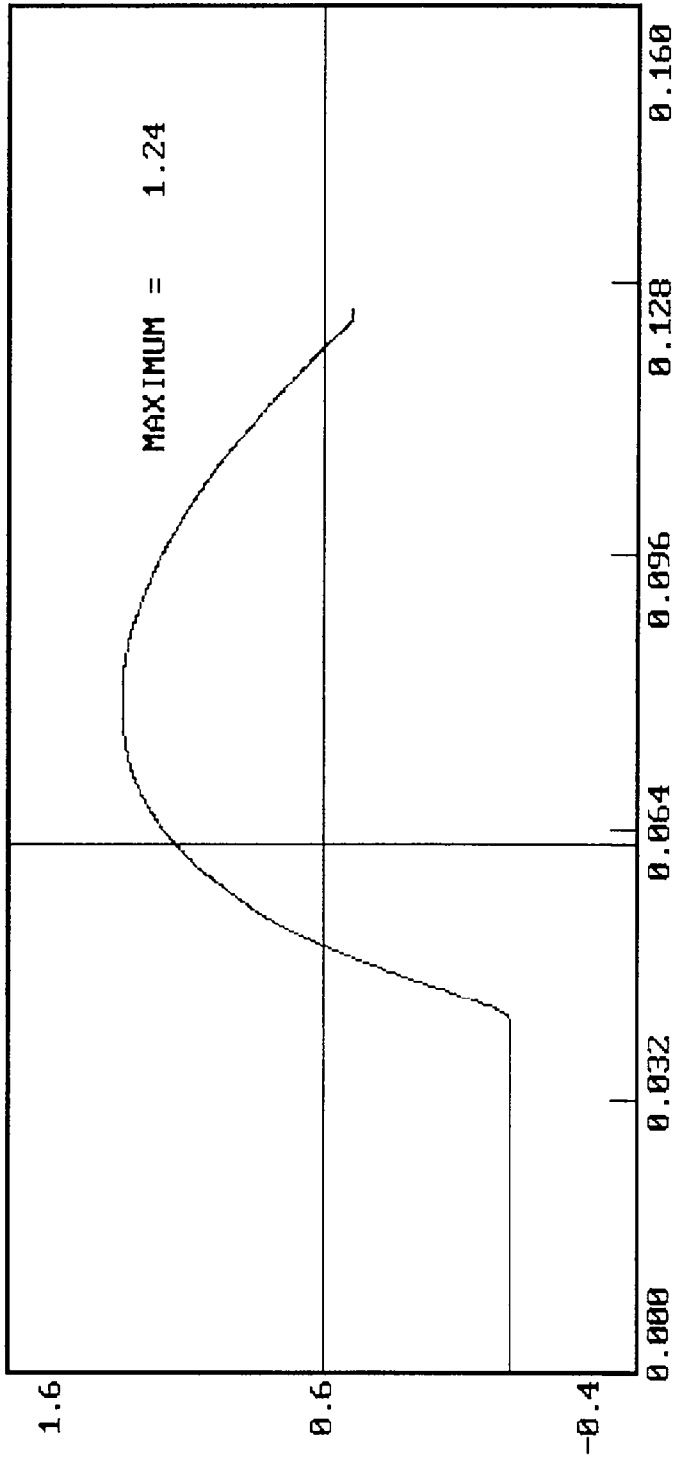


11-21-1996 18:33

DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 271

DISPLACEMENT (IN) VS. TIME (SECONDS)



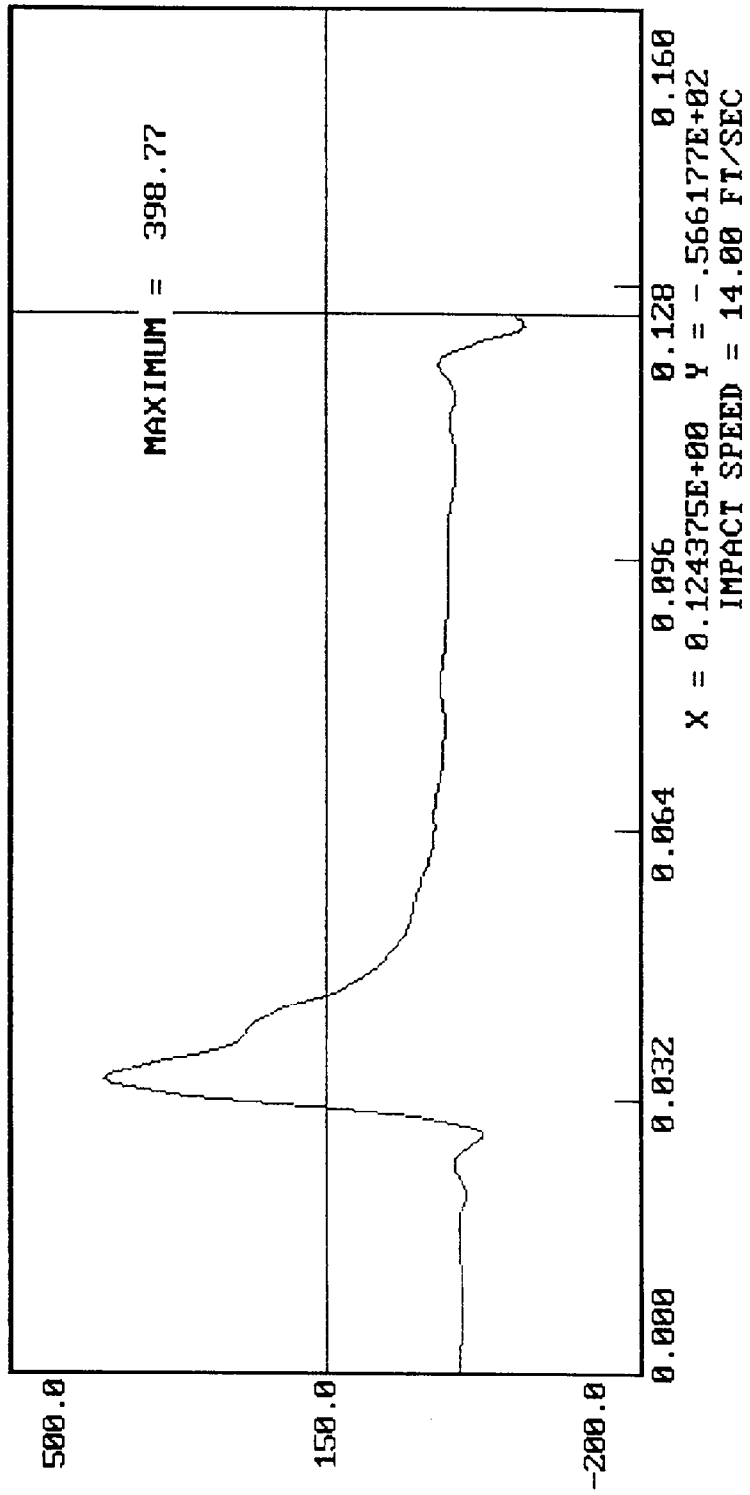
X = 0.622752E-01 Y = 0.107398E+01  
IMPACT SPEED = 10.00 FT/SEC

11-21-1996 18:36

DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 271

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

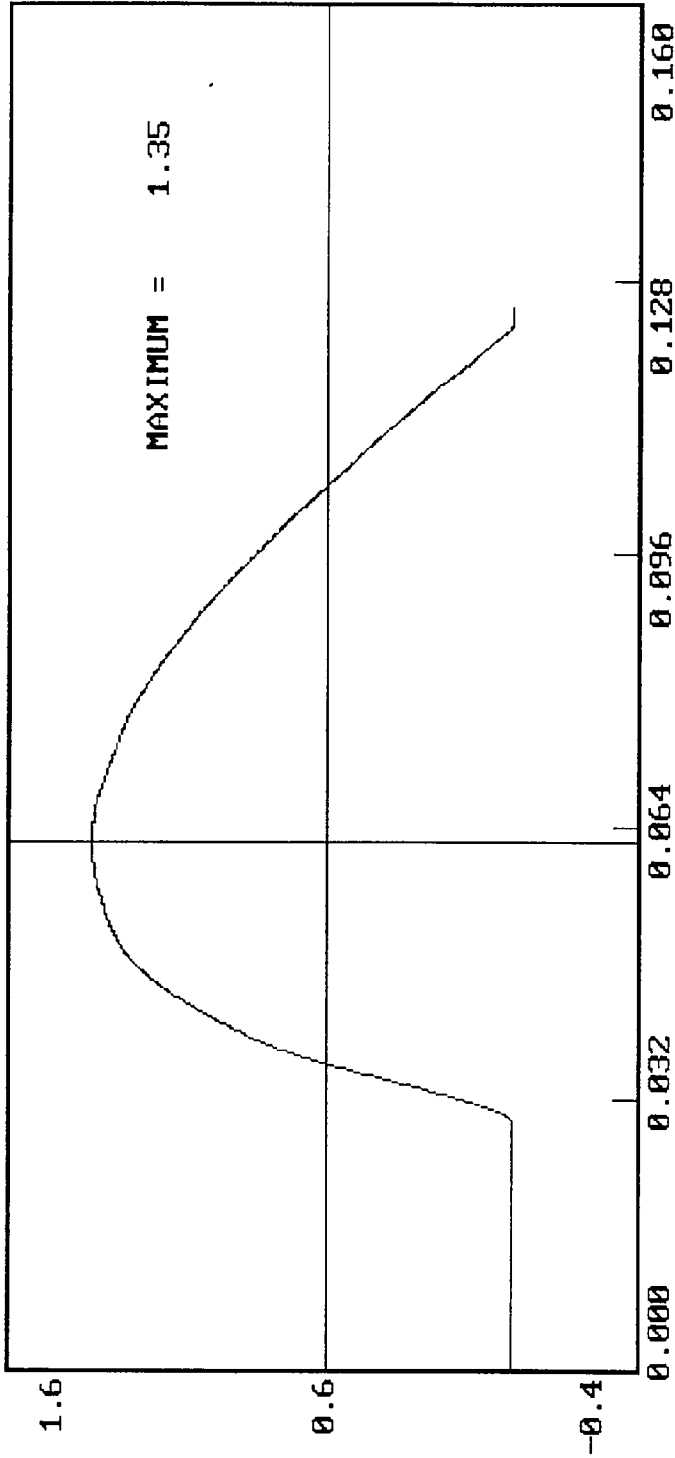


11-21-1996 18:36

DUMMY CALIBRATION - DAMPENER BENCH TEST

DUMMY # 271

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



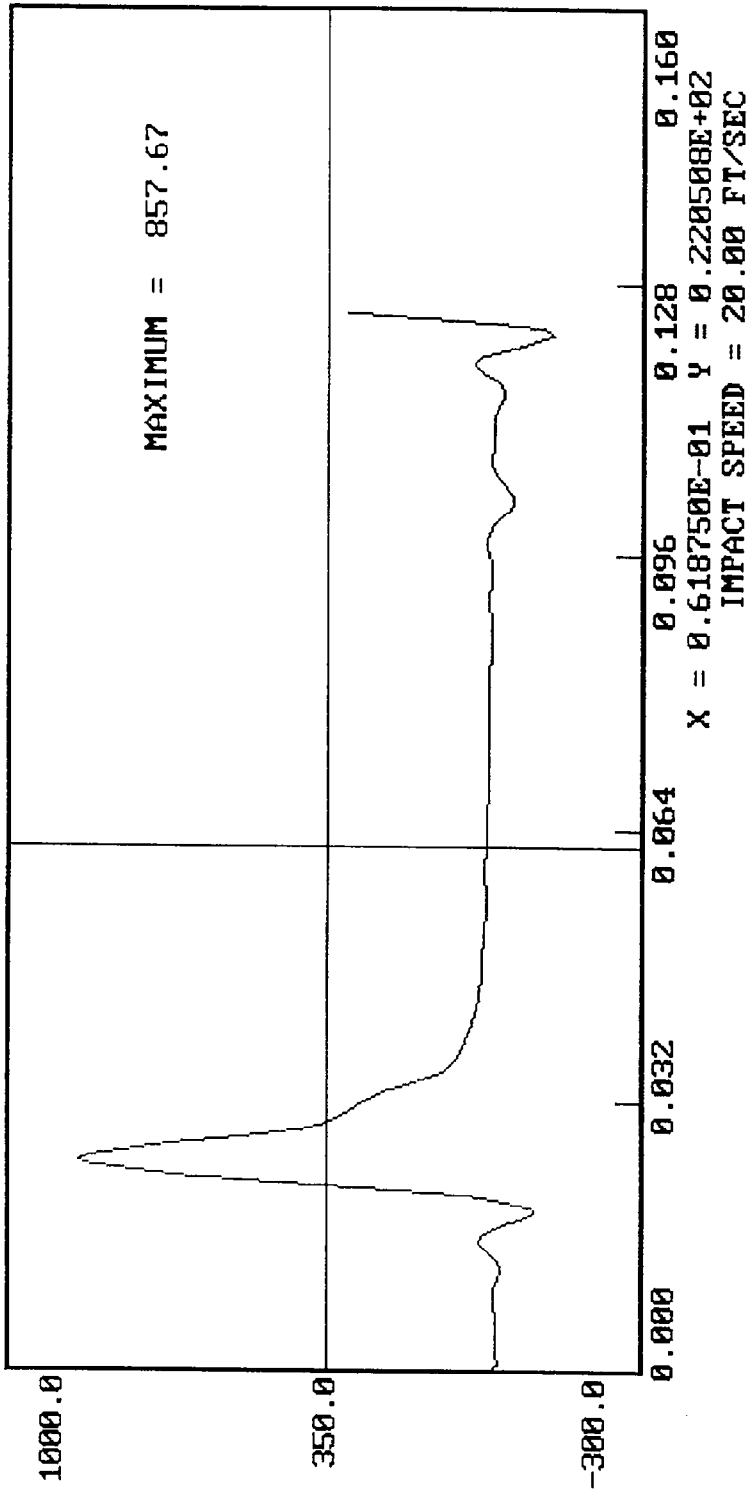
X = 0.622752E-01 Y = 0.134757E+01  
IMPACT SPEED = 14.00 FT/SEC

11-22-1996 09:15

DUMMY CALIBRATION - DAMPENER BENCH TEST

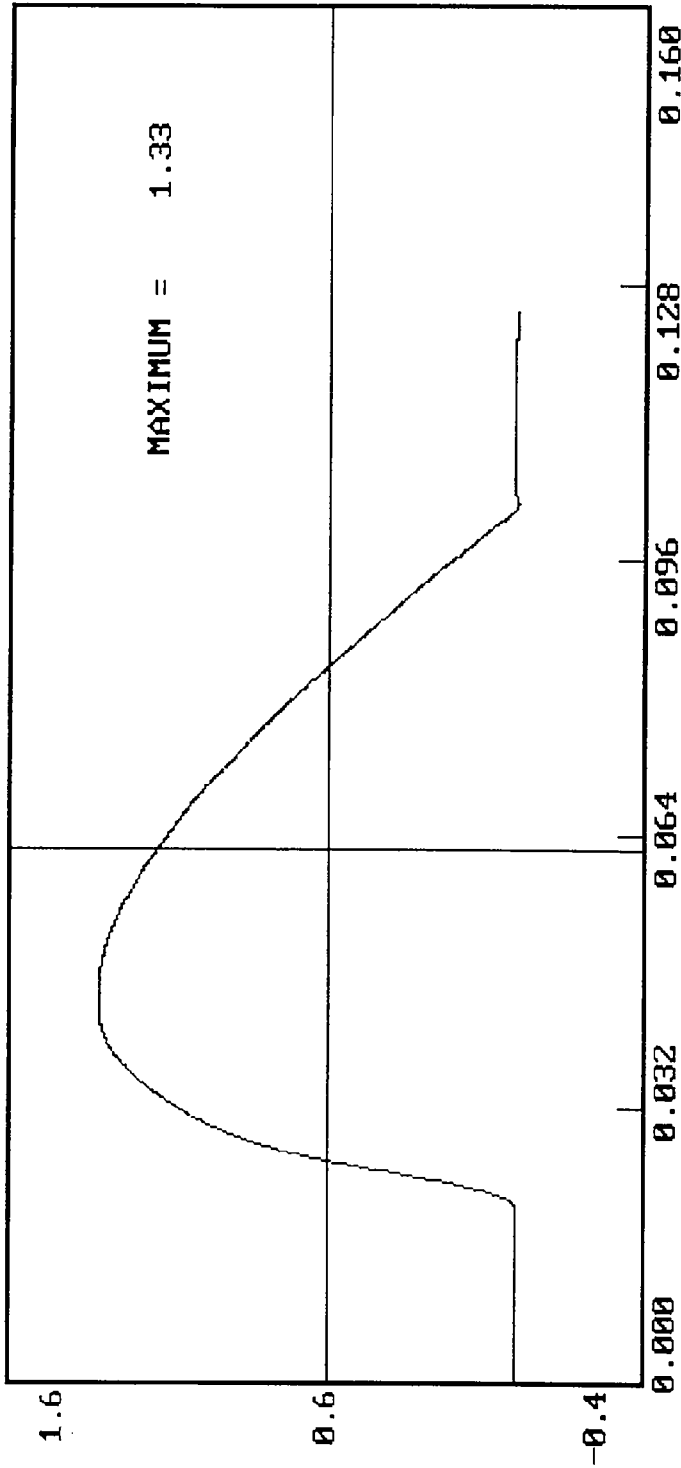
DUMMY # 271

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



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

11-22-1996 09:15



X = 0.622752E-01 Y = 0.113960E+01  
IMPACT SPEED = 20.00 FT/SEC

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 *Tom Hill*

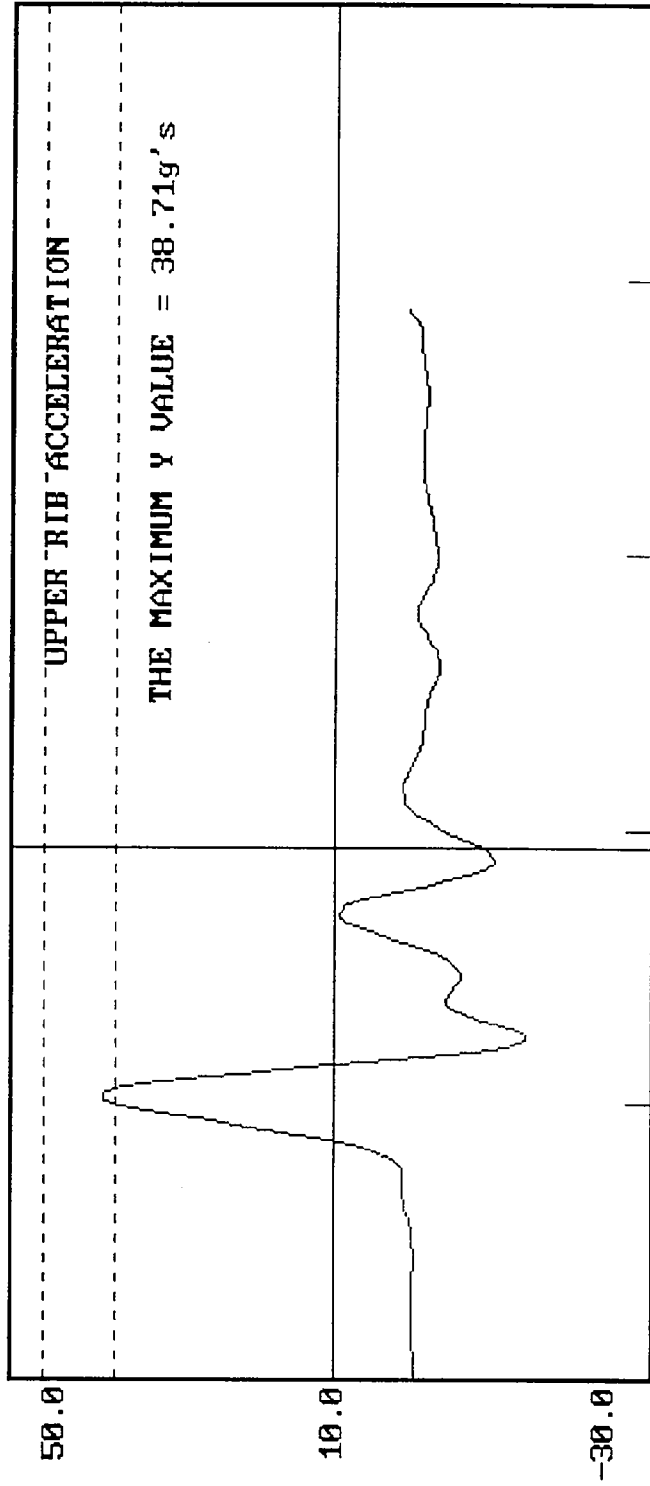
APPROVED BY *Rene Kelske*

11-22-1996 17:13

DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 271

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



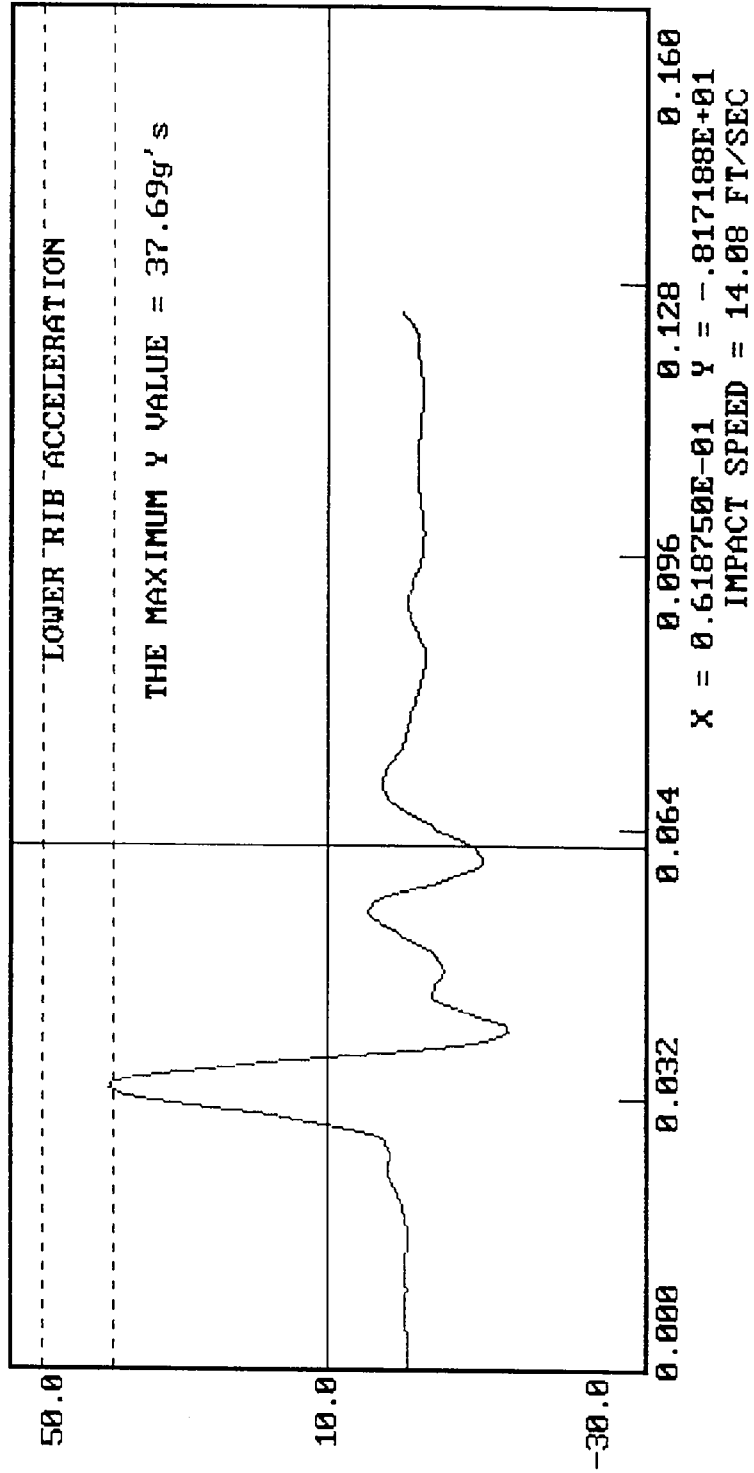
X = 0.618750E-01 Y = -.864224E+01  
IMPACT SPEED = 14.08 FT/SEC

DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 271

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

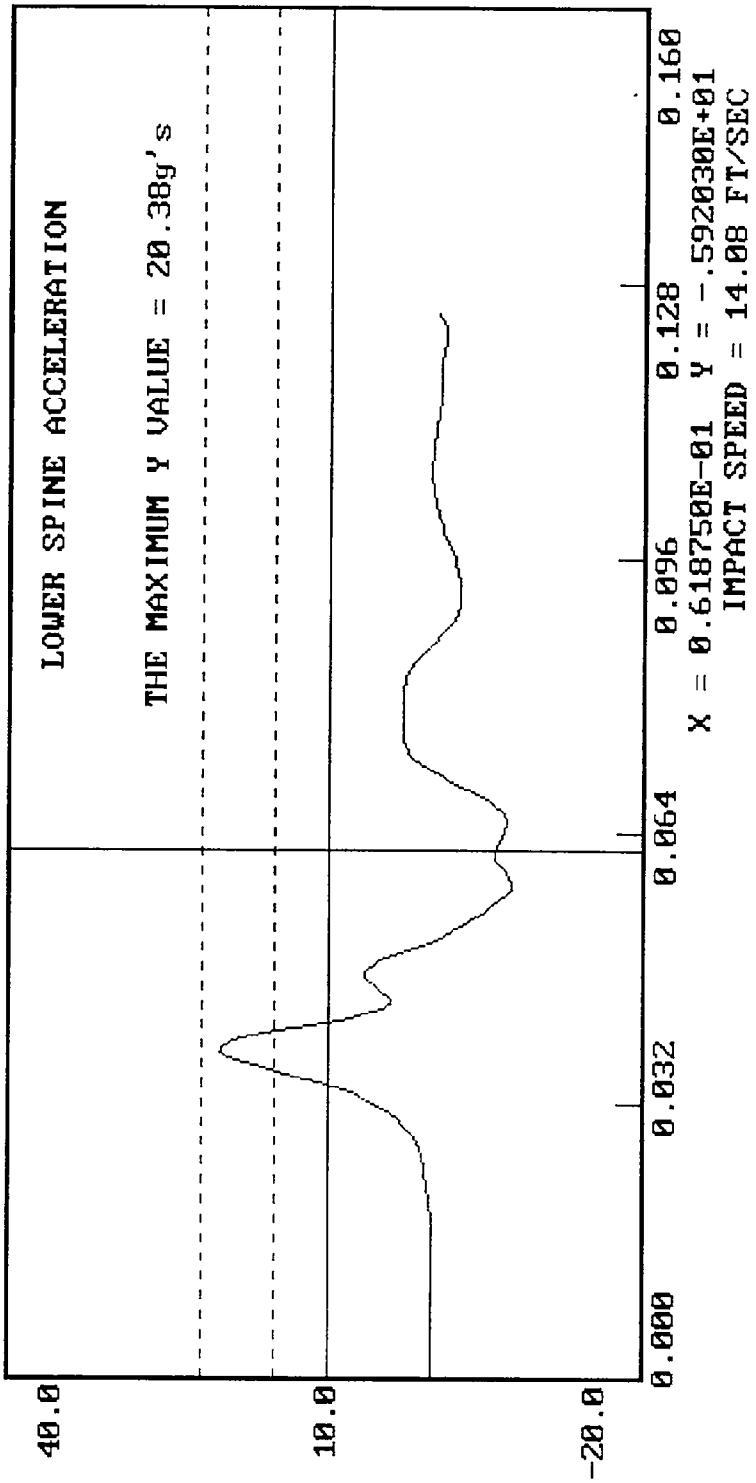
11-22-1996 17:13



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)

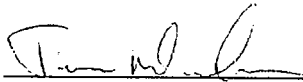
DATE: November 22, 1996

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

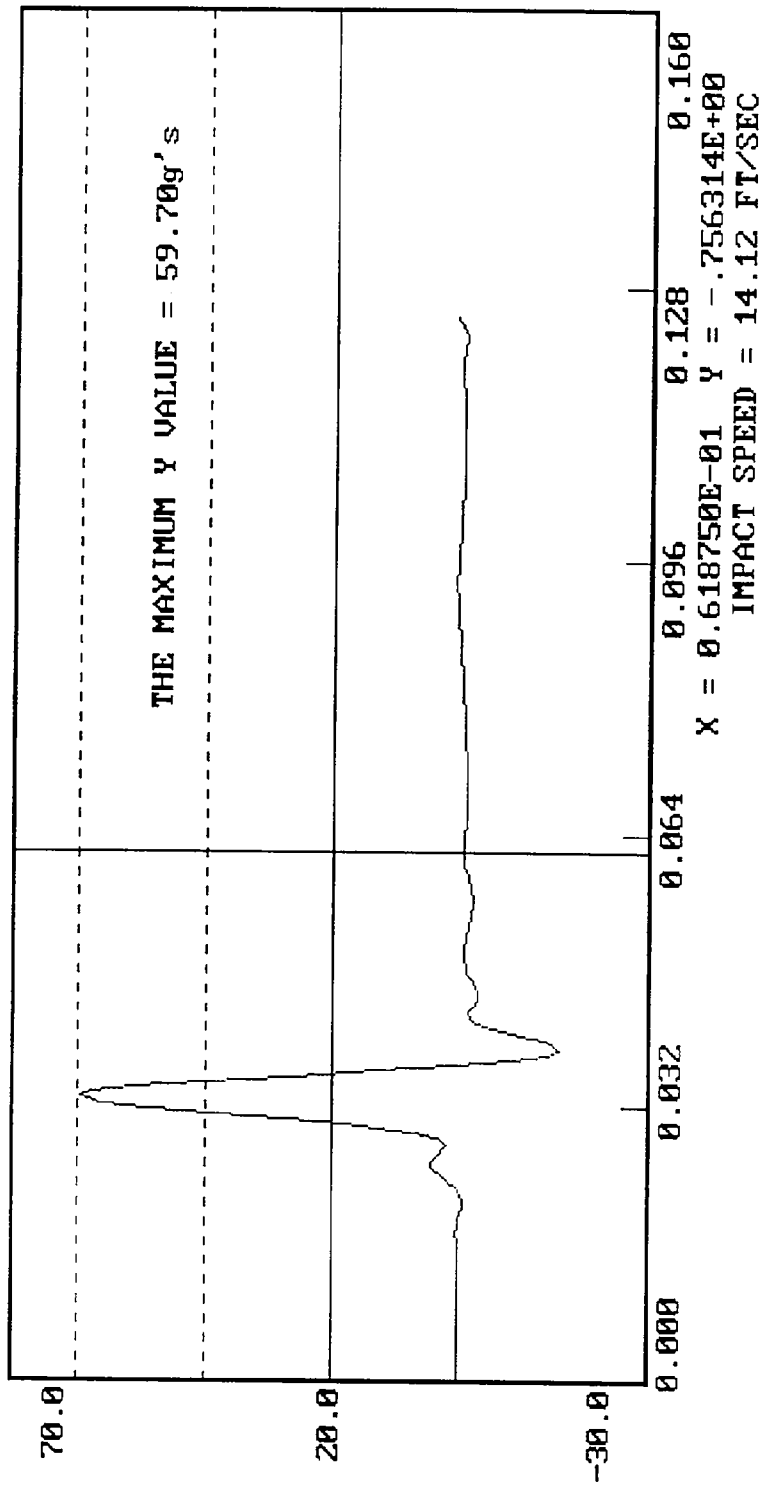
TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

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

11-22-1996 17:21



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

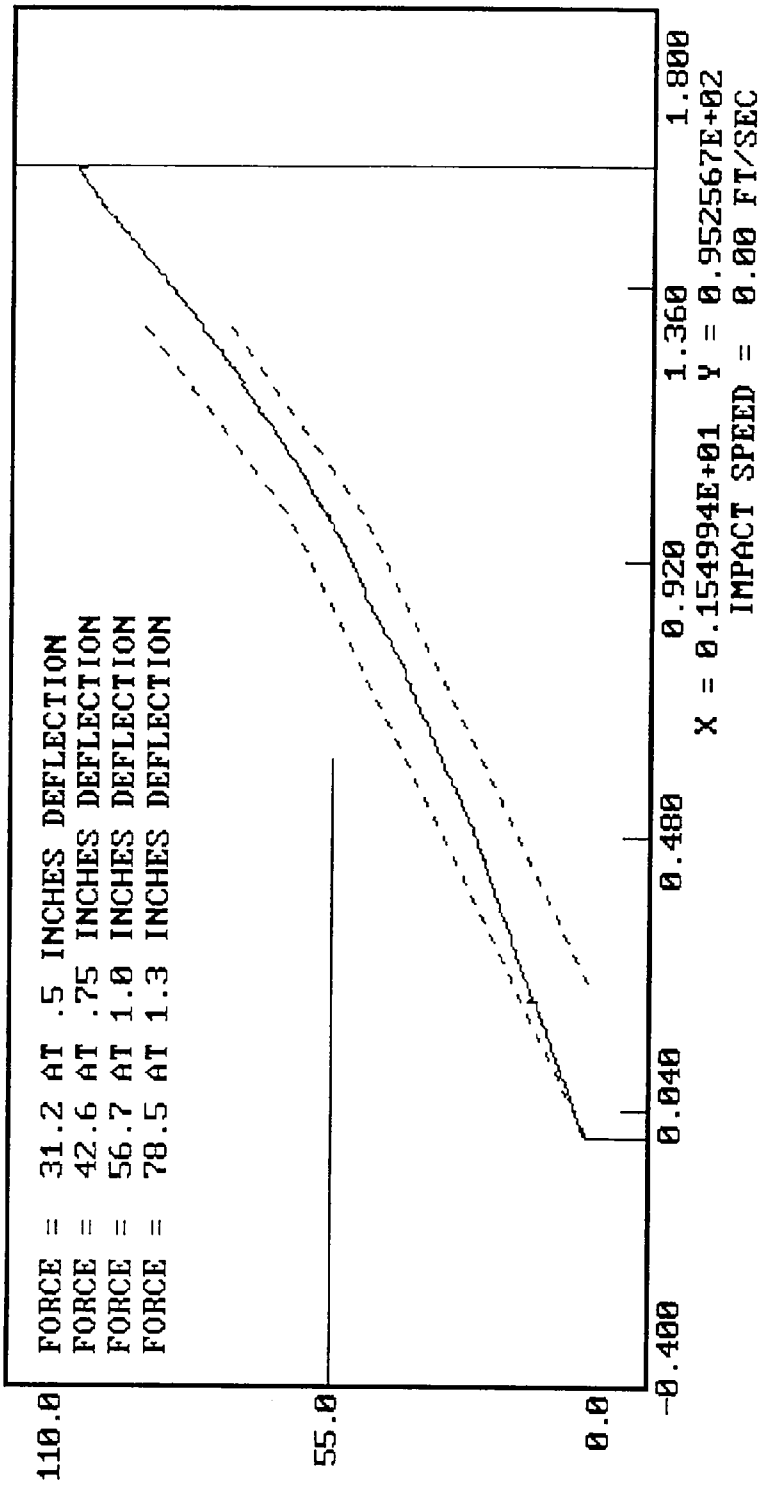
TECHNICIAN *Tim Hallock*

APPROVED BY *Rene Hallock*

DUMMY CALIBRATION - ABDOMEN COMPRESSION  
 DUMMY # 271  
 11-22-1996 18:32

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

FORCE = 31.2 AT .5 INCHES DEFLECTION  
 FORCE = 42.6 AT .75 INCHES DEFLECTION  
 FORCE = 56.7 AT 1.0 INCHES DEFLECTION  
 FORCE = 78.5 AT 1.3 INCHES DEFLECTION



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 *Tim Hill*

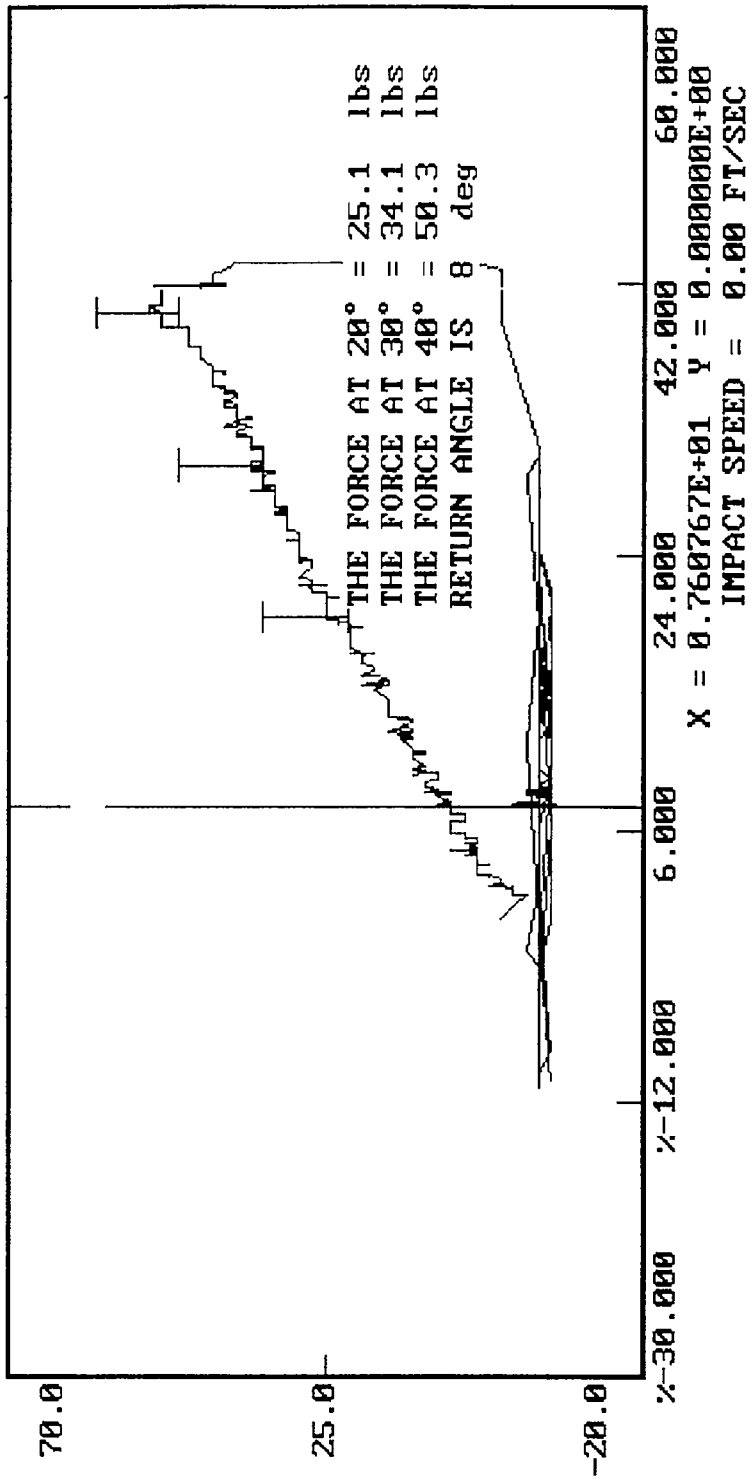
APPROVED BY *Rave Kobaske*

11-22-1996 18:21

DUMMY CALIBRATION - LUMBAR FLEXION

DUMMY # 271

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

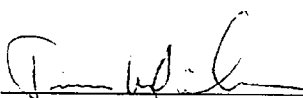
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion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

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 272

DATE OF VERIFICATION: November 26, 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: 

APPROVED BY: 

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

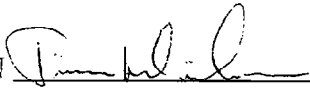
DATE: November 25, 1996


DUMMY NUMBER: 272

TEST NUMBER: D961912

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
PROBE SPEED	13.8 - 14.2 fps	13.9
UPPER RIB	37 - 46 g's	41
LOWER RIB	37 - 46 g's	41
LOWER SPINE	15 - 22 g's	20

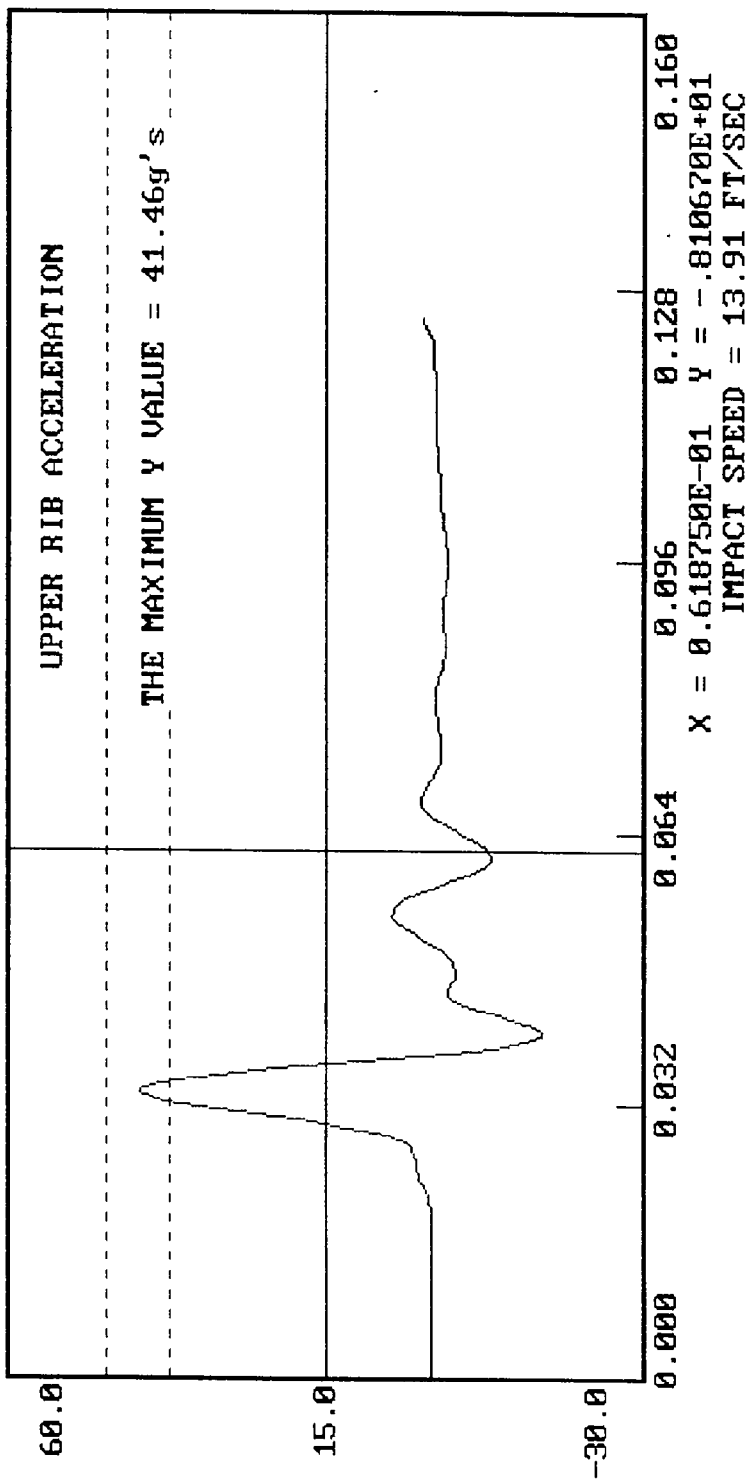
TEST MEETS SPECIFICATIONS

TECHNICIAN 

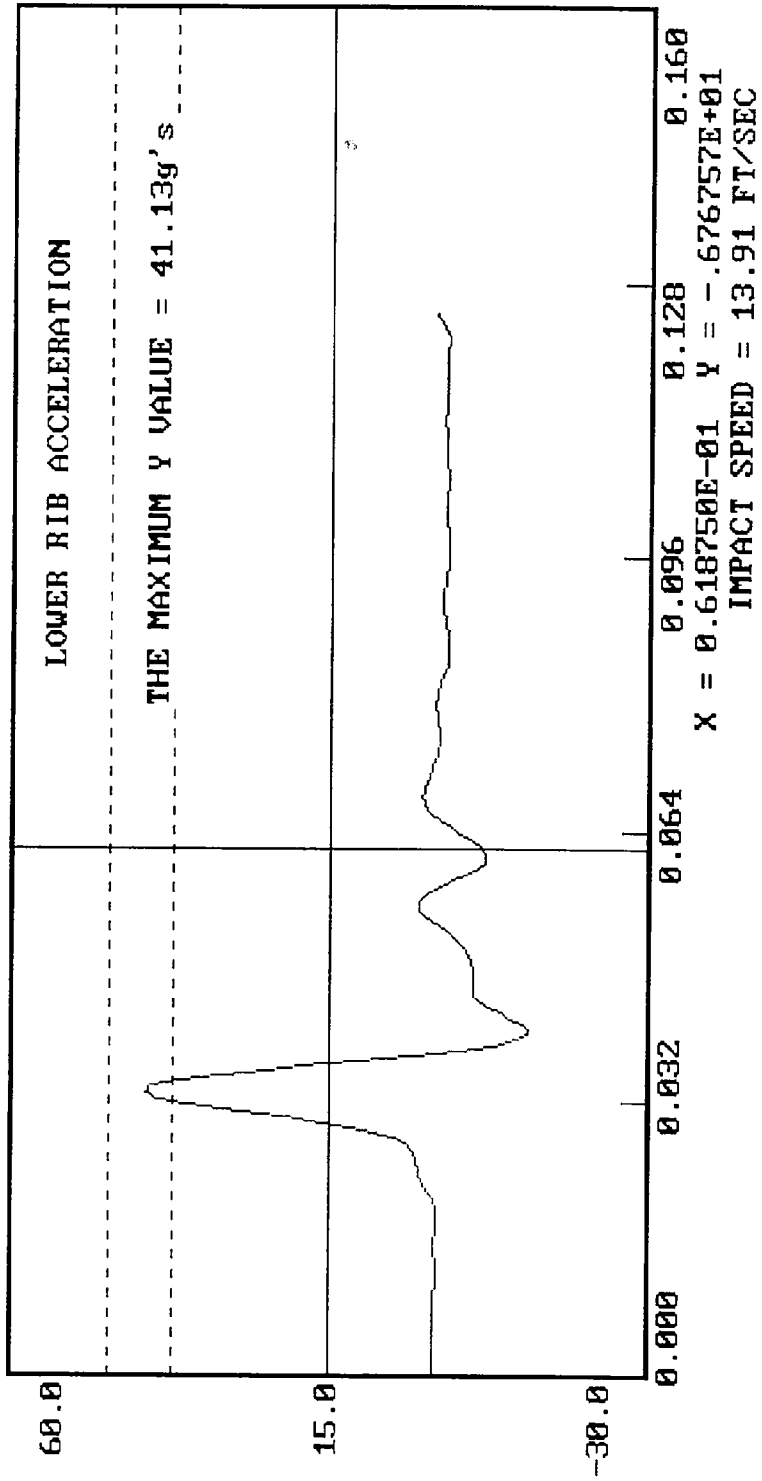
APPROVED BY 

11-25-1996 23:21

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



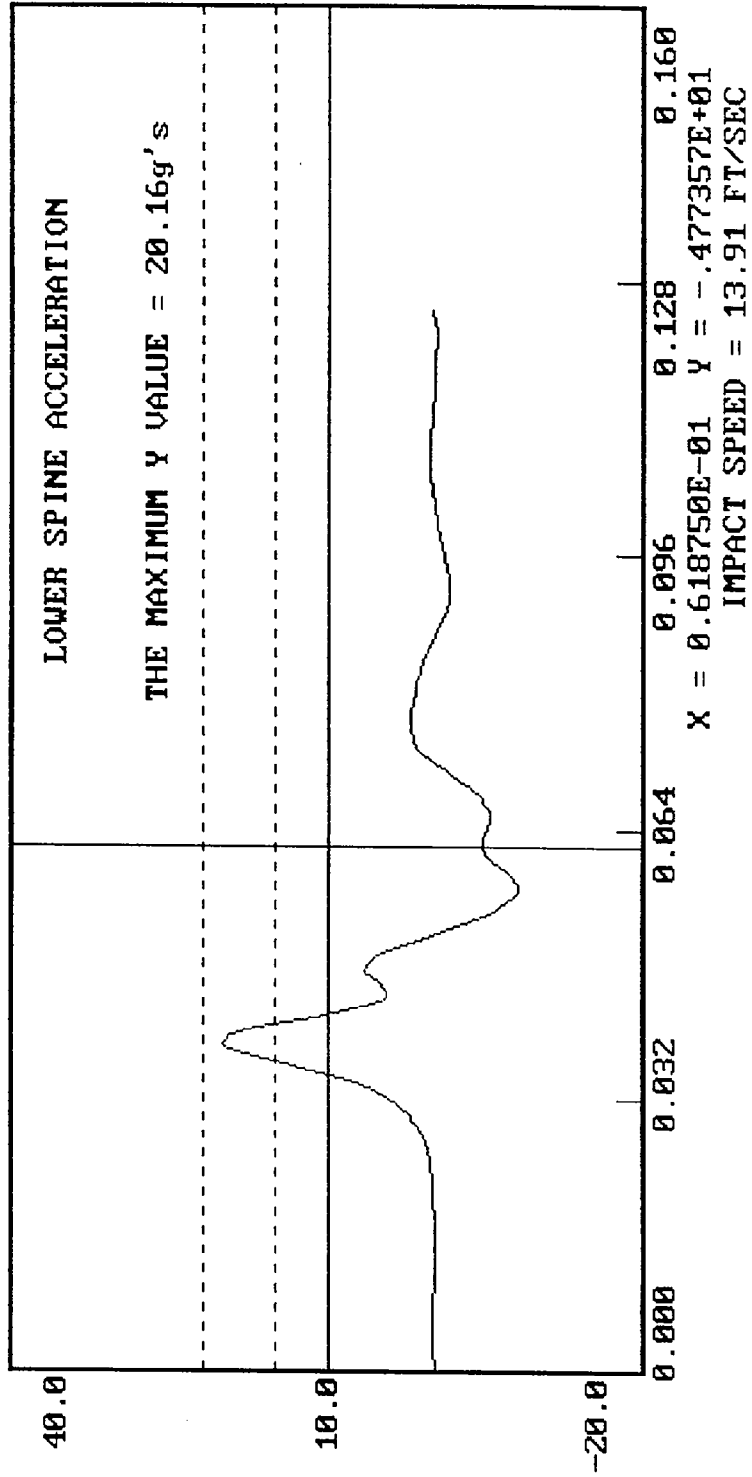
DUMMY CALIBRATION - THORAX IMPACT  
DUMMY # 272  
11-25-1996 23:21  
ACCELERATION (G'S) VS. TIME ((SECONDS))



DUMMY CALIBRATION - THORAX IMPACT  
DUMMY # 272

11-25-1996 23:22

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



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 25, 1996

DUMMY NUMBER: 272

TEST NUMBER: D961913

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 Jim White

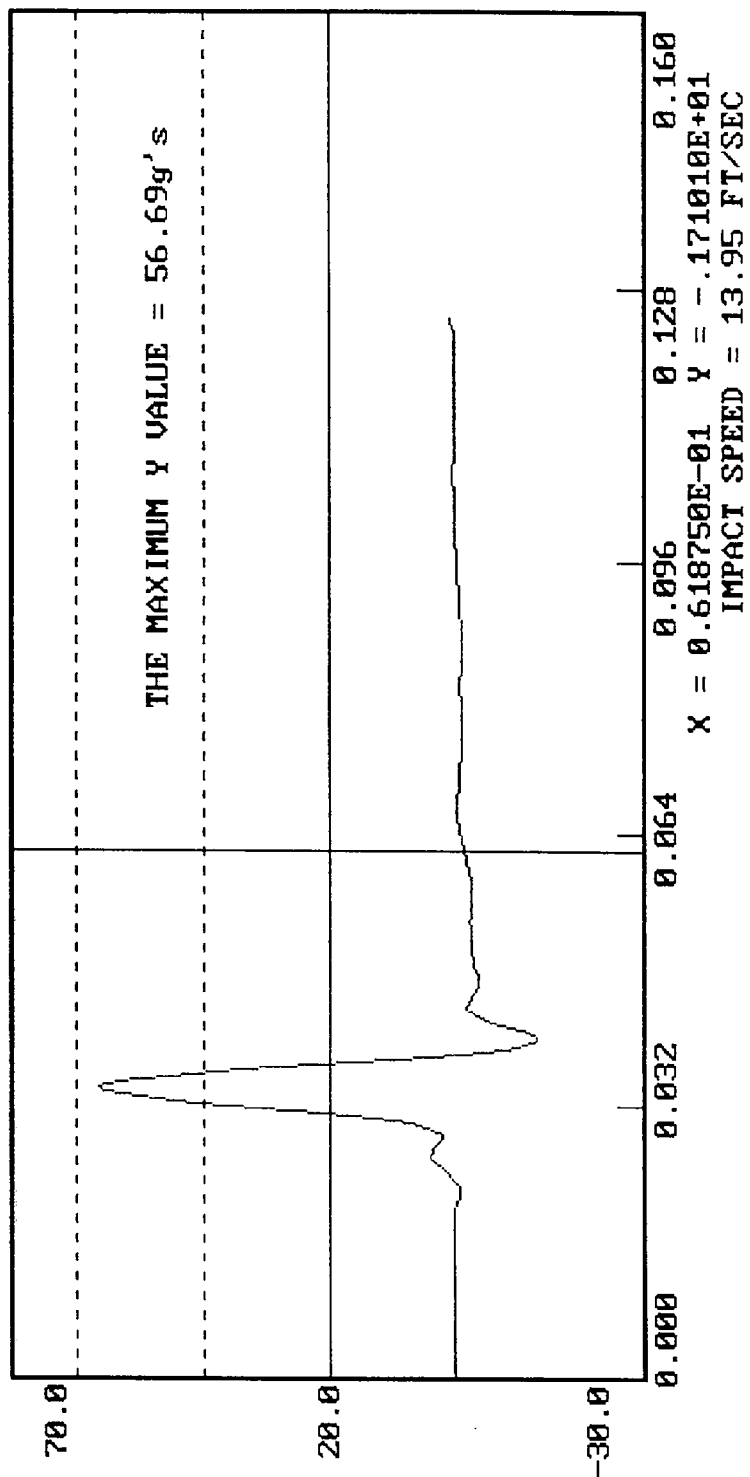
APPROVED BY Paul Kalsbeke

11-25-1996 23:30

DUMMY CALIBRATION - PELVIS IMPACT

DUMMY # 272

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



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

DATE: November 26, 1996

DUMMY NUMBER: 272

TEST NUMBER: D961914

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0.5 in	23.3 - 36.5 lbs	29.4
FORCE @ 0.75 in	36.7 - 49.8 lbs	40.7
FORCE @ 1.0 in	50 - 63 lbs	54
FORCE @ 1.3 in	73 - 88 lbs	76

TEST MEETS SPECIFICATIONS

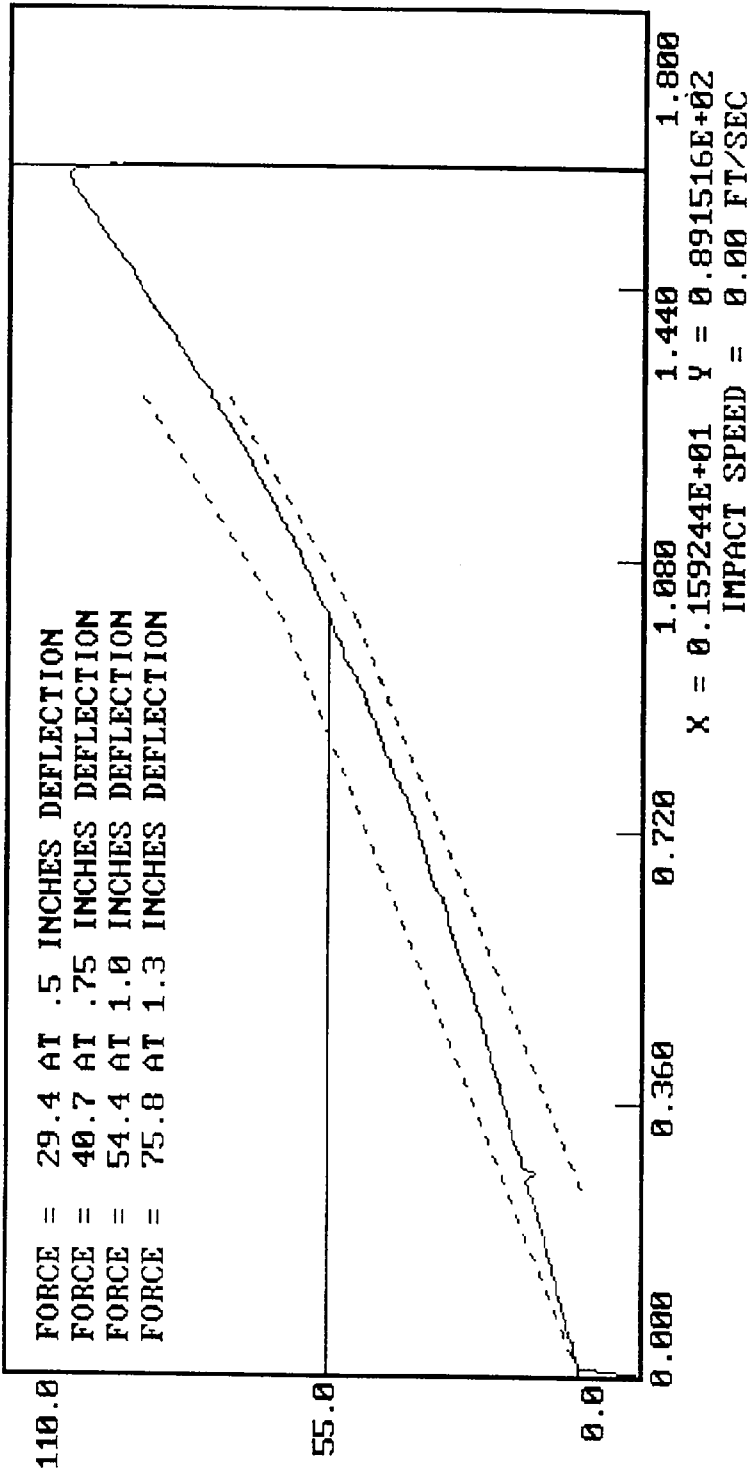
TECHNICIAN *Tom Hill*

APPROVED BY *Rene Koschke*

DUMMY CALIBRATION - ABDOMEN COMPRESSION  
DUMMY # 272

11-26-1996 00:32

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



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: November 26, 1996

DUMMY NUMBER: 272

TEST NUMBER: D961915

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	39
FORCE @ 40°	46 - 58 lbs	48
RETURN ANGLE	12° maximum	2°

TEST MEETS SPECIFICATIONS

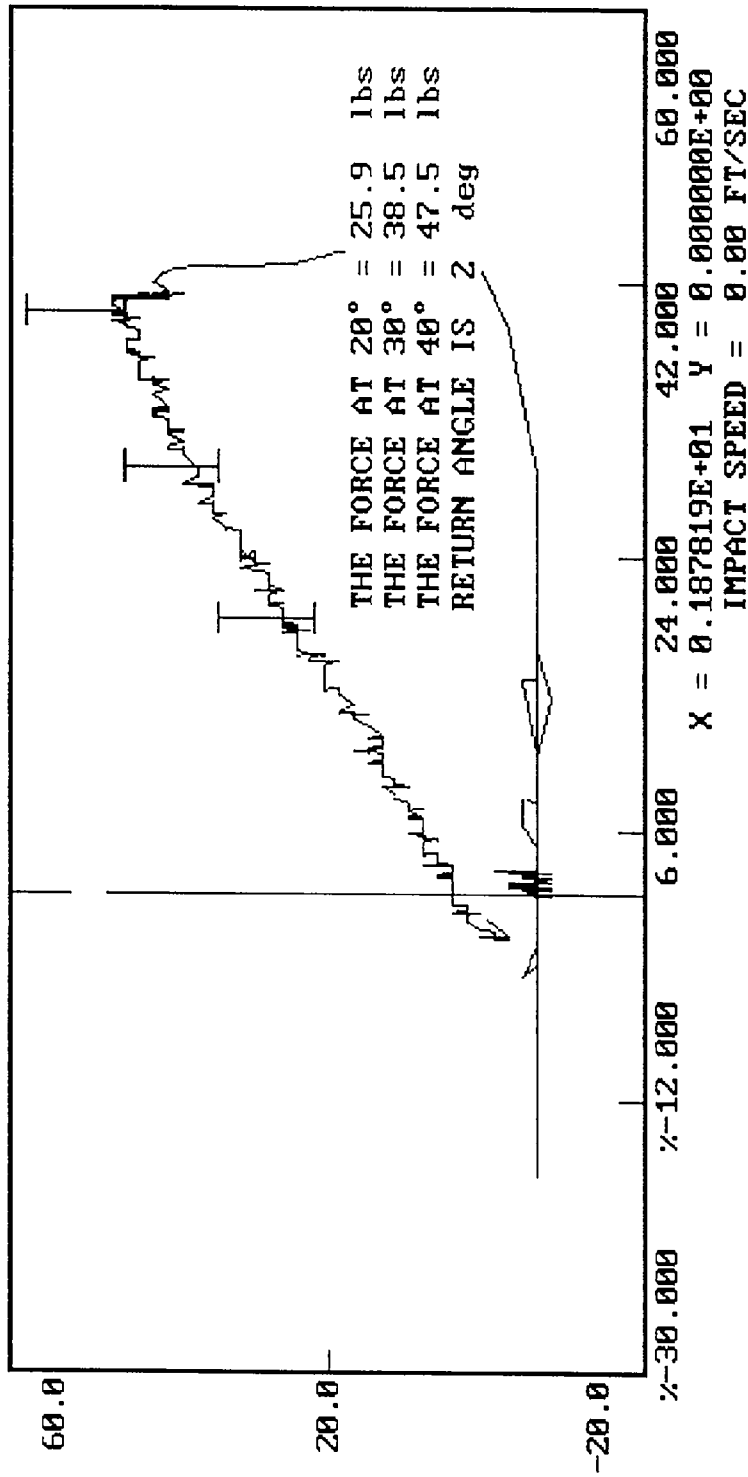
TECHNICIAN *Tim H. [Signature]*

APPROVED BY *Rene Koshake*

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

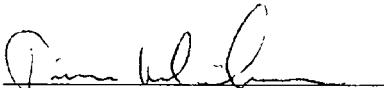
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion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

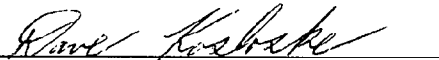
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 271

DATE OF VERIFICATION: November 26, 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

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 25, 1996

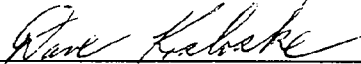
DUMMY NUMBER: 271

TEST NUMBER: D961902

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	37
LOWER RIB	37 - 46 g's	41
LOWER SPINE	15 - 22 g's	19

TEST MEETS SPECIFICATIONS

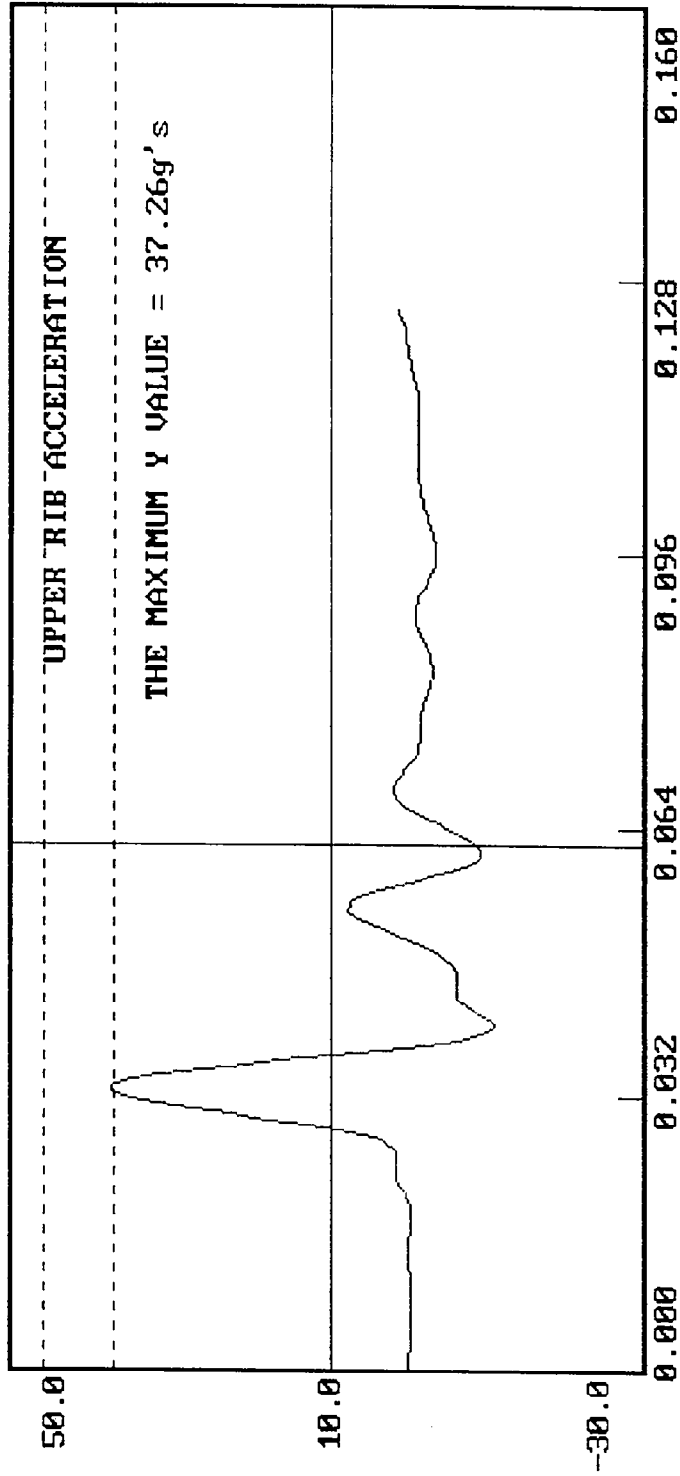
TECHNICIAN 

APPROVED BY 

DUMMY CALIBRATION - THORAX IMPACT  
DUMMY # 271

11-25-1996 22:32

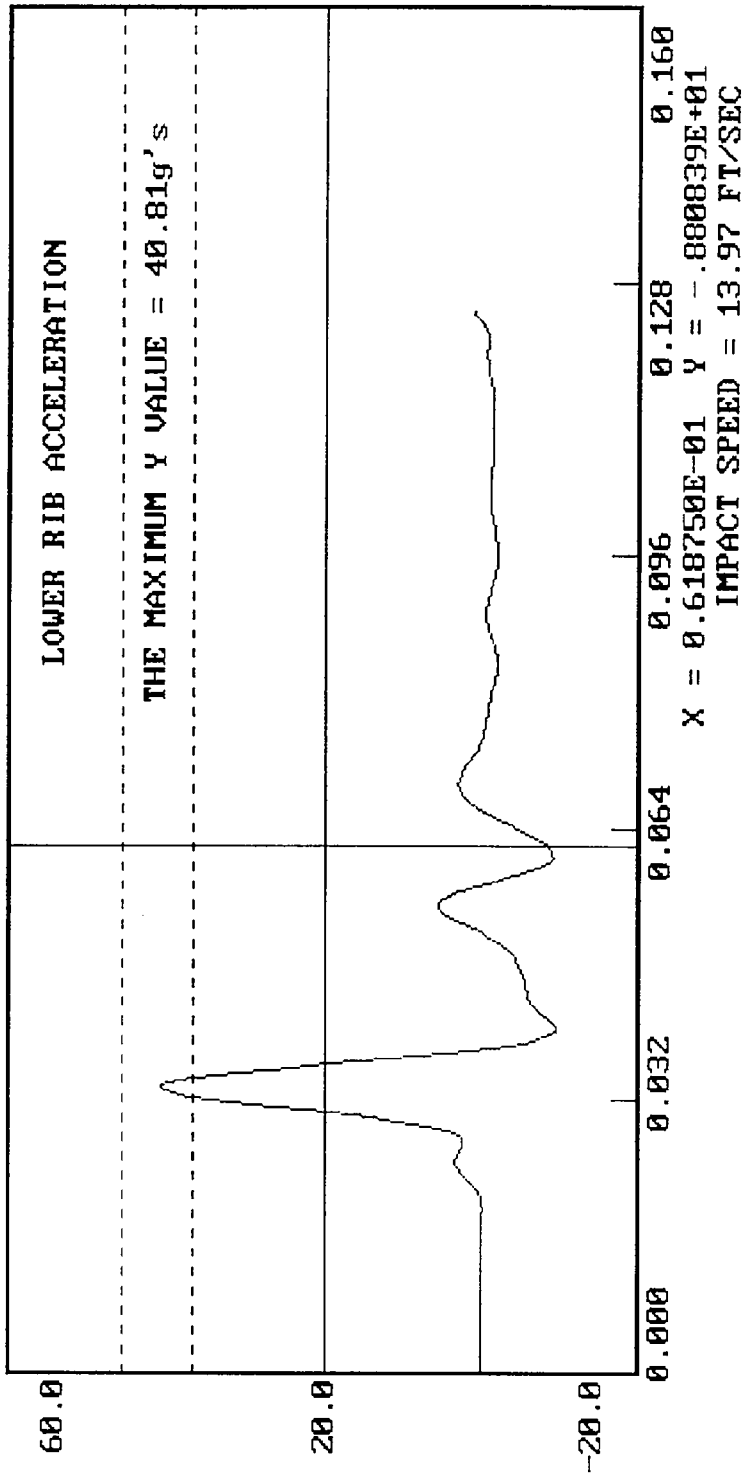
ACCELERATION (G'S) VS. TIME ((SECONDS))



X = 0.618750E-01 Y = -.855184E+01  
IMPACT SPEED = 13.97 FT/SEC

11-25-1996 22:32

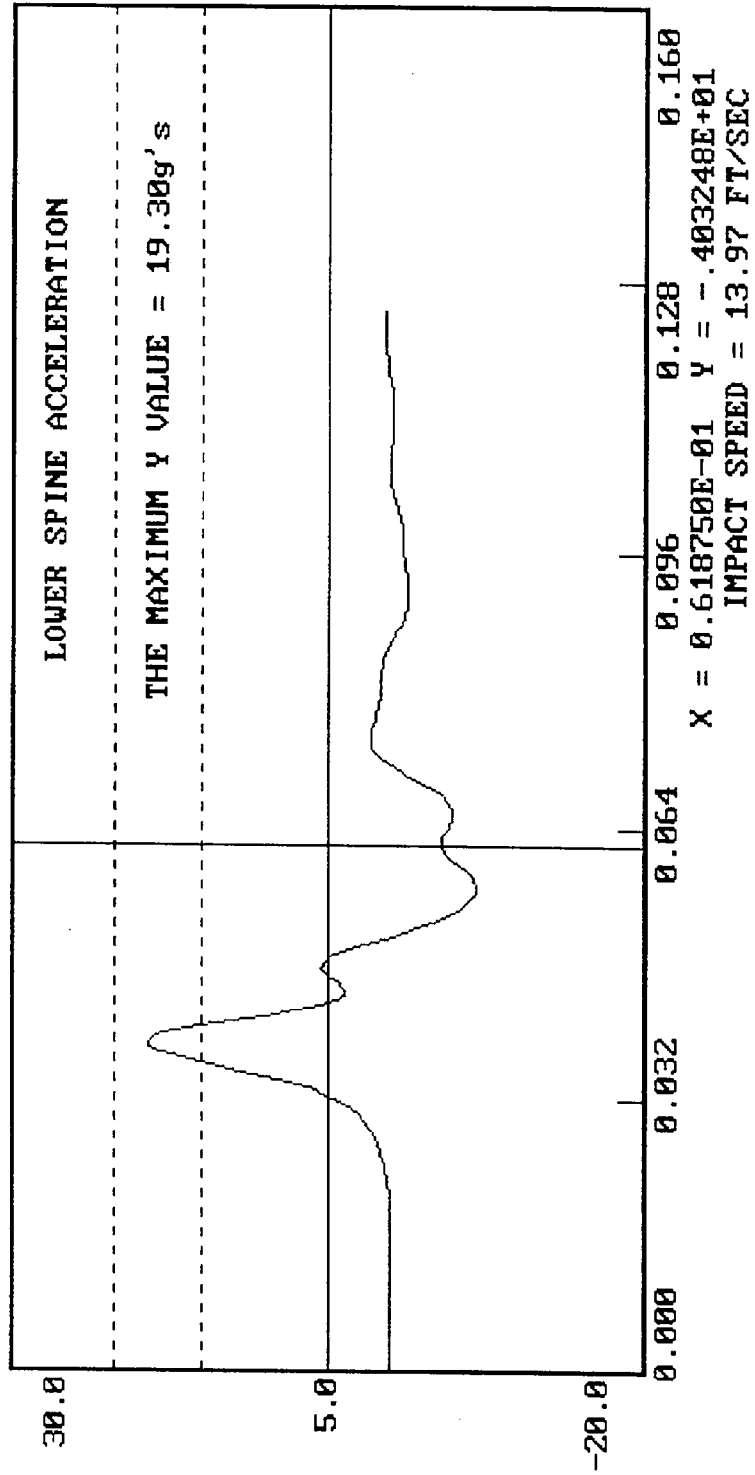
DUMMY CALIBRATION - THORAX IMPACT  
DUMMY # 271  
ACCELERATION (G'S) VS. TIME ((SECONDS))



DUMMY CALIBRATION - THORAX IMPACT  
DUMMY # 271

11-25-1996 22:32

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



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 25, 1996

DUMMY NUMBER: 271

TEST NUMBER: D961903

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
PROBE SPEED	13.8 - 14.2 f/s	13.9
PELVIS ACCELERATION	40 - 60 g's	52

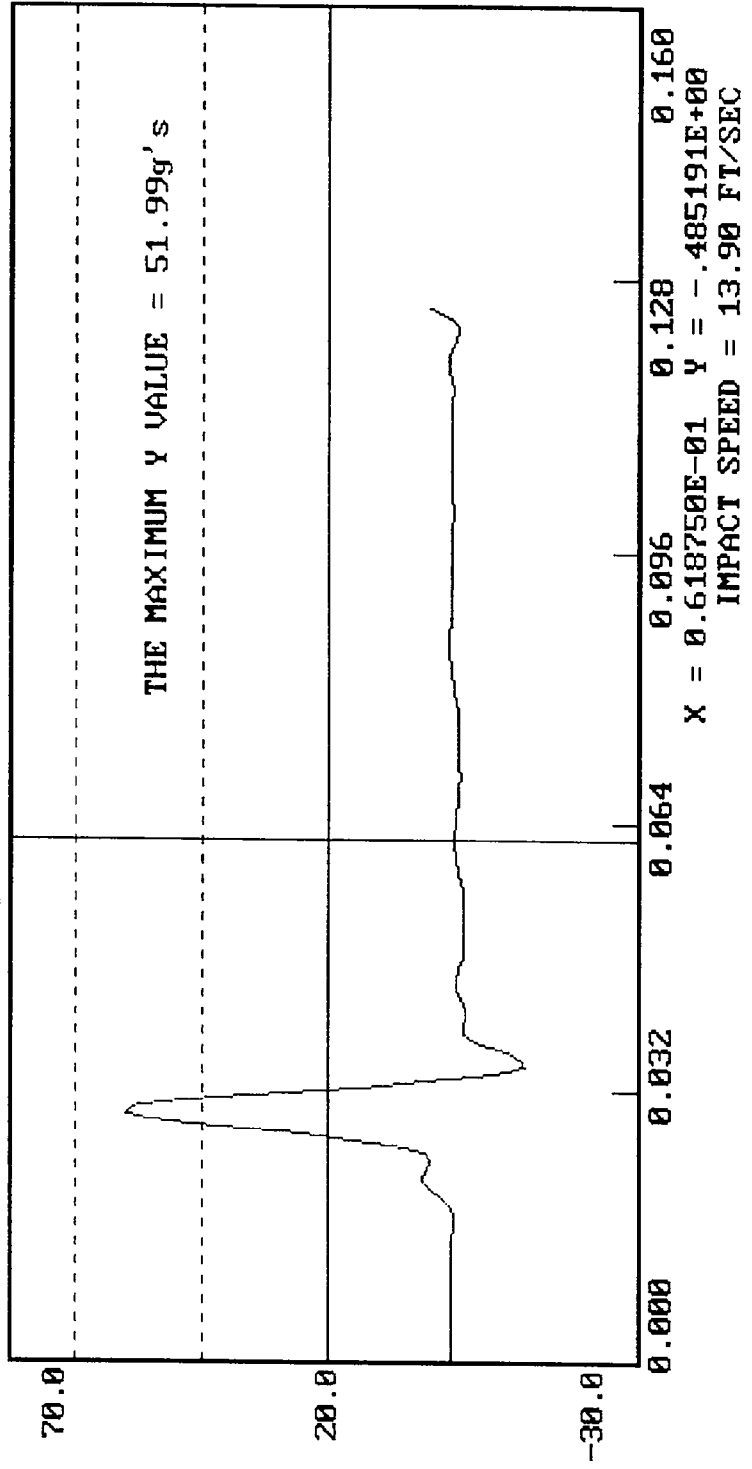
TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

11-25-1996 23:00

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)

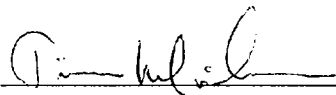
DATE: November 26, 1996

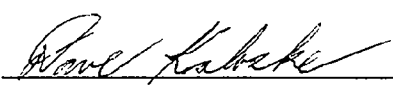
DUMMY NUMBER: 271

TEST NUMBER: D961904

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0.5 in	23.3 - 36.5 lbs	30.6
FORCE @ 0.75 in	36.7 - 49.8 lbs	43.2
FORCE @ 1.0 in	50 - 63 lbs	59
FORCE @ 1.3 in	73 - 88 lbs	80

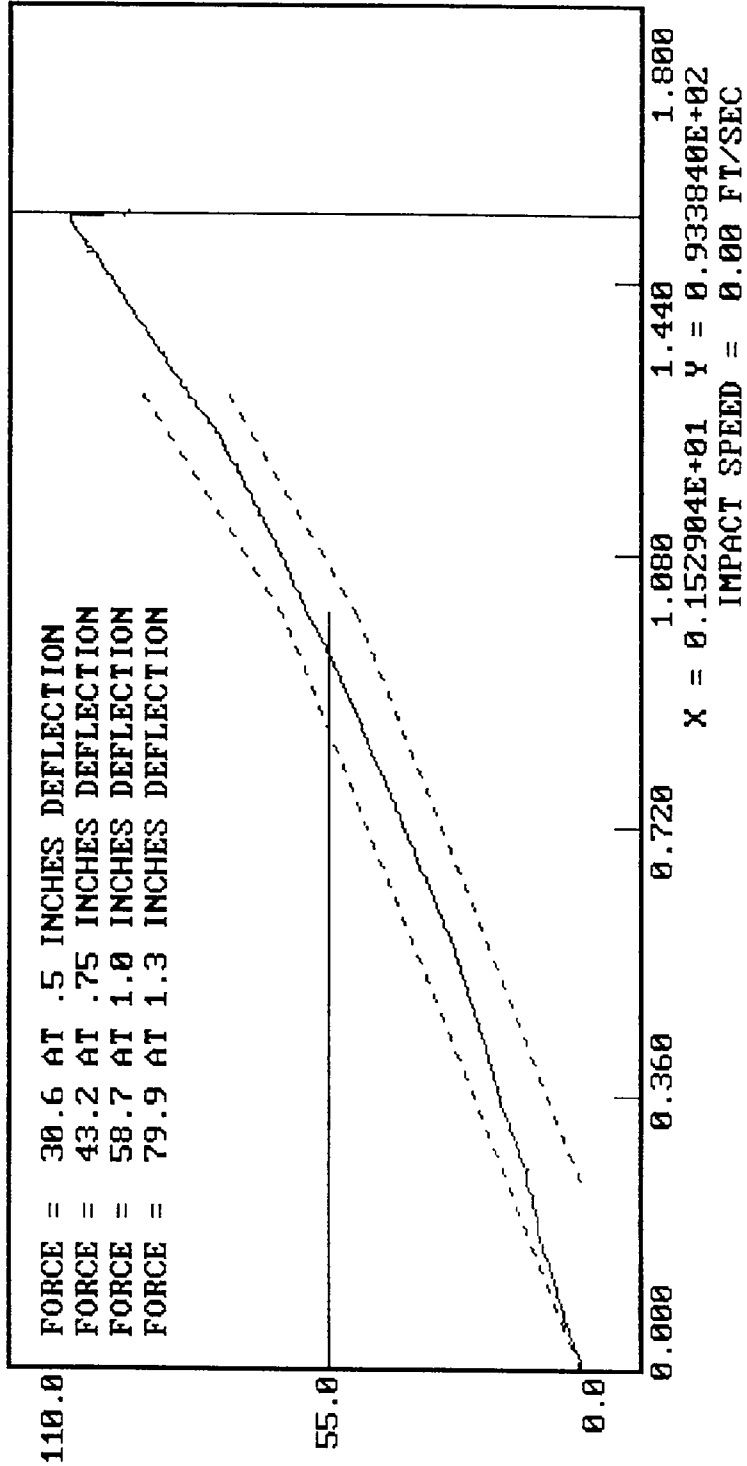
TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

DUMMY CALIBRATION - ABDOMEN COMPRESSION  
 DUMMY # 271  
 11-26-1996 00:28

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



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: November 25, 1996

DUMMY NUMBER: 271

TEST NUMBER: D961905

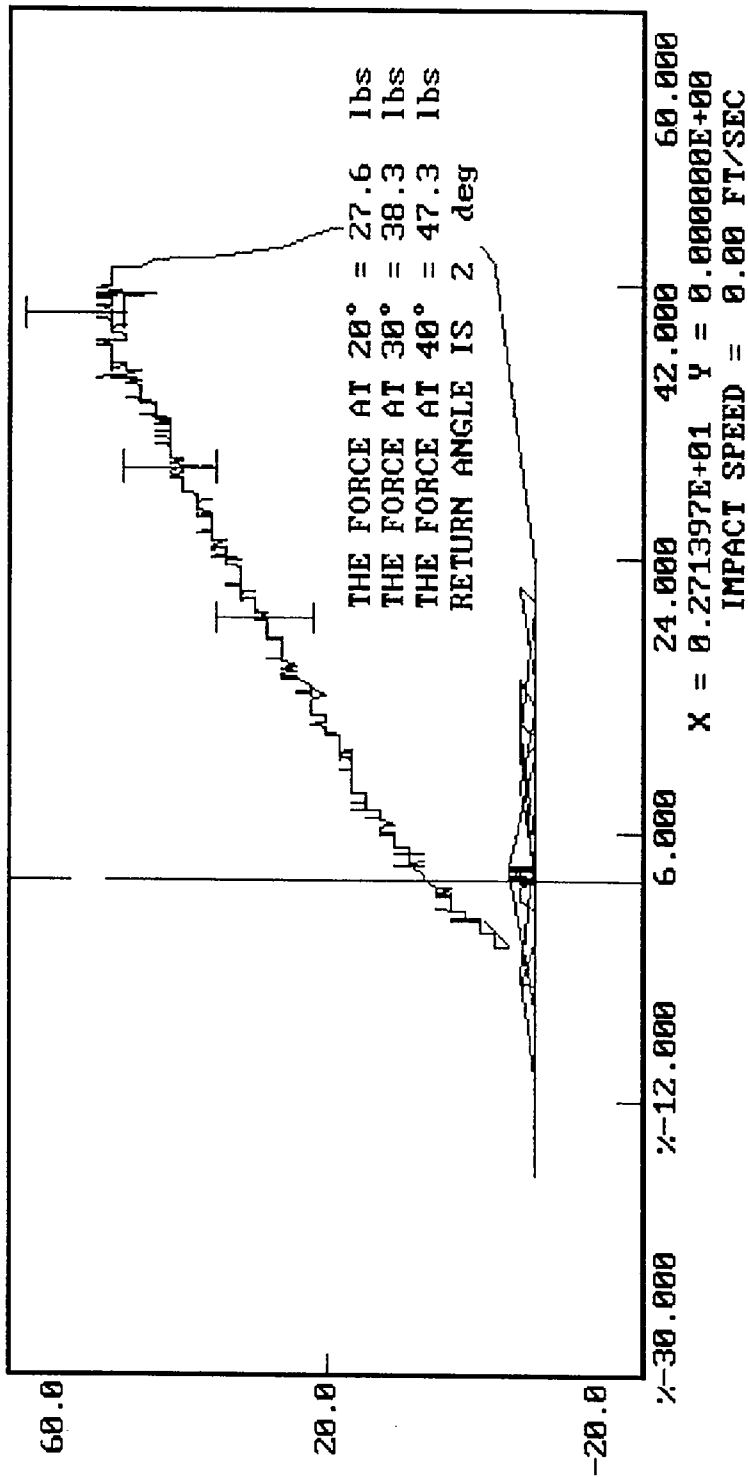
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	28
FORCE @ 30°	34 - 46 lbs	38
FORCE @ 40°	46 - 58 lbs	47
RETURN ANGLE	12° maximum	2°

TEST MEETS SPECIFICATIONS

TECHNICIAN *Tom Hill*

APPROVED BY *Gene Kabeke*

DUMMY CALIBRATION - LUMBAR FLEXION  
 DUMMY # 271  
 FORCE (LBS) VS. TORSO ROTATION (DEGREES) 11-25-1996 23:51



POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 272

Inspected By: Tim Michnay

Date: November 26, 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	Rib wrap torn from rivets on impact side - replaced	

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

POST-TEST PASSENGER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 271

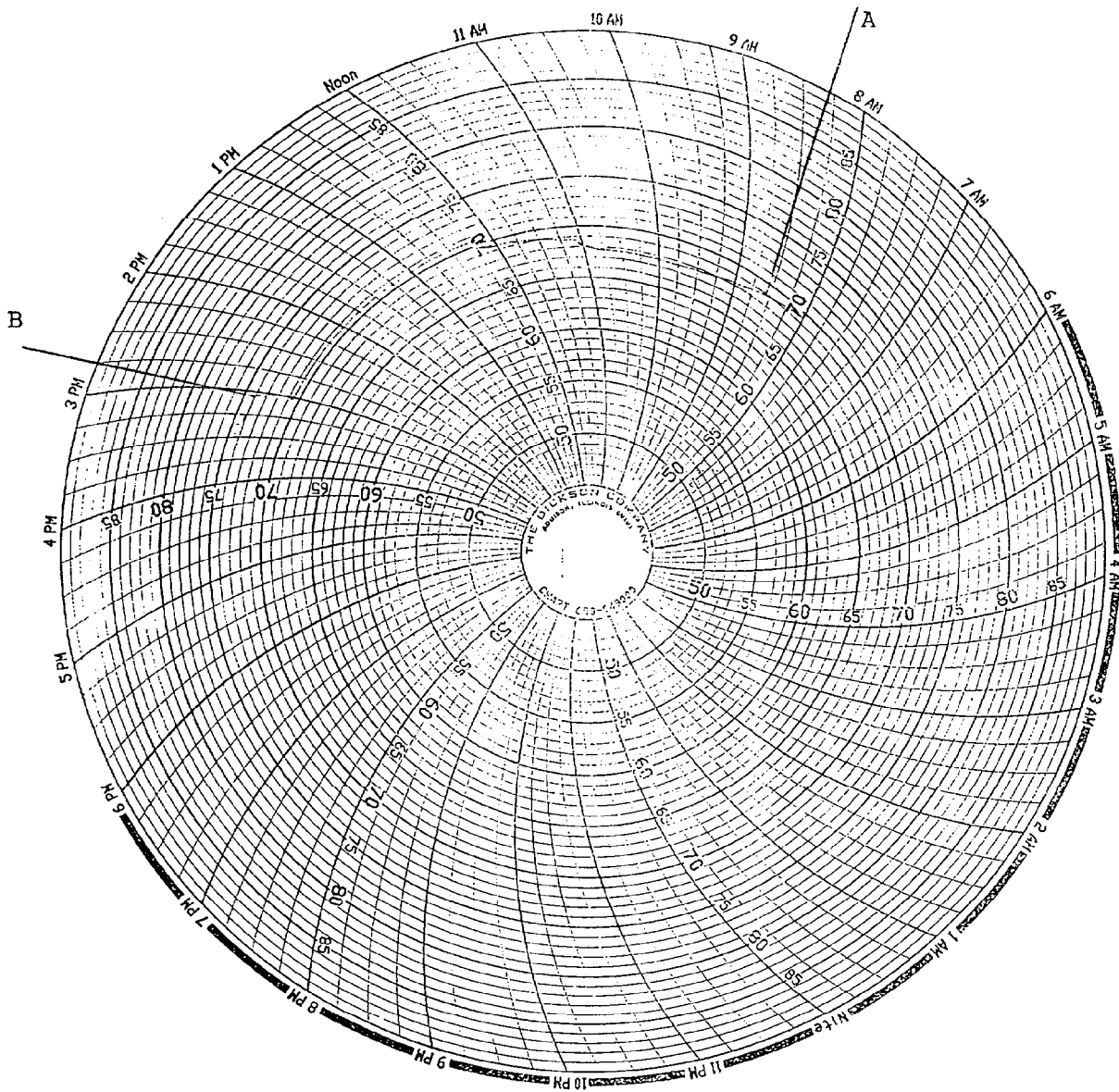
Inspected By: Tim Michnay

Date: November 26, 1996

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	Jacket Torn
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	Jacket torn on impact side - replaced	

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.	CALIBRATION DATE
Upper Rib Y	ALFJ7	July 12, 1996
Lower Rib Y	APYN0	June 06, 1996
Lower Spine Y	APOG2	July 12, 1996
Pelvis Y	APY15	September 16, 1996
Upper Rib Redundant Y	ALDD6	July 12, 1996
Lower Rib Redundant Y	APYN3	June 07, 1996
Lower Spine Redundant Y	AP138	July 12, 1996
Pelvis Redundant Y	APY15	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	ANAPI	Endevco	September 16, 1996
Pelvis Y	AHTC3	Endevco	September 16, 1996
Upper Rib Redundant Y	AP2A4	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	Entran	July 12, 1996
Moving Barrier CG Y	Entran	July 15, 1996
Moving Barrier CG Z	Entran	July 11, 1996
Moving Barrier Rear Axle X	Entran	July 11, 1996
Moving Barrier Rear Axle Y	Entran	June 04, 1996
Right Mid A-Post Y	Entran	July 11, 1996
Right Lower A-Post Y	Entran	June 04, 1996
Right Mid B-Post Y	Entran	July 11, 1996
Right Lower B-Post Y	Entran	July 10, 1996
Rear Floorpan Above Axle X	Entran	July 11, 1996
Rear Floorpan Above Axle Y	Entran	July 15, 1996
Rear Floorpan Above Axle Z	Entran	October 01, 1996
Right Front Passenger Seat Track Y	Entran	October 02, 1996
Left Side Sill at Front Seat X	Entran	July 11, 1996
Left Side Sill at Front Seat Y	Entran	June 04, 1996
Left Side Sill at Front Seat Z	Entran	July 10, 1996
Left Side Sill at Rear Seat X	Entran	July 10, 1996
Left Side Sill at Rear Seat Y	Entran	July 12, 1996
Left Side Sill at Rear Seat Z	Entran	July 10, 1996
Right Side Sill at Front Seat Y	Entran	June 04, 1996

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE AND MDB ACCELEROMETERS		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Right Side Sill at Rear Seat Y	C05-Z10	Entran	July 11, 1996
Left Rear Occupant Compartment Y	C14-Z15	Entran	July 11, 1996
Vehicle CG X	A09-G04	Entran	June 03, 1996
Vehicle CG Y	B14-R14	Entran	July 11, 1996
Vehicle CG Z	A10-G08	Entran	July 12, 1996

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