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MV5602

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TESTING
PASSENGER CARS

1997 MITSUBISHI GALANT
4-DOOR SEDAN
NHTSA NO: MV5602

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: March 10, 1997

Report Date: March 19, 1997

FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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16. Abstract A 90° Moving Deformable Barrier NCAP side impact was conducted on the subject 1997 Mitsubishi Galant 4-Door to obtain new car assessment and research data indicant of FMVSS No. 214D performance. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on March 10, 1997. The impact velocity of the Moving Deformable Barrier (MDB) was 61.2 kph, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 25 °C. The target vehicle post test maximum crush was 419 mm at level 2. The test vehicle's performance follows: <table border="1"> <thead> <tr> <th></th> <th><u>DRIVER</u></th> <th><u>PASS</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td>70</td> <td>103</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td>74</td> <td>128</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td>94</td> <td>68</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td>84</td> <td>98</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td>98</td> <td>97</td> </tr> </tbody> </table> 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.							<u>DRIVER</u>	<u>PASS</u>	Left Upper Rib (LUR) Accel., g	70	103	Left Lower Rib (LLR) Accel., g	74	128	Lower Spine (T ₁₂) Accel., g	94	68	Thoracic Trauma Index (TTI)	84	98	Pelvis (PEV) Accel., g	98	97
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17. Key Words New Car Assessment Program (NCAP) FMVSS No. 214D Side Impact Dummy (SID) Occupant Side Impact Protection				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																			
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SECTION 1
PURPOSE AND TEST PROCEDURE

This side impact test is part of the FY97 NCAP Side Impact 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 Mitsubishi Galant 4-Door.

This side impact test was conducted in accordance with the New Car Assessment Program Side Impact Testing Procedure dated October 1996.

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 Mitsubishi Galant was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 38.0 mph (61.2 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 March 10, 1997. Pre- and post-test photographs of the test vehicle, the MDB and the side impact dummies (SIDs) are included in Appendix A.

Two Side Impact Dummies (SIDs) were placed in the driver and left rear designated seating positions according to instructions specified in the New Car Assessment Program Side Impact Laboratory Test Procedure which is dated October 1996. The side impact event was documented by nine high speed cameras. Camera locations and other pertinent camera information can be found in this report.

The SIDs were instrumented with the following accelerometers.

1. Left Upper Rib (LUR) uniaxial accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial accelerometer (Y-direction)
3. Lower Thoracic Spine (T₁₂) uniaxial accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial accelerometer (Y-direction)
5. Head Center of Gravity triaxial accelerometers (X, Y, and Z-direction)

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

The following table summarizes the results of the test:

Injury Criteria	Front SID	Rear SID
TTI (g)	84	98
Pelvis (g)	98	97

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/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 VIN: 4A3AJ46G9VE014967

Vehicle Body Color: Cayenne Red Pearl Build Date: August 1996

Engine Data: 4 Cylinders; CID; 2.4 Liter; cc

Placement Longitudinal; X Lateral

Transmission: 4 Speed; Manual; X Automatic; X Overdrive

Final Drive: Rear Wheel Drive; X Frt. Wheel Drive; Four Wheel Drive

Odometer Reading 56 miles

Options: X A/C; X Pwr. Steering; X Pwr. Brakes; Pwr. Windows;

 Cruise Control; X Tilt Wheel; Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 32 Psi FRONT

29 Psi REAR

Recommended Tire Size: P185/70R/14

Tires on Test Vehicle: P185/70R/14 Manufacturer: Bridgestone

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; 3rd Seat, 5 Total

Type of Front Seats: X Bucket; Bench; Split Bench

Type of Front Seat Back: Fixed; X Adjustable with X Lever

Vehicle Maximum Capacity Loading = 375.1 kg (A)

No. of Occupants x 68.04 kg. = 340.2 kg (B)

Cargo Capacity (A-B) = 34.9 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS:

Right Front	=	<u>400.5</u> kg	Right Rear	=	<u>248.6</u> kg
Left Front	=	<u>414.1</u> kg	Left Rear	=	<u>242.2</u> kg
TOTAL FRONT	=	<u>814.6</u> kg	TOTAL REAR	=	<u>490.8</u> kg
% of Total Vehicle Weight	=	<u>62.4</u> %;	% of Total Weight	=	<u>37.6</u> %
TOTAL WEIGHT	=	<u>1305.4</u> kg			

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids	= <u>1305.4</u> kg
Cargo Carrying Capacity of Test Vehicle	= <u>34.9</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>1501.7</u> kg

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES AND CARGO (Fully Loaded):

Right Front	= <u>406.0</u> kg	Right Rear	= <u>300.7</u> kg
Left Front	= <u>469.0</u> kg	Left Rear	= <u>326.1</u> kg
TOTAL FRONT	= <u>875.0</u> kg	TOTAL REAR	= <u>626.8</u> kg
% of Total Weight	= <u>58.3</u> %	% of Total Weight	= <u>41.7</u> %
TOTAL TEST WEIGHT	= <u>1501.8</u> kg		

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 676 mm Left Front 678 mm Right Rear 684 mm Left Rear 669 mm

FULLY LOADED WEIGHT ATTITUDE:

Right Front 673 mm Left Front 658 mm Right Rear 662 mm Left Rear 631 mm

TEST ATTITUDE:

Right Front 665 mm Left Front 660 mm Right Rear 660 mm Left Rear 639 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2640 mm

C.G. = 1083 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 4362 mm

Centerline = 4760 mm

Left Side = 4362 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

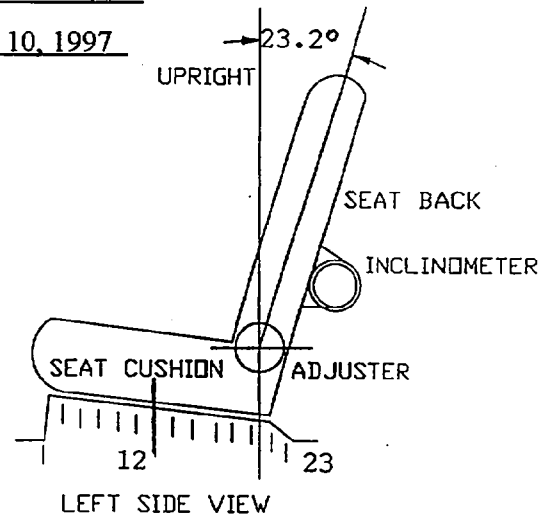
FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 220 mm

Test Position: 12th detent of 23 total

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 23.2° (13th locking position)



SECOND POSITION SEAT:

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

Seat Back Adjustment Position: Non-adjustable

ADJUSTABLE STEERING COLUMN POSITION: Mid Position

WINDOW POSITIONS: Left Front Up Left Rear Up
Right Front Down Right Rear Removed

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel system usable capacity = 16.9 gallons

Test Volume: 15.7 gallons 93 % of capacity

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

Wheelbase: = 2640 mm

Impact Point is 380 mm rearward of front axle centerline

DATA SHEET NO. 2
TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door
Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997
Overall Length = 4760 mm; Overall Width = 1720 mm

TEST WEIGHT:

Right Front = 422.3 kg Right Rear = 300.7 kg
Left Front = 459.9 kg Left Rear = 313.0 kg
TOTAL FRONT = 882.2 kg TOTAL REAR = 613.7 kg
% of Total Weight = 59.0 % % of Total Weight = 41.0 %
TOTAL VEHICLE WEIGHT = 1495.9 kg
Wheelbase = 2640 mm
Longitudinal C.G. from Center of Front Axle = 1083 mm
Impact Angle with Respect to Impactor = 90 ° degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (253 mm above ground) = 277 mm
2. LEVEL 2 (451 mm above ground) = 419 mm
3. LEVEL 3 (588 mm above ground) = 394 mm
4. LEVEL 4 (870 mm above ground) = 345 mm
5. LEVEL 5 (1292 mm above ground) = 73 mm

Maximum Post-Test Intrusion = 419 mm

OCCUPANTS:

	<u>Left Front Passenger</u>	<u>Left Rear Passenger</u>
Type of Dummy	<u>SID</u>	<u>SID</u>
Restraints Used	<u>type II belt</u> <u>and frontal airbag</u>	<u>type II belt</u>

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

INSTRUMENTATION:

Number of Vehicle Data Channels:	=	<u>25</u>
Number of Cameras: Onboard Vehicle	=	<u>3</u>
Offboard Vehicle	=	<u>4</u>
Deformable Barrier	=	<u>2</u>
TOTAL	=	<u>9</u>

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

Overall Width of Framework Carriage	=	<u>1252 mm</u>
Overall Length of MDB (incl. honeycomb impact face)	=	<u>4115 mm</u>
Wheelbase of Framework Carriage	=	<u>2591 mm</u>
Tread of Framework Carriage (Front & Rear)	=	<u>1880 mm</u>
C.G. Location Rearward of Front Axle	=	<u>1102 mm</u>
C.G. Location From Center Line	=	<u>-23 mm</u>
C.G. Location Above Ground Level	=	<u>508 mm</u>

MDB WEIGHT:

Left Front	=	<u>396.1 kg</u>	Left Rear	=	<u>284.4 kg</u>
Right Front	=	<u>383.4 kg</u>	Right Rear	=	<u>293.8 kg</u>
TOTAL FRONT	=	<u>779.5 kg</u>	TOTAL REAR	=	<u>578.2 kg</u>
TOTAL MDB WEIGHT = <u>1357.7 kg</u>					

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

Impact Speed = Primary: 38.0 mph (61.2 kph) Secondary: 37.9 mph (61.0 kph)

CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

- | | | |
|----|---------------------------------|-----------------|
| 1. | Row A Top of Stack (813 mm) | = <u>181</u> mm |
| 2. | Row B Mid Stack (686 mm) | = <u>119</u> mm |
| 3. | Row C Top of Bumper (533 mm) | = <u>71</u> mm |
| 4. | Row D Center of Bumper (432 mm) | = <u>99</u> mm |

INSTRUMENTATION:

Number of MDB Data Channels = 7

DATA SHEET NO. 4
POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

VISIBLE DUMMY CONTACT POINTS:

	<u>LEFT FRONT SID</u>	<u>LEFT REAR SID</u>
Head	<u>to airbag, B-post, and</u> <u>left shoulder</u>	<u>to C-post</u>
Arm	<u>to door panel</u>	<u>to door panel</u>
Pelvis	<u>to door panel</u>	<u>to door panel</u>
Left Knee	<u>to door panel</u>	<u>to door panel</u>
Right Knee	<u>to left knee</u>	<u>to left knee</u>

DOOR OPENING:

	<u>LEFT SIDE</u>	<u>RIGHT SIDE</u>
Front	<u>Remained closed</u>	<u>Remained closed</u>
Rear	<u>Remained closed</u>	<u>Remained closed</u>

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal: 12 mm rearward Vertical: 8 mm high

ARM REST LOCATIONS:

Front: 264 mm from bottom of window
Rear: 250 mm from bottom of window

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 114 mm Front Seat Cushion: 136 mm

Left Rear Seat Back: 186 mm Rear Seat Cushion: 241 mm

GLAZING DAMAGE:

Left side front and rear door glass broken, windshield cracked

PILLAR PERFORMANCE:

No failure noted

SILL SEPARATION:

Approximately 230 mm of separation starting 1620 mm rearward of the impact line

OTHER NOTABLE IMPACT EFFECTS:

Driver and passenger airbags deployed and fuel door opened during impact

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5

SIDE IMPACT DUMMY (SID) INSTRUMENTATION DATA

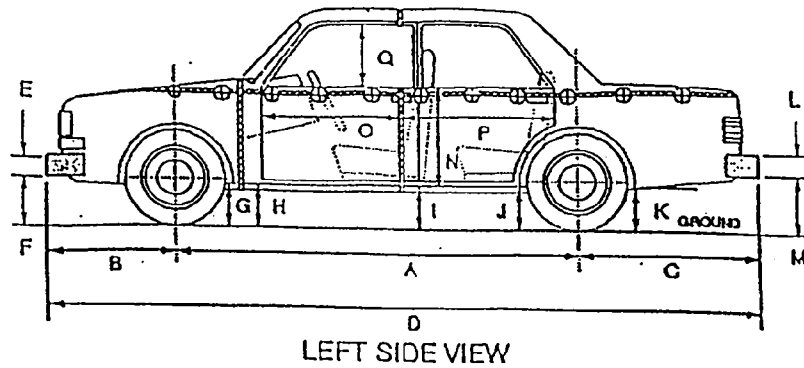
Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

	Front Dummy ID # 274				Rear Dummy ID # 275			
	Pos. Direct.		Neg. Direct		Pos. Direct.		Neg. Direct	
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
RIB ACCELERATIONS								
Left Upper Rib (LUR) Y	70	26	-18	91	103	39	-15	44
Left Lower Rib (LLR) Y	74	31	-21	68	128	38	-15	66
SPINE ACCELERATIONS								
Lower Lateral Y	94	28	-39	62	68	40	-25	63
PELVIS ACCELERATIONS								
Lateral Y	98	29	-35	54	97	32	-27	74

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)

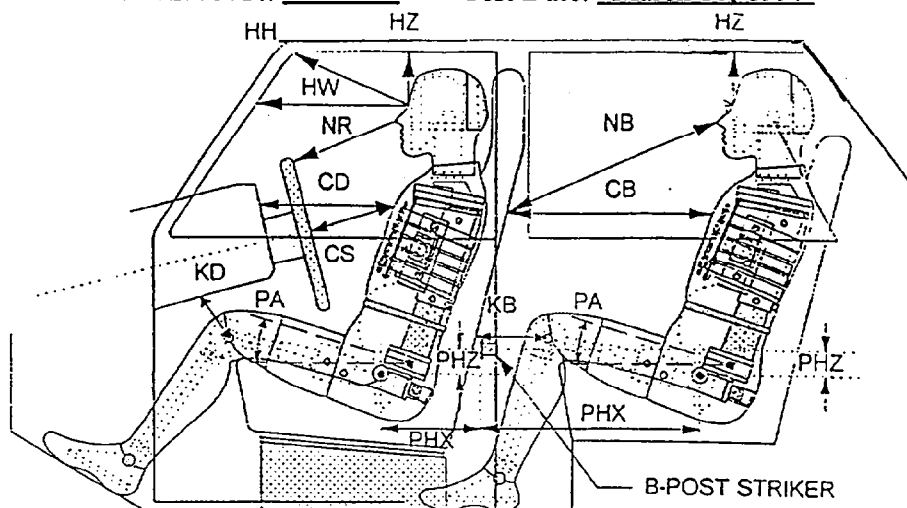
	PRE-TEST	POST-TEST	Δ CHANGE
A	2640	2576	64
B	1028	1034	6
C	1092	1118	26
D	4760	4762	2
E	115	115	0
F	397	405	8
G	173	214	41
H	174	212	38
I	167	161	6
J1J2	172/170	160/151	12/19
K	229	234	5
L	180	180	0
M	384	421	37
N	620	570	50
O	730	714	16
P	1222	1014	208
Q	424	412	12
R	4362	4363	1
S	4362	4314	48
T	1720	1354	366

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

NHTSA NO.: MV5602 Test Date: March 10, 1997



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

	DRIVER SID ID # 274		LEFT REAR PASSENGER SID ID # 275
HH	381	HZ	153
HW	618	NB	623
HZ	167	CB	512
NR	461	KBL (KBA)	174 (0°)
CD	553	KBR (KBA)	178 (0°)
CS	342	PA°	23.7°
KDL(KDA°)	201 (25.8°)	PHX	255
KDR(KDA°)	202 (36.1°)	PHZ	335
PA°	23.5		
PHX	172		
PHZ	142		

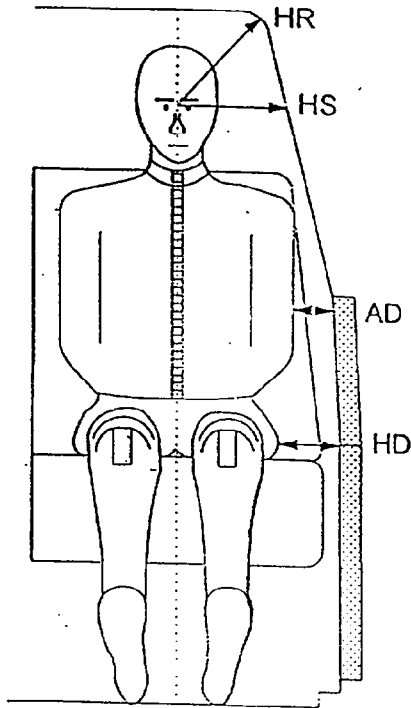
NOTE: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as reference point.

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

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

NHTSA NO.: MV5602

Test Date: March 10, 1997



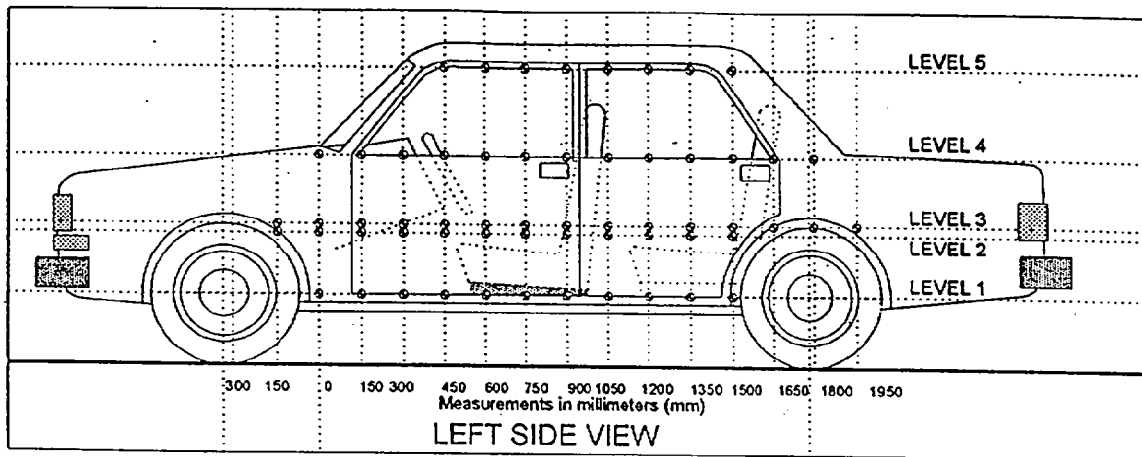
NOTE: All dimensions are in mm

	DRIVER SID ID # 274	LEFT REAR PASSENGER SID ID # 275
HR	220	211
HS	339	260
AD	106	114
HD	190	204

DATA SHEET NO. 9
VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

NHTSA NO.: MV5602 Test Date: March 10, 1997



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>253</u> mm
Level 2 @ Occupant H-Point	= <u>451</u> mm
Level 3 @ Mid Door	= <u>588</u> mm
Level 4 @ Window Sill	= <u>870</u> mm
Level 5 @ Window Top	= <u>1292</u> mm

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	778	823	45
300	786	963	177
450	791	1028	237
600	793	1023	230
750	793	1024	231
900	795	1035	240
1050	795	1045	250
1200	795	1069	274
1350	791	1068	277
1500	787	984	197
1650	782	939	157
1800	775	863	88
1950			
2100			
2250			
2400			

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

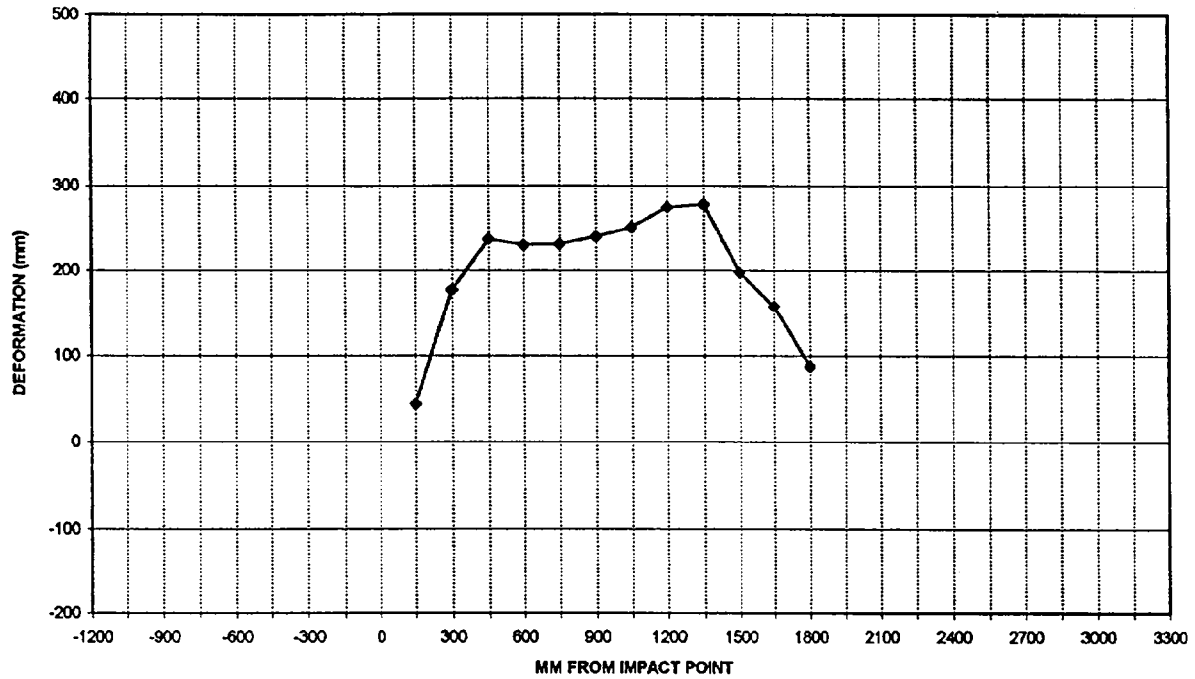
DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2550			
2700			
2850			
3000			
3150			

Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 1 - AXLE CENTERLINE

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

Longitudinal Distance (mm)	Level 2 - Occupant H Point		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050	803	813	10
-900	767	779	12
-750	742	755	13
-600			
-450			
-300			
-150			
0 (impact point)	743	818	75
150*	747	1091	344
300*	747	1123	376
450*	747	1136	389
600*	749	1143	394
750*	749	1154	405
900	750	1149	399
1050	750	1144	394
1200	750	1163	413
1350	750	1169	419
1500	750	1163	413
1650	750	1133	383
1800	747	1093	346
1950			
2100			
2250			
2400			

Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body

* Post-test measurement has been compensated for a piece of the MDB bumper which remained embedded in the door of the vehicle

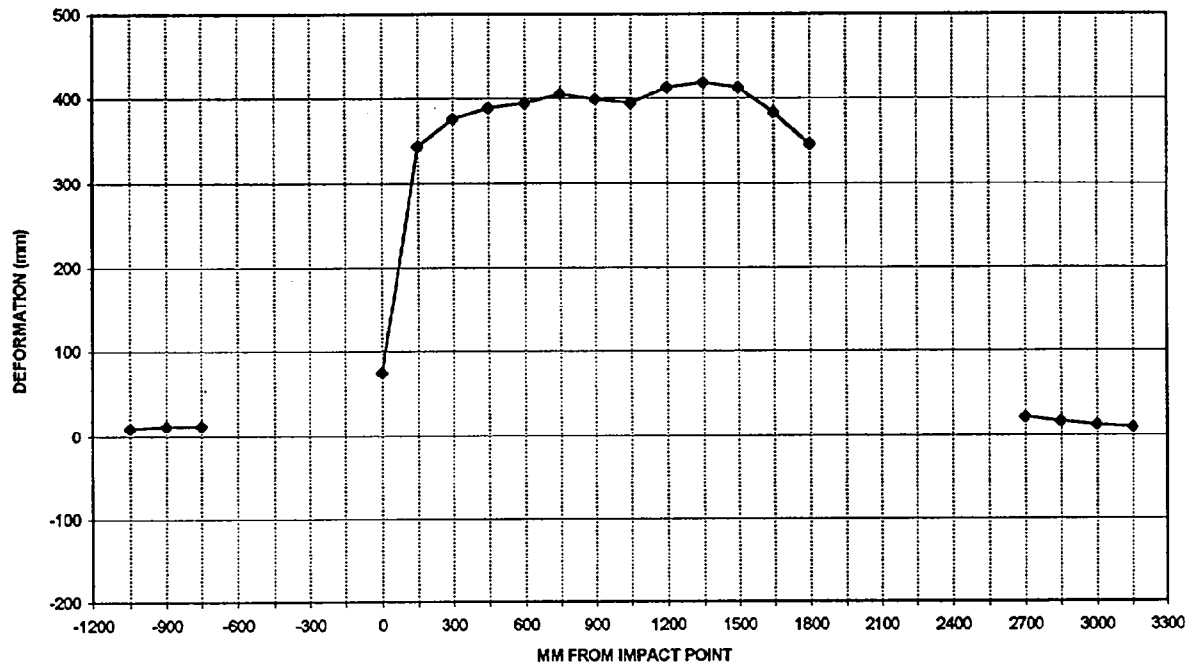
DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 2 - Occupant H-Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2550			
2700	754	776	22
2850	768	785	17
3000	782	795	13
3150	810	820	10

Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 2 - OCCUPANT H-POINT

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 3 - Mid Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900	792	804	12
-750	749	765	16
-600			
-450			
-300			
-150			
0 (impact point)	735	849	114
150	739	1031	292
300	740	1104	364
450	740	1102	362
600	740	1107	367
750	740	1113	373
900	740	1109	369
1050	740	1099	359
1200	737	1131	394
1350	737	1120	383
1500	737	1117	380
1650	734	1090	356
1800	733	1054	321
1950	730	992	262
2100	730	807	77
2250	730	771	41
2400	727	760	33

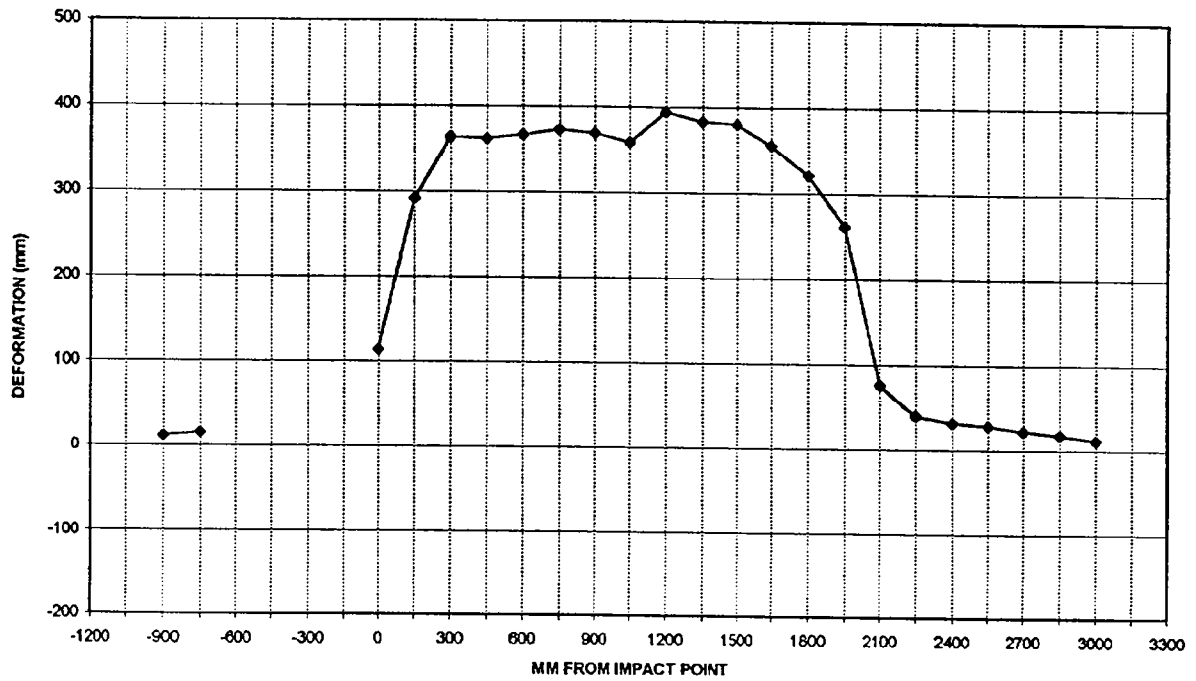
Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to car body.

DATA SHEET 14. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 3 - Mid Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2550	736	765	29
2700	752	775	23
2850	773	791	18
3000	802	814	12
3150			

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 3 - MID CENTERLINE

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050	903	909	6
-900	876	884	8
-750	856	867	11
-600	843	863	20
-450	836	860	24
-300	830	858	28
-150	822	858	36
0 (impact point)	817	863	46
150	812	864	52
300	808	1020	212
450	807	1061	254
600	805	1088	283
750	803	1086	283
900	804	1085	281
1050	801	1088	287
1200	801	1146	345
1350	802	1140	338
1500	806	1134	328
1650	808	1139	331
1800	811	1070	259
1950	813	953	140
2100	815	842	27
2250	816	874	58
2400	823	860	37

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

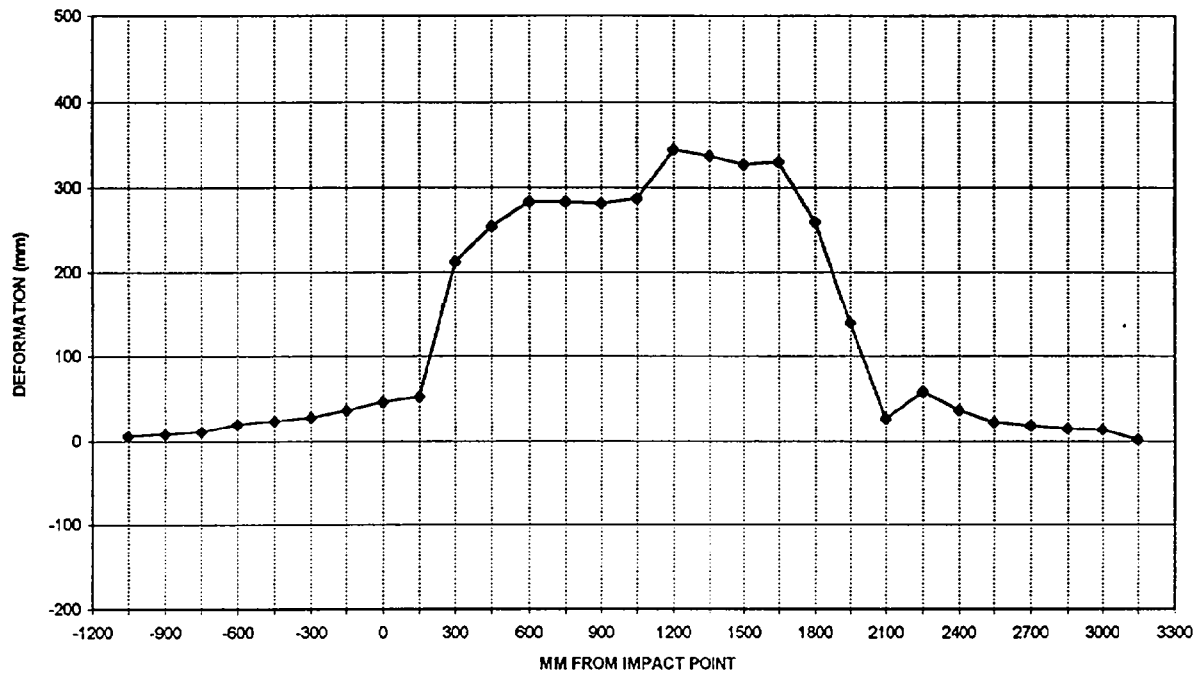
DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2550	838	861	23
2700	852	871	19
2850	875	890	15
3000	898	912	14
3150	928	930	2

Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 4 - WINDOW SILL

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150			
300			
450			
600			
750	1036	1080	44
900	1034	1083	49
1050	1036	1099	63
1200	1037	1110	73
1350	1037	1104	67
1500	1037	1098	61
1650	1036	1081	45
1800	1028	1062	34
1950	1032	1062	30
2100			
2250			
2400			

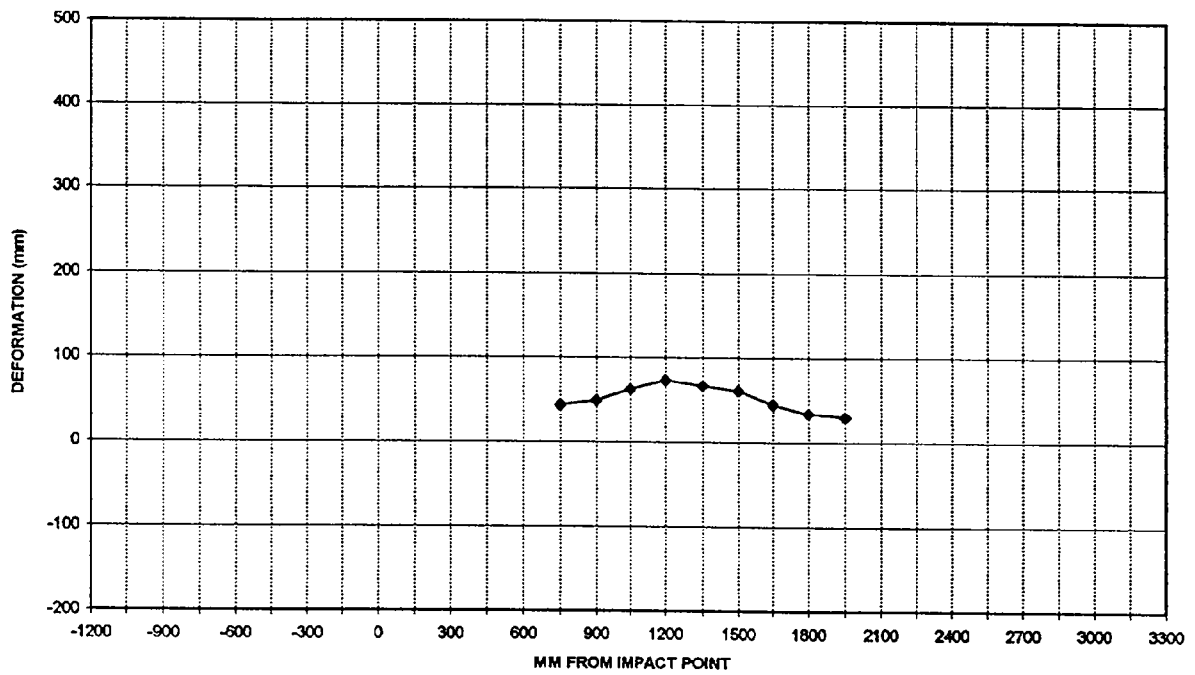
Reference plane is parallel to test vehicle longitudinal centerline.
 Given dimensions = Reference plane to car body

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2550			
2700			
2850			
3000			
3150			

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

VEHICLE EXTERIOR STATIC CRUSH



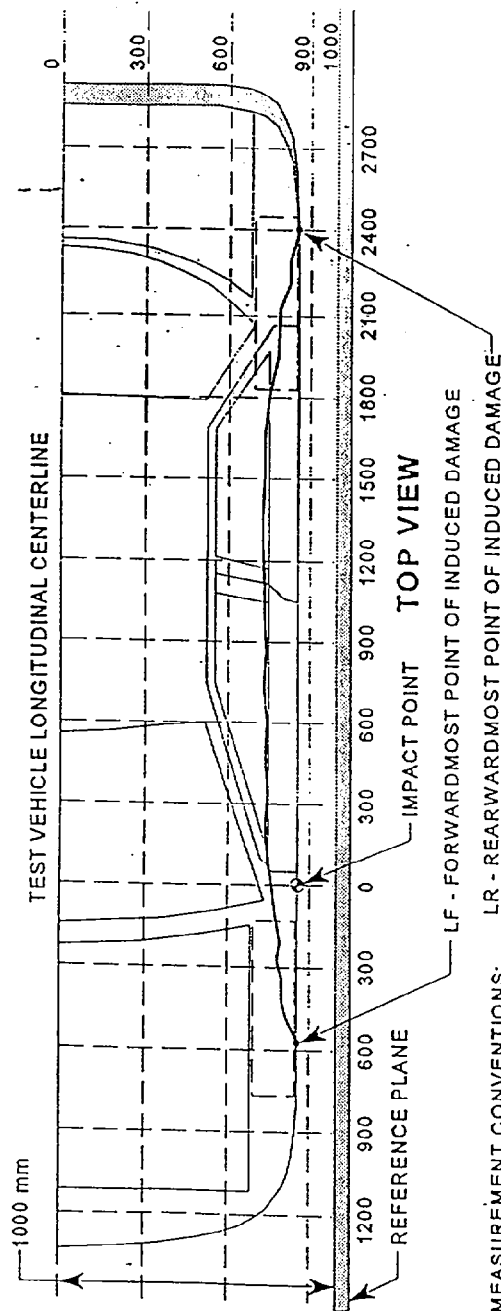
LEVEL 5 - WINDOW TOP

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

NHTSA NO.: MV5602 Test Date: March 10, 1997



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

DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1. (LF = <u>-1050</u> mm)	813	803	10
2. <u>-178</u> mm	859	825	34
3. <u>667</u> mm	1119	740	379
4. <u>1522</u> mm	1158	750	408
5. <u>2319</u> mm	767	728	39
6. (LR = <u>3150</u> mm)	820	810	10

DATA SHEET NO. 12

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

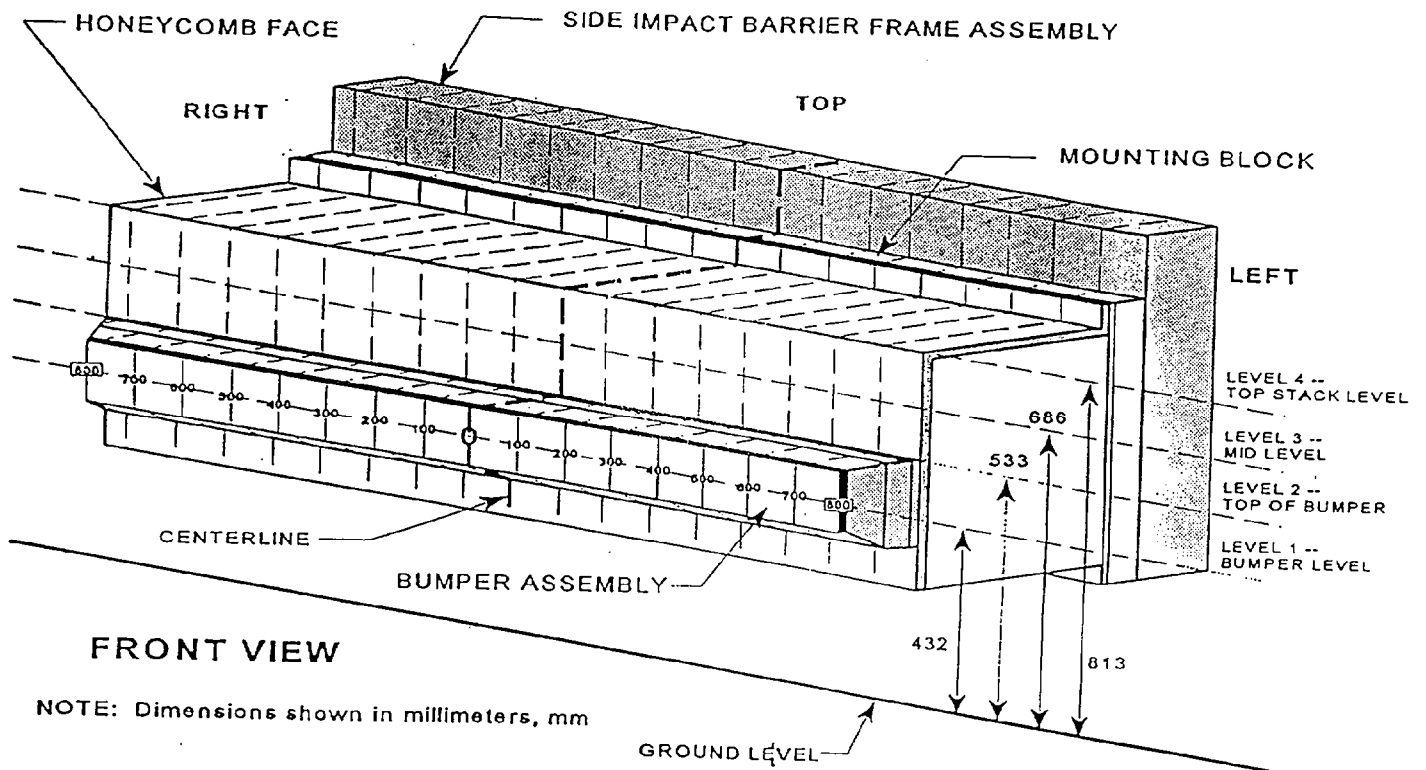
Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

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	78	22	0	0	0	1	2	4	5	6	8	9	10	39	71	117	181
Mid Level Level 3	686 mm	51	13	0	-1	0	0	1	1	1	2	3	4	6	10	25	55	119
Top Bumper Level 2	533 mm	50	26	9	4	4	3	3	3	4	5	5	5	7	10	20	48	71
Mid Bumper Level 1	432 mm	99	76	50	34	28	32	24	29	33	38	25	23	22	*	*	*	*

See next page for Barrier Face Graphic

* Post-test measurements could not be taken because this section of the MDB bumper remained embedded in the vehicle's door.

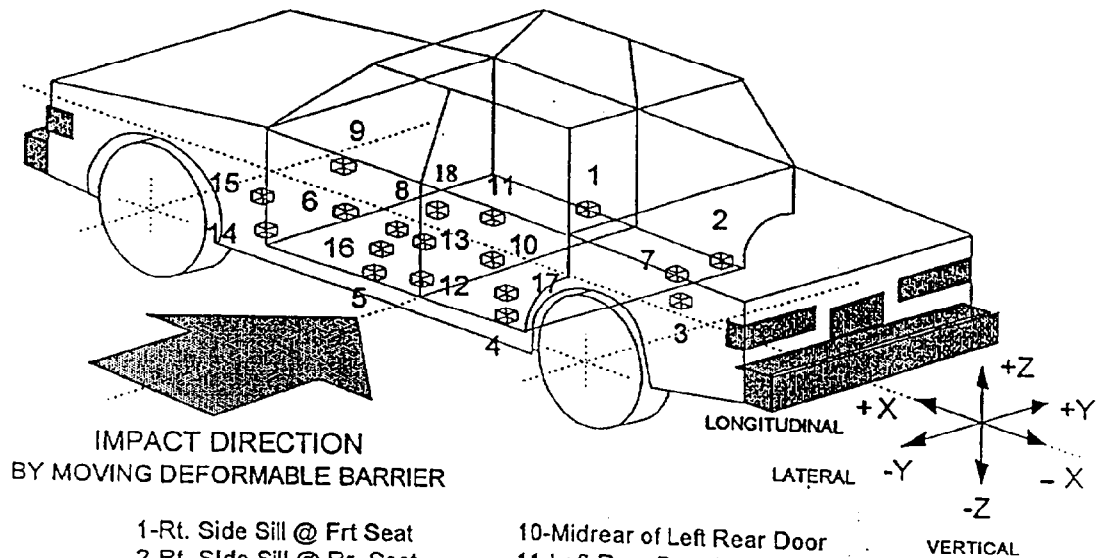
DATA SHEET NO. 12 (Cont'd)



DATA SHEET 13
TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997



- 1-Rt. Side Sill @ Frt Seat
- 2-Rt. Side Sill @ Rr. Seat
- 3-Rr. Floorpan Above Axle
- 4-Left Side Sill @ Rr. Seat
- 5-Left Side Sill @ Frt. Seat
- 6-Left Frt. Door On Centerline
- 7-Rt. Rr. Occ Compartment
- 8-Midrear of Left Frt. Door
- 9-Left Frt. Door Upper Ctrline

- 10-Midrear of Left Rear Door
- 11-Left Rear Door Upper Ctrline
- 12-Left Lower B-Post
- 13-Left Middle B-Post
- 14-Left Lower A-Post
- 15-Left Middle A-Post
- 16-Front Seat Track
- 17-Rear Seat Track
- 18-Vehicle C.G.

DATA SHEET NO. 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

Accel. No.	Description	Coordinates (mm)*			Long. (X) Maximums (g's)		Lat. (Y) Maximums (g's)		Vert. (Z) Maximums (g's)		Resultant (g's)
		X	Y	Z	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	
1	Rt. Side Sill @ Front Seat	2714	667	202	6	-6	18	-2	4	-6	18
2	Rt. Side Sill @ Rear Seat	1803	573	230	4	-9	19	-3	4	-7	19
3	Rr. Floorpan Above Axle	1104	0	446	2	-5	20	-3	5	-7	20
4	Left Side Sill @ Rr. Seat	1808	-573	228			38	-3			
5	Left Side Sill @ Frt. Seat	2717	-667	210			43	-10			
6	Left Front Door Centerline ***	2777	-753	595			---	---			
7	Right Rear Occupant Compartment	1947	302	322			20	-3			
8	Mid Rear of Left Front Door	2398	-742	614			181	-155			
9	Left Front Door Upper Centerline	2672	-766	802			138	-91			
10	Midrear of Left Rear Door	1881	-740	660			215	-200			
11	Left Rear Door Upper Centerline	1696	-759	830			163	-161			
12	Left Lower B-Post	2158	-722	368			138	-57			
13	Left Mid B-Post	2146	-706	970			157	-37			
14	Left Lower A-Post	3161	-683	348			55	-14			
15	Left Mid A-Post**	3237	-808	818			19	0			
16	Driver Left Seat Track	2357	-627	335			166	-65			
18	Vehicle CG	2487	-15	345	7	-7	30	-2	8	-13	31

*Reference: X - Rear Bumper (+ Forward) ** Data not valid after approximately 16 msec.

Y - Vehicle Centerline (+ To right) *** No valid data collected

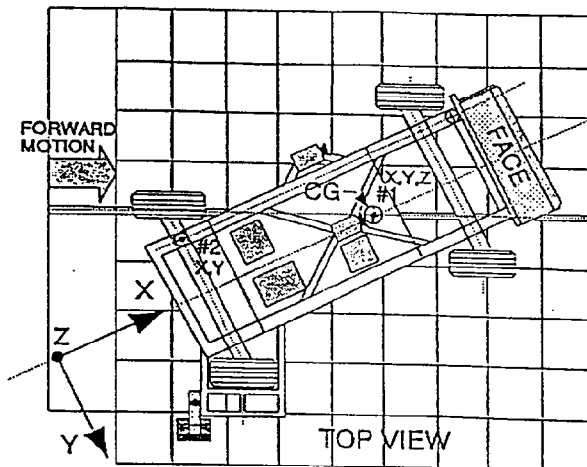
Z - Ground Level (+ Up)

DATA SHEET NO. 14

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997



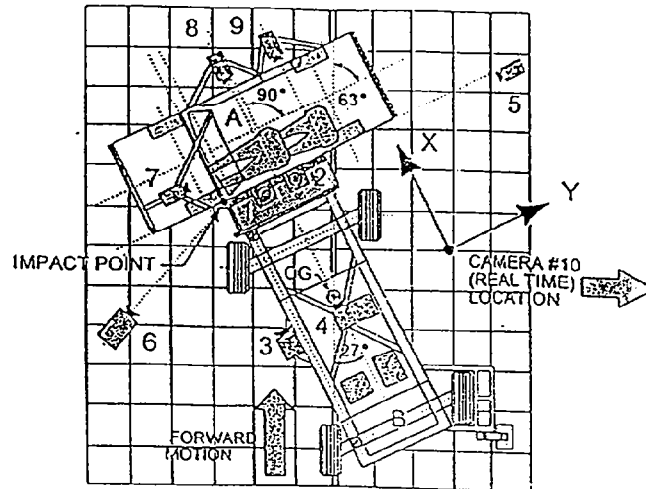
Accel. No.	Description	Coordinates (mm)*			(+) Positive		(-) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time (msec)
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	3	176	-18	32
	Lateral (Y)	---	---	---	3	3	-10	28
	Vertical (Z)	---	---	---	34	35	-25	24
	Resultant (R)	---	---	---	39	35	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	6	168	-20	17
	Lateral (Y)	---	---	---	7	26	-2	195

*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/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997



Camera No.	View	Coordinates (mm)*			Angle	Lens (mm)	Film Speed (fps)
		X	Y	Z			
	Real Time						
6	Left Impact	-840	-2170	1675		13	1015
8	Onboard Driver					8	957
9	Onboard Passenger					8	935
7	Onboard Hood					13	1000
5	Right Impact	-790	10570	1605		25	1026
1	Top Overall	270	1240	5000		8	1087
2	Top Impact	-310	20	5000		13	1015
4	Cart Overall					13	1015
3	Cart Pointer					35	1015

* Reference: (from point of impact)

+X = Forward

+Y = To Right

+Z = Upward

DATA SHEET 16
FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

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 38.0 mph (61.2 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

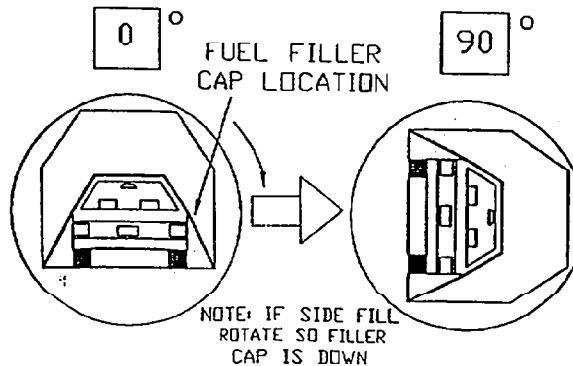
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

TEST PHASE: 0° - 90°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 43 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 43 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

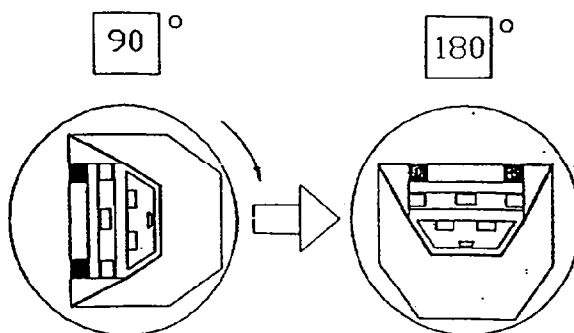
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

TEST PHASE: 90° - 180°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 27 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 27 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

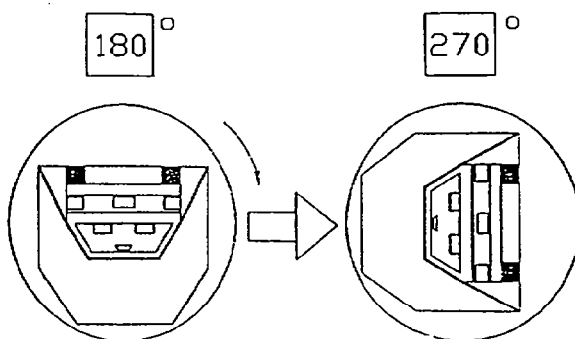
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

TEST PHASE: 180° - 270°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 23 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 23 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

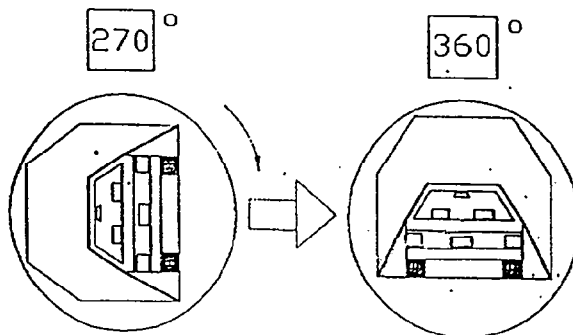
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Mitsubishi/Galant/4-Door

Vehicle NHTSA No.: MV5602 Test Date: March 10, 1997

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 59 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 59 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

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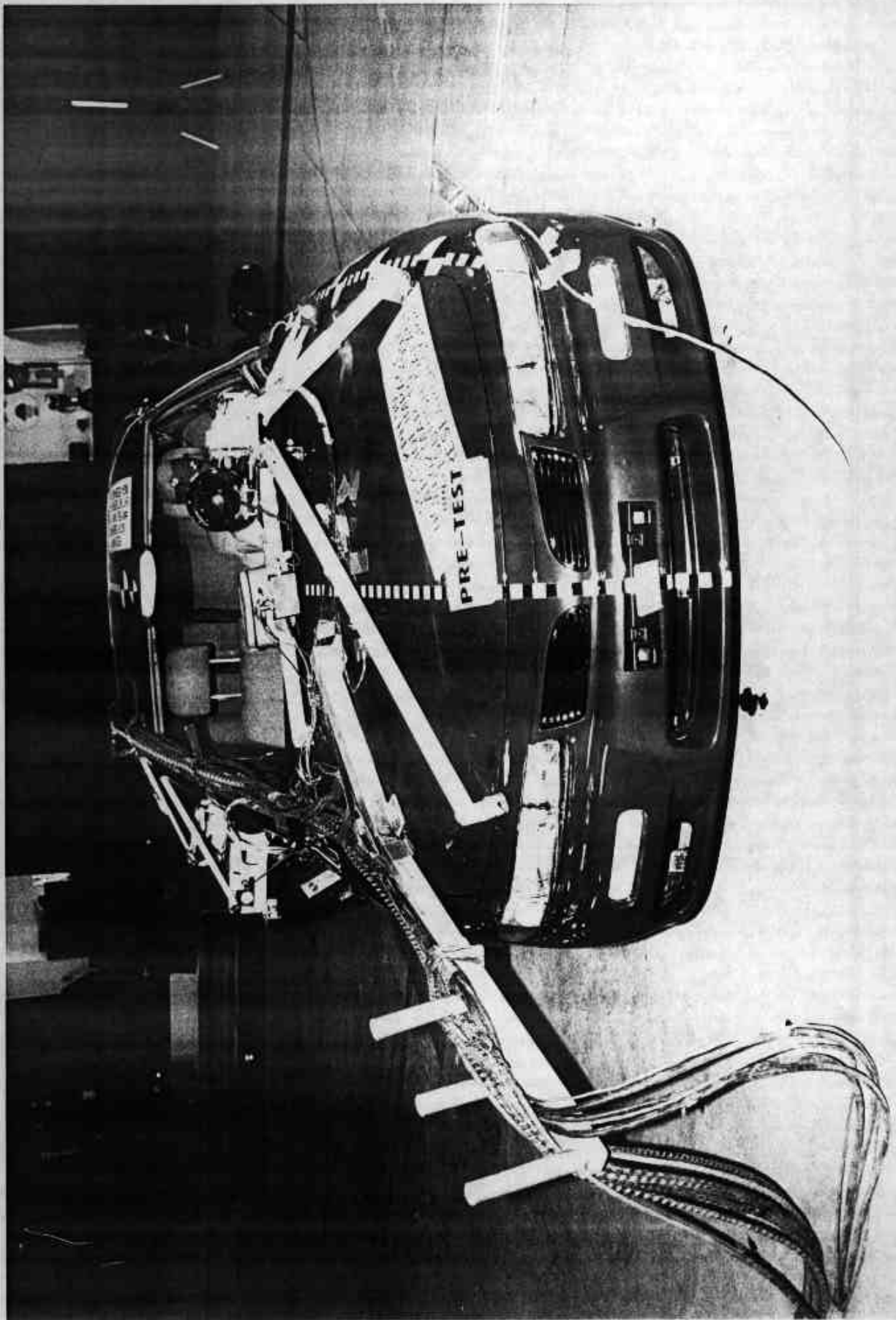


Photo No. A-1 - Pre-Test Front View of Test Vehicle

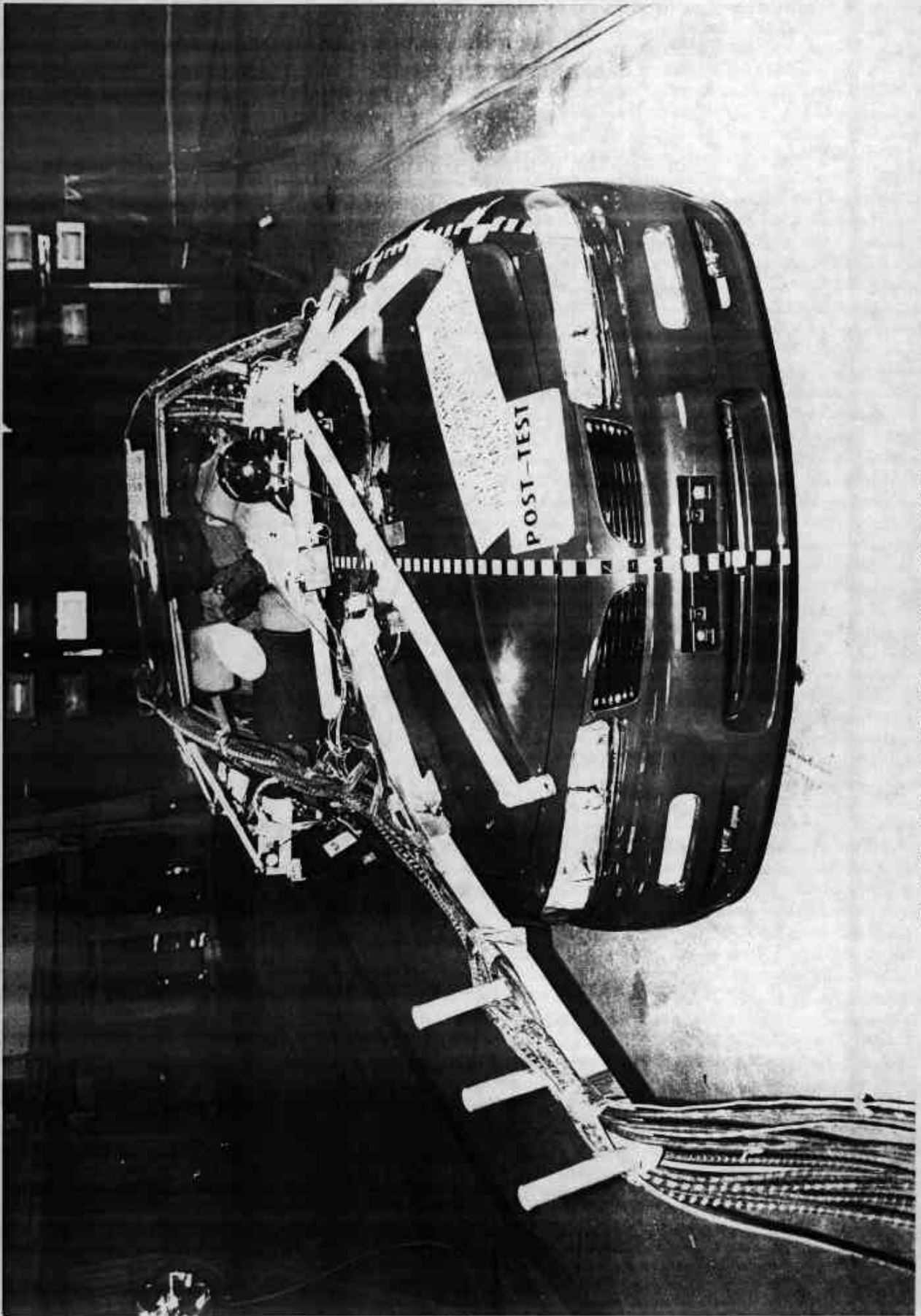


Photo No. A-2 - Post-Test Front View of Test Vehicle

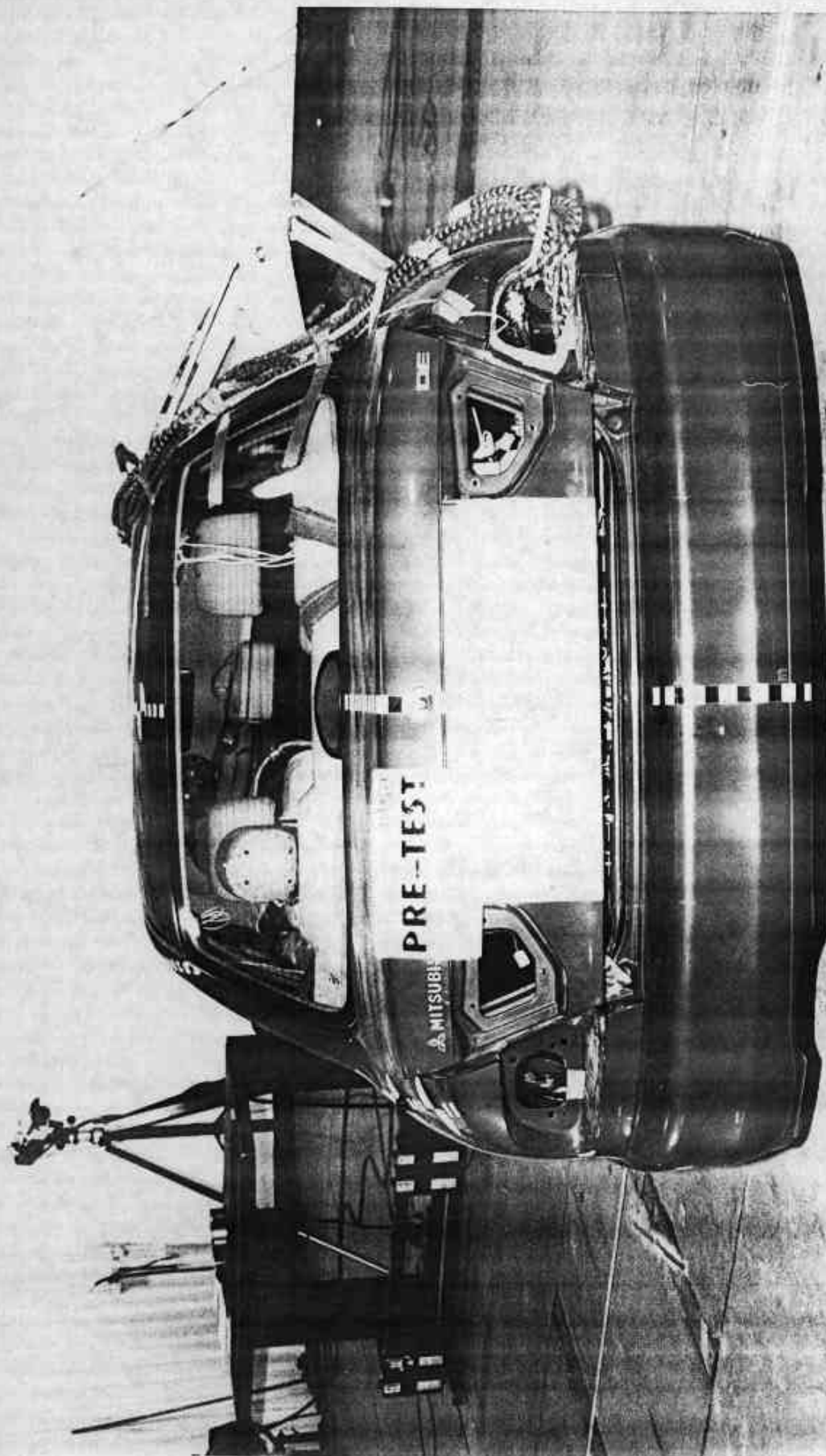
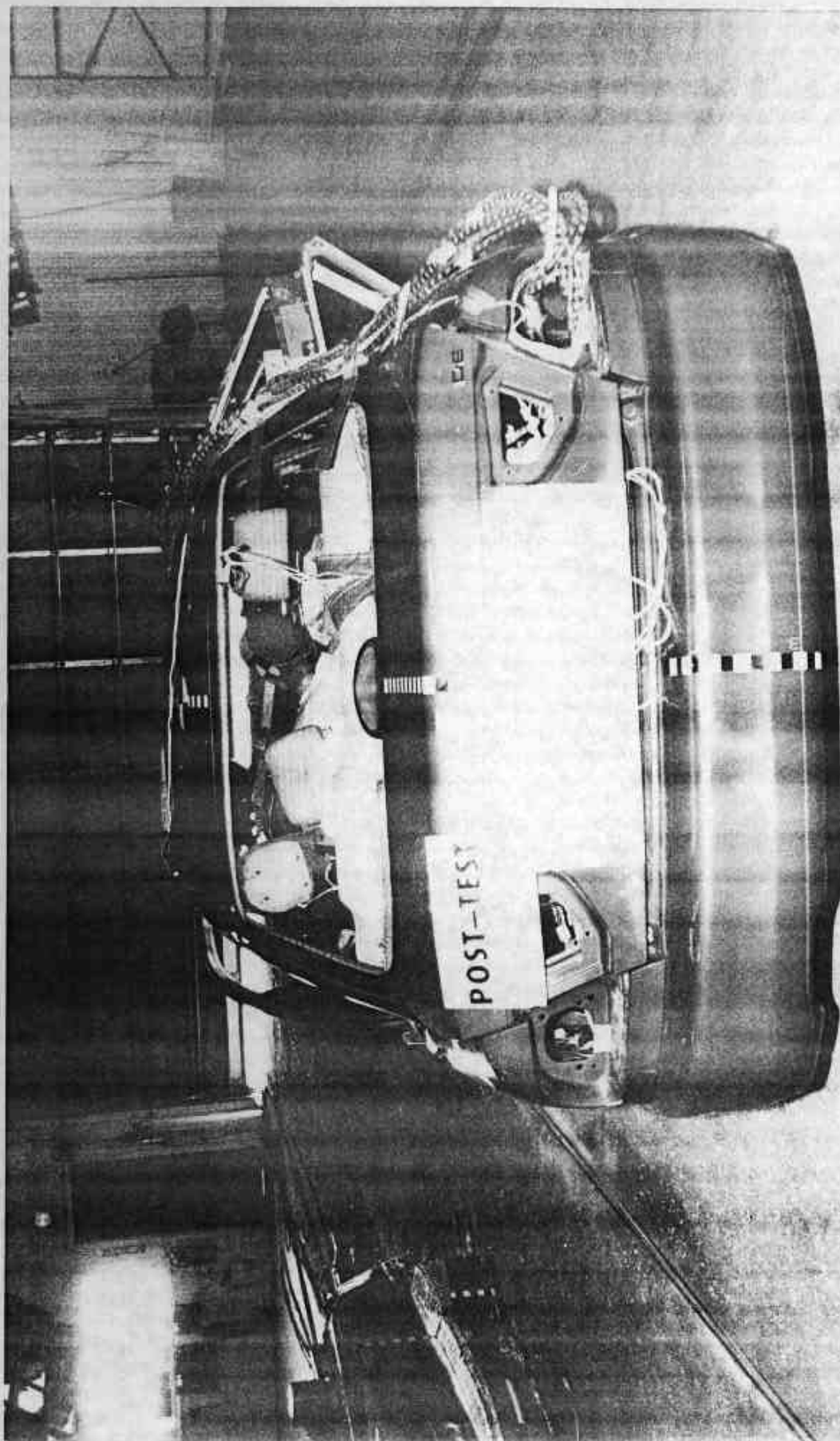
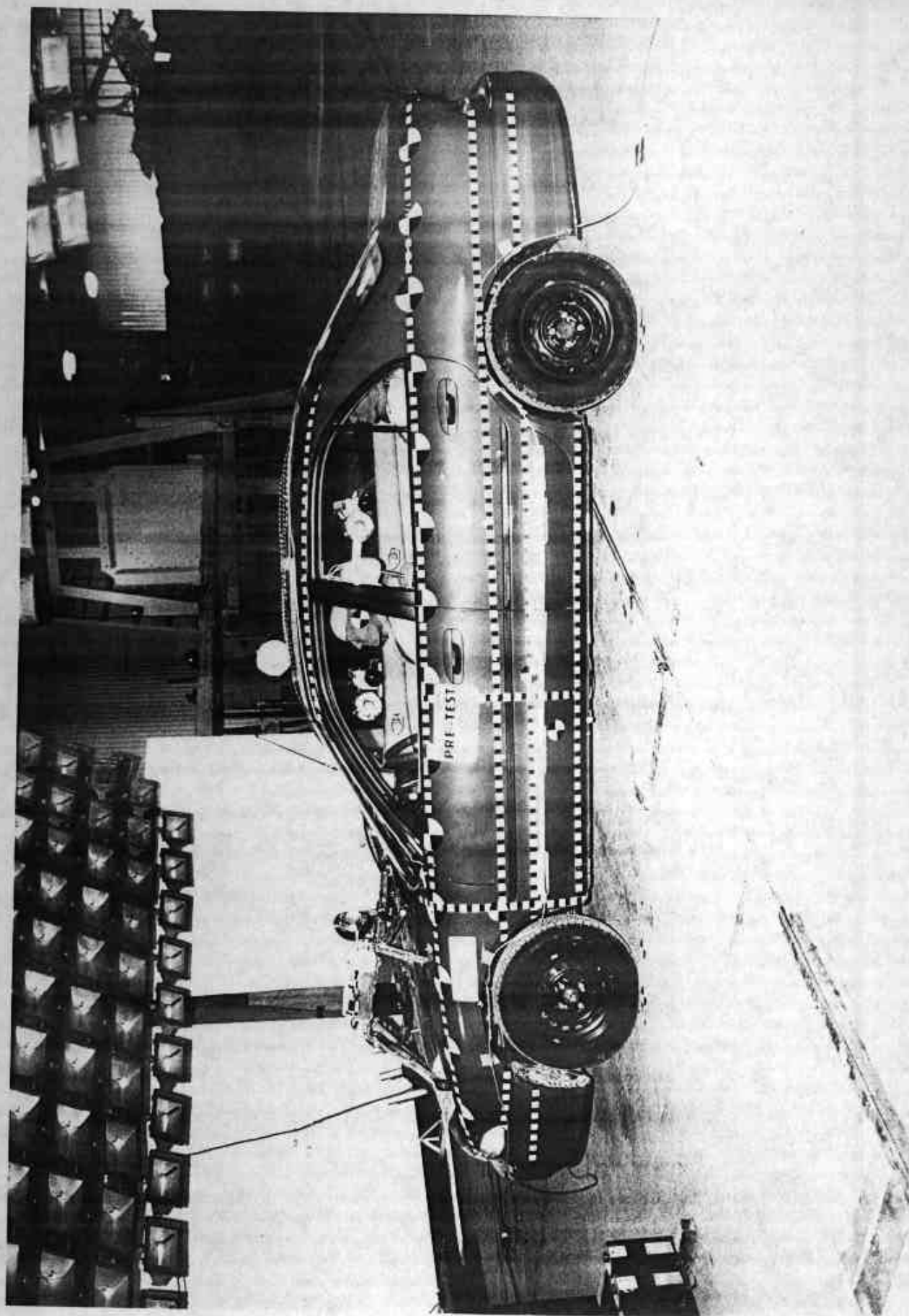


Photo No. A-3 - Pre-Test Rear View of Test Vehicle



A-4

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



A-5

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

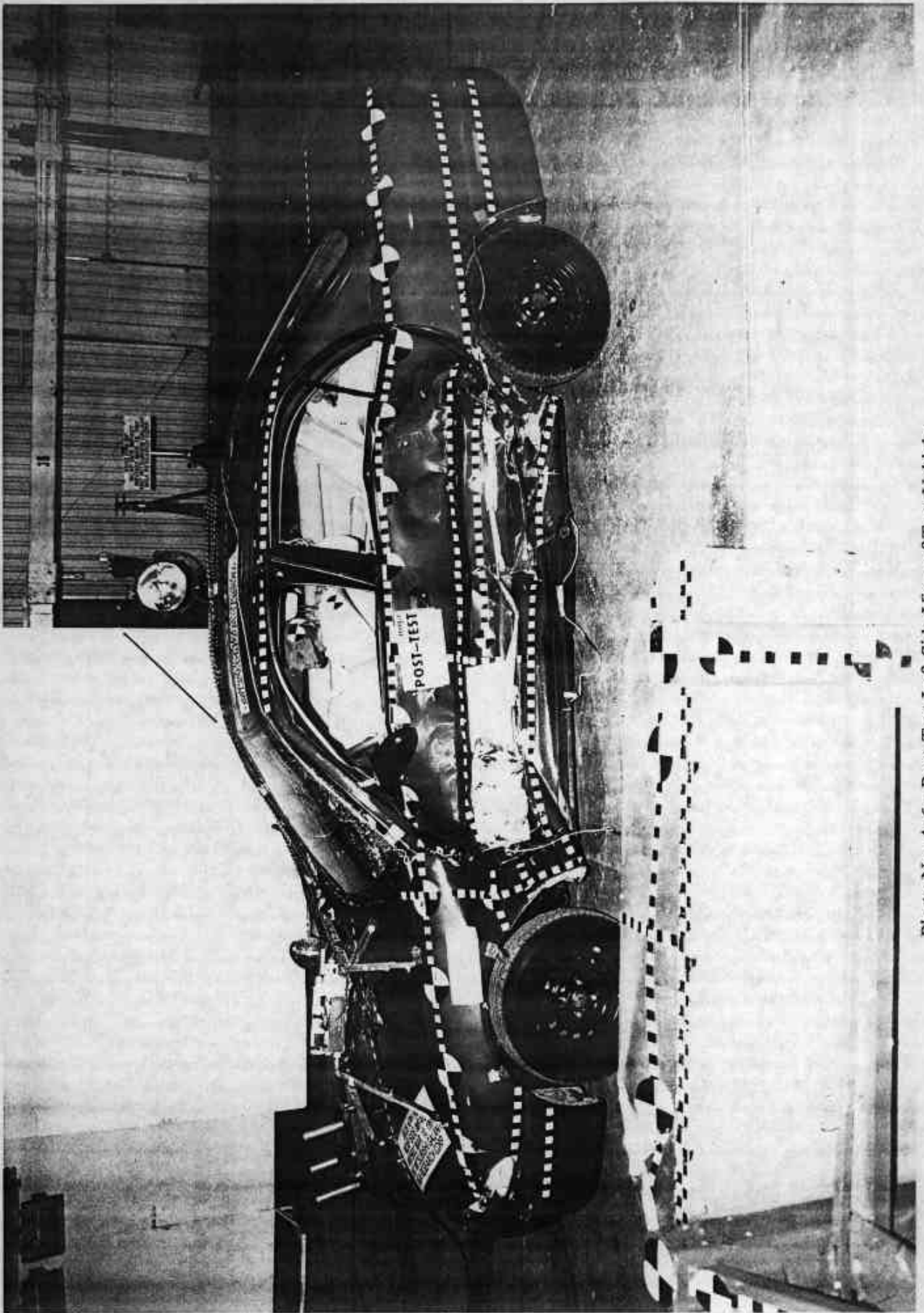


Photo No. A-6 - Post-Test Left Side View of Test Vehicle

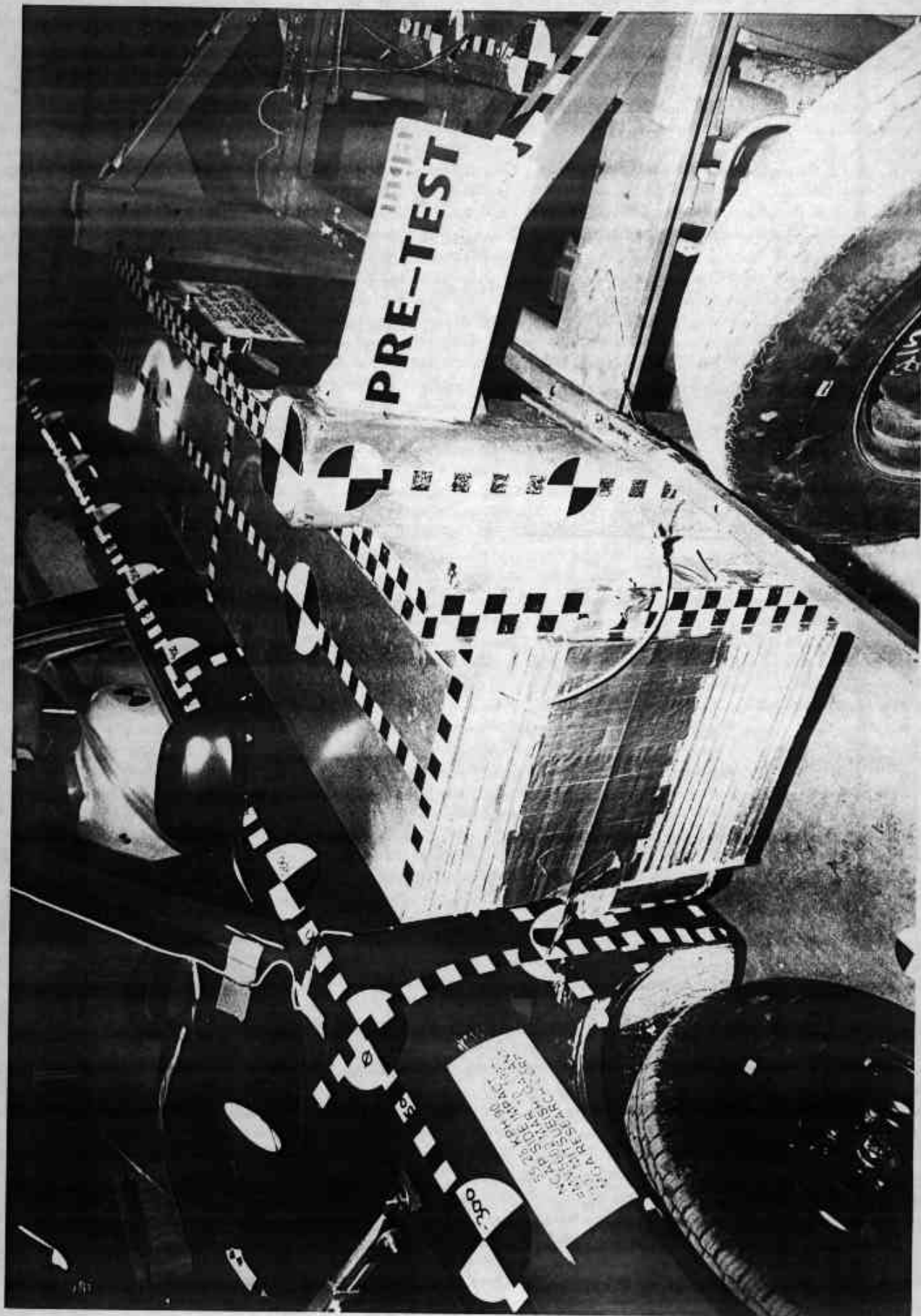


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (left side)



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

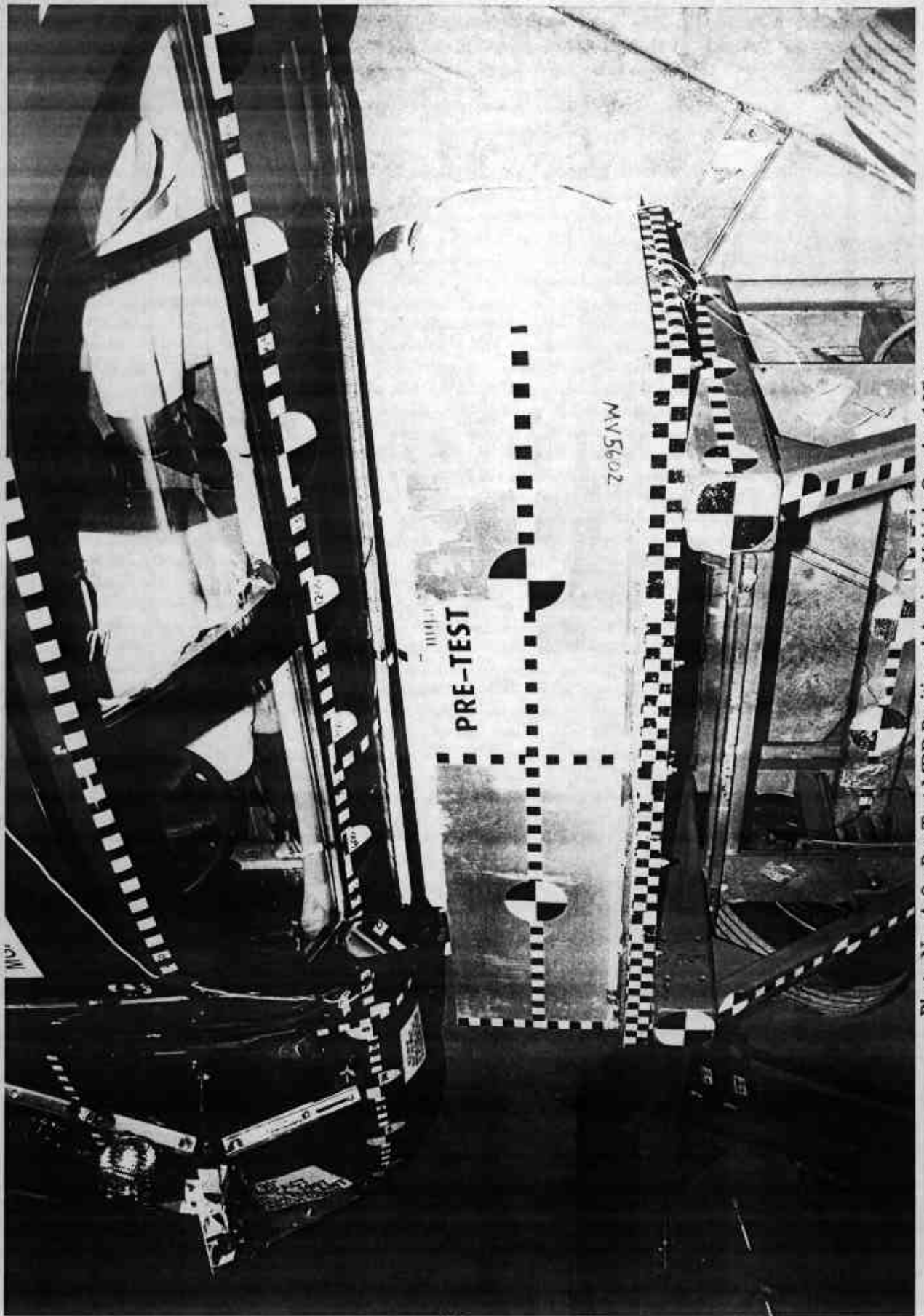


Photo No. A-9 - Pre-Test MDB Positioned Against Vehicle Overhead View

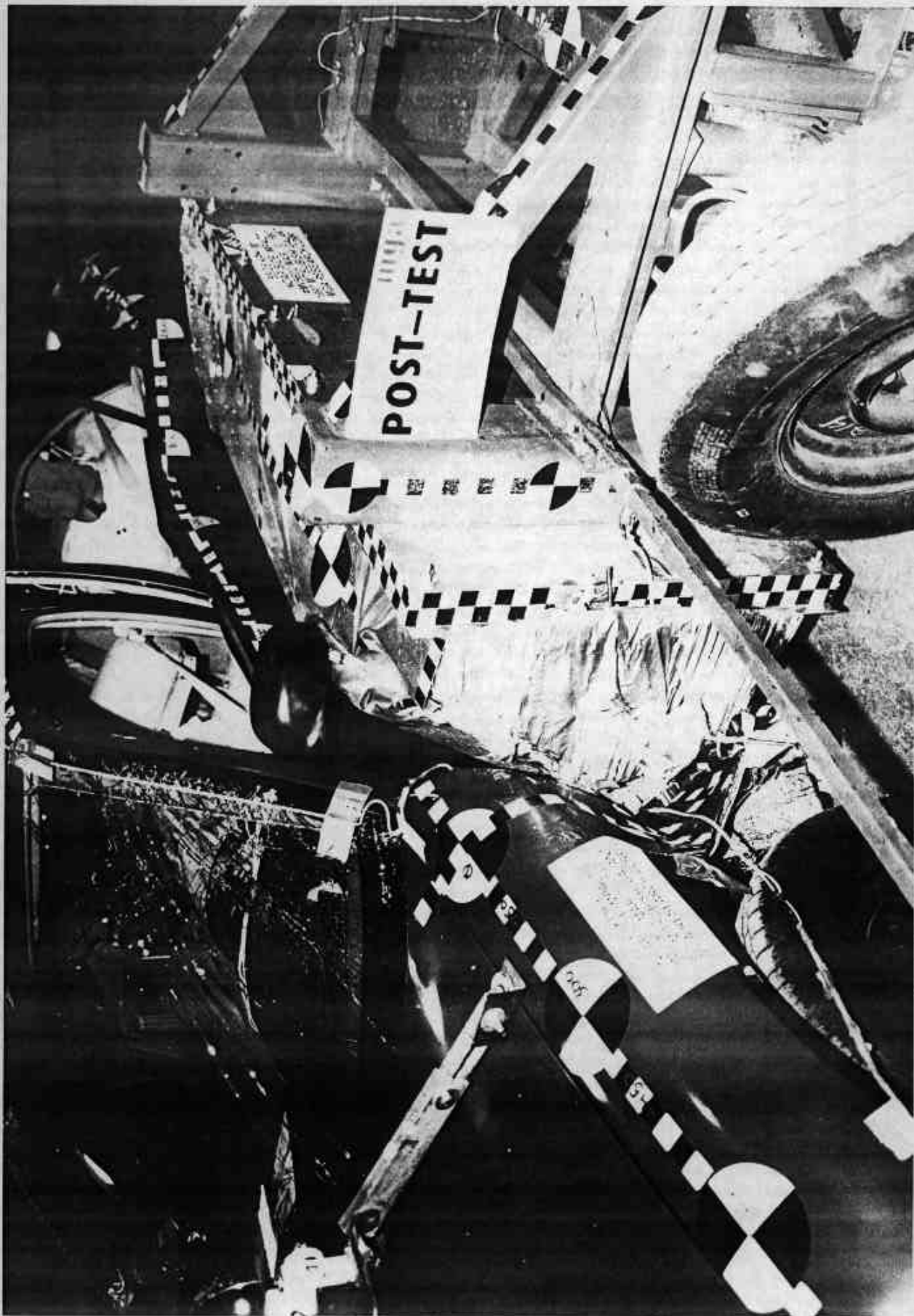


Photo No. A-10 - Post-Test MDB Positioned Against Vehicle (left side)

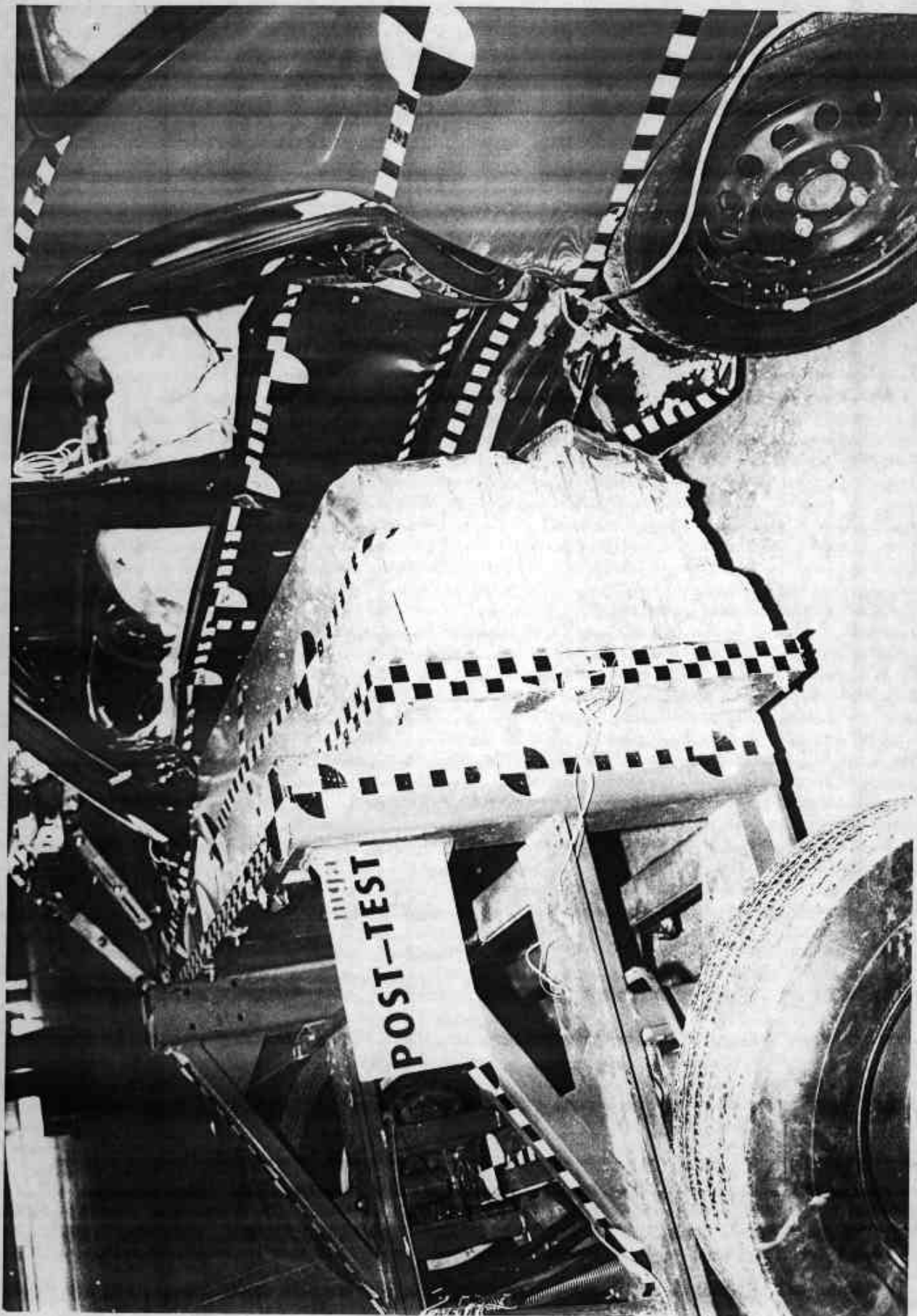


Photo No. A-11 - Post-Test MDB Positioned Against Vehicle (right side)

A-11

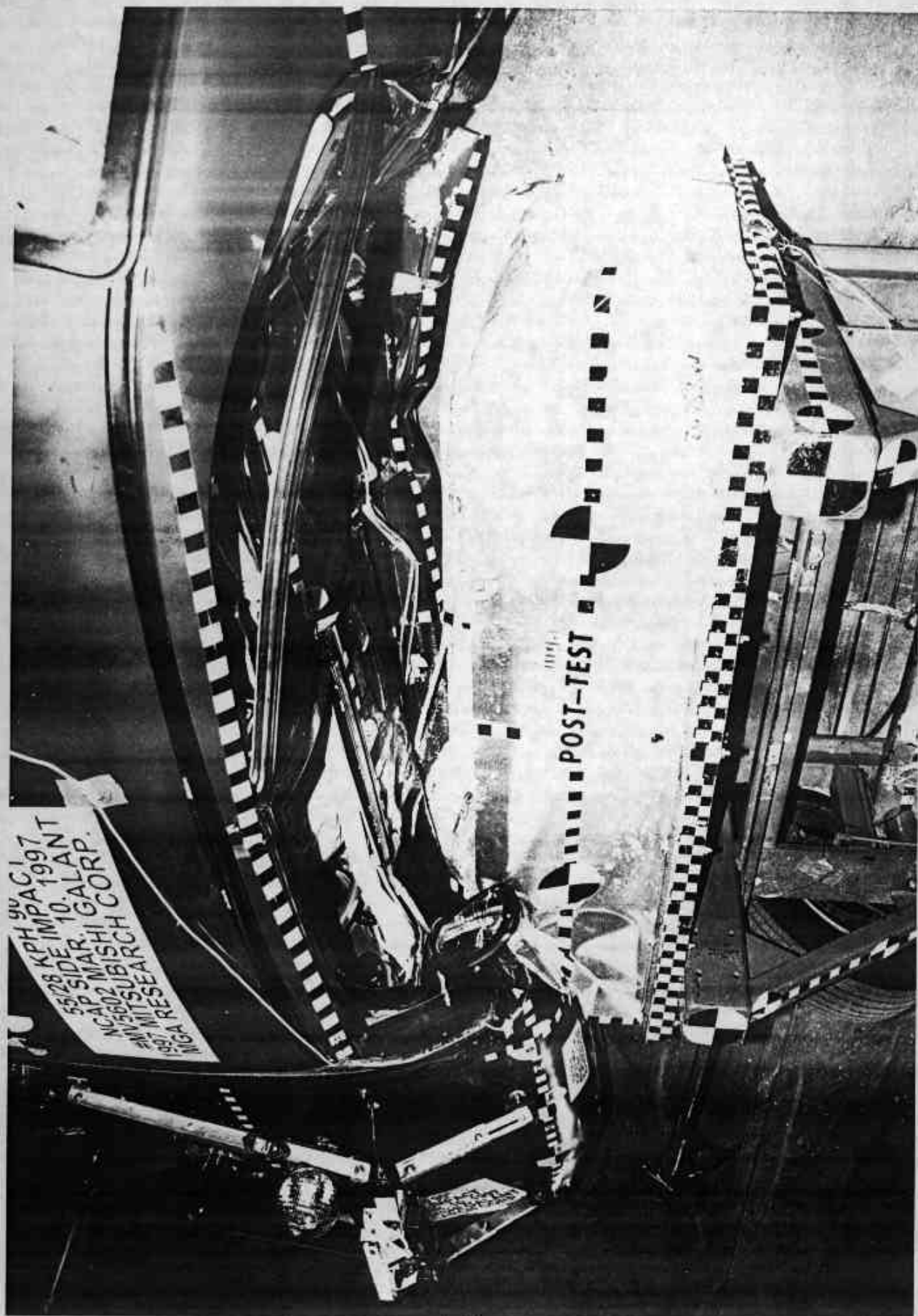


Photo No. A-12 - Post-Test MDB Positioned Against Vehicle Overhead View

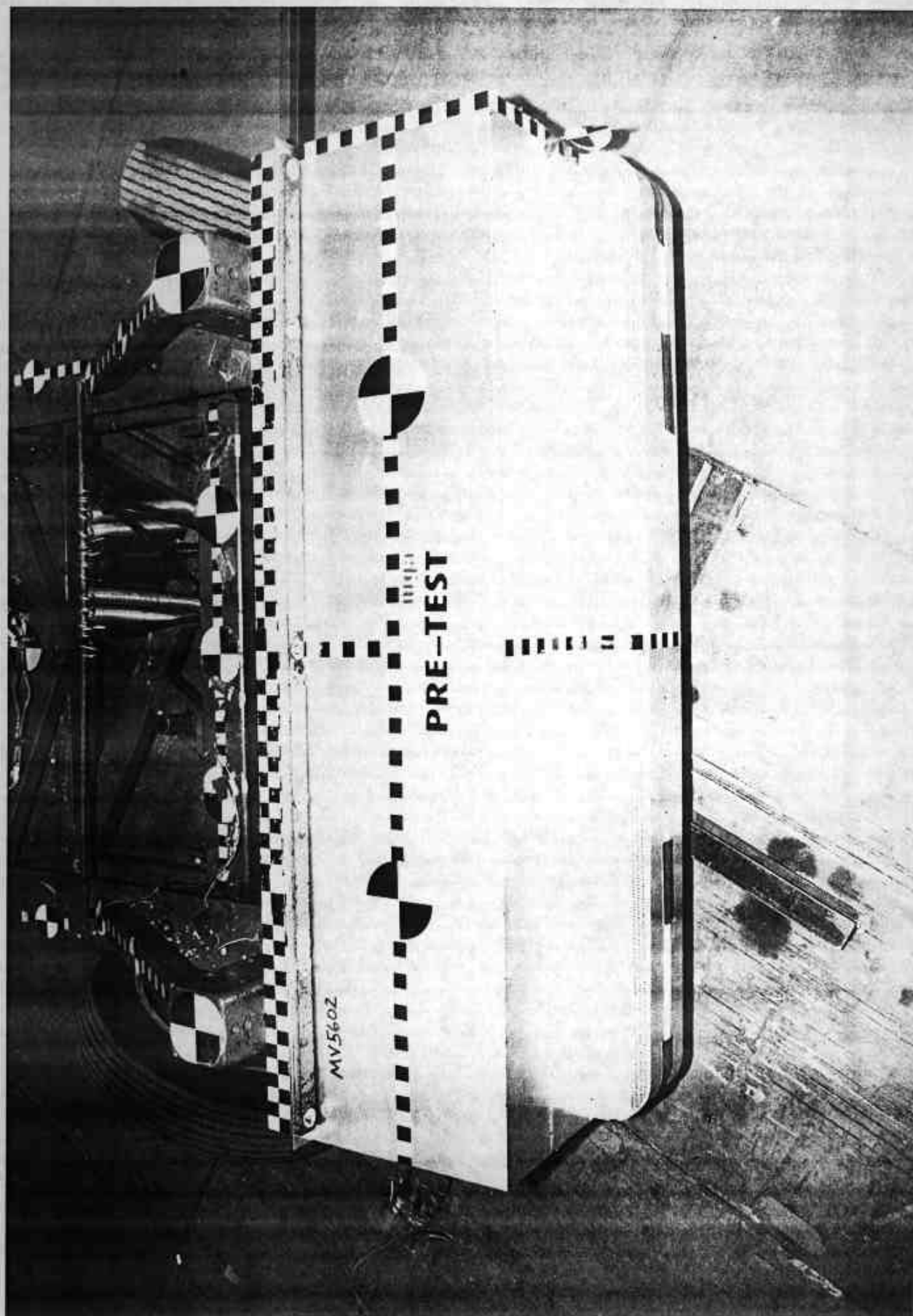


Photo No. A-13 - Pre-Test MDB Top View

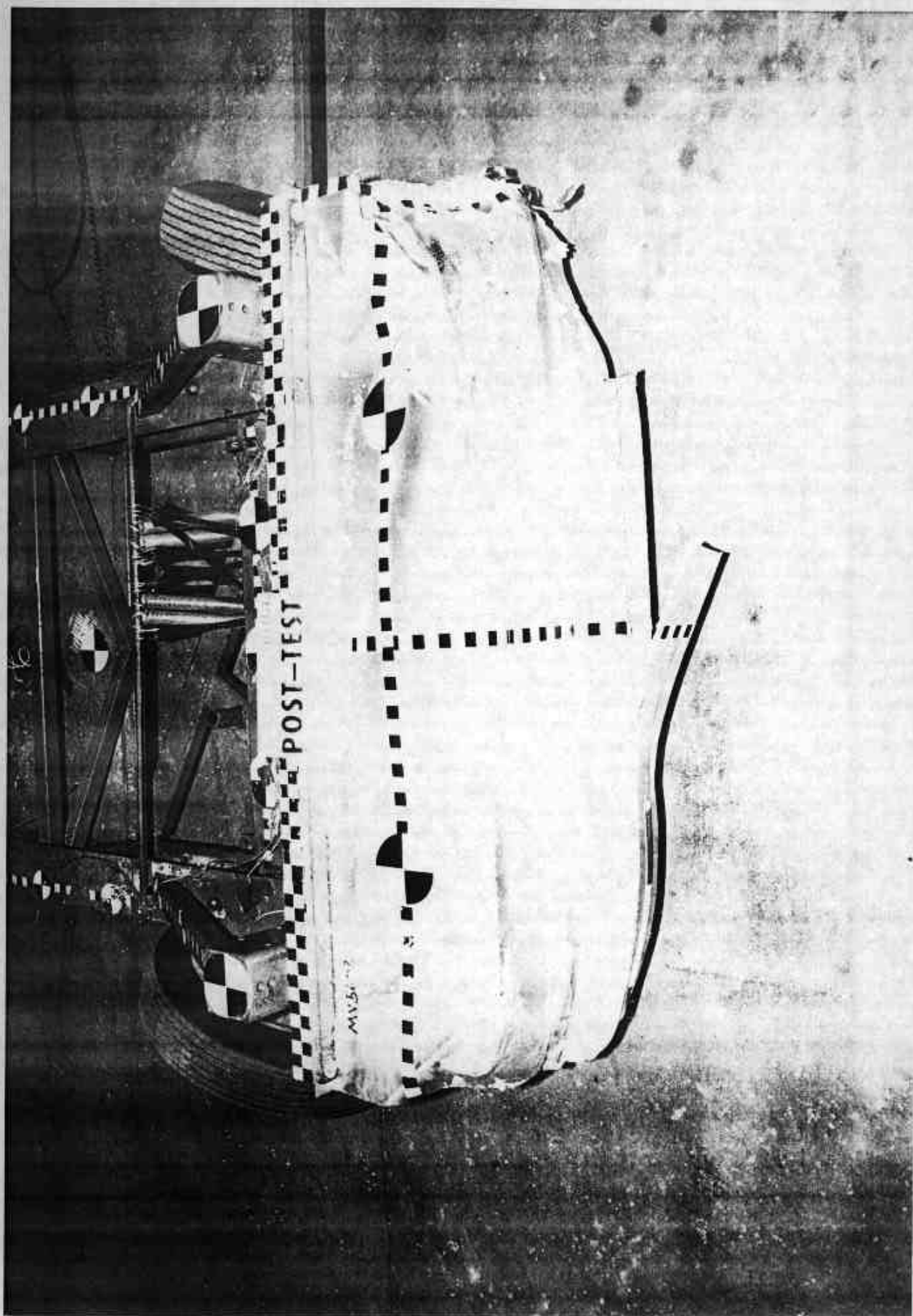


Photo No. A-14 - Post-Test MDB Top View

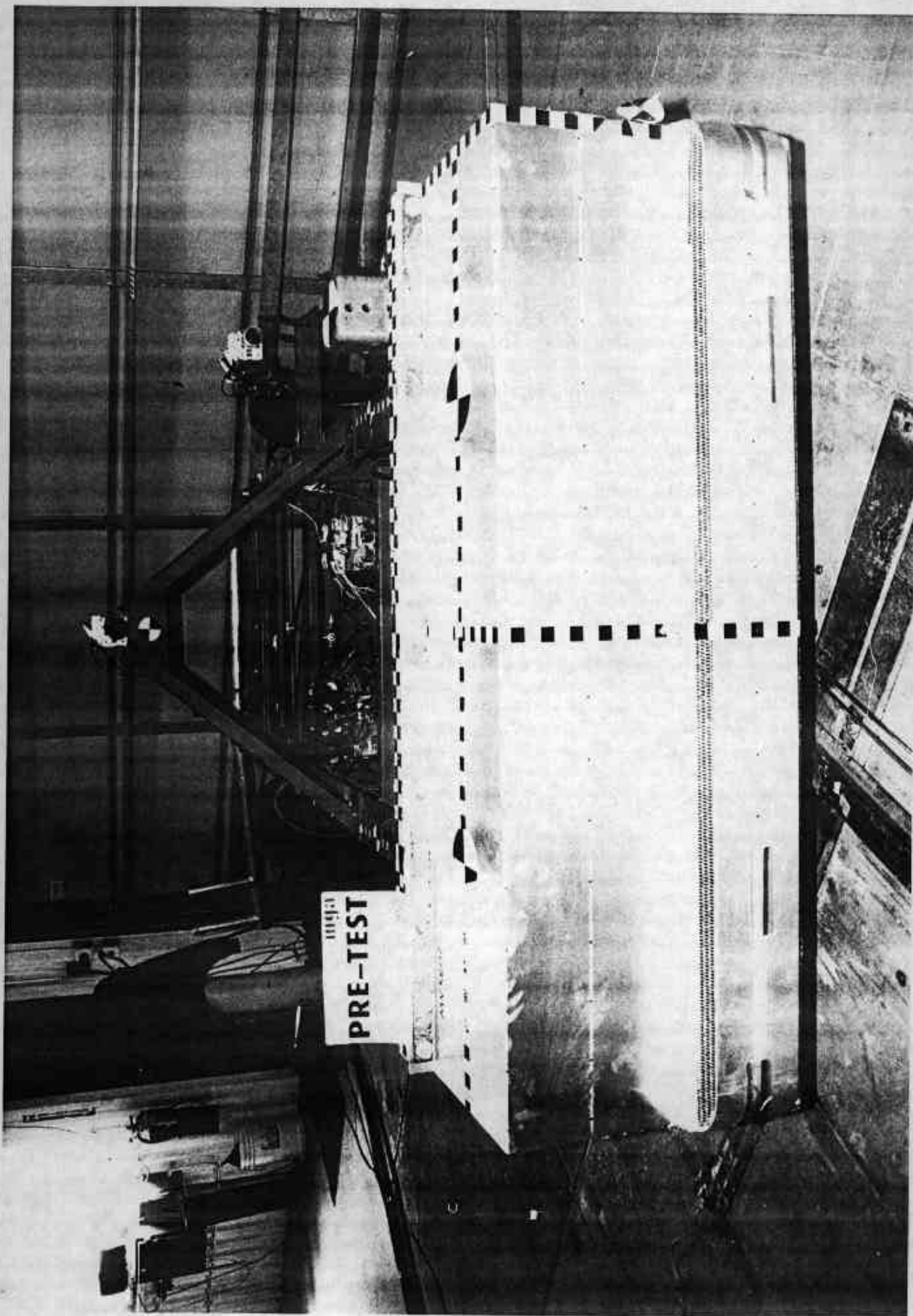


Photo No. A-15 - Pre-Test MDB Front View

A-15

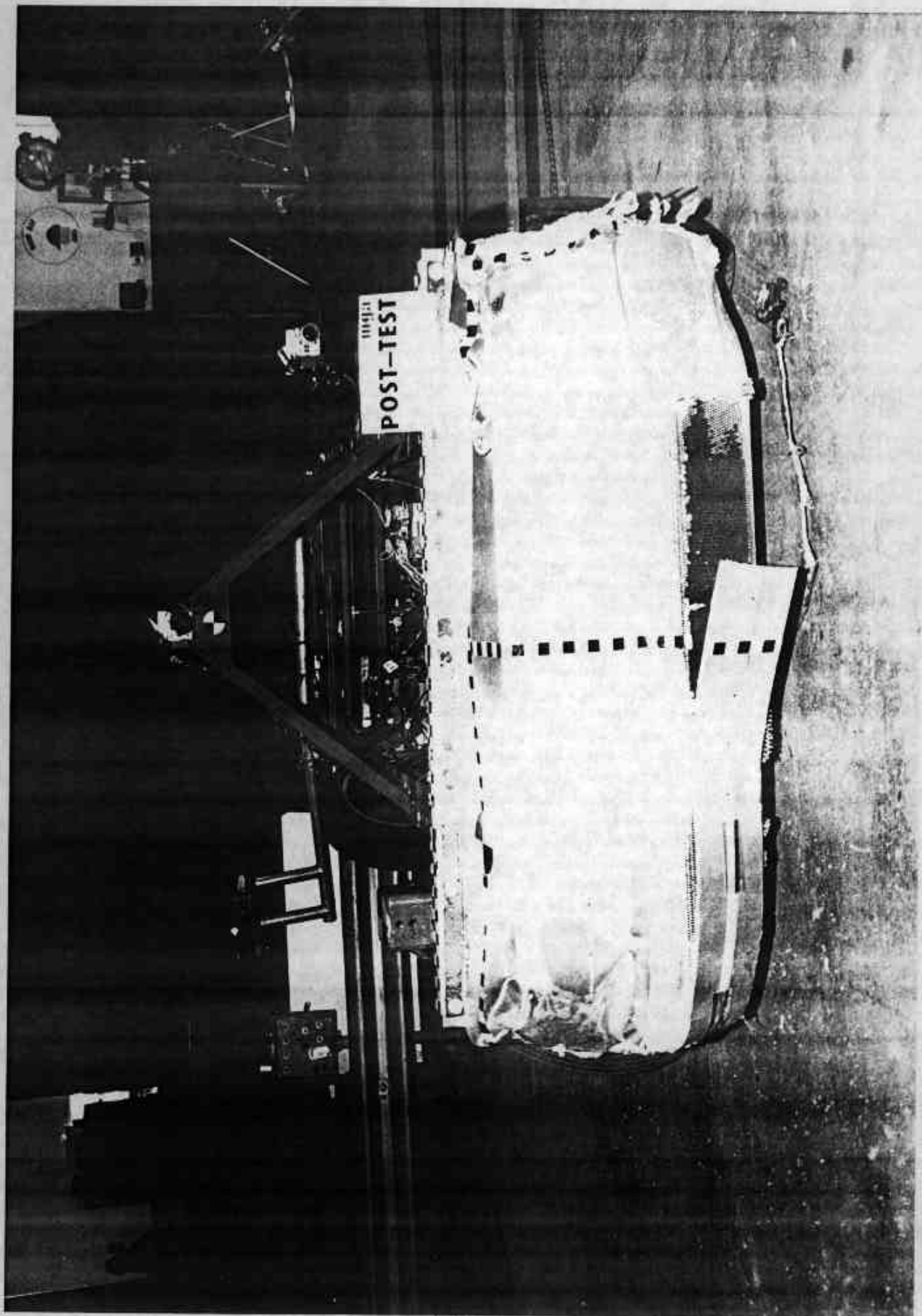


Photo No. A-16 - Post-Test MDB Front View

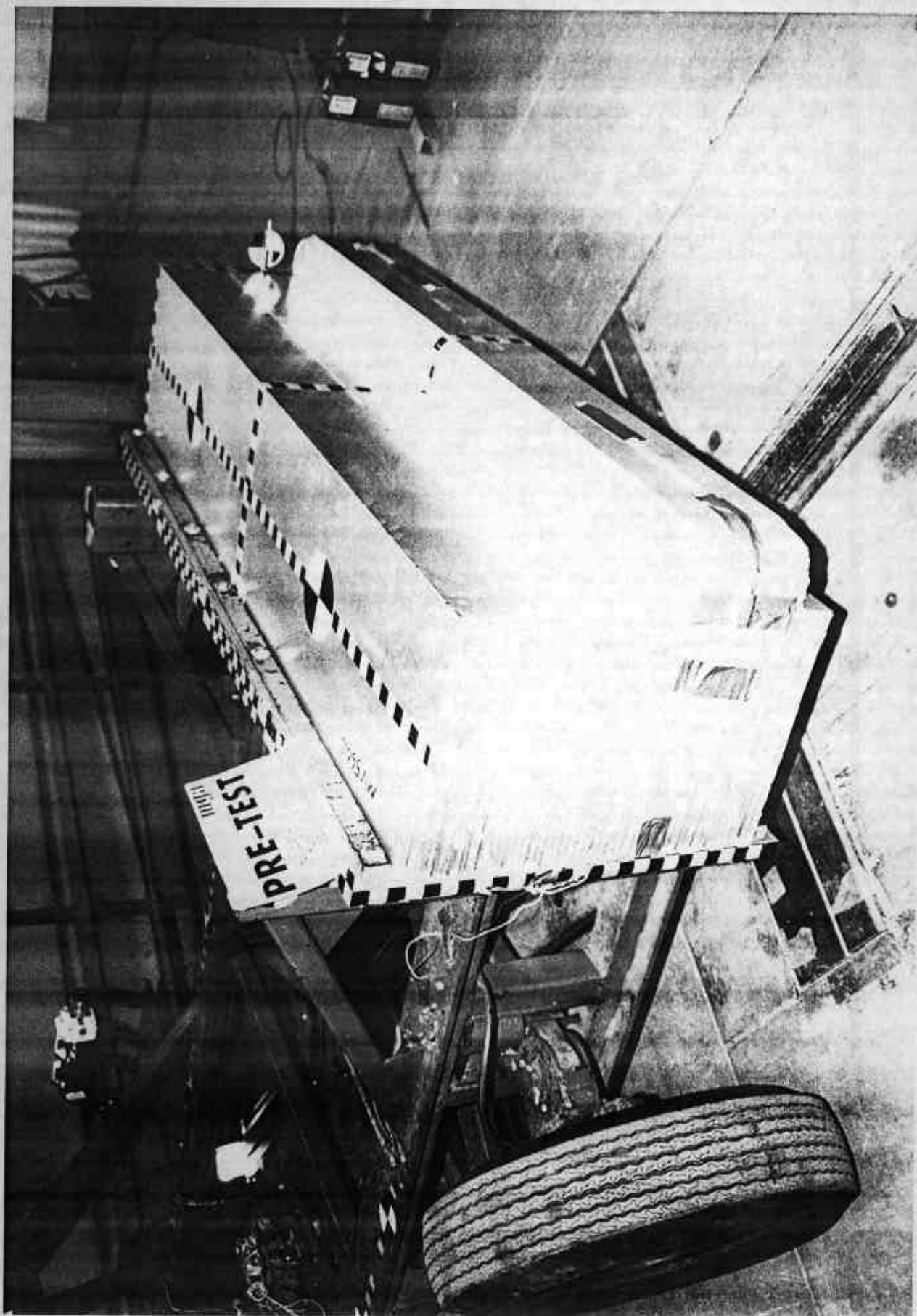


Photo No. A-17 - Pre-Test MDB Right Side View

A-17

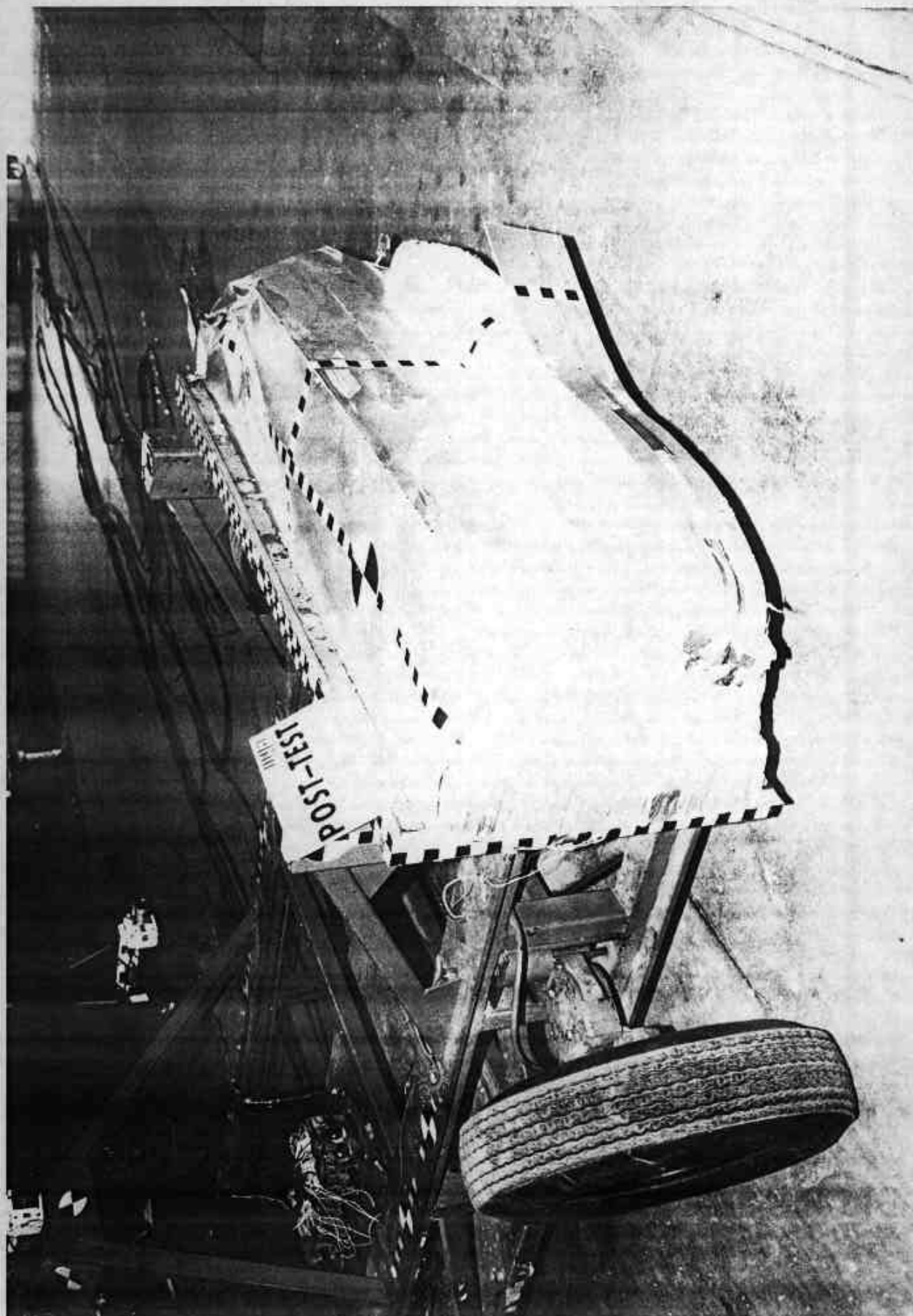


Photo No. A-18 - Post-Test MDB Right Side View

A-18

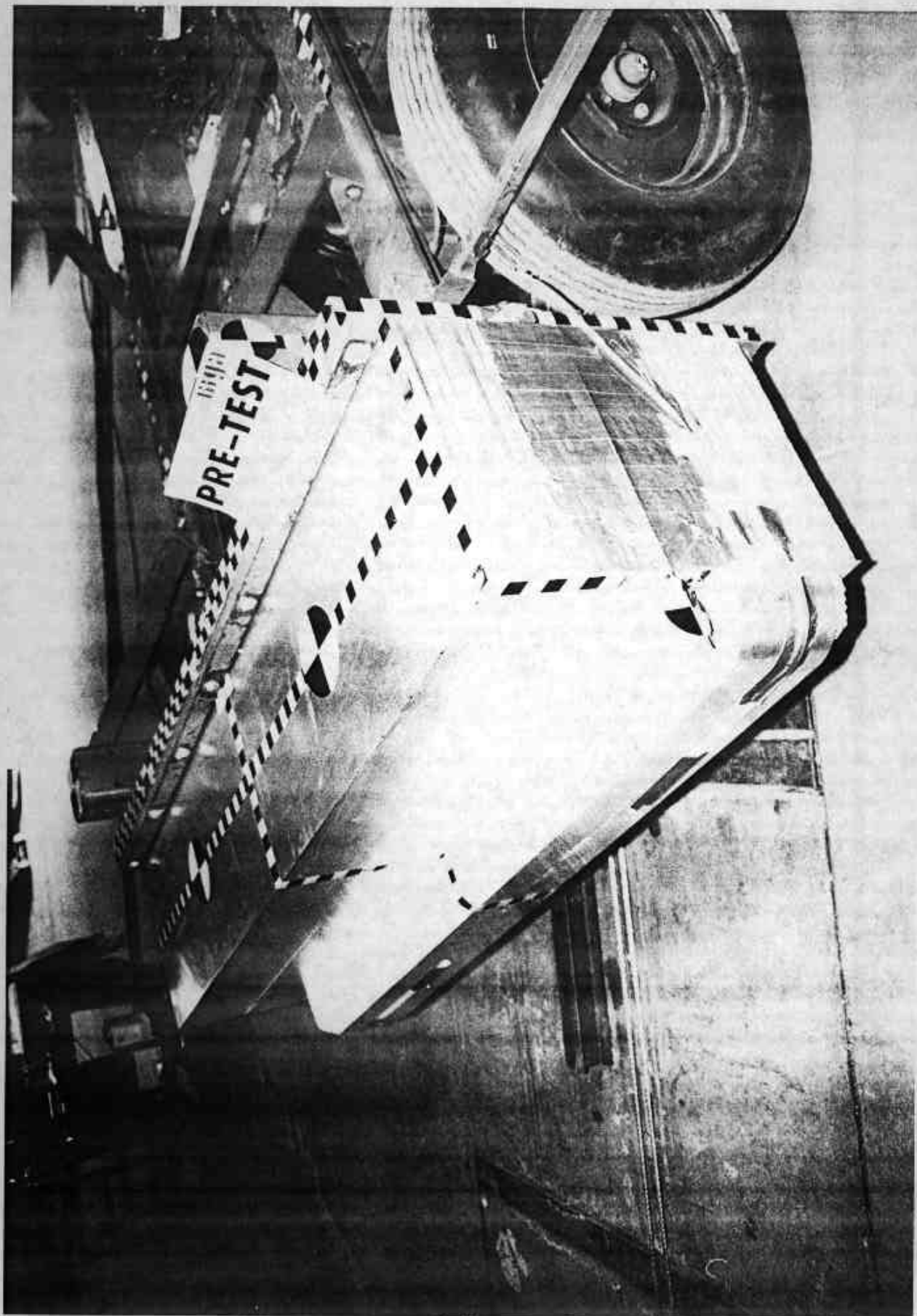


Photo No. A-19 - Pre-Test MDB Left Side View

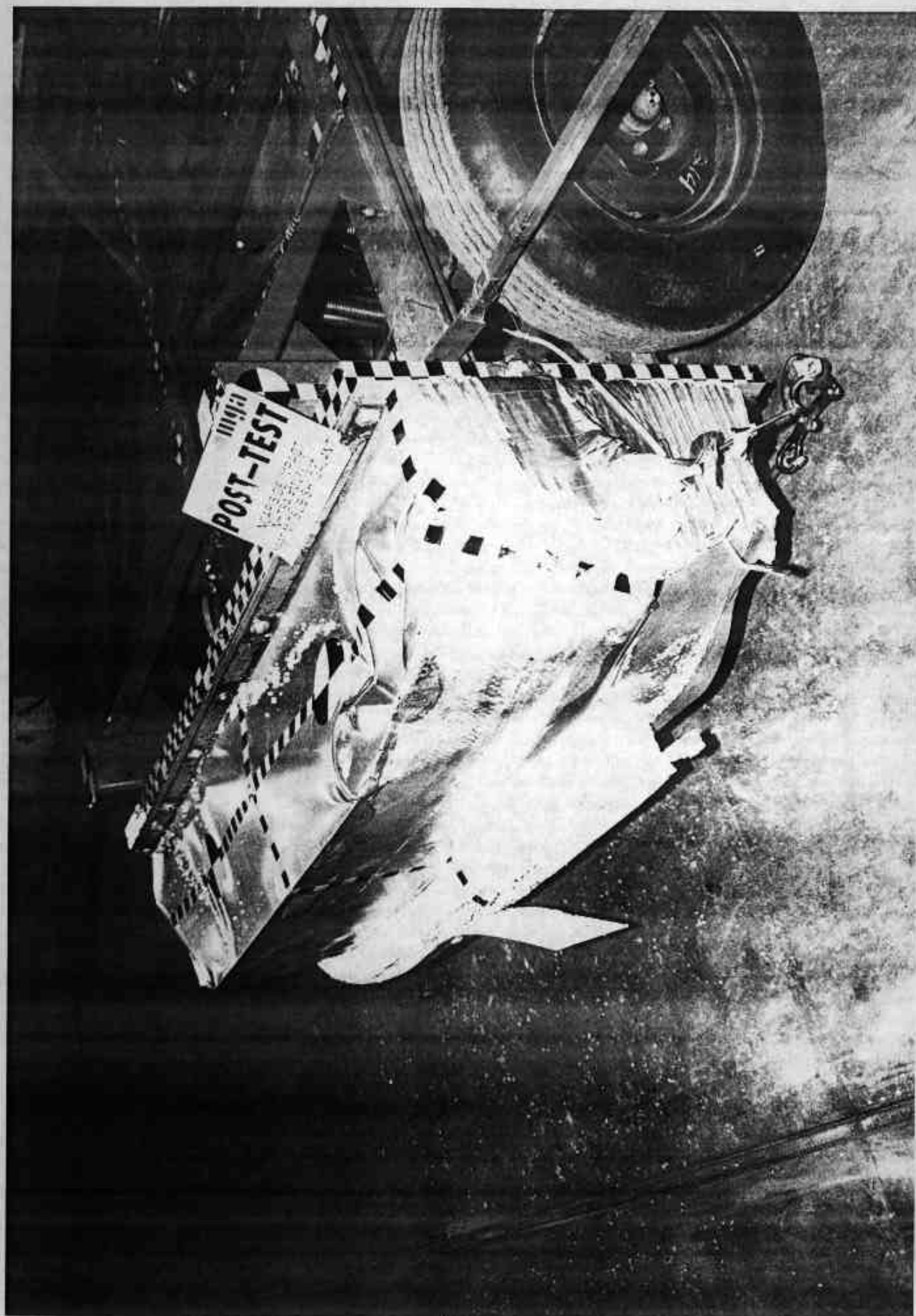


Photo No. A-20 - Post-Test MDB Left Side View

A-20

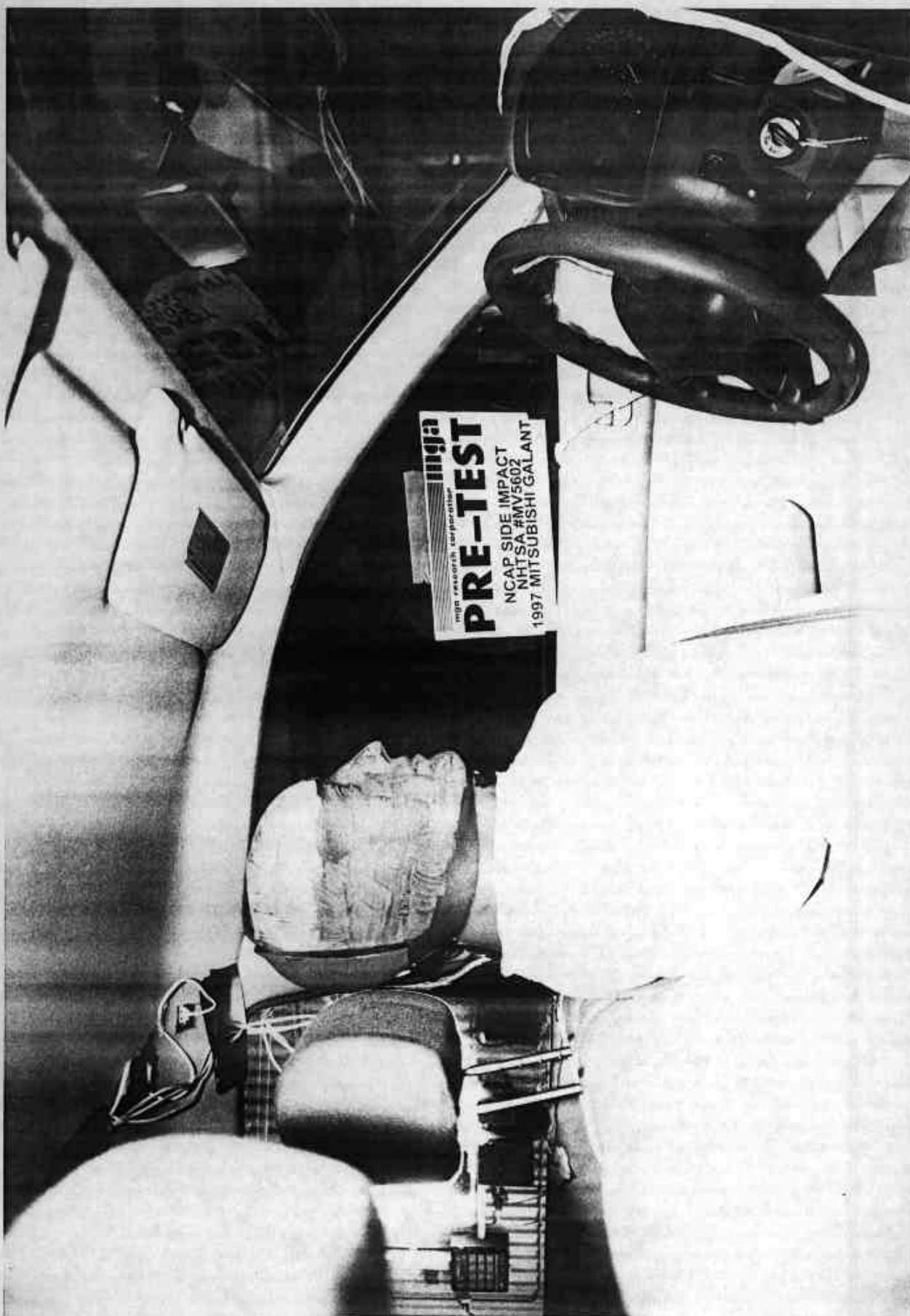
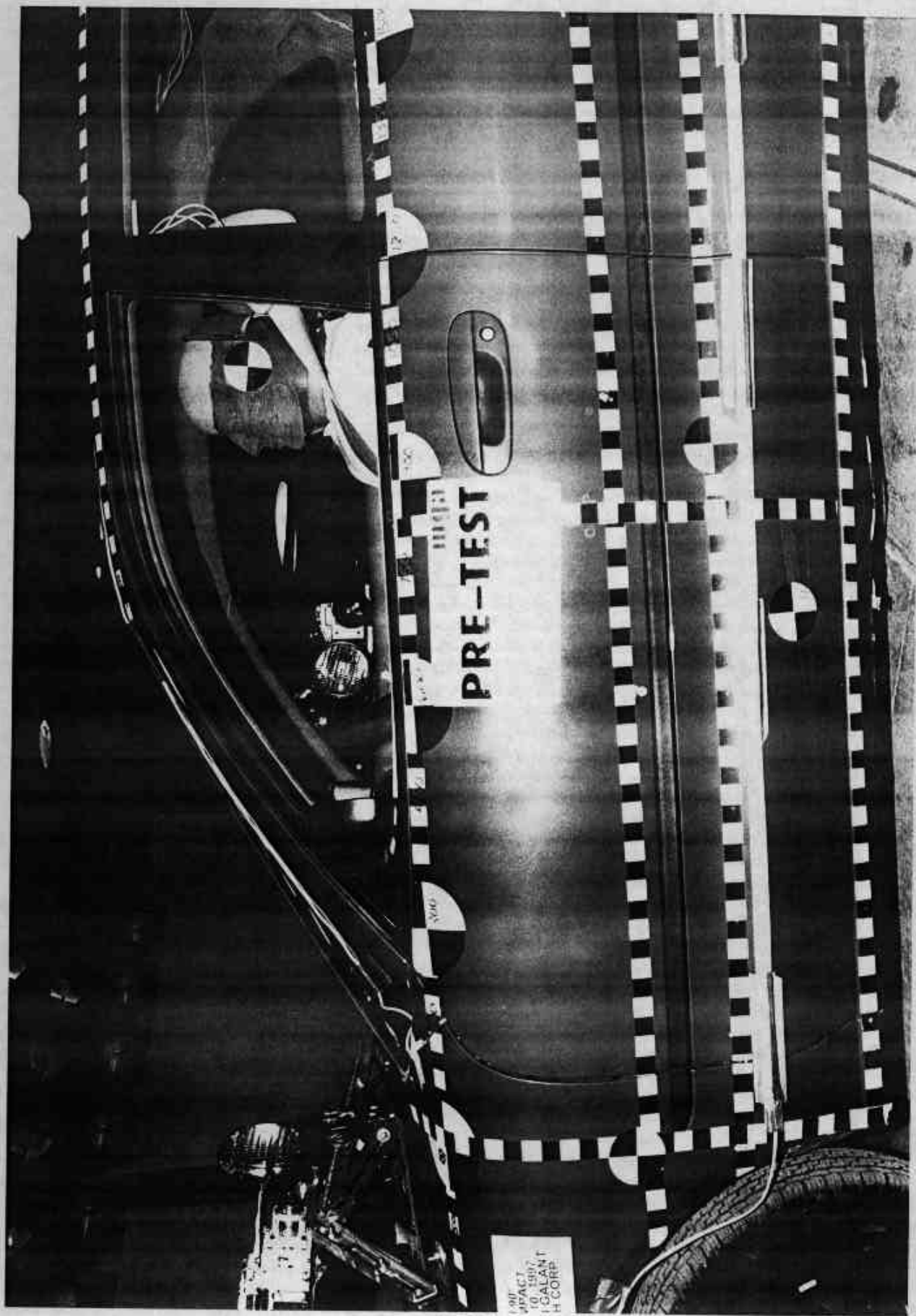


Photo No. A-21 - Pre-Test Driver Dummy Right Side View



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



A-23

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

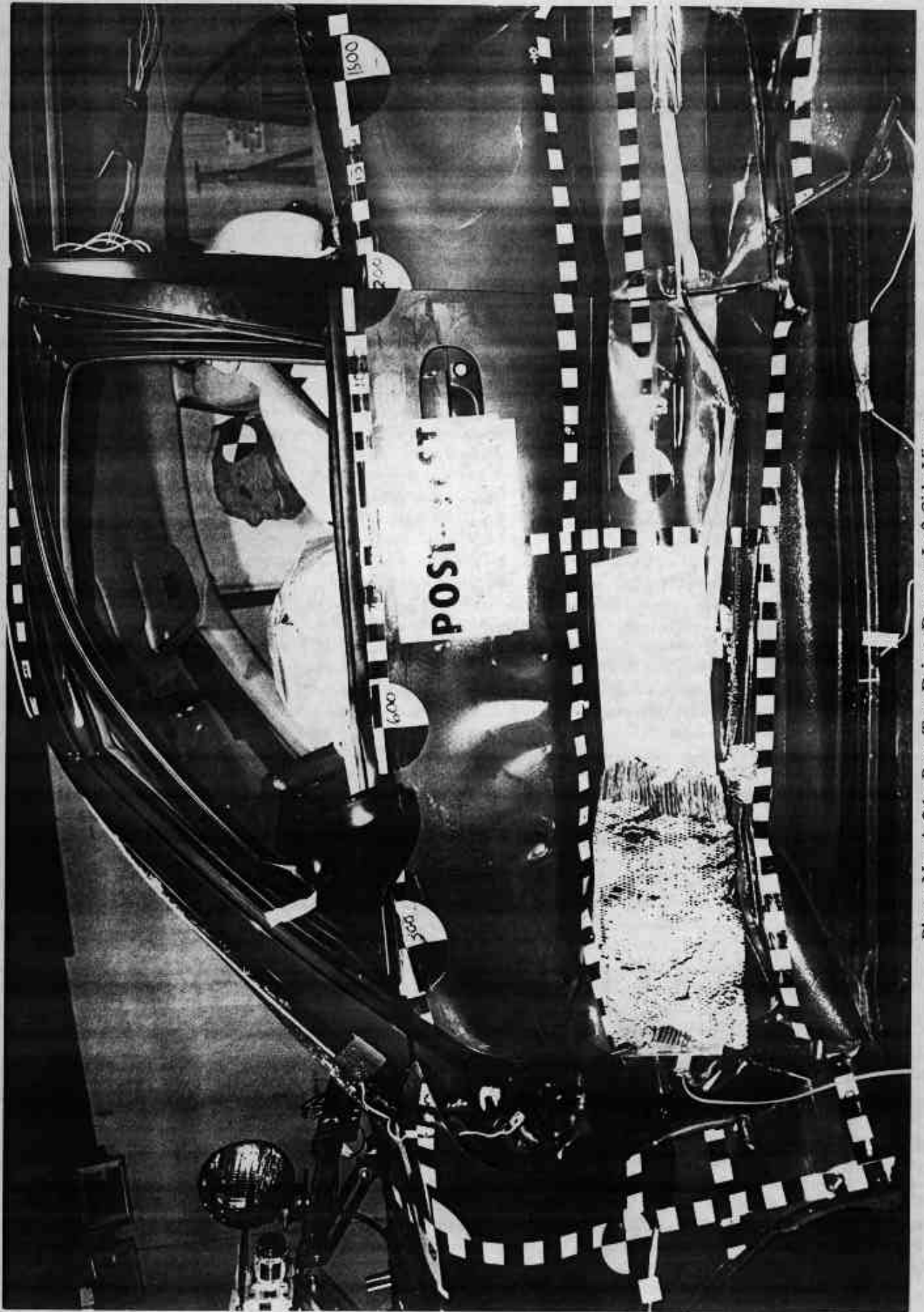
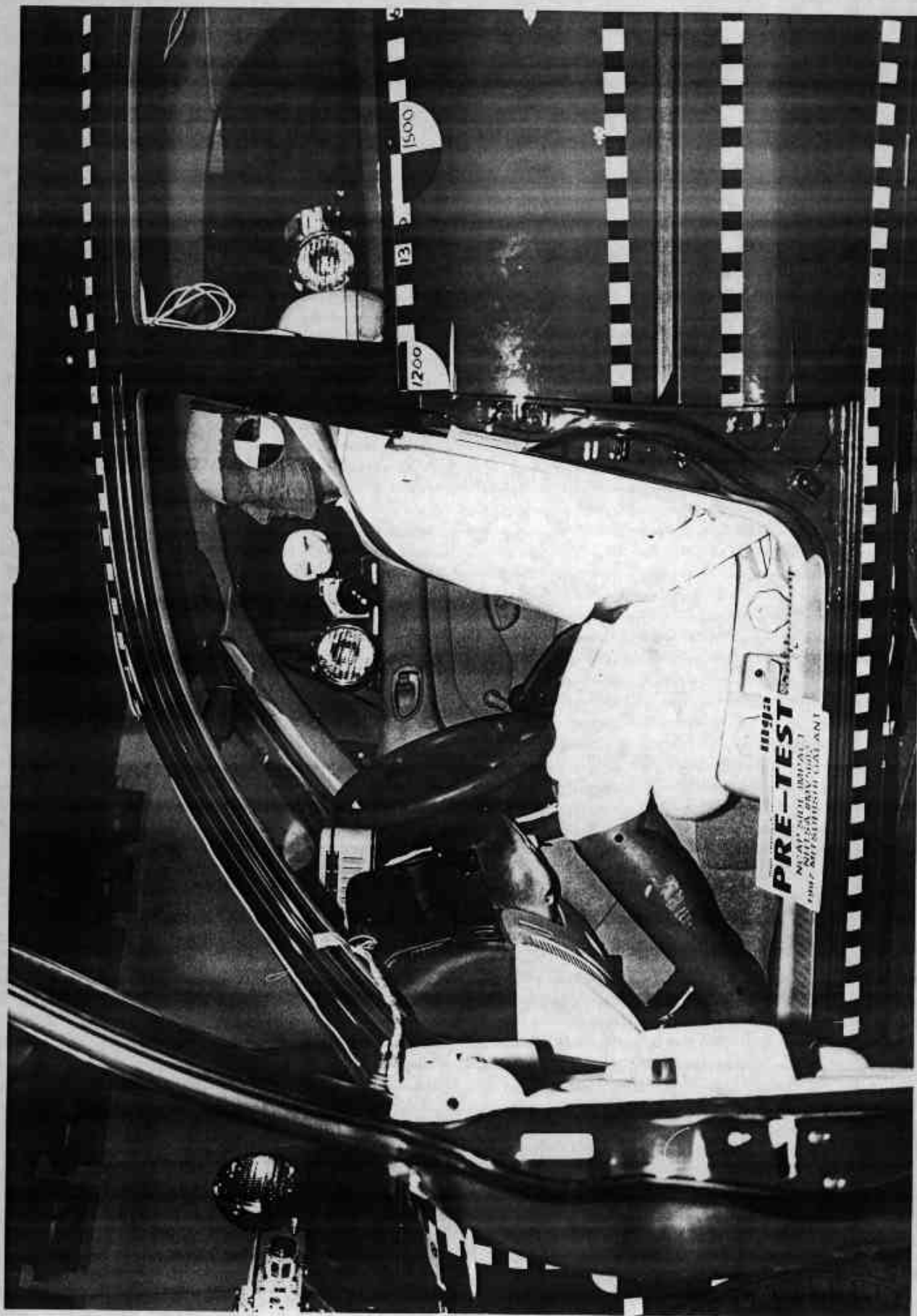


Photo No. A-24 - Post-Test Driver Dummy Left Side View

A-24



A-25

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



A-26

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

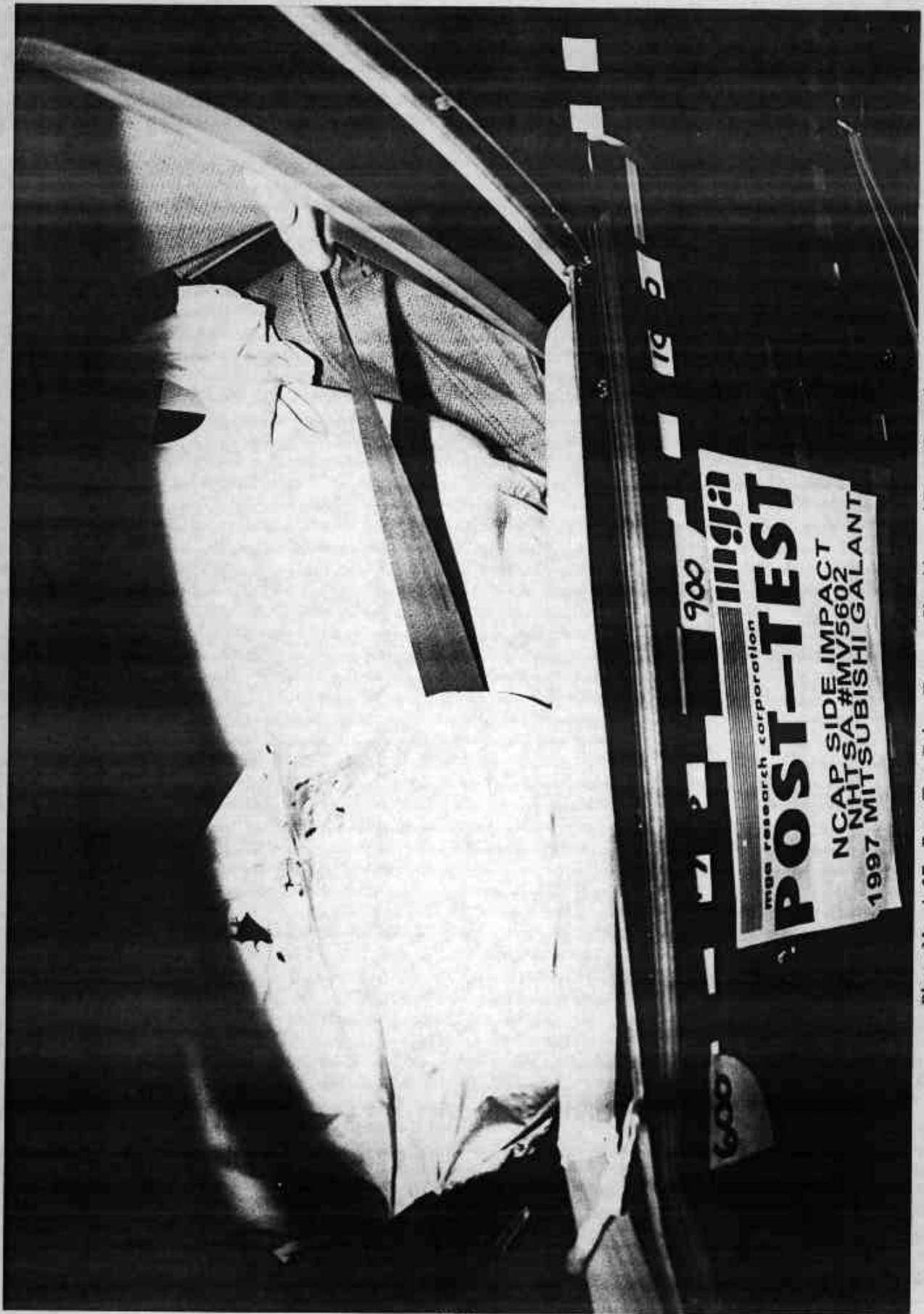


Photo No. A-27 - Post-Test Driver Dummy Shoulder and Door Top View



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NHTSA #MV5602
1997 MITSUBISHI GALANT

Photo No. A-28 - Pre-Test Driver Seat Position View



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



Photo No. A-30 - Post-Test Driver Dummy Contact

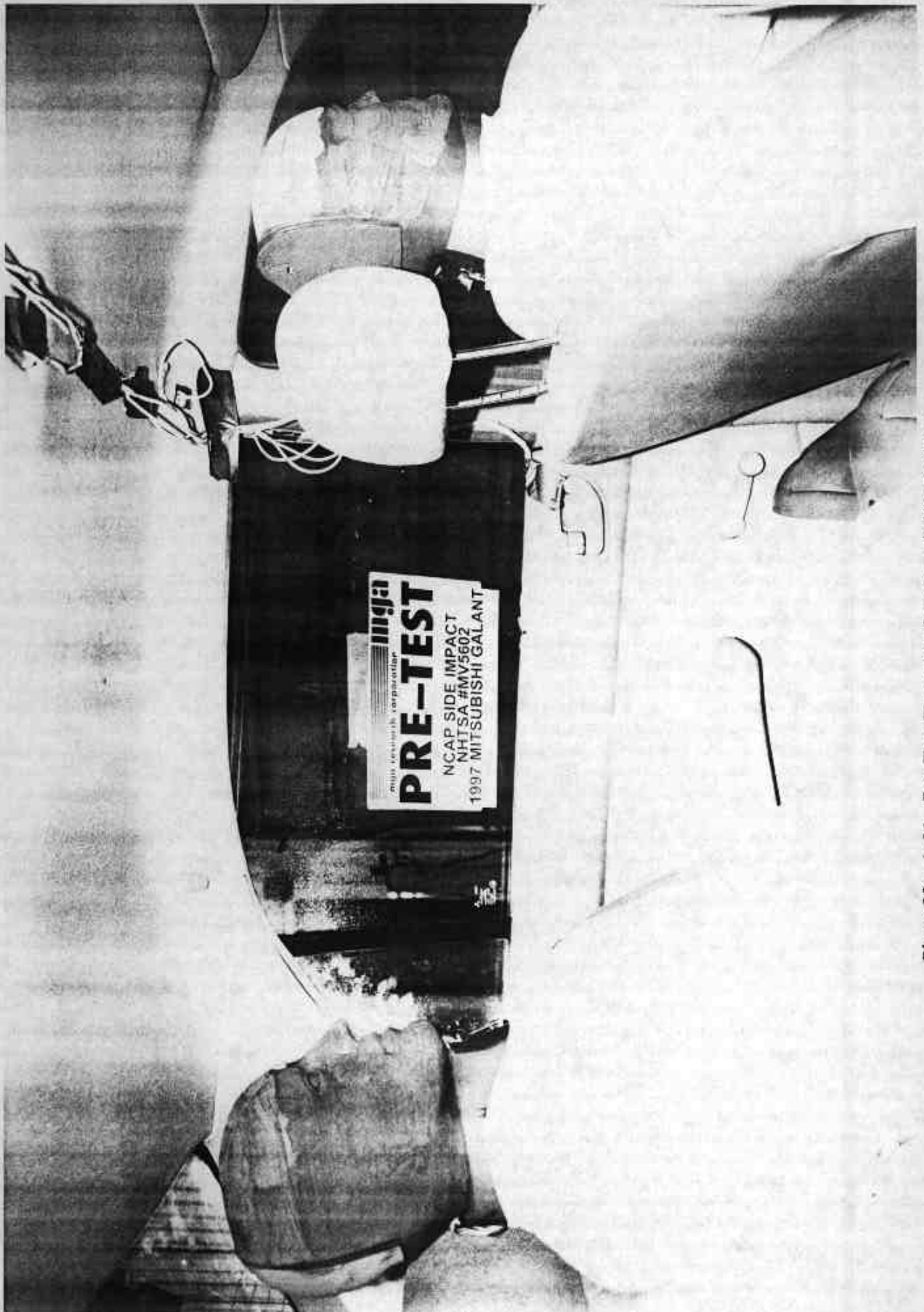
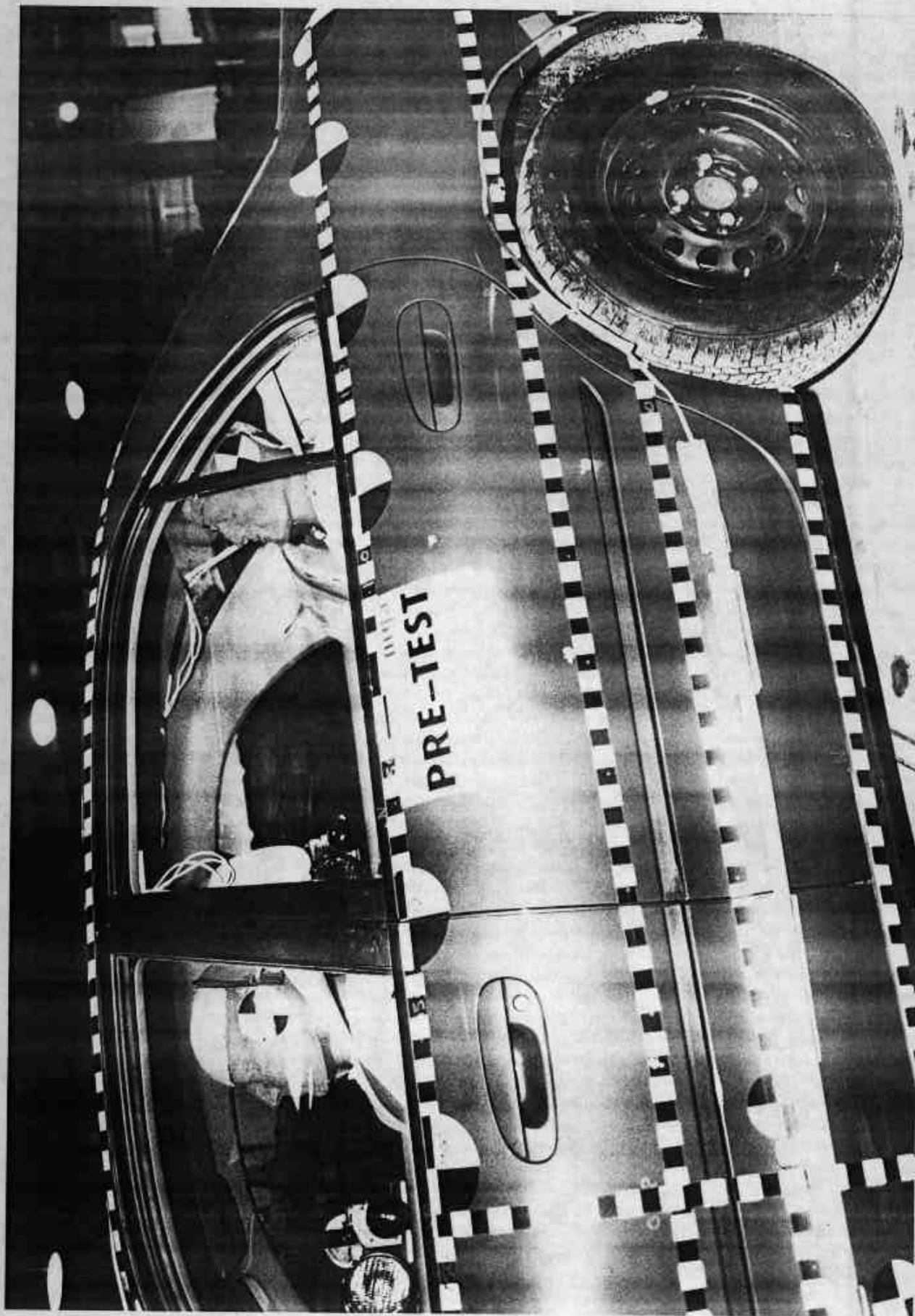


Photo No. A-31 - Pre-Test Passenger Dummy Right Side View



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



A-33

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

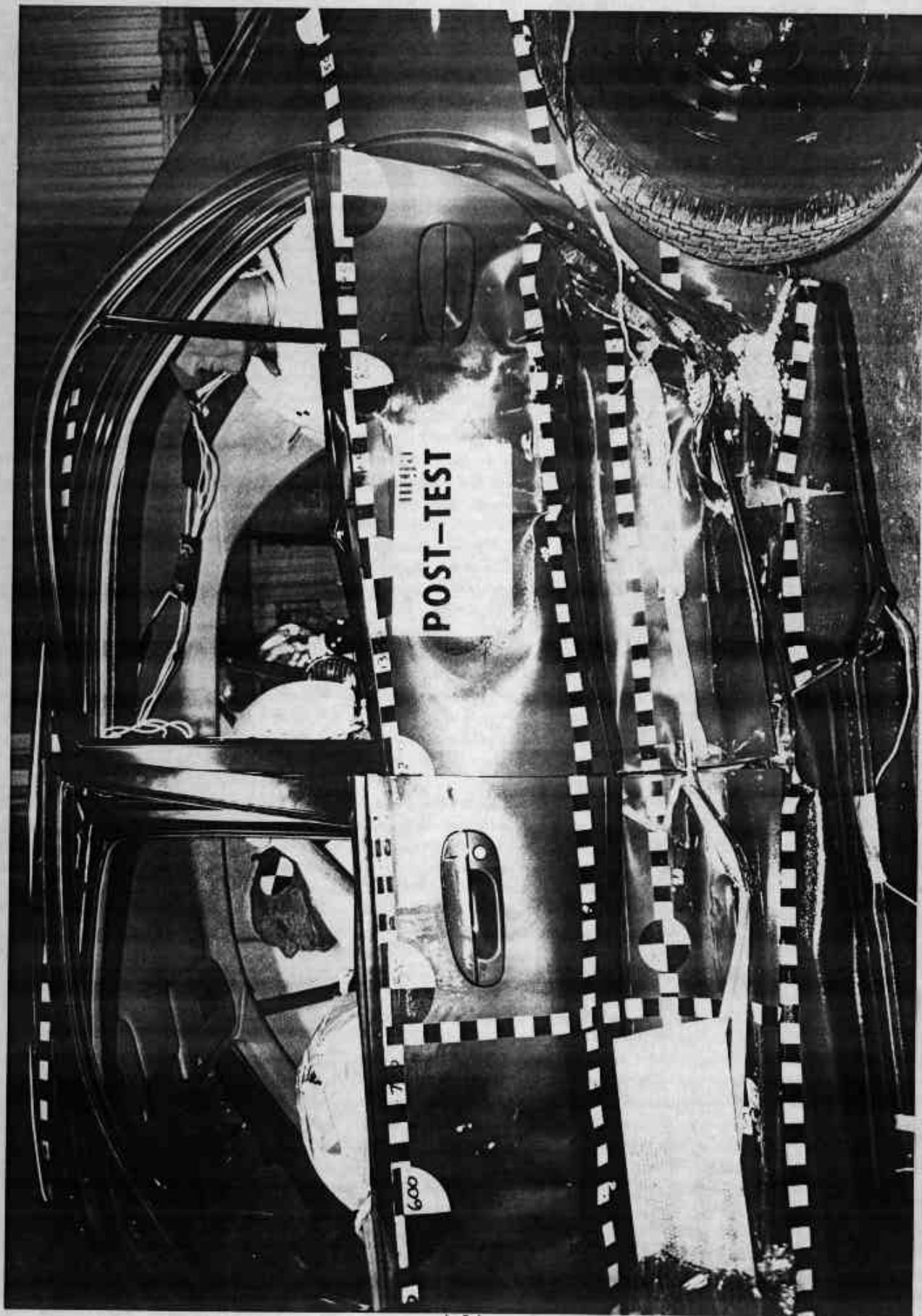


Photo No. A-34 - Post-Test Passenger Dummy Left Side View

A-34

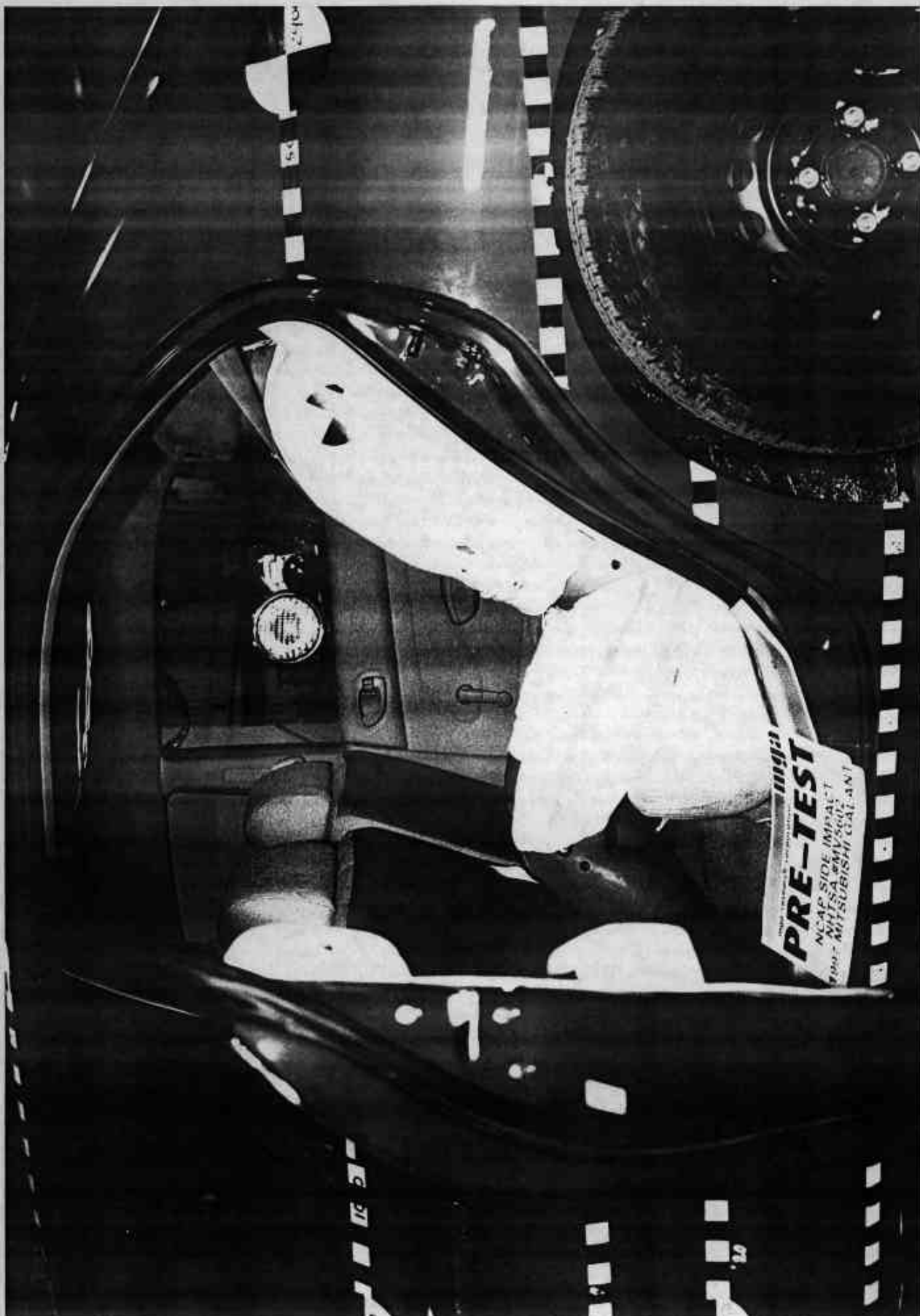


Photo No. A-35 - Pre-Test Passenger Dummy Left Side View (Door Open)

A-35



A-36

Photo No. A-36 - Pre-Test Passenger Dummy Shoulder and Door Top View



Photo No. A-37 - Post-Test Passenger Dummy Shoulder and Door Top View

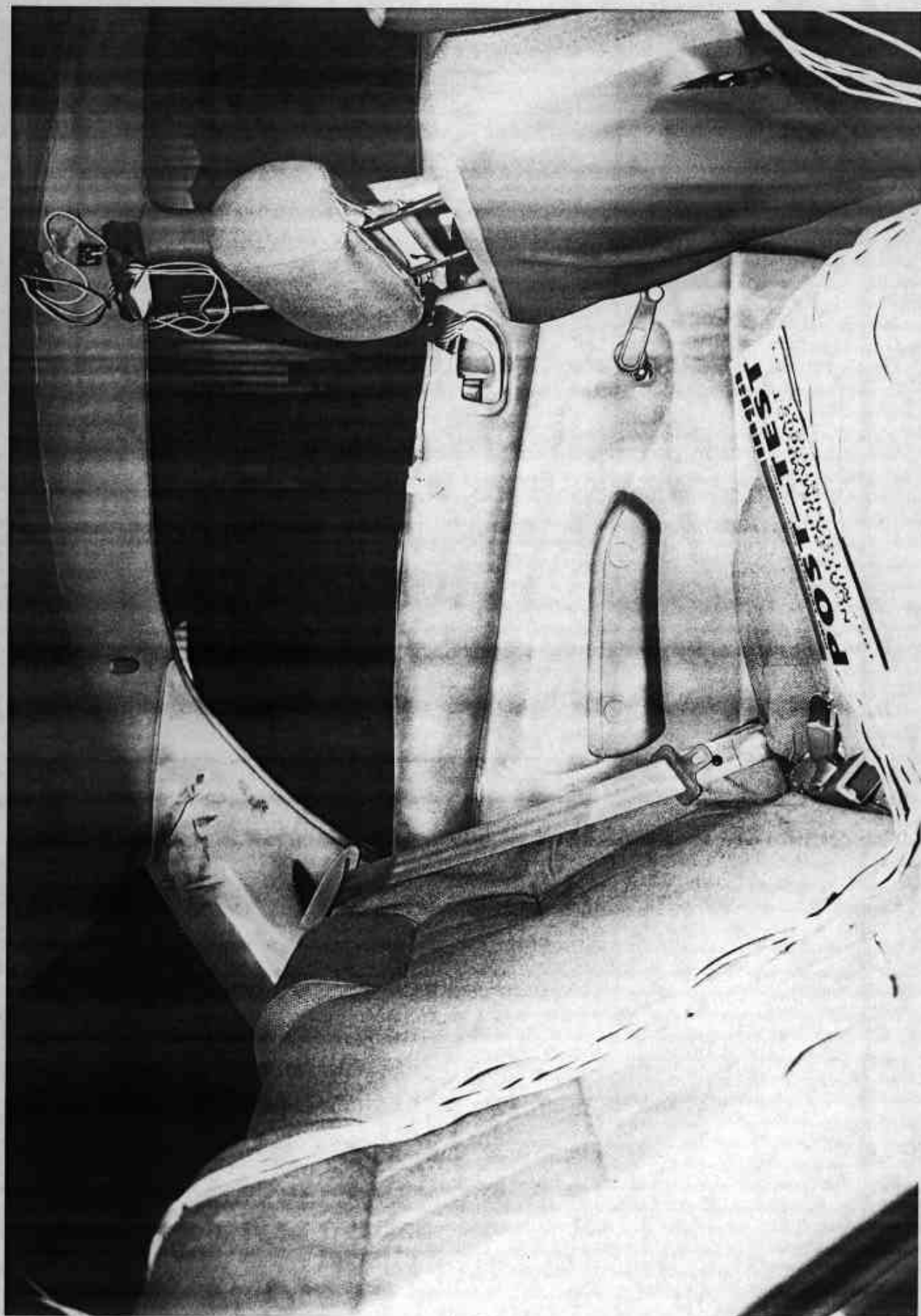


Photo No. A-38 - Post-Test Passenger Dummy Contact

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NCAP SIDE IMPACT
NHTSA #MV5602
1997 MITSUBISHI GALANT

Photo No. A-39 - Post-Test Passenger Dummy Head Contact

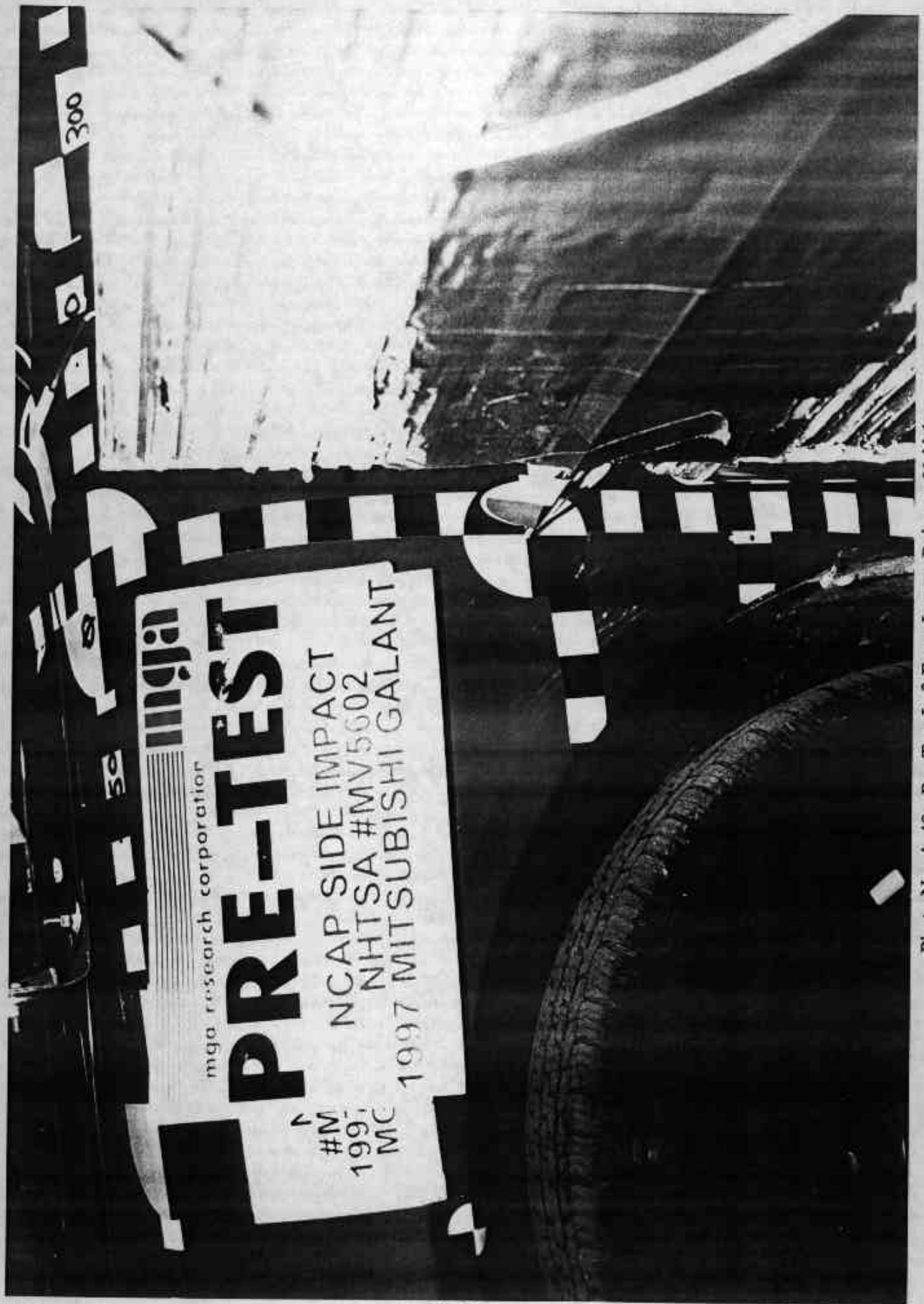


Photo No. A-40 - Pre-Test Left Front Impact Point on Vehicle



Photo No. A-41 - Post-Test Left Front Impact Point on Vehicle

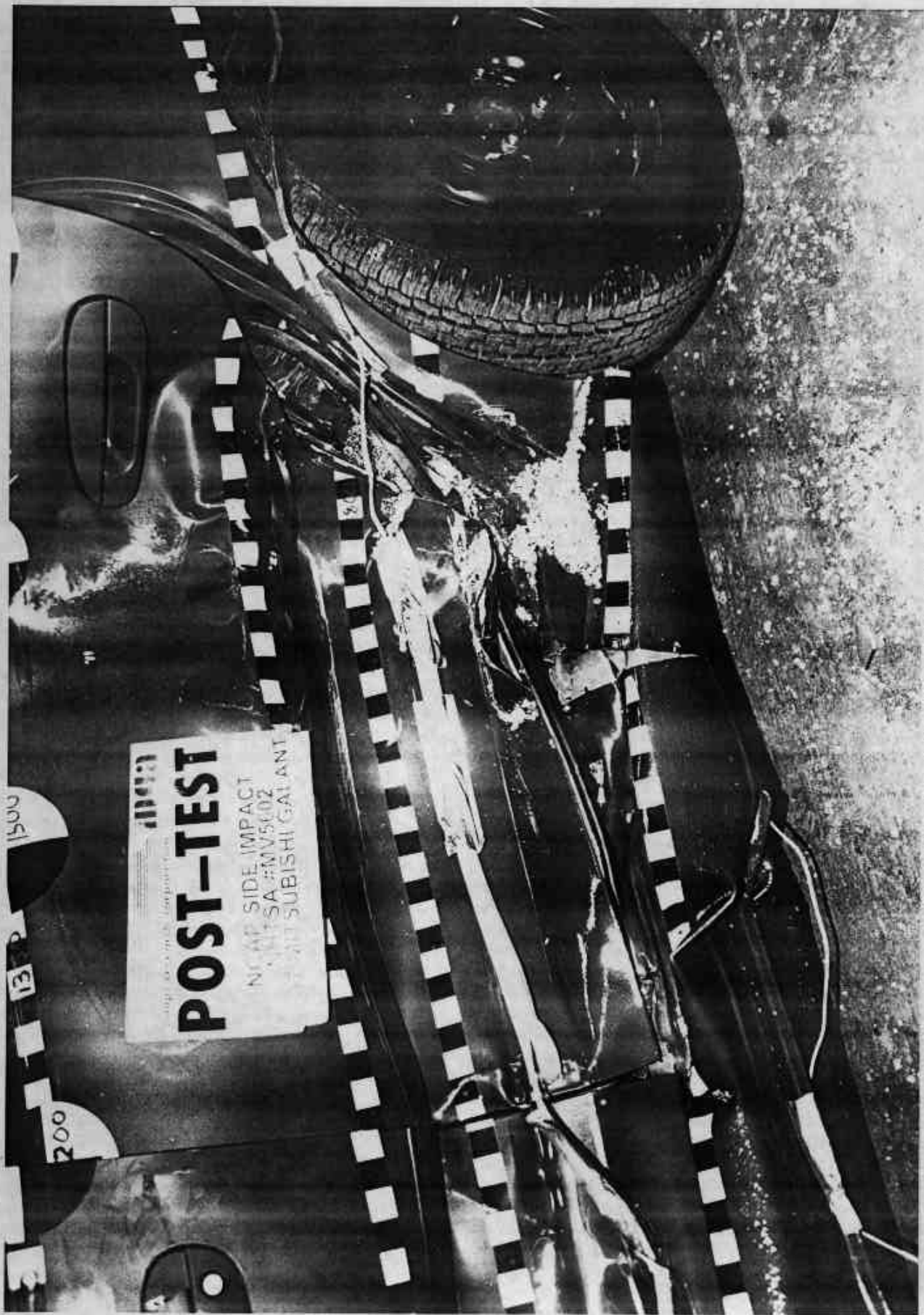


Photo No. A-42 - Area of Sill Separation

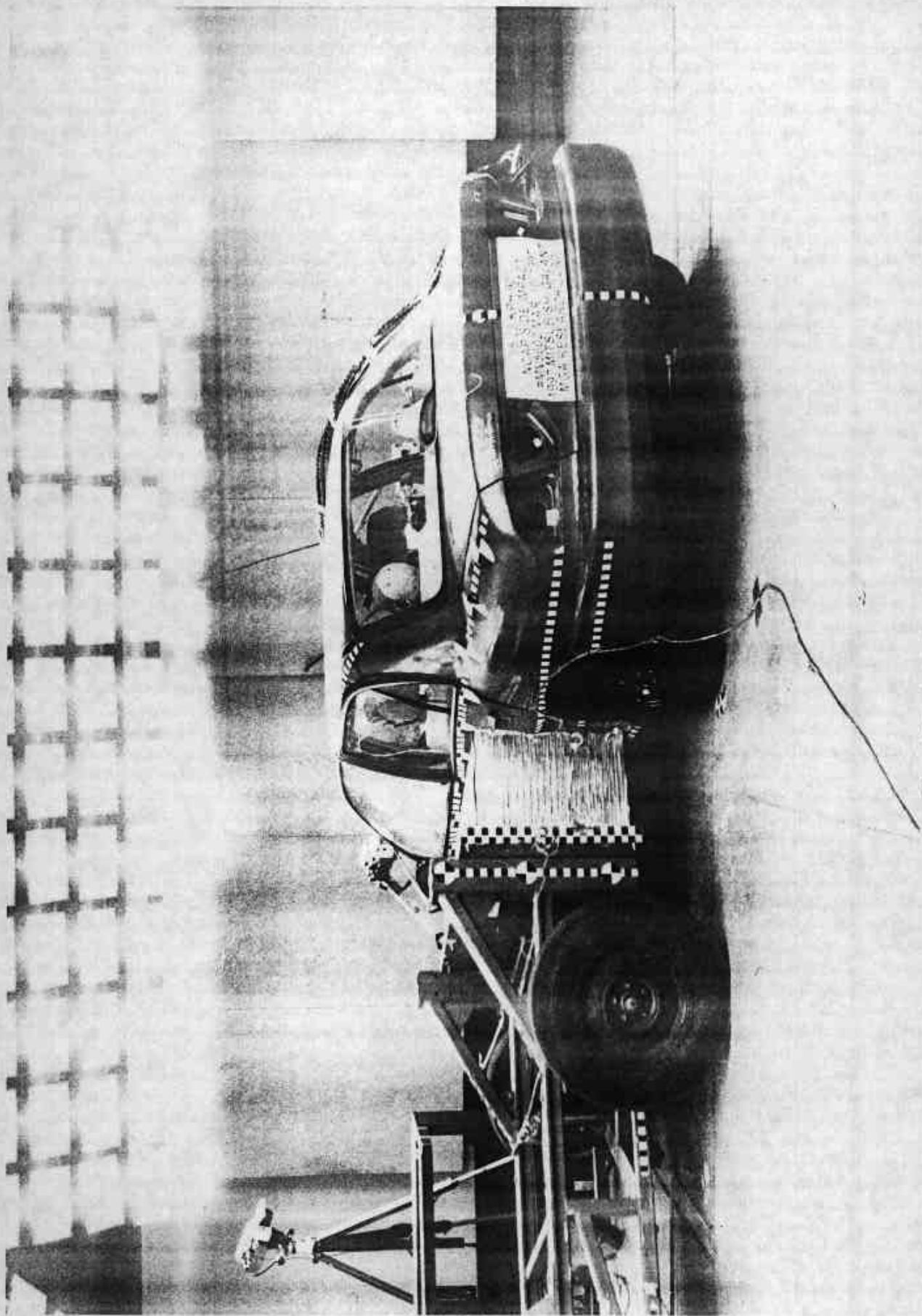


Photo No. A-43 - Impact

A-43

MADE IN U.S.A. DATE AUG. 1996
MFD BY MITSUBISHI MOTOR MFG. OF AMERICA, INC.
GVWR 3925 LBS GAUR 2140 LBS GAUR 1785 LBS
1780 KG FR. 970 KG RR. 810 KG

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

4 A 3 A J 4 6 G 9 V E 0 J 4 9 6 7



MDH DBJ4J7

VEHICLE TYPE: PASSENGER CAR MU900223

TIRE INFLATION PRESSURE (COLD)	
STANDARD INFLATION PRESSURE FOR ALL LOAD	
1ST SEAT	2 PASS.
2ND SEAT	3 PASS.
TOTAL	5 PASS.
LUGGAGE	35kg (77 LBS)
TOTAL WEIGHT	375kg (827 LBS)
TIRE SIZE	P185/70R14 87H
FRONT	P195/60R15 87H
220kPa (32psi)	200kPa (29psi)
TIRE SIZE	T125/70D15
TEMPORARY USE ONLY	
420kPa	(60psi)
PART NO. MR103896	

Photo No. A-45 - Tire Placard

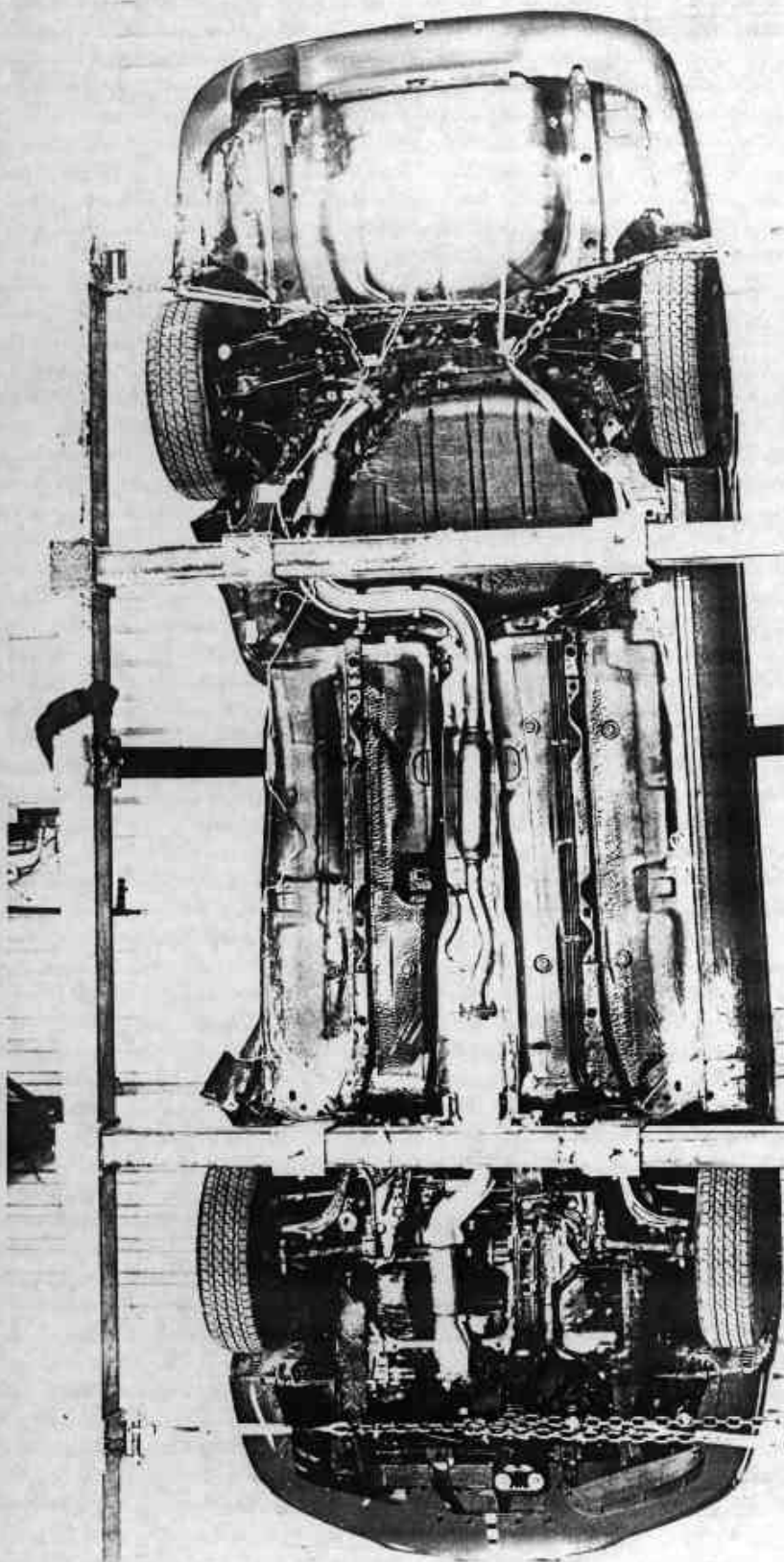
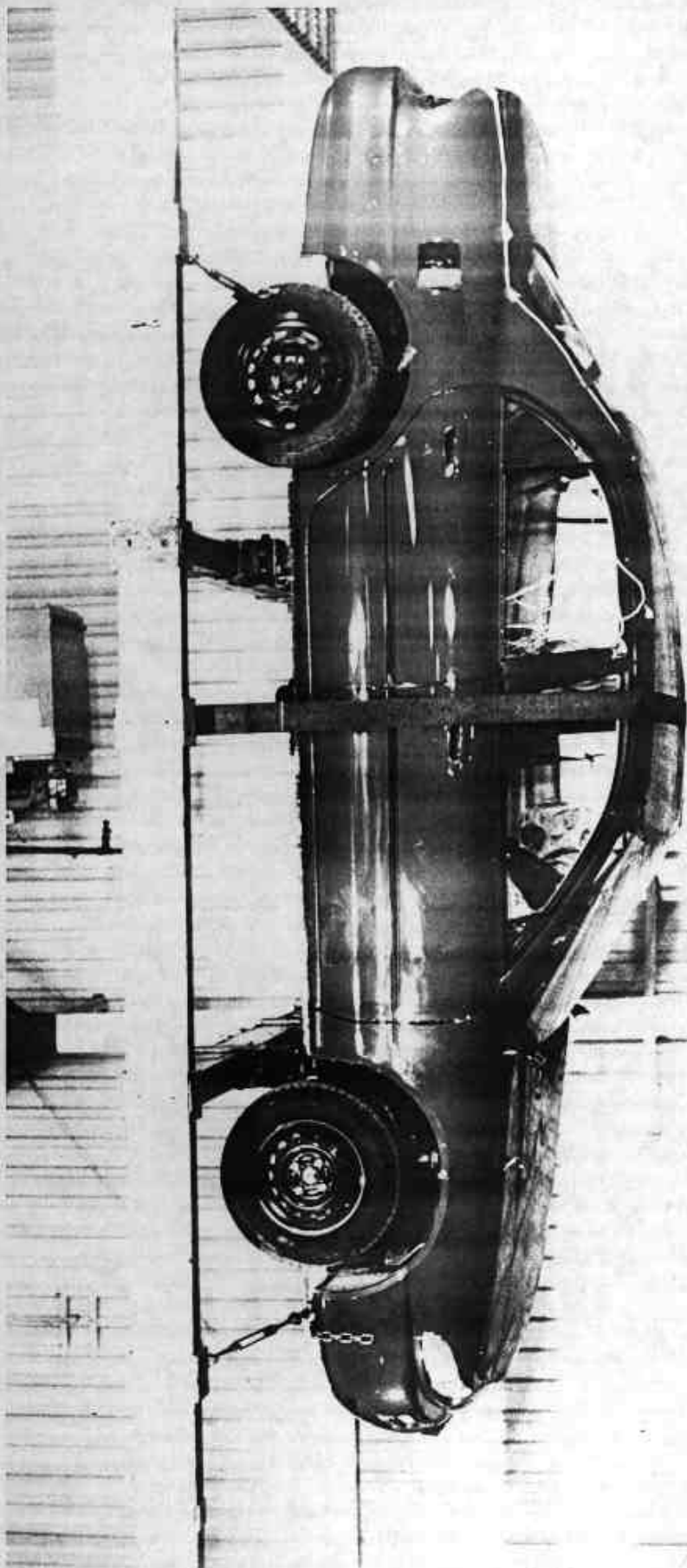


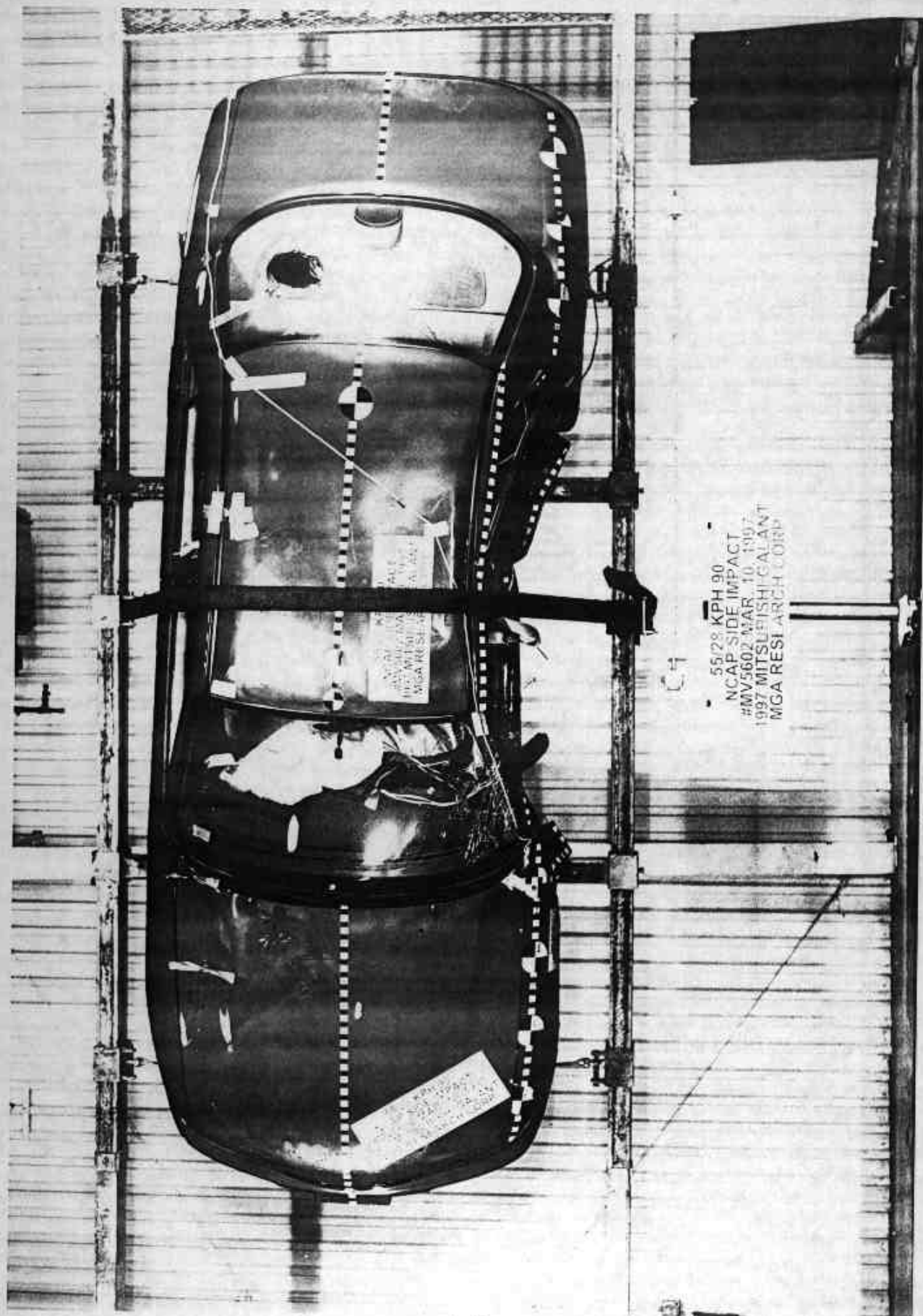
Photo No. A-46 - Rollover 90°

A-46



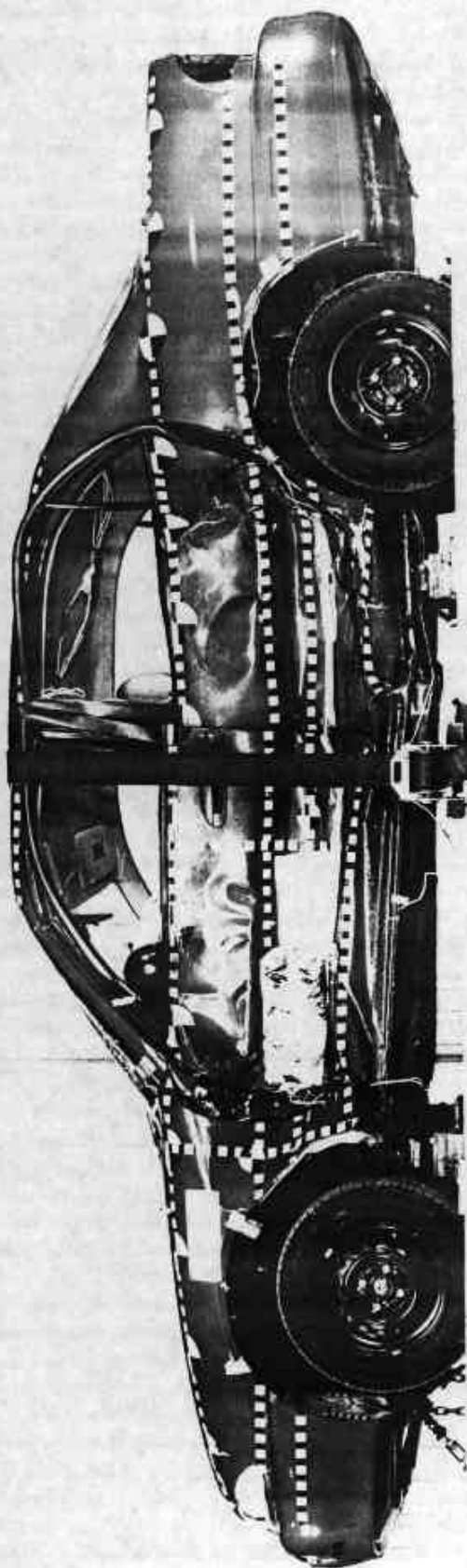
A-47

Photo No. A-47 - Rollover 180°



55/28 KPH 90
NCAP SIDE IMPACT
#MV5602 MAR. 10, 1997
1997 MITSUBISHI GALANT
MGA RESEARCH CORP

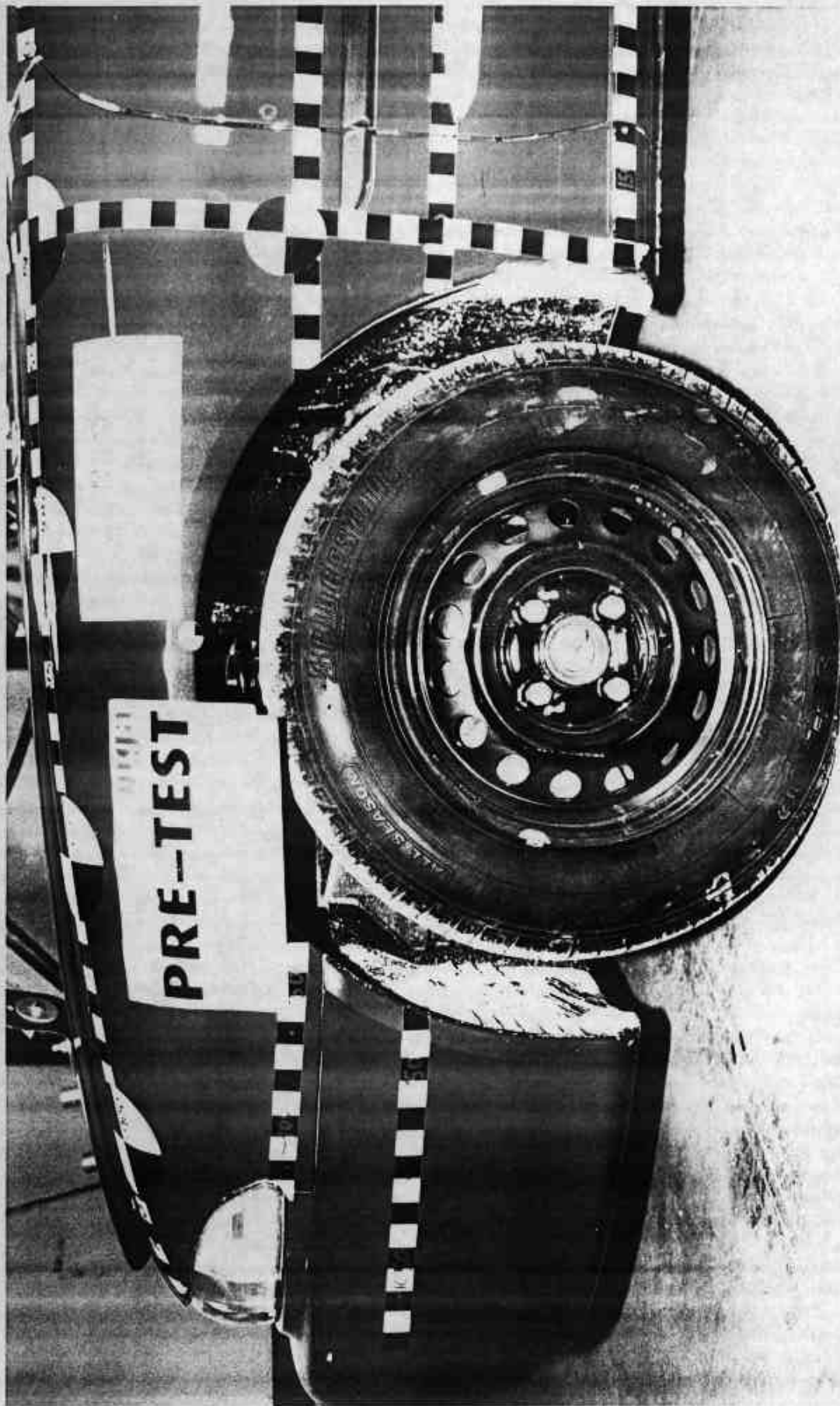
Photo No. A-48 - Rollover 270°



W 10 KPH 90
NCAP SIDE IMPACT
DIVISION, MASH 101
EAST MICHIGAN
ANN ARBOR MI 48106

A-49

Photo No. A-49 - Rollover 360°



A-50

Photo No. A-50 - Left Front Attitude Point

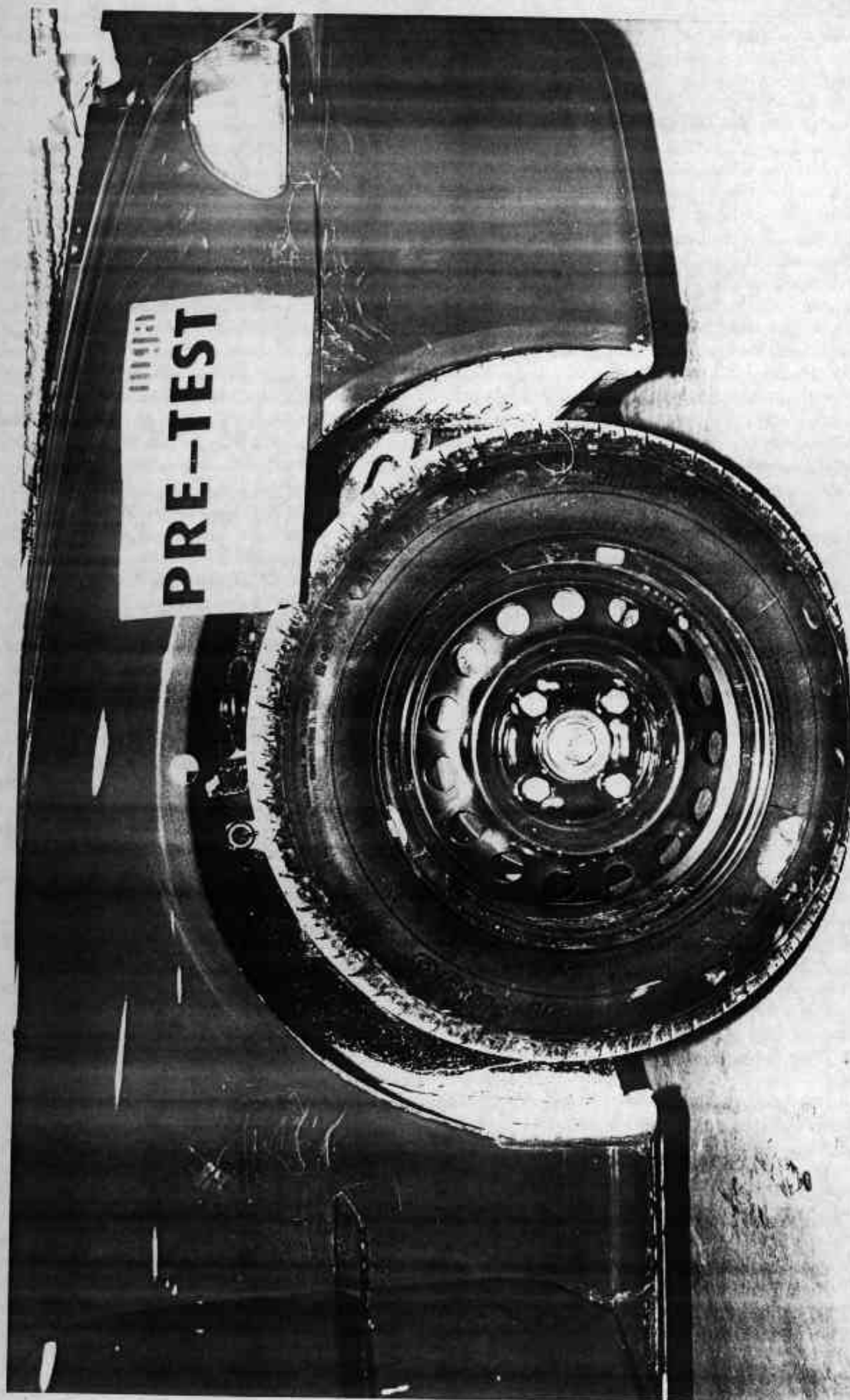


Photo No. A-51 - Right Front Attitude Point

A-51

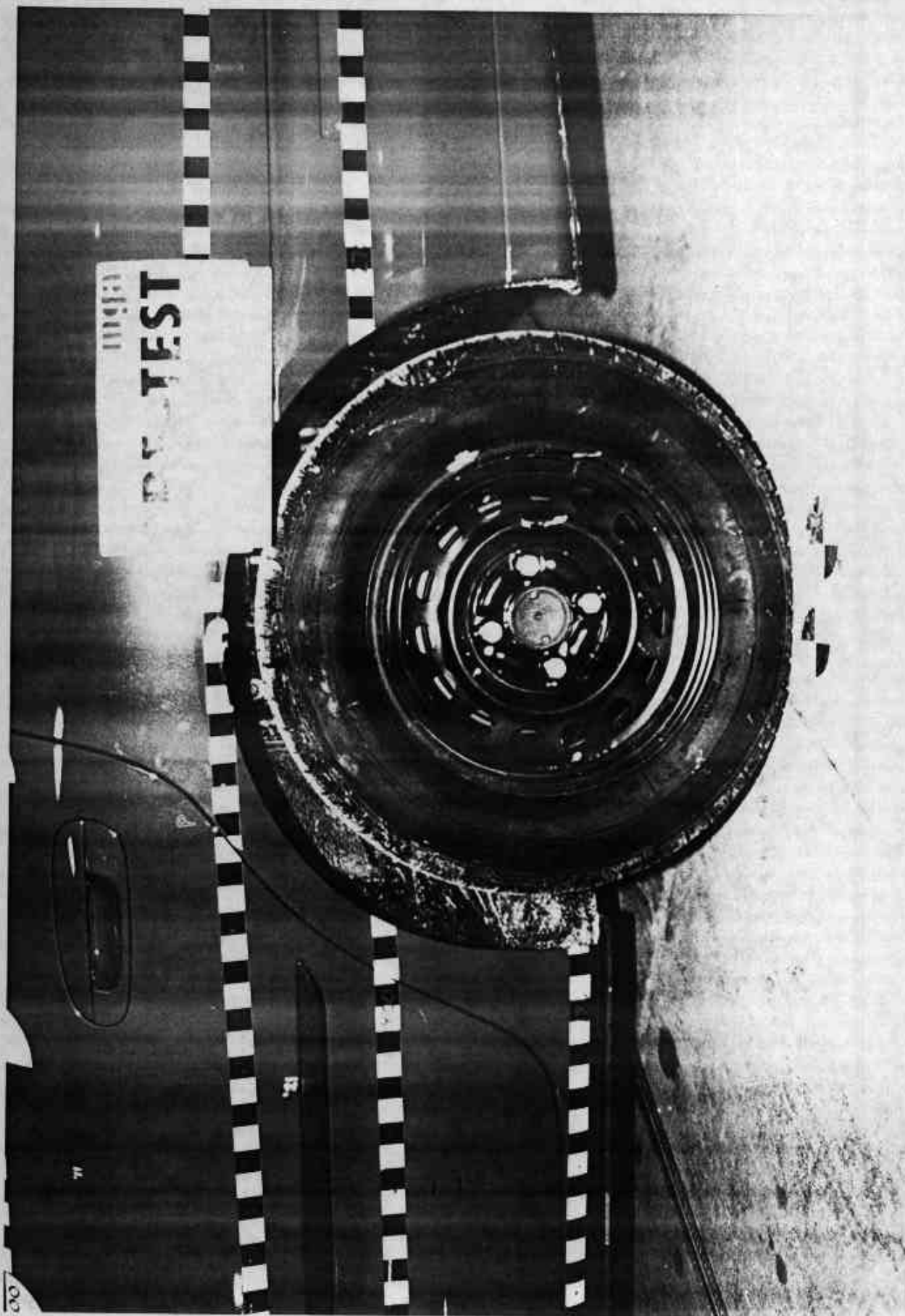


Photo No. A-52 - Left Rear Attitude Point

A-52



Photo No. A-53 - Right Rear Attitude Point

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* Data not valid after approximately 16 msec.

** No valid data collected

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TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

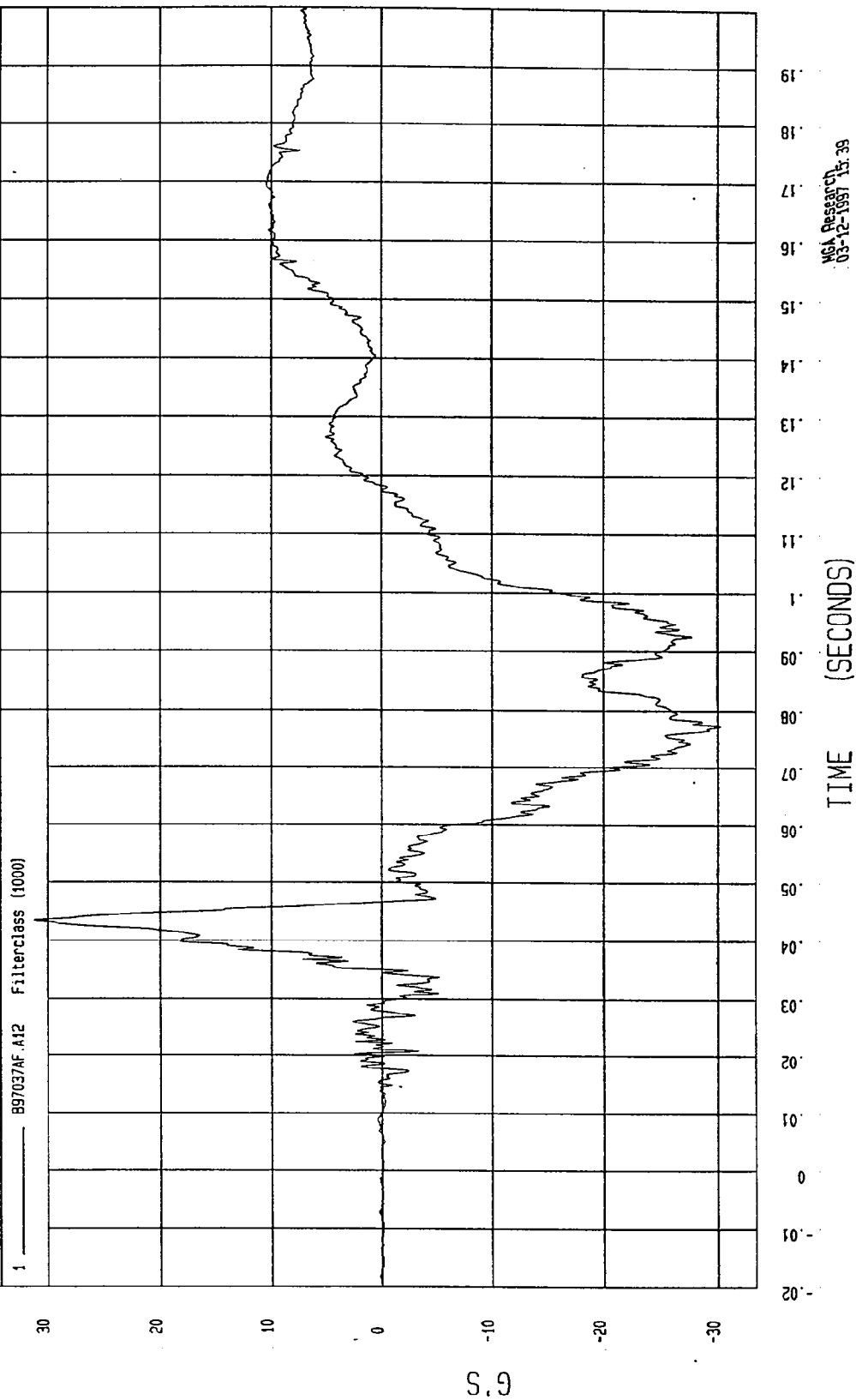
SPEED: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 31.18 G'S at 44 msec

Minimum = -30.27 G'S at 77 msec

DRIVER HEAD X ACCELERATION



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

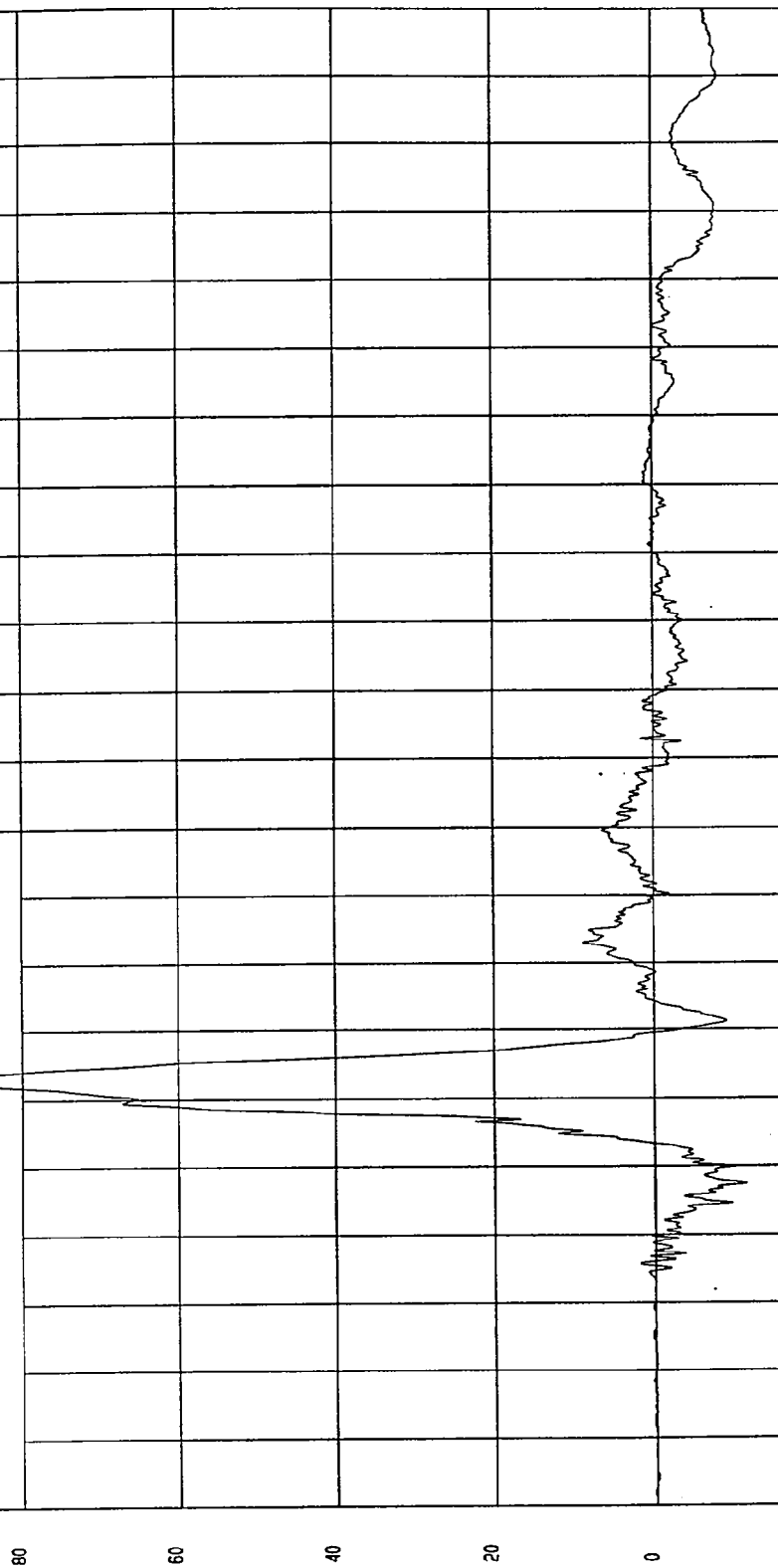
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 90.69 G'S at 43 msec

Minimum = -11.17 G'S at 28 msec

DRIVER HEAD Y ACCELERATION

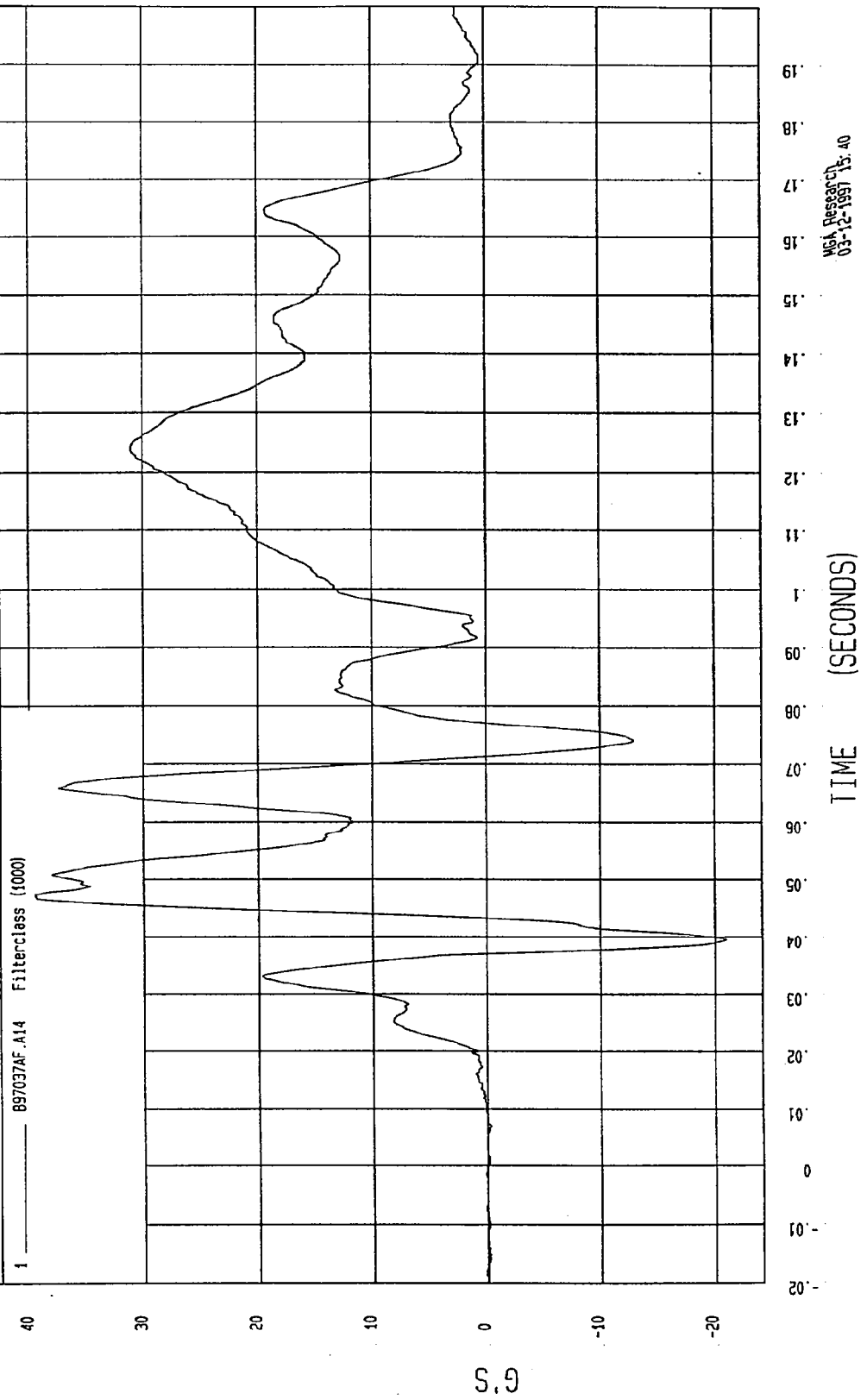
1 B97037AF.A13 Filterclass (1000)



NCA Research
03-12-1997 15:40

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH
Minimum = -20.97 G'S at 40 msec Maximum = 39.53 G'S at 47 msec

DRIVER HEAD Z ACCELERATION



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 95.19 G's at 43 msec

Minimum = 1.24E-02 G's at 3 msec

DRIVER HEAD RESULTANT

1 ——— 897037AV.A12 Filterclass (1000)

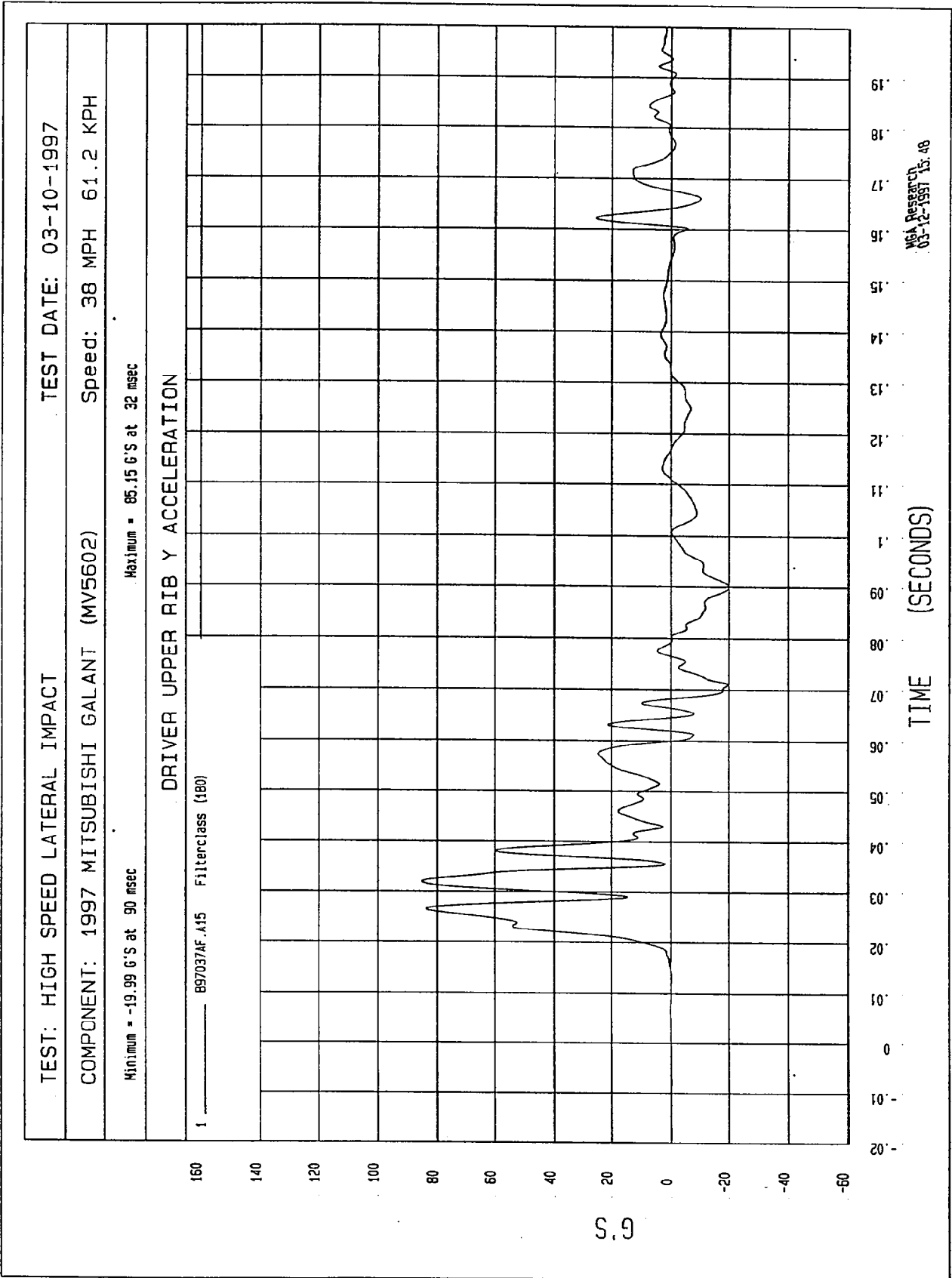
80
60
40
20
0

S.G

TIME (SECONDS)

0.02 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

W&A Research
03-12-1997 15:40



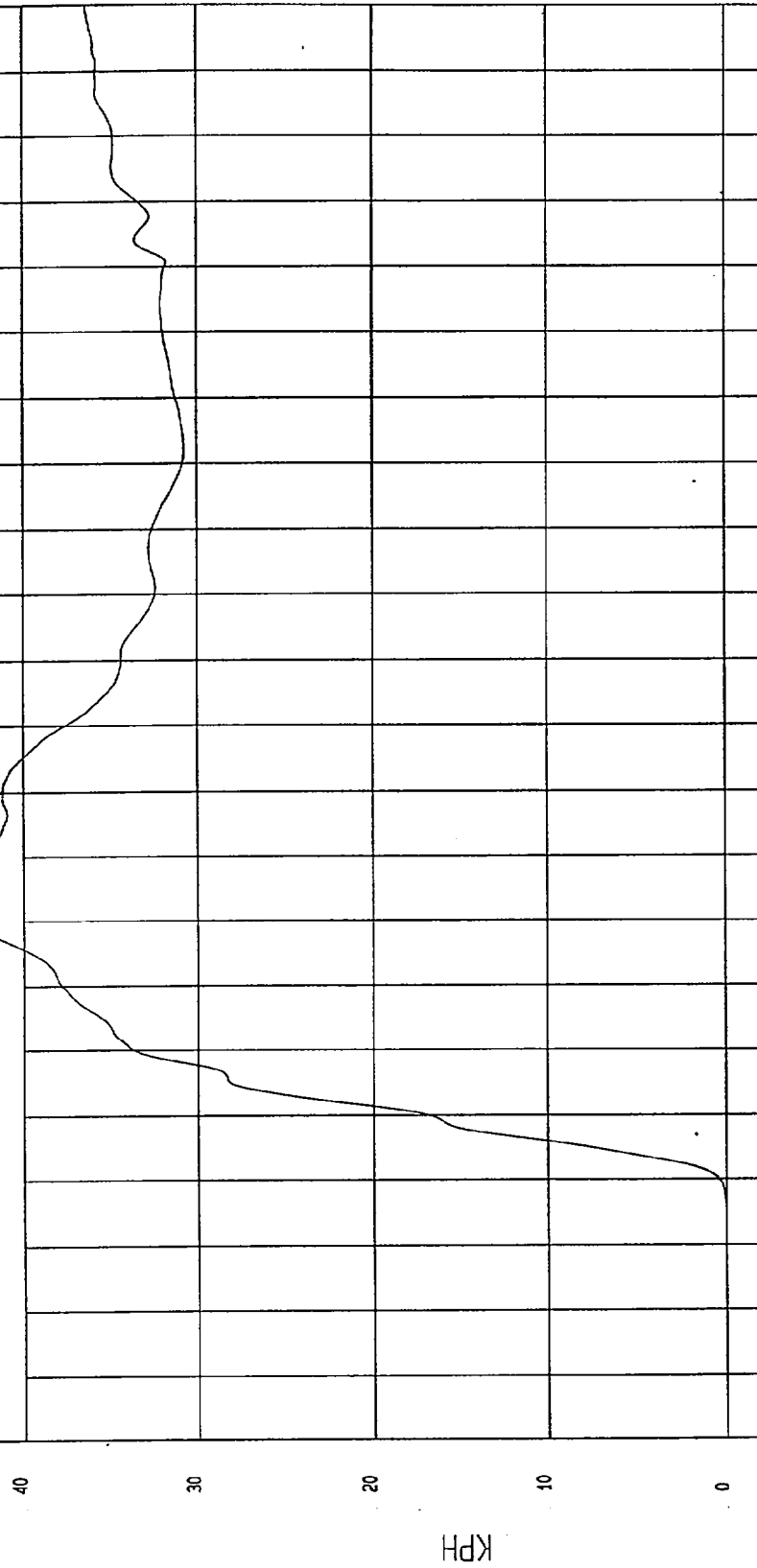
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -1.23E-02 KPH at 0 msec Maximum = 43.80 KPH at 68 msec

DRIVER UPPER RIB Y VELOCITY

1 ——— B97037A1.V15 Filterclass (180)



TIME Seconds

MSA Research
03-12-1997 15:41

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -32.85 G'S at 65 msec

Maximum = 86.77 G'S at 28 msec

DRIVER LOWER RIB Y ACCELERATION

1 _____ 897037AF.A16 Filterclass (180)

150
140
120
100
80
60
40
20
0
-20
-40
-60

G'S

0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02

TIME (SECONDS)

NSA Research
03-12-1997 15:48

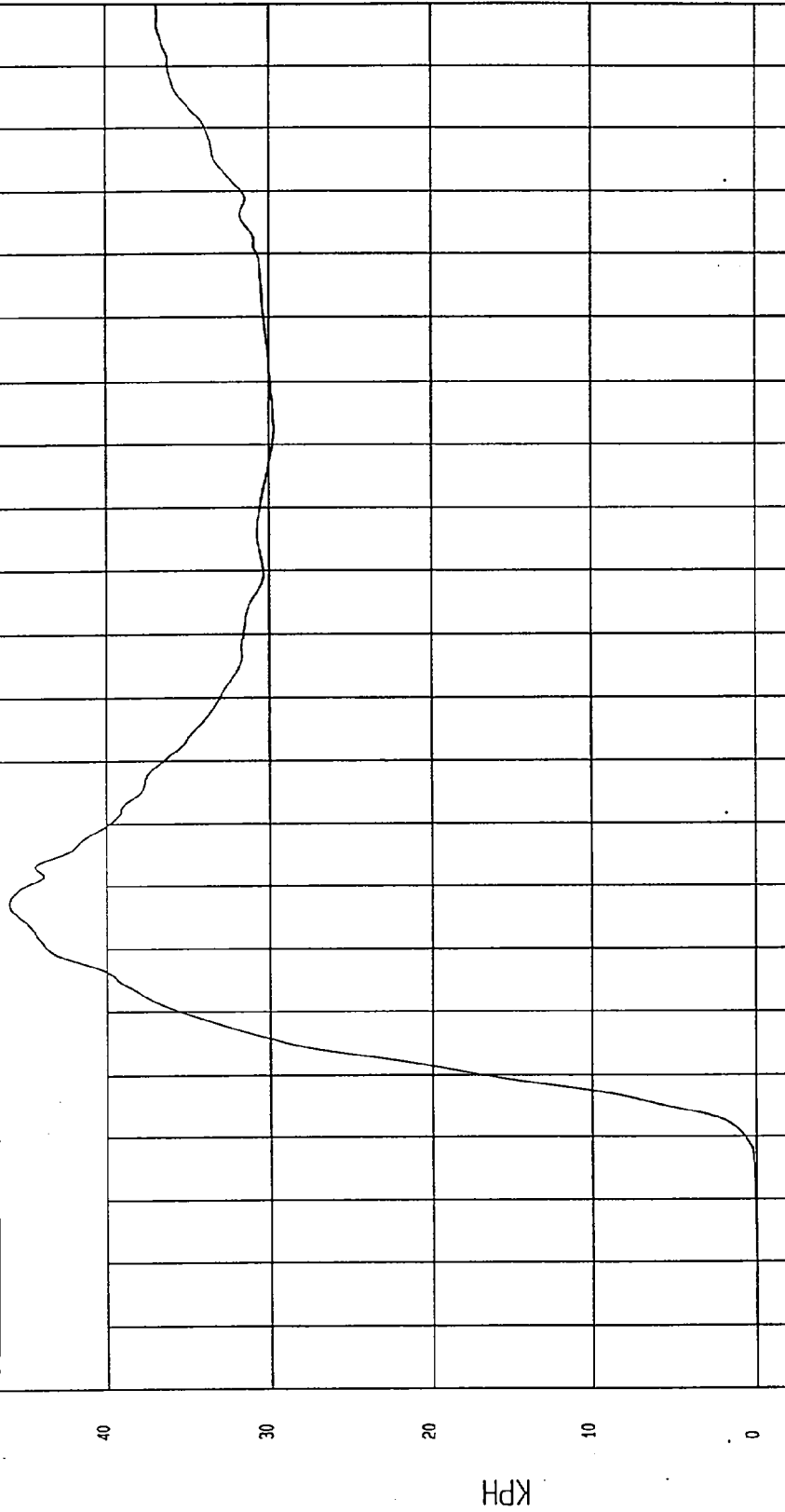
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -8.58E-03 KPH at -17 msec Maximum = 45.94 KPH at 57 msec

DRIVER LOWER RIB Y VELOCITY

1 ——— 097037A1.V16 Filterclass (180)



TIME Seconds
WCA Research
03-12-1997 15: 41

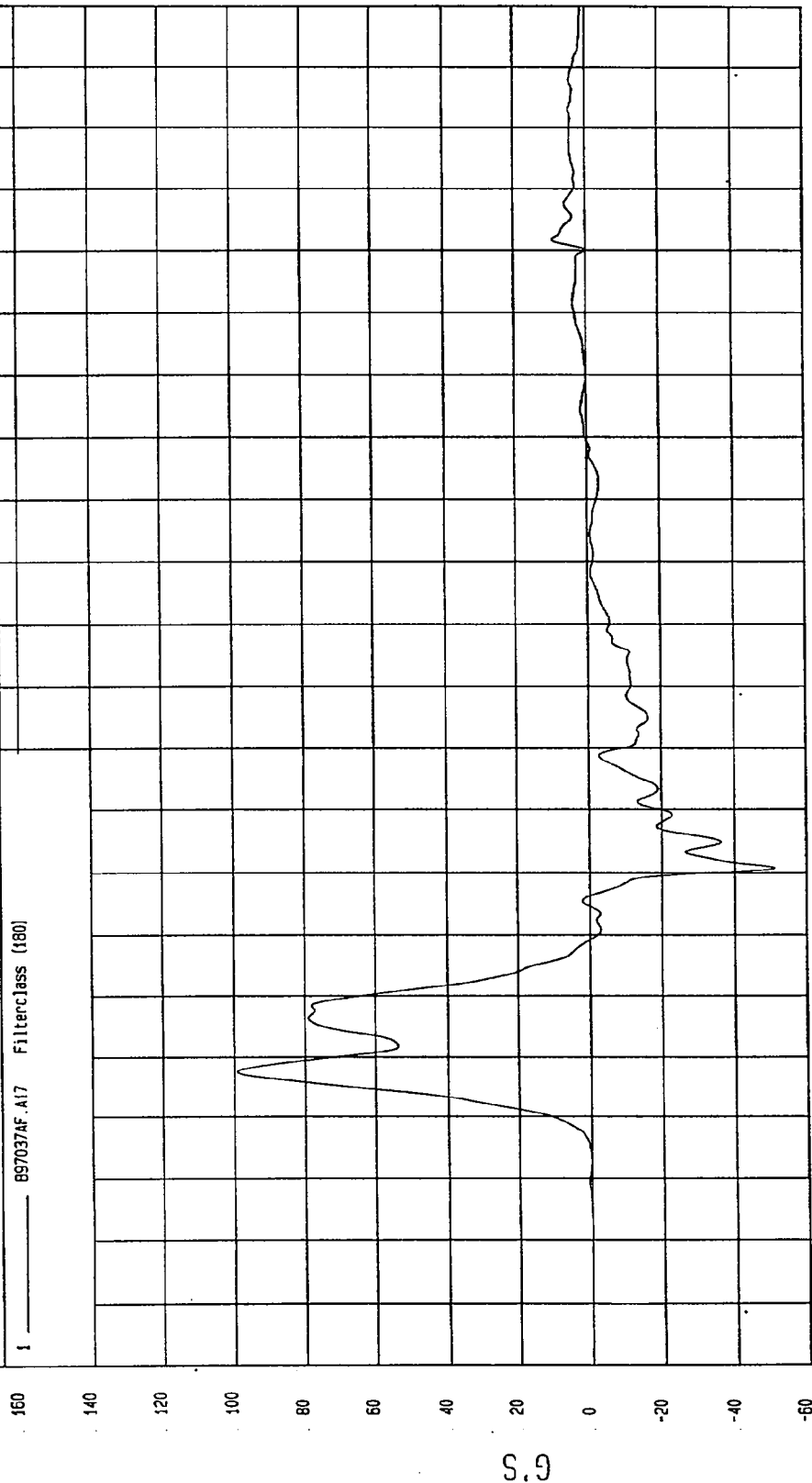
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -51.42 G'S at 61 msec Maximum = 99.08 G'S at 28 msec

DRIVER LOWER SPINE Y ACCELERATION

1 897037AF A17 Filterclass (180)



NSA Research
03-12-1997 15:49

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

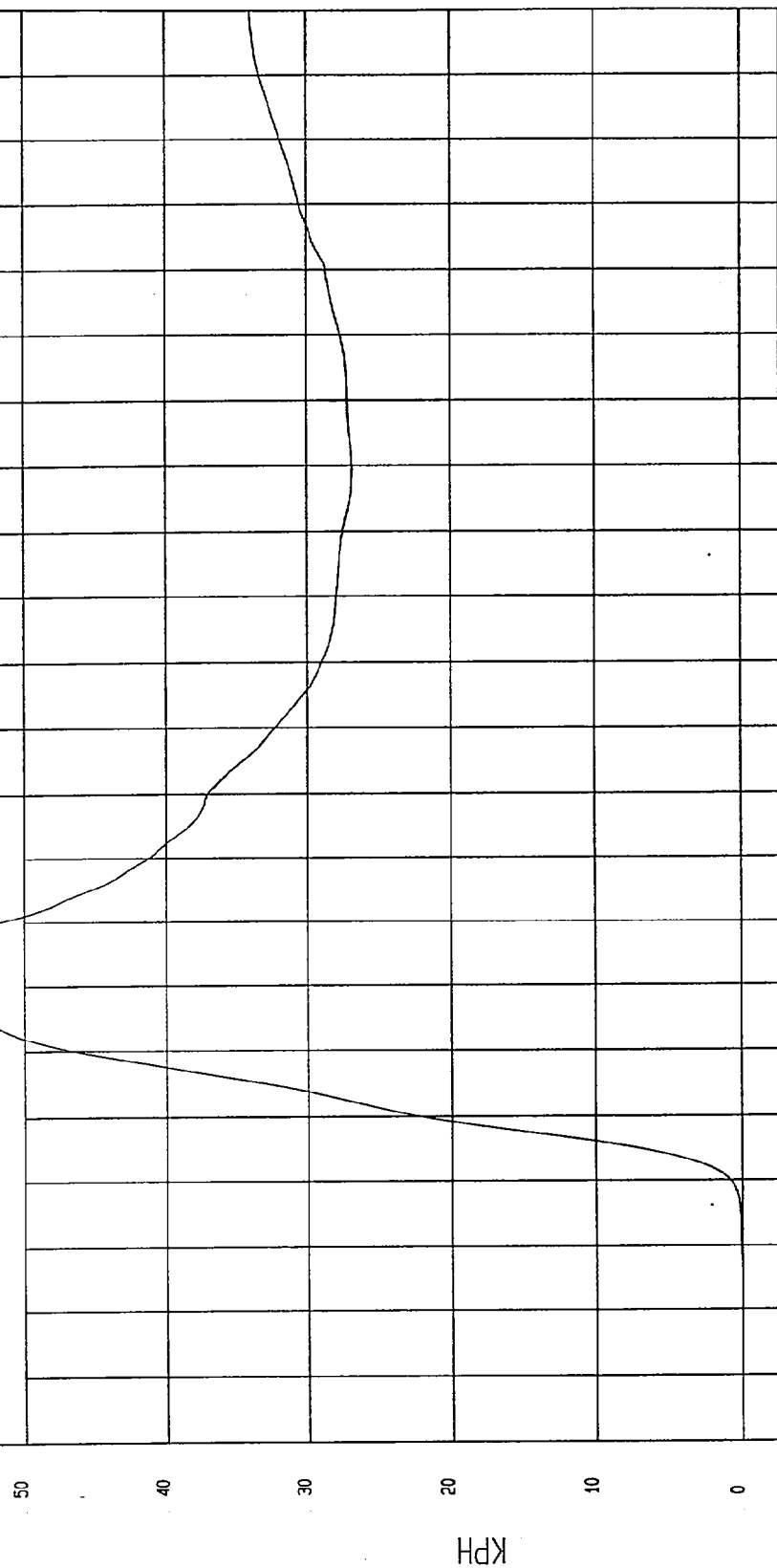
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -5.02E-03 KPH at -9 msec

Maximum = 53.57 KPH at 49 msec

DRIVER LOWER SPINE Y VELOCITY

1 B97037AI.V17 Filterclass (180)



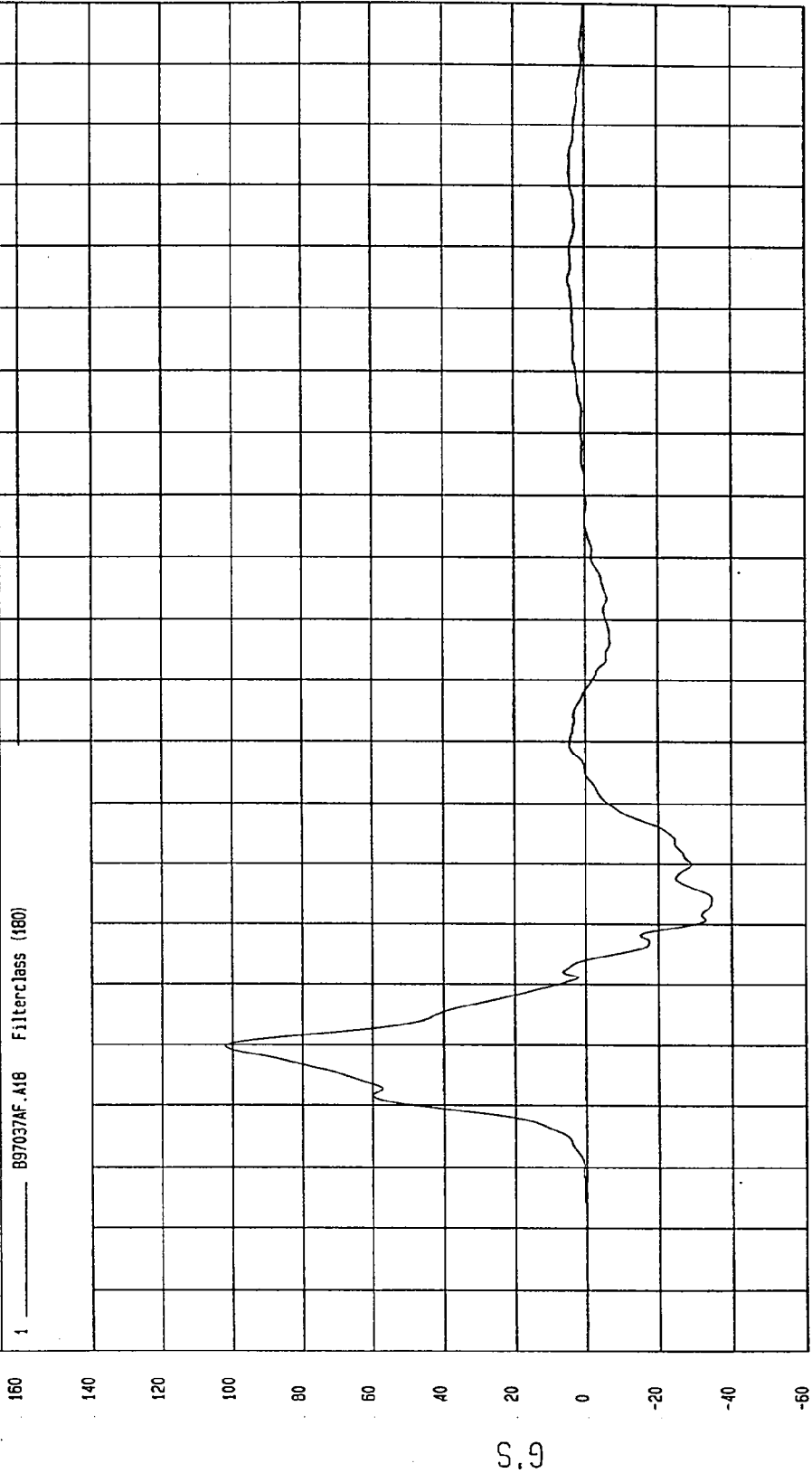
TIME Seconds

WGL Research
03-12-1997 15:41

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH
Minimum = -34.79 G'S at 54 msec Maximum = 102.20 G'S at 30 msec

DRIVER PELVIS Y ACCELERATION

1 _____ B97037AF.A18 Filterclass (180)



WGA Research
03-12-1997 15:49

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

SPEED: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 46.62 KPH at 44 msec

Minimum = -9.81E-03 KPH at -9 msec

DRIVER PELVIS Y VELOCITY

1 ——— B97037A1.V18 FilterClass (180)

KPH

TIME Seconds

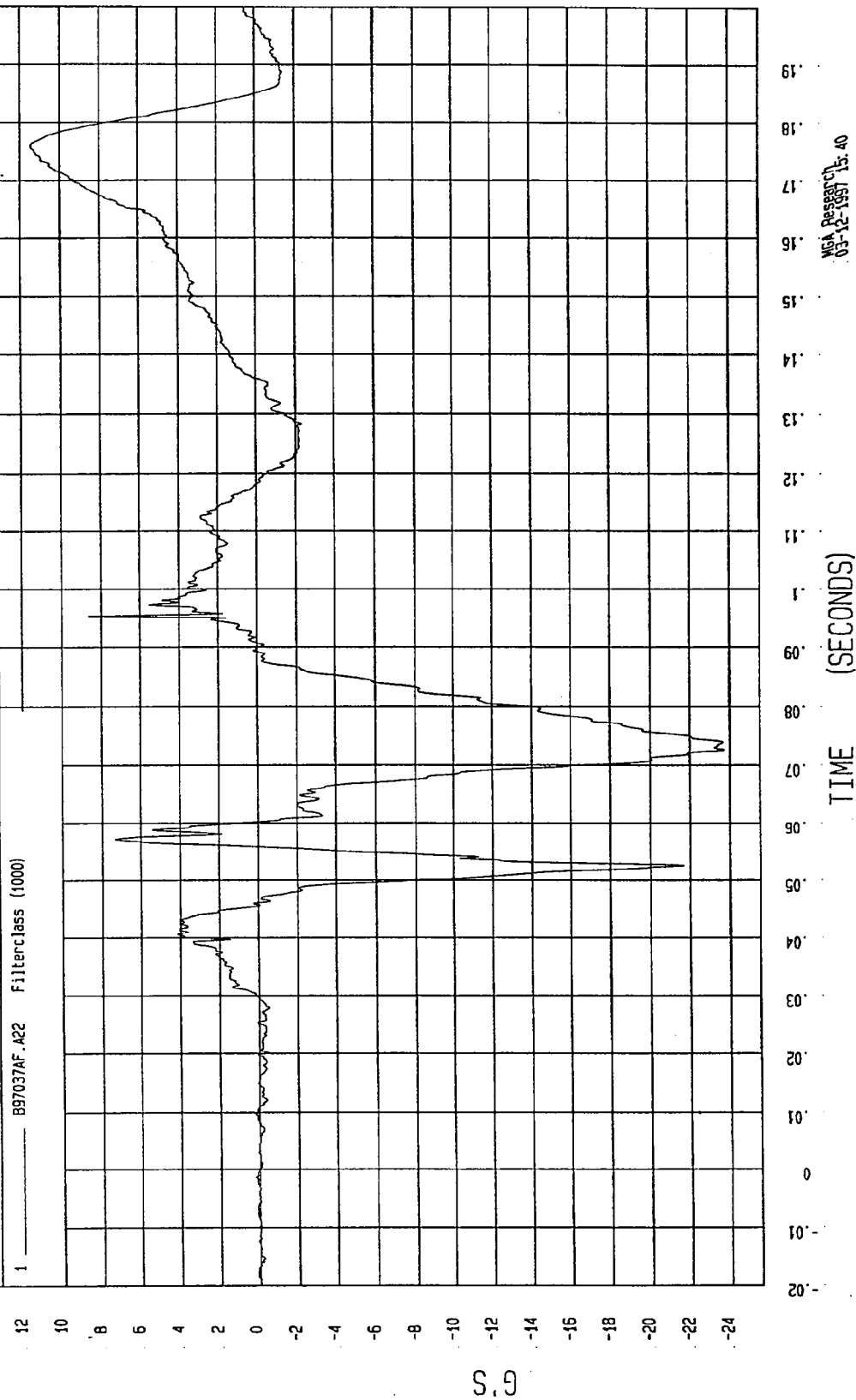
MSA Research
03-12-1997 15:41

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -23.74 G'S at 73 msec Maximum = 11.44 G'S at 176 msec

REAR PASSENGER HEAD X ACCELERATION

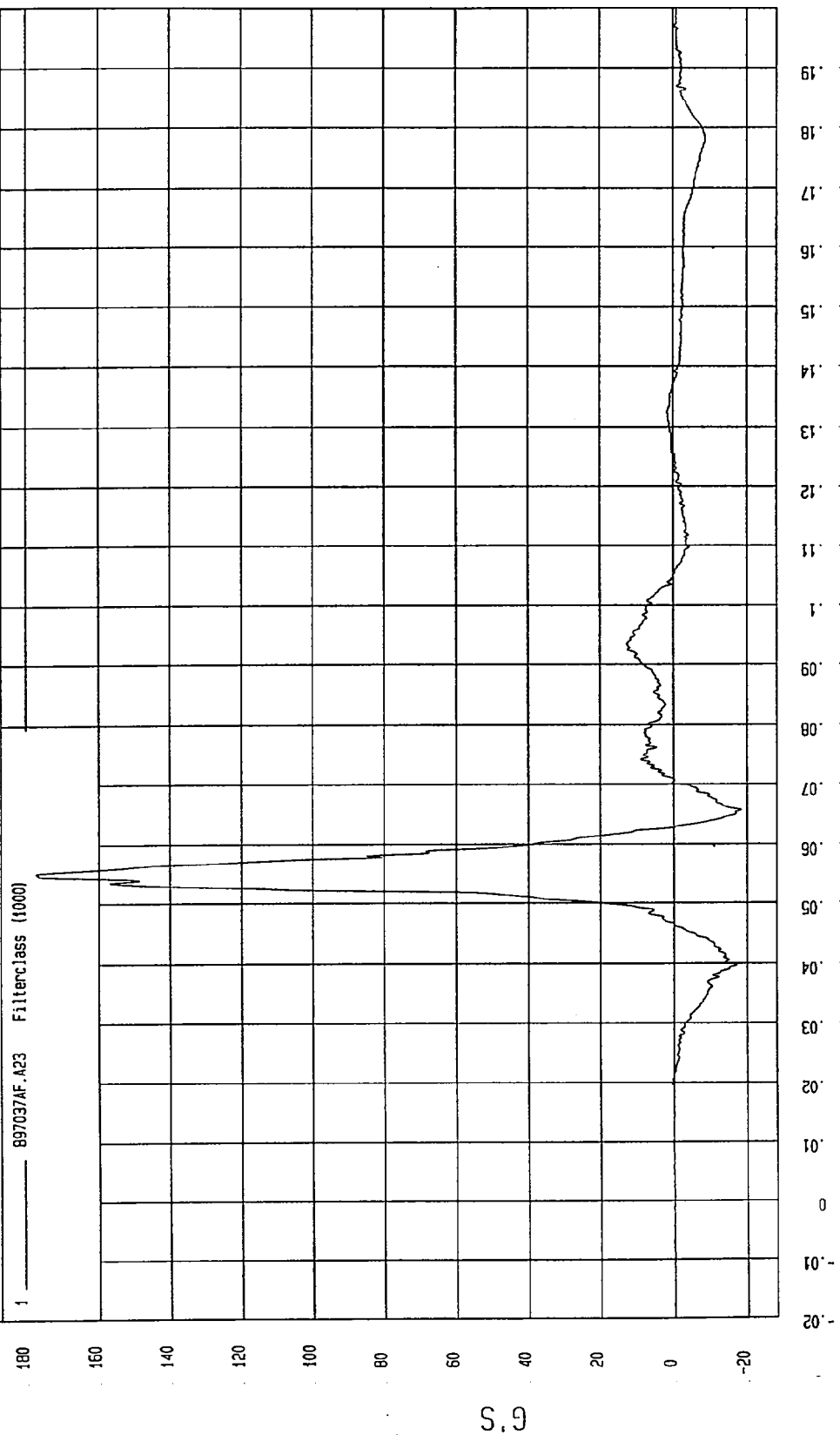


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -18.50 G'S at 66 msec Maximum = 177.25 G'S at 55 msec

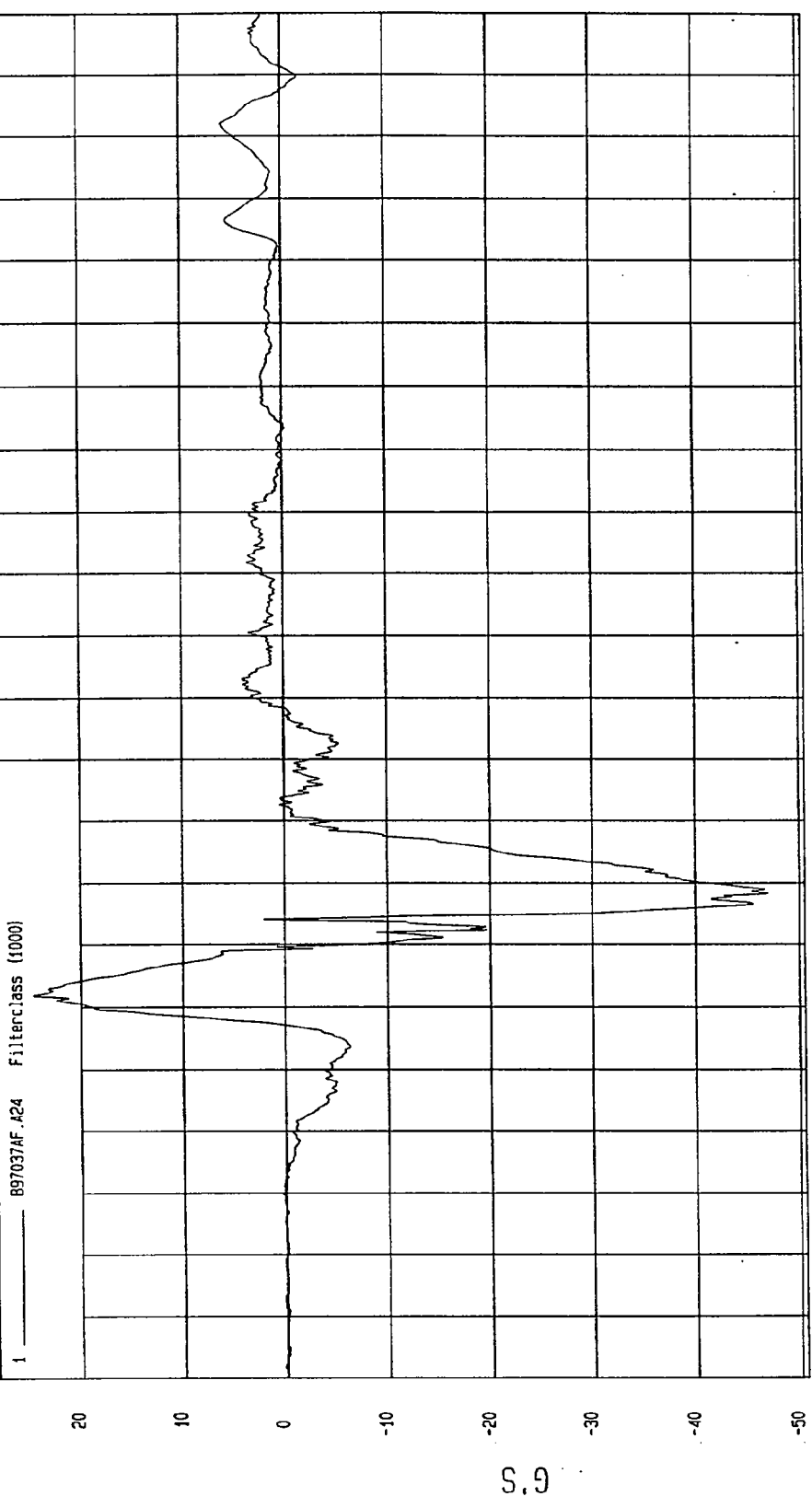
REAR PASSENGER HEAD Y ACCELERATION



WCA Research
03-12-1997 15:40

TEST: HIGH SPEED LATERAL IMPACT	TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)	Speed: 38 MPH 61.2 KPH
Minimum = -46.98 G'S at 58 msec	Maximum = 24.45 G'S at 42 msec

REAR PASSENGER HEAD Z ACCELERATION



TIME (SECONDS)

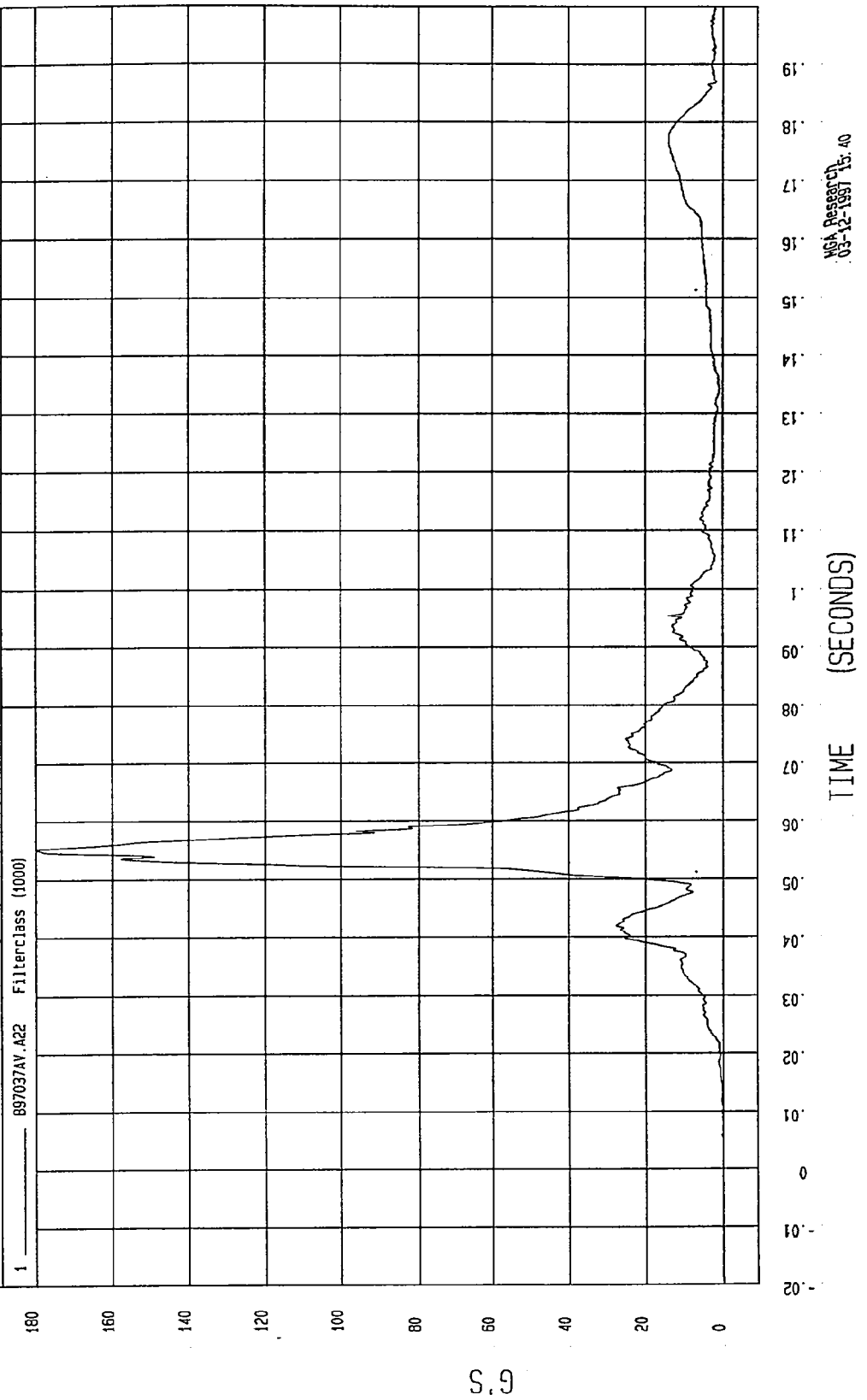
0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02

NGA Research
03-12-1997 15.40

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = 9.98E-03 G's at -11 msec Maximum = 180.07 G's at 55 msec

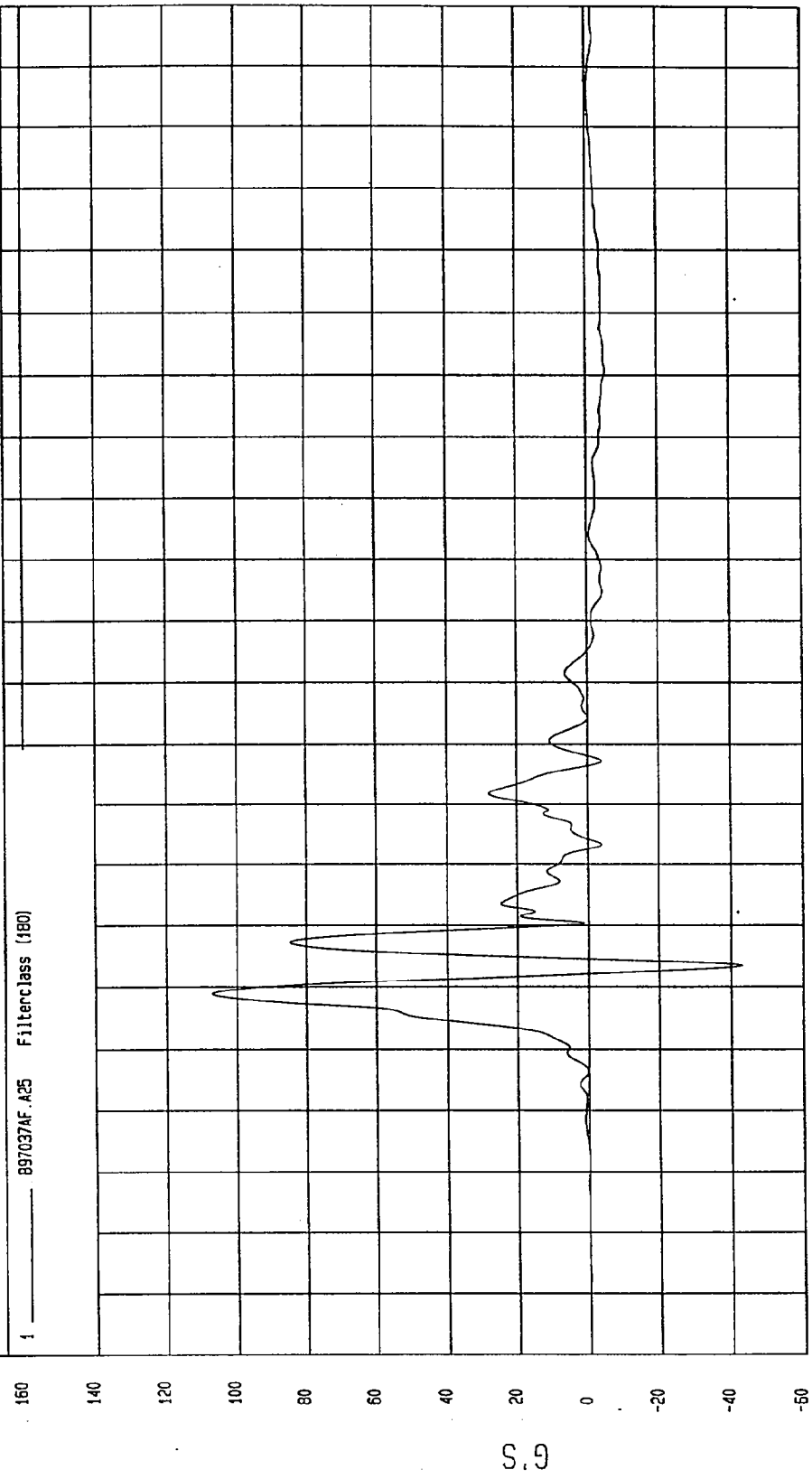
REAR PASSENGER HEAD RESULTANT



TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH
Minimum = -43.10 G'S at 44 msec Maximum = 107.14 G'S at 39 msec

REAR PASSENGER UPPER RIB Y ACCELERATION

1 _____ 897037AF.A25 Filterclass (160)



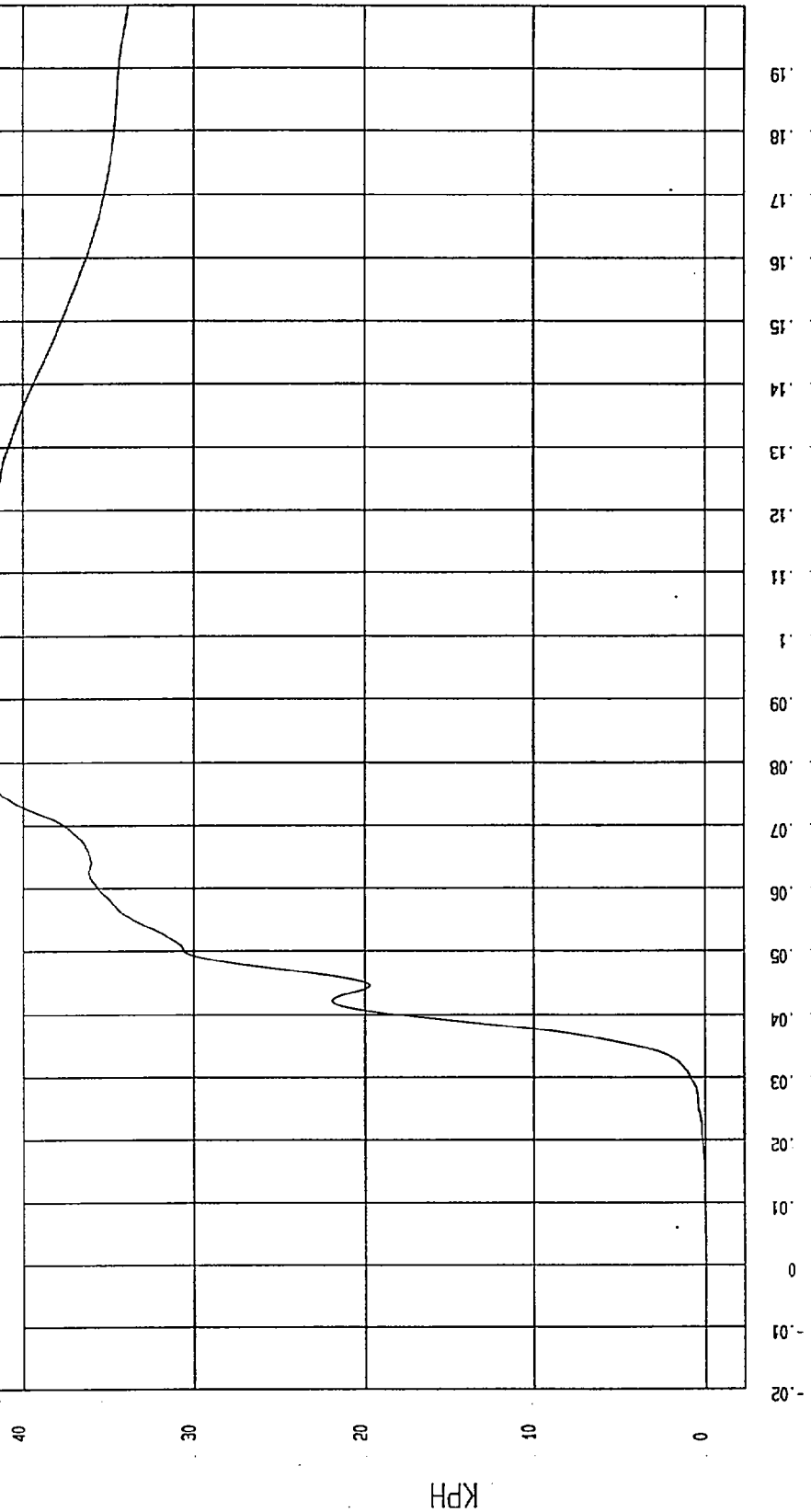
WCA Research
03-12-1997 15:49

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

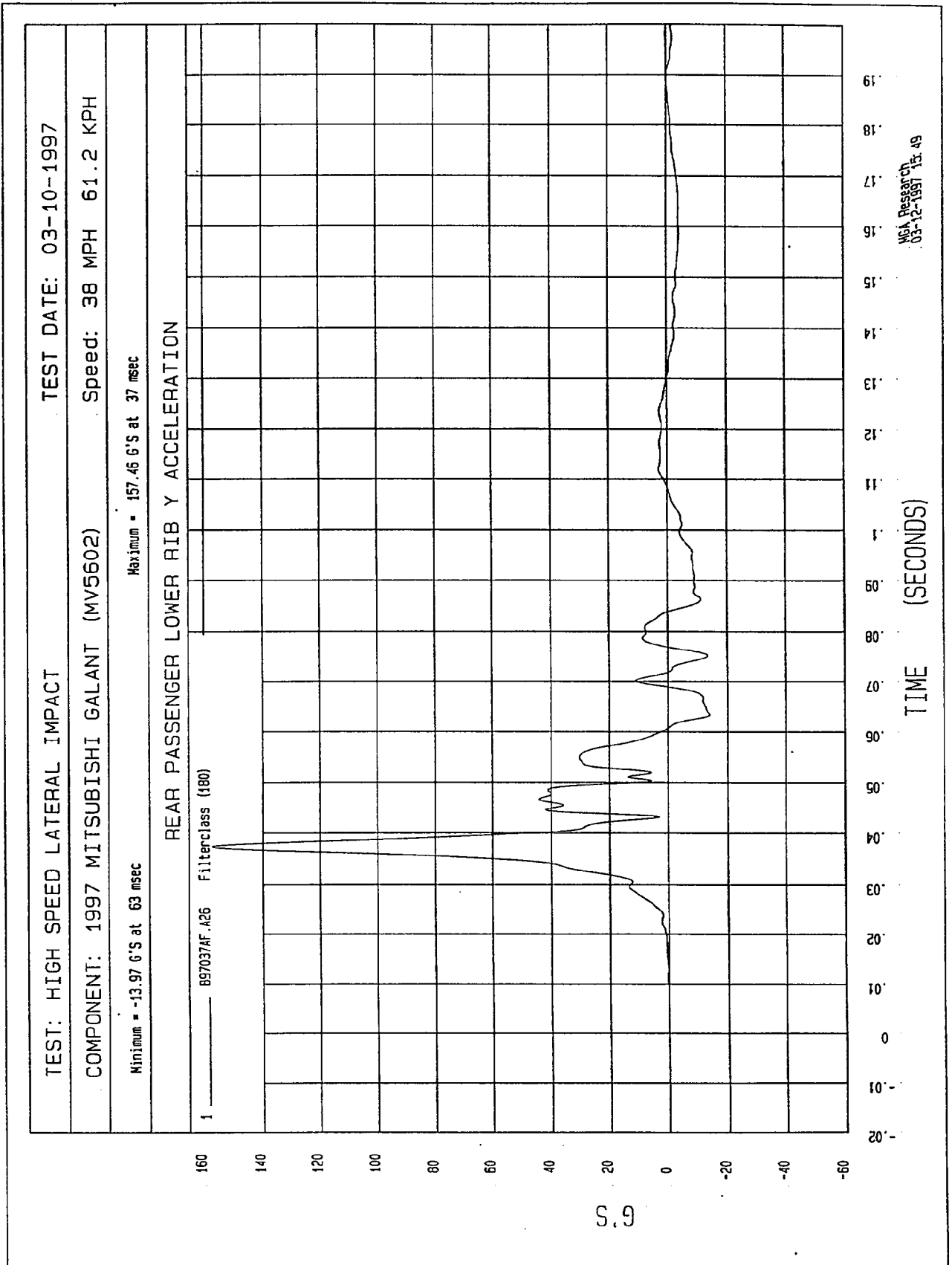
Minimum = -1.60E-02 KPH at 0 msec Maximum = 43.79 KPH at 95 msec

REAR PASSENGER UPPER RIB Y VELOCITY

1 897037A1.V25 Filterclass (180)



NCA Research
03-12-1997 15:41



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

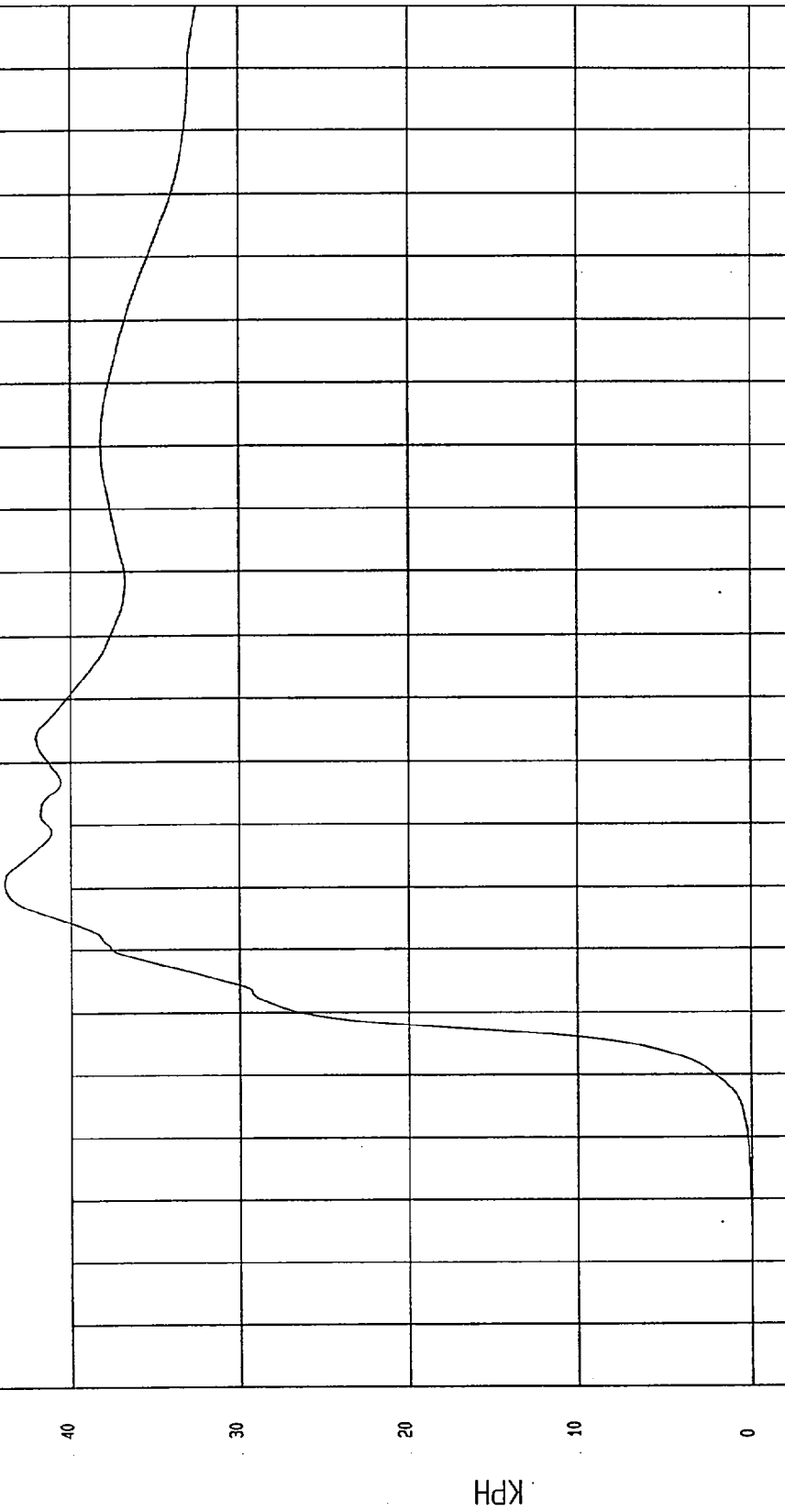
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -4.26E-03 KPH at -17 msec

Maximum = 43.80 KPH at 61 msec

REAR PASSENGER LOWER RIB Y VELOCITY

1 B97037A1.V26 Filterclass (180)



MGA Research
03-12-1997 15:41

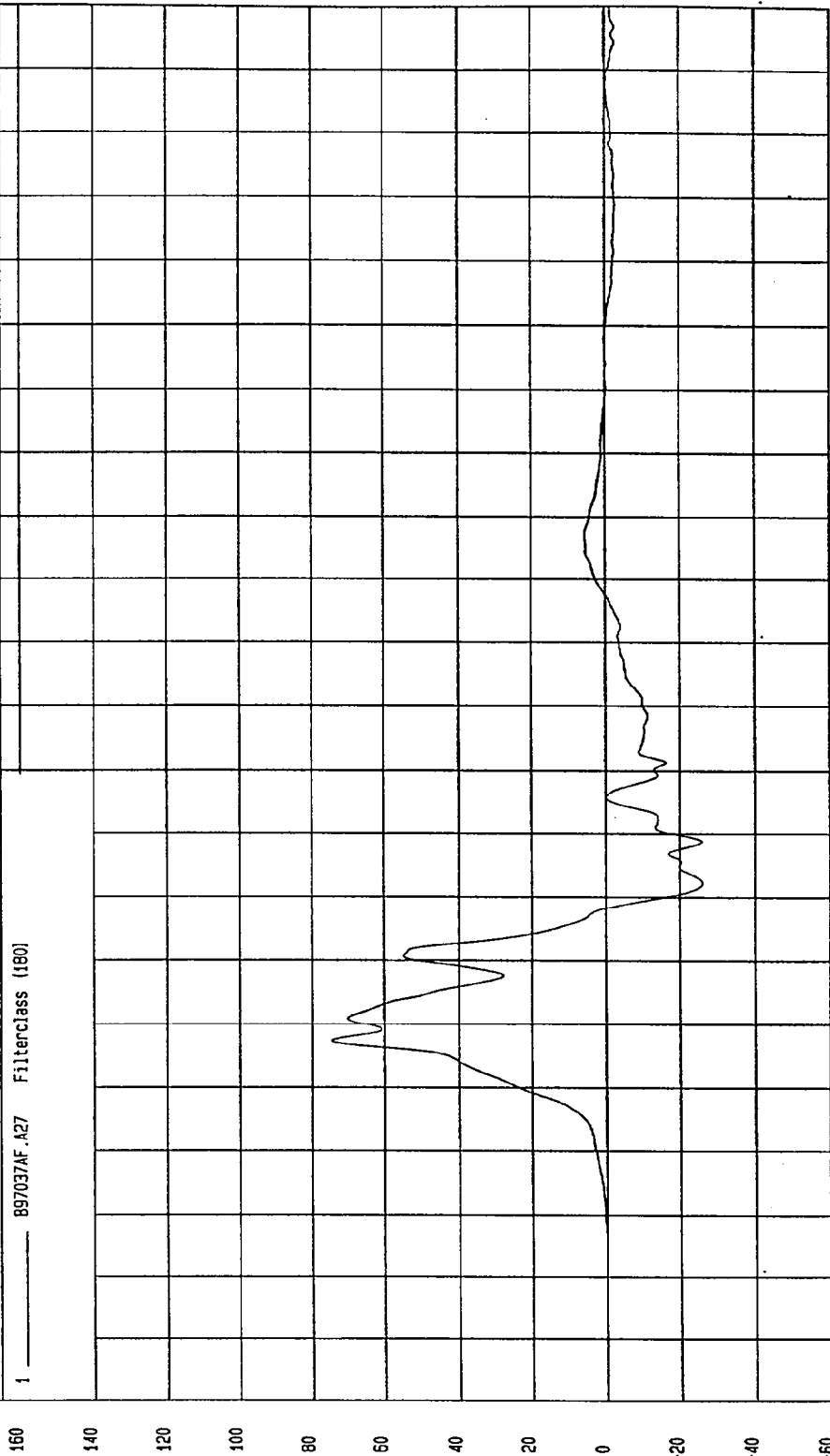
TIME Seconds

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -26.09 G'S at 62 msec Maximum = 74.61 G'S at 37 msec

REAR PASSENGER LOWER SPINE Y ACCELERATION



MGA Research
03-12-1997 15:49

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

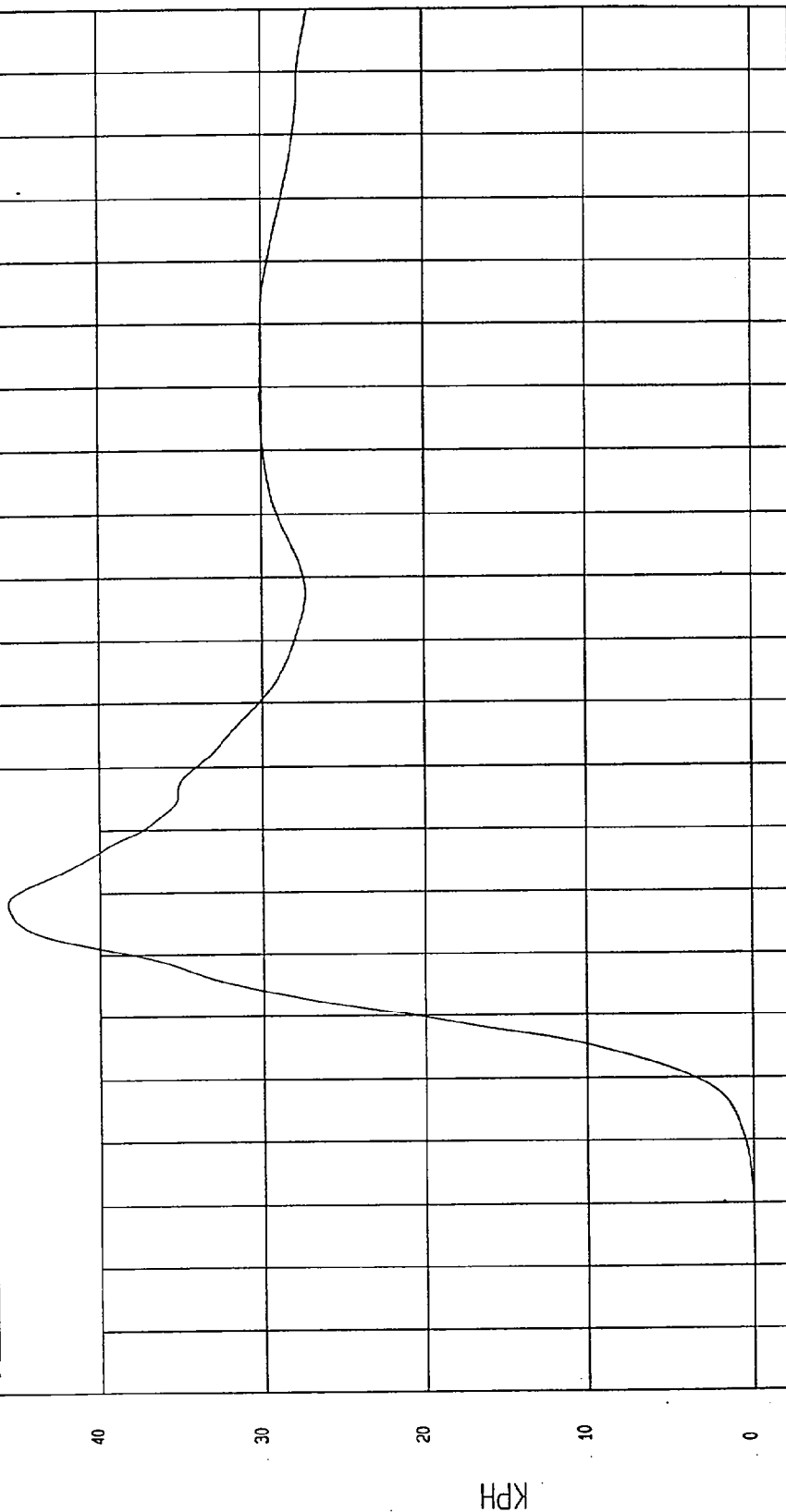
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 45.52 KPH at 58 msec

Minimum = -3.58E-03 KPH at -8 msec

REAR PASSENGER LOWER SPINE Y VELOCITY

1 B97037A1.V27 Filterclass (180)



TIME Seconds

MCA Research
03-12-1997 15:41

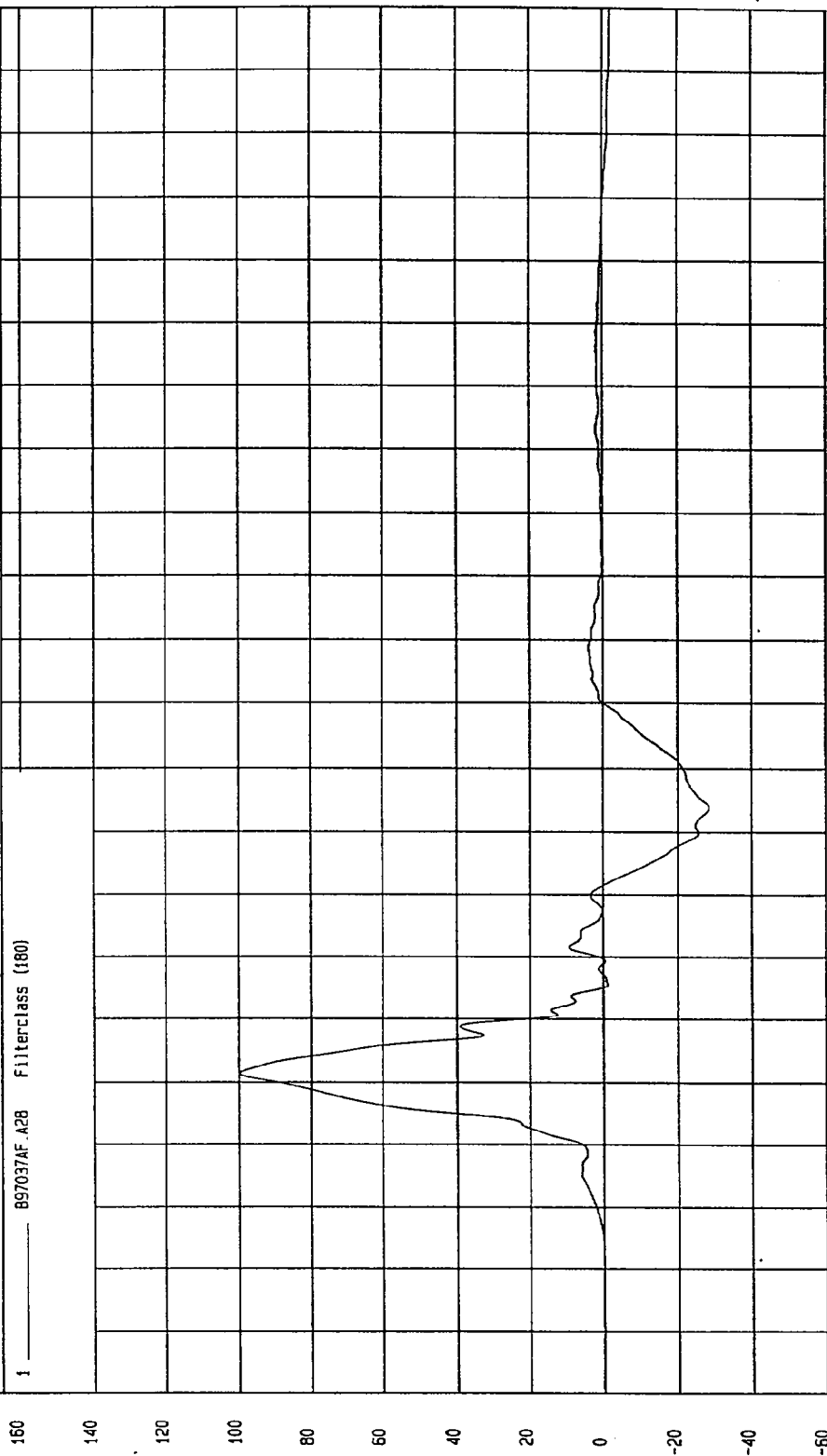
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -28.50 G'S at 74 msec Maximum = 99.83 G'S at 31 msec

REAR PASSENGER PELVIS Y ACCELERATION

1 _____ B97037AF.A28 Filterclass (180)



WCA Research
03-12-1997 15:49

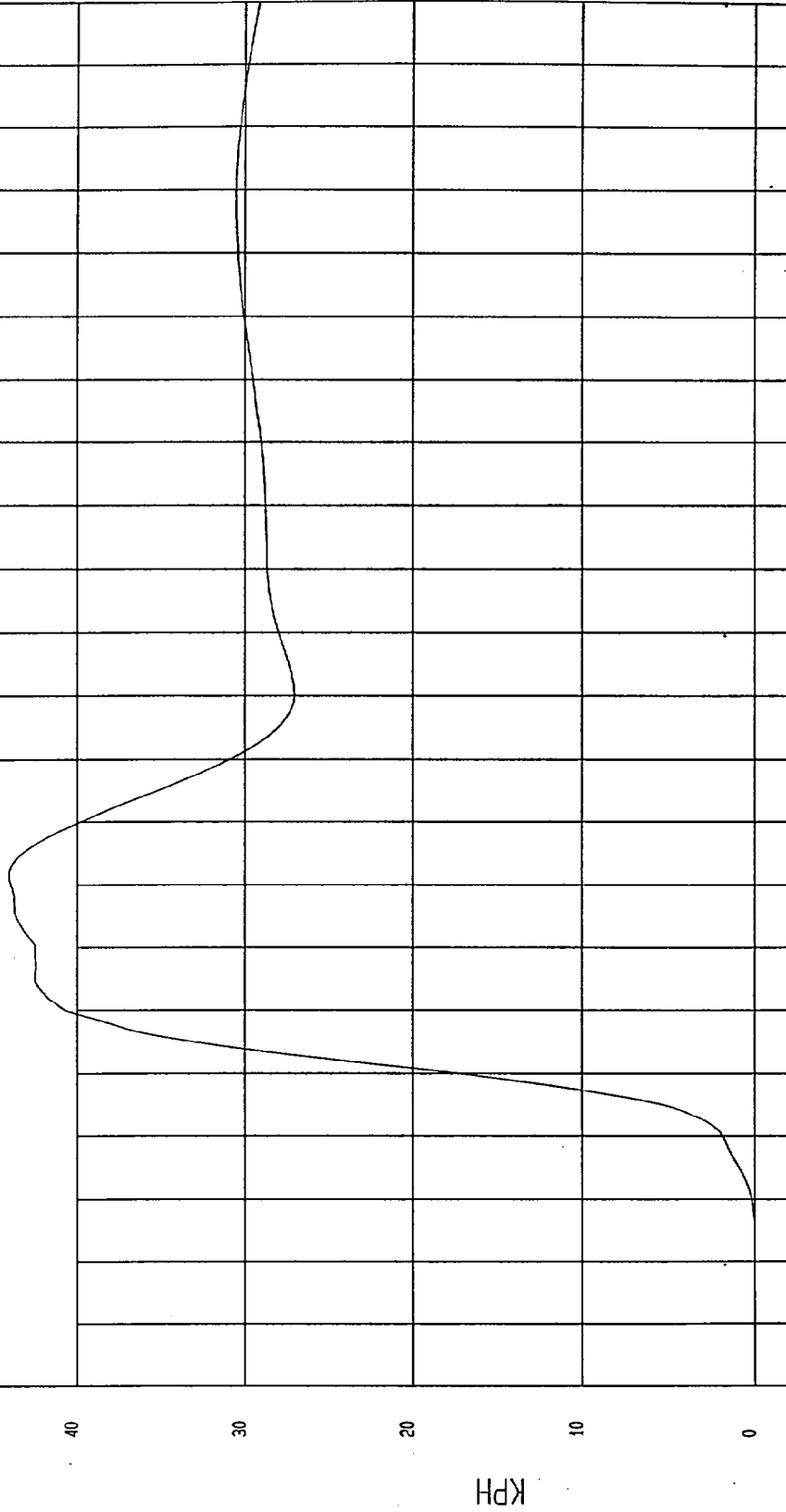
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = 0 KPH at -20 msec
Maximum = 43.95 KPH at 62 msec

REAR PASSENGER PELVIS Y VELOCITY

1 897037A1.V28 Filterclass (480)



MCA Research
03-12-1997 15:41

TIME Seconds

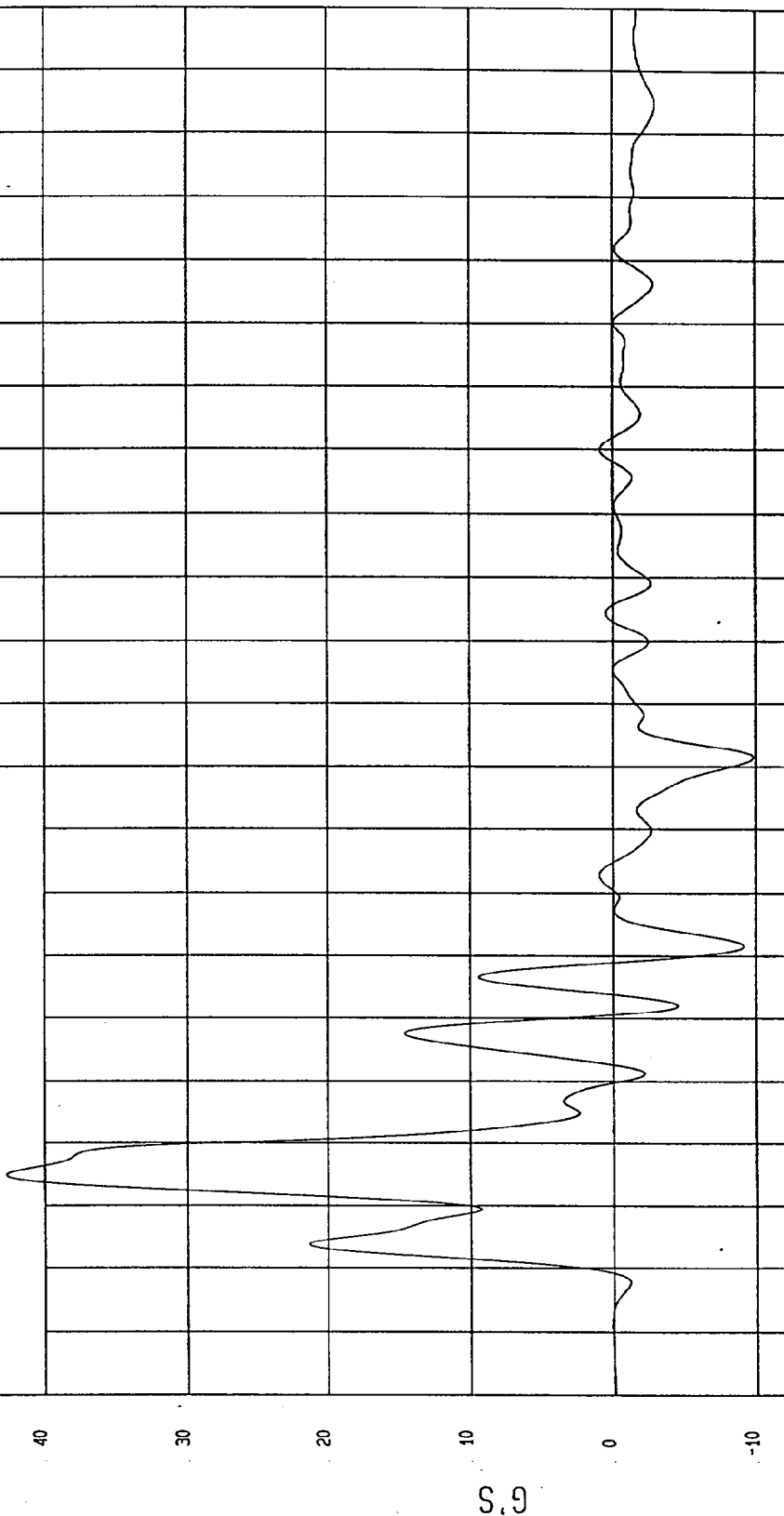
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -9.87 G'S at .82 msec Maximum = 42.64 G'S at .15 msec

LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION

1 _____ B97037AF.A38 Filterclass (60)



TIME (SECONDS)

0.19
0.18
0.17
0.16
0.15
0.14
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0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02

NCA Research
03-12-1997 16:04

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 22.14 KPH at 49 msec

Minimum = -.14 KPH at 1 msec

LEFT SIDE SILL AT FRONT SEAT Y VELOCITY

1 897037A1.V38 Filterclass (180)



WGA Research
03-12-1997 15:01

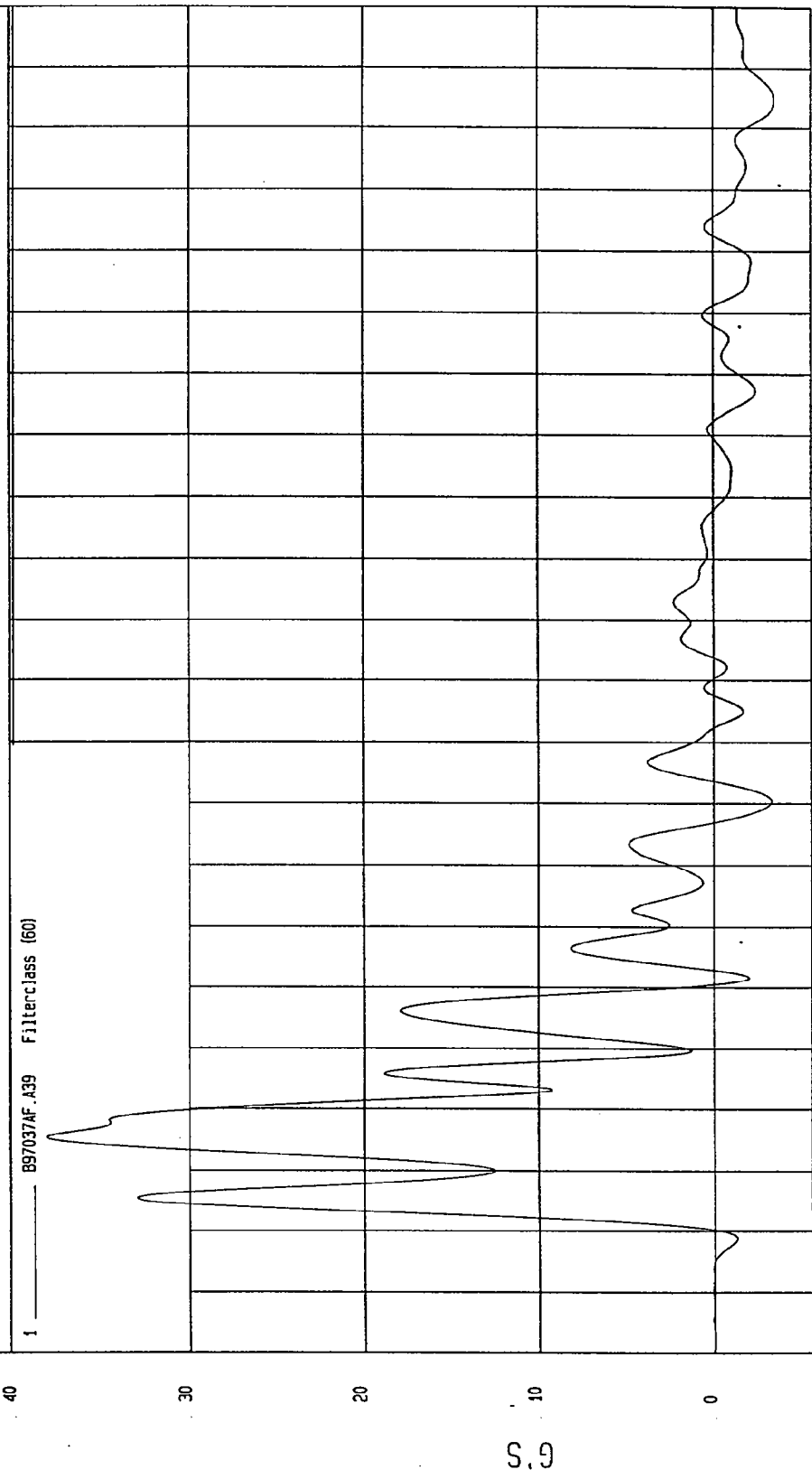
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -3.37 G'S at 184 msec Maximum = 38.13 G'S at 15 msec

LEFT SIDE SILL AT REAR SEAT Y ACCELERATION

1 _____ B97037AF.A39 Filterclass (60)



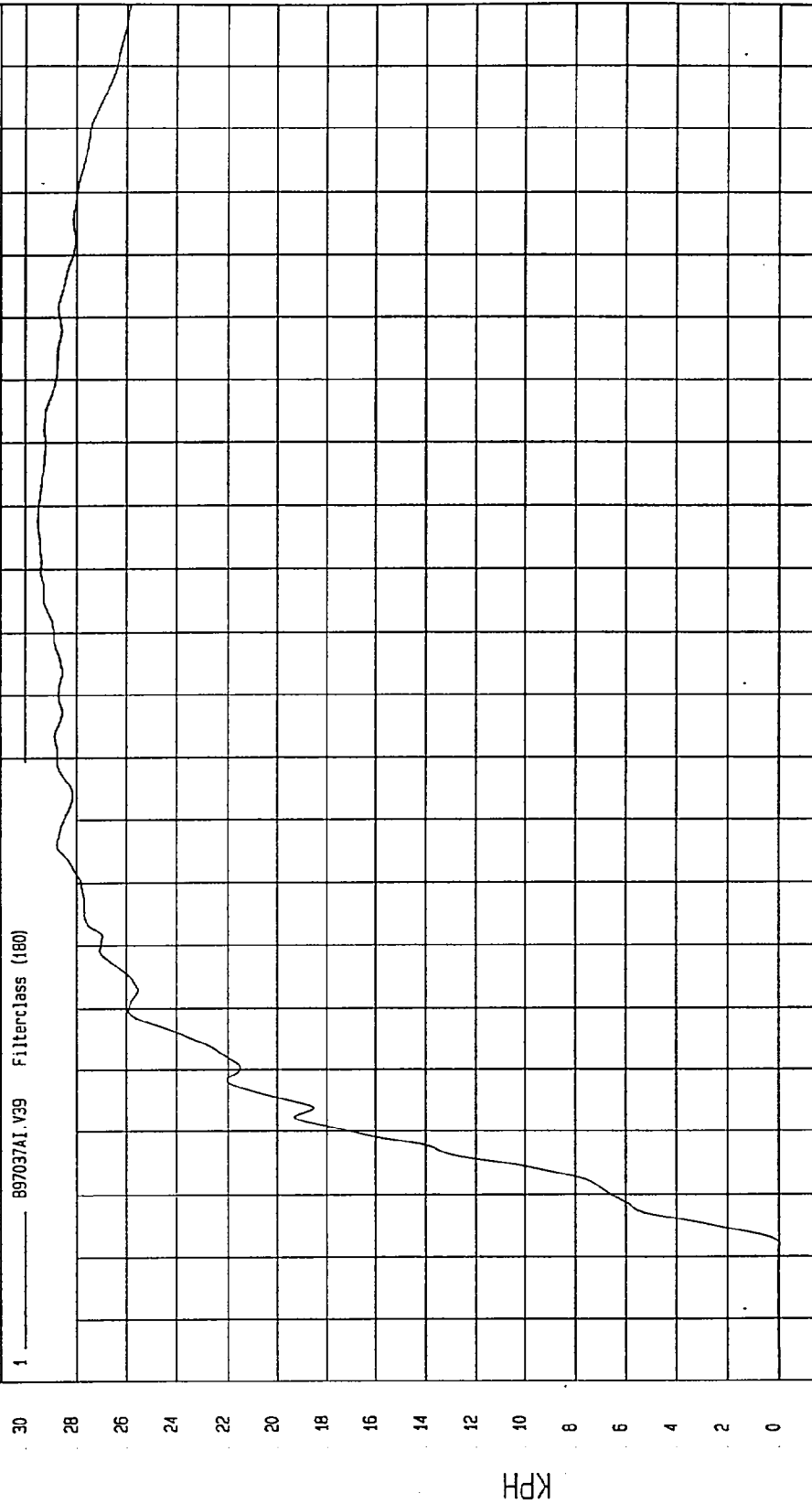
WCA Research
03-12-1997 16:04

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -2.85E-02 KPH at 2 msec Maximum = 29.51 KPH at 118 msec

LEFT SIDE SILL AT REAR SEAT Y VELOCITY



TIME Seconds

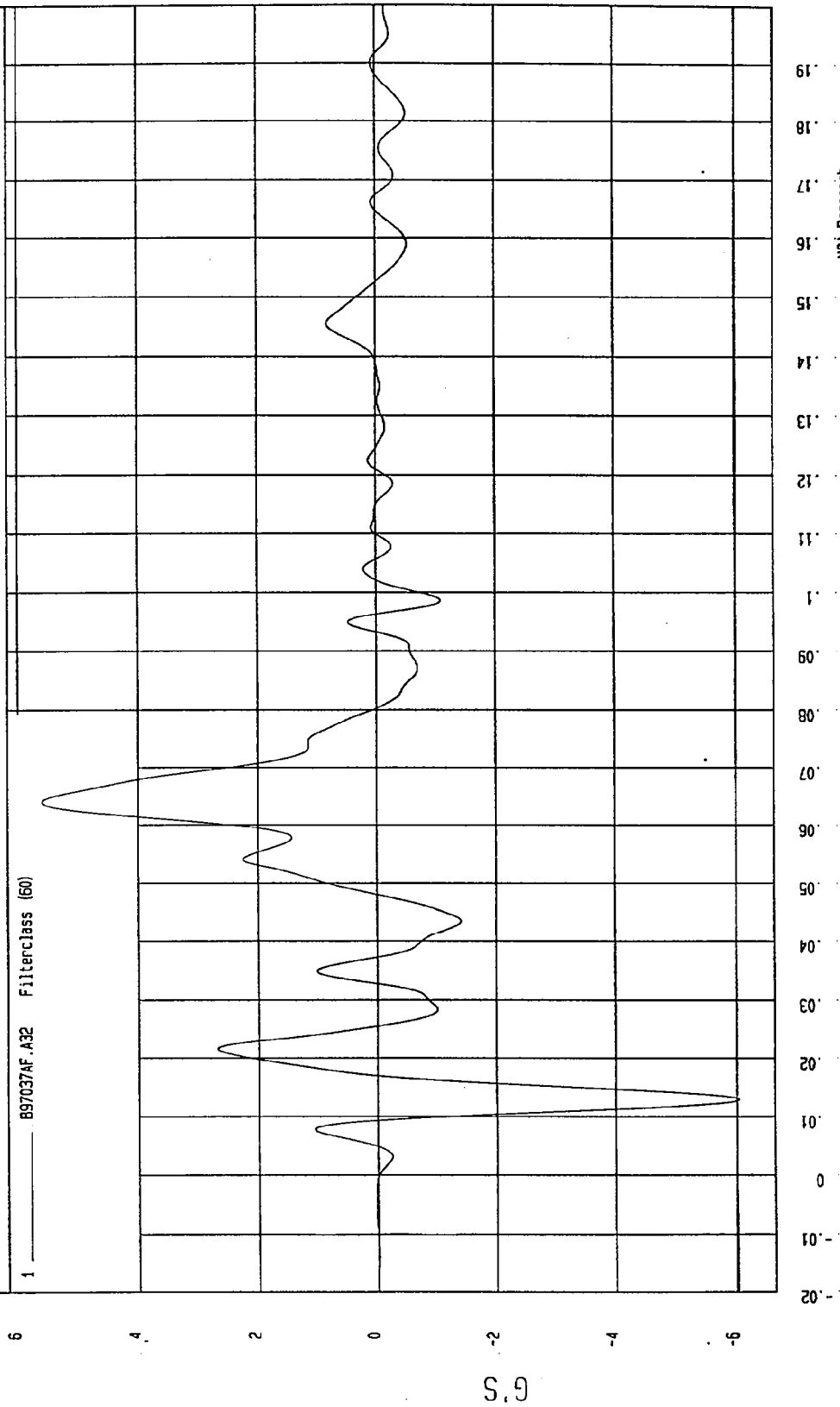
NSA Research
03-12-1997 16:01

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -6.04 G'S at 13 msec Maximum = 5.59 G'S at 64 msec

RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION

1 ——— B97037AF.A32 Filterclass (60)



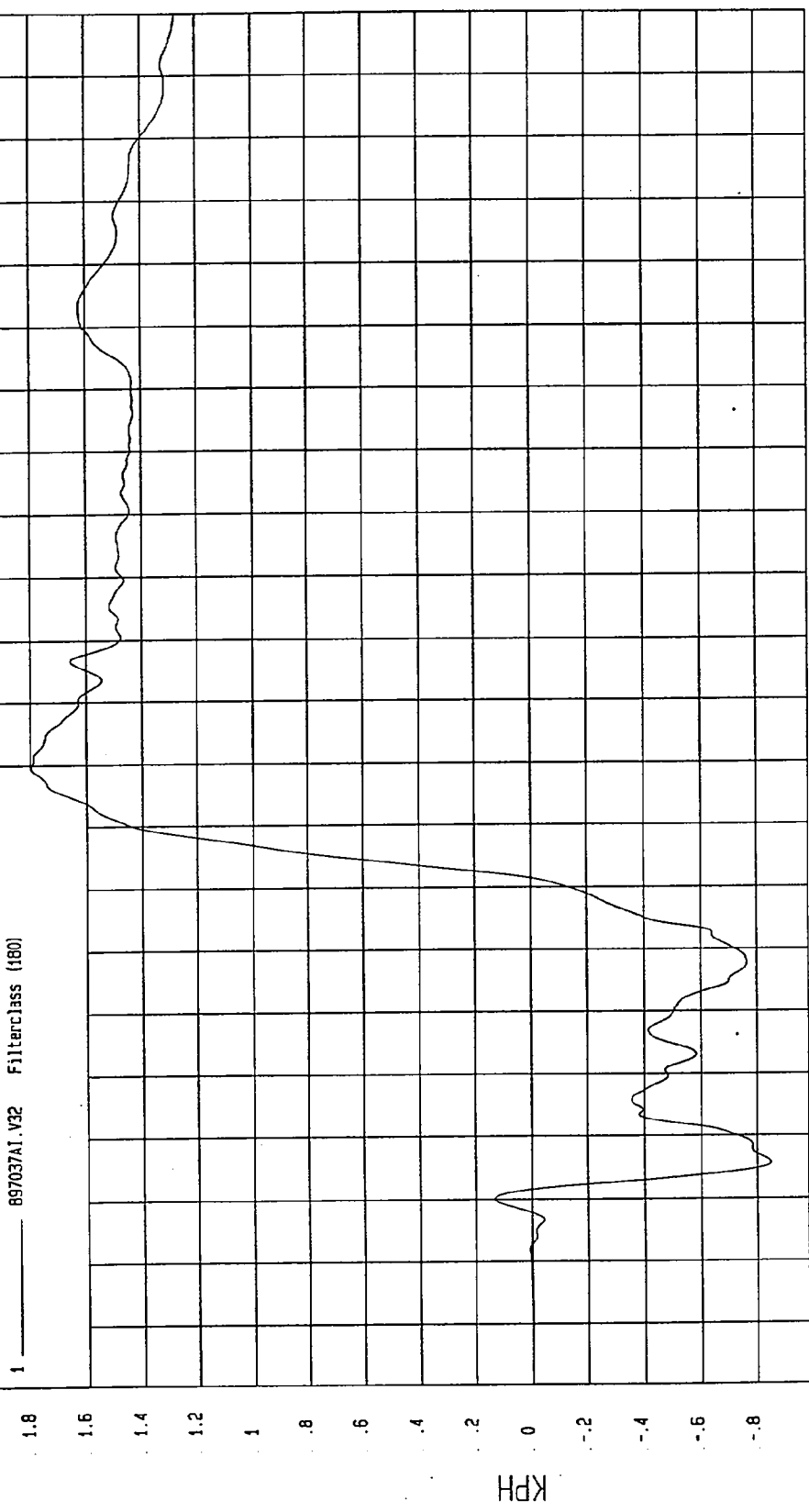
NSA Research
03-12-1997 16:04

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -.85 KPH at 16 msec Maximum = 1.79 KPH at 80 msec

RIGHT SIDE SILL AT FRONT SEAT X VELOCITY



MCA Research
03-12-1997 16.01

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

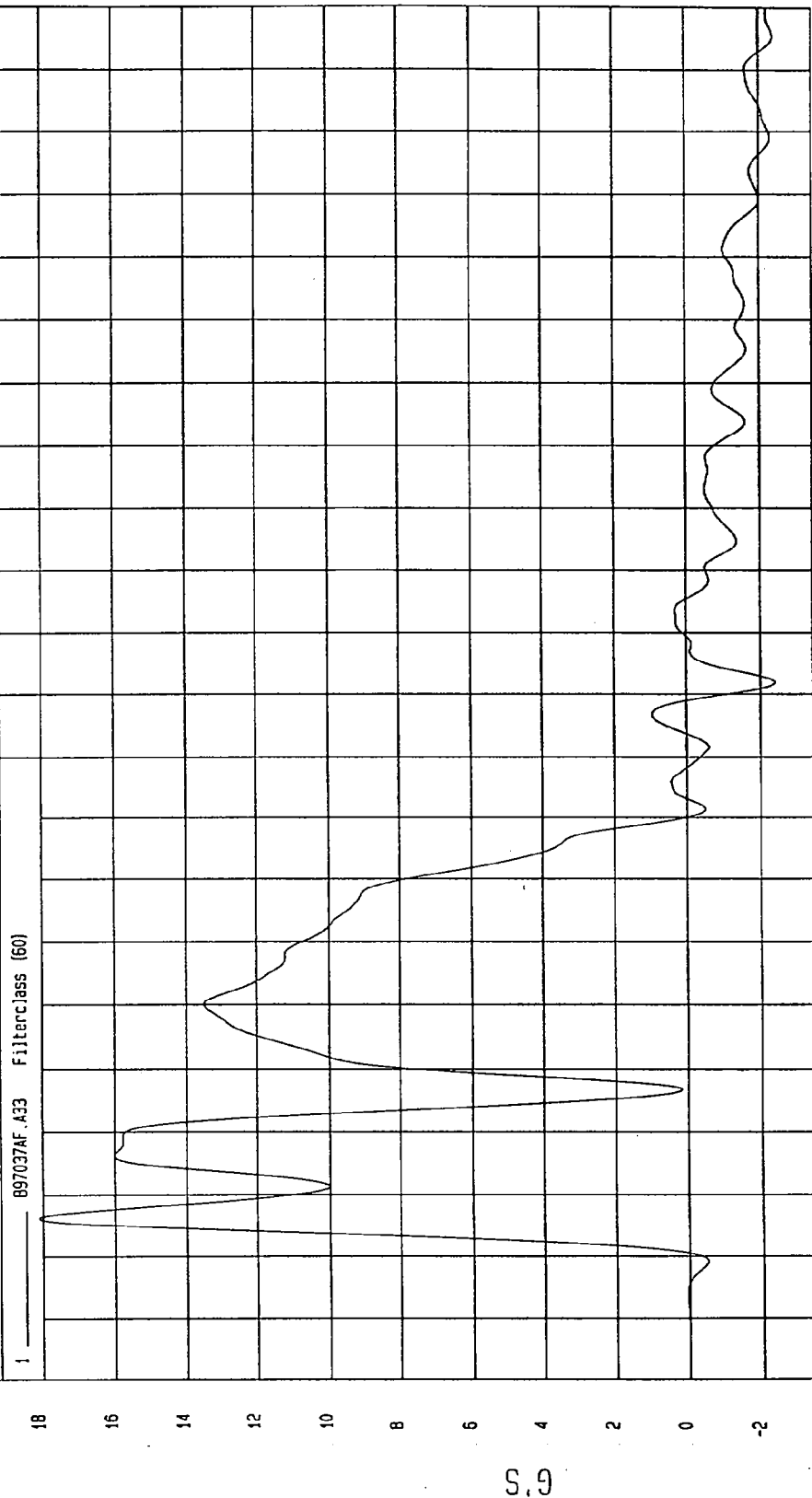
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 18.10 G'S at 6 msec

Minimum = -2.38 G'S at 92 msec

RIGHT SIDE SILL AT FRONT SEAT Y ACCELERATION

1 897037AF.A33 FilterClass (60)



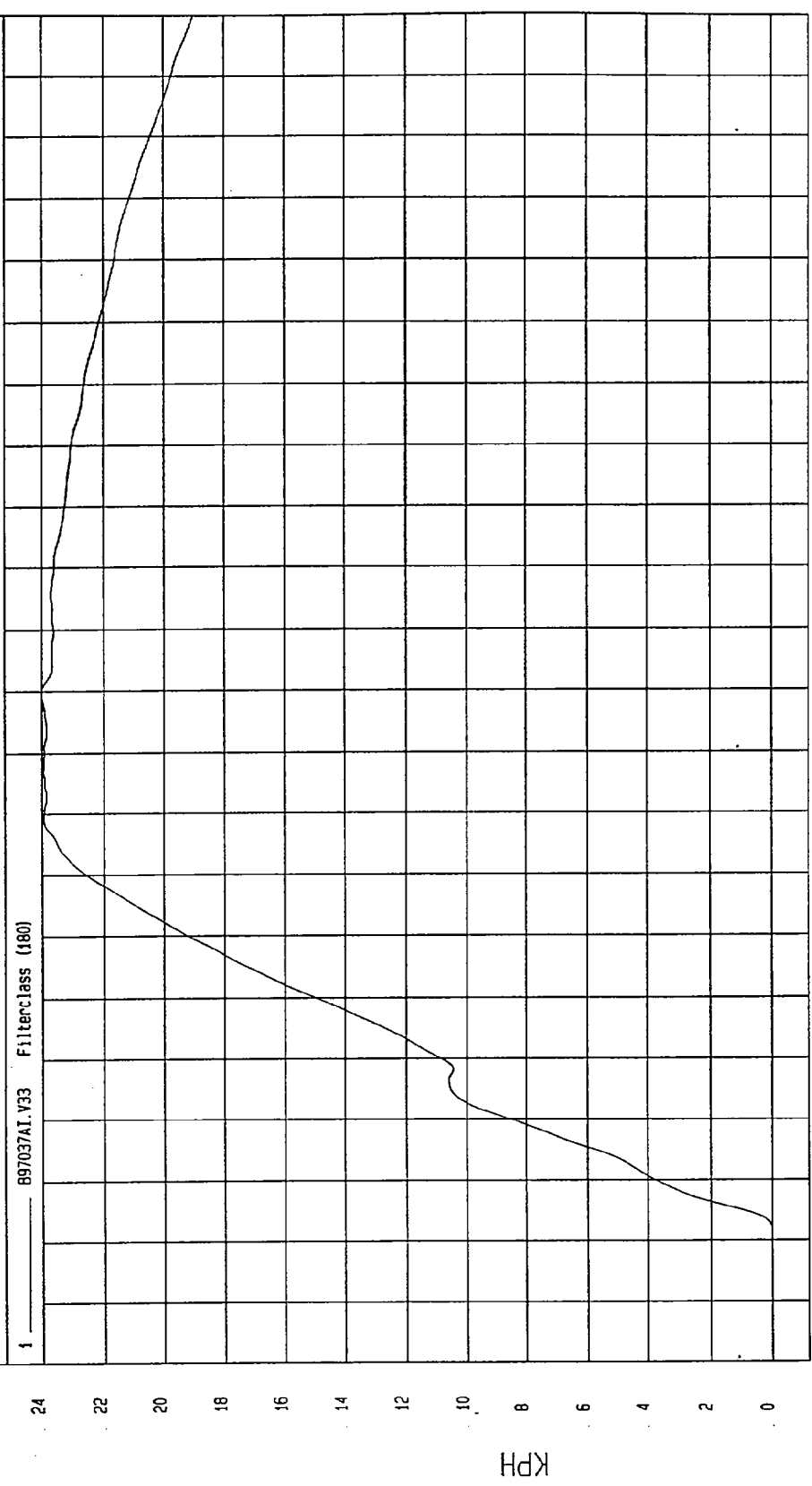
WCA Research
03-12-1997 16:04

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -5.65E-05 KPH at -10 msec Maximum = 24.03 KPH at 90 msec

RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY



TIME Seconds

NCI Research
03-12-1997 16.01

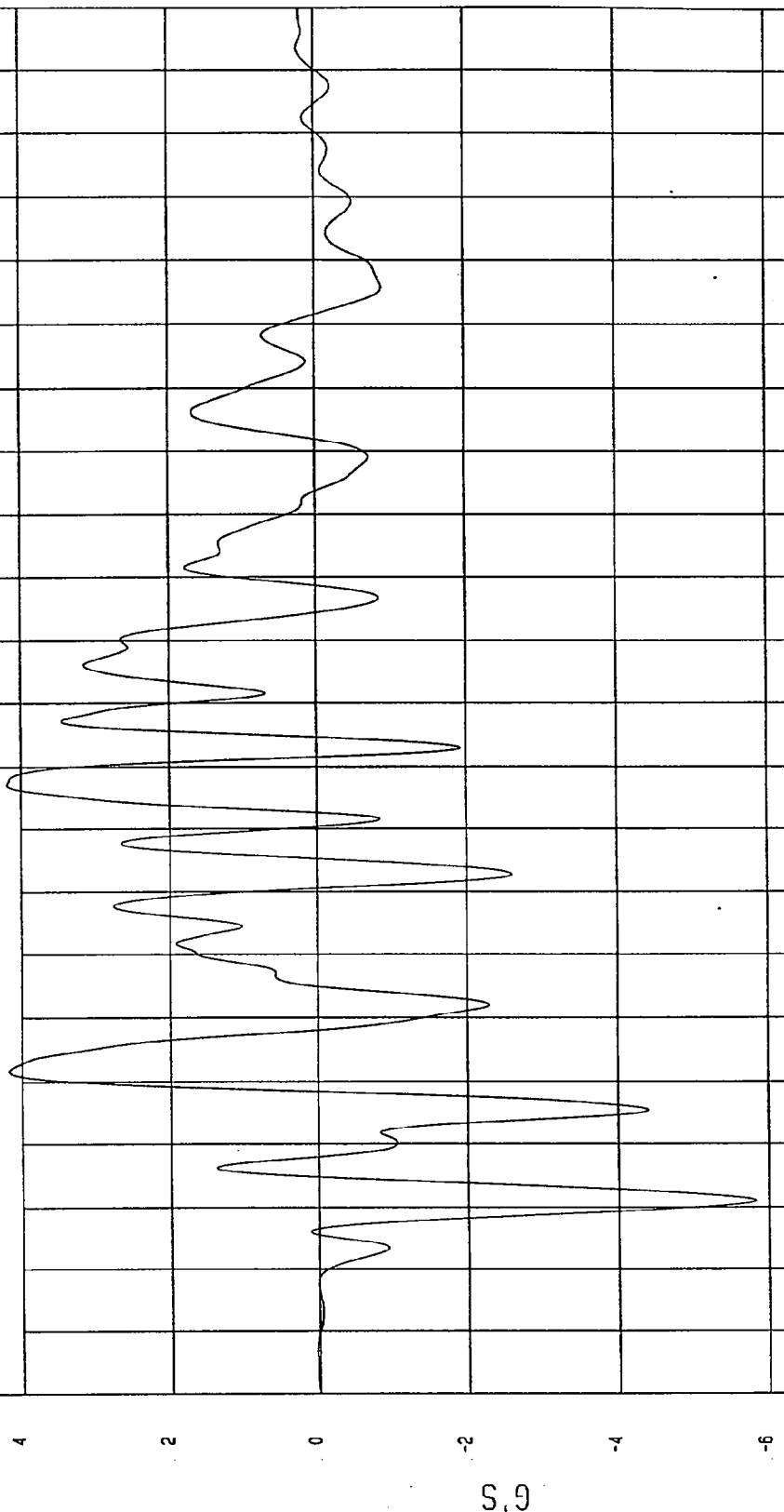
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -5.82 G's at 11 msec Maximum = 4.18 G's at 77 msec

RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION

1 897037AF.A34 Filterclass (60)



NCI Research
03-12-1997 16:04

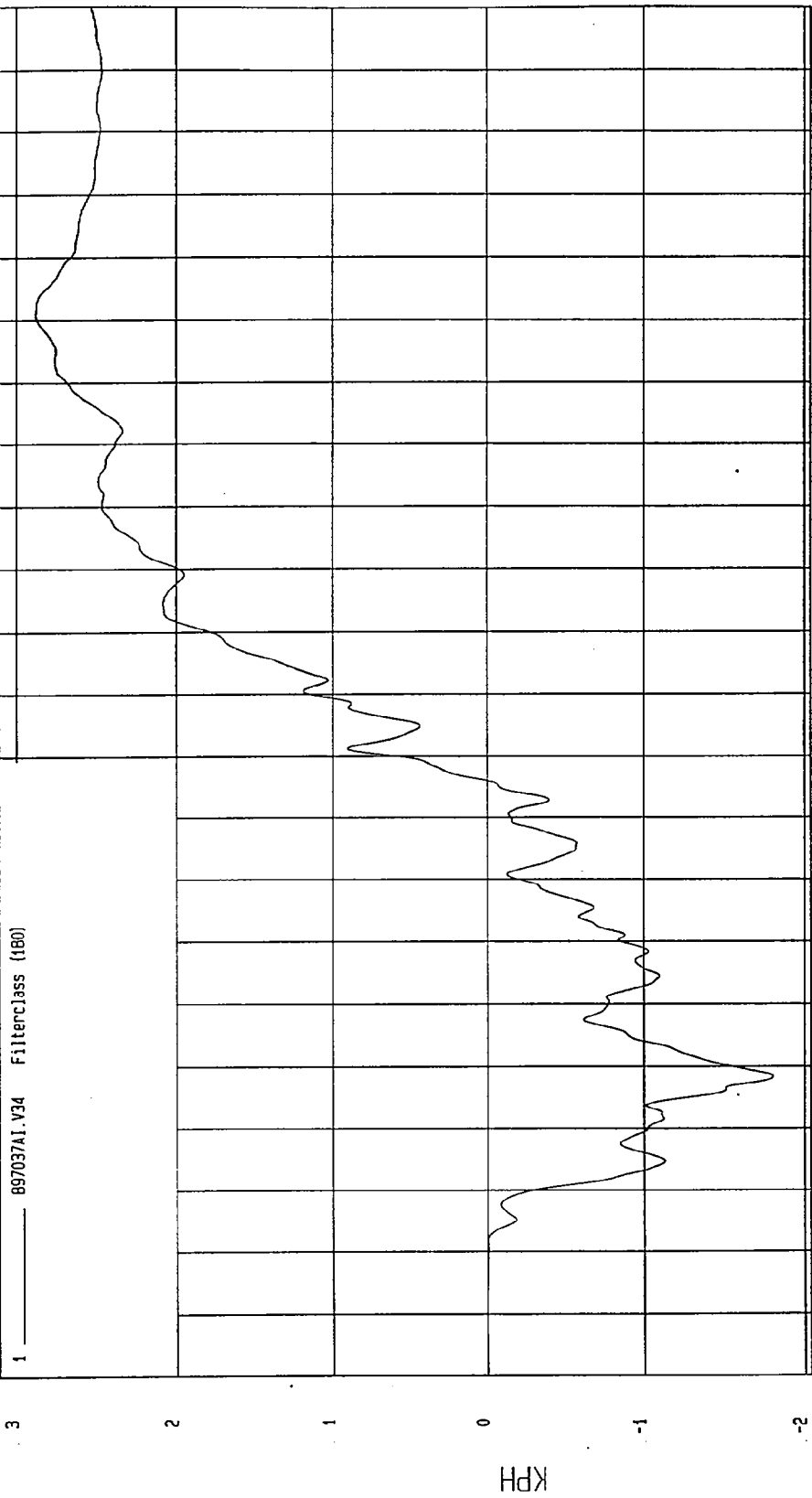
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -1.80 KPH at 28 msec Maximum = 2.88 KPH at 151 msec

RIGHT SIDE SILL AT FRONT SEAT Z VELOCITY

1 897037A1.V34 Filterclass (180)



NSA Research
03-12-1997 16:01

TIME Seconds

0.19 0.18 0.17 0.16 0.15 0.14 0.13 0.12 0.11 0.1 0.09 0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0 -0.01 -0.02

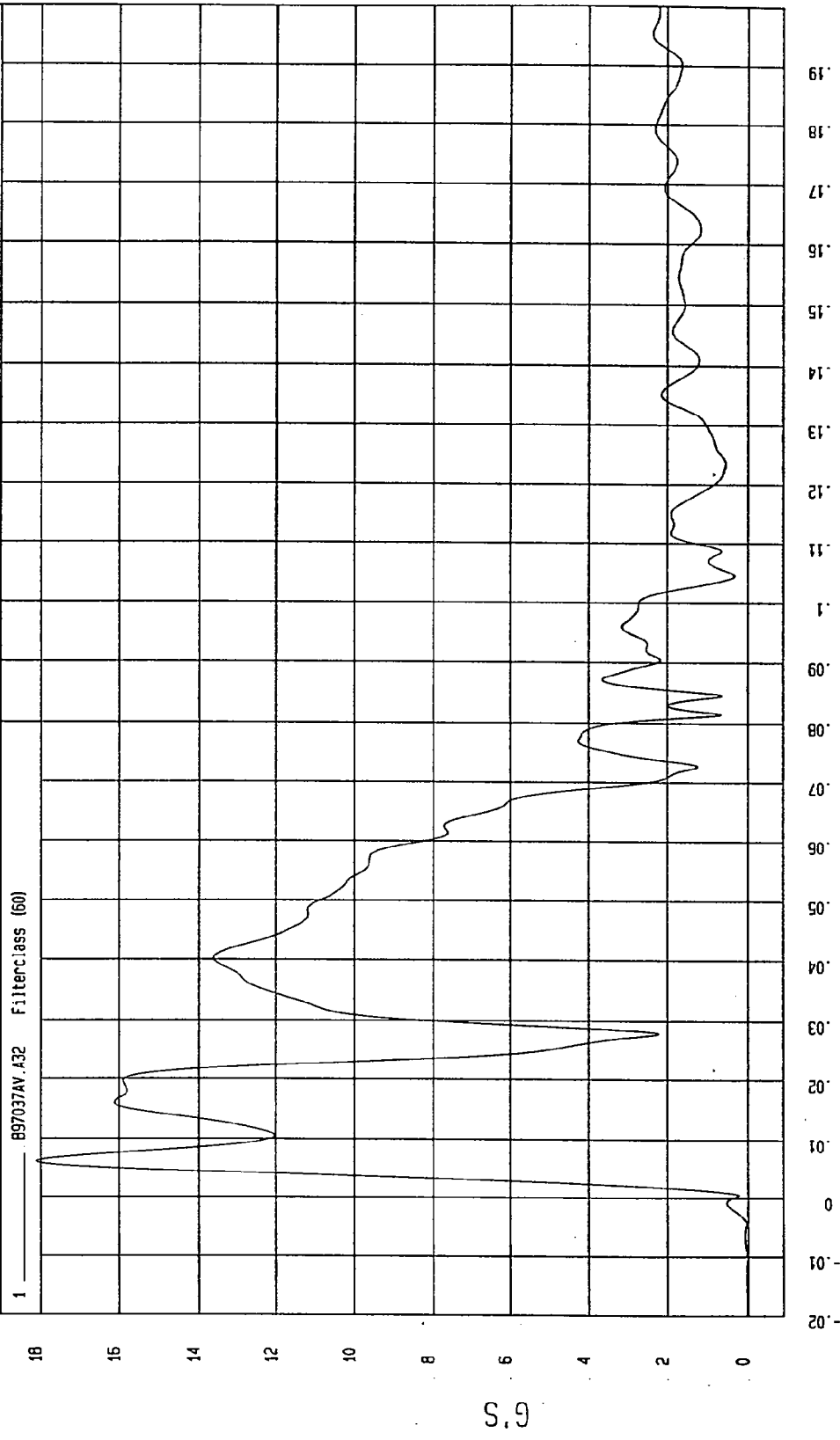
KPH

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = 5.33E-03 G'S at -10 msec Maximum = 18.11 G'S at 6 msec

RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION



WCA Research
03-12-1997 16:08

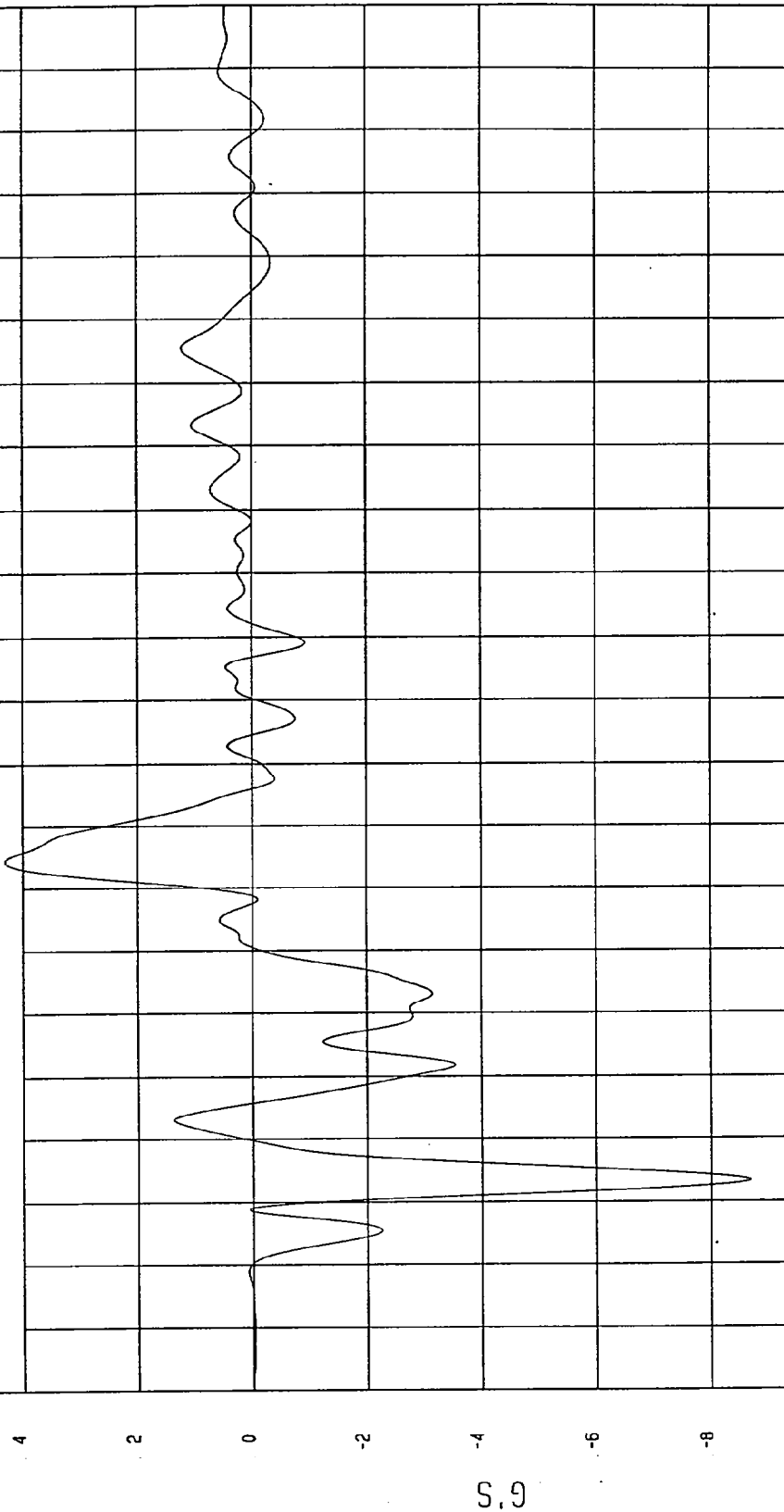
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -8.68 G'S at 13 msec Maximum = 4.31 G'S at 64 msec

RIGHT SIDE SILL AT REAR SEAT X ACCELERATION

1 ——— B97037AF.A35 Filterclass (60)



TIME (SECONDS)

0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
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-0.02

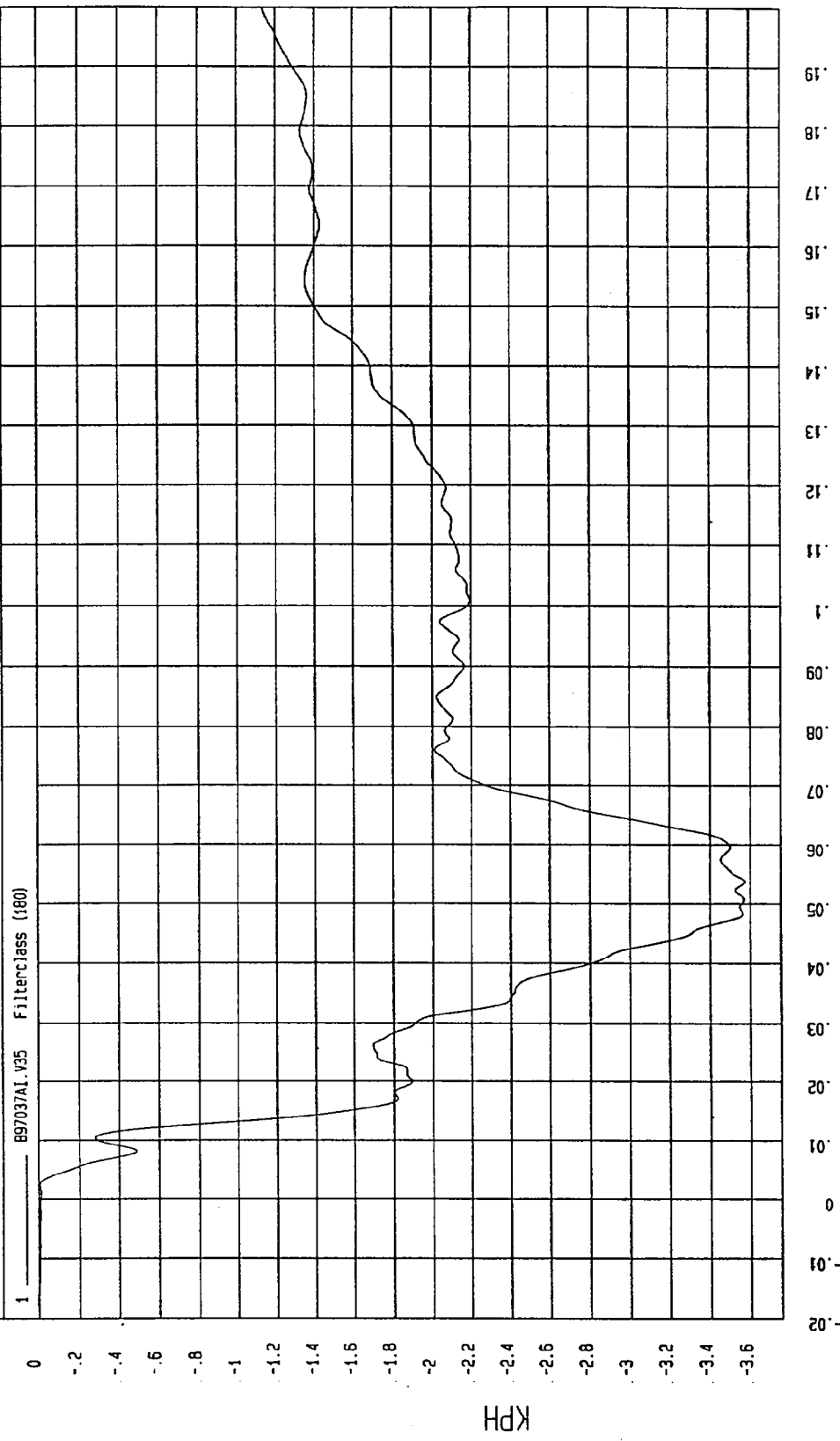
NSA Research
03-12-1997 16:04

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -3.57 KPH at 54 msec Maximum = 1.57E-03 KPH at -17 msec

RIGHT SIDE SILL AT REAR SEAT X VELOCITY



NGA Research
03-12-1997 16.02

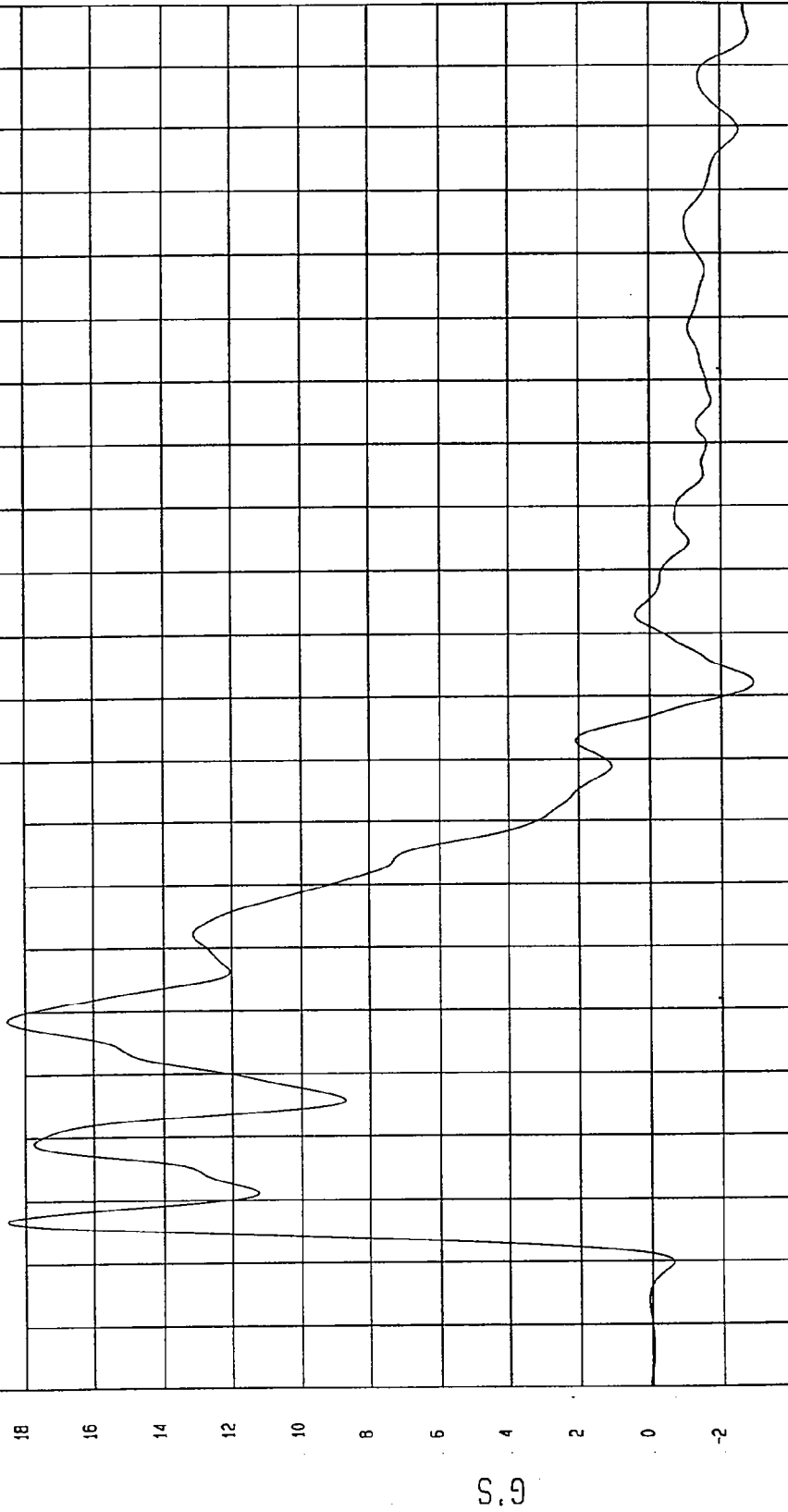
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -2.90 G'S at 92 msec Maximum = 18.50 G'S at 39 msec

RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION

1 897037AF.A36 Filterclass (60)



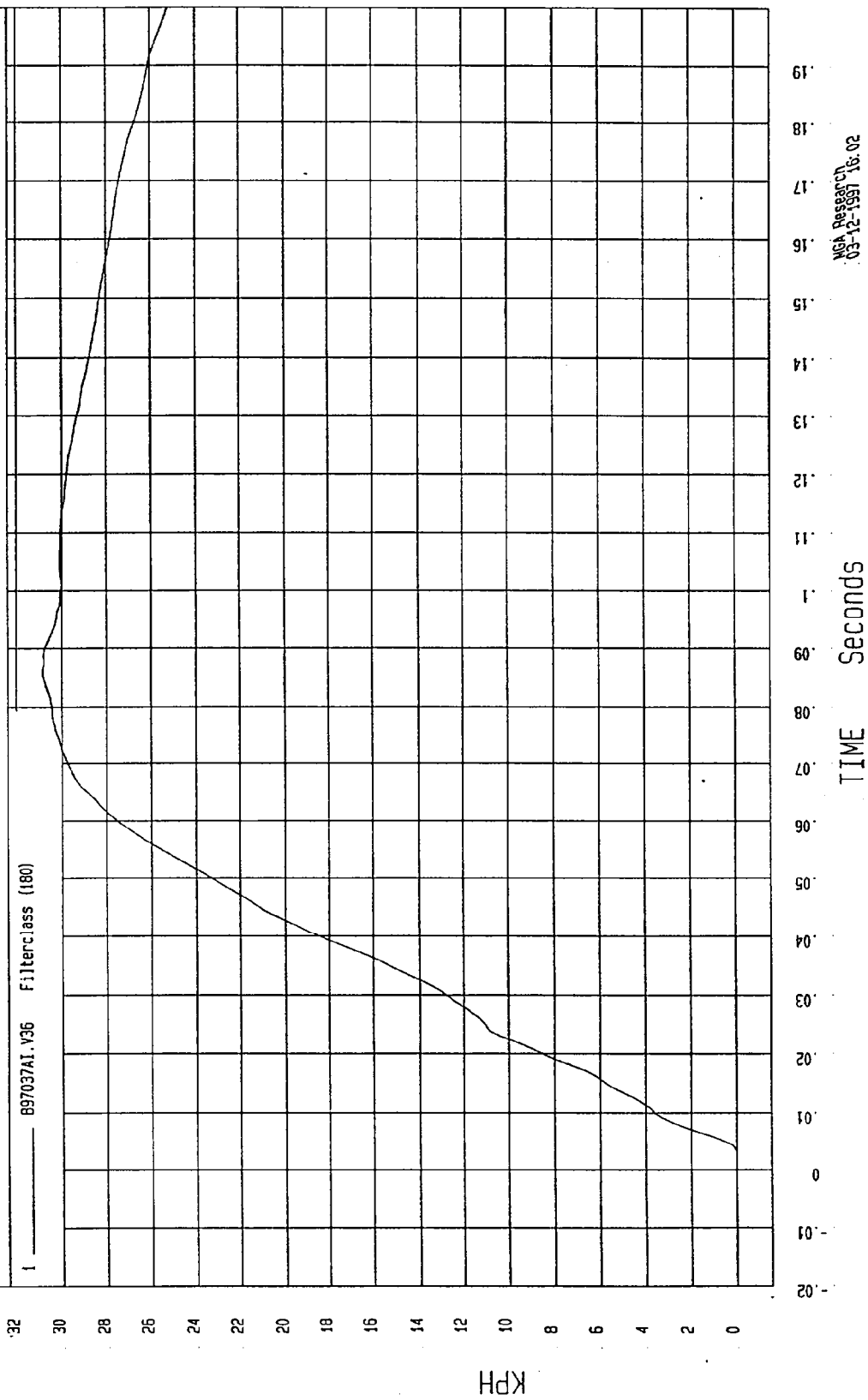
MGA Research
03-12-1997 16:04

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -8.07E-03 KPH at 2 msec Maximum = 30.83 KPH at 86 msec

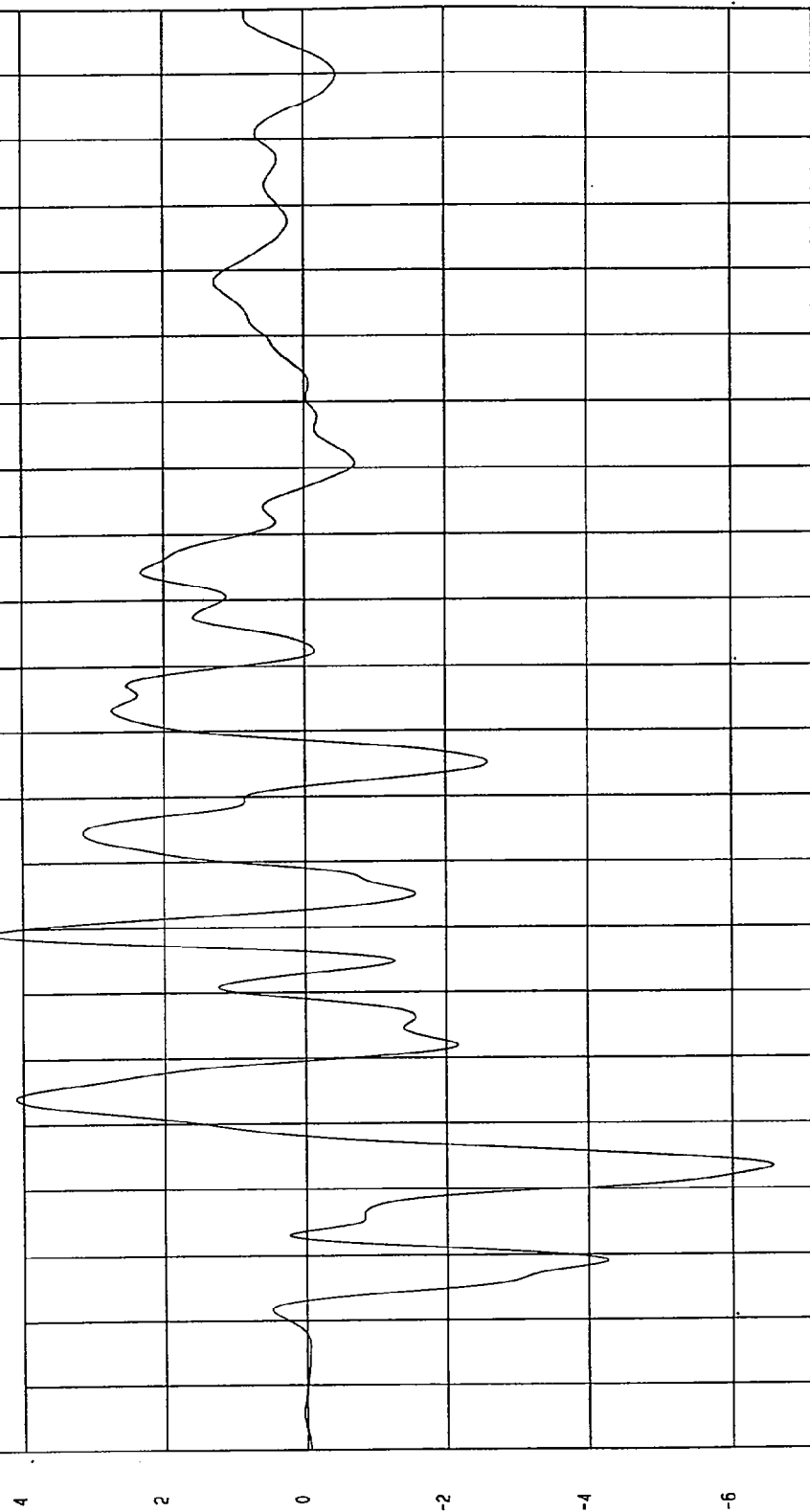
RIGHT SIDE SILL AT REAR SEAT Y VELOCITY



TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH
Minimum = -6.56 G'S at 23 msec Maximum = 4.42 G'S at 59 msec

RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION

1 ——— 897037AF.A37 Filterclass (50)



WCA Research
03-12-1997 16.05

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -2.34 KPH at 27 msec
Maximum = 1.51 KPH at 200 msec

RIGHT SIDE SILL AT REAR SEAT Z VELOCITY

1 _____ 897037AI.V37 Filterclass (180)

1

0

-1

-2

KPH

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

0

-01

-02

TIME Seconds

MCA Research
03-12-1997 16:02

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

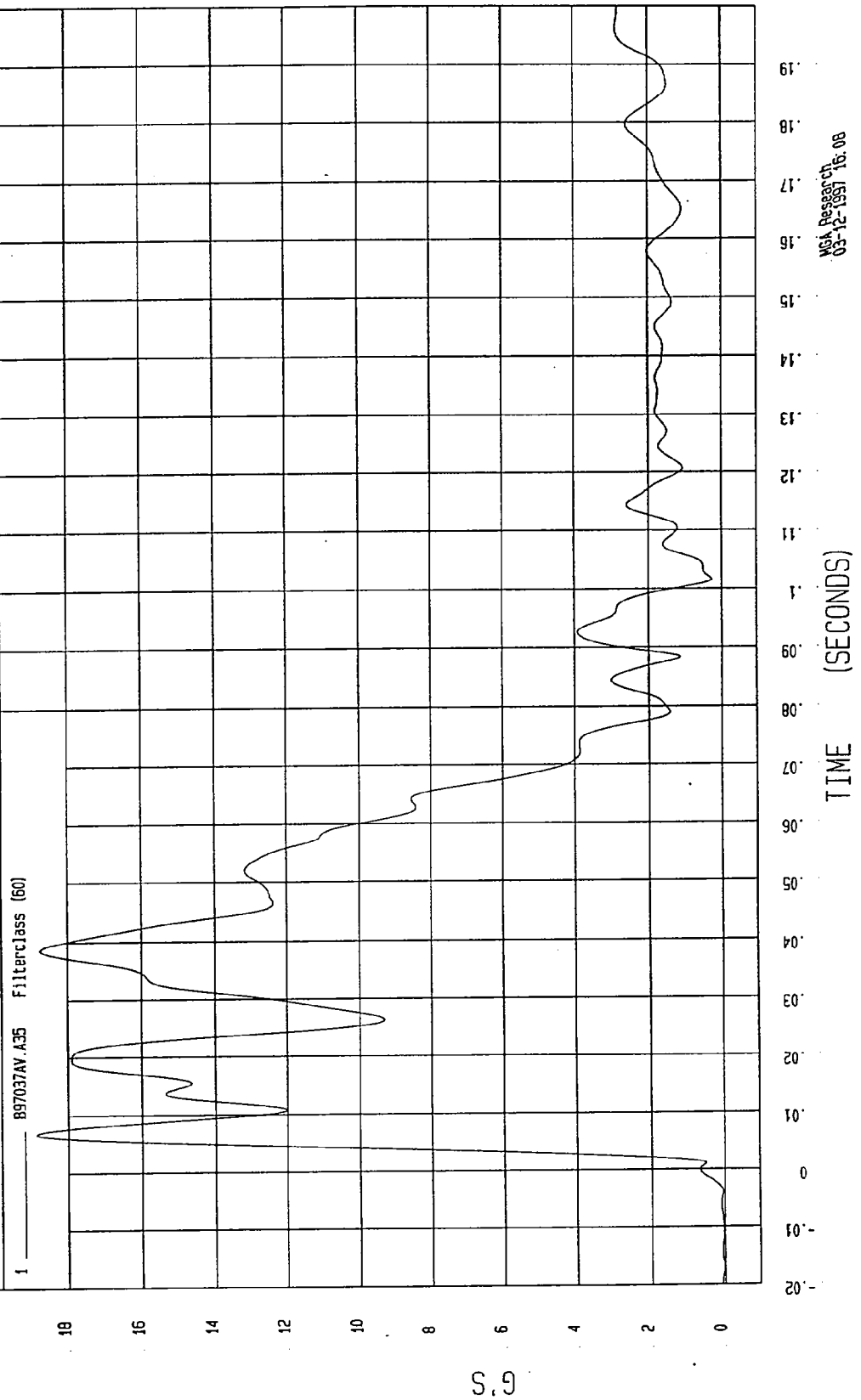
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Speed: 38 MPH 61.2 KPH

Minimum = .01 G'S at -17 msec

Maximum = 18.84 G'S at 7 msec

RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

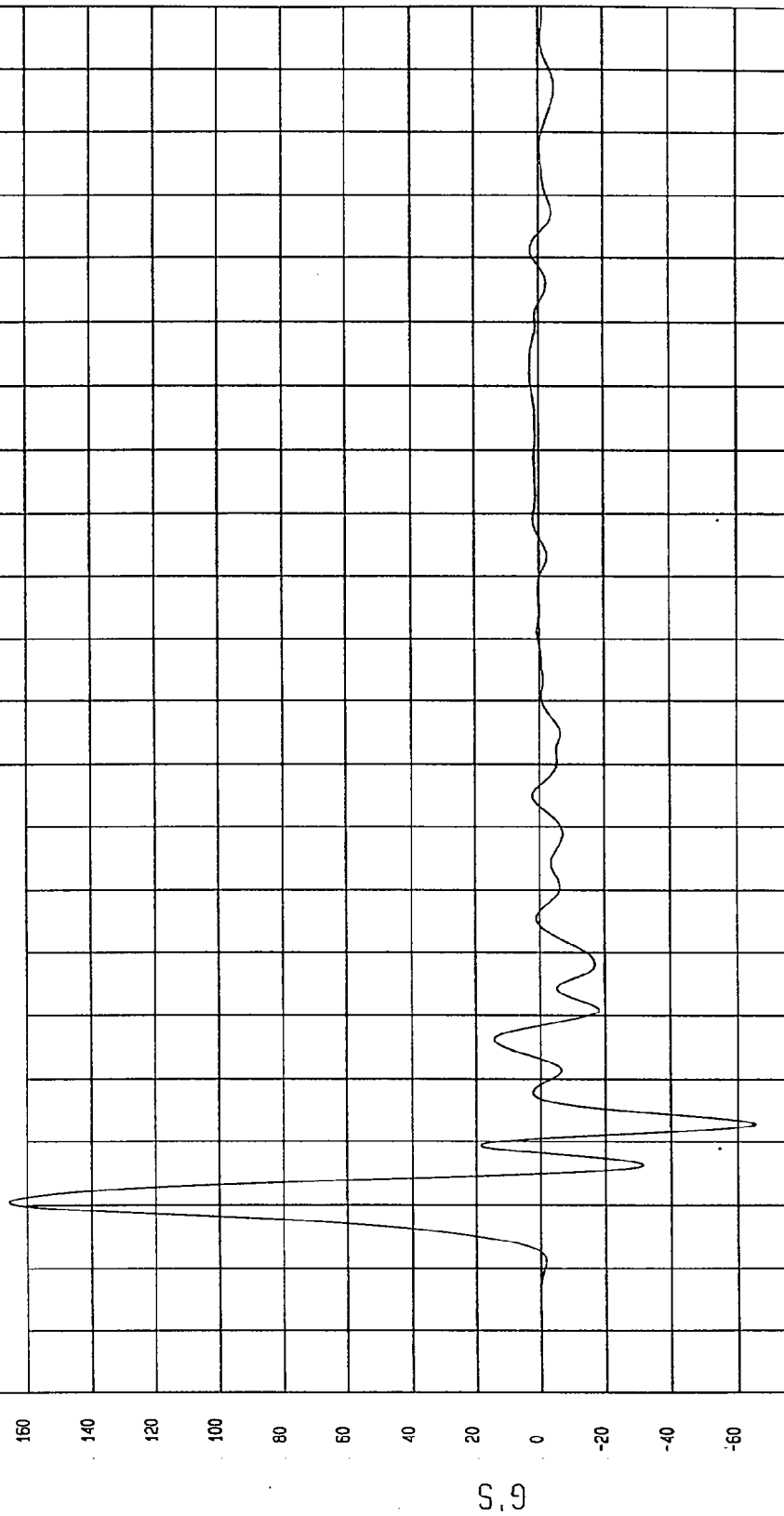
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 165.59 G'S at 10 msec

Minimum = -65.16 G'S at 23 msec

LEFT DRIVER SEAT TRACK Y ACCELERATION

1 ——— 897037AF.440 Filterclass (50)



NGA Research
03-12-1997 16:05

TIME (SECONDS)

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

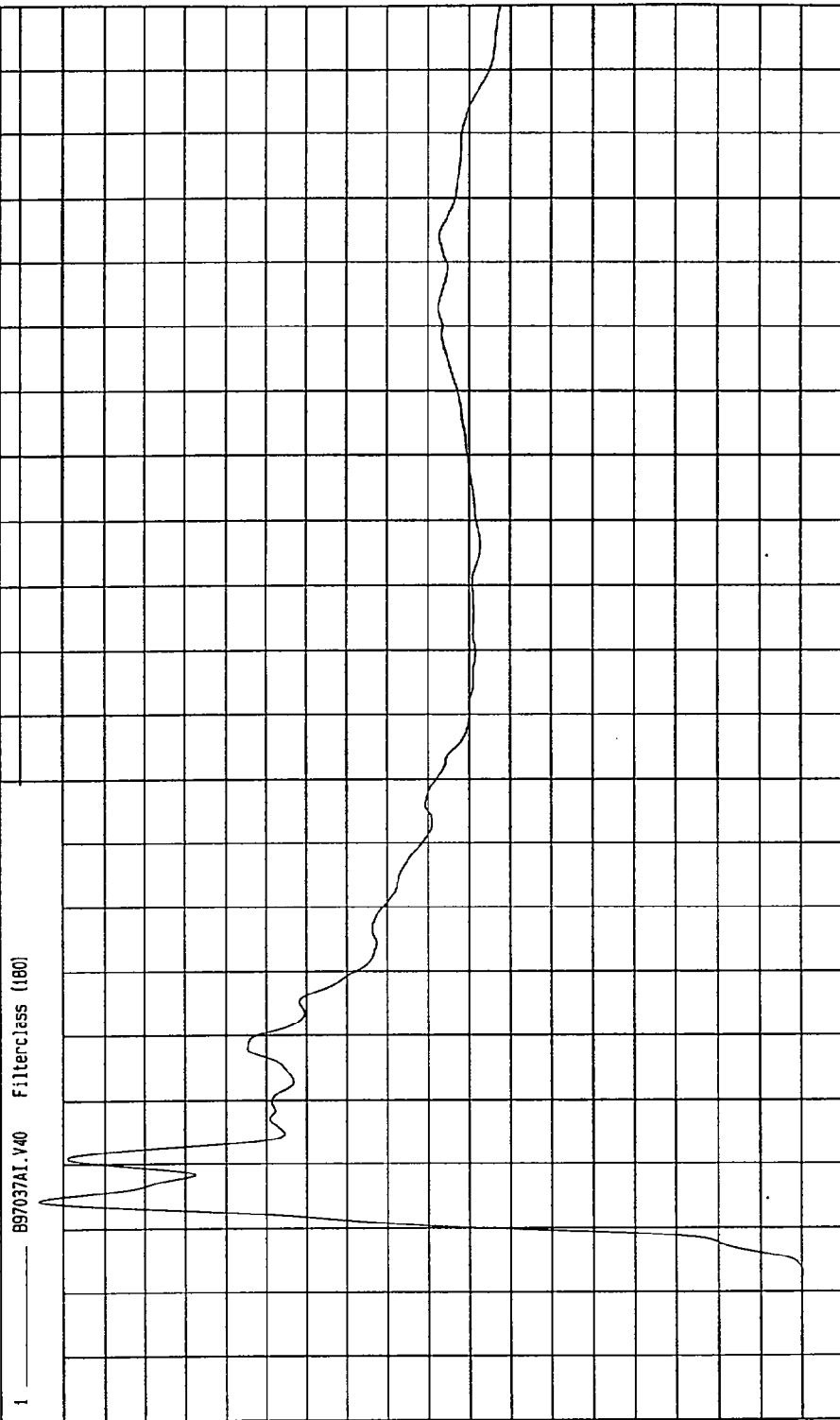
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -5.12E-02 KPH at 3 msec
Maximum = 37.13 KPH at 14 msec

LEFT DRIVER SEAT TRACK Y VELOCITY

1 B97037A1.V40 Filterclass (180)

KPH



TIME Seconds

MSA Research
03-12-1997 16:02

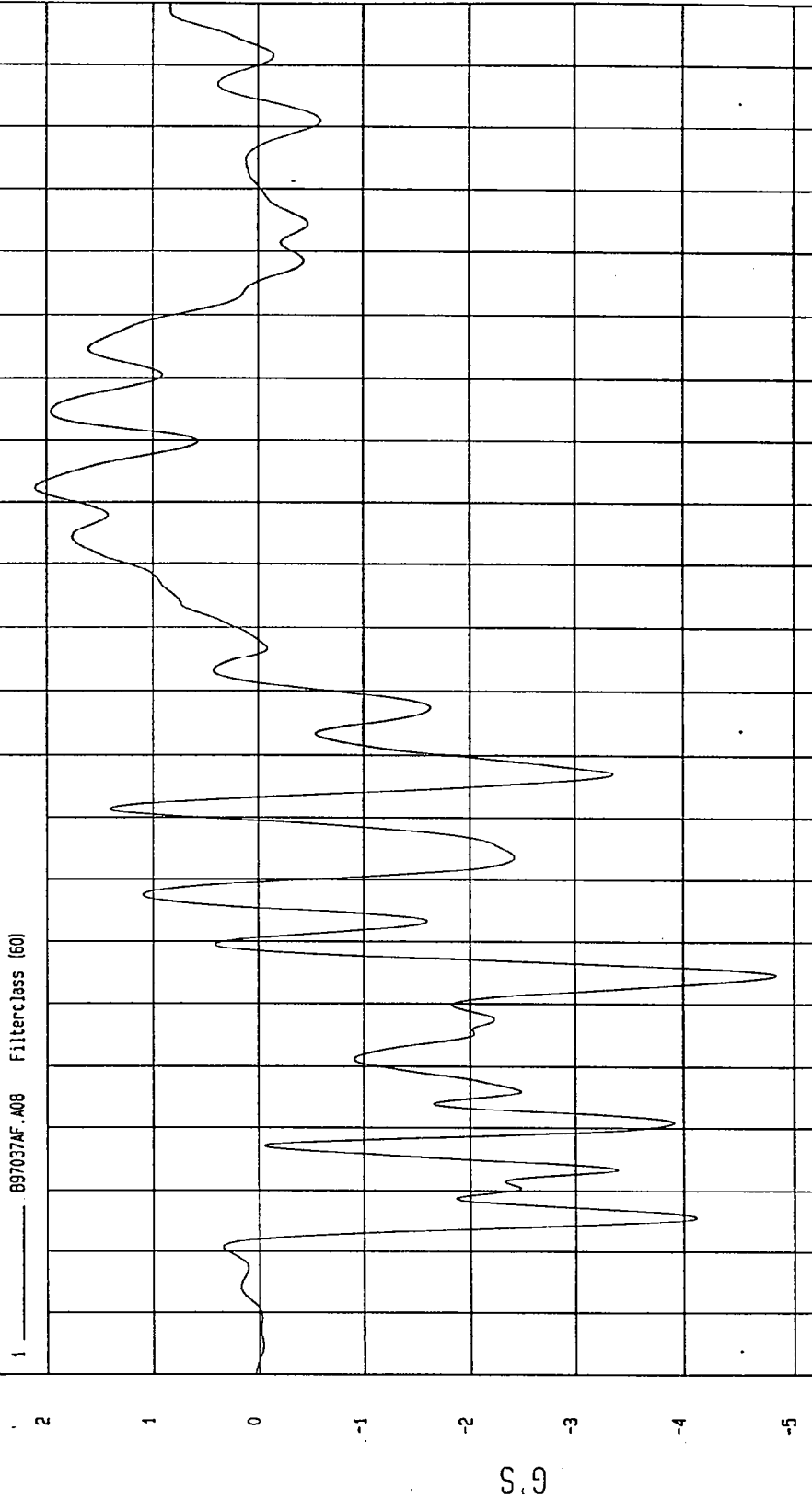
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -4.84 G'S at 45 msec Maximum = 2.10 G'S at 122 msec

REAR FLOORPAN ABOVE AXLE X ACCELERATION

1 _____ B97037AF.A08 Filterclass (50)



MOA Research
03-12-1997 16:05

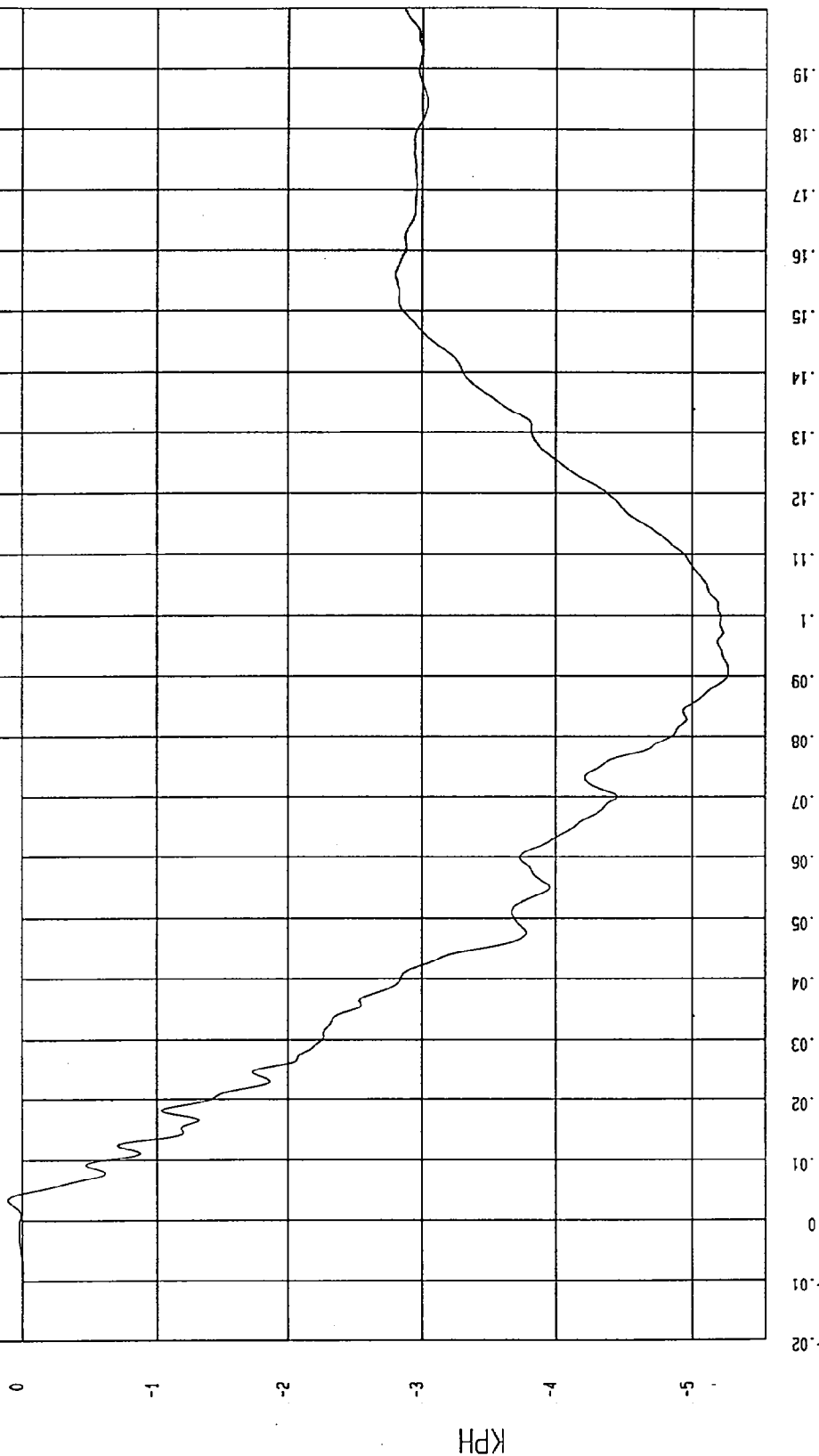
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -5.25 KPH at 90 msec
Maximum = .10 KPH at 3 msec

REAR FLOORPAN ABOVE AXLE X VELOCITY

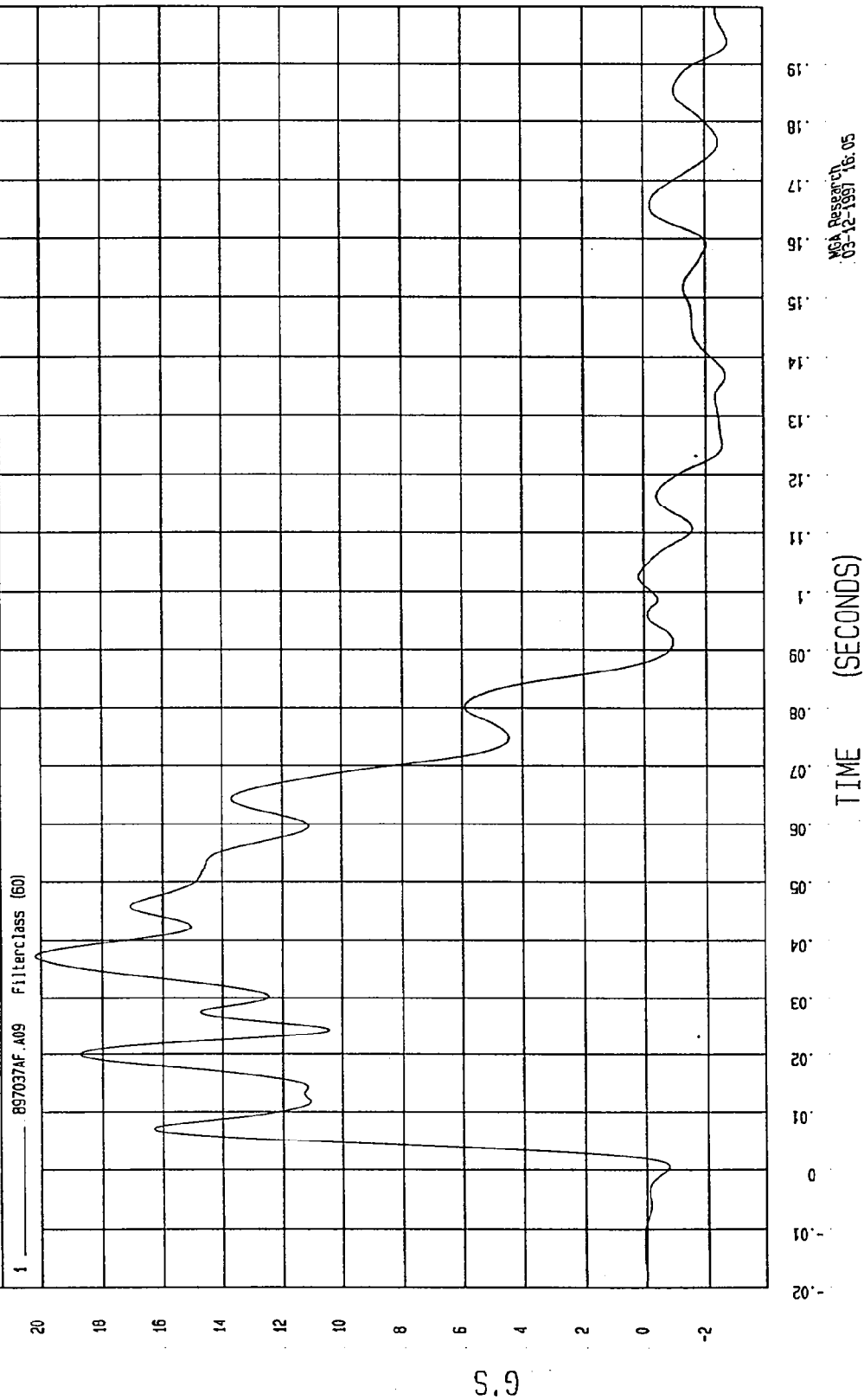
1 897037A1.V08 Filterclass (180)



MGA Research
03-12-1997 16:02

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH
Minimum = -2.73 G'S at 194 msec Maximum = 20.17 G'S at 37 msec

REAR FLOORPAN ABOVE AXLE Y ACCELERATION

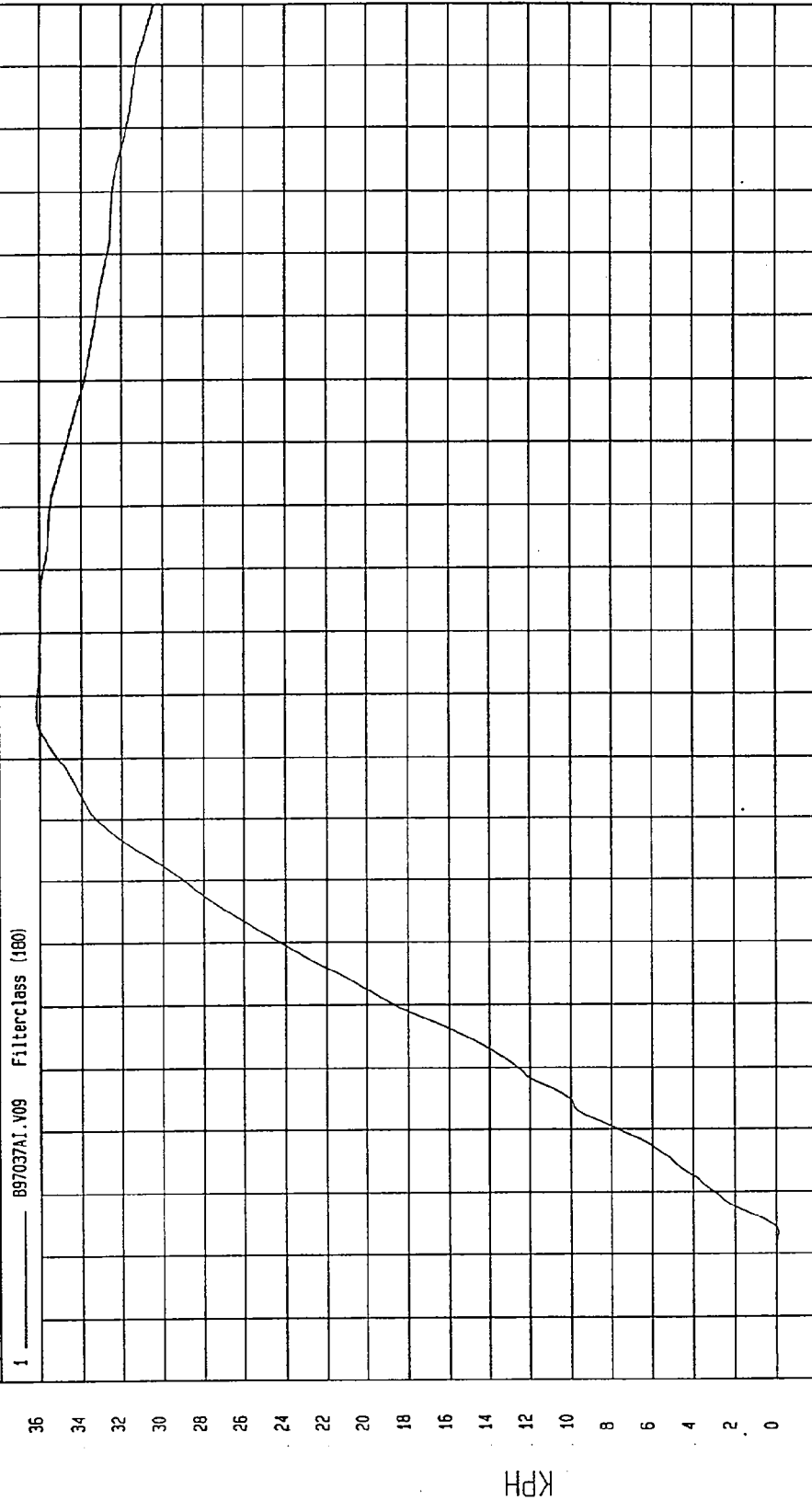


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -.10 KPH at 3 msec Maximum = 36.16 KPH at 87 msec

REAR FLOORPAN ABOVE AXLE Y VELOCITY



TIME Seconds

MOA Research
03-12-1997 16:02

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

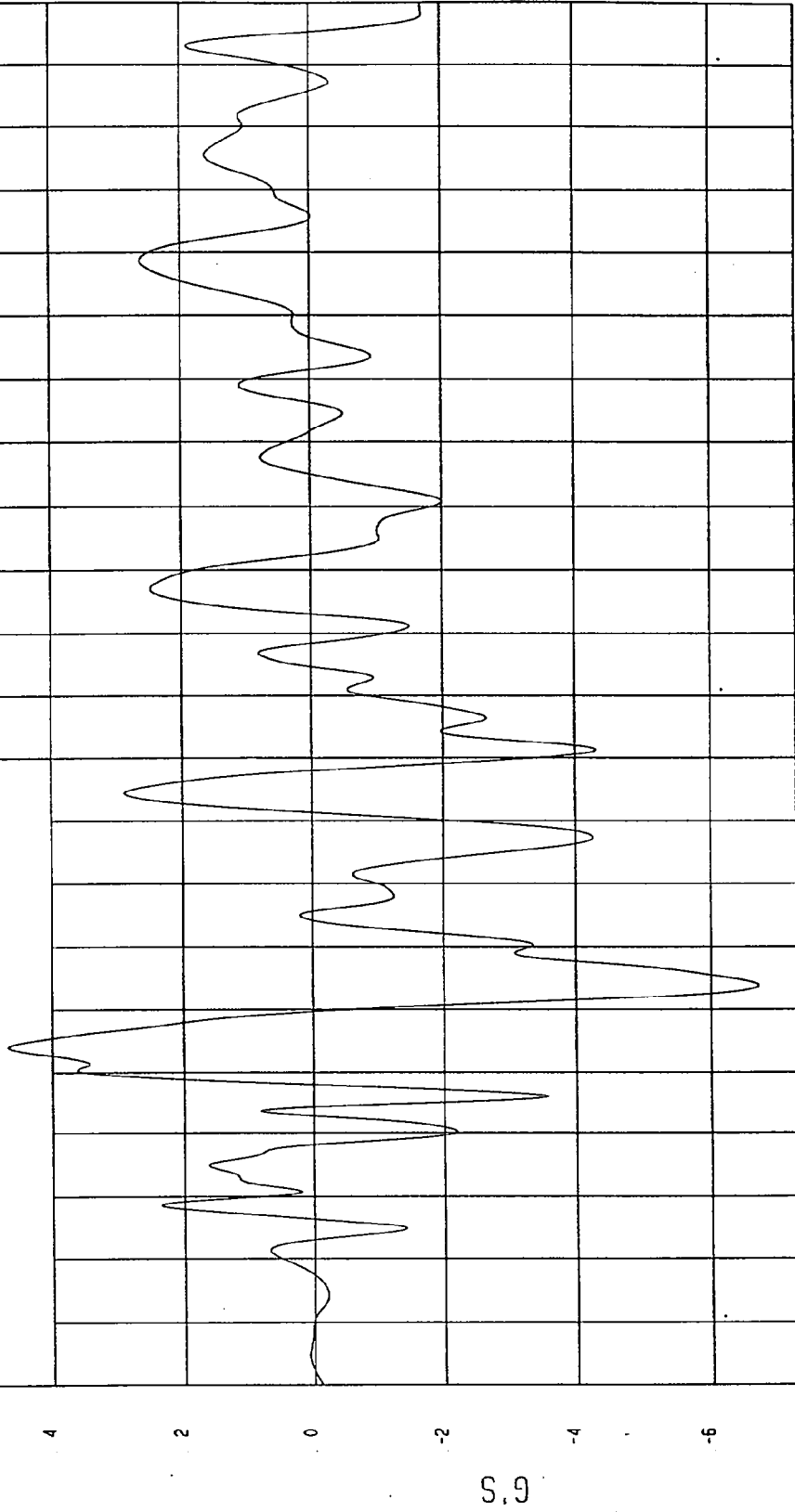
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 4.66 G'S at 34 msec

Minimum = -6.68 G'S at 44 msec

REAR FLOORPAN ABOVE AXLE Z ACCELERATION

1 897037AF.A10 Filterclass (60)



MSA Research
03-12-1997 18:05

TIME (SECONDS)

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

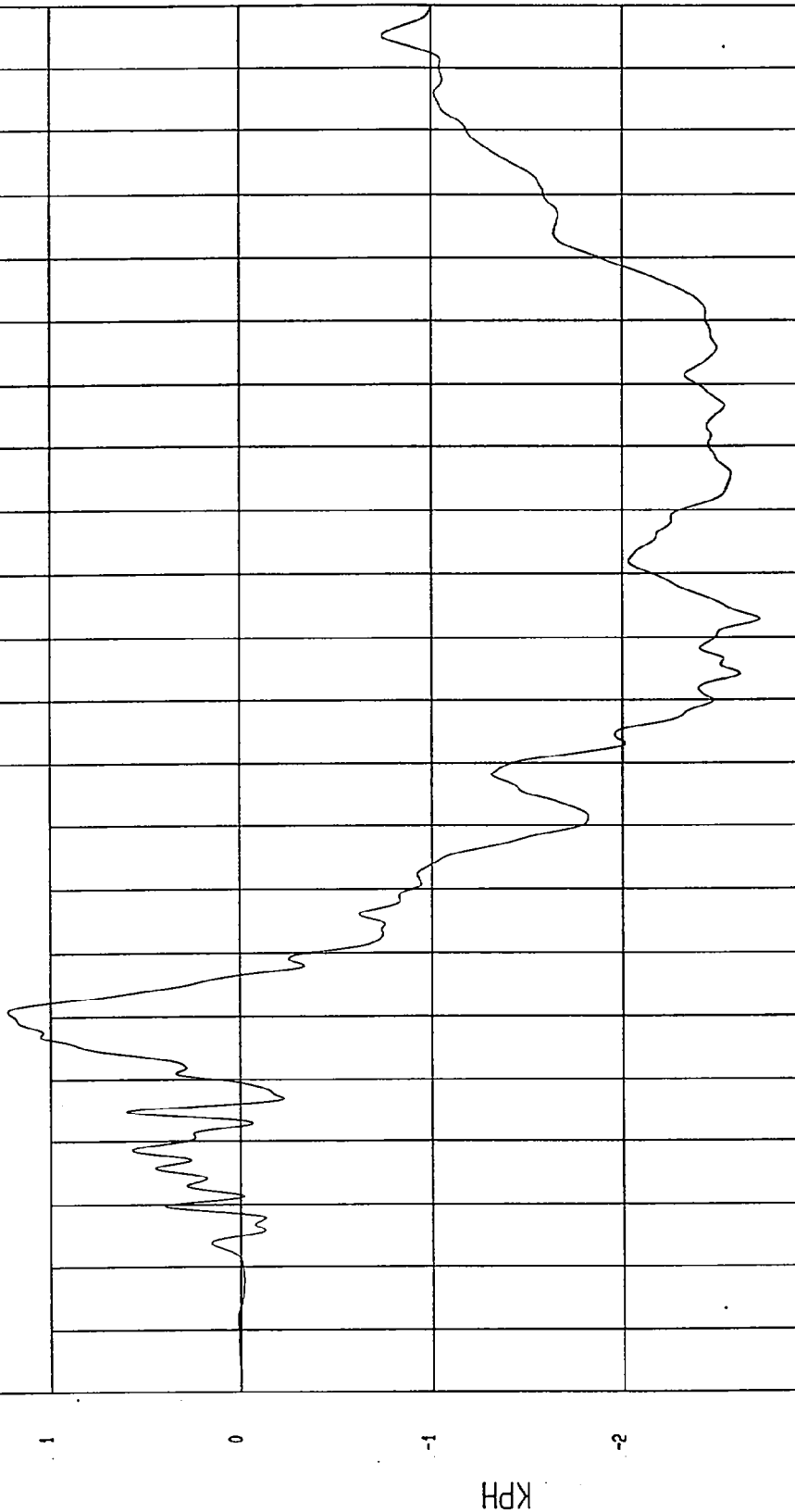
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 1.21 KPH at 41 msec

Minimum = -2.70 KPH at 103 msec

REAR FLOORPAN ABOVE AXLE Z VELOCITY

1 ——— 897037A1.V10 Filterclass (180)



MSA Research
03-12-1997 16:02

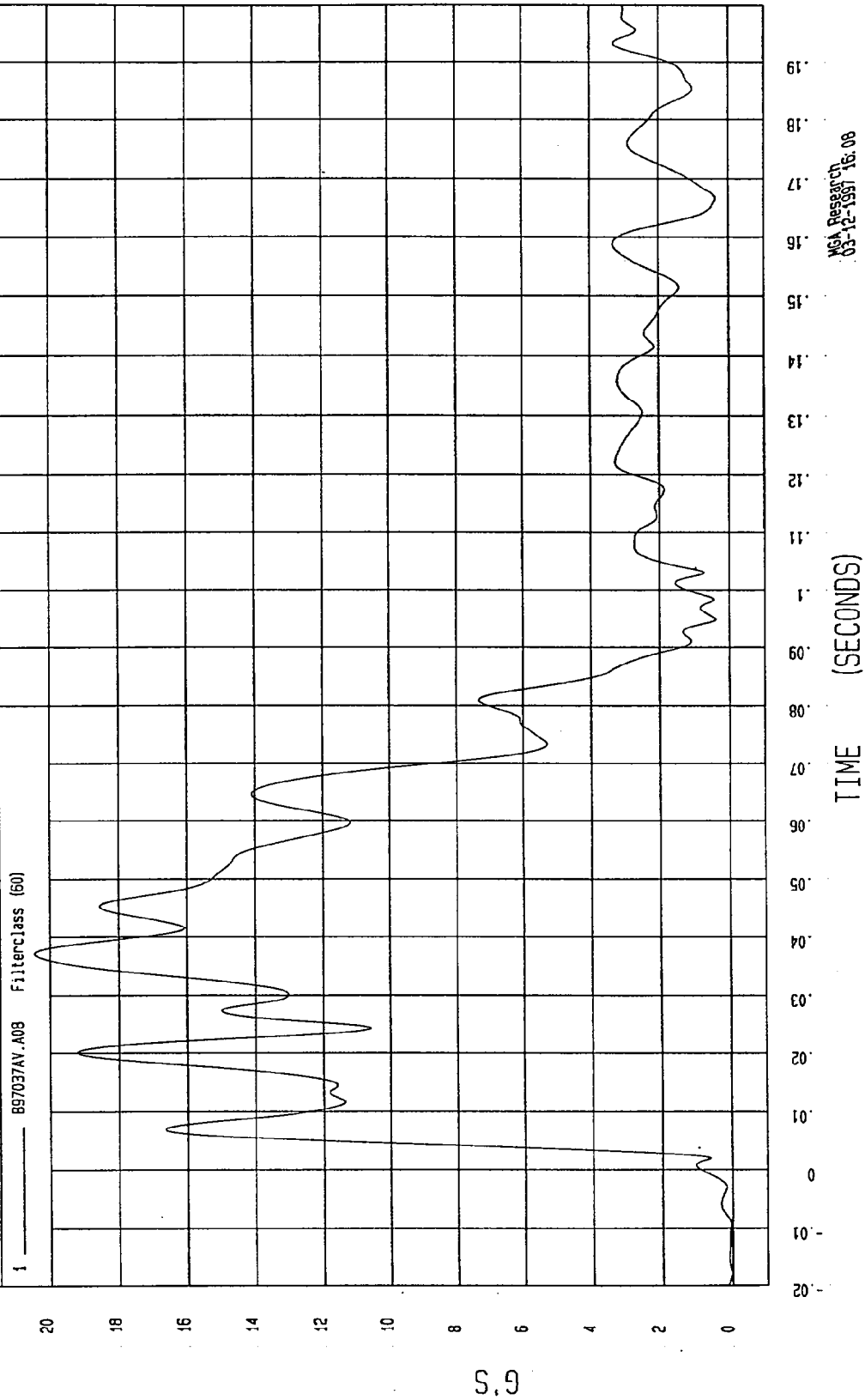
TIME Seconds

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = 3.59E-03 G's at -18 msec Maximum = 20.45 G's at 37 msec

REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

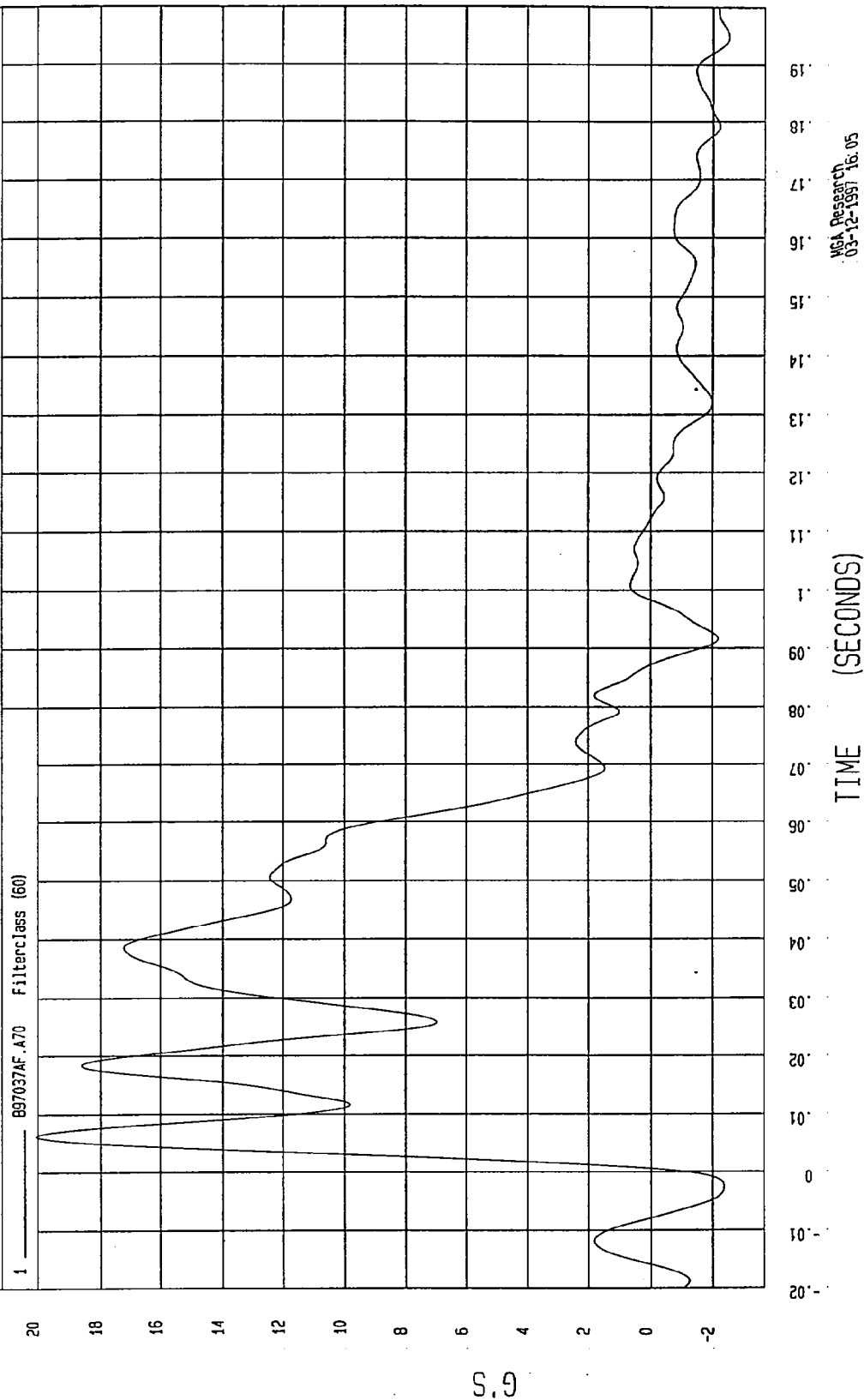


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -2.50 G'S at .195 msec Maximum = 20.05 G'S at 6 msec

RIGHT REAR OCCUPANT COMPARTMENT Y ACCELERATION



MECA Research
03-12-1997 16:05

TEST: HIGH SPEED LATERAL IMPACT

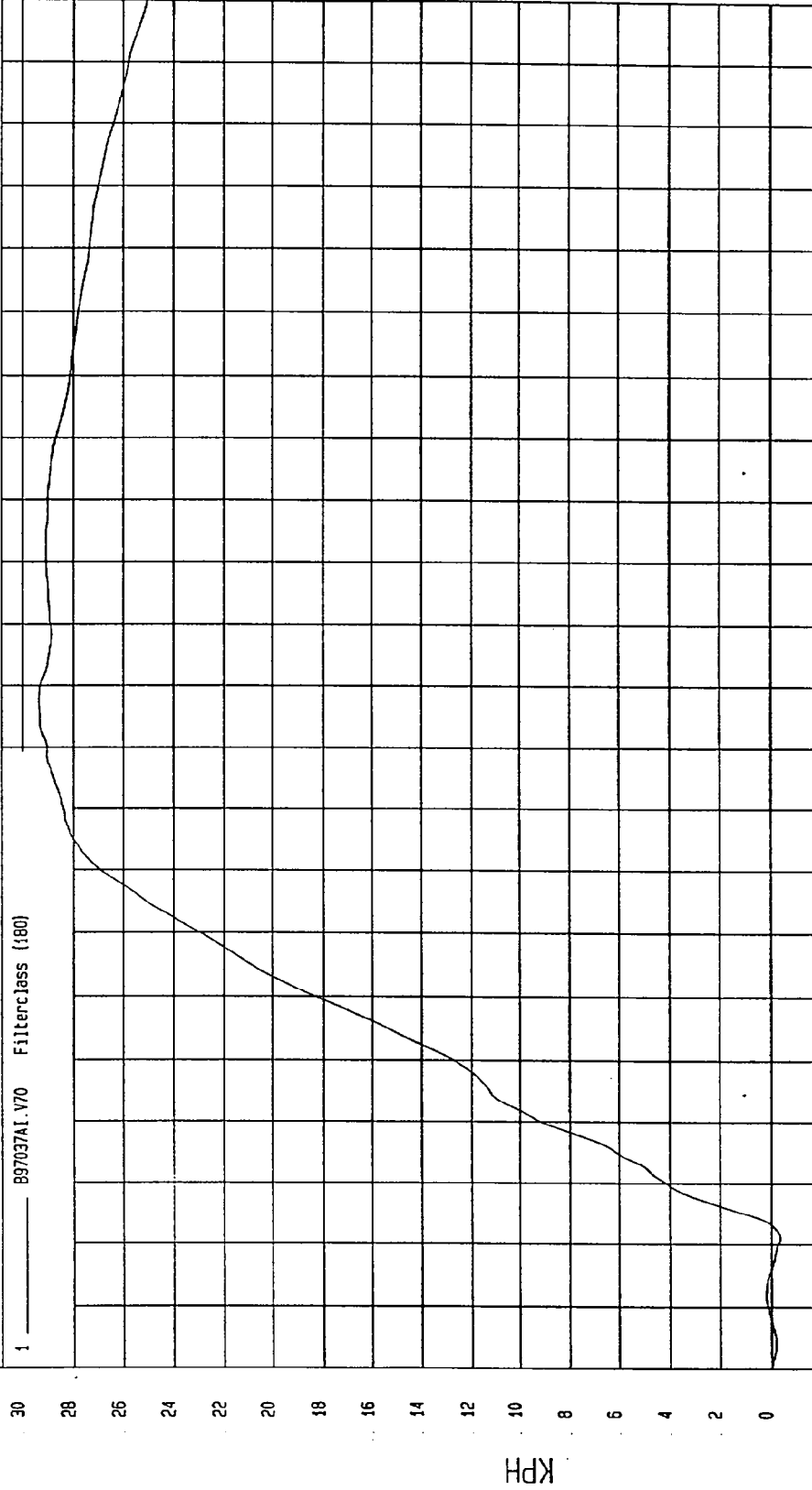
TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -33 KPH at 1 msec Maximum = 29.35 KPH at 87 msec

RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY

1 ——— B97037A1.V70 Filterclass (180)



TIME Seconds

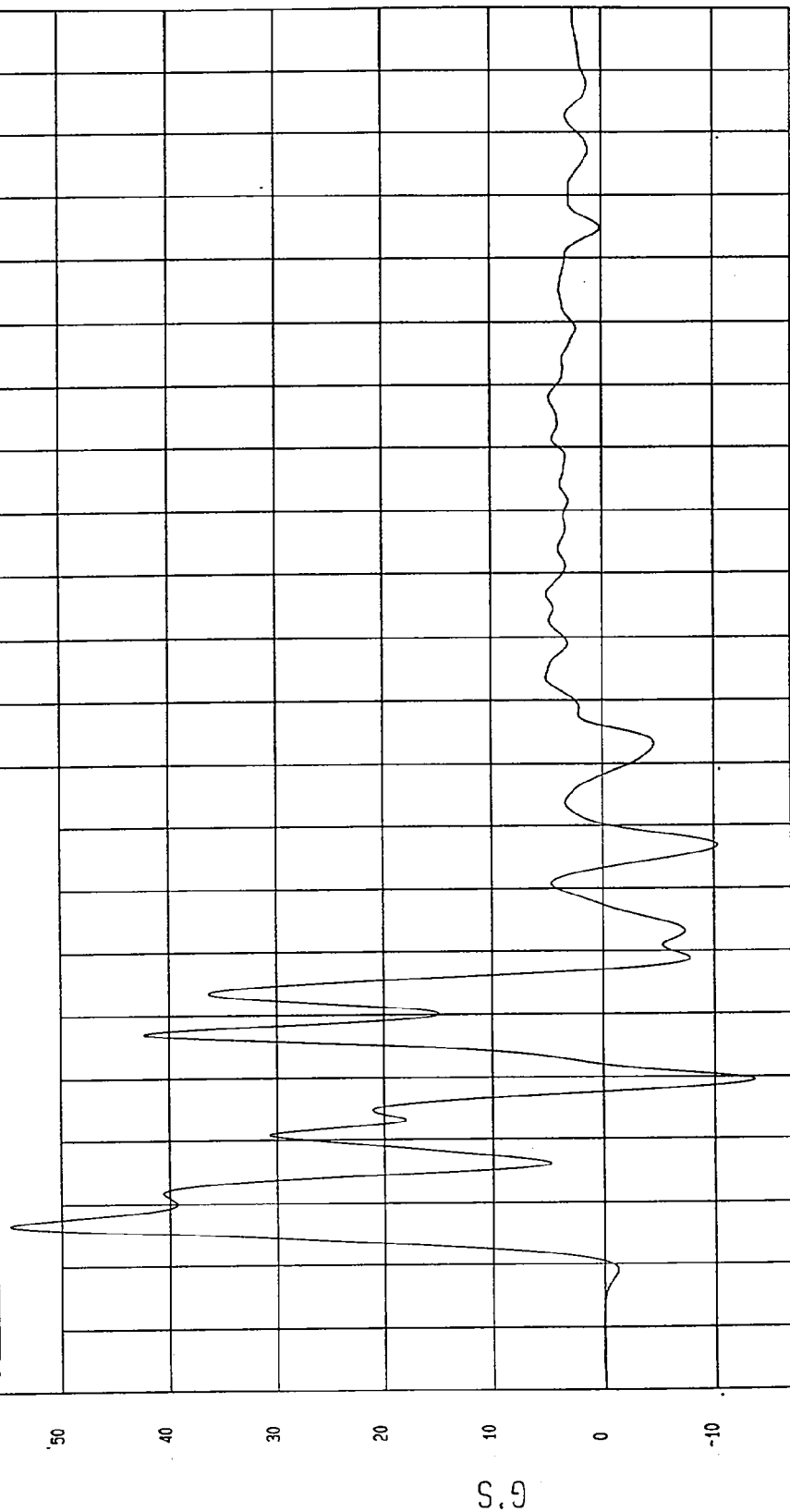
MCA Research
03-12-1997 16:02

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -13.59 G'S at 30 msec Maximum = 54.66 G'S at 7 msec

LEFT LOWER A-POST Y ACCELERATION

1 B97037AF.A20 Filterclass (60)



MGA Research
03-12-1997 16:05

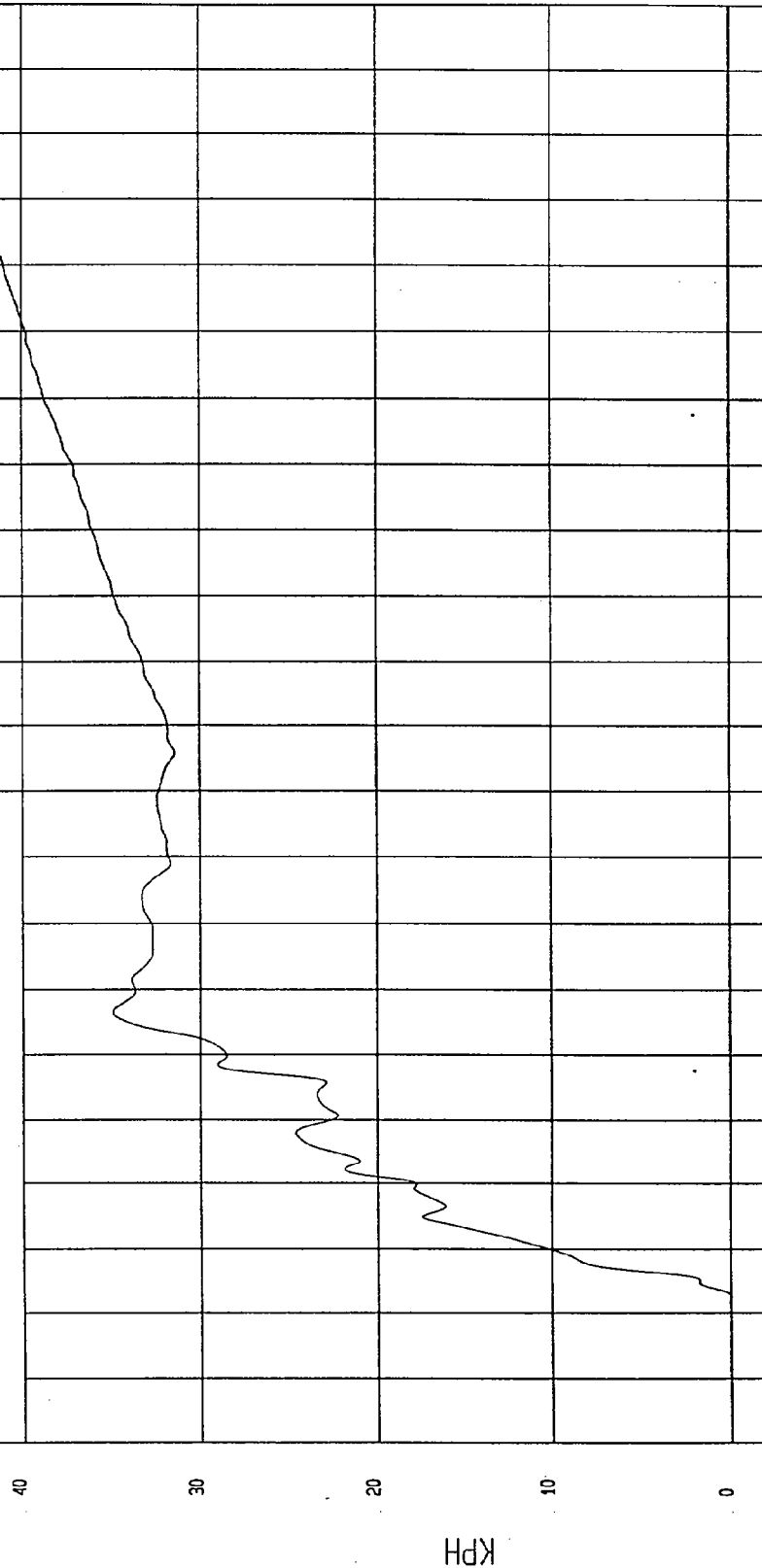
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -1.40E-02 KPH at 3 msec Maximum = 43.97 KPH at 200 msec

LEFT LOWER A-POST Y VELOCITY

1 _____ B97037A1.V20 FilterClass (f80)



TIME Seconds

McA Research
03-12-1997 16:02

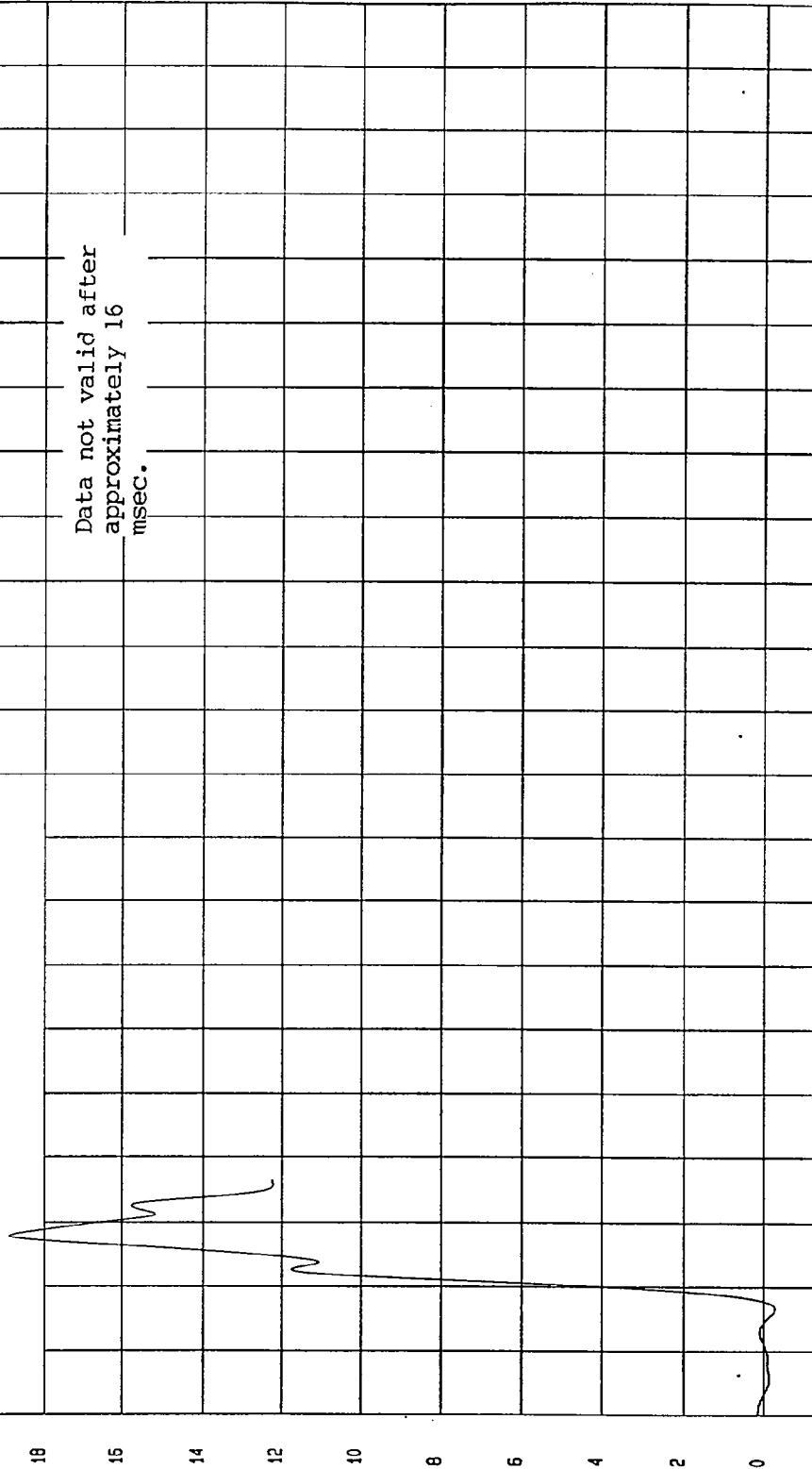
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -.27 G's at -3 msec Maximum = 18.86 G's at 8 msec

LEFT MID A-POST Y ACCELERATION

1 B97037AF.A19 Filterclass (60)



TIME (SECONDS)

19.18.17.16.15.14.13.12.11.10.09.08.07.06.05.04.03.02.01.0-0.01-0.02

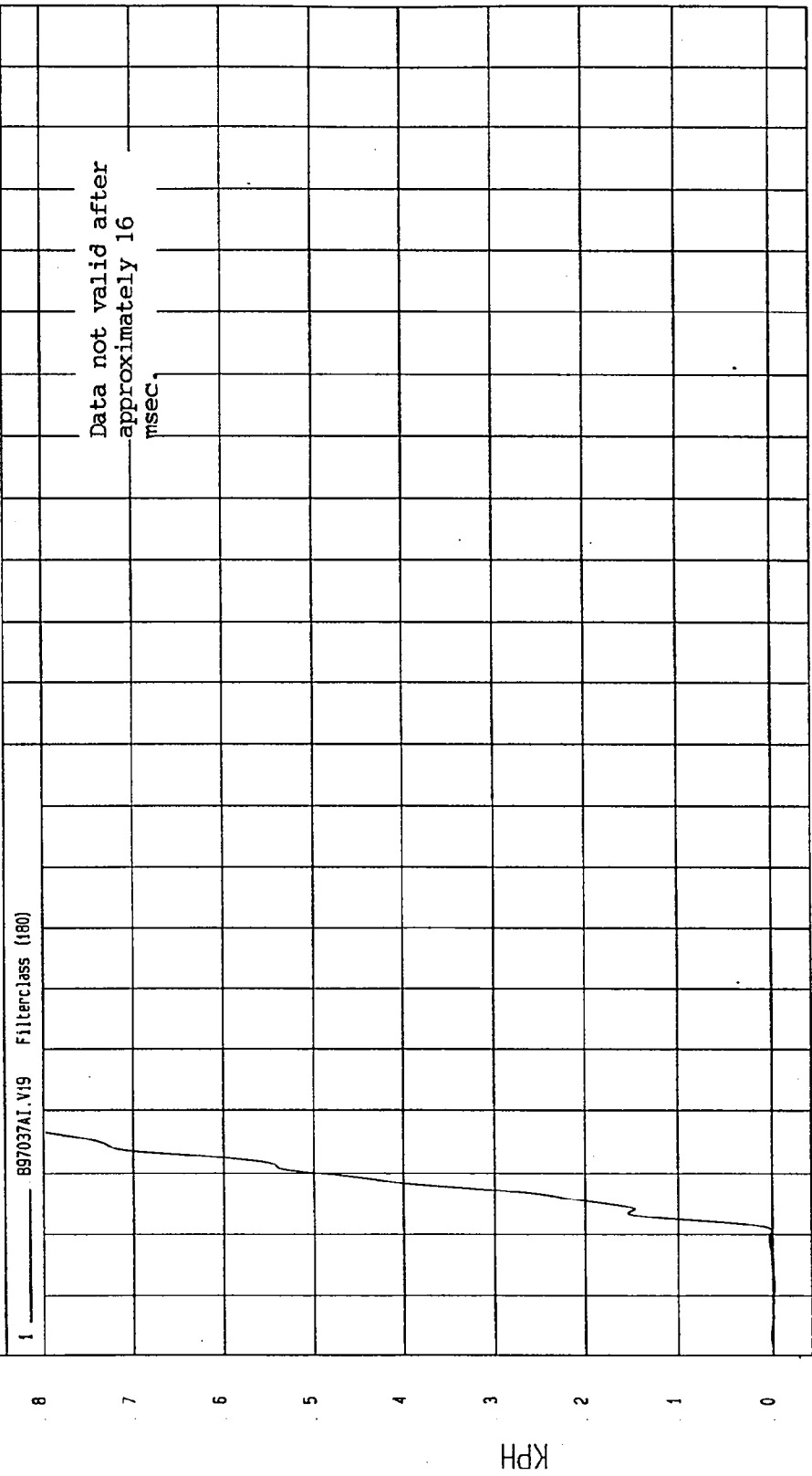
NSA Research
03-12-1997 16:15

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -2.10E-02 KPH at -9 msec Maximum = 8.01 KPH at 16 msec

LEFT MID A-POST Y VELOCITY



TIME Seconds

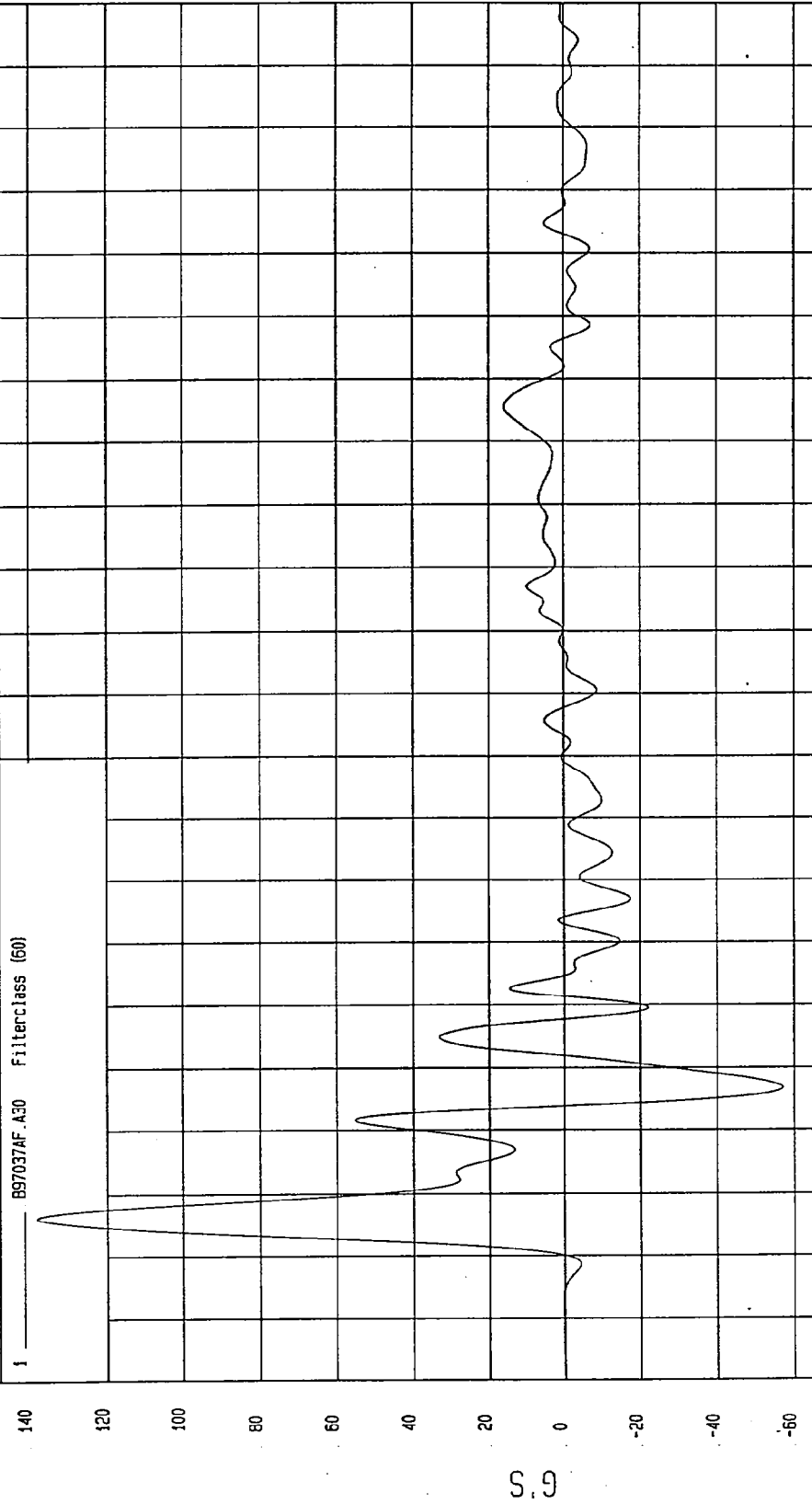
VCA Research
03-12-1997 16:15

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -57.03 G'S at 27 msec Maximum = 138.06 G'S at 6 msec

LEFT LOWER B-POST Y ACCELERATION



TIME (SECONDS)

MSA Research
03-12-1997 16.06

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 45.92 KPH at 24 msec

Minimum = -7.17E-02 KPH at 2 msec

LEFT LOWER B-POST Y VELOCITY

1 B97037A1.V30 Filterclass (180)

KPH

TIME Seconds

WCA Research
03-12-1997 16:03

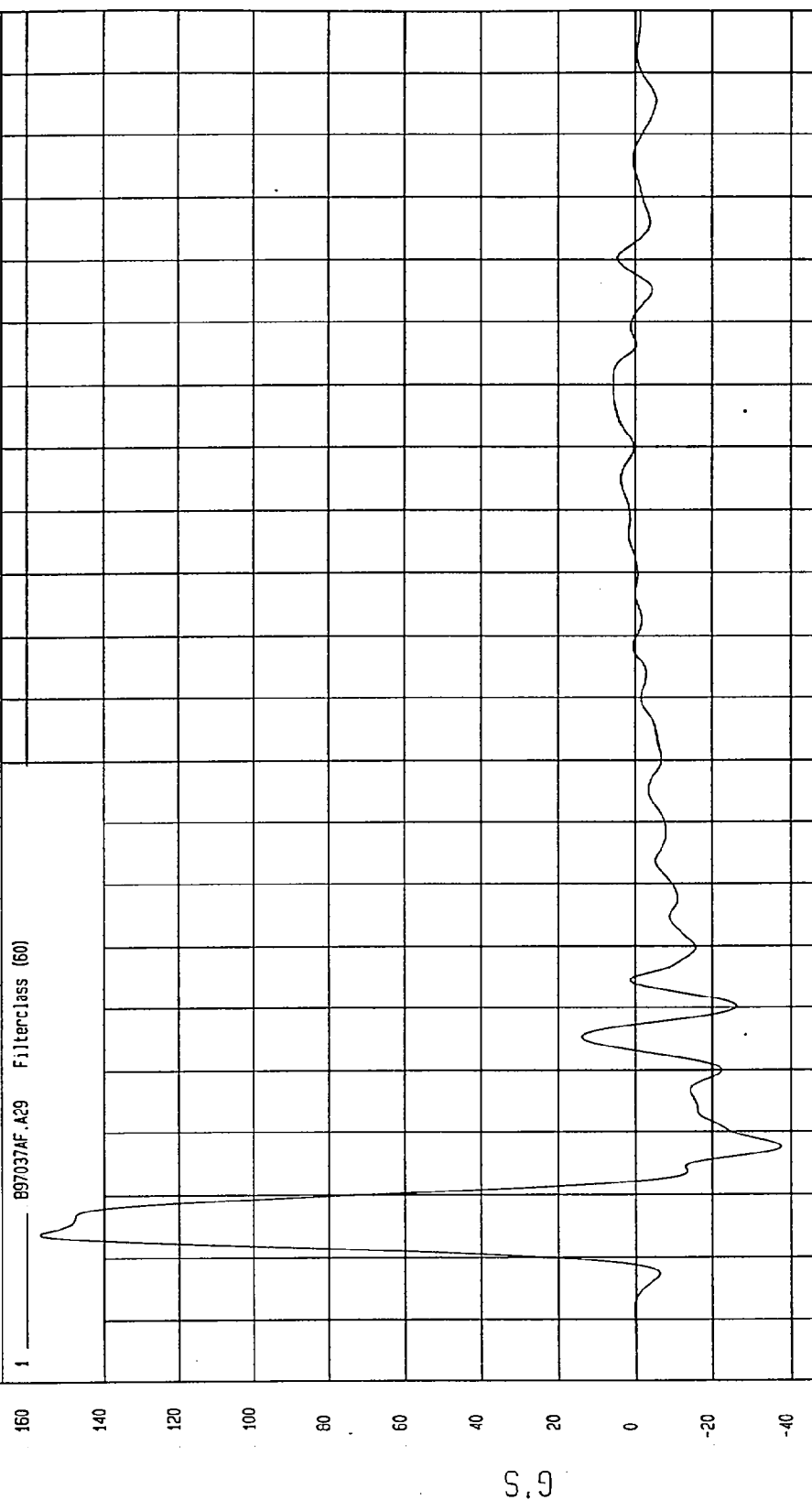
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -37.46 G'S at 18 msec Maximum = 156.86 G'S at 4 msec

LEFT MID B-POST Y ACCELERATION

1 — 897037AF.A29 Filterclass (50)



MCA Research
03-12-1997 16:06

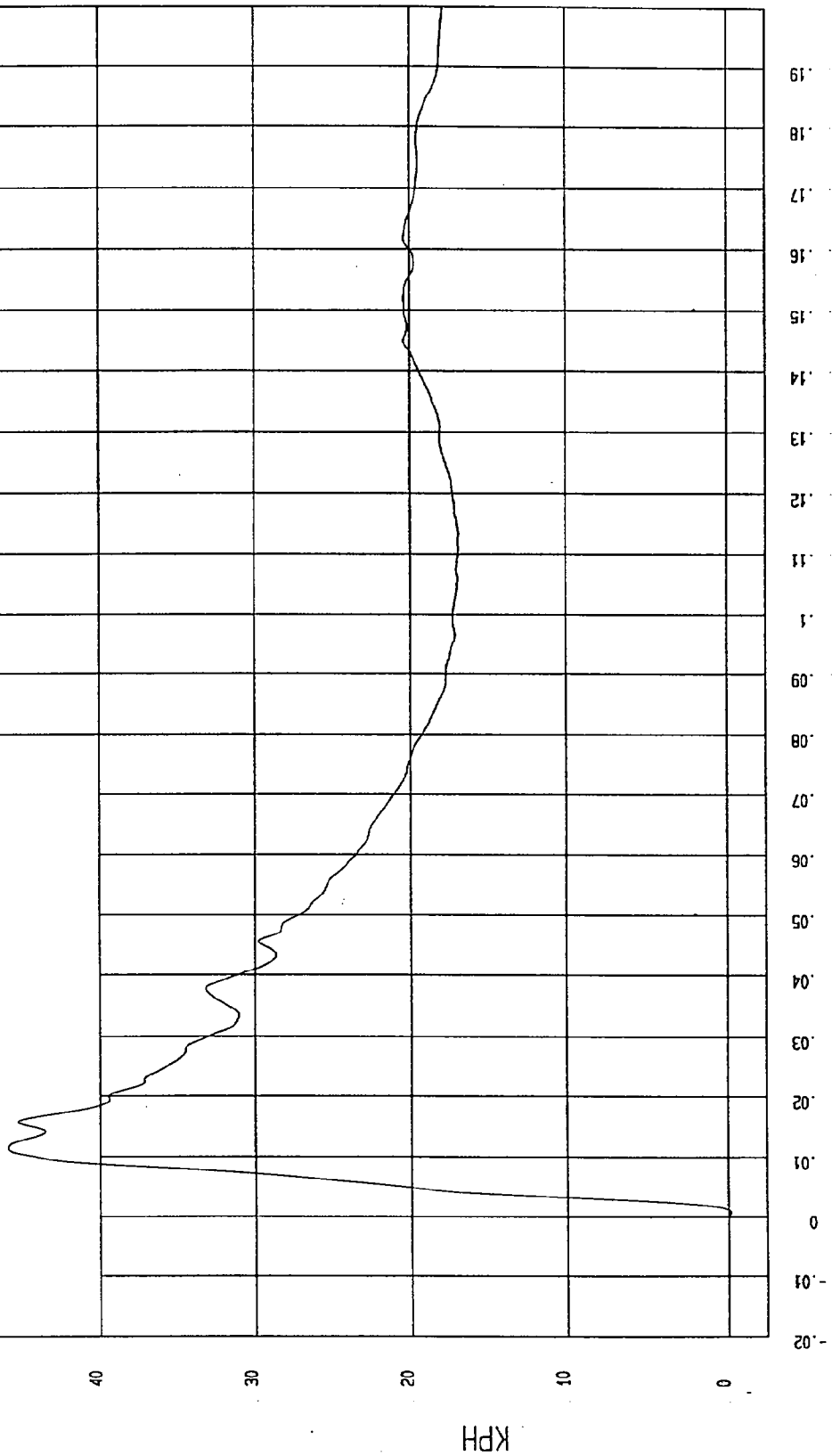
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -.14 KPH at 1 msec Maximum = 45.77 KPH at 11 msec

LEFT MID B-POST Y VELOCITY

1 ——— 897037A1.V29 Filterclass (180)



NGA Research
03-12-1997 16:03

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 7.18 G'S at 66 msec

Minimum = -7.47 G'S at 30 msec

VEHICLE CG X ACCELERATION

1 ——— B97037AF.A56 Filterclass (60)

G.S

TIME (SECONDS)

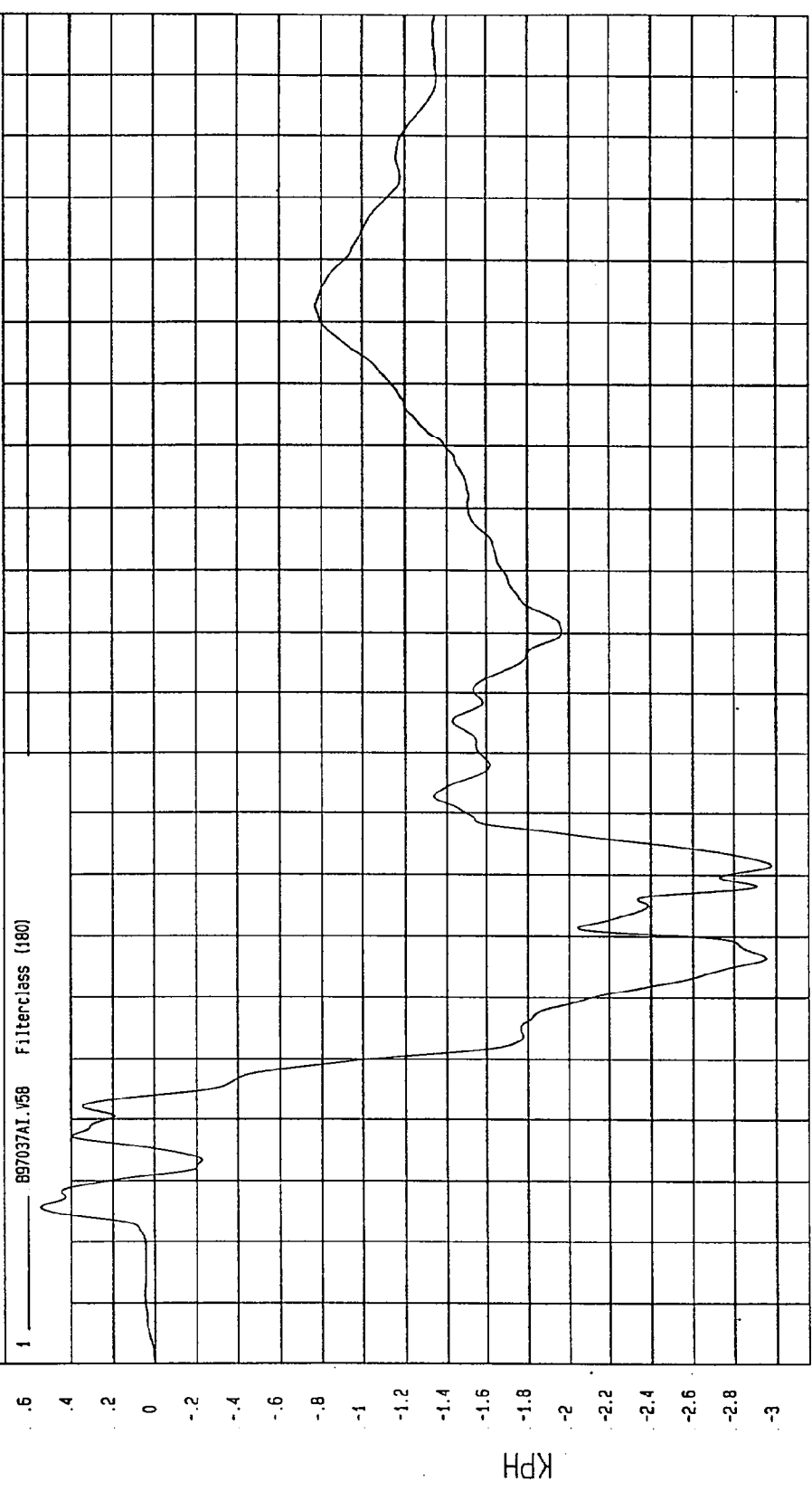
MCA Research
03-12-1997 16:06

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -2.97 KPH at 62 msec Maximum = .54 KPH at 6 msec

VEHICLE CG X VELOCITY



TIME Seconds

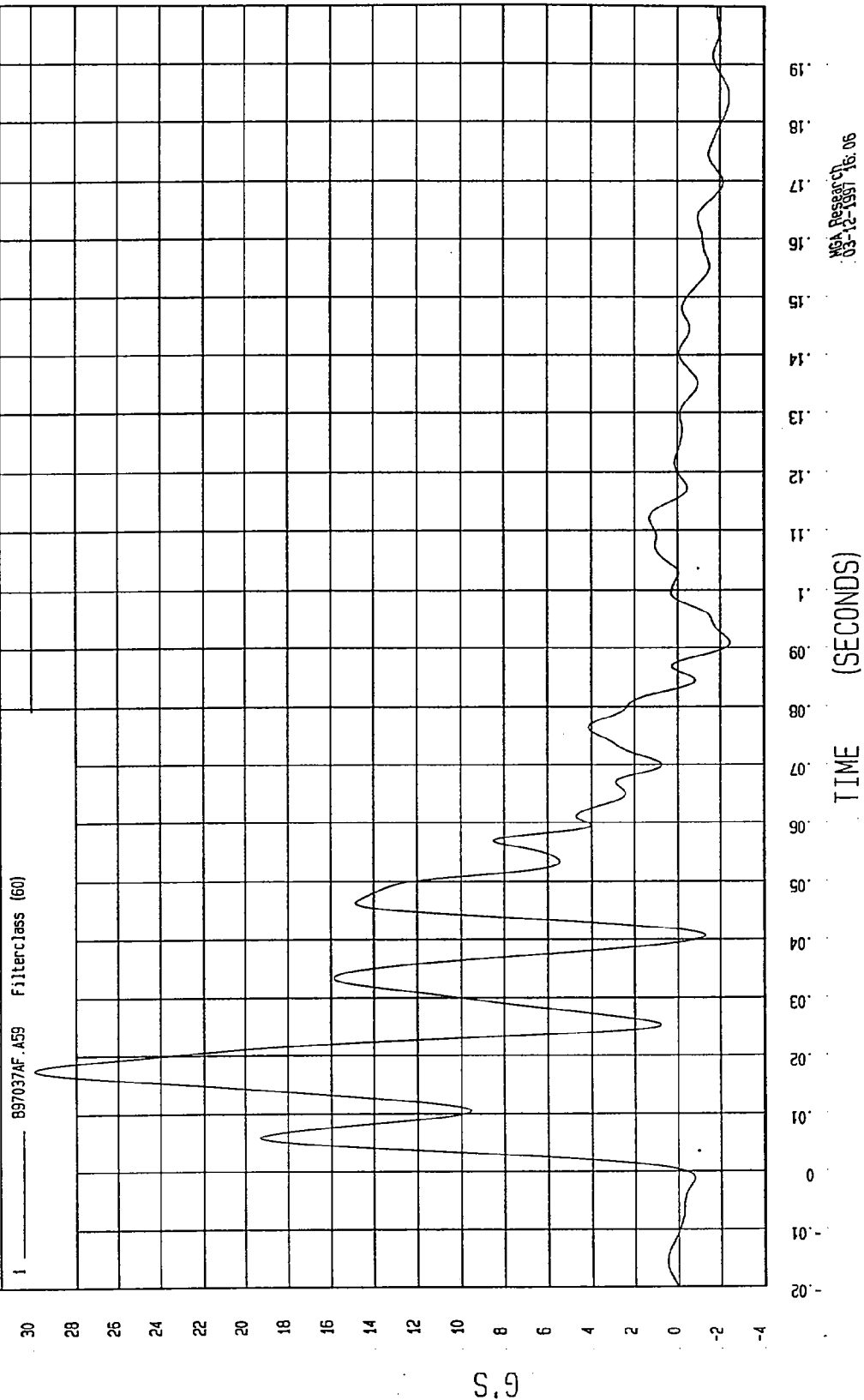
WCA Research
03-12-1997 16:03

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -2.44 G'S at 91 msec Maximum = 29.87 G'S at 18 msec

VEHICLE CG Y ACCELERATION



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

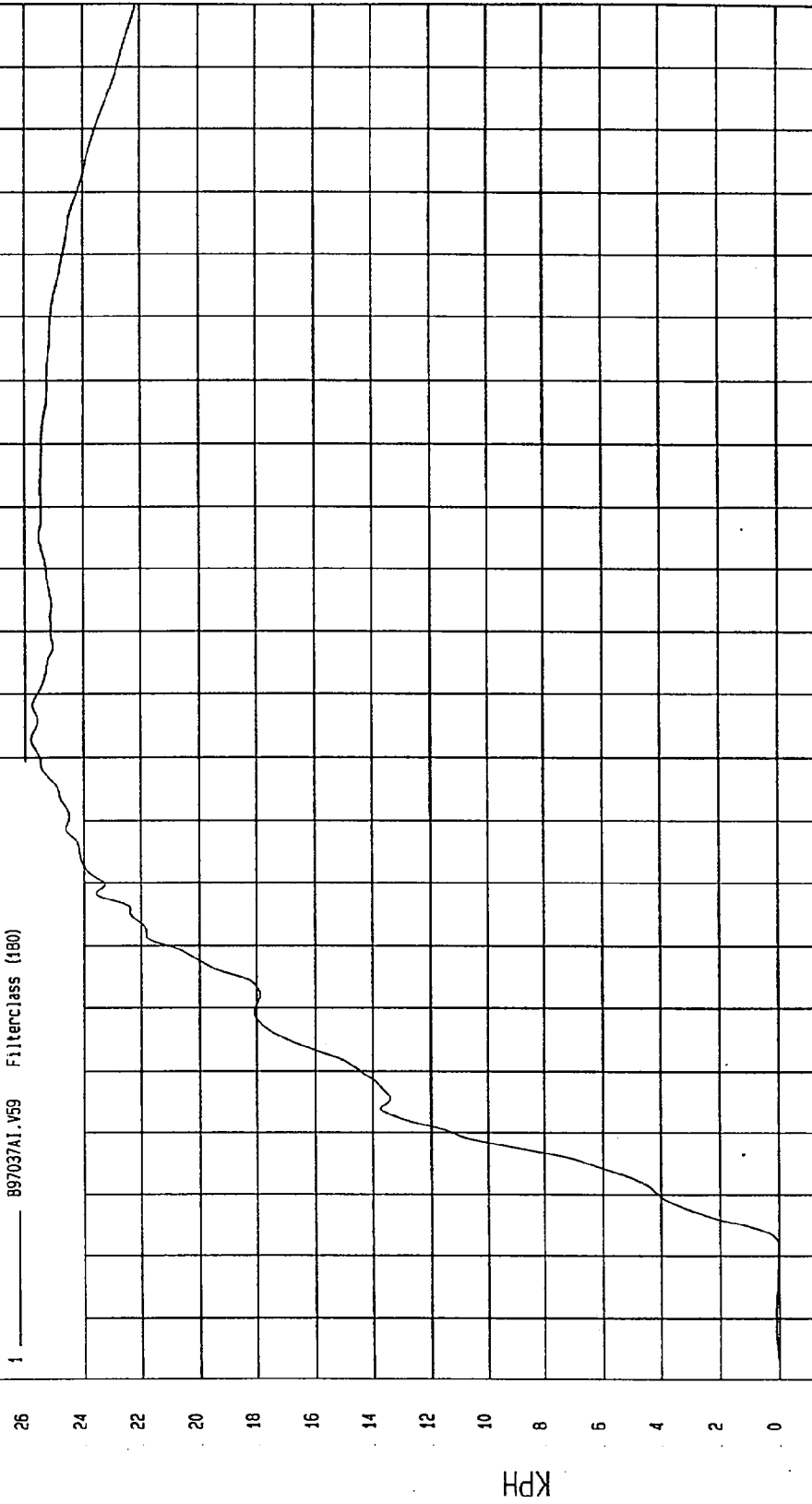
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 25.78 KPH at 83 msec

Minimum = -9.72E-05 KPH at -20 msec

VEHICLE CG Y VELOCITY

1 ——— 897037A1.V59 Filterclass (180)



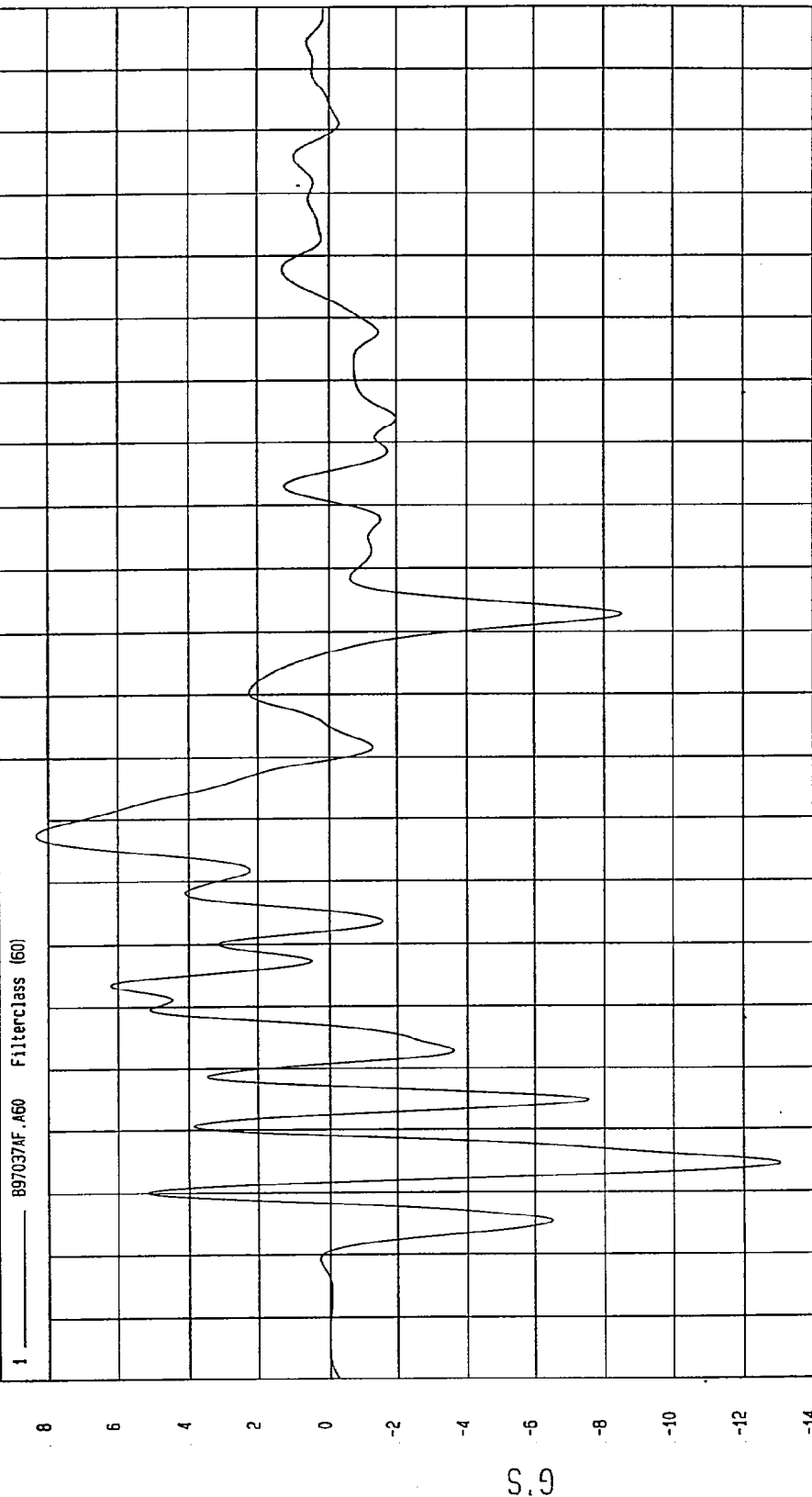
TIME Seconds
VEA Research
03-12-1997 16:03

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -13.03 G's at 14 msec Maximum = 8.33 G's at 68 msec

VEHICLE CG Z ACCELERATION



TIME (SECONDS)

0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02

NGA Research
03-12-1997 16:06

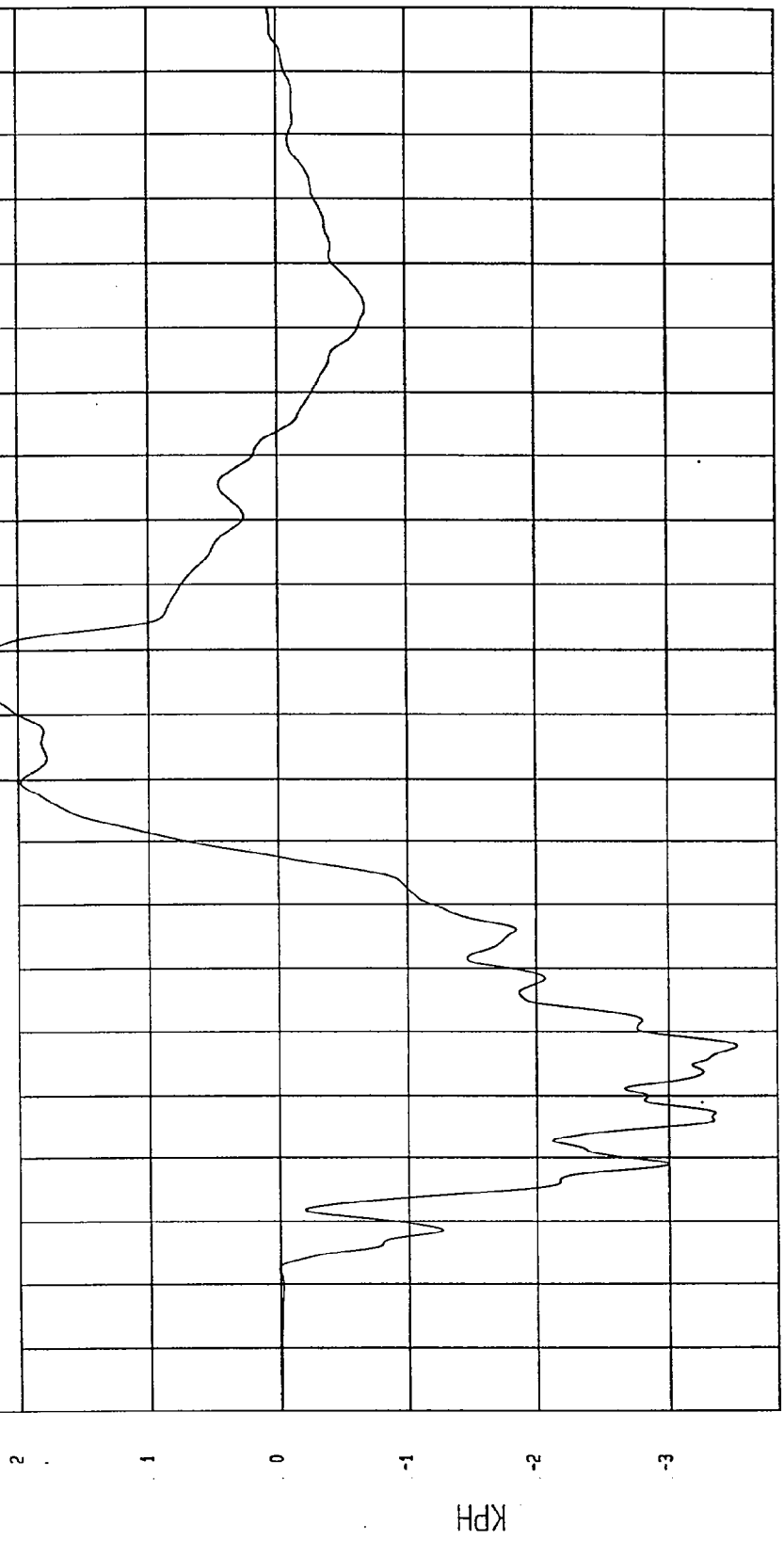
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -3.51 KPH at 38 msec Maximum = 2.32 KPH at 96 msec

VEHICLE CG Z VELOCITY

1 _____ 897037A1.V60 Filterclass (180)



MGA Research
03-12-1997 16:03

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = 6.59E-02 G'S at -10 msec Maximum = 30.62 G'S at 17 msec

VEHICLE CG RESULTANT ACCELERATION

32

1 _____ 897037AV.A58 Filterclass (60)

30

28

26

24

22

20

18

16

14

12

10

8

6

4

2

0

G'S

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

0

-01

-02

TIME (SECONDS)

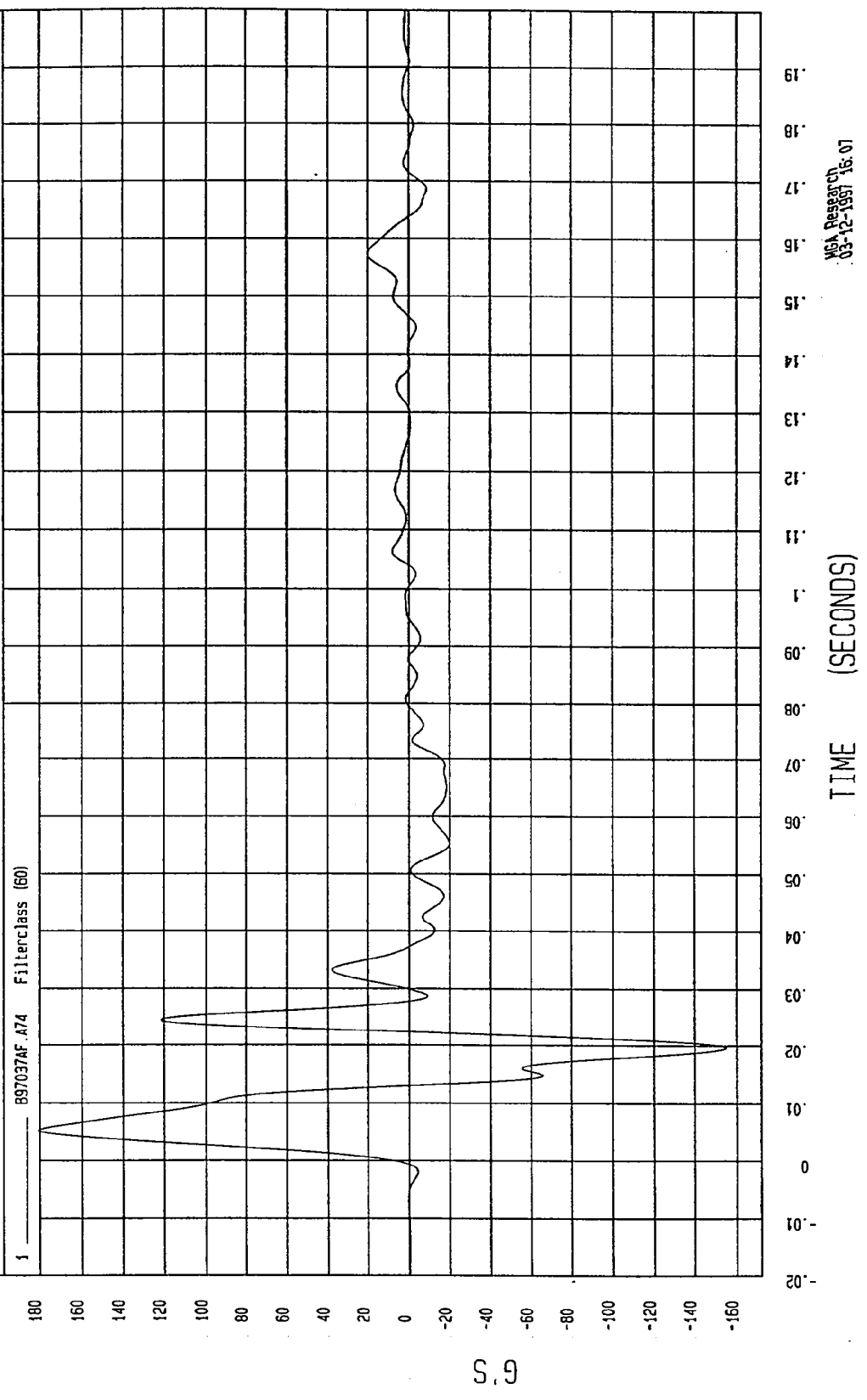
WGA Research
03-12-1997 16:08

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -154.99 G'S at 20 msec Maximum = 180.73 G'S at 5 msec

LEFT FRONT DOOR MIDREAR Y ACCELERATION



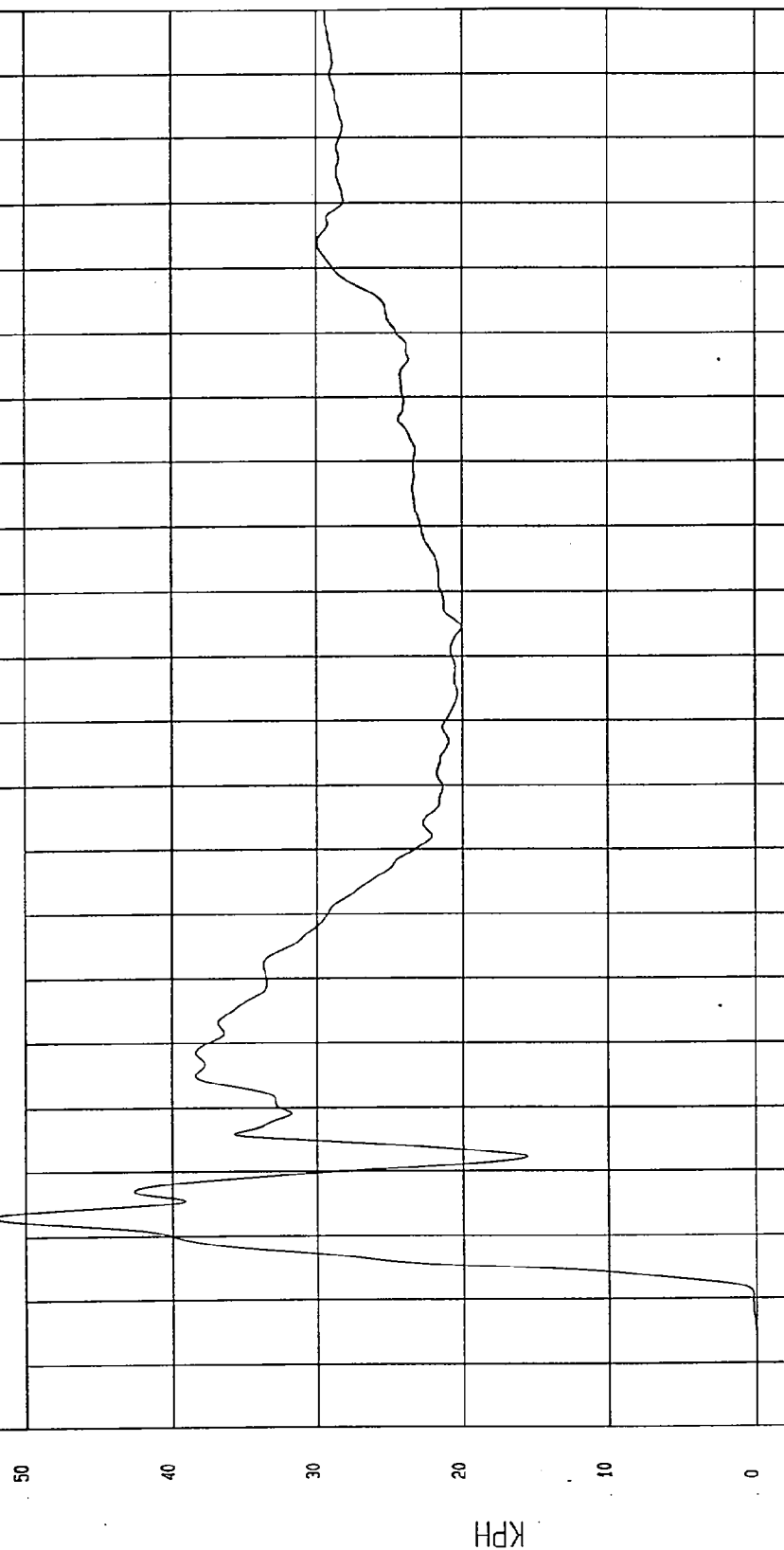
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -2.91E-02 KPH at -12 msec
Maximum = 52.25 KPH at 13 msec

LEFT FRONT DOOR MIDREAR Y VELOCITY

1 897037A1.V74 Filterclass (180)



MGA Research
03-12-1997 16:03

TIME Seconds

LEFT FRONT DOOR CENTERLINE Y ACCELERATION VS. TIME

NO VALID DATA COLLECTED

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

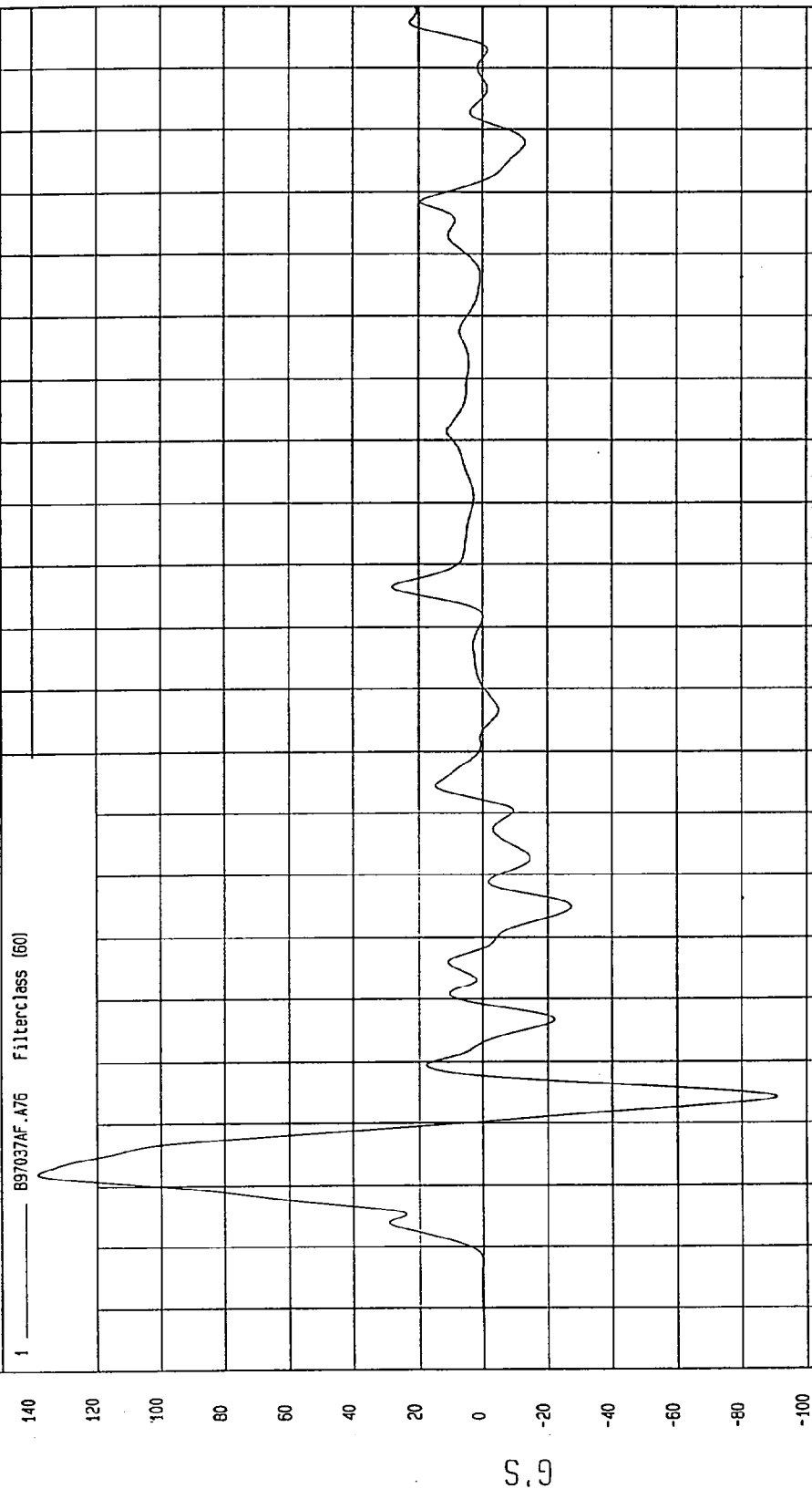
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 138.35 G'S at 12 msec

Minimum = -90.78 G'S at 24 msec

LEFT FRONT DOOR UPPER CENTERLINE Y ACCELERATION

1 — B97037AF.A75 Filterclass (60)



MSA Research
03-12-1997 16:07

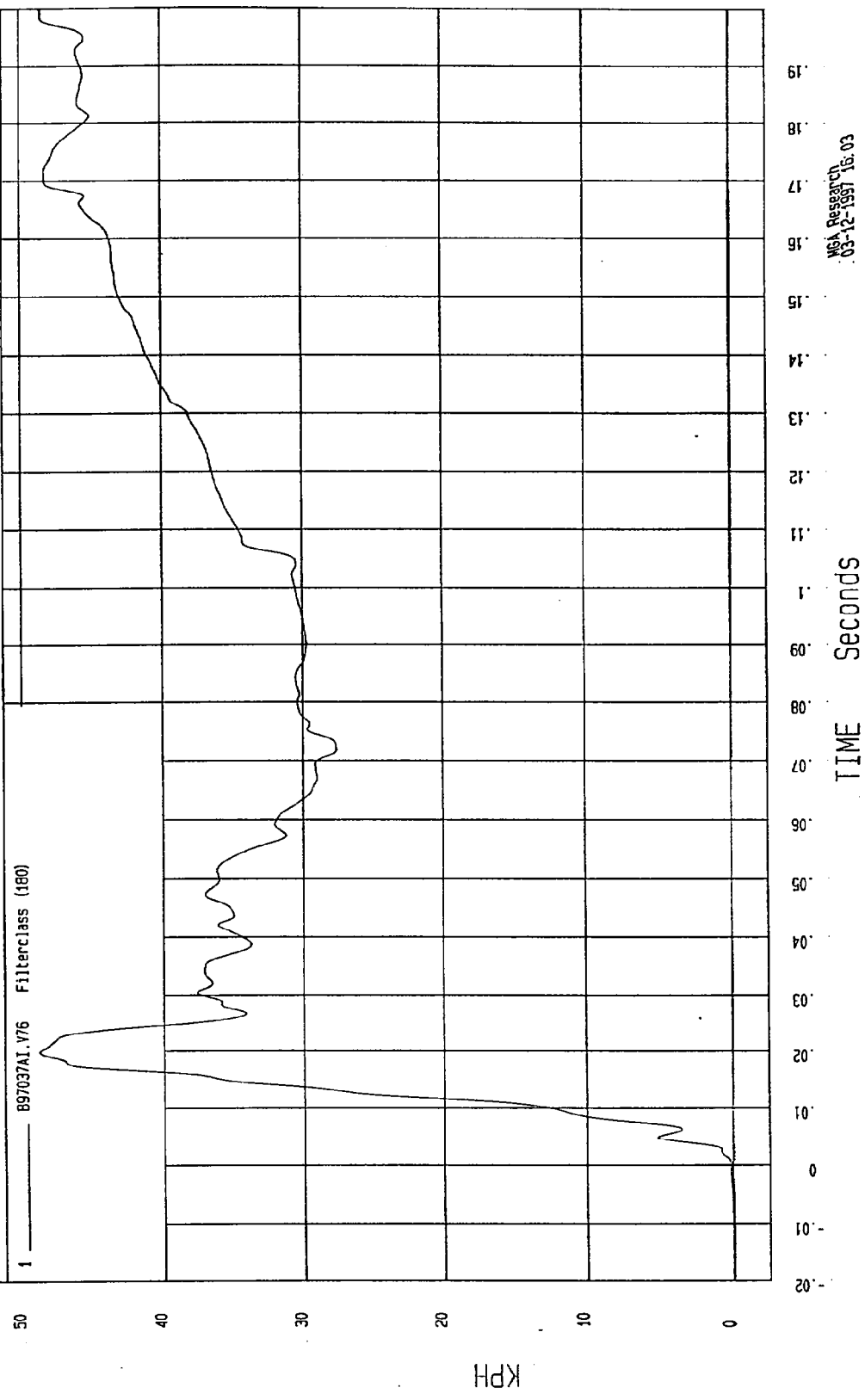
TIME (SECONDS)

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -2.85E-02 KPH at -12 msec Maximum = 48.85 KPH at 20 msec

LEFT FRONT DOOR UPPER CENTERLINE Y VELOCITY



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 215.04 G'S at 7 msec

Minimum = -200.09 G'S at 23 msec

LEFT REAR DOOR MIDREAR Y ACCELERATION

1 B97037AF.A77 FilterClass (60)

200
100
0
-100
-200

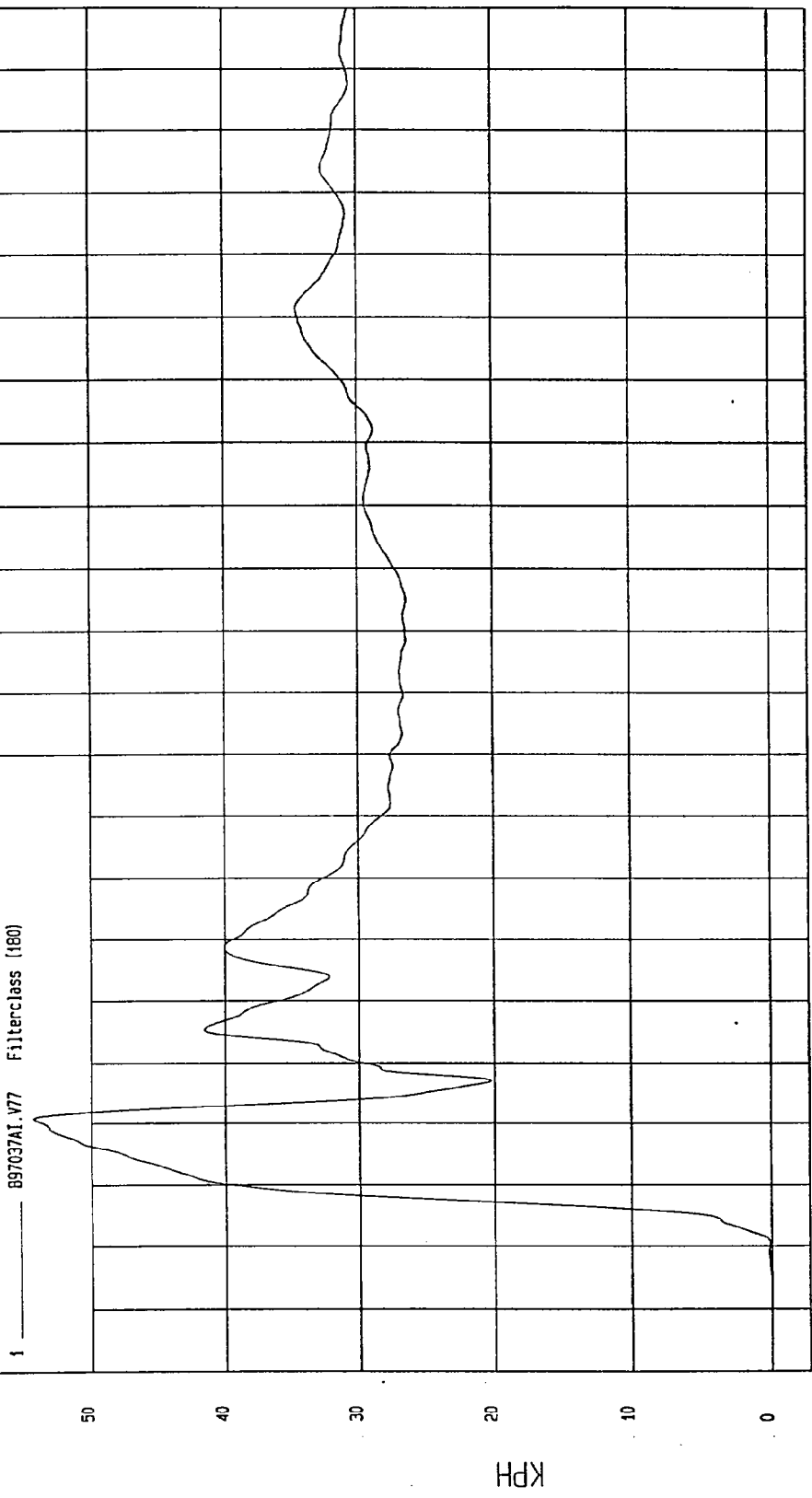
G'S

TIME (SECONDS)

MCA Research
03-12-1997 16:07

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH
Minimum = -2.15E-02 KPH at -12 msec Maximum = 54.27 KPH at 21 msec

LEFT REAR DOOR MIDREAR Y VELOCITY



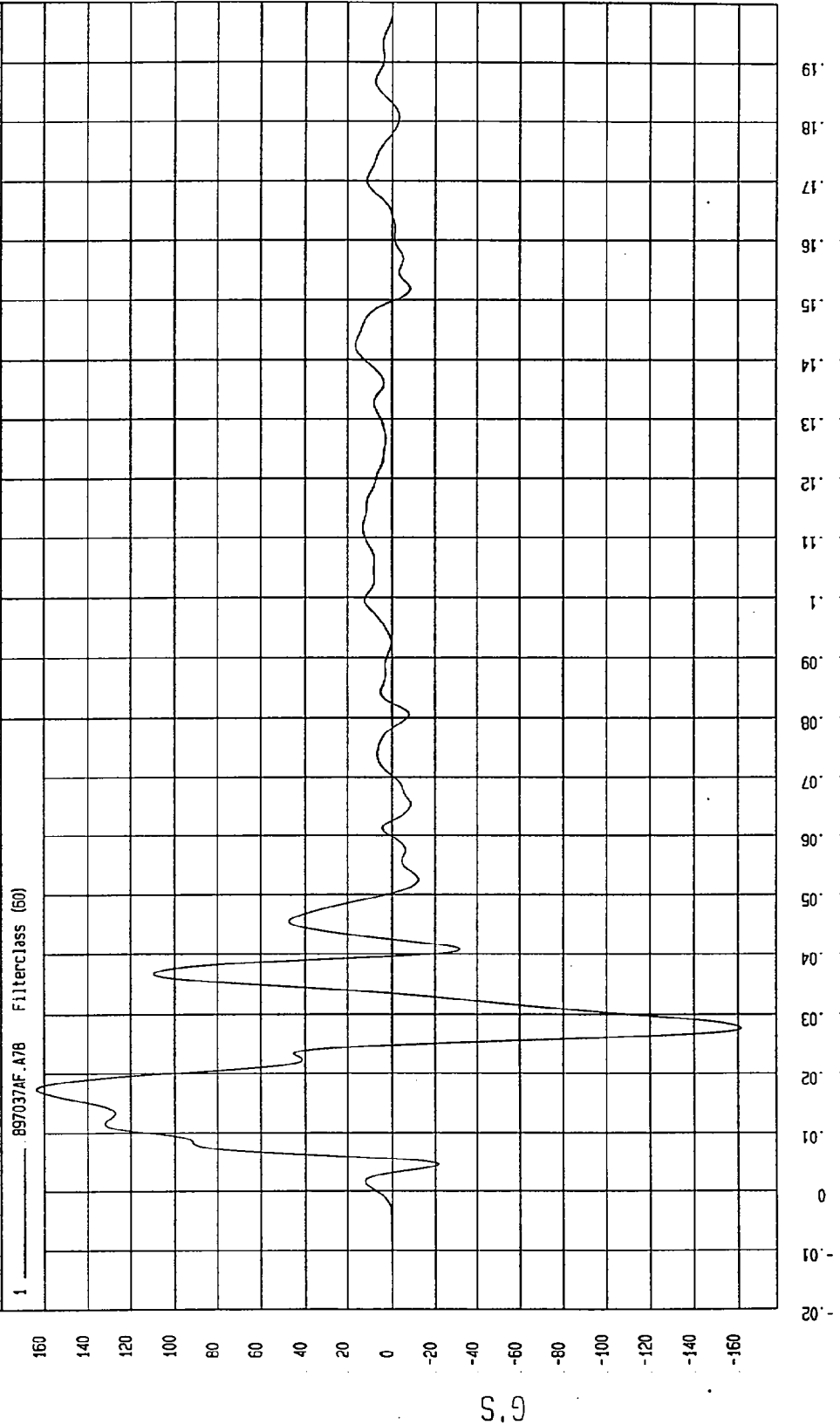
TIME Seconds
MSA Research
03-12-1997 16:03

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -161.35 G'S at 28 msec Maximum = 163.46 G'S at 17 msec

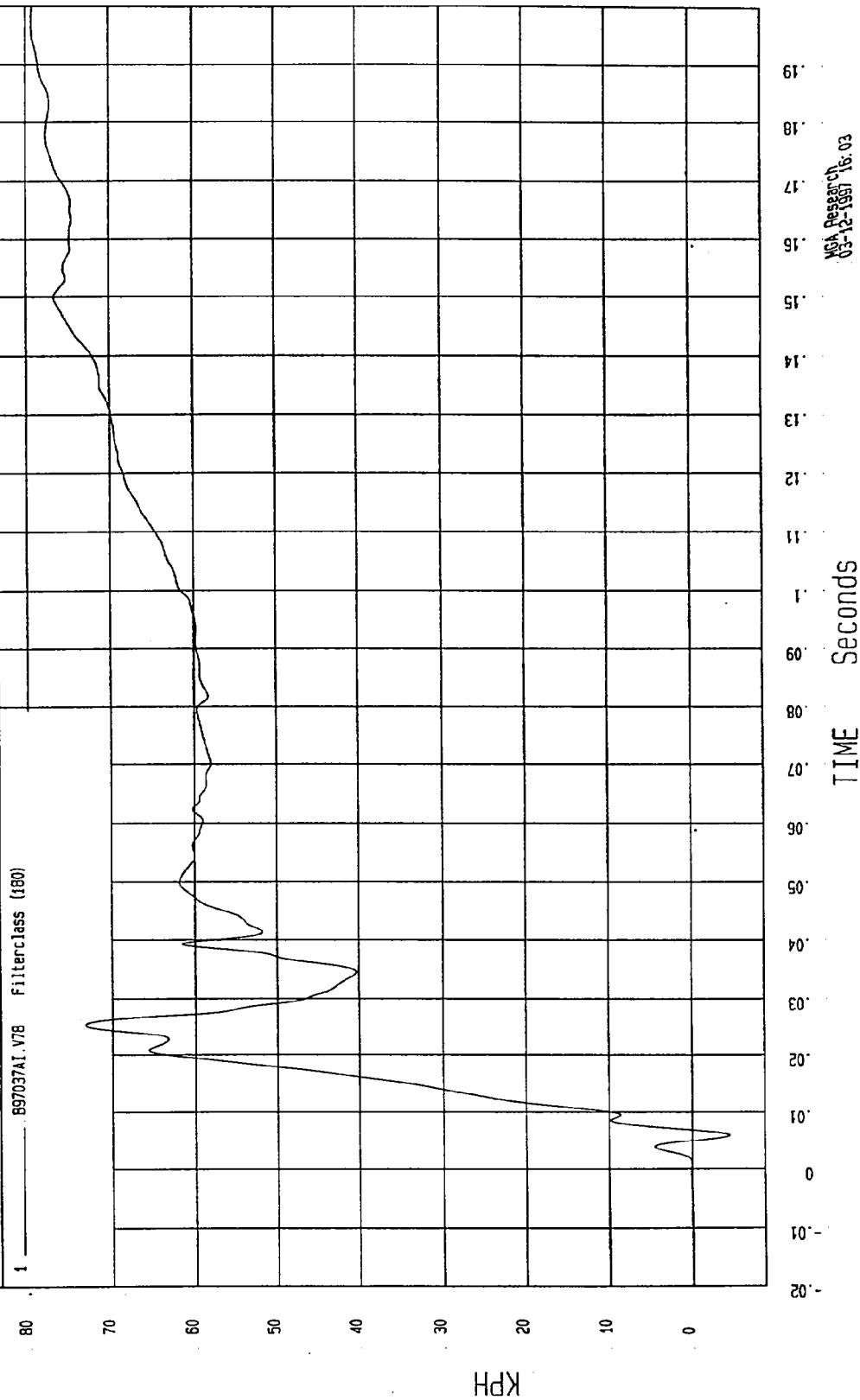
LEFT REAR DOOR UPPER CENTERLINE Y ACCELERATION



MSA Research
03-12-1997 16:07

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH
Minimum = -4.42 KPH at 6 msec Maximum = 79.30 KPH at 197 msec

LEFT REAR DOOR UPPER CENTERLINE Y VELOCITY

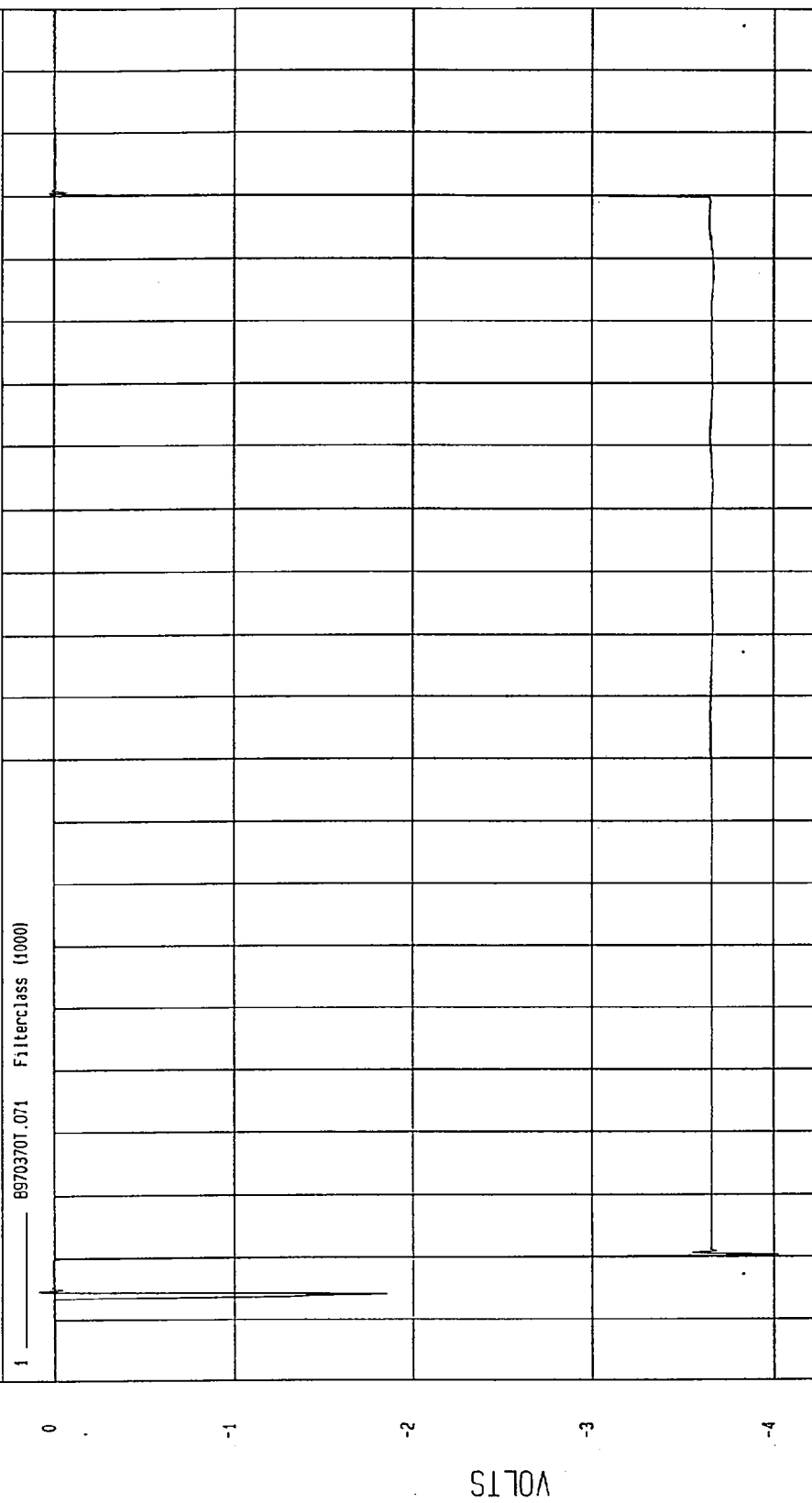


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -4.02 VOLTS at 0 msec Maximum = 8.60E-02 VOLTS at -5 msec

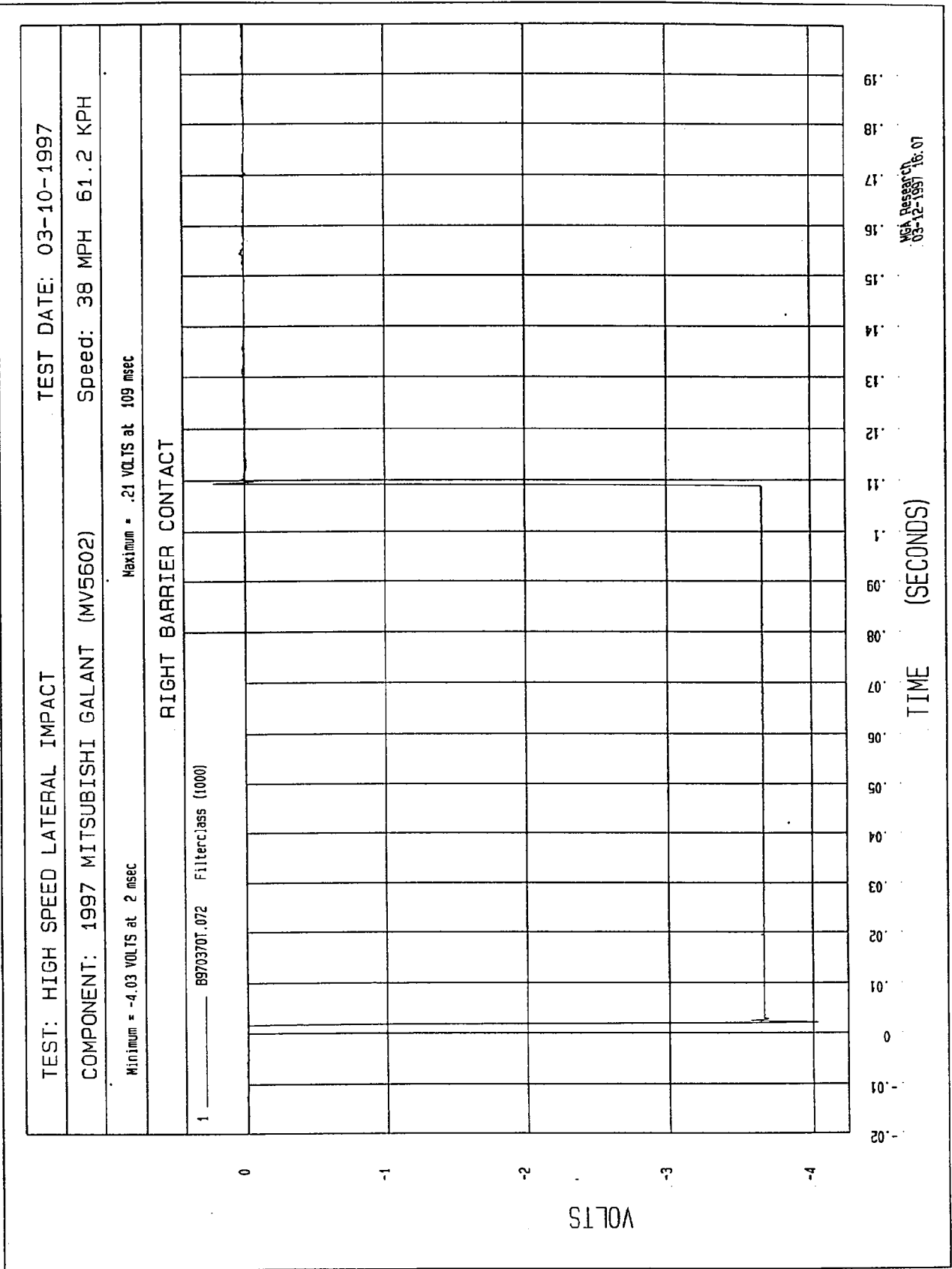
LEFT BARRIER CONTACT



TIME (SECONDS)

0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02

NSA Research
03-12-1997 16:07



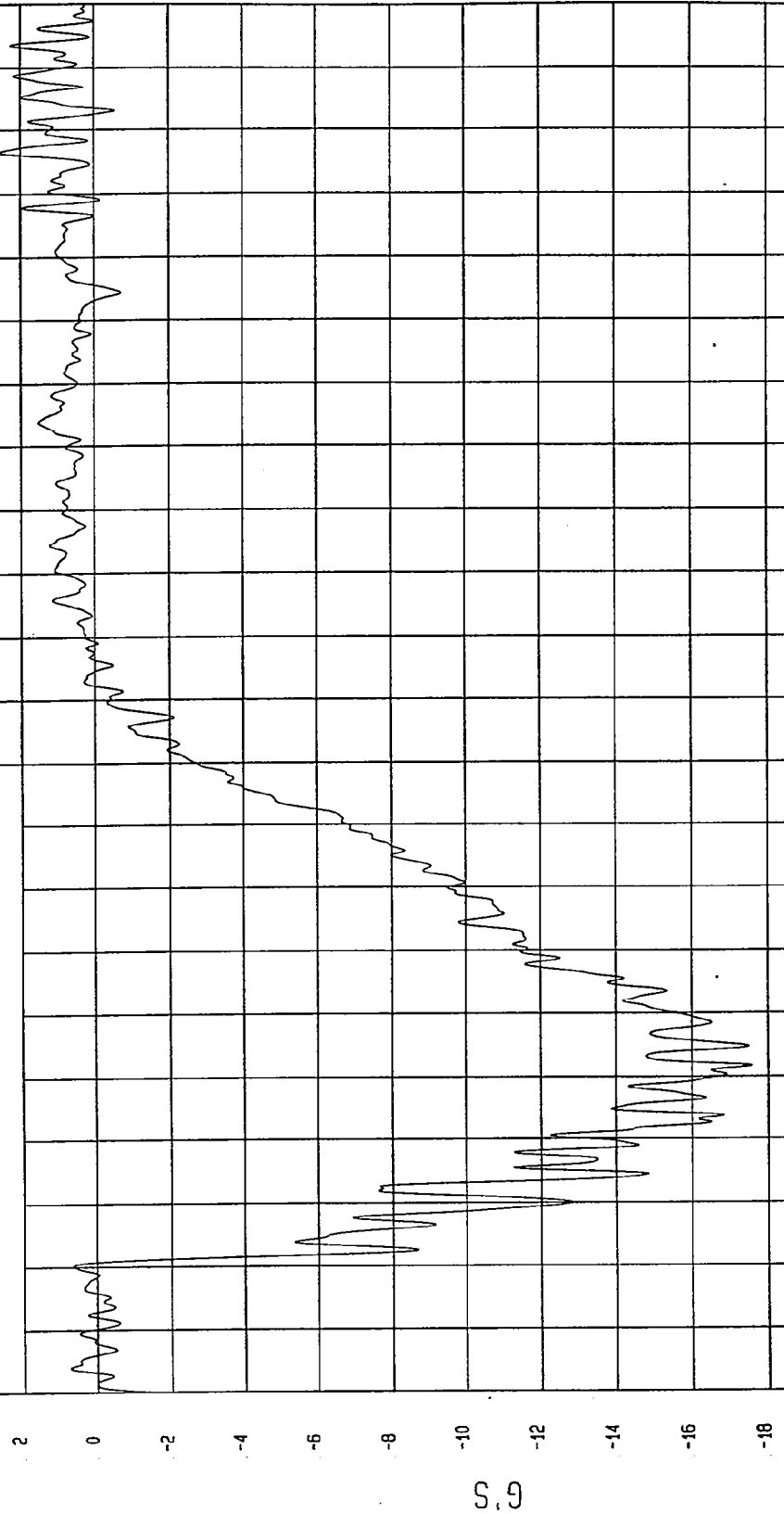
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -17.58 G'S at 32 msec
Maximum = 2.56 G'S at 176 msec

MOVING BARRIER CG X ACCELERATION

1 ——— 897037AF.A02 Filterclass (180)



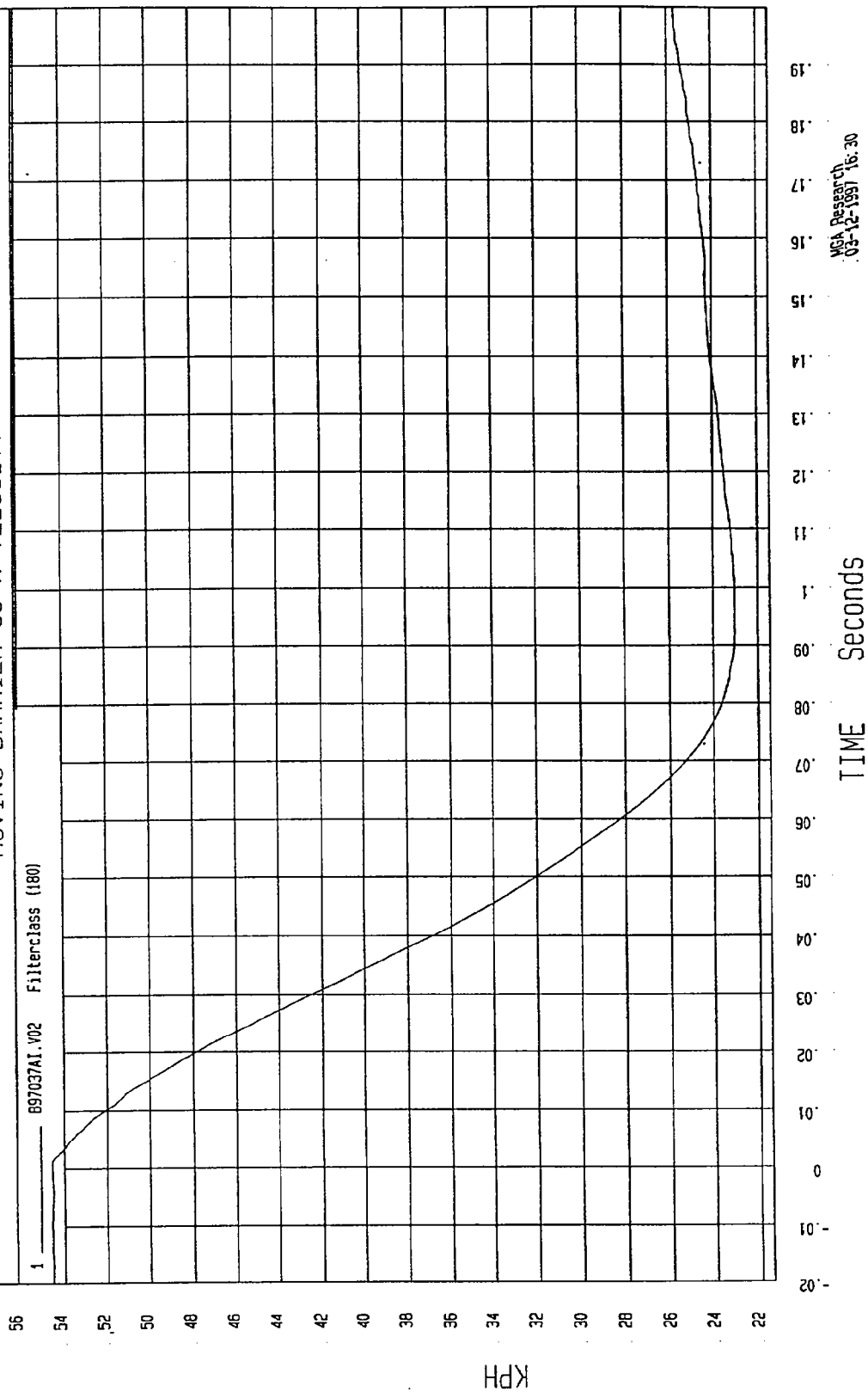
NSA Research
03-12-1997 16:30

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = 23.02 KPH at 96 msec Maximum = 54.54 KPH at -10 msec

MOVING BARRIER CG X VELOCITY



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

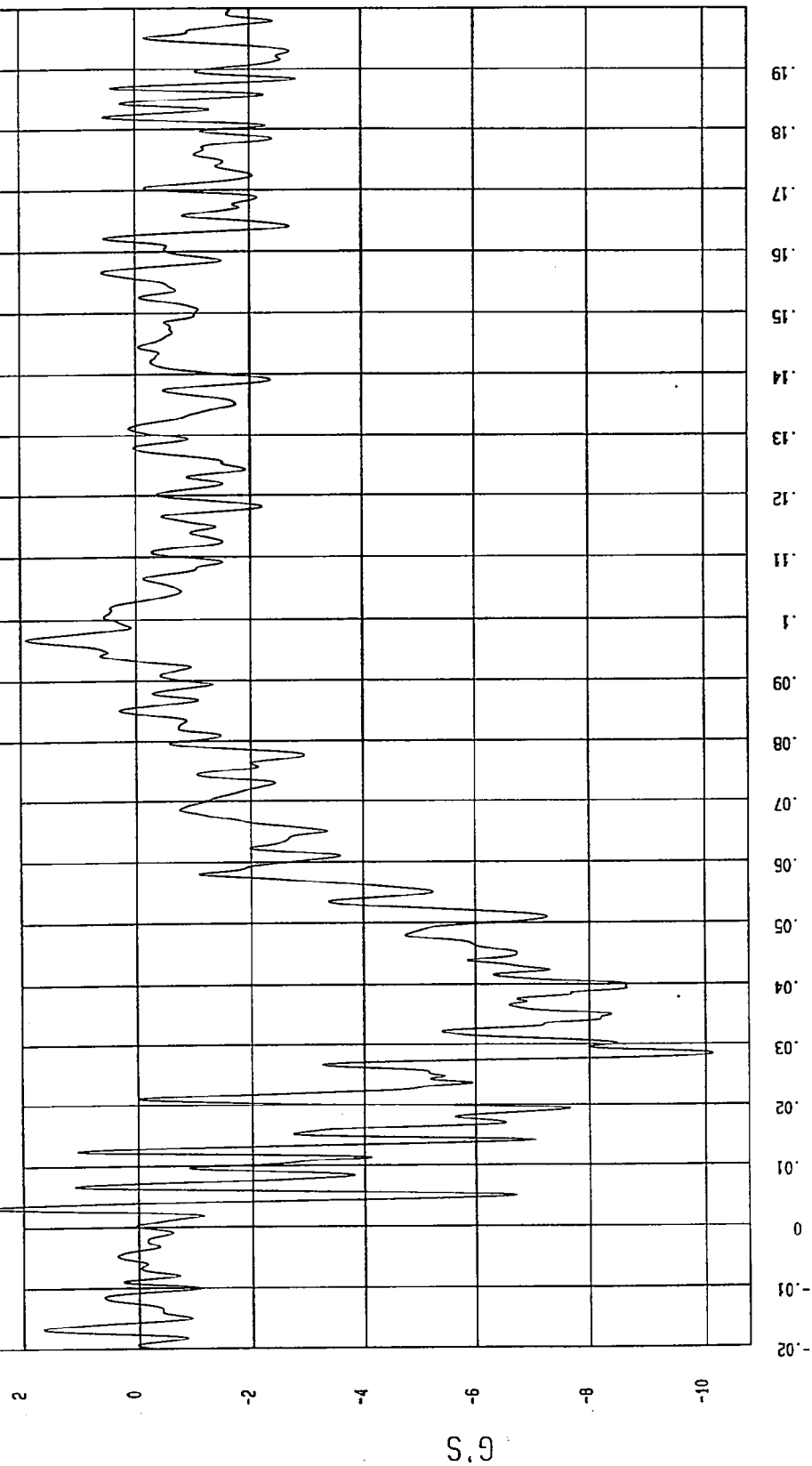
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 2.56 G'S at 3 msec

Minimum = -10.13 G'S at 28 msec

MOVING BARRIER CG Y ACCELERATION

1 897037AF.A03 Filterclass (180)



NSA Research
03-12-1997 16:30

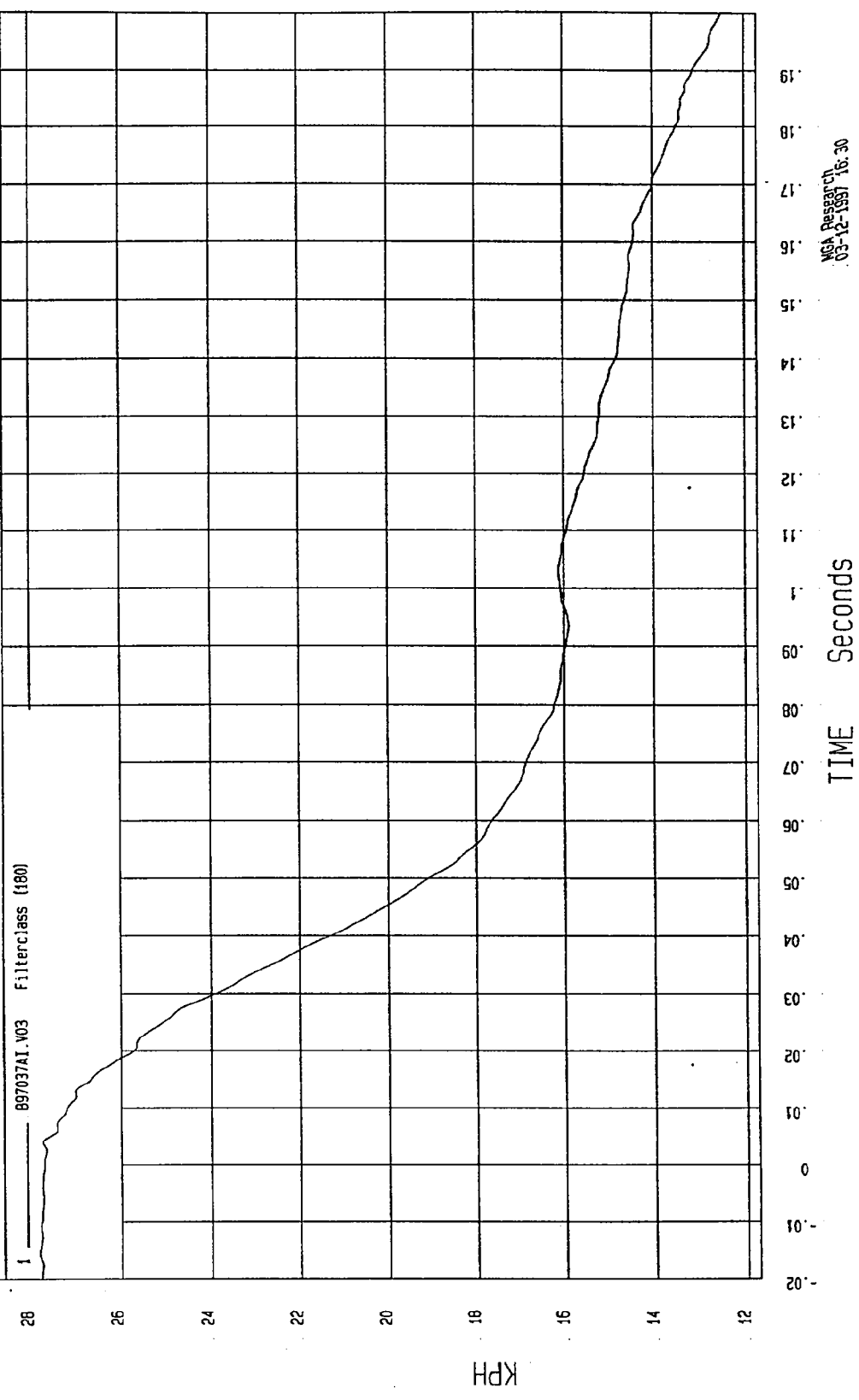
TIME (SECONDS)

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = 12.50 KPH at 200 msec Maximum = 27.82 KPH at -16 msec

MOVING BARRIER CG Y VELOCITY



NCA Research
03-12-1997 16:30

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 34.15 G'S at 35 msec

Minimum = -24.95 G'S at 24 msec

MOVING BARRIER CG Z ACCELERATION

1 ——— 897037AF.A04 Filterclass (180)

30

20

10

0

-10

-20

G.S

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

0

-01

-02

TIME (SECONDS)

NSA Research
03-12-1997 16:30

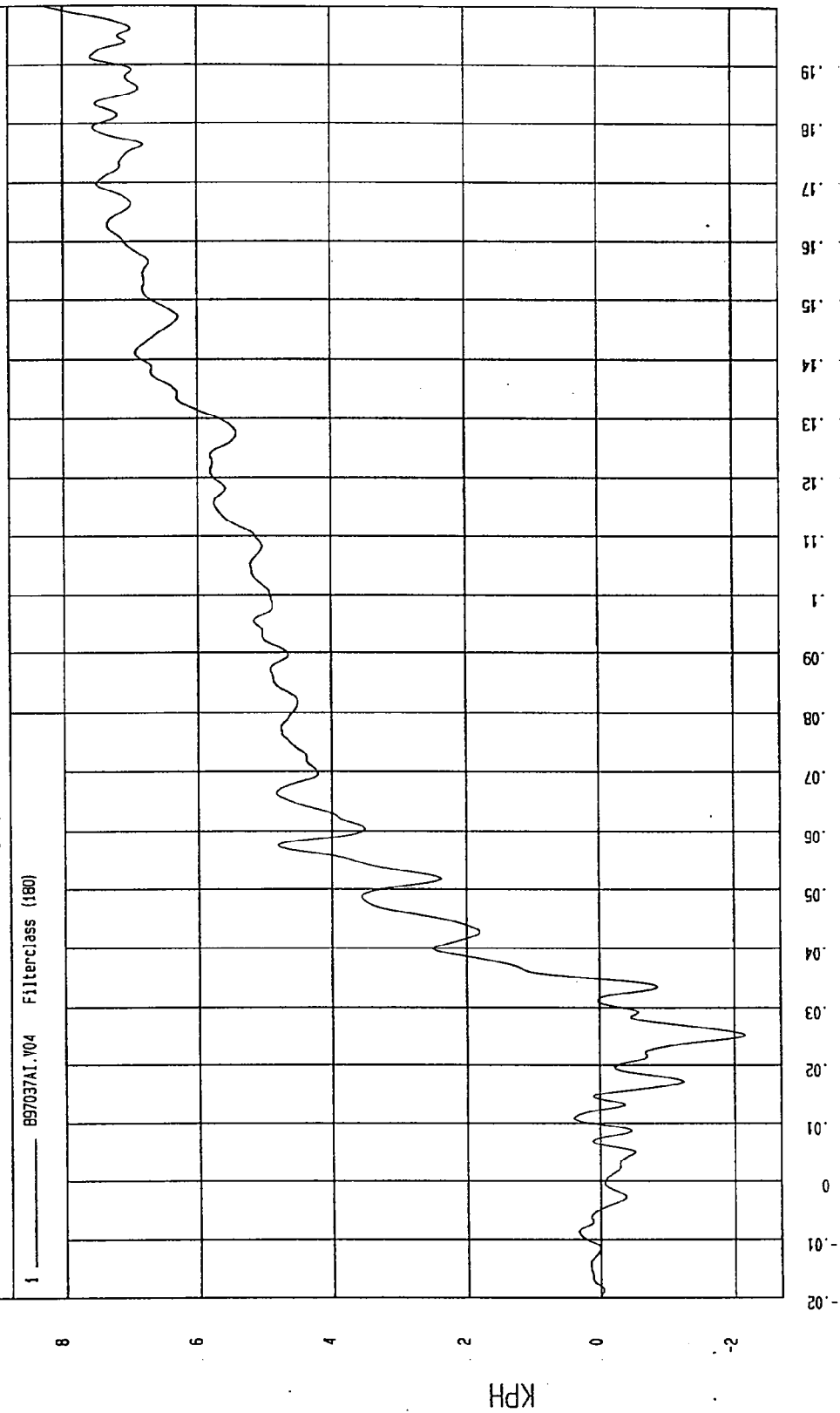
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -2.15 KPH at 25 msec Maximum = 8.27 KPH at 200 msec

MOVING BARRIER CG Z VELOCITY

1 ——— 897037A1.V04 Filterclass (180)



NCA Research
03-12-1997 16:30

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = .14 G'S at -7 msec
Maximum = 39.15 G'S at 35 msec

MOVING BARRIER CG RESULTANT ACCELERATION

1 ——— B97037AV.A02 FilterClass (180)

40

30

20

10

0

G'S

.19

.18

.17

.16

.15

.14

.13

.12

.11

.10

.09

.08

.07

.06

.05

.04

.03

.02

.01

0

-.01

-.02

TIME (SECONDS)

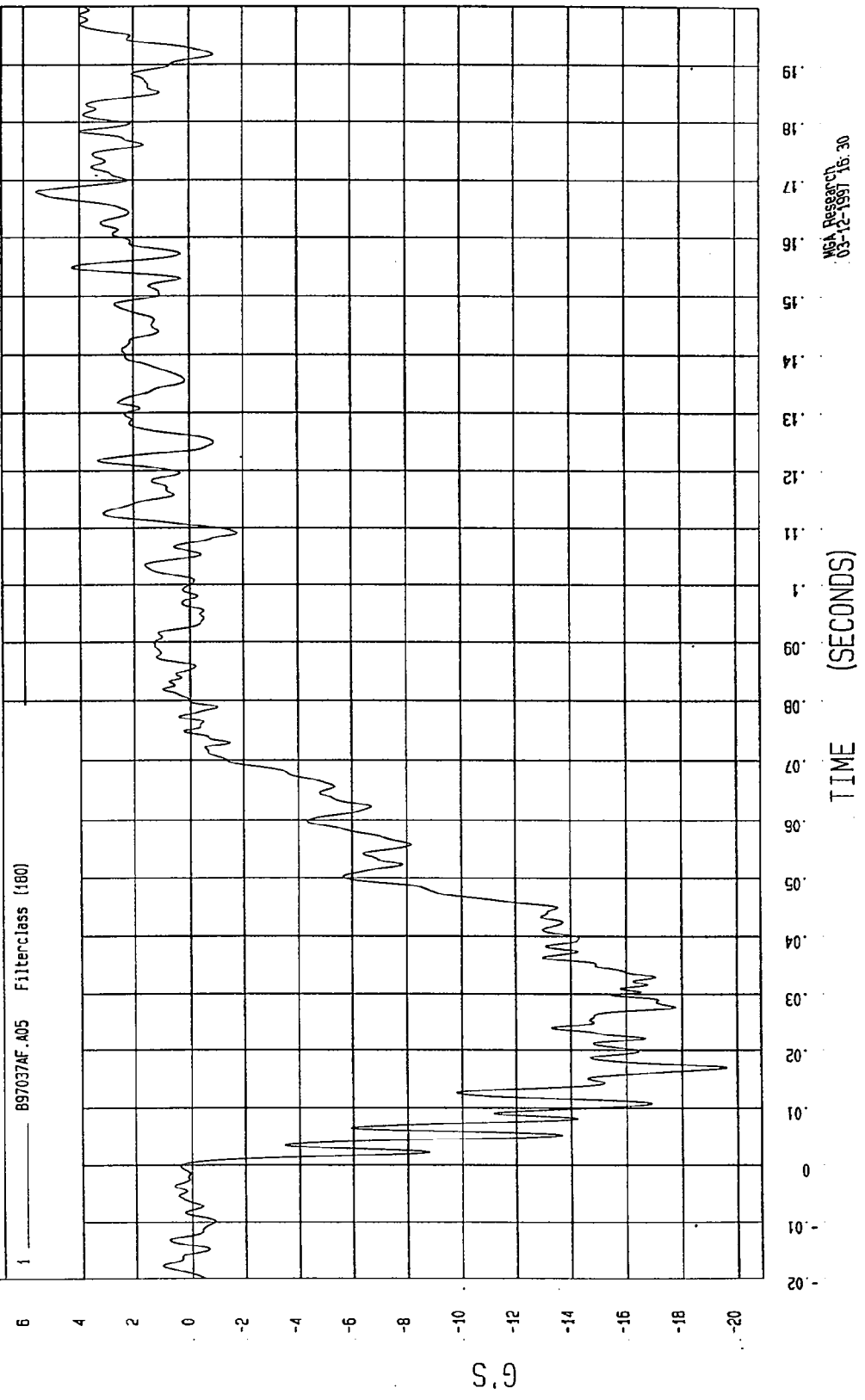
NGA Research
03-12-1997 16:31

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -19.60 G'S at 17 msec Maximum = 5.56 G'S at 168 msec

MOVING BARRIER REAR AXLE X ACCELERATION



TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

SPEED: 38 MPH 61.2 KPH

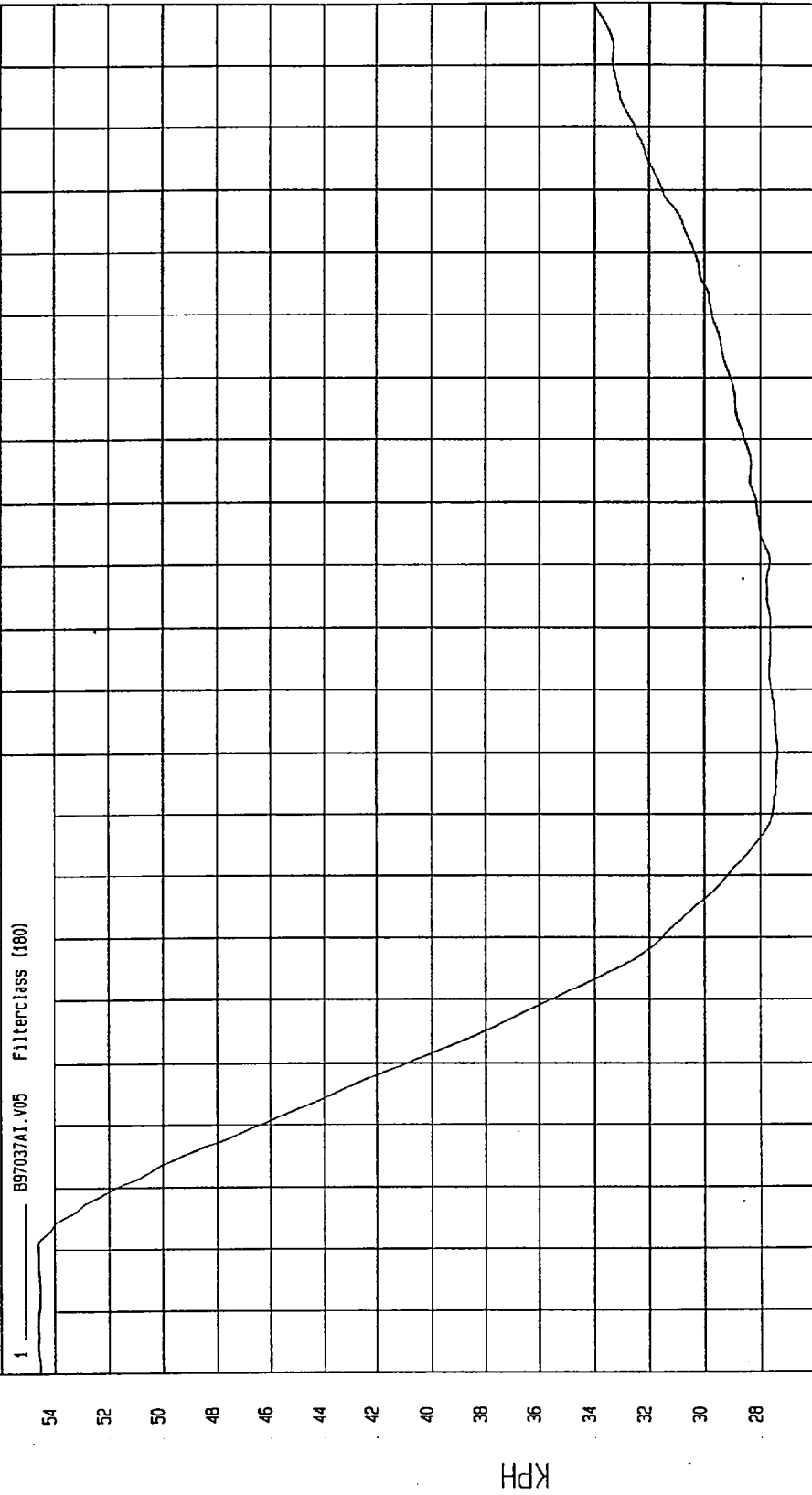
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 54.60 KPH at 0 msec

Minimum = 27.37 KPH at 60 msec

MOVING BARRIER REAR AXLE X VELOCITY

1 B97037A1.V05 Filterclass (180)



TIME Seconds
WSA Research
03-12-1997 16:30

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

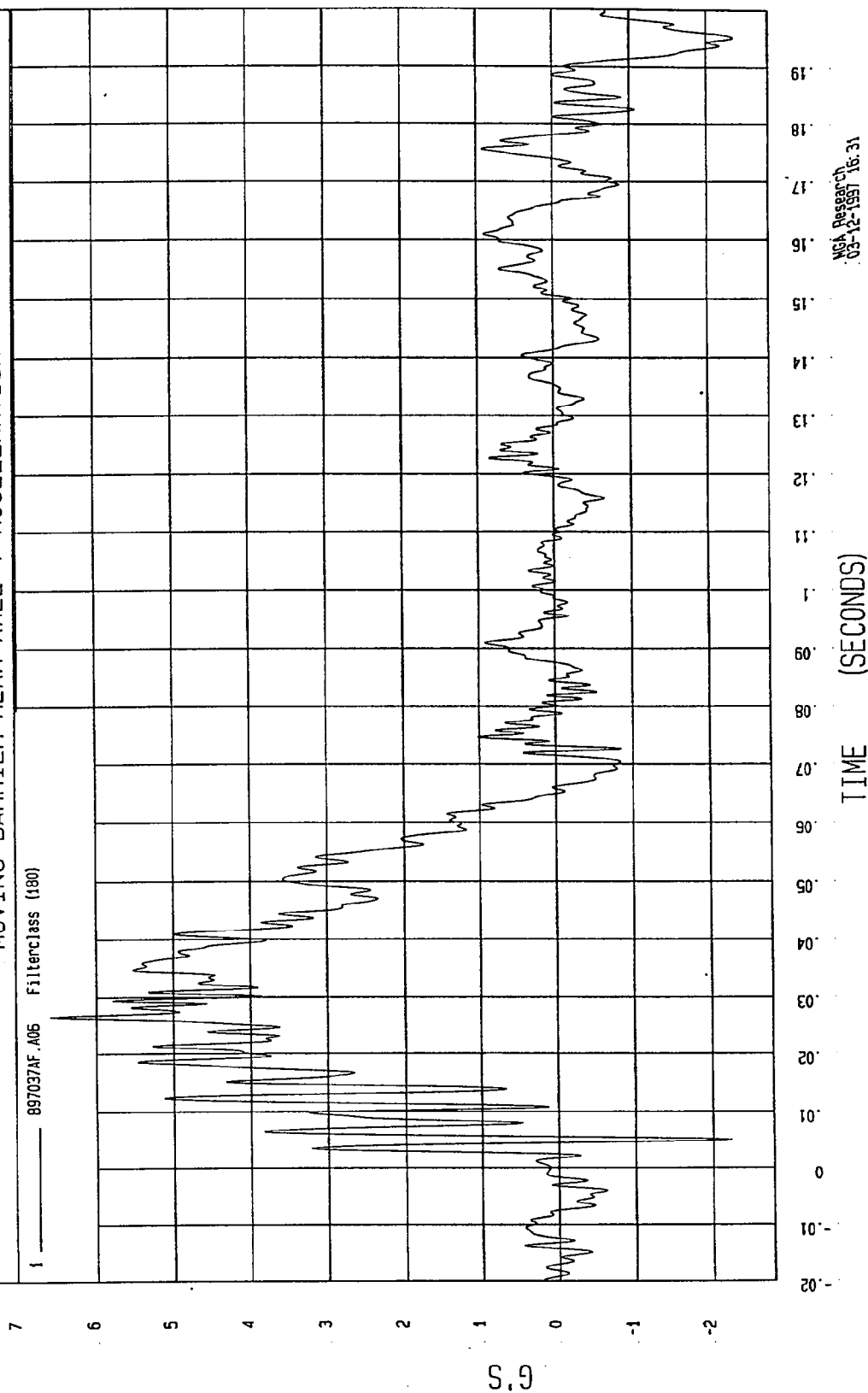
Speed: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 6.58 G'S at 26 msec

Minimum = -2.33 G'S at 195 msec

MOVING BARRIER REAR AXLE Y ACCELERATION

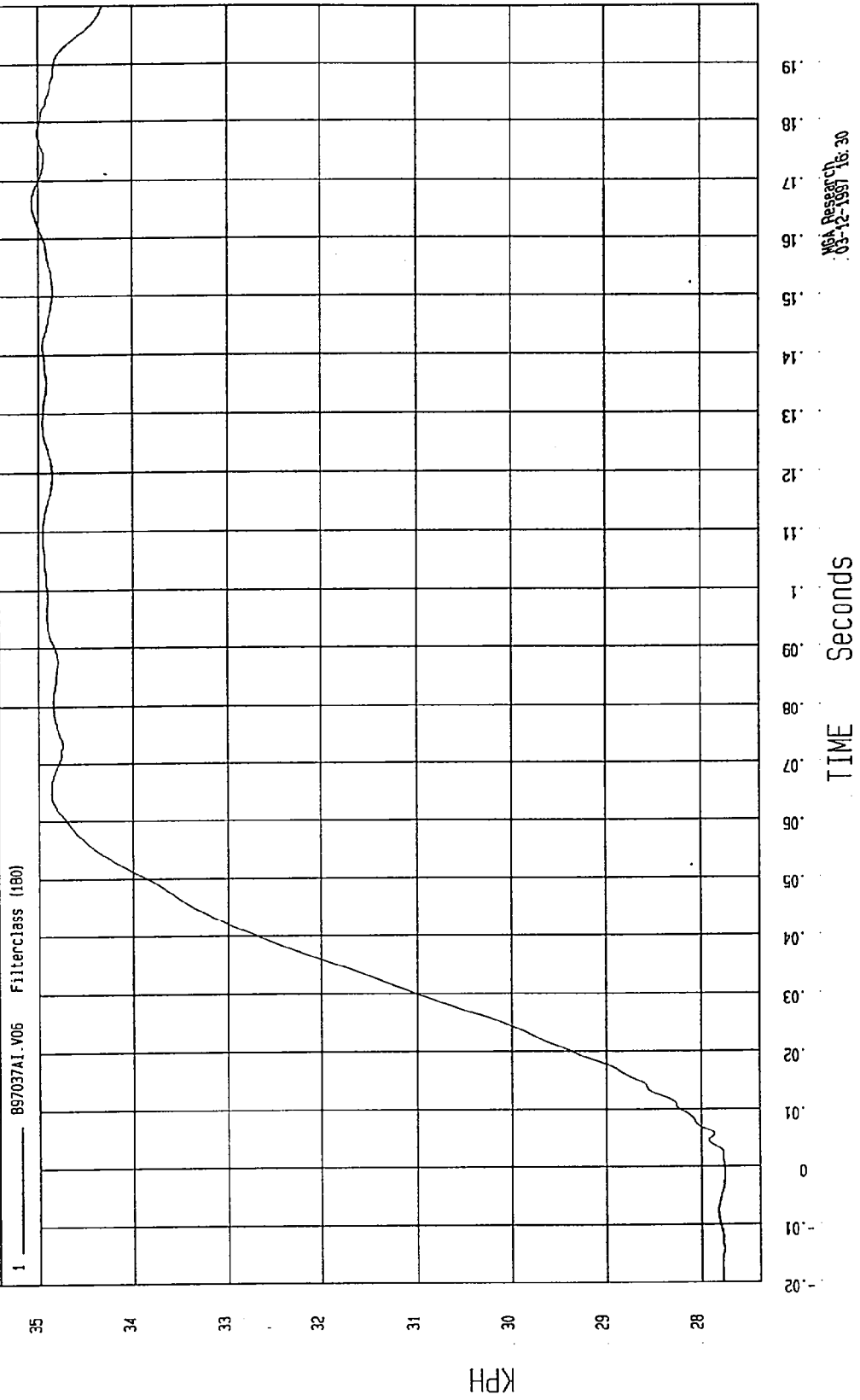


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = 27.76 KPH at -2 msec Maximum = 35.06 KPH at 166 msec

MOVING BARRIER REAR AXLE Y VELOCITY

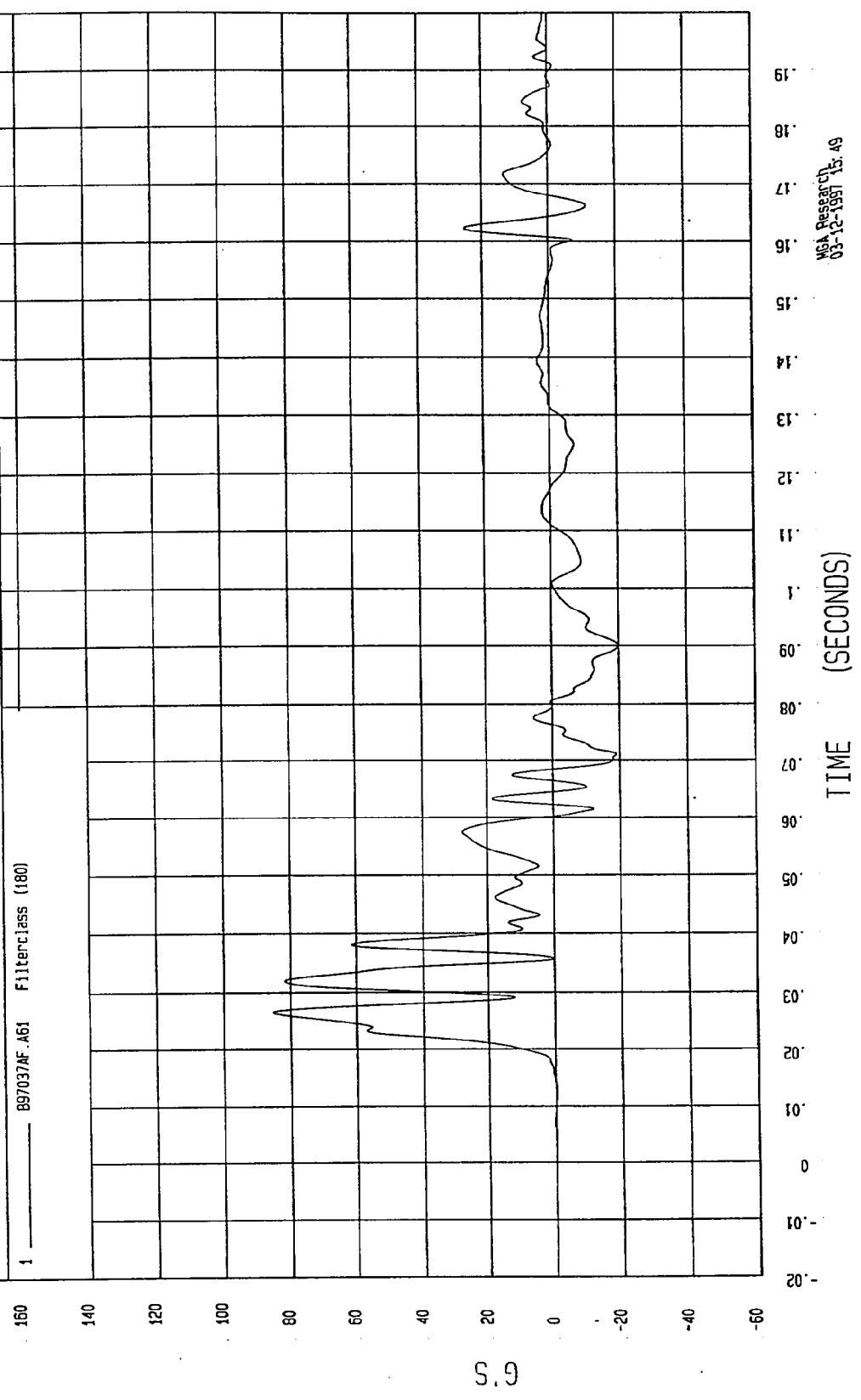


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -19.96 G'S at 90 msec Maximum = 85.23 G'S at 26 msec

DRIVER UPPER RIB Y REDUNDANT ACCELERATION



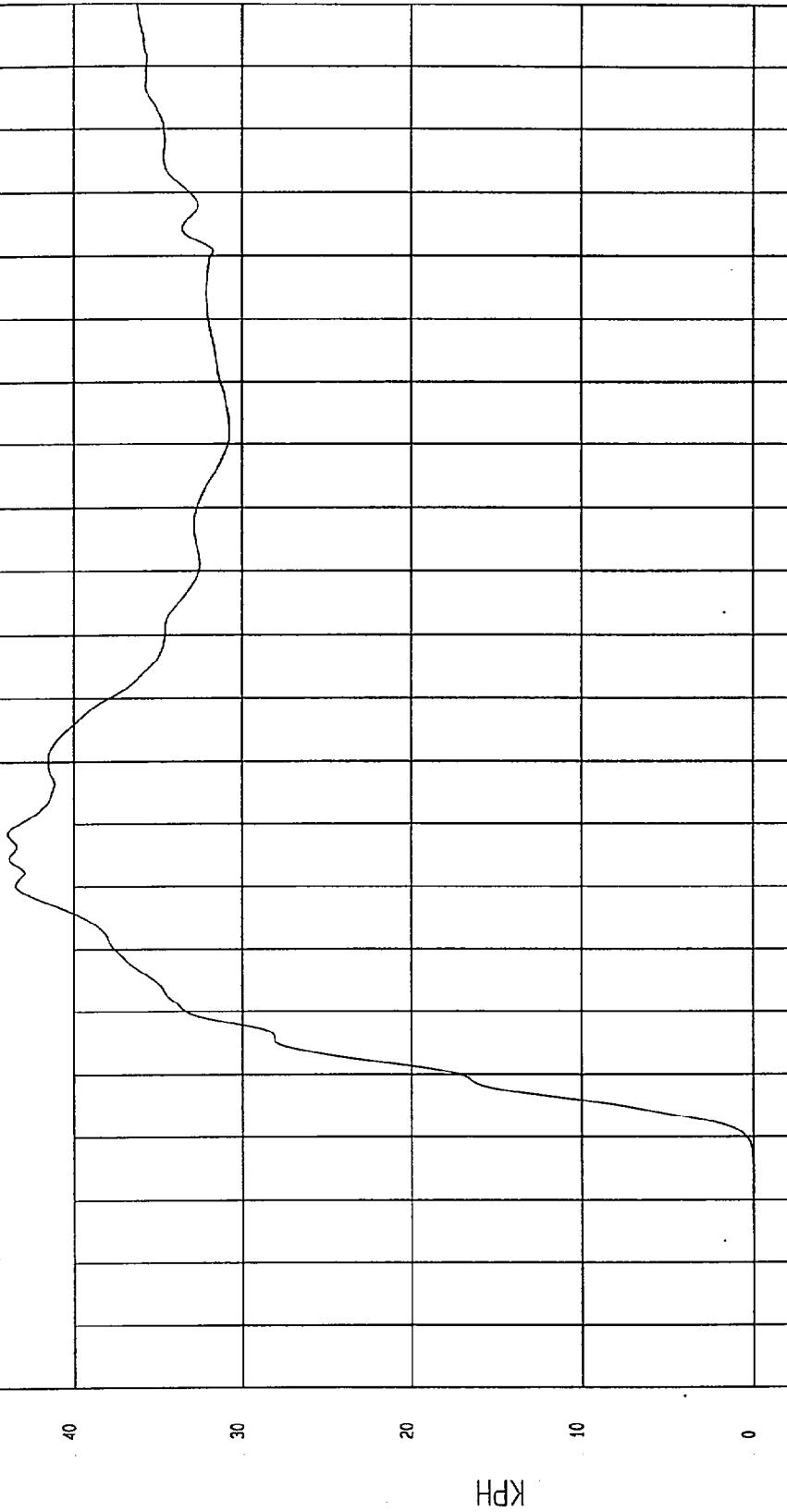
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -5.42E-03 KPH at 14 msec Maximum = 43.90 KPH at 68 msec

DRIVER UPPER RIB Y REDUNDANT VELOCITY

1 ——— 897037A1.V61 Filterclass (180)



TIME Seconds

NSA Research
03-12-1997 15:41

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 88.27 G's at 28 msec

Minimum = -34.48 G's at 65 msec

DRIVER LOWER RIB Y REDUNDANT ACCELERATION

1 B97037AF.A62 Filterclass (180)

160

140

120

100

80

60

40

20

0

-20

-40

-60

G.S

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

MCA Research
03-12-1997 15:49

TIME (SECONDS)

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

SPEED: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 46.78 KPH at 58 msec

Minimum = -.07 KPH at -2 msec

DRIVER LOWER RIB Y REDUNDANT VELOCITY

1 ——— B97037A1.V62 Filterclass (180)



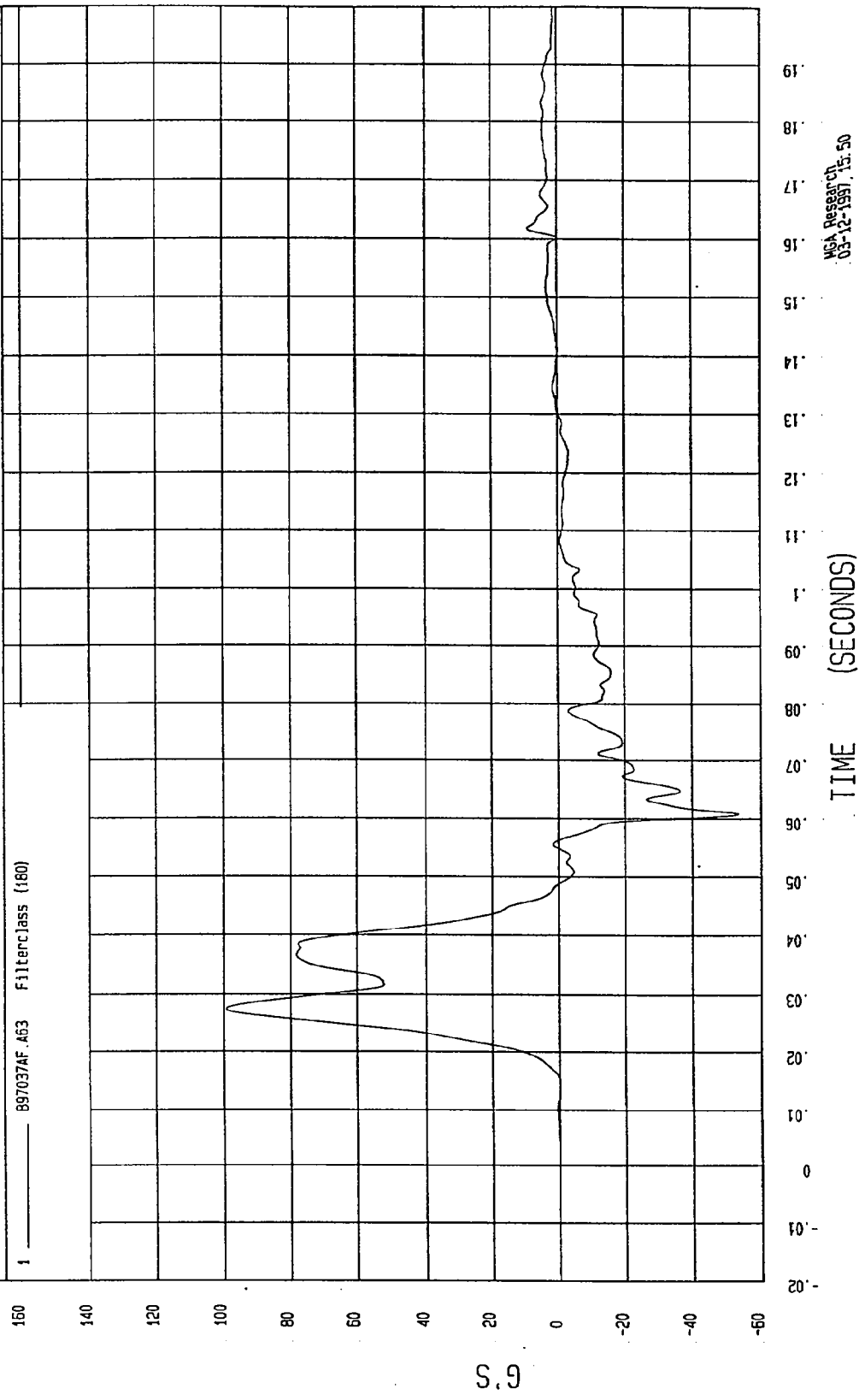
MSA Research
03-12-1997 15:41

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -53.55 G'S at 61 msec Maximum = 99.30 G'S at 28 msec

DRIVER LOWER SPINE Y REDUNDANT ACCELERATION



TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

SPEED: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 52.45 KPH at 49 msec

Minimum = 0 KPH at -20 msec

DRIVER LOWER SPINE Y REDUNDANT VELOCITY

1 897037A1.V63 Filterclass (180)



WCA Research
03-12-1997 15.41

TIME Seconds

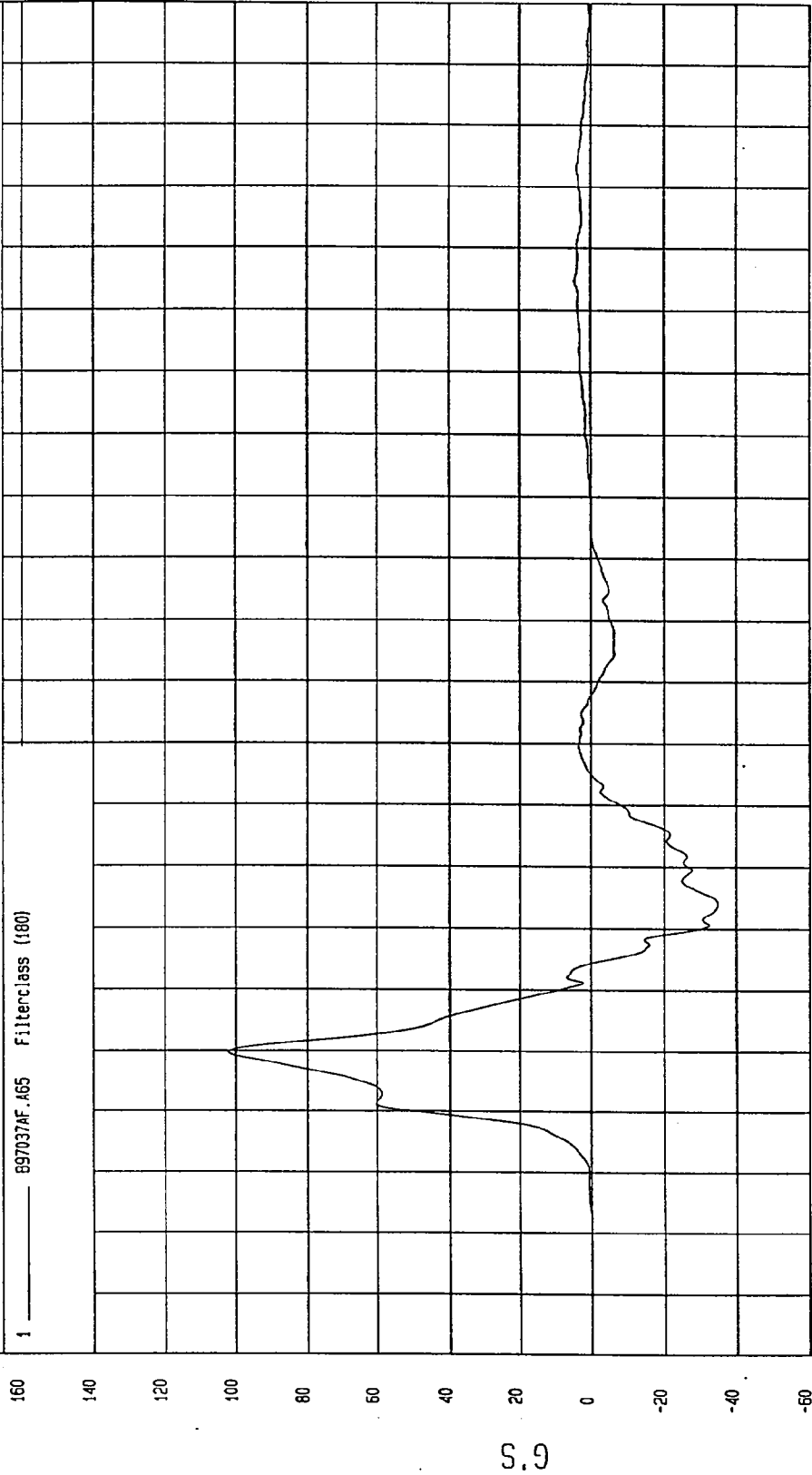
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -35.02 G'S at 54 msec Maximum = 102.21 G'S at 30 msec

DRIVER PELVIS Y REDUNDANT ACCELERATION

1 ——— 897037AF.A65 Filterclass (180)



NCA Research
03-12-1997 15:50

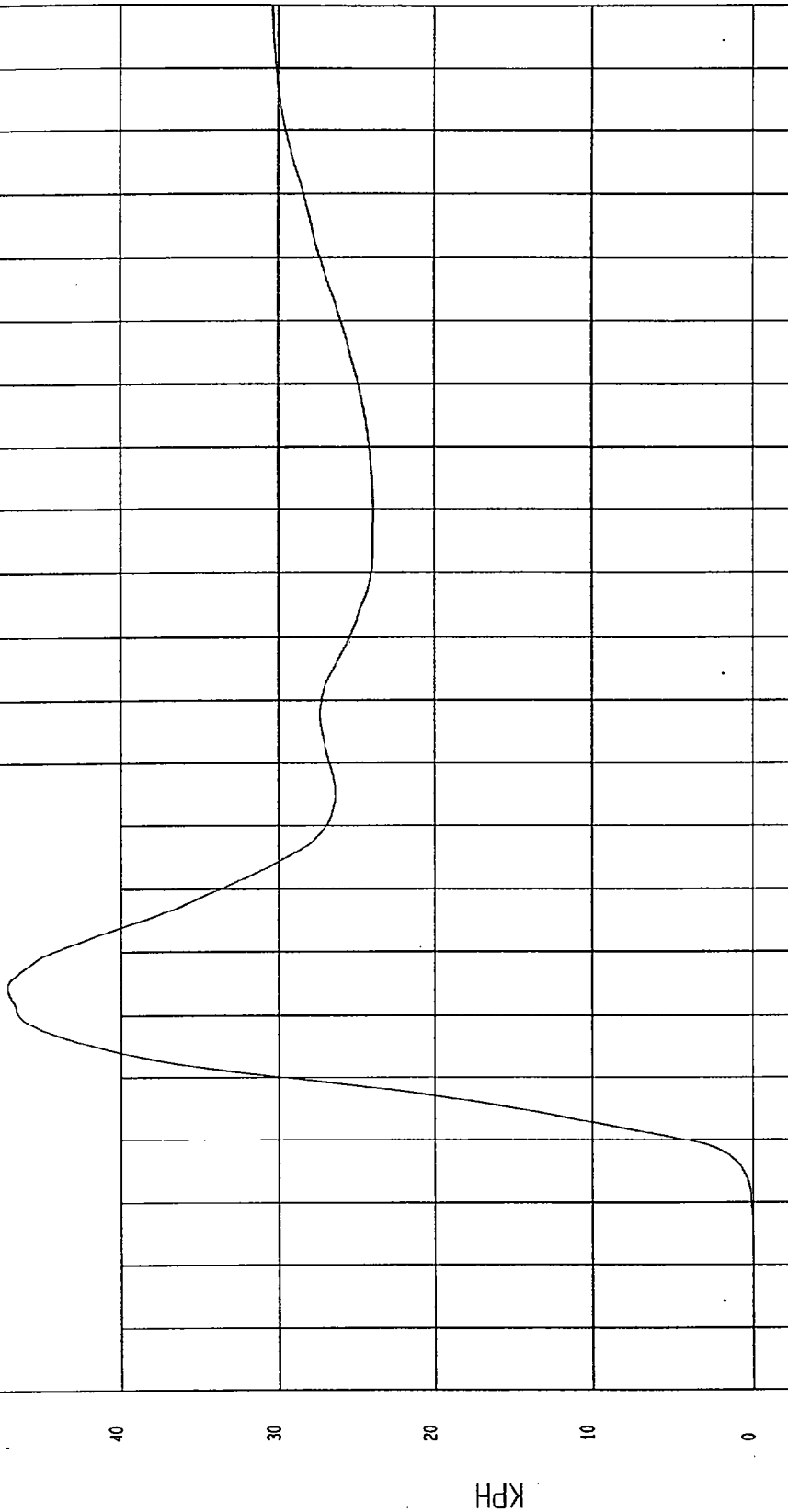
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -7.70E-03 KPH at -6 msec Maximum = 47.19 KPH at 44 msec

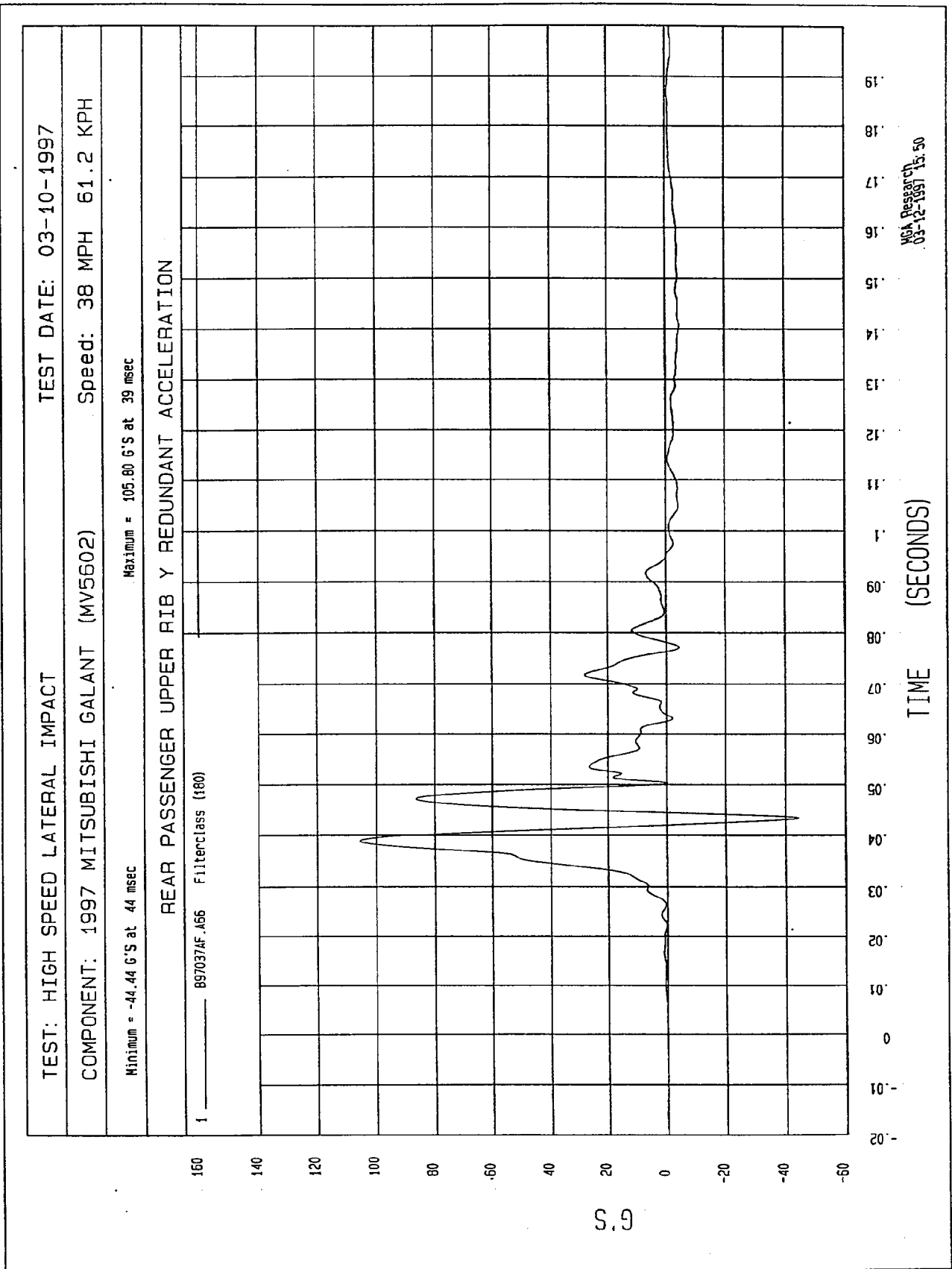
DRIVER PELVIS Y REDUNDANT VELOCITY

1 ——— B97037A1.V65 Filterclass (180)



TIME Seconds

W&A Research
03-12-1997 15:42



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Minimum = -2.45E-04 KPH at -20 msec

Maximum = 44.02 KPH at 95 msec

REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY

1 ——— 897037A1.V66 Filterclass (180)

40

30

20

10

0

KPH

TIME Seconds

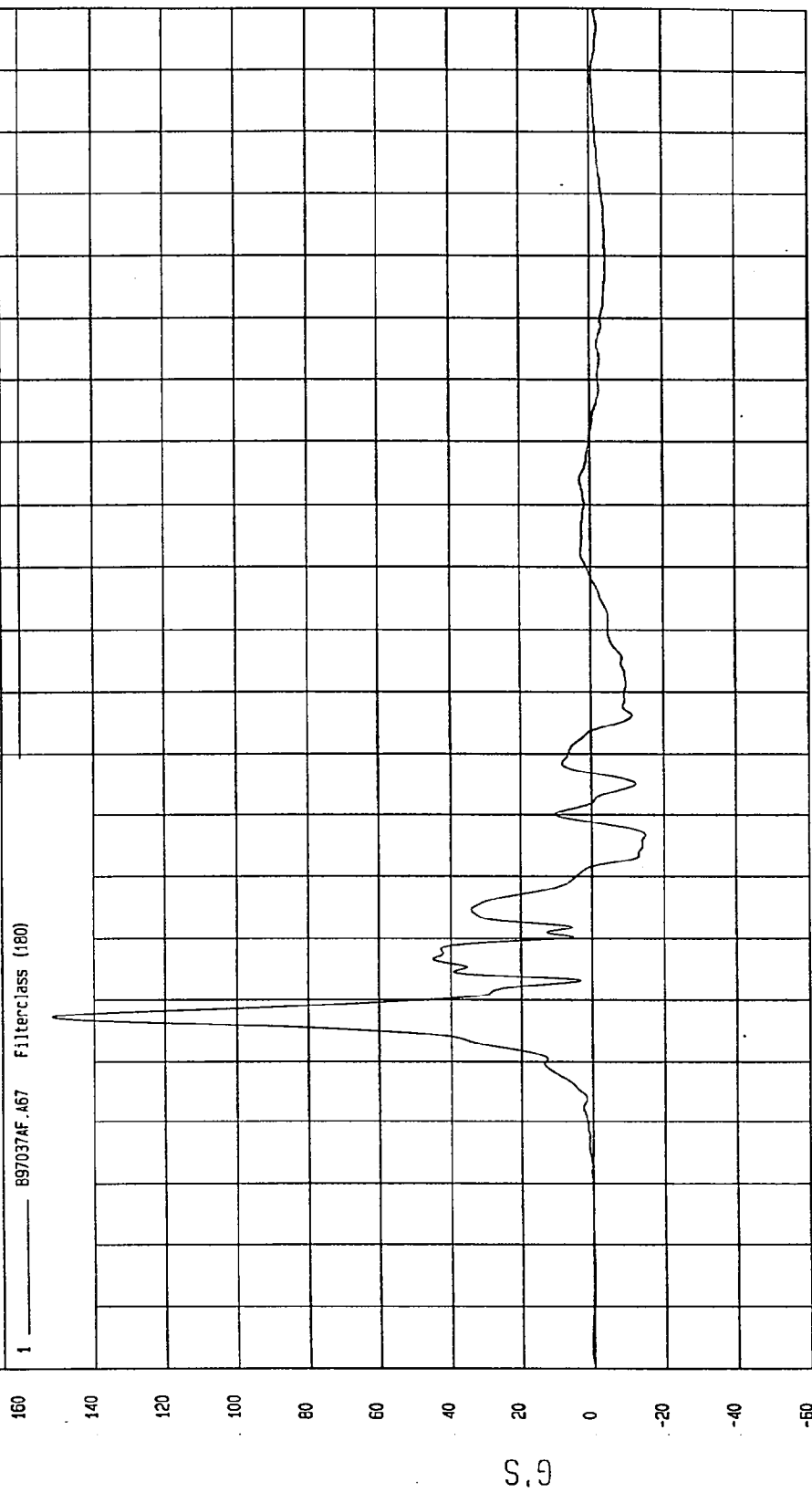
NGA Research
03-12-1997 15:42

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -14.80 G'S at 67 msec Maximum = 151.64 G'S at 37 msec

REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION

1 _____ 897037AF.A67 Filterclass (180)



TIME (SECONDS)

WGA Research
03-12-1997 15:50

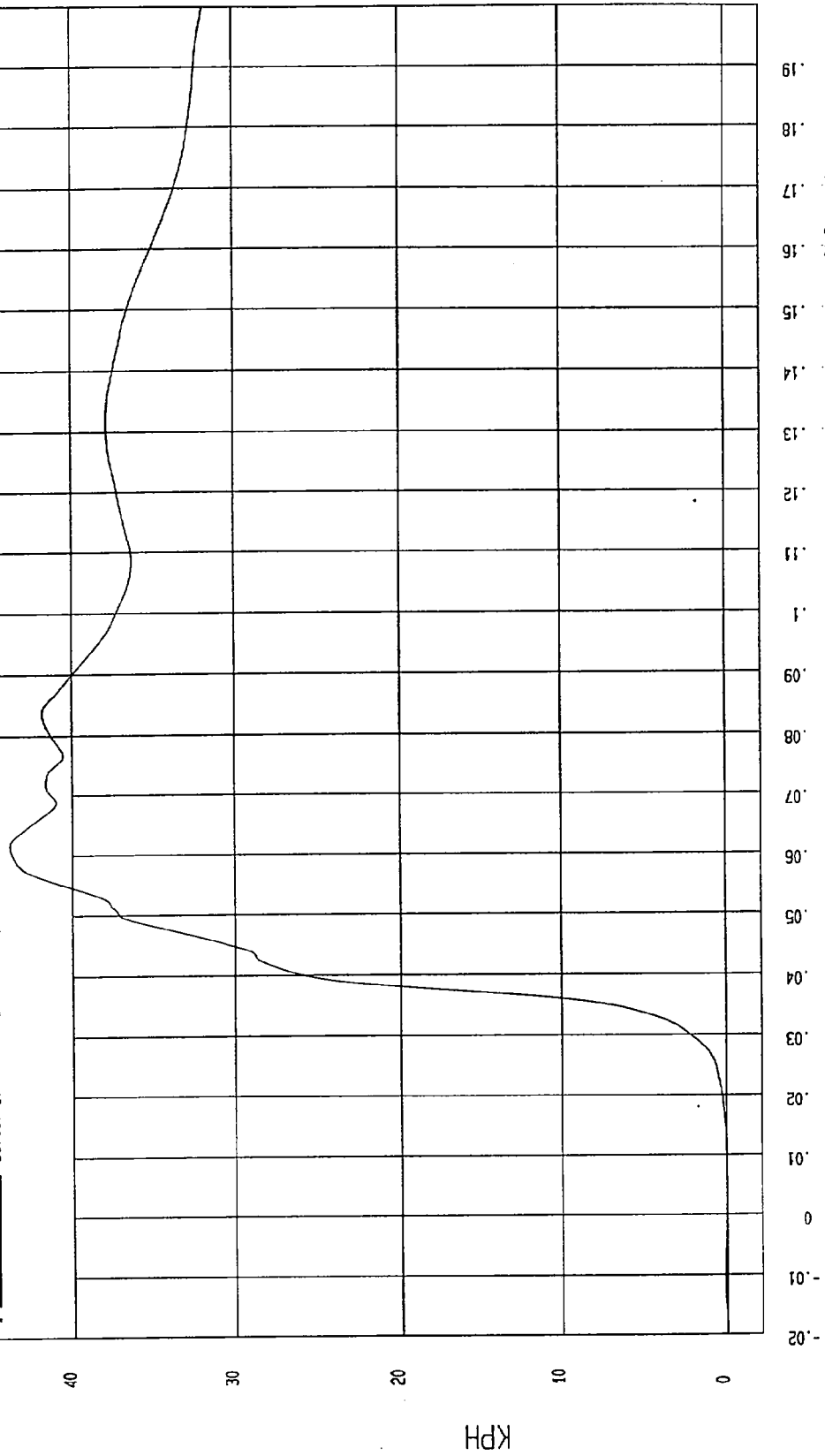
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -2.05E-04 KPH at -20 msec
Maximum = 43.79 KPH at 62 msec

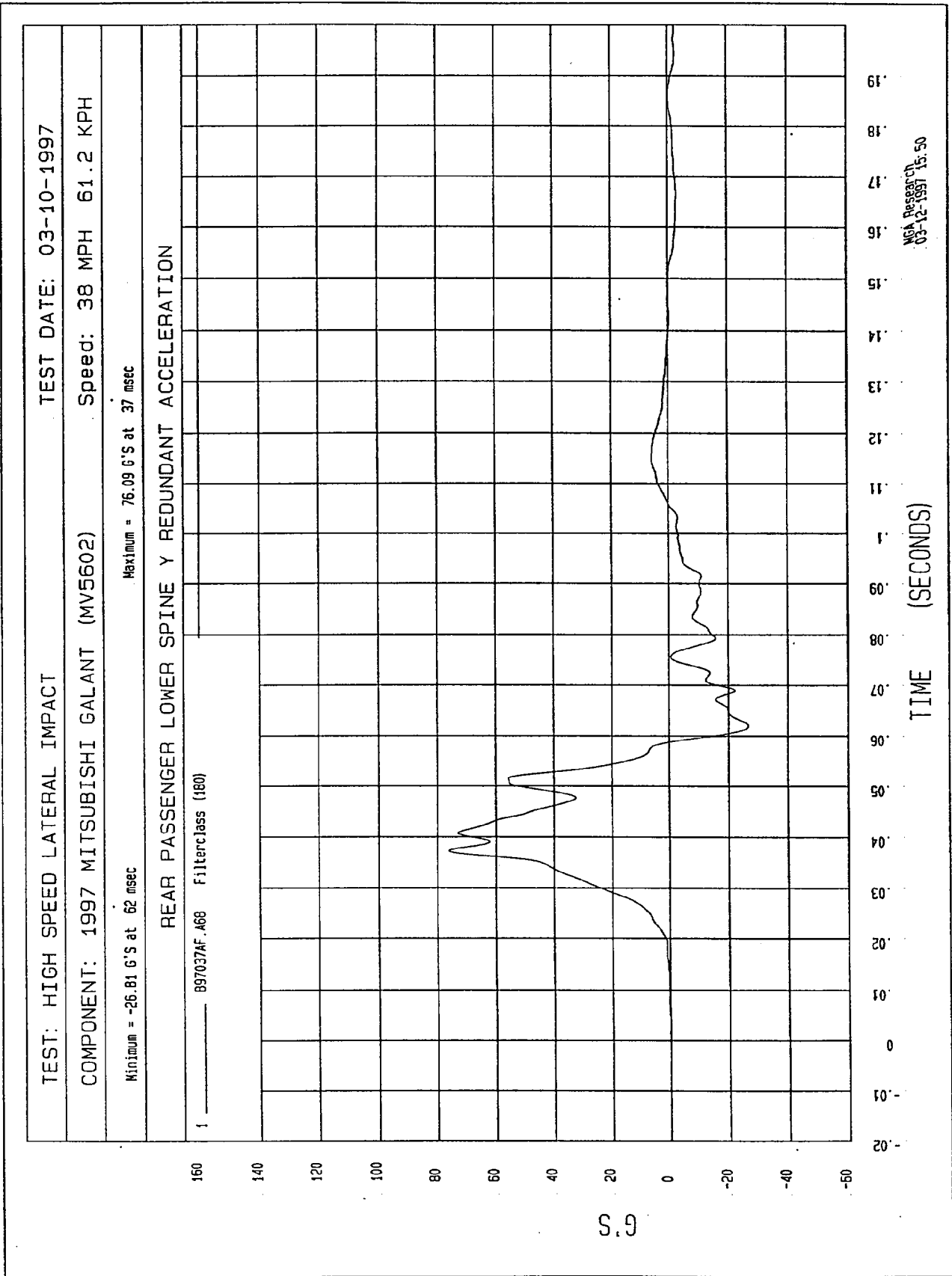
REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY

1 B97037A1.V67 Filterclass (180)



MGA Research
03-12-1997 15:42

TIME Seconds



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

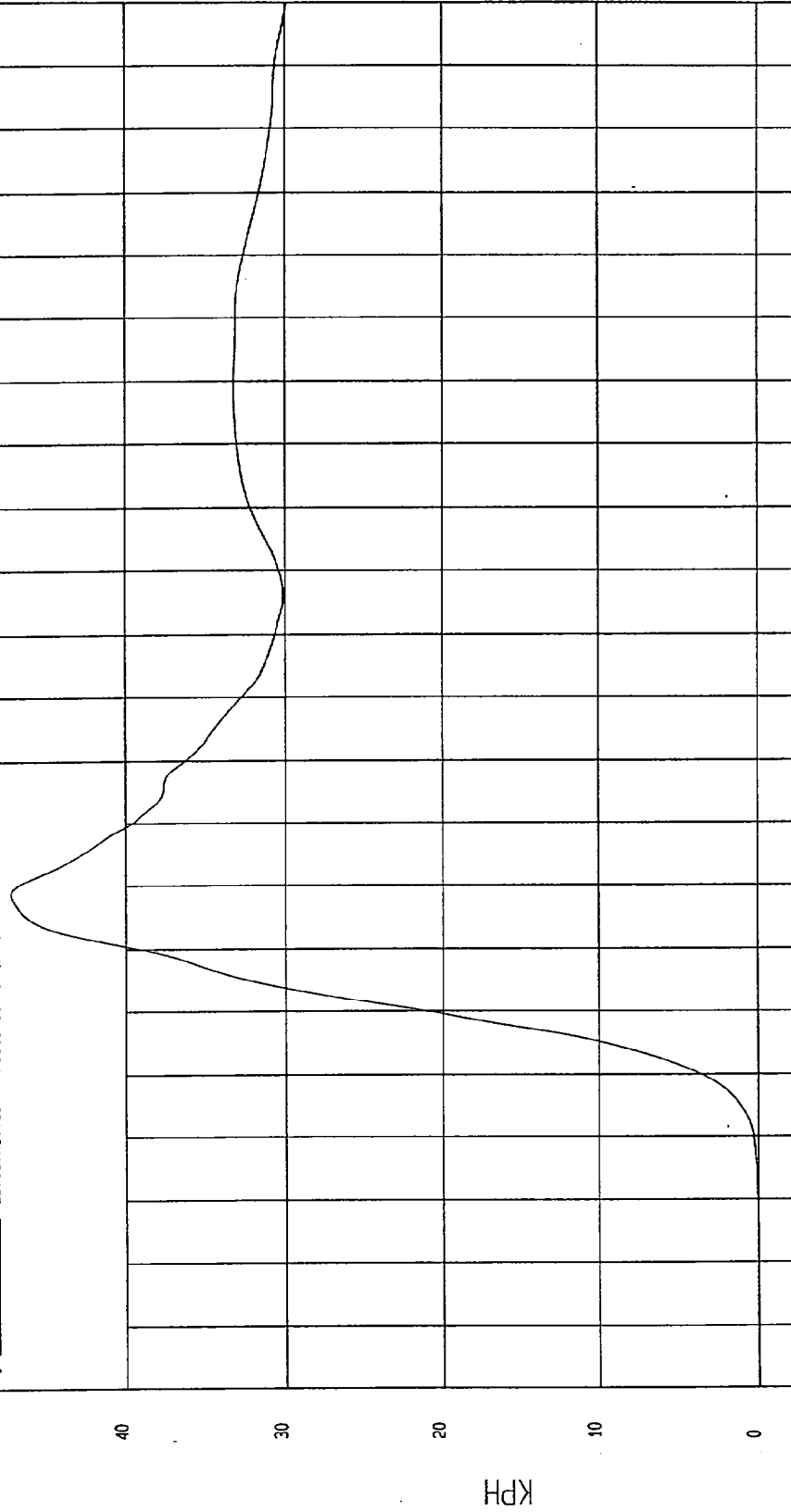
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 47.24 KPH at 59 msec

Minimum = -4.36E-03 KPH at -11 msec

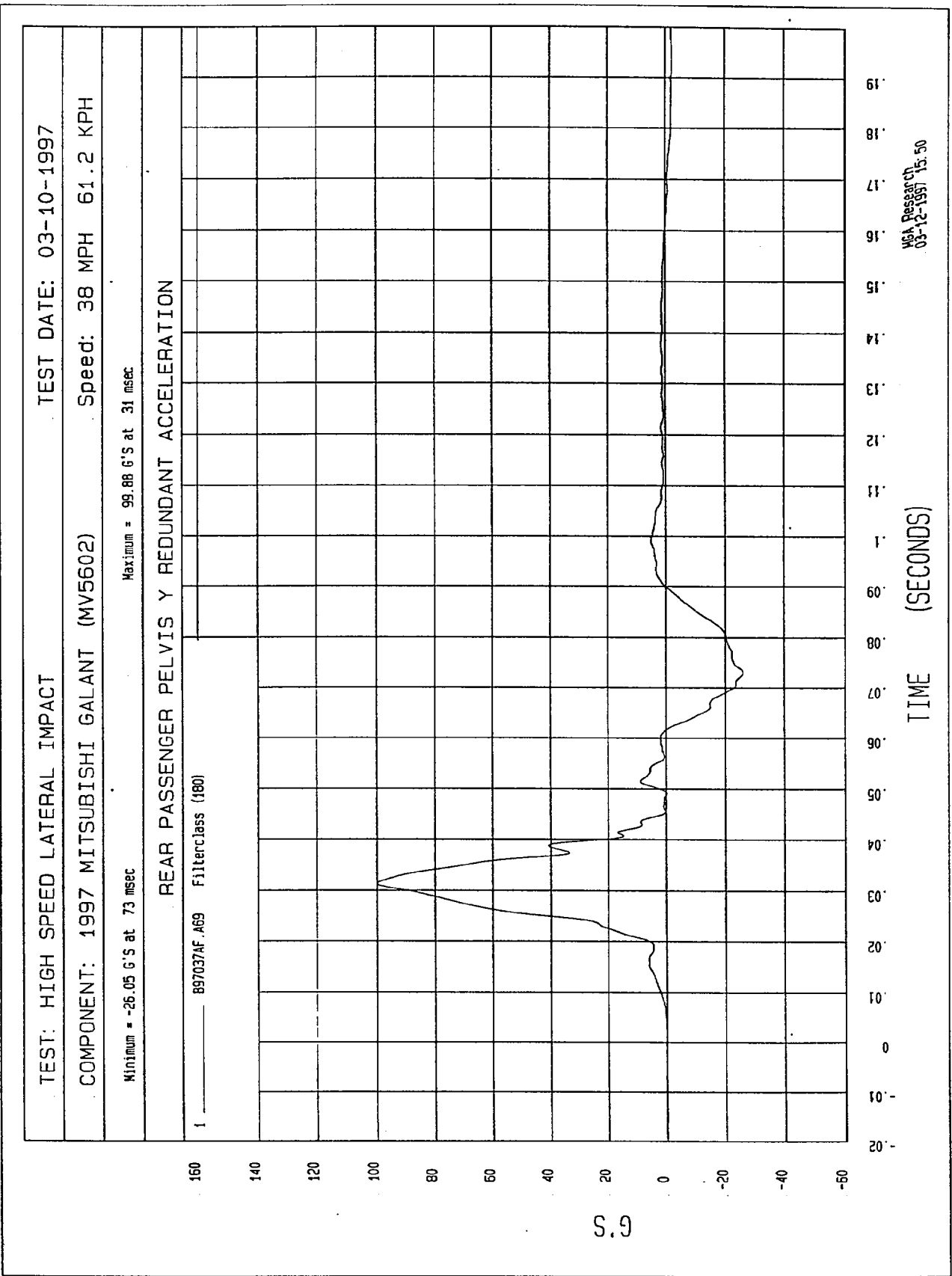
REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY

1 ——— B97037A1.V68 Filterclass (180)



TIME Seconds

MSA Research
03-12-1997 15:42



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

Speed: 38 MPH 61.2 KPH

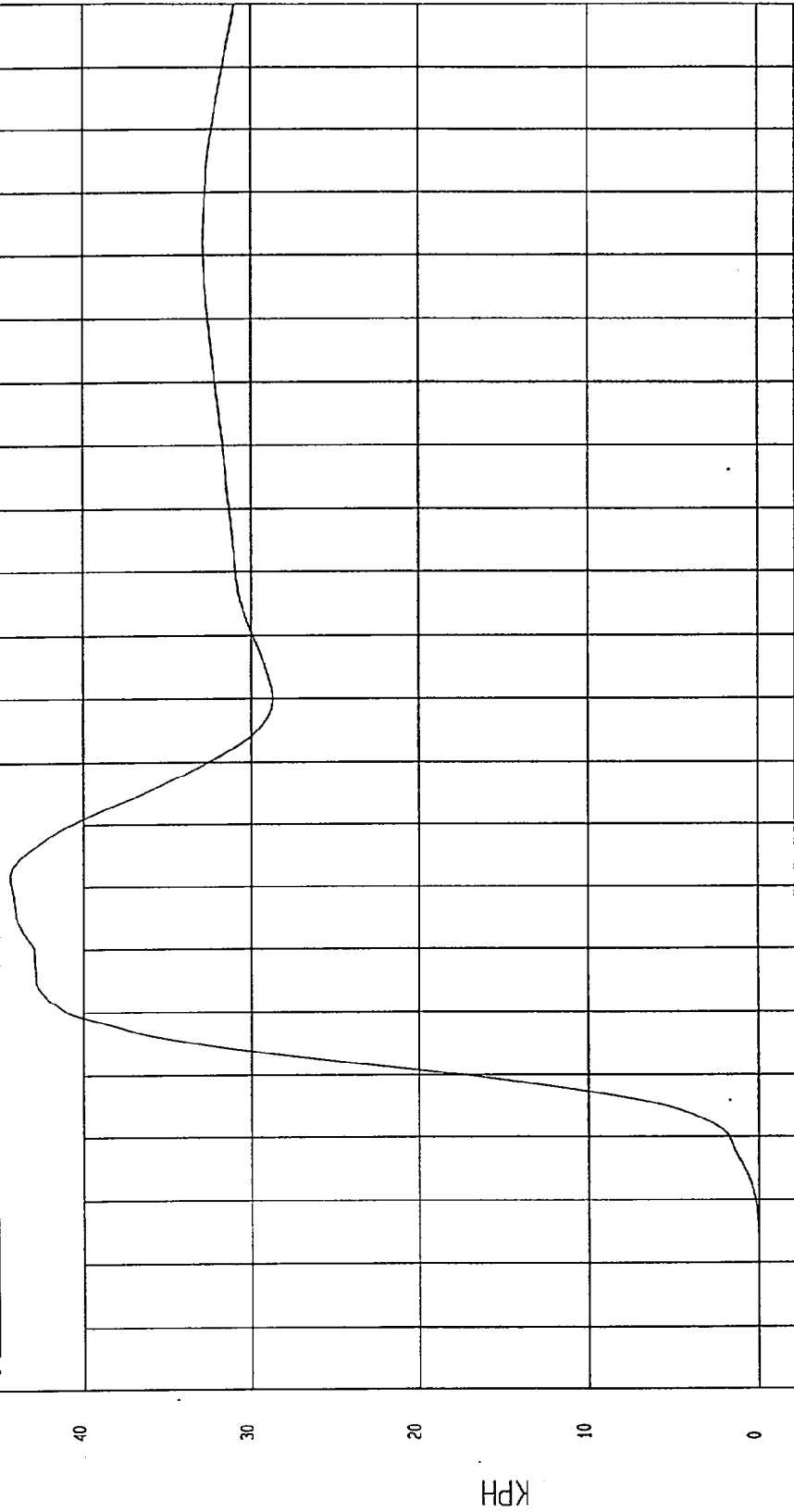
COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Maximum = 44.39 KPH at 62 msec

Minimum = -6.16E-03 KPH at -9 msec

REAR PASSENGER PELVIS Y REDUNDANT VELOCITY

1 — 897037A1.V69 Filterclass (480)



MCA Research
03-12-1997 15:42

TIME Seconds

FINITE IMPULSE RESPONSE (FIR) FILTERED DATA

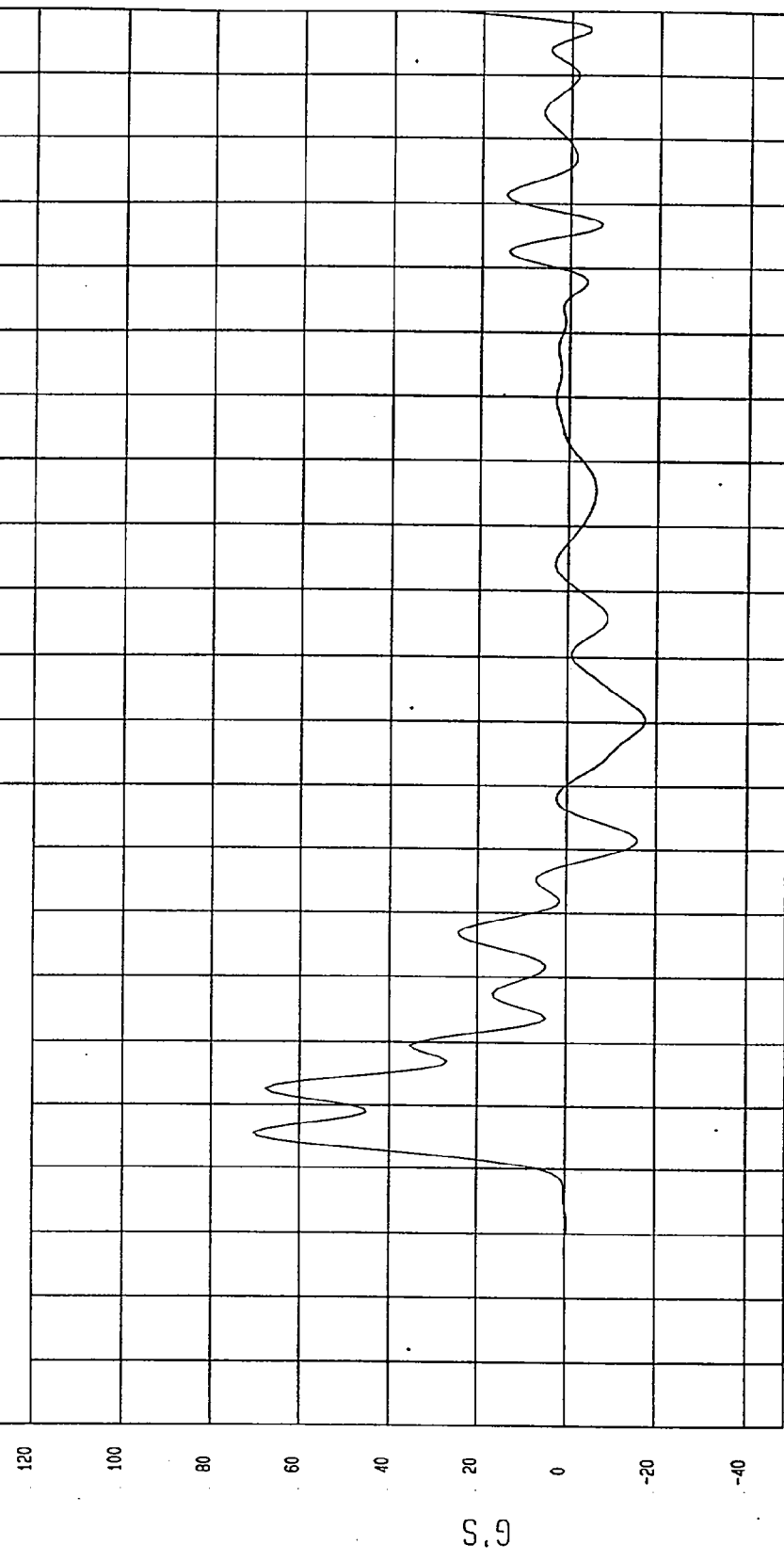
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -17.56 G'S at 91 msec
Maximum = 70.47 G'S at 26 msec

DRIVER UPPER RIB Y ACCELERATION

1 ——— B97037F1.R15 Filterclass (FIR Filtered)



MGA Research
03-21-1997 15:17

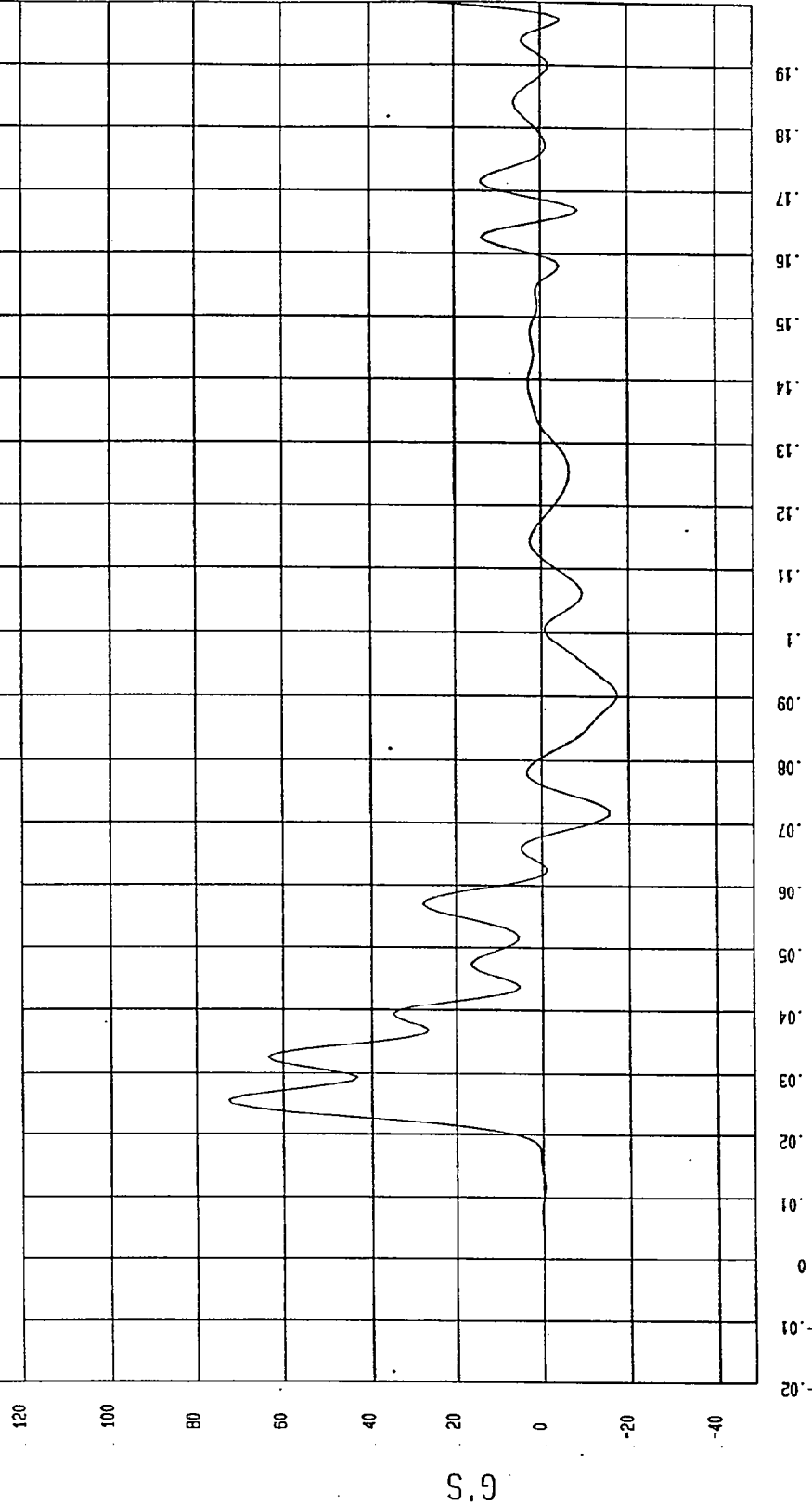
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -17.23 G'S at 91 msec Maximum = 73.05 G'S at 26 msec

DRIVER UPPER RIB Y REDUNDANT ACCELERATION

1 _____ 897037FI.R61 Filterclass (FIR Filtered)



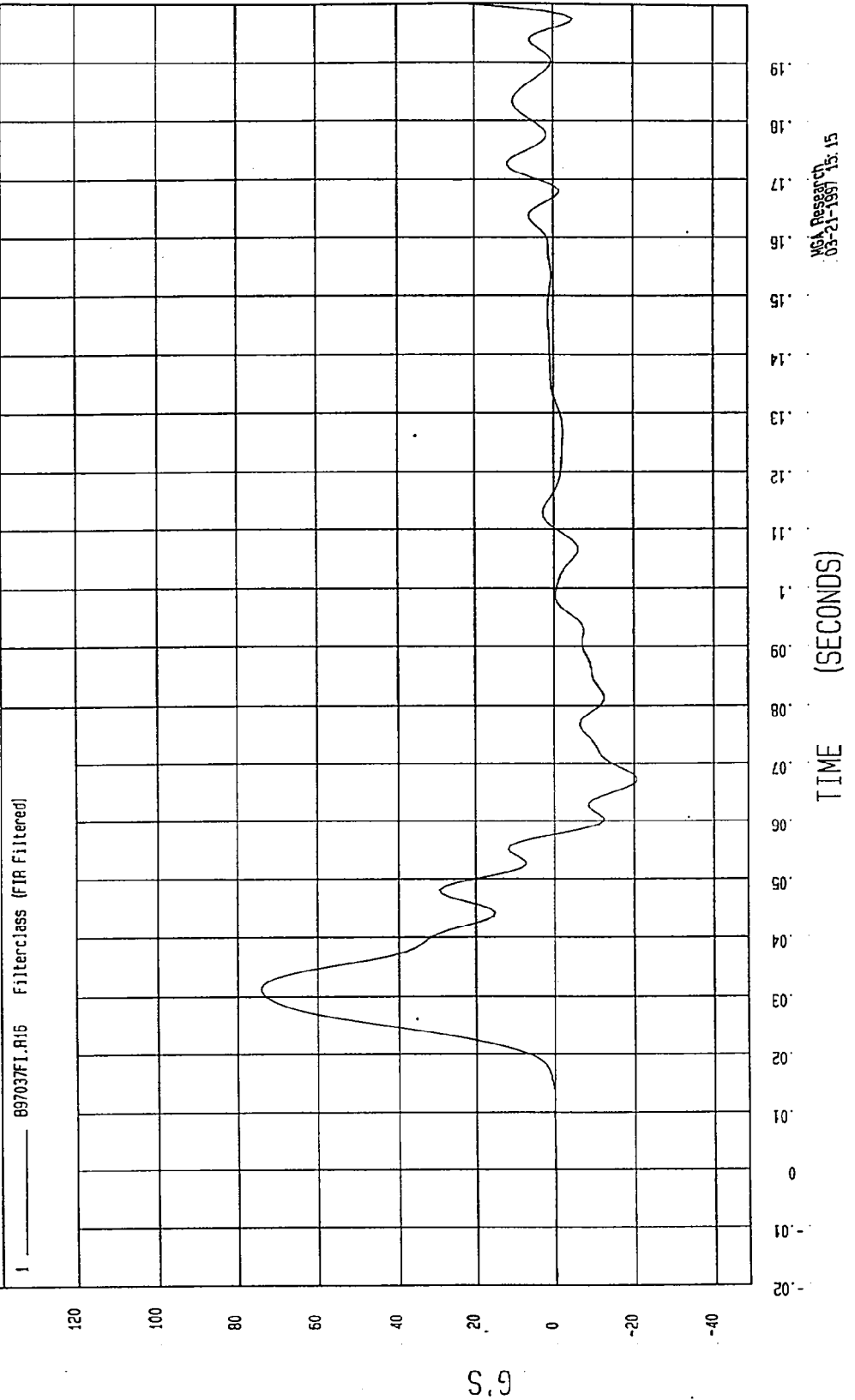
MSA Research
03-21-1997 15:15

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -20.73 G'S at 68 msec Maximum = 74.37 G'S at 31 msec

DRIVER LOWER RIB Y ACCELERATION



TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -19.94 G'S at 67 msec Maximum = 74.81 G'S at 31 msec

DRIVER LOWER RIB Y REDUNDANT ACCELERATION

1 — 097037F1.R62 Filterclass (FIR Filtered)

G.S

120

100

80

60

40

20

0

-20

-40

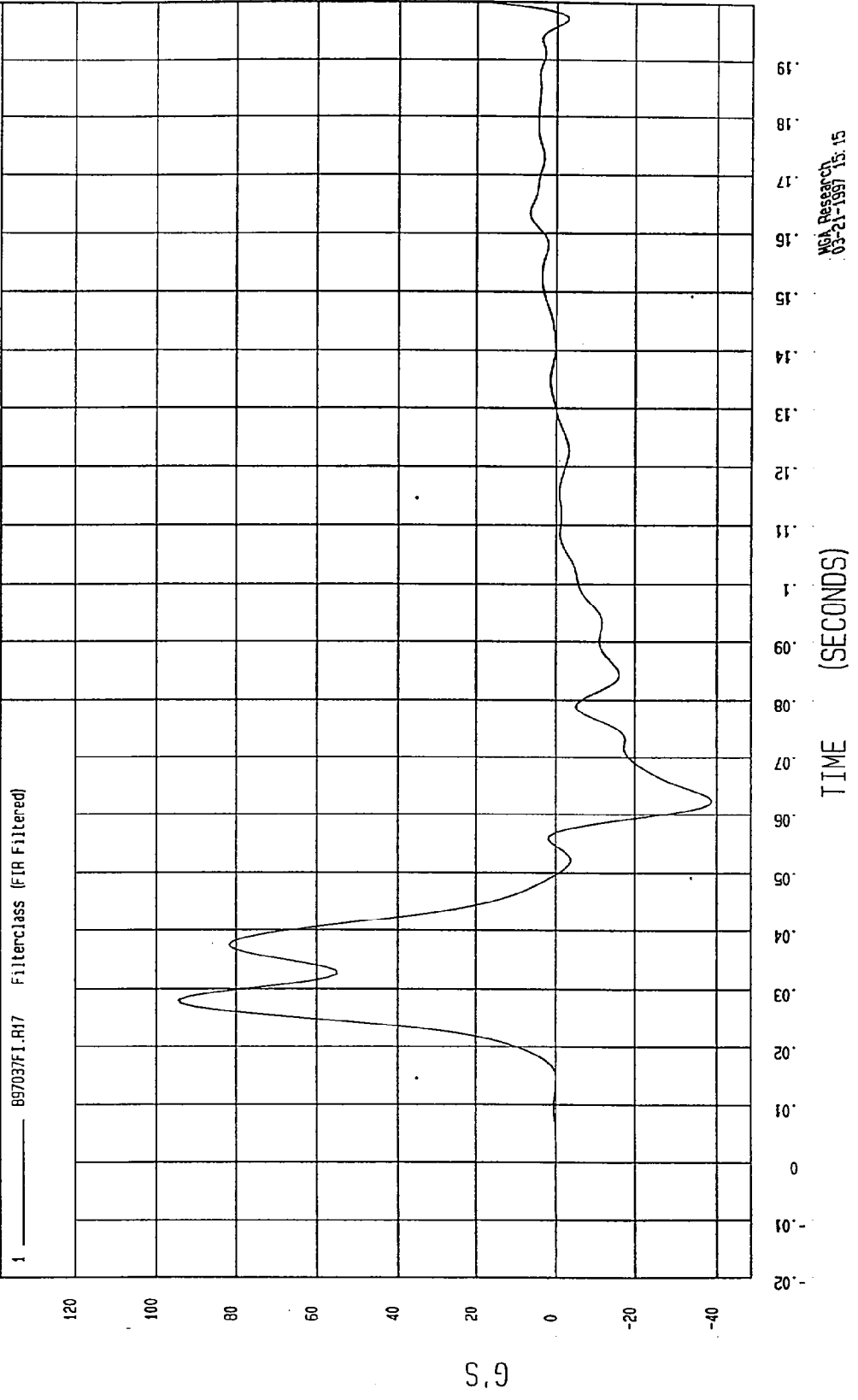
TIME (SECONDS)

0.02 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

NGA Research
03-21-1997 15:15

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH
Minimum = -38.78 G'S at 62 msec Maximum = 94.29 G'S at 28 msec

DRIVER LOWER SPINE Y ACCELERATION



MCA Research
03-21-1997 15:15

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

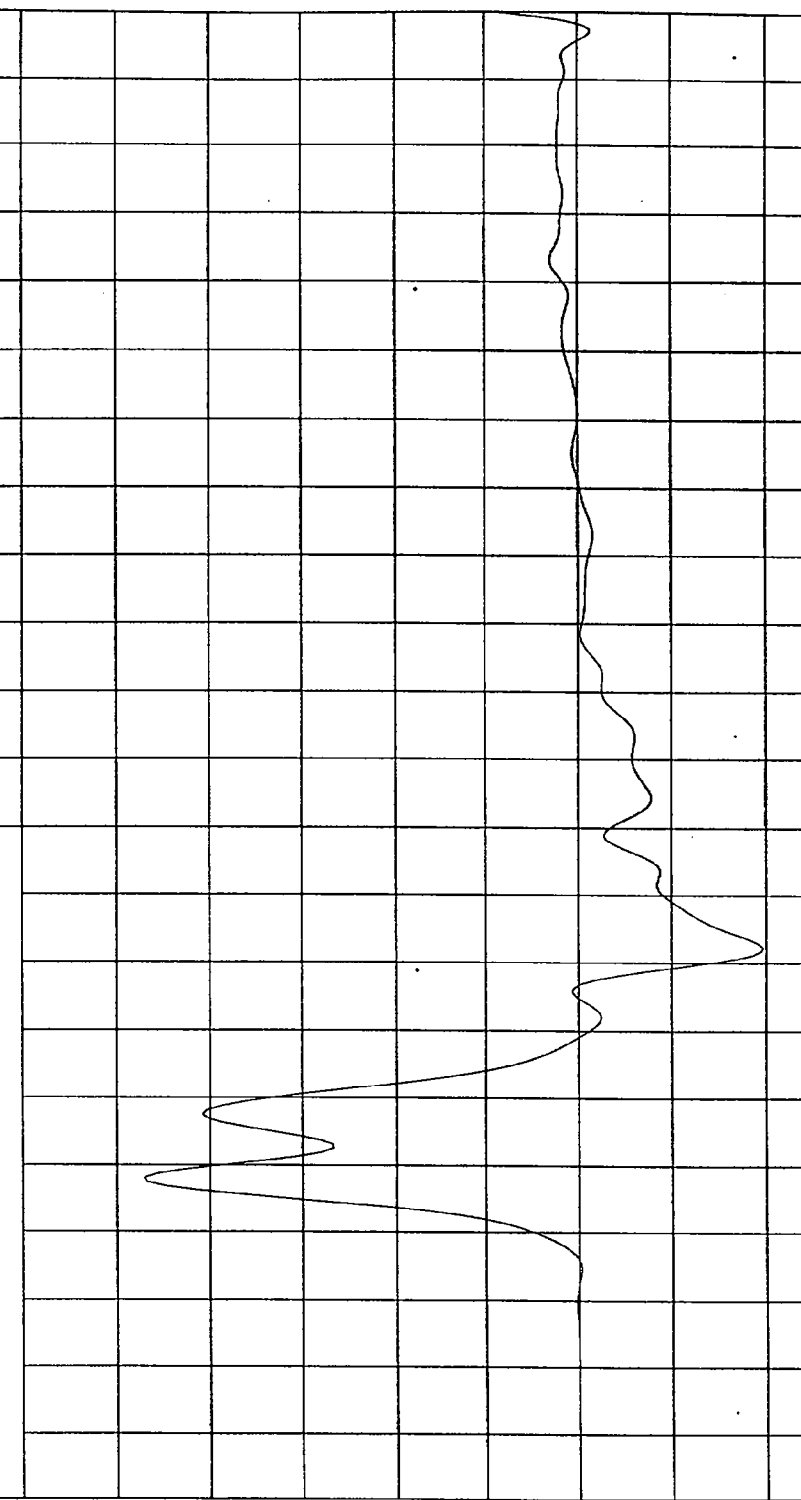
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -39.27 G'S at 62 msec Maximum = 94.14 G'S at 28 msec

DRIVER LOWER SPINE Y REDUNDANT ACCELERATION

1 897037FI.063 FilterClass (FIR Filtered)

120
100
80
60
40
20
0
-20
-40
S.G



TIME (SECONDS)

NCA Research
03-21-1997 13:15

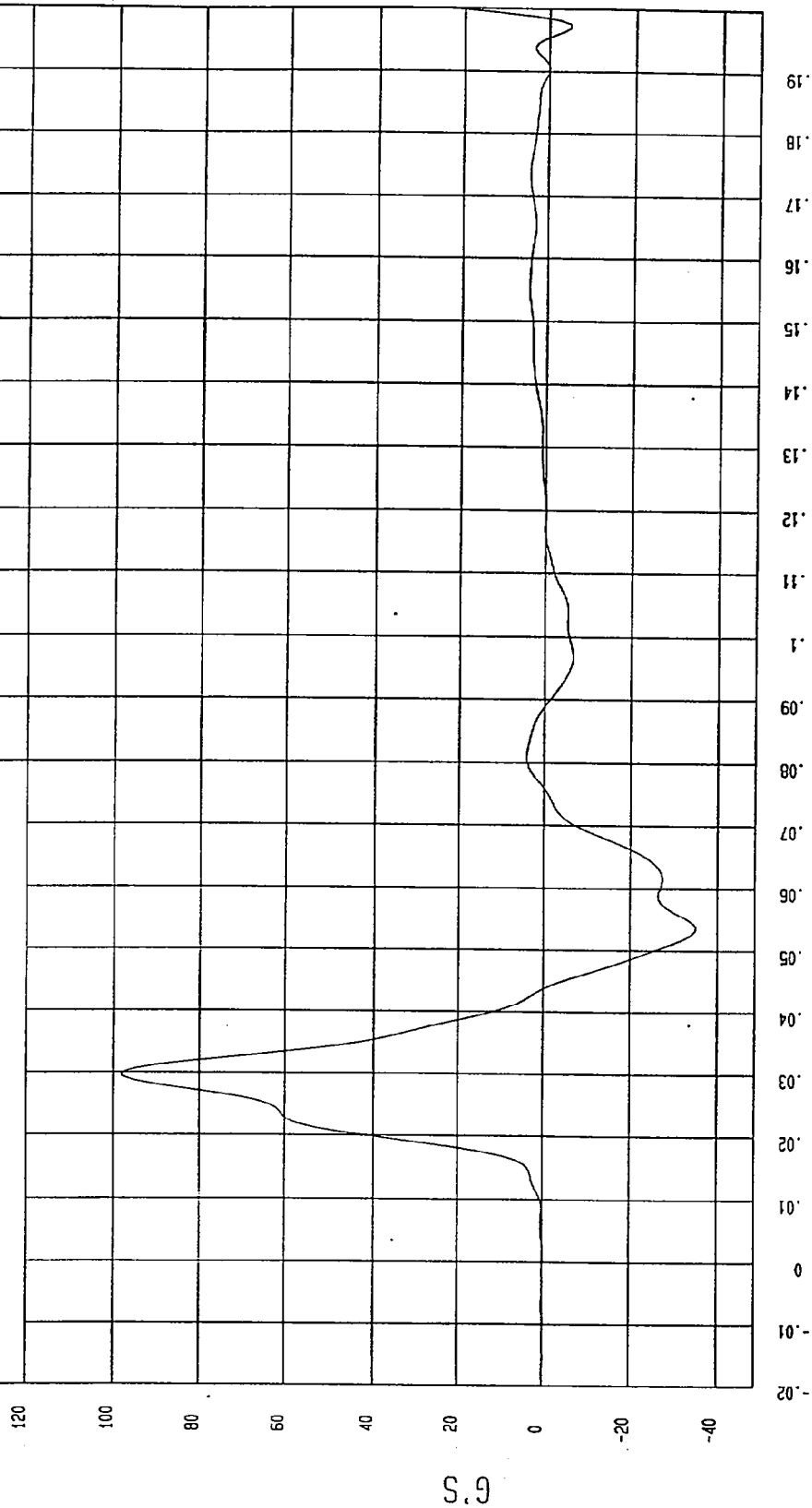
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -34.98 G'S at 54 msec Maximum = 98.03 G'S at 29 msec

DRIVER PELVIS Y ACCELERATION

1 ——— 897037F1.R18 FilterClass (FIR Filtered)

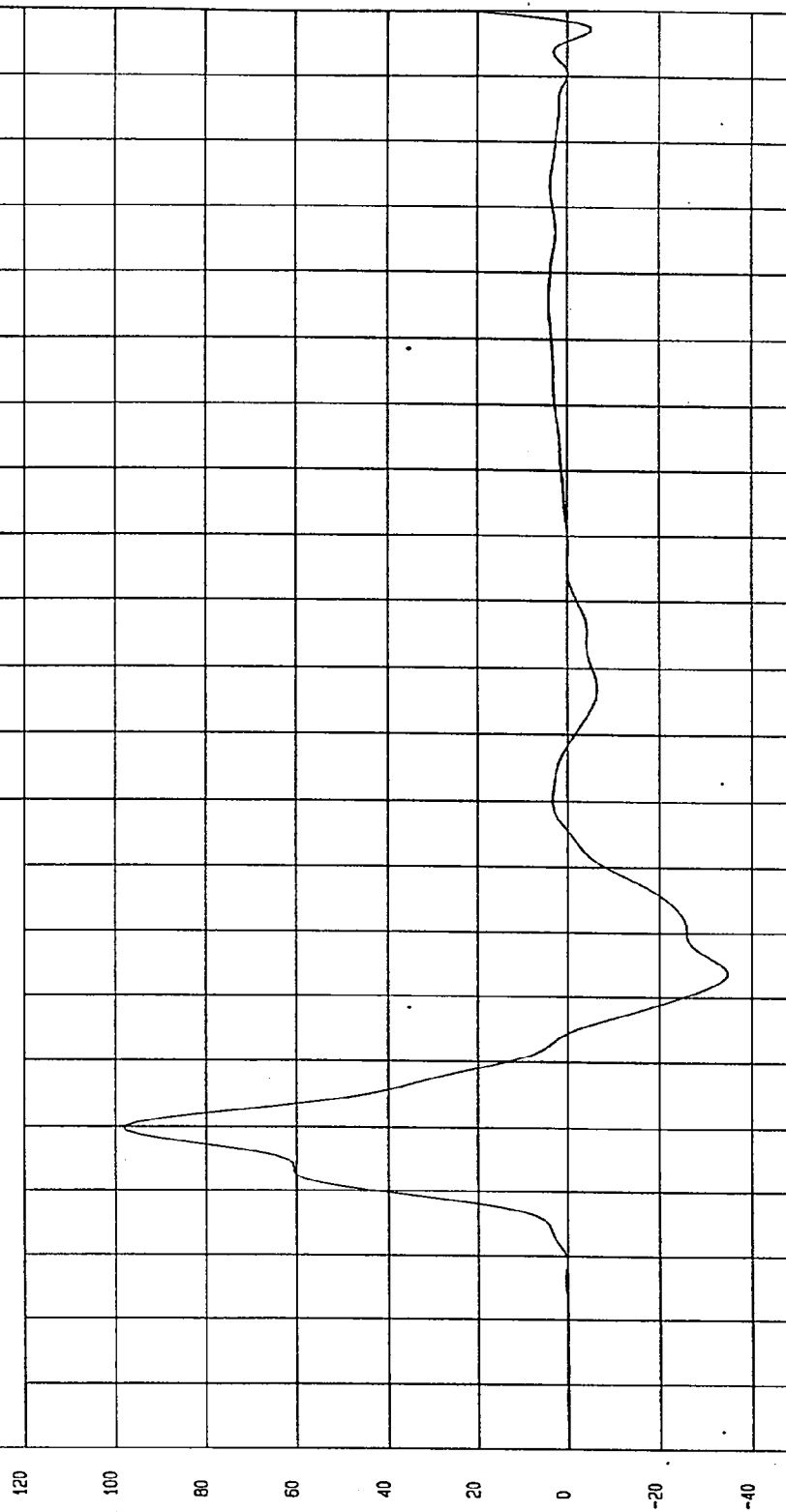


MSA Research
03-21-1997 15:15

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH
Minimum = -34.77 G'S at 54 msec Maximum = 98.09 G'S at 30 msec

DRIVER PELVIS Y REDUNDANT ACCELERATION

1 — 897037F1.R65 Filterclass (FIR Filtered)



MCA Research
03-21-1997 15:15

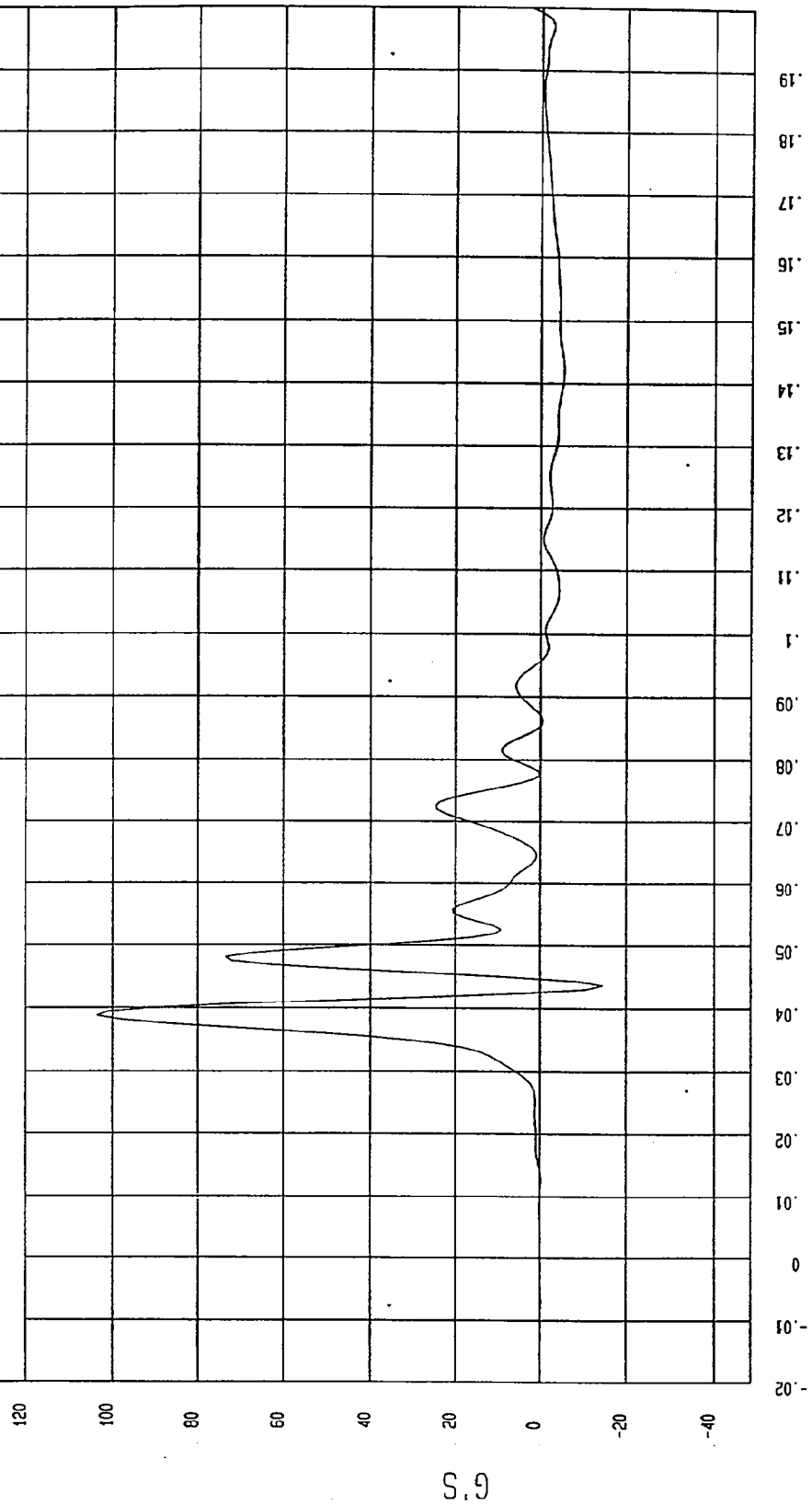
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

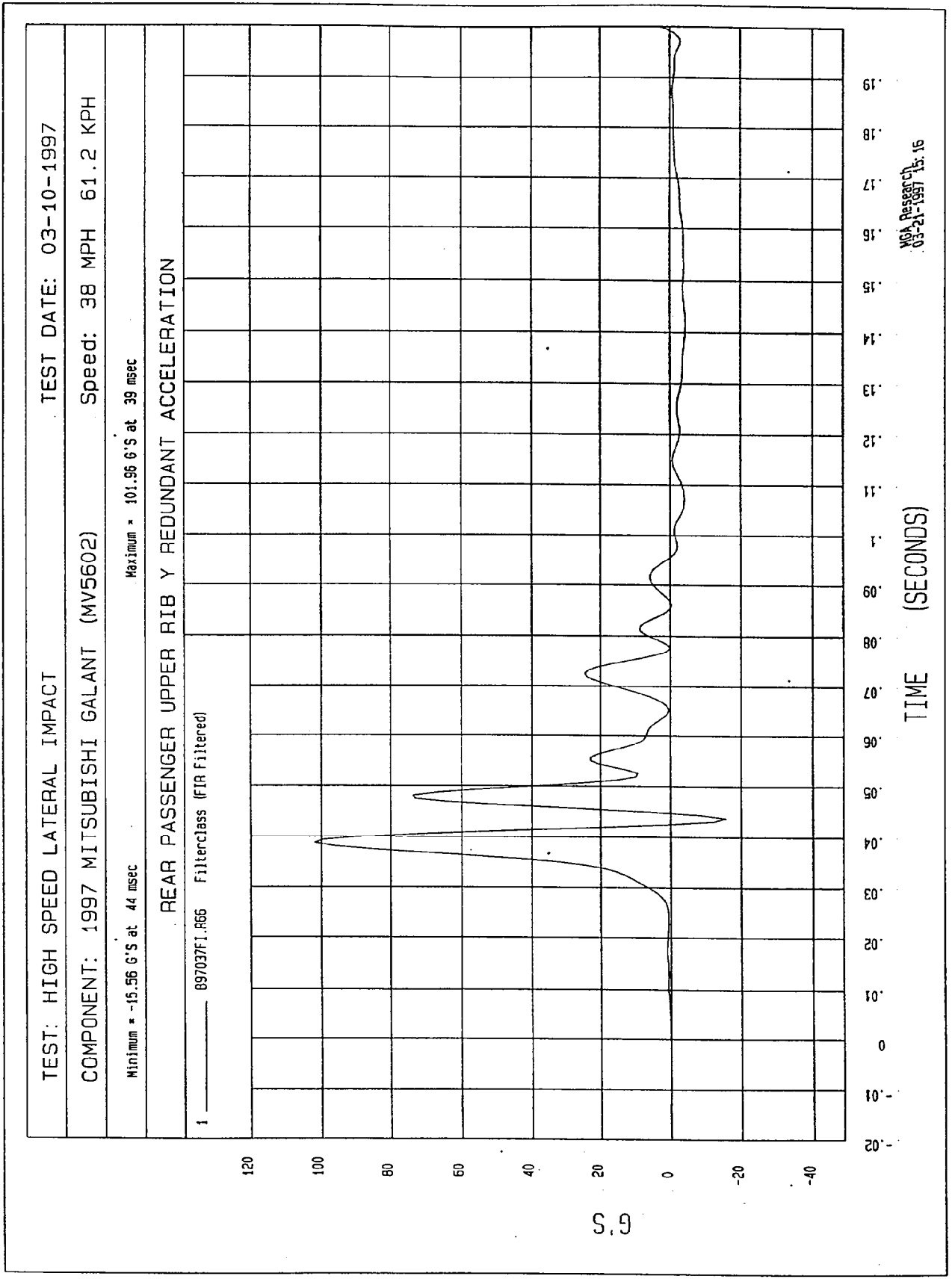
Minimum = -14.50 G's at .44 msec Maximum = 103.42 G's at .39 msec

REAR PASSENGER UPPER RIB Y ACCELERATION

1 ——— 897037F1.R25 Filterclass (FIR Filtered)



MVA Research
03-21-1997 15:15

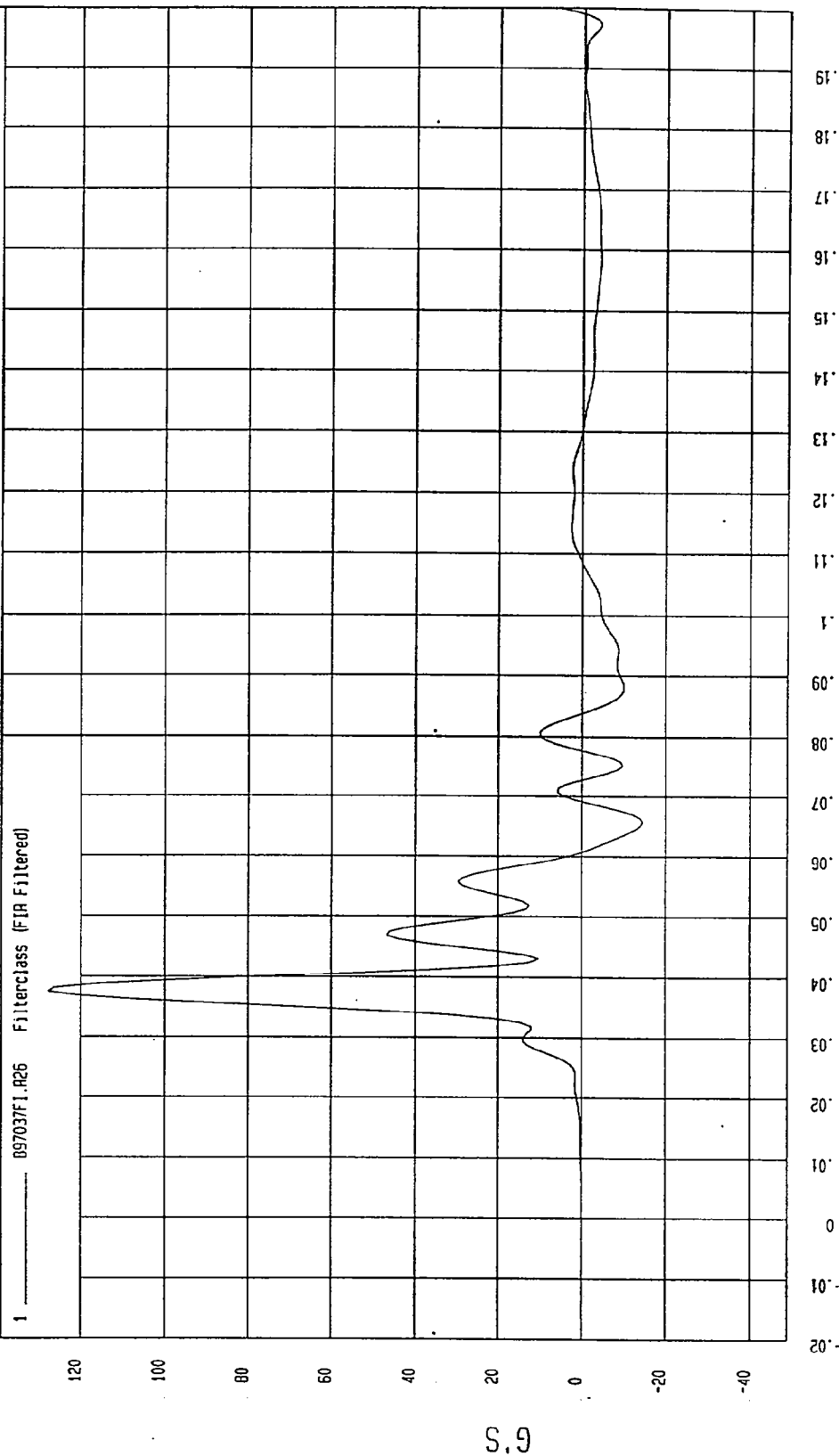


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

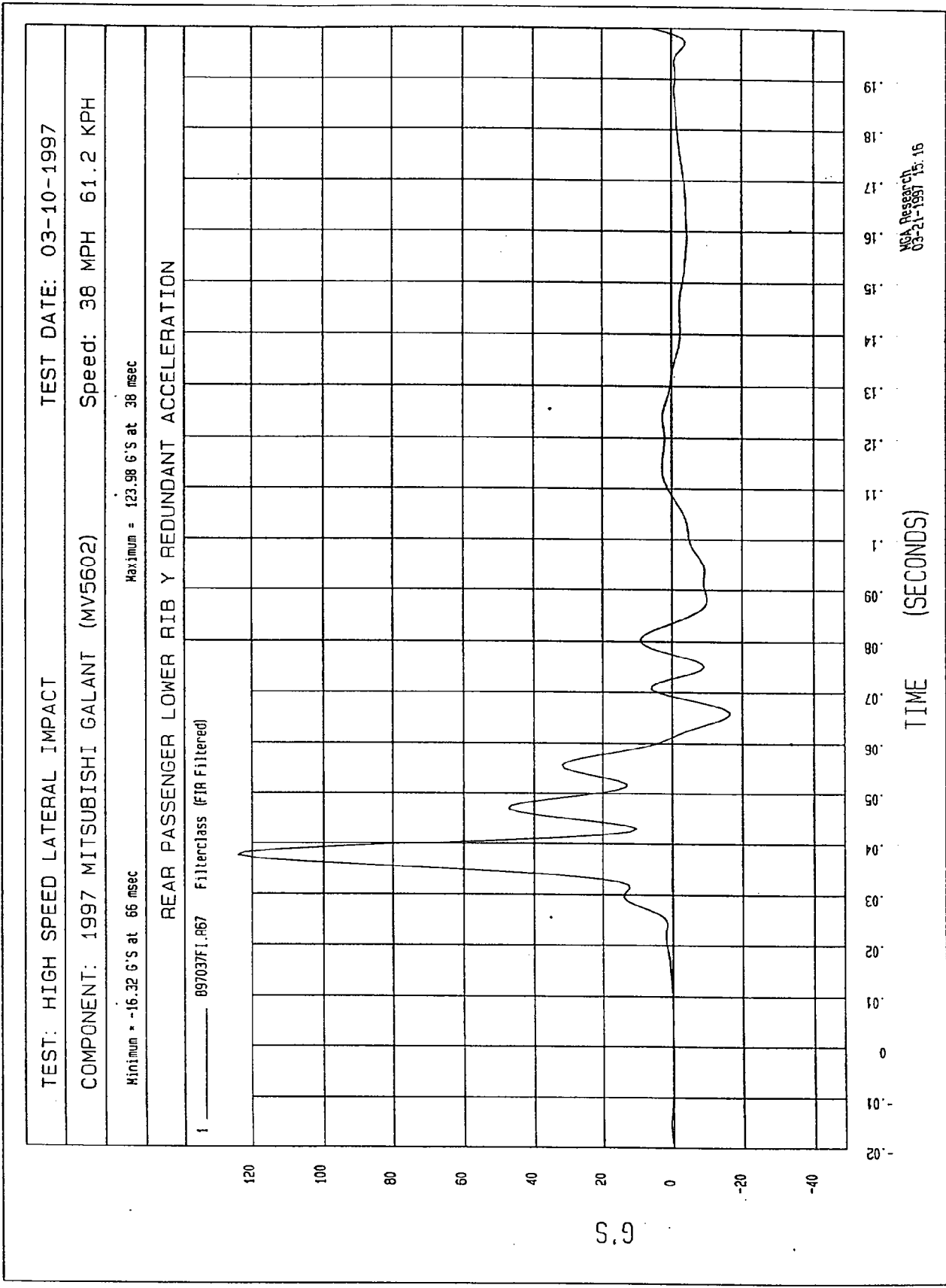
COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -14.61 G'S at 66 msec Maximum = 127.86 G'S at 38 msec

REAR PASSENGER LOWER RIB Y ACCELERATION



NGA Research
03-21-1997 15:16



TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602) Speed: 38 MPH 61.2 KPH

Minimum = -25.09 G'S at 63 msec Maximum = 68.27 G'S at 40 msec

REAR PASSENGER LOWER SPINE Y ACCELERATION

1 ——— 897037FL.R27 Filterclass (FIR Filtered)

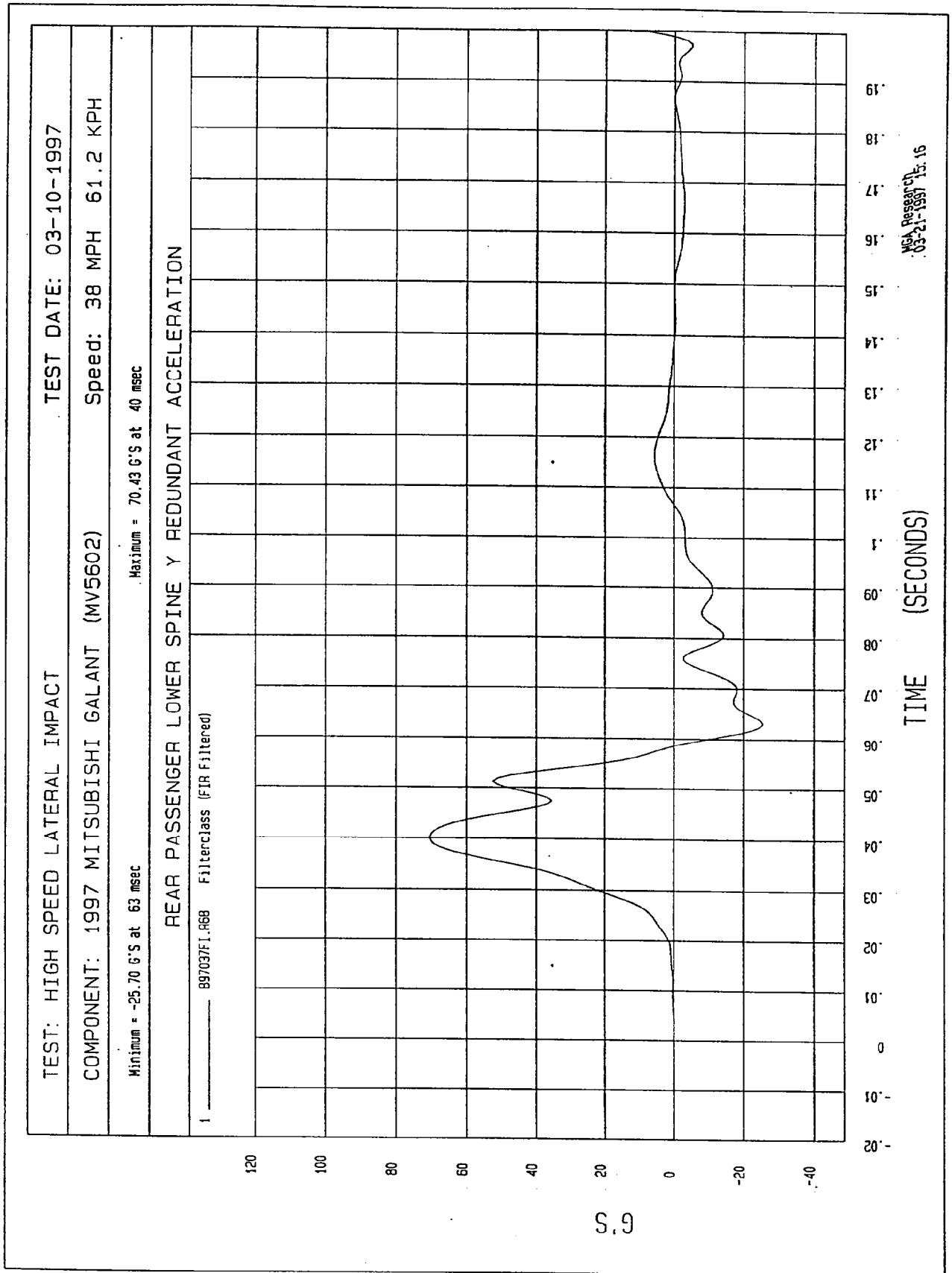
G.S

120
100
80
60
40
20
0
-20
-40

TIME (SECONDS)

0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

NSA Research
03-21-1997 15:16



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 03-10-1997

COMPONENT: 1997 MITSUBISHI GALANT (MV5602)

Speed: 38 MPH 61.2 KPH

Minimum = -27.30 G's at 74 msec

Maximum = 96.85 G's at 32 msec

REAR PASSENGER PELVIS Y ACCELERATION

1 897037F1.R28 Filterclass (FIR Filtered)

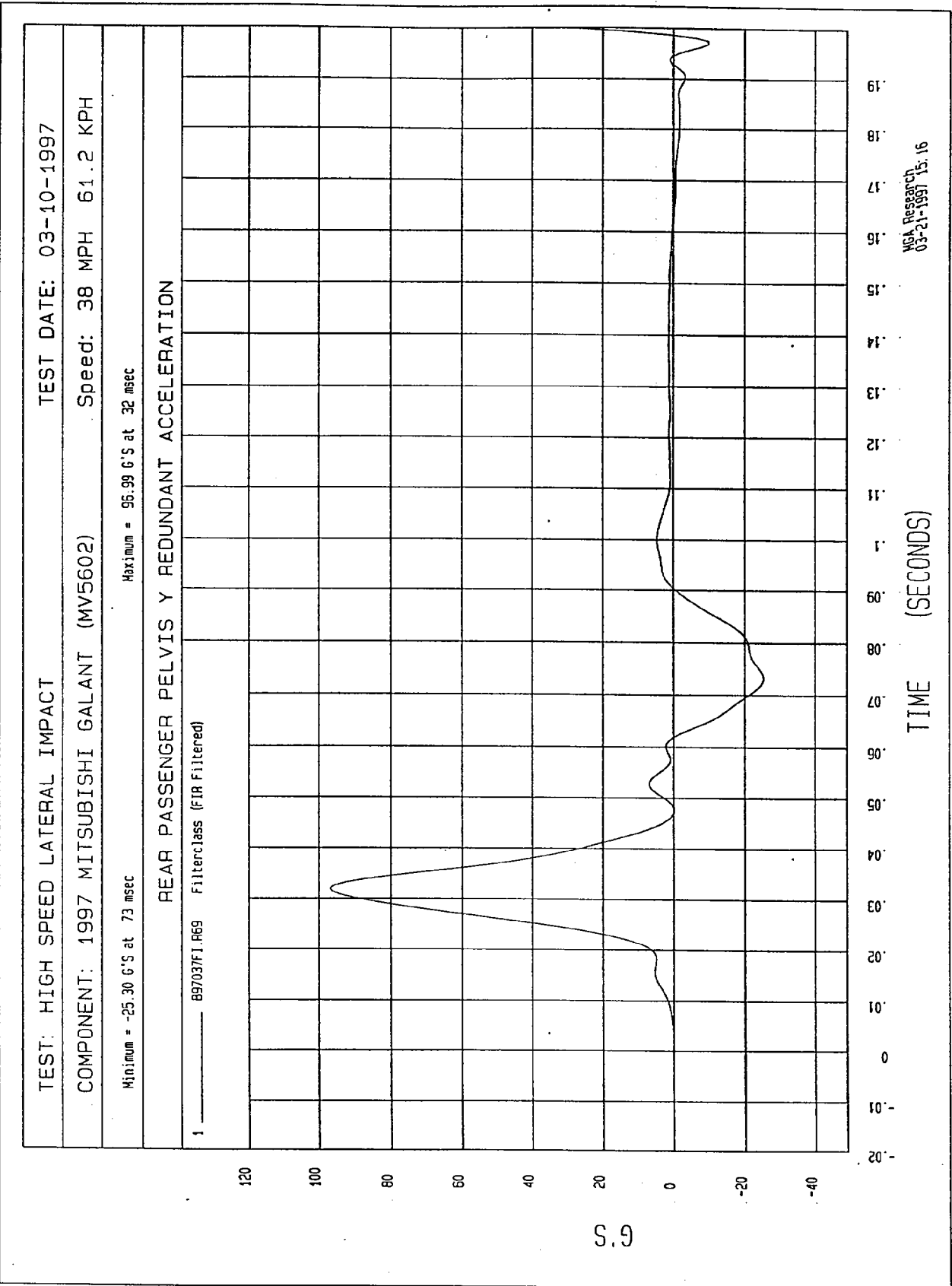
120
100
80
60
40
20
0
-20
-40

G.S

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

TIME (SECONDS)

MOA Research
03-21-1997 15:16



APPENDIX C
SID CONFIGURATION AND PERFORMANCE VERIFICATION

REPORT NO. MGA-97-DC25

DUMMY PERFORMANCE CALIBRATIONS

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST

1997 MITSUBISHI GALANT 4-DOOR
NHTSA NO. MV5602

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: March 10, 1997

Report Date: March 19, 1997

FINAL REPORT

Prepared For:

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
ROOM 5313, NPS-10
400 SEVENTH STREET, S.W.
Washington, D.C. 20590

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	VEHICLE AND DUMMY TEMPERATURE	7-1

PRE-TEST CERTIFICATION DATA

Front Dummy Serial Number: 274

Calibration Test Results Summary

Dummy Serial Number: 274

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.

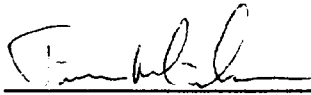
Lumbar Flexion Test: The lumbar passed all flexion test requirements.

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 274

DATE OF VERIFICATION: March 9, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.3
RH - Rib Height	19.75" - 20.50"	20.00
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.1
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.5
SW - Knee Pivot to Floor	19.3" - 19.9"	19.4
HW - Hip Width	14.0" - 15.4"	14.5

MEASUREMENTS BY: 

APPROVED BY: 

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: March 7, 1997

DUMMY NUMBER: 274

TEST NUMBER: D97632

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	18%
PROBE SPEED	13.8 - 14.2 fps	13.9
UPPER RIB	37 - 46 g's	40
LOWER RIB	37 - 46 g's	37
LOWER SPINE	15 - 22 g's	20

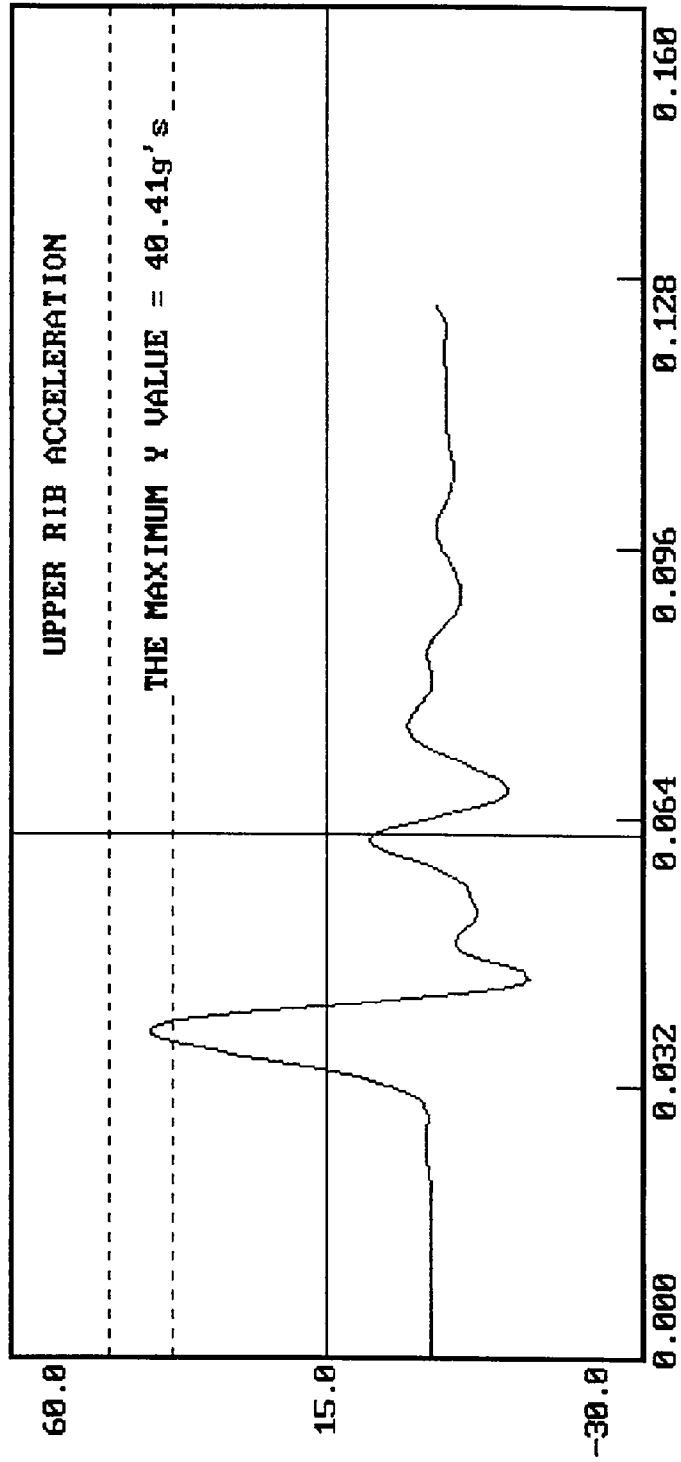
TEST MEETS SPECIFICATIONS

TECHNICIAN Tim White

APPROVED BY Ron Kosbake

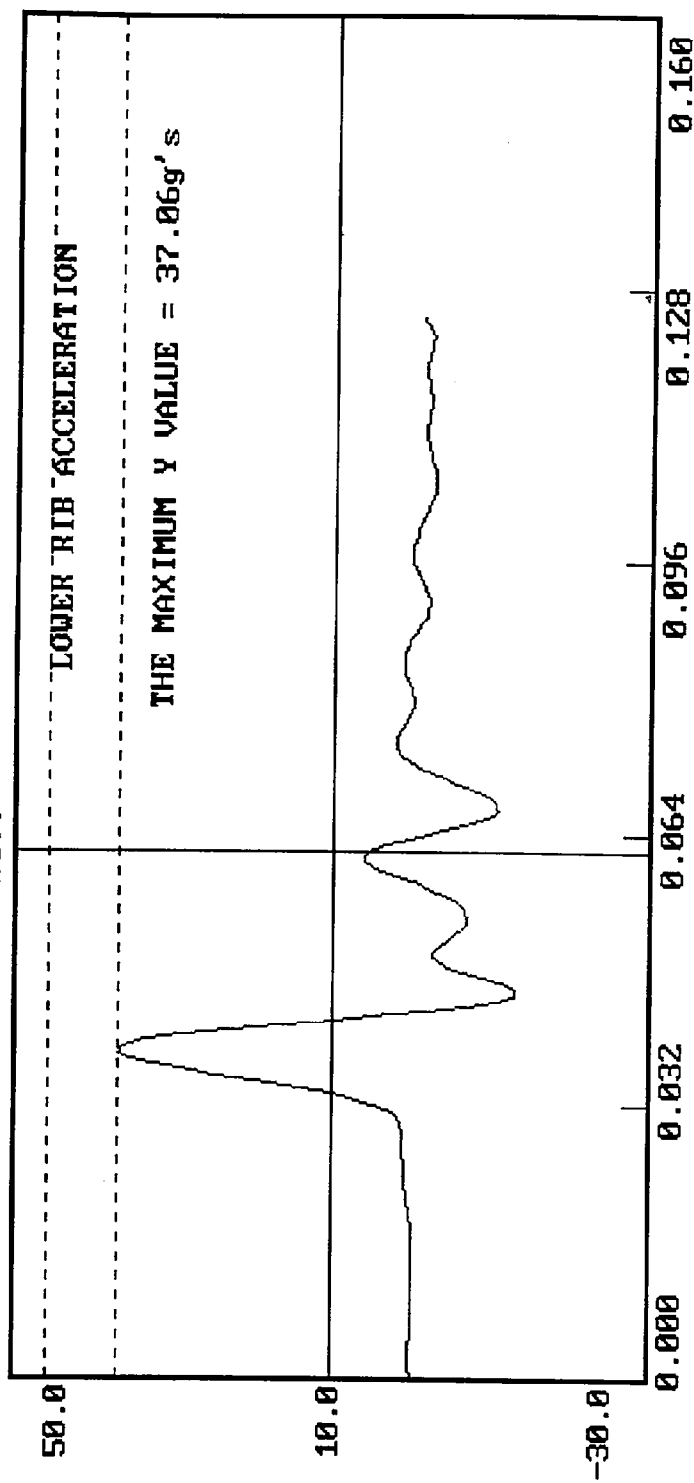
03-07-1997 17:42

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 274
ACCELERATION (G'S) VS. TIME ((SECONDS))



IMPACT SPEED = 13.89 FT/SEC

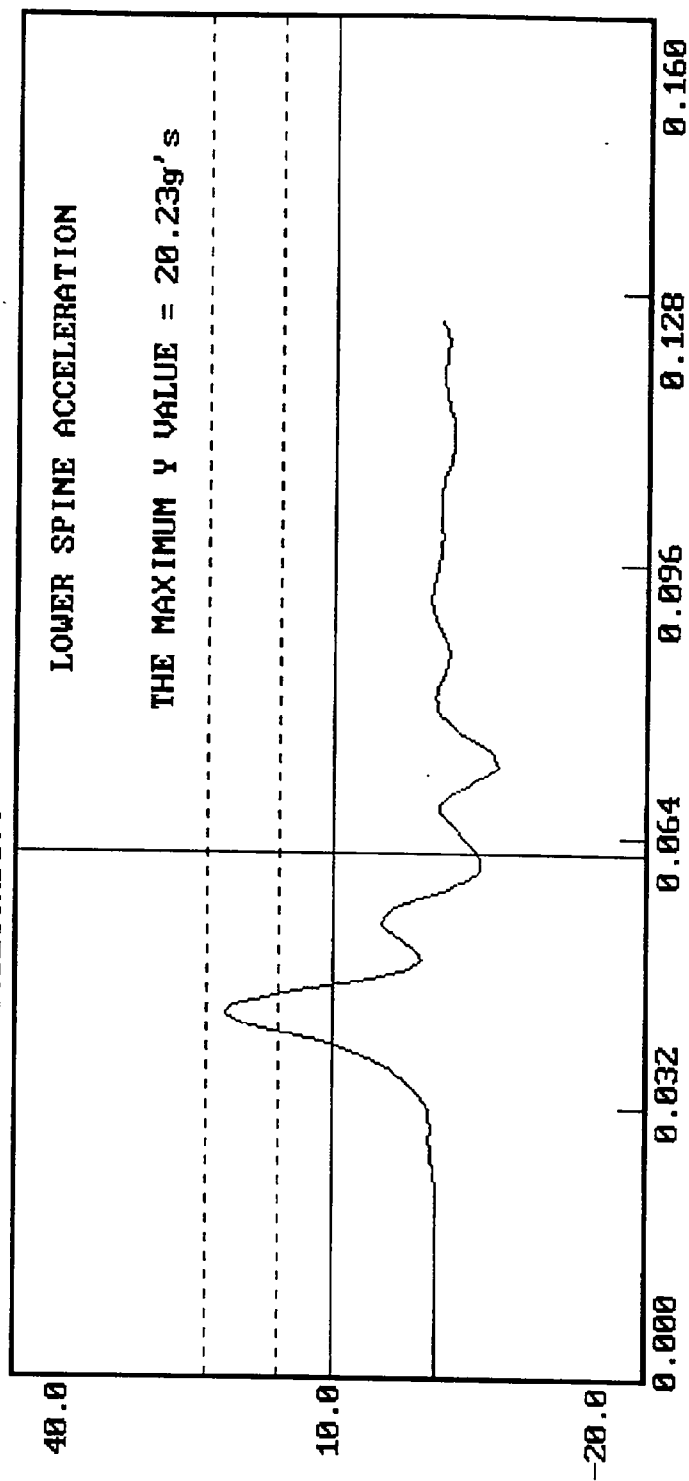
DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 274
03-07-1997 17:42
ACCELERATION (G'S) VS. TIME ((SECONDS))



IMPACT SPEED = 13.89 FT/SEC

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 274
03-07-1997 17:42

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



IMPACT SPEED = 13.89 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: March 7, 1997

DUMMY NUMBER: 274

TEST NUMBER: D97633

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	18%
PROBE SPEED	13.8 - 14.2 f/s	13.9
PELVIS ACCELERATION	40 - 60 g's	40

TEST MEETS SPECIFICATIONS

TECHNICIAN

Tom White

APPROVED BY

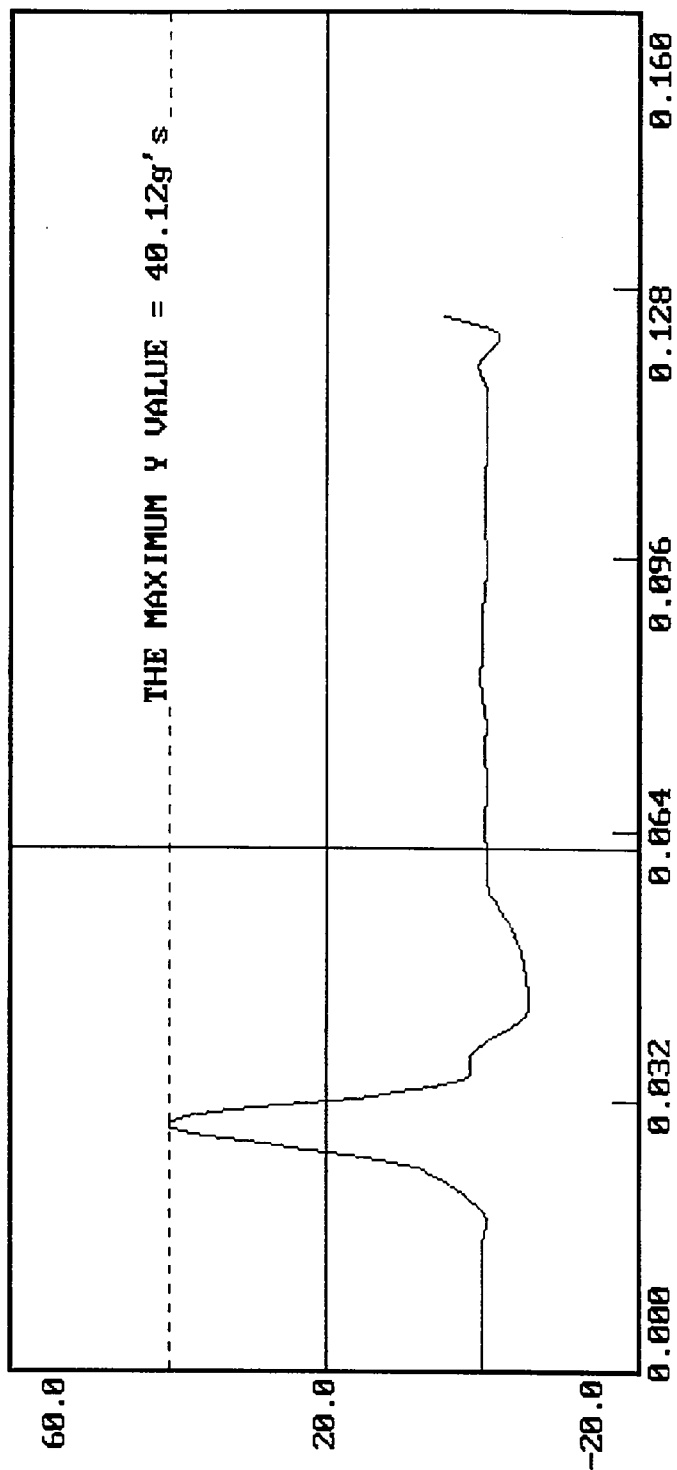
Paul Kosloski

03-07-1997 17:58

DUMMY CALIBRATION - PELVIS IMPACT

DUMMY # 274

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



IMPACT SPEED = 13.91 FT/SEC

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

DATE: March 9, 1997

DUMMY NUMBER: 274

TEST NUMBER: D97634

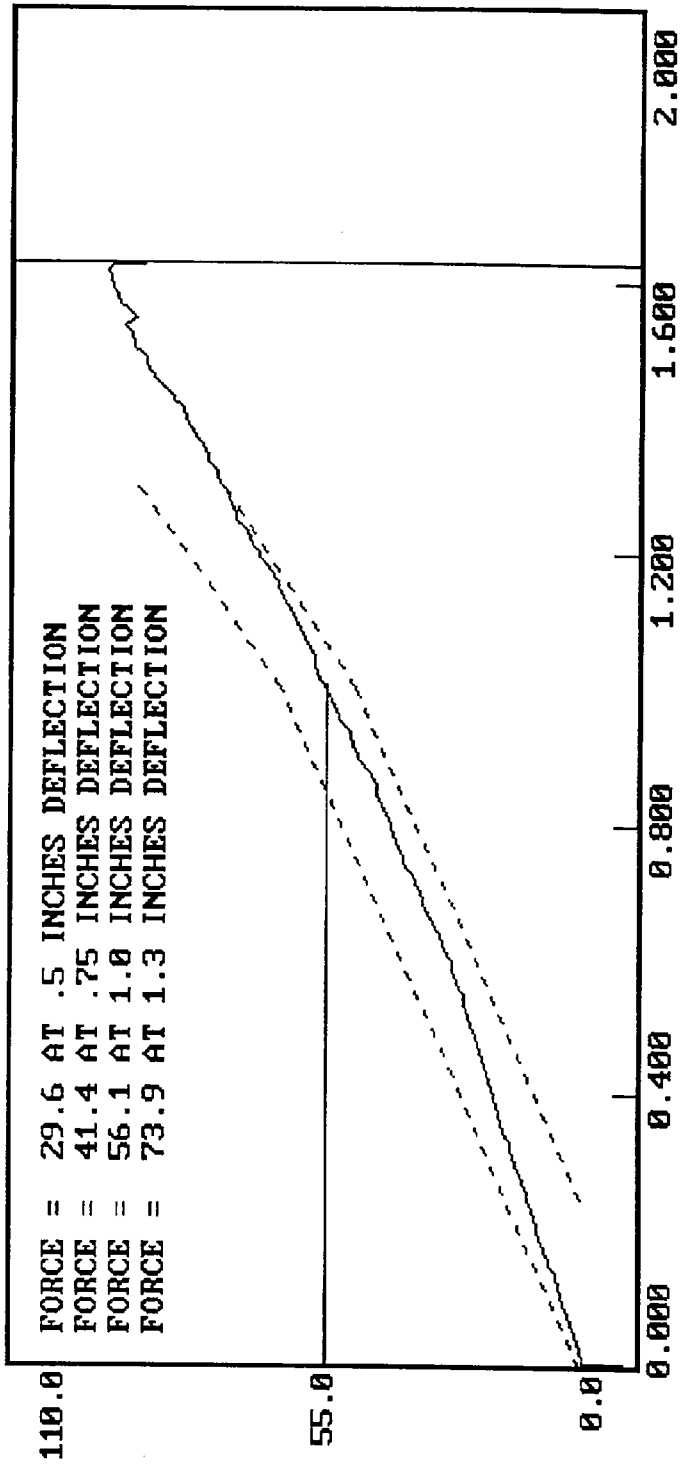
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0.5 in	23.3 - 36.5 lbs	29.6
FORCE @ 0.75 in	36.7 - 49.8 lbs	41.4
FORCE @ 1.0 in	50 - 63 lbs	56
FORCE @ 1.3 in	73 - 88 lbs	74

TEST MEETS SPECIFICATIONS

TECHNICIAN Tim M. H.

APPROVED BY Paul Karloske

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



IMPACT SPEED = 0.00 FT/SEC

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: March 9, 1997

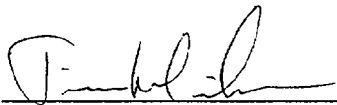
DUMMY NUMBER: 274

TEST NUMBER: D97635

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	24
FORCE @ 30°	34 - 46 lbs	36
FORCE @ 40°	46 - 58 lbs	52
RETURN ANGLE	12° maximum	4°

TEST MEETS SPECIFICATIONS

TECHNICIAN

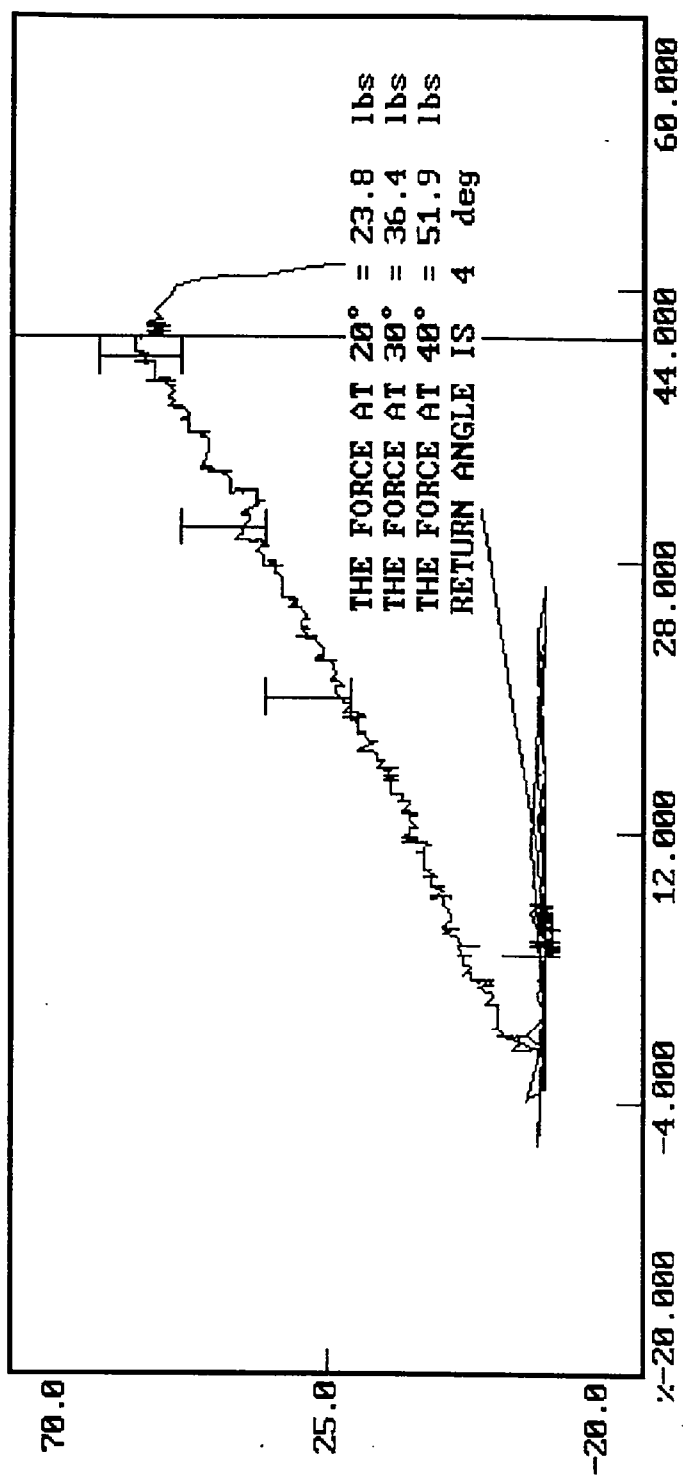


APPROVED BY



DUMMY CALIBRATION - LUMBAR FLEXION
 DUMMY # 274
 FORCE (LBS) VS. TORSO ROTATION (DEGREES)

03-09-1997 11:51



IMPACT SPEED = 0.00 FT/SEC

PRE-TEST CERTIFICATION DATA

Rear Dummy Serial Number: 275

Calibration Test Results Summary

Dummy Serial Number: 275

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.: 275

DATE OF VERIFICATION: March 9, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.4
RH - Rib Height	19.75" - 20.50"	20.25
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.1
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.5
SW - Knee Pivot to Floor	19.3" - 19.9"	19.6
HW - Hip Width	14.0" - 15.4"	14.6

MEASUREMENTS BY: Jim White

APPROVED BY: Dave Krobake

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

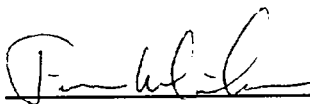
DATE: March 9, 1997

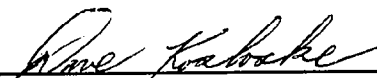
DUMMY NUMBER: 275

TEST NUMBER: D97642

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
PROBE SPEED	13.8 - 14.2 fps	14.2
UPPER RIB	37 - 46 g's	42
LOWER RIB	37 - 46 g's	39
LOWER SPINE	15 - 22 g's	21

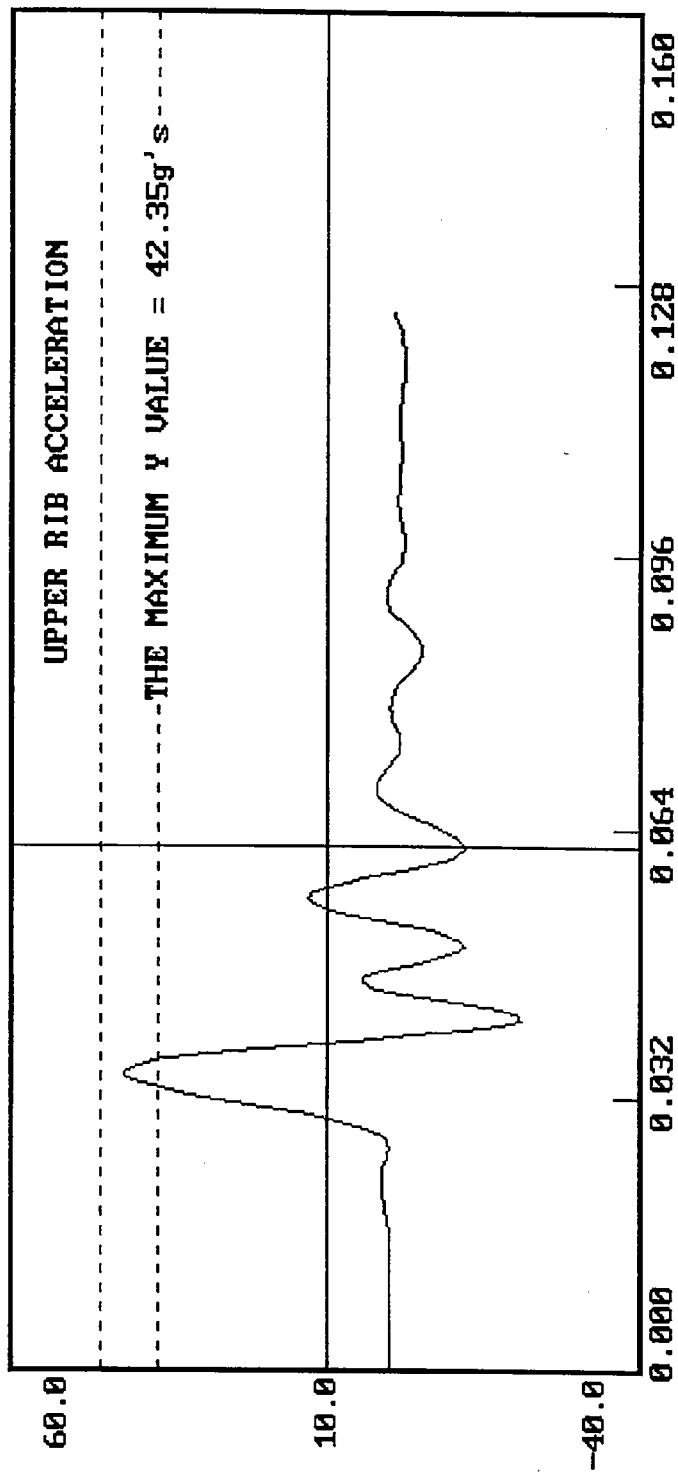
TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

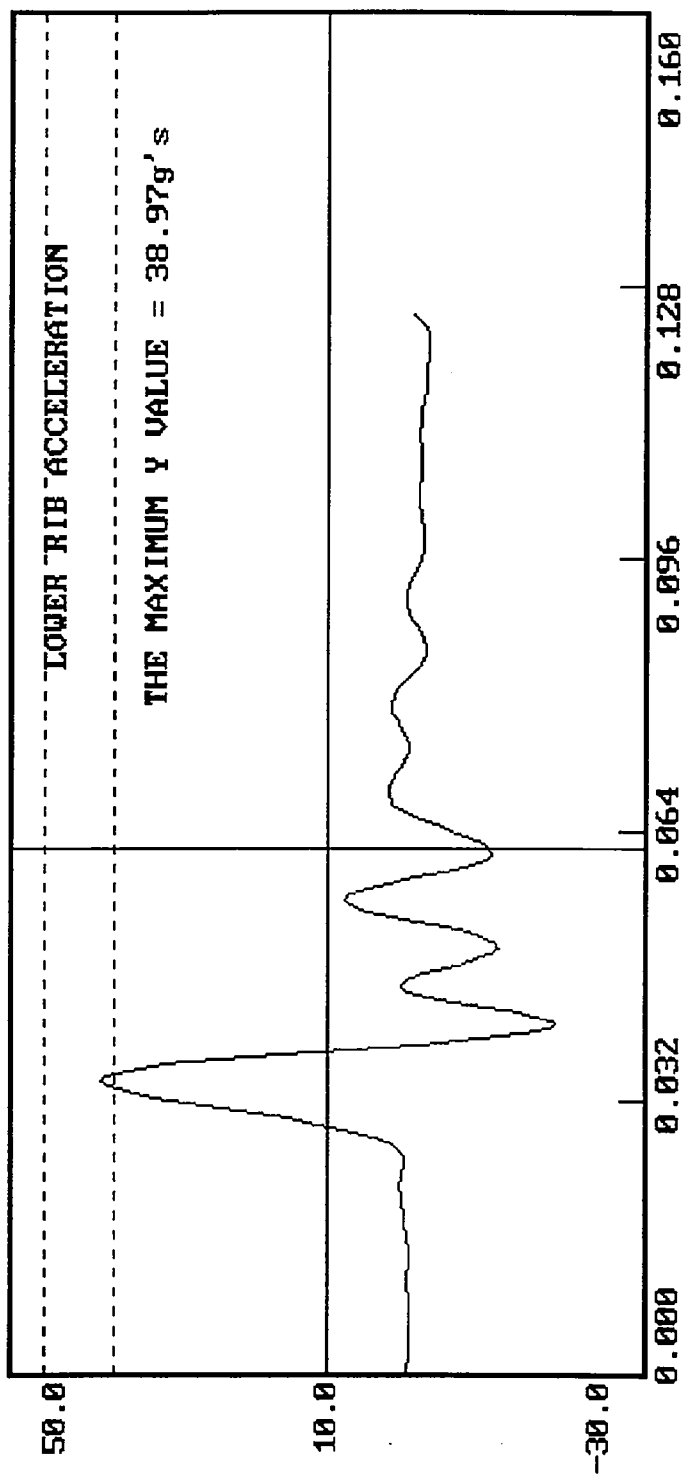
03-09-1997 10:04

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 275
ACCELERATION (G'S) VS. TIME ((SECONDS))



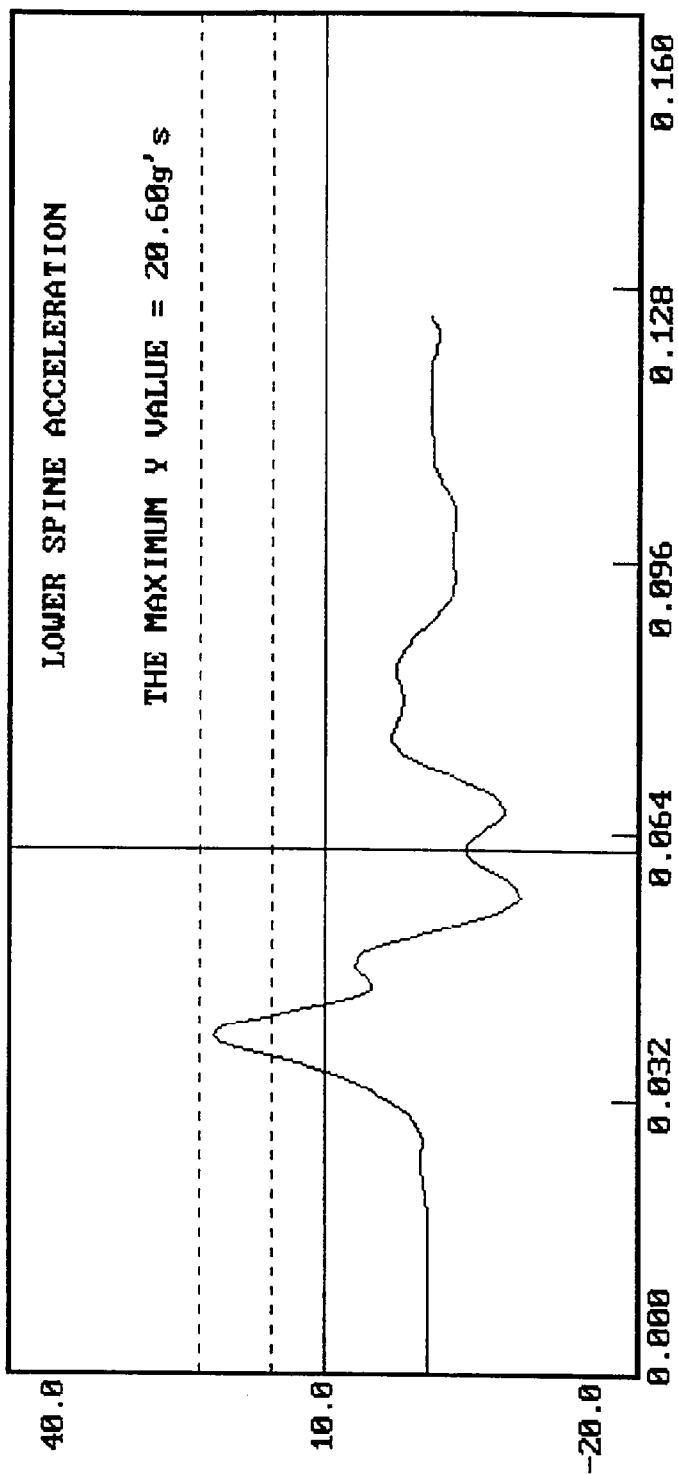
IMPACT SPEED = 14.18 FT/SEC

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 275
03-09-1997 10:04
ACCELERATION (G'S) VS. TIME (SECONDS)



IMPACT SPEED = 14.18 FT/SEC

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 275
ACCELERATION (G'S) VS. TIME ((SECONDS))
03-09-1997 10:06



IMPACT SPEED = 14.18 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: March 9, 1997

DUMMY NUMBER: 275

TEST NUMBER: D97643

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
PROBE SPEED	13.8 - 14.2 f/s	14.0
PELVIS ACCELERATION	40 - 60 g's	51

TEST MEETS SPECIFICATIONS

TECHNICIAN

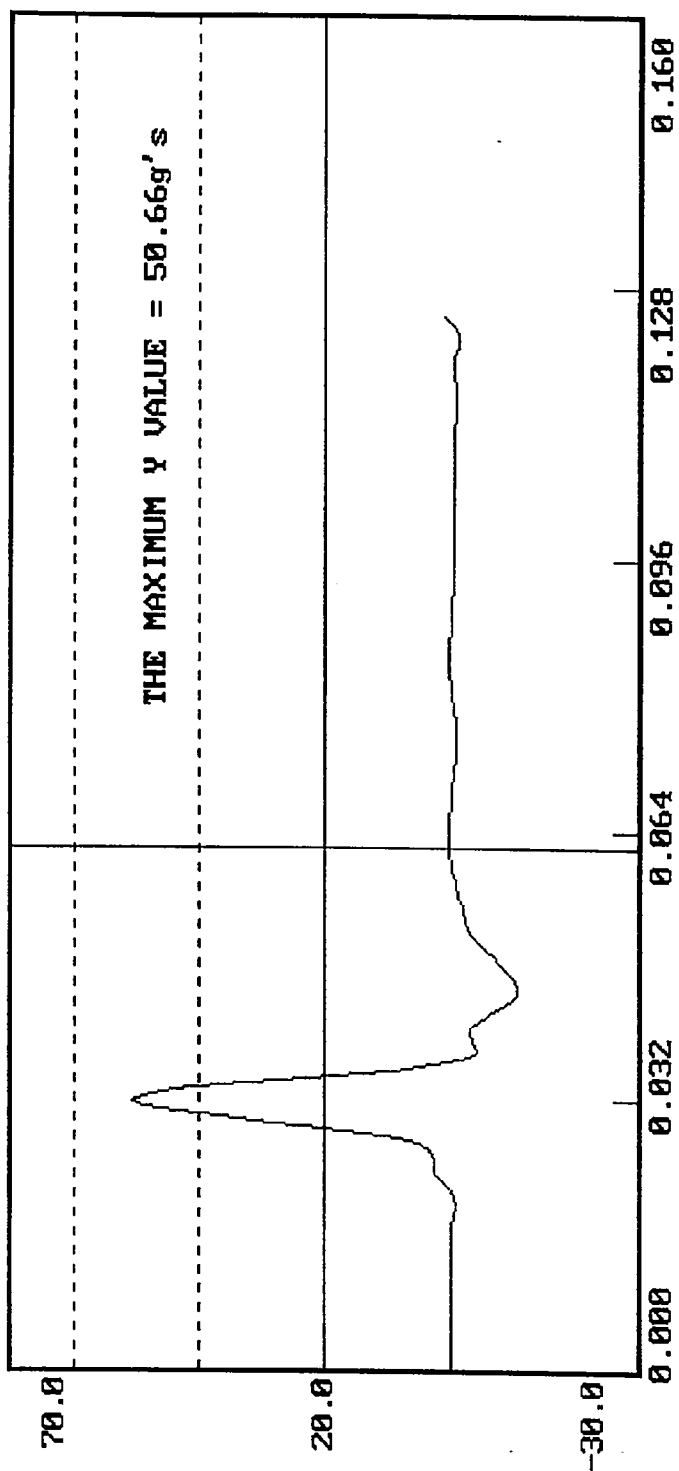
Jim White

APPROVED BY

Rene Kaba

03-09-1997 10:15

DUMMY CALIBRATION - PELVIS IMPACT
DUMMY # 275
ACCELERATION (G'S) VS. TIME ((SECONDS))



IMPACT SPEED = 14.03 FT/SEC

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

DATE: March 9, 1997

DUMMY NUMBER: 275

TEST NUMBER: D97644

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0.5 in	23.3 - 36.5 lbs	31.8
FORCE @ 0.75 in	36.7 - 49.8 lbs	44.5
FORCE @ 1.0 in	50 - 63 lbs	59
FORCE @ 1.3 in	73 - 88 lbs	79

TEST MEETS SPECIFICATIONS

TECHNICIAN

Tim White

APPROVED BY

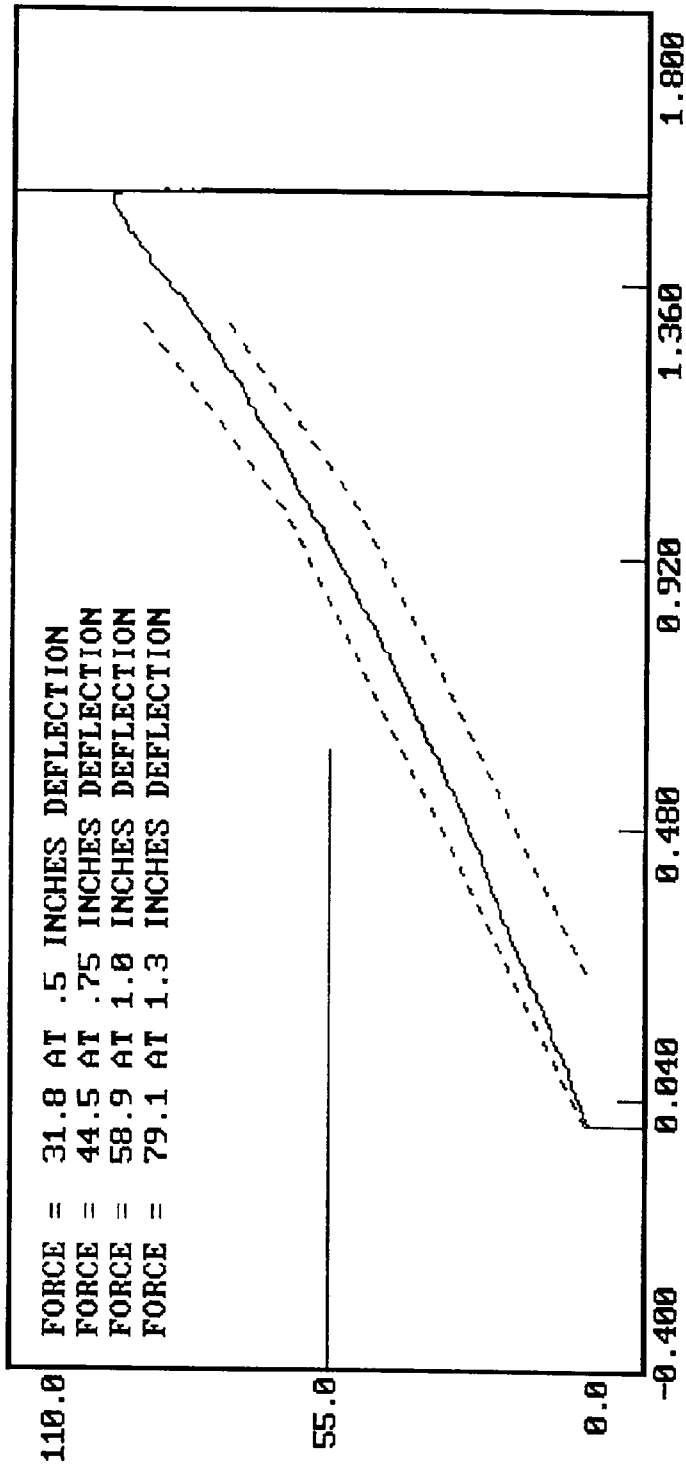
Paul Kabane

DUMMY CALIBRATION - ABDOMEN COMPRESSION

DUMMY # 275

03-09-1997 10:40

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



IMPACT SPEED = 0.00 FT/SEC

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: March 9, 1997

DUMMY NUMBER: 275

TEST NUMBER: D97645

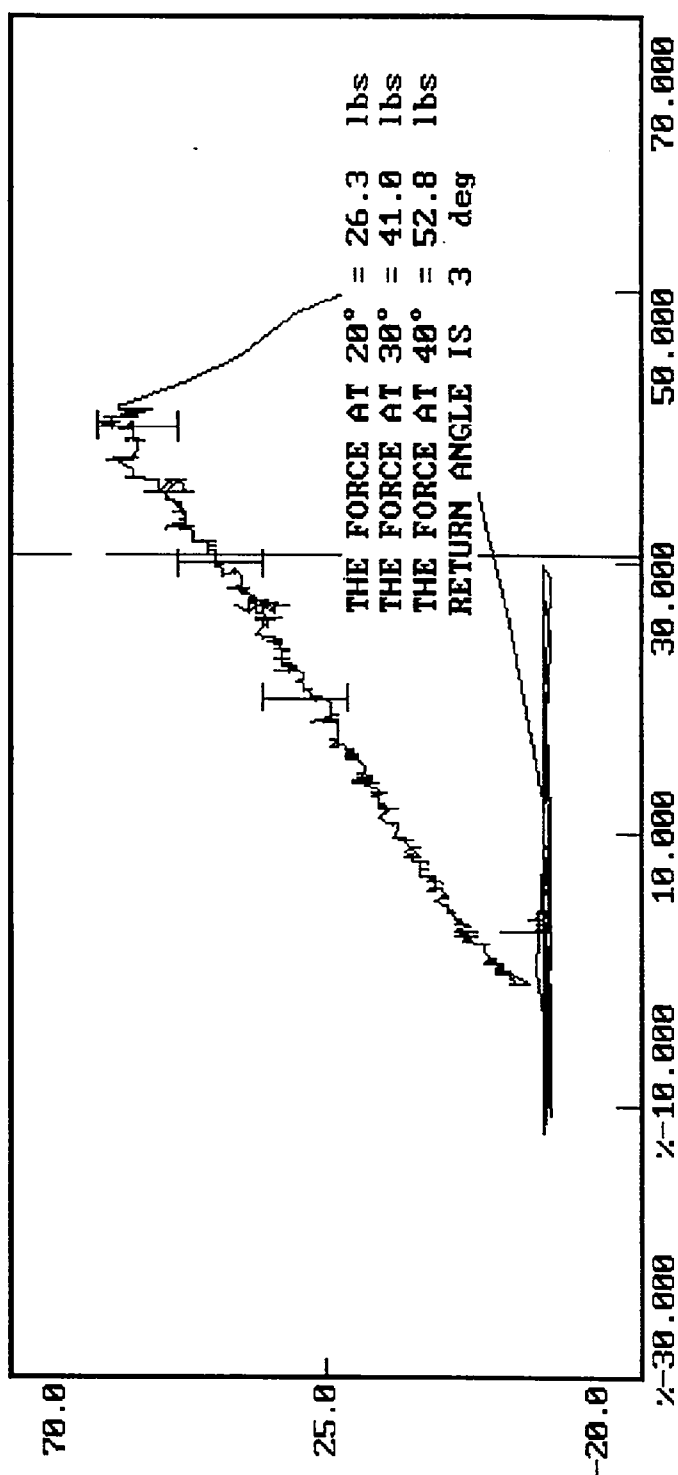
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	26
FORCE @ 30°	34 - 46 lbs	41
FORCE @ 40°	46 - 58 lbs	53
RETURN ANGLE	12° maximum	3°

TEST MEETS SPECIFICATIONS

TECHNICIAN Tim White

APPROVED BY Paul Kishake

DUMMY CALIBRATION - LUMBAR FLEXION
 DUMMY # 275
 03-09-1997 12:03
 FORCE (LBS) VS. TORSO ROTATION (DEGREES)



IMPACT SPEED = 0.00 FT/SEC

POST-TEST CERTIFICATION DATA

Front Dummy Serial Number: 274

Calibration Test Results Summary

Dummy Serial Number: 274

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.: 274

DATE OF VERIFICATION: March 13, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.3
RH - Rib Height	19.75" - 20.50"	20.00
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.1
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.5
SW - Knee Pivot to Floor	19.3" - 19.9"	19.4
HW - Hip Width	14.0" - 15.4"	14.5

MEASUREMENTS BY: Tim White

APPROVED BY: Paul LaBake

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: March 13, 1997

DUMMY NUMBER: 274

TEST NUMBER: D97682

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	40
LOWER RIB	37 - 46 g's	38
LOWER SPINE	15 - 22 g's	20

TEST MEETS SPECIFICATIONS

TECHNICIAN

Jim Philib

APPROVED BY

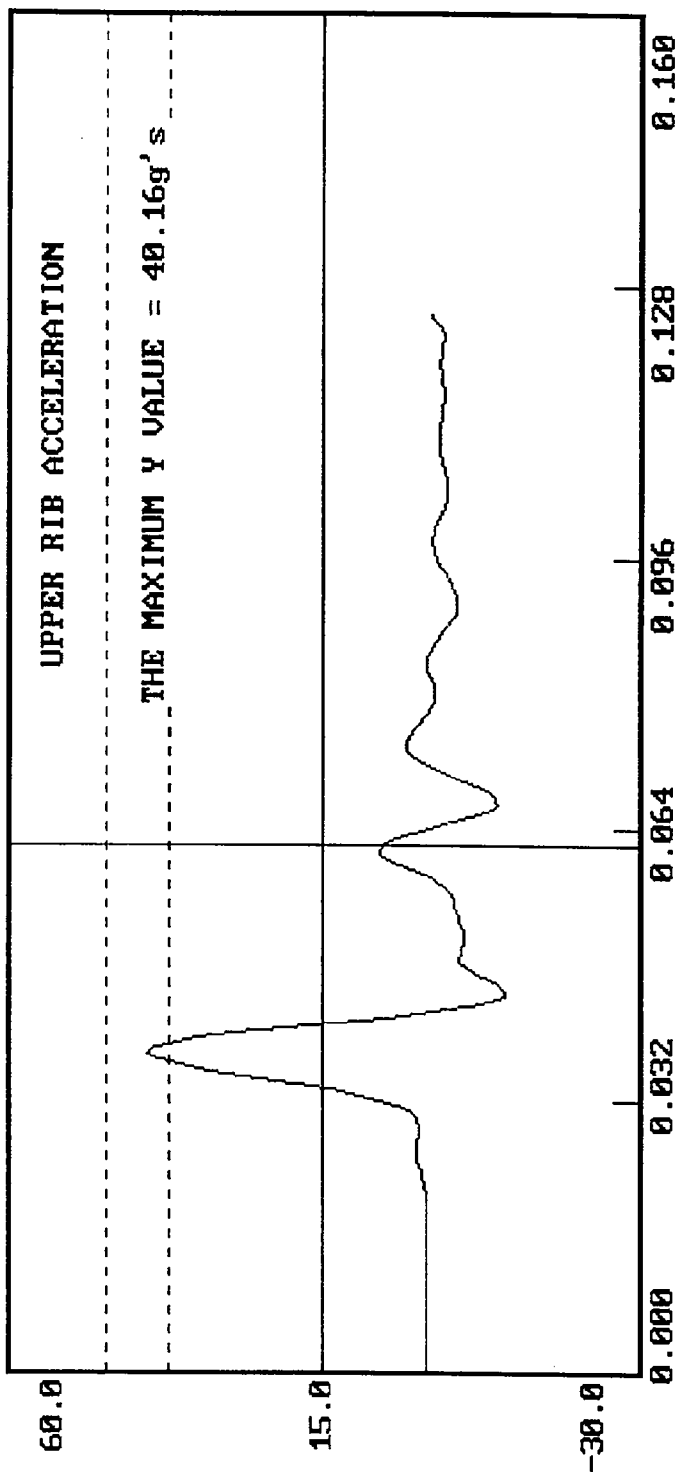
Rene Kobabe

03-13-1997 16:56

DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 274

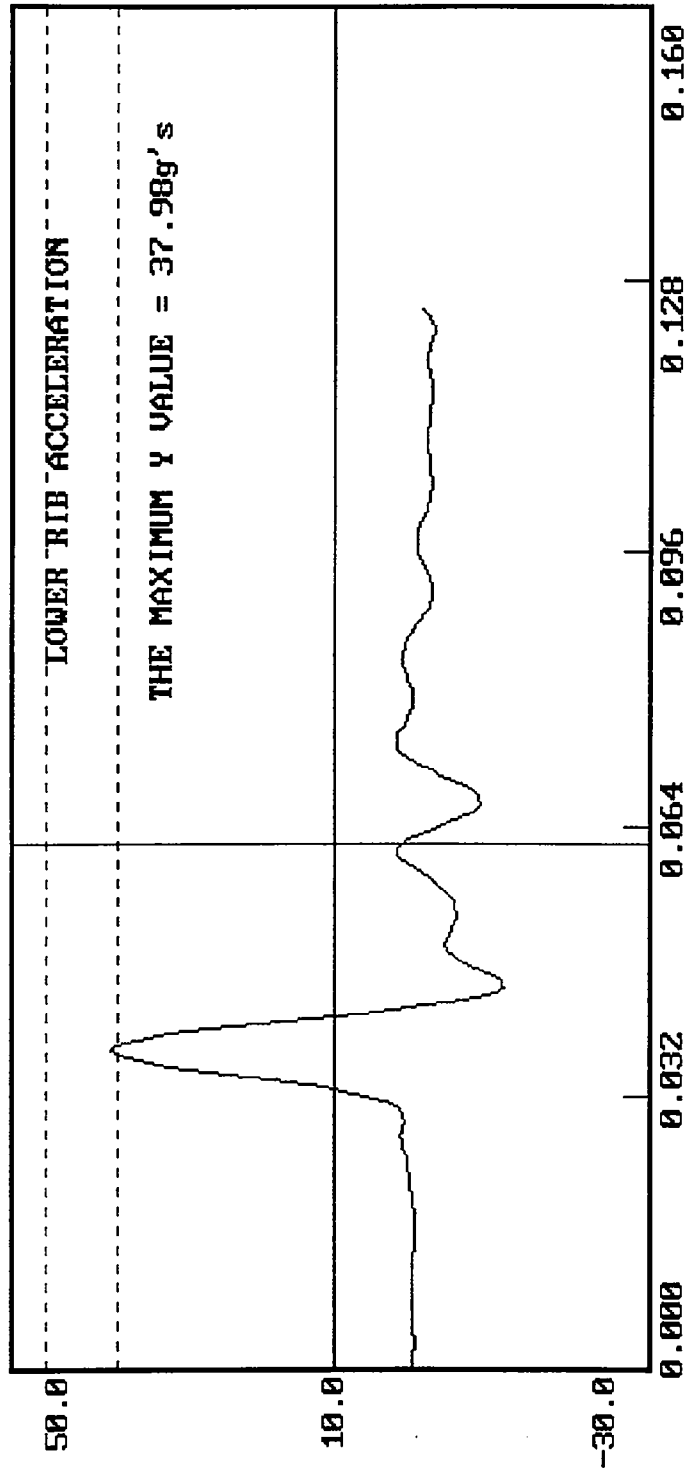
ACCELERATION (G'S) VS. TIME ((SECONDS))



IMPACT SPEED = 14.04 FT/SEC

03-13-1997 16:56

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 274
ACCELERATION (G'S) VS. TIME ((SECONDS))



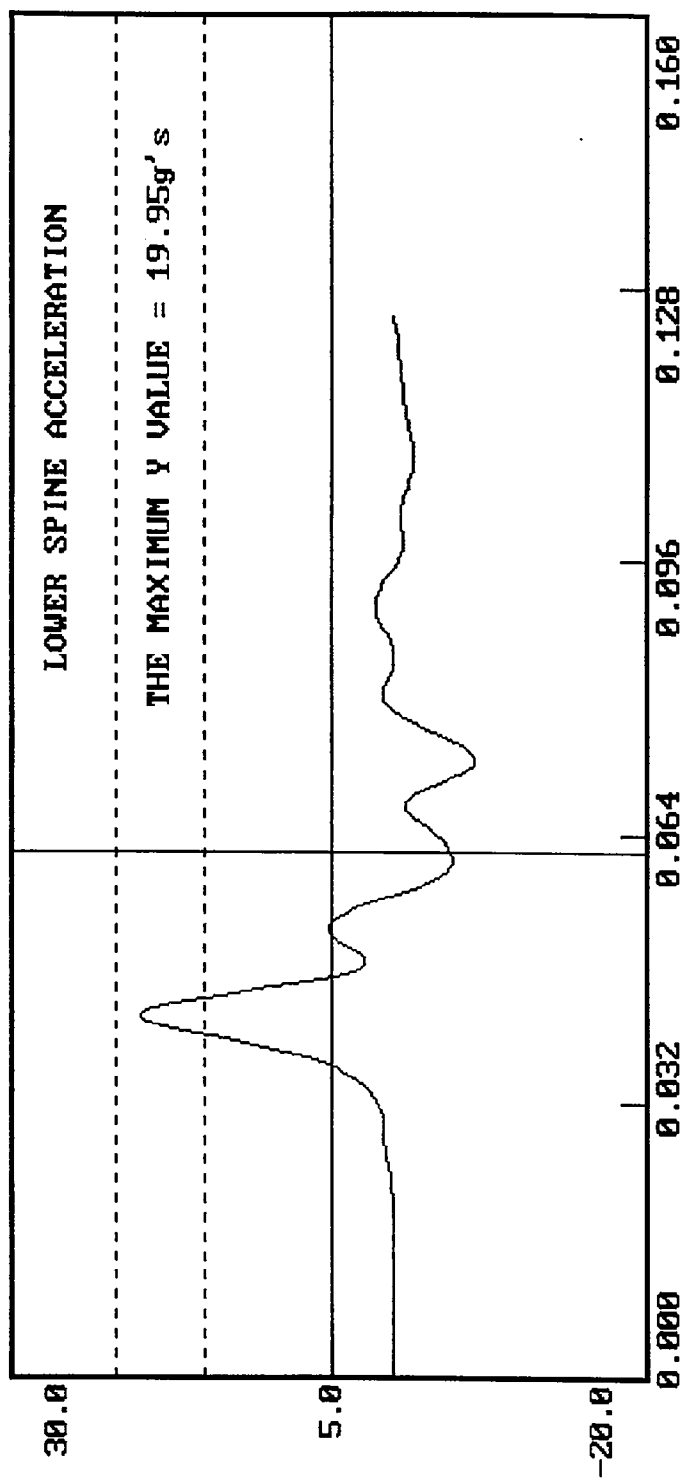
IMPACT SPEED = 14.04 FT/SEC

03-13-1997 16:56

DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 274

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



IMPACT SPEED = 14.04 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: March 13, 1997

DUMMY NUMBER: 274

TEST NUMBER: D97683

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
PROBE SPEED	13.8 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	48

TEST MEETS SPECIFICATIONS

TECHNICIAN

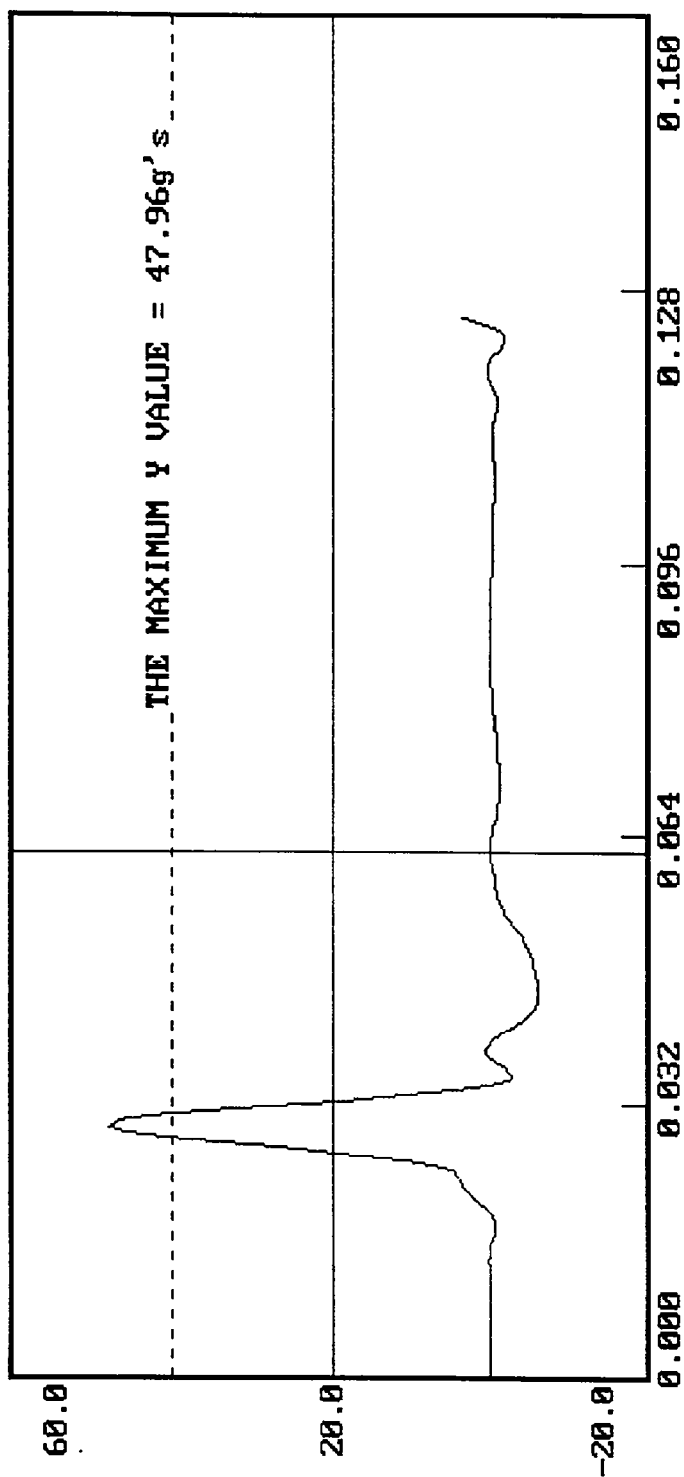
Jim Hill

APPROVED BY

Steve Kabeke

03-13-1997 17:01

DUMMY CALIBRATION - PELVIS IMPACT
DUMMY # 274
ACCELERATION (G'S) VS. TIME ((SECONDS))



IMPACT SPEED = 14.05 FT/SEC

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

DATE: March 13, 1997

DUMMY NUMBER: 274

TEST NUMBER: D97684

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0.5 in	23.3 - 36.5 lbs	30.5
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	76

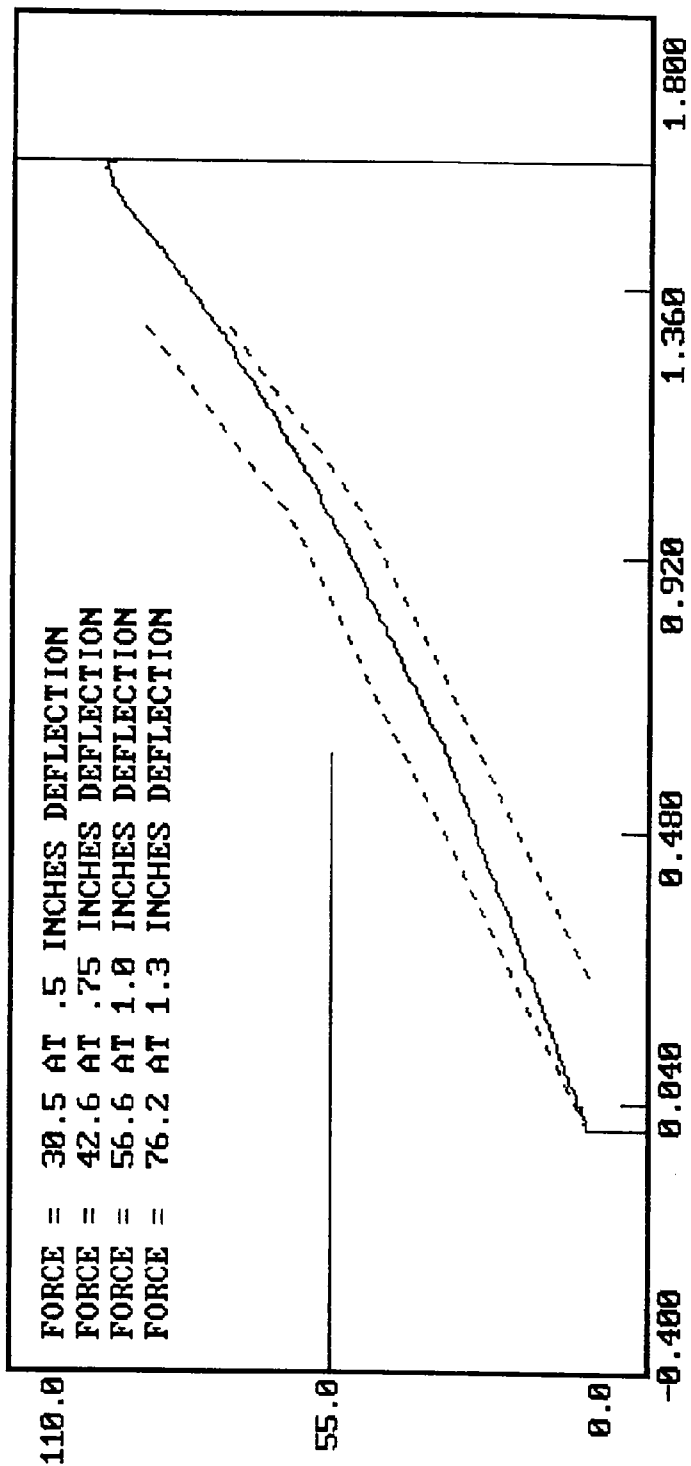
TEST MEETS SPECIFICATIONS

TECHNICIAN Jim White

APPROVED BY Don Kabeke

DUMMY CALIBRATION - ABDOMEN COMPRESSION
 DUMMY # 274
 03-13-1997 12:34

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



IMPACT SPEED = 0.00 FT/SEC

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: March 13, 1997

DUMMY NUMBER: 274

TEST NUMBER: D97685

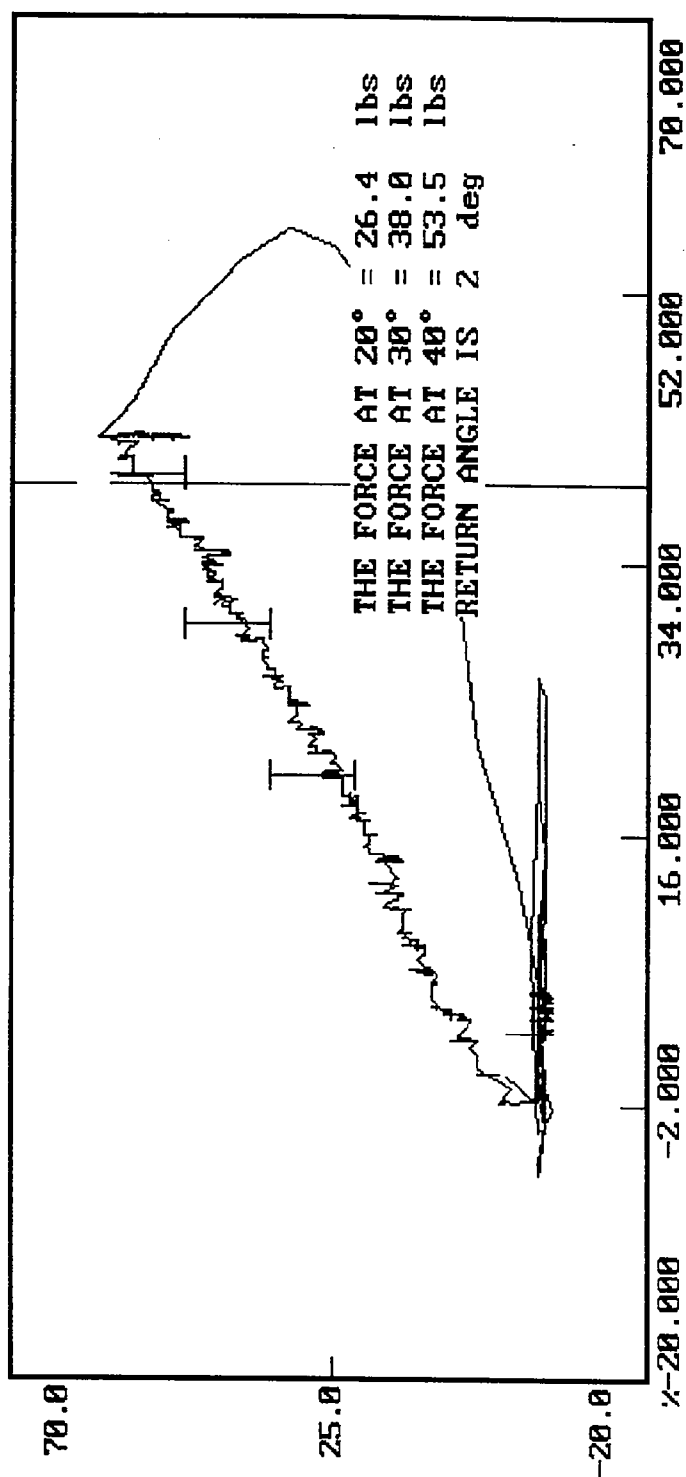
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	26
FORCE @ 30°	34 - 46 lbs	38
FORCE @ 40°	46 - 58 lbs	54
RETURN ANGLE	12° maximum	2°

TEST MEETS SPECIFICATIONS

TECHNICIAN Tim White

APPROVED BY Rene Kabeche

DUMMY CALIBRATION - LUMBAR FLEXION
 DUMMY # 274
 03-13-1997 14:40
 FORCE (LBS) VS. TORSO ROTATION (DEGREES)



IMPACT SPEED = 0.00 FT/SEC

POST-TEST CERTIFICATION DATA

Rear Dummy Serial Number: 275

Calibration Test Results Summary

Dummy Serial Number: 275

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.: 275

DATE OF VERIFICATION: March 14, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.4
RH - Rib Height	19.75" - 20.50"	20.25
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.1
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.5
SW - Knee Pivot to Floor	19.3" - 19.9"	19.6
HW - Hip Width	14.0" - 15.4"	14.6

MEASUREMENTS BY: Tim Wilkin

APPROVED BY: Rene Kabiske

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

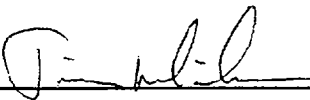
DATE: March 14, 1997

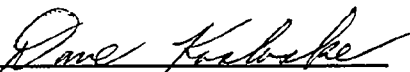
DUMMY NUMBER: 275

TEST NUMBER: D97692

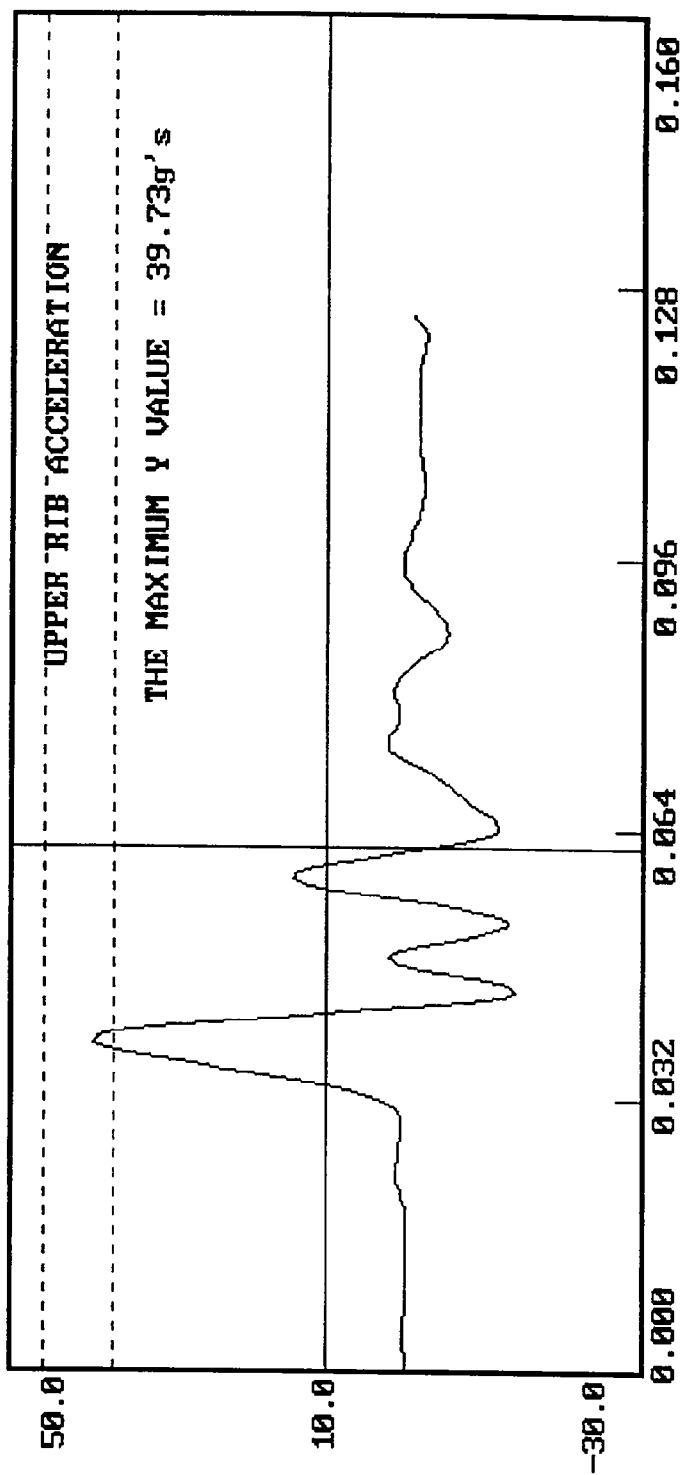
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	16%
PROBE SPEED	13.8 - 14.2 fps	14.2
UPPER RIB	37 - 46 g's	40
LOWER RIB	37 - 46 g's	39
LOWER SPINE	15 - 22 g's	19

TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 275
03-14-1997 09:39
ACCELERATION (G'S) VS. TIME ((SECONDS))



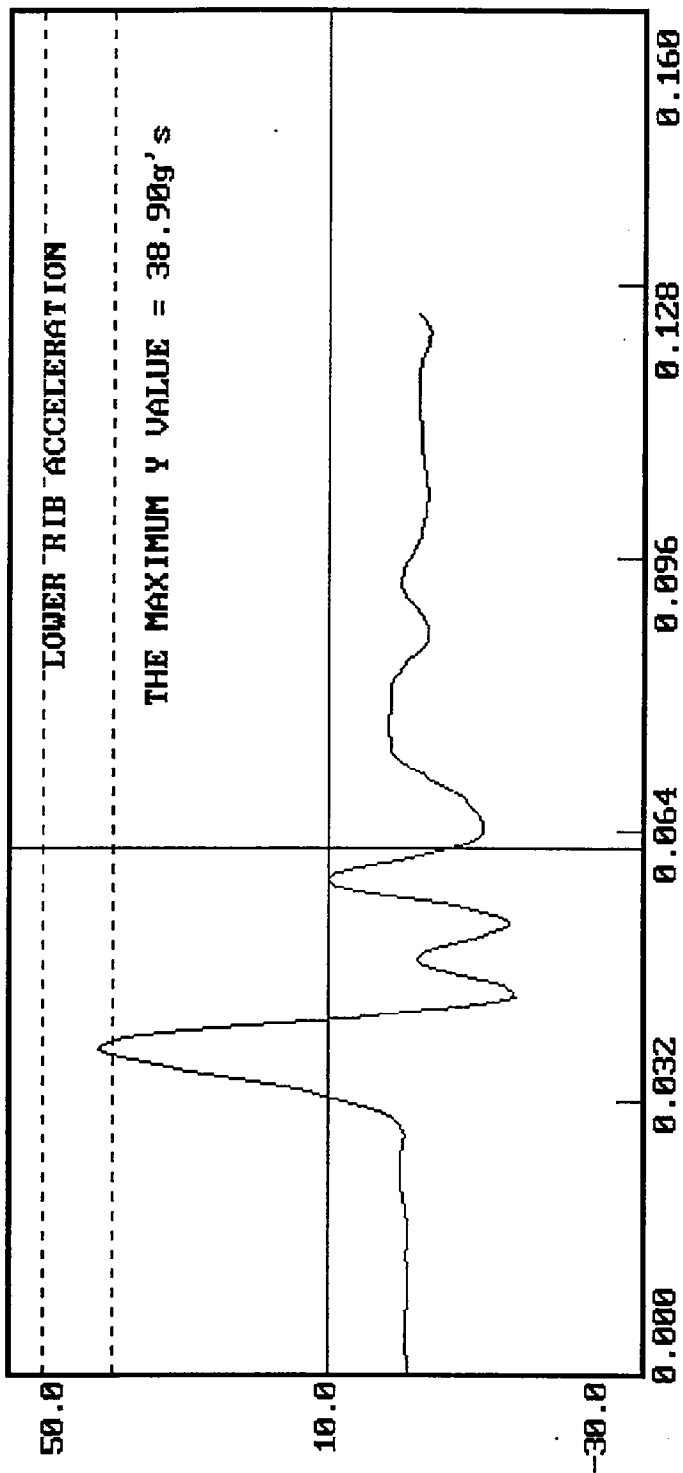
IMPACT SPEED = 14.18 FT/SEC

03-14-1997 09:39

DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 275

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



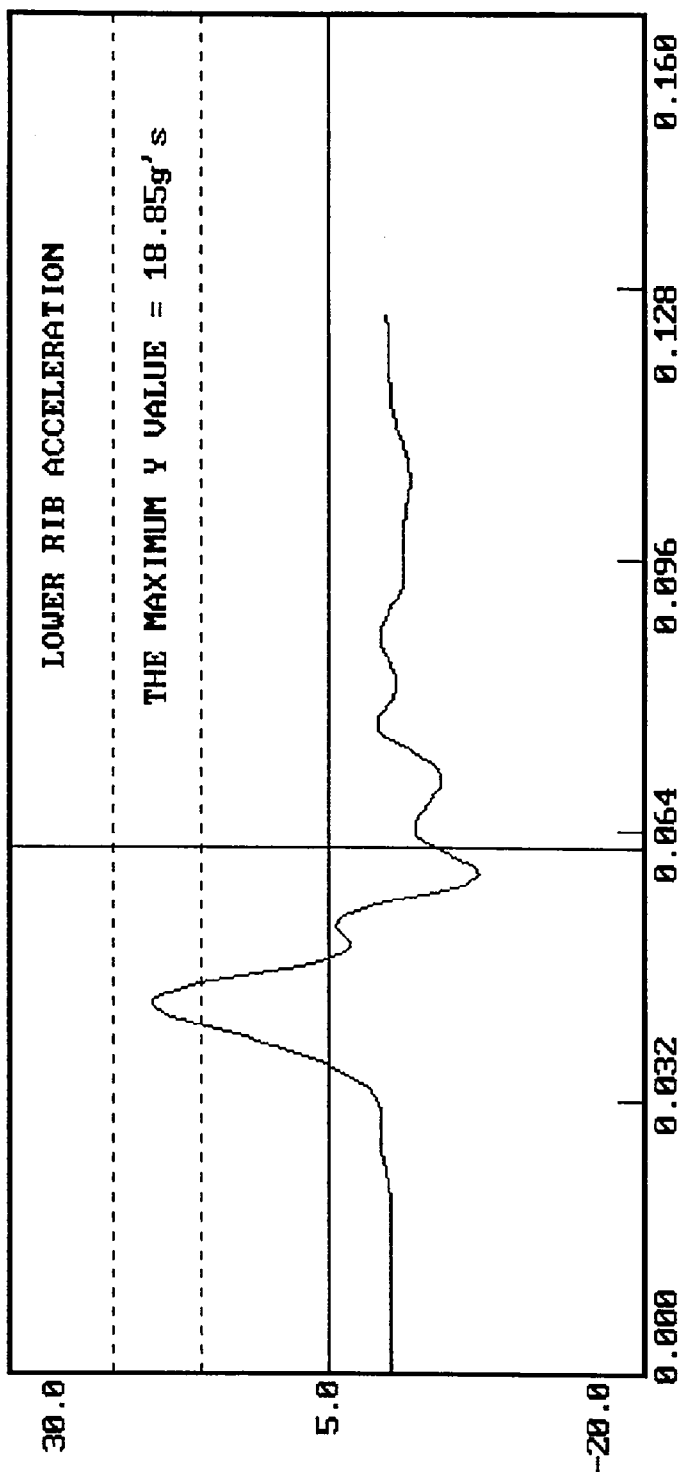
IMPACT SPEED = 14.18 FT/SEC

03-14-1997 09:39

DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 275

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



IMPACT SPEED = 14.18 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: March 14, 1997

DUMMY NUMBER: 275

TEST NUMBER: D97693

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	16%
PROBE SPEED	13.8 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	48

TEST MEETS SPECIFICATIONS

TECHNICIAN

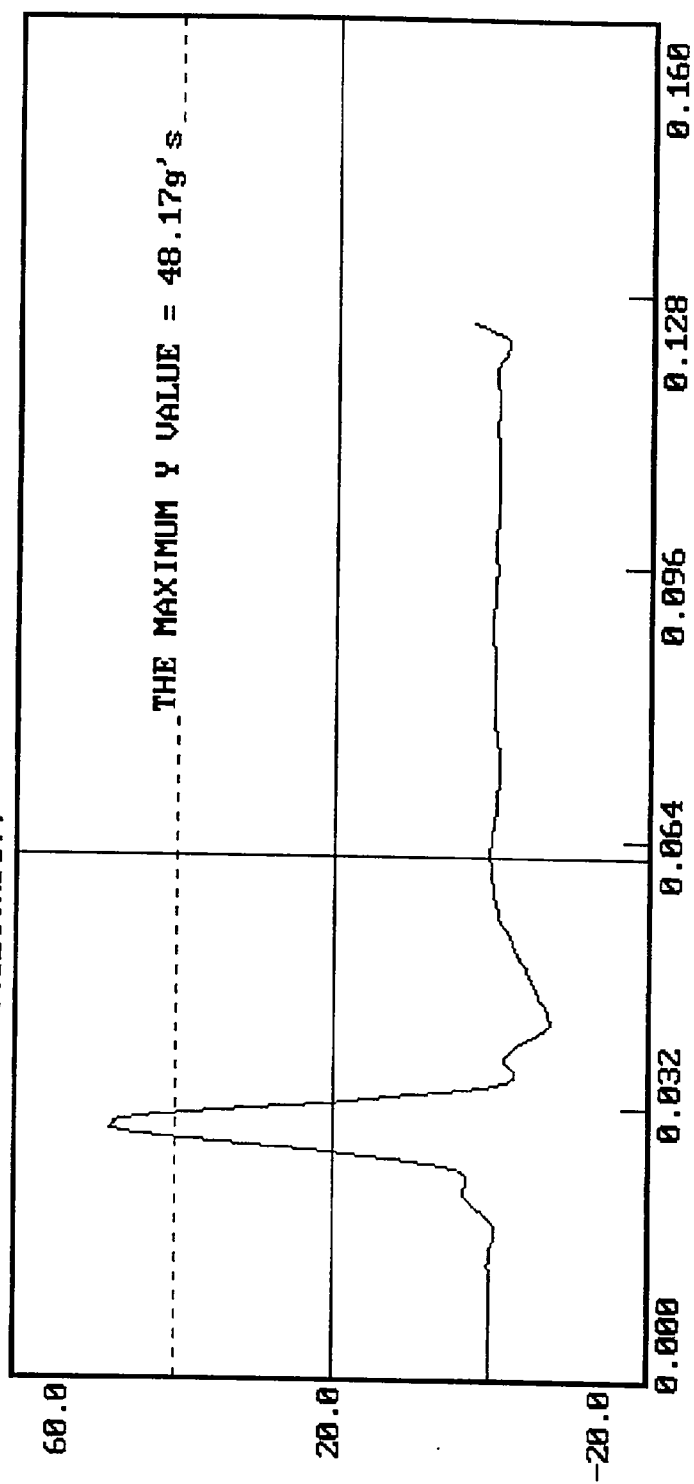
Tim White

APPROVED BY

Rene Koszko

DUMMY CALIBRATION - PELVIS IMPACT
DUMMY # 275
03-14-1997 09:46

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



IMPACT SPEED = 14.06 FT/SEC

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

DATE: March 13, 1997

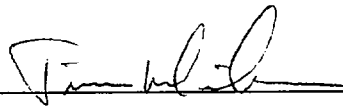
DUMMY NUMBER: 275

TEST NUMBER: D97694

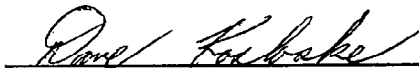
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0.5 in	23.3 - 36.5 lbs	31.9
FORCE @ 0.75 in	36.7 - 49.8 lbs	44.1
FORCE @ 1.0 in	50 - 63 lbs	58
FORCE @ 1.3 in	73 - 88 lbs	79

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY

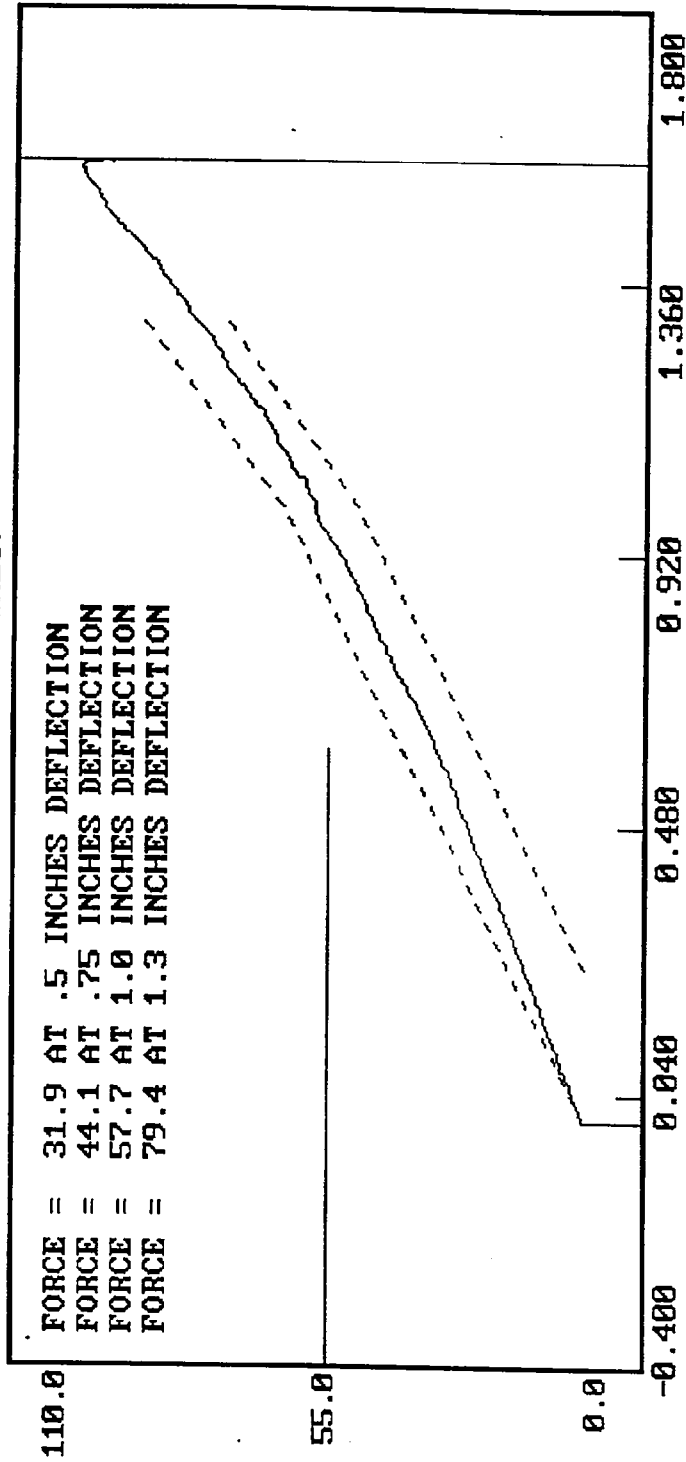


DUMMY CALIBRATION - ABDOMEN COMPRESSION

DUMMY # 275

03-13-1997 12:40

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



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: March 13, 1997

DUMMY NUMBER: 275

TEST NUMBER: D97695

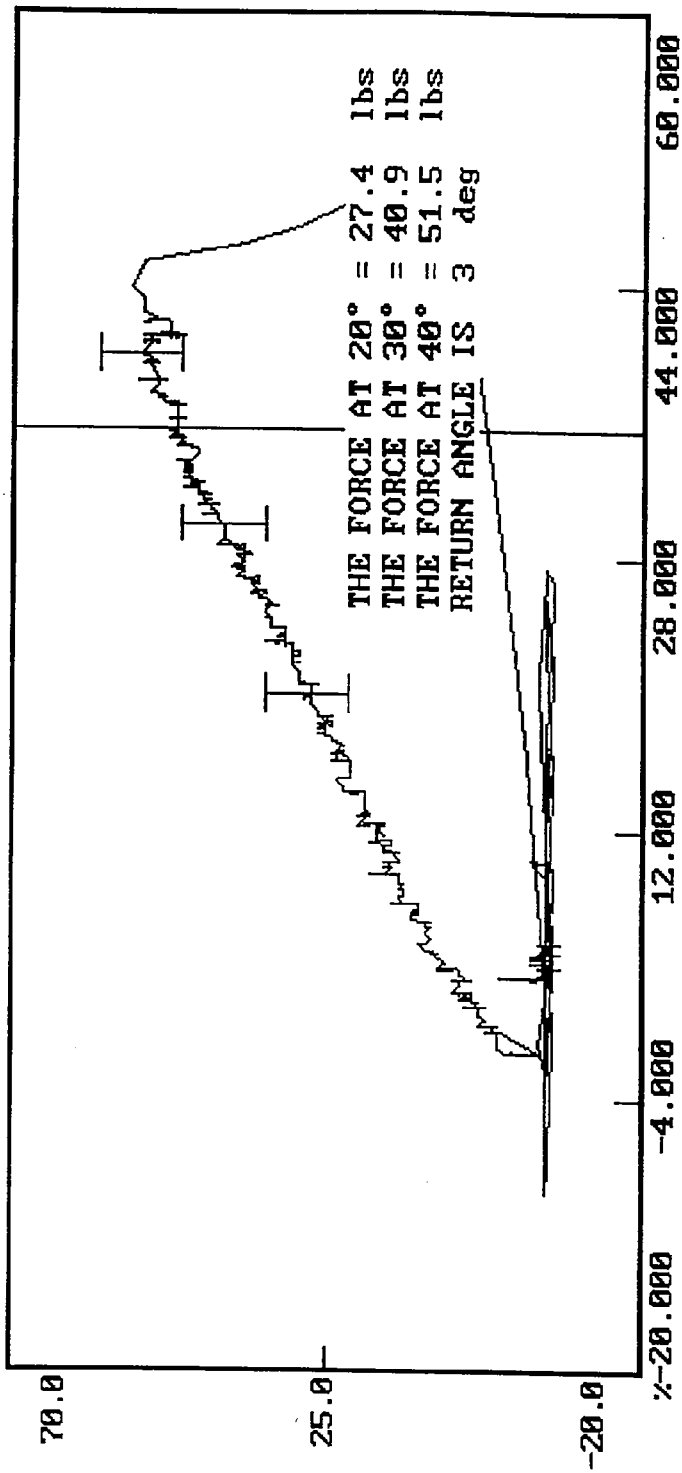
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	27
FORCE @ 30°	34 - 46 lbs	41
FORCE @ 40°	46 - 58 lbs	52
RETURN ANGLE	12° maximum	3°

TEST MEETS SPECIFICATIONS

TECHNICIAN Tim White

APPROVED BY Paul Kachake

DUMMY CALIBRATION - LUMBAR FLEXION
 DUMMY # 275
 03-13-1997 14:29
 FORCE (LBS) VS. TORSO ROTATION (DEGREES)



IMPACT SPEED = 0.00 FT/SEC

POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 274

Inspected By: Tim Michnay

Date: March 13, 1997

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

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

POST-TEST PASSENGER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 275

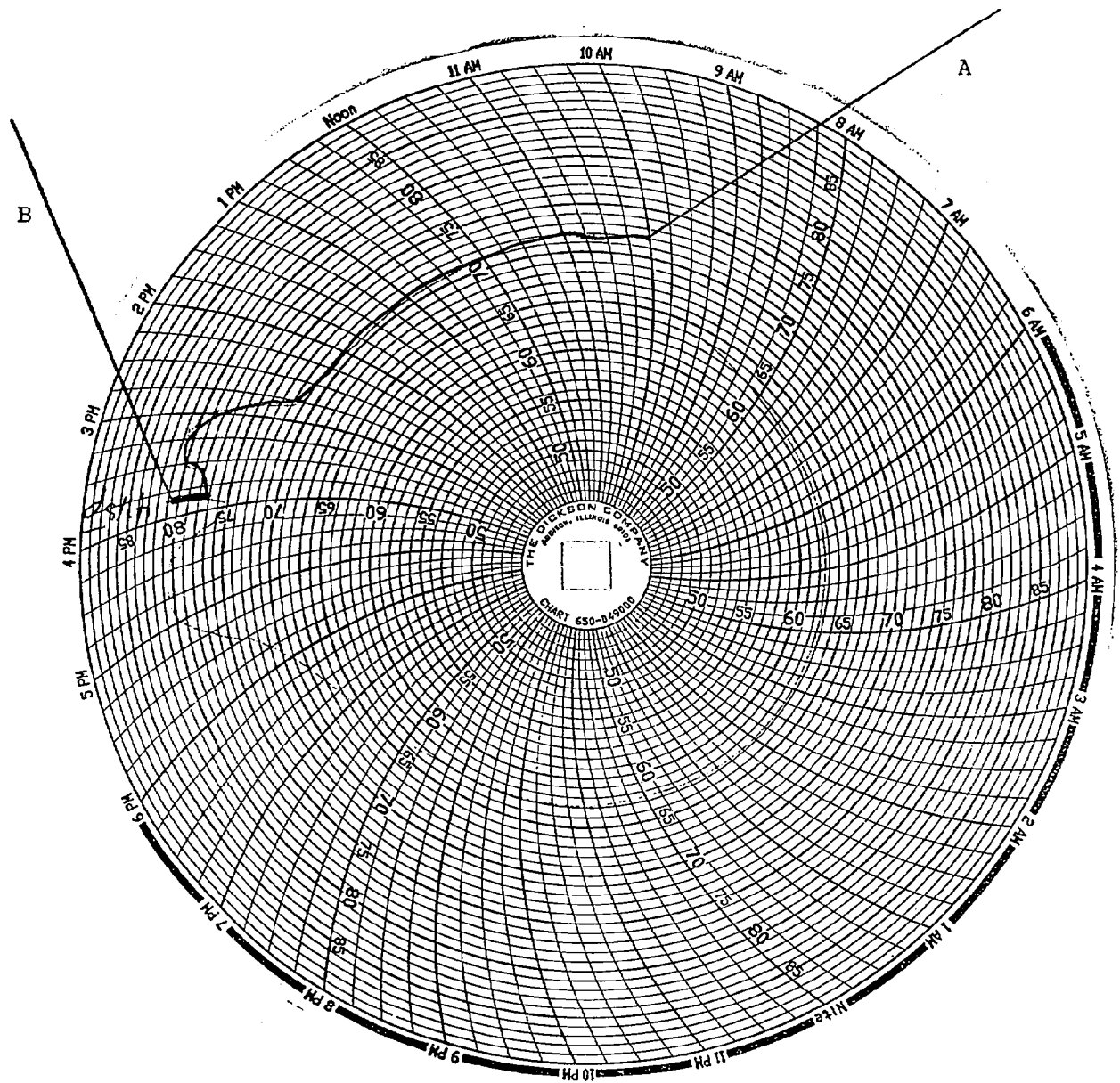
Inspected By: Tim Michnay

Date: March 14, 1997

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

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

VEHICLE AND DUMMY TEMPERATURE



APPENDIX D
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA
INSTRUMENTS FOR DRIVER DUMMY NO. 274

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AN8L6	Endevco	1/02/97
Lower Rib Y	J12465	Endevco	1/02/97
Lower Spine Y	J12450	Endevco	1/02/97
Pelvis Y	AGTP7	Endevco	1/02/97
Upper Rib Redundant Y	APY13	Endevco	1/02/97
Lower Rib Redundant Y	J11361	Endevco	1/02/97
Lower Spine Redundant Y	J12461	Endevco	/02/97
Pelvis Redundant Y	AGT04	Endevco	1/02/97
Head Center of Gravity X	AH0A5	Endevco	1/02/97
Head Center of Gravity Y	AN8A4	Endevco	1/02/97
Head Center of Gravity Z	AJ9C4	Endevco	1/02/97

INSTRUMENTS FOR PASSENGER DUMMY NO. 275

LEFT REAR PASSENGER			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AHRP6	Endevco	1/02/97
Lower Rib Y	J11630	Endevco	10/01/96
Lower Spine Y	AHT20	Endevco	1/02/97
Pelvis Y	AJ417	Endevco	1/02/97
Upper Rib Redundant Y	AJ412	Endevco	10/01/96
Lower Rib Redundant Y	J11166	Endevco	1/02/97
Lower Spine Redundant Y	AH0N9	Endevco	1/02/97
Pelvis Redundant Y	AGP20	Endevco	1/02/97
Head Center of Gravity X	AJ9B0	Endevco	1/02/97
Head Center of Gravity Y	AHTR2	Endevco	1/02/97
Head Center of Gravity Z	AGTE9	Endevco	1/02/97

VEHICLE INSTRUMENT CALIBRATION

VEHICLE ACCELEROMETERS			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier CG X	C25-A04	Entran	1/06/97
Moving Barrier CG Y	C25-A06	Entran	1/07/97
Moving Barrier CG Z	D05-R16	Entran	1/06/97
Moving Barrier Rear Axle X	D05-R19	Entran	1/02/97
Moving Barrier Rear Axle Y	D05-R20	Entran	1/02/97
Left Mid A-Post Y	J10-E13	Entran	1/07/97
Left Lower A-Post Y	G01-J06	Entran	1/08/97
Left Mid B-Post Y	A10-G05	Entran	1/03/97
Left Lower B-Post Y	F12-G10	Entran	1/09/97
Rear Floorpan Above Axle X	F12-G04	Entran	1/09/97
Rear Floorpan Above Axle Y	D05-R10	Entran	1/09/97
Rear Floorpan Above Axle Z	F12-G06	Entran	1/09/97
Driver Seat Track Y	D05-R05	Entran	1/07/97
Right Side Sill at Front Seat X	A09-G05	Entran	12/03/96
Right Side Sill at Front Seat Y	C25-A17	Entran	1/02/97
Right Side Sill at Front Seat Z	E10-F19	Entran	1/09/97
Right Side Sill at Rear Seat X	C20-J10	Entran	1/02/97
Right Side Sill at Rear Seat Y	J10-E03	Entran	1/07/97
Right Side Sill at Rear Seat Z	L18-E02	Entran	1/03/97
Left Side Sill at Front Seat Y	E24-G07	Entran	1/07/97

VEHICLE INSTRUMENT CALIBRATION

VEHICLE ACCELEROMETERS			
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Left Side Sill at Rear Seat Y	B28-B03	Entran	1/02/97
Right Rear Occupant Compartment Y	B14-R11	Entran	1/03/97
Vehicle CG X	G01-J12	Entran	1/09/97
Vehicle CG Y	F12-G02	Entran	1/09/97
Vehicle CG Z	F11-G01	Entran	1/09/97
Left Front Door on Centerline	F11-G06	Entran	1/09/97
Midrear of Left Front Door	C25-A22	Entran	1/08/97
Left Front Door Upper Centerline	L25-J11	Entran	1/09/97
Midrear of Left Rear Door	H07-A15	Entran	1/03/97
Left Rear Door Upper Centerline	H16-X11	Entran	12/04/96

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