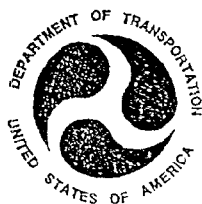


NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TESTING
PASSENGER CARS

1998 NISSAN SENTRA
4-DOOR SEDAN
NHTSA NO: MW5206

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: January 27, 1998

Report Date: February 4, 1998

FINAL REPORT

Prepared For:

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

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

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Approval Date: February 13, 1998

FINAL REPORT ACCEPTED BY (OCWS):

Accepted By: _____
Contract Technical Manager

Acceptance Date: _____

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 214D-MGA-98-019		2. Government Accession No.		3. Recipient's Catalog No.																			
4. Title and Subtitle New Car Assessment Program Side Impact Test of a 1998 Nissan Sentra 4-Door Sedan NHTSA No. MW5206		5. Report Date February 4, 1998		6. Performing Organization Code MGA																			
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		12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards 400 Seventh St., S.W. Washington, D.C. 20590																					
15. Supplementary Notes																							
16. Abstract A 90° Moving Deformable Barrier NCAP side impact was conducted on the subject 1998 Nissan Sentra 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 January 27, 1998. The impact velocity of the Moving Deformable Barrier (MDB) was 61.6 kph, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 20°C. The target vehicle post test maximum crush was 415 mm at level 3. 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>82</td> <td>70</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td>78</td> <td>93</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td>98</td> <td>82</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td>90</td> <td>88</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td>116</td> <td>82</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	82	70	Left Lower Rib (LLR) Accel., g	78	93	Lower Spine (T ₁₂) Accel., g	98	82	Thoracic Trauma Index (TTI)	90	88	Pelvis (PEV) Accel., g	116	82
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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 FY98 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 1998 Nissan Sentra 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 1998 Nissan Sentra 4-Door 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 38.3 mph (61.6 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 January 27, 1998. 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)	90	88
Pelvis (g)	116	82

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: 1998/Nissan/Sentra/4-Door
Vehicle NHTSA No.: MW5206 VIN: 1N4AB41D8WC713314
Vehicle Body Color: Green Build Date: 9/97
Engine Data: 4 Cylinders; CID; 1.6 Liter; cc
Placement Longitudinal; X Lateral
Transmission: 3 Speed; Manual; X Automatic; X Overdrive
Final Drive: Rear Wheel Drive; X Frt. Wheel Drive; Four Wheel Drive

Odometer Reading 77 miles
Options: X A/C; X Pwr. Steering; X Pwr. Brakes; X Pwr. Windows;
 X Cruise Control; X Tilt Wheel; X Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 33 Psi FRONT
29 Psi REAR
Recommended Tire Size: P175/65/R14
Tires on Test Vehicle: P175/65/R14 Manufacturer: Dunlop

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 = 369.2 kg (A)
No. of Occupants x 68.04 kg. = 340.2 kg (B)
Cargo Capacity (A-B) = 29.0 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS:

Right Front	=	<u>356.5</u> kg	Right Rear	=	<u>209.1</u> kg
Left Front	=	<u>358.8</u> kg	Left Rear	=	<u>212.7</u> kg
TOTAL FRONT	=	<u>715.3</u> kg	TOTAL REAR	=	<u>421.8</u> kg
% of Total Vehicle Weight	=	<u>62.9</u> %;	% of Total Weight	=	<u>37.1</u> %
TOTAL WEIGHT	=	<u>1137.1</u> kg			

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids	=	<u>1137.1</u> kg
Cargo Carrying Capacity of Test Vehicle	=	<u>29.0</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>1327.5</u> kg

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

Right Front	=	<u>363.8</u> kg	Right Rear	=	<u>254.5</u> kg
Left Front	=	<u>407.3</u> kg	Left Rear	=	<u>300.7</u> kg
TOTAL FRONT	=	<u>771.1</u> kg	TOTAL REAR	=	<u>555.2</u> kg
% of Total Weight	=	<u>58.1</u> %	% of Total Weight	=	<u>41.9</u> %
TOTAL TEST WEIGHT	=	<u>1326.3</u> kg			

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 666 mm Left Front 665 mm Right Rear 653 mm Left Rear 658 mm

FULLY LOADED WEIGHT ATTITUDE:

Right Front 671 mm Left Front 644 mm Right Rear 628 mm Left Rear 610 mm

TEST ATTITUDE:

Right Front 657 mm Left Front 653 mm Right Rear 622 mm Left Rear 611 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2536 mm

C.G. = 1039 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 4085 mm

Centerline = 4281 mm

Left Side = 4074 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 225 mm

Test Position: 11th notch from foremost locking position

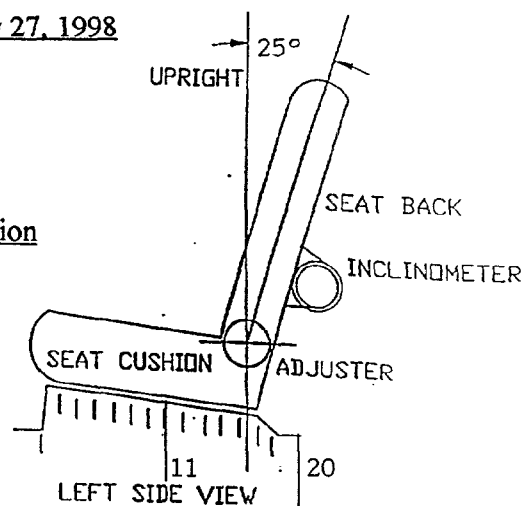
FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 7th from first 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 Closed Left Rear Closed
Right Front Open Right Rear Open

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel system usable capacity = 13.2 gallons

Test Volume: 12.25 gallons 93 % of capacity

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

Wheelbase: = 2536 mm

Impact Point is 328 mm rearward of front axle centerline

DATA SHEET NO. 2
TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door
Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998
Overall Length = 4281 mm; Overall Width = 1676 mm

TEST WEIGHT:

Right Front = 381.5 kg Right Rear = 252.7 kg
Left Front = 399.6 kg Left Rear = 289.4 kg
TOTAL FRONT = 781.1 kg TOTAL REAR = 542.1 kg
% of Total Weight = 59.0 % % of Total Weight = 41.0 %
TOTAL VEHICLE WEIGHT = 1323.2 kg
Wheelbase = 2536 mm
Longitudinal C.G. from Center of Front Axle = 1039 mm
Impact Angle with Respect to Impactor = 90° degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (271 mm above ground) = 256 mm
 2. LEVEL 2 (448 mm above ground) = 399 mm
 3. LEVEL 3 (563 mm above ground) = 415 mm
 4. LEVEL 4 (852 mm above ground) = 338 mm
 5. LEVEL 5 (1280 mm above ground) = 117 mm
- Maximum Post-Test Intrusion = 415 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: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

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>1105 mm</u>
C.G. Location From Center Line	= <u>-12 mm</u>
C.G. Location Above Ground Level	= <u>484 mm</u>

MDB WEIGHT:

Left Front	= <u>440.0 kg</u>	Left Rear	= <u>242.5 kg</u>
Right Front	= <u>338.2 kg</u>	Right Rear	= <u>331.9 kg</u>
TOTAL FRONT	= <u>778.2 kg</u>	TOTAL REAR	= <u>574.4 kg</u>
TOTAL MDB WEIGHT = <u>1352.9 kg</u>			

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

Impact Speed = Primary: 38.3 mph (61.6 kph) Secondary: 38.1 mph (61.3 kph)

CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A Top of Stack (813 mm) = 187 mm
2. Row B Mid Stack (686 mm) = 132 mm
3. Row C Top of Bumper (533 mm) = 103 mm
4. Row D Center of Bumper (432 mm) = 141 mm

INSTRUMENTATION:

Number of MDB Data Channels = 7

DATA SHEET NO. 4
POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

VISIBLE DUMMY CONTACT POINTS:

	<u>LEFT FRONT SID</u>	<u>LEFT REAR SID</u>
Head	<u>both headrests, window sill</u> <u>shoulder, seatbelt</u>	<u>C-post, rear window</u>
Arm	<u>door panel</u>	<u>door panel</u>
Pelvis	<u>door panel</u>	<u>door panel</u>
Left Knee	<u>door panel</u>	<u>door panel</u>
Right Knee	<u>left knee</u>	<u>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: 1 mm rearward Vertical: 4 mm low

ARM REST LOCATIONS:

Front: 208 mm from bottom of window
Rear: 206 mm from bottom of window

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 119 mm Front Seat Cushion: 100 mm
Left Rear Seat Back: 134 mm Rear Seat Cushion: 234 mm

GLAZING DAMAGE:

Windshield cracked, both left side windows broke.

PILLAR PERFORMANCE:

None noted

SILL SEPARATION:

None noted

OTHER NOTABLE IMPACT EFFECTS:

None
Vehicle has no side airbags.

AIRBAG DEPLOYMENT STATUS:

	<u>DRIVER</u>	<u>PASSENGER</u>
Frontal	<u>No</u>	<u>No</u>
Side	<u>N/A</u>	<u>N/A</u>

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

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

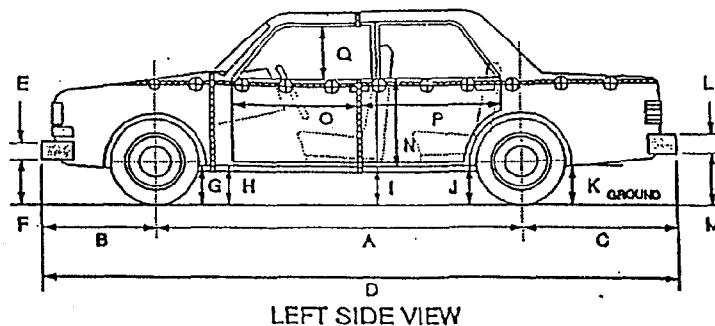
Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

Front Dummy ID #270				Rear Dummy ID #269			
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							
82.4	26	-29.3	68	69.7	38	-11.2	61
77.9	36	-28.5	66	93.2	38	-27.3	65
SPINE ACCELERATIONS							
97.8	31	-30.3	60	81.6	49	-53.6	62
PELVIS ACCELERATIONS							
116.5	27	-28.0	49	81.6	31	-20.4	68

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)

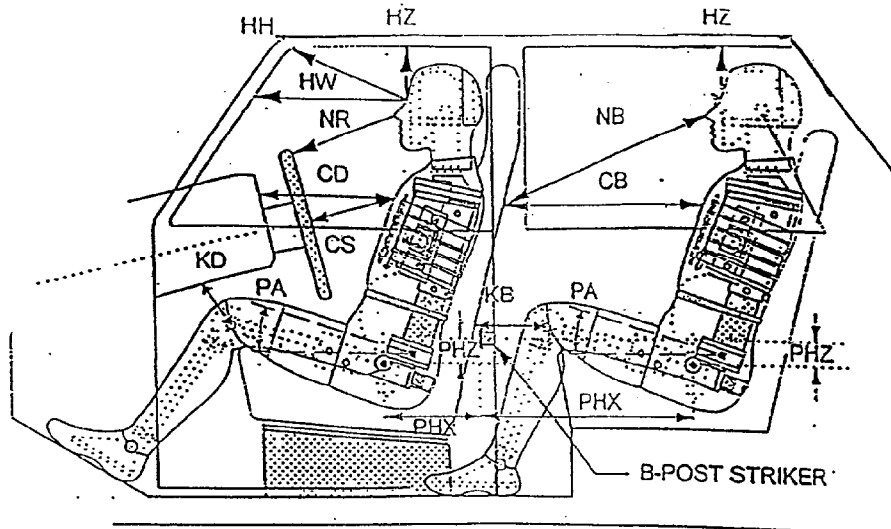
	PRE-TEST	POST-TEST	Δ CHANGE
A	2536	2502	34
B	833	840	7
C	912	910	2
D	4281	4252	29
E	125	125	0
F	390	388	2
G	186	190	4
H	187	219	32
I	184	215	31
J1/J2	179/180	174/206	5/26
K	215	234	19
L	144	144	0
M	358	379	21
N	623	504	119
O	745	715	30
P	1133	1144	11
Q	432	419	13
R	4085	4076	9
S	4074	3996	78
T	1676	1294	382

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

NHTSA NO.: MW5206 Test Date: January 27, 1998



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

	DRIVER SID ID #270
HH	390
HW	594
HZ	158
NR	477
CD	540
CS	346
KDL(KDA°)	165 (24.2°)
KDR(KDA°)	172 (27.1°)
PA°	24.0
PHX	190
PHZ	140

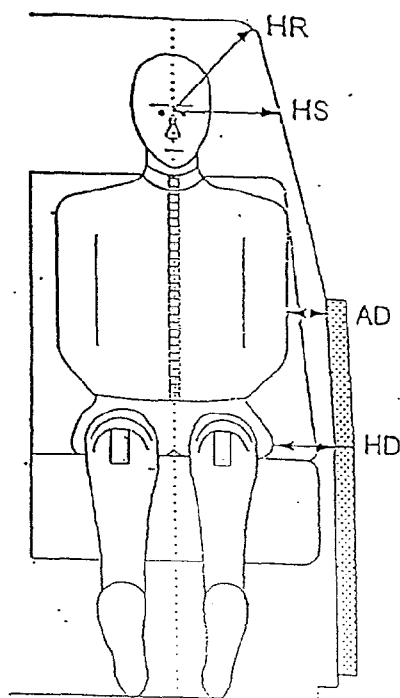
	LEFT REAR PASSENGER SID ID #269
HZ	123
NB	591
CB	502
KBL (KBA)	199 (0.0°)
KBR (KBA)	204 (0.0°)
PA°	24.2°
PHX	312
PHZ	303

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: 1998/Nissan/Sentra/4-Door

NHTSA NO.: MW5206 Test Date: January 27, 1998



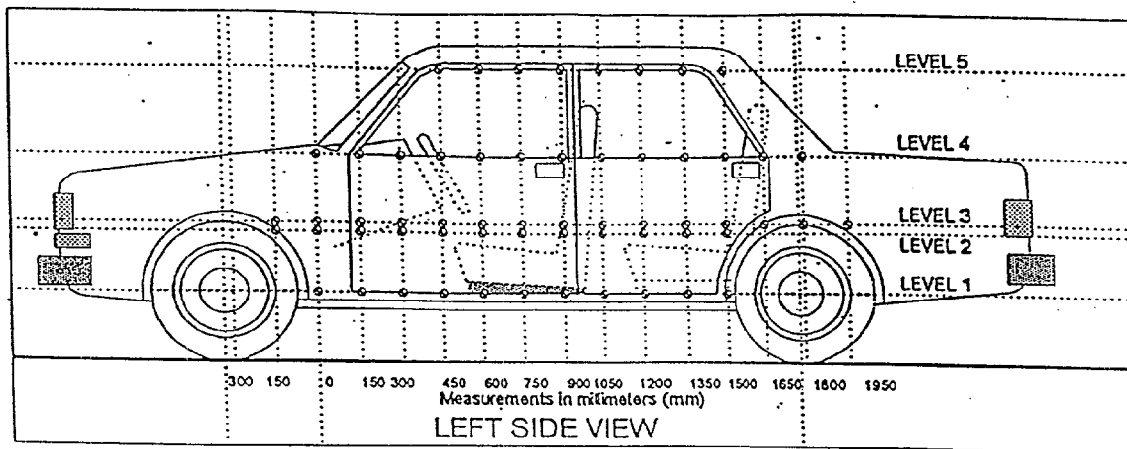
NOTE: All dimensions are in mm

	DRIVER SID ID #270	LEFT REAR PASSENGER SID ID #269
HR	220	210
HS	320	235
AD	40	100
HD	128	160

DATA SHEET NO. 9
VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

NHTSA NO.: MW5206 Test Date: January 27, 1998



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>271</u> mm
Level 2 @ Occupant H-Point	=	<u>448</u> mm
Level 3 @ Mid Door	=	<u>563</u> mm
Level 4 @ Window Sill	=	<u>852</u> mm
Level 5 @ Window Top	=	<u>1280</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)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	881	972	91
300	881	1034	153
450	880	1052	172
600	881	1071	190
750	881	1091	210
900	881	1100	219
1050	881	1114	233
1200	880	1136	256
1350	880	1083	203
1500	880	1031	151
1650	879	991	112
1800	879	963	84

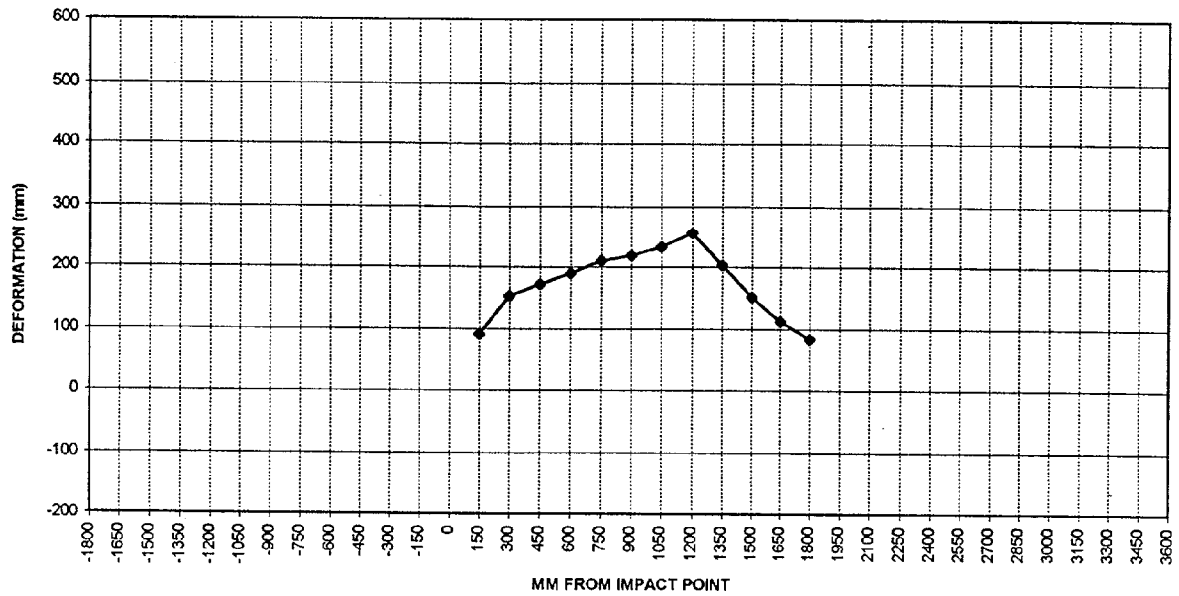
Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to car body

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950			
2100			
2250			
2400			
2550			
2700			
2850			
3000			
3150			
3300			
3450			
3600			

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

	Level 2 - Occupant H-Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050			
-900	870	878	8
-750	839	850	11
-600			
-450			
-300			
-150			
0 (impact point)	820	939	119
150	824	1098	274
300	824	1171	347
450	823	1200	377
600	823	1212	389
750	823	1215	392
900	824	1219	395
1050	824	1223	399
1200	824	1221	397
1350	823	1216	393
1500	823	1196	373
1650	822	1154	332
1800	820	1069	249

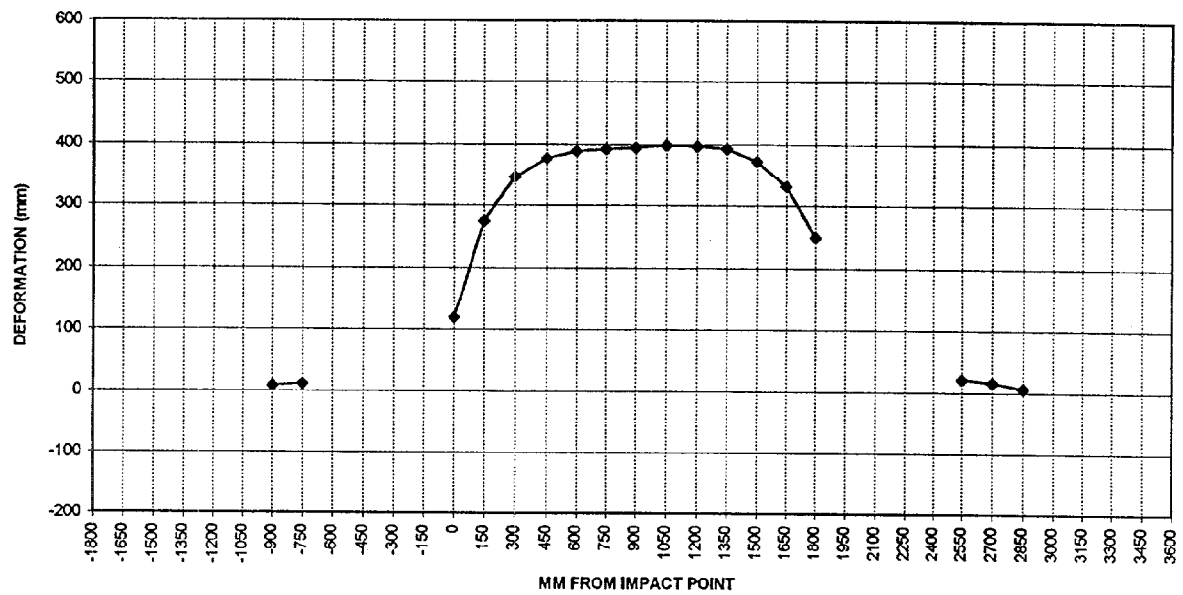
Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to car body

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 2 - Occupant H-Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950			
2100			
2250			
2400			
2550	846	866	20
2700	864	879	15
2850	890	896	6
3000			
3150			
3300			
3450			
3600			

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)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050			
-900			
-750	842	855	13
-600	818	835	17
-450			
-300			
-150			
0 (impact point)	812	902	90
150	813	1082	269
300	813	1161	348
450	813	1168	355
600	813	1185	372
750	812	1200	388
900	812	1205	393
1050	812	1200	388
1200	813	1228	415
1350	813	1214	401
1500	812	1188	376
1650	810	1146	336
1800	810	1116	306

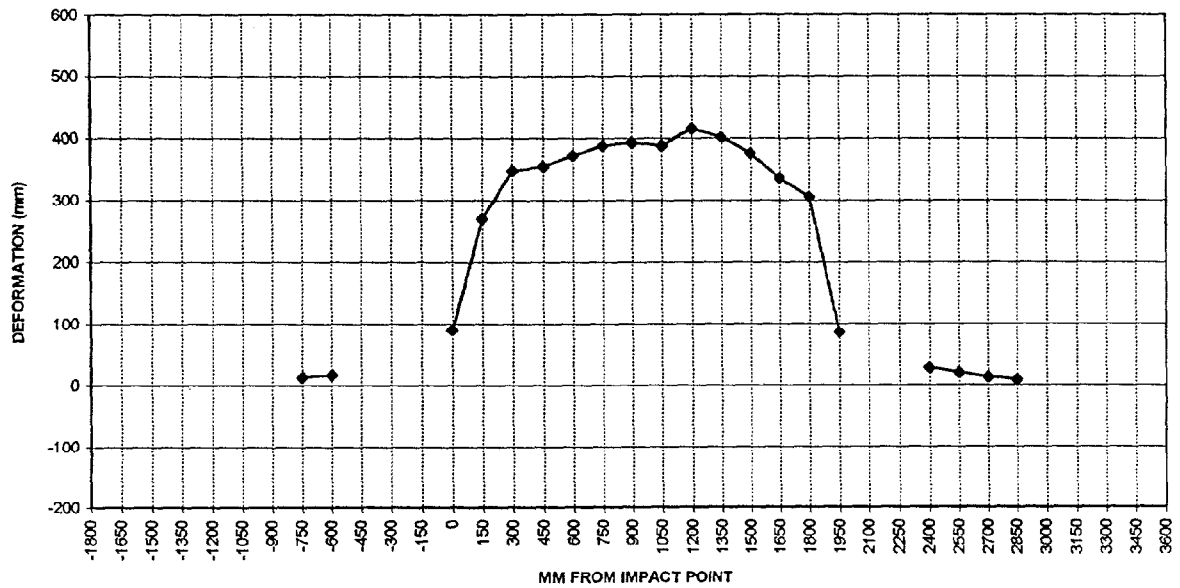
Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to car body

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 3 - Mid-Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950	810	896	86
2100			
2250			
2400	820	848	28
2550	841	861	20
2700	870	883	13
2850	911	920	9
3000			
3150			
3300			
3450			
3600			

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 3 - MID-DOOR

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050			
-900	940	956	16
-750	914	933	19
-600	897	924	27
-450	884	919	35
-300	878	918	40
-150	874	918	44
0 (impact point)	870	922	52
150	867	999	132
300	864	1082	218
450	864	1131	267
600	863	1158	295
750	860	1162	302
900	861	1166	305
1050	860	1173	313
1200	864	1202	338
1350	864	1179	315
1500	864	1163	299
1650	864	1142	278
1800	862	1053	191

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)
1950	862	942	80
2100	867	869	2
2250	865	909	44
2400	877	902	25
2550	895	912	17
2700	921	931	10
2850	962	958	-4
3000			
3150			
3300			
3450			
3600			

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)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150			
300			
450			
600			
750	1080	1107	27
900	1079	1127	48
1050	1079	1158	79
1200	1079	1186	107
1350	1079	1196	117
1500	1076	1130	54
1650	1077	1061	-16
1800	1080	1131	51

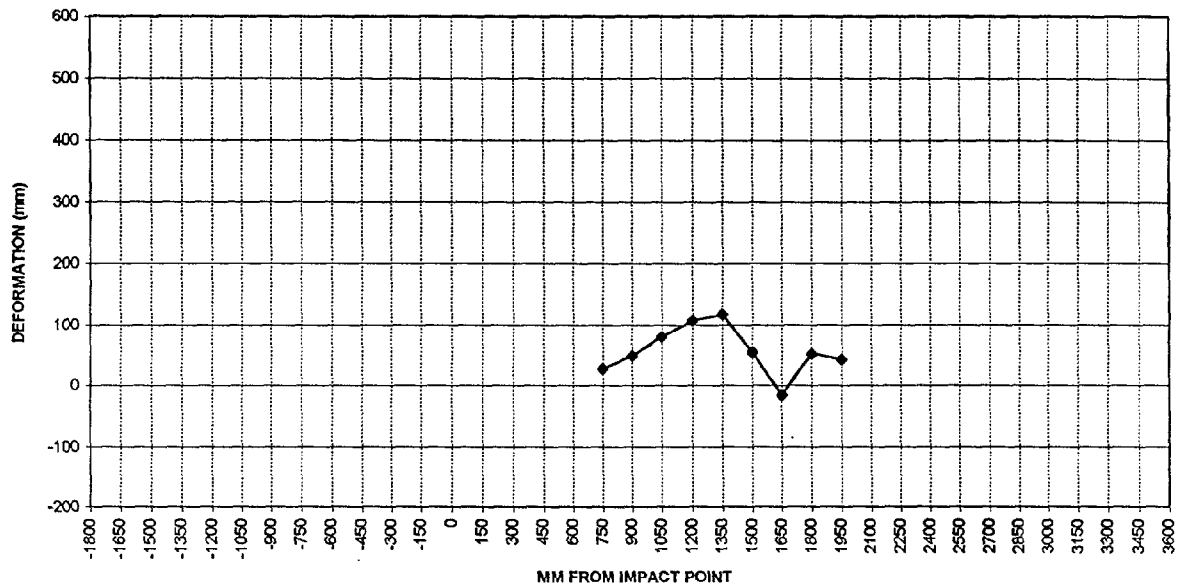
Reference plane is parallel to test vehicle longitudinal centerline.
 Given dimensions = Reference plane to car body

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950	1091	1133	42
2100			
2250			
2400			
2550			
2700			
2850			
3000			
3150			
3300			
3450			
3600			

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

VEHICLE EXTERIOR STATIC CRUSH



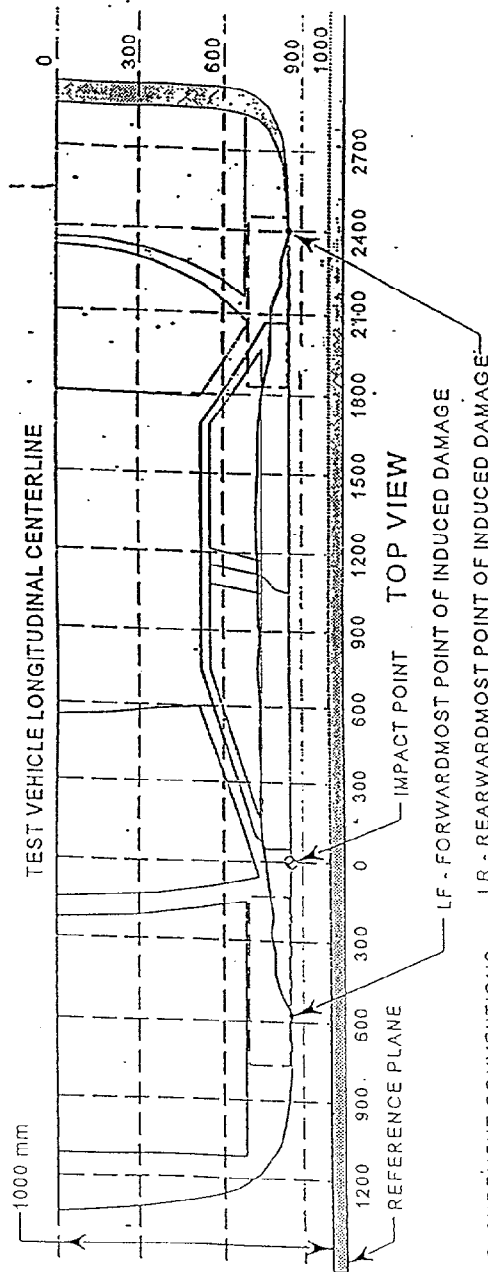
LEVEL 5 - WINDOW TOP

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

NHTSA NO.: MW5206 Test Date: January 27, 1998



MEASUREMENT CONVENTIONS:
Forward of the impact point (towards front of vehicle) is considered negative (-).
Rearward of the impact point (towards rear of vehicle) is considered positive (+).

DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1. (LF = -900 mm)	940	940	0
2. -361 mm	921	878	43
3. 196 mm	1142	818	324
4. 785 mm	1228	817	411
5. 1352 mm	1235	818	417
6. (LR = 2400 mm)	877	877	0

DATA SHEET NO. 12

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

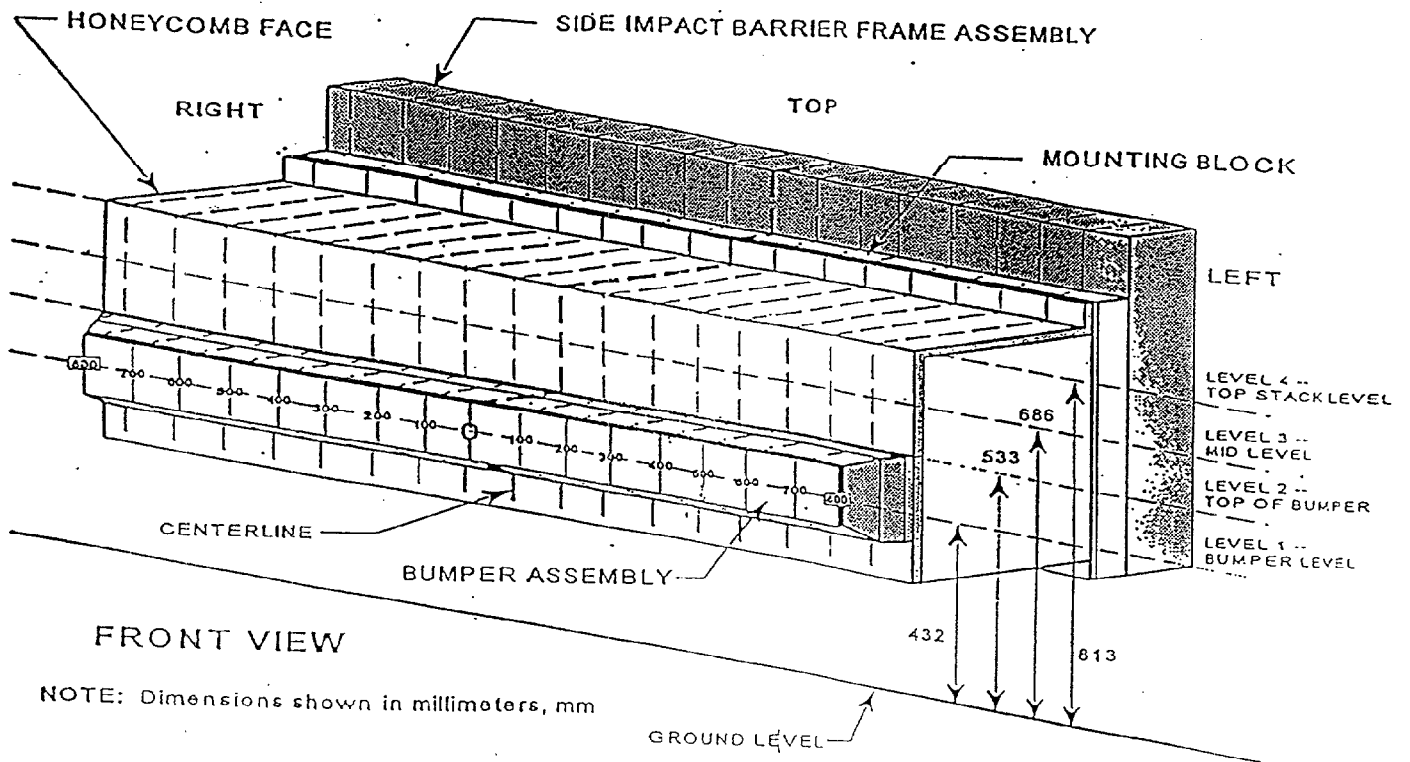
Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

		Distance Right of Center (mm)									Distance Left of Center (mm)							
Location	Height at CL	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level 4	813 mm	51	3	-3	-1	-1	1	4	6	8	11	14	16	22	57	94	133	187
Mid Level Level 3	686 mm	39	7	1	1	1	6	5	6	7	9	11	13	20	40	67	68	132
Top Bumper Level 2	533 mm	72	42	18	13	17	17	19	19	19	22	25	31	33	39	48	69	103
Mid Bumper Level 1	432 mm	109	88	58	38	40	45	42	40	39	44	47	51	55	59	73	104	141

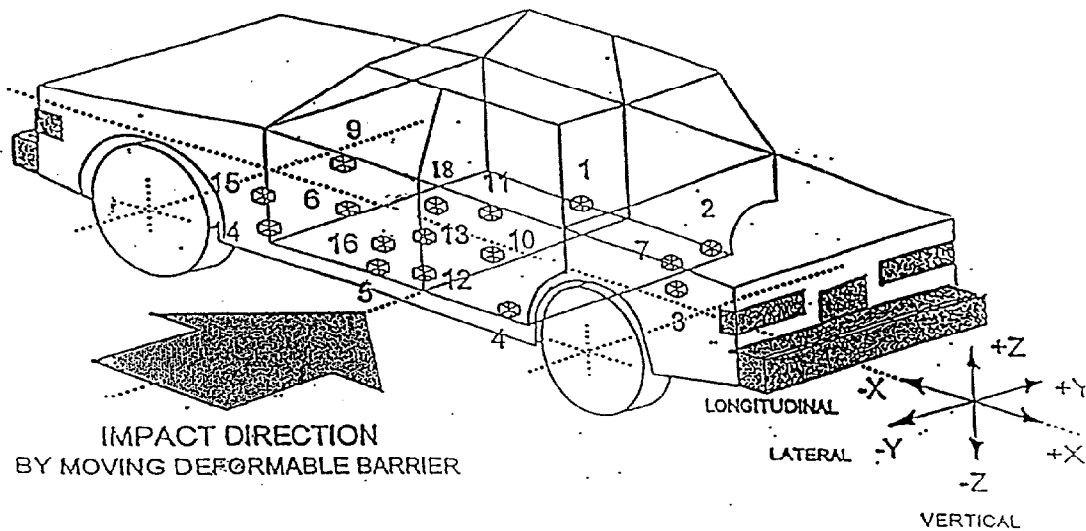
See next page for Barrier Face Graphic

DATA SHEET NO. 12 (Cont'd)



DATA SHEET 13
TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door
 Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998



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

DATA SHEET NO. 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

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	2210	648	212	4.6	6.8	20.4	3.8	7.8	5.7	20.8
2	Rt. Side Sill @ Rear Seat	1450	650	220	5.4	6.5	23.3	3.9	6.9	8.4	24.2
3	Rr. Floorpan Above Axle	945	0	480	2.4	8.4	25.3	3.2	7.4	4.8	26.7
4	Left Side Sill @ Rr. Seat	1388	-650	220	---	---	25.5	3.6	---	---	---
5	Left Side Sill @ Frt. Seat	2242	-648	214	---	---	44.2	10.5	---	---	---
6	Left Front Door Centerline	2381	-694	664	---	---	237.6	122.1	---	---	---
7	Right Rear Occupant Compartment	1648	-316	300	---	---	21.2	3.8	---	---	---
8	Mid Rear of Left Front Door	2090	-705	840	---	---	238.7	82.3	---	---	---
9	Left Front Door Upper Centerline	2368	-705	658	---	---	393.8	92.4	---	---	---
10	Left Rear Door Mid Rear	1500	-709	632	---	---	212.4	144.8	---	---	---
11	Left Rear Door Upper Centerline	1460	-688	840	---	---	248.1	65.1	---	---	---
12	Left Lower B-Post	1874	-635	282	---	---	79.0	20.8	---	---	---
13	Left Mid B-Post	1814	-690	820	---	---	161.6	41.4	---	---	---
14	Left Lower A-Post	2858	-634	280	---	---	78.0	26.0	---	---	---
15	Left Mid A-Post	2910	-752	930	---	---	52.8	18.3	---	---	---
16	Driver Left Seat Track	1988	-550	238	---	---	118.4	40.4	---	---	---
18	Vehicle CG	2298	0	328	69.2	17.8	43.6	12.6	21.1	37.8	69.5

*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To right)

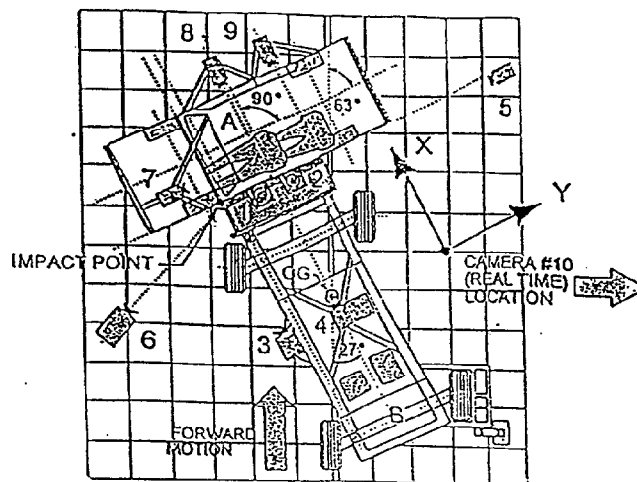
Z - Ground Level (+ Up)

DATA SHEET NO. 14

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998



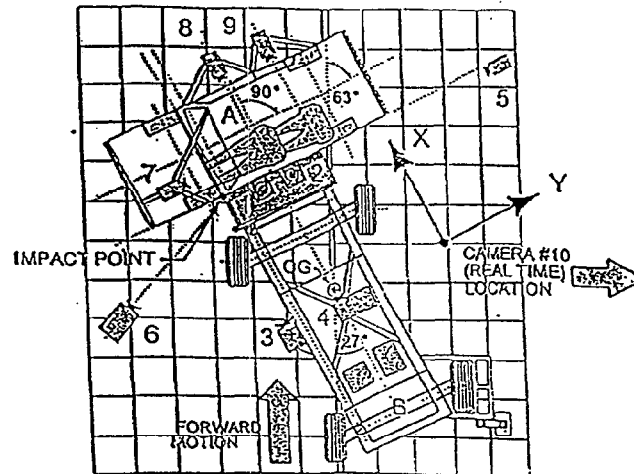
Accel. No.	Description	Coordinates (mm)*			(+) Positive		(-) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time (msec)
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	1.5	118	17.3	40
	Lateral (Y)	---	---	---	1.9	63	5.5	22
	Vertical (Z)	---	---	---	19.9	55	16.3	62
	Resultant (R)	---	---	---	22.5	55	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	1.8	176	21.5	34
	Lateral (Y)	---	---	---	3.2	31	1.7	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: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998



Camera No.	View	Coordinates (mm)*			Angle	Lens (mm)	Film Speed (fps)
		X	Y	Z			
	Real Time						
6	Left Impact	-500	-2330	1660		13	962
8	Onboard Driver					8	928
9	Onboard Passenger					8	1105
7	Onboard Hood					13	1005
5	Right Impact	1080	10370	1930		25	1020
1	Top Overall	0	1290	5000		8	985
2	Top Impact	-400	-50	5000		13	980
4	Cart Overall					13	1020
3	Cart Pointer					35	917

* 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: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

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 38.3 mph (61.6 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

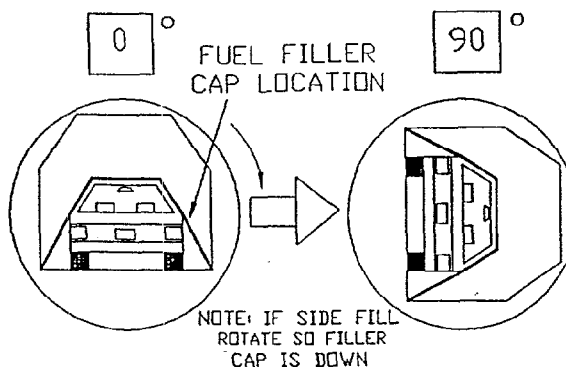
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

TEST PHASE: 0° - 90°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 53 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 53 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

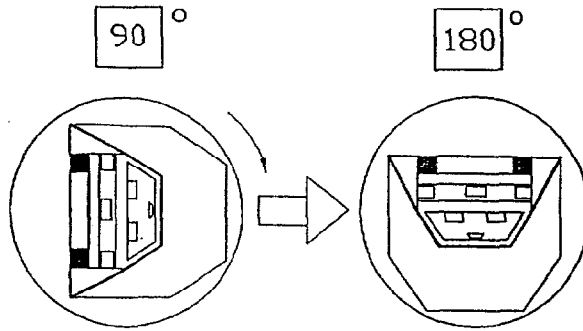
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

TEST PHASE: 90° - 180°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 33 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 33 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

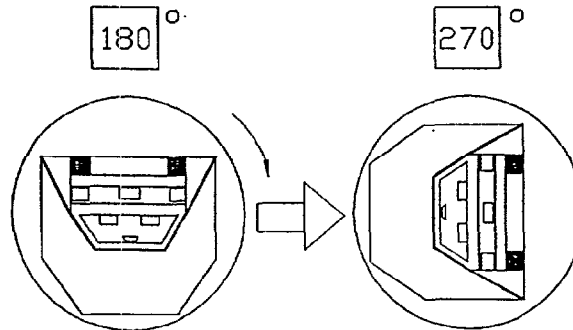
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

TEST PHASE: 180° - 270°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 14 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 14 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

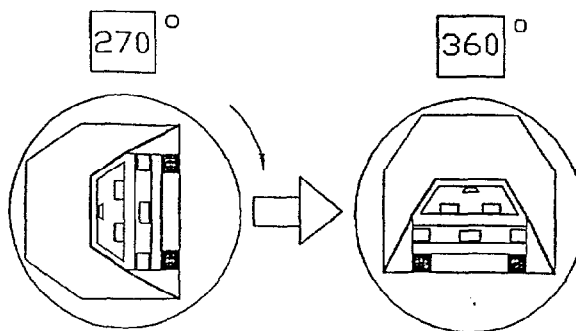
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1998/Nissan/Sentra/4-Door

Vehicle NHTSA No.: MW5206 Test Date: January 27, 1998

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 38 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 38 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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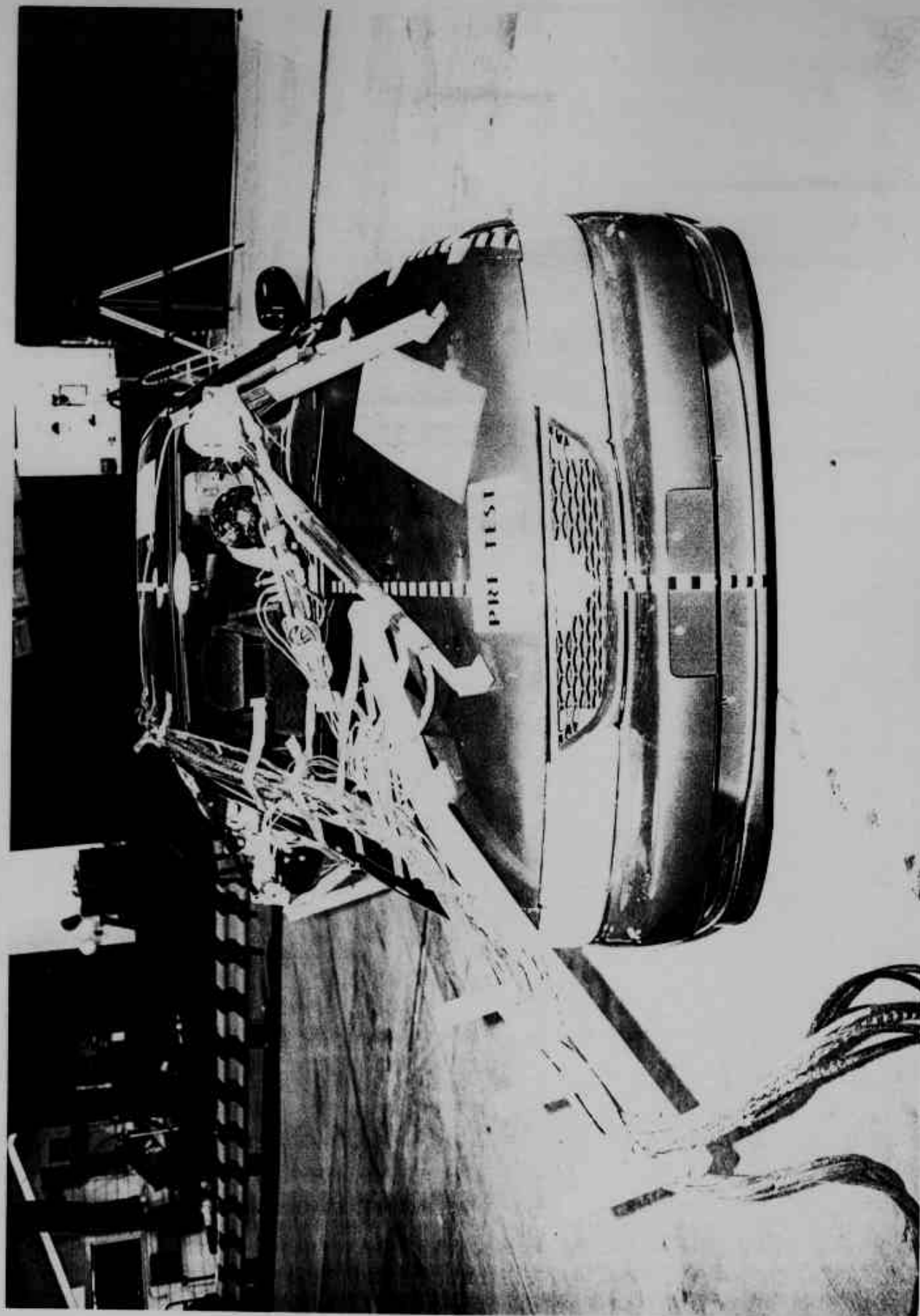


Photo No. A-1 - Pre-Test Front View of Test Vehicle

A-1

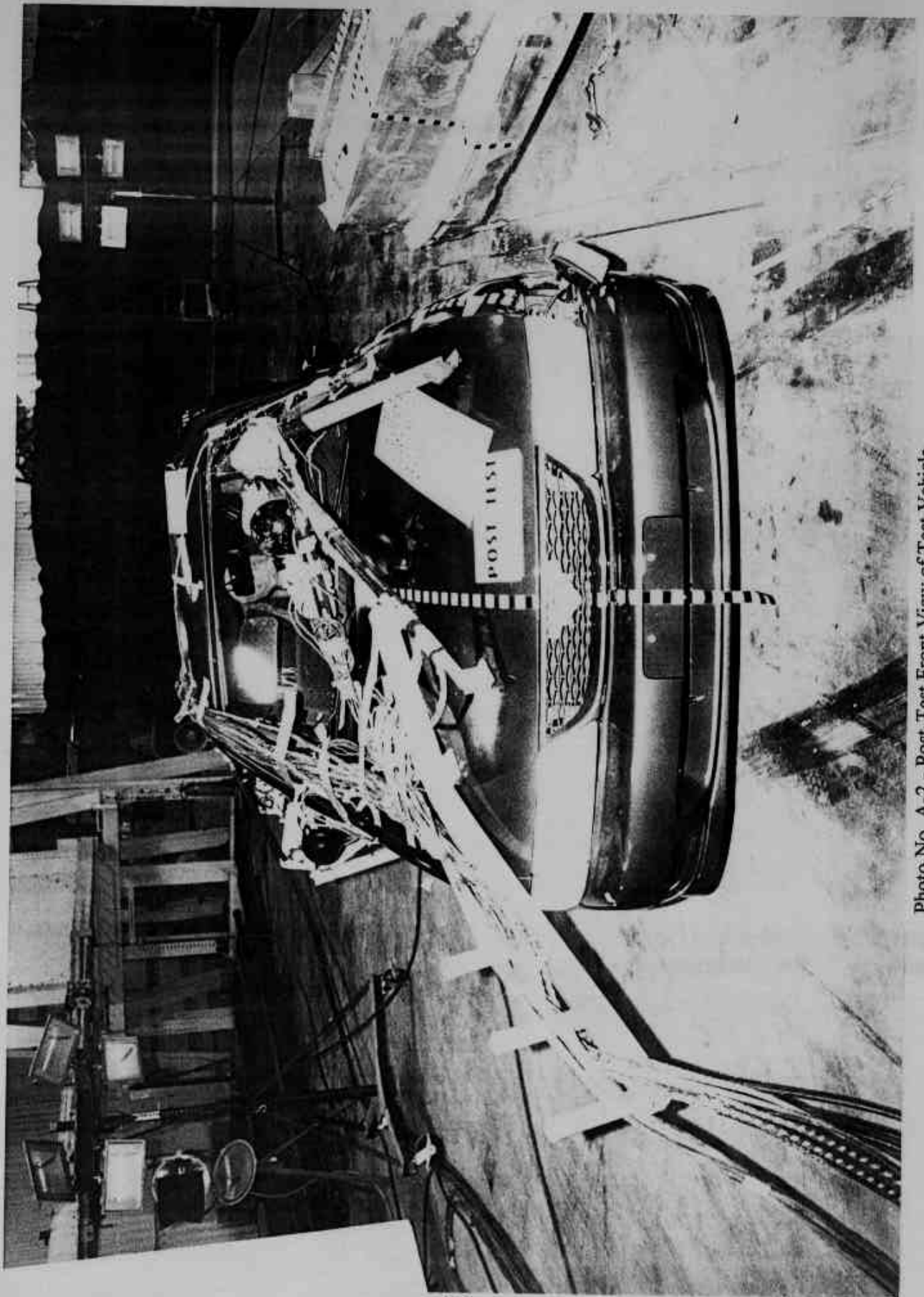


Photo No. A-2 - Post-Test Front View of Test Vehicle

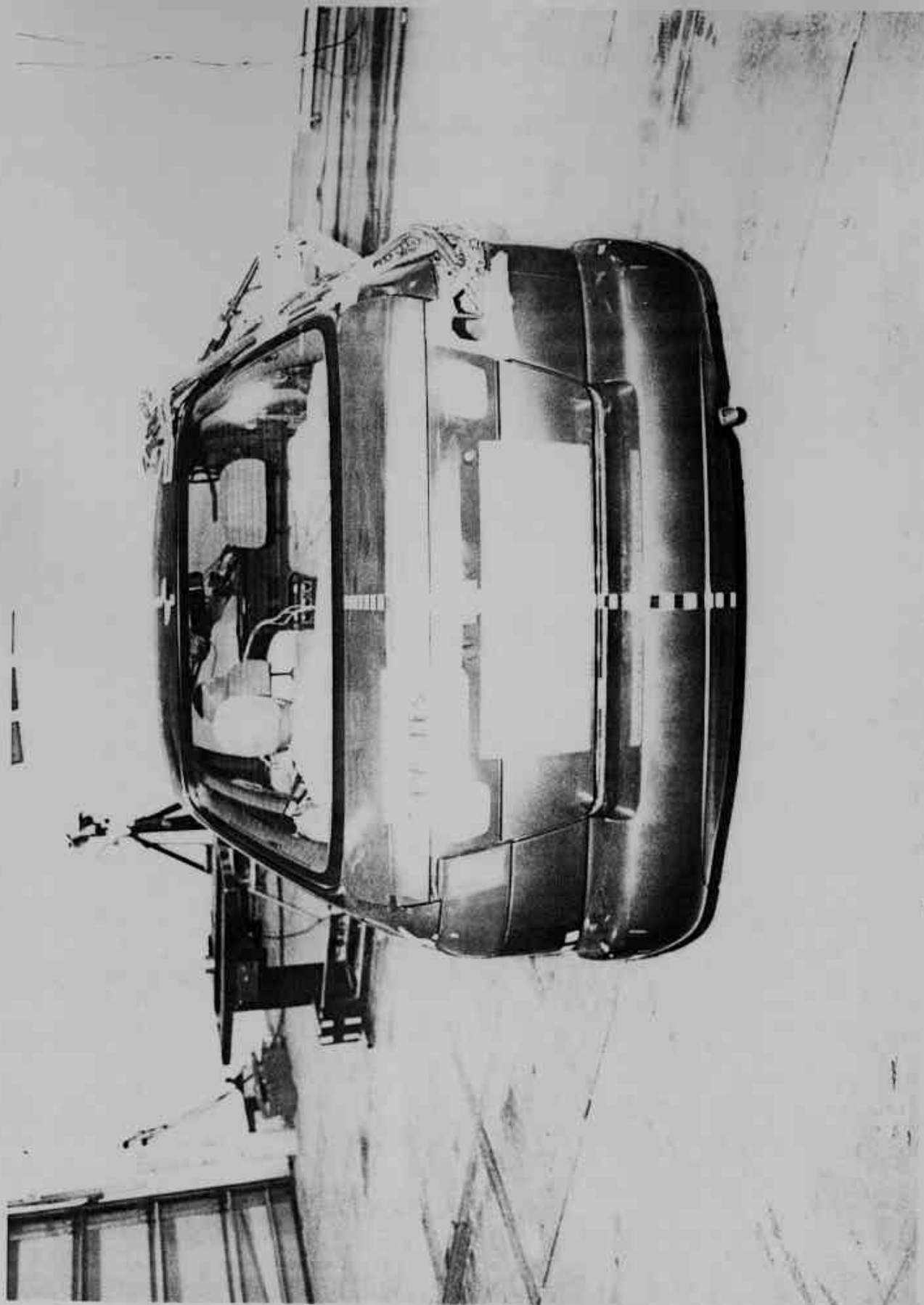


Photo No. A-3 - Pre-Test Rear View of Test Vehicle

A-3



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

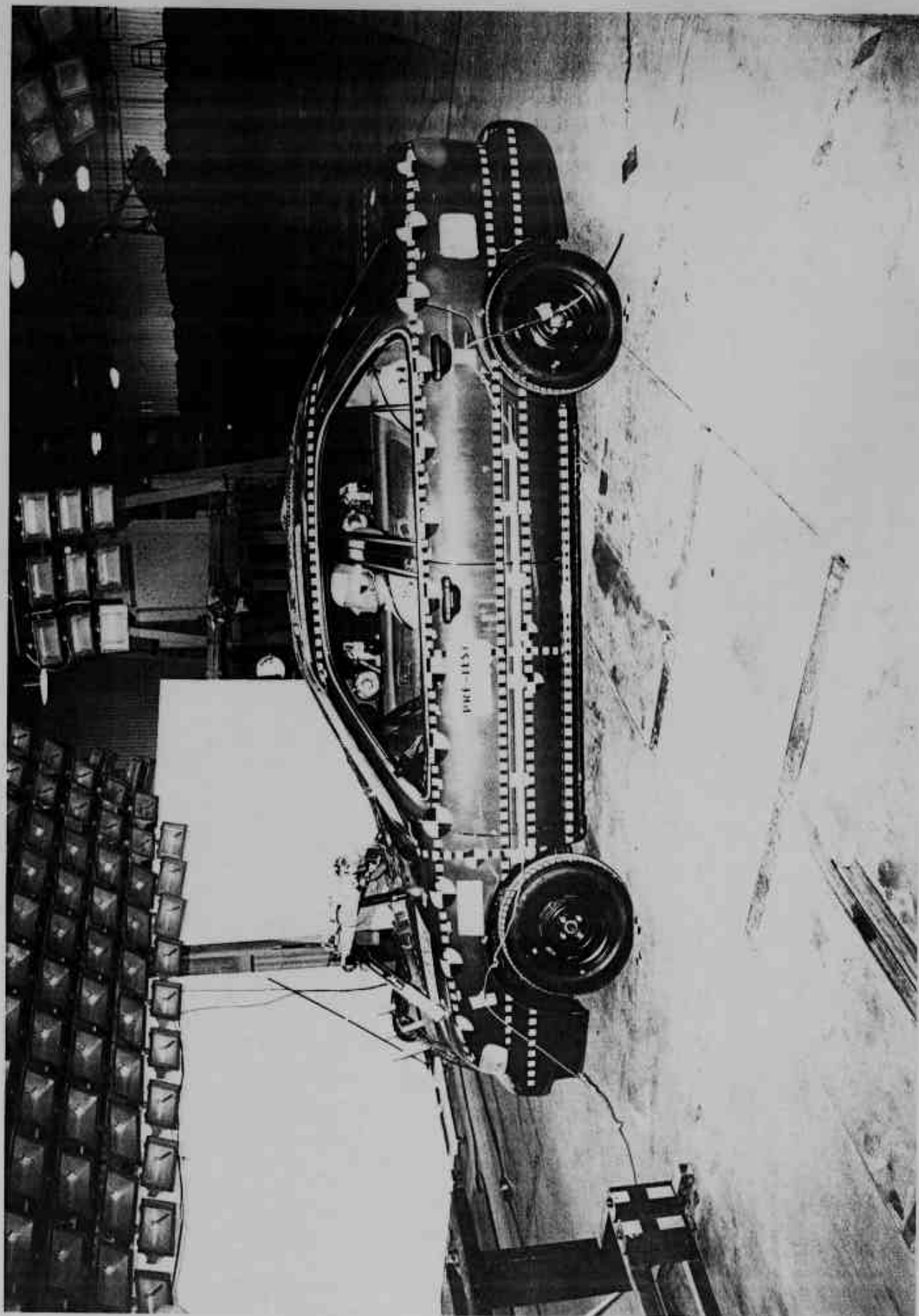


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

A-5

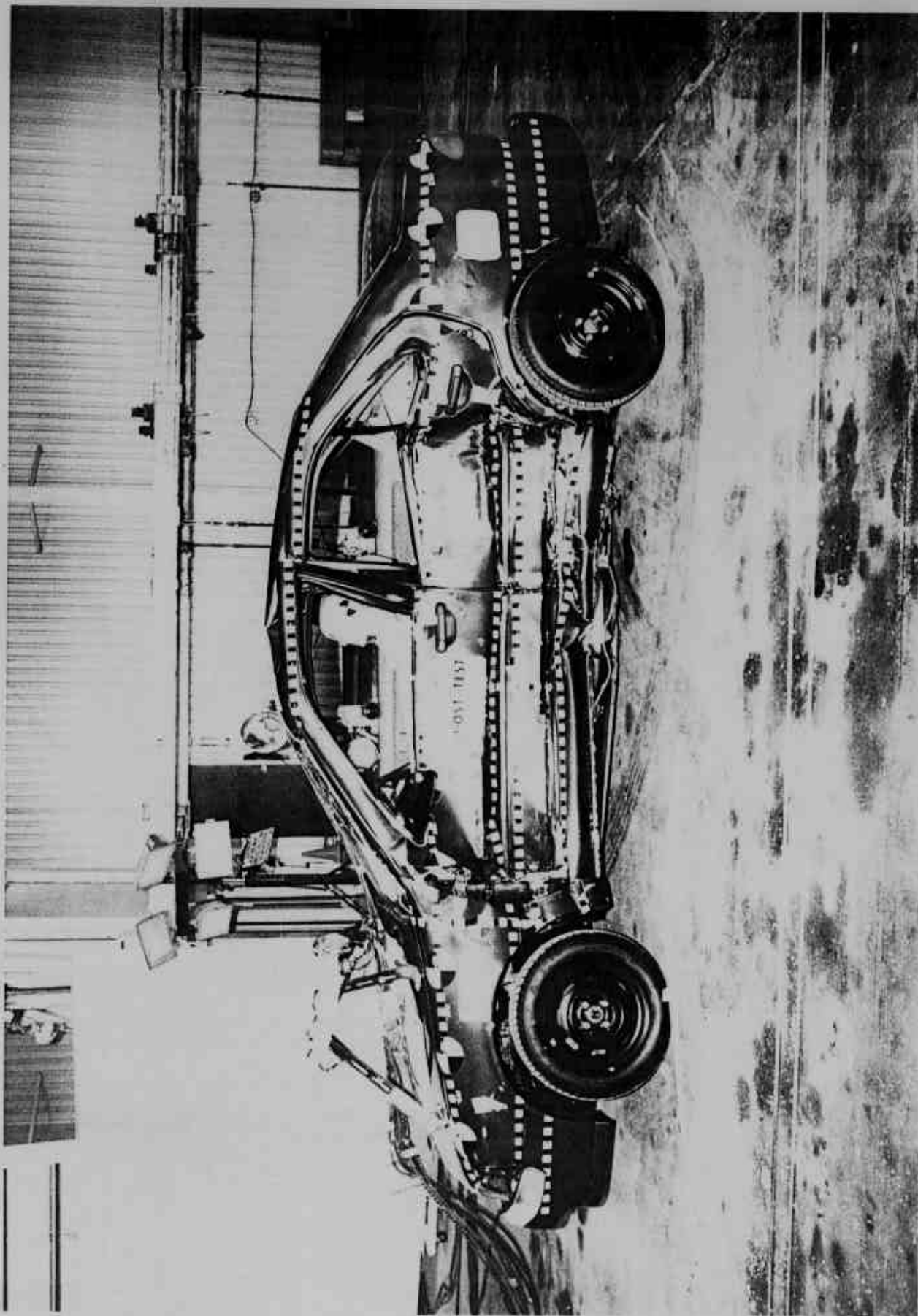


Photo No. A-6 - Post-Test Left Side View of Test Vehicle

A-6

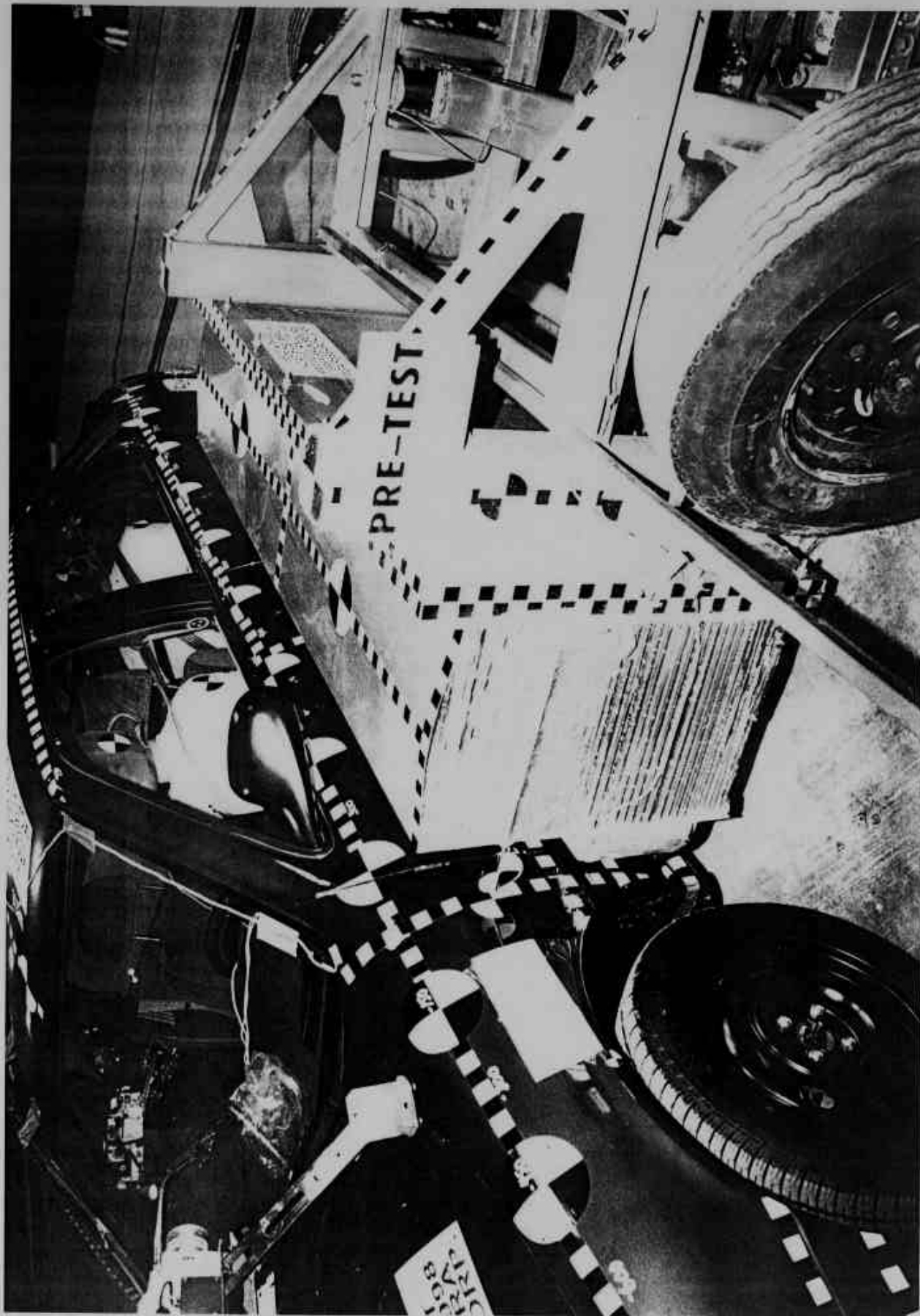
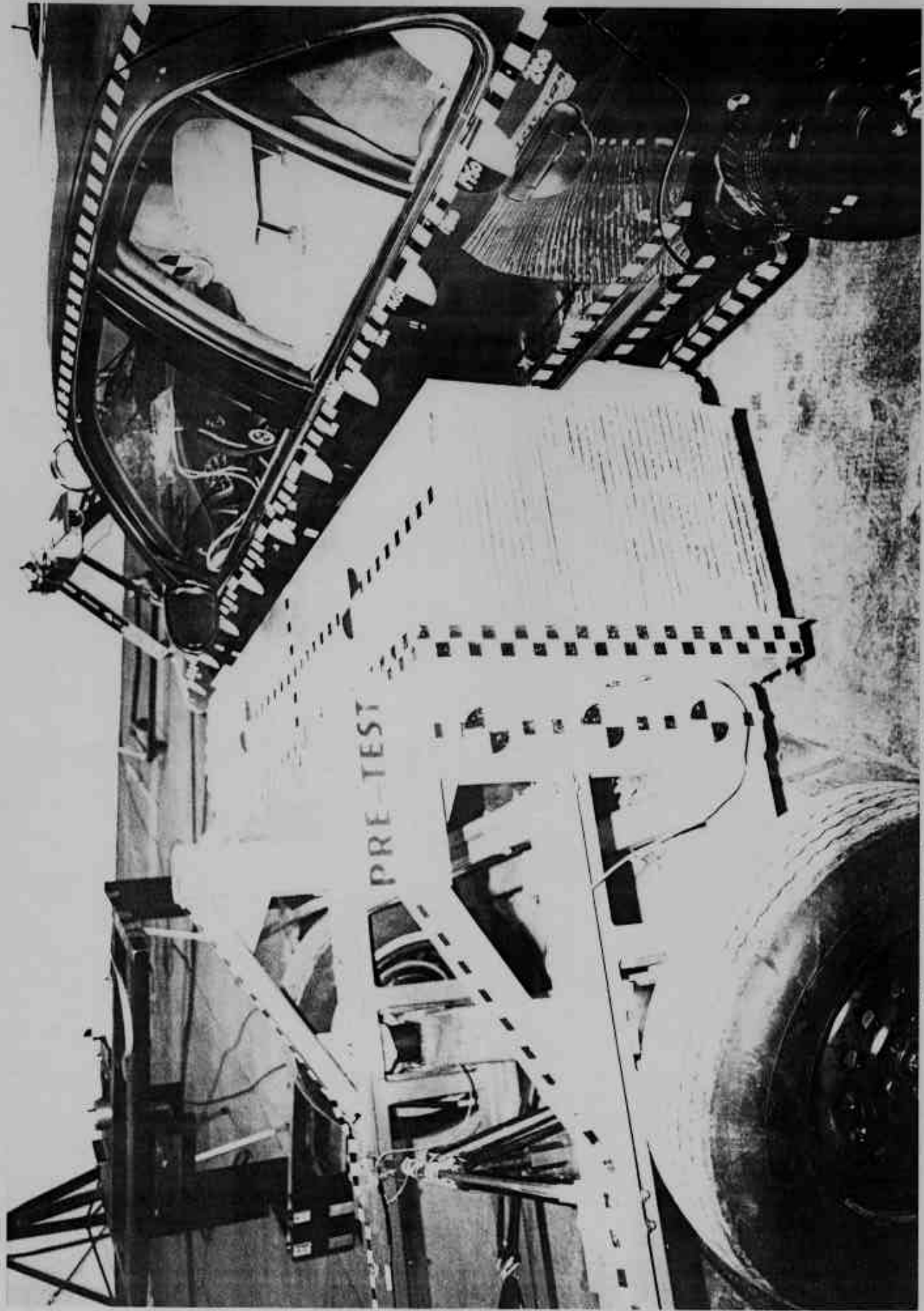


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (left side)



A-8

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

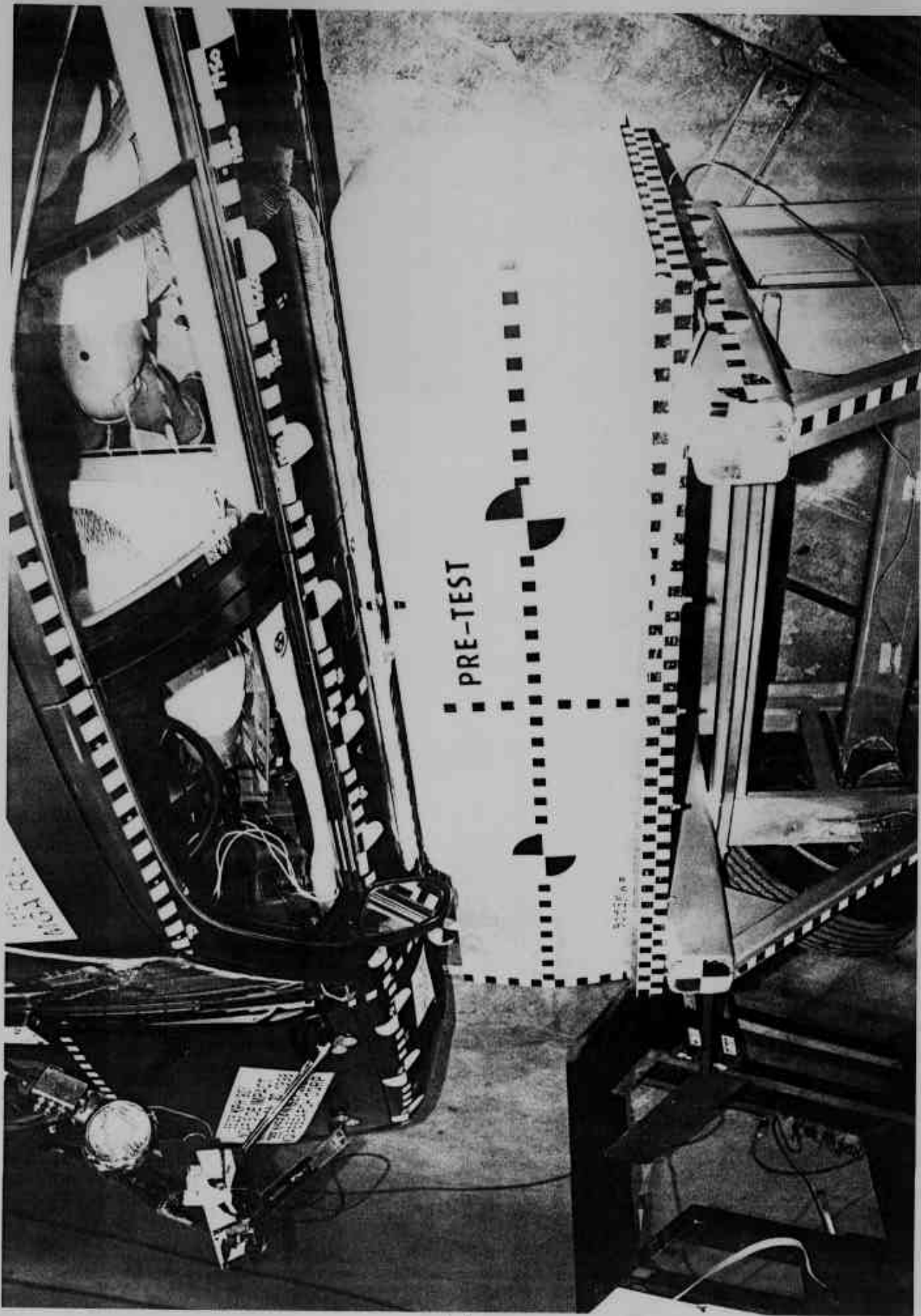


Photo No. A-9 - Pre-Test MDB Positioned Against Vehicle Overhead View

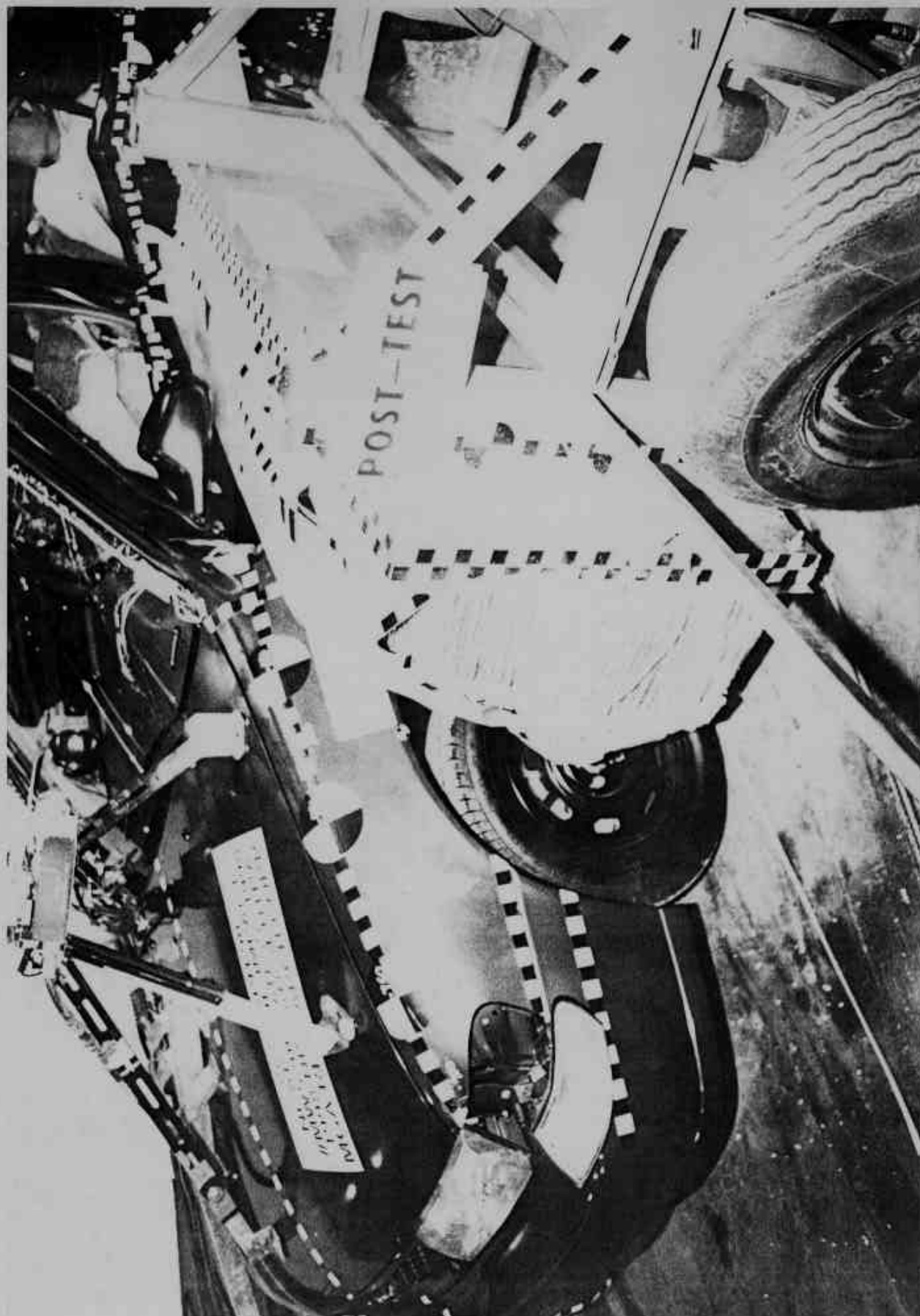


Photo No. A-10 - Post-Test MDB Positioned Against Vehicle (left side)

A-10

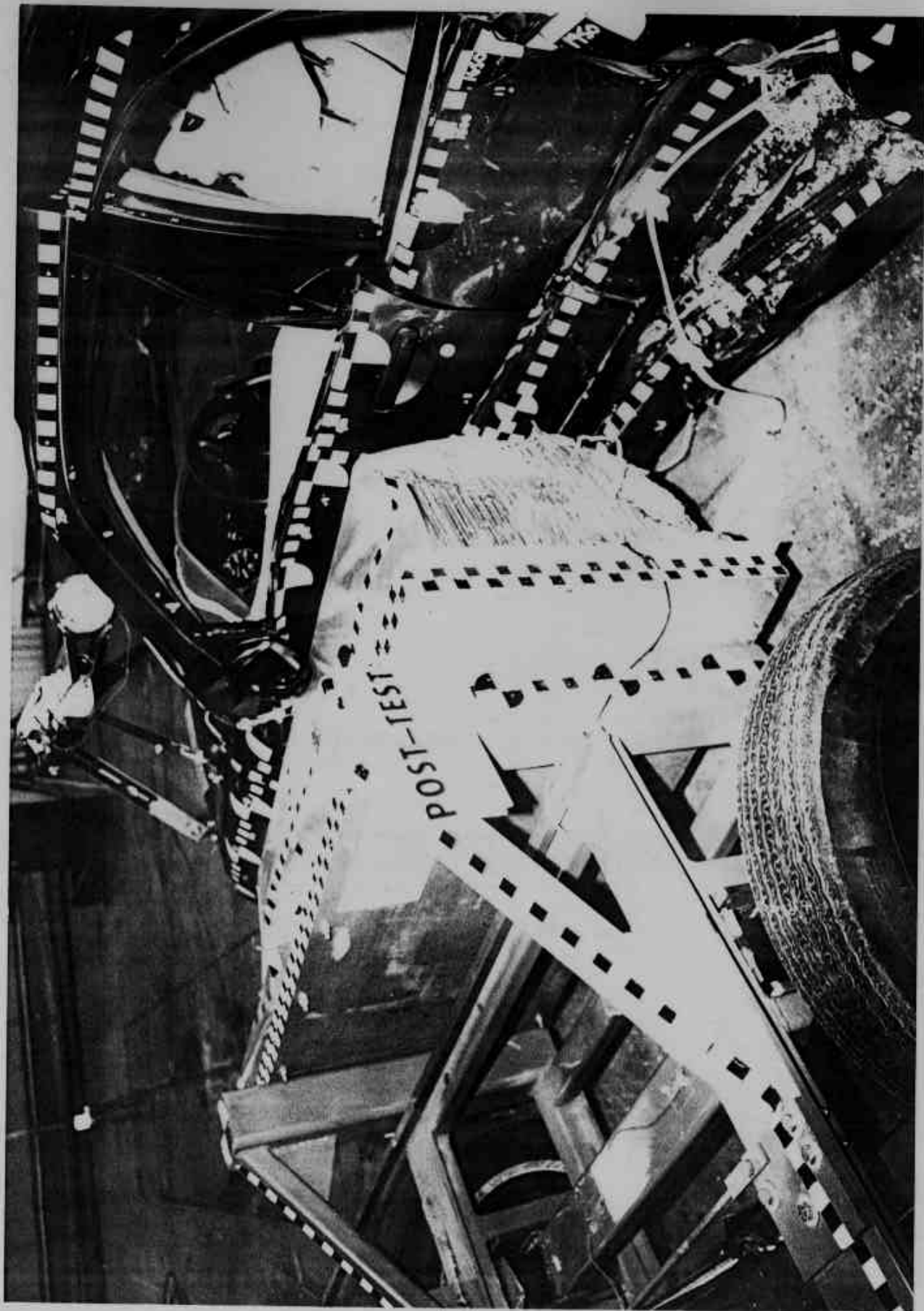


Photo No. A-11 - Post-Test MDB Positioned Against Vehicle (right side)

A-11

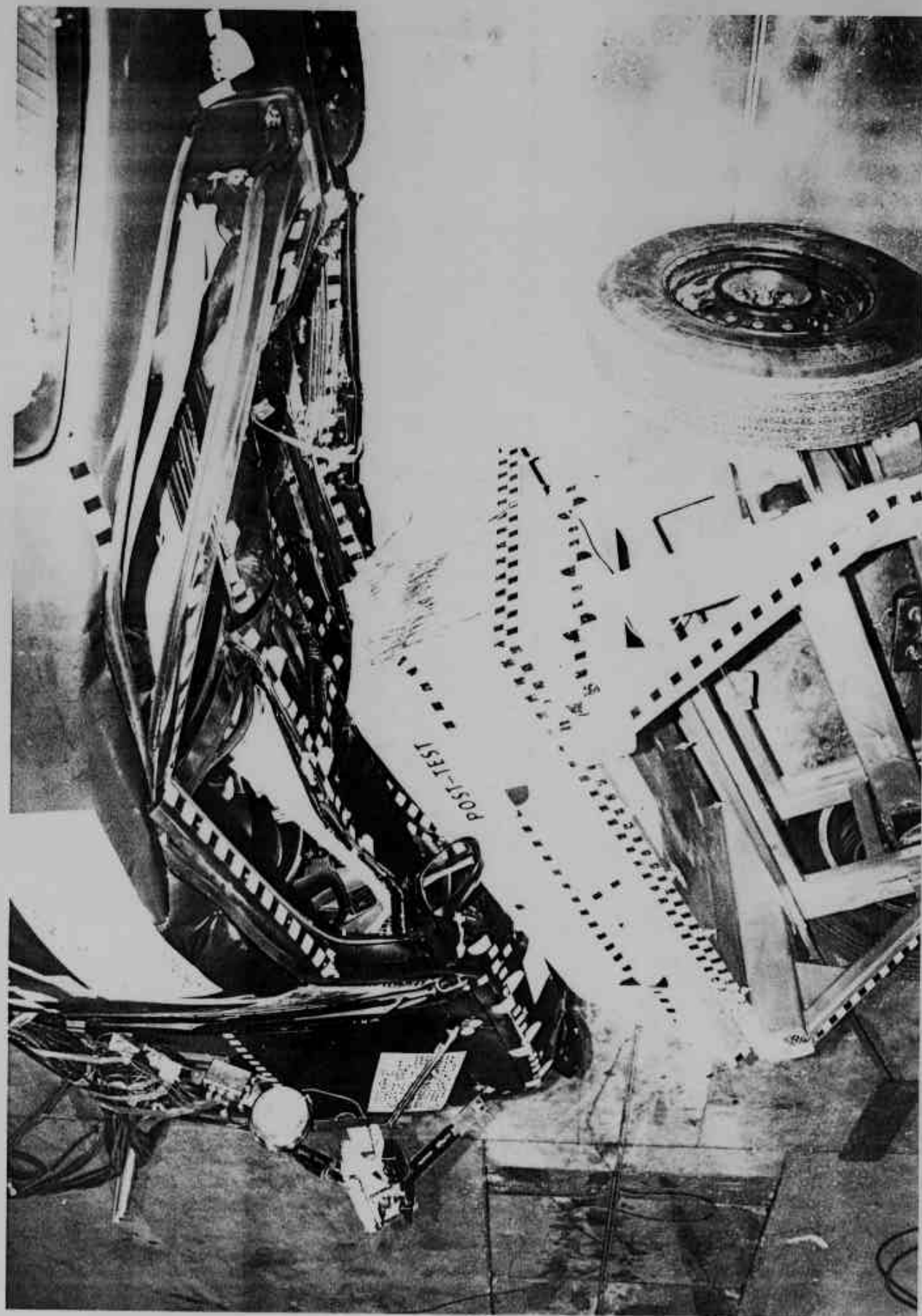


Photo No. A-12 - Post-Test MDB Positioned Against Vehicle Overhead View

A-12

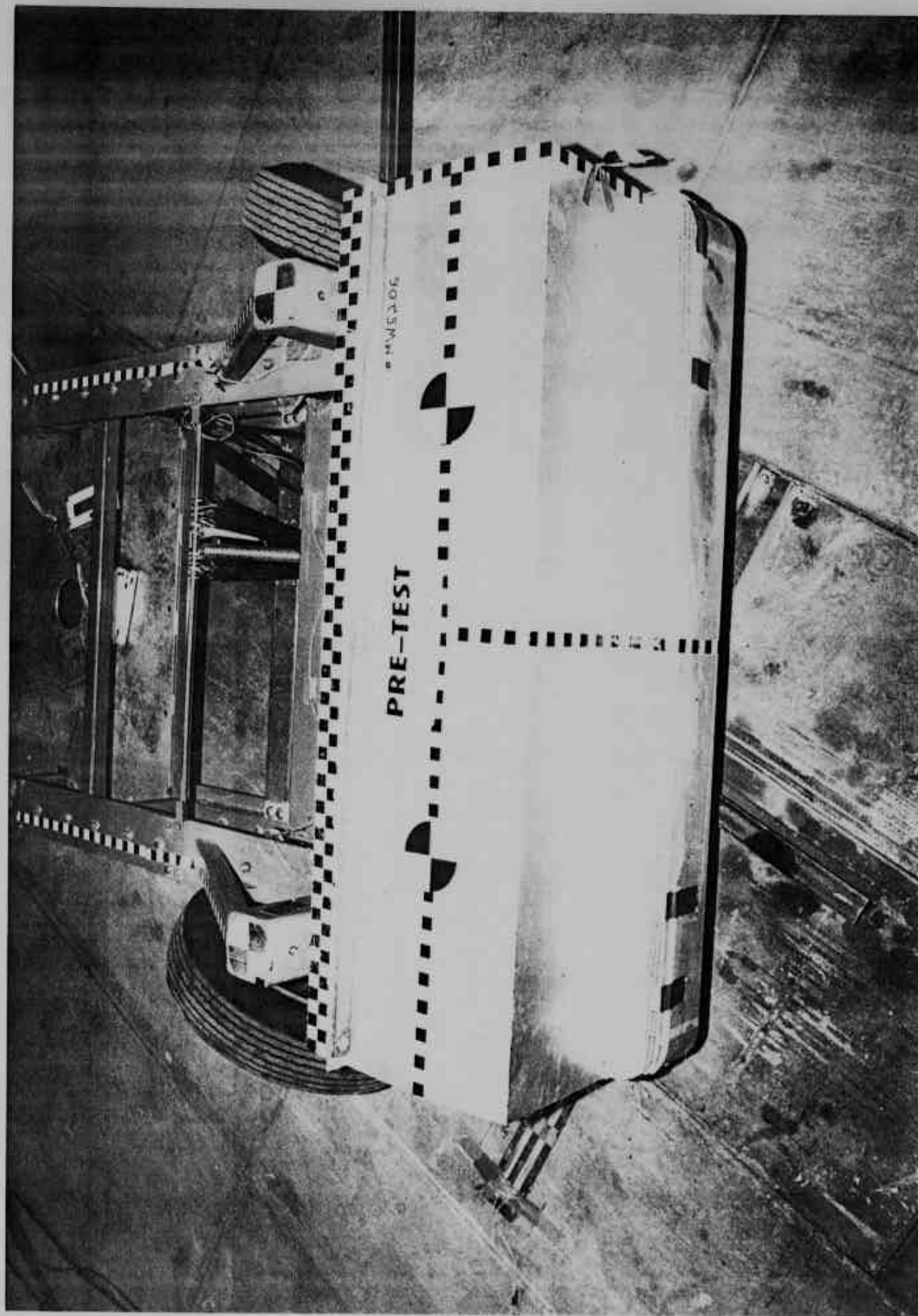


Photo No. A-13 - Pre-Test MDB Top View

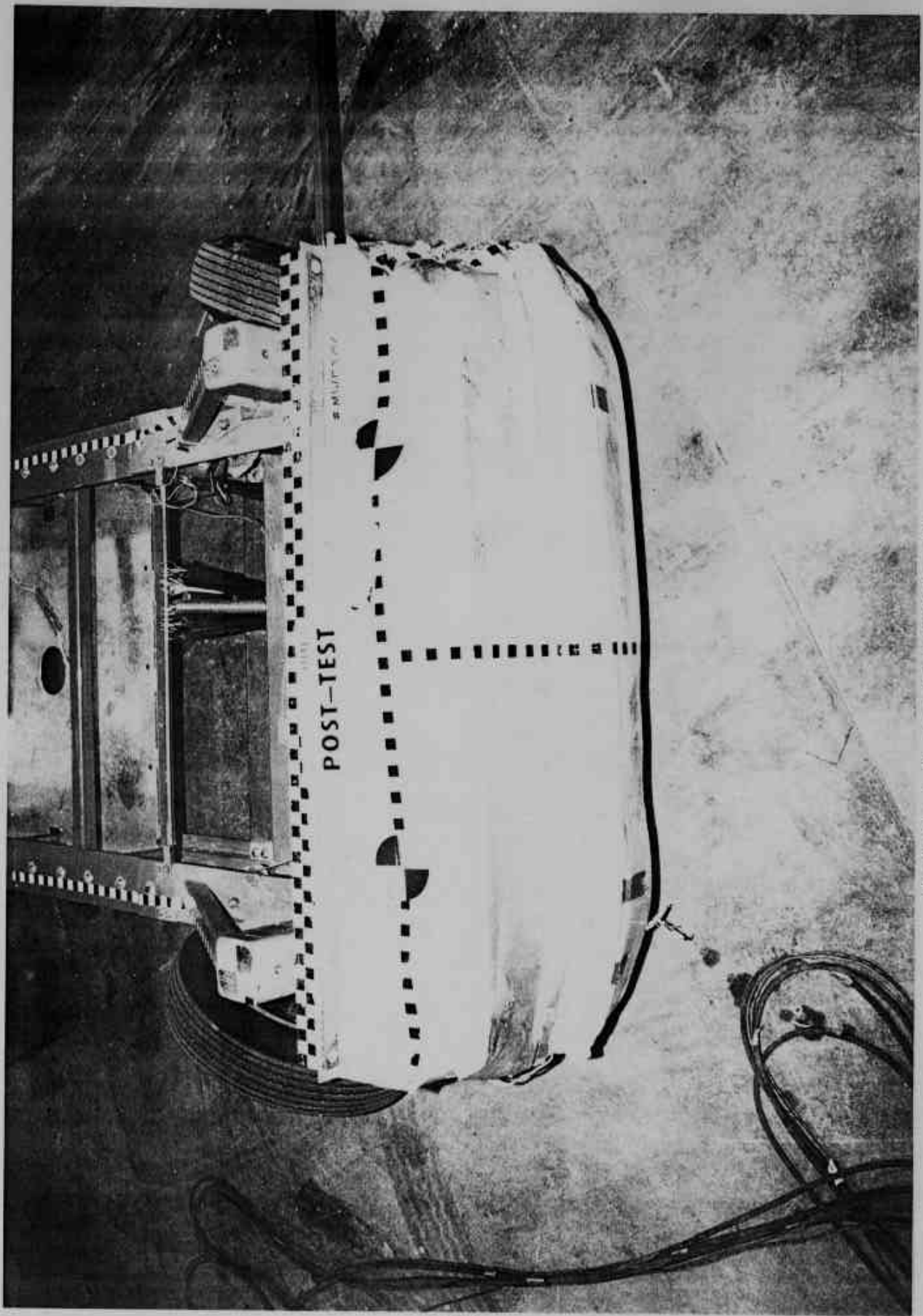


Photo No. A-14 - Post-Test MDB Top View

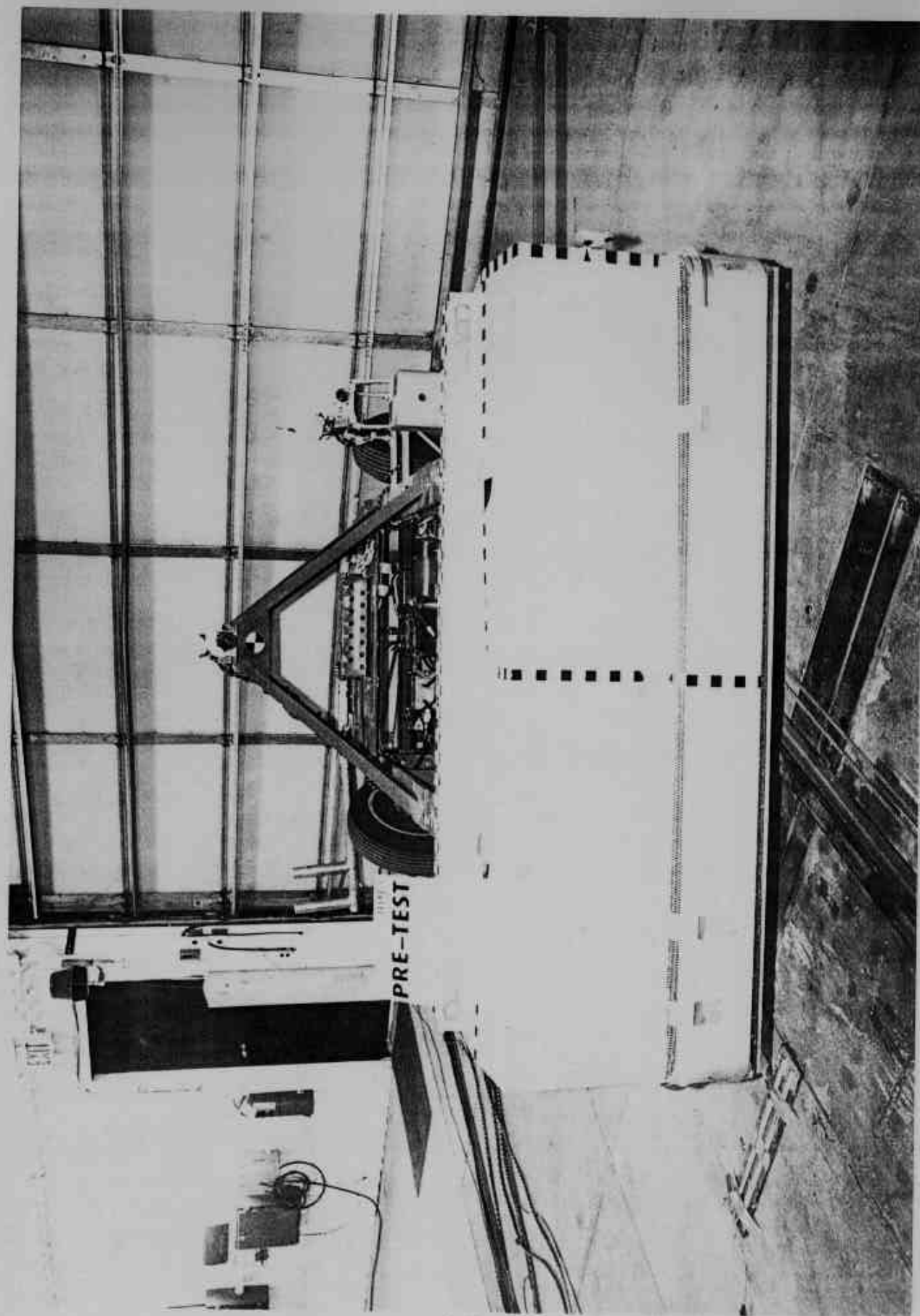


Photo No. A-15 - Pre-Test MDB Front View

A-15

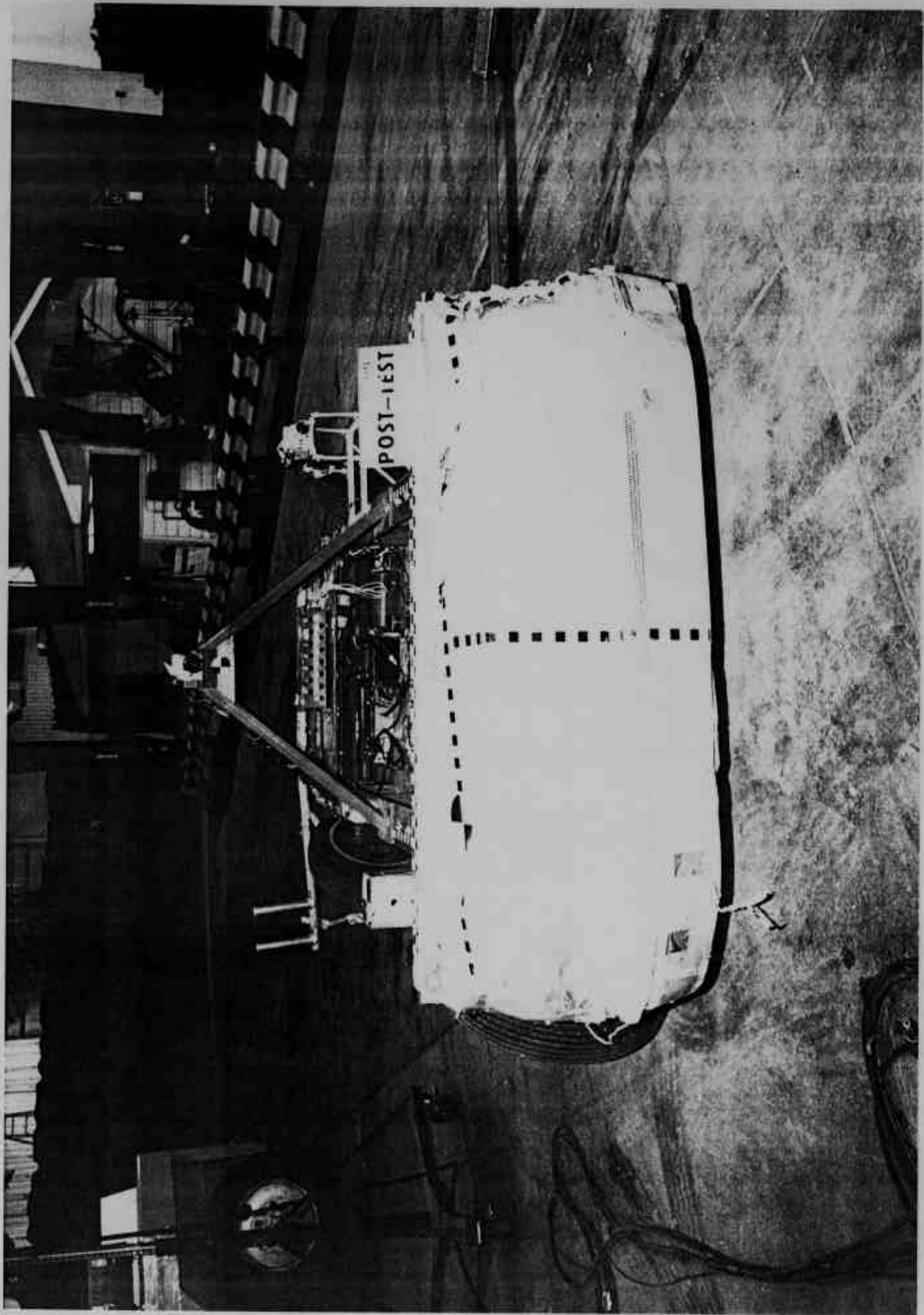


Photo No. A-16 - Post-Test MDB Front View

A-16

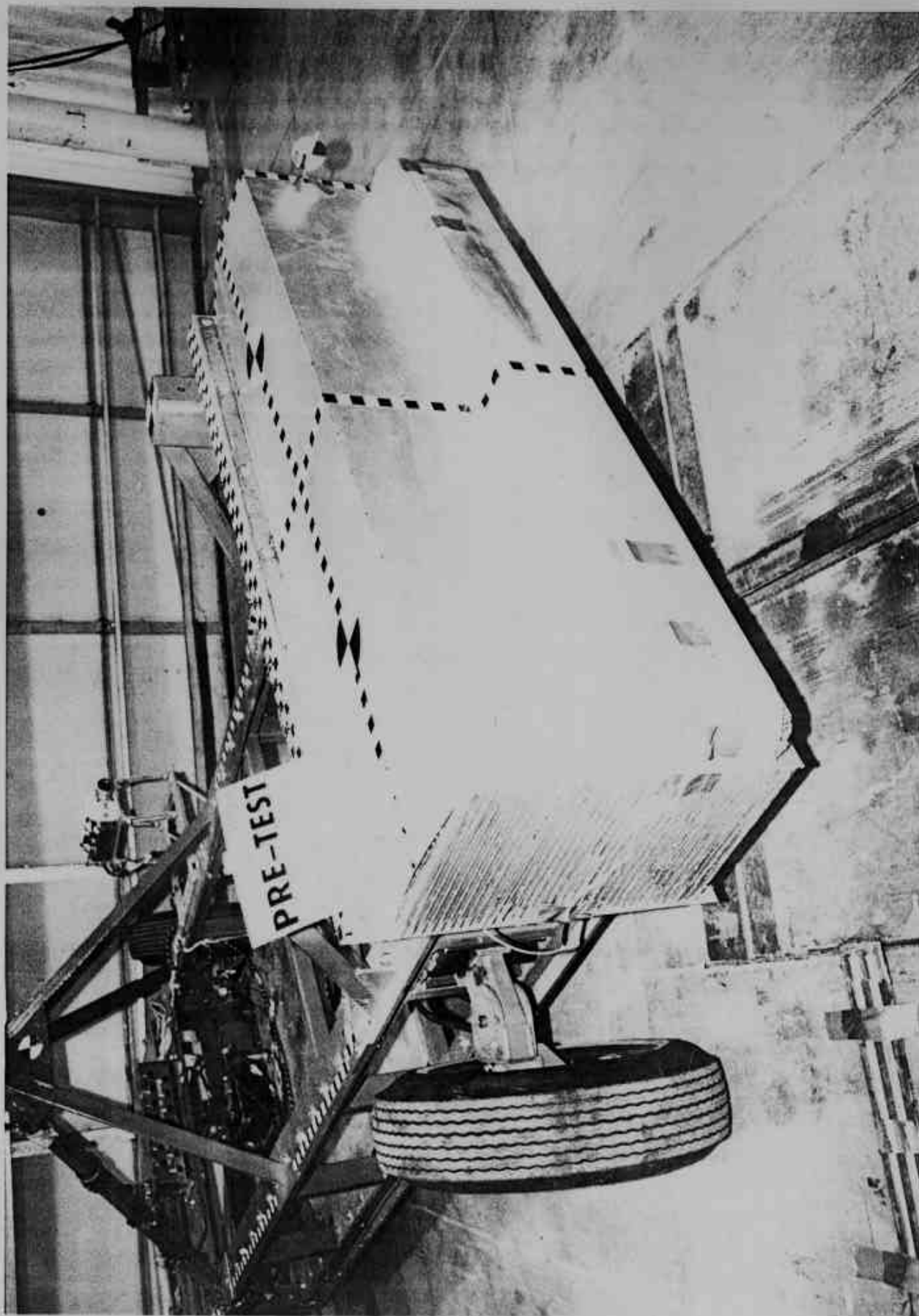


Photo No. A-17 - Pre-Test MDB Right Side View

A-17

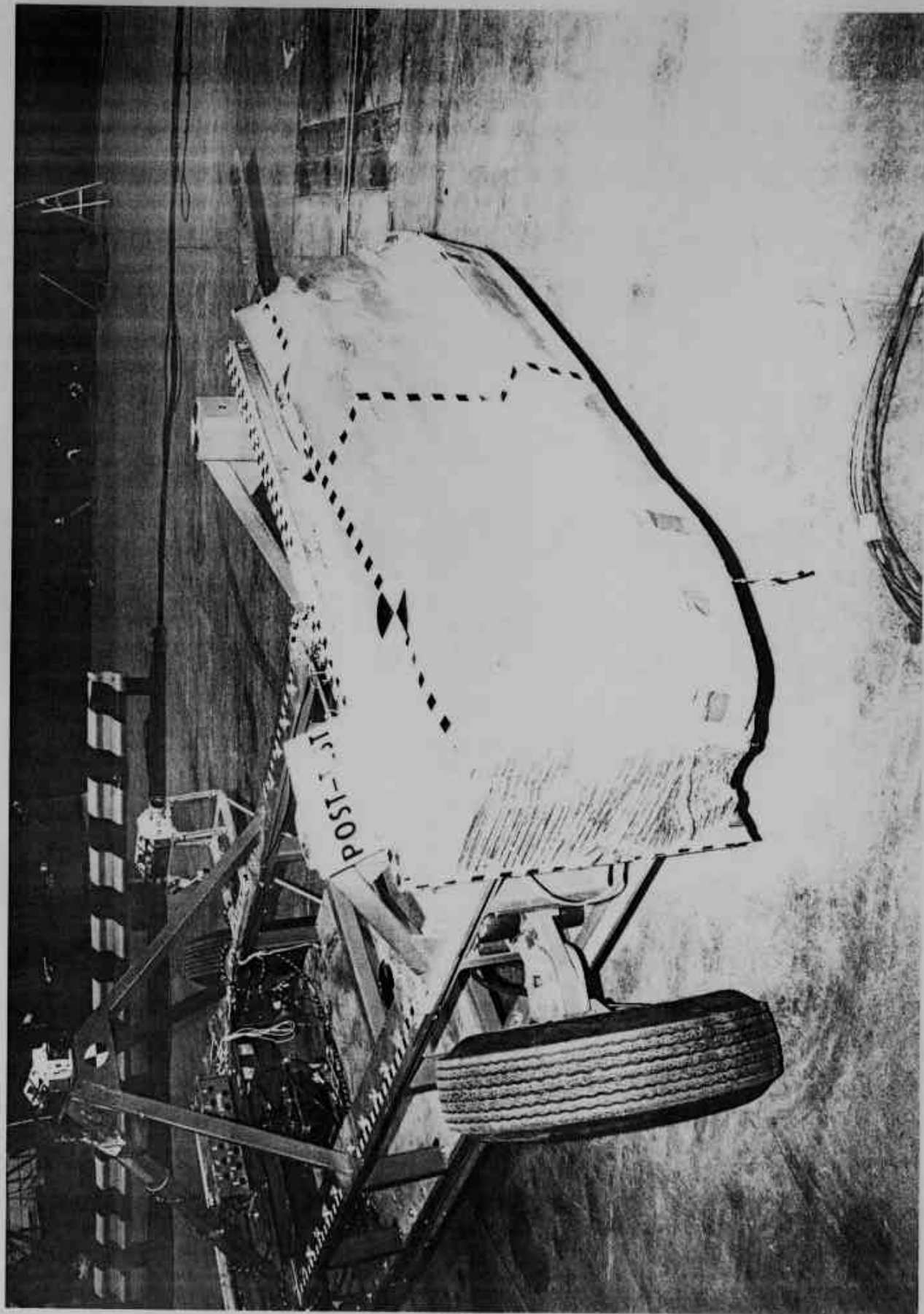


Photo No. A-18 - Post-Test MDB Right Side View

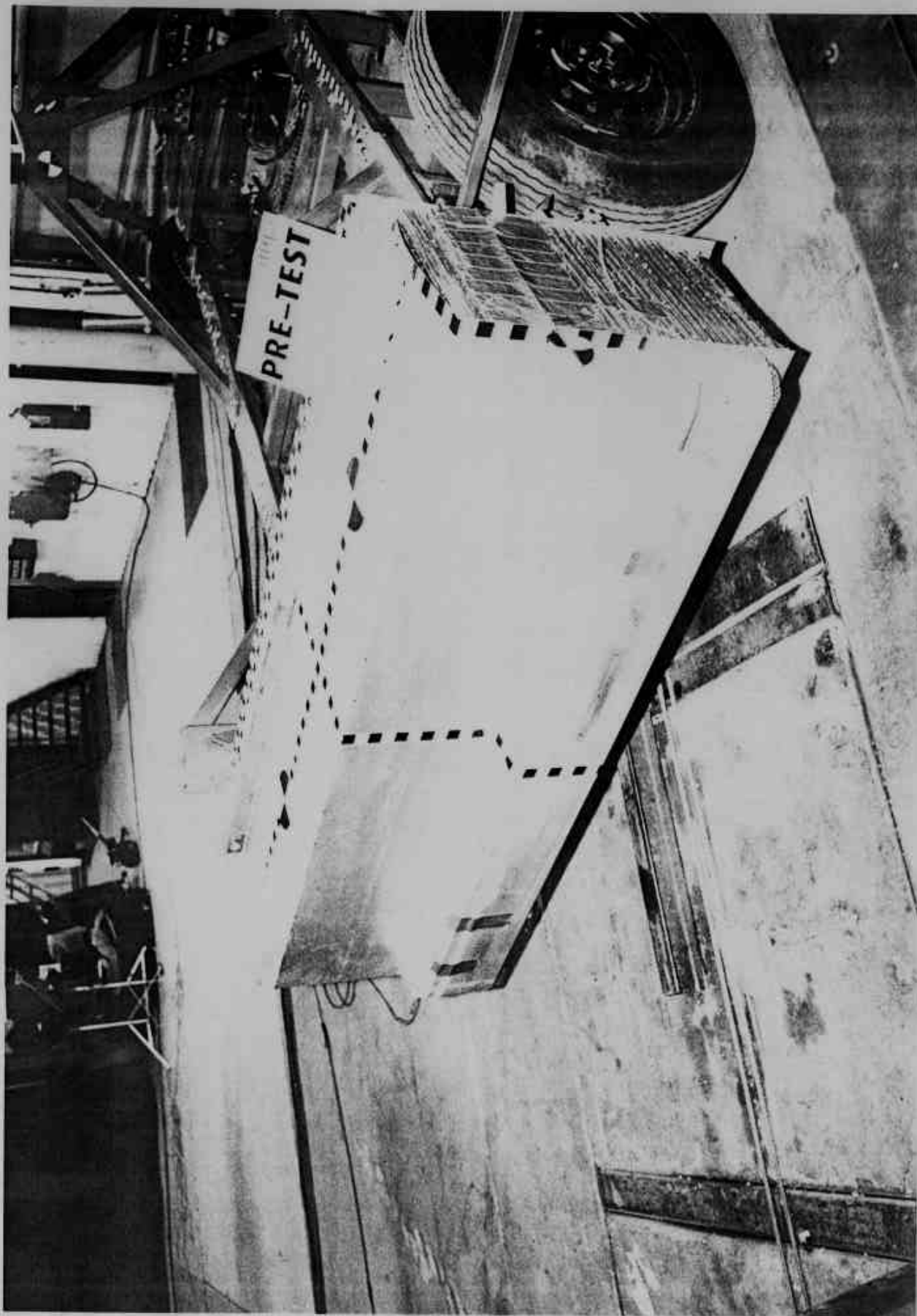


Photo No. A-19 - Pre-Test MDB Left Side View

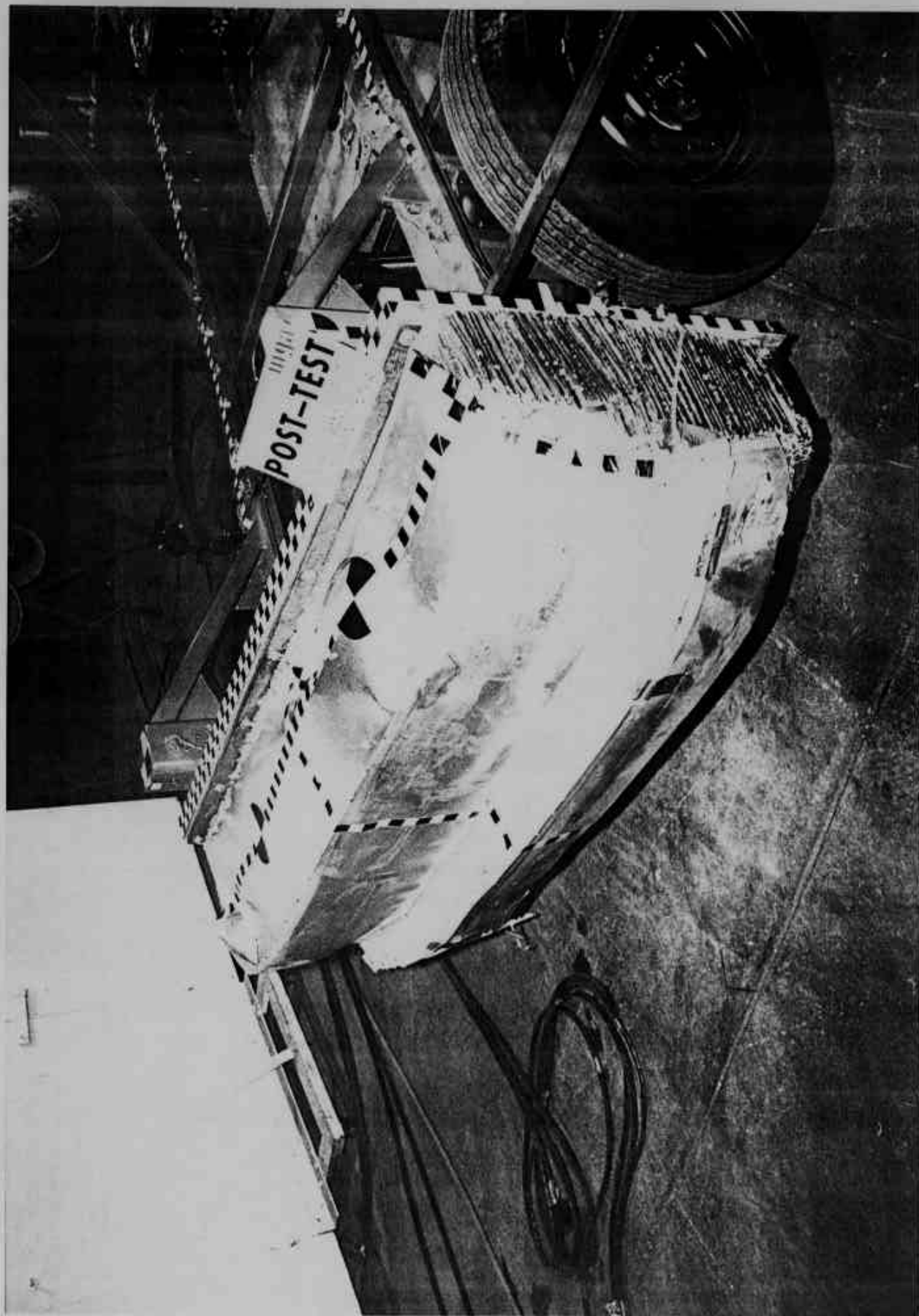


Photo No. A-20 - Post-Test MDB Left Side View

A-20



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

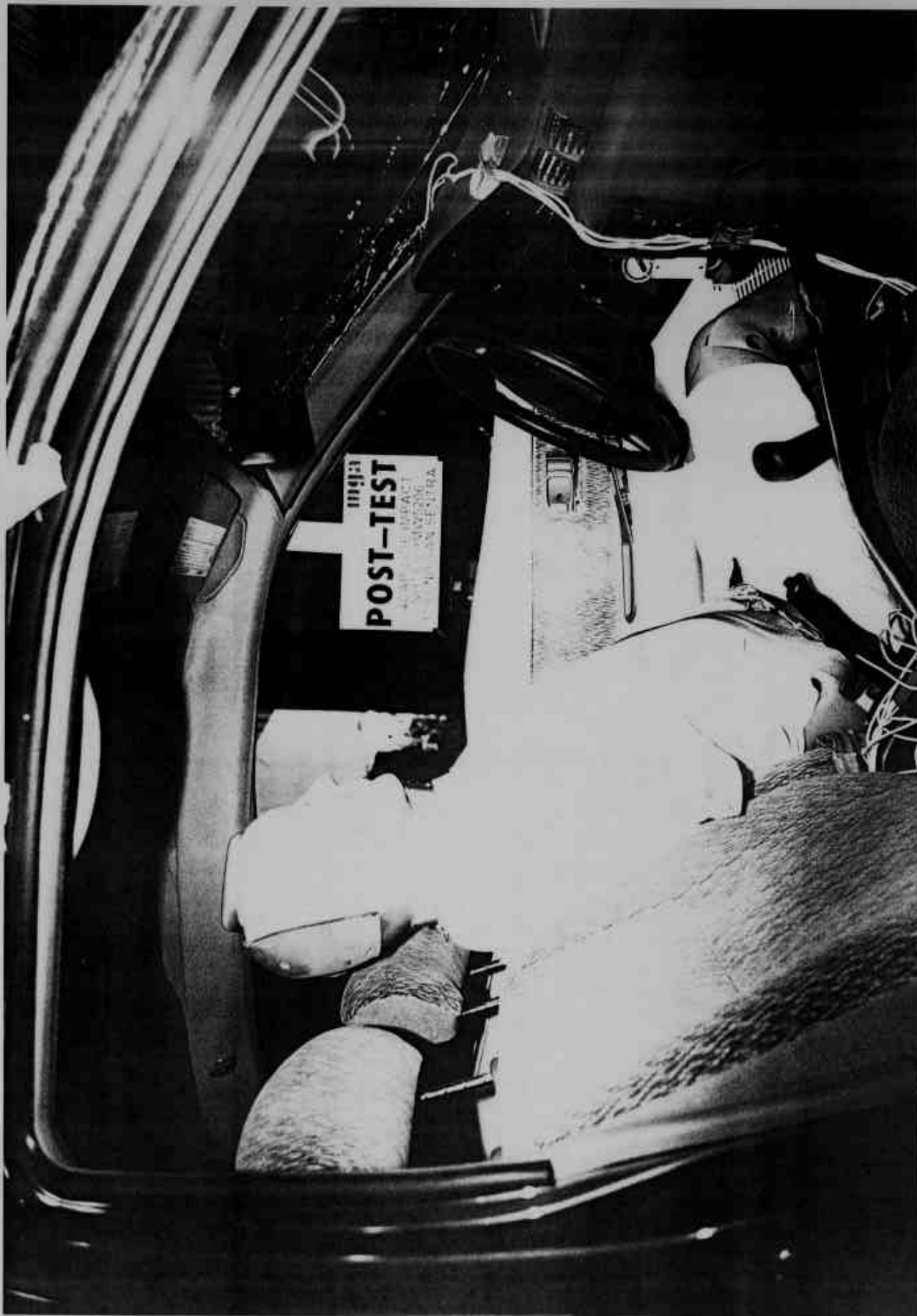
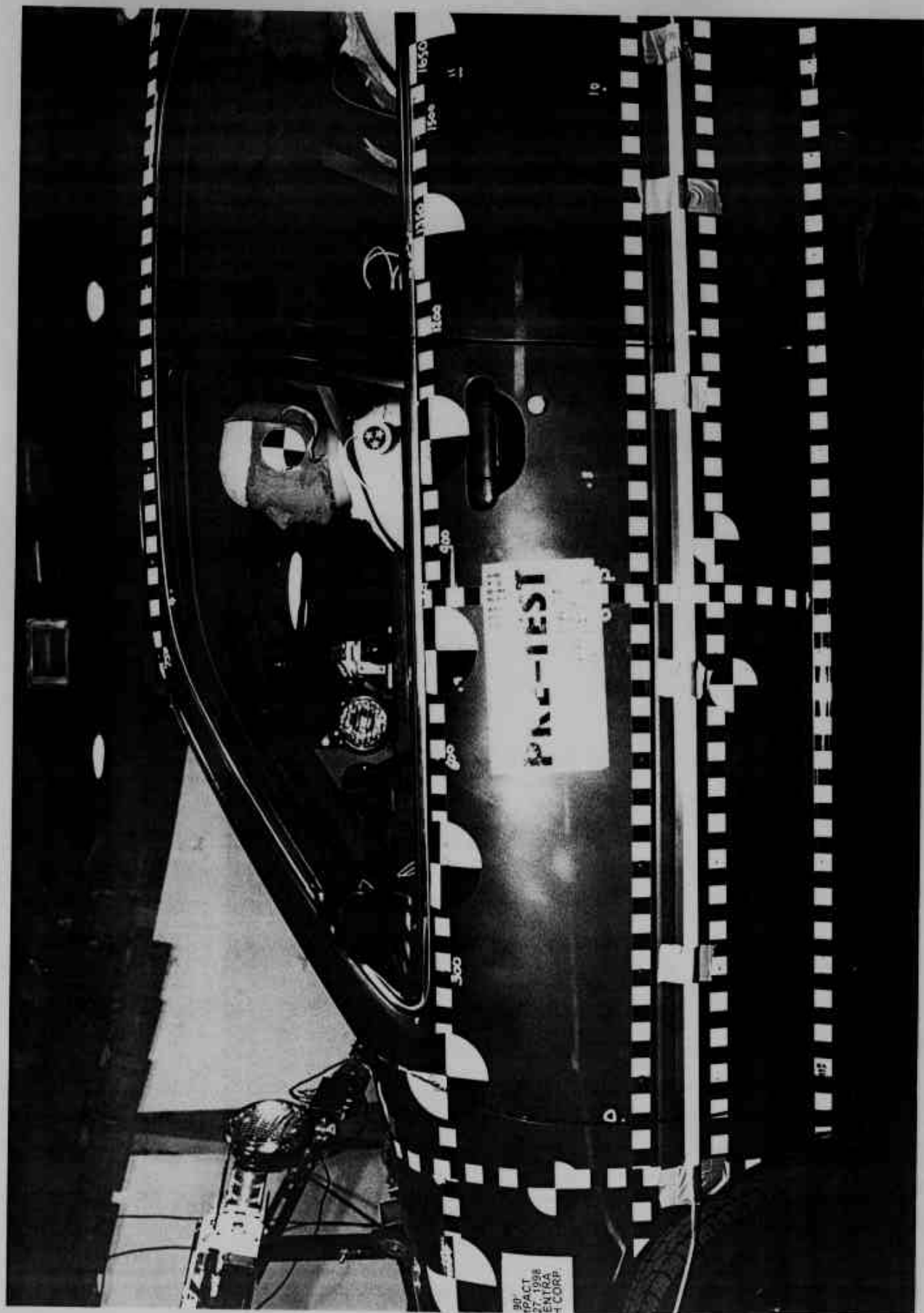
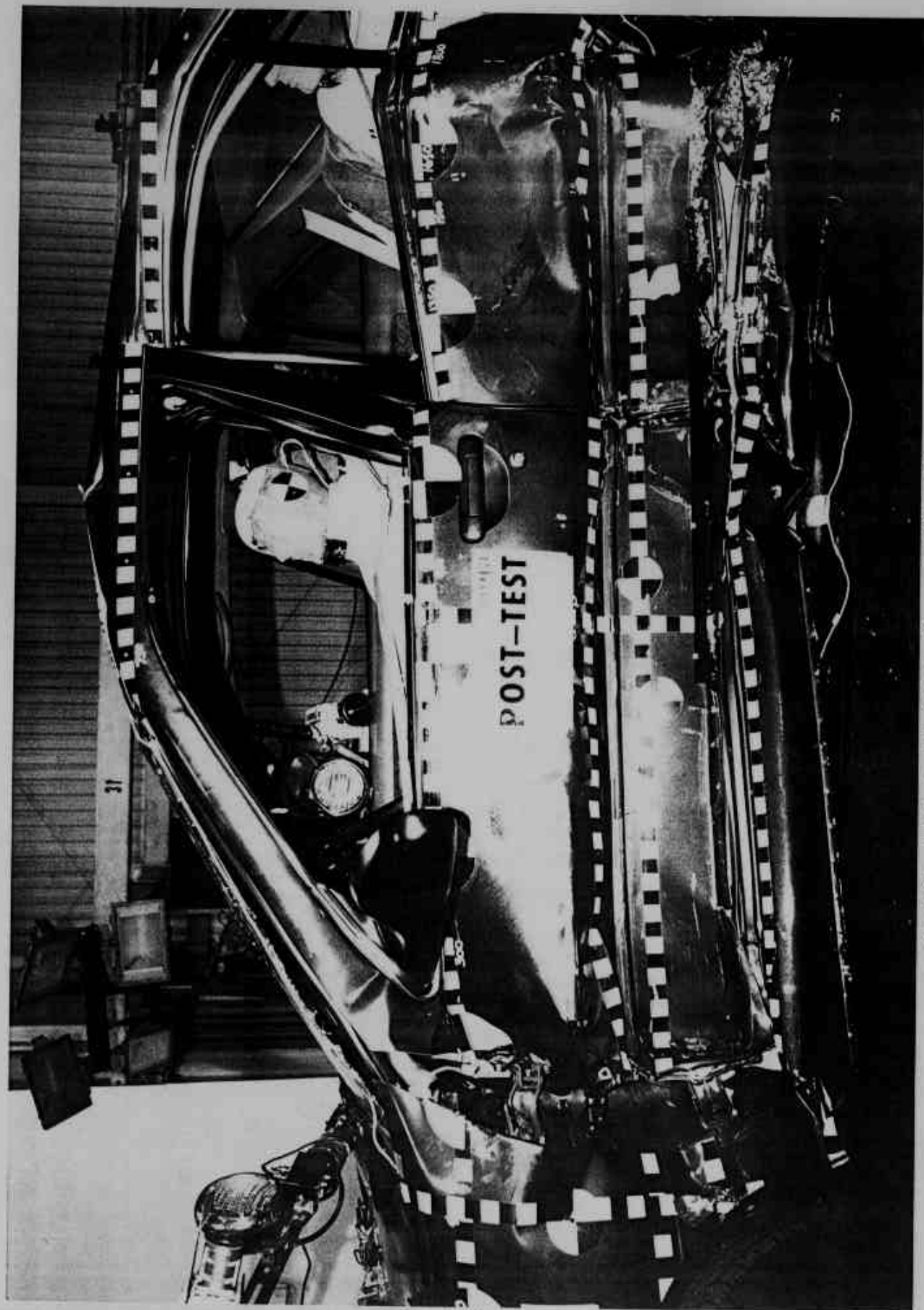


Photo No. A-22 - Post-Test Driver Dummy Right Side View



A-23

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

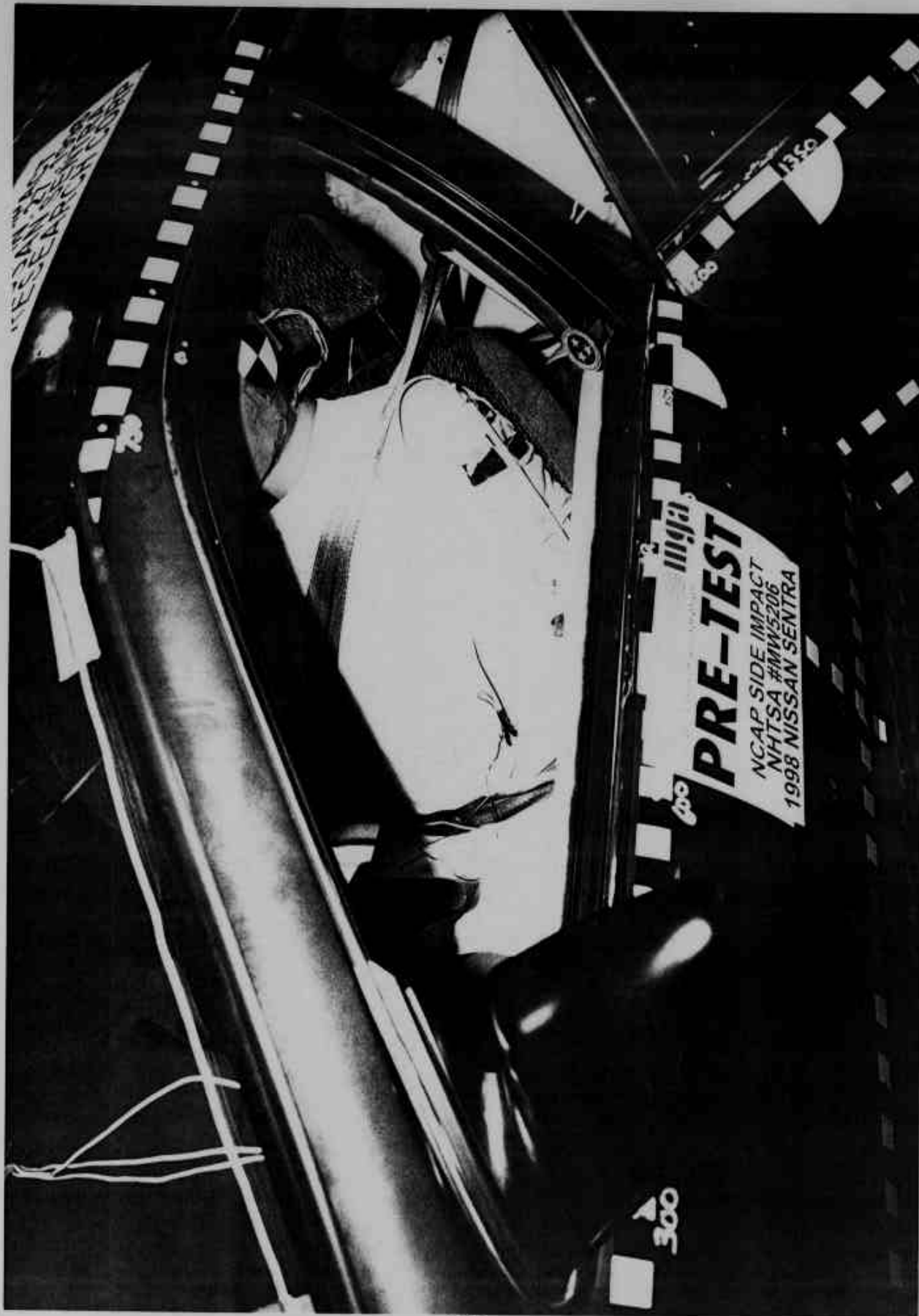


A-24

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



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



A-27

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



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

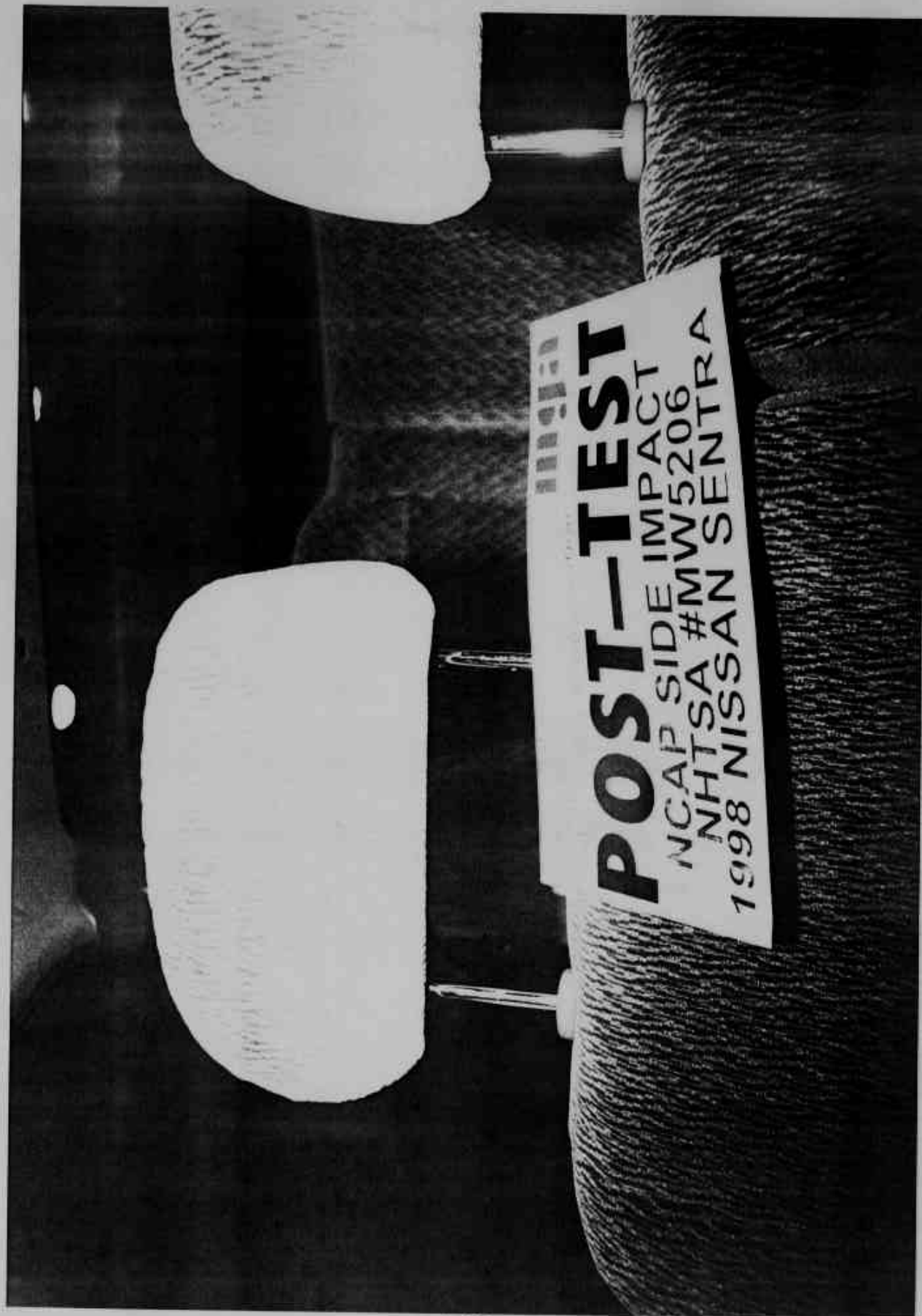


Photo No. A-29 - Post-Test Driver Dummy Head Contact



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

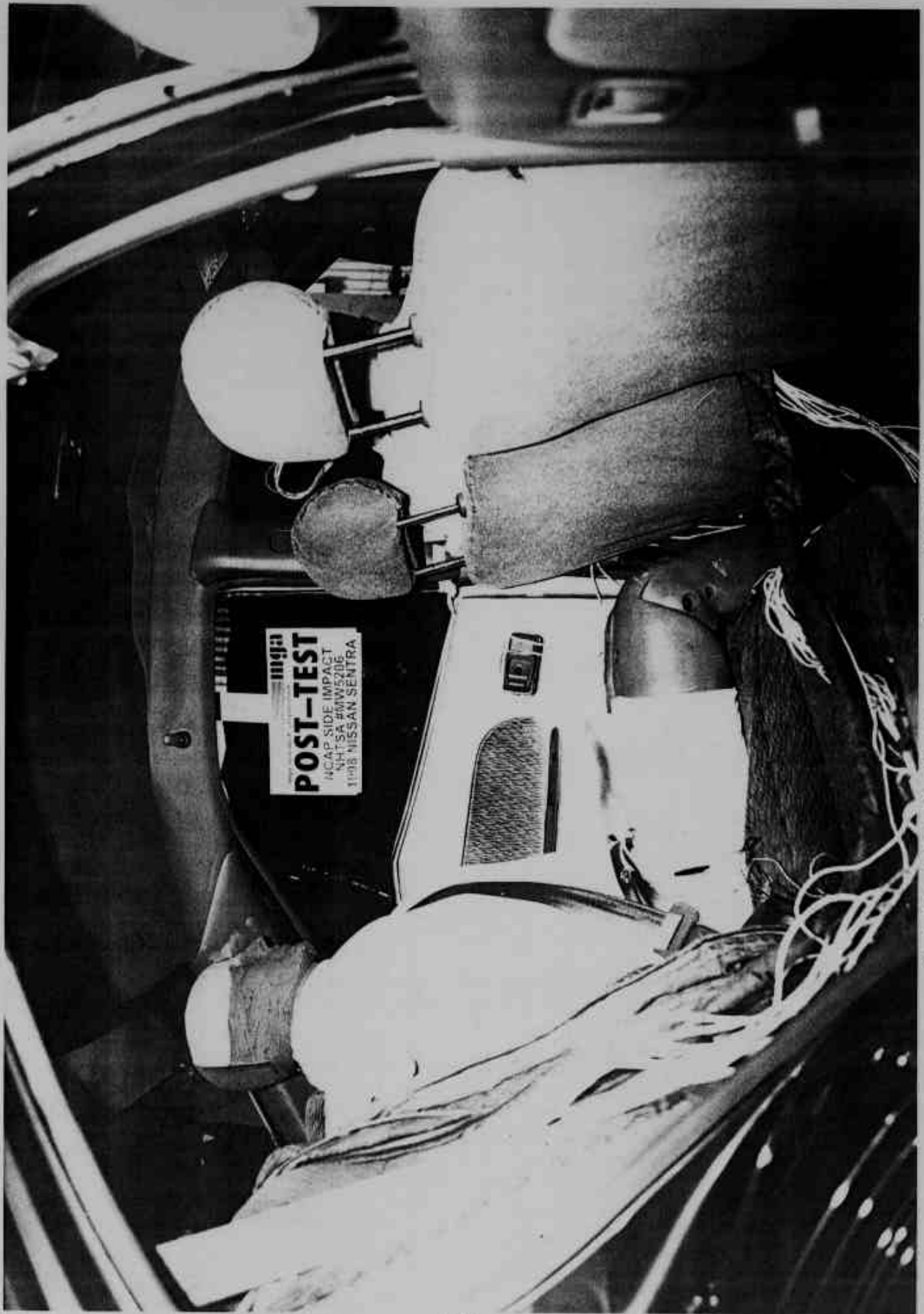
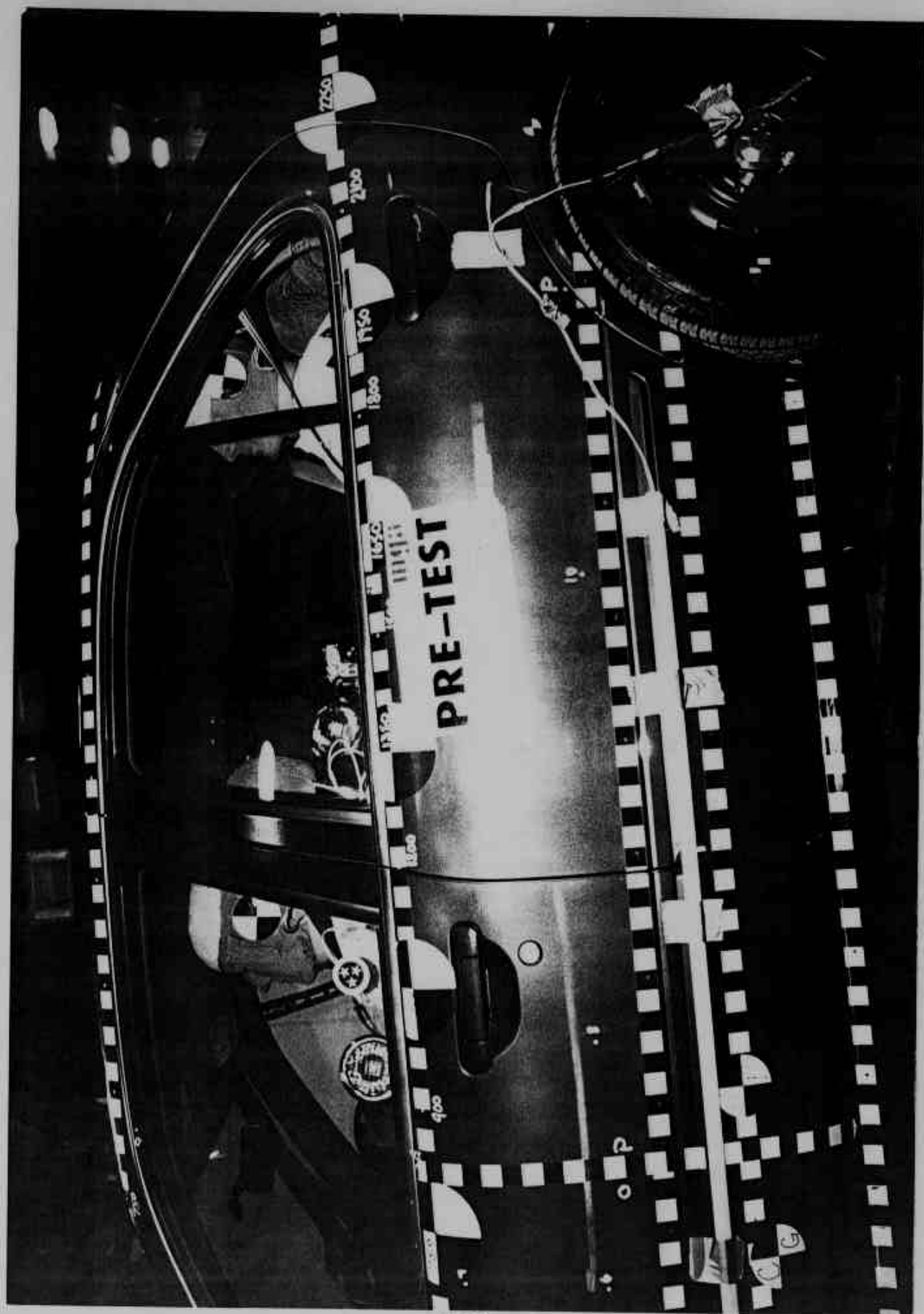
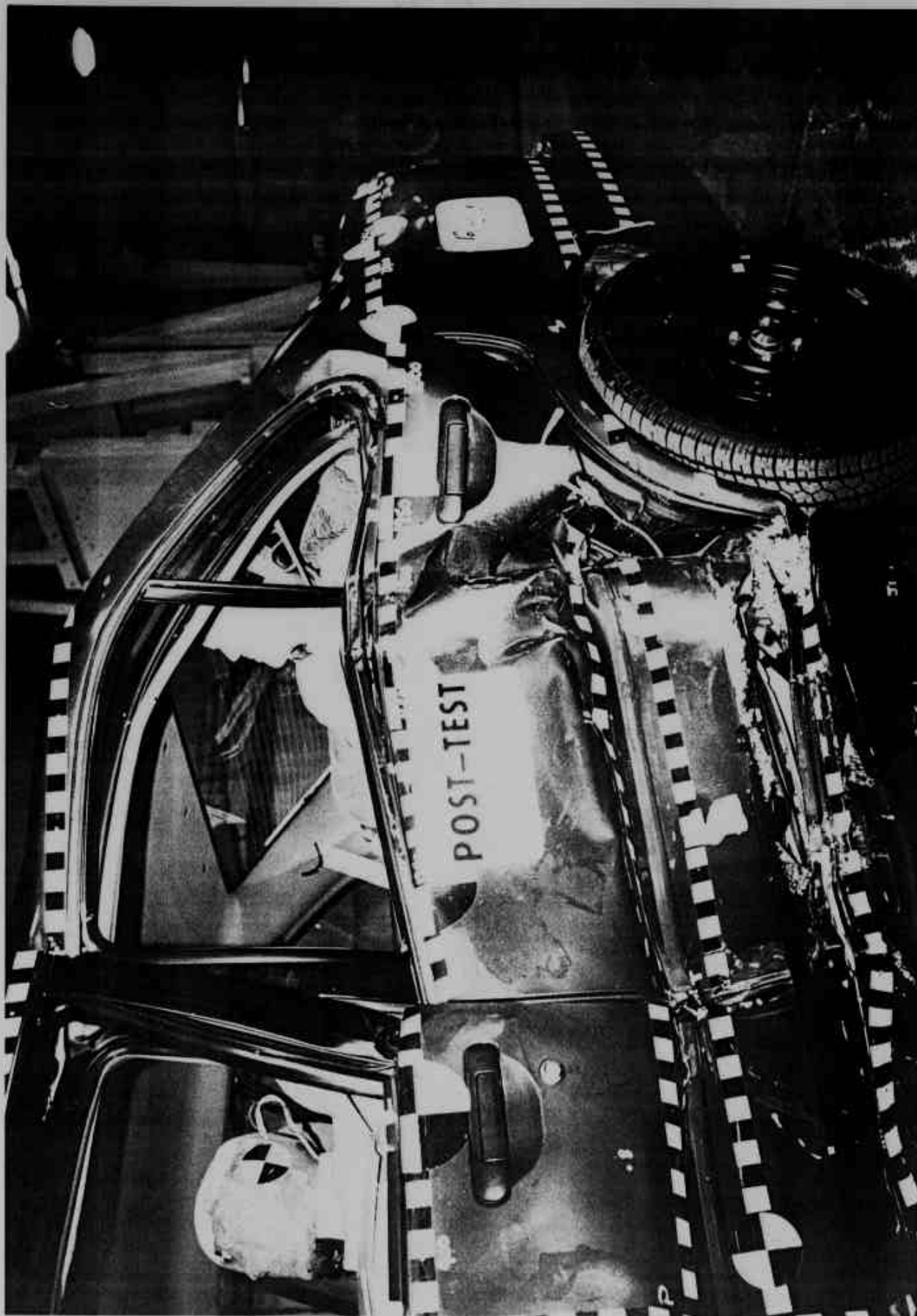


Photo No. A-31 - Post-Test Passenger Dummy Right Side View



A-32

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



A-33

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

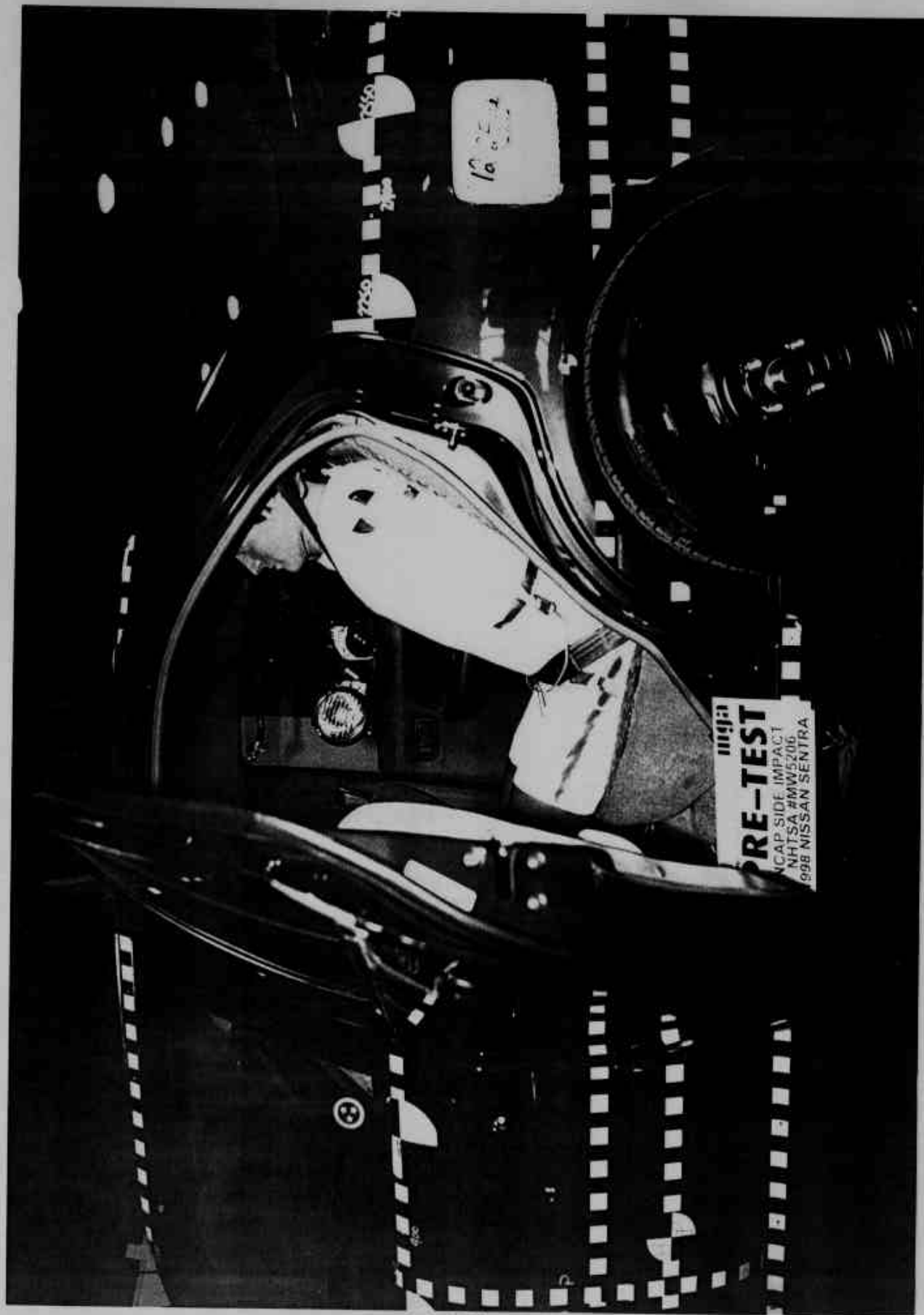


Photo No. A-34 - Pre-Test Passenger Dummy Left Side View (Door Open)



A-36

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



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

A-37



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

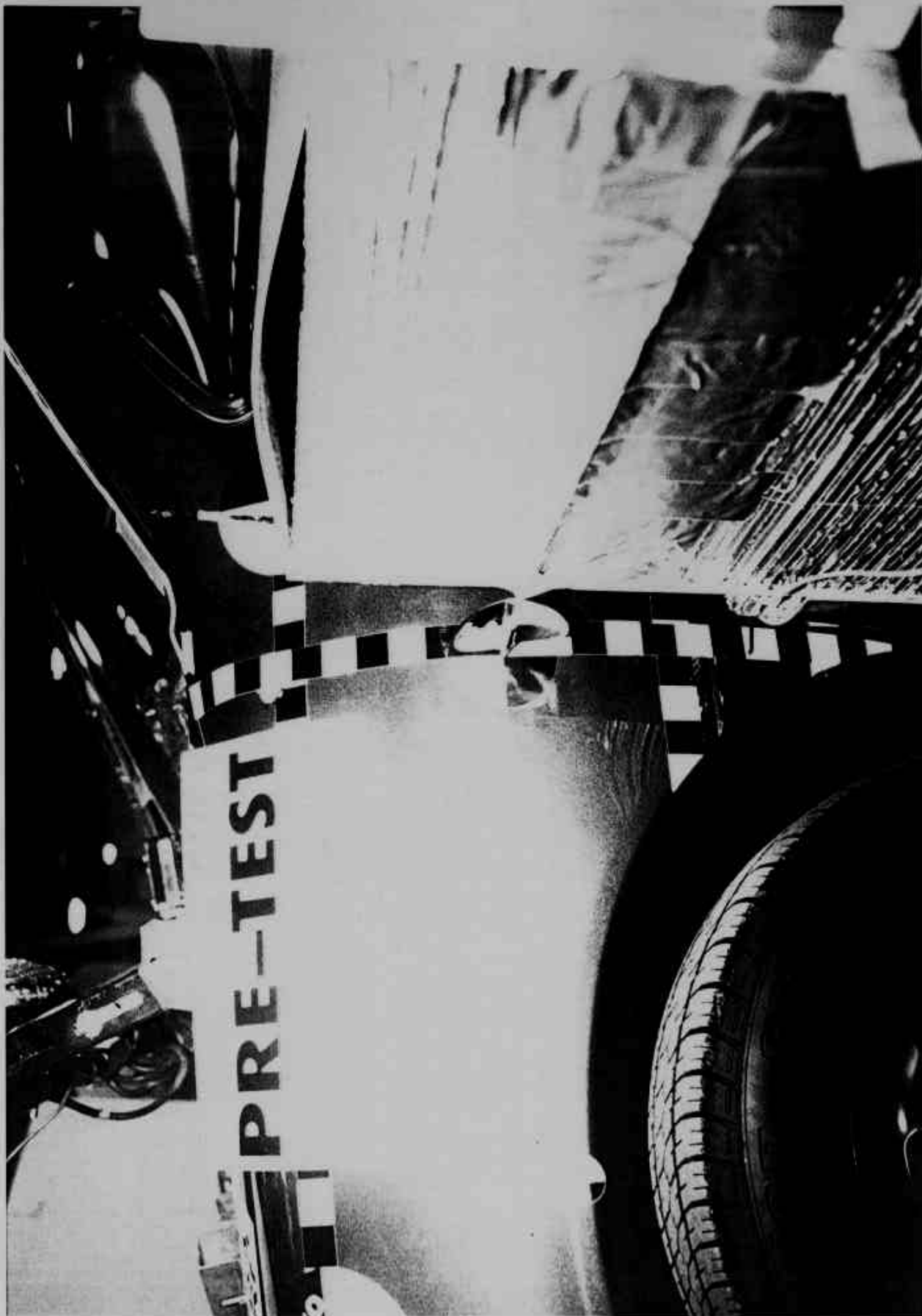
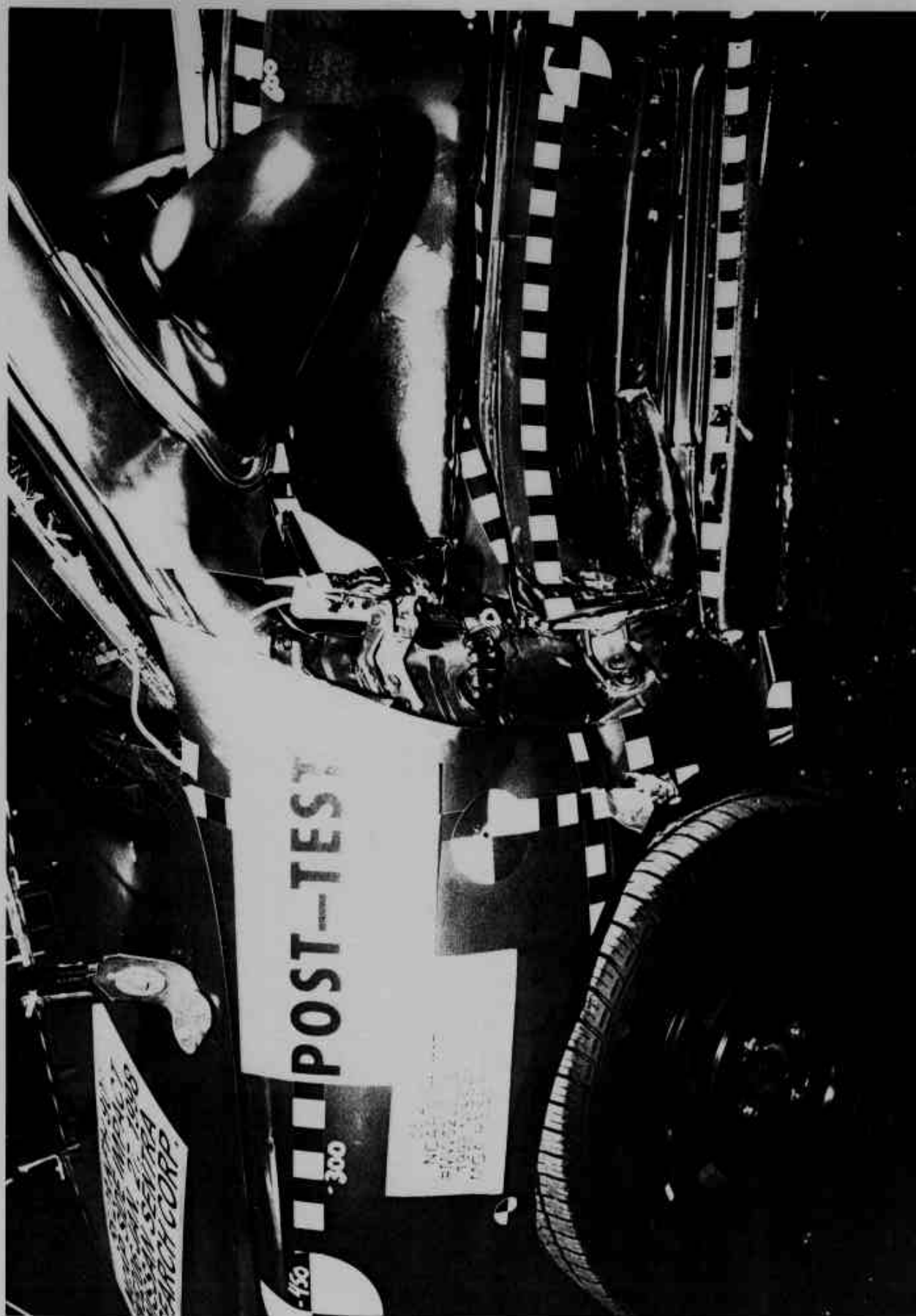


Photo No. A-39 - Pre-Test Left Front Impact Point on Vehicle



A-40

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

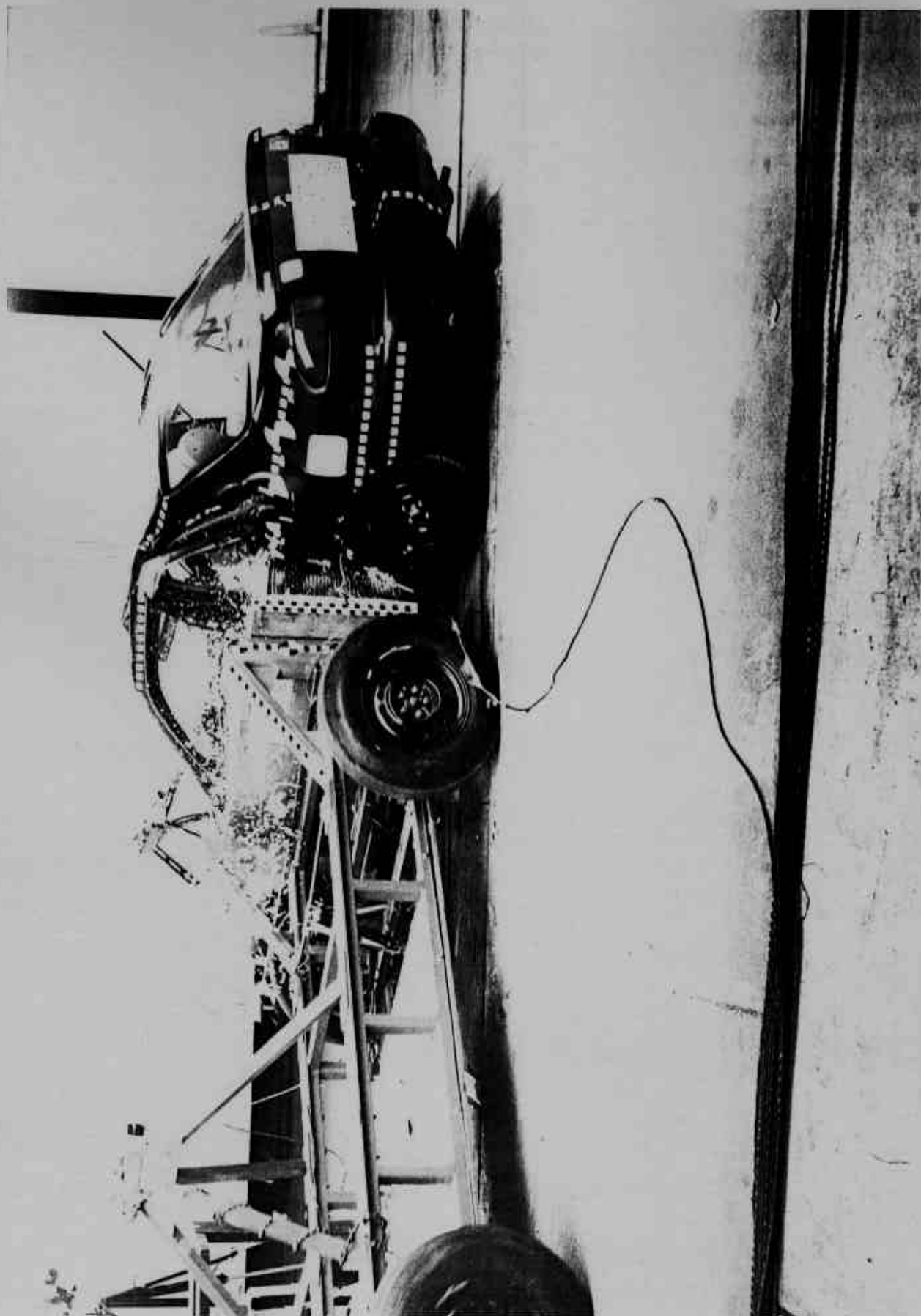


Photo No. A-41 - Impact

A-41

MANUFACTURED BY
NISSAN MOTOR CO., LTD. 183 V

DATE	09/97
GWR	3413 LB
GAWR FR	1672 LB
GAWR RR	1567 LB

THIS VEHICLE CONFORMS TO:
ALL APPLICABLE FEDERAL
AND STATE VEHICLE SAFETY,
BUMPER AND THEFT
PREVENTION STANDARDS IN
EFFECT ON THE DATE OF
MANUFACTURE SHOWN ABOVE.
SEE OWNER'S MANUAL FOR
ADDITIONAL INFORMATION.

VIN: 1N4JB41D8HC713314

MODEL: 84V18A-EUA

EXPIRATION DATE: 88000

COLOR	TRIM	TRANS
DS2	C	RL4F03A
AXLE		ENGINE
FL38		6A16DE 1597CC

Photo No. A-42 - Vehicle Certification Label

VEHICLE CAPACITY WEIGHT	369 kg	SEATING CAPACITY	FRONT 2 AVANT	TOTAL TOTAL	SPARE TIRE ROUE DE SECOURS	kPa (psi)
POIDS UTILE DU VEHICULE	814 lbs	NOMBRE DE PLACES	REAR 3 ARRIERE	5	T115/70D14	420 (60)
RECOMMENDED COLD TIRE INFLATION PRESSURE PRESSION DE GONFLAGE RECOMMANDEE DES PNEUS FROIDS.						
TIRE SIZE DIMENSIONS	FRONT kPa AVANT (psi)	REAR kPa ARRIERE (psi)				
P175/65R14 81S	230 (33)	200 (29)				

DO NOT USE IN EXCESS OF
50 MPH, 80 km/h
SEE OWNER'S MANUAL
ADDITIONAL INFORMATION
UTILISATION A MAX 50 MPH, 80
POUR LES DETAILS
AU MANUEL D'UTILISATION

Photo No. A-43 - Tire Placard

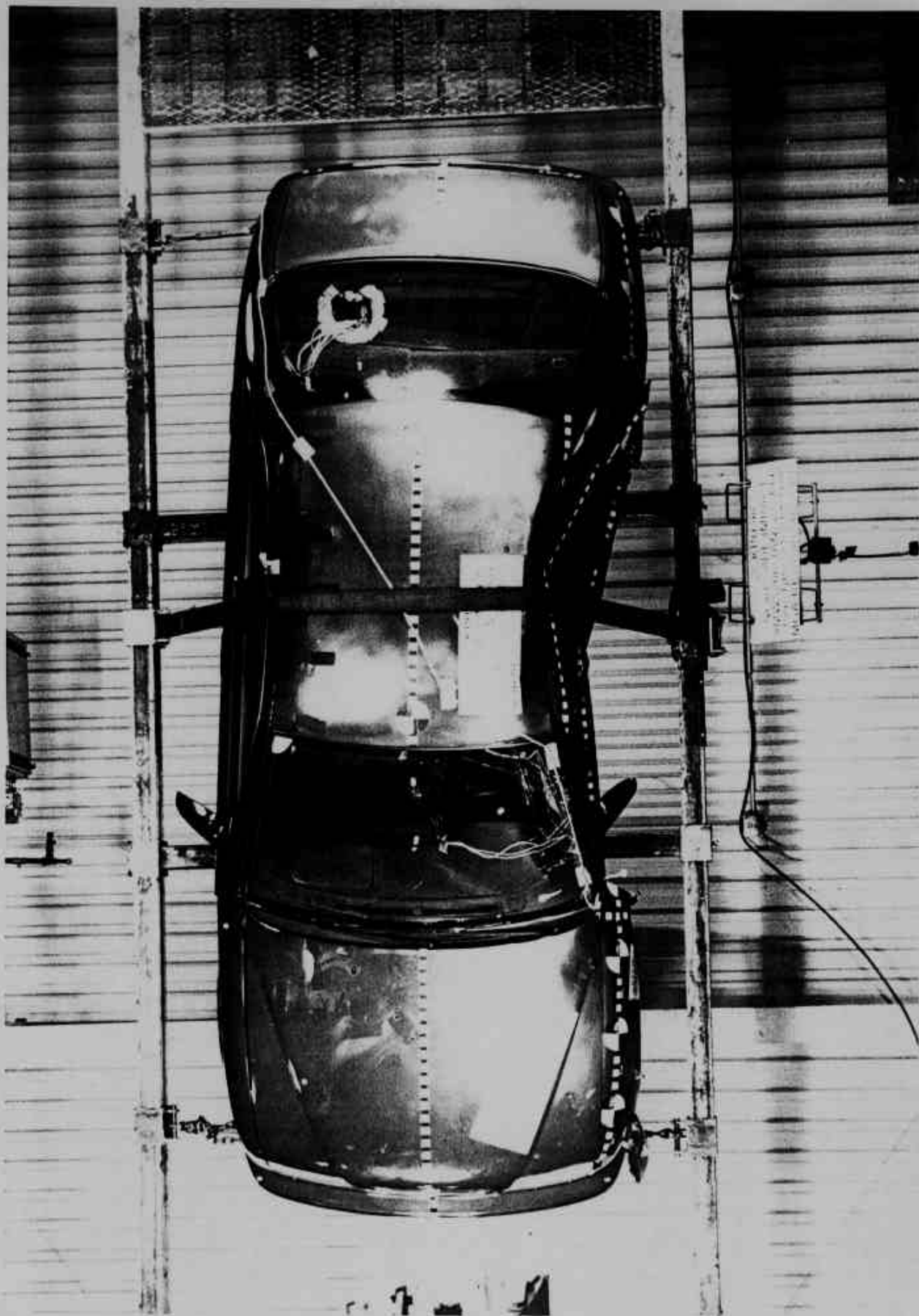
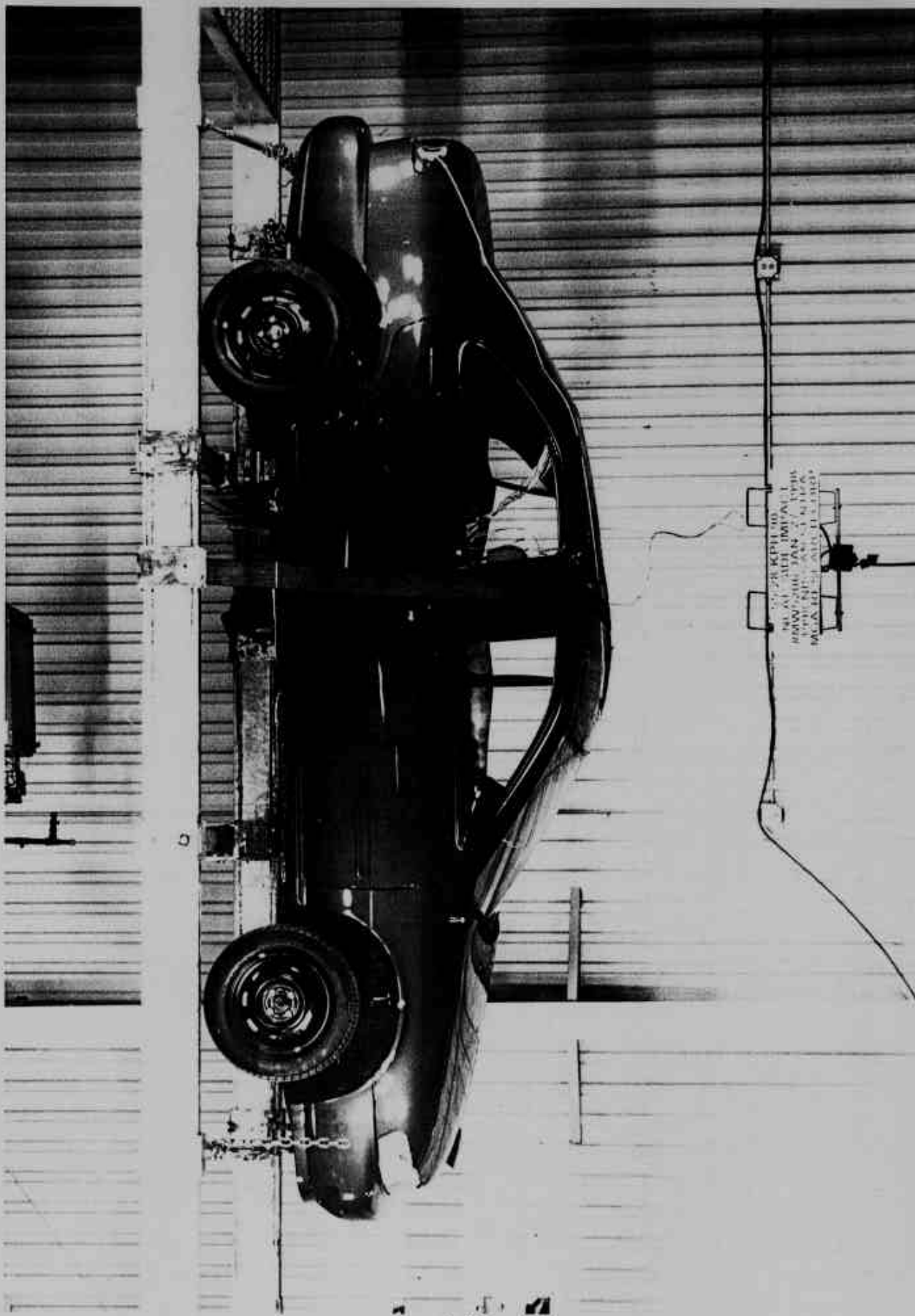


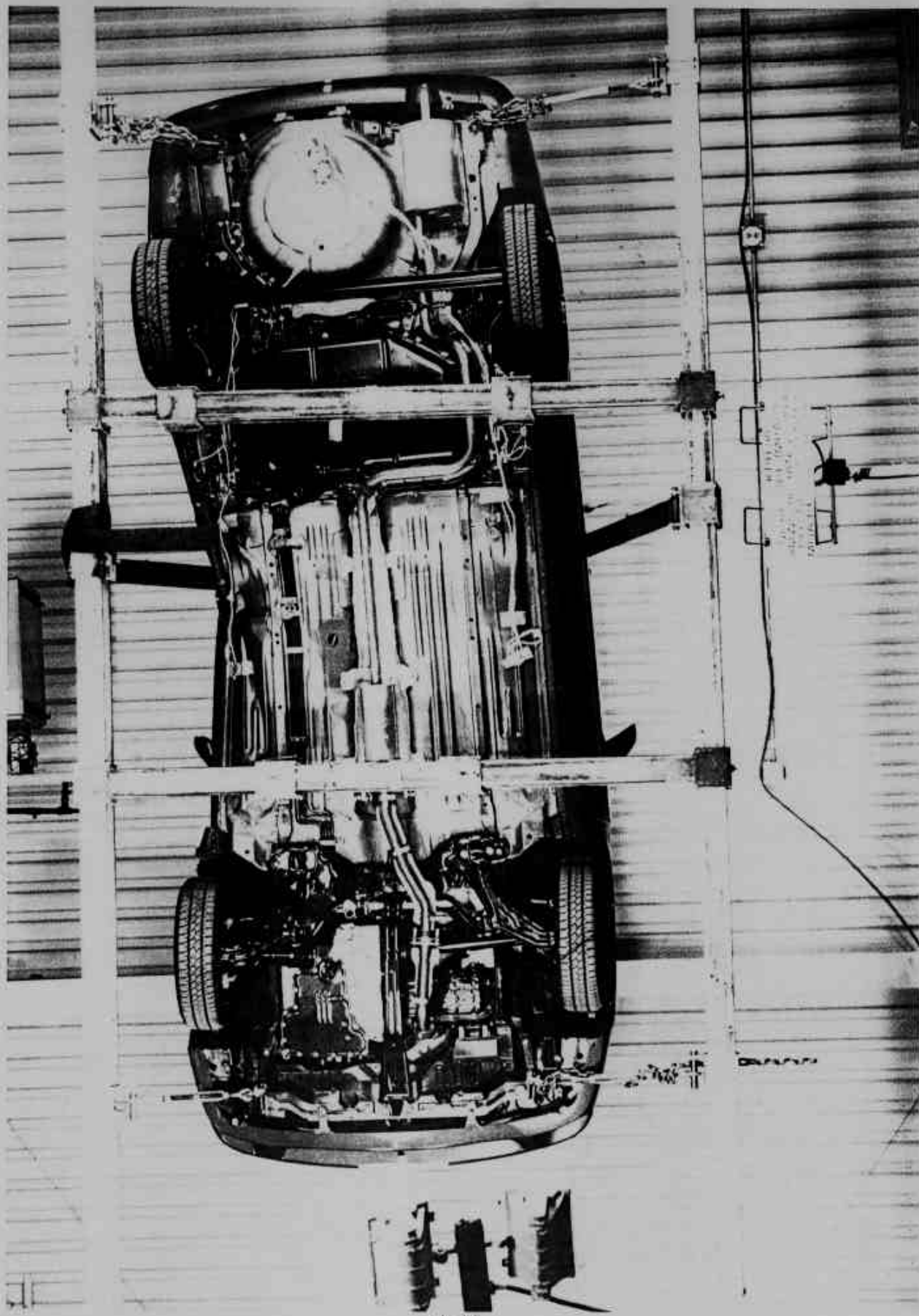
Photo No. A-44 - Rollover 90°

A-44



A-45

Photo No. A-45 - Rollover 180°



A-46

Photo No. A-46 - Rollover 270°

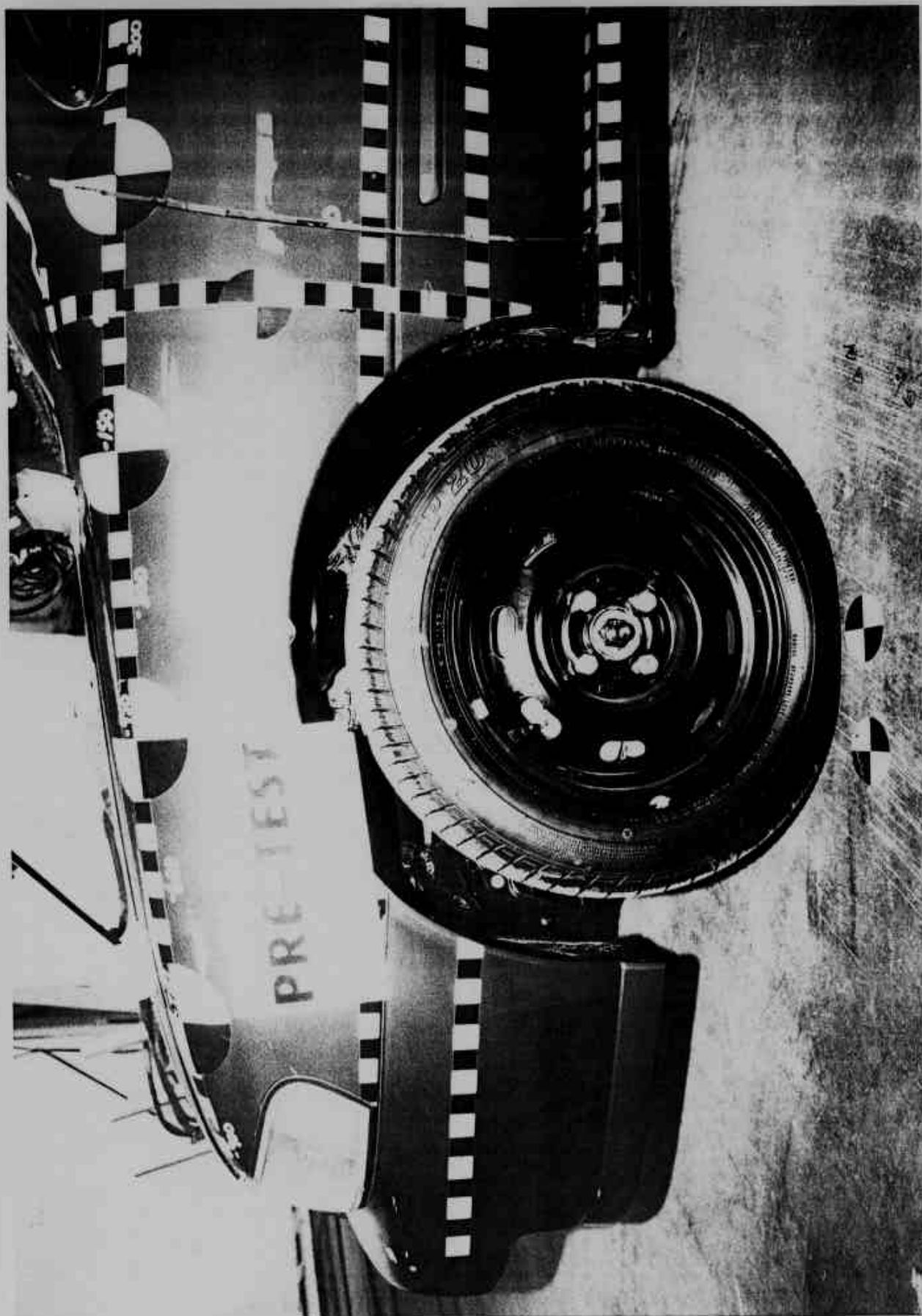


Photo No. A-48 - Left Front Attitude Point

A-48

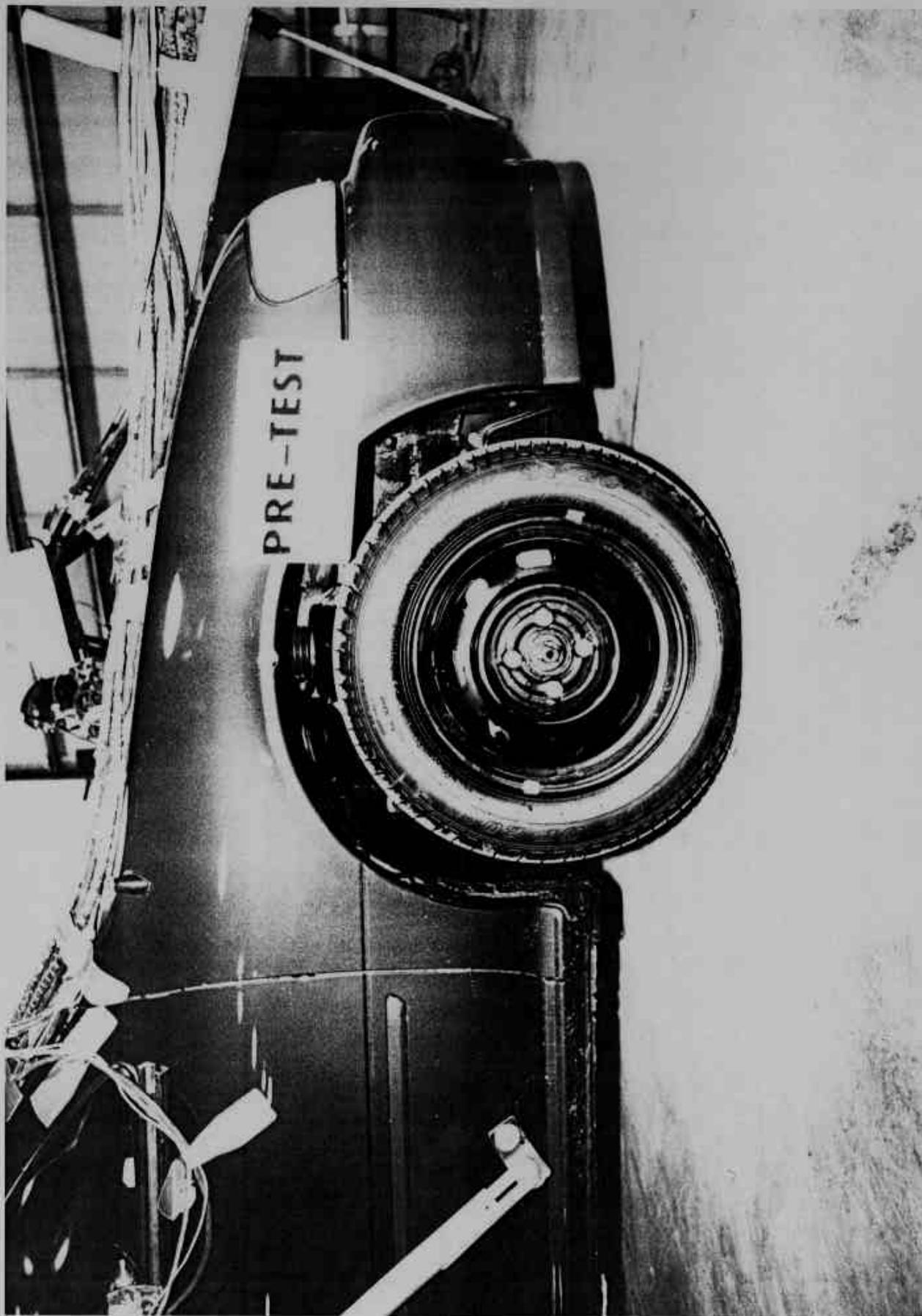
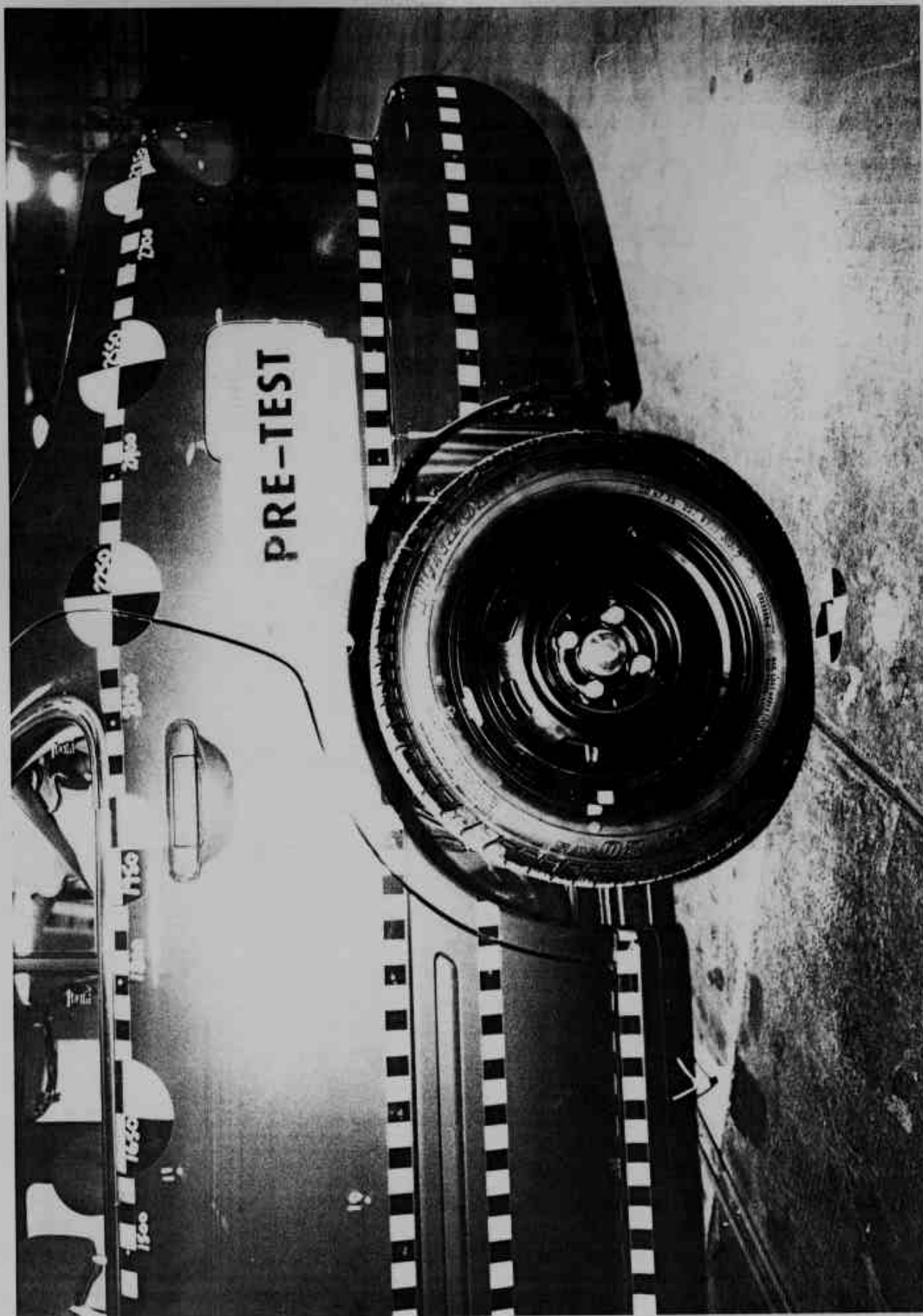


Photo No. A-49 - Right Front Attitude Point

A-49



A-50

Photo No. A-50 - Left Rear Attitude Point

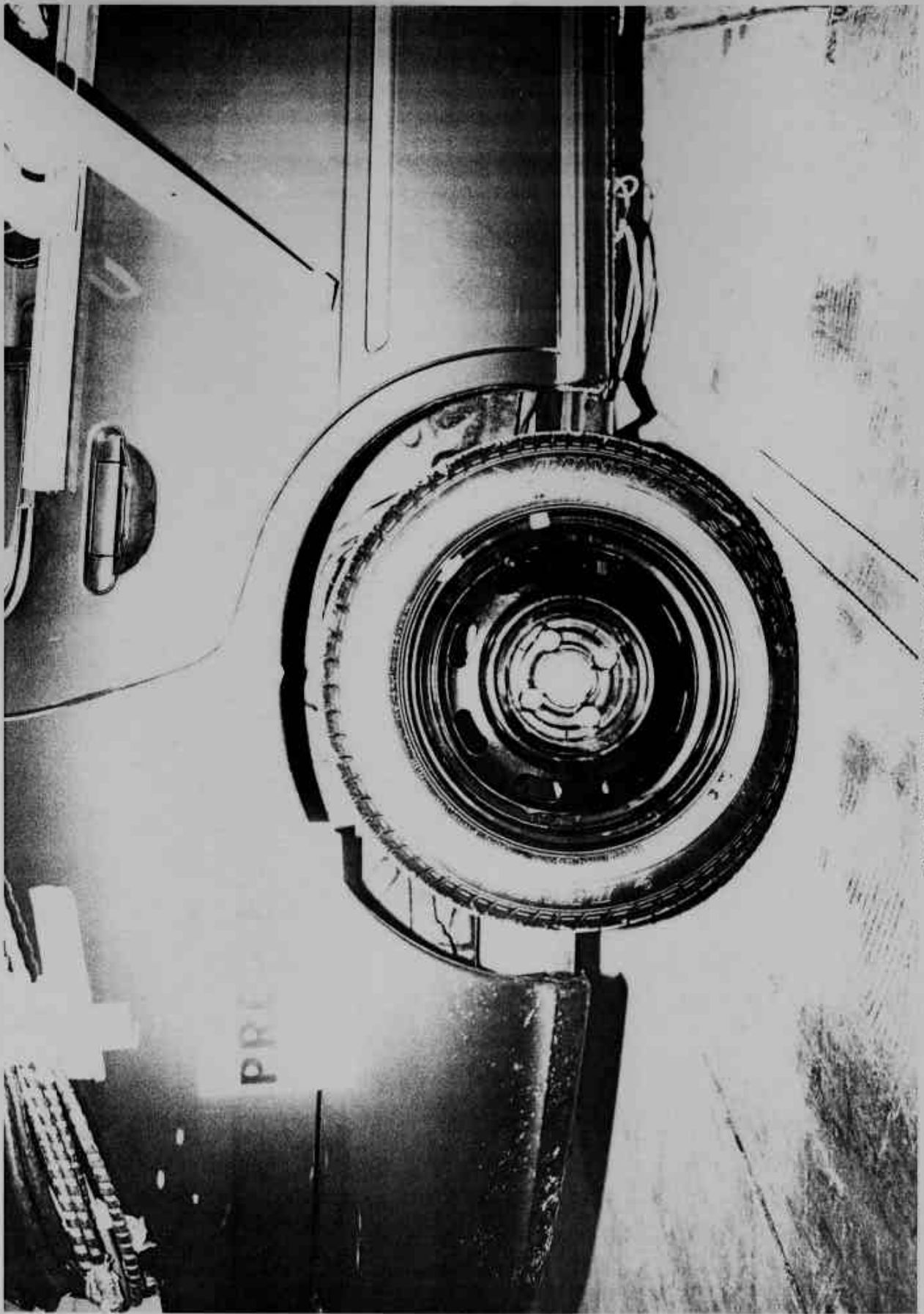


Photo No. A-51 - Right Rear Attitude Point

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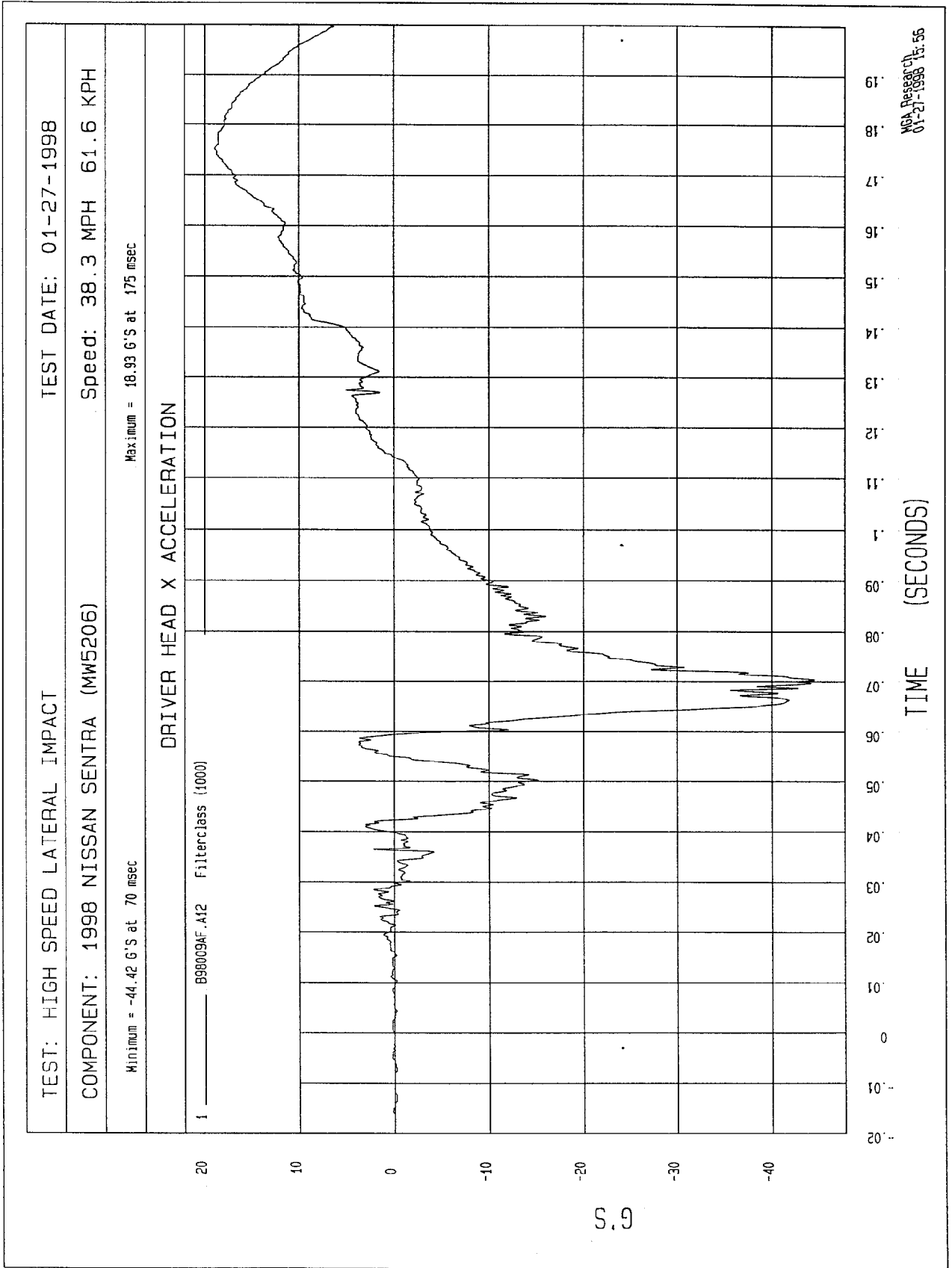
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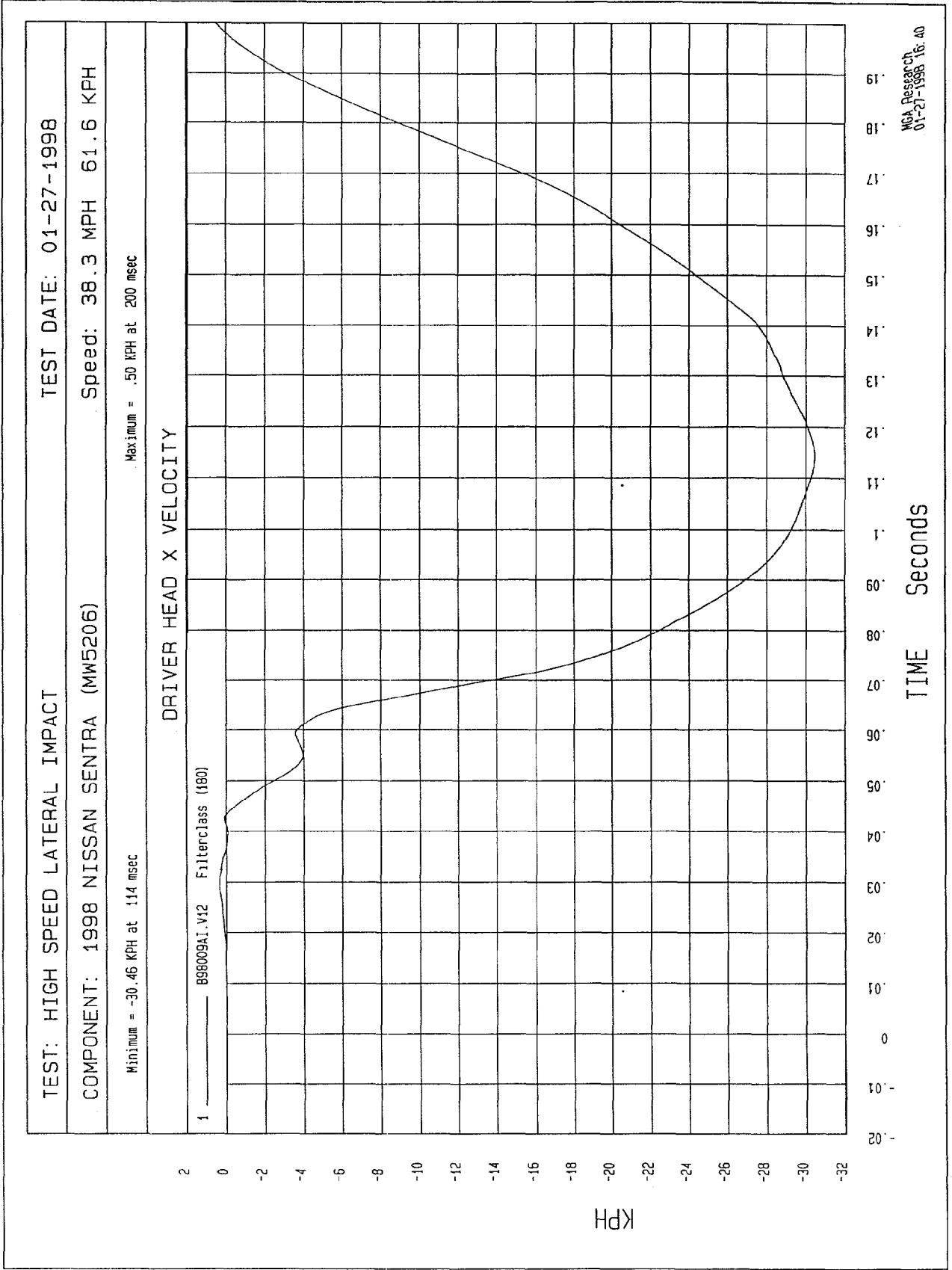
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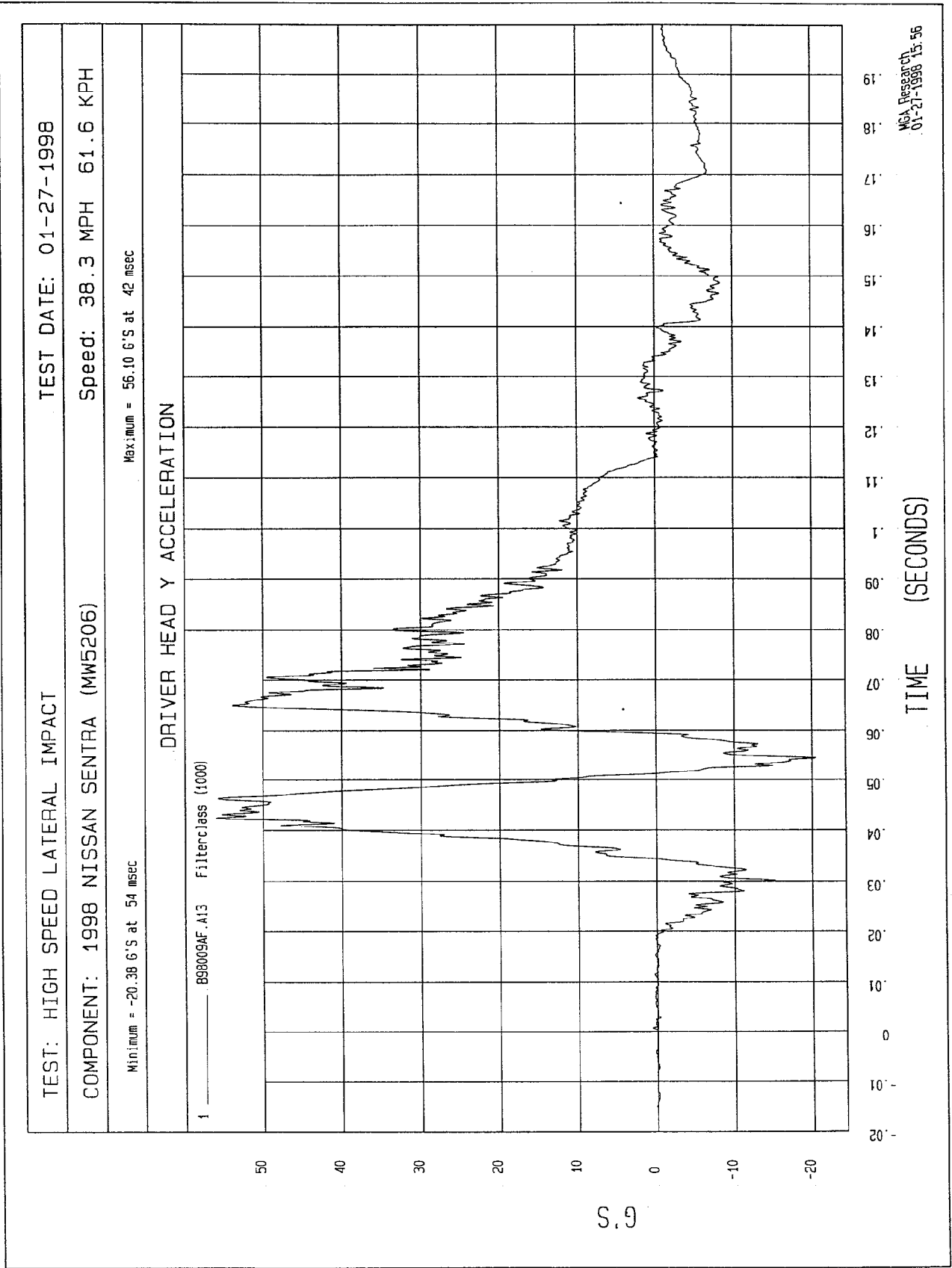
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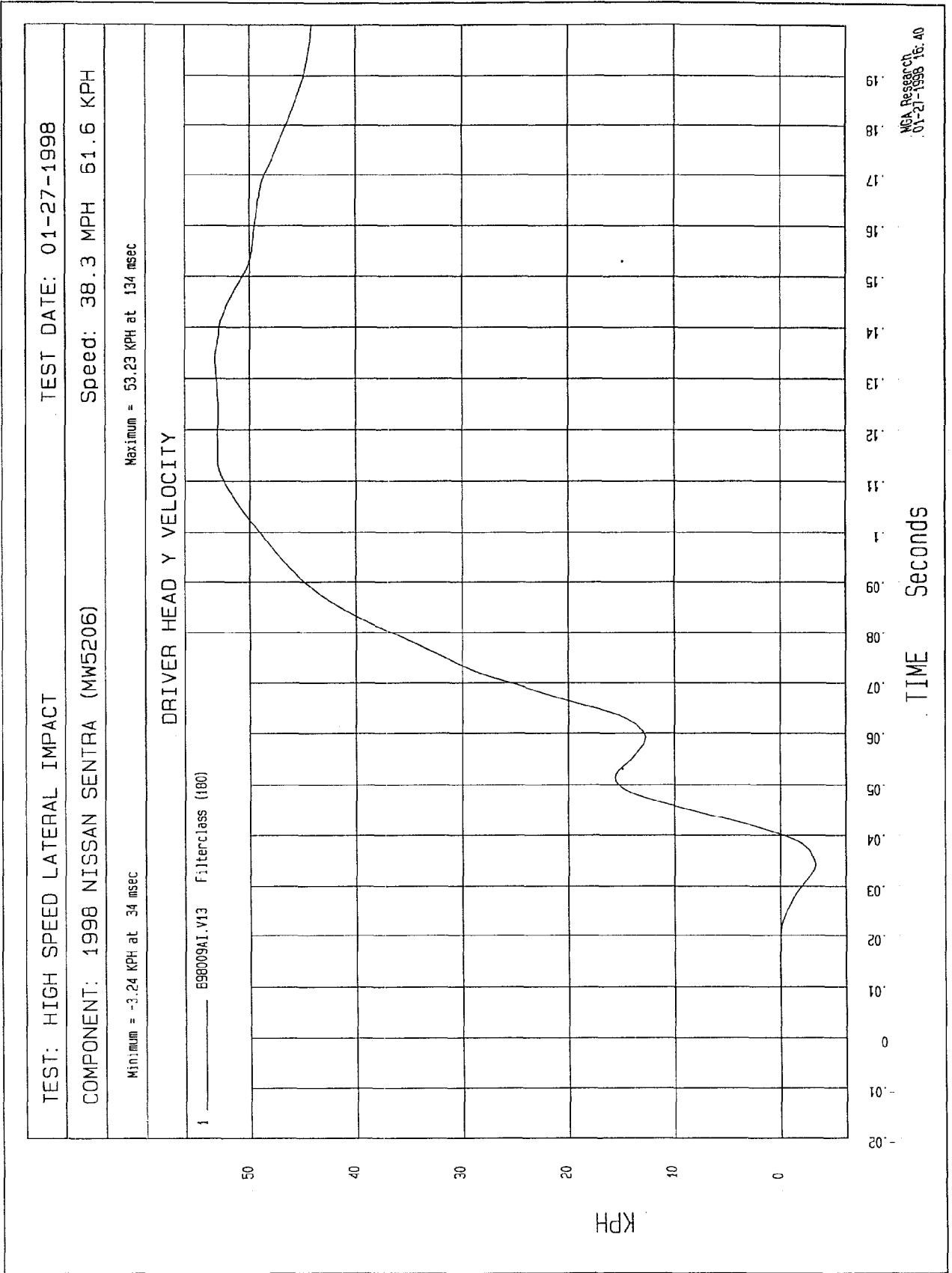
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TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

Speed: 38.3 MPH 61.6 KPH

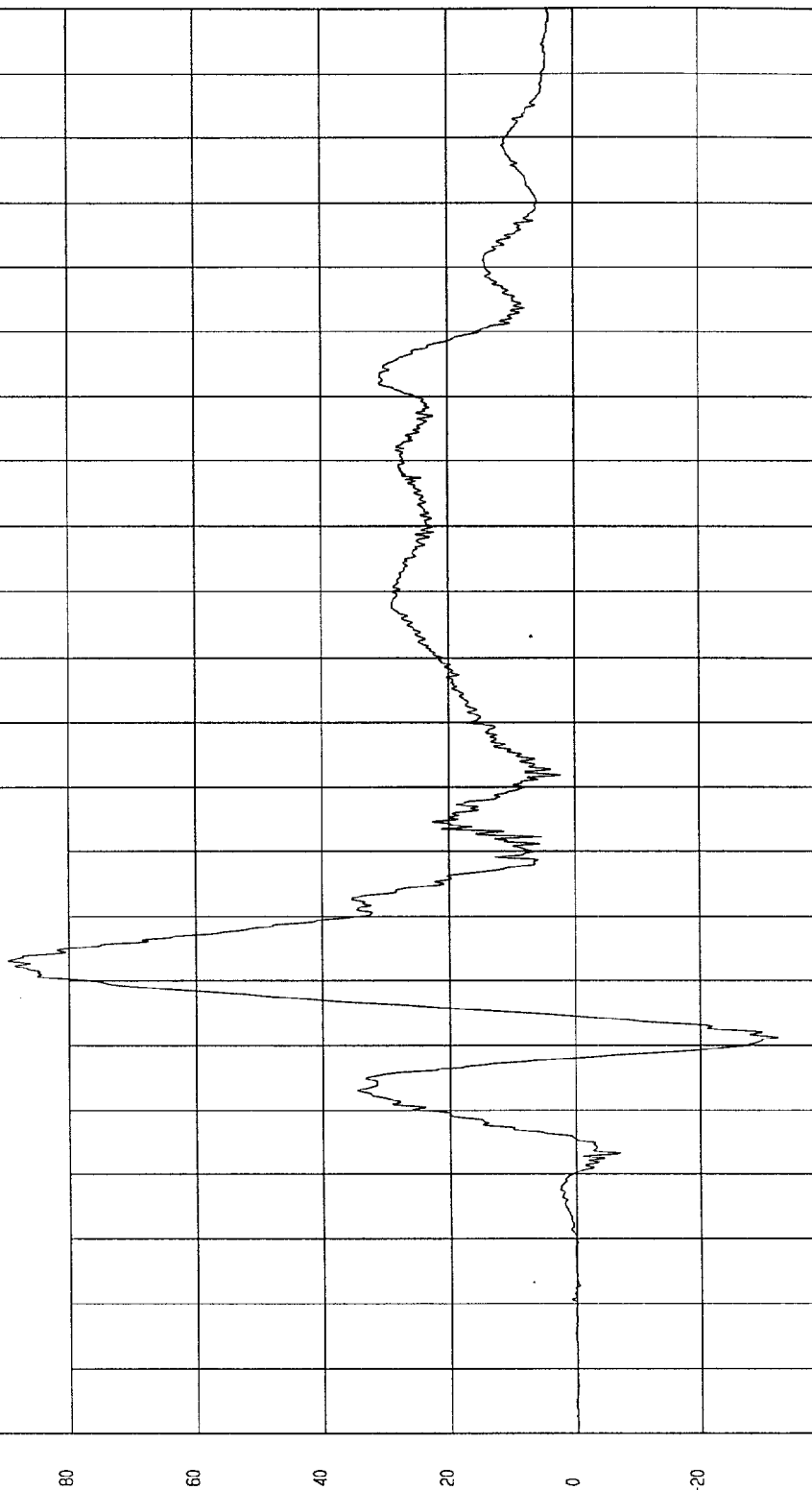
COMPONENT: 1998 NISSAN SENTRA (MW5206)

Maximum = 89.50 G'S at 53 msec

Minimum = -32.18 G'S at 41 msec

DRIVER HEAD Z ACCELERATION

1 ——— B98009AF.A14 Filterclass (1000)



MCA Research
01-27-1998 15:56

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

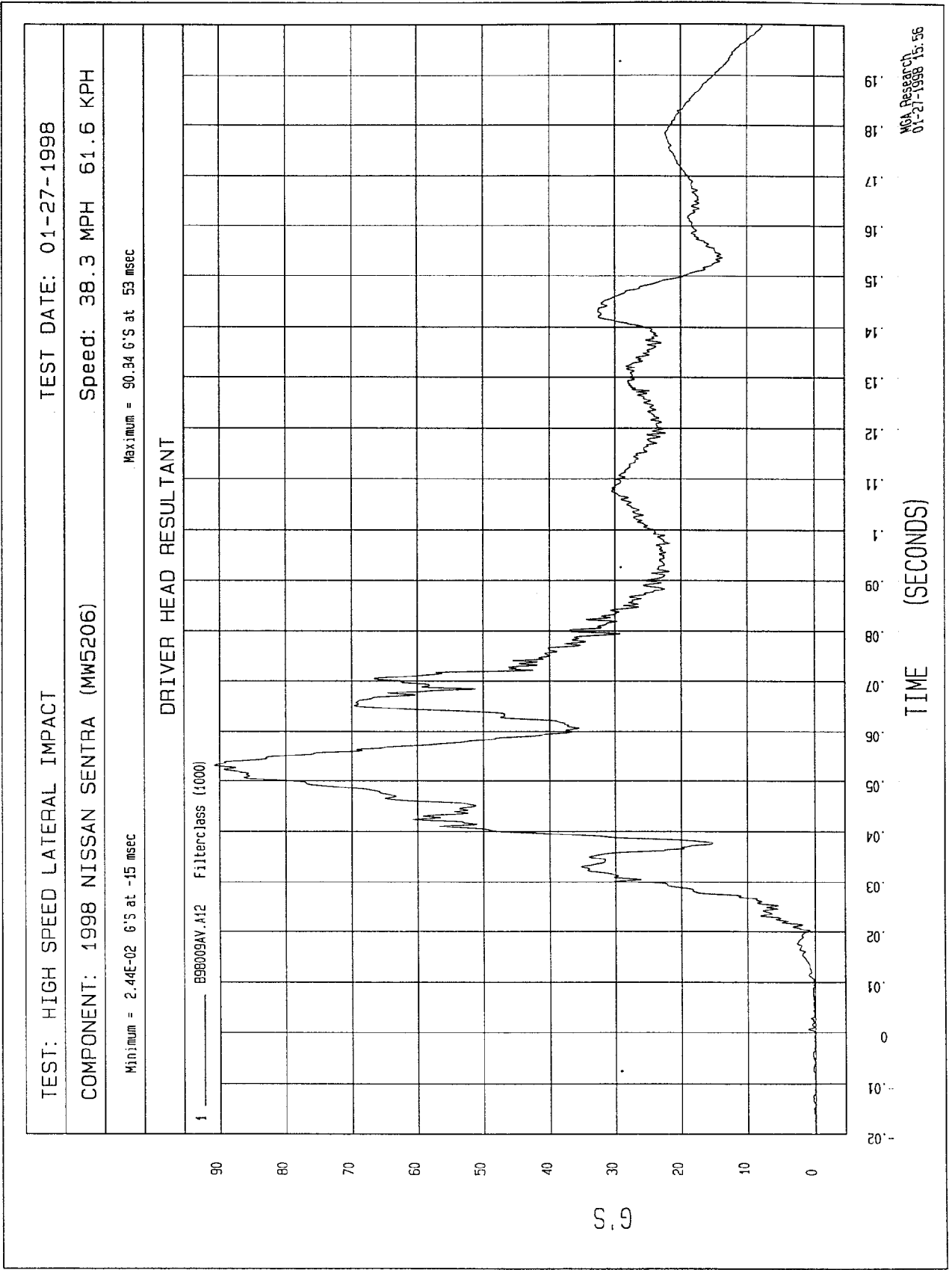
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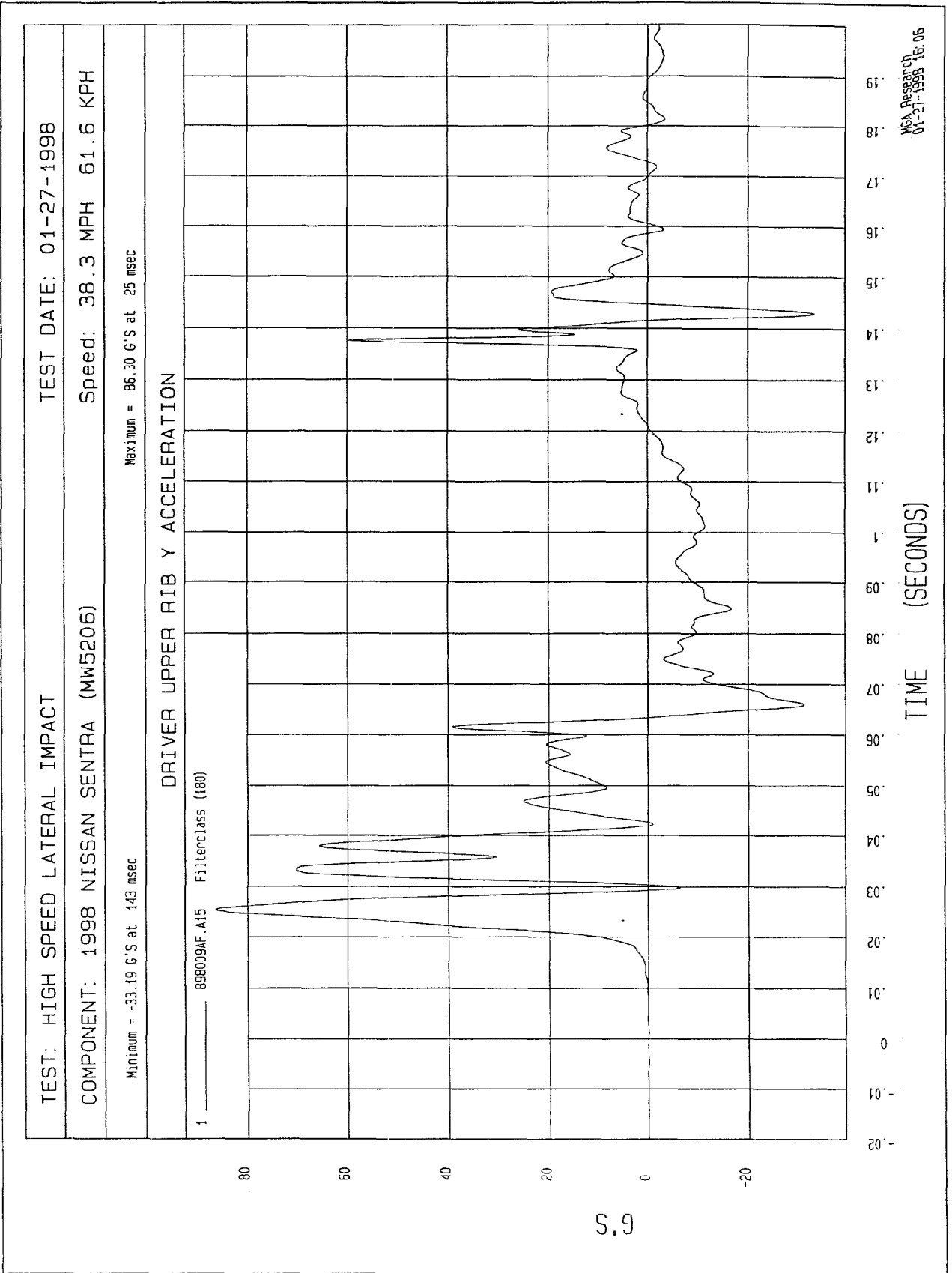


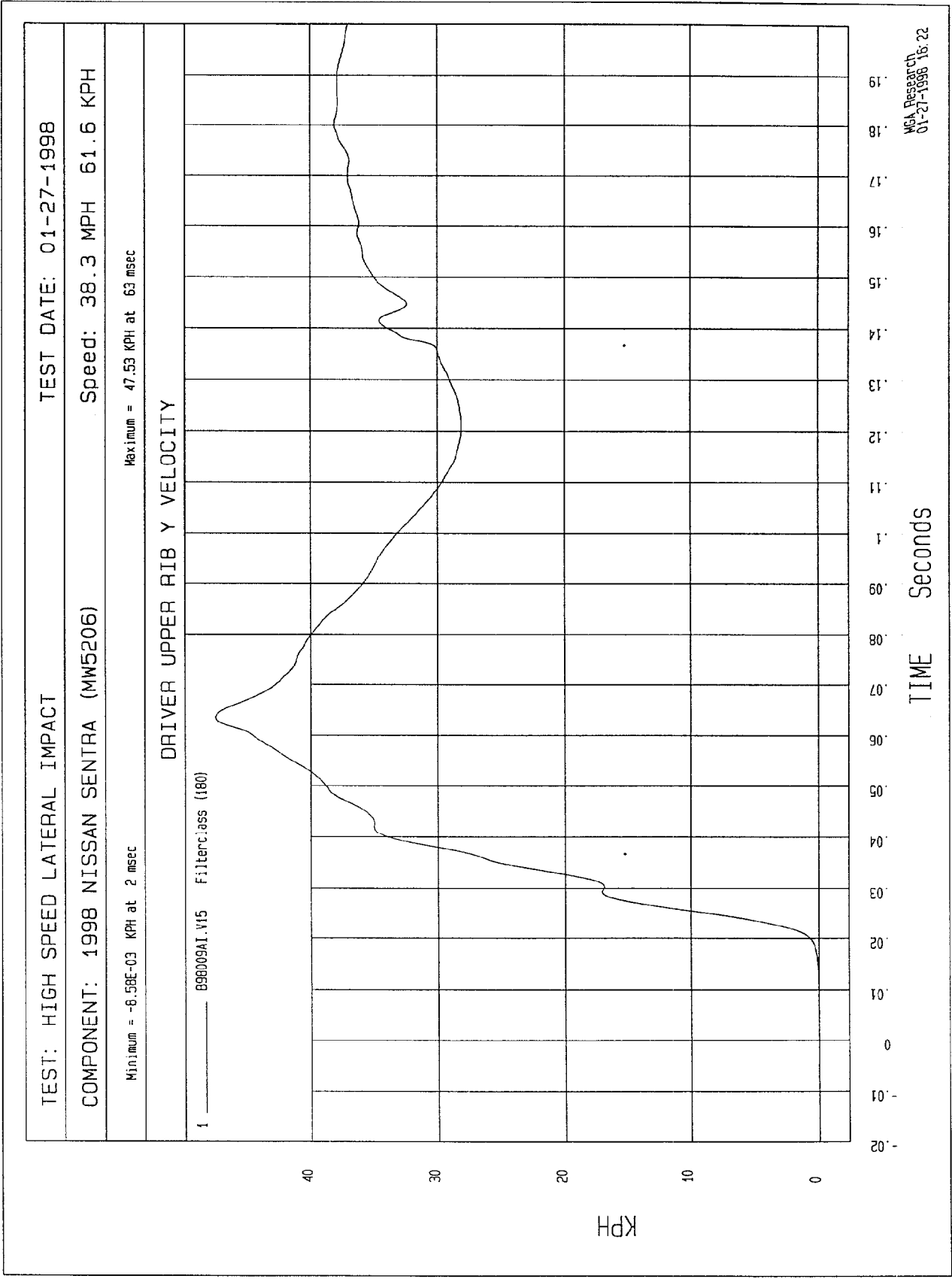
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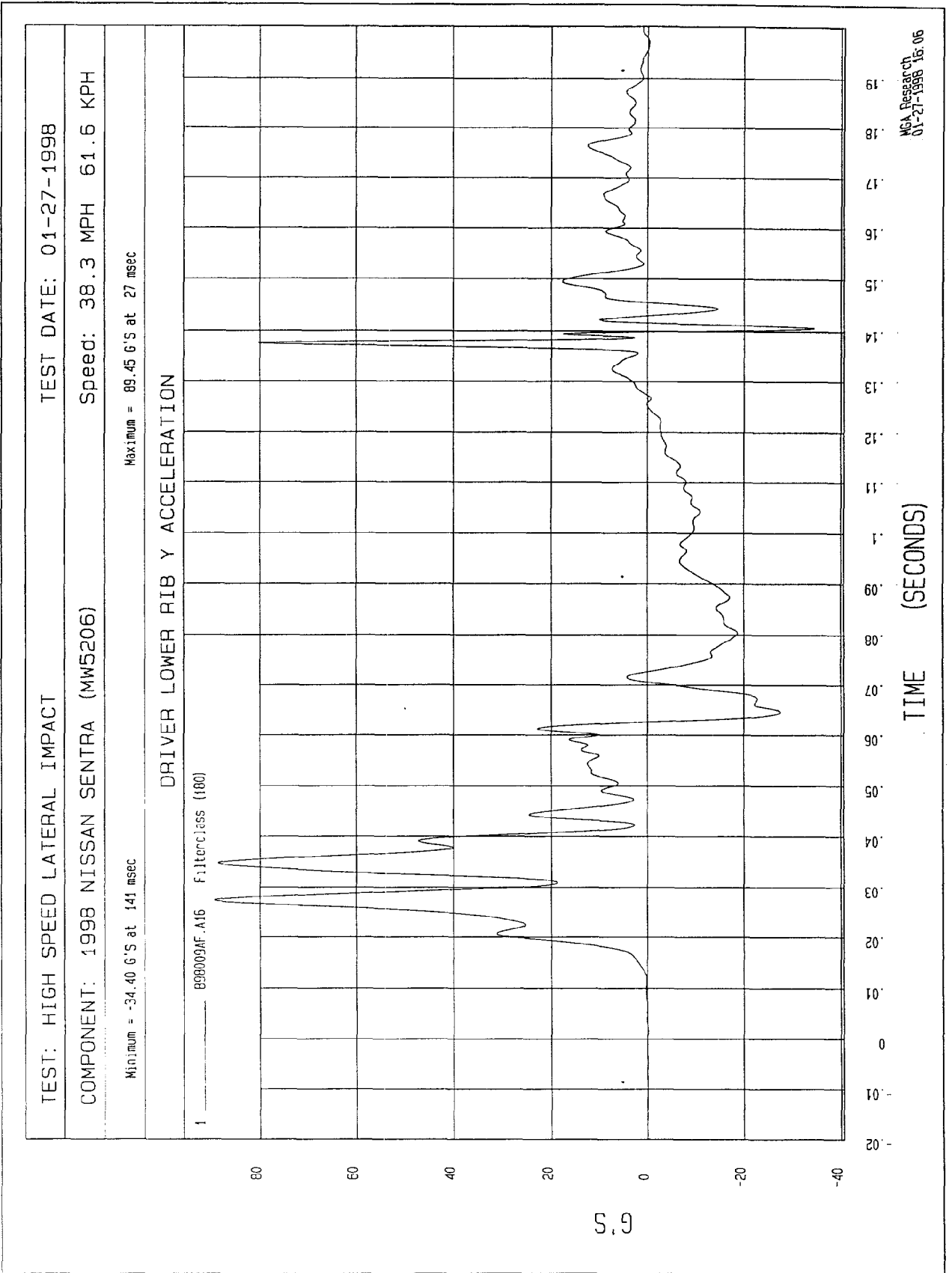
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MCA Research
01-27-1998 16:40









TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206)

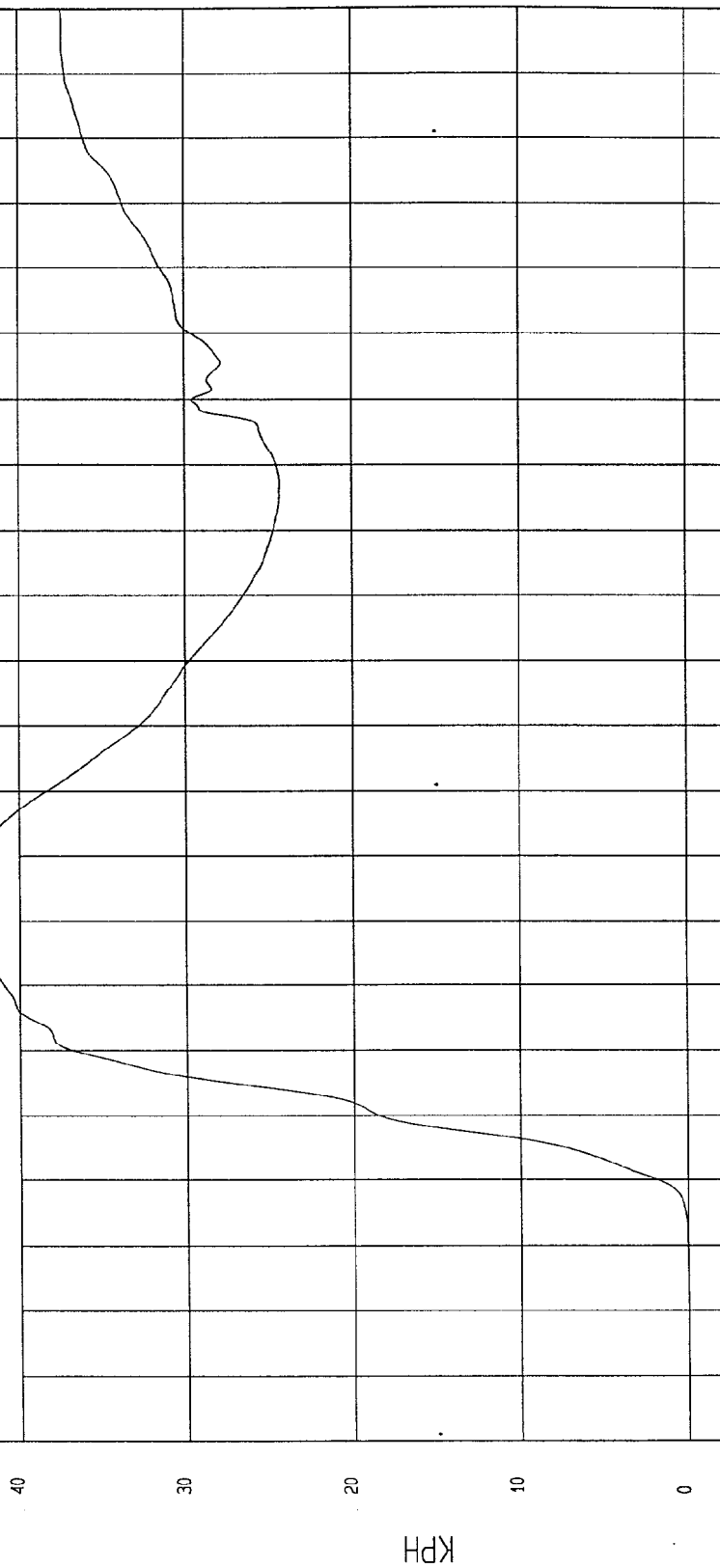
Speed: 38.3 MPH 61.6 KPH

Minimum = -6.75E-03 KPH at -14 msec

Maximum = 46.51 KPH at 63 msec

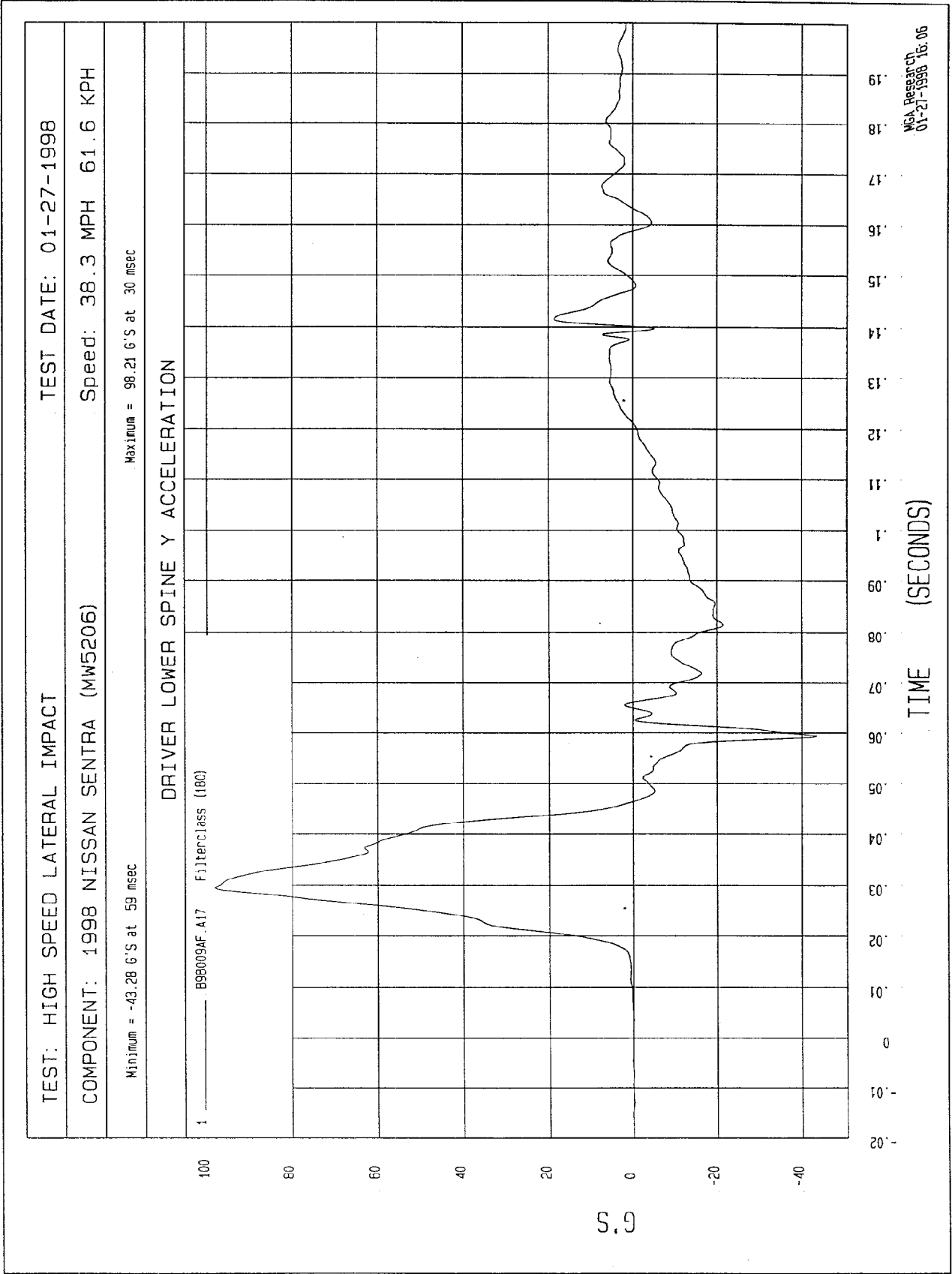
DRIVER LOWER RIB Y VELOCITY

1 ——— 898009A1.V16 Filterclass (180)



MSA Research
01-27-1998 16:22

TIME Seconds



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

Speed: 38.3 MPH 61.6 KPH

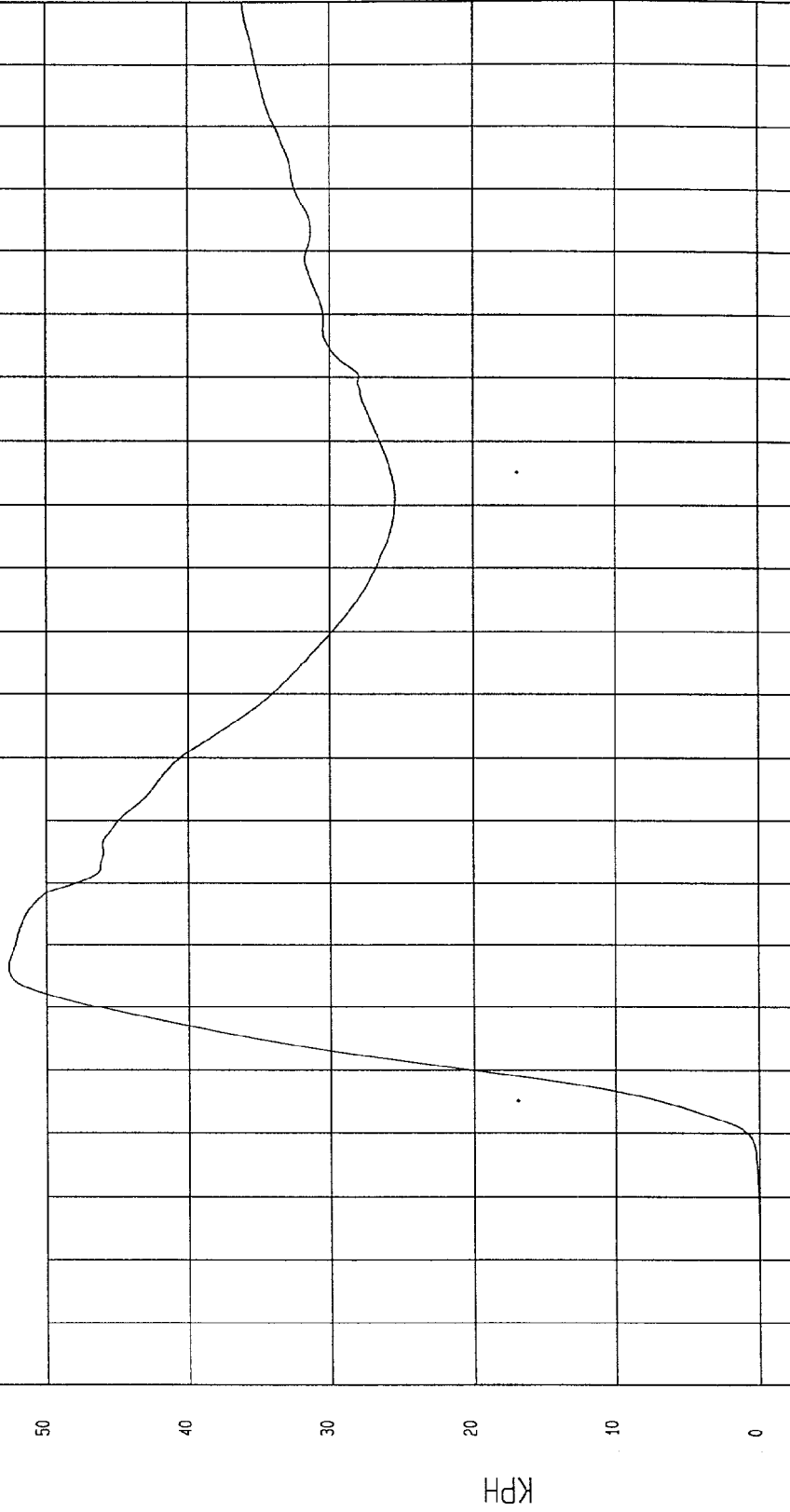
COMPONENT: 1998 NISSAN SENTRA (MW5206)

Maximum = 52.65 KPH at 46 msec

Minimum = -7.12E-03 KPH at -5 msec

DRIVER LOWER SPINE Y VELOCITY

1 ——— B96009A1.V17 Filterclass (180)



TIME Seconds

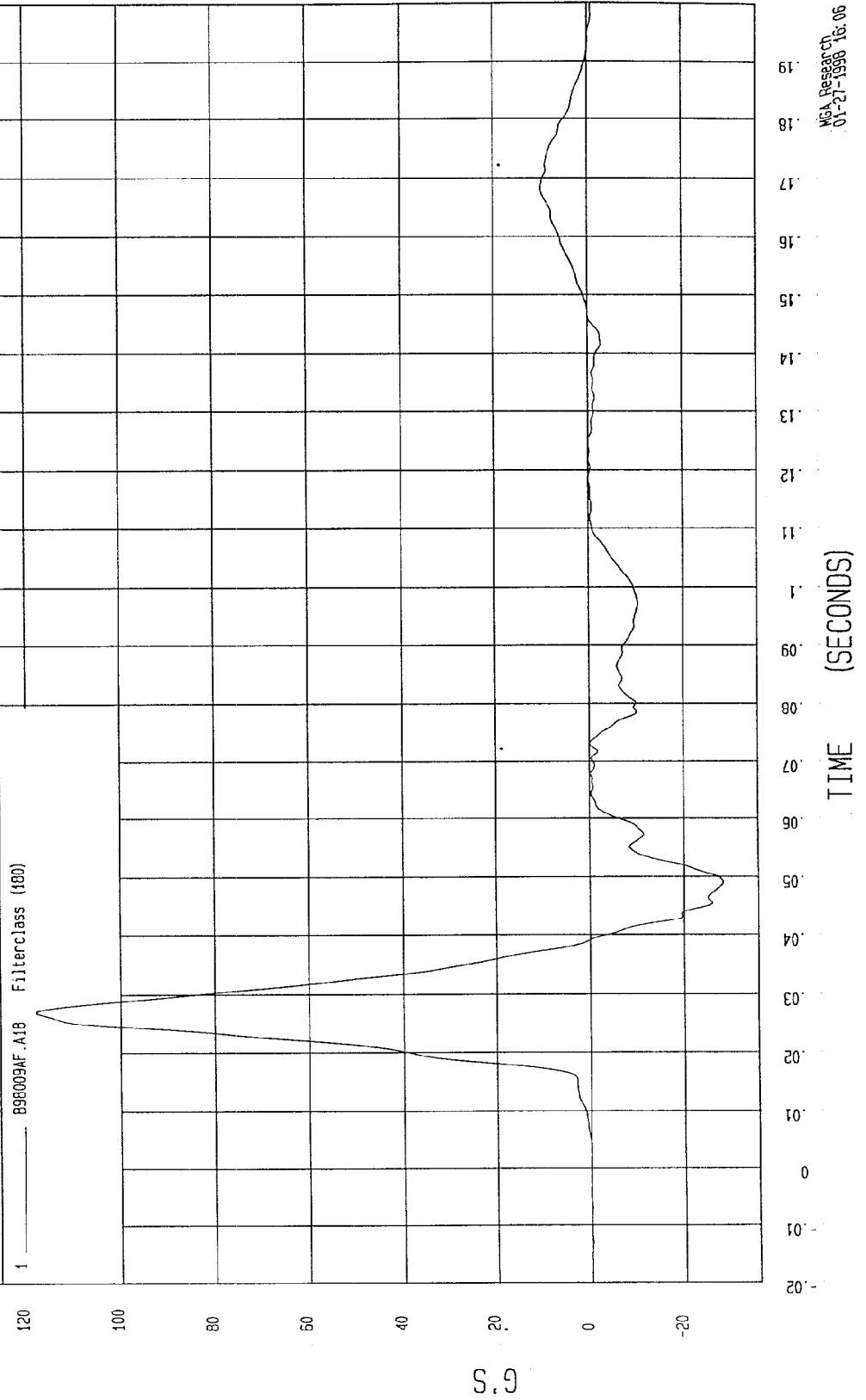
W&A Research
01-27-1998 16:22

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = -28.25 G'S at 49 msec Maximum = 118.01 G'S at 27 msec

DRIVER PELVIS Y ACCELERATION



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

Speed: 38.3 MPH 61.6 KPH

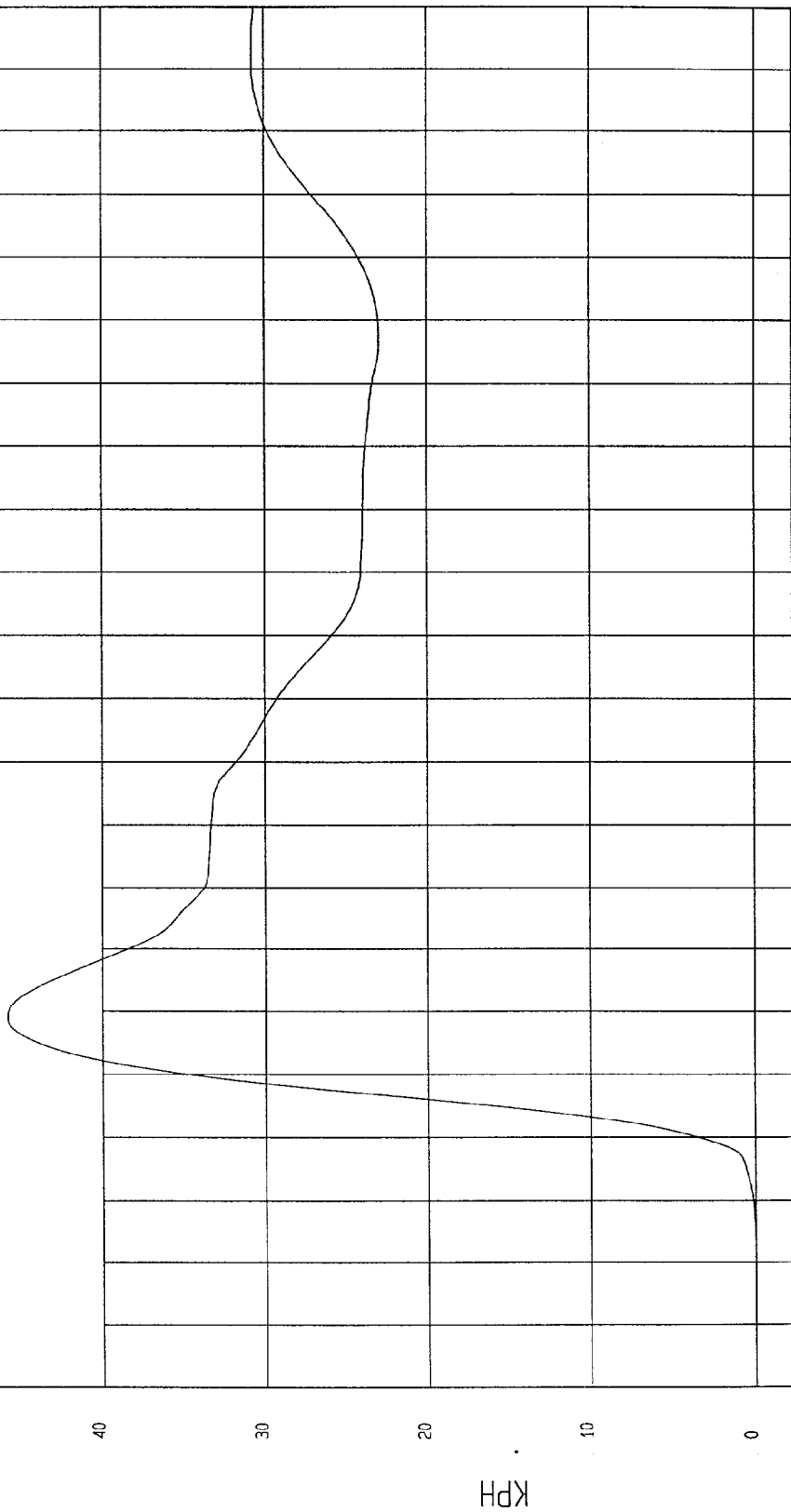
COMPONENT: 1998 NISSAN SENTRA (MW5206)

Maximum = 45.82 KPH at 39 msec

Minimum = -2.72E-03 KPH at -6 msec

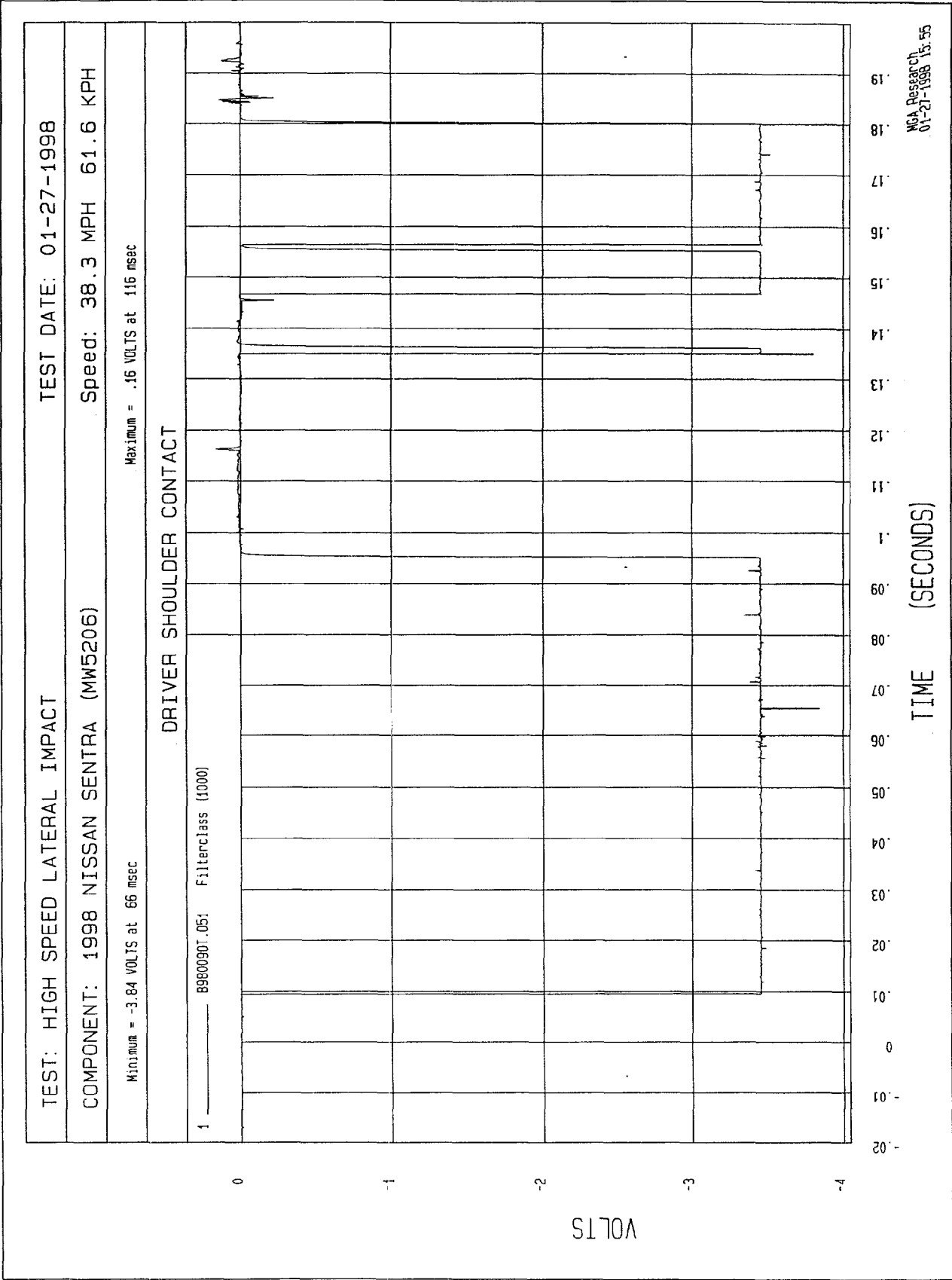
DRIVER PELVIS Y VELOCITY

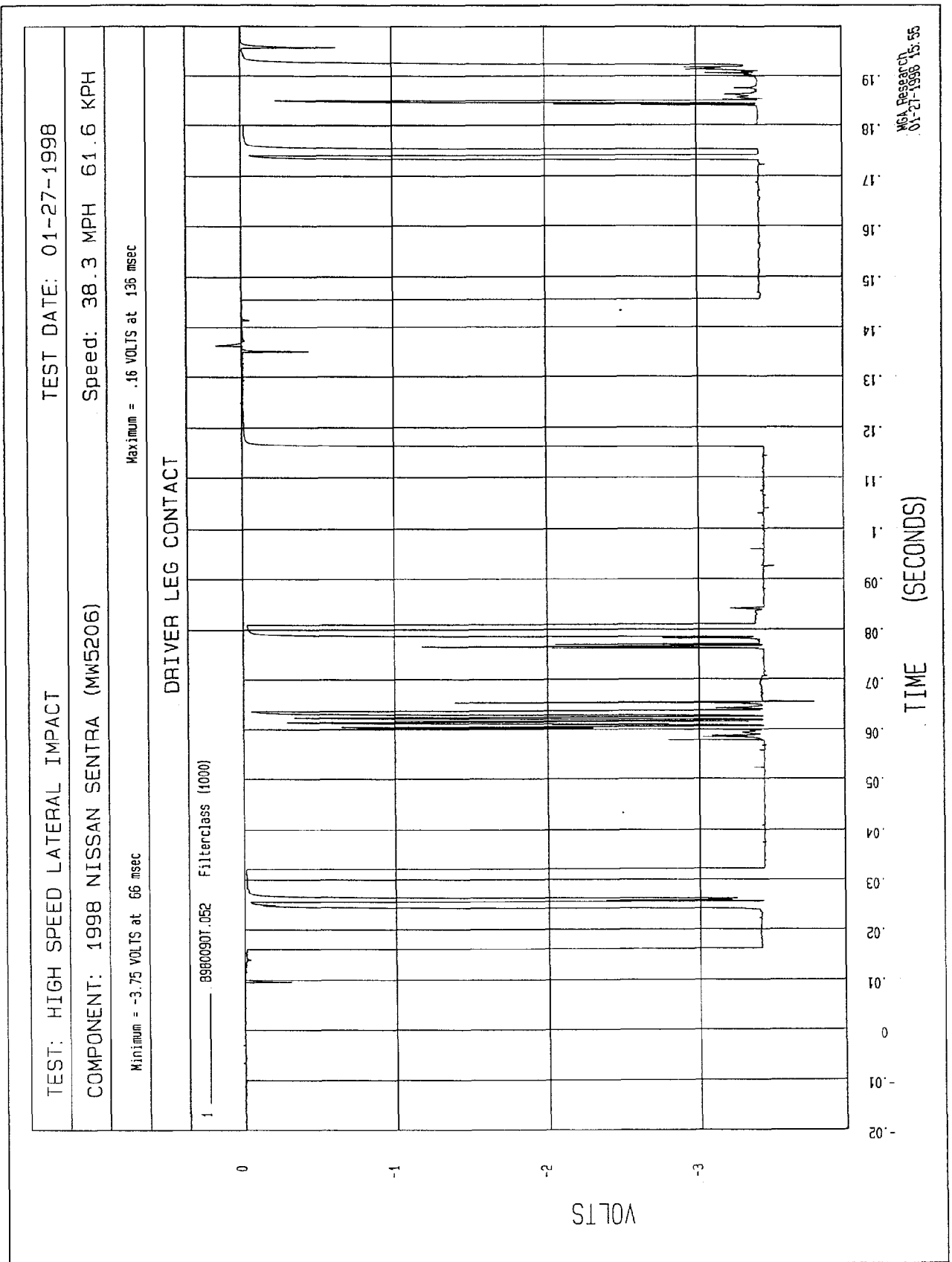
1 _____ B98009A1.V18 FilterClass (180)

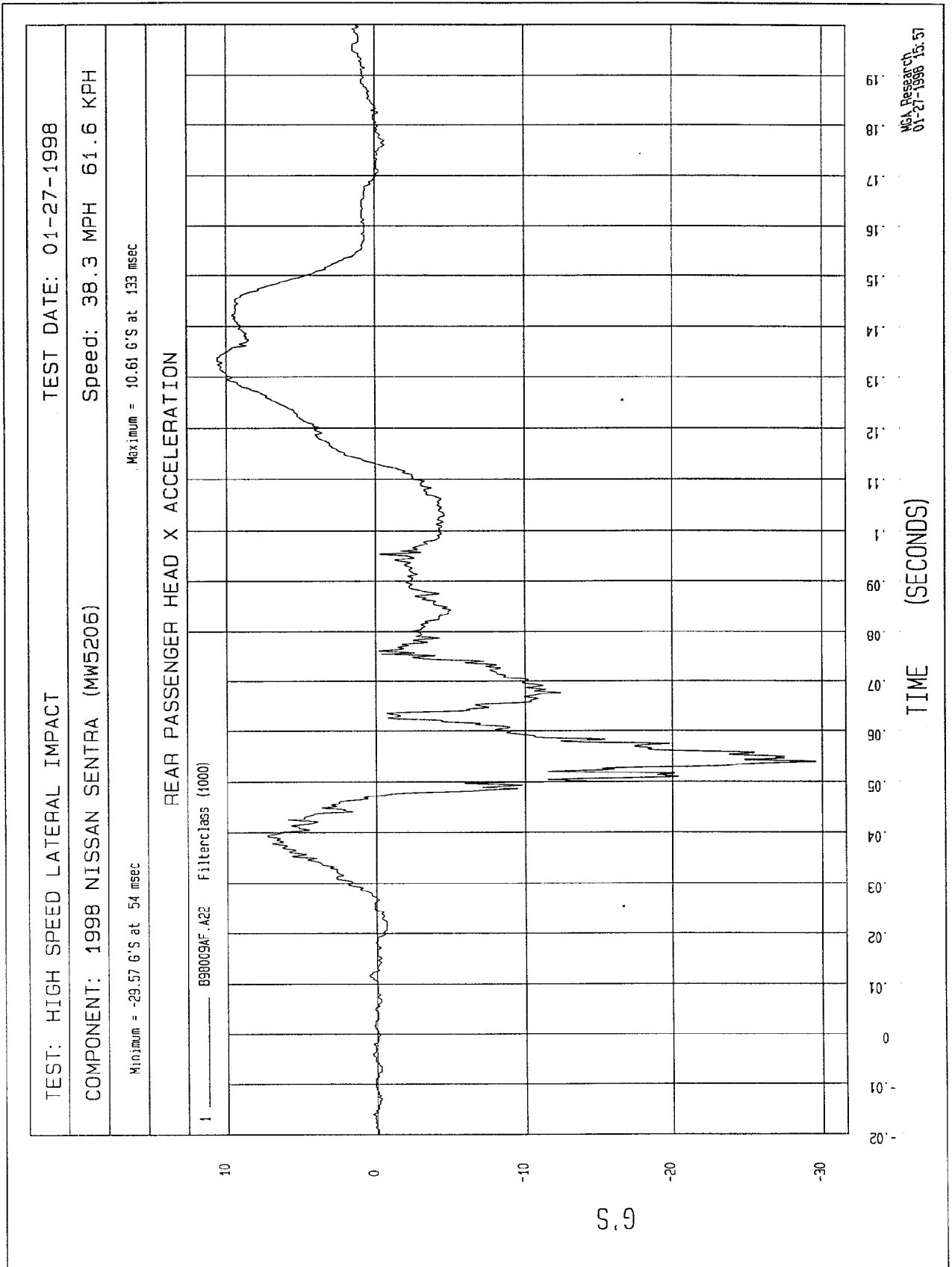


TIME Seconds

WCA Research
01-27-1998 16:22







TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

SPEED: 38.3 MPH 61.6 KPH

Maximum = 2.49 KPH at 47 msec

TEST: HIGH SPEED LATERAL IMPACT

COMPONENT: 1998 NISSAN SENTRA (MW5206)

Minimum = -12.80 KPH at 113 msec

REAR PASSENGER HEAD X VELOCITY

1 _____ B98009A1.V22 Filterclass (160)

2

0

-2

-4

-6

-8

-10

-12

KPH

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

0

-01

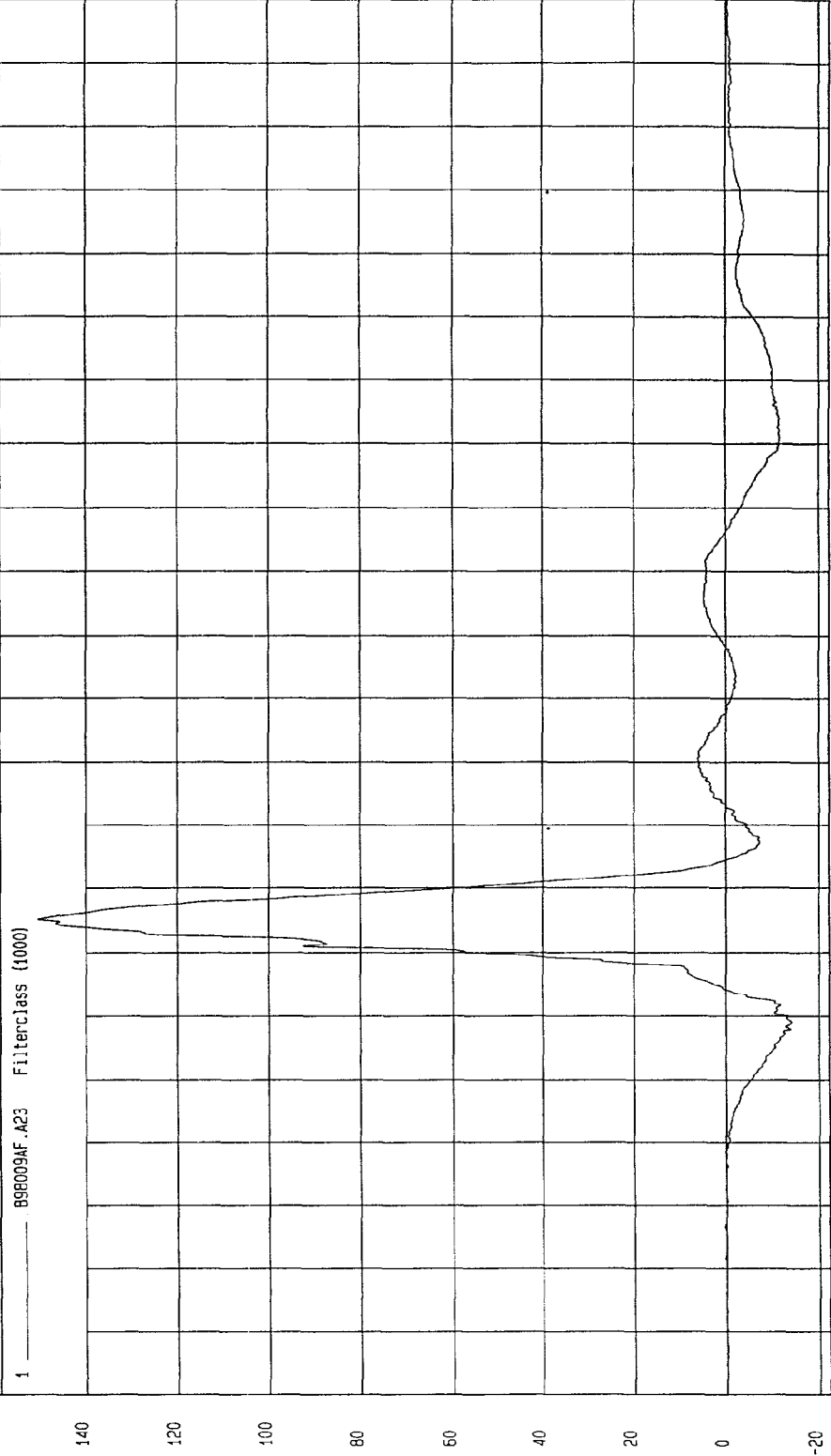
-02

TIME Seconds

MCA Research
01-27-1998 16:40

TEST: HIGH SPEED LATERAL IMPACT	TEST DATE: 01-27-1998
COMPONENT: 1998 NISSAN SENTRA (MW5206)	Speed: 38.3 MPH 61.6 KPH
Minimum = -14.00 G'S at 39 msec	
Maximum = 150.45 G'S at 55 msec	

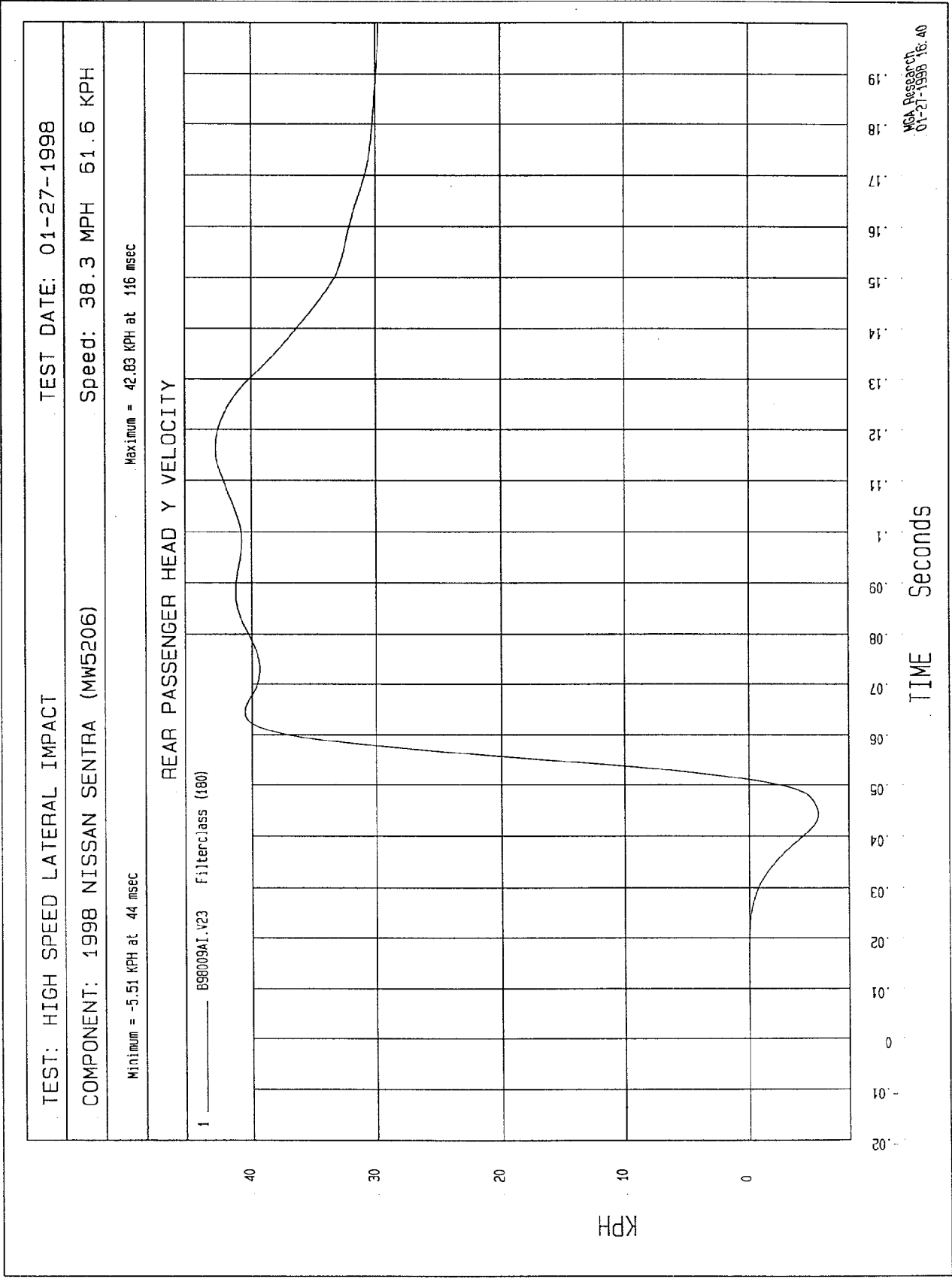
REAR PASSENGER HEAD Y ACCELERATION



NCA Research
01-27-1998 15:57

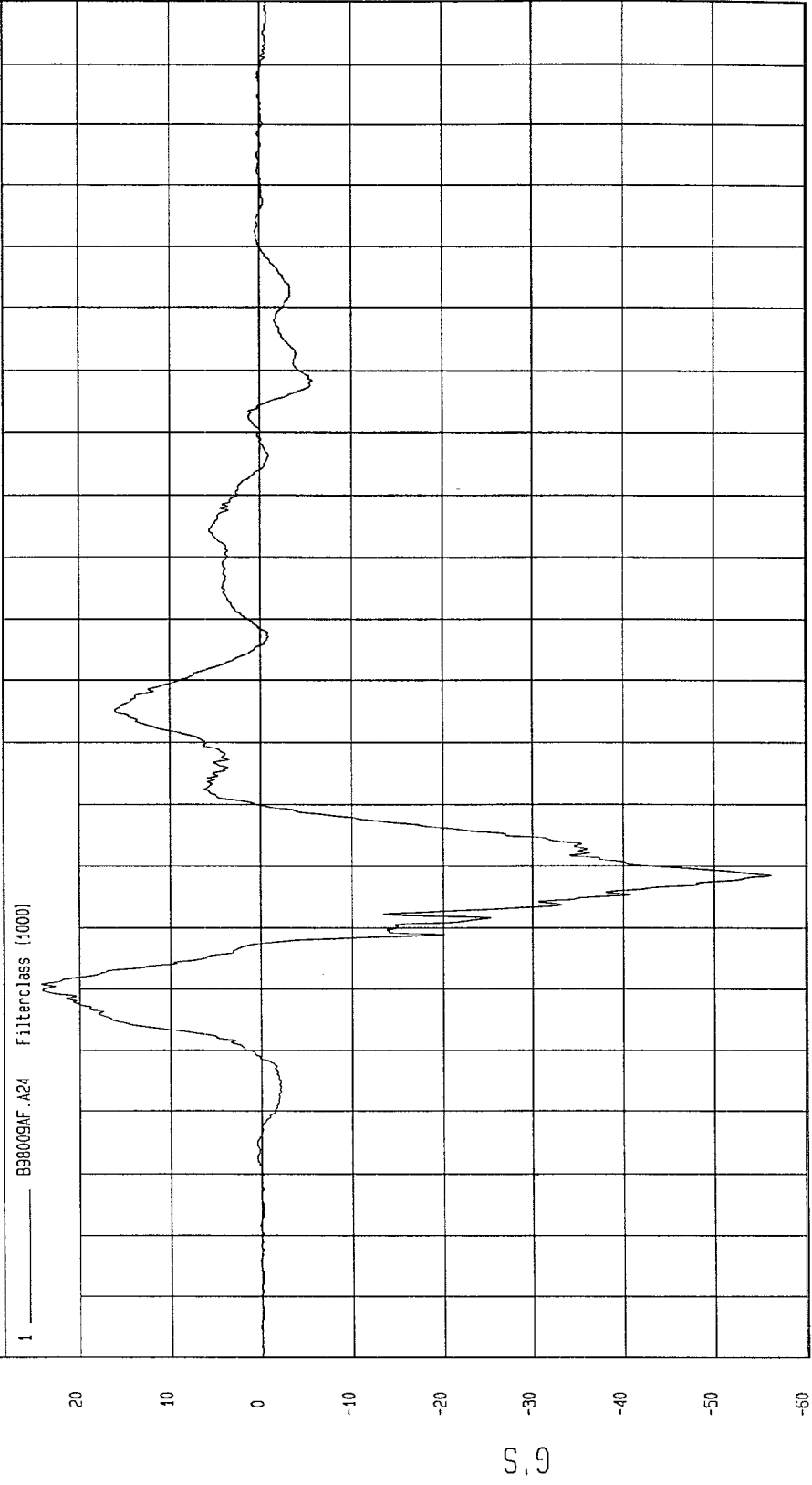
TIME (SECONDS)

G.S



TEST: HIGH SPEED LATERAL IMPACT	TEST DATE: 01-27-1998
COMPONENT: 1998 NISSAN SENTRA (MW5206)	Speed: 38.3 MPH 61.6 KPH
Minimum = -55.18 G'S at 58 msec	
Maximum = 24.22 G'S at 41 msec	

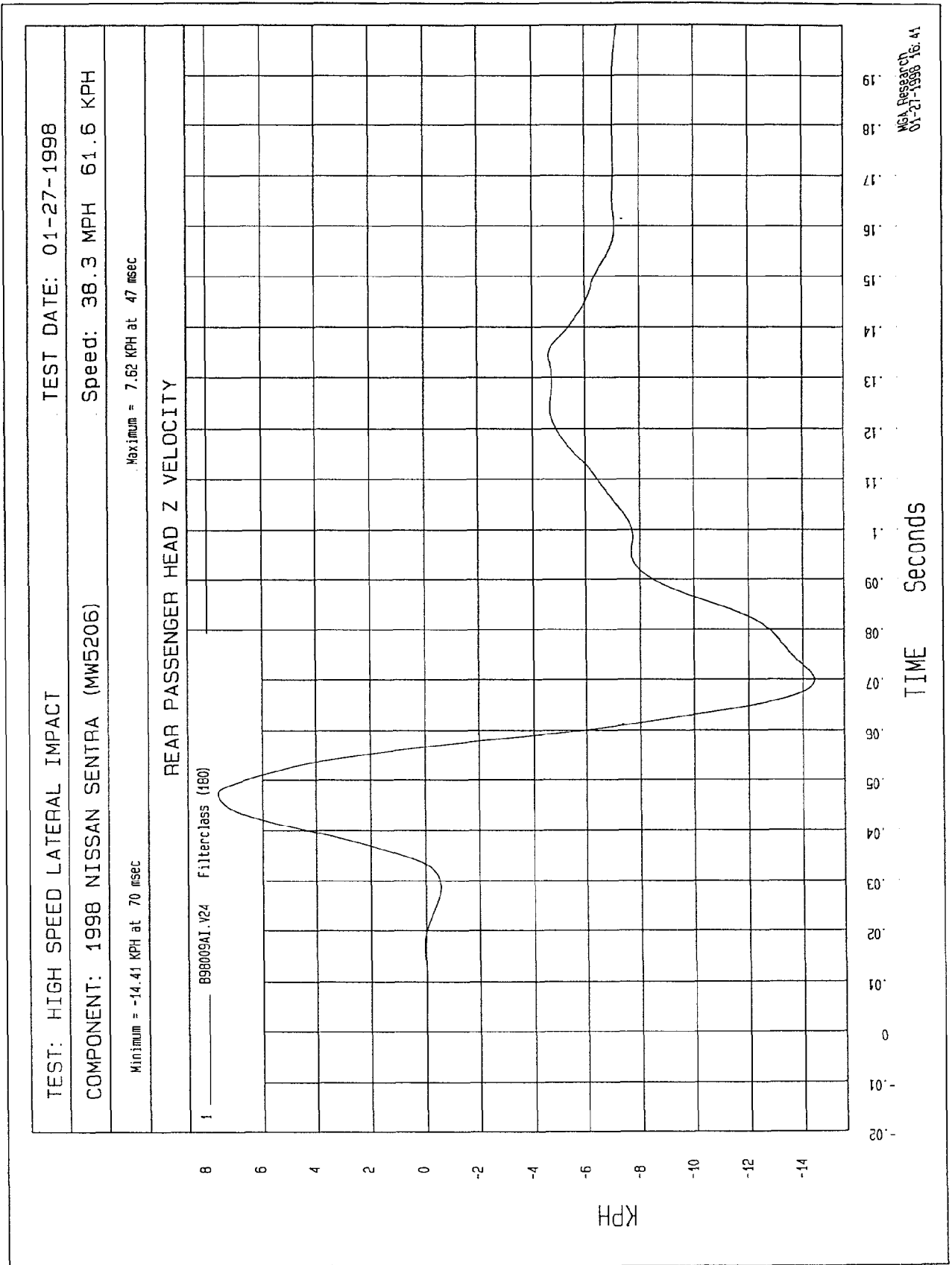
REAR PASSENGER HEAD Z ACCELERATION

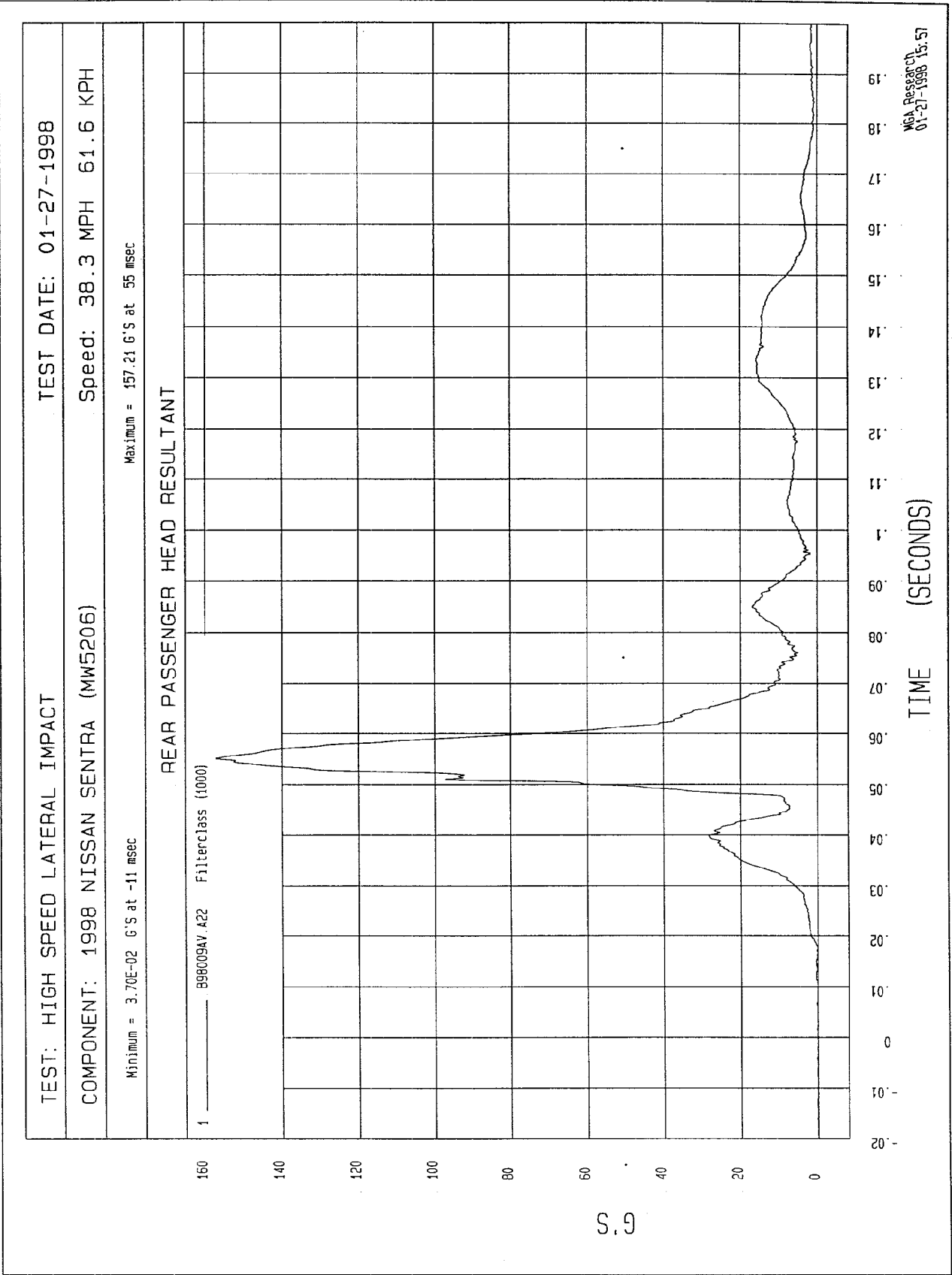


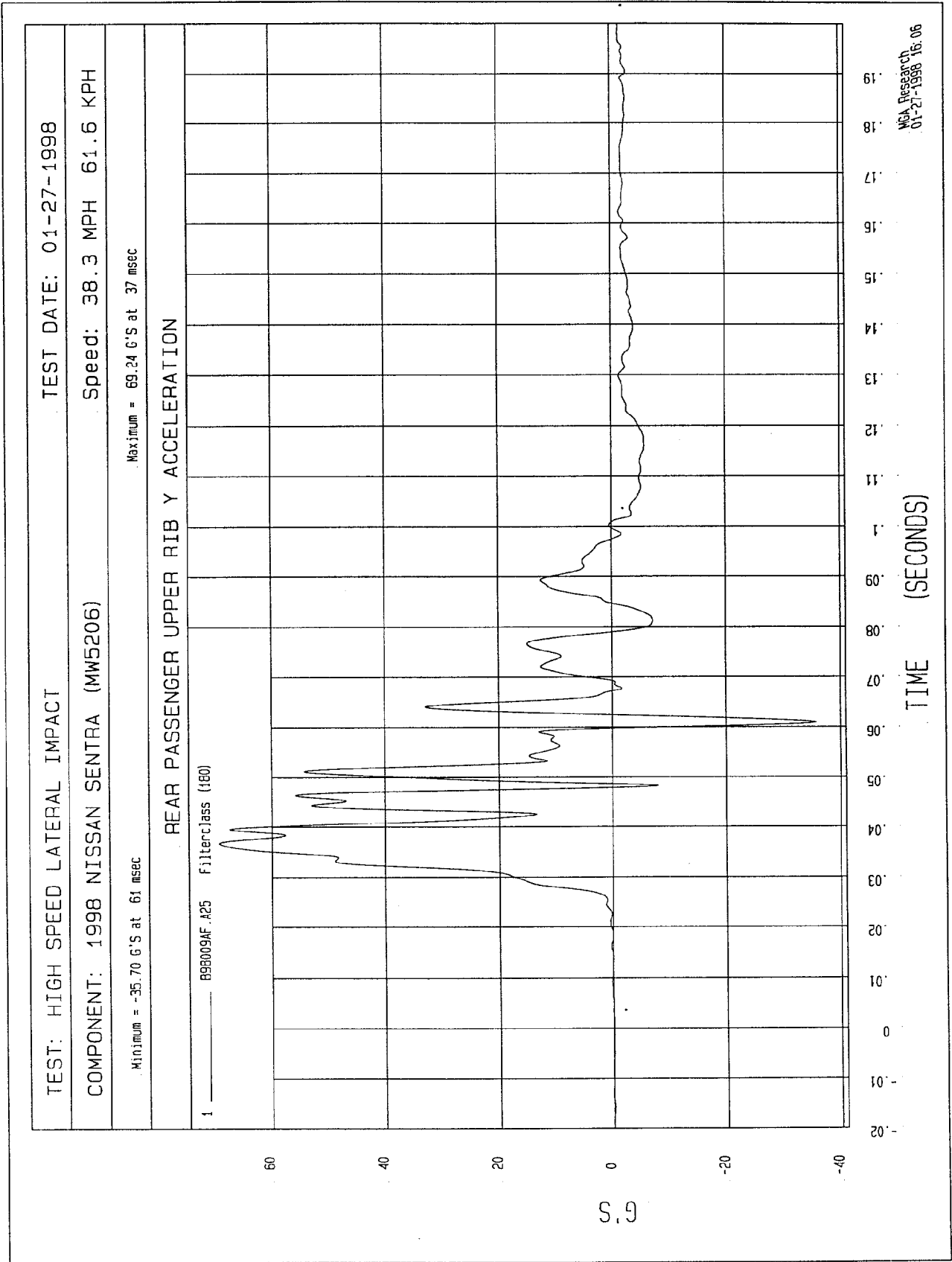
TIME (SECONDS)

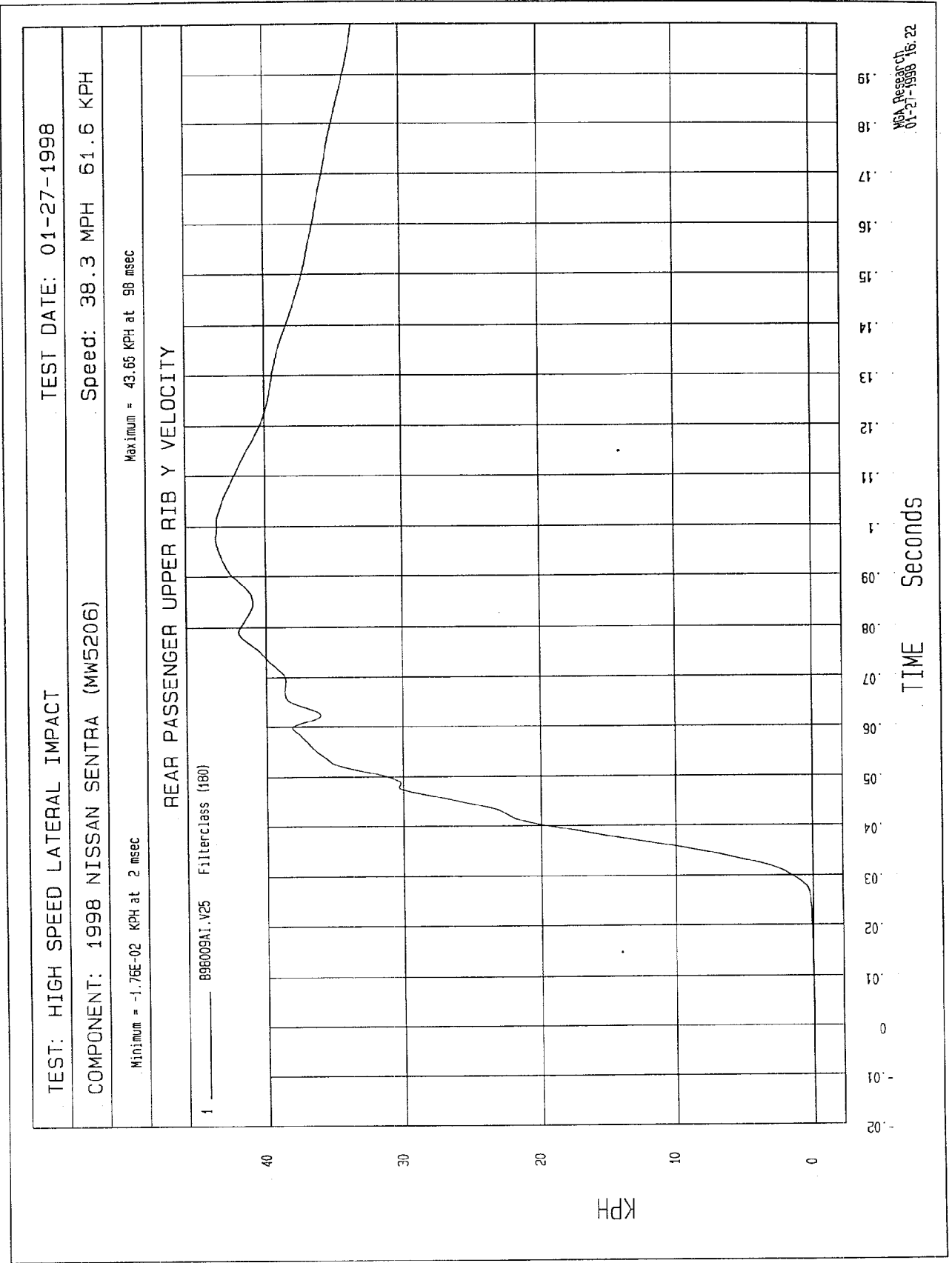
0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02

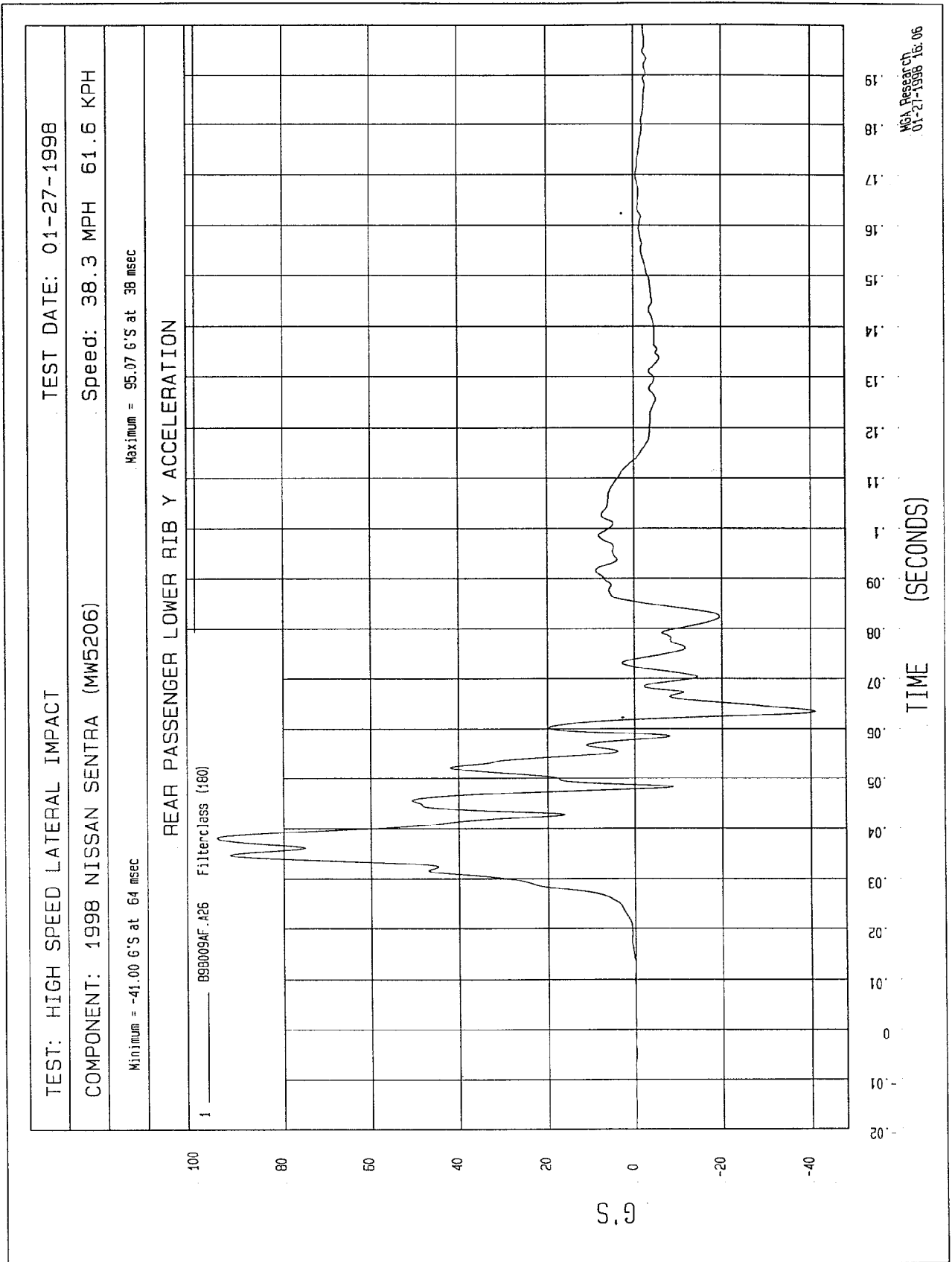
NGA Research
01-27-1998 15:57

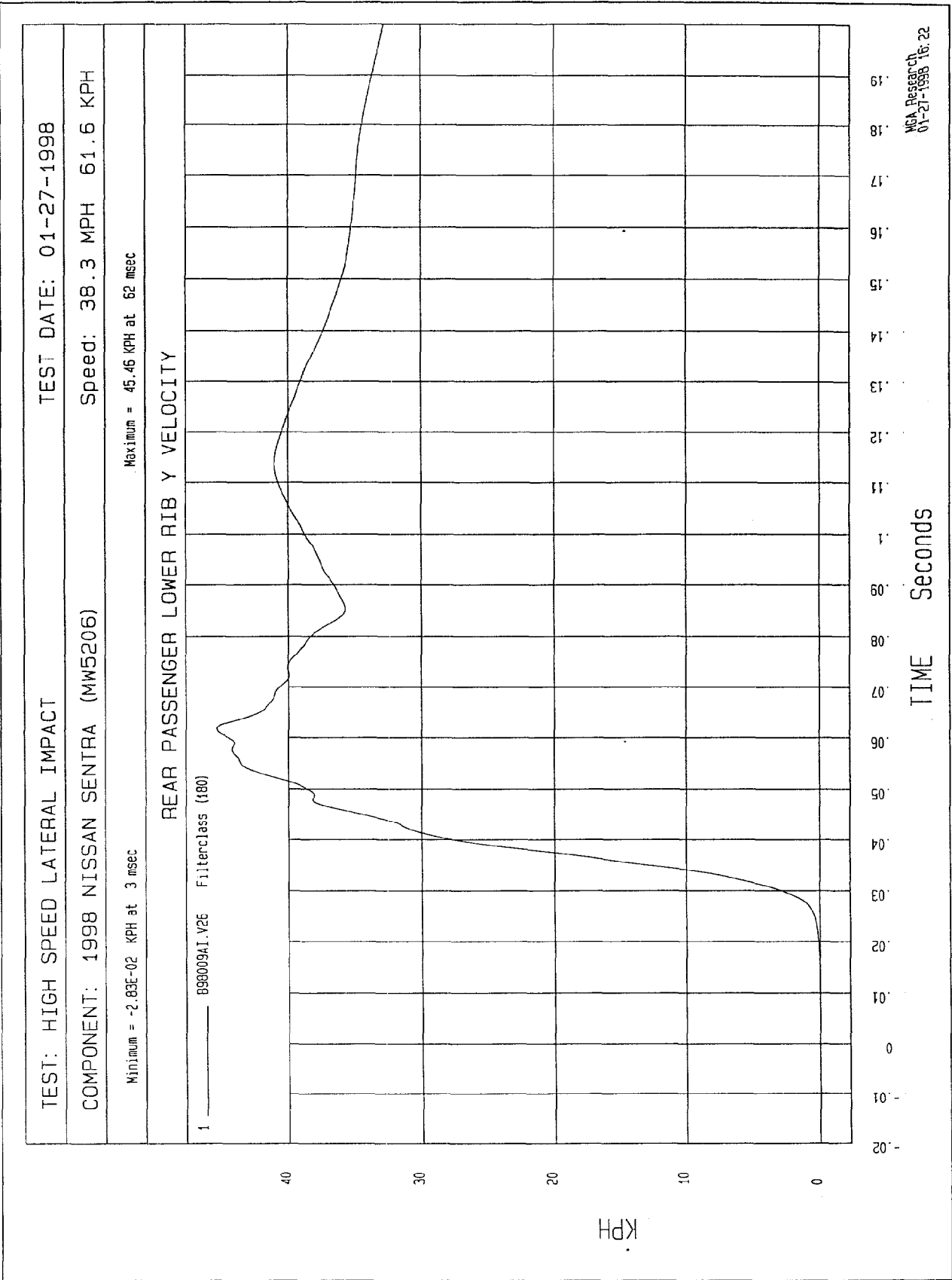


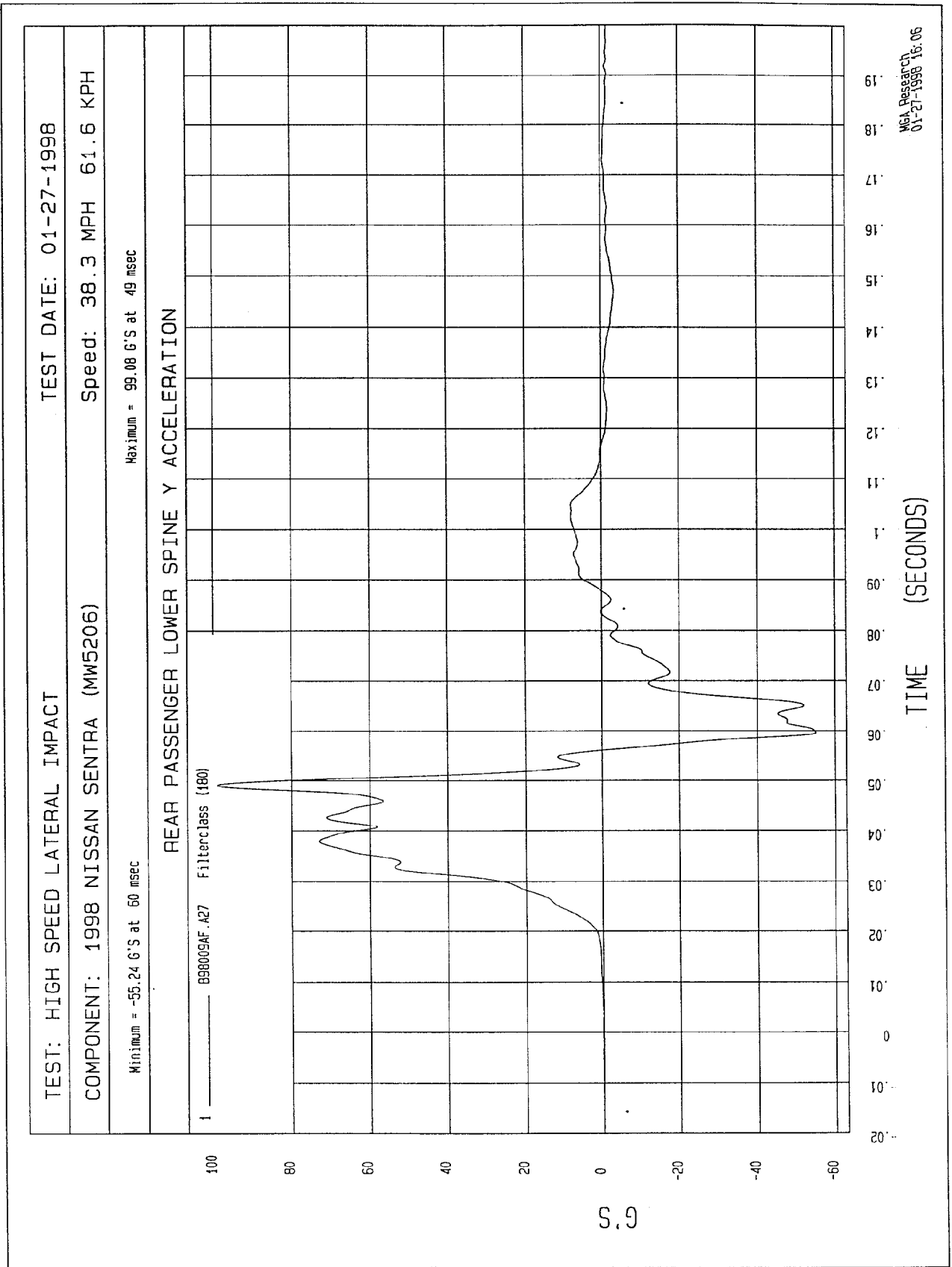


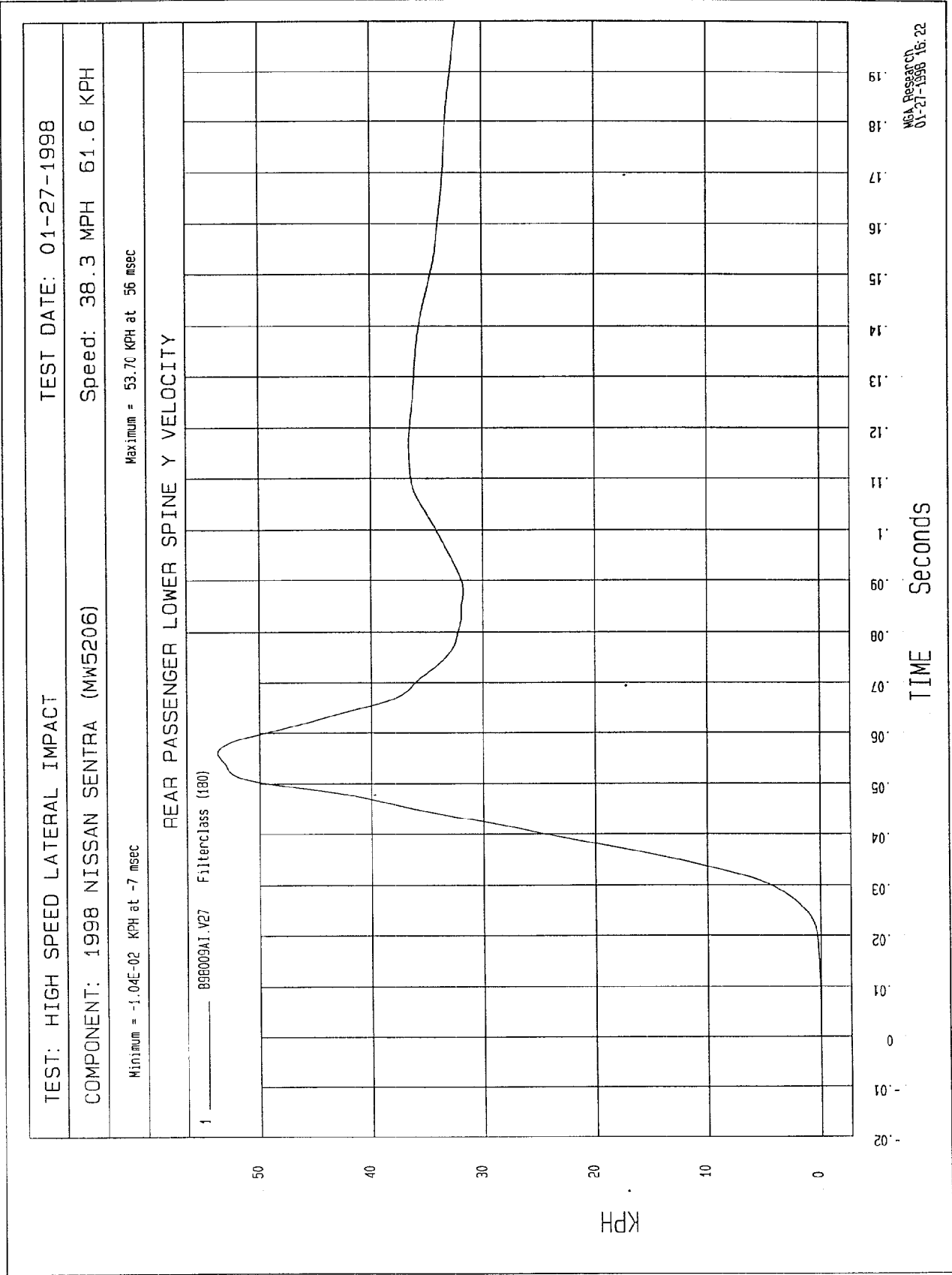


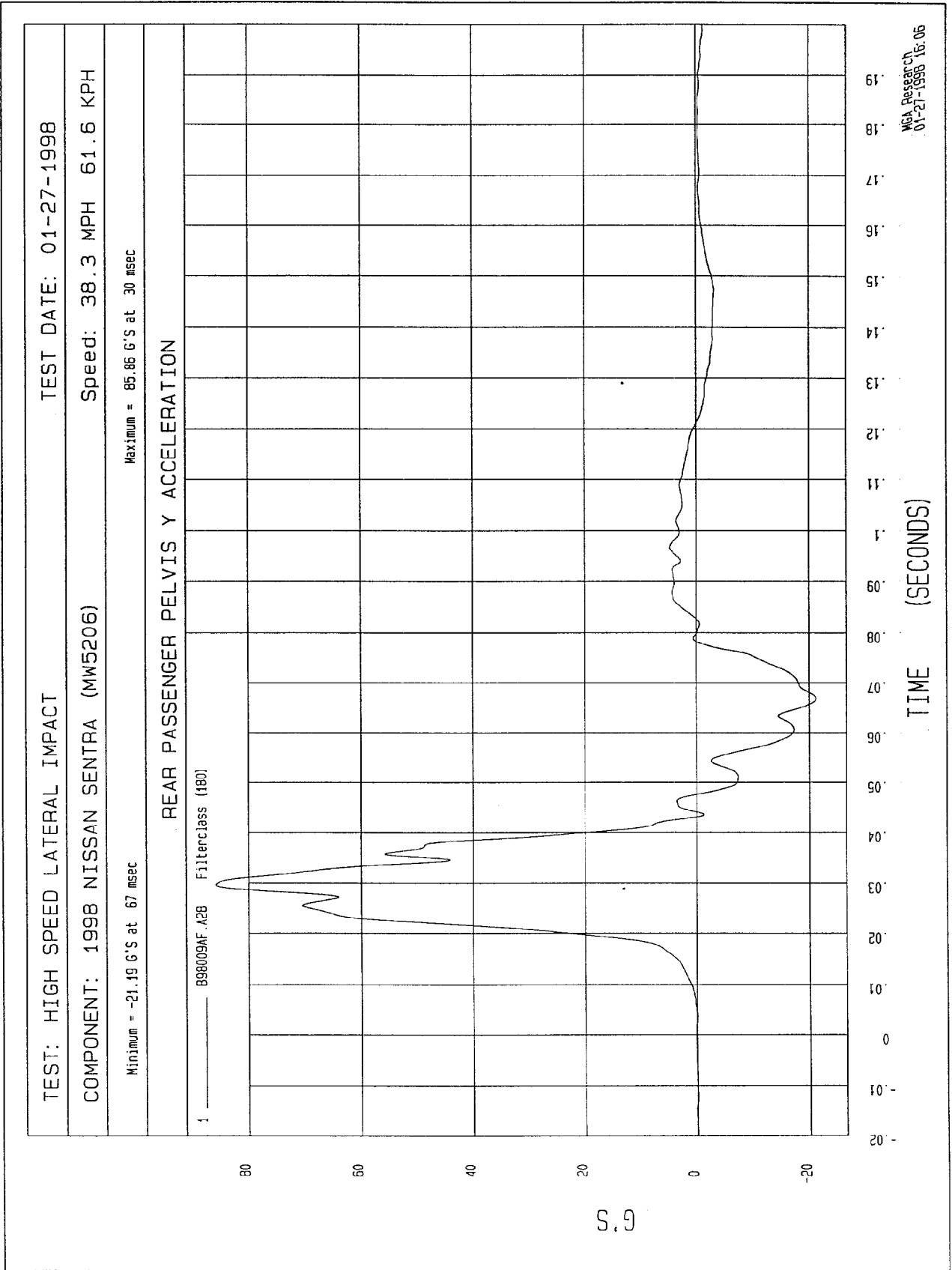


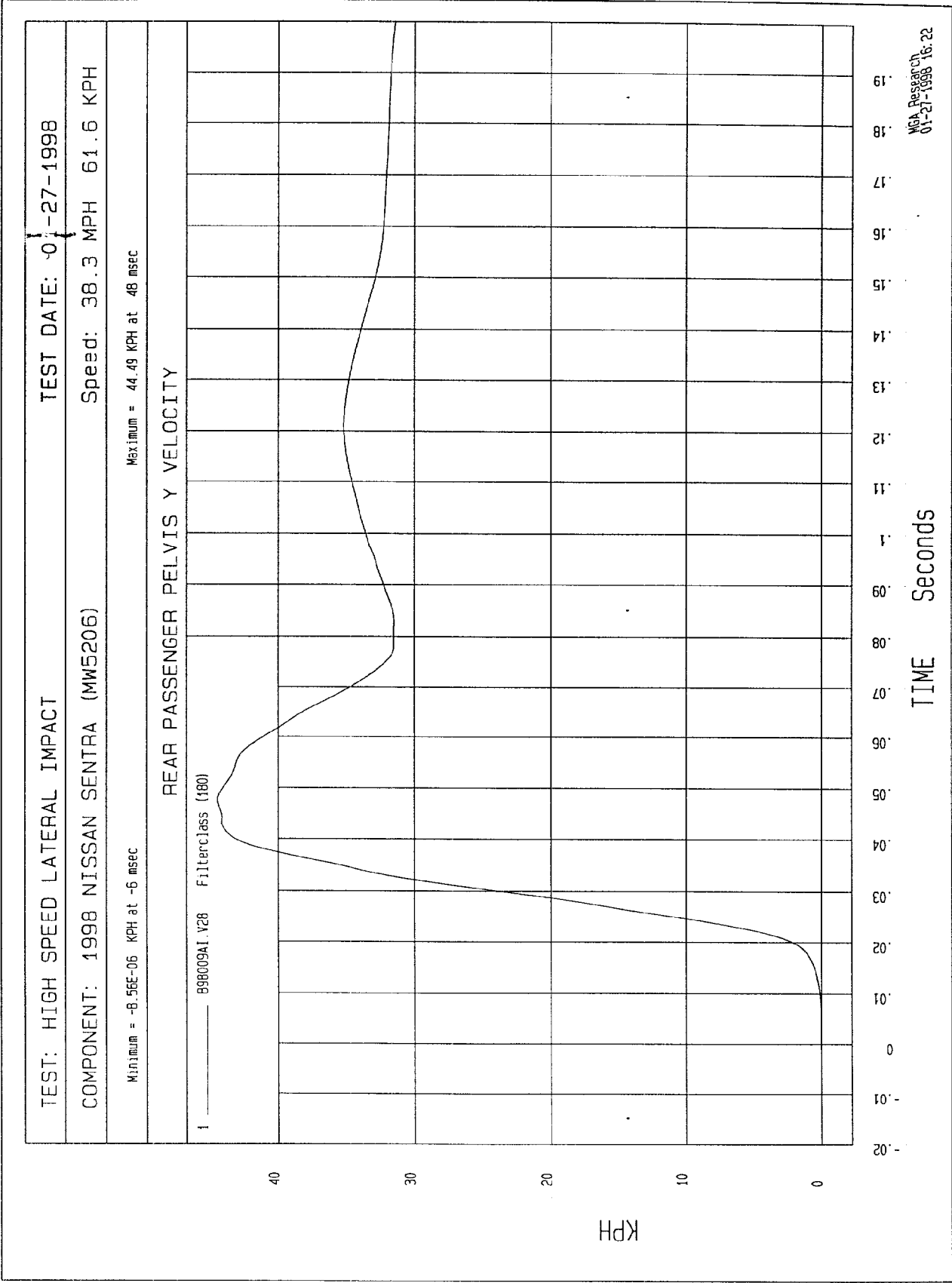










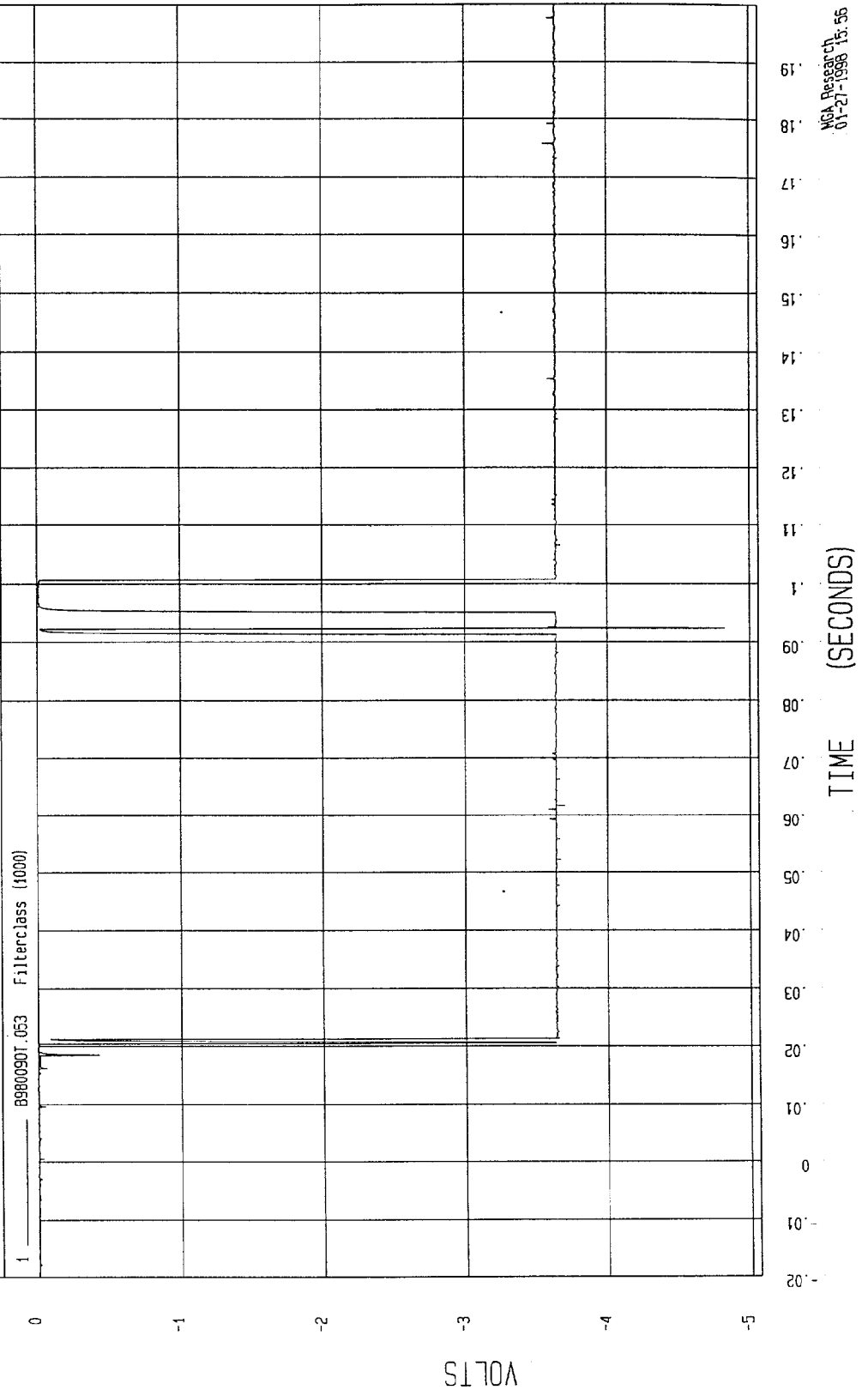


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

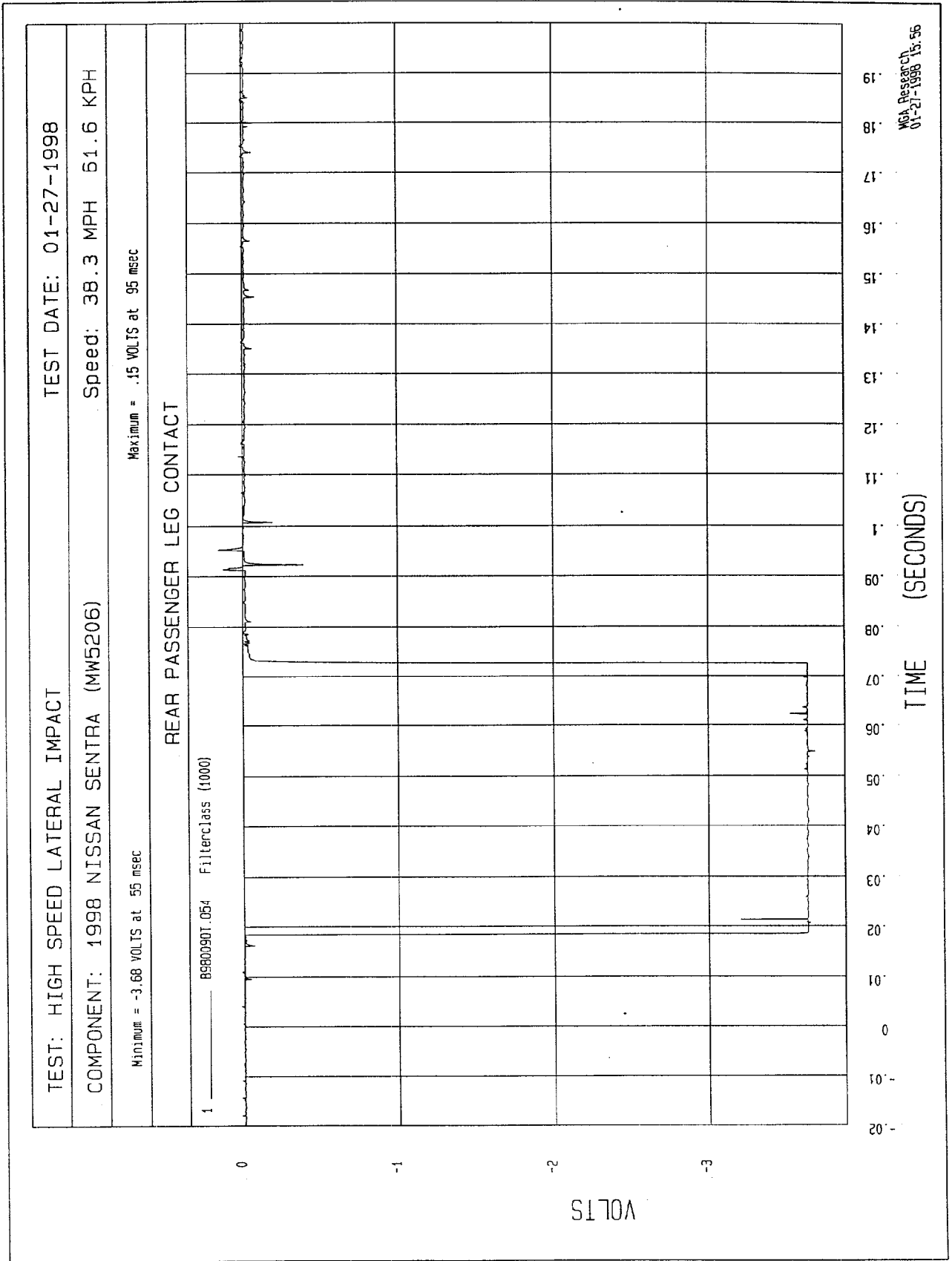
COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

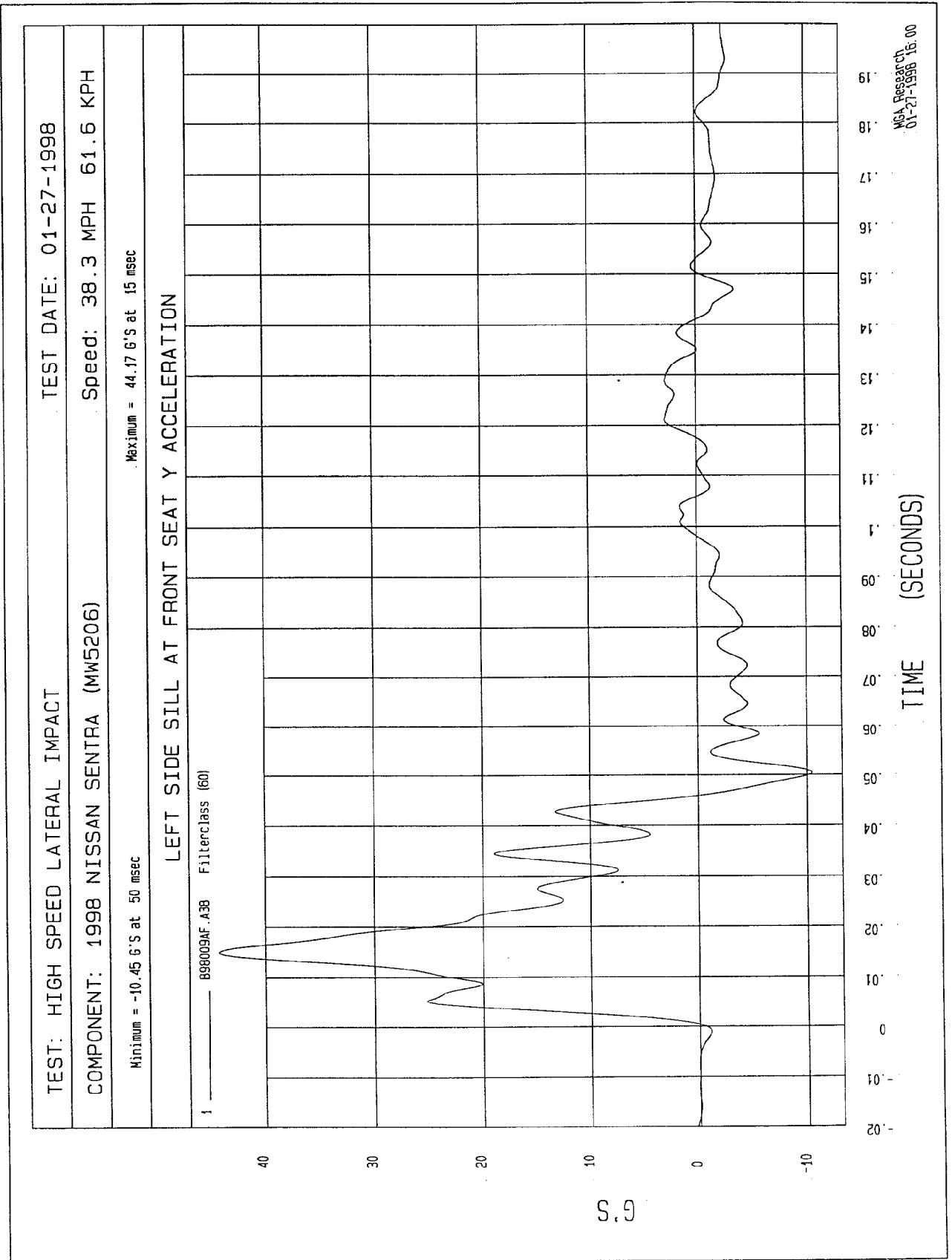
Minimum = -4.81 VOLTS at 92 msec Maximum = 8.04E-03 VOLTS at 19 msec

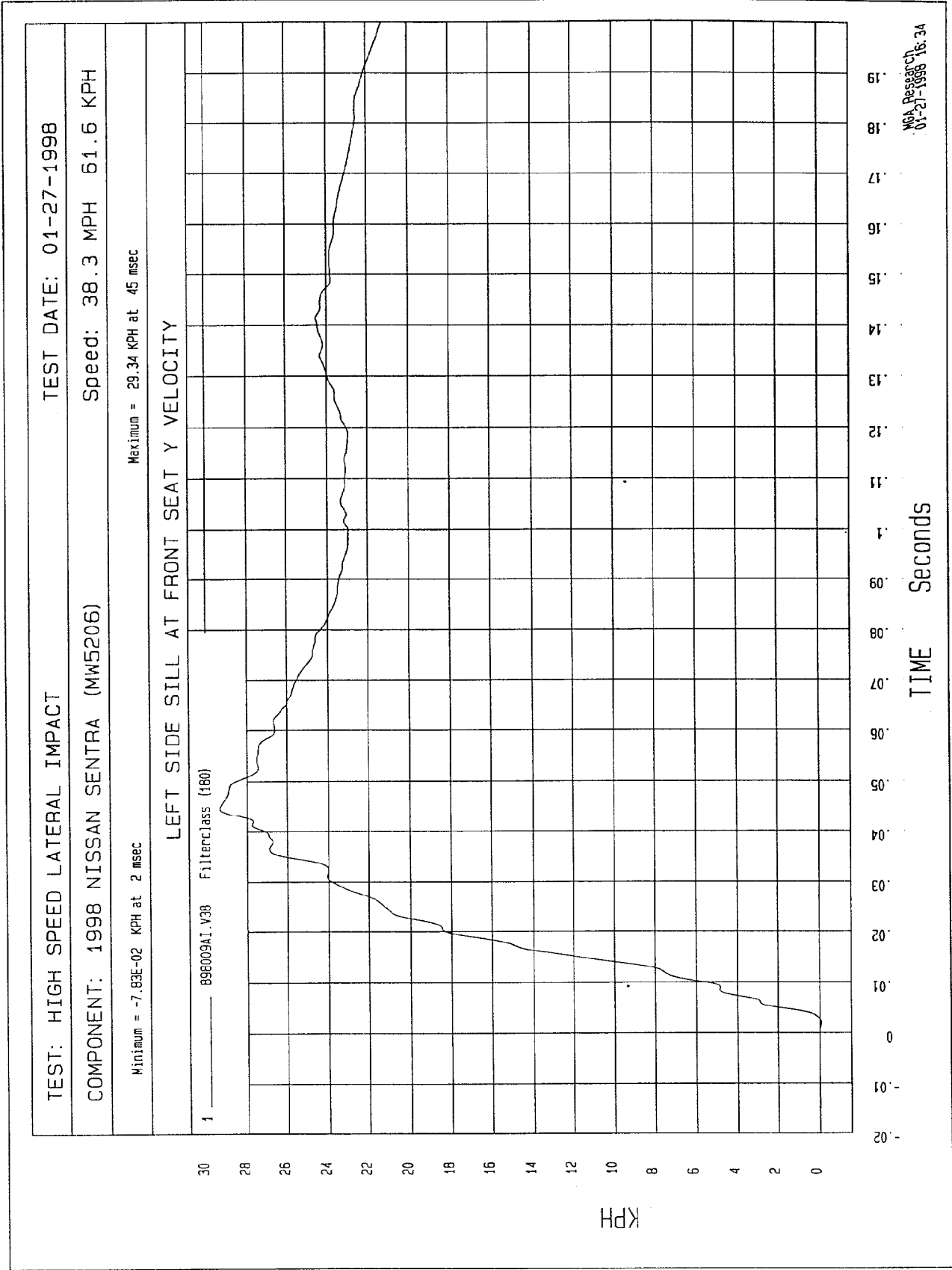
REAR PASSENGER SHOULDER CONTACT

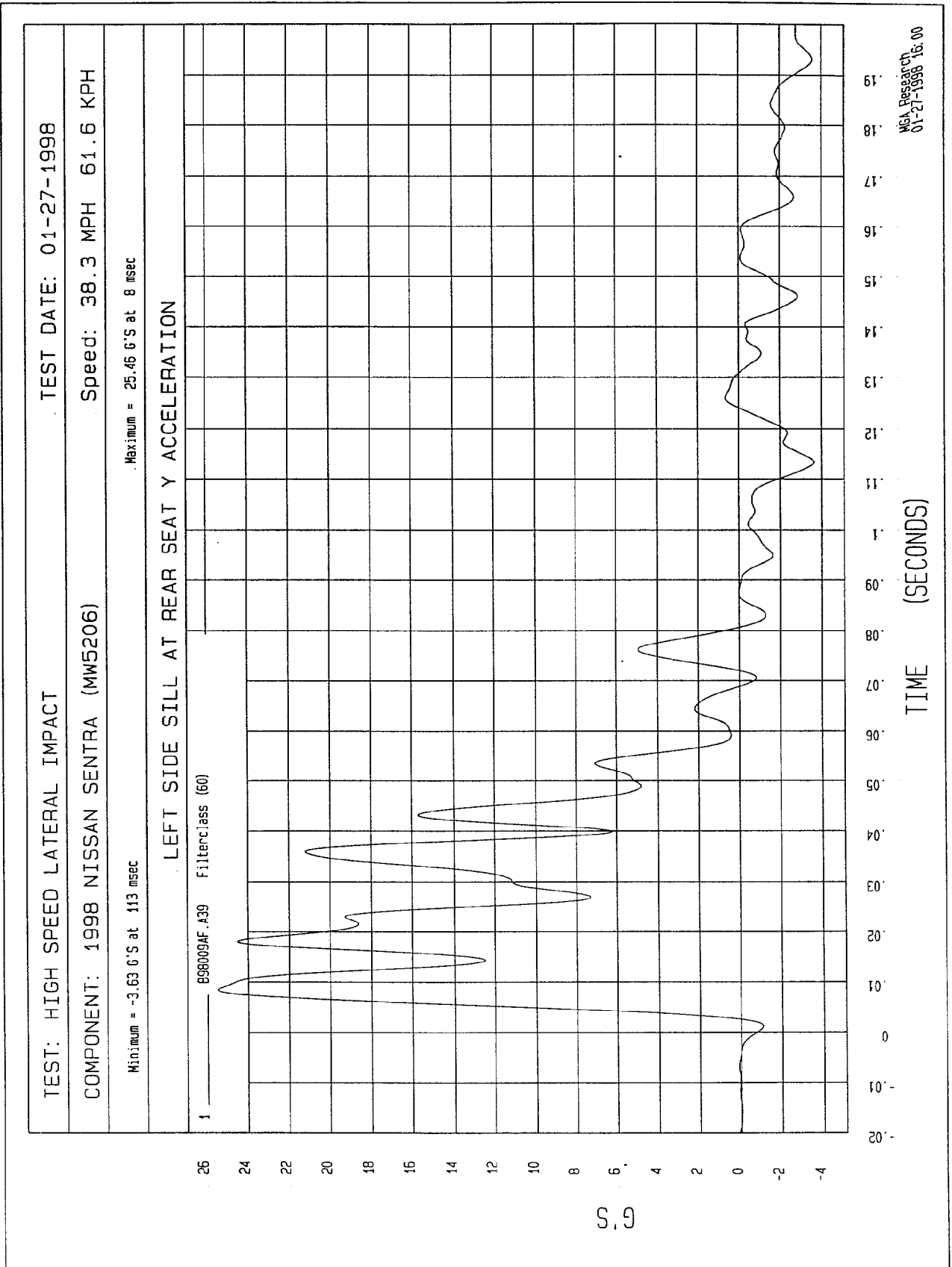


WCA Research
01-27-1998 15:56



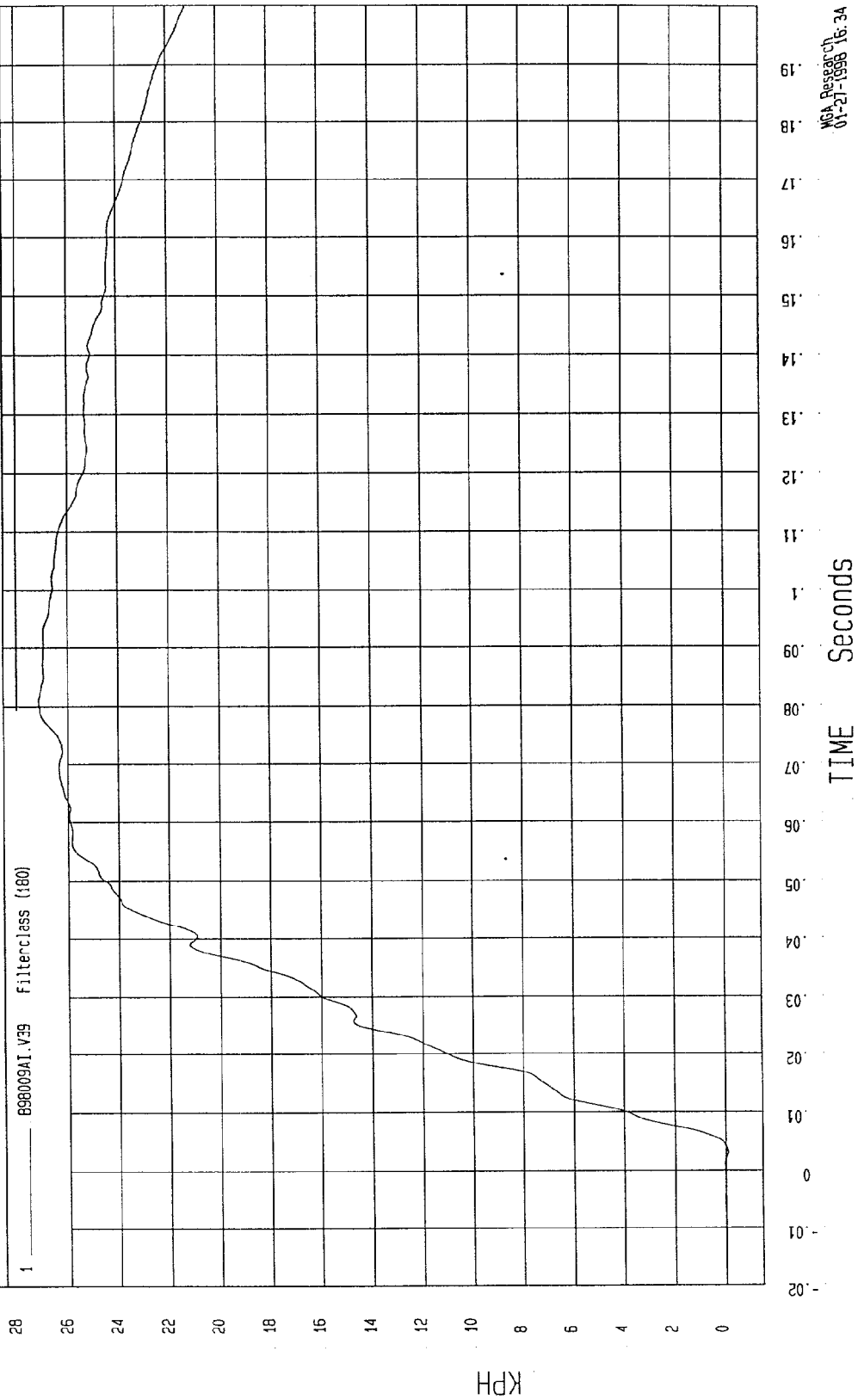




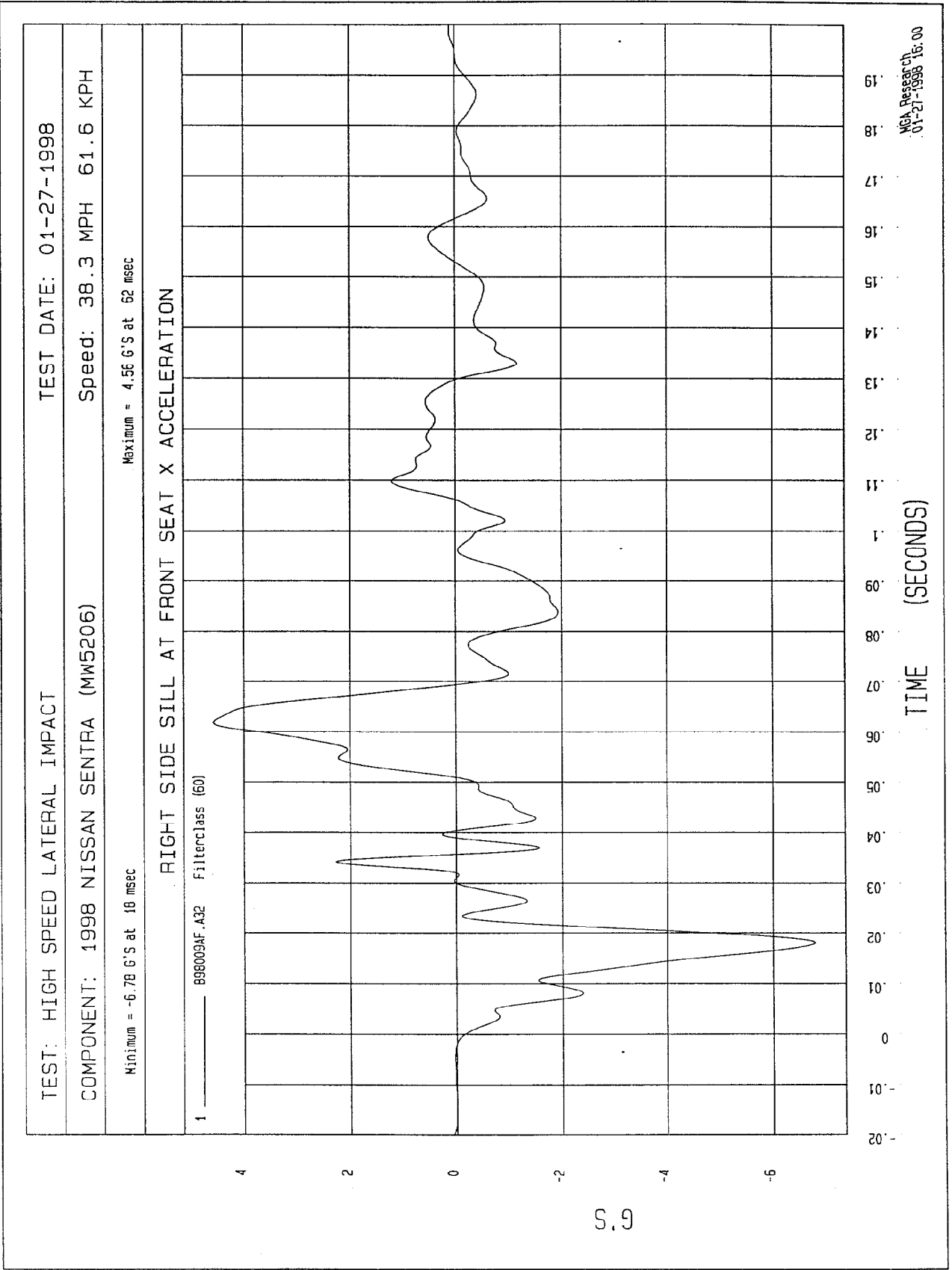


TEST: HIGH SPEED LATERAL IMPACT	TEST DATE: 01-27-1998
COMPONENT: 1998 NISSAN SENTRA (MW5206)	Speed: 38.3 MPH 61.6 KPH
Minimum = -.08 KPH at 3 msec	Maximum = 27.14 KPH at 81 msec

LEFT SIDE SILL AT REAR SEAT Y VELOCITY

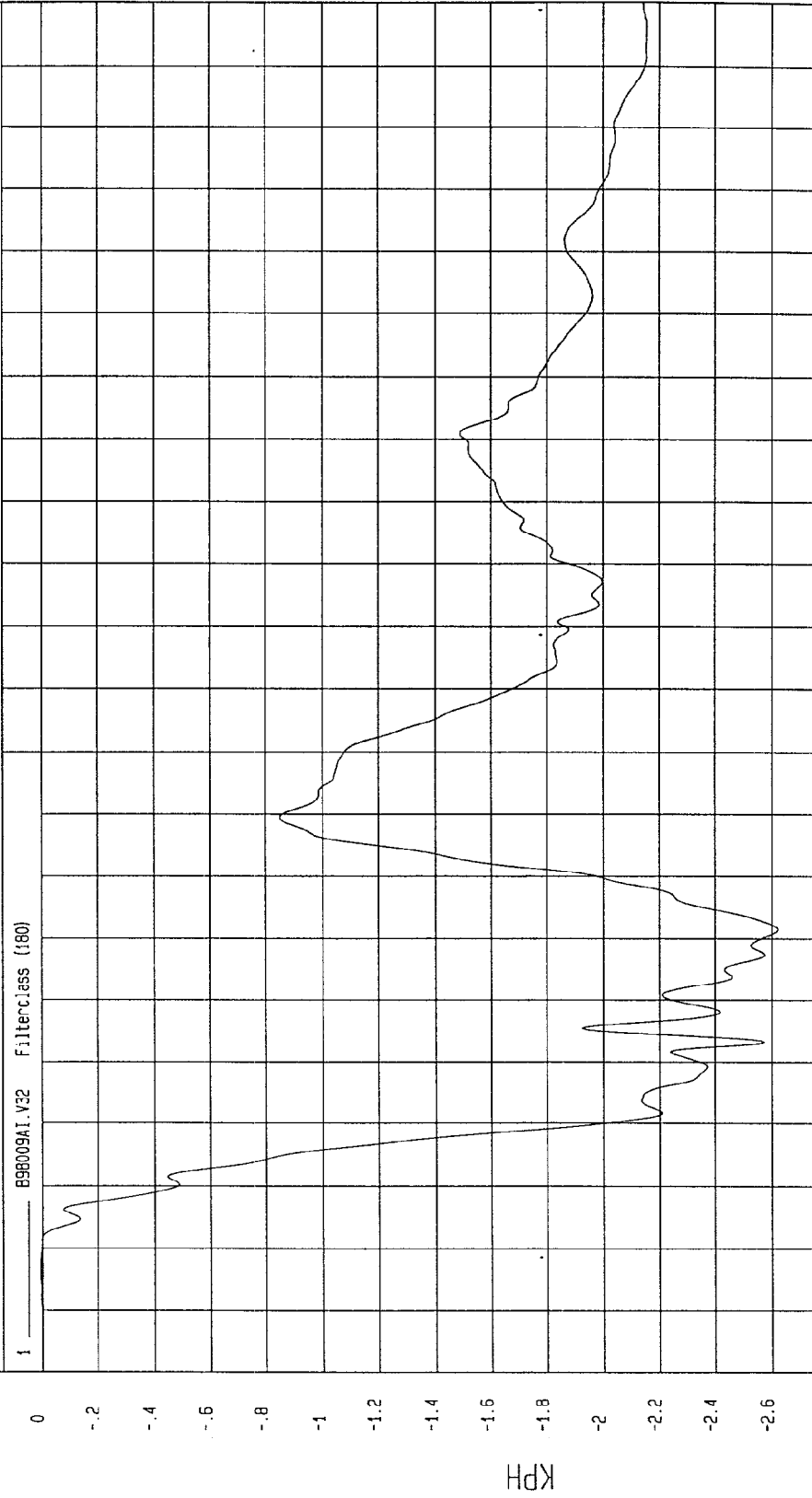


MGA Research
01-27-1998 16:34



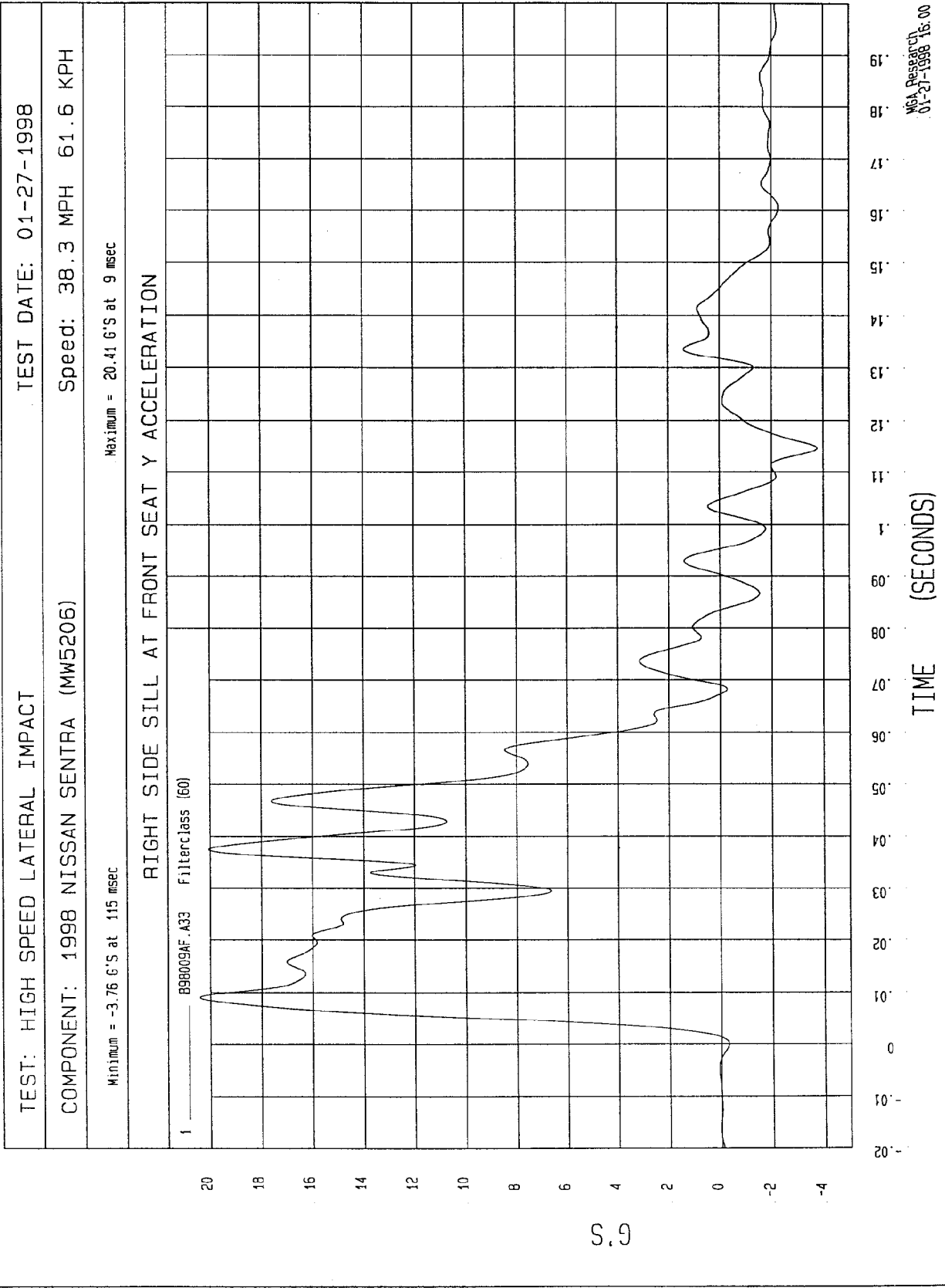
TEST: HIGH SPEED LATERAL IMPACT	TEST DATE: 01-27-1998
COMPONENT: 1998 NISSAN SENTRA (MW5206)	Speed: 38.3 MPH 61.6 KPH
Minimum = -2.62 KPH at 52 msec	
Maximum = 7.51E-03 KPH at -3 msec	

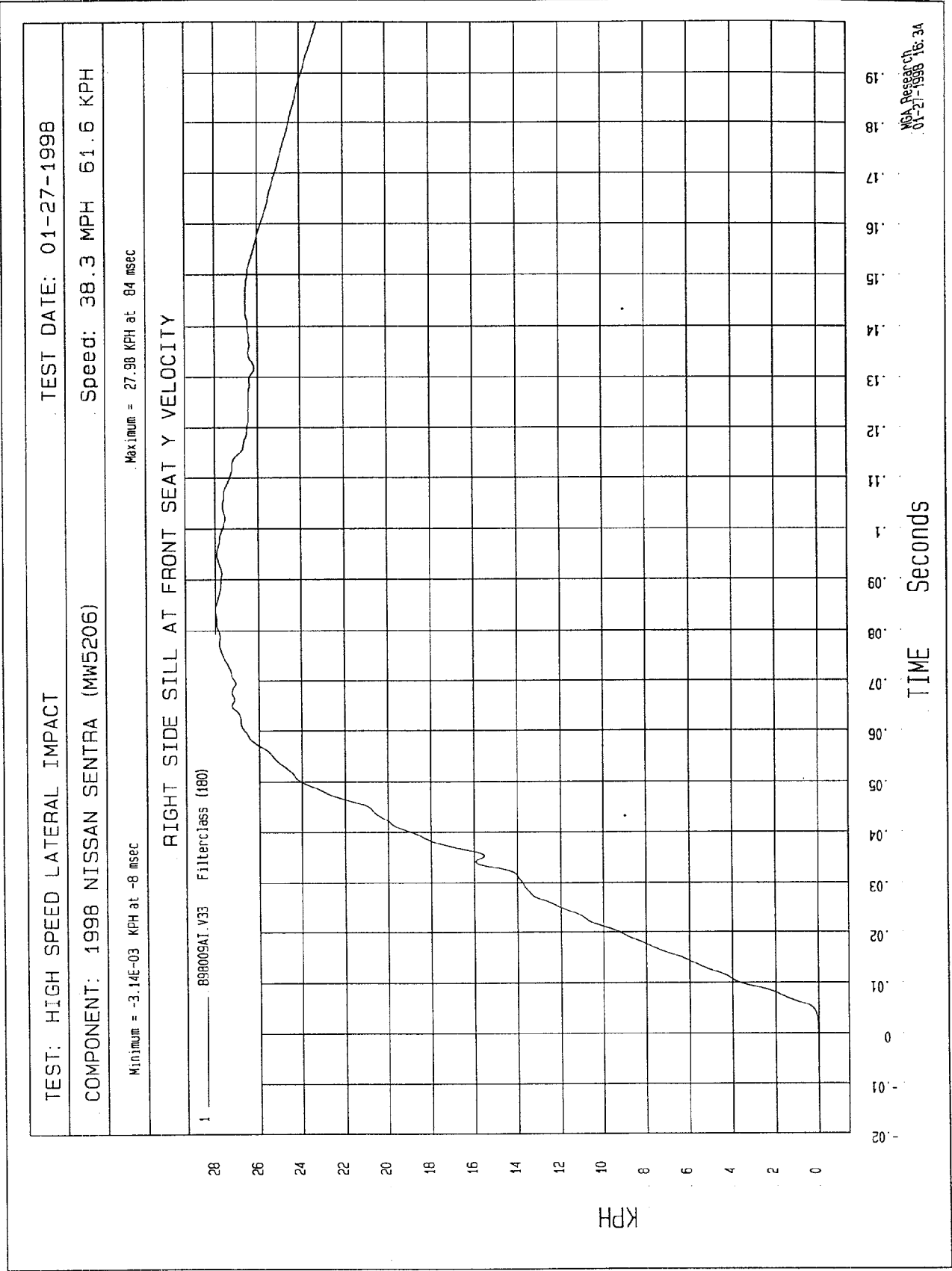
RIGHT SIDE SILL AT FRONT SEAT X VELOCITY

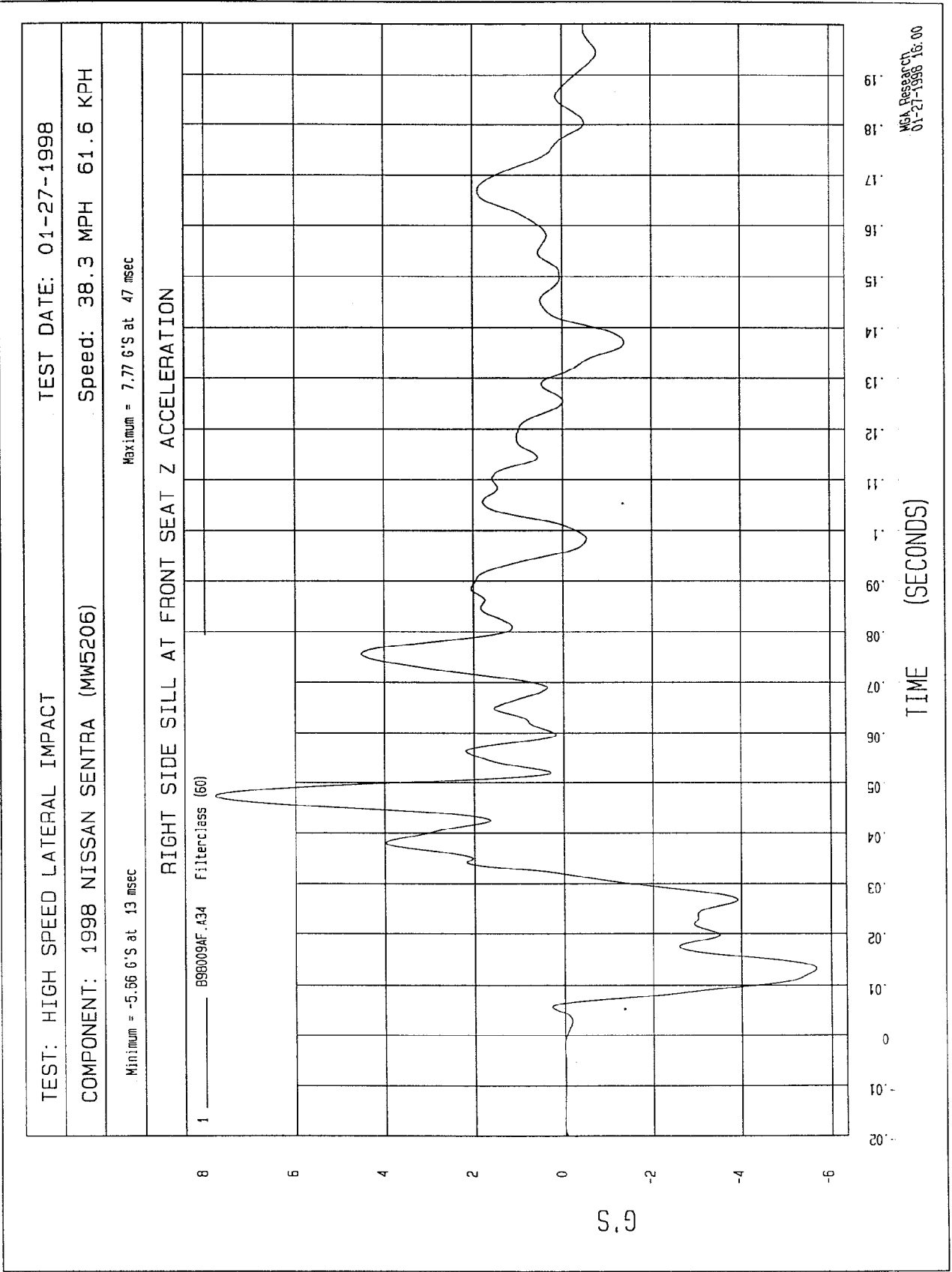


TIME Seconds

MOA Research
01-27-1998 16:34





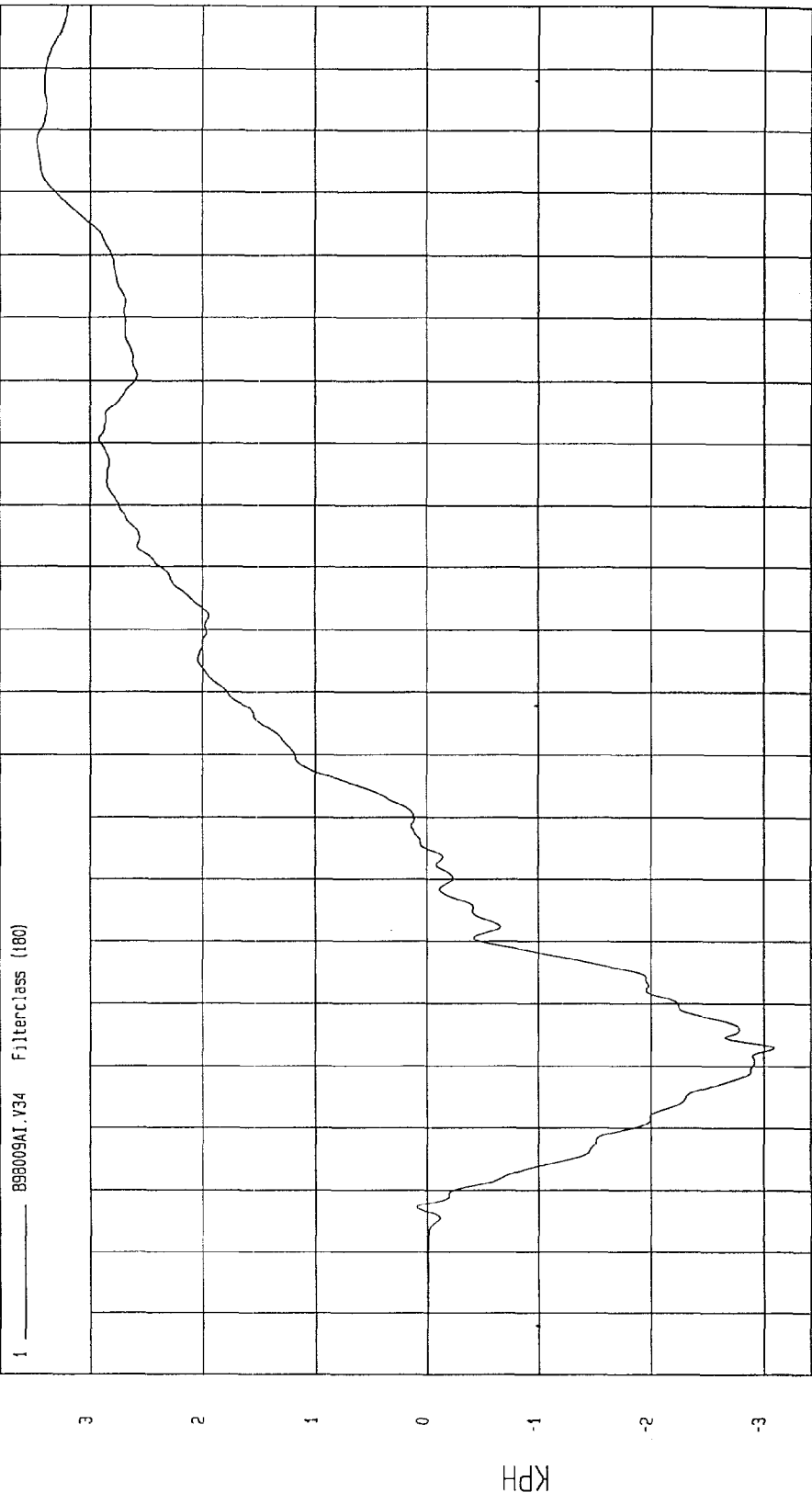


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

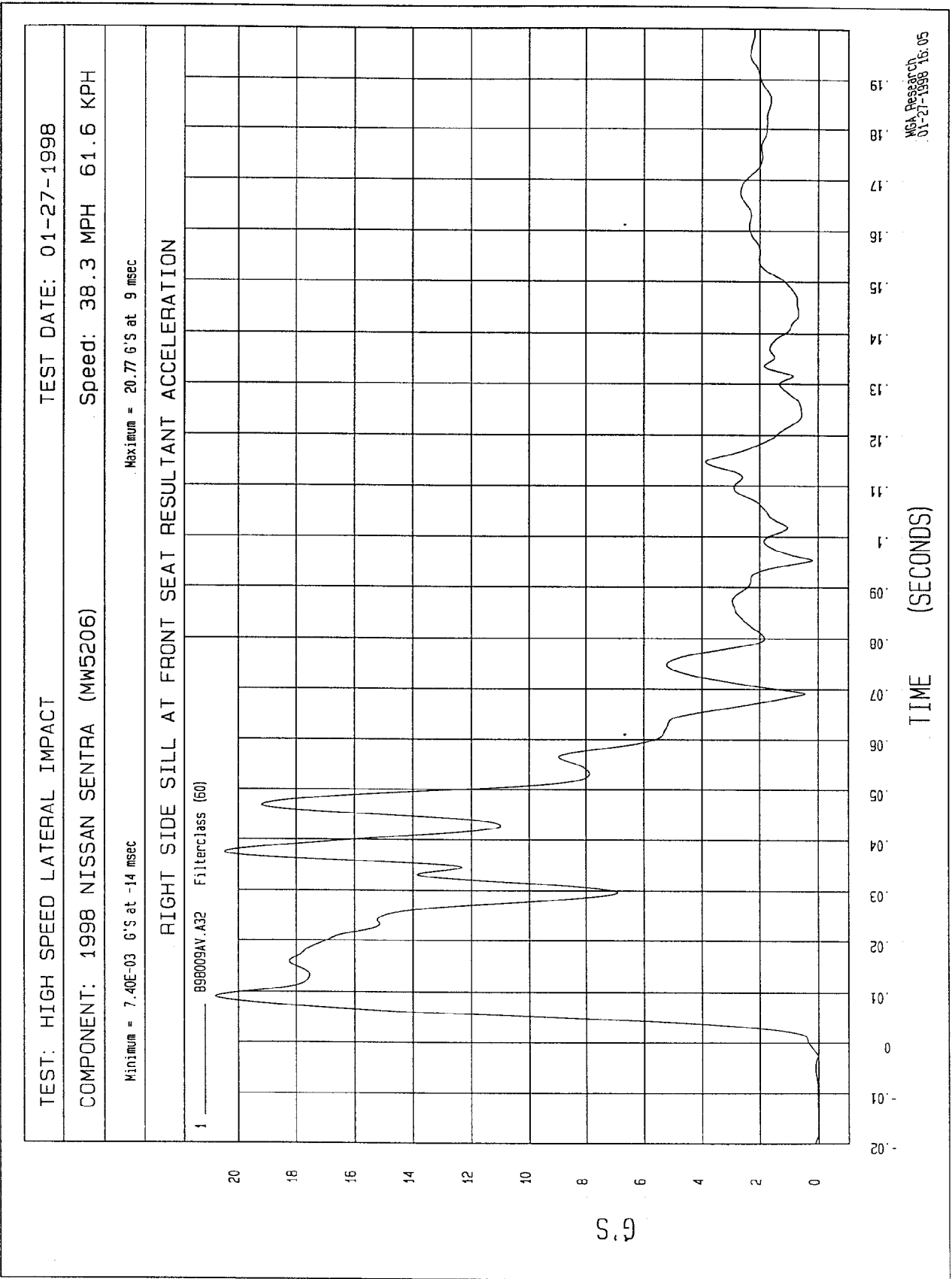
Minimum = -3.08 KPH at 33 msec Maximum = 3.47 KPH at 178 msec

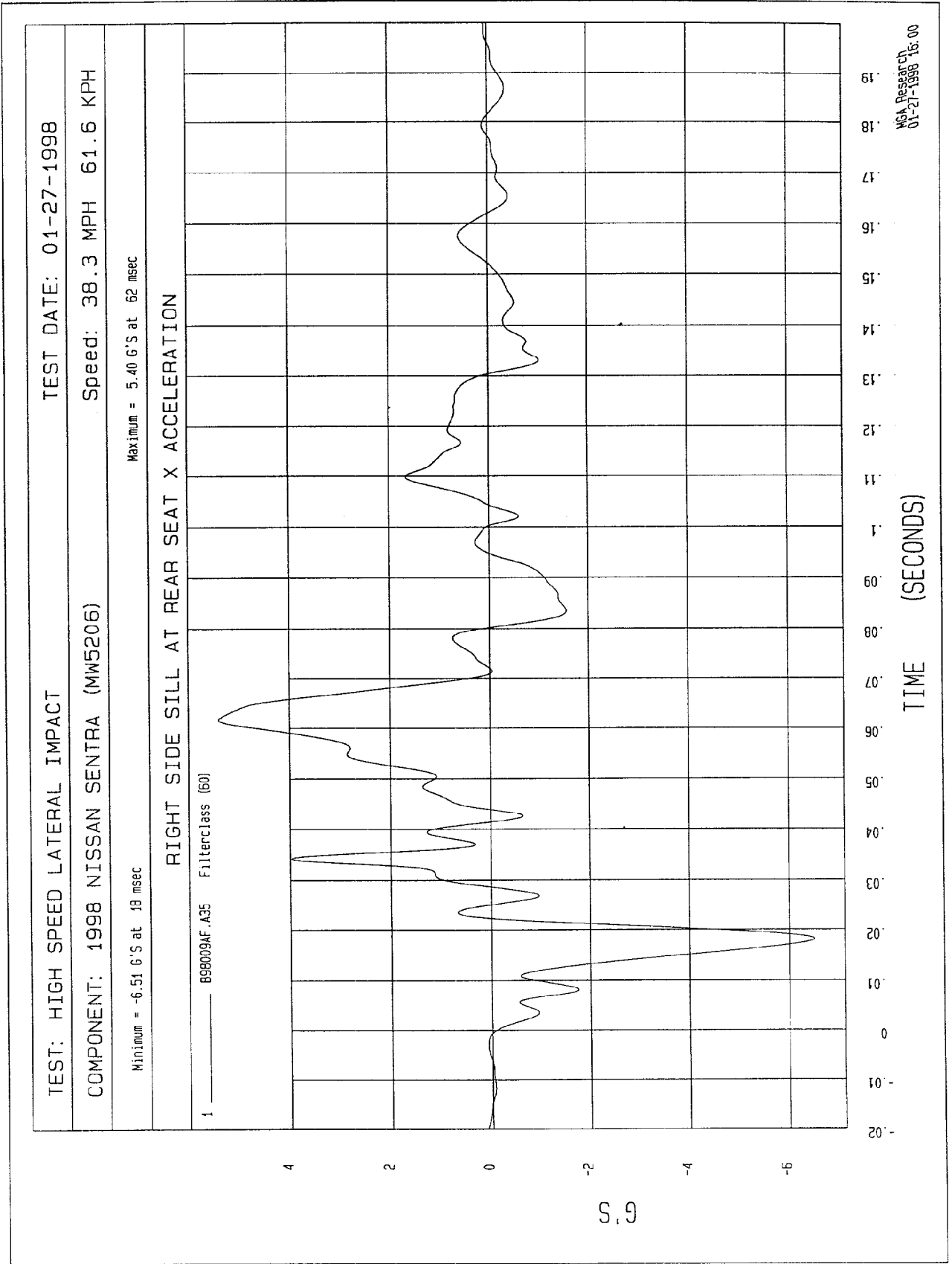
RIGHT SIDE SILL AT FRONT SEAT Z VELOCITY



TIME Seconds

WCA Research
01-27-1998 16:35





TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

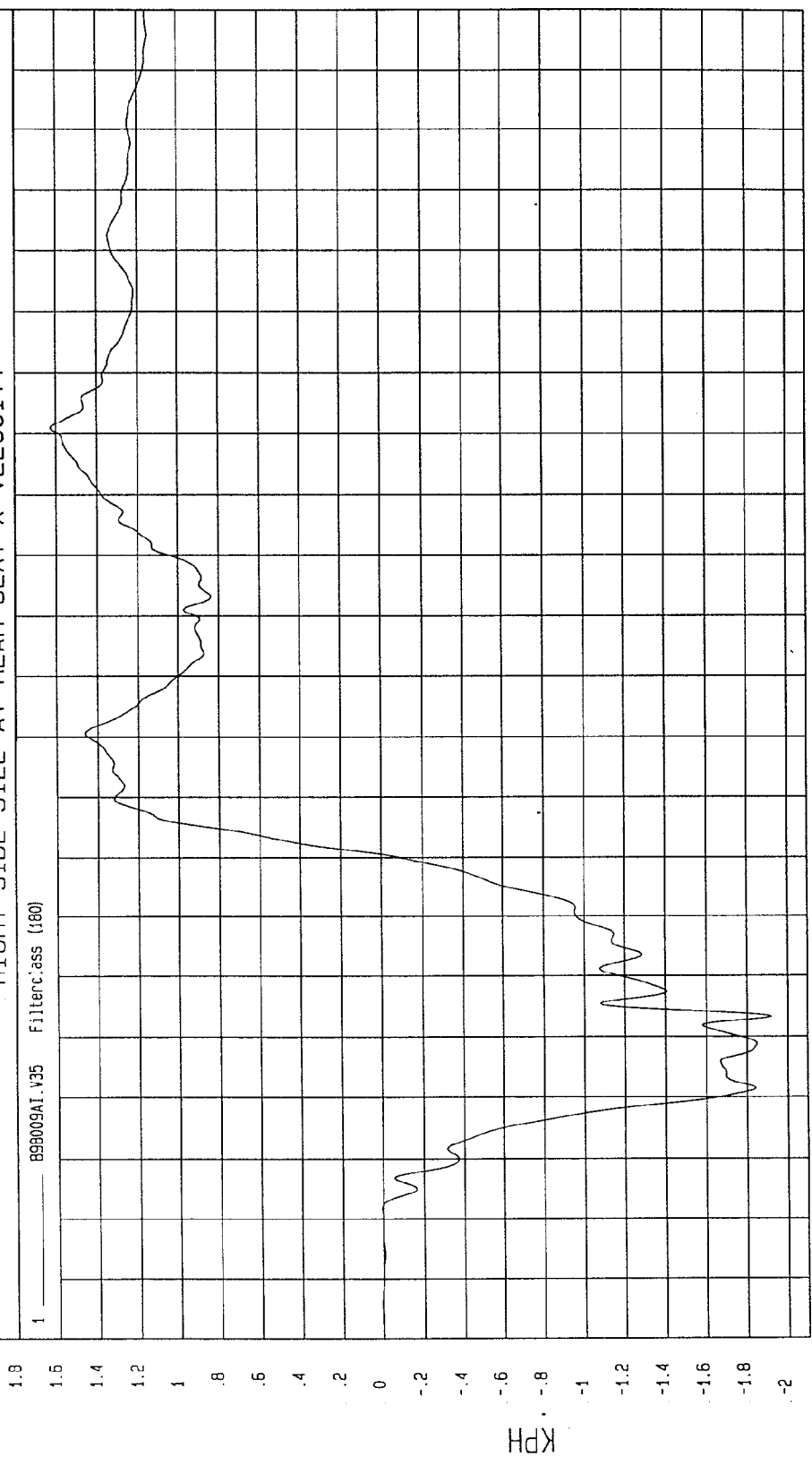
Speed: 38.3 MPH 61.6 KPH

COMPONENT: 1998 NISSAN SENTRA (MW5206)

Maximum = 1.62 KPH at 131 msec

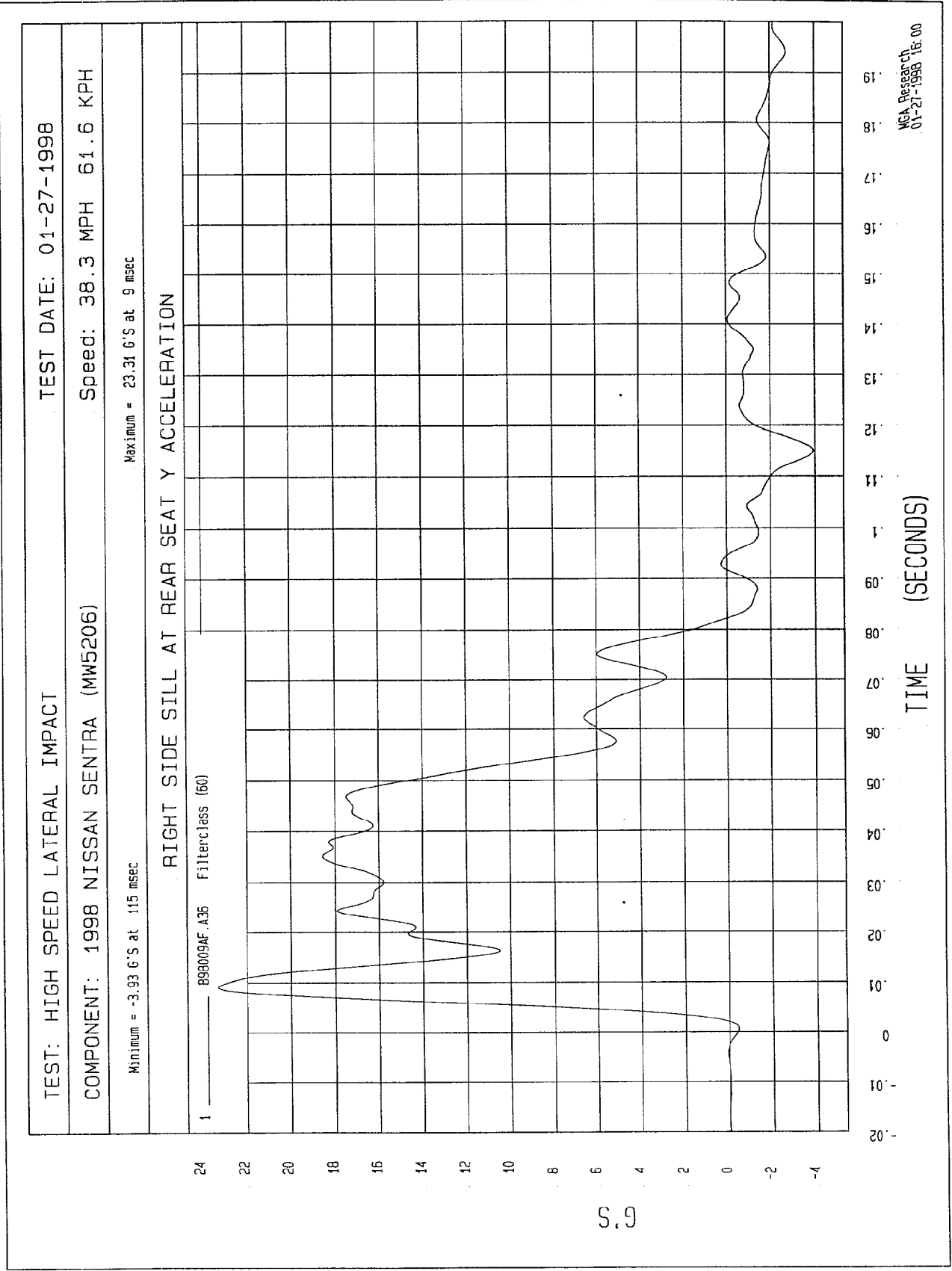
Minimum = -1.91 KPH at 33 msec

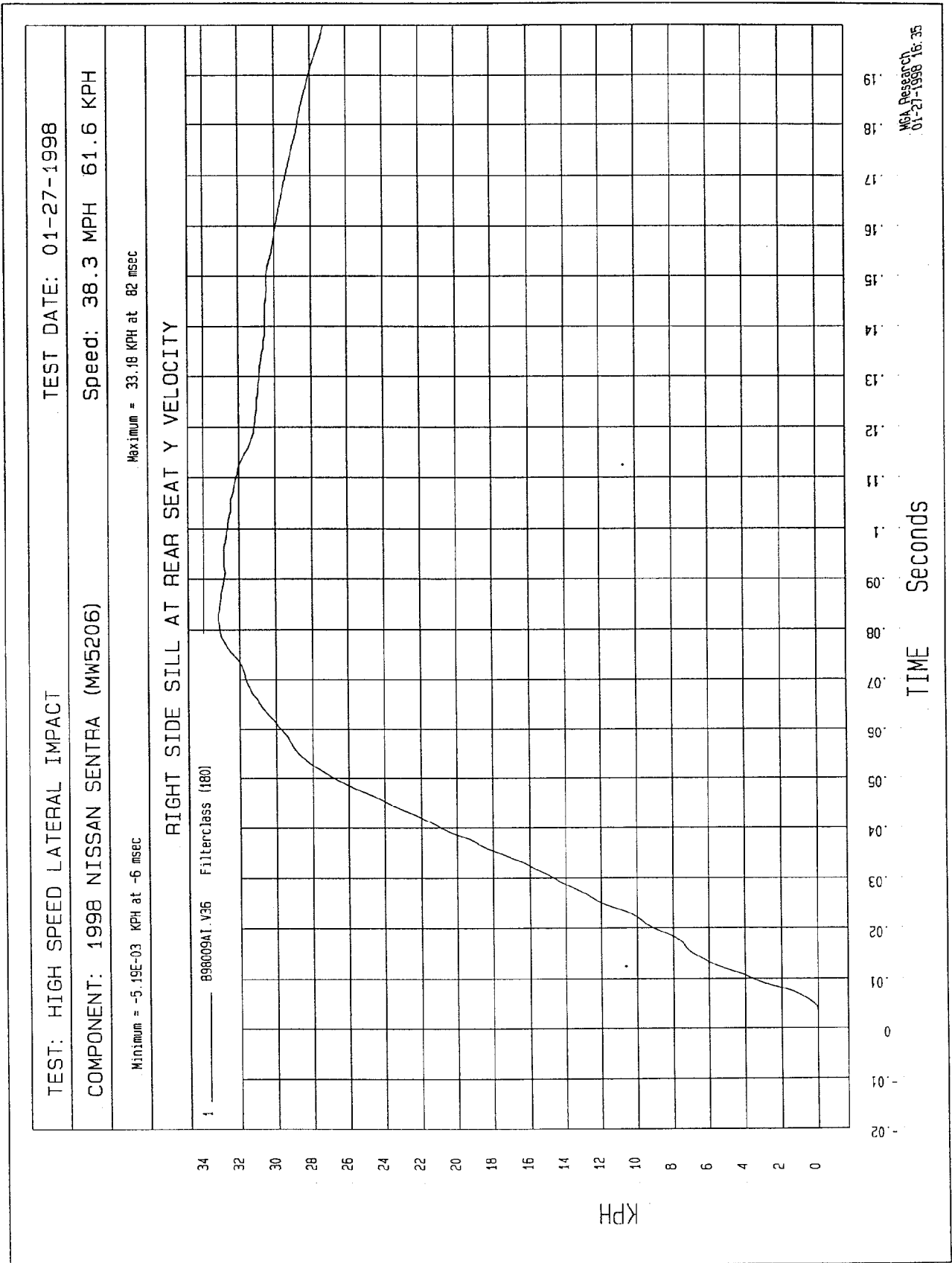
RIGHT SIDE SILL AT REAR SEAT X VELOCITY

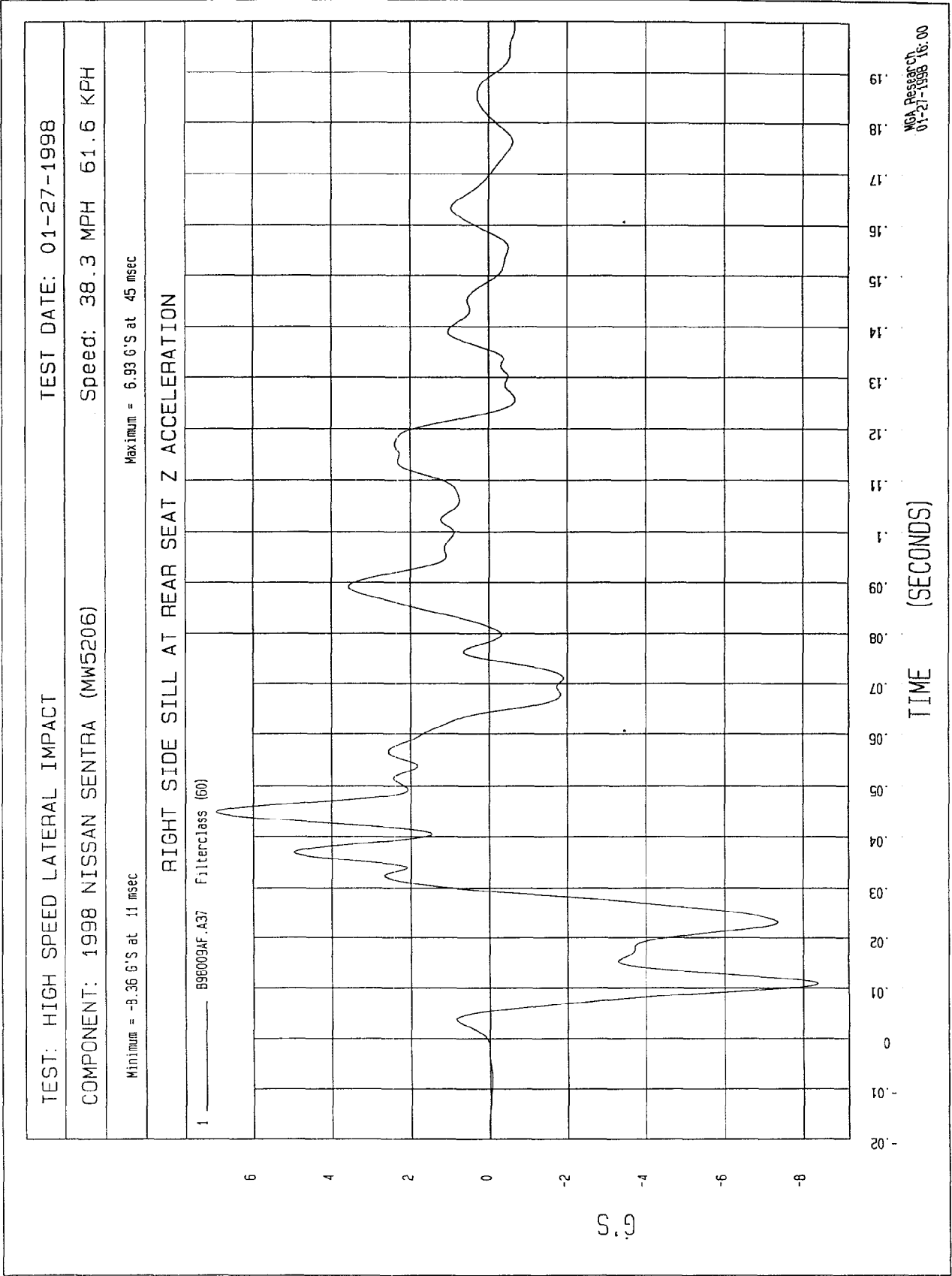


TIME Seconds

MCA Research
01-27-1998 16:35







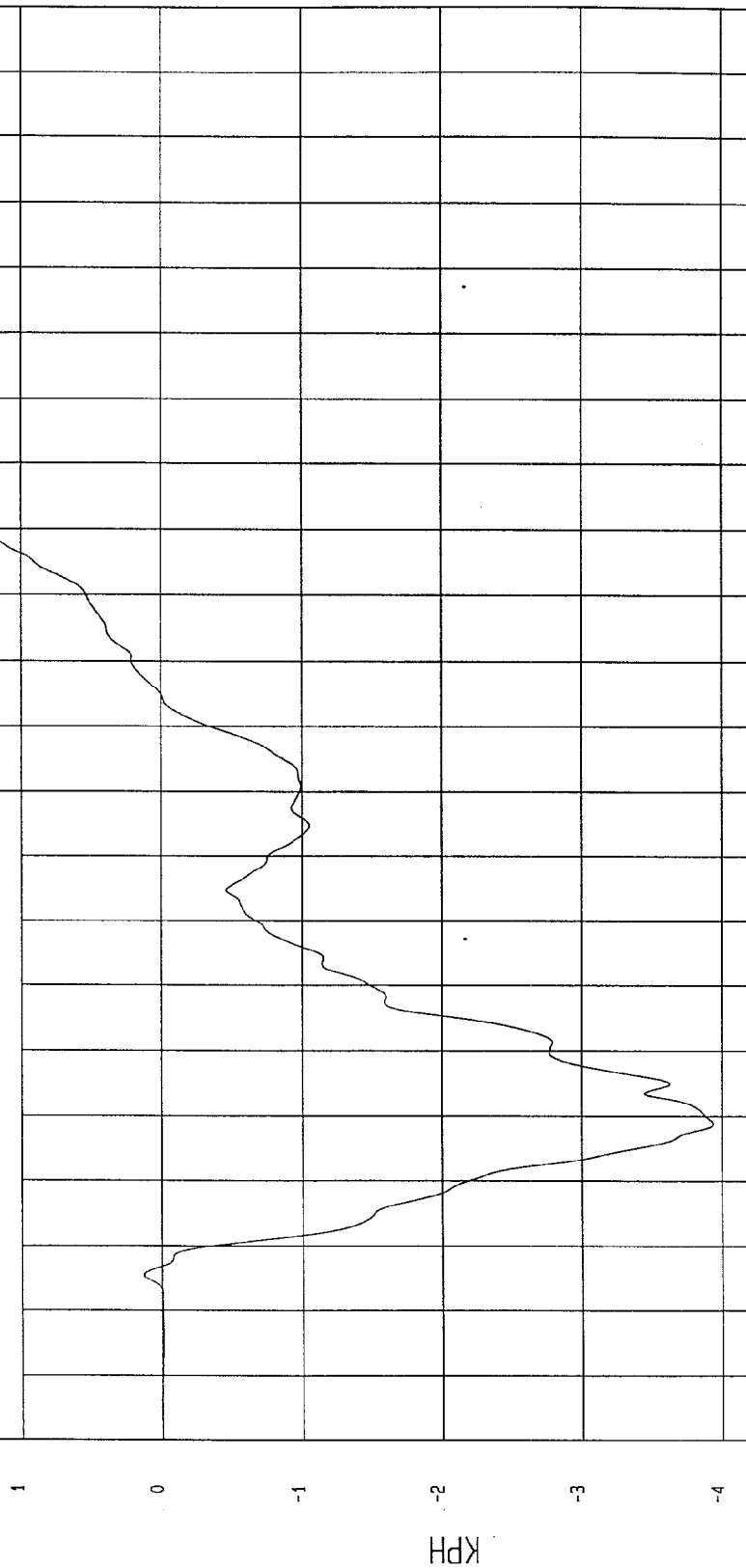
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

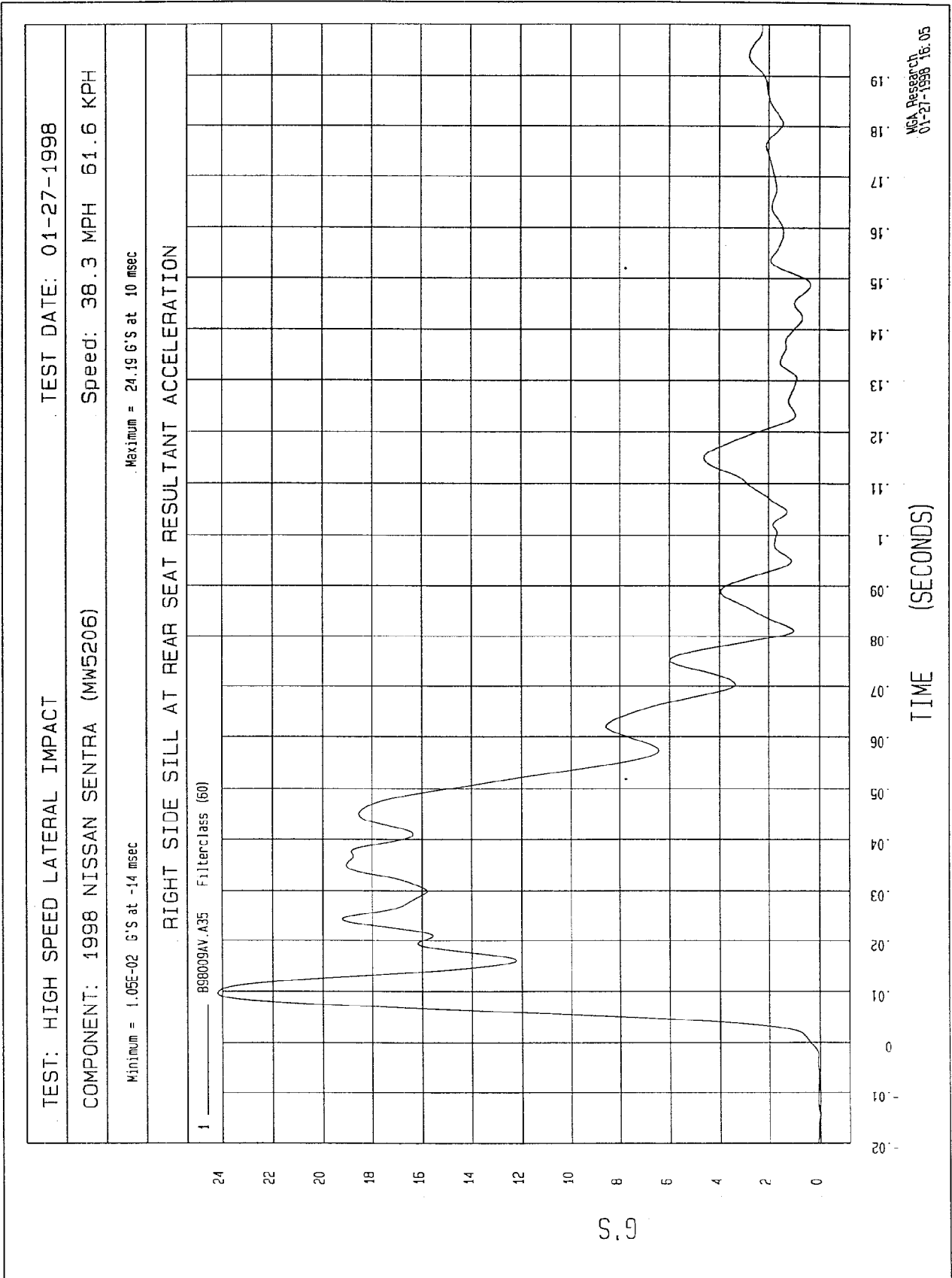
Minimum = -3.94 KPH at 29 msec Maximum = 1.59 KPH at 169 msec

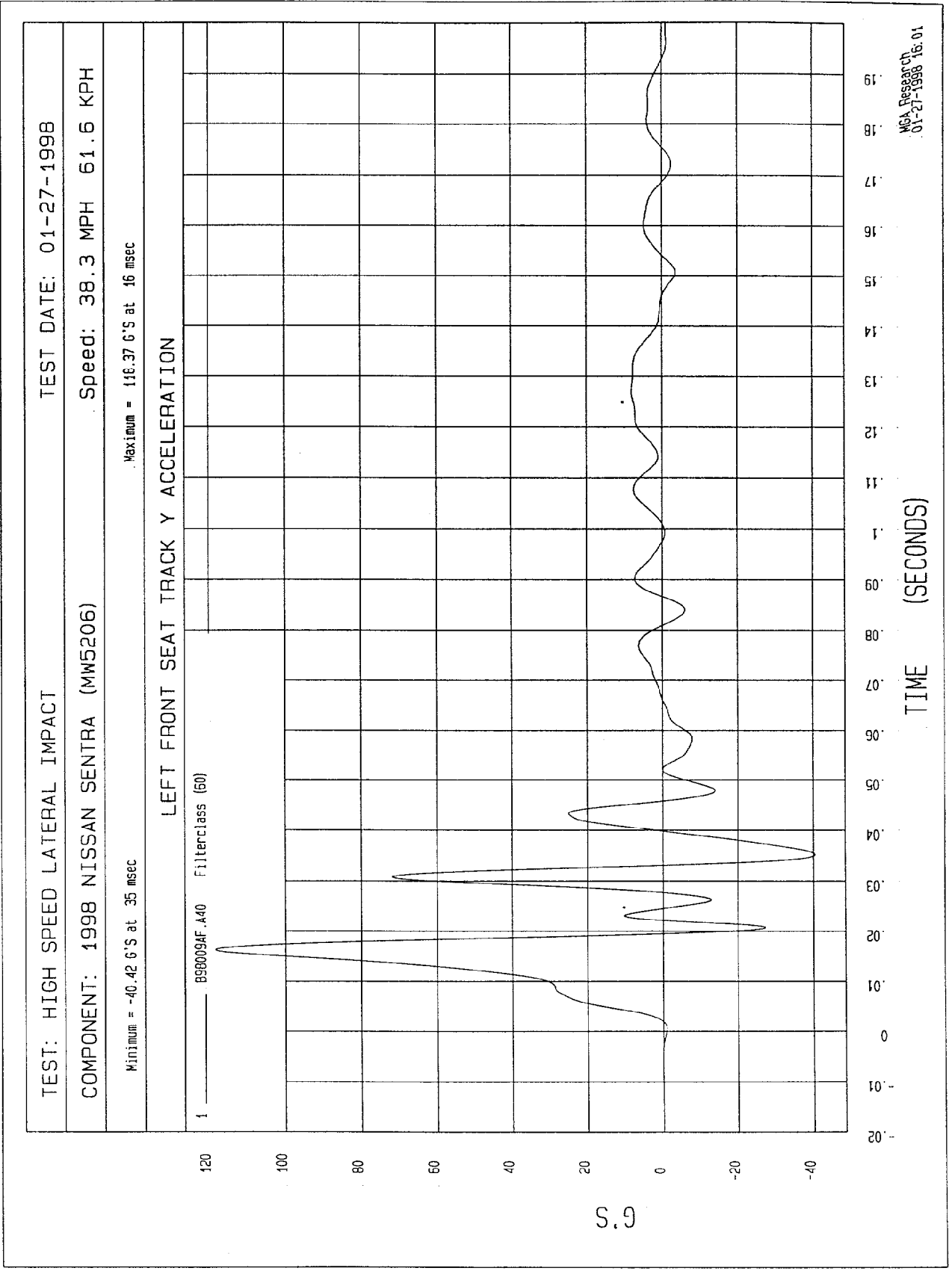
RIGHT SIDE SILL AT REAR SEAT Z VELOCITY

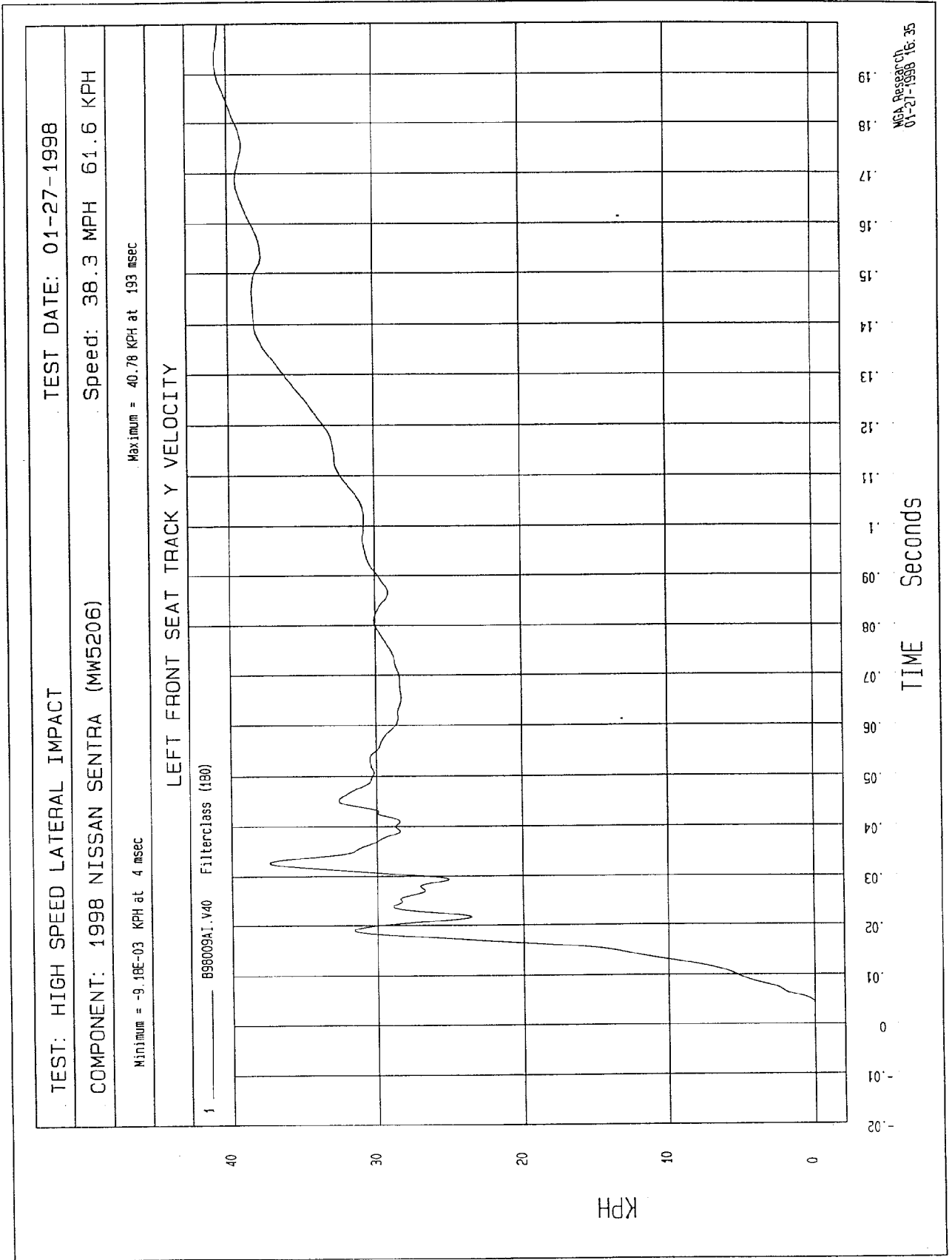
1 B98009A1.V37 Filterclass (180)

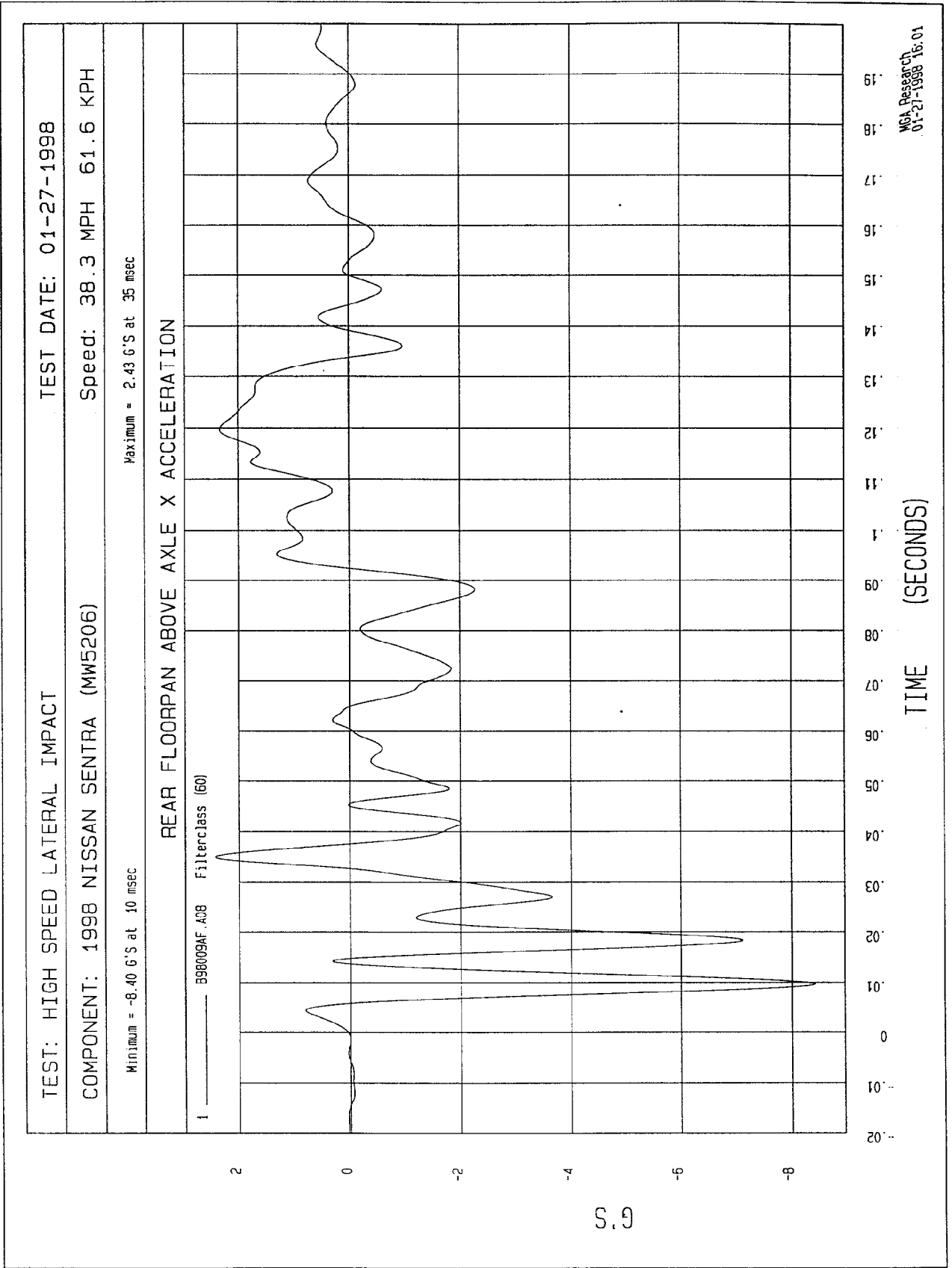


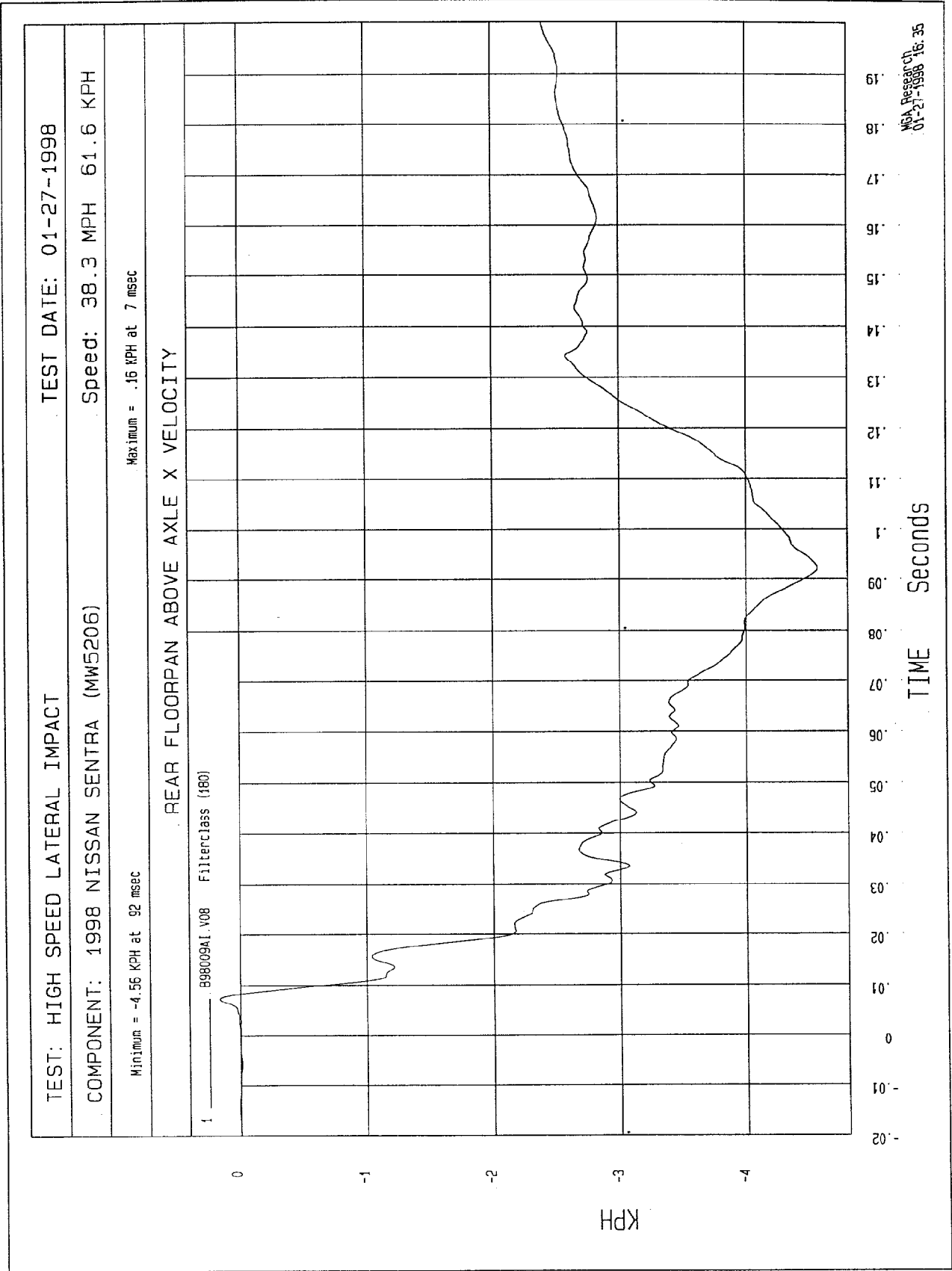
TIME Seconds
NCA Research
01-27-1998 16:35











TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

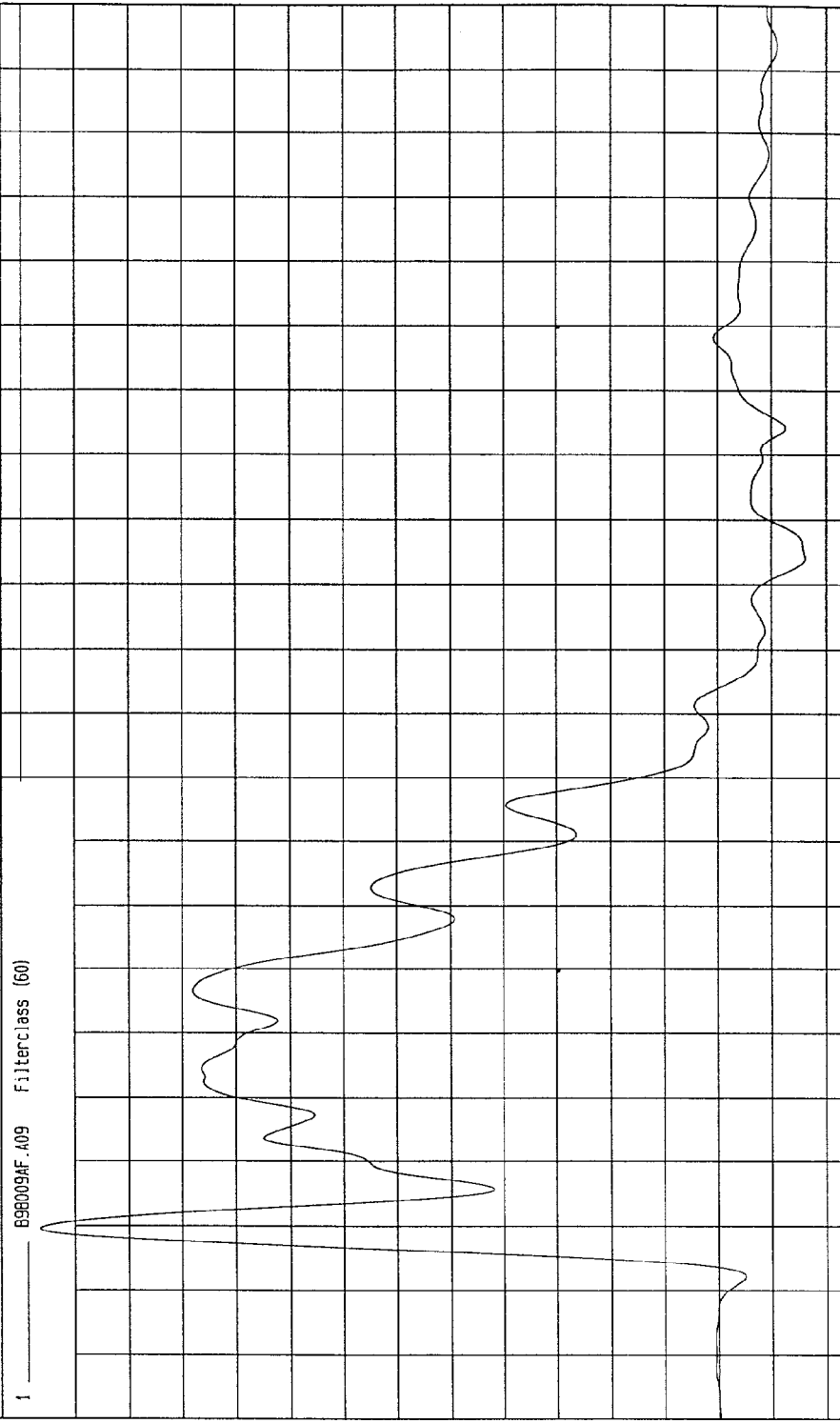
COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = -3.23 G'S at 114 msec Maximum = 25.29 G'S at 10 msec

REAR FLOORPAN ABOVE AXLE Y ACCELERATION

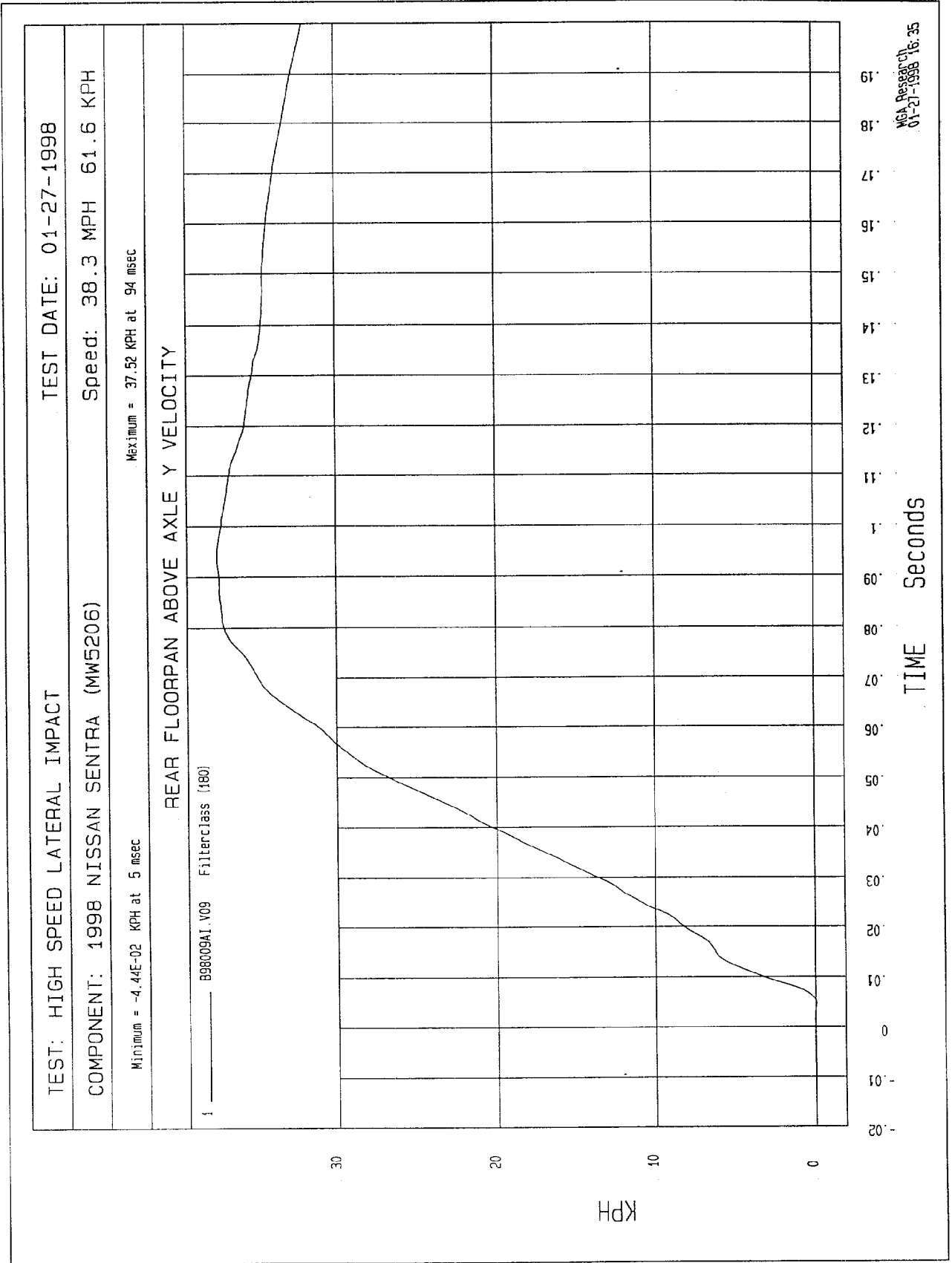
1 698009AF.A09 Filterclass (60)

G.S



TIME (SECONDS)

MCA Research
01-27-1998 16:01



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

Speed: 38.3 MPH 61.6 KPH

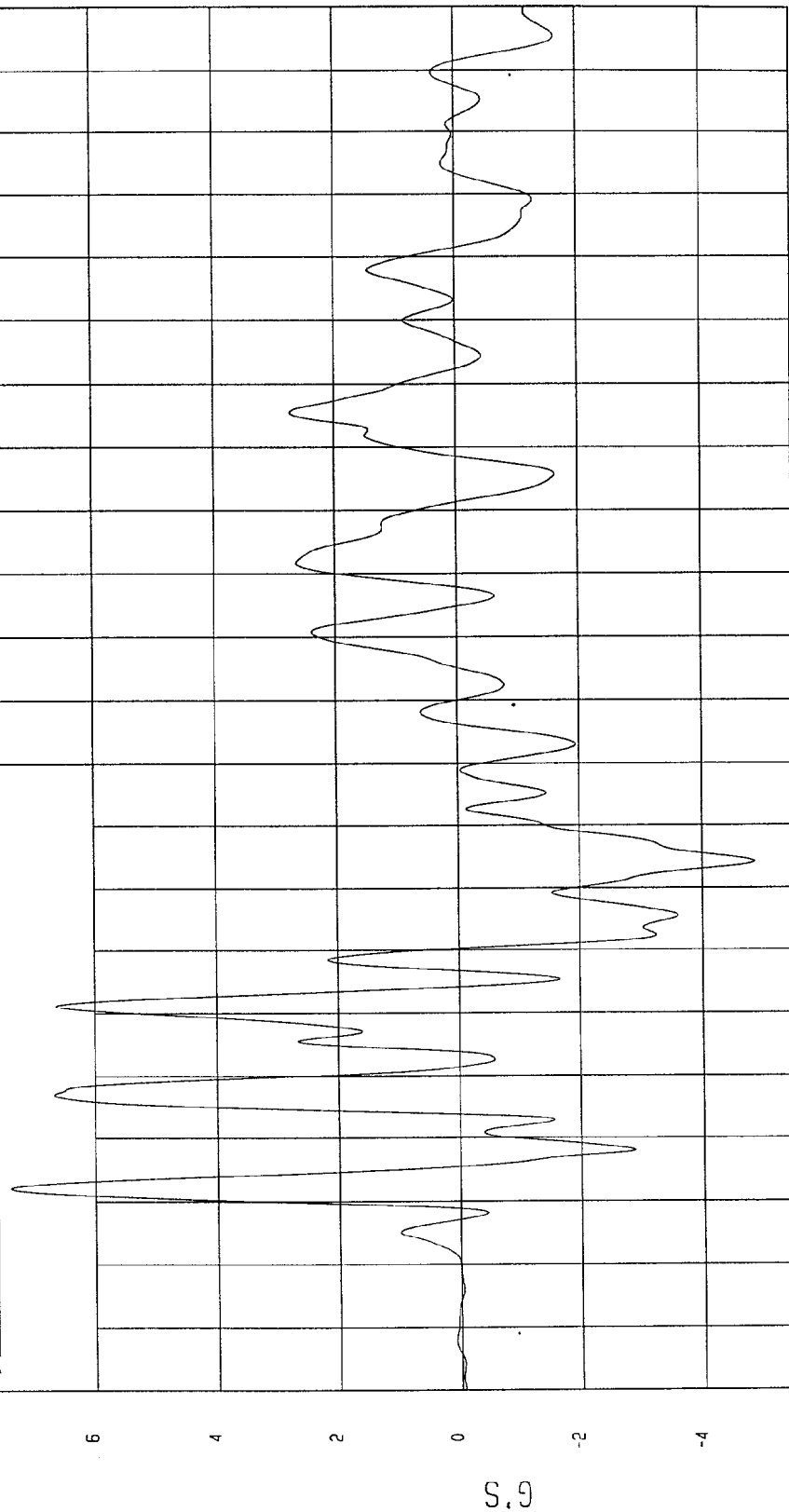
COMPONENT: 1998 NISSAN SENTRA (MW5206)

Maximum = 7.38 G'S at 12 msec

Minimum = -4.84 G'S at 64 msec

REAR FLOORPAN ABOVE AXLE Z ACCELERATION

1 ——— B98009AF.A10 Filterclass (60)



TIME (SECONDS)

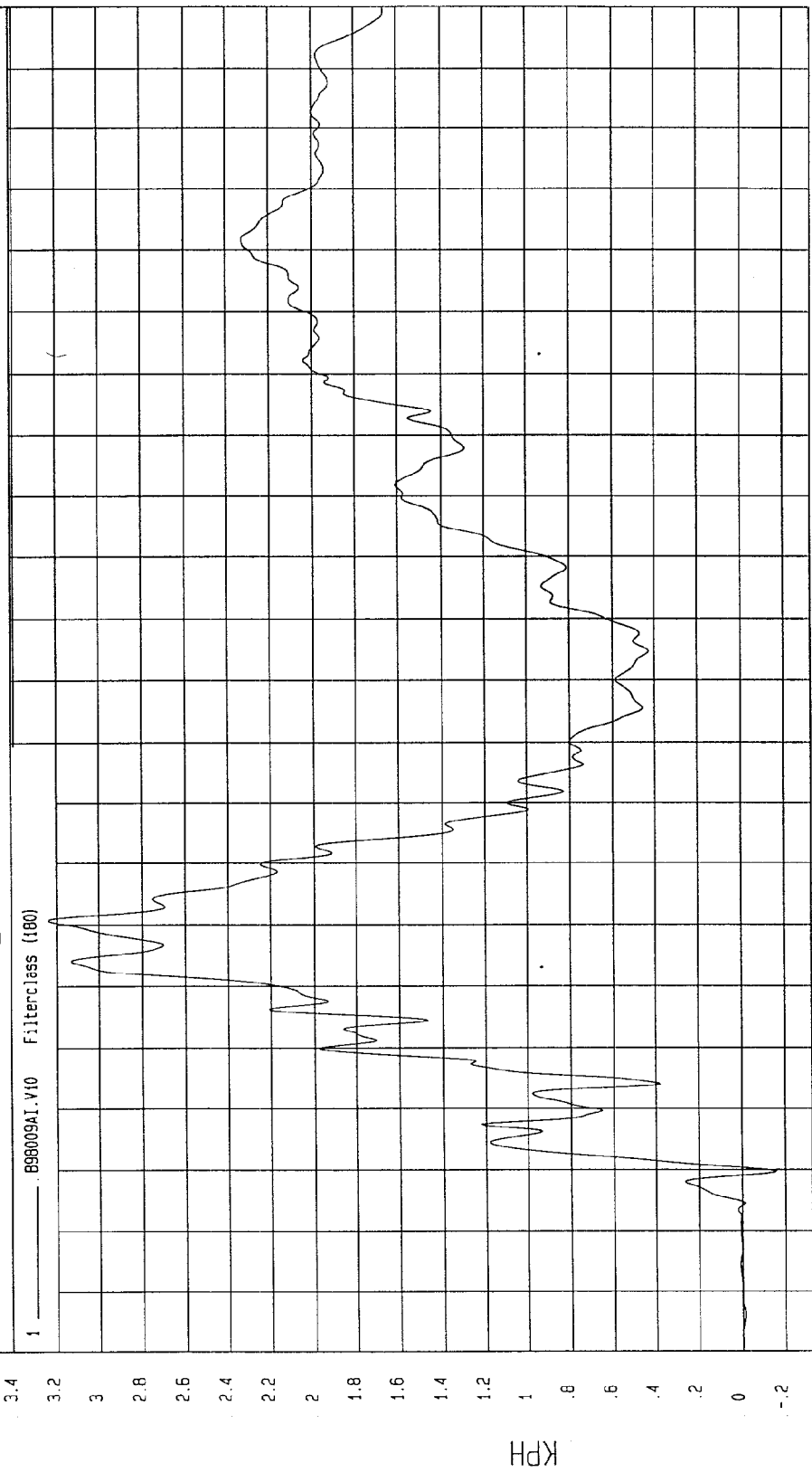
MCA Research
01-27-1998 16:01

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

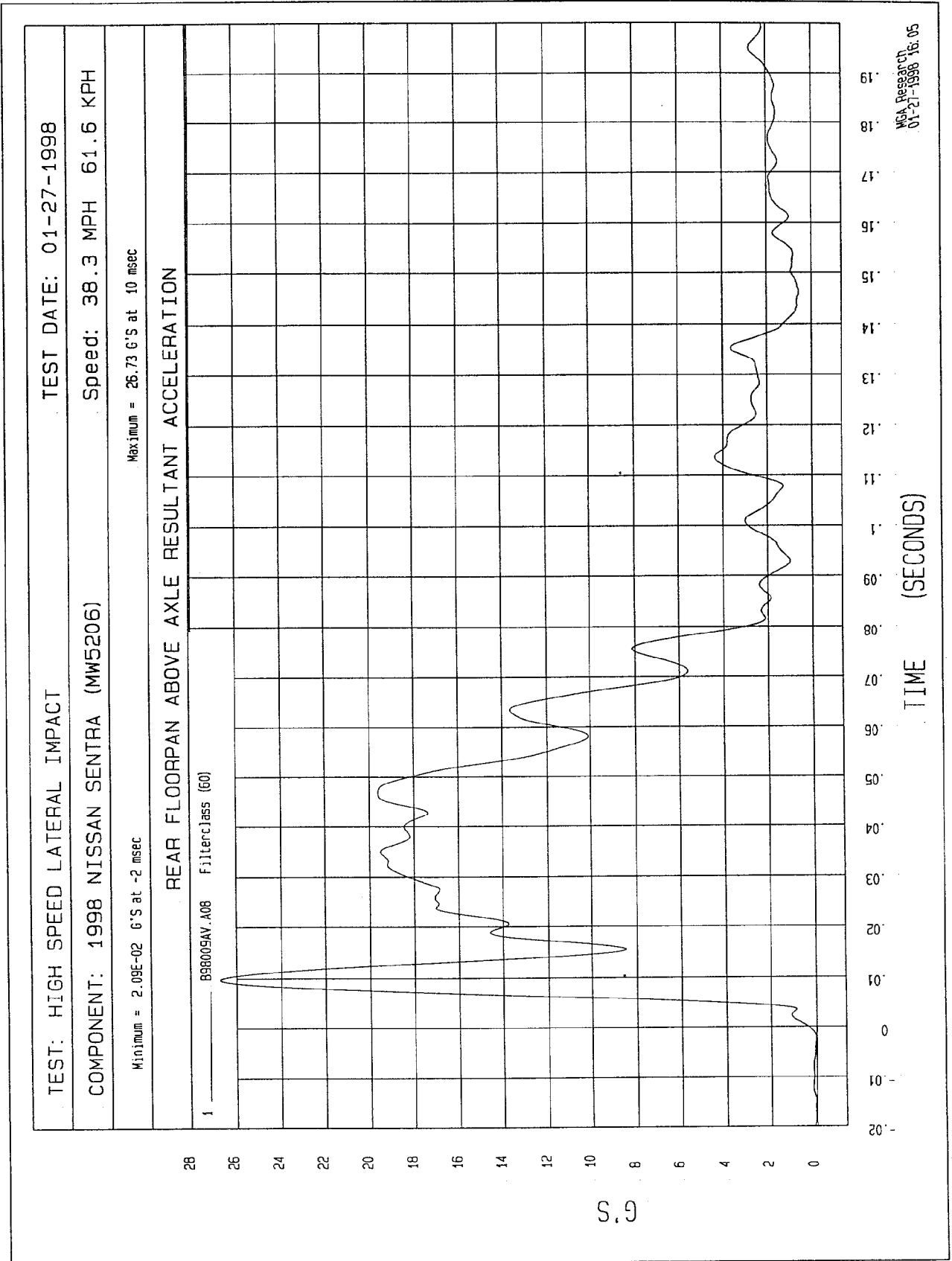
Minimum = -.15 KPH at 10 msec Maximum = 3.24 KPH at 51 msec

REAR FLOORPAN ABOVE AXLE Z VELOCITY



TIME Seconds

WCA Research
01-27-1998 16:35

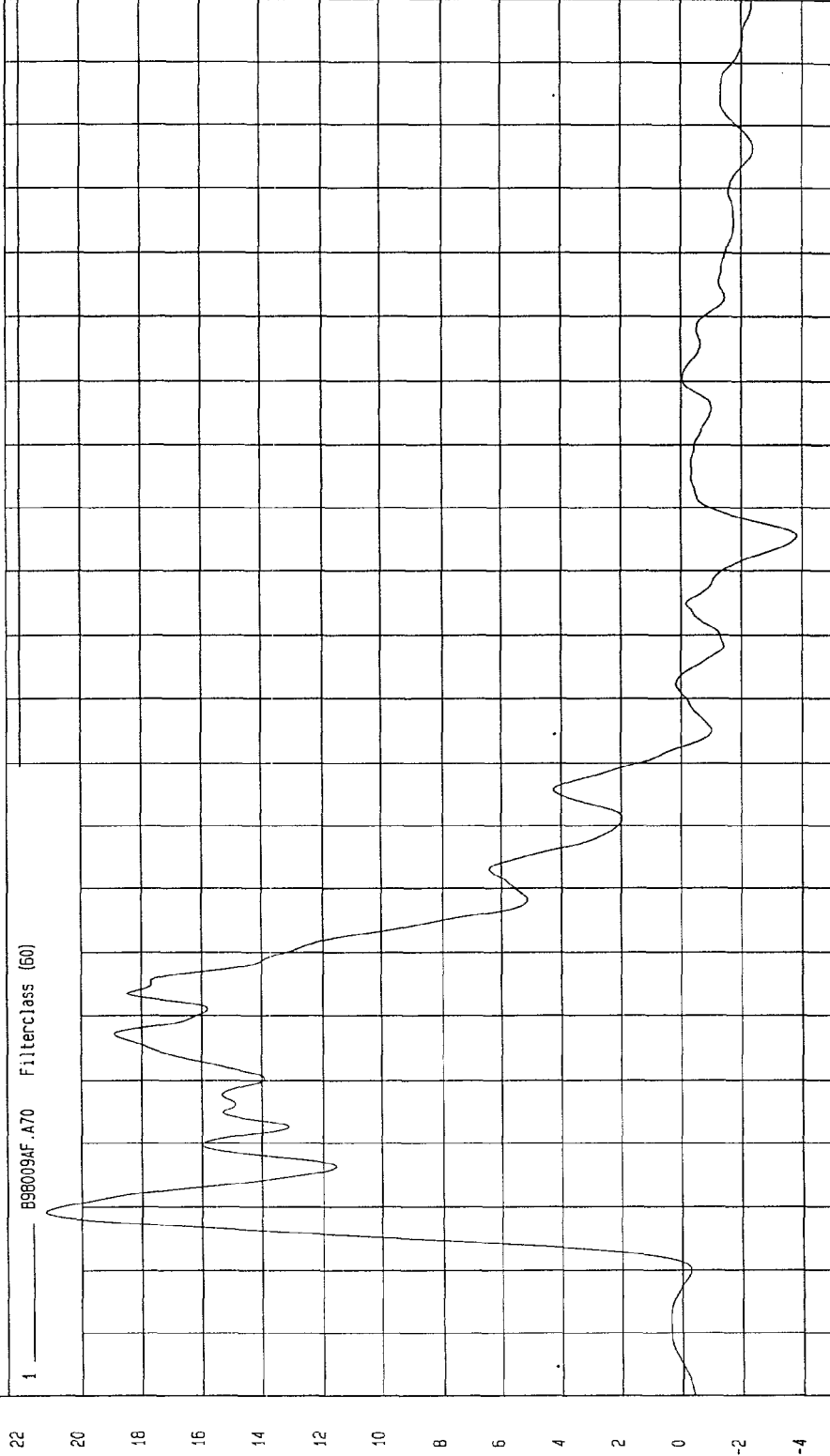


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = -3.82 G'S at 116 msec Maximum = 21.18 G'S at 9 msec

RIGHT REAR OCCUPANT COMPARTMENT Y ACCELERATION



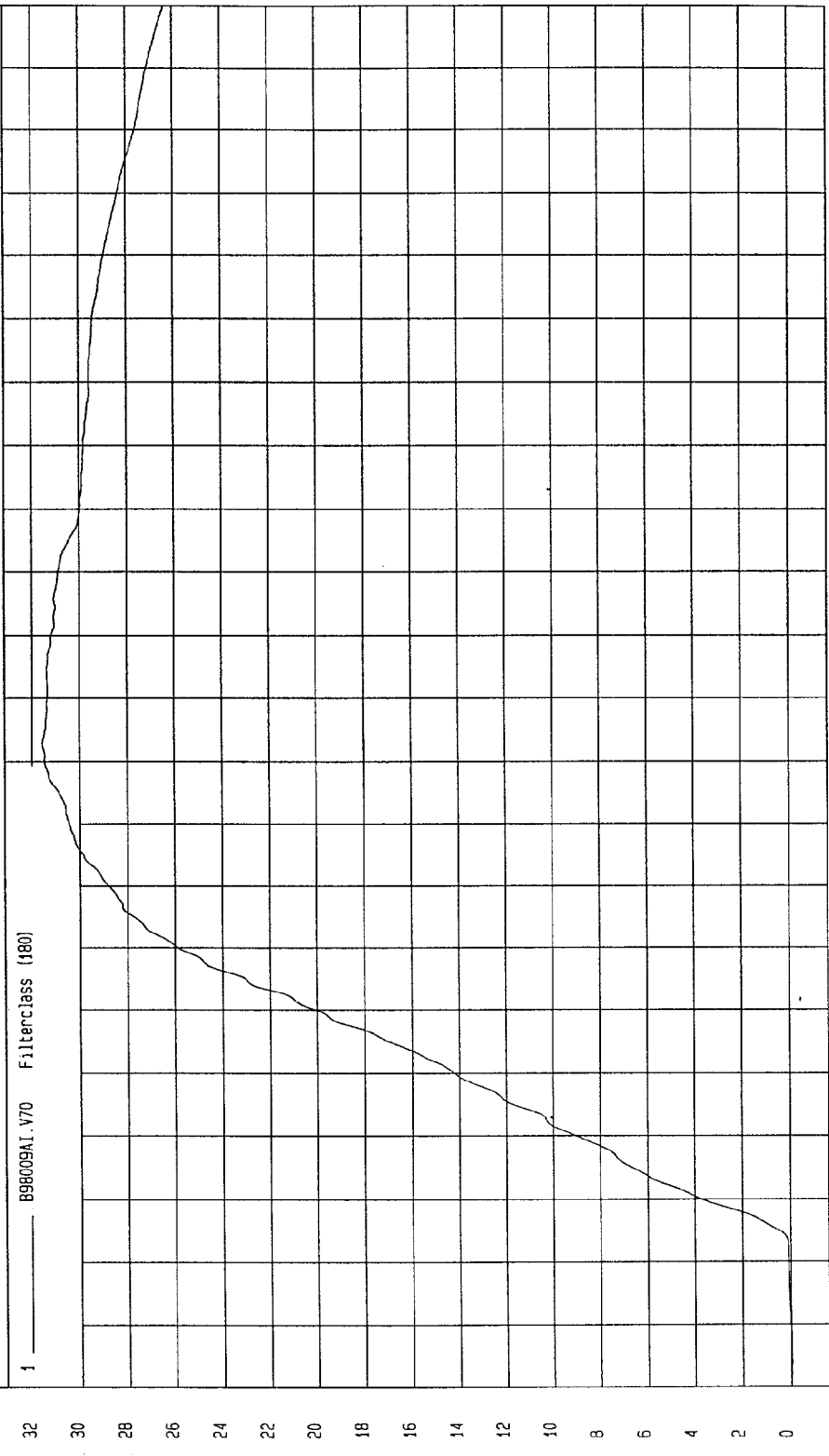
WGA Research Corp.
01-27-1998 16:01

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

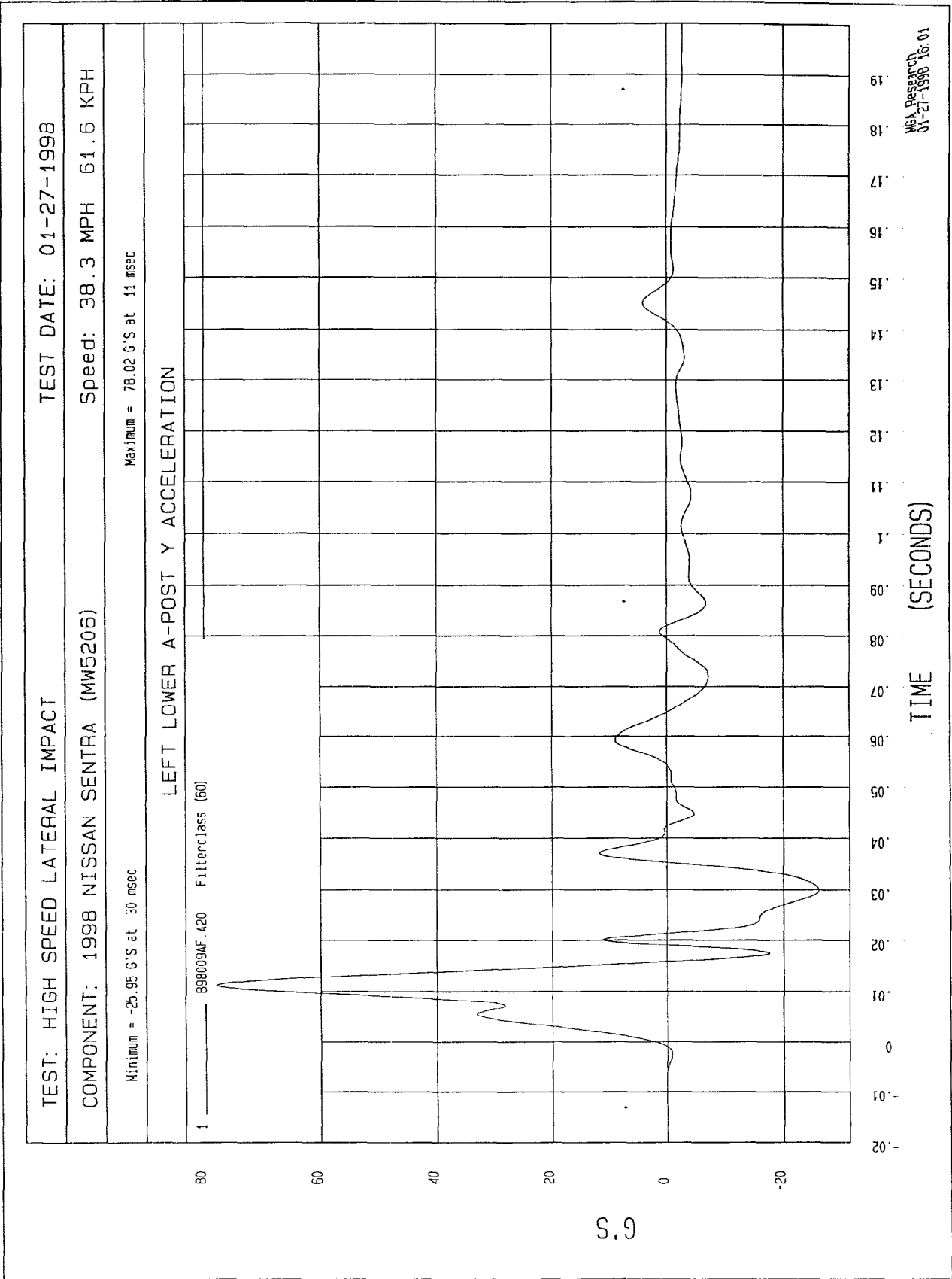
COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = -4.27E-02 KPH at -15 msec Maximum = 31.56 KPH at 83 msec

RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY



TIME Seconds
NSA Research
01-27-1998 16:35



TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

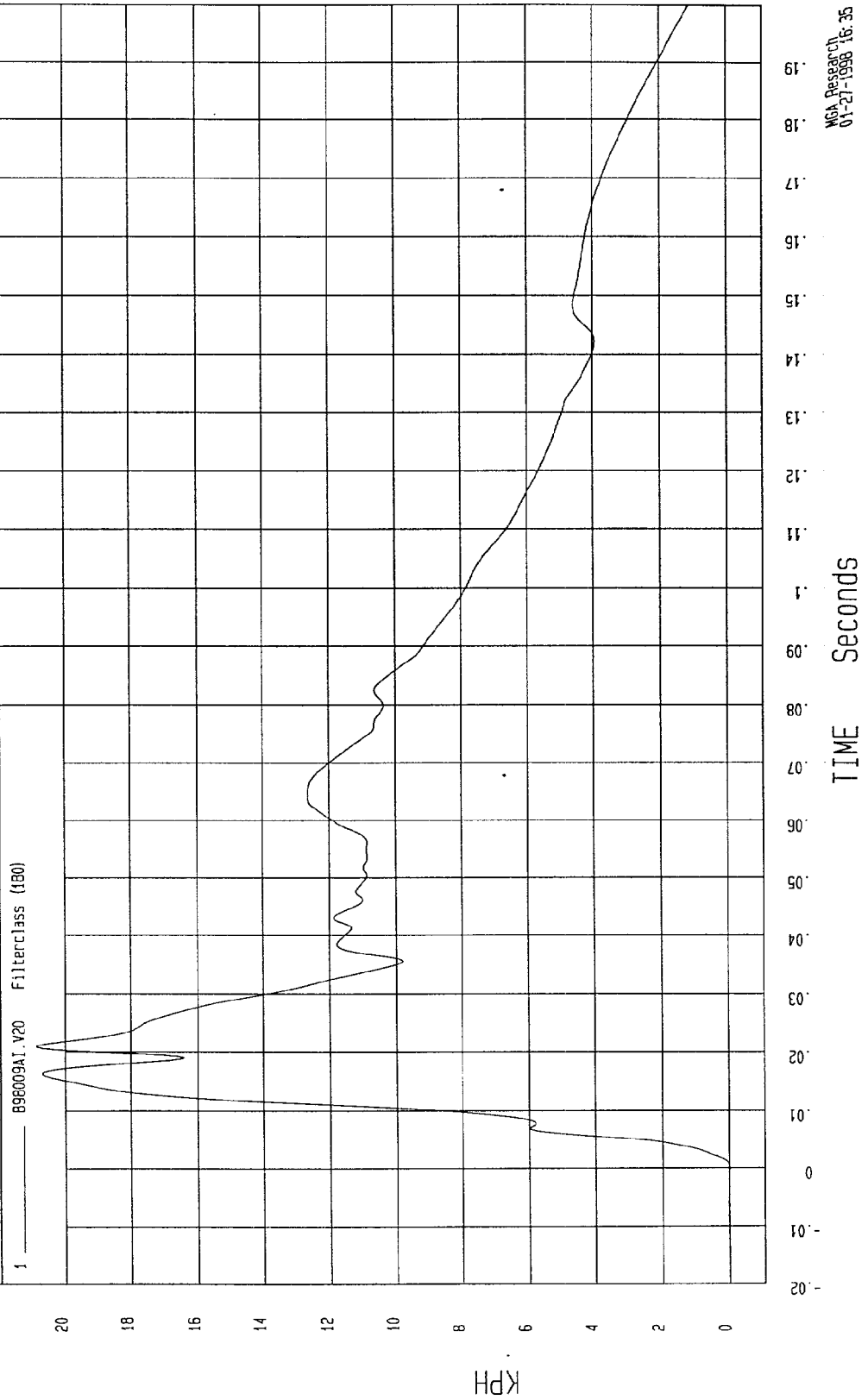
Speed: 38.3 MPH 61.6 KPH

COMPONENT: 1998 NISSAN SENTRA (MW5206)

Maximum = 20.87 KPH at 21 msec

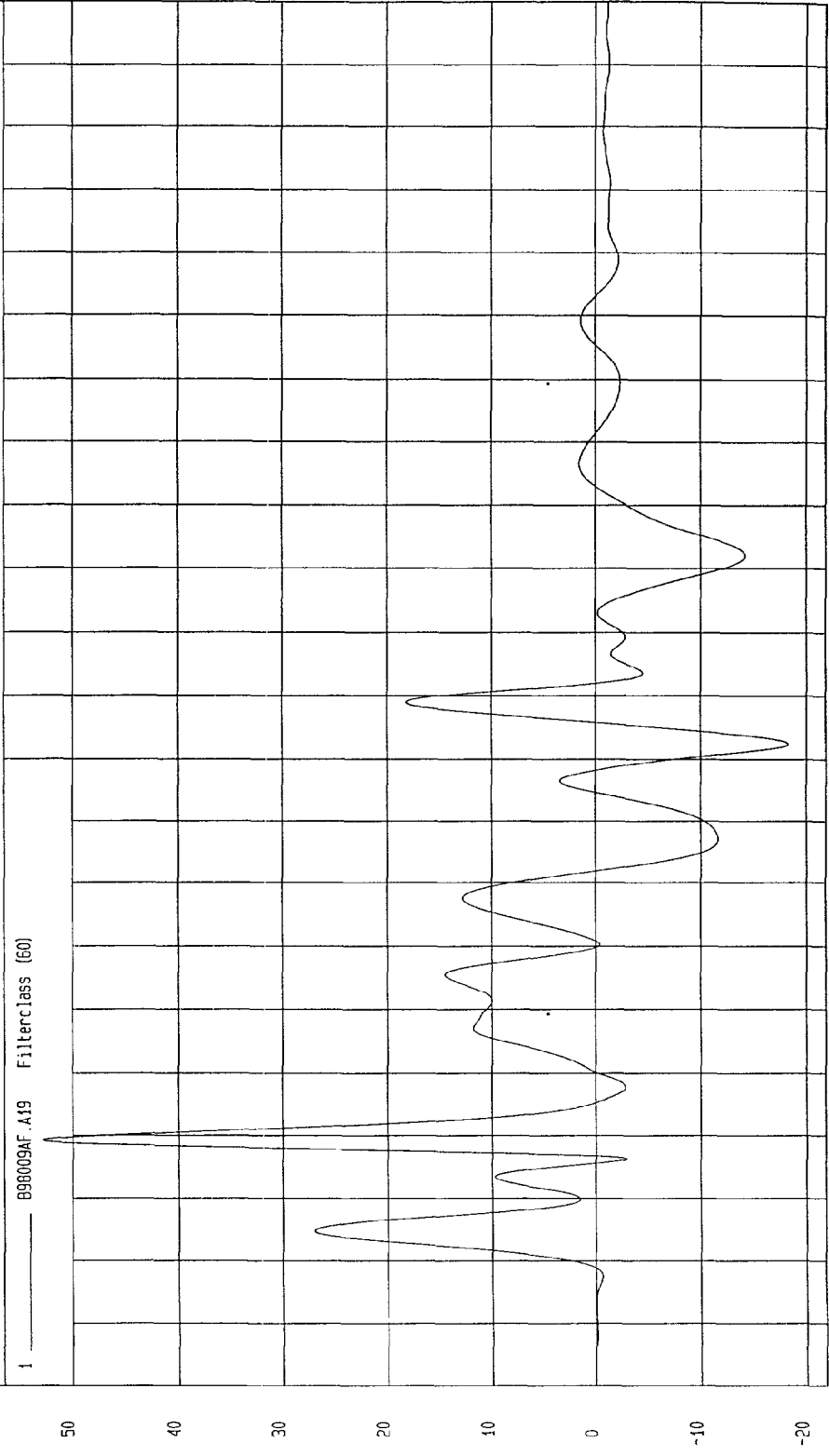
Minimum = -6.48E-03 KPH at 0 msec

LEFT LOWER A-POST Y VELOCITY



TEST: HIGH SPEED LATERAL IMPACT	TEST DATE: 01-27-1998
COMPONENT: 1998 NISSAN SENTRA (MW5206)	Speed: 38.3 MPH 61.6 KPH
Minimum = -18.27 G'S at 82 msec	Maximum = 52.84 G'S at 19 msec

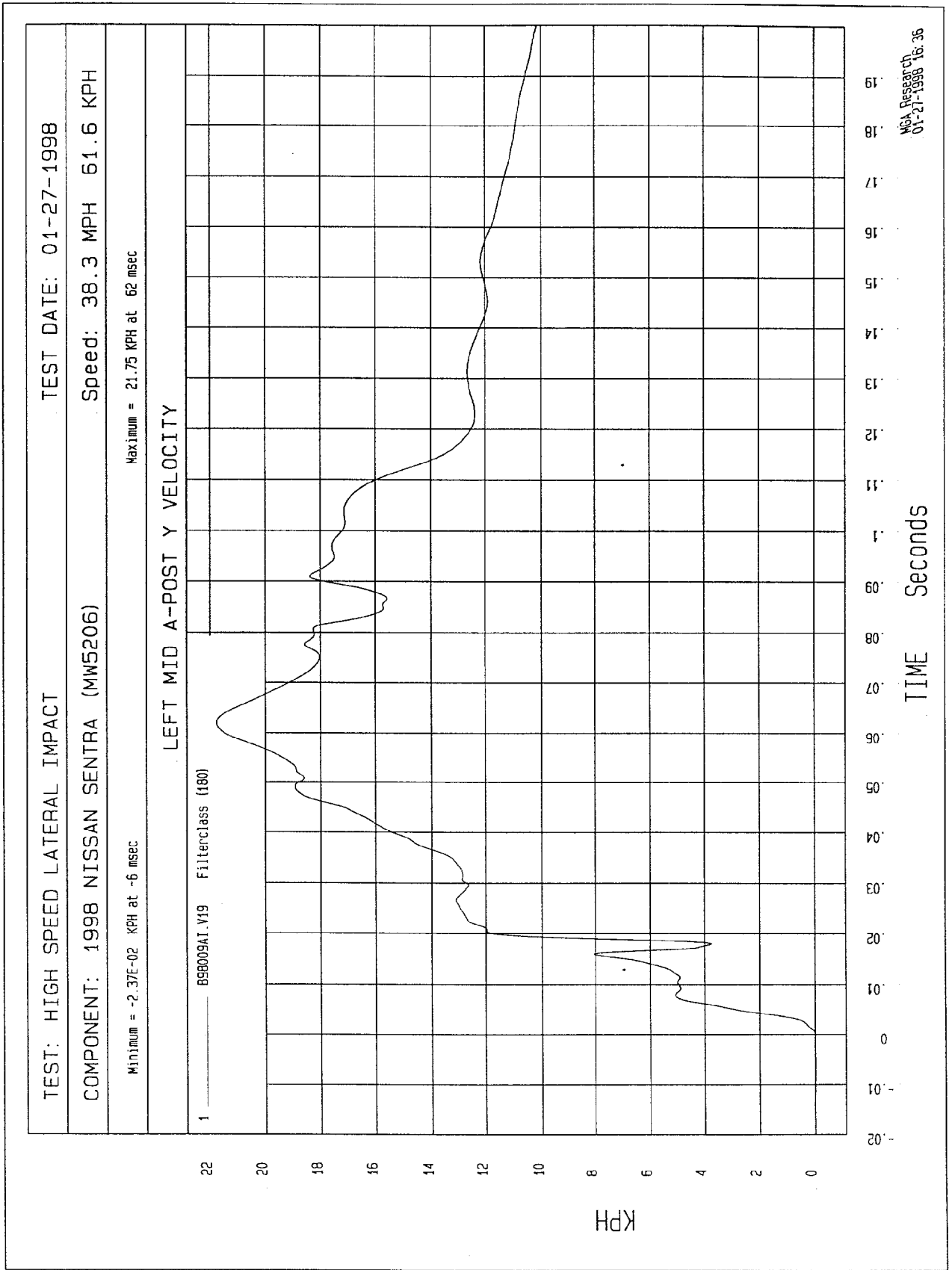
LEFT MID A-POST Y ACCELERATION

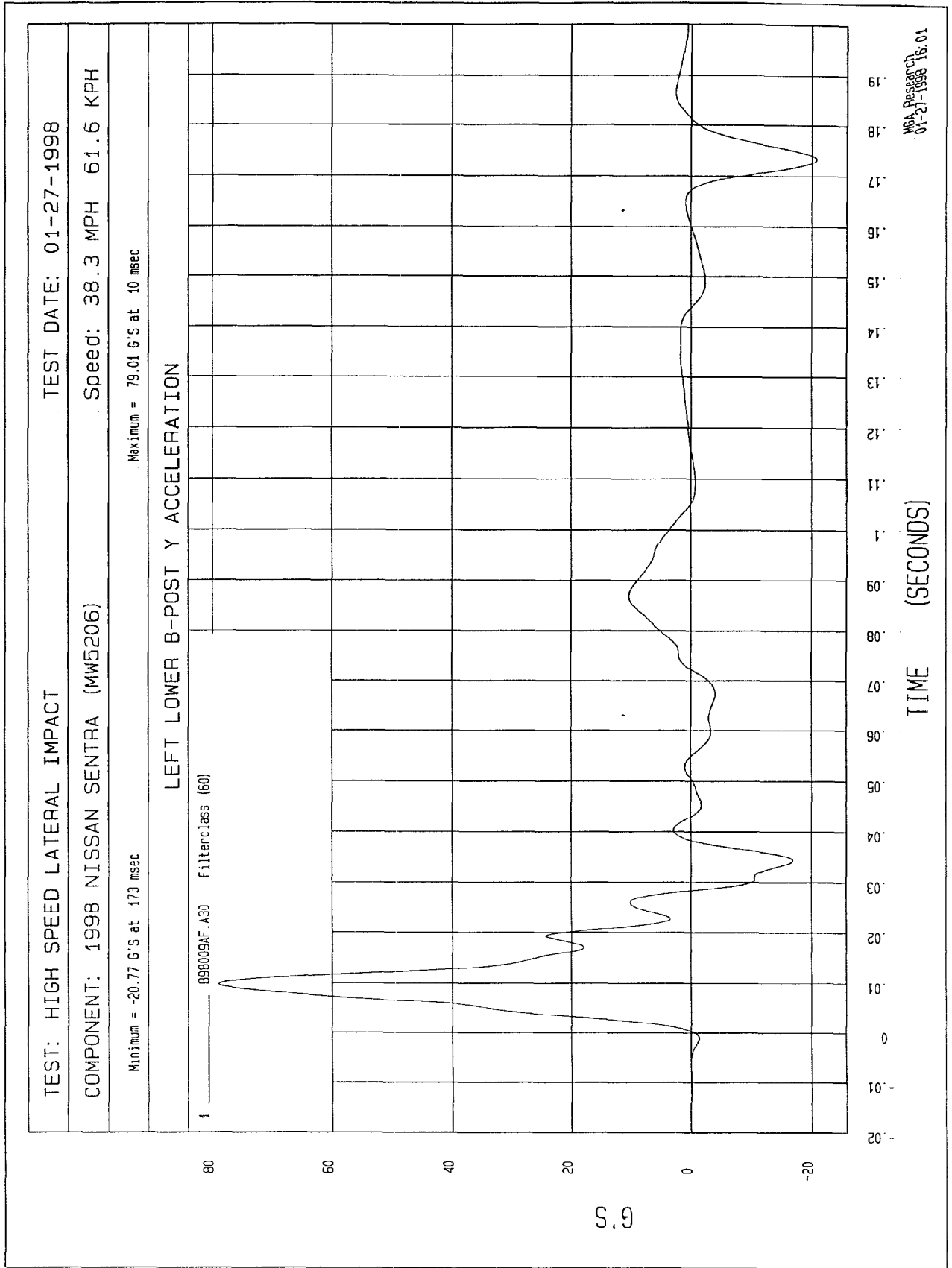


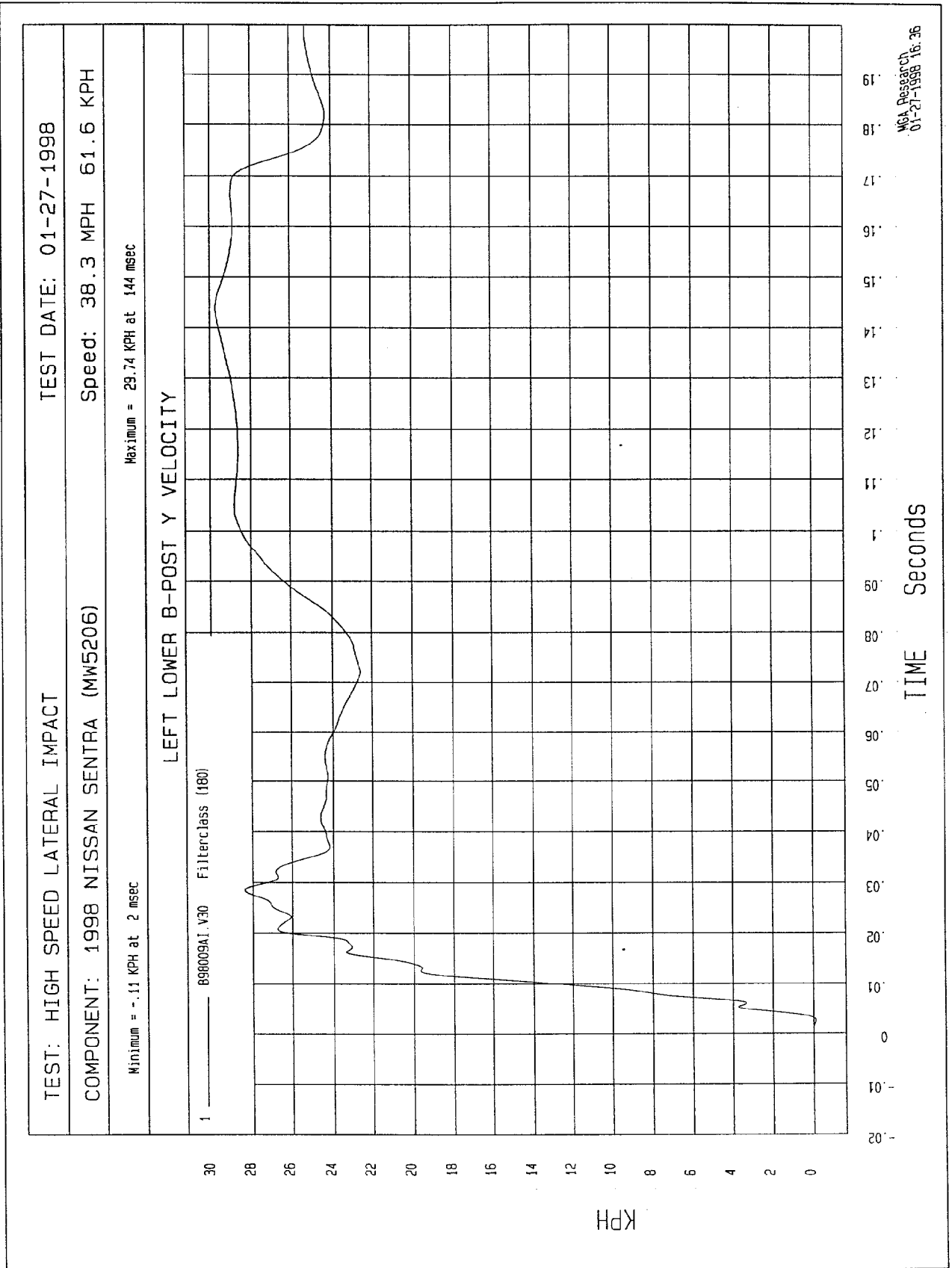
TIME (SECONDS)

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

NSI Research
01-27-1998 16:01





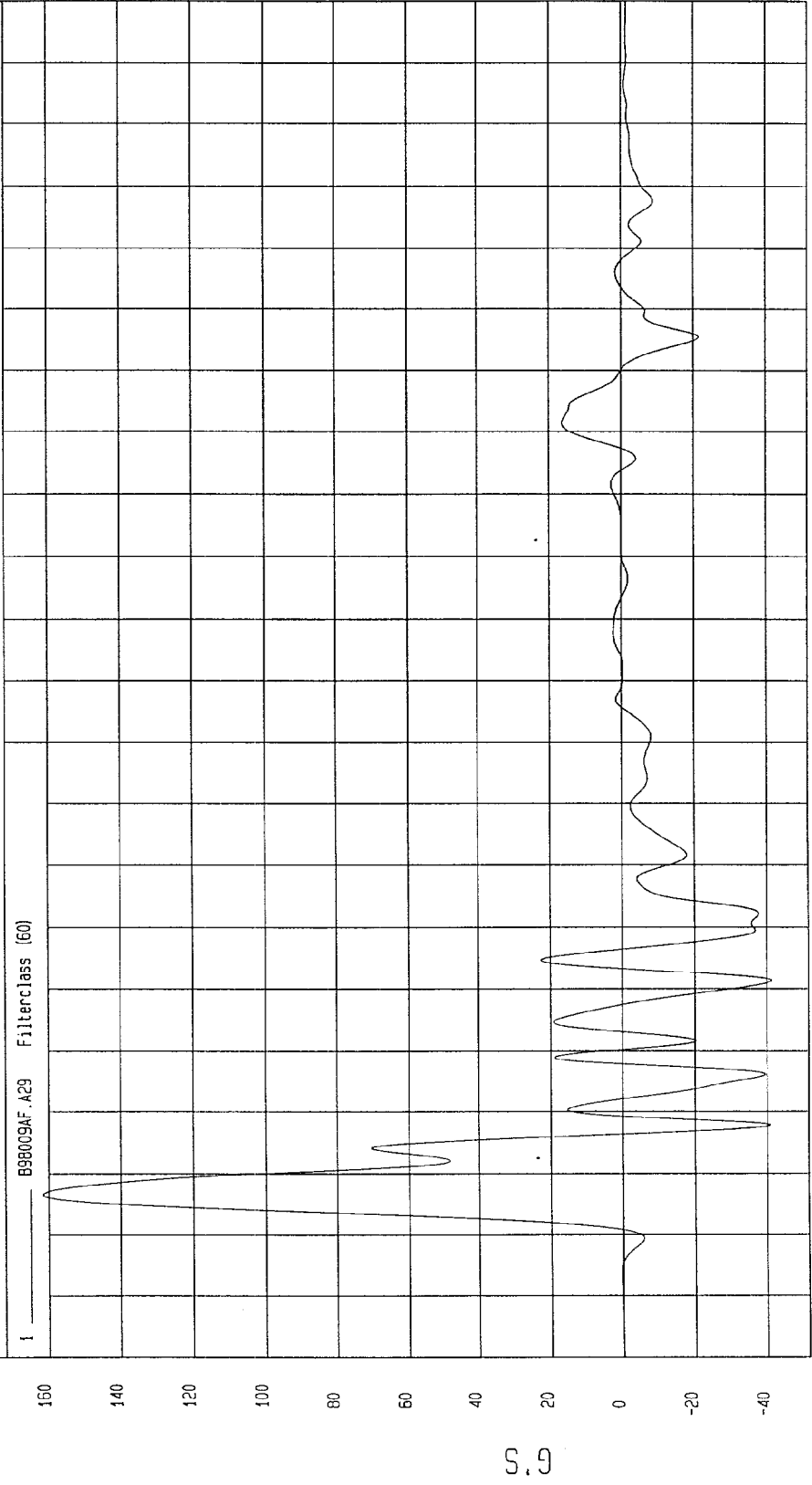


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

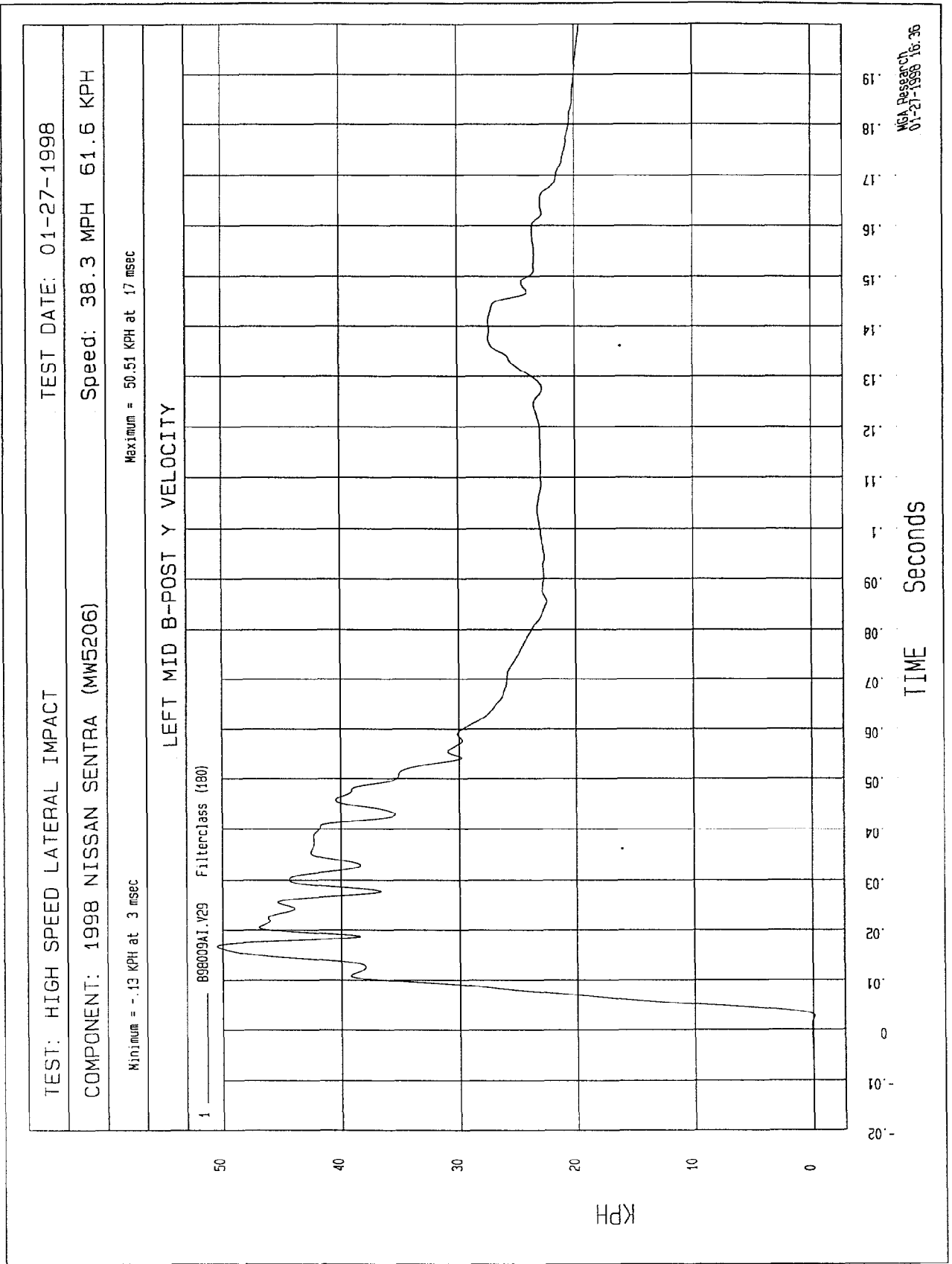
Minimum = -41.40 G'S at 41 msec Maximum = 161.6 G'S at 7 msec

LEFT MID B-POST Y ACCELERATION



TIME (SECONDS)

NCA Research
01-27-1998 15:01

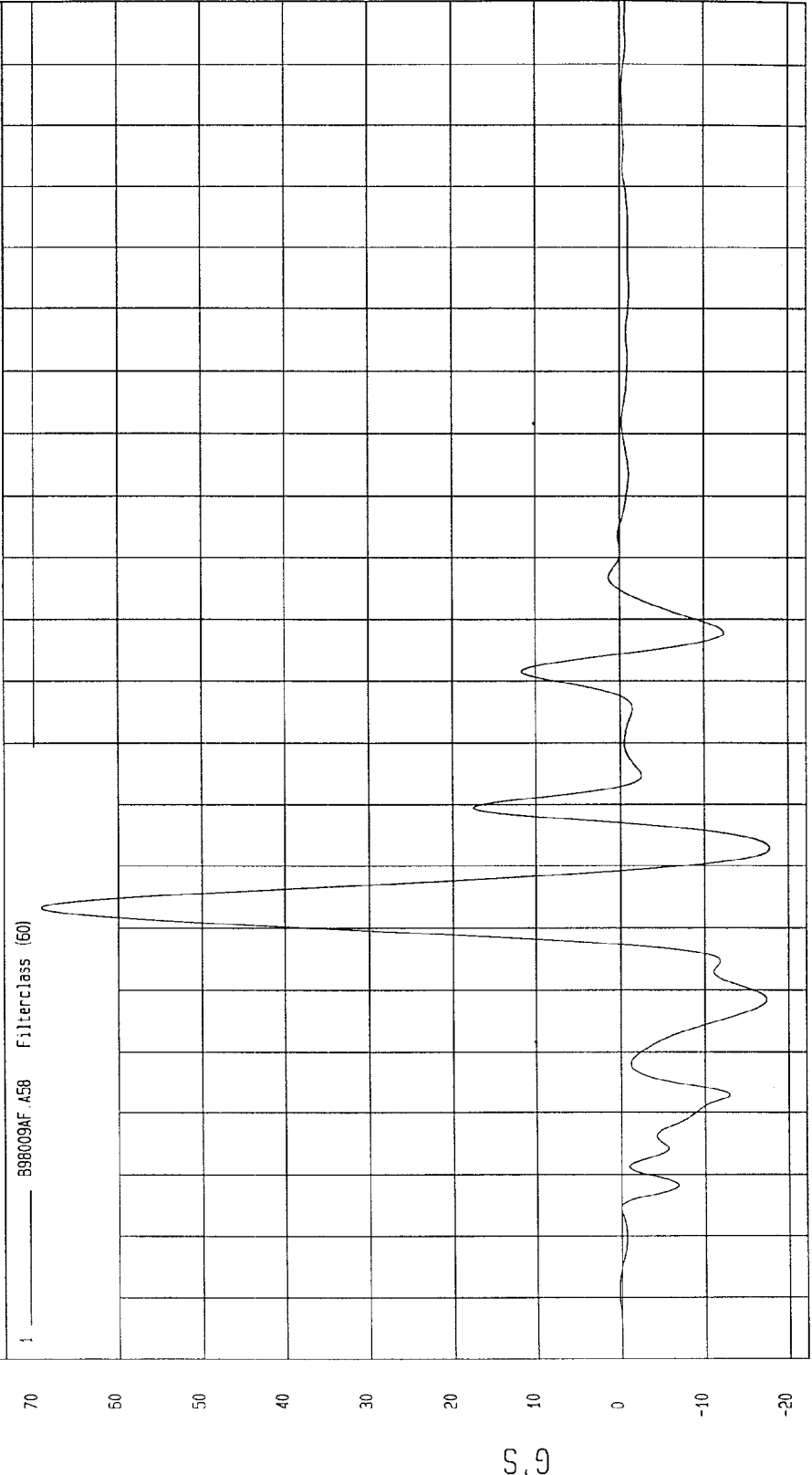


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = -17.76 G's at 63 msec Maximum = 69.20 G's at 53 msec

VEHICLE CG X ACCELERATION



TIME (SECONDS)

MCA Research
01-27-1998 16:02

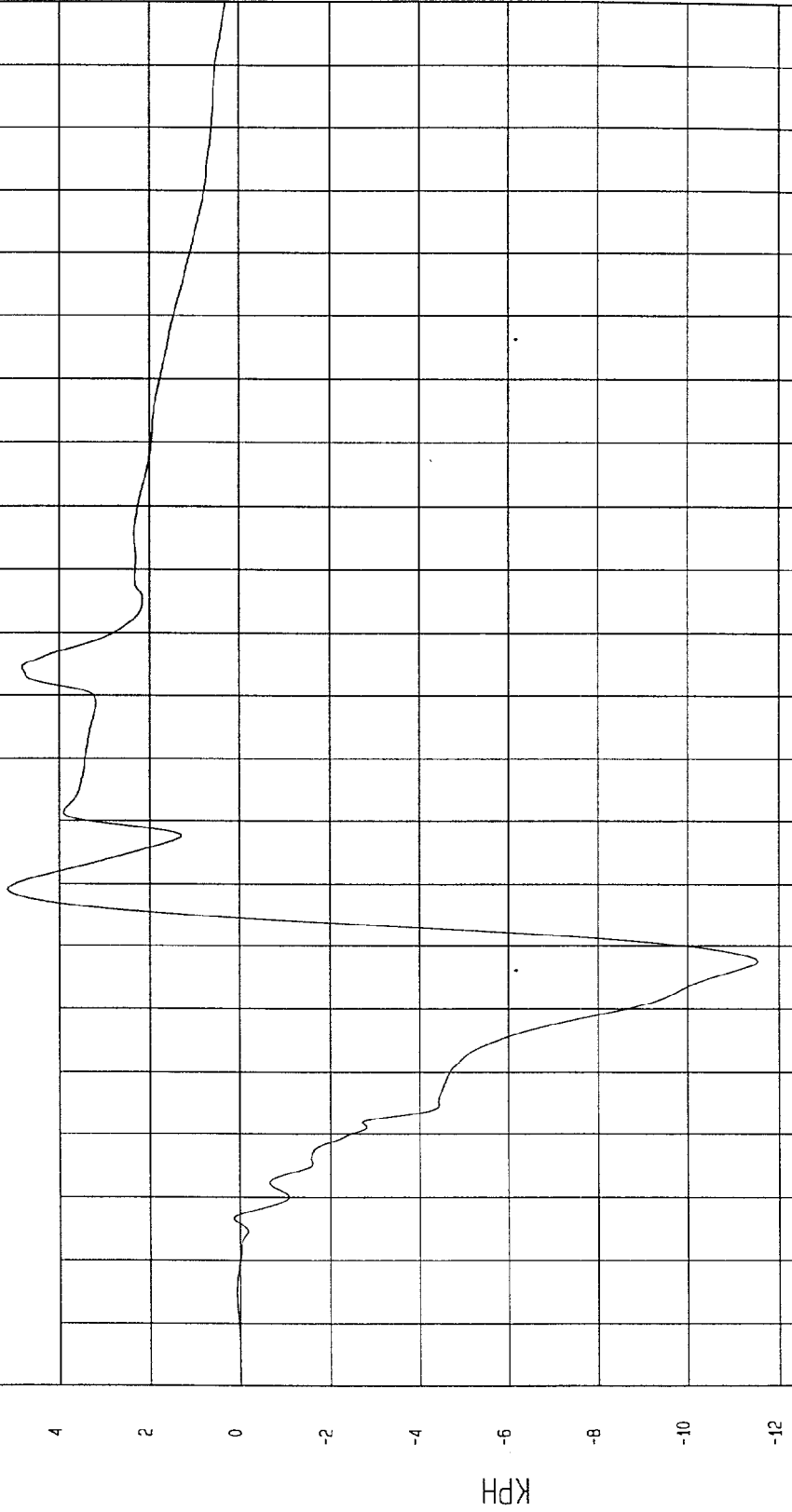
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

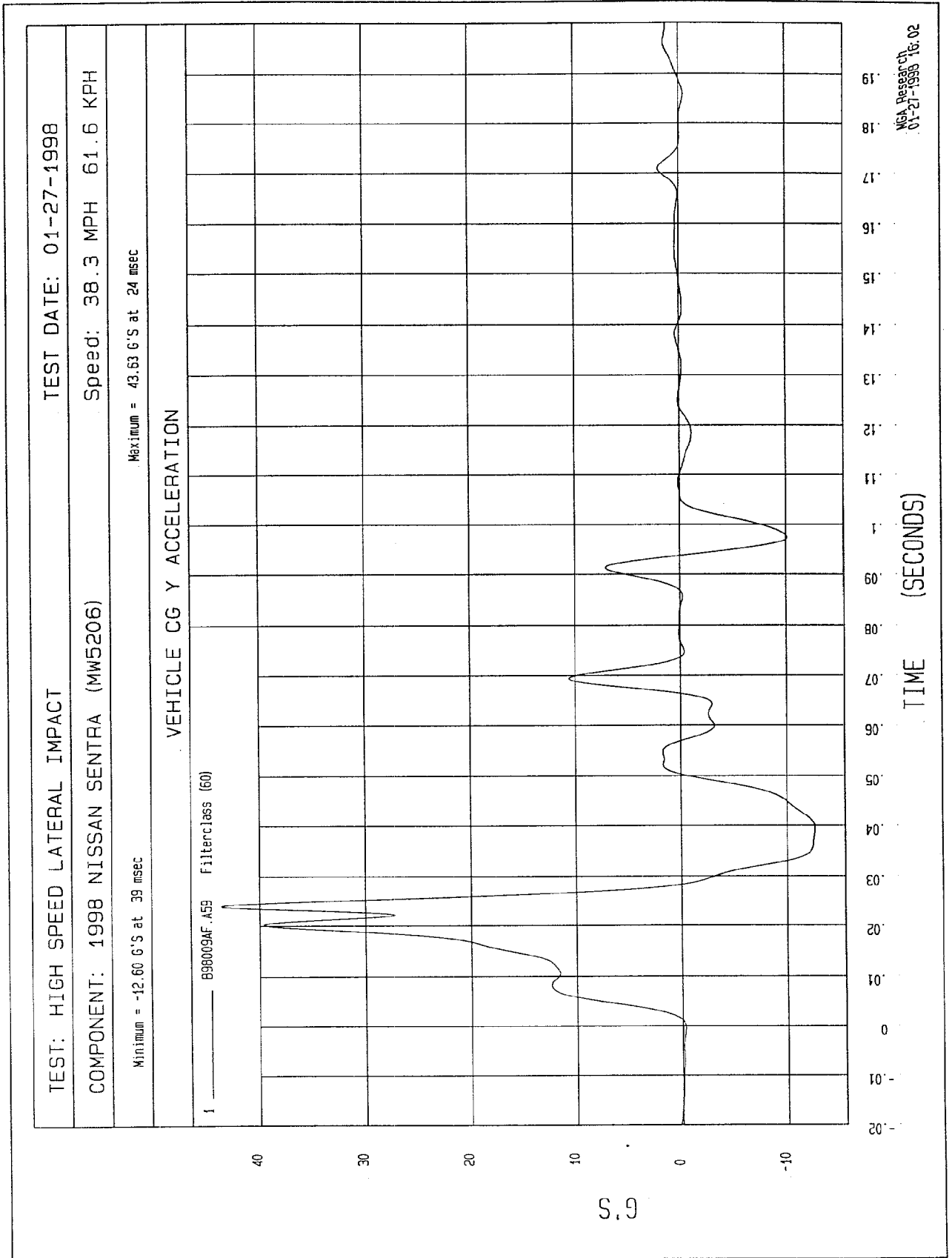
Minimum = -11.52 KPH at 48 msec Maximum = 5.15 KPH at 59 msec

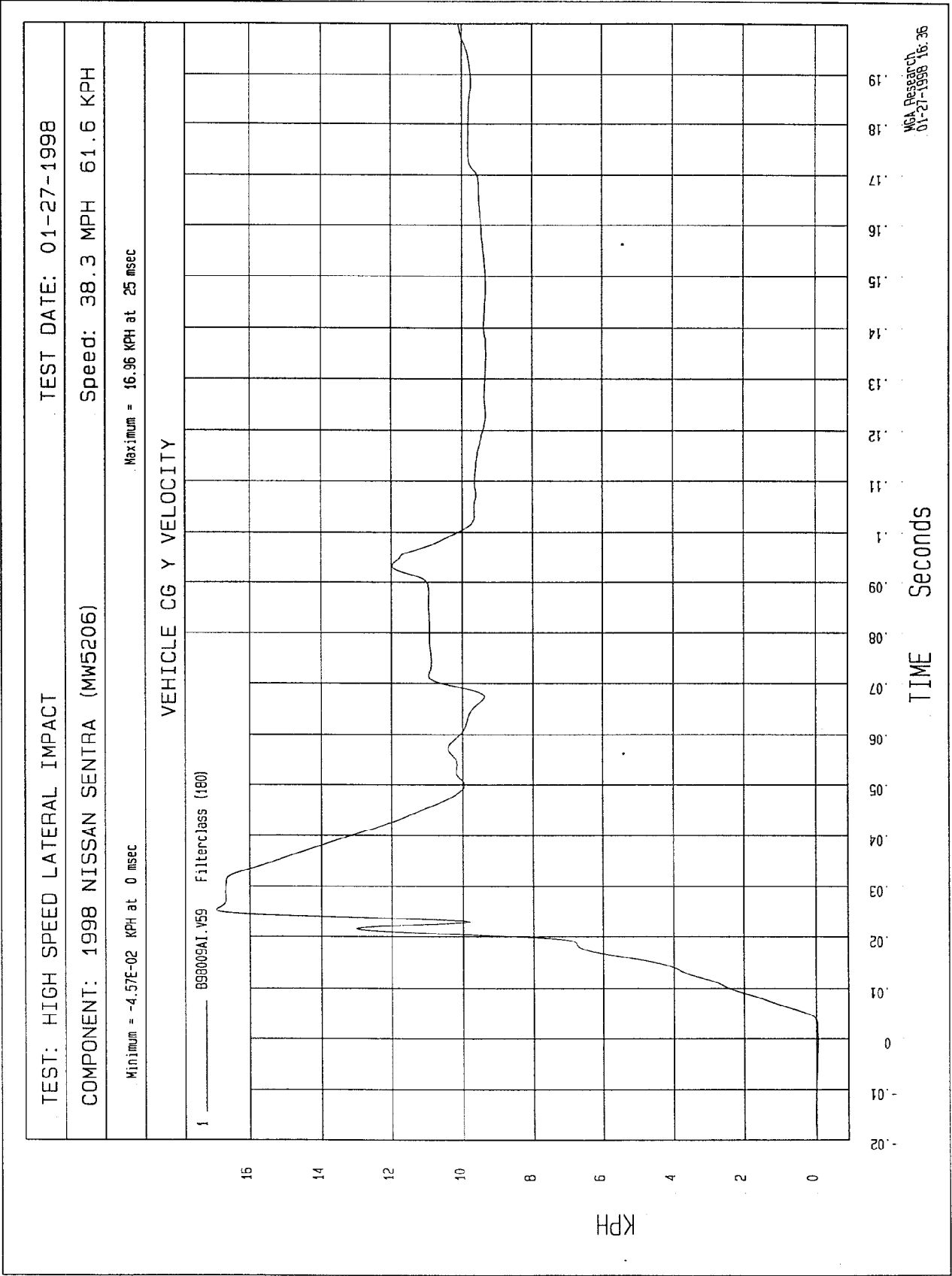
VEHICLE CG X VELOCITY

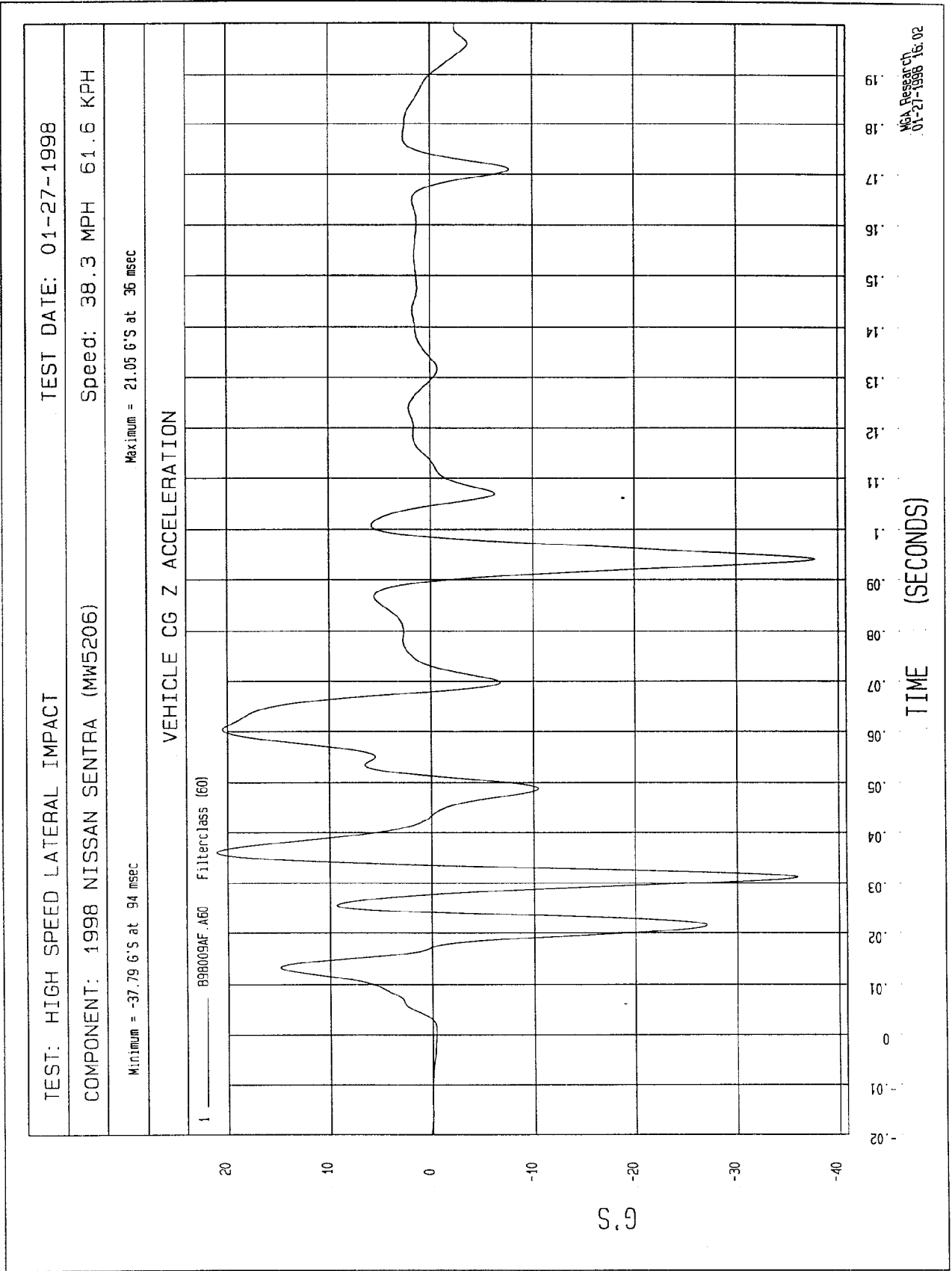
1 — 898009AT.V58 Filterclass (180)



TIME Seconds
WCA Research
01-27-1998 16:36





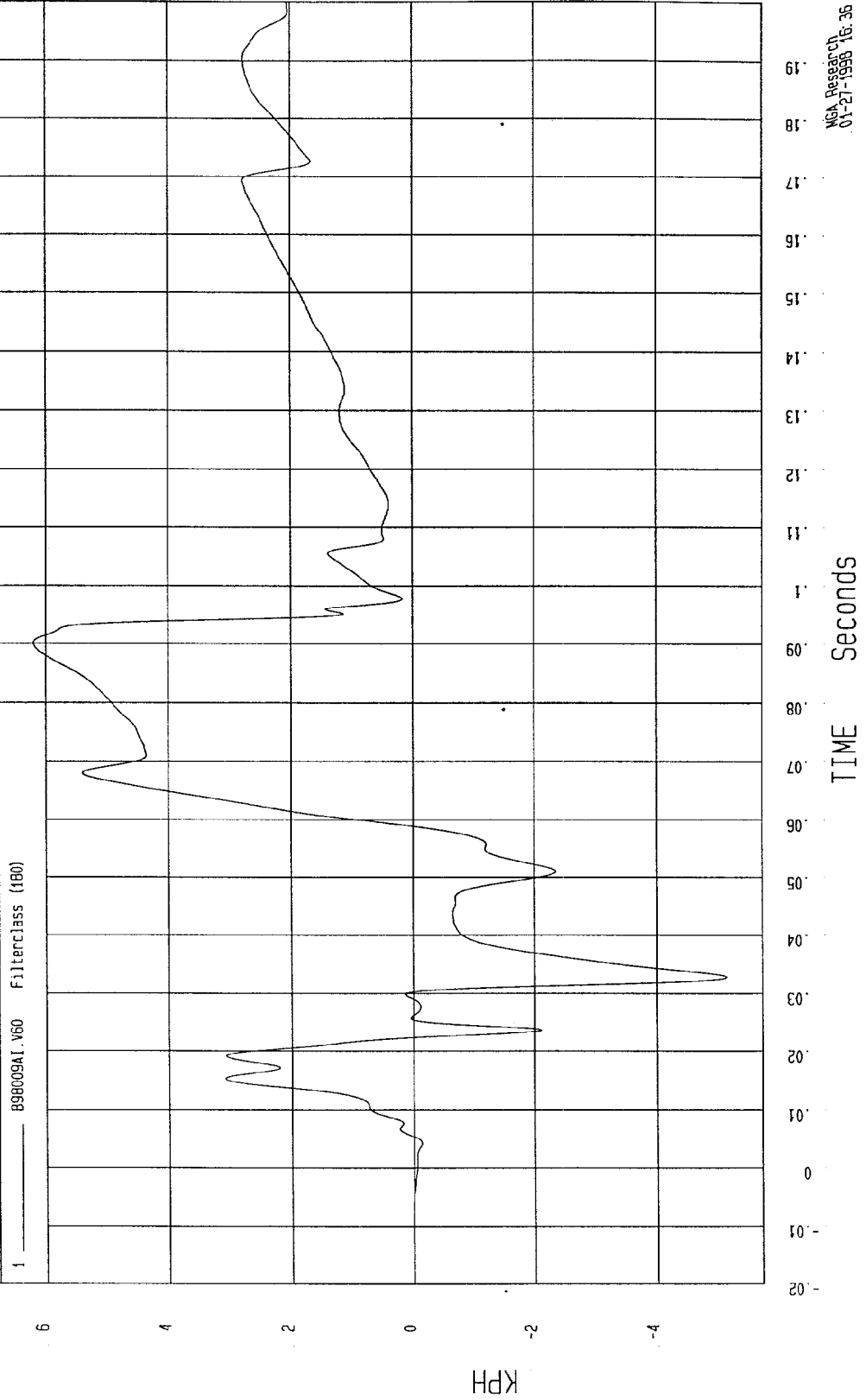


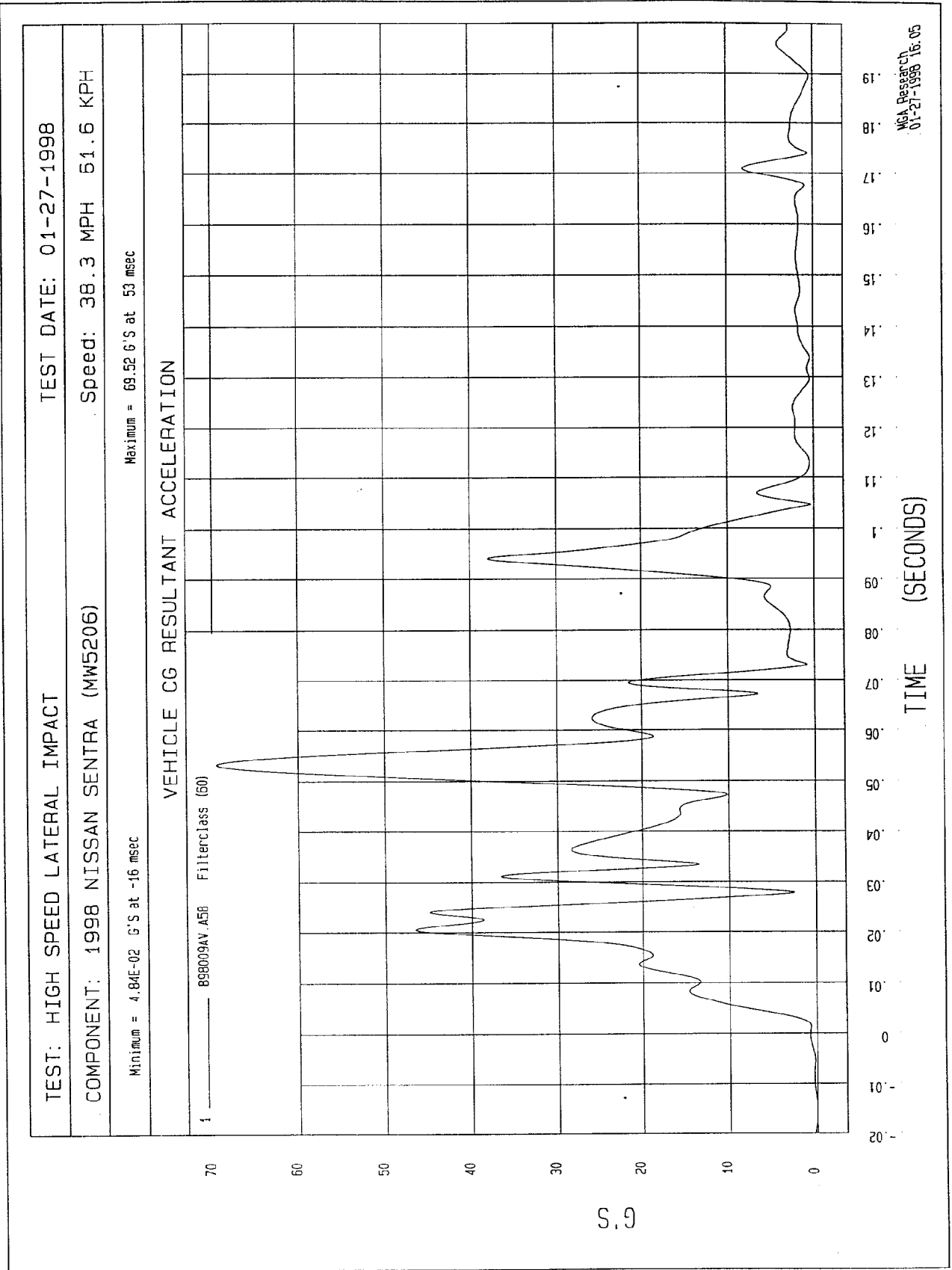
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = -5.13 KPH at 33 msec Maximum = 6.20 KPH at 90 msec

VEHICLE CG Z VELOCITY





TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

Speed: 38.3 MPH 61.6 KPH

COMPONENT: 1998 NISSAN SENTRA (MW5206)

Maximum = 238.66 G'S at 8 msec

Minimum = -82.25 G'S at 24 msec

MIDREAR OF LEFT FRONT DOOR Y ACCELERATION

1 B98009AF.A75 Filterclass (60)

240

220

200

180

160

140

120

100

80

60

40

20

0

-20

-40

-60

-80

G'S

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

0

-01

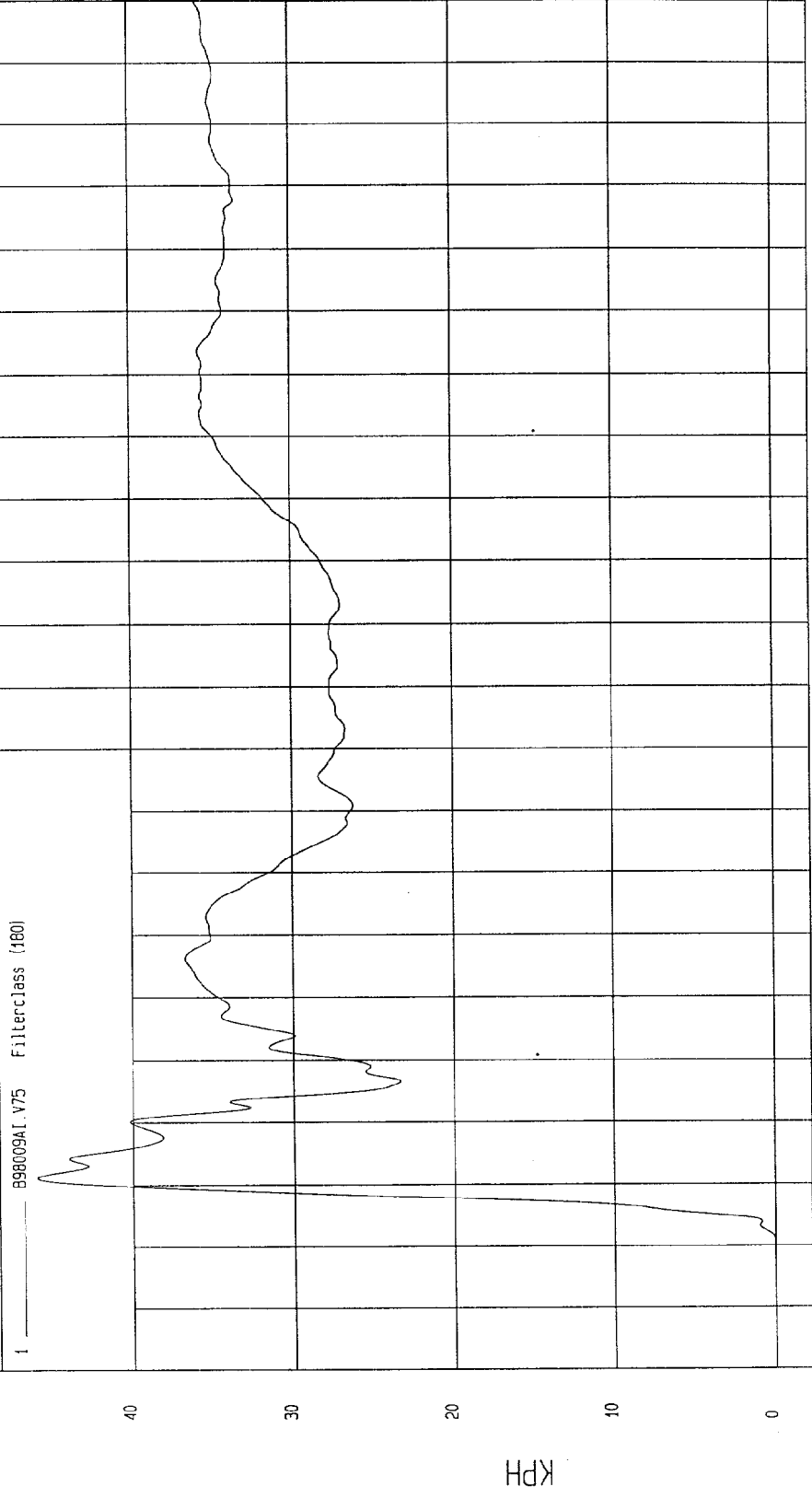
-02

TIME (SECONDS)

WCA Research
02-03-1998 16:42

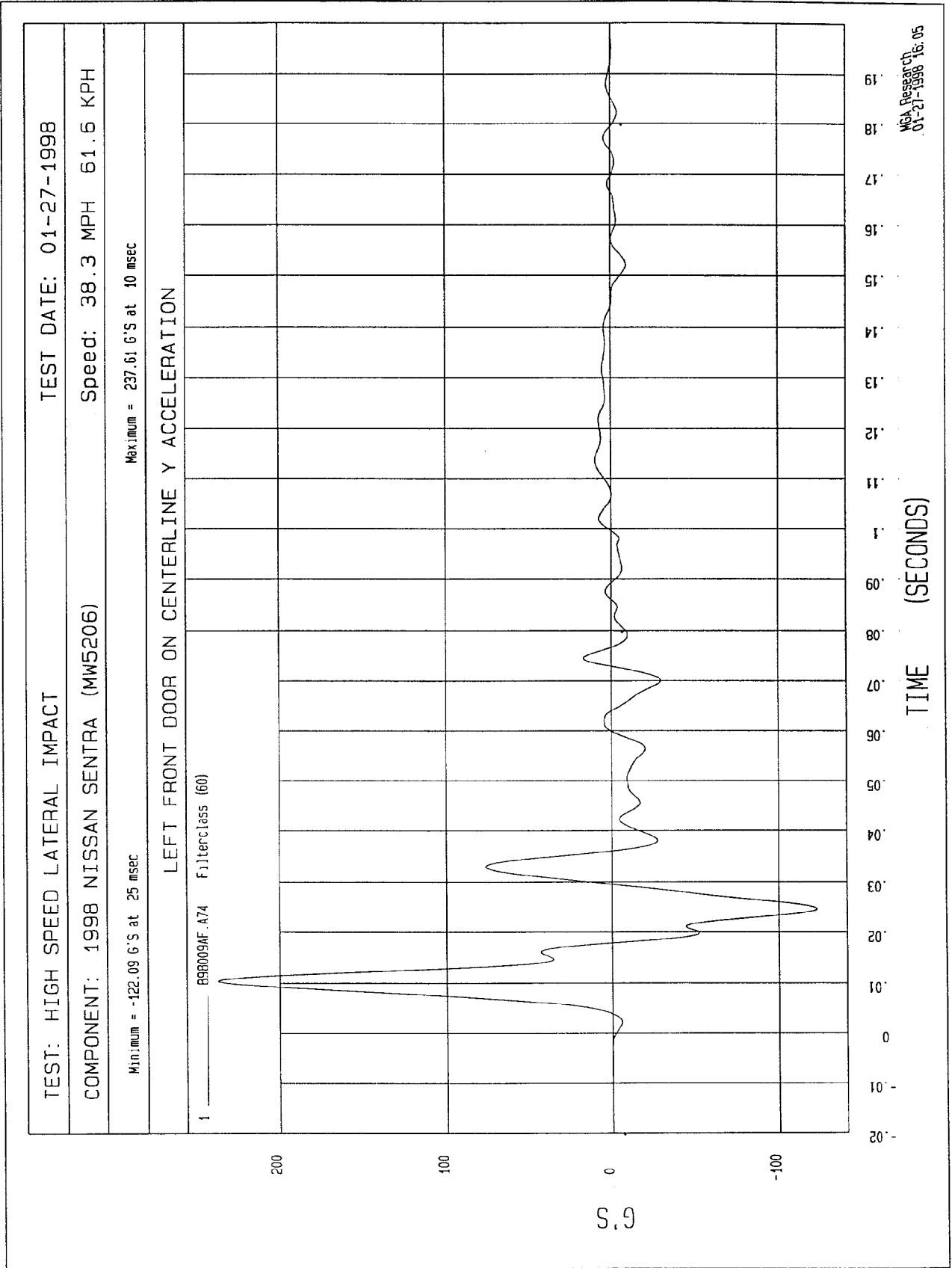
TEST: HIGH SPEED LATERAL IMPACT	TEST DATE: 01-27-1998
COMPONENT: 1998 NISSAN SENTRA (MW5206)	Speed: 38.3 MPH 61.6 KPH
Minimum = -1.59E-02 KPH at -10 msec	
Maximum = 46.04 KPH at 11 msec	

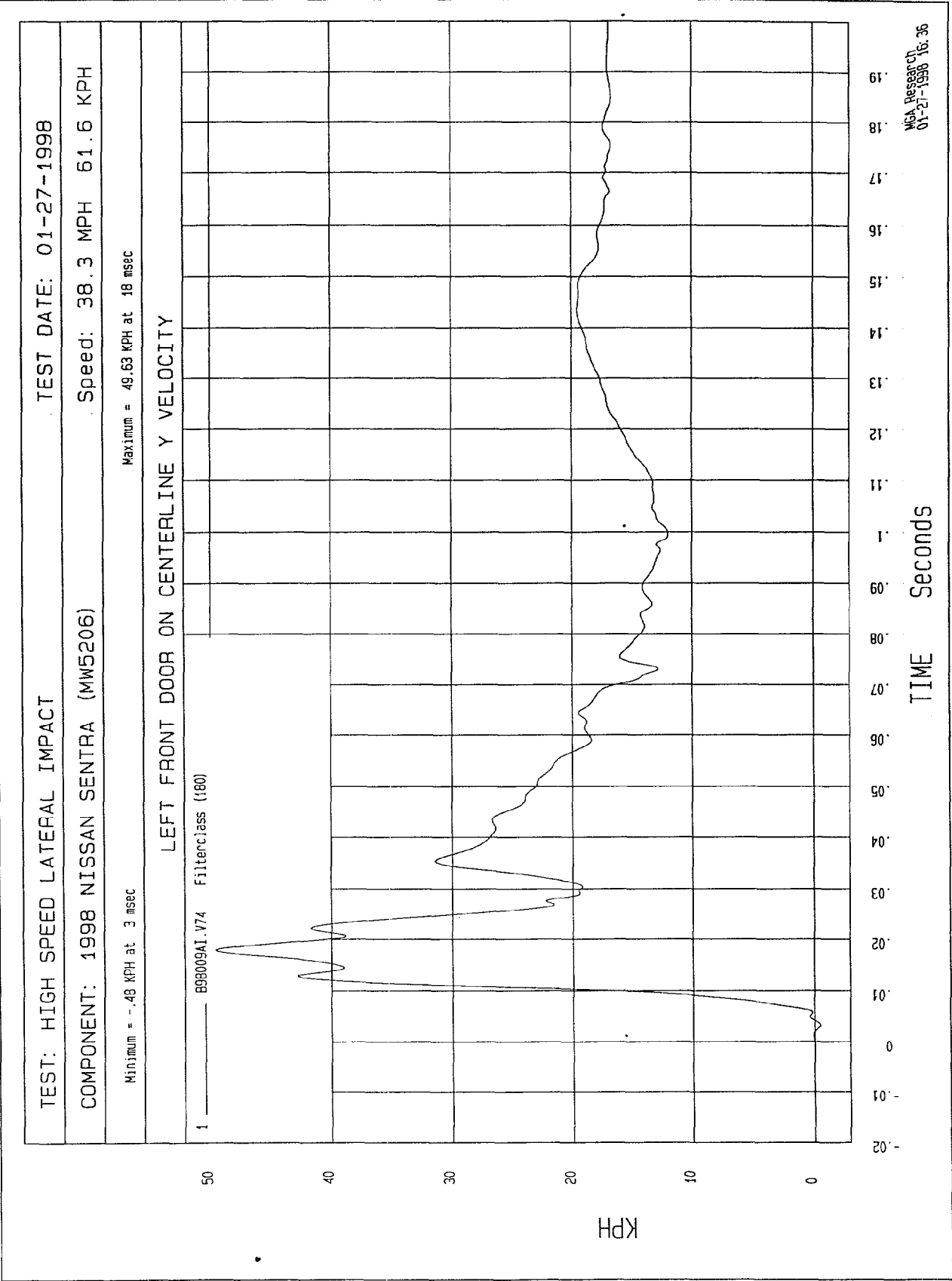
MIDREAR OF LEFT FRONT DOOR Y VELOCITY

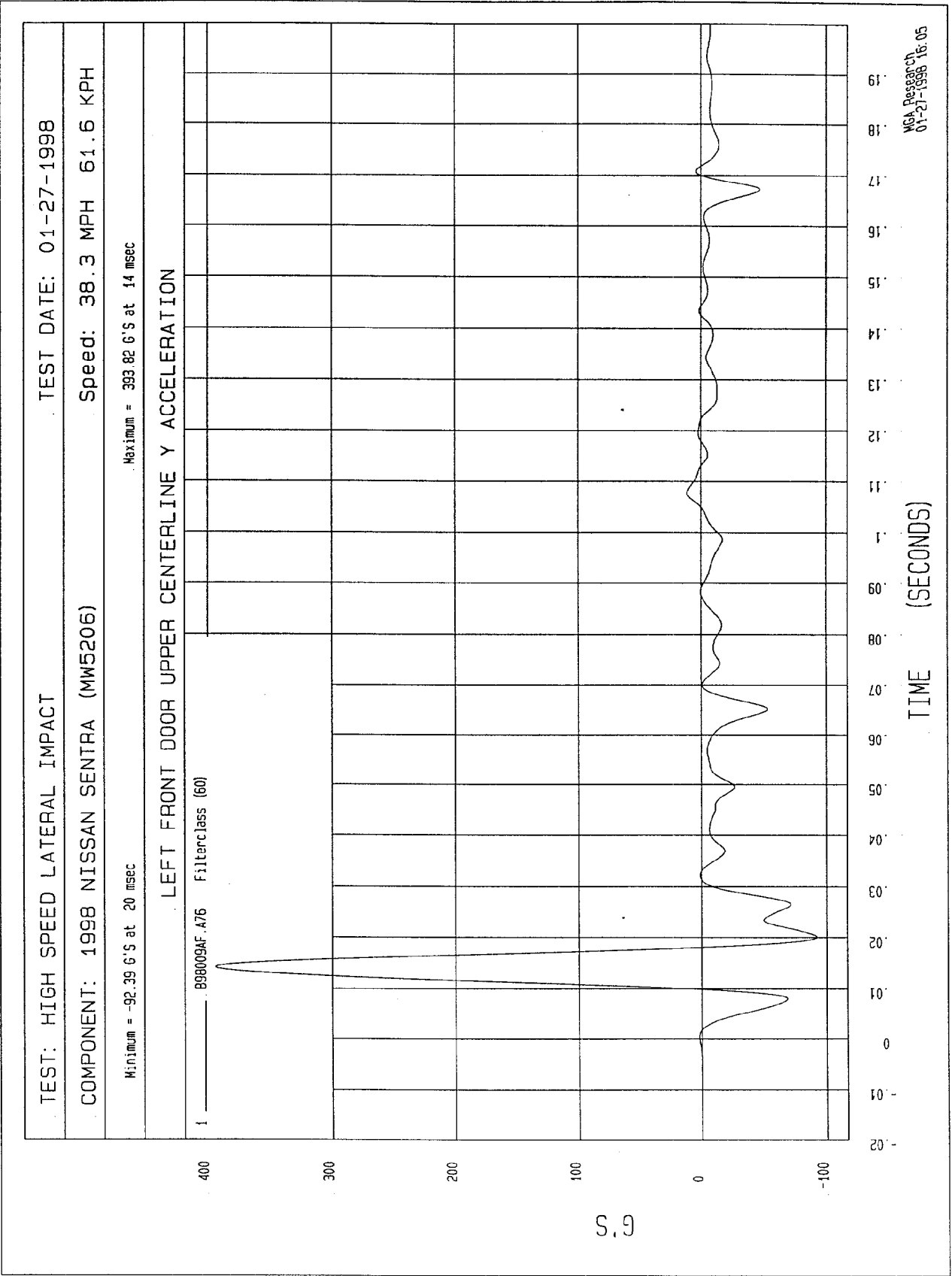


TIME Seconds

MCA Research
02-03-1998 16:42





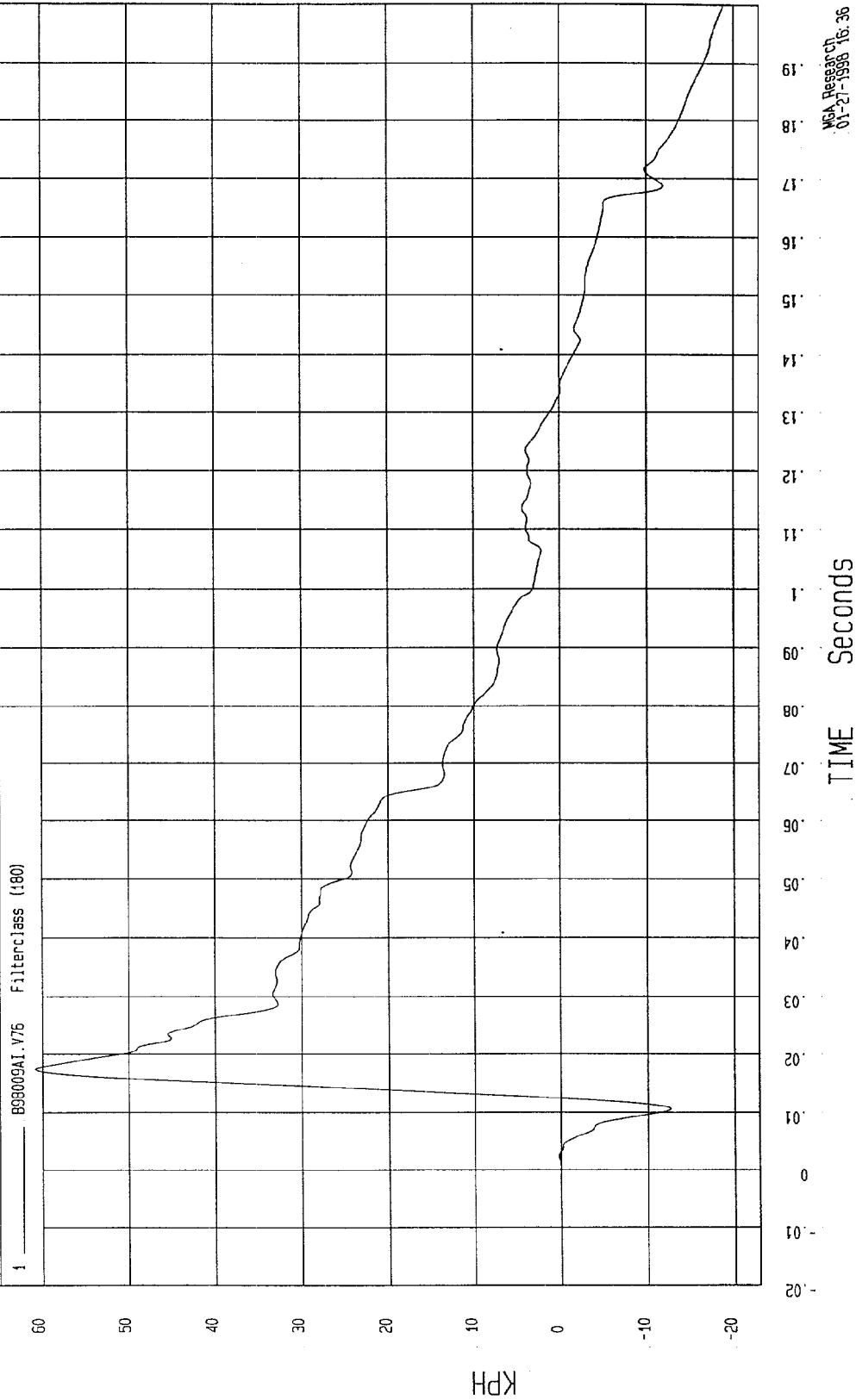


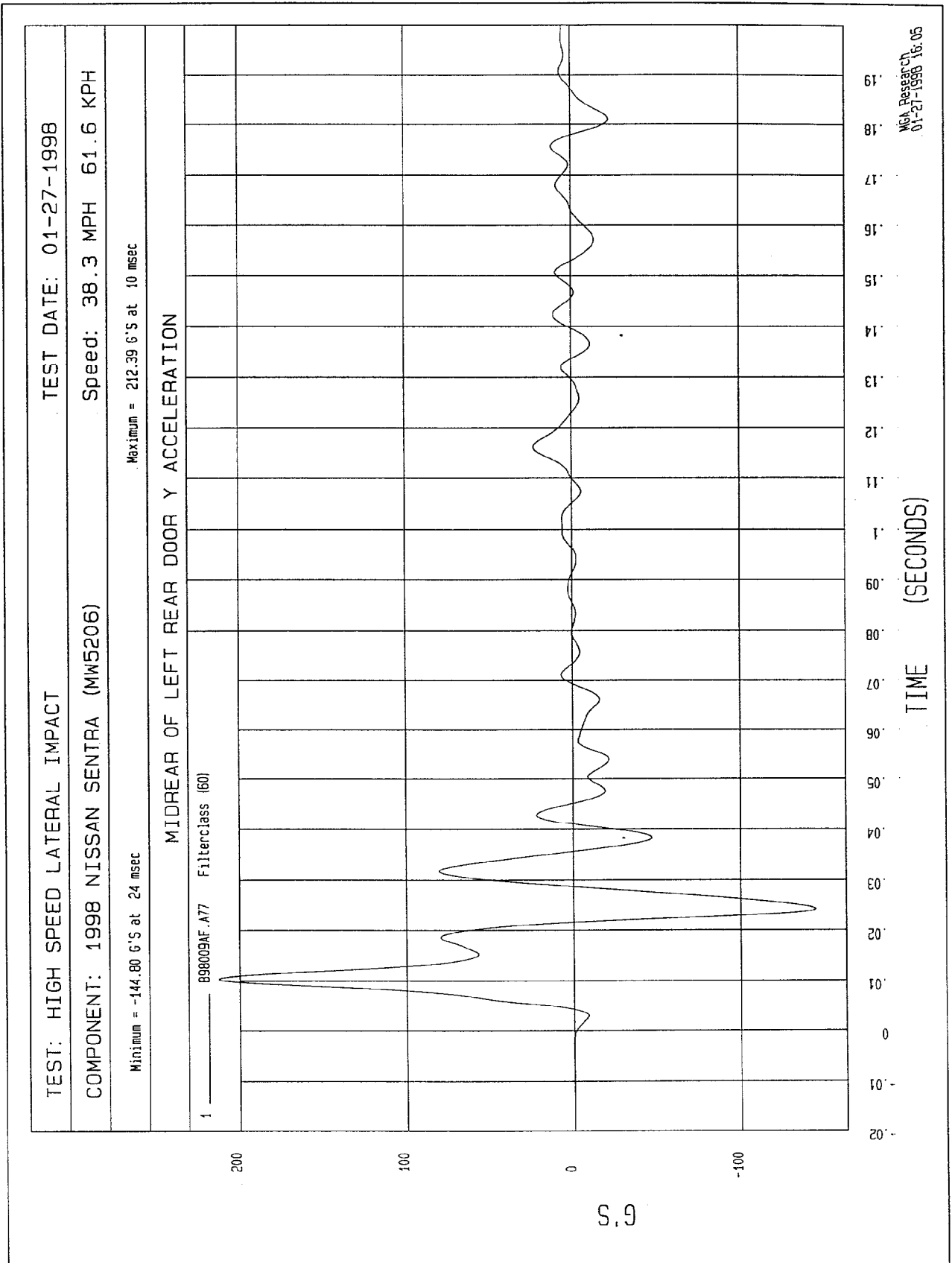
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

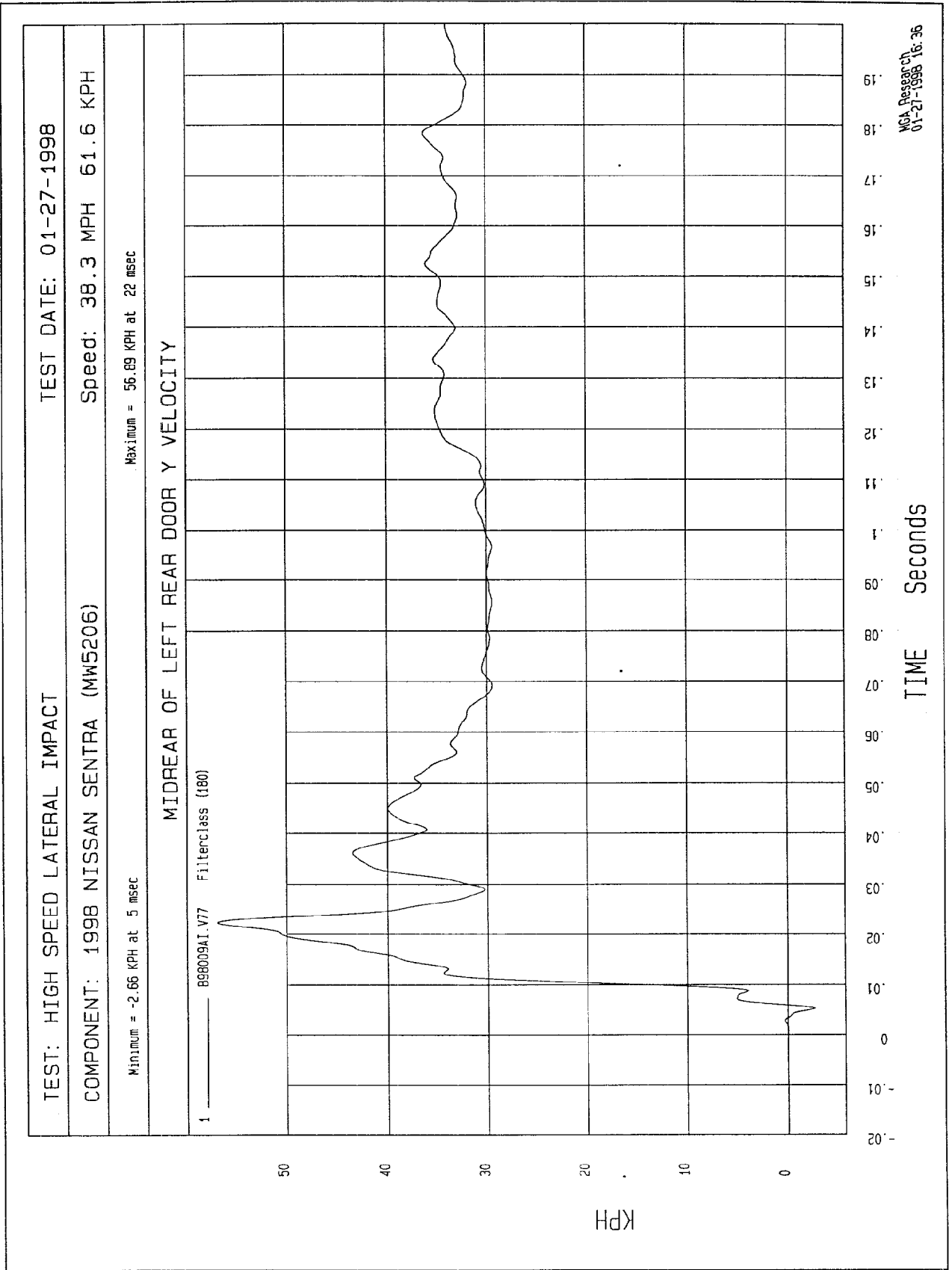
COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

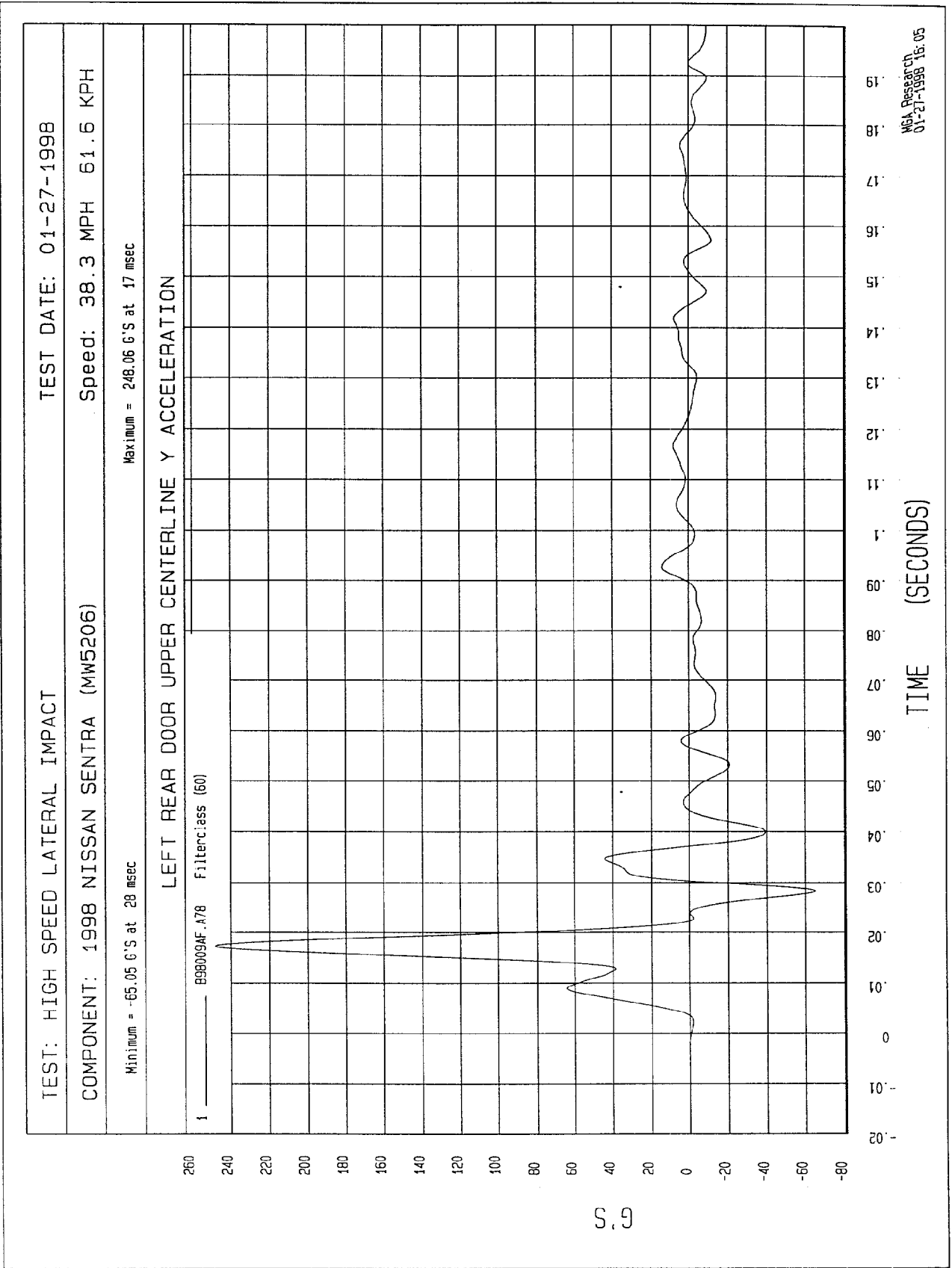
Minimum = -18.65 KPH at 200 msec Maximum = 60.87 KPH at 17 msec

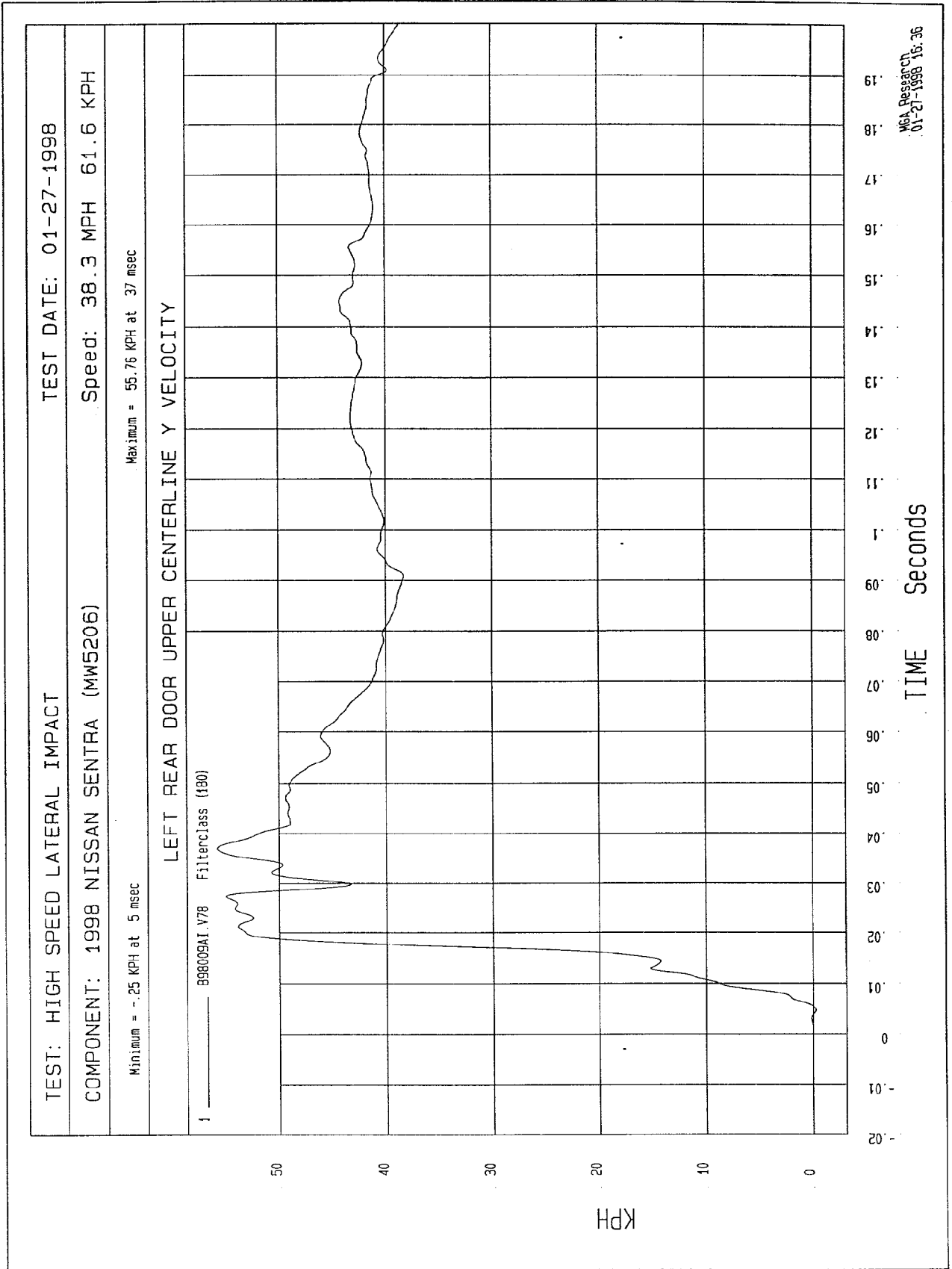
LEFT FRONT DOOR UPPER CENTERLINE Y VELOCITY

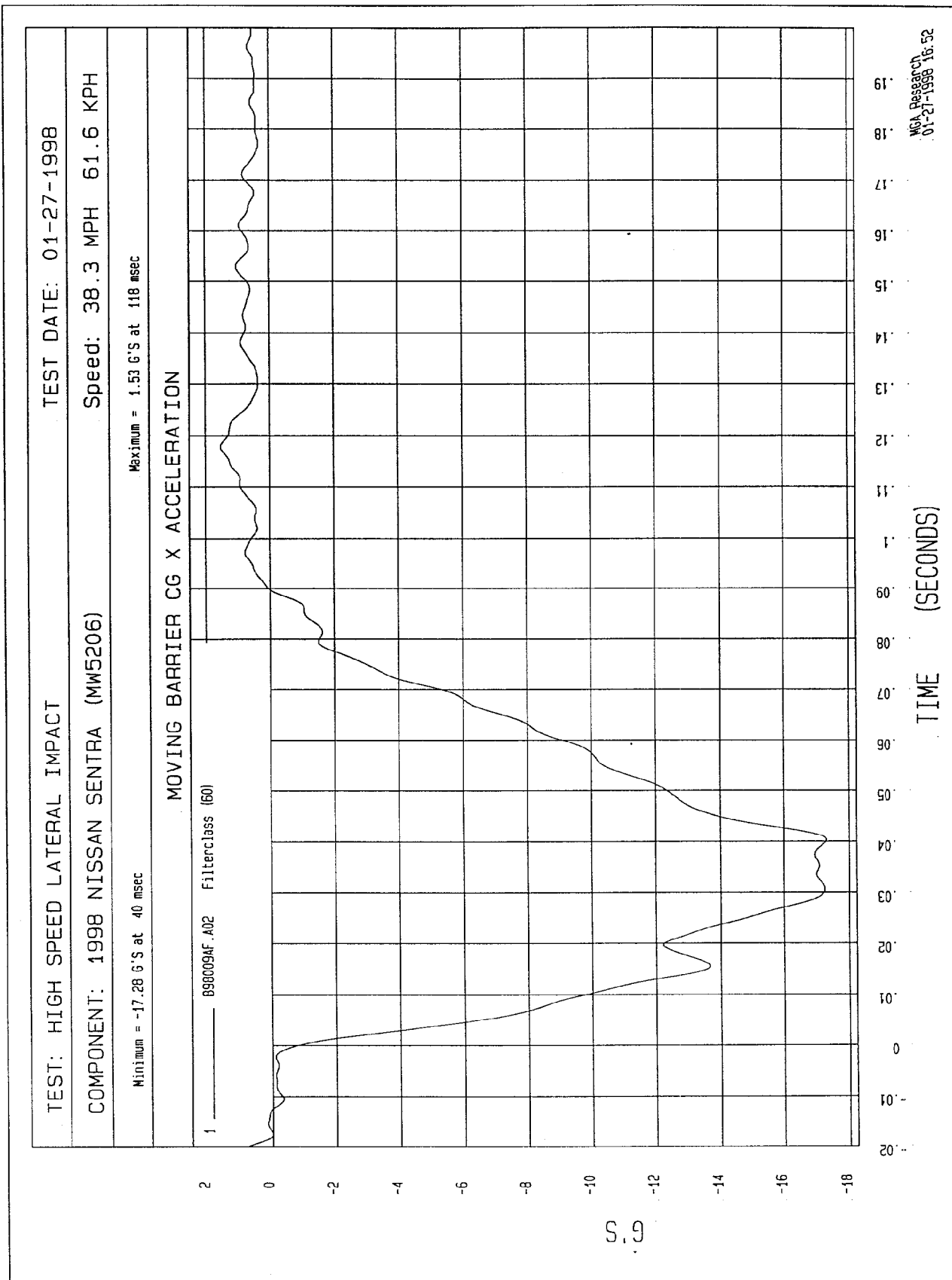


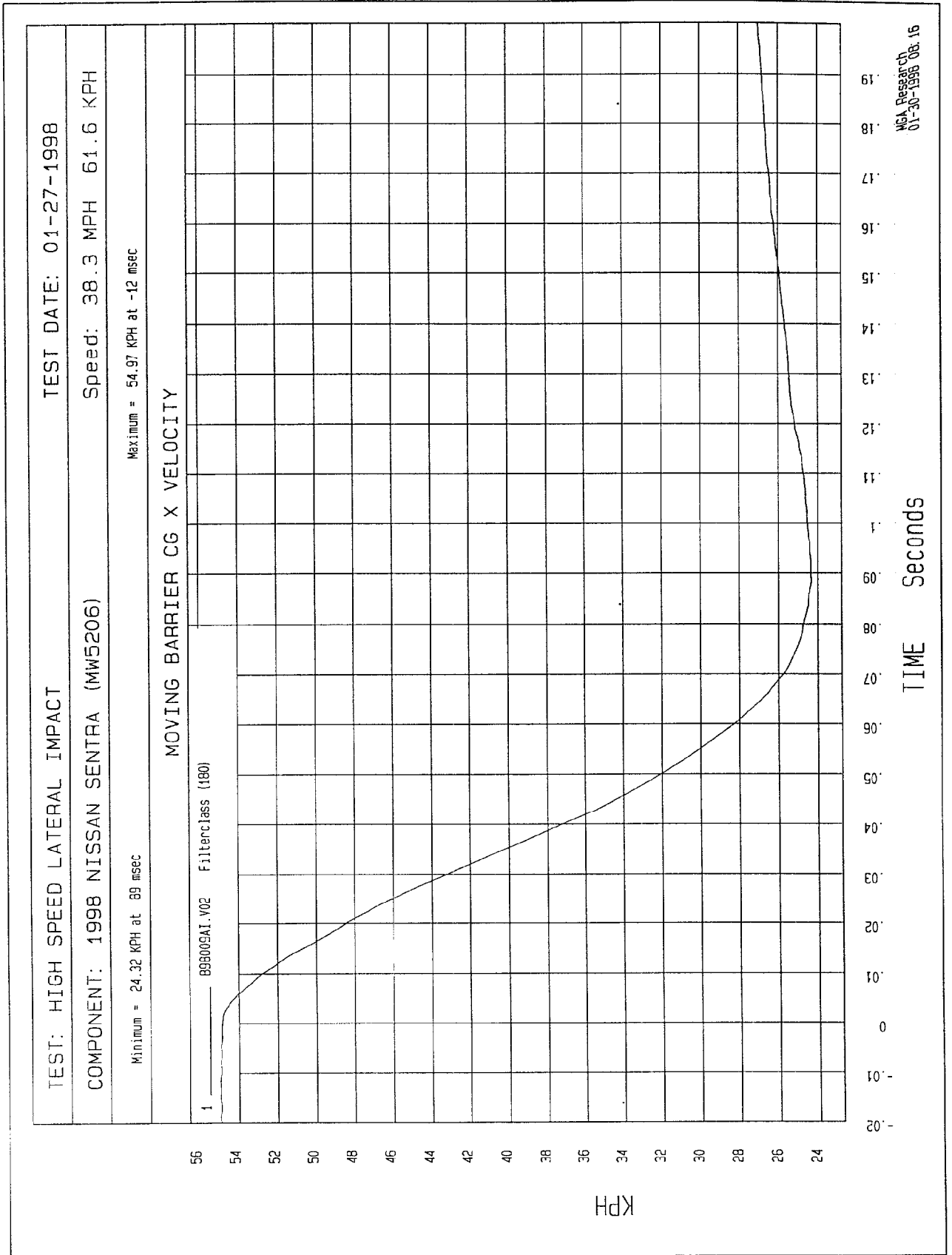












TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206)

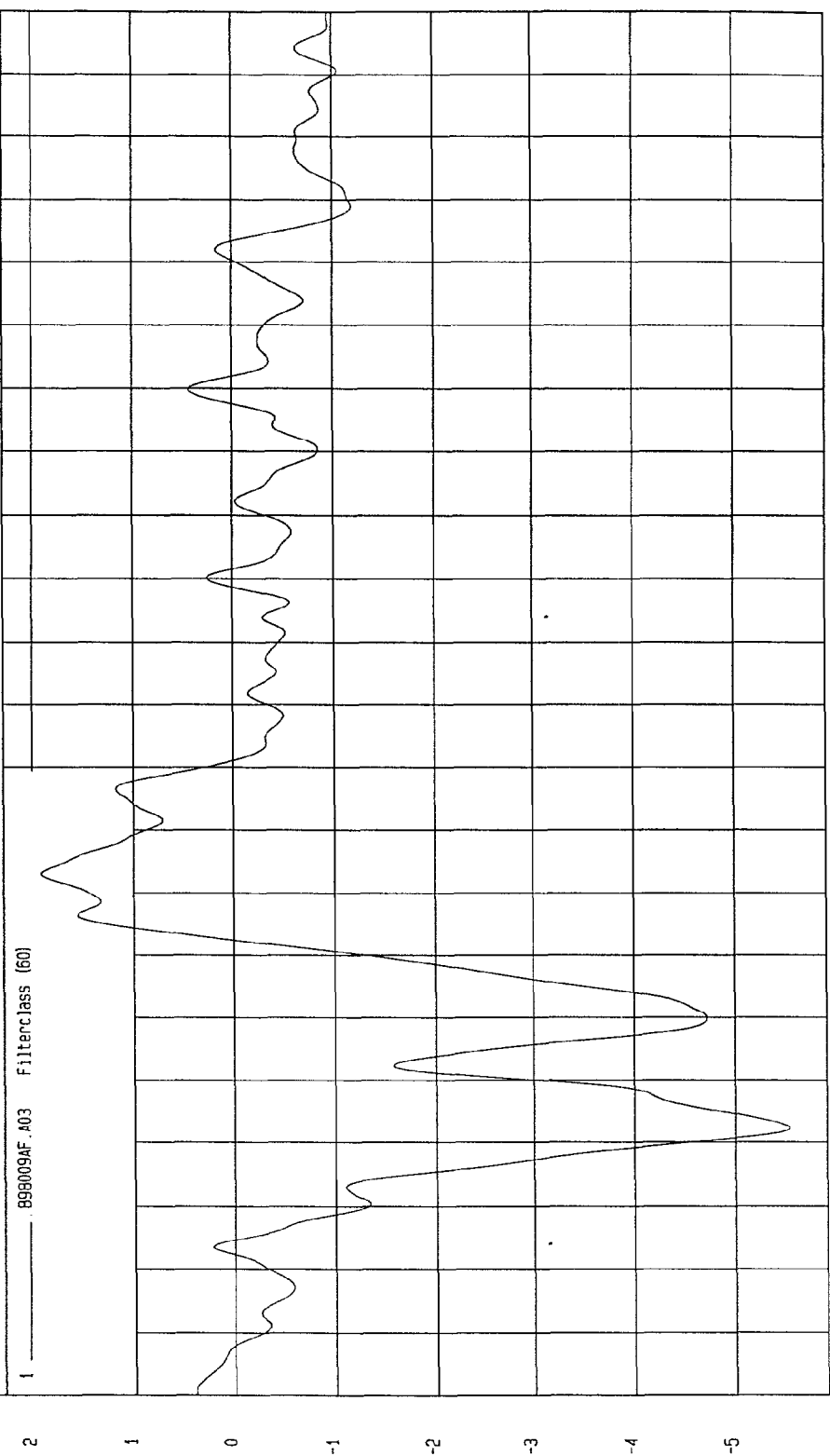
Speed: 38.3 MPH 61.6 KPH

Minimum = -5.54 G'S at 22 msec

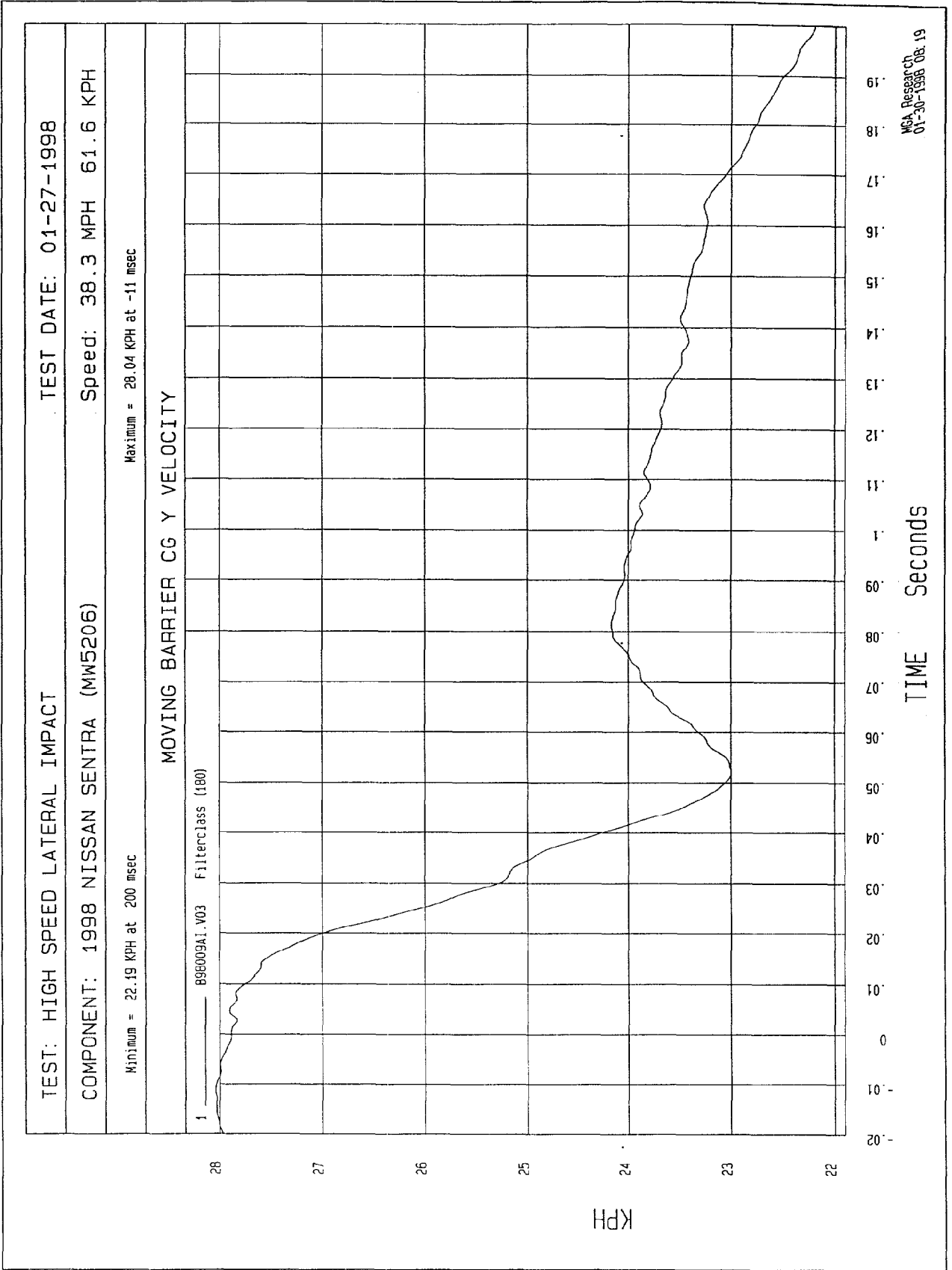
Maximum = 1.91 G'S at 63 msec

MOVING BARRIER CG Y ACCELERATION

1 898009AF.A03 Filterclass (60)



MGA Research
01-27-1998 18:52



TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = -16.31 G'S at 52 msec Maximum = 19.94 G'S at 55 msec

MOVING BARRIER CG Z ACCELERATION

1 B98009AF.A04 Filterclass (60)

20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18

G.S

-02 -01 0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12 .13 .14 .15 .16 .17 .18 .19

TIME (SECONDS)

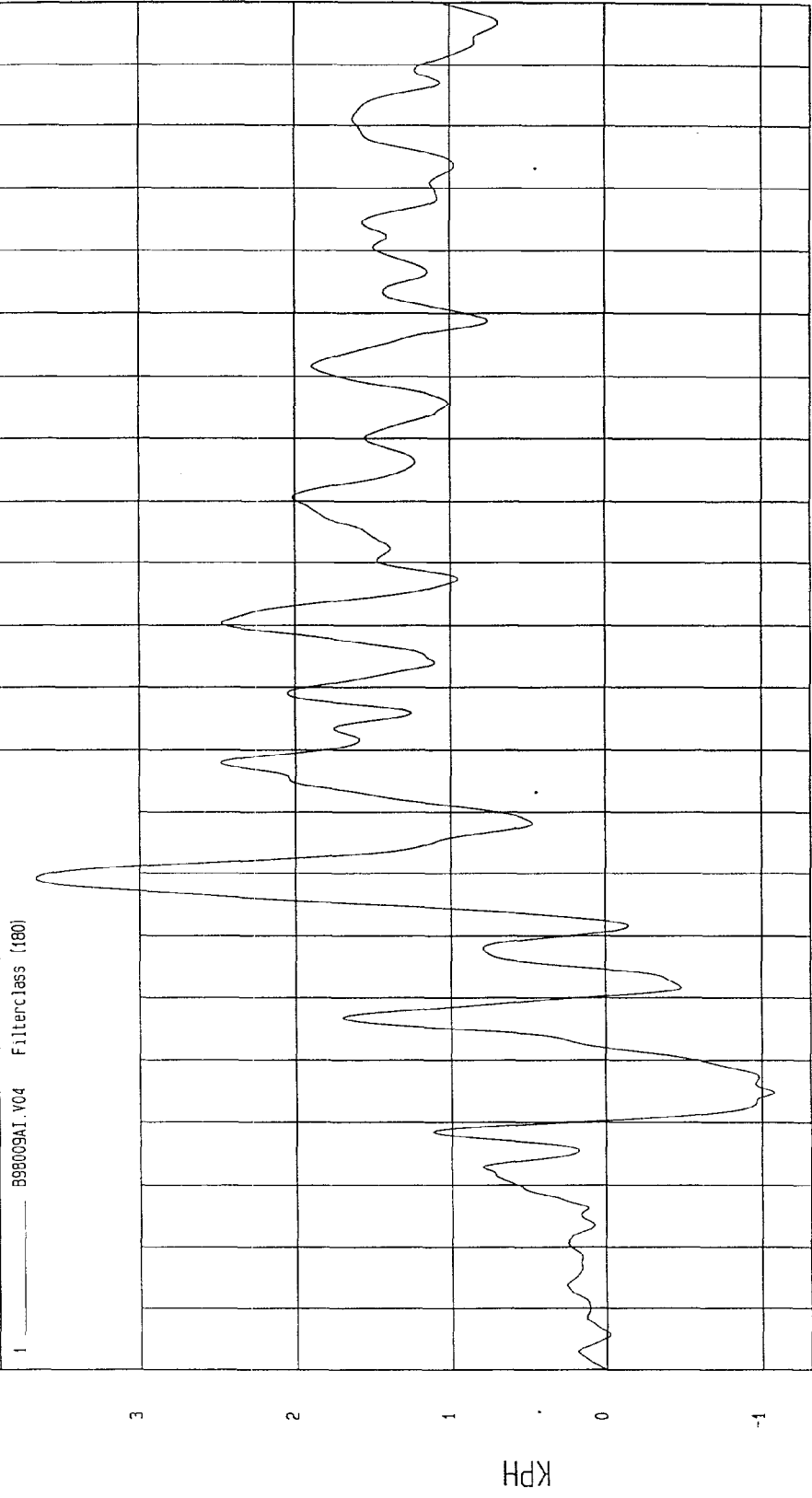
NCA Research
01-27-1998 16:52

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = -1.07 KPH at 25 msec Maximum = 3.66 KPH at 59 msec

MOVING BARRIER CG Z VELOCITY



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

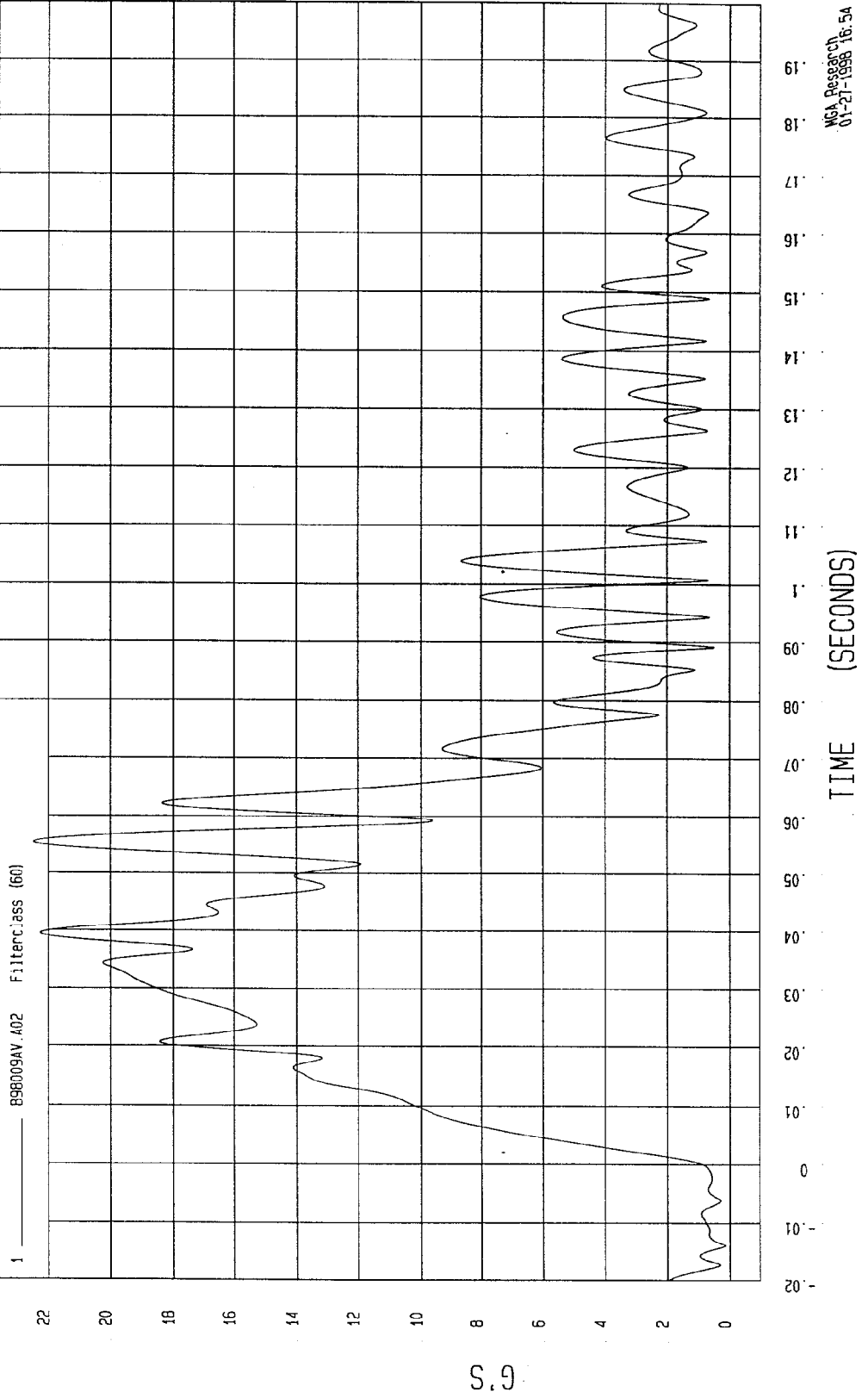
NGA Report 01-30-1998 08:16

TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = .14 G'S at -14 msec Maximum = 22.47 G'S at 55 msec

MOVING BARRIER CG RESULTANT ACCELERATION



TEST DATE: 01-27-1998

TEST: HIGH SPEED LATERAL IMPACT

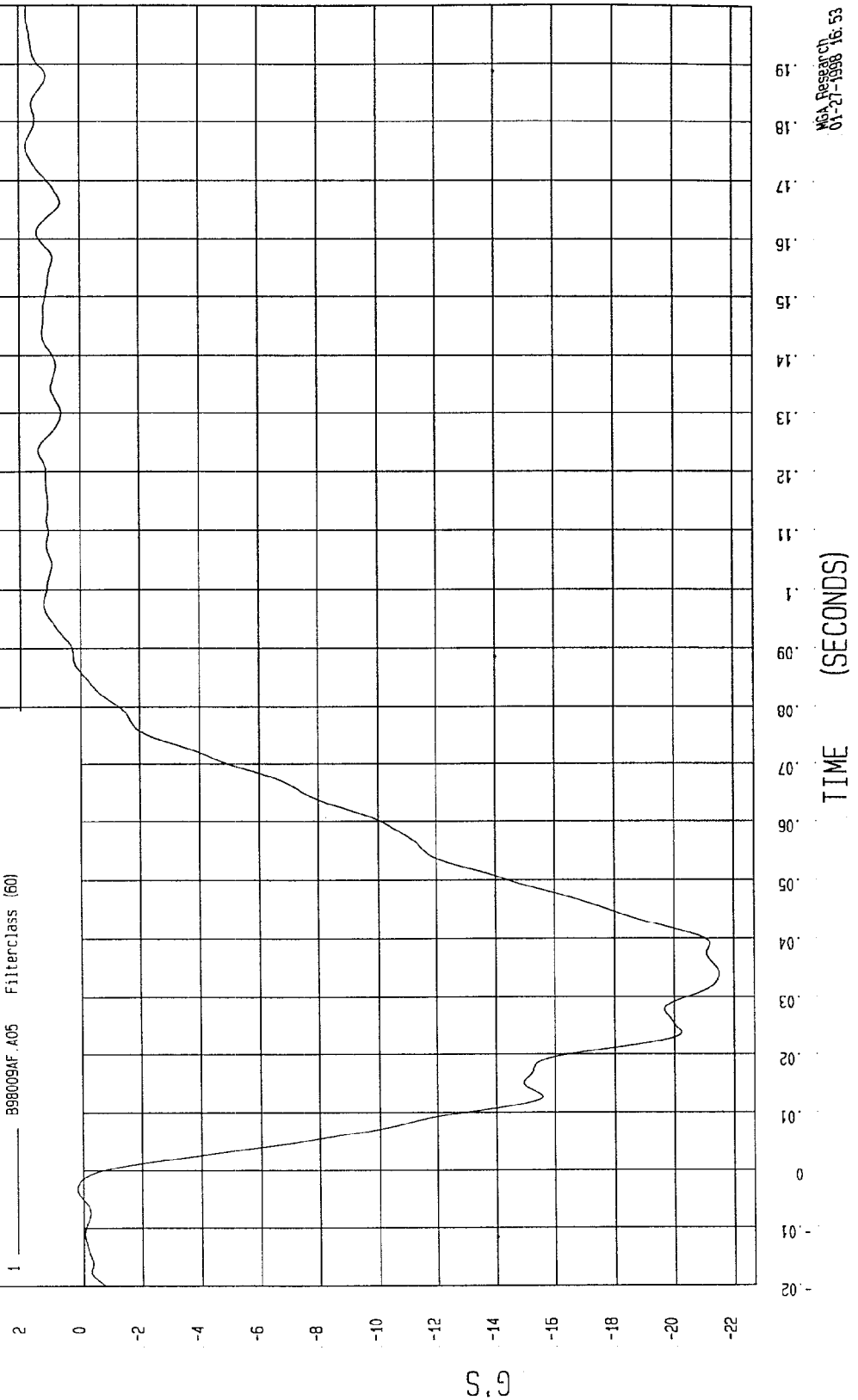
COMPONENT: 1998 NISSAN SENTRA (MW5206) . Speed: 38.3 MPH 61.6 KPH

Minimum = -21.51 G'S at 34 msec

Maximum = 1.79 G'S at 176 msec

MOVING BARRIER REAR AXLE X ACCELERATION

1	B98009AF.A05	Filterclass (60)



MGA Research
01-27-1998 16:53

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

Speed: 38.3 MPH 61.6 KPH

COMPONENT: 1998 NISSAN SENTRA (MW5206)

Maximum = 54.92 KPH at -20 msec

Minimum = 18.35 KPH at 86 msec

MOVING BARRIER REAR AXLE X VELOCITY

1 B98009A1.V05 Filterclass (180)

56

54

52

50

48

46

44

42

40

38

36

34

32

30

28

26

24

22

20

18

KPH

19

18

17

16

15

14

13

12

11

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06

05

04

03

02

01

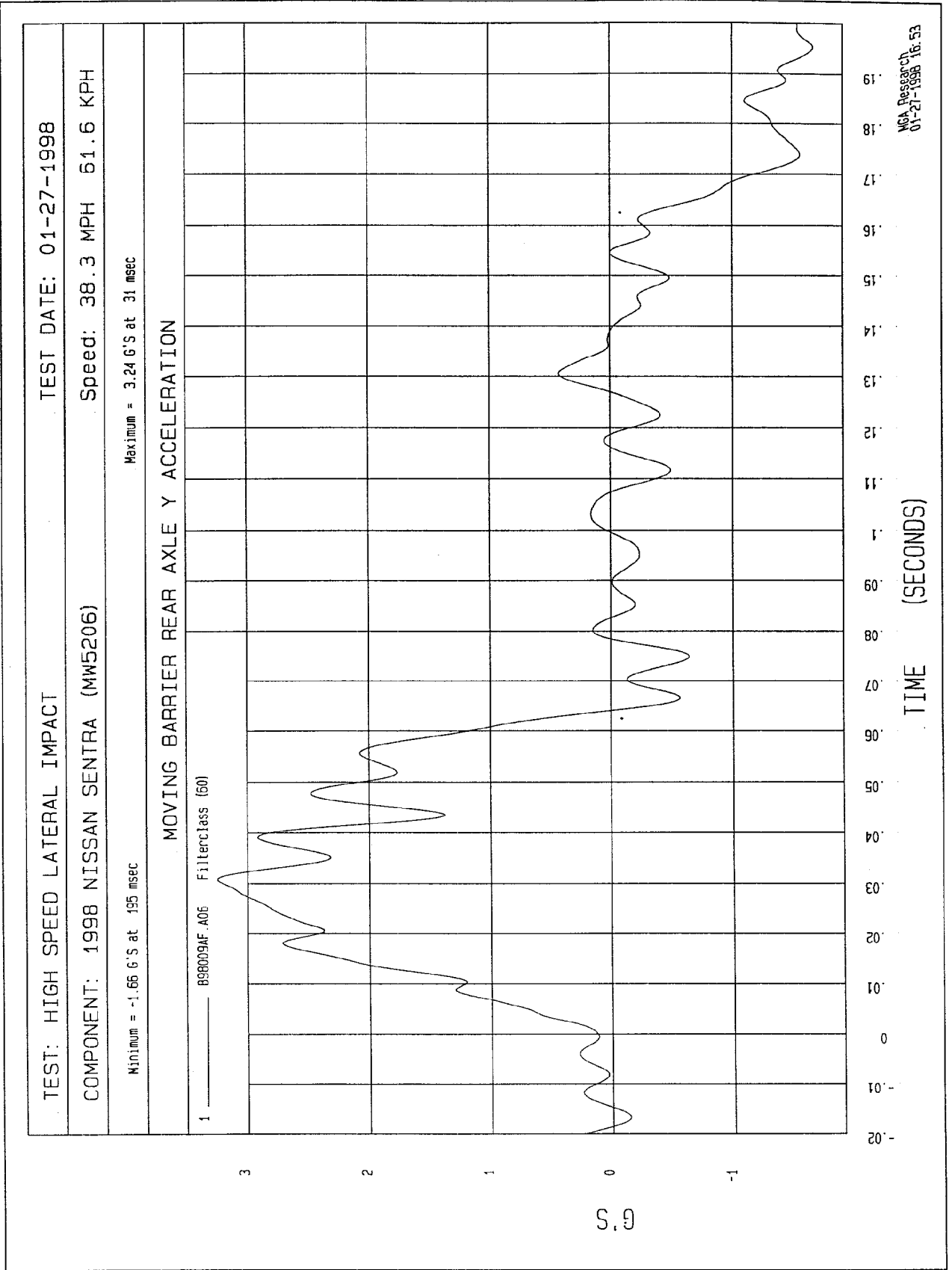
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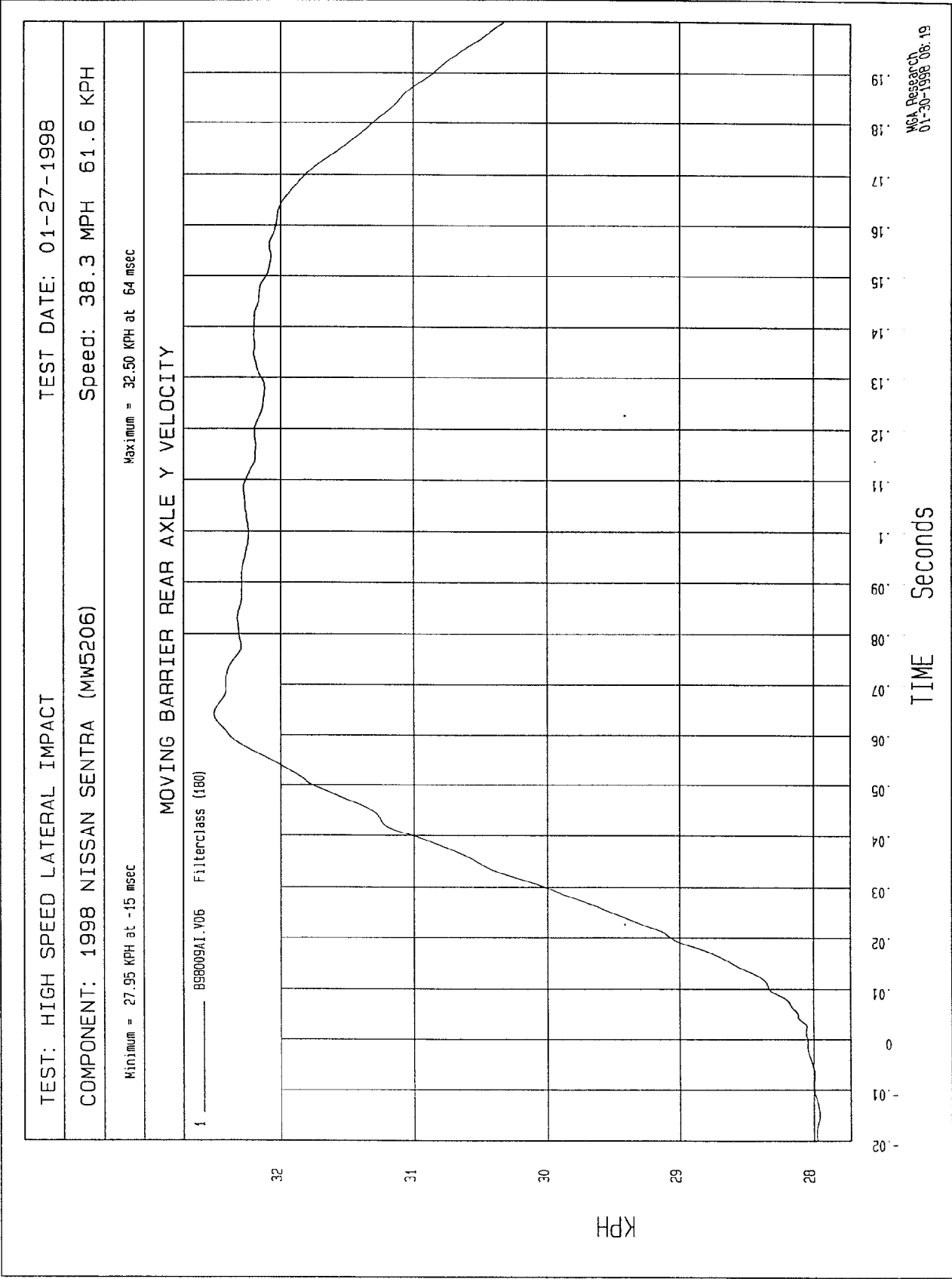
-01

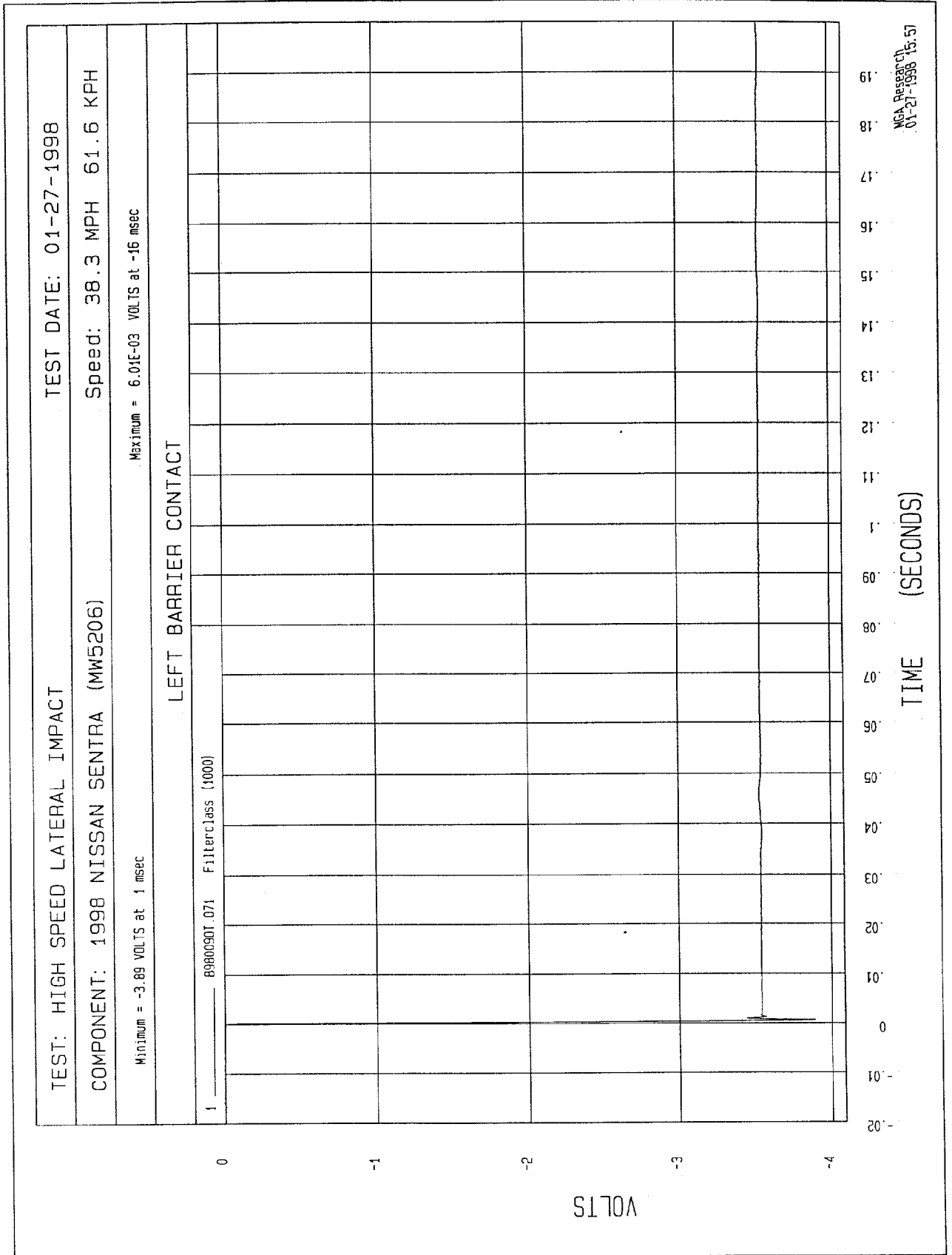
-02

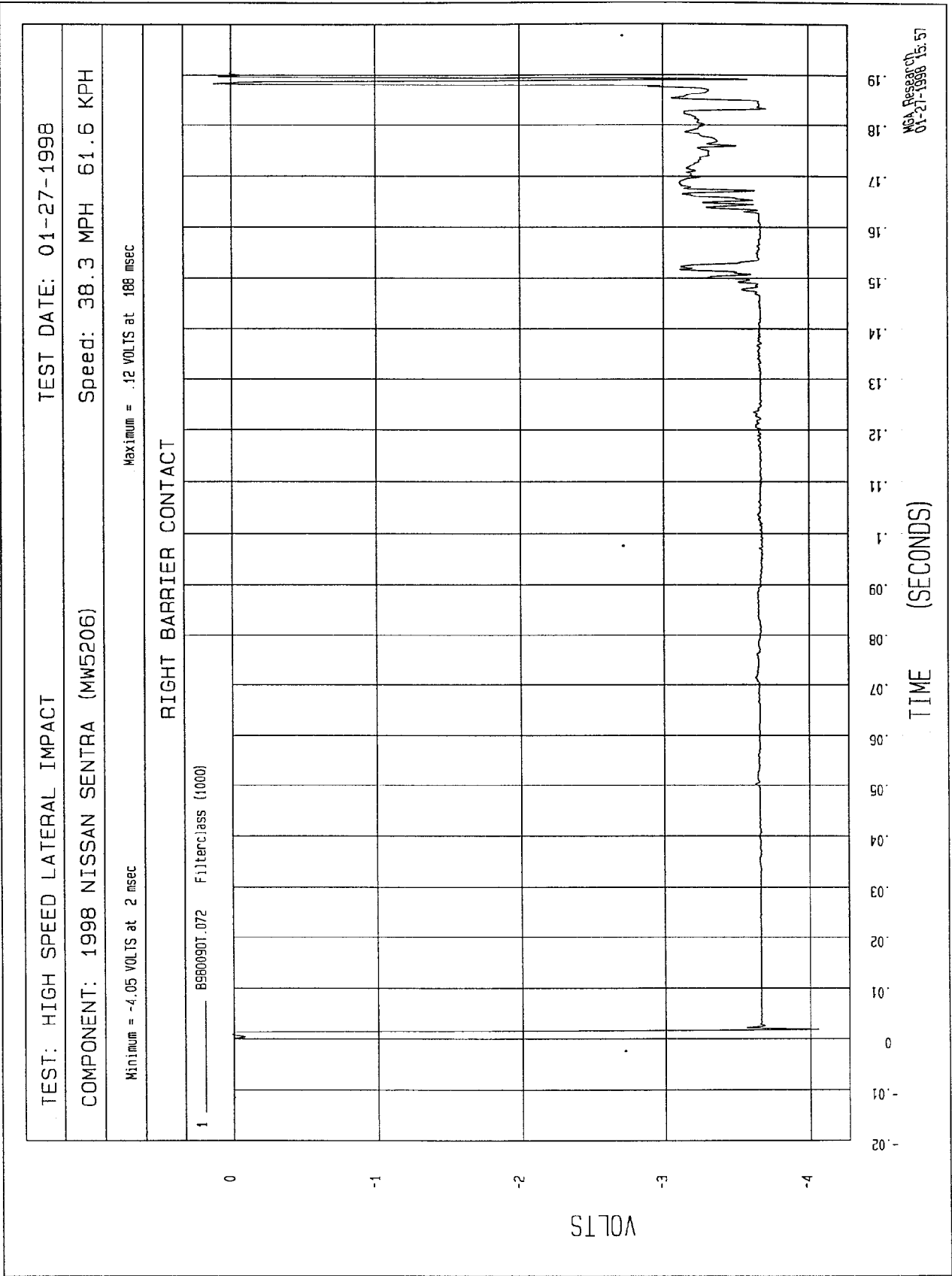
TIME Seconds

WGL Research
01-30-1998 08:16







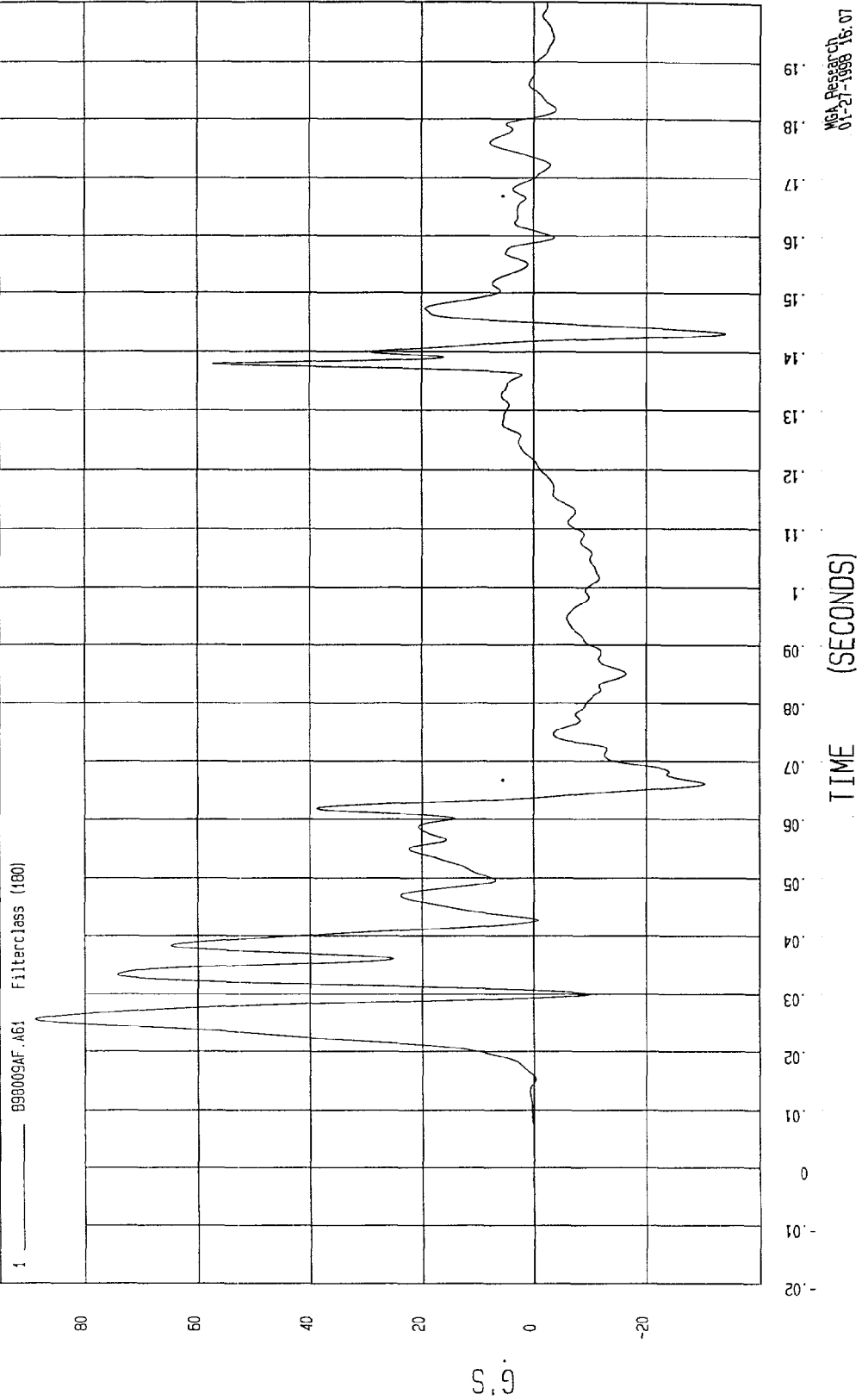


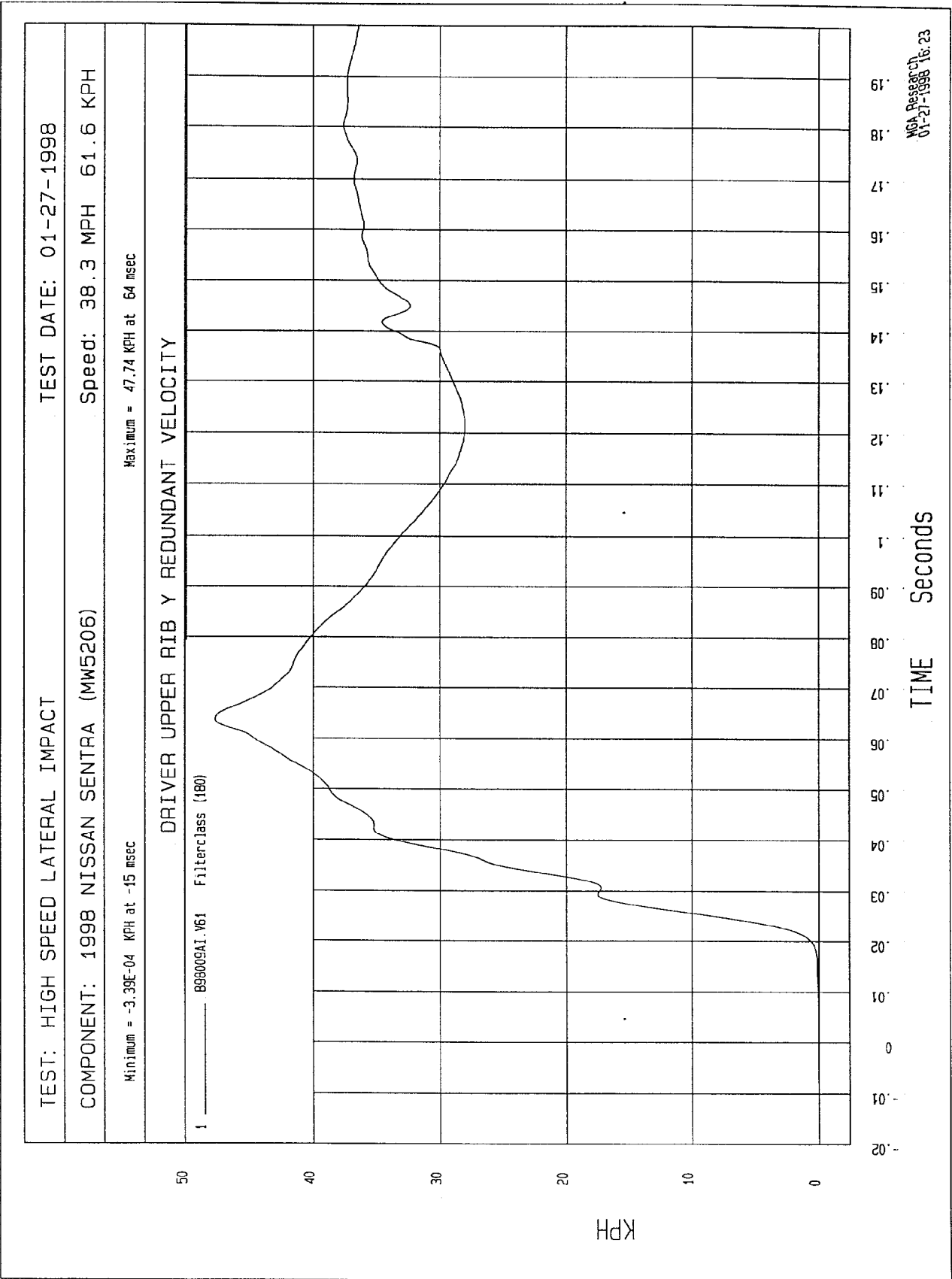
TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

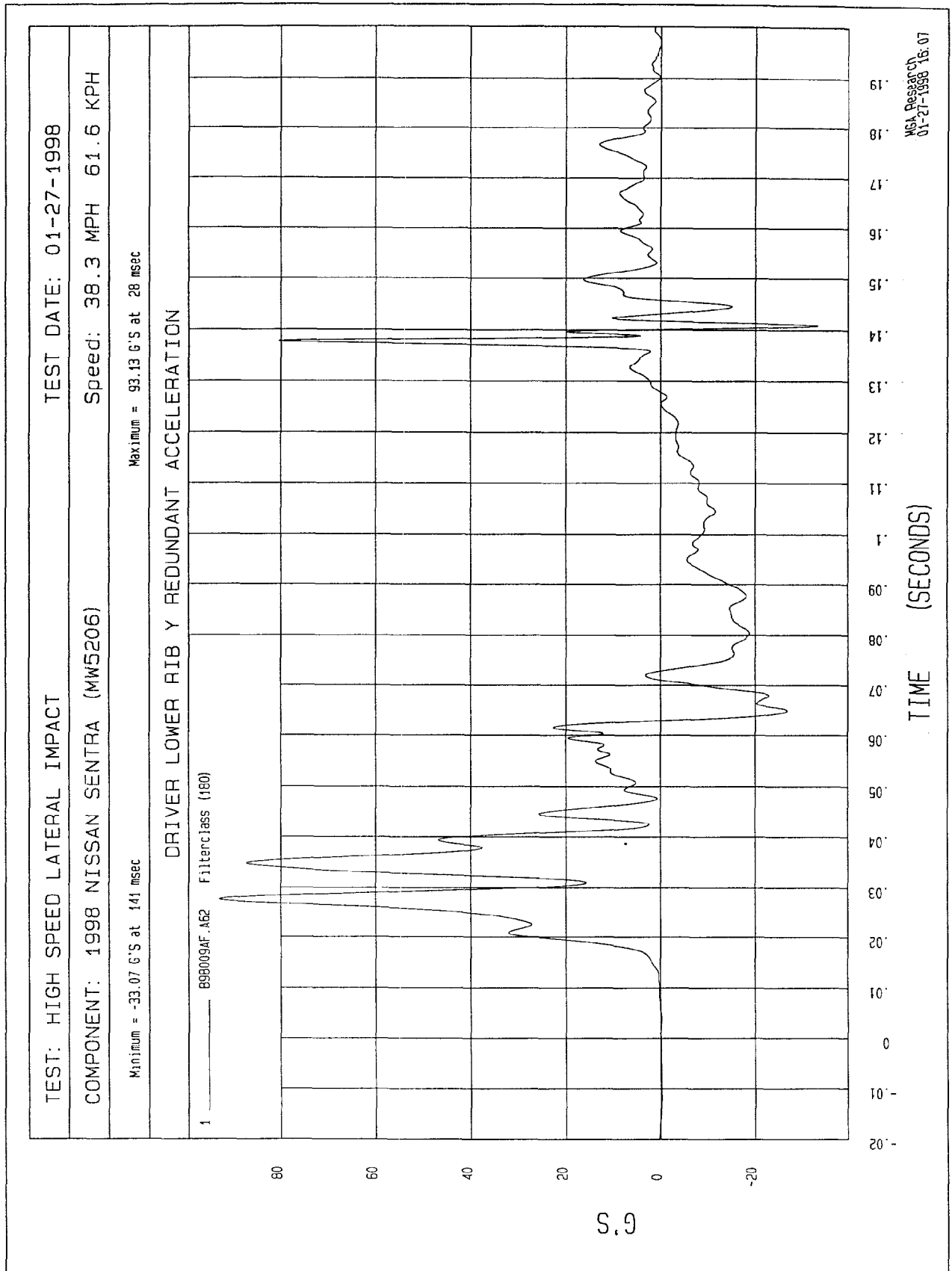
COMPONENT: 1998 NISSAN SENTRA (MWS206) Speed: 38.3 MPH 61.6 KPH

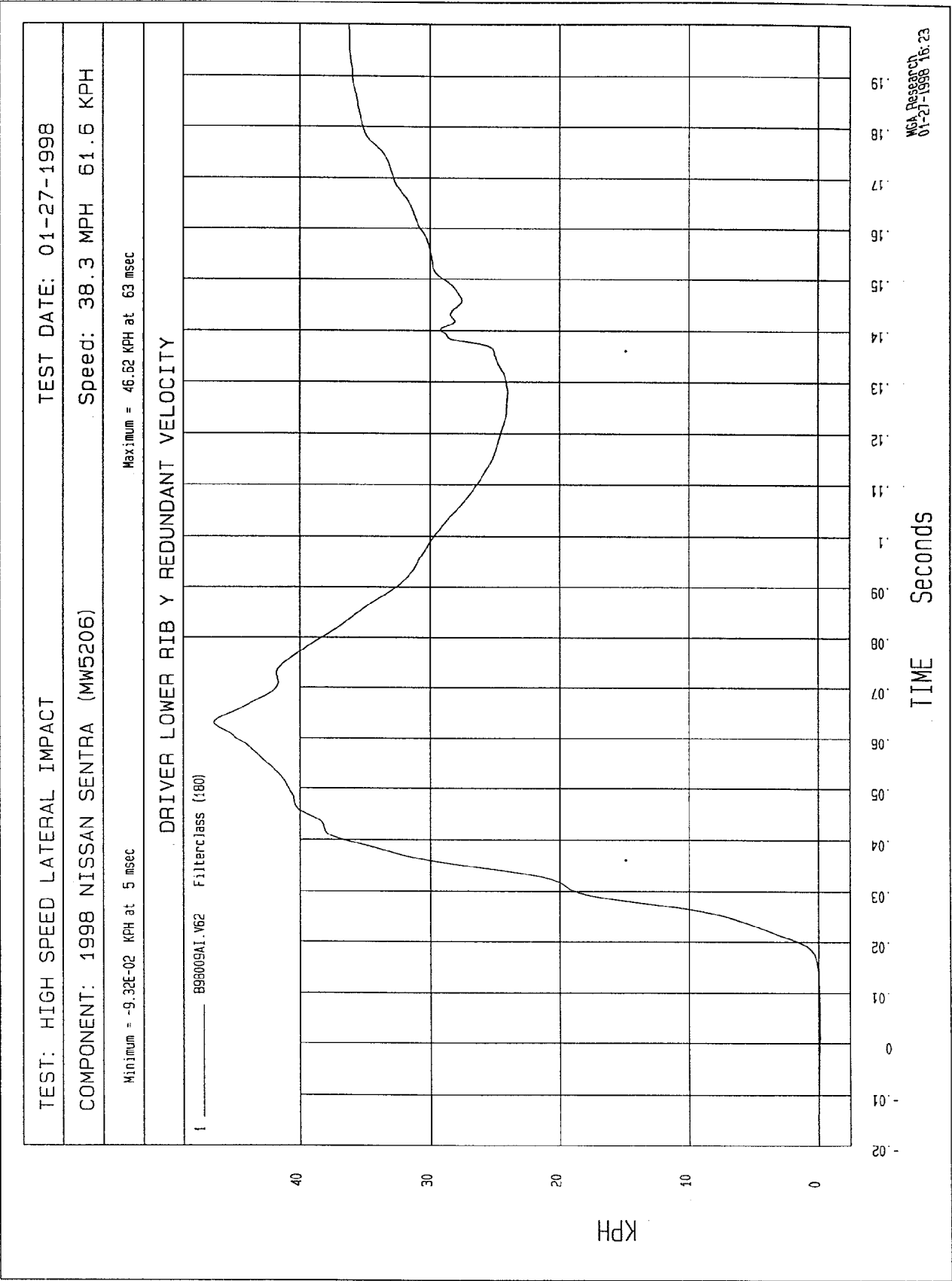
Minimum = -33.84 G'S at 143 msec Maximum = 88.75 G'S at 26 msec

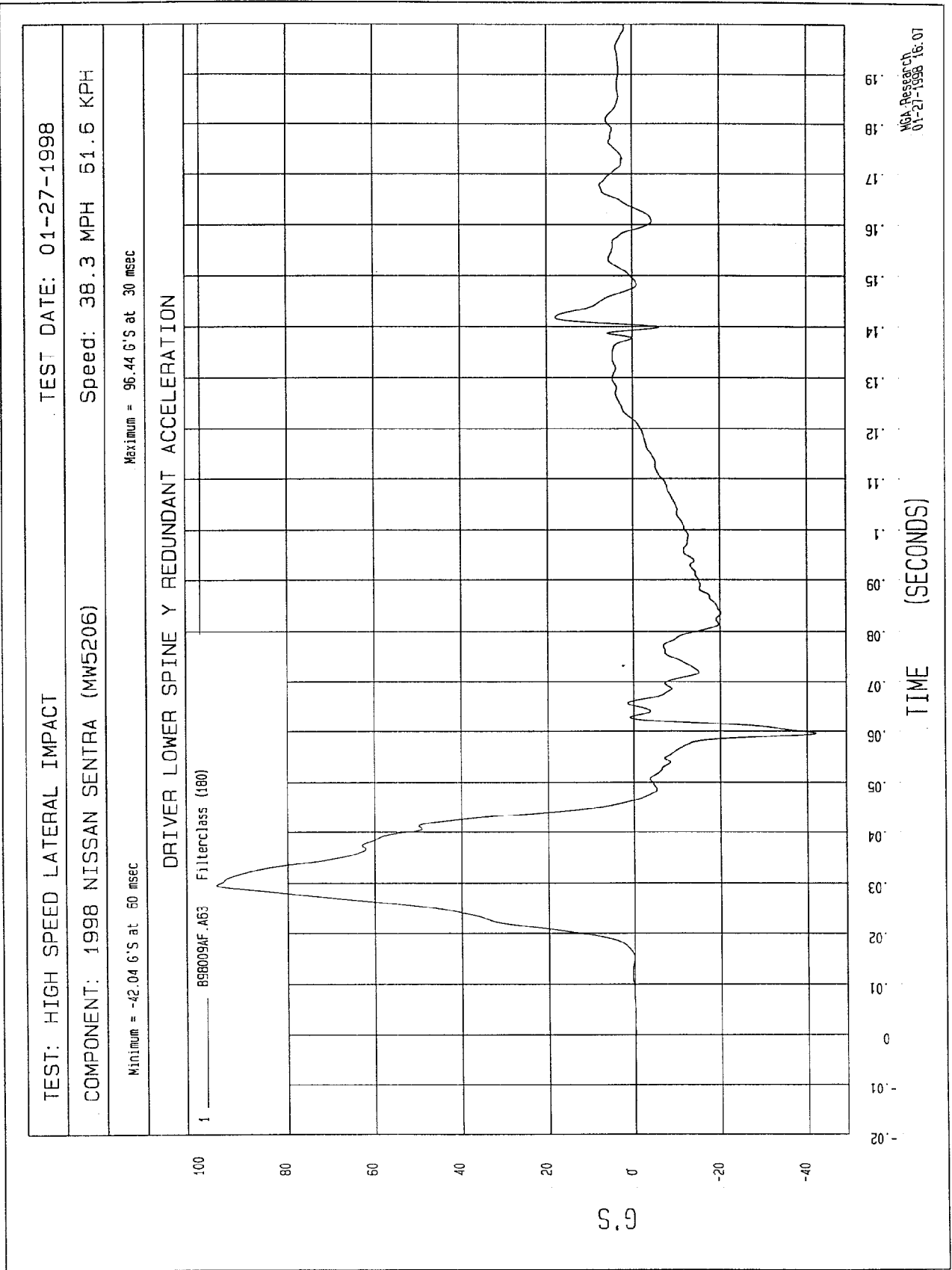
DRIVER UPPER RIB Y REDUNDANT ACCELERATION











TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

Speed: 38.3 MPH 61.6 KPH

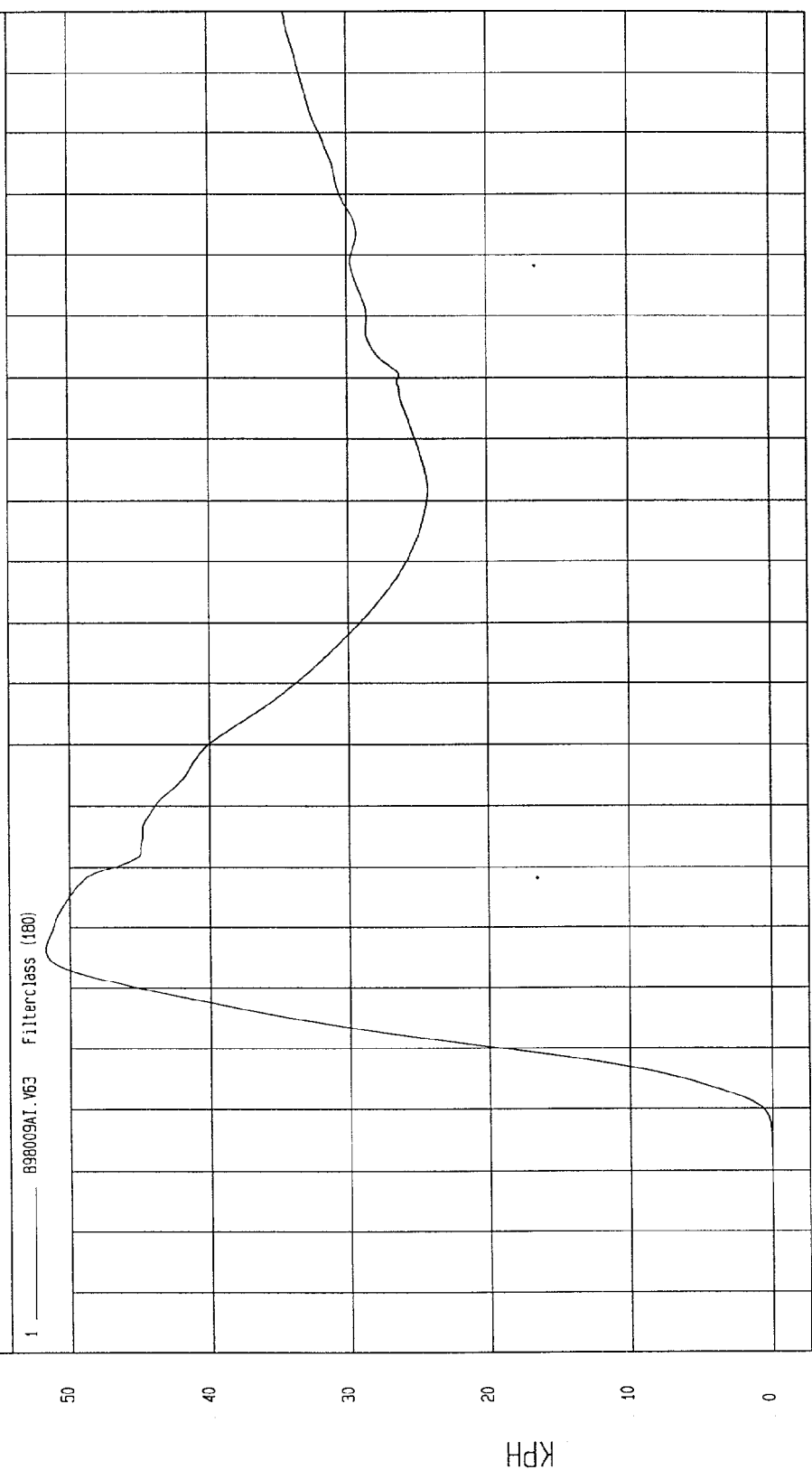
COMPONENT: 1998 NISSAN SENTRA (MW5206)

Maximum = 51.65 KPH at 46 msec

Minimum = -2.73E-02 KPH at 6 msec

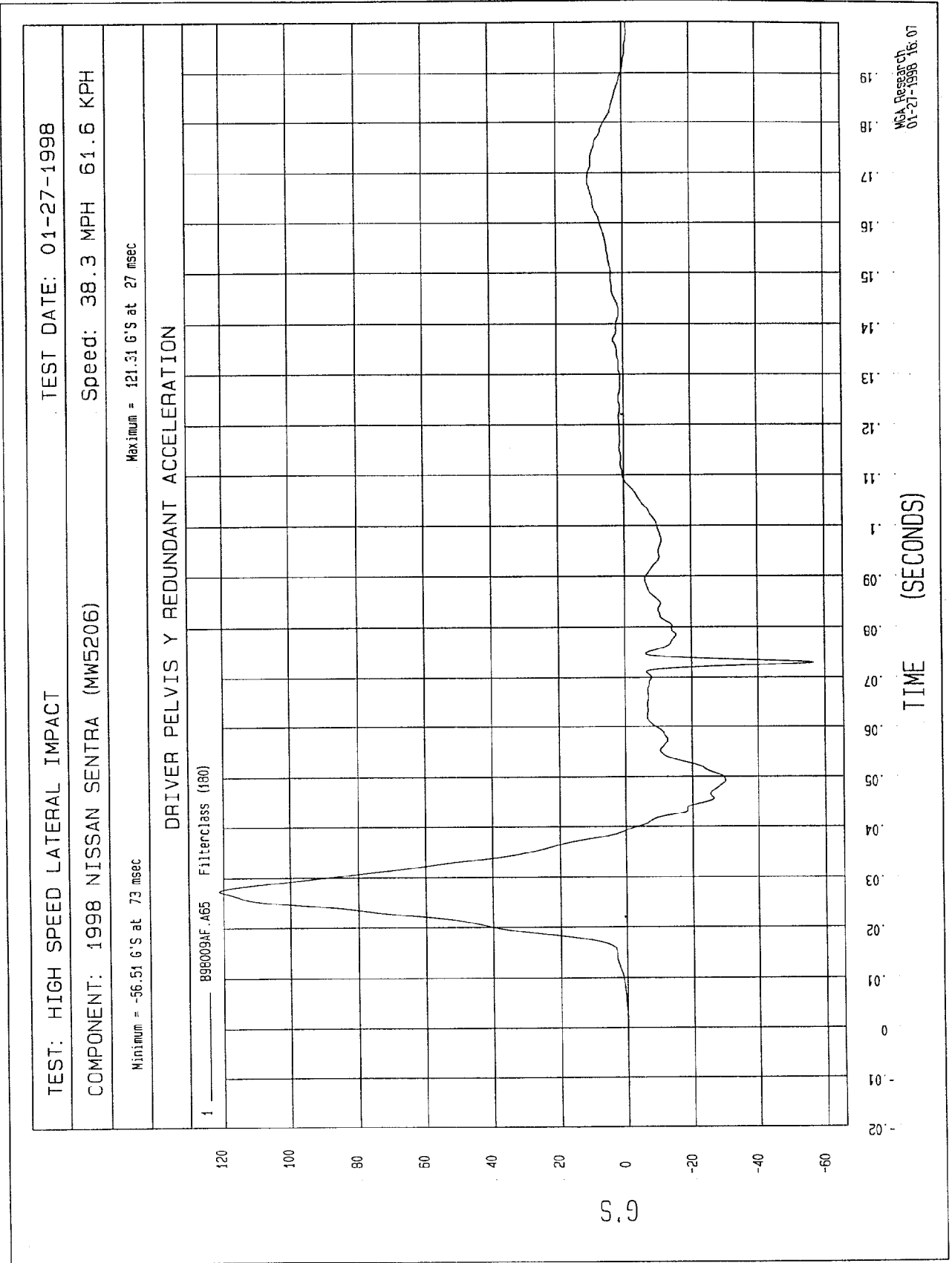
DRIVER LOWER SPINE Y REDUNDANT VELOCITY

1 B98009A1.V63 Filterclass (180)



TIME Seconds

WCA Research
01-27-1998 16:23

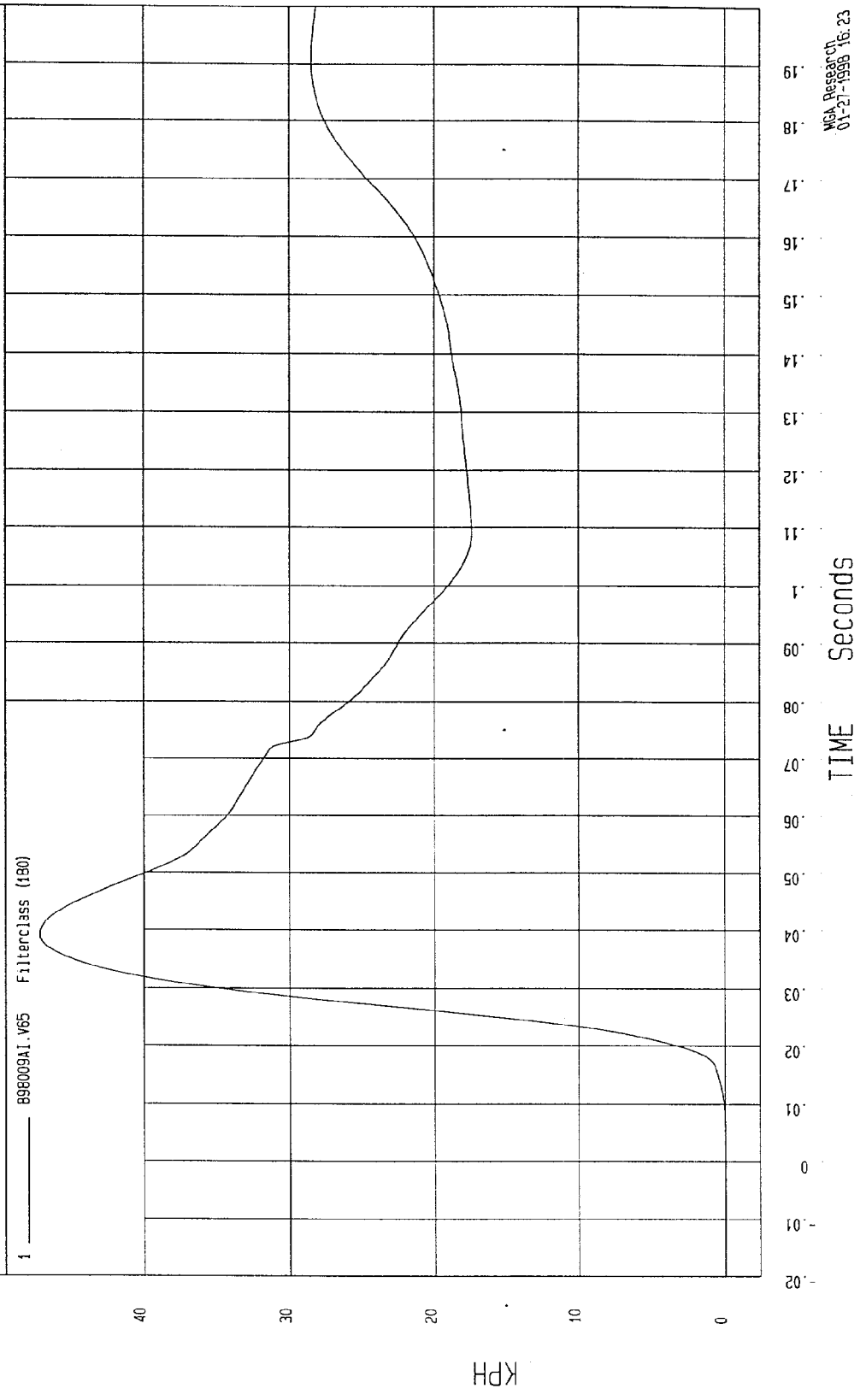


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = -.01 KPH at -3 msec Maximum = 47.07 KPH at 39 msec

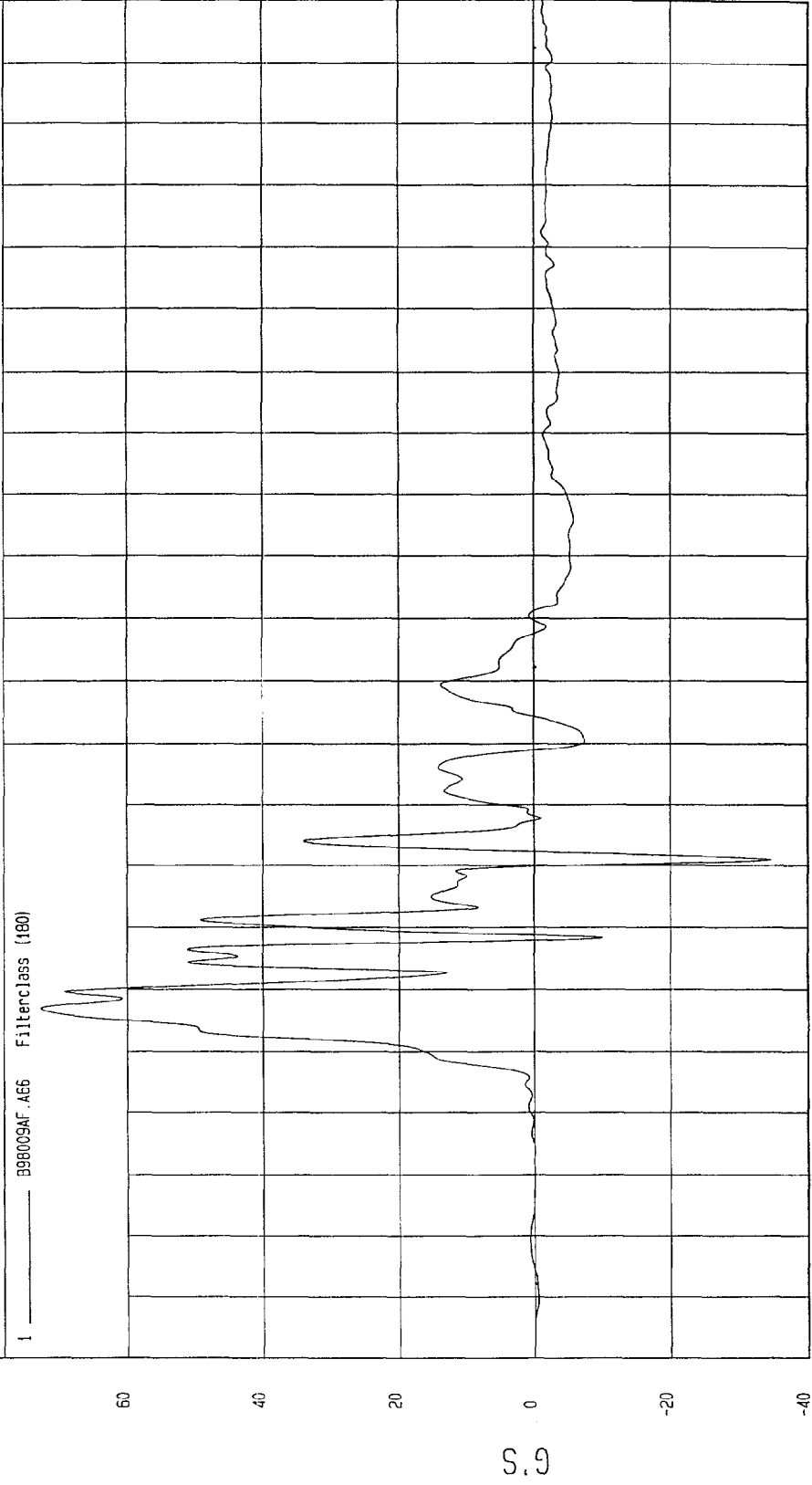
DRIVER PELVIS Y REDUNDANT VELOCITY



NCA Research
01-27-1998 16:23

TEST: HIGH SPEED LATERAL IMPACT	TEST DATE: 01-27-1998
COMPONENT: 1998 NISSAN SENTRA (MW5206)	Speed: 38.3 MPH 61.6 KPH
Minimum = -34.71 G'S at 61 msec	
Maximum = 72.66 G'S at 37 msec	

REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION



TIME (SECONDS)

NSA Research
01-27-1998 15:07

TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

Speed: 38.3 MPH 61.6 KPH

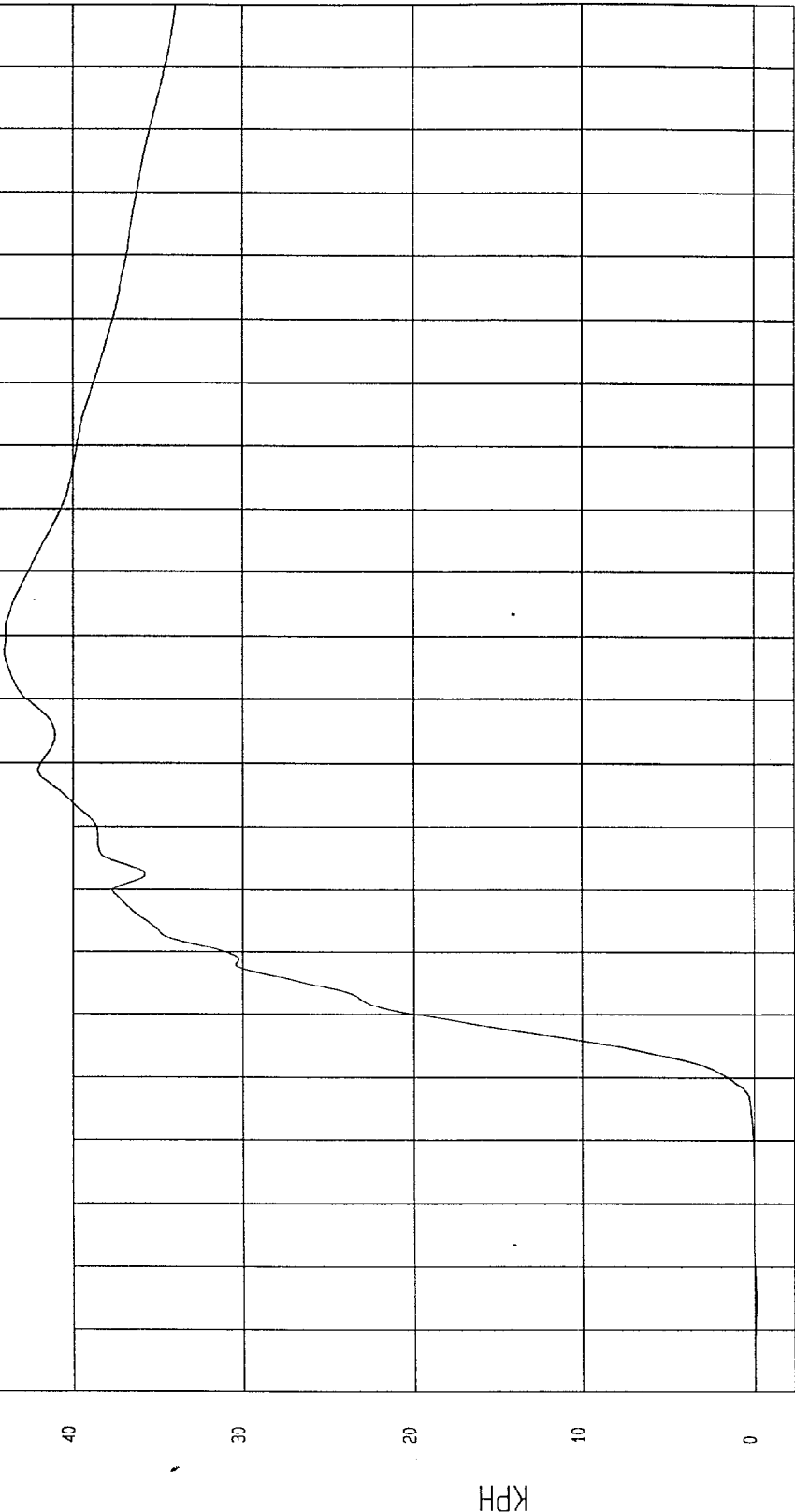
COMPONENT: 1998 NISSAN SENTRA (MW5206)

Maximum = 43.98 KPH at 98 msec

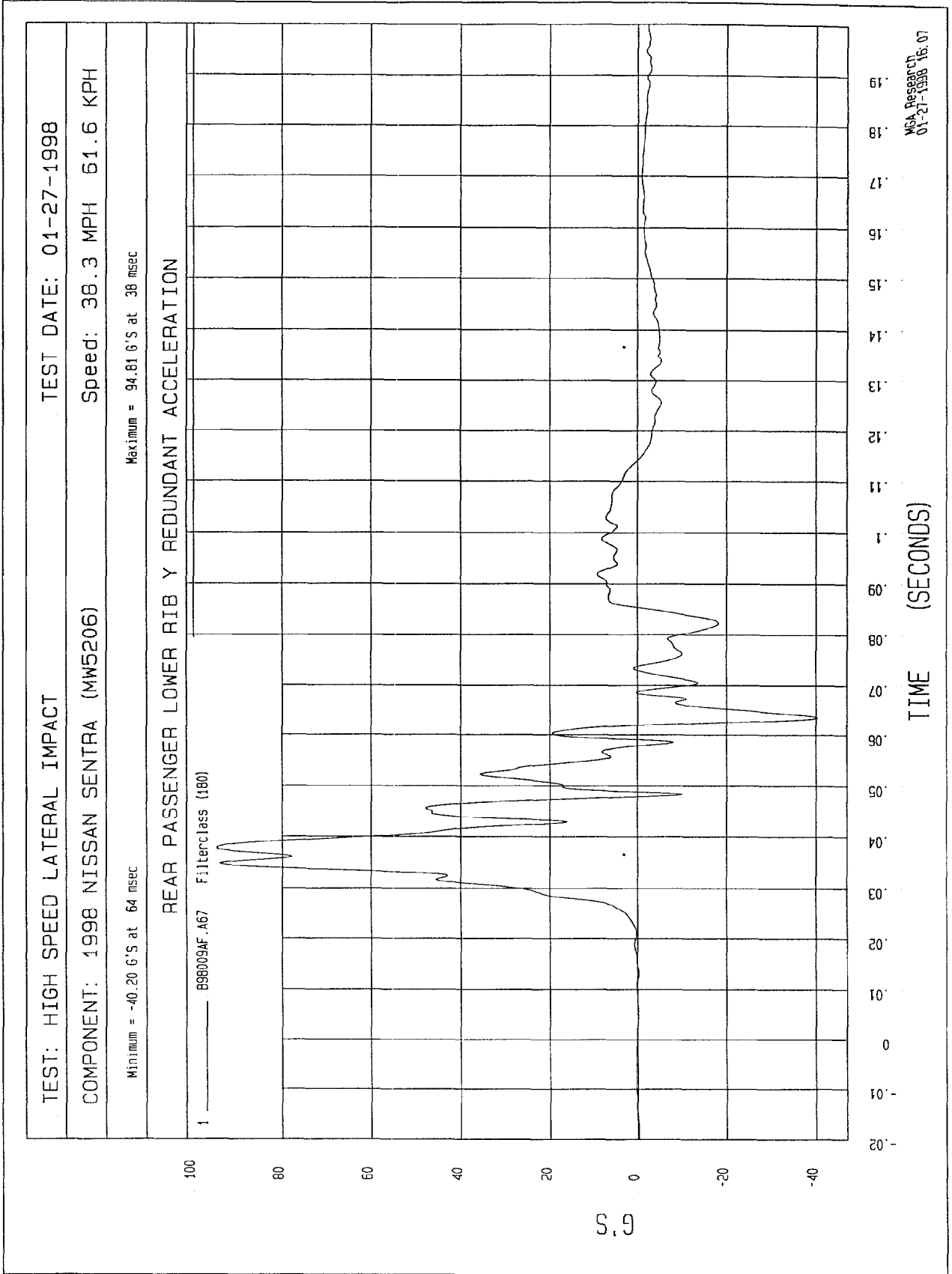
Minimum = -10 KPH at -6 msec

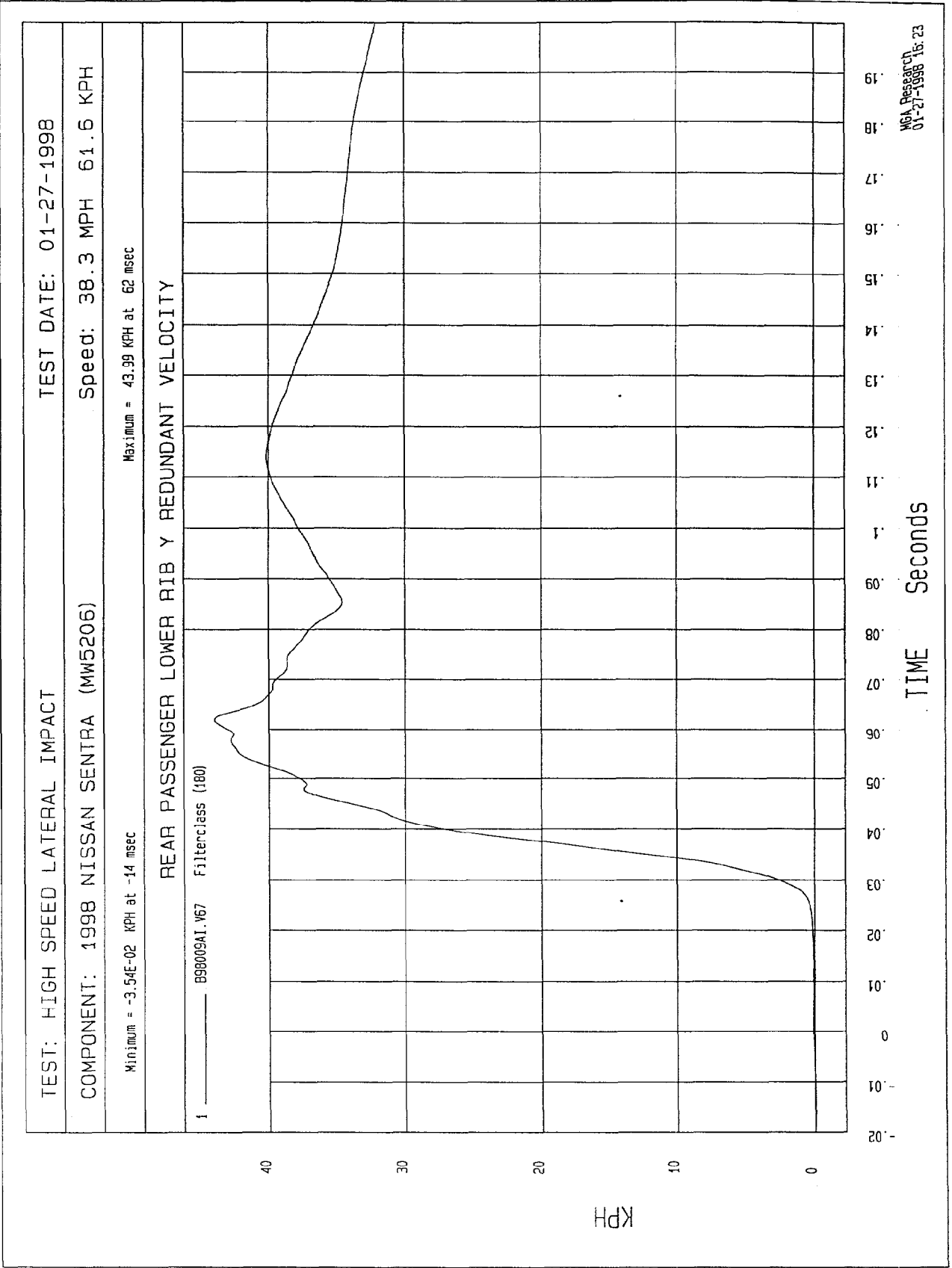
REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY

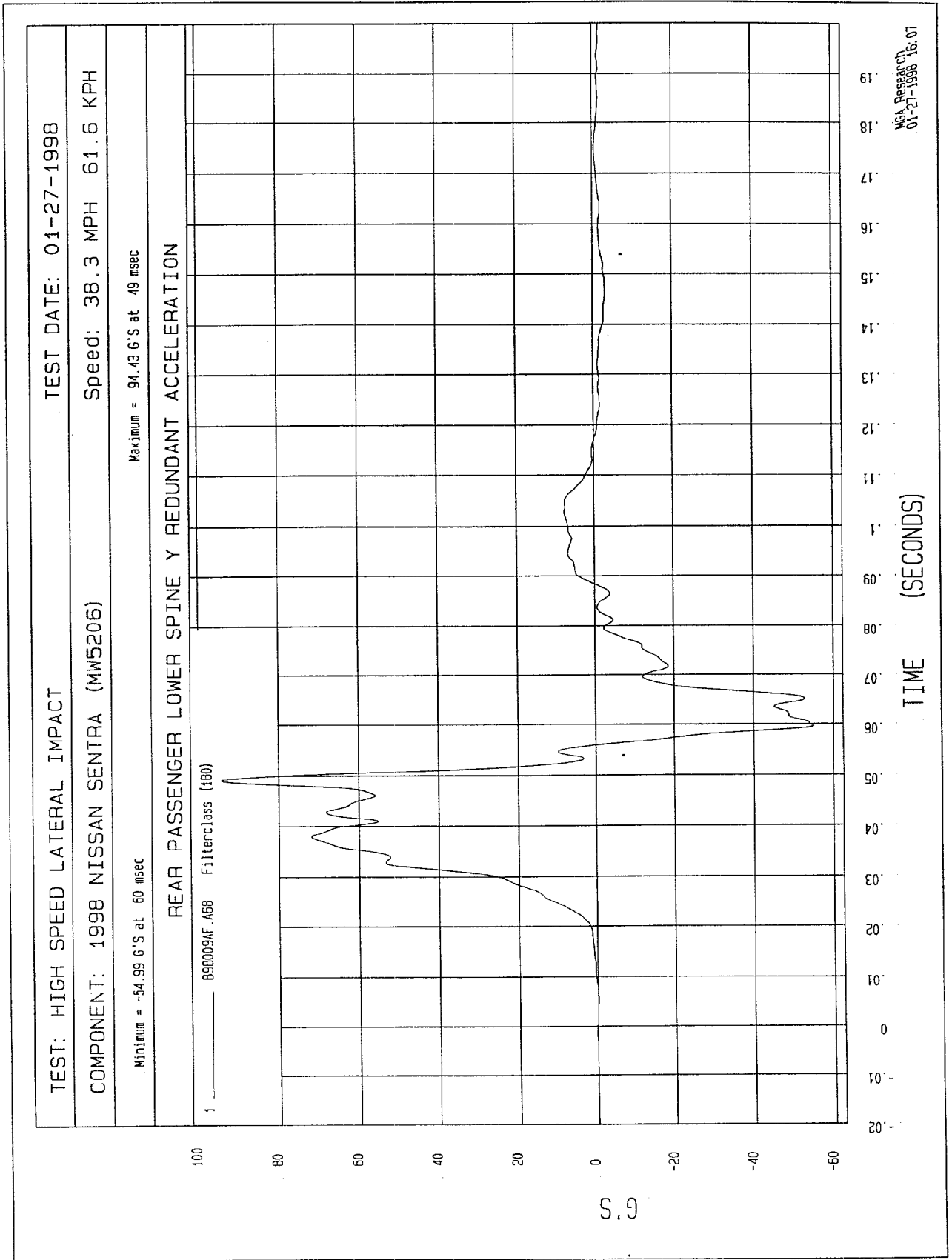
1 B98009AI.V66 Filterclass (180)

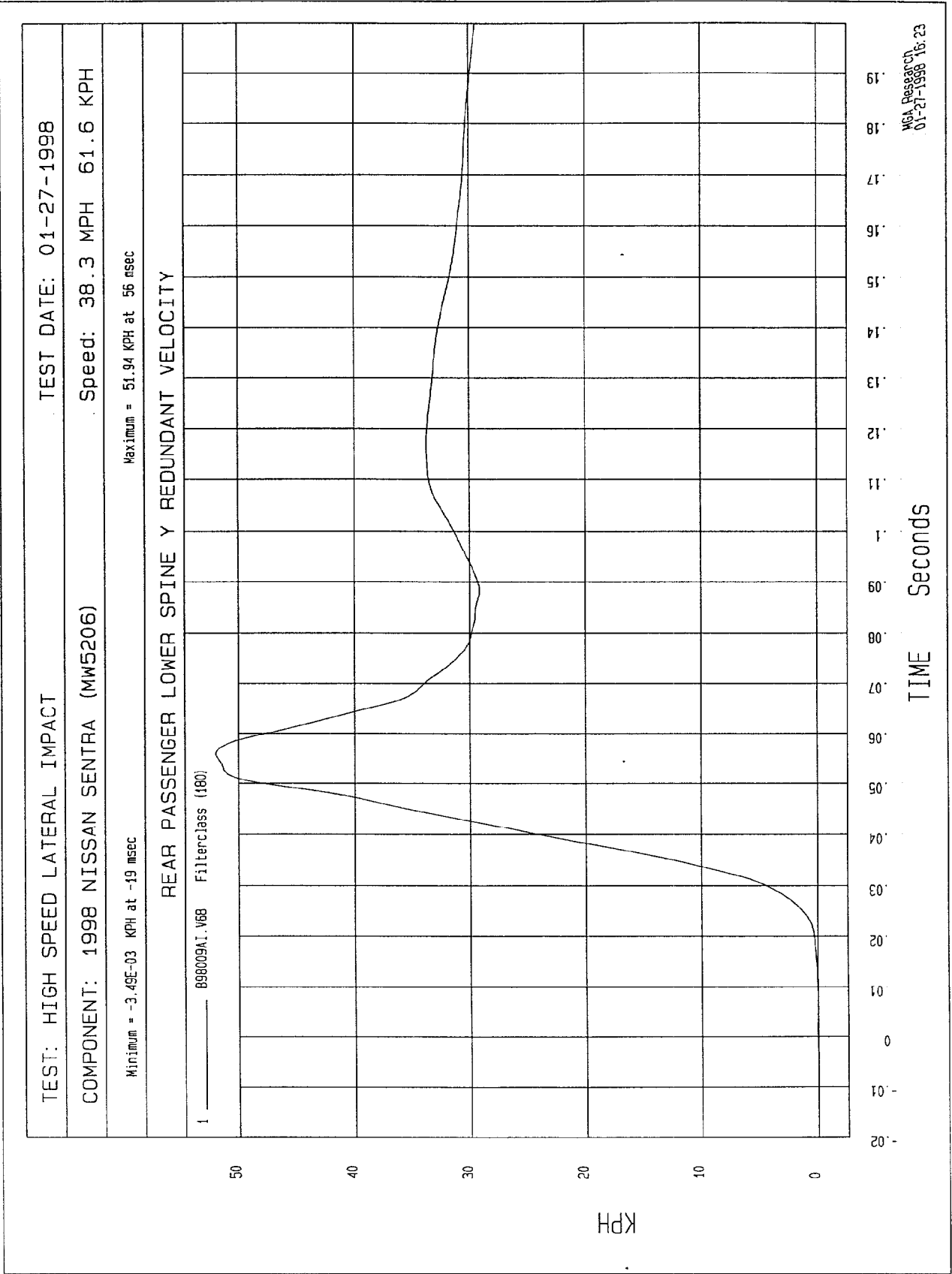


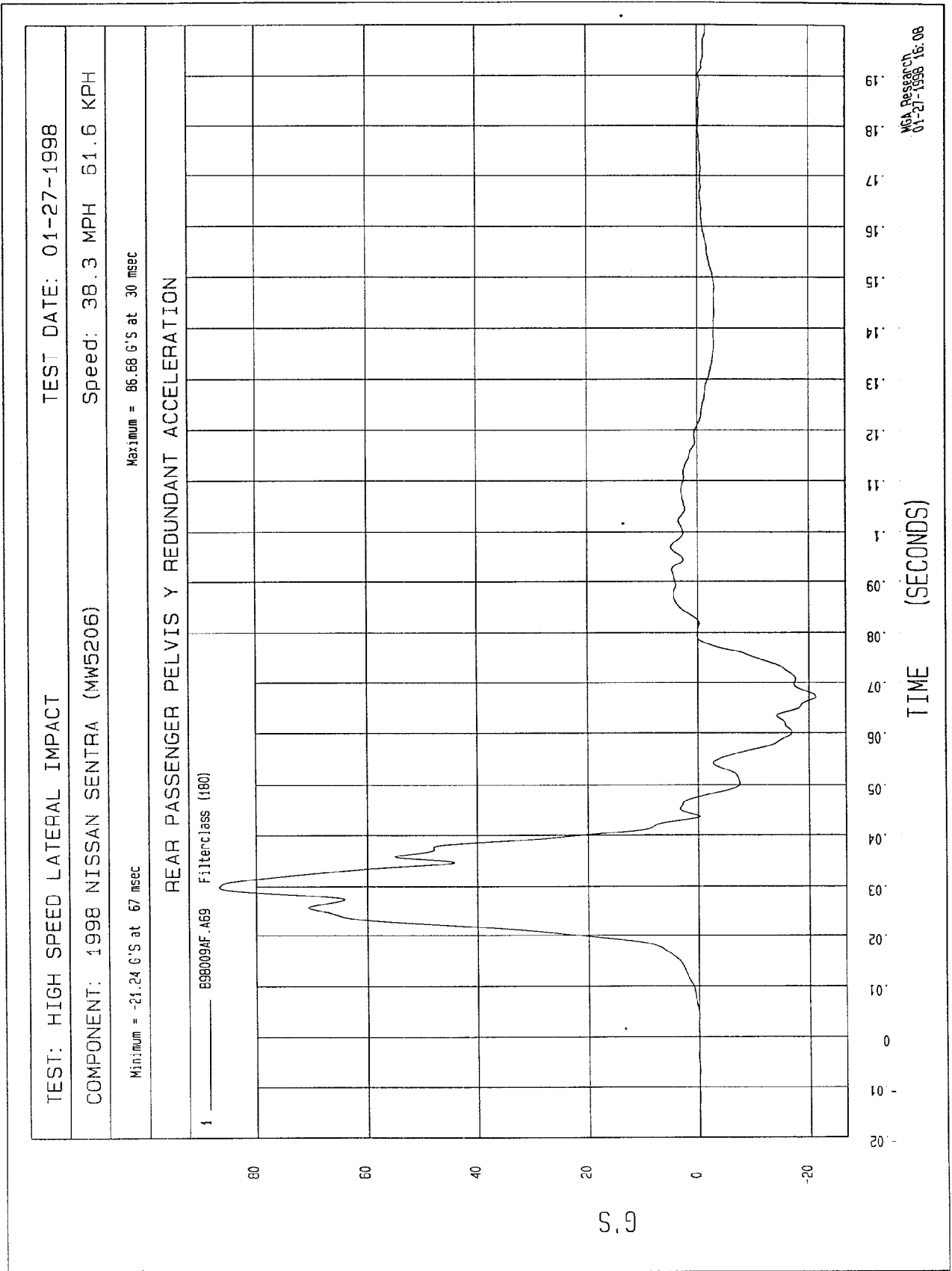
WCA Research
01-27-1998 16:23

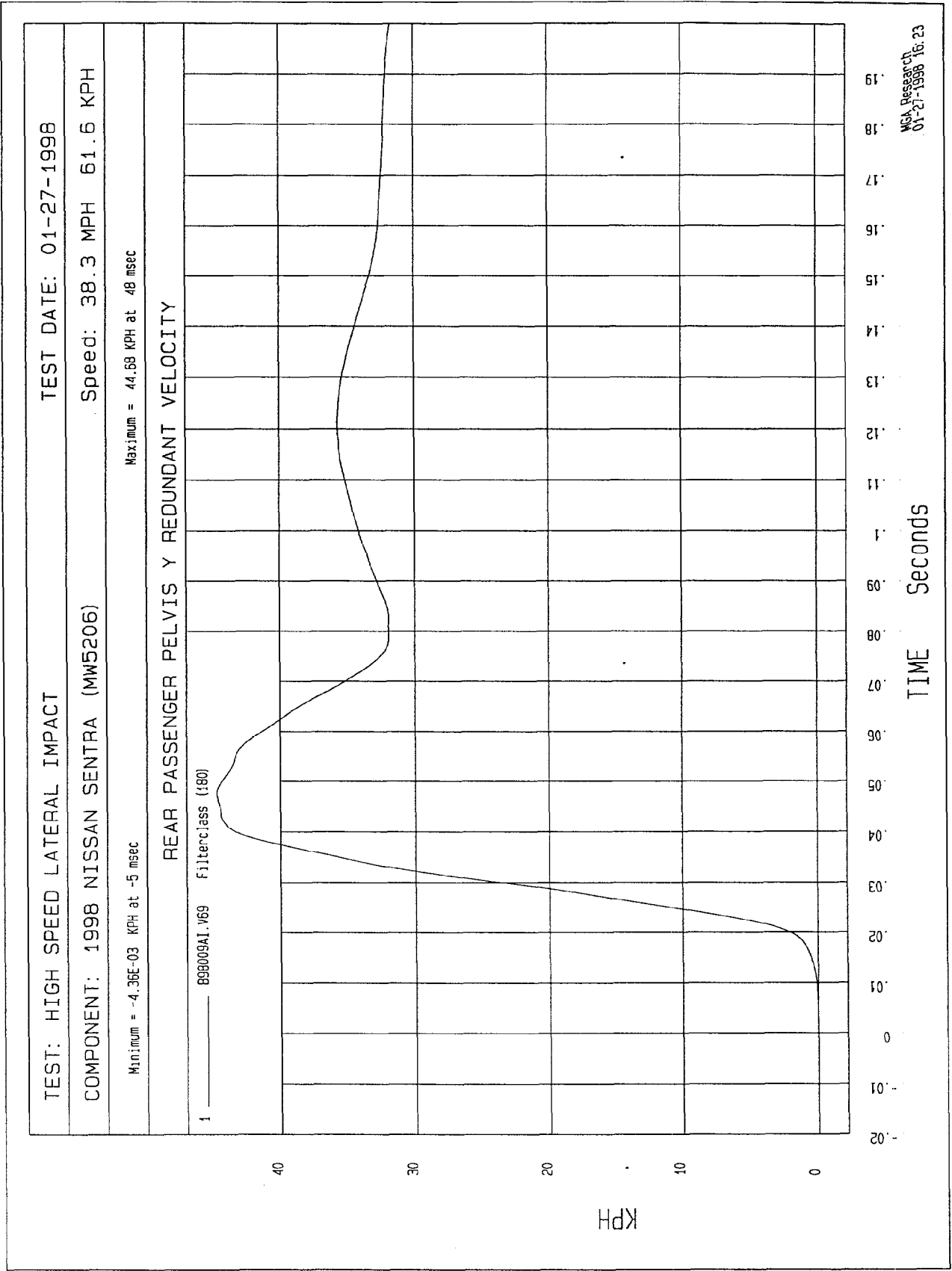




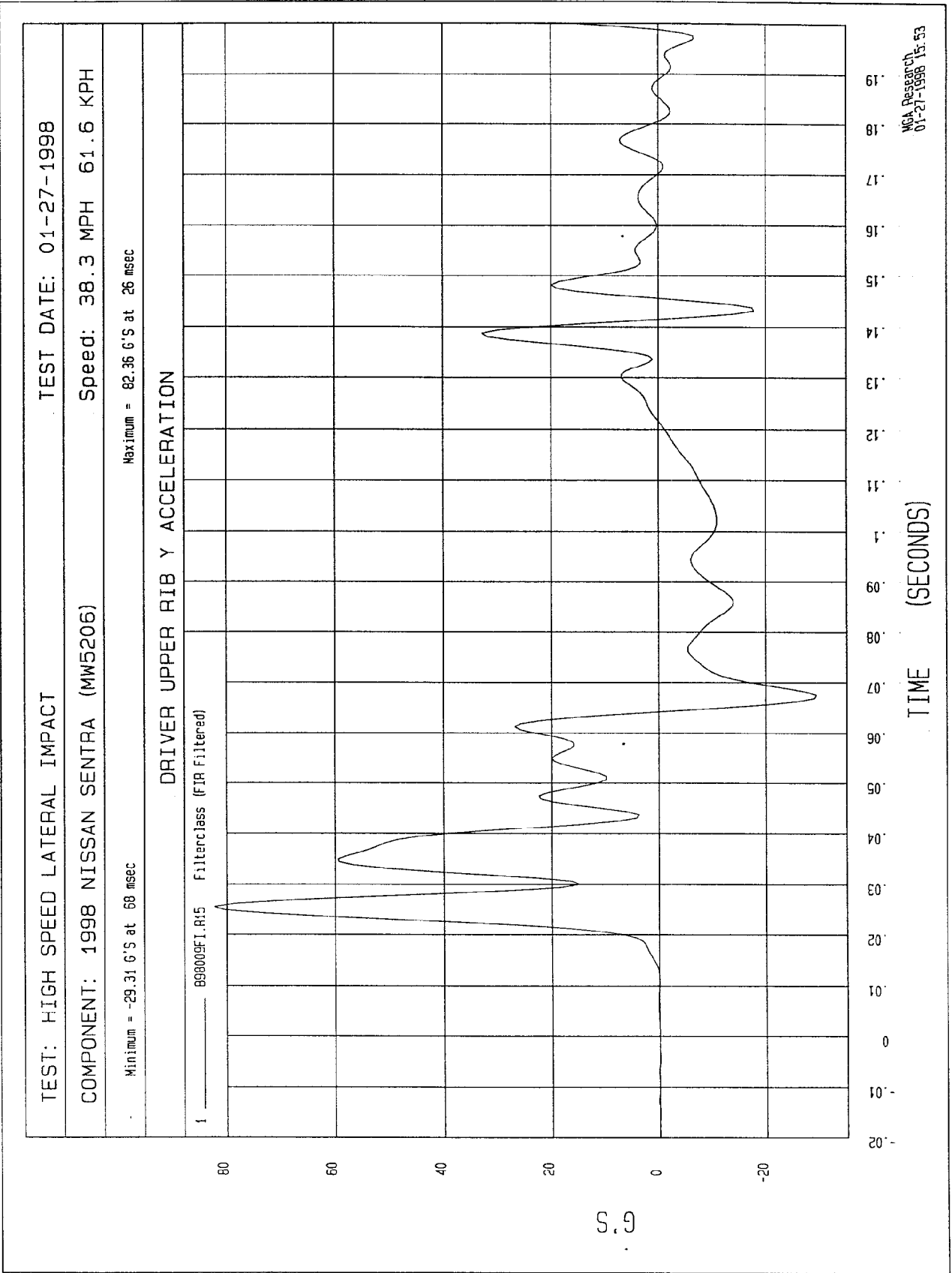


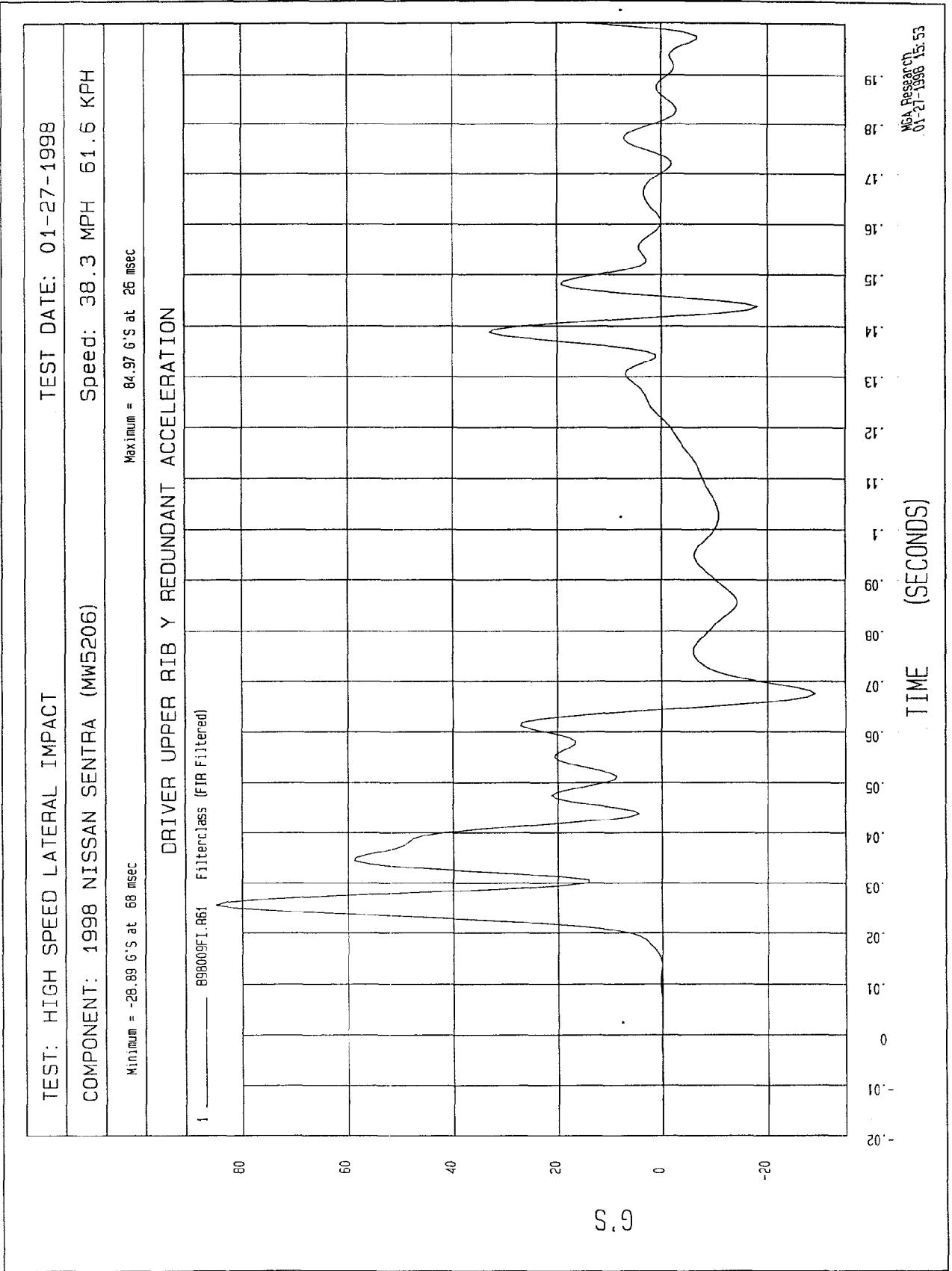


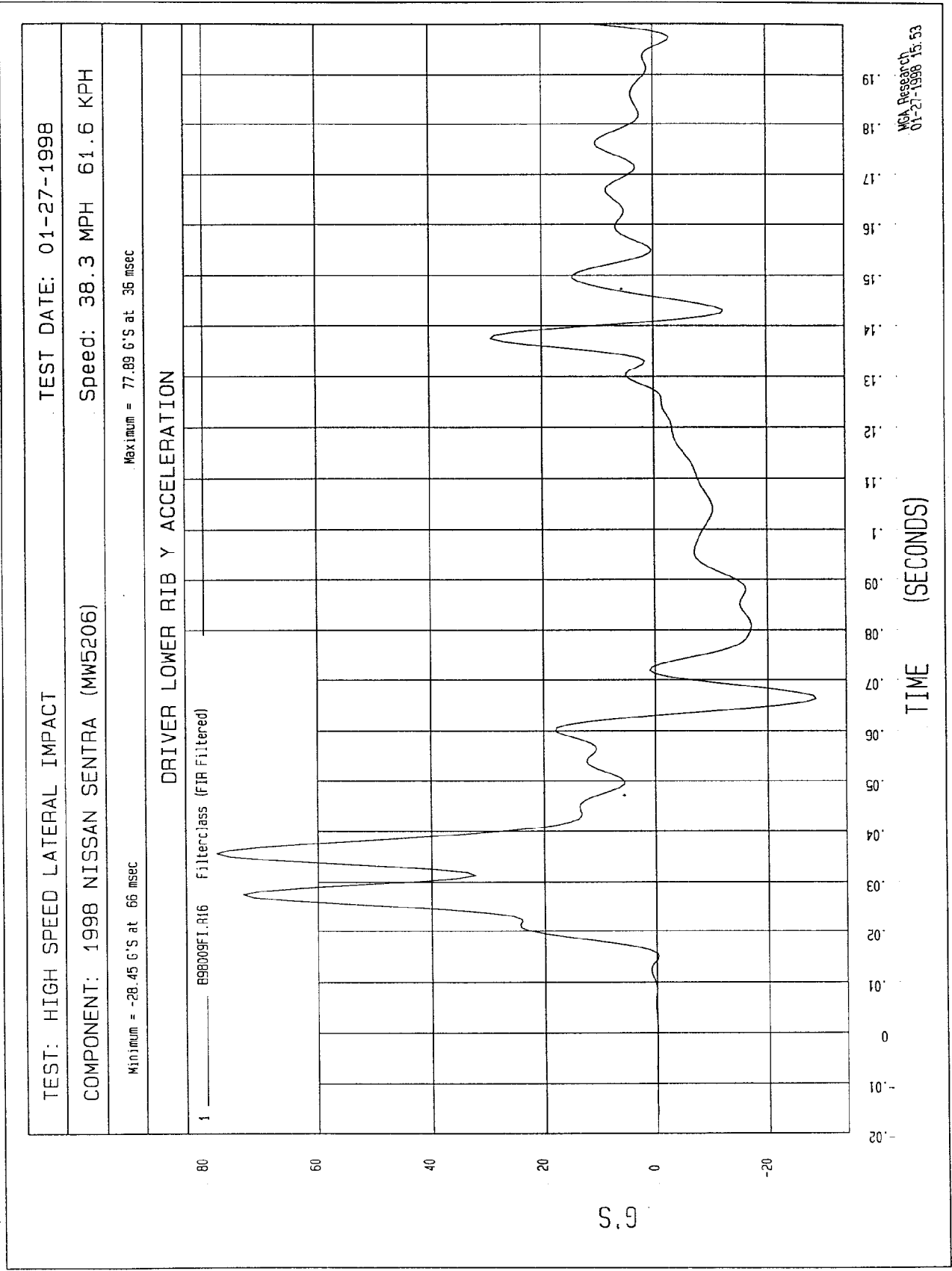


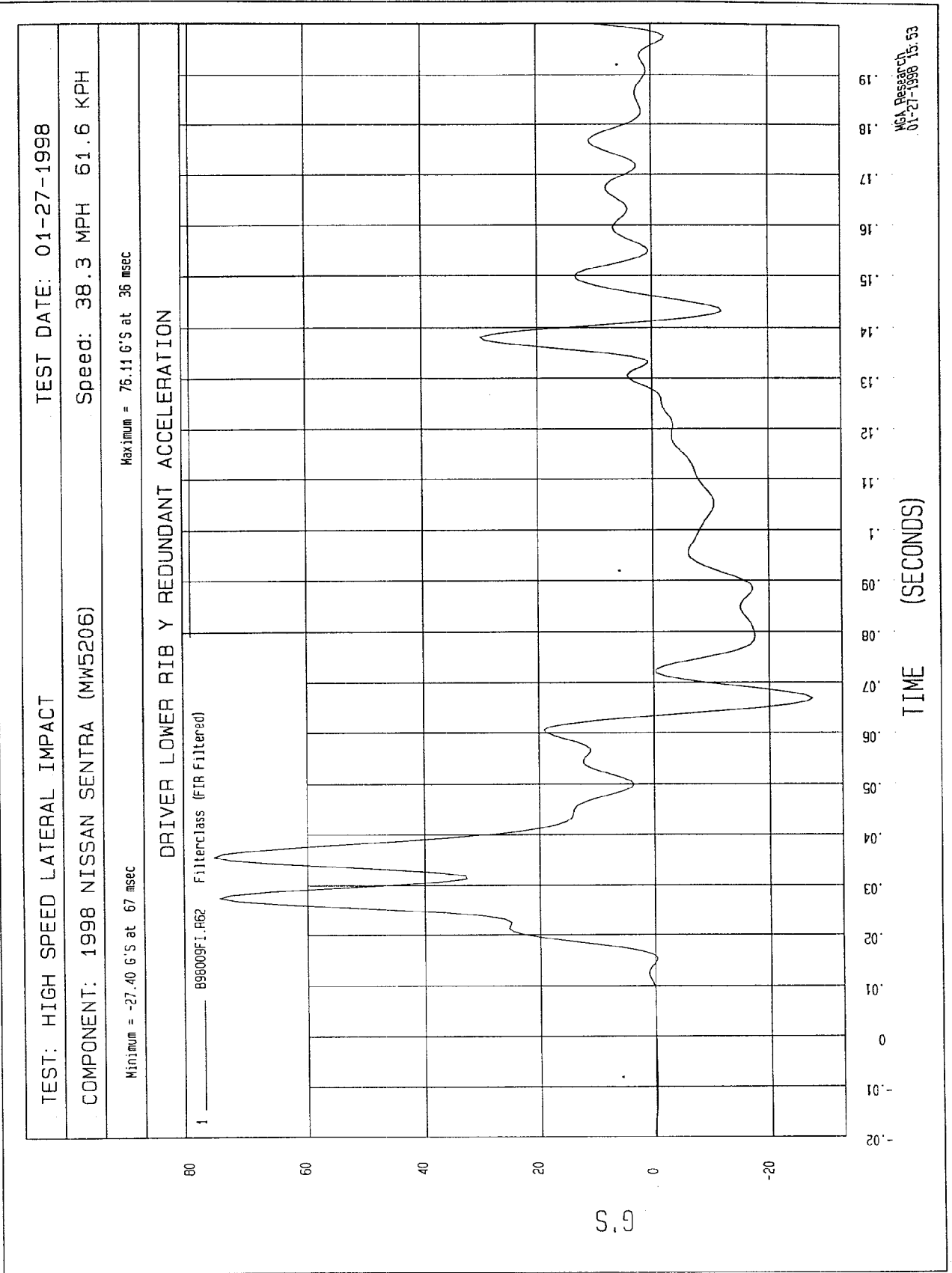


FINITE IMPULSE RESPONSE (FIR) FILTERED DATA









TEST: HIGH SPEED LATERAL IMPACT

TEST DATE: 01-27-1998

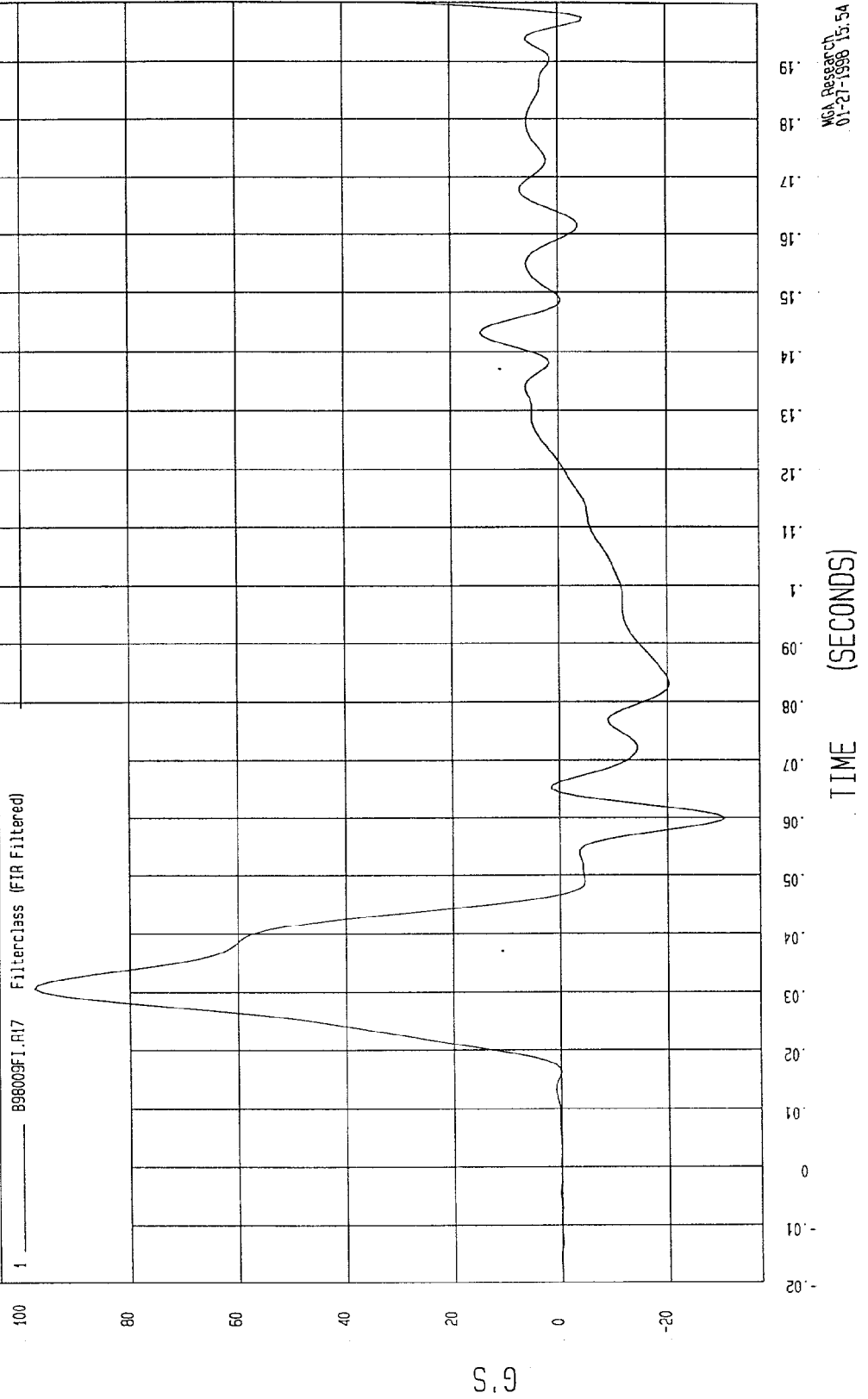
COMPONENT: 1998 NISSAN SENTRA (MW5206)

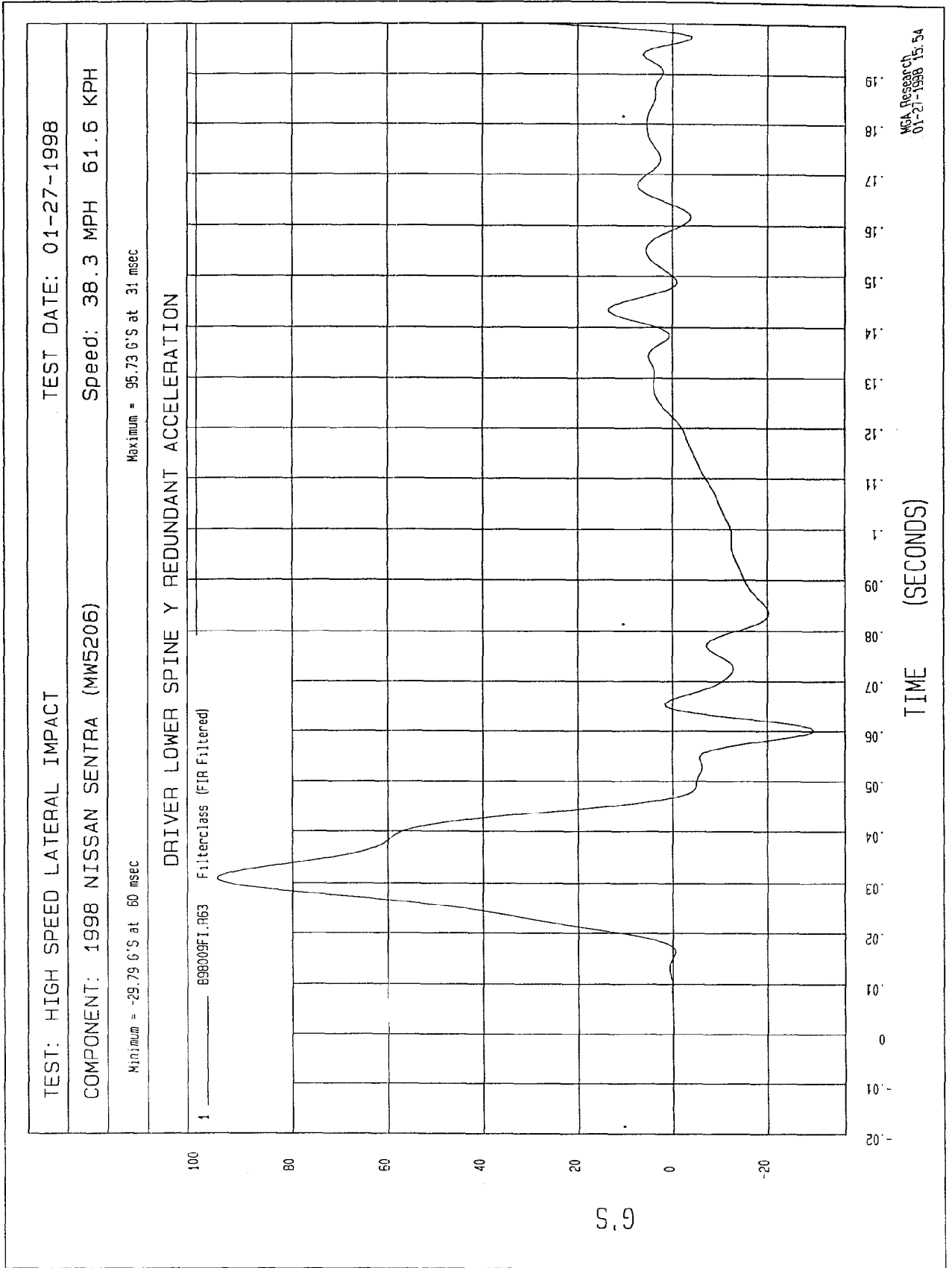
Speed: 38.3 MPH 61.6 KPH

Minimum = -30.33 G's at 60 msec

Maximum = 97.77 G's at 31 msec

DRIVER LOWER SPINE Y ACCELERATION



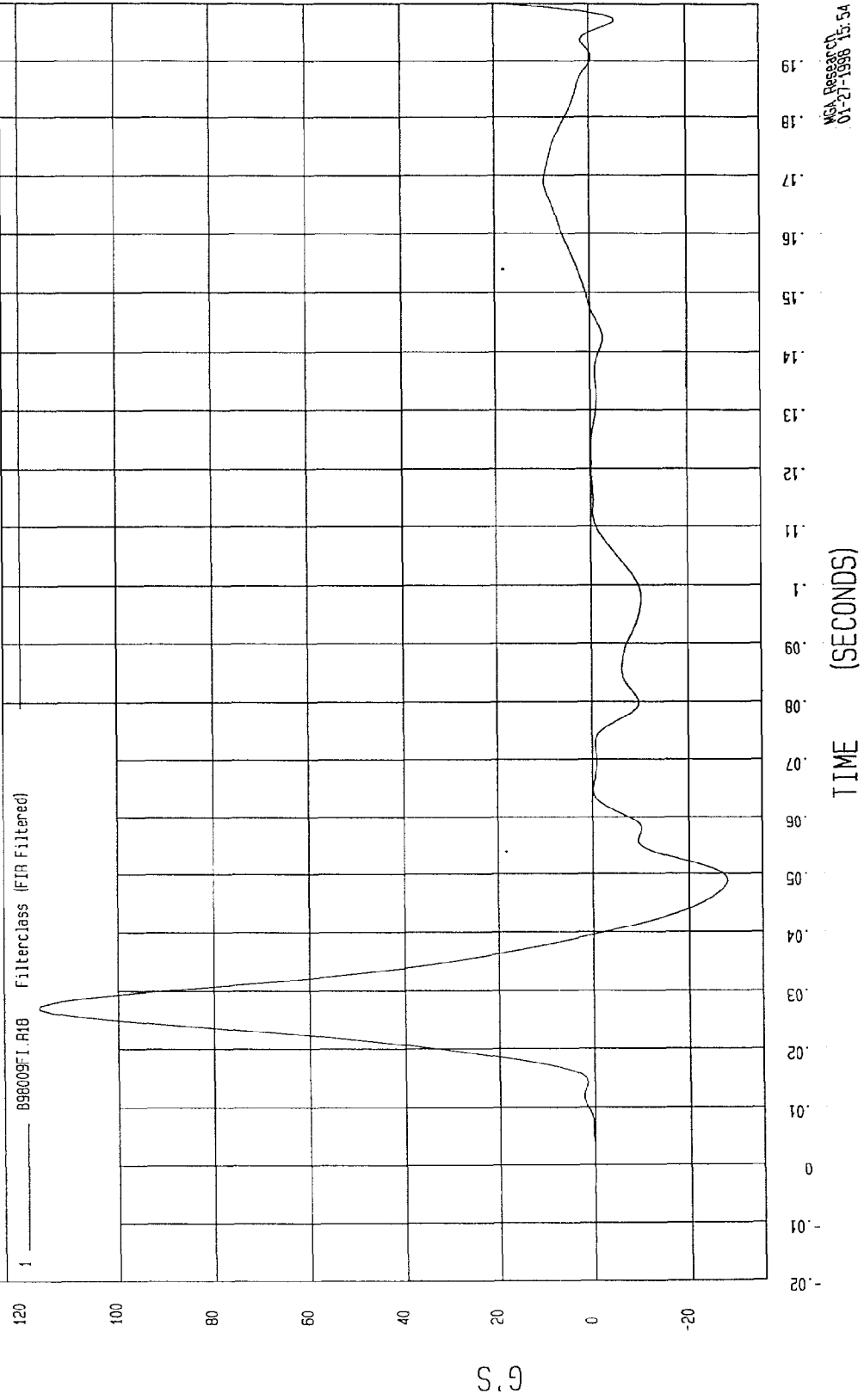


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = -28.02 G'S at 49 msec Maximum = 116.46 G'S at 27 msec

DRIVER PELVIS Y ACCELERATION

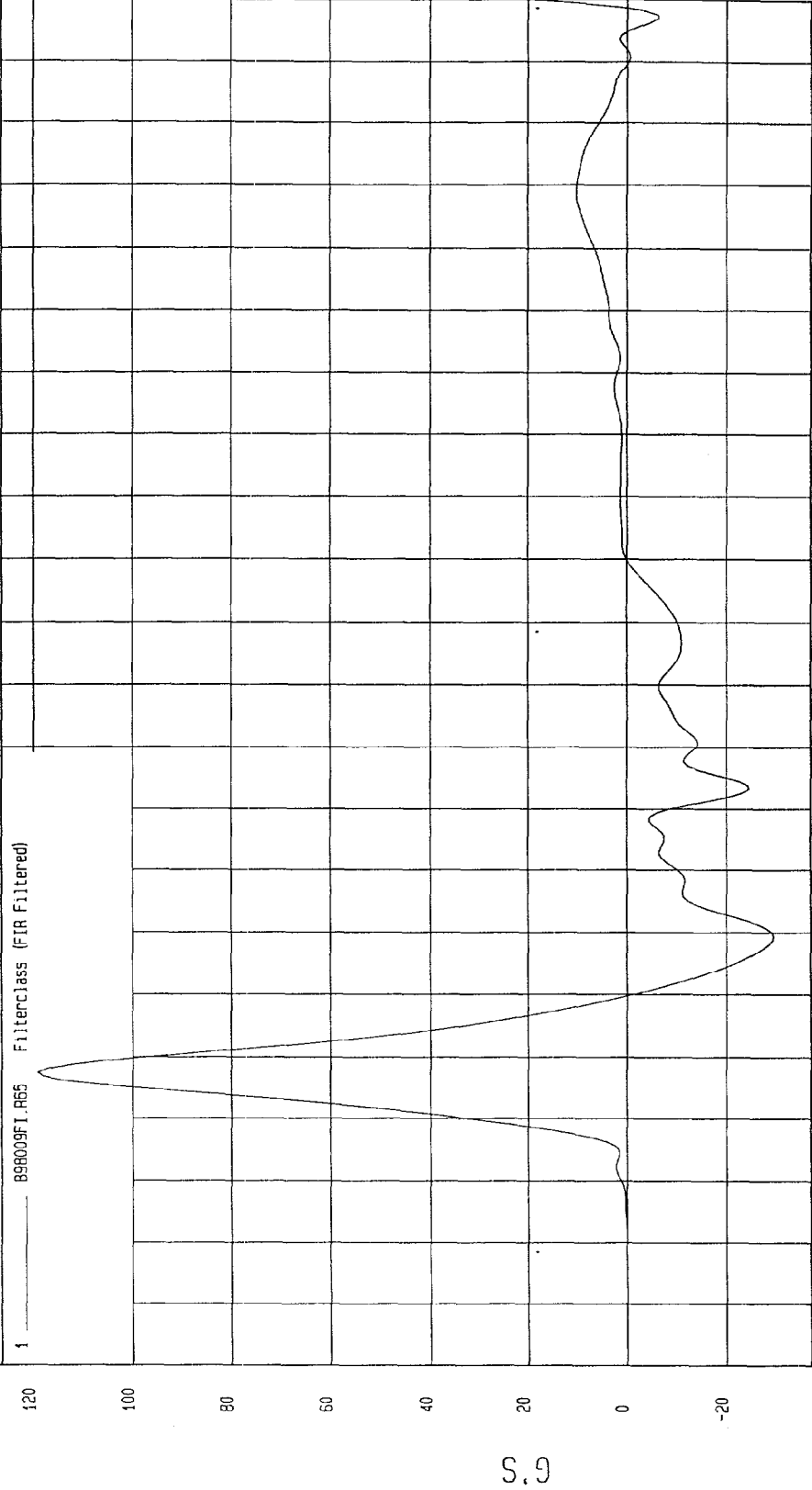


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

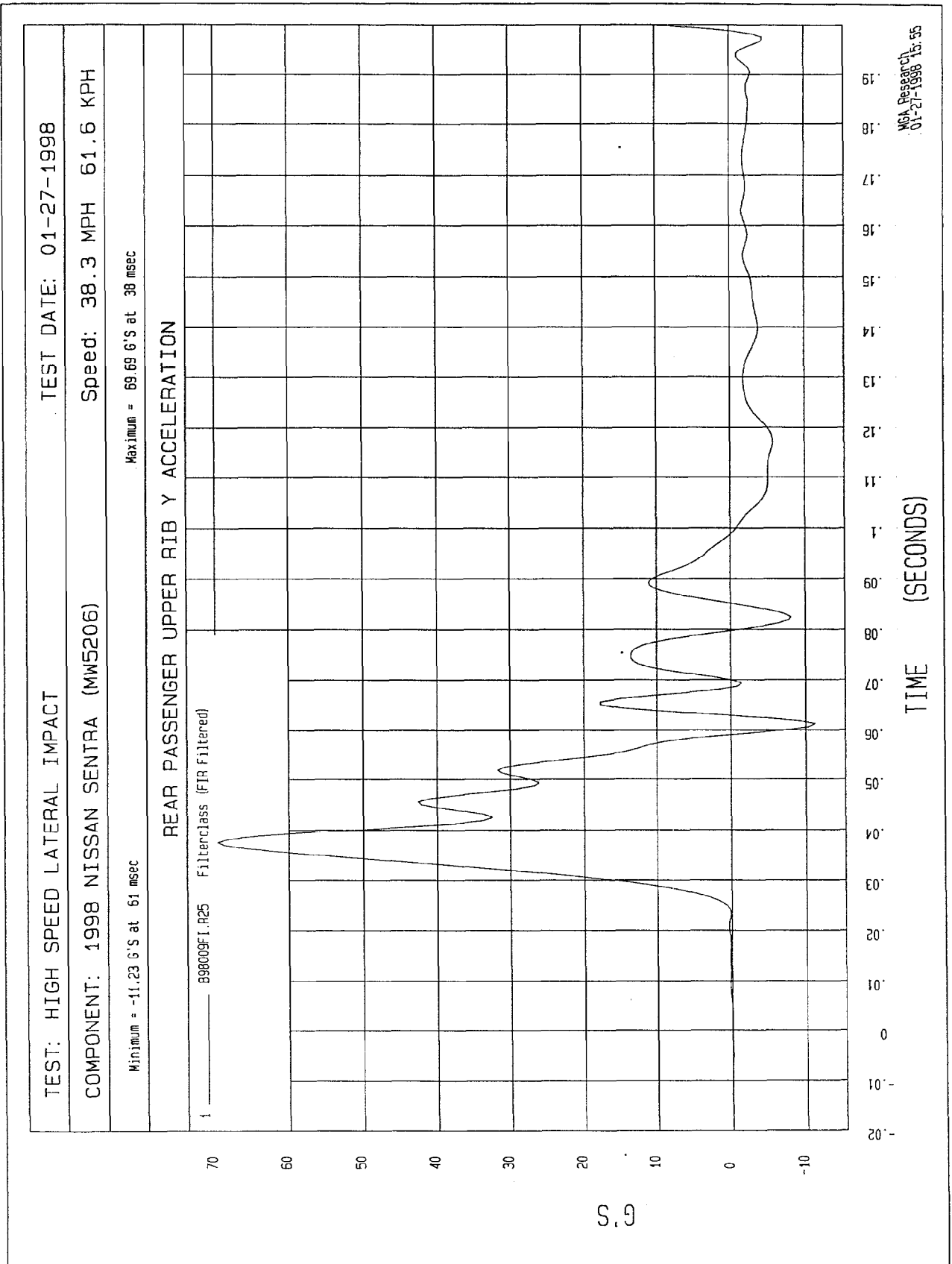
Minimum = -29.41 G'S at 49 msec Maximum = 119.09 G'S at 28 msec

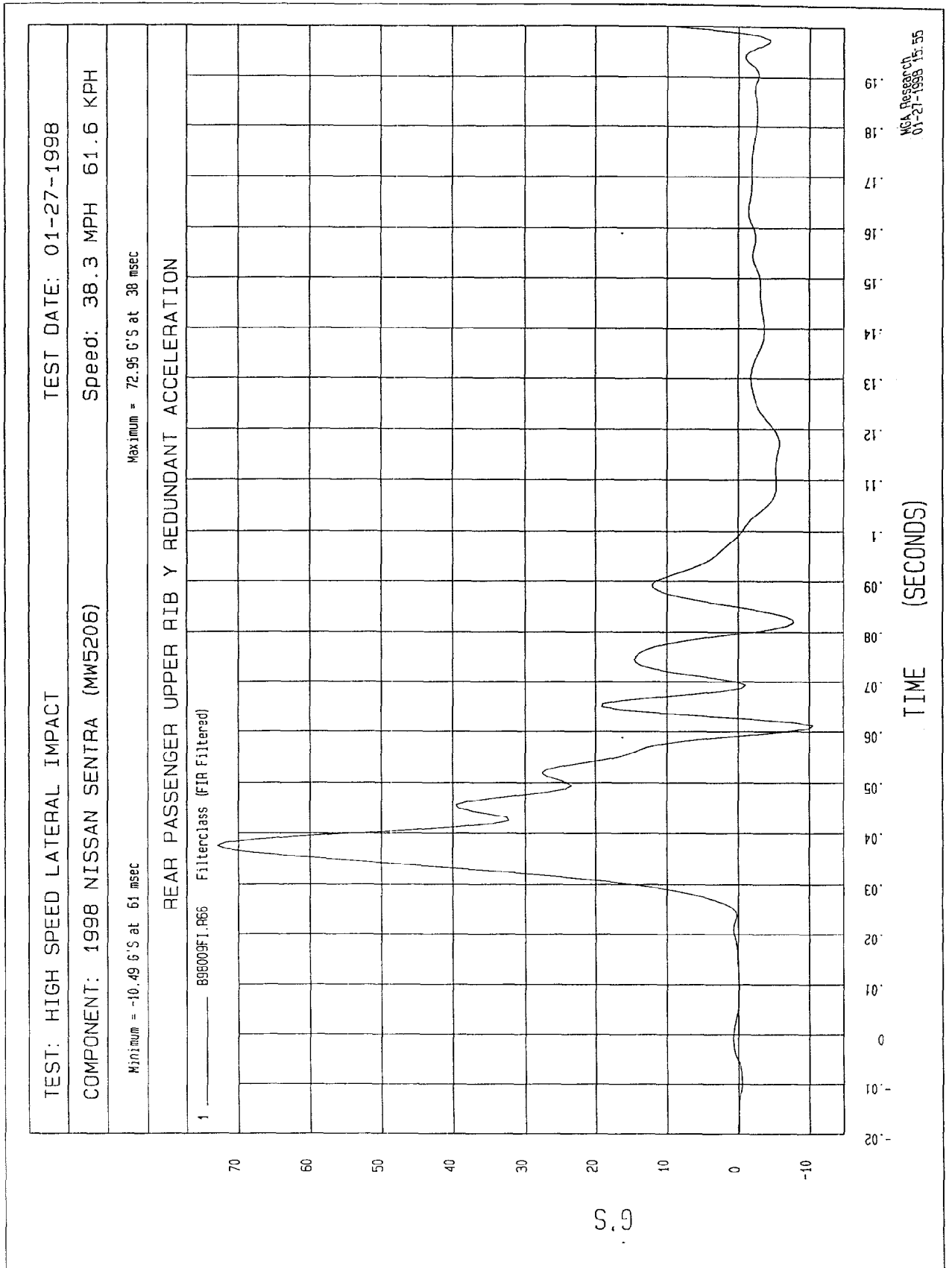
DRIVER PELVIS Y REDUNDANT ACCELERATION

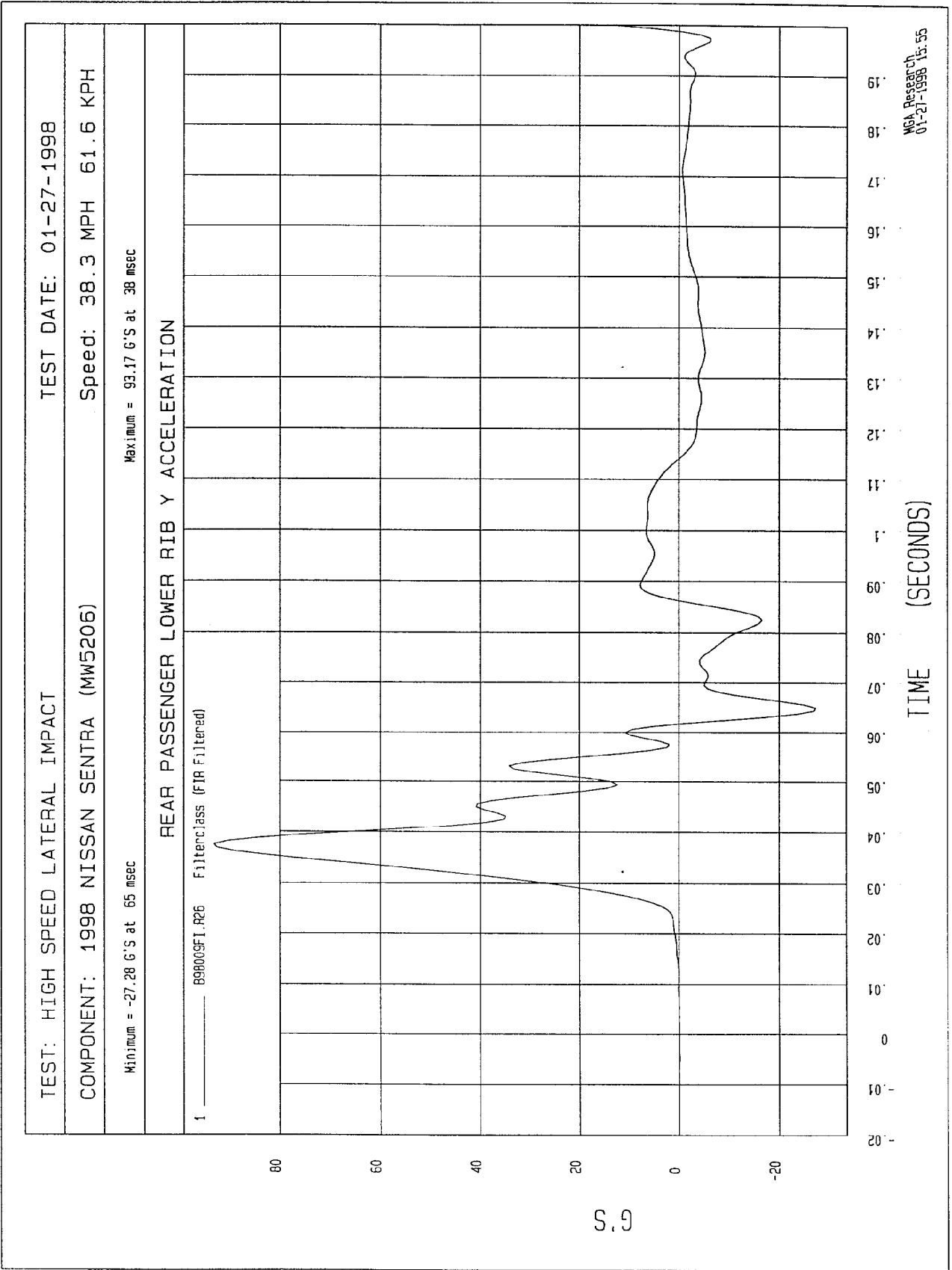


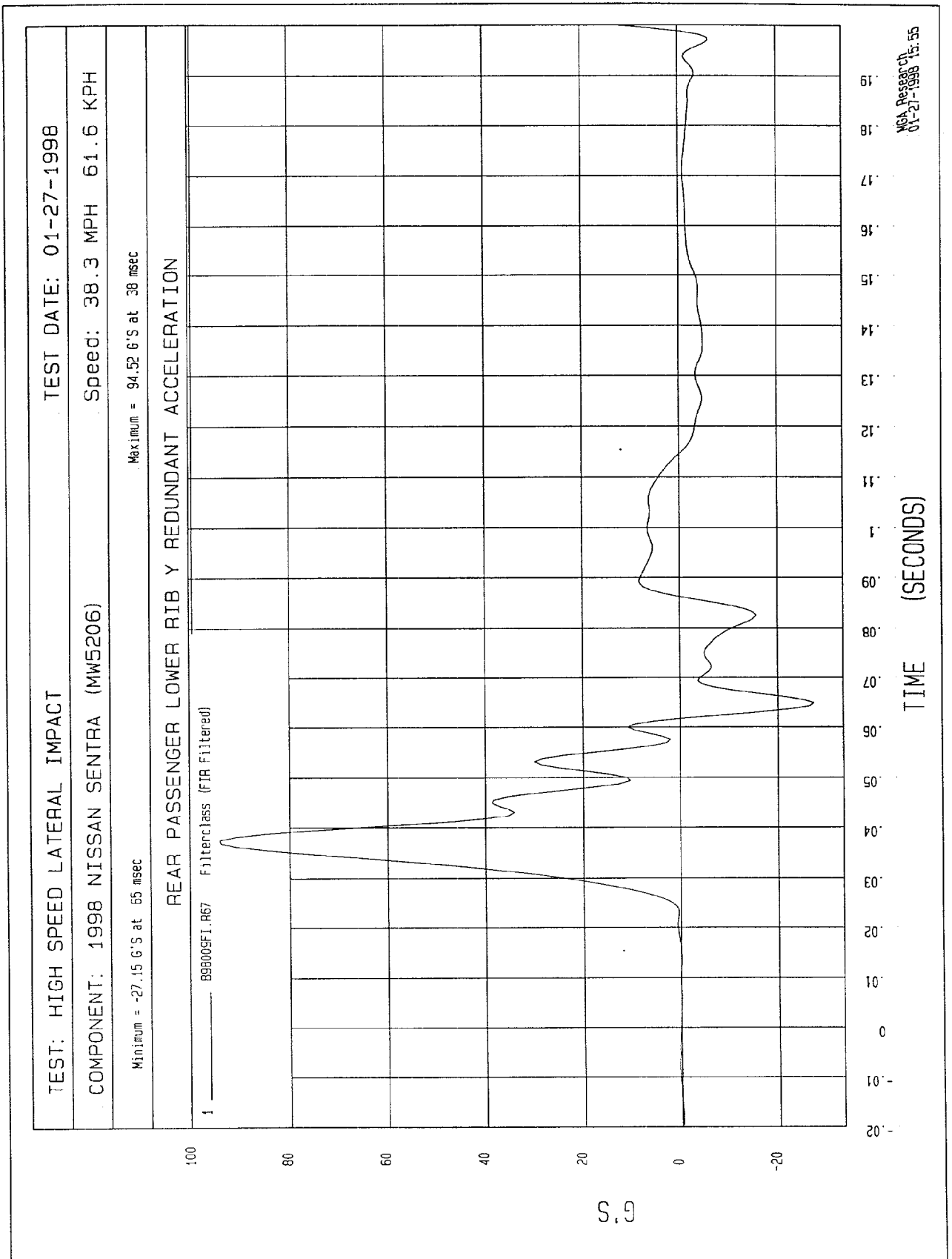
NSA Research
01-27-1998 15:55

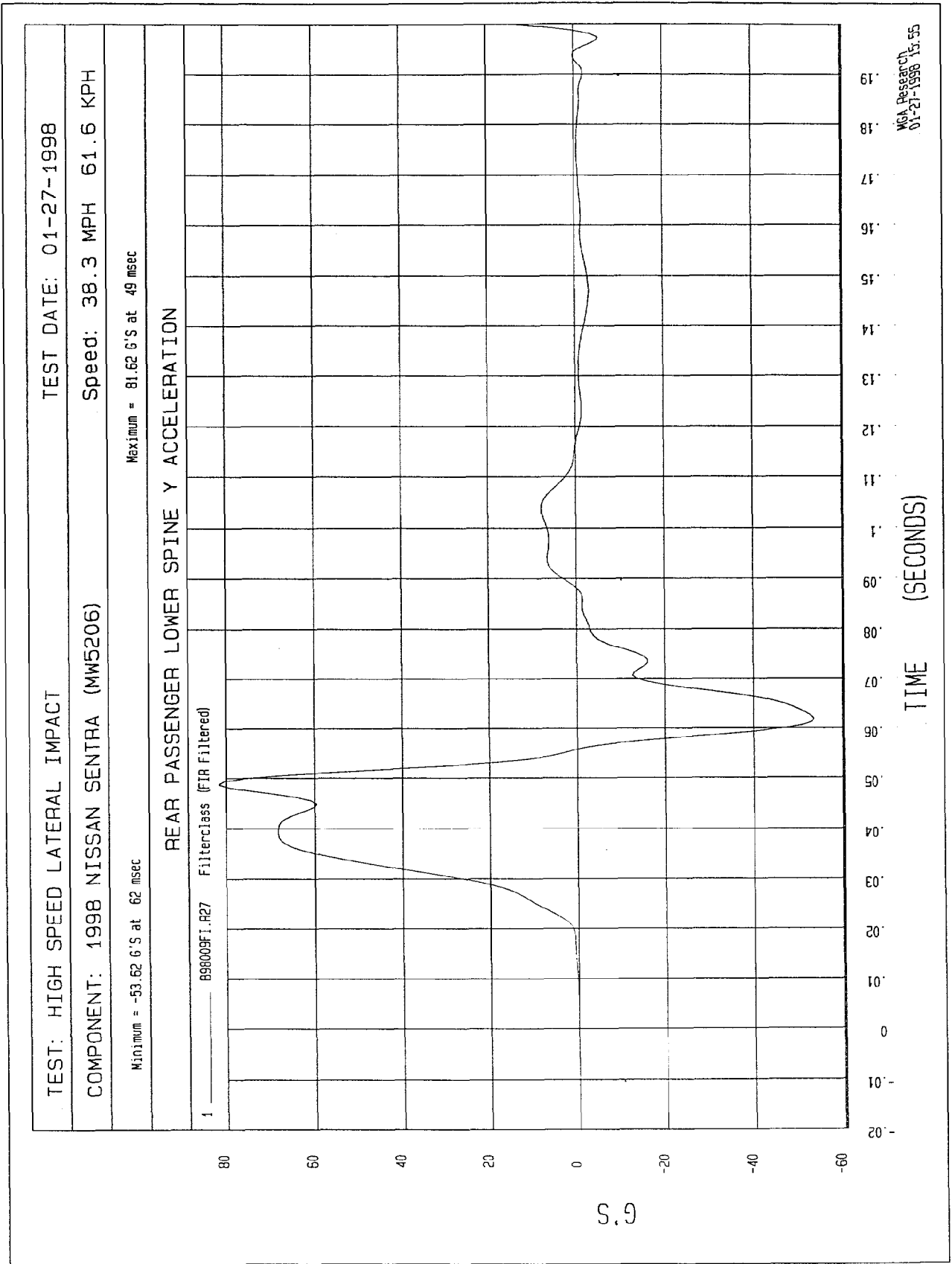
TIME (SECONDS)

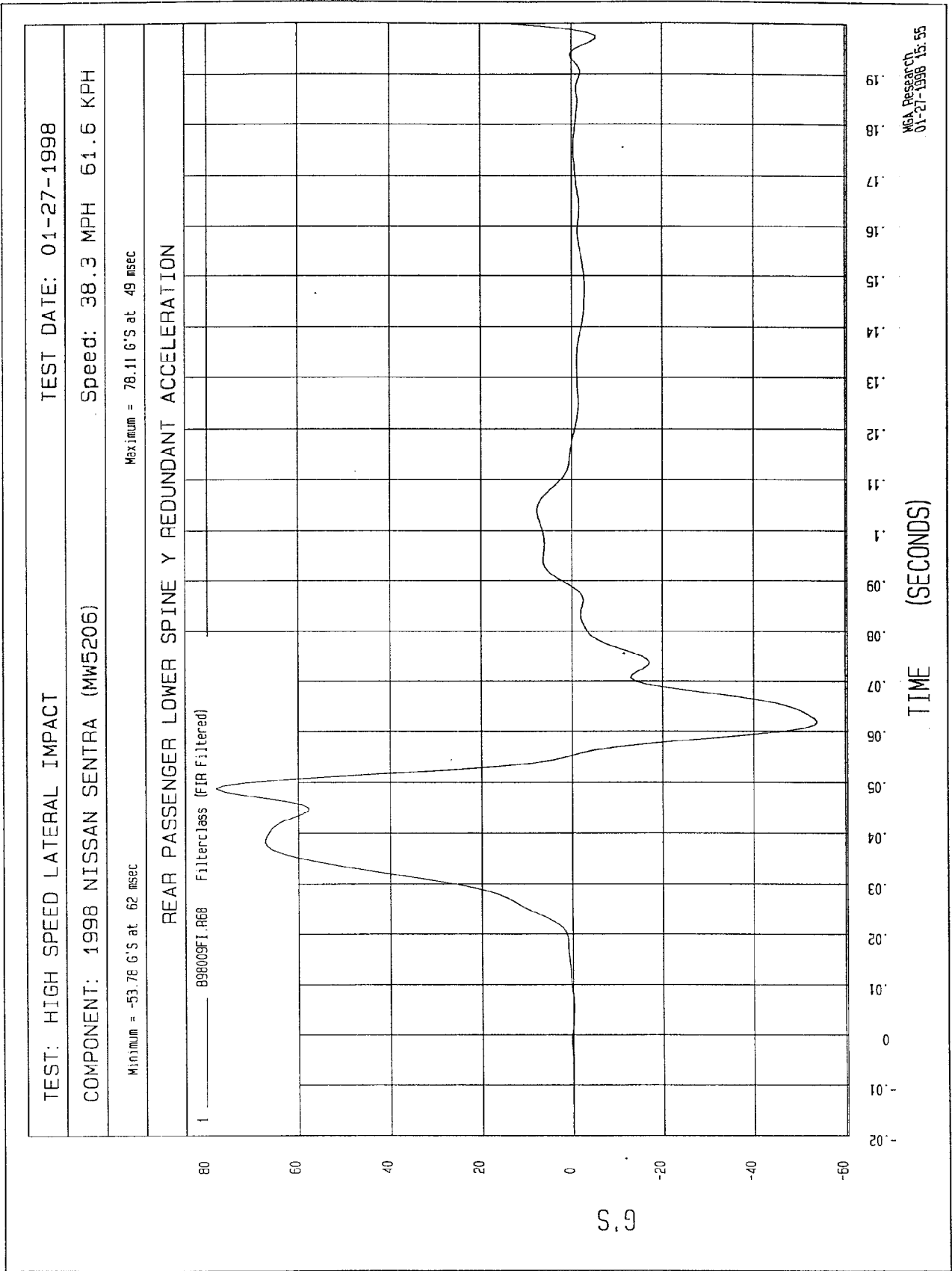










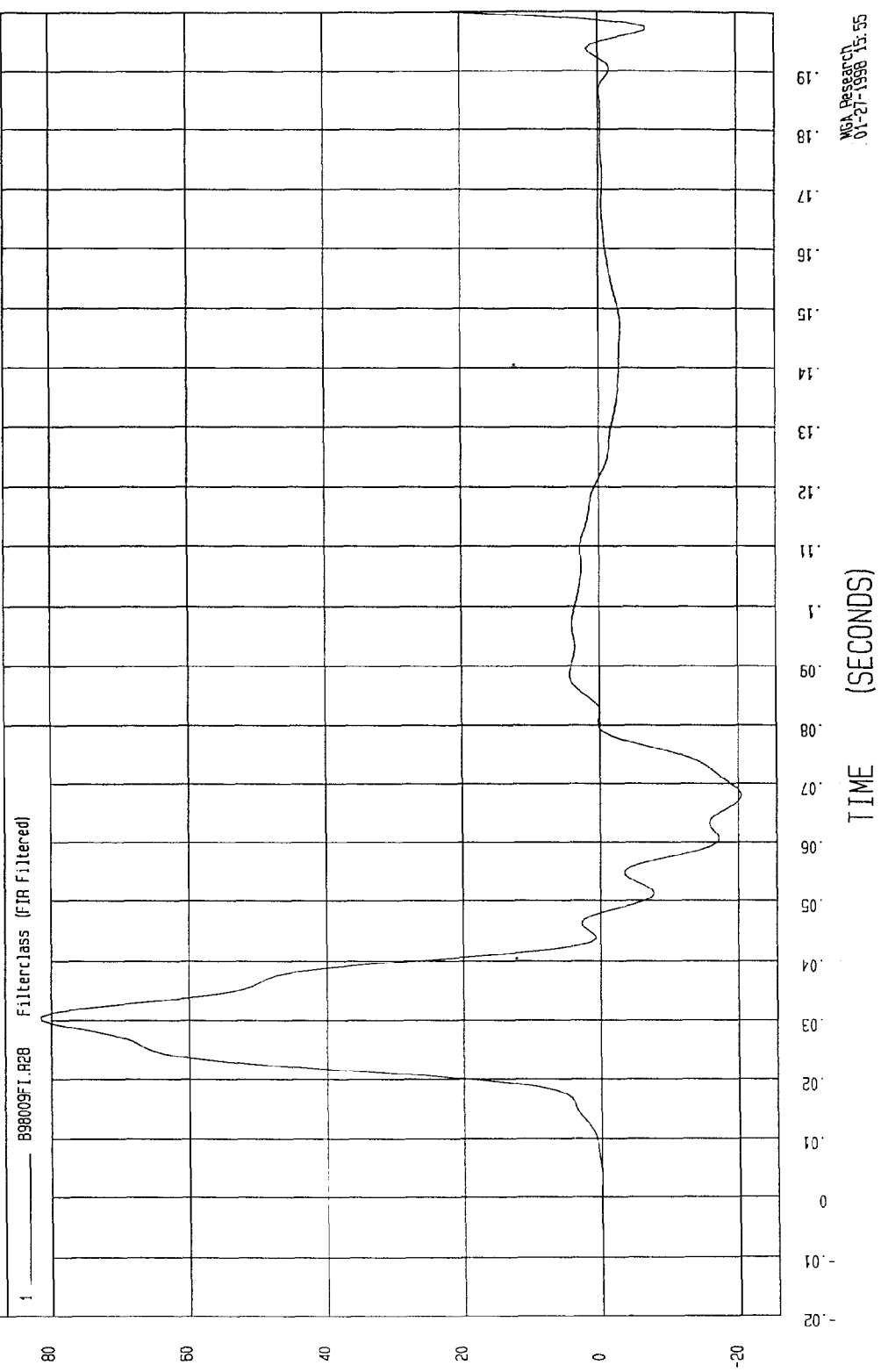


TEST: HIGH SPEED LATERAL IMPACT TEST DATE: 01-27-1998

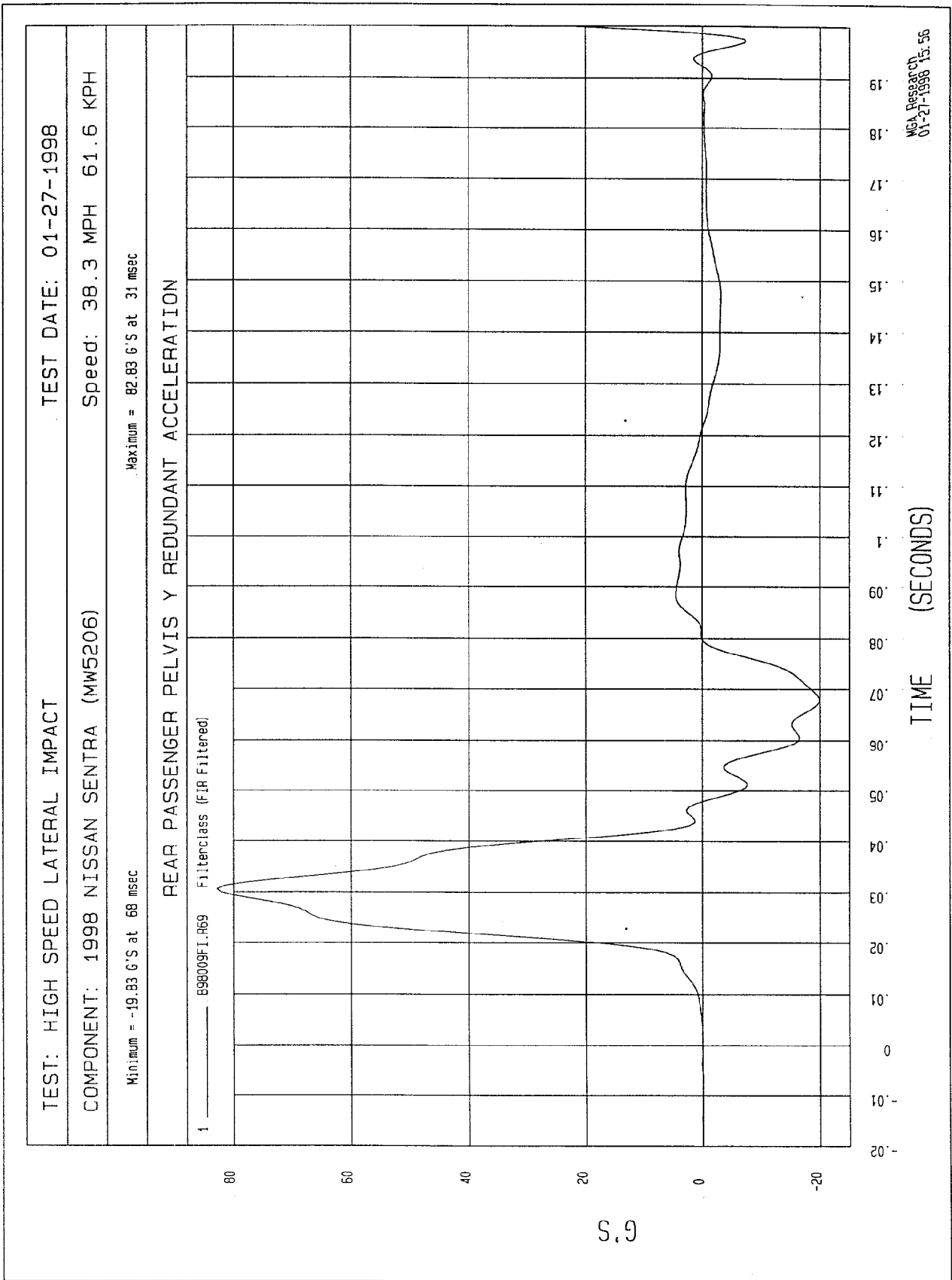
COMPONENT: 1998 NISSAN SENTRA (MW5206) Speed: 38.3 MPH 61.6 KPH

Minimum = -20.42 G'S at 68 msec Maximum = 81.57 G'S at 31 msec

REAR PASSENGER PELVIS Y ACCELERATION



MCA Research
01-27-1998 15:55



APPENDIX C
SID CONFIGURATION AND PERFORMANCE VERIFICATION

REPORT NO. MGA-98-DC019

DUMMY PERFORMANCE CALIBRATIONS

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST

1998 NISSAN SENTRA 4-DOOR
NHTSA NO. MW5206

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: January 27, 1998

Report Date: February 4, 1998

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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DUMMY S/N: 269	POST-TEST CERTIFICATION DATA	4-1
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DUMMY S/N: 269	POST-TEST INSPECTION CHECKLIST	6-1
	VEHICLE AND DUMMY TEMPERATURE	7-1

PRE-TEST CERTIFICATION DATA

Front Dummy Serial Number: 270

Calibration Test Results Summary

Dummy Serial Number: 270

Pre-Test Calibration

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

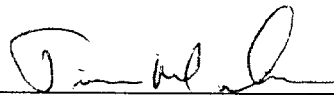
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 270

DATE OF VERIFICATION: January 26, 1998

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.4
RH - Rib Height	19.75" - 20.50"	20.50
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.4
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.6
SW - Knee Pivot to Floor	19.3" - 19.9"	19.5
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY:



APPROVED BY:



MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

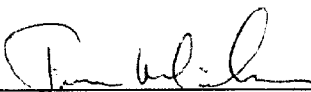
DATE: January 26, 1998

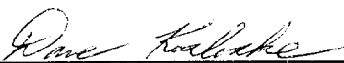
DUMMY NUMBER: 270

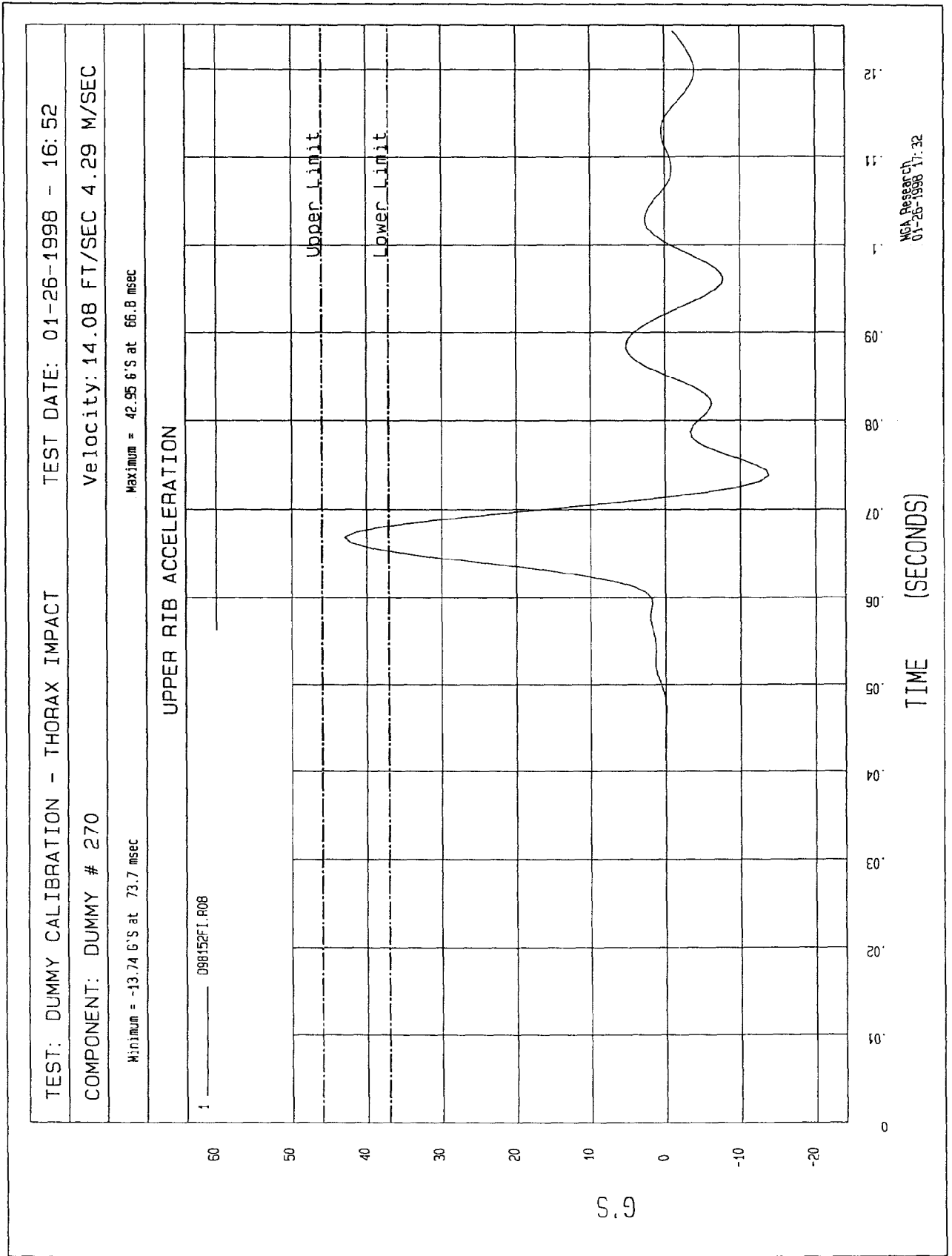
TEST NUMBER: D98152

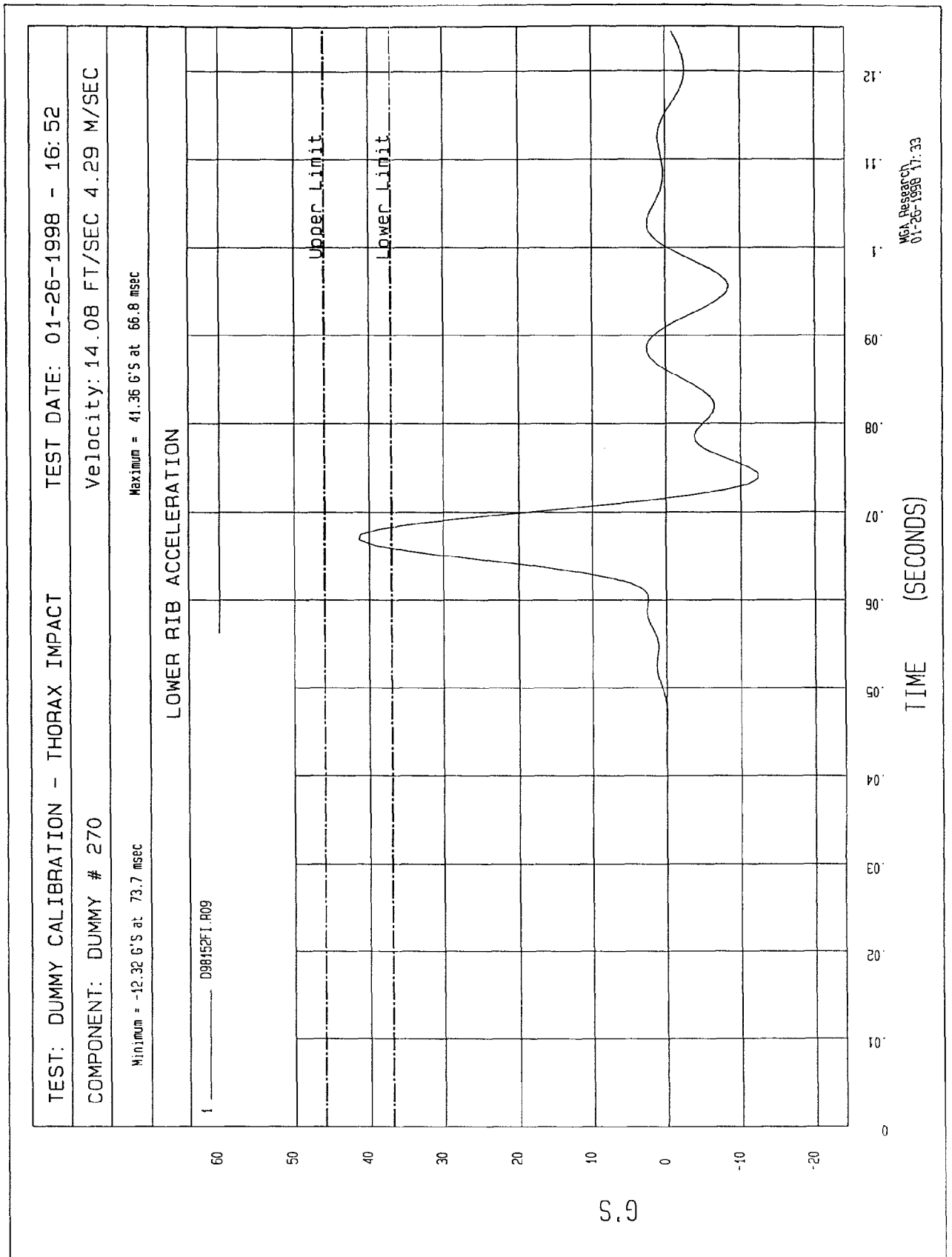
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
PROBE SPEED	14.0 - 14.2 fps	14.1
UPPER RIB	37 - 46 g's	43
LOWER RIB	37 - 46 g's	41
LOWER SPINE	15 - 22 g's	21

TEST MEETS SPECIFICATIONS

TECHNICIAN 

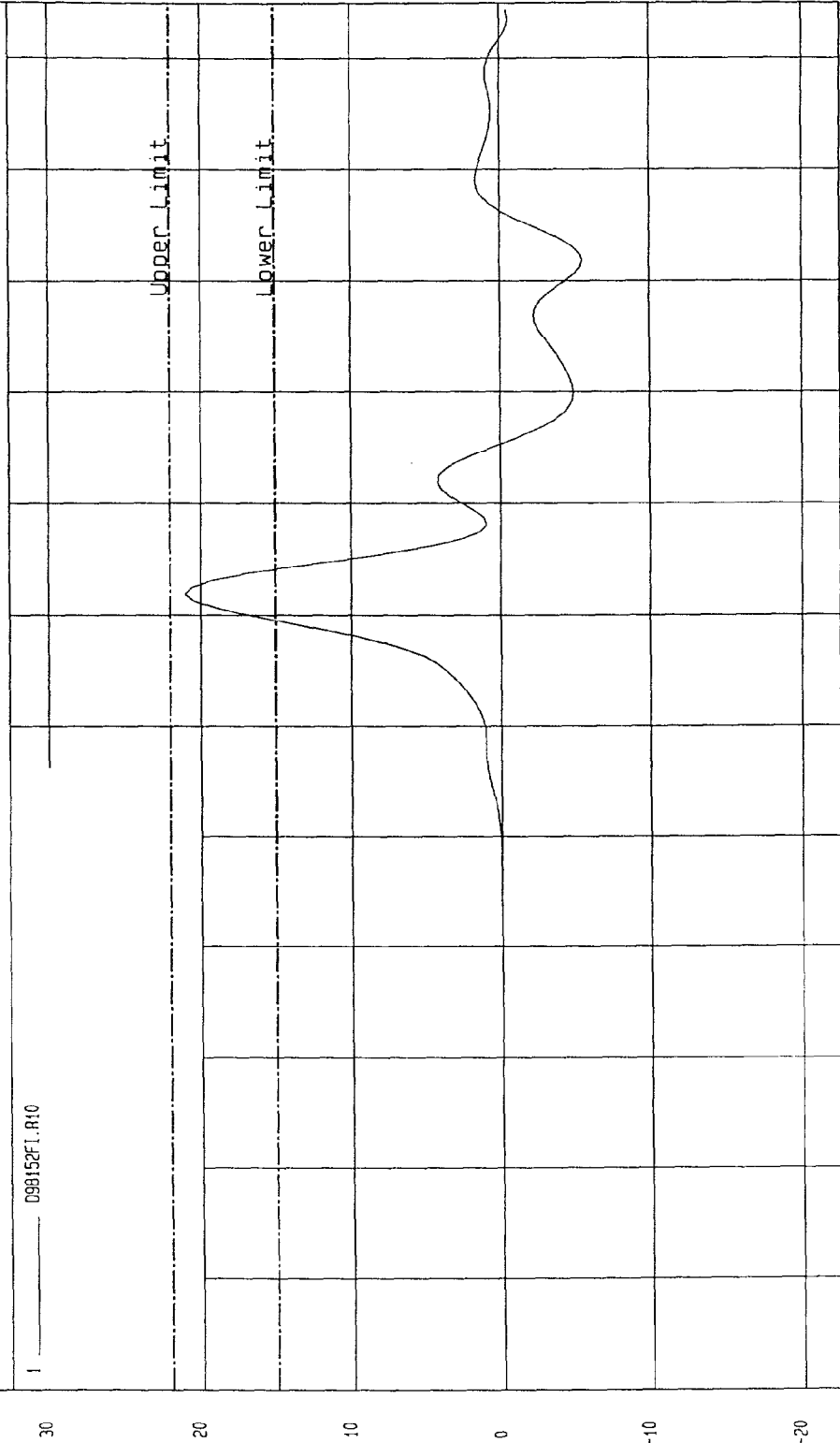
APPROVED BY 





TEST: DUMMY CALIBRATION - THORAX IMPACT	TEST DATE: 01-26-1998 - 16:52
COMPONENT: DUMMY # 270	Velocity: 14.08 FT/SEC 4.29 M/SEC
Minimum = -5.54 G'S at 101. msec	Maximum = 21.04 G'S at 71.8 msec

LOWER SPINE ACCELERATION



TIME (SECONDS)

MSA Research
01-26-1998 17:33

G'S

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: January 13, 1998

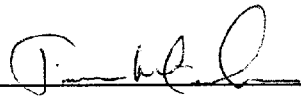
DUMMY NUMBER: 270

TEST NUMBER: D98153

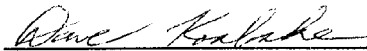
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	14%
PROBE SPEED	14.0 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	45

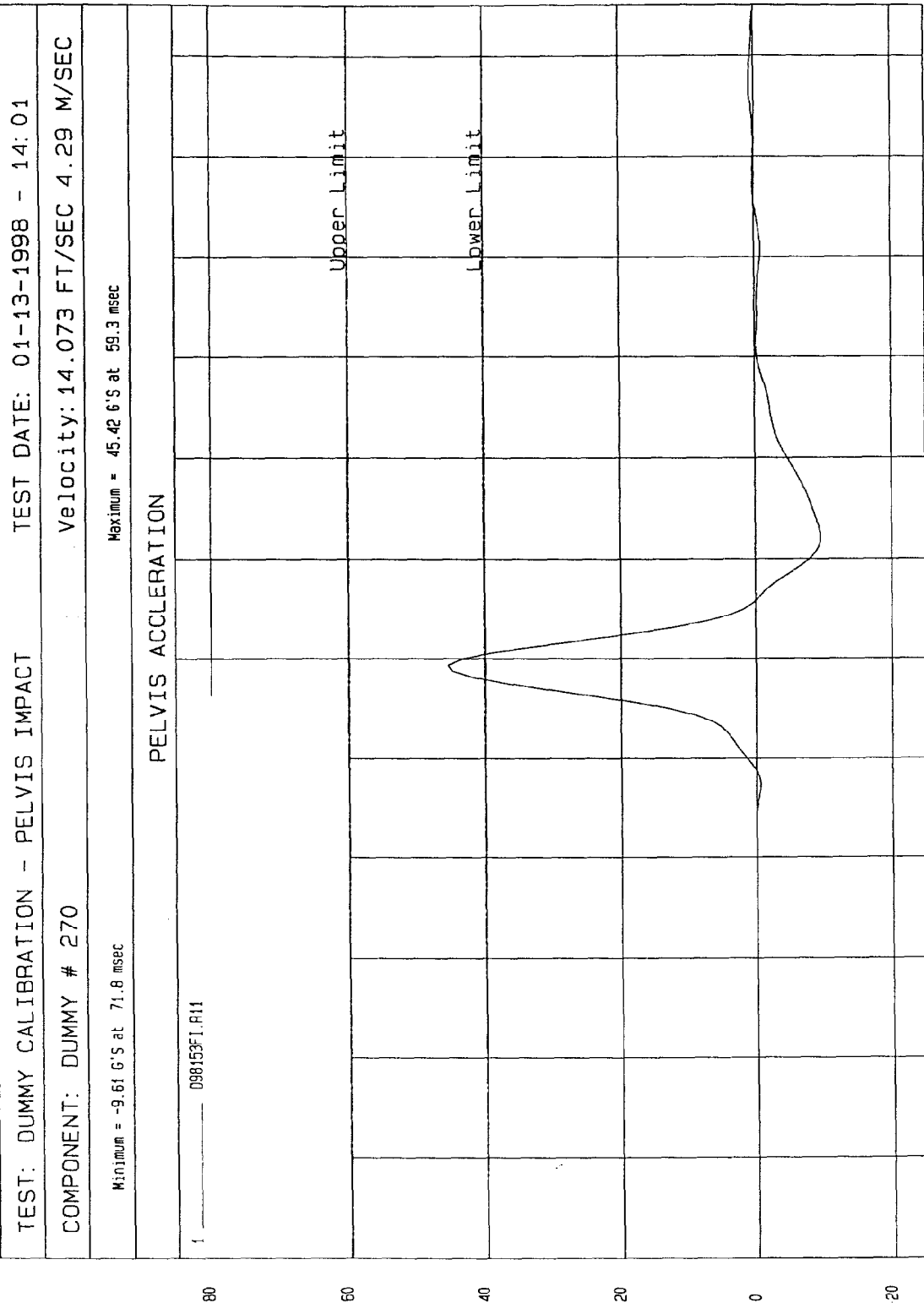
TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY





WGA Research
01-21-1998 13:16

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

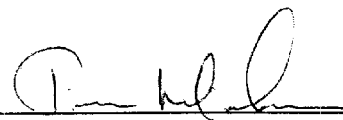
DATE: January 13, 1998

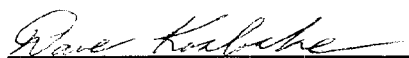
DUMMY NUMBER: 270

TEST NUMBER: D98154

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0.5 in	23.3 - 36.5 lbs	30.7
FORCE @ 0.75 in	36.7 - 49.8 lbs	42.0
FORCE @ 1.0 in	50 - 63 lbs	56
FORCE @ 1.3 in	73 - 88 lbs	77

TEST MEETS SPECIFICATIONS

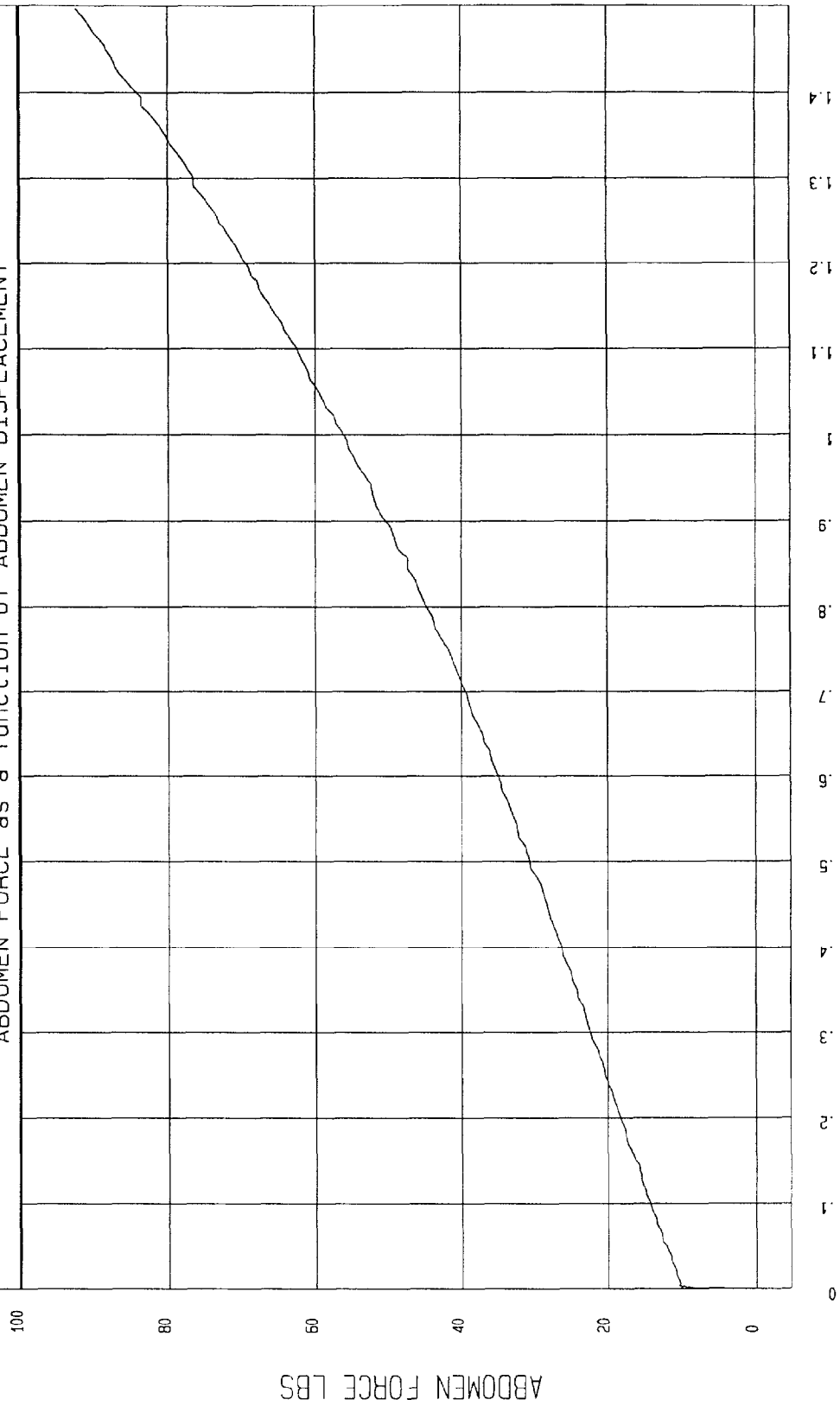
TECHNICIAN 

APPROVED BY 

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 01-13-1998 - 19:51:12

COMPONENT: DUMMY # 270

ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT



NSA Research
02-04-1998 16:42

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

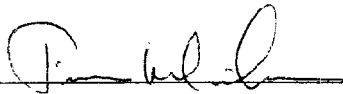
DATE: January 21, 1998

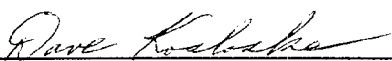
DUMMY NUMBER: 270

TEST NUMBER: D98065

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	19%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	24
FORCE @ 30°	34 - 46 lbs	37
FORCE @ 40°	46 - 58 lbs	47
RETURN ANGLE	12° maximum	6°

TEST MEETS SPECIFICATIONS

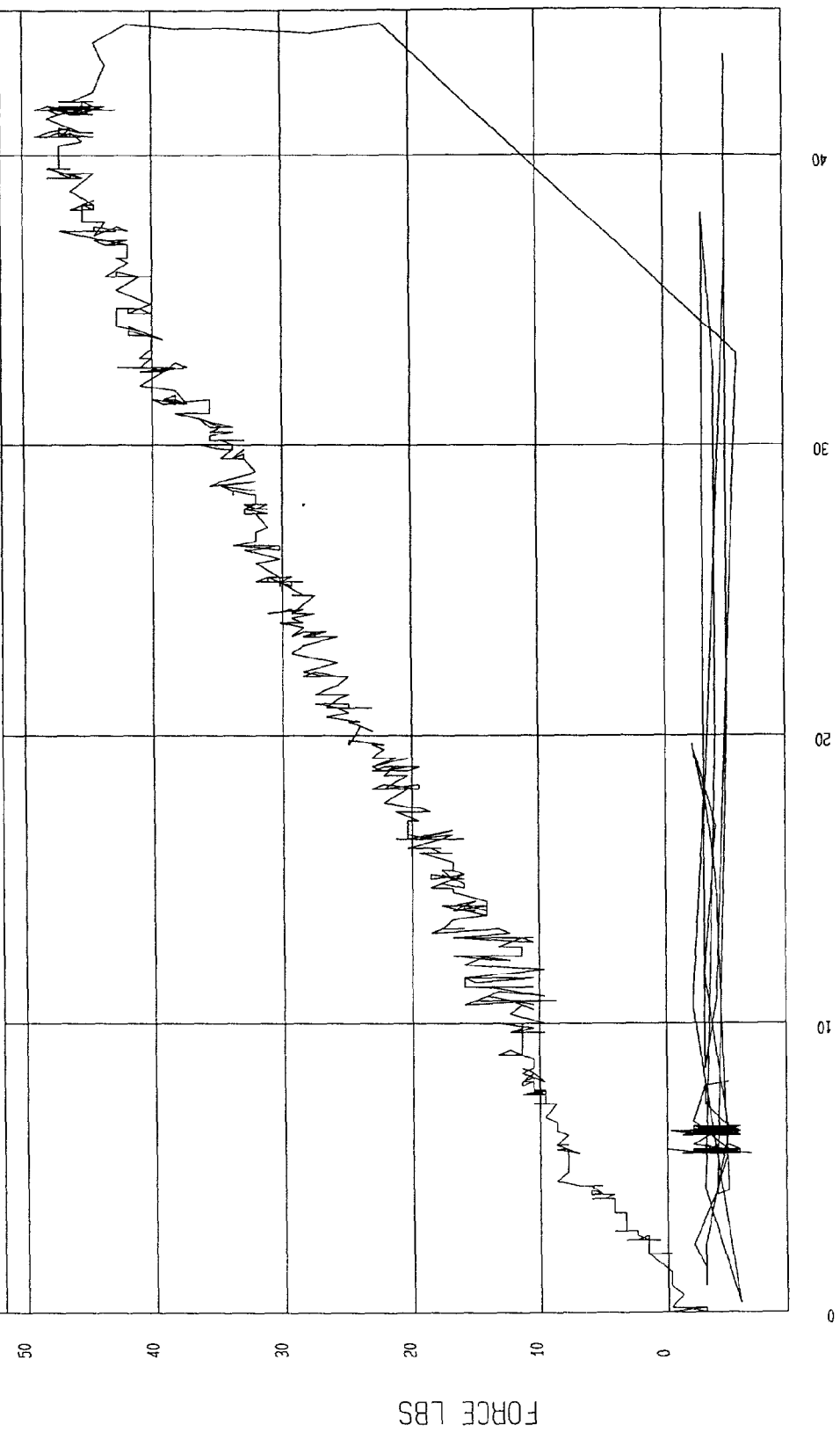
TECHNICIAN 

APPROVED BY 

TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 01-21-1998 - 11:34

COMPONENT: DUMMY # 270

FORCE as a function of TORSO ROTATION



MCA Research
01-21-1998 13:19

PRE-TEST CERTIFICATION DATA

Rear Dummy Serial Number: 269

Calibration Test Results Summary

Dummy Serial Number: 269

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.

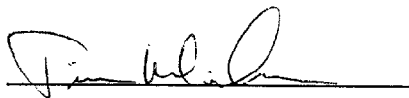
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 269

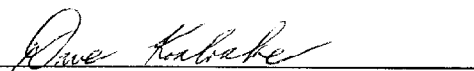
DATE OF VERIFICATION: January 14, 1998

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.2
RH - Rib Height	19.75" - 20.50"	20.20
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.3
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.4
SW - Knee Pivot to Floor	19.3" - 19.9"	19.4
HW - Hip Width	14.0" - 15.4"	15.1

MEASUREMENTS BY:



APPROVED BY:



MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

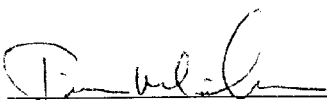
DATE: January 13, 1998

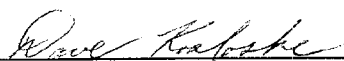
DUMMY NUMBER: 269

TEST NUMBER: D98052

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	16%
PROBE SPEED	14.0 - 14.2 fps	14.1
UPPER RIB	37 - 46 g's	46
LOWER RIB	37 - 46 g's	40
LOWER SPINE	15 - 22 g's	22

TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

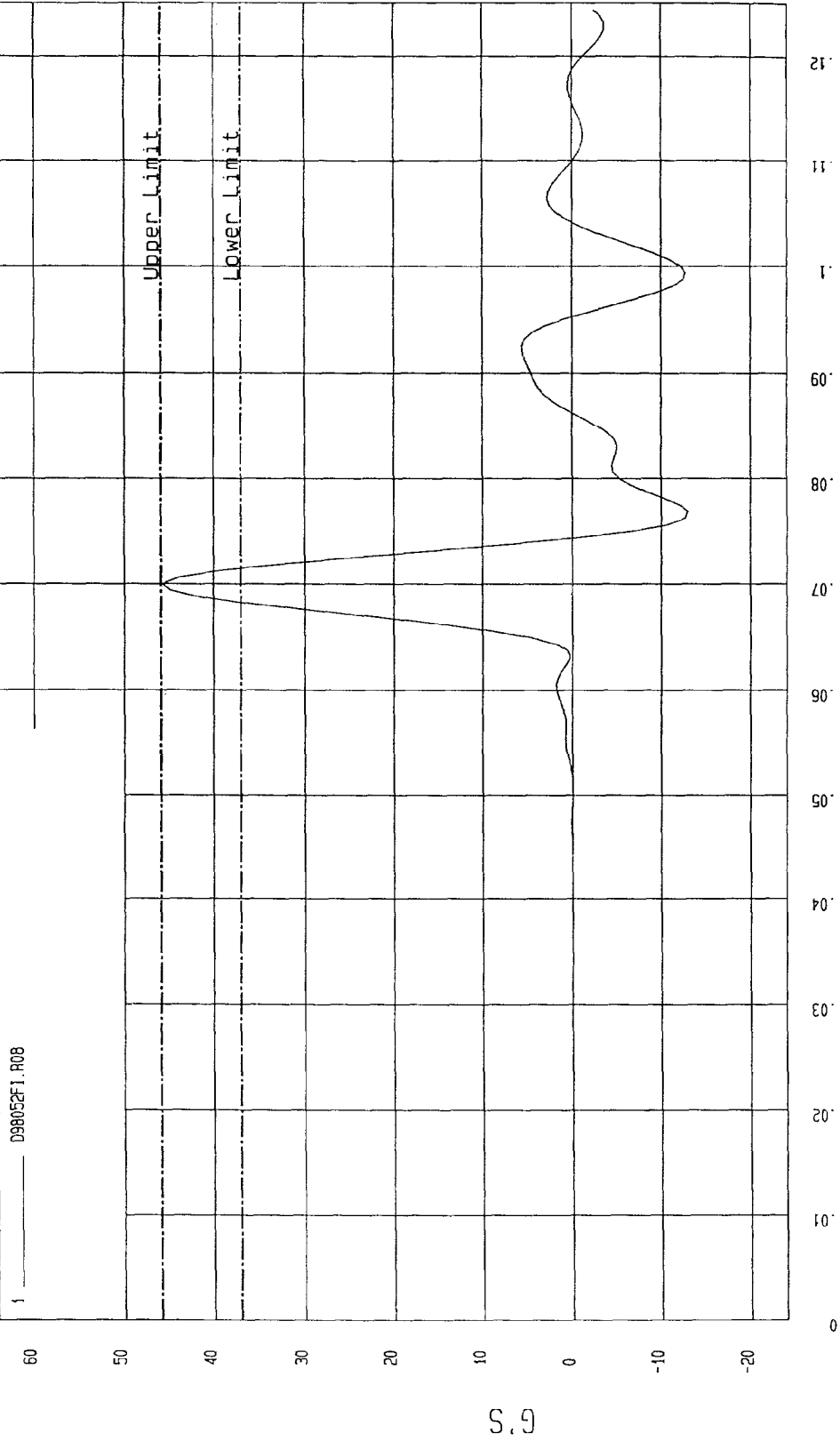
TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 01-13-1998 - 11:02

COMPONENT: DUMMY # 269 Velocity: 14.086 FT/SEC 4.29 M/SEC

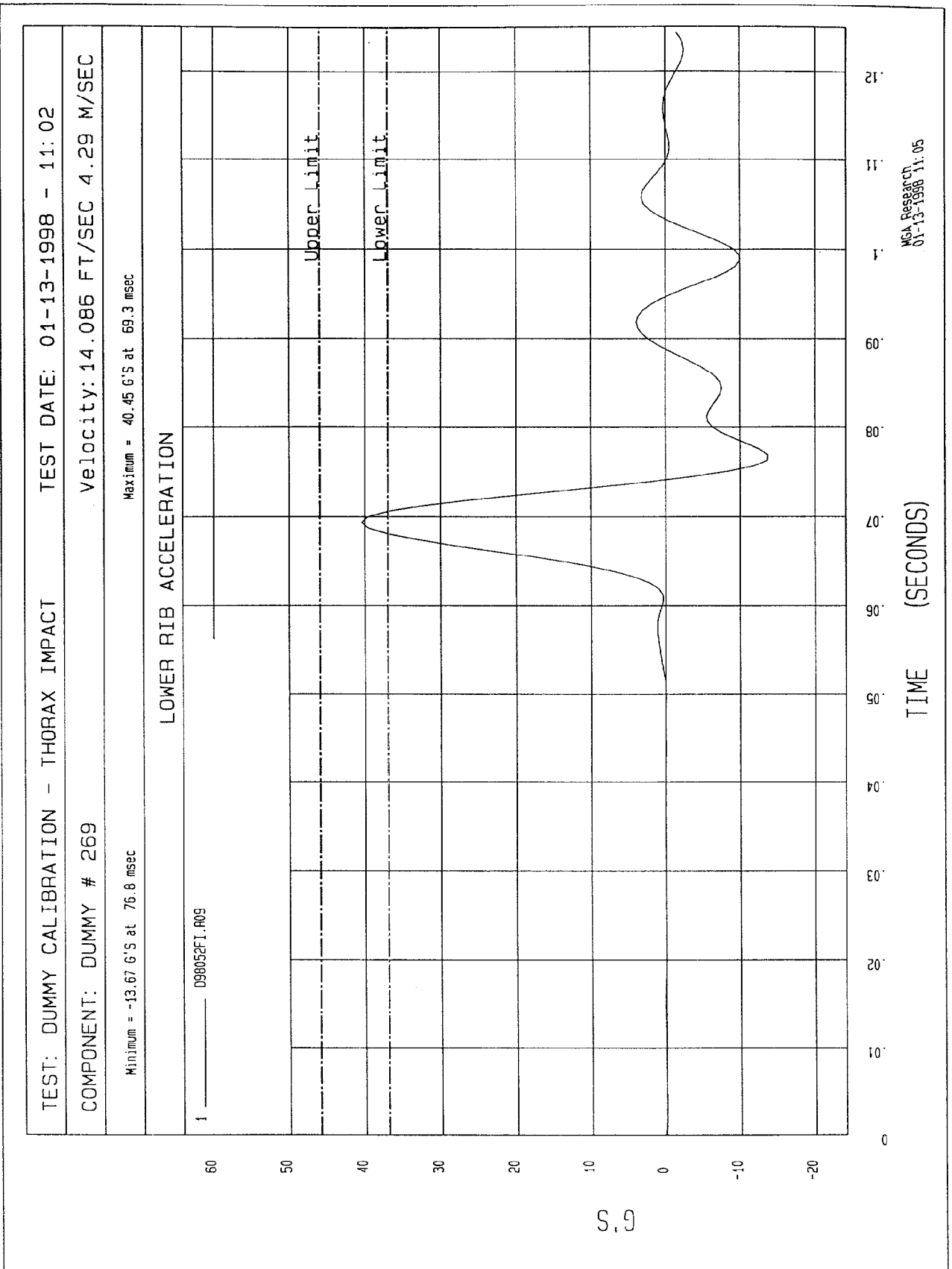
Minimum = -12.97 G'S at 76.8 msec

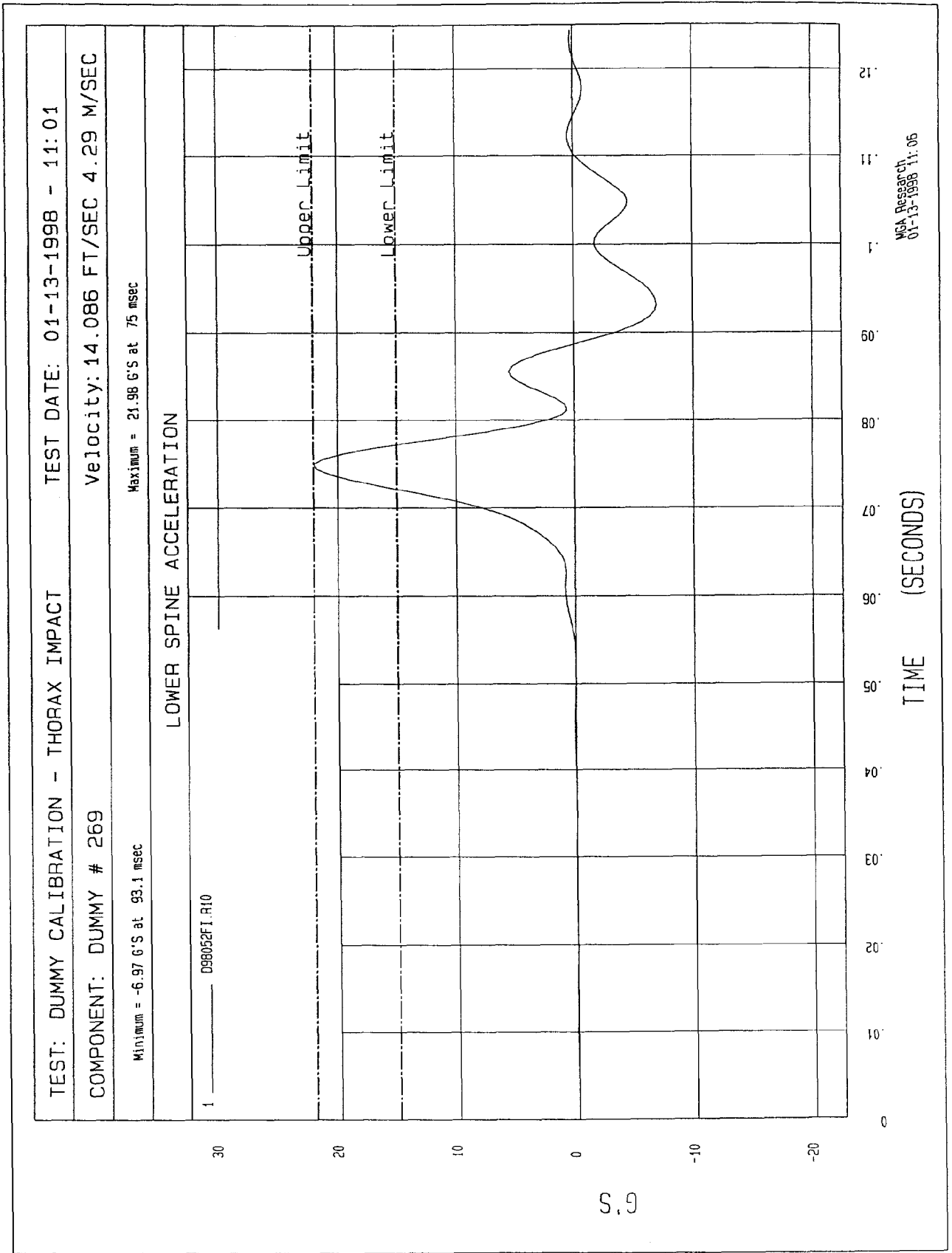
Maximum = 45.82 G'S at 70 msec

UPPER RIB ACCELERATION



NCA Research
01-13-1998 11:05





MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

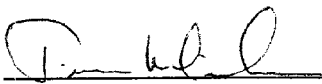
DATE: January 13, 1998

DUMMY NUMBER: 269

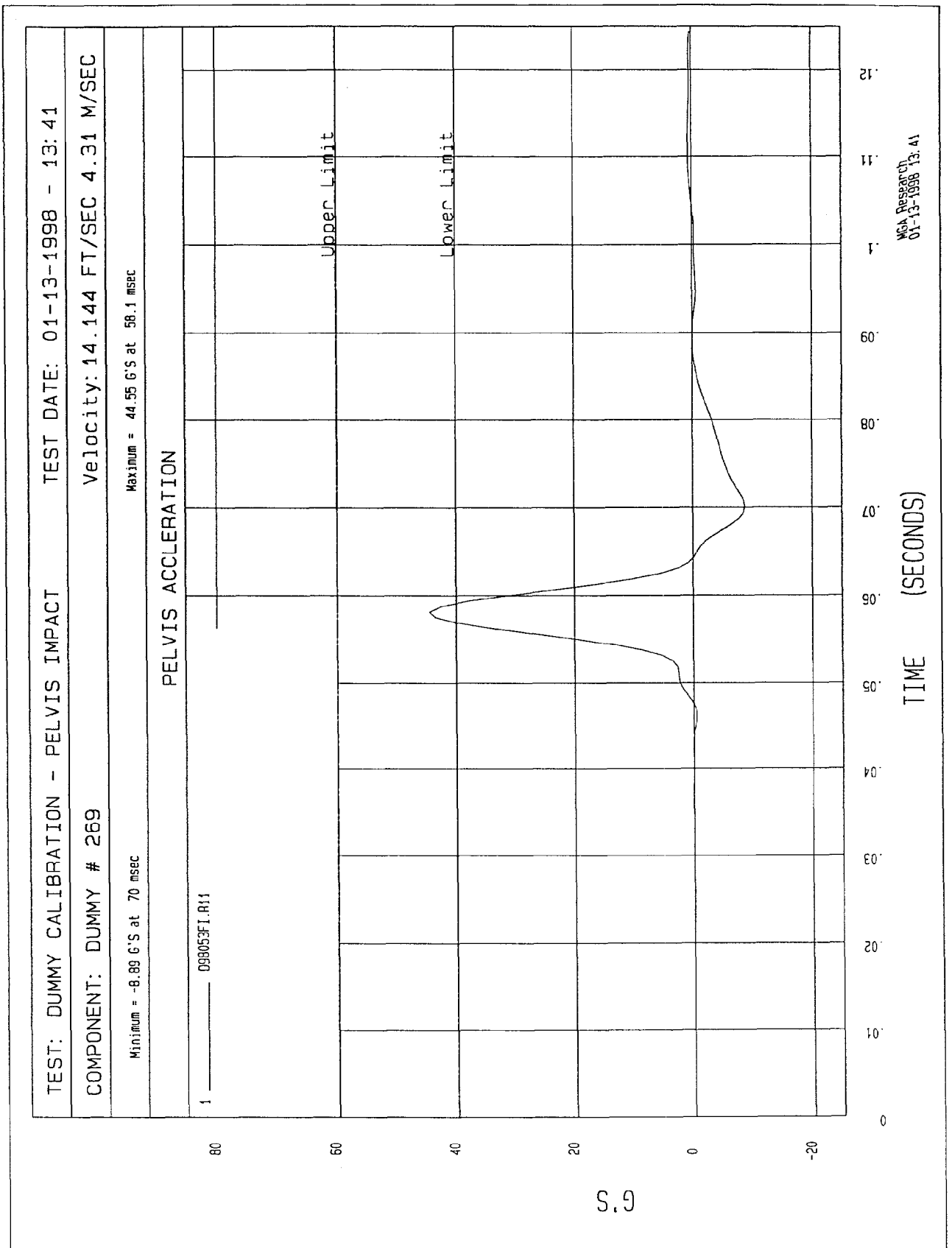
TEST NUMBER: D98053

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
PROBE SPEED	14.0 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	45

TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 



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

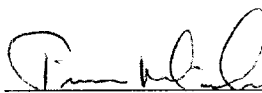
DATE: January 13, 1998

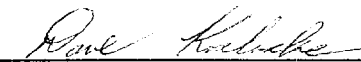
DUMMY NUMBER: 269

TEST NUMBER: D98054

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0.5 in	23.3 - 36.5 lbs	35.1
FORCE @ 0.75 in	36.7 - 49.8 lbs	48.5
FORCE @ 1.0 in	50 - 63 lbs	63
FORCE @ 1.3 in	73 - 88 lbs	85

TEST MEETS SPECIFICATIONS

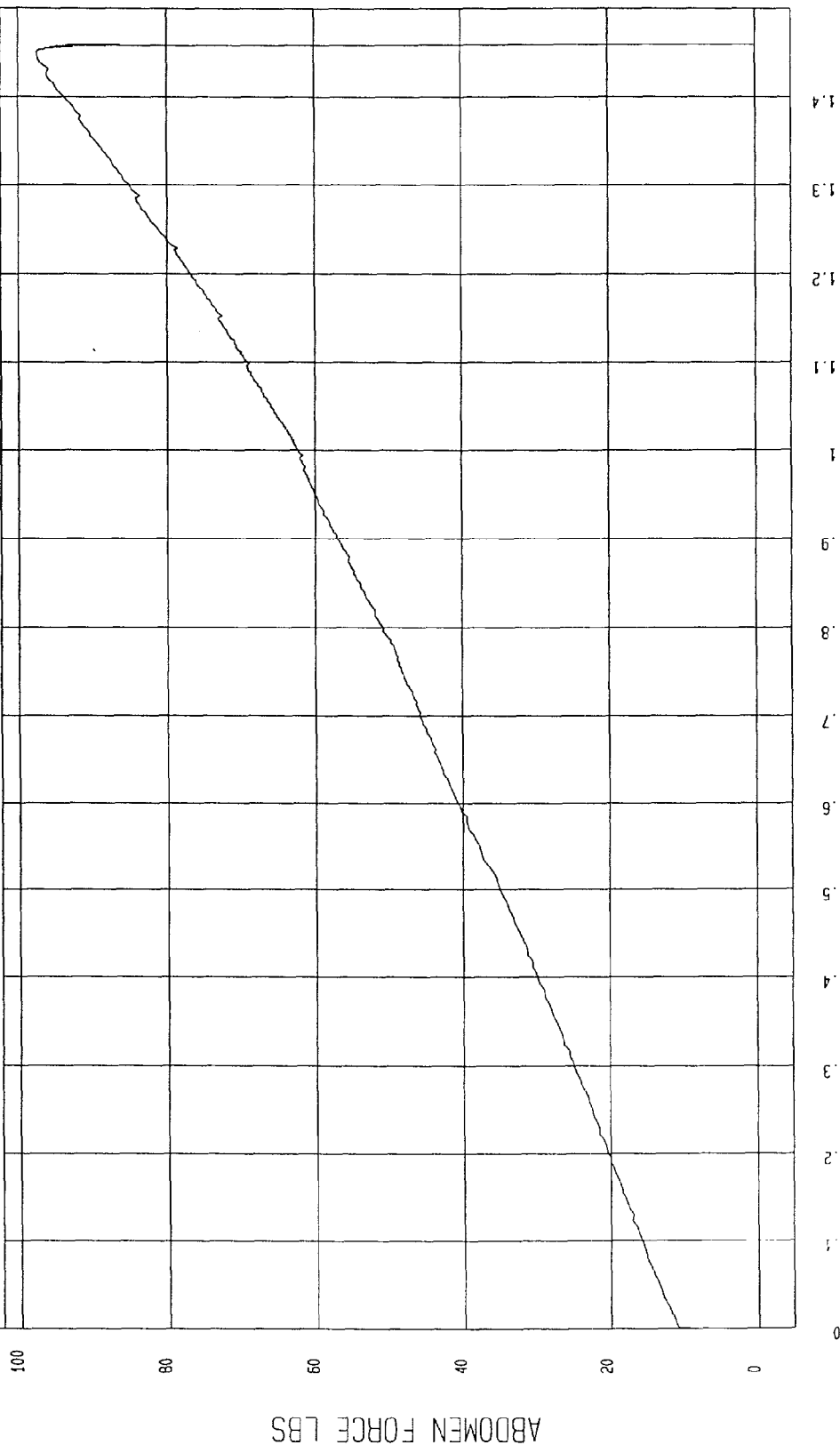
TECHNICIAN 

APPROVED BY 

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 01-13-1998 - 17:50

COMPONENT: DUMMY # 269

ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT



NCA Research
01-13-1998 18:13

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: January 14, 1998

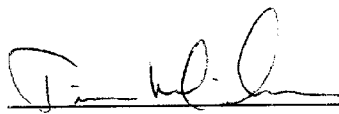
DUMMY NUMBER: 269

TEST NUMBER: D98055

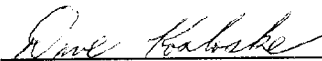
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	30
FORCE @ 30°	34 - 46 lbs	44
FORCE @ 40°	46 - 58 lbs	56
RETURN ANGLE	12° maximum	6°

TEST MEETS SPECIFICATIONS

TECHNICIAN



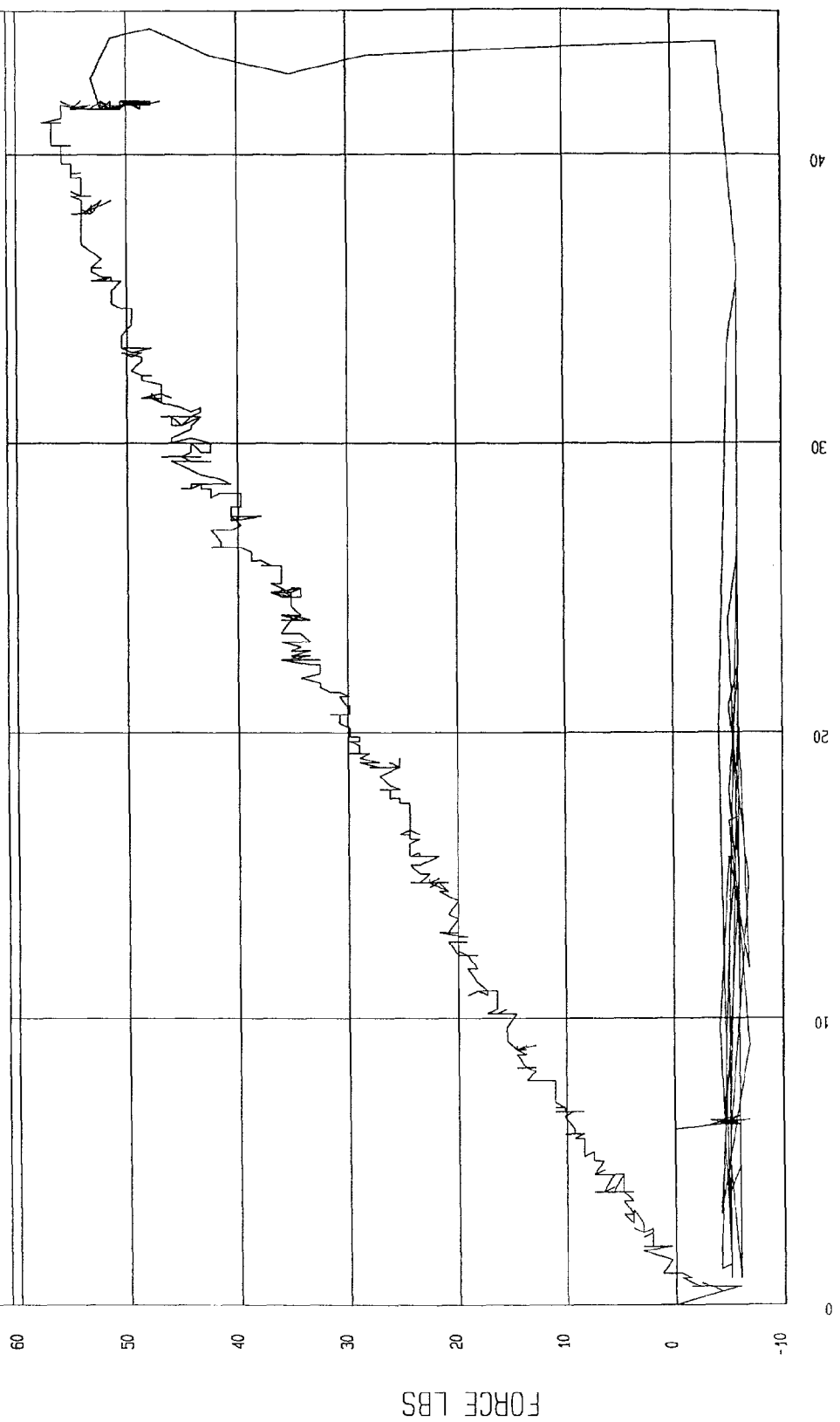
APPROVED BY



TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 01-14-1998 - 11:04

COMPONENT: DUMMY # 269

FORCE as a function of TORSO ROTATION



WCA Research
01-21-1998 13:19

POST-TEST CERTIFICATION DATA

Front Dummy Serial Number: 270

Calibration Test Results Summary

Dummy Serial Number: 270

Post-Test Calibration

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

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 270

DATE OF VERIFICATION: January 30, 1998

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.4
RH - Rib Height	19.75" - 20.50"	20.50
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.4
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.6
SW - Knee Pivot to Floor	19.3" - 19.9"	19.5
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY:

Jim White

APPROVED BY:

Dave Keshake

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: January 29, 1998

DUMMY NUMBER: 270

TEST NUMBER: D98202

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	25%
PROBE SPEED	14.0 - 14.2 fps	14.1
UPPER RIB	37 - 46 g's	43
LOWER RIB	37 - 46 g's	40
LOWER SPINE	15 - 22 g's	21

TEST MEETS SPECIFICATIONS

TECHNICIAN Tim White

APPROVED BY Ron Krabaker

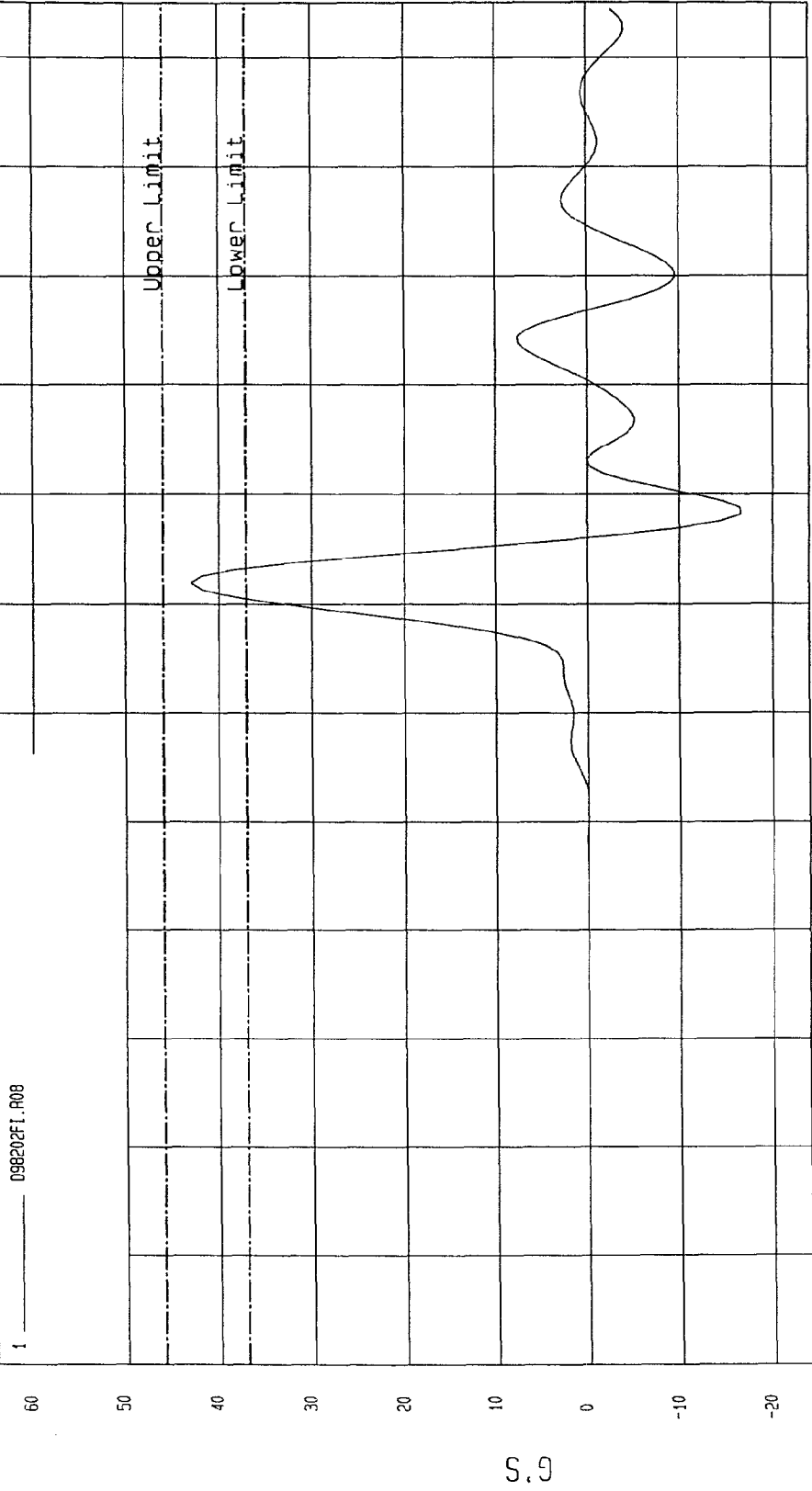
TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 01-29-1998 - 11:01

COMPONENT: DUMMY # 270 Velocity: 14.074 FT/SEC 4.29 M/SEC

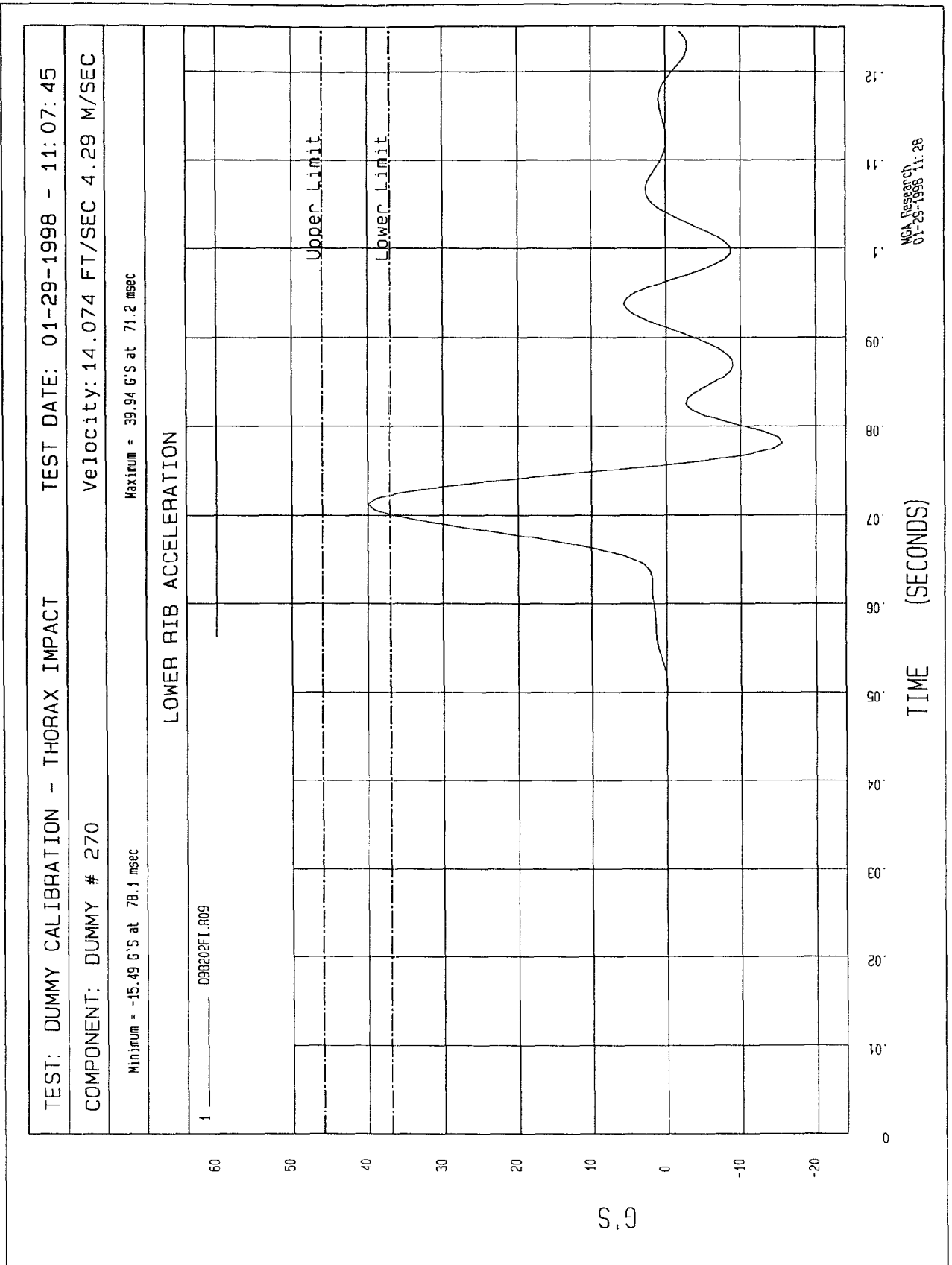
Minimum = -16.56 G'S at 78.1 msec

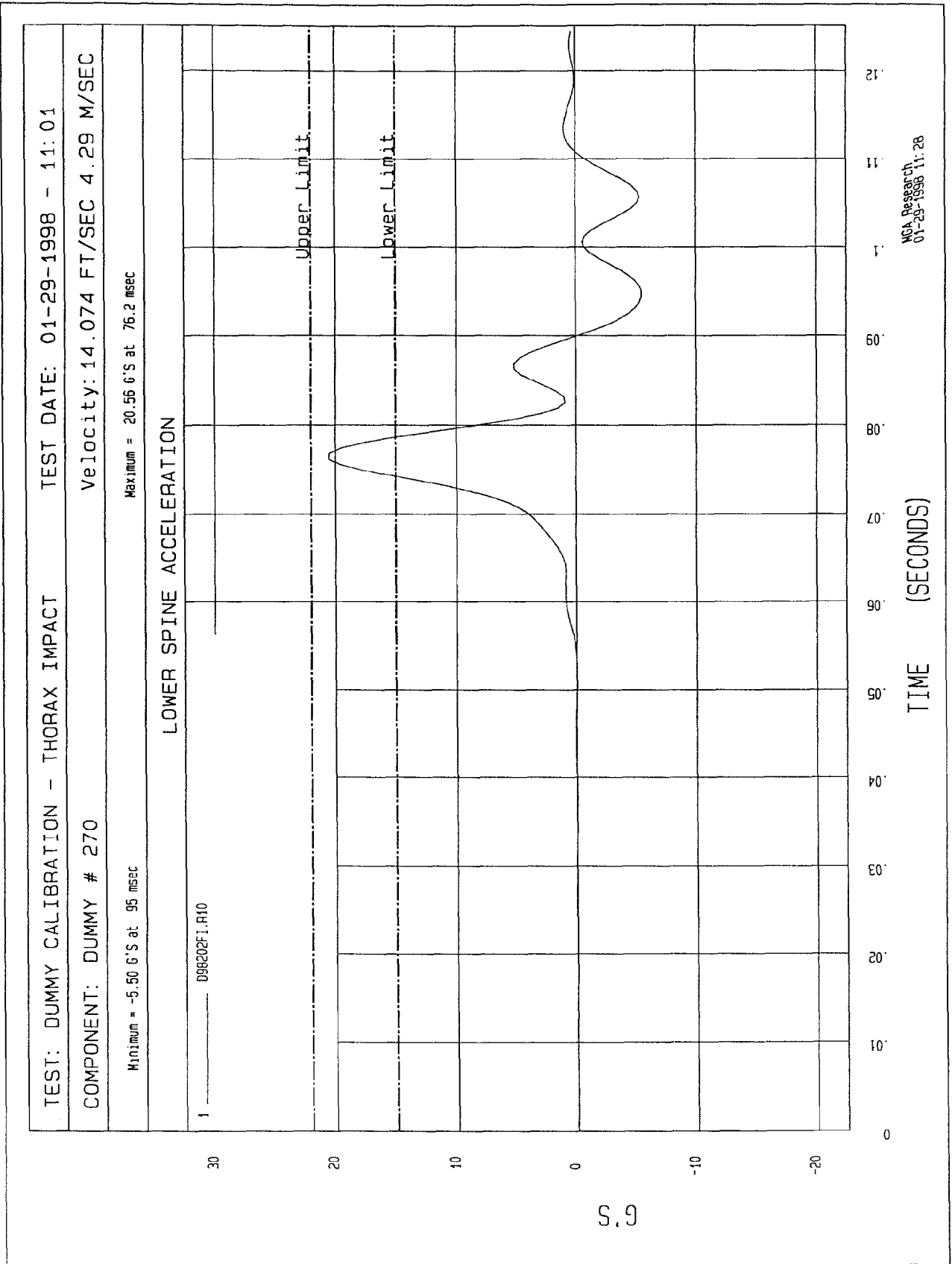
Maximum = 43.06 G'S at 71.8 msec

UPPER RIB ACCELERATION



MCA Research
01-29-1998 11:28





MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

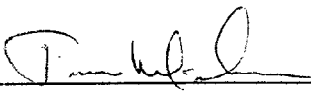
DATE: January 29, 1998

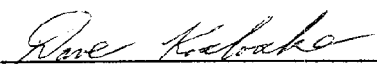
DUMMY NUMBER: 270

TEST NUMBER: D98203

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	25%
PROBE SPEED	14.0 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	46

TEST MEETS SPECIFICATIONS

TECHNICIAN 

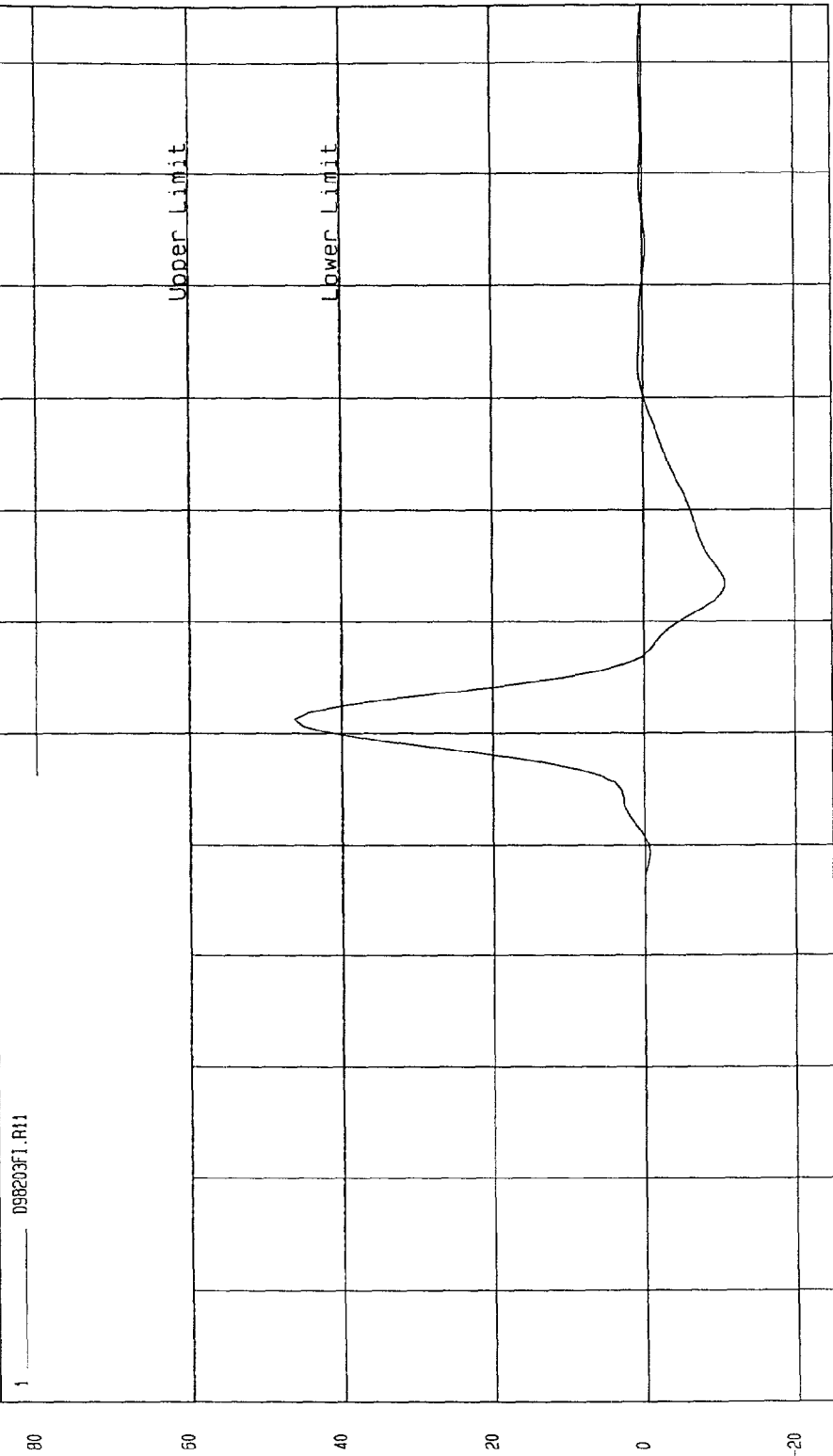
APPROVED BY 

TEST: DUMMY CALIBRATION - PELVIS IMPACT TEST DATE: 01-29-1998 - 11:27

COMPONENT: DUMMY # 270 Velocity: 14.112 FT/SEC 4.3 M/SEC

Minimum = -10.84 G'S at 73.1 msec Maximum = 46.21 G'S at 61.2 msec

PELVIS ACCELERATION



MCA Research
01-29-1998 11:29

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

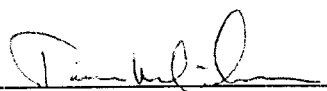
DATE: January 30, 1998

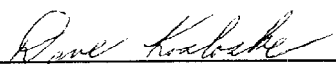
DUMMY NUMBER: 270

TEST NUMBER: D98204

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
FORCE @ 0.5 in	23.3 - 36.5 lbs	29.7
FORCE @ 0.75 in	36.7 - 49.8 lbs	40.9
FORCE @ 1.0 in	50 - 63 lbs	55
FORCE @ 1.3 in	73 - 88 lbs	73

TEST MEETS SPECIFICATIONS

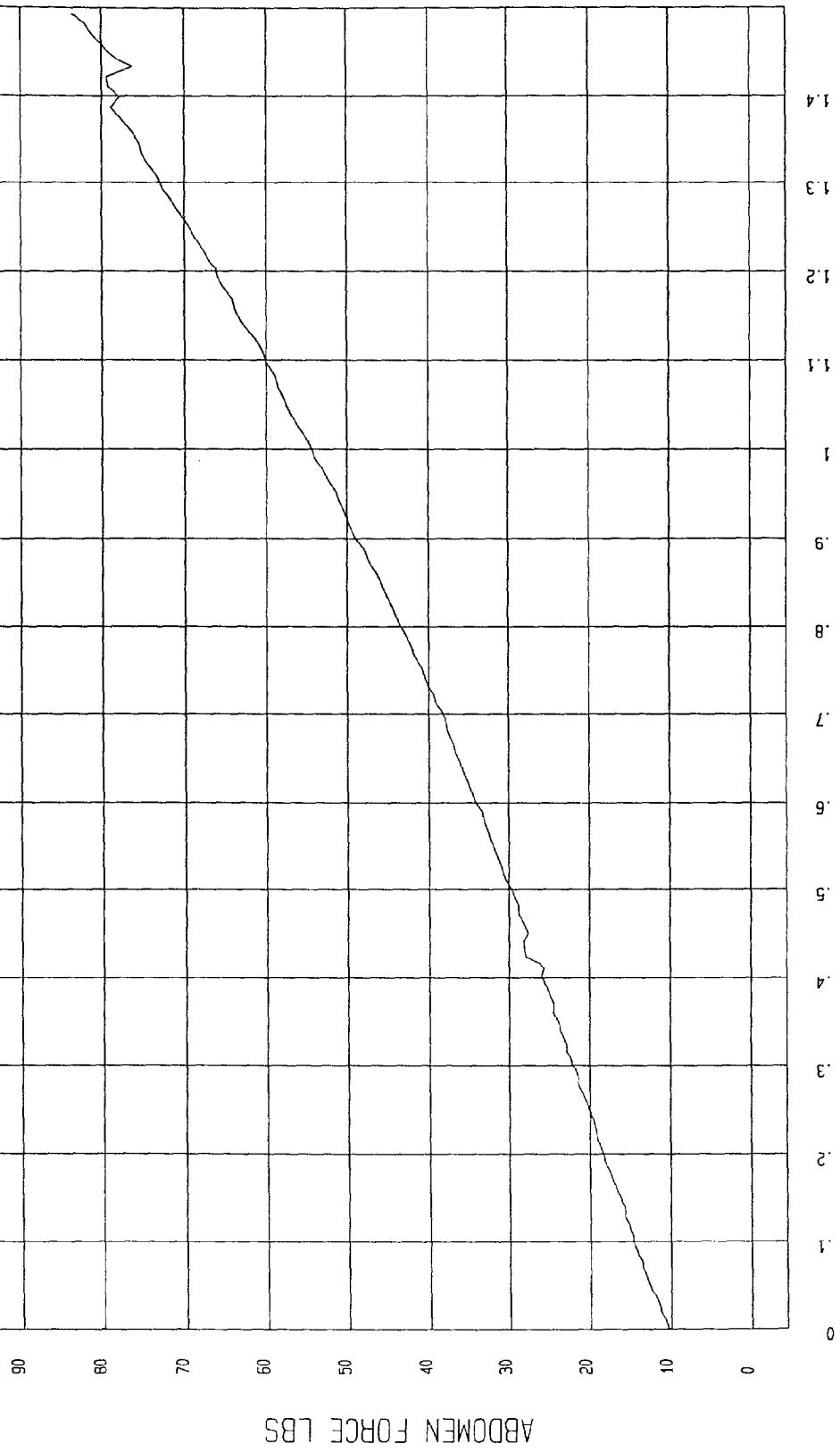
TECHNICIAN 

APPROVED BY 

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 01-30-1998 - 17:44

COMPONENT: DUMMY # 270

ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT



MGA Research
01-30-1998 18:04

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: January 30, 1998

DUMMY NUMBER: 270

TEST NUMBER: D98205

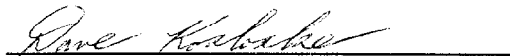
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	25
FORCE @ 30°	34 - 46 lbs	37
FORCE @ 40°	46 - 58 lbs	53
RETURN ANGLE	12° maximum	2°

TEST MEETS SPECIFICATIONS

TECHNICIAN



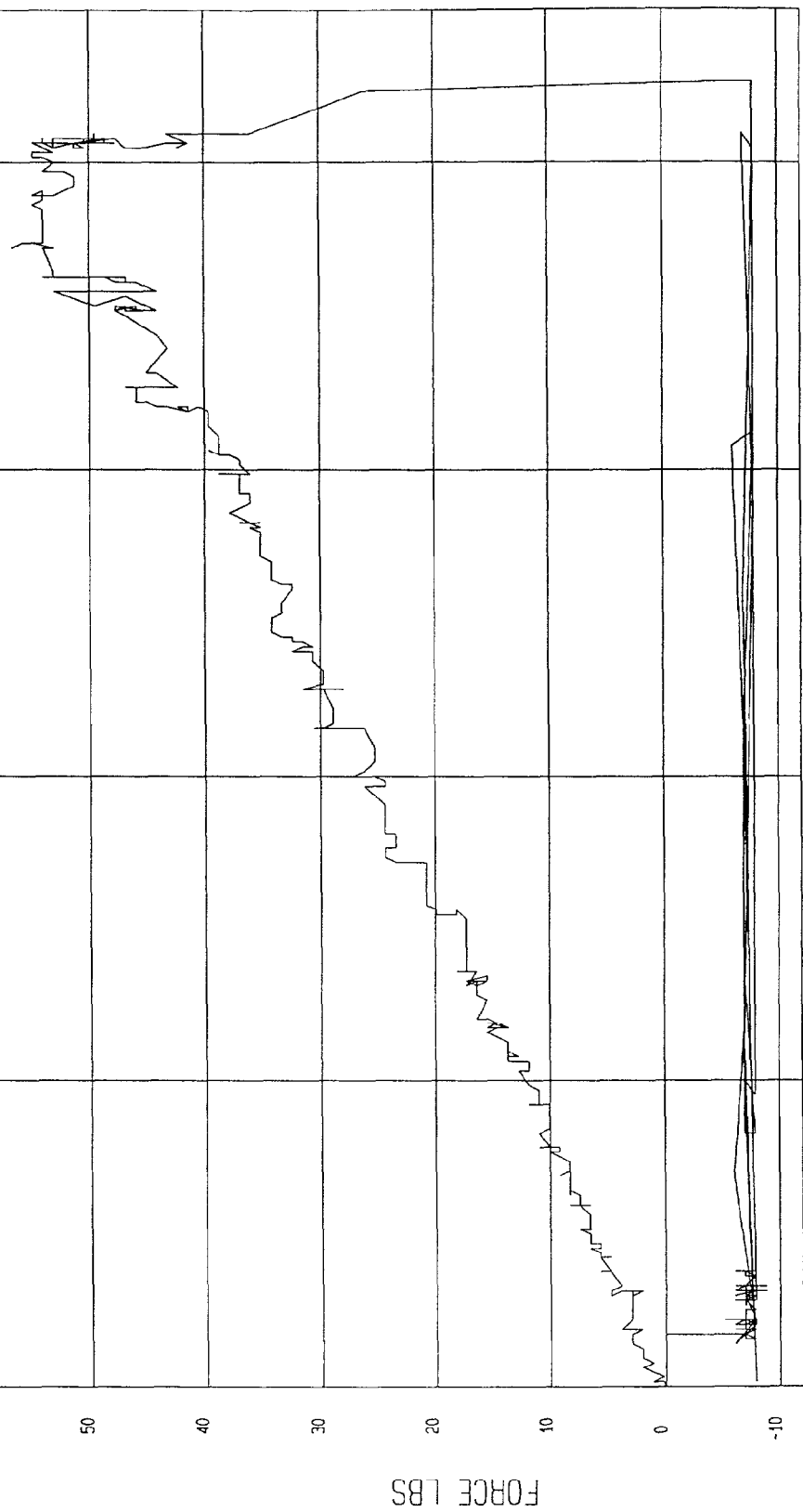
APPROVED BY



TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 01-30-1998 - 18:29

COMPONENT: DUMMY # 270

FORCE as a function of TORSO ROTATION



WCA Research
01-30-1998 19:04

POST-TEST CERTIFICATION DATA

Rear Dummy Serial Number: 269

Calibration Test Results Summary

Dummy Serial Number: 269

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.

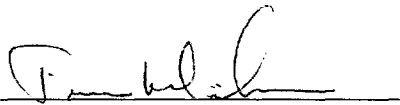
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 269

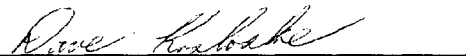
DATE OF VERIFICATION: January 30, 1998

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.2
RH - Rib Height	19.75" - 20.50"	20.20
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.3
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.4
SW - Knee Pivot to Floor	19.3" - 19.9"	19.4
HW - Hip Width	14.0" - 15.4"	15.1

MEASUREMENTS BY:



APPROVED BY:



MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: January 29, 1998

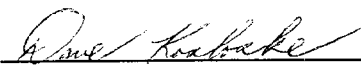
DUMMY NUMBER: 269

TEST NUMBER: D98192

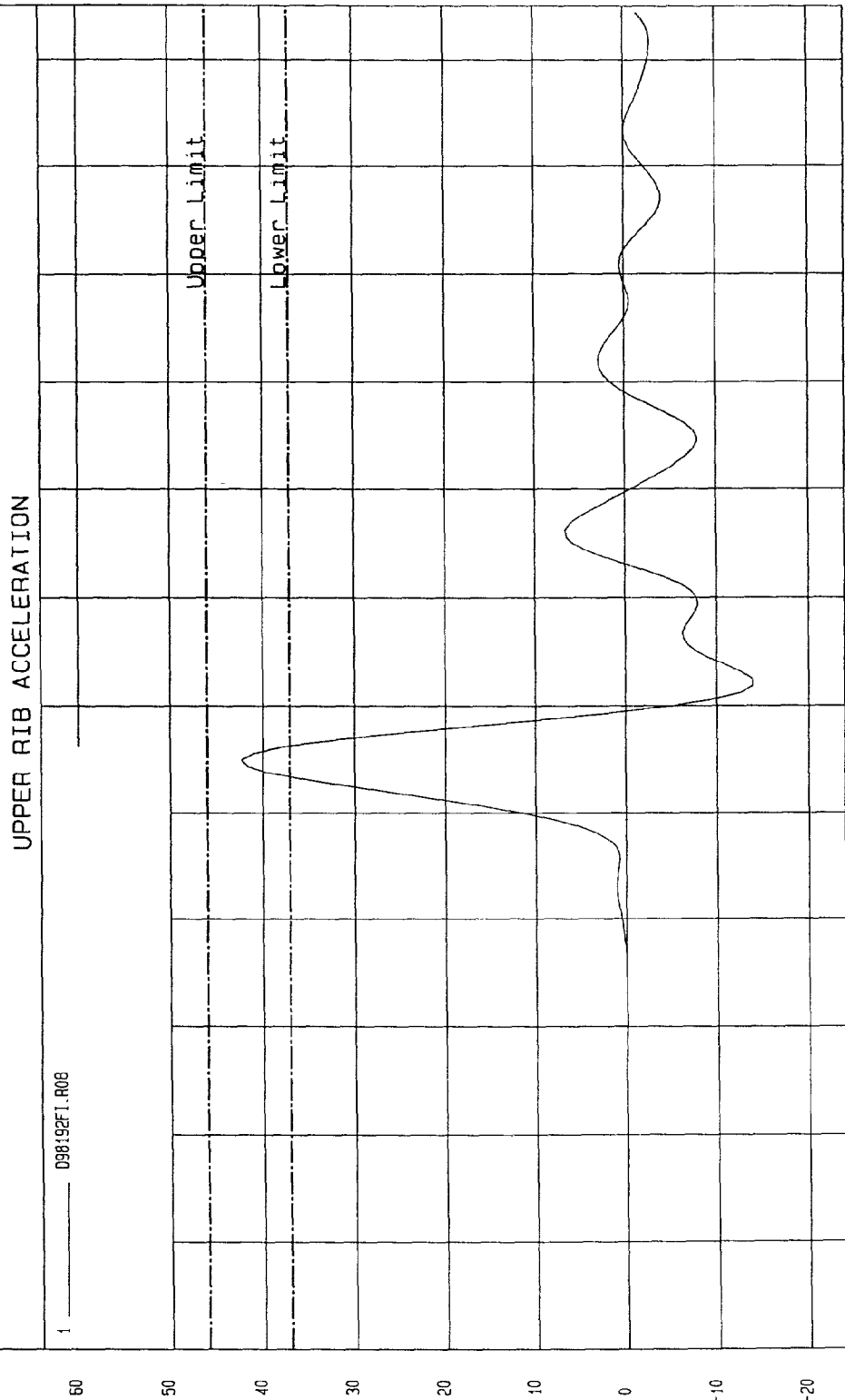
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	25%
PROBE SPEED	14.0 - 14.2 fps	14.0
UPPER RIB	37 - 46 g's	42
LOWER RIB	37 - 46 g's	41
LOWER SPINE	15 - 22 g's	20

TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

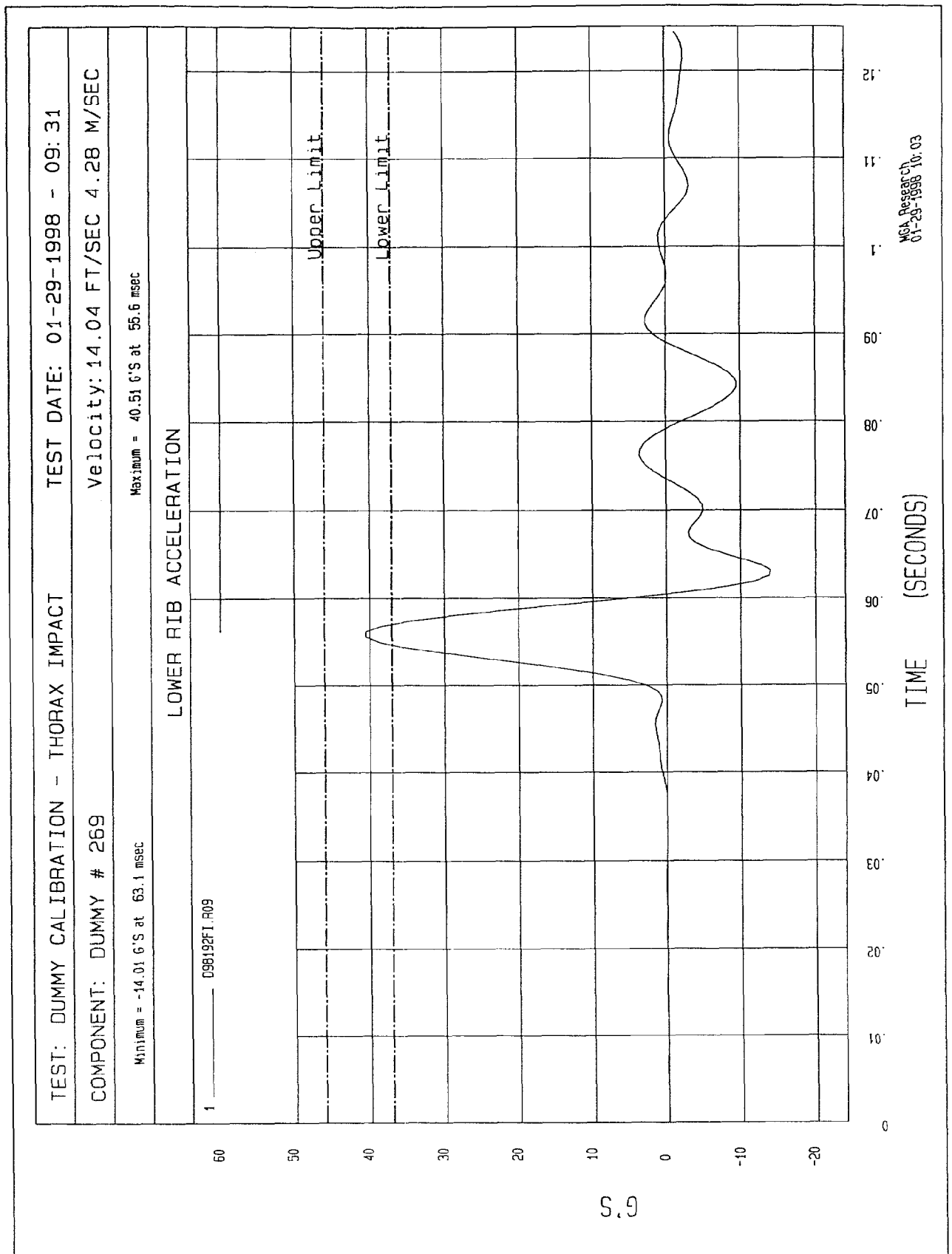
TEST: DUMMY CALIBRATION - THORAX IMPACT	TEST DATE: 01-29-1998 - 09:31
COMPONENT: DUMMY # 269	Velocity: 14.04 FT/SEC 4.28 M/SEC
Minimum = -14.04 G'S at 61.8 msec	
Maximum = 42.37 G'S at 55 msec	



TIME (SECONDS)

WSA Research
01-29-1998 10:02

S.G

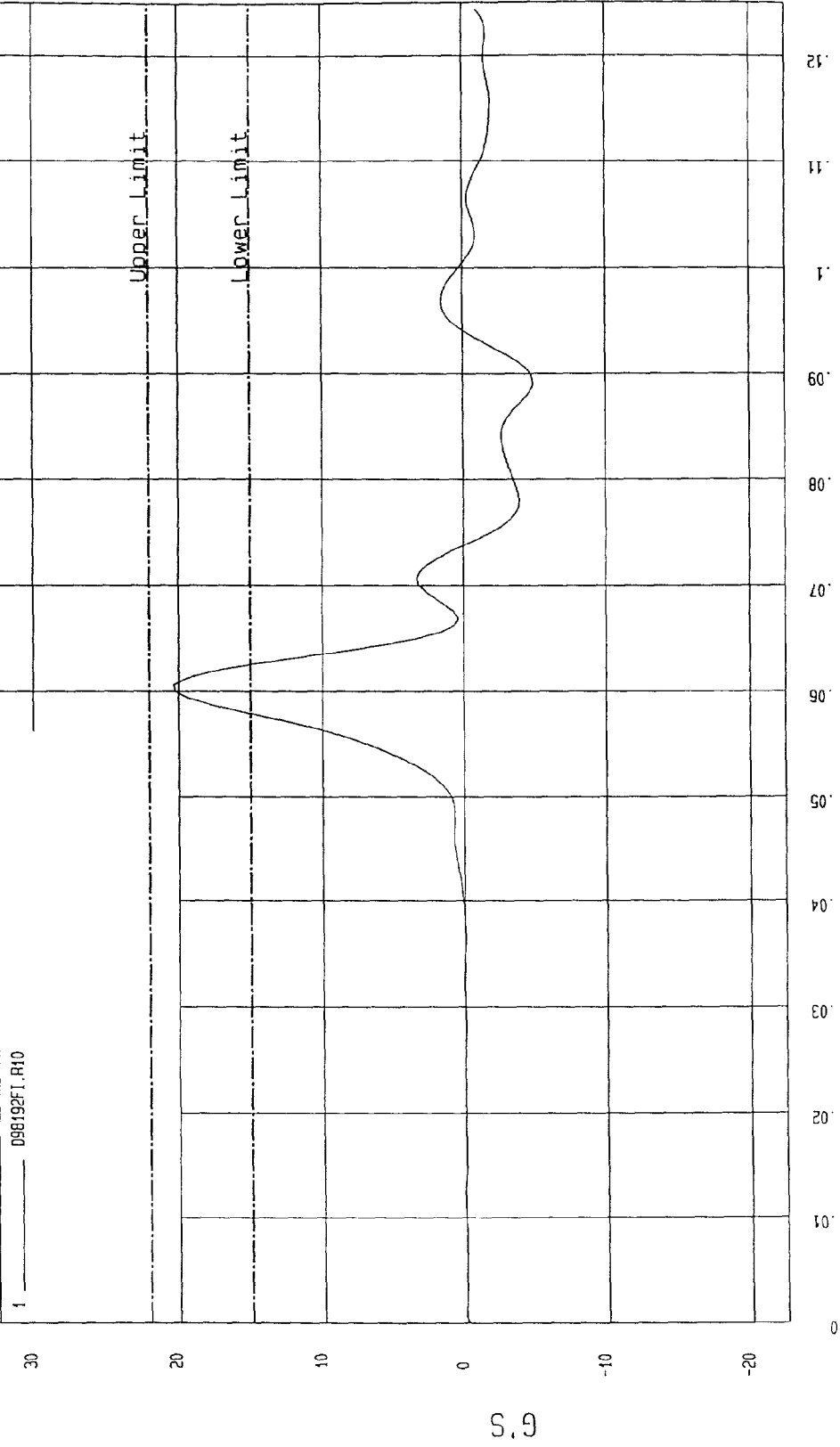


TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 01-29-1998 - 09:31

COMPONENT: DUMMY # 269 Velocity: 14.04 FT/SEC 4.28 M/SEC

Minimum = -4.94 G'S at 89.3 msec Maximum = 20.31 G'S at 60.6 msec

LOWER SPINE ACCELERATION



MGA Research
01-29-1998 10:03

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: January 29, 1998

DUMMY NUMBER: 269

TEST NUMBER: D98193

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	25%
PROBE SPEED	14.0 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	41

TEST MEETS SPECIFICATIONS

TECHNICIAN

T. W. O.

APPROVED BY

Dave Kishabe

TEST: DUMMY CALIBRATION - PELVIS IMPACT TEST DATE: 01-29-1998 - 10:02:16

COMPONENT: DUMMY # 259 Velocity: 14.116 FT/SEC 4.3 M/SEC

Minimum = -7.64 G'S at 73.7 msec

Maximum = 40.55 G'S at 61.2 msec

PELVIS ACCELERATION

1 ——— D98193F1.R11

80

60

Upper Limit

40

Lower Limit

20

G.S

0

-20

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

MSA Research
01-29-1998 10:03

TIME (SECONDS)

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: January 30, 1998

DUMMY NUMBER: 269

TEST NUMBER: D98194

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
FORCE @ 0.5 in	23.3 - 36.5 lbs	34.8
FORCE @ 0.75 in	36.7 - 49.8 lbs	47.6
FORCE @ 1.0 in	50 - 63 lbs	62
FORCE @ 1.3 in	73 - 88 lbs	84

TEST MEETS SPECIFICATIONS

TECHNICIAN



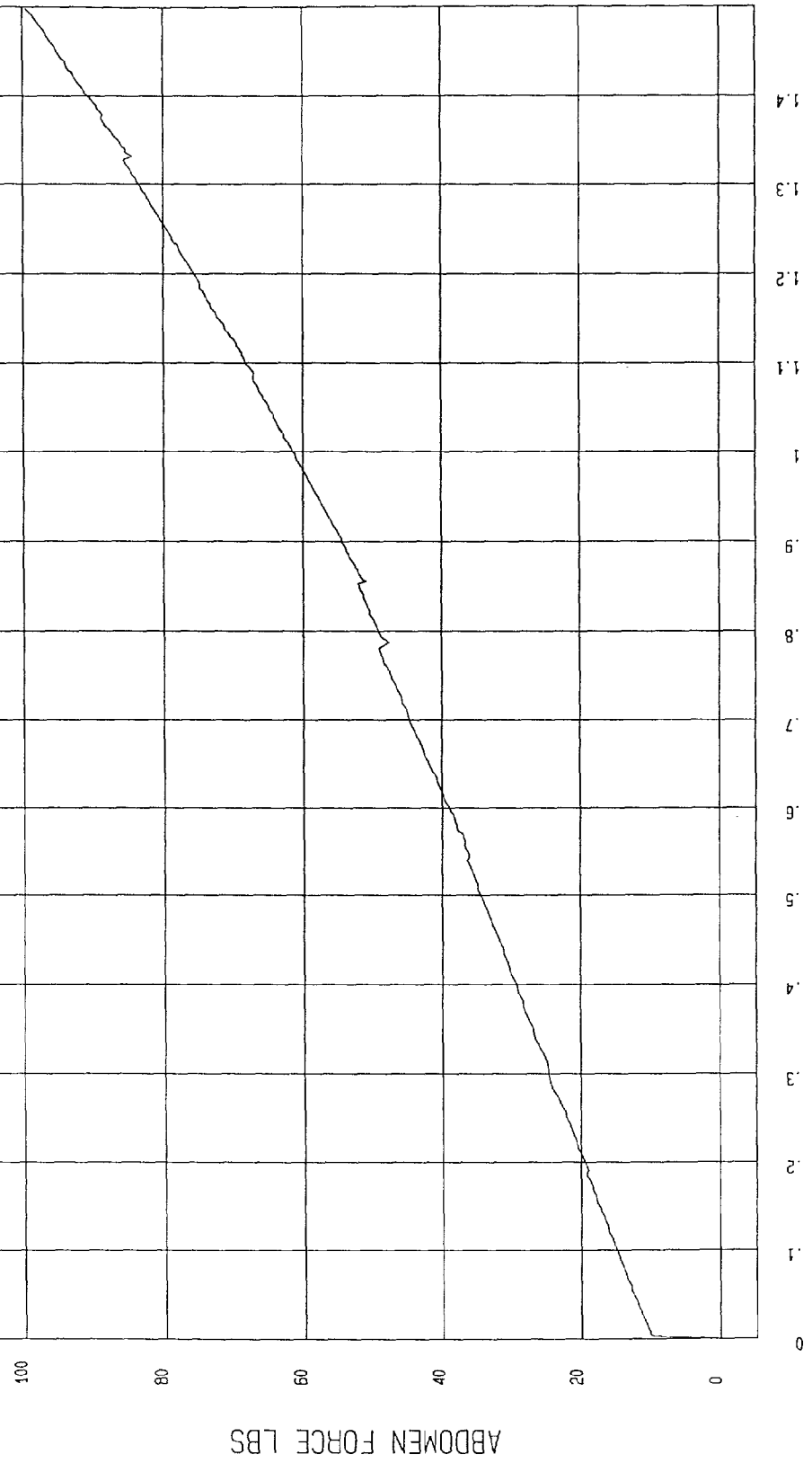
APPROVED BY



TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 01-30-1998 - 17:40

COMPONENT: DUMMY # 269

ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT



MCA Research
01-30-1998 16:03

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: January 30, 1998

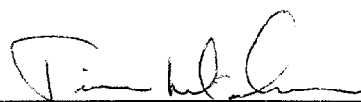
DUMMY NUMBER: 269

TEST NUMBER: D98195

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	25
FORCE @ 30°	34 - 46 lbs	41
FORCE @ 40°	46 - 58 lbs	54
RETURN ANGLE	12° maximum	4°

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY



TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 01-30-1998 - 18:18

COMPONENT: DUMMY # 269

FORCE as a function of TORSO ROTATION

50

40

30

20

10

0

-10

FORCE LBS

10

20

30

40

TORSO ROTATION DEGREES

MGA Research
01-30-1998 19:04

POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 270

Inspected By: Tim Michnay

Date: January 30, 1998

<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: 269

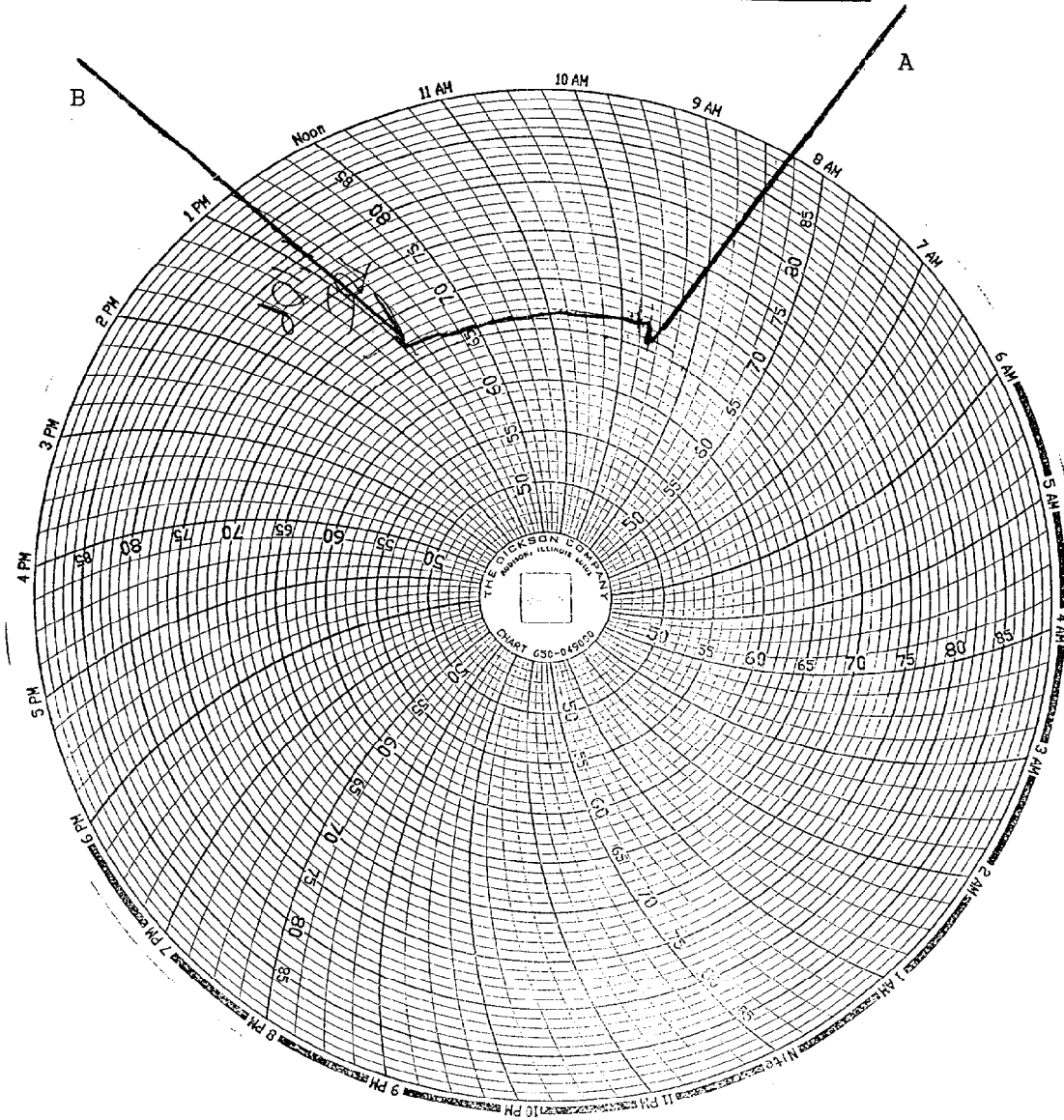
Inspected By: Tim Michnay

Date: January 30, 1998

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

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

VEHICLE AND DUMMY TEMPERATURE



A = dummies installed in vehicle
B = test conducted

APPENDIX D
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA
INSTRUMENTS FOR DRIVER DUMMY NO. 270

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AKAF3	Endevco	September 16, 1997
Lower Rib Y	ALEC1	Endevco	September 15, 1997
Lower Spine Y	ALCH7	Endevco	September 16, 1997
Pelvis Y	AKAD6	Endevco	September 11, 1997
Upper Rib Redundant Y	ALCN9	Endevco	September 16, 1997
Lower Rib Redundant Y	J10411	Endevco	September 15, 1997
Lower Spine Redundant Y	AJ420	Endevco	September 16, 1997
Pelvis Redundant Y	AJ9A7	Endevco	September 11, 1997
Head Center of Gravity X	AN8R0	Endevco	September 11, 1998
Head Center of Gravity Y	AN8P8	Endevco	September 11, 1998
Head Center of Gravity Z	AN8M5	Endevco	September 11, 1998

INSTRUMENTS FOR PASSENGER DUMMY NO. 269

	LEFT REAR PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AKAC4	Endevco	August 6, 1997
Lower Rib Y	J10431	Endevco	August 5, 1997
Lower Spine Y	AGP28	Endevco	September 15, 1997
Pelvis Y	AJ9P7	Endevco	August 6, 1997
Upper Rib Redundant Y	J13642	Endevco	August 6, 1997
Lower Rib Redundant Y	AN9E3	Endevco	August 5, 1997
Lower Spine Redundant Y	AJ8T5	Endevco	September 15, 1997
Pelvis Redundant Y	AI462	Endevco	August 6, 1997
Head Center of Gravity X	AJ9E5	Endevco	August 5, 1997
Head Center of Gravity Y	ALFA7	Endevco	August 5, 1997
Head Center of Gravity Z	AHTT3	Endevco	August 5, 1997

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier CG X	J04-F10	Entran	August 7, 1997
Moving Barrier CG Y	F11-G04	Entran	August 7, 1997
Moving Barrier CG Z	J04-F12	Entran	August 7, 1997
Moving Barrier Rear Axle X	G13-B07	Entran	August 6, 1997
Moving Barrier Rear Axle Y	L14-D04	Entran	August 4, 1997
Left Mid A-Post Y	I25-J09	Entran	August 7, 1997
Left Lower A-Post Y	B14-R01	Entran	August 1, 1997
Left Mid B-Post Y	F11-G08	Entran	August 7, 1997
Left Lower B-Post Y	L14-D14	Entran	January 12, 1998
Rear Floorpan Above Axle X	J04-F16	Entran	August 7, 1997
Rear Floorpan Above Axle Y	F20-G03	Entran	August 7, 1997
Rear Floorpan Above Axle Z	F18-G03	Entran	August 7, 1997
Driver Seat Track Y	L18-E06	Entran	November 5, 1997
Right Side Sill at Front Seat X	I26-D06	Entran	August 5, 1997
Right Side Sill at Front Seat Y	G08-B07	Entran	January 8, 1998
Right Side Sill at Front Seat Z	C20-J10	Entran	August 6, 1997
Right Side Sill at Rear Seat X	F12-G03	Entran	January 12, 1998
Right Side Sill at Rear Seat Y	D05-R20	Entran	January 12, 1998
Right Side Sill at Rear Seat Z	D05-R16	Entran	January 12, 1998
Left Side Sill at Front Seat Y	F20-G09	Entran	January 12, 1998

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Left Side Sill at Rear Seat Y	I25-J16	Entran	January 12, 1998
Right Rear Occupant Compartment Y	J10-E06	Entran	August 1, 1997
Vehicle CG X	B14-R15	Entran	January 8, 1998
Vehicle CG Y	G13-B15	Entran	January 8, 1998
Vehicle CG Z	H02-J04	Entran	January 8, 1998
Left Front Door on Centerline	F20-G12	Entran	August 7, 1997
Midrear of Left Front Door	H02-J05	Entran	August 6, 1997
Left Front Door Upper Centerline	I26-D02	Entran	August 7, 1997
Midrear of Left Rear Door	A09-G05	Entran	August 1, 1997
Left Rear Door Upper Centerline	I25-J19	Entran	August 7, 1997

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