REPORT NO.: 214D-MGA-97-02

V2477

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TESTING
PASSENGER CARS

1997 HONDA CIVIC
4 DOOR
NHTSA NO: MV5301

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: November 27, 1996

Report Date: December 11, 1996

FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY PERFORMANCE STANDARDS
OFFICE OF CRASHWORTHINESS STANDARDS
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15. Supplementary Notes

16. Abstract

A 90° Moving Deformable Barrier NCAP side impact was conducted on the subject 1997 Honda Civic 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 November 27, 1996.

The impact velocity of the Moving Deformable Barrier (MDB) was 60.7 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 453 mm at mid door level. The test vehicle's performance follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	78.5	77.5
Left Lower Rib (LLR) Accel., g	86.9	91.2
Lower Spine (T_{12}) Accel., g	79.3	70.9
Thoracic Trauma Index (TTI)	83.1	81.1
Pelvis (PEV) Accel., g	107.2	131.2

The door on the struck side of the vehicle did not separate from the body. The opposite doors did not open during the side impact event.

17. Key Words	18. Distribution Statement
New Car Assessment Program (NCAP) FMVSS No. 214D Side Impact Dummy (SID) Occupant Side Impact Protection	Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, Room 5108 (NAD-52) 400 Seventh Street, S.W. Washington, D.C. 20590 Telephone No. 202-366-4946 Attn: Robert Hornickle

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SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FY97 NCAP Side Impact Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-93-C-02047. The purpose of this test was to evaluate side impact protection of a 1997 Honda Accord.

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

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

SECTION 2
SUMMARY OF SIDE IMPACT TEST

A 1997 Honda Civic 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 37.7 mph (60.7 kph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by MGA Research Corporation in Burlington, Wisconsin, on November 27, 1996. Pre- and post-test photographs of the test vehicle, the MDB and the side impact dummies (SIDs) are included in Appendix A.

Two Side Impact Dummies (SIDs) were placed in the 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 (T_{12}) uniaxial accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial accelerometer (Y-direction)

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

The following table summarizes the results of the test:

Injury Criteria	Front SID	Rear SID
TTI (g)	83.1	81.1
Pelvis (g)	107.2	131.2

TEST NOTES

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

   Left Front Door Upper Centerline

   Left Rear Door Upper Centerline

   Rear Seat Track

SECTION 3

SIDE IMPACT DUMMY (SID) AND

VEHICLE TEST DATA

DATA SHEET NO. 1

GENERAL VEHICLE TEST PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 VIN: JHMEJ6527V5005626

Vehicle Body Color: Gray Build Date: 9/96

Engine Data: 4 Cylinders; ___ CID; 1.6 Liter; ___cc

Placement ___ Longitudinal; X Lateral

Transmission: 5 Speed; X Manual; _ Automatic; __ Overdrive

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

Odometer Reading 95 miles

Options: __A/C; X Pwr. Steering; X Pwr. Brakes; __ Pwr. Windows;

___Cruise Control; X Tilt Wheel; ___Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 30 Psi FRONT

29 Psi REAR

Recommended Tire Size: P185/65R14

Tires on Test Vehicle: P185/65R14 Manufacturer: Dunlap

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	= 385.5 kg	(A)
No. of Occupants x 68.04 kg.	= 340.2 kg	(B)
Cargo Capacity (A-B)	= 45.3 kg	

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS:

Right Front	= 304.3 kg	Right Rear	= 208.6 kg
Left Front	= 316.1 kg	Left Rear	= 210.9 kg
TOTAL FRONT = 620.4 kg		TOTAL REAR = 419.5 kg	

% of Total Vehicle Weight = 54.7 %; % of Total Weight = 40.3 %

TOTAL WEIGHT = 1039.9 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids	= 1039.9 kg
Cargo Carrying Capacity of Test Vehicle	= 45.3 kg
Weight of 2 Side Impact Dummies (2 x 80.7 kg.)	= 161.4 kg
TEST VEHICLE TARGET WEIGHT	= 1246.6 kg

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES AND CARGO:

Right Front	= 310.6 kg	Right Rear	= 262.1 kg
Left Front	= 363.2 kg	Left Rear	= 308.4 kg
TOTAL FRONT	= 673.8 kg	TOTAL REAR	= 570.5 kg
% of Total Weight	= 54.2 %	% of Total Weight	= 45.8 %

TOTAL TEST WEIGHT = 1244.3 kg

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 650 mm Left Front 641 mm Right Rear 667 mm Left Rear 649 mm

FULLY LOADED WEIGHT ATTITUDE:

Right Front 645 mm Left Front 619 mm Right Rear 636 mm Left Rear 602 mm

TEST ATTITUDE:

Right Front 631 mm Left Front 622 mm Right Rear 631 mm Left Rear 611 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2620 mm

C.G. = 1135 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 4086 mm

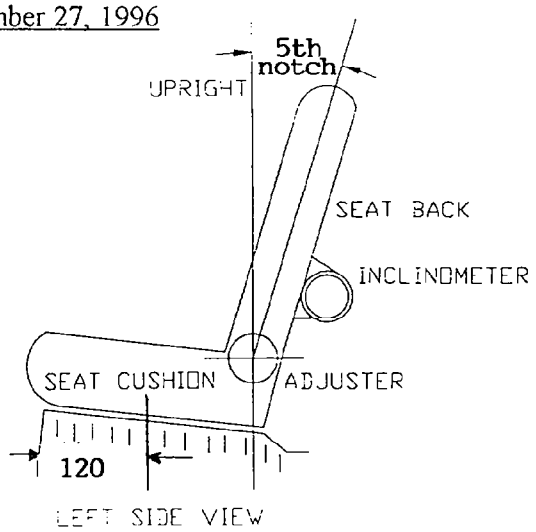
Centerline = 4416 mm

Left Side = 4086 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996



FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 240 mm

Test Position: 120 mm of 240 mm total

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 5th notch

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: N/A

Seat Back Adjustment Position: N/A

ADJUSTABLE STEERING COLUMN POSITION: Mid-Position

WINDOW POSITIONS: Left Front Closed Left Rear Open

Right Front Closed Right Rear Open

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel system usable capacity = 45.0 liters

Test Volume: 41.9 liters 93 % of capacity

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

Wheelbase: = 2620 mm

Impact Point is 370 mm rearward of front axle centerline

N/A = Not applicable

DATA SHEET NO. 2

TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996

Overall Length = 4416 mm; Overall Width = 1712 mm

TEST WEIGHT:

Right Front	= 336.0 kg	Right Rear	= 254.4 kg
Left Front	= 367.3 kg	Left Rear	= 283.4 kg
TOTAL FRONT	= 703.3 kg	TOTAL REAR	= 537.8 kg
% of Total Weight = 56.7 %		% of Total Weight = 43.3 %	

TOTAL VEHICLE WEIGHT = 1241.1 kg

Wheelbase = 2620 mm

Longitudinal C.G. from Center of Front Axle = 1135 mm

Impact Angle with Respect to Impactor = 90 ° degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (260 mm above ground) = 257 mm
2. LEVEL 2 (444 mm above ground) = 432 mm
3. LEVEL 3 (530 mm above ground) = 453 mm
4. LEVEL 4 (855 mm above ground) = 348 mm
5. LEVEL 5 (1303 mm above ground) = 154 mm

Maximum Post-Test Intrusion = 453 mm

OCCUPANTS:	Left Front Passenger	Left Rear Passenger
Type of Dummy	SID	SID
Restraints Used	type II belt	type II belt

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

INSTRUMENTATION:

Number of Vehicle Data Channels:		= 58
Number of Cameras:	Onboard Vehicle	= 3
	Offboard Vehicle	= 3
	Deformable Barrier	= 2
	TOTAL	= 8

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 26.8° to left

MDB DETAILS:

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

MDB WEIGHT:

Left Front	= 496.7 kg	Left Rear	= 187.3 kg
Right Front	= 283.0 kg	Right Rear	= 389.2 kg
TOTAL FRONT = 779.7 kg		TOTAL REAR = 576.5 kg	

TOTAL MDB WEIGHT = 1356.2 kg

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

Impact Speed = Primary: 37.7 mph (60.7 kph) Secondary: 37.8 mph (60.8 kph)

CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A Top of Stack (813 mm) = 183 mm
2. Row B Mid Stack (686 mm) = 138 mm
3. Row C Top of Bumper (533 mm) = 88 mm
4. Row D Center of Bumper (432 mm) = 115 mm

INSTRUMENTATION:

Number of MDB Data Channels = 5

DATA SHEET NO. 4

POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996

VISIBLE DUMMY CONTACT POINTS:

	LEFT FRONT SID	LEFT REAR SID
Head	to door trim and sill	to C-Post and rear window
Arm	to door	to door
Pelvis	to door	to door
Left Knee	to door	to door
Right Knee	to left knee	to left knee

DOOR OPENING:

	LEFT SIDE	RIGHT SIDE
Front	No	Opened
Rear	No	Opened

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal: 0 mm forward Vertical: 10 mm high

ARM REST LOCATIONS:

Front: 252 mm from bottom of window

Rear: 236 mm from bottom of window

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 80 mm Front Seat Cushion: 120 mm

Left Rear Seat Back: 160 mm Rear Seat Cushion: 200 mm

GLAZING DAMAGE:

Side door glass

PILLAR PERFORMANCE:

None noted

SILL SEPARATION:

500 mm separation 440 mm rearward of front axle

800 mm separation 635 mm forward of rear axle

OTHER NOTABLE IMPACT EFFECTS:

Trunk opened on impact

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5

SIDE IMPACT DUMMY (SID) INSTRUMENTATION DATA

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

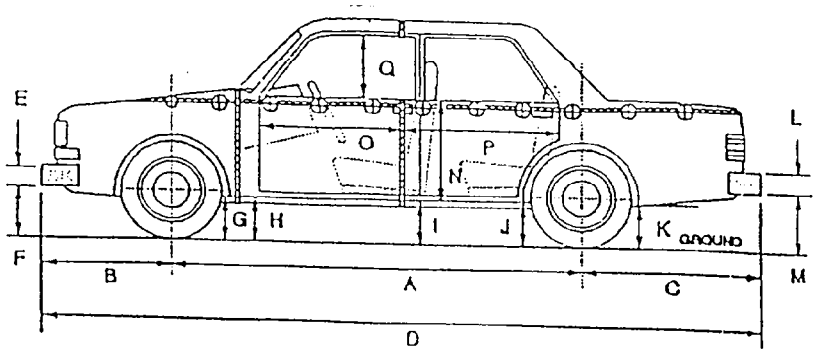
Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996

	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								
Left Upper Rib (LUR) Y	78.5	35	-18.0	71	72.5	50	-5.0	151
Left Lower Rib (LLR) Y	86.9	34	-16.3	70	91.2	40	-16.9	73
SPINE ACCELERATIONS								
Lower Lateral Y	79.3	39	-25.4	65	70.9	38	-39.8	65
PELVIS ACCELERATIONS								
Lateral Y	107.2	27	-15.5	51	131.2	31	-23.6	65

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

DATA SHEET NO. 6

VEHICLE PRE AND POST-TEST MEASUREMENTS



LEFT SIDE VIEW

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	2620	2566	54
B	856	862	6
C	940	924	16
D	4416	4352	64
E	108	110	-2
F	388	418	-30
G	170	177	-7
H	158	192	-34
I	172	N/A *	N/A *
J1/J2	166/155	N/A */158	N/A */-3
K	223	243	-20
L	254	257	-3
M	297	318	-21
N	624	528	96
O	732	660	72
P	1099	1010	89
Q	458	430	28
R	4086	4095	-9
S	4086	4031	55
T	1712	1438	274

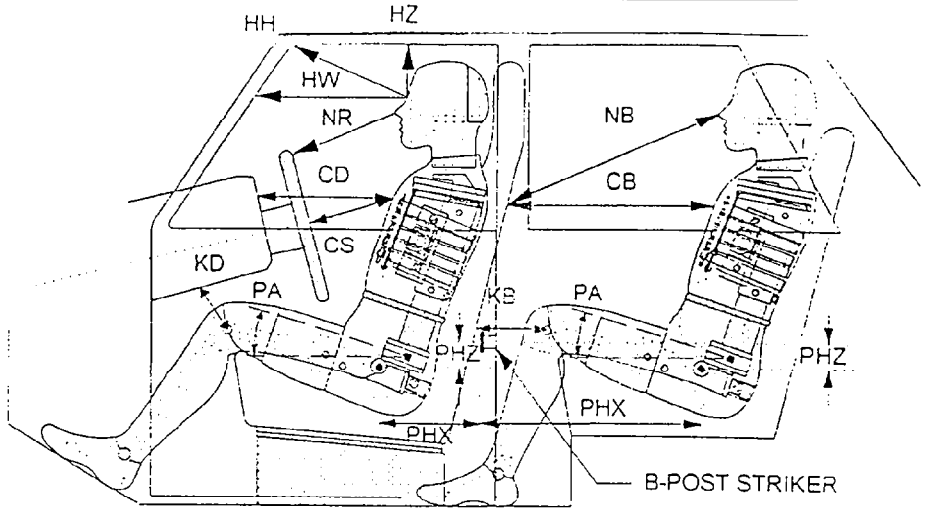
* Molding came off at impact.

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

NHTSA NO.: MV5301 Test Date: November 27,1996



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

	DRIVER SID ID # 270
HH	356
HW	579
HZ	179
NR	472
CD	566
CS	345
KDL(KDA°)	184 (0°)
KDR(KDA°)	184 (0°)
PA°	23.8
PHX	198
PHZ	148

	LEFT REAR PASSENGER SID ID # 269
HZ	155
NB	600
CB	510
KBL (KBA)	214 (0°)
KBR (KBA)	228 (0°)
PA°	24.2
PHX	239
PHZ	279

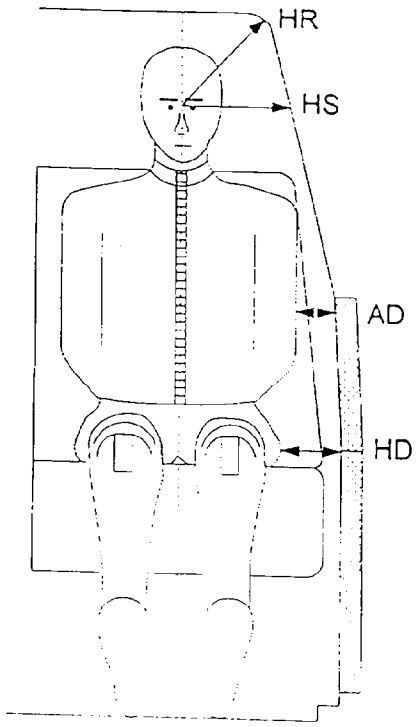
NOTE: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as reference point.

DATA SHEET NO. 8

SIDE IMPACT DUMMY (SID) LATERAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

NHTSA NO.: MV5301 Test Date: November 27, 1996



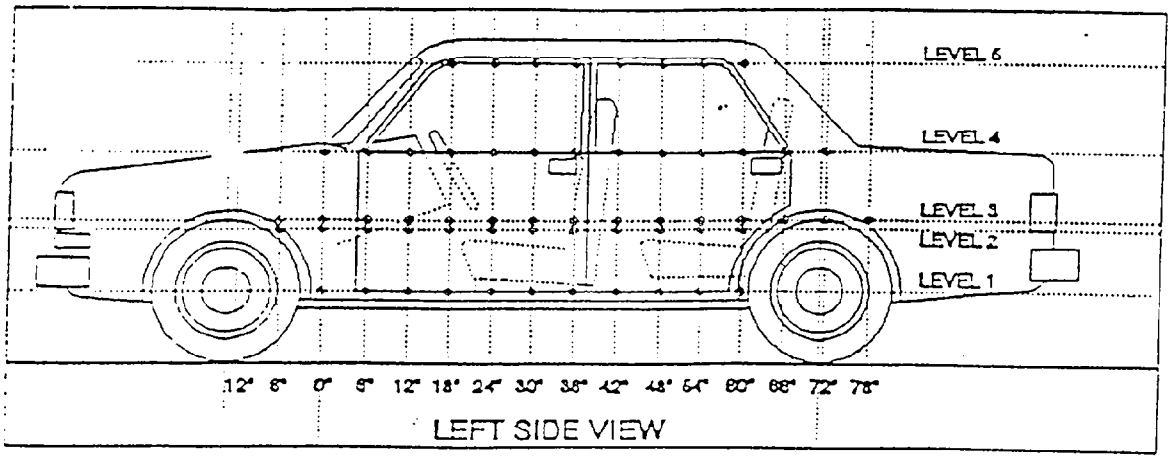
NOTE: All dimensions are in mm

	DRIVER SID ID # 270	LEFT REAR PASSENGER SID ID # 269
HR	204	224
HS	313	252
AD	82	104
HD	117	136

DATA SHEET NO. 9
VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

NHTSA NO.: MV5301 Test Date: November 27, 1996



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

MEASUREMENTS ALONG THE VERTICAL 750 mm. LINE SHOWN ABOVE

Level 5 @ Window Top	= 1303 mm
Level 4 @ Window Sill	= 855 mm
Level 3 @ Mid Door	= 530 mm
Level 2 @ Occupant H-Point	= 444 mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	= 260 mm

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050			
-900	782	777	-5
-750			
-600			
-450			
-300			
-150			
0 (impact point)	768	866	98
150	780	978	198
300	778	1024	246
450	778	1022	246
600	778	1028	250
750	777	1030	253
900	774	1031	257
1050	773	1025	252
1200	775	1028	253
1350	776	1014	238
1500	776	1002	226
1650	777	938	161
1800	779	862	83
1950			

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

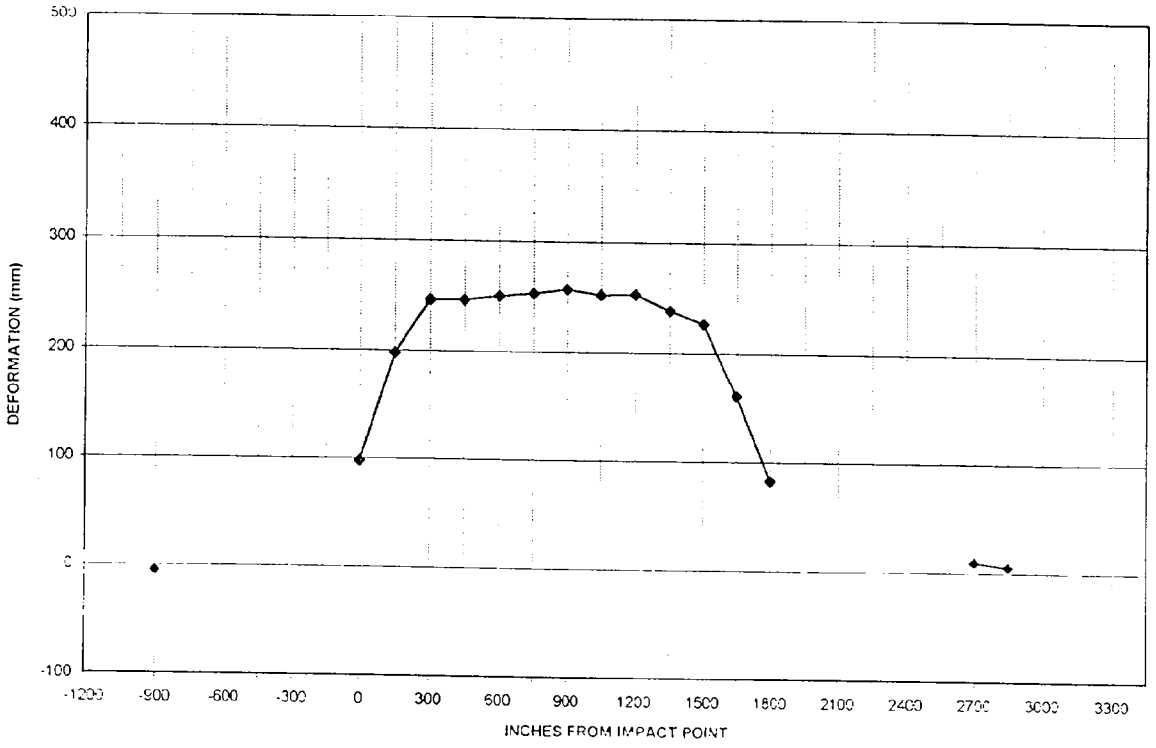
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2100			
2250			
2400			
2550			
2700	779	788	9
2850	790	795	5
3000			
3150			
3300			

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 1 - AXLE CENTERLINE

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

	Level 2 - Occupant H Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050	824	810	-14
-900	774	769	-5
-750	743	743	0
-600			
-450			
-300			
-150			
0 (impact point)	732	905	173
150	731	1052	321
300	729	1108	379
450	728	1140	412
600	728	1144	416
750	727	1148	421
900	726	1148	422
1050	725	1148	423
1200	724	1156	432
1350	725	1157	432
1500	726	1123	397
1650	722	1096	374
1800	723	997	274
1950			

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

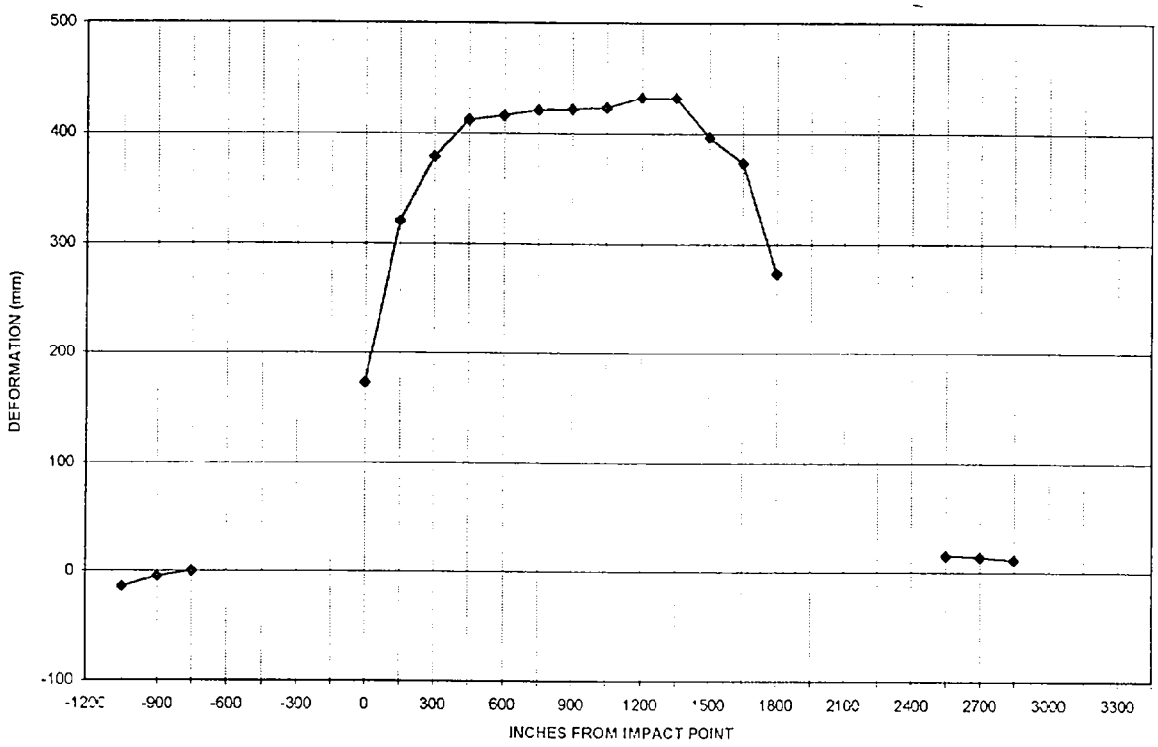
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

	Level 2 - Occupant H Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2100			
2250			
2400			
2550	734	749	15
2700	743	757	14
2850	755	766	11
3000			
3150			
3300			

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 2 - OCCUPANT H-POINT

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

	Level 3 - Mid Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050			
-900	768	768	0
-750	747	752	5
-600			
-450			
-300			
-150	725	847	122
0 (impact point)	731	921	190
150	729	1008	279
300	728	1096	368
450	726	1109	383
600	726	1117	391
750	724	1118	394
900	724	1124	400
1050	723	1131	408
1200	723	1176	453
1350	724	1146	422
1500	724	1118	394
1650	724	1074	350
1800	726	1052	326
1950	720	782	62

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

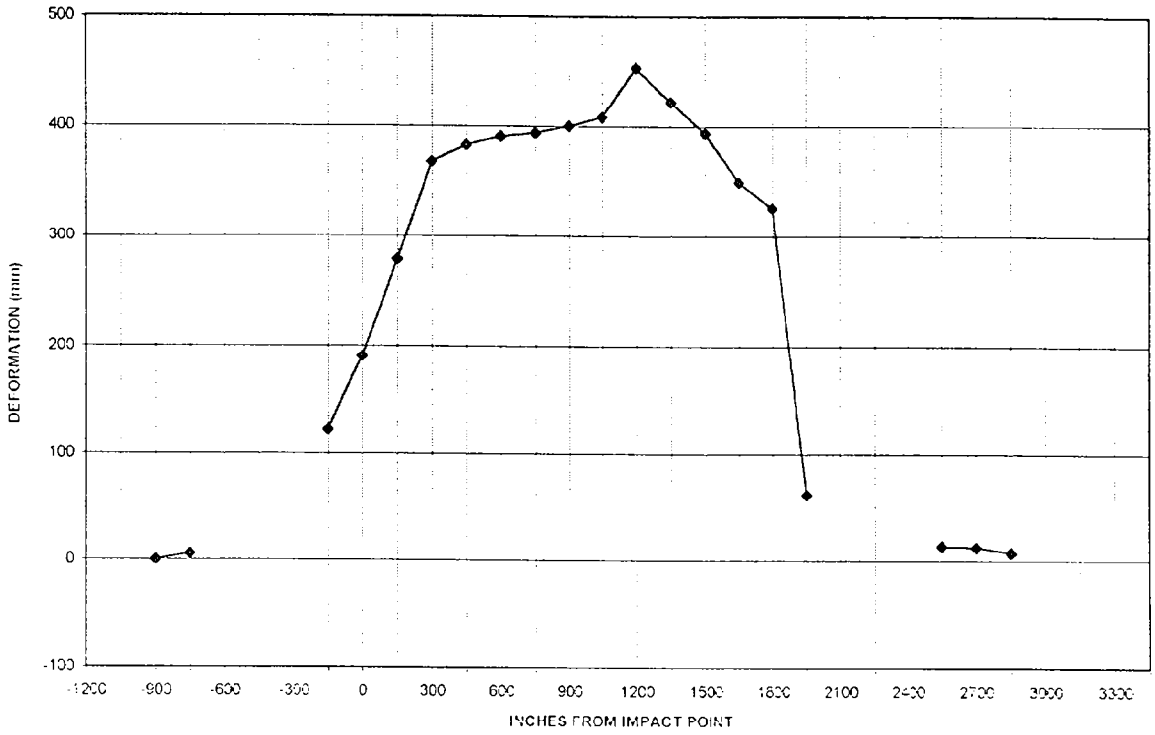
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

	Level 3 - Mid Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2100			
2250			
2400			
2550	734	747	13
2700	744	756	12
2850	758	765	7
3000			
3150			
3300			

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 3 - MID DOOR

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050			
-900			
-750	864	855	-9
-600	847	845	-2
-450	828	837	9
-300	815	836	21
-150	806	834	28
0 (impact point)	800	841	41
150	793	941	148
300	787	1012	225
450	784	1061	277
600	782	1080	298
750	780	1083	303
900	778	1087	309
1050	778	1099	321
1200	778	1126	348
1350	778	1112	334
1500	779	1110	331
1650	781	1108	327
1800	786	1016	230
1950	786	904	118

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

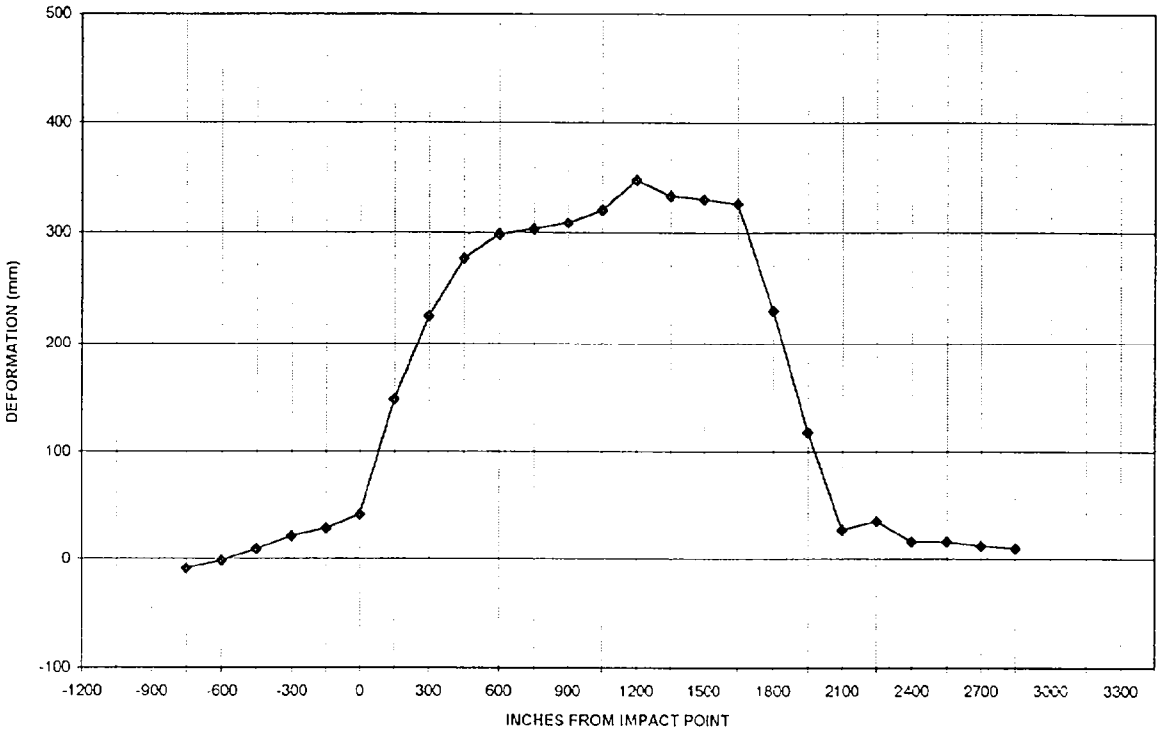
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2100	787	814	27
2250	792	827	35
2400	800	816	16
2550	808	824	16
2700	820	832	12
2850	836	846	10
3000			
3150			
3300			

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 4 - WINDOW SILL

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

	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	1018	1100	82
900	1025	1132	107
1050	1029	1164	135
1200	1031	1185	154
1350	1030	1173	143
1500	1028	1153	125
1650	1026	1088	62
1800	1022	1065	43
1950	1022	1050	28

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

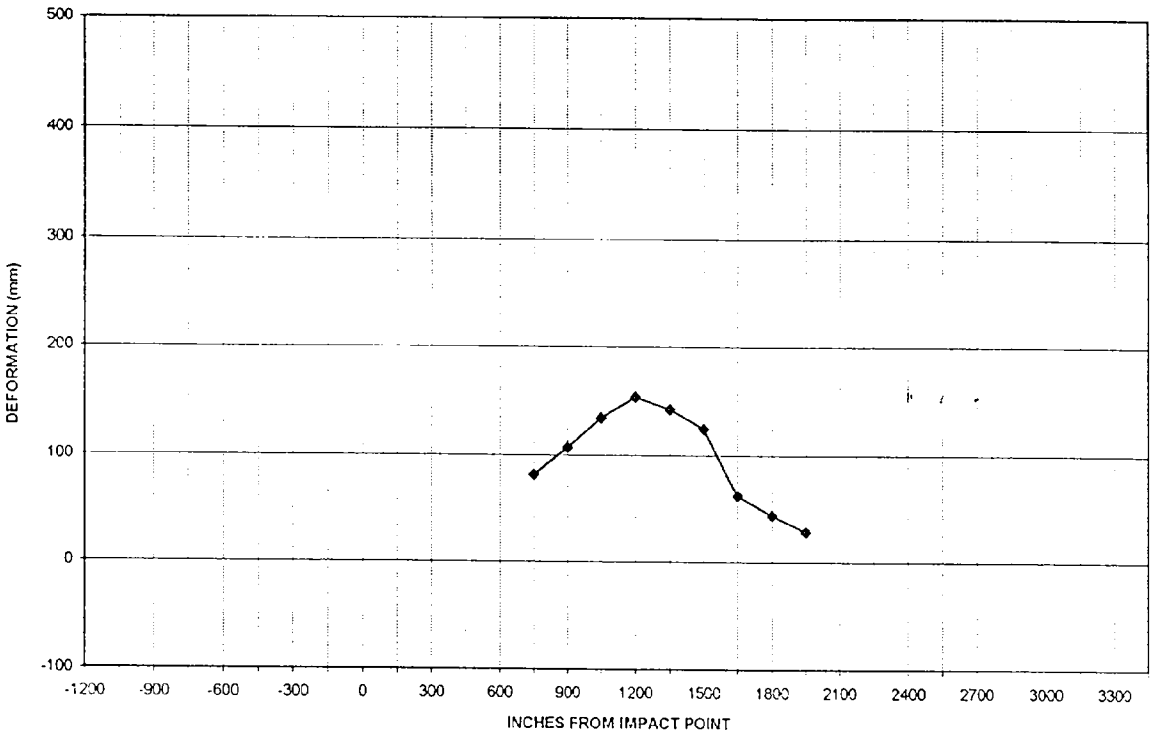
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

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

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

VEHICLE EXTERIOR STATIC CRUSH



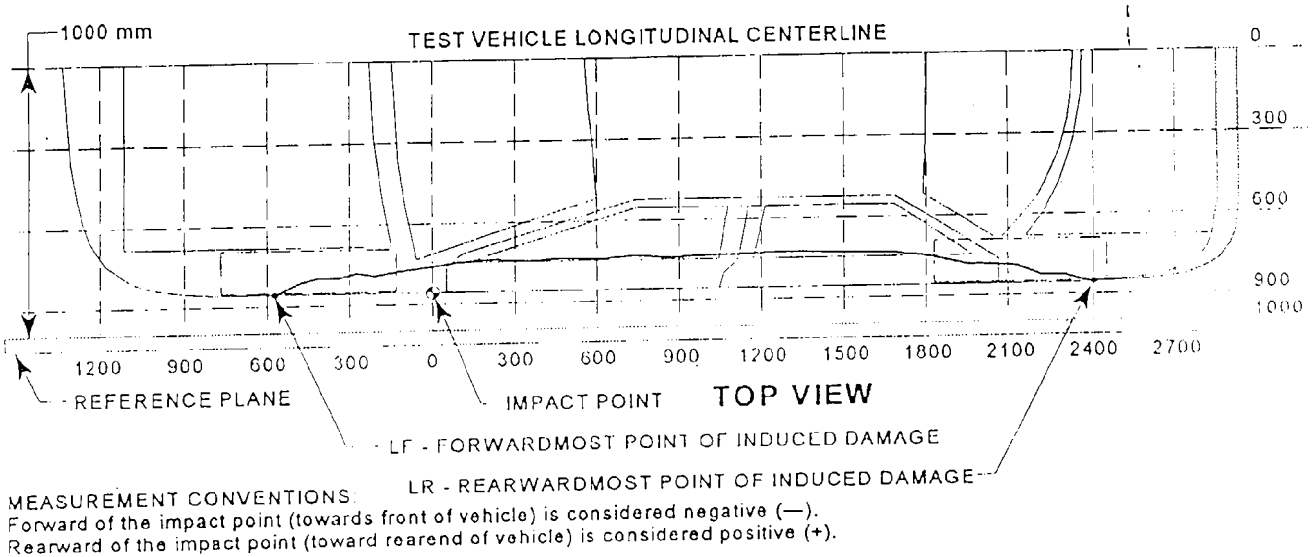
LEVEL 5 - WINDOW TOP

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

NHTSA NO.: MV5301 Test Date: November 27, 1996



MEASUREMENT CONVENTIONS
Forward of the impact point (towards front of vehicle) is considered negative (—).
Rearward of the impact point (toward rearend of vehicle) is considered positive (+).

DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1. (LF = -900 mm)	768	768	0
2. -210 mm	840	725	115
3. 480 mm	1122	726	396
4. 1170 mm	1182	723	459
5. 1860 mm	1061	728	333
6. (LR = 2550 mm)	740	740	0

DATA SHEET NO. 12

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

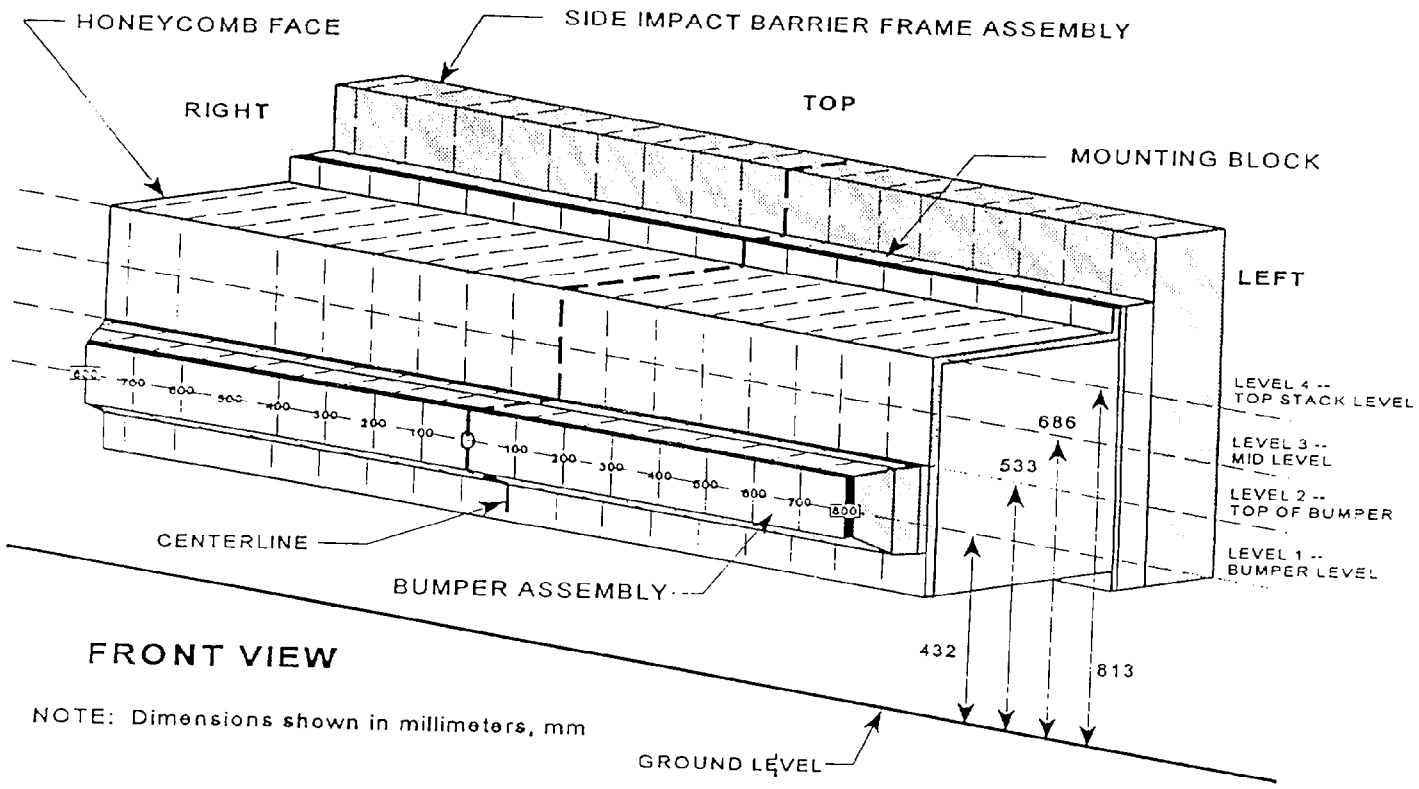
Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996

		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	67	9	-2	-1	0	2	4	6	9	10	13	15	17	49	87	128	183
Mid Level Level 3	686 mm	32	3	-3	-3	-1	1	4	7	4	3	4	5	8	11	27	70	138
Top Bumper Level 2	533 mm	27	20	12	9	6	6	6	8	9	12	15	17	20	24	34	52	88
Mid Bumper Level 1	432 mm	48	41	30	24	24	24	23	23	26	29	31	33	36	40	56	87	115

See next page for Barrier Face Graphic

DATA SHEET NO. 12 (Cont'd)

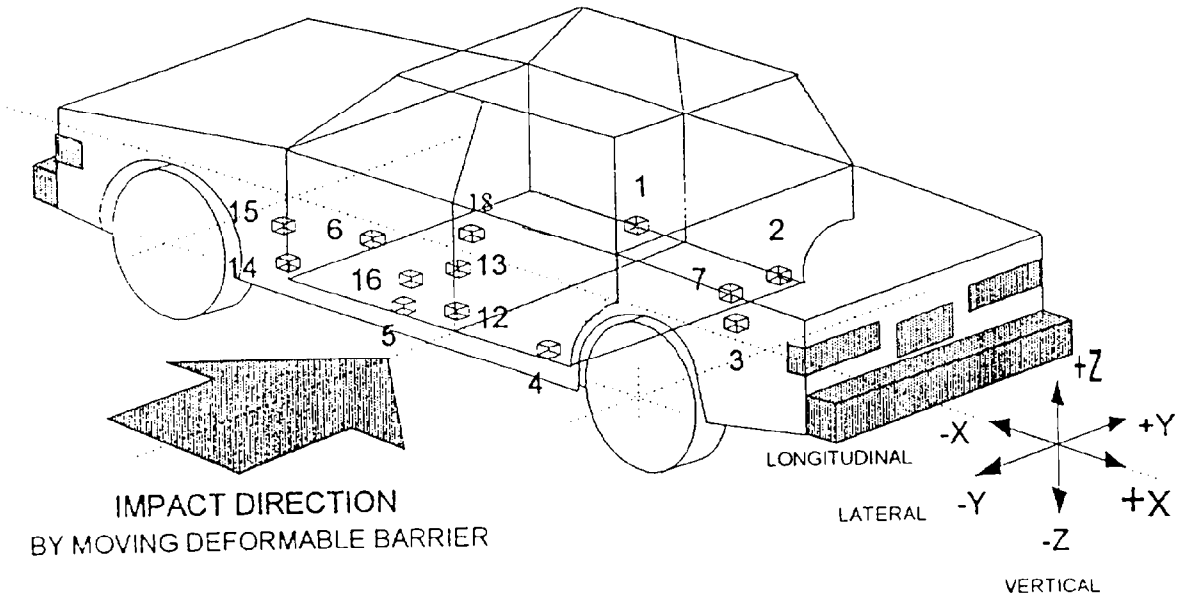


DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996



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

DATA SHEET NO. 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996

Accel. No.	Description	Coordinates (mm)*			Long. (X) Maximums (g's)		Lat. (Y) Maximums (g's)		Vert. (Z) Maximums (g's)		Resultant (g's)
		X	Y	Z	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Max.
1	Rt. Side Sill @ Front Seat				4.0	-7.1	18.2	-2.5	4.1	4.5	18.4
2	Rt. Side Sill @ Rear Seat				4.5	-6.9	24.8	-2.9	4.9	-3.7	24.9
3	Rr. Floorpan Above Axle				6.8	-10.6	22.8	-2.5	7.3	-6.8	23.8
4	Left Side Sill @ Rr. Seat				---	---	77.6	-10.5	---	---	---
5	Left Side Sill @ Frt. Seat				---	---	62.9	-10.2	---	---	---
6	Left Front Door on Centerline				---	---	206.6	-224.6	---	---	---
7	Right Rear Occupant Compartment				---	---	21.9	-2.6	---	---	---
8	Mid Rear of Left Front Door				---	---	185.3	-323.6	---	---	---
9	Left Front Door Upper Centerline										
10	Mid Rear of Left Rear Door				---	---	175.4	-135.9	---	---	---
11	Left Rear Door Upper Centerline										
12	Left Lower B-Post				---	---	146.2	-113.0	---	---	---
13	Left Mid B-Post				---	---	141.3	-40.7	---	---	---
14	Left Lower A-Post				---	---	35.0	-48.1	---	---	---
15	Left Mid A-Post***				---	---	64.7	-2.0	---	---	---
16	Driver Left Seat Track**				---	---	87.6	-45.0	---	---	---
18	Vehicle CG				4.9	-10.4	25.2	-2.9	12.0	-15.7	30.8

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

** Data valid till 43 msec.

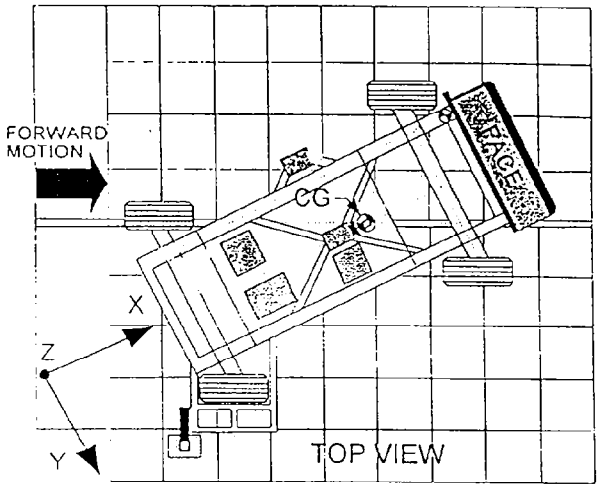
*** Data valid till 13 msec.

DATA SHEET NO. 14

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996



Accel. No.	Description	Coordinates (mm)*			(+) Positive		(-) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time (msec)
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	1.7	153	-15.4	32
	Lateral (Y)	---	---	---	1.5	63	-7.5	32
	Vertical (Z)	---	---	---			-9.0	83
	Resultant (R)	---	---	---	19.7	38	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	2.2	138	-22.0	31
	Lateral (Y)	---	---	---	4.9	22	-.7	188

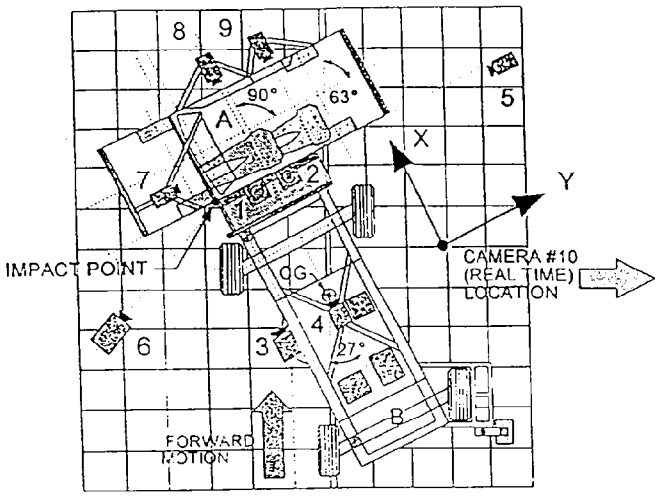
*Reference: X - Front Axle (+ Forward)
Y - Vehicle Centerline (+ To right)
Z - Ground Level (+ Up)

DATA SHEET NO. 15

HIGH SPEED CAMERA LOCATIONS AND DATA

Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996



Camera No.	View	Coordinates (mm)*			Angle	Lens (mm)	Film Speed (fps)
		X	Y	Z			
	Real Time					13	
1	Front Impact	-1040	-2160	1640	90°	13	1020
2	Onboard Driver					8	870
3	Onboard Passenger					8	833
4	Onboard Hood					13	1000
5	Rear Impact	-400	10390	2055	90°	25	966
6	Top Overall	-170	1220	5000	90°	8	1075
7	Top Impact	-140	40	5000	90°	13	1015
8	Cart Overall					13	NR
9	Cart Pointer					35	NT

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

NR = Not Recorded
NT = No Timing

DATA SHEET 16
FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996

TEST REQUIREMENTS:

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

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

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATION(S): None

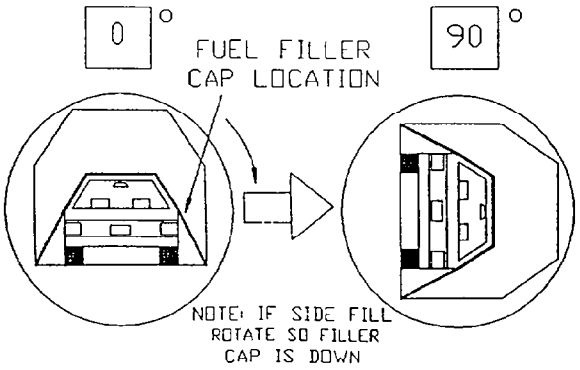
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27,1 996

TEST PHASE: 0° - 90°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 54 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 54 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

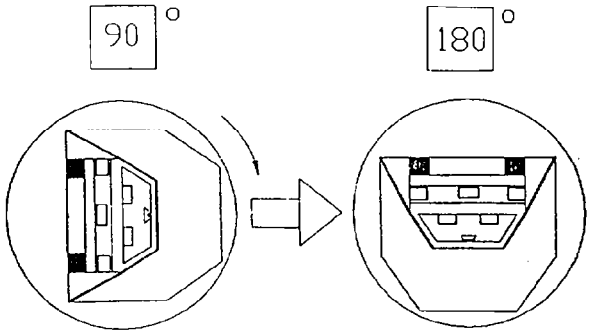
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996

TEST PHASE: 90° - 180°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 32 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 32 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

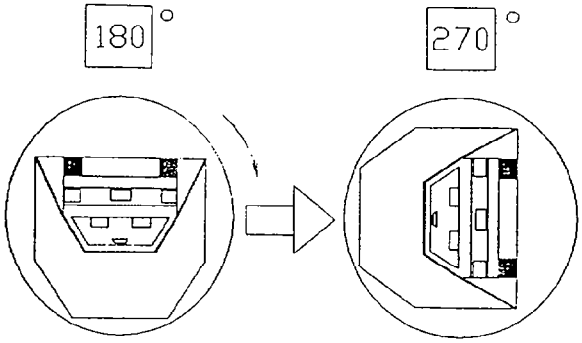
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996

TEST PHASE: 180° - 270°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 17 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 17 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

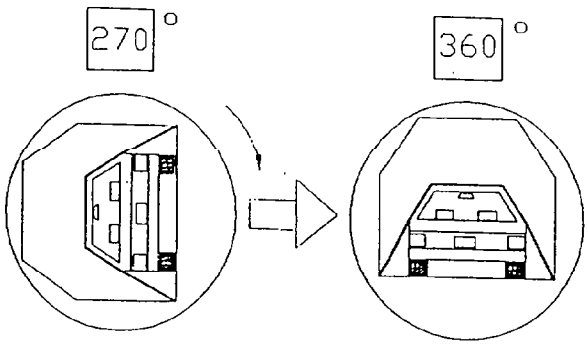
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Honda/Civic/4 Door

Vehicle NHTSA No.: MV5301 Test Date: November 27, 1996

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 39 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 39 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

APPENDIX A - PHOTOGRAPHS

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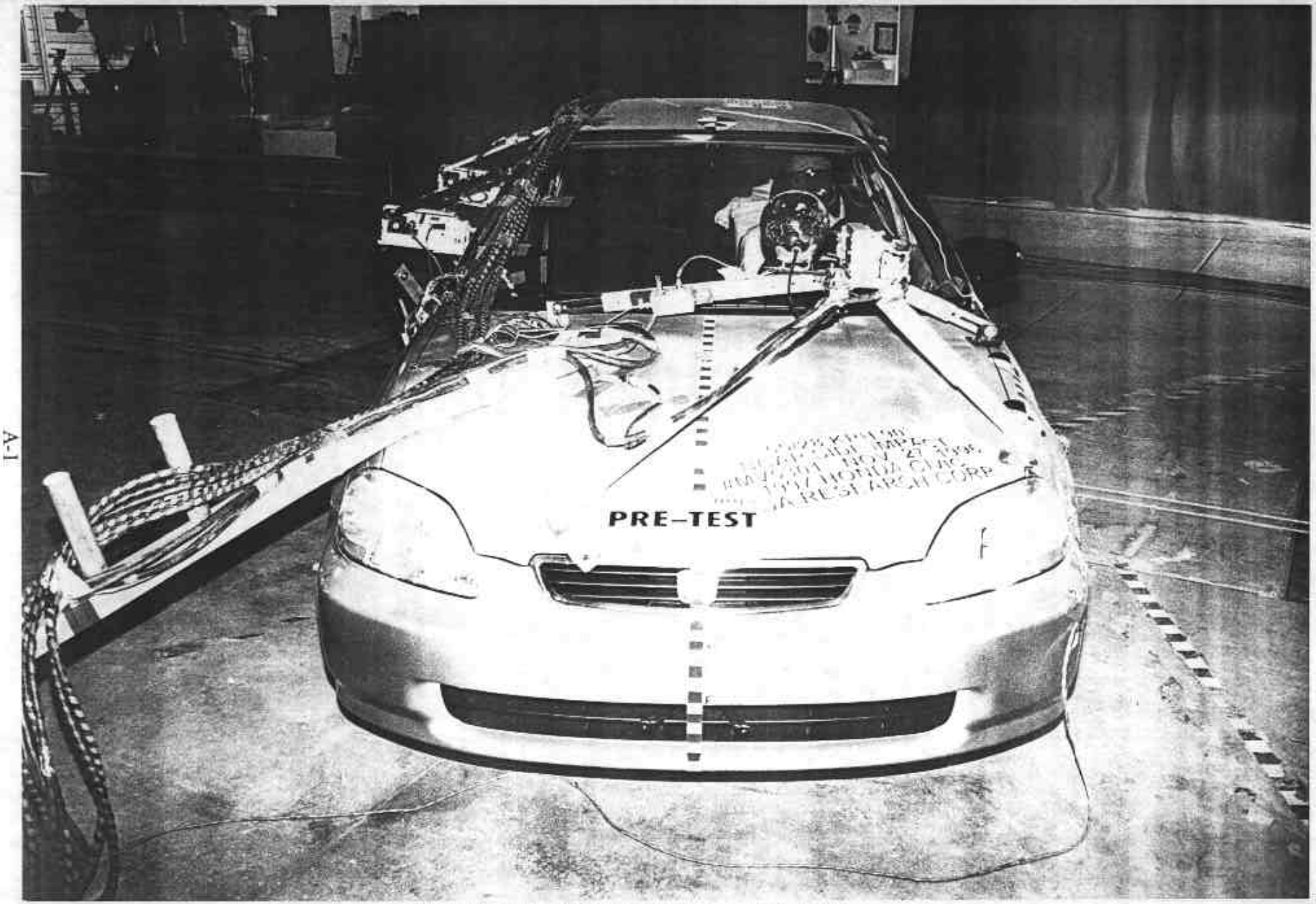


Photo No. A-1 - Pre-Test Front View of Test Vehicle

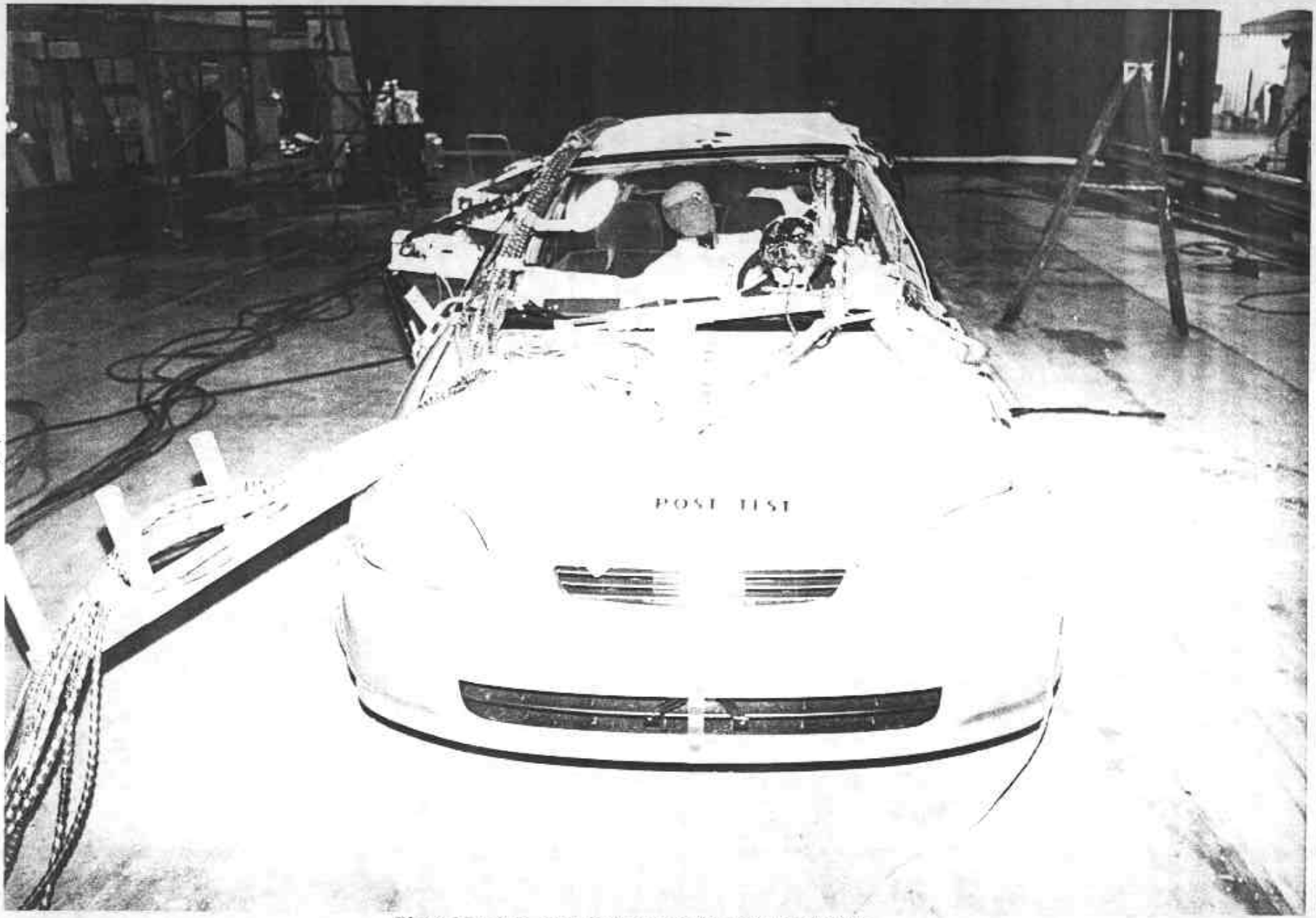


Photo No. A-2 - Post-Test Front View of Test Vehicle

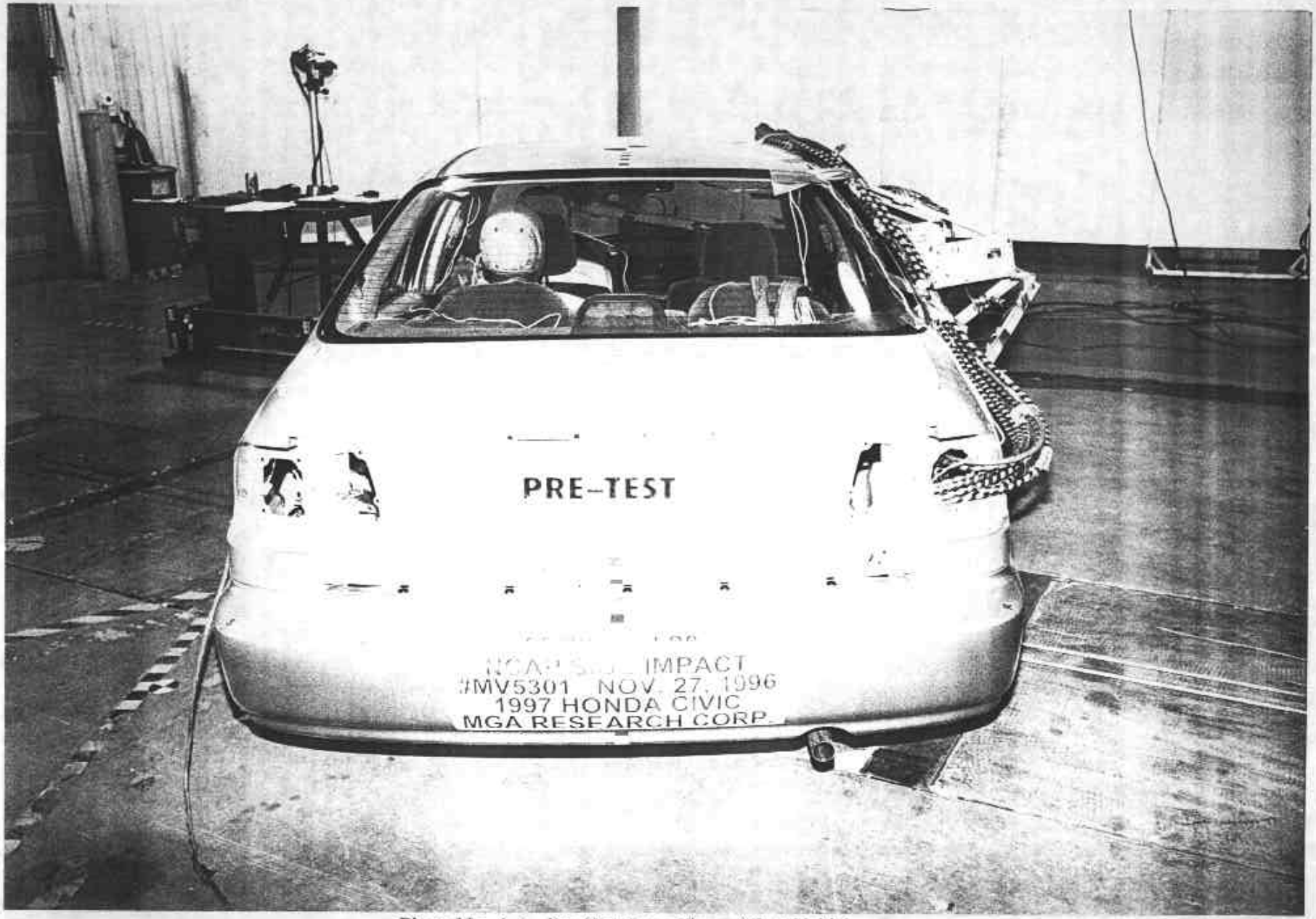


Photo No. A-3 - Pre-Test Rear View of Test Vehicle

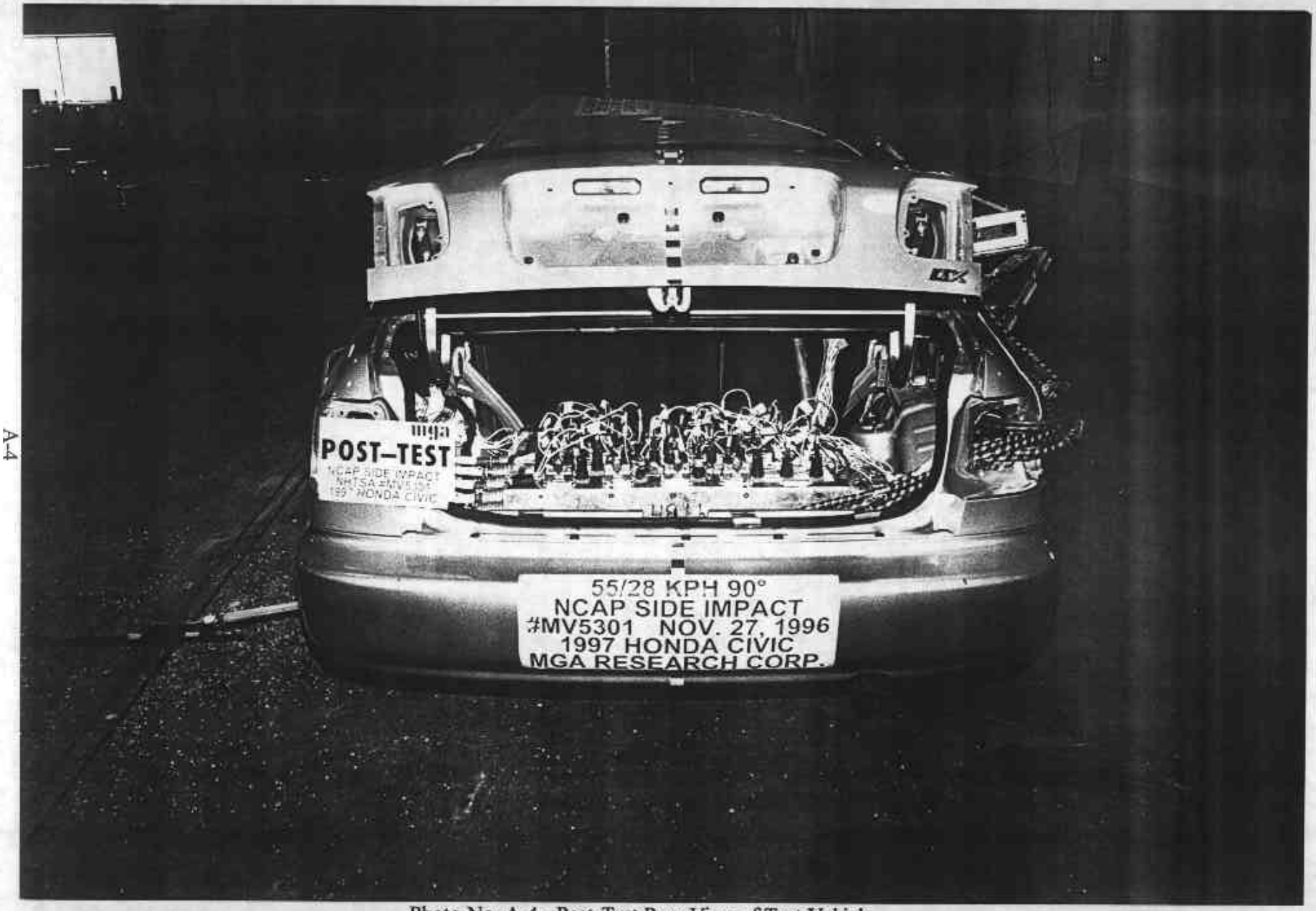


Photo No. A-4 - Post-Test Rear View of Test Vehicle

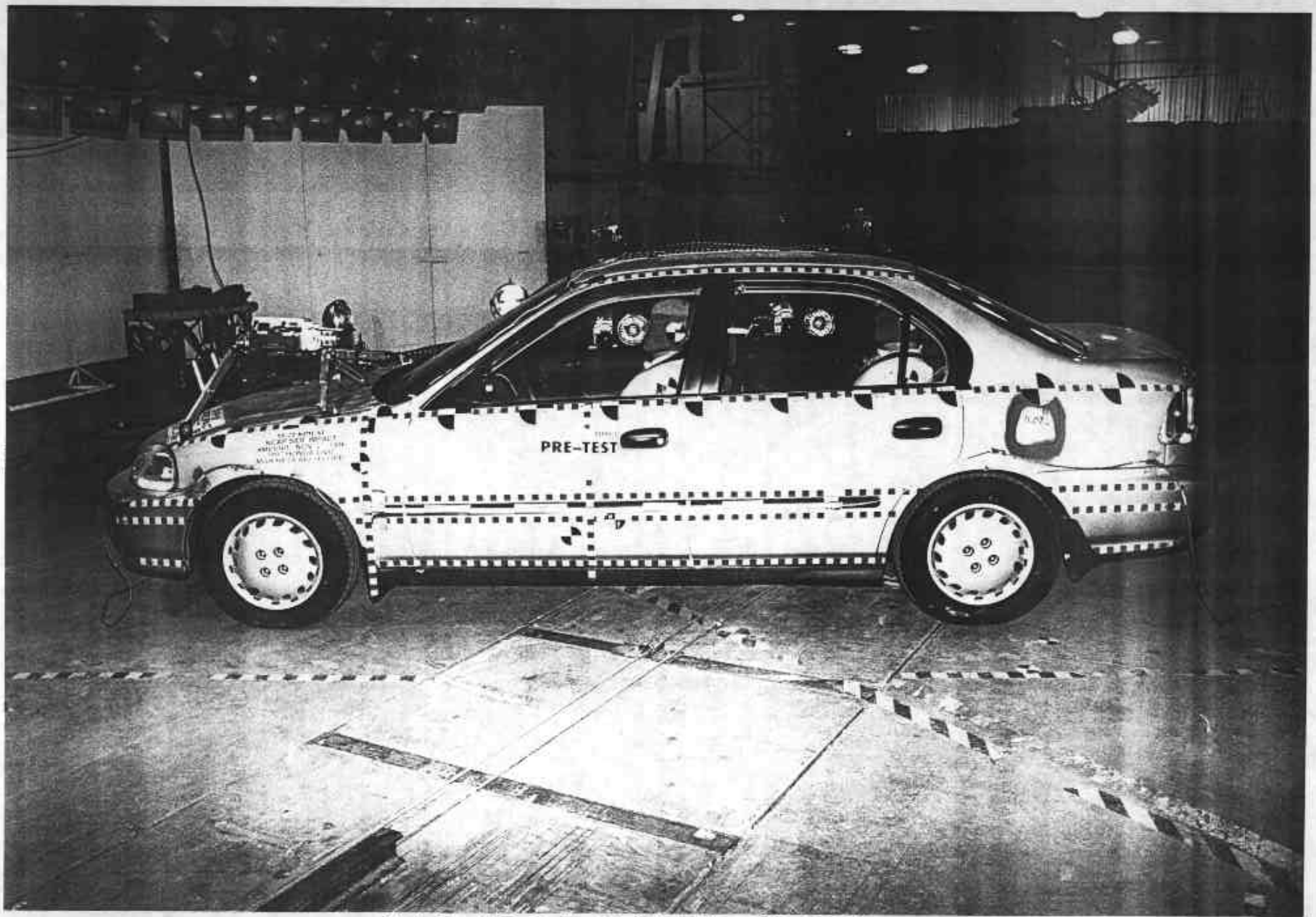


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

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

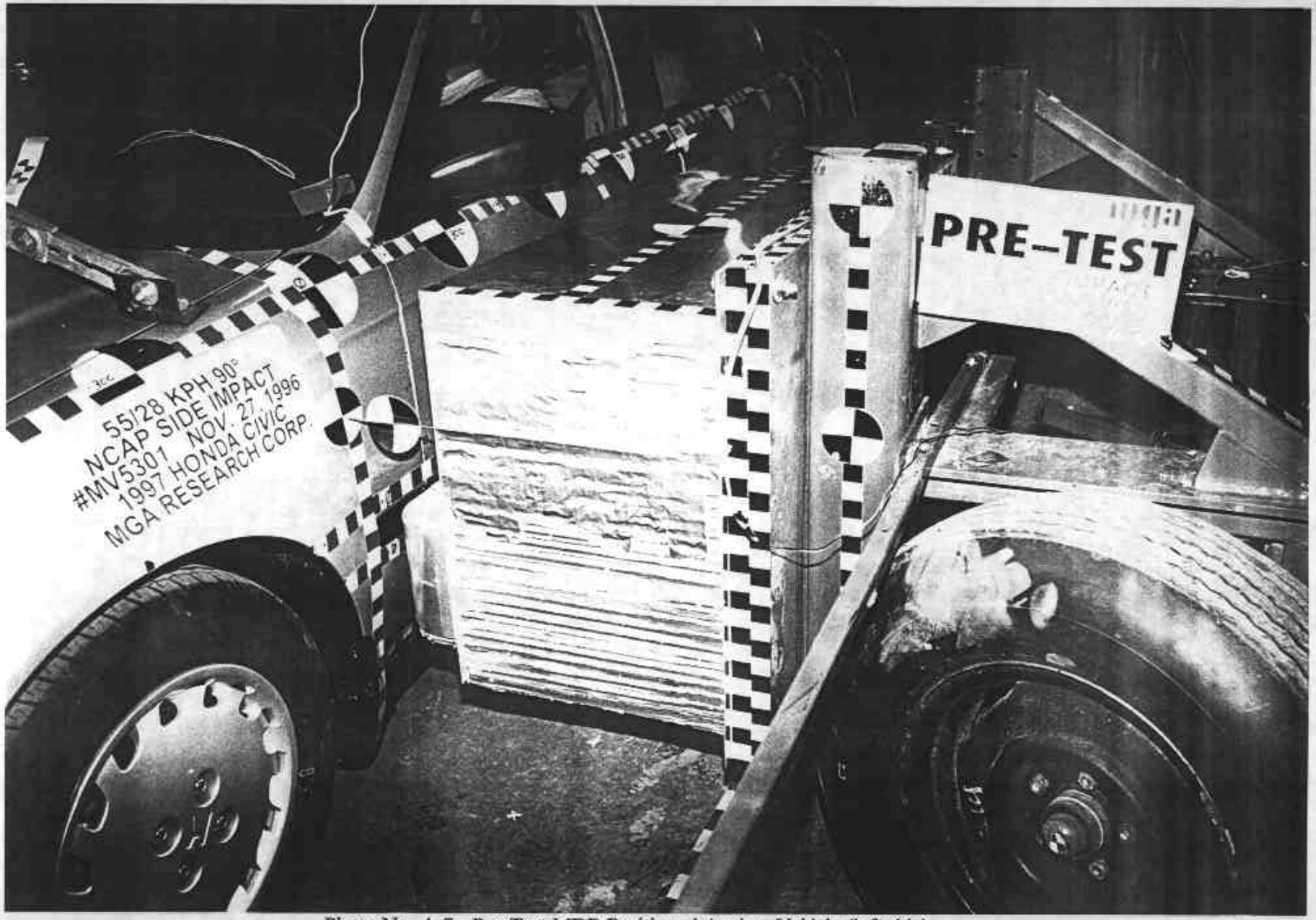


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (left side)

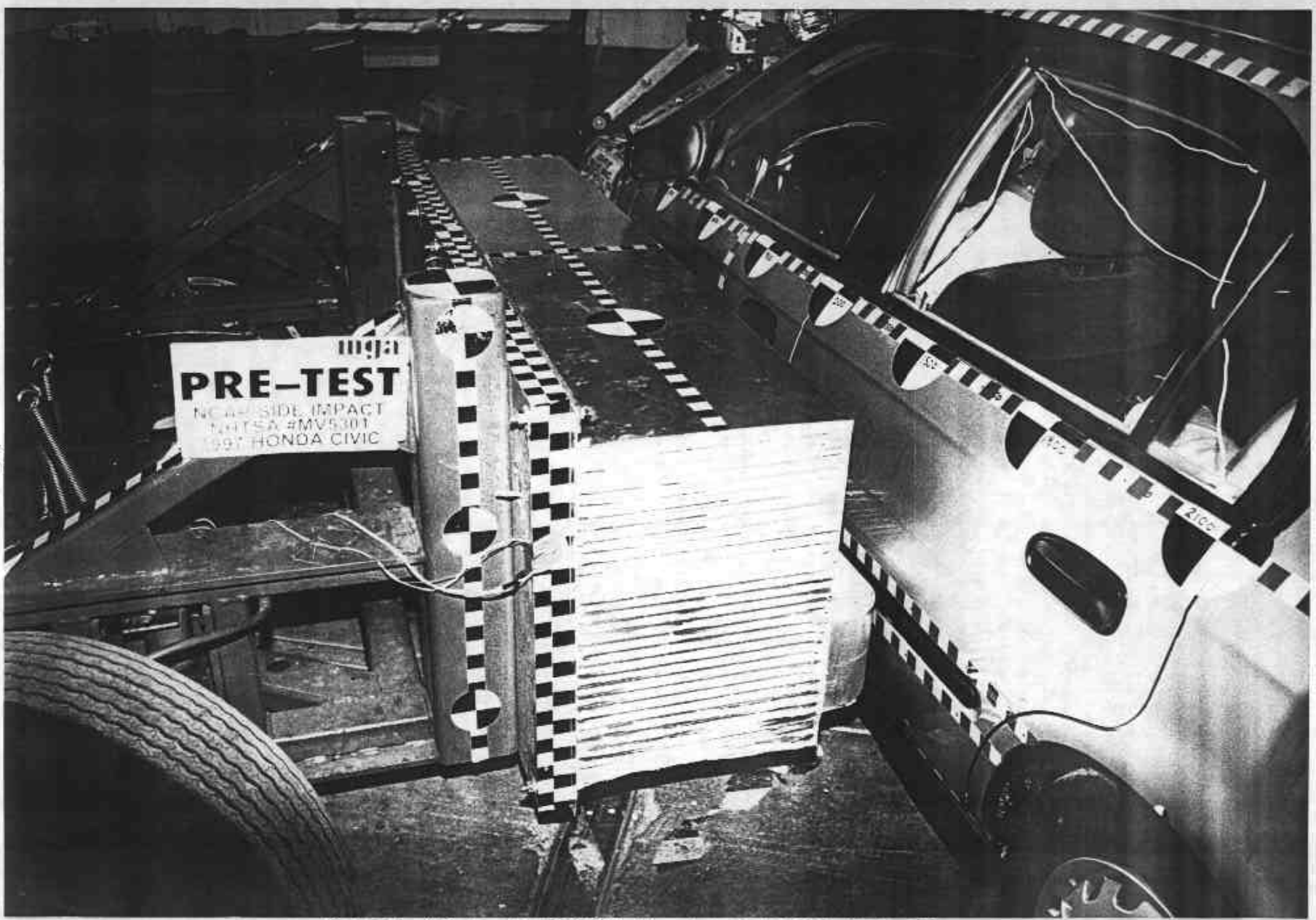


Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (right side)

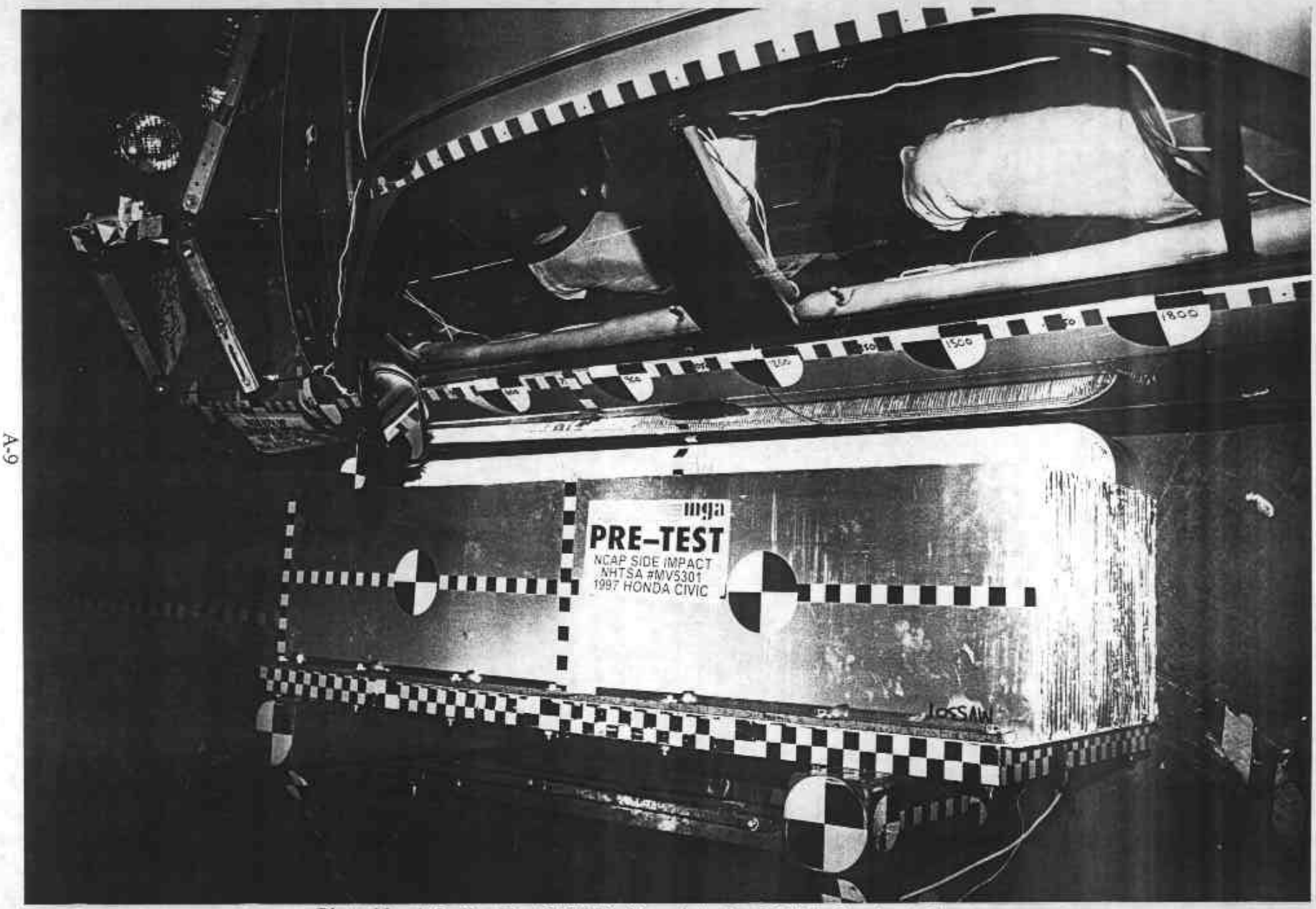


Photo No. A-9 - Pre-Test MDB Positioned Against Vehicle Overhead View

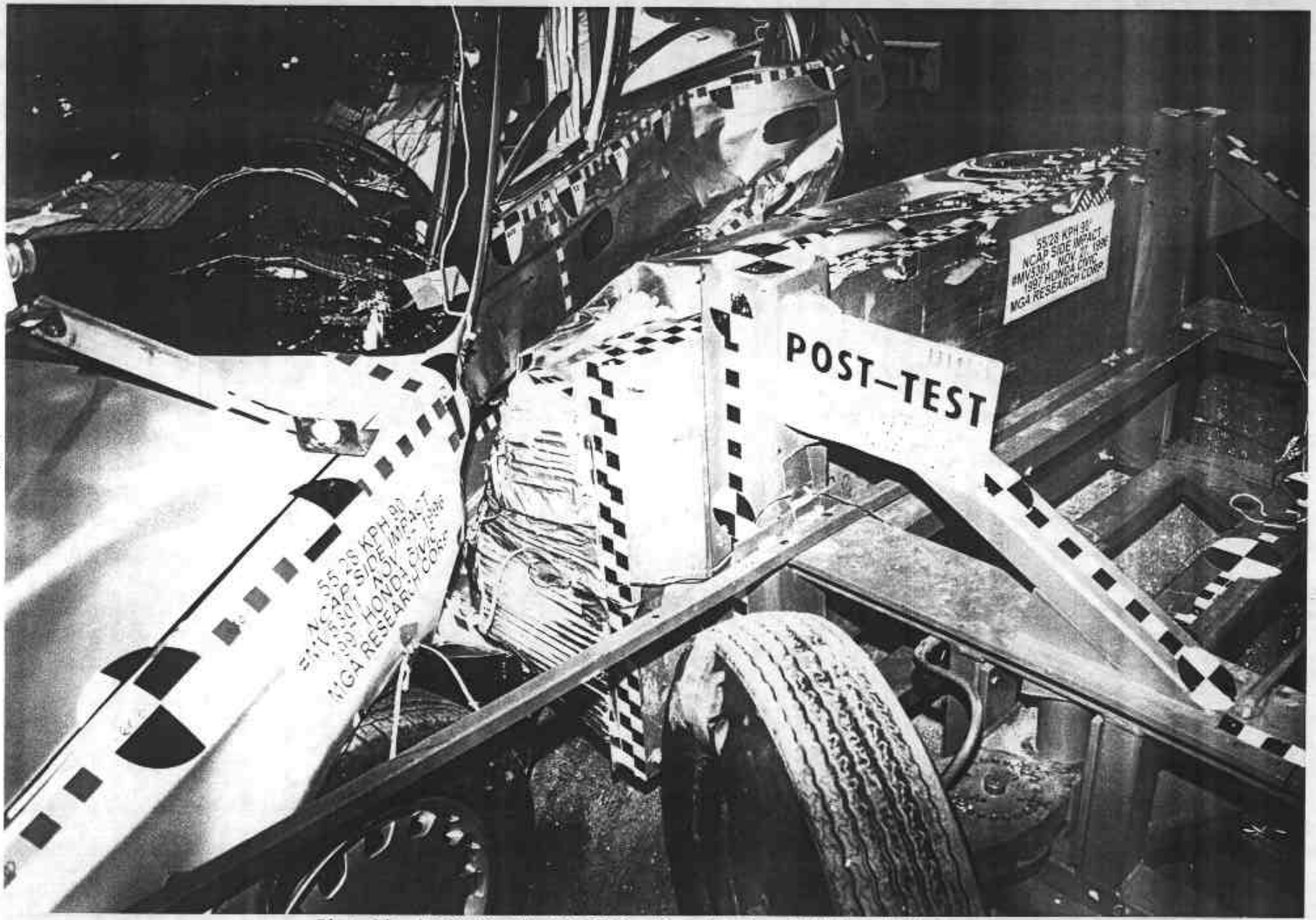


Photo No. A-10 - Post-Test MDB Positioned Against Vehicle (left side)

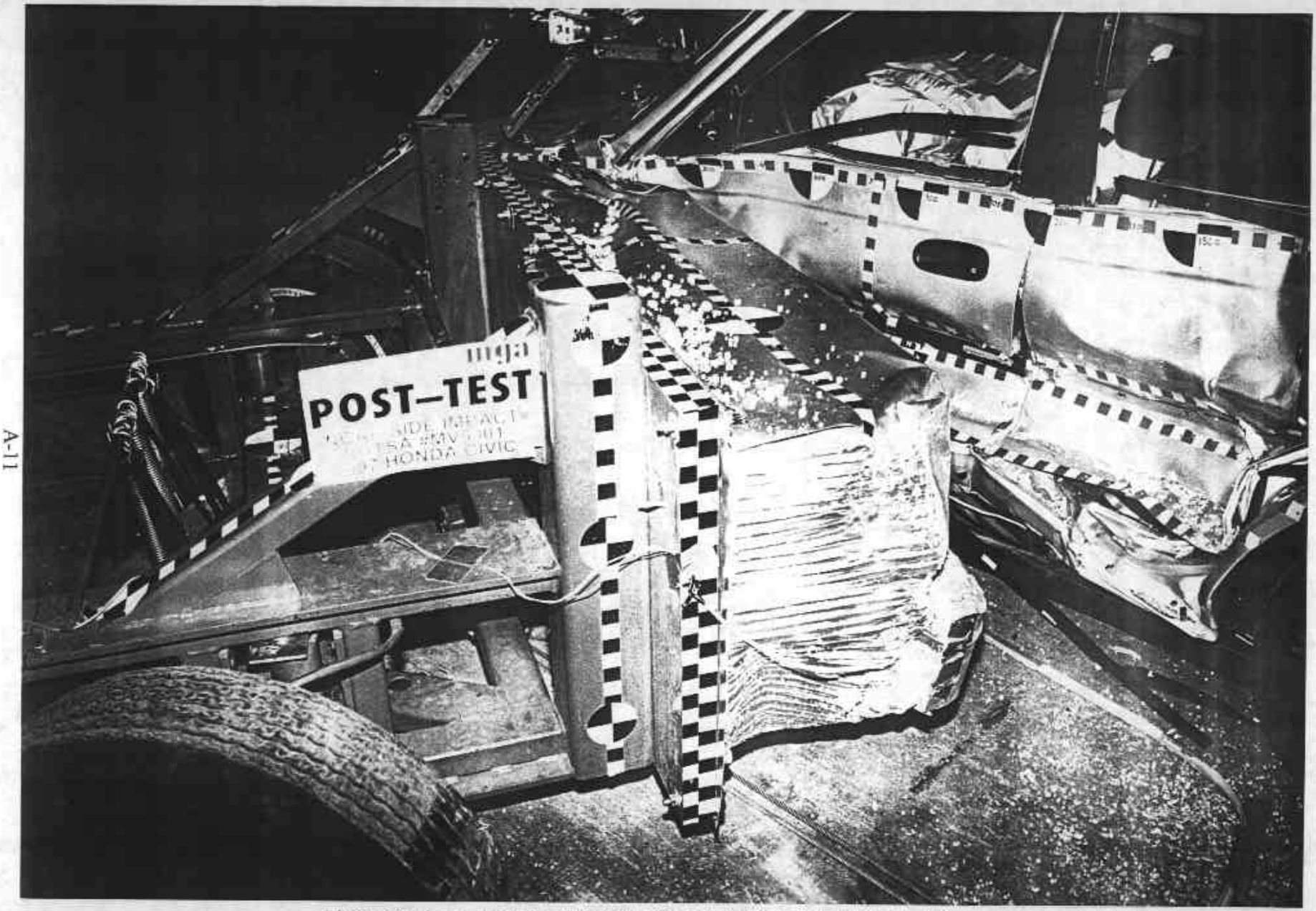


Photo No. A-11 - Post-Test MDB Positioned Against Vehicle (right side)

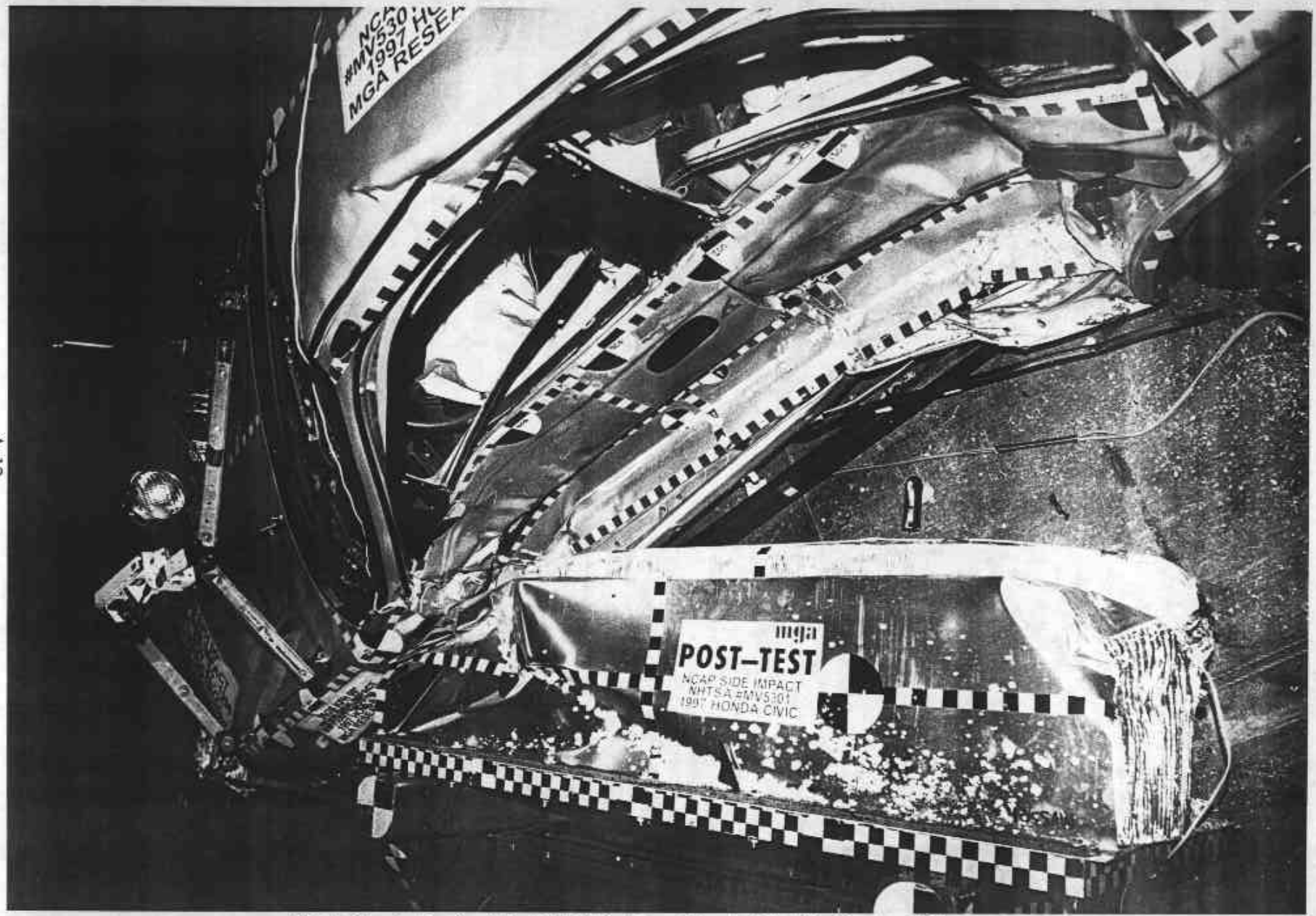


Photo No. A-12 - Post-Test MDB Positioned Against Vehicle Overhead View

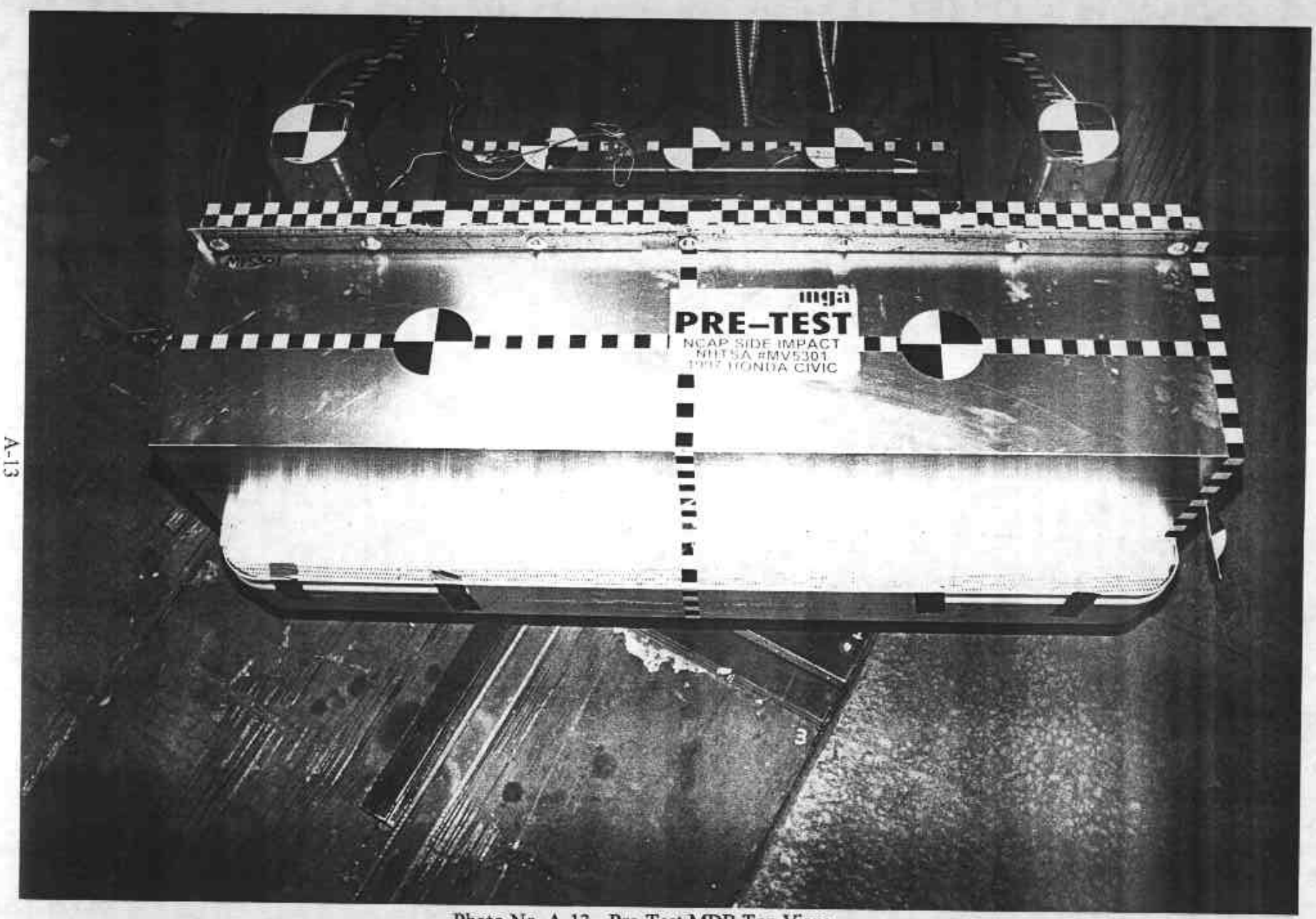


Photo No. A-13 - Pre-Test MDB Top View

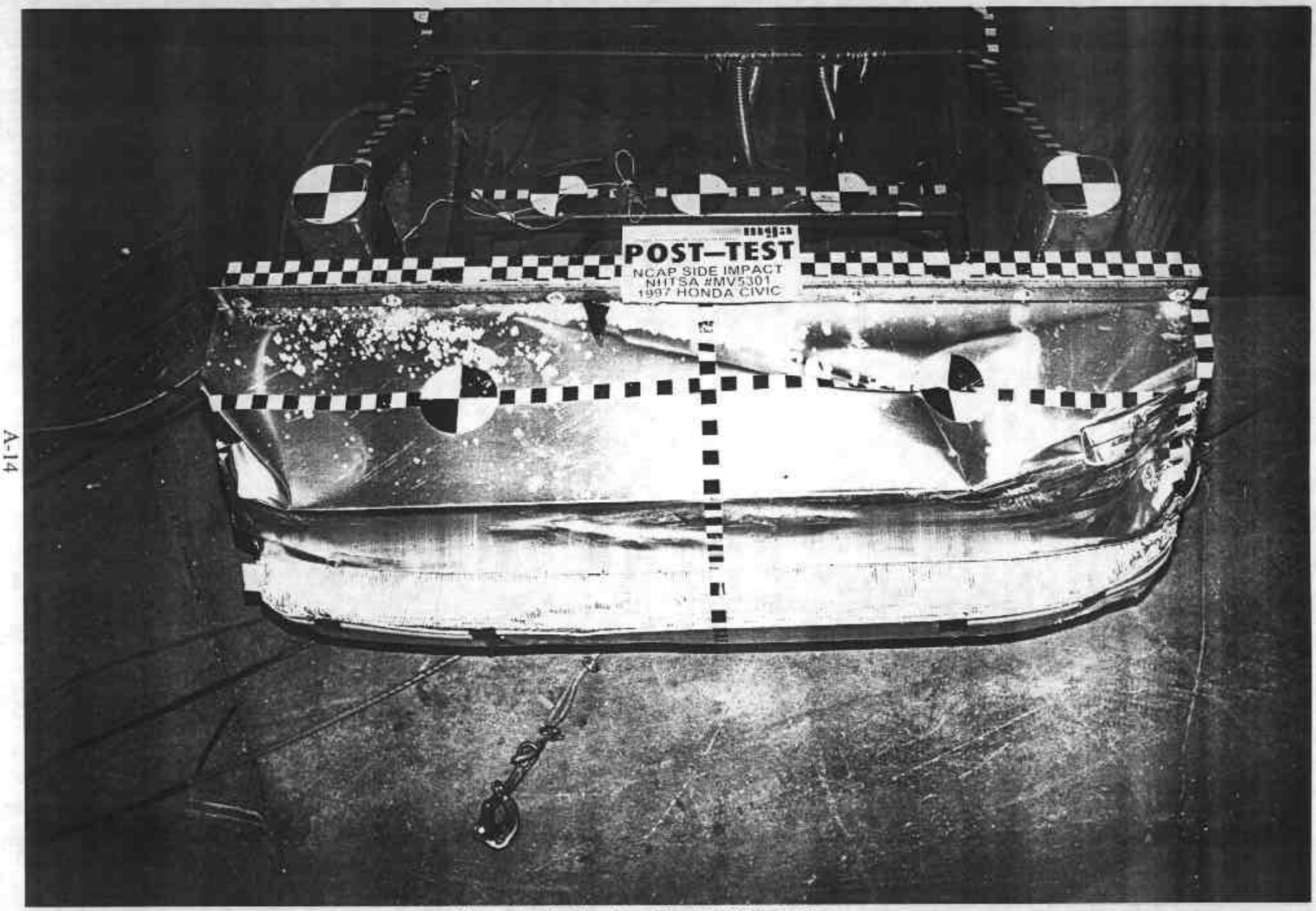


Photo No. A-14 - Post-Test MDB Top View

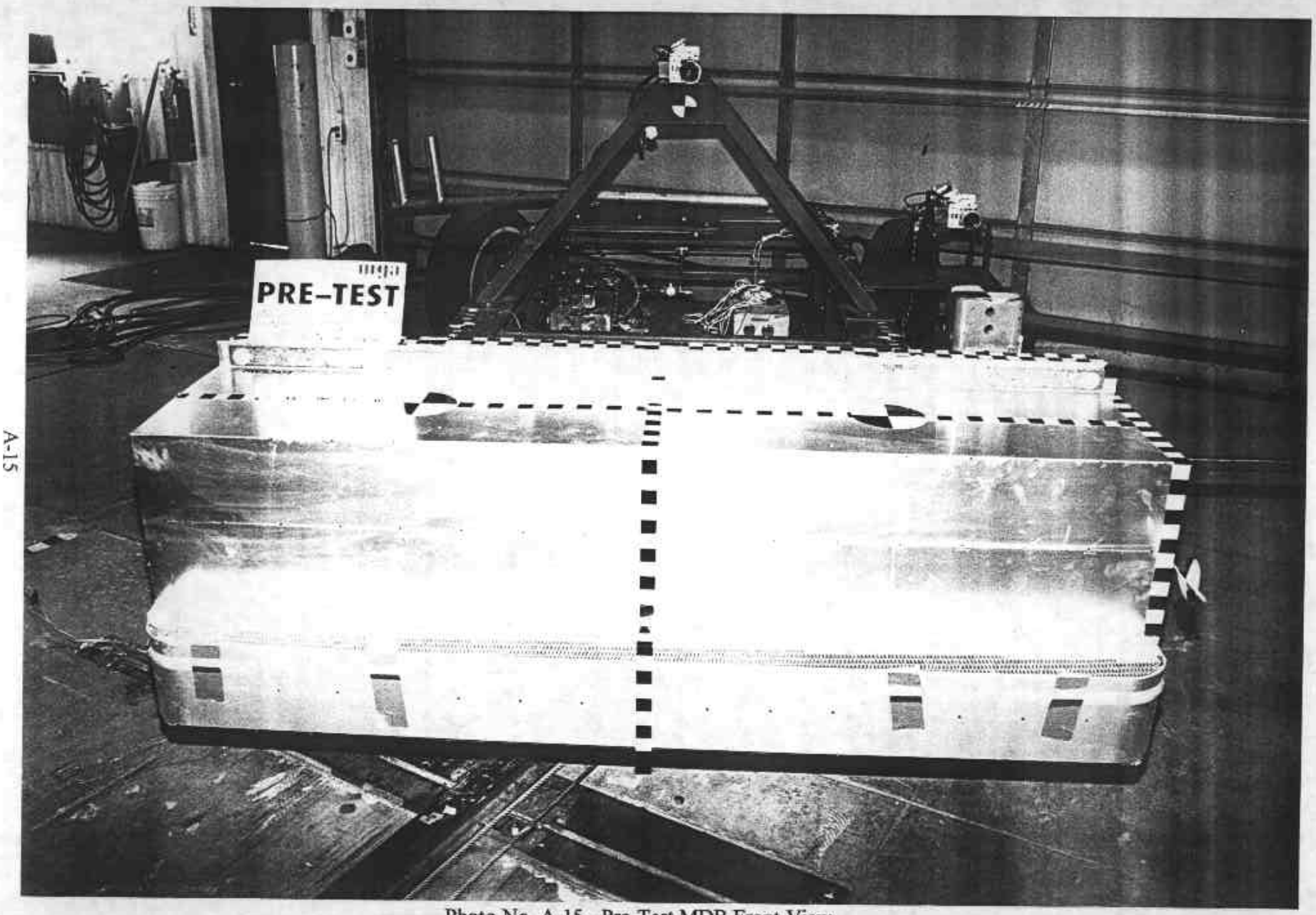


Photo No. A-15 - Pre-Test MDB Front View

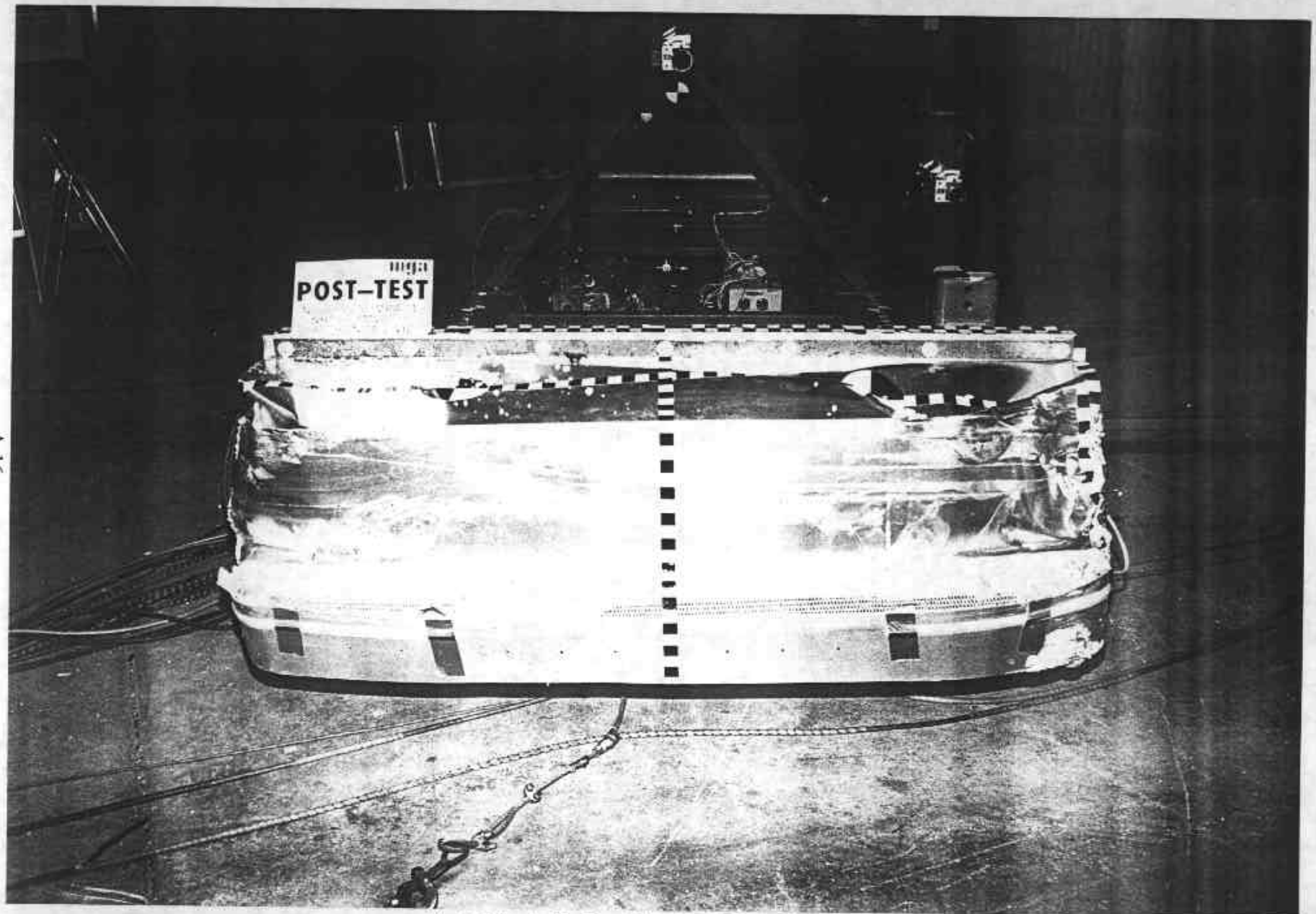


Photo No. A-16 - Post-Test MDB Front View

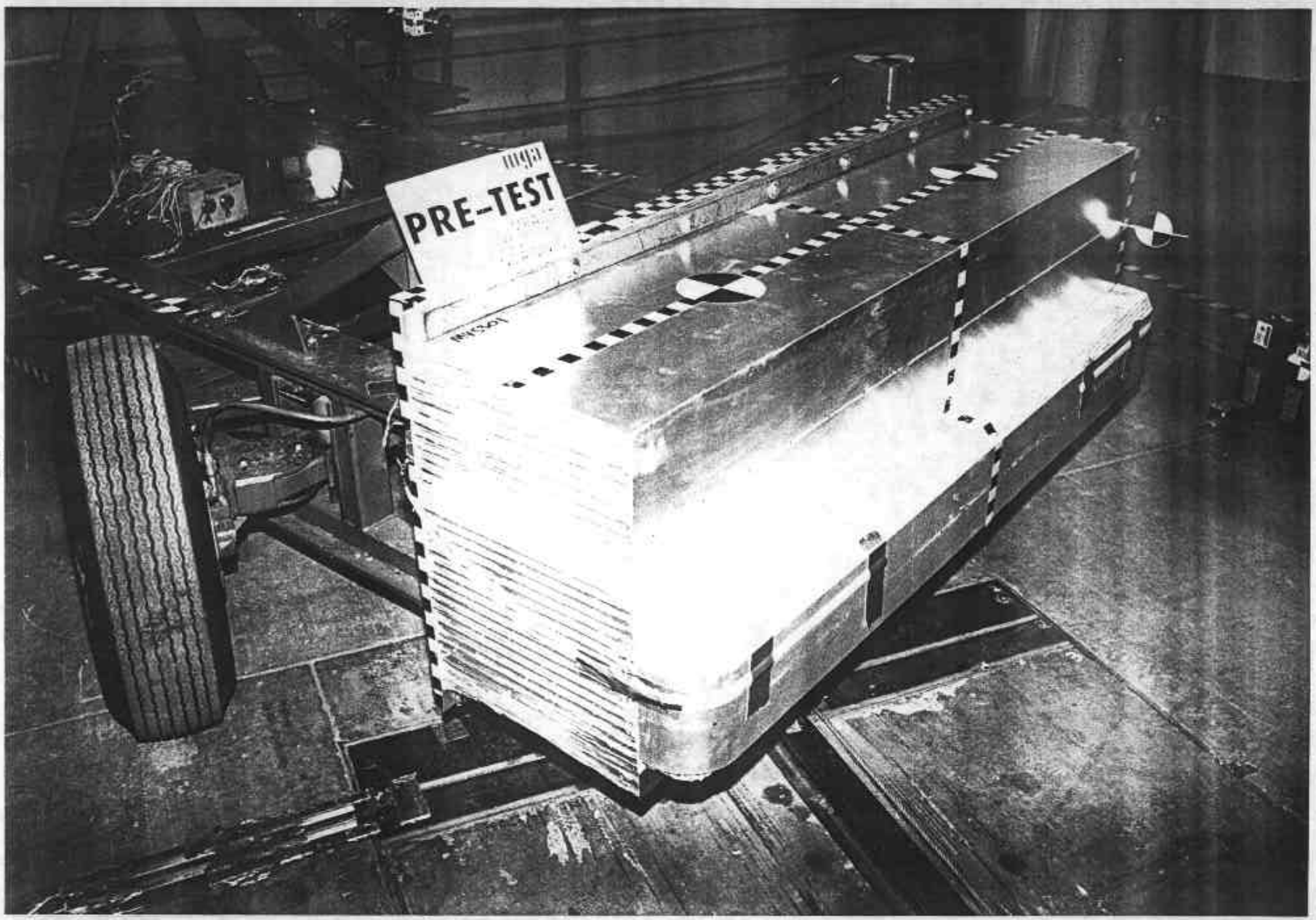


Photo No. A-17 - Pre-Test MDB Right Side View

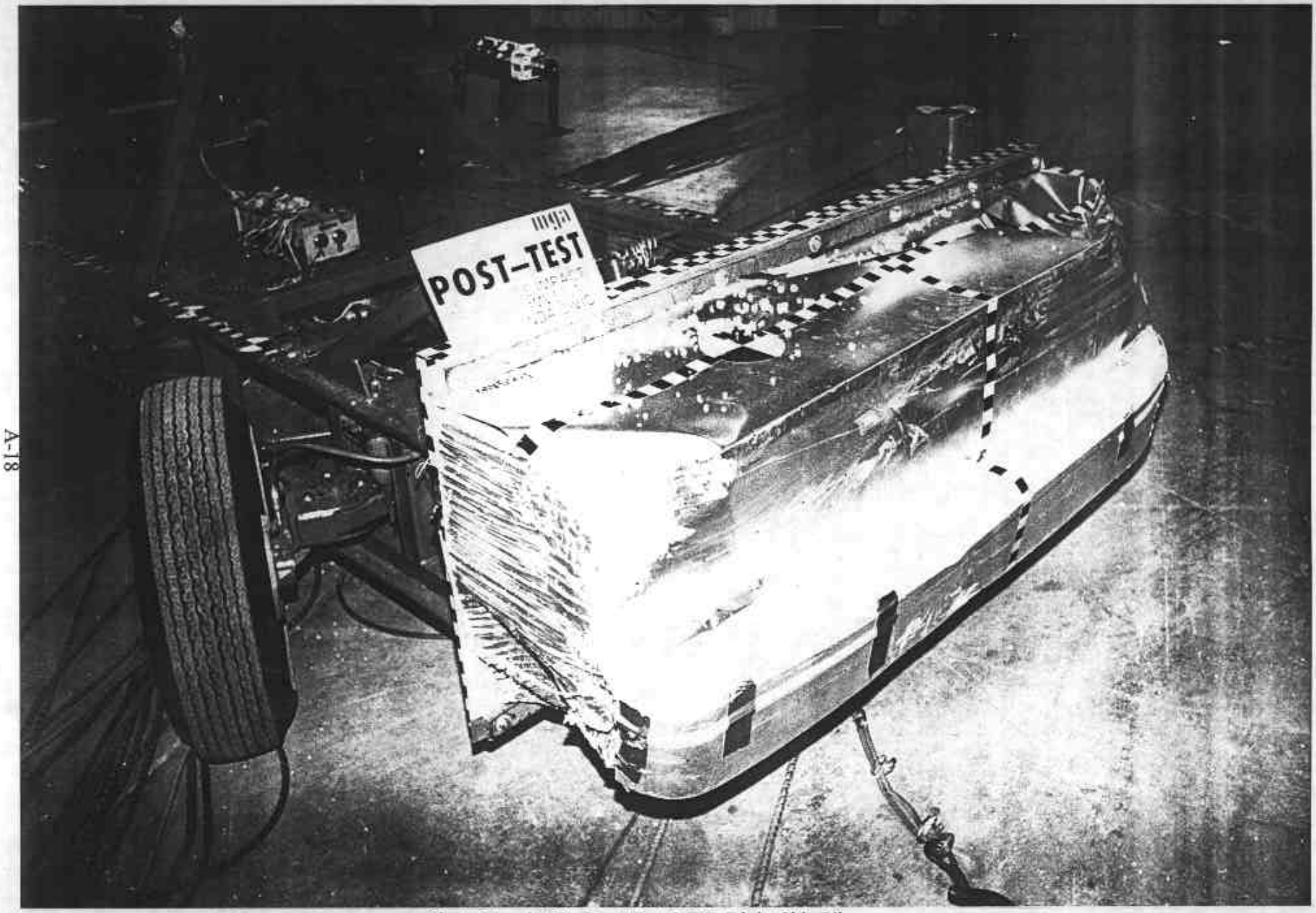


Photo No. A-18 - Post-Test MDB Right Side View

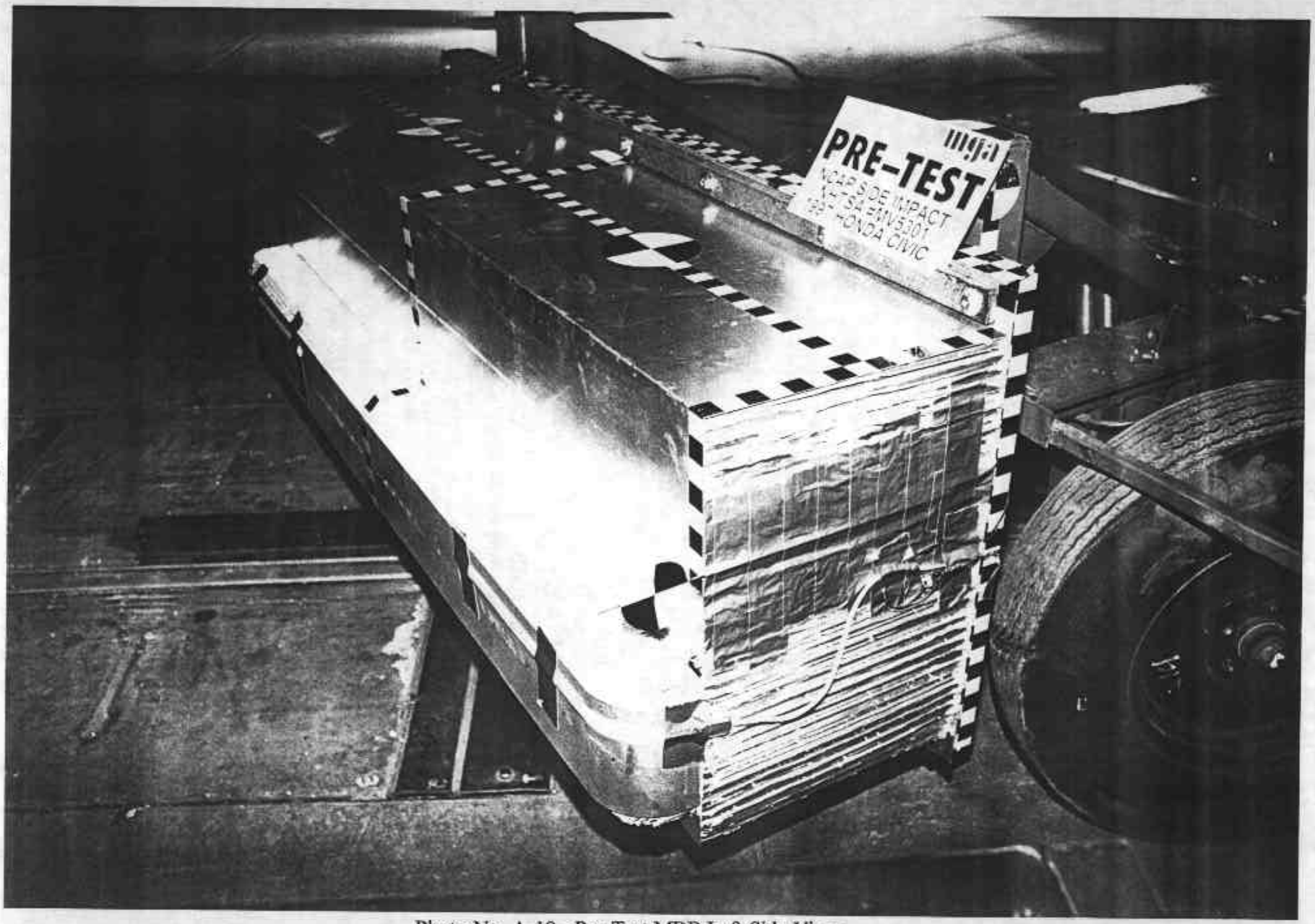


Photo No. A-19 - Pre-Test MDB Left Side View

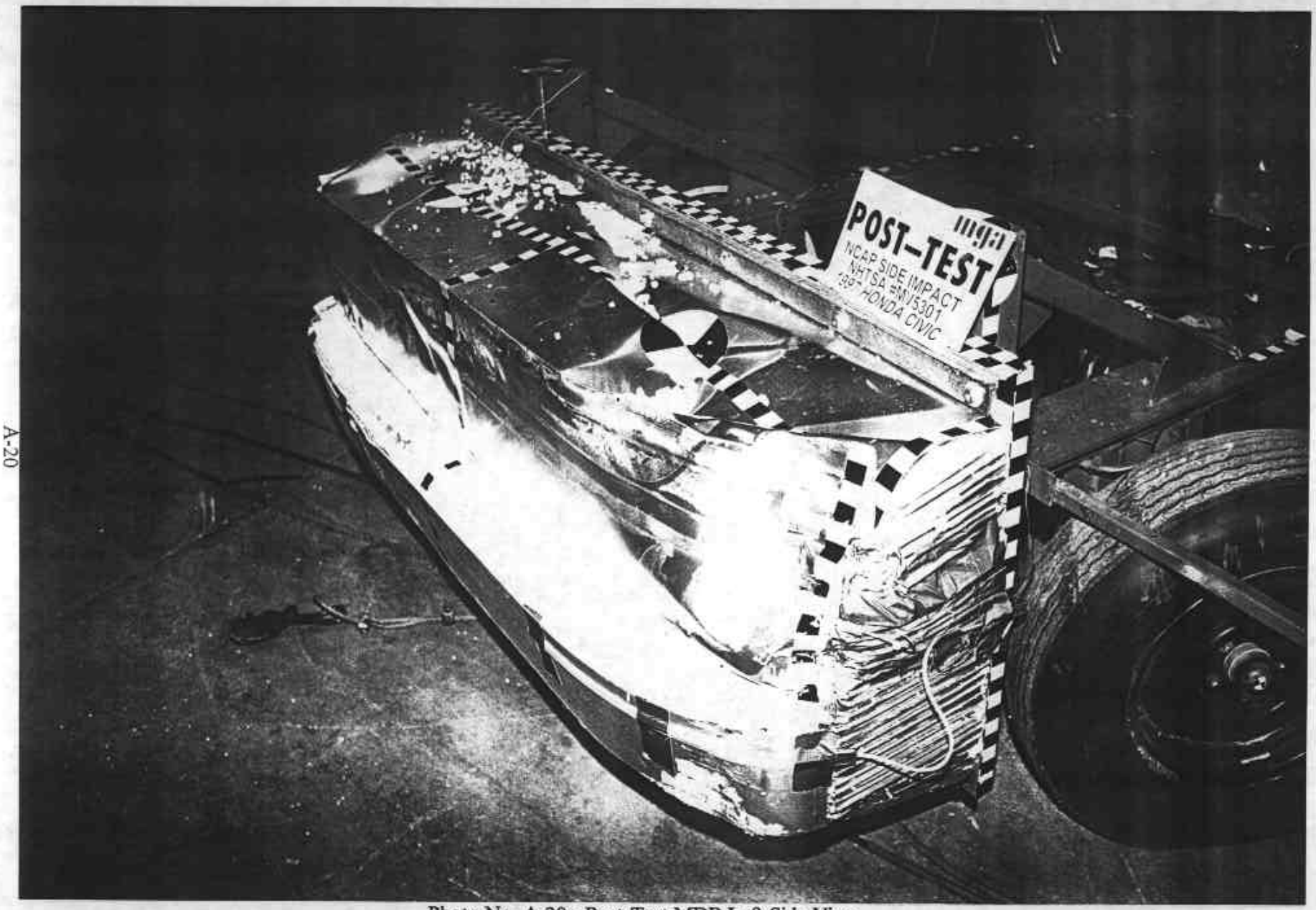


Photo No. A-20 - Post-Test MDB Left Side View

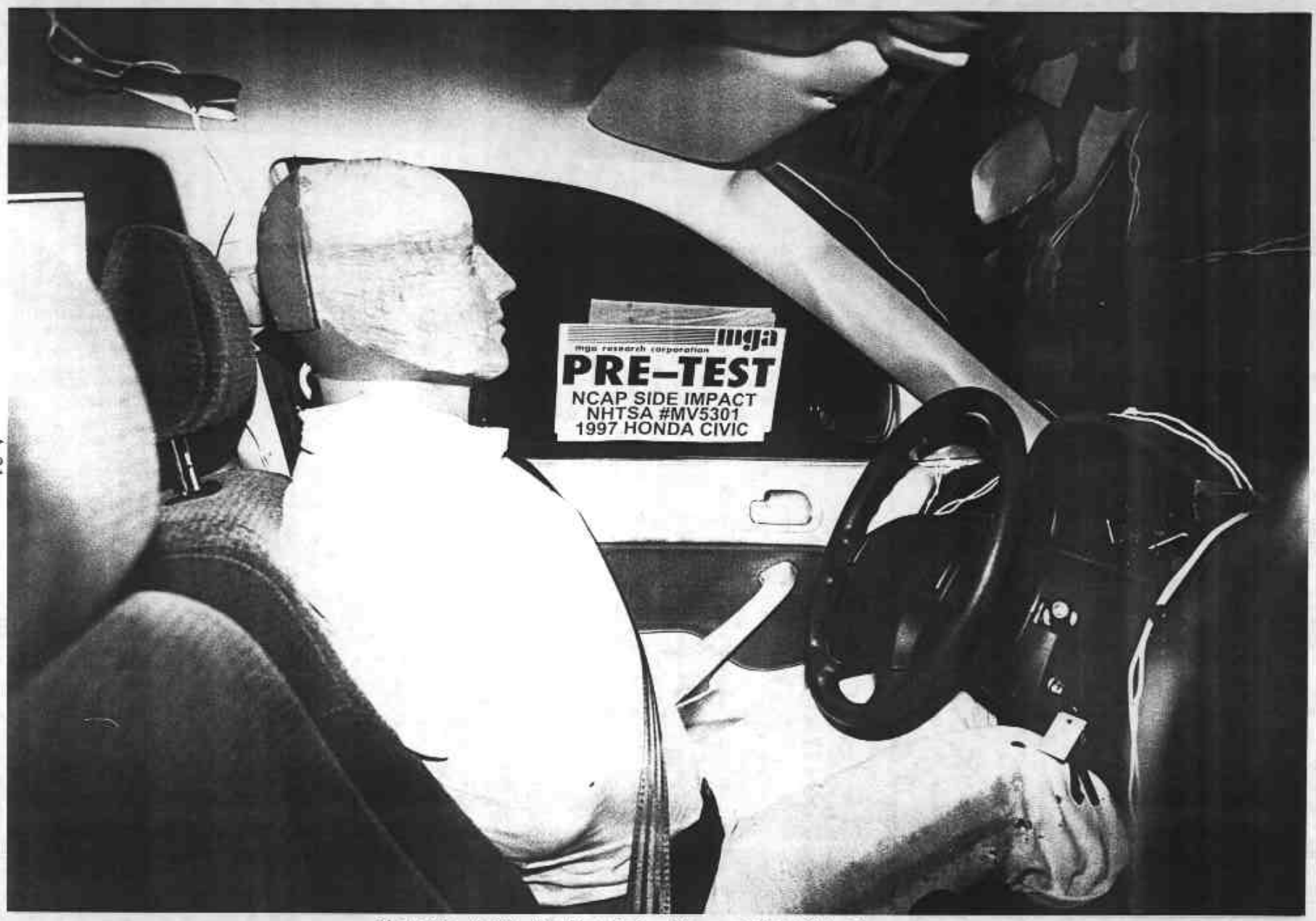


Photo No. A-21 - Pre-Test Driver Dummy Right Side View

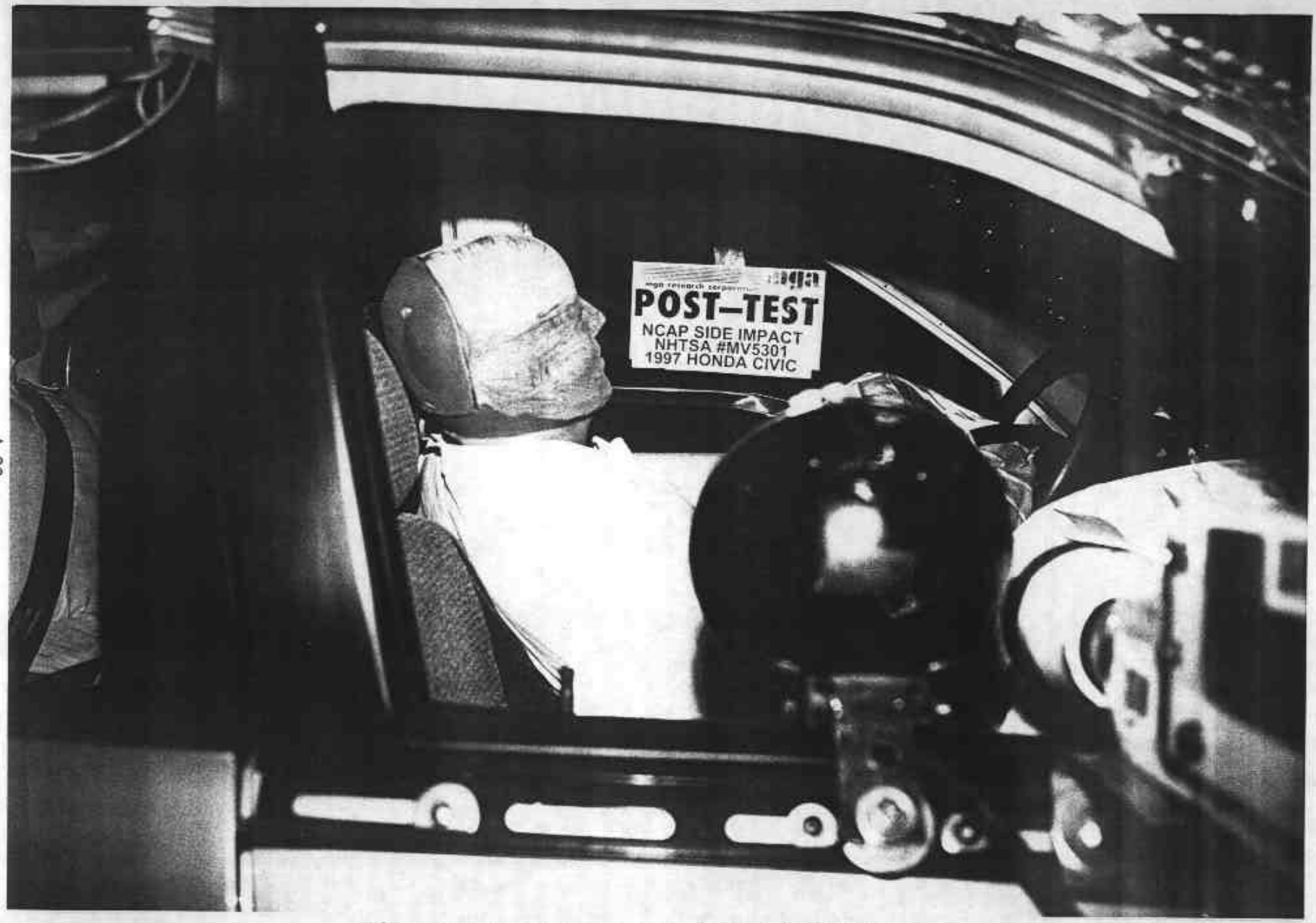


Photo No. A-22 - Post-Test Driver Dummy Right Side View

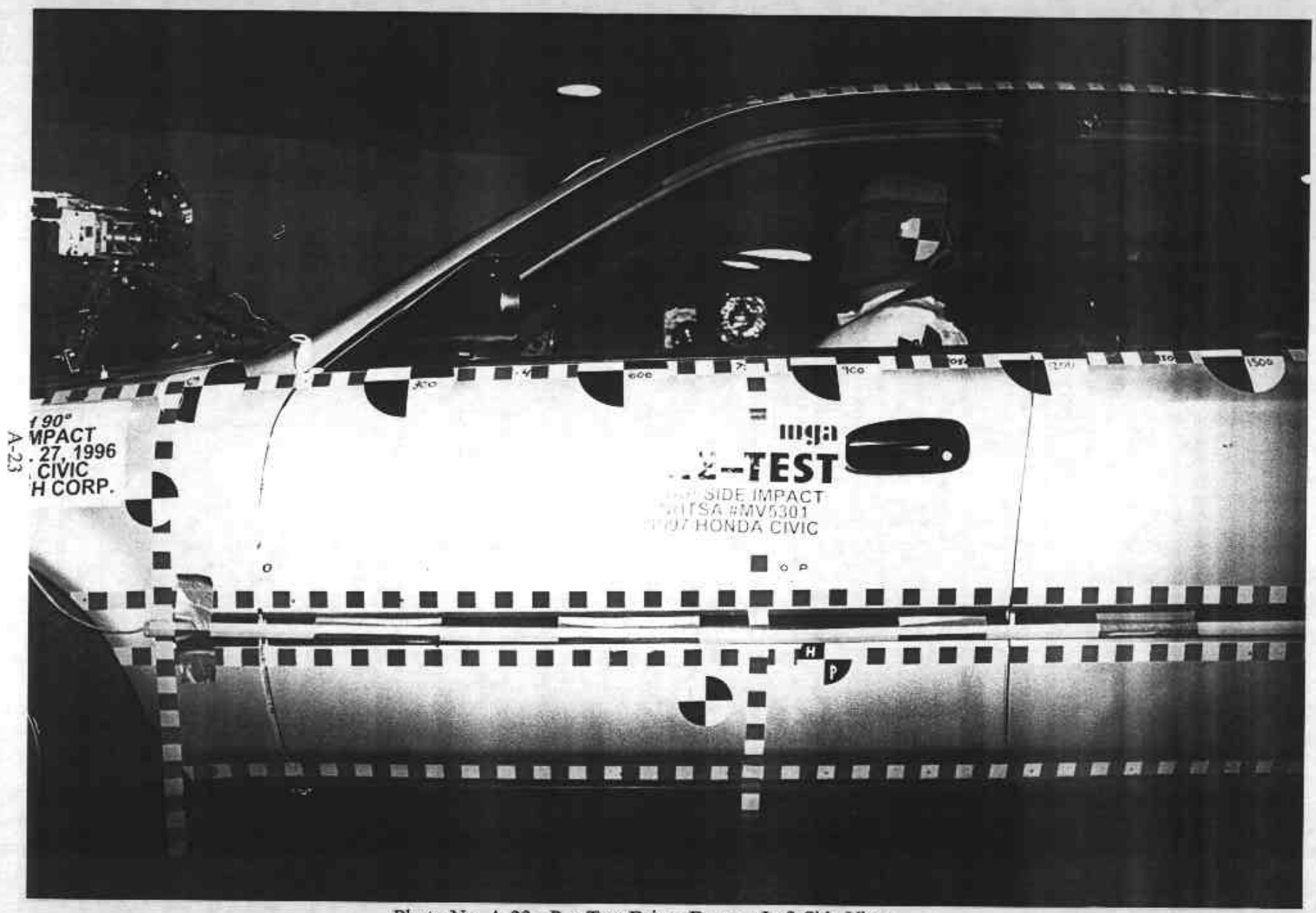
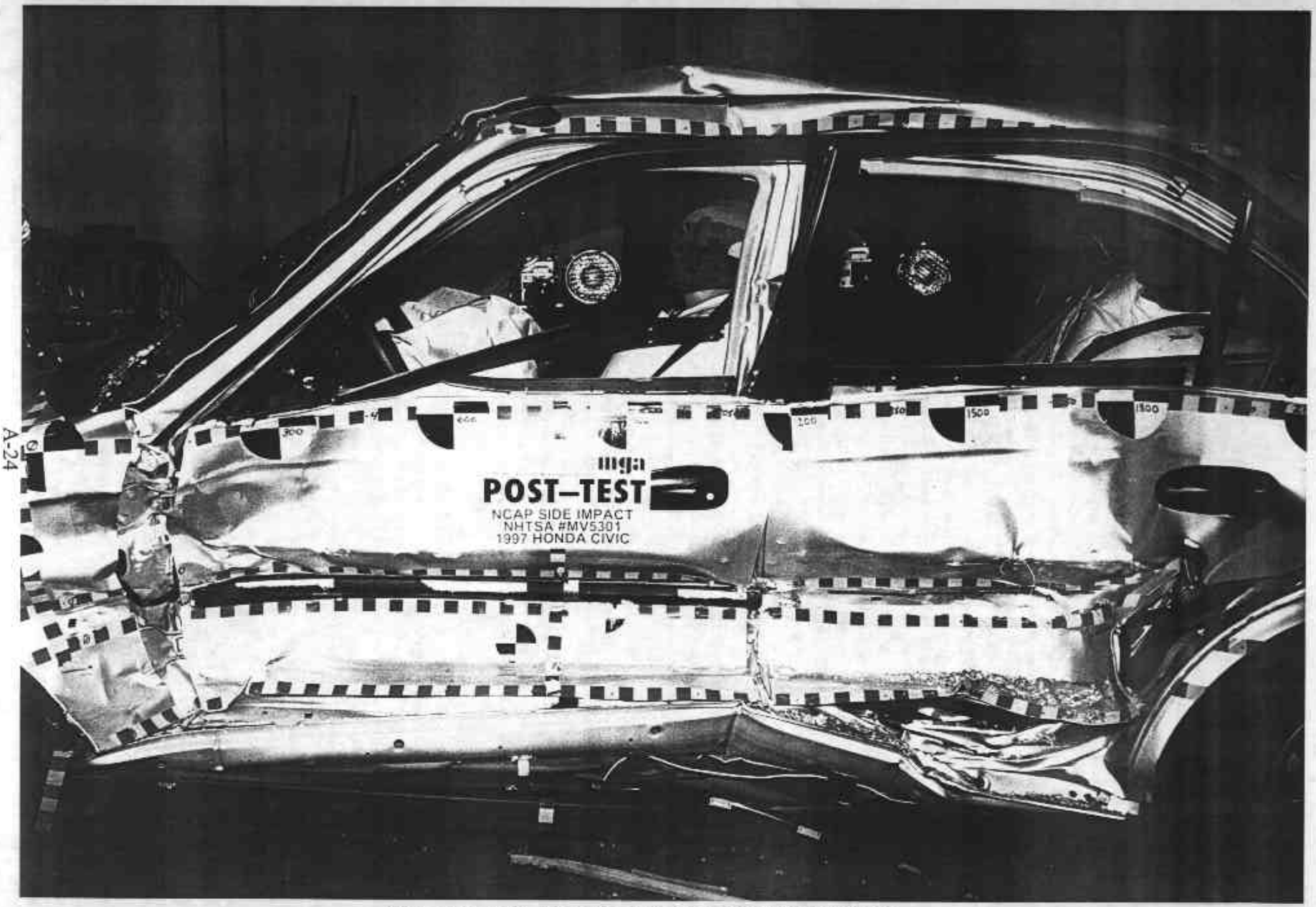


Photo No. A-23 - Pre-Test Driver Dummy Left Side View



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

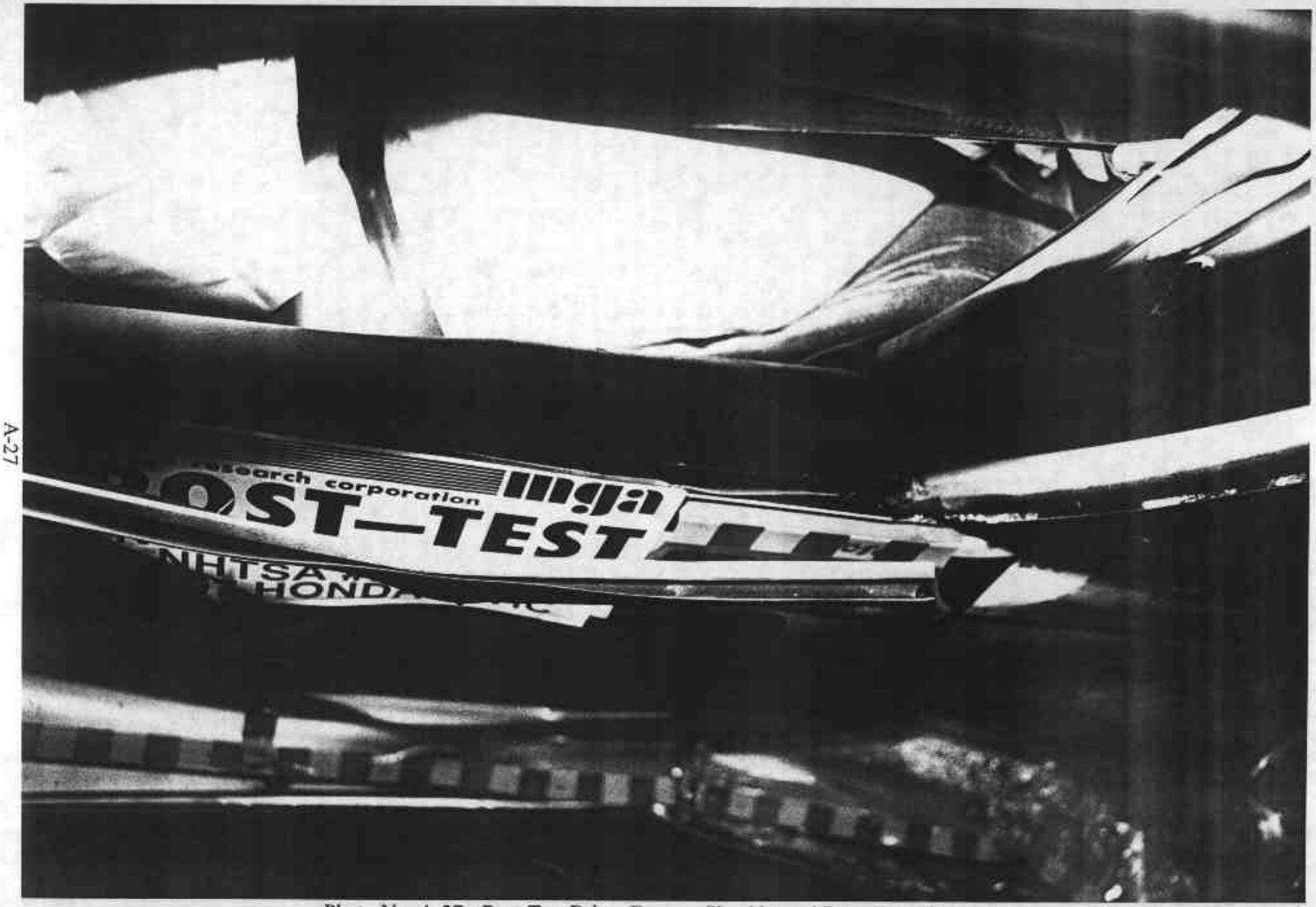


Photo No. A-27 - Post-Test Driver Dummy Shoulder and Door Top View

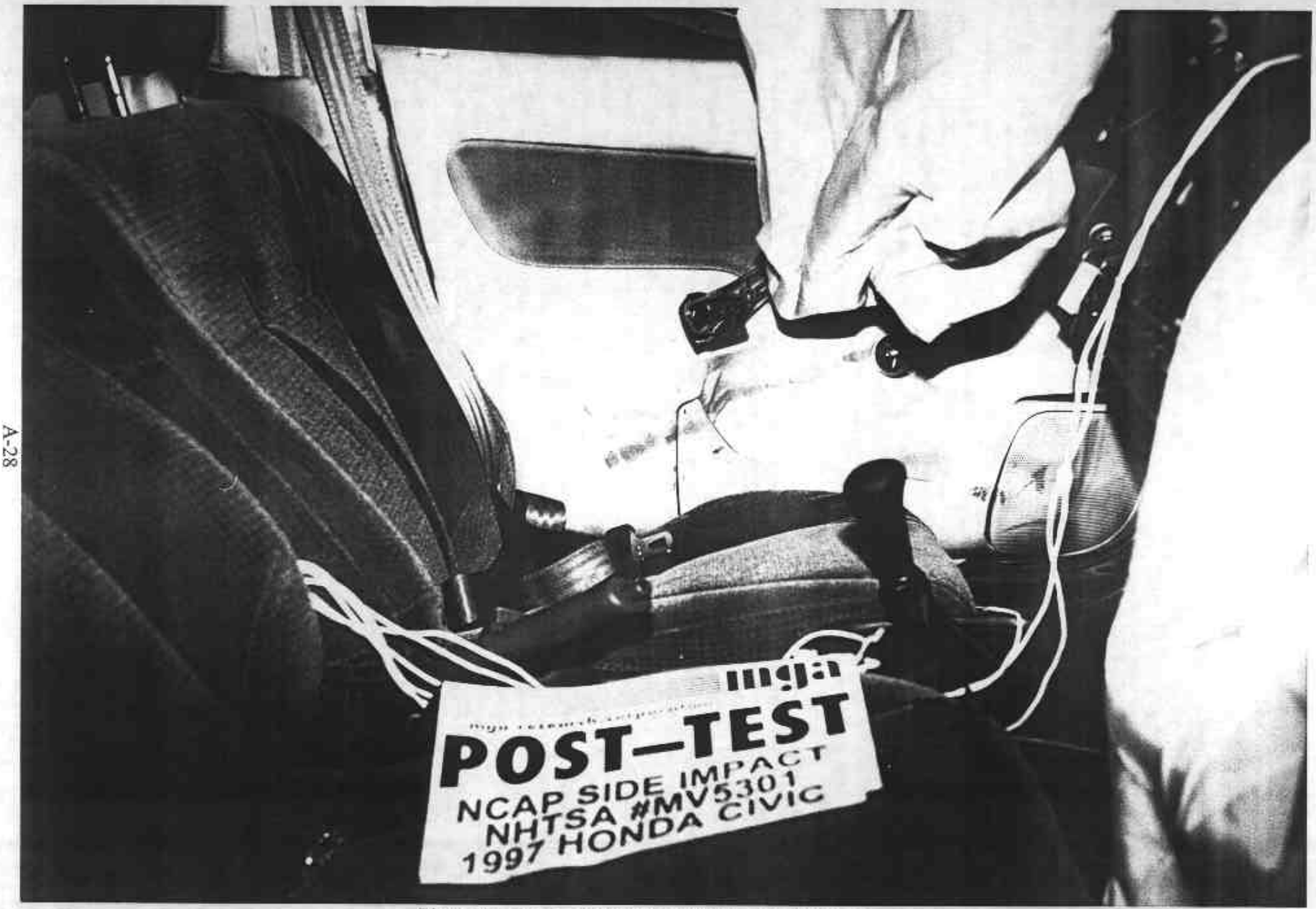


Photo No. A-28 - Post-Test Driver Dummy Contact

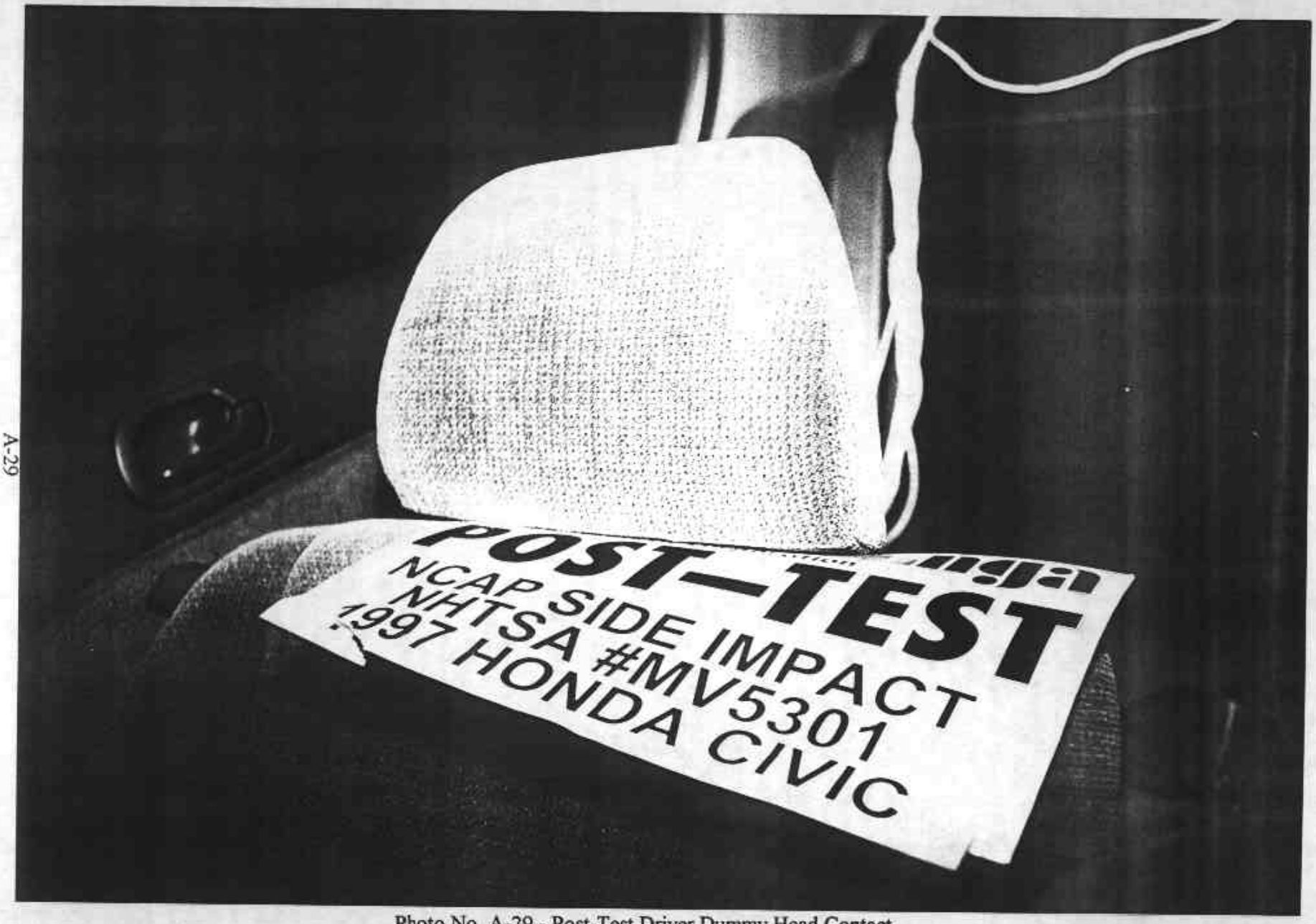


Photo No. A-29 - Post-Test Driver Dummy Head Contact

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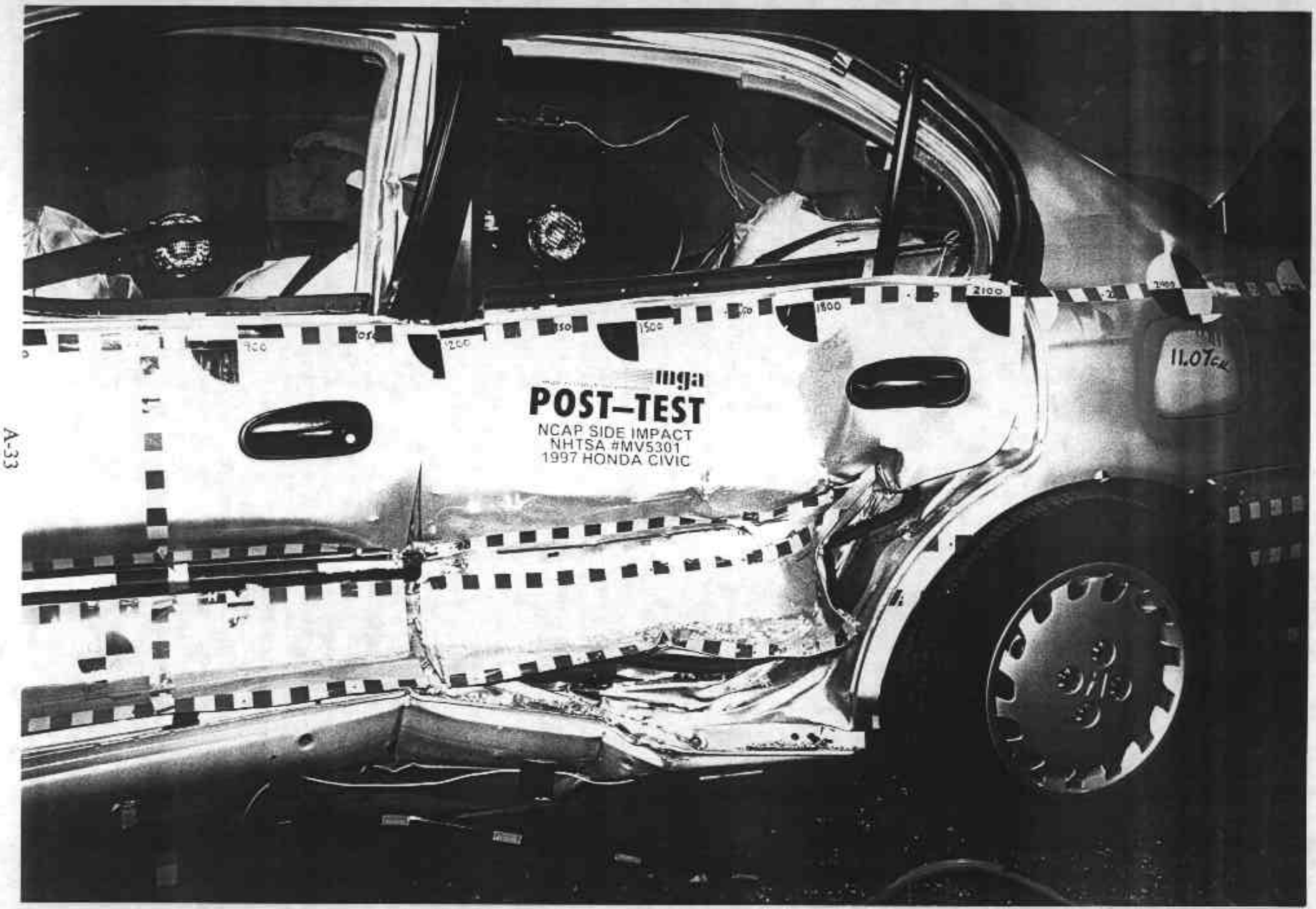
Photo No. A-30 - Pre-Test Passenger Dummy Right Side View

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

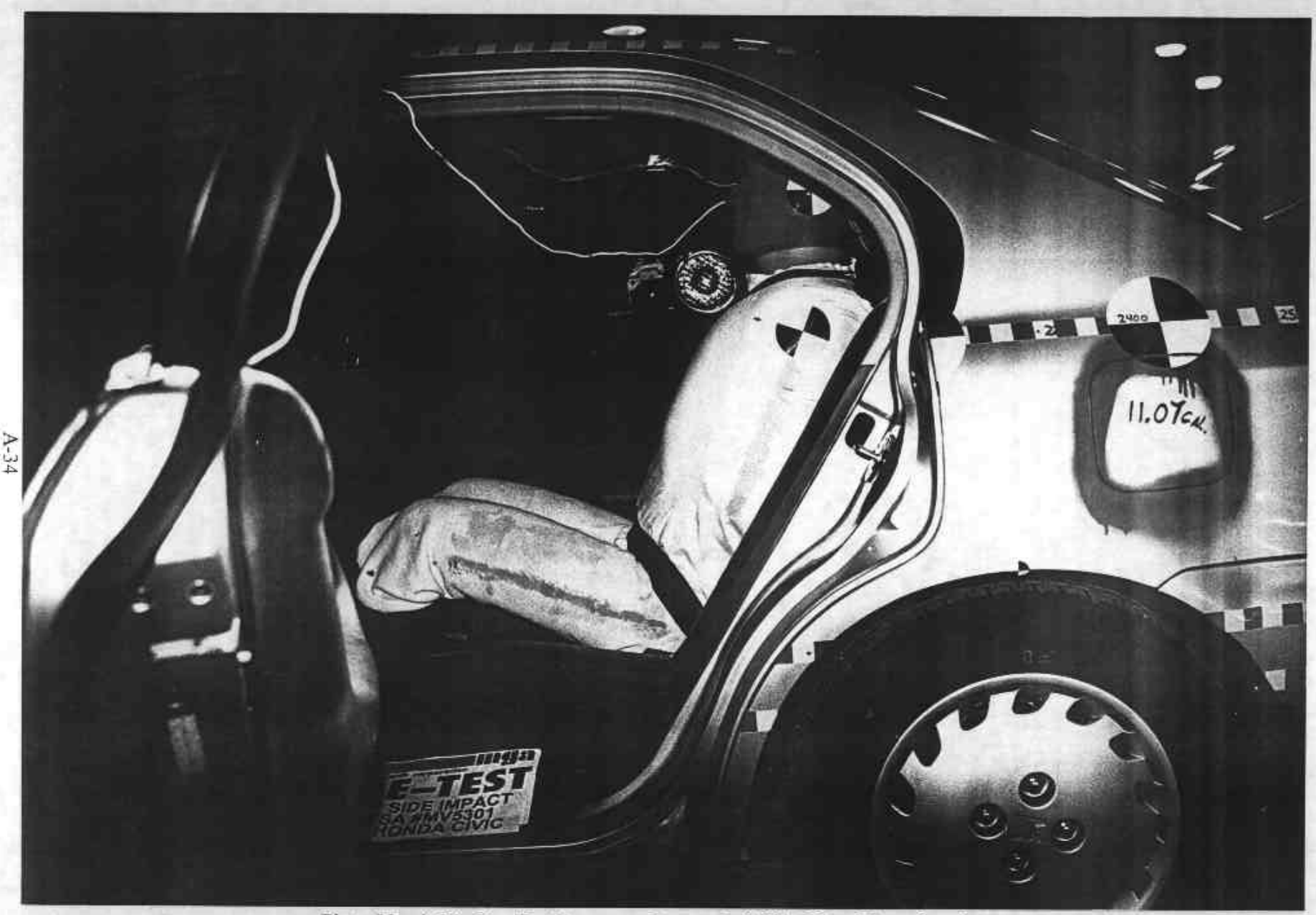


Photo No. A-34 - Pre-Test Passenger Dummy Left Side View (Door Open)

A-35

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

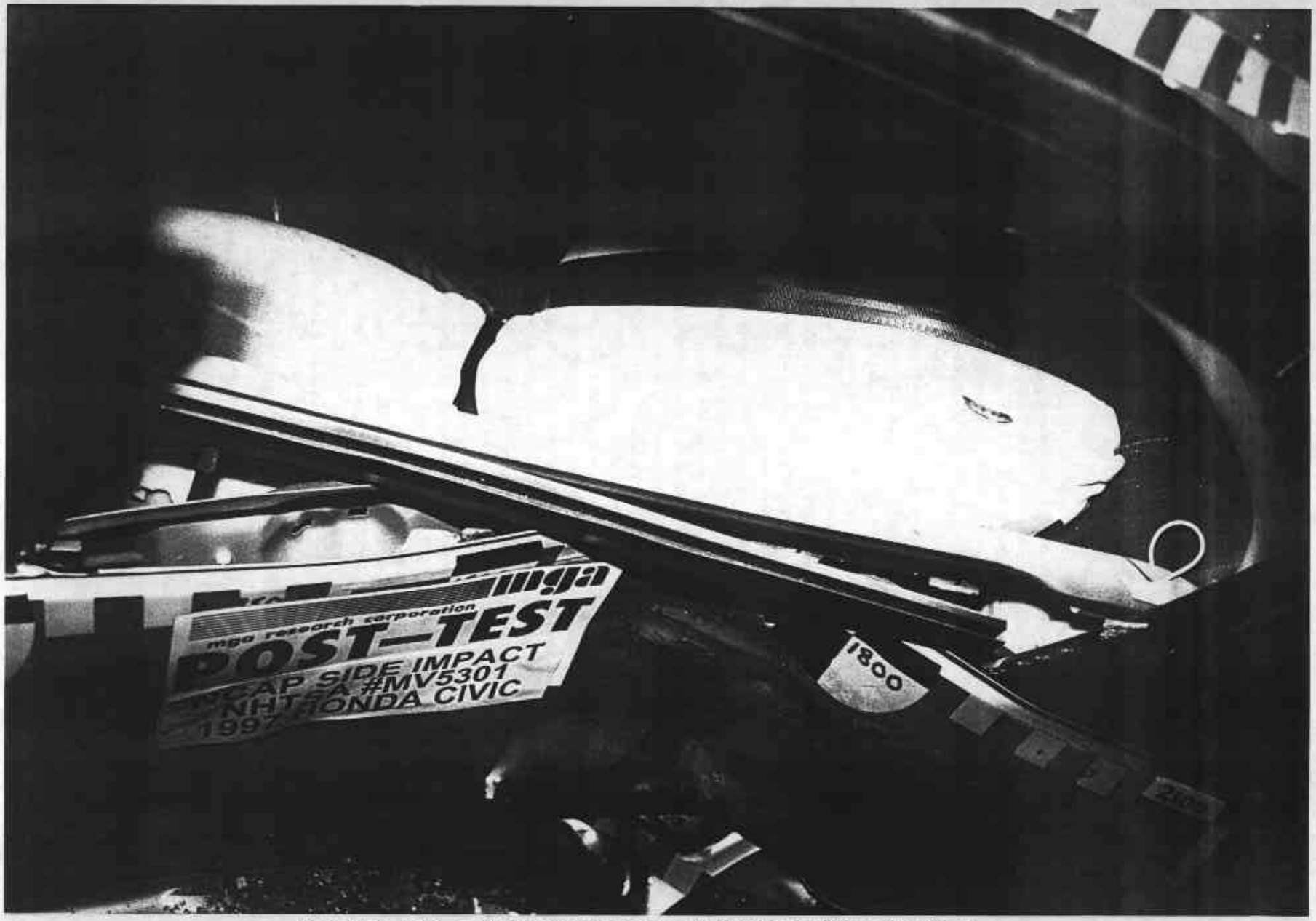


Photo No. A-36 - Post-Test Passenger Dummy Shoulder and Door Top View

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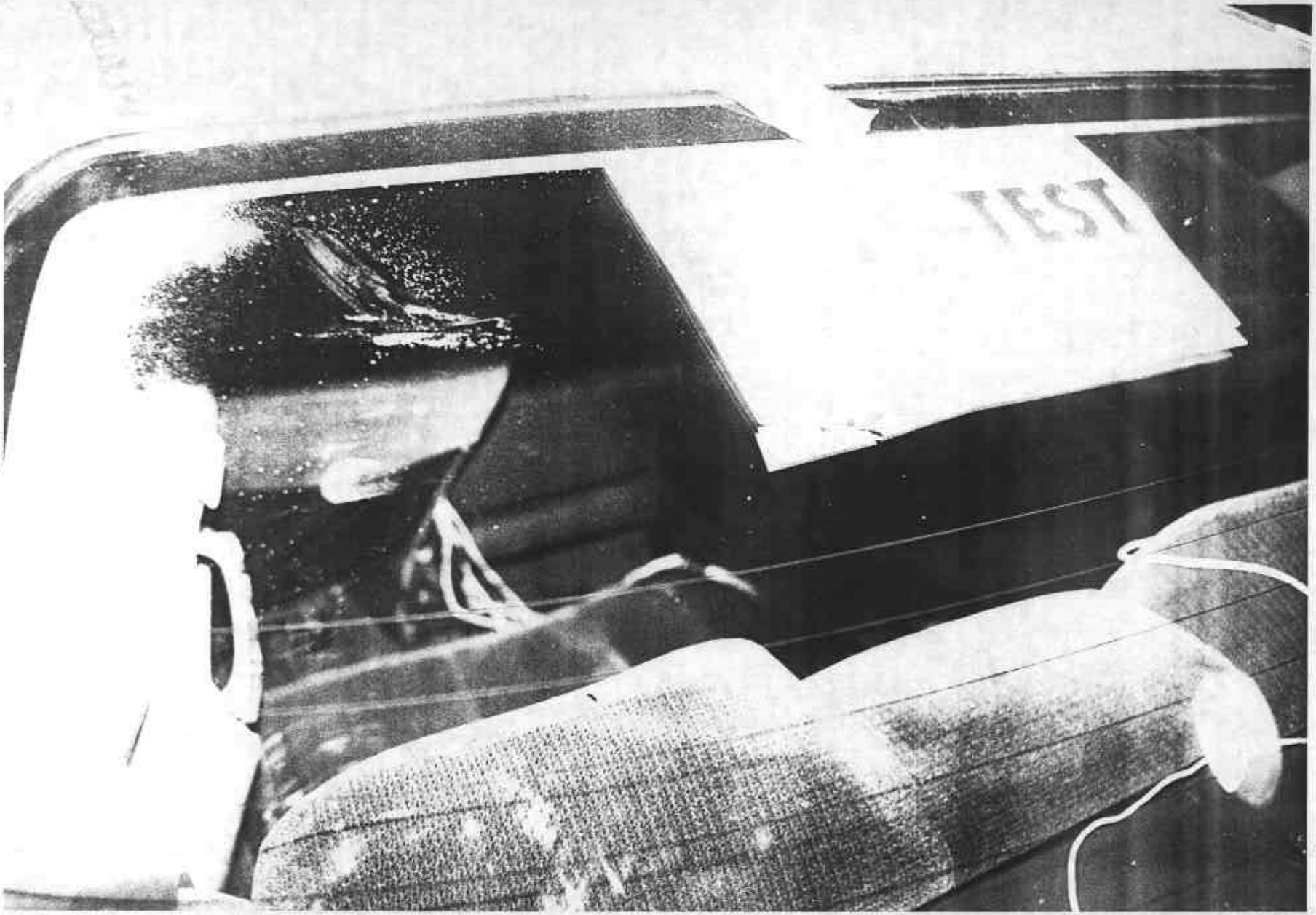
Photo No. A-37 - Post-Test Passenger Dummy Contact



A-38

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

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

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

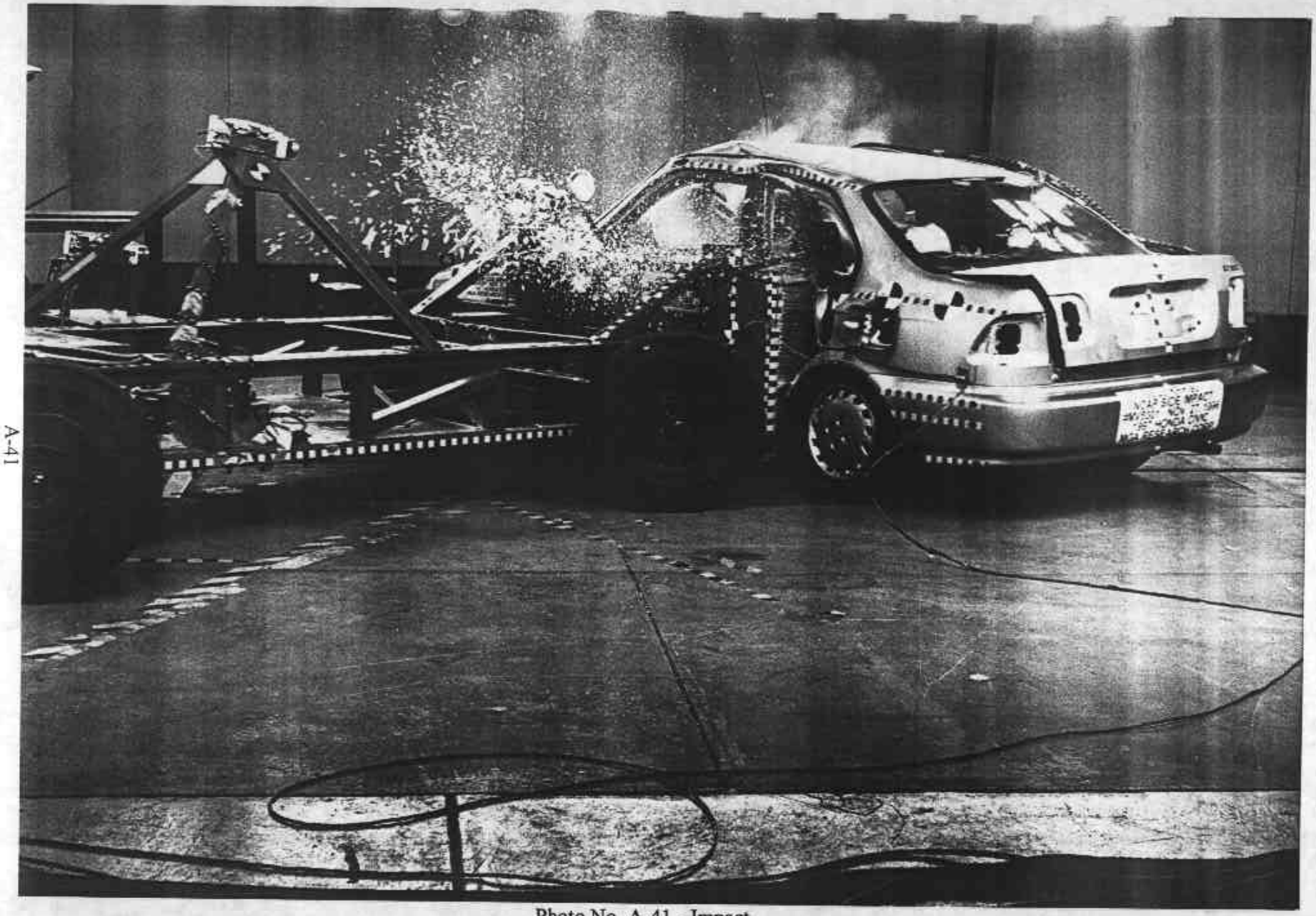
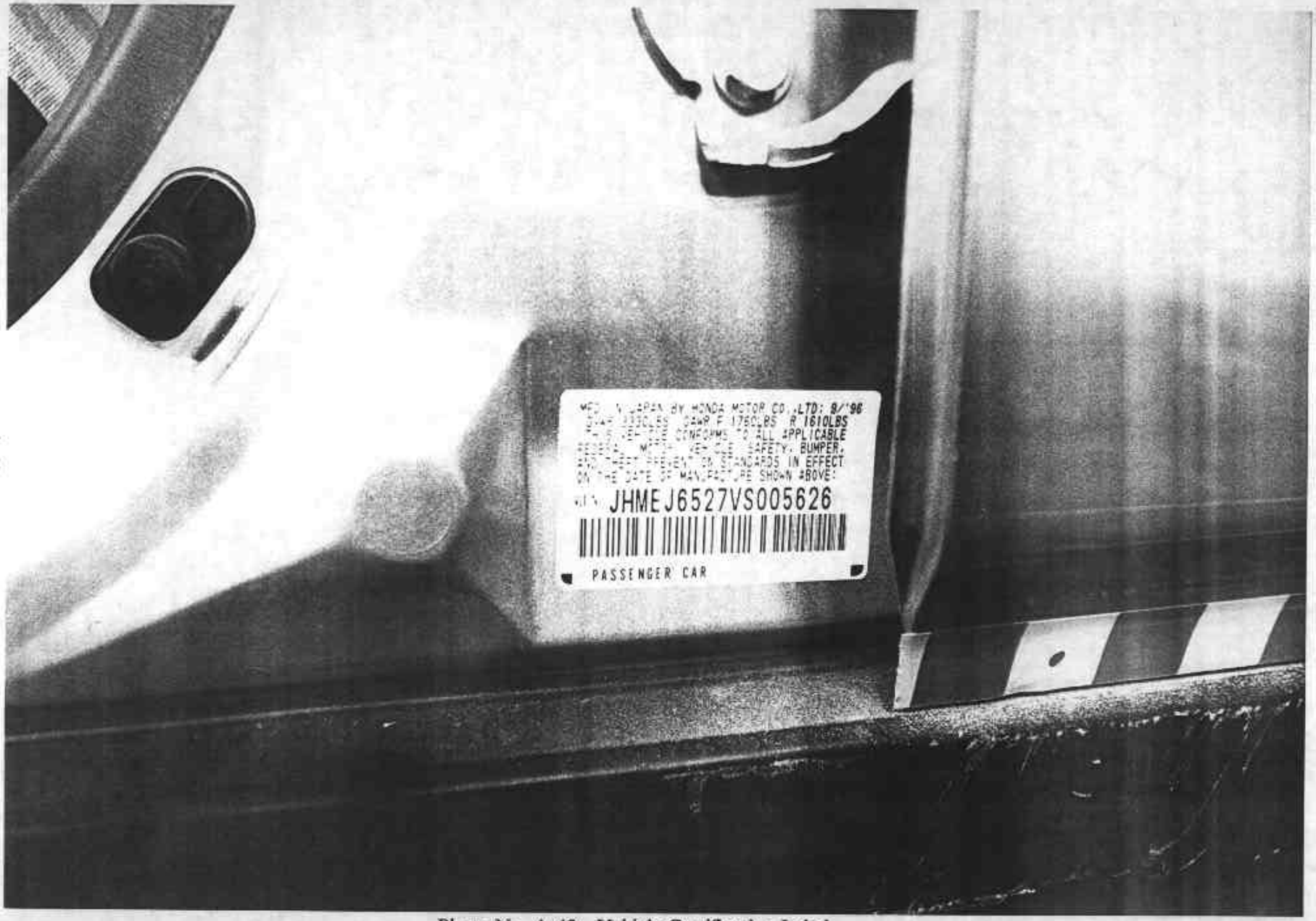
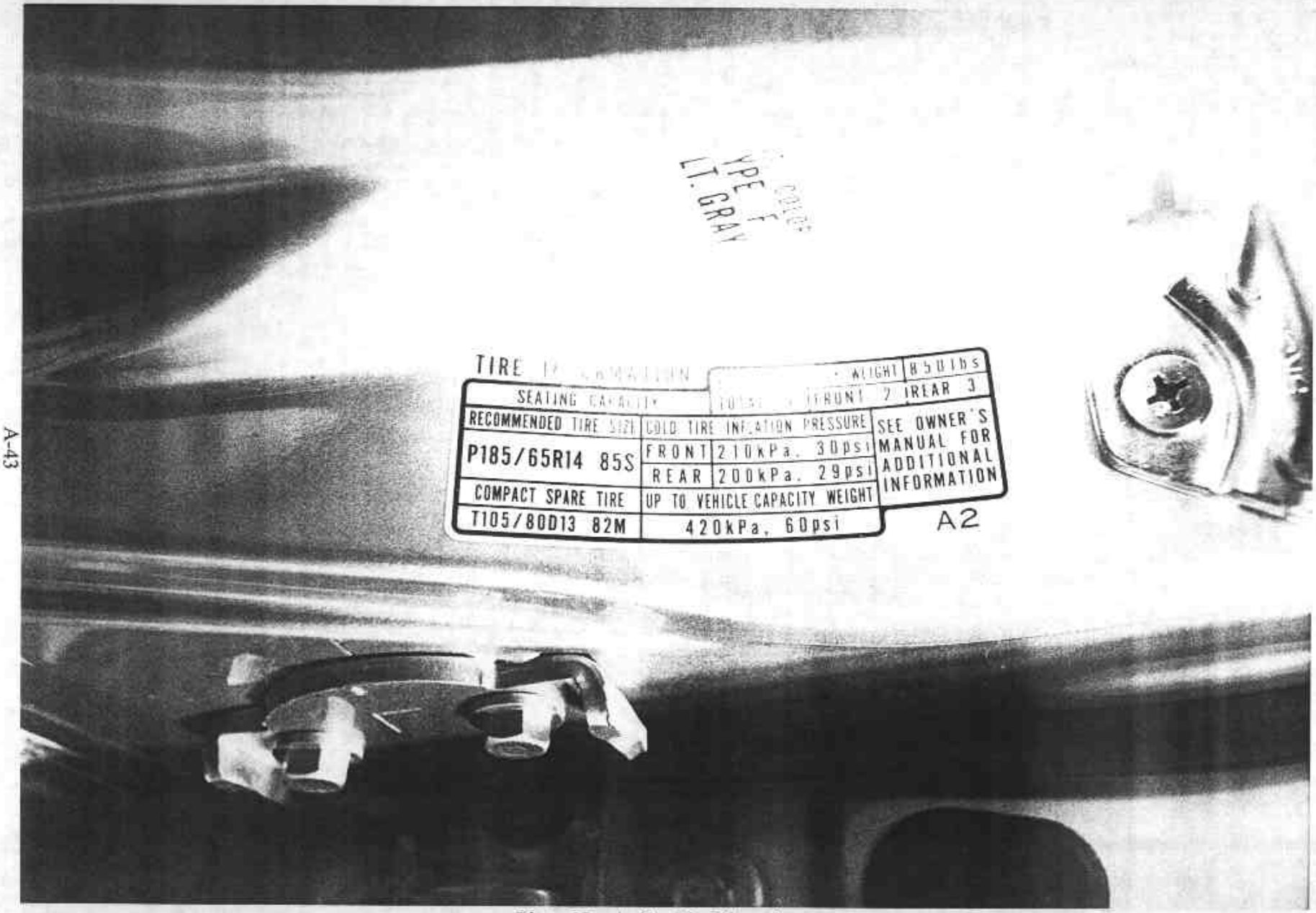


Photo No. A-41 - Impact



A-42

Photo No. A-42 - Vehicle Certification Label



A-43

Photo No. A-43 - Tire Placard

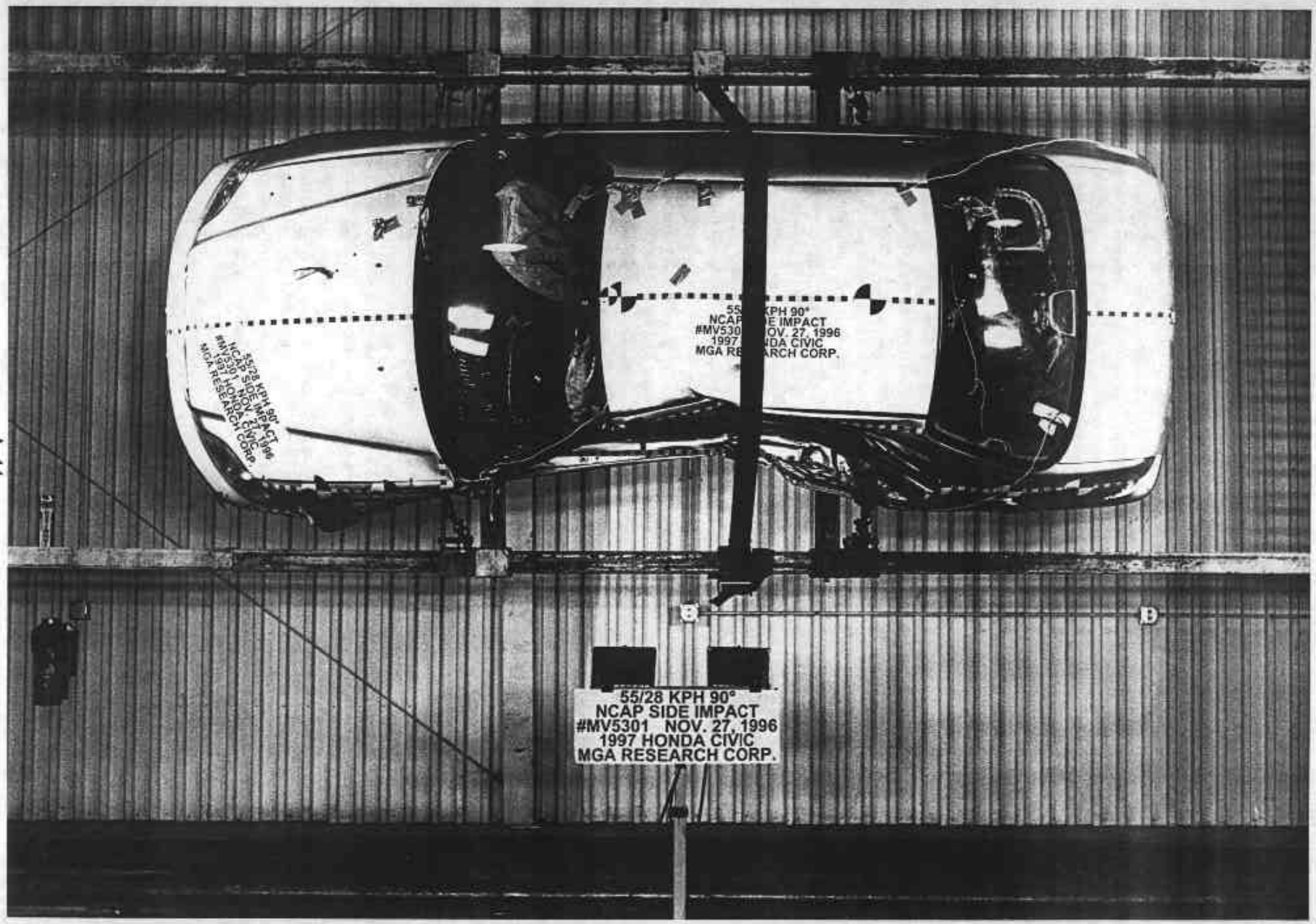
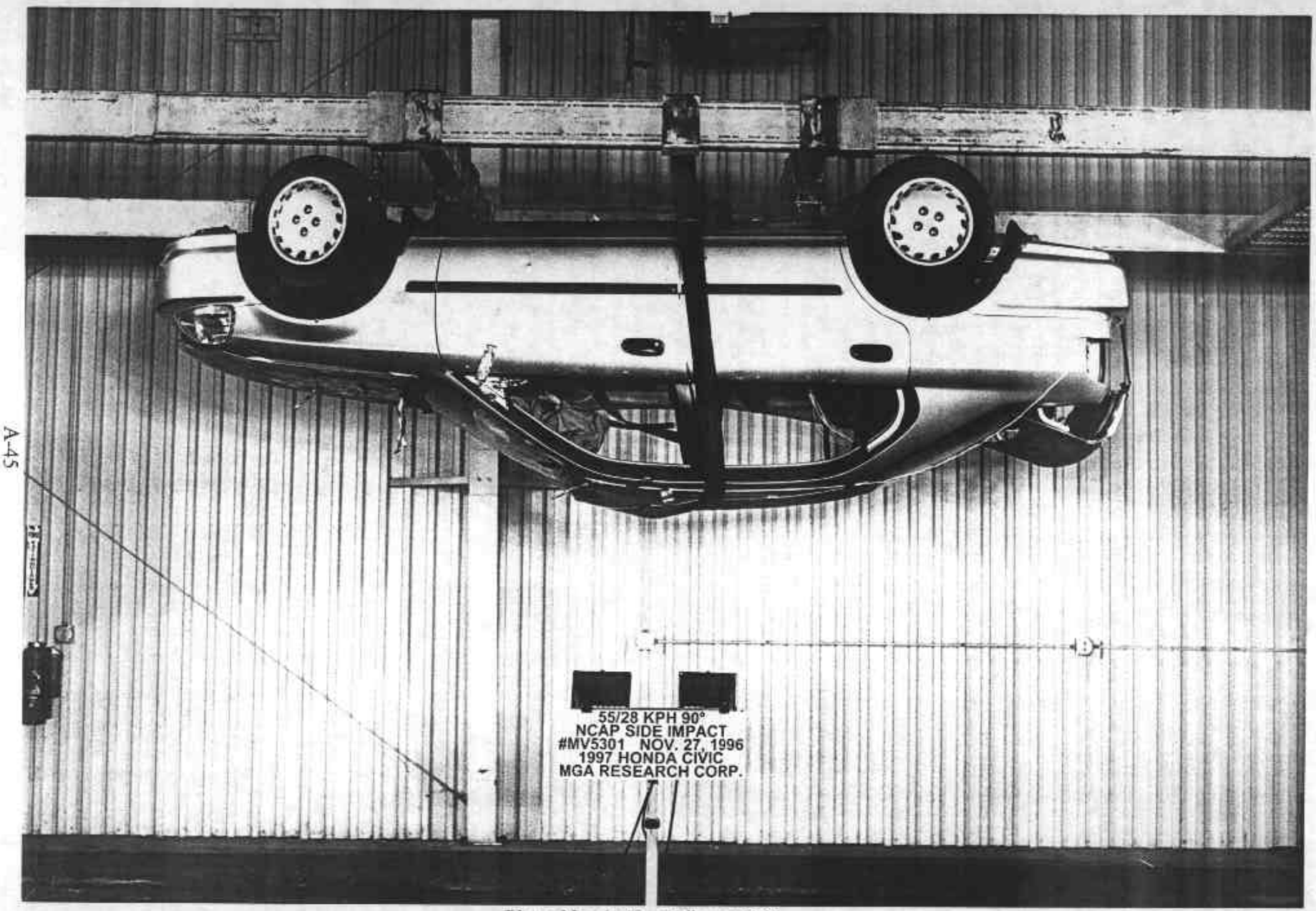


Photo No. A-44 - Rollover 90°



A-45

Photo No. A-45 - Rollover 180°

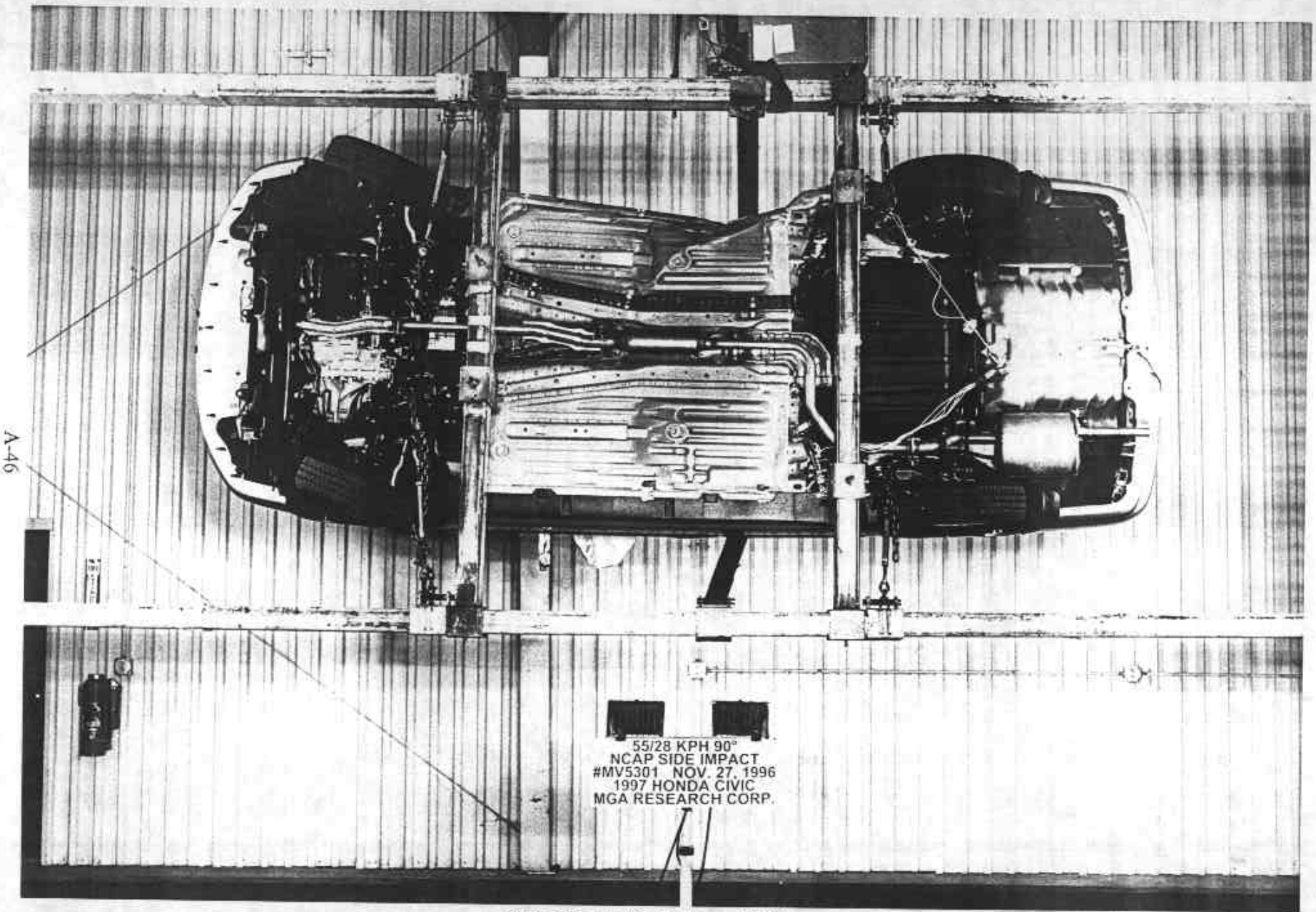


Photo No. A-46 - Rollover 270°

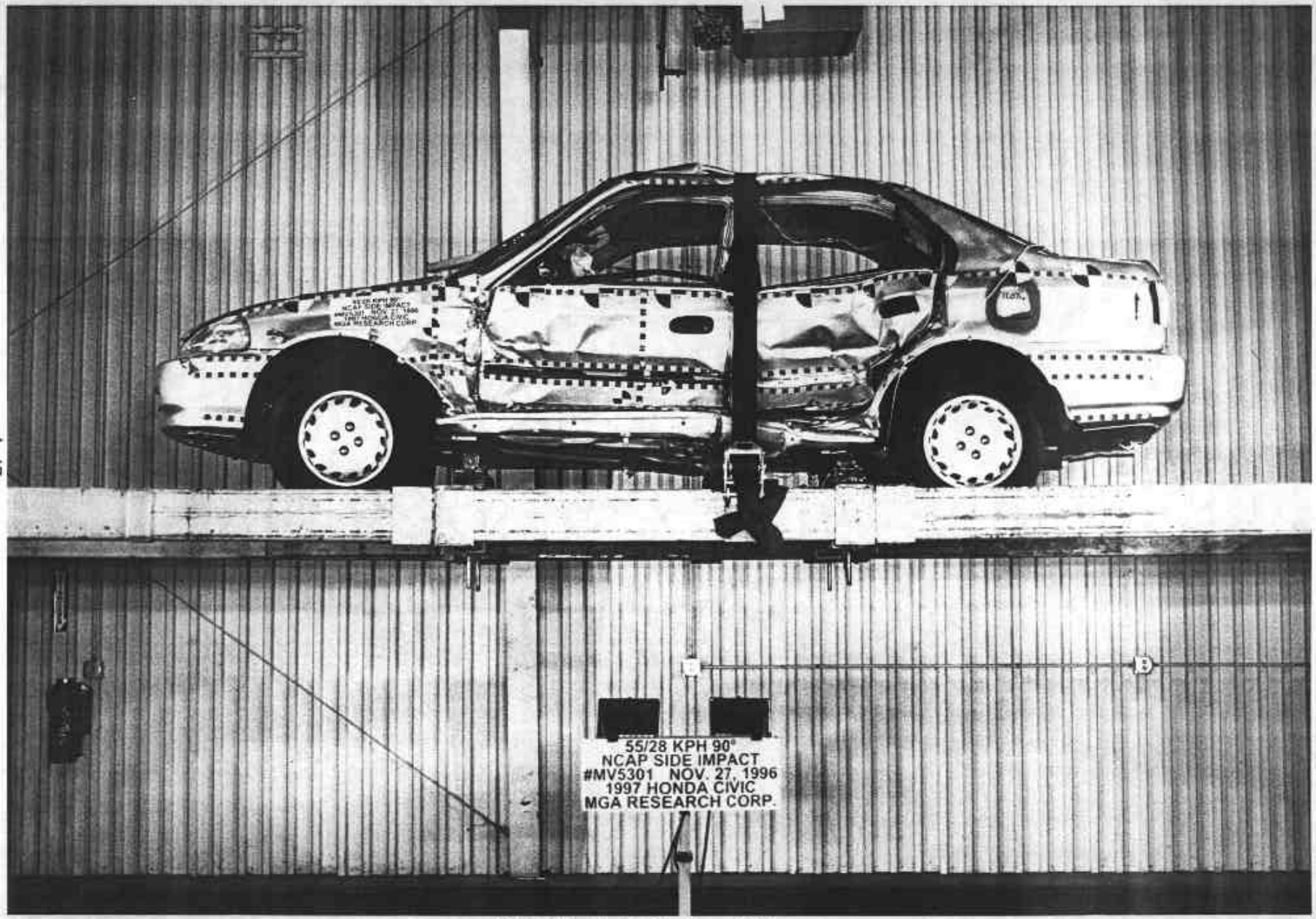


Photo No. A-47 - Rollover 360°

Photo No. A-48 - Left Front Attitude Point

Photo No. A-49 - Right Front Attitude Point

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Photo No. A-50 - Left Rear Attitude Point

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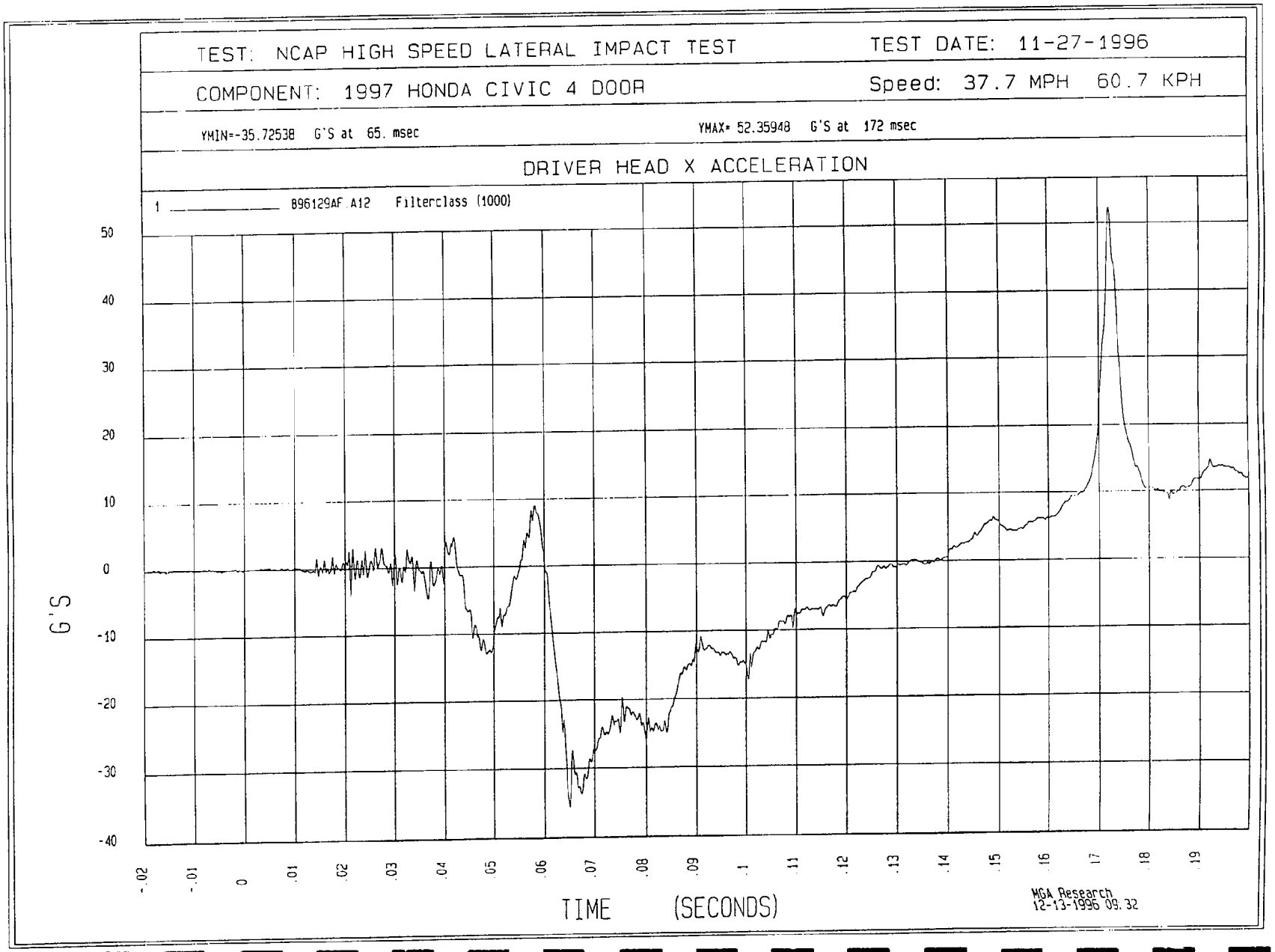
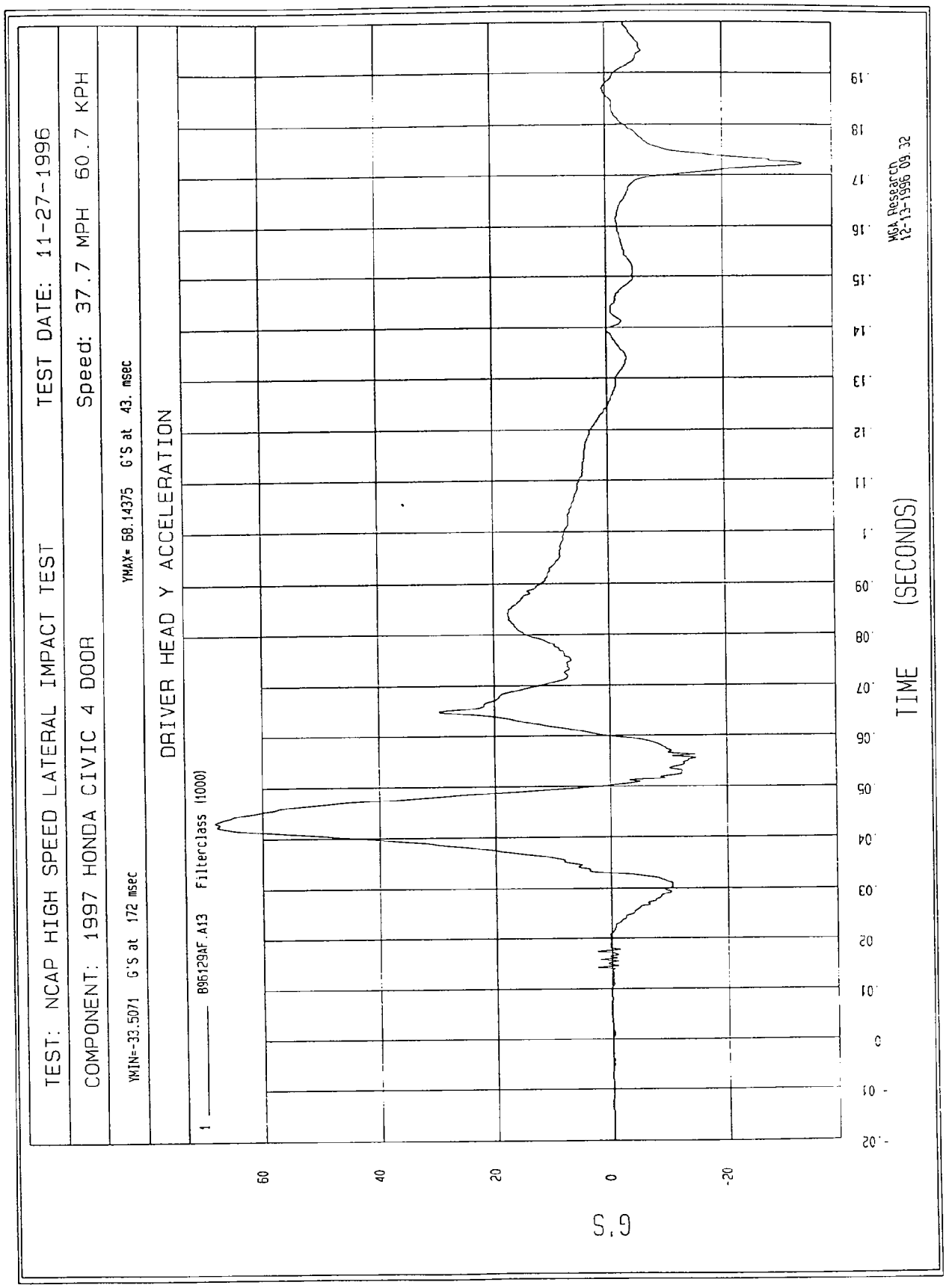
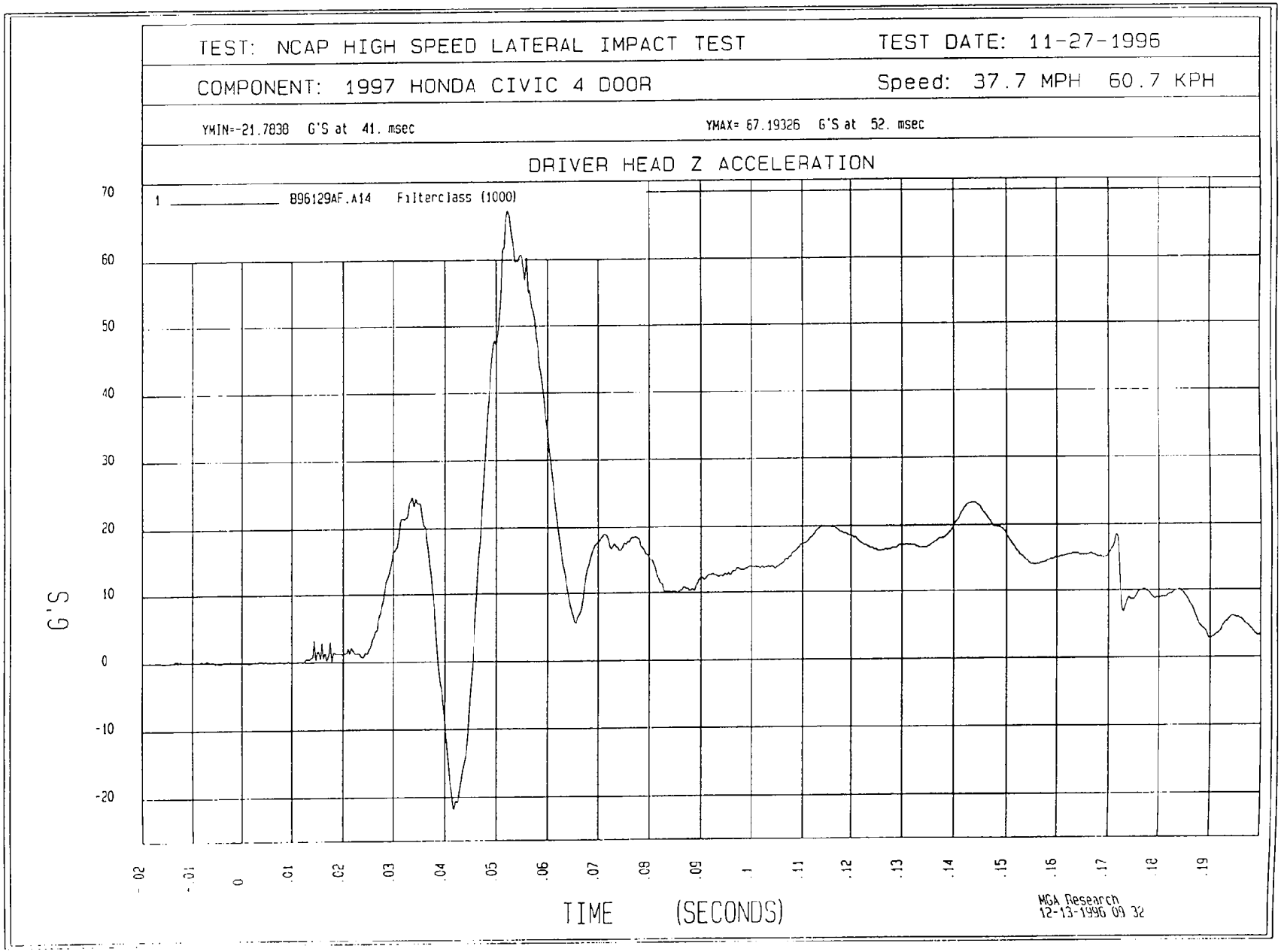
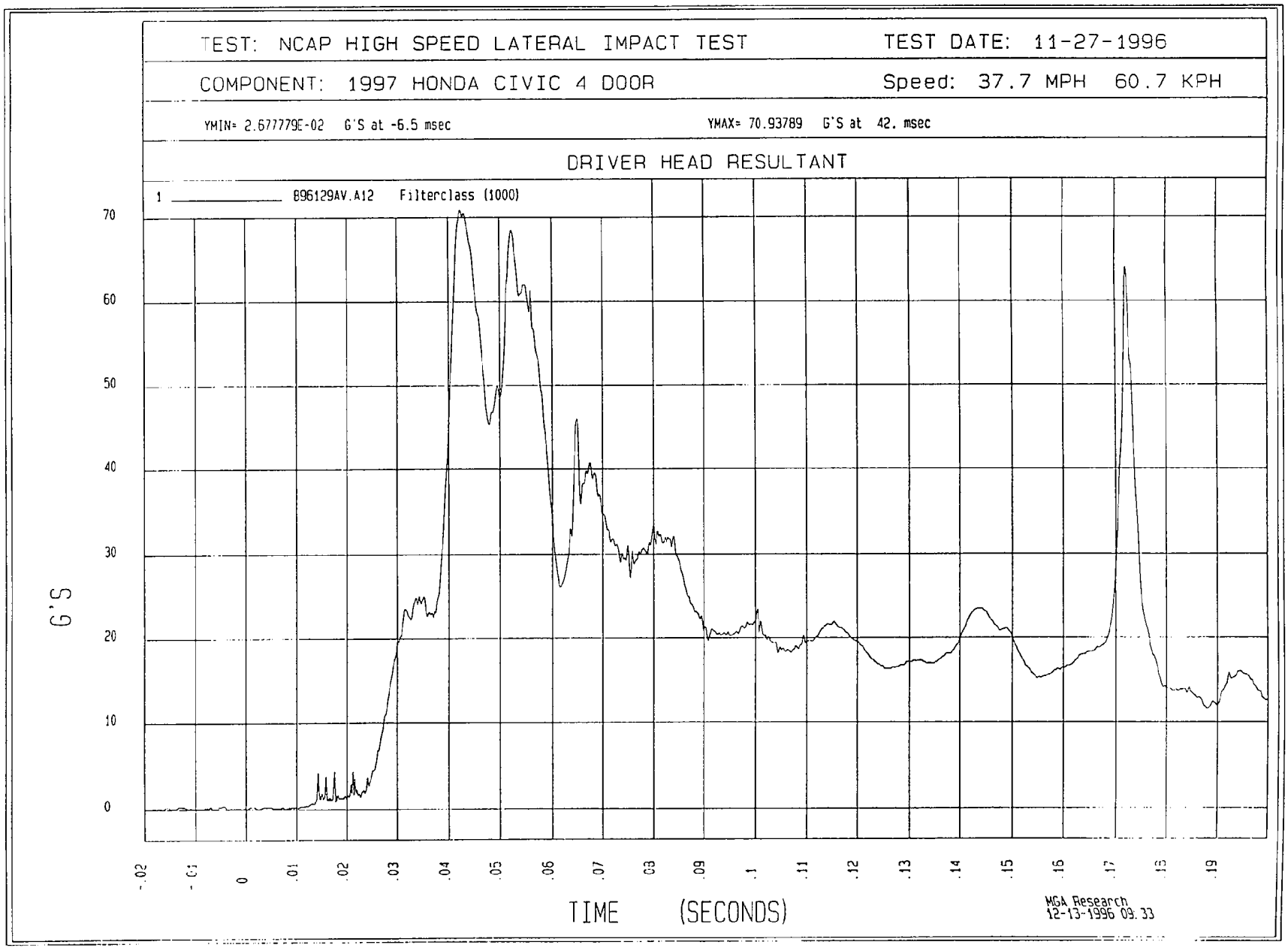
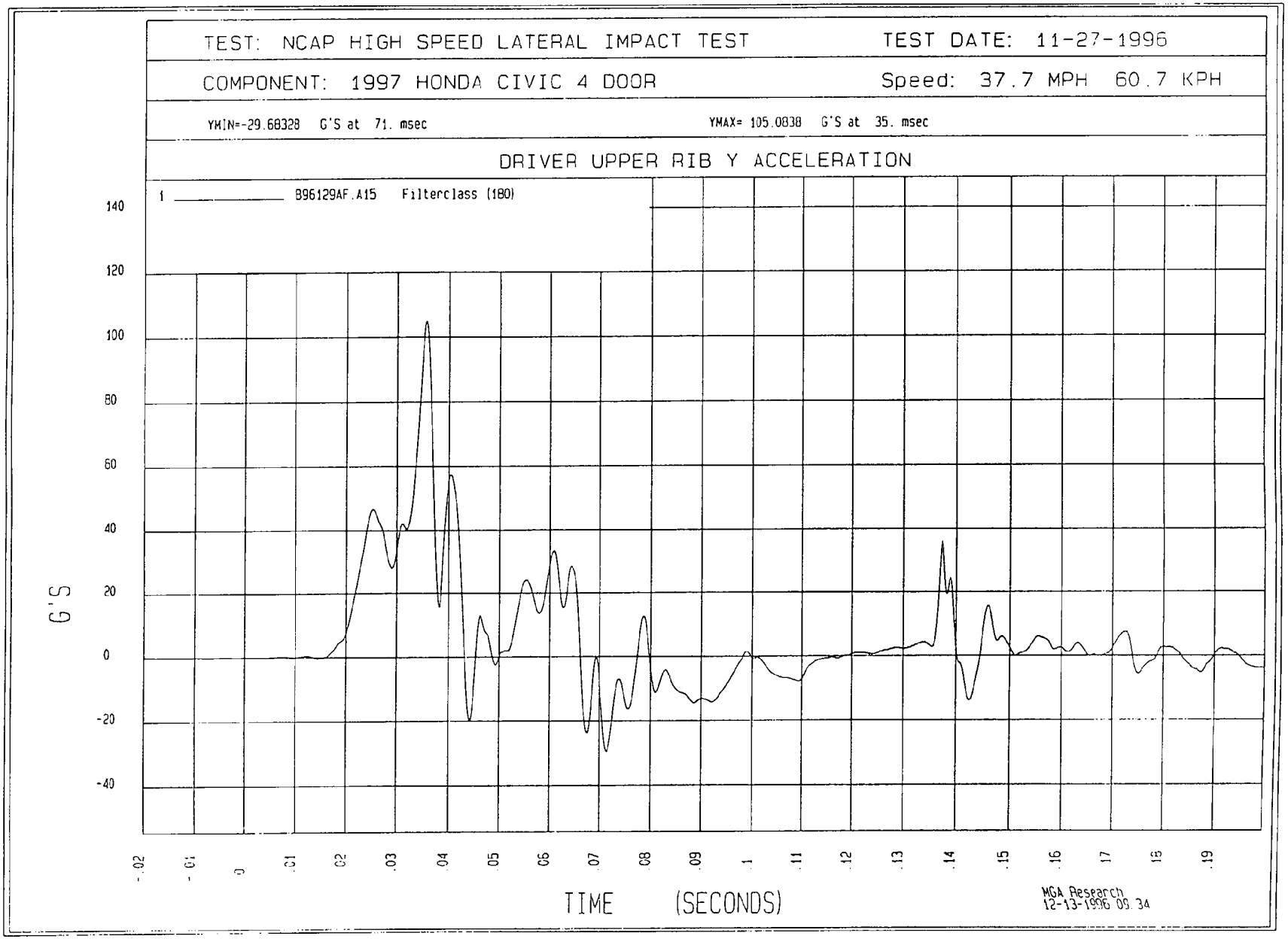
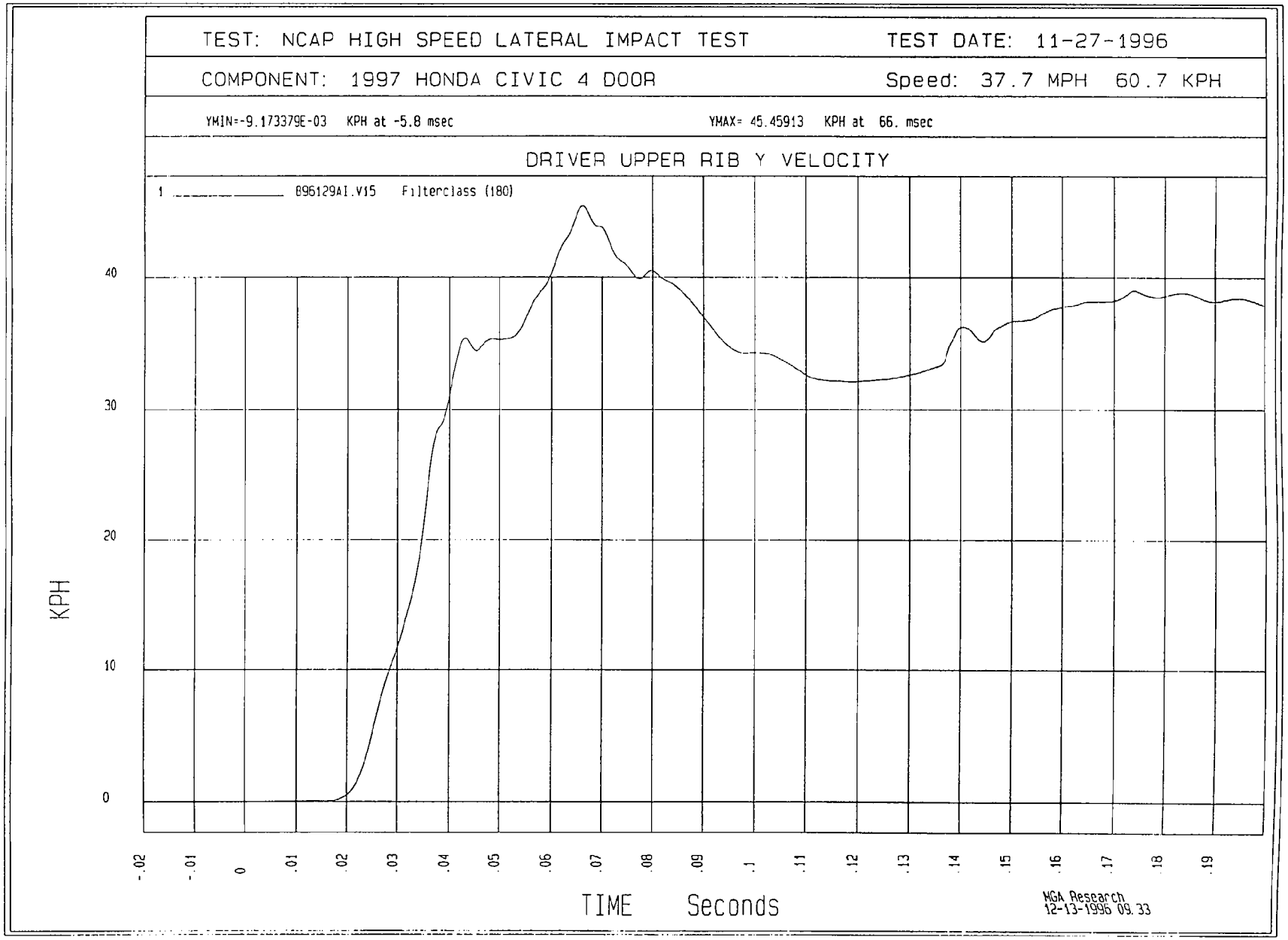

TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-35.72538 G'S at 65. msec
YMAX= 52.35948 G'S at 172 msec
DRIVER HEAD X ACCELERATION
1 896129AF.A12 Filterclass (1000)
50
40
30
20
10
0
-10
-20
-30
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-13-1996 09.32

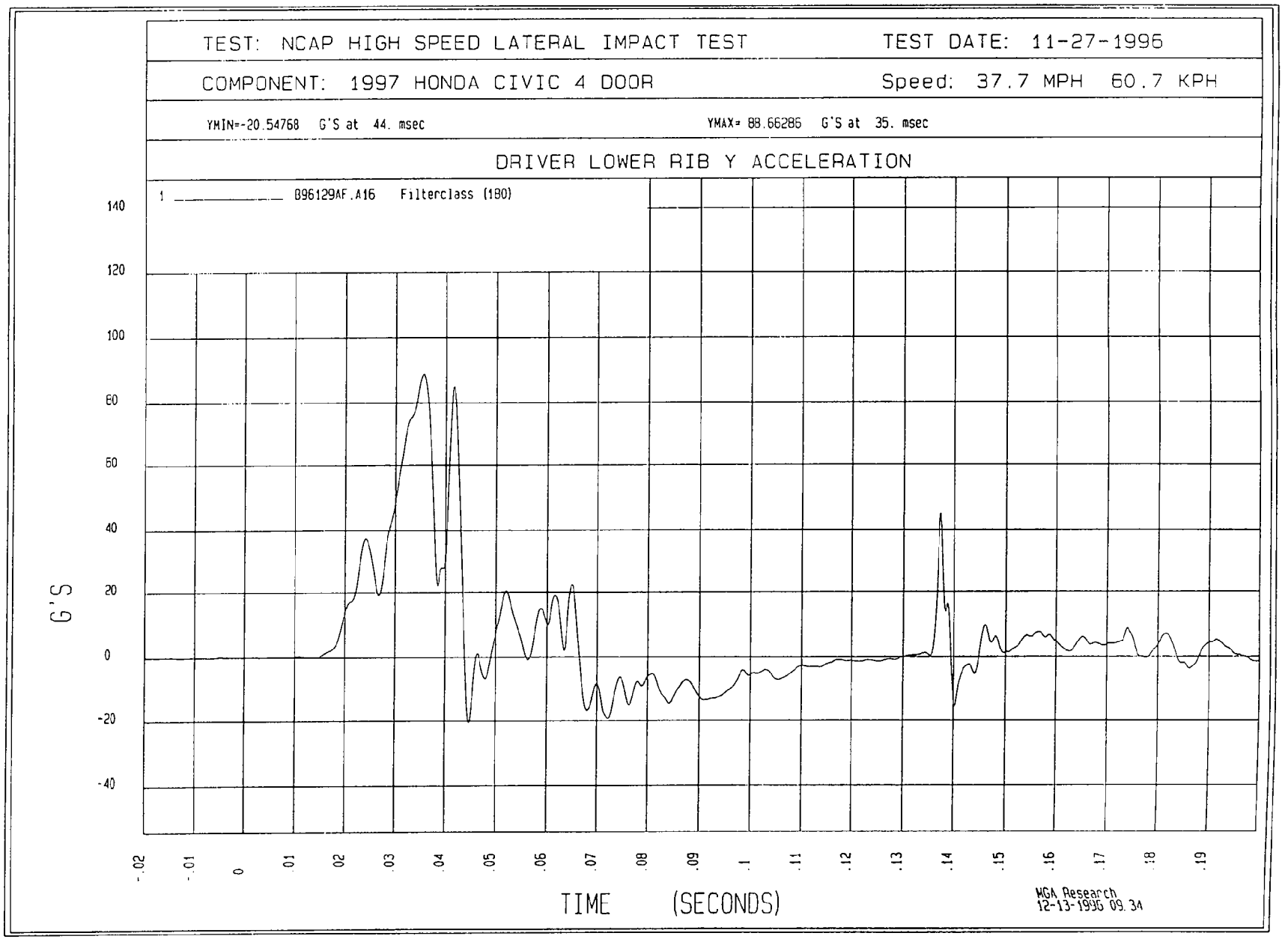

TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-33.5071 G'S at 172 msec
YMAX= 68.14375 G'S at 43. msec
DRIVER HEAD Y ACCELERATION
1 B96129AF.A13 Filterclass (1000)
60
40
20
0
-20
G'S
TIME (SECONDS)
MGA Research
12-13-1996 09:32

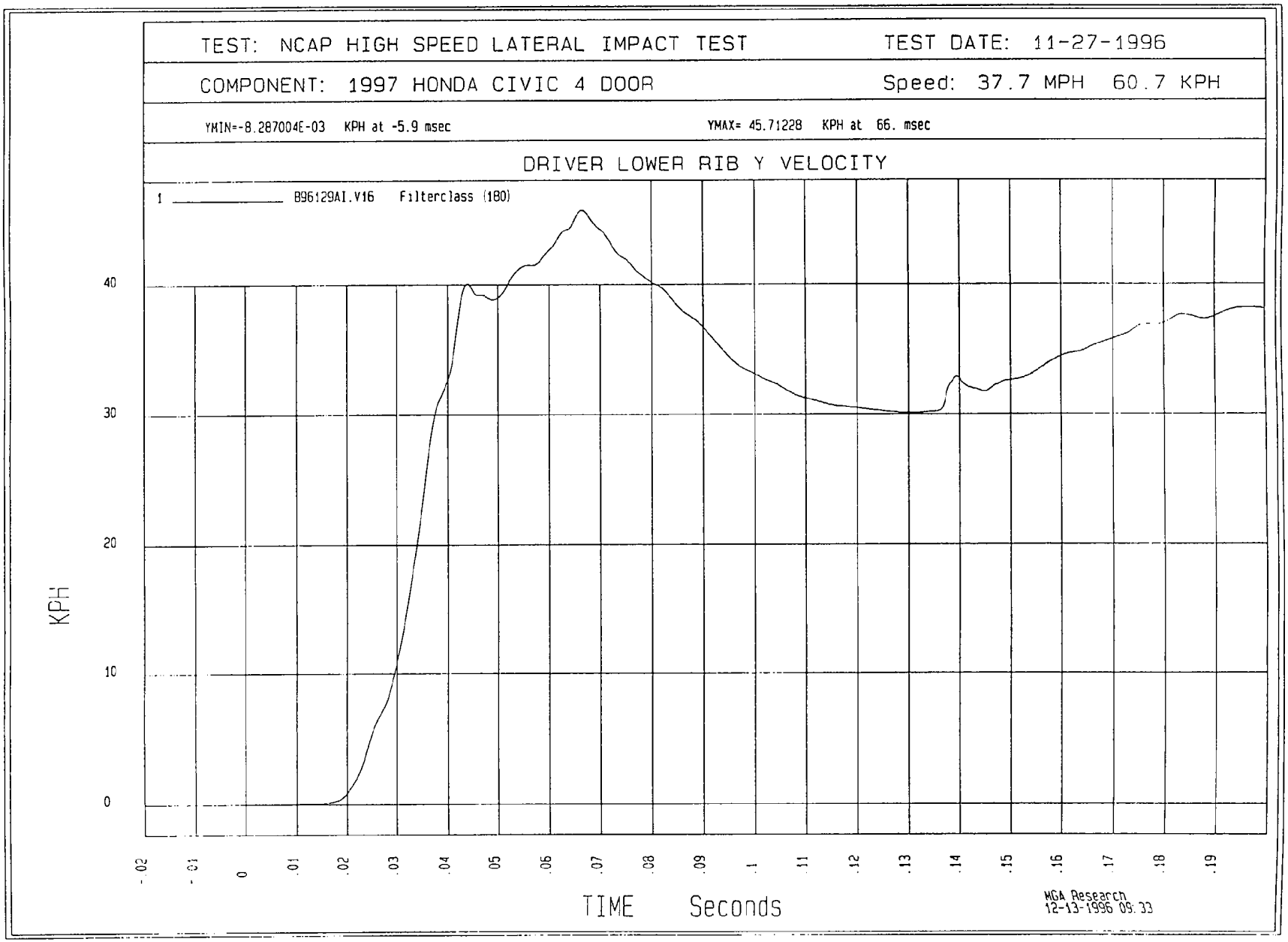

TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-21.7838 G'S at 41. msec
YMAX= 67.19326 G'S at 52. msec
DRIVER HEAD Z ACCELERATION
1 896129AF.A14 Filterclass (1000)
70
60
50
40
30
20
10
0
-10
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-13-1996 09 32


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= 2.677779E-02 G'S at -6.5 msec
YMAX= 70.93789 G'S at 42. msec
DRIVER HEAD RESULTANT
1 896129AV.A12 Filterclass (1000)
G'S
70
60
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-13-1996 09:33


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-29.68328 G'S at 71. msec
YMAX= 105.0838 G'S at 35. msec
DRIVER UPPER RIB Y ACCELERATION
1 896129AF.A15 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
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)
MGA Research
12-13-1996 09:34


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-9.173379E-03 KPH at -5.8 msec
YMAX= 45.45913 KPH at 66. msec
DRIVER UPPER RIB Y VELOCITY
1 896129AI.V15 Filterclass (180)
KPH
0
10
20
30
40
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-13-1996 09:33


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-20.54768 G'S at 44. msec
YMAX= 88.66286 G'S at 35. msec
DRIVER LOWER RIB Y ACCELERATION
1 B96129AF.A16 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
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)
MGA Research
12-13-1996 09.34


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-8.287004E-03 KPH at -5.9 msec
YMAX= 45.71228 KPH at 66. msec
DRIVER LOWER RIB Y VELOCITY
1 B96129AI.V16 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
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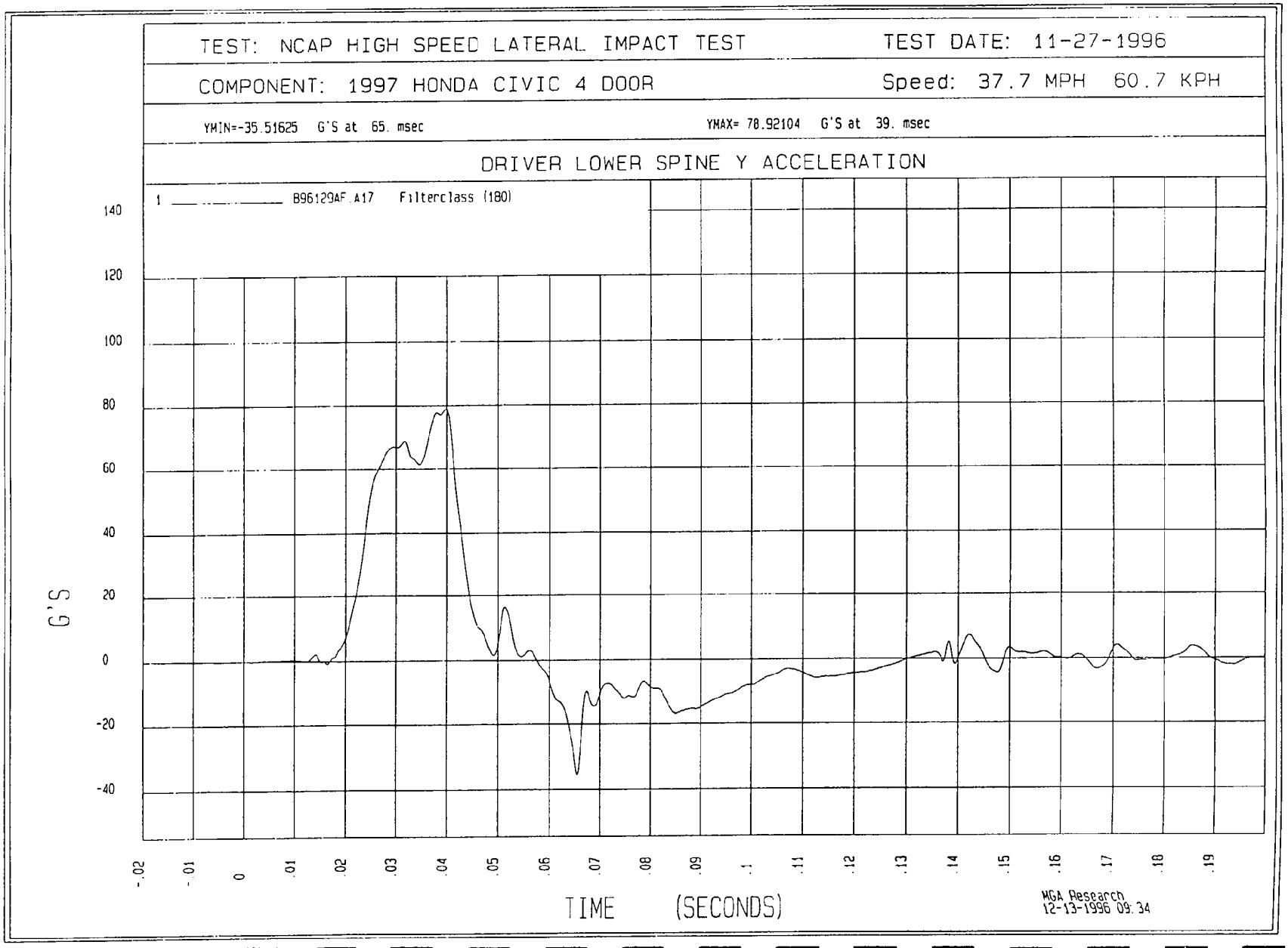
TIME Seconds
MGA Research
12-13-1996 09:33


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-35.51625 G'S at 65. msec
YMAX= 78.92104 G'S at 39. msec
DRIVER LOWER SPINE Y ACCELERATION
1 B96129AF.A17 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
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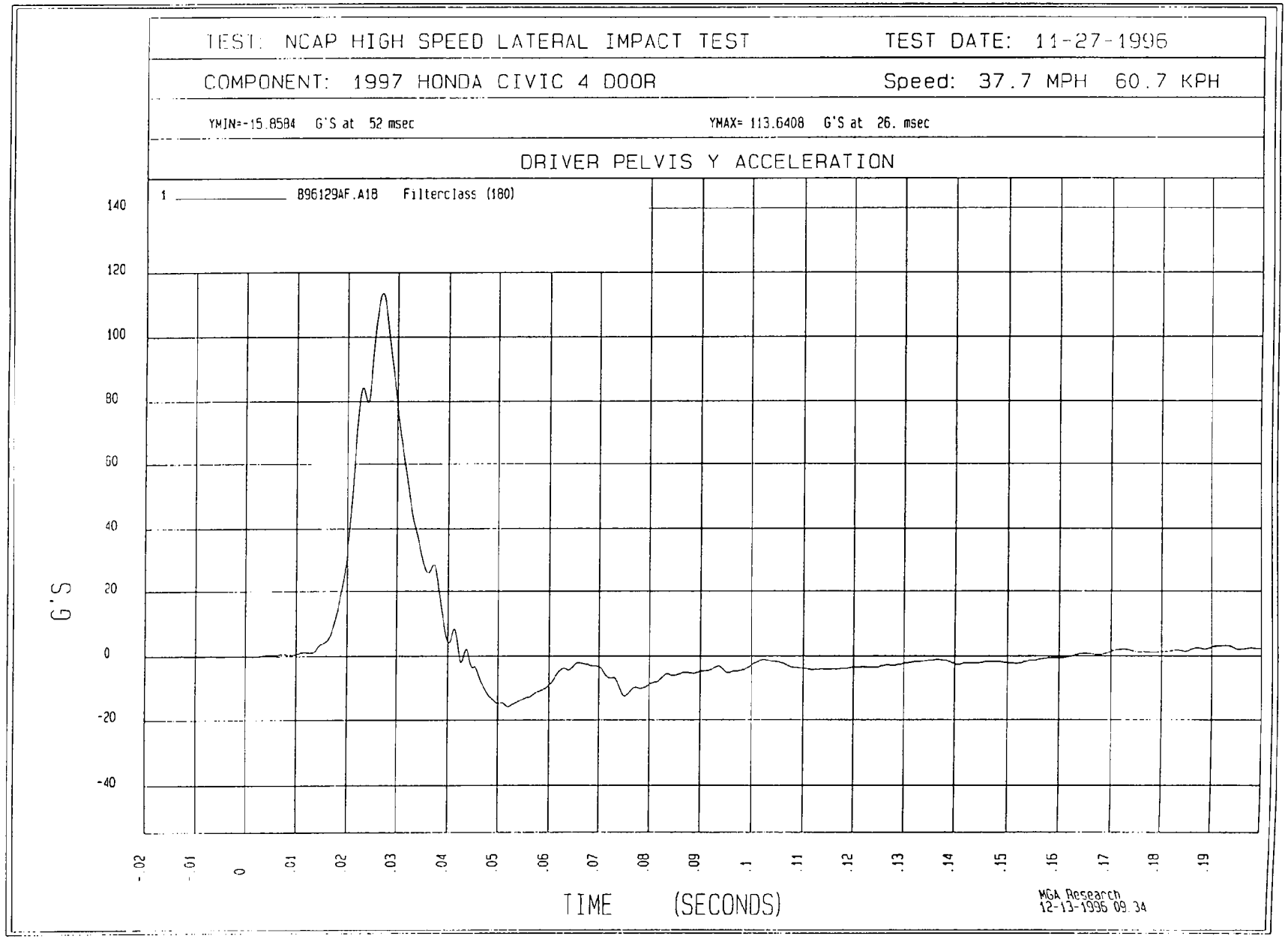
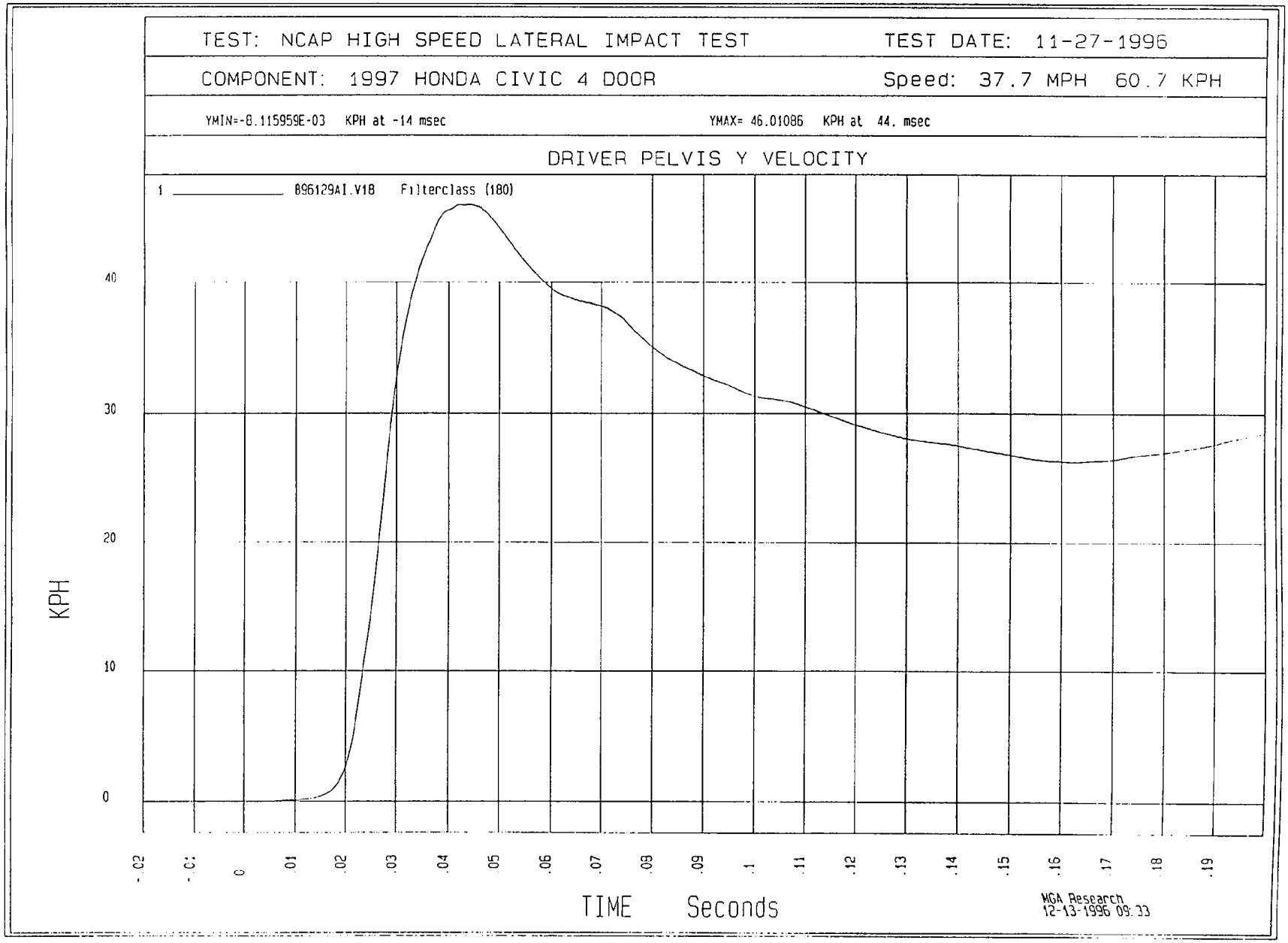
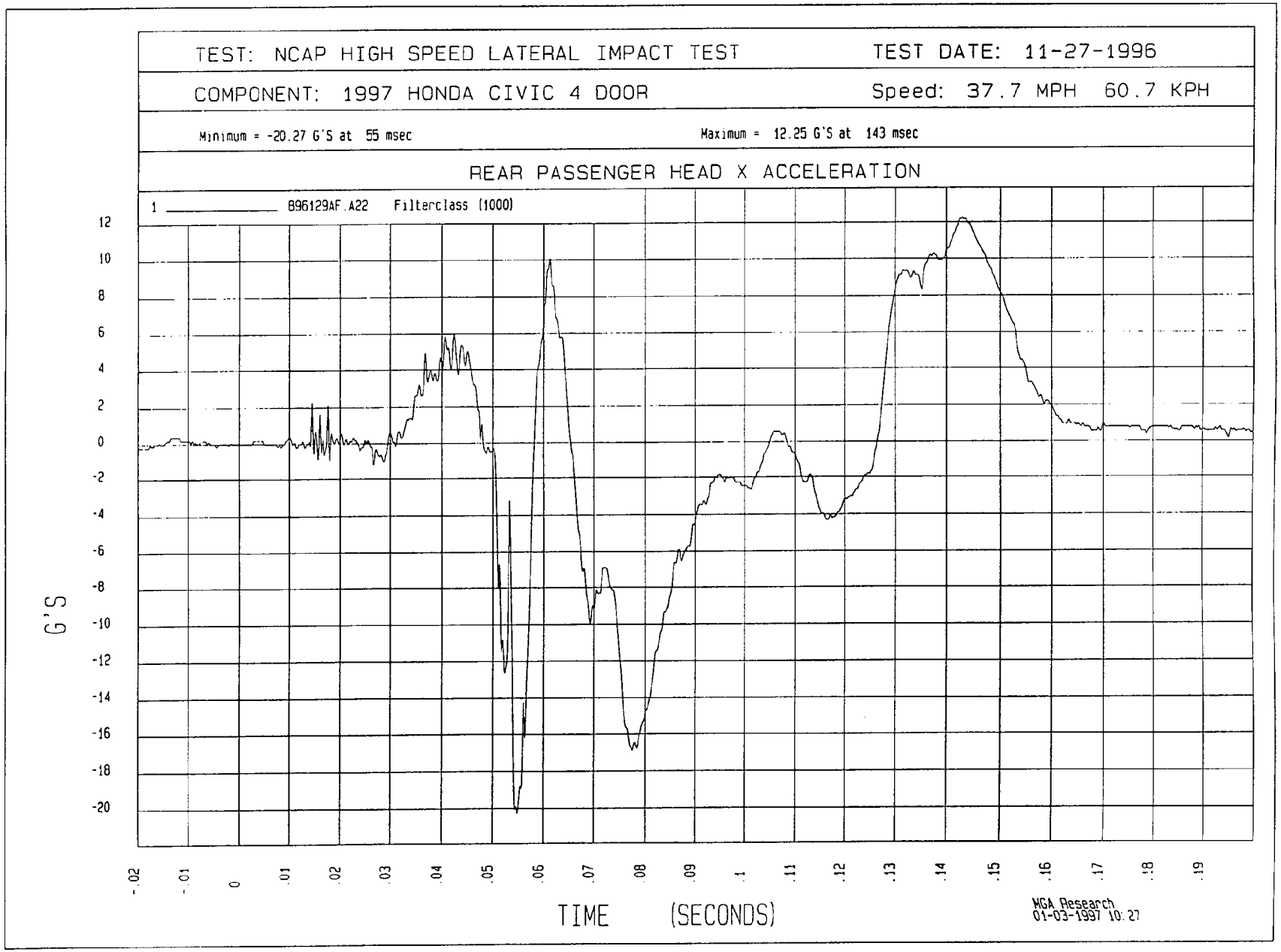
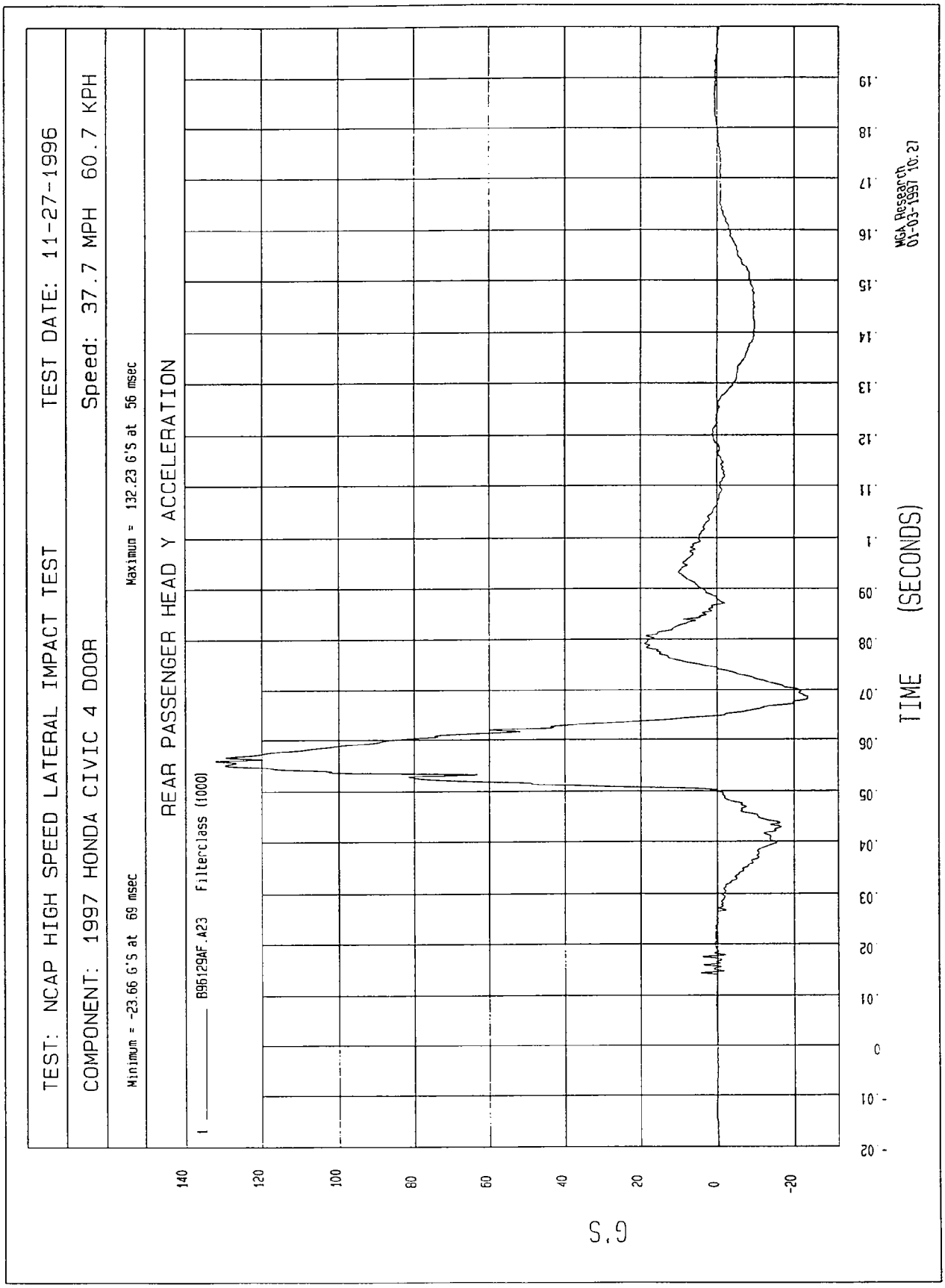
TIME (SECONDS)
MGA Research
12-13-1996 09:34

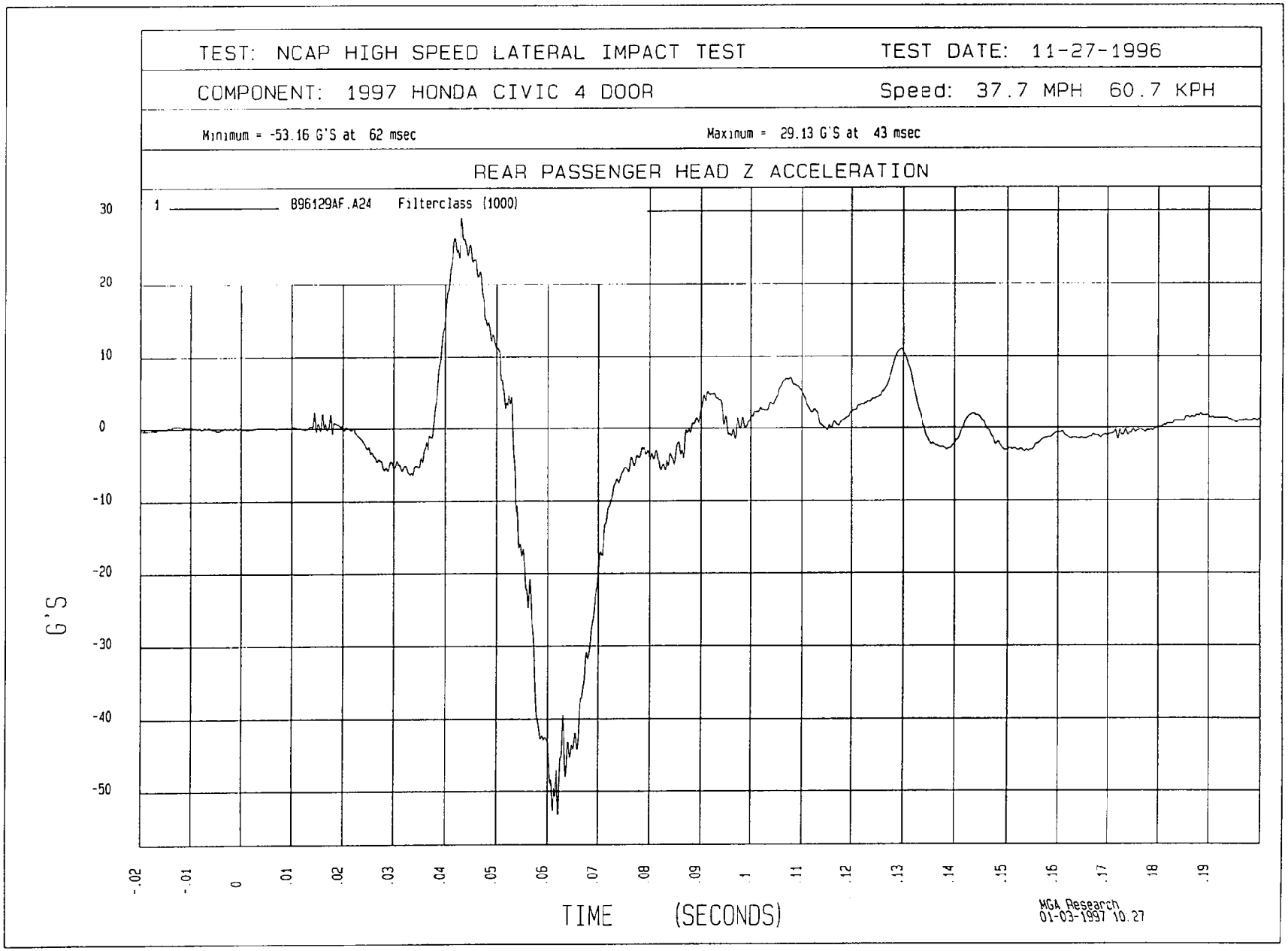
TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-2.296947E-02 KPH at 2.6 msec
YMAX= 51.39739 KPH at 57. msec
DRIVER LOWER SPINE Y VELOCITY
1 B96129AI.V17 Filterclass (180)
KPH
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-13-1996 09:33

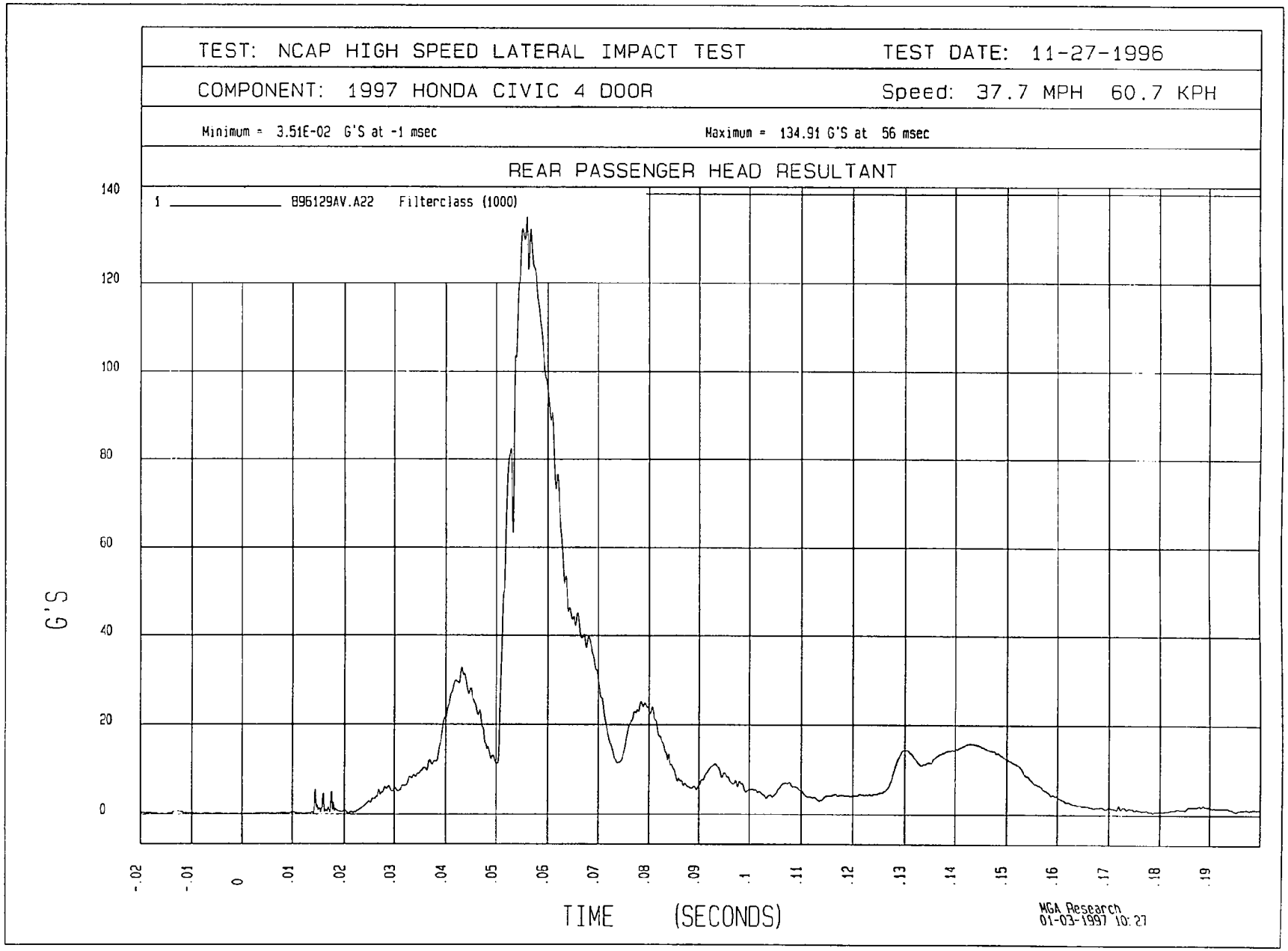

TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-15.8584 G'S at 52 msec
YMAX= 113.6408 G'S at 26. msec
DRIVER PELVIS Y ACCELERATION
1 B96129AF.A1B Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-13-1996 09:34

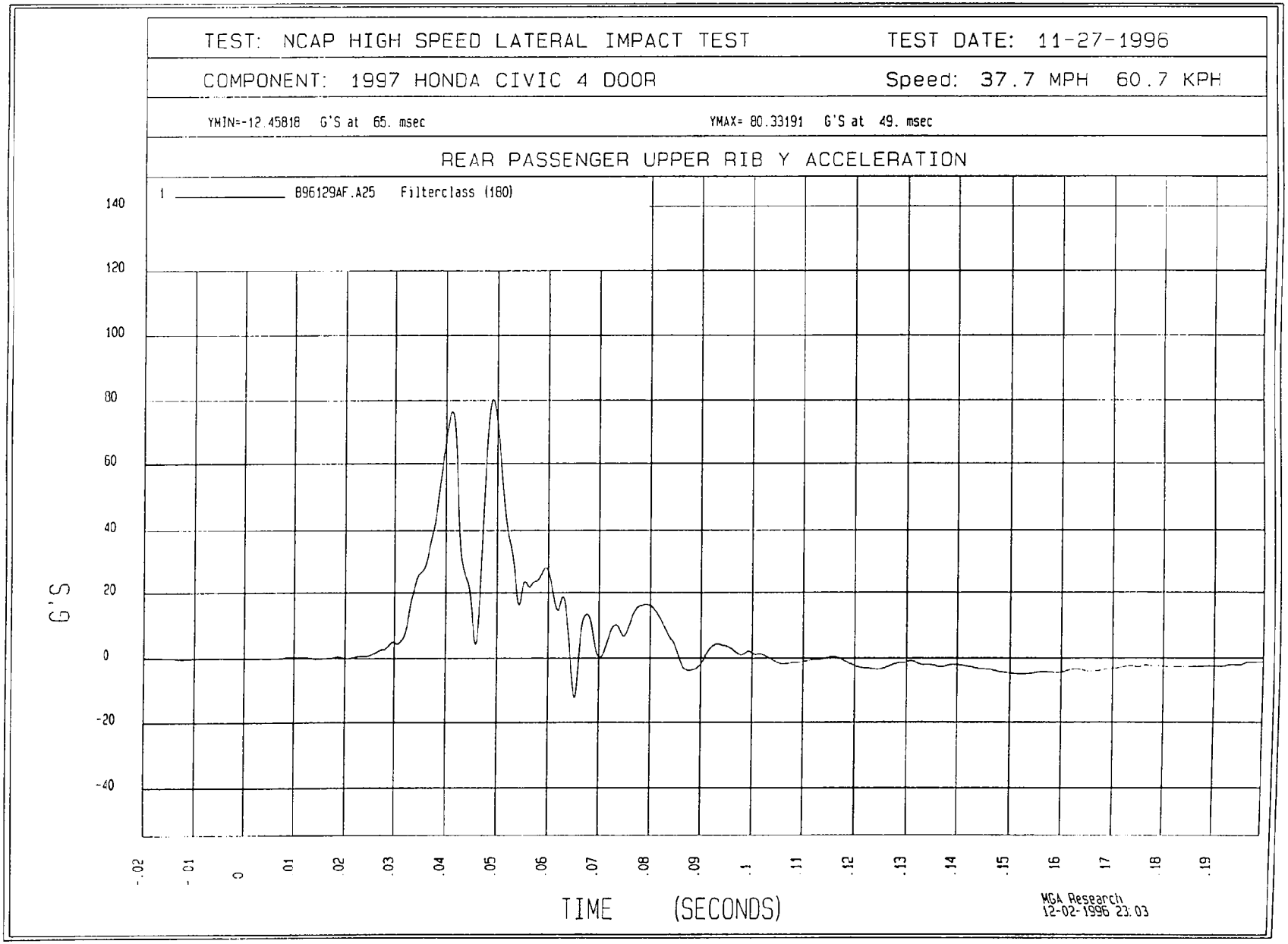

TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-8.115959E-03 KPH at -14 msec
YMAX= 46.01086 KPH at 44. msec
DRIVER PELVIS Y VELOCITY
1 B96129AI.V18 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-13-1996 09:33

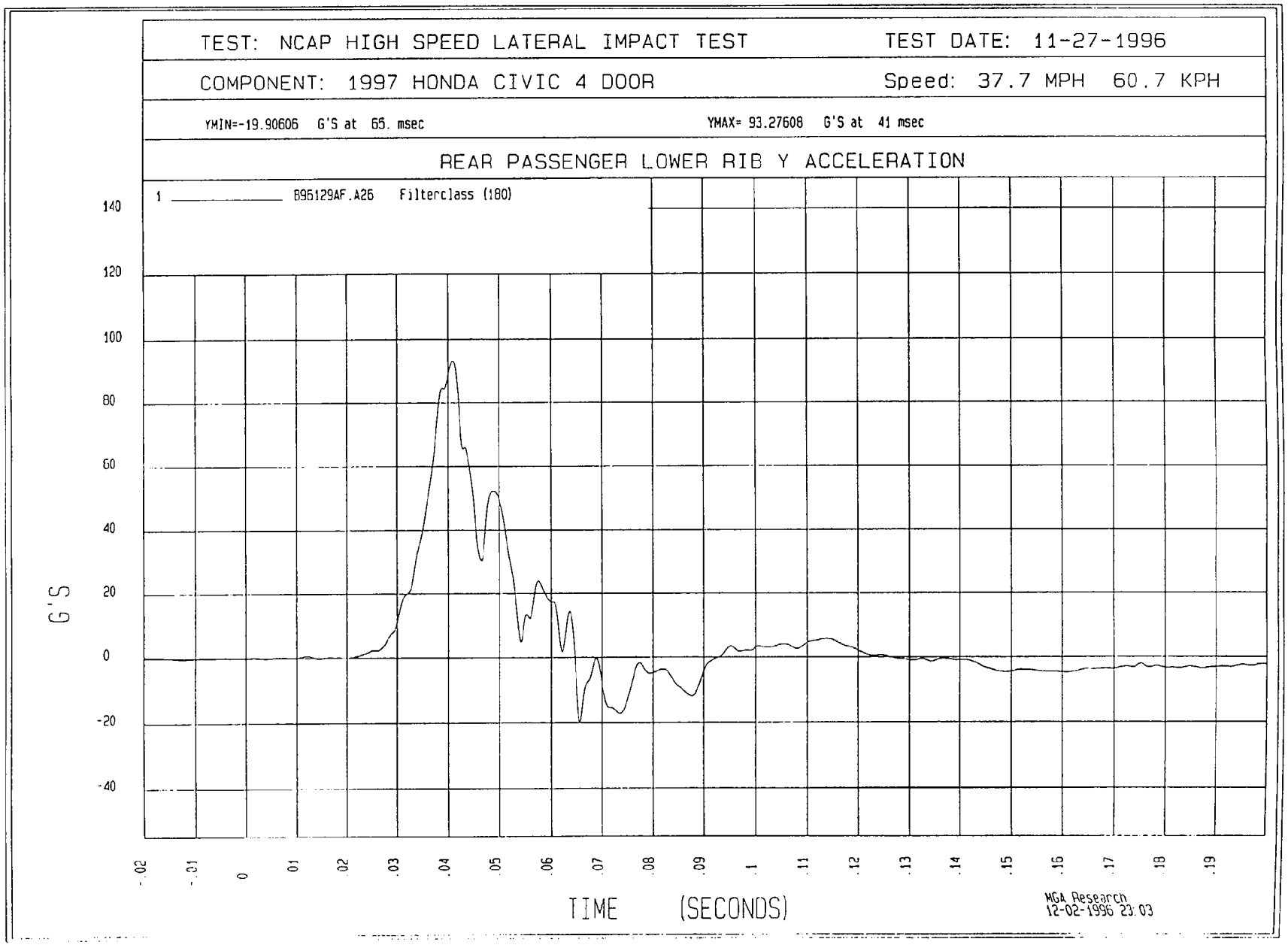

TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
Minimum = -20.27 G'S at 55 msec
Maximum = 12.25 G'S at 143 msec
REAR PASSENGER HEAD X ACCELERATION
1 896129AF.A22 Filterclass (1000)
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
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)
MGA Research
01-03-1997 10:27

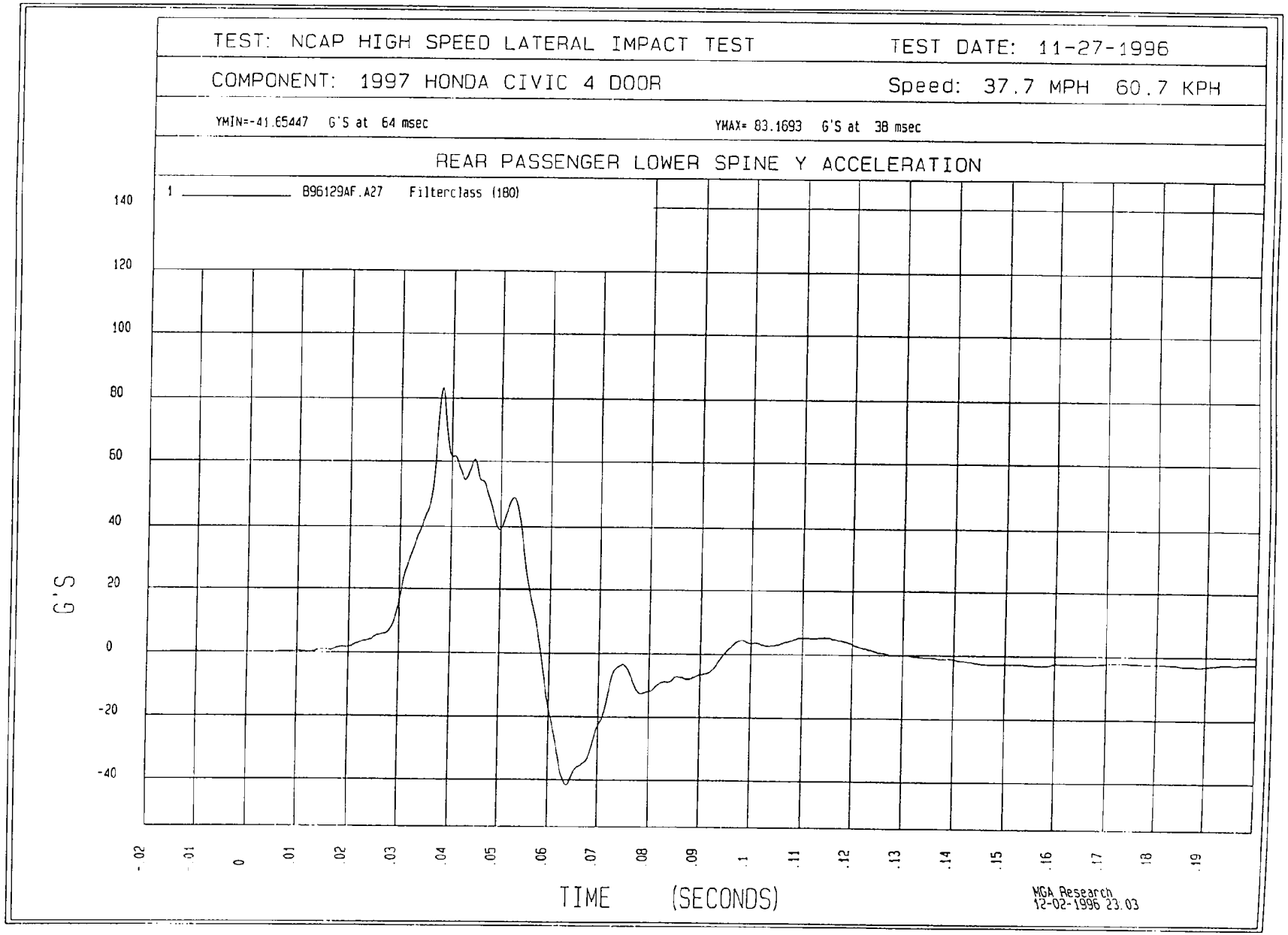

TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
Minimum = -23.66 G'S at 69 msec
Maximum = 132.23 G'S at 56 msec
REAR PASSENGER HEAD Y ACCELERATION
1 B96129AF.A23 Filterclass (1000)
140
120
100
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
01-03-1997 10:27

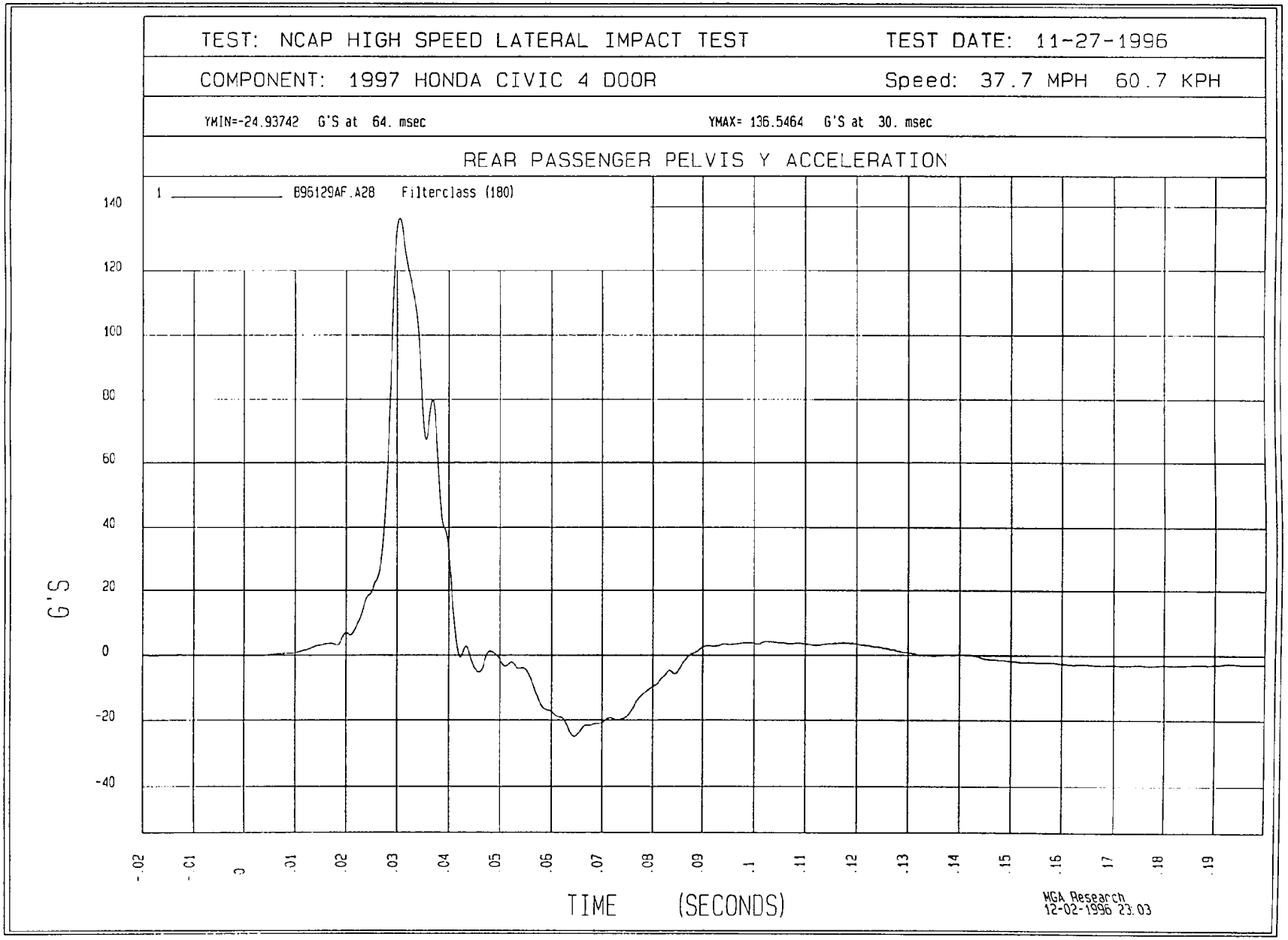

TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
Minimum = -53.16 G'S at 62 msec
Maximum = 29.13 G'S at 43 msec
REAR PASSENGER HEAD Z ACCELERATION
1 B96129AF.A24 Filterclass (1000)
30
20
10
0
-10
-20
-30
-40
-50
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
01-03-1997 10:27


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
Minimum = 3.51E-02 G'S at -1 msec
Maximum = 134.91 G'S at 56 msec
REAR PASSENGER HEAD RESULTANT
1 896129AV.A22 Filterclass (1000)
G'S
140
120
100
80
60
40
20
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
01-03-1997 10:27


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-12.45818 G'S at 65. msec
YMAX= 80.33191 G'S at 49. msec
REAR PASSENGER UPPER RIB Y ACCELERATION
1 B96129AF.A25 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
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)
MGA Research
12-02-1996 23:03


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-19.90606 G'S at 65. msec
YMAX= 93.27608 G'S at 41 msec
REAR PASSENGER LOWER RIB Y ACCELERATION
1 896129AF.A26 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
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)
MGA Research
12-02-1996 23:03


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-41.65447 G'S at 64 msec
YMAX= 83.1693 G'S at 38 msec
REAR PASSENGER LOWER SPINE Y ACCELERATION
1 B96129AF.A27 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
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)
MGA Research
12-02-1996 23.03


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-24.93742 G'S at 64. msec
YMAX= 136.5464 G'S at 30. msec
REAR PASSENGER PELVIS Y ACCELERATION
1 B96129AF.A28 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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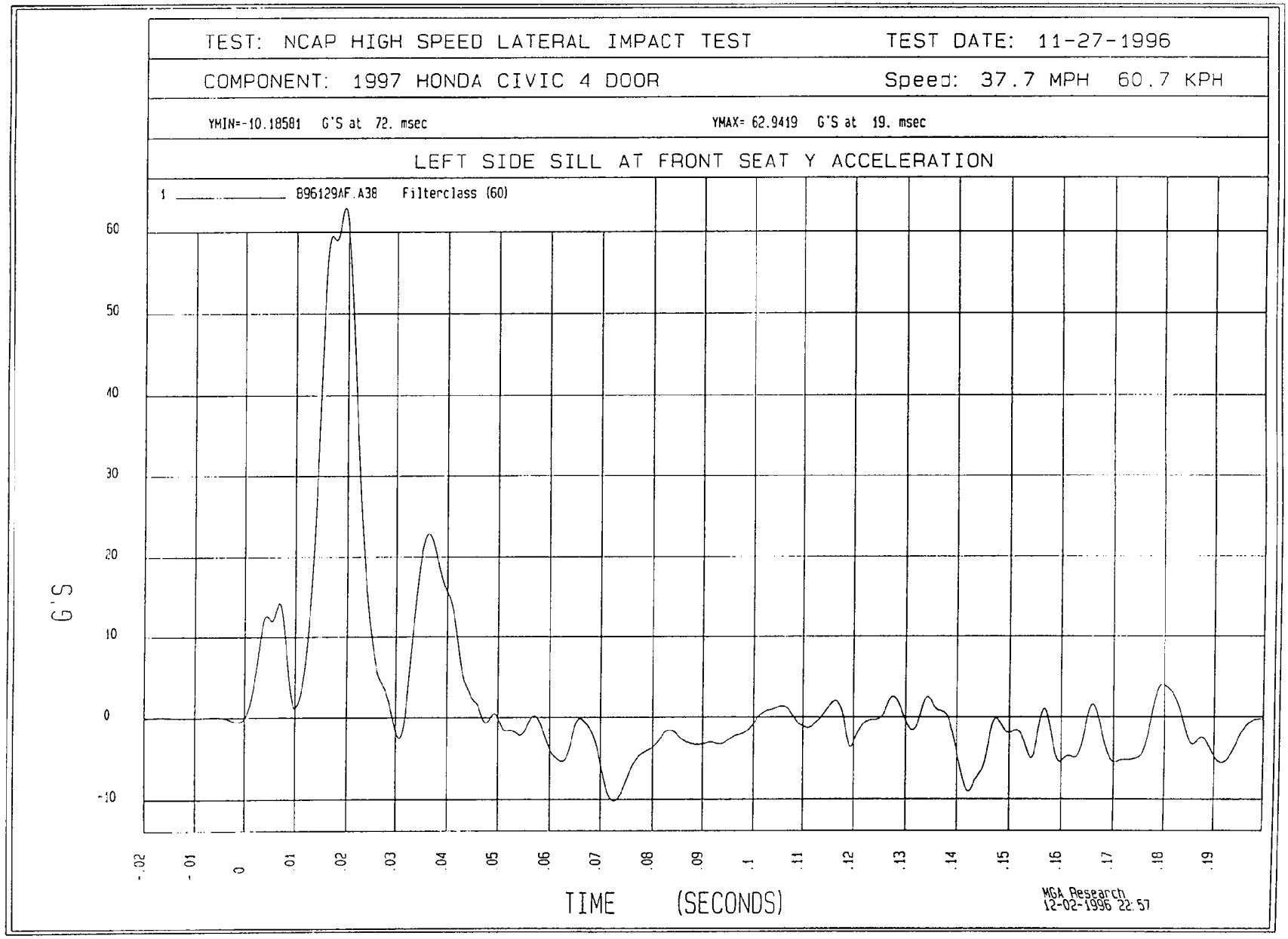
.19
TIME (SECONDS)
MGA Research
12-02-1996 23:03


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-10.18581 G'S at 72. msec
YMAX= 62.9419 G'S at 19. msec
LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION
1 B96129AF.A38 Filterclass (60)
G'S
60
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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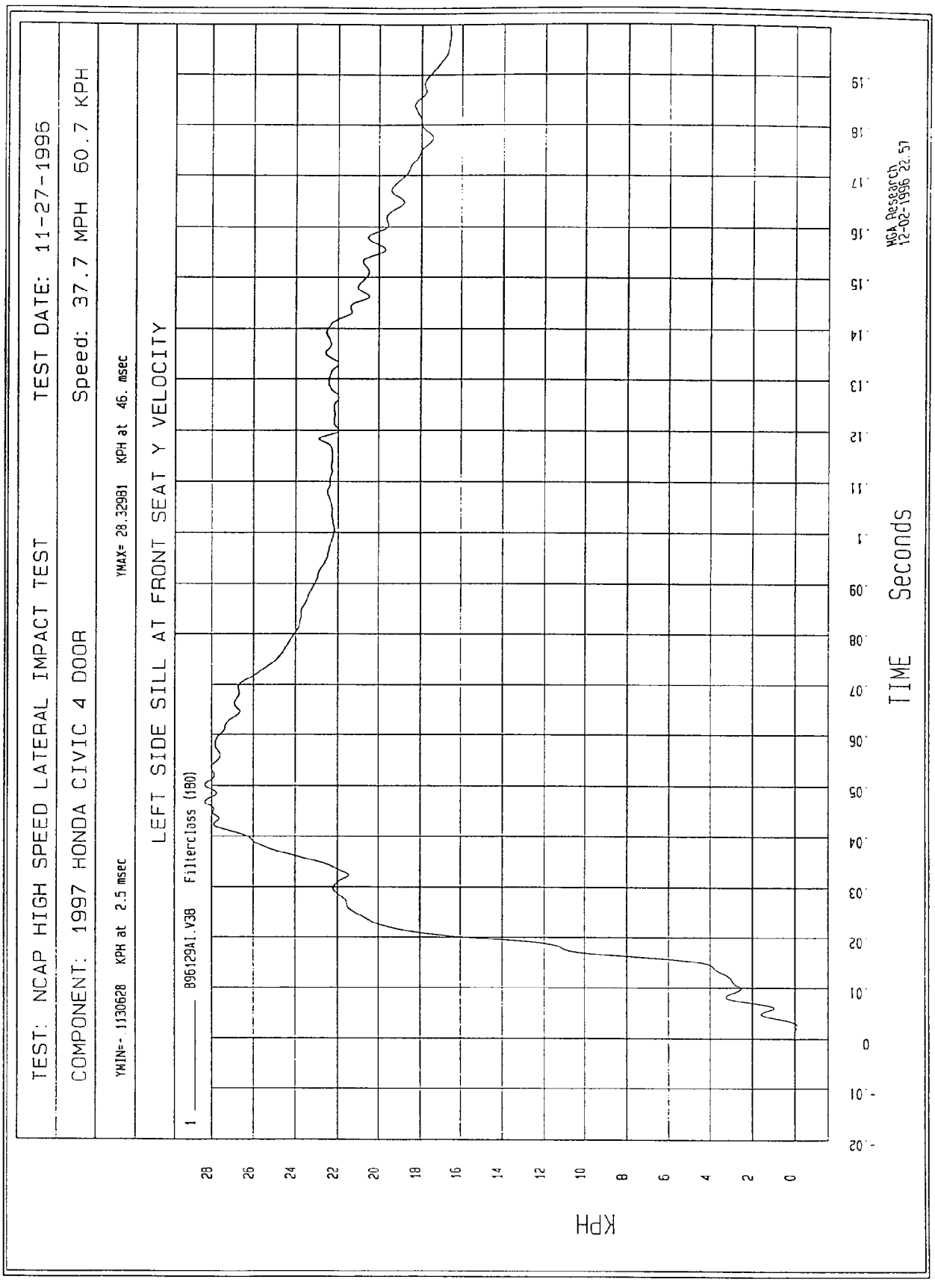
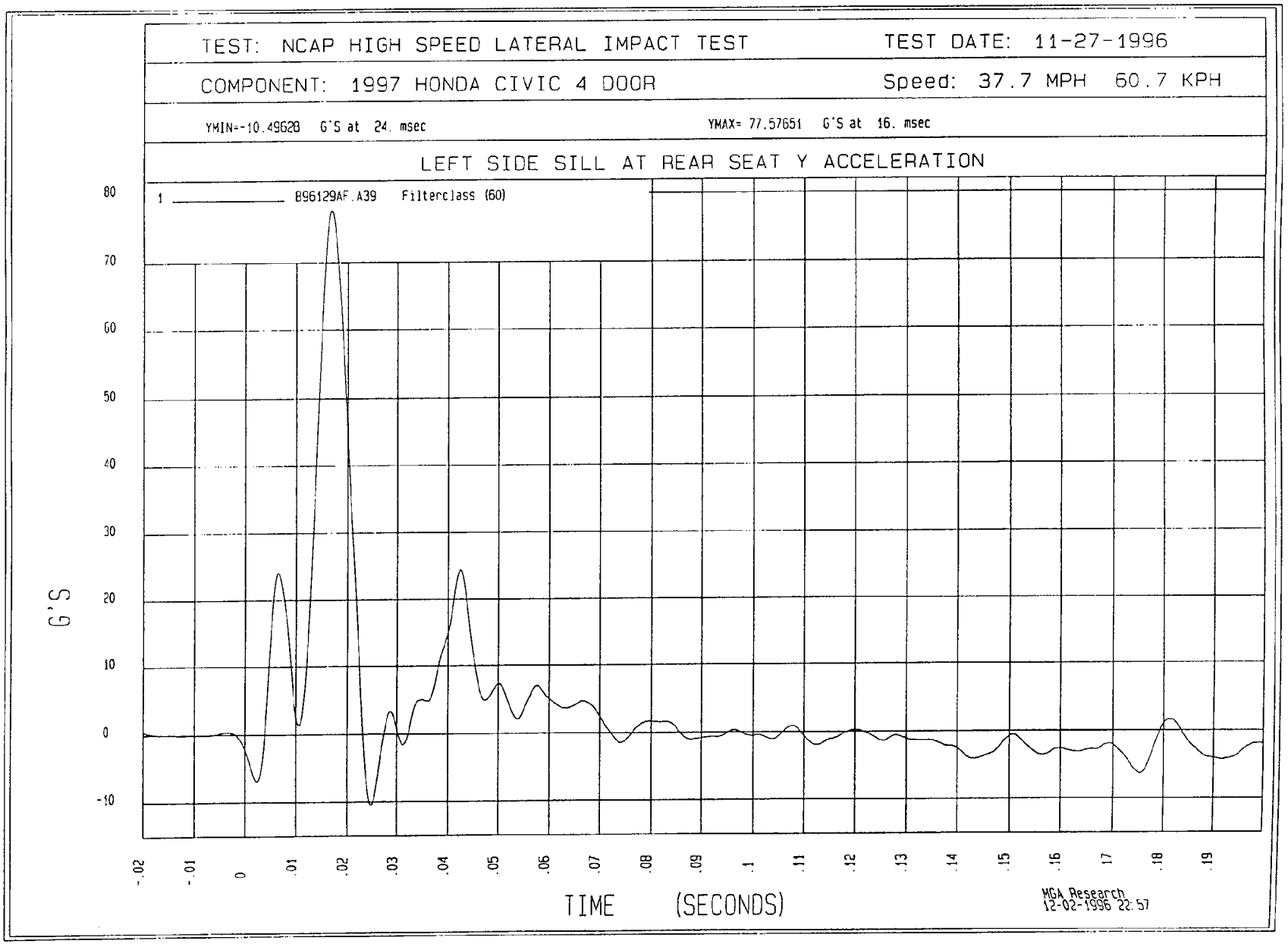
.18
.19
TIME (SECONDS)
MGA Research
12-02-1996 22:57


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=- 1130628 KPH at 2.5 msec
YMAX= 28.32981 KPH at 46. msec
LEFT SIDE SILL AT FRONT SEAT Y VELOCITY
1 _____ B96129AI.V38 Filterclass (180)
KPH
TIME Seconds
MGA Research
12-02-1996 22.57


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-10.49628 G'S at 24. msec
YMAX= 77.57651 G'S at 16. msec
LEFT SIDE SILL AT REAR SEAT Y ACCELERATION
1 B96129AF.A39 Filterclass (60)
80
70
60
50
40
30
20
10
0
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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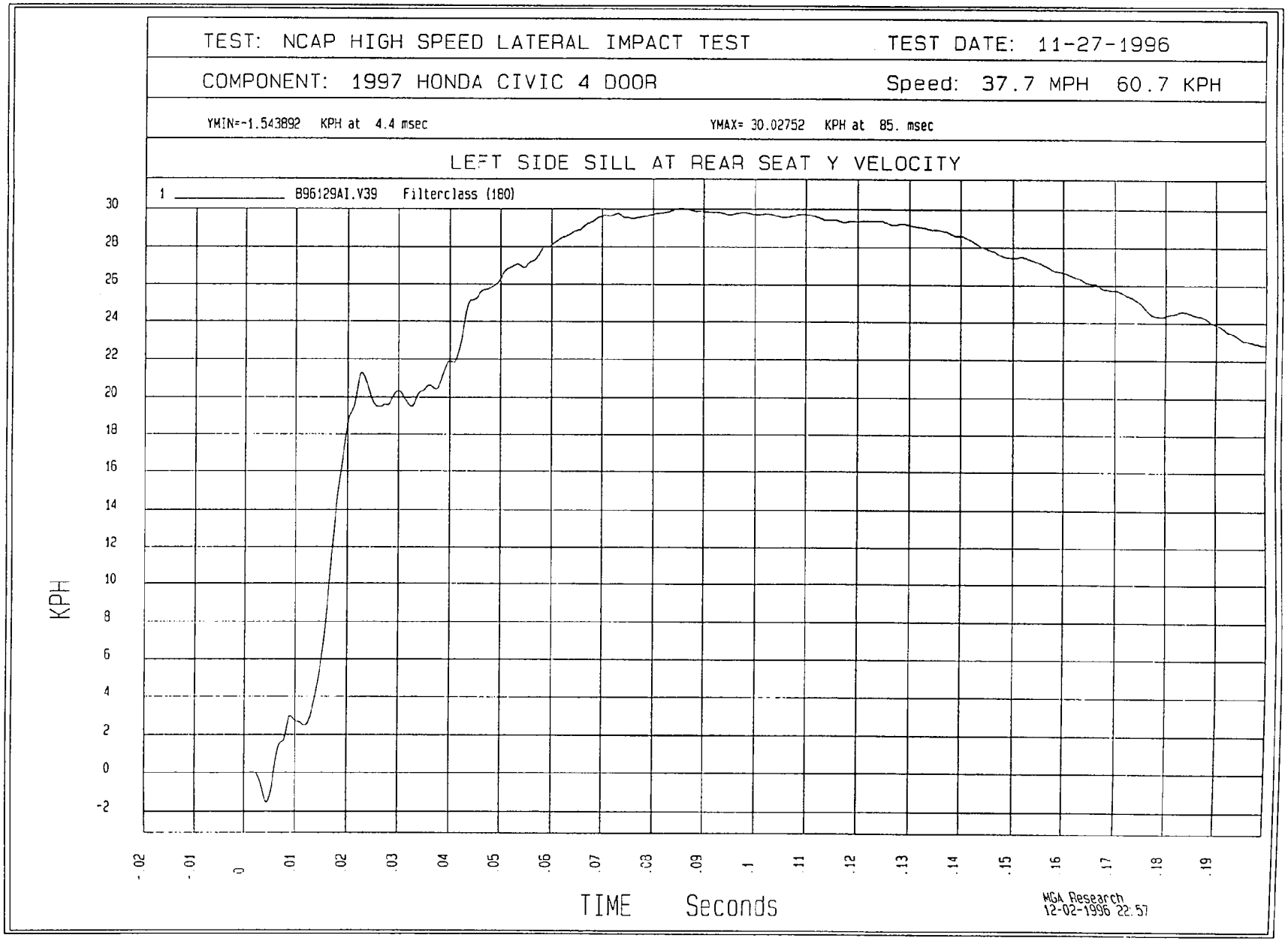
TIME (SECONDS)
MGA Research
12-02-1996 22:57


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-1.543892 KPH at 4.4 msec
YMAX= 30.02752 KPH at 85. msec
LEFT SIDE SILL AT REAR SEAT Y VELOCITY
1 B96129AI.V39 Filterclass (180)
KPH
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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.17
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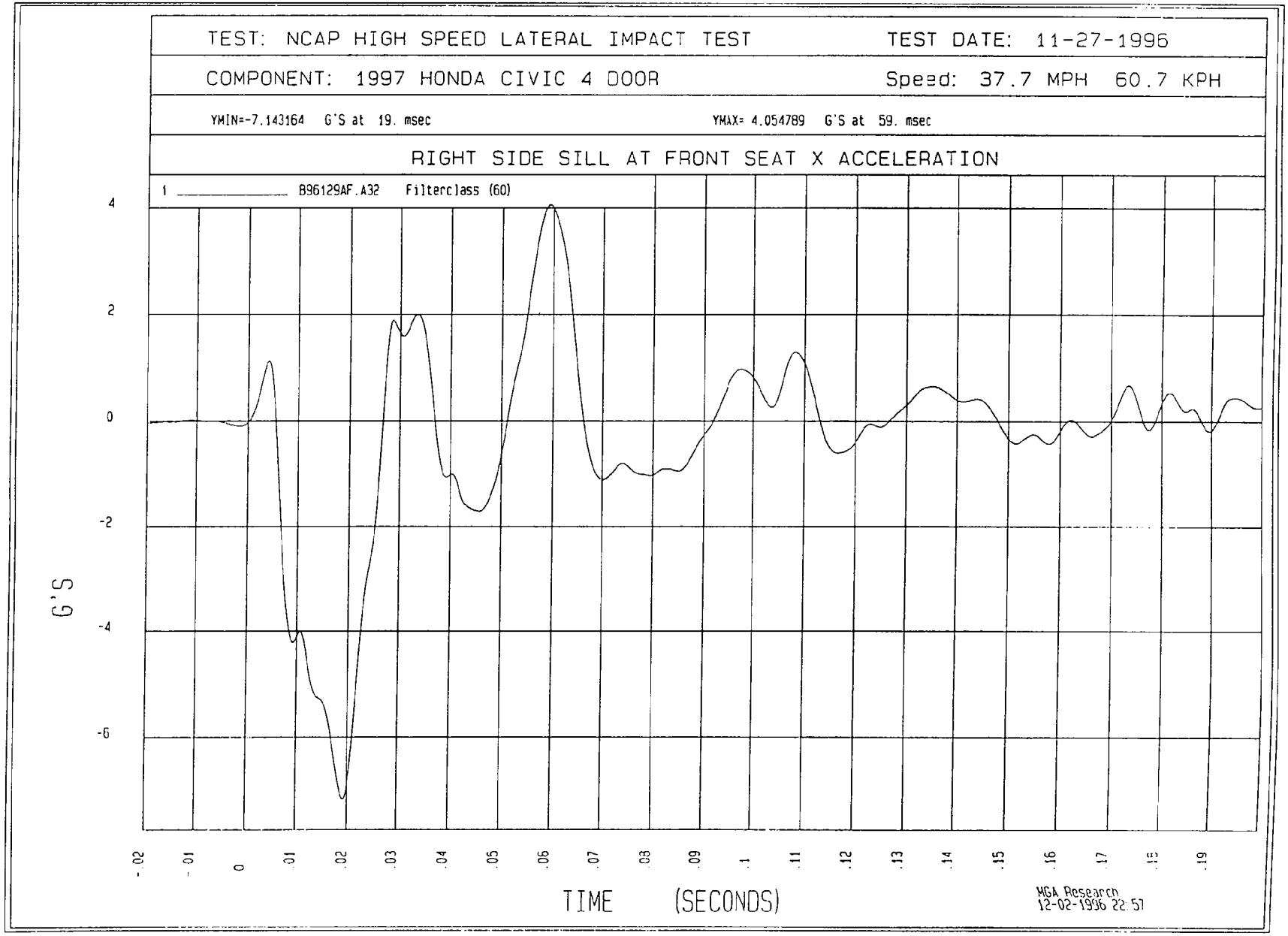
TIME Seconds
MGA Research
12-02-1996 22:57


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-7.143164 G'S at 19. msec
YMAX= 4.054789 G'S at 59. msec
RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION
1 B96129AF.A32 Filterclass (60)
4
2
0
-2
-4
-6
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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.12
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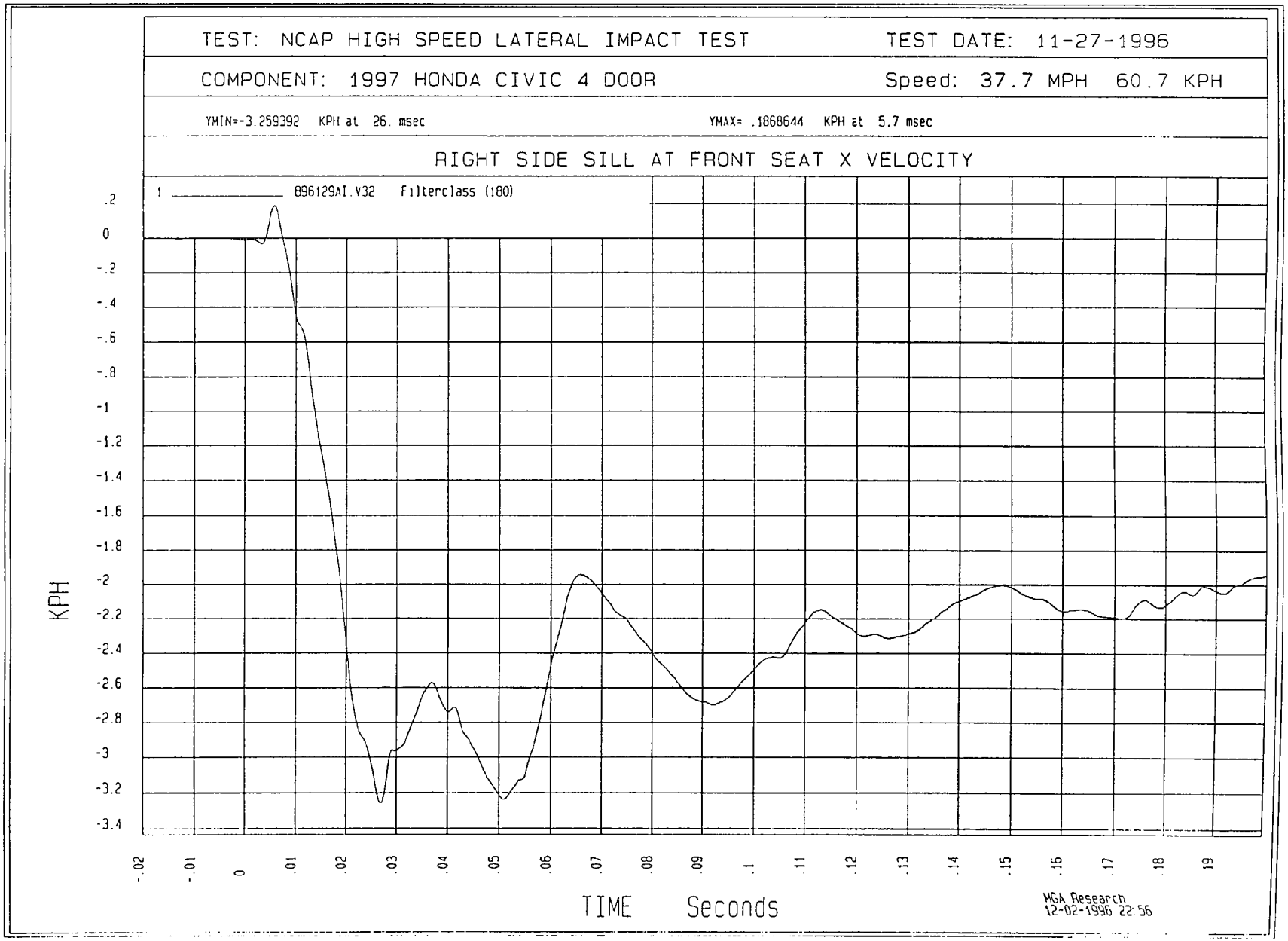
TIME (SECONDS)
MGA Research
12-02-1996 22:57


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-3.259392 KPH at 26. msec
YMAX= .1868644 KPH at 5.7 msec
RIGHT SIDE SILL AT FRONT SEAT X VELOCITY
1 896129AI.V32 Filterclass (180)
KPH
.2
0
-.2
-.4
-.6
-.8
-1
-1.2
-1.4
-1.6
-1.8
-2
-2.2
-2.4
-2.6
-2.8
-3
-3.2
-3.4
-.02
-.01
0
.01
.02
.03
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.05
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.14
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.17
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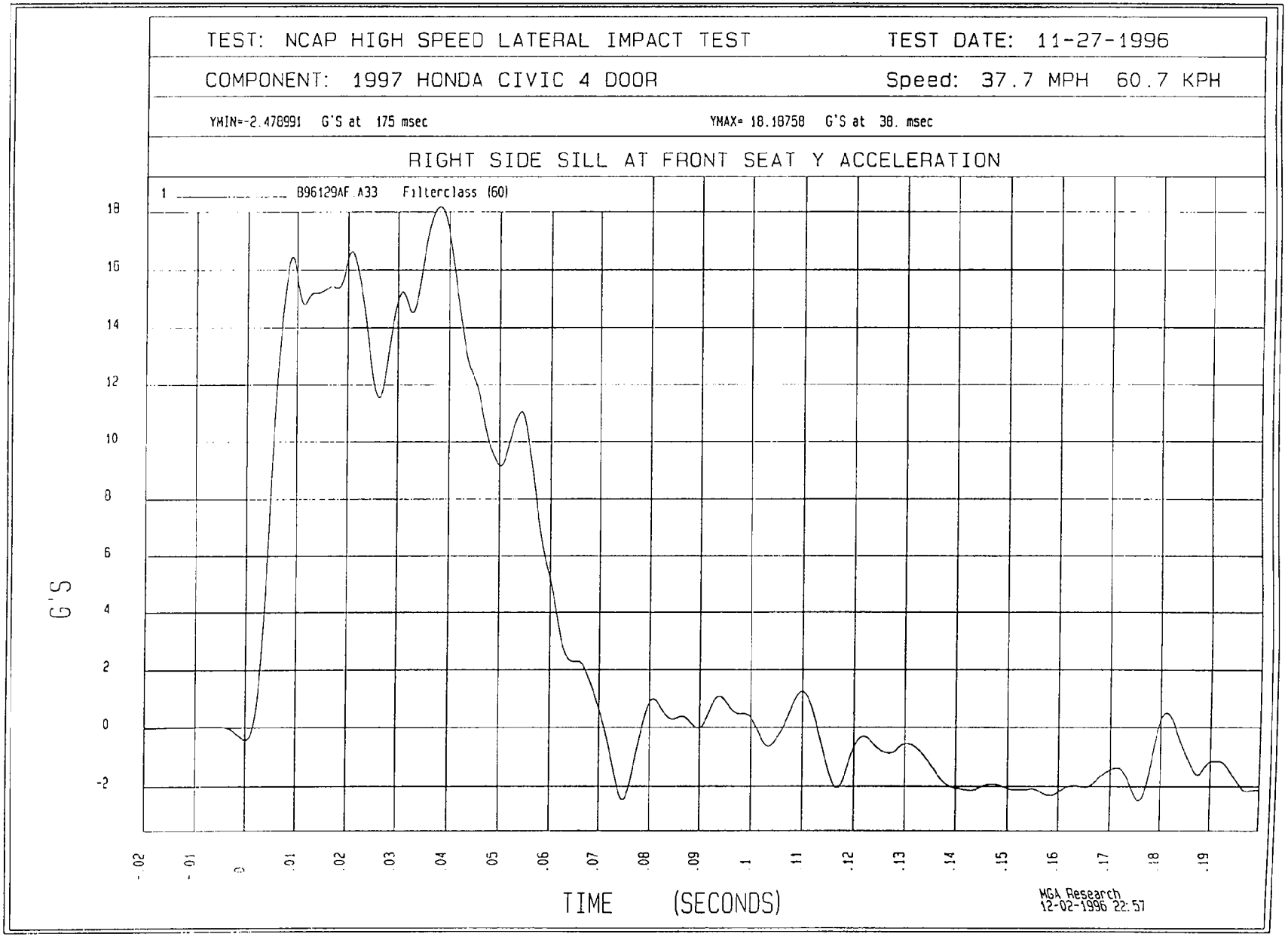
TIME Seconds
MGA Research
12-02-1996 22:56


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-2.478991 G'S at 175 msec
YMAX= 18.18758 G'S at 38. msec
RIGHT SIDE SILL AT FRONT SEAT Y ACCELERATION
1 B96129AF.A33 Filterclass (60)
18
16
14
12
10
8
6
4
2
0
-2
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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.13
.14
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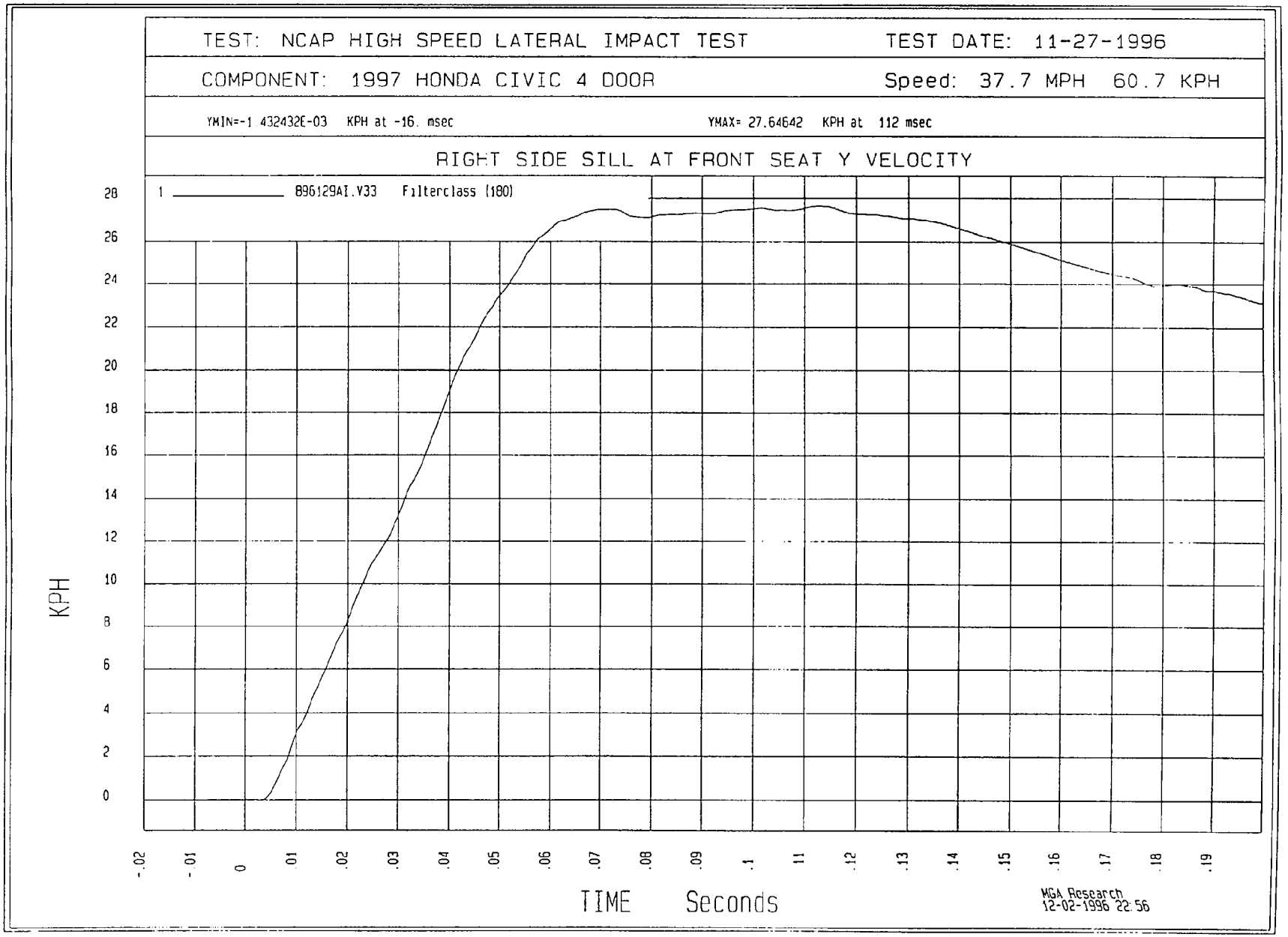
TIME (SECONDS)
MGA Research
12-02-1996 22:57


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-1.432432E-03 KPH at -16. msec
YMAX= 27.64642 KPH at 112 msec
RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY
1 896129AI.V33 Filterclass (180)
KPH
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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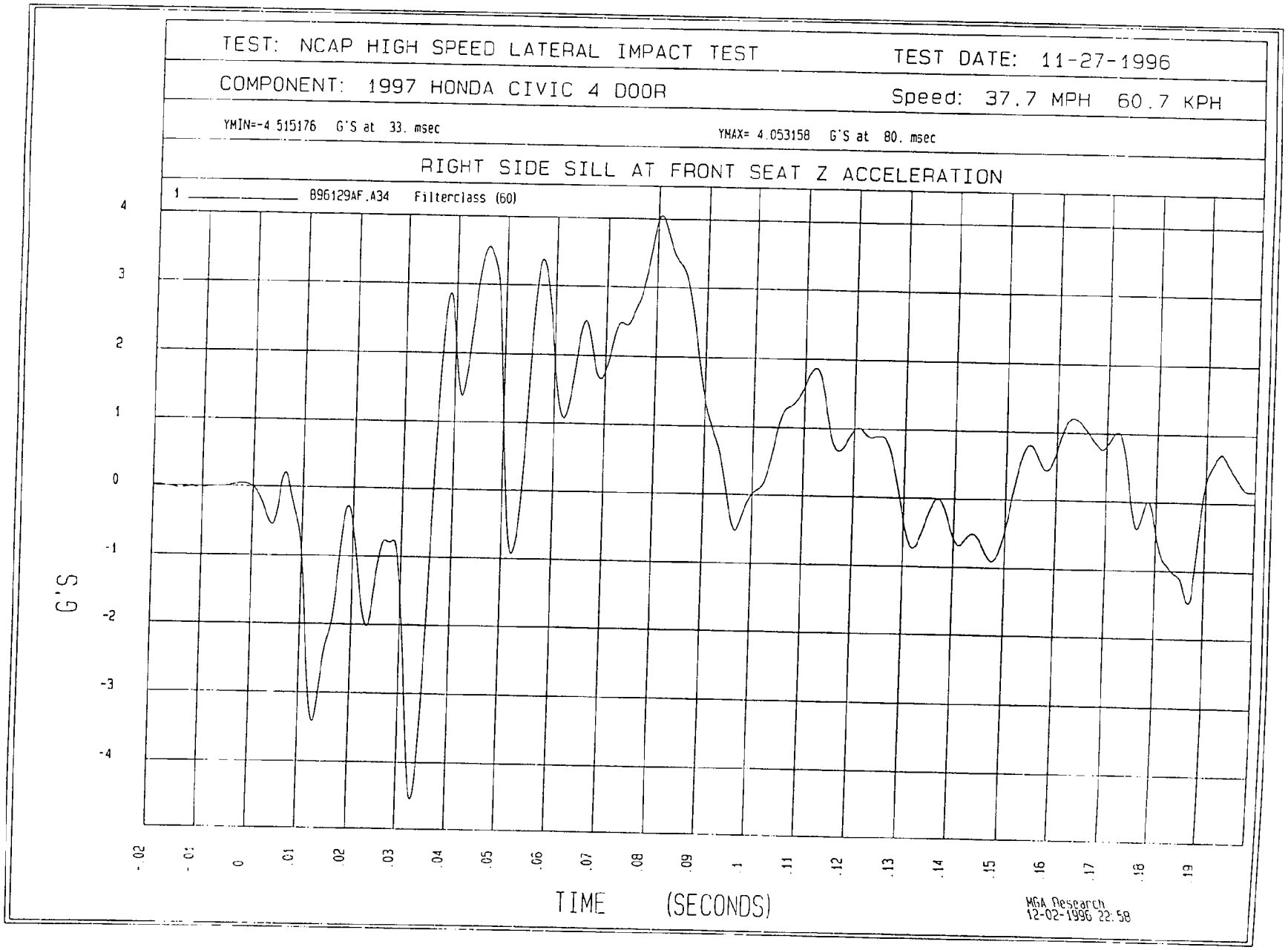
TIME Seconds
MGA Research
12-02-1996 22:56


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-4.515176 G'S at 33. msec
YMAX= 4.053158 G'S at 80. msec
RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION
1 B96129AF.A34 Filterclass (60)
G'S
4
3
2
1
0
-1
-2
-3
-4
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
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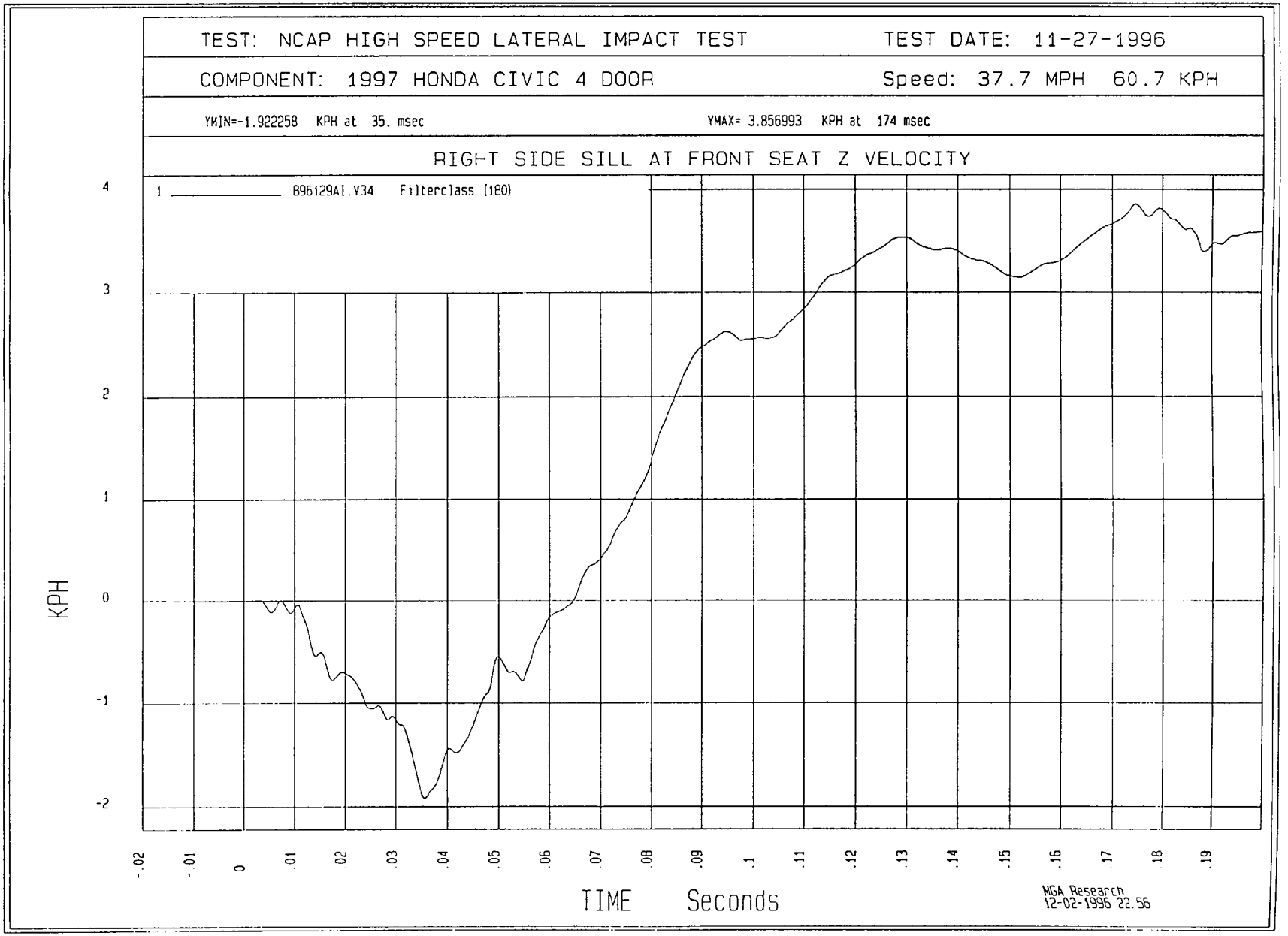
TIME (SECONDS)
MGA Research
12-02-1996 22:58


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-1.922258 KPH at 35. msec
YMAX= 3.856993 KPH at 174 msec
RIGHT SIDE SILL AT FRONT SEAT Z VELOCITY
1 B96129AI.V34 Filterclass (180)
KPH
4
3
2
1
0
-1
-2
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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.14
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.17
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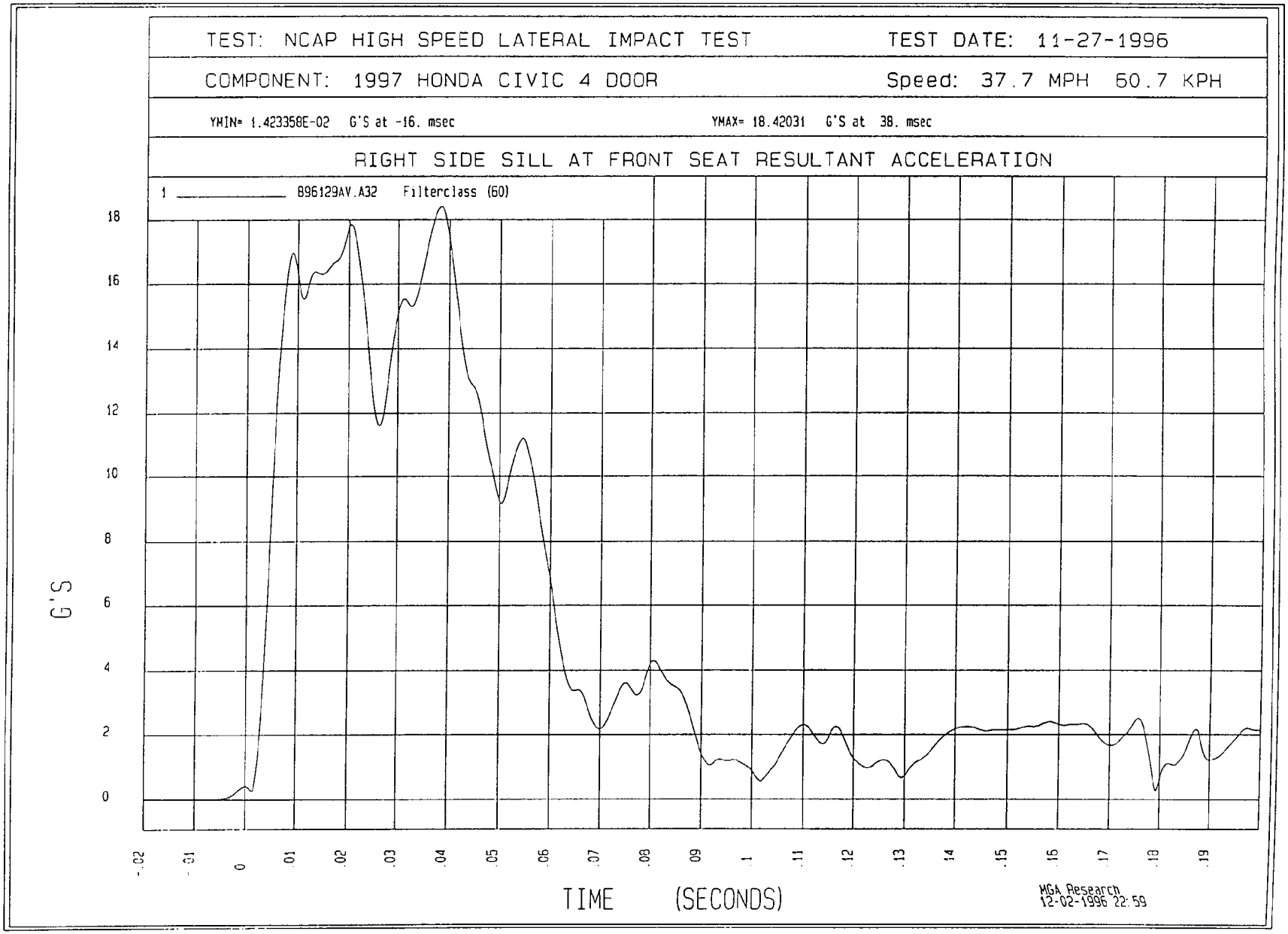
.19
TIME Seconds
MGA Research
12-02-1996 22.56


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= 1.423358E-02 G'S at -16. msec
YMAX= 18.42031 G'S at 38. msec
RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION
1 B96129AV.A32 Filterclass (60)
G'S
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
.05
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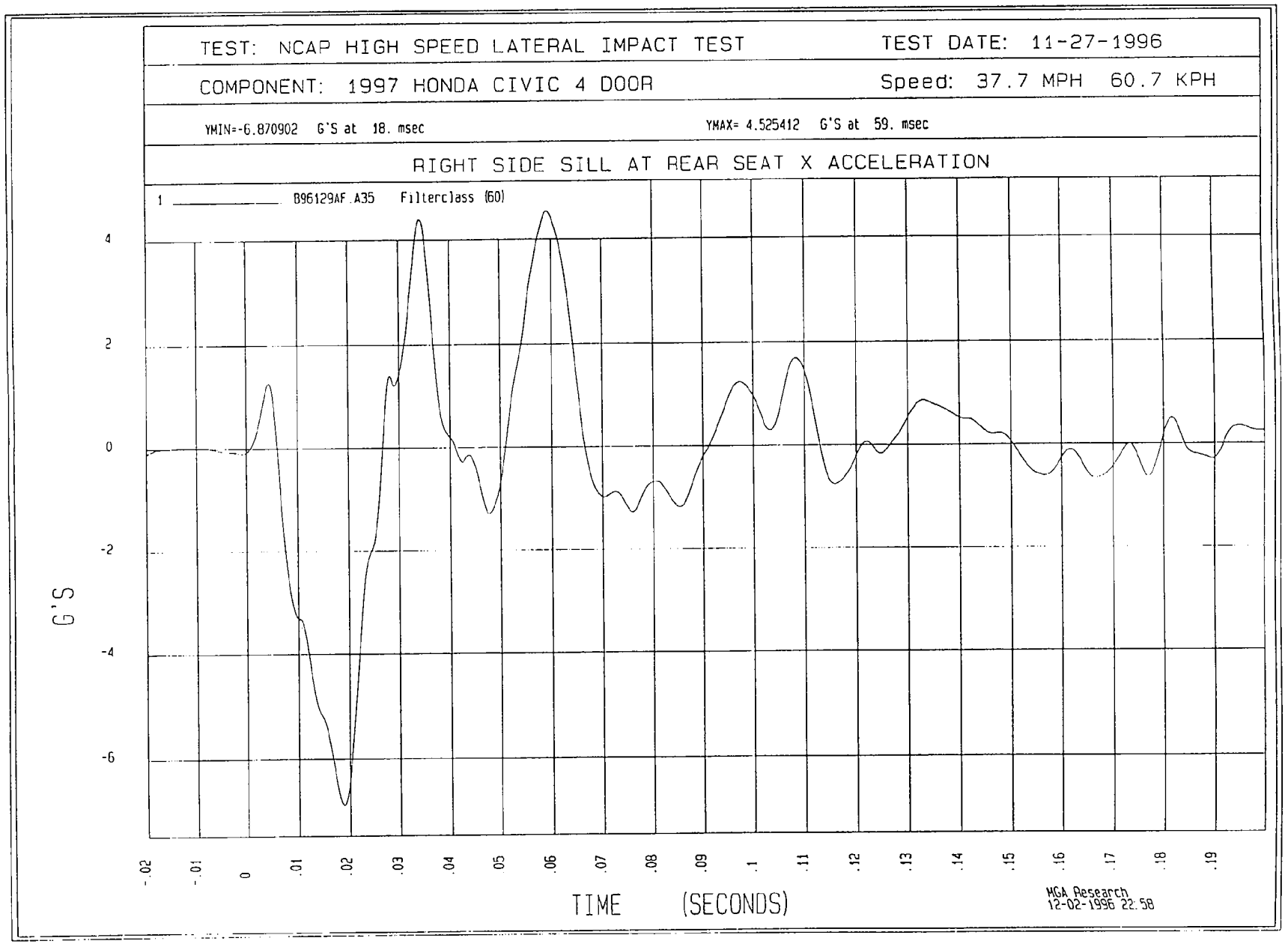
TIME (SECONDS)
MGA Research
12-02-1996 22:59


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-6.870902 G'S at 18. msec
YMAX= 4.525412 G'S at 59. msec
RIGHT SIDE SILL AT REAR SEAT X ACCELERATION
1 B96129AF.A35 Filterclass (60)
4
2
0
-2
-4
-6
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
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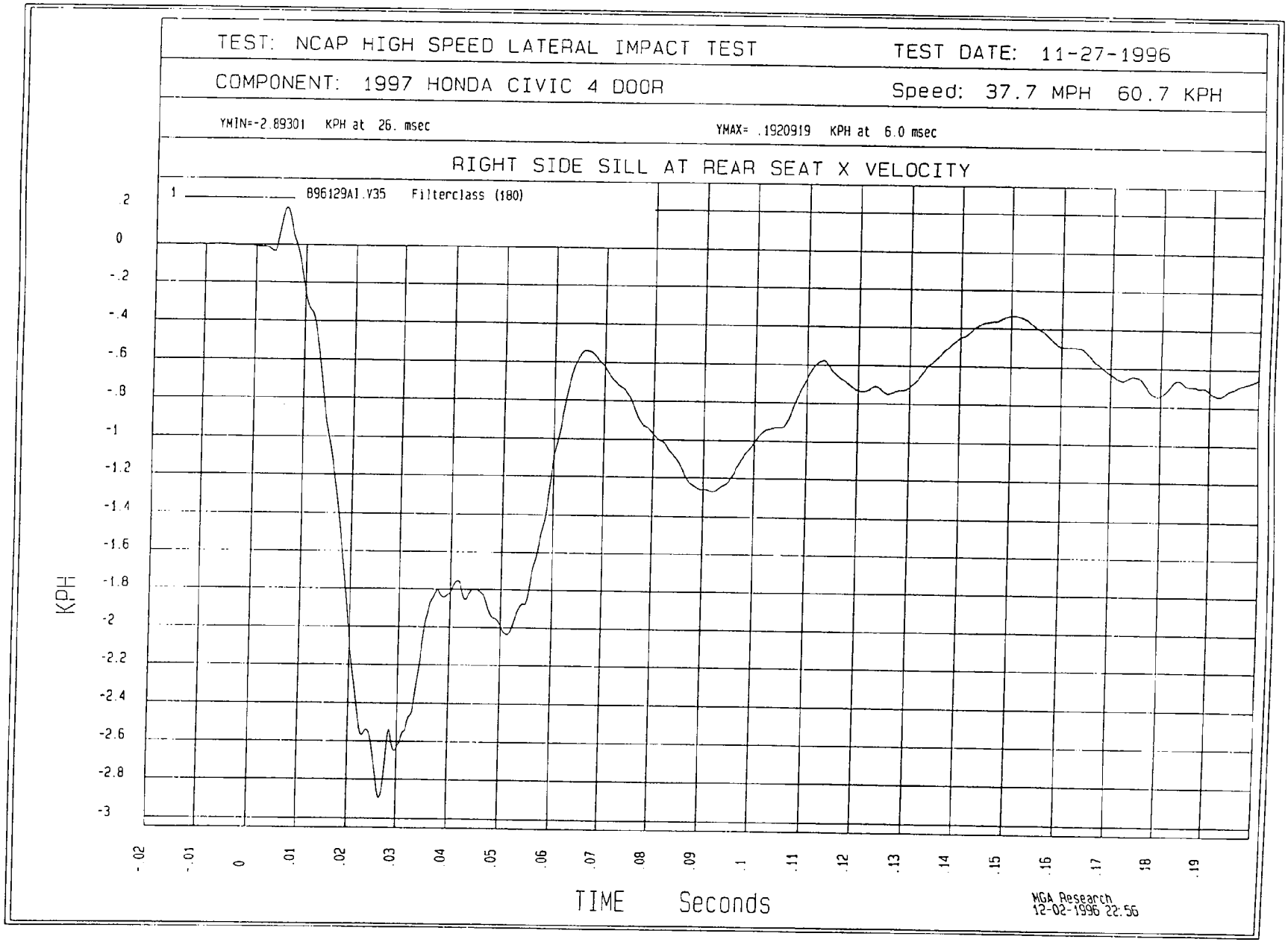
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1996 22:58


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-2.89301 KPH at 26. msec
YMAX= .1920919 KPH at 6.0 msec
RIGHT SIDE SILL AT REAR SEAT X VELOCITY
1 B96129A1.V35 Filterclass (180)
KPH
2
0
-.2
-.4
-.6
-.8
-1
-1.2
-1.4
-1.6
-1.8
-2
-2.2
-2.4
-2.6
-2.8
-3
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
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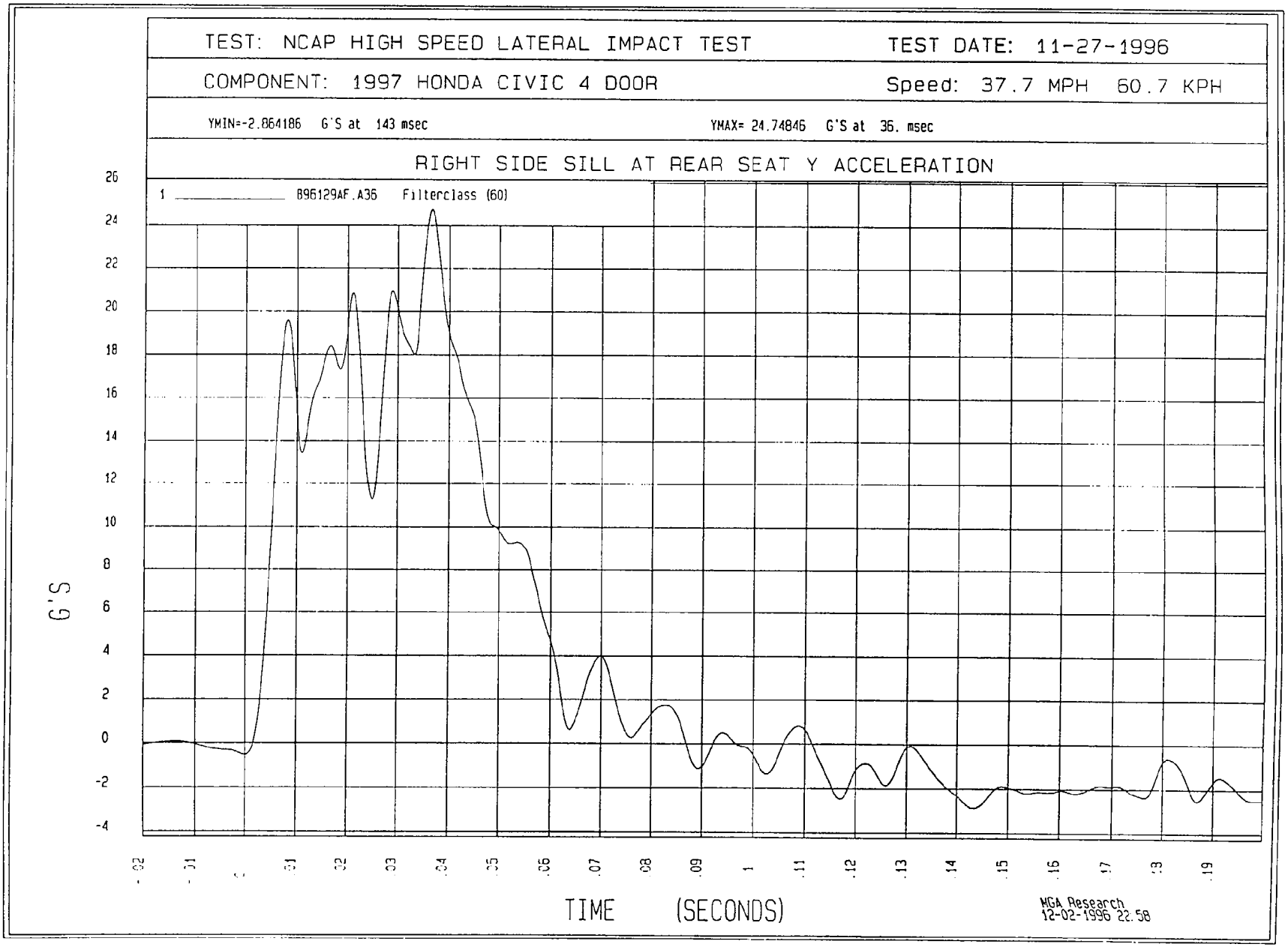
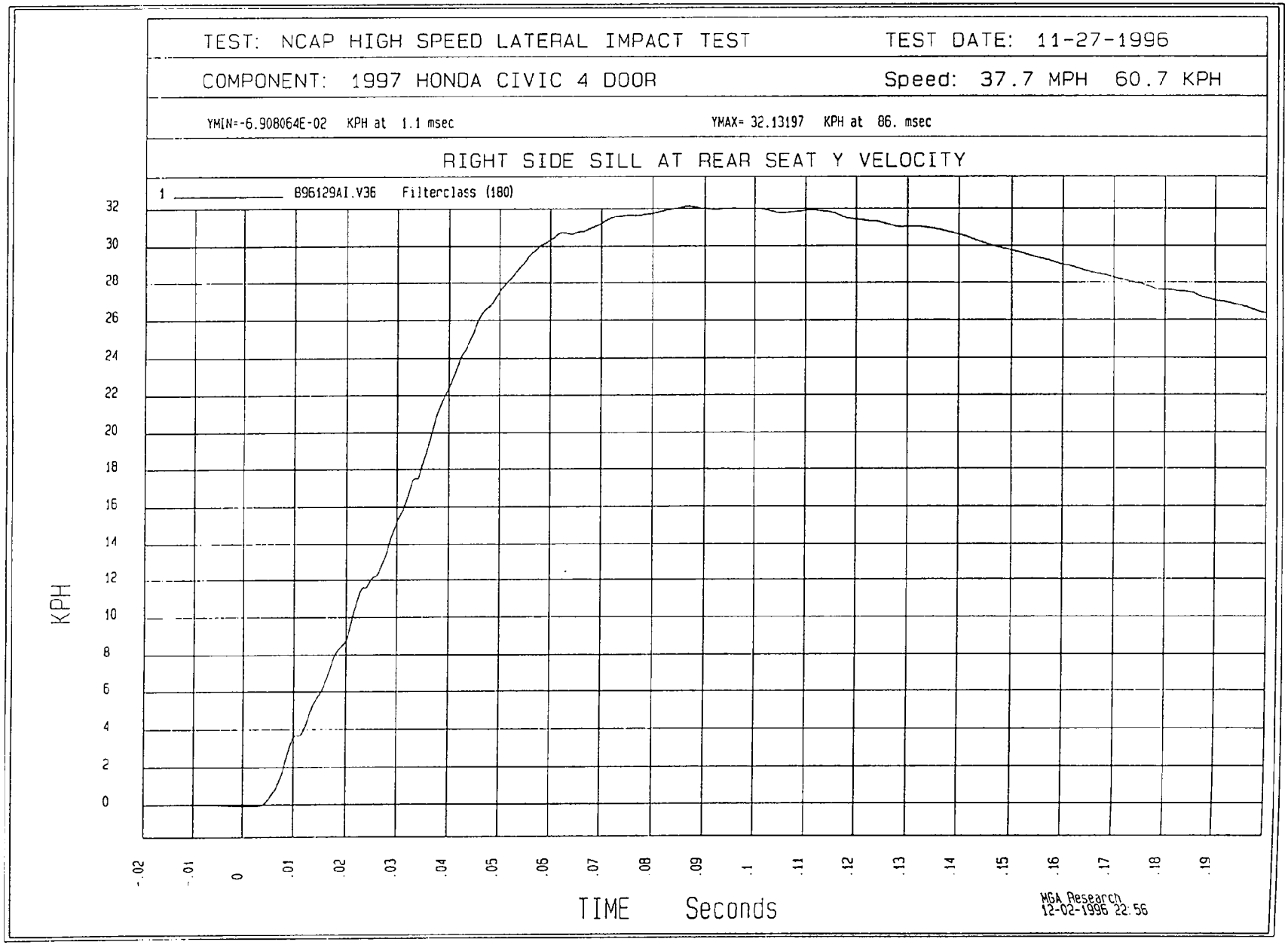
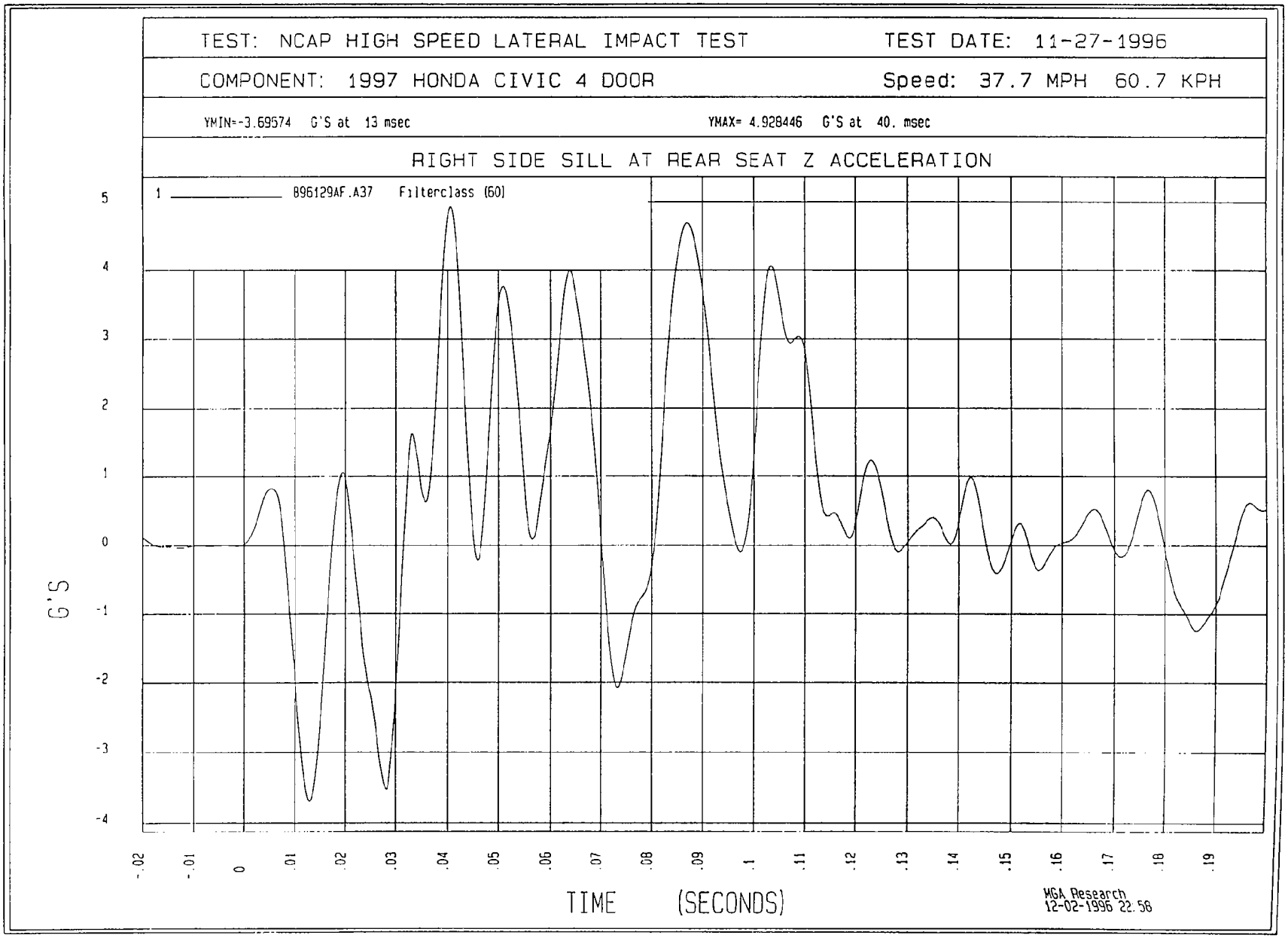
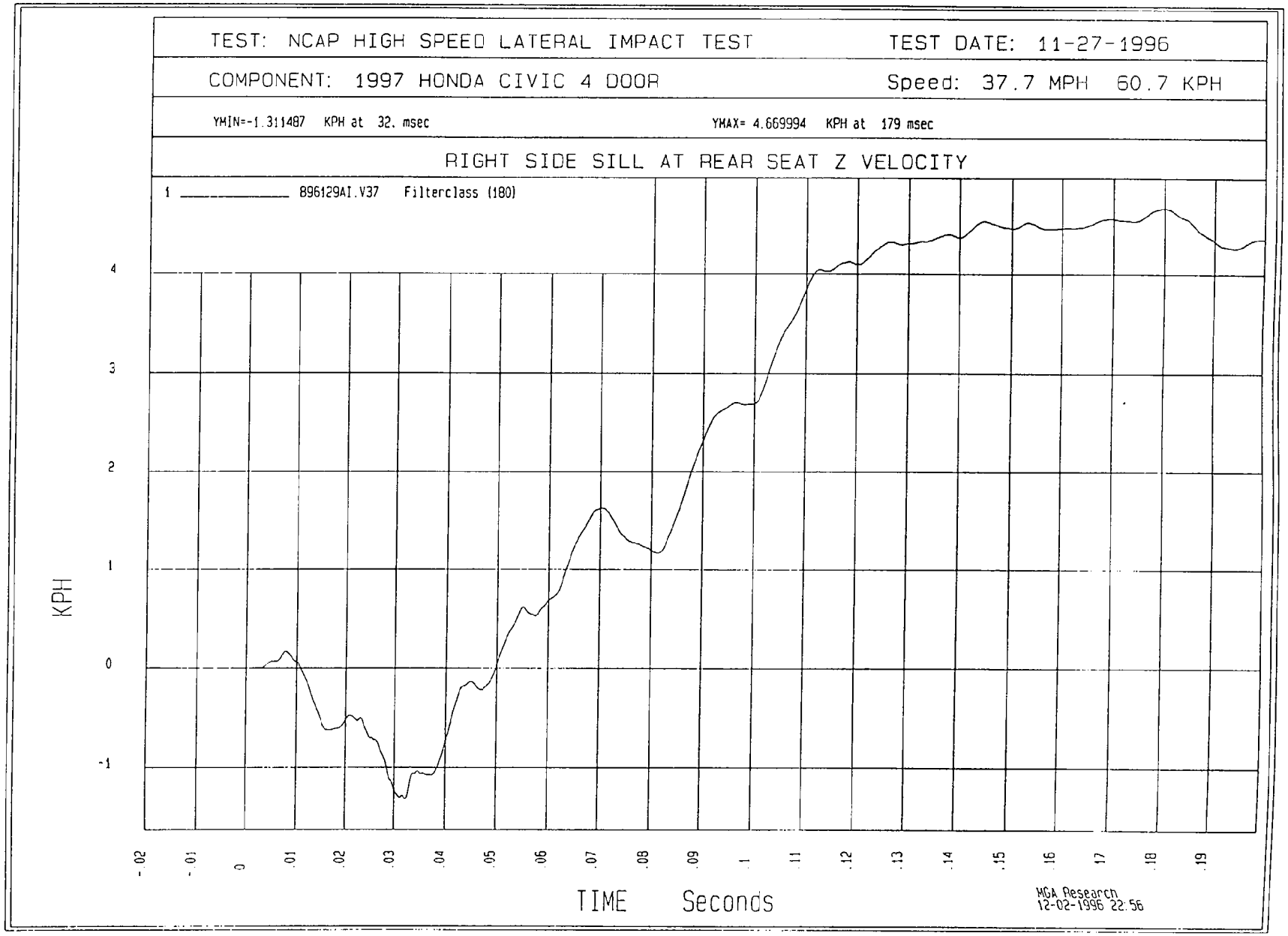
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-02-1996 22:56


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-2.864186 G'S at 143 msec
YMAX= 24.74846 G'S at 36. msec
RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION
1 B96129AF.A36 Filterclass (60)
G'S
TIME (SECONDS)
MGA Research
12-02-1996 22.58


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-6.908064E-02 KPH at 1.1 msec
YMAX= 32.13197 KPH at 86. msec
RIGHT SIDE SILL AT REAR SEAT Y VELOCITY
1 B96129AI.V36 Filterclass (180)
KPH
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-02-1996 22:56


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-3.69574 G'S at 13 msec
YMAX= 4.928446 G'S at 40. msec
RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION
1 896129AF.A37 Filterclass (60)
G'S
5
4
3
2
1
0
-1
-2
-3
-4
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1996 22:56


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-1.311487 KPH at 32. msec
YMAX= 4.669994 KPH at 179 msec
RIGHT SIDE SILL AT REAR SEAT Z VELOCITY
1 896129AI.V37 Filterclass (180)
KPH
4
3
2
1
0
-1
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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.13
.14
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.17
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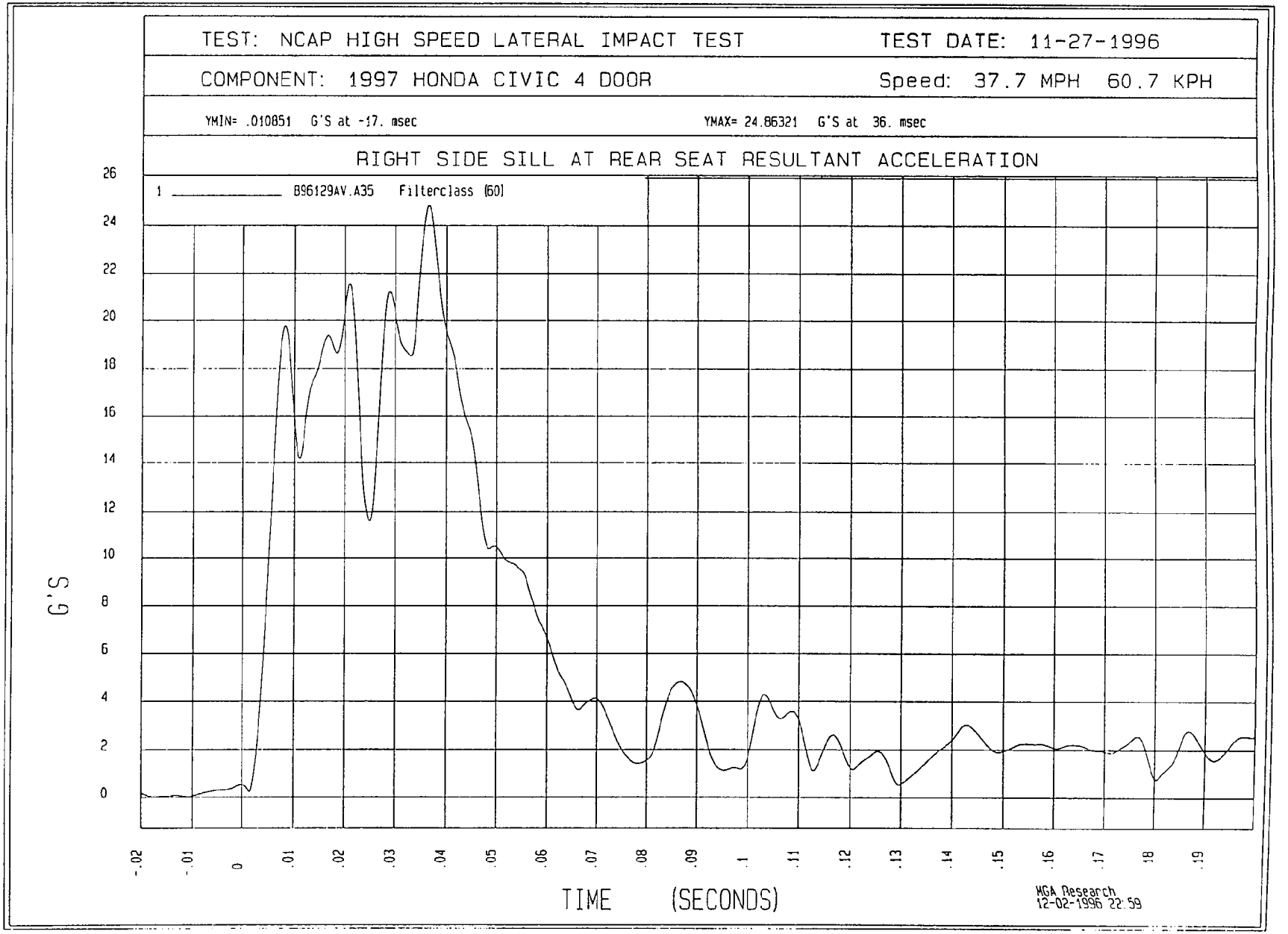
.19
TIME Seconds
MGA Research
12-02-1996 22:56


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= .010851 G'S at -17. msec
YMAX= 24.86321 G'S at 36. msec
RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION
1 B96129AV.A35 Filterclass (60)
G'S
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
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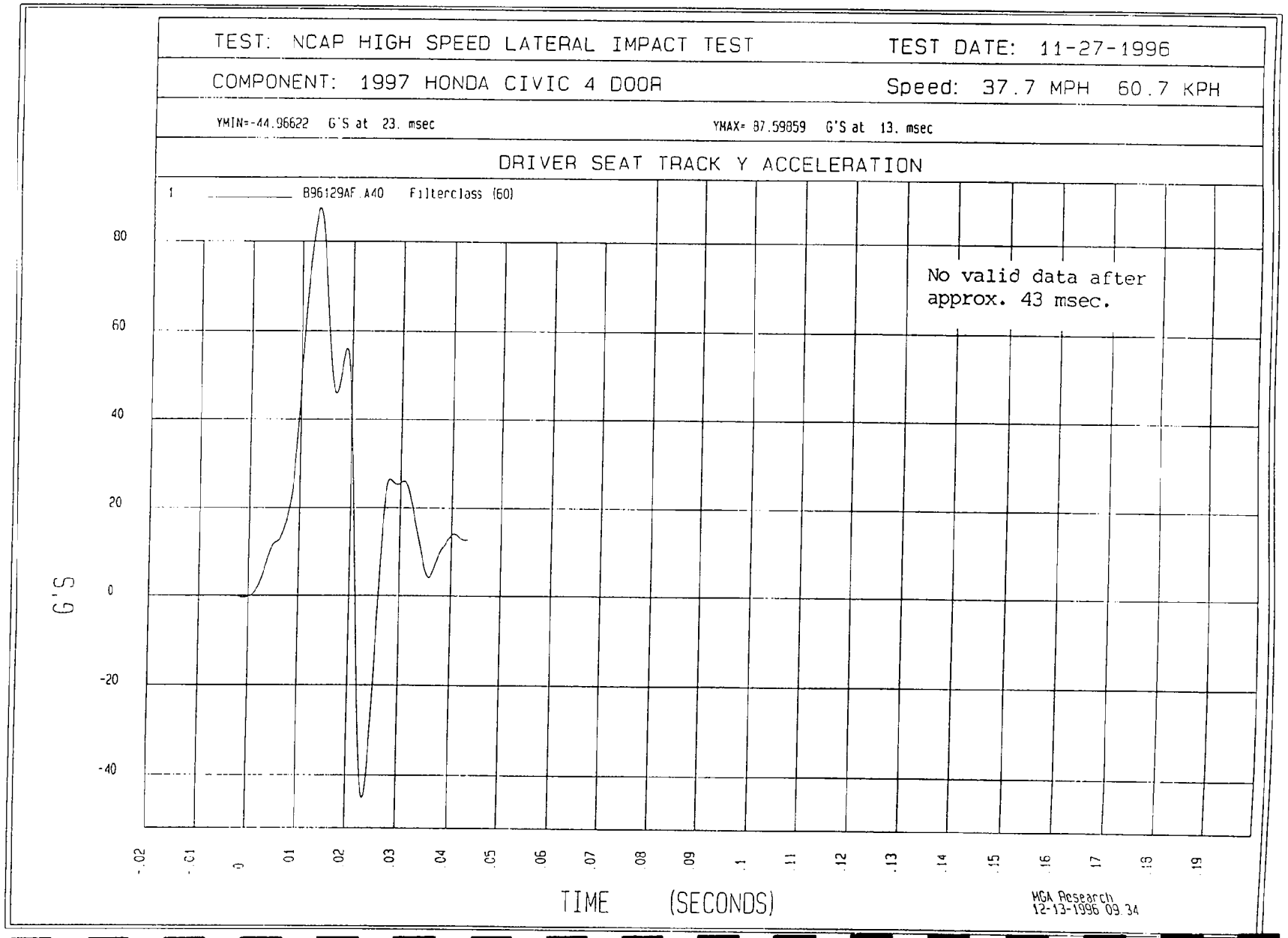
TIME (SECONDS)
MGA Research
12-02-1996 22:59


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-44.96622 G'S at 23. msec
YMAX= 87.59859 G'S at 13. msec
DRIVER SEAT TRACK Y ACCELERATION
1 B96129AF.A40 Filterclass (60)
No valid data after approx. 43 msec.
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
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.06
.07
.08
.09
.1
.11
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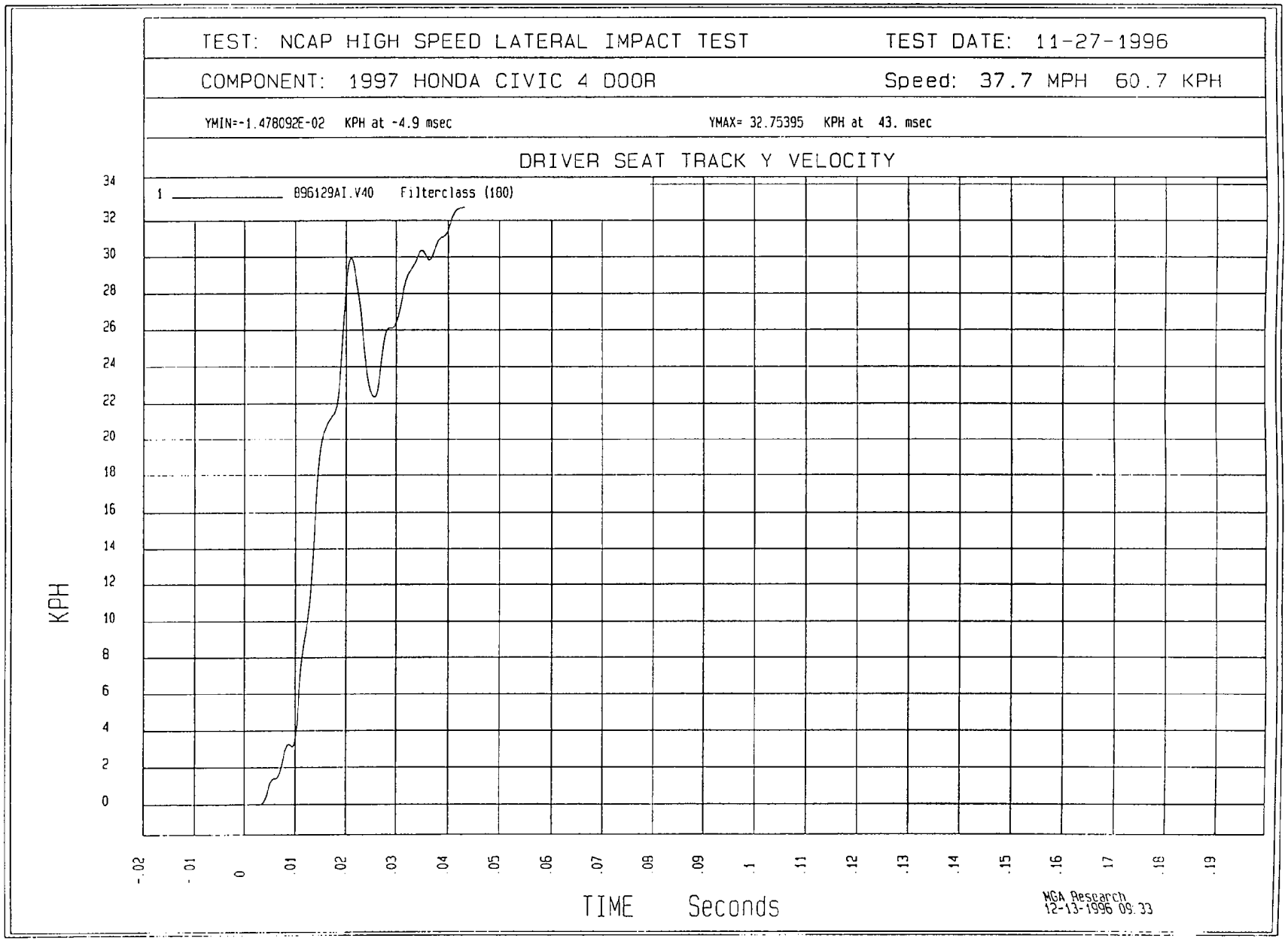
TIME (SECONDS)
MGA Research
12-13-1996 09:34


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-1.478092E-02 KPH at -4.9 msec
YMAX= 32.75395 KPH at 43. msec
DRIVER SEAT TRACK Y VELOCITY
1 B96129AI.V40 Filterclass (180)
KPH
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
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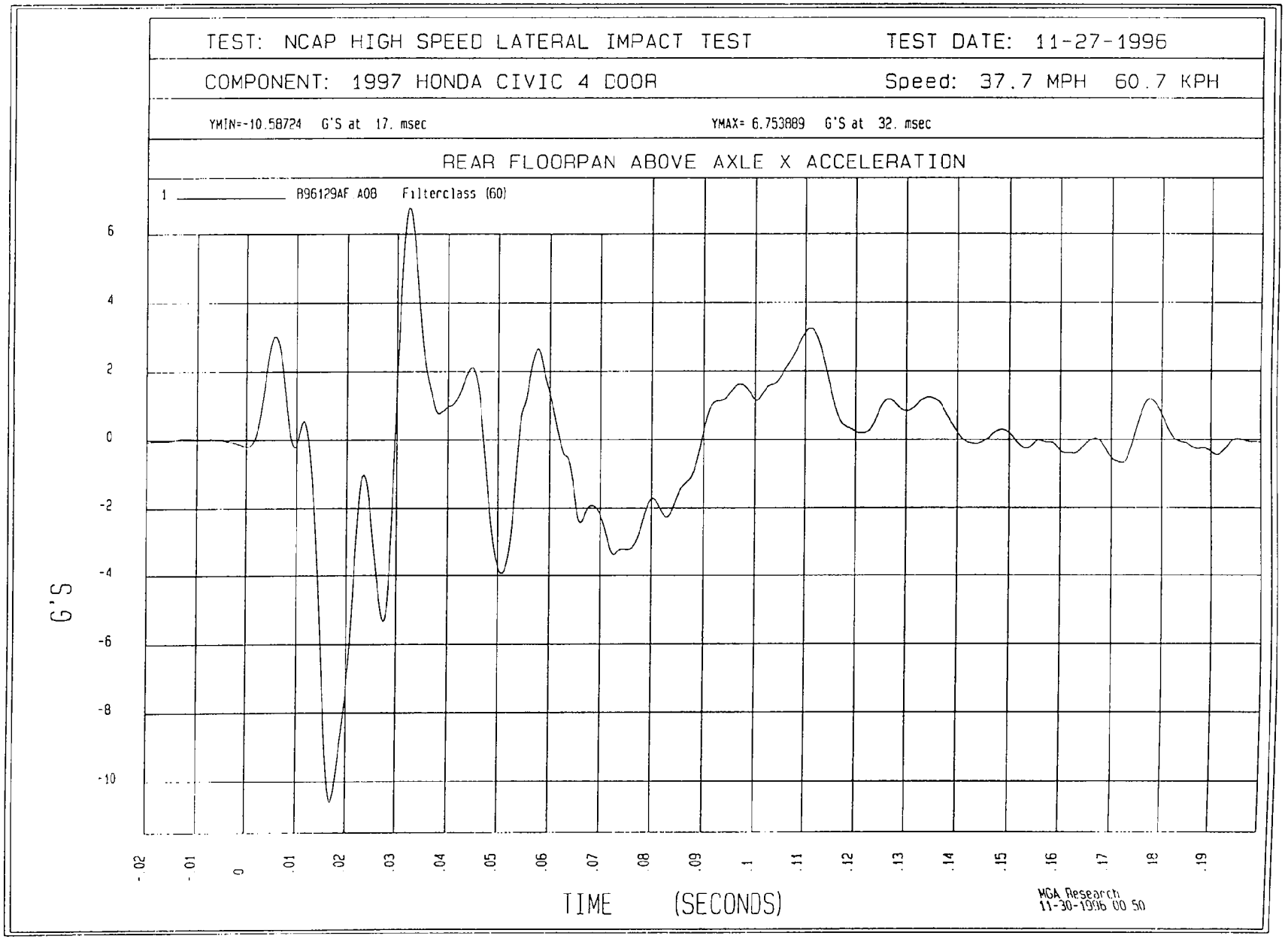
TIME Seconds
MGA Research
12-13-1996 09:33


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-10.58724 G'S at 17. msec
YMAX= 6.753889 G'S at 32. msec
REAR FLOORPAN ABOVE AXLE X ACCELERATION
1 R96129AF.A08 Filterclass (60)
6
4
2
0
-2
-4
-6
-8
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
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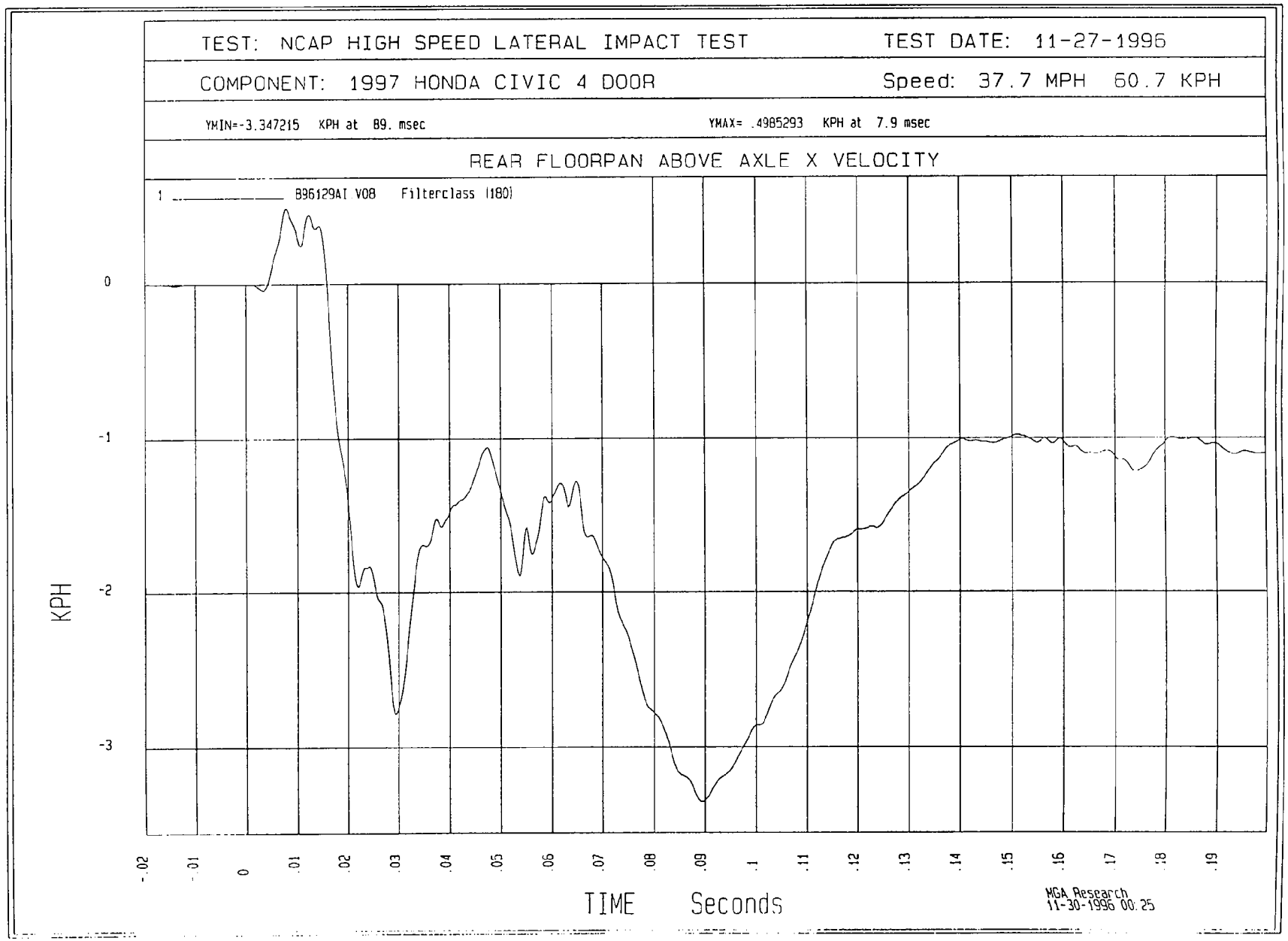
TIME (SECONDS)
MGA Research
11-30-1996 00 50


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-3.347215 KPH at 89. msec
YMAX= .4985293 KPH at 7.9 msec
REAR FLOORPAN ABOVE AXLE X VELOCITY
1 B96129AI V08 Filterclass (180)
KPH
0
-1
-2
-3
-.02
-.01
0
.01
.02
.03
.04
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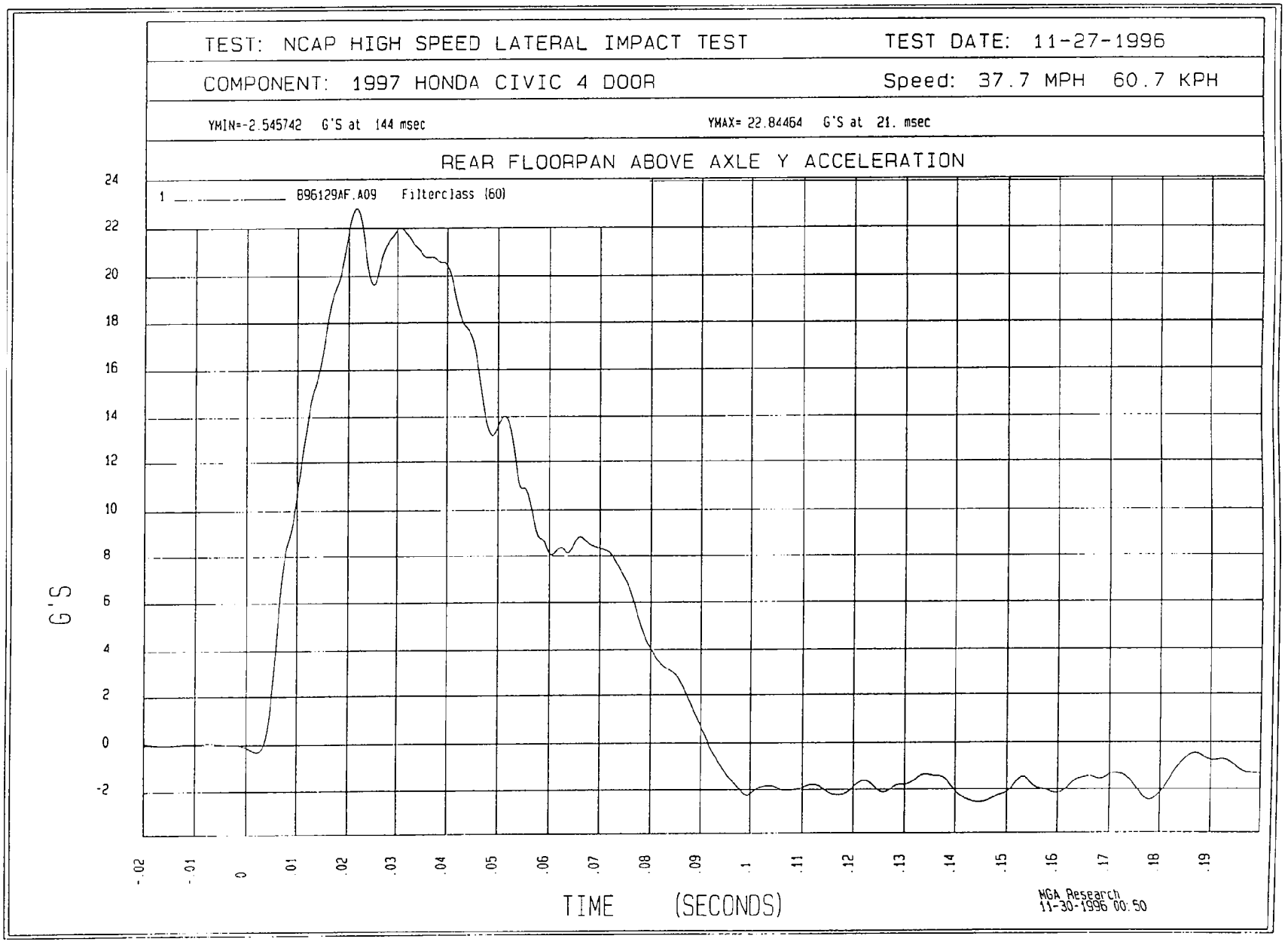
TIME Seconds
MGA Research
11-30-1996 00:25


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-2.545742 G'S at 144 msec
YMAX= 22.84464 G'S at 21. msec
REAR FLOORPAN ABOVE AXLE Y ACCELERATION
1 B96129AF.A09 Filterclass (60)
G'S
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-.02
-.01
0
.01
.02
.03
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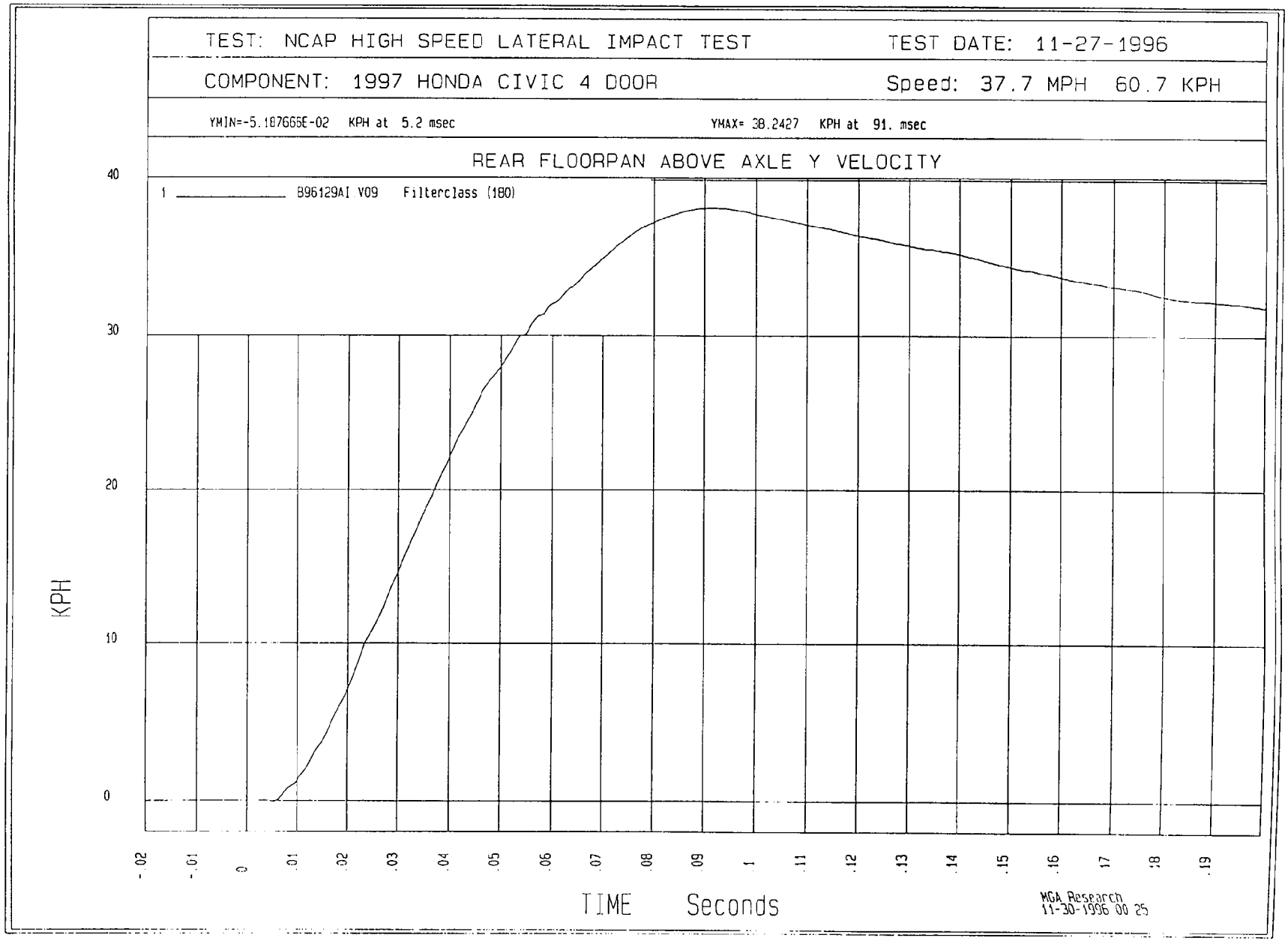
TIME (SECONDS)
MGA Research
11-30-1996 00:50


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-5.187665E-02 KPH at 5.2 msec
YMAX= 38.2427 KPH at 91. msec
REAR FLOORPAN ABOVE AXLE Y VELOCITY
1 896129AI V09 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
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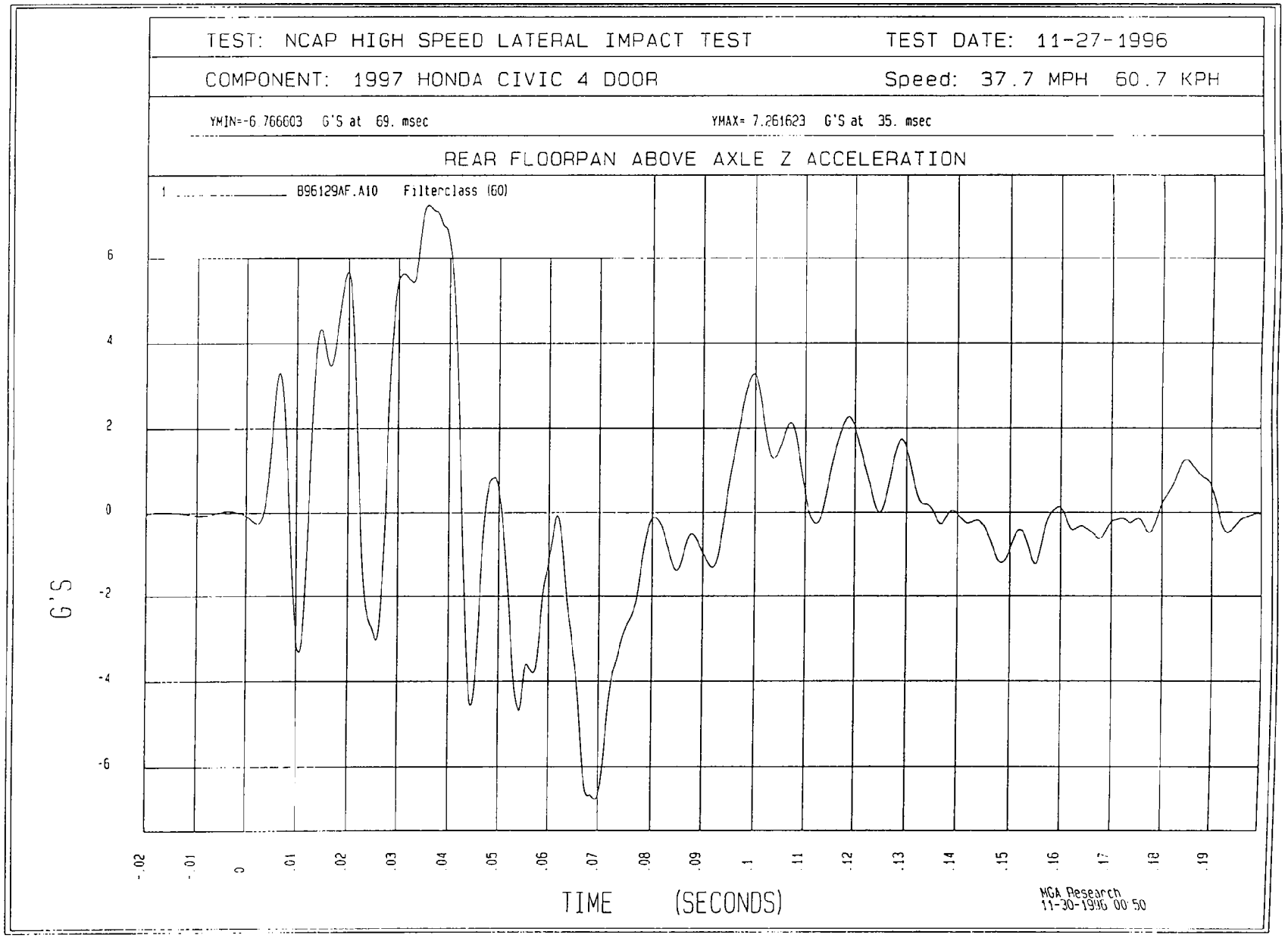
TIME Seconds
MGA Research
11-30-1996 00 25


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-6.766603 G'S at 69. msec
YMAX= 7.261623 G'S at 35. msec
REAR FLOORPAN ABOVE AXLE Z ACCELERATION
1 B96129AF.A10 Filterclass (60)
G'S
6
4
2
0
-2
-4
-6
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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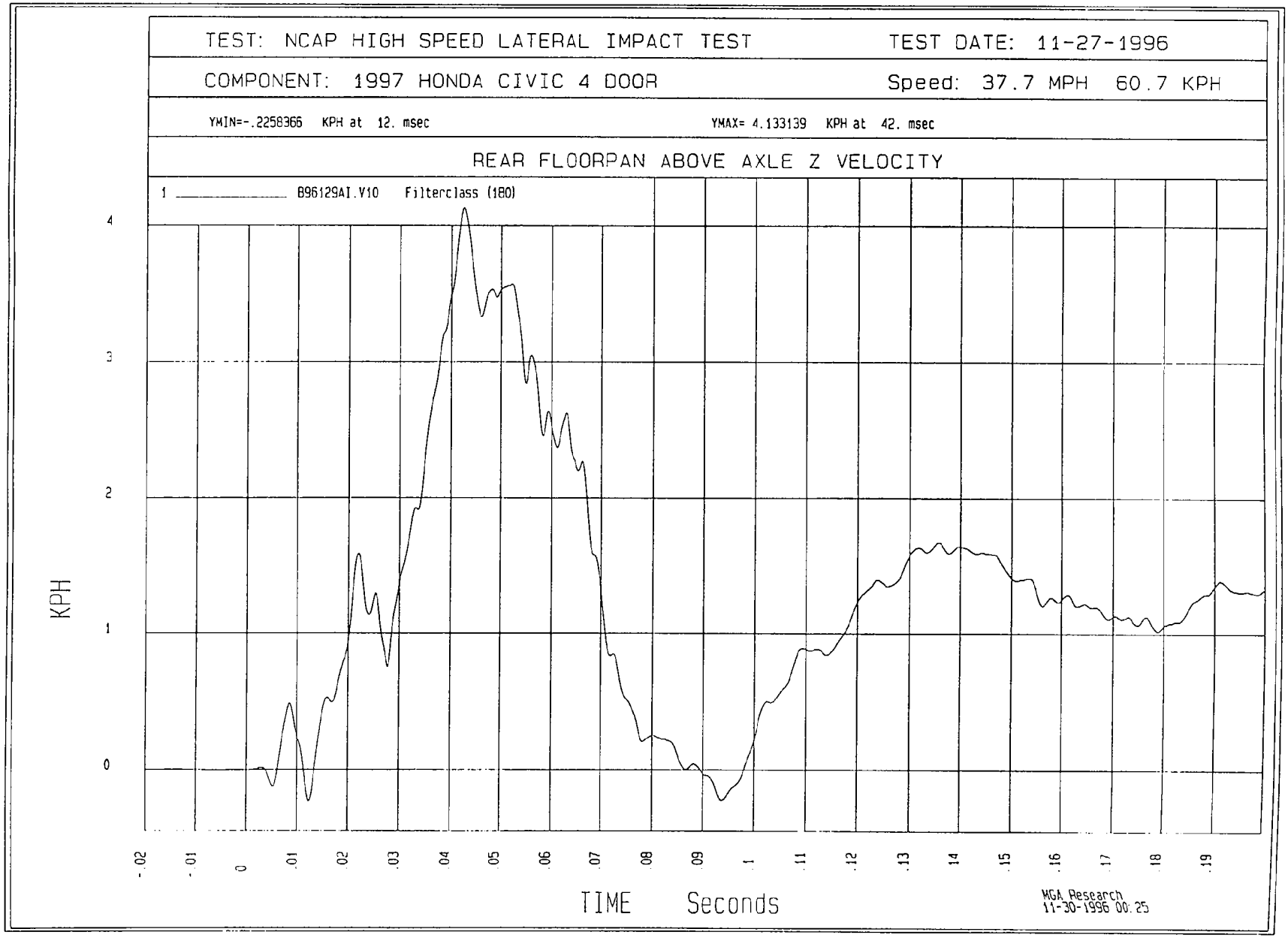
TIME (SECONDS)
MGA Research
11-30-1996 00:50


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-.2258366 KPH at 12. msec
YMAX= 4.133139 KPH at 42. msec
REAR FLOORPAN ABOVE AXLE Z VELOCITY
1 B96129AI.V10 Filterclass (180)
KPH
4
3
2
1
0
-.02
-.01
0
.01
.02
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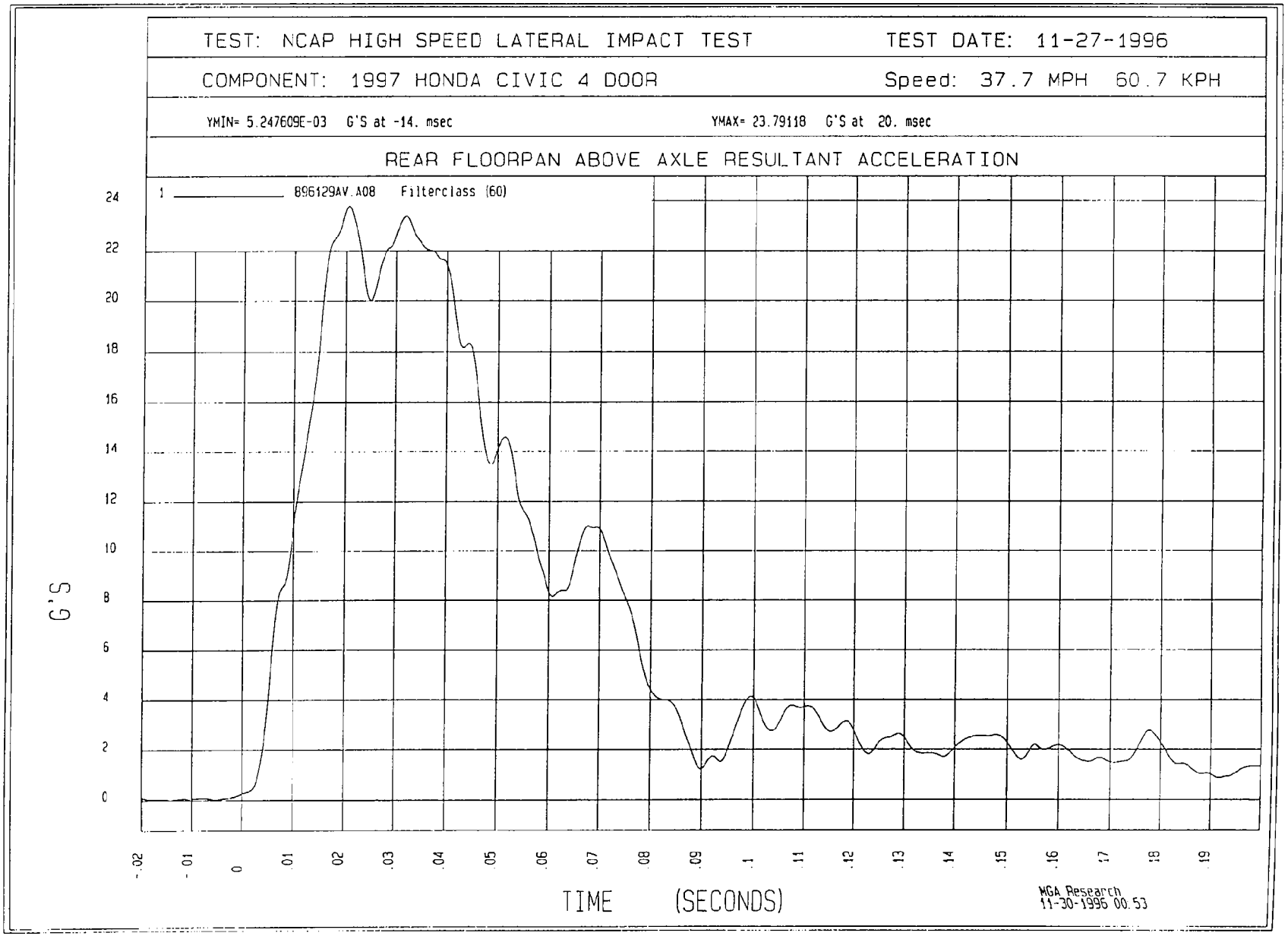
TIME Seconds
MGA Research
11-30-1996 00:25


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= 5.247609E-03 G'S at -14. msec
YMAX= 23.79118 G'S at 20. msec
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION
1 B96129AV.A08 Filterclass (60)
G'S
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
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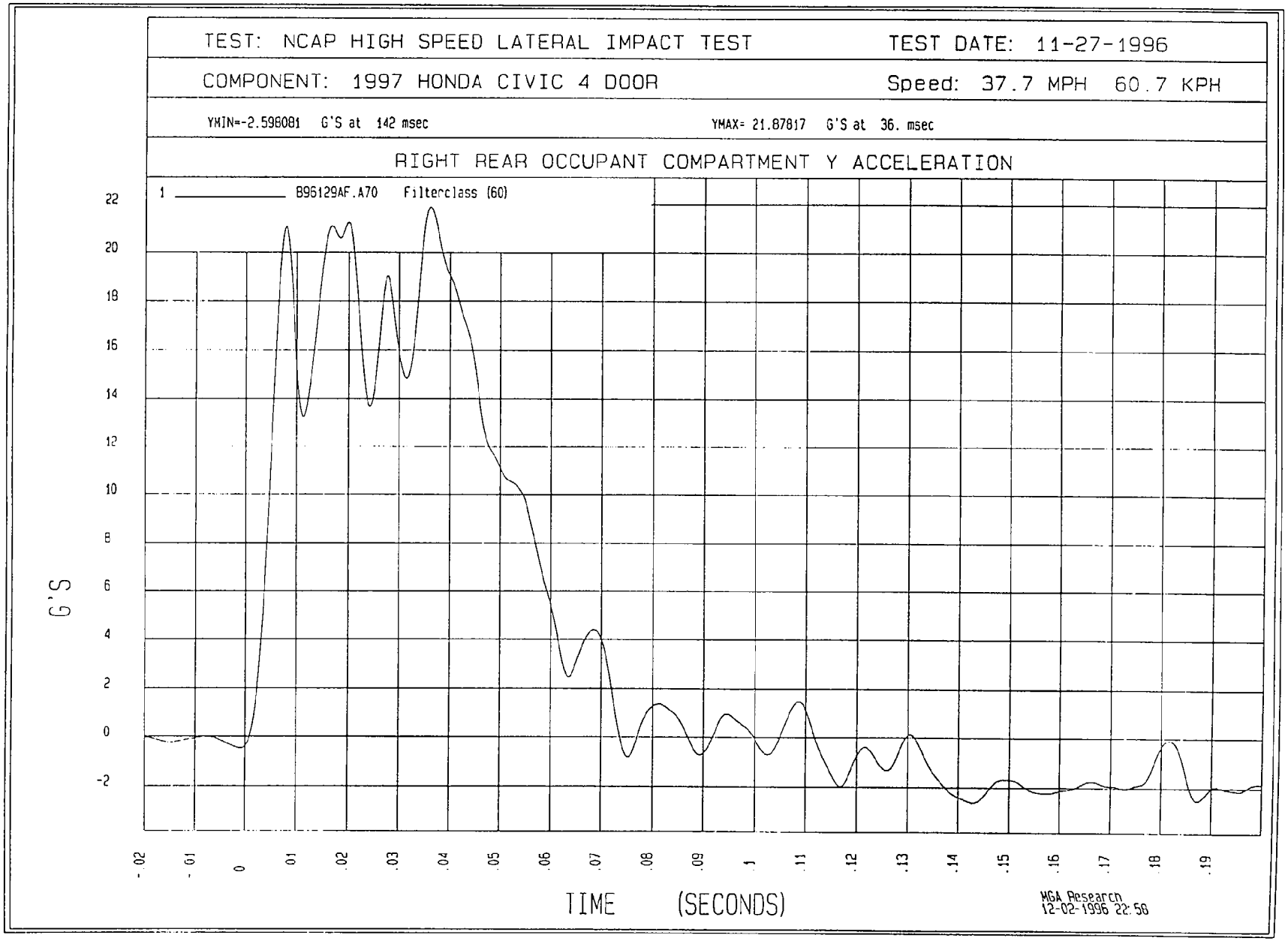
TIME (SECONDS)
MGA Research
11-30-1996 00.53


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-2.598081 G'S at 142 msec
YMAX= 21.87817 G'S at 36. msec
RIGHT REAR OCCUPANT COMPARTMENT Y ACCELERATION
1 B96129AF.A70 Filterclass (60)
G'S
22
20
18
16
14
12
10
8
6
4
2
0
-2
-.02
-.01
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.01
.02
.03
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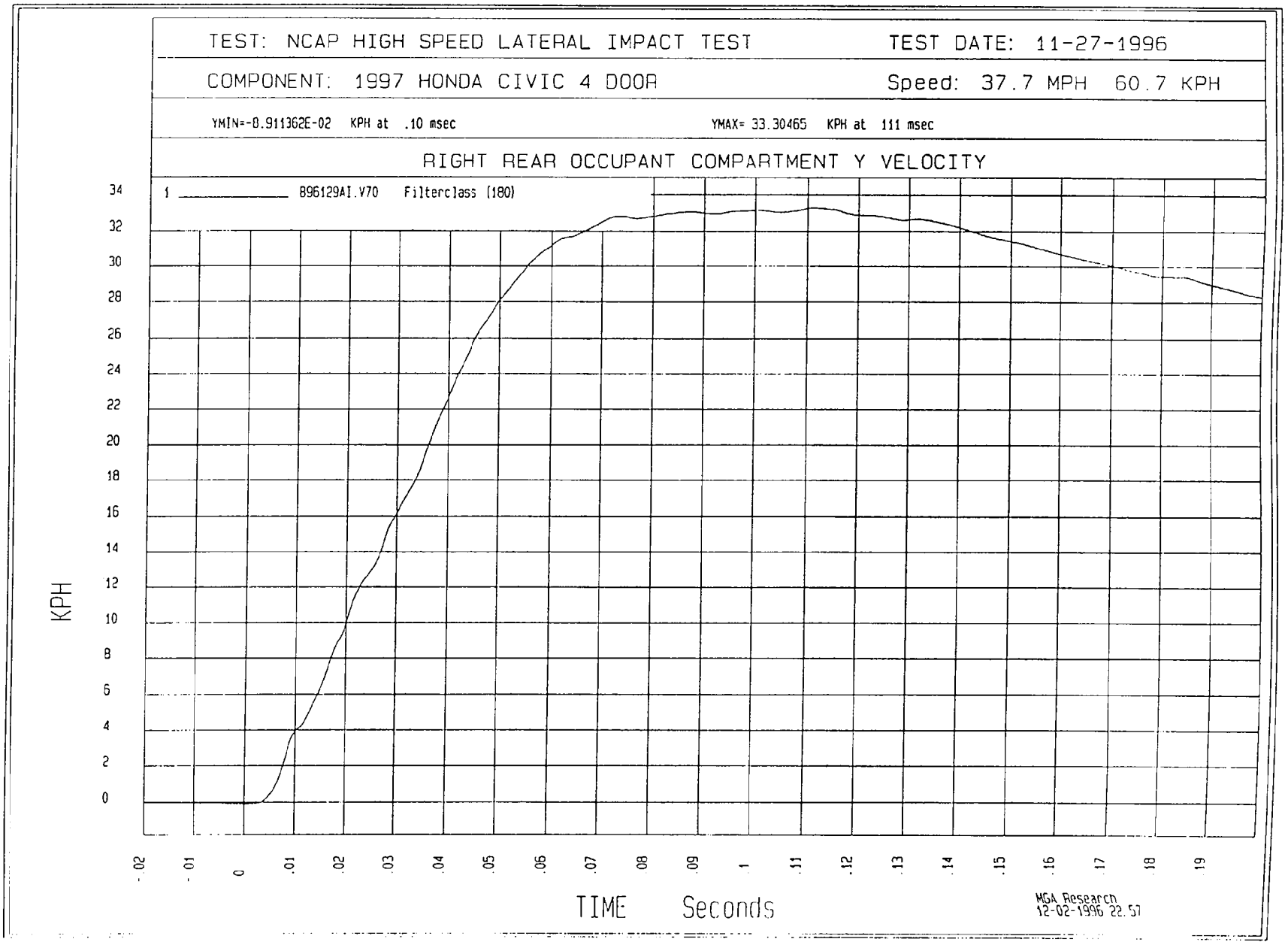
TIME (SECONDS)
MGA Research
12-02-1996 22:58


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-0.911362E-02 KPH at .10 msec
YMAX= 33.30465 KPH at 111 msec
RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY
1 B96129AI.V70 Filterclass (180)
KPH
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
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-.02
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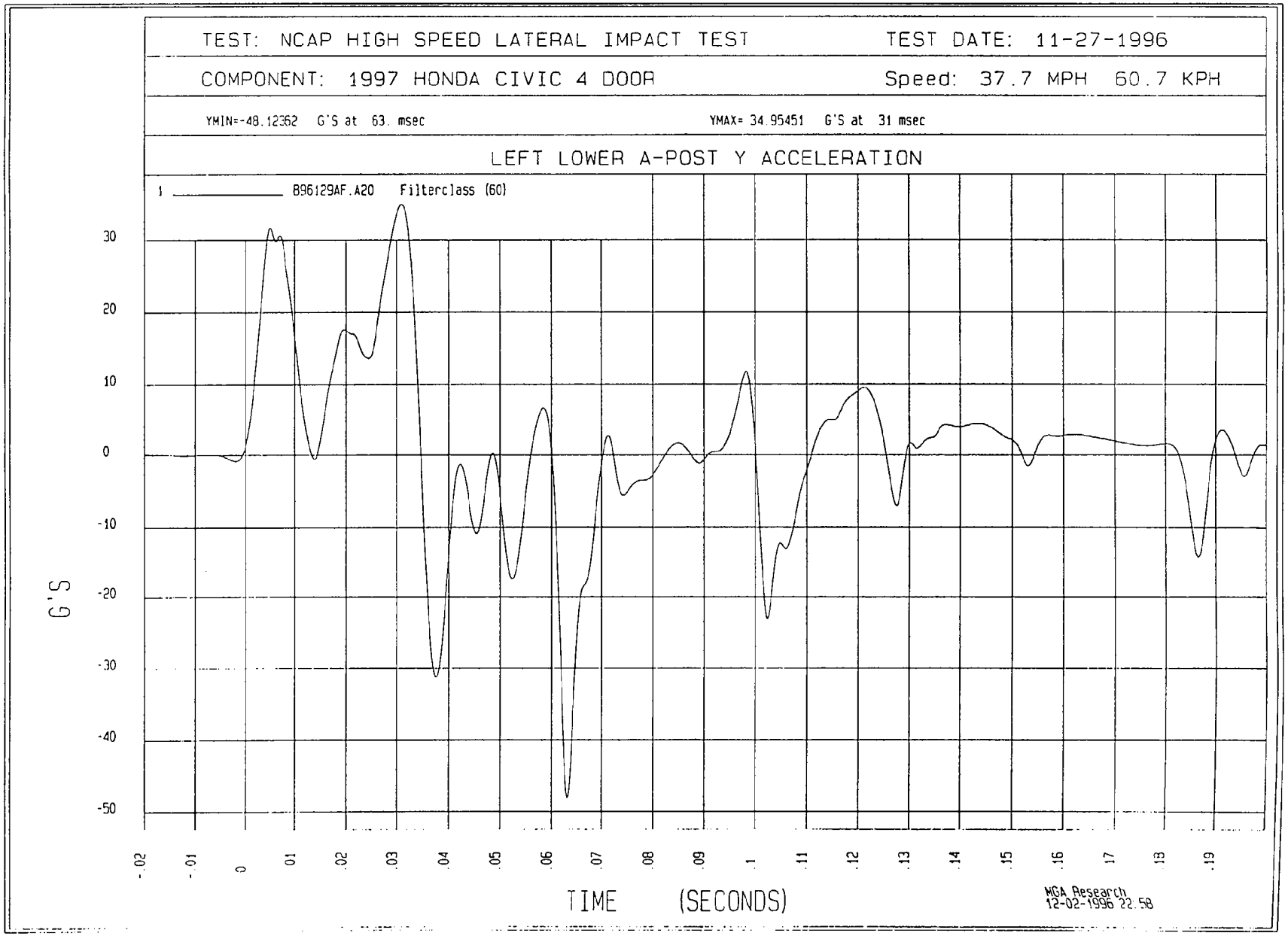
TIME Seconds
MGA Research
12-02-1996 22:57


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-48.12362 G'S at 63. msec
YMAX= 34.95451 G'S at 31 msec
LEFT LOWER A-POST Y ACCELERATION
1 B96129AF.A20 Filterclass (60)
30
20
10
0
-10
-20
-30
-40
-50
G'S
-.02
-.01
0
.01
.02
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.04
.05
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.08
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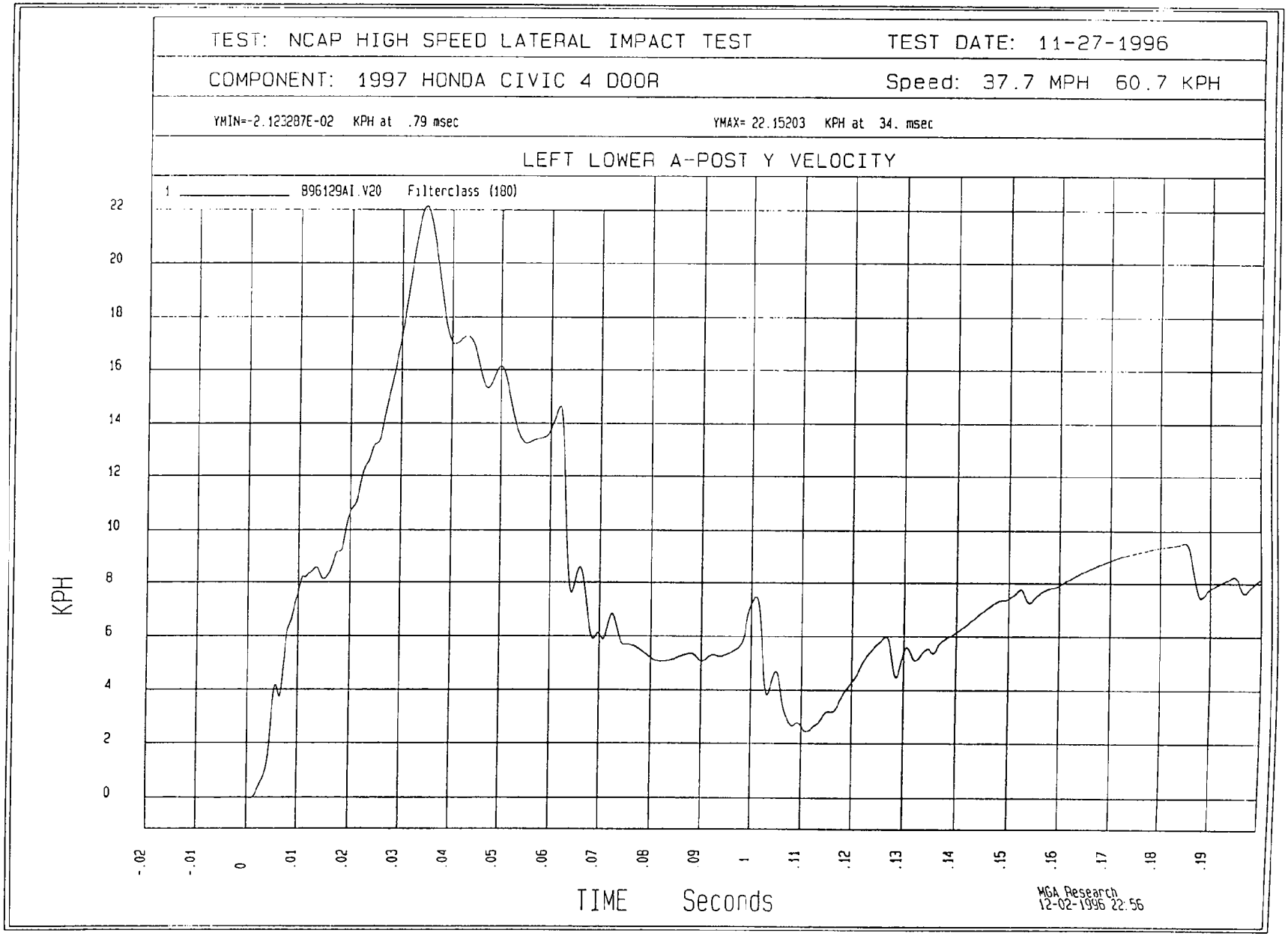
TIME (SECONDS)
MGA Research
12-02-1996 22:58


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-2.123287E-02 KPH at .79 msec
YMAX= 22.15203 KPH at 34. msec
LEFT LOWER A-POST Y VELOCITY
1 896129AI.V20 Filterclass (180)
KPH
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
.05
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.07
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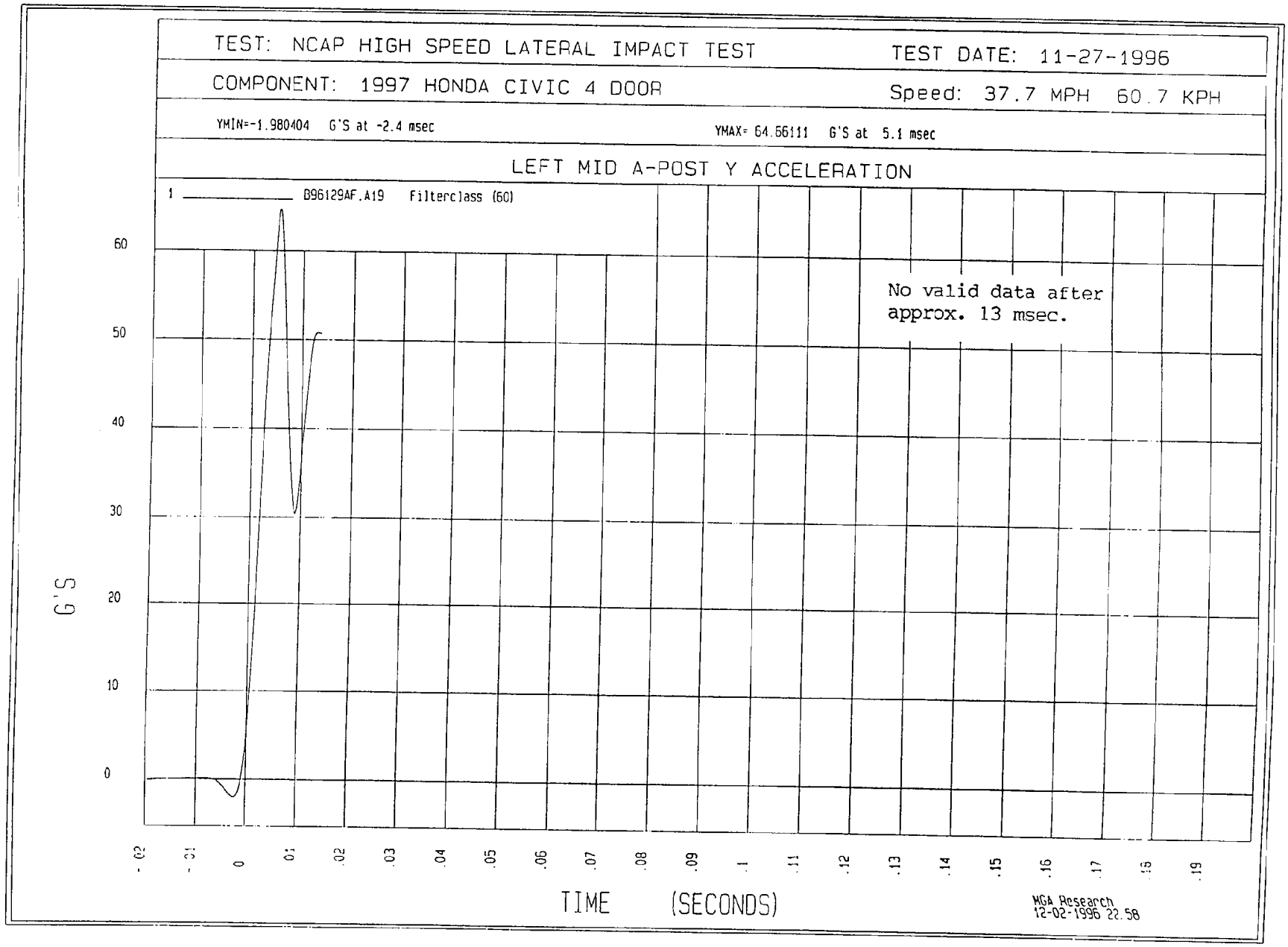
TIME Seconds
MGA Research
12-02-1996 22:56


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-1.980404 G'S at -2.4 msec
YMAX= 64.66111 G'S at 5.1 msec
LEFT MID A-POST Y ACCELERATION
1 B96129AF.A19 Filterclass (60)
No valid data after approx. 13 msec.
G'S
60
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
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.07
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.1
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.14
.15
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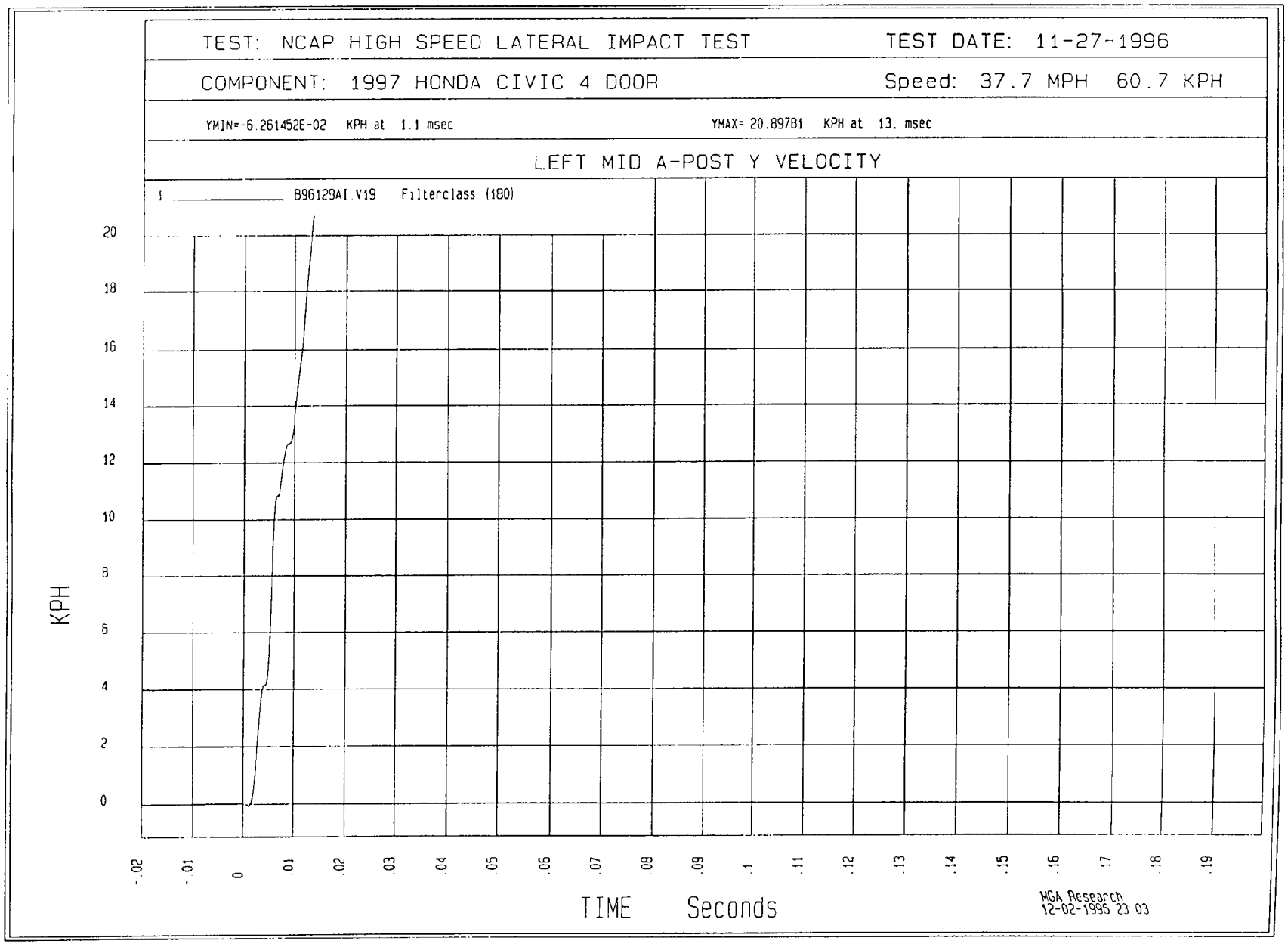
.17
.18
.19
TIME (SECONDS)
MGA Research
12-02-1996 22.58


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-6.261452E-02 KPH at 1.1 msec
YMAX= 20.89781 KPH at 13. msec
LEFT MID A-POST Y VELOCITY
1 B96129AI.V19 Filterclass (180)
KPH
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
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.04
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.14
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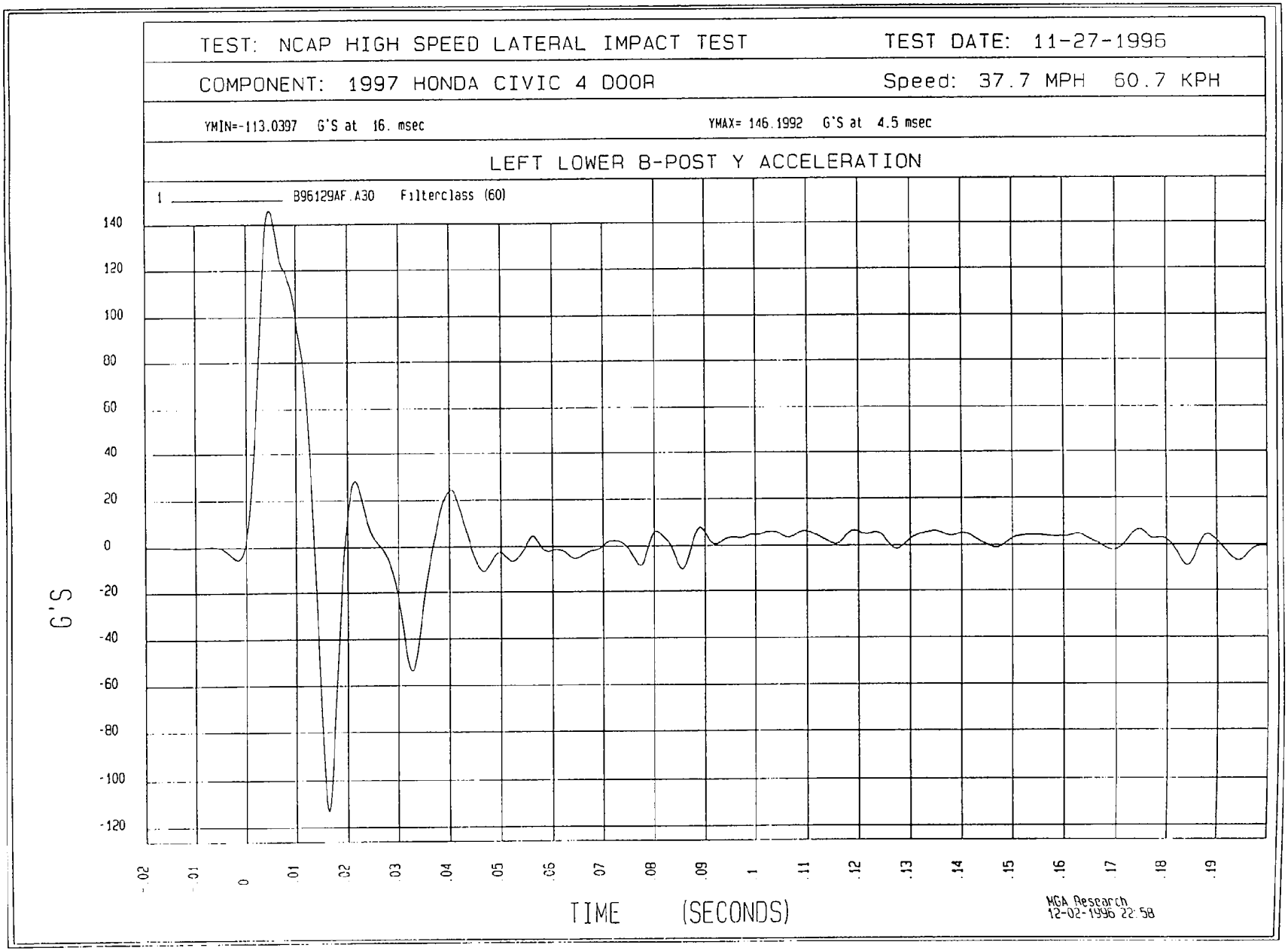
.19
TIME Seconds
MGA Research
12-02-1996 23 03


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-113.0397 G'S at 16. msec
YMAX= 146.1992 G'S at 4.5 msec
LEFT LOWER B-POST Y ACCELERATION
1 B96129AF.A30 Filterclass (60)
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
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.16
.17
.18
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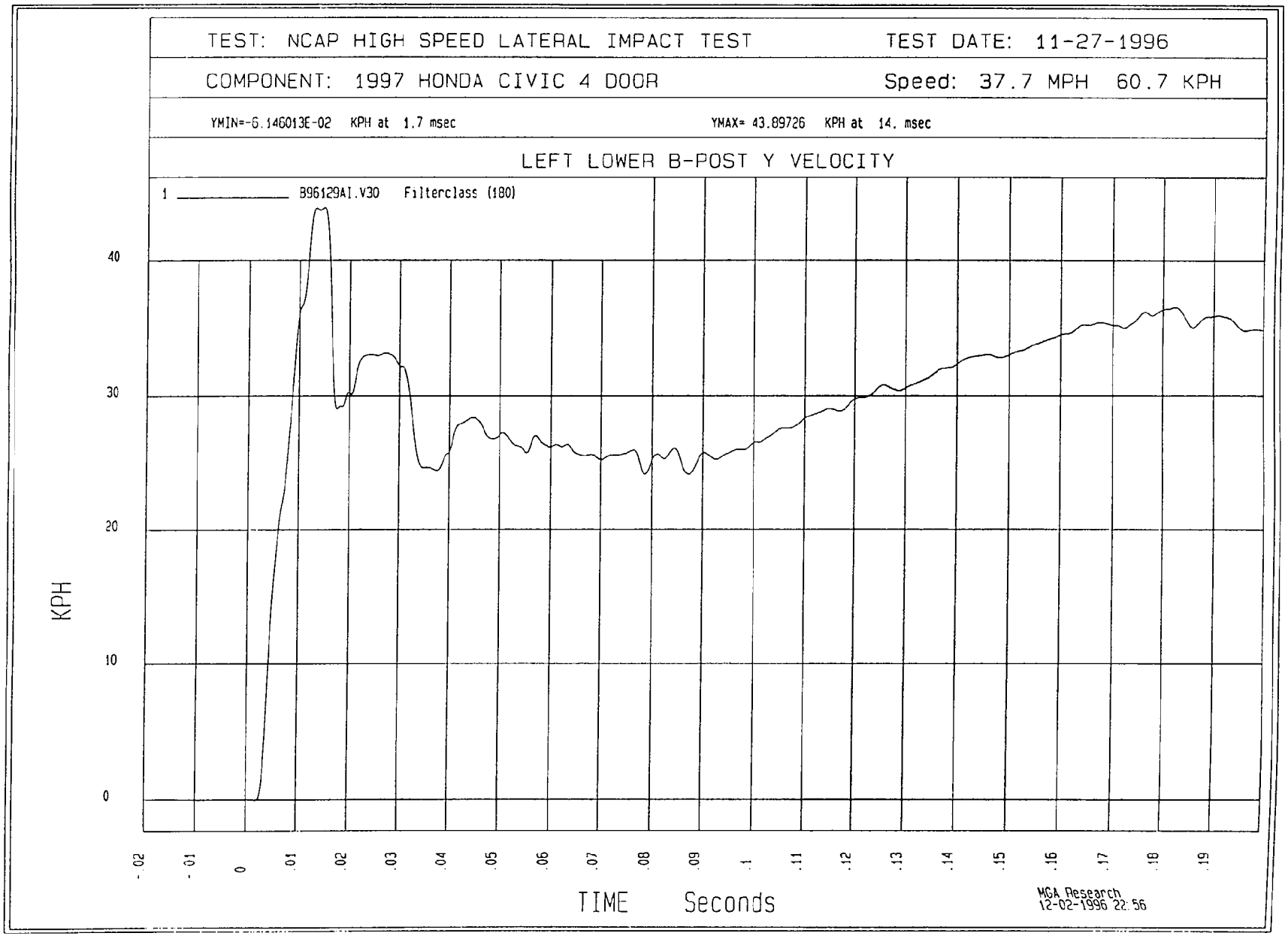
TIME (SECONDS)
MGA Research
12-02-1996 22:58


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-6.146013E-02 KPH at 1.7 msec
YMAX= 43.89726 KPH at 14. msec
LEFT LOWER B-POST Y VELOCITY
1 B96129AI.V30 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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.08
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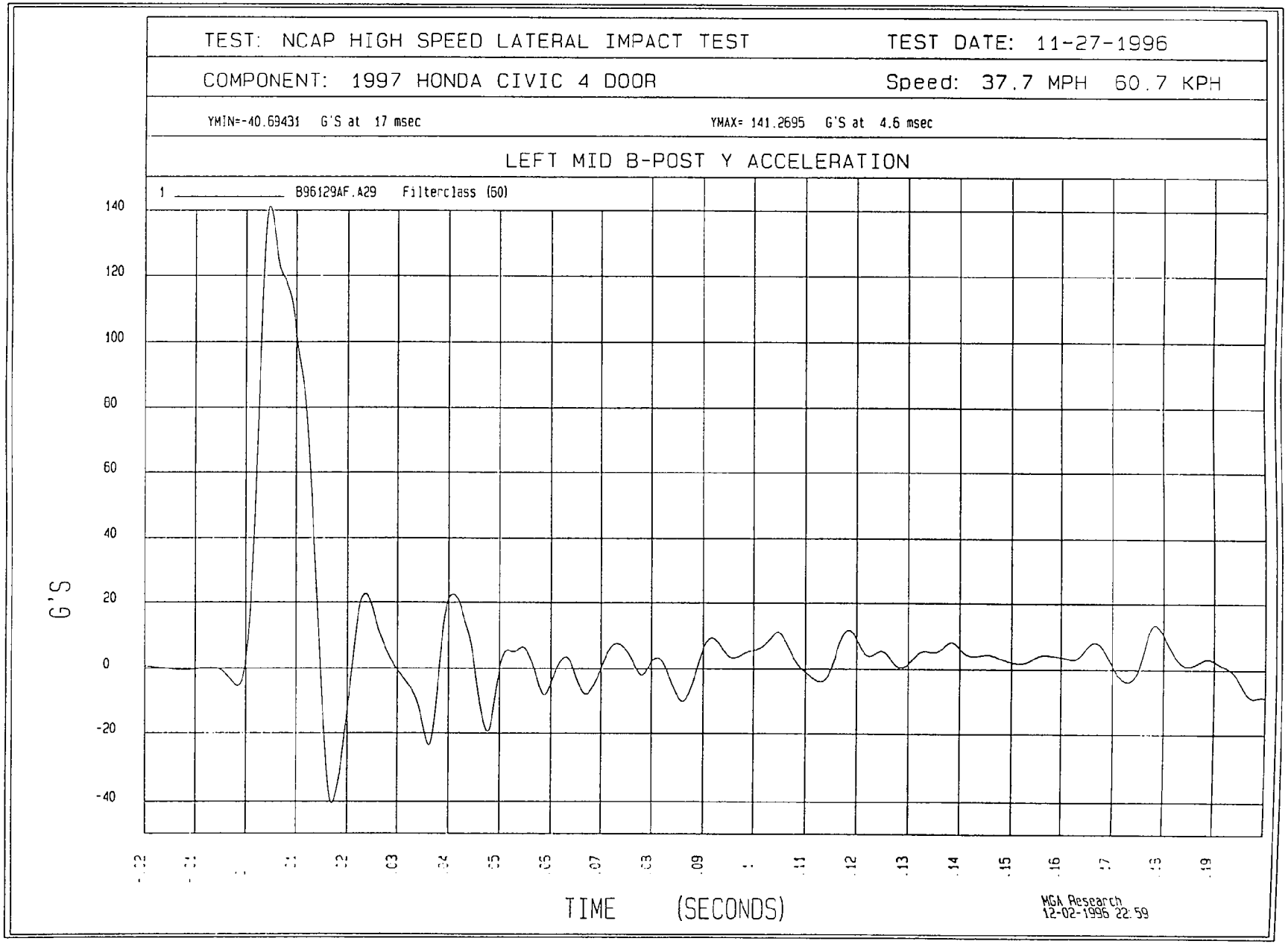
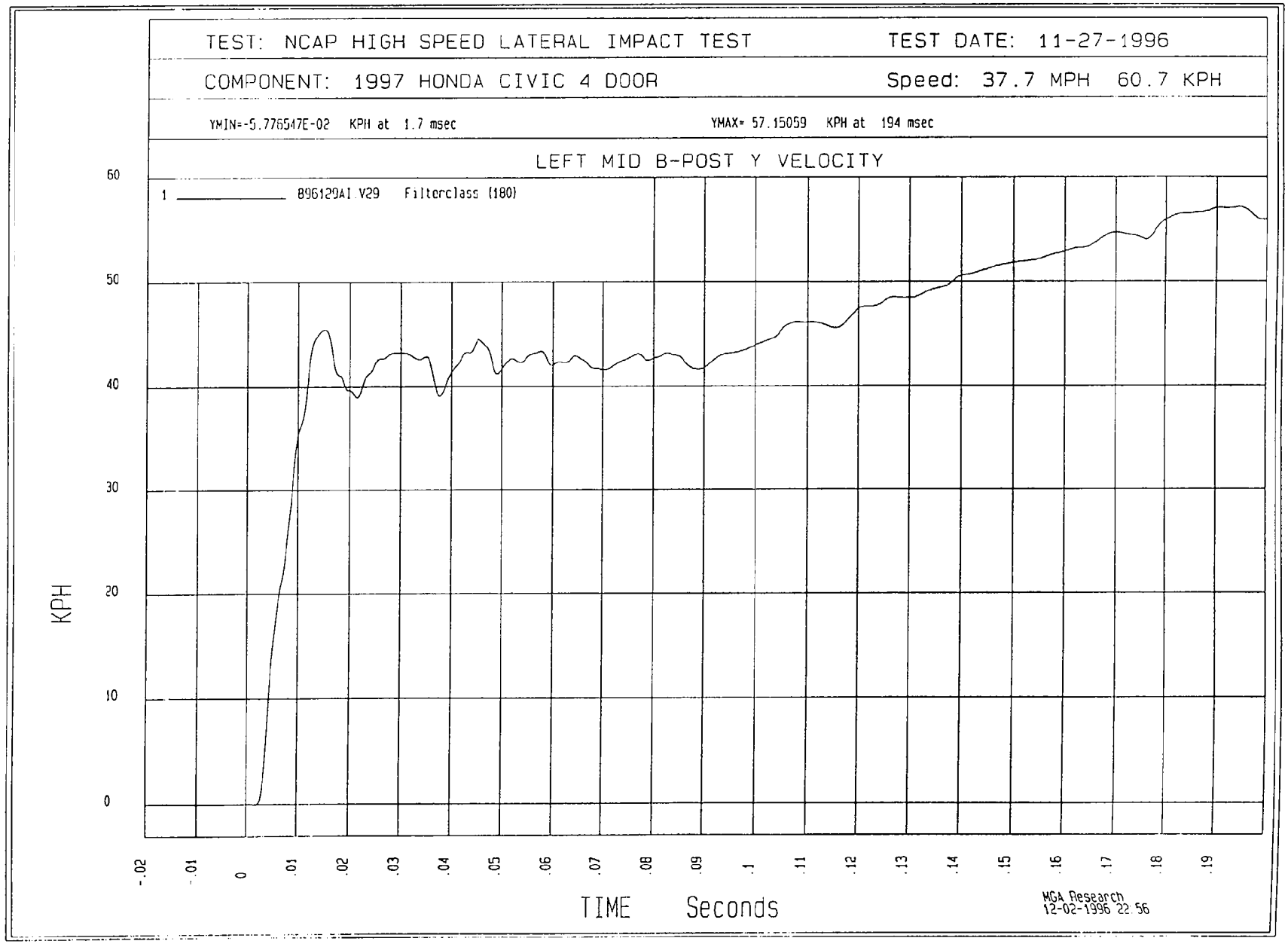
.19
TIME Seconds
MGA Research
12-02-1996 22:56


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-40.69431 G'S at 17 msec
YMAX= 141.2695 G'S at 4.6 msec
LEFT MID B-POST Y ACCELERATION
1 B96129AF.A29 Filterclass (60)
140
120
100
80
60
40
20
0
-20
-40
G'S
TIME (SECONDS)
MGA Research
12-02-1996 22:59


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-5.776547E-02 KPH at 1.7 msec
YMAX= 57.15059 KPH at 194 msec
LEFT MID B-POST Y VELOCITY
1 896129AI.V29 Filterclass (180)
KPH
60
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
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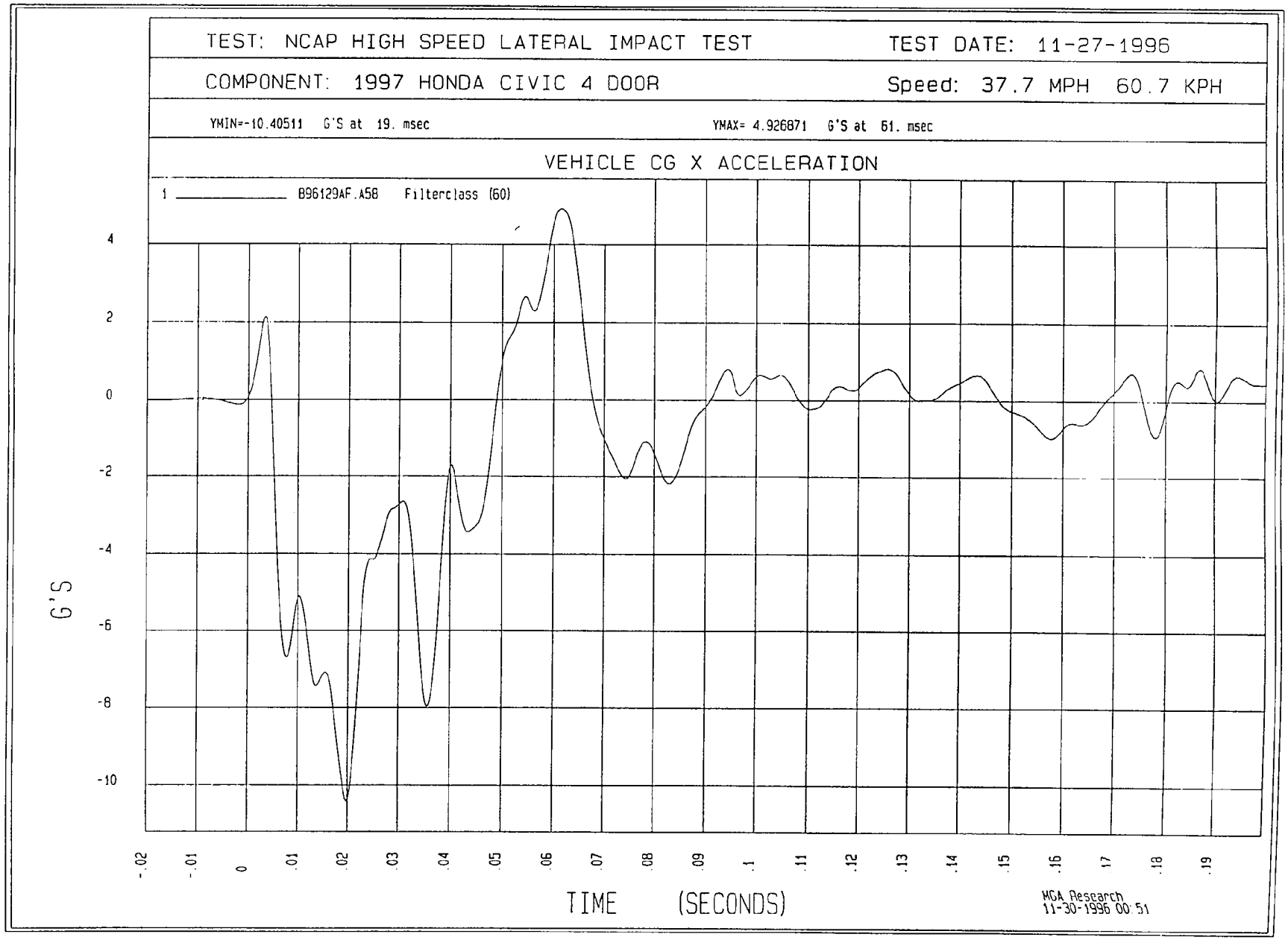
TIME Seconds
MGA Research
12-02-1996 22:56


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-10.40511 G'S at 19. msec
YMAX= 4.926871 G'S at 61. msec
VEHICLE CG X ACCELERATION
1 B96129AF.A58 Filterclass (60)
4
2
0
-2
-4
-6
-8
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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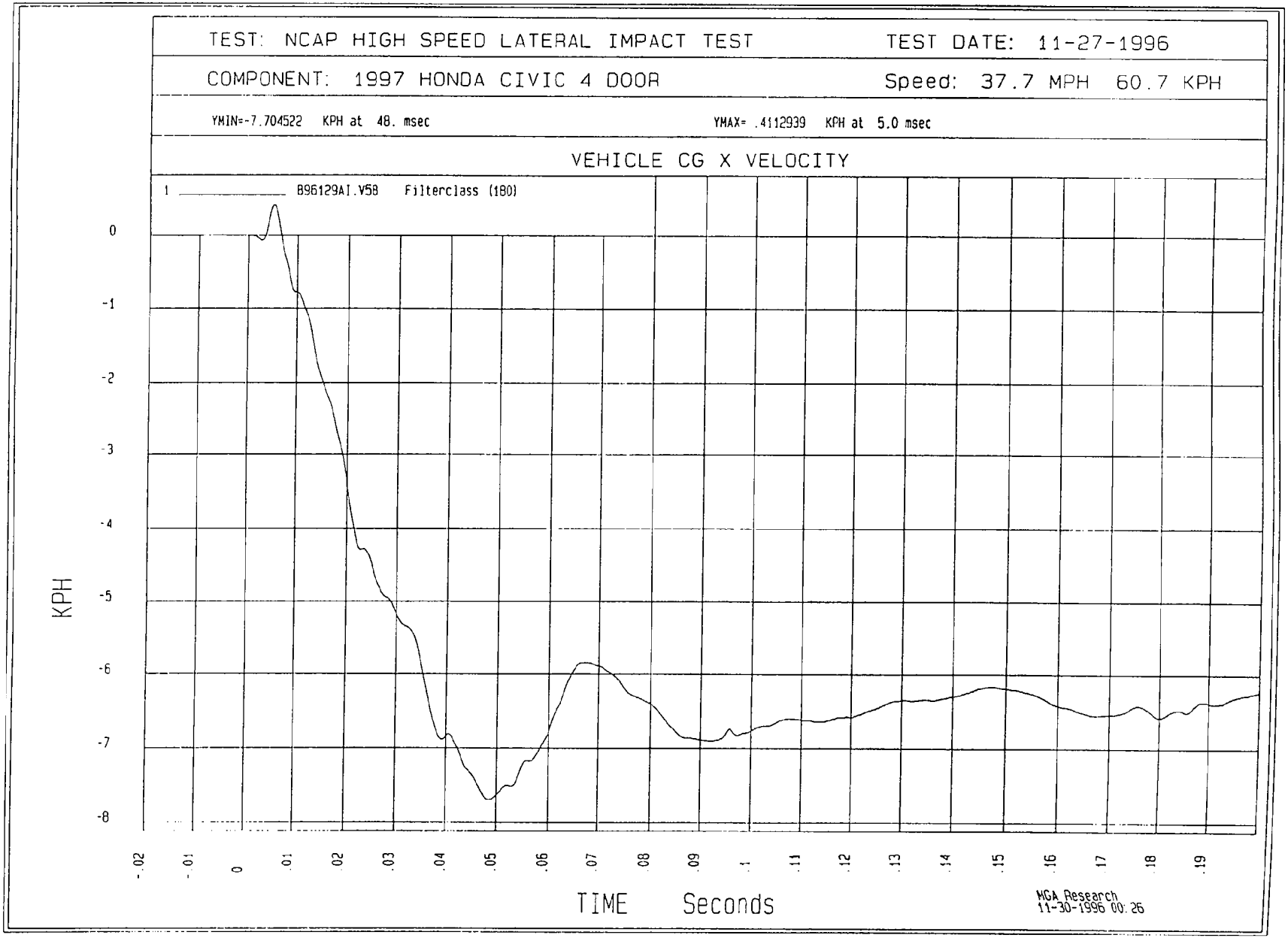
TIME (SECONDS)
MGA Research
11-30-1996 00:51


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-7.704522 KPH at 48. msec
YMAX= .4112939 KPH at 5.0 msec
VEHICLE CG X VELOCITY
1 B96129AI.V58 Filterclass (180)
0
-1
-2
-3
-4
-5
-6
-7
-8
KPH
-.02
-.01
0
.01
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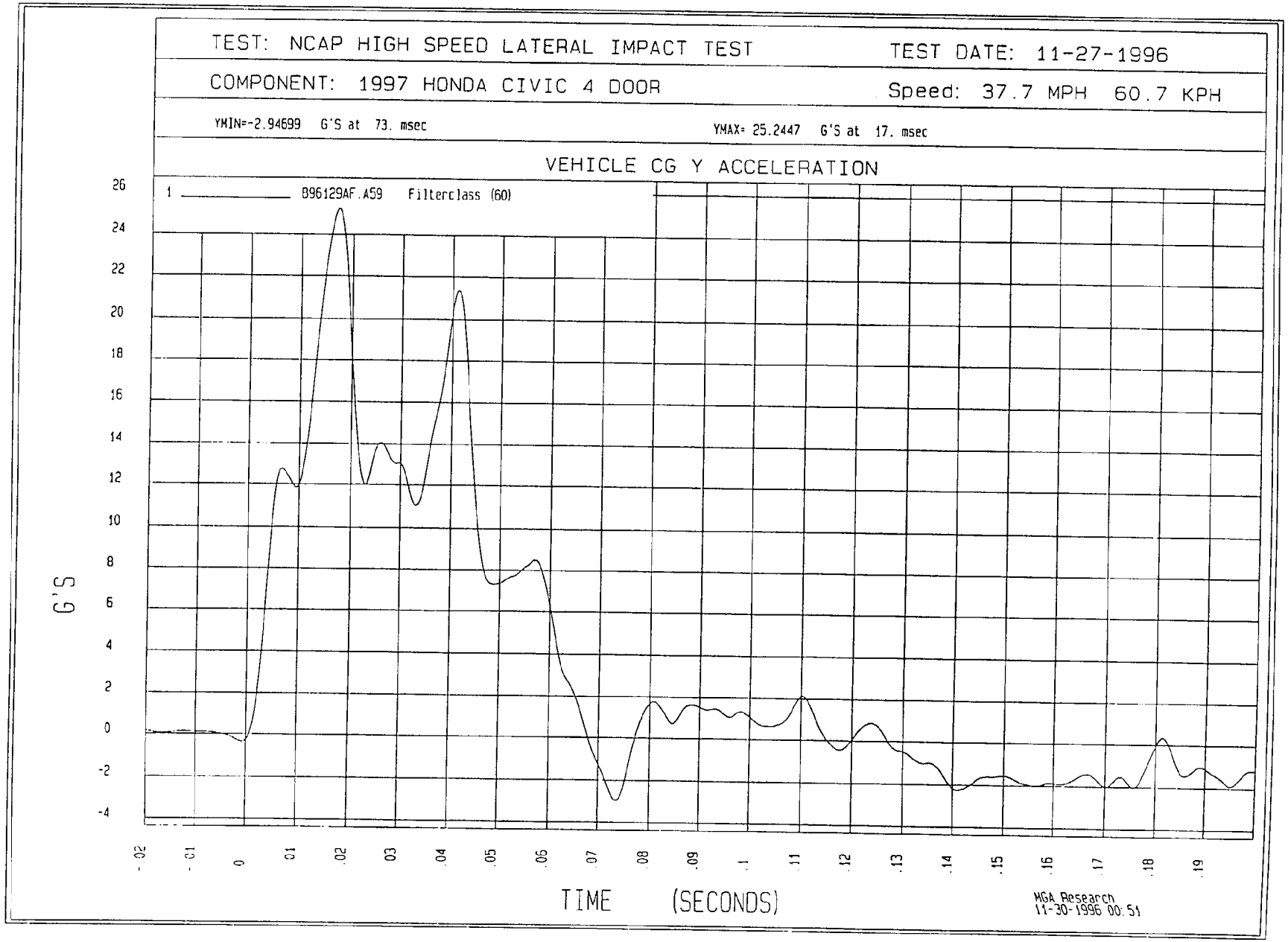
TIME Seconds
MGA Research
11-30-1996 00:26


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-2.94699 G'S at 73. msec
YMAX= 25.2447 G'S at 17. msec
VEHICLE CG Y ACCELERATION
1 B96129AF.A59 Filterclass (60)
G'S
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
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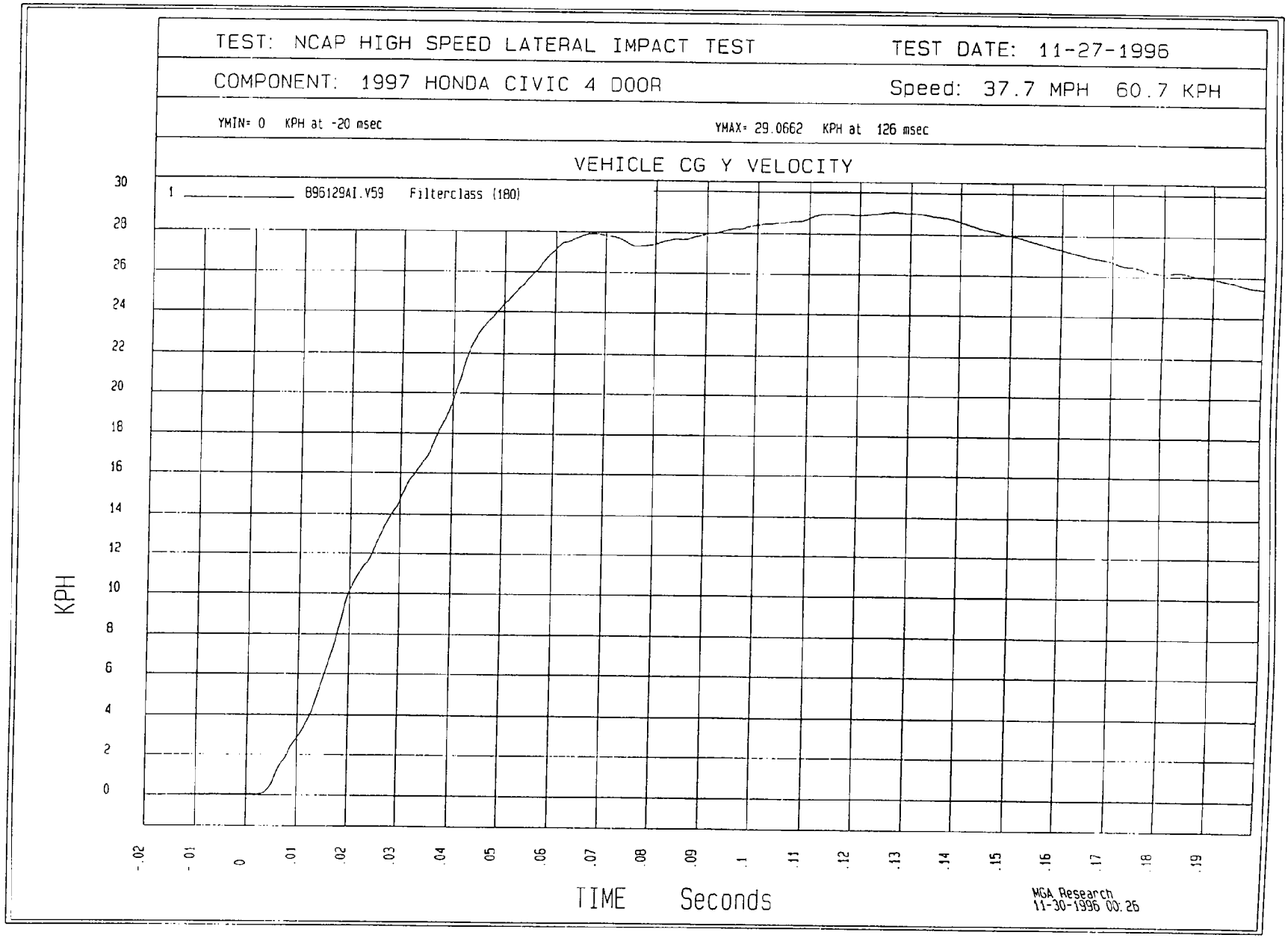
TIME (SECONDS)
MGA Research
11-30-1996 00:51


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= 0 KPH at -20 msec
YMAX= 29.0662 KPH at 126 msec
VEHICLE CG Y VELOCITY
1 B96129AI.V59 Filterclass (180)
KPH
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
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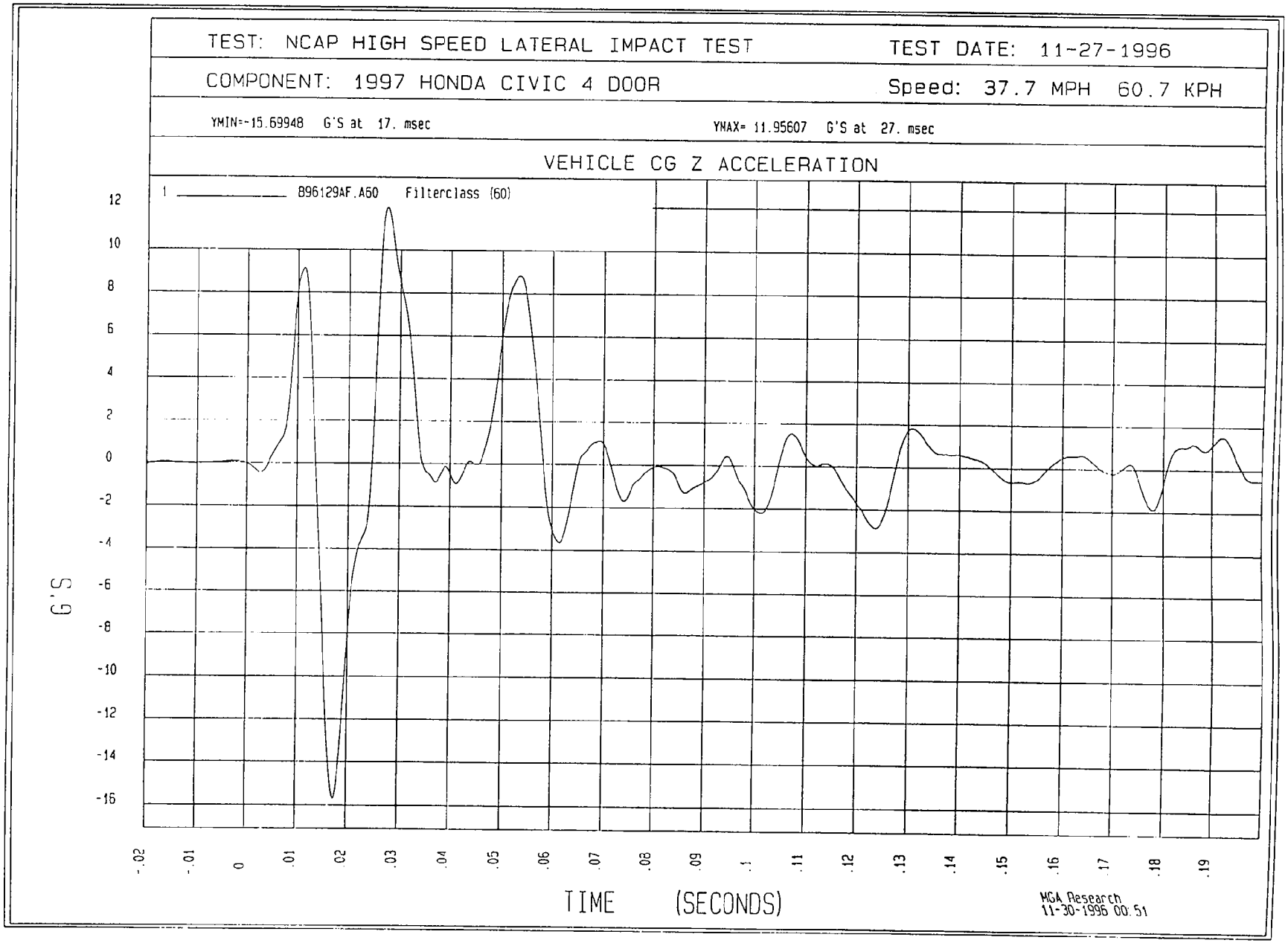
TIME Seconds
MGA Research
11-30-1996 00:26


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-15.69948 G'S at 17. msec
YMAX= 11.95607 G'S at 27. msec
VEHICLE CG Z ACCELERATION
1 B96129AF.A60 Filterclass (60)
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
G'S
-.02
-.01
0
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.05
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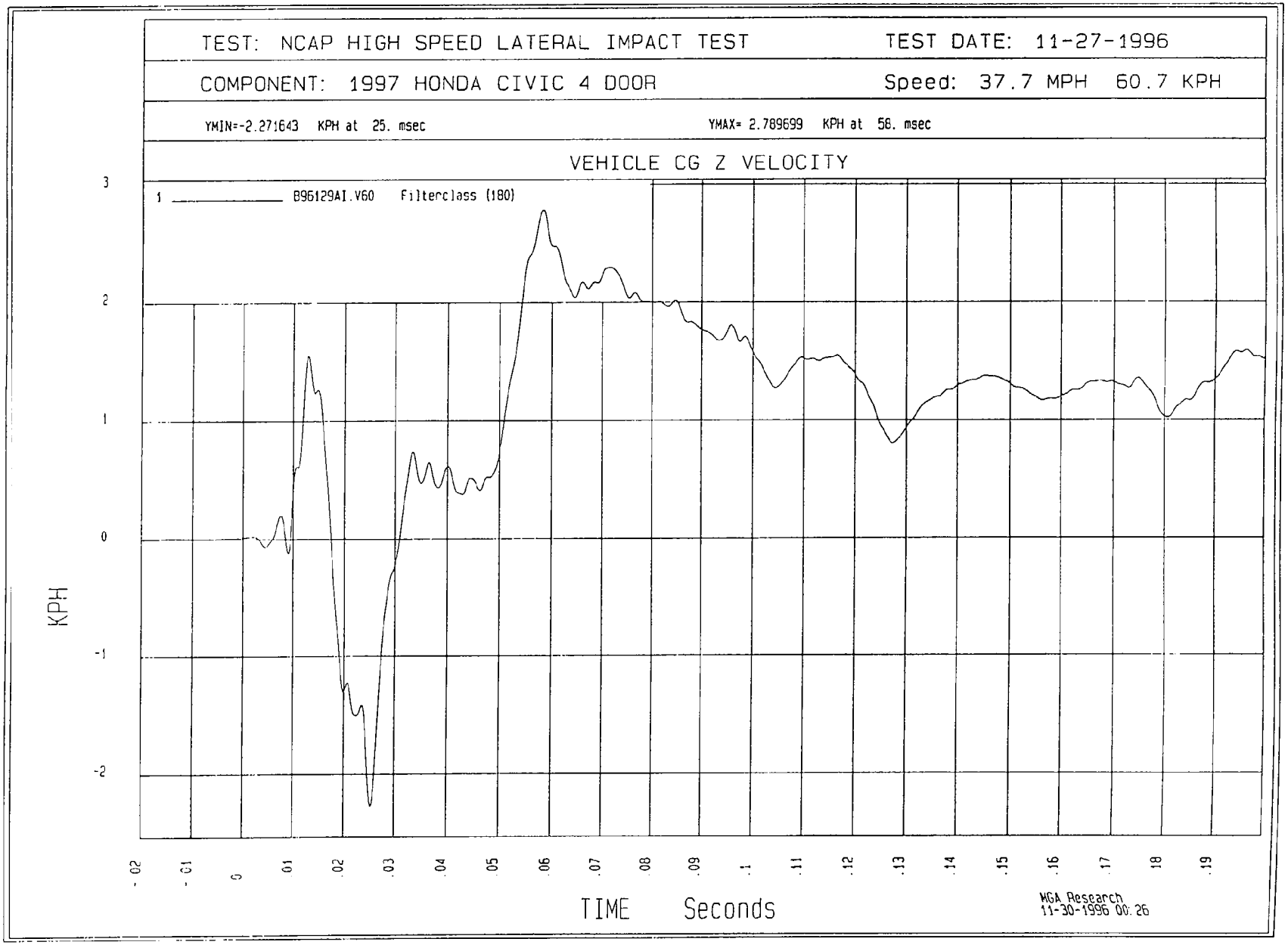
TIME (SECONDS)
MGA Research
11-30-1996 00:51


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-2.271643 KPH at 25. msec
YMAX= 2.789699 KPH at 56. msec
VEHICLE CG Z VELOCITY
1 B96129AI.V60 Filterclass (180)
KPH
3
2
1
0
-1
-2
-.02
-.01
0
.01
.02
.03
.04
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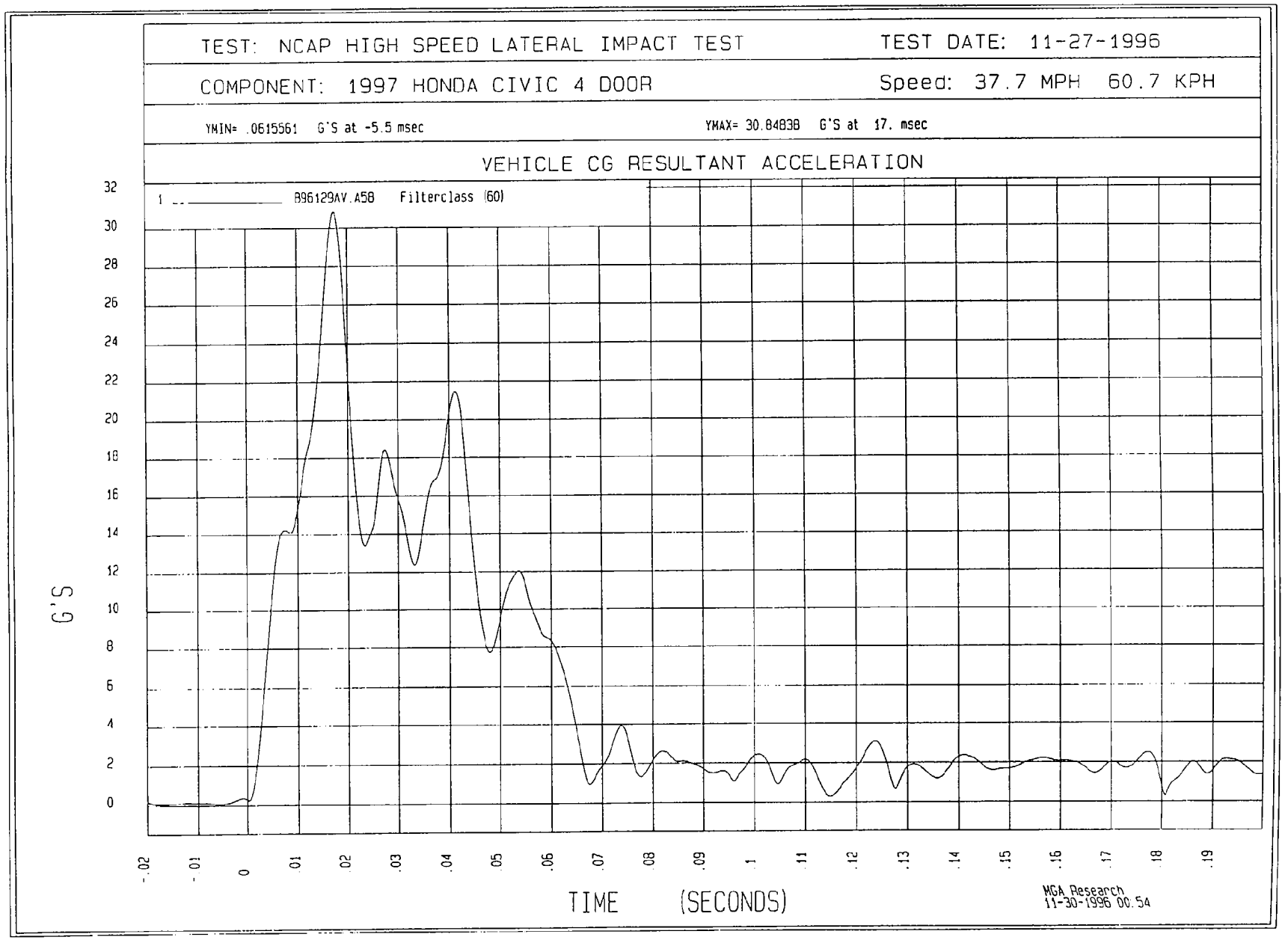
TIME Seconds
MGA Research
11-30-1996 00:26


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= .0615561 G'S at -5.5 msec
YMAX= 30.84838 G'S at 17. msec
VEHICLE CG RESULTANT ACCELERATION
1 B96129AV.A58 Filterclass (60)
G'S
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
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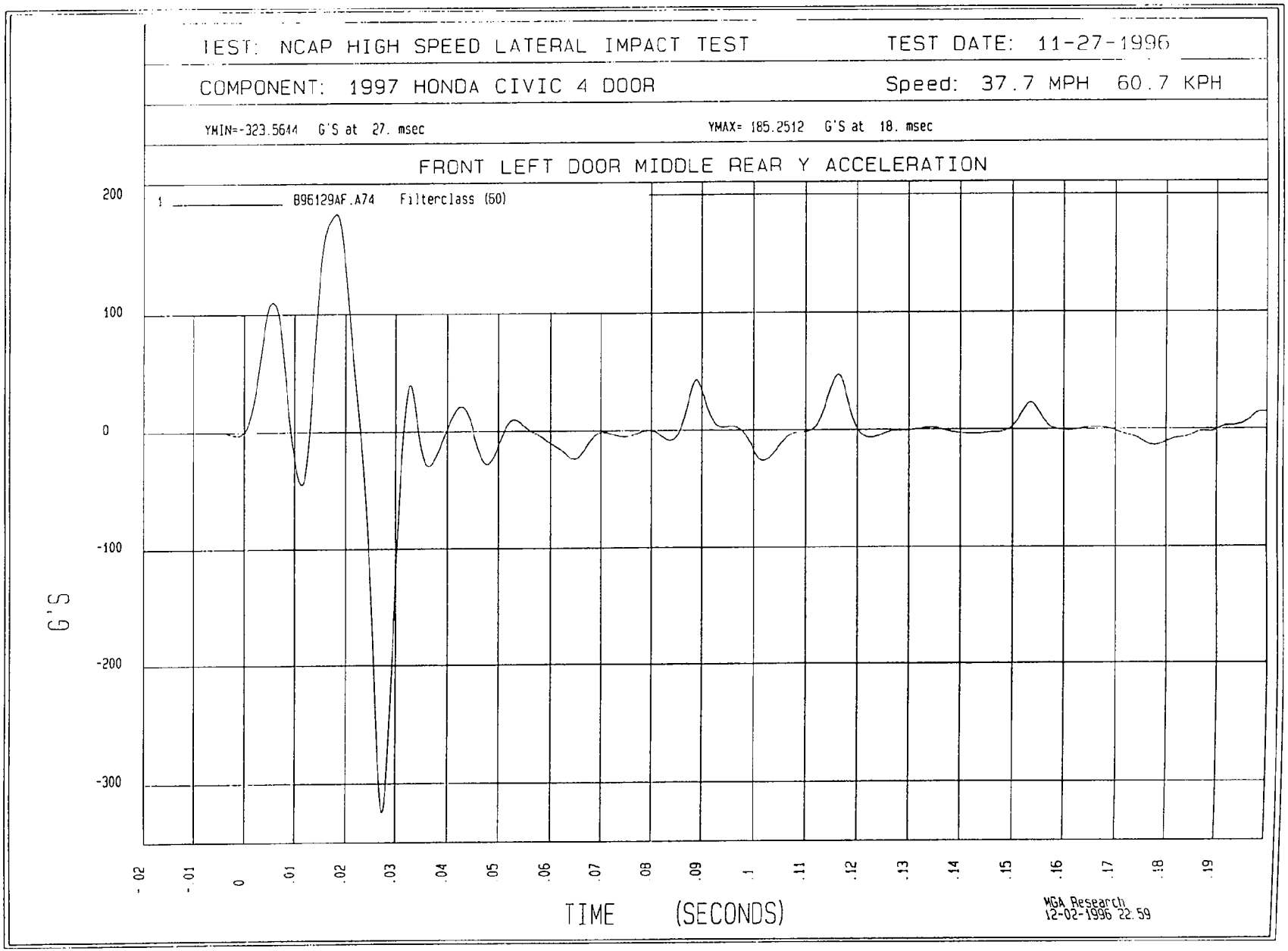
TIME (SECONDS)
MGA Research
11-30-1996 00:54


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-323.5644 G'S at 27. msec
YMAX= 185.2512 G'S at 18. msec
FRONT LEFT DOOR MIDDLE REAR Y ACCELERATION
1 B96129AF.A74 Filterclass (60)
200
100
0
-100
-200
-300
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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.12
.13
.14
.15
.16
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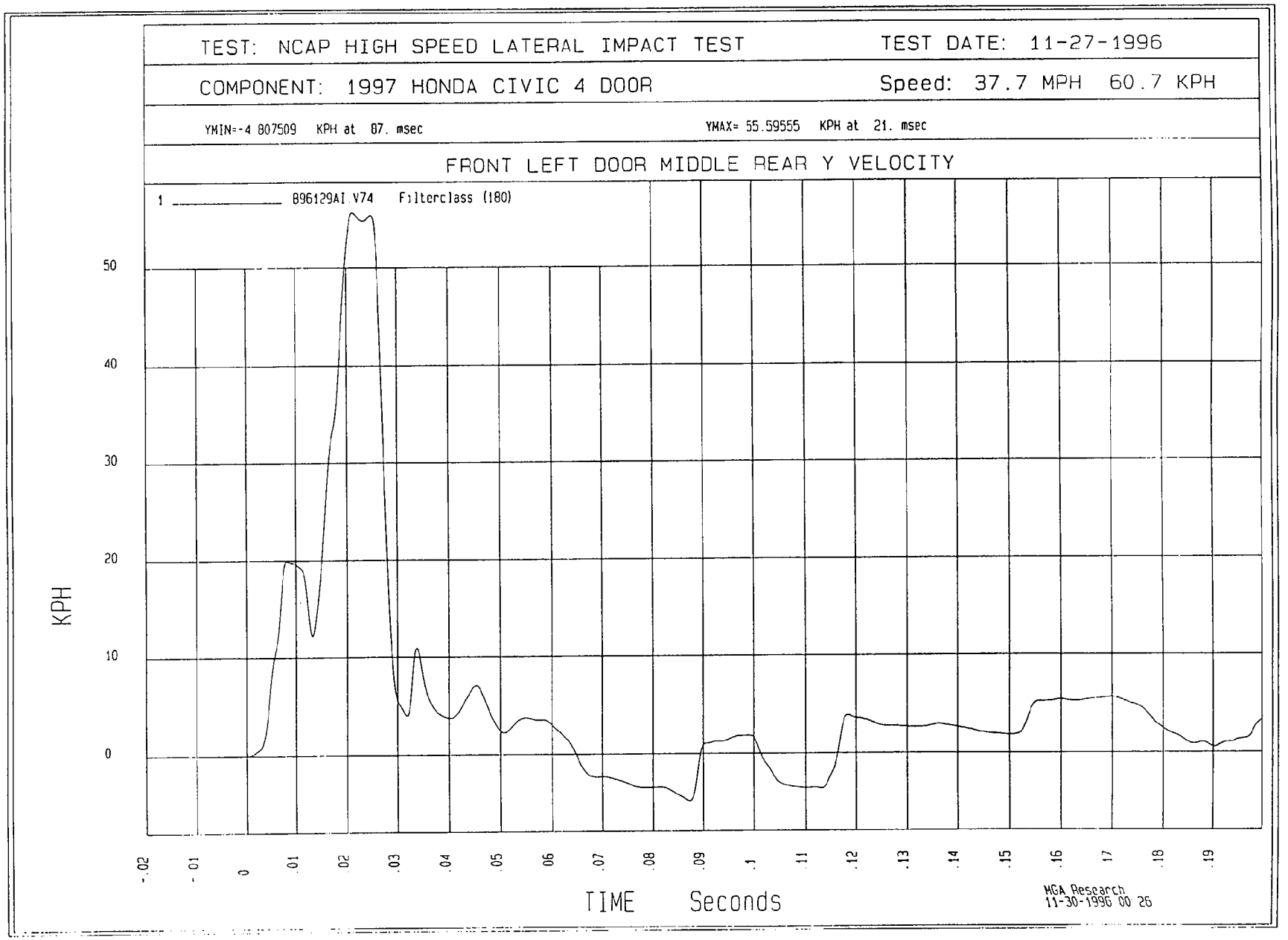
.18
.19
TIME (SECONDS)
MGA Research
12-02-1996 22:59


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-4 807509 KPH at 87. msec
YMAX= 55.59555 KPH at 21. msec
FRONT LEFT DOOR MIDDLE REAR Y VELOCITY
1 B96129AI.V74 Filterclass (180)
KPH
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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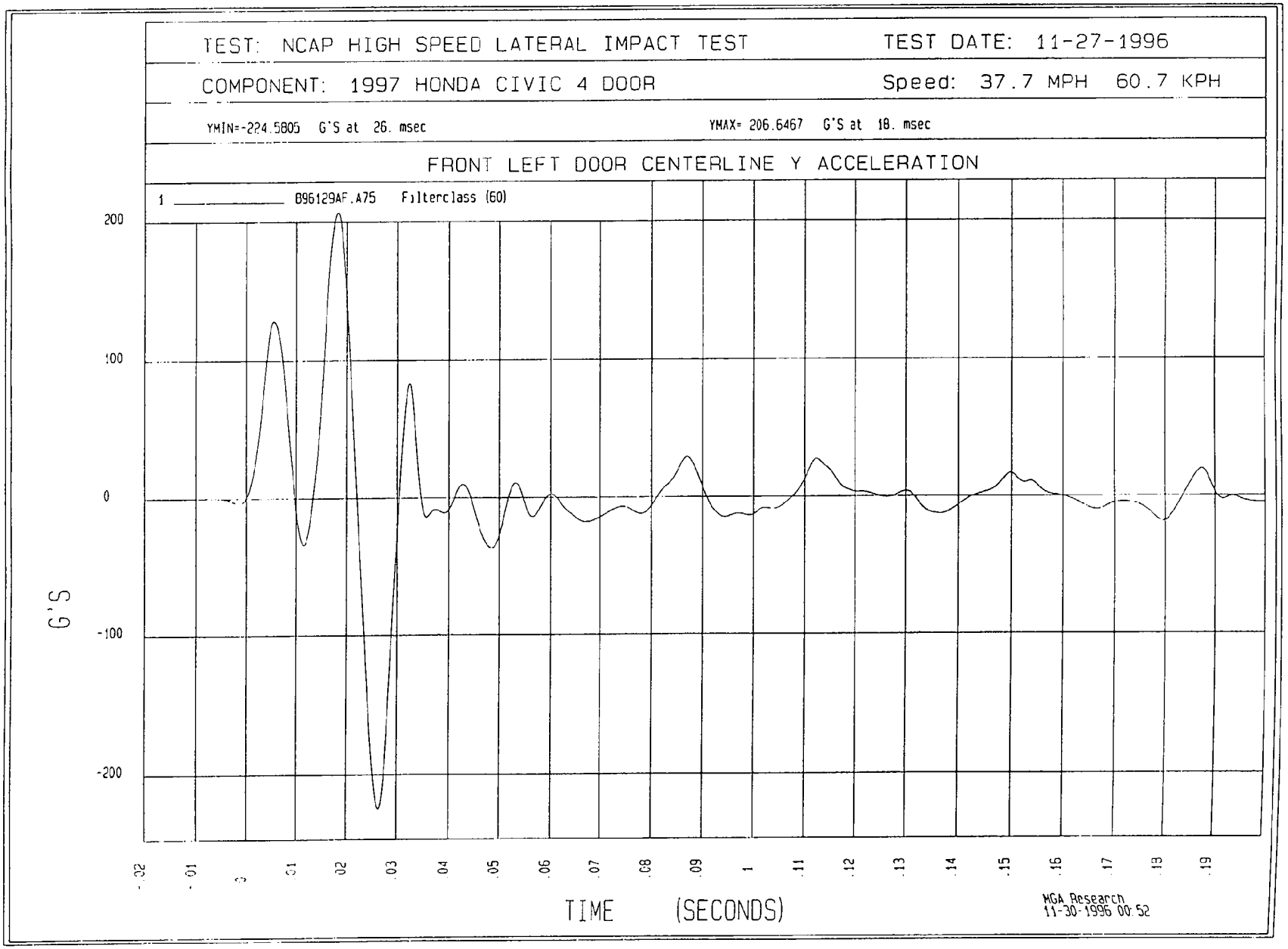
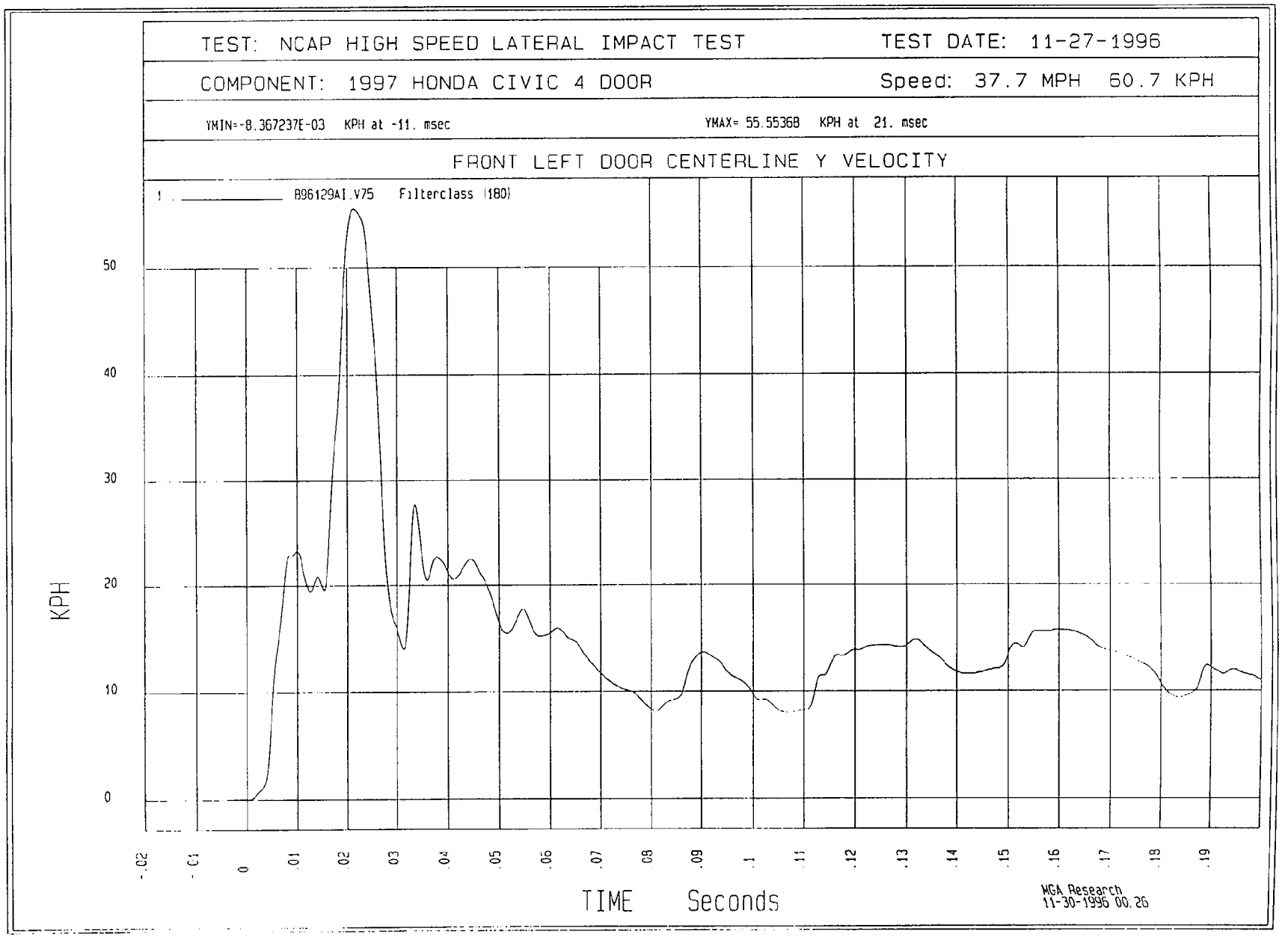
TIME Seconds
MGA Research
11-30-1996 00:26


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-224.5805 G'S at 26. msec
YMAX= 206.6467 G'S at 18. msec
FRONT LEFT DOOR CENTERLINE Y ACCELERATION
1 B96129AF.A75 Filterclass (60)
200
100
0
-100
-200
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)
MGA Research
11-30-1996 00:52


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-8.367237E-03 KPH at -11. msec
YMAX= 55.55368 KPH at 21. msec
FRONT LEFT DOOR CENTERLINE Y VELOCITY
1 B96129AI.V75 Filterclass (180)
KPH
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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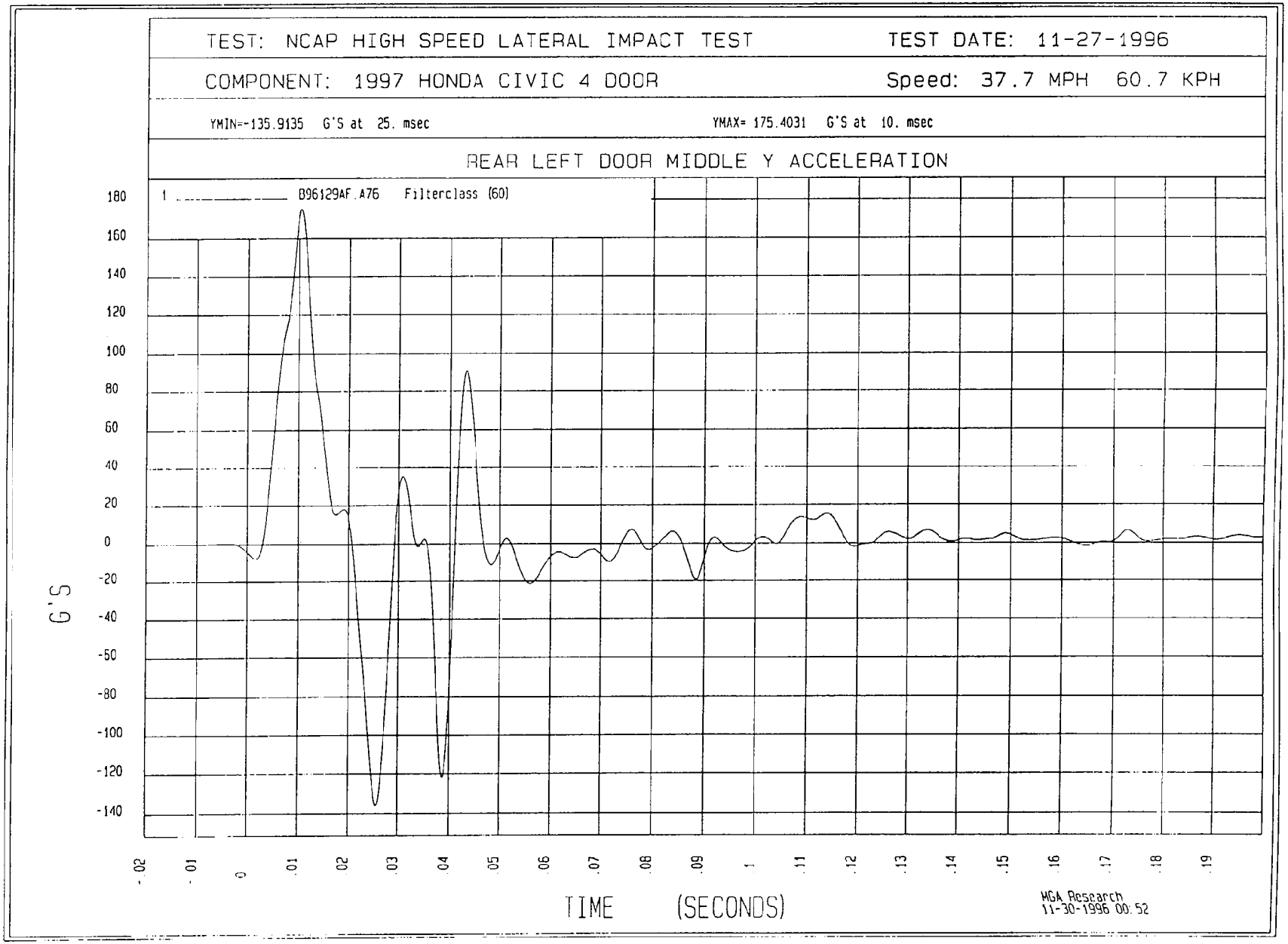
TIME Seconds
MGA Research
11-30-1996 00.26


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-135.9135 G'S at 25. msec
YMAX= 175.4031 G'S at 10. msec
REAR LEFT DOOR MIDDLE Y ACCELERATION
1 B96129AF.A76 Filterclass (60)
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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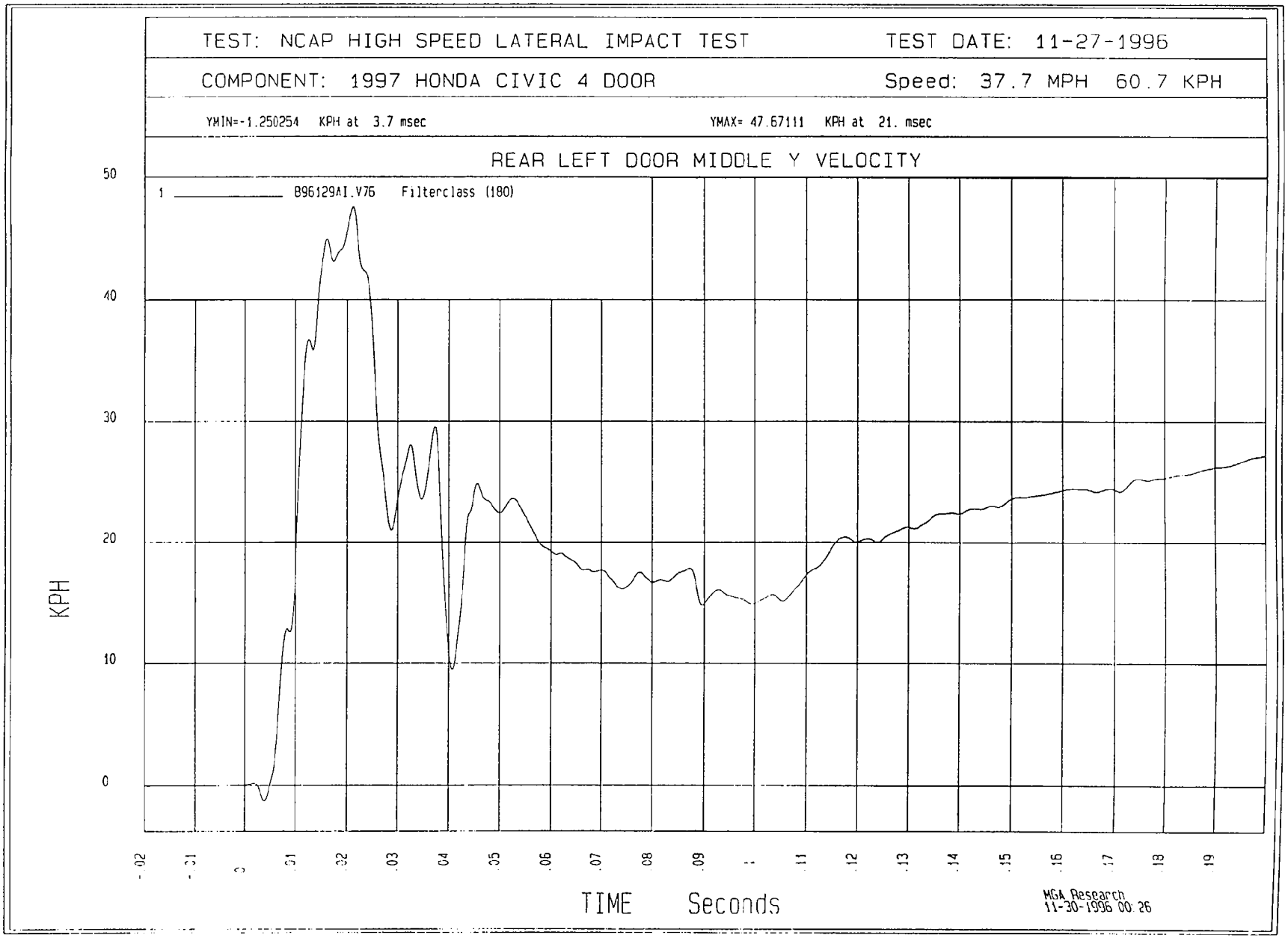
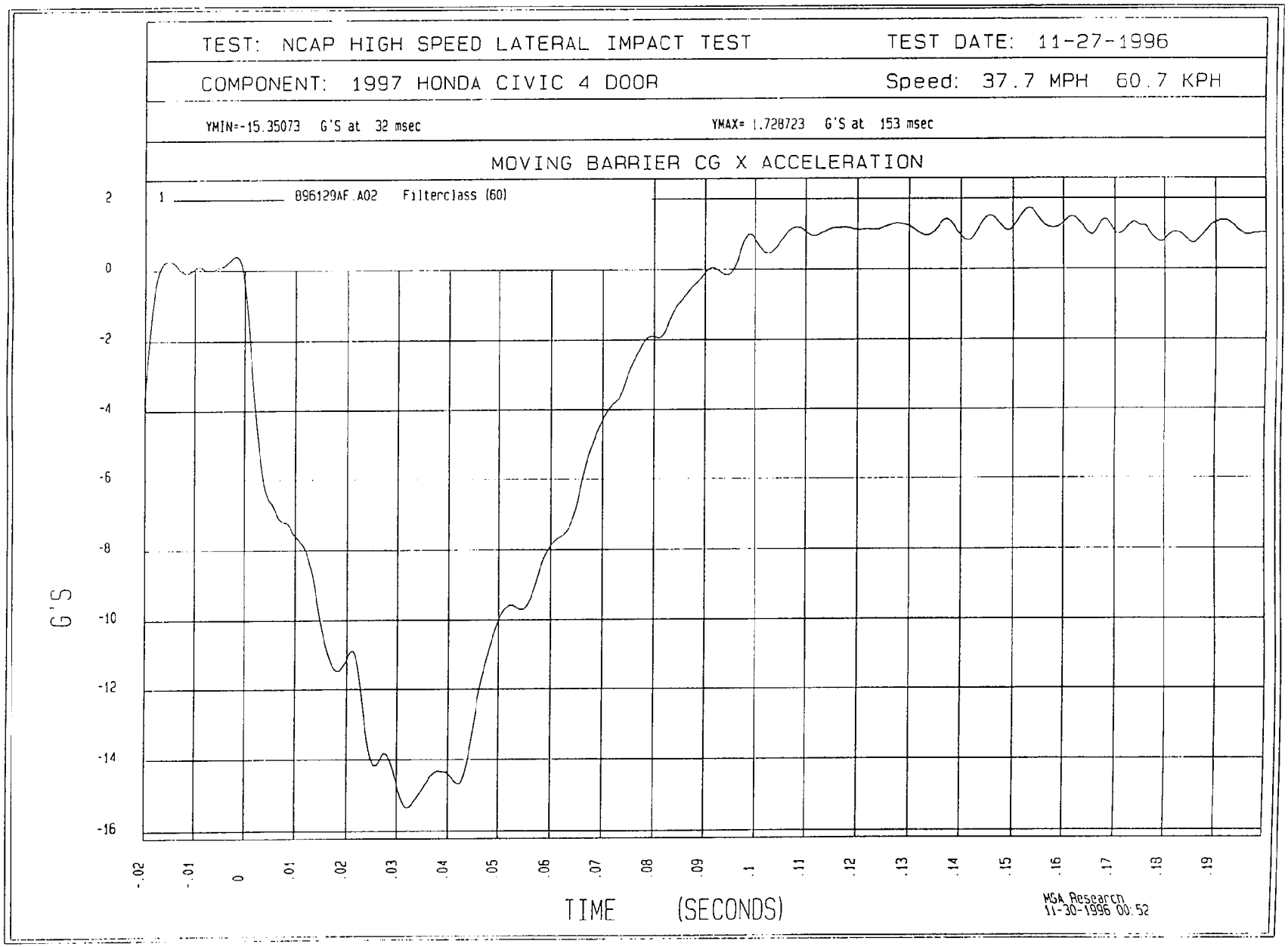
TIME (SECONDS)
MGA Research
11-30-1996 00:52


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-1.250254 KPH at 3.7 msec
YMAX= 47.67111 KPH at 21. msec
REAR LEFT DOOR MIDDLE Y VELOCITY
1 B96129AI.V76 Filterclass (180)
KPH
50
40
30
20
10
0
TIME Seconds
MGA Research
11-30-1996 00:26


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-15.35073 G'S at 32 msec
YMAX= 1.728723 G'S at 153 msec
MOVING BARRIER CG X ACCELERATION
1 896129AF.A02 Filterclass (60)
2
0
-2
-4
-6
-8
-10
-12
-14
-16
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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.12
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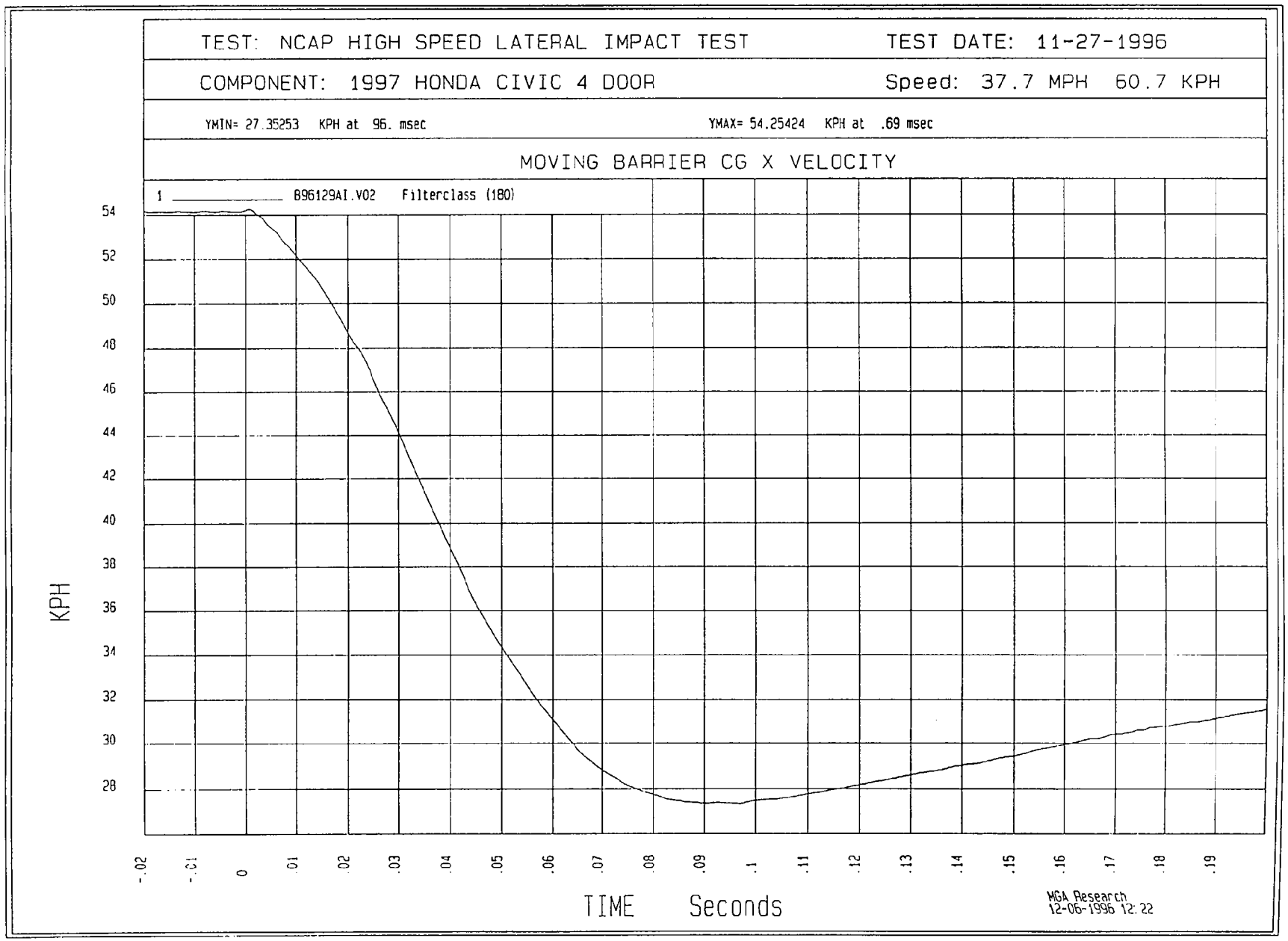
TIME (SECONDS)
MGA Research
11-30-1996 00:52


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= 27.35253 KPH at 96. msec
YMAX= 54.25424 KPH at .69 msec
MOVING BARRIER CG X VELOCITY
1 B96129AI.V02 Filterclass (180)
KPH
54
52
50
48
46
44
42
40
38
36
34
32
30
28
-.02
-.01
0
.01
.02
.03
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TIME Seconds
MGA Research
12-06-1996 12:22

TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-7.457286 G'S at 32. msec
YMAX= 1.525246 G'S at 63. msec
MOVING BARRIER CG Y ACCELERATION
1 B96129AF.A03 Filterclass (60)
G'S
1
0
-1
-2
-3
-4
-5
-6
-7
-.02
-.01
0
.01
.02
.03
.04
.05
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.16
.17
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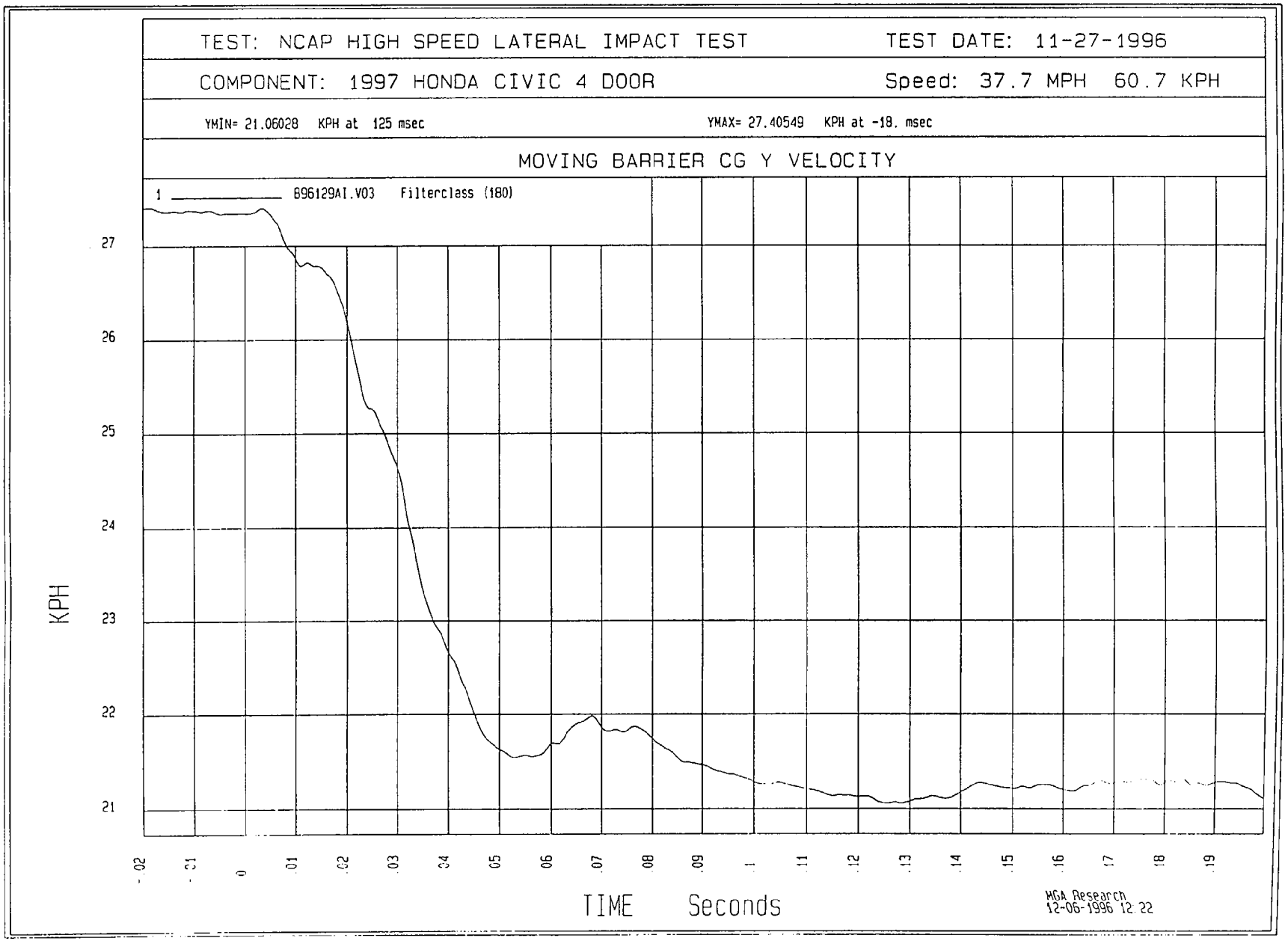
.19
TIME (SECONDS)
MGA Research
11-30-1996 00:52


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= 21.06028 KPH at 125 msec
YMAX= 27.40549 KPH at -18. msec
MOVING BARRIER CG Y VELOCITY
1 896129AI.V03 Filterclass (180)
KPH
27
26
25
24
23
22
21
-.02
-.01
0
.01
.02
.03
.04
.05
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.07
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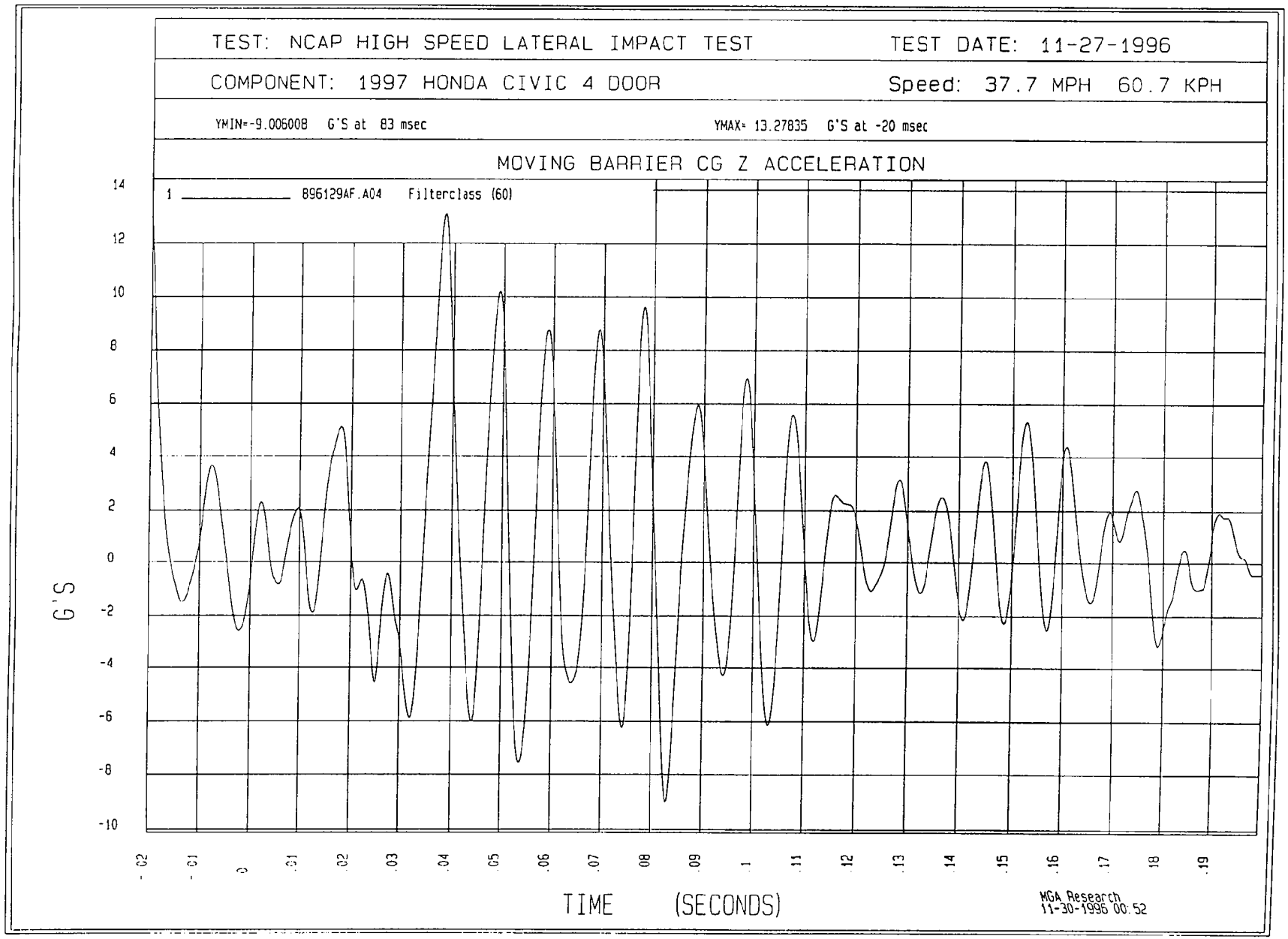
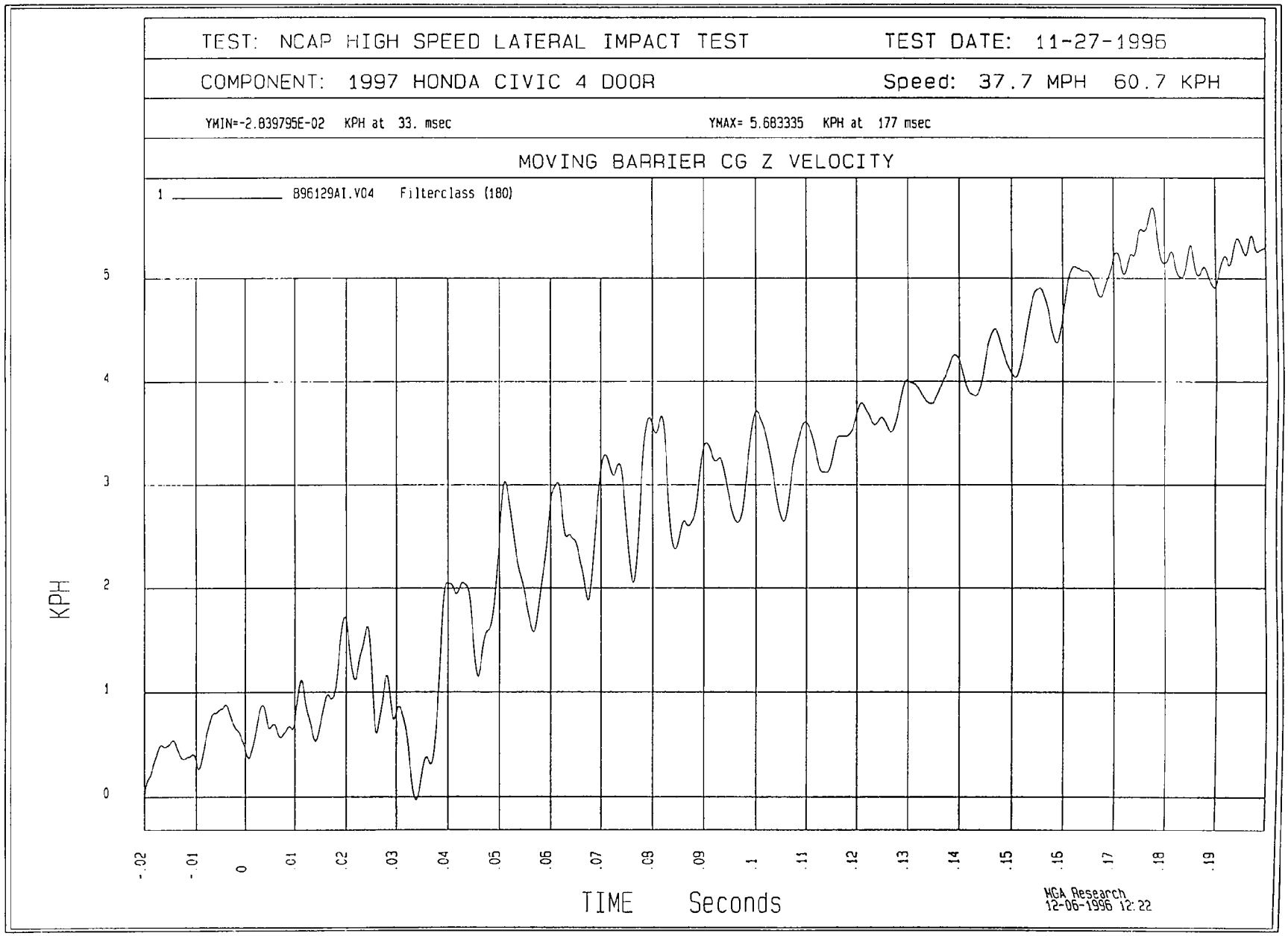
TIME Seconds
MGA Research
12-06-1996 12:22


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-9.006008 G'S at 83 msec
YMAX= 13.27835 G'S at -20 msec
MOVING BARRIER CG Z ACCELERATION
1 B96129AF.A04 Filterclass (60)
G'S
TIME (SECONDS)
MGA Research
11-30-1996 00:52


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-2.839795E-02 KPH at 33. msec
YMAX= 5.683335 KPH at 177 msec
MOVING BARRIER CG Z VELOCITY
1 B96129AI.V04 Filterclass (180)
KPH
5
4
3
2
1
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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.08
.09
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.12
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.17
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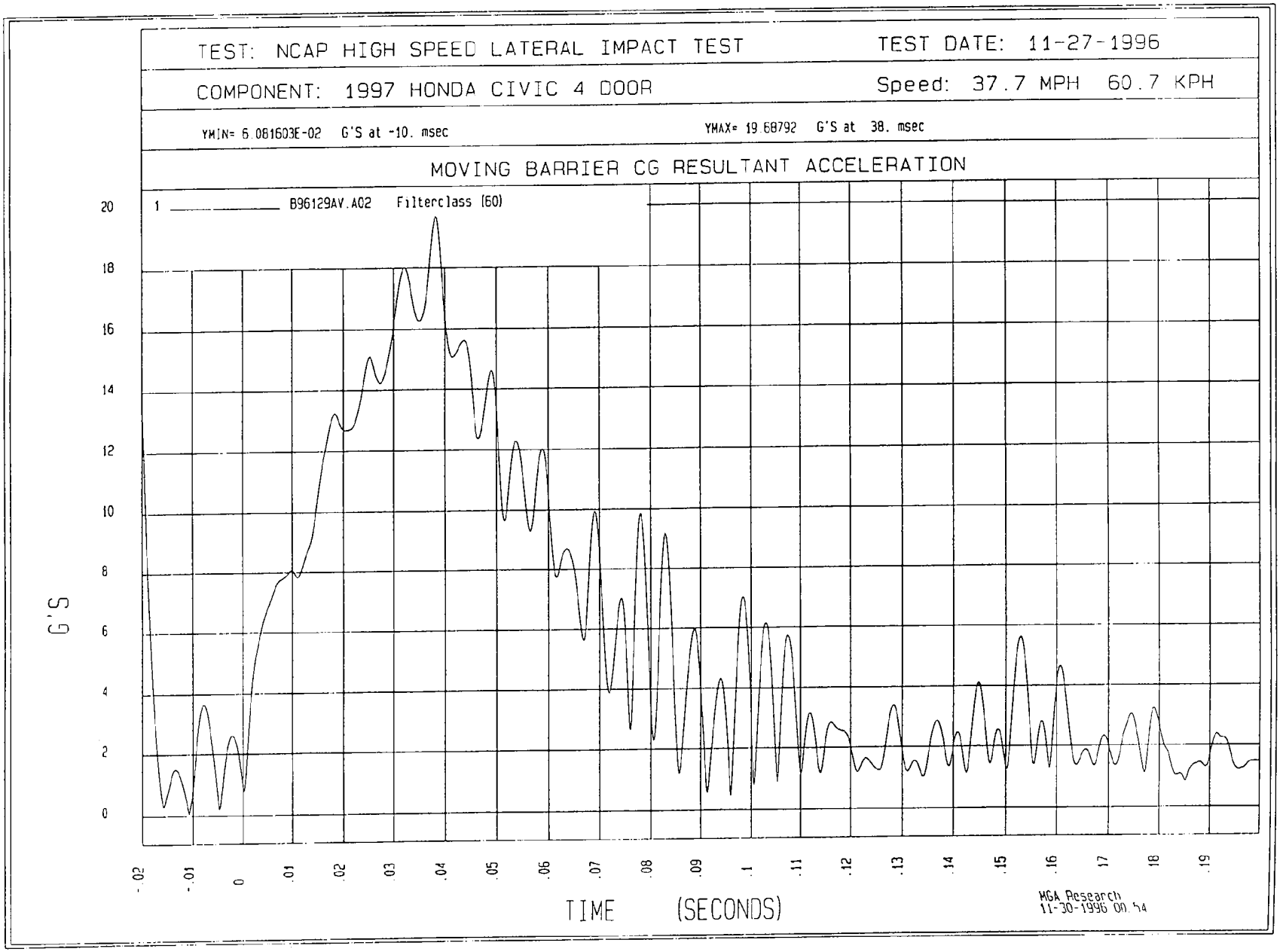
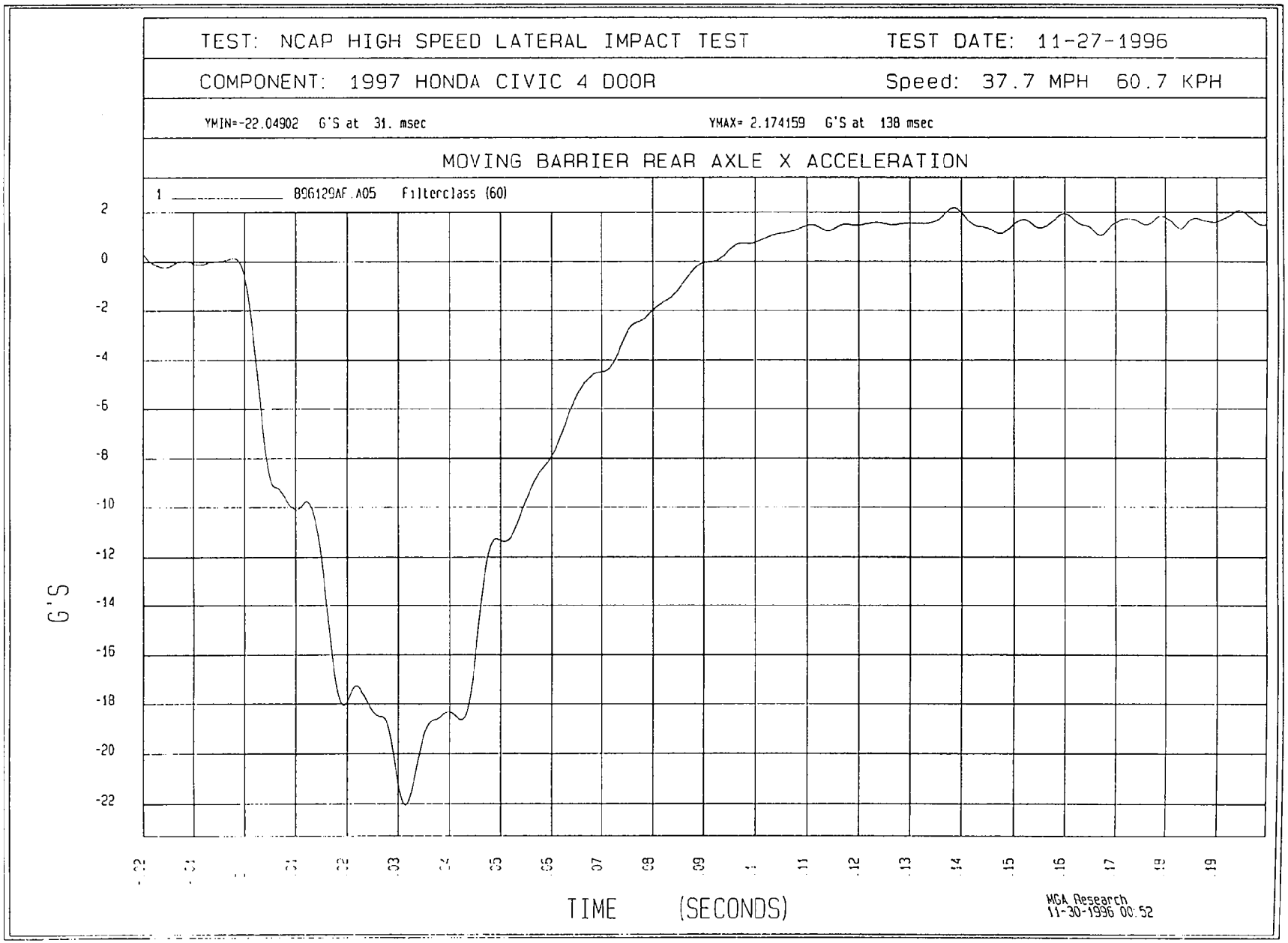
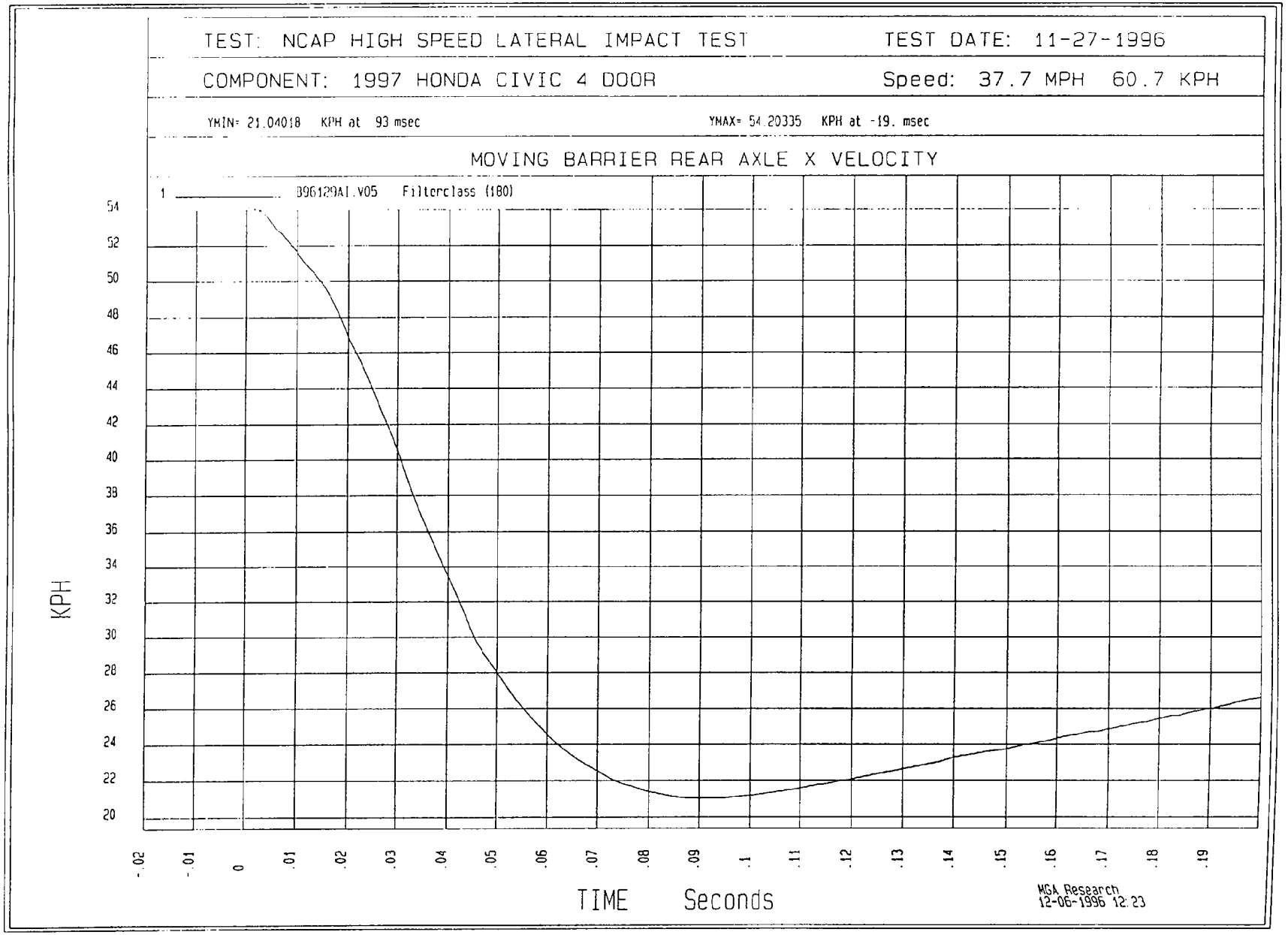
.19
TIME Seconds
NGA Research
12-06-1996 12:22


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= 6.081603E-02 G'S at -10. msec
YMAX= 19.68792 G'S at 38. msec
MOVING BARRIER CG RESULTANT ACCELERATION
1 B96129AV.A02 Filterclass (60)
G'S
TIME (SECONDS)
MGA Research
11-30-1996 09:54


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-22.04902 G'S at 31. msec
YMAX= 2.174159 G'S at 138 msec
MOVING BARRIER REAR AXLE X ACCELERATION
1 896129AF.A05 Filterclass (60)
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
G'S
.12
.13
.14
.15
.16
.17
.19
TIME (SECONDS)
MGA Research
11-30-1996 00:52


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= 21.04018 KPH at 93 msec
YMAX= 54.20335 KPH at -19. msec
MOVING BARRIER REAR AXLE X VELOCITY
1 B96129A1.V05 Filterclass (180)
KPH
54
52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
-.02
-.01
0
.01
.02
.03
.04
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.12
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.15
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.17
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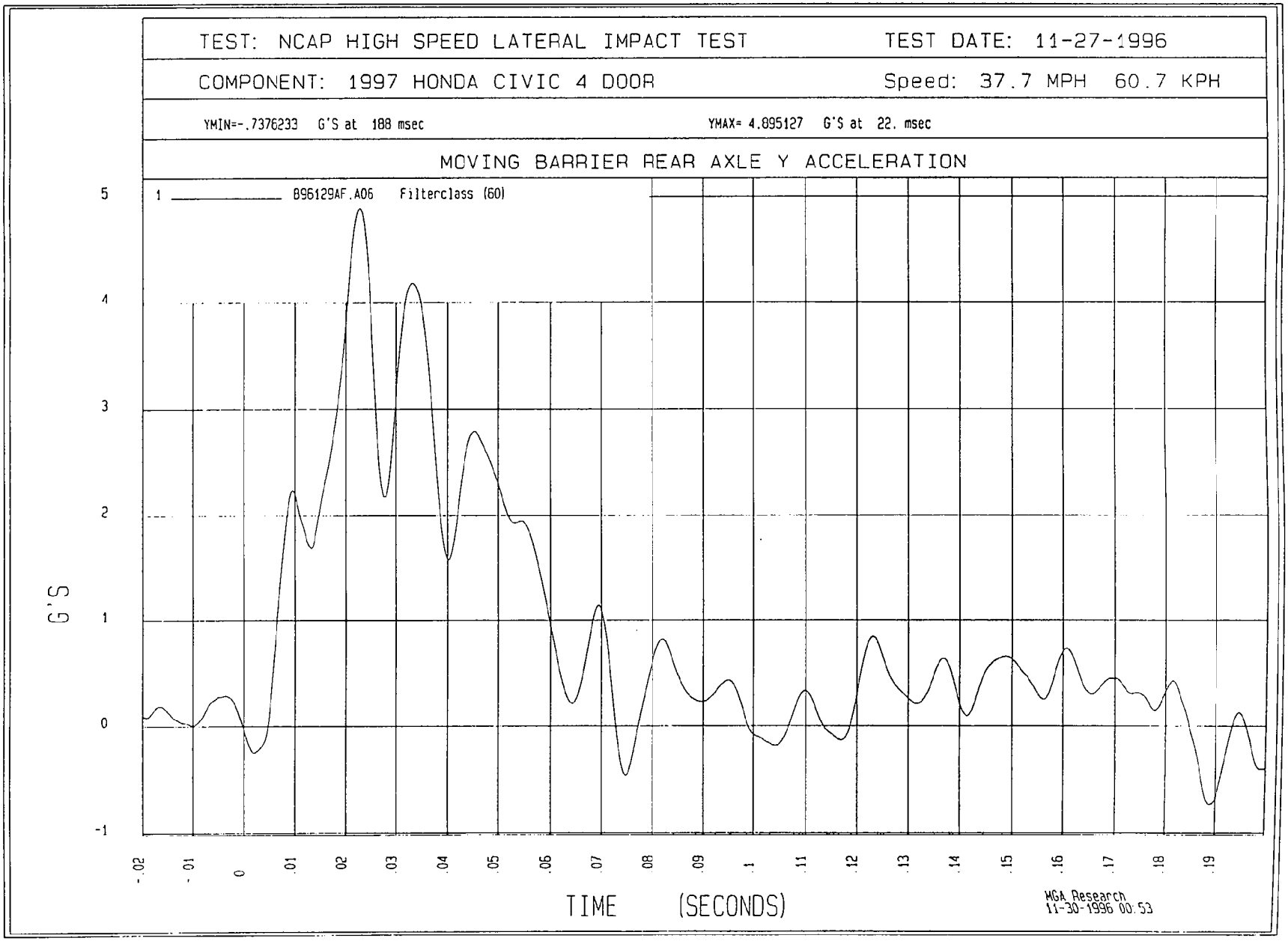
.19
TIME Seconds
MGA Research
12-06-1996 12:23


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-.7376233 G'S at 188 msec
YMAX= 4.895127 G'S at 22. msec
MOVING BARRIER REAR AXLE Y ACCELERATION
1 B96129AF.A06 Filterclass (60)
G'S
5
4
3
2
1
0
-1
-.02
-.01
0
.01
.02
.03
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.05
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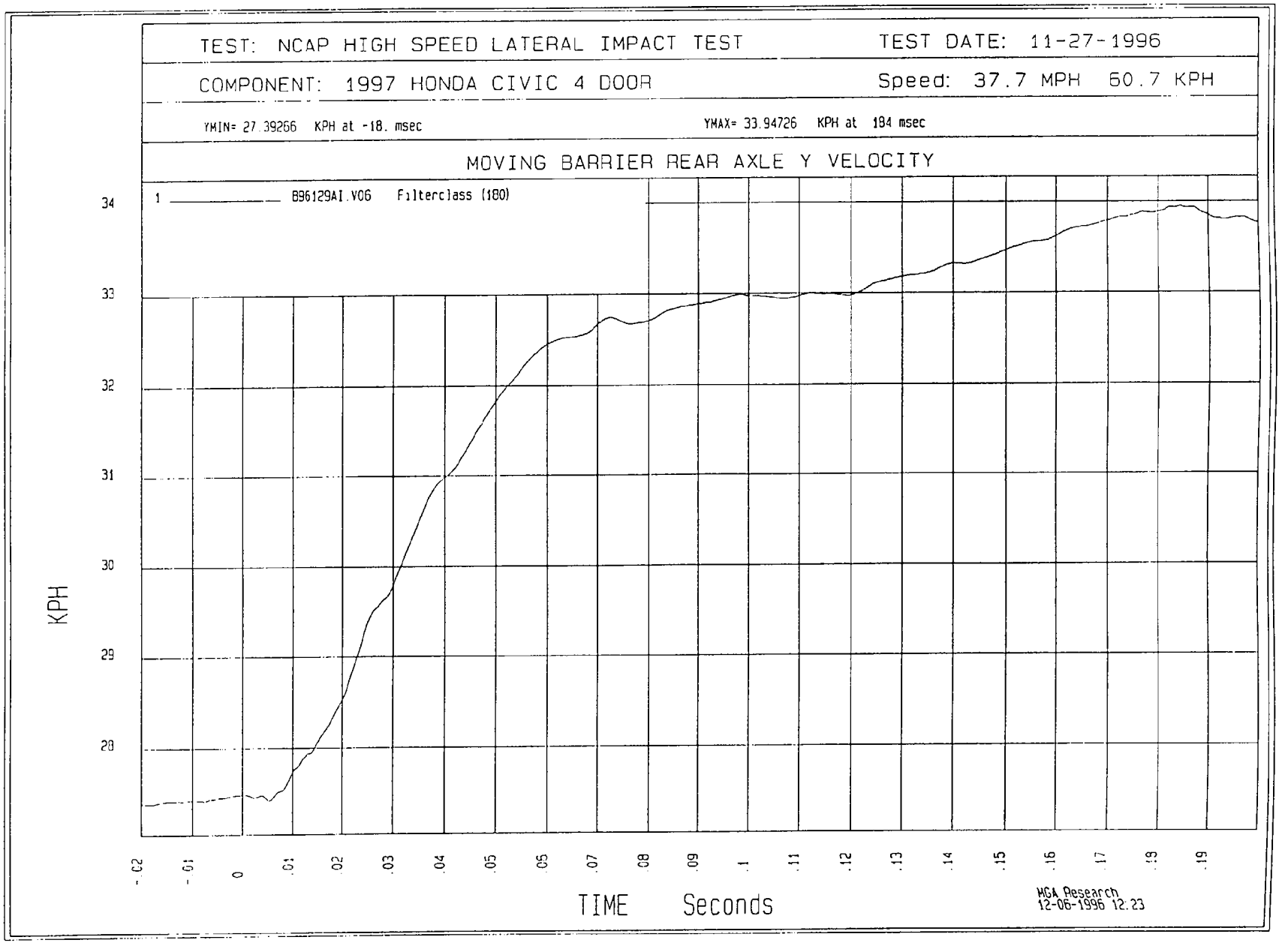
TIME (SECONDS)
MGA Research
11-30-1996 00:53


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= 27.39266 KPH at -18. msec
YMAX= 33.94726 KPH at 184 msec
MOVING BARRIER REAR AXLE Y VELOCITY
1 B96129AI.V06 Filterclass (180)
KPH
34
33
32
31
30
29
28
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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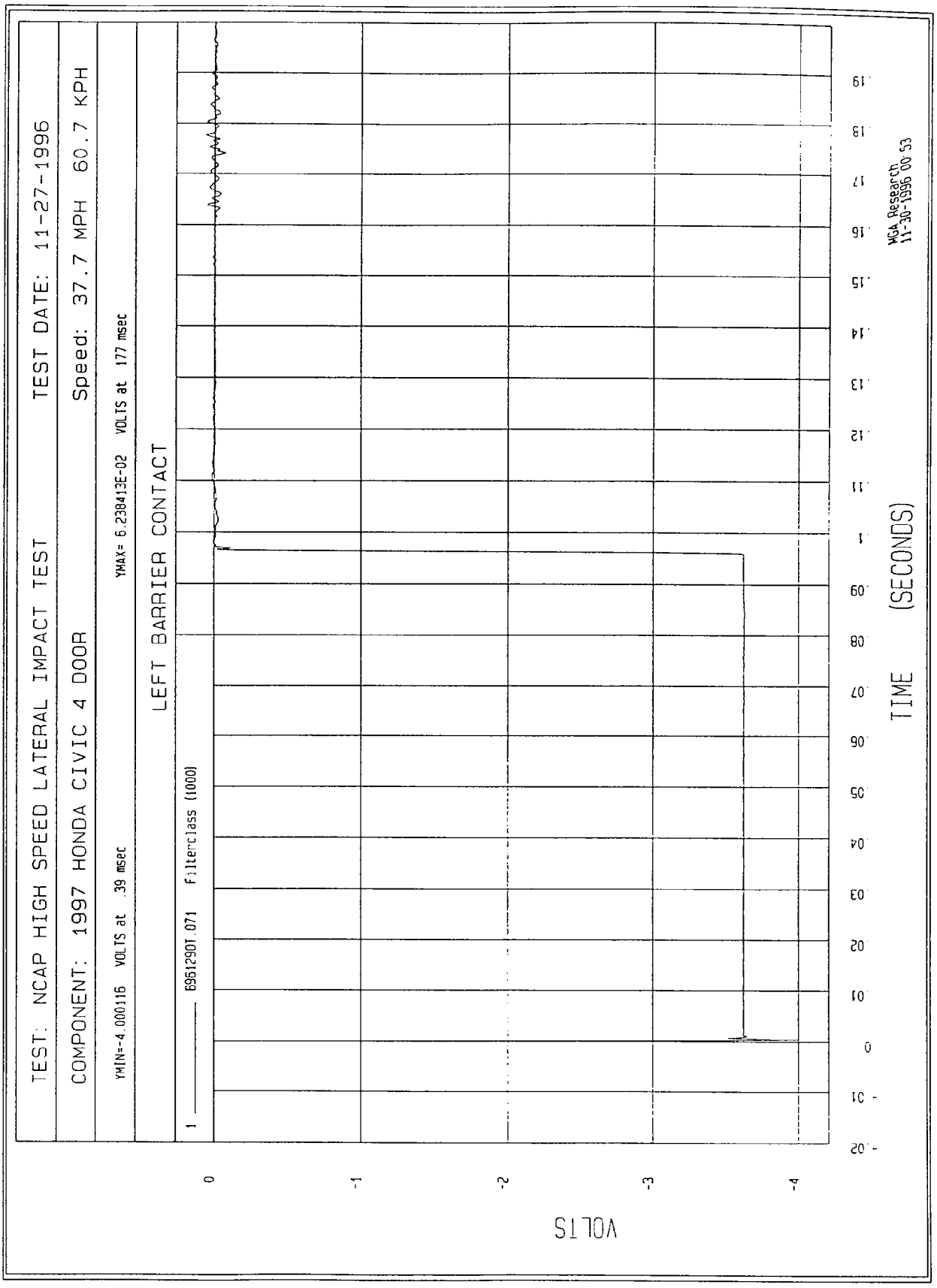
TIME Seconds
MGA Research
12-06-1996 12:23


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-4.000116 VOLTS at .39 msec
YMAX= 6.238413E-02 VOLTS at 177 msec
LEFT BARRIER CONTACT
1 _____ 69612901.071 Filterclass (1000)
VOLTS
0
-1
-2
-3
-4
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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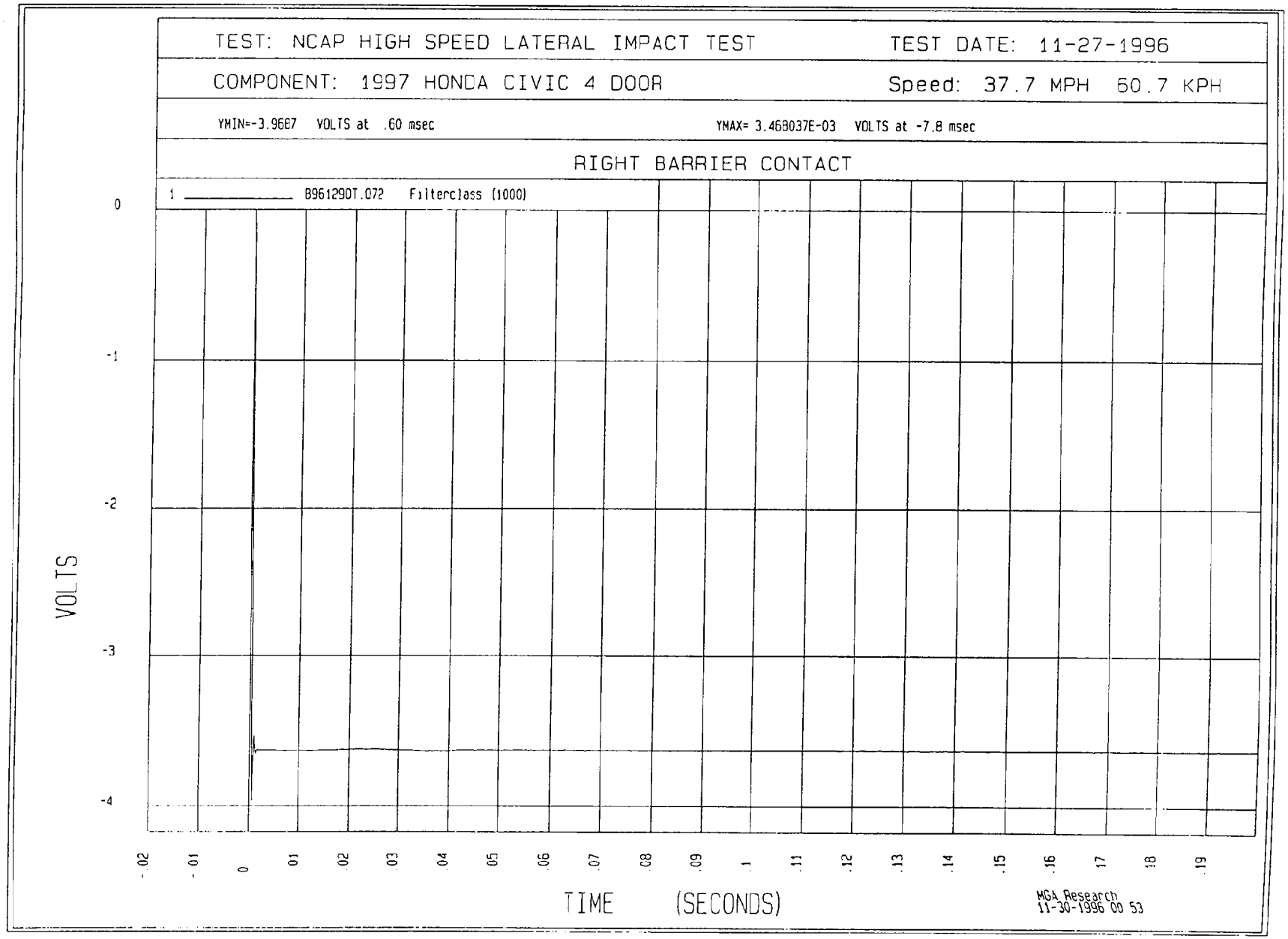
MGA Research
11-30-1996 00:53


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-3.9667 VOLTS at .60 msec
YMAX= 3.468037E-03 VOLTS at -7.8 msec
RIGHT BARRIER CONTACT
1 B961290T.072 Filterclass (1000)
VOLTS
0
-1
-2
-3
-4
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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.12
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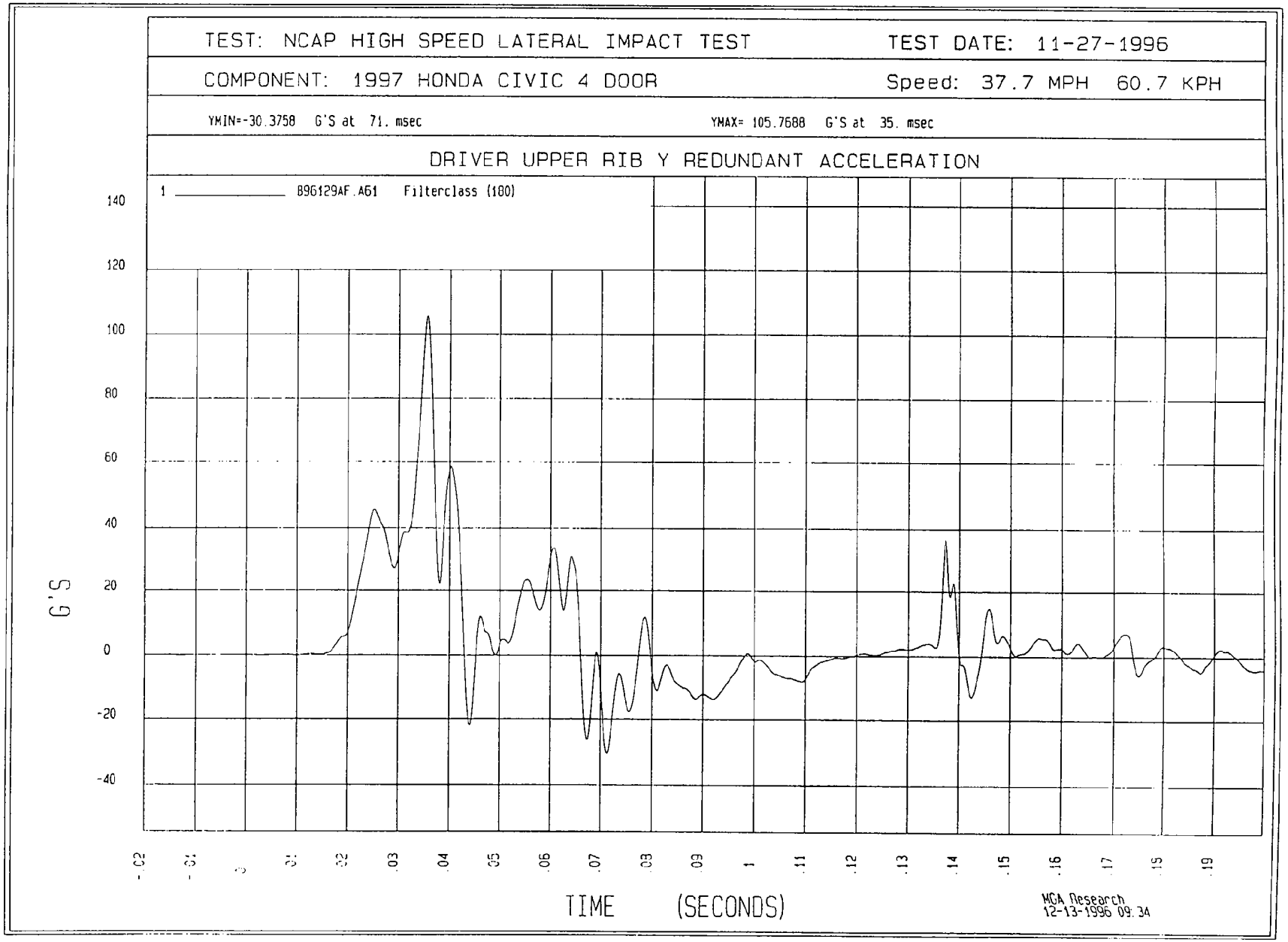
.19
TIME (SECONDS)
MGA Research
11-30-1996 00 53


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-30.3758 G'S at 71. msec
YMAX= 105.7688 G'S at 35. msec
DRIVER UPPER RIB Y REDUNDANT ACCELERATION
1 B96129AF.A61 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
G'S
.02
.03
.04
.05
.06
.07
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.11
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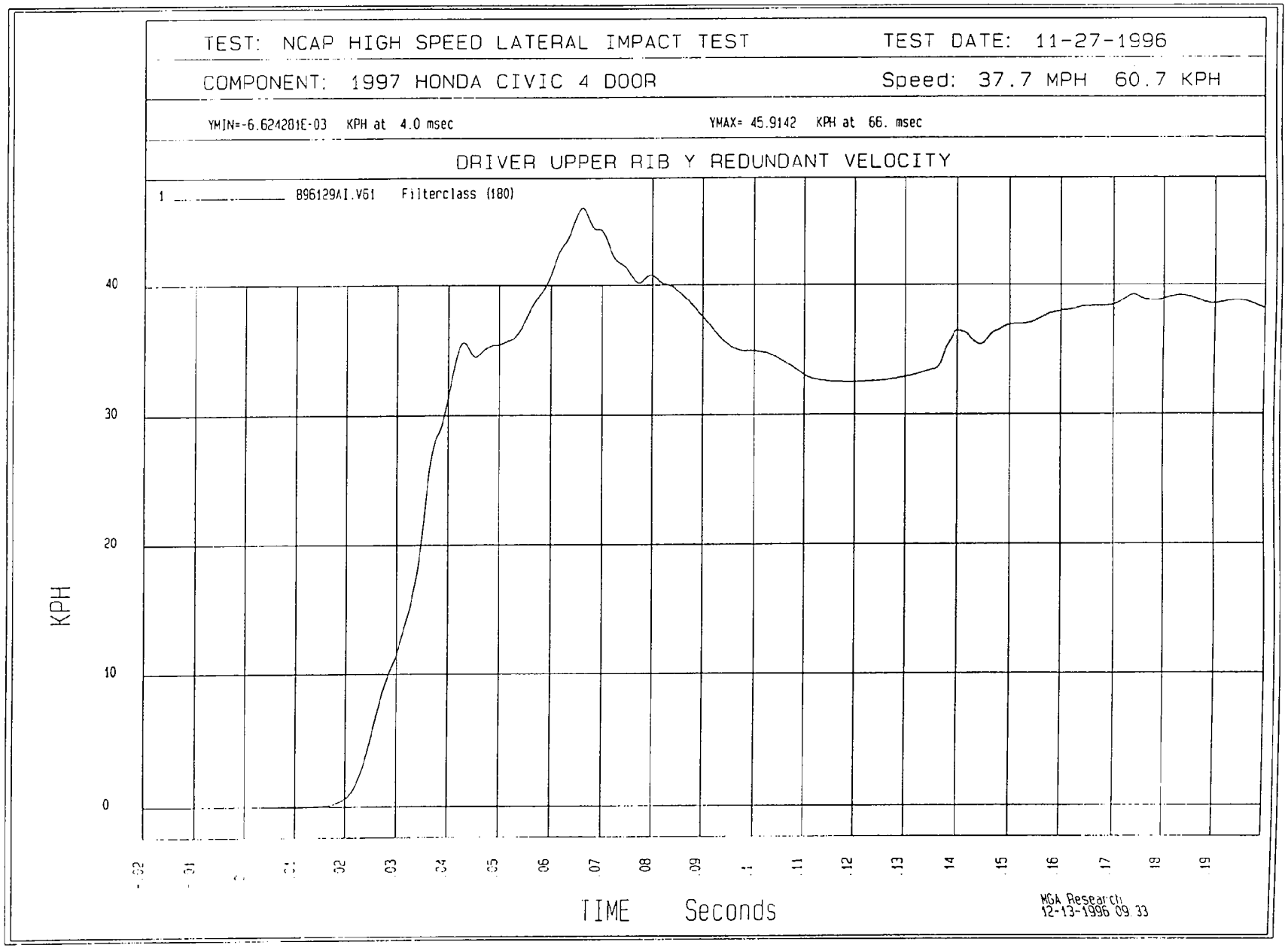
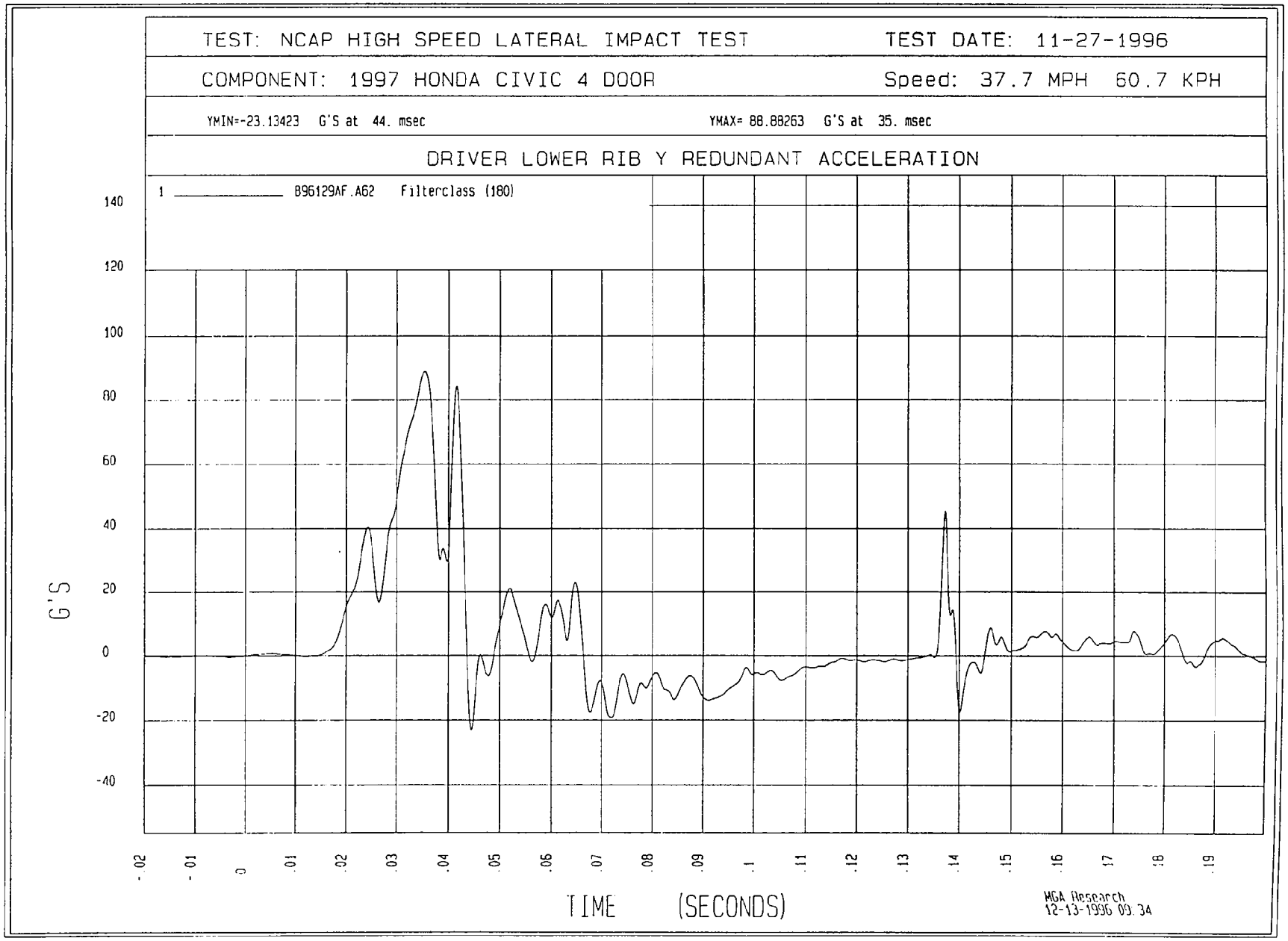
TIME (SECONDS)
MGA Research
12-13-1996 09:34


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-6.624281E-03 KPH at 4.0 msec
YMAX= 45.9142 KPH at 66. msec
DRIVER UPPER RIB Y REDUNDANT VELOCITY
1 896129AI.V61 Filterclass (180)
KPH
40
30
20
10
0
TIME Seconds
MGA Research
12-13-1996 09:33


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-23.13423 G'S at 44. msec
YMAX= 88.88263 G'S at 35. msec
DRIVER LOWER RIB Y REDUNDANT ACCELERATION
1 B96129AF.A62 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
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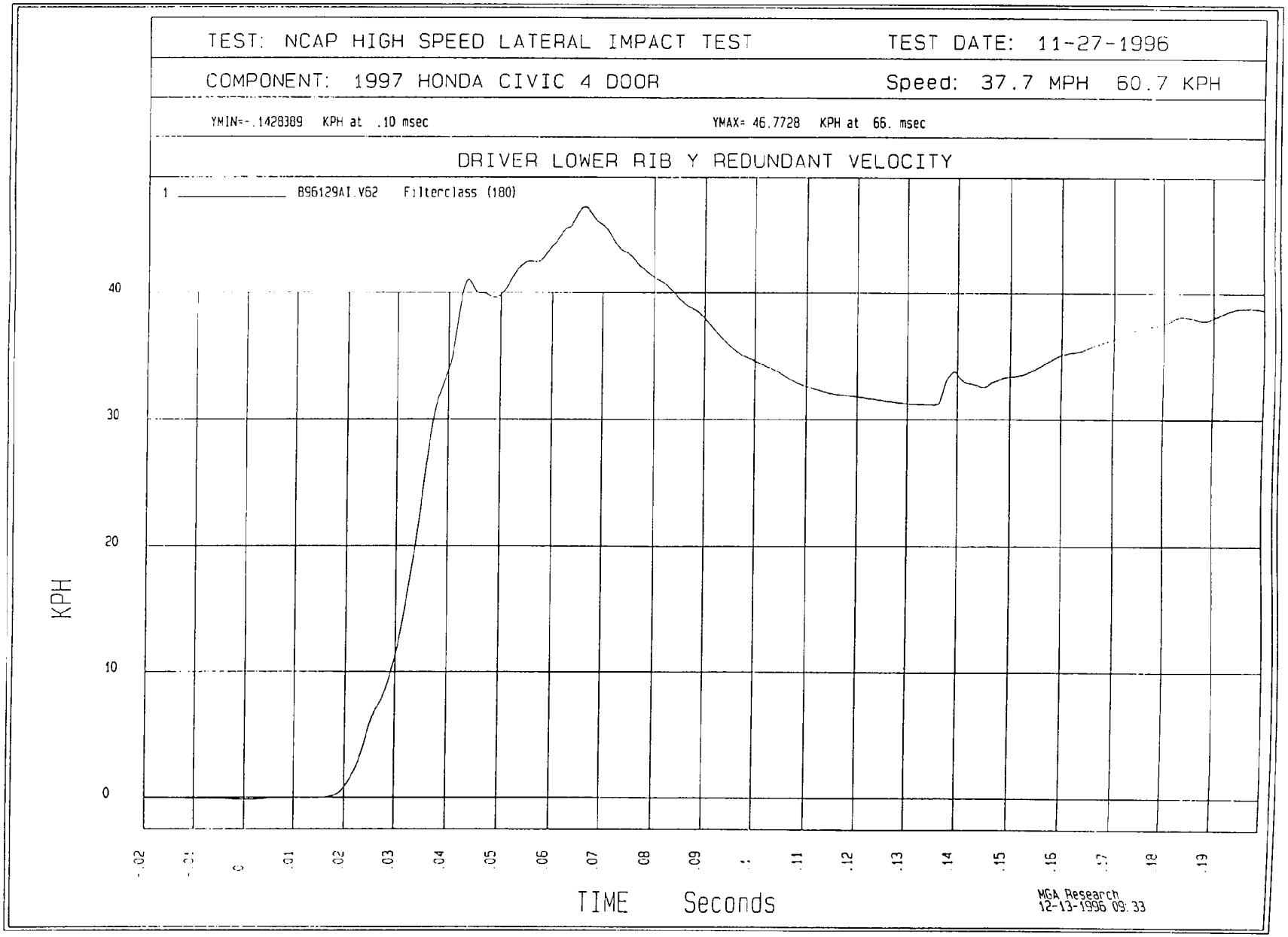
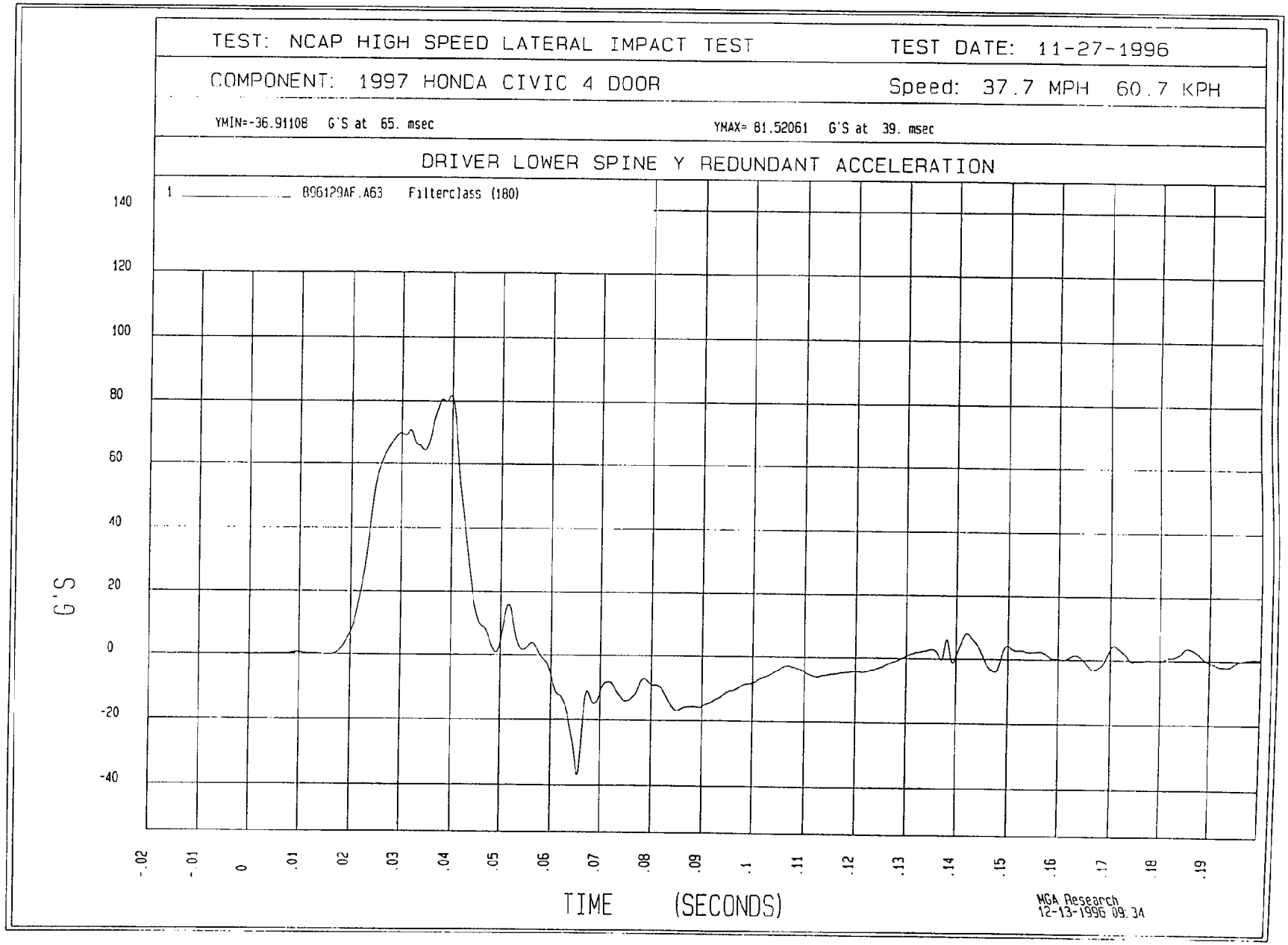
TIME (SECONDS)
MGA Research
12-13-1996 09:34


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-.1428389 KPH at .10 msec
YMAX= 46.7728 KPH at 66. msec
DRIVER LOWER RIB Y REDUNDANT VELOCITY
1 B96129AI.V62 Filterclass (180)
KPH
40
30
20
10
0
TIME Seconds
MGA Research
12-13-1996 09:33


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-36.91108 G'S at 65. msec
YMAX= 81.52061 G'S at 39. msec
DRIVER LOWER SPINE Y REDUNDANT ACCELERATION
1 B96129AF.A63 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
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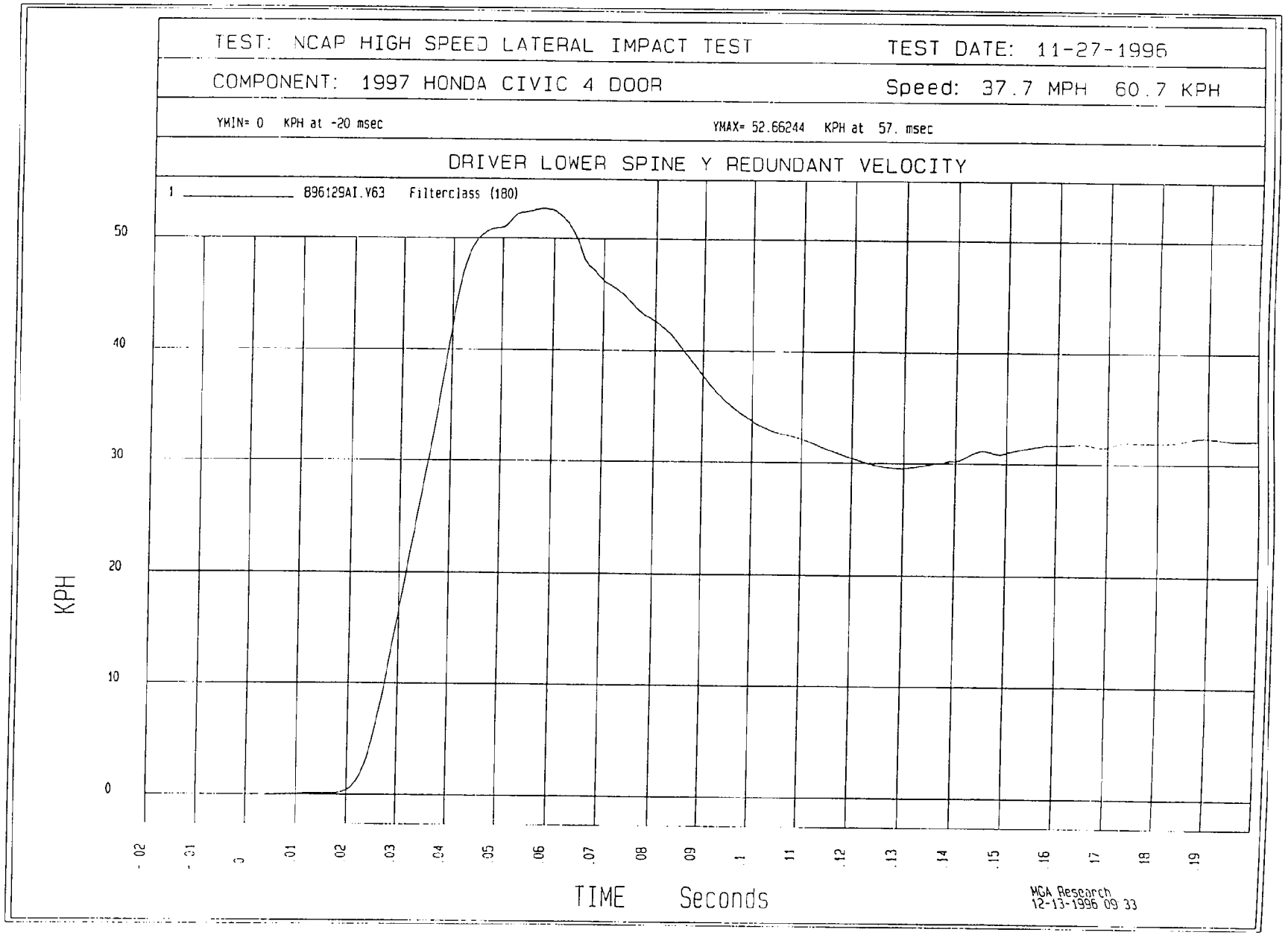
TIME (SECONDS)
MGA Research
12-13-1996 09:34


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN= 0 KPH at -20 msec
YMAX= 52.66244 KPH at 57. msec
DRIVER LOWER SPINE Y REDUNDANT VELOCITY
1 B96129AI.V63 Filterclass (180)
KPH
50
40
30
20
10
0
-.02
-.01
0
.01
.02
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.04
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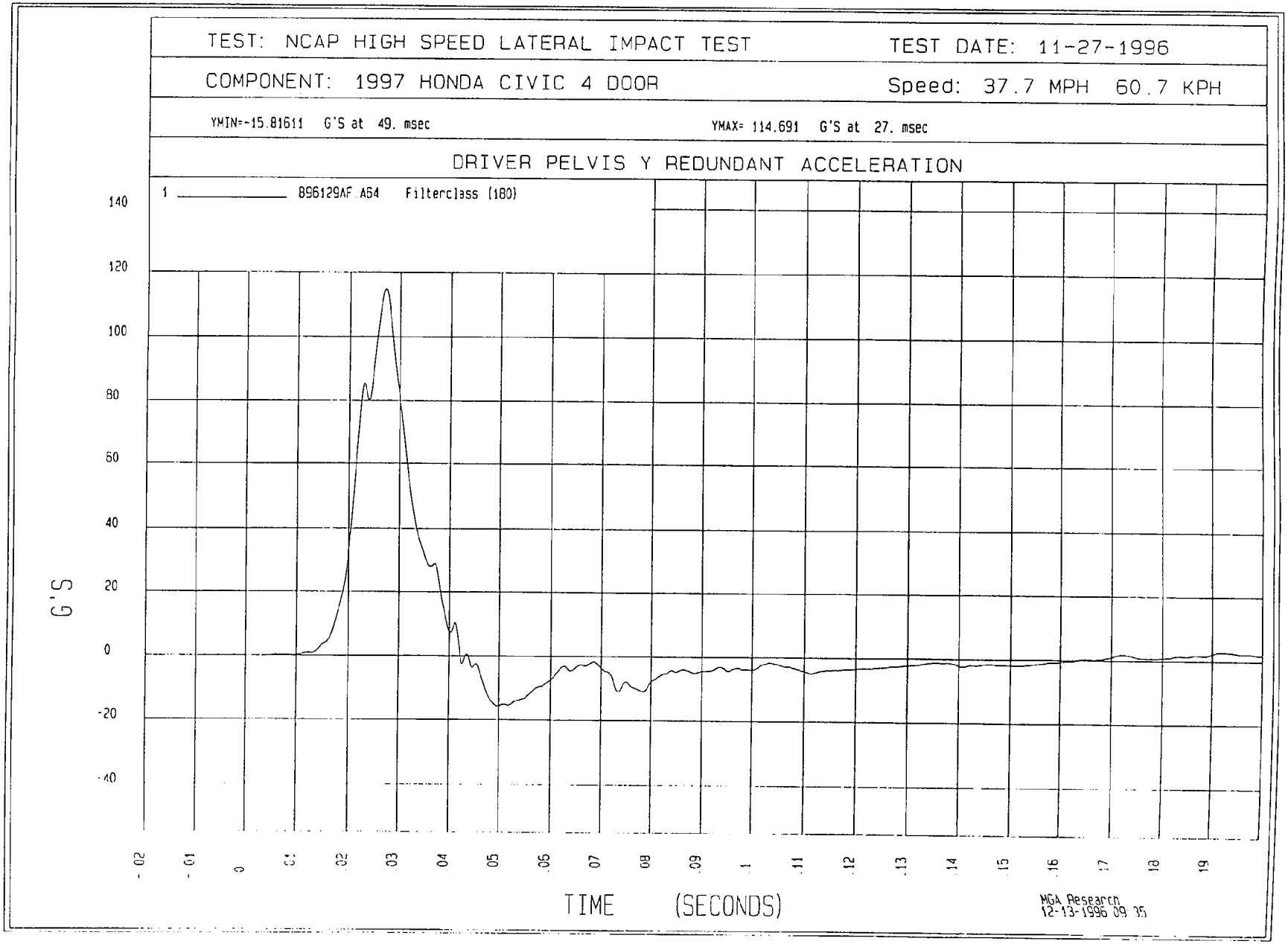
TIME Seconds
MGA Research
12-13-1996 09:33


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-15.81611 G'S at 49. msec
YMAX= 114.691 G'S at 27. msec
DRIVER PELVIS Y REDUNDANT ACCELERATION
1 896129AF.A64 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
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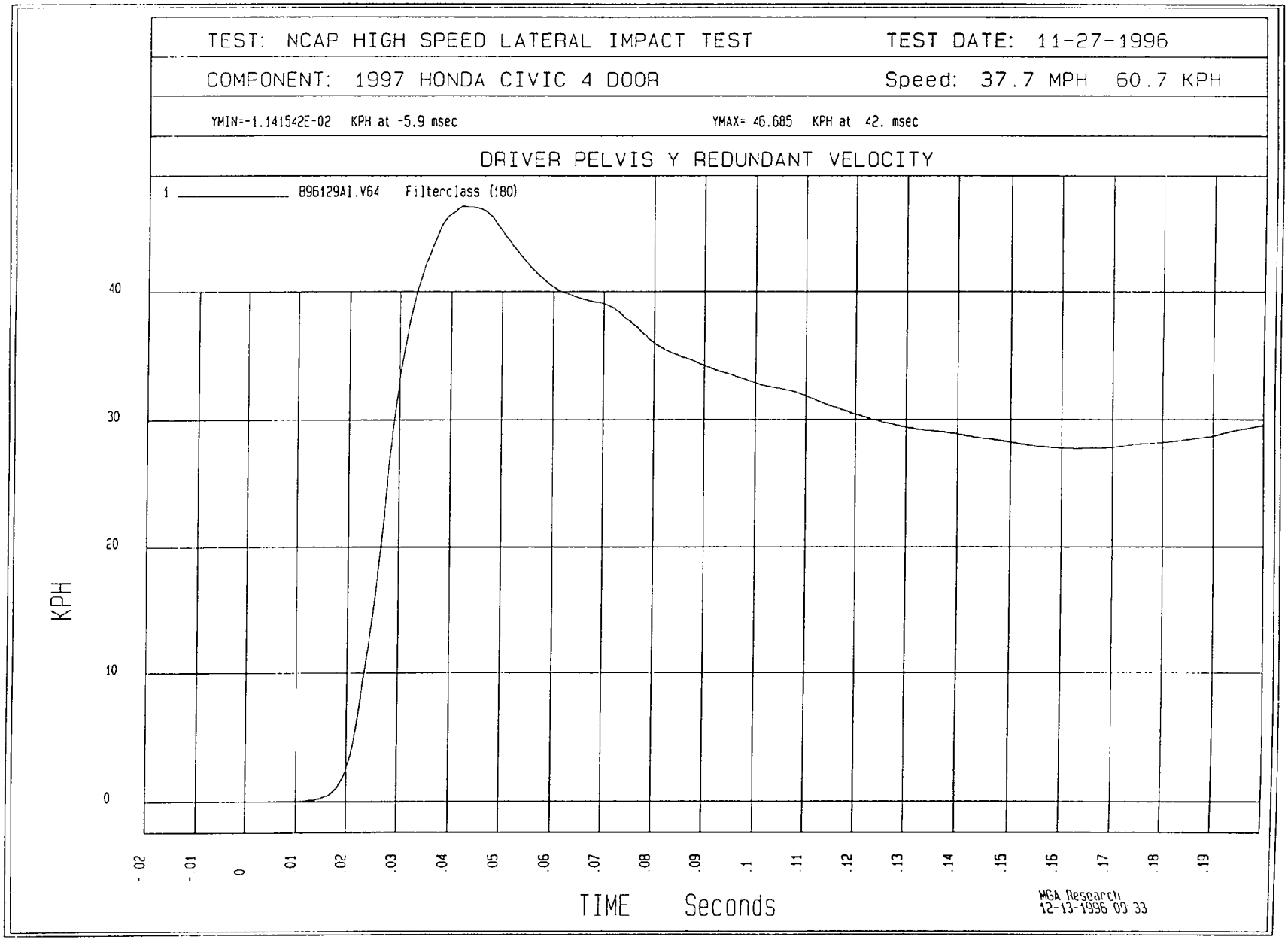
TIME (SECONDS)
MGA Research
12-13-1996 09:35


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-1.141542E-02 KPH at -5.9 msec
YMAX= 46.685 KPH at 42. msec
DRIVER PELVIS Y REDUNDANT VELOCITY
1 B96129AI.V64 Filterclass (180)
KPH
0
10
20
30
40
-.02
-.01
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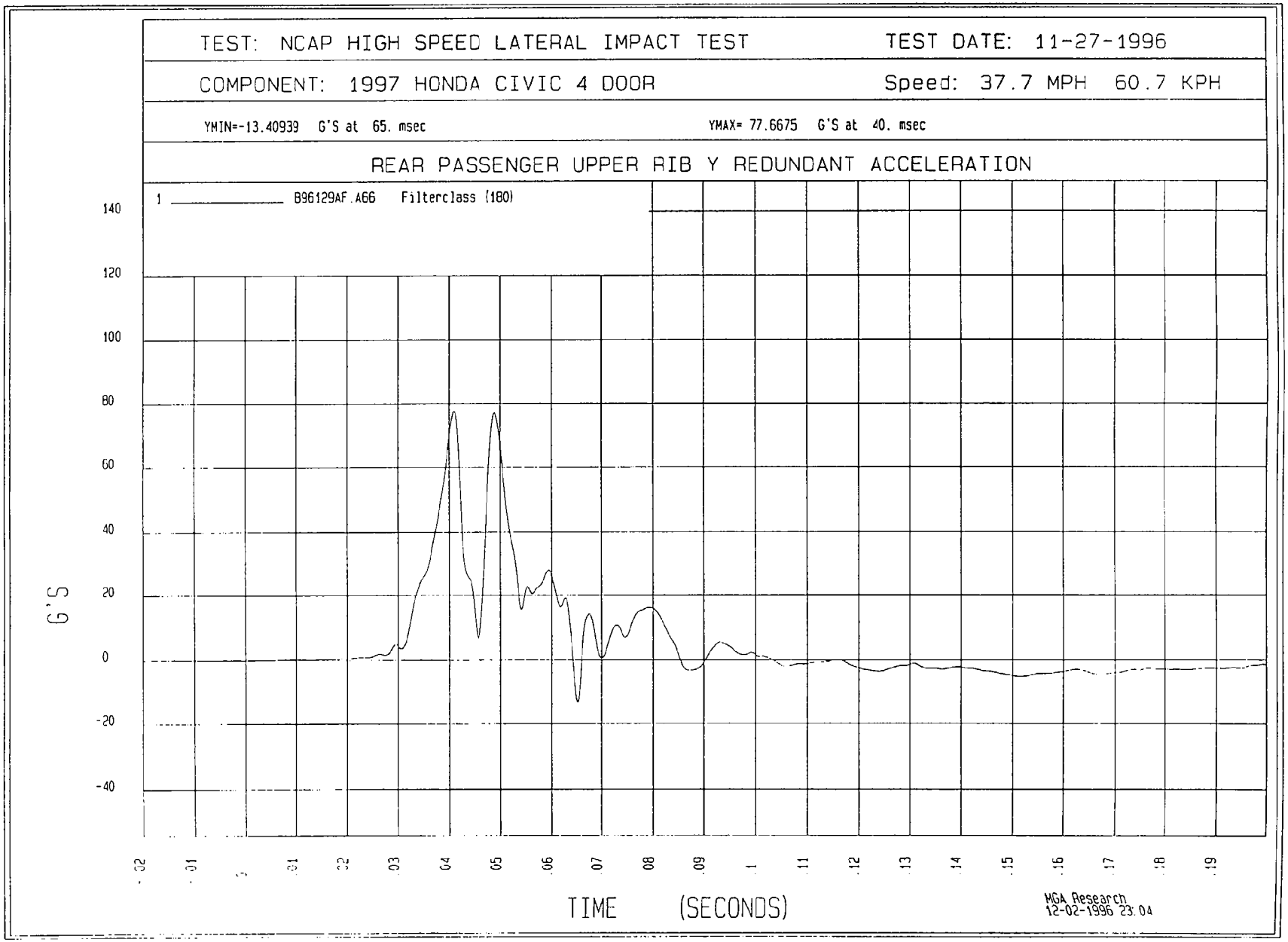
TIME Seconds
MGA Research
12-13-1996 09:33


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-13.40939 G'S at 65. msec
YMAX= 77.6675 G'S at 40. msec
REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION
1 B96129AF.A66 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
G'S
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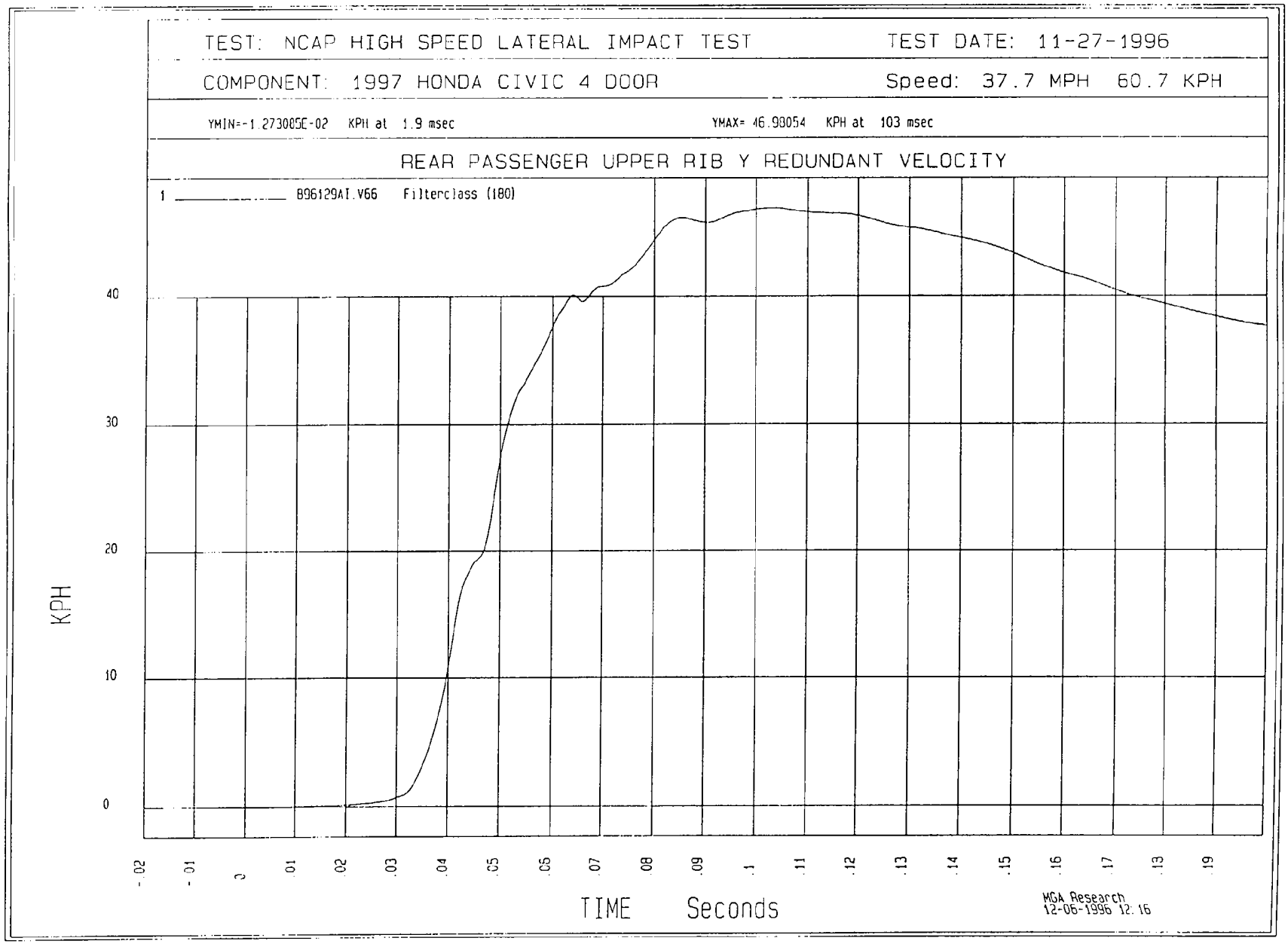
TIME (SECONDS)
MGA Research
12-02-1996 23:04


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-1.273005E-02 KPH at 1.9 msec
YMAX= 46.98054 KPH at 103 msec
REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY
1 B96129AI.V66 Filterclass (180)
KPH
0
10
20
30
40
-.02
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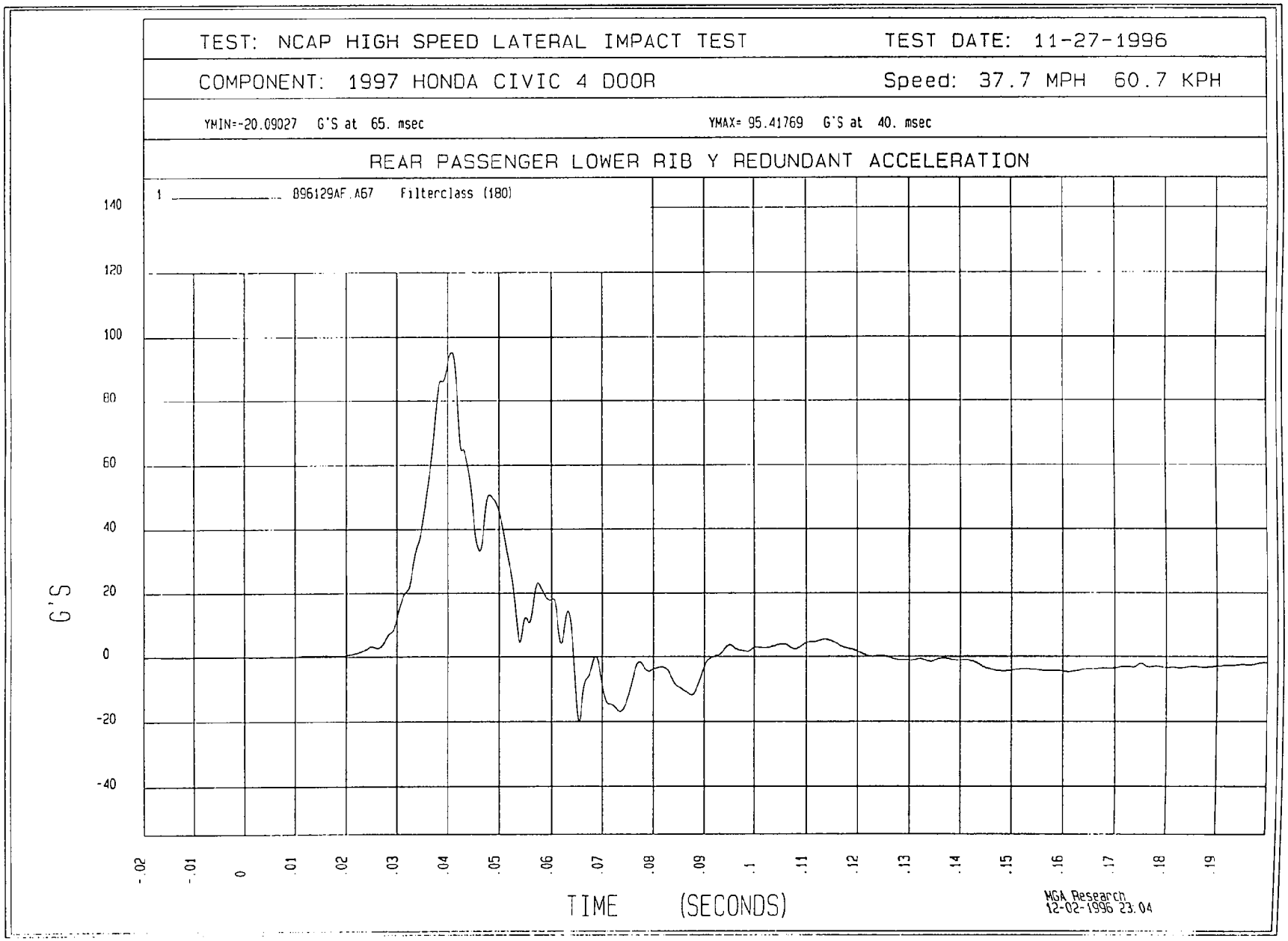
TIME Seconds
MGA Research
12-06-1996 12:16


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-20.09027 G'S at 65. msec
YMAX= 95.41769 G'S at 40. msec
REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION
1 896129AF.A67 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
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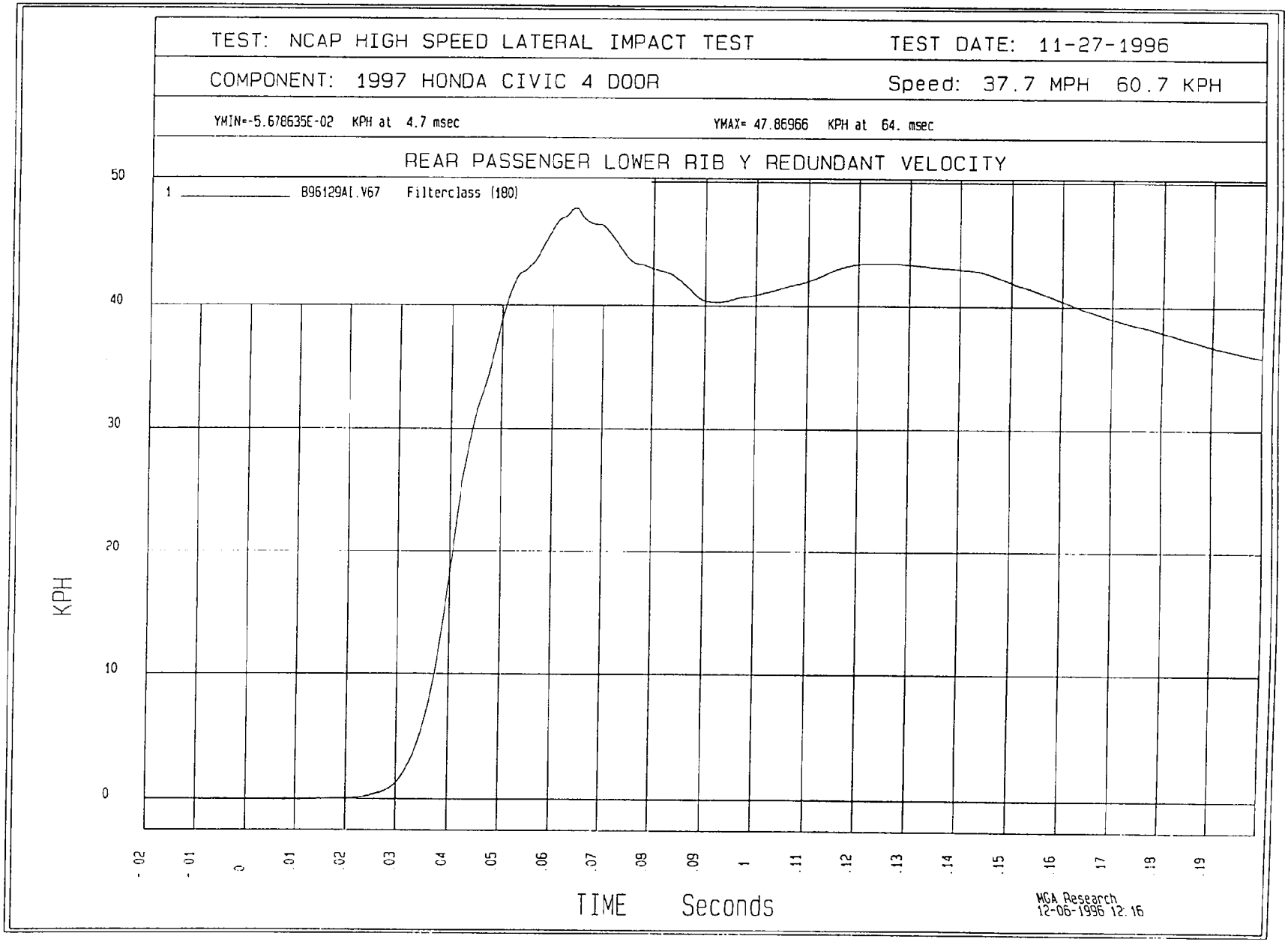
TIME (SECONDS)
MGA Research
12-02-1996 23:04


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-5.678635E-02 KPH at 4.7 msec
YMAX= 47.86966 KPH at 64. msec
REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY
1 B96129AI.V67 Filterclass (180)
KPH
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
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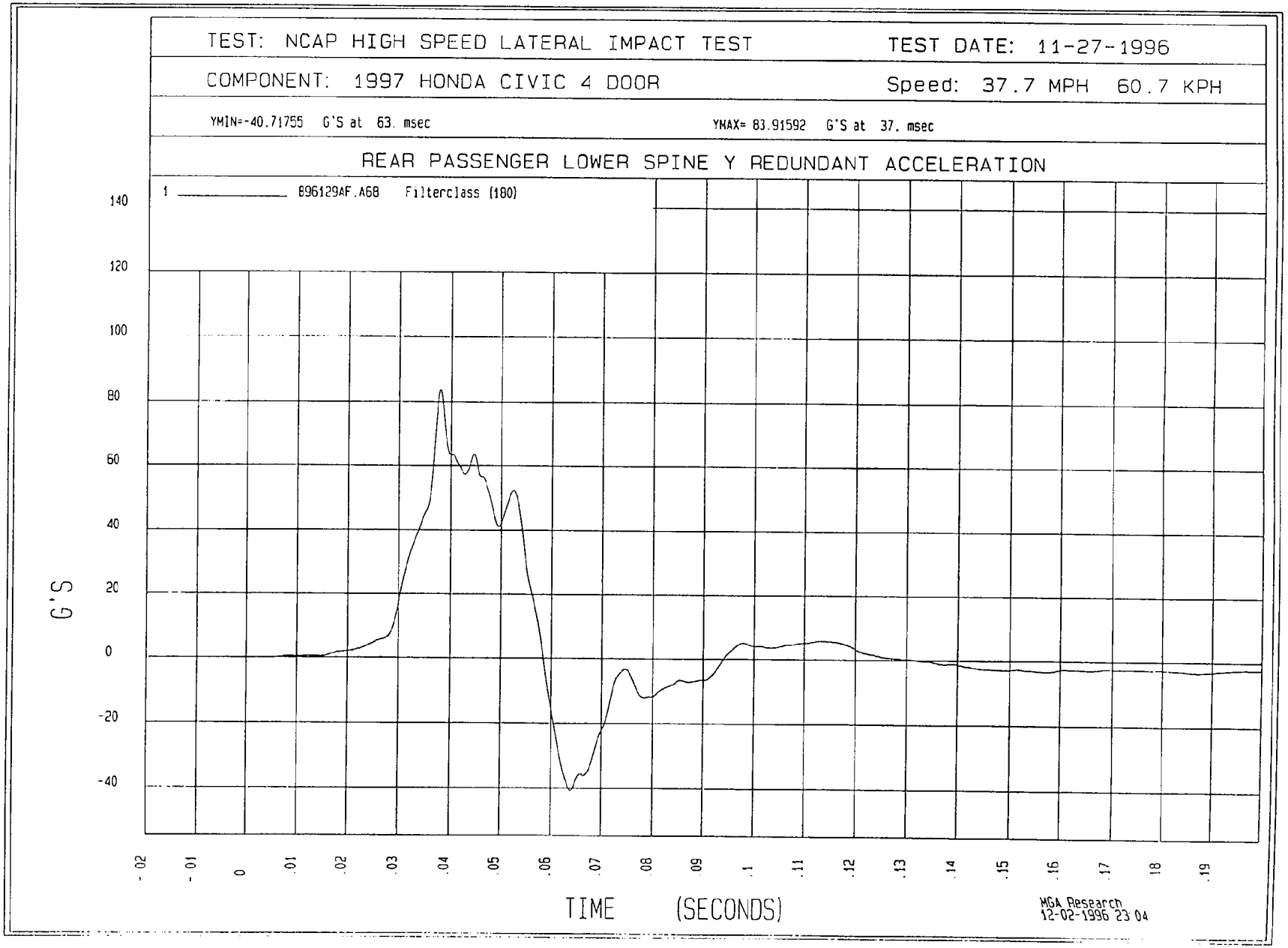
TIME Seconds
MGA Research
12-06-1996 12:16


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-40.71755 G'S at 63. msec
YMAX= 83.91592 G'S at 37. msec
REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION
1 B96129AF.A68 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
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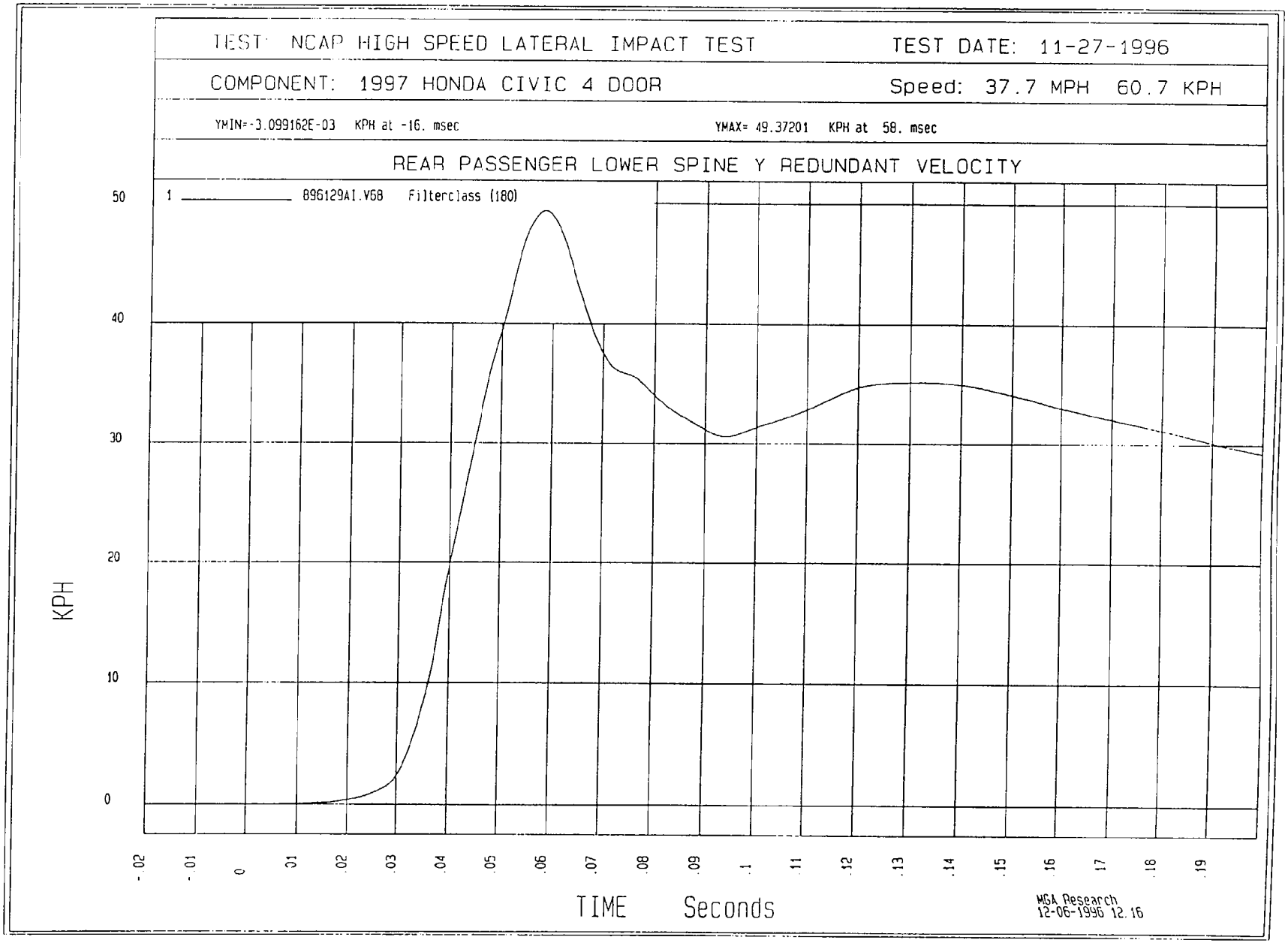
TIME (SECONDS)
MGA Research
12-02-1996 23:04


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-3.099162E-03 KPH at -16. msec
YMAX= 49.37201 KPH at 58. msec
REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY
1 896129AI.V68 Filterclass (180)
KPH
50
40
30
20
10
0
-.02
-.01
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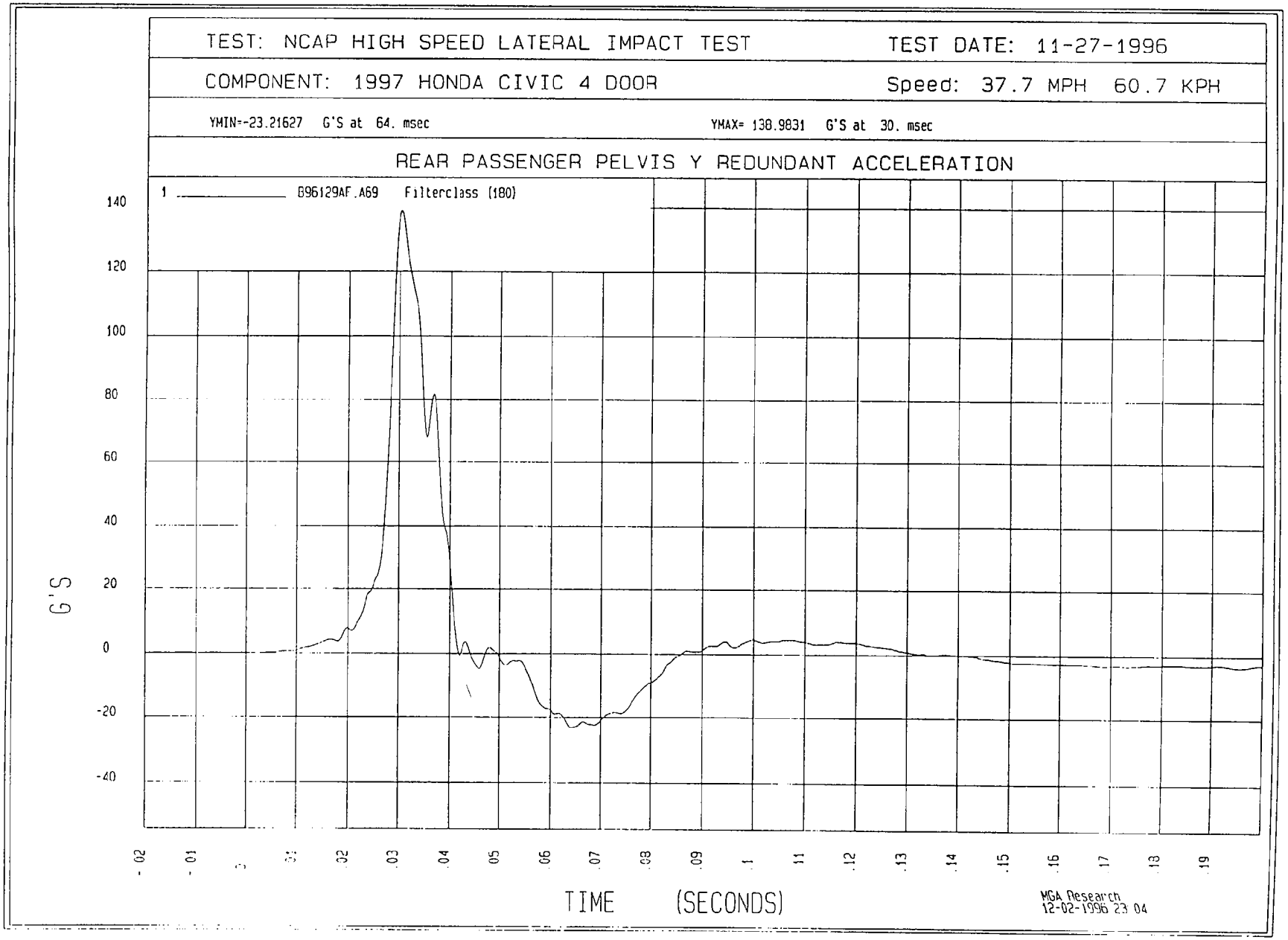
TIME Seconds
MGA Research
12-06-1996 12.16


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-23.21627 G'S at 64. msec
YMAX= 138.9831 G'S at 30. msec
REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION
1 B96129AF.A69 Filterclass (180)
140
120
100
80
60
40
20
0
-20
-40
G'S
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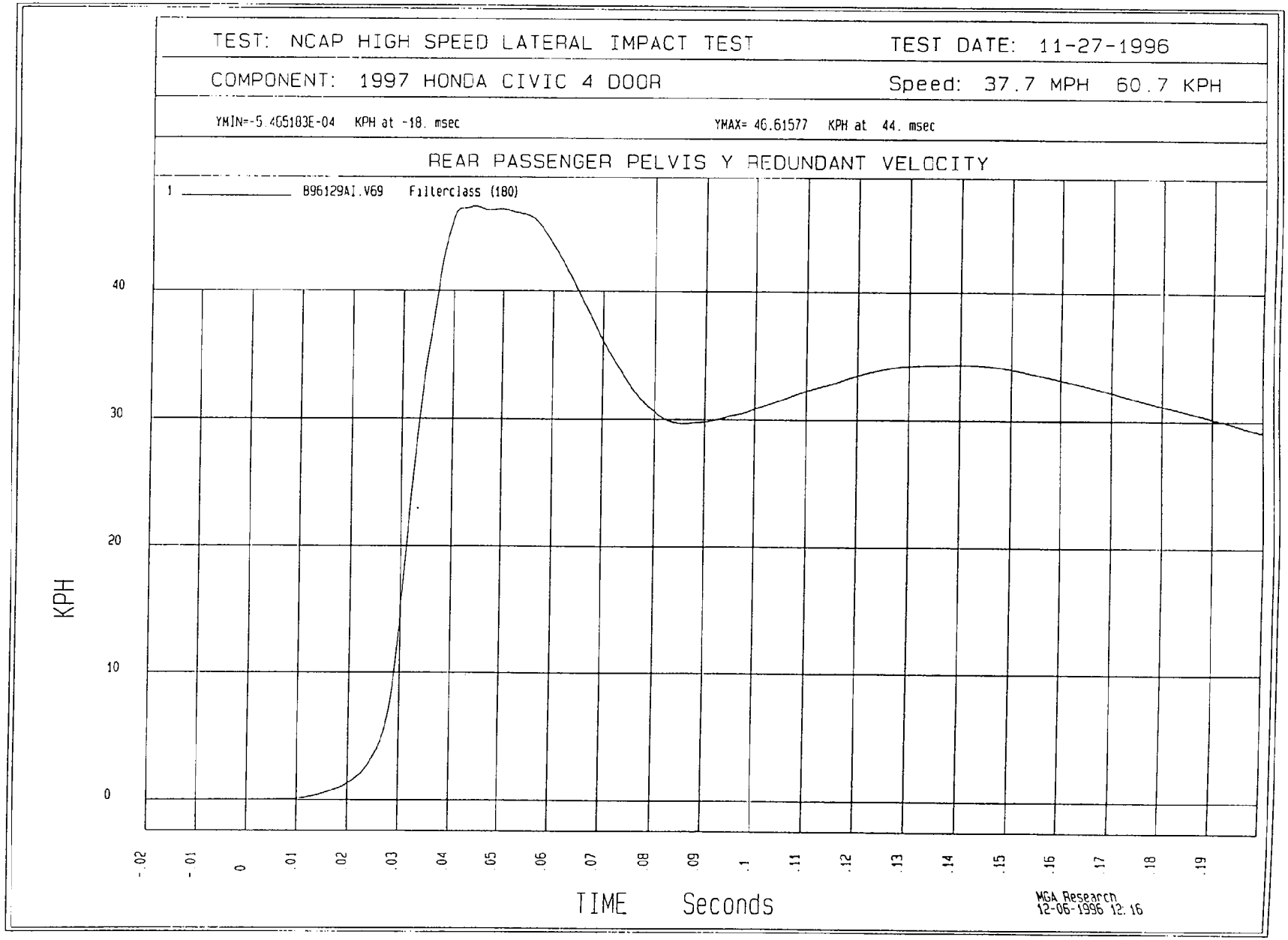
TIME (SECONDS)
MGA Research
12-02-1996 23:04


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-5.465183E-04 KPH at -18. msec
YMAX= 46.61577 KPH at 44. msec
REAR PASSENGER PELVIS Y REDUNDANT VELOCITY
1 B96129AI.V69 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
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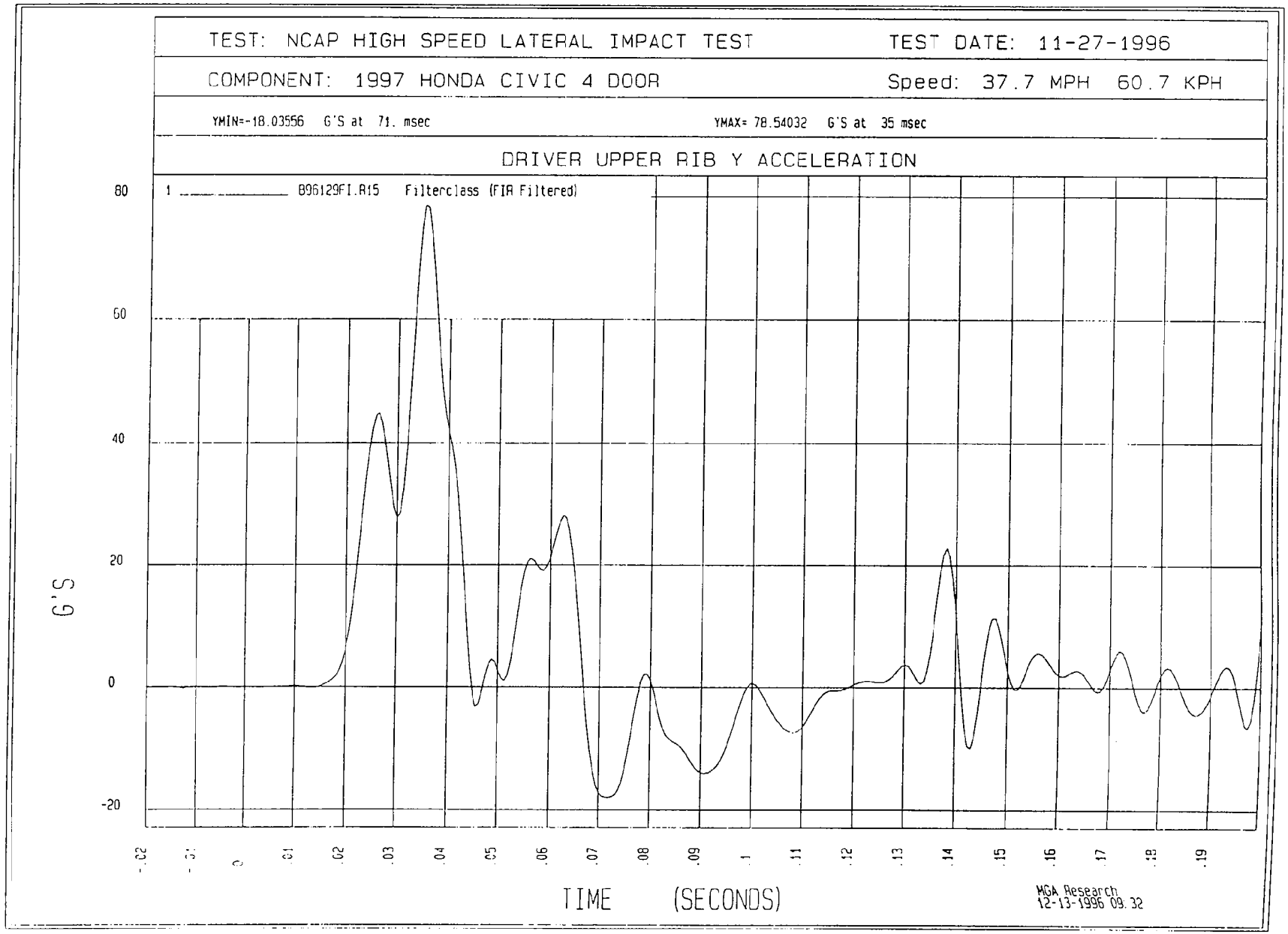
TIME Seconds
MGA Research
12-06-1996 12:16

FINITE IMPULSE RESPONSE (FIR) FILTERED DATA


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-18.03556 G'S at 71. msec
YMAX= 78.54032 G'S at 35 msec
DRIVER UPPER RIB Y ACCELERATION
1 B96129FI.R15 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
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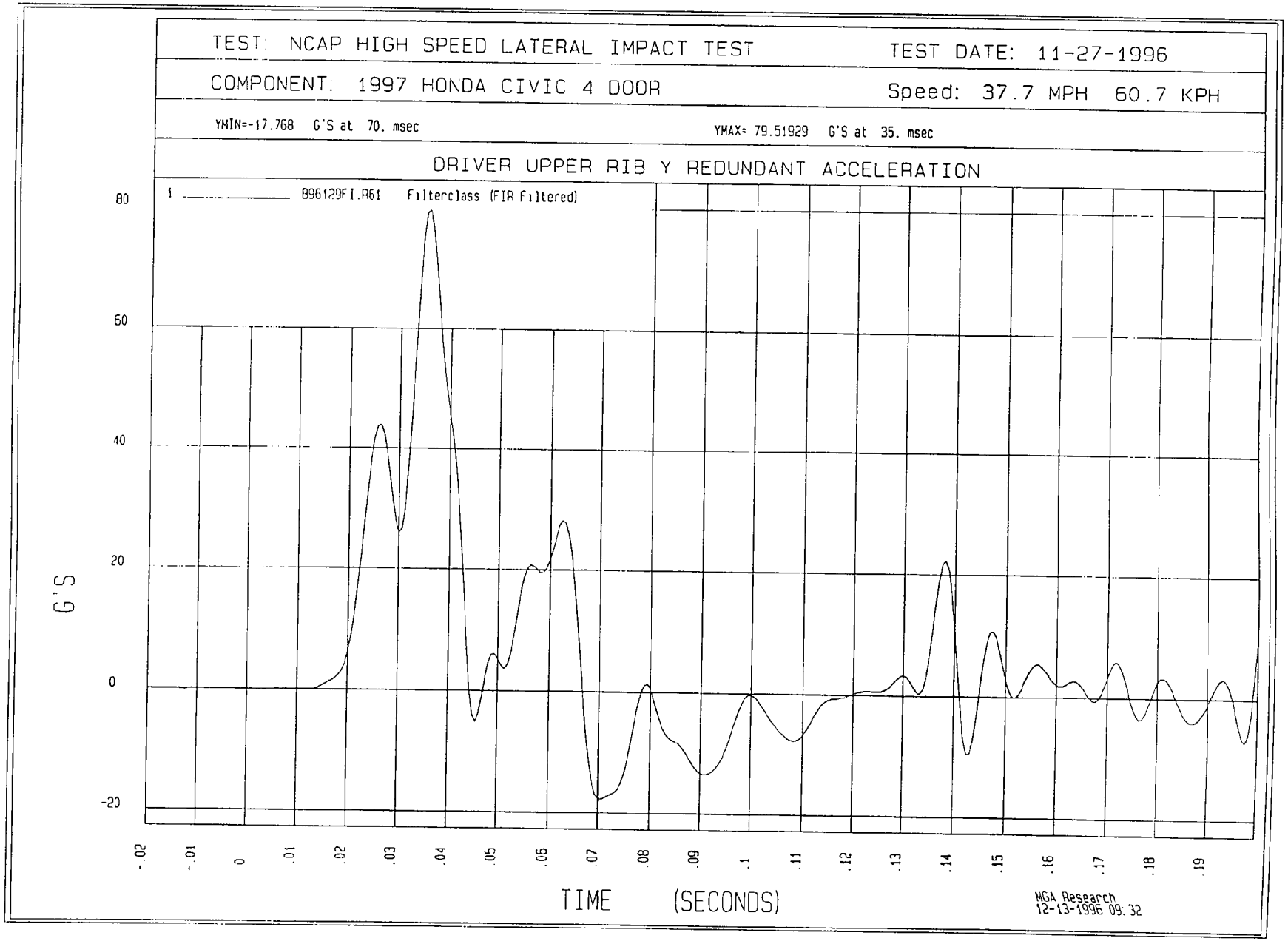
TIME (SECONDS)
MGA Research
12-13-1996 09.32


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-17.768 G'S at 70. msec
YMAX= 79.51929 G'S at 35. msec
DRIVER UPPER RIB Y REDUNDANT ACCELERATION
1 B96129FI.R61 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.02
-.01
0
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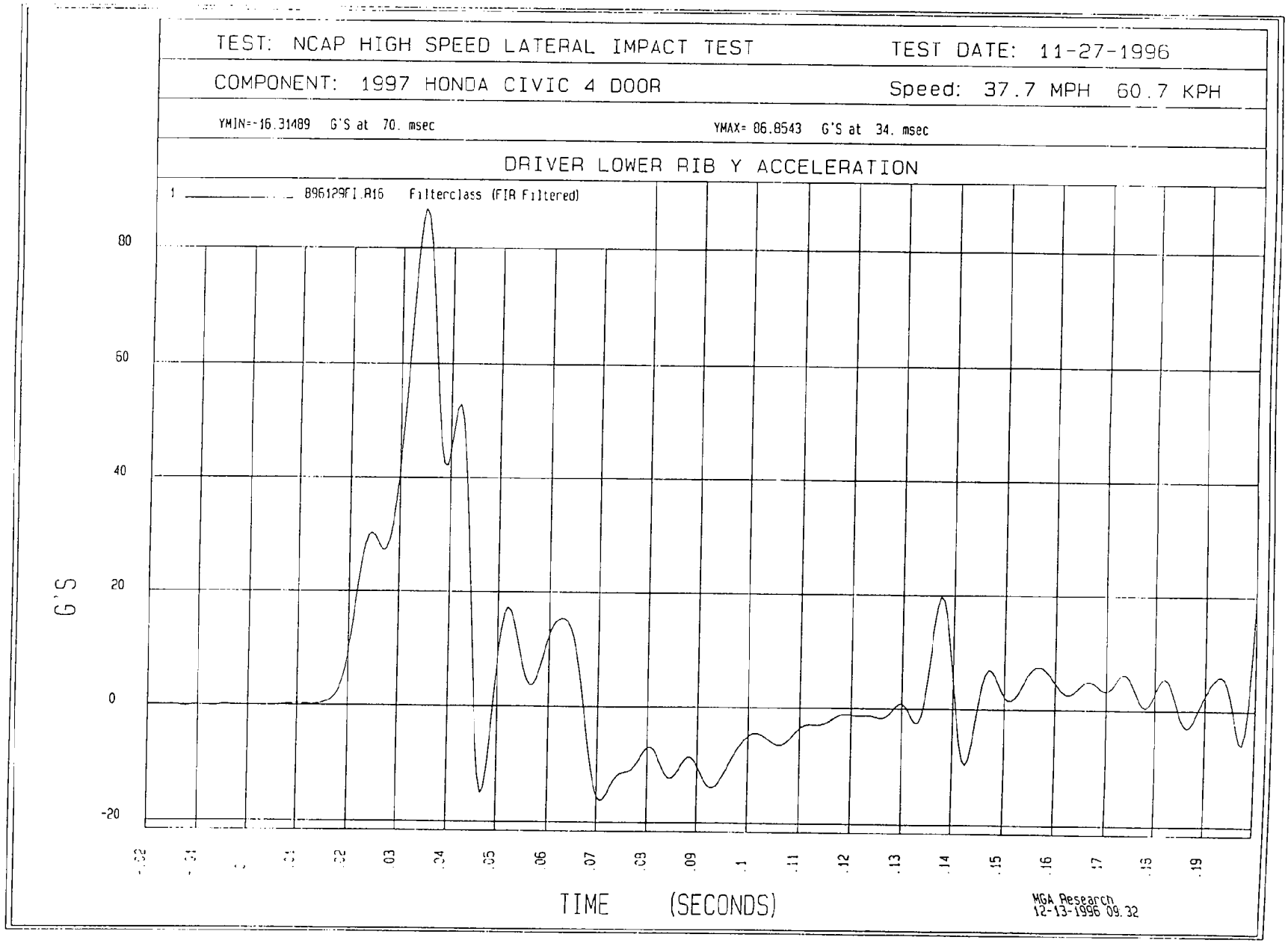
TIME (SECONDS)
MGA Research
12-13-1996 09:32


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-16.31489 G'S at 70. msec
YMAX= 86.8543 G'S at 34. msec
DRIVER LOWER RIB Y ACCELERATION
1 896129FI.A16 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
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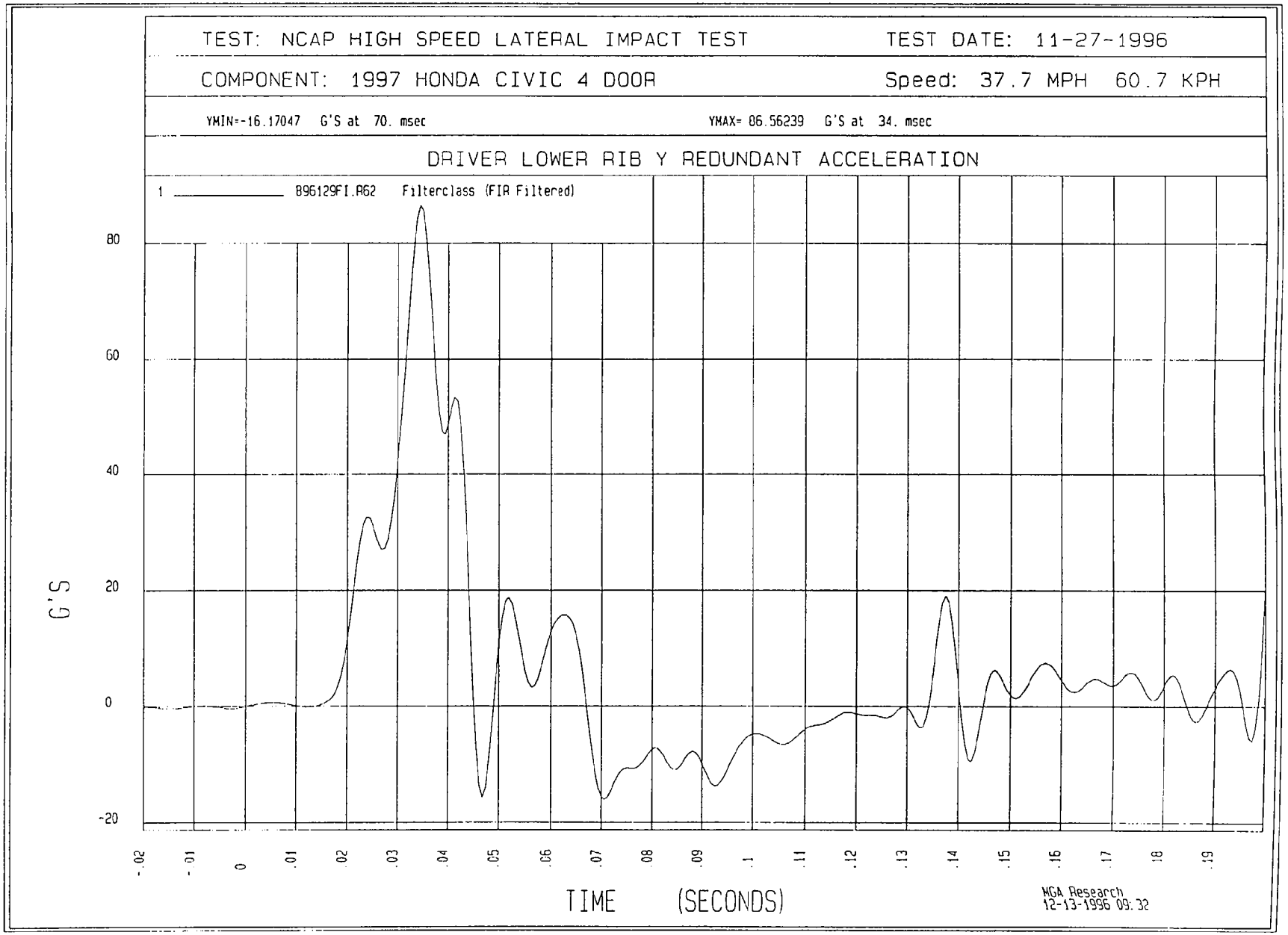
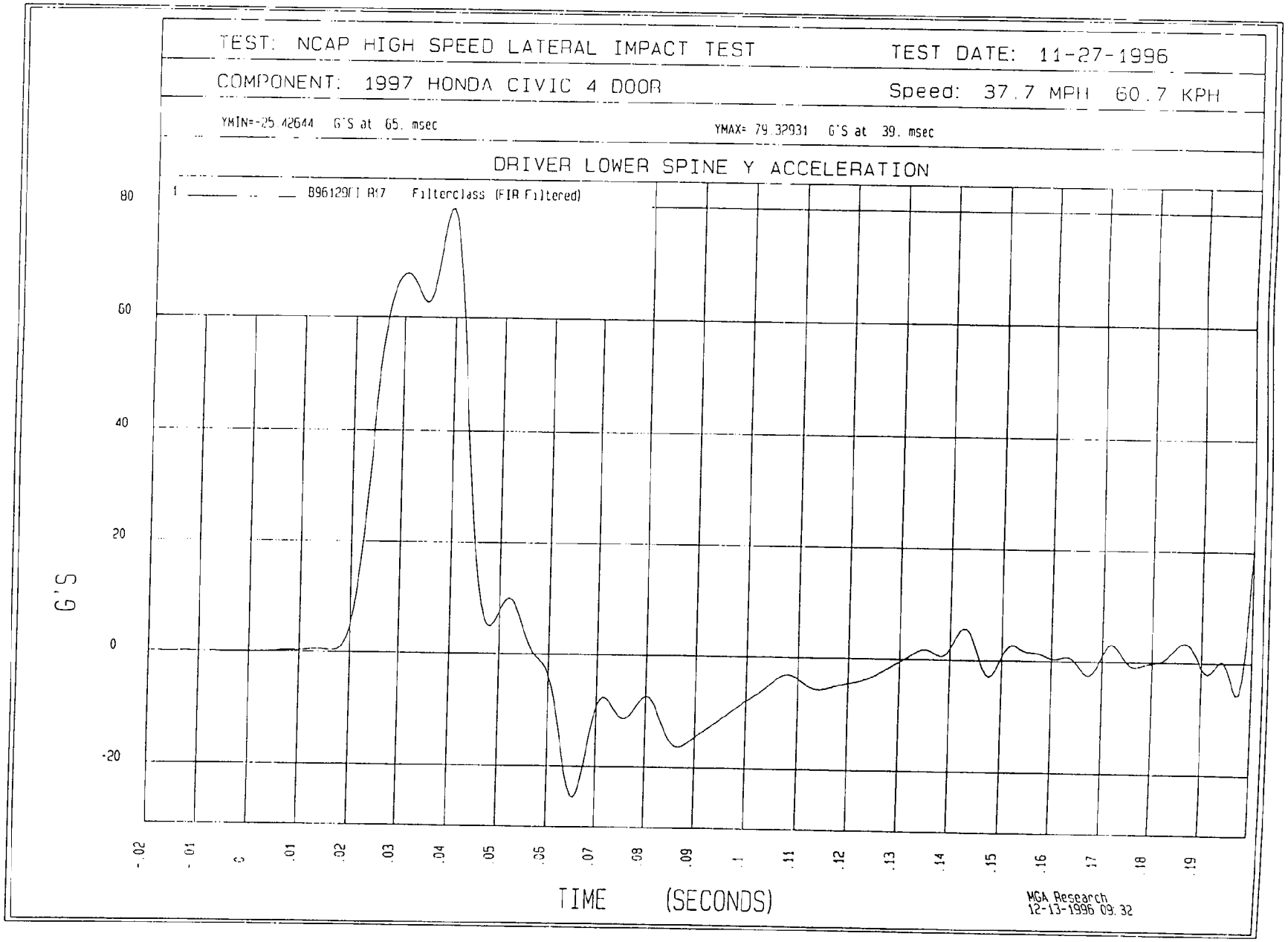
TIME (SECONDS)
MGA Research
12-13-1996 09.32


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-16.17047 G'S at 70. msec
YMAX= 86.56239 G'S at 34. msec
DRIVER LOWER RIB Y REDUNDANT ACCELERATION
1 B96129FI.A62 Filterclass (FIR Filtered)
80
60
40
20
0
-20
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)
MGA Research
12-13-1996 09:32


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-25.42644 G'S at 65. msec
YMAX= 79.32931 G'S at 39. msec
DRIVER LOWER SPINE Y ACCELERATION
1 B96129FI RI7 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
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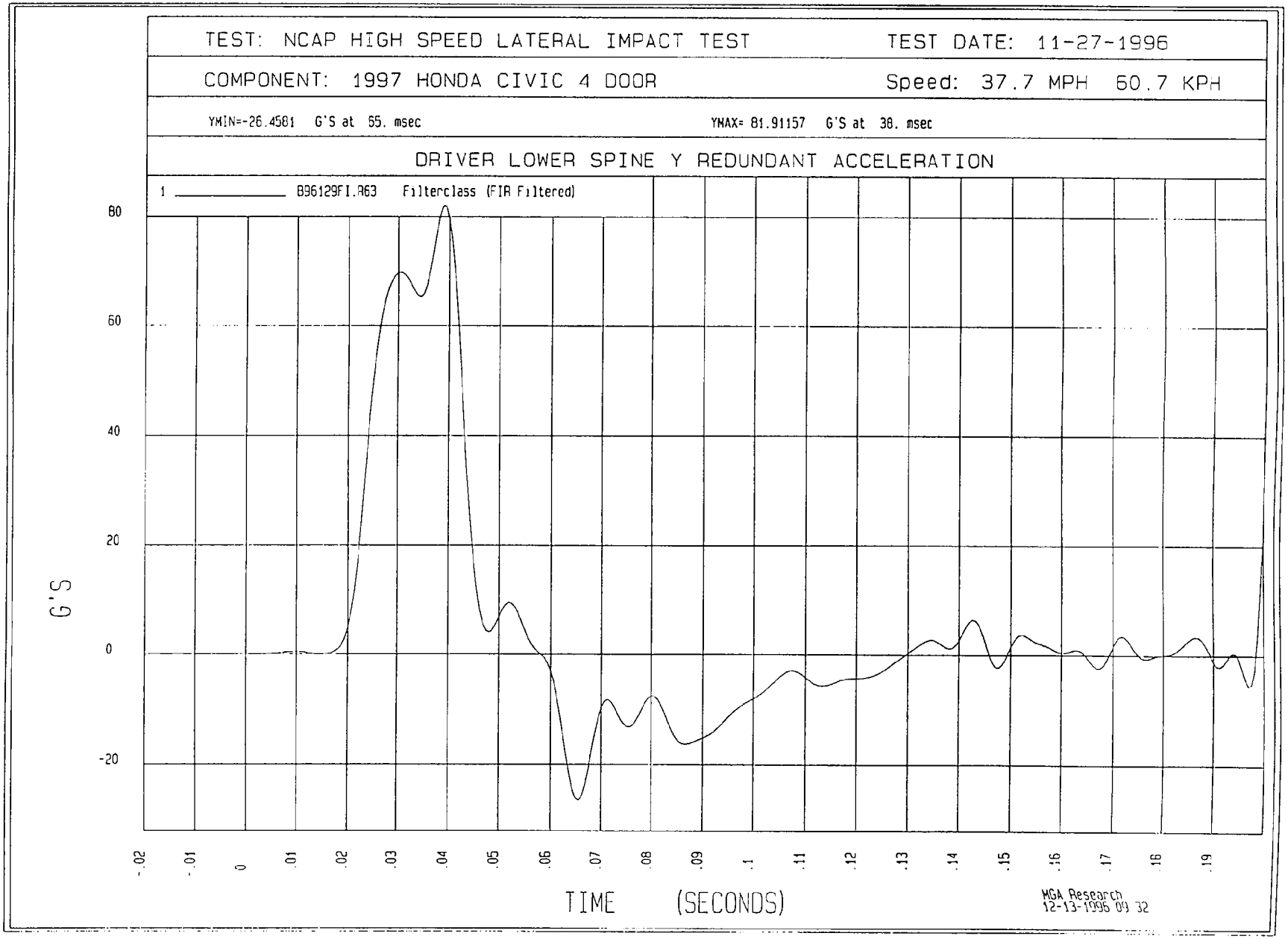
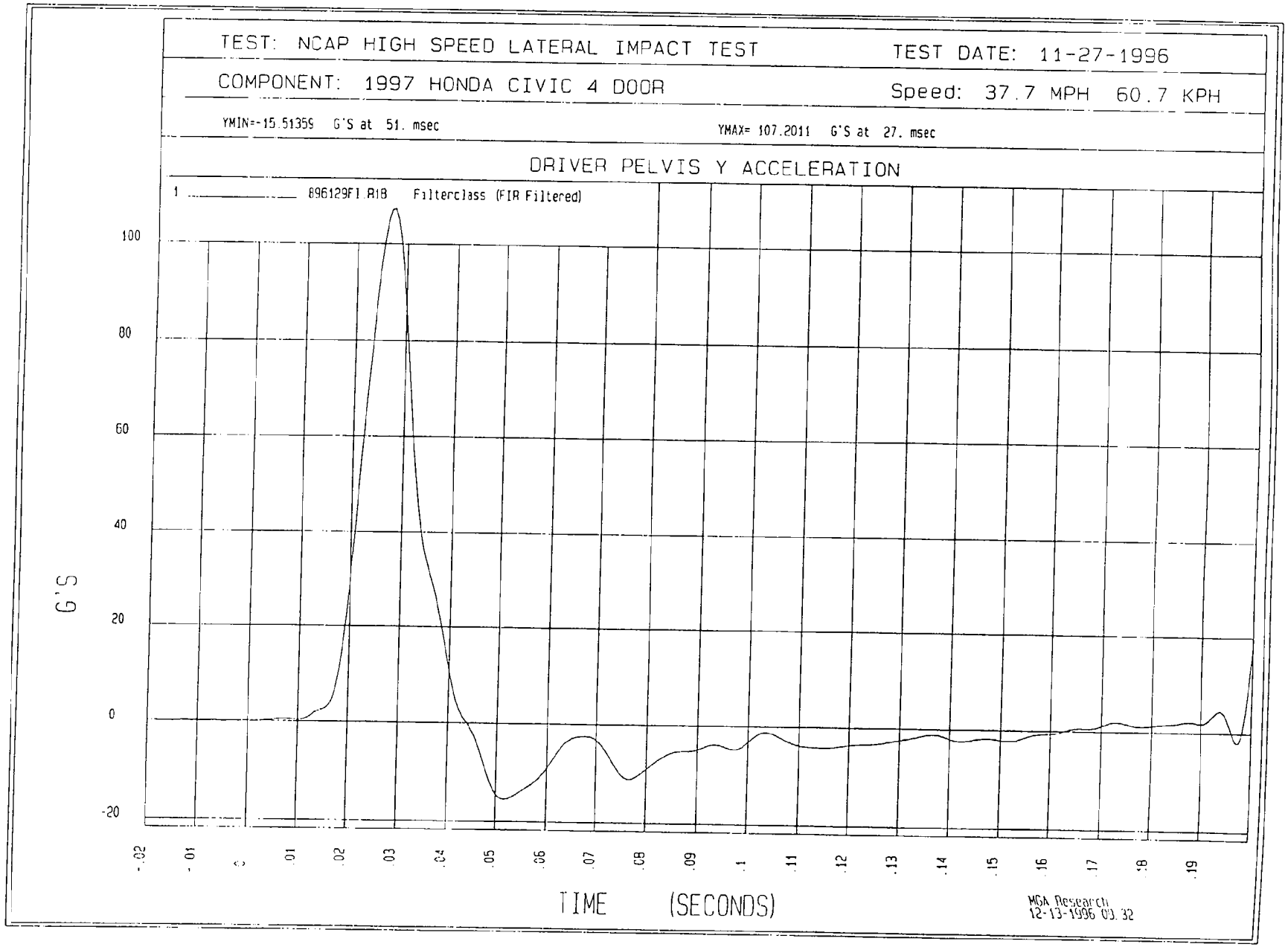
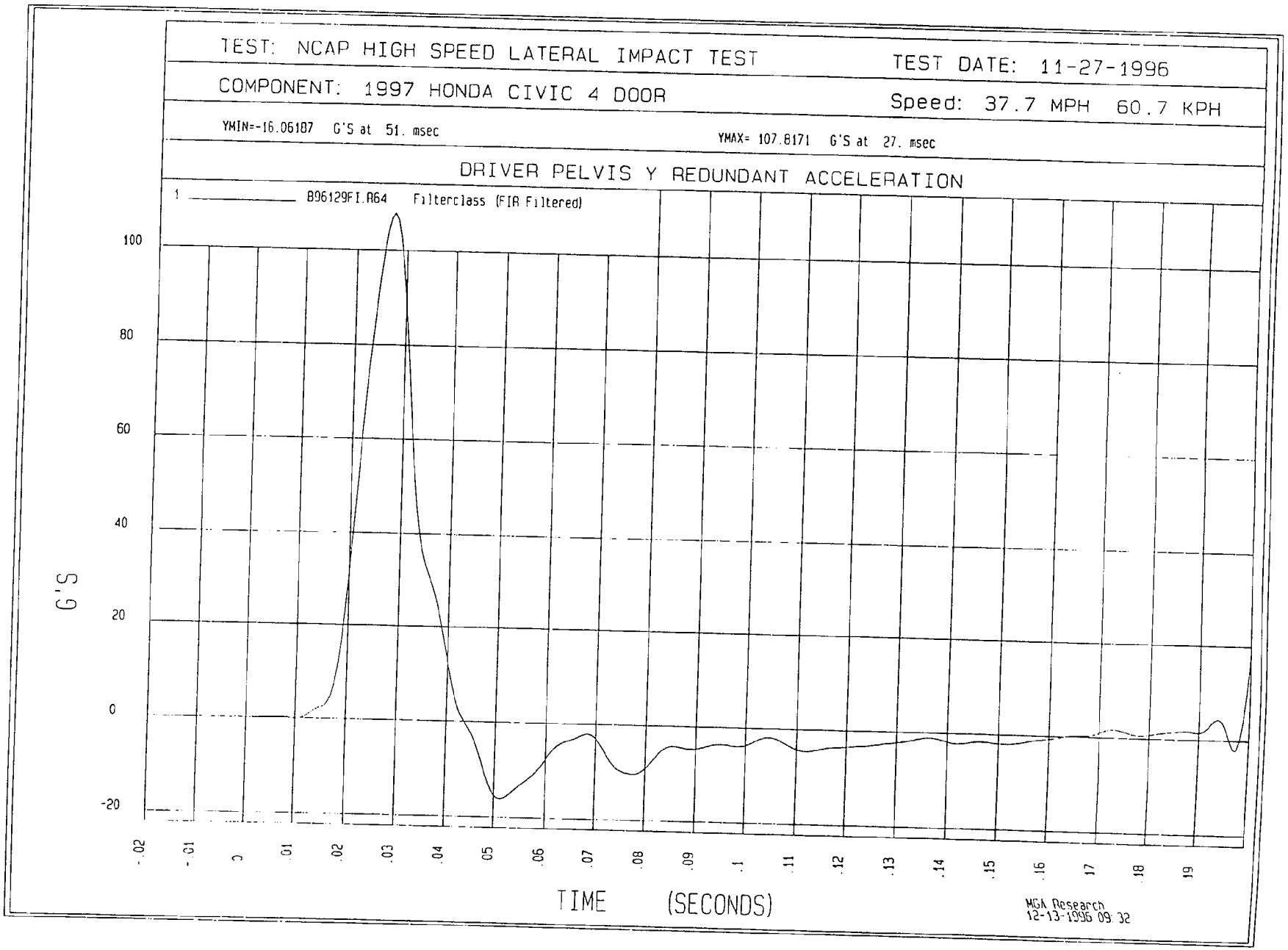
.17
.18
.19
TIME (SECONDS)
MGA Research
12-13-1996 09:32


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-26.4581 G'S at 55. msec
YMAX= 81.91157 G'S at 38. msec
DRIVER LOWER SPINE Y REDUNDANT ACCELERATION
1 B96129FI.A63 Filterclass (FIR Filtered)
80
60
40
20
0
-20
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)
MGA Research
12-13-1996 09:32


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-15.51359 G'S at 51. msec
YMAX= 107.2011 G'S at 27. msec
DRIVER PELVIS Y ACCELERATION
1 896129F1.R1B Filterclass (FIR Filtered)
100
80
60
40
20
0
-20
G'S
-.02
-.01
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-13-1996 09:32


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-16.06187 G'S at 51. msec
YMAX= 107.8171 G'S at 27. msec
DRIVER PELVIS Y REDUNDANT ACCELERATION
1 B96129FI.A64 Filterclass (FIR Filtered)
100
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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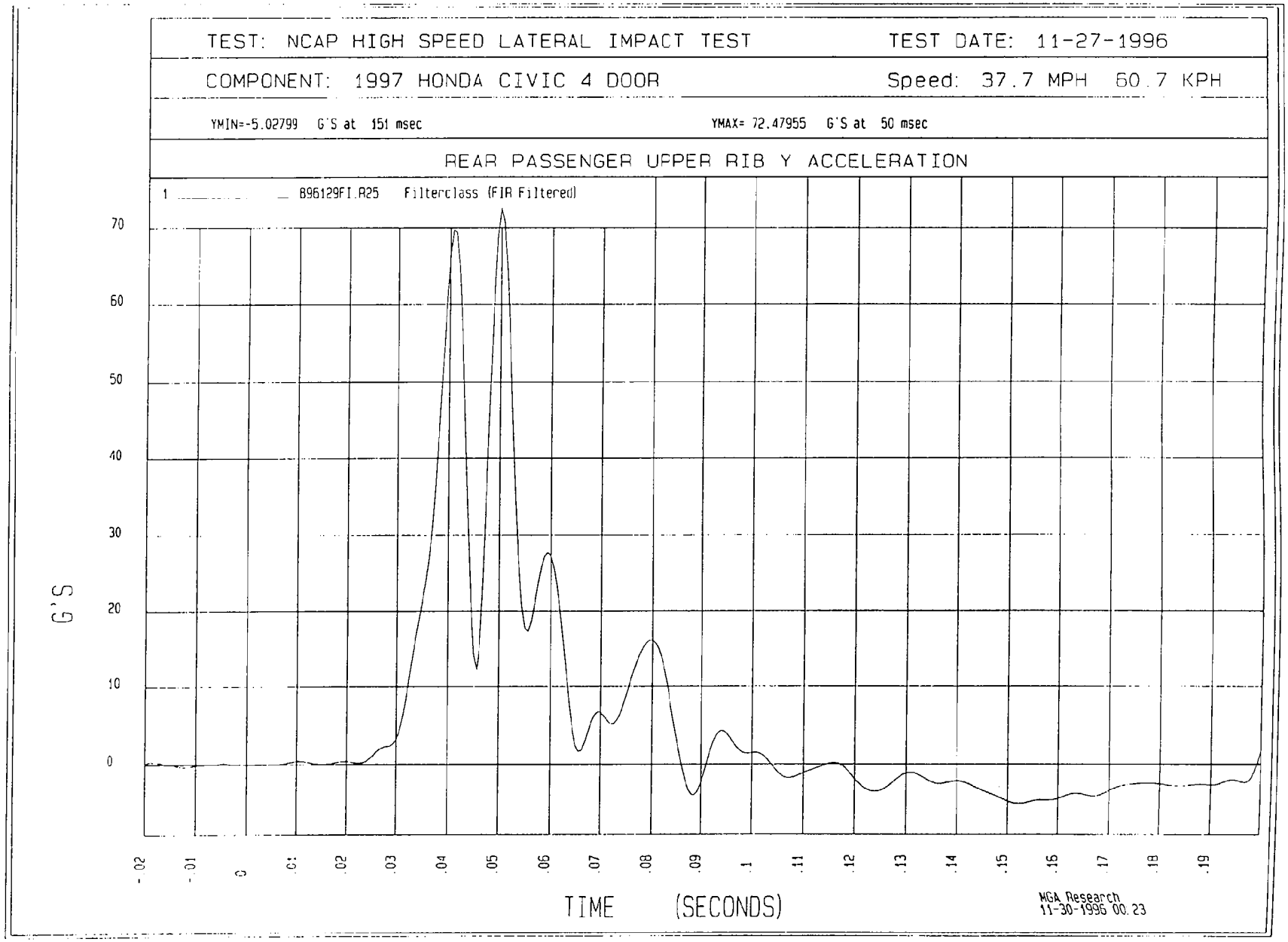
TIME (SECONDS)
MGA Research
12-13-1996 09:32


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-5.02799 G'S at 151 msec
YMAX= 72.47955 G'S at 50 msec
REAR PASSENGER UPPER RIB Y ACCELERATION
1 B96129FI.R25 Filterclass (FIR Filtered)
70
60
50
40
30
20
10
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
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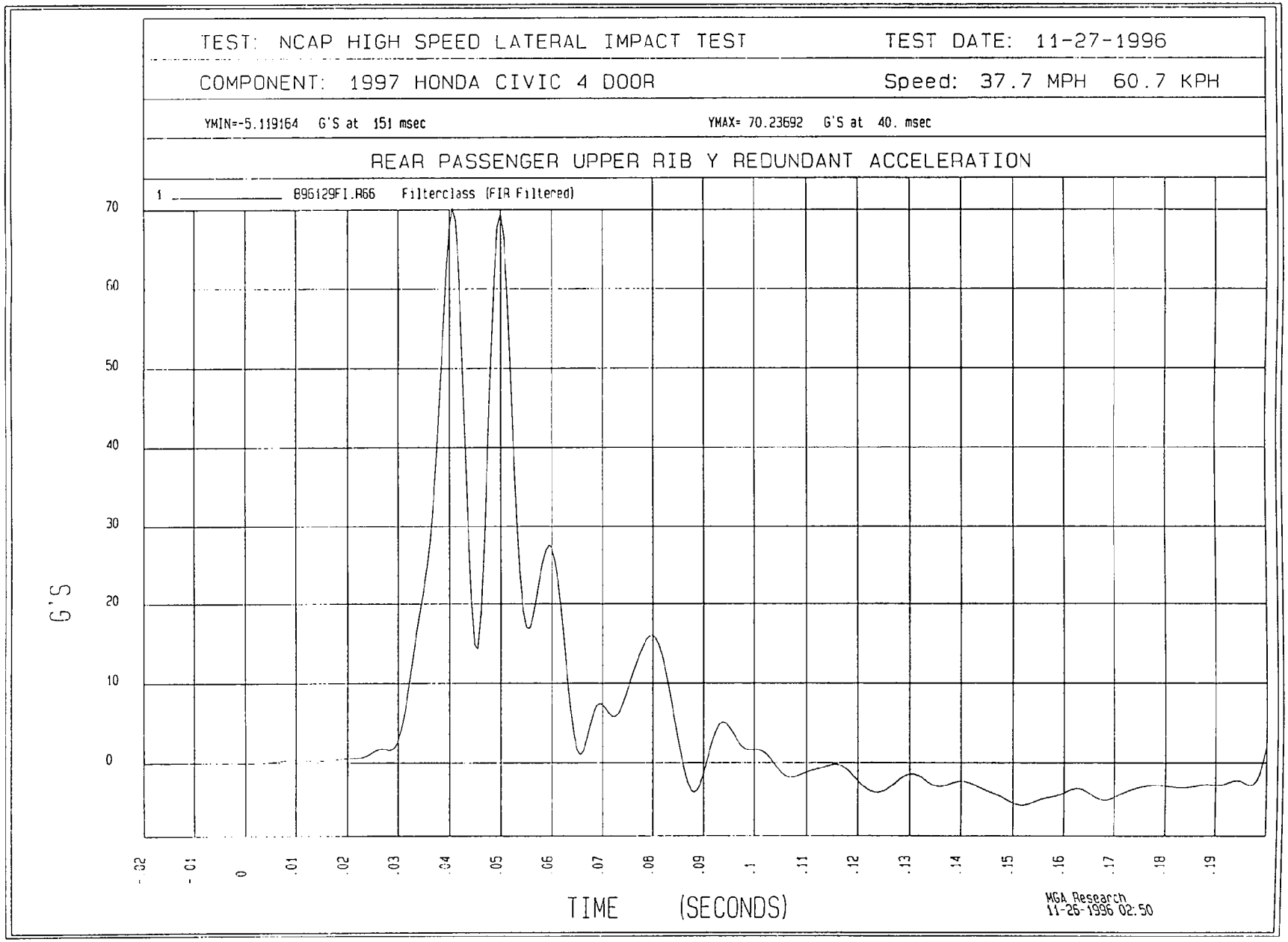
TIME (SECONDS)
MGA Research
11-30-1996 00.23


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-5.119164 G'S at 151 msec
YMAX= 70.23692 G'S at 40. msec
REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION
1 B96129FI.A66 Filterclass (FIR Filtered)
70
60
50
40
30
20
10
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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.13
.14
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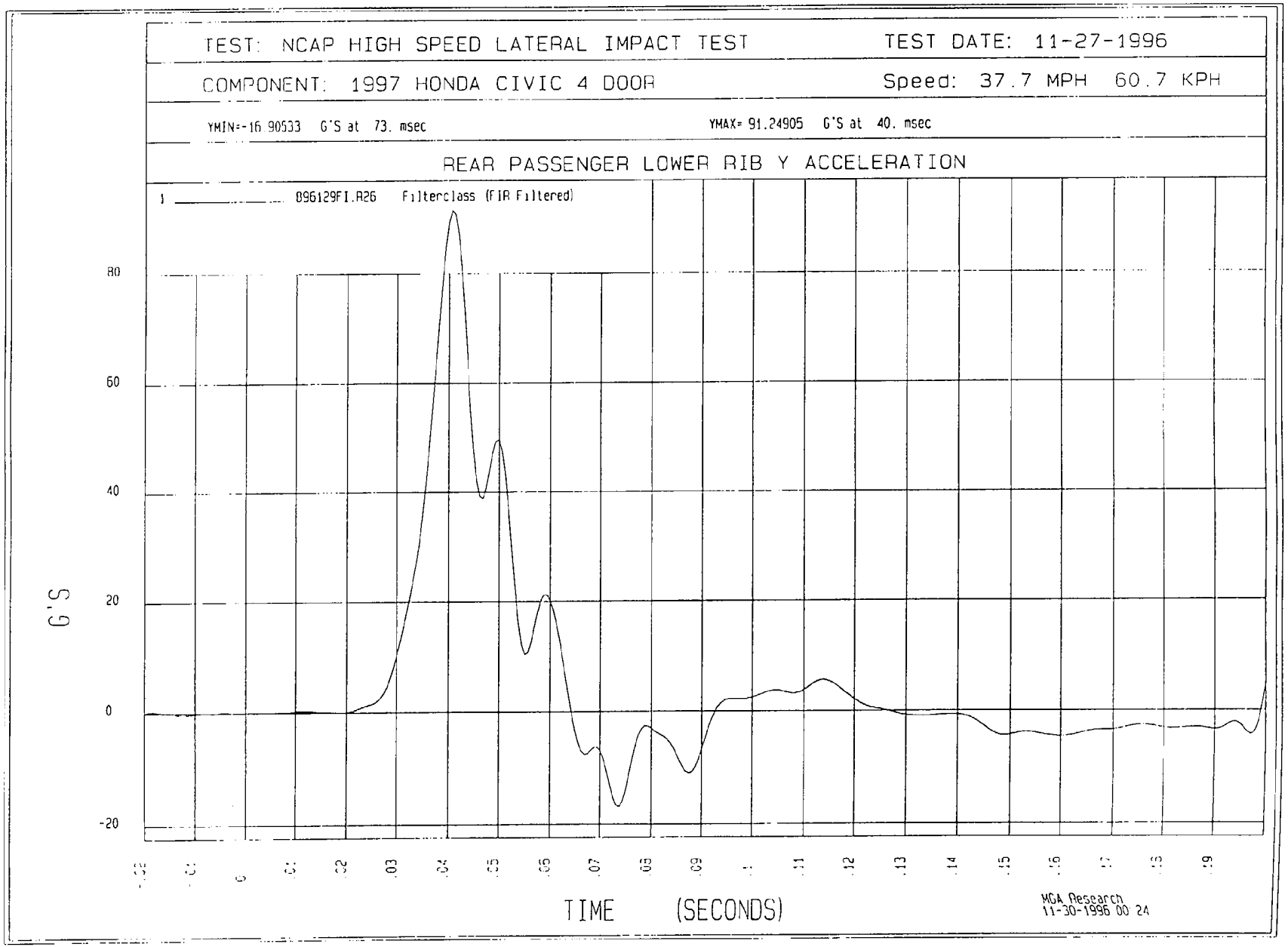
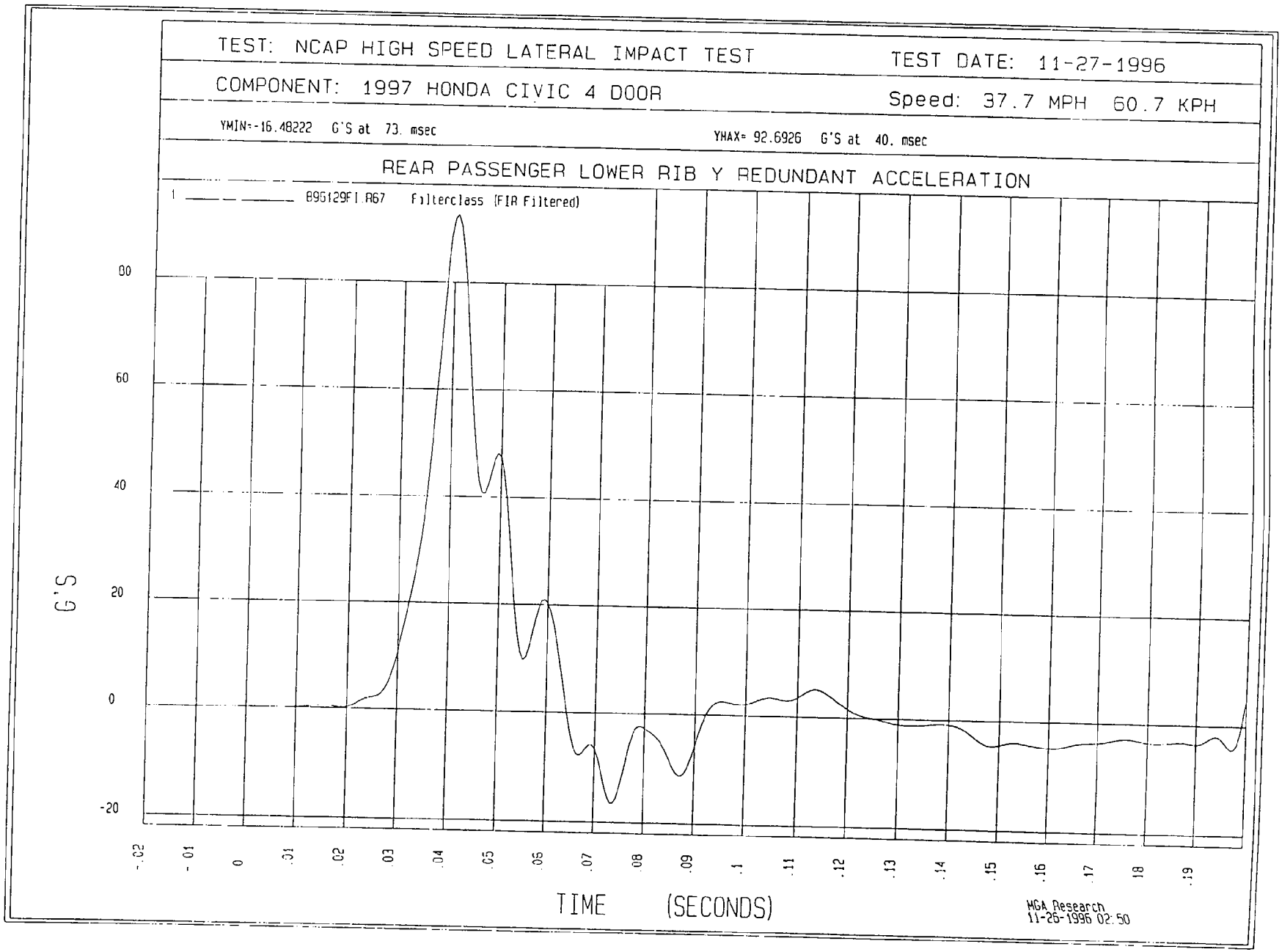
TIME (SECONDS)
MGA Research
11-26-1996 02:50


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-16.90533 G'S at 73. msec
YMAX= 91.24905 G'S at 40. msec
REAR PASSENGER LOWER RIB Y ACCELERATION
1 896129FI.A26 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
TIME (SECONDS)
MGA Research
11-30-1996 00 24


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-16.48222 G'S at 73. msec
YMAX= 92.6926 G'S at 40. msec
REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION
1 B96129F1.R67 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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.14
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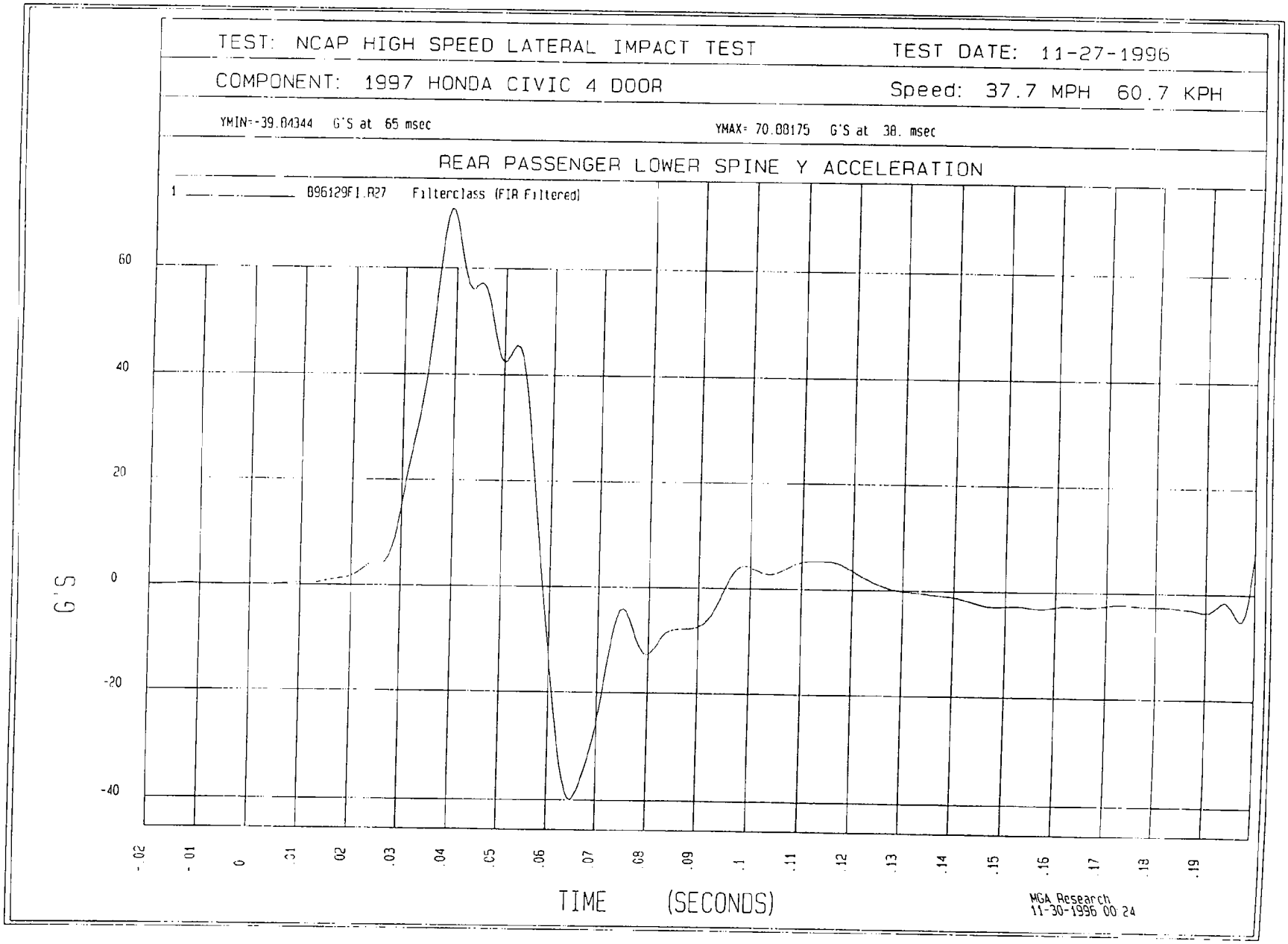
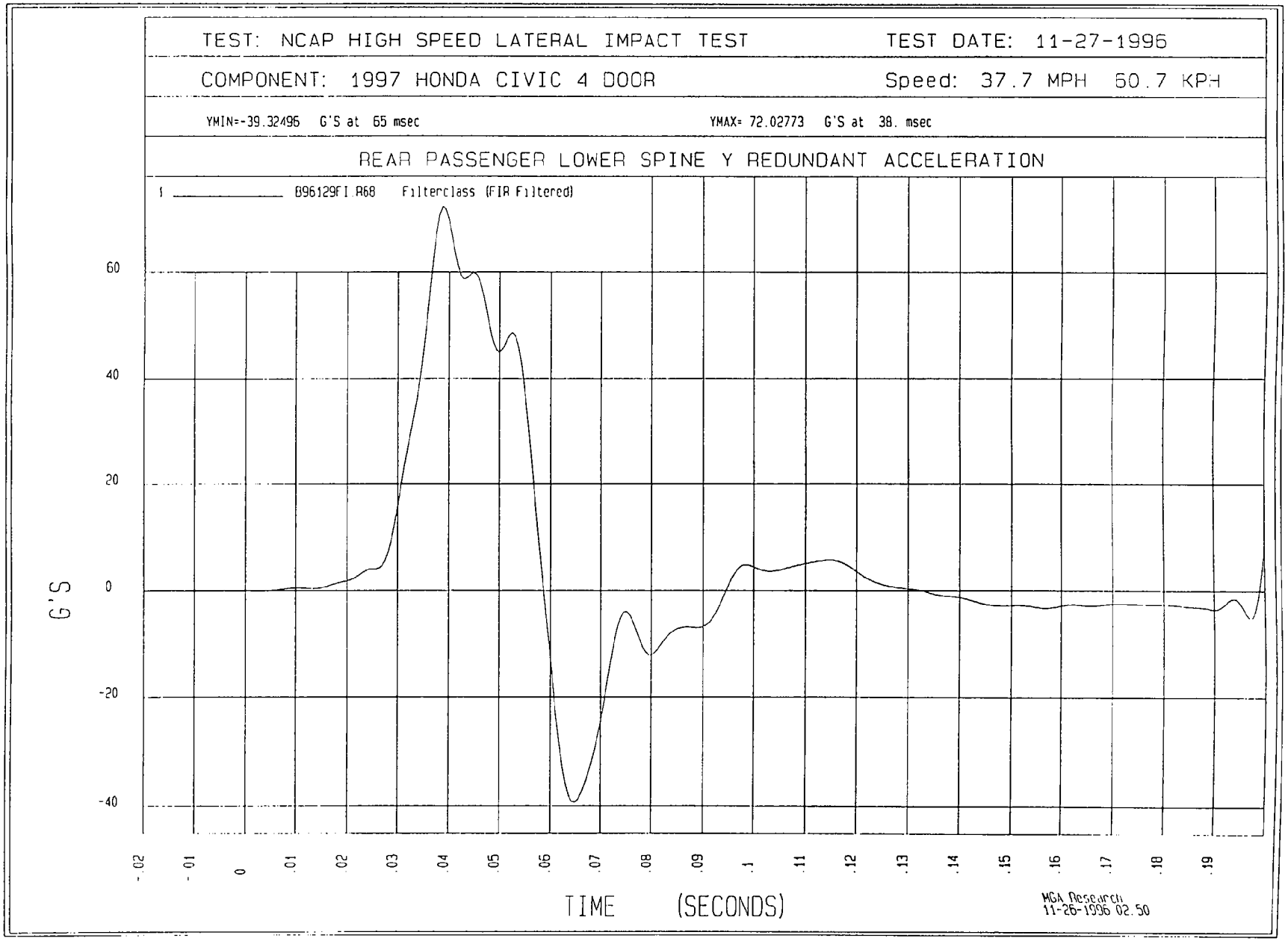
TIME (SECONDS)
MGA Research
11-26-1996 02:50


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-39.04344 G'S at 65 msec
YMAX= 70.08175 G'S at 38. msec
REAR PASSENGER LOWER SPINE Y ACCELERATION
1 B96129F1.R27 Filterclass (FIR Filtered)
60
40
20
0
-20
-40
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)
MGA Research
11-30-1996 00 24


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-39.32496 G'S at 65 msec
YMAX= 72.02773 G'S at 38. msec
REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION
1 B96129FI.A68 Filterclass (FIR Filtered)
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
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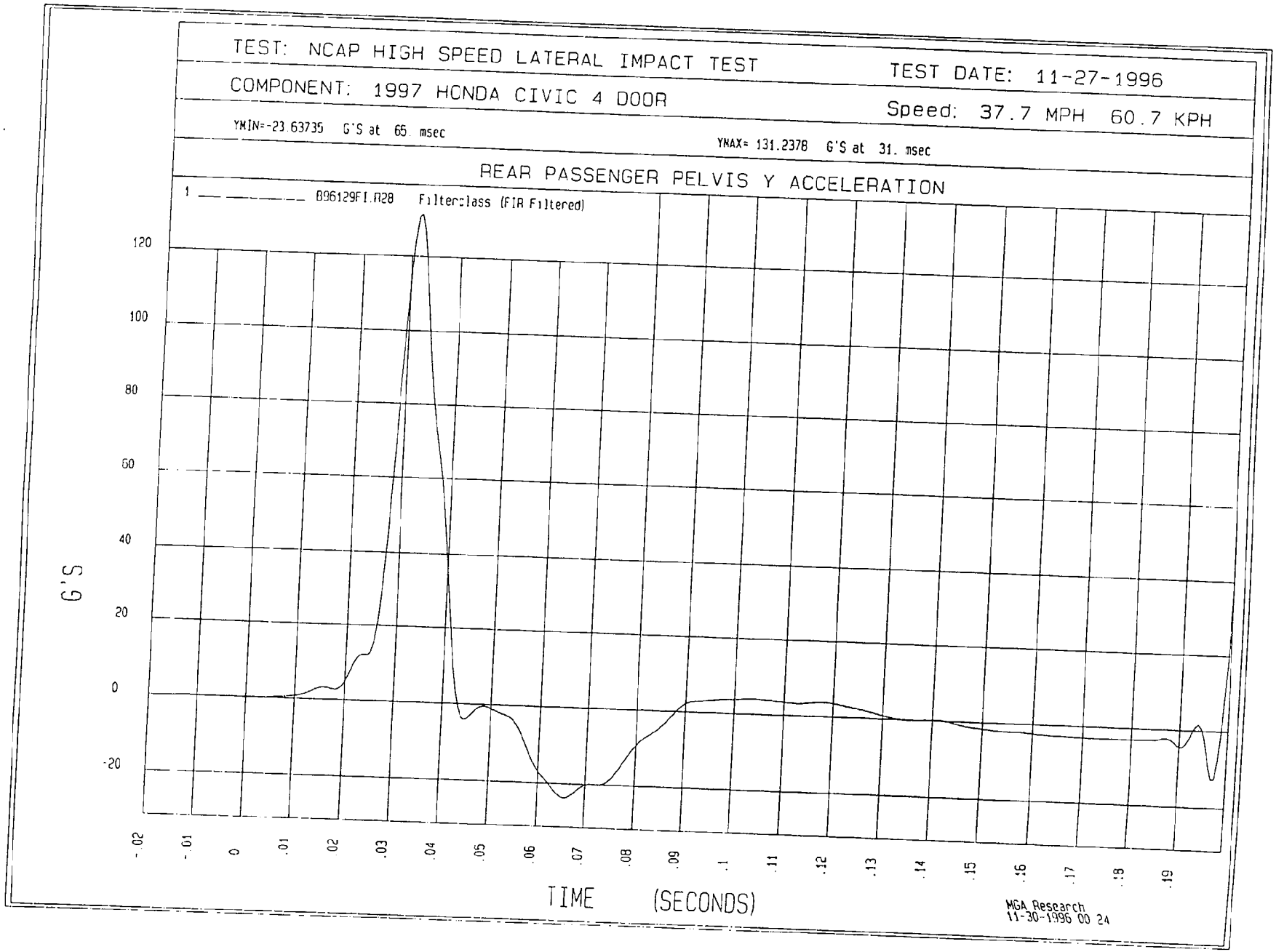
.18
.19
TIME (SECONDS)
MGA Research
11-26-1996 02.50


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-23.63735 G'S at 65. msec
YMAX= 131.2378 G'S at 31. msec
REAR PASSENGER PELVIS Y ACCELERATION
1 B96129FI.R28 Filter:Class (FIR Filtered)
120
100
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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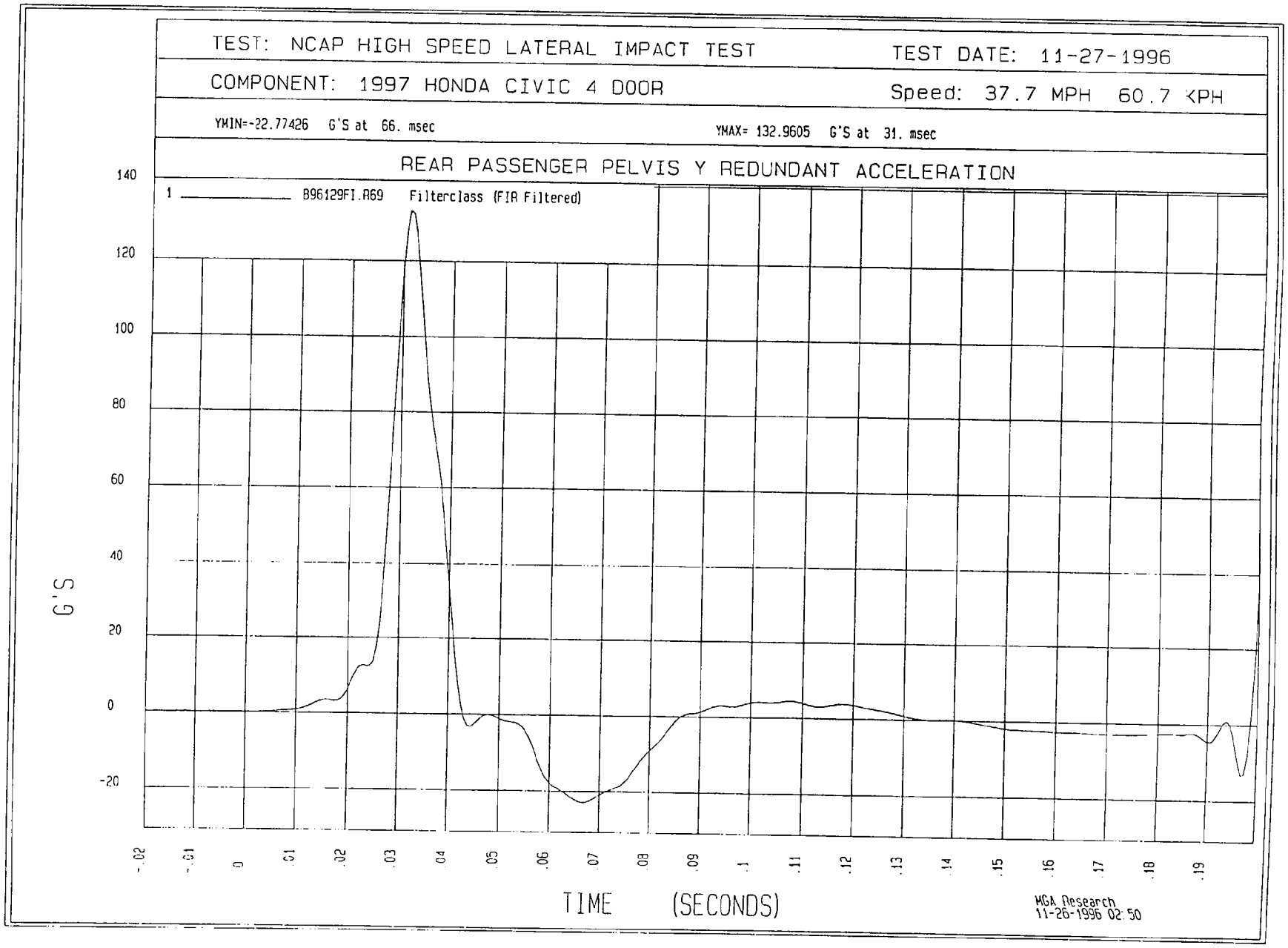
TIME (SECONDS)
MGA Research
11-30-1996 00 24


TEST: NCAP HIGH SPEED LATERAL IMPACT TEST
TEST DATE: 11-27-1996
COMPONENT: 1997 HONDA CIVIC 4 DOOR
Speed: 37.7 MPH 60.7 KPH
YMIN=-22.77426 G'S at 66. msec
YMAX= 132.9605 G'S at 31. msec
REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION
1 B96129FI.A69 Filterclass (FIR Filtered)
140
120
100
80
60
40
20
0
-20
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)
MGA Research
11-26-1996 02:50

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION

REPORT NO. MGA-97-DC02

DUMMY PERFORMANCE CALIBRATIONS

NEW CAR ASSESSEMENT PROGRAM
SIDE IMPACT TEST

1997 HONDA CIVIC 4 DOOR
NHTSA NO. MV5301

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: November 27, 1996

Report Date: December 11, 1996

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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		Page No.
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DUMMY S/N: 269	PRE-TEST CERTIFICATION DATA	2-1
DUMMY S/N: 270	POST-TEST CERTIFICATION DATA	3-1
DUMMY S/N: 269	POST-TEST CERTIFICATION DATA	4-1
DUMMY S/N: 270	POST-TEST INSPECTION CHECKLIST	5-1
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: November 25, 1996

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.2
RH - Rib Height	19.75" - 20.50"	20.50
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.5
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.6
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: November 25, 1996

DUMMY NUMBER: 270 TEST NUMBER: D961872

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	25%
PROBE SPEED	13.8 - 14.2 fps	13.9
UPPER RIB	37 - 46 g's	39
LOWER RIB	37 - 46 g's	42
LOWER SPINE	15 - 22 g's	21

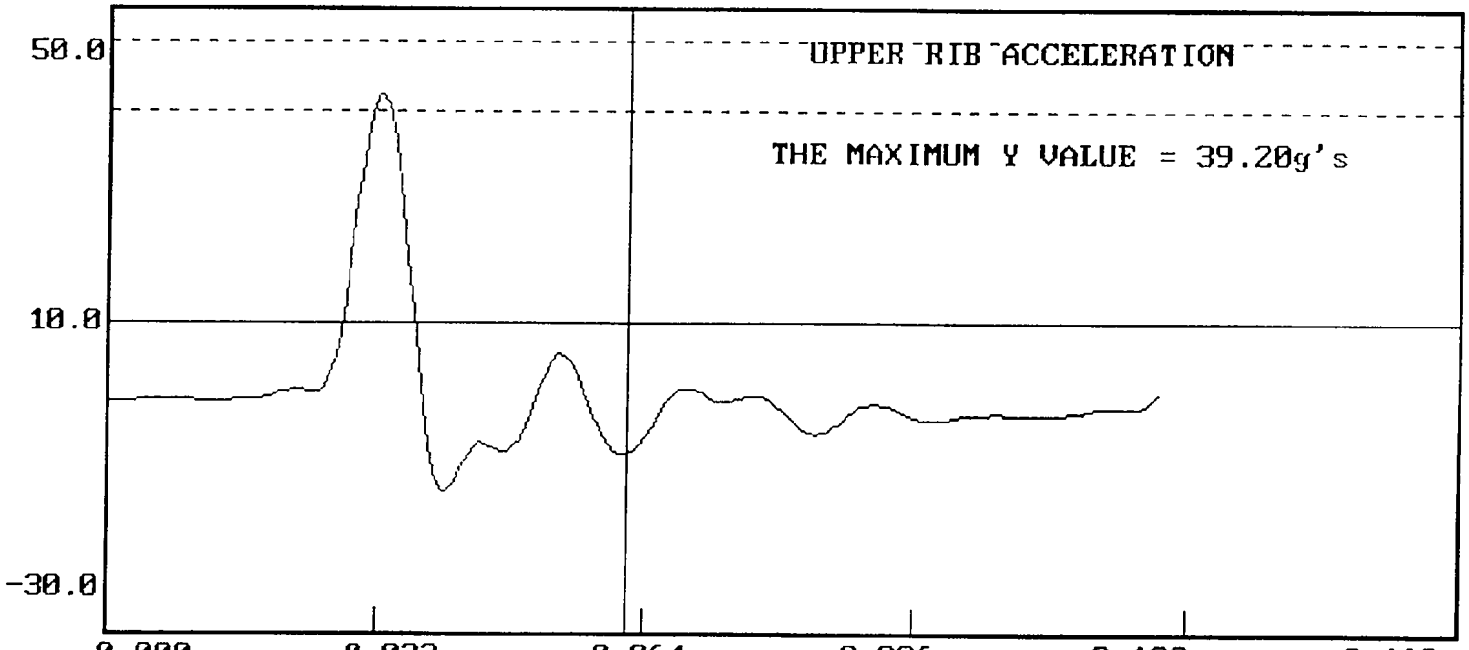
TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY

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

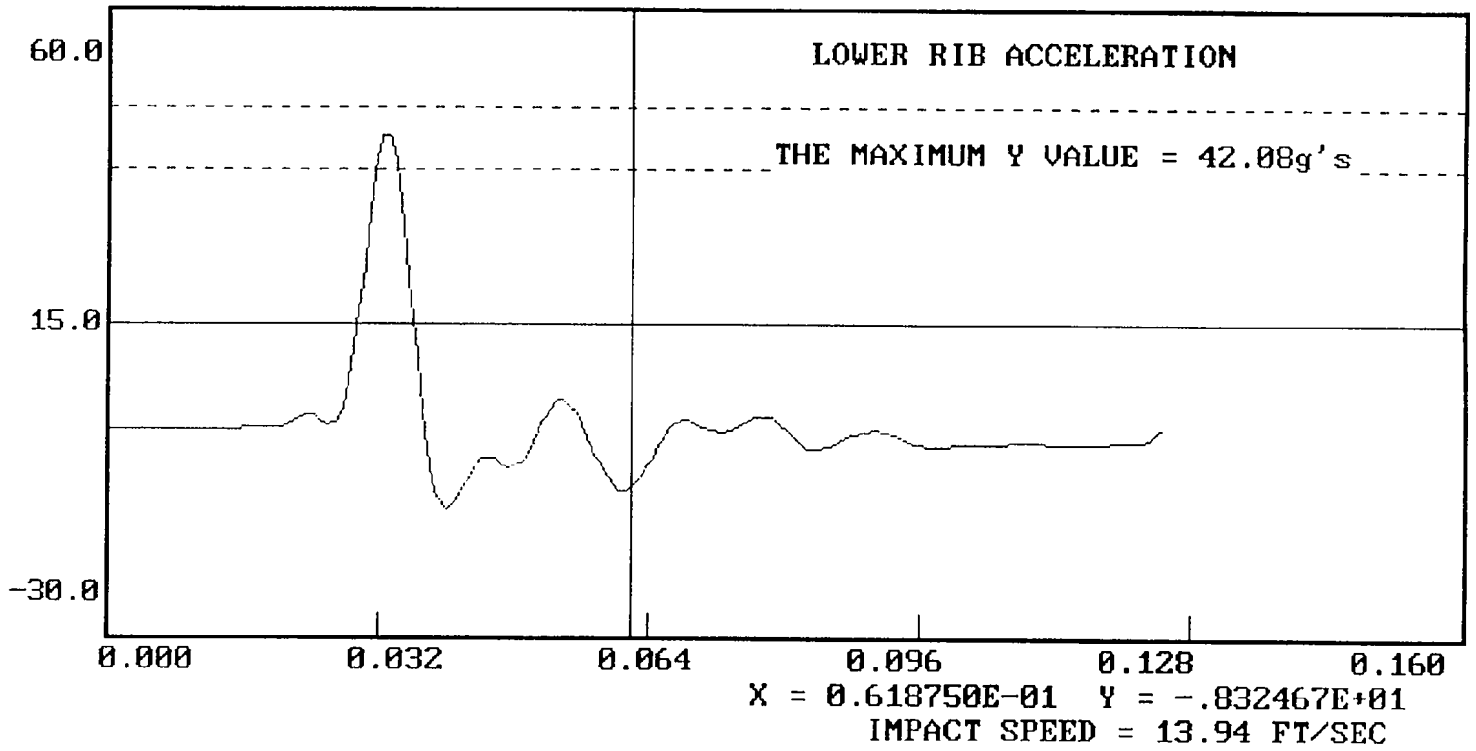
11-25-1996 16:02



X = 0.618750E-01 Y = -.686380E+01
IMPACT SPEED = 13.94 FT/SEC

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

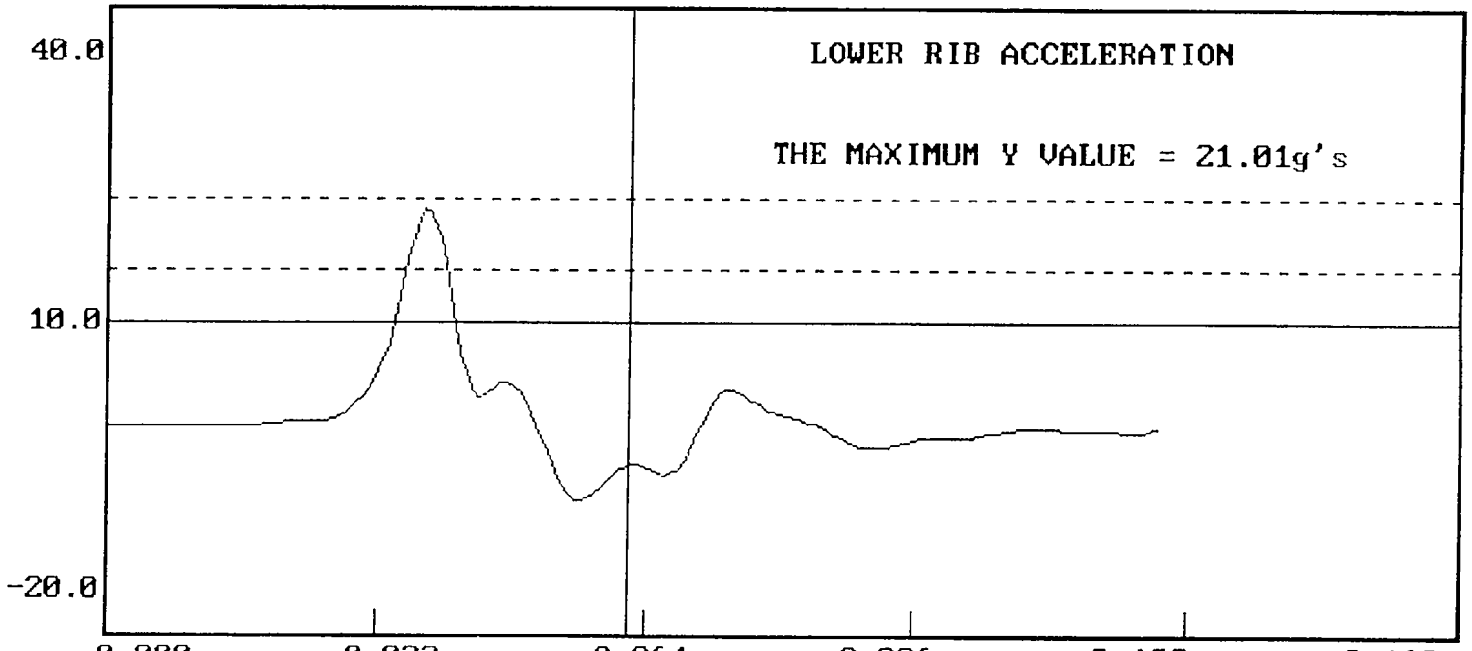
11-25-1996 16:02



X = 0.618750E-01 Y = -.832467E+01
IMPACT SPEED = 13.94 FT/SEC

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

11-25-1996 16:02



X = 0.618750E-01 Y = -.379553E+01
IMPACT SPEED = 13.94 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 25, 1996

DUMMY NUMBER: 270 TEST NUMBER: D961873

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	25%
PROBE SPEED	13.8 - 14.2 f/s	13.9
PELVIS ACCELERATION	40 - 60 g's	58

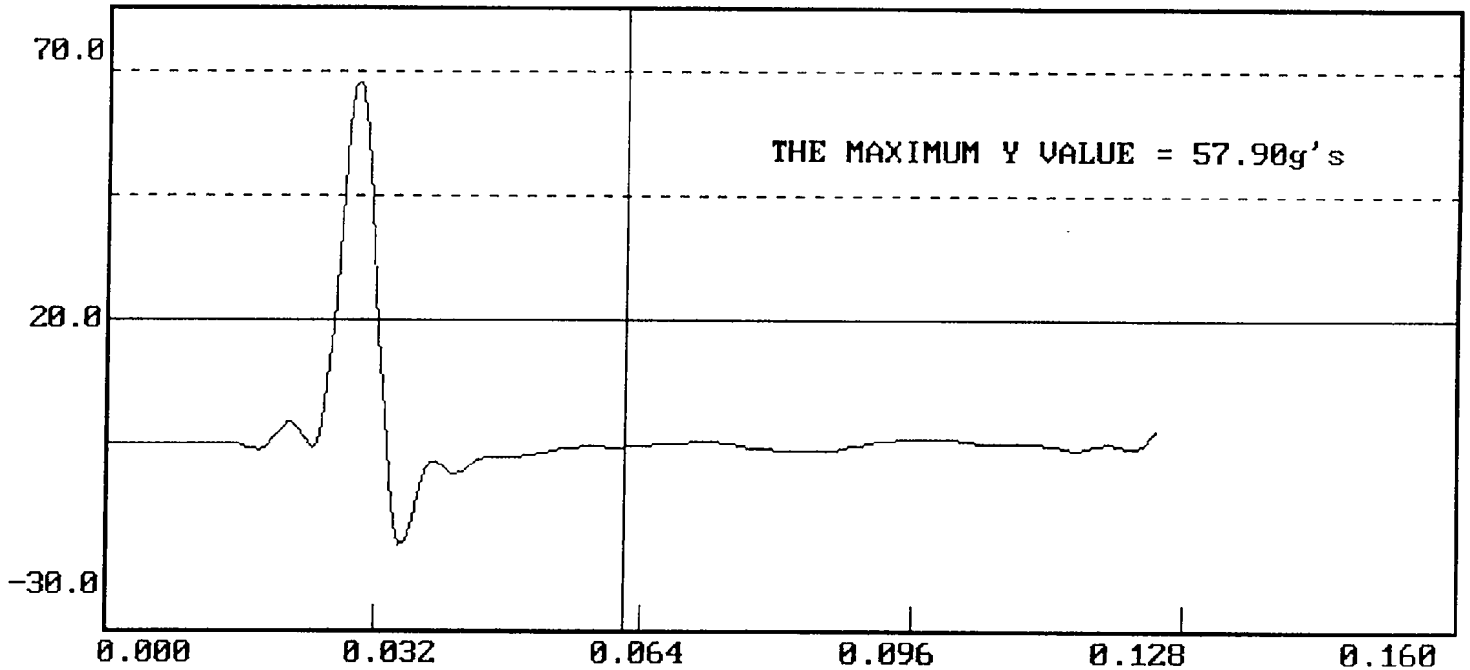
TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____

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

11-25-1996 16:23



X = 0.618750E-01 Y = -.614773E+00
IMPACT SPEED = 13.88 FT/SEC

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

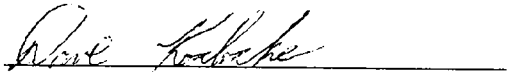
DATE: November 25, 1996

DUMMY NUMBER: 270 TEST NUMBER: D961874

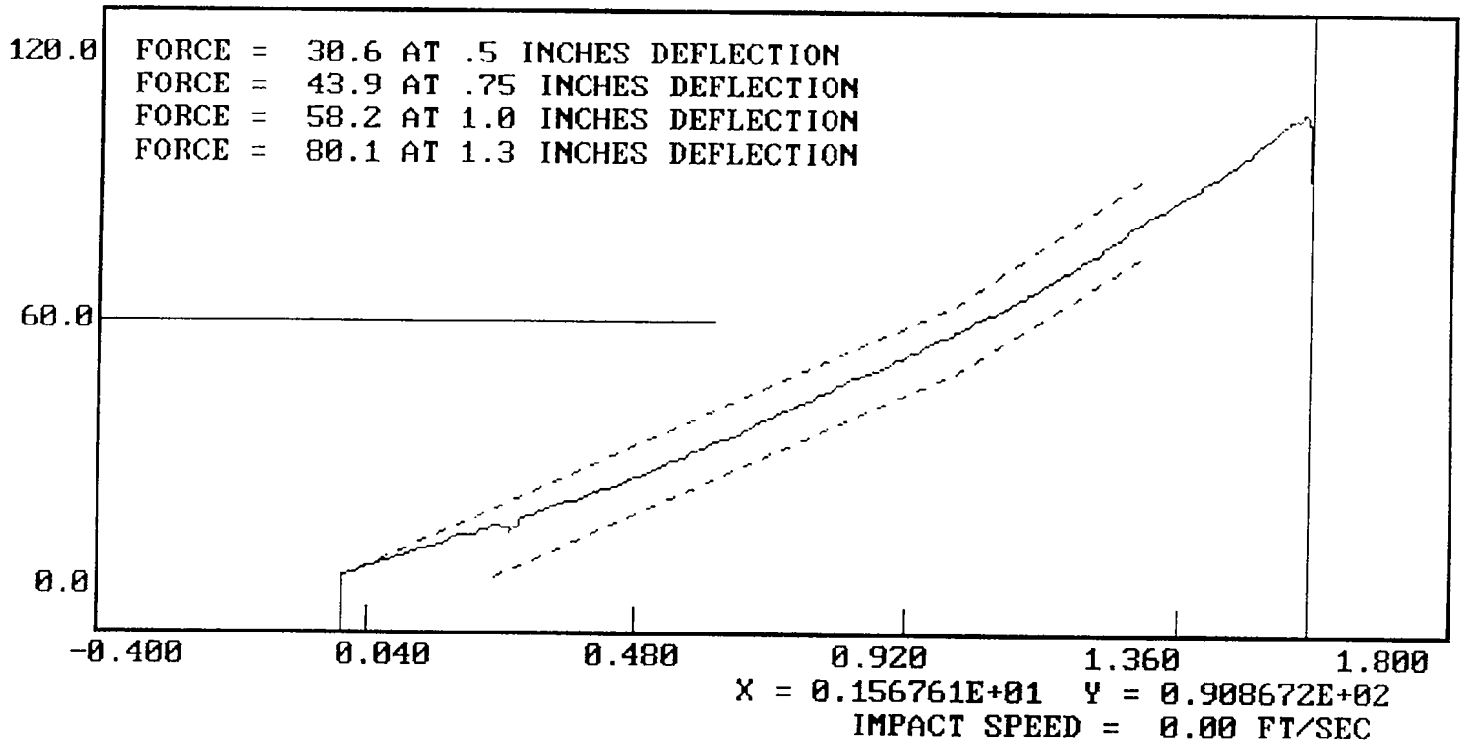
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0.5 in	23.3 - 36.5 lbs	30.6
FORCE @ 0.75 in	36.7 - 49.8 lbs	43.9
FORCE @ 1.0 in	50 - 63 lbs	58
FORCE @ 1.3 in	73 - 88 lbs	80

TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY 

DUMMY CALIBRATION - ABDOMEN COMPRESSION 11-25-1996 11:52
DUMMY # 270
ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: November 25, 1996

DUMMY NUMBER: 270 TEST NUMBER: D961875

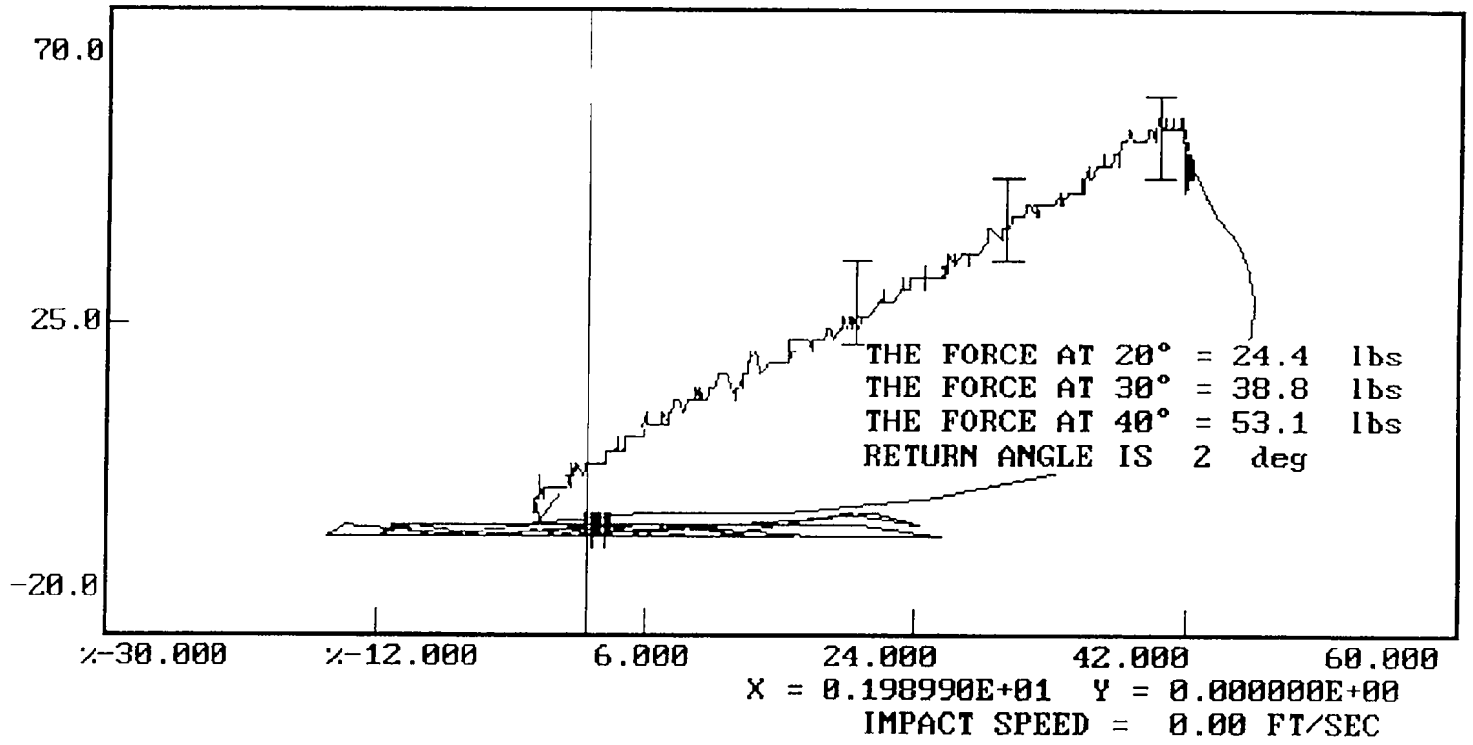
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	24
FORCE @ 30°	34 - 46 lbs	39
FORCE @ 40°	46 - 58 lbs	53
RETURN ANGLE	12° maximum	2°

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____

DUMMY CALIBRATION - LUMBAR FLEXION 11-25-1996 14:23
DUMMY # 270
FORCE (LBS) VS. TORSO ROTATION (DEGREES)



PRE-TEST CERTIFICATION DATA

Rear Dummy Serial Number: 269

Calibration Test Results Summary

Passenger 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: November 26, 1996

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.1
RH - Rib Height	19.75" - 20.50"	20.00
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.3
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: November 25, 1996

DUMMY NUMBER: 269 TEST NUMBER: D961862

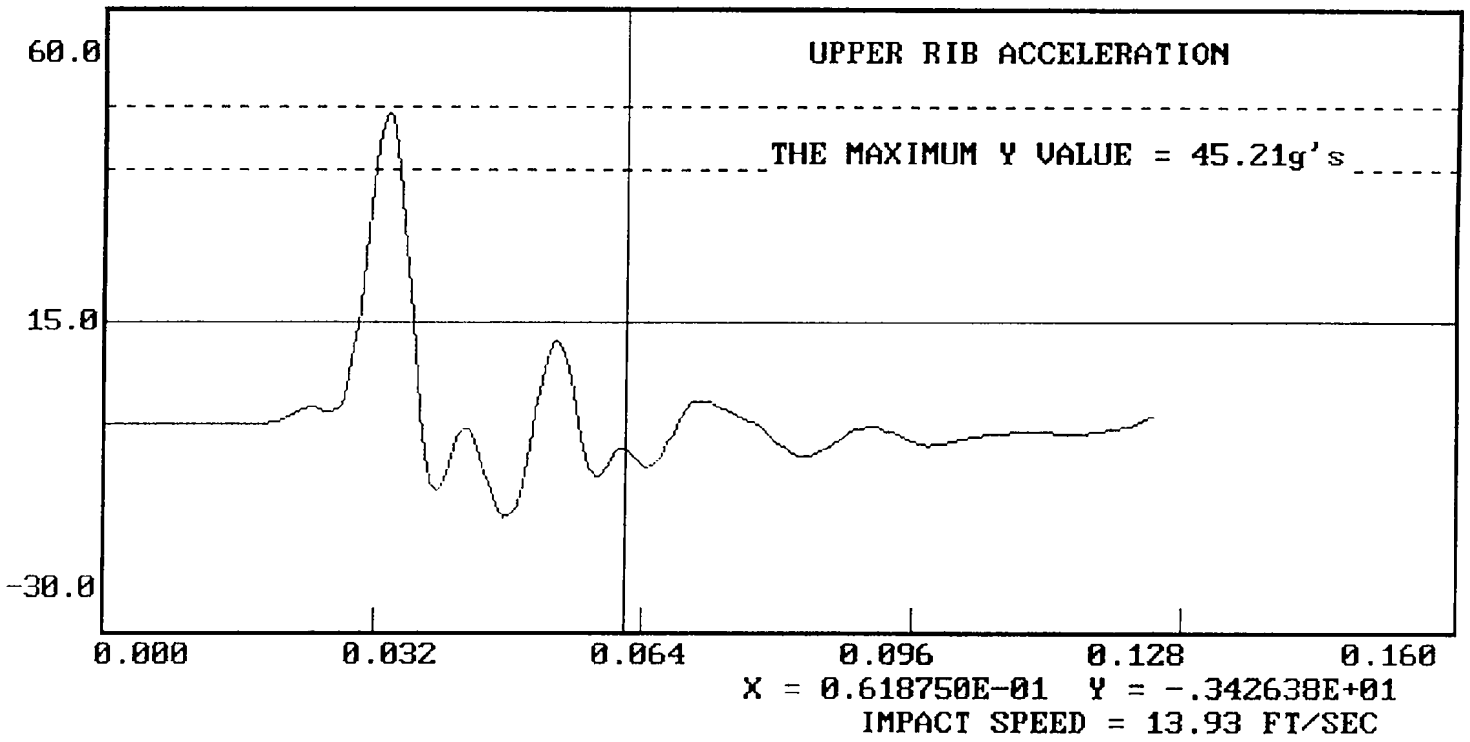
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	25%
PROBE SPEED	13.8 - 14.2 fps	13.9
UPPER RIB	37 - 46 g's	45
LOWER RIB	37 - 46 g's	46
LOWER SPINE	15 - 22 g's	21

TEST MEETS SPECIFICATIONS

TECHNICIAN

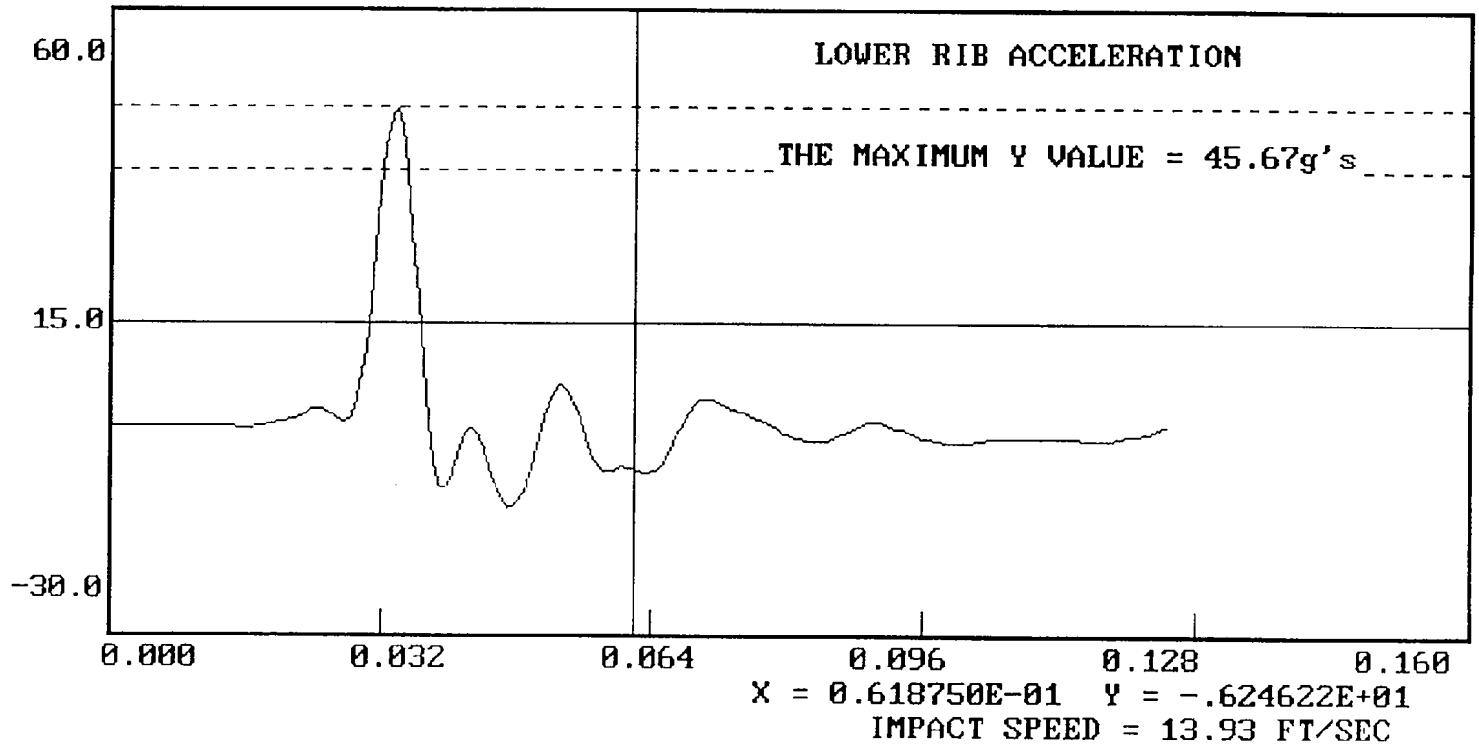
APPROVED BY

DUMMY CALIBRATION - THORAX IMPACT 11-25-1996 15:21
DUMMY # 269
ACCELERATION (G'S) VS. TIME ((SECONDS))



DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 269
ACCELERATION (G'S) VS. TIME ((SECONDS))

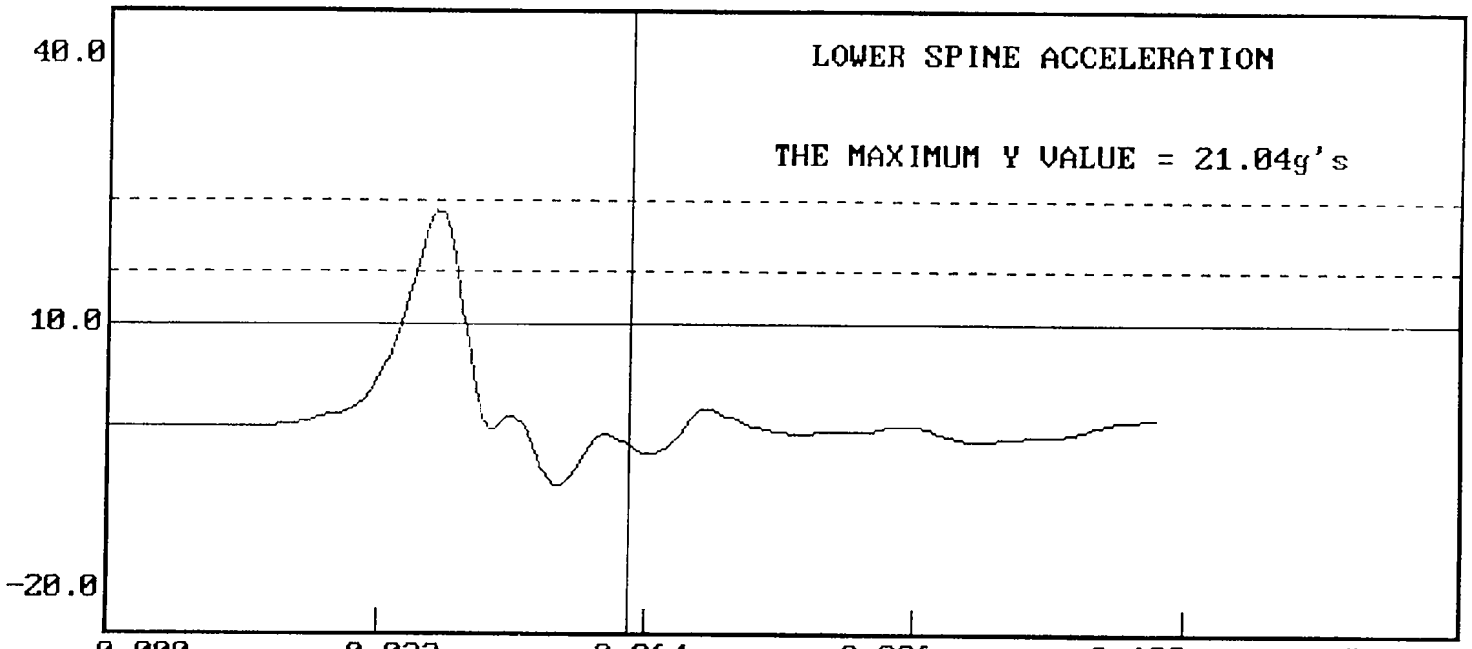
11-25-1996 15:21



X = 0.618750E-01 Y = -.624622E+01
IMPACT SPEED = 13.93 FT/SEC

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 269
ACCELERATION (G'S) VS. TIME ((SECONDS))

11-25-1996 15:31



X = 0.618750E-01 Y = -.165020E+01
IMPACT SPEED = 13.93 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 25, 1996

DUMMY NUMBER: 269

TEST NUMBER: D961863

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	25%
PROBE SPEED	13.8 - 14.2 f/s	13.9
PELVIS ACCELERATION	40 - 60 g's	55

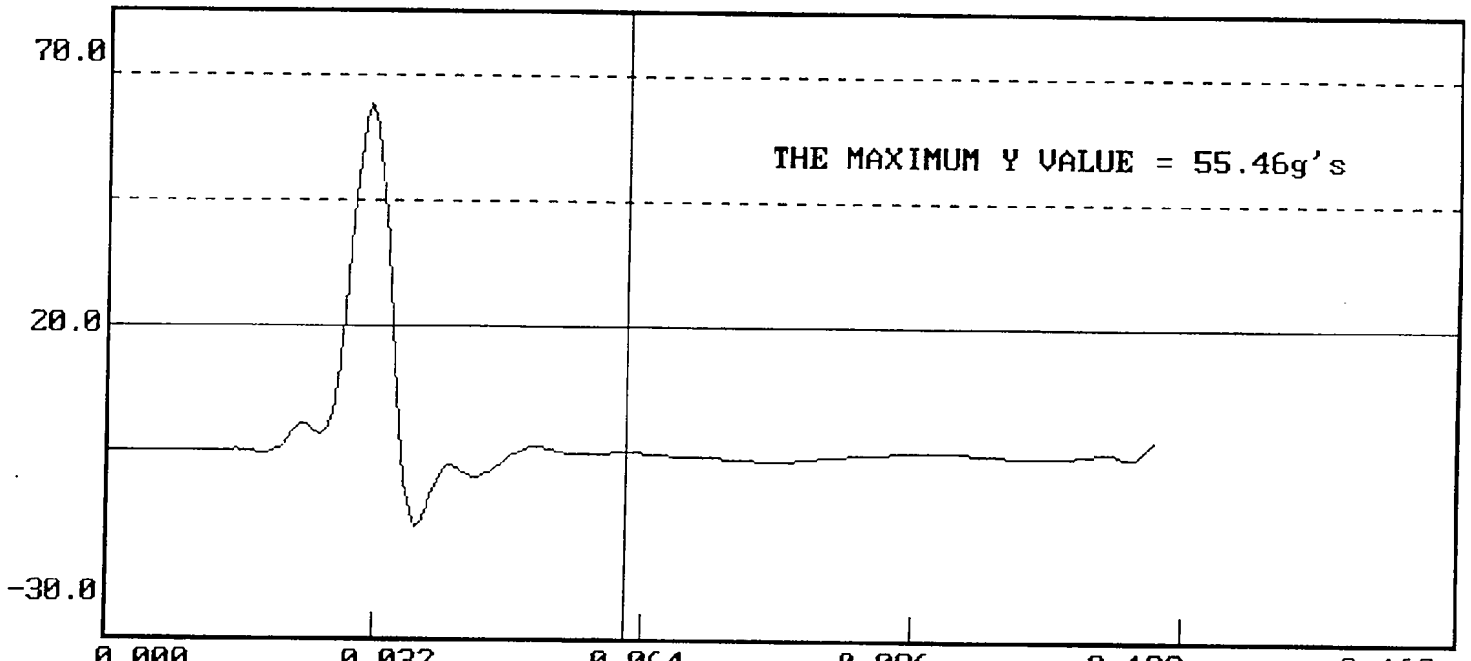
TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY

DUMMY CALIBRATION - PELVIS IMPACT
DUMMY # 269
ACCELERATION (G'S) VS. TIME ((SECONDS))

11-25-1996 15:42



X = 0.618750E-01 Y = -.754076E-01
IMPACT SPEED = 13.92 FT/SEC

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: November 25, 1996

DUMMY NUMBER: 269 TEST NUMBER: D961864

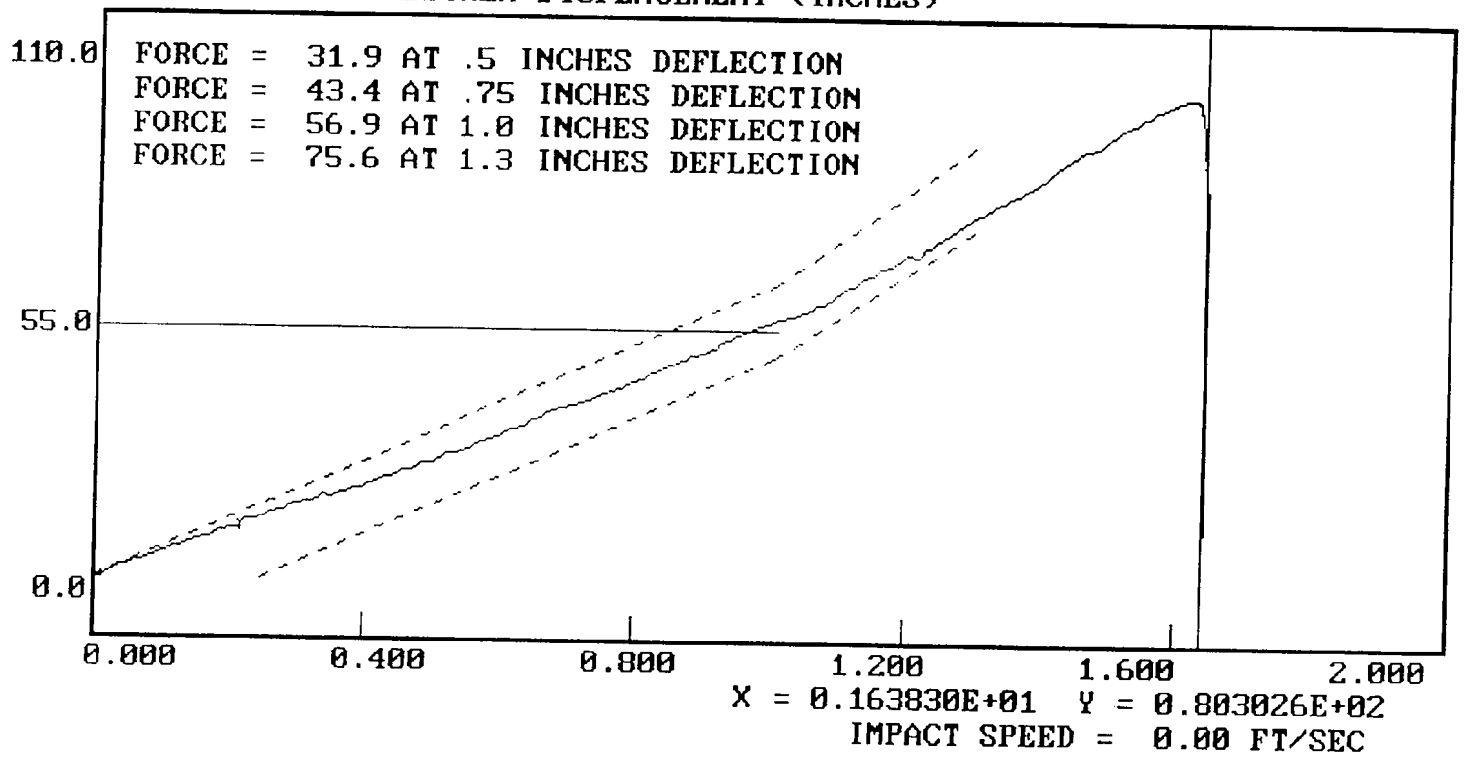
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0.5 in	23.3 - 36.5 lbs	31.9
FORCE @ 0.75 in	36.7 - 49.8 lbs	43.4
FORCE @ 1.0 in	50 - 63 lbs	57
FORCE @ 1.3 in	73 - 88 lbs	76

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____

DUMMY CALIBRATION - ABDOMEN COMPRESSION
DUMMY # 269
11-25-1996 11:26
ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: November 25, 1996

DUMMY NUMBER: 269 TEST NUMBER: D961865

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	35
FORCE @ 40°	46 - 58 lbs	48
RETURN ANGLE	12° maximum	1°

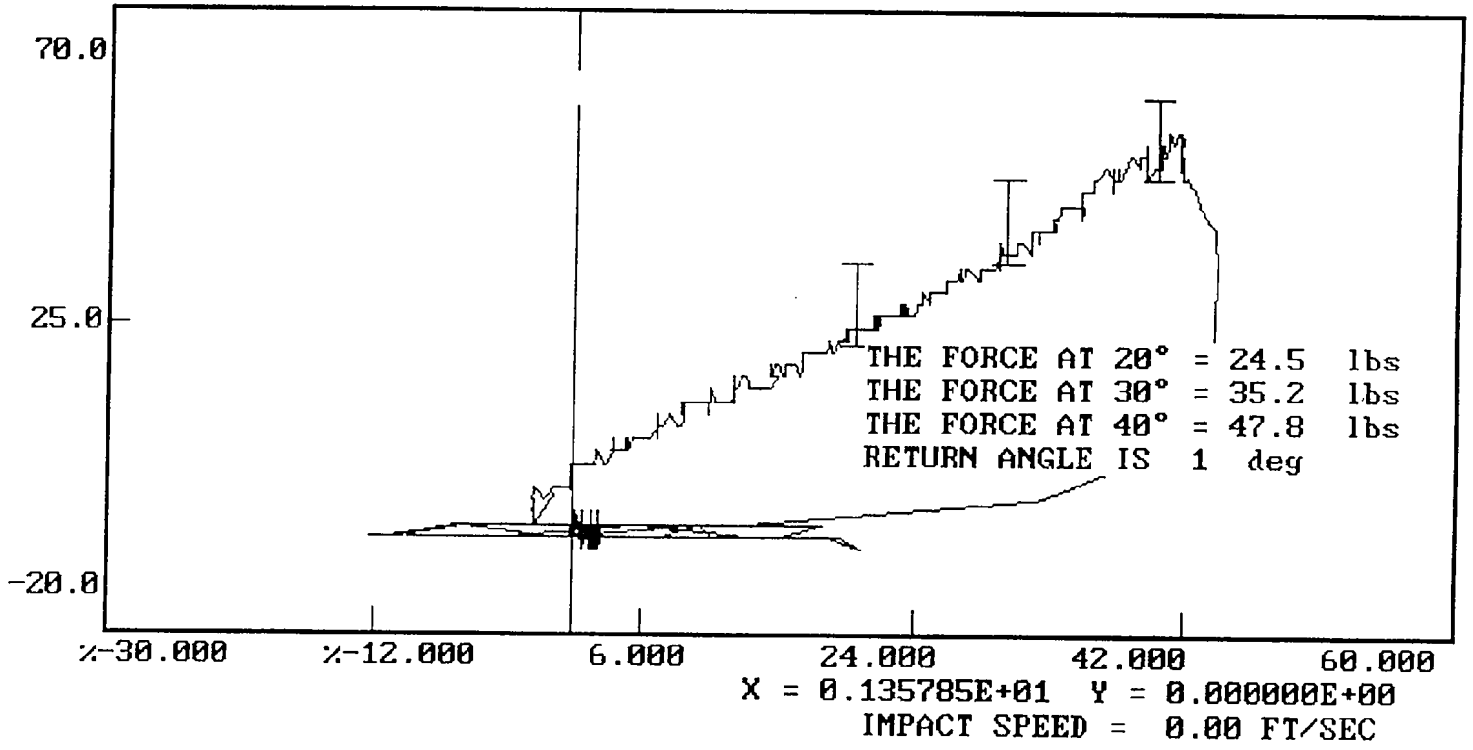
TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY

DUMMY CALIBRATION - LUMBAR FLEXION
DUMMY # 269
FORCE (LBS) VS. TORSO ROTATION (DEGREES)

11-25-1996 14:08



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: December 2, 1996

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.2
RH - Rib Height	19.75" - 20.50"	20.50
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.5
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.6
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)

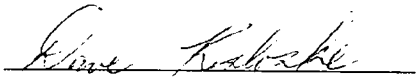
DATE: December 2, 1996

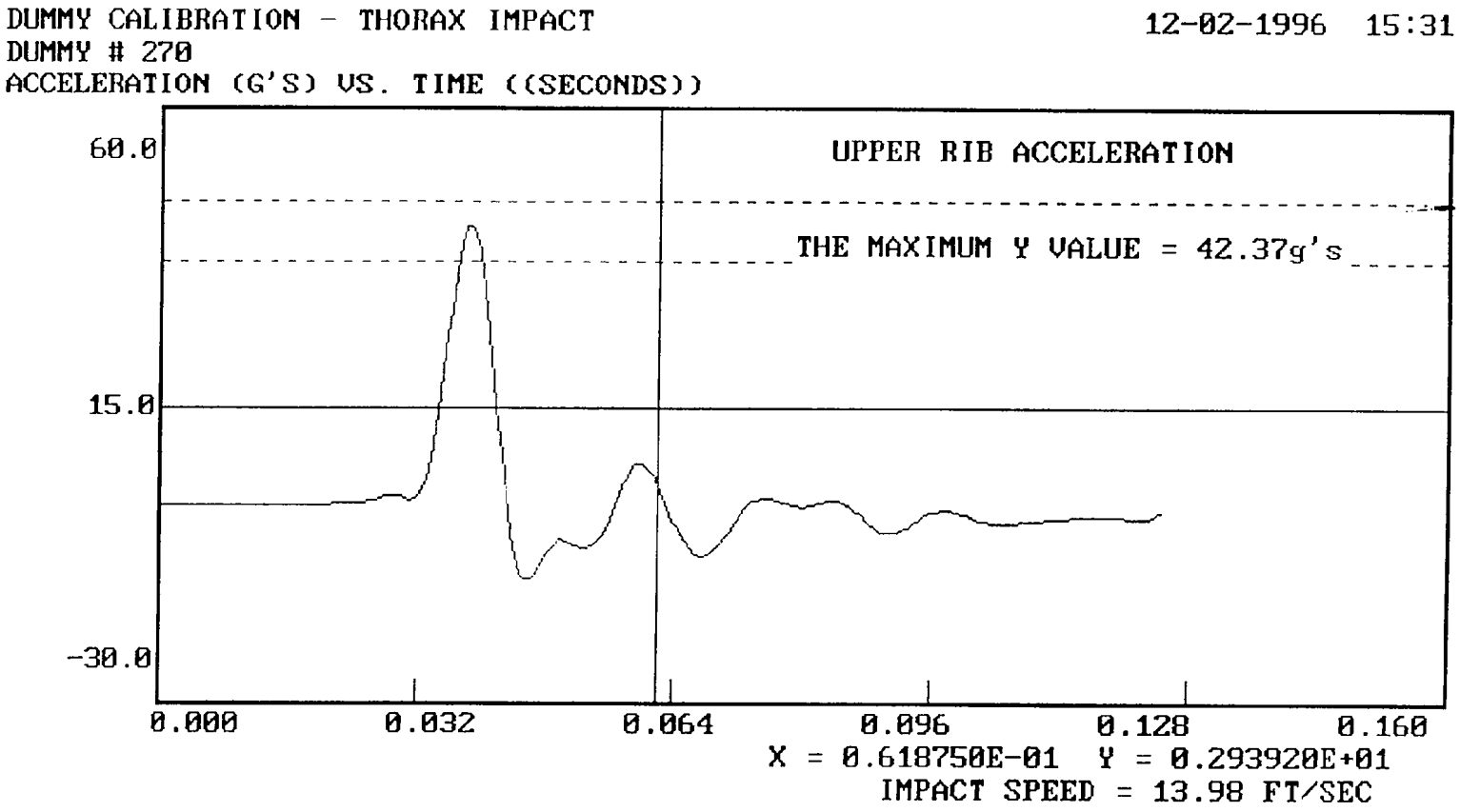
DUMMY NUMBER: 270 TEST NUMBER: D961972

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
PROBE SPEED	13.8 - 14.2 fps	14.0
UPPER RIB	37 - 46 g's	42
LOWER RIB	37 - 46 g's	44
LOWER SPINE	15 - 22 g's	21

TEST MEETS SPECIFICATIONS

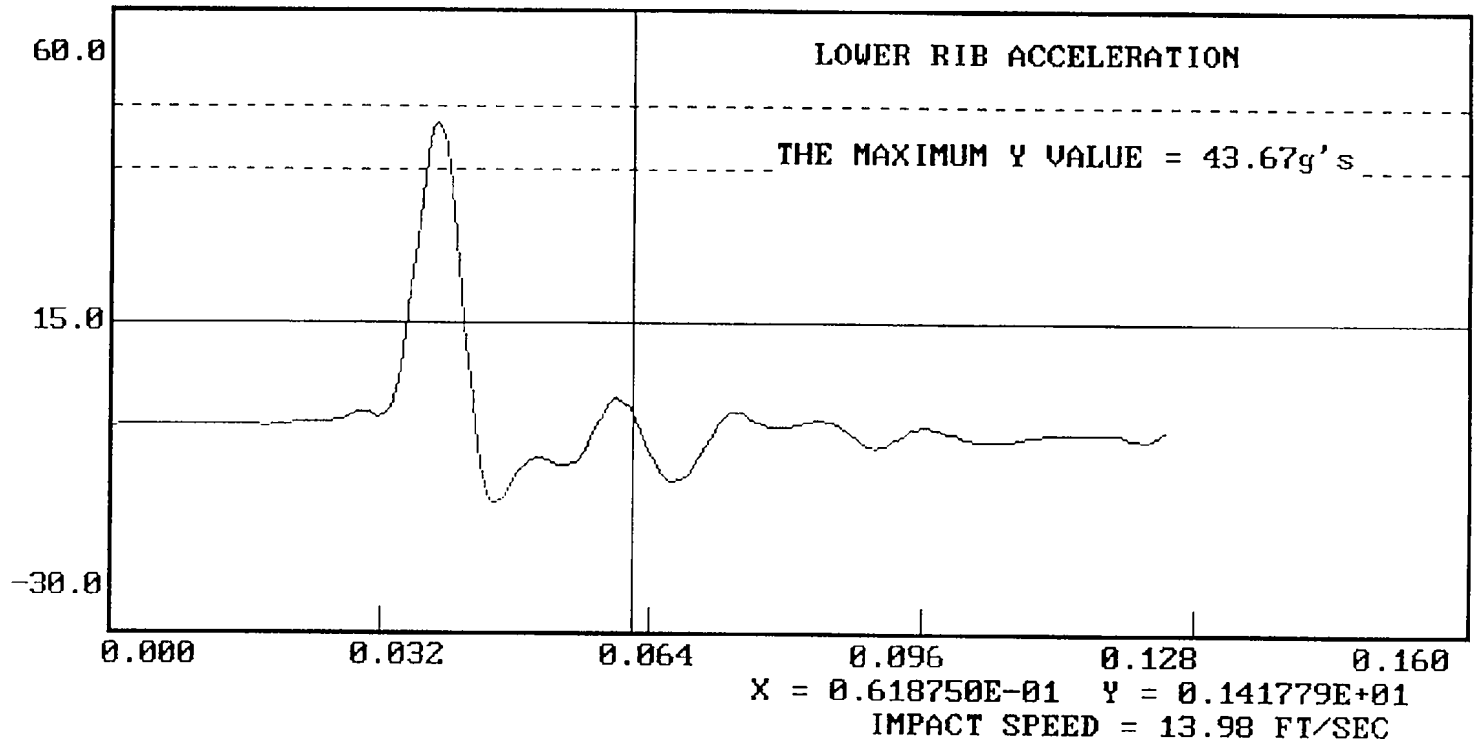
TECHNICIAN

APPROVED BY 


DUMMY CALIBRATION - THORAX IMPACT
12-02-1996 15:31
DUMMY # 270
ACCELERATION (G'S) VS. TIME ((SECONDS))
UPPER RIB ACCELERATION
THE MAXIMUM Y VALUE = 42.37g's
60.0
15.0
-30.0
0.000
0.032
0.064
0.096
0.128
0.160
X = 0.618750E-01 Y = 0.293920E+01
IMPACT SPEED = 13.98 FT/SEC

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

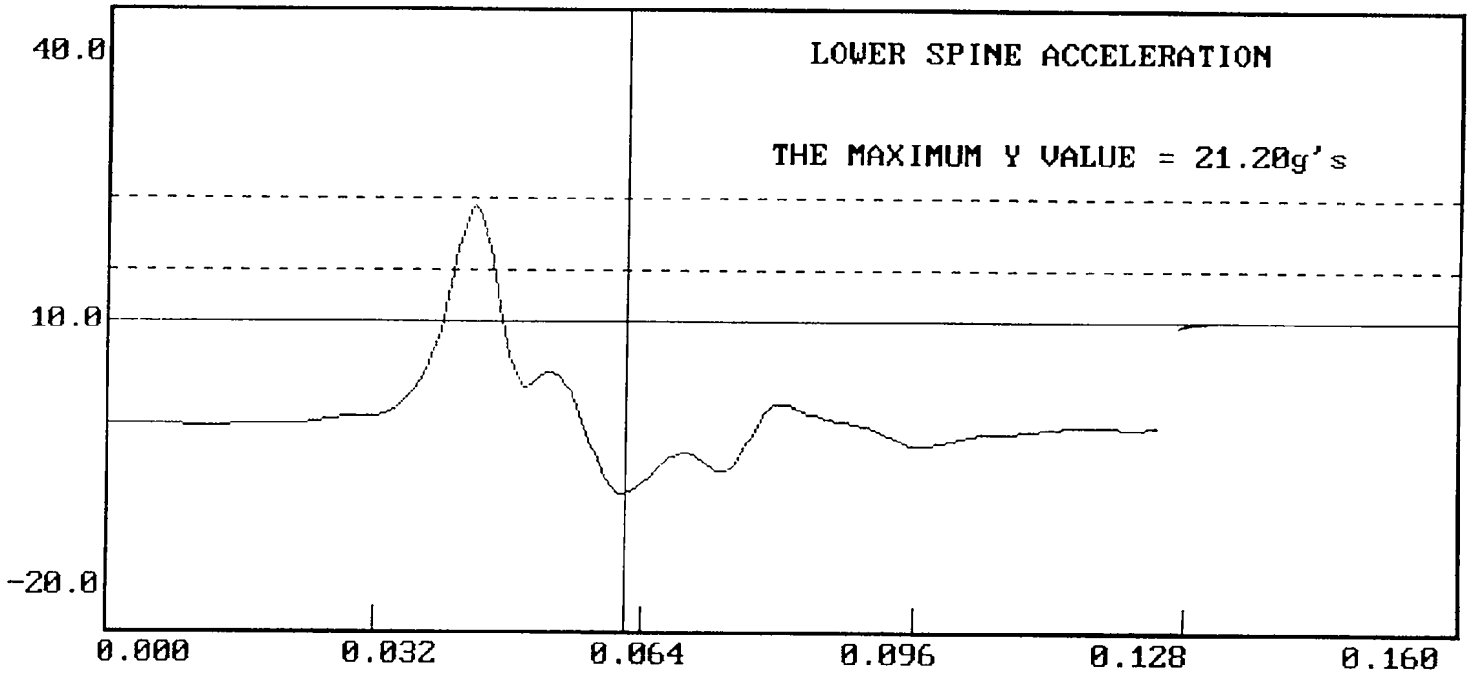
12-02-1996 15:31



X = 0.618750E-01 Y = 0.141779E+01
IMPACT SPEED = 13.98 FT/SEC

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

12-02-1996 15:31



X = 0.618750E-01 Y = -.683318E+01
IMPACT SPEED = 13.98 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 2, 1996

DUMMY NUMBER: 270 TEST NUMBER: D961973

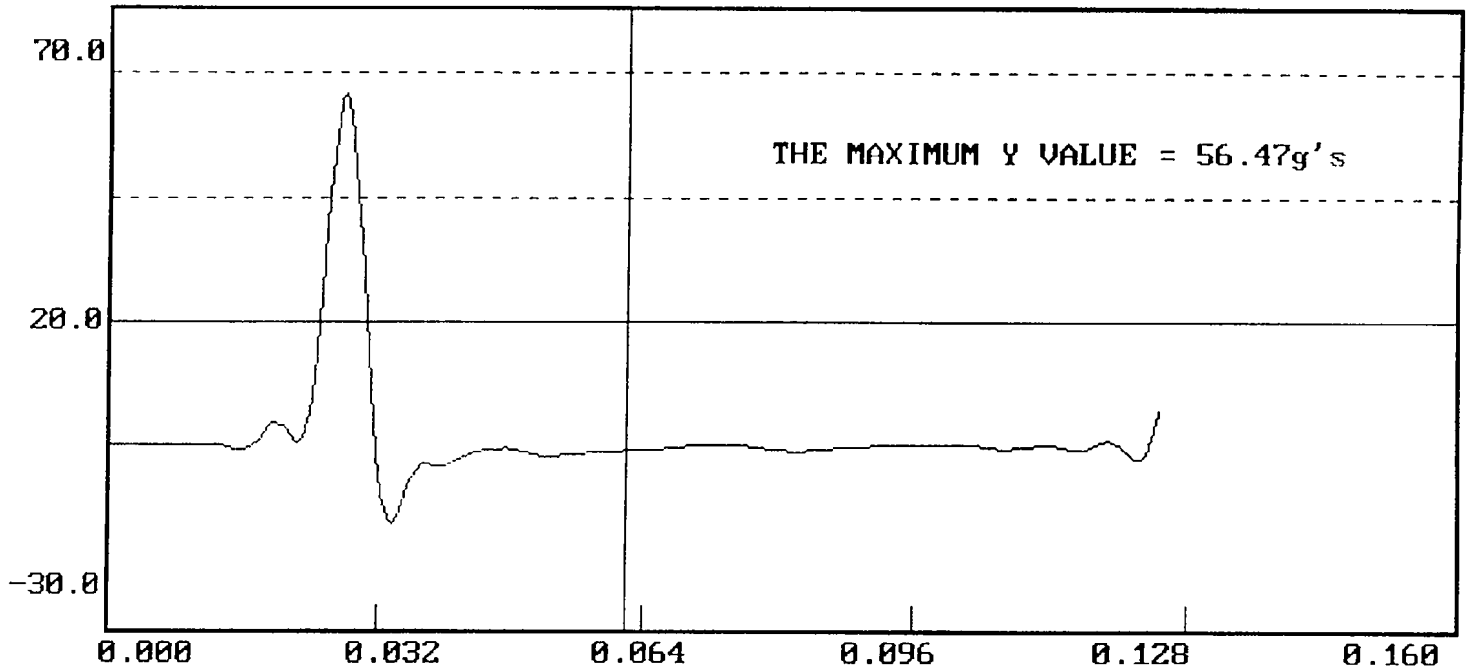
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
PROBE SPEED	13.8 - 14.2 f/s	13.9
PELVIS ACCELERATION	40 - 60 g's	56

TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY

DUMMY CALIBRATION - PELVIS IMPACT 12-02-1996 16:21
DUMMY # 270
ACCELERATION (G'S) VS. TIME ((SECONDS))



X = 0.618750E-01 Y = -.947546E+00
IMPACT SPEED = 13.90 FT/SEC

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: December 2, 1996

DUMMY NUMBER: 270 TEST NUMBER: D961974

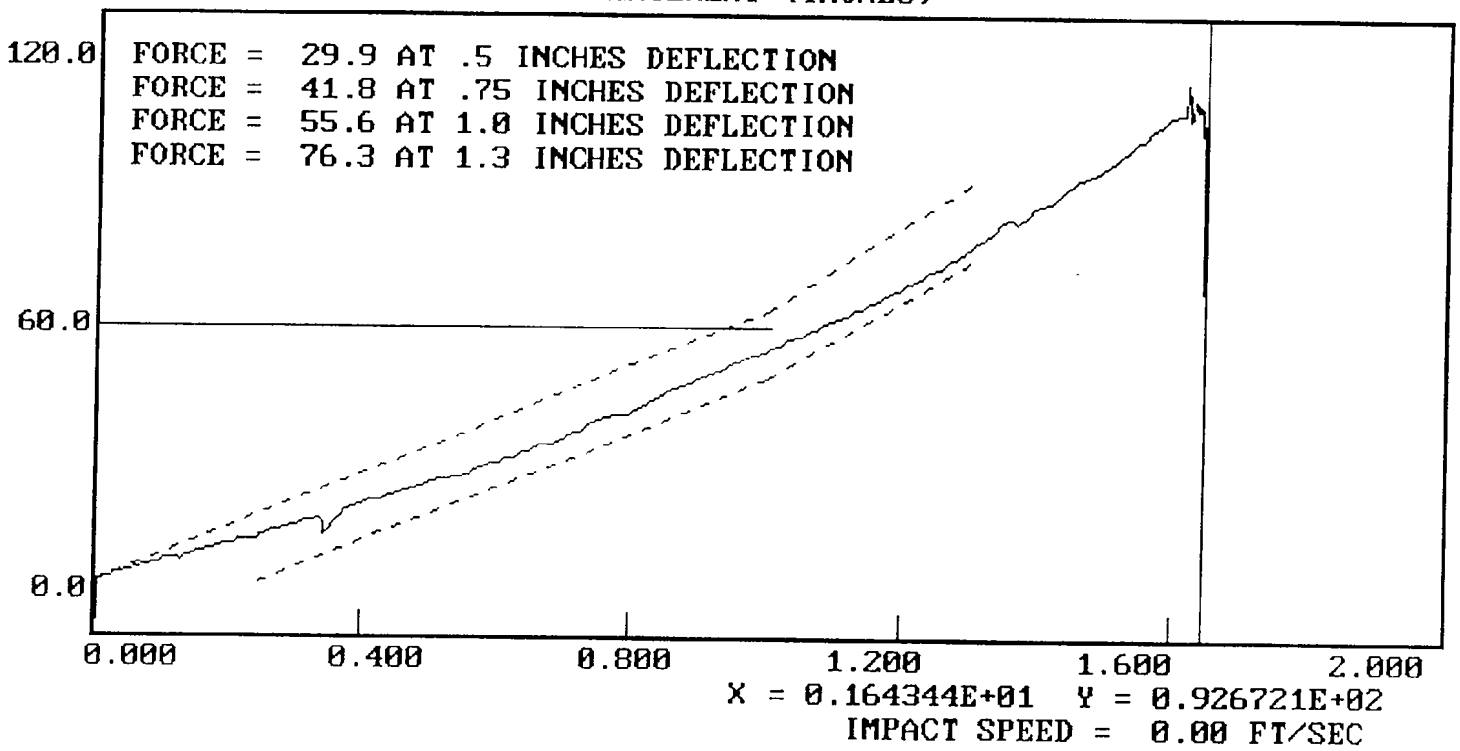
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0.5 in	23.3 - 36.5 lbs	29.9
FORCE @ 0.75 in	36.7 - 49.8 lbs	41.8
FORCE @ 1.0 in	50 - 63 lbs	56
FORCE @ 1.3 in	73 - 88 lbs	76

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____

DUMMY CALIBRATION - ABDOMEN COMPRESSION 12-02-1996 21:38
DUMMY # 270
ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

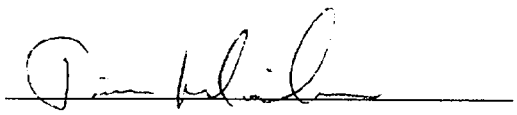
SIDE IMPACT DUMMY (SID)

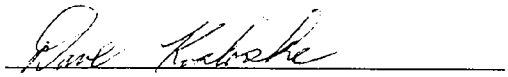
DATE: December 2, 1996

DUMMY NUMBER: 270 TEST NUMBER: D961975

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	24
FORCE @ 30°	34 - 46 lbs	38
FORCE @ 40°	46 - 58 lbs	49
RETURN ANGLE	12° maximum	1°

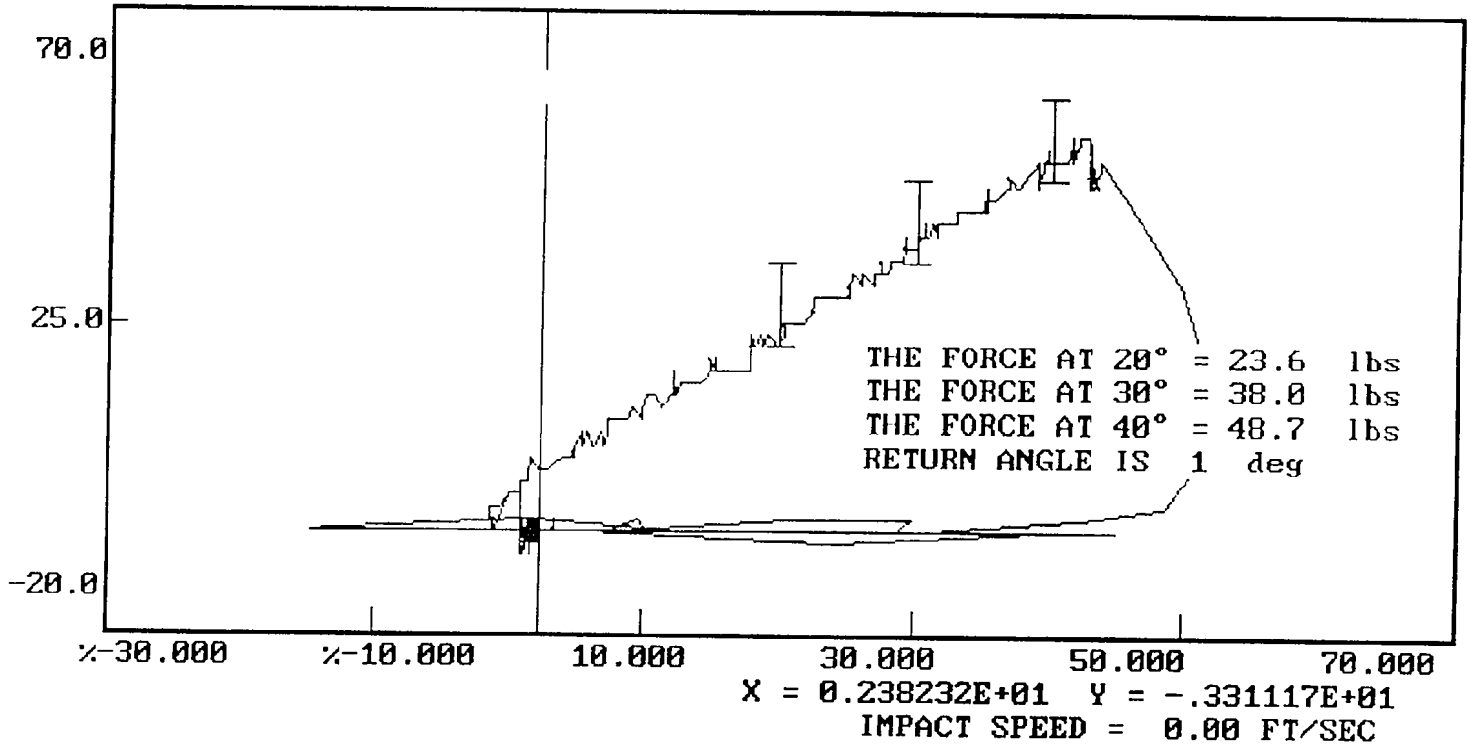
TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

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

12-02-1996 22:04



X = 0.238232E+01 Y = -.331117E+01
IMPACT SPEED = 0.00 FT/SEC

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: December 2, 1996

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.1
RH - Rib Height	19.75" - 20.50"	20.00
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.3
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: December 2, 1996

DUMMY NUMBER: 269

TEST NUMBER: D961962

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
PROBE SPEED	13.8 - 14.2 fps	14.1
UPPER RIB	37 - 46 g's	40
LOWER RIB	37 - 46 g's	39
LOWER SPINE	15 - 22 g's	20

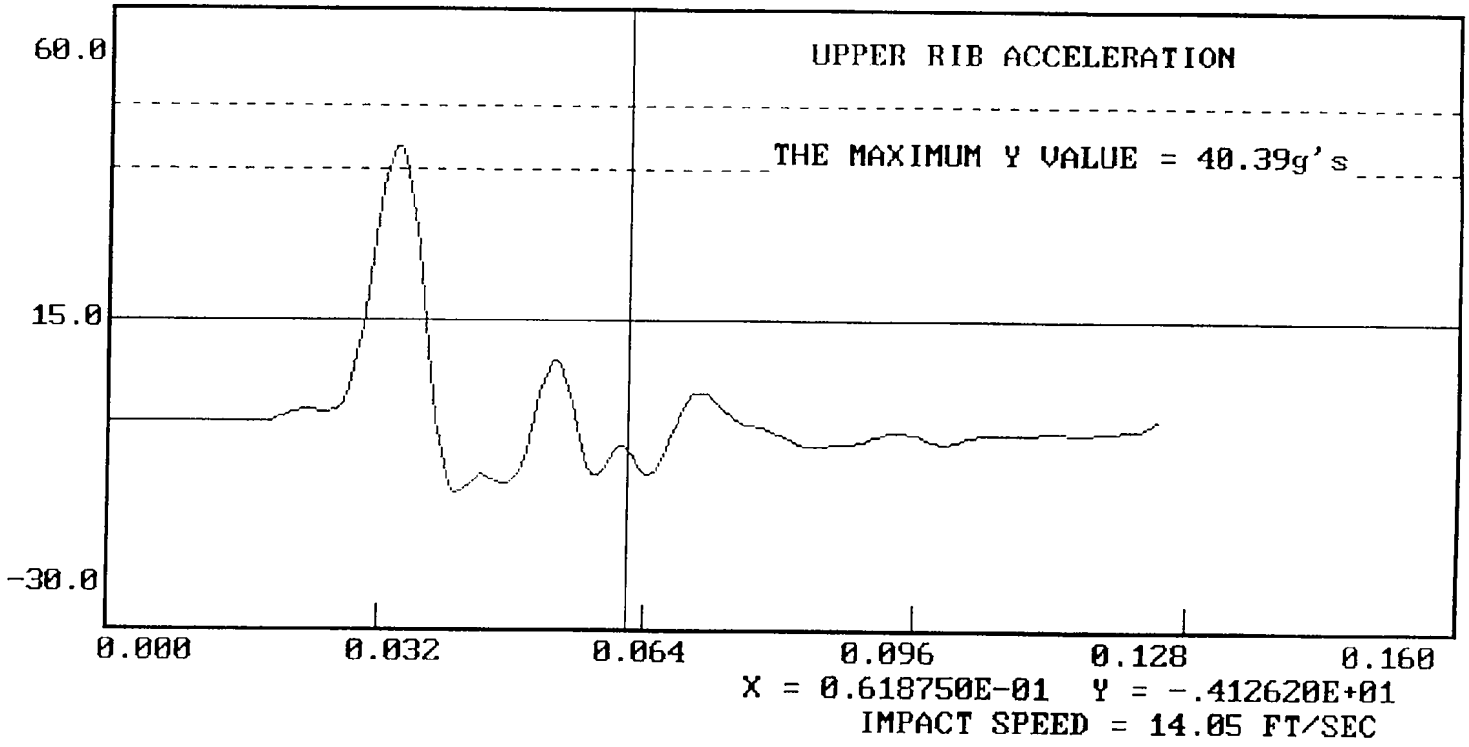
TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 269
ACCELERATION (G'S) VS. TIME ((SECONDS))

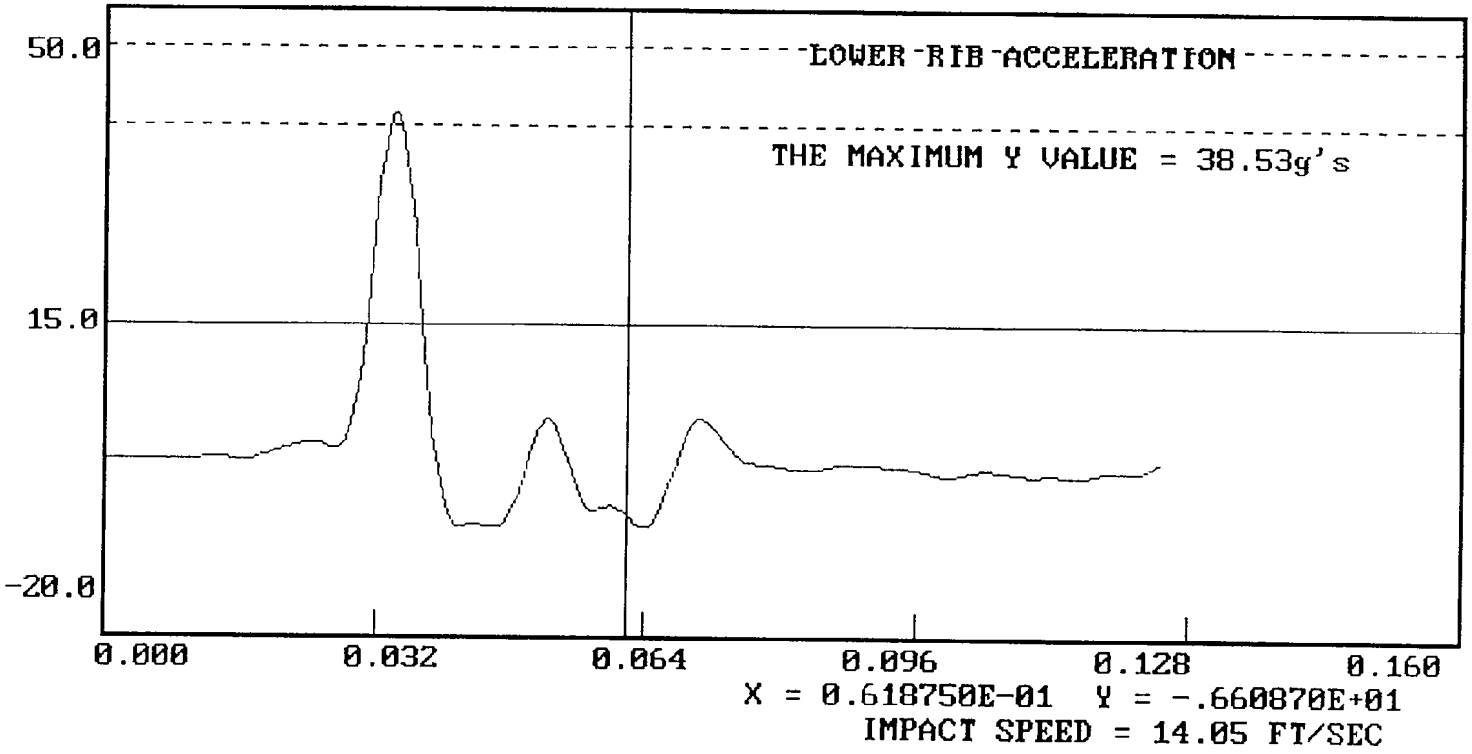
12-02-1996 15:03



X = 0.618750E-01 Y = -.412620E+01
IMPACT SPEED = 14.05 FT/SEC

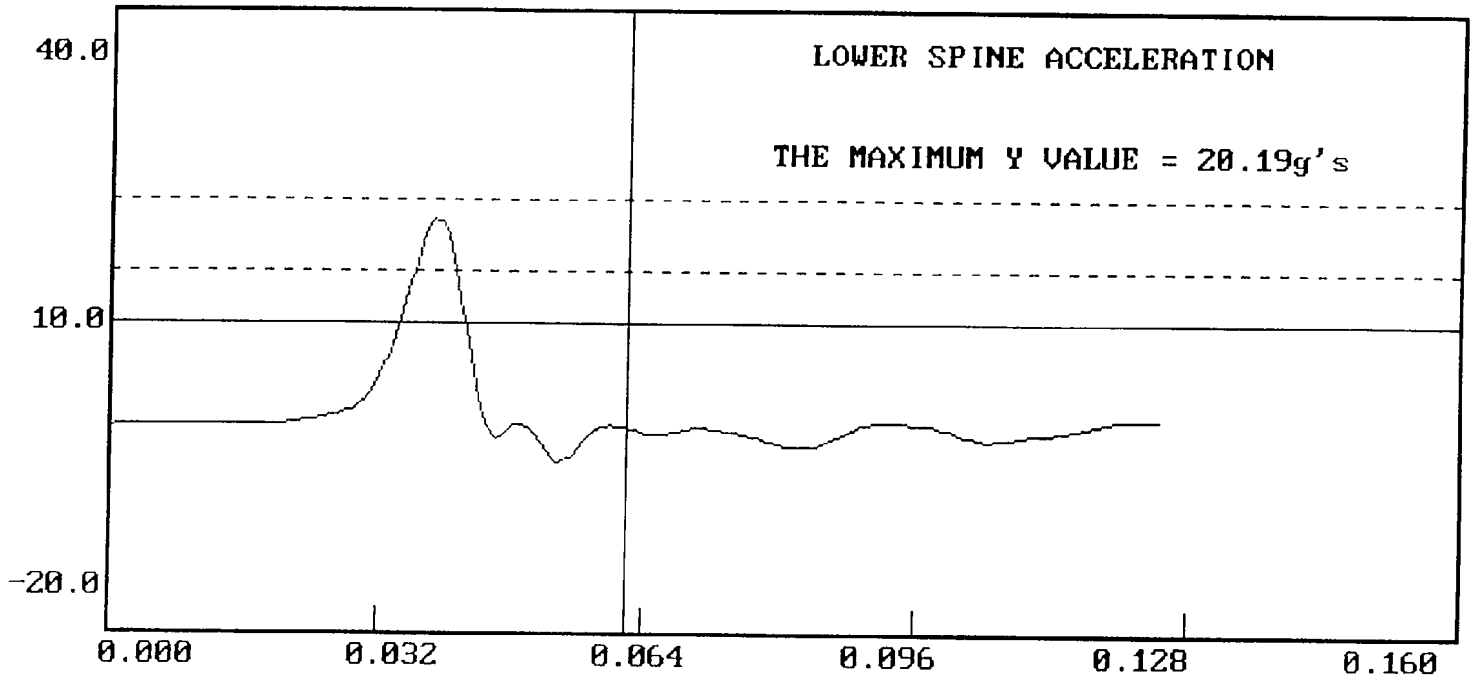
DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 269
ACCELERATION (G'S) VS. TIME ((SECONDS))

12-02-1996 15:03



DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 269
ACCELERATION (G'S) VS. TIME ((SECONDS))

12-02-1996 15:05



X = 0.618750E-01 Y = -.242915E+00
IMPACT SPEED = 14.05 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 2, 1996

DUMMY NUMBER: 269 TEST NUMBER: D961963

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
PROBE SPEED	13.8 - 14.2 f/s	14.0
PELVIS ACCELERATION	40 - 60 g's	45

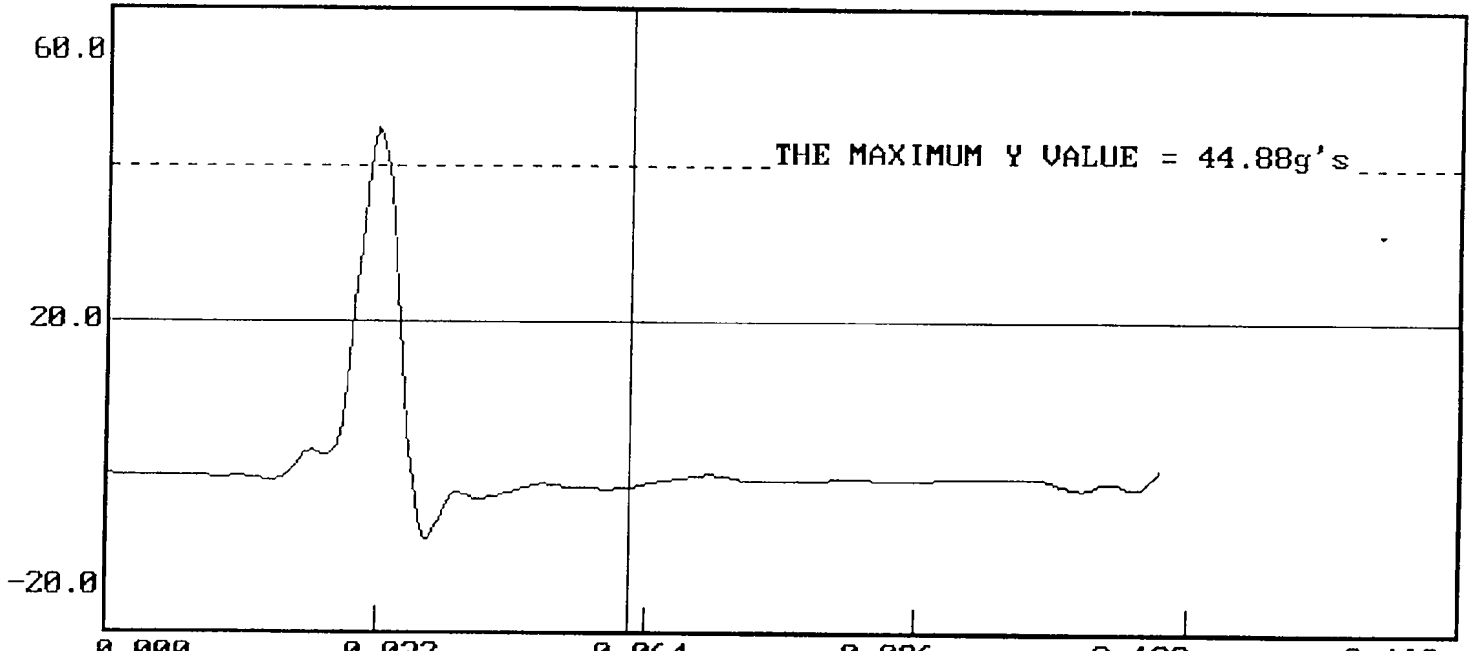
TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY

DUMMY CALIBRATION - PELVIS IMPACT
DUMMY # 269
ACCELERATION (G'S) VS. TIME ((SECONDS))

12-02-1996 15:18



X = 0.618750E-01 Y = -.153585E+01
IMPACT SPEED = 13.97 FT/SEC

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: December 2, 1996

DUMMY NUMBER: 269 TEST NUMBER: D961964

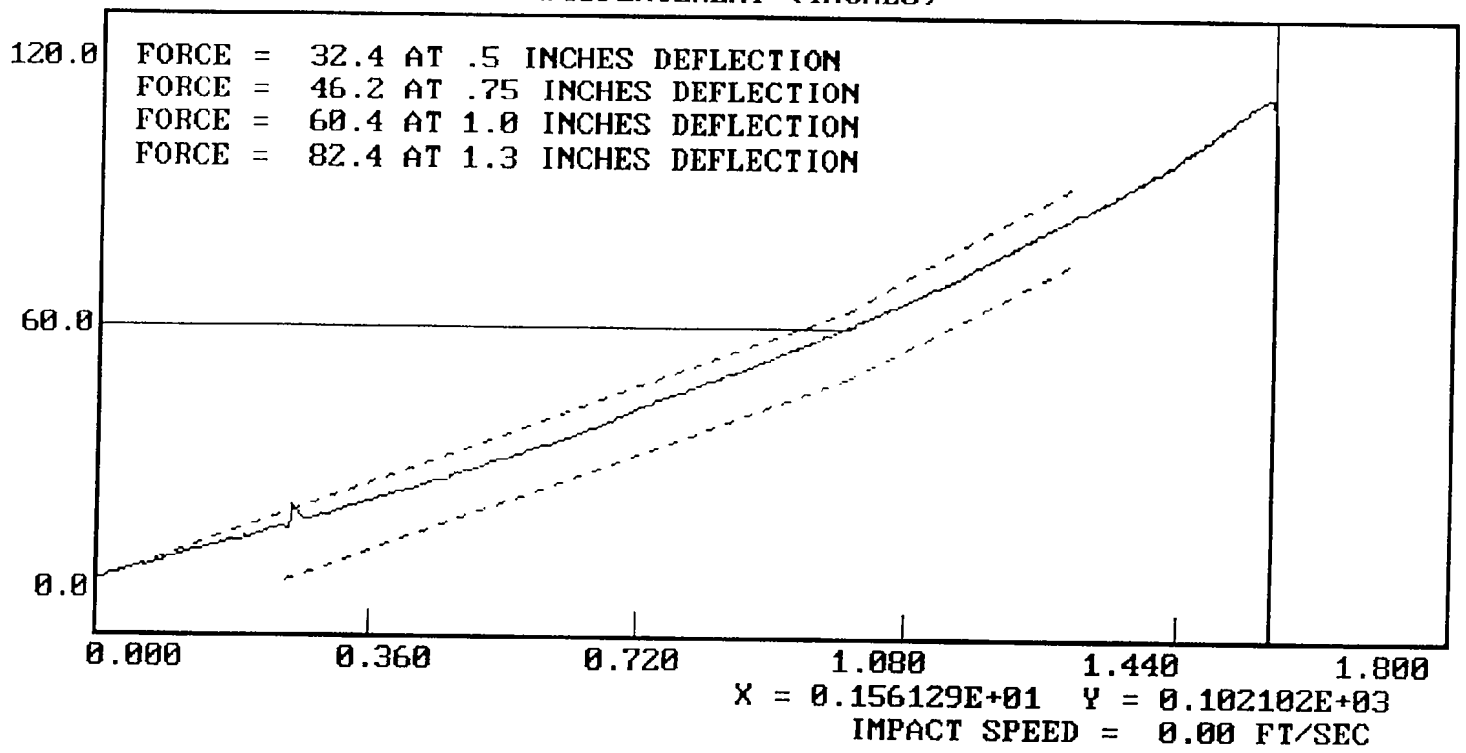
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0.5 in	23.3 - 36.5 lbs	32.4
FORCE @ 0.75 in	36.7 - 49.8 lbs	46.2
FORCE @ 1.0 in	50 - 63 lbs	60
FORCE @ 1.3 in	73 - 88 lbs	82

TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY

DUMMY CALIBRATION - ABDOMEN COMPRESSION
DUMMY # 269
12-02-1996 21:45
ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



X = 0.156129E+01 Y = 0.102102E+03
IMPACT SPEED = 0.00 FT/SEC

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: December 2, 1996

DUMMY NUMBER: 269

TEST NUMBER: D961965

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	29
FORCE @ 30°	34 - 46 lbs	40
FORCE @ 40°	46 - 58 lbs	51
RETURN ANGLE	12° maximum	4°

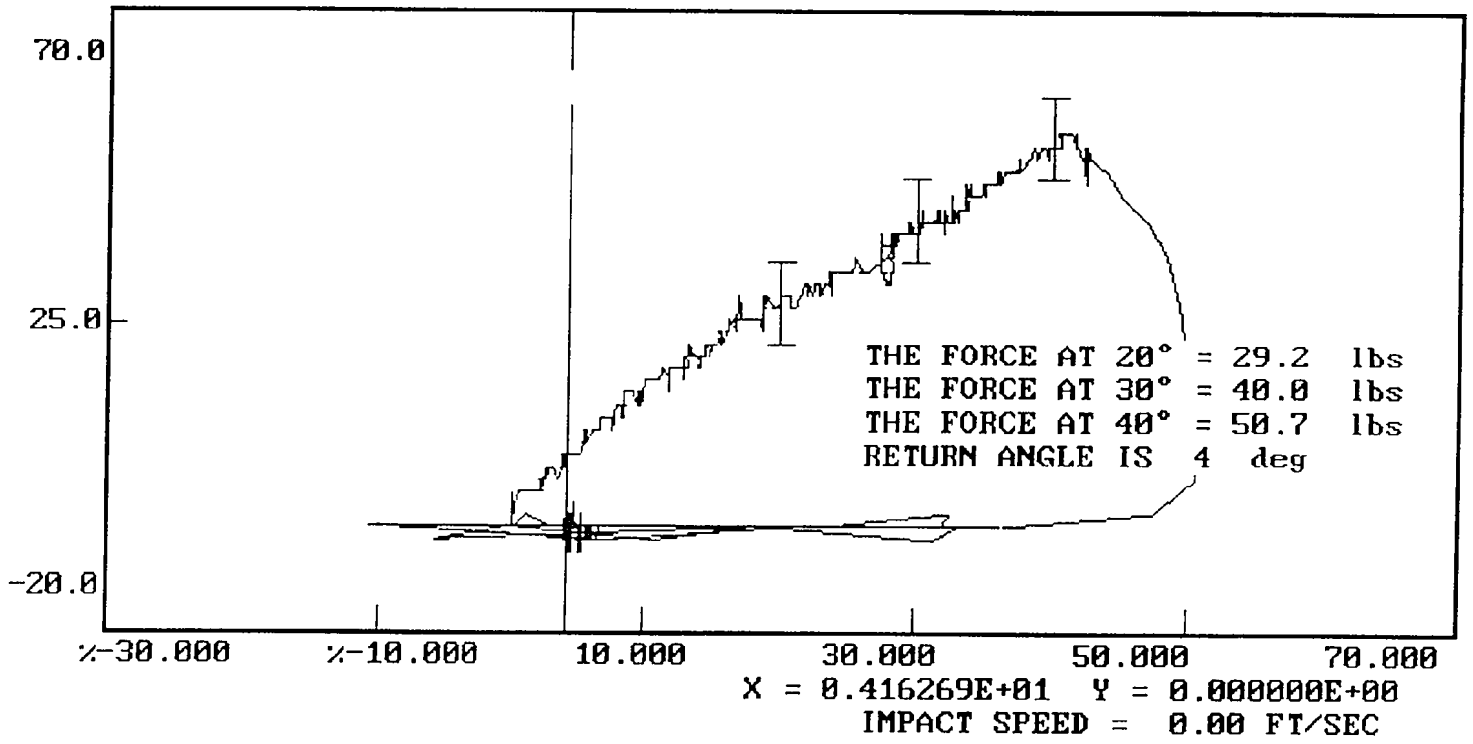
TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____

DUMMY CALIBRATION - LUMBAR FLEXION
DUMMY # 269
FORCE (LBS) VS. TORSO ROTATION (DEGREES)

12-02-1996 22:16



POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 270

Inspected By: Tim Michnay

Date: December 2, 1996

Part	Items Checked	Comments
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

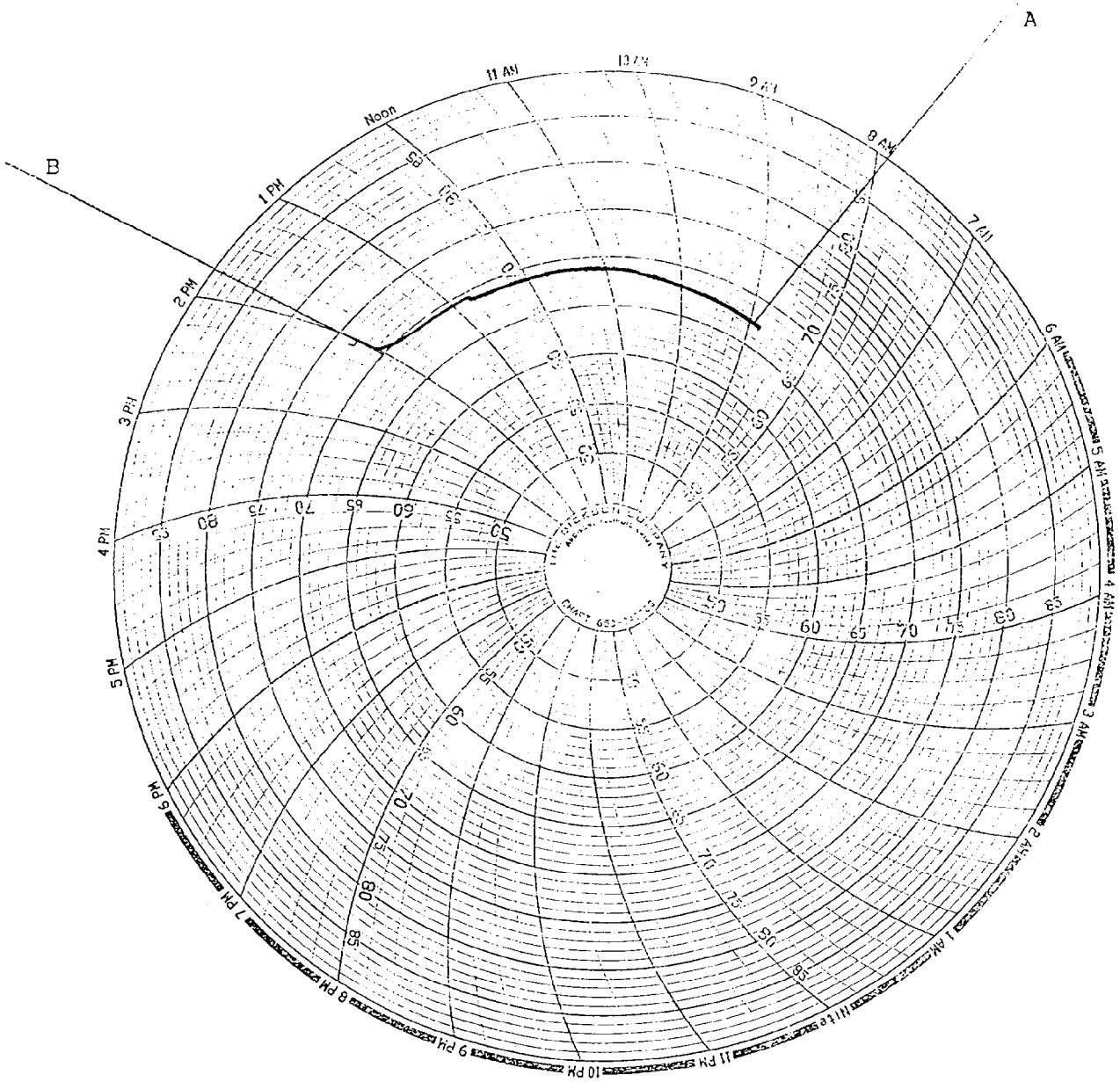
Inspected By: Tim Michnay

Date: December 2, 1996

Part	Items Checked	Comments
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	AP1H2	Endevco	9/10/96
Lower Rib Y	AJ9C2	Endevco	9/09/96
Lower Spine Y	AP2D7	Endevco	9/10/96
Pelvis Y	ALCH7	Endevco	9/09/96
Upper Rib Redundant Y	AH0B0	Endevco	9/10/96
Lower Rib Redundant Y	AHTT2	Endevco	9/09/86
Lower Spine Redundant Y	AP1T8	Endevco	9/10/96
Pelvis Redundant Y	AJ420	Endevco	9/09/96

INSTRUMENTS FOR PASSENGER DUMMY NO. 269

	LEFT REAR PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AGTM2	Endevco	9/10/96
Lower Rib Y	ALEC1	Endevco	9/11/96
Lower Spine Y	AH1G2	Endevco	9/11/96
Pelvis Y	ALCN9	Endevco	9/10/96
Upper Rib Redundant Y	AGTB5	Endevco	9/10/96
Lower Rib Redundant Y	J10411	Endevco	9/11/96
Lower Spine Redundant Y	AM751	Endevco	9/11/96
Pelvis Redundant Y	AKAF3	Endevco	9/10/96

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier CG X	C14-Z10	Entran	7/12/96
Moving Barrier CG Y	B14-R01	Entran	7/15/96
Moving Barrier CG Z	B14-R16	Entran	7/11/96
Moving Barrier Rear Axle X	B14-R03	Entran	7/11/96
Moving Barrier Rear Axle Y	A10-G01	Entran	6/04/96
Left Mid A-Post Y	A10-G02	Entran	7/12/96
Left Lower A-Post Y	A09-G02	Entran	7/15/96
Left Mid B-Post Y	J10-E03	Entran	7/10/96
Left Lower B-Post Y	D05-R05	Entran	7/11/96
Rear Floorpan Above Axle X	B28-B03	Entran	7/11/96
Rear Floorpan Above Axle Y	A10-G04	Entran	7/11/96
Rear Floorpan Above Axle Z	C14-Z15	Entran	7/11/96
Driver Seat Track Y	J10-E11	Entran	7/10/96
Right Side Sill at Front Seat X	A10-G03	Entran	7/12/96
Right Side Sill at Front Seat Y	D05-R19	Entran	6/04/96
Right Side Sill at Front Seat Z	D05-R20	Entran	6/04/96
Right Side Sill at Rear Seat X	J06-D19	Entran	7/11/96
Right Side Sill at Rear Seat Y	D05-R25	Entran	7/12/96
Right Side Sill at Rear Seat Z	J10-E16	Entran	6/10/96
Left Side Sill at Front Seat Y	C05-Z13	Entran	6/04/96

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Left Side Sill at Rear Seat Y	L22-G05	Entran	7/11/96
Right Rear Occupant Compartment Y	B14-R04	Entran	6/04/96
Vehicle CG X	J06-D17	Entran	7/10/96
Vehicle CG Y	D05-R12	Entran	7/12/96
Vehicle CG Z	J10-E14	Entran	7/10/96
Left Front Door Mid Rear Y	D05-R24	Entran	6/04/96
Left Front Door Centerline Y	H07-A21	Entran	10/01/96
Left Front Door Upper Centerline Y	N/A	Entran	N/A
Left Rear Door Mid Rear Y	F10-D08	Entran	10/02/96
Left Rear Door Upper Centerline Y	N/A	Entran	N/A

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