V2403

REPORT NO.: 214-MGA-96-006
SAFETY COMPLIANCE TESTING FOR
FMVSS 214 "SIDE IMPACT PROTECTION -
PASSENGER CARS"

MAZDA MOTOR COMPANY
1996 MAZDA 626 4 DOOR SEDAN
NHTSA NO: CT5400

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: November 29, 1995

Report Date: December 19, 1995

FINAL REPORT

Prepared For:

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

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

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

Prepared By: _____
Michael Janovicz, Project Engineer

Approved By: _____
John Fleck, Facility Director

Approval Date: 1-3-96

FINAL REPORT ACCEPTED BY (OVSC):

Accepted By: _____
Contract Technical Manager

Acceptance Date: 2/6/96

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 214-MGA-96-006	2. Government Accession No.	3. Recipient's Catalog No.

4. Title and Subtitle Final Report of FMVSS No.214 Compliance Side Impact Protection Testing of a 1996 Mazda 626 4 Door NHTSA No. CT5201	5. Report Date December 19, 1995
	6. Performing Organization Code MGA
7. Author(s) John Fleck, Project Manager Michael Janovicz, Project Engineer	8. Performing Organization Report No. MGA-DOT-214-006
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105	10. Work Unit No.
	11. Contract or Grant No. DTNH22-93-C-02047
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (Mail Code: NSA-30) 400 Seventh St., S.W., Room 6115 Washington, D.C. 20590	13. Type of Report and Period Covered Final Test Report November 29 to December 19, 1995
	14. Sponsoring Agency Code NSA-30

15. Supplementary Notes

16. Abstract

A 48/24 kph 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject 1996 Mazda 626 4 Door Sedan in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-04 for the determination of FMVSS No. 214 Side Impact Protection compliance. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on November 29, 1995.

The impact velocity of the Moving Deformable Barrier (MDB) was 53.1 kph, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 21°C. The target vehicle post test maximum crush was 347 mm at level 2. The test vehicle's performance follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	53	50
Left Lower Rib (LLR) Accel., g	62	59
Lower Spine (T_{12}) Accel., g	56	52
Thoracic Trauma Index (TTI)	59	56
Pelvis (PEV) Accel., g	62	63

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

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

19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages	22. Price

Form DOT F 1700.7 (8-69)

TABLE OF CONTENTS

SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FY 96 FMVSS 214 Side Impact Protection Compliance Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-93-C-02047. The purpose of this test was to evaluate side impact protection in a 1996 Mazda 626 4 Door Sedan.

This side impact test was conducted in accordance with the Vehicle Safety Compliance's FMVSS 214 test procedure (TP-214D-04, dated September 1, 1995).

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

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 1996 Mazda 626 4 Door Sedan 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 33.0 mph (53.1 kph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by MGA Research Corporation in Burlington, Wisconsin, on November 29, 1995. 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 OVSC Side Impact Laboratory Test Procedure which is dated September 1, 1995. The side impact event was documented by nine high speed cameras. Camera locations and other pertinent camera information can be found in this report.

The SIDs were instrumented with the following accelerometers.

1. 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)	59.1	55.5
Pelvis (g)	62.2	63.4

TEST NOTES

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

Left Front Door on Centerline

Midrear of Left Front Door

Left Front Door Upper Centerline

Midrear of Left Rear Door

Left Rear Door Upper Centerline

Rear Seat Track

2) The Driver Seat Track Y Acceleration did not collect any valid data.

3) The Left Mid B-Pillar Y Acceleration data is invalid after 28 msec.

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: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 VIN: 14VGF22C5T5501096

Vehicle Body Color: green Build Date: 7/18/95

Engine Data: 4 Cylinders; 121.5 CID; ___ Liter; ___cc

Placement __ Longitudinal; X Lateral

Transmission: 3 speed; __ Manual; X Automatic; X Overdrive

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

Odometer Reading 597 miles

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

X Cruise Control; X Tilt Wheel; __Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 32 Psi FRONT

26 Psi REAR

Recommended Tire Size: P195/65R14

Tires on Test Vehicle: P195/65R14 Manufacturer: Dunlop

Vehicle Capacity Data:

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

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

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

Vehicle Maximum Capacity Loading = 385.6 kg (A)

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

Cargo Capacity (A-B) = 45.4 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS:

Right Front	= 398.7 kg	Right Rear	= 222.7 kg
Left Front	= 400.5 kg	Left Rear	= 237.7 kg
TOTAL FRONT = 799.2 kg		TOTAL REAR = 460.4 kg	

% of Total Vehicle Weight = 63.4 %; % of Total Weight = 36.6 %

TOTAL WEIGHT = 1259.6 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids	= 1259.6 kg
Cargo Carrying Capacity of Test Vehicle	= 45.4 kg
Weight of 2 Side Impact Dummies (2 x 80.7 kg.)	= 161.4 kg
TEST VEHICLE TARGET WEIGHT	= 1466.4 kg

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES AND CARGO:

Right Front	= 404.2 kg	Right Rear	= 280.3 kg
Left Front	= 451.3 kg	Left Rear	= 328.4 kg
TOTAL FRONT	= 855.5 kg	TOTAL REAR	= 608.7 kg
% of Total Weight	= 58.4 %	% of Total Weight	= 41.6 %
TOTAL TEST WEIGHT	= 1464.2 kg		

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 693 mm Left Front 679 mm Right Rear 696 mm Left Rear 692 mm

FULLY LOADED WEIGHT ATTITUDE:

Right Front 683 mm Left Front 661 mm Right Rear 662 mm Left Rear 642 mm

TEST ATTITUDE:

Right Front 667 mm Left Front 662 mm Right Rear 667 mm Left Rear 648 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2604 mm

C.G. = 1082 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 4324 mm

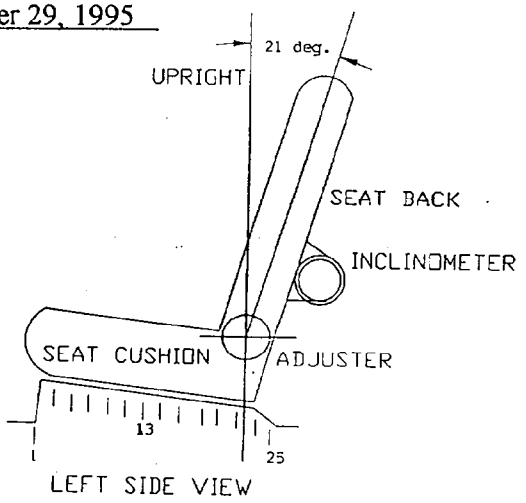
Centerline = 4670 mm

Left Side = 4324 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995



FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 225 mm

Test Position: 13th detent rearward out of 25 total

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 21° degrees

SECOND POSITION SEAT:

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

Seat Back Adjustment Position: Non-Adjustable

ADJUSTABLE STEERING COLUMN POSITION: Non-Adjustable

WINDOW POSITIONS: Left Front Closed Left Rear Closed

Right Front Open Right Rear Open

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel system usable capacity = 54.9 liters

Test Volume: 50.7 liters 93 % of capacity

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

Wheelbase: = 2604 mm

Impact Point is 362 mm rearward of front axle centerline

DATA SHEET NO. 2

TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

Overall Length = 4670 mm; Overall Width = 1748 mm

TEST WEIGHT:

Right Front =	426.4 kg	Right Rear =	272.2 kg
Left Front =	449.5 kg	Left Rear =	312.5 kg
TOTAL FRONT =	875.9 kg	TOTAL REAR =	584.7 kg
% of Total Weight =	60.0 %	% of Total Weight =	40.0 %

TOTAL VEHICLE WEIGHT = 1460.6 kg

Wheelbase = 2604 mm

Longitudinal C.G. from Center of Front Axle = 1042 mm

Impact Angle with Respect to Impactor = 90° degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (280 mm above ground) = 266 mm
2. LEVEL 2 (450 mm above ground) = 347 mm
3. LEVEL 3 (570 mm above ground) = 313 mm
4. LEVEL 4 (890 mm above ground) = 204 mm
5. LEVEL 5 (1304 mm above ground) = 58 mm

Maximum Post-Test Intrusion = 347 mm

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

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

INSTRUMENTATION:

Number of Vehicle Data Channels:		= 20
Number of Cameras:	Onboard Vehicle	= 3
	Offboard Vehicle	= 4
	Deformable Barrier	= 2
	TOTAL	= 9

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° 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: 33.0 mph (53.1 kph) Secondary: 33.0 mph (53.1 kph)

CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A Top of Stack (810 mm) = 148 mm
2. Row B Mid Stack (685 mm) = 117 mm
3. Row C Top of Bumper (560 mm) = 81 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: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

VISIBLE DUMMY CONTACT POINTS:

	LEFT FRONT SID	LEFT REAR SID
Head	to seatbelt	to C Post
Arm	to door panel	to door panel
Pelvis	to door panel	to door panel
Left Knee	to door panel	to door panel
Right Knee	no contact noted	no contact noted

DOOR OPENING:

	LEFT SIDE	RIGHT SIDE
Front	unopenable	openable
Rear	unopenable	openable

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal: 8 mm forward Vertical: 2 mm high

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 68 mm Front Seat Cushion: 95 mm

Left Rear Seat Back: 37 mm Rear Seat Cushion: 161 mm

GLAZING DAMAGE:

Driver and left rear passenger side windows broken, windshield cracked

PILLAR PERFORMANCE:

No failure noted

SILL SEPARATION:

No sill separation noted

OTHER NOTABLE IMPACT EFFECTS:

None

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5

SIDE IMPACT DUMMY (SID) INSTRUMENTATION DATA

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

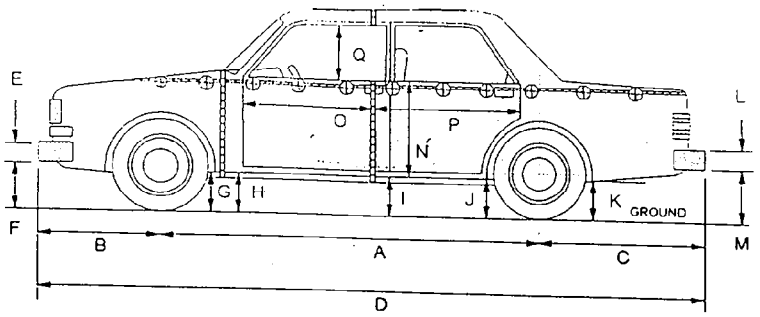
	Front Dummy ID #272				Rear Dummy ID #271			
	Pos. Direct.		Neg. Direct		Pos. Direct.		Neg. Direct	
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
RIB ACCELERATIONS								
Left Upper Rib (LUR) Y	53.0	39	-23.3	80	49.8	47	-6.1	176
Left Lower Rib (LLR) Y	61.8	36	-19.5	80	59.0	46	-11.7	77
SPINE ACCELERATIONS								
Lower Lateral Y	56.4	35	-24.2	73	52.0	50	-9.2	68
PELVIS ACCELERATIONS								
Lateral Y	62.2	36	-16.4	85	63.4	43	-10.8	74

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

Negative Direction - Longitudinal (X) = rearward
Lateral (Y) = to left
Vertical (Z) = up

DATA SHEET NO. 6

VEHICLE PRE AND POST-TEST MEASUREMENTS



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)

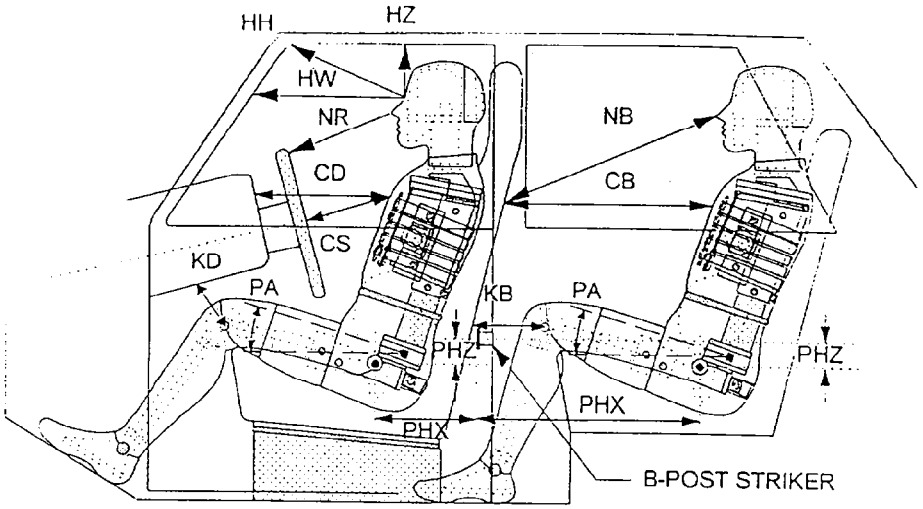
	PRE-TEST	POST-TEST	Δ CHANGE
A	2603	2595	8
B	994	1013	-19
C	1073	1104	-31
D	4670	4712	-42
E	177	177	0
F	363	409	-46
G	200	215	-15
H	174	142	32
I	164	164	0
J1/J2	175/175	188/186	-13/-11
K	243	248	-5
L	347	314	33
M	322	390	-68
N	627	568	59
O	664	660	4
P	1170	1092	78
Q	401	385	16
R	4324	4334	-10
S	4314	4288	36
T	1748	1412	336

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

NHTSA NO.: CT5400 Test Date: November 29, 1995



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

	FRONT SID ID #272
HH	440
HW	622
HZ	194
NR	429
CD	610
CS	328
KDL(KDA°)	204 (1.6°)
KDR(KDA°)	210 (5.2°)
PA°	23.7
PHX	184
PHZ	138

	REAR PASSENGER SID ID #271
HZ	155
NB	627
CB	535
KBL (KBA)	218 (18.4°)
KBR (KBA)	226 (14.2°)
PA°	24.4
PHX	698
PHZ	109

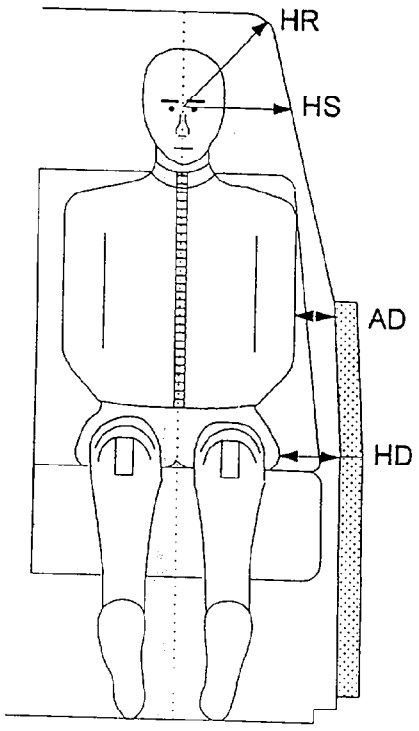
NOTE: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as reference point.

DATA SHEET NO. 8

SIDE IMPACT DUMMY (SID) LATERAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

NHTSA NO.: CT5400 Test Date: November 29, 1995



NOTE: All dimensions are in mm

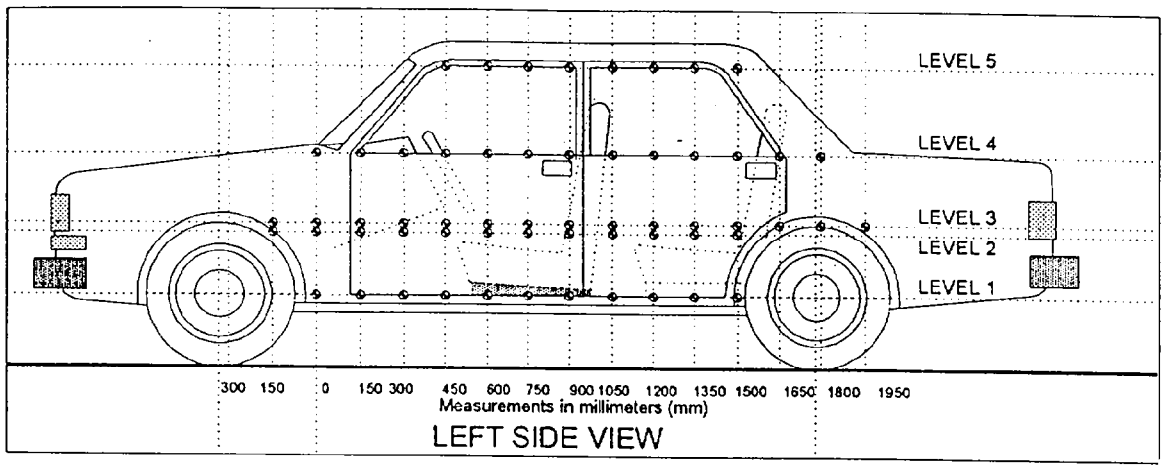
	DRIVER ID #272	LEFT REAR PASSENGER ID #271
HR	224	230
HS	328	263
AD	74	84
HD	134	147

DATA SHEET NO. 9

VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

NHTSA NO.: CT5400 Test Date: November 29, 1995



LEVEL 5 - WINDOW TOP
LEVEL 4 - WINDOW SILL
LEVEL 3 - MID-DOOR
LEVEL 2 - OCCUPANT H-POINT
LEVEL 1 - AXLE CENTERLINE HEIGHT or SILL TOP HEIGHT

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

MEASUREMENTS ALONG THE VERTICAL 750 mm. LINE SHOWN ABOVE

Level 5 @ Window Top	= 1304 mm
Level 4 @ Window Sill	= 890 mm
Level 3 @ Mid Door	= 570 mm
Level 2 @ Occupant H-Point	= 450 mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	= 280 mm

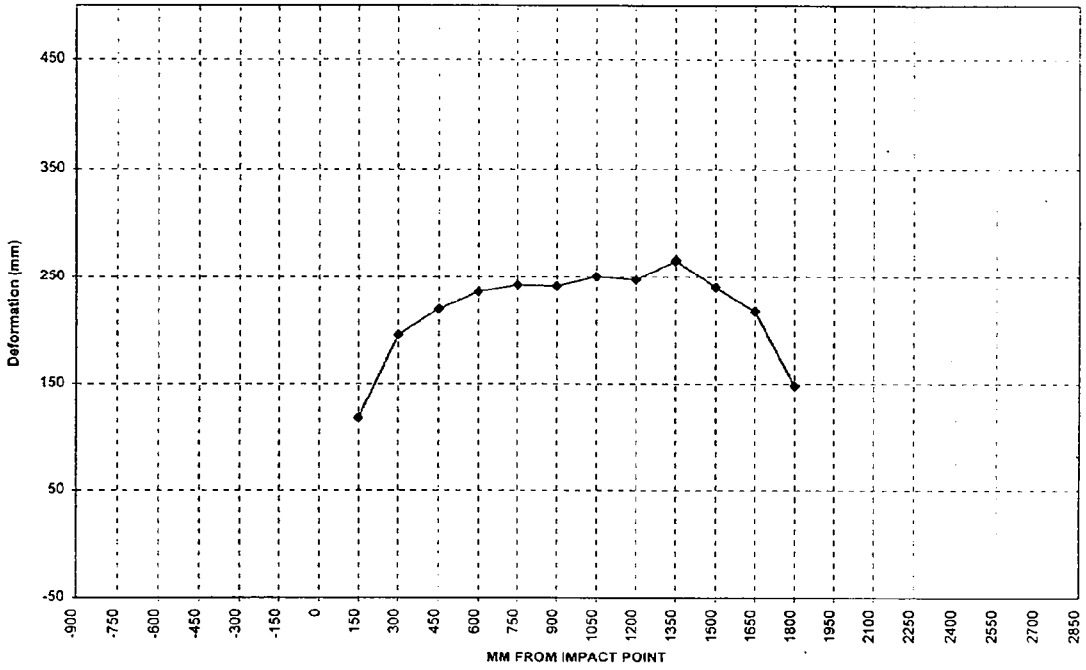
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door
NHTSA NO.: CT5400 Test Date: November 29, 1995

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	745	862	117
300	747	943	196
450	745	965	220
600	742	978	236
750	742	984	242
900	742	983	241
1050	740	990	250
1200	742	989	247
1350	740	1006	266
1500	742	982	240
1650	742	960	218
1800	745	893	148
1950			
2100			
2250			
2400			
2550			
2700			
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 1 - AXLE CENTERLINE

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

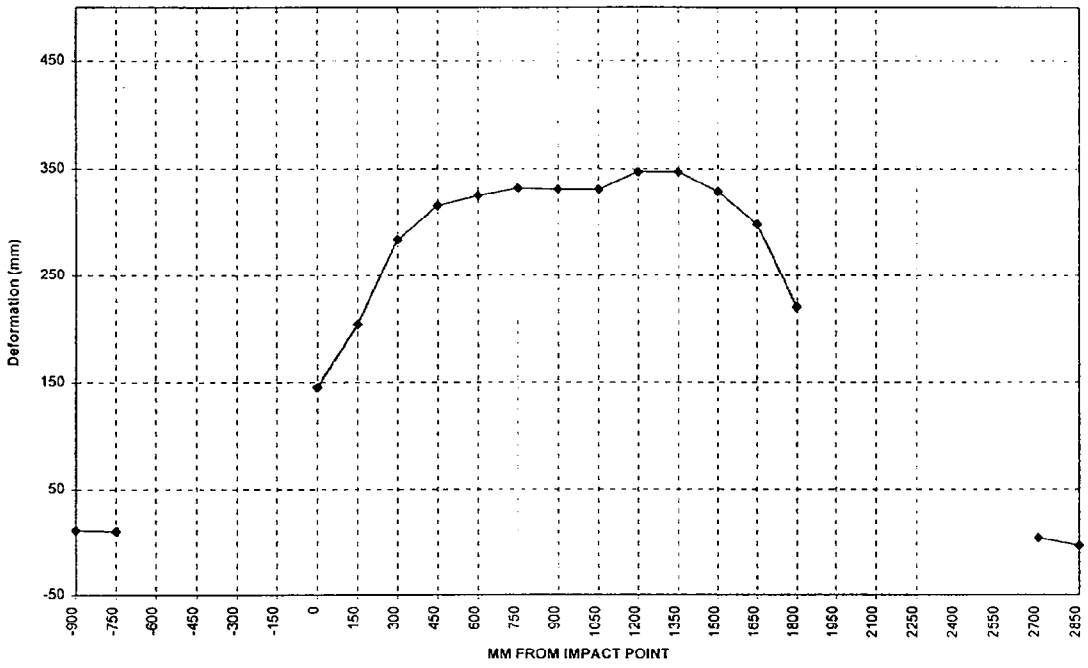
NHTSA NO.: CT5400 Test Date: November 29, 1995

	Level 2 - Occupant H-Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900	777	787	10
-750	747	756	9
-600			
-450			
-300			
-150			
0 (impact point)	723	868	145
150	722	926	204
300	722	1006	284
450	721	1037	316
600	721	1046	325
750	721	1053	332
900	721	1052	331
1050	720	1051	331
1200	720	1067	347
1350	720	1067	347
1500	720	1049	329
1650	721	1020	299
1800	722	942	220
1950			
2100			
2250			
2400			
2550			
2700	747	750	3
2850	769	765	-4
3000	797	792	-5

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

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

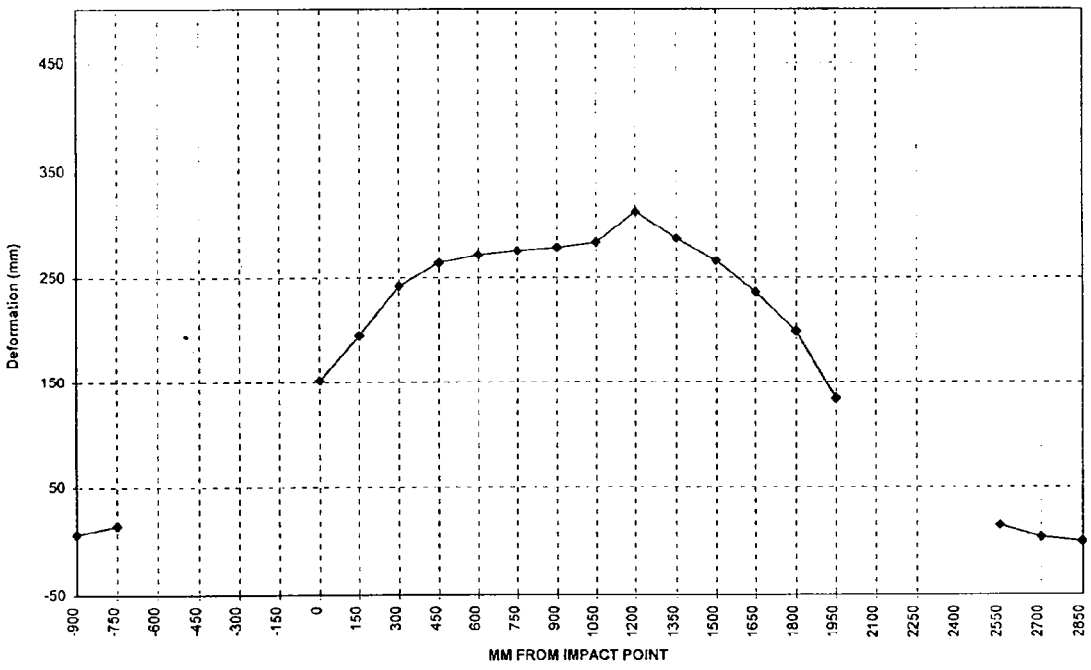
Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

NHTSA NO.: CT5400 Test Date: October 16, 1995

	Level 3 - Mid Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900	784	790	6
-750	751	765	14
-600			
-450			
-300			
-150			
0 (impact point)	712	864	152
150	717	912	195
300	719	961	242
450	719	983	264
600	718	990	272
750	718	994	276
900	718	997	279
1050	716	1000	284
1200	715	1028	313
1350	715	1003	288
1500	715	981	266
1650	716	952	236
1800	715	914	199
1950	712	846	134
2100			
2250			
2400			
2550	729	743	14
2700	747	750	3
2850	768	767	-1
3000	796	791	-5

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 3 - MID DOOR

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

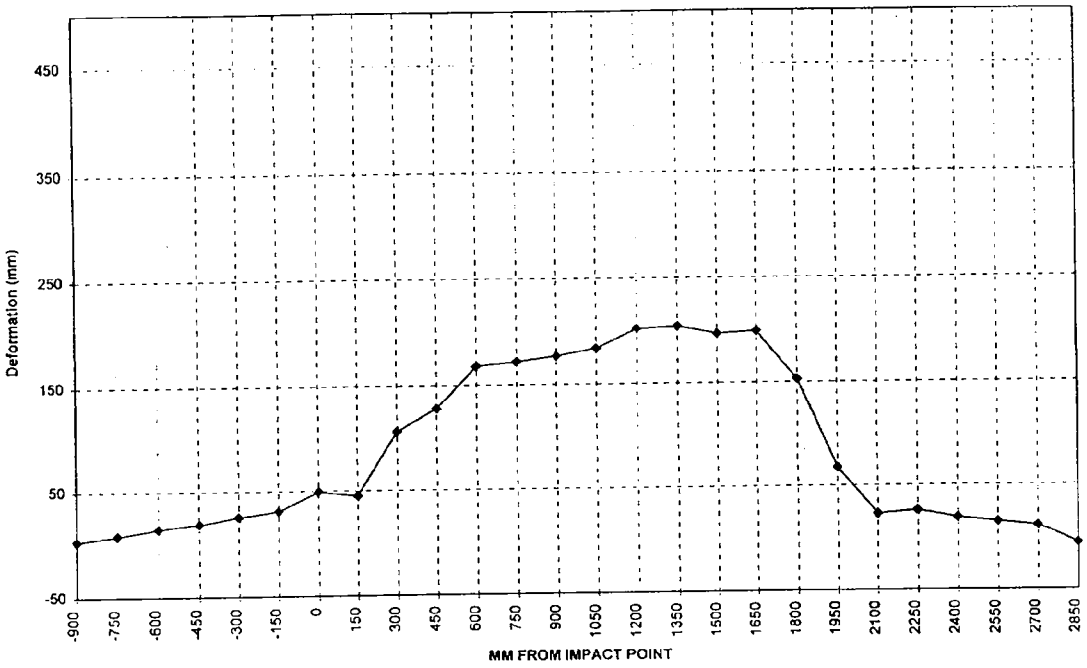
Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

NHTSA NO.: CT5400 Test Date: November 29, 1995

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900	895	898	3
-750	879	887	8
-600	858	872	14
-450	844	863	19
-300	830	856	26
-150	827	858	31
0 (impact point)	804	853	49
150	810	855	45
300	805	910	105
450	804	931	127
600	799	967	168
750	799	971	172
900	799	976	177
1050	799	983	184
1200	796	998	202
1350	799	1003	204
1500	799	996	197
1650	800	999	199
1800	805	958	153
1950	810	877	67
2100	813	836	23
2250	822	848	26
2400	830	849	19
2550	841	856	15
2700	847	858	11
2850	866	860	-6
3000	886	876	-10

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 4 - WINDOW SILL

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

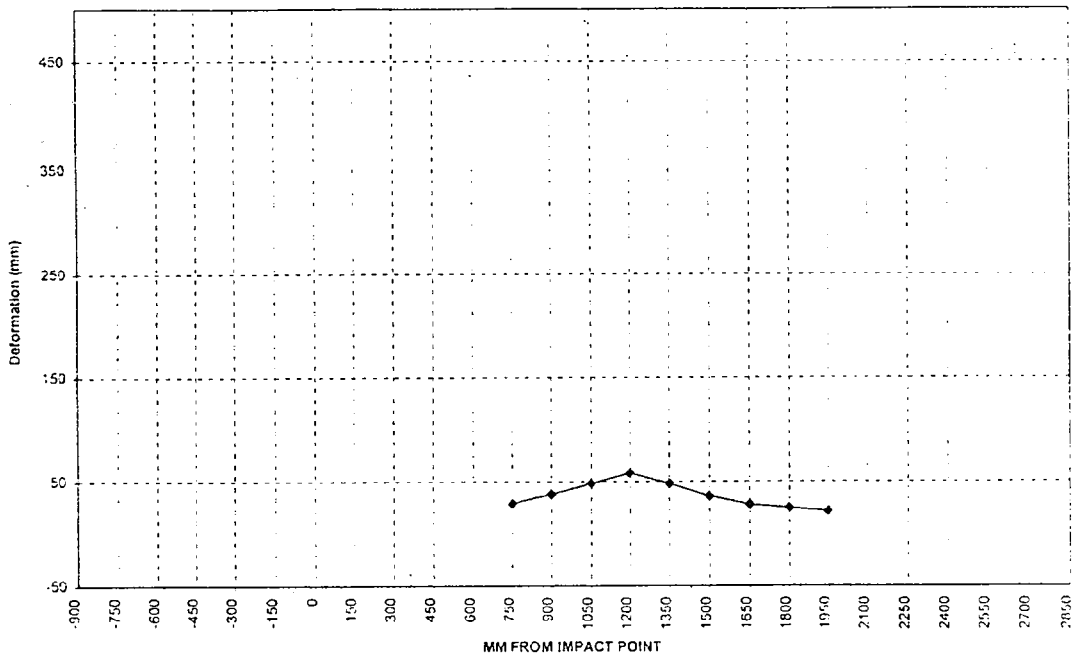
Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

NHTSA NO.: CT5400 Test Date: December 16, 1995

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150			
300			
450			
600			
750	1022	1051	29
900	1025	1063	38
1050	1020	1068	48
1200	1020	1078	58
1350	1020	1068	48
1500	1025	1061	36
1650	1030	1058	28
1800	1034	1059	25
1950	1038	1060	22
2100			
2250			
2400			
2550			
2700			
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH



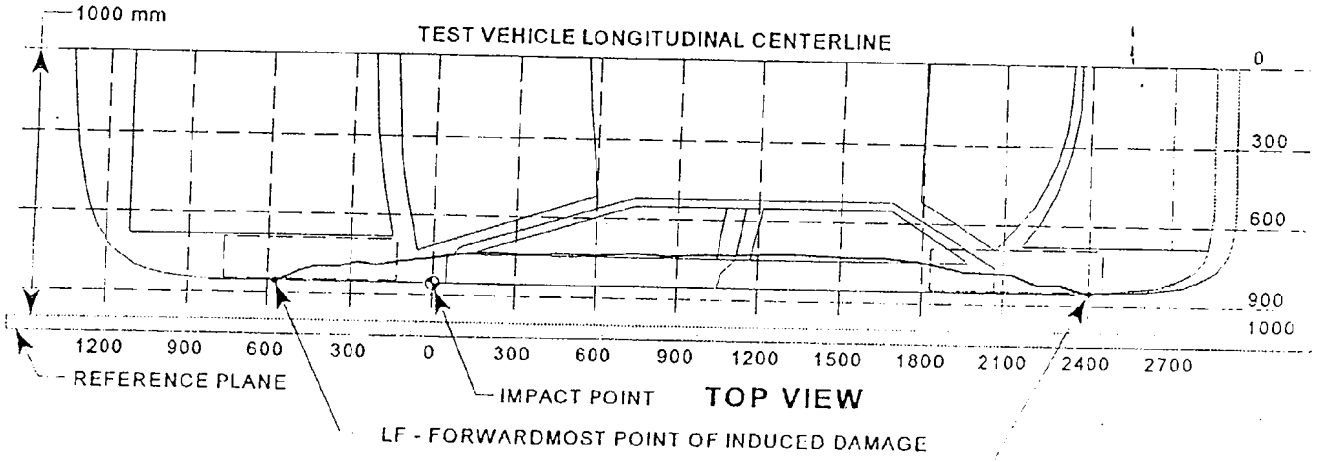
LEVEL 5 - WINDOW TOP

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

NHTSA NO.: CT5400 Test Date: November 29, 1995



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 = -450 mm)	761	761	0
2. 75 mm	918	758	160
3. 690 mm	1052	758	294
4. 1350 mm	1081	757	324
5. 2050 mm	805	763	42
6. (LR = 2700 mm)	760	760	0

DATA SHEET NO. 12

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

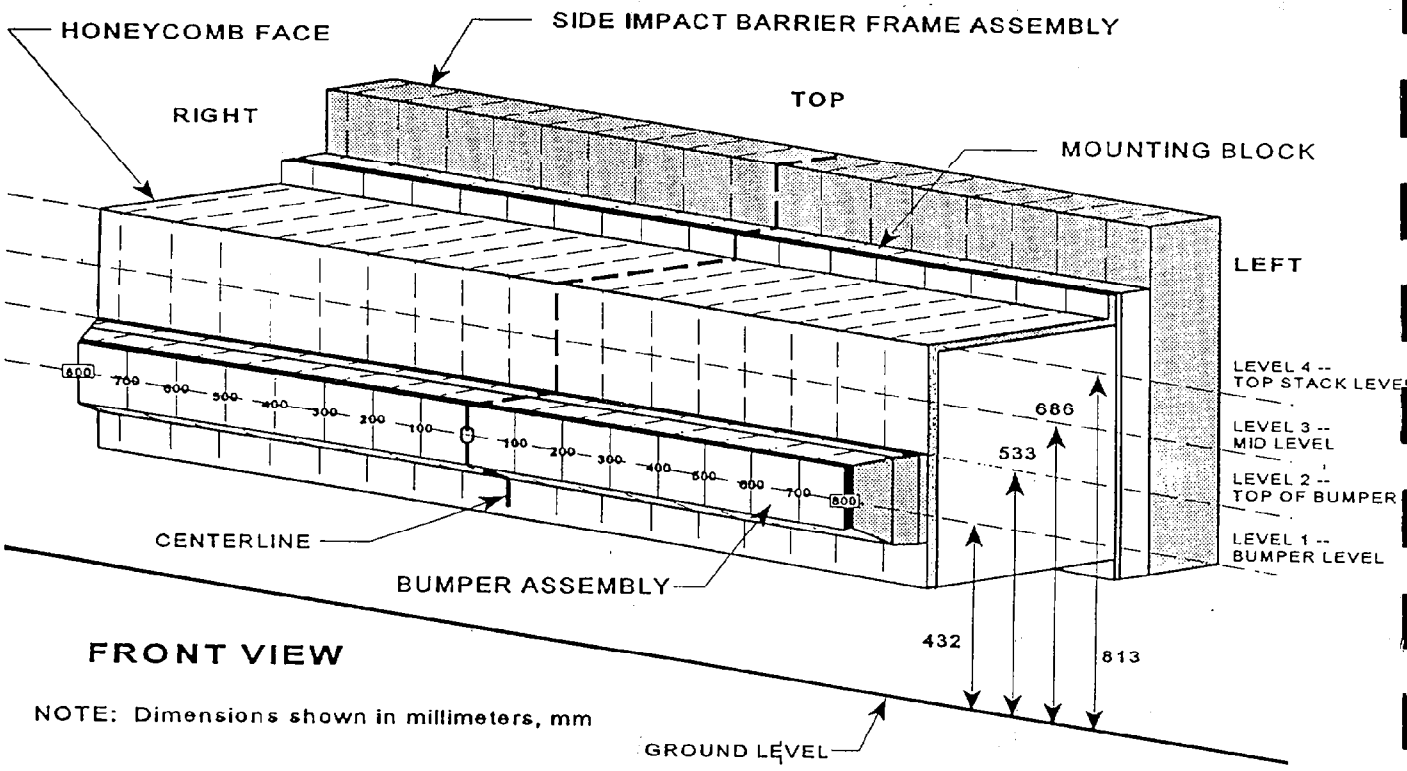
Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

		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	25	-2	-1	-1	0	1	1	3	2	4	6	8	11	33	60	101	148
Mid Level Level 3	686 mm	28	2	-1	-2	0	1	1	2	4	4	5	6	7	9	29	91	117
Top Bumper Level 2	533 mm	46	20	6	4	2	3	6	7	9	12	15	18	20	24	35	60	81
Mid Bumper Level 1	432 mm	61	37	20	8	5	5	7	9	12	15	18	21	26	35	58	90	115

See next page for Barrier Face Graphic

DATA SHEET NO. 12 (Cont'd)

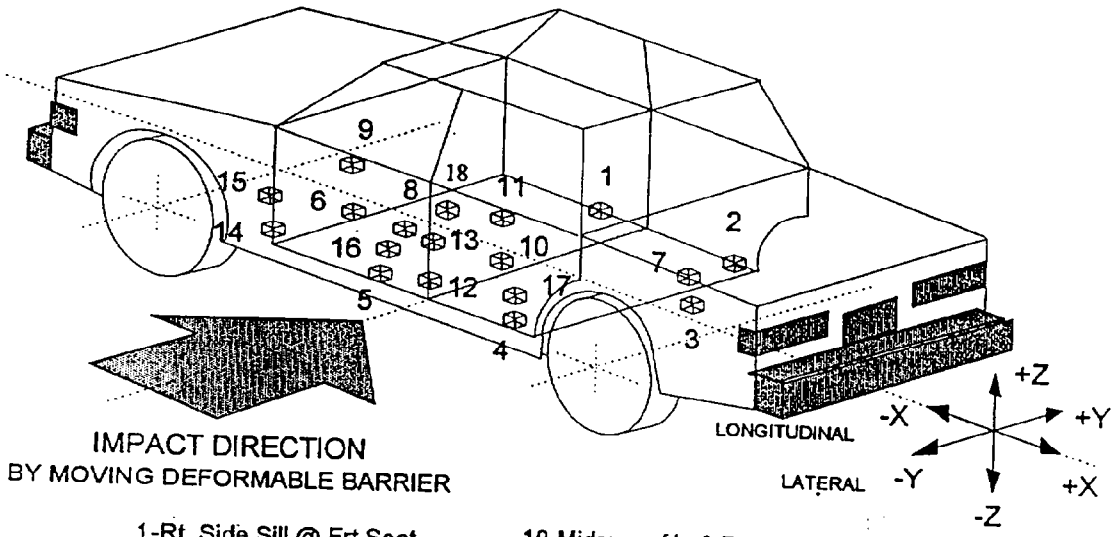


DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995



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

DATA SHEET NO. 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

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	2669	642	195	4.8	-3.2	18.8	-3.5	3.7	-3.1	19.1
2	Rt. Side Sill @ Rear Seat	1941	652	205	4.7	-4.0	22.5	-3.3	4.1	-3.3	23.0
3	Rr. Floorpan Above Axle	1022	0	435	3.8	-8.9	20.9	-3.6	14.4	-12.0	26.3
4	Left Side Sill @ Rr. Seat	1991	653	215	---	---	58.7	-35.3	---	---	---
5	Left Side Sill @ Frt. Seat	2716	643	200	---	---	24.0	-5.5	---	---	---
7	Right Rear Occupant Compartment	1814	300	380	---	---	21.5	-2.2	---	---	---
12	Left Lower B-Post	2060	700	405	---	---	25.0	-18.7	---	---	---
13	Left Mid B-Post[1]	2091	710	870	---	---	60.7	-20.0	---	---	---
14	Left Lower A-Post	3111	675	252	---	---	168.2	-194.4	---	---	---
15	Left Mid A-Post	3093	785	732	---	---	141.9	-32.5	---	---	---
16	Driver Left Seat Track**	2630	578	315	---	---	**	**	---	---	---
18	Vehicle CG	2586	75	337	2.7	-8.8	45.9	-6.2	17.1	-12.3	49.2

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

** No valid data collected

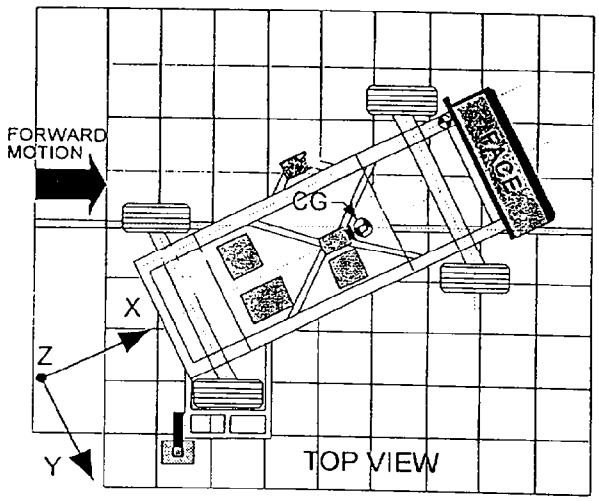
[1] Data is invalid after 28 msec.

DATA SHEET NO. 14

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995



Accel. No.	Description	Coordinates (mm)*			(+) Positive		(-) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	1.3	115	-15.0	41
	Lateral (Y)	---	---	---	0.4	176	-7.3	37
	Vertical (Z)	---	---	---	10.4	30	-7.0	20
	Resultant (R)	---	---	---	18.1	30	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	3.7	189	-20.0	37
	Lateral (Y)	---	---	---	N/A	N/A	-9.1	87

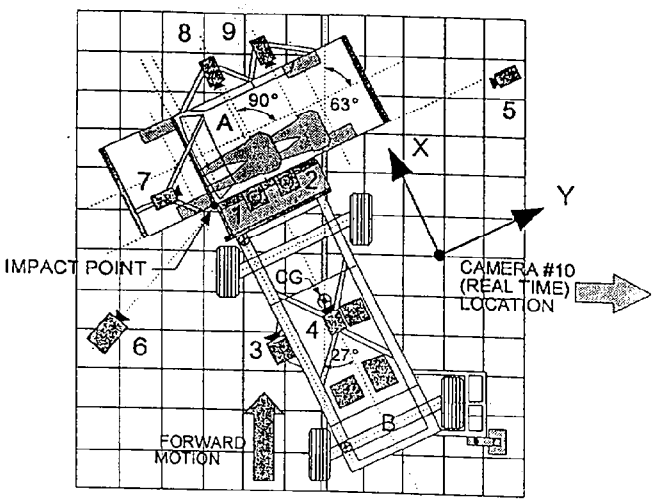
*Reference: X - Front Axle (+ Forward)
Y - Vehicle Centerline (+ To right)
Z - Ground Level (+ Up)

DATA SHEET NO. 15

HIGH SPEED CAMERA LOCATIONS AND DATA

Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995



Camera No.	View	Coordinates (mm)*			Angle	Lens (mm)	Film Speed (fps)
		X	Y	Z			
	Real Time					13	24
1	Top Impact	-350	850	5400		13	885
2	Top Wide	-700	0	5130		8	1190
3	Cart Pointer					35	826
4	Cart					13	813
5	Right Impact	3740	8070	1860	90°	25	1130
6	Left Overall	2410	2440	1645	90°	13	1031
7	Onboard Driver					8	893
8	Onboard Hood					13	976
9	Onboard Passenger					8	1075

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

DATA SHEET 16

FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

Vehicle Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

TEST REQUIREMENTS:

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

TEST VEHICLE IMPACT TYPE: X Side Impact MDB 33.3 mph (53.6 kph)

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATION(S): None

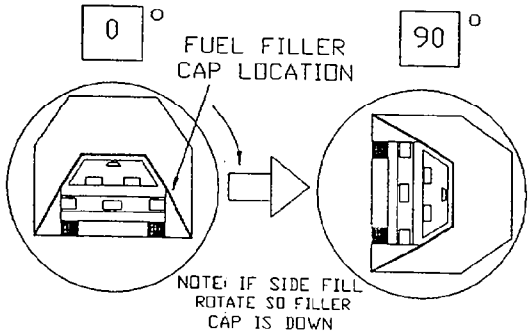
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

TEST PHASE: 0° - 90°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 45 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 45 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	N/R	1 oz

FUEL SPILLAGE LOCATIONS(S): None

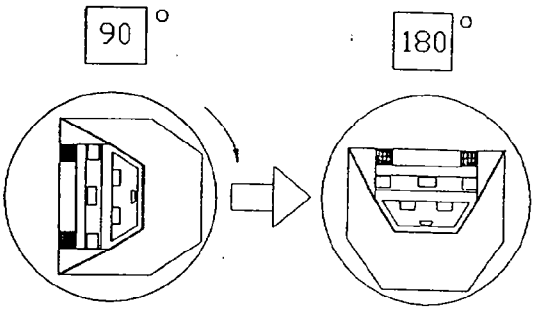
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

TEST PHASE: 90° - 180°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 35 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 35 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	N/R	1 oz

FUEL SPILLAGE LOCATIONS(S): None

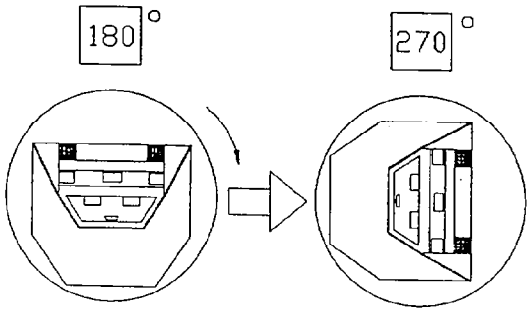
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1996/Mazda/626/4 Door

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

TEST PHASE: 180° - 270°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 20 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 20 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

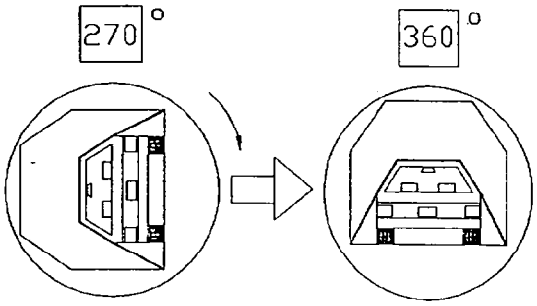
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1996/Geo Metor/3 Door Hatchback

Vehicle NHTSA No.: CT5400 Test Date: November 29, 1995

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 40 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 40 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

APPENDIX A - PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

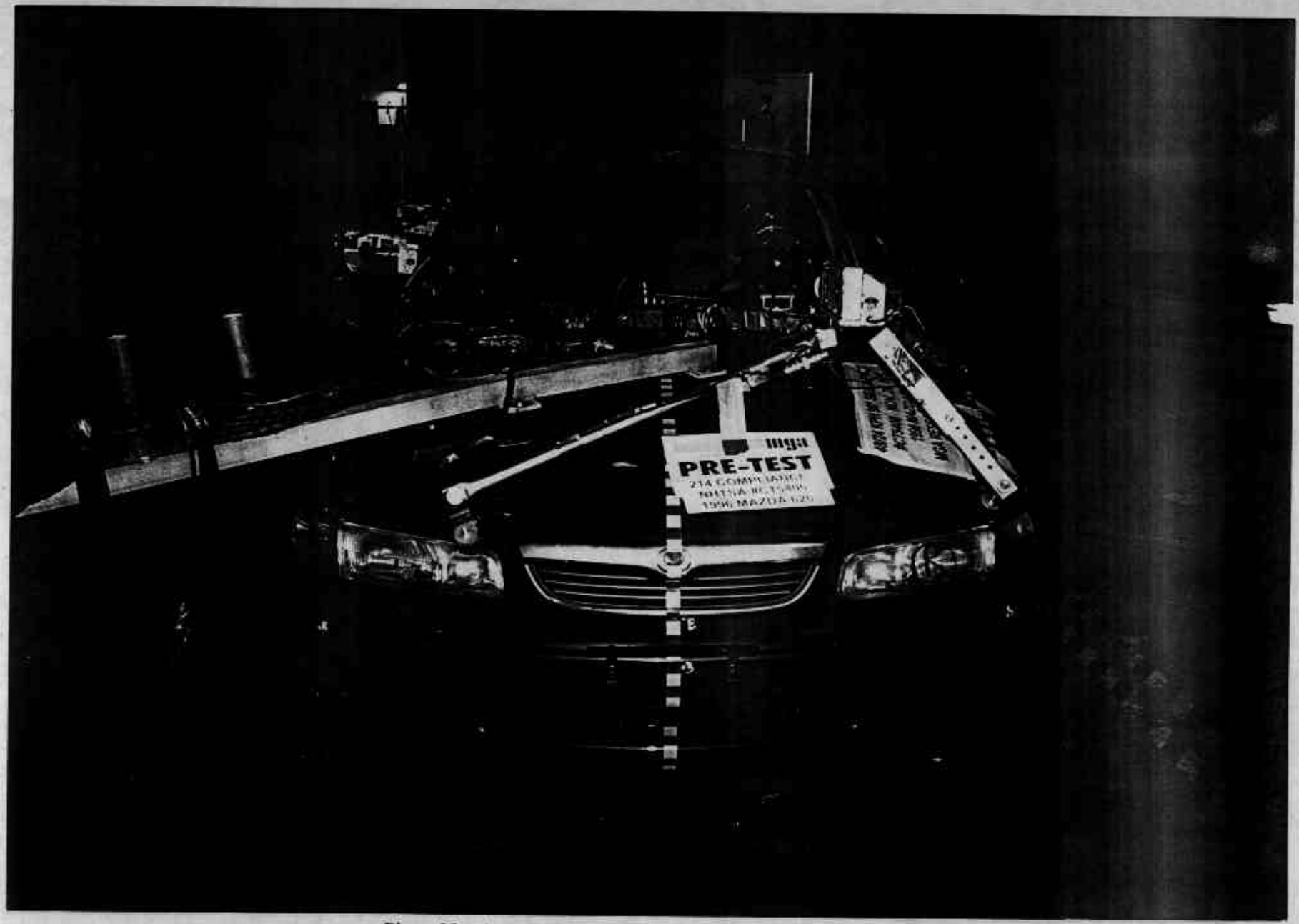


Photo No. A-1 - Pre-Test Front View of Test Vehicle

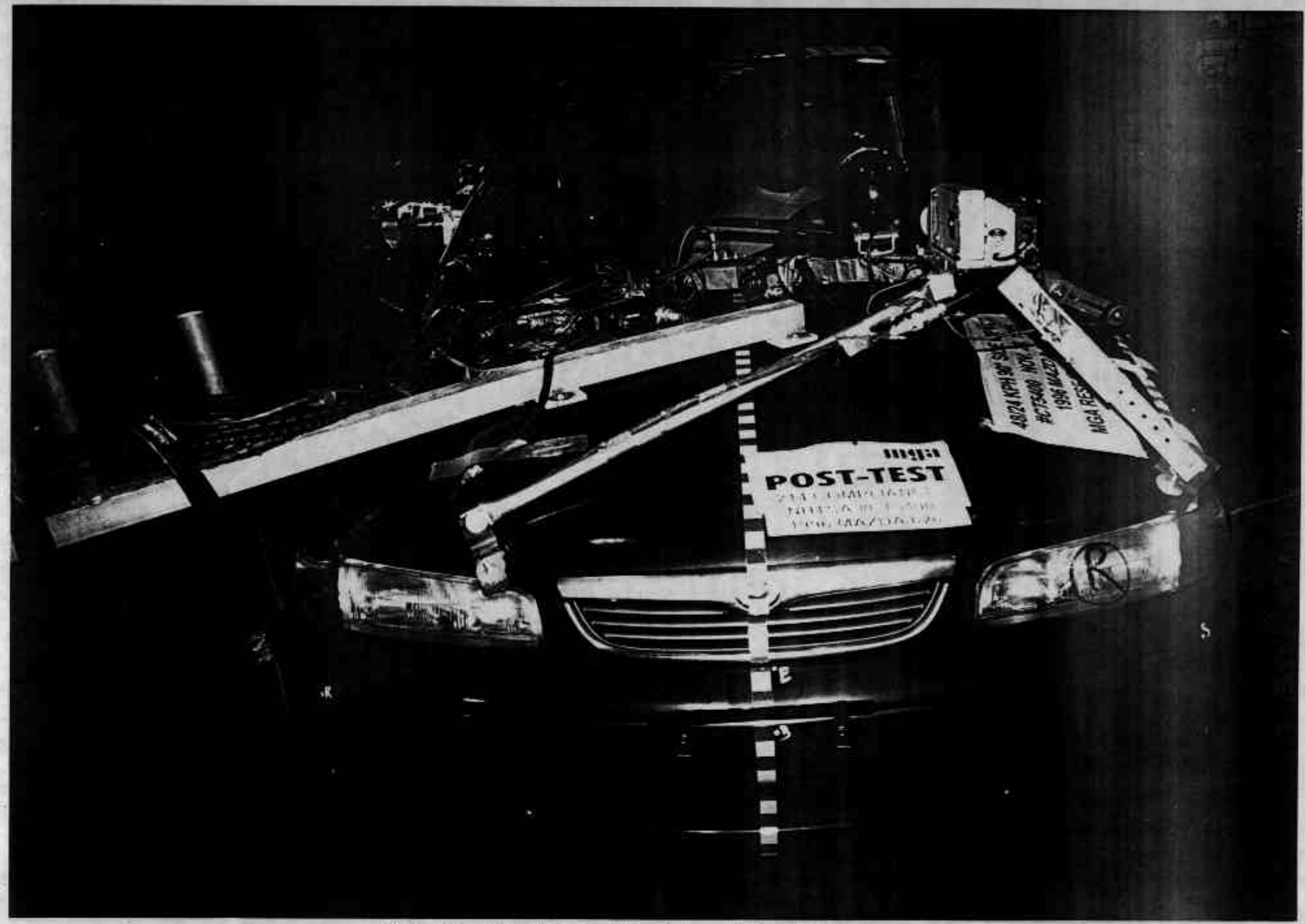
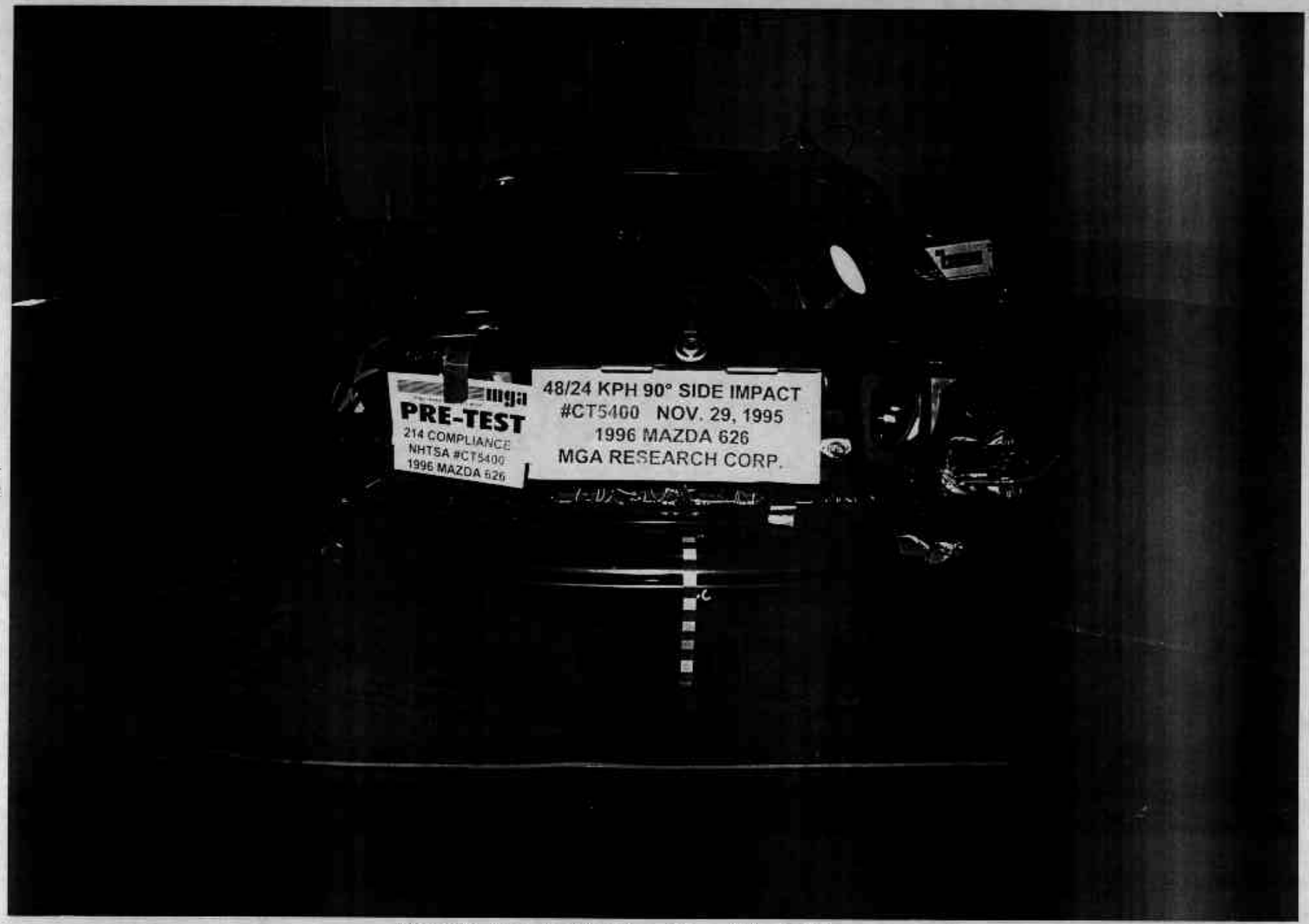


Photo No. A-2 - Post-Test Front View of Test Vehicle



A-3

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

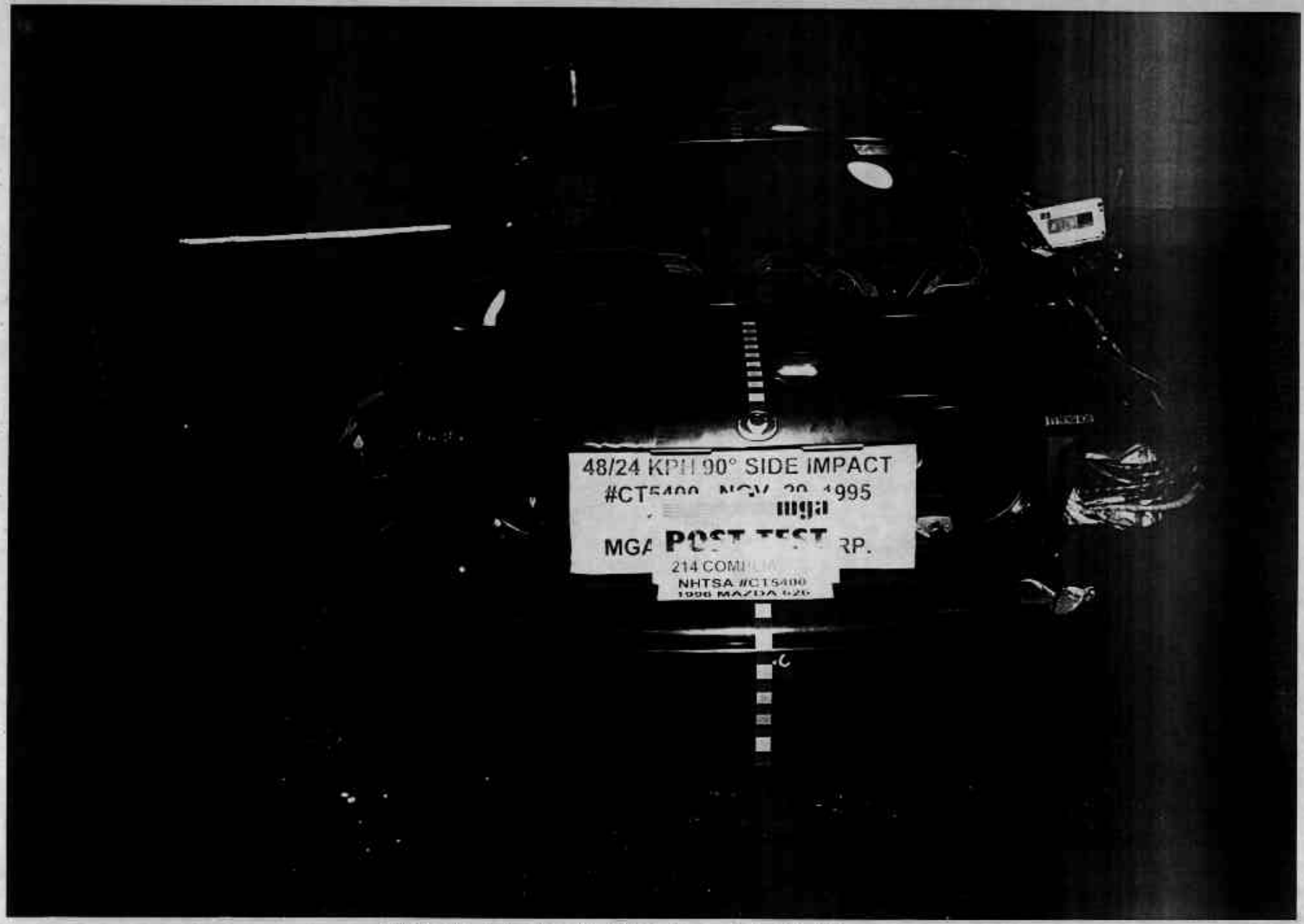


Photo No. A-4 - Post-Test Rear View of Test Vehicle

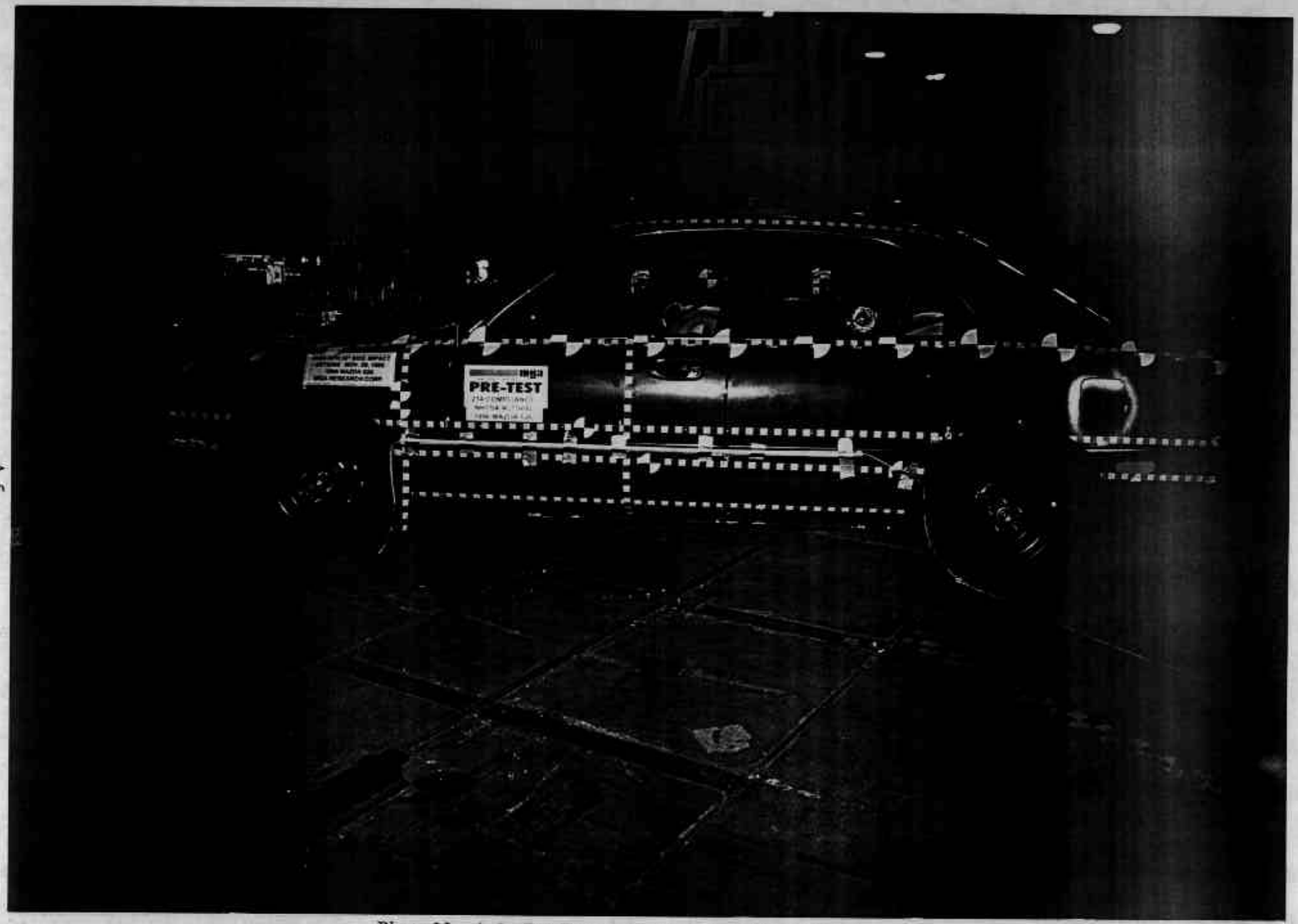


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

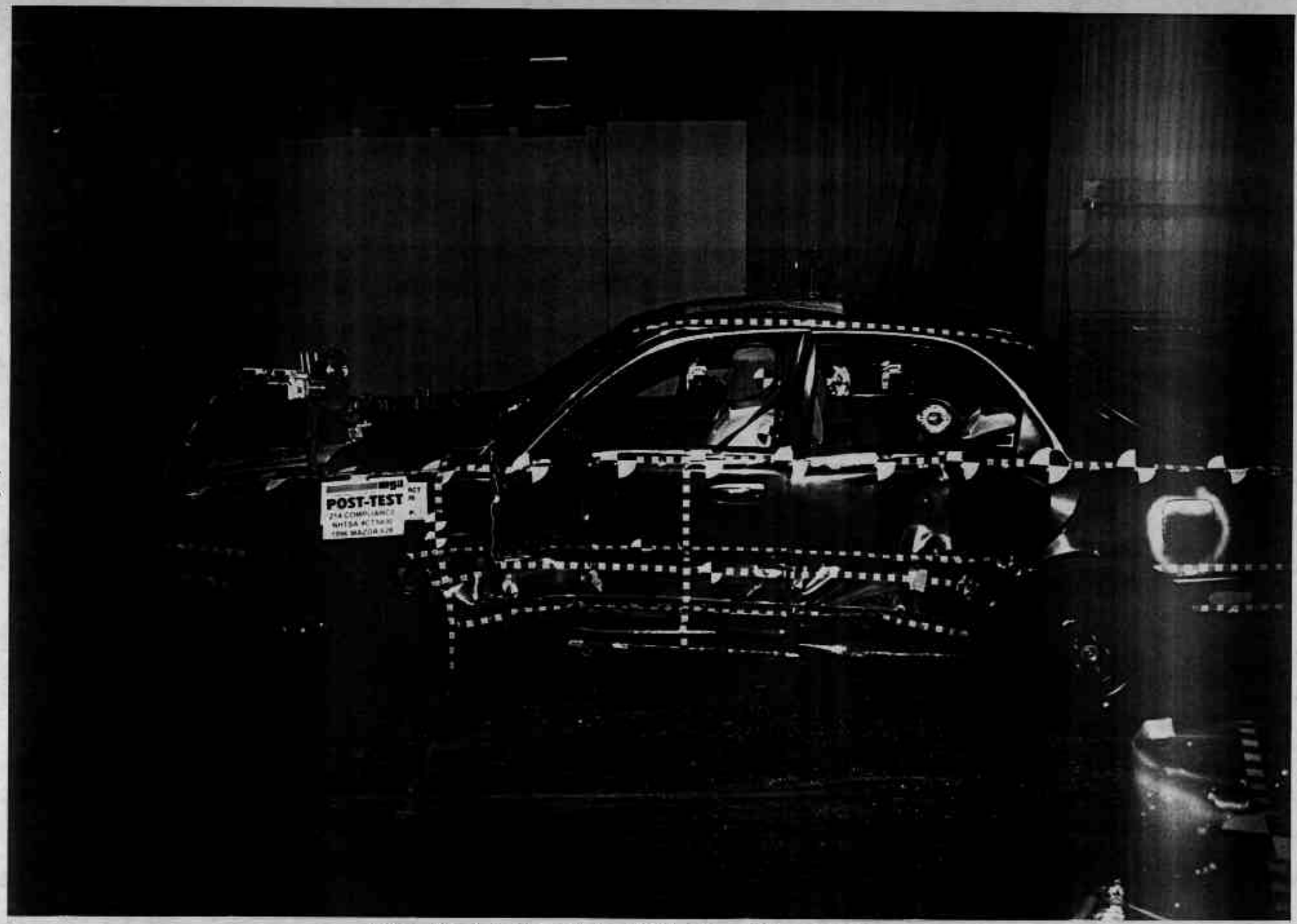


Photo No. A-6 - Post-Test Left Side View of Test Vehicle

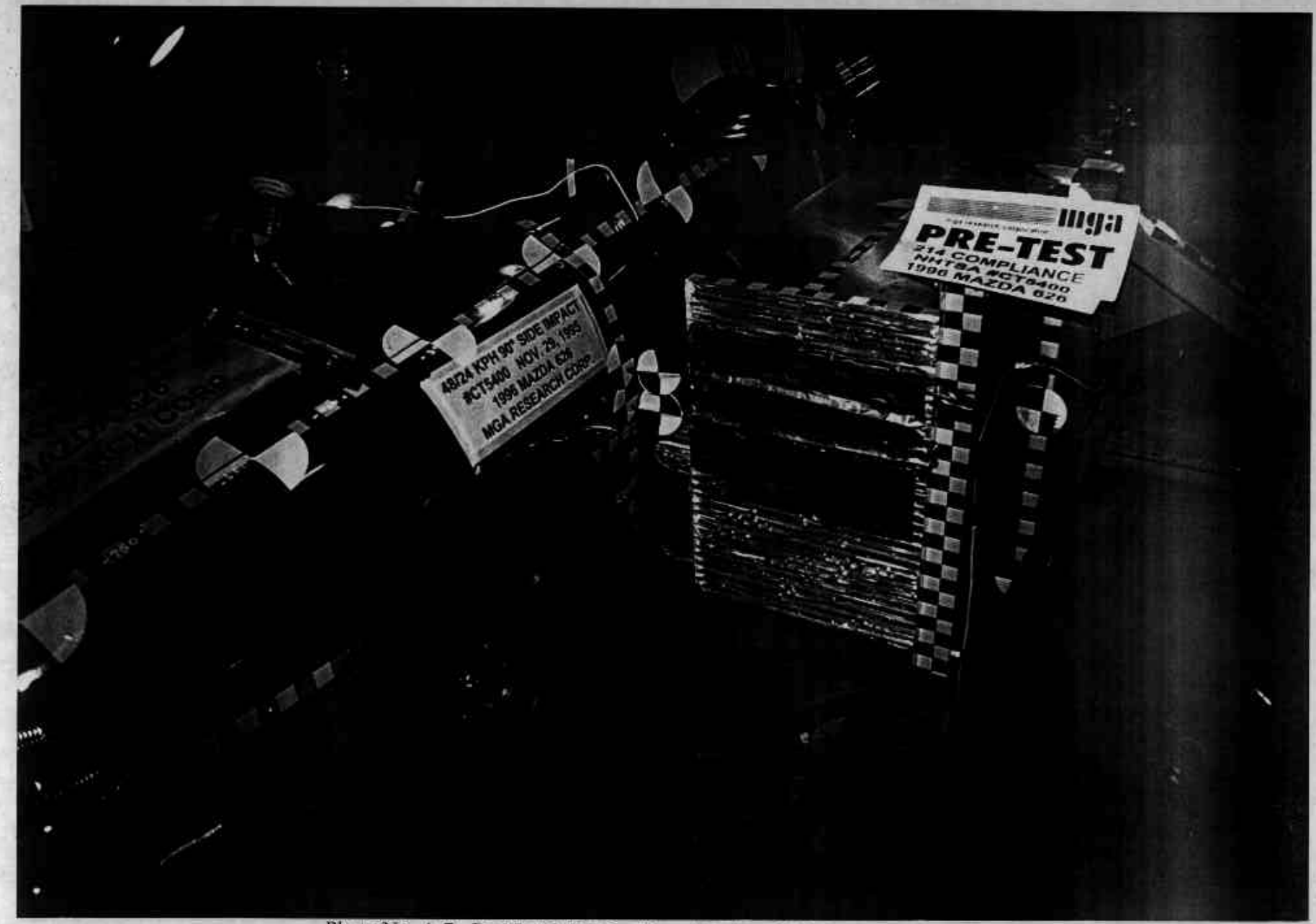
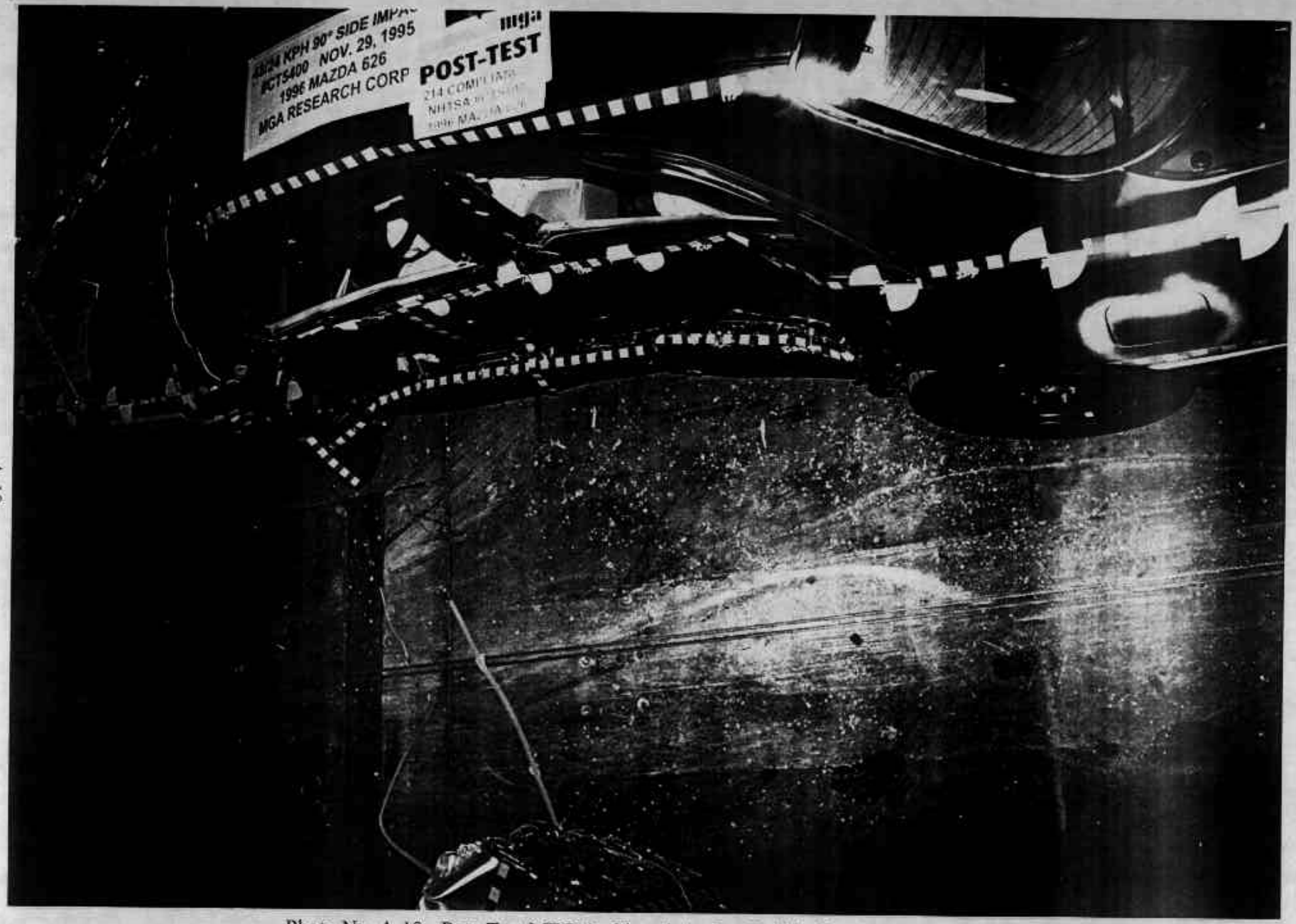


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (left side)

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

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



A-10

Photo No. A-10 - Post-Test MDB Positioned Against Vehicle Overhead View

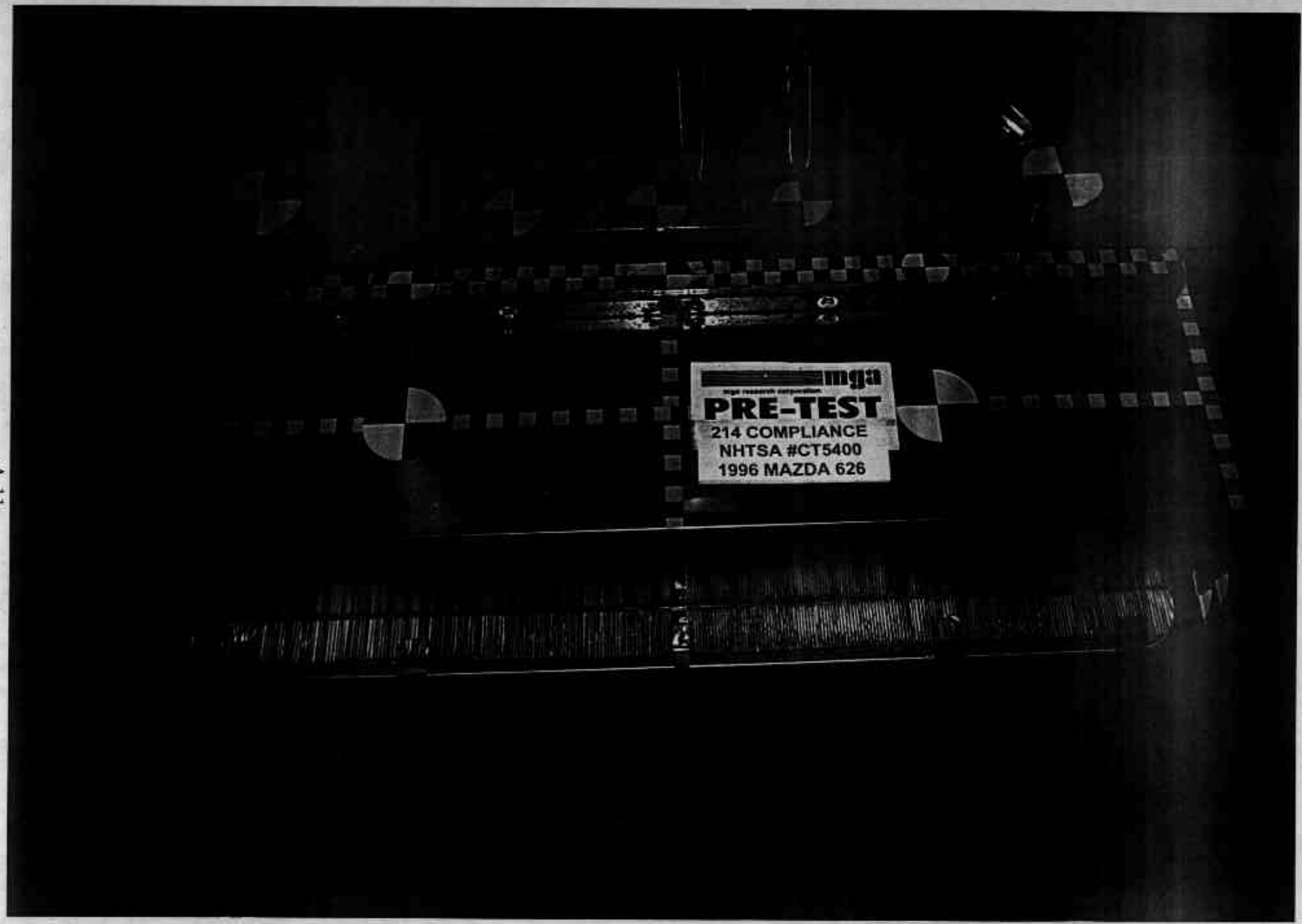


Photo No. A-11 - Pre-Test MDB Top View

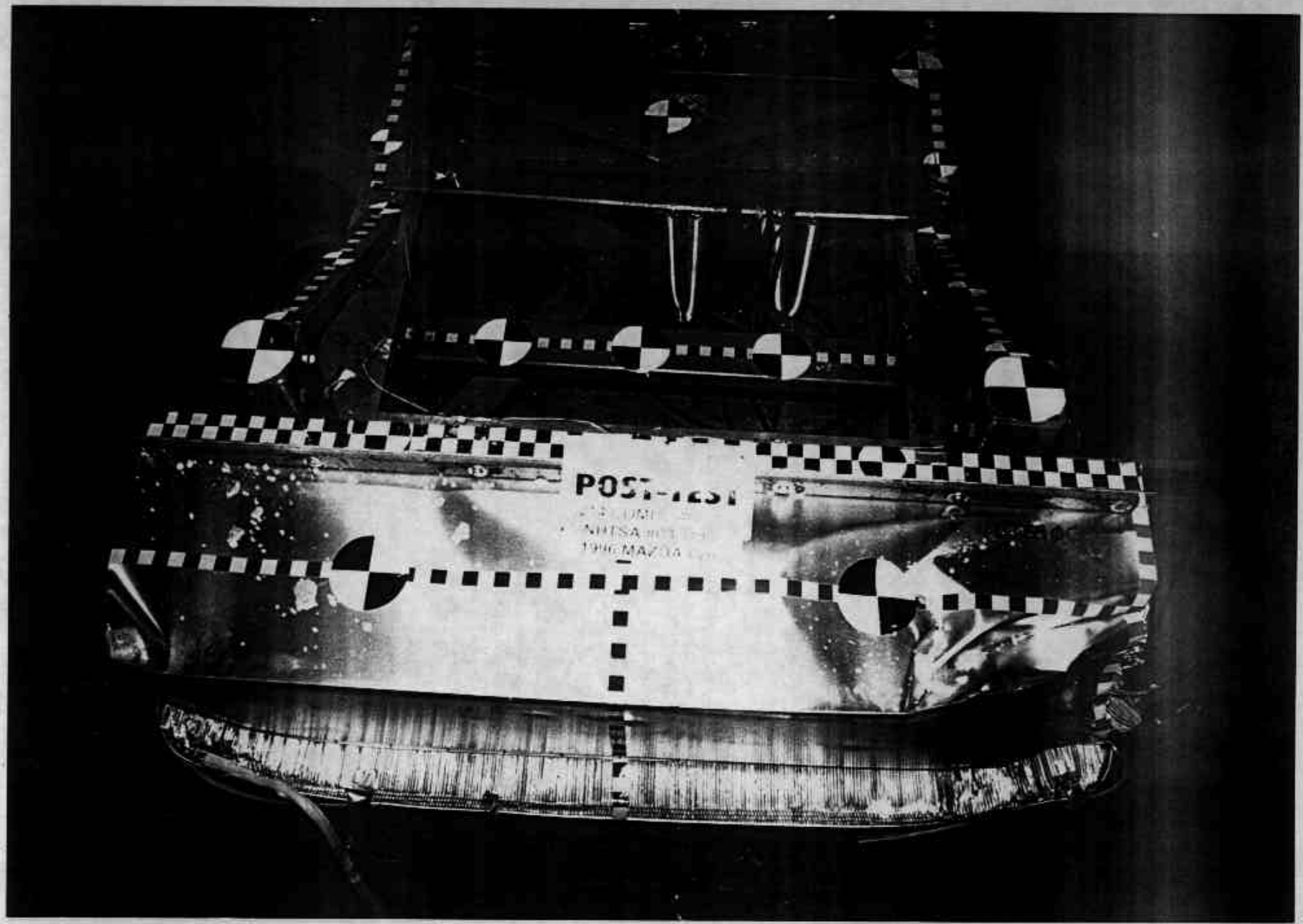


Photo No. A-12 - Post-Test MDB Top View

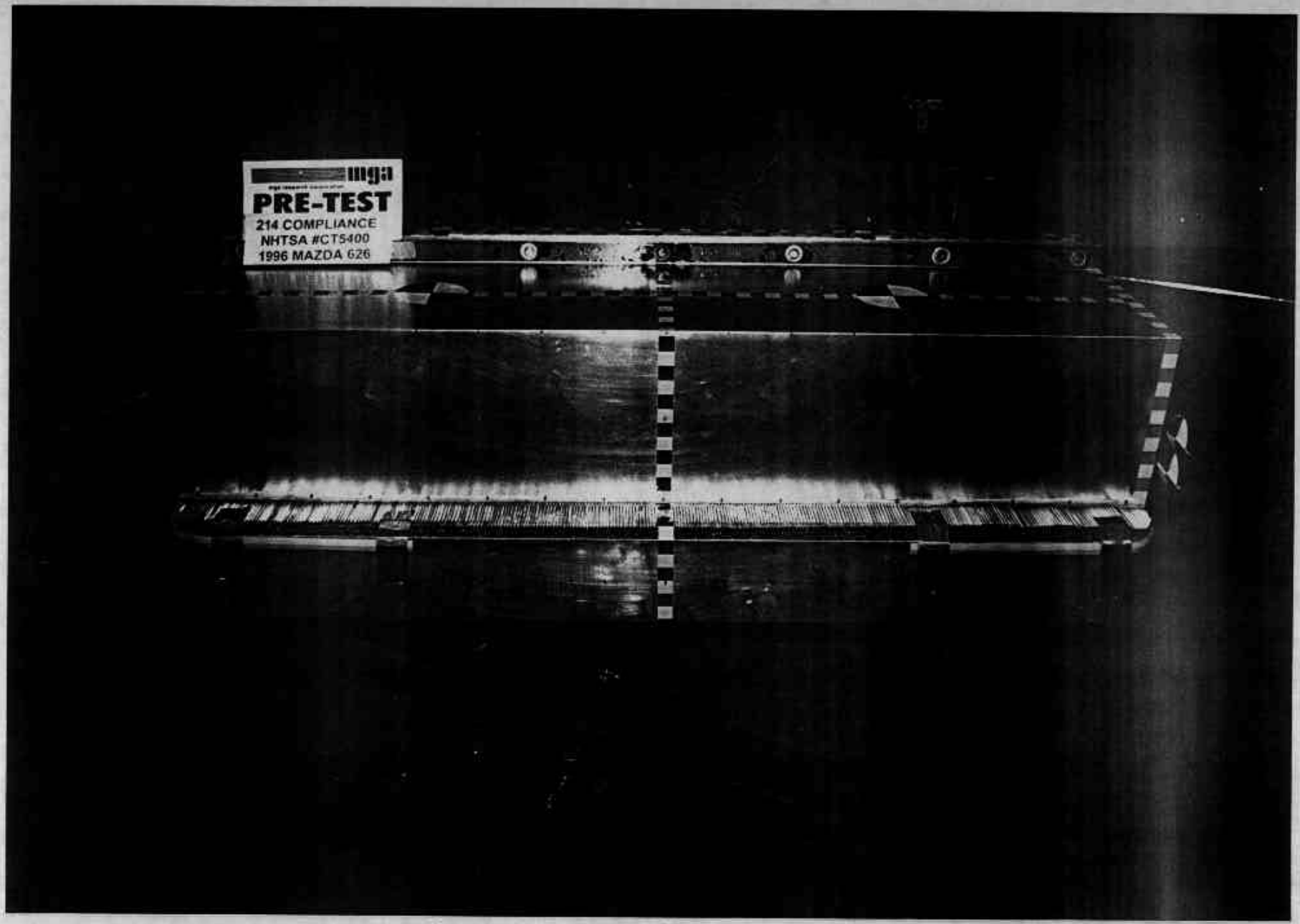


Photo No. A-13 - Pre-Test MDB Front View

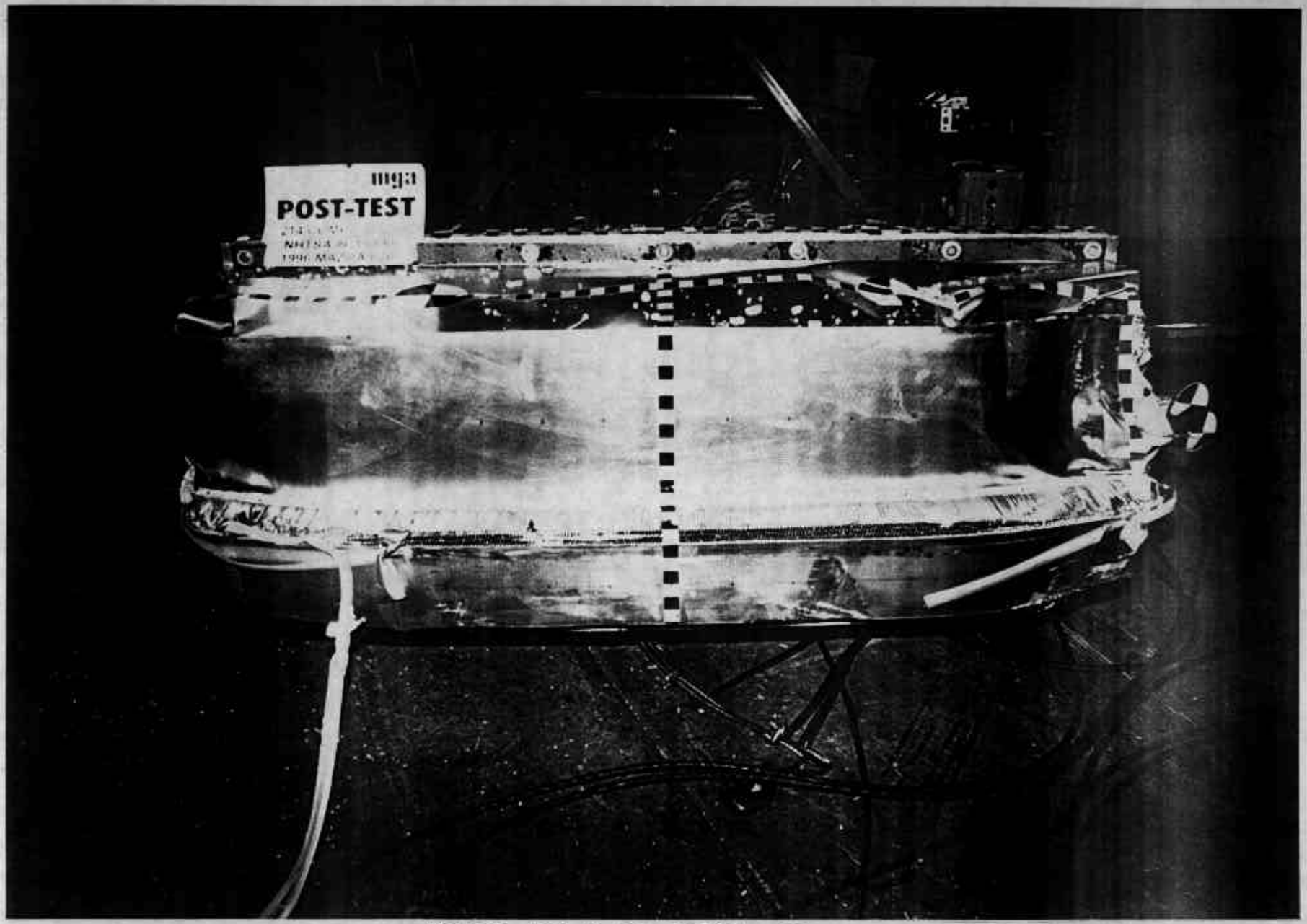


Photo No. A-14 - Post-Test MDB Front View

Photo No. A-15 - Pre-Test MDB Right Side View

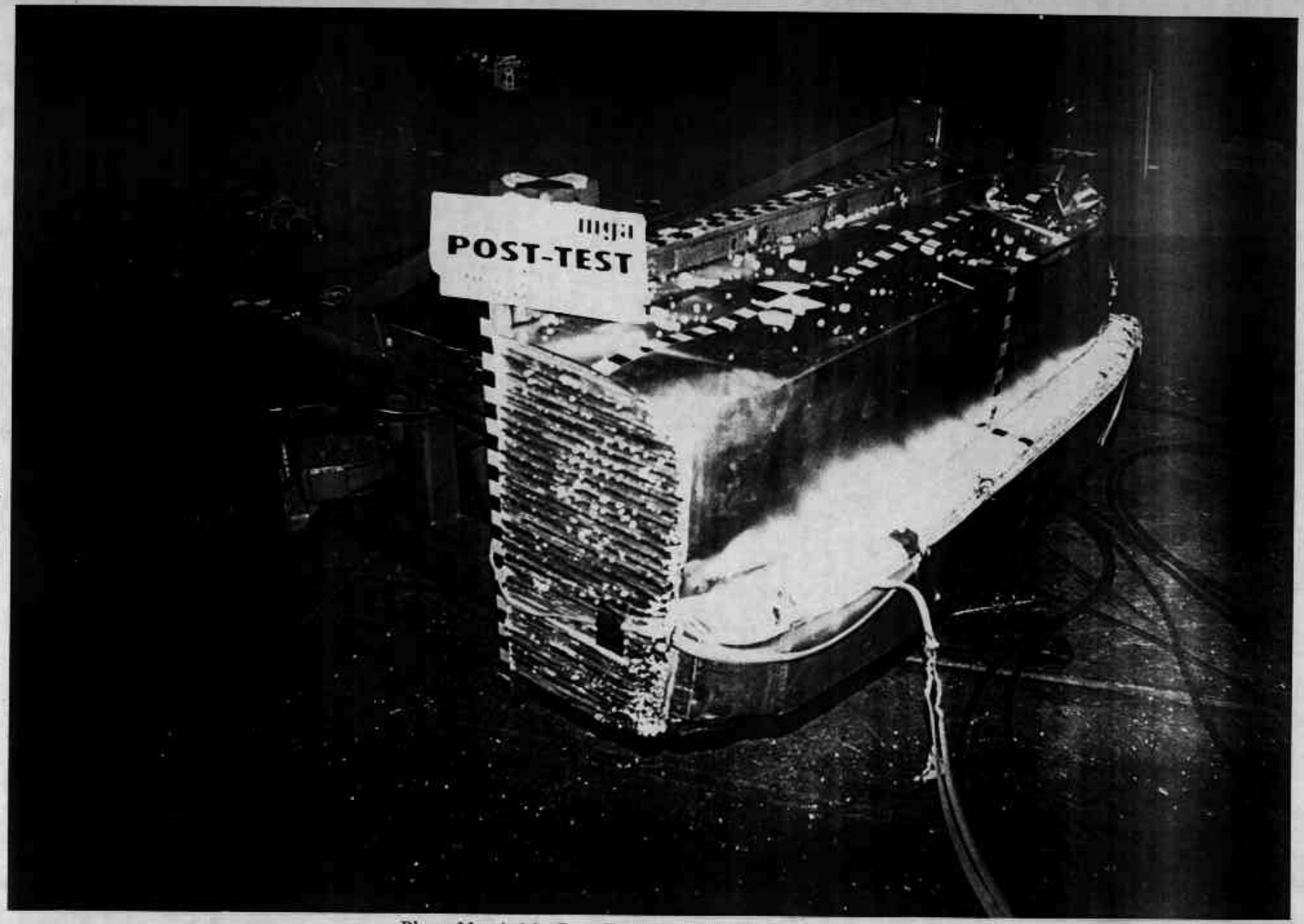


Photo No. A-16 - Post-Test MDB Right Side View

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

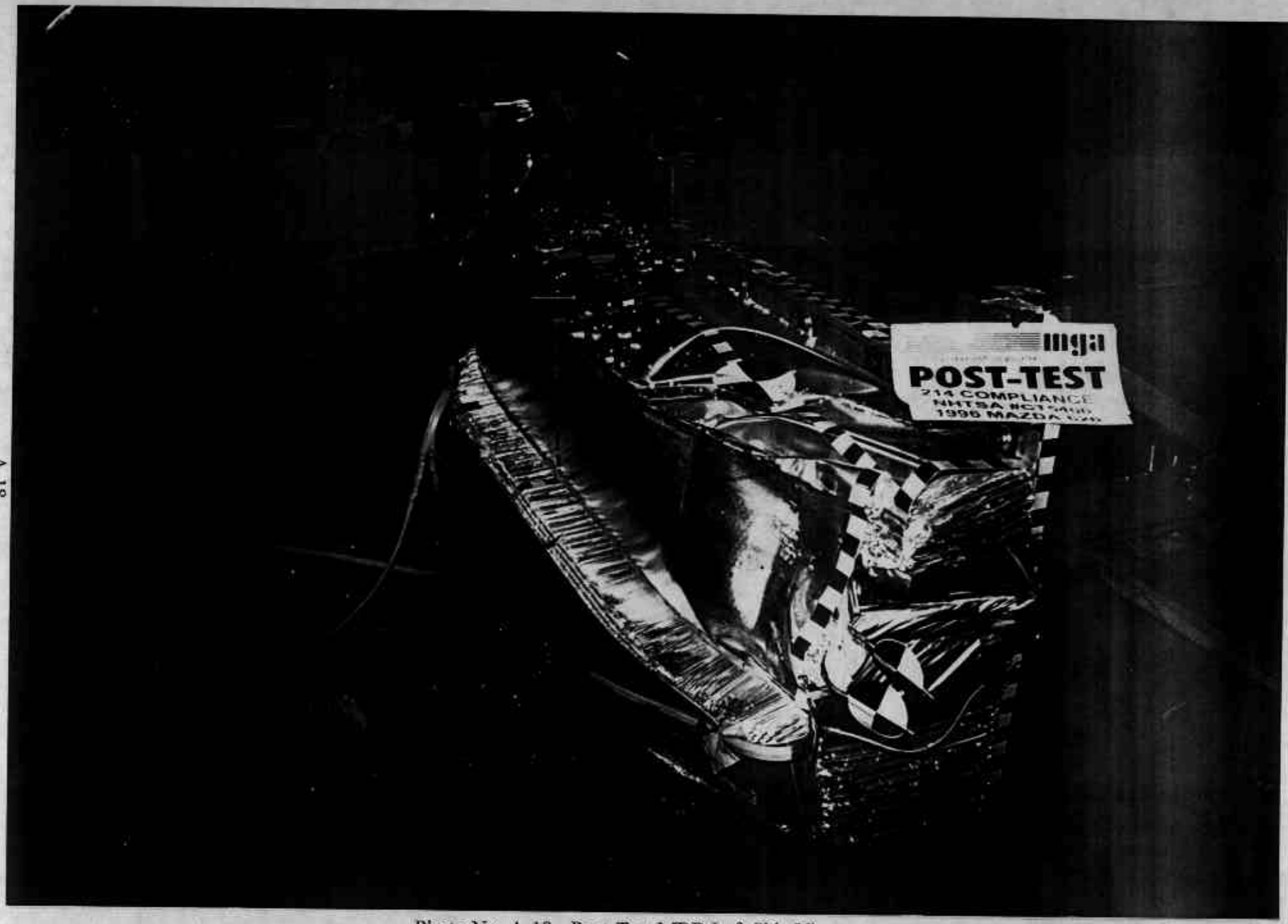


Photo No. A-18 - Post-Test MDB Left Side View

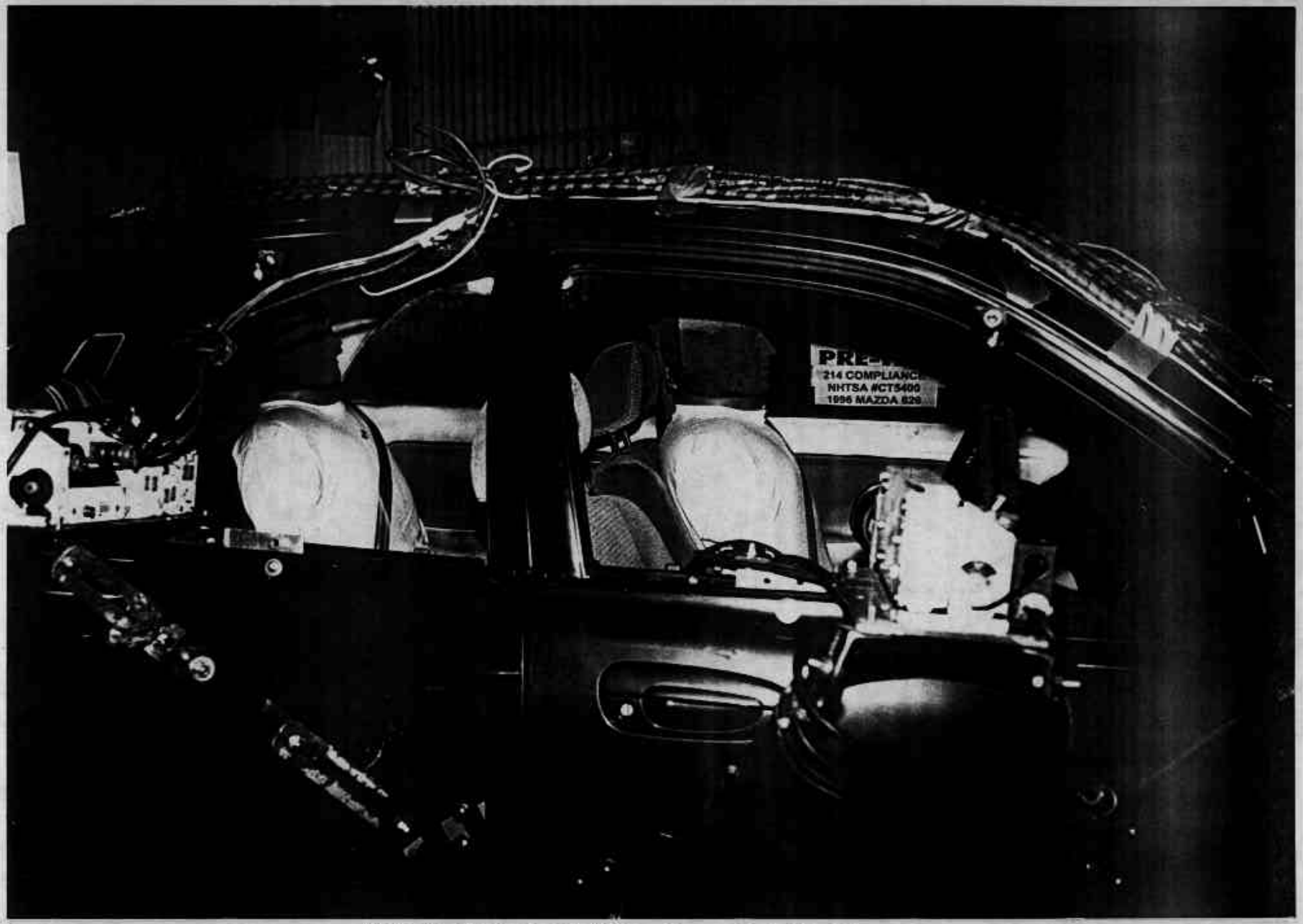
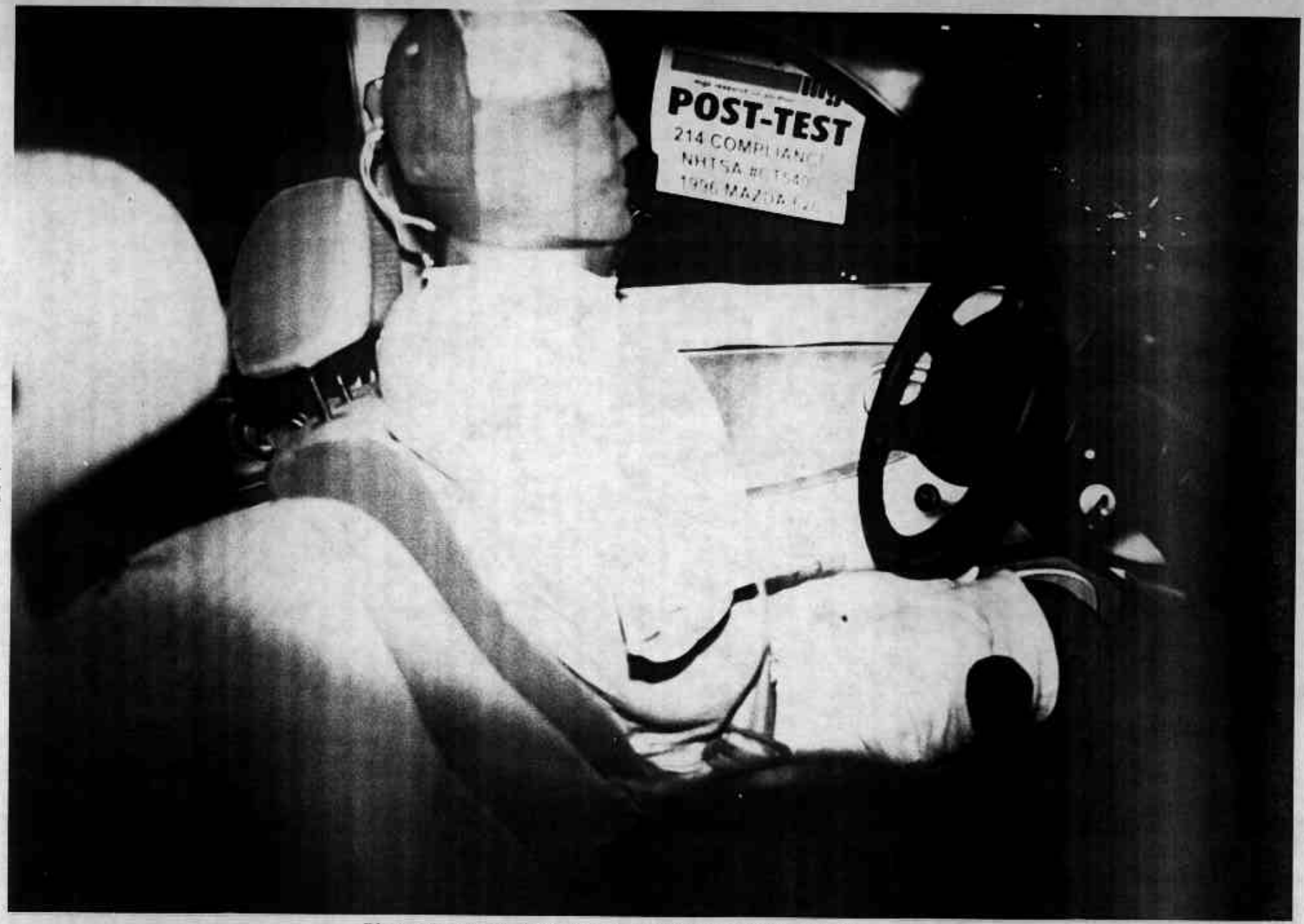


Photo No. A-19 - Pre-Test Driver Dummy Right Side View



A-20

Photo No. A-20 - Post-Test Driver Dummy Right Side View

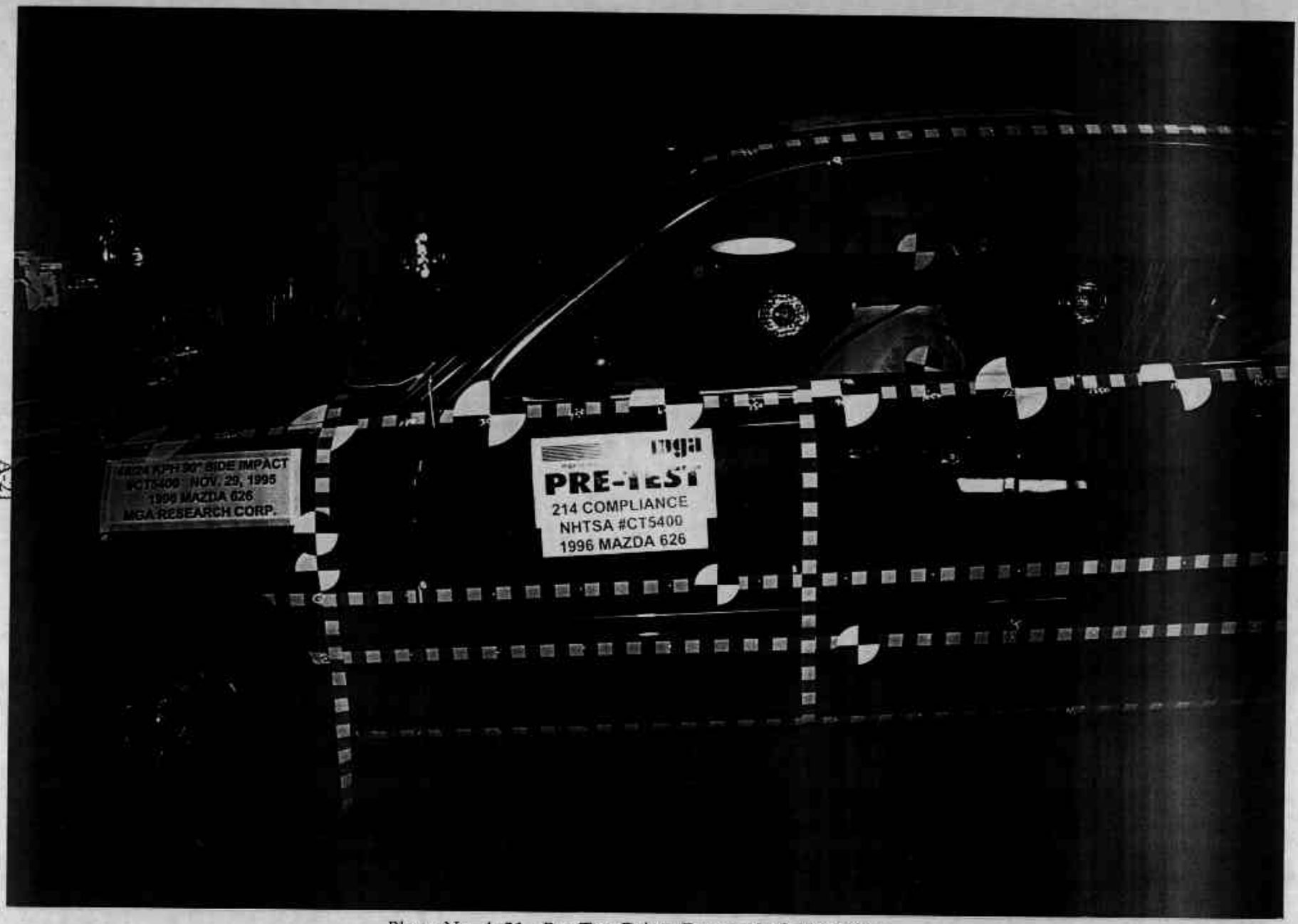


Photo No. A-21 - Pre-Test Driver Dummy Left Side View

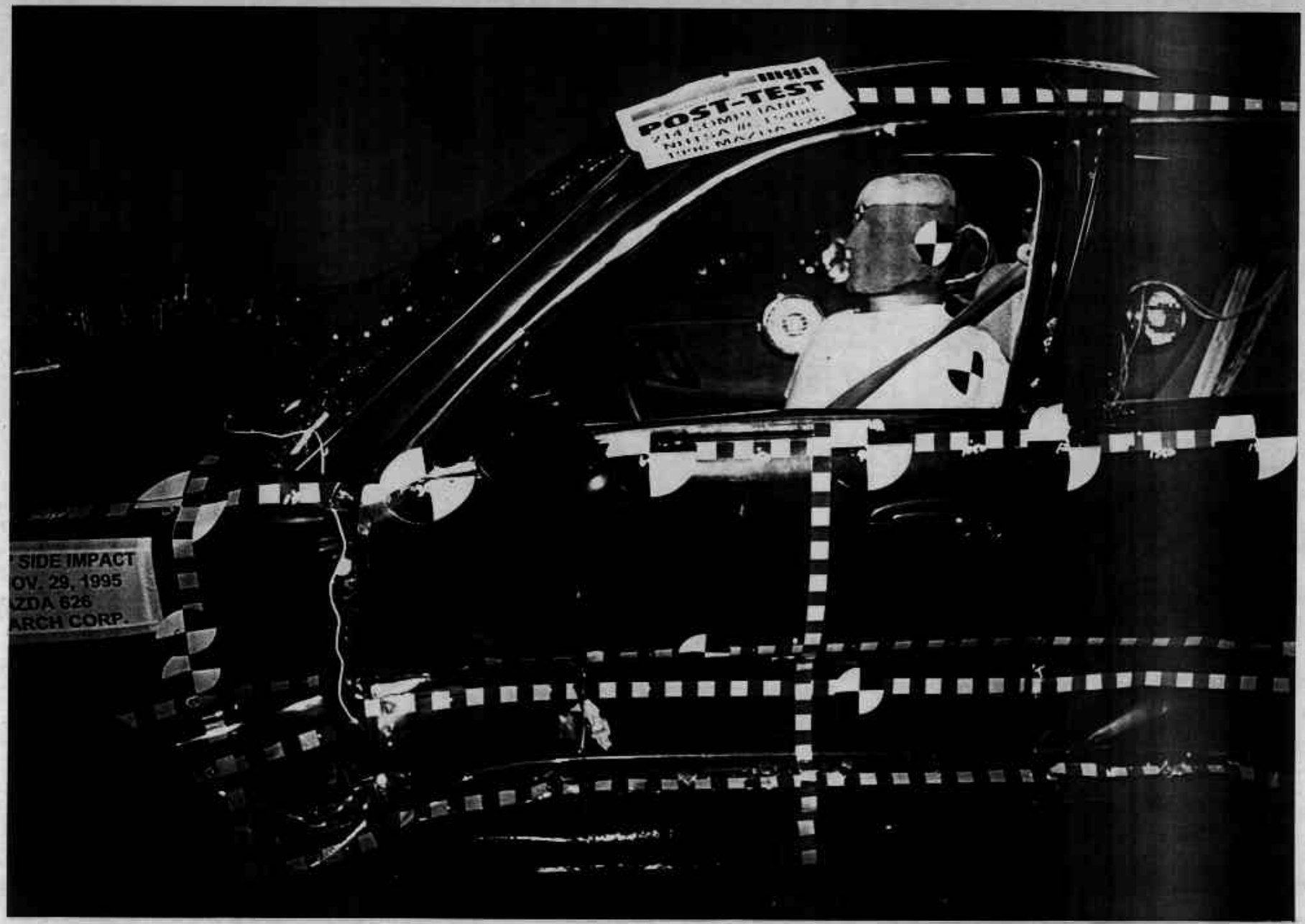


Photo No. A-22 - Post-Test Driver Dummy Left Side View

Photo No. A-23 - Pre-Test Driver Dummy Left Side View (Door Open)

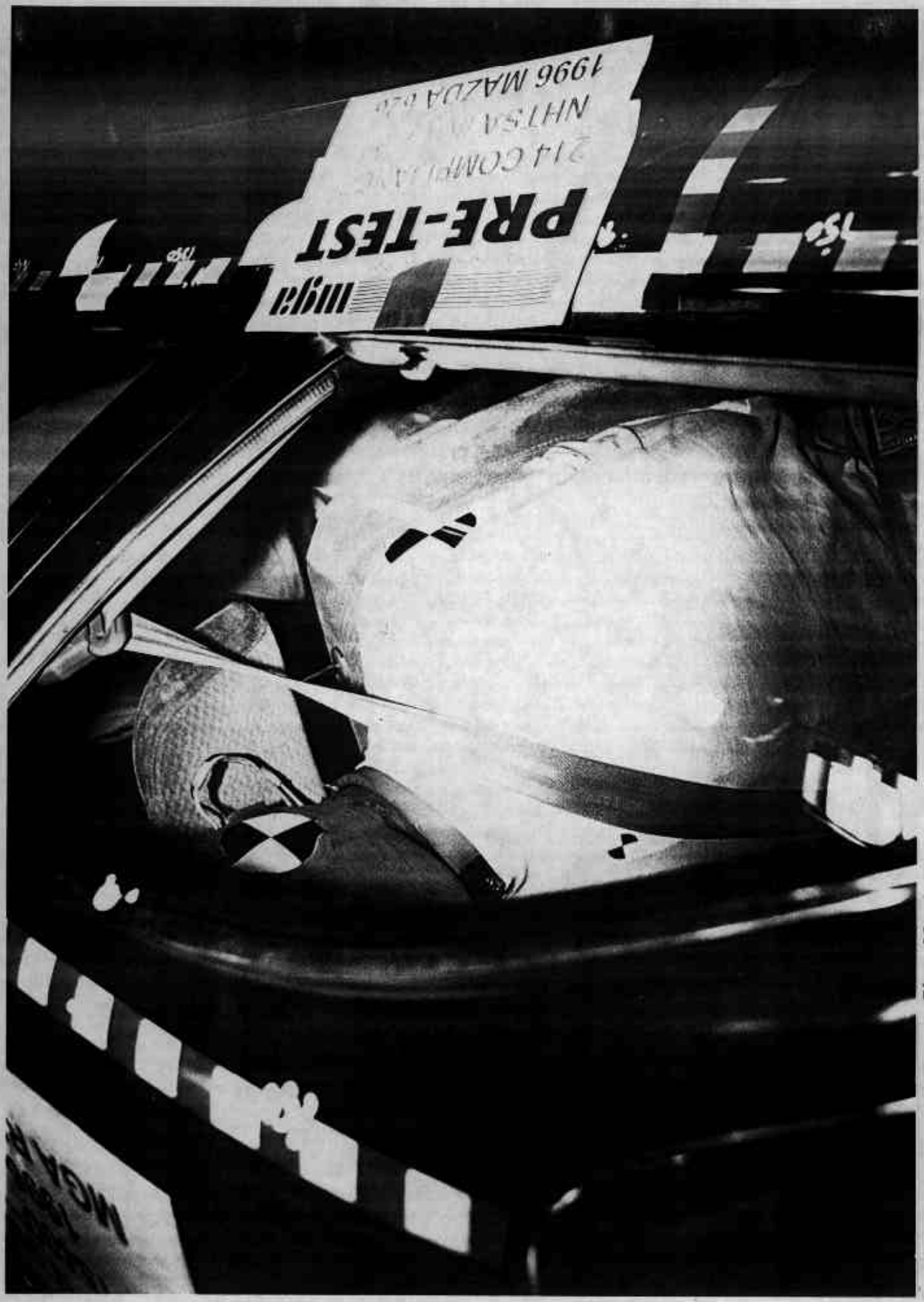
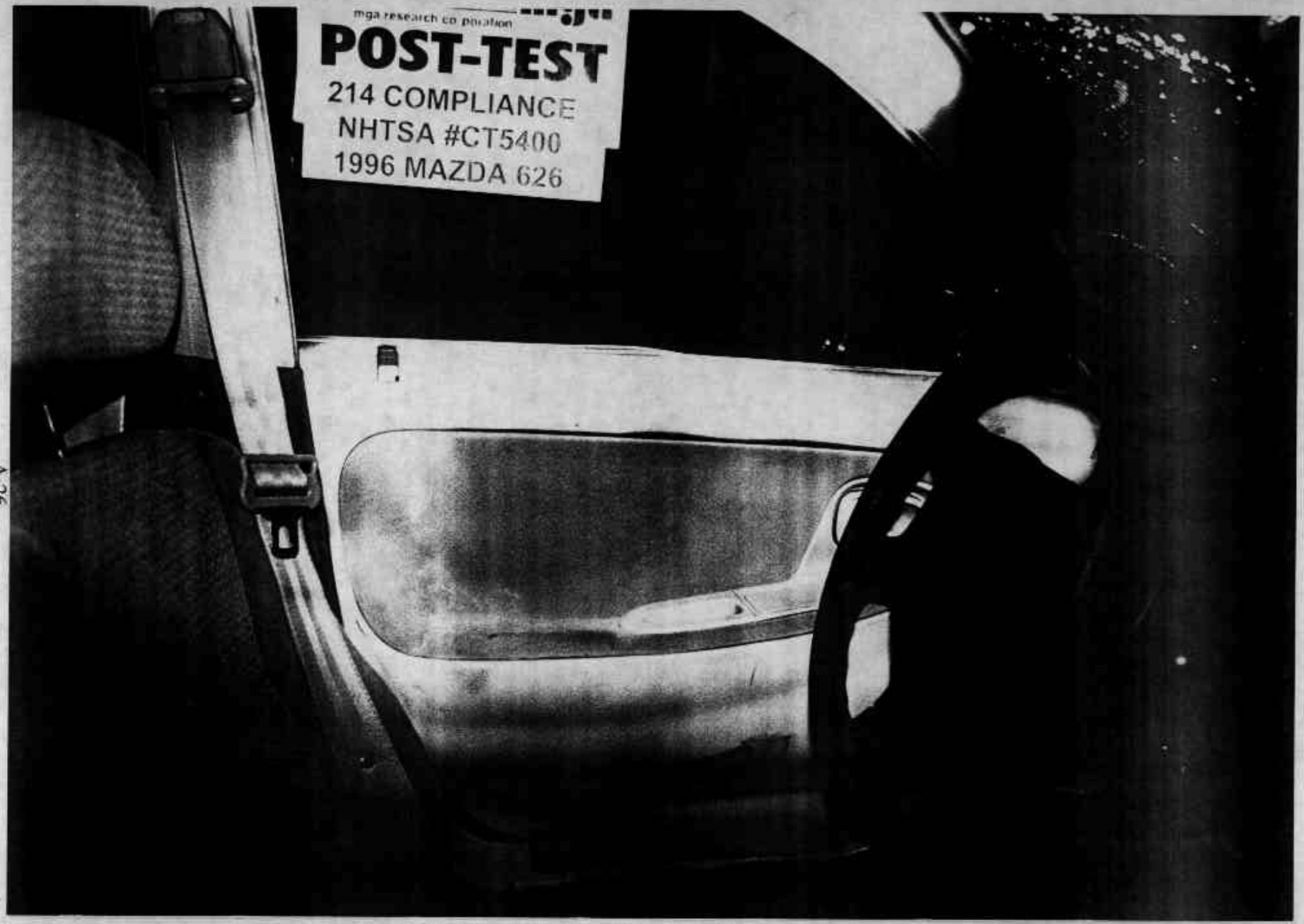


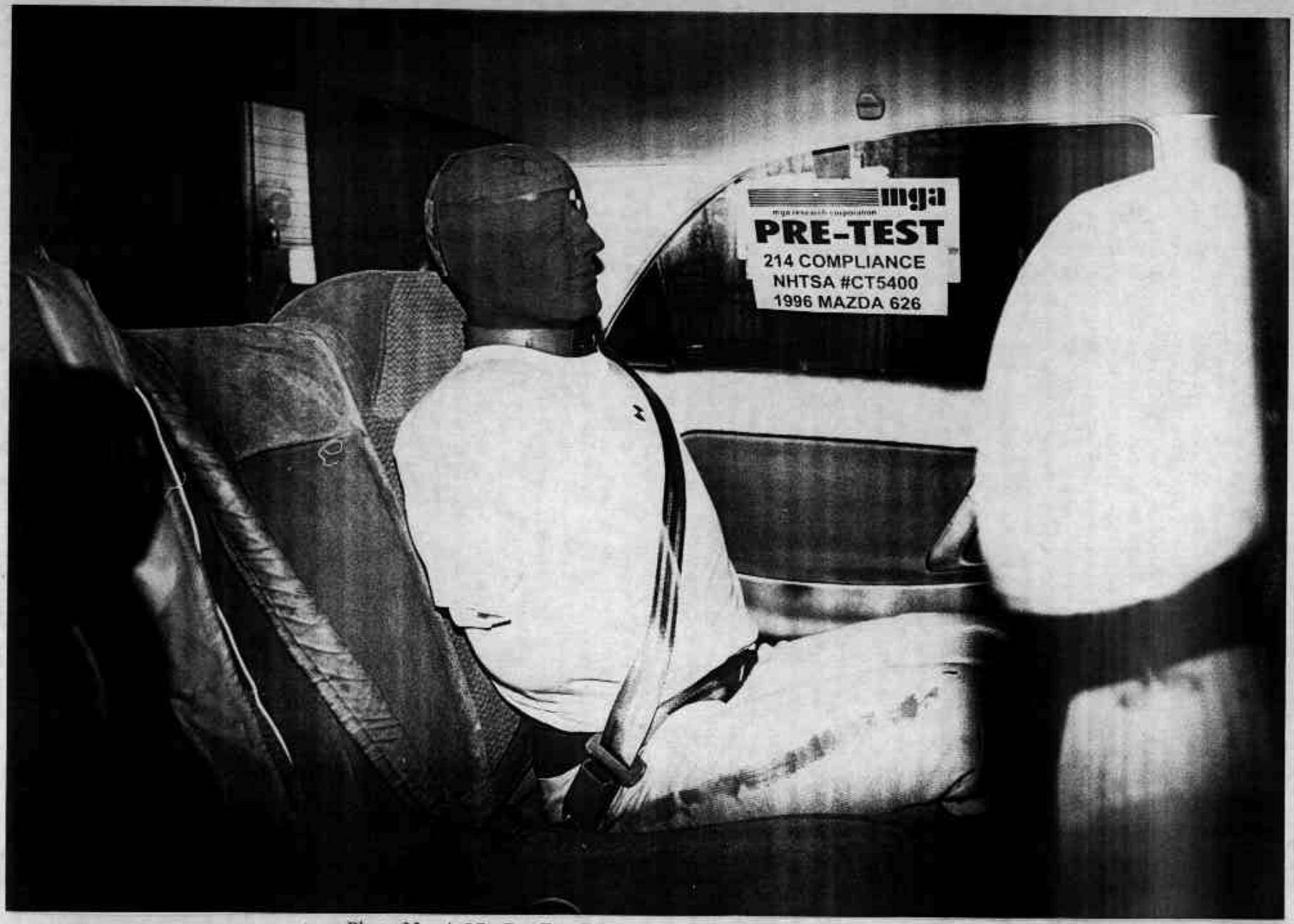
Photo No. A-24 - Pre-Test Driver Dummy Shoulder and Door Top View

Photo No. A-25 - Post-Test Driver Dummy Shoulder and Door Top View



A-26

Photo No. A-26 - Post-Test Driver Dummy Contact



A-27

Photo No. A-27 - Pre-Test Passenger Dummy Right Side View

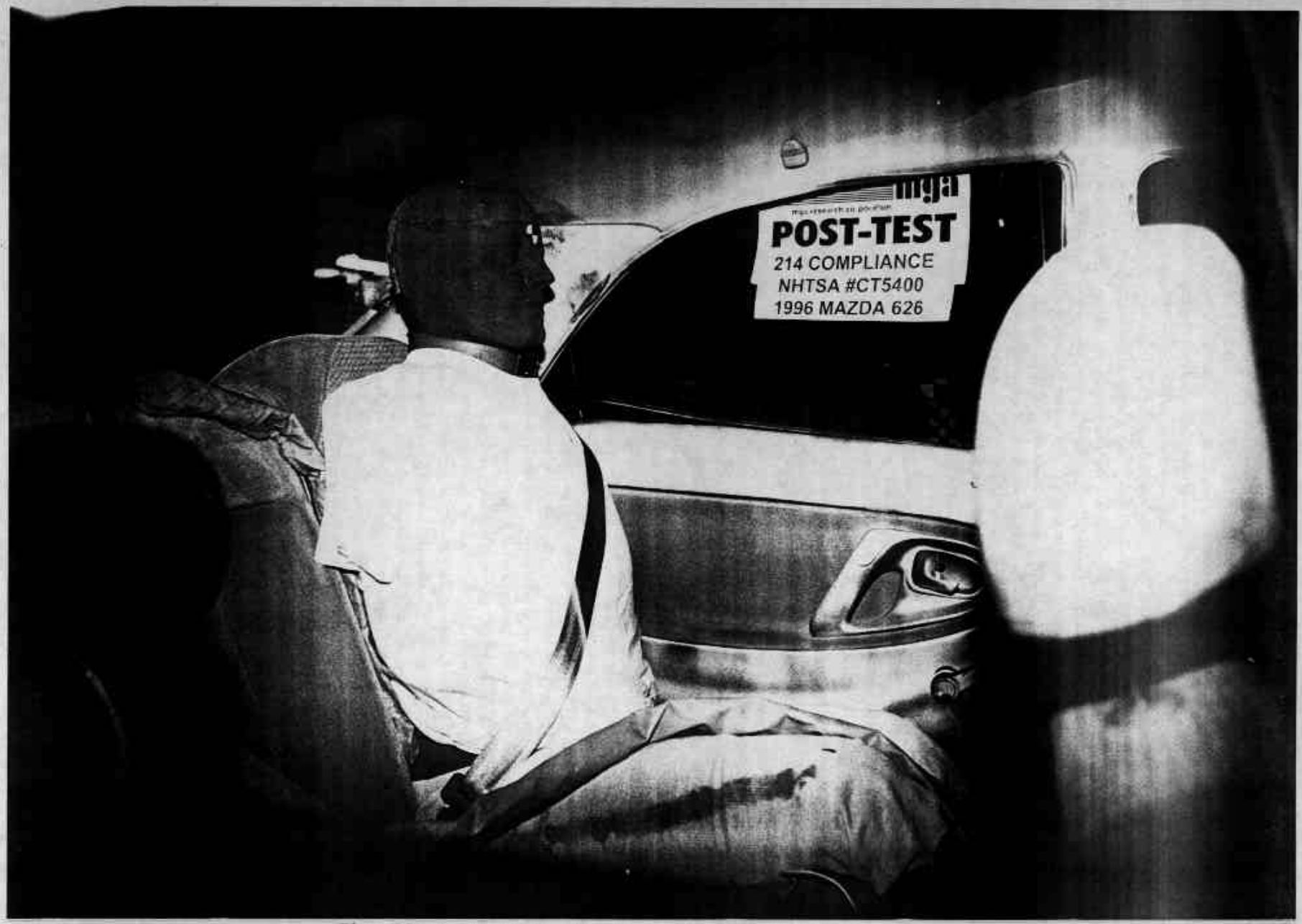
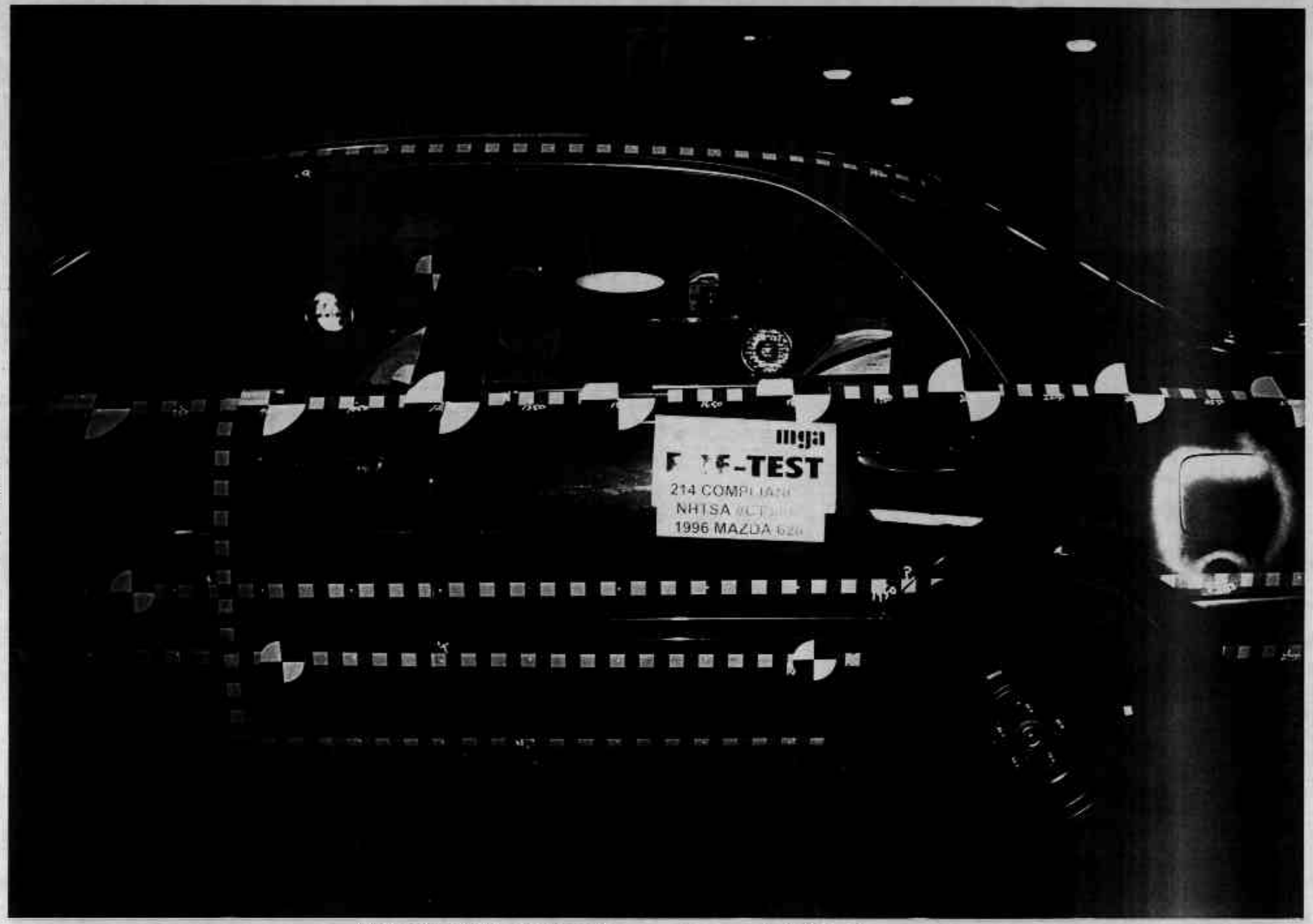


Photo No. A-28 - Post-Test Passenger Dummy Right Side View



A-29

Photo No. A-29 - Pre-Test Passenger Dummy Left Side View

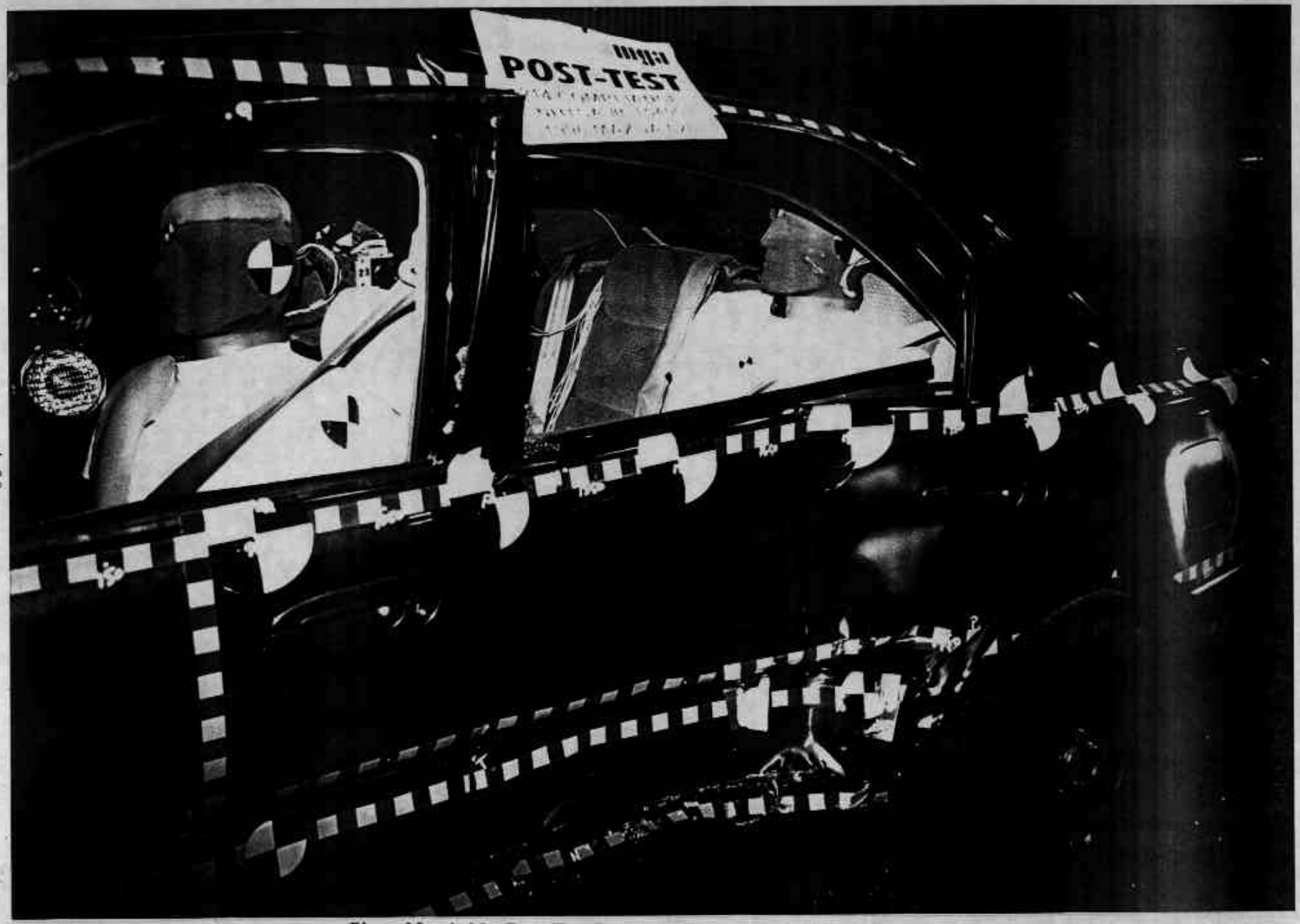


Photo No. A-30 - Post-Test Passenger Dummy Left Side View

Photo No. A-31 - Post-Test Passenger Dummy Left Side View (Door Open)

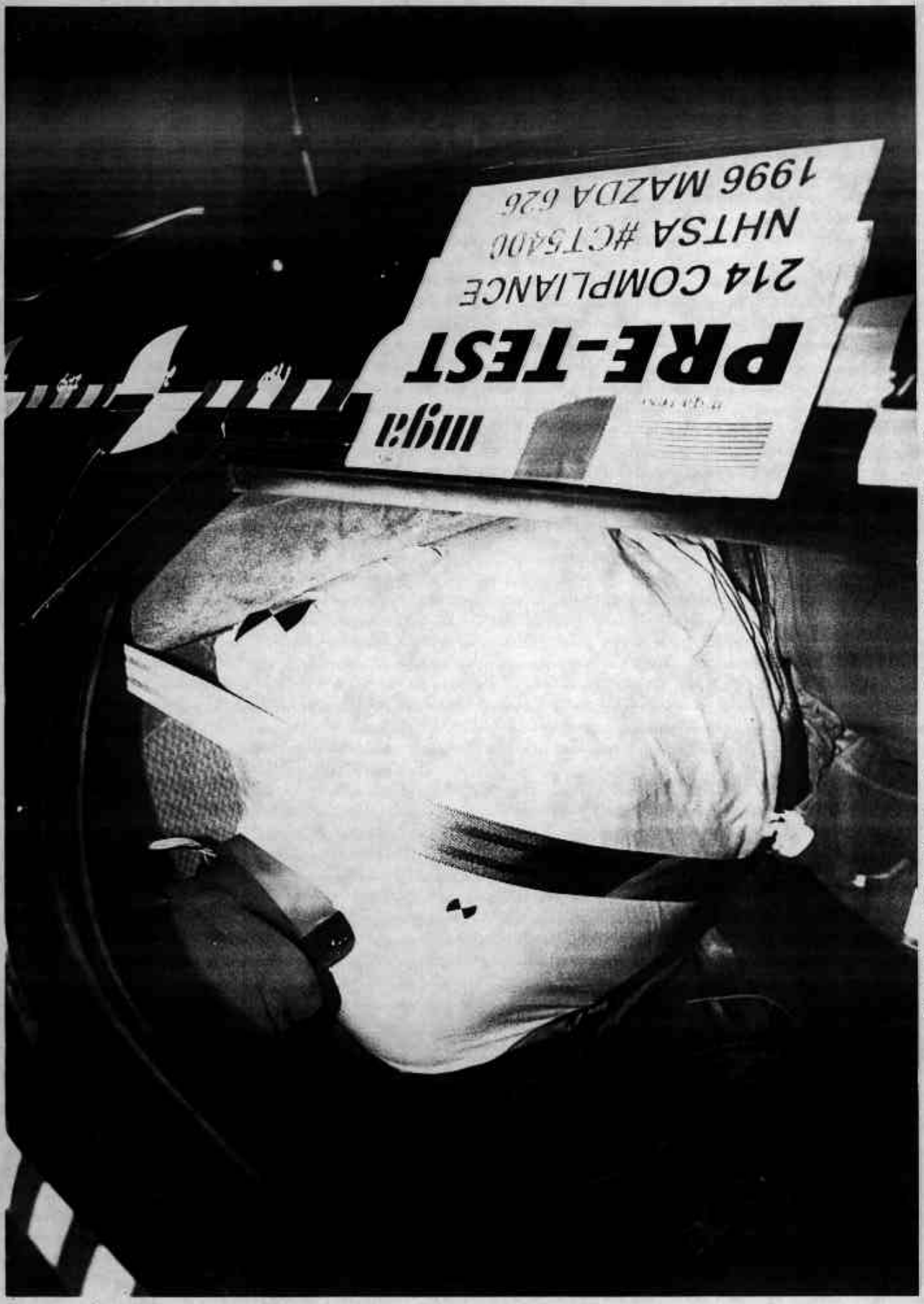


Photo No. A-32 - Pre-Test Passenger Dummy Shoulder and Door Top View

Photo No. A-33 - Post-Test Passenger Dummy Shoulder and Door Top View

Photo No. A-34 - Post-Test Passenger Dummy Contact

Photo No. A-35 - Post-Test Passenger Dummy Contact

Photo No. A-36 - Pre-Test Left Front Impact Point on Vehicle

A-37

Photo No. A-37 - Post-Test Left Front Impact Point on Vehicle

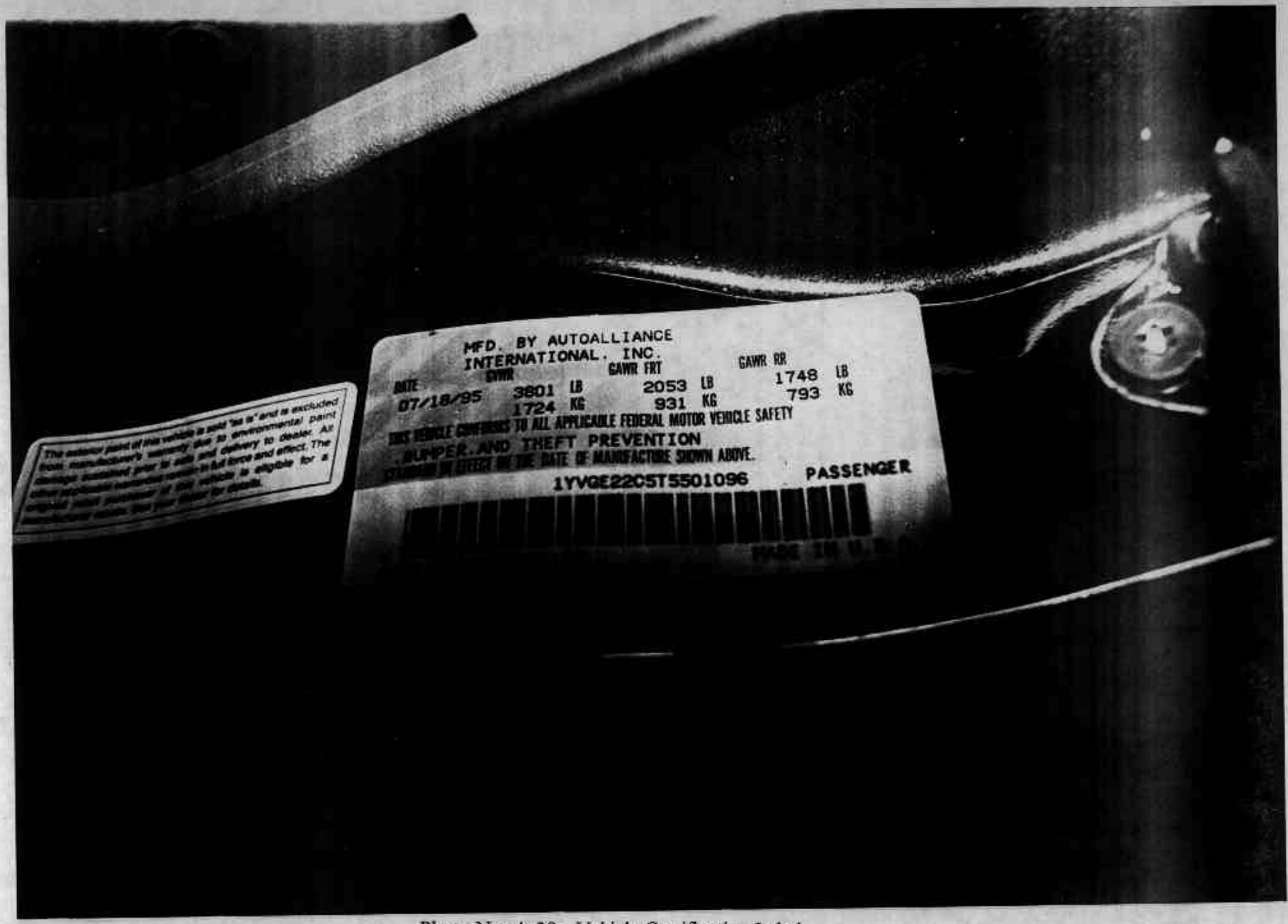
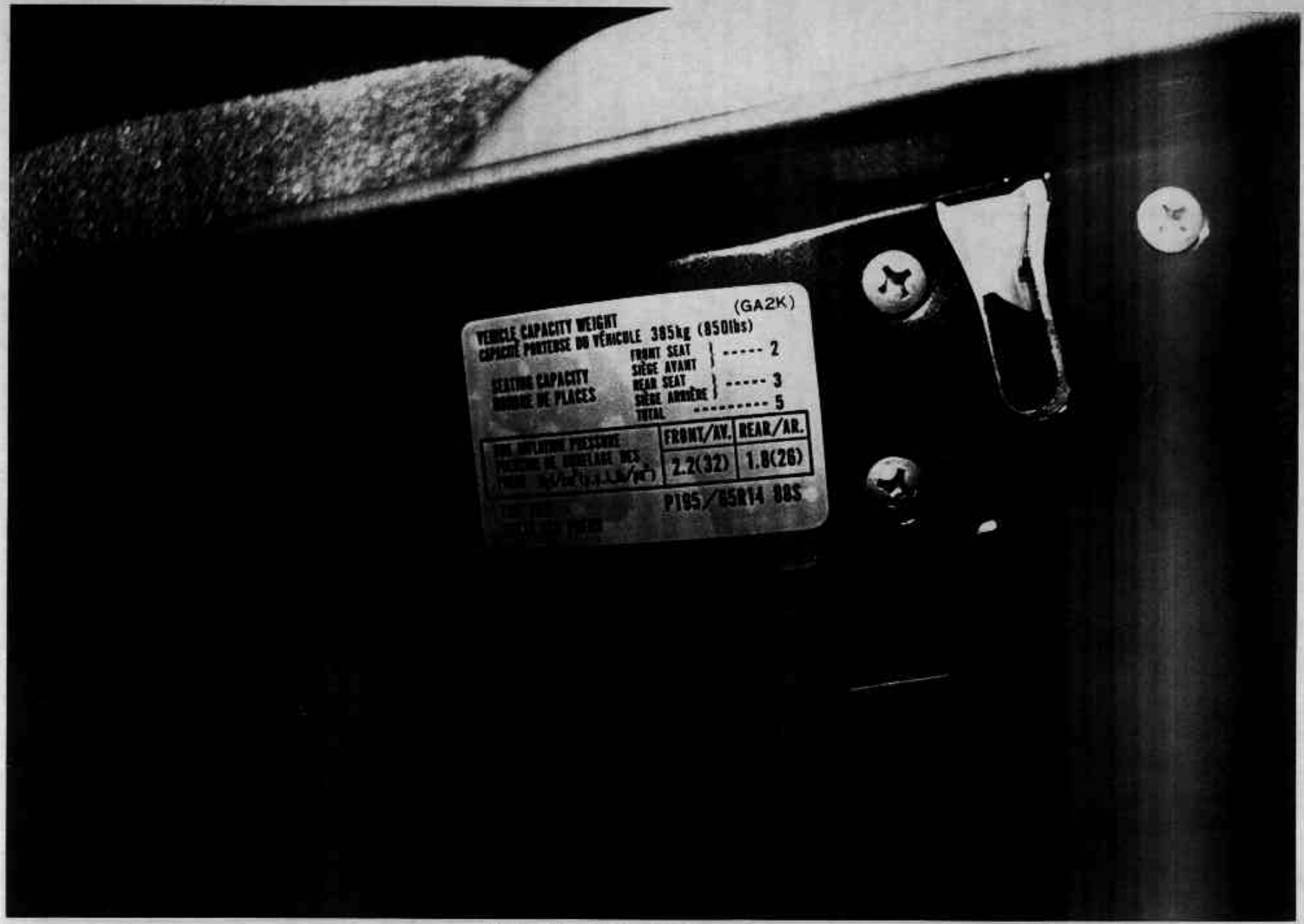


Photo No. A-38 - Vehicle Certification Label



A-39

Photo No. A-39 - Tire Placard

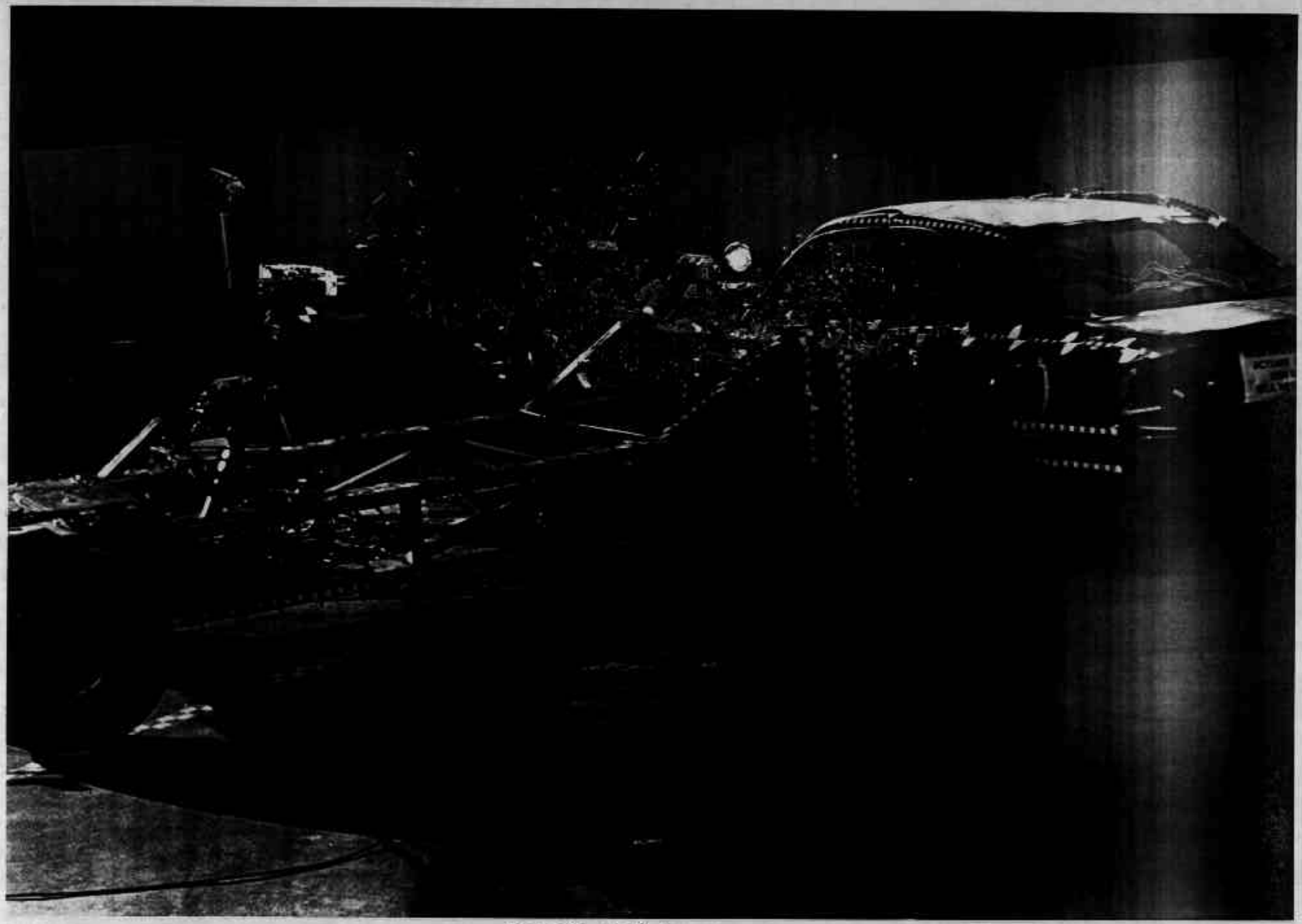


Photo No. A-40 - Impact

Photo No. A-41 - Rollover 90°

Photo No. A-42 - Rollover 180°

Photo No. A-43 - Rollover 270°

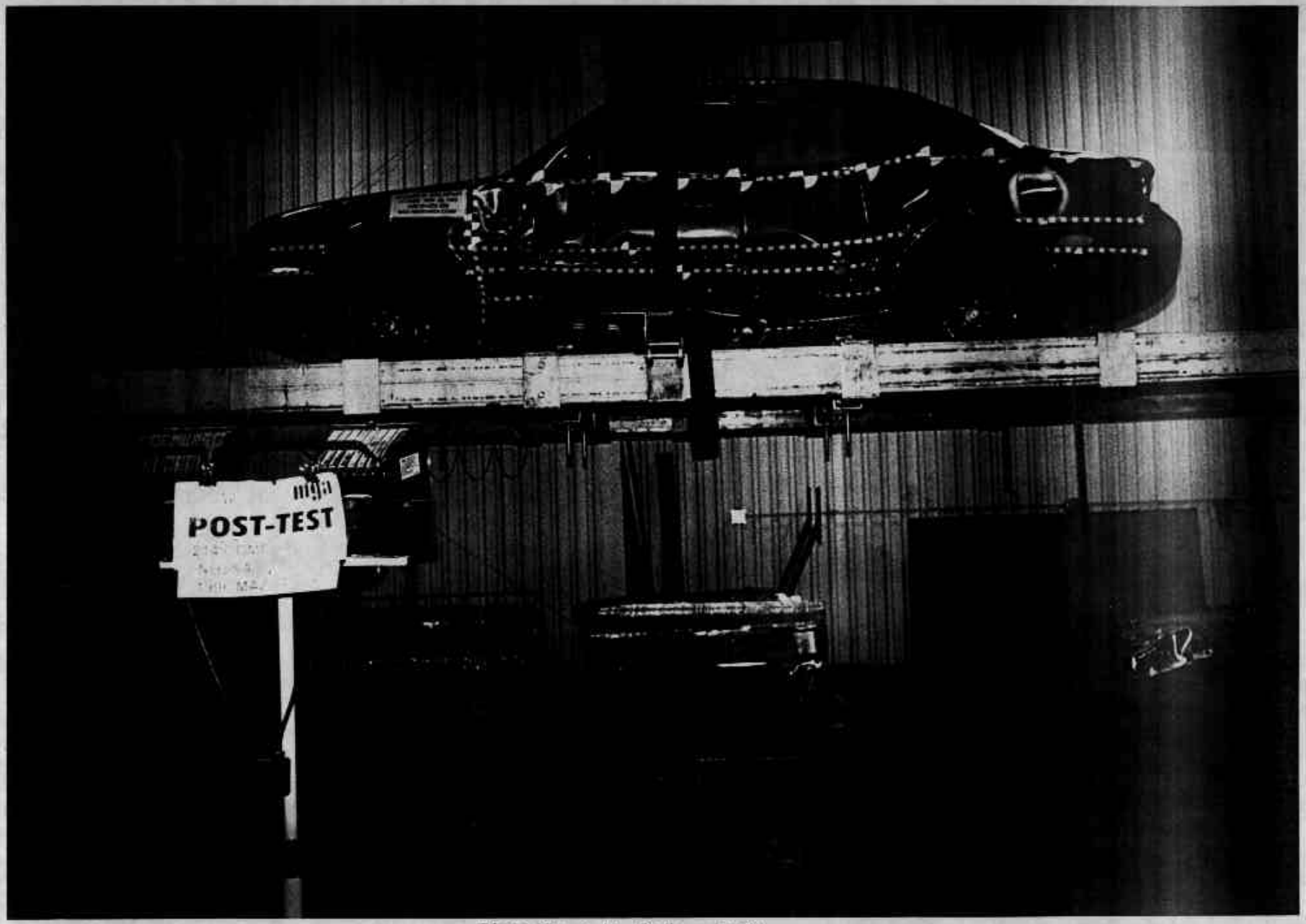


Photo No. A-44 - Rollover 360°

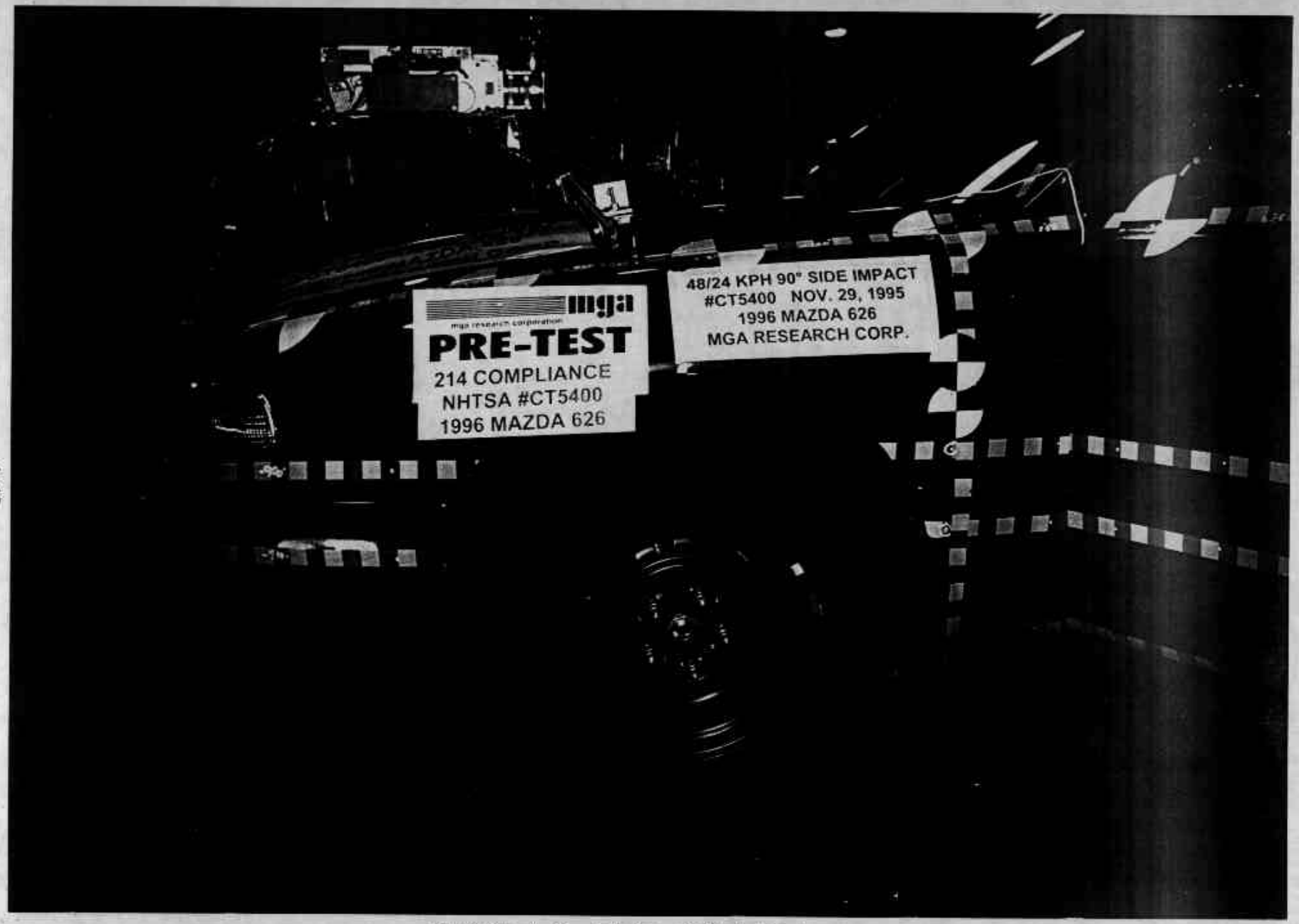


Photo No. A-45 - Left Front Attitude Point

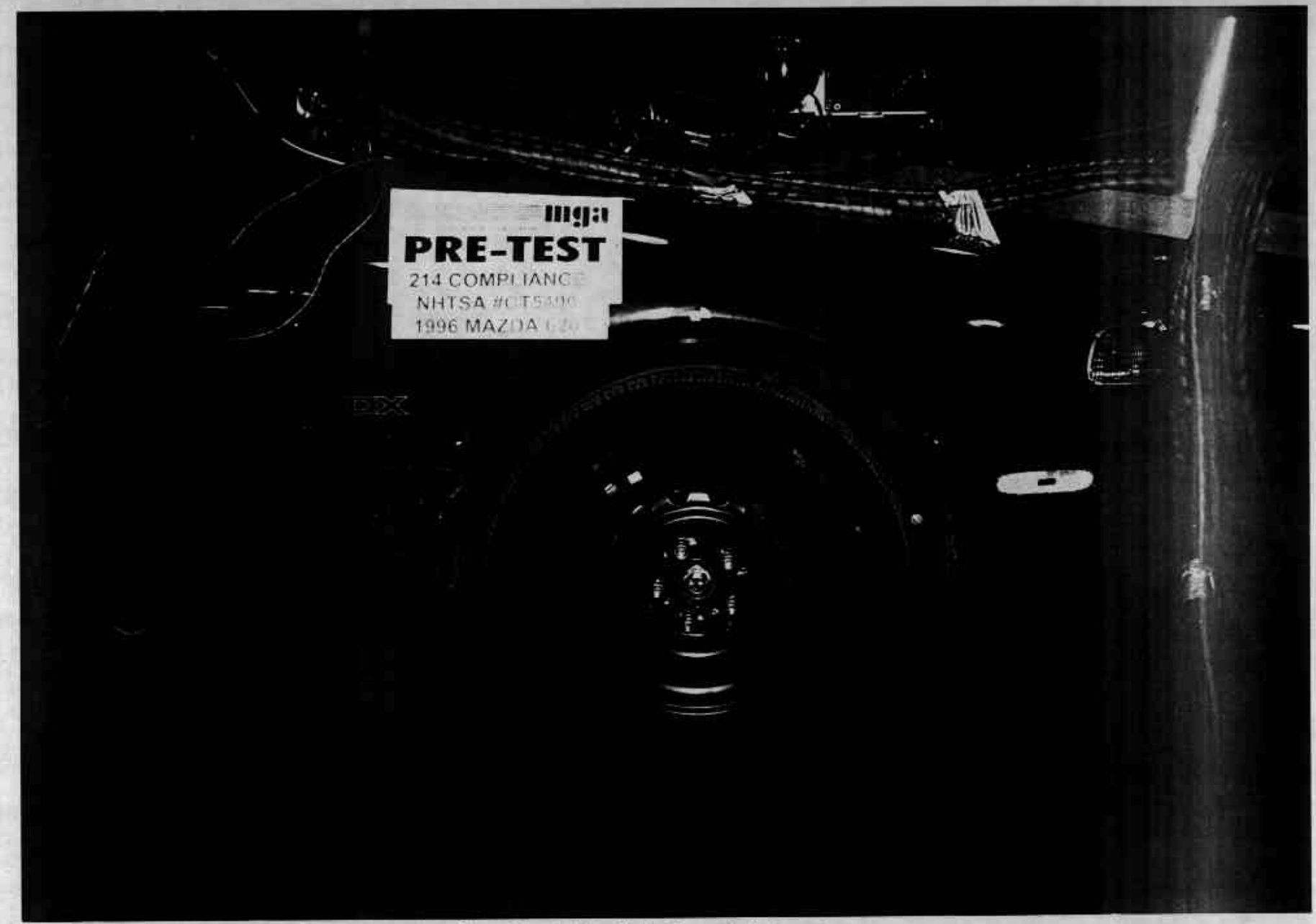


Photo No. A-46 - Right Front Attitude Point

Photo No. A-47 - Left Rear Attitude Point

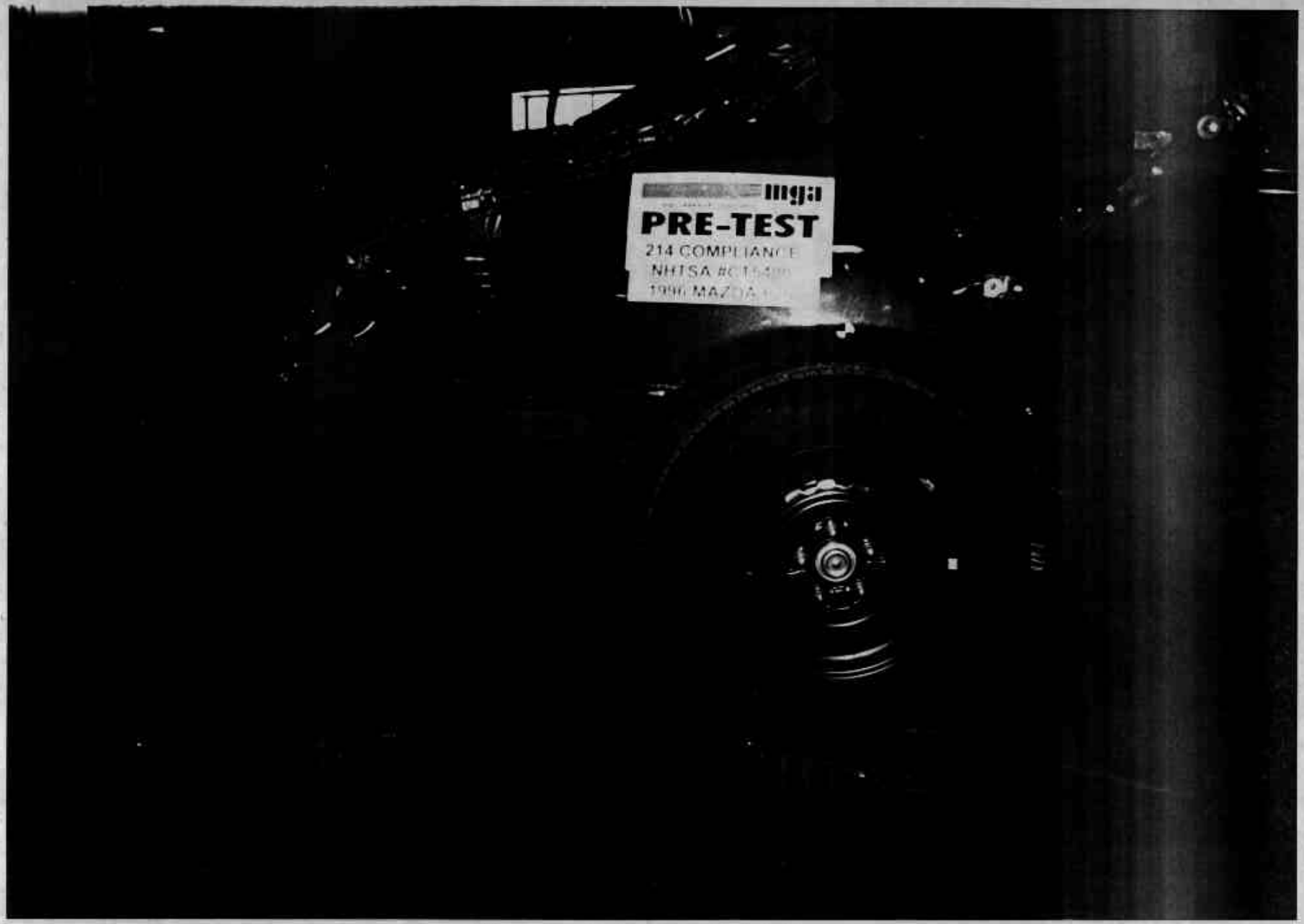


Photo No. A-48 - Right Rear Attitude Point

APPENDIX B - VEHICLE AND SID REPSONSE DATA

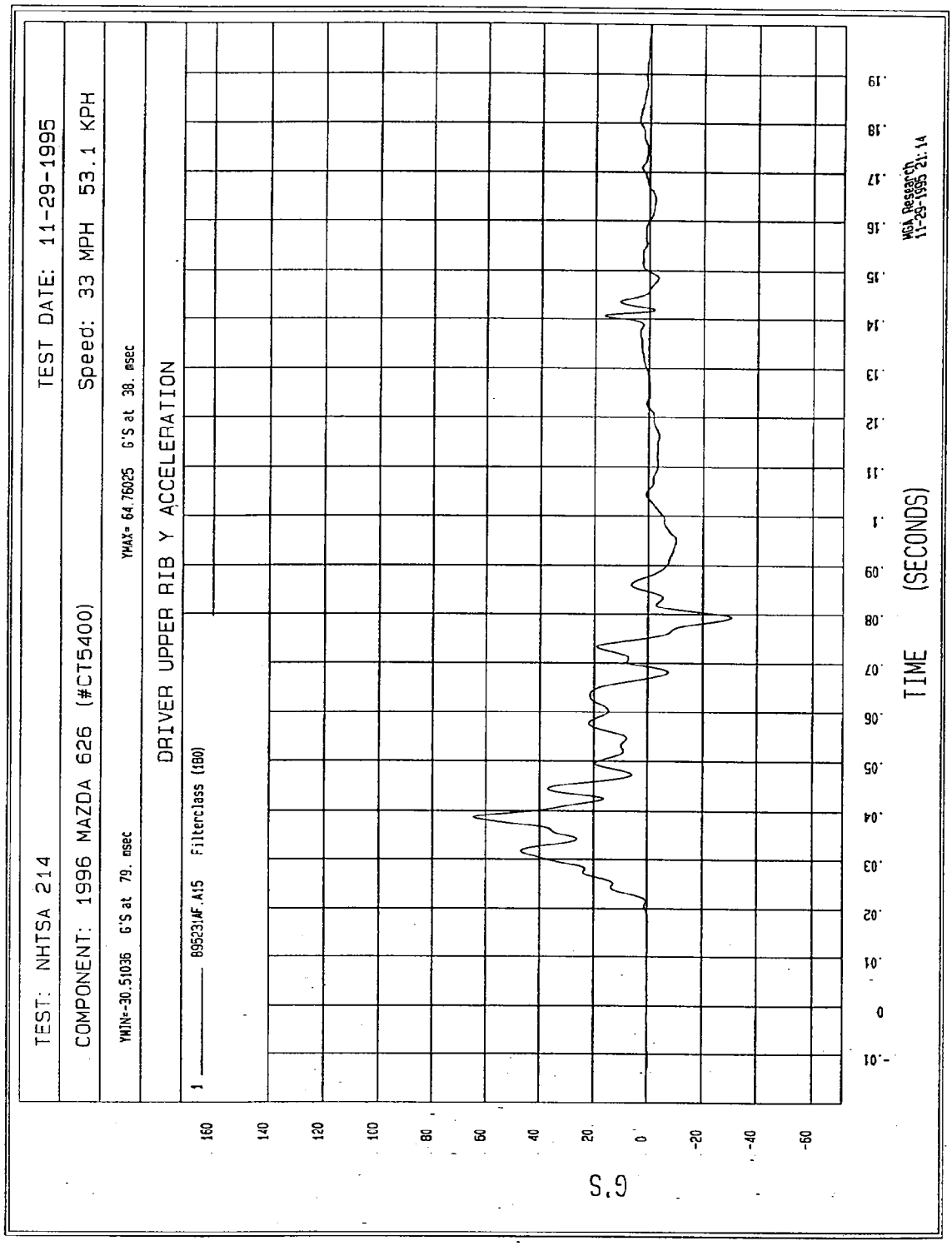
Table of Data Plots

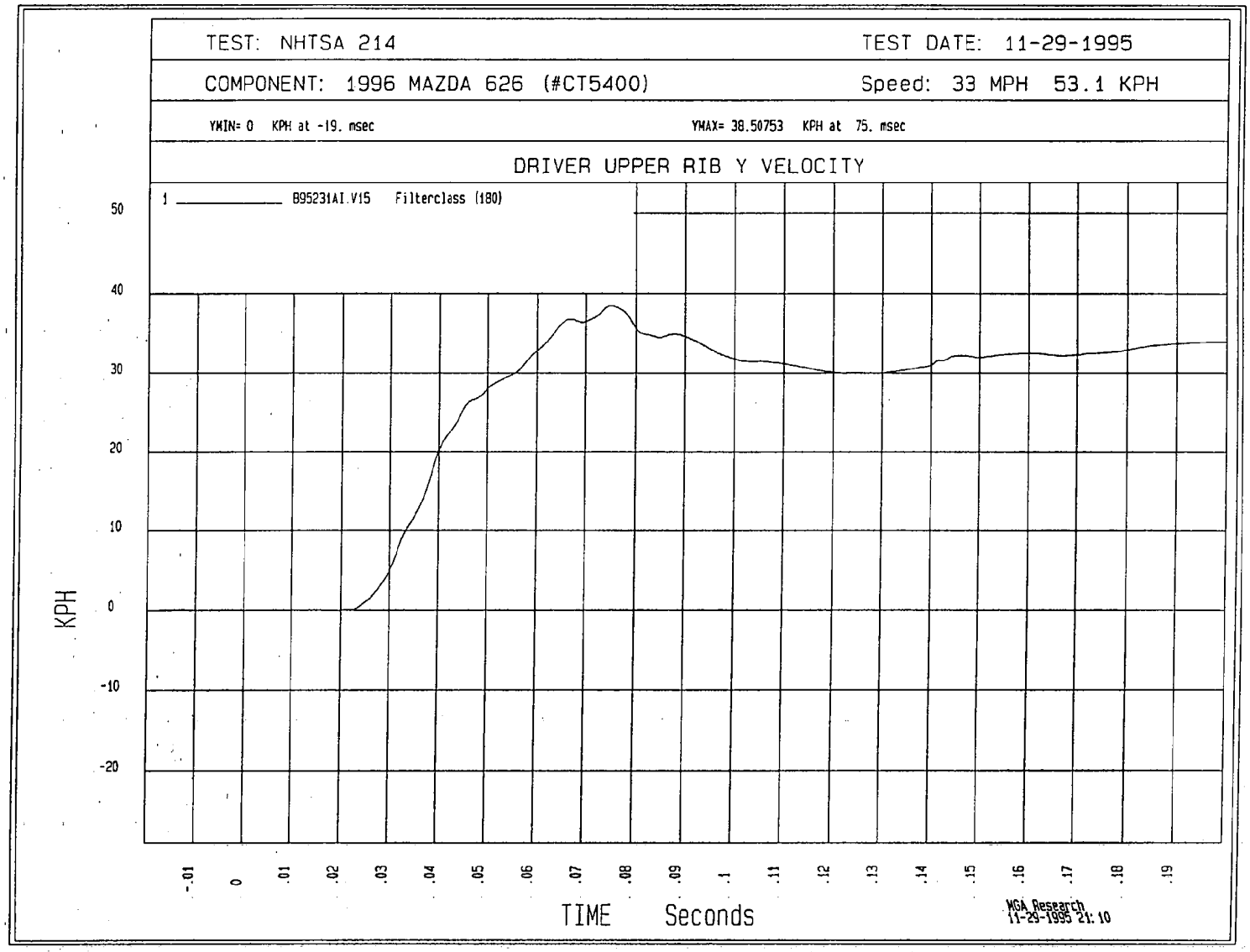
Table of Data Plots

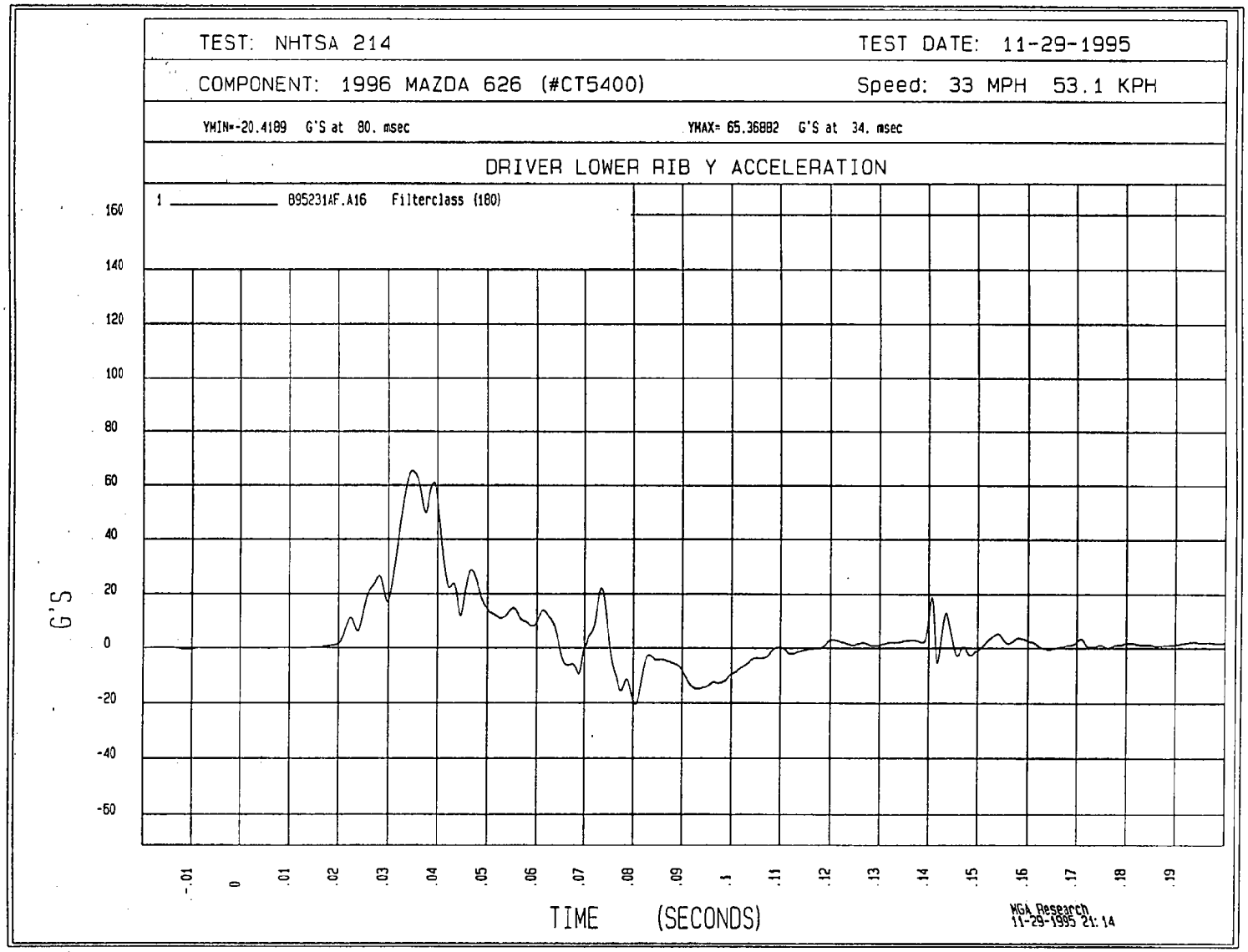
* No valid data collected

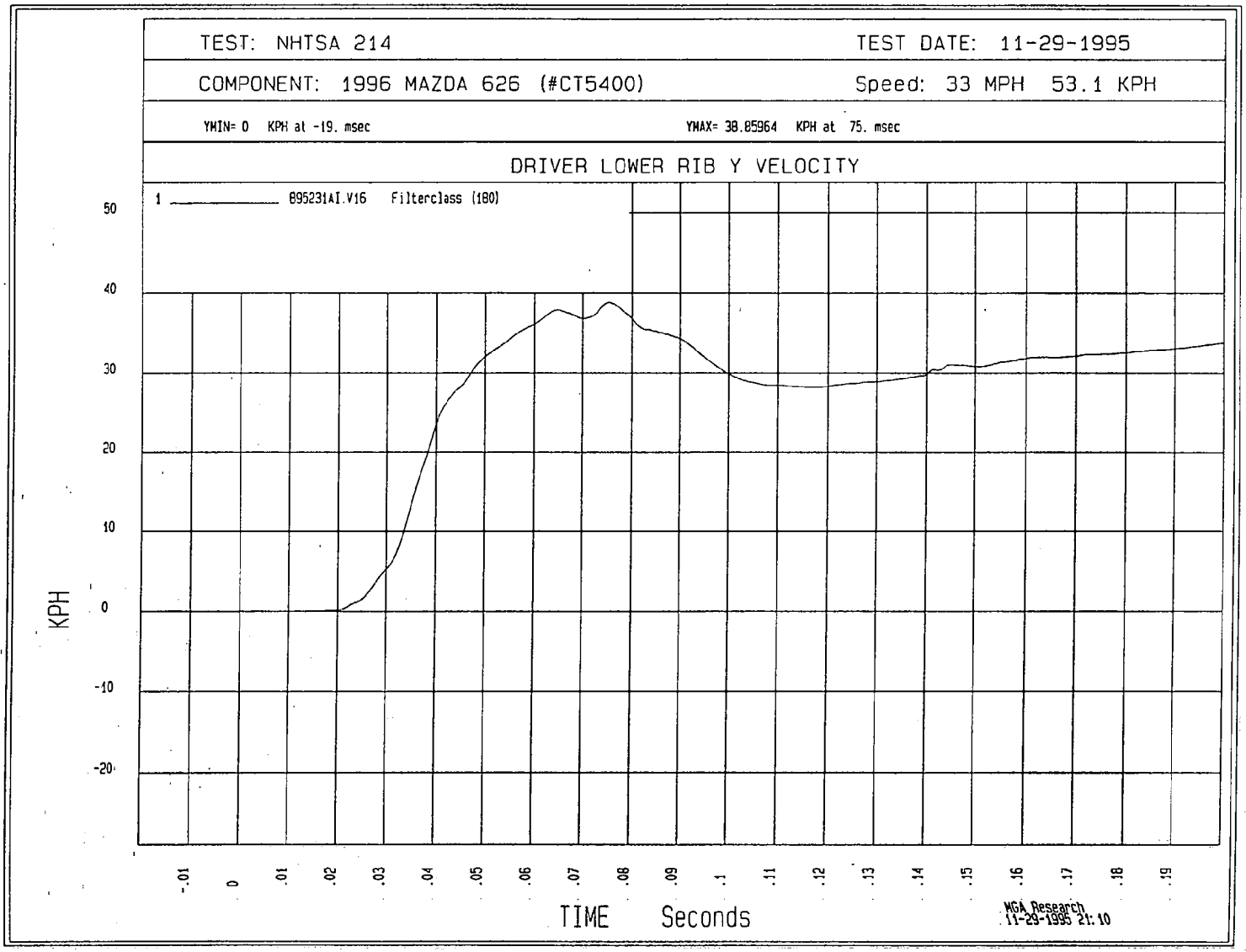
Table of Data Plots

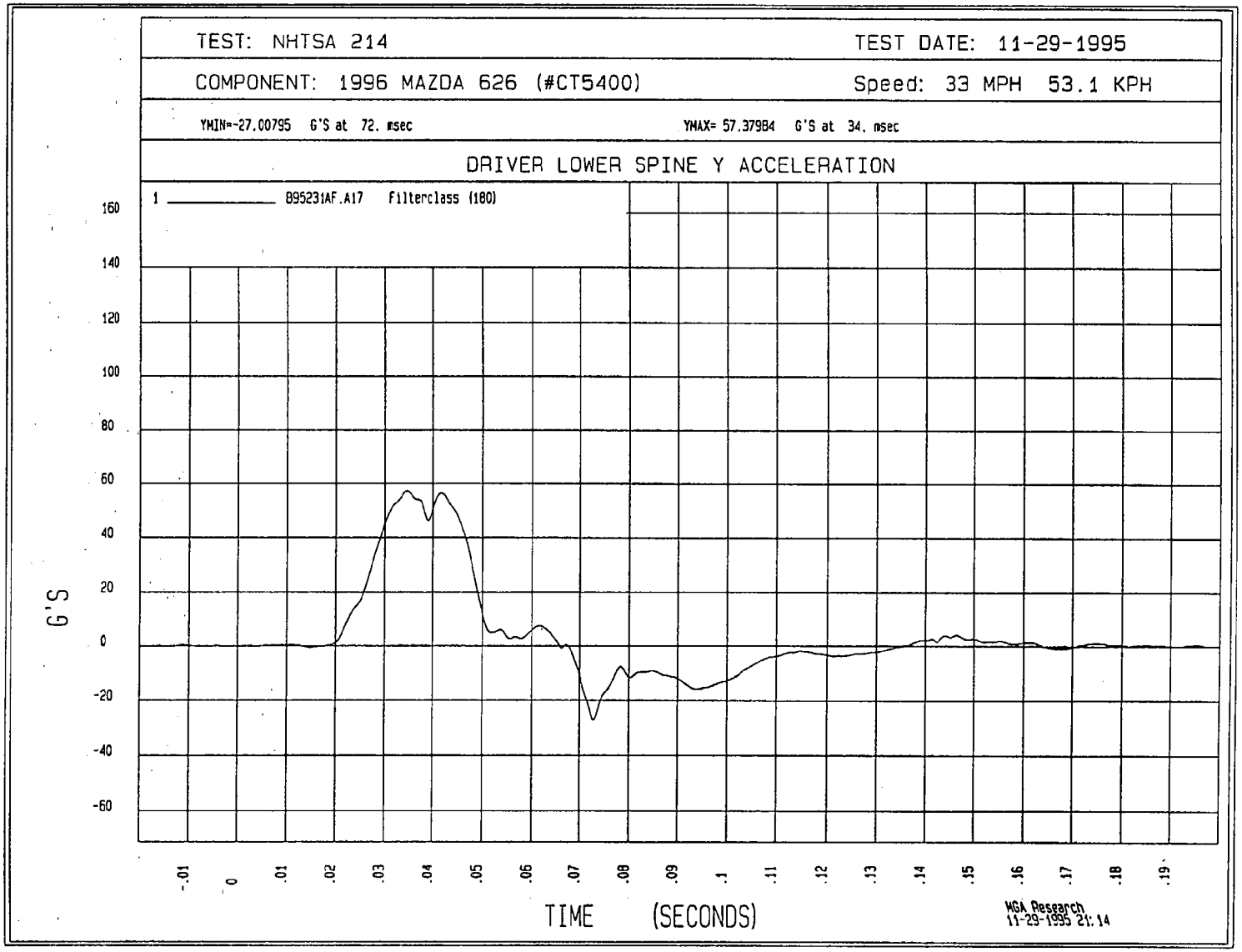
Table of Data Plots

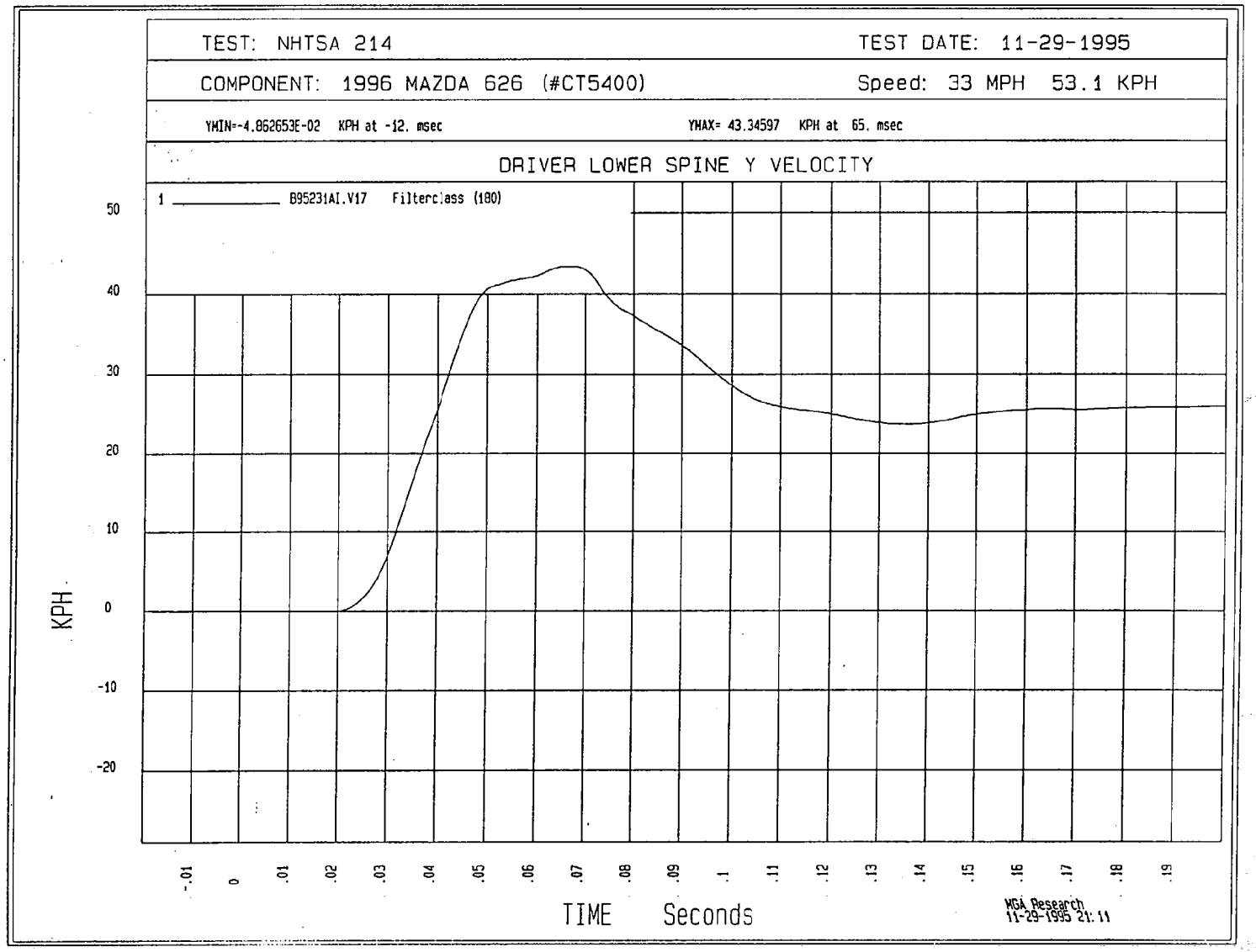

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-30.51036 G'S at 79. msec
YMAX= 64.76025 G'S at 38. msec
DRIVER UPPER RIB Y ACCELERATION
1 ——— 895231AF.A15 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:14

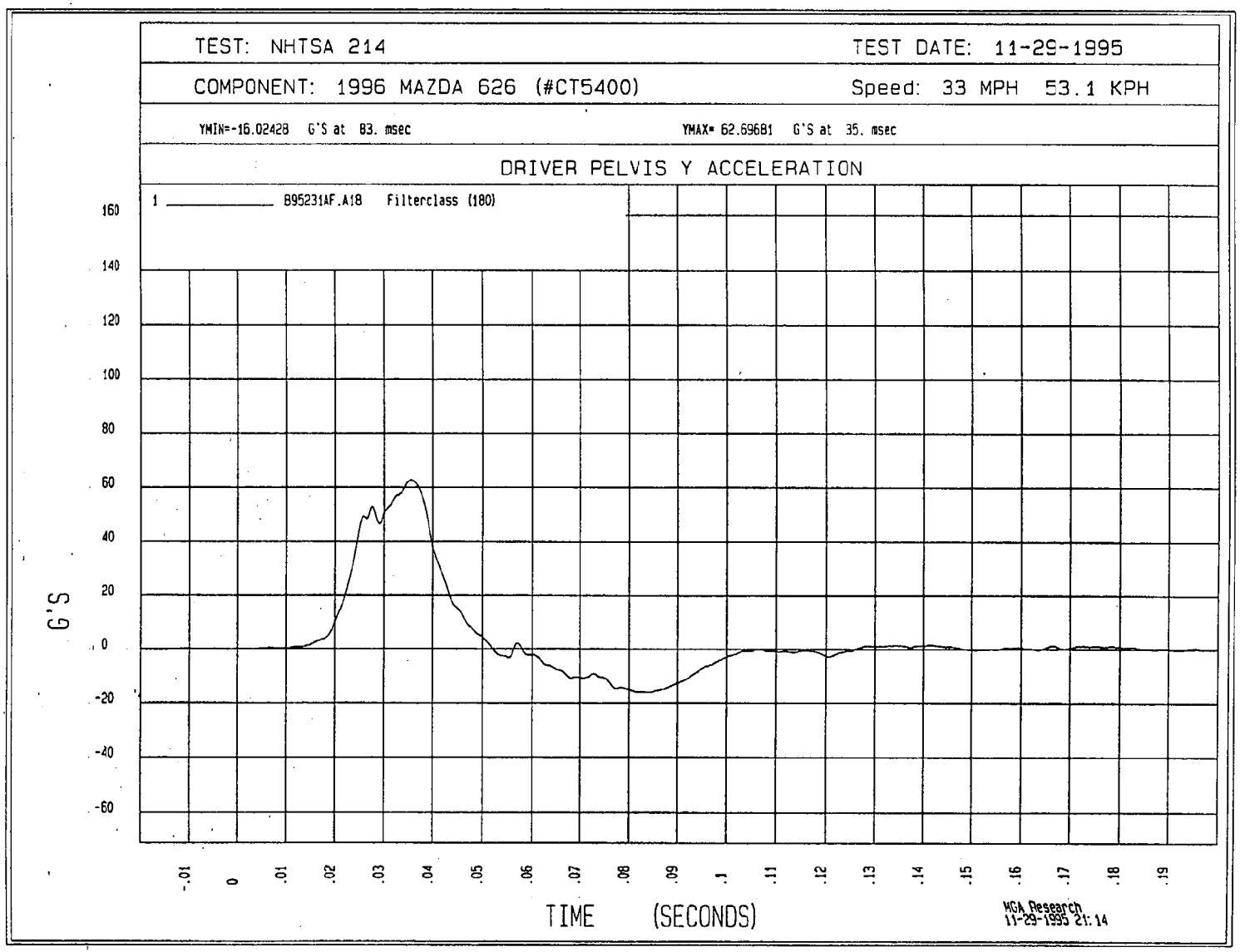

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN= 0 KPH at -19. msec
YMAX= 38.50753 KPH at 75. msec
DRIVER UPPER RIB Y VELOCITY
1 B95231AI.V15 Filterclass (180)
KPH
50
40
30
20
10
0
-10
-20
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:10

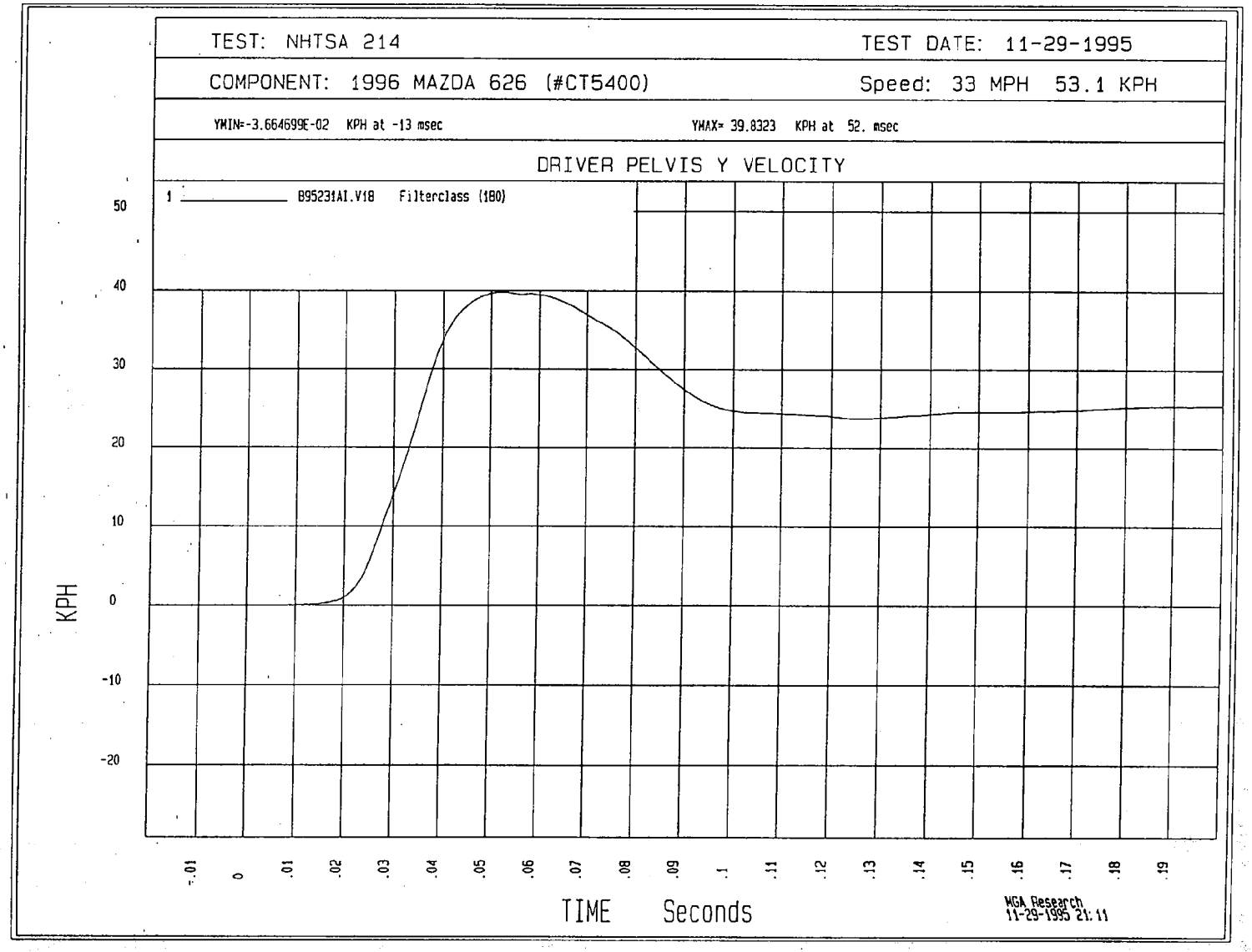

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-20.4189 G'S at 80. msec
YMAX= 65.36882 G'S at 34. msec
DRIVER LOWER RIB Y ACCELERATION
1 B95231AF.A16 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:14

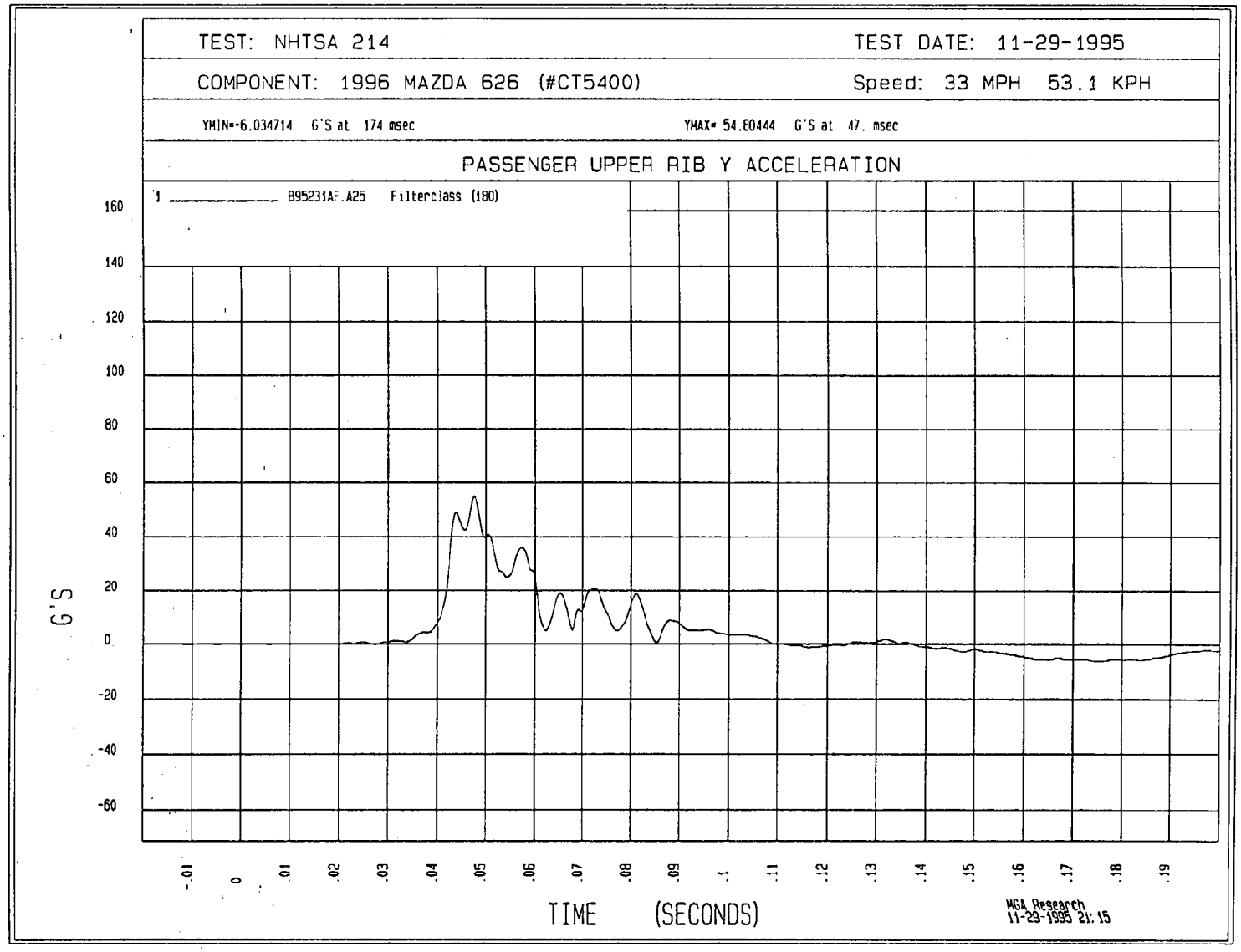

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN= 0 KPH at -19. msec
YMAX= 38.85964 KPH at 75. msec
DRIVER LOWER RIB Y VELOCITY
1 095231AI.V16 Filterclass (180)
50
40
30
20
10
0
-10
-20
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:10

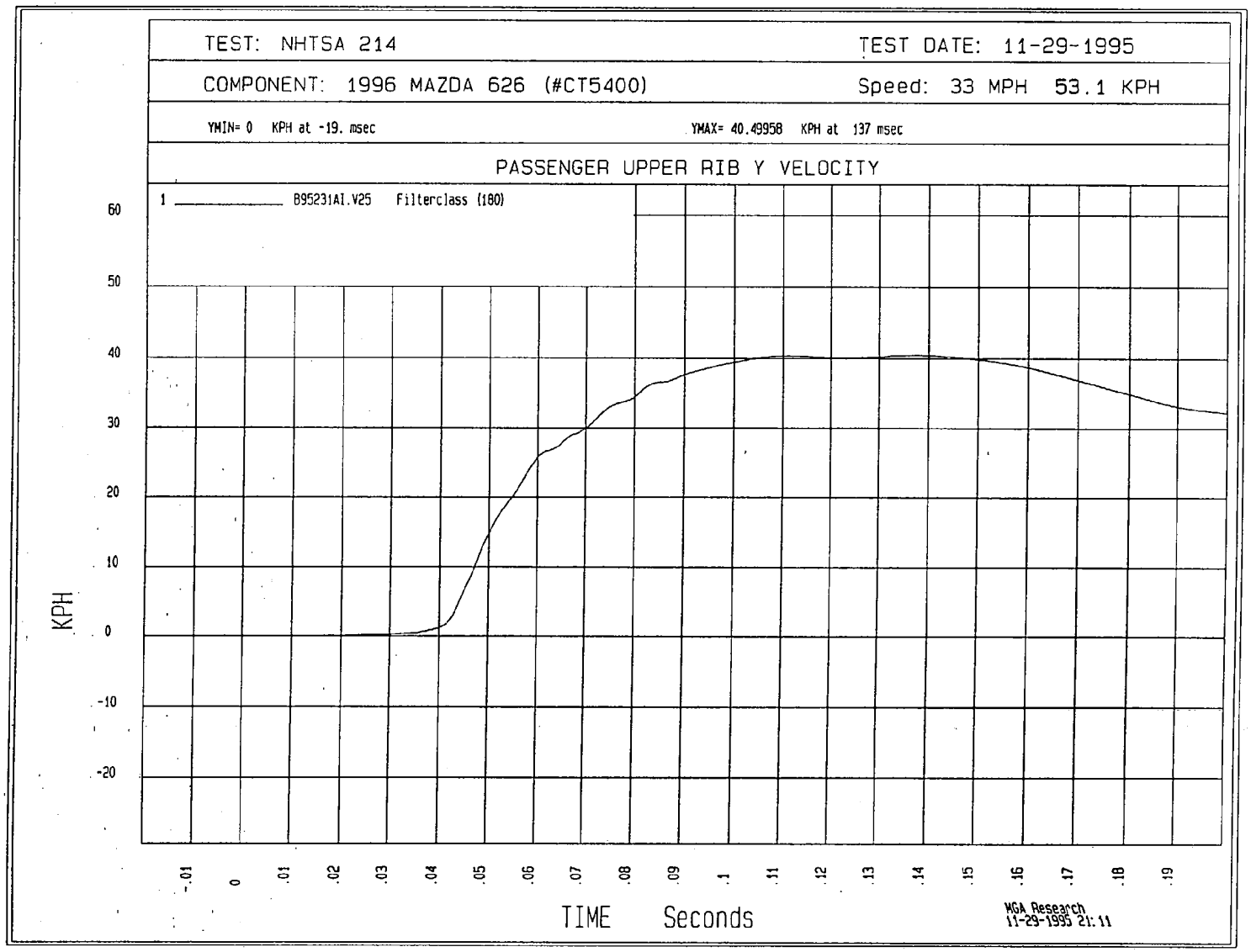

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-27.00795 G'S at 72. msec
YMAX= 57.37984 G'S at 34. msec
DRIVER LOWER SPINE Y ACCELERATION
1 895231AF.A17 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:14

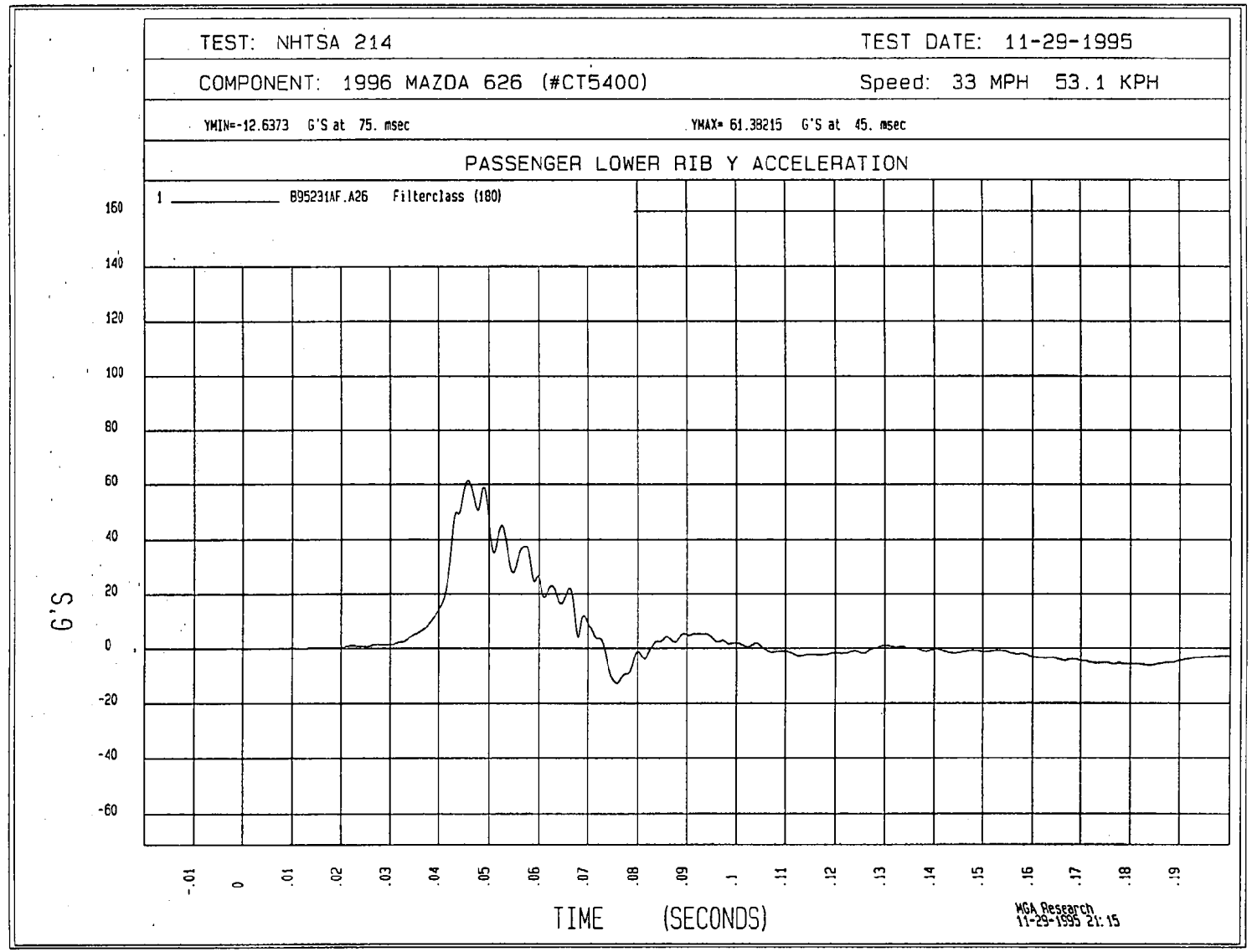

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-4.862653E-02 KPH at -12. msec
YMAX= 43.34597 KPH at 65. msec
DRIVER LOWER SPINE Y VELOCITY
1 B95231AI.V17 FilterClass (180)
KPH
50
40
30
20
10
0
-10
-20
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:11

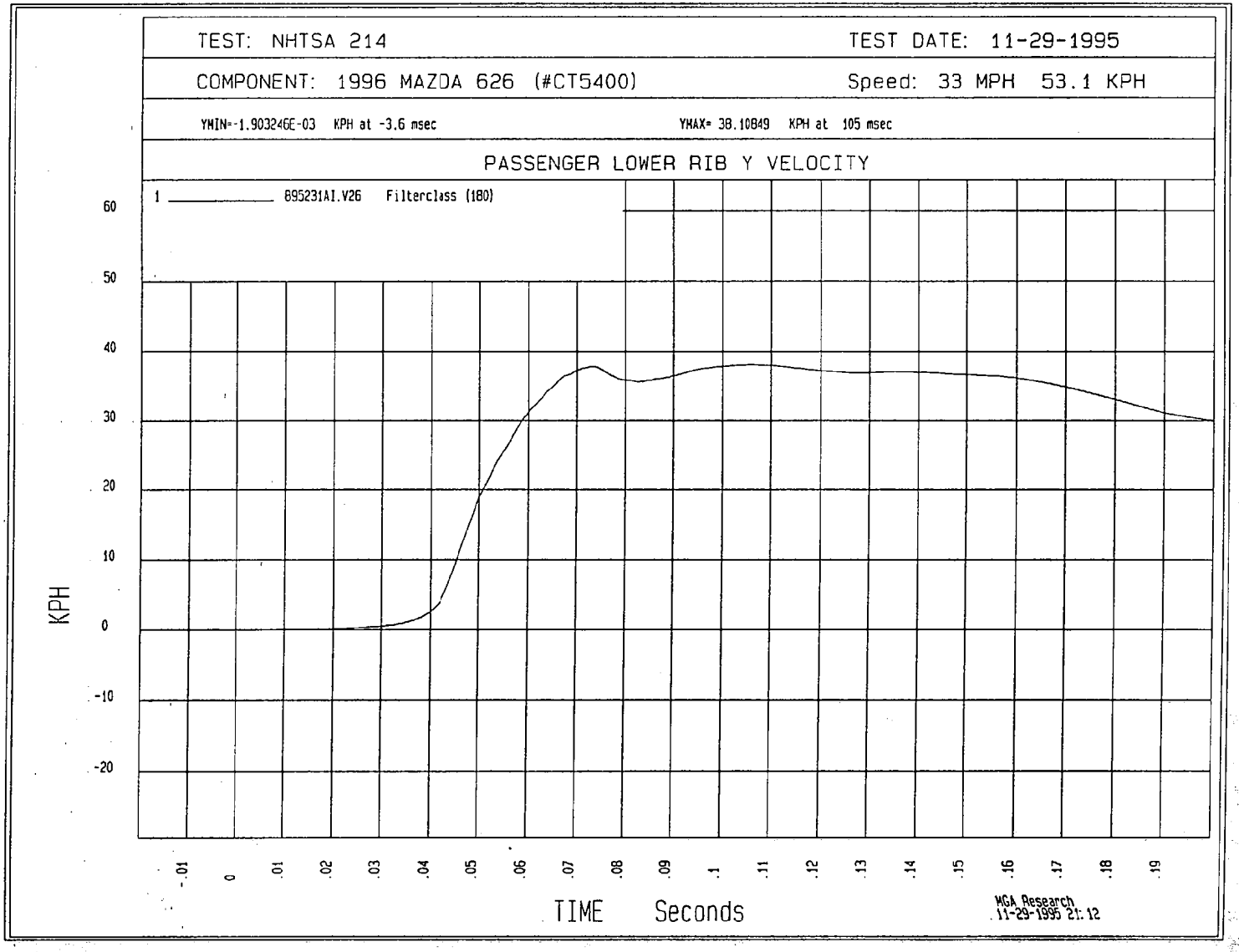

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-16.02428 G'S at 83. msec
YMAX= 62.69681 G'S at 35. msec
DRIVER PELVIS Y ACCELERATION
1 B95231AF.A18 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:14

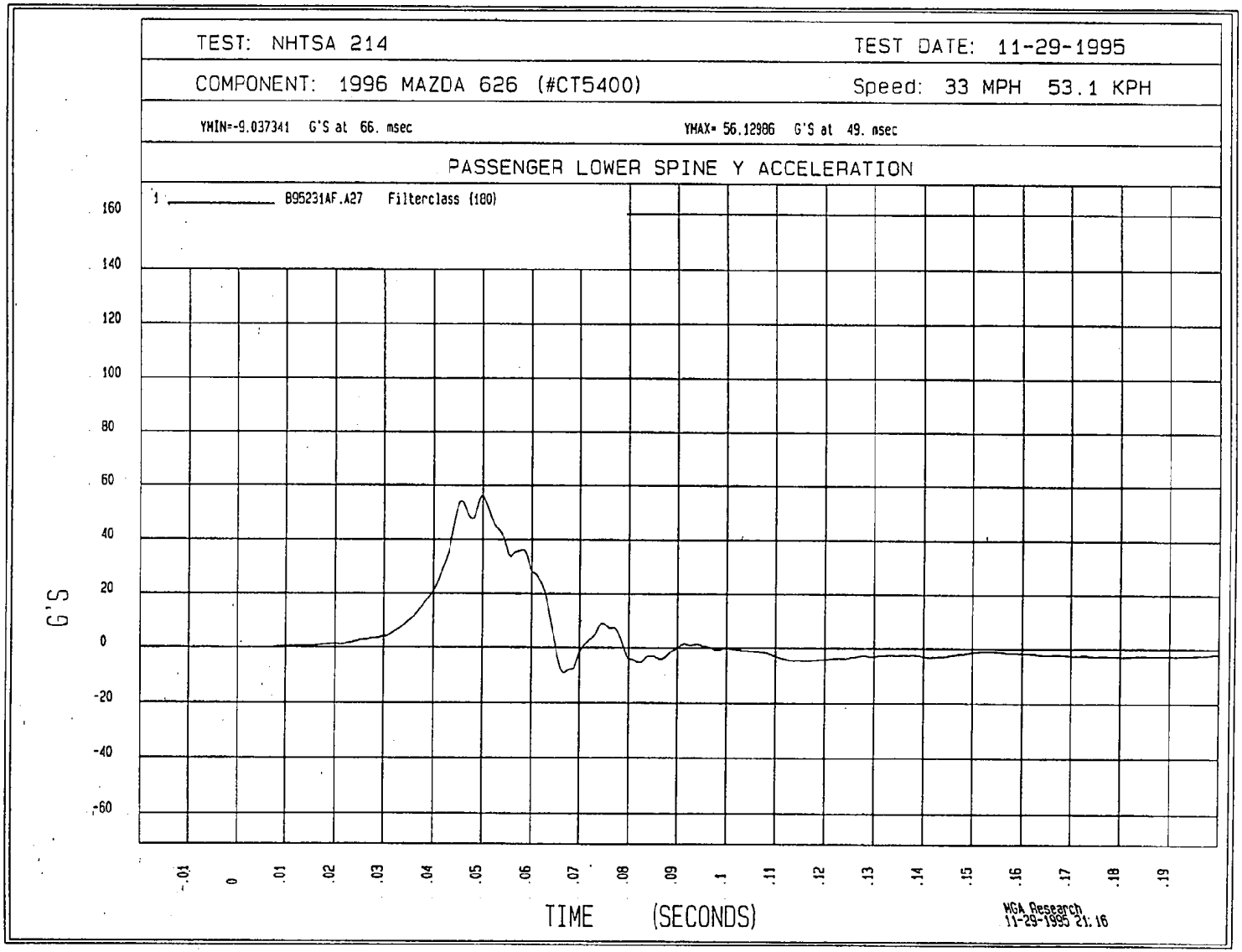

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-3.664699E-02 KPH at -13 msec
YMAX= 39.8323 KPH at 52. msec
DRIVER PELVIS Y VELOCITY
1 B95231AI.V18 Filterclass (180)
KPH
50
40
30
20
10
0
-10
-20
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:11

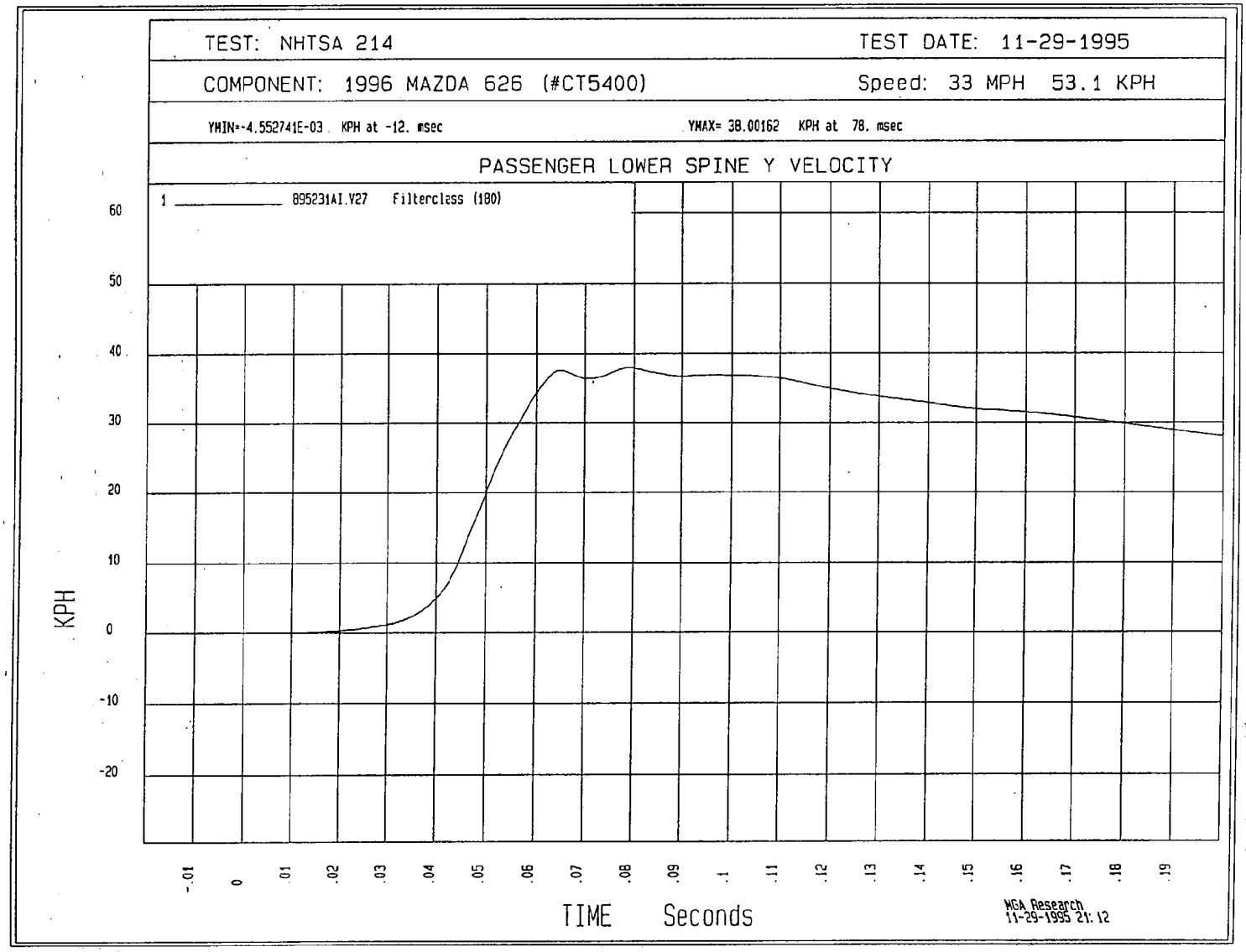

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-6.034714 G'S at 174 msec
YMAX= 54.80444 G'S at 47. msec
PASSENGER UPPER RIB Y ACCELERATION
1 B95231AF.A25 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:15

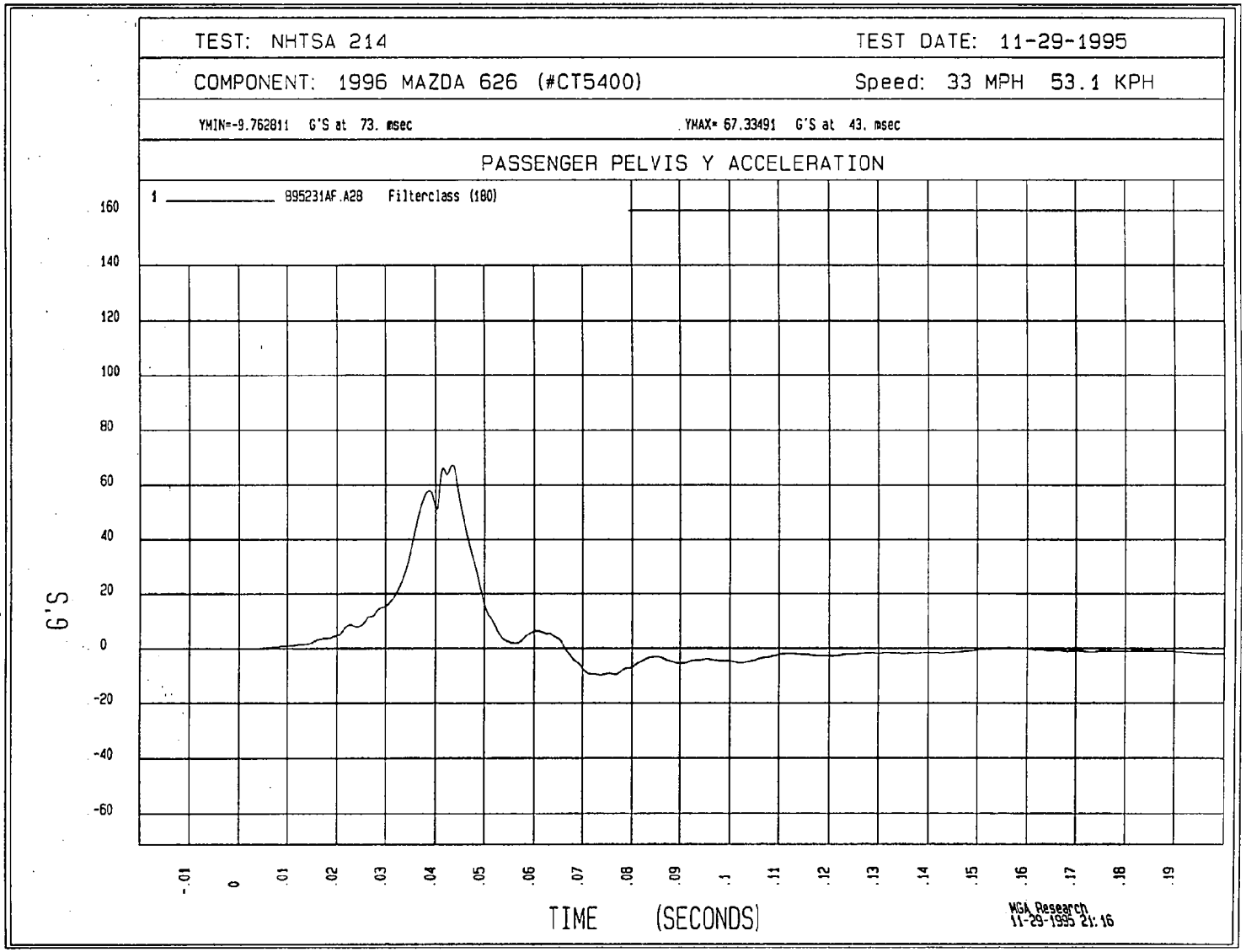

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN= 0 KPH at -19. msec
YMAX= 40.49958 KPH at 137 msec
PASSENGER UPPER RIB Y VELOCITY
1 B95231AI.V25 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:11

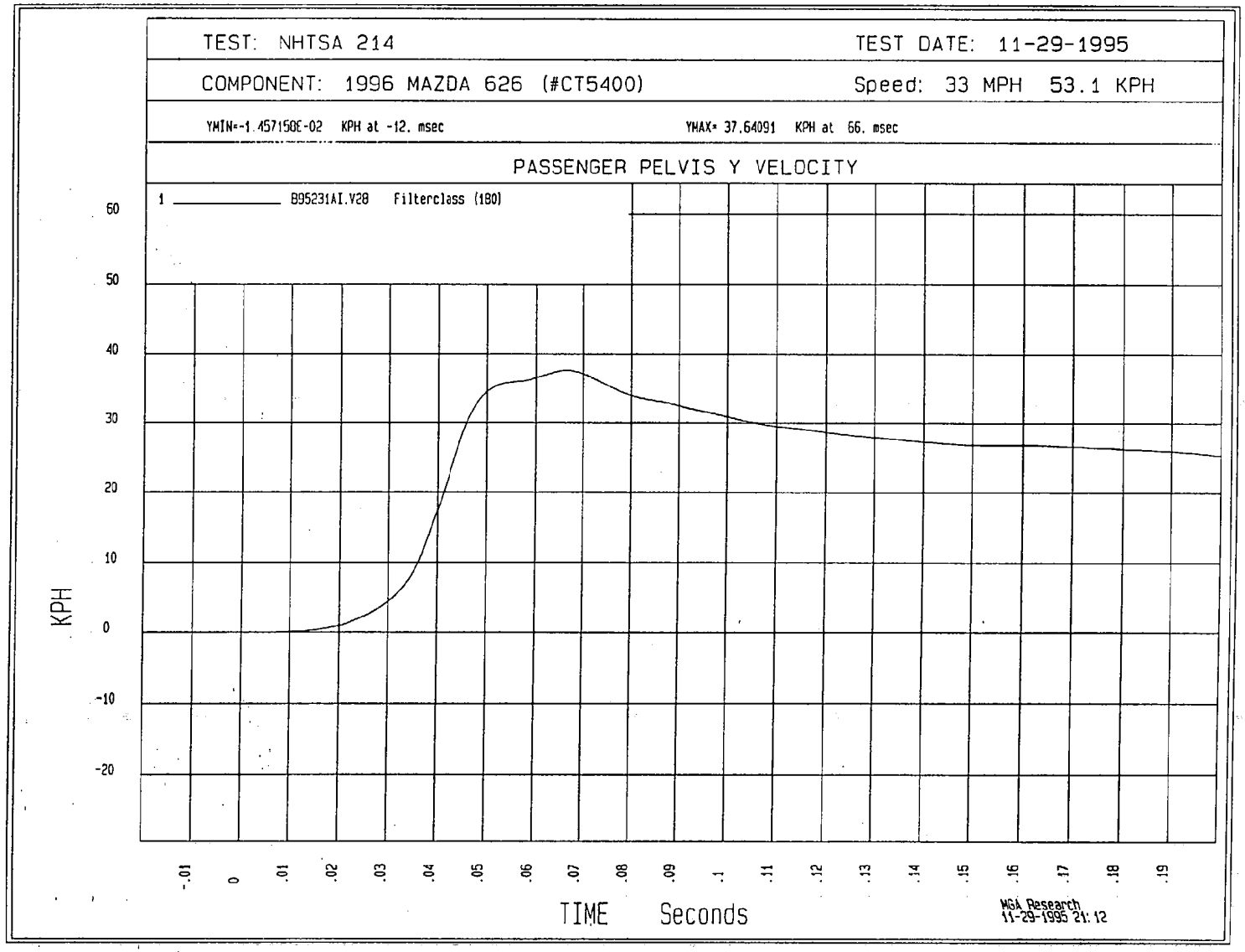

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-12.6373 G'S at 75. msec
YMAX= 61.38215 G'S at 45. msec
PASSENGER LOWER RIB Y ACCELERATION
1 B95231AF.A26 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
WGA Research
11-29-1995 21:15

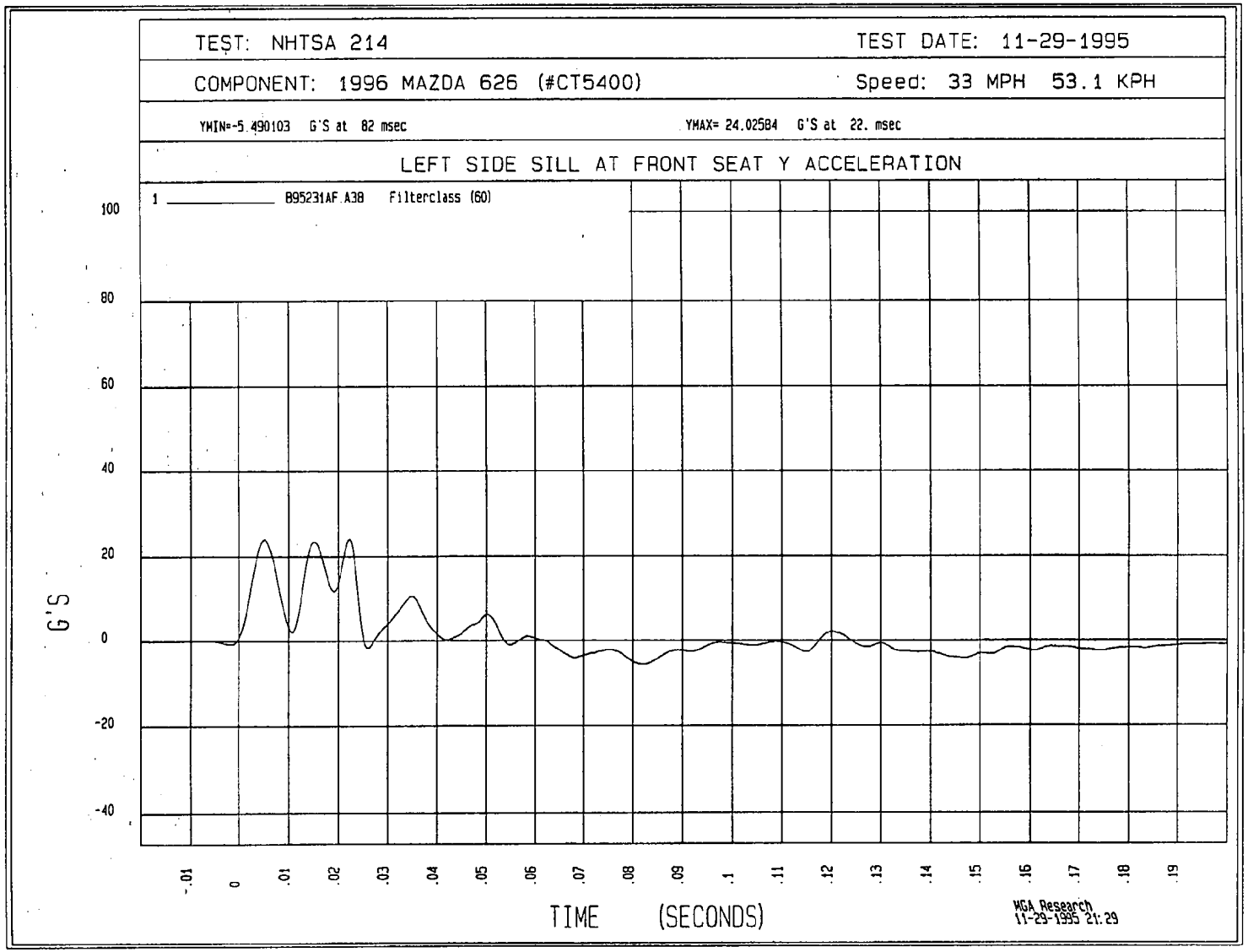

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-1.903246E-03 KPH at -3.6 msec
YMAX= 38.10849 KPH at 105 msec
PASSENGER LOWER RIB Y VELOCITY
1 895231AI.V26 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:12

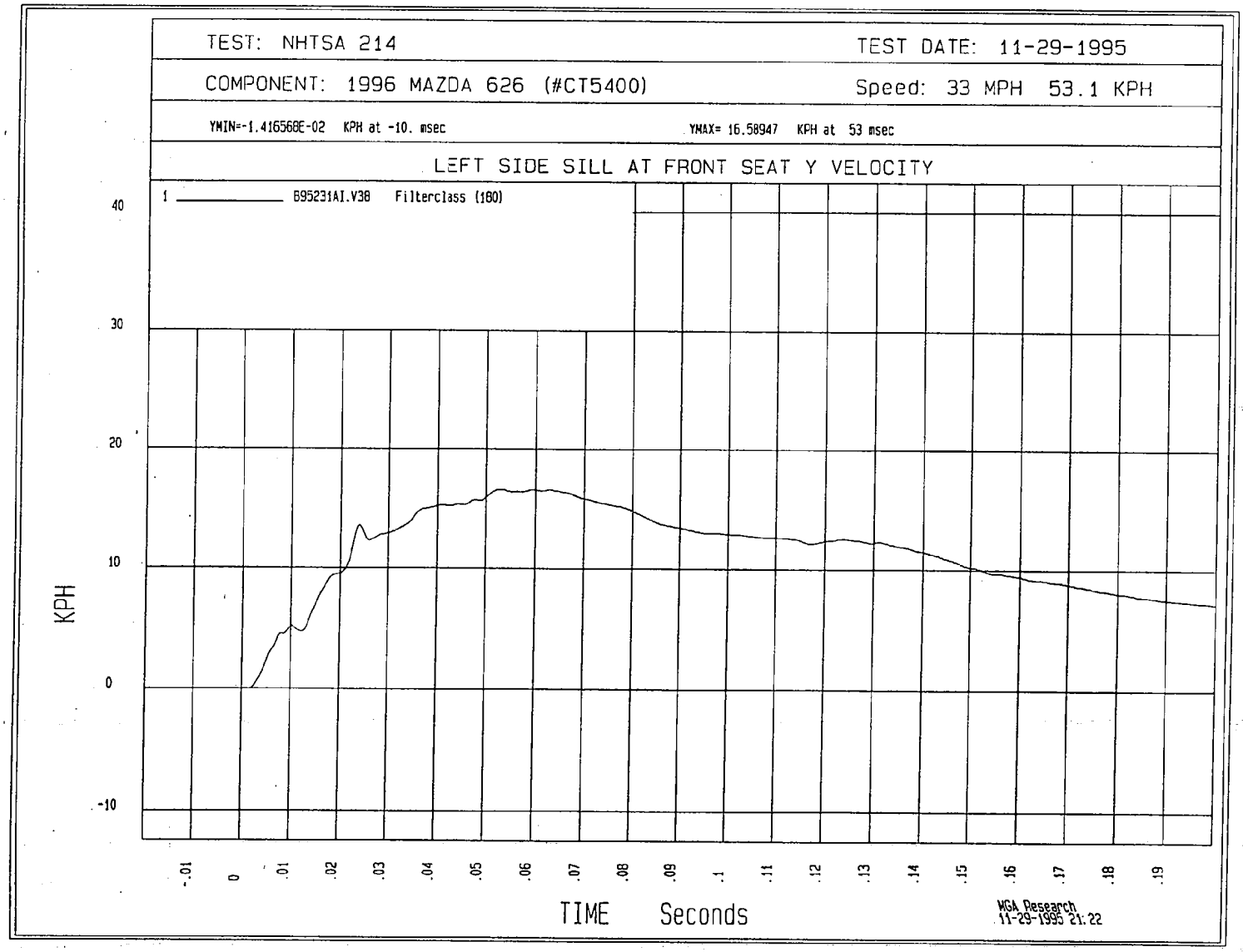

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-9.037341 G'S at 66. msec
YMAX= 56.12986 G'S at 49. msec
PASSENGER LOWER SPINE Y ACCELERATION
1 B95231AF.A27 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:16

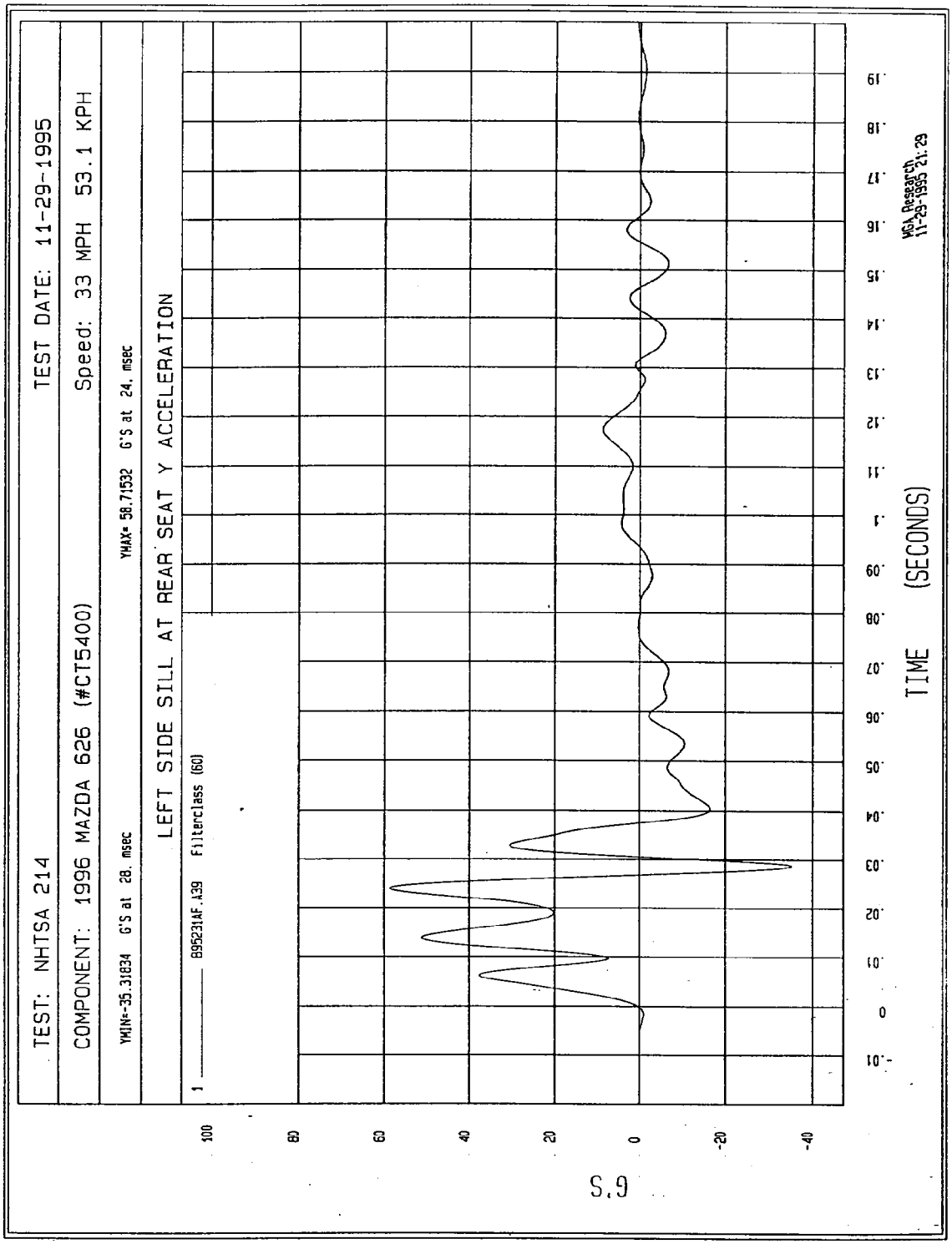

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-4.552741E-03 KPH at -12. msec
YMAX= 38.00162 KPH at 78. msec
PASSENGER LOWER SPINE Y VELOCITY
1 895231AI.V27 filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:12

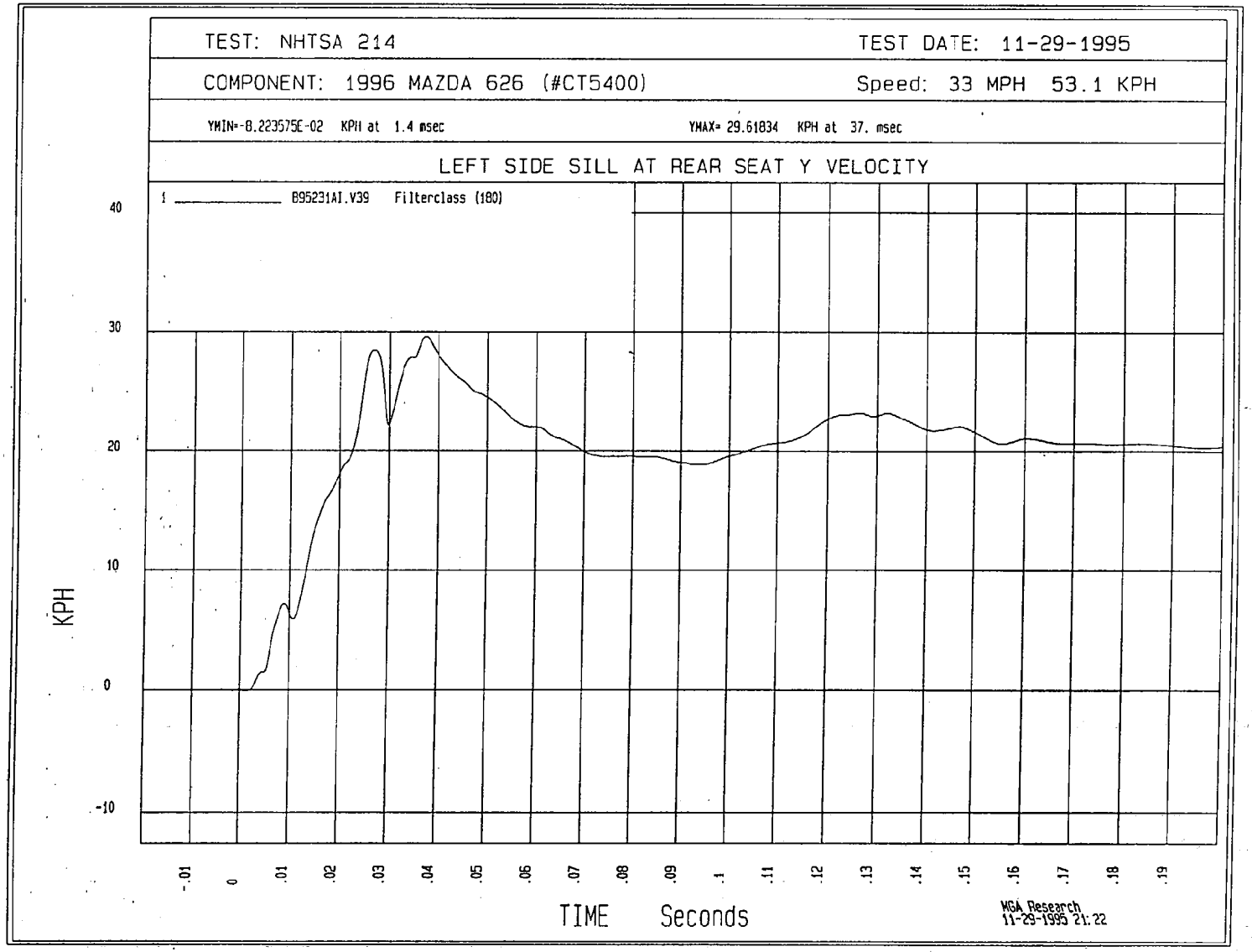

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-9.762811 G'S at 73. msec
YMAX= 67.33491 G'S at 43. msec
PASSENGER PELVIS Y ACCELERATION
1 995231AF.A28 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:16

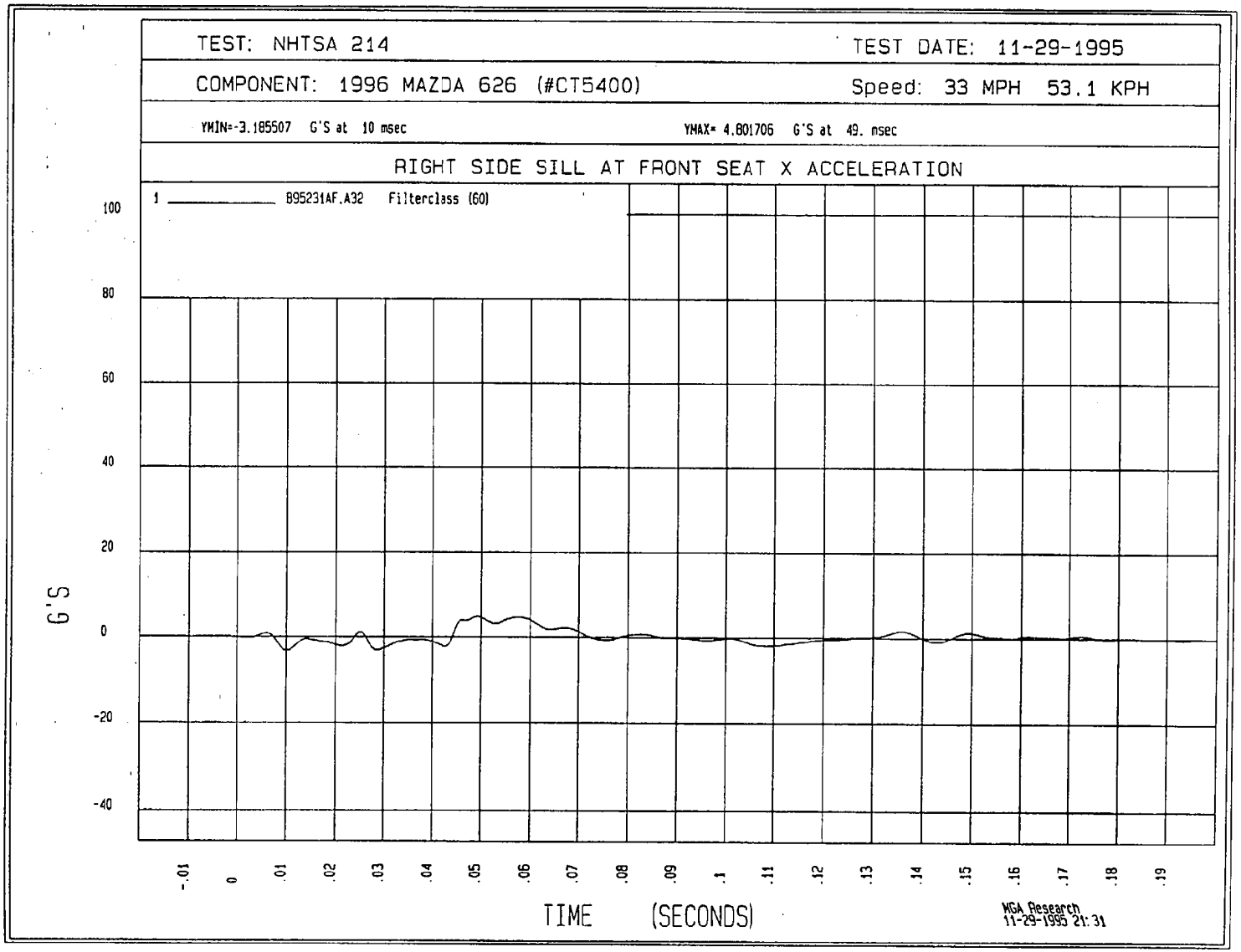

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-1.457150E-02 KPH at -12. msec
YMAX= 37.64091 KPH at 66. msec
PASSENGER PELVIS Y VELOCITY
1 B95231AI.V28 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:12

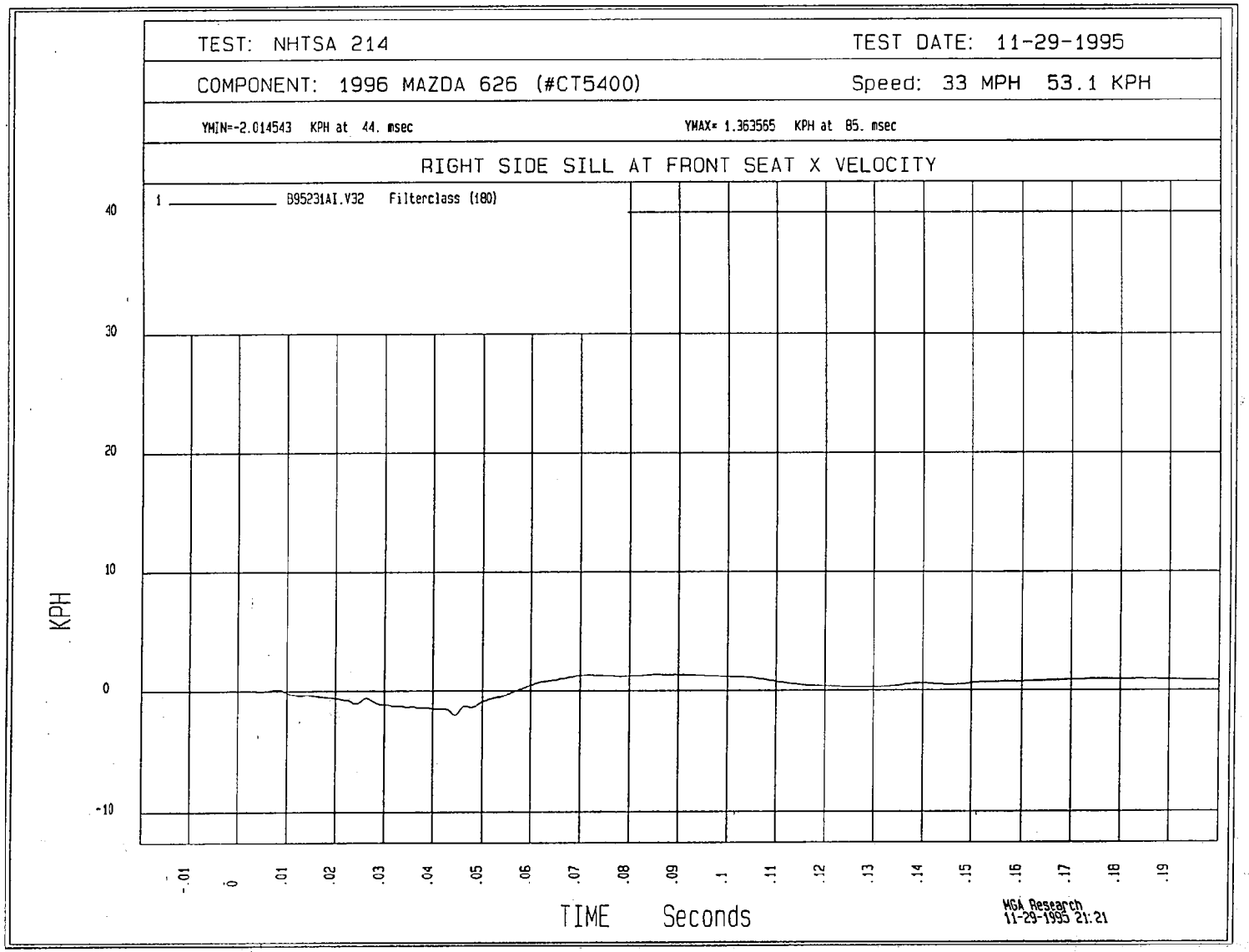

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-5.490103 G'S at 82 msec
YMAX= 24.02584 G'S at 22. msec
LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION
1 B95231AF.A38 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:29

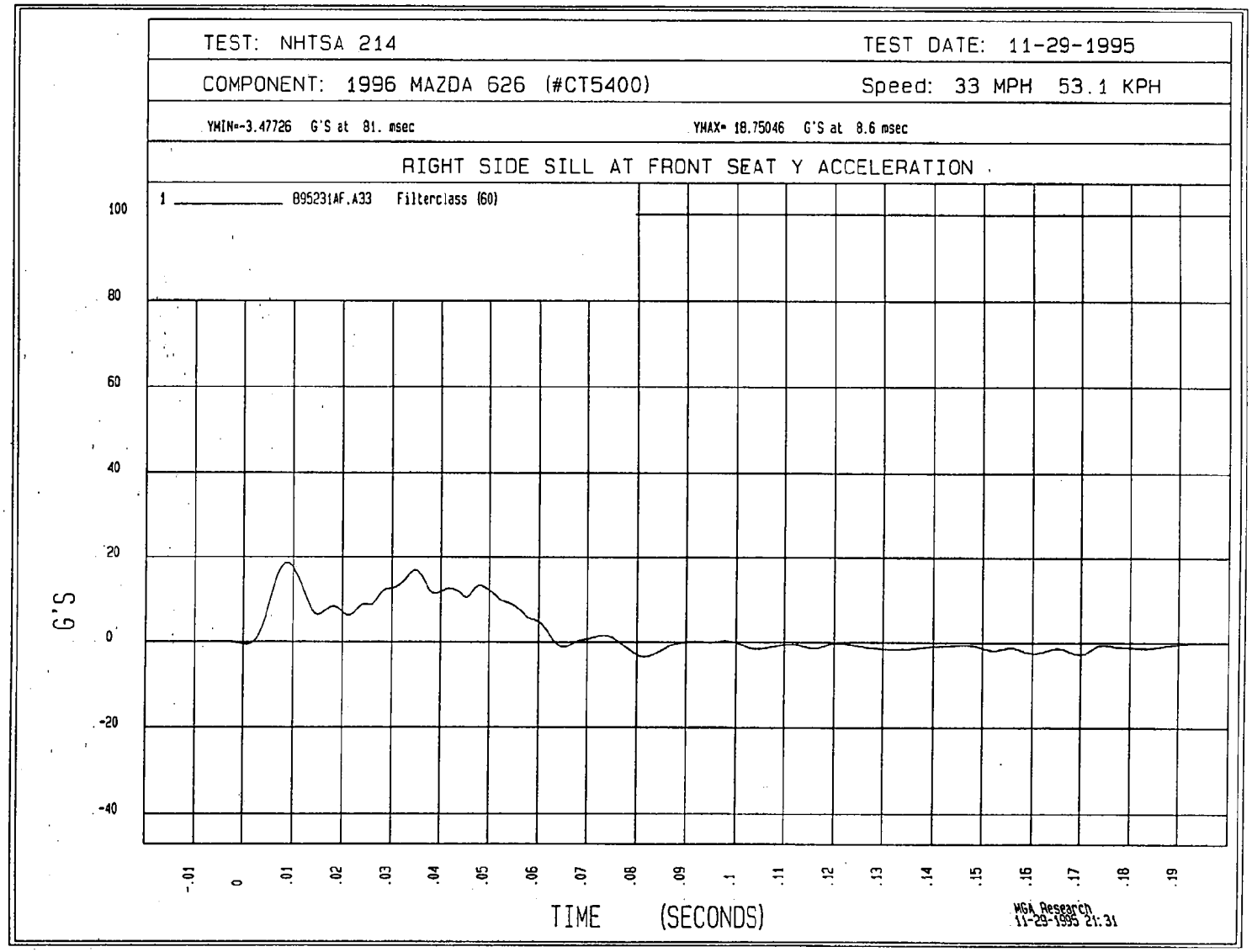

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-1.416568E-02 KPH at -10. msec
YMAX= 16.58947 KPH at 53 msec
LEFT SIDE SILL AT FRONT SEAT Y VELOCITY
1 B95231AI.V38 Filterclass (180)
40
30
20
10
0
-10
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:22

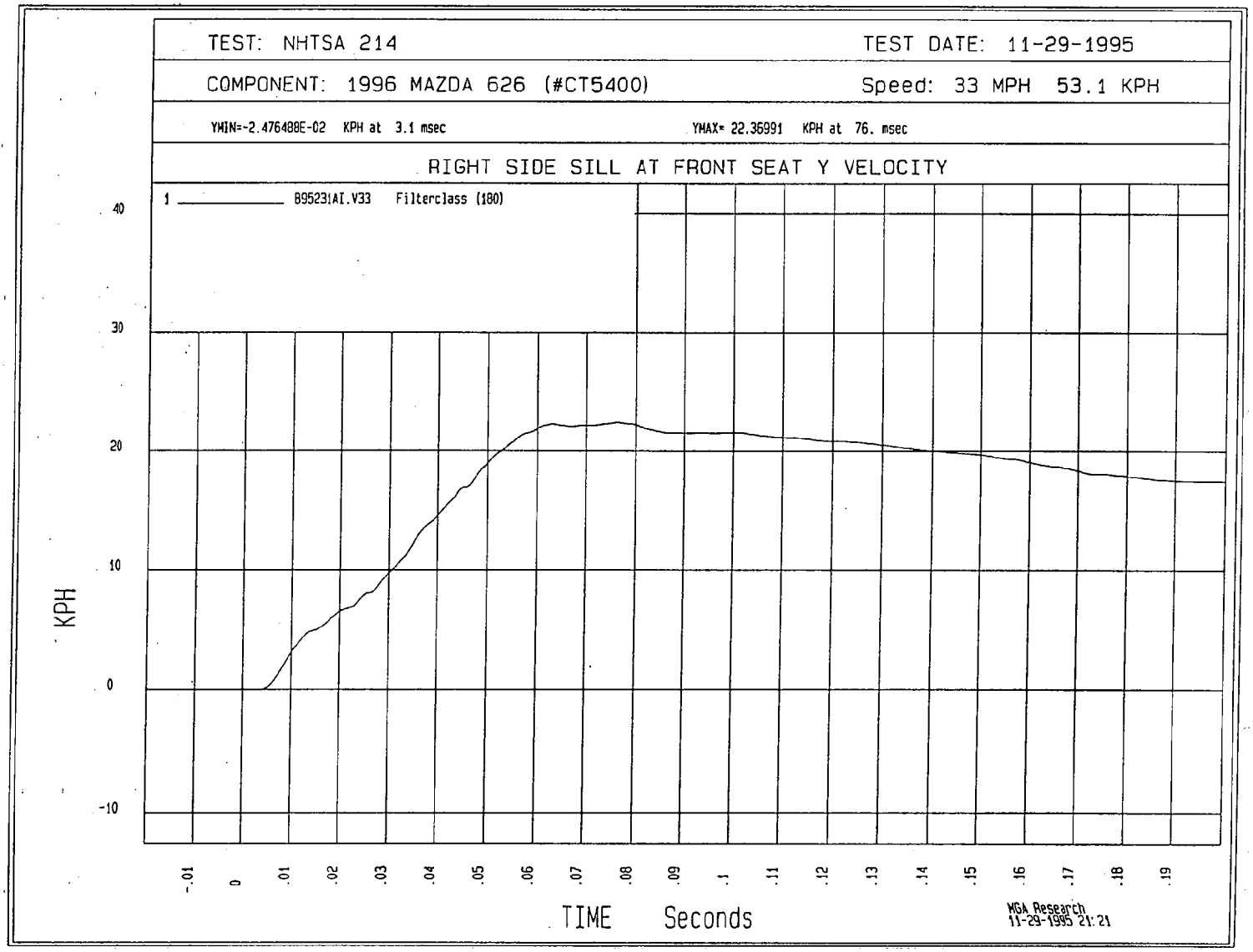

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-35.31634 G'S at 28. msec
YMAX= 58.71532 G'S at 24. msec
LEFT SIDE SILL AT REAR SEAT Y ACCELERATION
1 B95231AF.A39 Filterclass (60)
100
80
60
40
20
0
-20
-40
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:29
G's

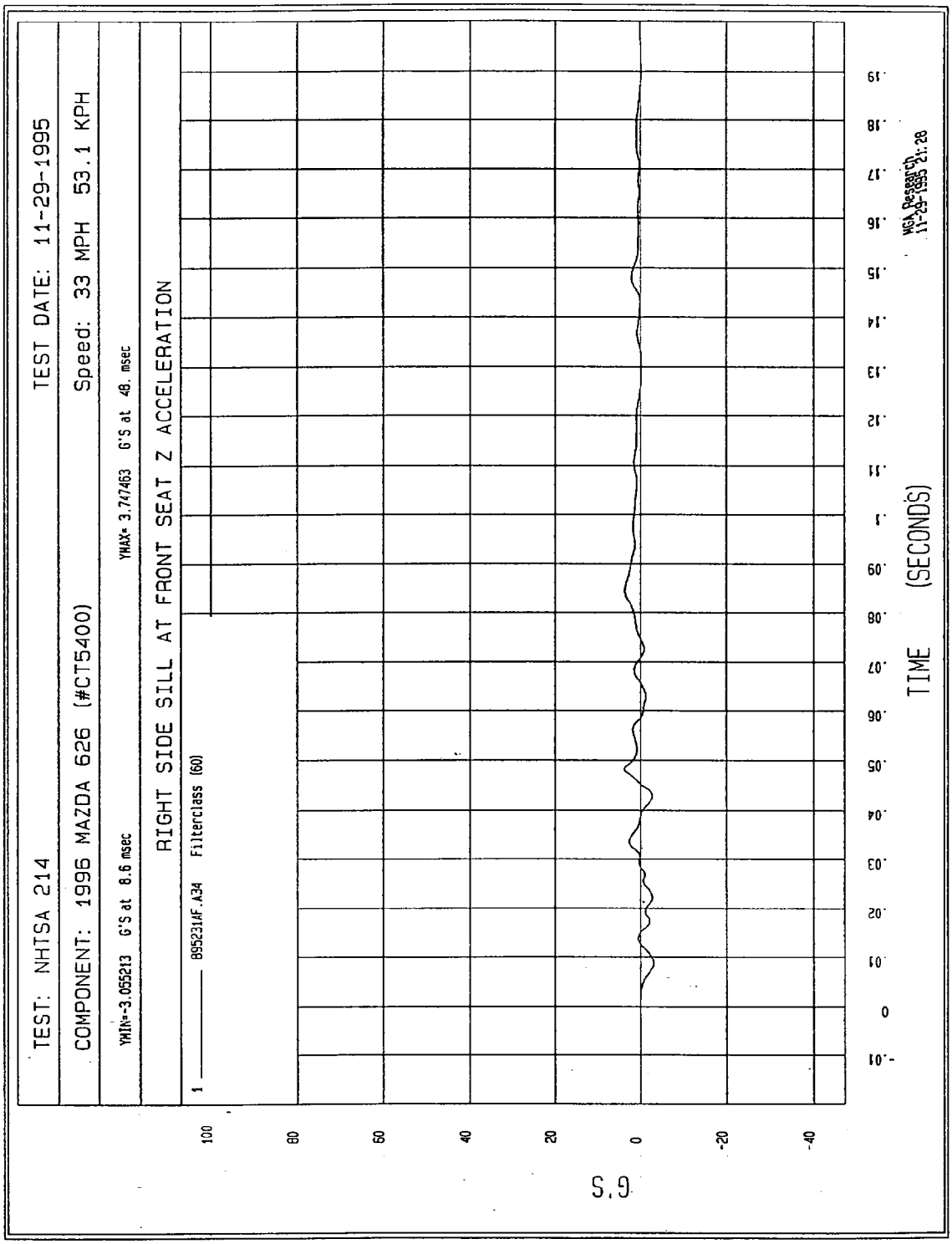

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-8.223575E-02 KPH at 1.4 msec
YMAX= 29.61834 KPH at 37. msec
LEFT SIDE SILL AT REAR SEAT Y VELOCITY
1 B95231AI.V39 Filterclass (180)
KPH
40
30
20
10
0
-10
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:22

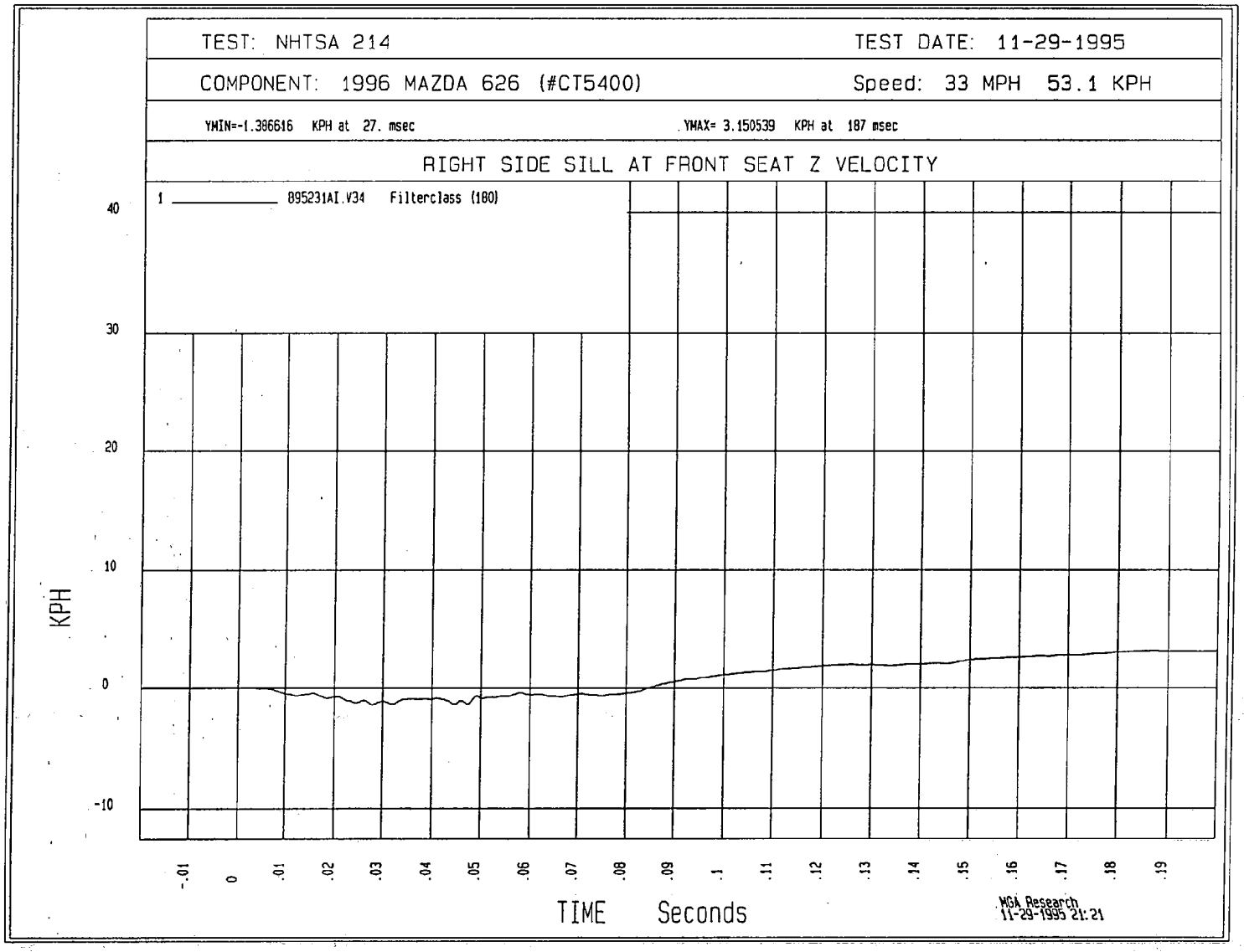

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-3.185507 G'S at 10 msec
YMAX= 4.801706 G'S at 49. msec
RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION
1 B95231AF.A32 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:31

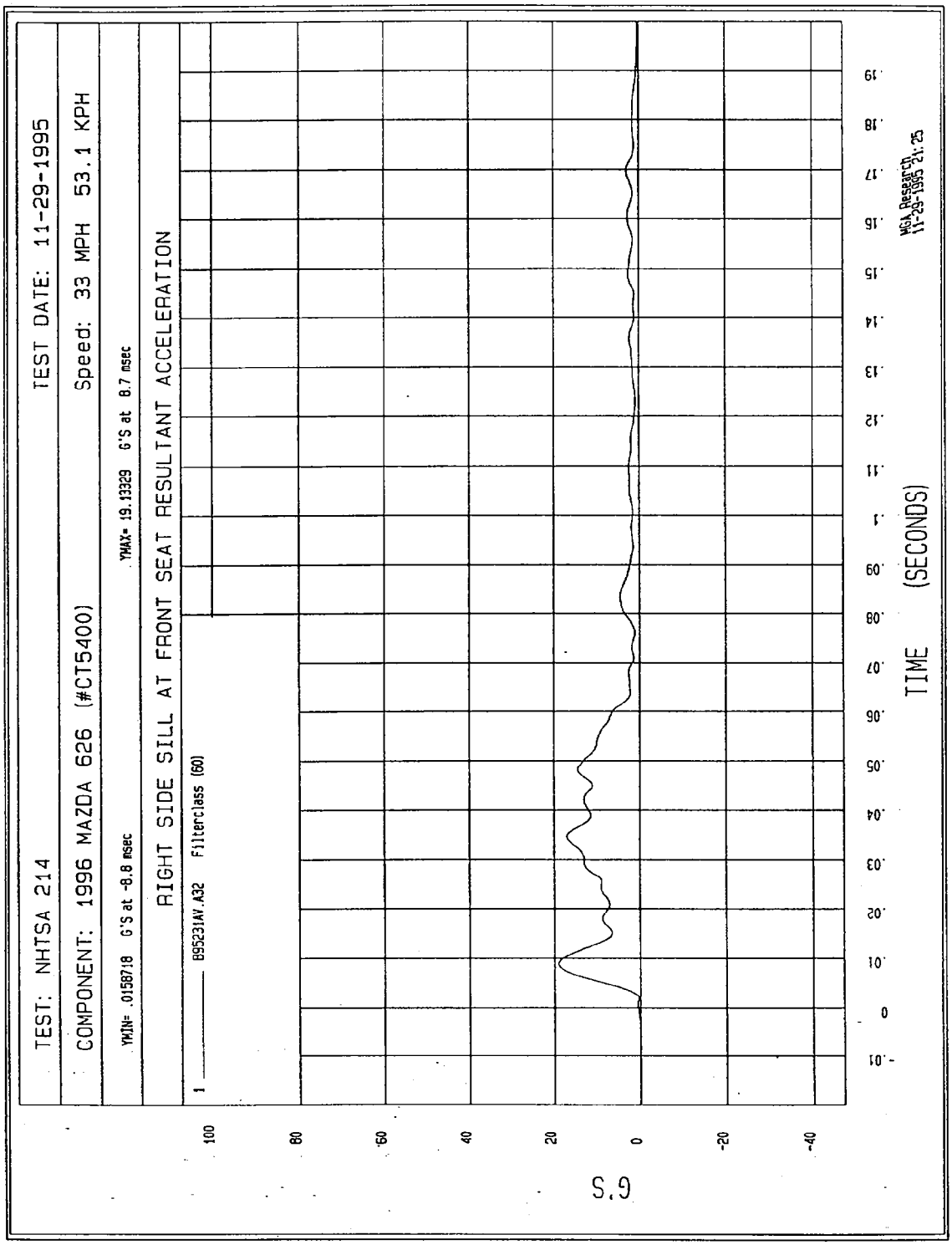

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-2.014543 KPH at 44. msec
YMAX= 1.363565 KPH at 85. msec
RIGHT SIDE SILL AT FRONT SEAT X VELOCITY
1 B95231AI.V32 Filterclass (180)
40
30
20
10
0
-10
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:21

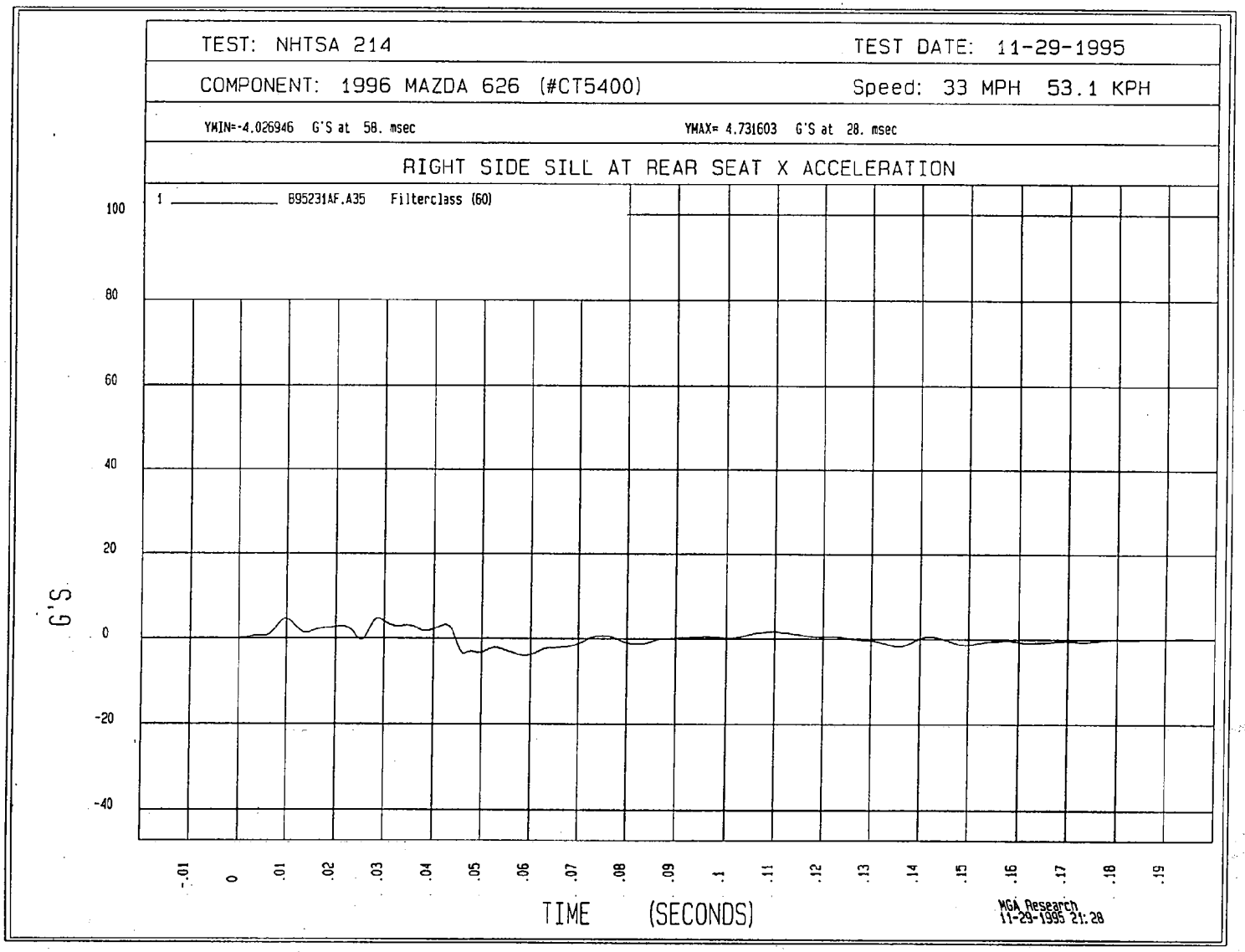

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-3.47726 G'S at 81. msec
YMAX= 18.75046 G'S at 8.6 msec
RIGHT SIDE SILL AT FRONT SEAT Y ACCELERATION
1 B95231AF.A33 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:31

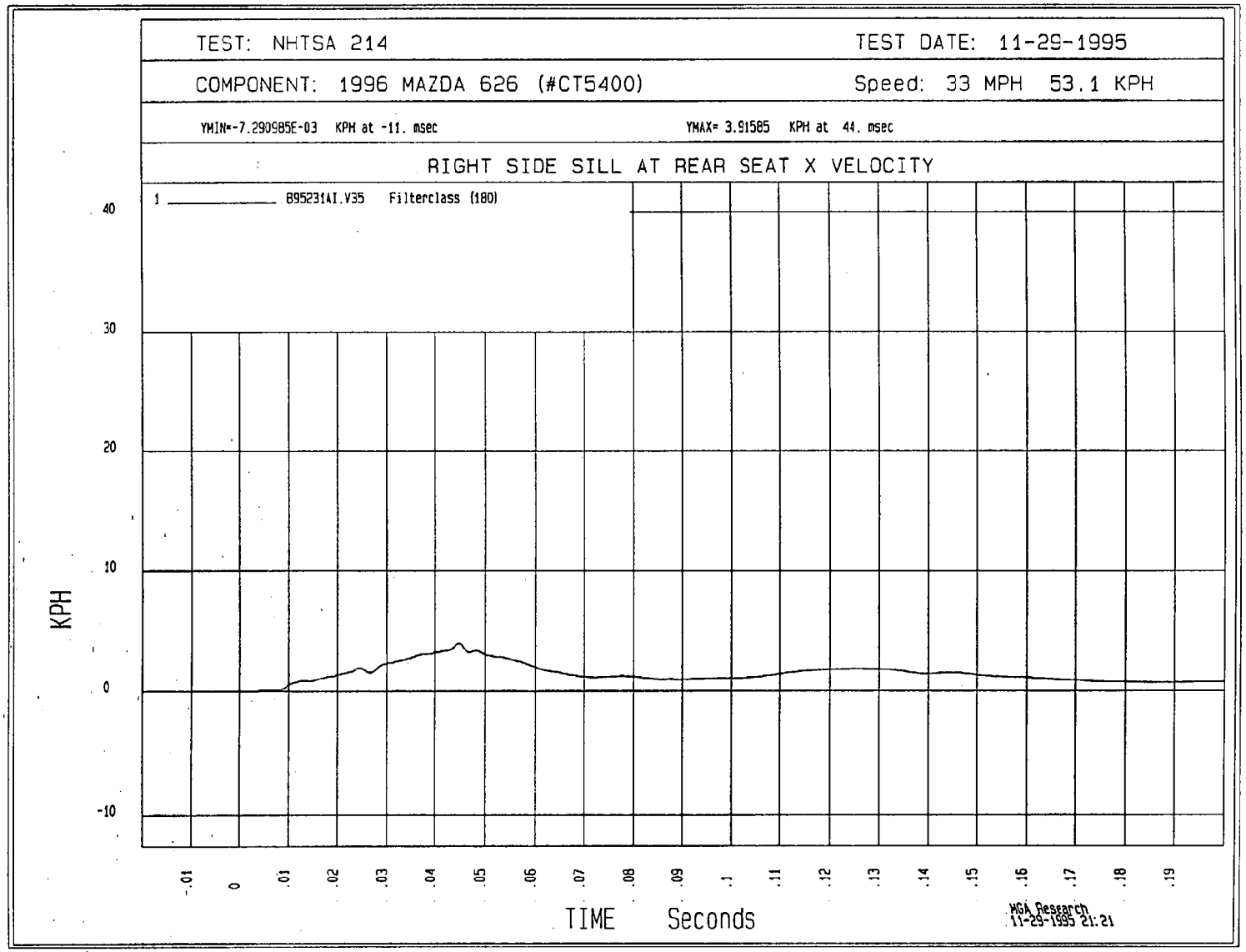

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-2.476488E-02 KPH at 3.1 msec
YMAX= 22.36991 KPH at 76. msec
RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY
1 B95231AI.V33 Filterclass (180)
40
30
20
10
0
-10
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:21

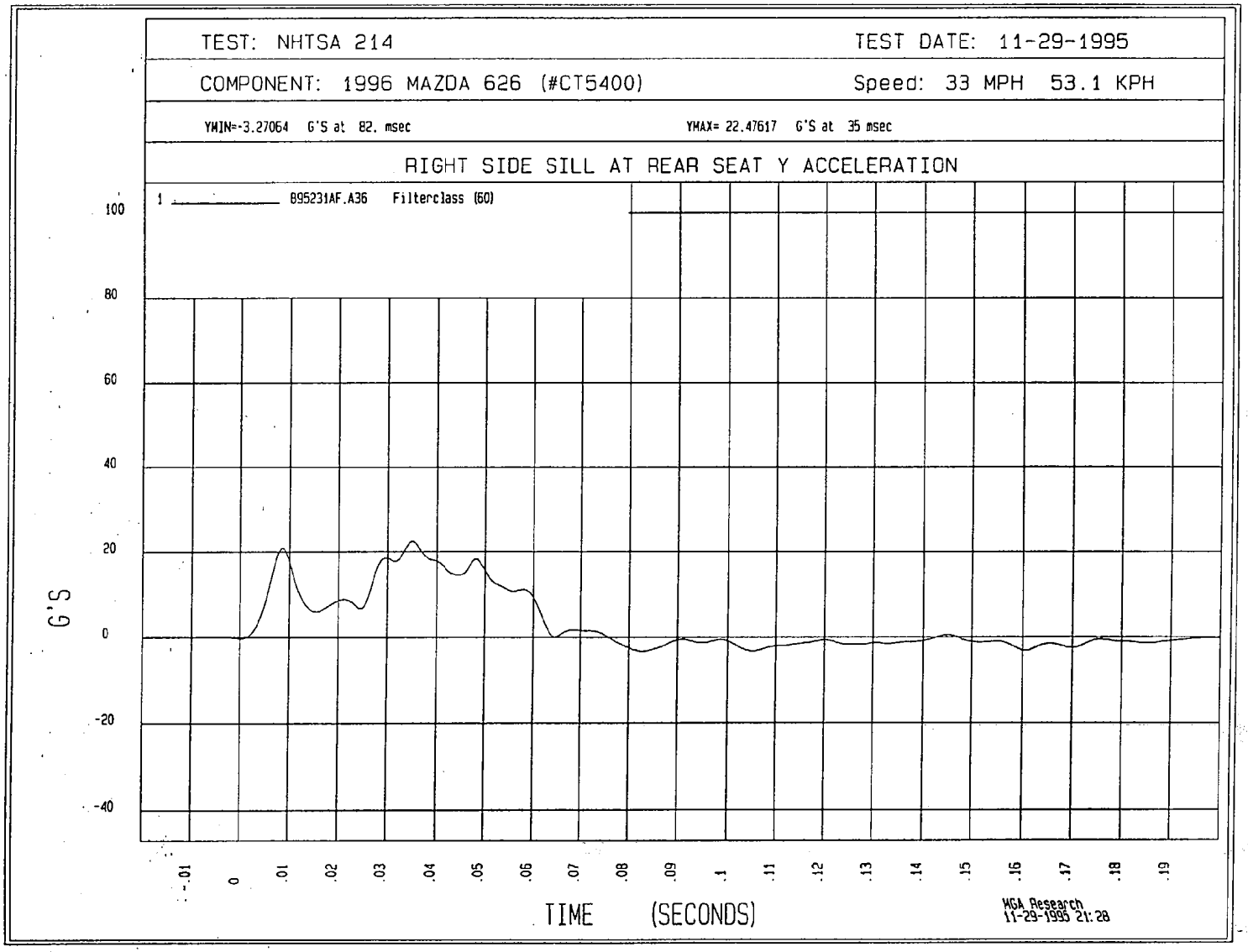

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-3.055213 G'S at 8.6 msec
YMAX= 3.747463 G'S at 48. msec
RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION
1 B95231AF.A34 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:28

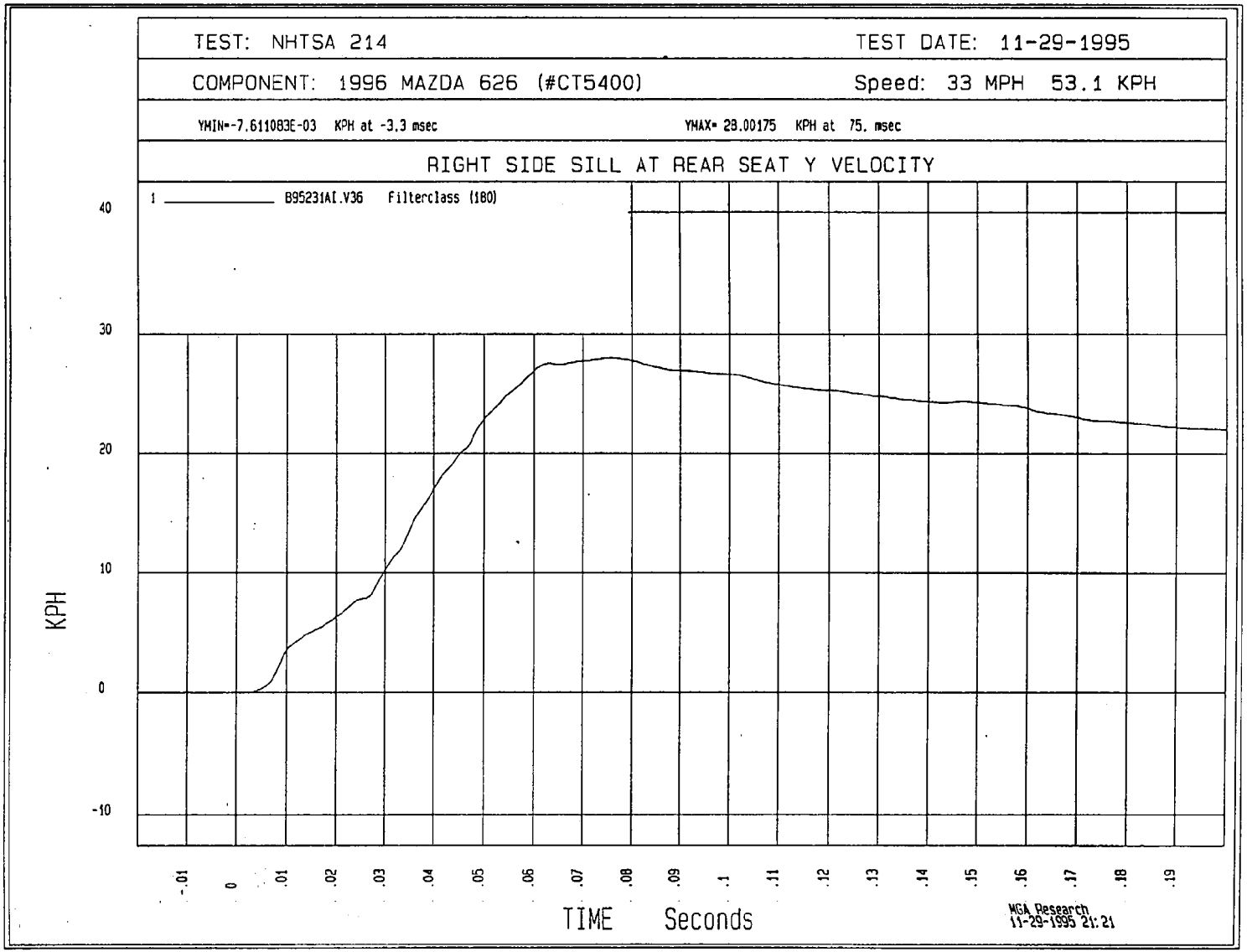

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-1.386616 KPH at 27. msec
YMAX= 3.150539 KPH at 187 msec
RIGHT SIDE SILL AT FRONT SEAT Z VELOCITY
1 895231AI.V34 Filterclass (180)
40
30
20
10
0
-10
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:21

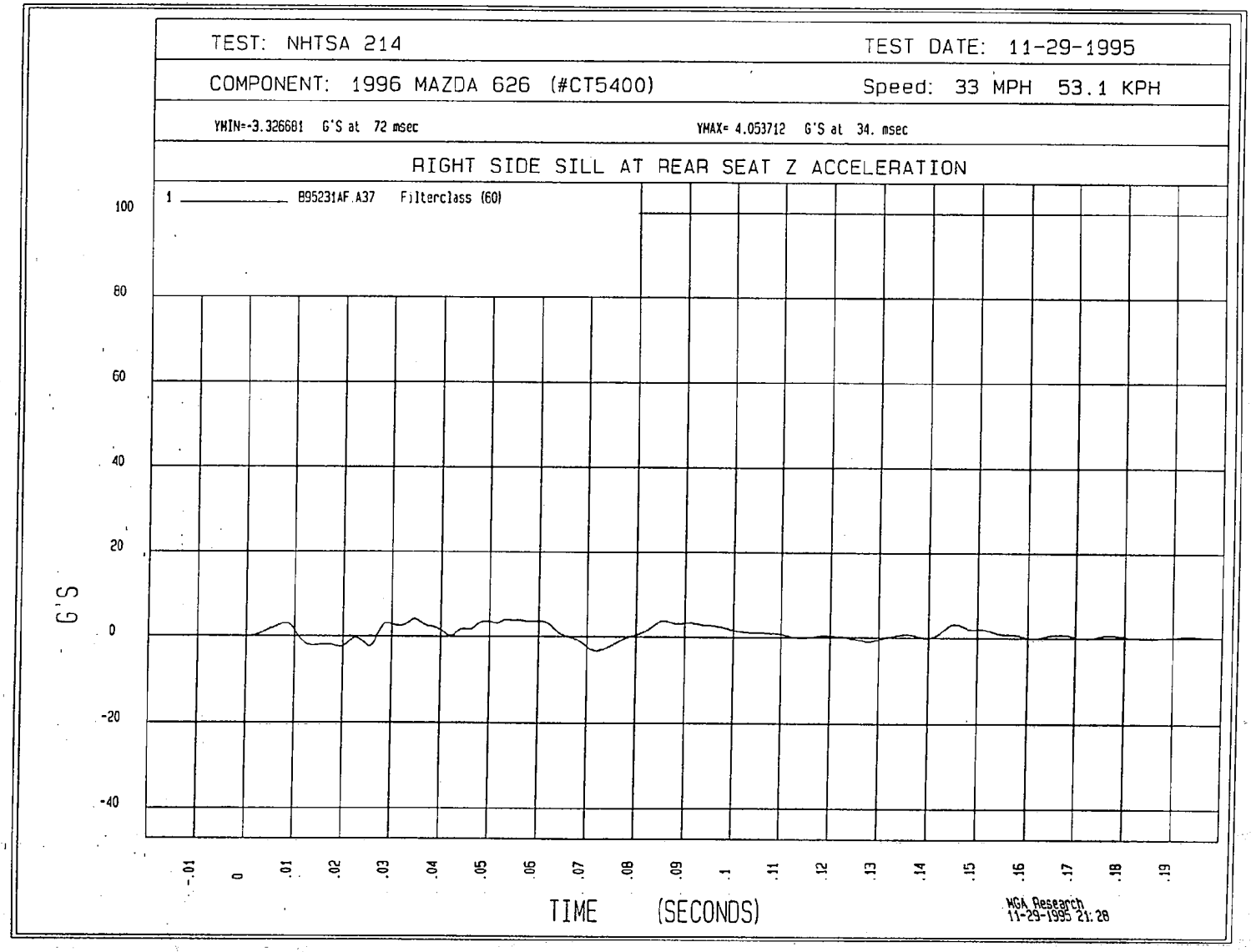

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN= .0158718 G'S at -8.8 msec
YMAX= 19.13329 G'S at 8.7 msec
RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION
1 B95231AV.A32 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:25

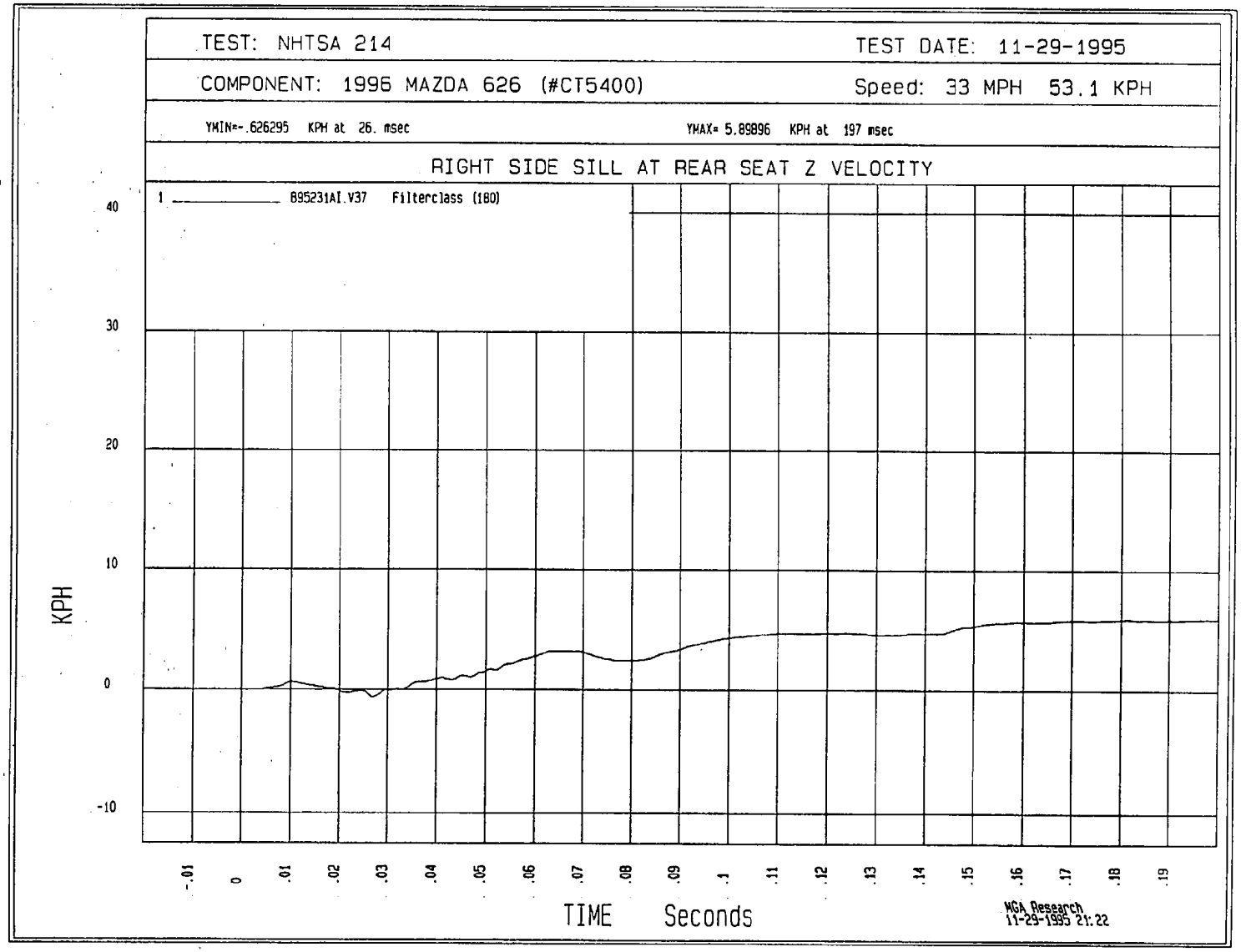

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-4.026946 G'S at 58. msec
YMAX= 4.731603 G'S at 28. msec
RIGHT SIDE SILL AT REAR SEAT X ACCELERATION
1 B95231AF.A35 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:28

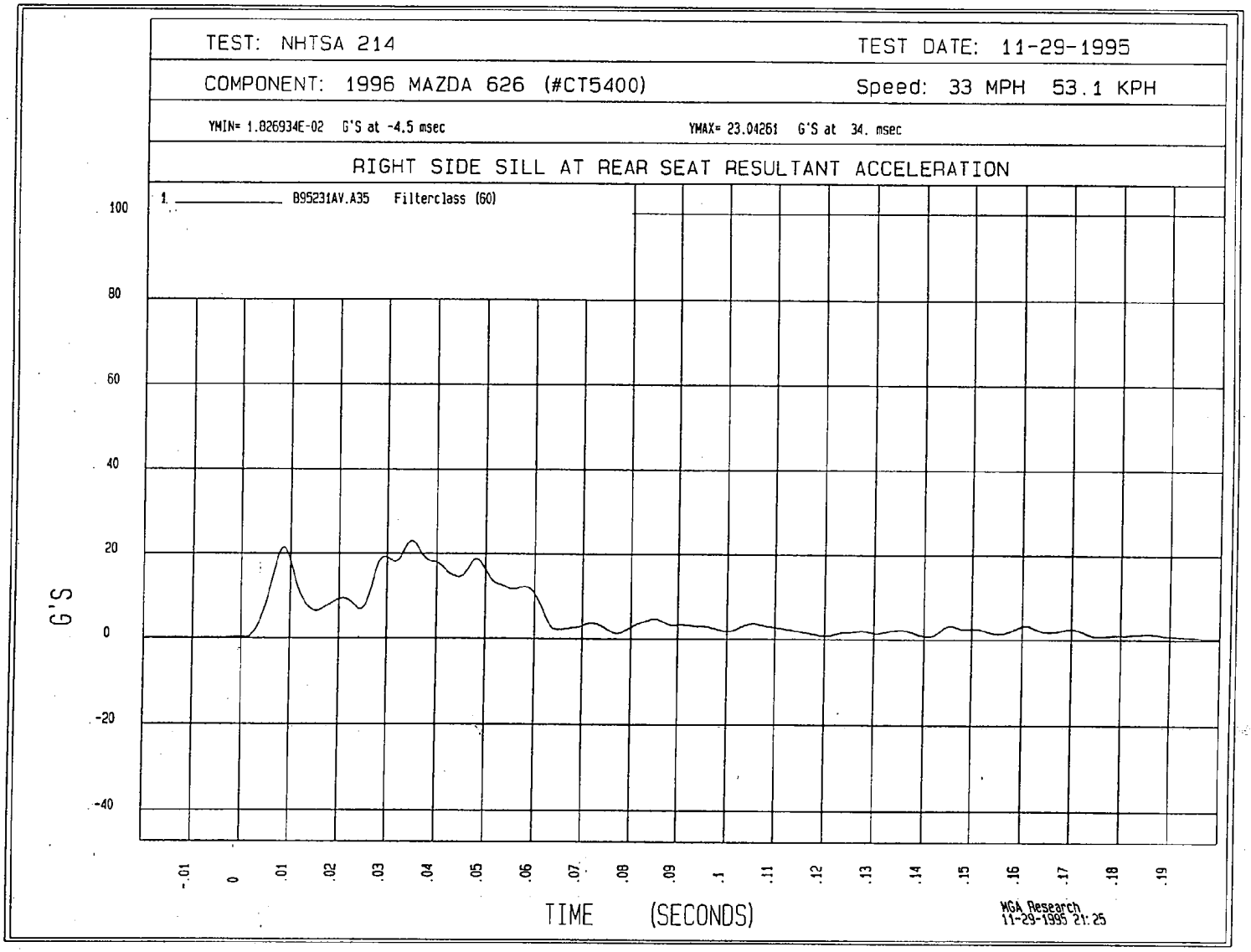

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-7.290985E-03 KPH at -11. msec
YMAX= 3.91585 KPH at 44. msec
RIGHT SIDE SILL AT REAR SEAT X VELOCITY
1 B95231AI.V35 Filterclass (180)
40
30
20
10
0
-10
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:21


TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-3.27064 G'S at 82. msec
YMAX= 22.47617 G'S at 35 msec
RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION
1 B95231AF.A36 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.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
11-29-1995 21:28


TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-7.611083E-03 KPH at -3.3 msec
YMAX= 28.00175 KPH at 75. msec
RIGHT SIDE SILL AT REAR SEAT Y VELOCITY
1 B95231AI.V36 Filterclass (180)
KPH
40
30
20
10
0
-10
-.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
11-29-1995 21:21

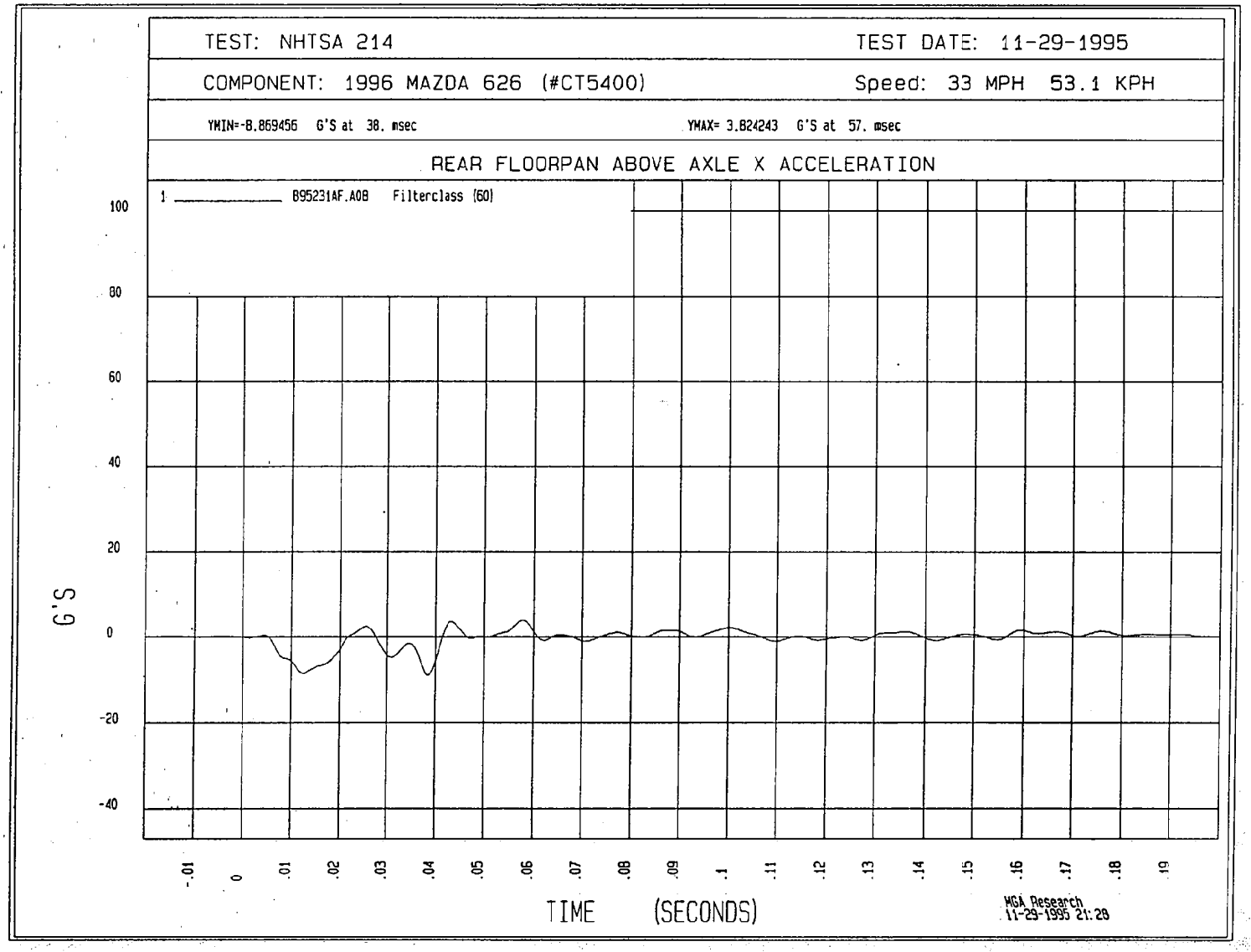

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-3.326681 G'S at 72 msec
YMAX= 4.053712 G'S at 34. msec
RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION
1 B95231AF.A37 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:28

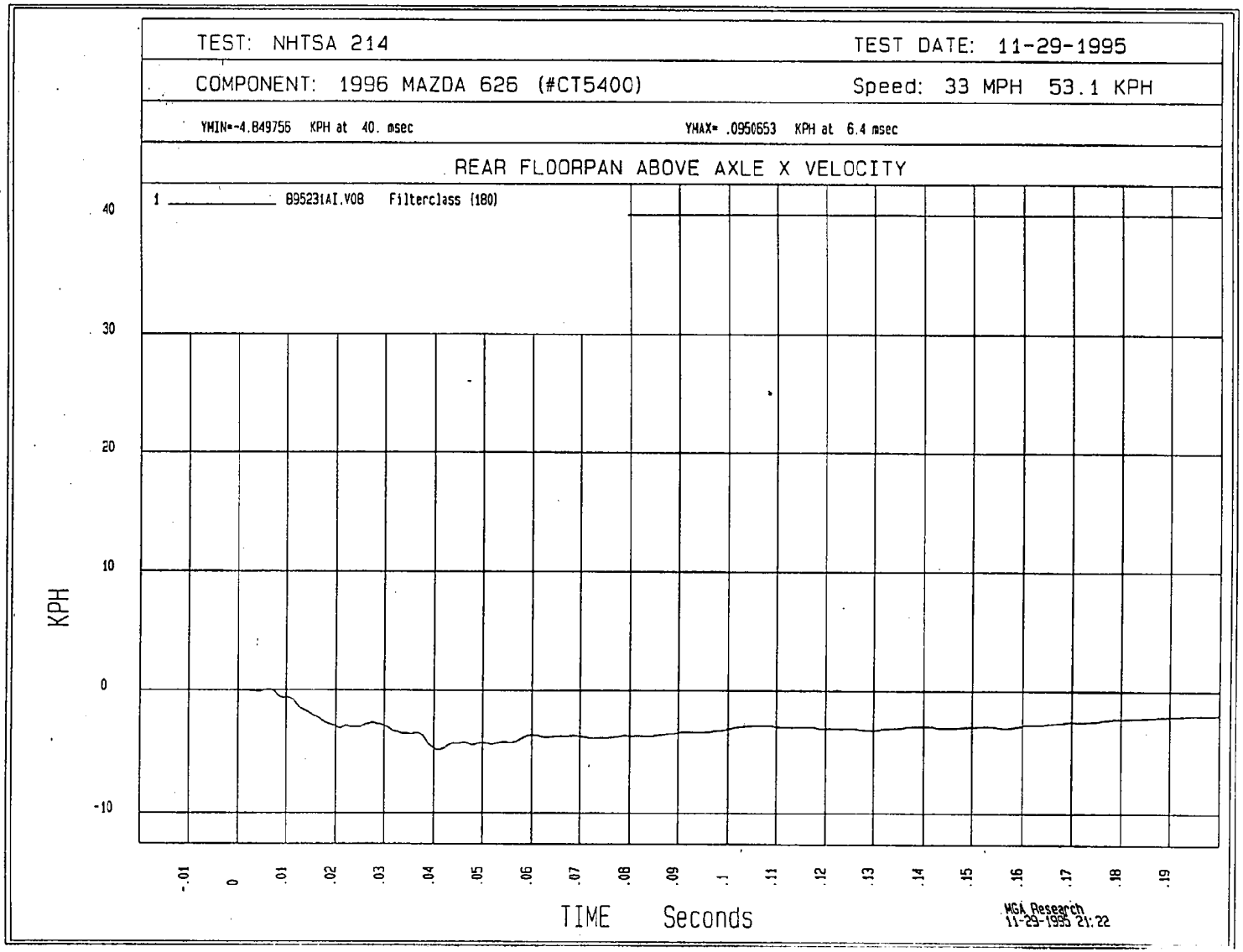

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-.626295 KPH at 26. msec
YMAX= 5.89896 KPH at 197 msec
RIGHT SIDE SILL AT REAR SEAT Z VELOCITY
1 B95231AI.V37 Filterclass (180)
KPH
40
30
20
10
0
-10
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:22

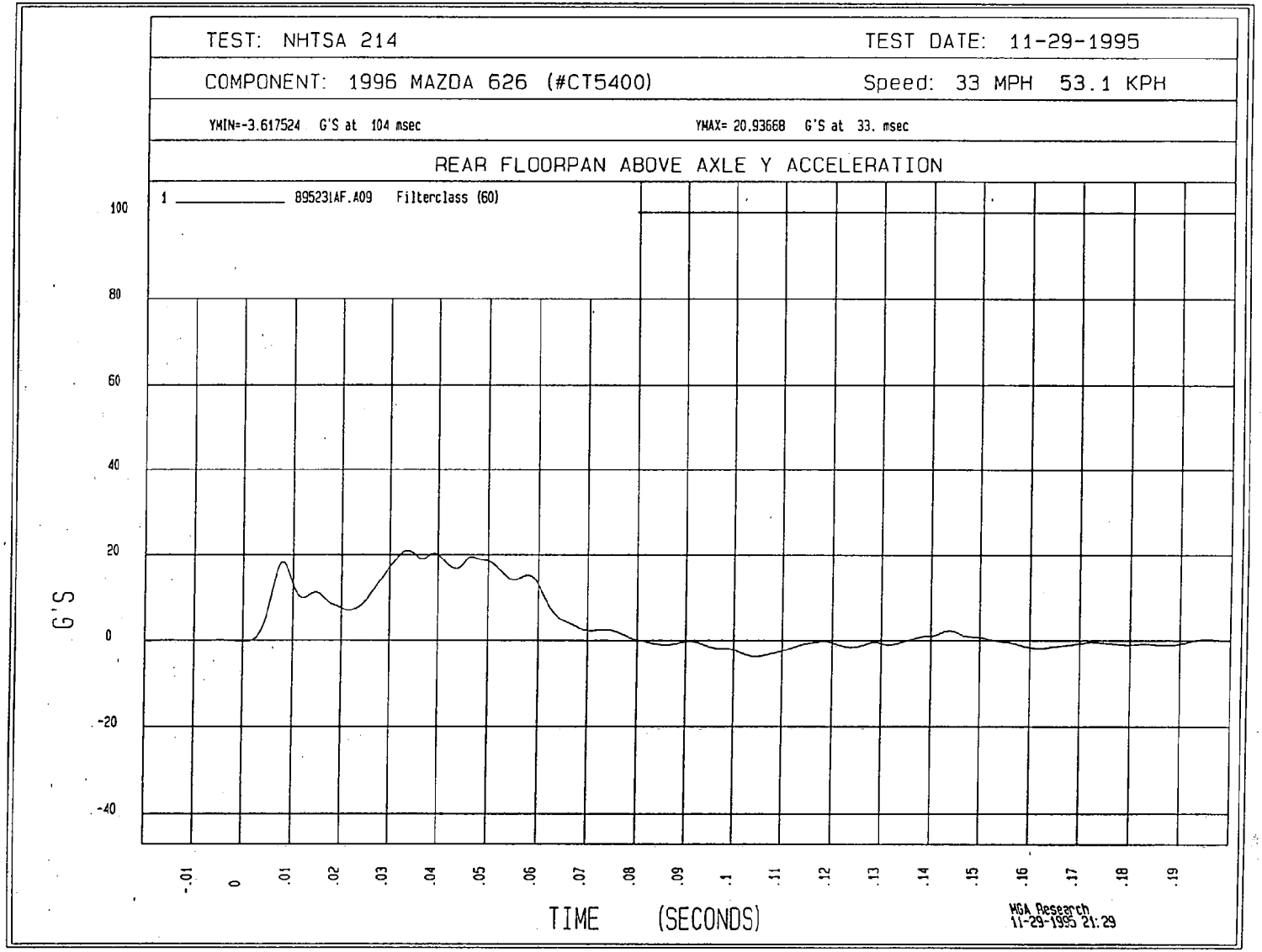

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN= 1.826934E-02 G'S at -4.5 msec
YMAX= 23.04261 G'S at 34. msec
RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION
1. B95231AV.A35 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:25

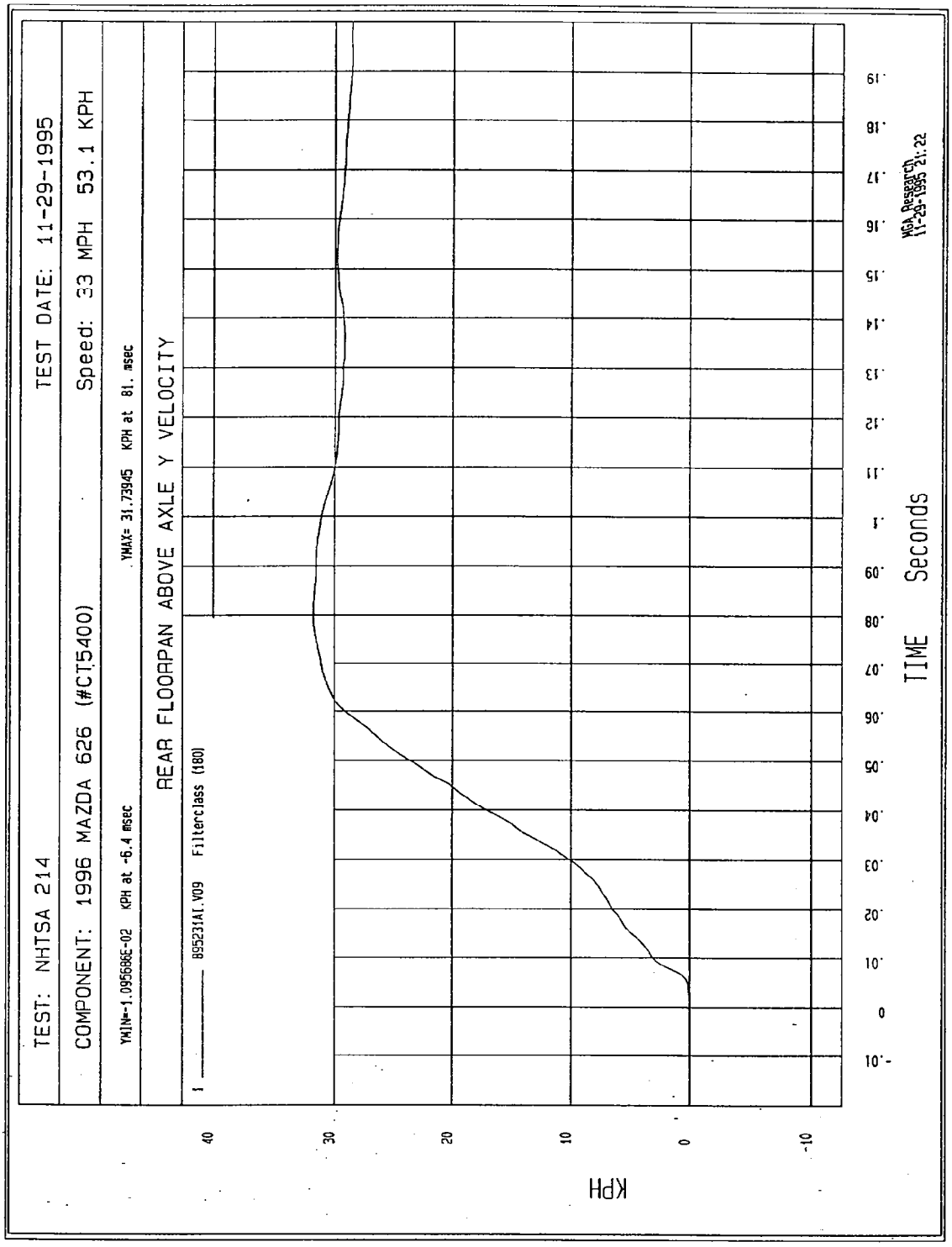
DRIVER SEAT TRACK Y ACCELERATION VS. TIME

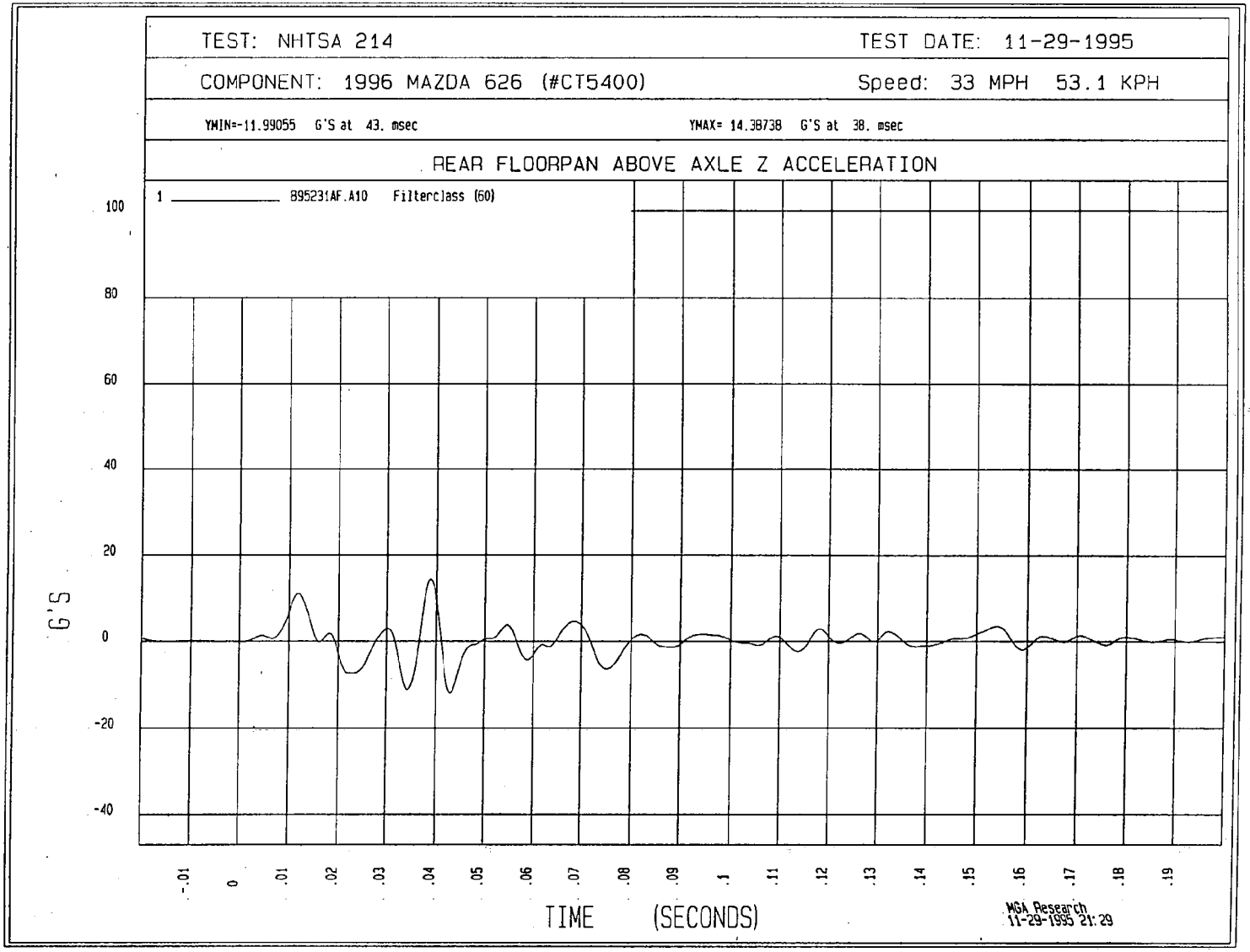
NO VALID DATA COLLECTED

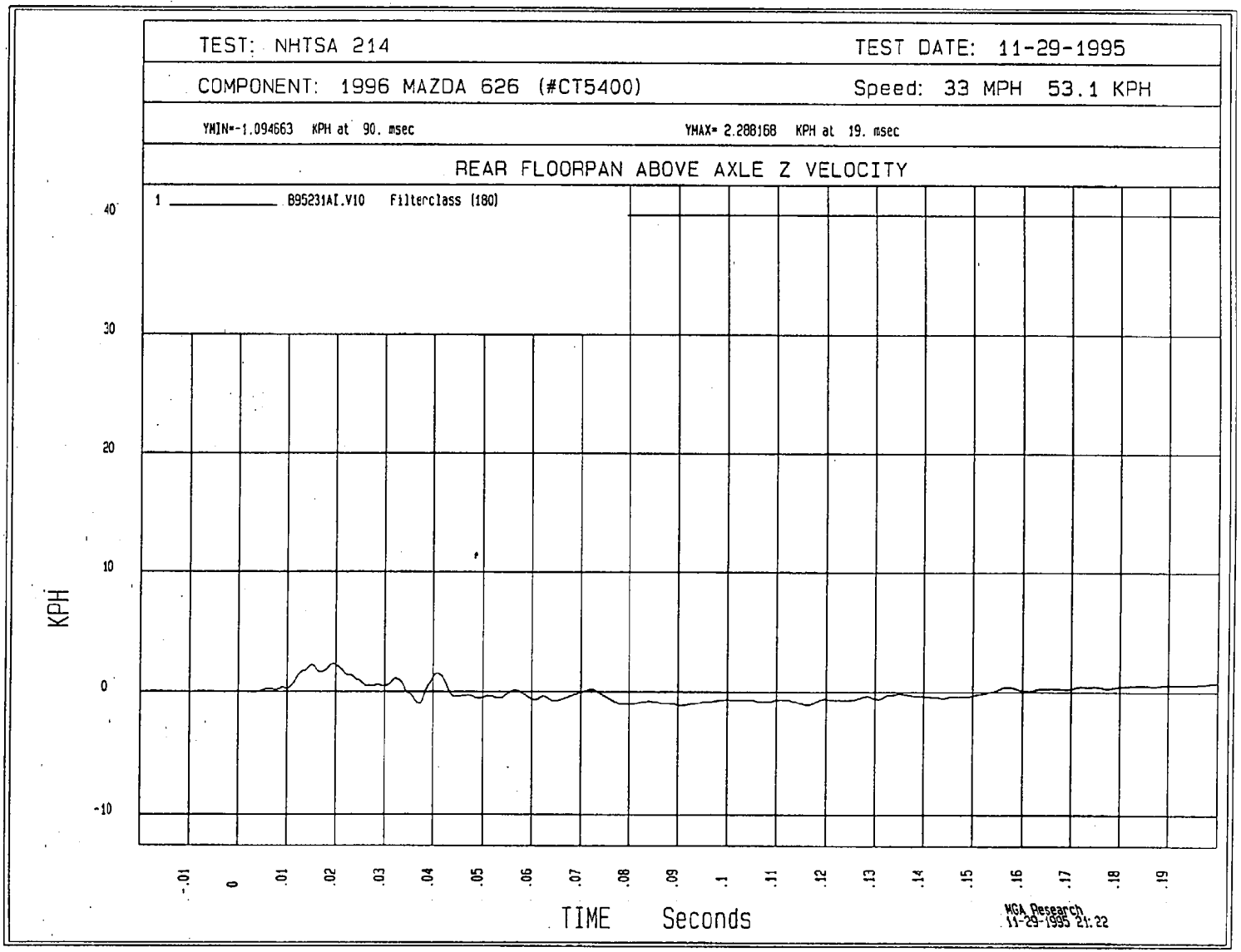

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-8.869456 G'S at 38. msec
YMAX= 3.824243 G'S at 57. msec
REAR FLOORPAN ABOVE AXLE X ACCELERATION
1 B95231AF.A08 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:28

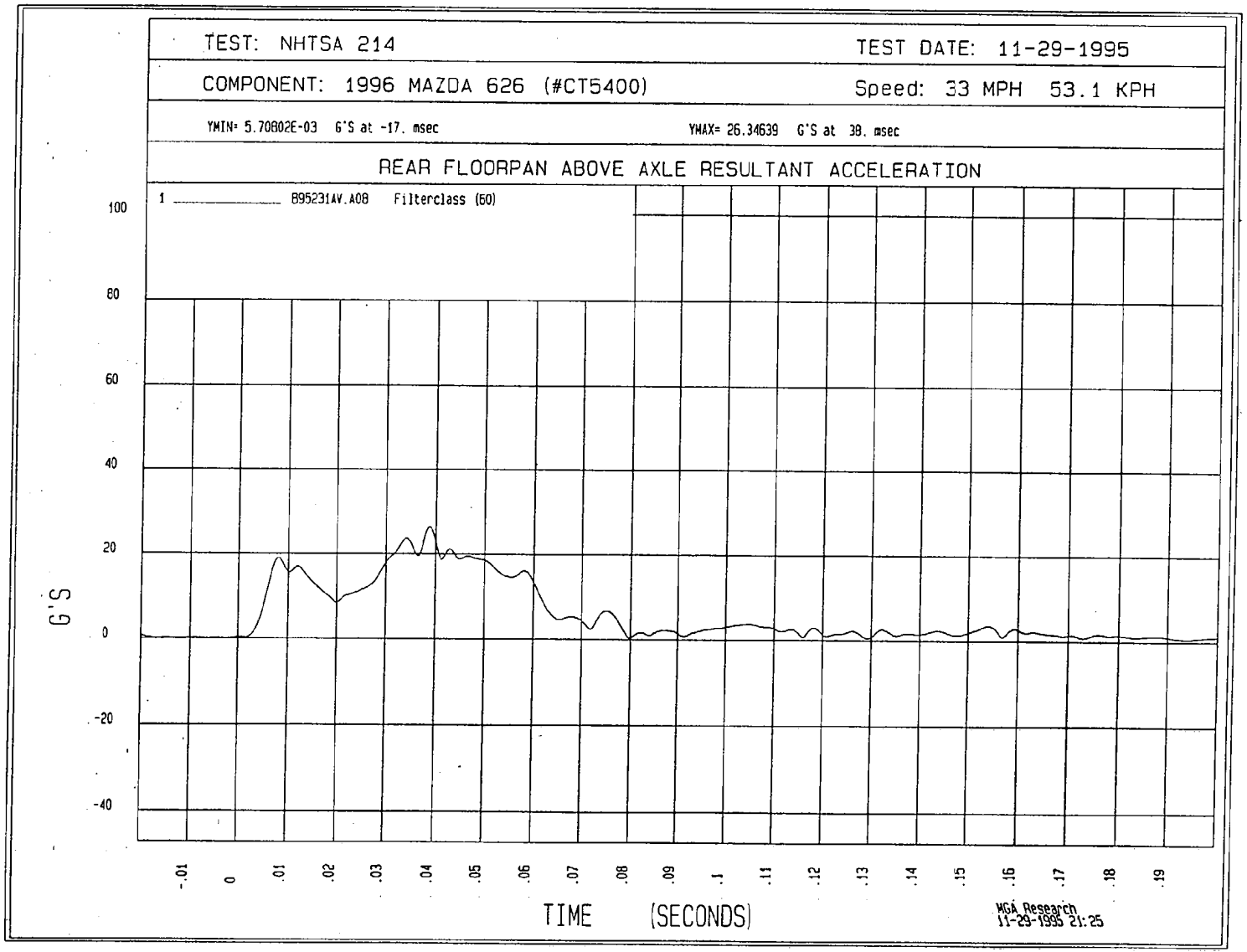

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-4.849755 KPH at 40. msec
YMAX= .0950653 KPH at 6.4 msec
REAR FLOORPAN ABOVE AXLE X VELOCITY
1 B95231AI.V08 Filterclass (180)
KPH
40
30
20
10
0
-10
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:22

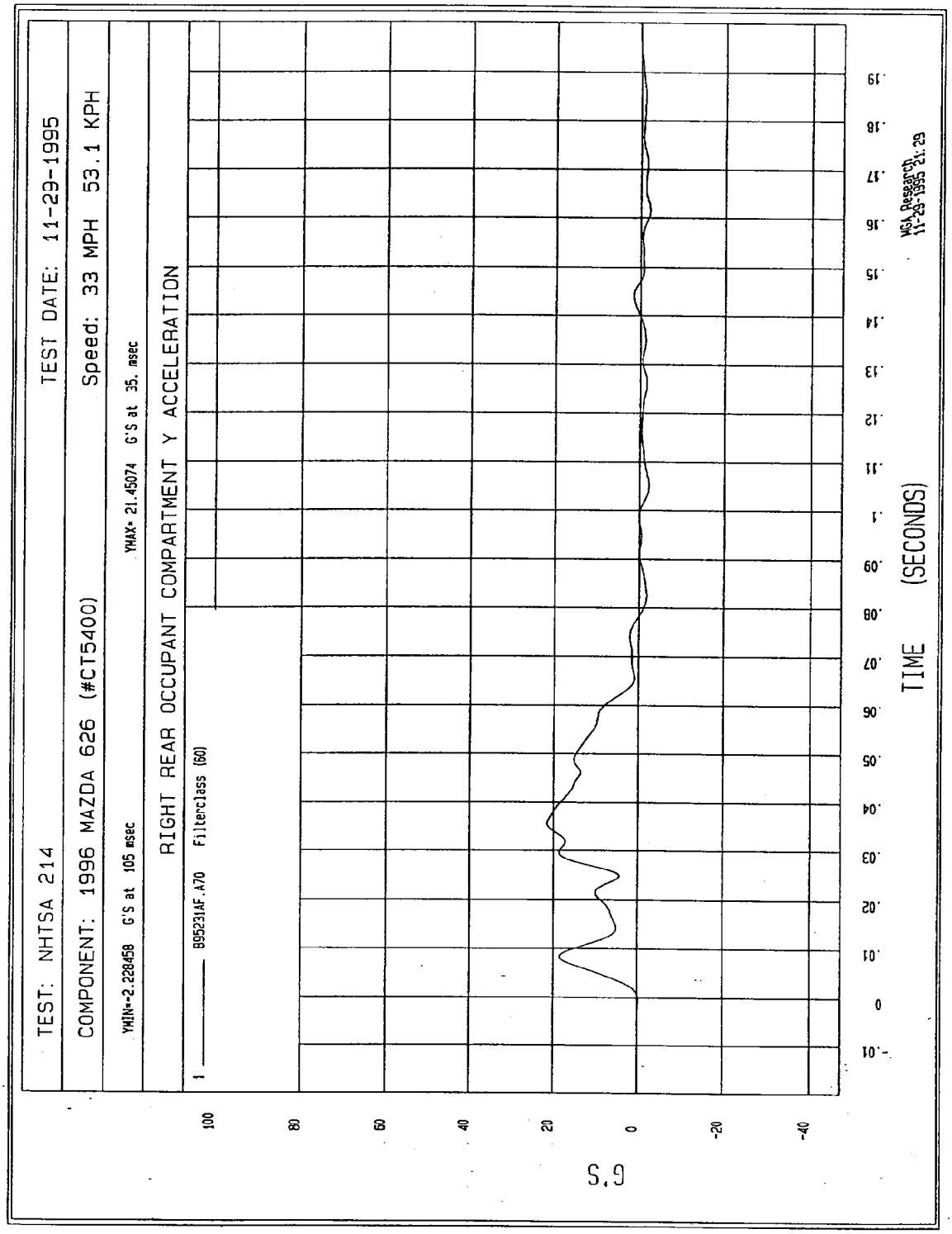

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-3.617524 G'S at 104 msec
YMAX= 20.93668 G'S at 33. msec
REAR FLOORPAN ABOVE AXLE Y ACCELERATION
1 _____ 89523IAF.A09 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:29

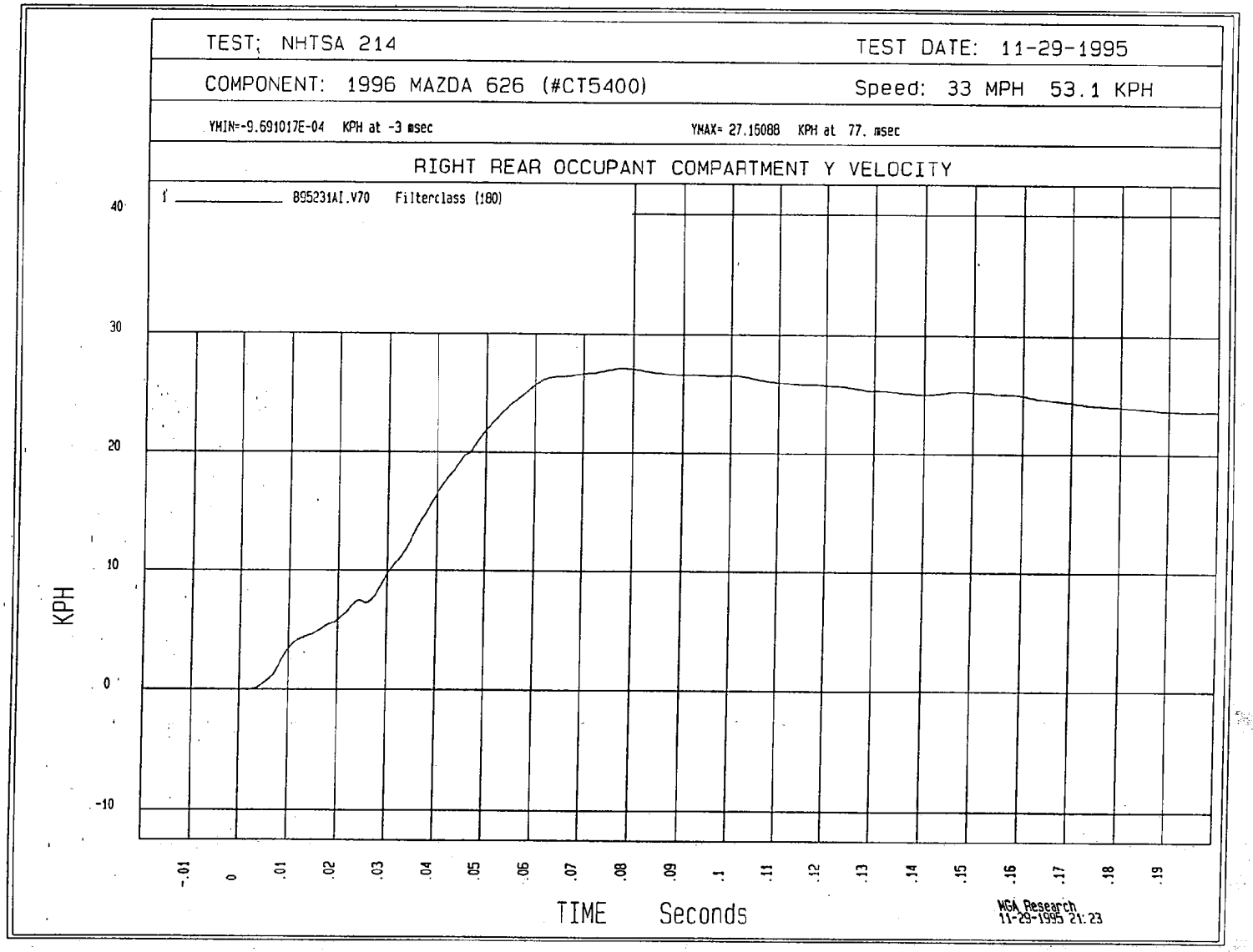

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-1.095686E-02 KPH at -6.4 msec
YMAX= 31.73945 KPH at 81. msec
REAR FLOORPAN ABOVE AXLE Y VELOCITY
1 ——— B952314I.V09 Filterclass (180)
KPH
40
30
20
10
0
-10
TIME Seconds
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
11-29-1995 21:22

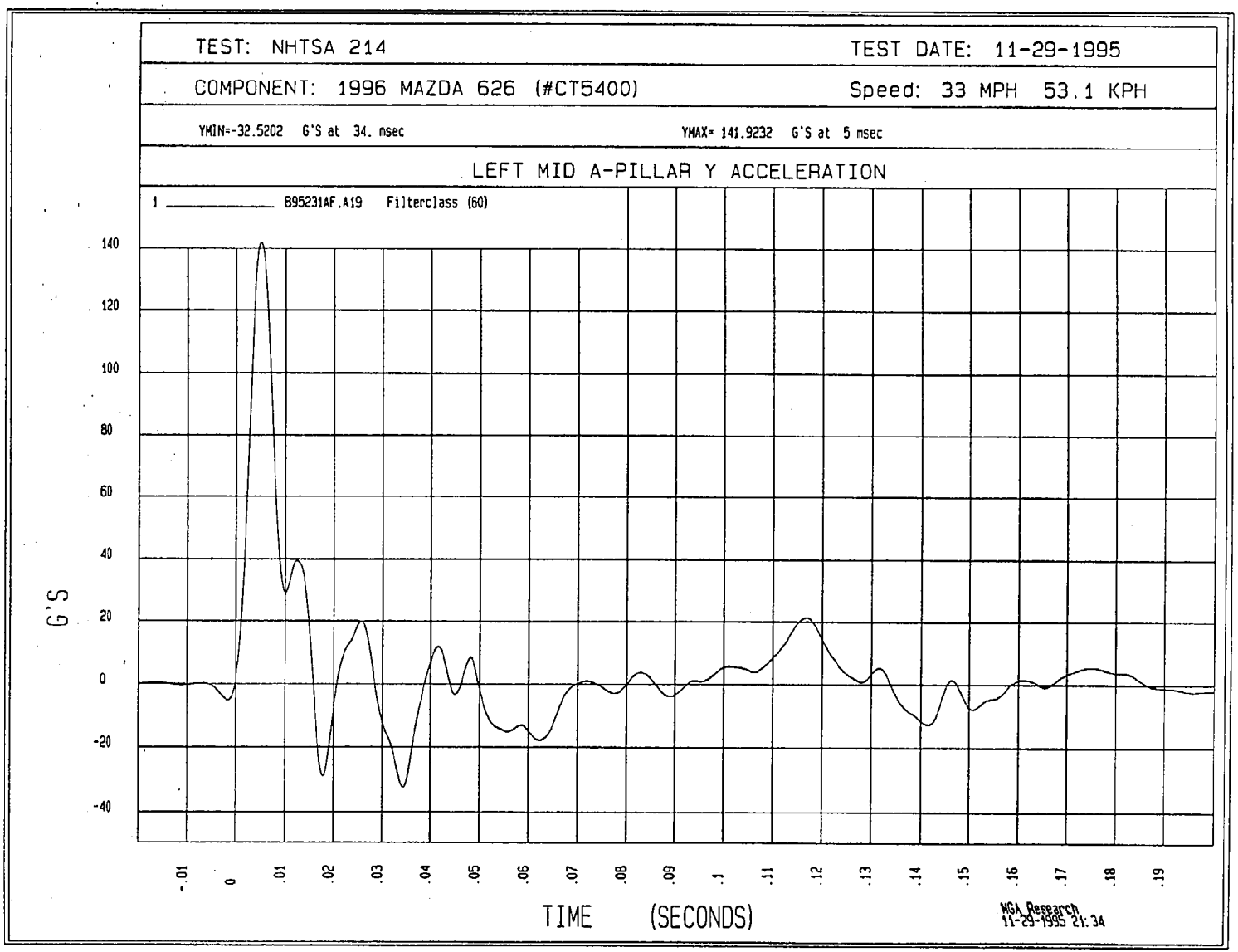

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-11.99055 G'S at 43. msec
YMAX= 14.38738 G'S at 38. msec
REAR FLOORPAN ABOVE AXLE Z ACCELERATION
1 B95231AF.A10 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:29

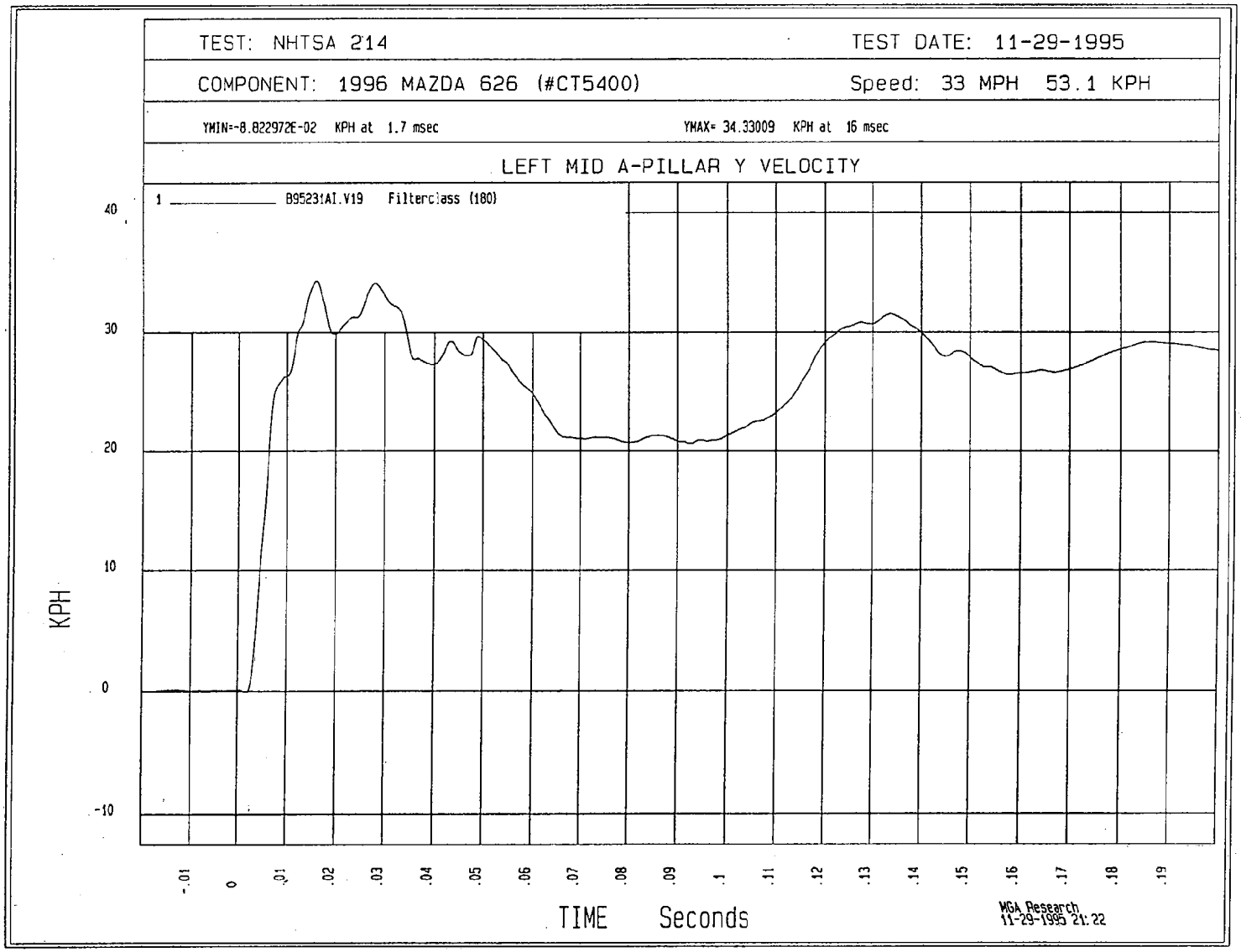

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-1.094663 KPH at 90. msec
YMAX= 2.288168 KPH at 19. msec
REAR FLOORPAN ABOVE AXLE Z VELOCITY
1 B95231AI.V10 Filterclass (180)
40
30
20
10
0
-10
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:22

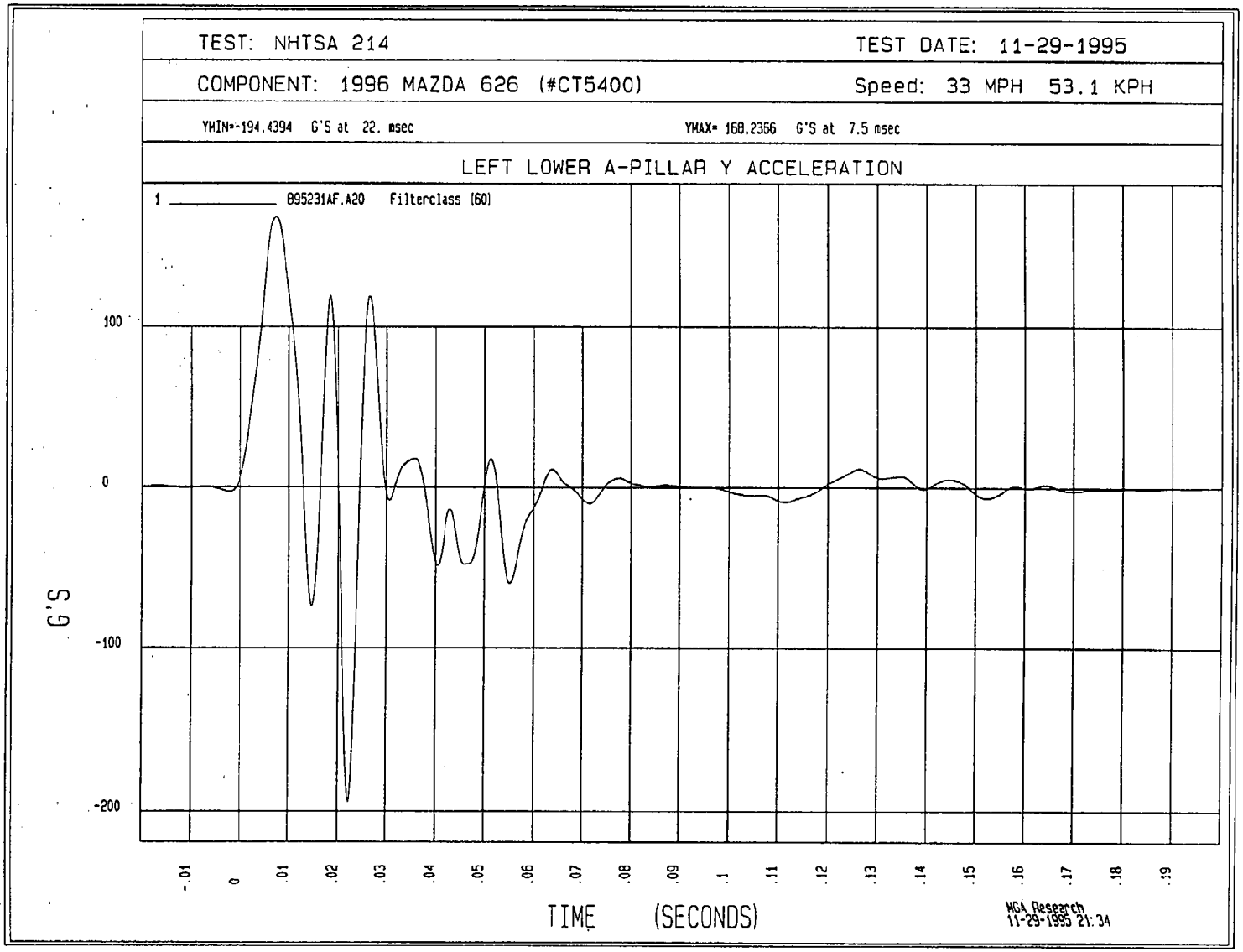

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN= 5.70802E-03 G'S at -17. msec
YMAX= 26.34639 G'S at 38. msec
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION
1 B95231AV.A08 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:25

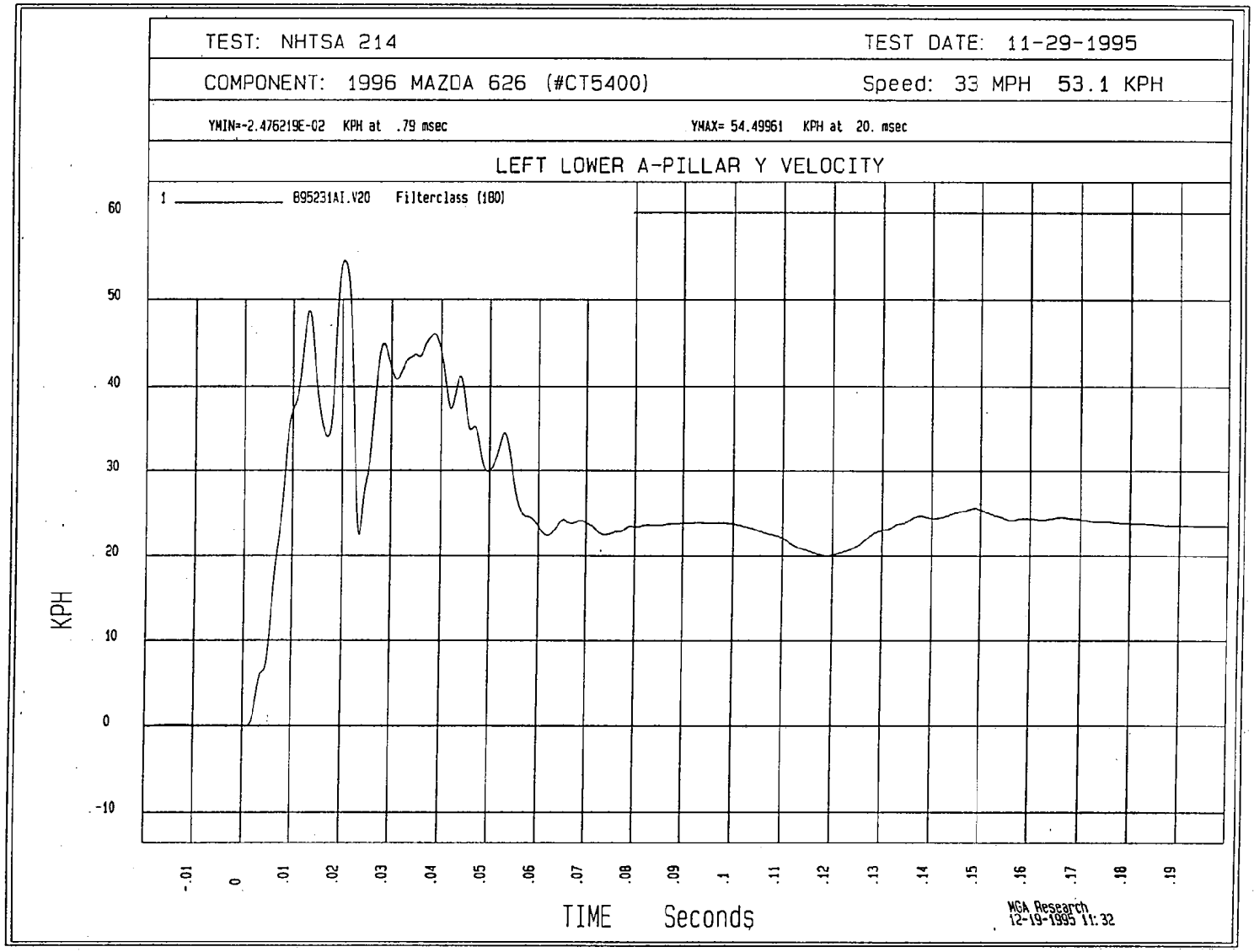

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-2.228458 G'S at 105 msec
YMAX= 21.45074 G'S at 35. msec
RIGHT REAR OCCUPANT COMPARTMENT Y ACCELERATION
1 B9523IAF.A70 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:29

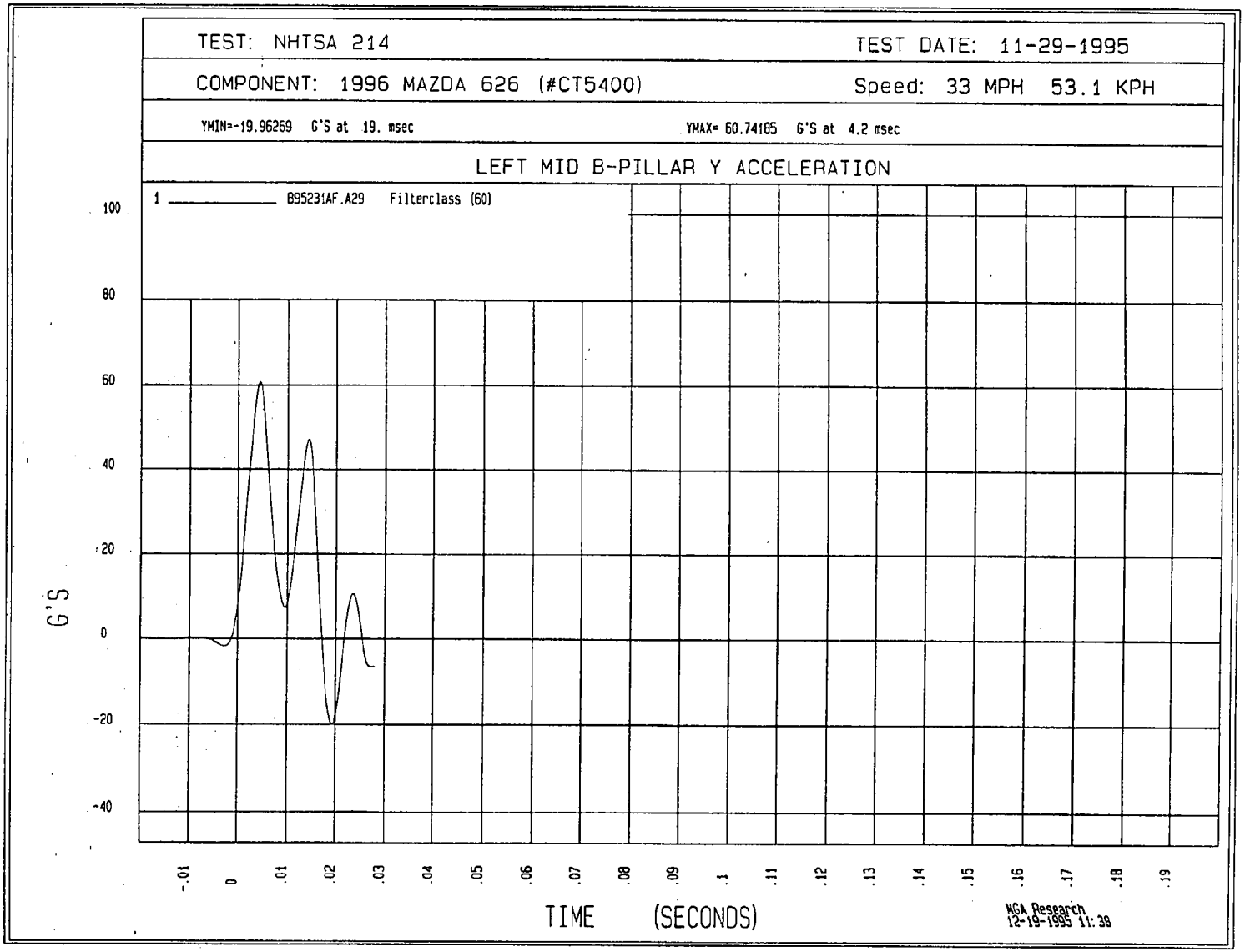

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-9.691017E-04 KPH at -3 msec
YMAX= 27.15088 KPH at 77. msec
RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY
B95231AI.V70 Filterclass (180)
KPH
40
30
20
10
0
-10
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
NGA Research
11-29-1995 21:23

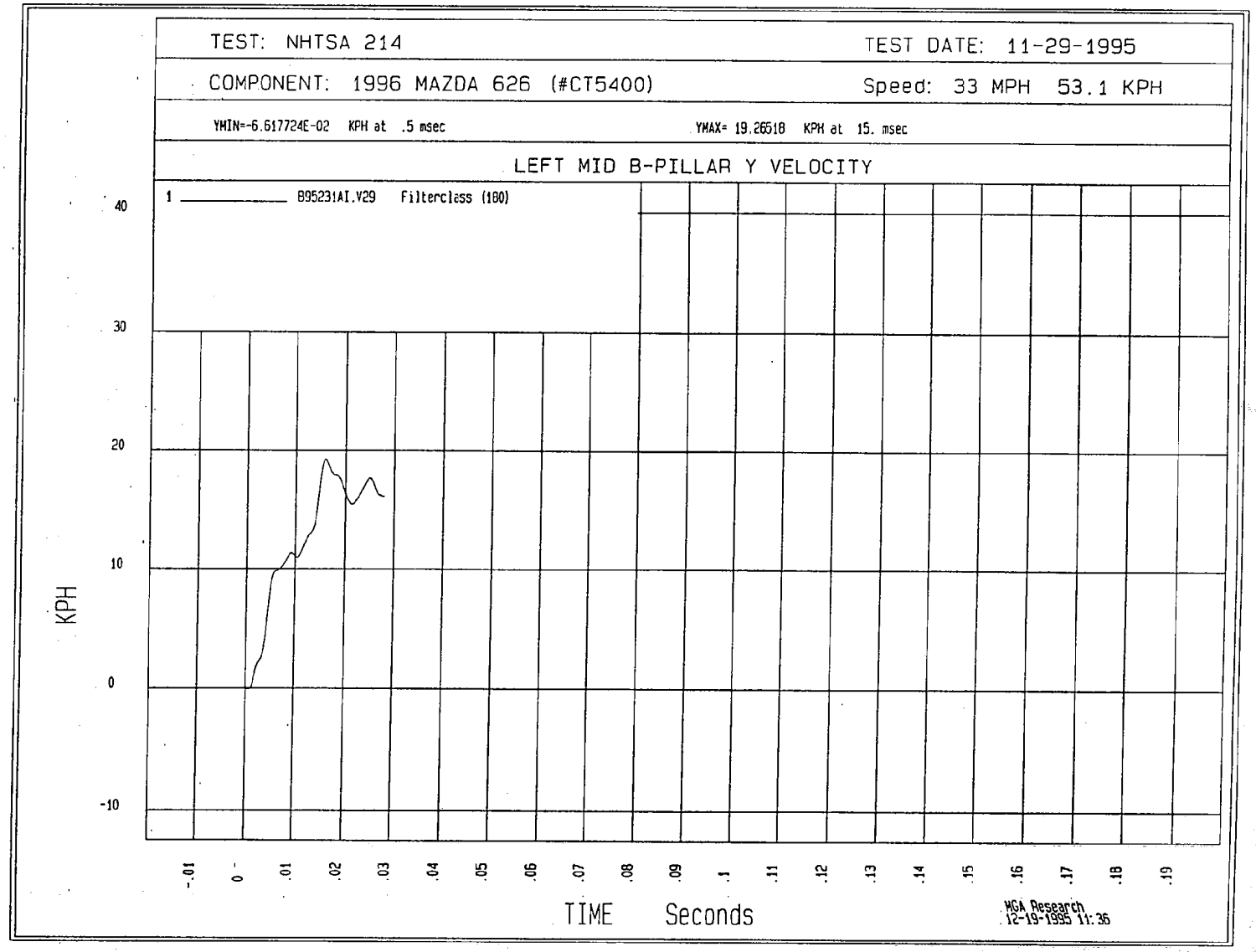

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-32.5202 G'S at 34. msec
YMAX= 141.9232 G'S at 5 msec
LEFT MID A-PILLAR Y ACCELERATION
1 B95231AF.A19 Filterclass (60)
140
120
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:34

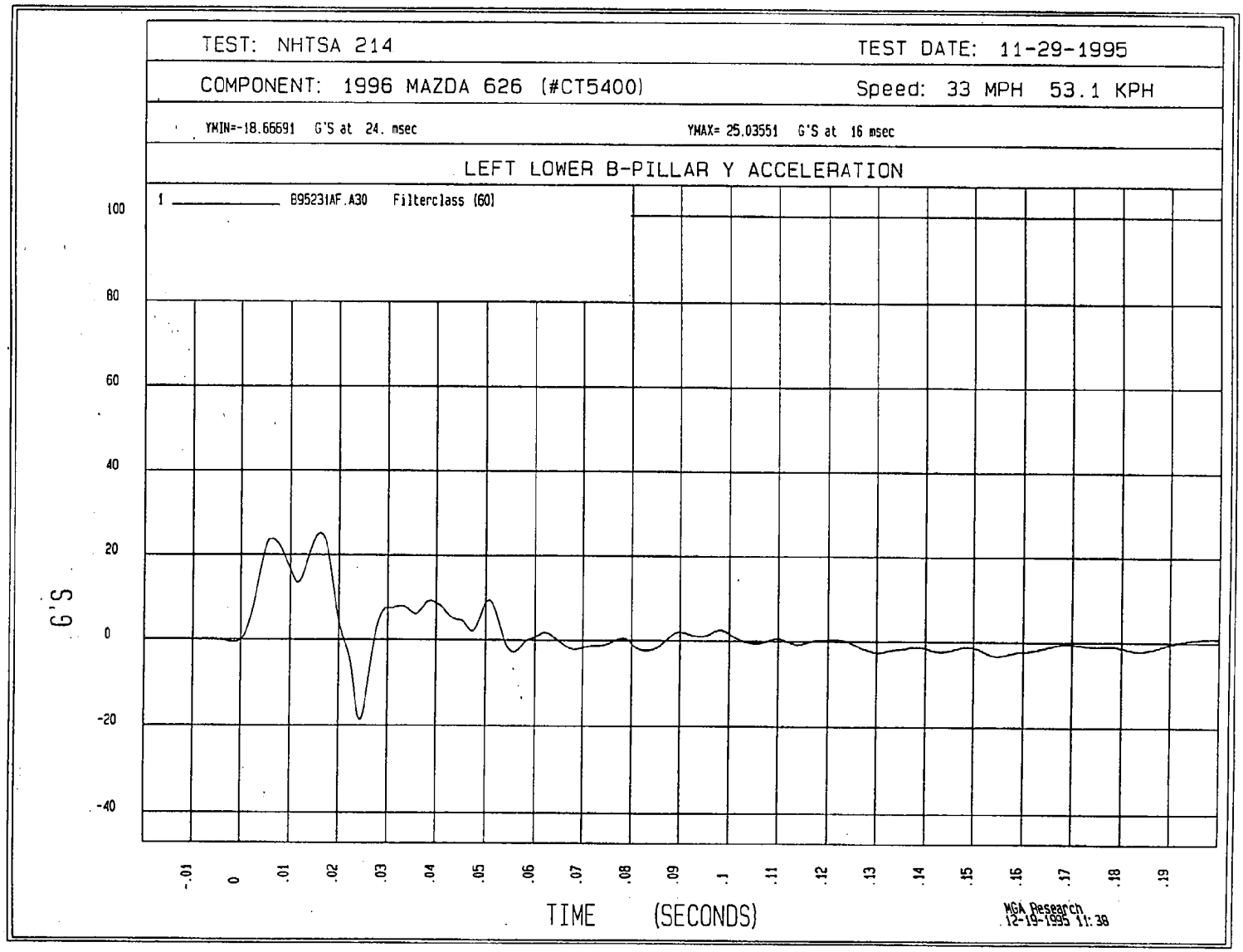

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-8.822972E-02 KPH at 1.7 msec
YMAX= 34.33009 KPH at 16 msec
LEFT MID A-PILLAR Y VELOCITY
1 B95231AI.V19 Filterclass (180)
KPH
40
30
20
10
0
-10
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:22

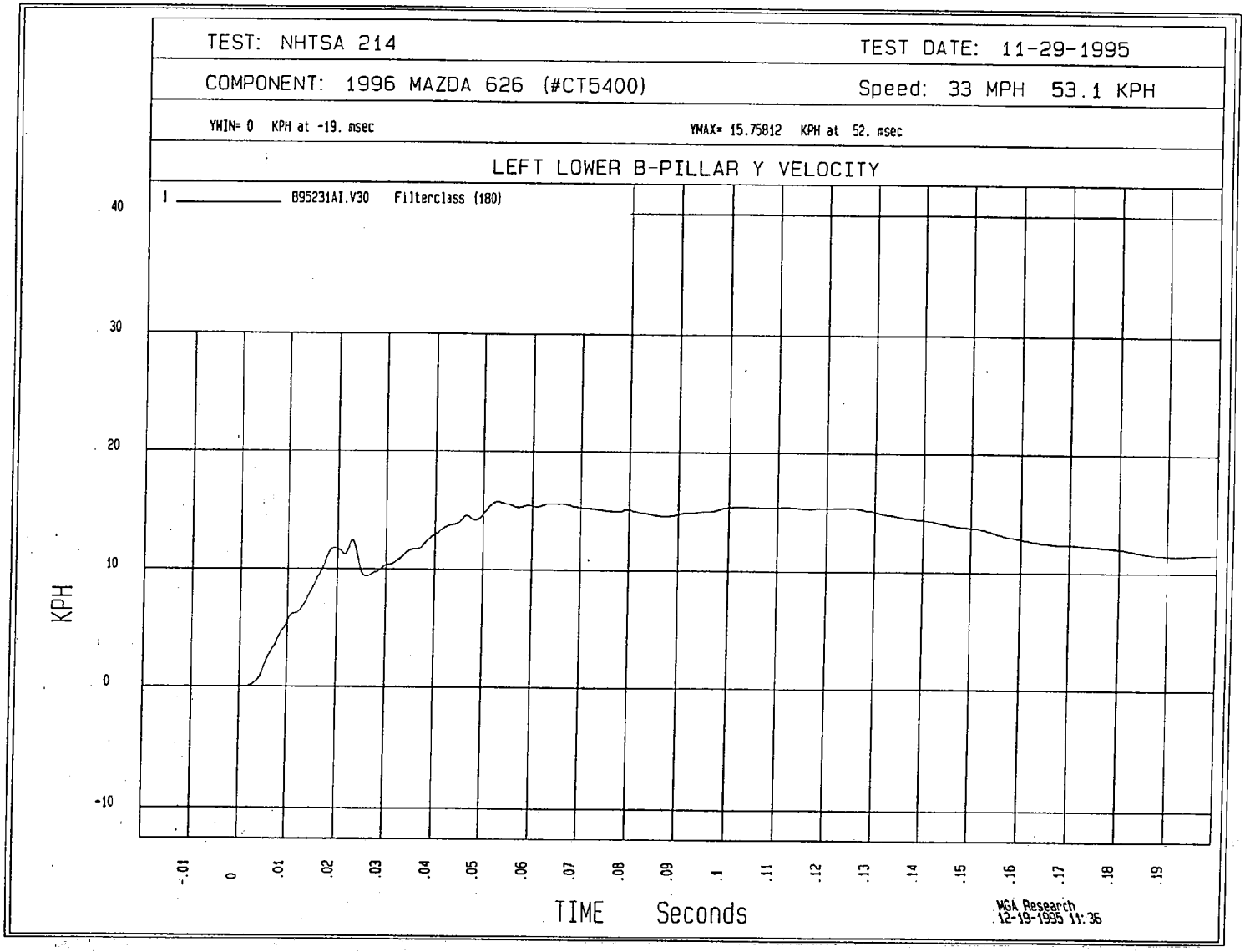

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-194.4394 G'S at 22. msec
YMAX= 168.2356 G'S at 7.5 msec
LEFT LOWER A-PILLAR Y ACCELERATION
1 B95231AF.A20 Filterclass (60)
100
0
-100
-200
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:34

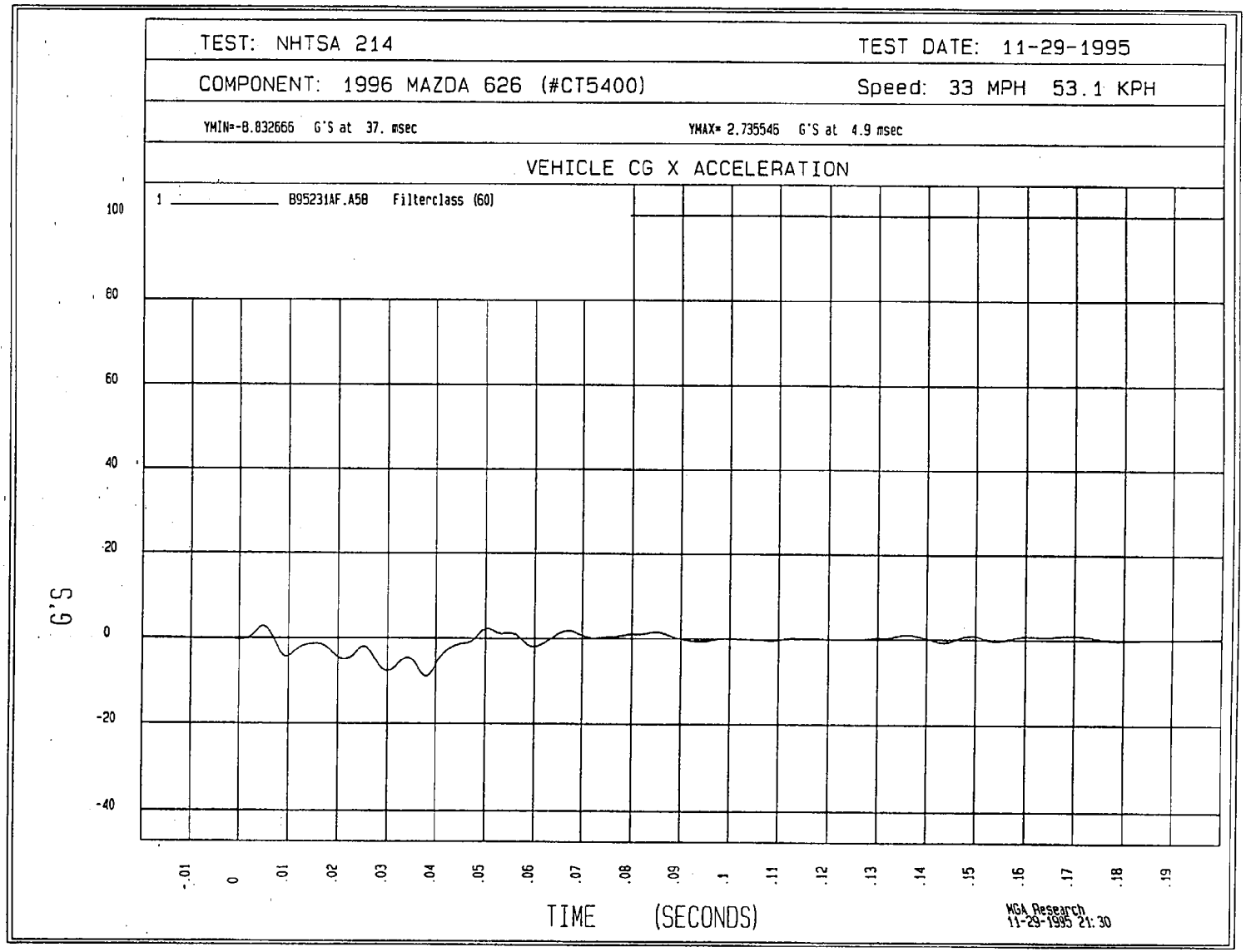

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-2.476219E-02 KPH at .79 msec
YMAX= 54.49961 KPH at 20. msec
LEFT LOWER A-PILLAR Y VELOCITY
1 895231AI.V20 Filterclass (180)
60
50
40
30
20
10
0
-10
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-19-1995 11:32

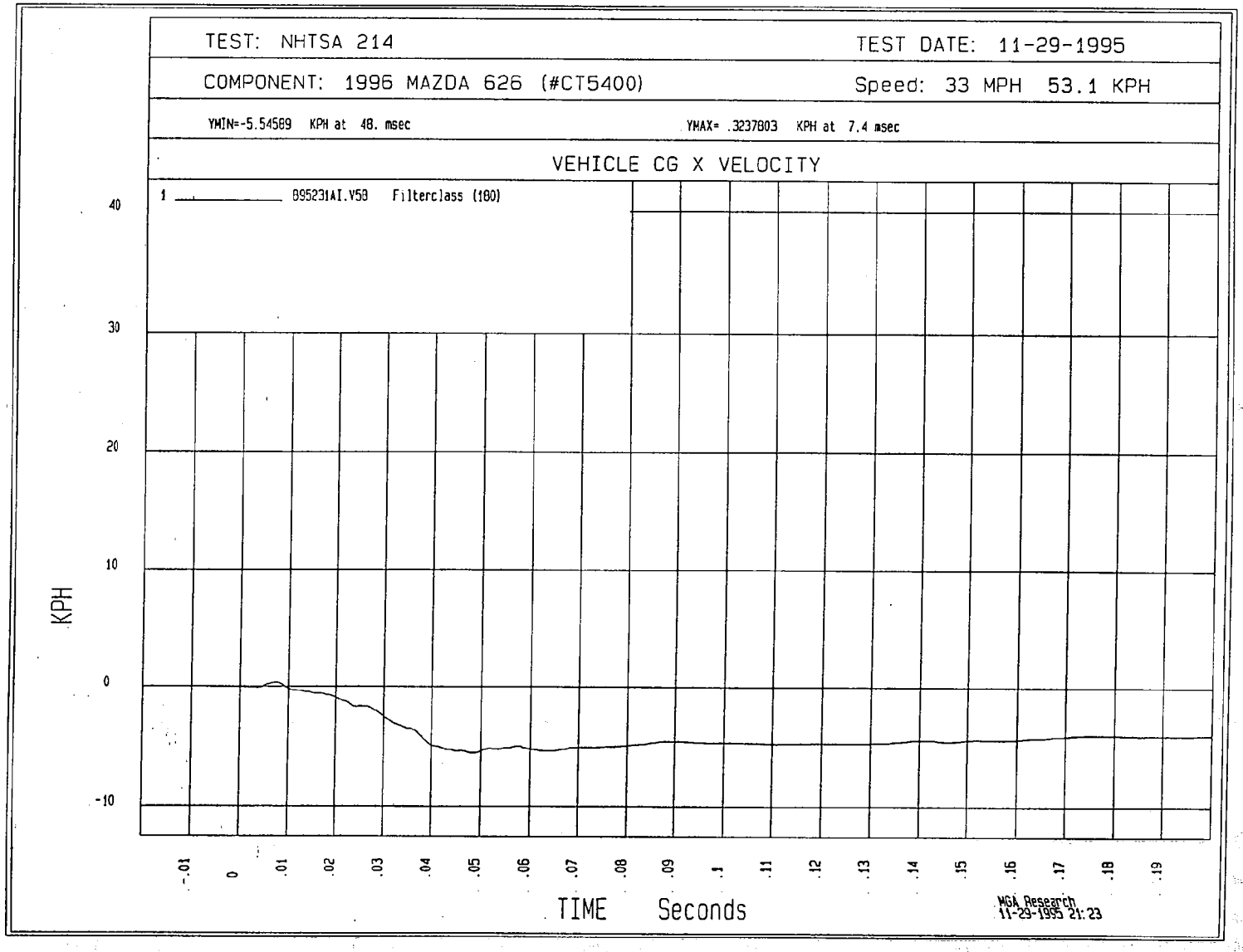

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-19.96269 G'S at 19. msec
YMAX= 60.74185 G'S at 4.2 msec
LEFT MID B-PILLAR Y ACCELERATION
1 B95231AF.A29 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-19-1995 11:38

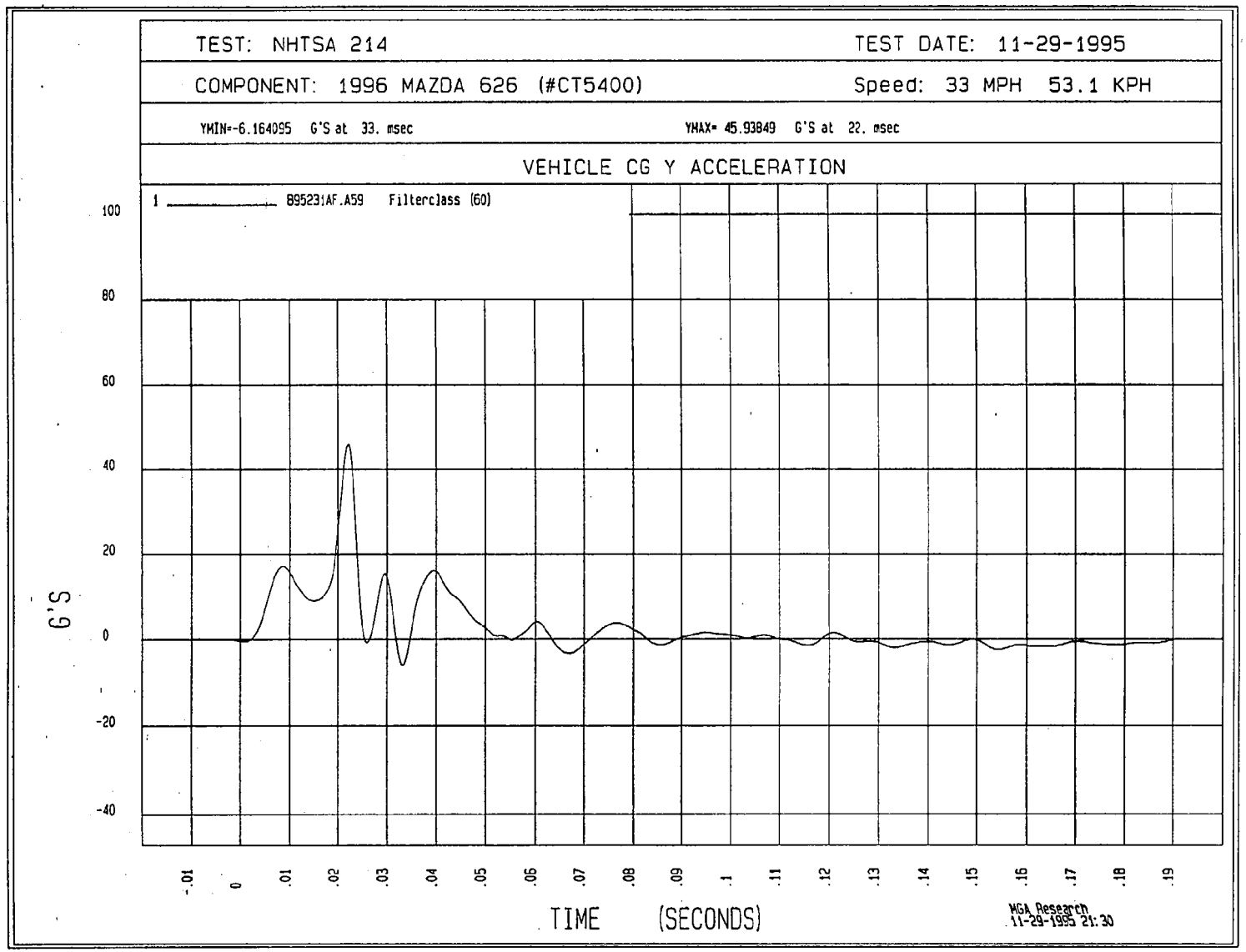

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-6.617724E-02 KPH at .5 msec
YMAX= 19.26518 KPH at 15. msec
LEFT MID B-PILLAR Y VELOCITY
1 B95231AI.V29 Filterclass (180)
KPH
40
30
20
10
0
-10
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-19-1995 11:36

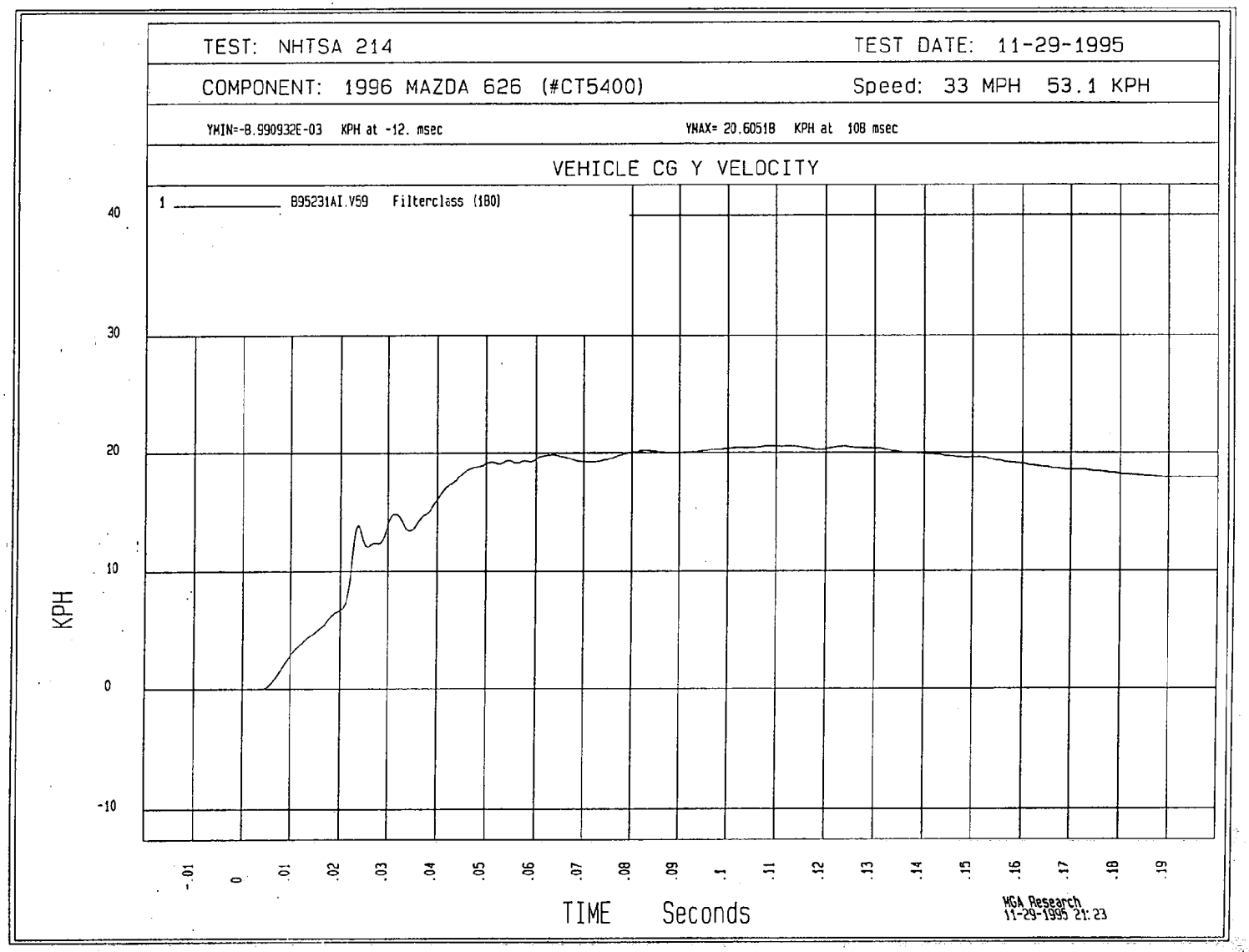

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-18.66691 G'S at 24. msec
YMAX= 25.03551 G'S at 16 msec
LEFT LOWER B-PILLAR Y ACCELERATION
1 B95231AF.A30 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
12-19-1995 11:38

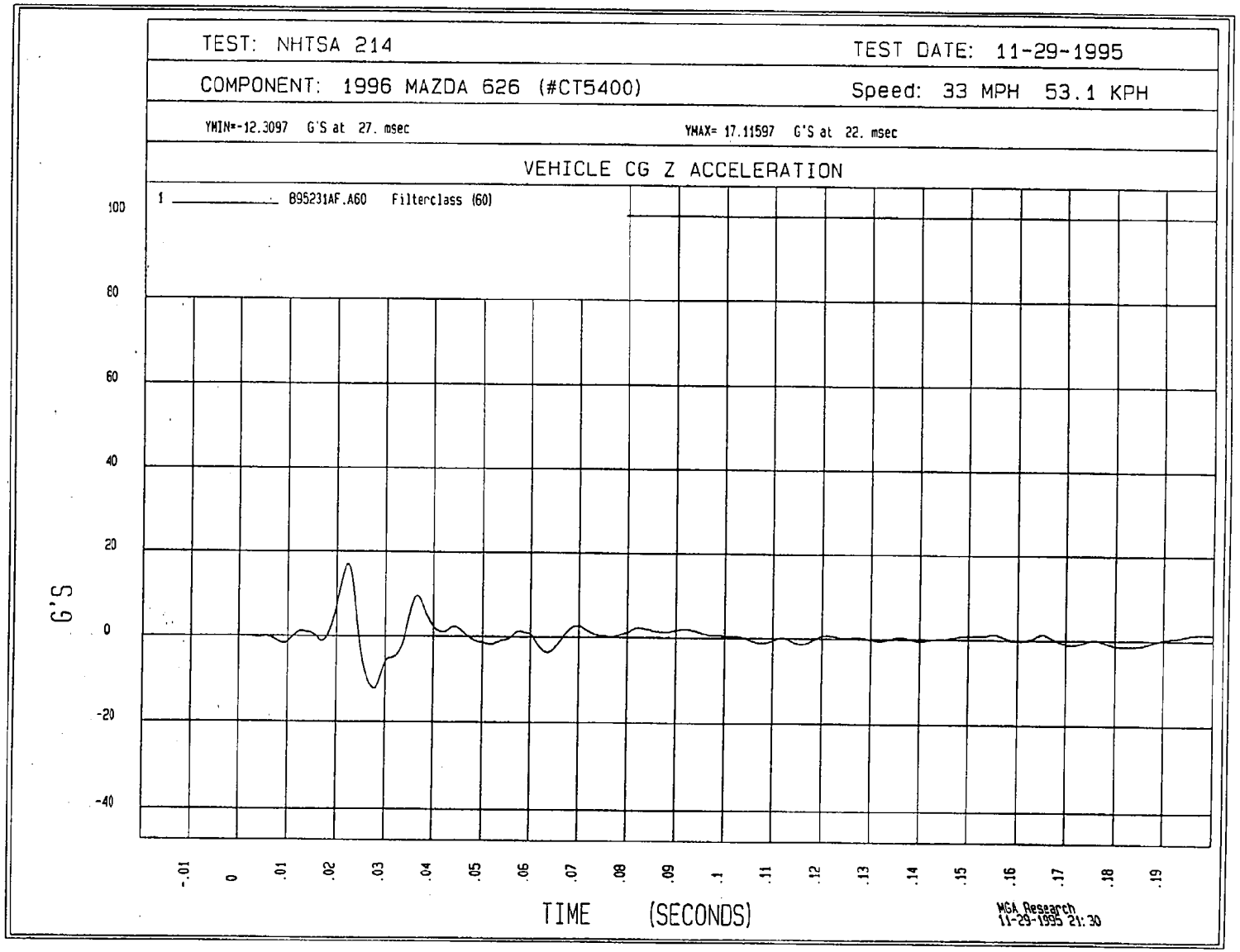

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN= 0 KPH at -19. msec
YMAX= 15.75812 KPH at 52. msec
LEFT LOWER B-PILLAR Y VELOCITY
1 B95231AI.V30 Filterclass (180)
40
30
20
10
0
-10
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-19-1995 11:36

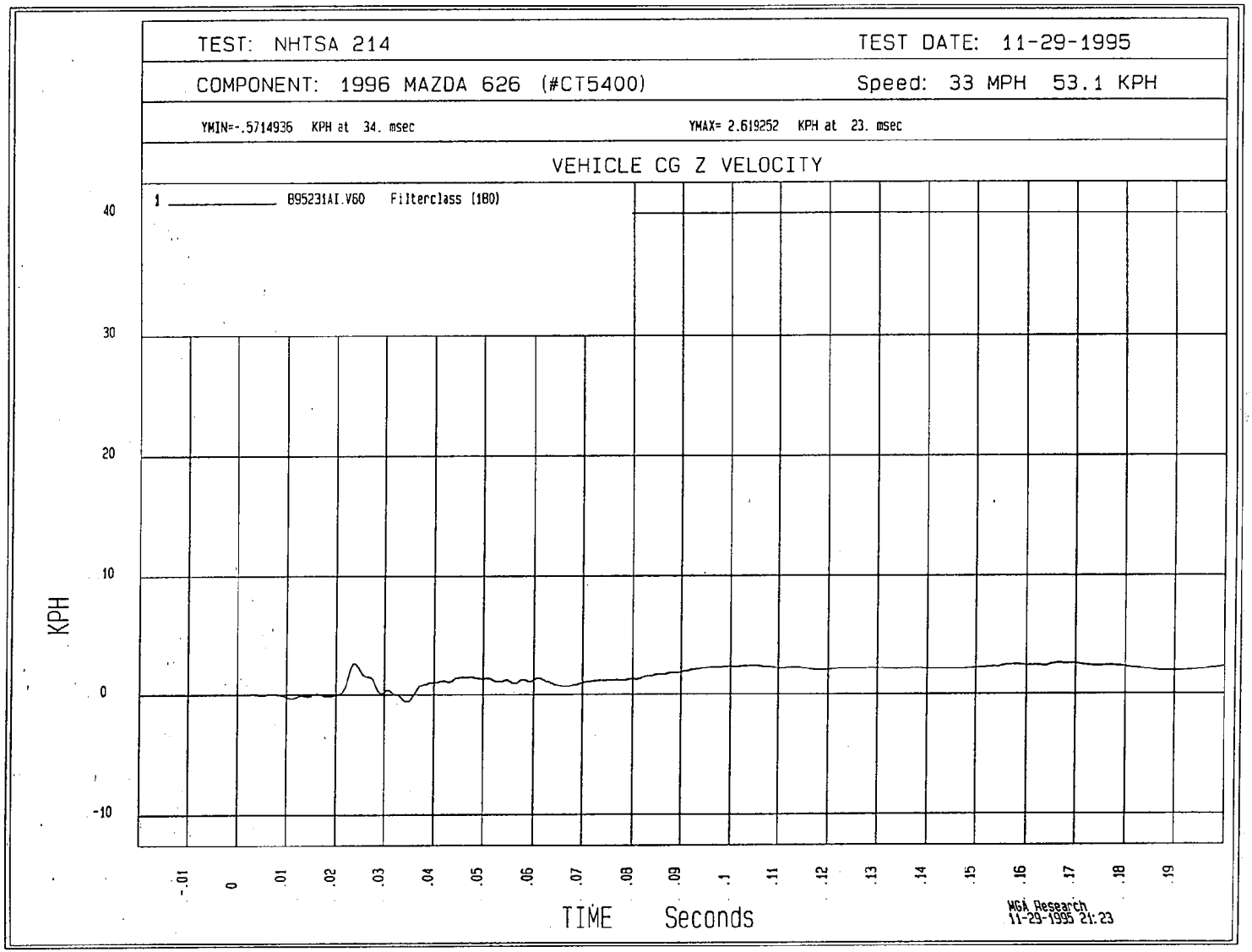

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-8.832666 G'S at 37. msec
YMAX= 2.735546 G'S at 4.9 msec
VEHICLE CG X ACCELERATION
1 B95231AF.A5B Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:30

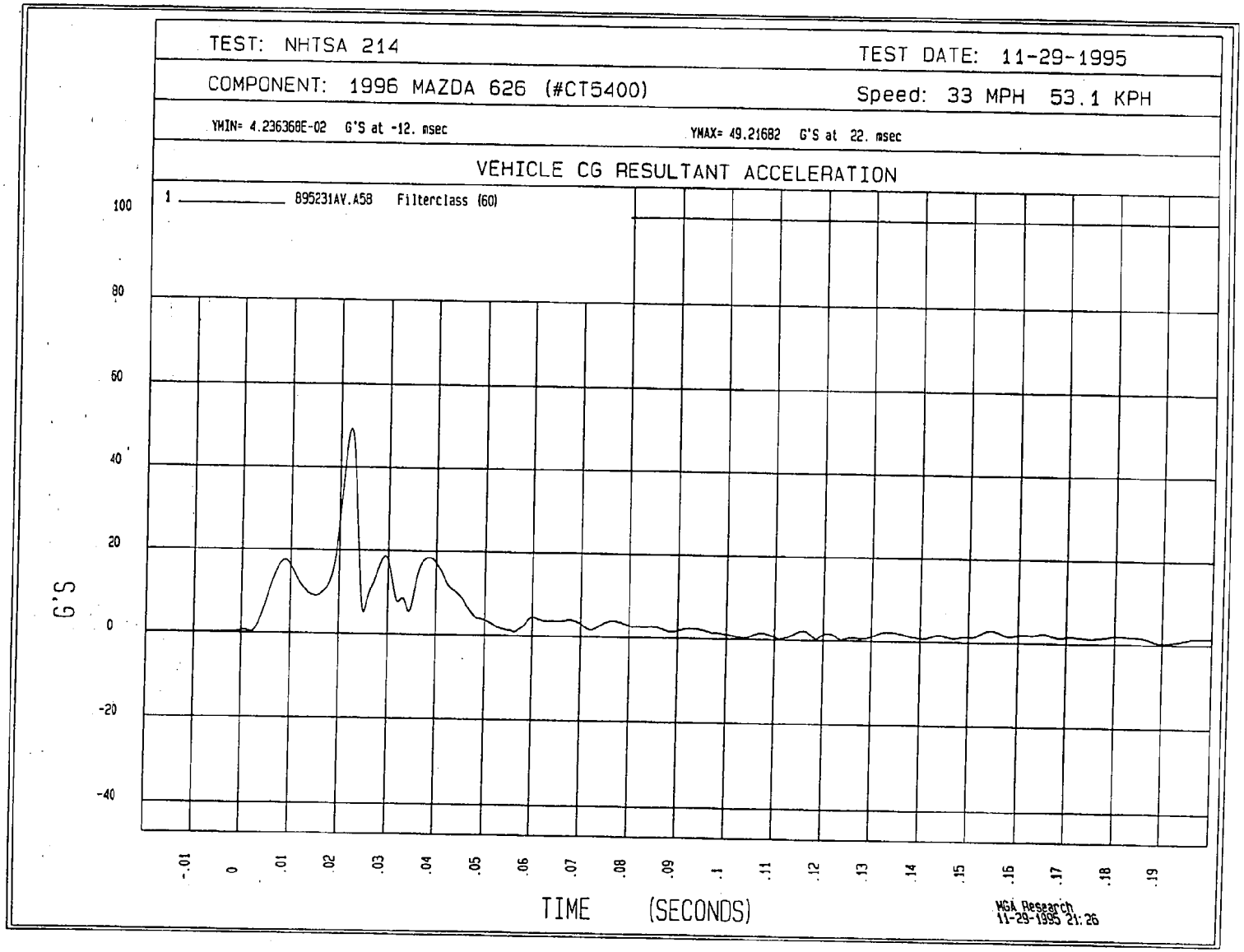

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-5.54589 KPH at 48. msec
YMAX= .3237803 KPH at 7.4 msec
VEHICLE CG X VELOCITY
1 _____ 895231AI.V58 Filterclass (180)
40
30
20
10
0
-10
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:23

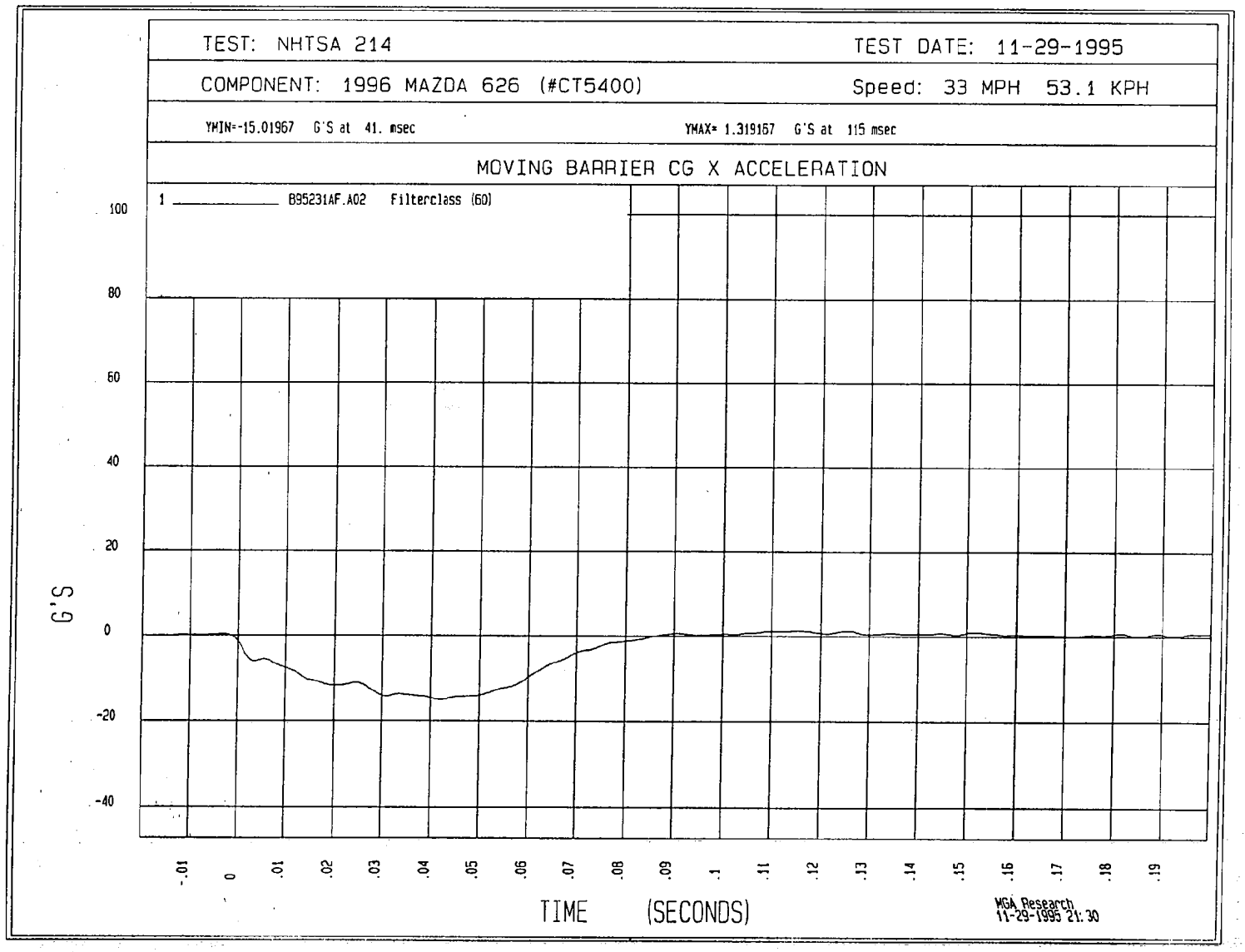

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-6.164095 G'S at 33. msec
YMAX= 45.93849 G'S at 22. msec
VEHICLE CG Y ACCELERATION
1 B95231AF.A59 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:30

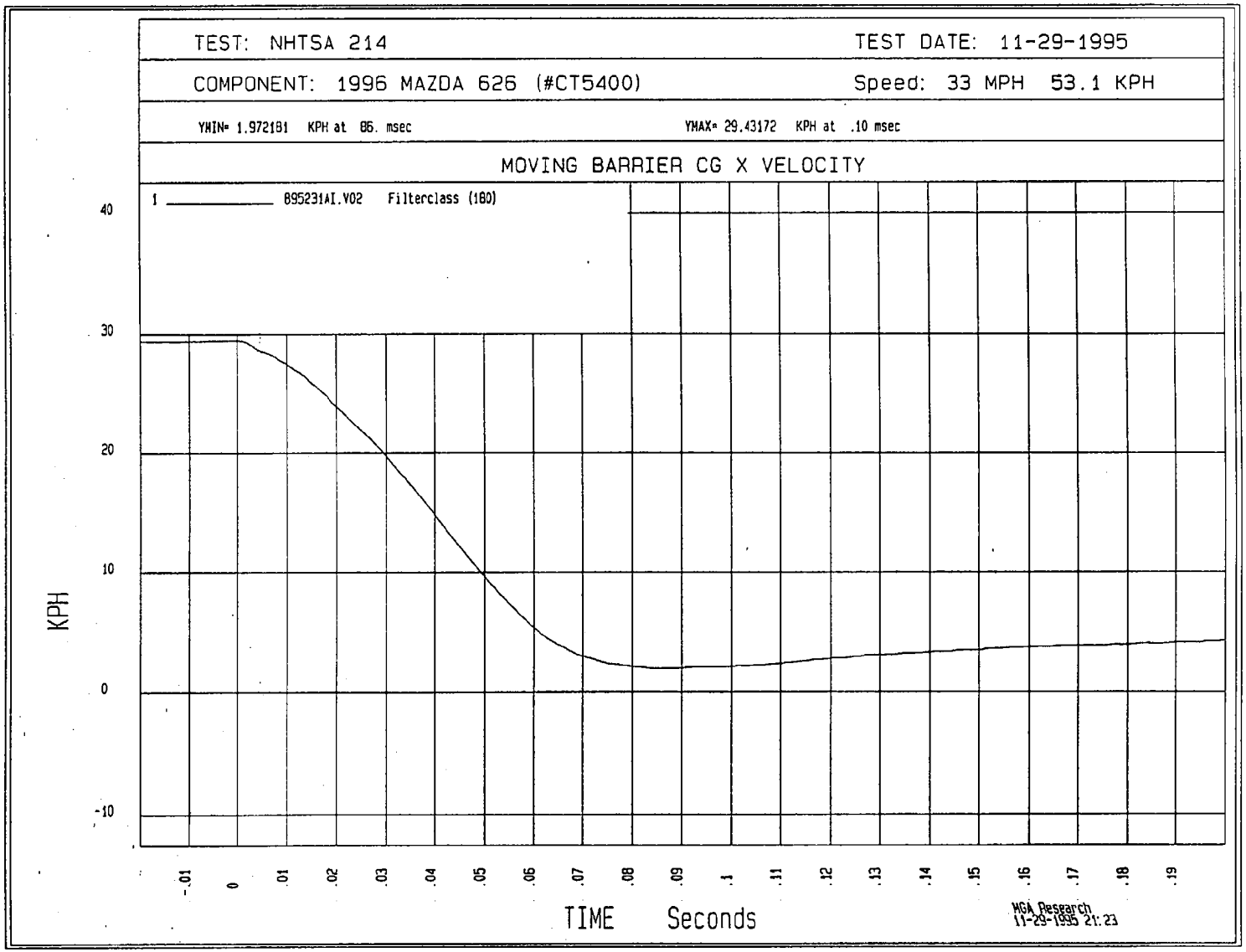

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-8.990932E-03 KPH at -12. msec
YMAX= 20.60518 KPH at 108 msec
VEHICLE CG Y VELOCITY
1 B95231AI.V59 Filterclass (180)
KPH
40
30
20
10
0
-10
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:23

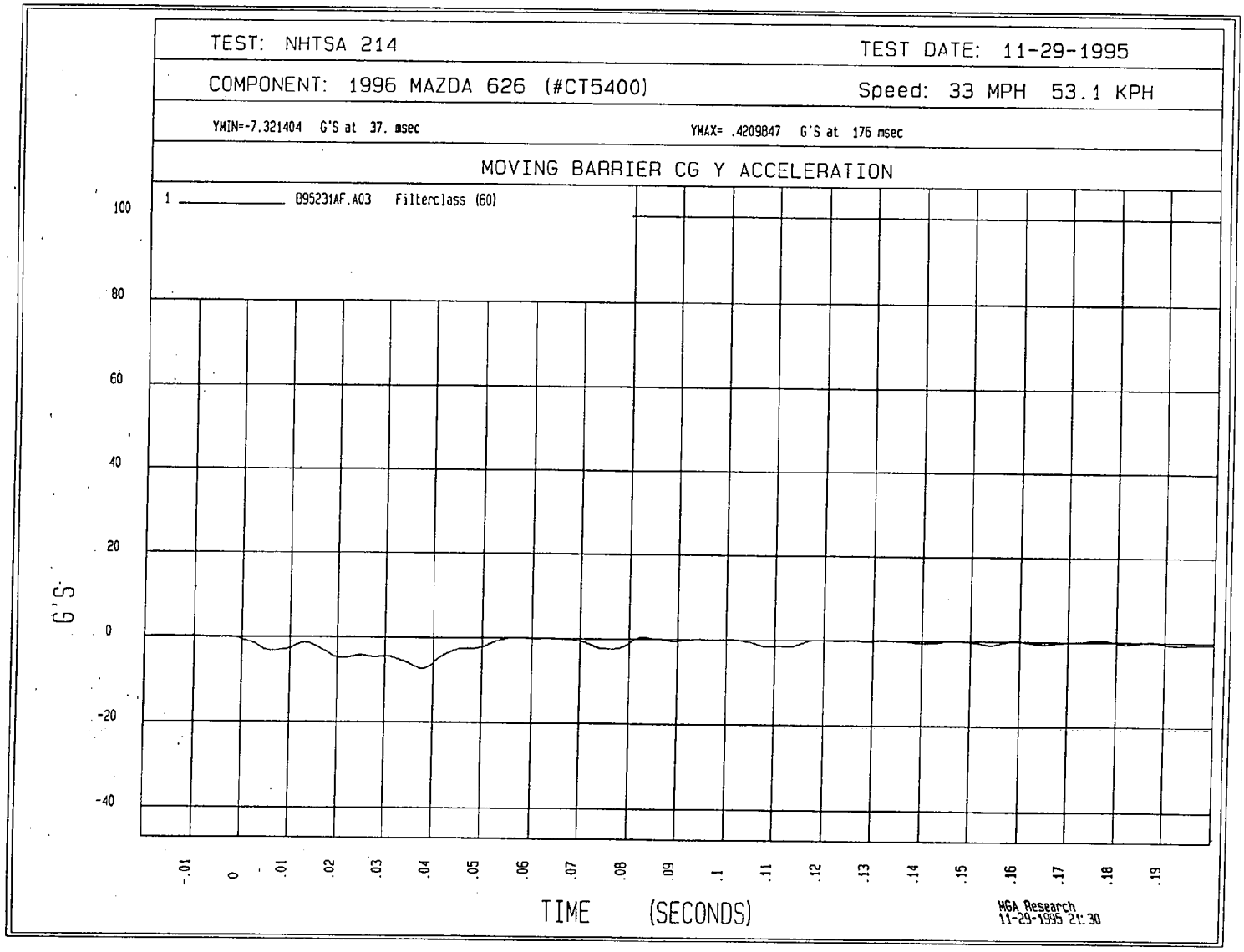

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-12.3097 G'S at 27. msec
YMAX= 17.11597 G'S at 22. msec
VEHICLE CG Z ACCELERATION
1 B95231AF.A60 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:30

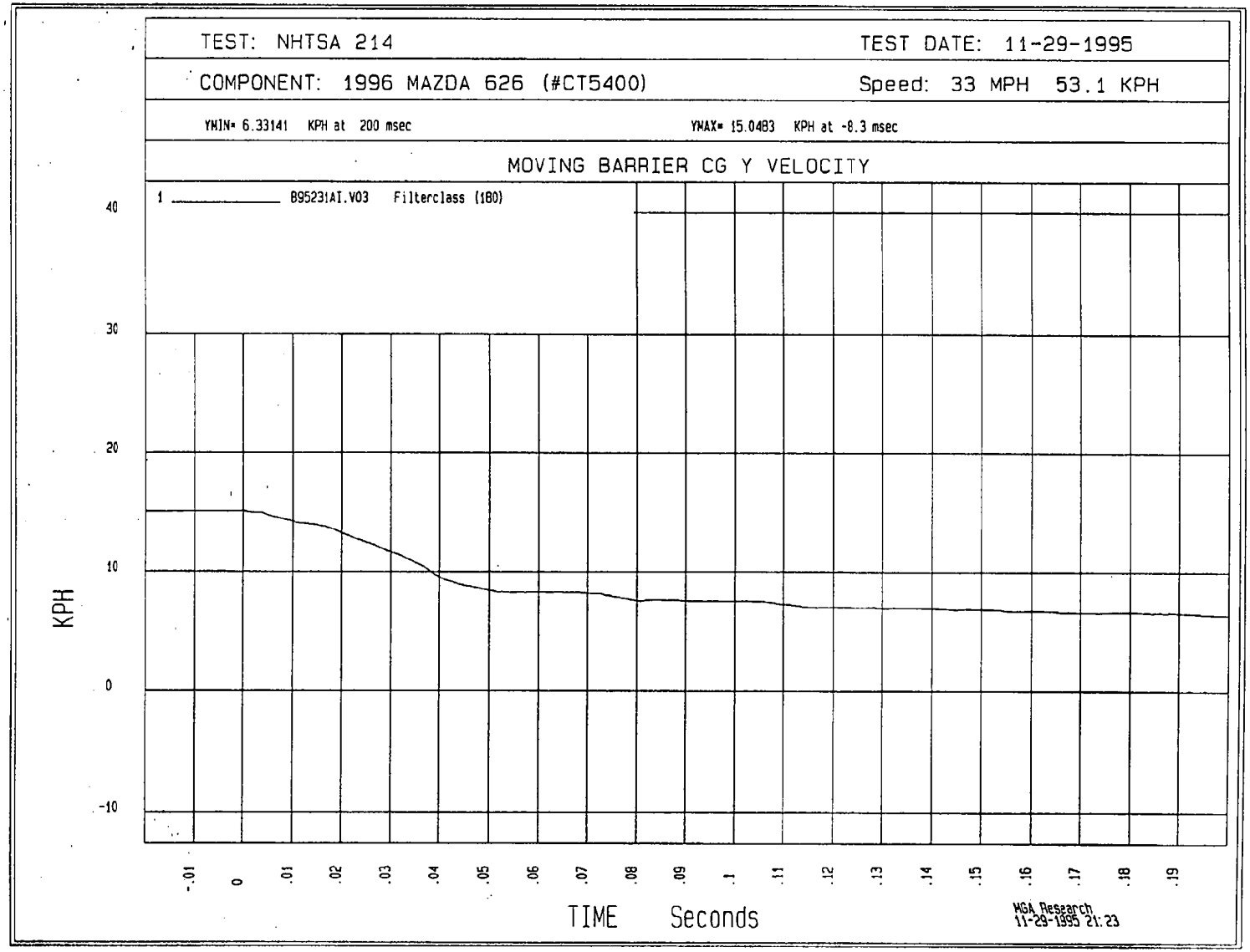

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-.5714936 KPH at 34. msec
YMAX= 2.619252 KPH at 23. msec
VEHICLE CG Z VELOCITY
1 _____ 895231AI.V60 Filterclass (180)
KPH
40
30
20
10
0
-10
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:23

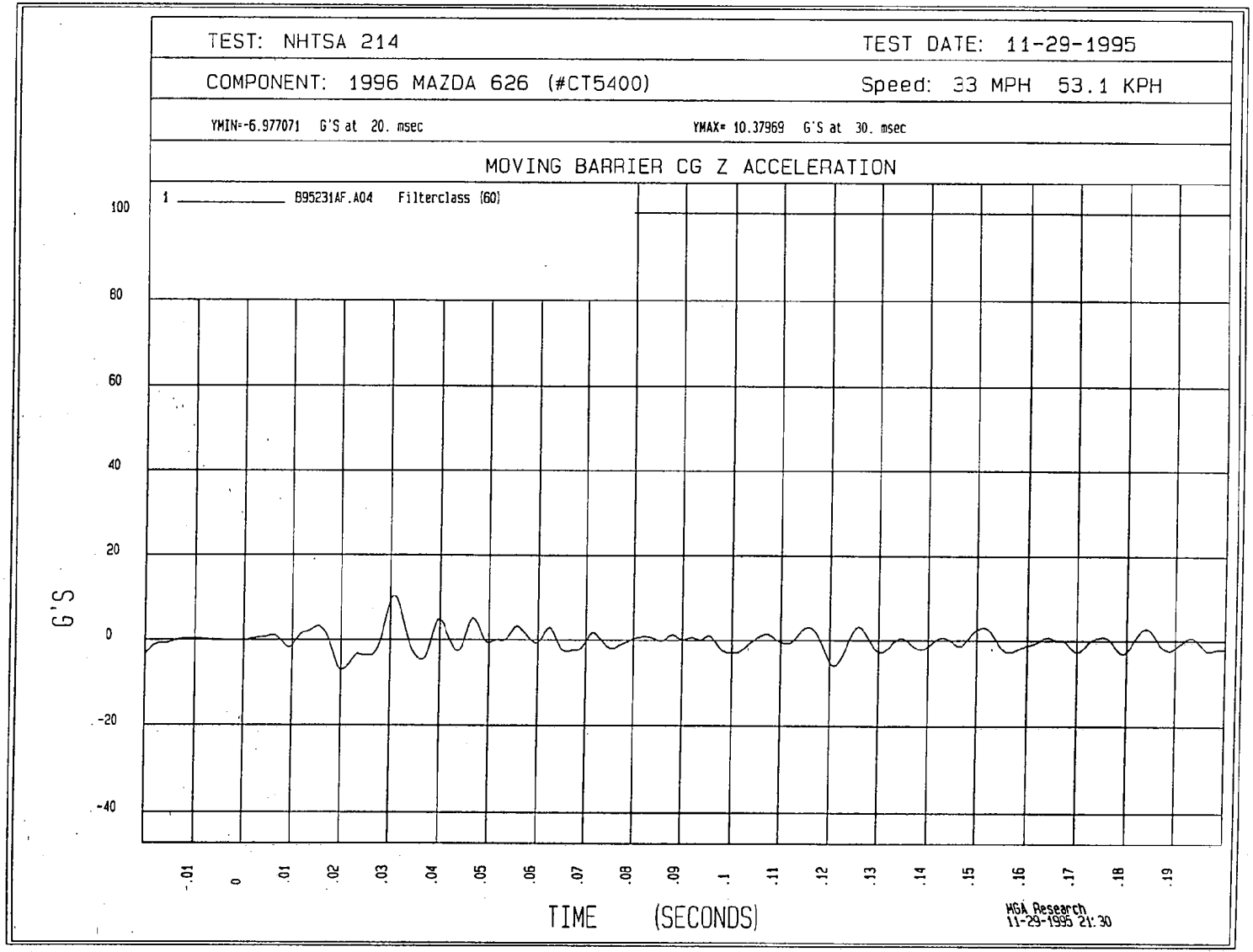

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN= 4.236368E-02 G'S at -12. msec
YMAX= 49.21682 G'S at 22. msec
VEHICLE CG RESULTANT ACCELERATION
1 895231AV.A58 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:26

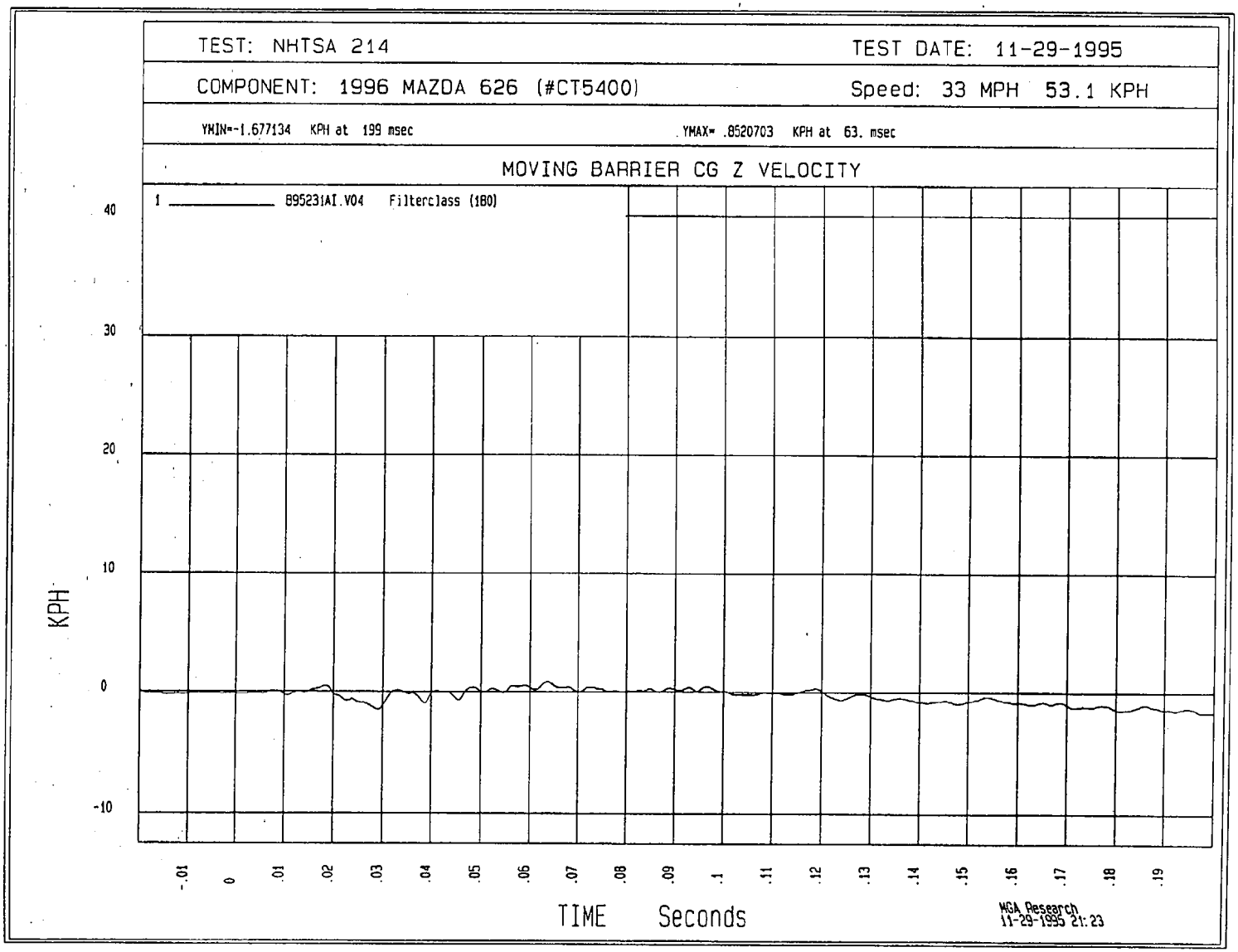

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-15.01967 G'S at 41. msec
YMAX= 1.319167 G'S at 115 msec
MOVING BARRIER CG X ACCELERATION
1 B95231AF.A02 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:30

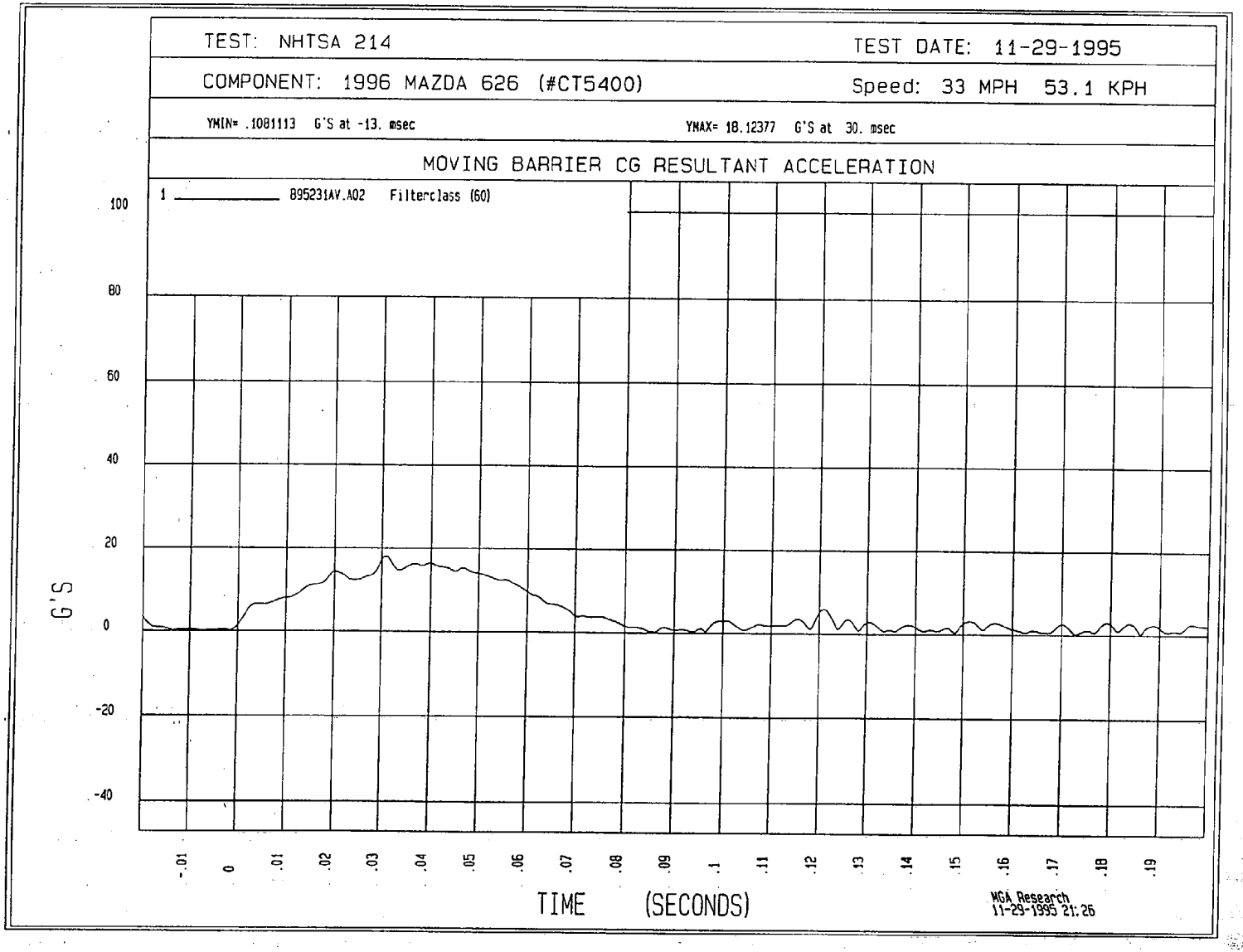

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN= 1.972181 KPH at 86. msec
YMAX= 29.43172 KPH at .10 msec
MOVING BARRIER CG X VELOCITY
1 895231AI.V02 Filterclass (180)
KPH
40
30
20
10
0
-10
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:23

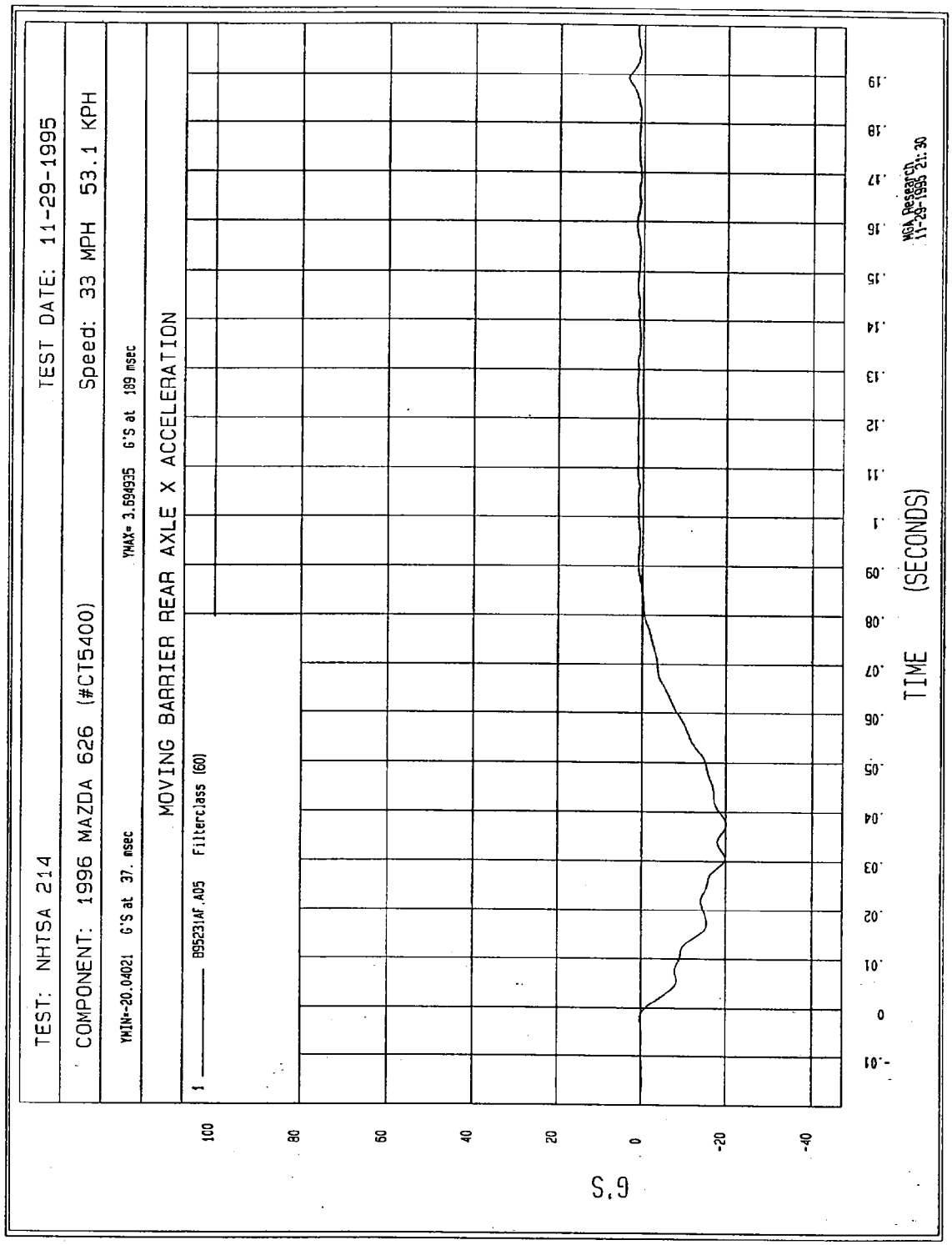

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-7.321404 G'S at 37. msec
YMAX= .4209847 G'S at 176 msec
MOVING BARRIER CG Y ACCELERATION
1 B95231AF.A03 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
HGA Research
11-29-1995 21:30

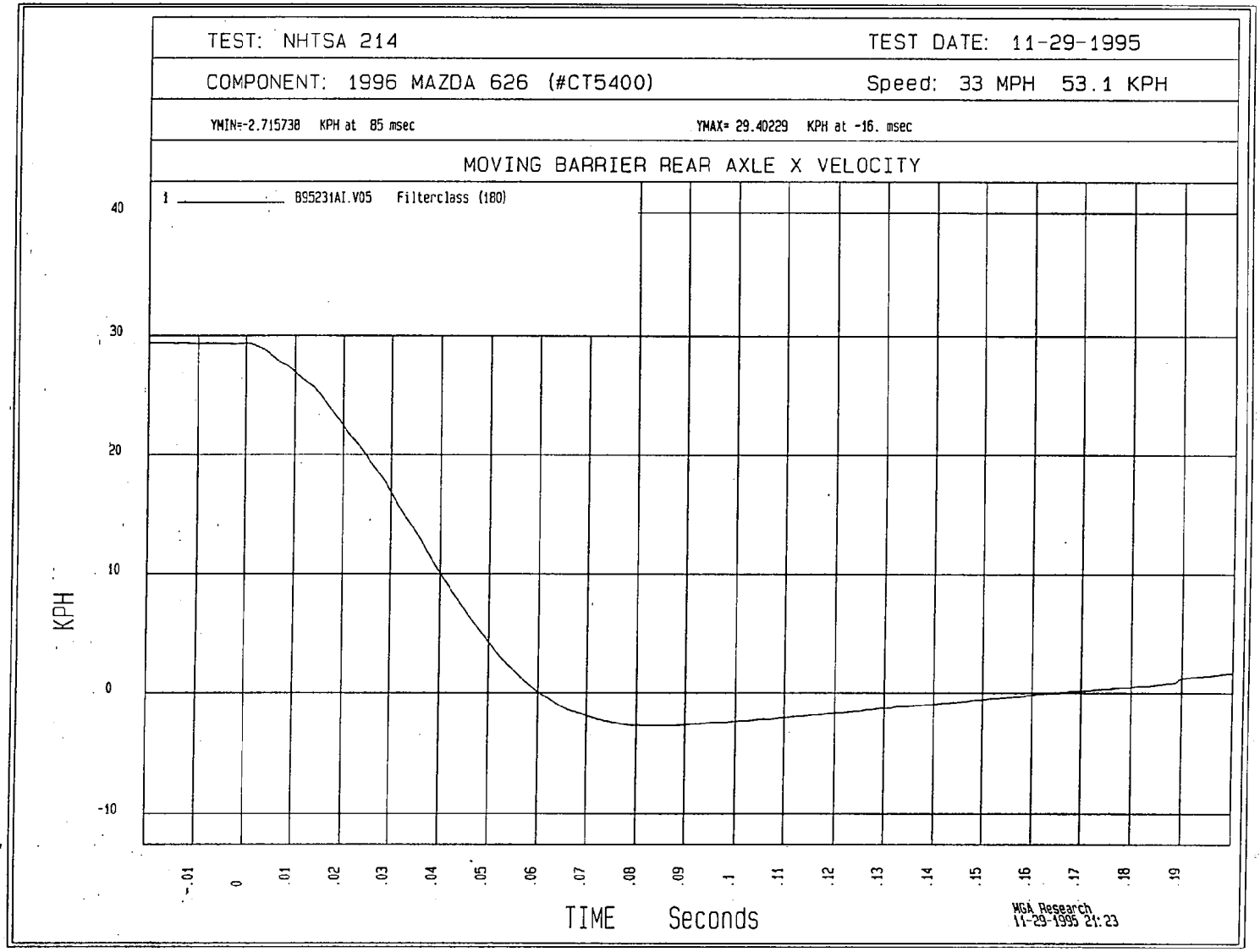

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN= 6.33141 KPH at 200 msec
YMAX= 15.0483 KPH at -8.3 msec
MOVING BARRIER CG Y VELOCITY
1 B95231AI.V03 Filterclass (180)
40
30
20
10
0
-10
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:23

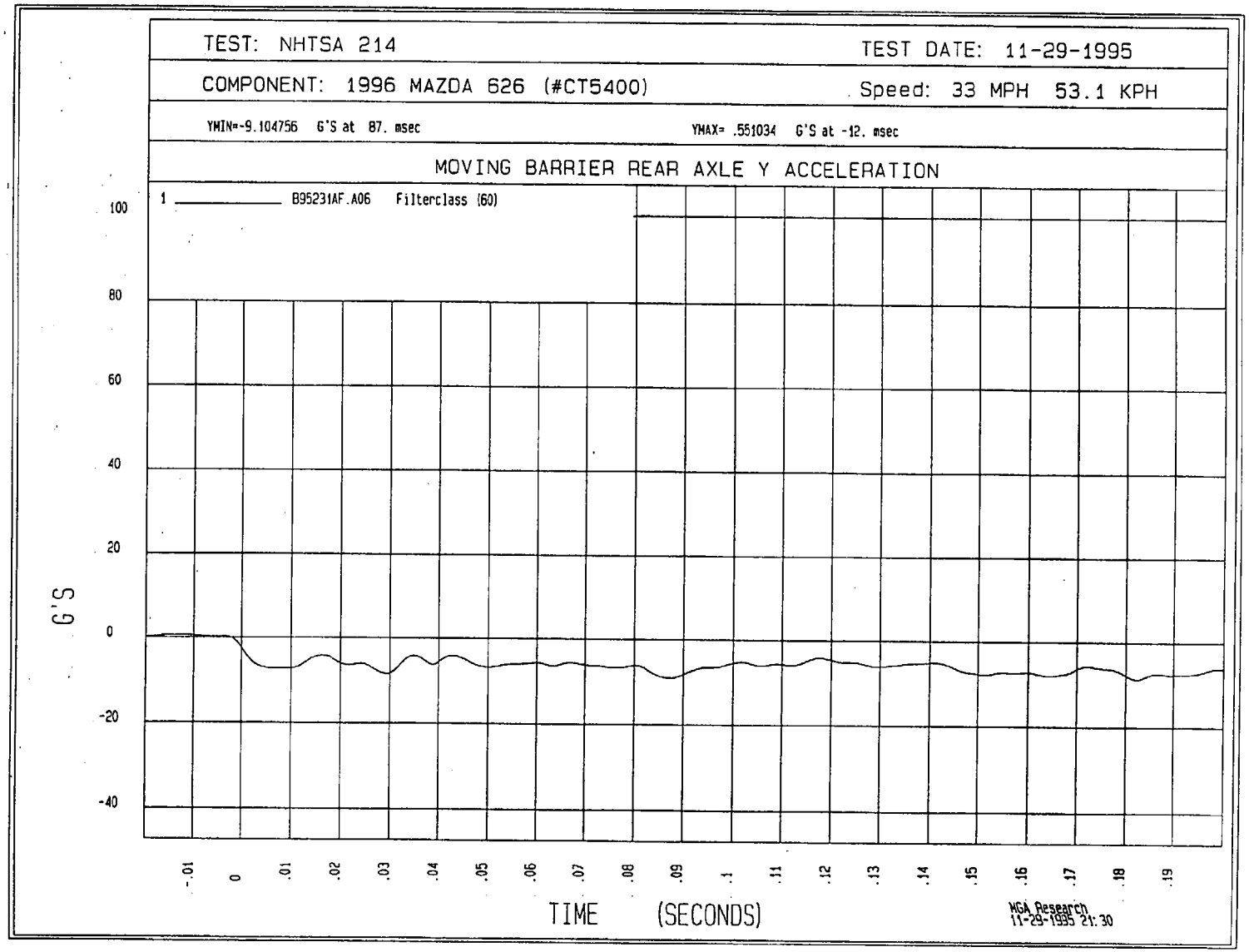

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-6.977071 G'S at 20. msec
YMAX= 10.37969 G'S at 30. msec
MOVING BARRIER CG Z ACCELERATION
1 B95231AF.A04 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
HGA Research
11-29-1995 21:30

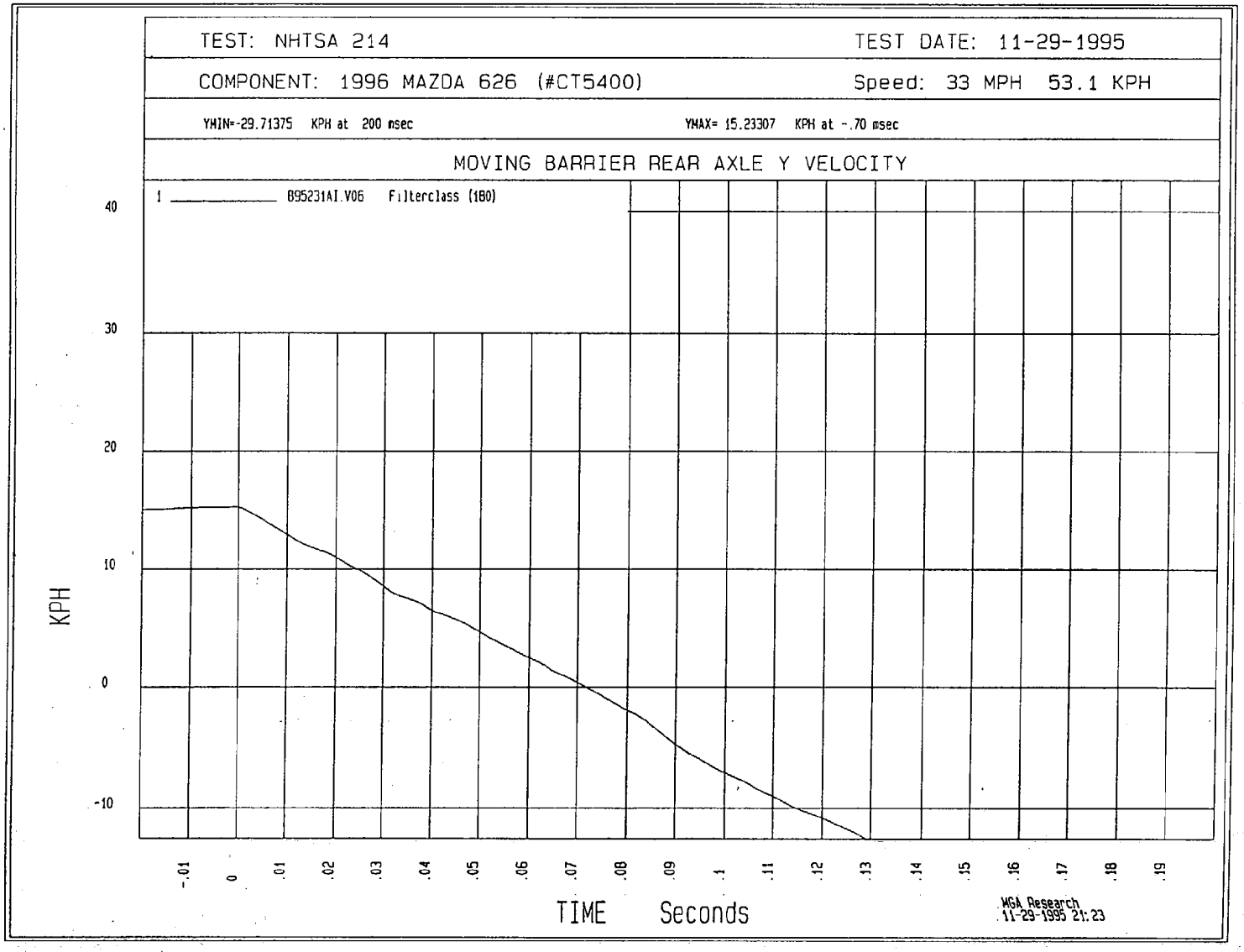

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-1.677134 KPH at 199 msec
YMAX= .8520703 KPH at 63. msec
MOVING BARRIER CG Z VELOCITY
1 895231AI.V04 Filterclass (180)
KPH
40
30
20
10
0
-10
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:23

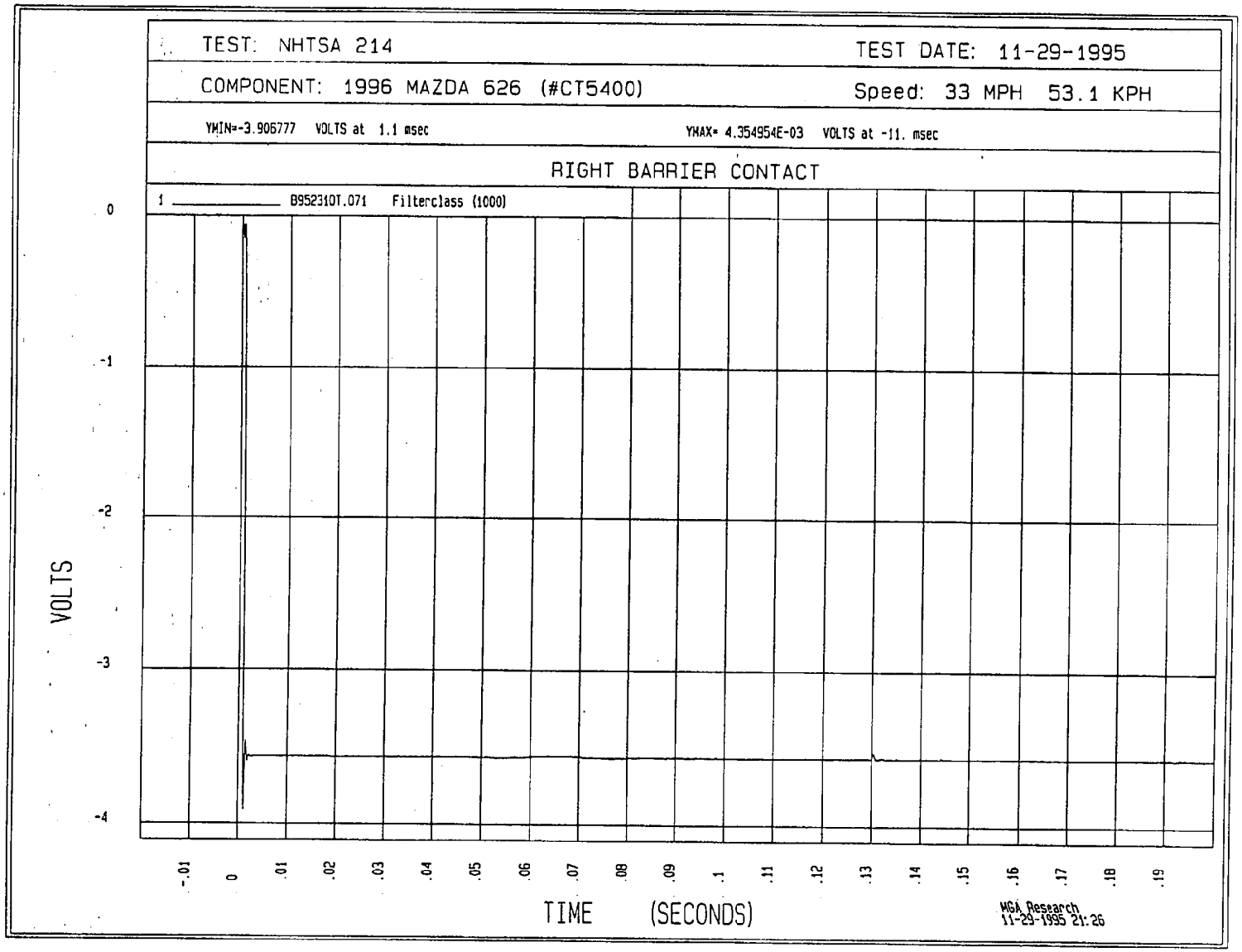

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN= .1081113 G'S at -13. msec
YMAX= 18.12377 G'S at 30. msec
MOVING BARRIER CG RESULTANT ACCELERATION
1 B95231AV.A02 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:26

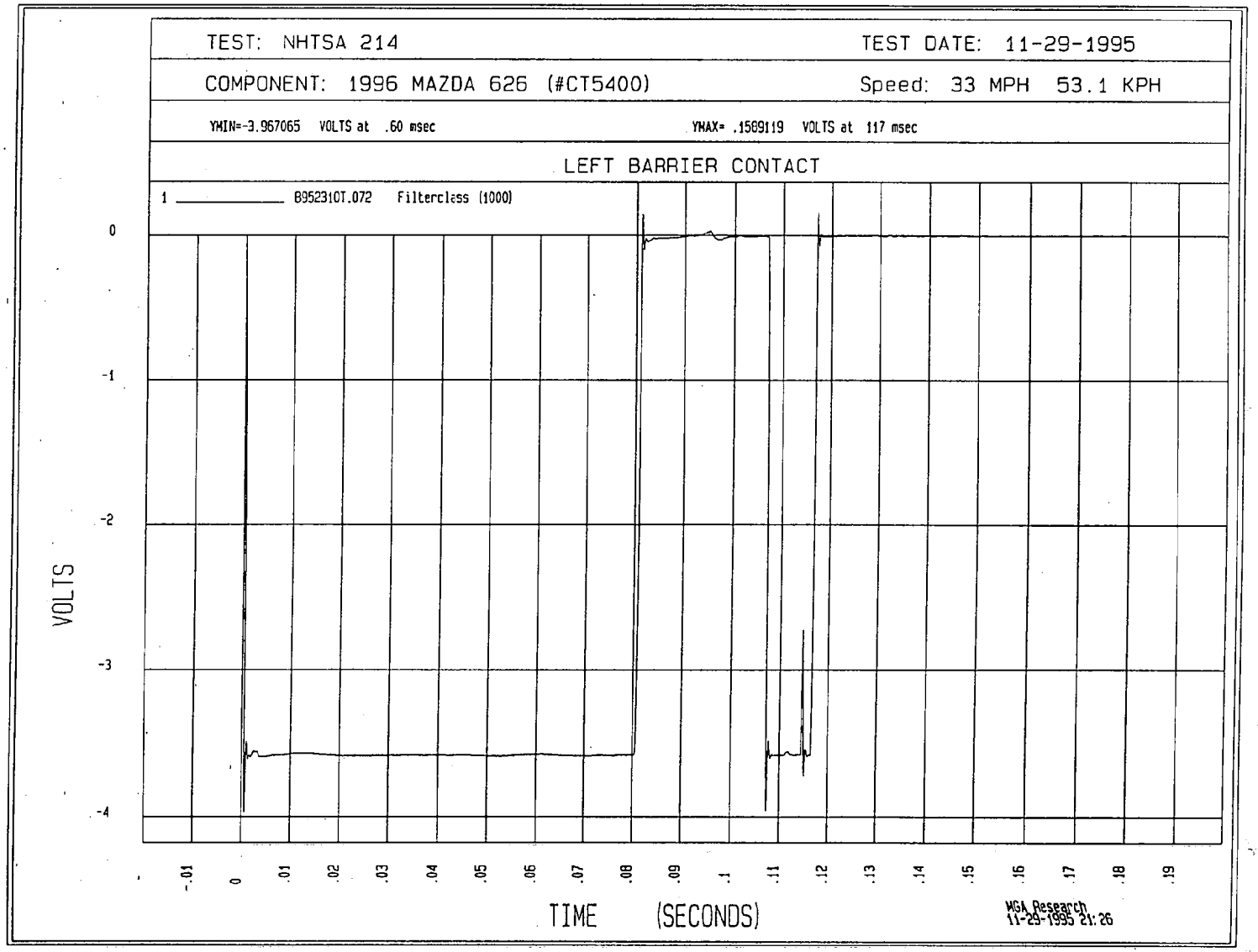

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-20.04021 G'S at 37. msec
YMAX= 3.694935 G'S at 189 msec
MOVING BARRIER REAR AXLE X ACCELERATION
1 ——— 895231AF.A05 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:30

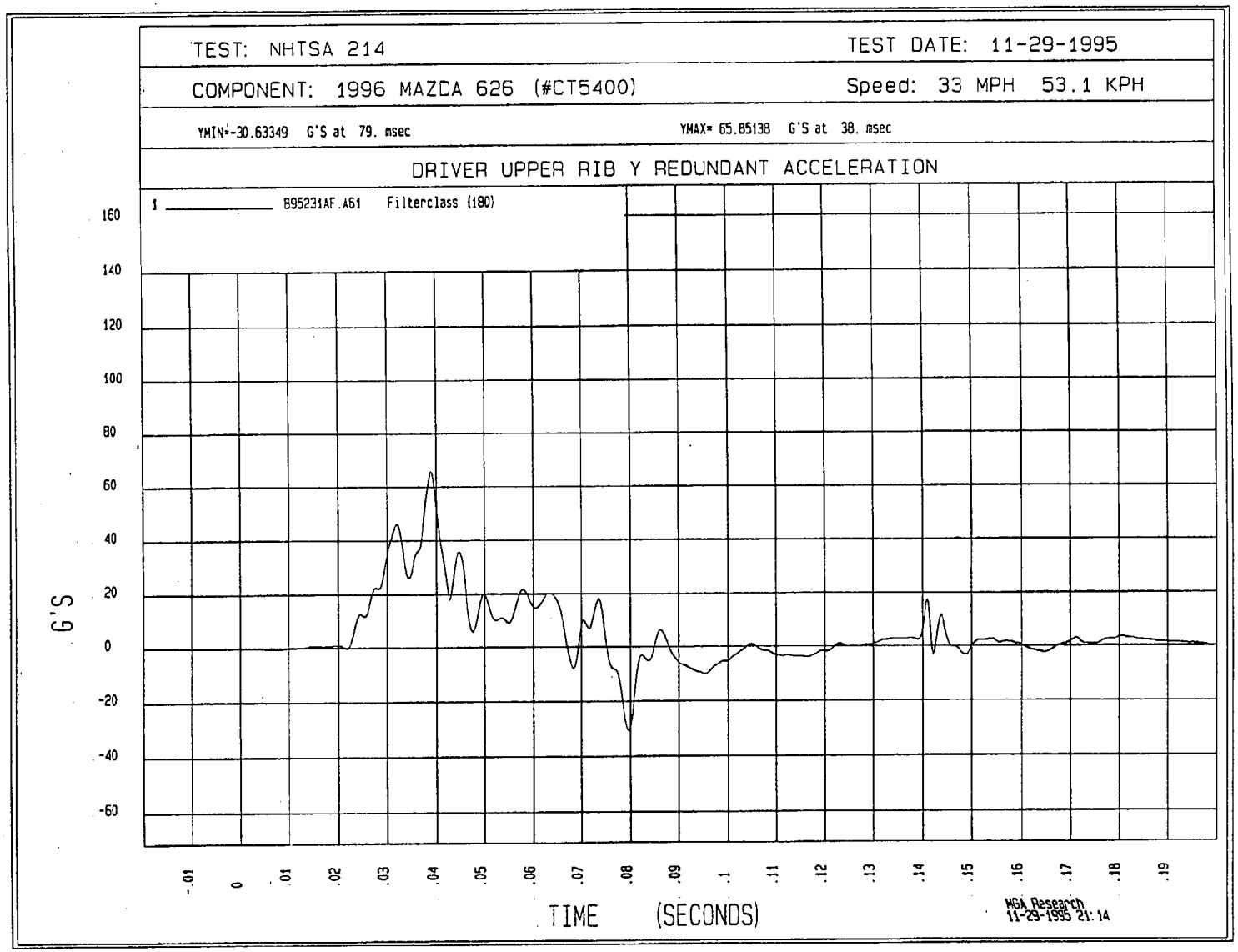

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-2.715738 KPH at 85 msec
YMAX= 29.40229 KPH at -16. msec
MOVING BARRIER REAR AXLE X VELOCITY
1 B95231AI.V05 Filterclass (180)
40
30
20
10
0
-10
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:23

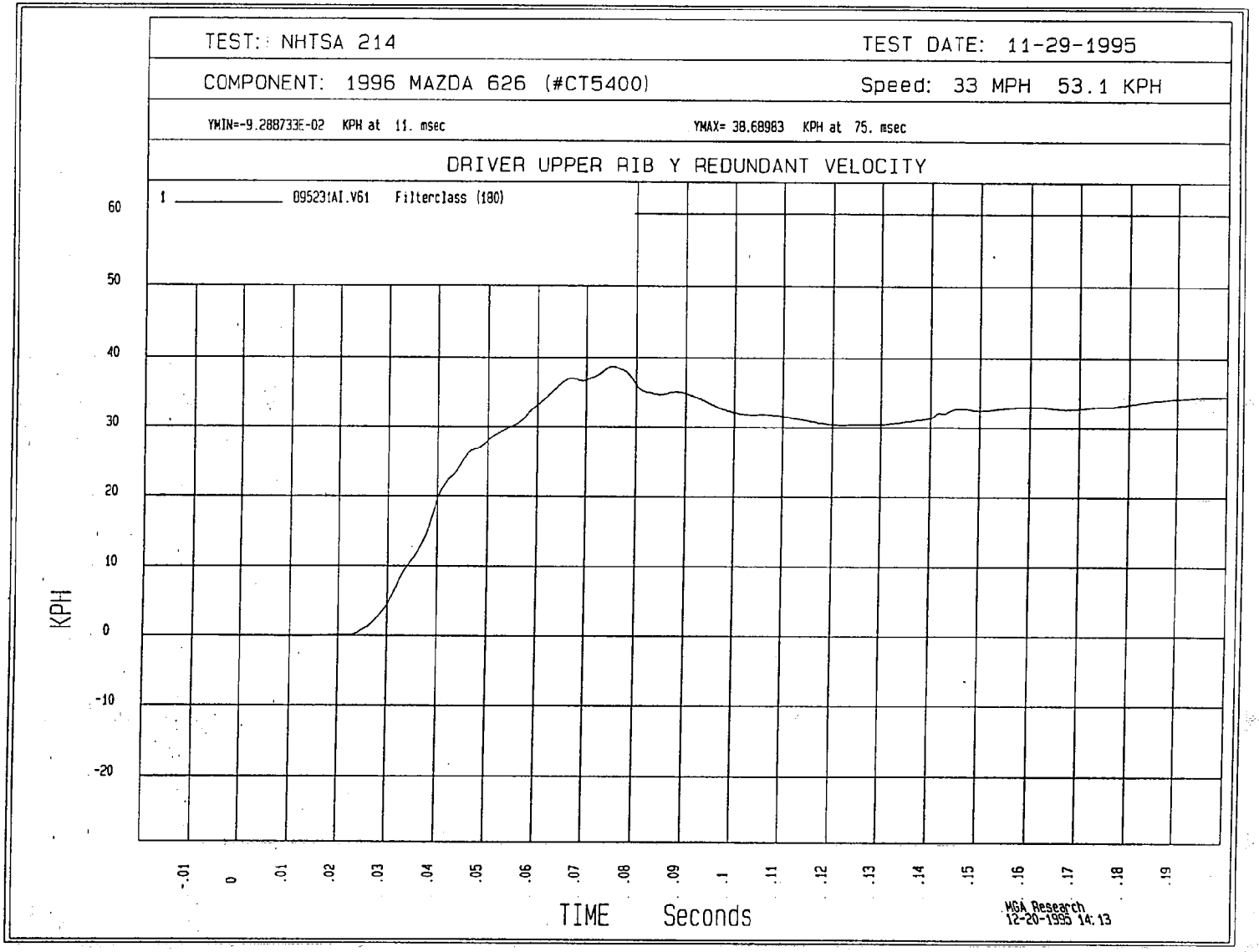

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-9.104756 G'S at 87. msec
YMAX= .551034 G'S at -12. msec
MOVING BARRIER REAR AXLE Y ACCELERATION
1 B95231AF.A06 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:30

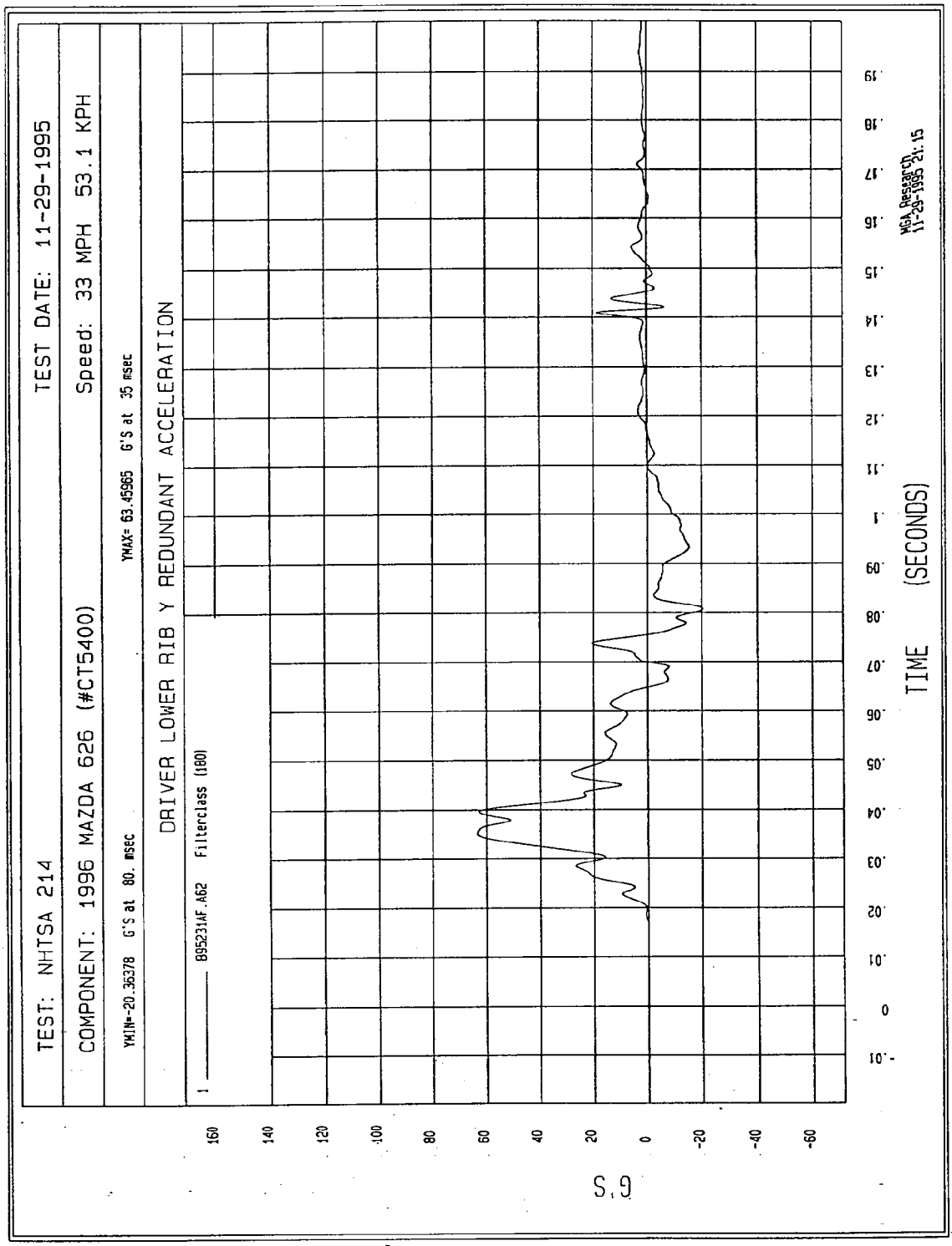

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-29.71375 KPH at 200 msec
YMAX= 15.23307 KPH at -.70 msec
MOVING BARRIER REAR AXLE Y VELOCITY
1 B95231AI.V06 Filterclass (180)
KPH
40
30
20
10
0
-10
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
11-29-1995 21:23

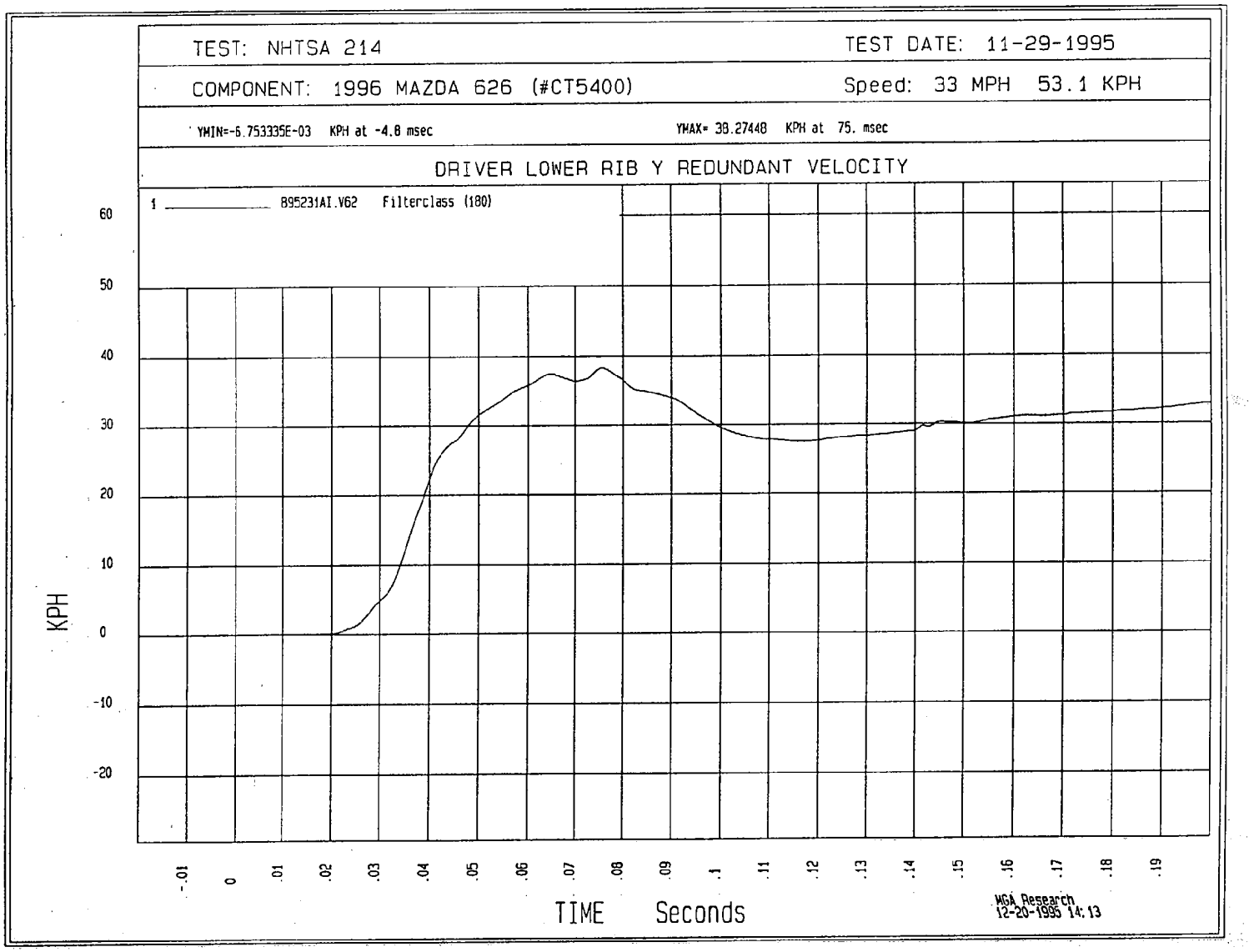

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-3.906777 VOLTS at 1.1 msec
YMAX= 4.354954E-03 VOLTS at -11. msec
RIGHT BARRIER CONTACT
1 B952310T.071 Filterclass (1000)
VOLTS
0
-1
-2
-3
-4
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:26

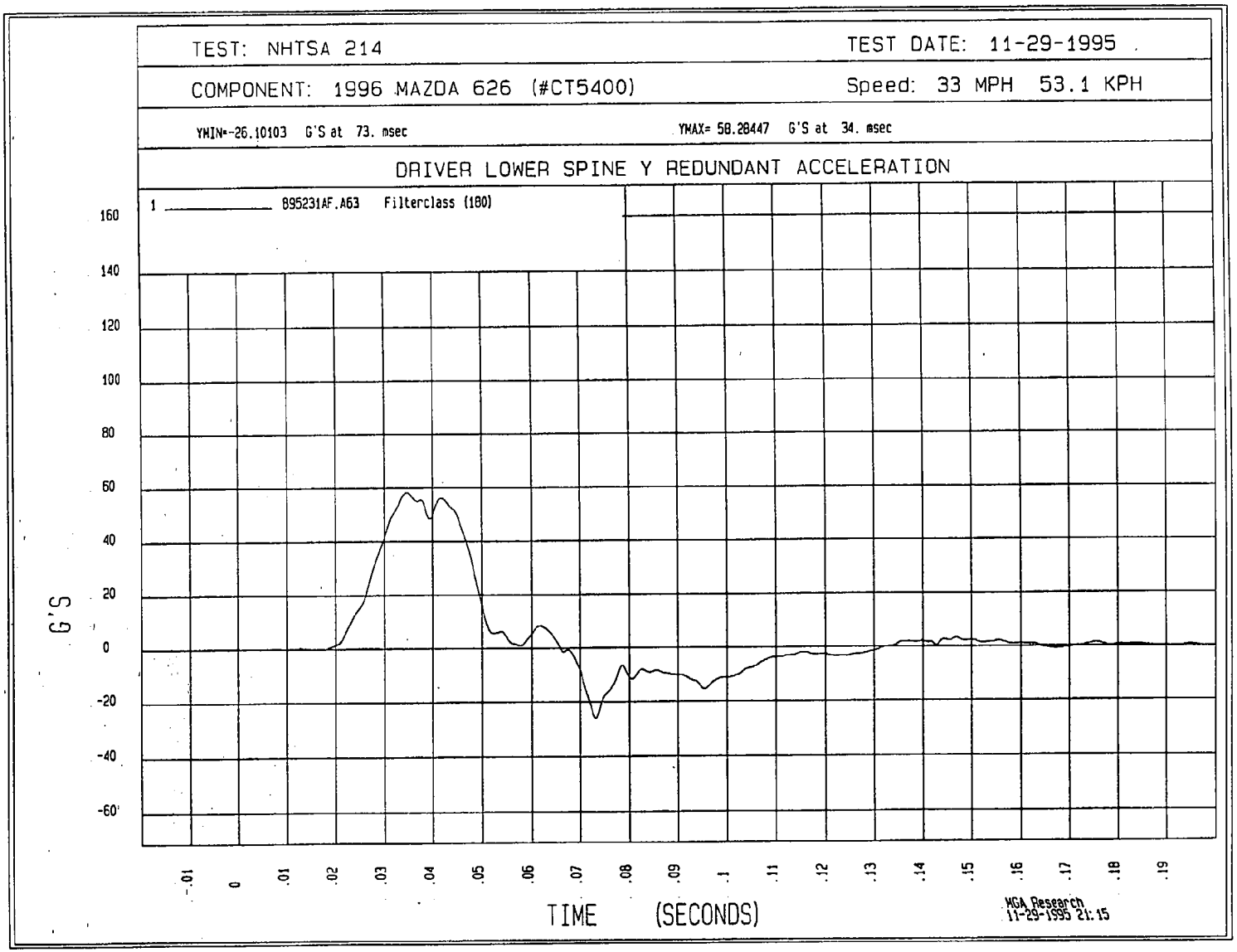

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-3.967065 VOLTS at .60 msec
YMAX= .1569119 VOLTS at 117 msec
LEFT BARRIER CONTACT
1 B952310T.072 Filterclass (1000)
VOLTS
0
-1
-2
-3
-4
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:26

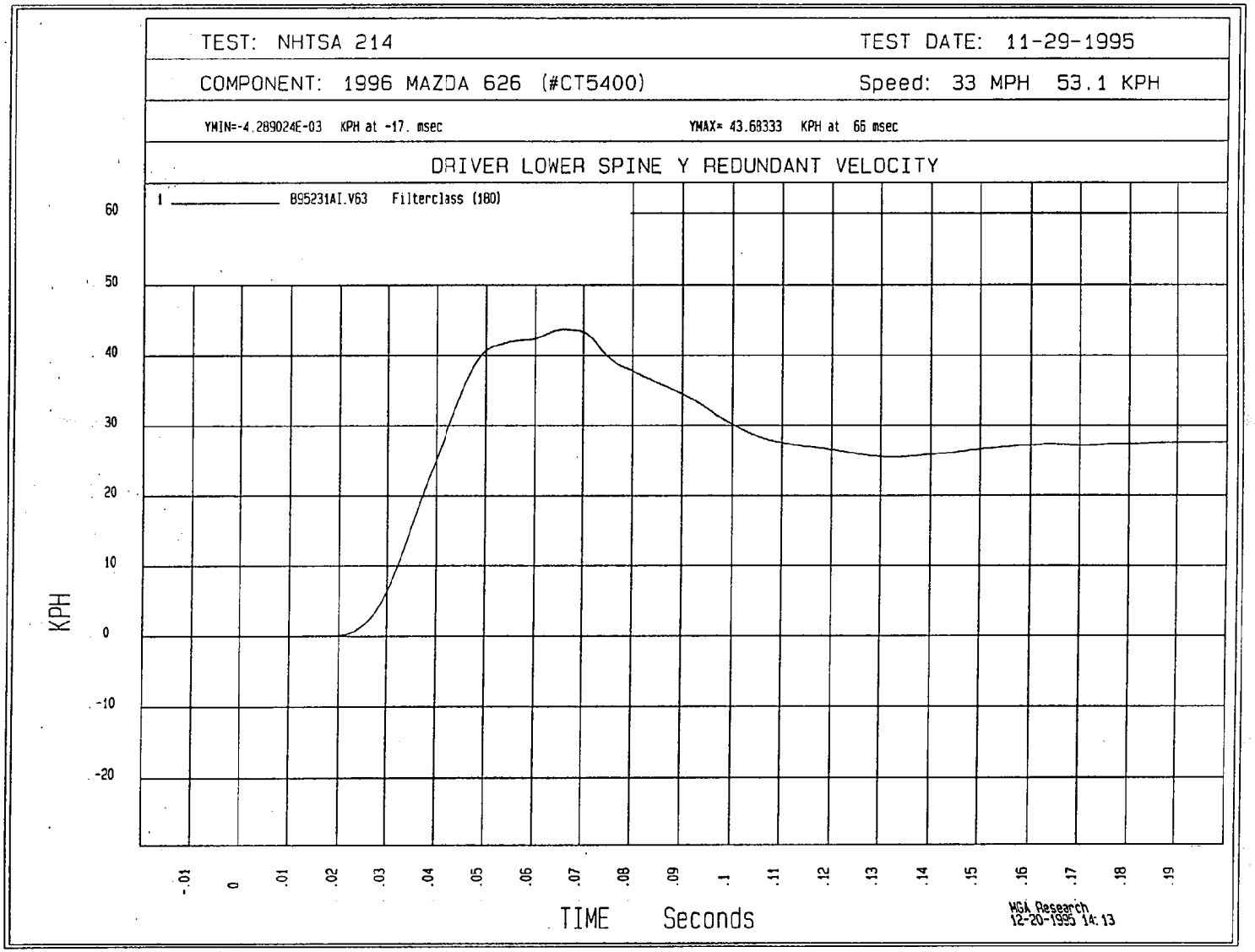

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-30.63349 G'S at 79. msec
YMAX= 65.85138 G'S at 38. msec
DRIVER UPPER RIB Y REDUNDANT ACCELERATION
1 B95231AF.A61 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:14

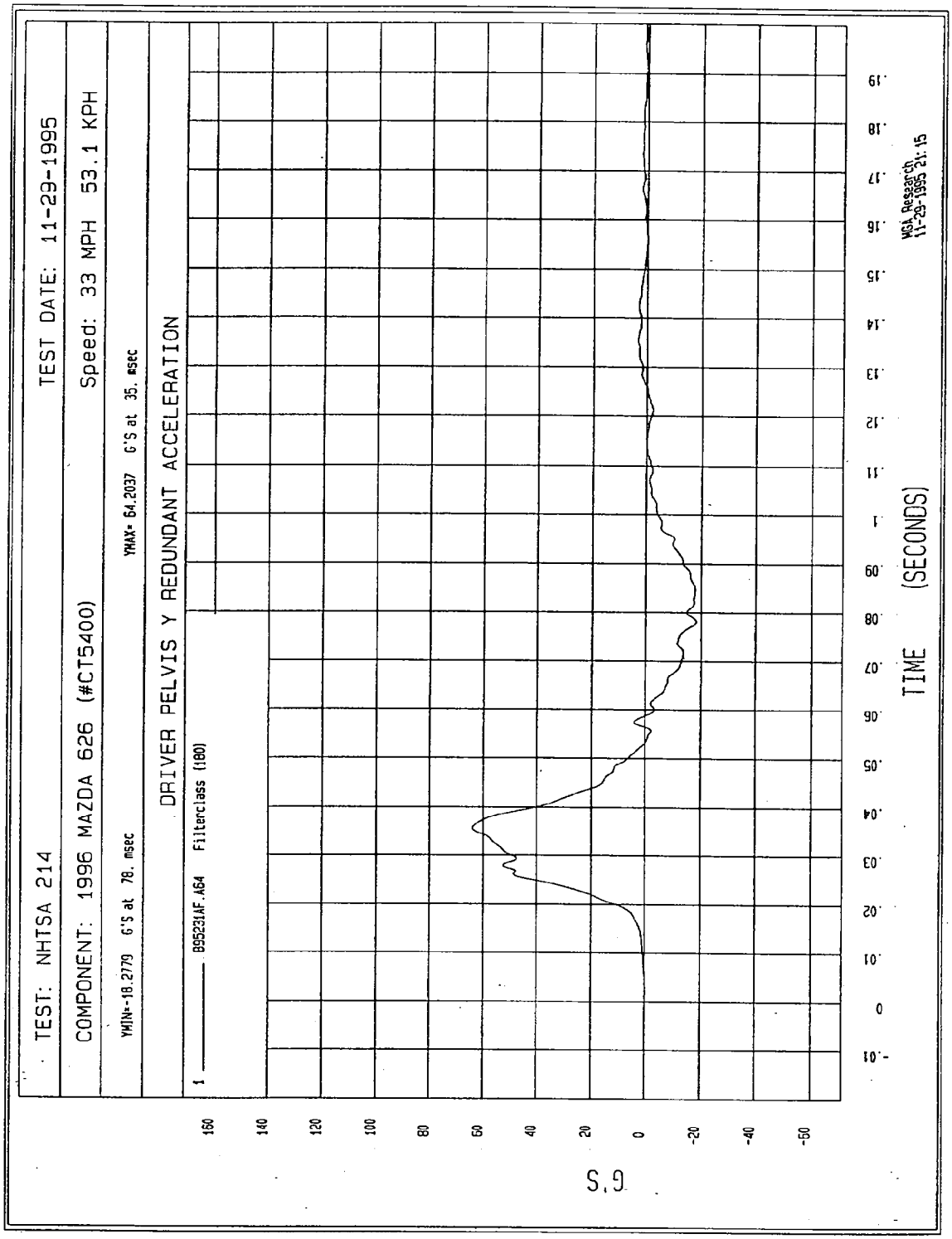

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-9.288733E-02 KPH at 11. msec
YMAX= 38.68983 KPH at 75. msec
DRIVER UPPER RIB Y REDUNDANT VELOCITY
1 095231AI.V61 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-20-1995 14:13

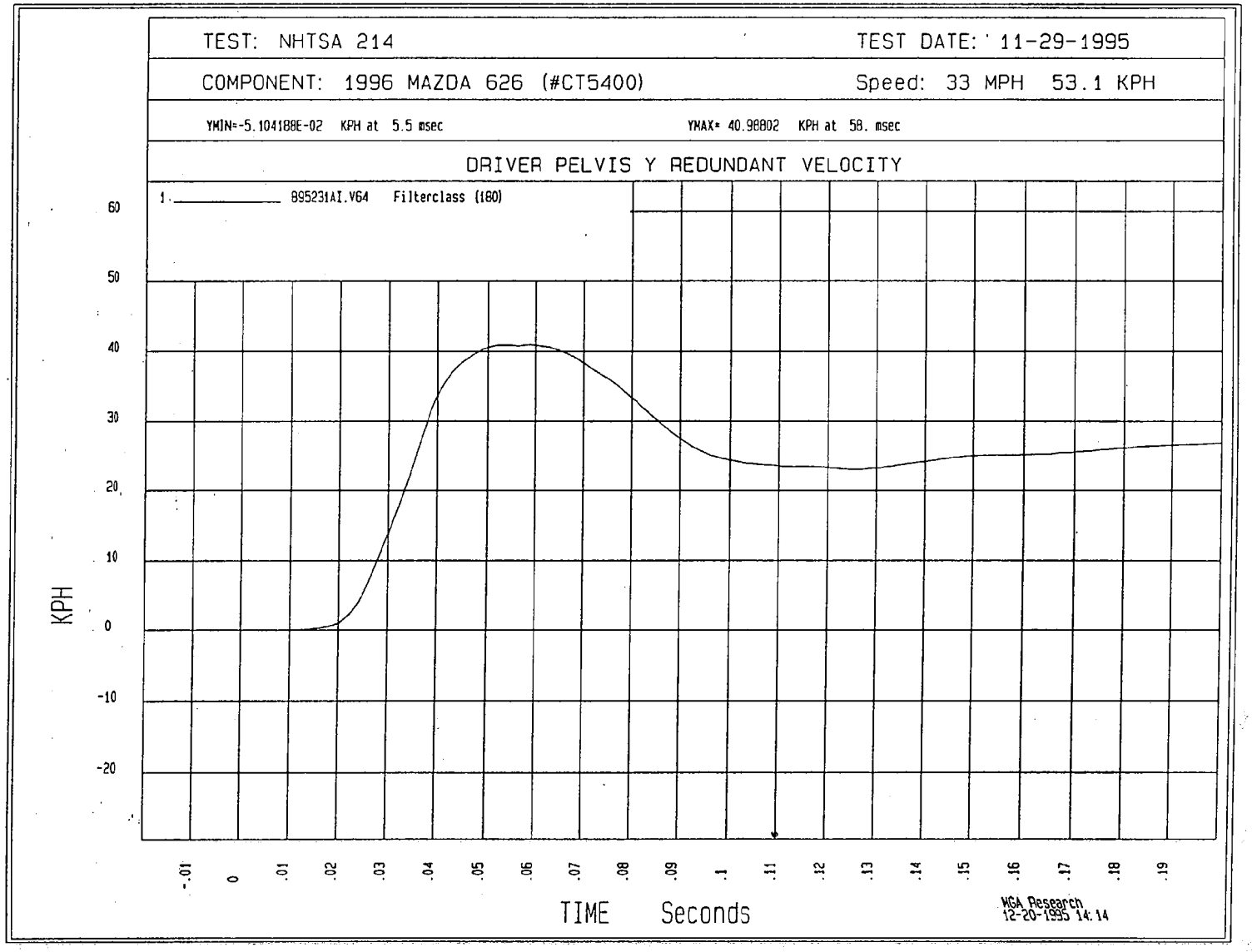

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-20.36378 G'S at 80. msec
YMAX= 63.45965 G'S at 35 msec
DRIVER LOWER RIB Y REDUNDANT ACCELERATION
1 B95231AF.A62 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:15

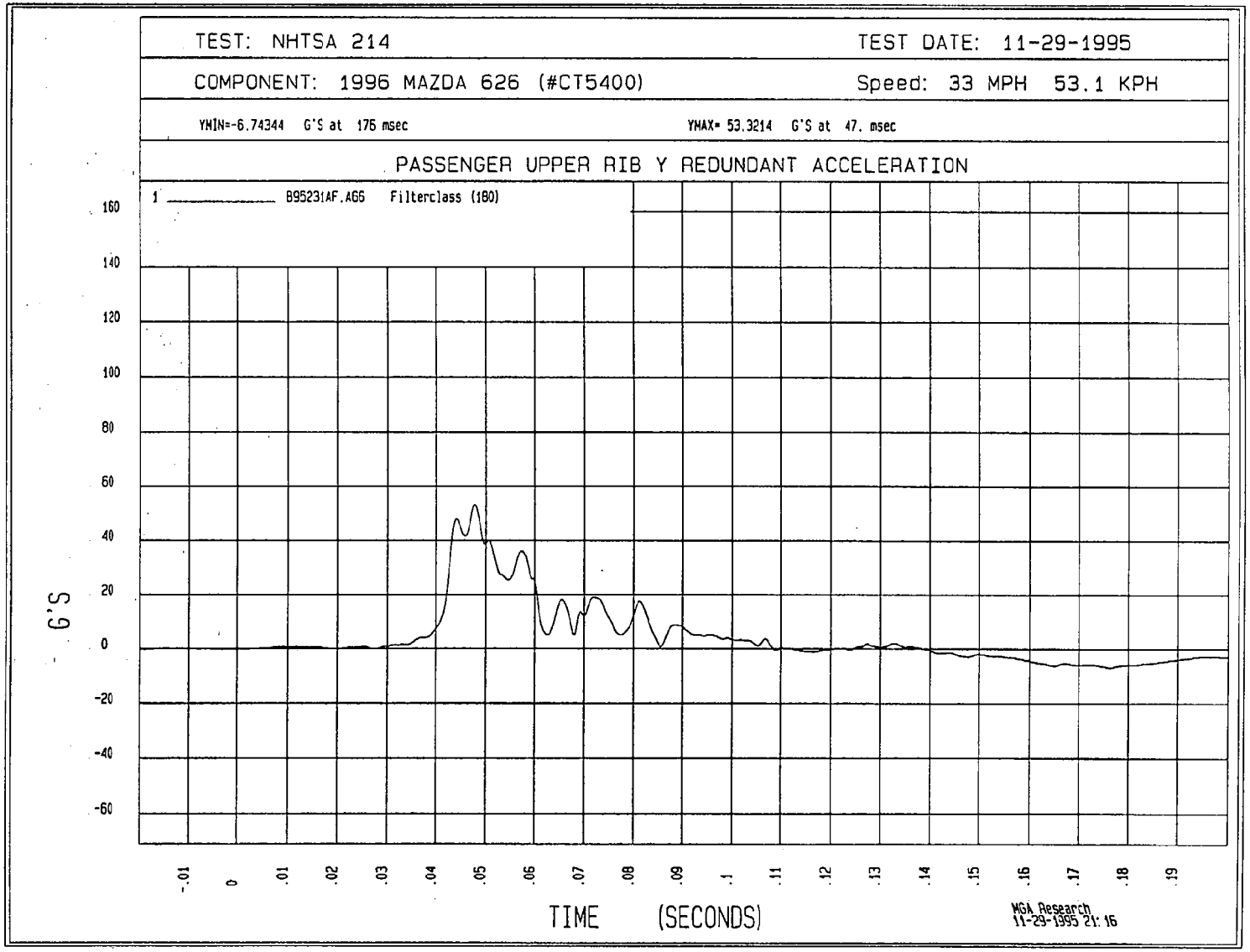

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-6.753335E-03 KPH at -4.8 msec
YMAX= 38.27448 KPH at 75. msec
DRIVER LOWER RIB Y REDUNDANT VELOCITY
1 B95231AI.V62 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-20-1995 14:13

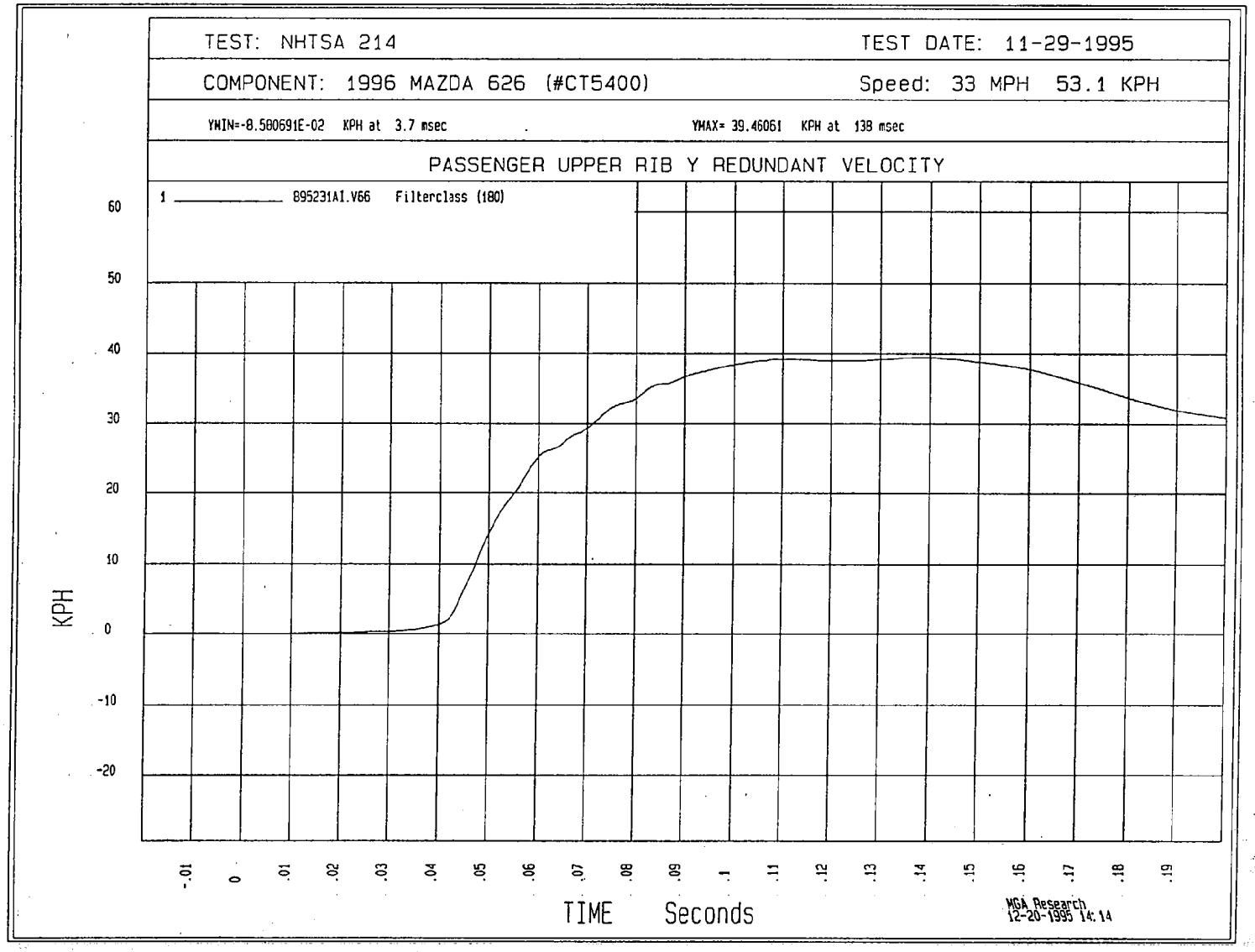

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-26.10103 G'S at 73. msec
YMAX= 58.28447 G'S at 34. msec
DRIVER LOWER SPINE Y REDUNDANT ACCELERATION
1 895231AF.A63 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:15

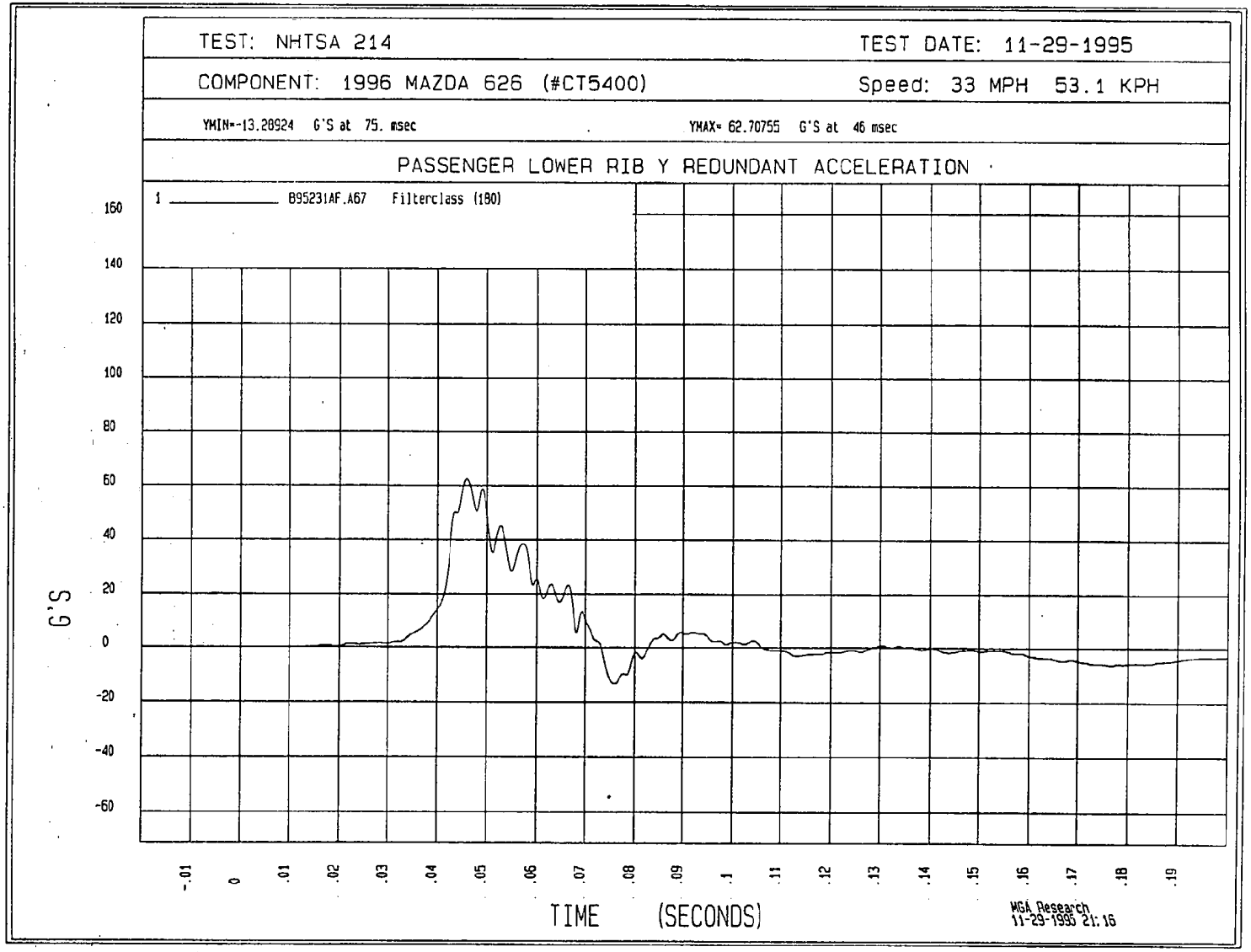

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-4.289024E-03 KPH at -17. msec
YMAX= 43.68333 KPH at 66 msec
DRIVER LOWER SPINE Y REDUNDANT VELOCITY
1 B95231AI.V63 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
HGA Research
12-20-1995 14:13

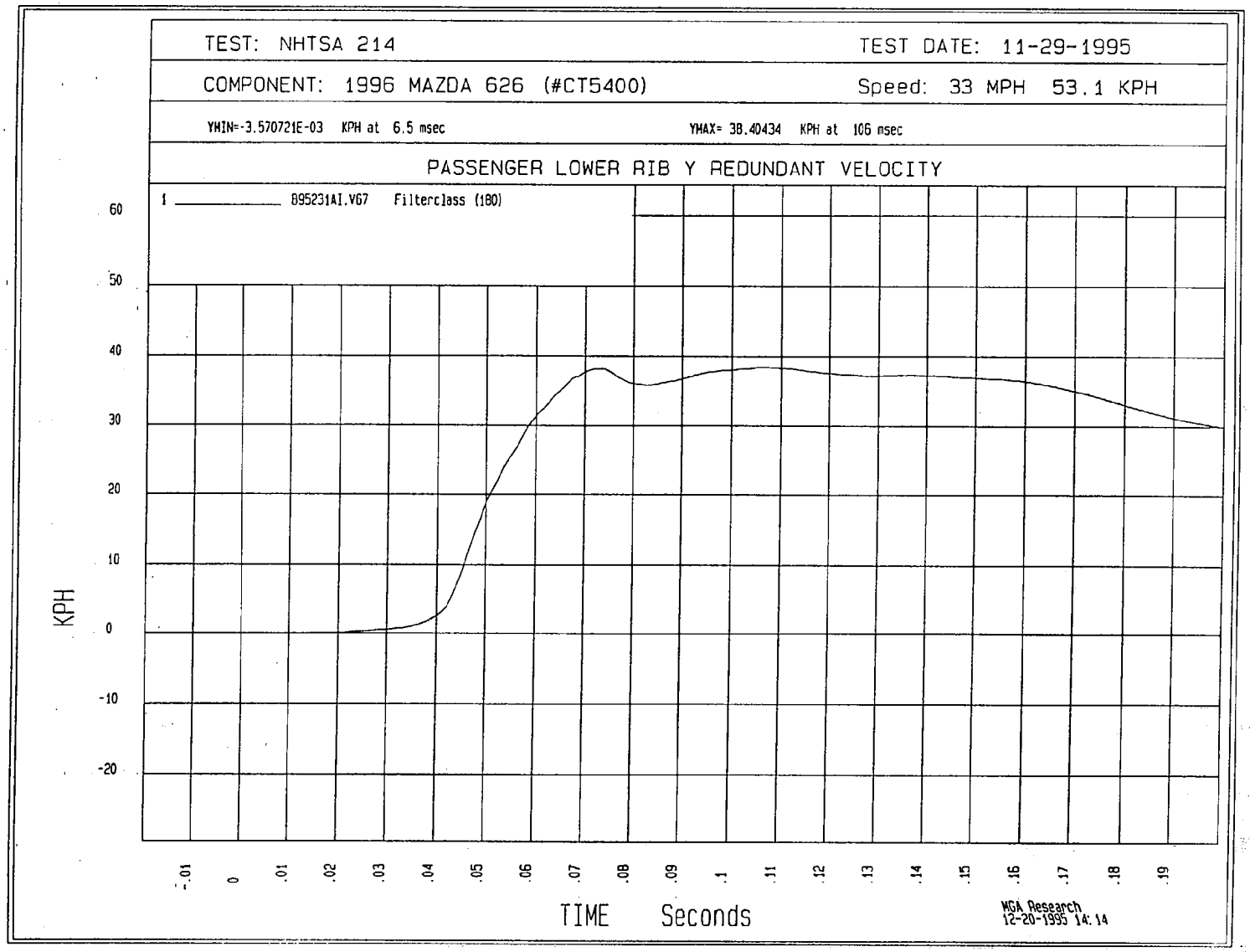

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-18.2779 6'S at 78. msec
YMAX= 64.2037 6'S at 35. msec
DRIVER PELVIS Y REDUNDANT ACCELERATION
1 B9523IAF.A64 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-50
6'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21: 15

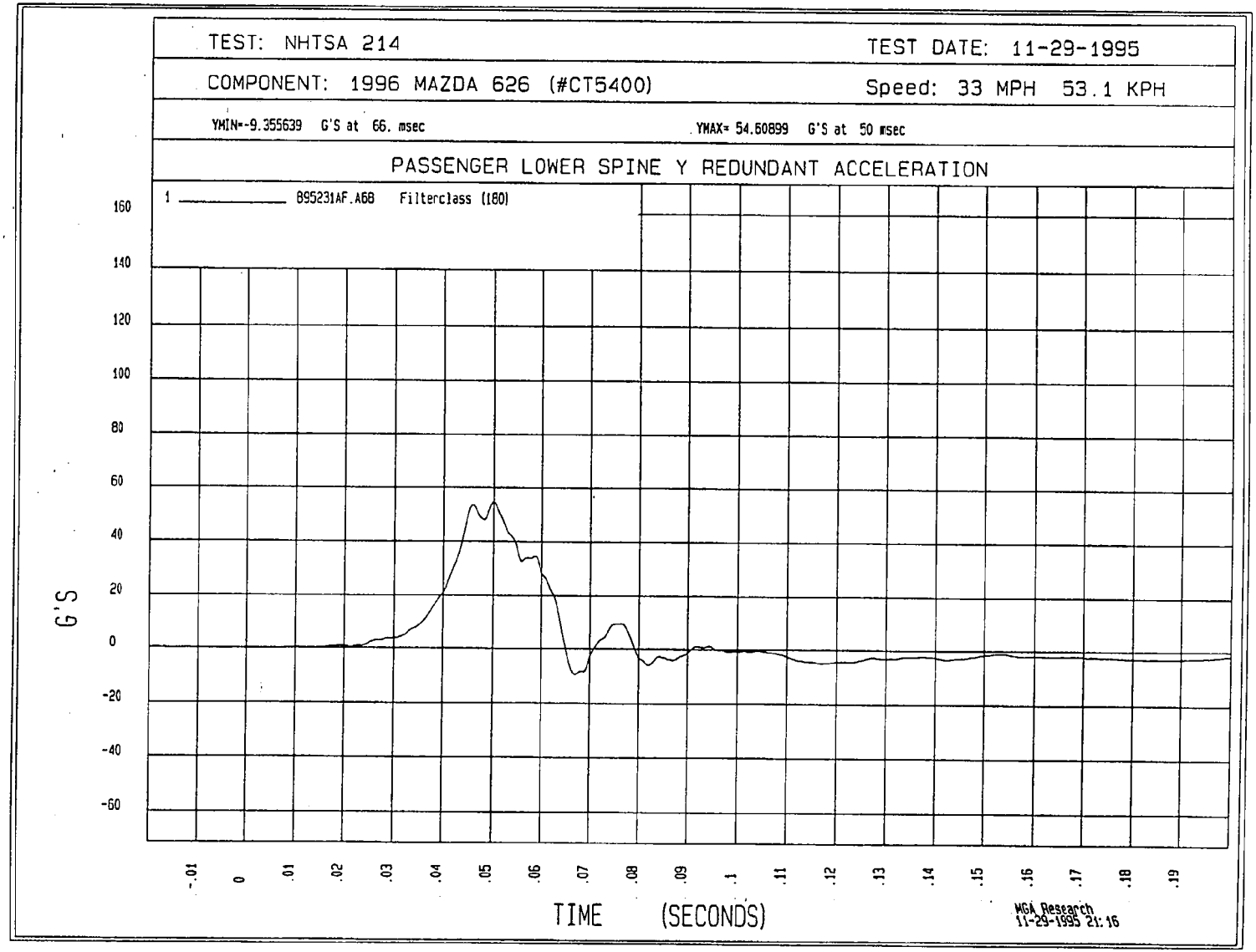

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-5.104188E-02 KPH at 5.5 msec
YMAX= 40.98802 KPH at 58. msec
DRIVER PELVIS Y REDUNDANT VELOCITY
1 895231AI.V64 Filterclass (180)
KPH
60
50
40
30
20
10
0
-10
-20
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-20-1995 14:14

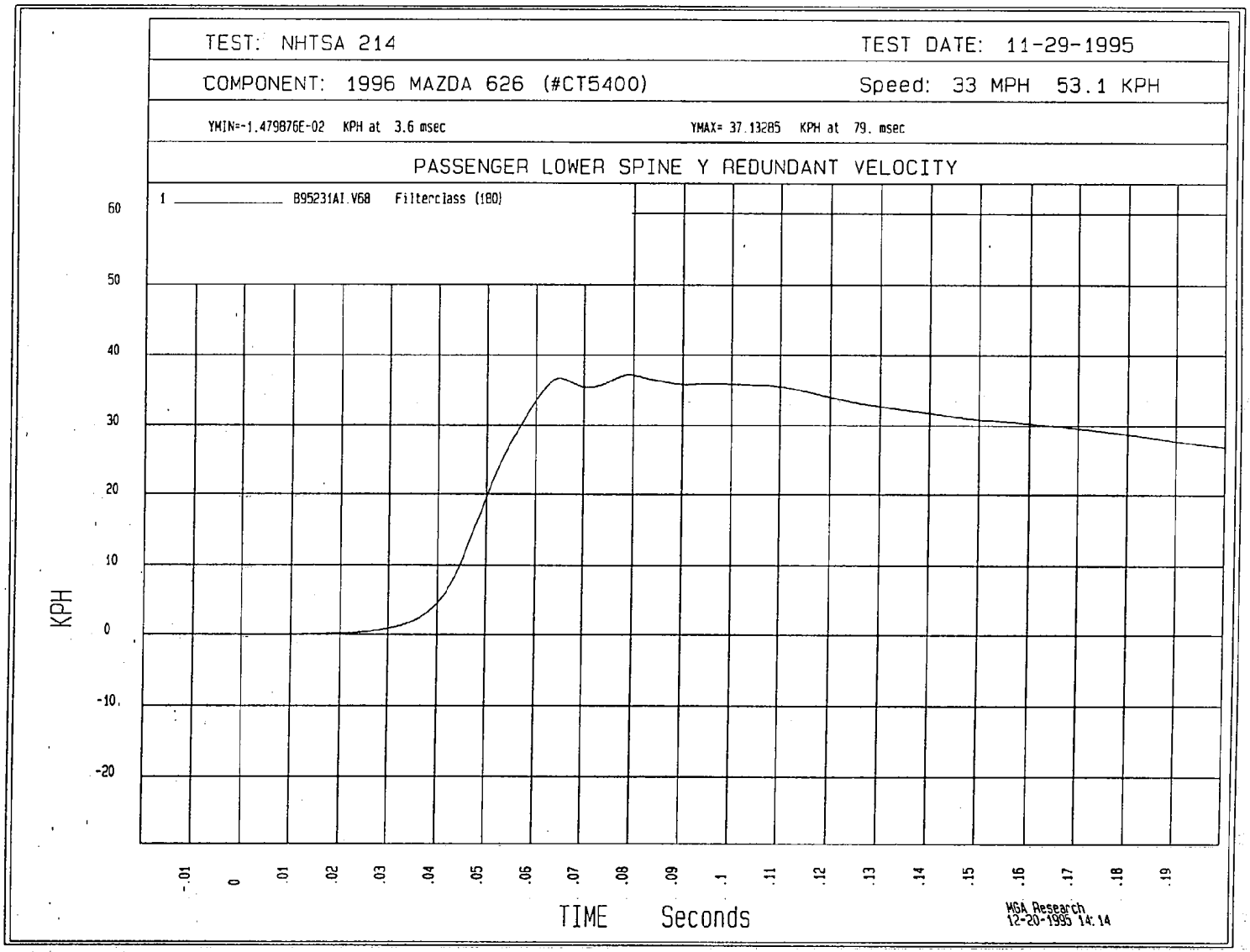

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-6.74344 G'S at 175 msec
YMAX= 53.3214 G'S at 47. msec
PASSENGER UPPER RIB Y REDUNDANT ACCELERATION
1 B95231AF.AGS Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:16

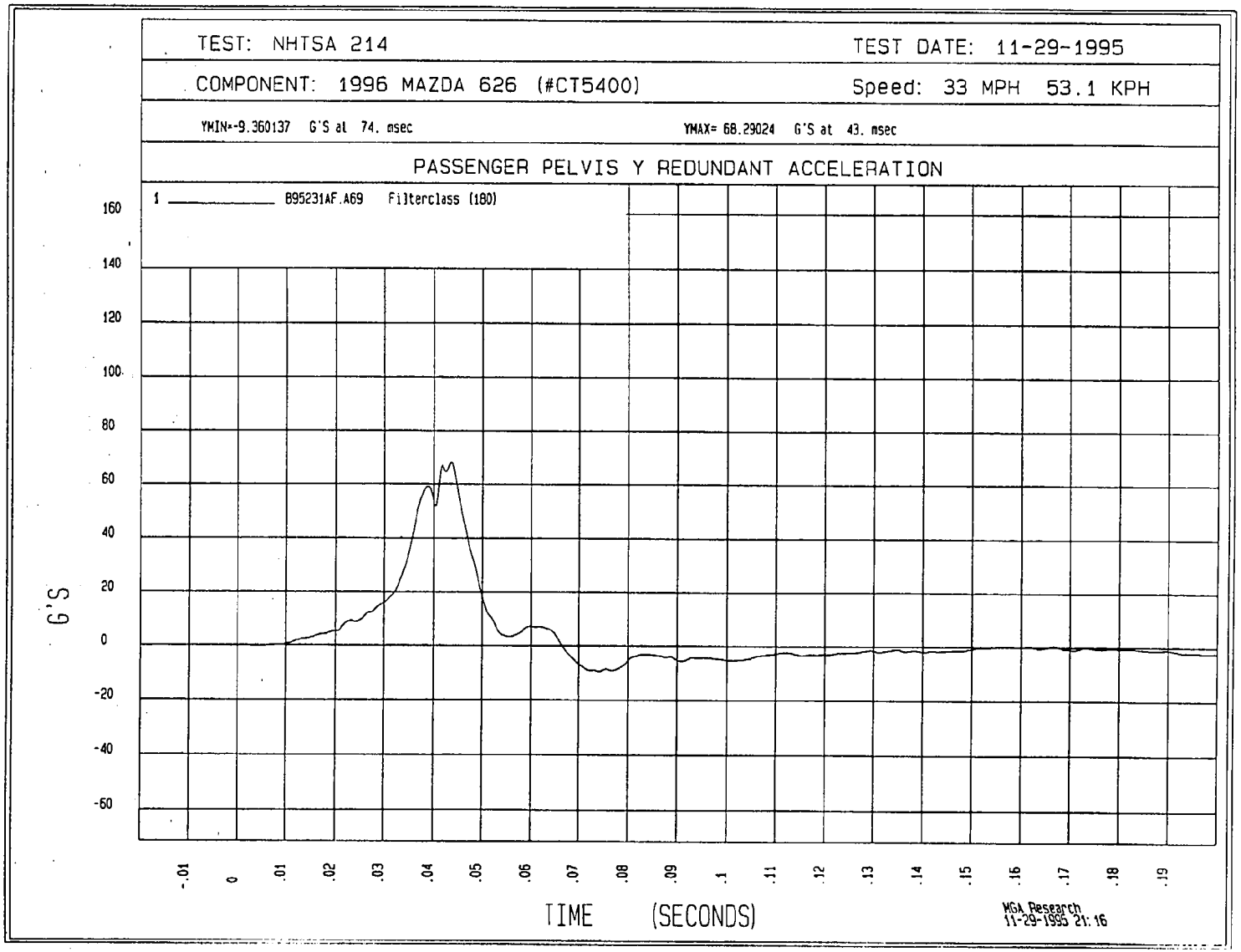

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-8.580691E-02 KPH at 3.7 msec
YMAX= 39.46061 KPH at 138 msec
PASSENGER UPPER RIB Y REDUNDANT VELOCITY
1 895231A1.V66 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-20-1995 14:14

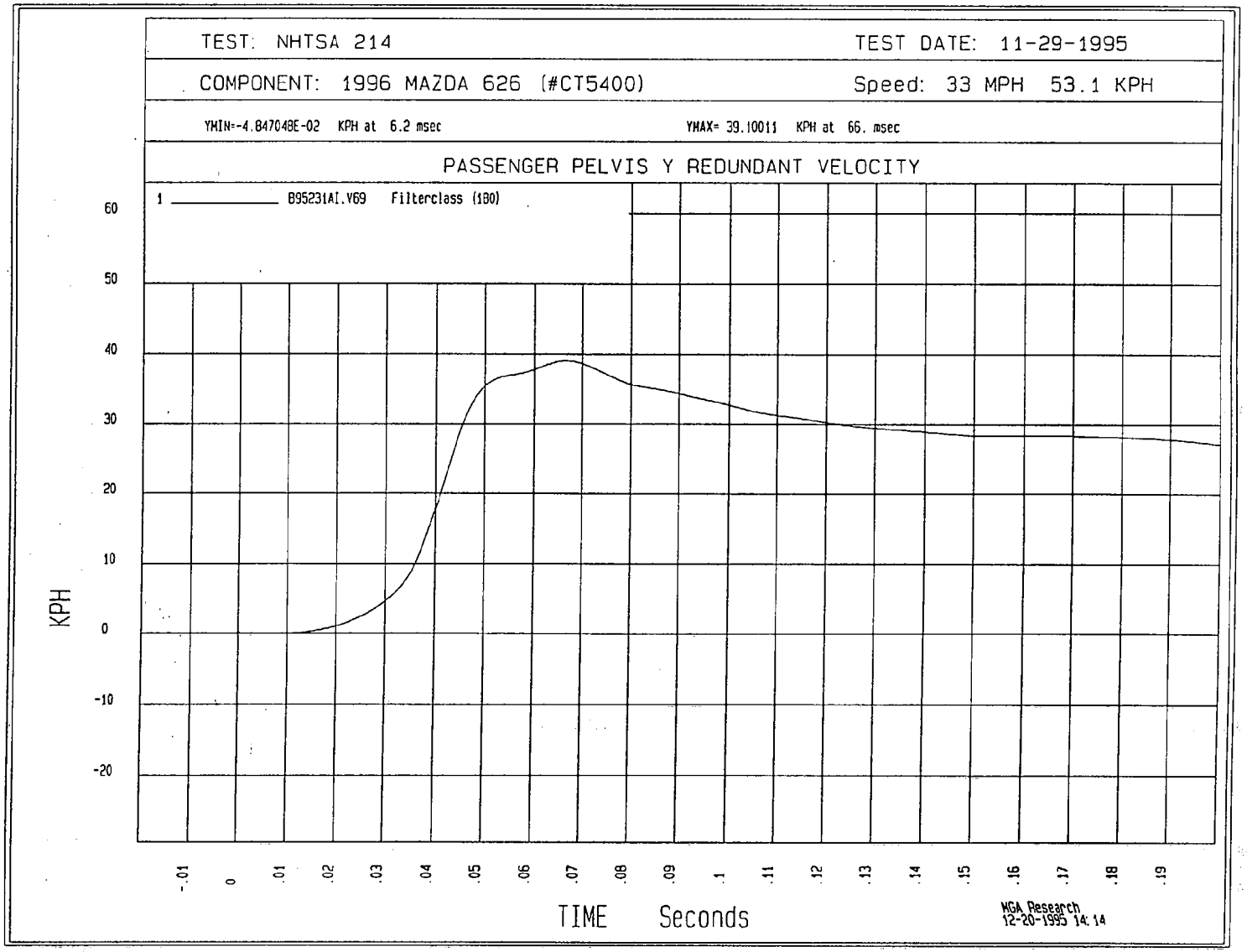

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-13.20924 G'S at 75. msec
YMAX= 62.70755 G'S at 46 msec
PASSENGER LOWER RIB Y REDUNDANT ACCELERATION
1 B95231AF.A67 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:16


TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-3.570721E-03 KPH at 6.5 msec
YMAX= 38.40434 KPH at 106 msec
PASSENGER LOWER RIB Y REDUNDANT VELOCITY
1 895231AI.VG7 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.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
12-20-1995 14:14

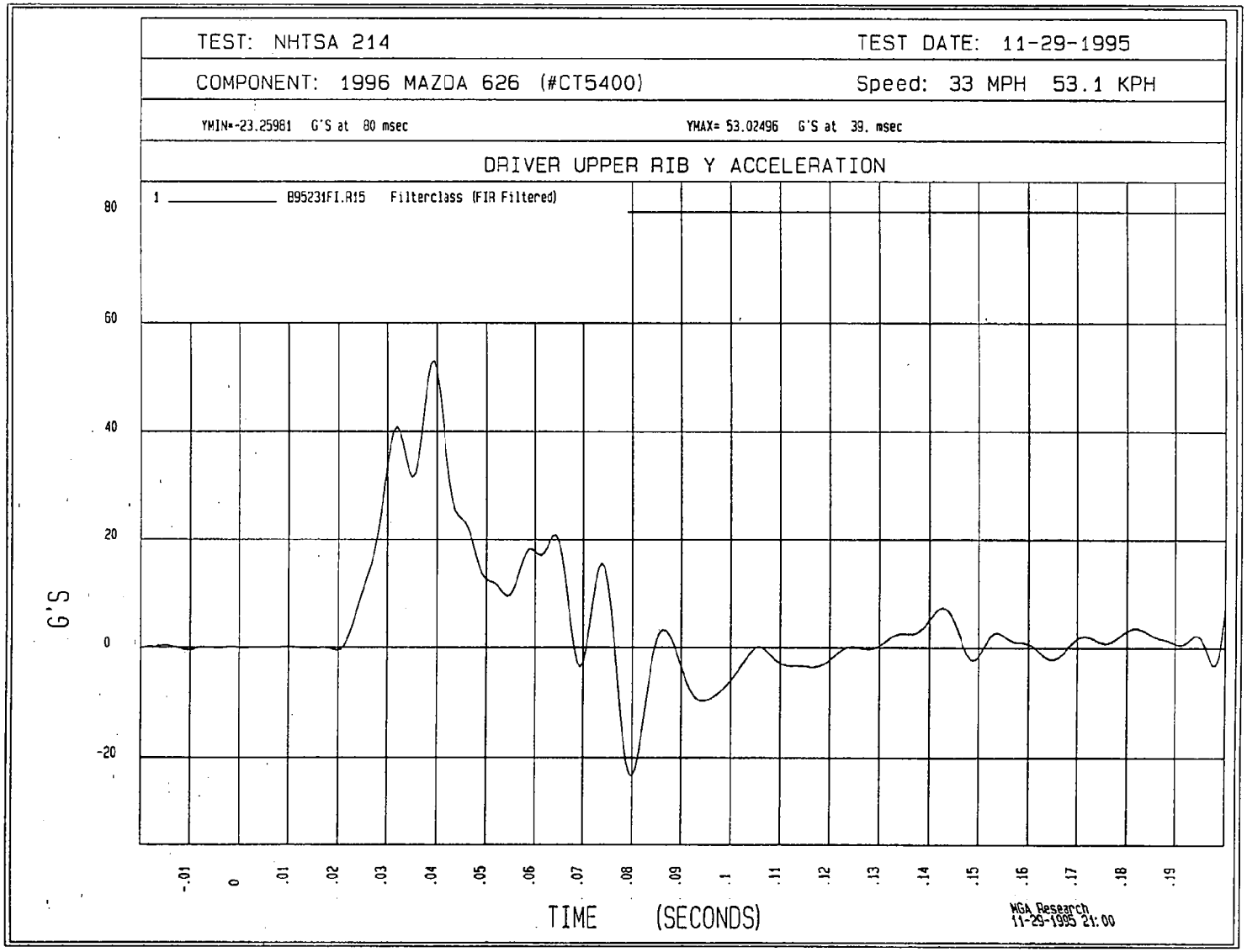

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-9.355639 G'S at 66. msec
YMAX= 54.60899 G'S at 50 msec
PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION
1 895231AF.A68 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:16

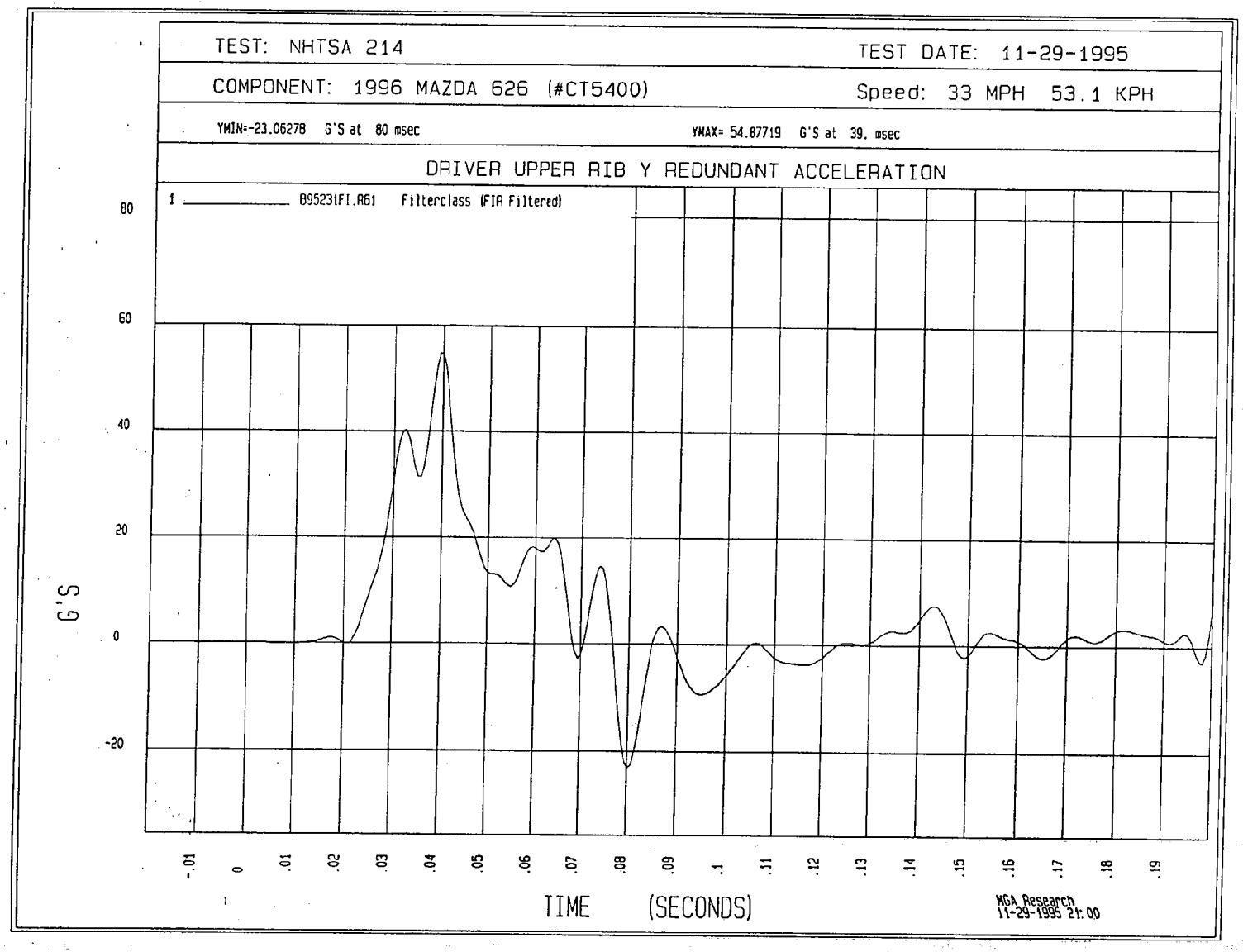

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-1.479876E-02 KPH at 3.6 msec
YMAX= 37.13285 KPH at 79. msec
PASSENGER LOWER SPINE Y REDUNDANT VELOCITY
1 B95231AI.V68 Filterclass (180)
60
50
40
30
20
10
0
-10.
-20
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
12-20-1995 14:14

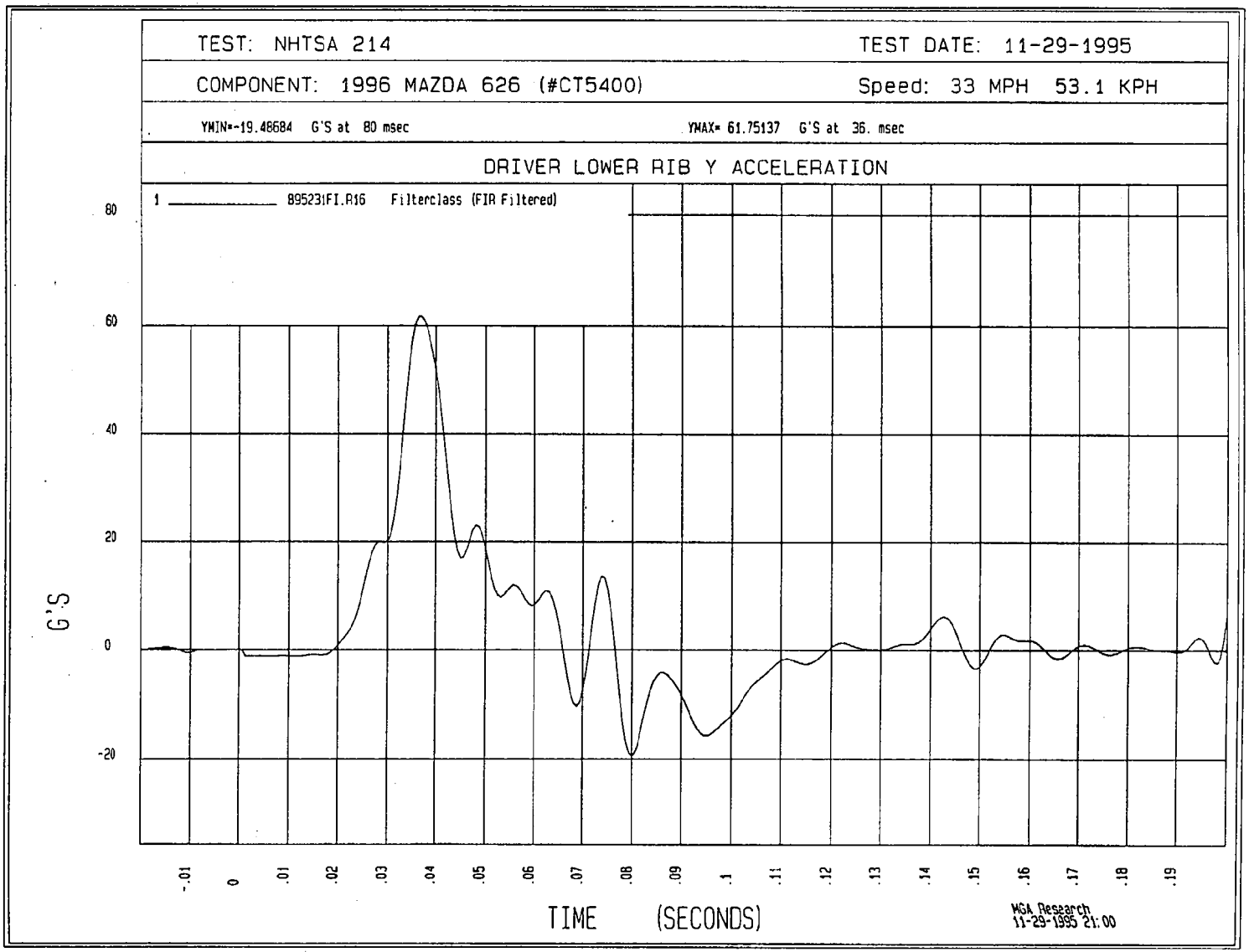

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-9.360137 G'S at 74. msec
YMAX= 68.29024 G'S at 43. msec
PASSENGER PELVIS Y REDUNDANT ACCELERATION
1 B95231AF.A69 Filterclass (180)
160
140
120
100
80
60
40
20
0
-20
-40
-60
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:16

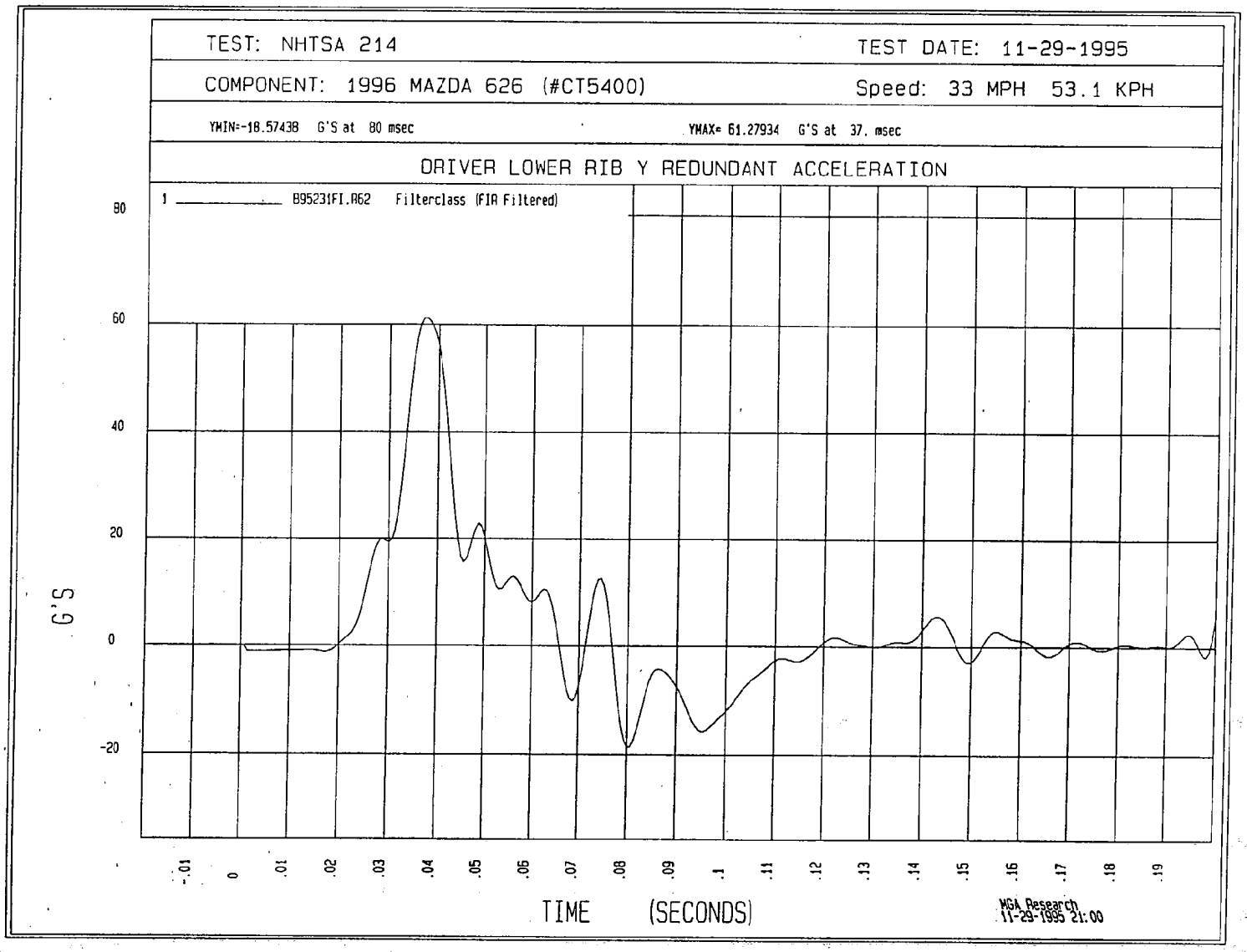

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-4.847048E-02 KPH at 6.2 msec
YMAX= 39.10011 KPH at 66. msec
PASSENGER PELVIS Y REDUNDANT VELOCITY
1 B95231AI.V69 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
NGA Research
12-20-1995 14:14

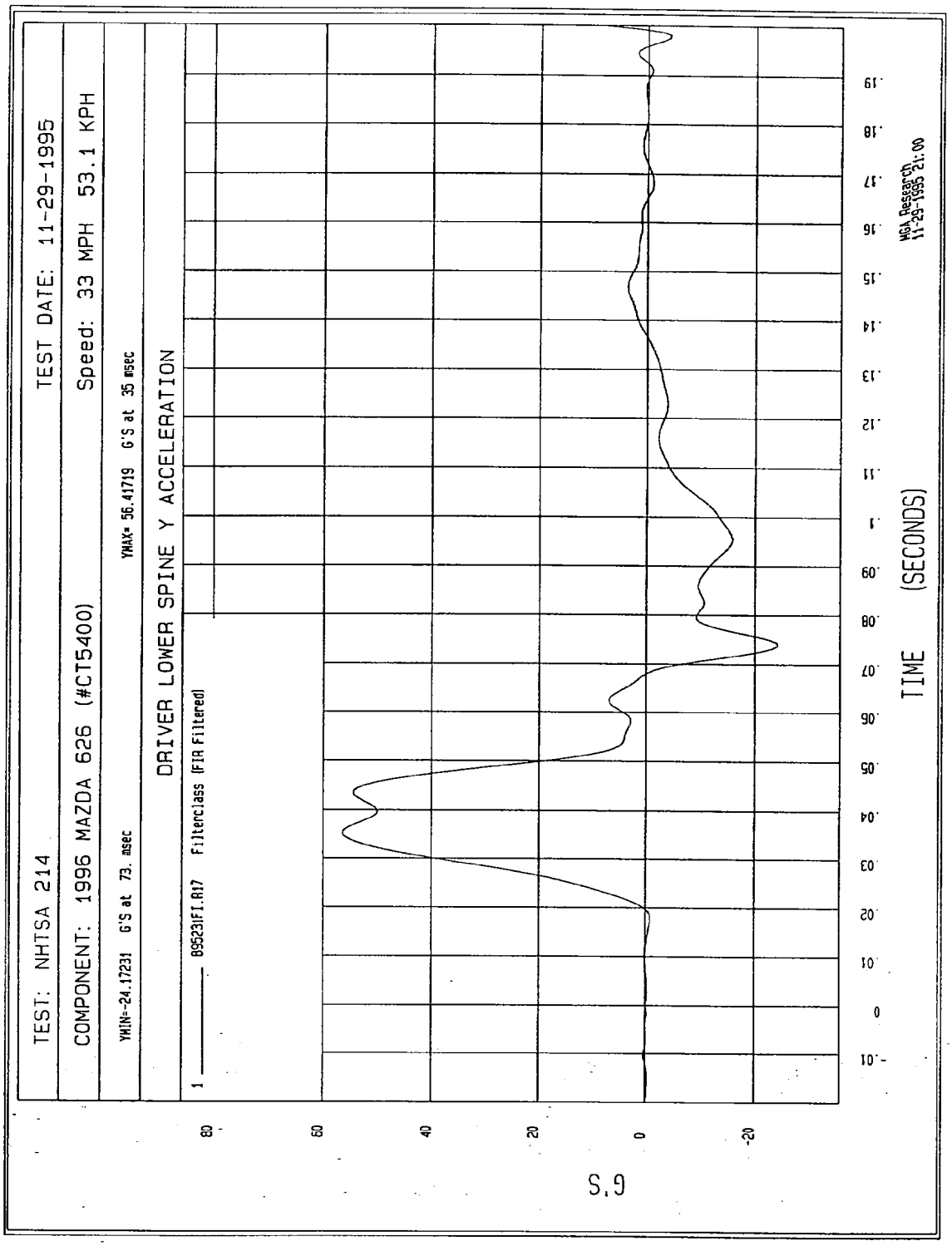
FINITE IMPULSE RESPONSE (FIR) FILTERED DATA

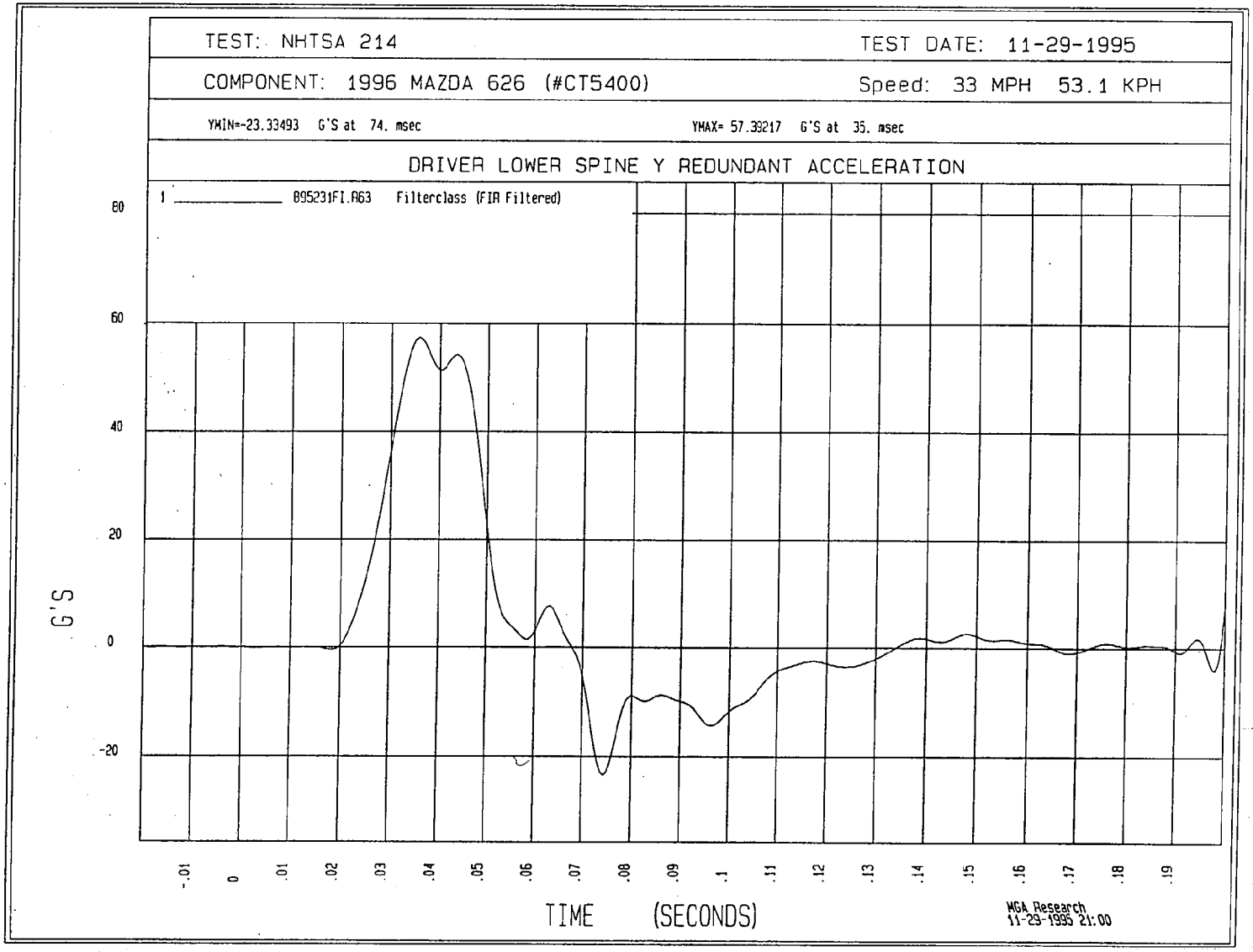

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-23.25981 G'S at 80 msec
YMAX= 53.02496 G'S at 39. msec
DRIVER UPPER RIB Y ACCELERATION
1 B95231FI.A15 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:00

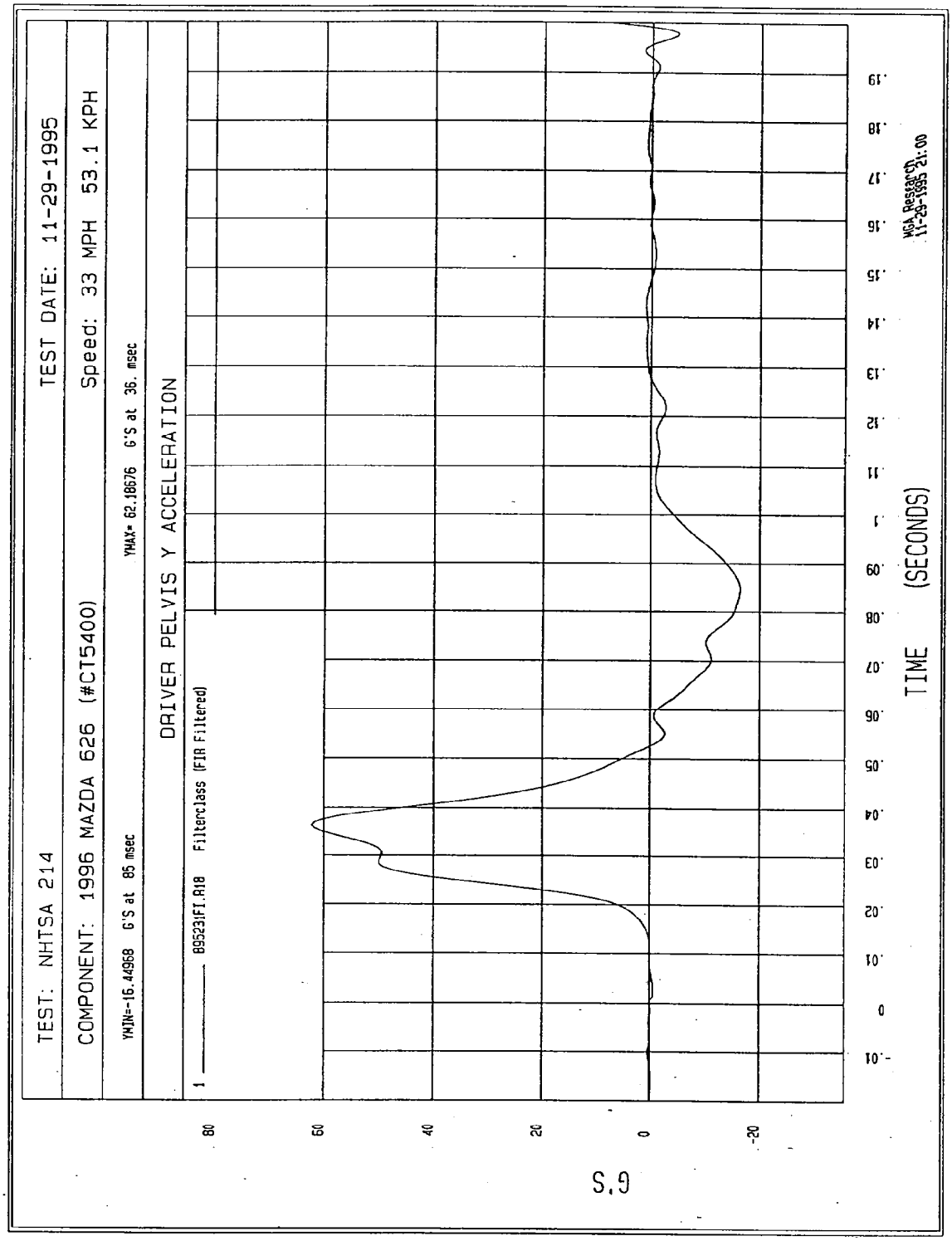

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-23.06278 G'S at 80 msec
YMAX= 54.87719 G'S at 39. msec
DRIVER UPPER RIB Y REDUNDANT ACCELERATION
1 B95231FI.A61 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:00

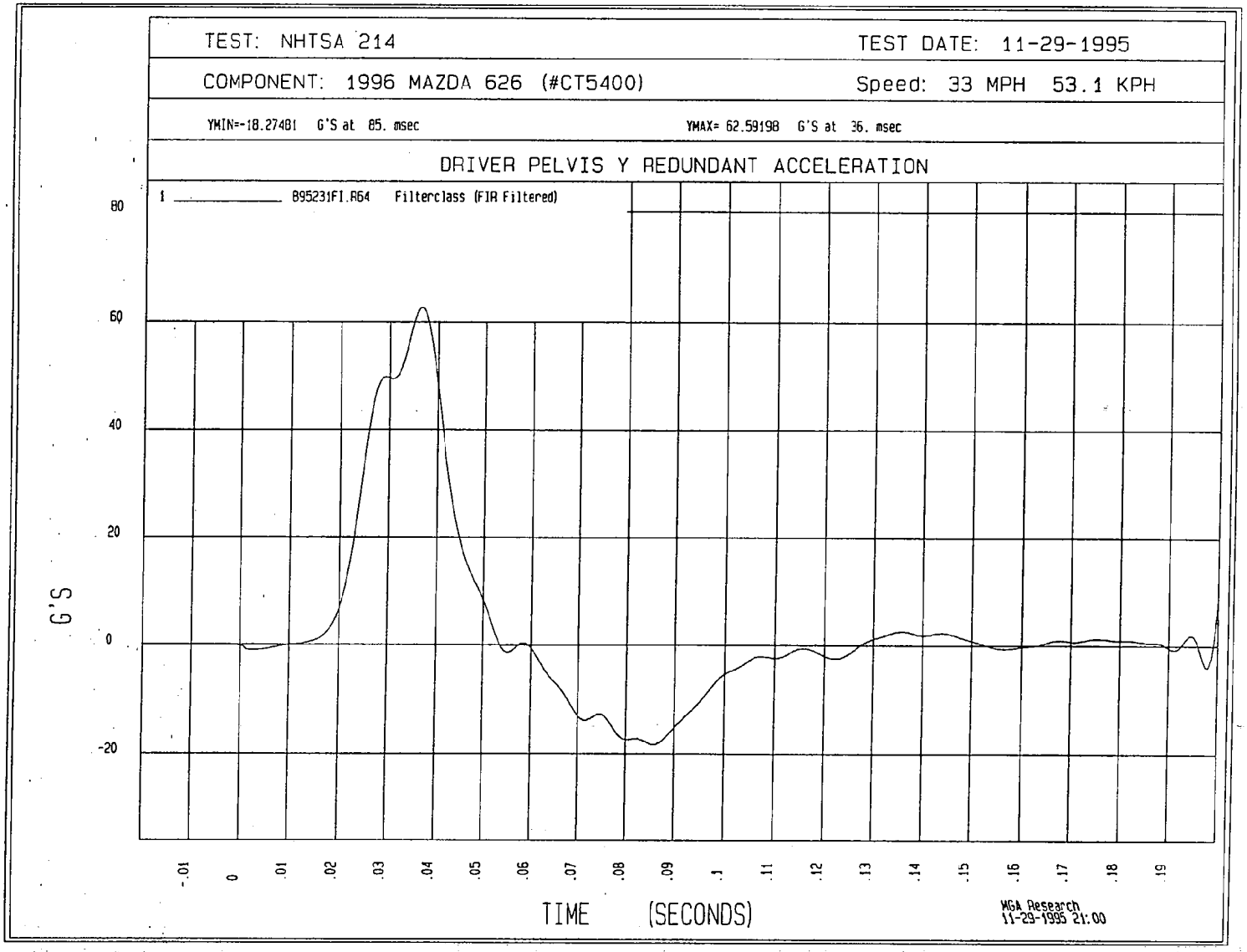

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-19.48684 G'S at 80 msec
YMAX= 61.75137 G'S at 36. msec
DRIVER LOWER RIB Y ACCELERATION
1 895231FI.R16 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:00

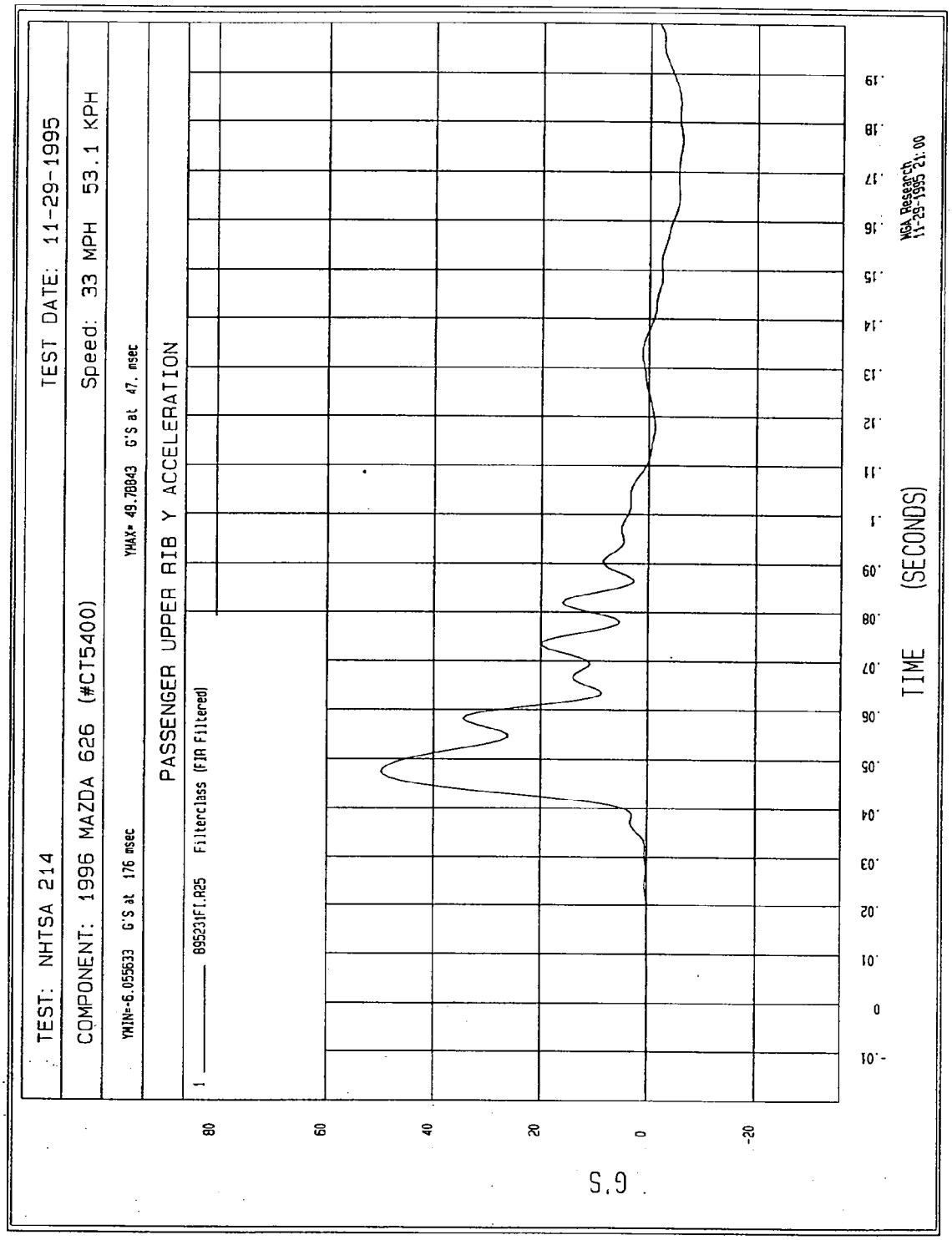

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-18.57438 G'S at 80 msec
YMAX= 61.27934 G'S at 37. msec
DRIVER LOWER RIB Y REDUNDANT ACCELERATION
1 B95231FI.R62 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:00

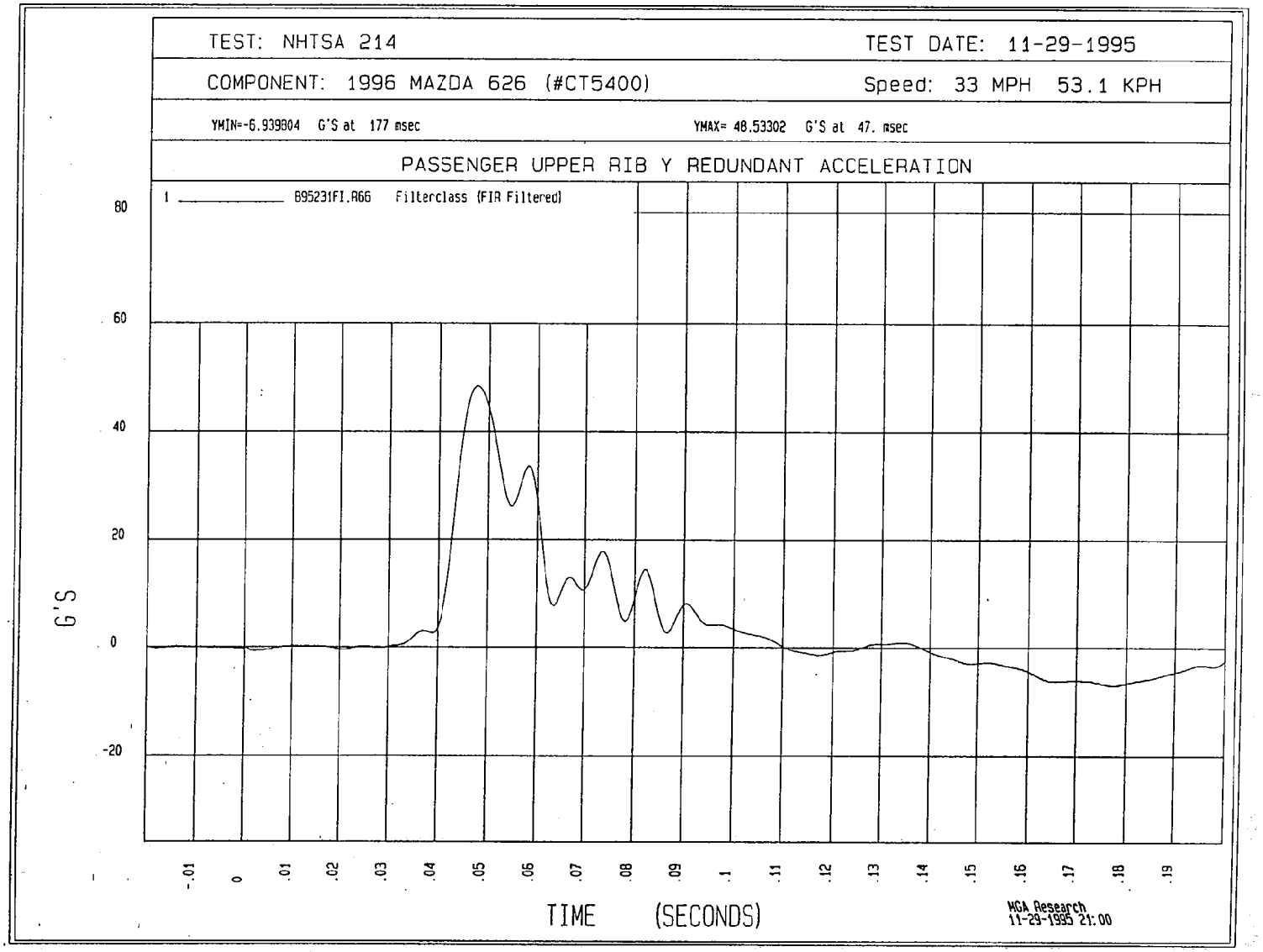

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-24.17231 G'S at 73. msec
YMAX= 56.41719 G'S at 35 msec
DRIVER LOWER SPINE Y ACCELERATION
1 B9523iFI.R17 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.10
.20
.03
.04
.05
.06
.07
.08
.09
1.
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:00

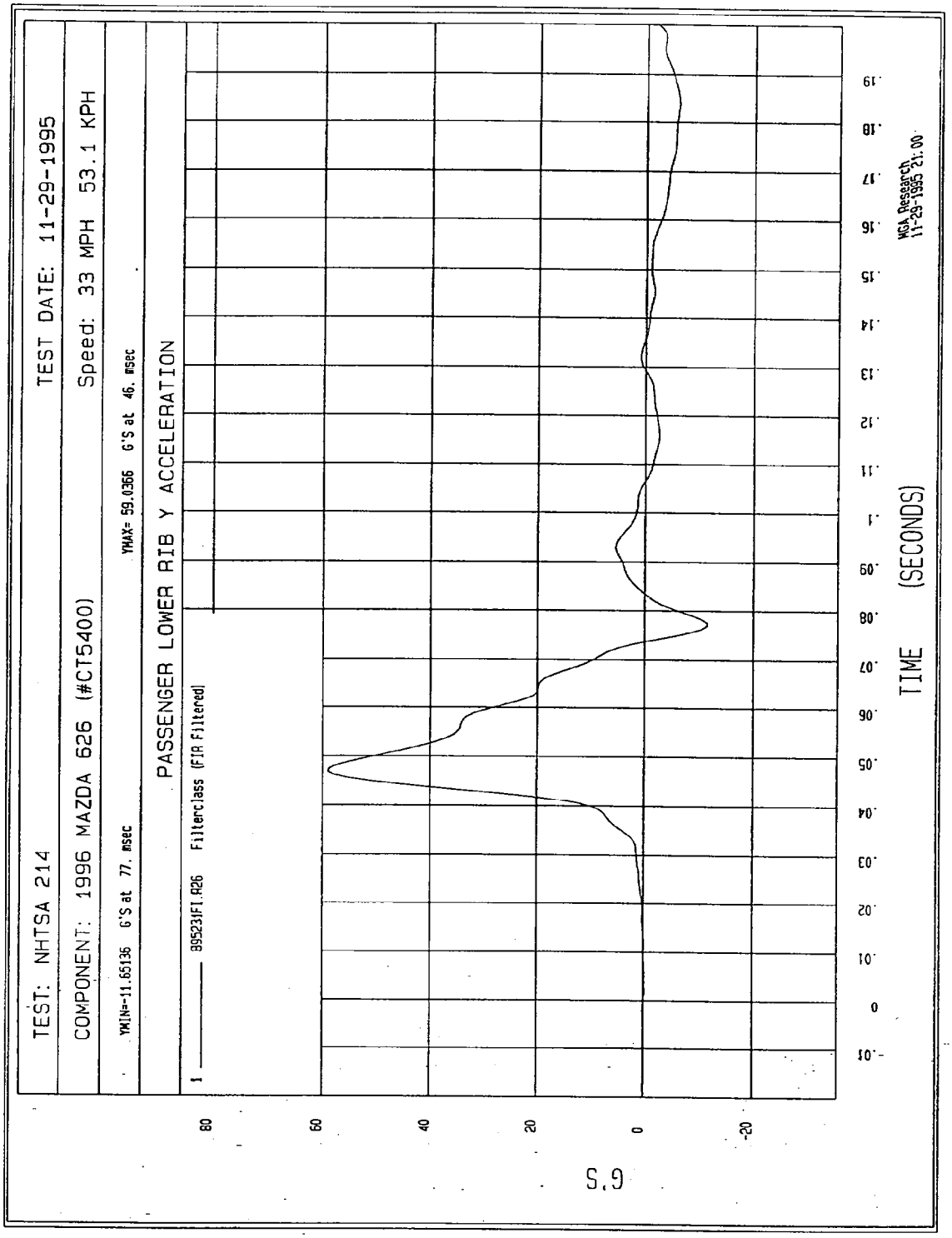

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-23.33493 G'S at 74. msec
YMAX= 57.39217 G'S at 35. msec
DRIVER LOWER SPINE Y REDUNDANT ACCELERATION
1 B95231FI.A63 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:00

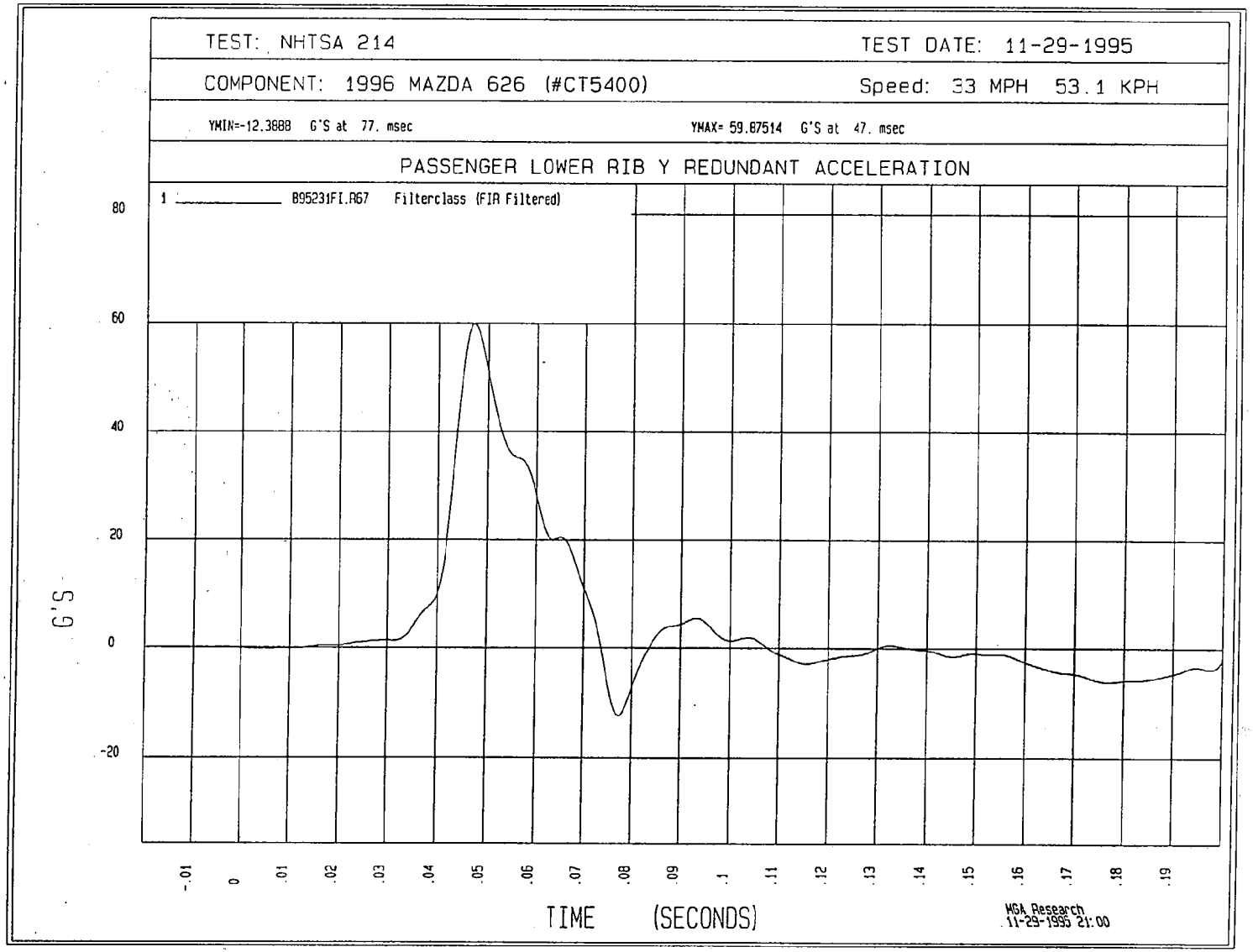

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-16.44968 G'S at 85 msec
YMAX= 62.18676 G'S at 36. msec
DRIVER PELVIS Y ACCELERATION
1 ——— 895231FI.A10 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:00

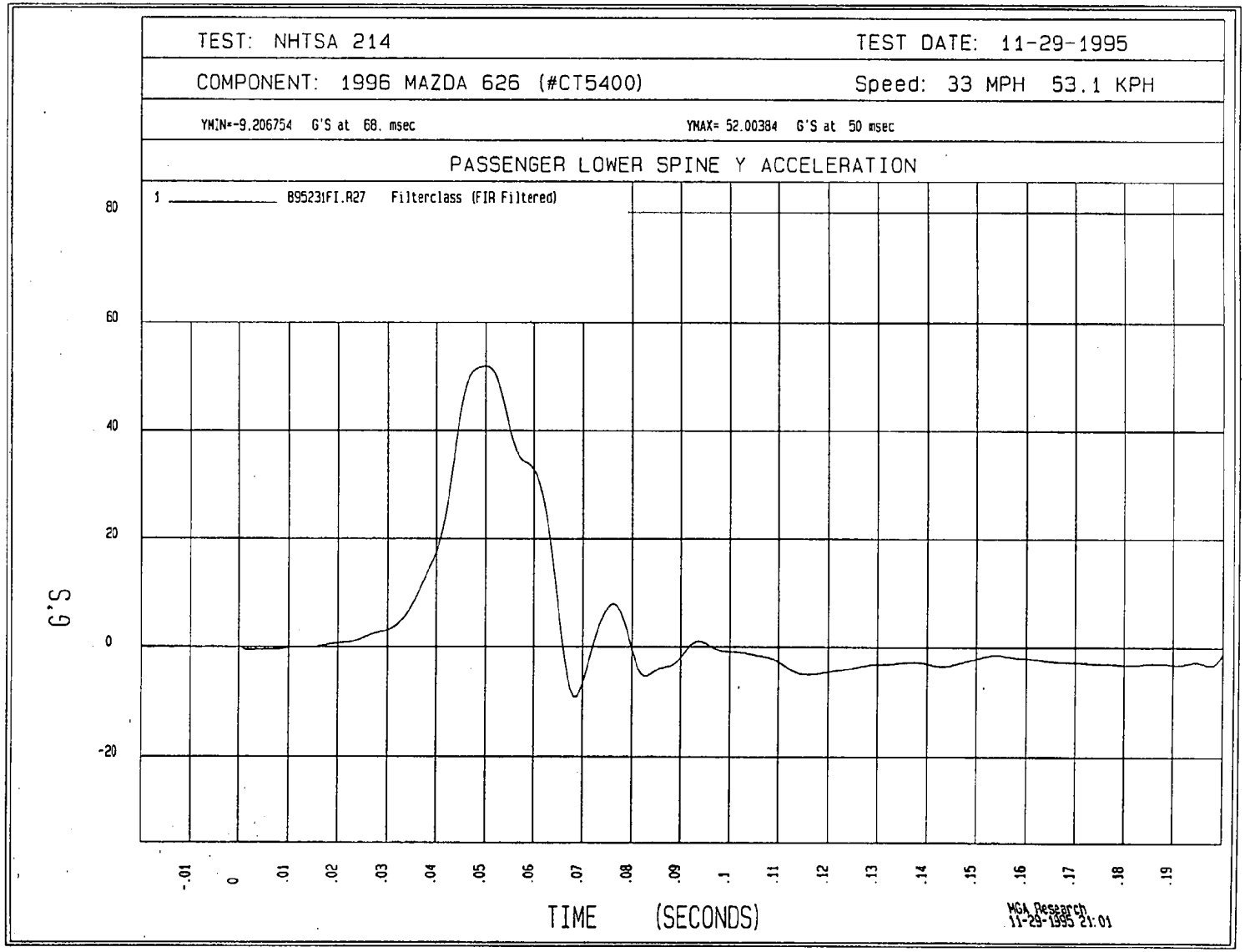

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-18.27481 G'S at 85. msec
YMAX= 62.59198 G'S at 36. msec
DRIVER PELVIS Y REDUNDANT ACCELERATION
1 B95231F1.R64 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:00

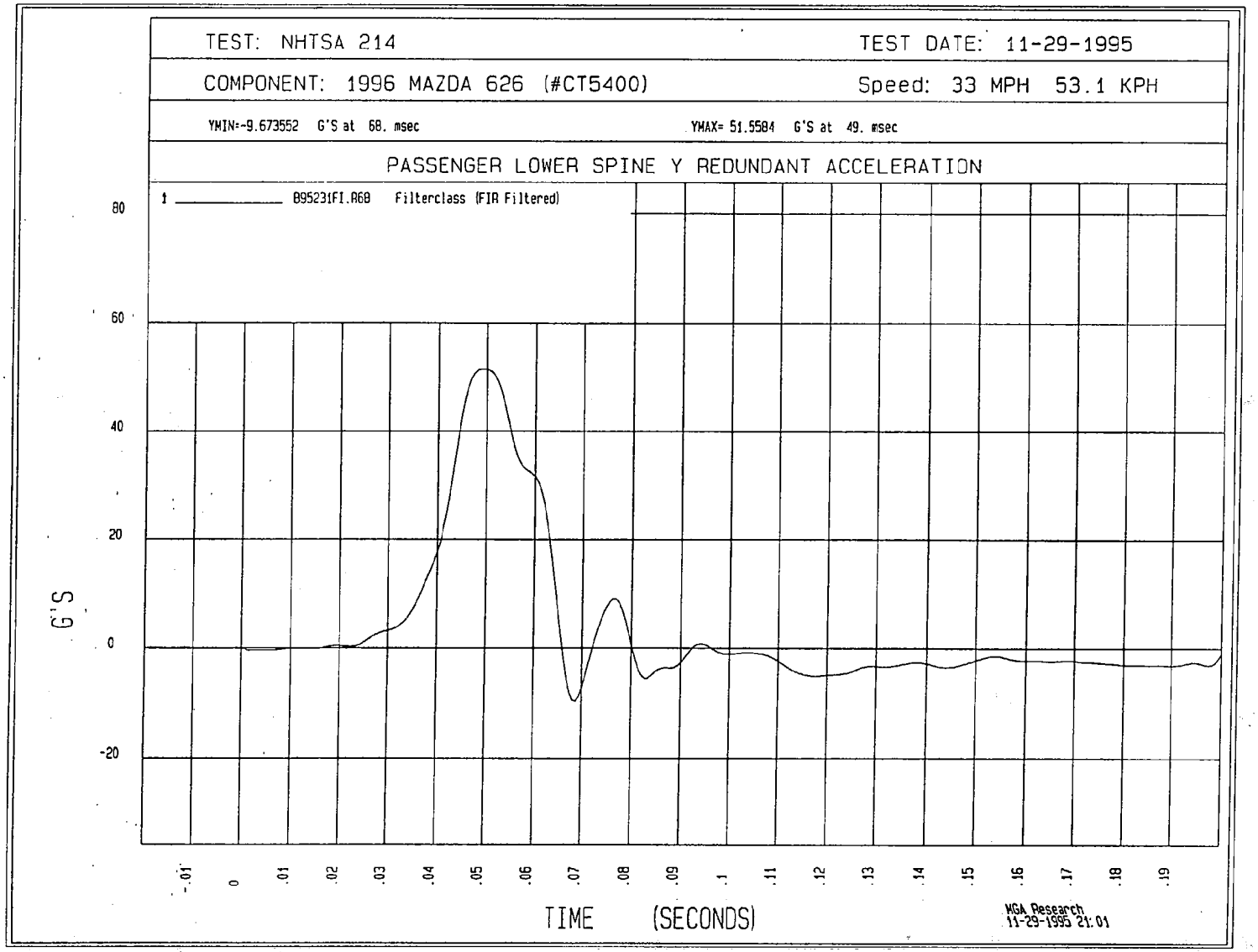

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-6.055633 G'S at 176 msec
YMAX= 49.78843 G'S at 47. msec
PASSENGER UPPER RIB Y ACCELERATION
1 ——— 895231FI.R25 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:00

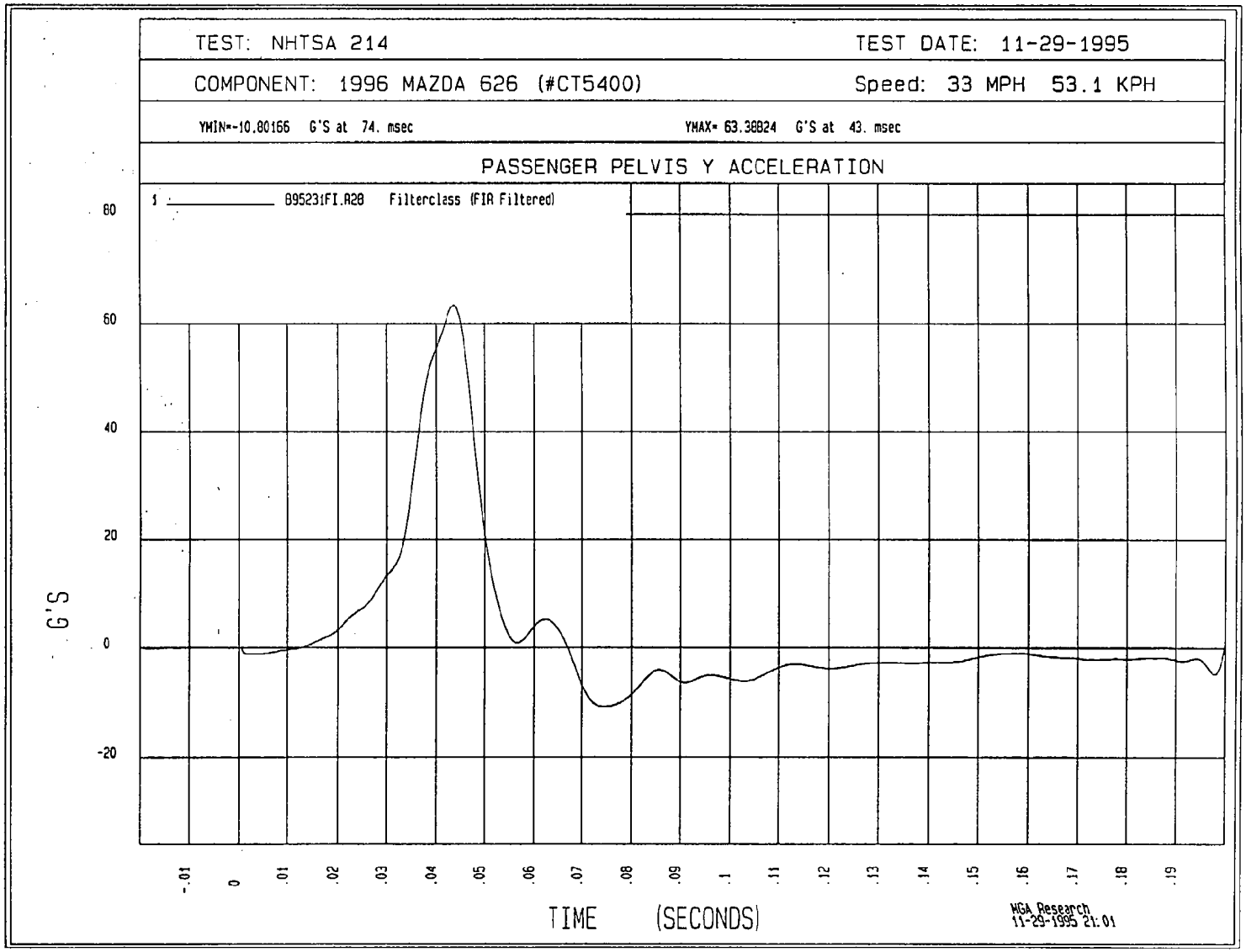

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-6.939804 G'S at 177 msec
YMAX= 48.53302 G'S at 47. msec
PASSENGER UPPER RIB Y REDUNDANT ACCELERATION
1 B95231FI.A66 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:00

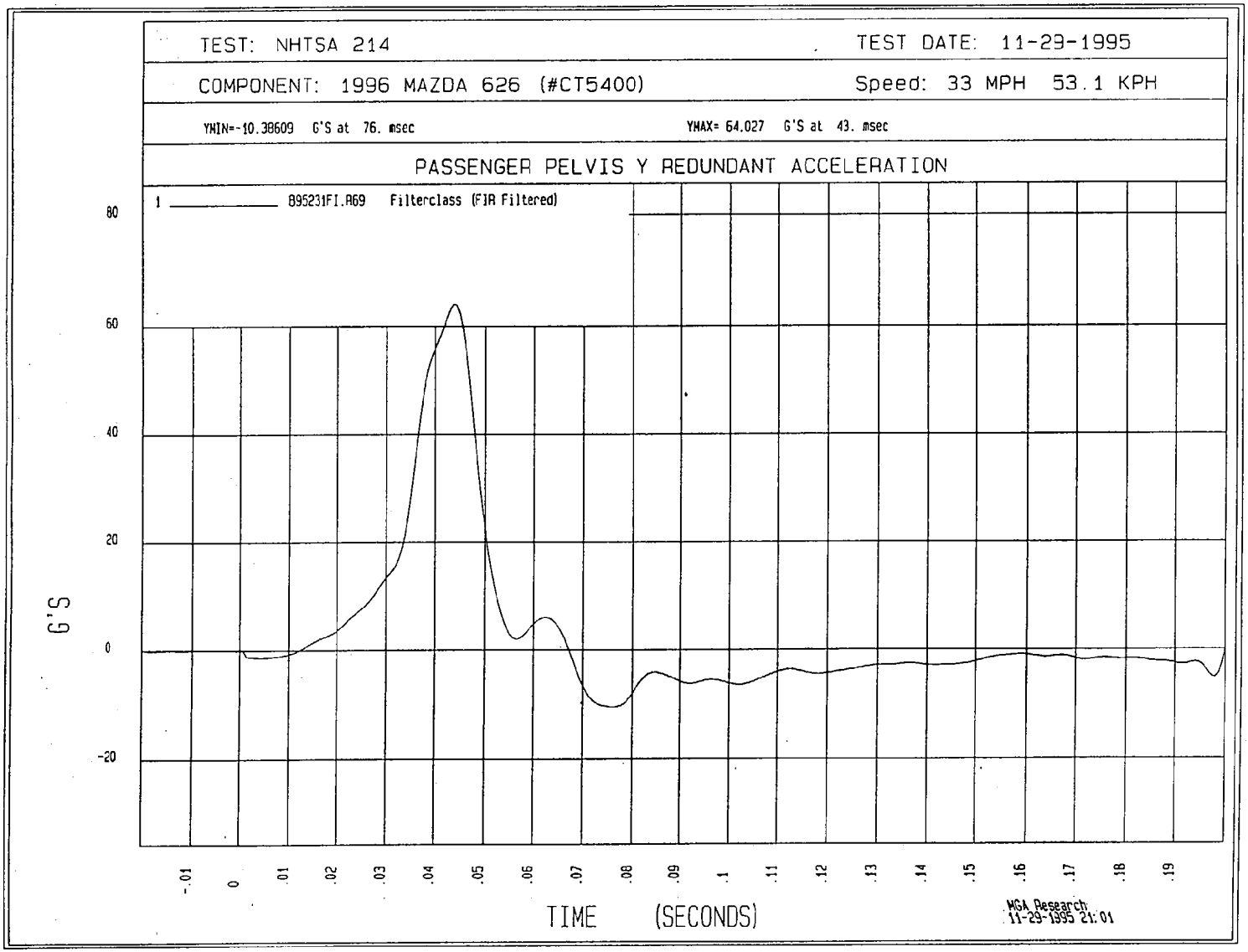

TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-11.65136 G'S at 77. msec
YMAX= 59.0366 G'S at 46. msec
PASSENGER LOWER RIB Y ACCELERATION
1 ——— 995231F1.R26 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
11-29-1995 21:00


TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-12.3888 G'S at 77. msec
YMAX= 59.87514 G'S at 47. msec
PASSENGER LOWER RIB Y REDUNDANT ACCELERATION
1 B95231FI.A67 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.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
11-29-1995 21:00


TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-9.206754 G'S at 68. msec
YMAX= 52.00384 G'S at 50 msec
PASSENGER LOWER SPINE Y ACCELERATION
1 B95231FI.R27 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G's
-.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
11-29-1995 21:01


TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-9.673552 G'S at 68. msec
YMAX= 51.5584 G'S at 49. msec
PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION
1 B95231FI.A68 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
NGA Research
11-29-1995 21:01


TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-10.80166 G'S at 74. msec
YMAX= 63.38824 G'S at 43. msec
PASSENGER PELVIS Y ACCELERATION
1 B9523iFI.A28 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.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
11-29-1995 21:01


TEST: NHTSA 214
TEST DATE: 11-29-1995
COMPONENT: 1996 MAZDA 626 (#CT5400)
Speed: 33 MPH 53.1 KPH
YMIN=-10.38609 G'S at 76. msec
YMAX= 64.027 G'S at 43. msec
PASSENGER PELVIS Y REDUNDANT ACCELERATION
1 895231FI.A69 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.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
11-29-1995 21:01

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION

REPORT NO. MGA-96-DC06

DUMMY PERFORMANCE CALIBRATIONS

FMVSS 214 - SIDE IMPACT TEST

MAZDA MOTORS CORPORATION
1996 MAZDA 626 4 DOOR
NHTSA NO. CT5400

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: November 29, 1995

Report Date: December 19, 1995

FINAL REPORT

Prepared For:

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

TABLE OF CONTENTS

PRE-TEST CERTIFICATION DATA

Driver Dummy Serial Number: 272

Calibration Test Results Summary

Dummy Serial Number: 272

Pre-Test Calibration

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

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 272

DATE OF VERIFICATION: November 14, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.3
RH - Rib Height	19.75" - 20.50"	20.20
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.5
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.7
SW - Knee Pivot to Floor	19.3" - 19.9"	19.6
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: _____

APPROVED BY: _____

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

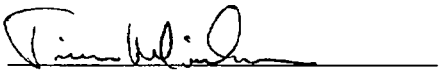
SIDE IMPACT DUMMY (SID)

DATE: November 8, 1995

DUMMY NUMBER: 272 TEST NUMBER: D951692

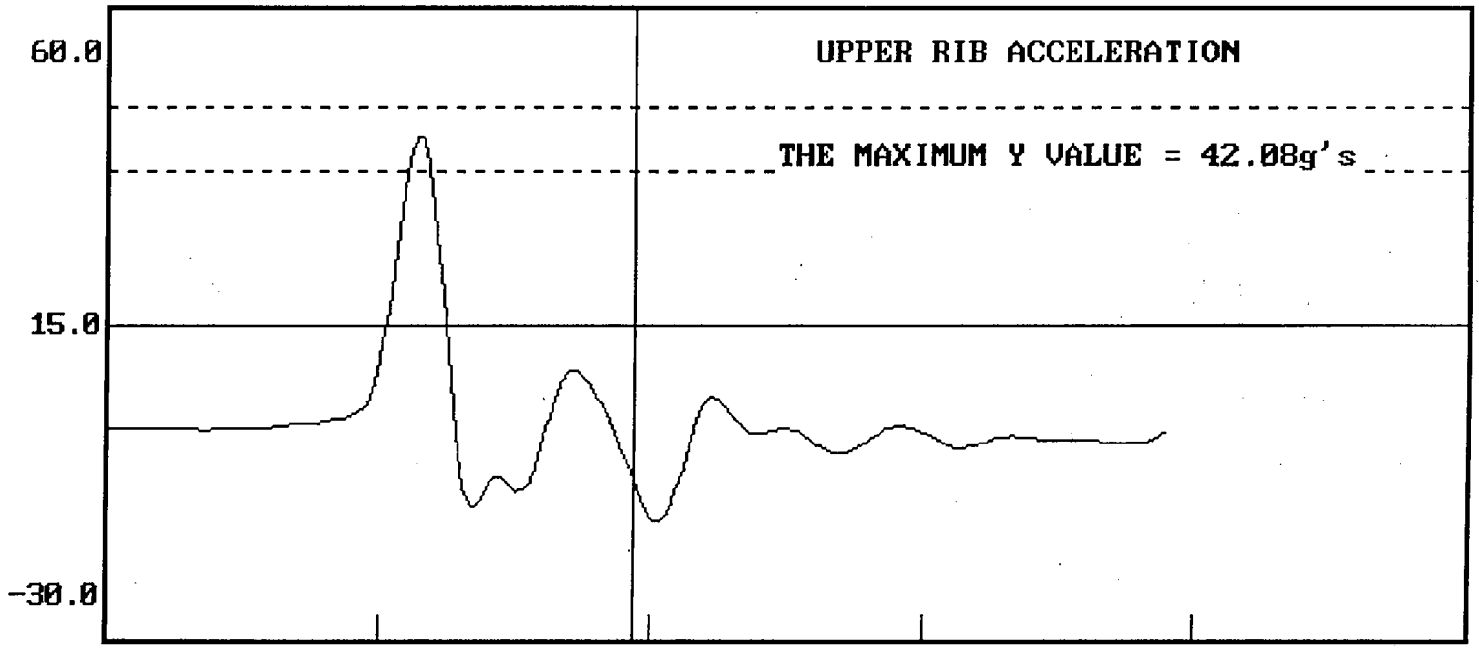
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 fps	13.9
UPPER RIB	37 - 46 g's	42
LOWER RIB	37 - 46 g's	41
LOWER SPINE	15 - 22 g's	21

TEST MEETS SPECIFICATIONS

TECHNICIAN 

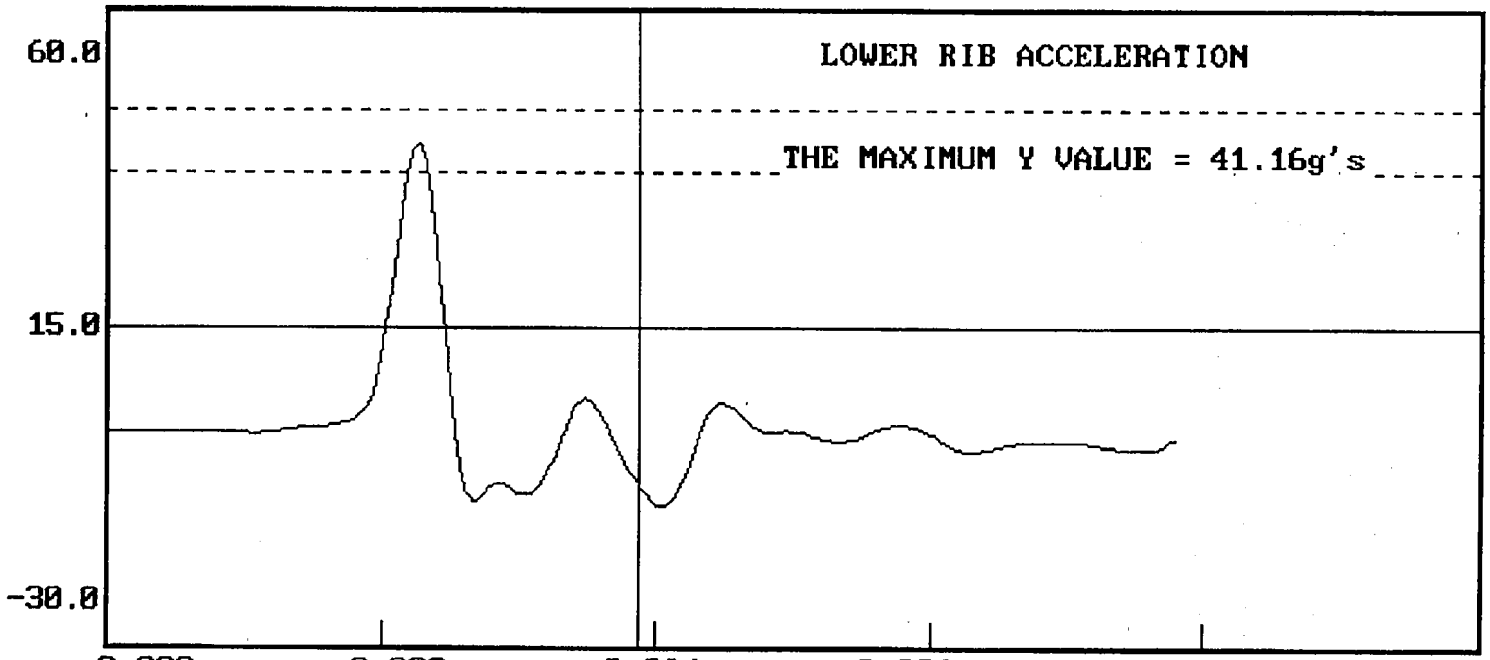
APPROVED BY 

DUMMY CALIBRATION - THORAX IMPACT 11-08-1995 16:00
DUMMY # 272
ACCELERATION (G'S) VS. TIME ((SECONDS))



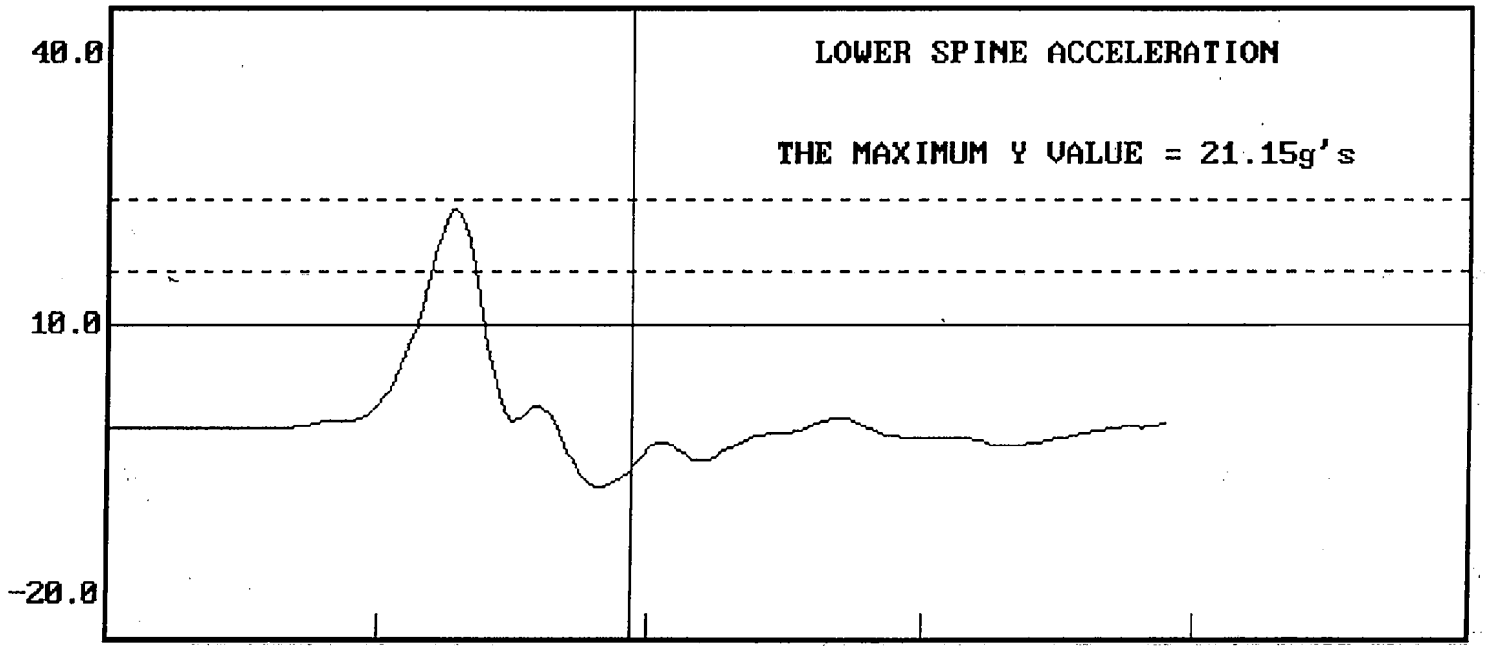
DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 272
ACCELERATION (G'S) VS. TIME ((SECONDS))

11-08-1995 16:00



X = 0.618750E-01 Y = -.735883E+01
IMPACT SPEED = 13.89 FT/SEC

DUMMY CALIBRATION - THORAX IMPACT 11-08-1995 16:00
DUMMY # 272
ACCELERATION (G'S) VS. TIME ((SECONDS))



X = 0.618750E-01 Y = -.372110E+01
IMPACT SPEED = 13.89 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 9, 1995

DUMMY NUMBER: 272 TEST NUMBER: D951693

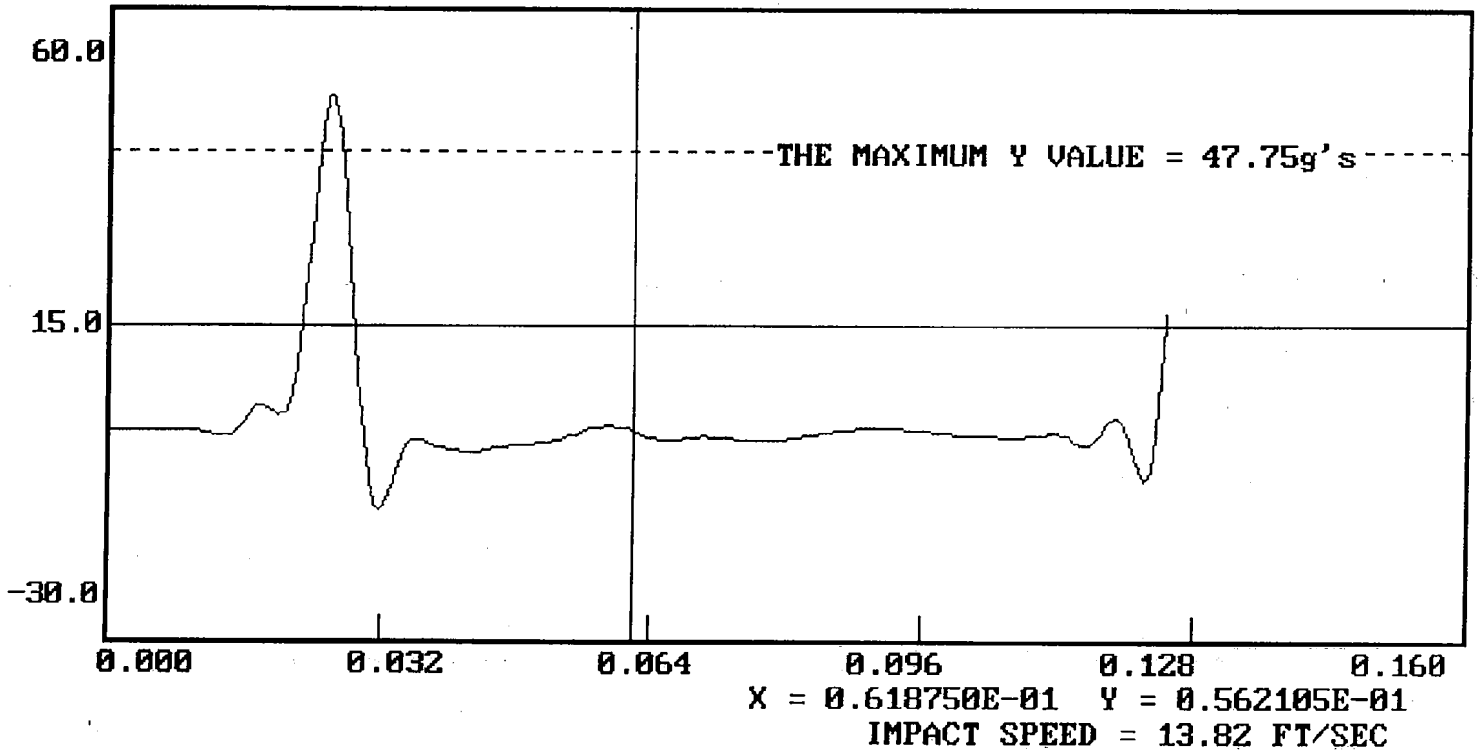
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
PROBE SPEED	13.8 - 14.2 f/s	13.8
PELVIS ACCELERATION	40 - 60 g's	48

TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY

DUMMY CALIBRATION - PELVIS IMPACT 11-09-1995 08:32
DUMMY # 272
ACCELERATION (G'S) VS. TIME ((SECONDS))



X = 0.618750E-01 Y = 0.562105E-01
IMPACT SPEED = 13.82 FT/SEC

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: November 14, 1995

DUMMY NUMBER: 272 TEST NUMBER: D951694

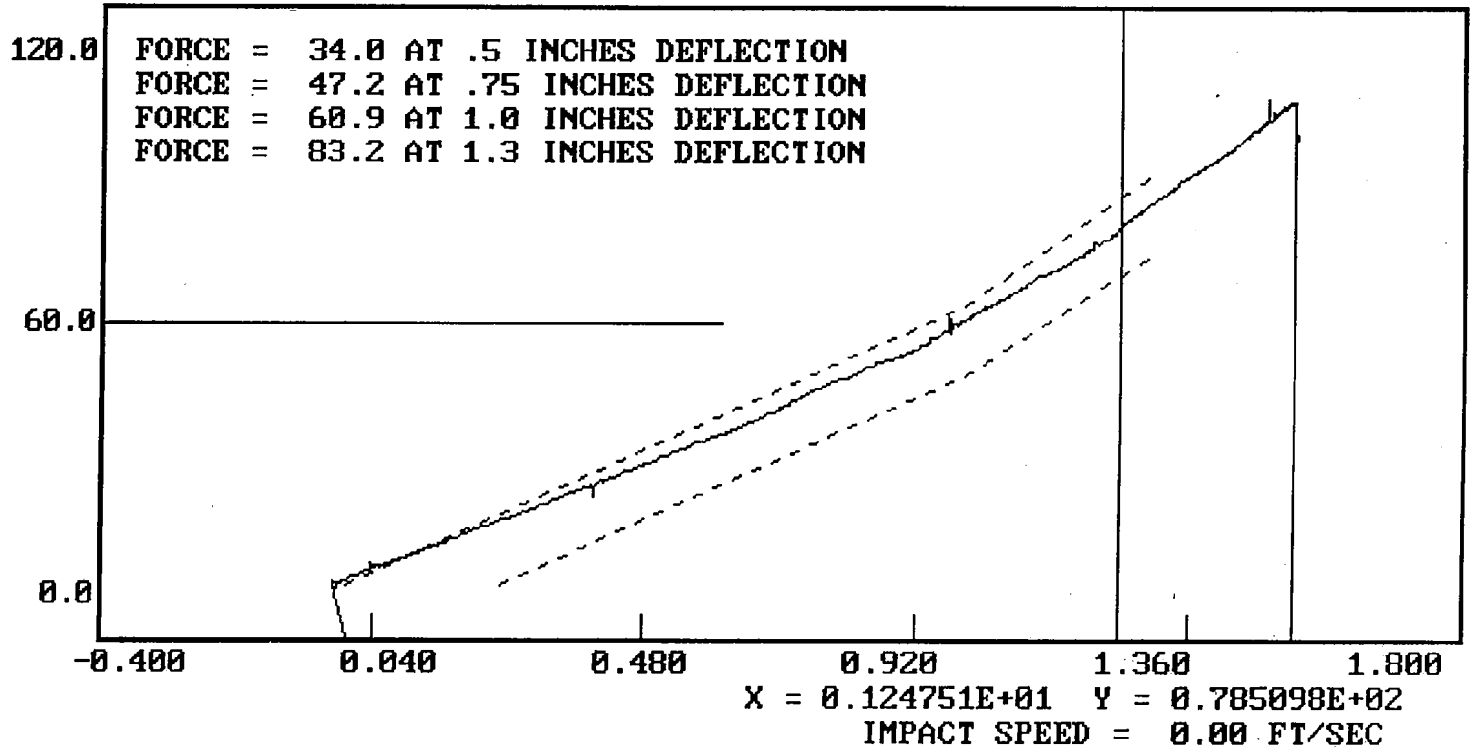
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0.5 in	23.3 - 36.5 lbs	34.0
FORCE @ 0.75 in	36.7 - 49.8 lbs	47.2
FORCE @ 1.0 in	50 - 63 lbs	61
FORCE @ 1.3 in	73 - 88 lbs	83

TEST MEETS SPECIFICATIONS

TECHNICIAN Jim McQueen

APPROVED BY Dave Kobaske

DUMMY CALIBRATION - ABDOMEN COMPRESSION 11-14-1995 09:06
DUMMY # 272
ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: November 13, 1995

DUMMY NUMBER: 272 TEST NUMBER: D951695

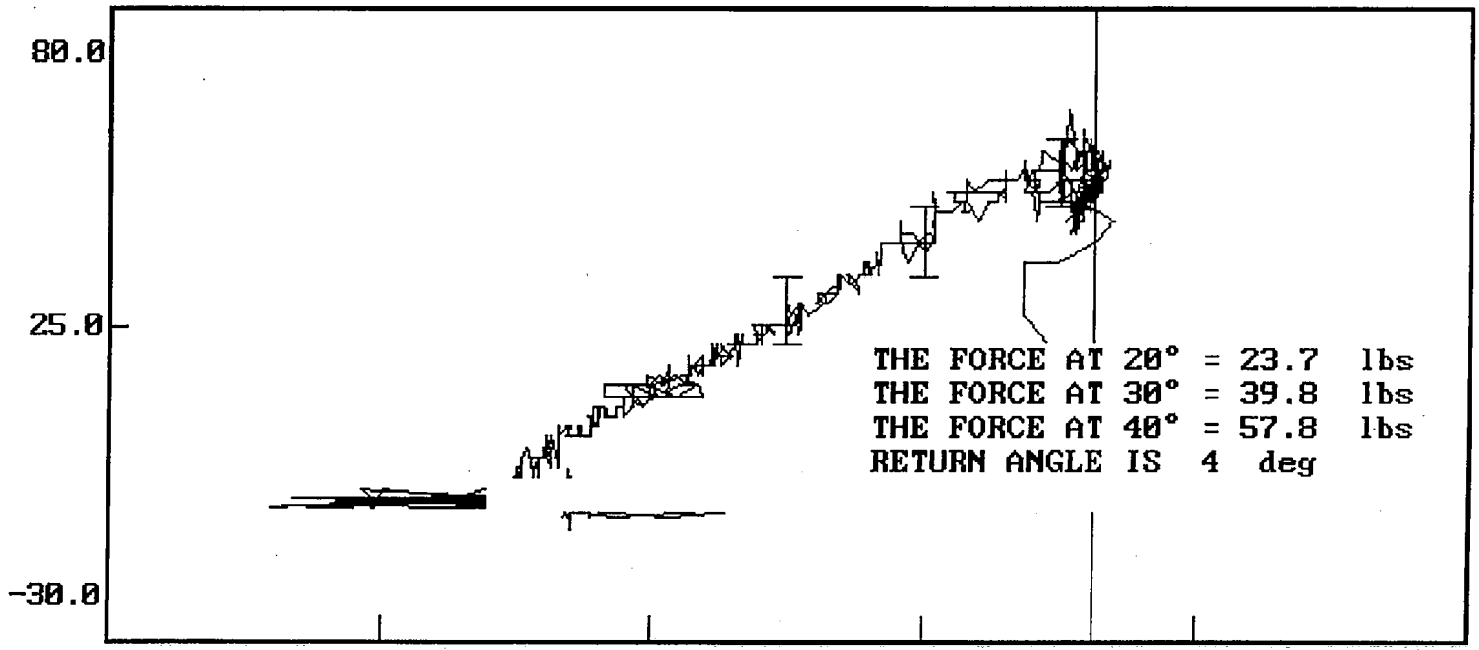
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	24
FORCE @ 30°	34 - 46 lbs	40
FORCE @ 40°	46 - 58 lbs	58
RETURN ANGLE	12° maximum	4°

TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

DUMMY CALIBRATION - LUMBAR FLEXION 11-13-1995 10:09
DUMMY # 272
FORCE () VS. TORSO ROTATION (DEGREES)



X = 0.425362E+02 Y = 0.542028E+02
IMPACT SPEED = 0.00 FT/SEC

PRE-TEST CERTIFICATION DATA

Passenger Dummy Serial Number: 271

Calibration Test Results Summary

Passenger Serial Number: 271

Pre-Test Calibration

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

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 271

DATE OF VERIFICATION: November 8, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.4
RH - Rib Height	19.75" - 20.50"	20.40
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.4
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.4
SW - Knee Pivot to Floor	19.3" - 19.9"	19.5
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: _____

APPROVED BY: _____

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 8, 1995

DUMMY NUMBER: 271 TEST NUMBER: D951682

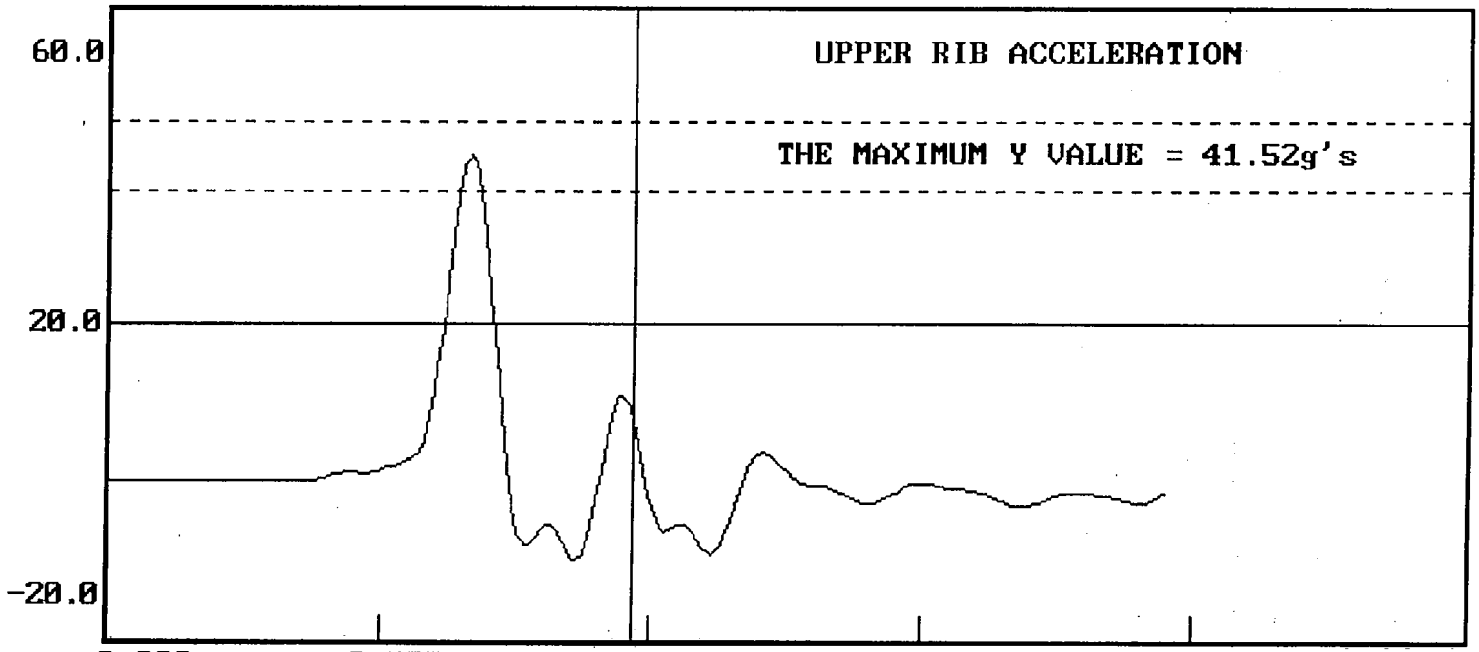
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 fps	13.8
UPPER RIB	37 - 46 g's	42
LOWER RIB	37 - 46 g's	38
LOWER SPINE	15 - 22 g's	20

TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY

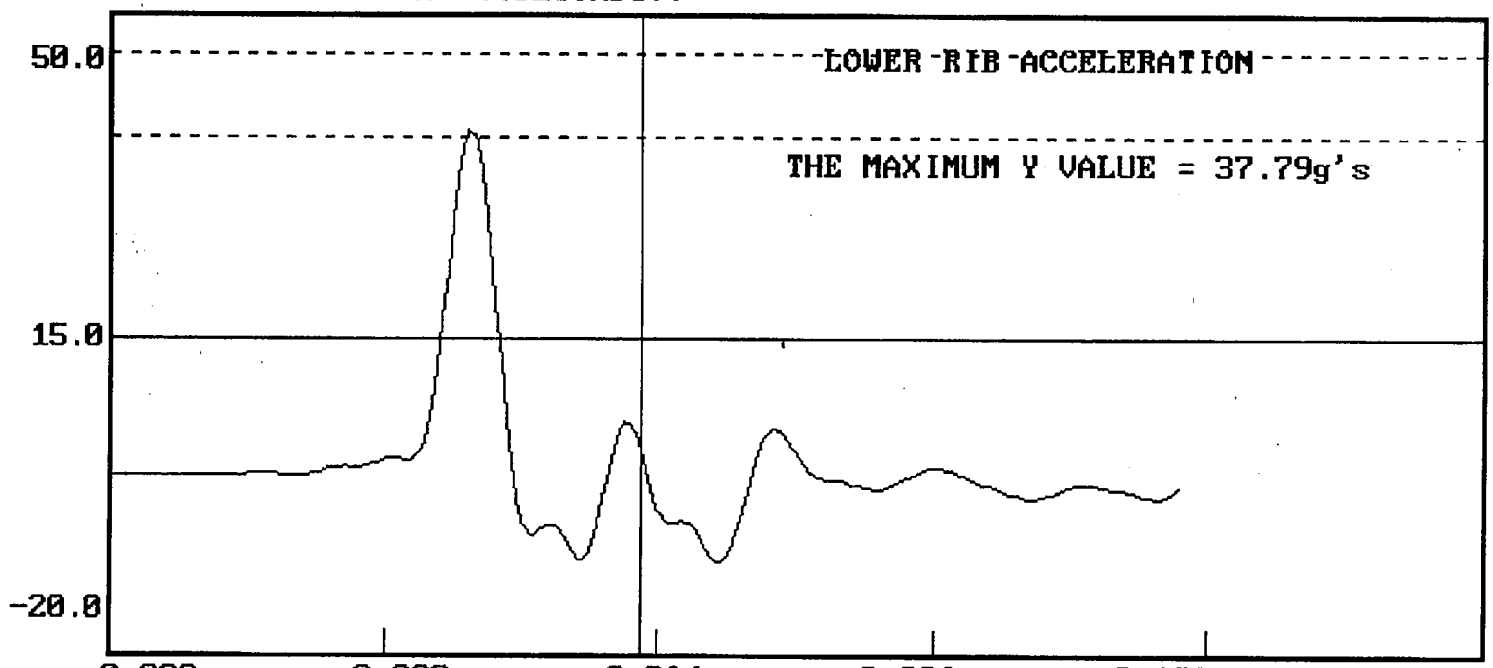
DUMMY CALIBRATION - THORAX IMPACT 11-08-1995 11:46
DUMMY # 271
ACCELERATION (G'S) VS. TIME ((SECONDS))



X = 0.618750E-01 Y = 0.742342E+01
IMPACT SPEED = 13.81 FT/SEC

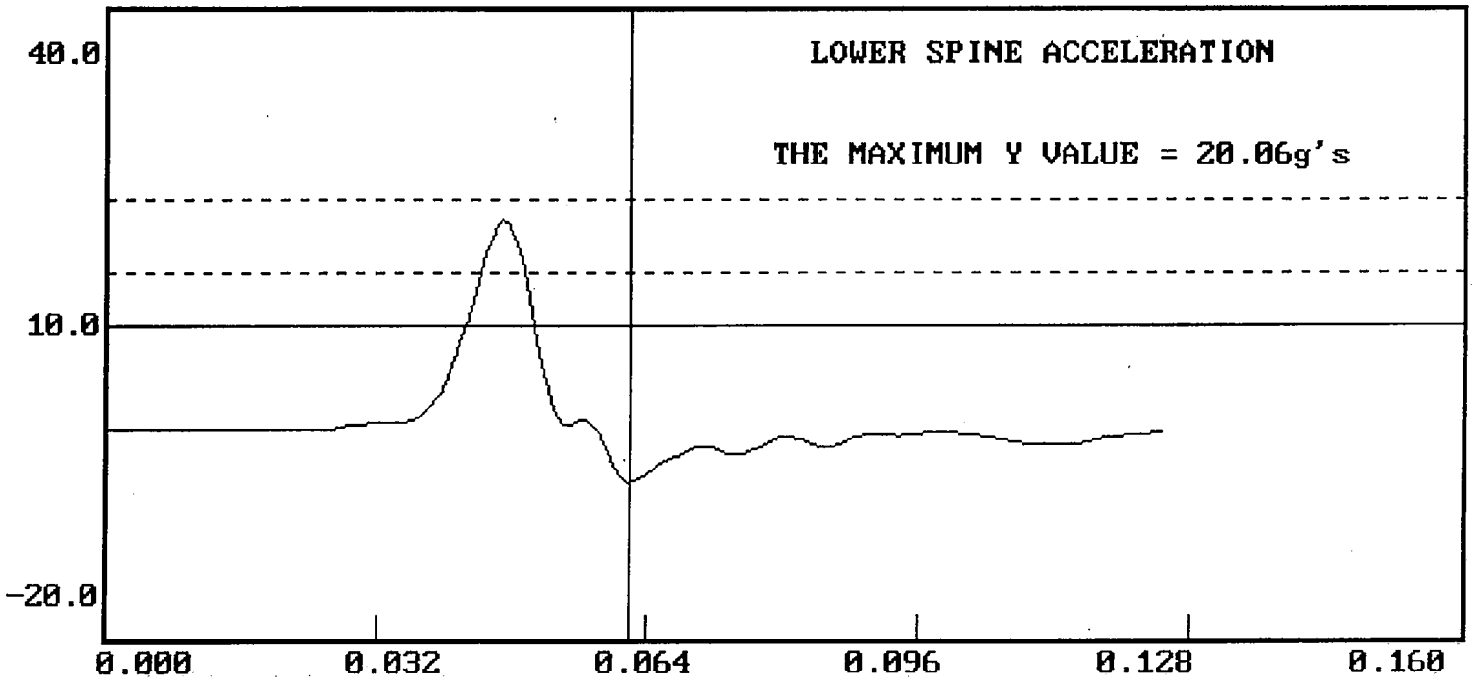
DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 271
ACCELERATION (G'S) VS. TIME ((SECONDS))

11-08-1995 11:46



X = 0.618750E-01 Y = 0.232562E+01
IMPACT SPEED = 13.81 FT/SEC

DUMMY CALIBRATION - THORAX IMPACT 11-08-1995 11:46
DUMMY # 271
ACCELERATION (G'S) VS. TIME ((SECONDS))



X = 0.618750E-01 Y = -.490575E+01
IMPACT SPEED = 13.81 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 8, 1995

DUMMY NUMBER: 271 TEST NUMBER: D951683

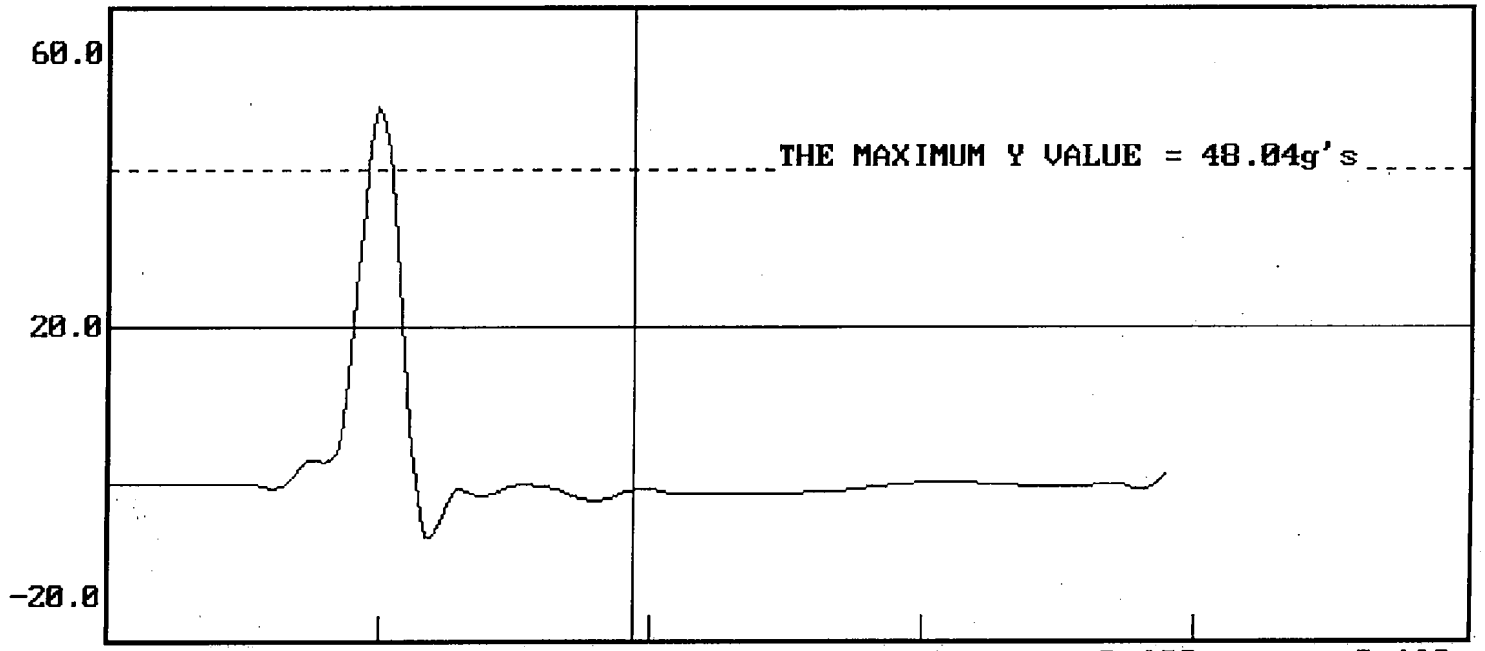
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 f/s	13.8
PELVIS ACCELERATION	40 - 60 g's	48

TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY

DUMMY CALIBRATION - PELVIS IMPACT 11-08-1995 11:53
DUMMY # 271
ACCELERATION (G'S) VS. TIME ((SECONDS))



X = 0.618750E-01 Y = -.840383E+00
IMPACT SPEED = 13.82 FT/SEC

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

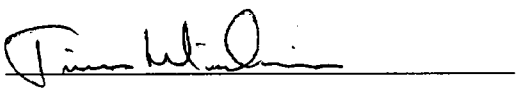
SIDE IMPACT DUMMY (SID)

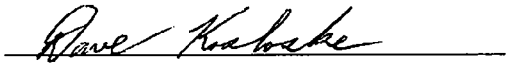
DATE: November 14, 1995

DUMMY NUMBER: 271 TEST NUMBER: D951684

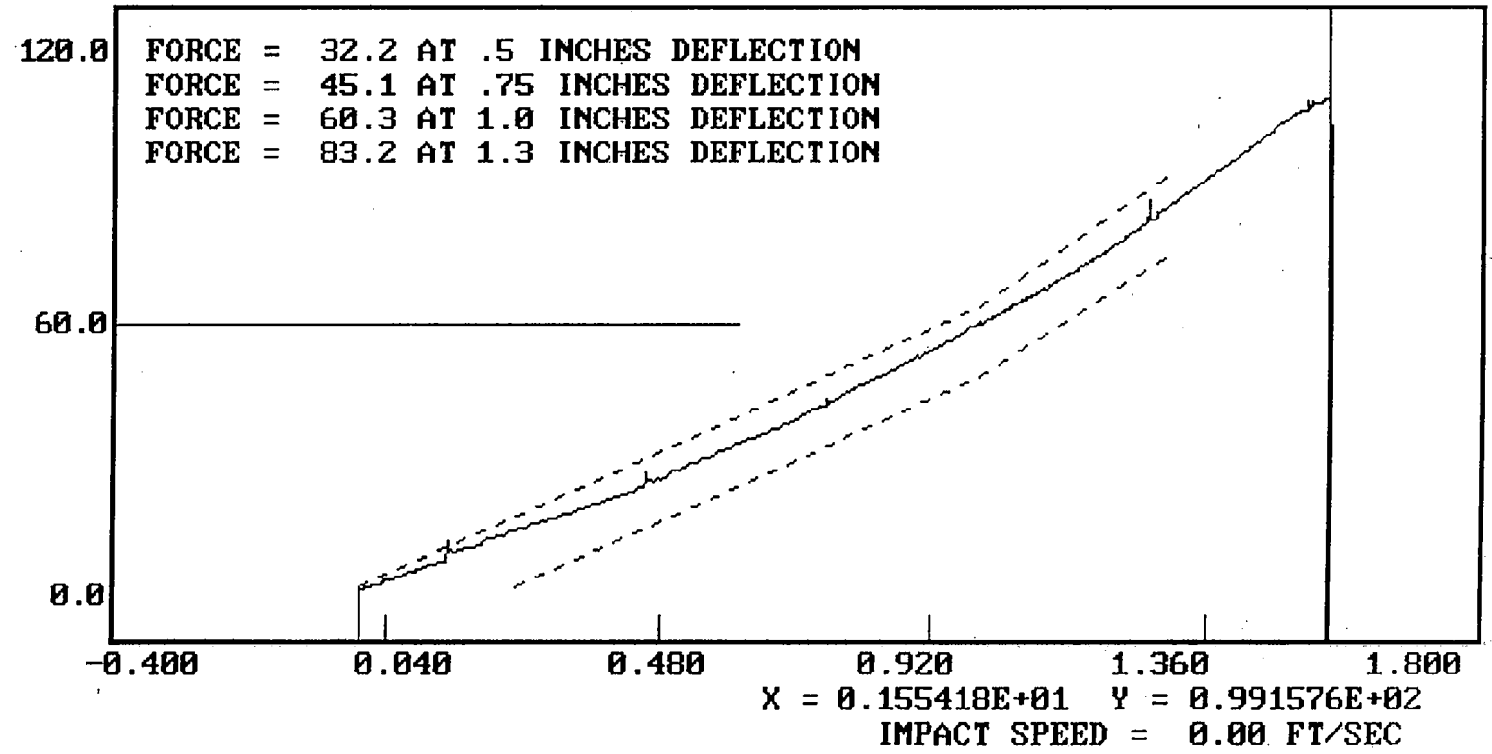
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0.5 in	23.3 - 36.5 lbs	32.2
FORCE @ 0.75 in	36.7 - 49.8 lbs	45.1
FORCE @ 1.0 in	50 - 63 lbs	60
FORCE @ 1.3 in	73 - 88 lbs	83

TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

DUMMY CALIBRATION - ABDOMEN COMPRESSION 11-14-1995 08:57
DUMMY # 271
ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



X = 0.155418E+01 Y = 0.991576E+02
IMPACT SPEED = 0.00 FT/SEC

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: November 13, 1995

DUMMY NUMBER: 271 TEST NUMBER: D951685

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	24
FORCE @ 30°	34 - 46 lbs	34
FORCE @ 40°	46 - 58 lbs	50
RETURN ANGLE	12° maximum	5°

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

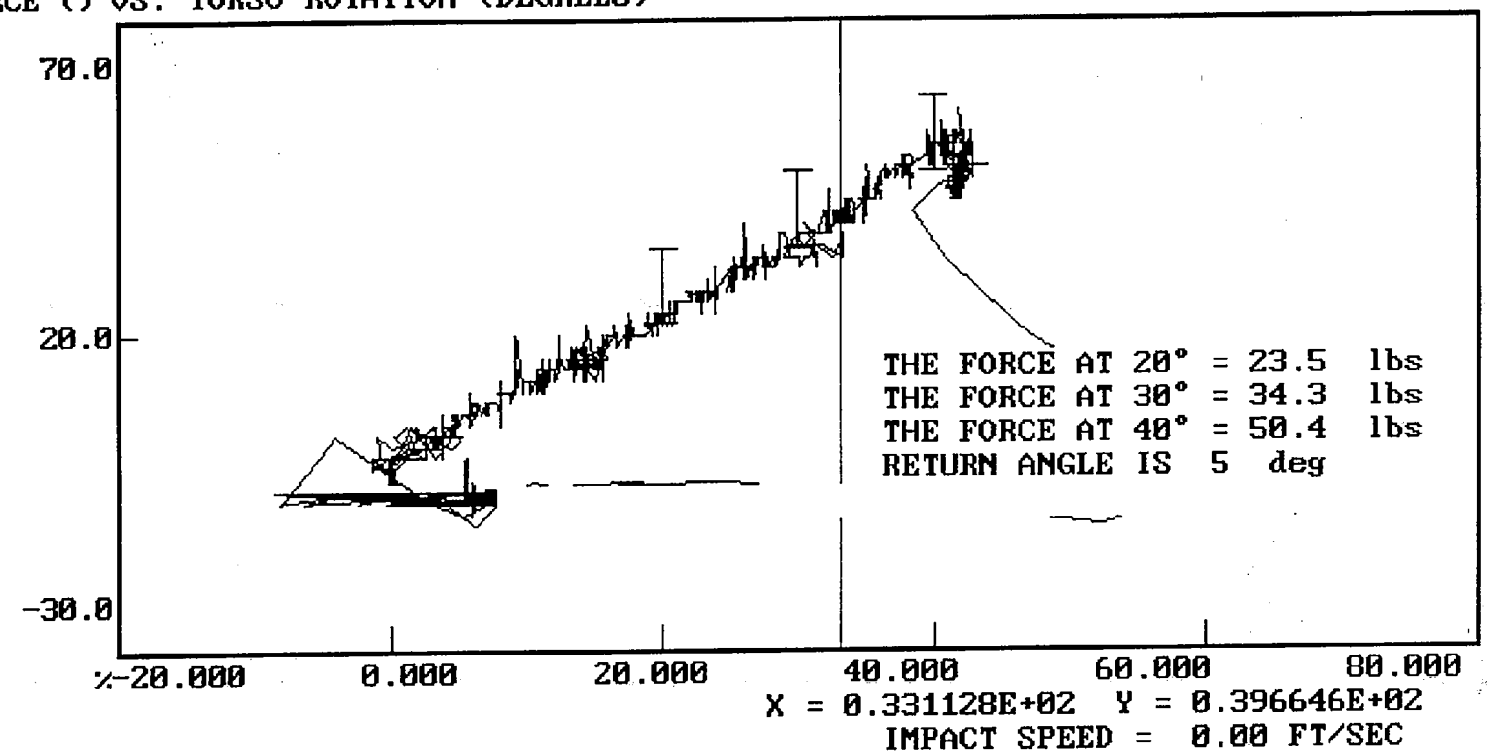
APPROVED BY _____

DUMMY CALIBRATION - LUMBAR FLEXION

11-13-1995 09:52

DUMMY # 271

FORCE () VS. TORSO ROTATION (DEGREES)



X = 0.331128E+02 Y = 0.396646E+02

IMPACT SPEED = 0.00 FT/SEC

POST-TEST CERTIFICATION DATA

Driver Dummy Serial Number: 272

Calibration Test Results Summary

Dummy Serial Number: 272

Post-Test Calibration

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

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 272

DATE OF VERIFICATION: December 7, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.3
RH - Rib Height	19.75" - 20.50"	20.20
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.5
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.7
SW - Knee Pivot to Floor	19.3" - 19.9"	19.6
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: _____

APPROVED BY: _____

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 6, 1995

DUMMY NUMBER: 272 TEST NUMBER: D952022

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 fps	14.0
UPPER RIB	37 - 46 g's	45
LOWER RIB	37 - 46 g's	43
LOWER SPINE	15 - 22 g's	21

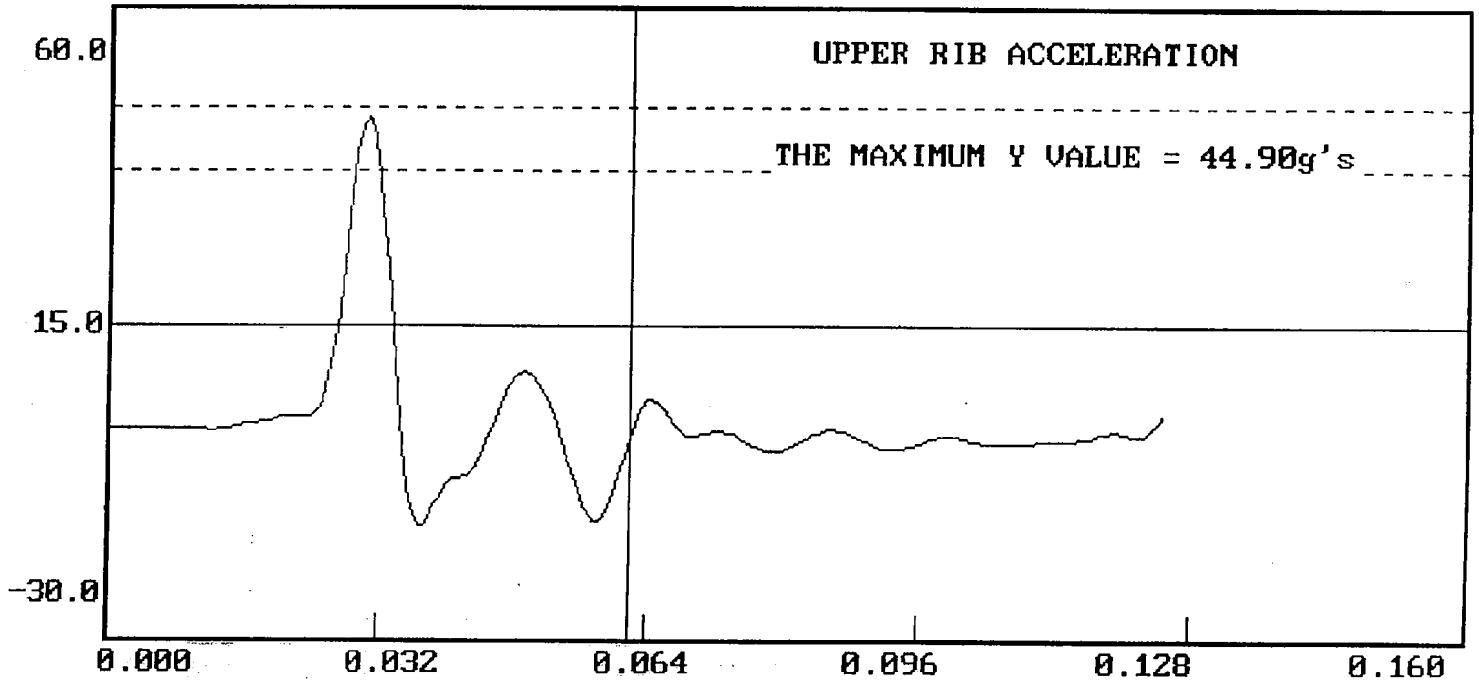
TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____

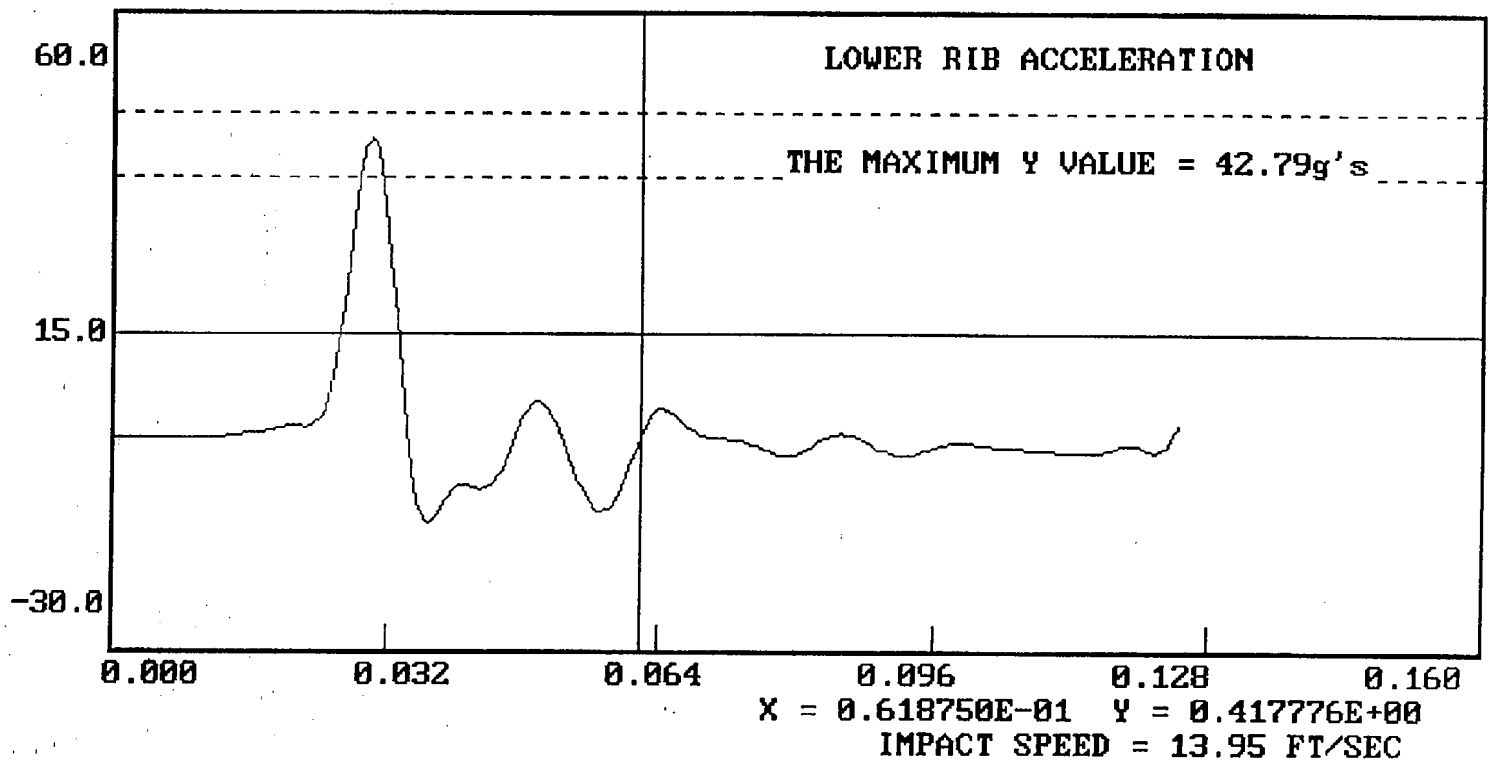
DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 272
ACCELERATION (G'S) VS. TIME ((SECONDS))

12-06-1995 10:44



X = 0.618750E-01 Y = -.900555E+00
IMPACT SPEED = 13.95 FT/SEC

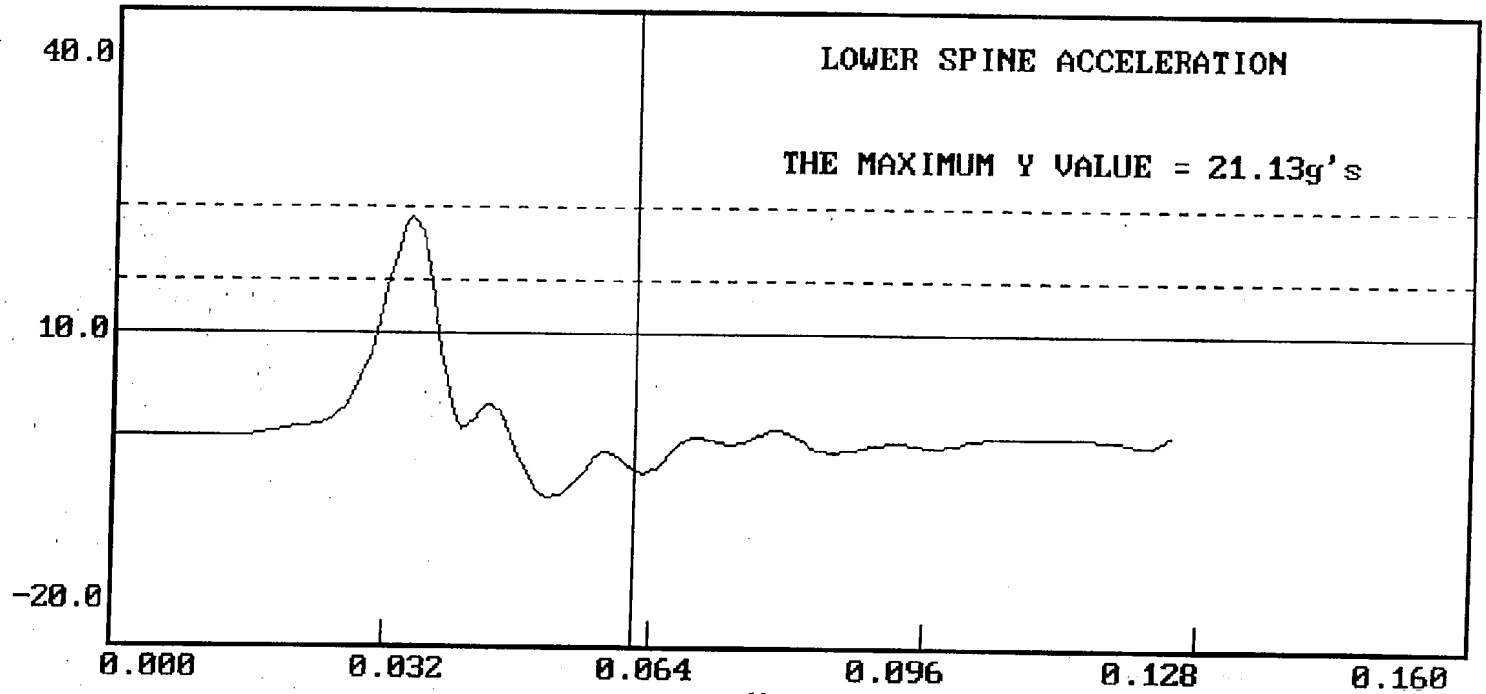
DUMMY CALIBRATION - THORAX IMPACT 12-06-1995 10:44
DUMMY # 272
ACCELERATION (G'S) VS. TIME ((SECONDS))



X = 0.618750E-01 Y = 0.417776E+00
IMPACT SPEED = 13.95 FT/SEC

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

12-06-1995 10:44



X = 0.618750E-01 Y = -.301107E+01
IMPACT SPEED = 13.95 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 6, 1995

DUMMY NUMBER: 272 TEST NUMBER: D952023

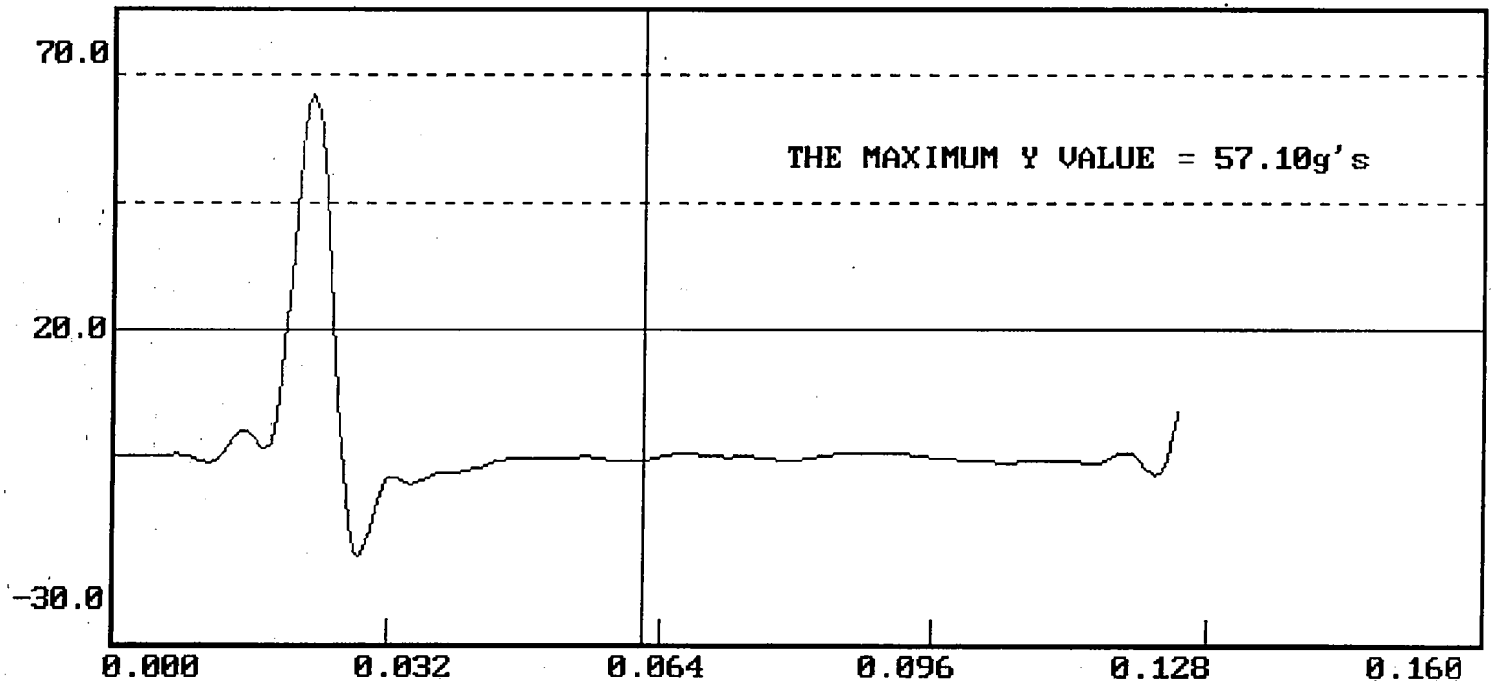
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 f/s	14.0
PELVIS ACCELERATION	40 - 60 g's	57

TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY

DUMMY CALIBRATION - PELVIS IMPACT 12-06-1995 11:16
DUMMY # 272
ACCELERATION (G'S) VS. TIME ((SECONDS))



X = 0.618750E-01 Y = -.809648E+00
IMPACT SPEED = 13.95 FT/SEC

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

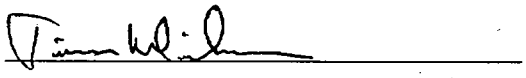
SIDE IMPACT DUMMY (SID)

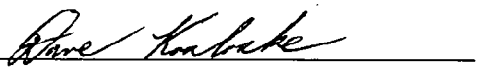
DATE: December 7, 1995

DUMMY NUMBER: 272 TEST NUMBER: D952024

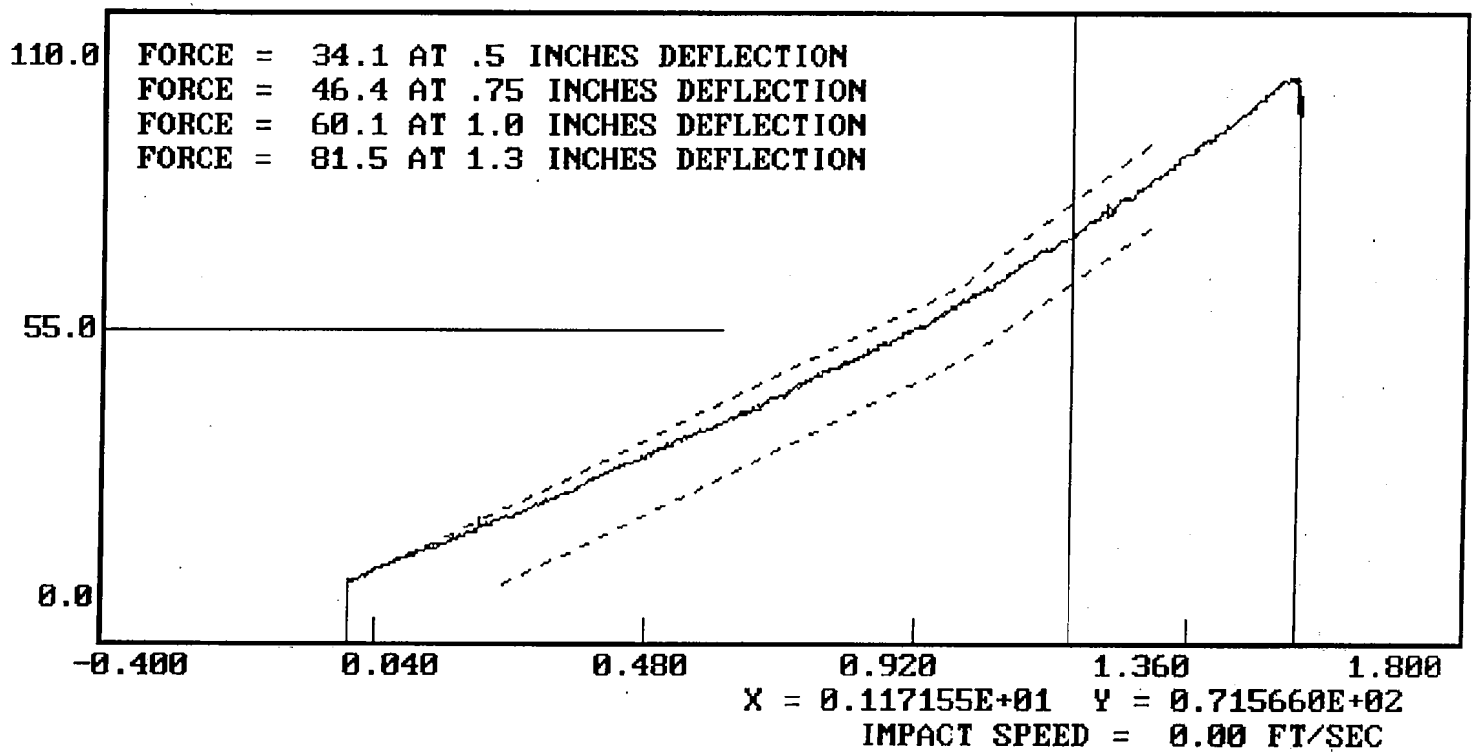
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0.5 in	23.3 - 36.5 lbs	34.1
FORCE @ 0.75 in	36.7 - 49.8 lbs	46.4
FORCE @ 1.0 in	50 - 63 lbs	60
FORCE @ 1.3 in	73 - 88 lbs	82

TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

DUMMY CALIBRATION - ABDOMEN COMPRESSION 12-07-1995 16:53
DUMMY # 272
ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: December 7, 1995

DUMMY NUMBER: 272

TEST NUMBER: D952025

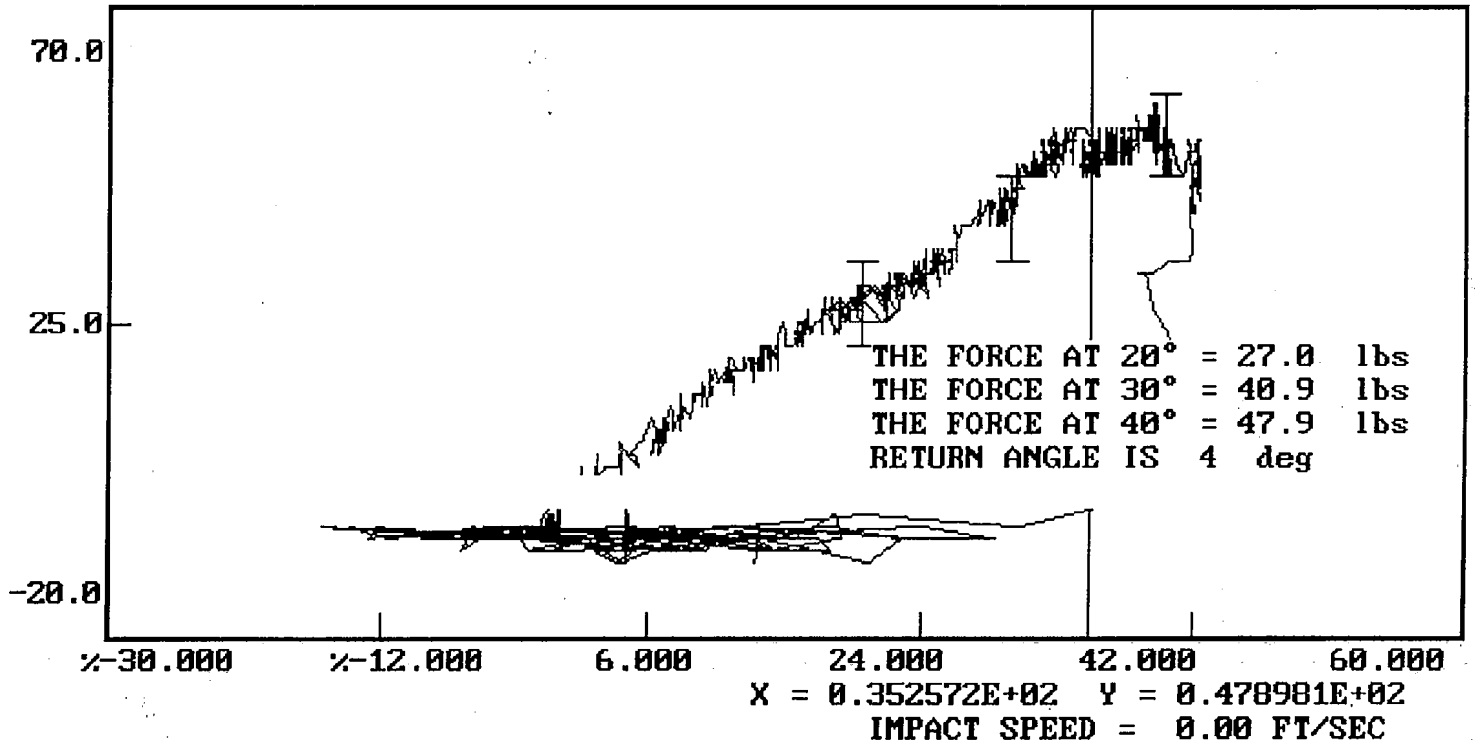
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	27
FORCE @ 30°	34 - 46 lbs	41
FORCE @ 40°	46 - 58 lbs	48
RETURN ANGLE	12° maximum	4°

TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY

DUMMY CALIBRATION - LUMBAR FLEXION 12-07-1995 08:07
DUMMY # 272
FORCE (LBS) VS. TORSO ROTATION (DEGREES)



POST-TEST CERTIFICATION DATA

Passenger Dummy Serial Number: 271

Calibration Test Results Summary

Dummy Serial Number: 271

Post-Test Calibration

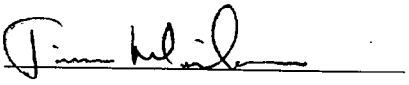
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion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

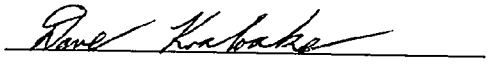
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 271

DATE OF VERIFICATION: December 7, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.4
RH - Rib Height	19.75" - 20.50"	20.40
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.4
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.4
SW - Knee Pivot to Floor	19.3" - 19.9"	19.5
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: 

APPROVED BY: 

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 6, 1995

DUMMY NUMBER: 271 TEST NUMBER: D952012

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 fps	13.9
UPPER RIB	37 - 46 g's	45
LOWER RIB	37 - 46 g's	41
LOWER SPINE	15 - 22 g's	21

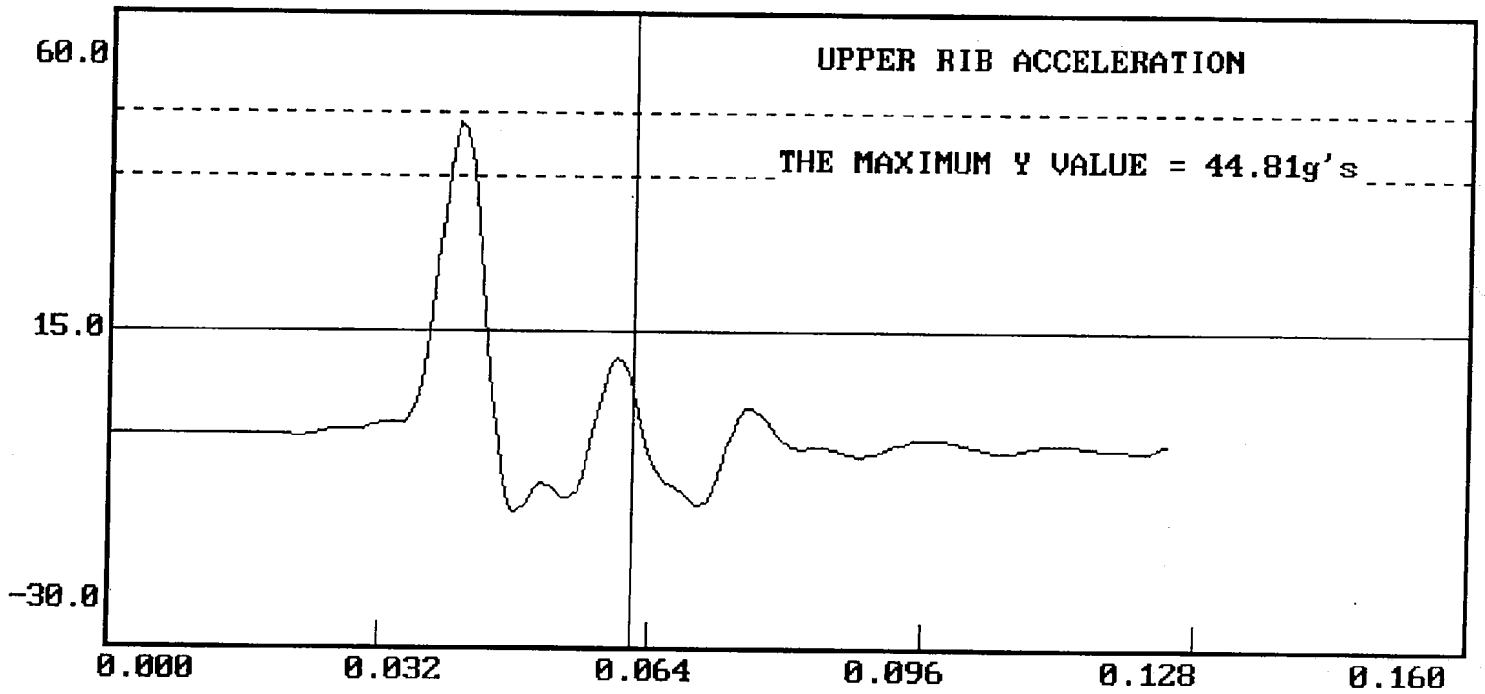
TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____

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

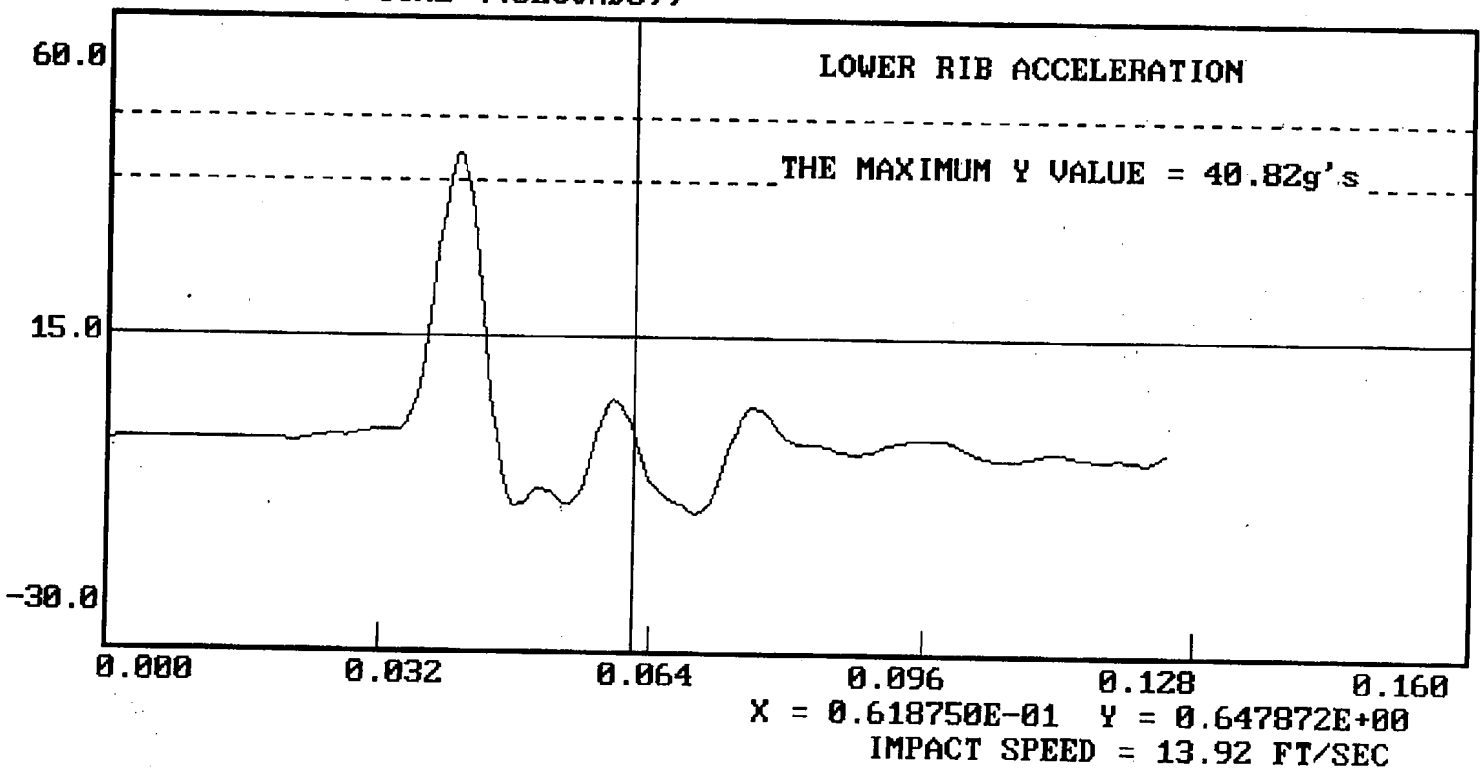
12-06-1995 09:15



X = 0.618750E-01 Y = 0.615582E+01
IMPACT SPEED = 13.92 FT/SEC

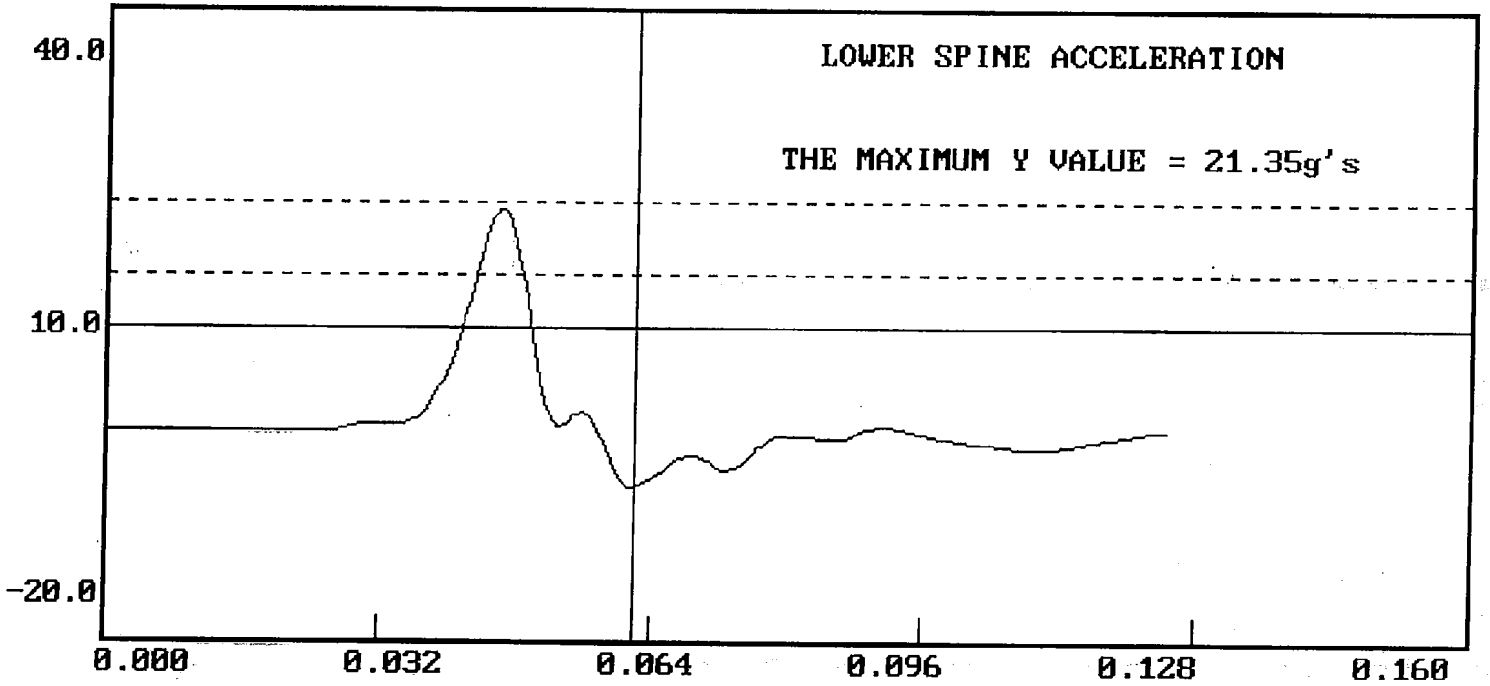
DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 271
ACCELERATION (G'S) VS. TIME ((SECONDS))

12-06-1995 09:15



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

12-06-1995 09:15



X = 0.618750E-01 Y = -.515804E+01
IMPACT SPEED = 13.92 FT/SEC

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: December 6, 1995

DUMMY NUMBER: 271 TEST NUMBER: D952013

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 f/s	13.9
PELVIS ACCELERATION	40 - 60 g's	51

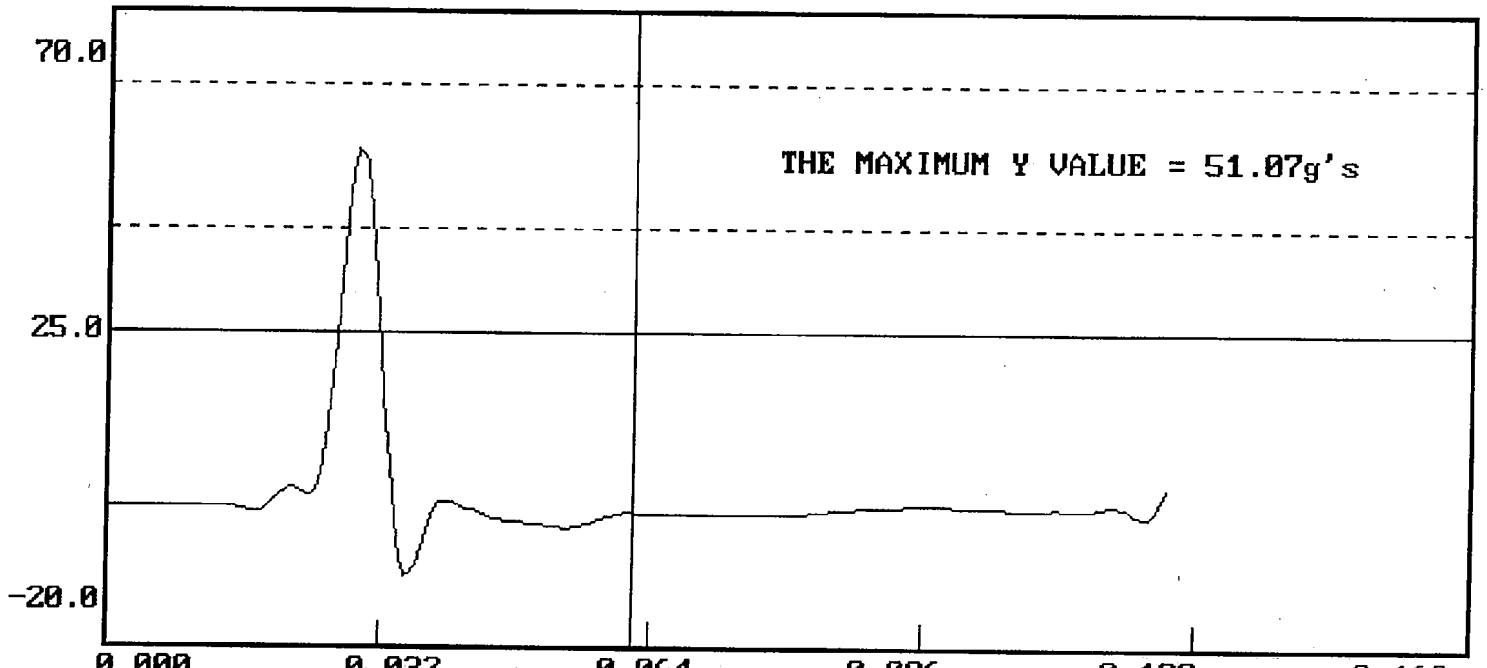
TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____

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

12-06-1995 09:22



X = 0.618750E-01 Y = -.764742E+00
IMPACT SPEED = 13.87 FT/SEC

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

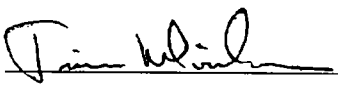
DATE: December 7, 1995

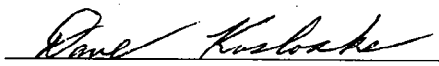
DUMMY NUMBER: 271

TEST NUMBER: D952014

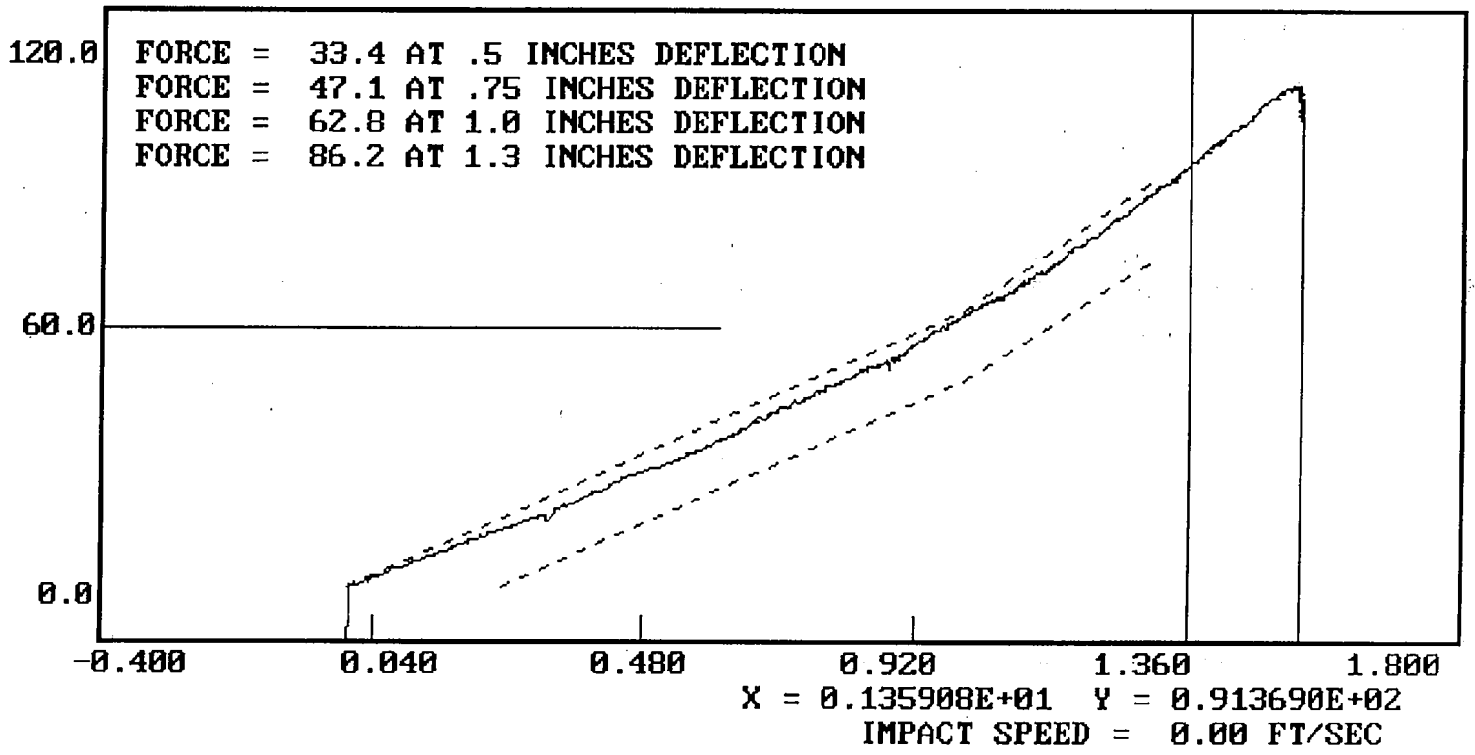
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0.5 in	23.3 - 36.5 lbs	33.4
FORCE @ 0.75 in	36.7 - 49.8 lbs	47.1
FORCE @ 1.0 in	50 - 63 lbs	63
FORCE @ 1.3 in	73 - 88 lbs	86

TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

DUMMY CALIBRATION - ABDOMEN COMPRESSION 12-07-1995 16:49
DUMMY # 271
ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: December 6, 1995

DUMMY NUMBER: 271 TEST NUMBER: D952015

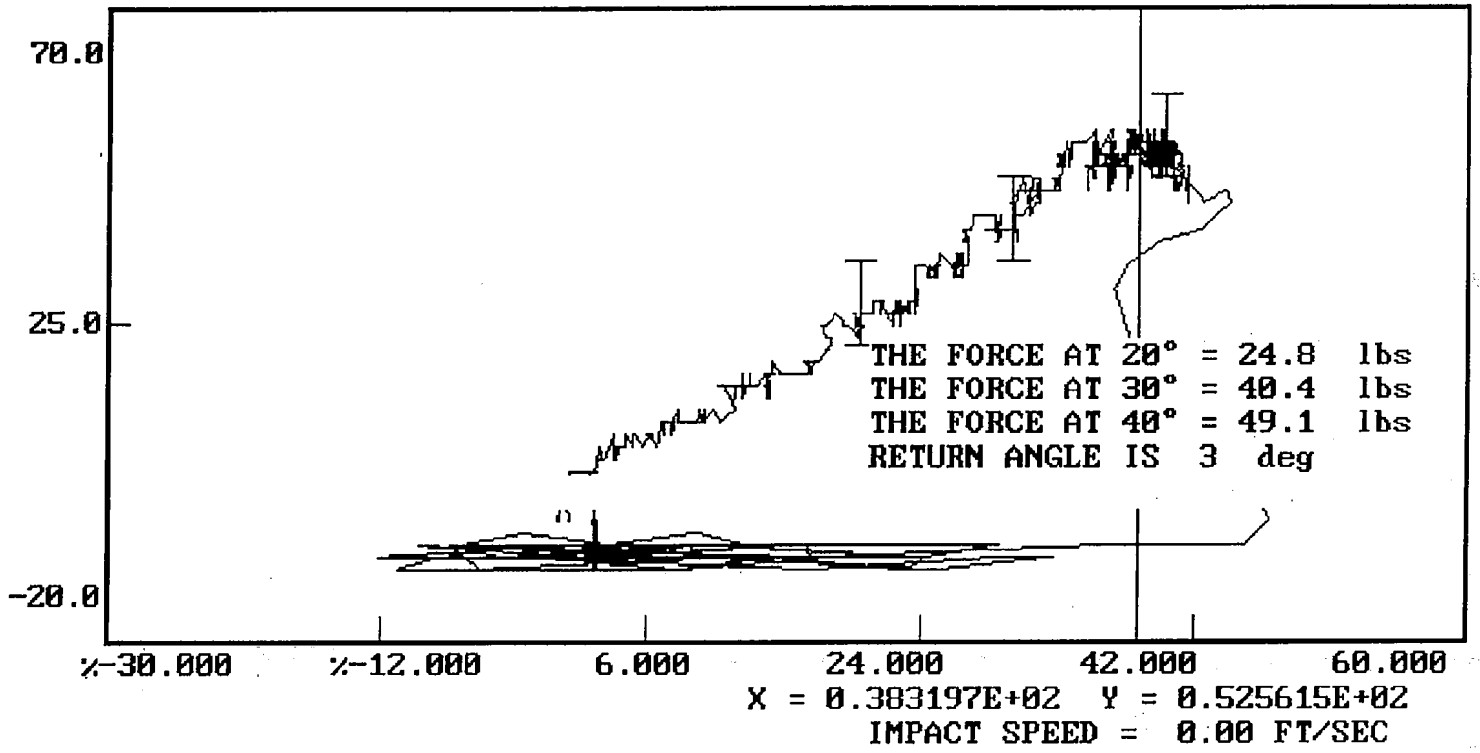
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	25
FORCE @ 30°	34 - 46 lbs	40
FORCE @ 40°	46 - 58 lbs	49
RETURN ANGLE	12° maximum	3°

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____

DUMMY CALIBRATION - LUMBAR FLEXION 12-06-1995 17:23
DUMMY # 271
FORCE (LBS) VS. TORSO ROTATION (DEGREES)



POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 272

Inspected By: Al Chalmers

Date: December 7, 1995

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: 271

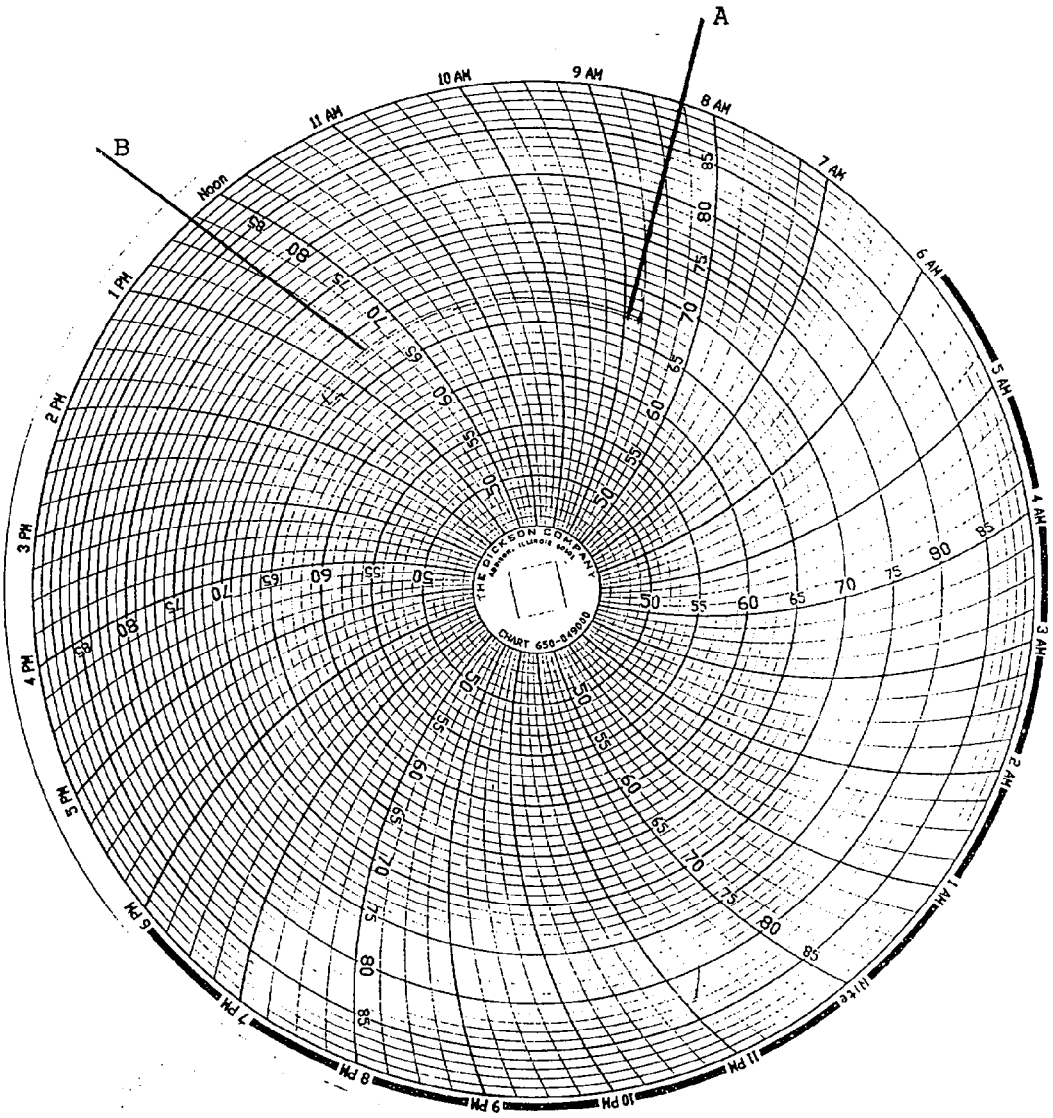
Inspected By: Al Chalmers

Date: December 7, 1995

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 placed in vehicle
B = Test Conducted

APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Left Side Sill at Rear Seat Y	L14-D14	Entran	October 24, 1995
Right Rear Occupant Compartment Y	E24-G06	Entran	September 29, 1995
Vehicle CG X	E25-G10	Entran	June 28, 1995
Vehicle CG Y	H07-A11	Entran	September 5, 1995
Vehicle CG Z	F07-A09	Entran	August 1, 1995

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

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier CG X	F12-X03	Entran	August 2, 1995
Moving Barrier CG Y	L14-D17	Entran	October 23, 1995
Moving Barrier CG Z	L18-E14	Entran	October 23, 1995
Moving Barrier Rear Axle X	C25-A01	Entran	October 5, 1995
Moving Barrier Rear Axle Y	C25-A08	Entran	October 24, 1995
Left Mid A-Post Y	L14-D03	Entran	October 23, 1995
Left Lower A-Post Y	L15-G09	Entran	October 5, 1995
Left Mid B-Post Y	L14-D10	Entran	October 23, 1995
Left Lower B-Post Y	H16-X11	Entran	September 21, 1995
Rear Floorpan Above Axle X	D06-A02	Entran	June 9, 1995
Rear Floorpan Above Axle Y	H16-X13	Entran	September 21, 1995
Rear Floorpan Above Axle Z	H16-X14	Entran	September 21, 1995
Driver Seat Track Y	L14-D22	Entran	September 5, 1995
Right Side Sill at Front Seat X	B12-G08	Entran	October 19, 1995
Right Side Sill at Front Seat Y	E24-G10	Entran	June 28, 1995
Right Side Sill at Front Seat Z	F07-A14	Entran	August 2, 1995
Right Side Sill at Rear Seat X	H07-A25	Entran	September 5, 1995
Right Side Sill at Rear Seat Y	D06-A15	Entran	October 23, 1995
Right Side Sill at Rear Seat Z	L14-D04	Entran	October 23, 1995
Left Side Sill at Front Seat Y	L18-E07	Entran	October 23, 1995

INSTRUMENTS FOR PASSENGER DUMMY NO. 272

	LEFT REAR PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AP2A4	Endevco	September 14, 1995
Lower Rib Y	AP1B3	Endevco	September 25, 1995
Lower Spine Y	ANAP1	Endevco	November 8, 1995
Pelvis Y	AJ417	Endevco	July 10, 1995
Upper Rib Redundant Y	AP2D8	Endevco	September 14, 1995
Lower Rib Redundant Y	AP1C6	Endevco	September 25, 1995
Lower Spine Redundant Y	ANAT6	Endevco	November 8, 1995
Pelvis Redundant Y	APG20	Endevco	July 10, 1995

DUMMY AND VEHICLE CALIBRATION DATA

INSTRUMENTS FOR DRIVER DUMMY NO. 271

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AN8L6	Endevco	June 31, 1995
Lower Rib Y	APYR7	Endevco	September 6, 1995
Lower Spine Y	AP0H4	Endevco	September 6, 1995
Pelvis Y	APY15	Endevco	September 6, 1995
Upper Rib Redundant Y	APY13	Endevco	September 6, 1995
Lower Rib Redundant Y	AJ8T5	Endevco	July 27, 1995
Lower Spine Redundant Y	AP0F6	Endevco	September 6, 1995
Pelvis Redundant Y	APY16	Endevco	September 6, 1995