

V2337

REPORT NO.: 214-MGA-96-004
SAFETY COMPLIANCE TESTING FOR
FMVSS 214 "SIDE IMPACT PROTECTION -
PASSENGER CARS"

FORD MOTOR CORPORATION
1996 FORD MUSTANG
NHTSA NO: CT0204

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: November 1, 1995

Report Date: November 15, 1995

FINAL REPORT

Prepared For:
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16. Abstract A 48/24 kph 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject 1996 Ford Mustang 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 1, 1995. The impact velocity of the Moving Deformable Barrier (MDB) was 52.8 kph, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 22°C. The target vehicle post test maximum crush was 254 mm at level 2 - H-Point Level. The test vehicle's performance follows: <table border="1"> <thead> <tr> <th></th> <th>DRIVER</th> <th>PASS.</th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td>44</td> <td>42</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td>52</td> <td>41</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td>60</td> <td>56</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td>56</td> <td>49</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td>65</td> <td>37</td> </tr> </tbody> </table> The rear passenger dummy could not be seated according to the seating procedures of S7, therefore the data reported is only for informational purposes. The door on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite door did not open during the side impact event.							DRIVER	PASS.	Left Upper Rib (LUR) Accel., g	44	42	Left Lower Rib (LLR) Accel., g	52	41	Lower Spine (T ₁₂) Accel., g	60	56	Thoracic Trauma Index (TTI)	56	49	Pelvis (PEV) Accel., g	65	37
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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 Hornickie																			
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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 Ford Mustang 2 Door.

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

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

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 1996 Ford Mustang 2 Door was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 32.8 kph (52.8 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 1, 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 (T₁₂) 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)	56	49
Pelvis (g)	65	37

TEST NOTES

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
- Left Mid B Post
- Rear Seat Track

The left rear passenger dummy was not able to be positioned with a pelvic angle between 23 and 25 degrees.

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/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 VIN: 1FALP4042TF110977

Vehicle Body Color: Red Build Date: 9/95

Engine Data: 6 Cylinders; CID; 3.8 Liter; cc

Placement X Longitudinal; Lateral

Transmission: 5 speed; X Manual; Automatic; Overdrive

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

Odometer Reading 184 miles

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

 Cruise Control; X Tilt Wheel; Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 35 Psi FRONT

 35 Psi REAR

Recommended Tire Size: P205/65R15

Tires on Test Vehicle: P205/65R15 Manufacturer: Goodyear

Vehicle Capacity Data:

Number of Occupants: 2 Front; 2 Rear; 3rd Seat 4 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 = 318 kg (A)

No. of Occupants x 68.04 kg. = 272 kg (B)

Cargo Capacity (A-B) = 46 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS:

Right Front	=	<u>396.0</u> kg	Right Rear	=	<u>303.5</u> kg
Left Front	=	<u>407.3</u> kg	Left Rear	=	<u>303.0</u> kg
TOTAL FRONT	=	<u>803.3</u> kg	TOTAL REAR	=	<u>606.5</u> kg
% of Total Vehicle Weight = <u>57</u> %; % of Total Weight = <u>43</u> %					
TOTAL WEIGHT = <u>1409.8</u> kg					

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids = 1409.8 kg

Cargo Carrying Capacity of Test Vehicle = 46.0 kg

Weight of 2 Side Impact Dummies (2 x 80.7 kg.) = 161.4 kg

TEST VEHICLE TARGET WEIGHT = 1617.2 kg

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES AND CARGO:

Right Front = 408.7 kg Right Rear = 371.5 kg

Left Front = 466.8 kg Left Rear = 369.7 kg

TOTAL FRONT = 875.5 kg TOTAL REAR = 741.2 kg

% of Total Weight = 54 % % of Total Weight = 46 %

TOTAL TEST WEIGHT = 1616.7 kg

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 728 mm Left Front 724 mm Right Rear 739 mm Left Rear 738 mm

FULLY LOADED WEIGHT ATTITUDE:

Right Front 721 mm Left Front 709 mm Right Rear 695 mm Left Rear 683 mm

TEST ATTITUDE:

Right Front 712 mm Left Front 711 mm Right Rear 708 mm Left Rear 692 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2570 mm

C.G. = 1178 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 4362 mm

Centerline = 4608 mm

Left Side = 4362 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995

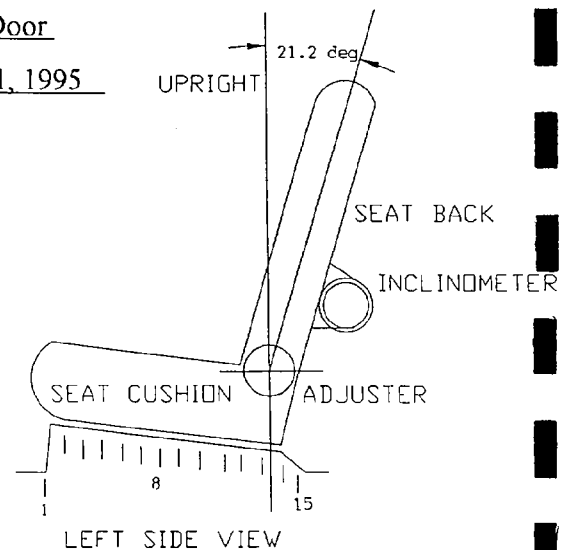
FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 190 mm

Test Position: 8th detent rearward out of 15 total

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 21.2° degrees



SECOND POSITION SEAT:

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

Seat Back Adjustment Position: Non-Adjustable

ADJUSTABLE STEERING COLUMN POSITION: Mid-Position

WINDOW POSITIONS: Left Front Closed Left Rear Closed

Right Front Open Right Rear Open

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel system usable capacity = 58 liters

Test Volume: 54 liters 93 % of capacity

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

Wheelbase: = 2570 mm

Impact Point is 345 mm rearward of front axle centerline

DATA SHEET NO. 2
TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door
Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995
Overall Length = 4608 mm; Overall Width = 1784 mm

TEST WEIGHT:

Right Front = 408.7 kg Right Rear = 371.5 kg
Left Front = 466.8 kg Left Rear = 376.7 kg
TOTAL FRONT = 875.8 kg TOTAL REAR = 741.2 kg
% of Total Weight = 54 % % of Total Weight = 46 %
TOTAL VEHICLE WEIGHT = 1616.7 kg
Wheelbase = 2570 mm
Longitudinal C.G. from Center of Front Axle = 1178 mm
Impact Angle with Respect to Impactor = 90° degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (280 mm above ground) = 132 mm
 2. LEVEL 2 (510 mm above ground) = 254 mm
 3. LEVEL 3 (615 mm above ground) = 234 mm
 4. LEVEL 4 (890 mm above ground) = 132 mm
 5. LEVEL 5 (1265 mm above ground) = 48 mm
- Maximum Post-Test Intrusion = 254 mm

OCCUPANTS:

	<u>Left Front Passenger</u>	<u>Left Rear Passenger</u>
Type of Dummy	<u>SID</u>	<u>SID</u>
Restraints Used	<u>type II belts</u> <u>with airbag</u>	<u>type II belt</u> <u>system</u>

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

INSTRUMENTATION:

Number of Vehicle Data Channels:	=	<u>19</u>
Number of Cameras: Onboard Vehicle	=	<u>3</u>
Offboard Vehicle	=	<u>4</u>
Deformable Barrier	=	<u>2</u>
TOTAL	=	<u>9</u>

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

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

MDB WEIGHT:

Left Front	= <u>496.7 kg</u>	Left Rear	= <u>187.3 kg</u>
Right Front	= <u>283.0 kg</u>	Right Rear	= <u>389.2 kg</u>
TOTAL FRONT	= <u>779.7 kg</u>	TOTAL REAR	= <u>576.5 kg</u>
TOTAL MDB WEIGHT = <u>1356.2 kg</u>			

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

Impact Speed = Primary: 32.8 mph (52.8 kph) Secondary: 32.8 mph (52.8 kph)

CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

- | | | |
|----|---------------------------------|-----------------|
| 1. | Row A Top of Stack (813 mm) | = <u>78</u> mm |
| 2. | Row B Mid Stack (686 mm) | = <u>55</u> mm |
| 3. | Row C Top of Bumper (533 mm) | = <u>90</u> mm |
| 4. | Row D Center of Bumper (432 mm) | = <u>153</u> mm |

INSTRUMENTATION:

Number of MDB Data Channels = 7

DATA SHEET NO. 4
POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995

VISIBLE DUMMY CONTACT POINTS:

	<u>LEFT FRONT SID</u>	<u>LEFT REAR SID</u>
Head	<u>to window, door</u>	<u>to window, C Post</u>
Arm	<u>to door</u>	<u>to trim</u>
Pelvis	<u>to door</u>	<u>to trim</u>
Left Knee	<u>to door</u>	<u>to trim, B-Post</u>
Right Knee	<u>to left knee, dash</u>	<u>to left knee, front seat</u>

DOOR OPENING:

	<u>LEFT SIDE</u>	<u>RIGHT SIDE</u>
Front	<u>remained closed</u>	<u>remained closed</u>
Rear	<u>N/A</u>	<u>N/A</u>

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal: 25 mm forward Vertical: 0 mm

ARM REST LOCATIONS:

Front: 265 mm Below window opening
Rear: 312 mm Below window opening

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 27 mm Front Seat Cushion: 25 mm

Left Rear Seat Back: 2 mm Rear Seat Cushion: 34 mm

GLAZING DAMAGE:

Left side windows broke, windshield cracked

PILLAR PERFORMANCE:

No separation noted

SILL SEPARATION:

No separation noted

OTHER NOTABLE IMPACT EFFECTS:

None

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

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

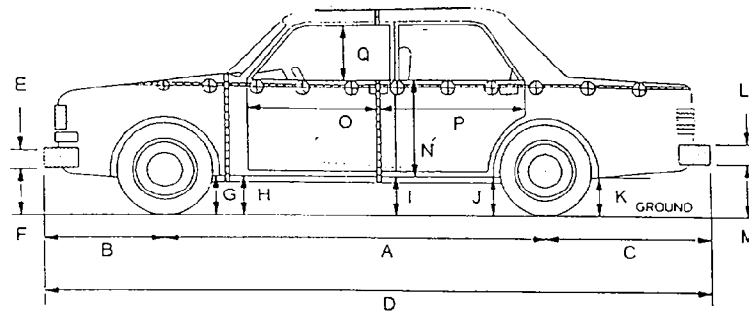
Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door
Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995

	Front Dummy ID #269				Rear Dummy ID #270			
	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	43.9	42	14.1	78	41.6	46	3.4	144
Left Lower Rib (LLR) Y	52.2	31	11.4	97	40.8	49	5.5	124
SPINE ACCELERATIONS								
Lower Lateral Y	59.9	35	11.4	103	56.4	61	12.4	81
PELVIS ACCELERATIONS								
Lateral Y	65.3	30	10.1	95	37.3	55	8.1	122

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)

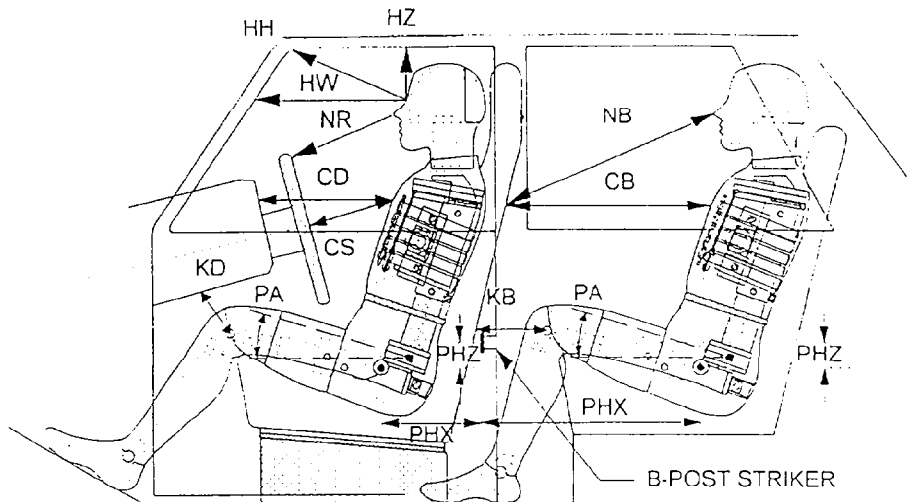
	PRE-TEST	POST-TEST	Δ CHANGE
A	2570	2562	8
B	1033	1028	5
C	1005	964	41
D	4608	4554	54
E	200	200	0
F	374	403	29
G	224	228	4
H	184	232	48
I	184	195	11
J1/J2	190/173	167/152	23/21
K	272	277	5
L	370	370	0
M	310	310	0
N	637	601	36
O	611	612	1
P	777	773	4
Q	370	361	9
R	4362	4352	10
S	4362	4325	37
T	1784	1608	176

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

NHTSA NO.: CT0204 Test Date: November 1, 1995



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

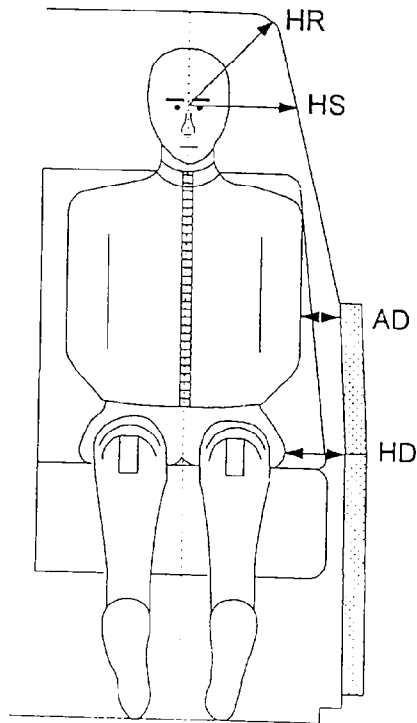
	FRONT SID ID #269		REAR PASSENGER SID ID #270
HH	317	HZ	104
HW	495	NB	530
HZ	140	CB	400
NR	407	KBL (KBA)	115 (0)
CD	520	KBR (KBA)	120 (0)
CS	284	PA°	18.0
KDL(KDA°)	118 (26.7)	PHX	294
KDR(KDA°)	120 (22.9)	PHZ	140
PA°	24.0		
PHX	535		
PHZ	120		

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/Ford/Mustang/2 Door

NHTSA NO.: CT0204 Test Date: November 1, 1995



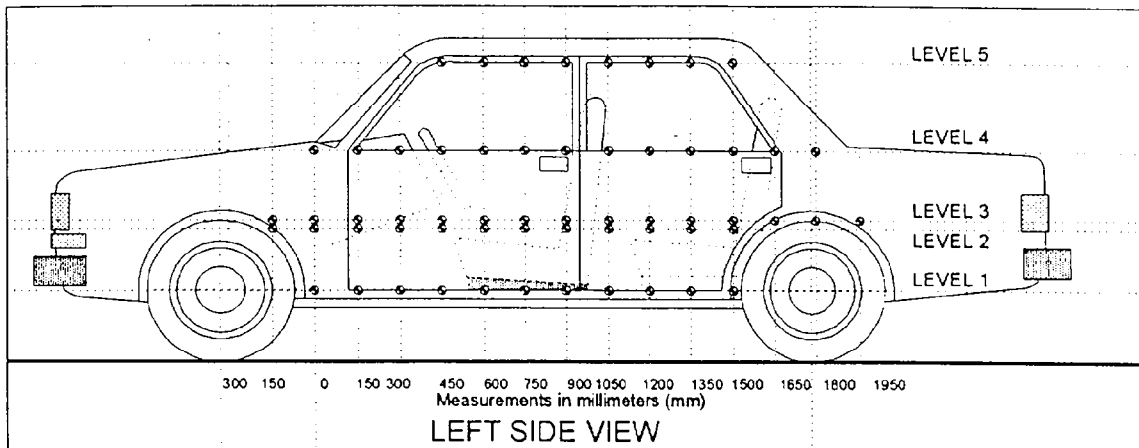
NOTE: All dimensions are in mm

	DRIVER ID #269	LEFT REAR PASSENGER ID #270
HR	162	272
HS	282	283
AD	40	84
HD	108	175

DATA SHEET NO. 9
VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

NHTSA NO.: CT0204 Test Date: November 1, 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	=	<u>1265</u> mm
Level 4 @ Window Sill	=	<u>890</u> mm
Level 3 @ Mid Door	=	<u>615</u> mm
Level 2 @ Occupant H-Point	=	<u>510</u> mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>280</u> mm

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

NHTSA NO.: CT0204 Test Date: November 1, 1995

Longitudinal Distance (mm)	Level 1 - Axle Centerline		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200	---	---	---
-1050	---	---	---
-900	---	---	---
-750	---	---	---
-600	---	---	---
-450	---	---	---
-300	---	---	---
-150	---	---	---
0 (impact point)	---	---	---
150	827	959	132
300	831	956	125
450	833	955	122
600	828	948	120
750	828	945	117
900	827	946	119
1050	823	929	106
1200	817	905	88
1350	812	875	63
1500	806	890	84
1650	798	849	51
1800	794	842	48

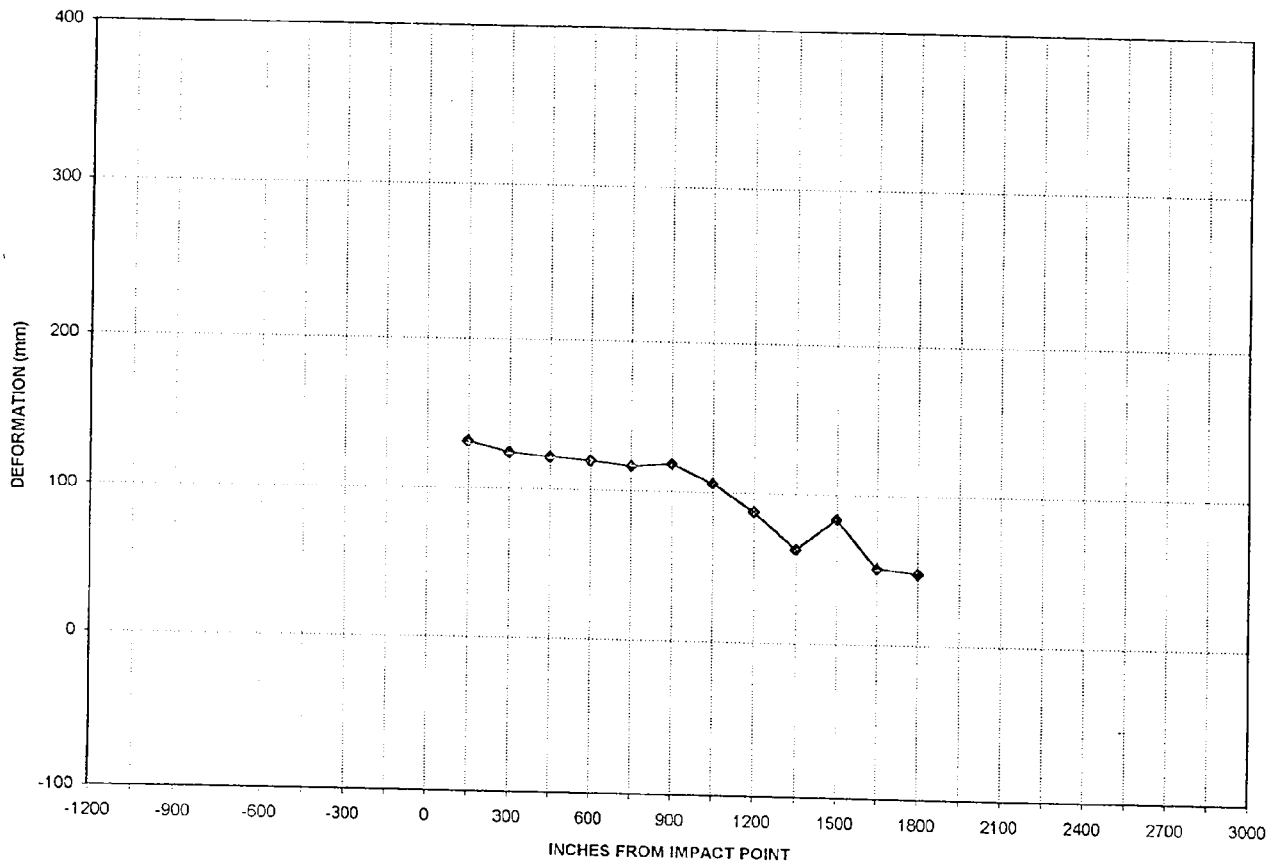
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS (Cont'd)

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
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

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

NHTSA NO.: CT0204 Test Date: November 1, 1995

	Level 2 - Occupant H-Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200	883	887	4
-1050	837	845	8
-900	808	828	20
-750	790	819	29
-600	---	---	---
-450	---	---	---
-300	---	---	---
-150	---	---	---
0 (impact point)	787	1004	217
150	791	1021	230
300	796	1029	233
450	797	1047	250
600	795	1049	254
750	795	1043	248
900	795	1035	240
1050	796	1026	230
1200	794	1016	222
1350	791	1000	209
1500	788	979	191
1650	794	969	175
1800	743	840	97

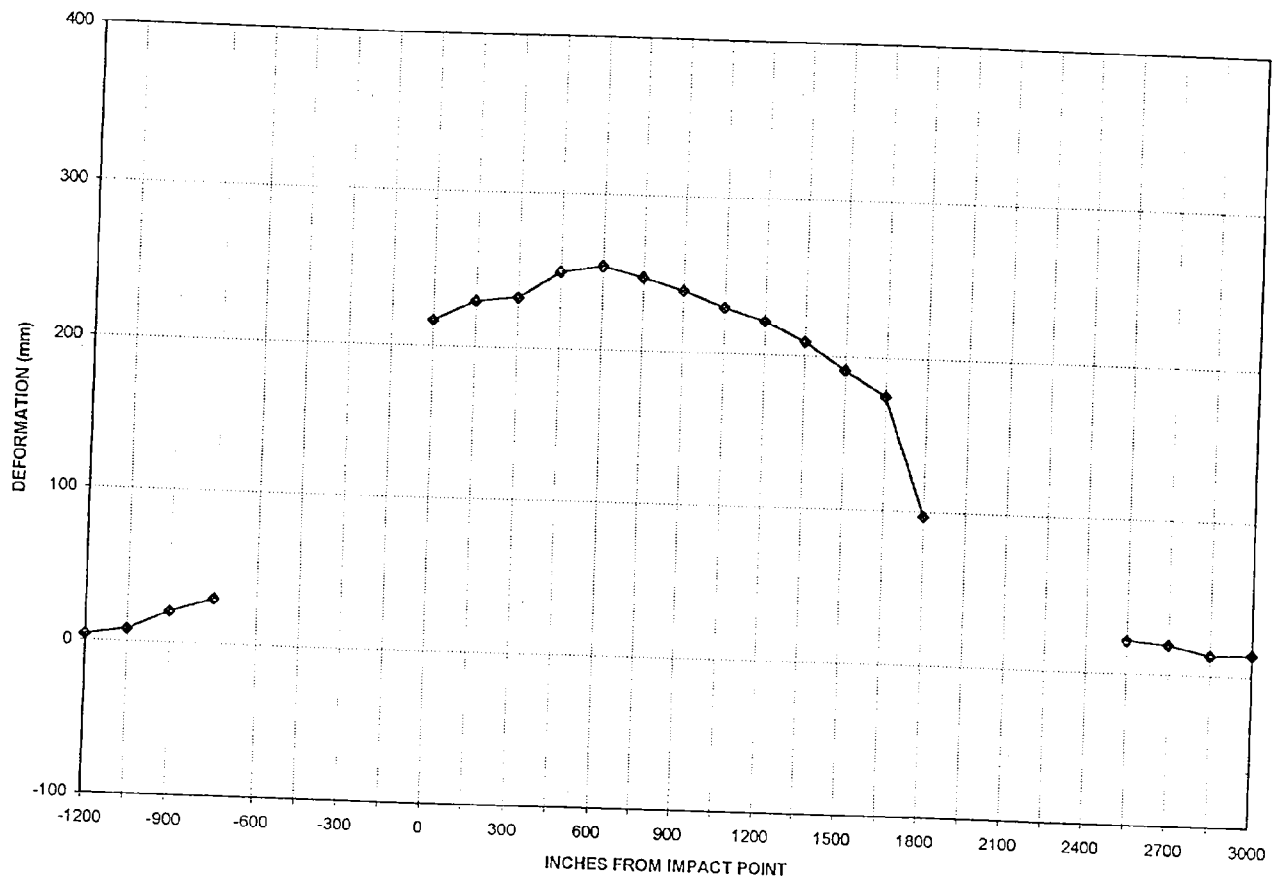
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS (Cont'd)

	Level 2 - Occupant H-Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950	---	---	---
2100	---	---	---
2250	---	---	---
2400	---	---	---
2550	767	788	21
2700	790	809	19
2850	817	830	13
3000	860	874	14

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 2 - OCCUPANT H-POINT

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

NHTSA NO.: CT0204 Test Date: November 1, 1995

	Level 3 - Mid Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200	---	---	---
-1050	---	---	---
-900	828	845	17
-750	798	830	32
-600	---	---	---
-450	---	---	---
-300	---	---	---
-150	---	---	---
0 (impact point)	773	859	86
150	779	876	97
300	782	889	107
450	782	1012	230
600	782	1014	232
750	782	1015	233
900	782	1016	234
1050	782	1014	232
1200	777	1000	223
1350	777	981	204
1500	767	961	194
1650	762	961	199
1800	751	N/A	N/A

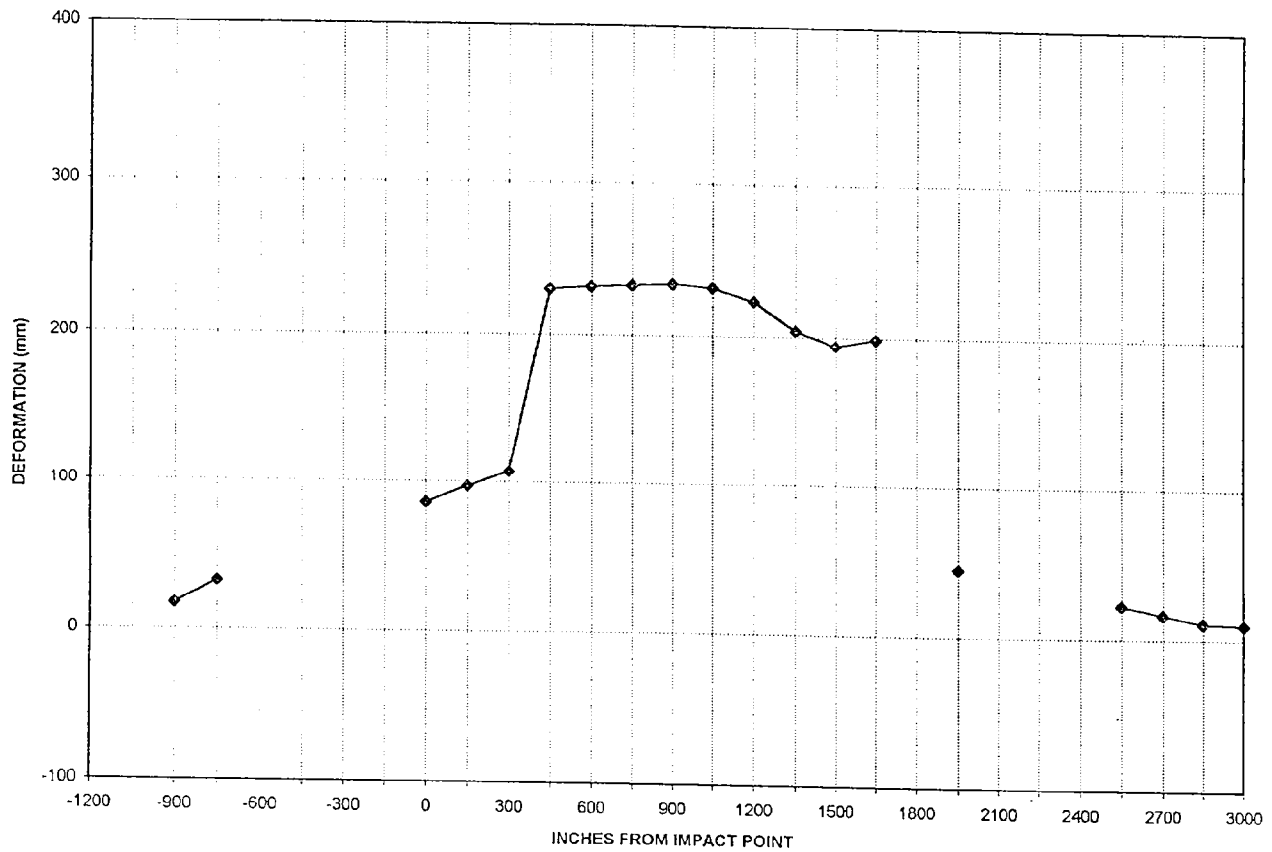
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS (Cont'd)

	Level 3 - Mid Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950	733	778	45
2100	---	---	---
2250	---	---	---
2400	---	---	---
2550	763	785	22
2700	786	802	16
2850	819	830	11
3000	855	865	10

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 3 - MID DOOR

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

NHTSA NO.: CT0204 Test Date: November 1, 1995

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200	---	---	---
-1050	917	916	-1
-900	883	892	9
-750	864	880	16
-600	850	877	27
-450	844	877	33
-300	837	883	46
-150	837	892	55
0 (impact point)	837	905	68
150	840	932	92
300	840	951	111
450	843	962	119
600	844	976	132
750	844	976	132
900	843	972	129
1050	843	971	128
1200	843	967	124
1350	845	967	122
1500	843	960	117
1650	843	973	130
1800	847	911	64

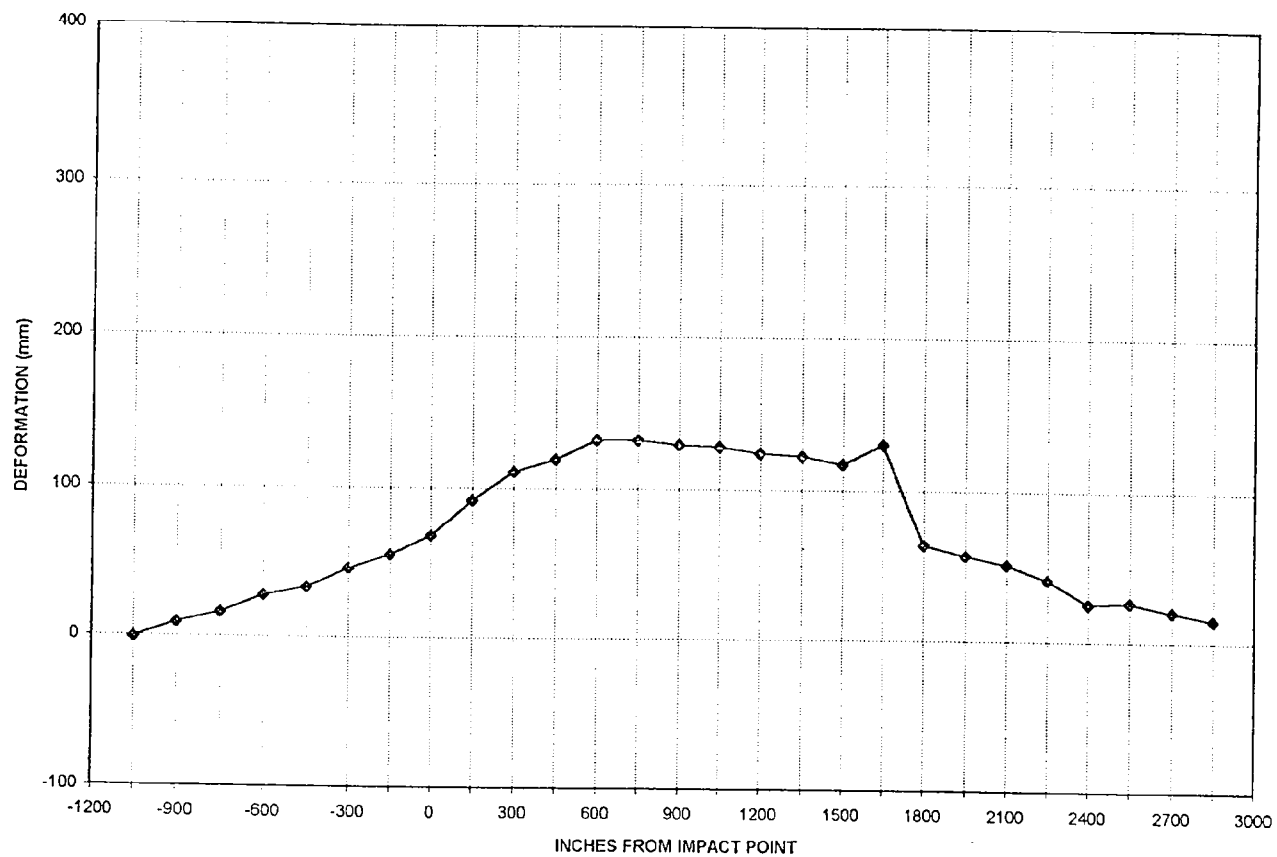
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS (Cont'd)

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950	851	908	57
2100	857	908	51
2250	862	903	41
2400	871	896	25
2550	876	902	26
2700	887	907	20
2850	898	913	15
3000	---	---	---

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 4 - WINDOW SILL

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

NHTSA NO.: CT0204 Test Date: November 1, 1995

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200	---	---	---
-1050	---	---	---
-900	---	---	---
-750	---	---	---
-600	---	---	---
-450	---	---	---
-300	---	---	---
-150	---	---	---
0 (impact point)	---	---	---
150	---	---	---
300	---	---	---
450	---	---	---
600	---	---	---
750	---	---	---
900	1027	1073	46
1050	1038	1076	38
1200	1033	1081	48
1350	1032	1080	48
1500	1028	1076	48
1650	1031	1075	44
1800	1040	1076	36

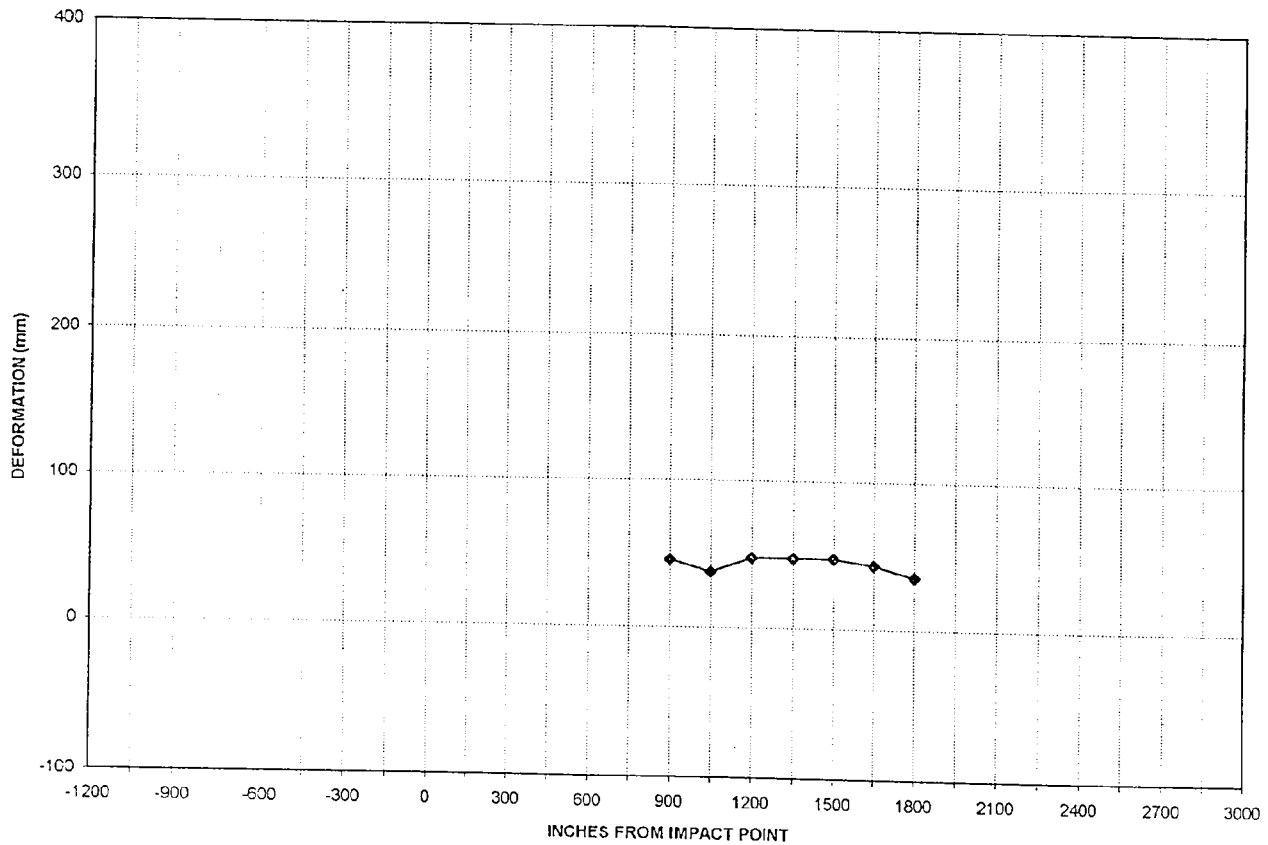
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS (Cont'd)

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
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



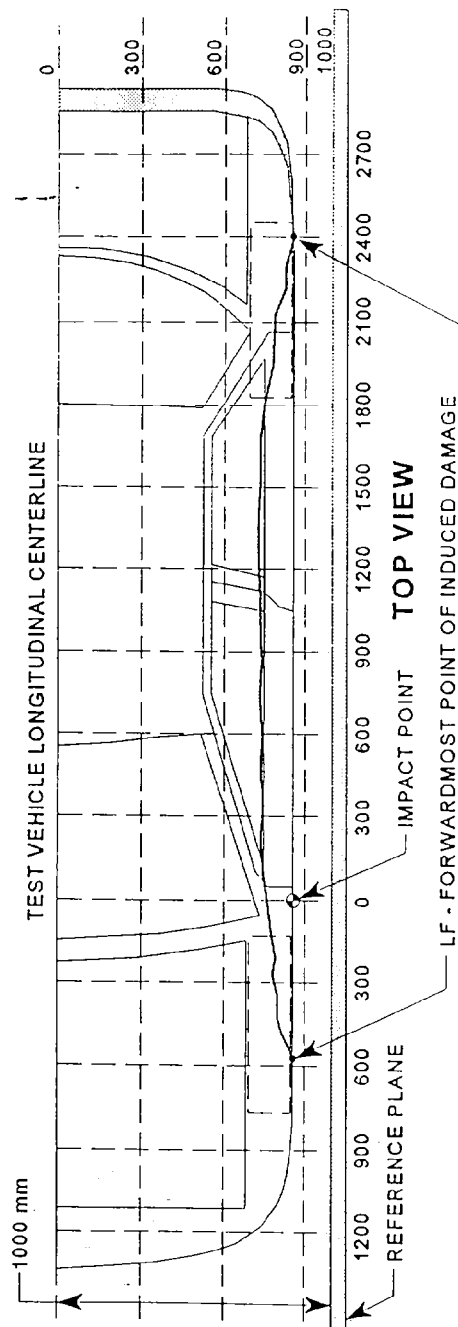
LEVEL 5 - WINDOW TOP

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

NHTSA NO.: CT0204 Test Date: November 1, 1995



DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1. (LF = -672 mm)	886	886	0
2. -39 mm	916	837	79
3. 594 mm	994	838	156
4. 1227 mm	1009	844	165
5. 1860 mm	953	848	105
6. (LR = 2493 mm)	957	957	0

DATA SHEET NO. 12

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

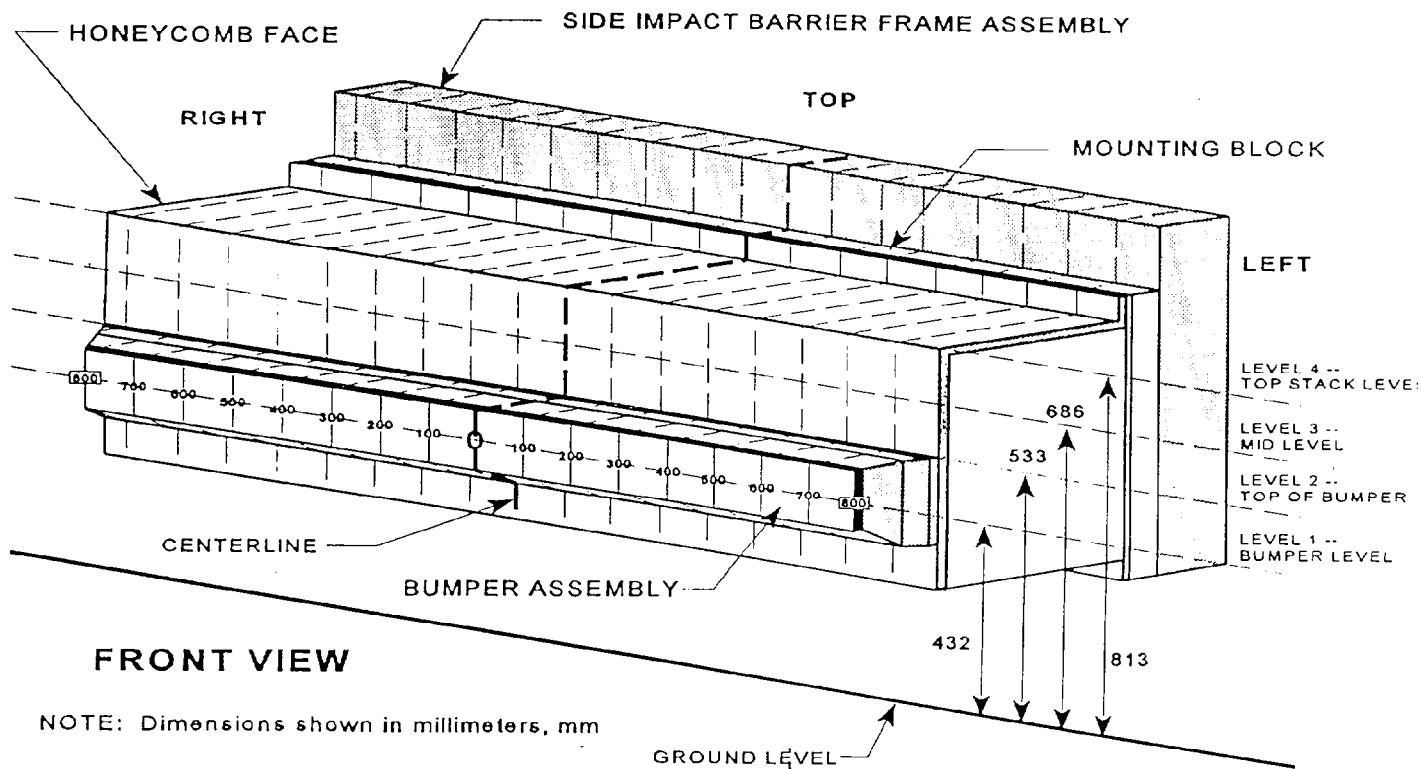
Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995

Location	Height at CL*	Distance Right of Center (mm)									Distance Left of Center (mm)							
		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level 4	813 mm	42	5	3	3	4	5	6	7	11	13	18	25	37	58	78	63	78
Mid Level Level 3	686 mm	37	35	8	4	3	0	0	0	1	2	4	6	9	15	45	55	45
Top Bumper Level 2	533 mm	89	90	74	47	26	18	16	15	12	16	20	23	27	34	43	48	51
Mid Bumper Level 1	432 mm	145	153	137	98	70	50	41	34	27	27	29	32	38	50	66	63	63

See next page for Barrier Face Graphic

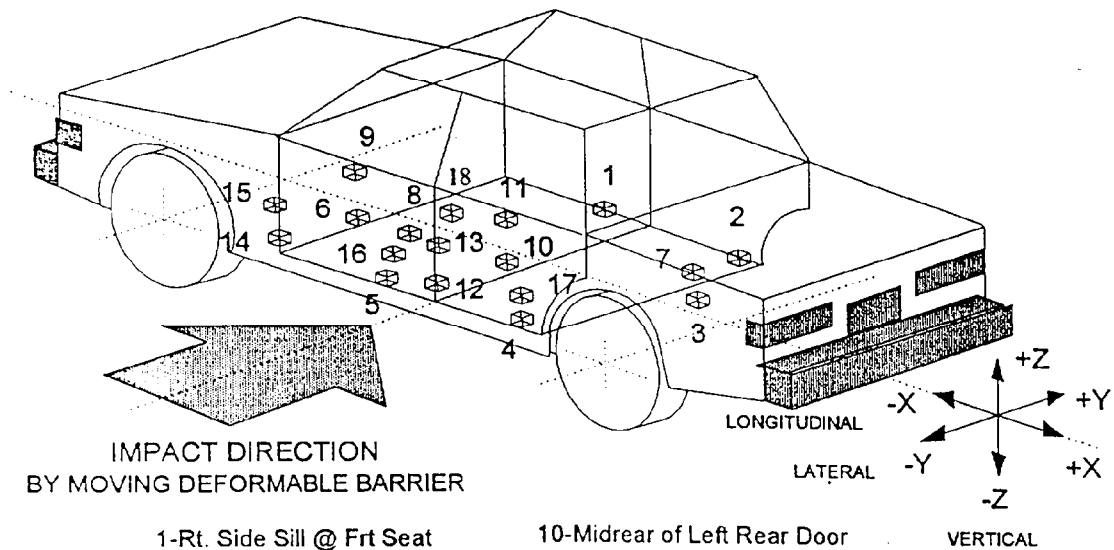
DATA SHEET NO. 12 (Cont'd)



DATA SHEET 13
TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1996/Ford /Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995



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

DATA SHEET NO. 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door.

Vehicle NHTSA No.: CT0204 Test Date: November 1, 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.	
1	Rt. Side Sill @ Front Seat	2123	650	210	3.9	6.4	28.1	3.4	6.3	8.5	28.6
2	Rt. Side Sill @ Rear Seat	1495	650	212	3.0	7.5	28.6	3.7	4.8	3.6	28.7
3	Rr. Floorpan Above Axle	880	-105	515	9.4	5.9	27.3	3.4	7.1	3.8	28.0
4	Left Side Sill @ Rr. Seat	1478	-650	220	---	---	38.6	3.1	---	---	---
5	Left Side Sill @ Frt. Seat	2245	-650	210	---	---	55.2	7.0	---	---	---
7	Right Rear Occupant Compartment	1742	355	422	---	---	27.4	2.5	---	---	---
12	Left Lower B-Post	1790	-670	280	---	---	34.9	9.3	---	---	---
14	Left Lower A-Post	2974	-675	300	---	---	93.6	14.8	---	---	---
15	Left Mid A-Post	2919	-792	718	---	---	**	**	---	---	---
16	Driver Left Seat Track	2554	-596	320	---	---	37.2	12.4	---	---	---
18	Vehicle CG	1178	60	400	**	**	**	**	**	**	**

*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To right)

Z - Ground Level (+ Up)

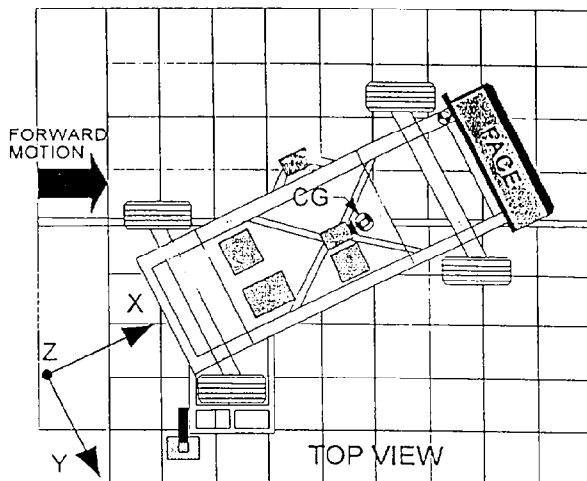
** No valid data collected

DATA SHEET NO. 14

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995



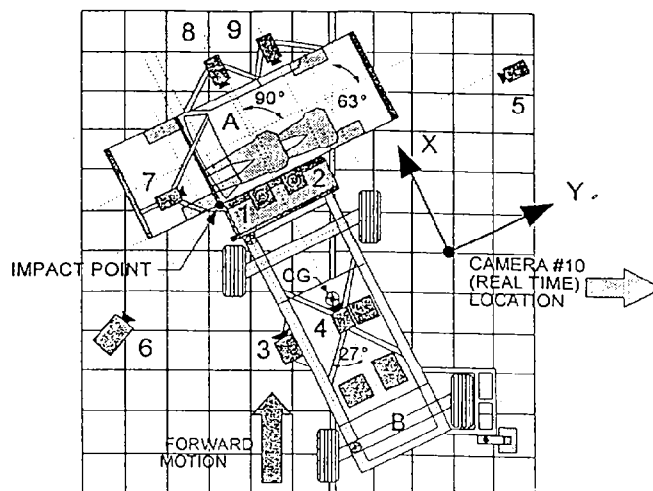
Accel. No.	Description	Coordinates (mm)*			(+) Positive		(-) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Neg.
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	1.3	119	16.7	32
	Lateral (Y)	---	---	---	0.9	57	6.8	26
	Vertical (Z)	---	---	---	18.3	35	13.4	21
	Resultant (R)	---	---	---	25.3	35	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	3.0	135	20.7	24
	Lateral (Y)	---	---	---	6.6	39	0.4	161

*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/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 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	909
2	Top Wide	-700	0	5130		8	1183
3	Cart Pointer					35	1020
4	Cart					13	943
5	Right Impact	-3750	-8280	1665	90°	25	1005
6	Left Overall	2910	2490	1655	90°	13	1010
7	Onboard Driver					13	1020
8	Onboard Hood					8	1053
9	Onboard Passenger					8	1015

* Reference: (from point of impact)

+X = Forward

+Y = To Right

+Z = Upward

DATA SHEET 16
FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

Vehicle Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 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 32.8 mph (52.8 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

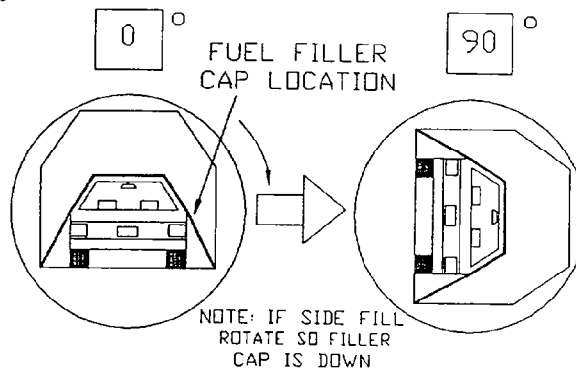
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995

TEST PHASE: 0° - 90°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 43 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 43 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

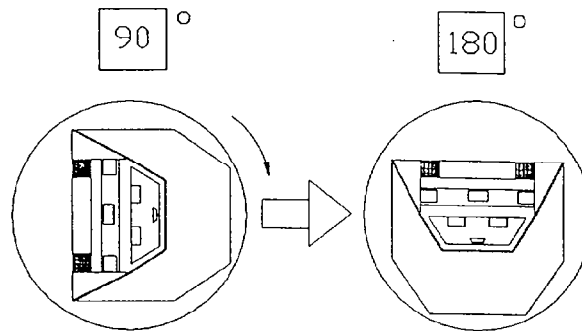
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995

TEST PHASE: 90° - 180°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 18 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 18 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

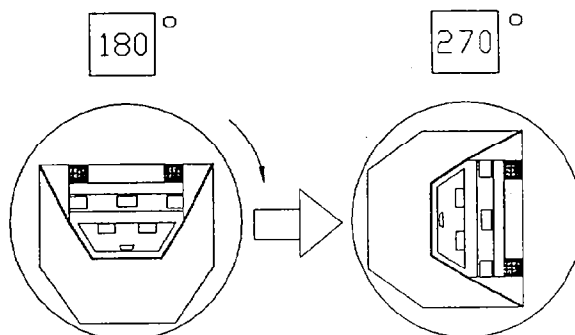
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995

TEST PHASE: 180° - 270°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 22 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 22 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

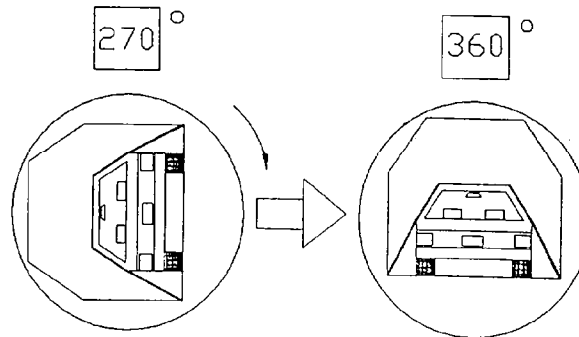
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1996/Ford/Mustang/2 Door

Vehicle NHTSA No.: CT0204 Test Date: November 1, 1995

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 42 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 42 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

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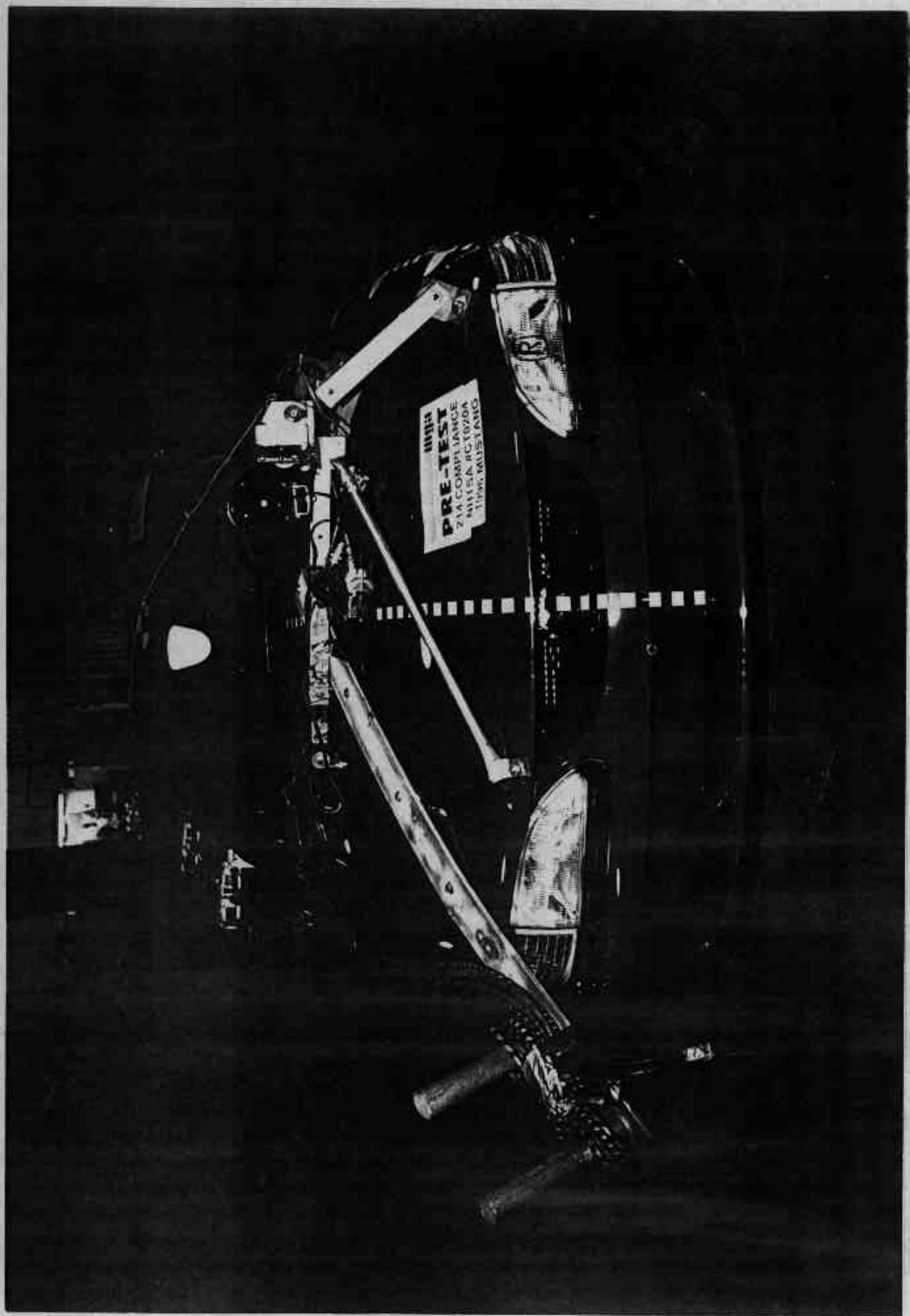


Photo No. A-1 - Pre-Test Front View of Test Vehicle

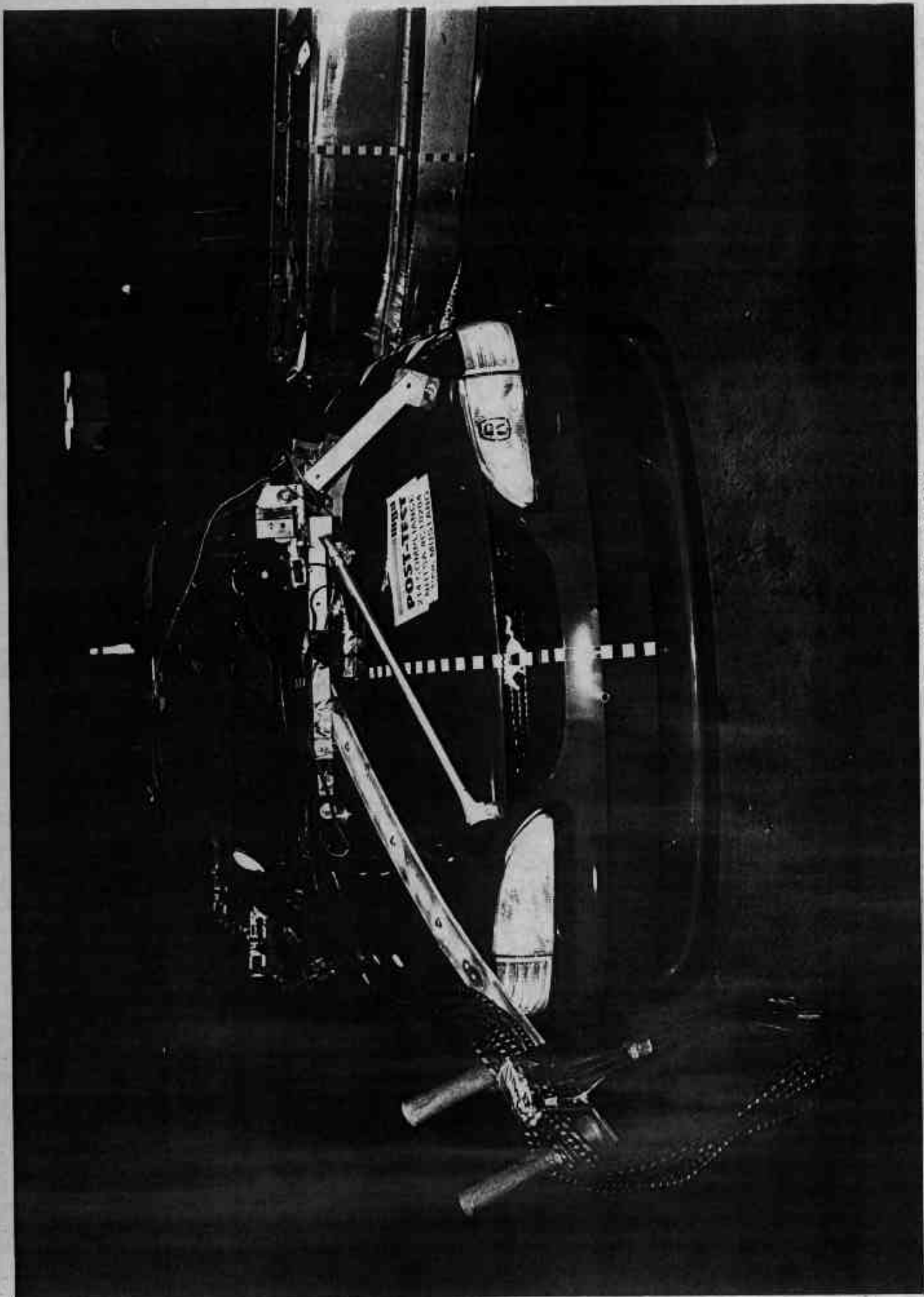


Photo No. A-2 - Post-Test Front View of Test Vehicle

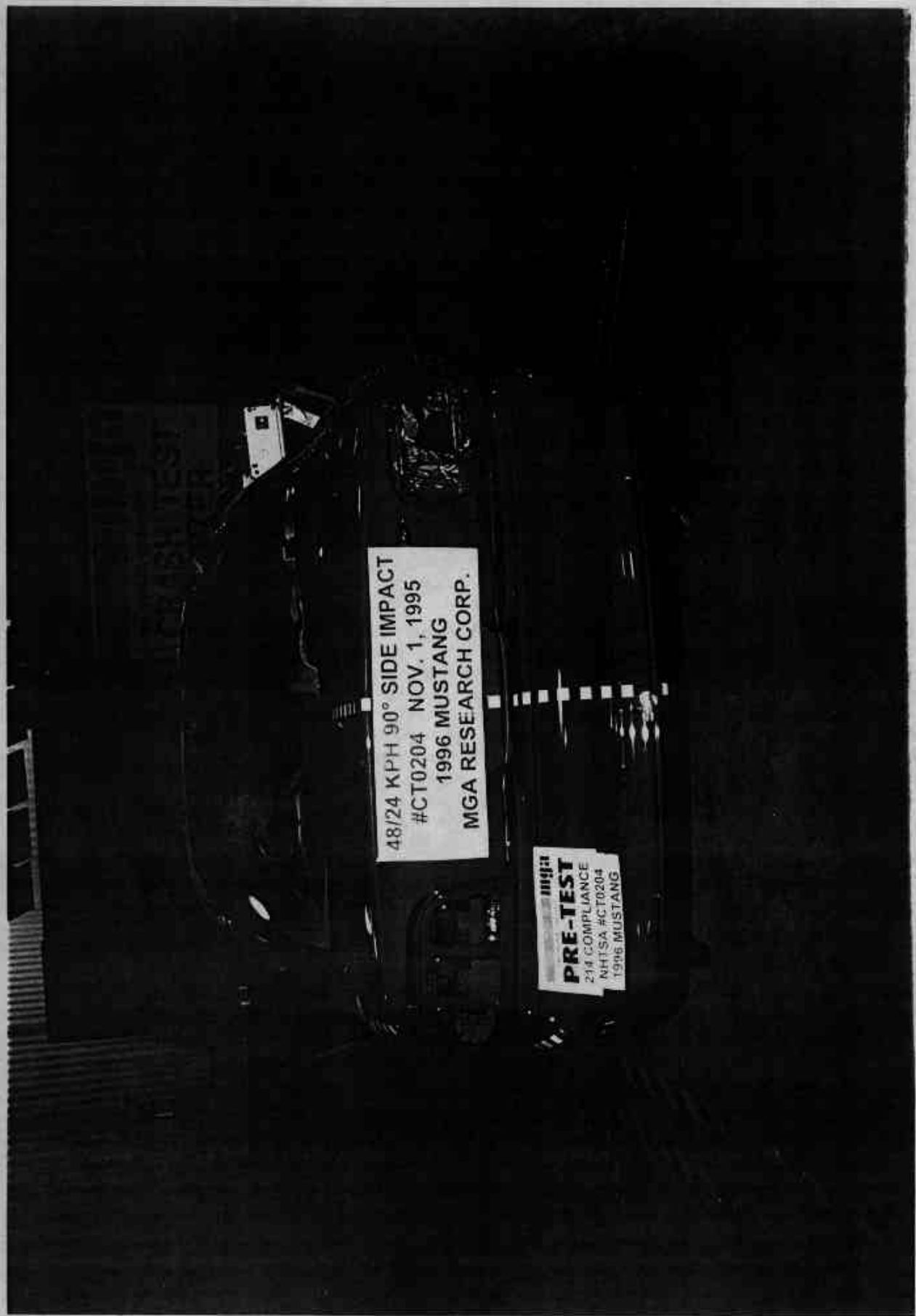


Photo No. A-3 - Pre-Test Rear View of Test Vehicle

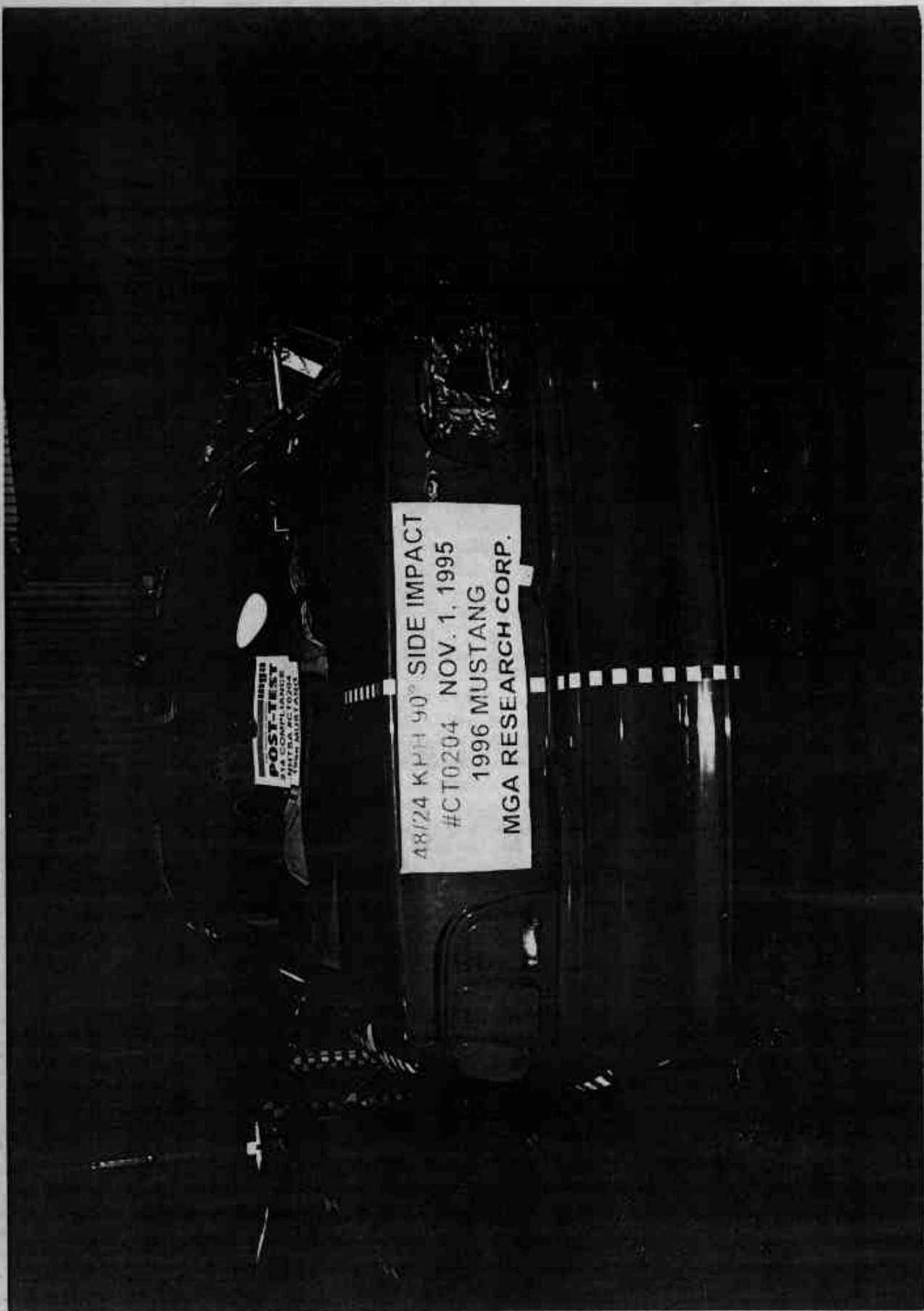


Photo No. A-4 - Post-Test Rear View of Test Vehicle

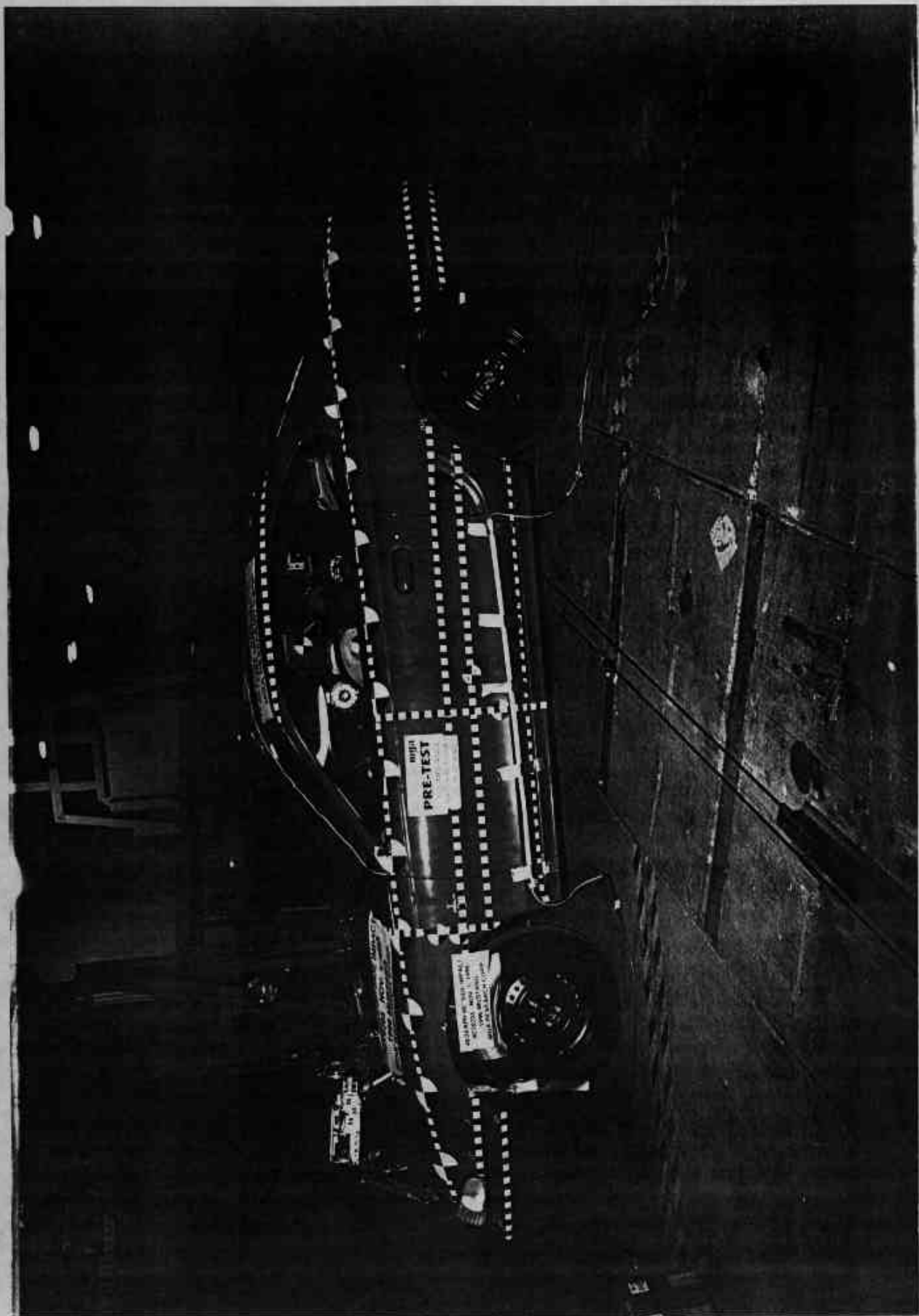


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

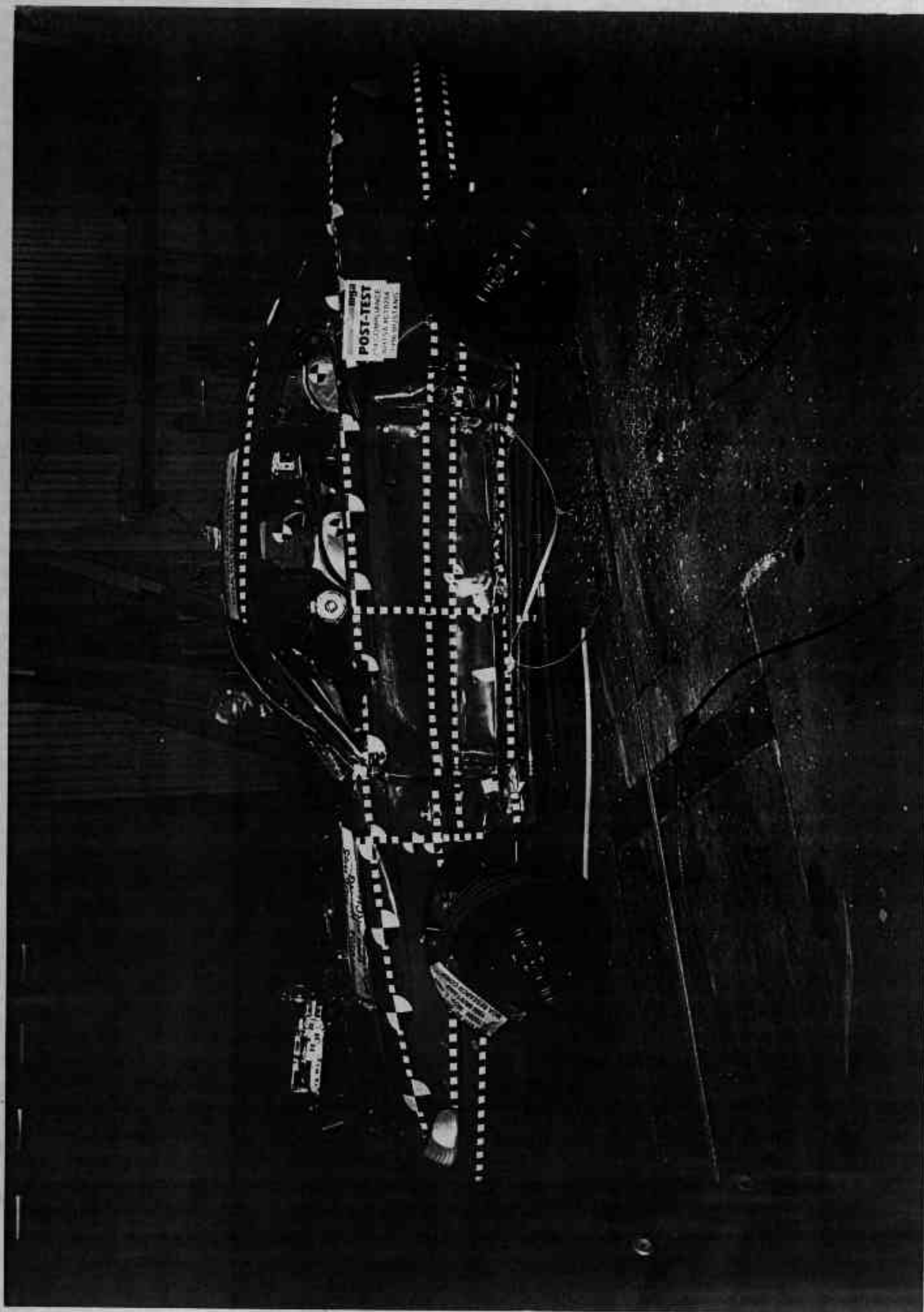


Photo No. A-6 - Post-Test Left Side View of Test Vehicle



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

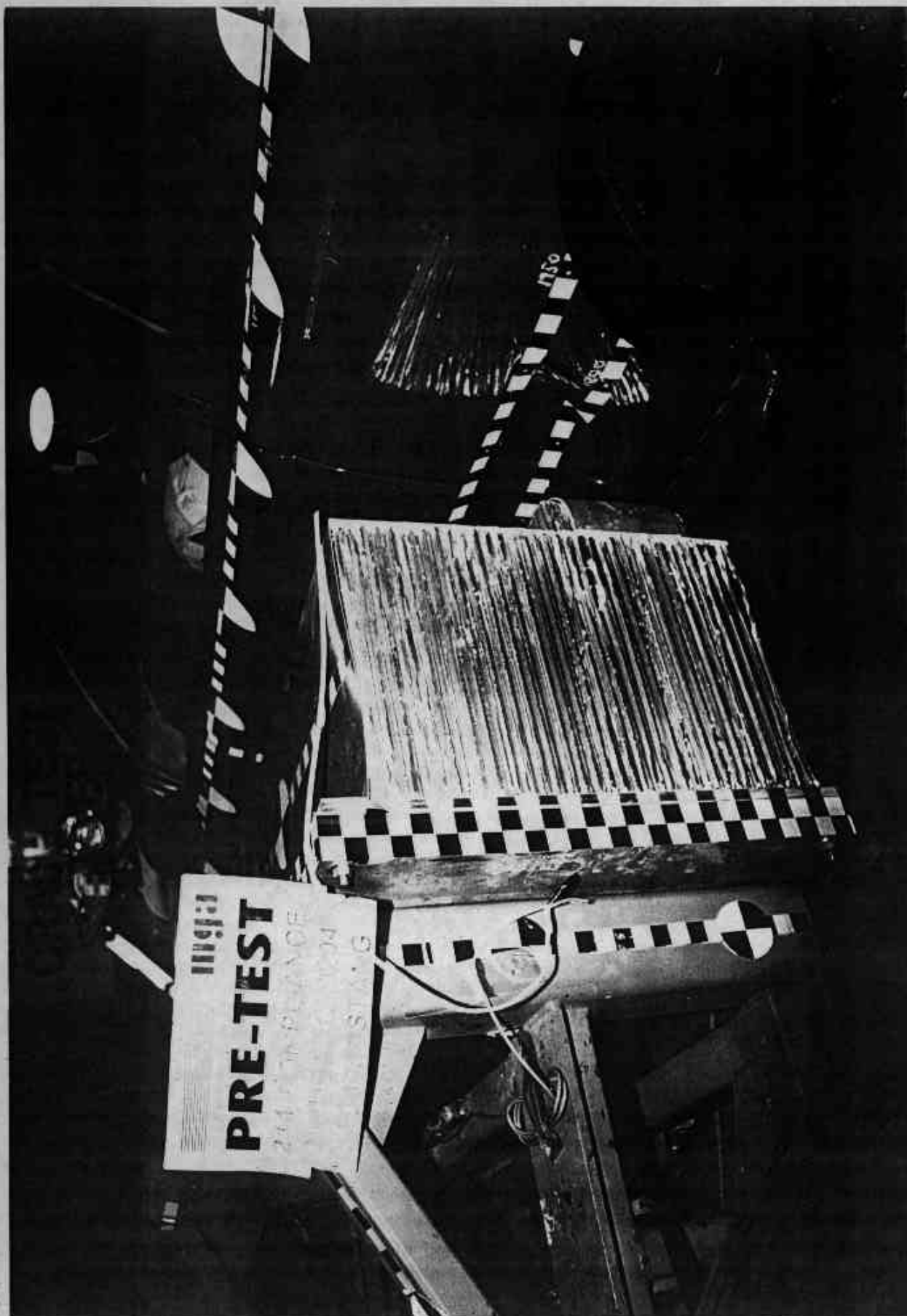


Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (right side)

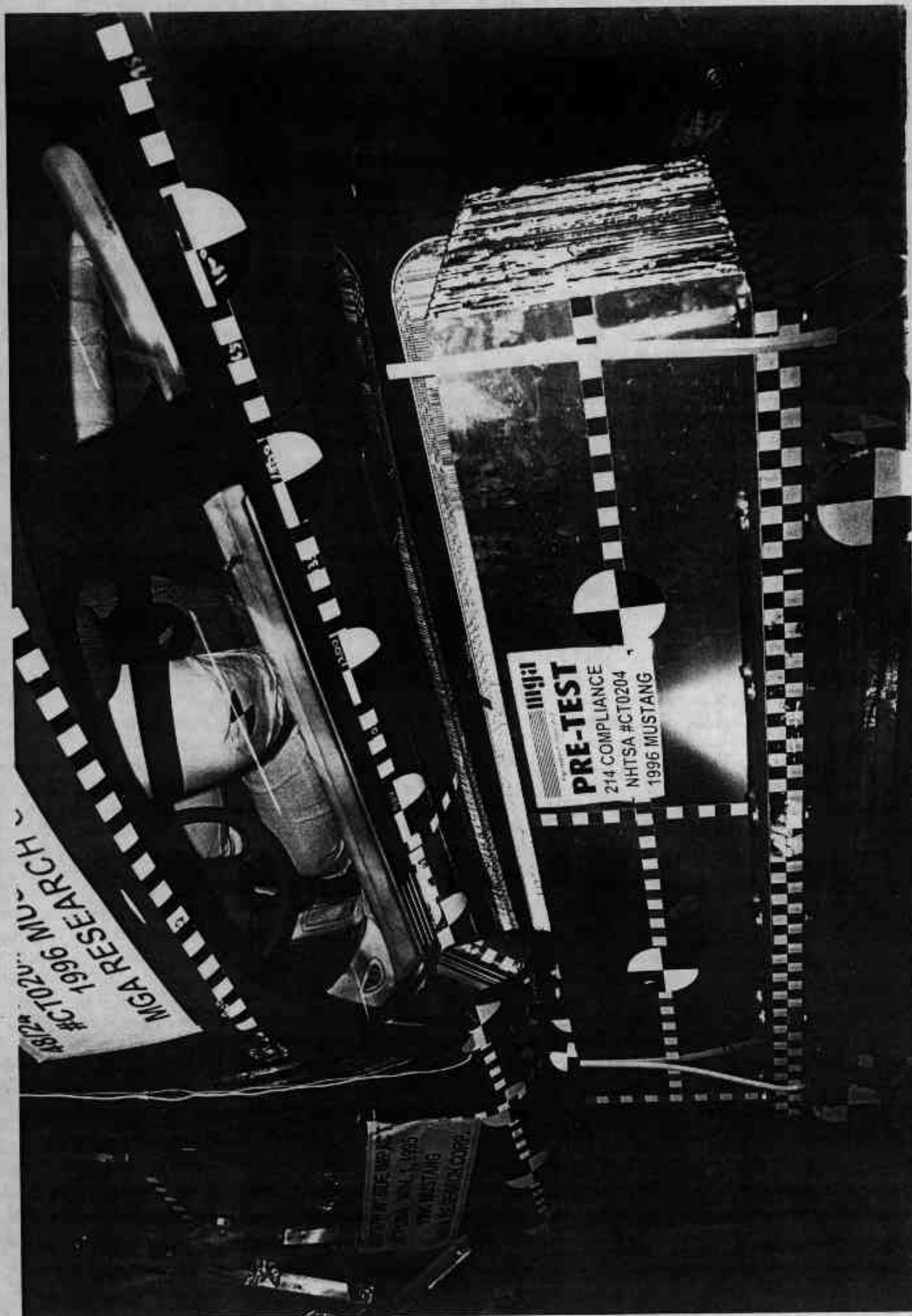


Photo No. A-9 - Pre-Test MDB Positioned Against Vehicle Overhead View

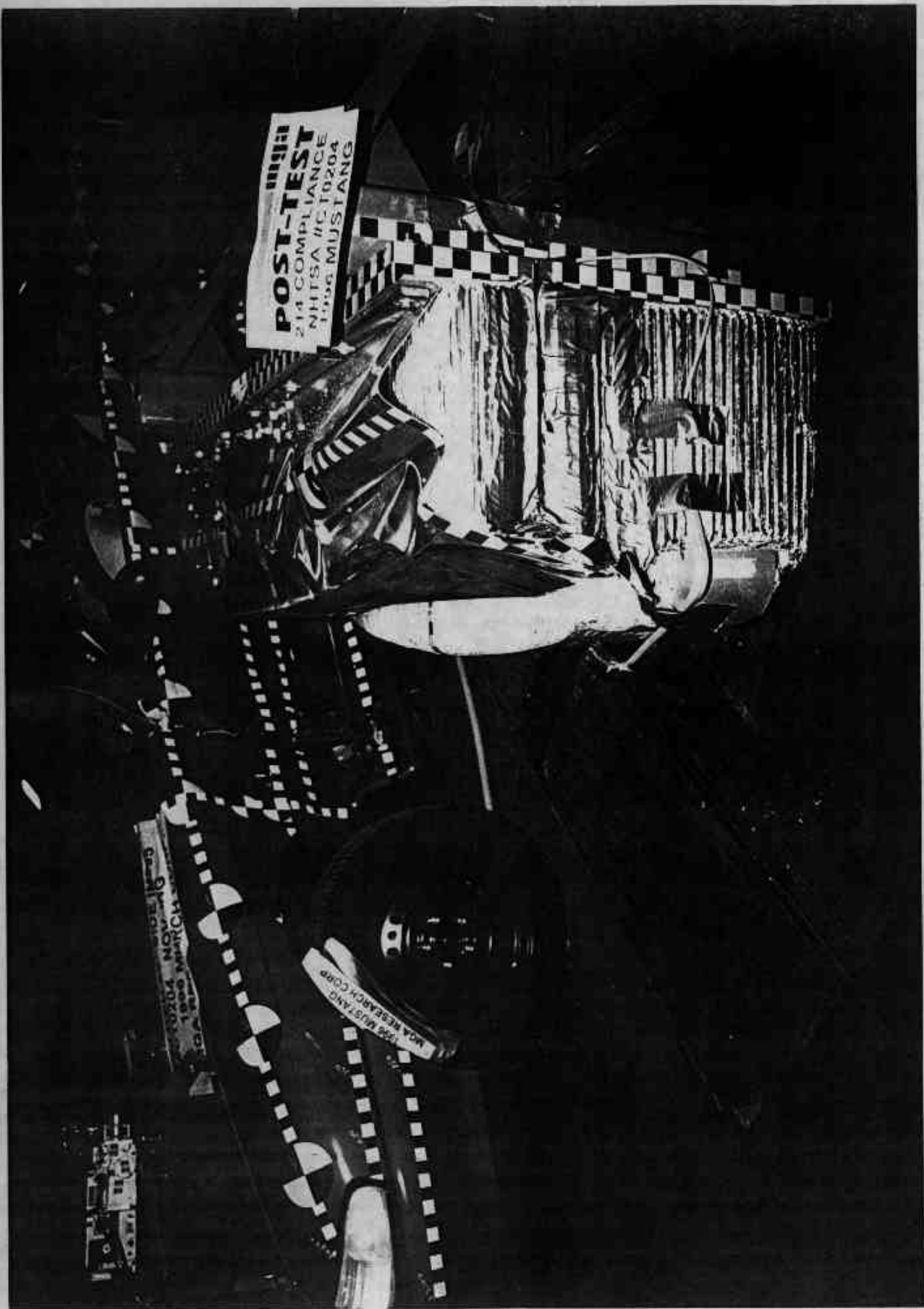


Photo No. A-10 - Post-Test MDB Positioned Against Vehicle (left side)

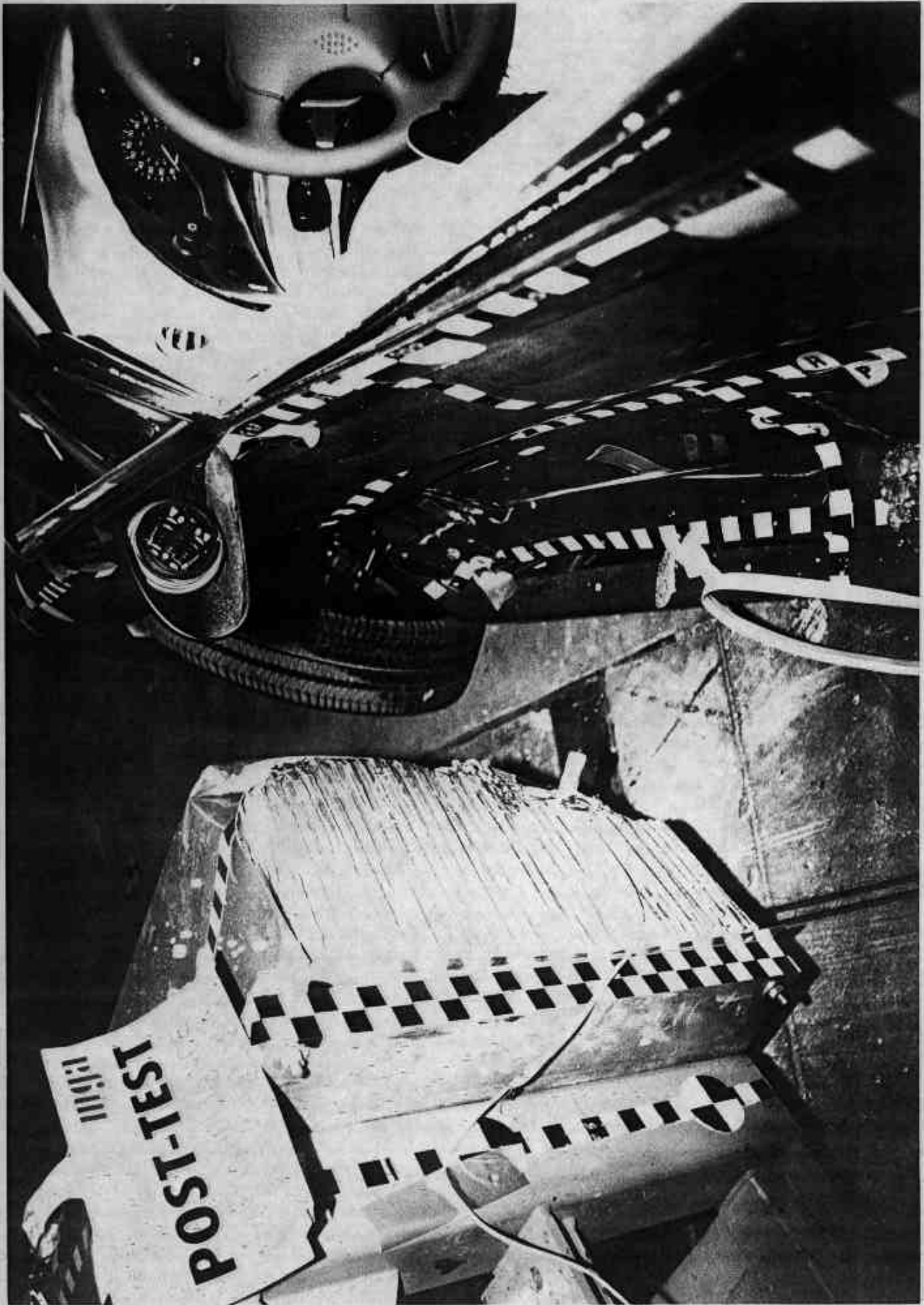


Photo No. A-11 - Post-Test MDB Positioned Against Vehicle (right side)

A-11

#001 1996 MUSTANG
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POST-TEST SIDE IMPACT
FEB 2004 NOV 2005
1996 MUSTANG
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POST-TEST
NHTSA #C10204
1996 MUSTANG
MGA

A-12

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

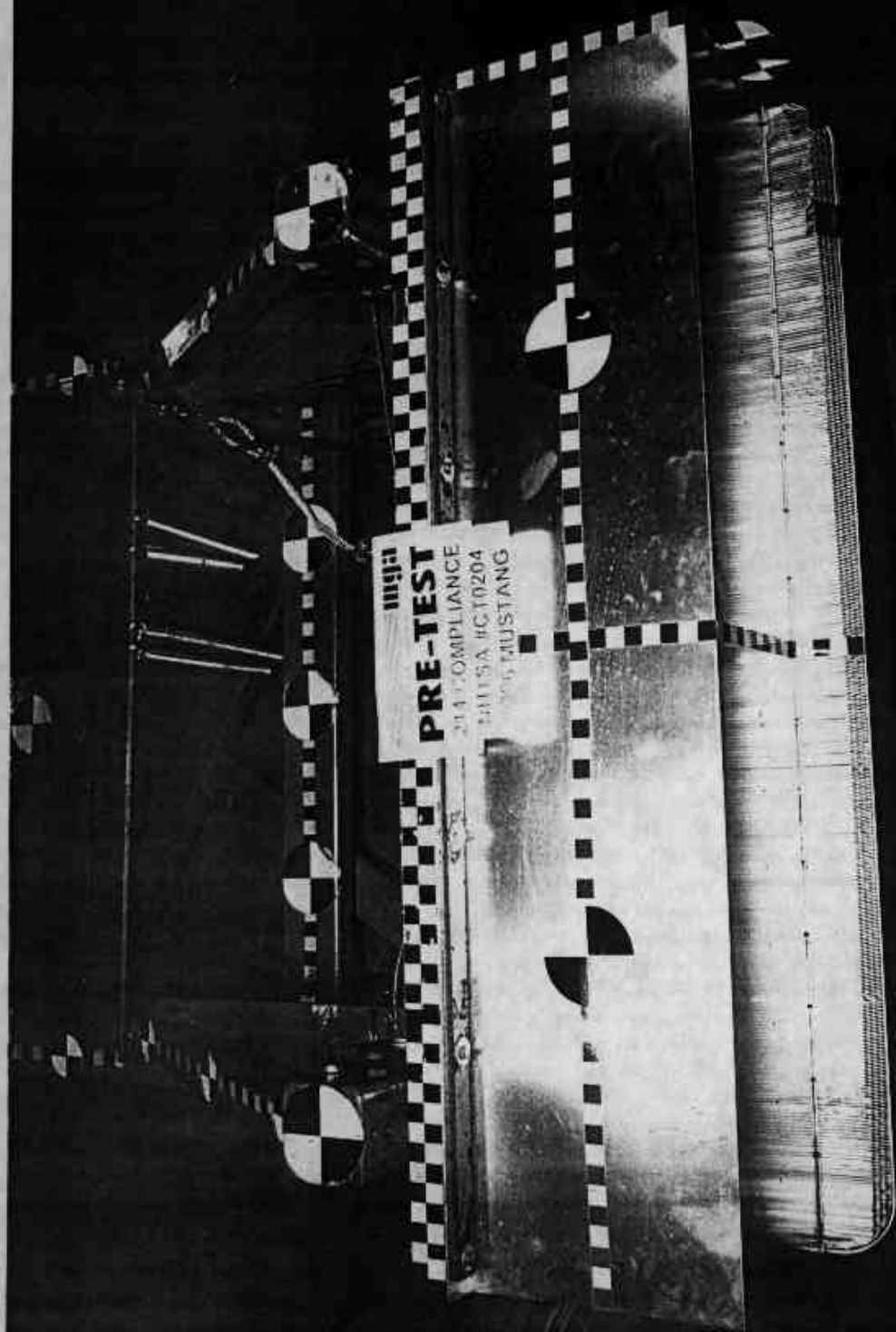


Photo No. A-13 - Pre-Test MDB Top View

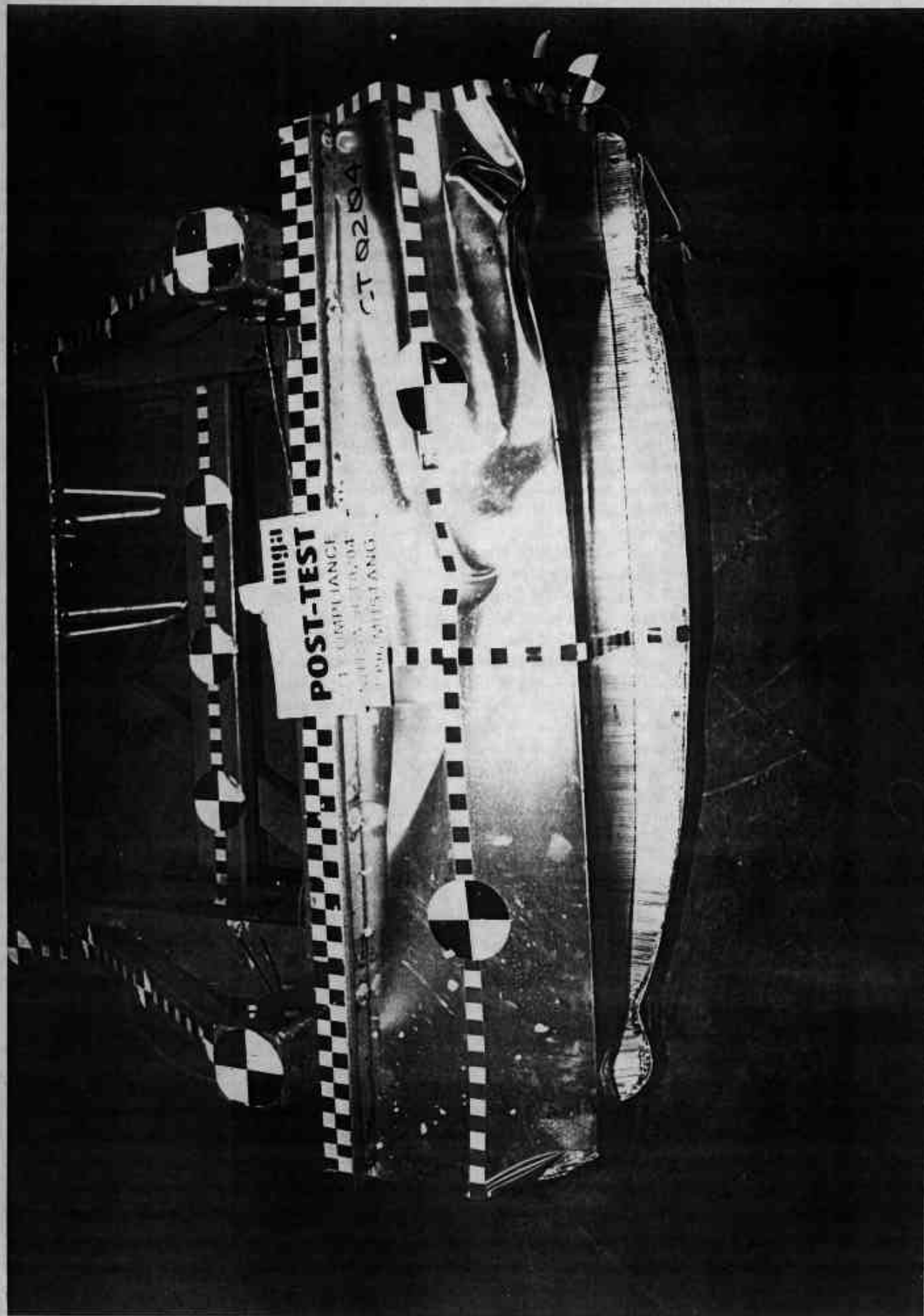


Photo No. A-14 - Post-Test MDB Top View

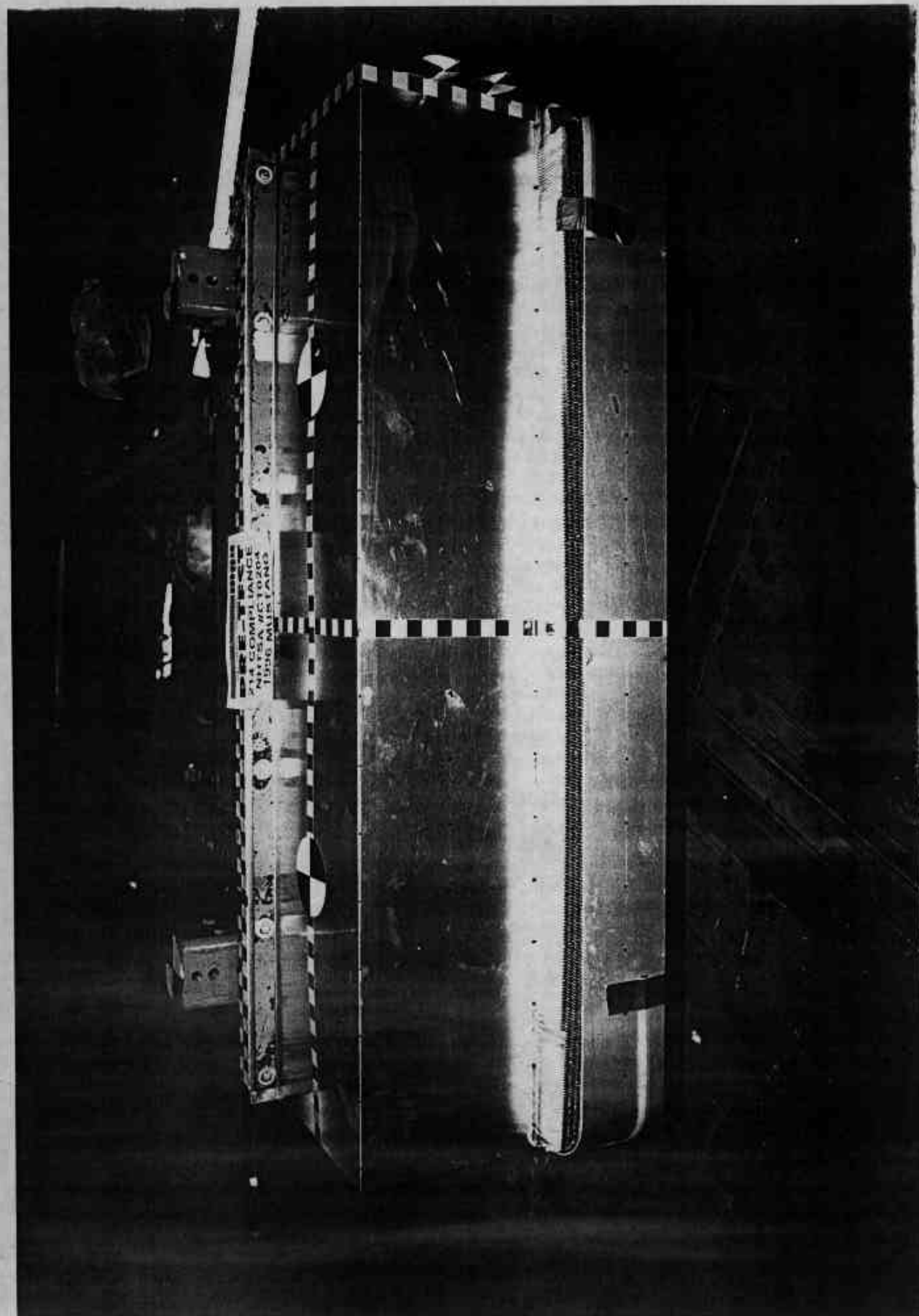


Photo No. A-15 - Pre-Test MDB Front View

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214 COMPLIANCE
NHTSA #C10104
FORD MUSTANG

A-16

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

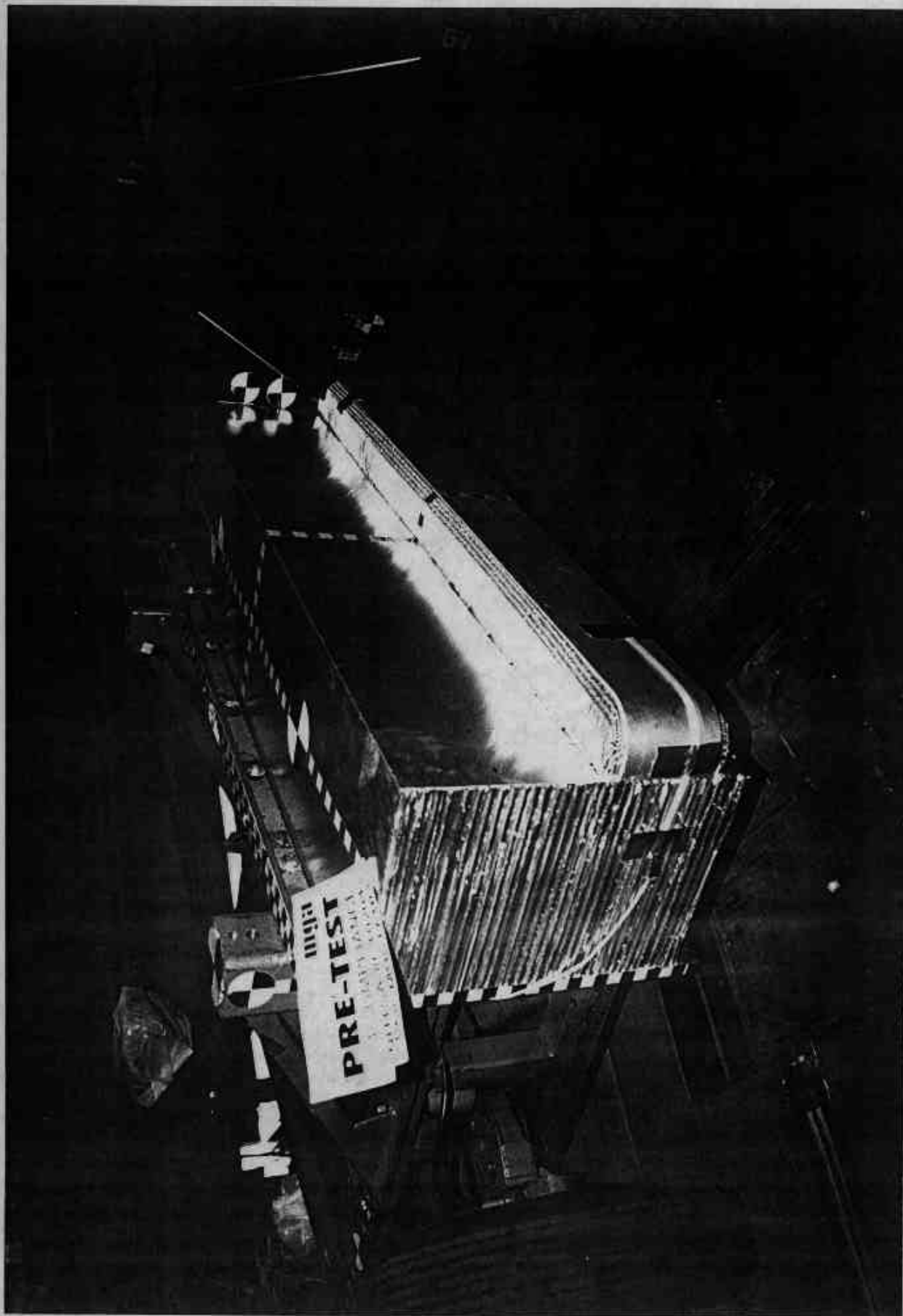


Photo No. A-17 - Pre-Test MDB Right Side View

A-17

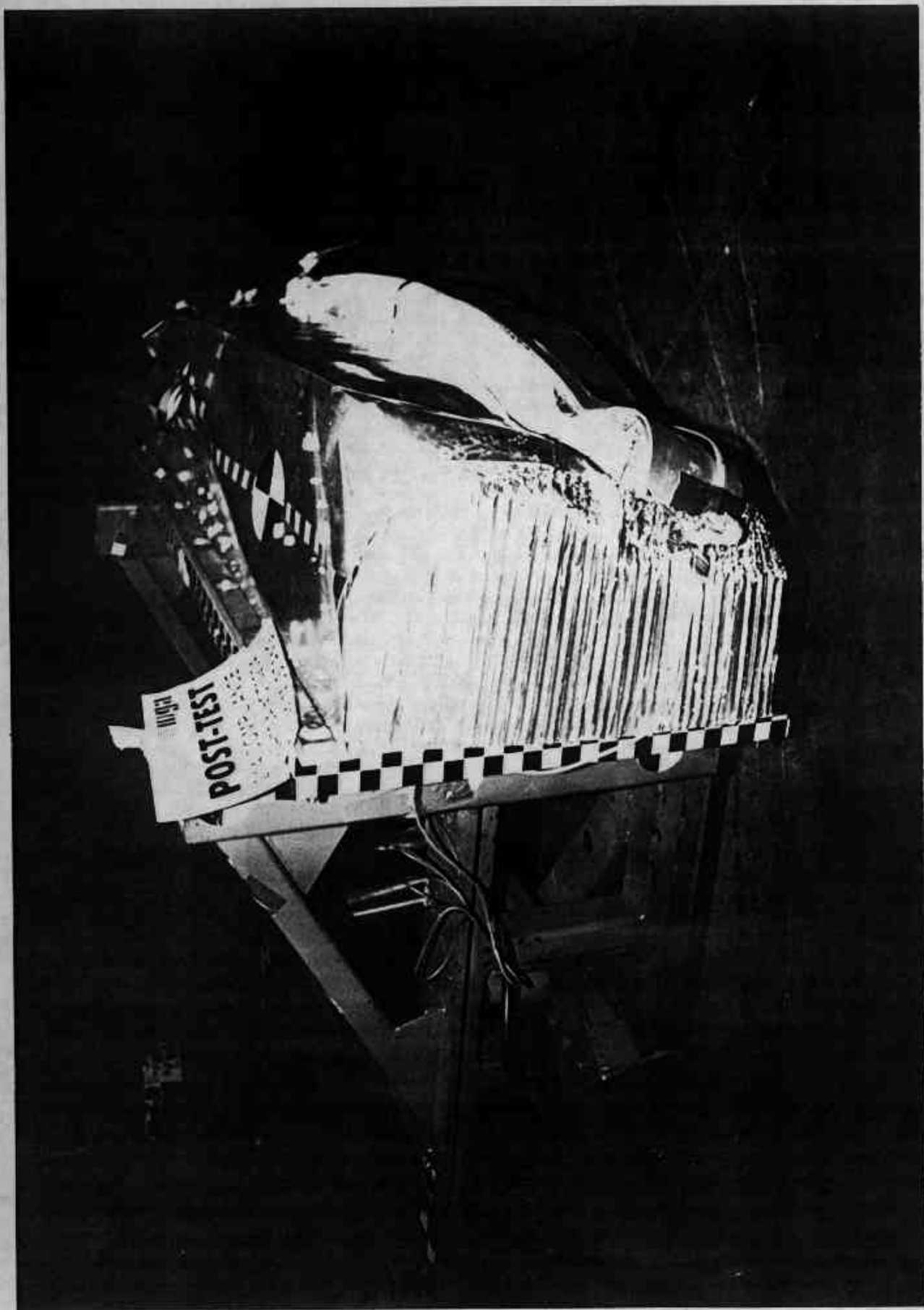


Photo No. A-18 - Post-Test MDB Right Side View

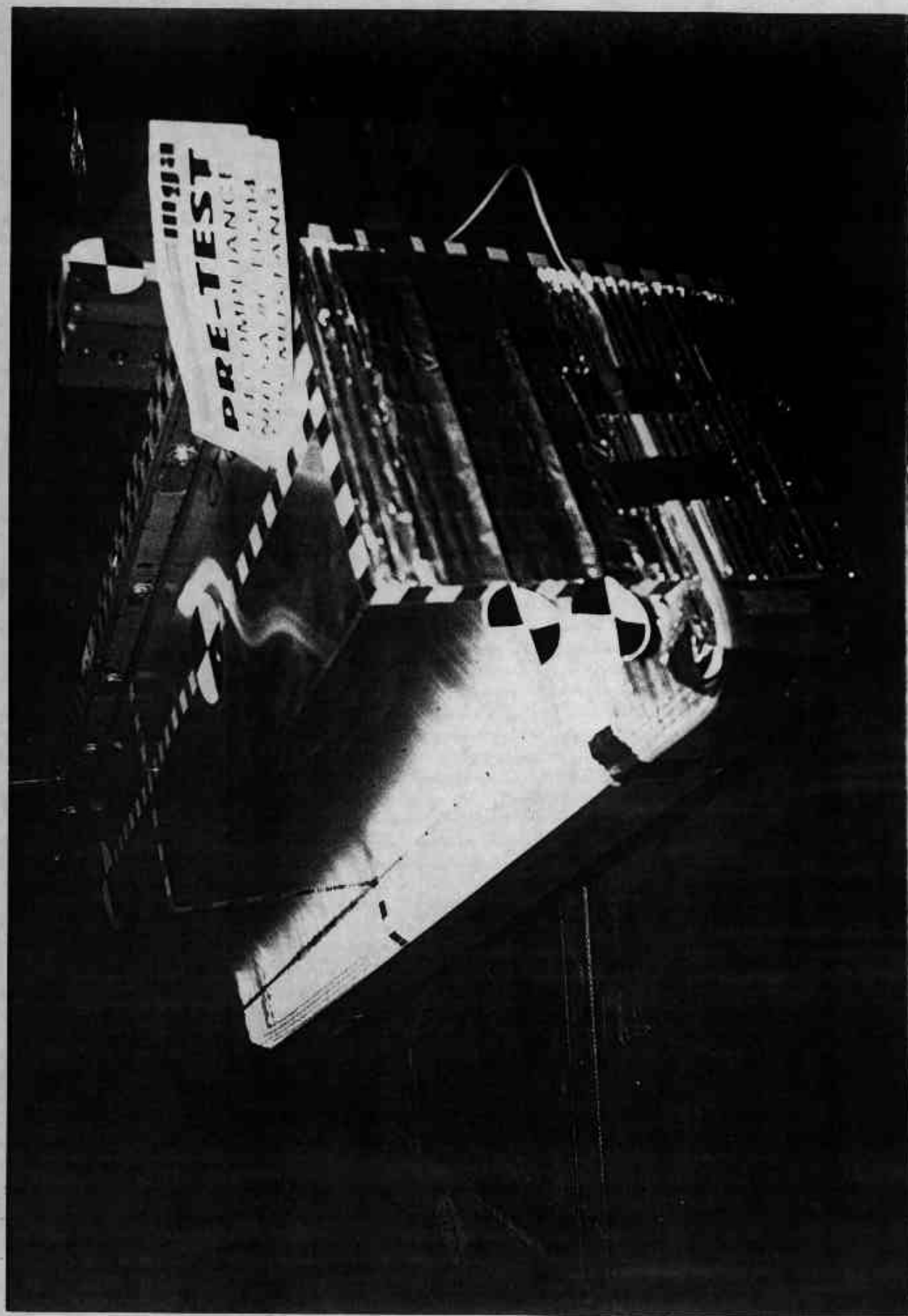


Photo No. A-19 - Pre-Test MDB Left Side View

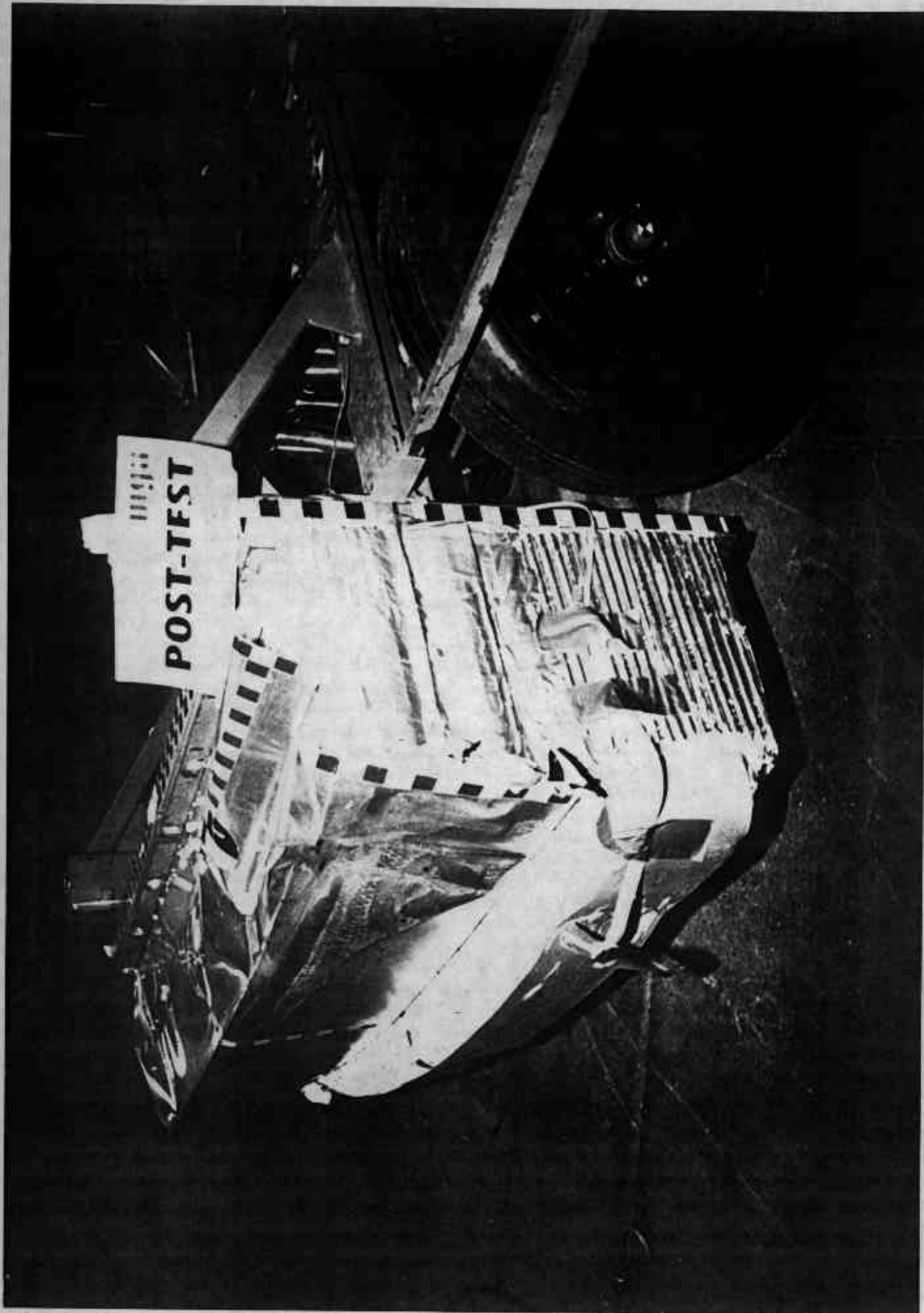


Photo No. A-20 - Post-Test MDB Left Side View

A-20



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



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

A-22

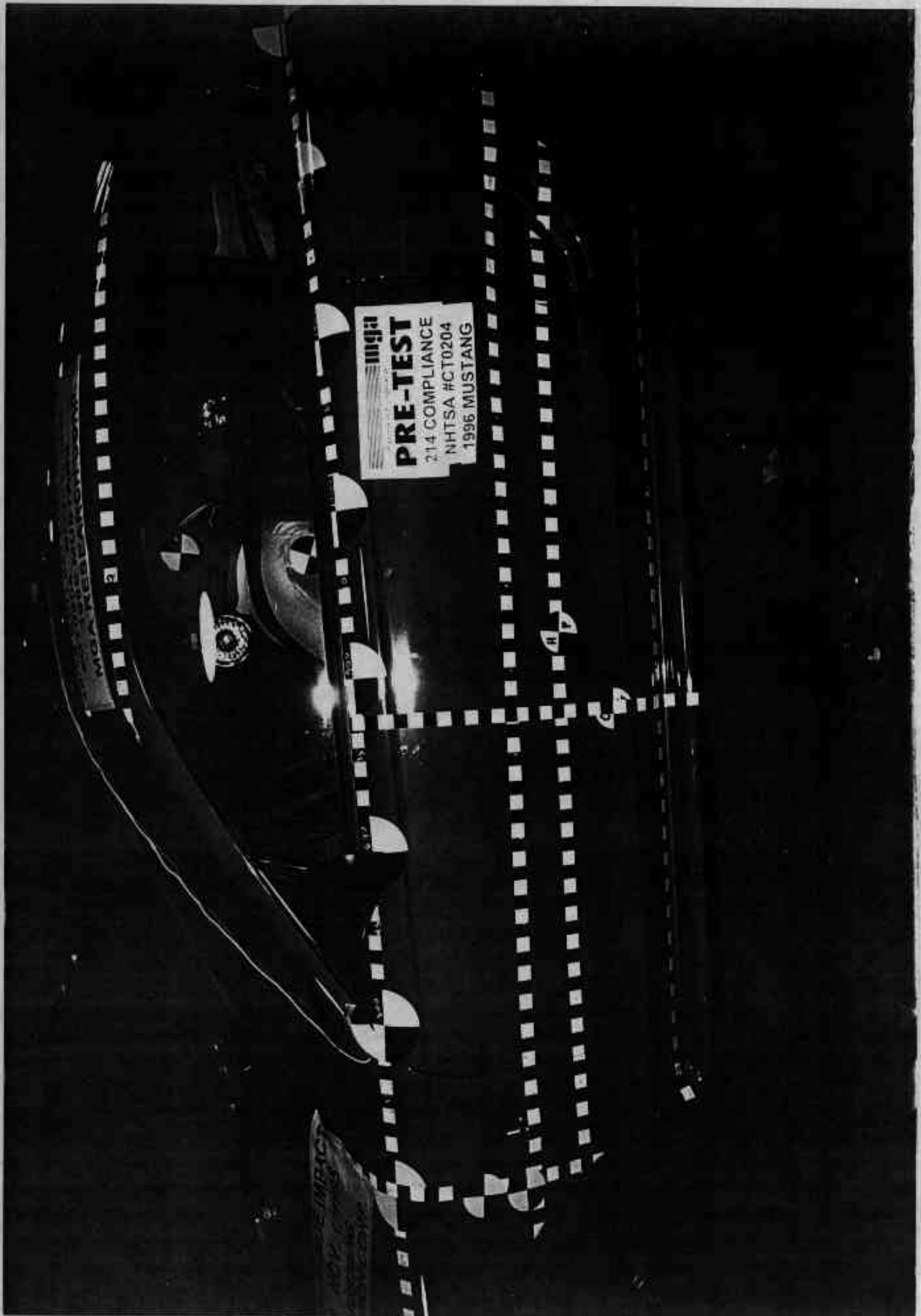


Photo No. A-23 - Pre-Test Driver Dummy Left Side View

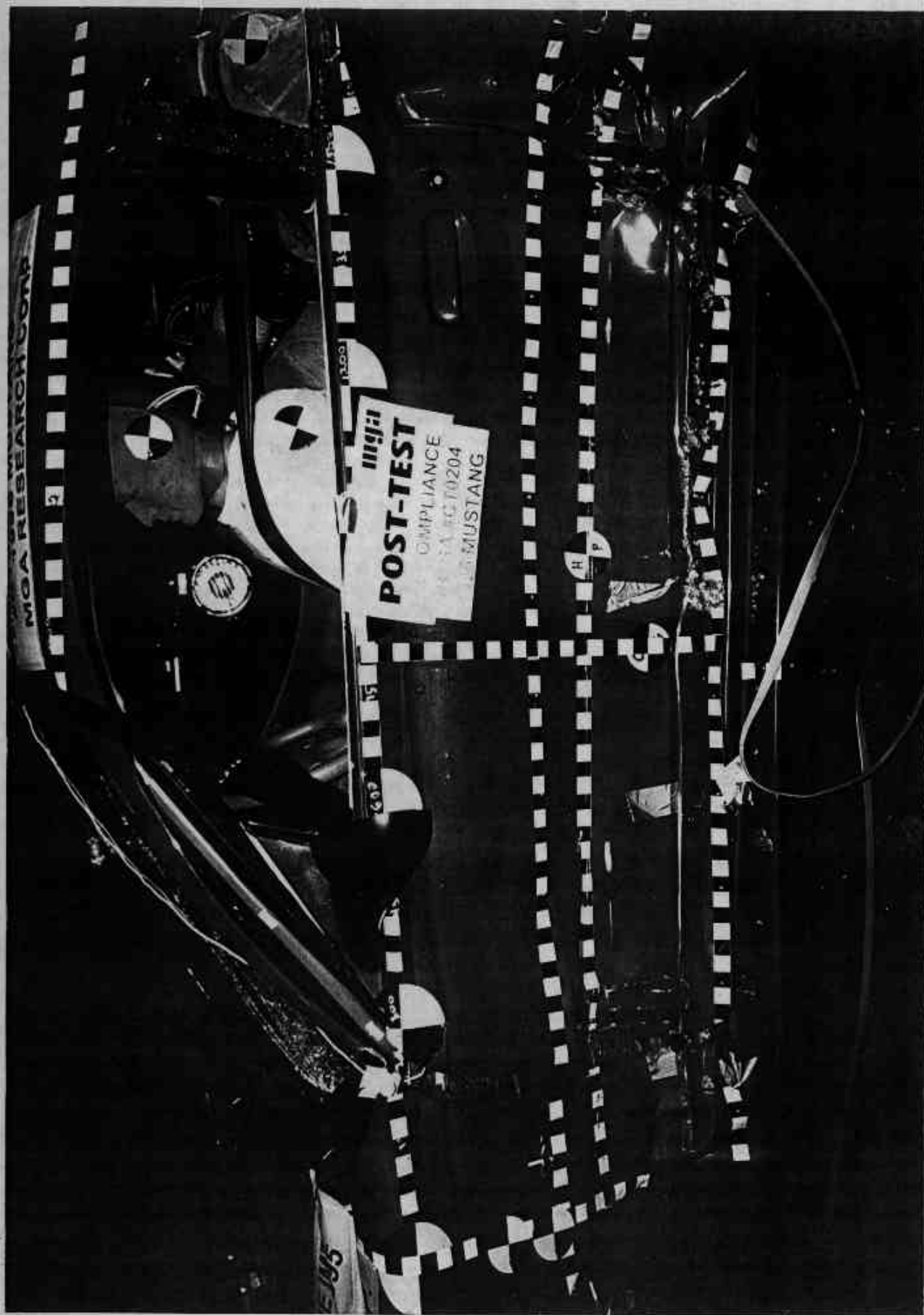


Photo No. A-24 - Post-Test Driver Dummy Left Side View

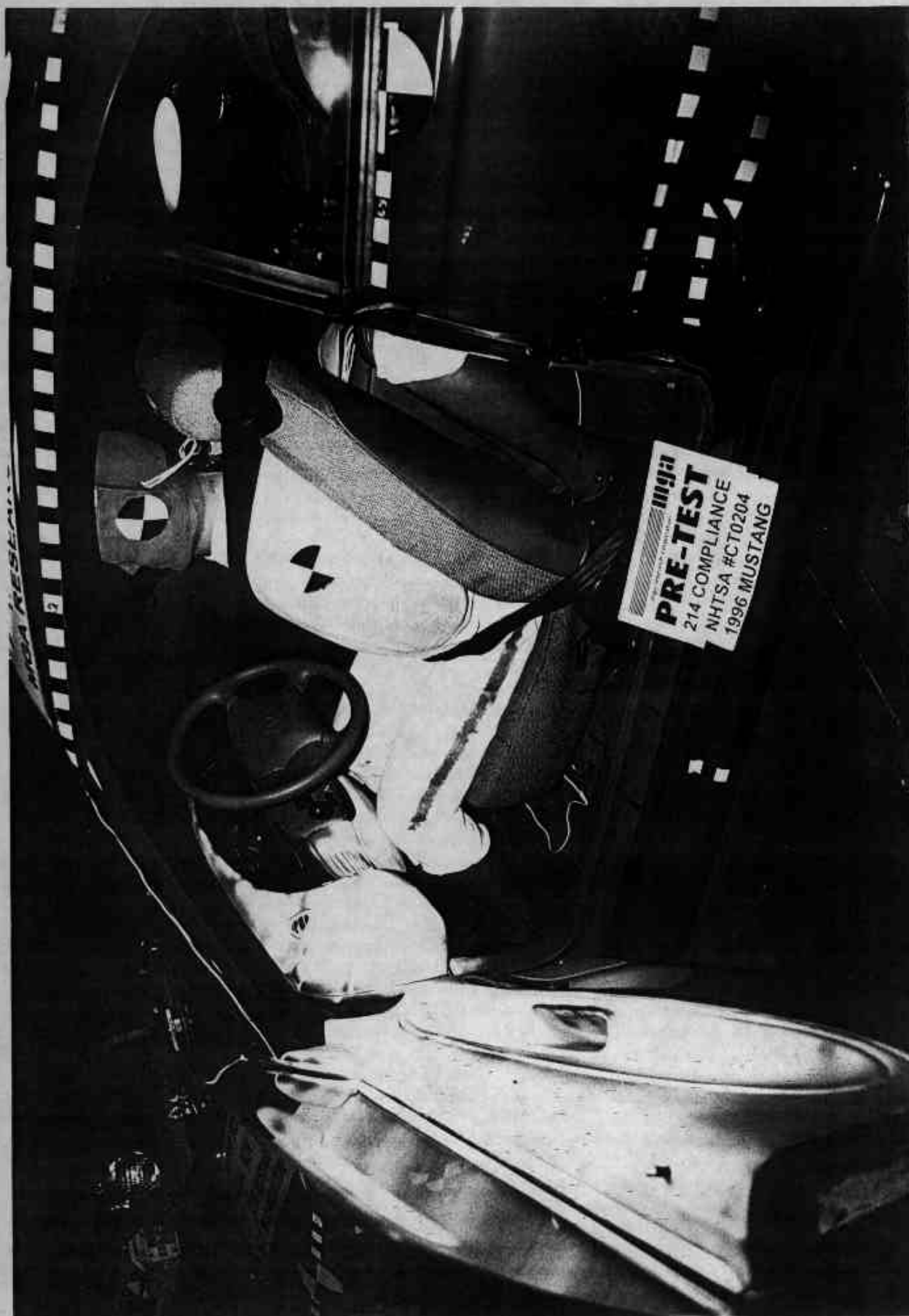


Photo No. A-25 - Pre-Test Driver Dummy Left Side View (Door Open)



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



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

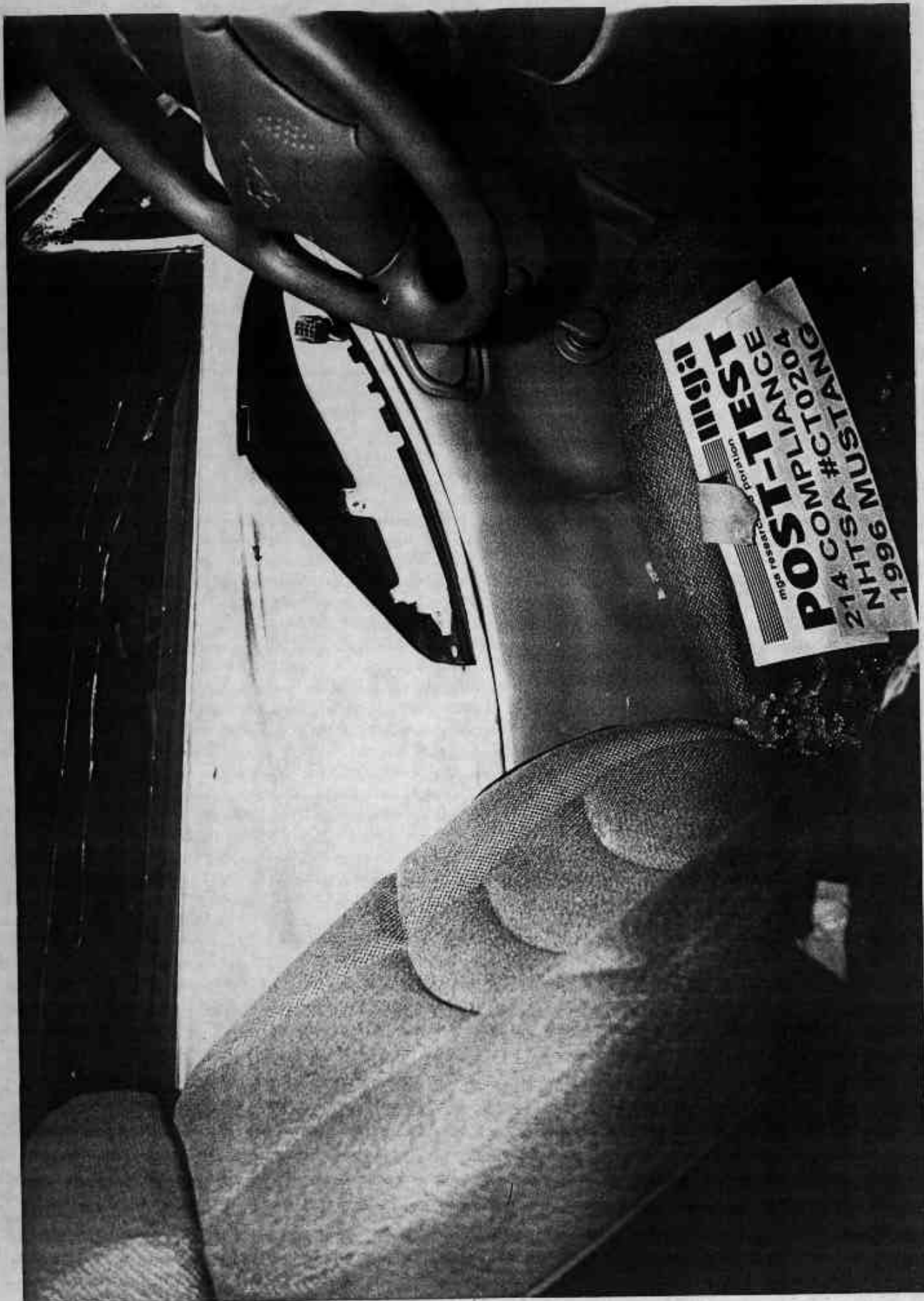


Photo No. A-28 - Post-Test Driver Dummy Contact



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

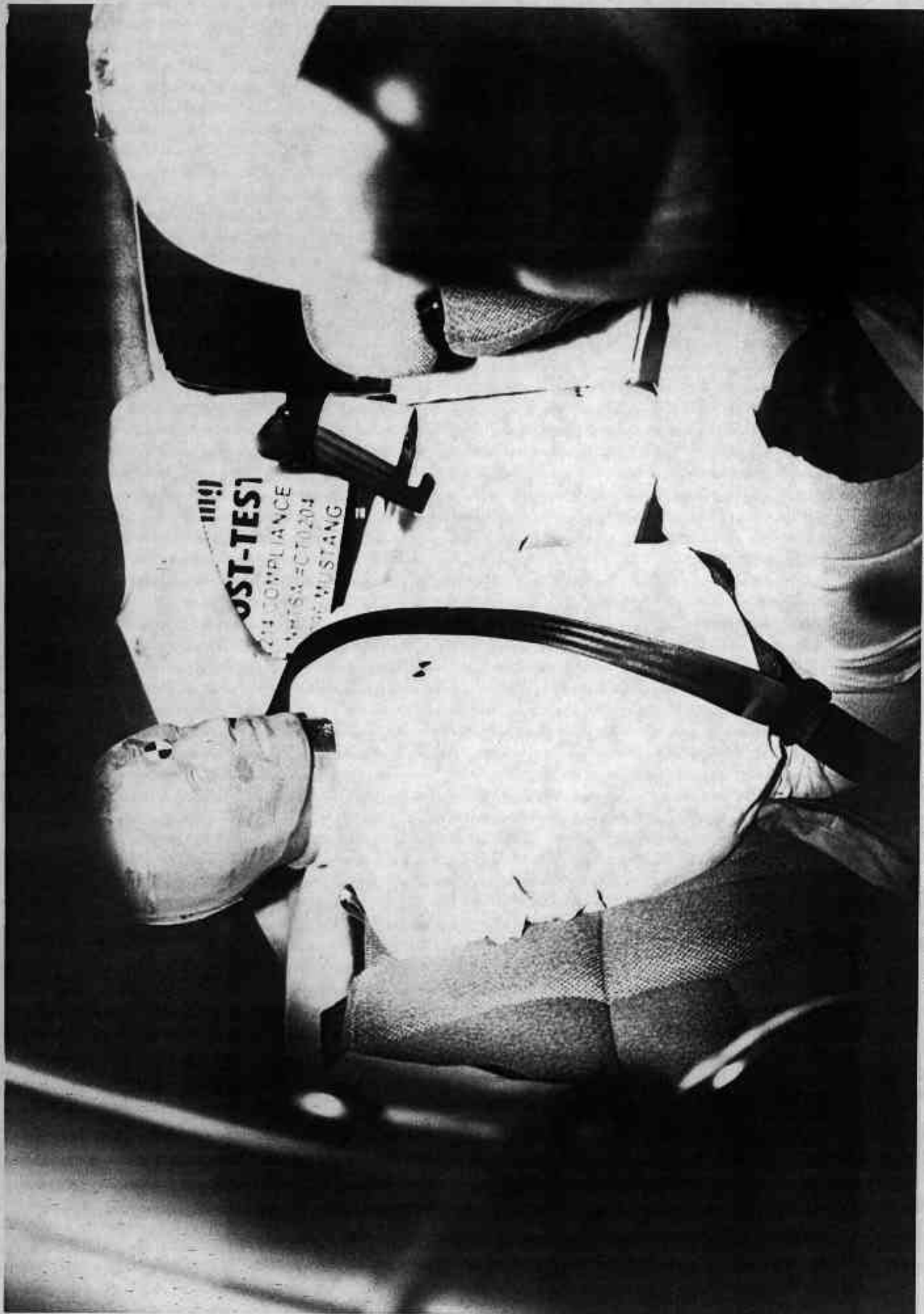
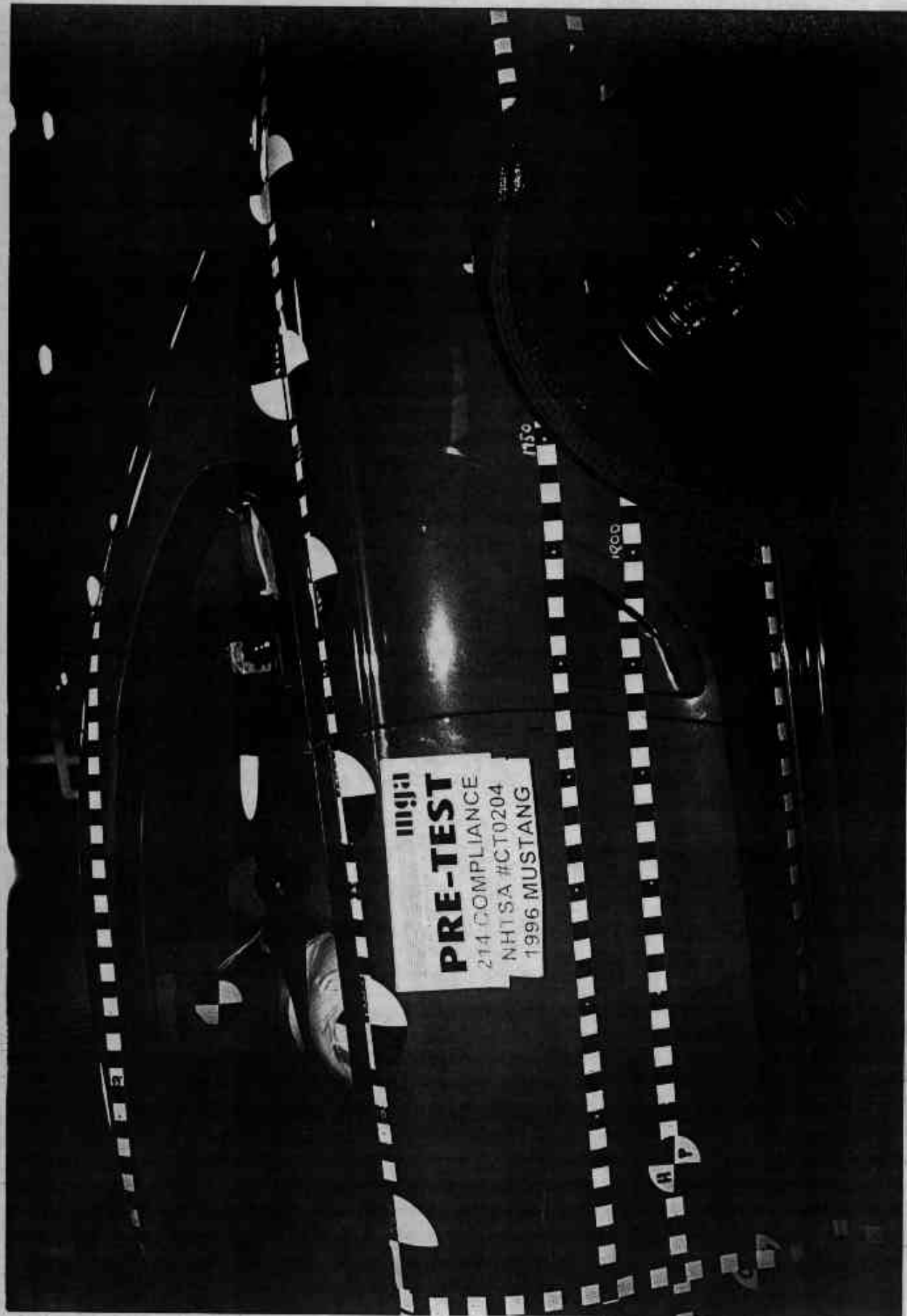


Photo No. A-30 - Post-Test Passenger Dummy Right Side View

A-30



A-31

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

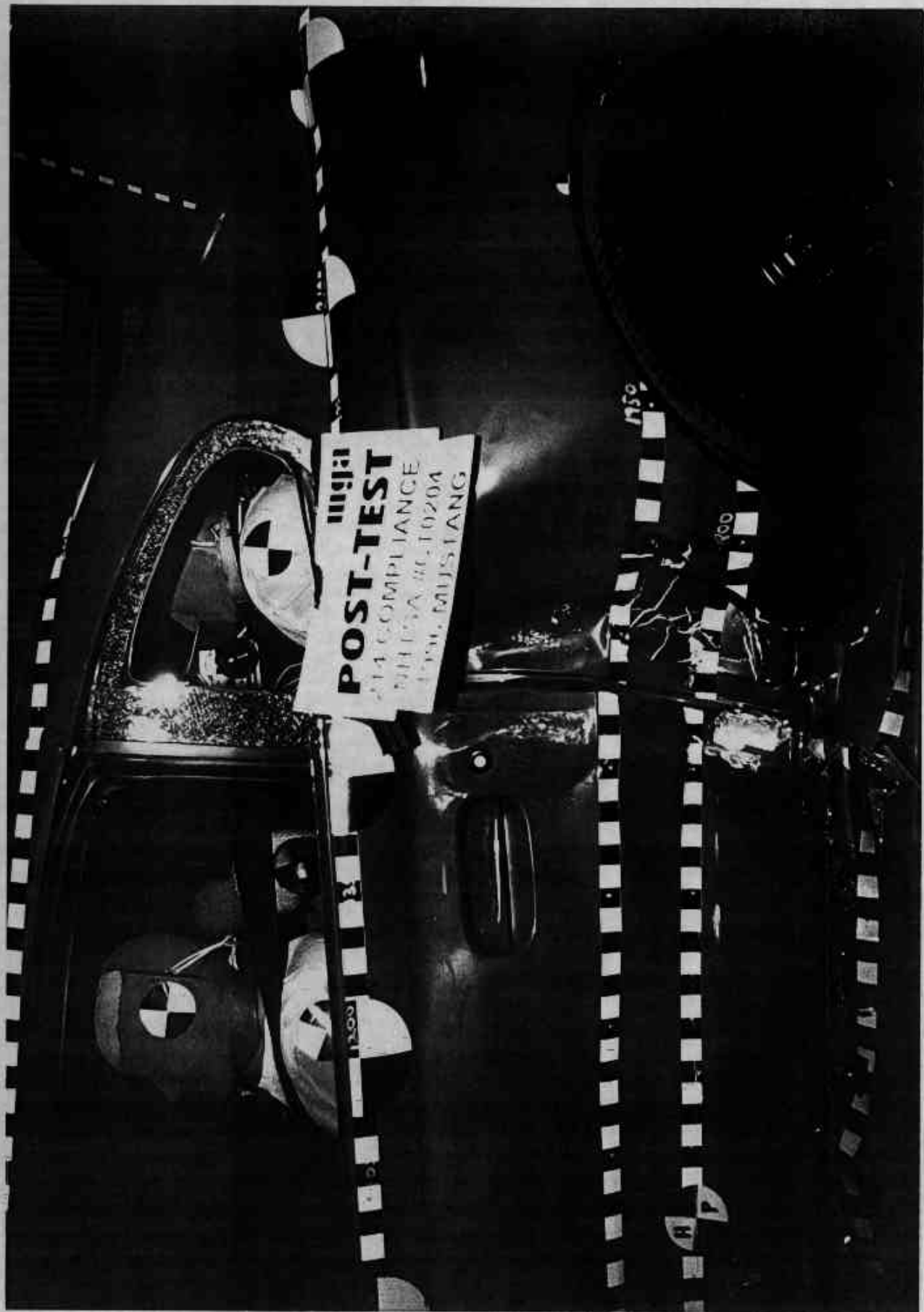


Photo No. A-32 - Post-Test Passenger Dummy Left Side View



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

A-33



Photo No. A-34 - Post-Test Passenger Dummy Shoulder and Door Top View

A-34



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



Photo No. A-36 - Post-Test Passenger Dummy Contact

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NHTSA #CT0204

1996 MUSTANG

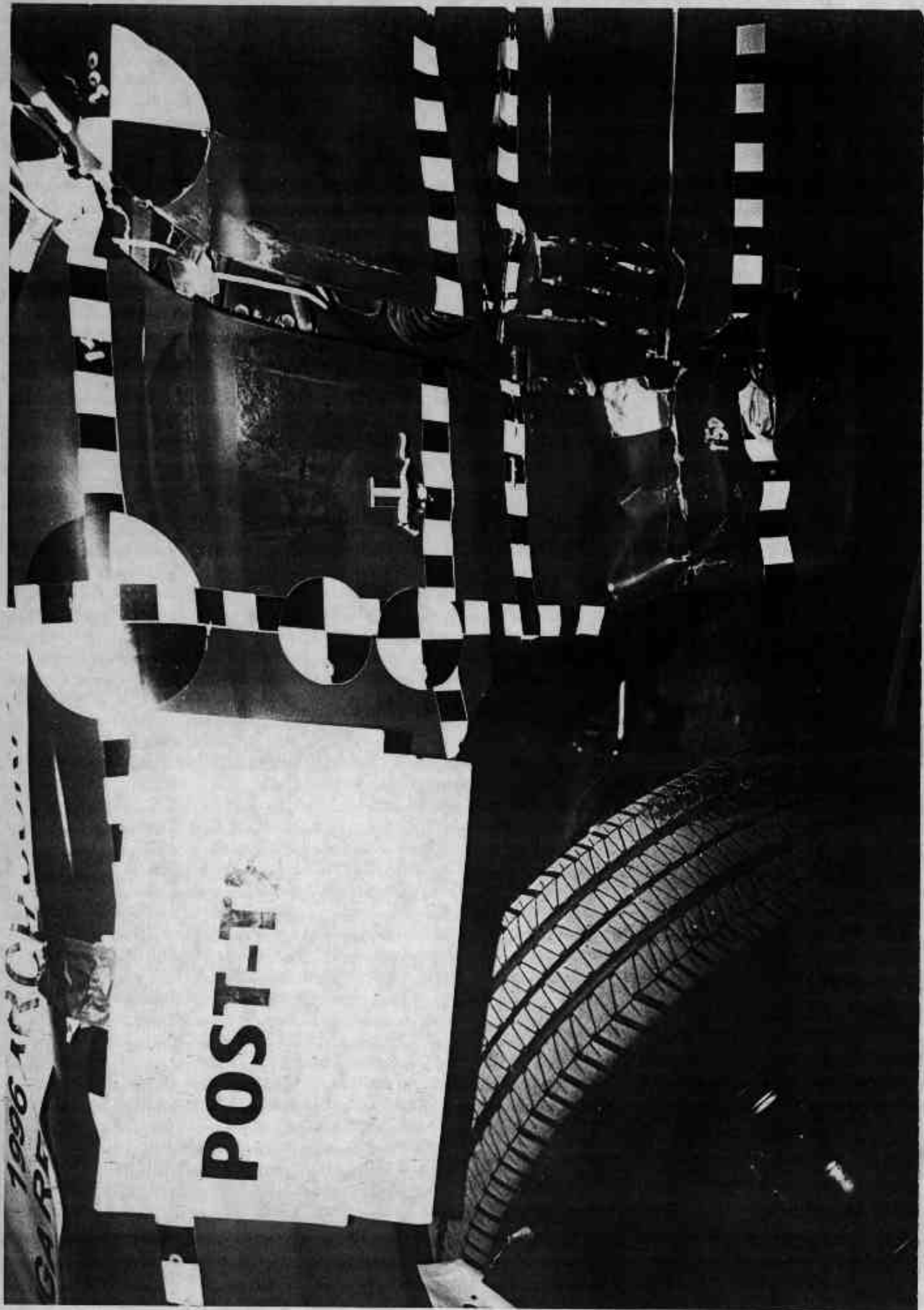
48/24 HHT 90° SIDE IMPACT

#CT0204 NOV. 1, 1995

1996 MUSTANG

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



A-38

Photo No. A-38 - Post-Test Left Front Impact Point on Vehicle

MFD. BY FORD MOTOR CO. IN U.S.A.
GVWR: 4291LB/1946KG

DATE: 09/95

FRONT GAWR: 2315LB

1050KG

REAR GAWR: 2002LB

908KG

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

VIN: 1FALP4042TF110977

TYPE: PASSENGER

F0346
R0131



E9

EXTERIOR PAINT COLORS

BODY	BRK	MLDG.	INT	TRIM	TAPE	R	S	AX	TR
BA2	1	CC		Z2		M		8	51EJJ

41

DSO

VF0EB-58204A10-AB

Photo No. A-39 - Vehicle Certification Label

MUSTANG

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

TIRE SIZE DIMENSIONS DES PNEUS	TIRE PRESSURE		PRESSION DES PNEUS	
	FRONT	AVANT	REAR	ARRIÈRE
P205/65R15 92T*	35 PSI lb/po ²	240 kPa	35 PSI lb/po ²	240 kPa
P225/55ZR16* 245/45ZR17*	30 PSI lb/po ²	207 kPa	30 PSI lb/po ²	207 kPa
T125/90R15 T155/70R17 TEMPORAL SPARE/PNEU PROVISOIRE	60 PSI lb/po ²	415 kPa	60 PSI lb/po ²	415 kPa

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

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

MAXIMUM LOAD CHARGE MAXIMALE	OCCUPANTS OCCUPANTS	DISTRIBUTION		BAGAGES
		FRONT AVANT	REAR ARRIÈRE	
700 lb/317 kg	4	2	2	15 kg

FOR SUSTAINED HIGH SPEED, TRAILER TOWING, RECREATIONAL ACCESSORIES
AND TEMPORAL SPARE USAGE - SEE OWNER GUIDE.
HAUTES VITESSES SOUTENUES, REMORQUES, ACCESSOIRES DE PLAISANCE ET
PNEU DE SECOURS PROVISOIRE: CONSULTER LE GUIDE DU PROPRIÉTAIRE.

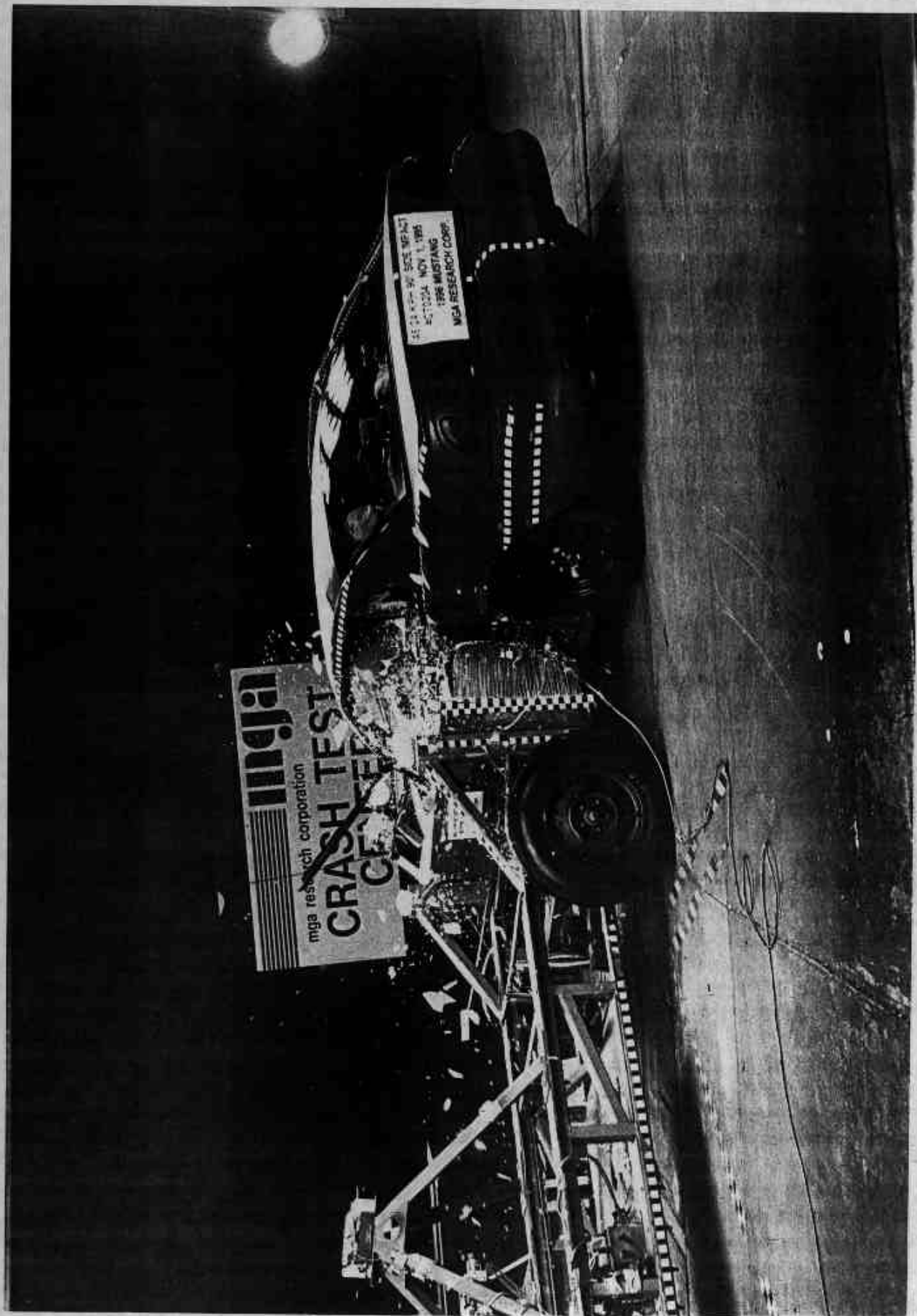


Photo No. A-41 - Impact

A-41

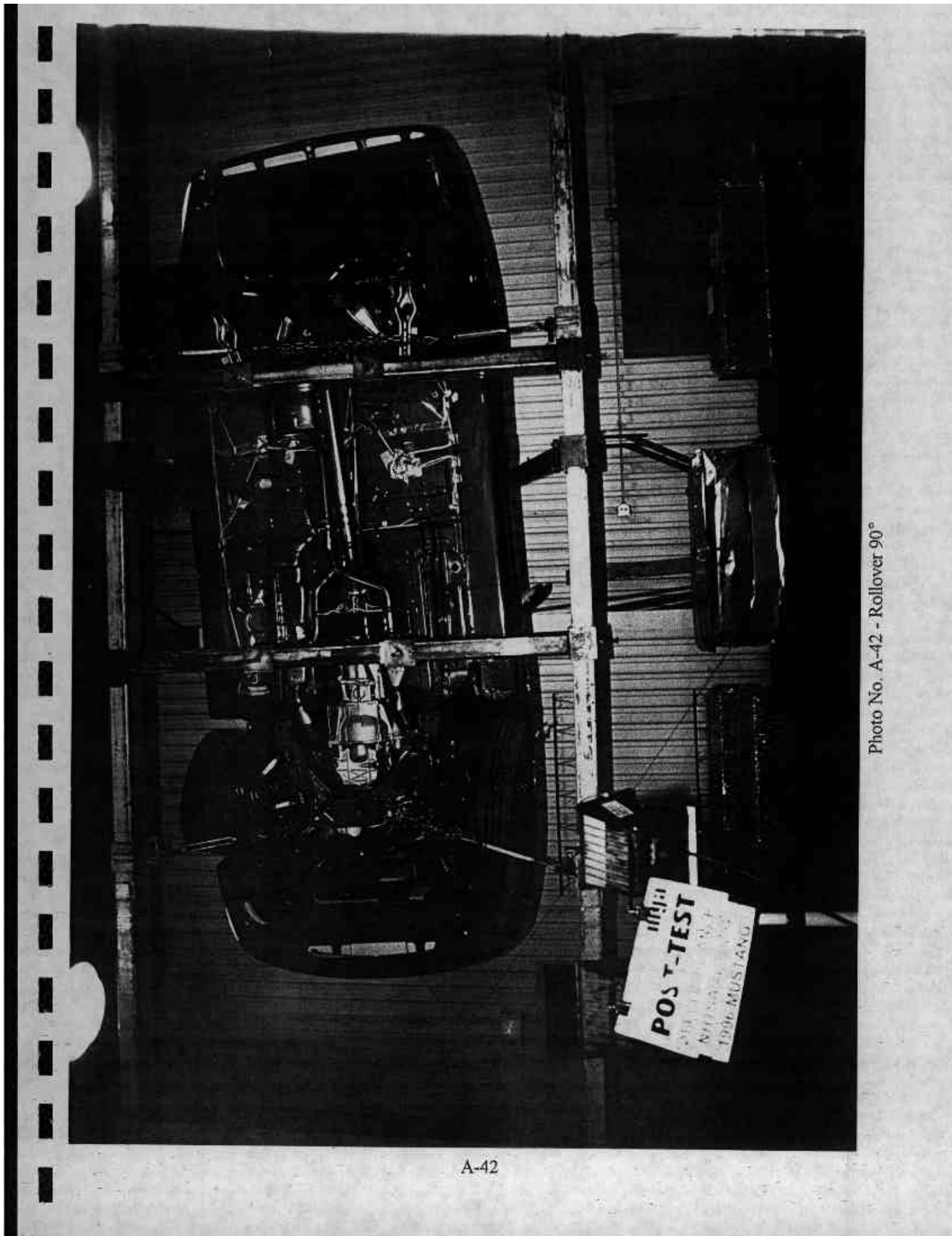


Photo No. A-42 - Rollover 90°

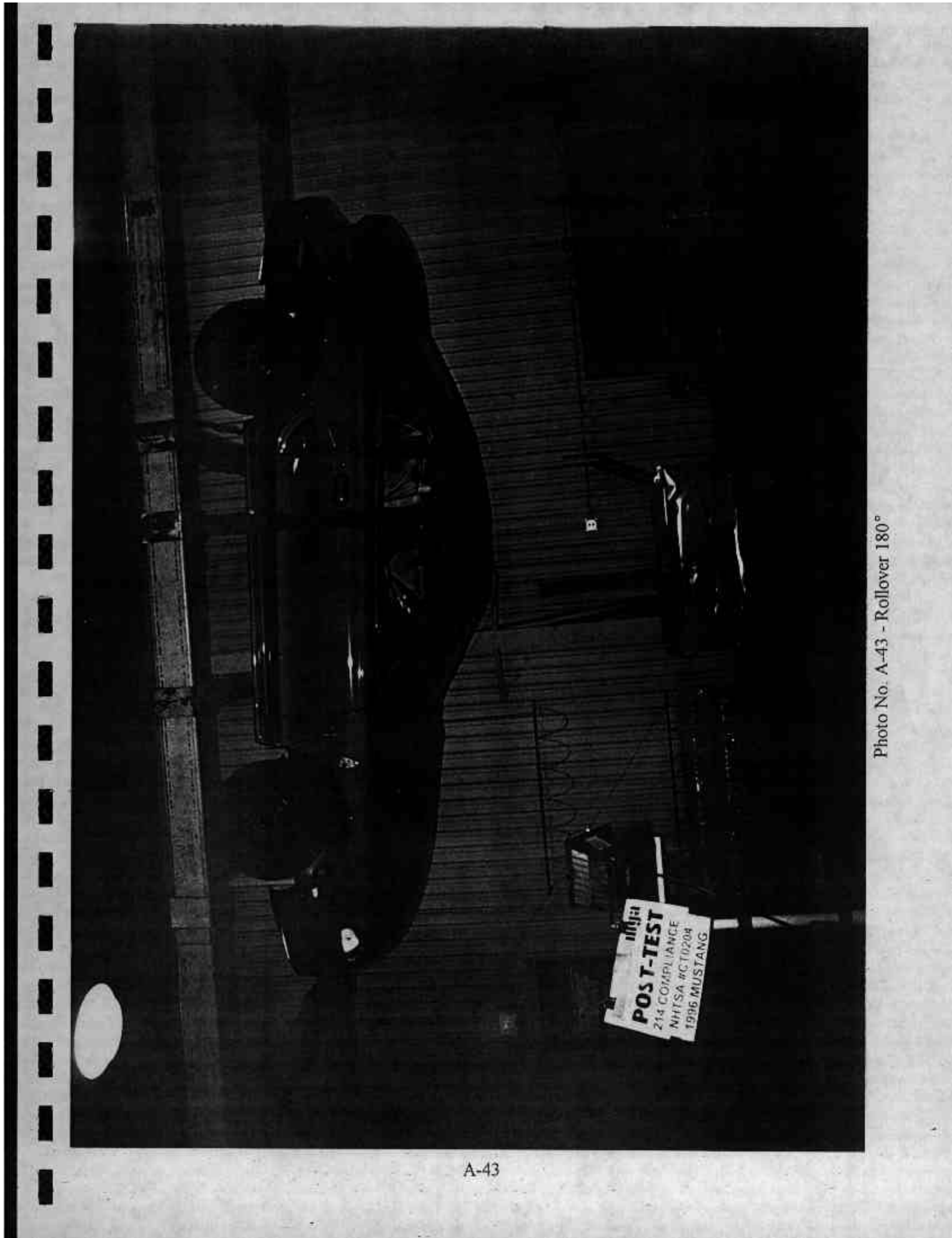


Photo No. A-43 - Rollover 180°



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NHTSA #CT0204
1996 MUSTANG

48/24 KPH 90° SIDE IMPACT
#CT0204 NOV. 1, 1995
1996 MUSTANG
MGA RESEARCH CORP.

PRE-TEST

COMPLIANCE

CHISA #CT0204

1996 MUSTANG

48/24 KPH 90° SIDE IMPACT
#CT0204 NOV. 1, 1995
1996 MUSTANG
MGA RESEARCH CORP.

Photo No. A-46 - Left Front Attitude Point

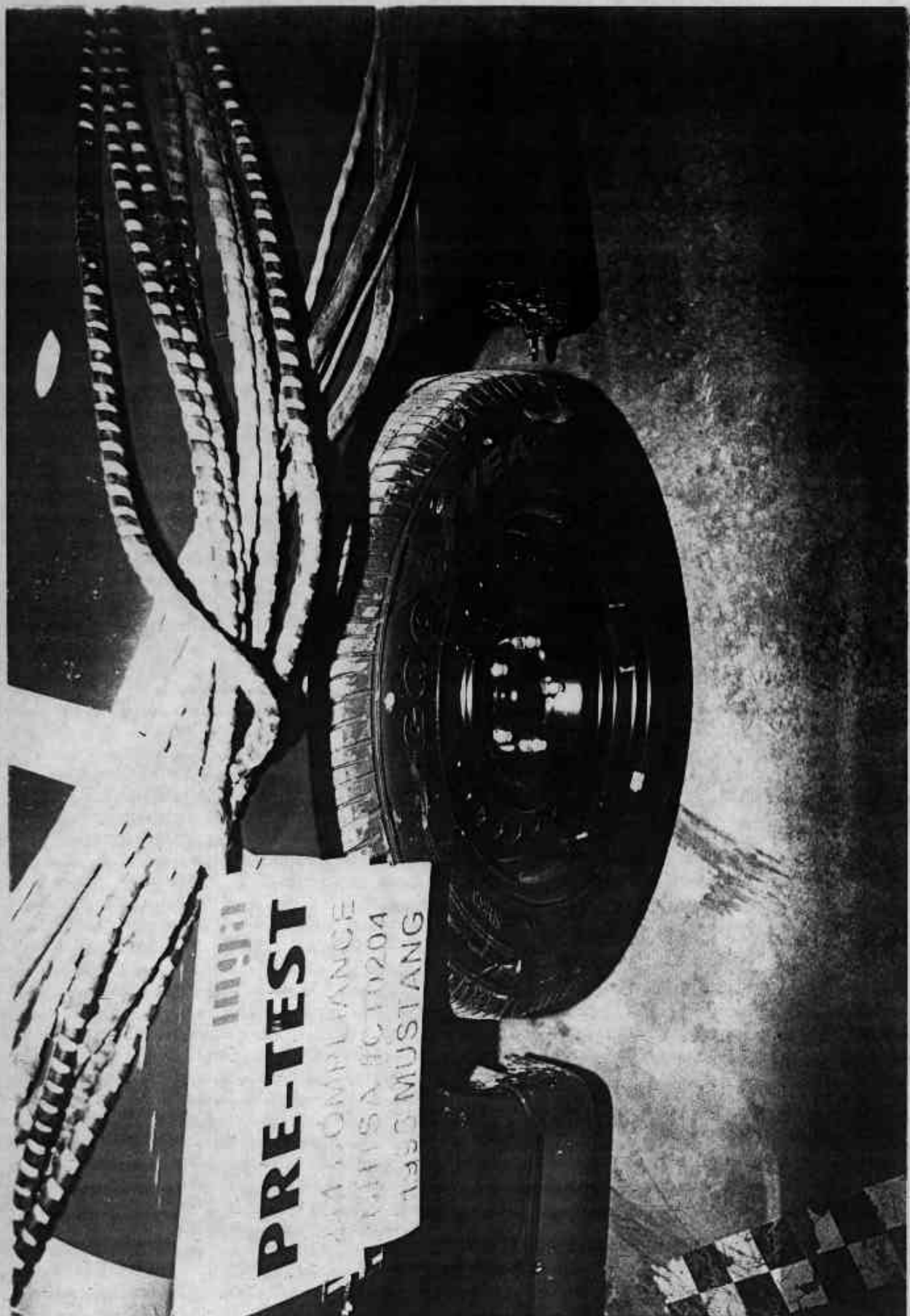


Photo No. A-47 - Right Front Attitude Point

PRE-TEST
214 COMPLIANCE
NHTSA #CT0204
1996 MUSTANG

A-48

Photo No. A-48 - Left Rear Attitude Point



Photo No. A-49 - Right Rear Attitude Point

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* No valid data collected

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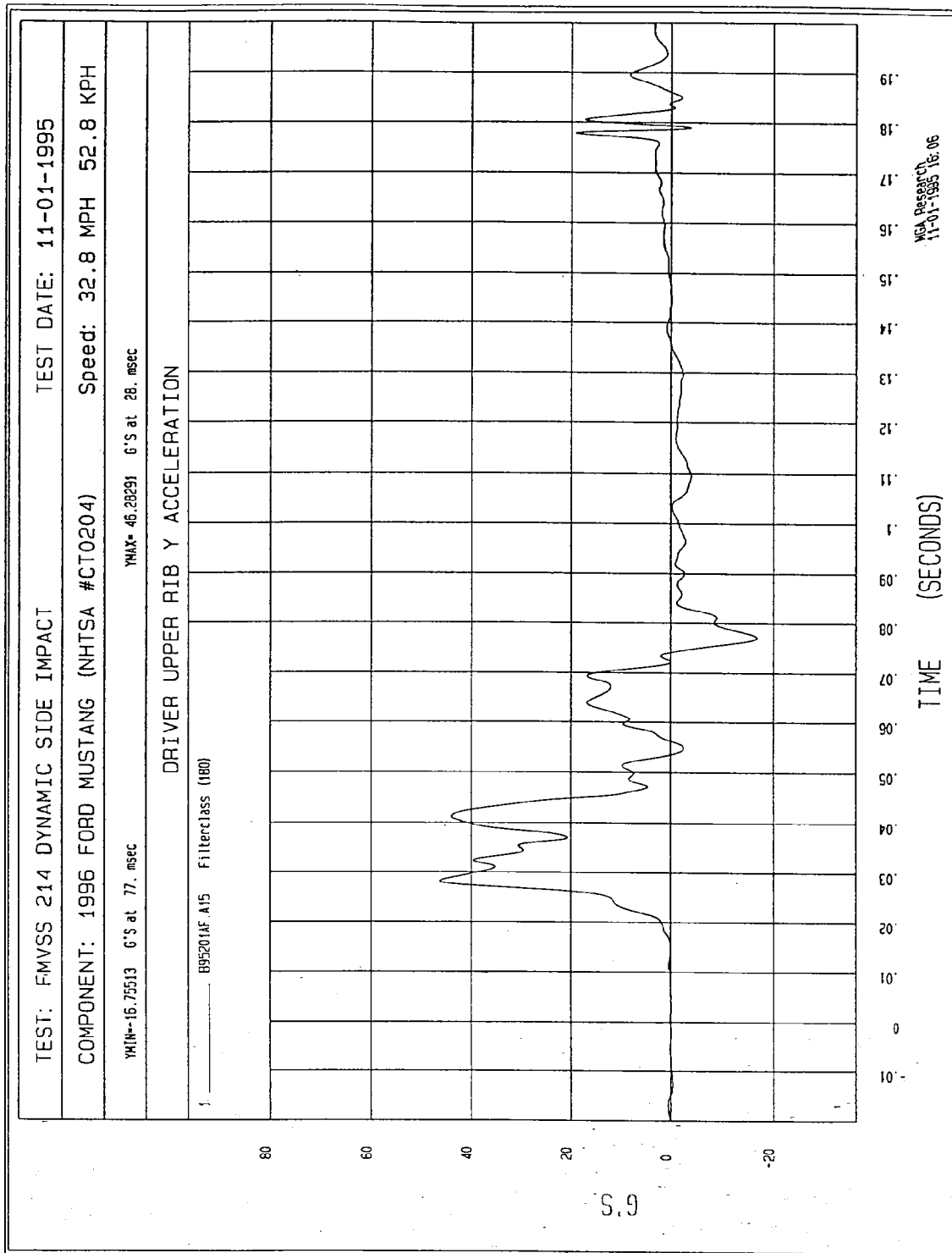


Figure B-1 - Driver Upper Rib Y Acceleration vs. Time

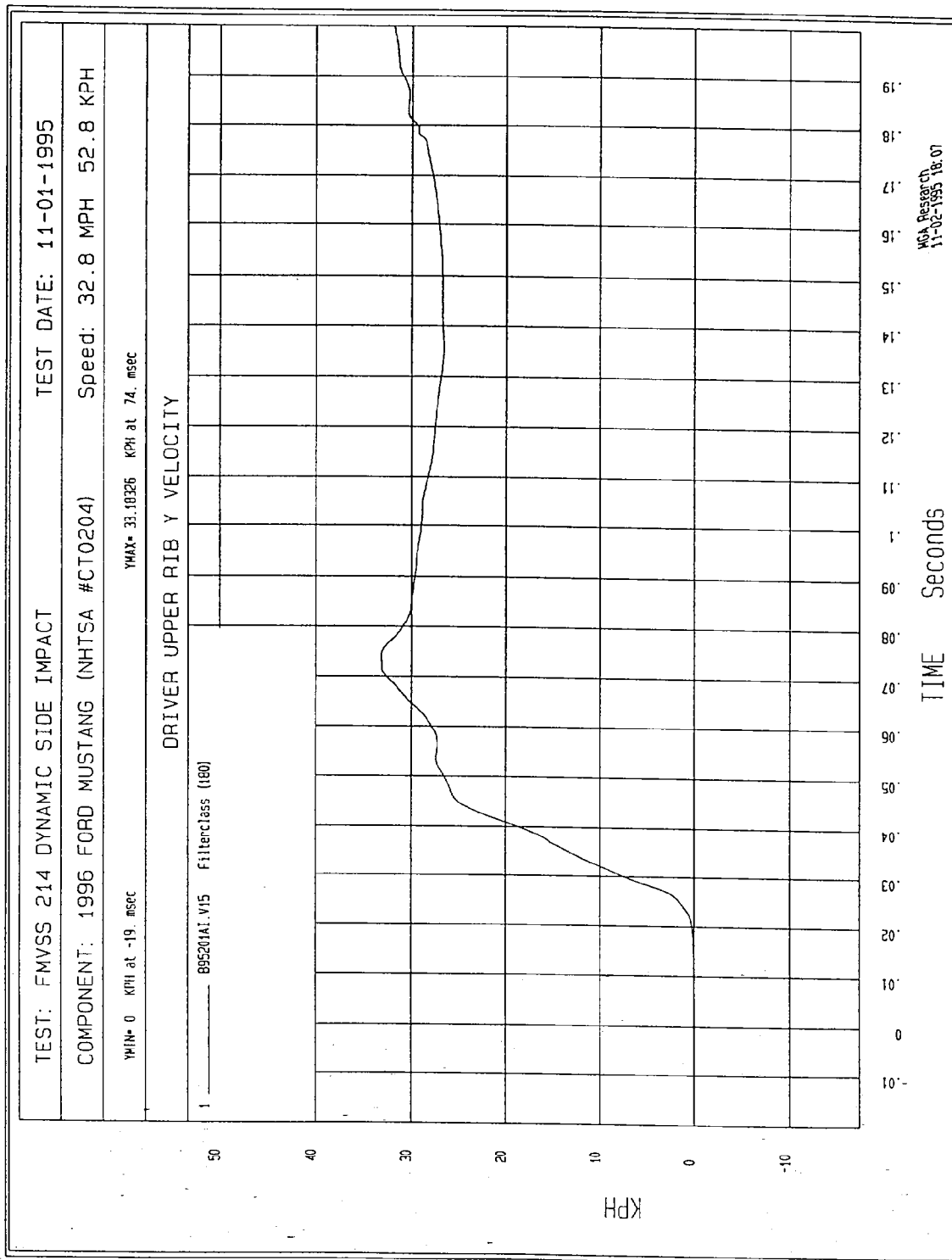


Figure B-2 - Driver Upper Rib Y Velocity vs. Time

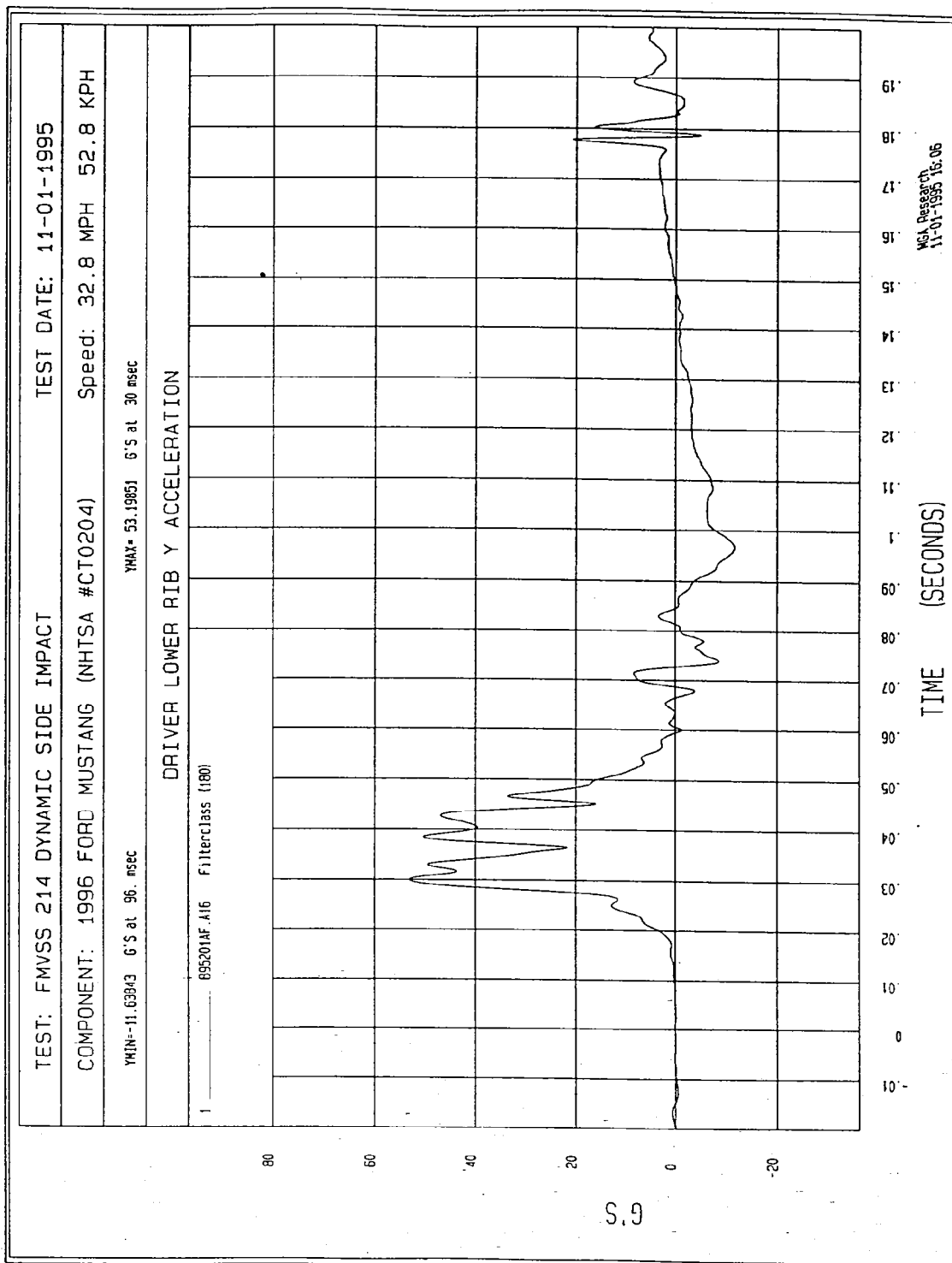


Figure B-3 - Driver Lower Rib Y Acceleration vs. Time

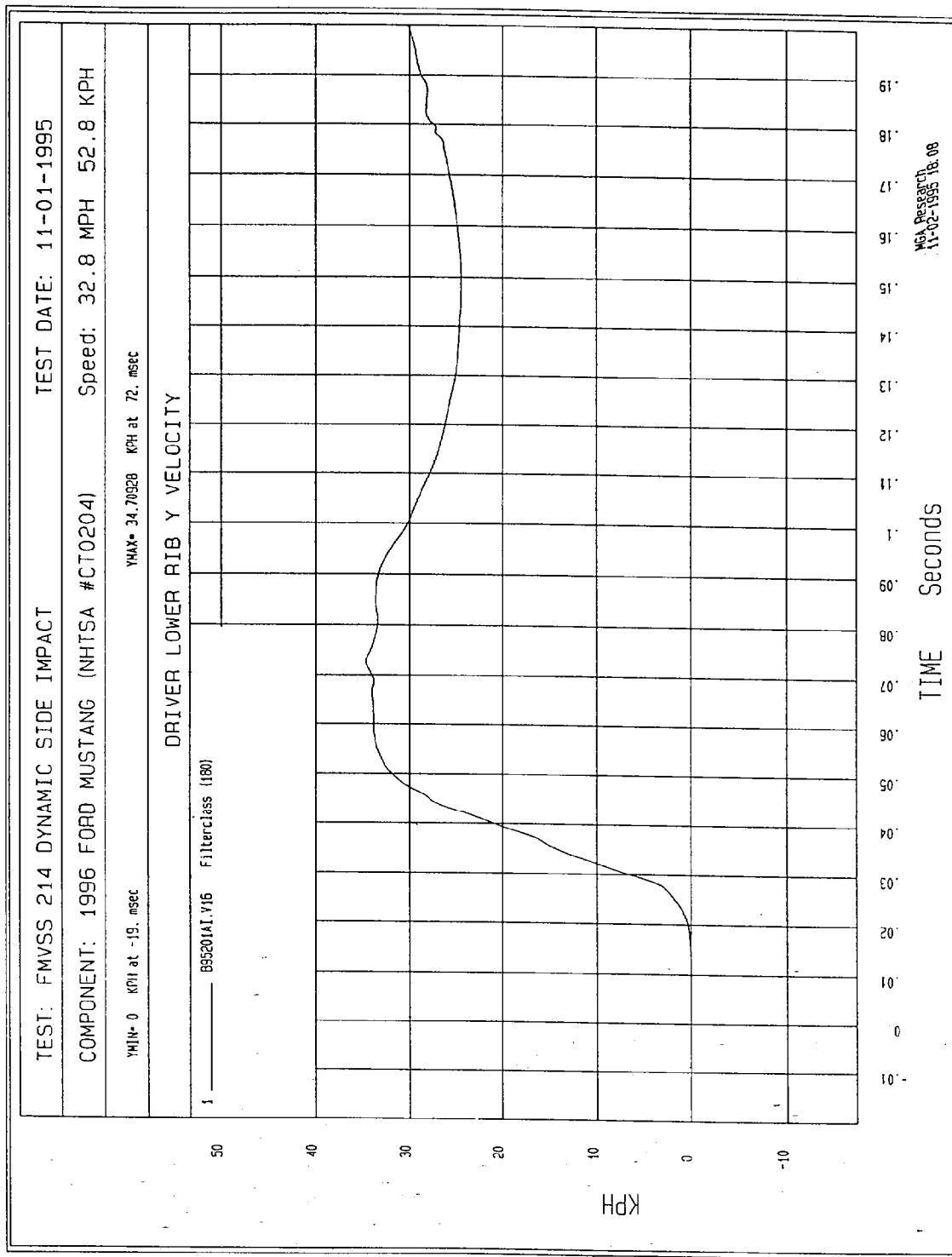


Figure B-4 - Driver Lower Rib Y Velocity vs. Time

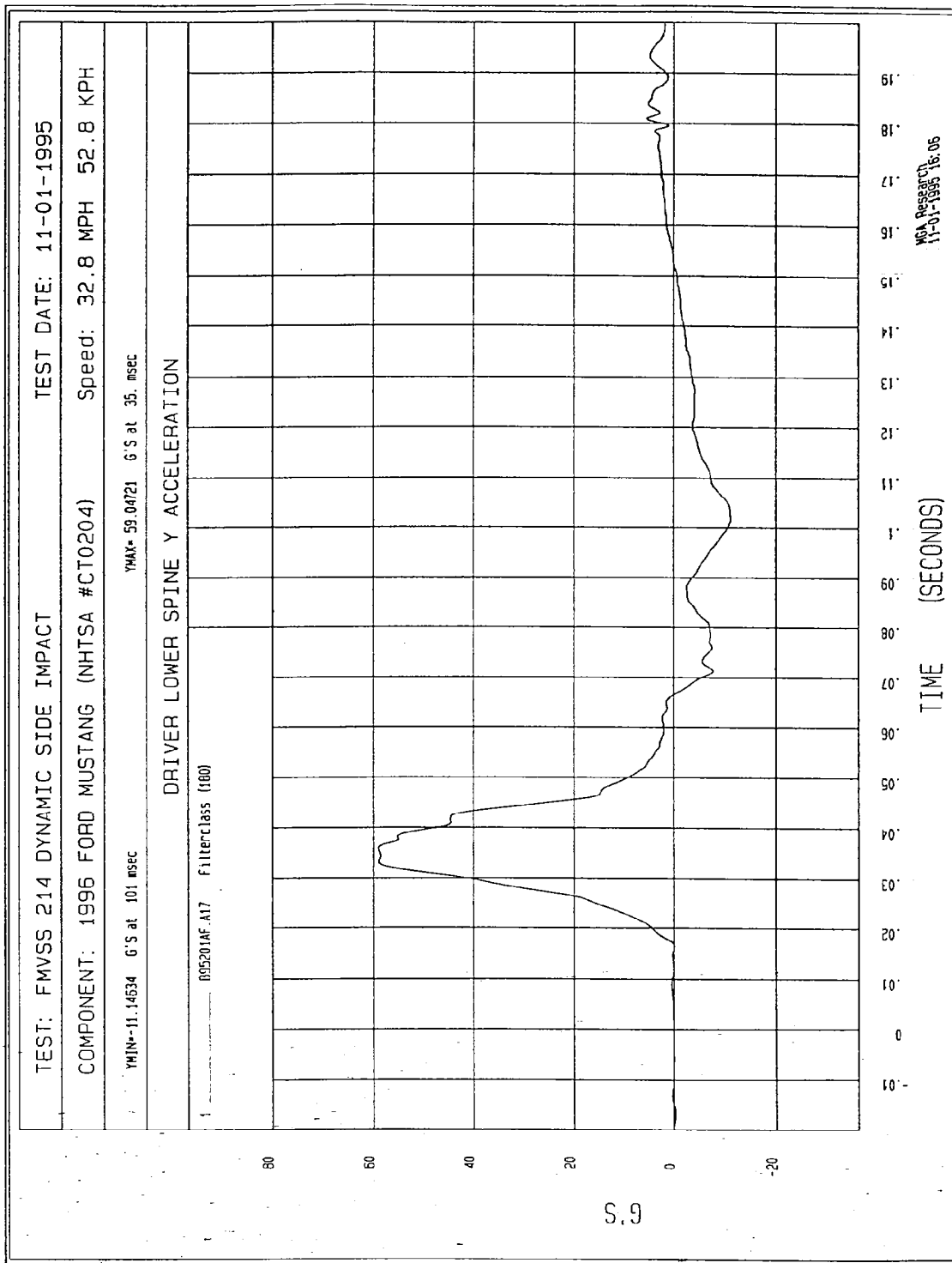


Figure B-5 - Driver Lower Spine Y Acceleration vs. Time

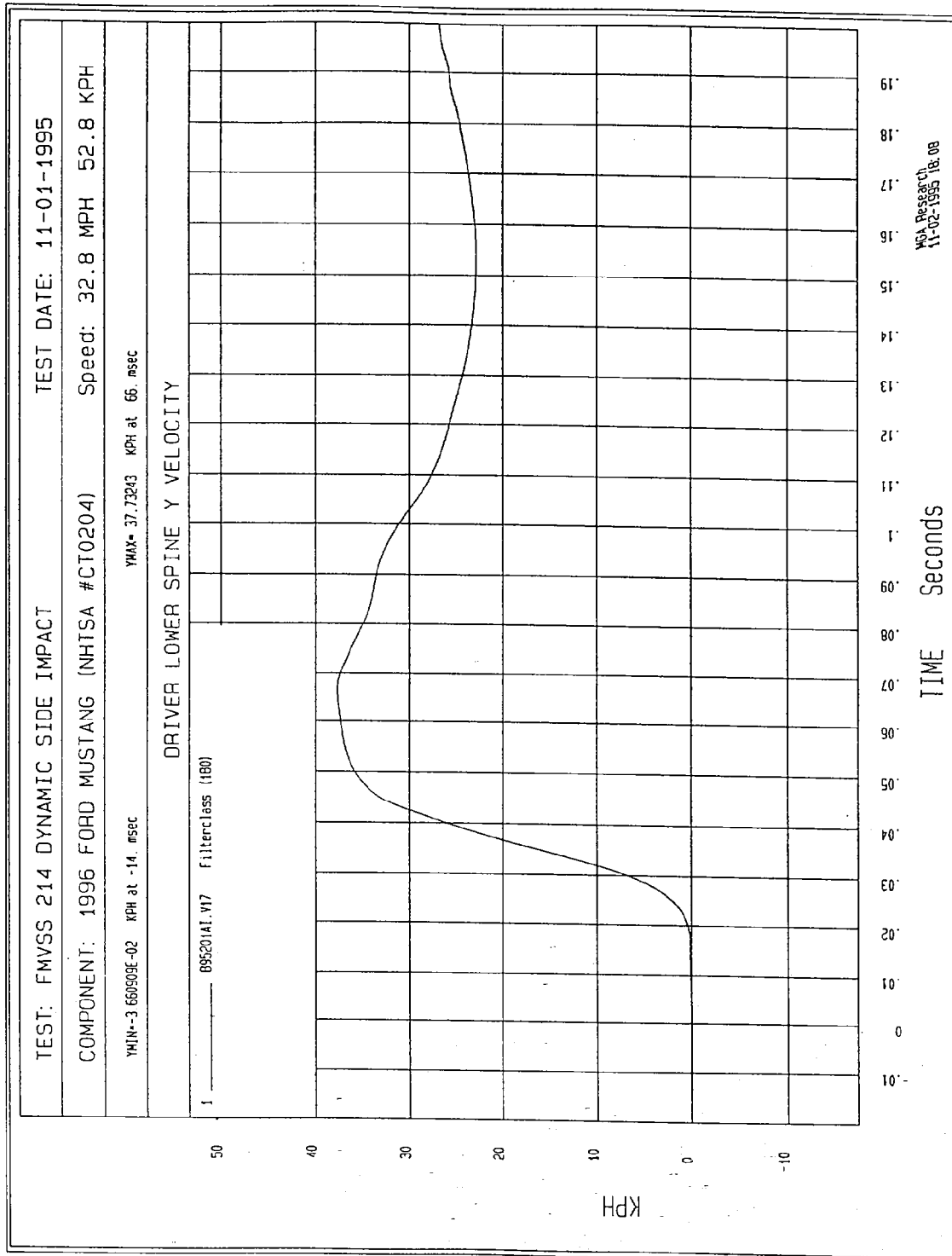


Figure B-6 - Driver Lower Spine Y Velocity vs. Time

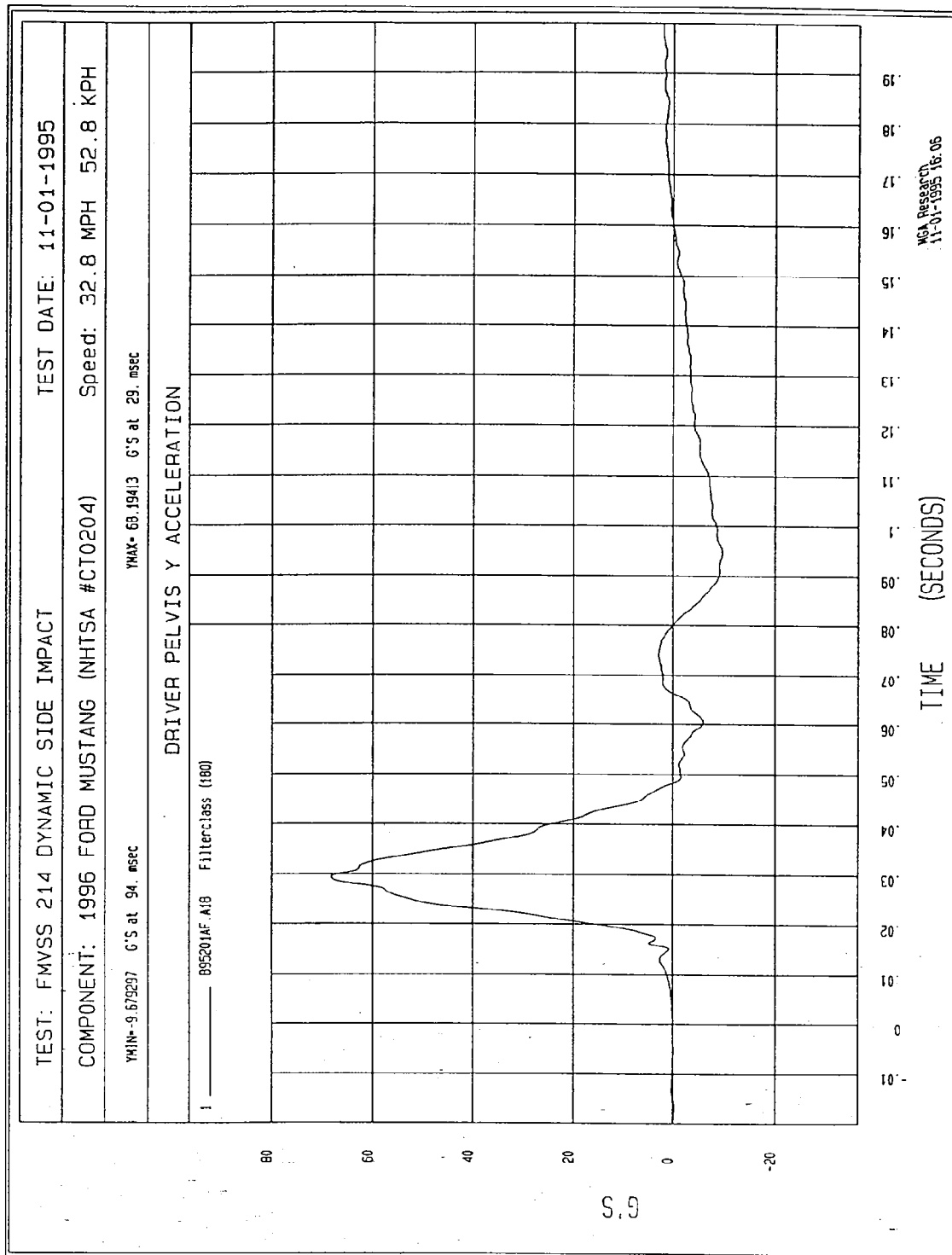


Figure B-7 - Driver Pelvis Y Acceleration vs. Time

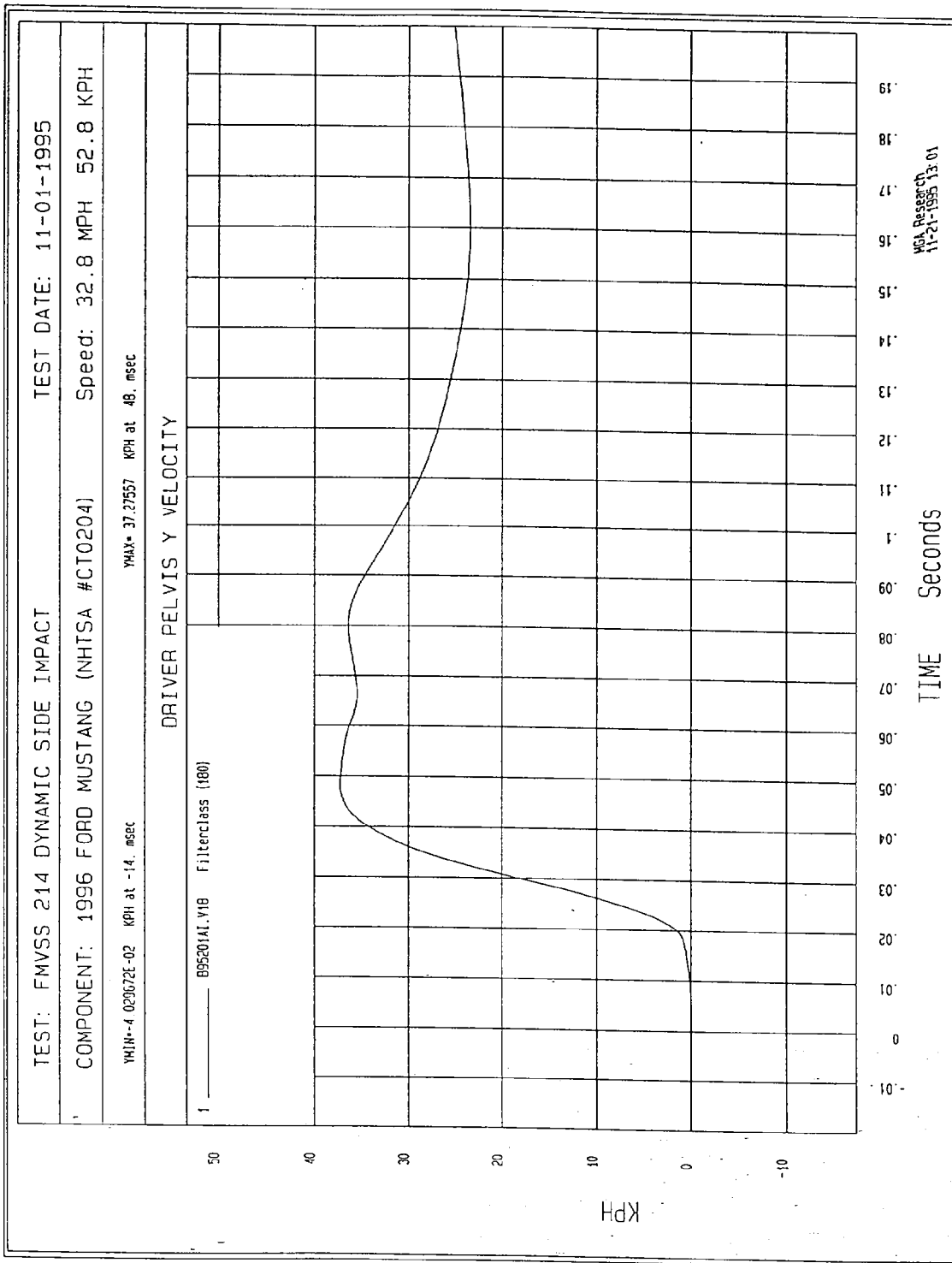


Figure B-8 - Driver Pelvis Y Velocity vs. Time

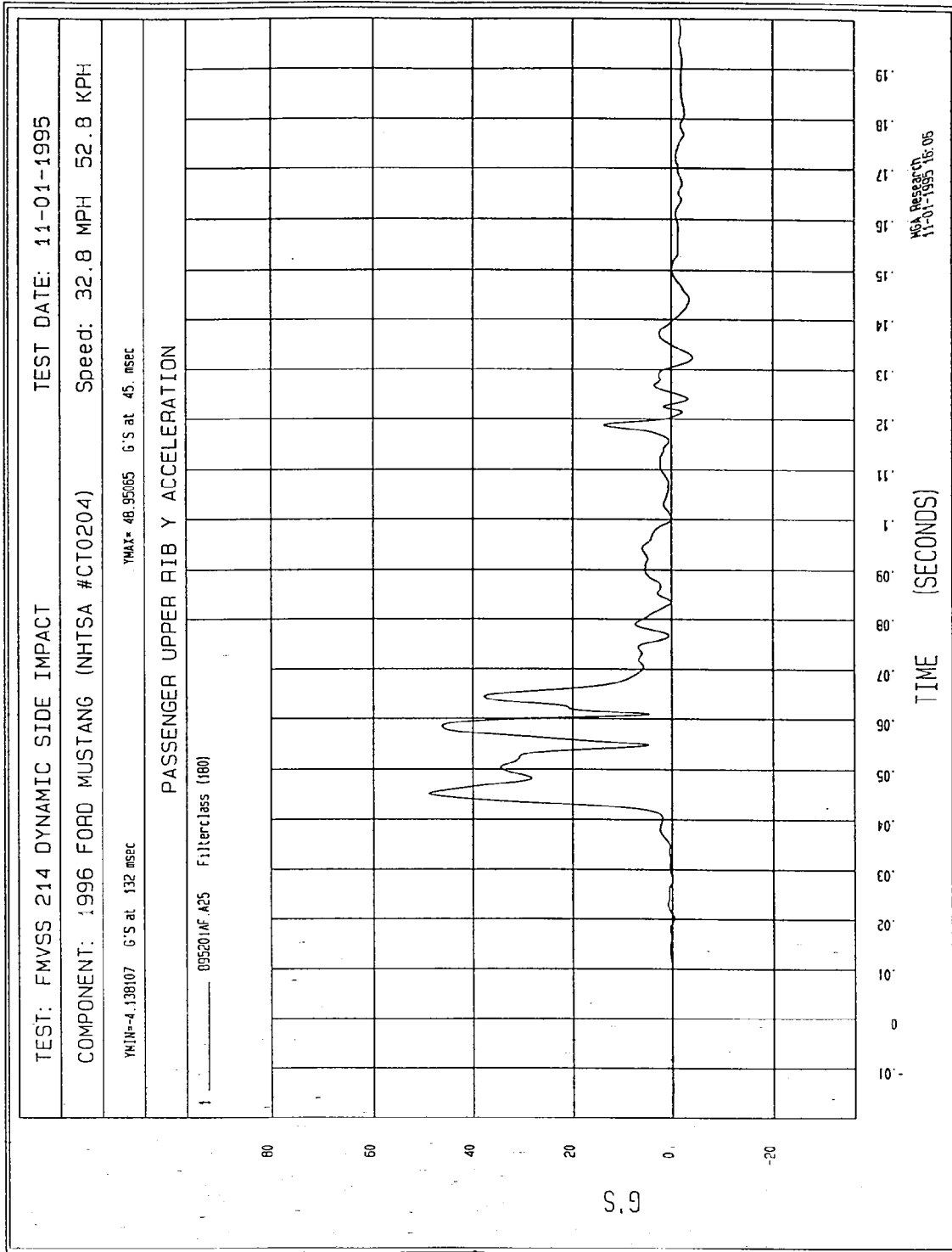


Figure B-9 - Passenger Upper Rib Y Acceleration vs. Time

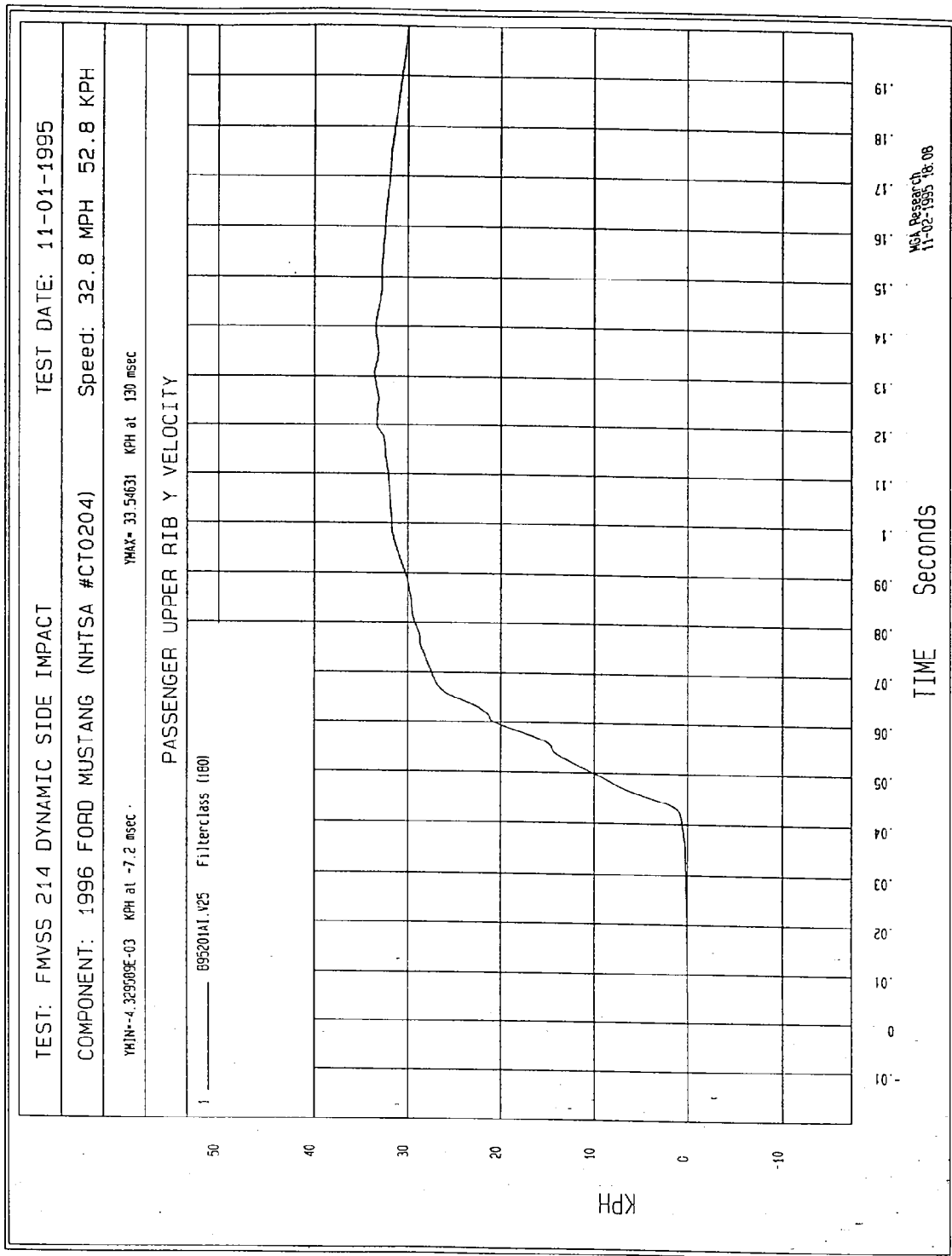


Figure B-10 - Passenger Upper Rib Y Velocity vs. Time

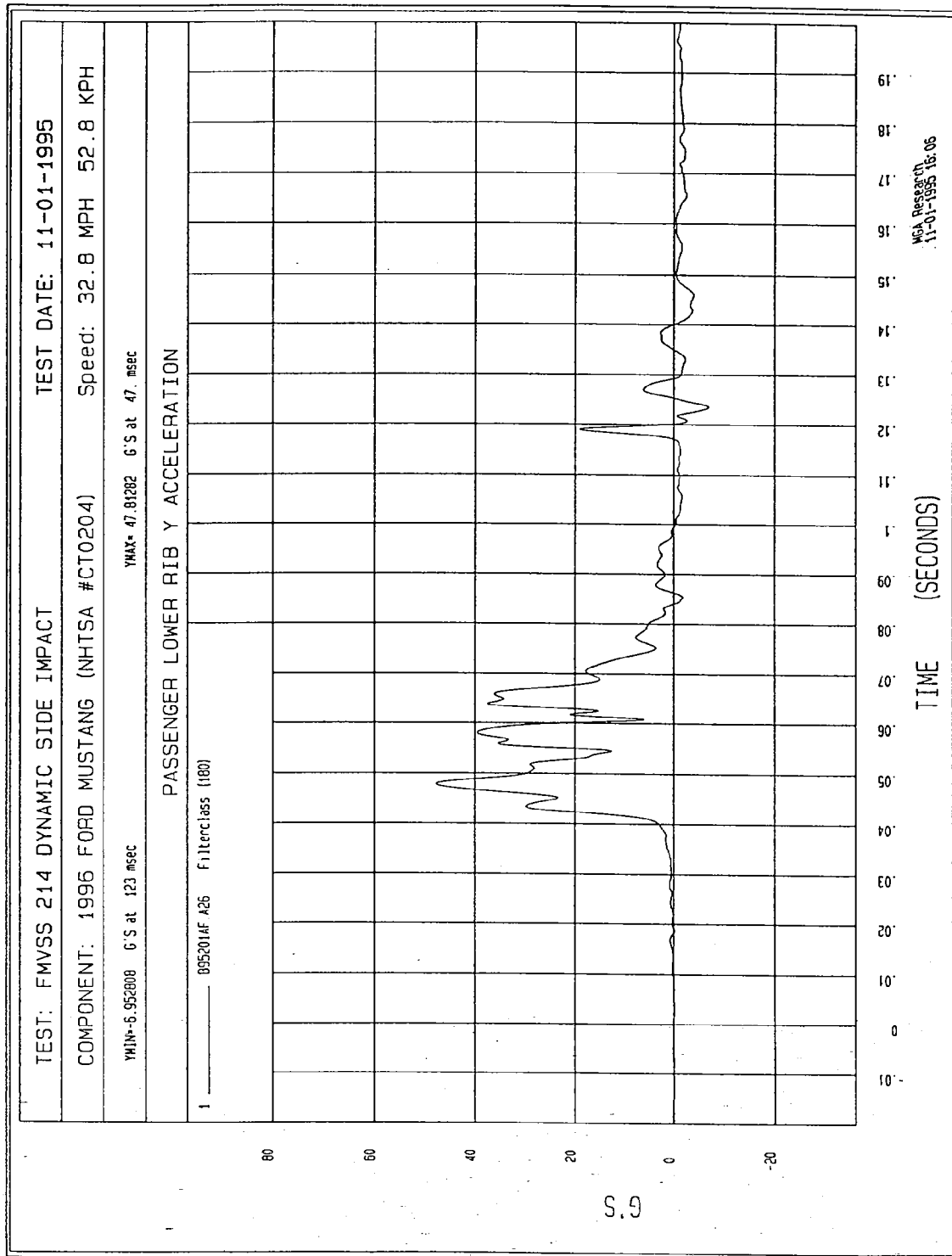


Figure B-11 - Passenger Lower Rib Y Acceleration vs. Time

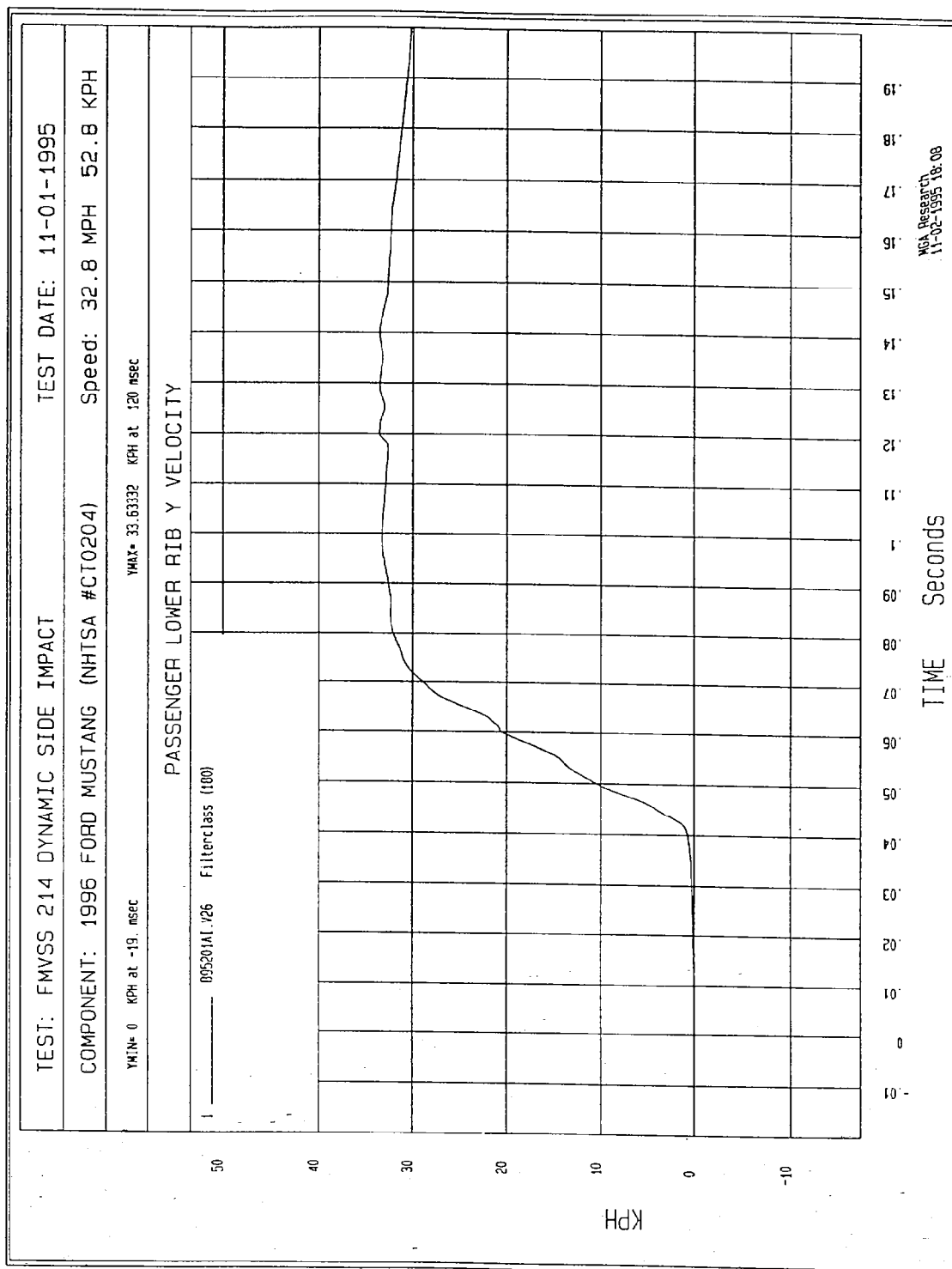


Figure B-12 - Passenger Lower Rib Y Velocity vs. Time

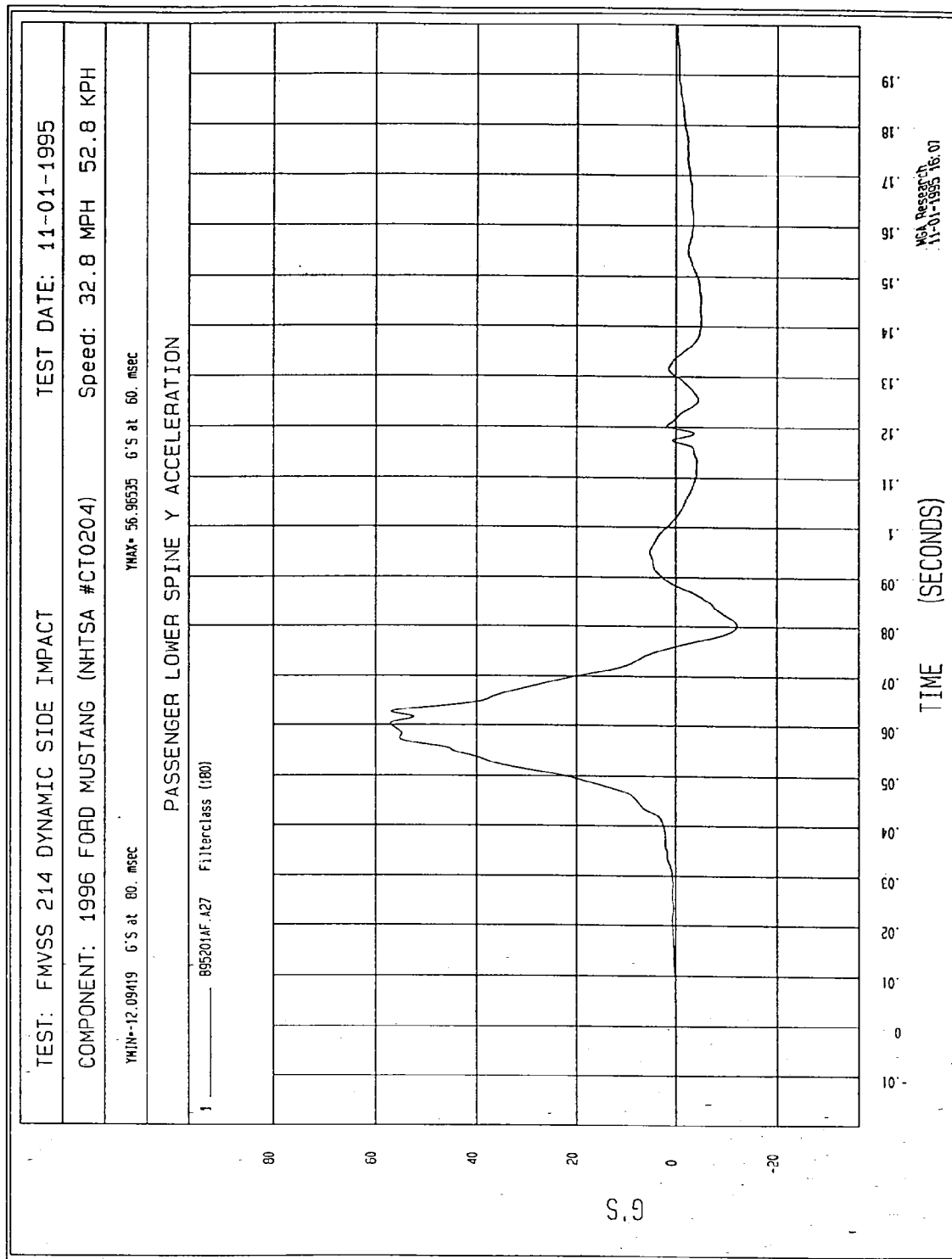


Figure B-13 - Passenger Lower Spine Y Acceleration vs. Time

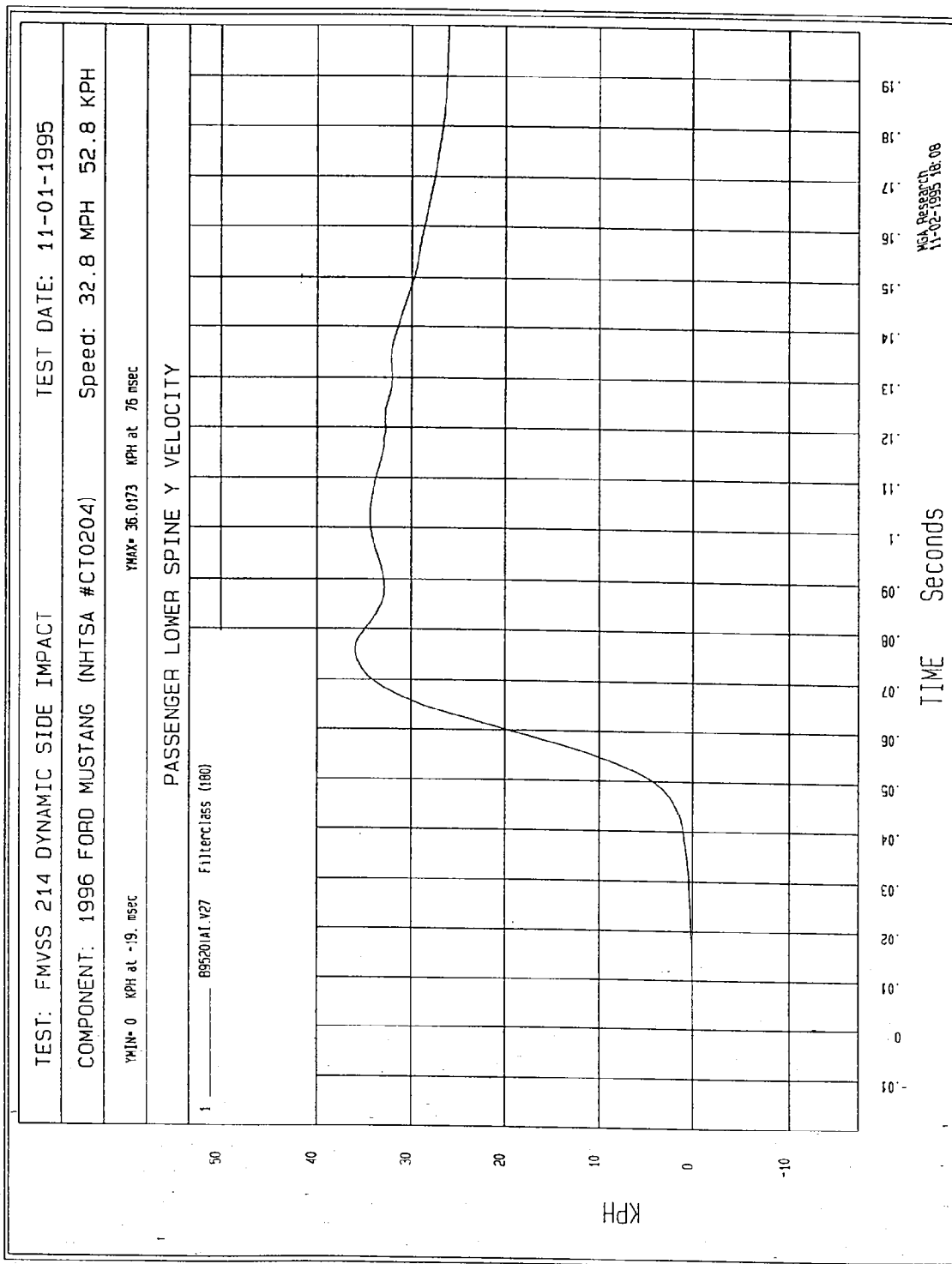


Figure B-14 - Passenger Lower Spine Y Velocity vs. Time

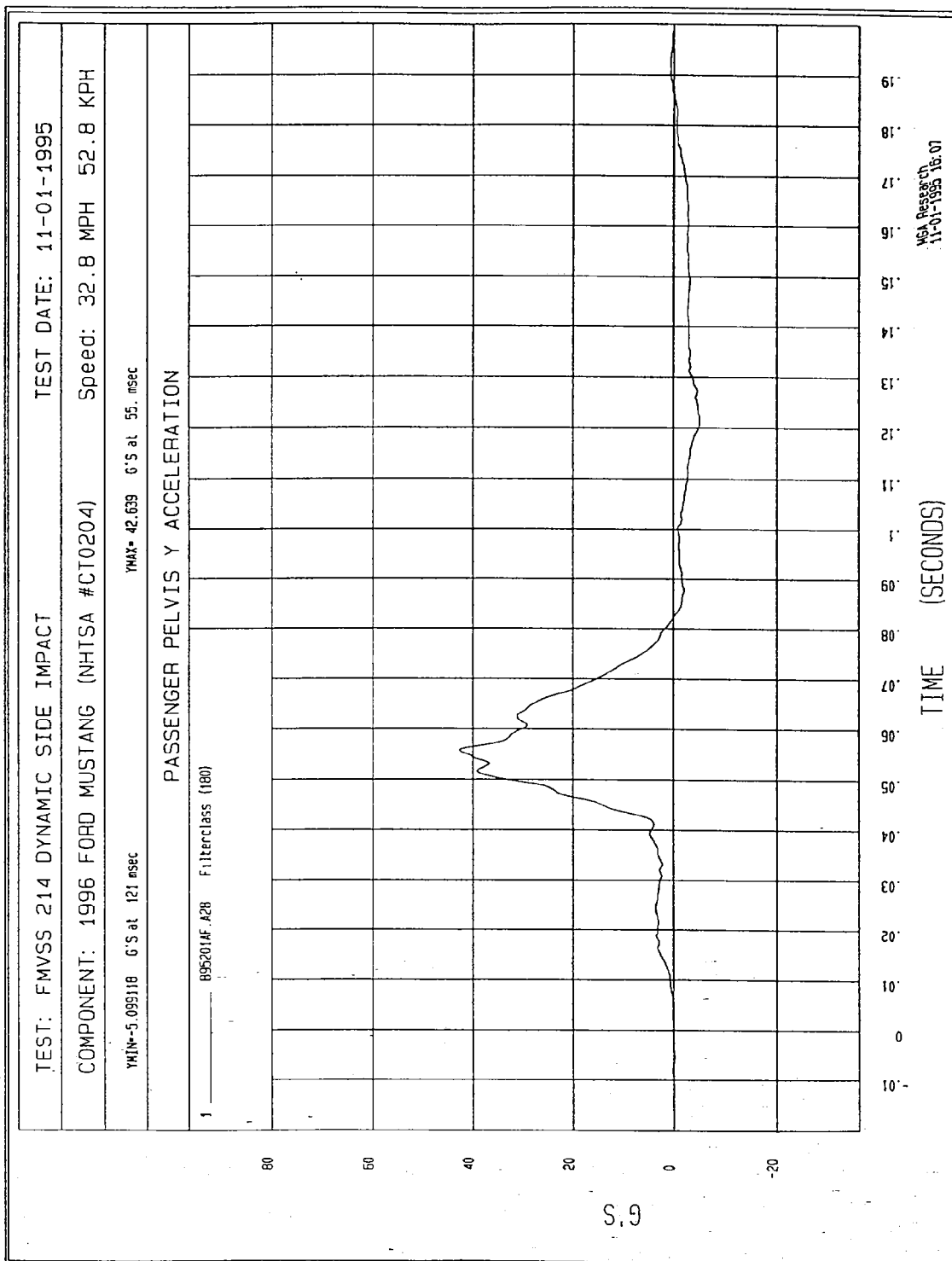


Figure B-15 - Passenger Pelvis Y Acceleration vs. Time

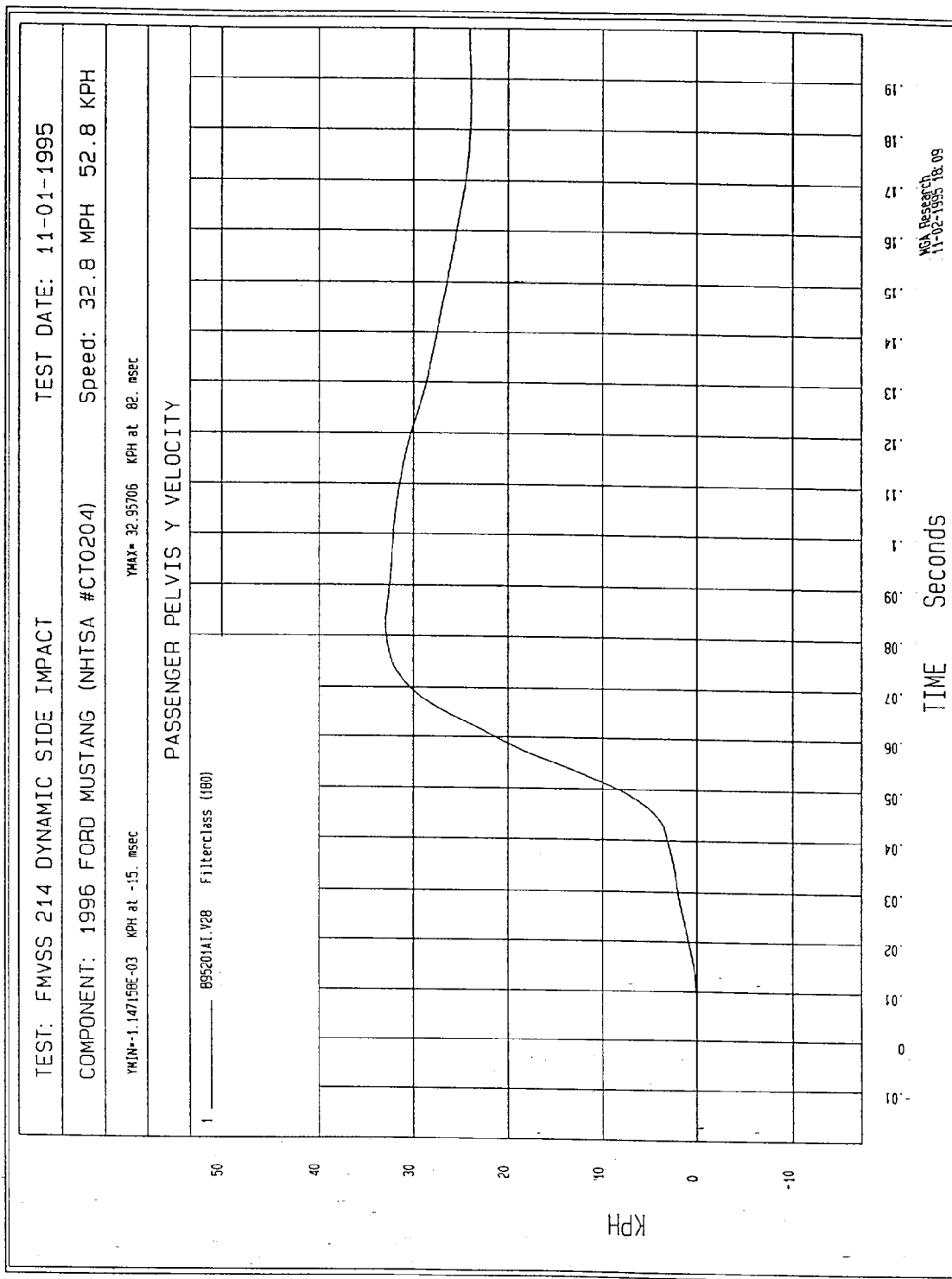


Figure B-16 - Passenger Pelvis Y Velocity vs. Time

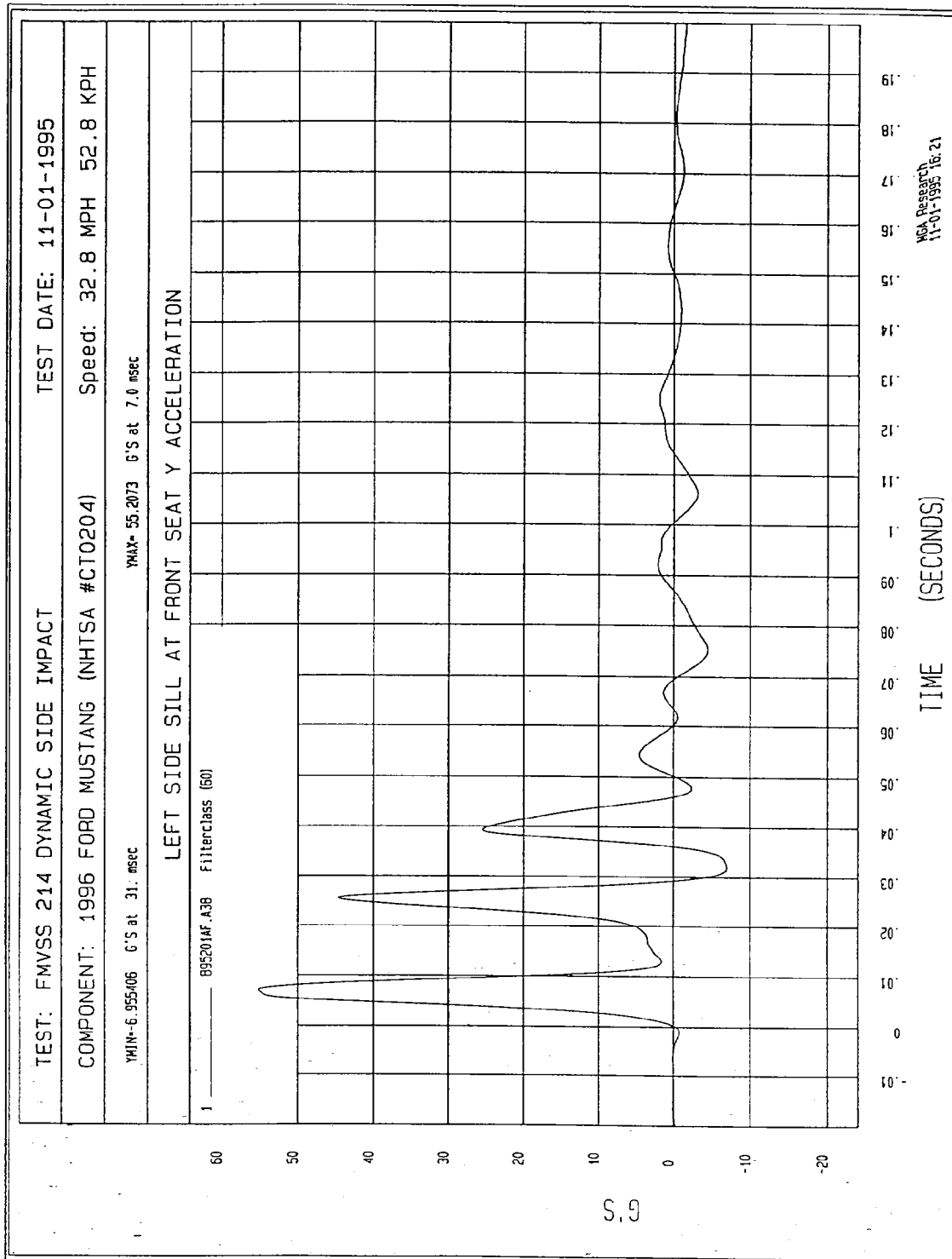


Figure B-17 - Left Side Sill at Front Seat Y Acceleration vs. Time

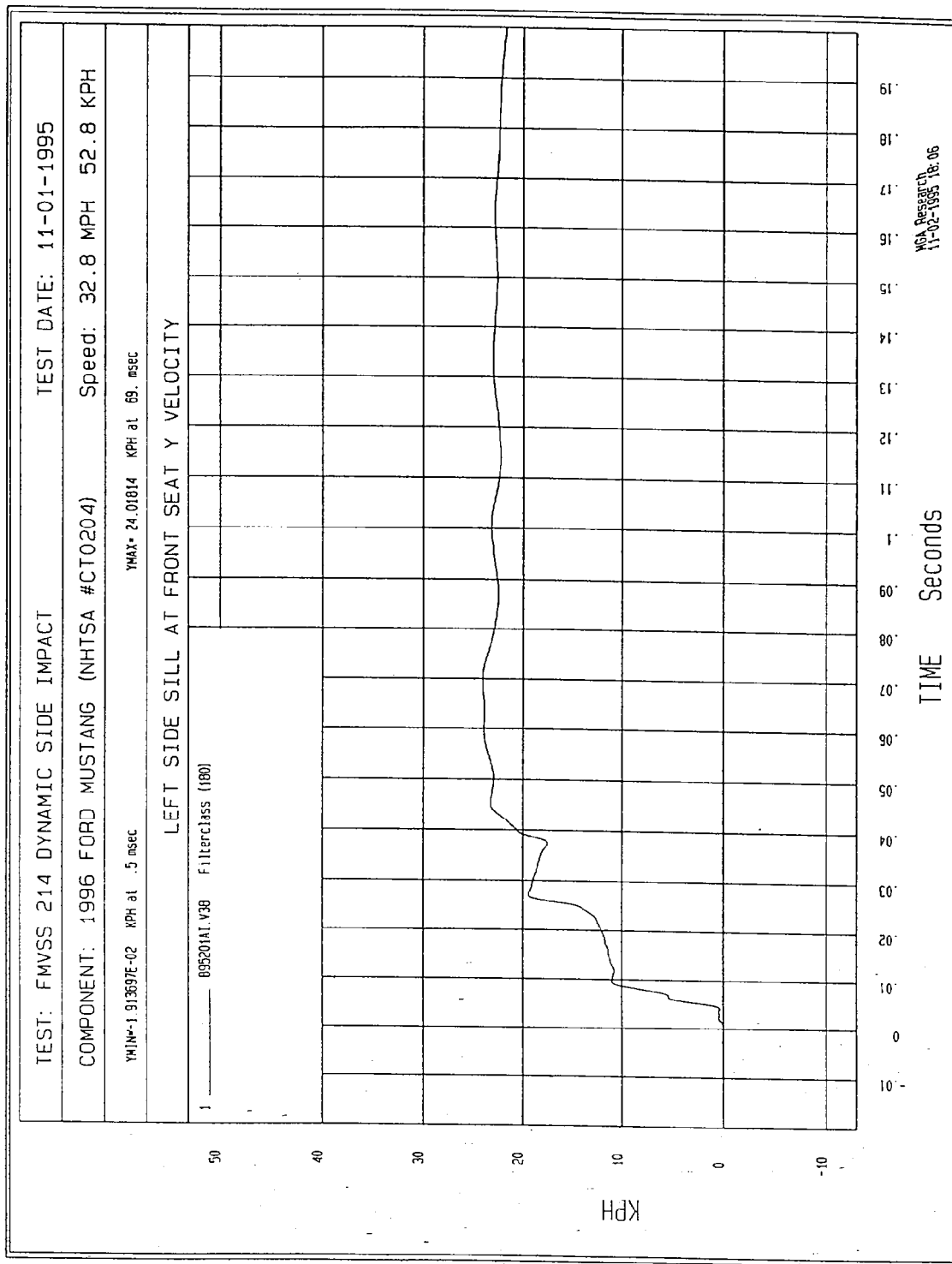


Figure B-18 - Left Side Sill at Front Seat Y Velocity vs. Time

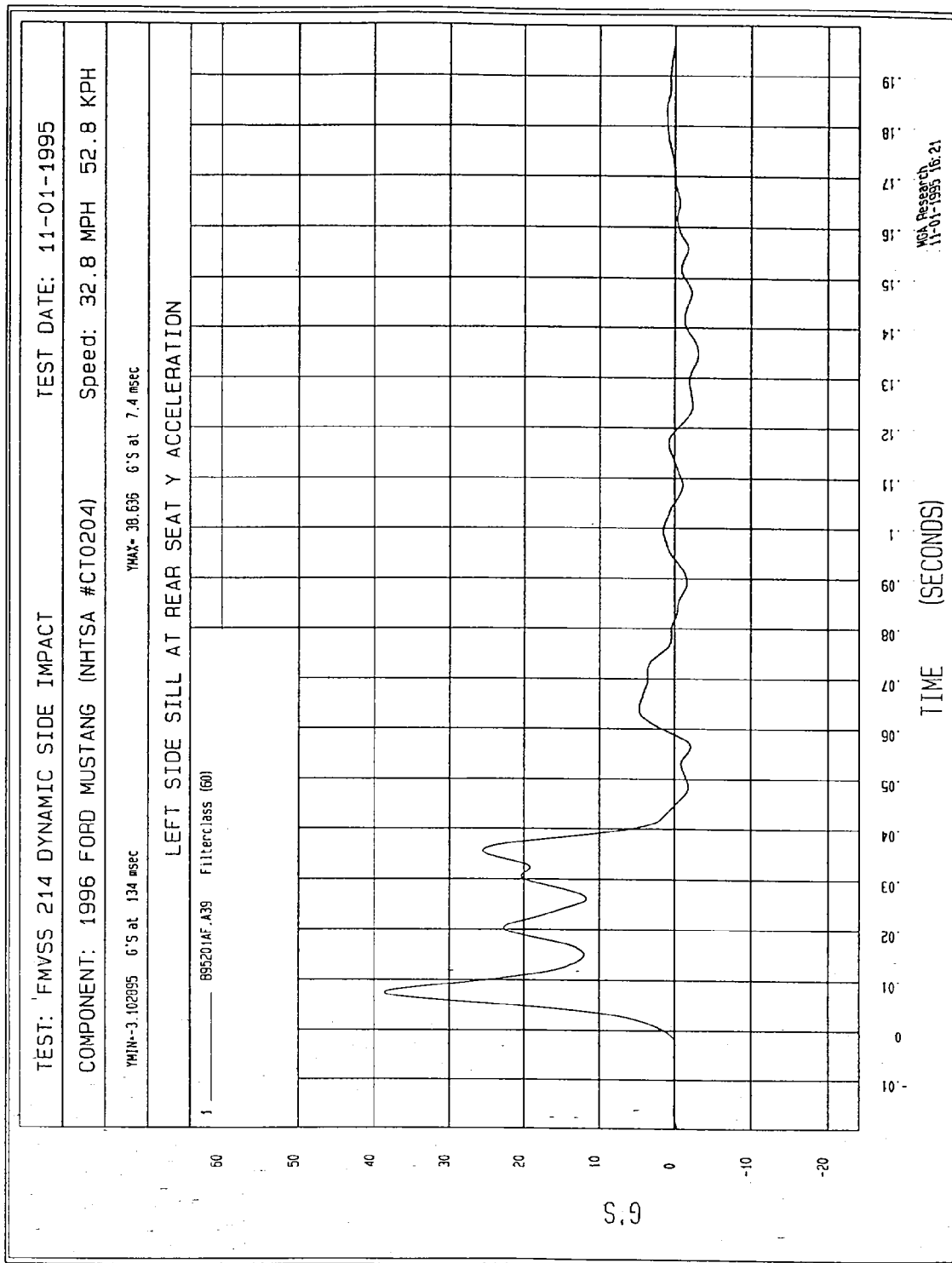


Figure B-19 - Left Side Sill at Rear Seat Y Acceleration vs. Time

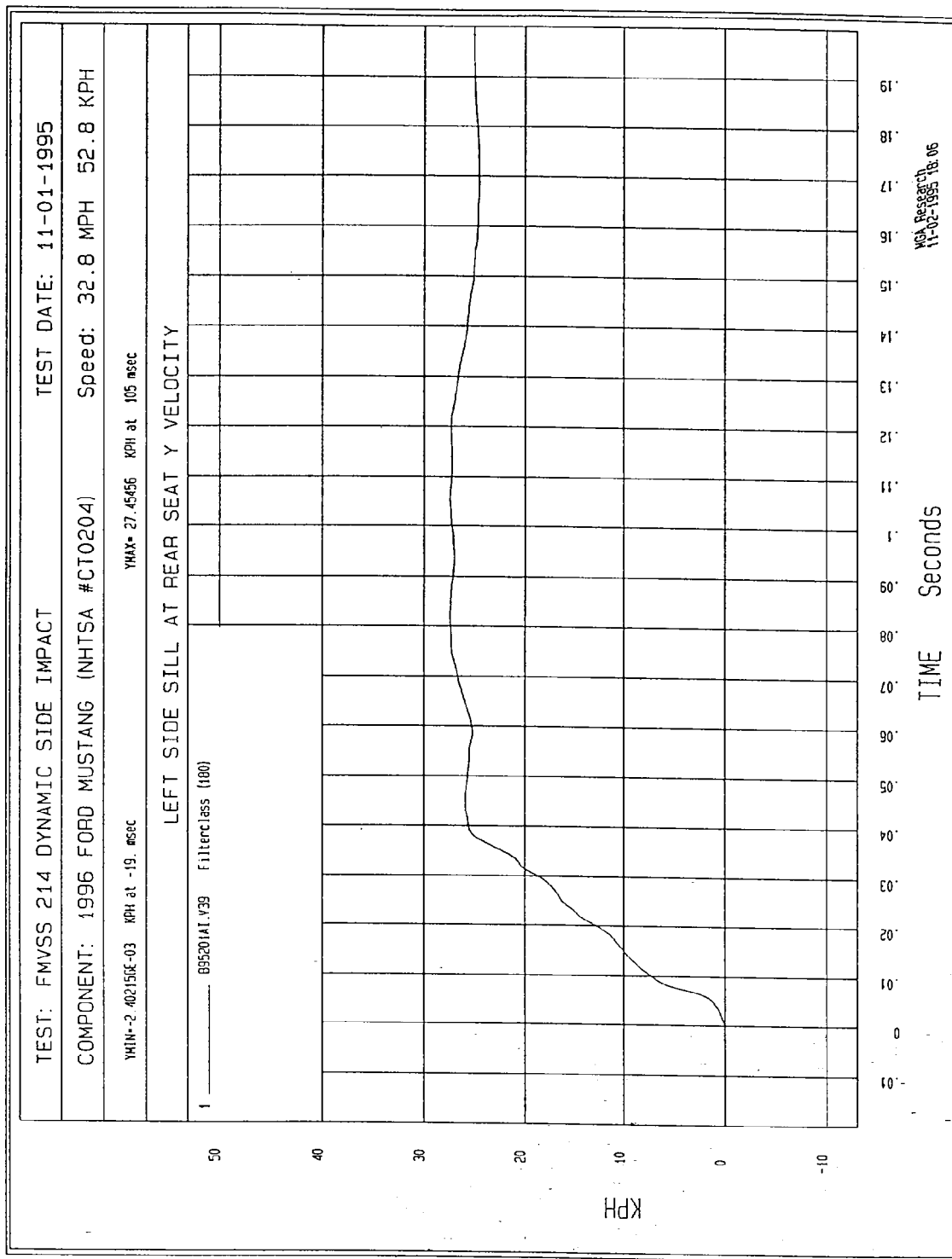


Figure B-20 - Left Side Sill at Rear Seat Y Velocity vs. Time

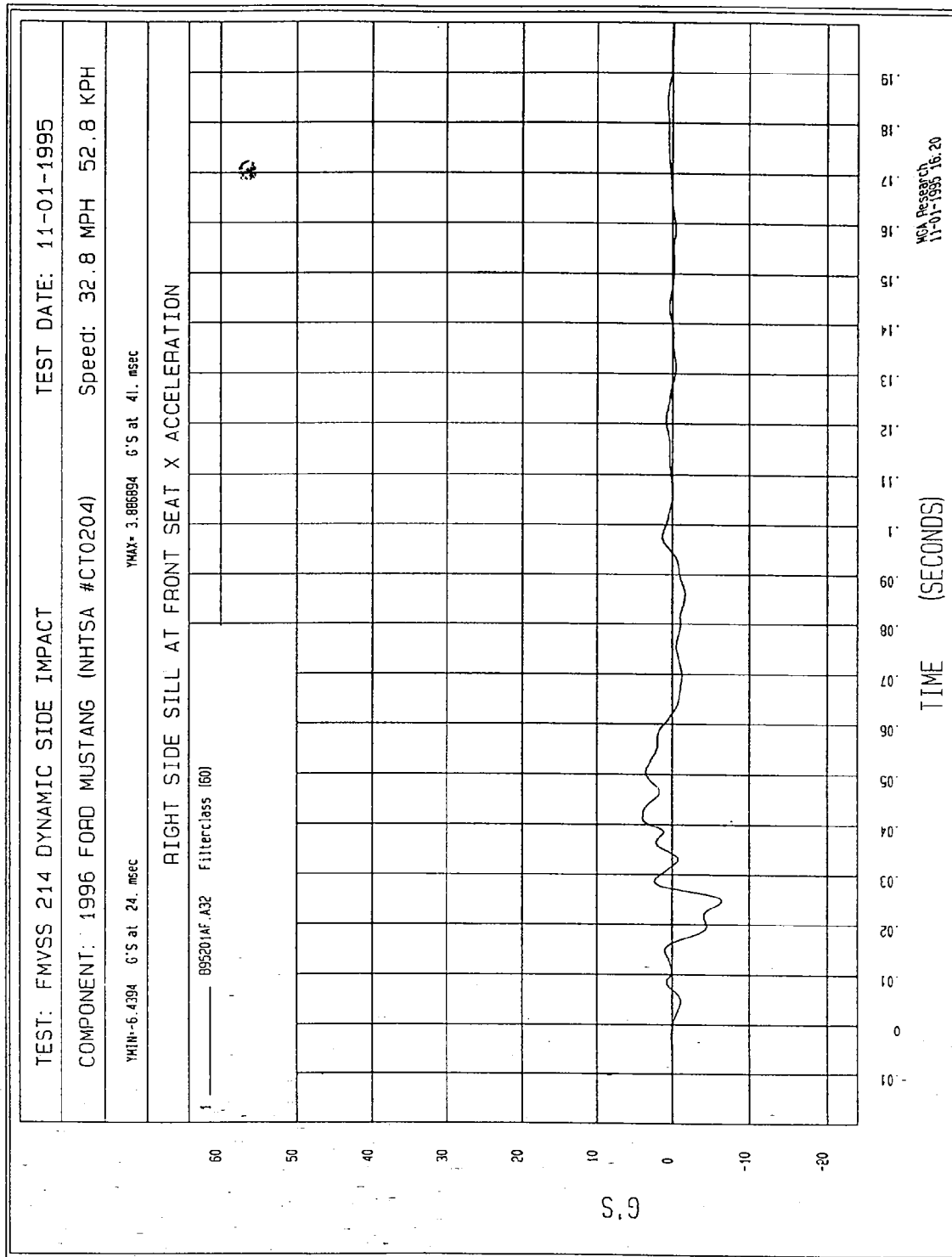


Figure B-21 - Right Side Sill at Front Seat X Acceleration vs. Time

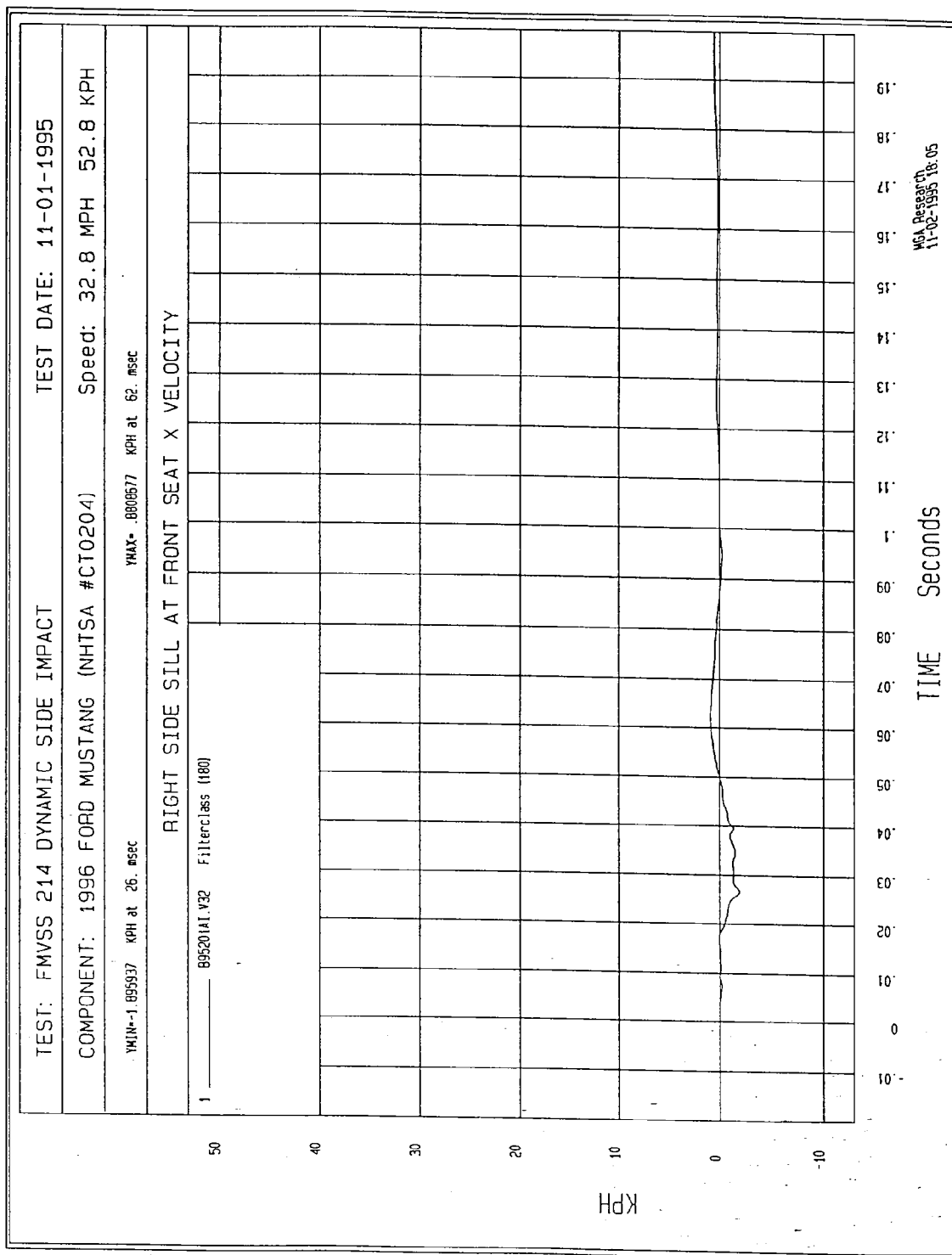


Figure B-22 - Right Side Sill at Front Seat X Velocity vs. Time

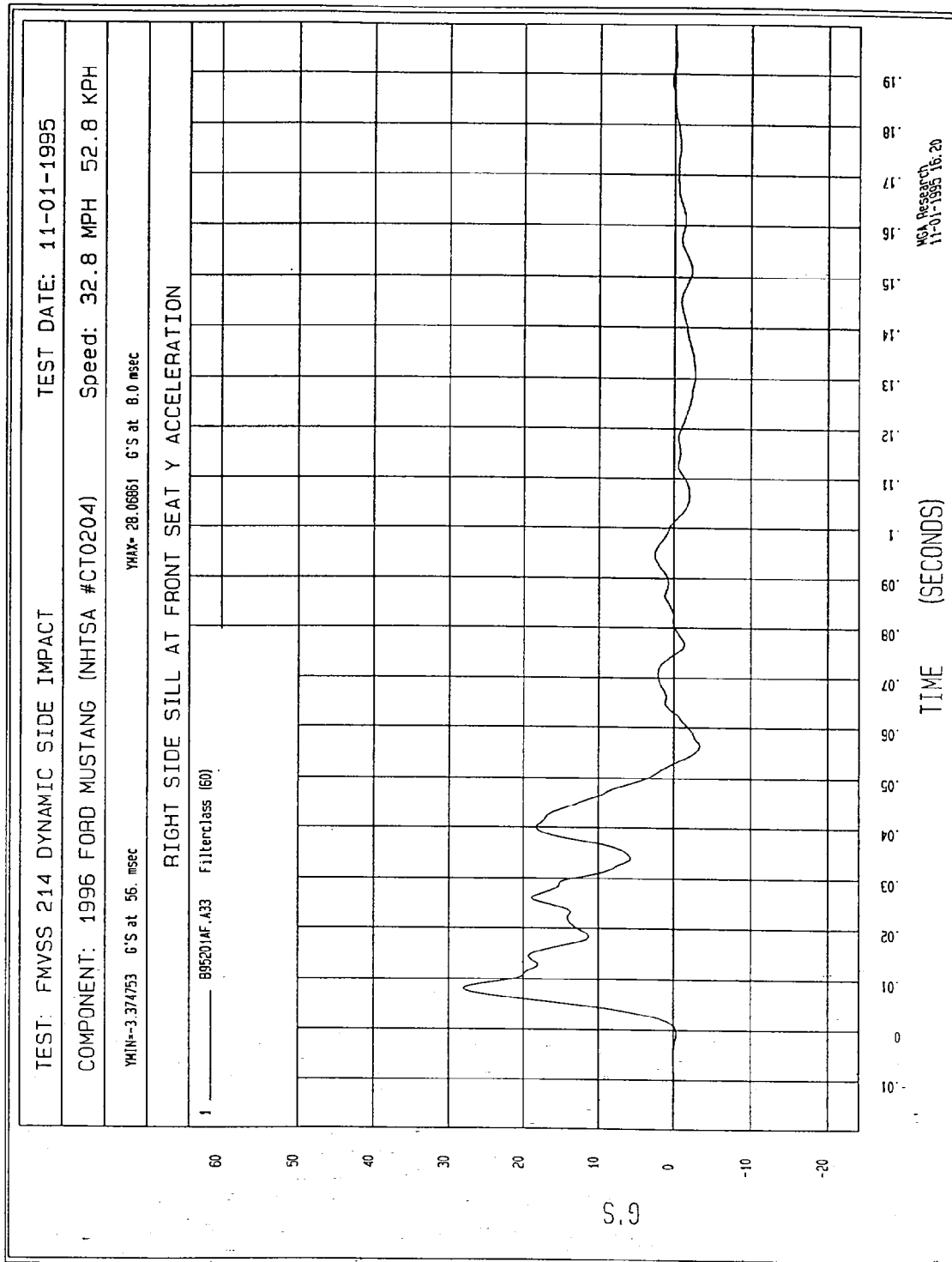


Figure B-23 - Right Side Sill at Front Seat Y Acceleration vs. Time

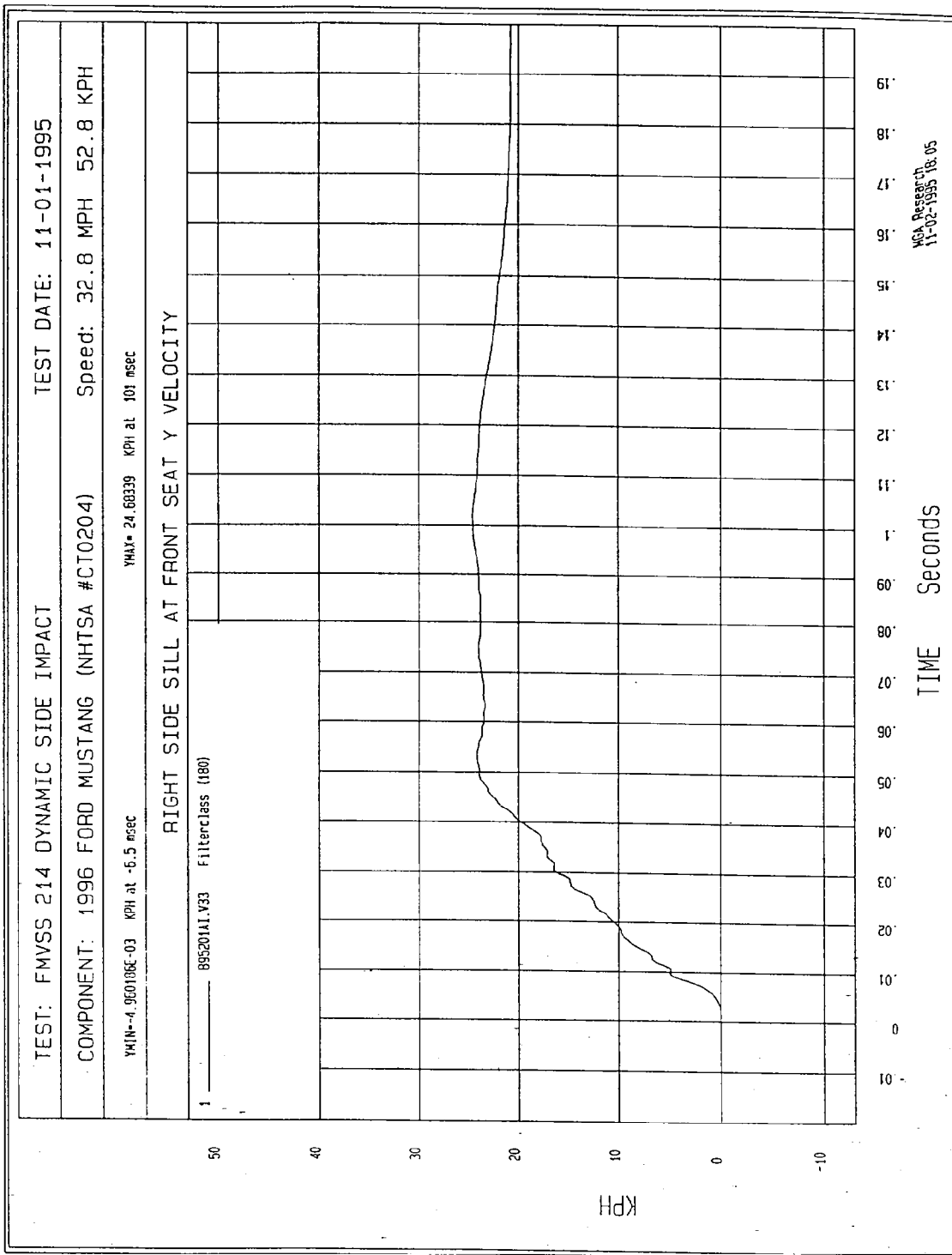


Figure B-24 - Right Side Sill at Front Seat Y Velocity vs. Time

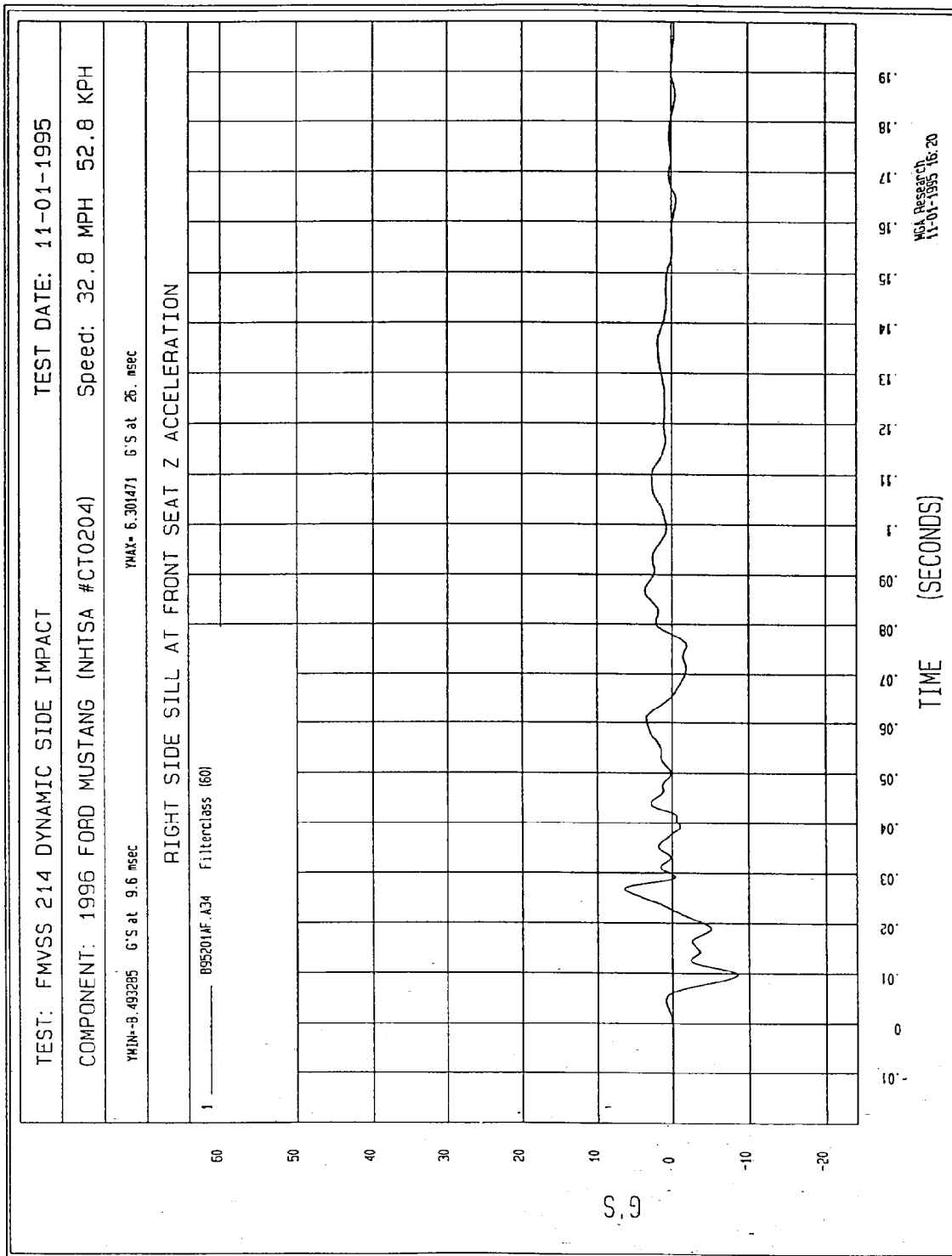


Figure B-25 - Right Side Sill at Front Seat Z Acceleration vs. Time

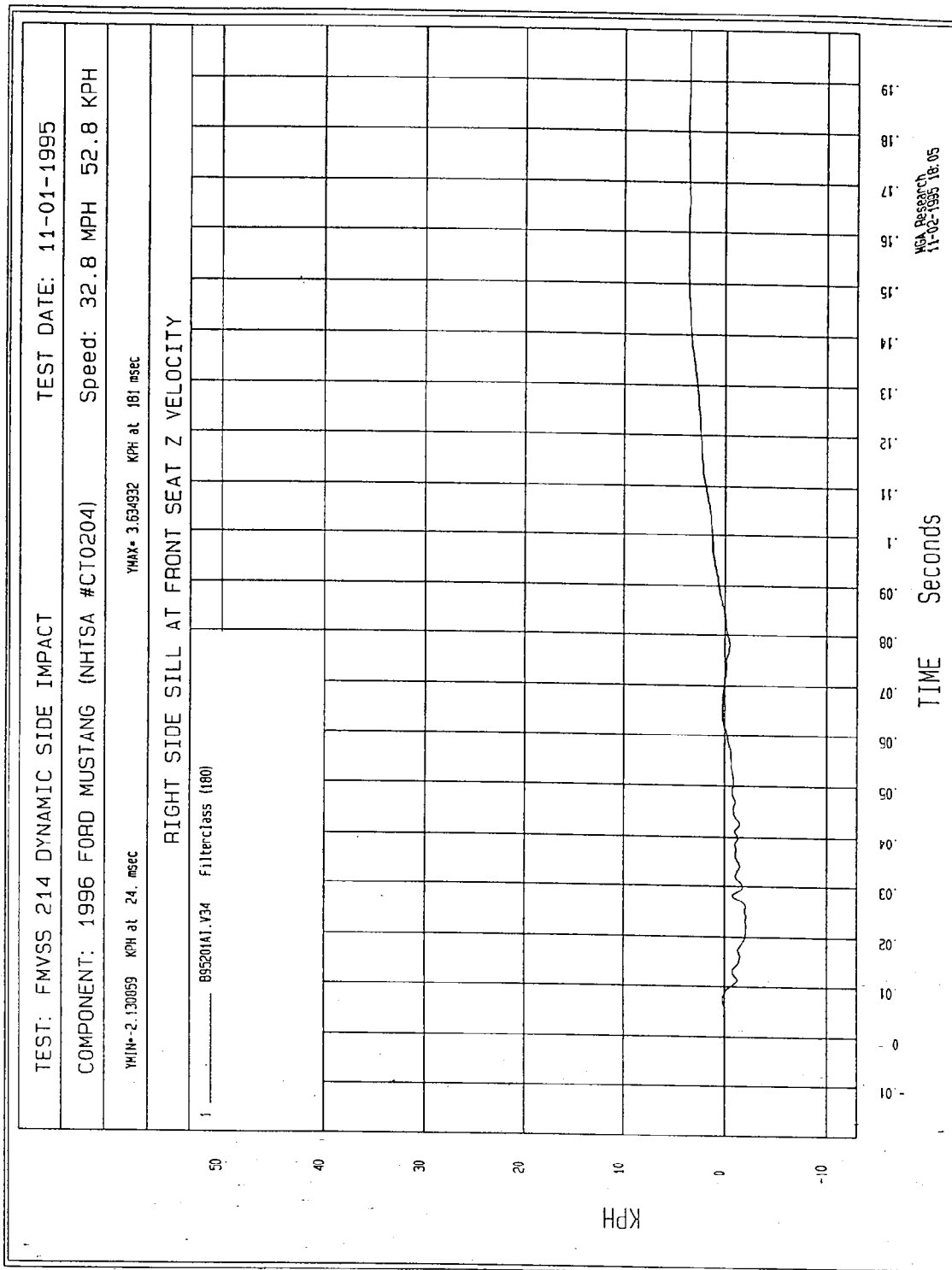


Figure B-26 - Right Side Sill at Front Seat Z Velocity vs. Time

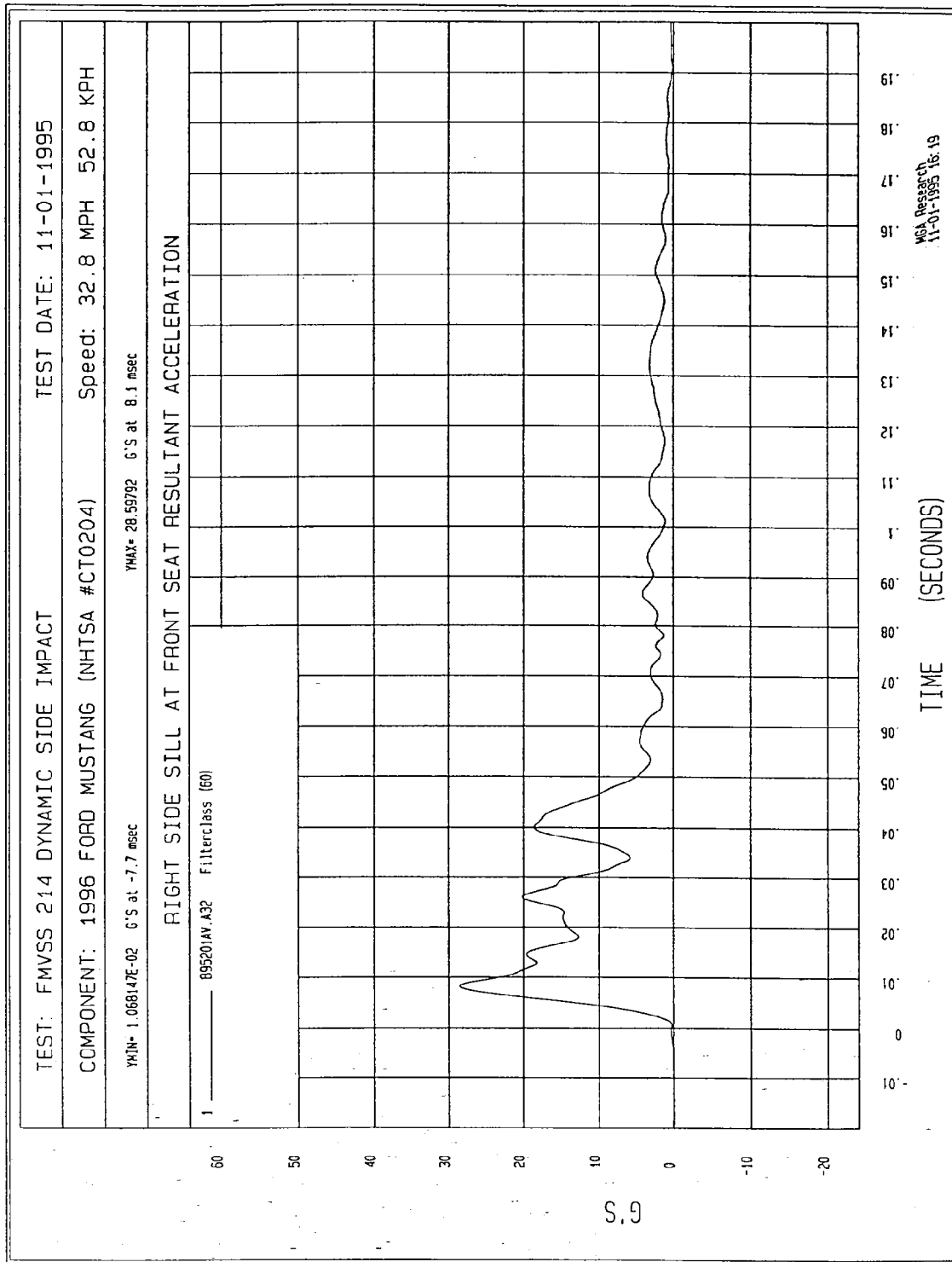


Figure B-27 - Right Side Sill at Front Seat Resultant Acceleration vs. Time

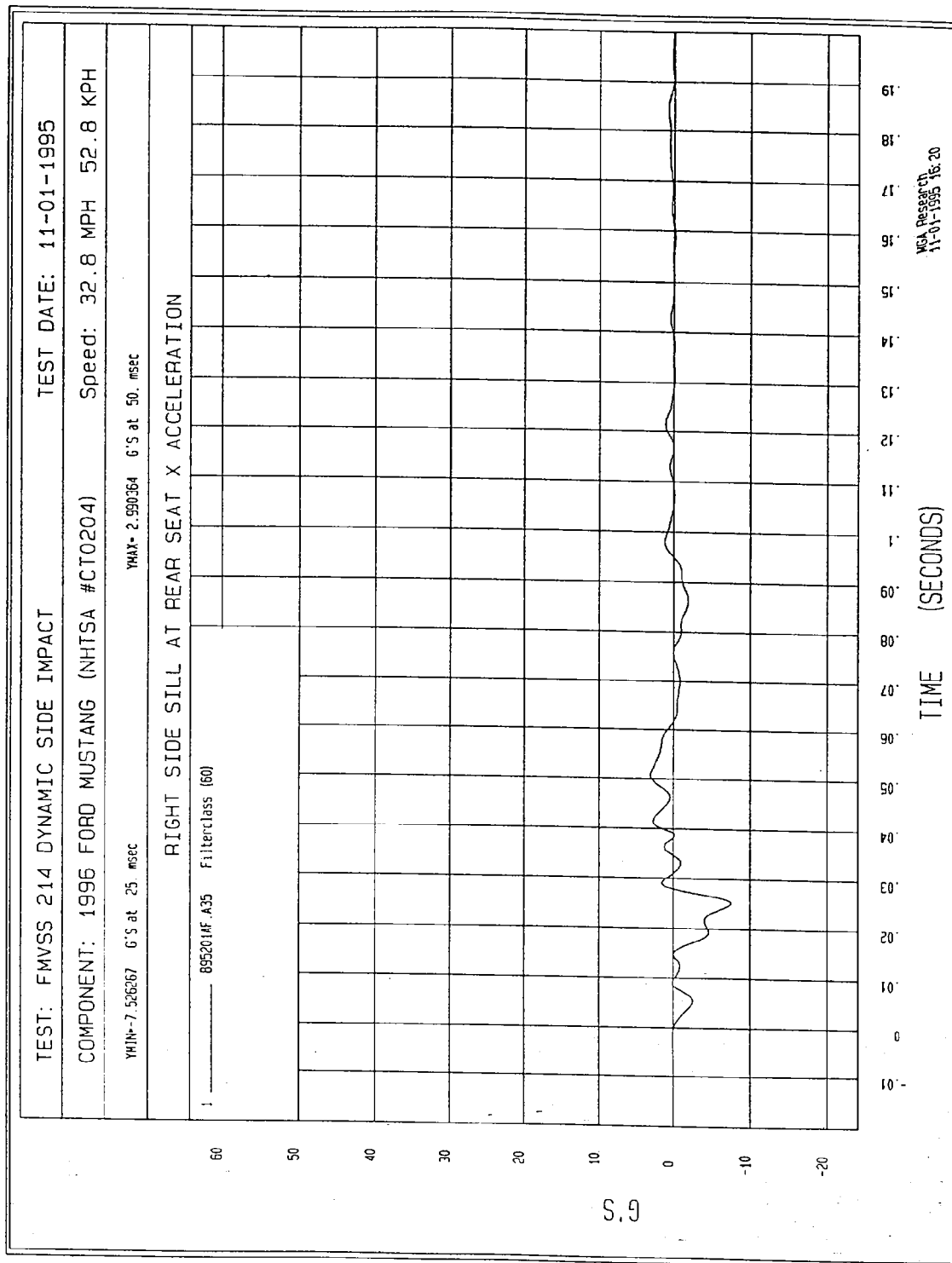


Figure B-28 - Right Side Sill at Rear Seat X Acceleration vs. Time

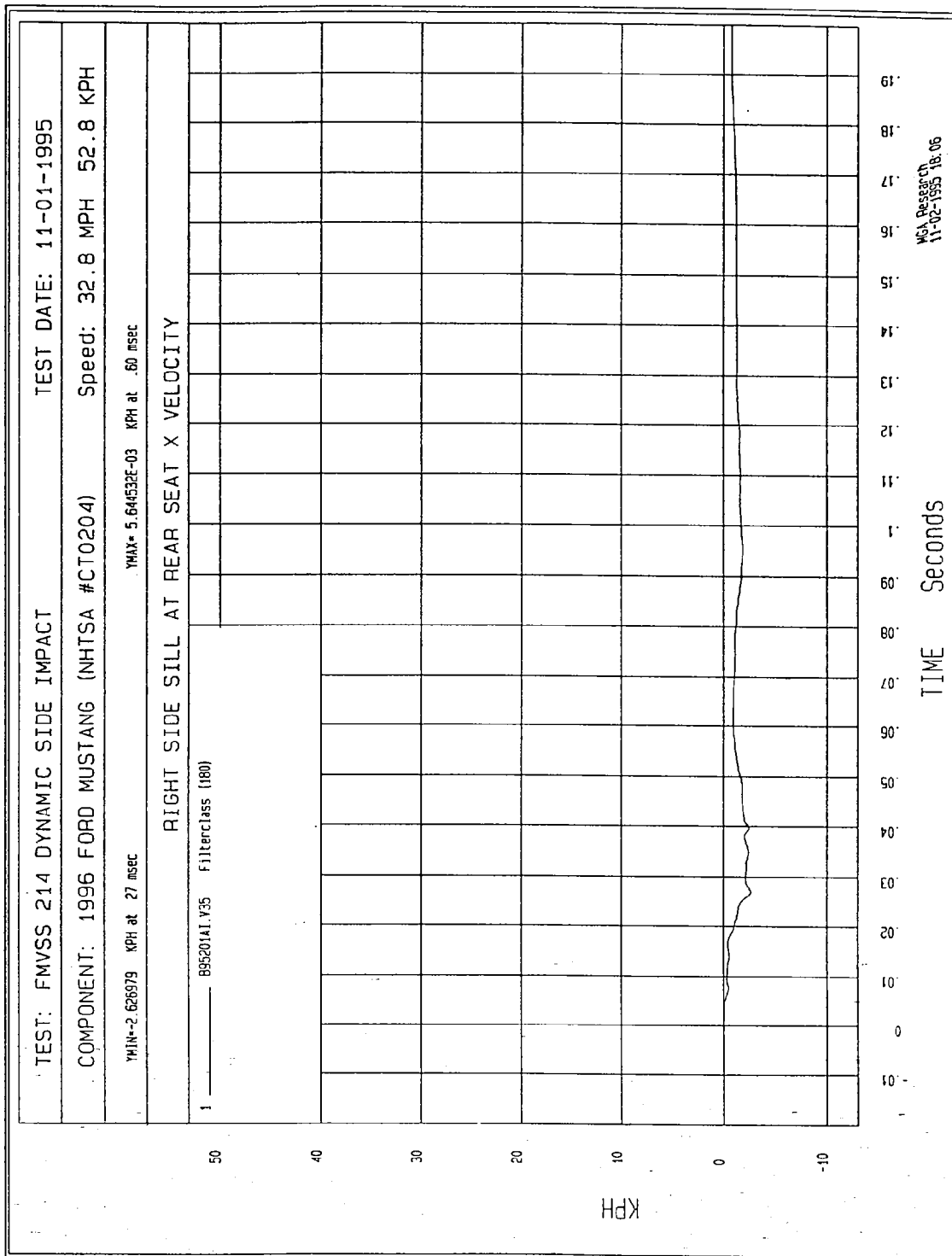


Figure B-29 - Right Side Sill at Rear Seat X Velocity vs. Time

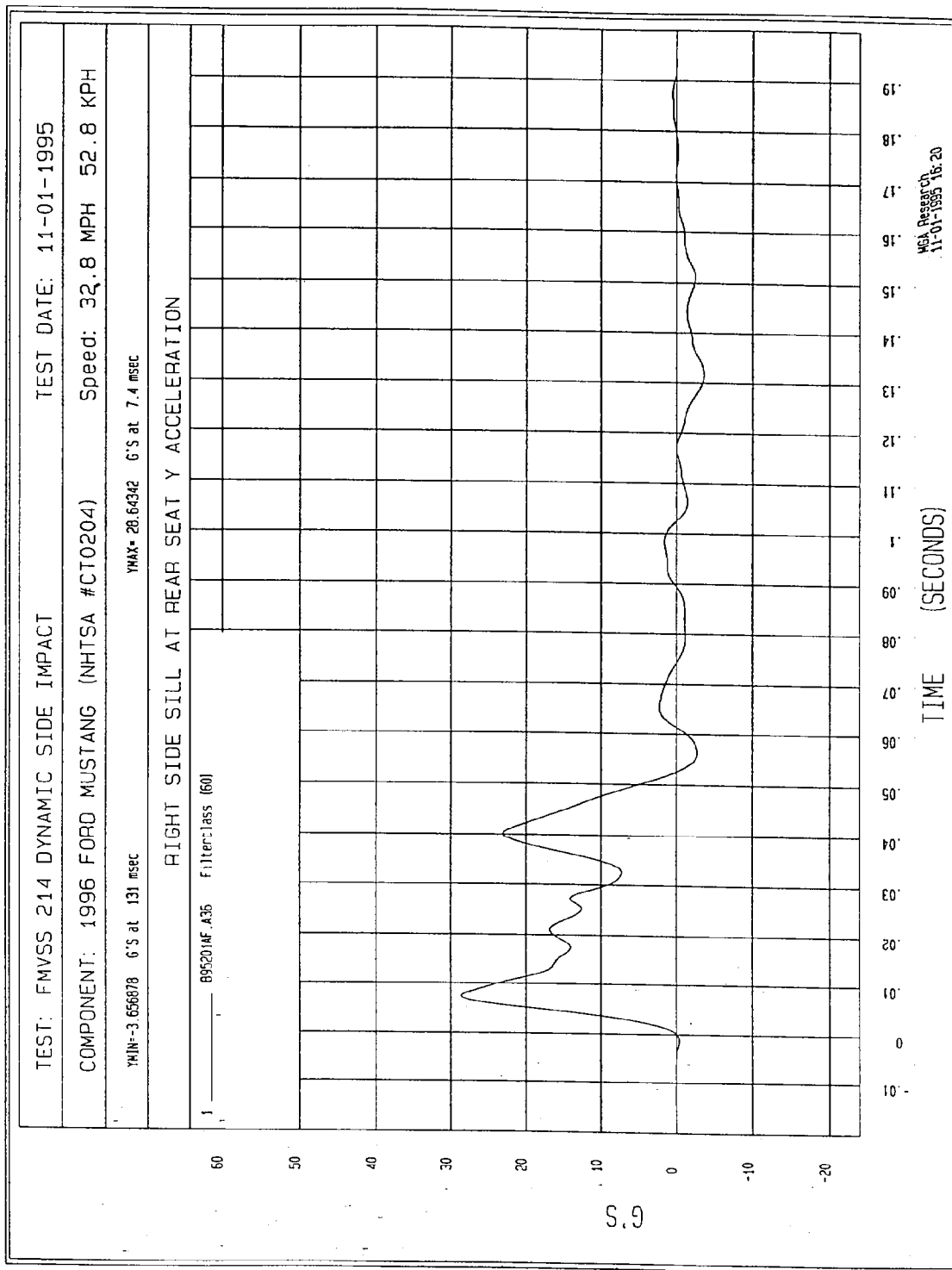


Figure B-30 - Right Side Sill at Rear Seat Y Acceleration vs. Time

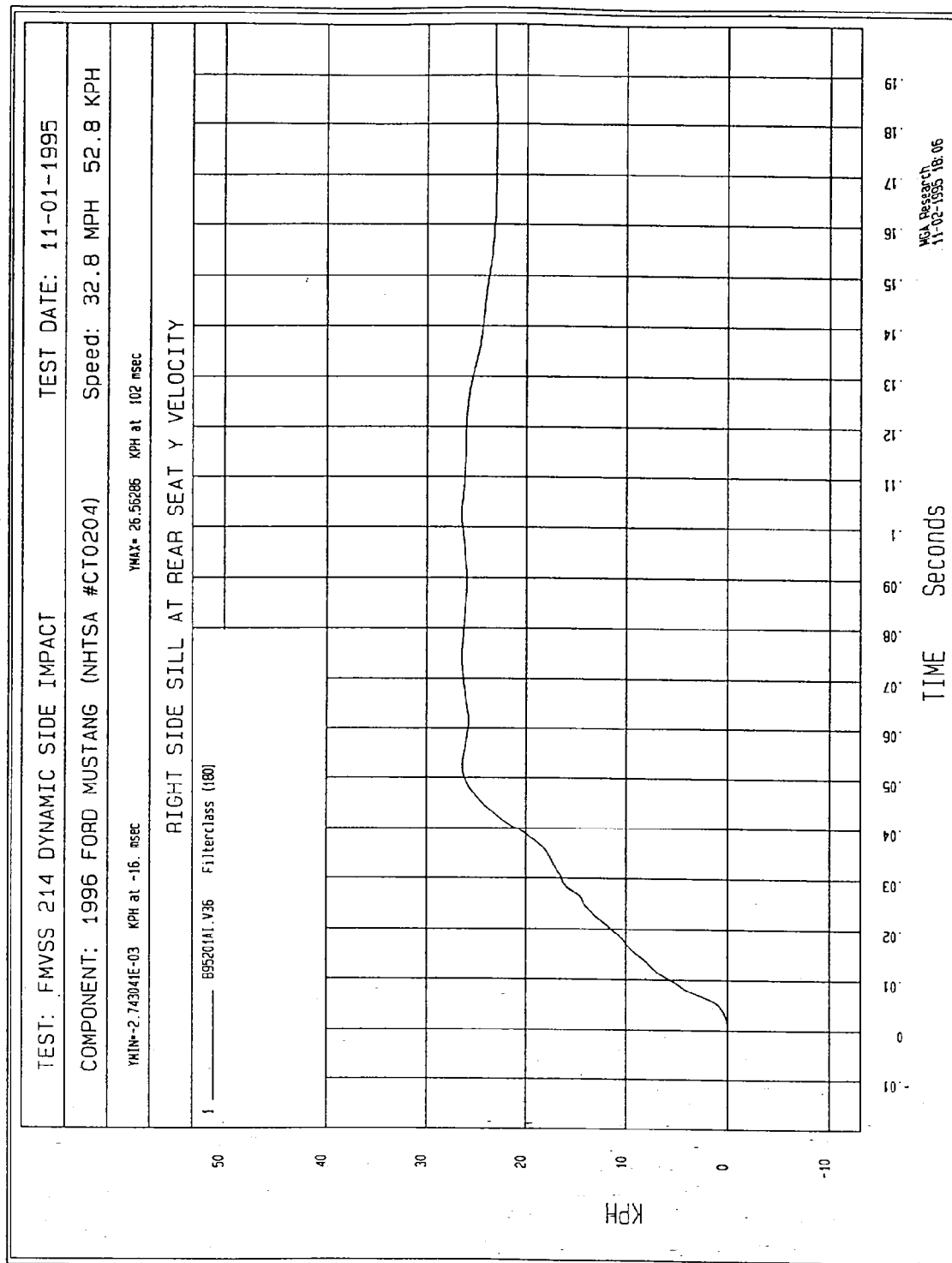


Figure B-31 - Right Side Sill at Rear Seat Y Velocity vs. Time

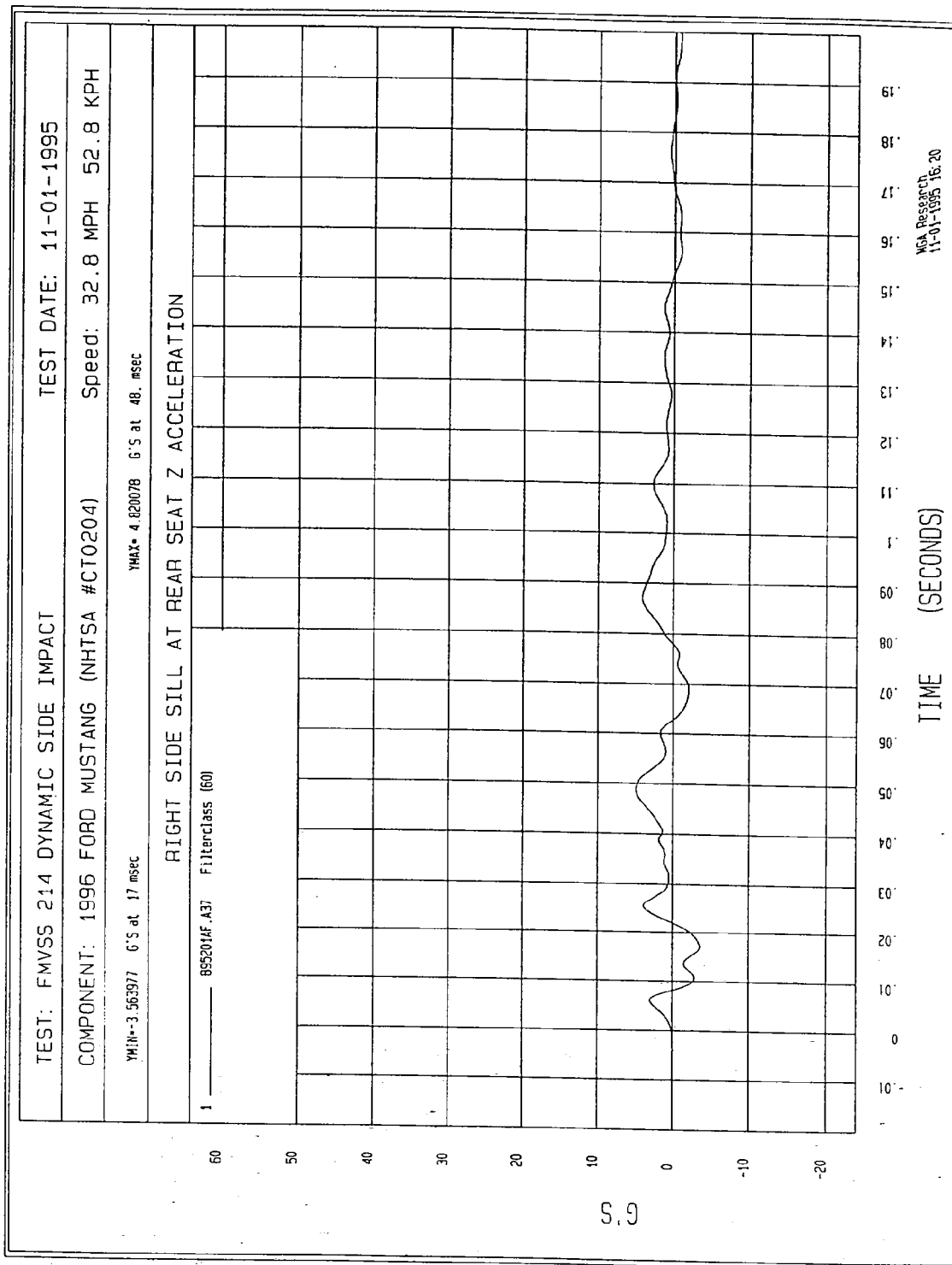


Figure B-32 - Right Side Sill at Rear Seat Z Acceleration vs. Time

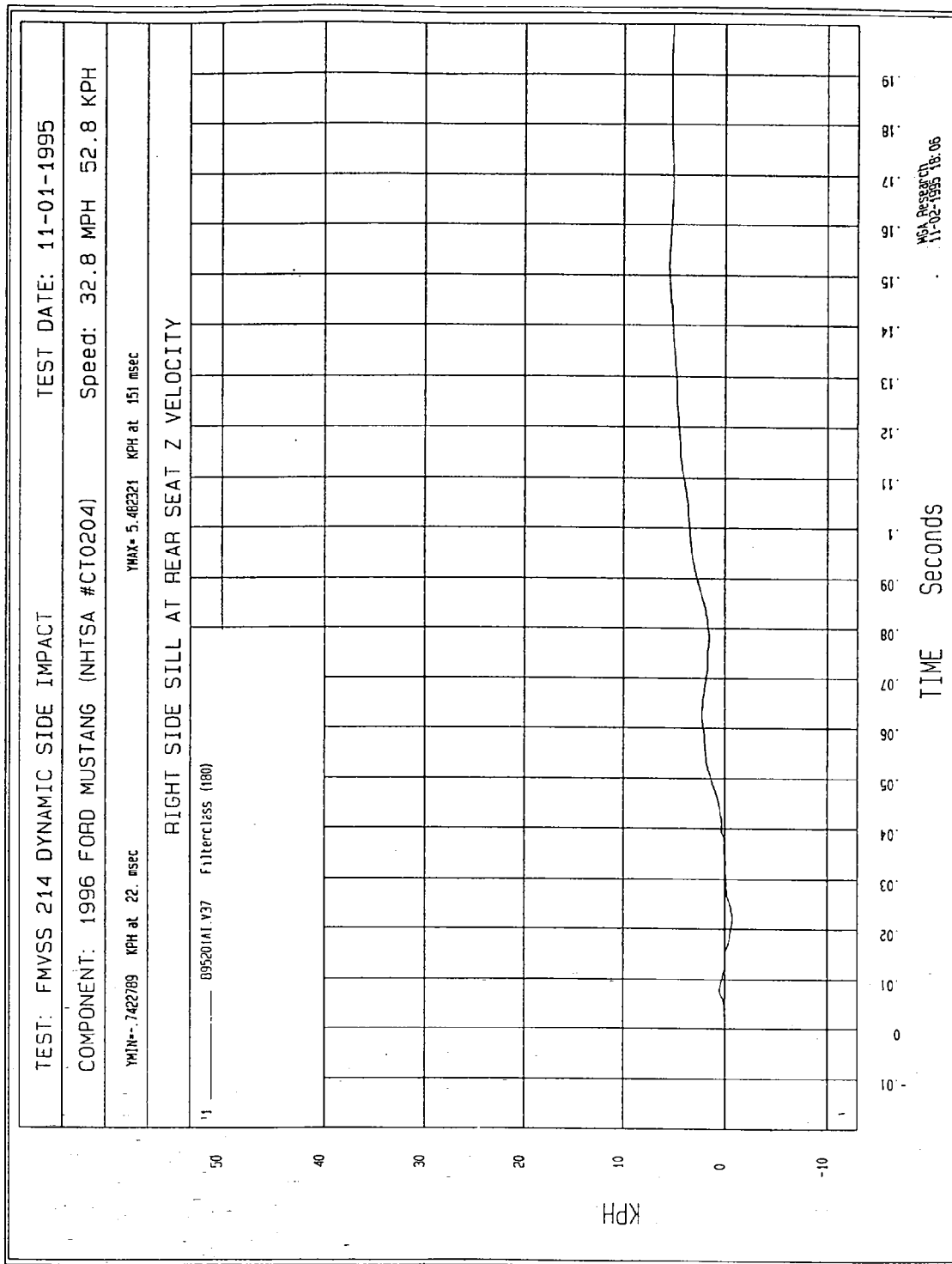


Figure B-33 - Right Side Sill at Rear Seat Z Velocity vs. Time

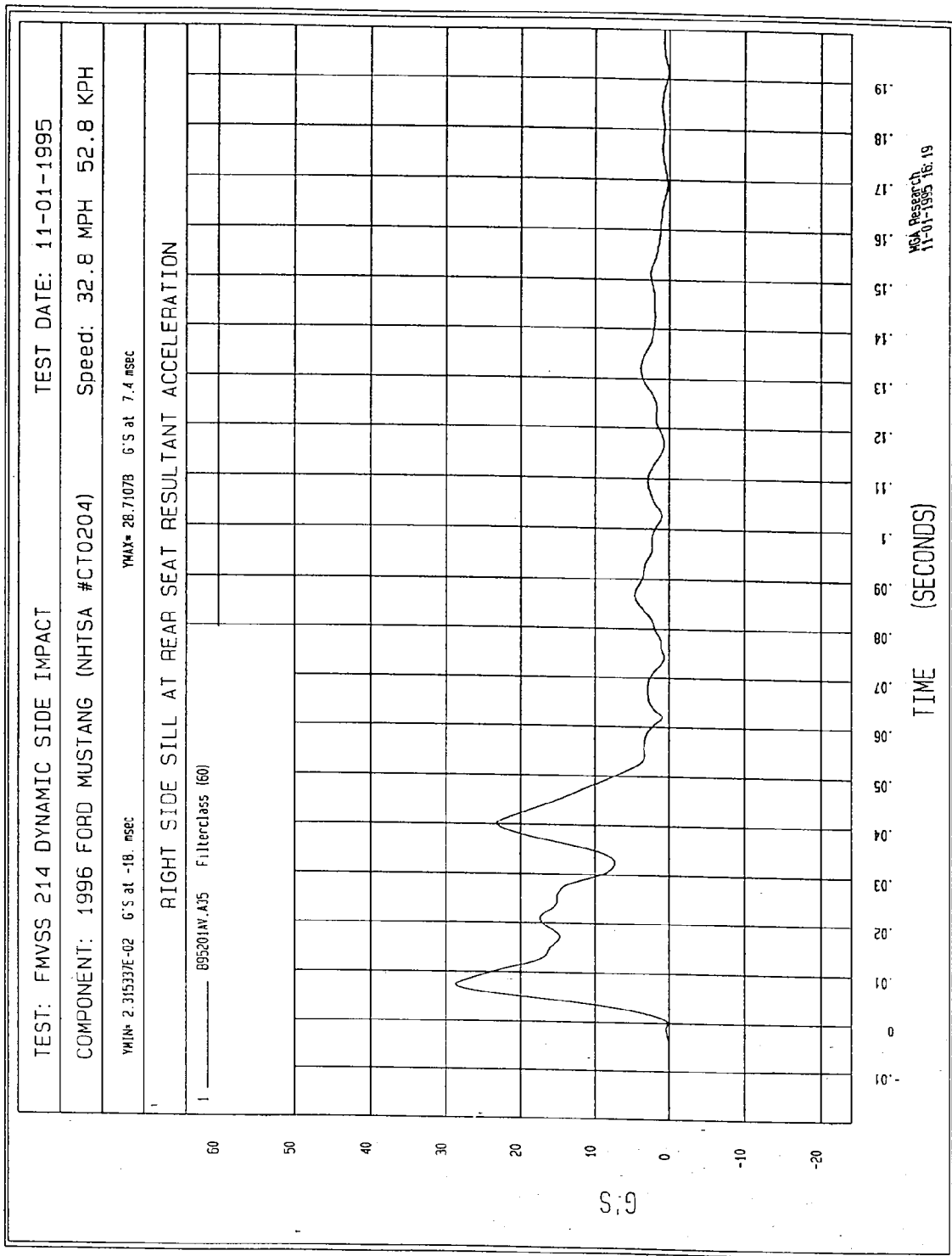


Figure B-34 - Right Side Sill at Rear Seat Resultant Acceleration vs. Time

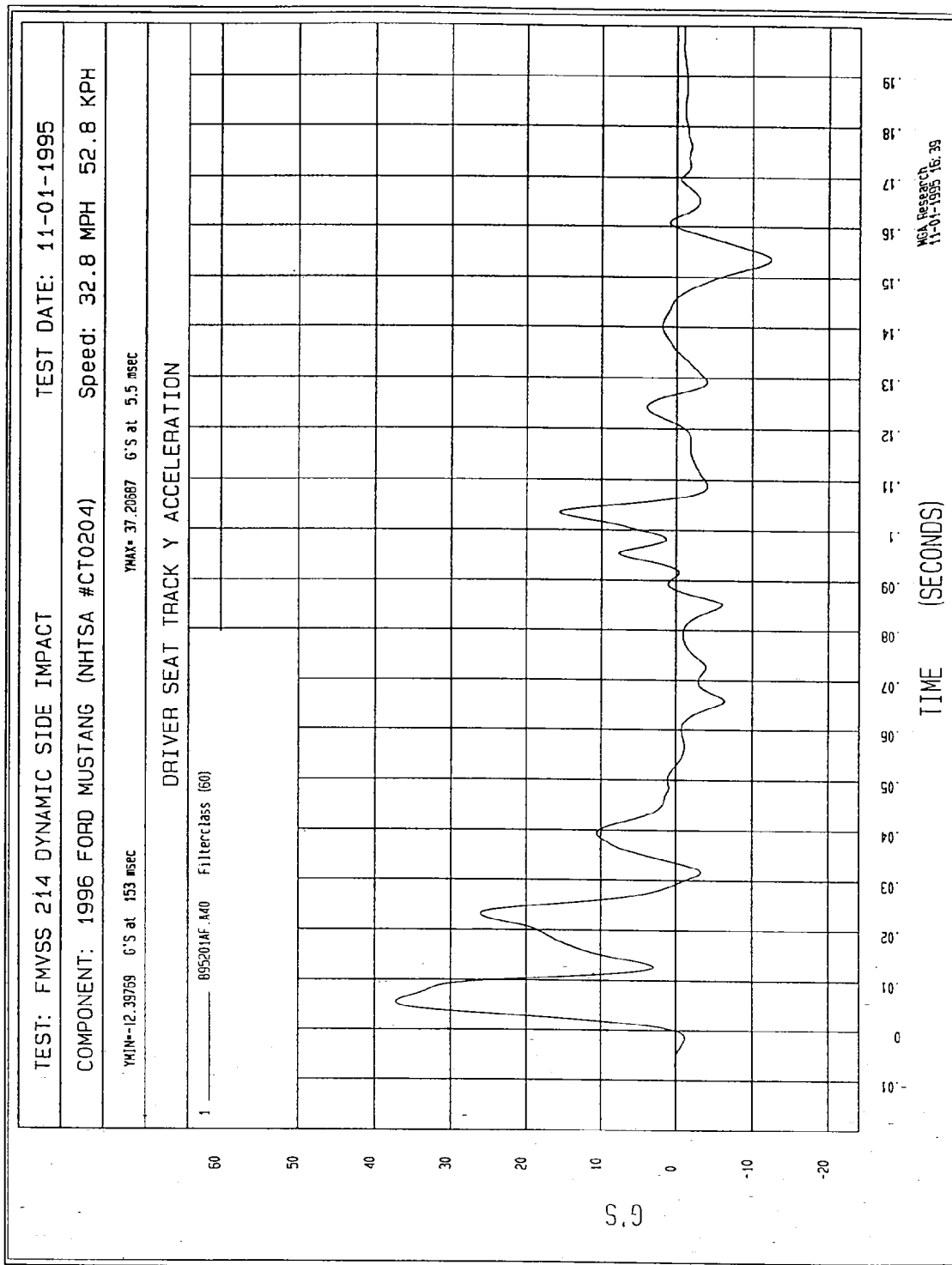


Figure B-35 - Driver Seat Track Y Acceleration vs. Time

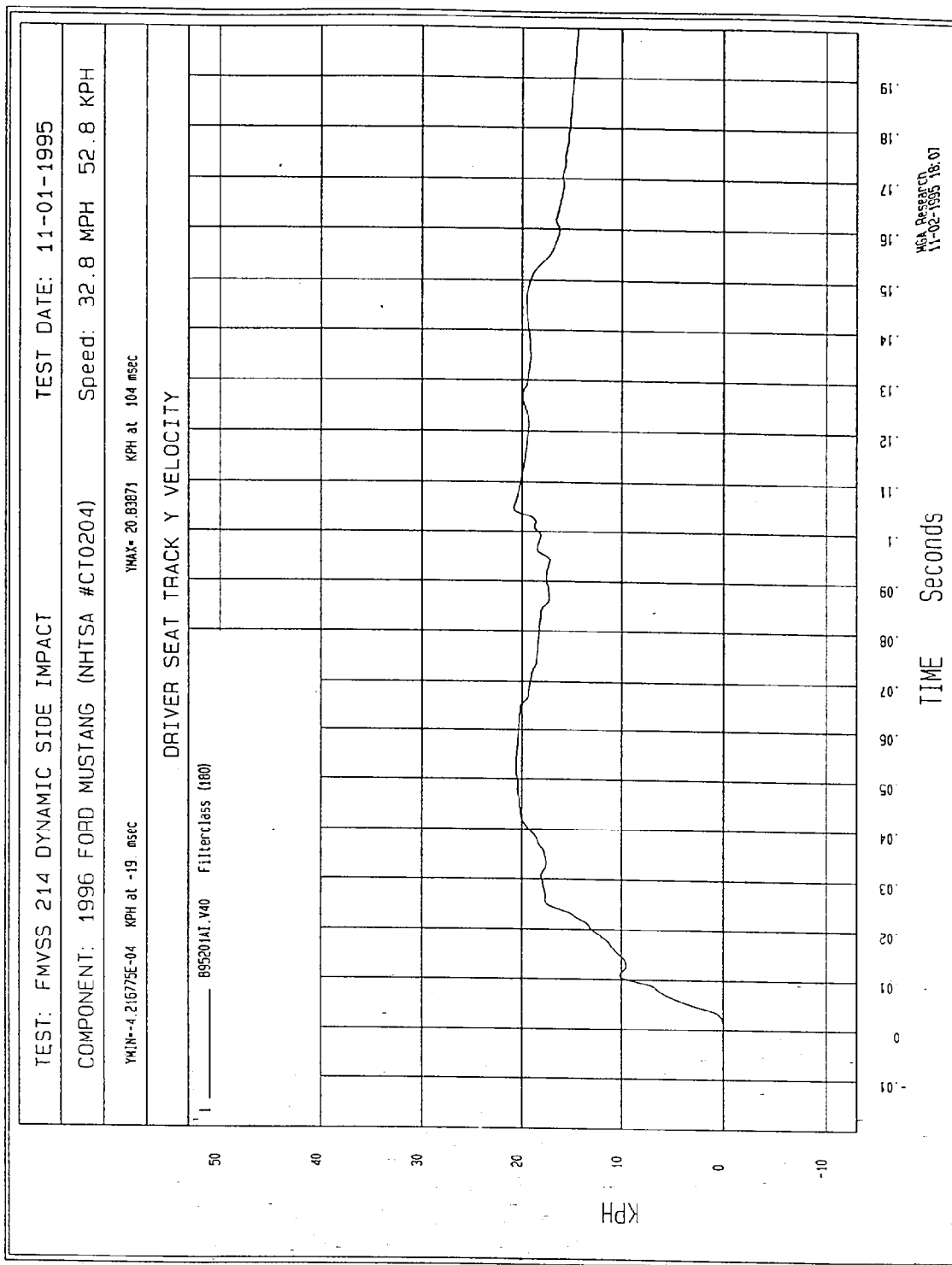


Figure B-36 - Driver Seat Track Y Velocity vs. Time

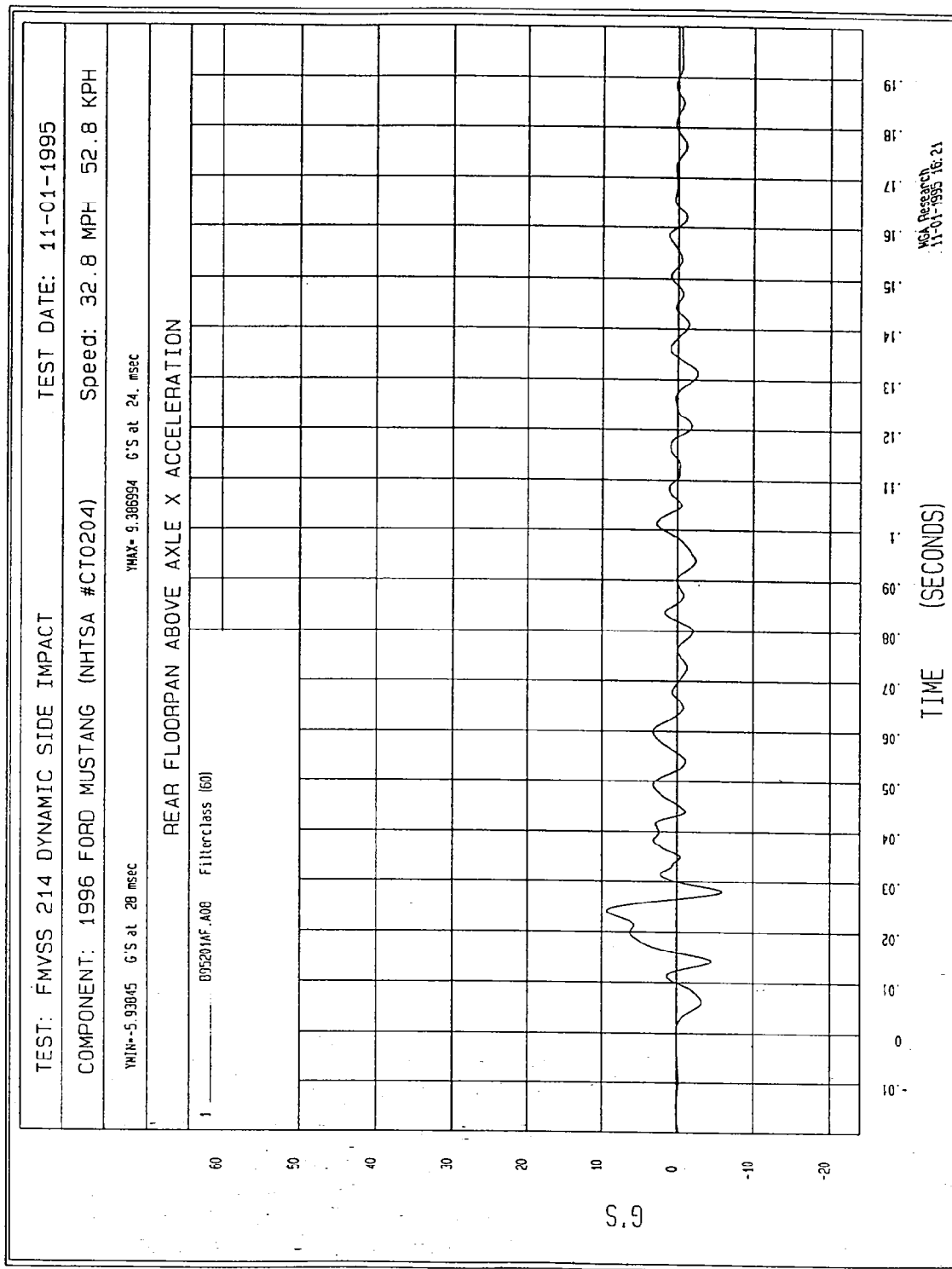


Figure B-37 - Rear Floorpan above Axle X Acceleration vs. Time

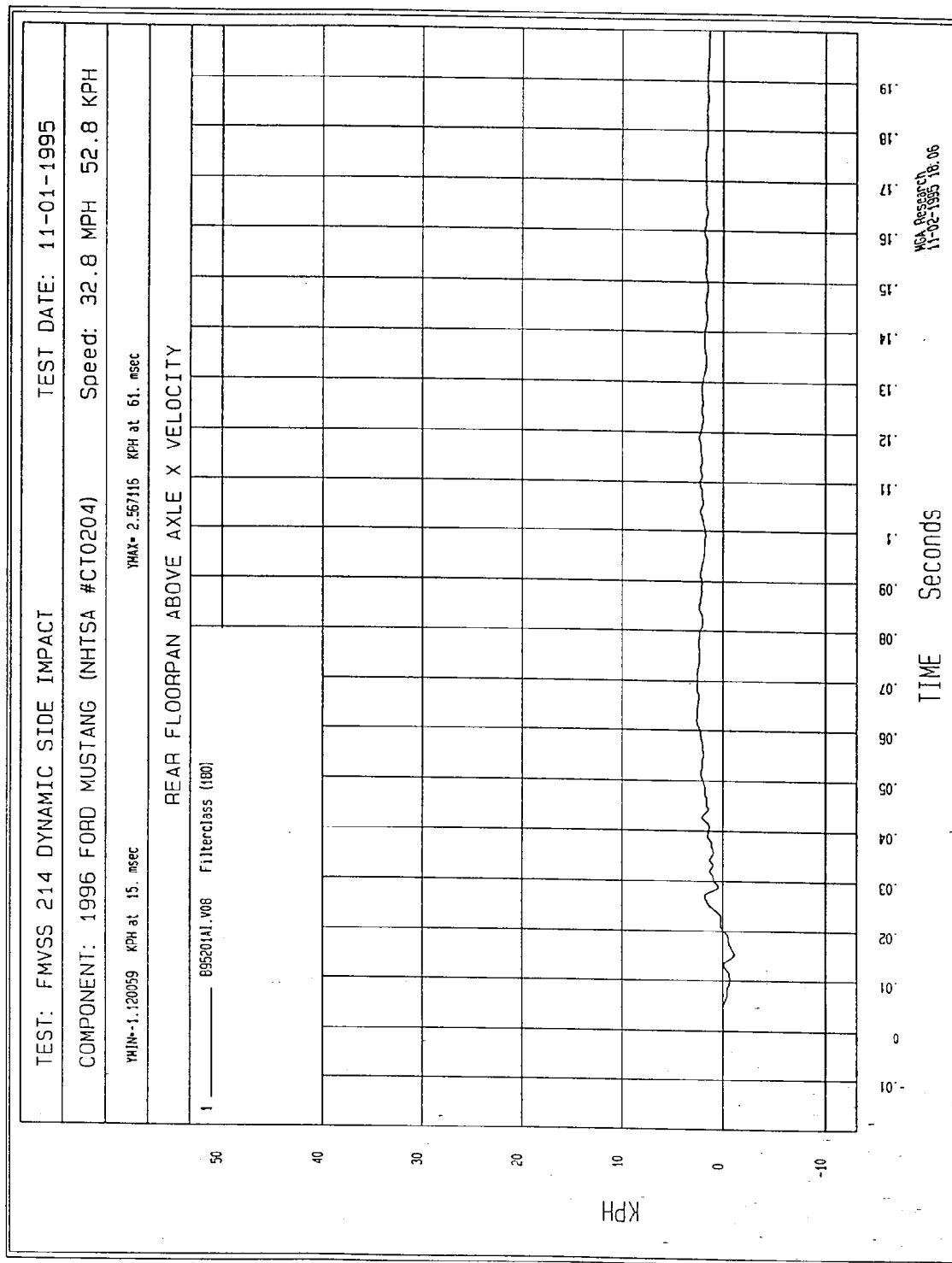


Figure B-38 - Rear Floorpan above Axle X Velocity vs. Time

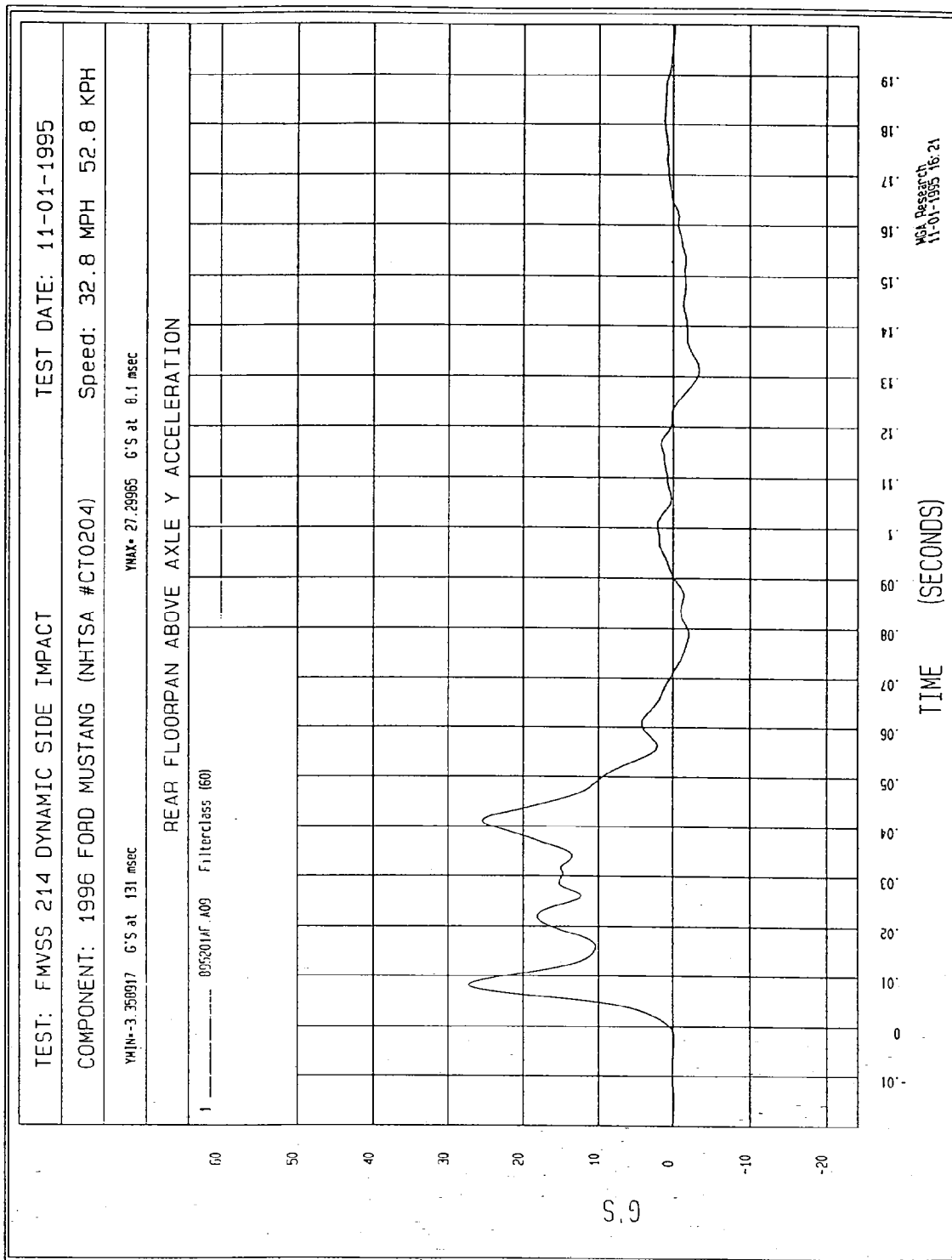


Figure B-39 - Rear Floorpan above Axle Y Acceleration vs. Time

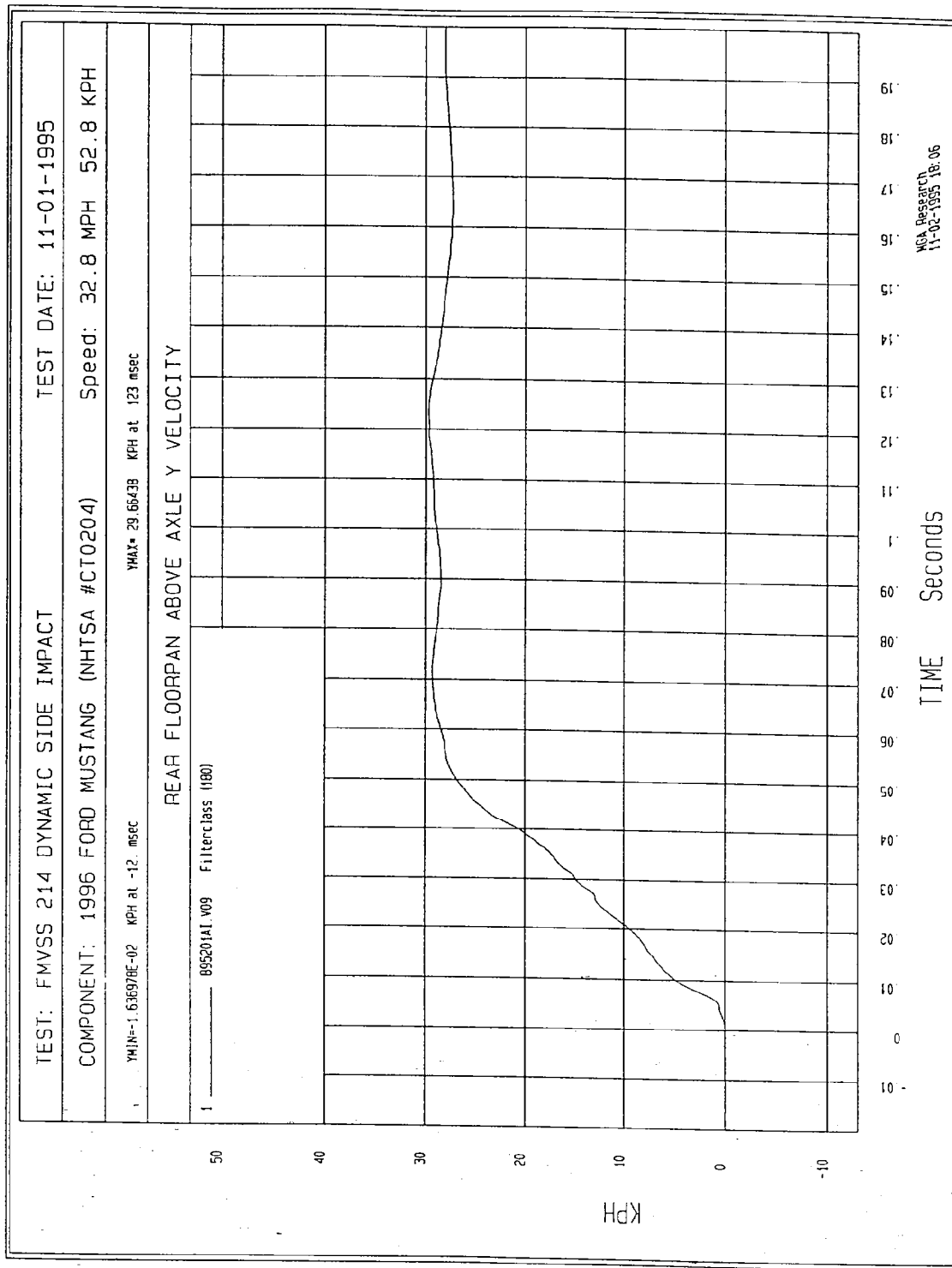


Figure B-40 - Rear Floorpan above Axle Y Velocity vs. Time

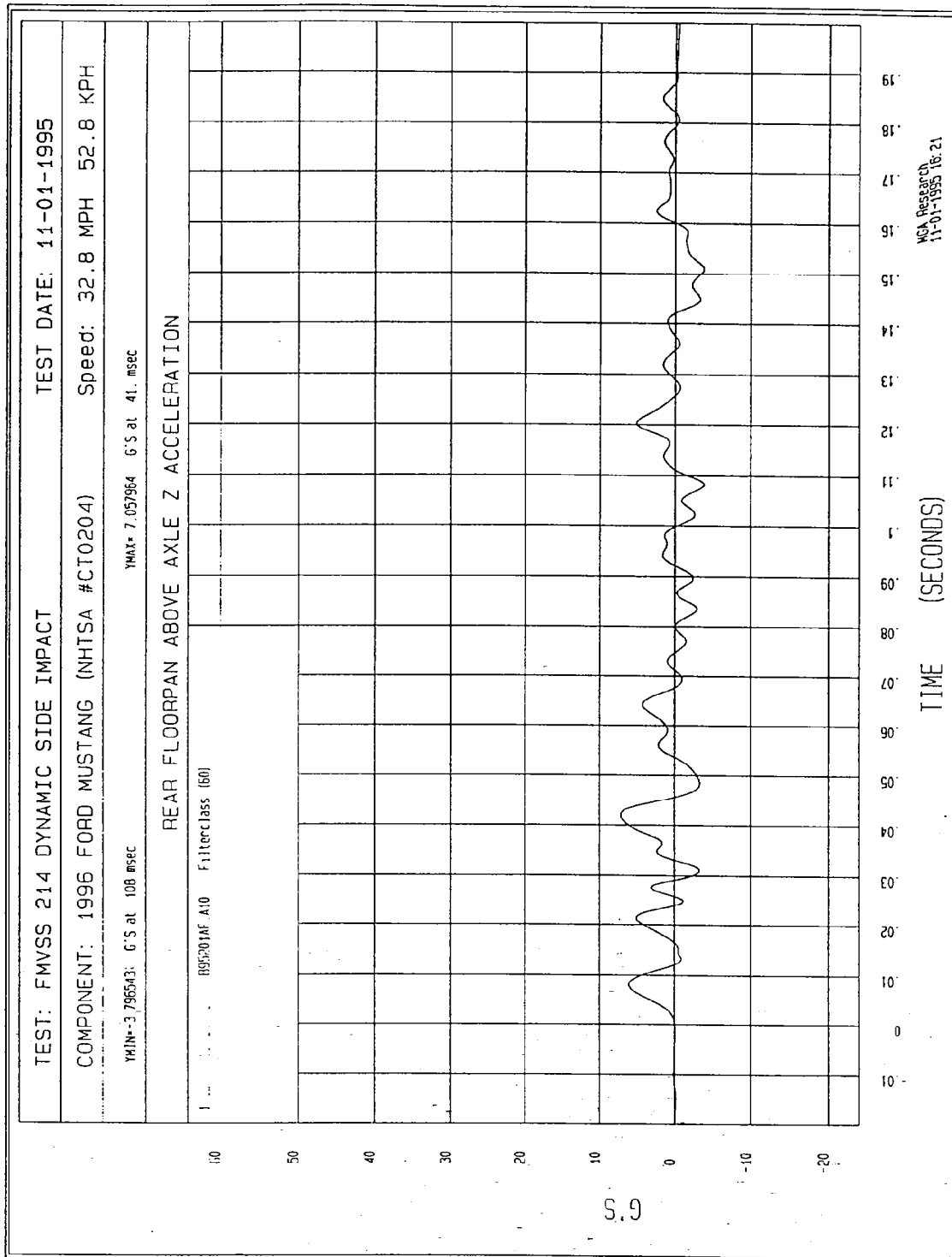


Figure B-41 - Rear Floorpan above Axle Z Acceleration vs. Time

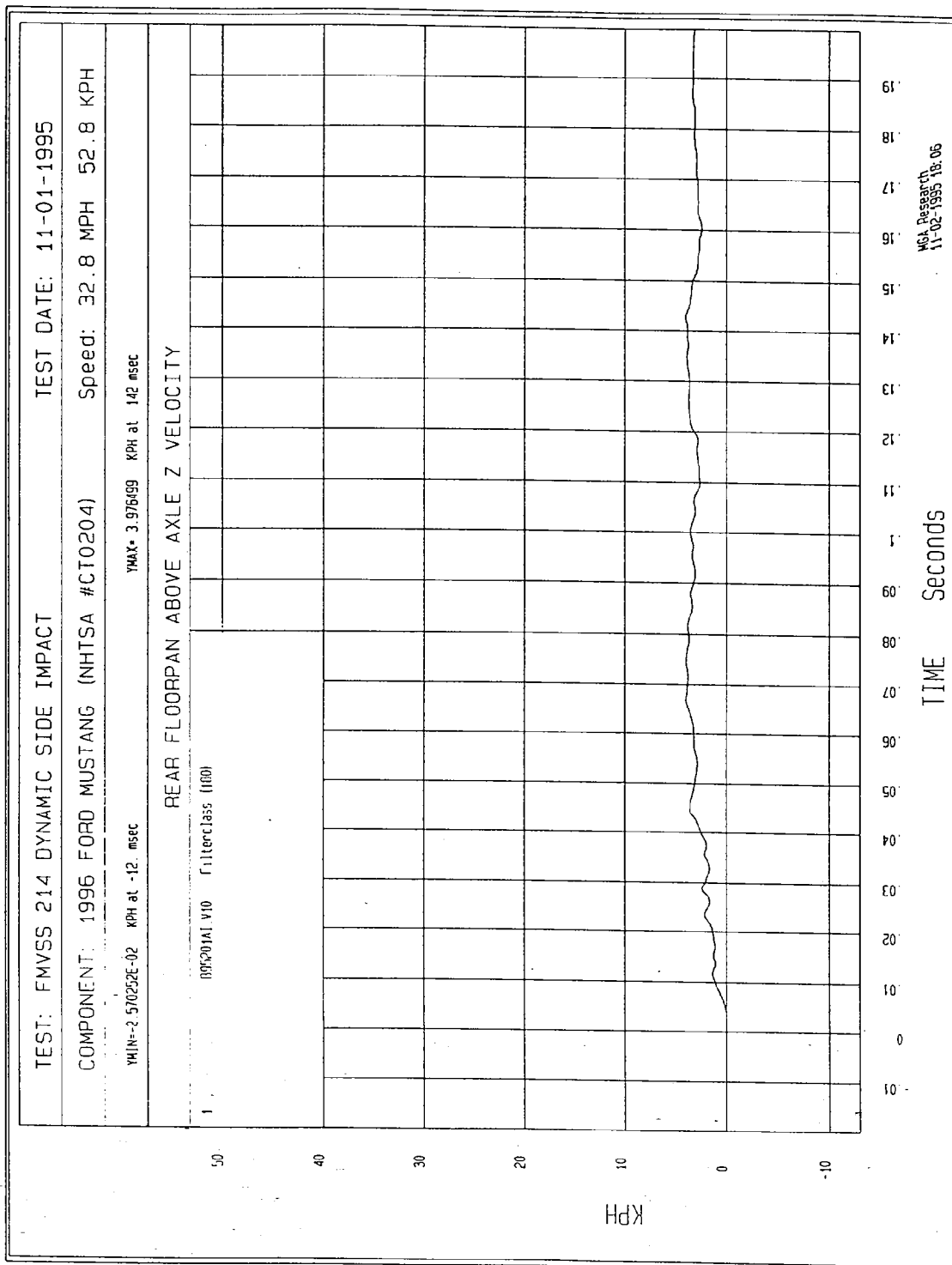


Figure B-42 - Rear Floorpan above Axle Z Velocity vs. Time

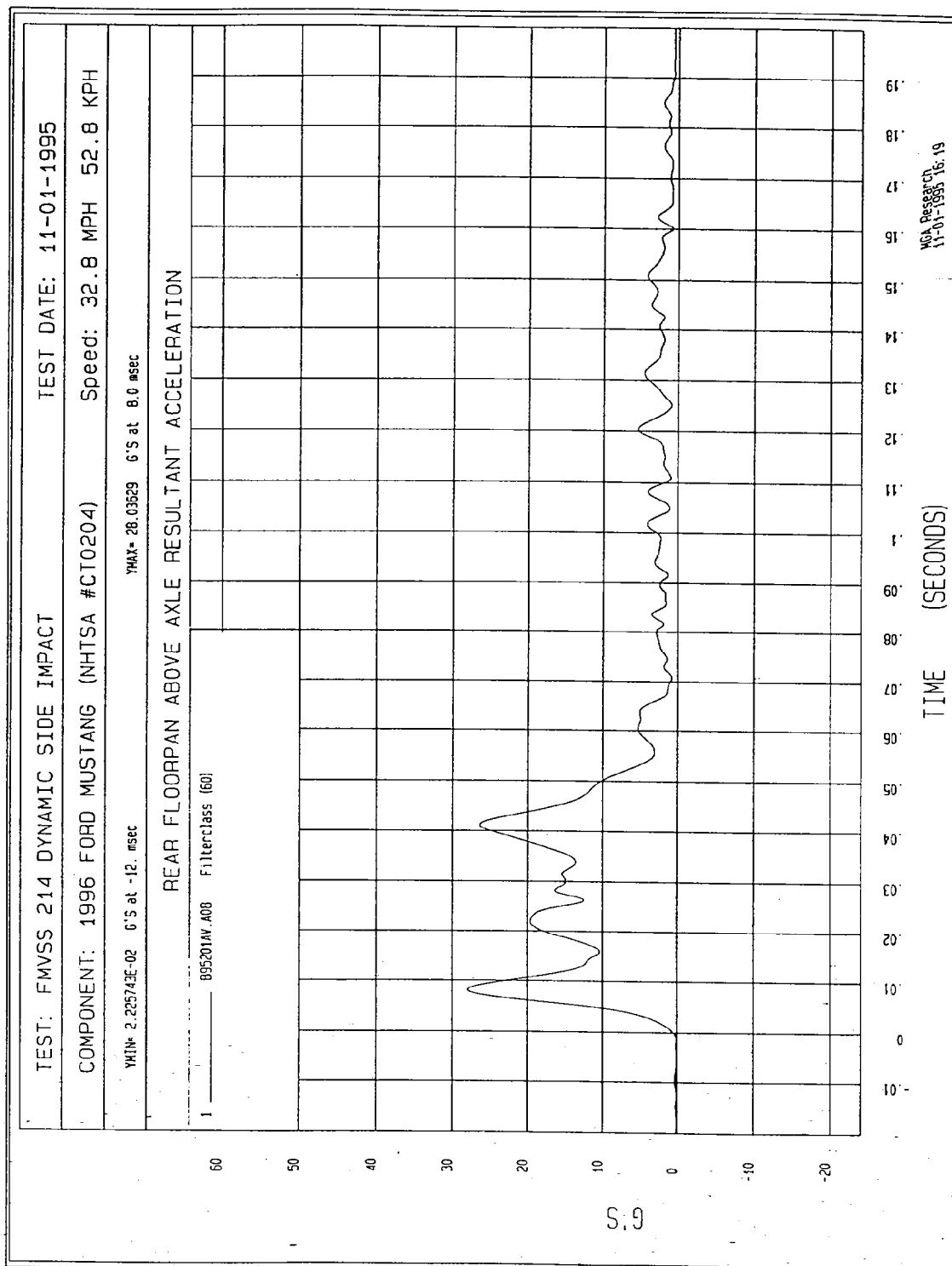


Figure B-43 - Rear Floorpan above Axle Resultant Acceleration vs. Time

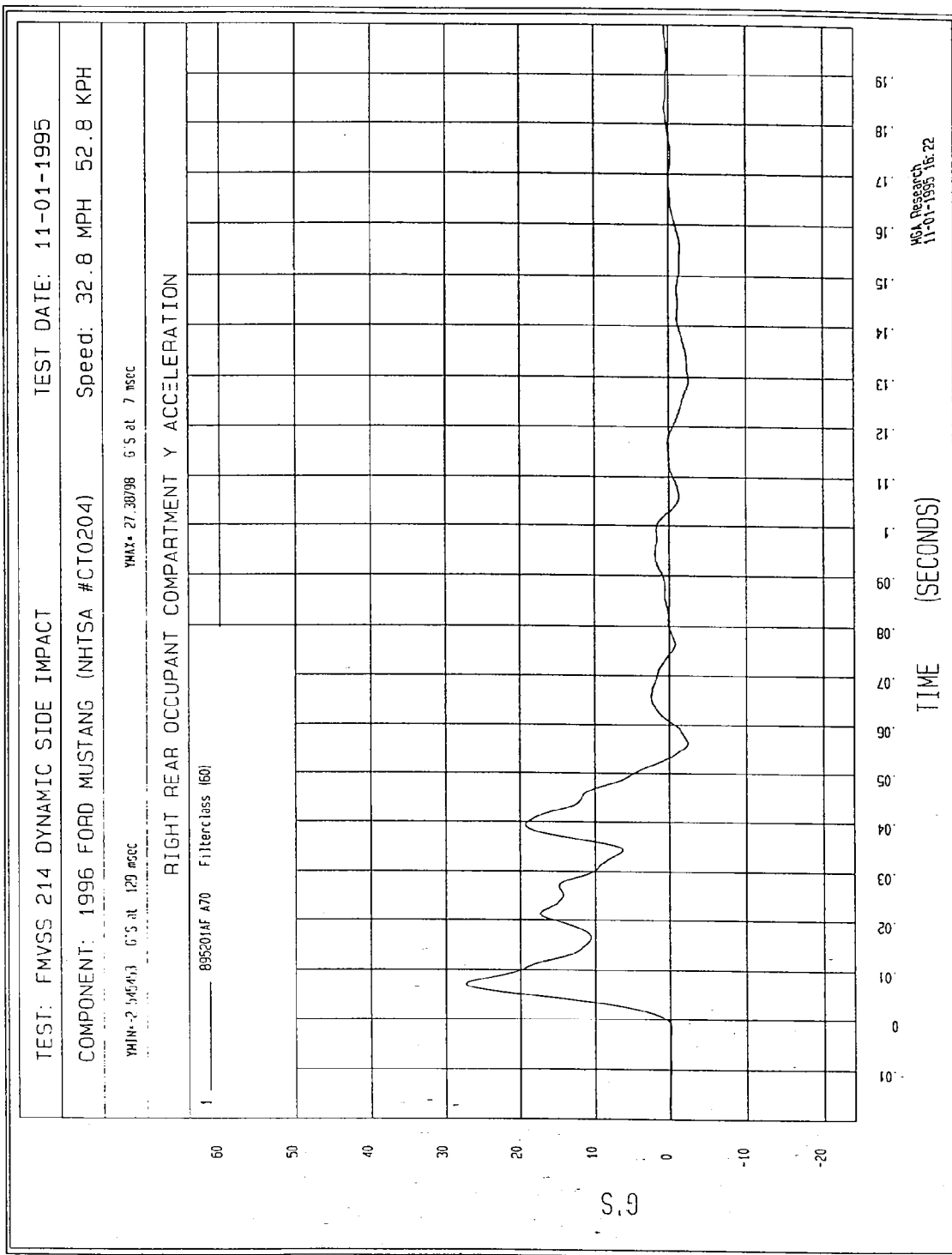


Figure B-44 - Right Rear Occupant Compartment Y Acceleration vs. Time

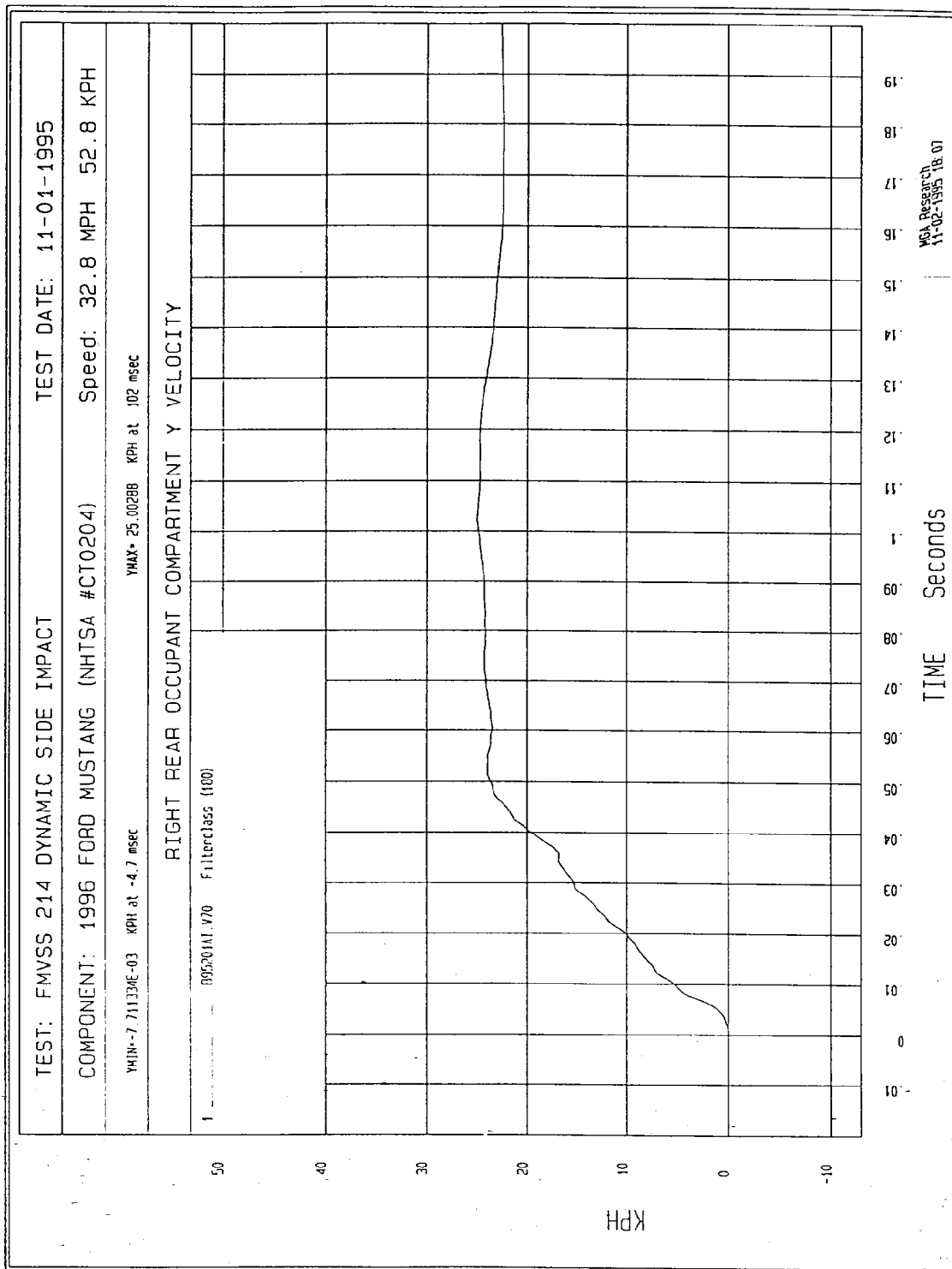


Figure B-45 - Right Rear Occupant Compartment Y Velocity vs. Time

NO VALID DATA COLLECTED

Figure B-46 - Left Mid A Post Y Acceleration vs. Time

NO VALID DATA COLLECTED

Figure B-47 - Left Mid A Post Y Velocity vs. Time

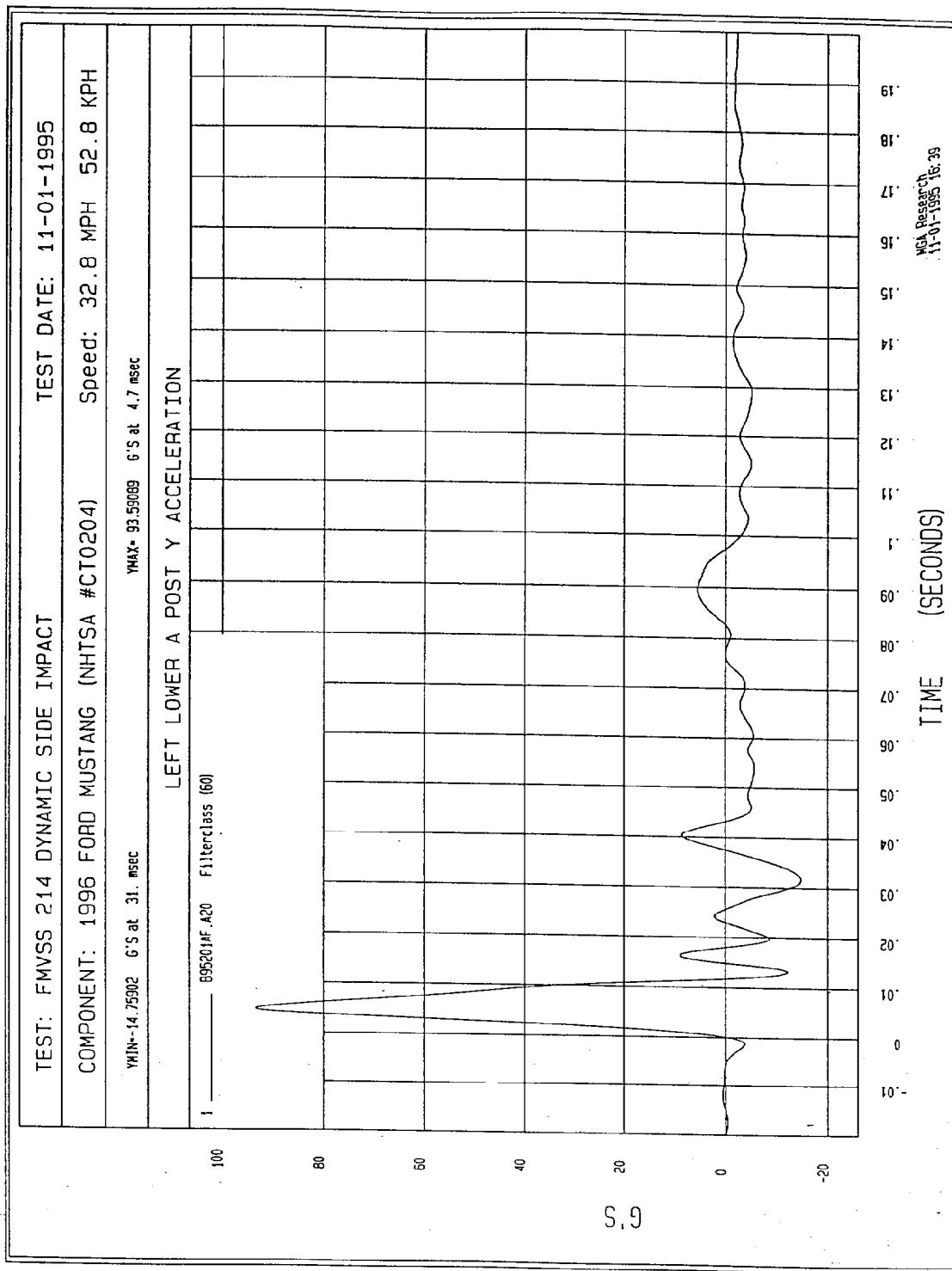


Figure B-48 - Left Lower A Post Y Acceleration vs. Time

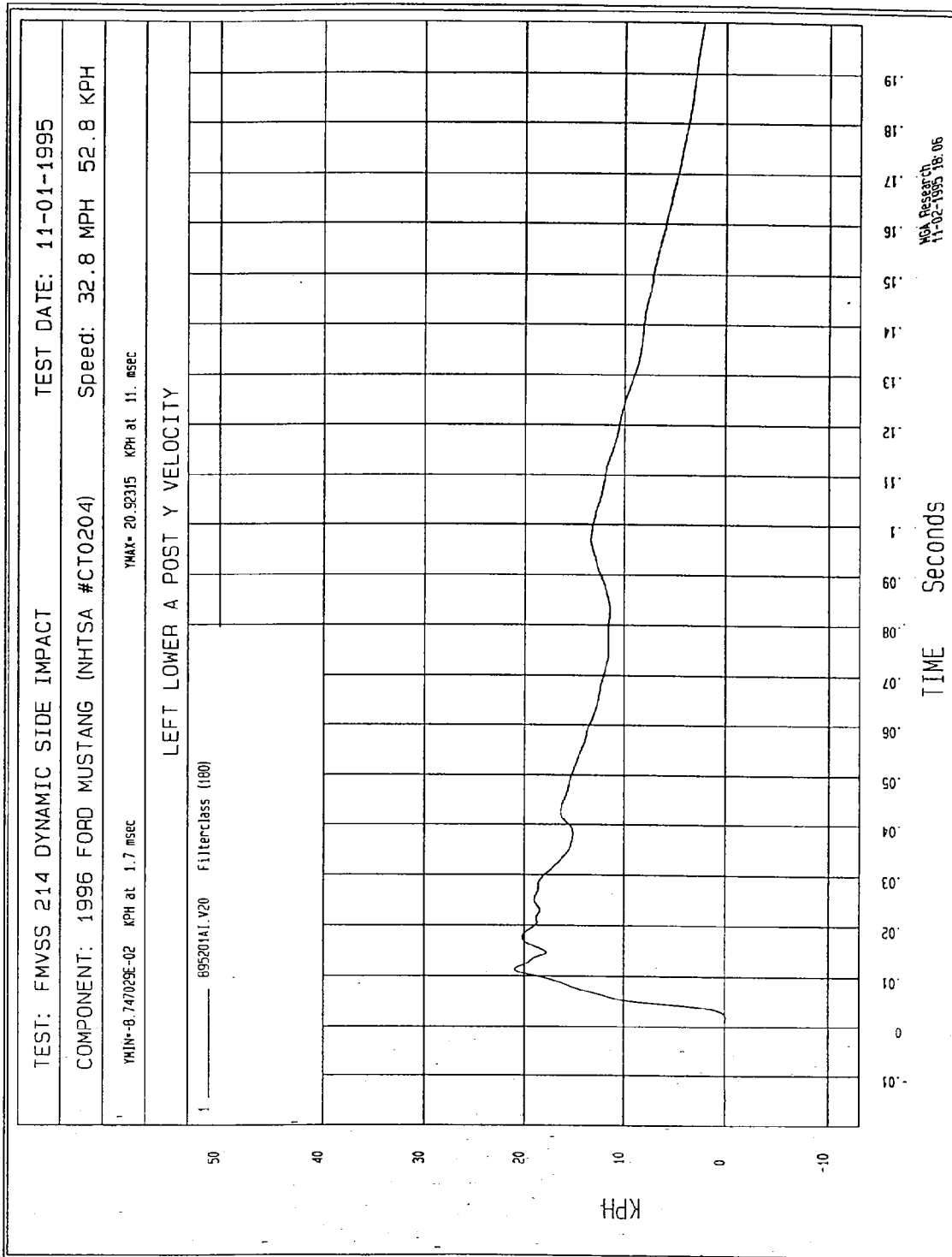


Figure B-49 - Left Lower A Post Y Velocity vs. Time

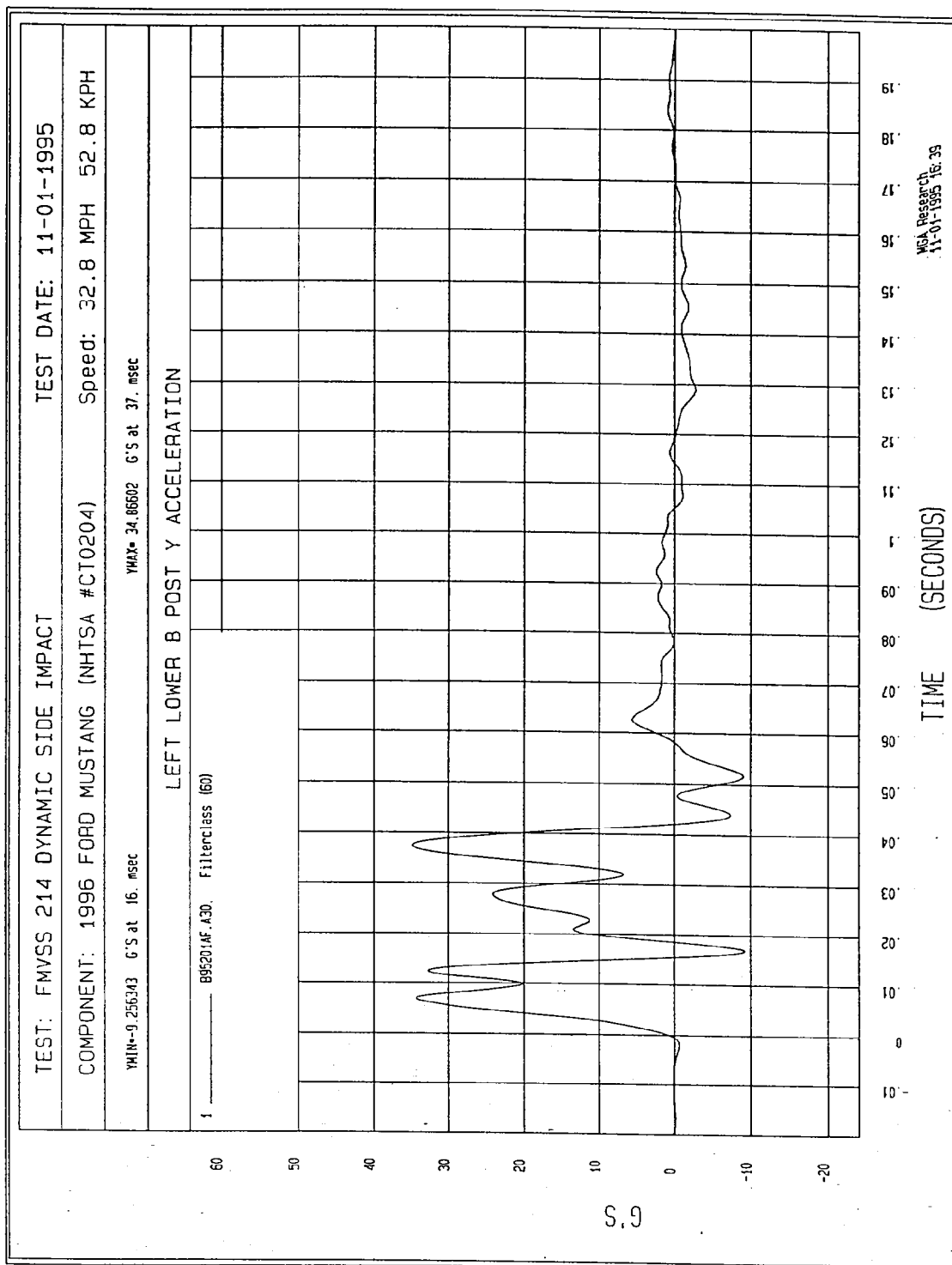


Figure B-50 - Left Lower B Post Y Acceleration vs. Time

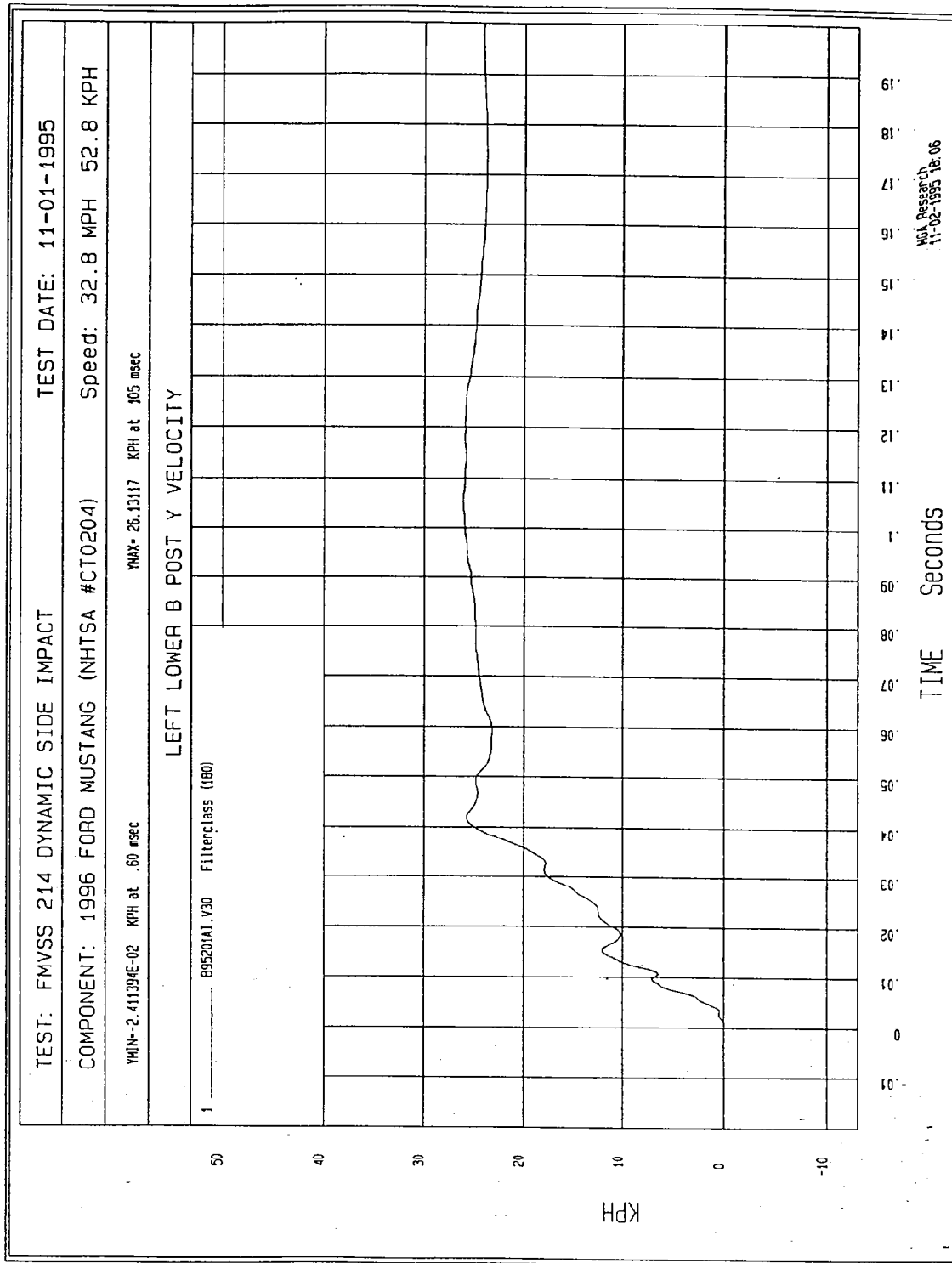


Figure B-51 - Left Lower B Post Y Velocity vs. Time

NO VALID DATA COLLECTED

Figure B-52 - Vehicle Center of Gravity X Acceleration vs. Time

NO VALID DATA COLLECTED

Figure B-53 - Vehicle Center of Gravity Y Acceleration vs. Time

NO VALID DATA COLLECTED

Figure B-54 - Vehicle Center of Gravity Z Acceleration vs. Time

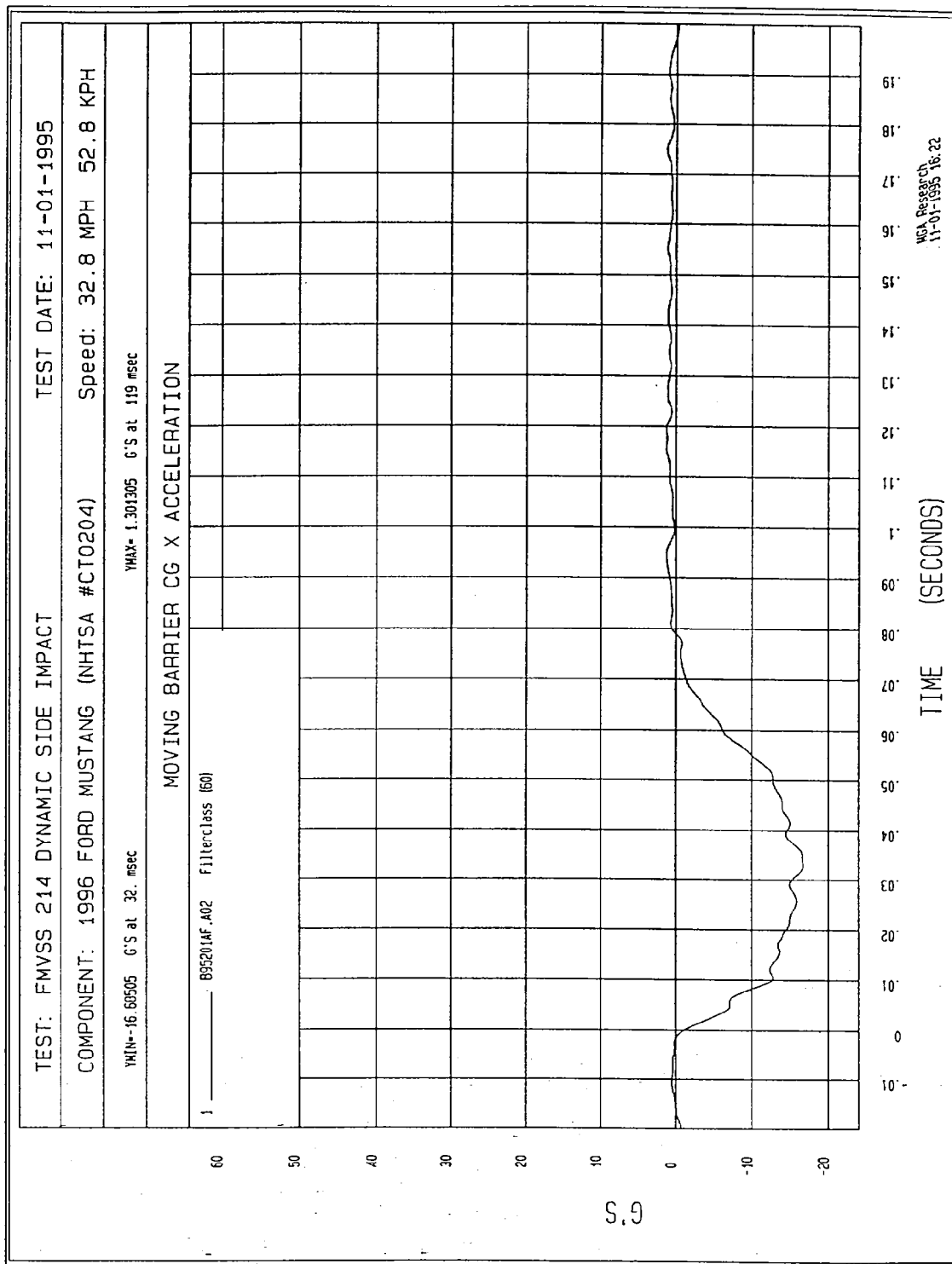


Figure B-55 - Moving Barrier Center of Gravity X Acceleration vs. Time

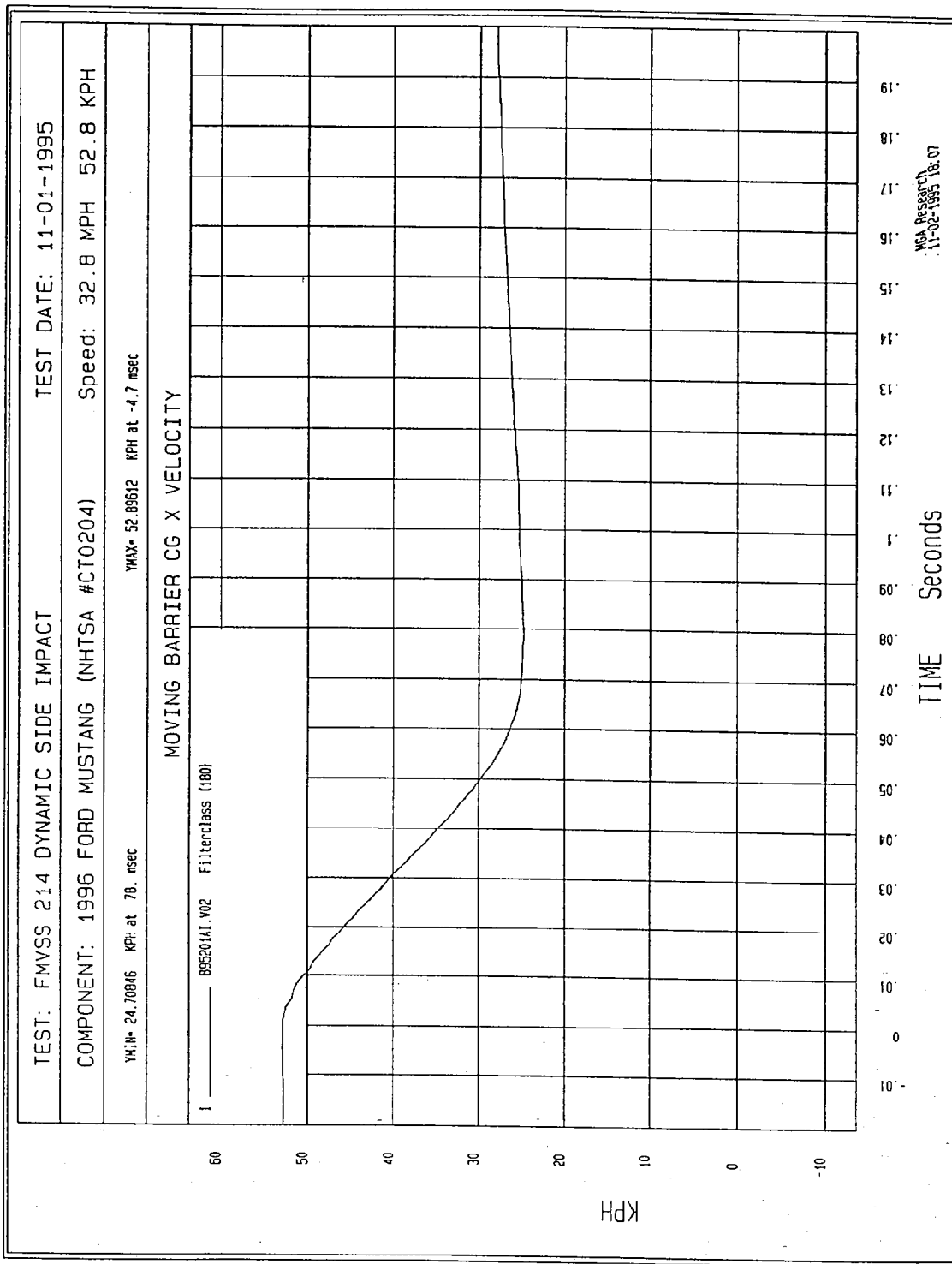


Figure B-56 - Moving Barrier Center of Gravity X Velocity vs. Time

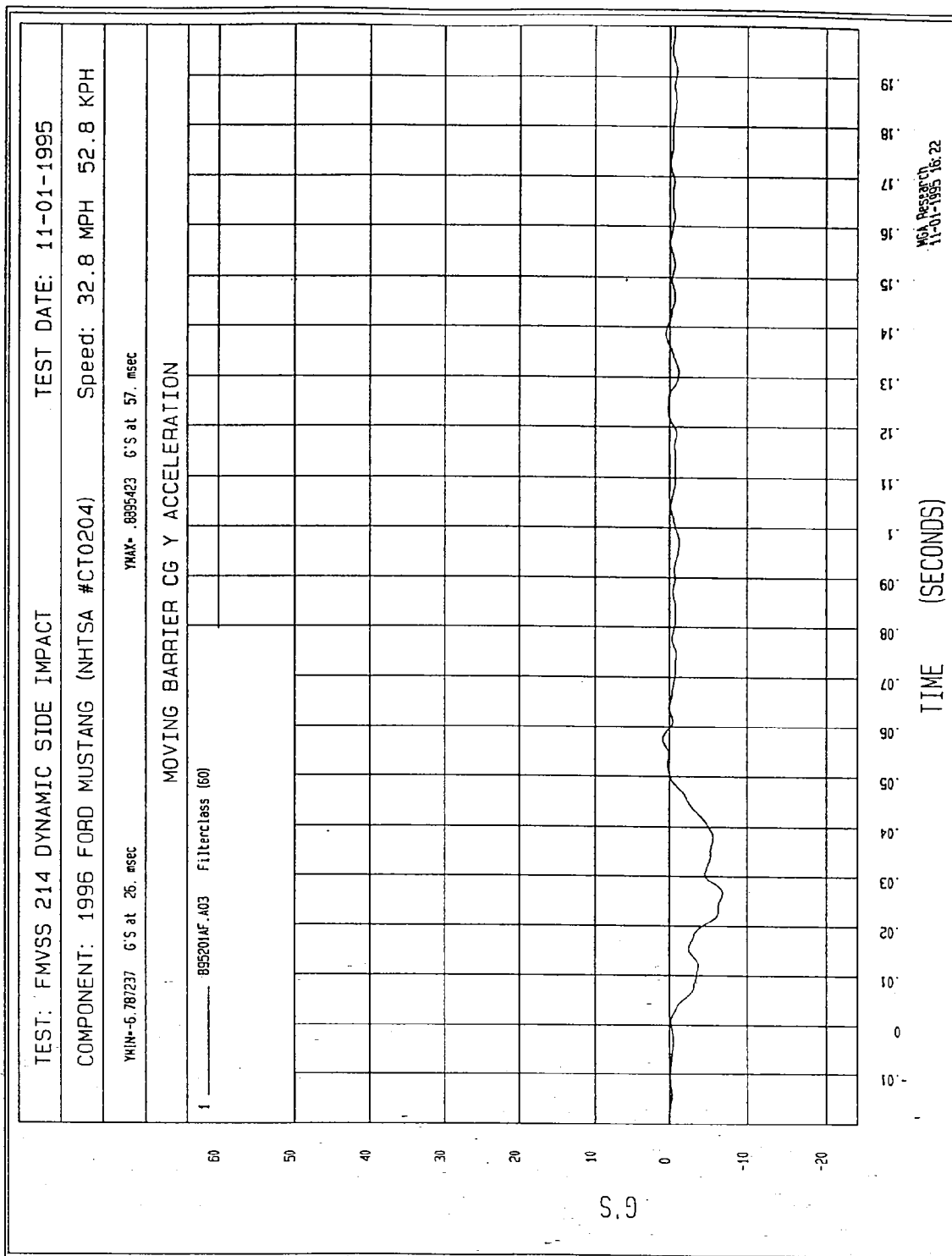


Figure B-57 - Moving Barrier Center of Gravity Y Acceleration vs. Time

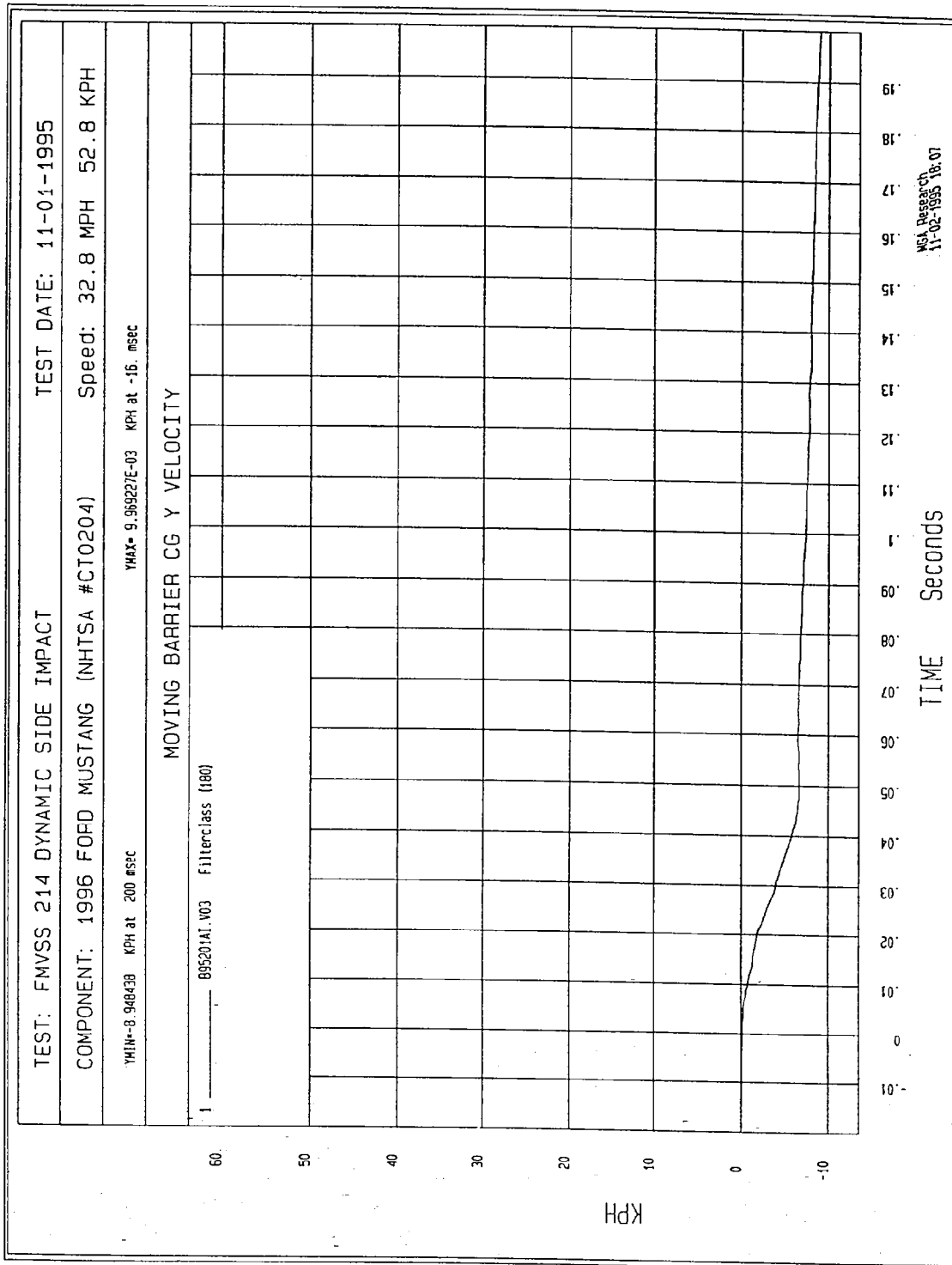


Figure B-58 - Moving Barrier Center of Gravity Y Velocity vs. Time

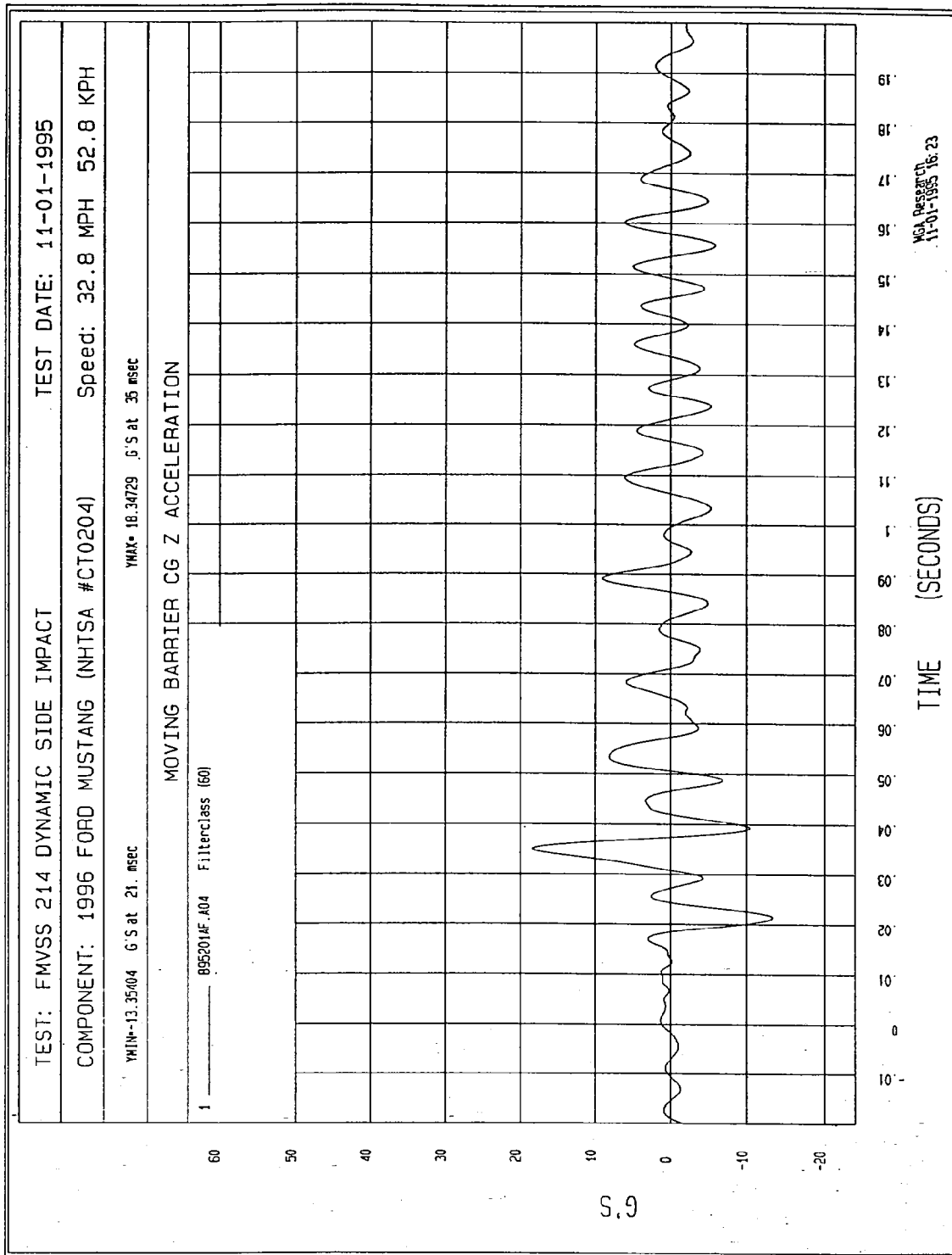


Figure B-59 - Moving Barrier Center of Gravity Z Acceleration vs. Time

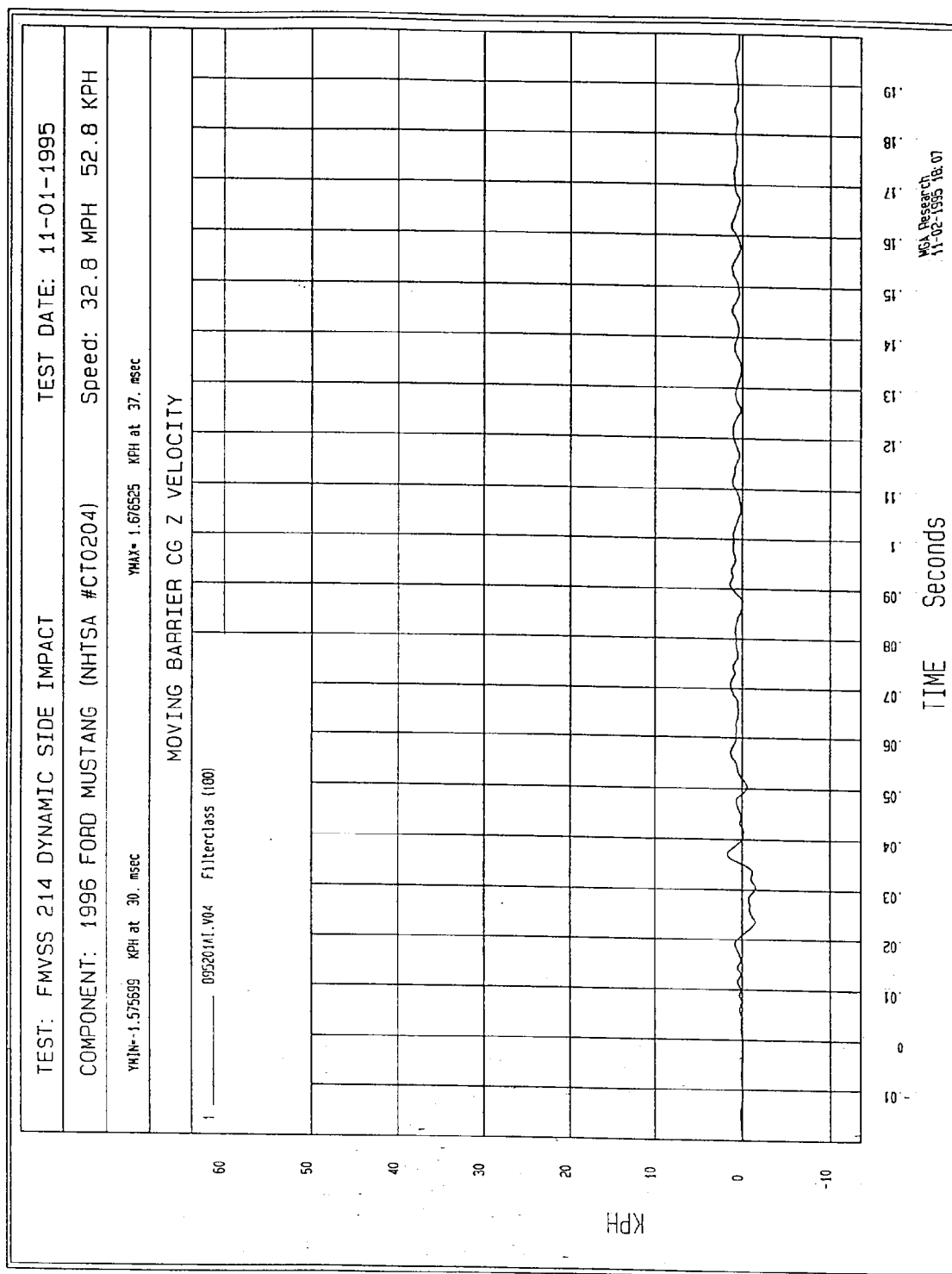


Figure B-60 - Moving Barrier Center of Gravity Z Velocity vs. Time

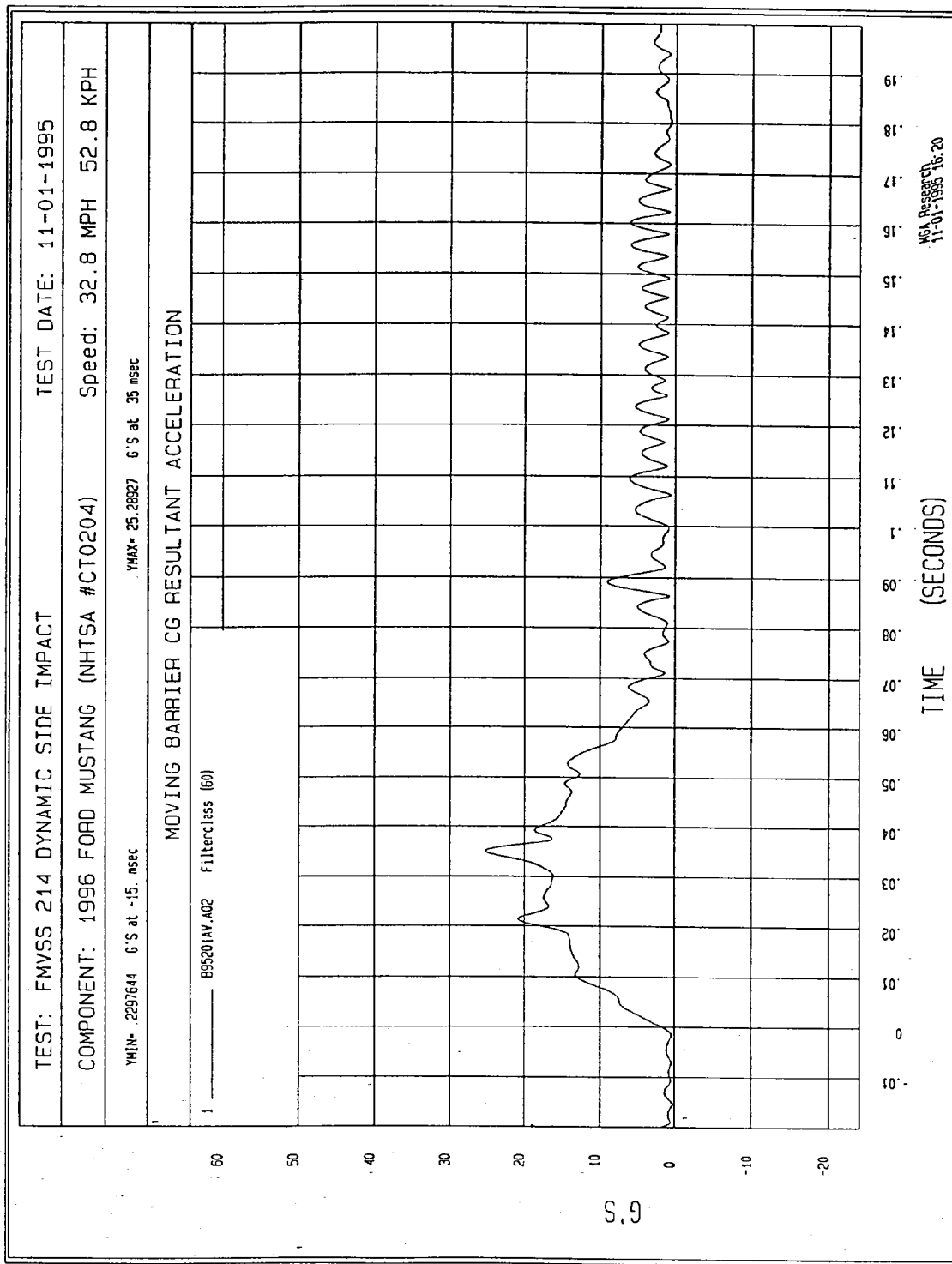


Figure B-61 - Moving Barrier Center of Gravity Resultant Acceleration vs. Time

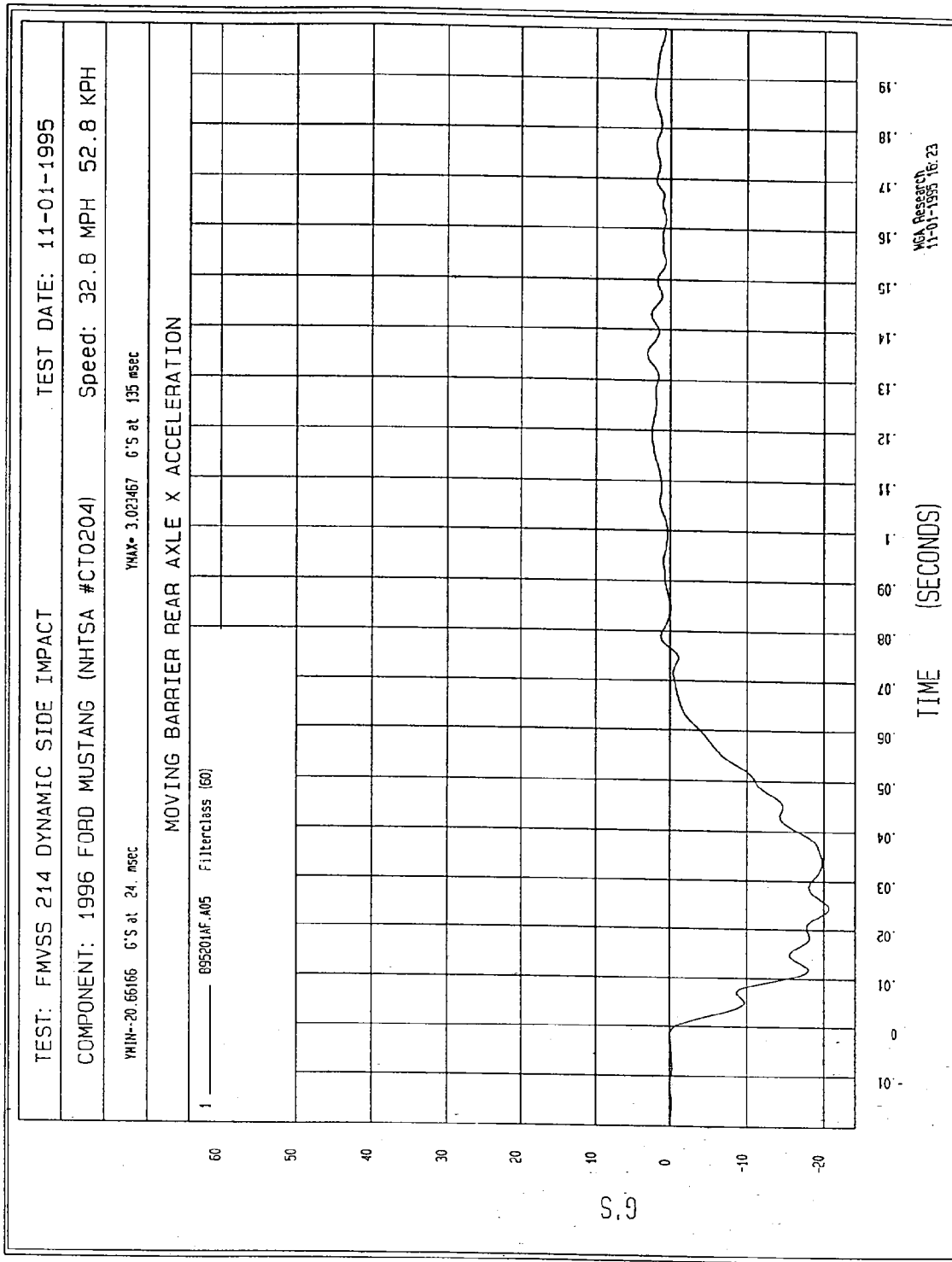


Figure B-62 - Moving Barrier Rear Axle X Acceleration vs. Time

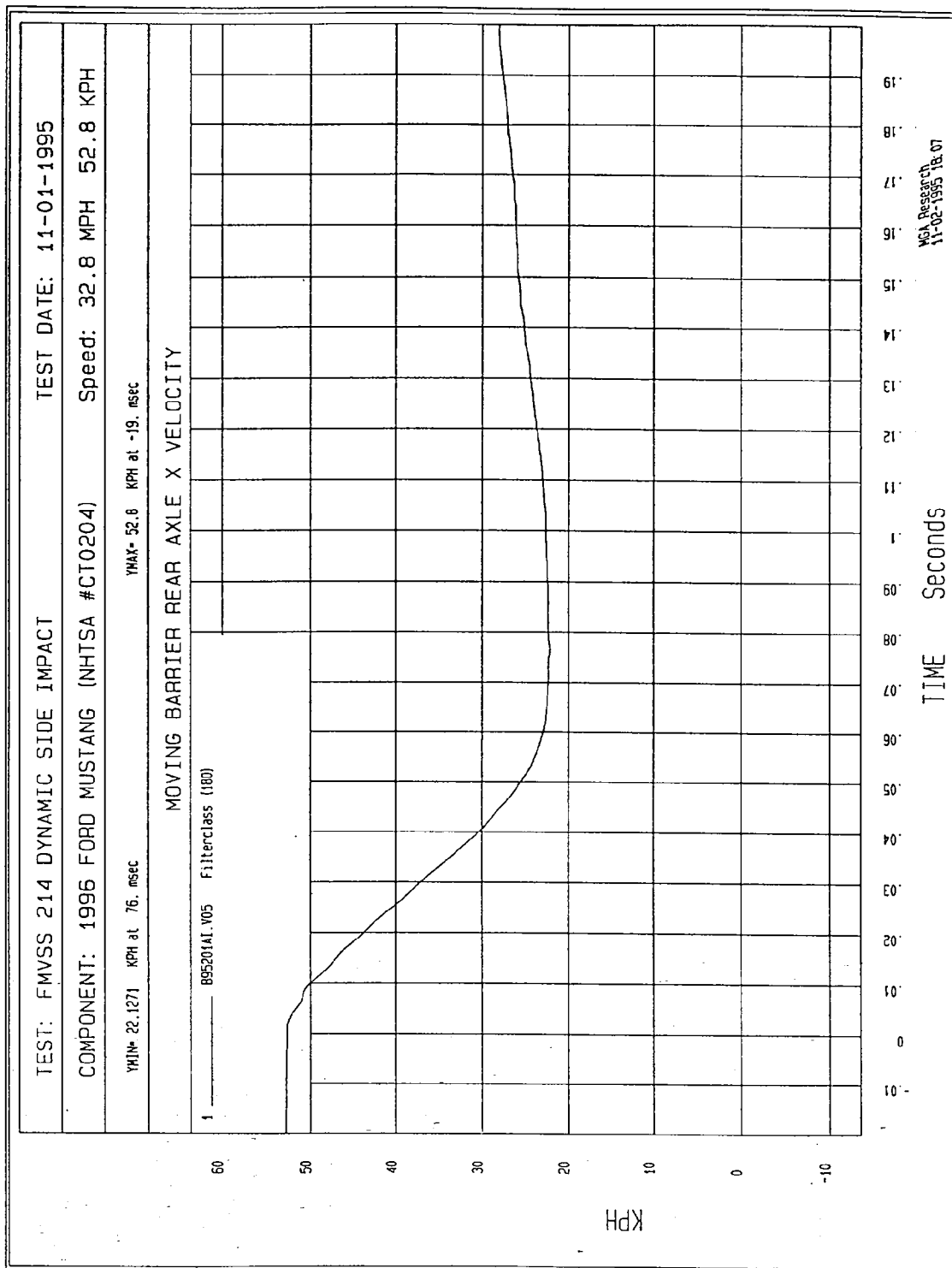


Figure B-63 - Moving Barrier Rear Axle X Velocity vs. Time

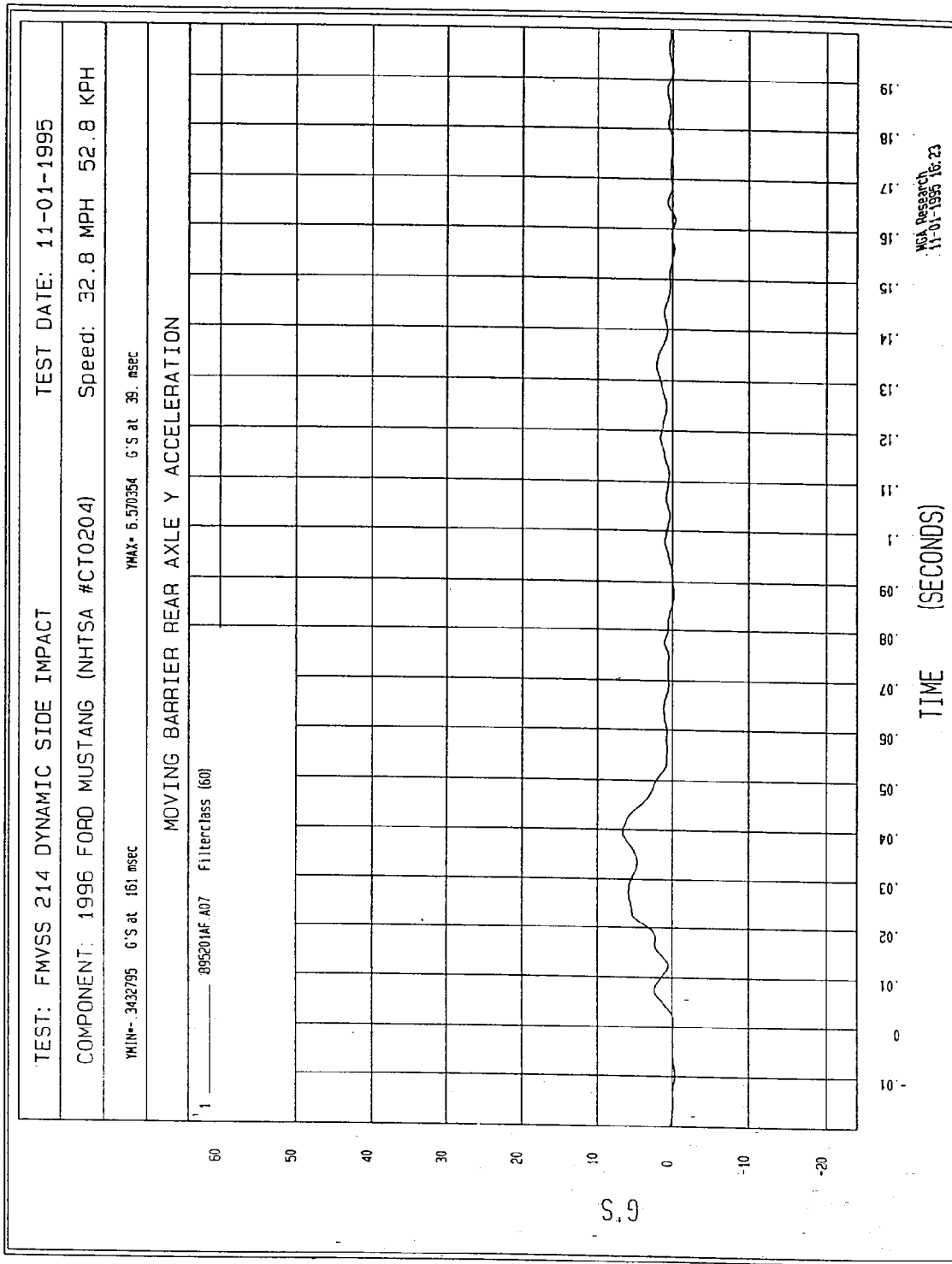


Figure B-64 - Moving Barrier Rear Axle Y Acceleration vs. Time

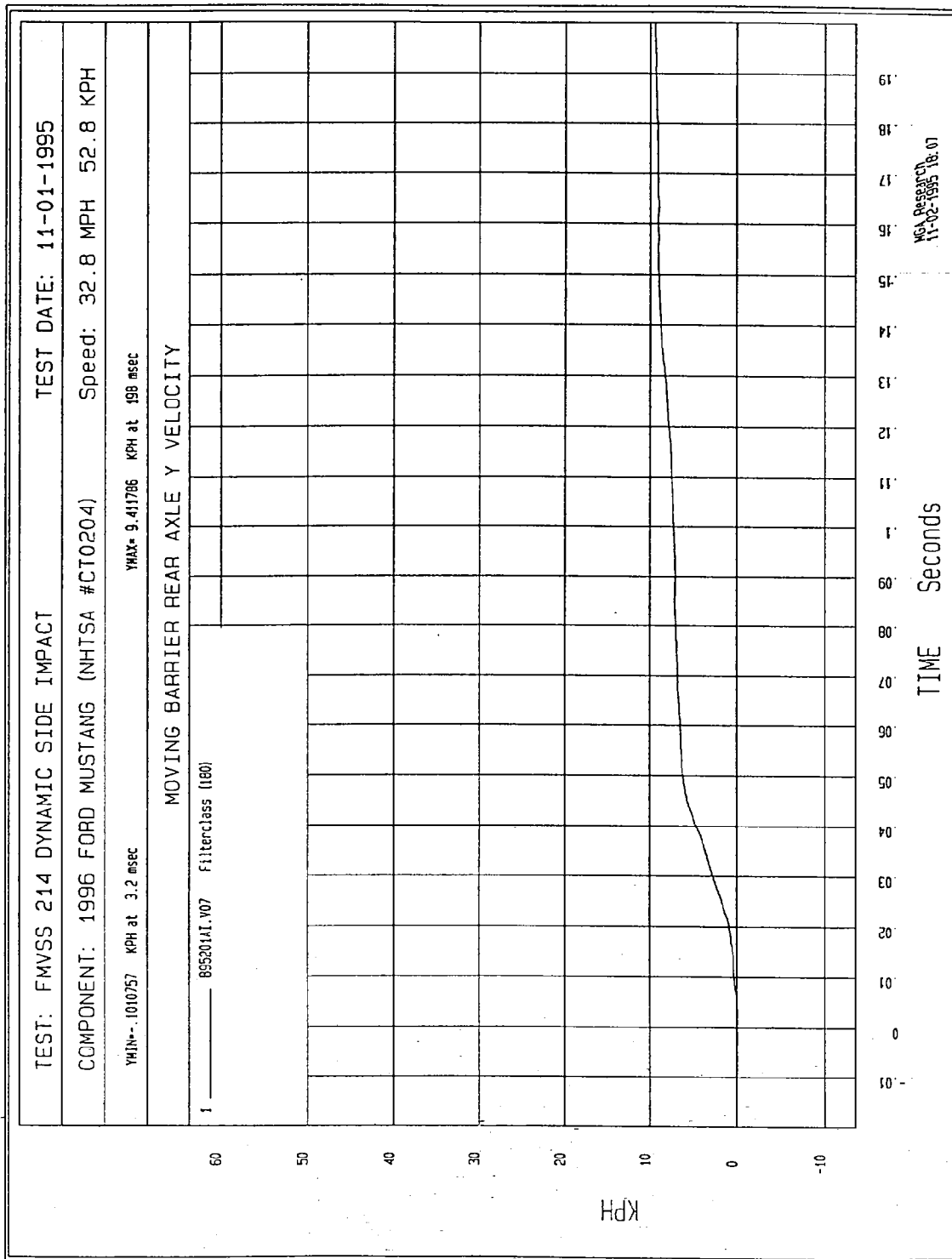


Figure B-65 - Moving Barrier Rear Axle Y Velocity vs. Time

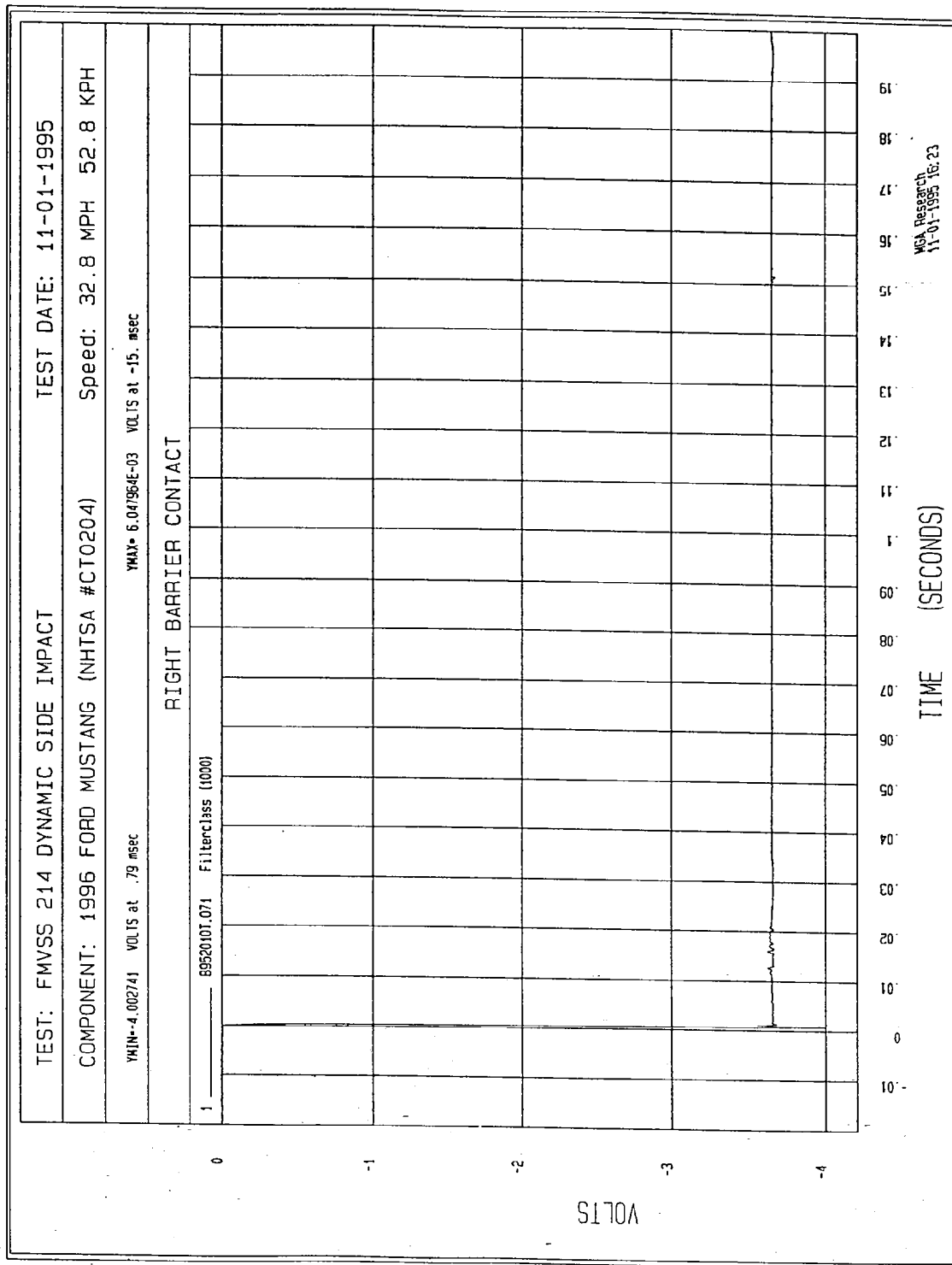


Figure B-66 - Right Barrier Contact

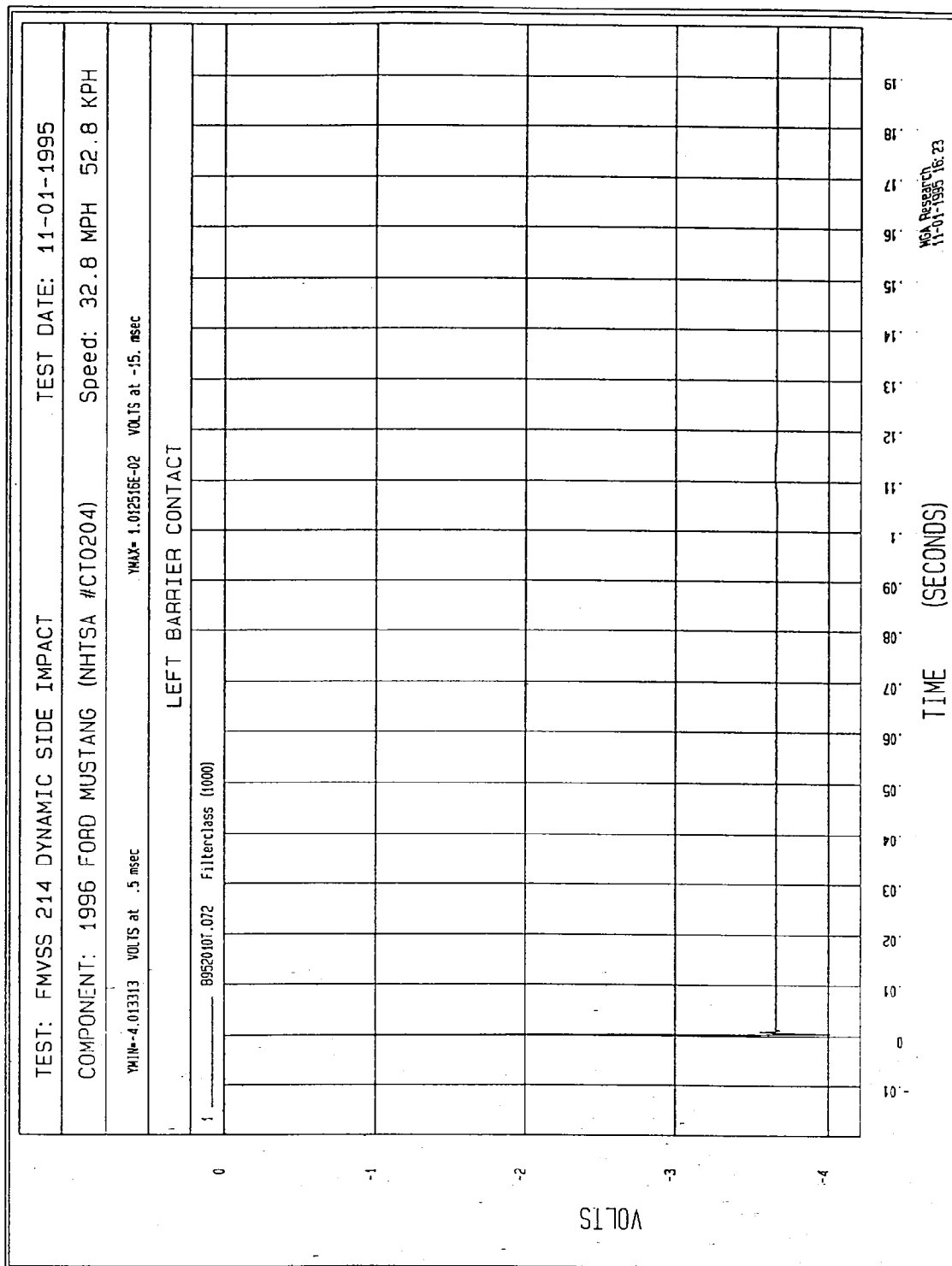


Figure B-67 - Left Barrier Contact

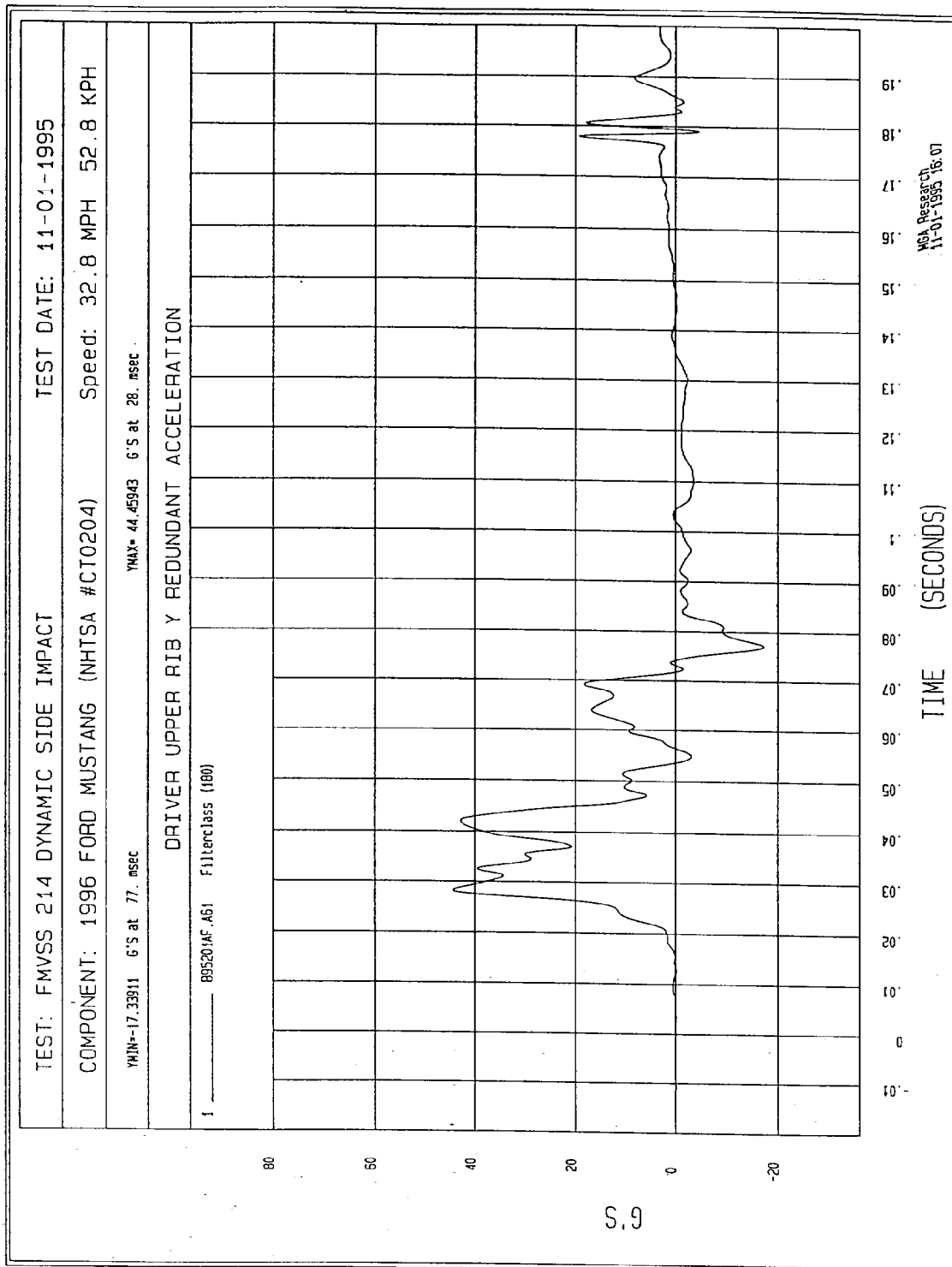


Figure B-68 - Driver Upper Rib Y Redundant Acceleration vs. Time

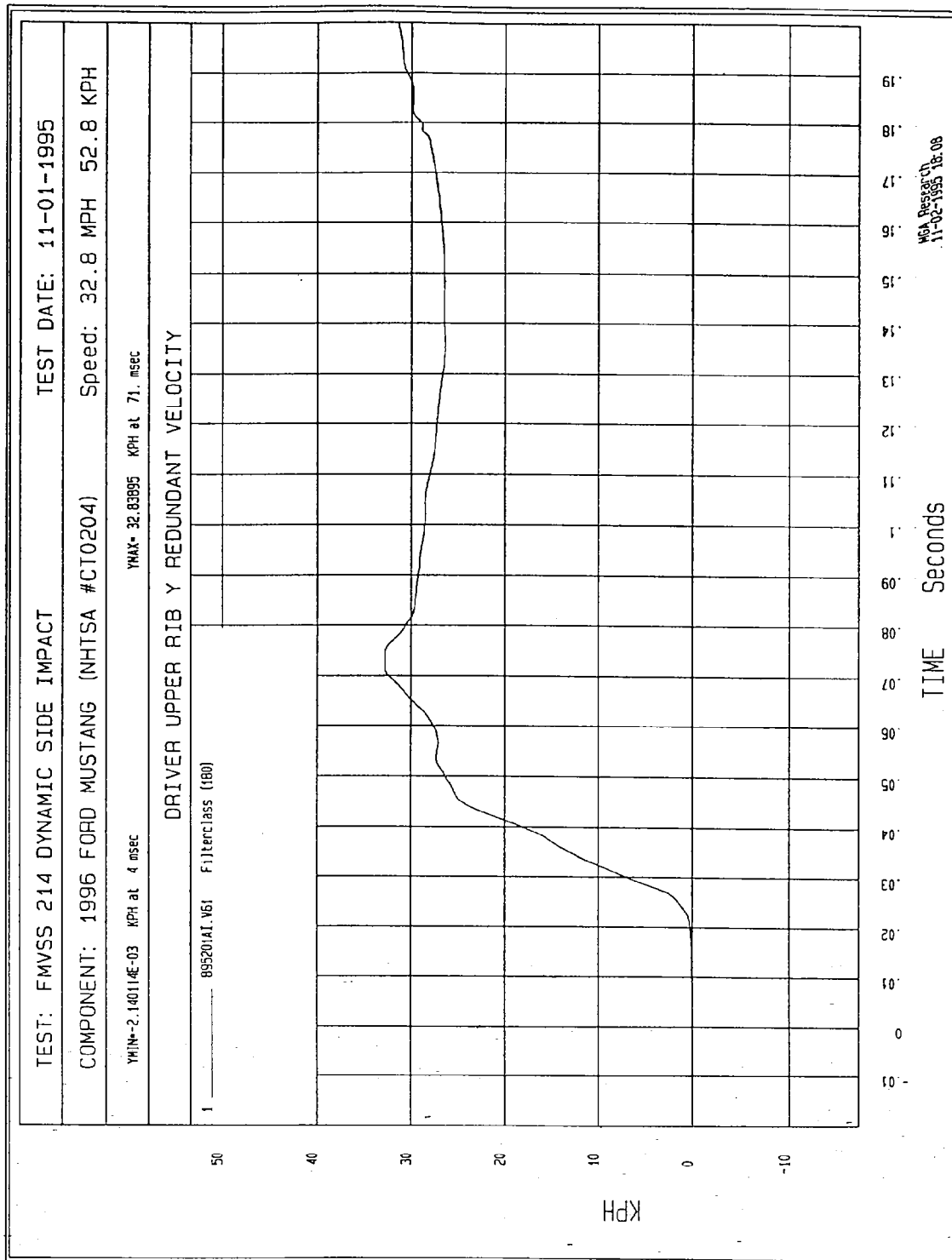


Figure B-69 - Driver Upper Rib Y Redundant Velocity vs. Time

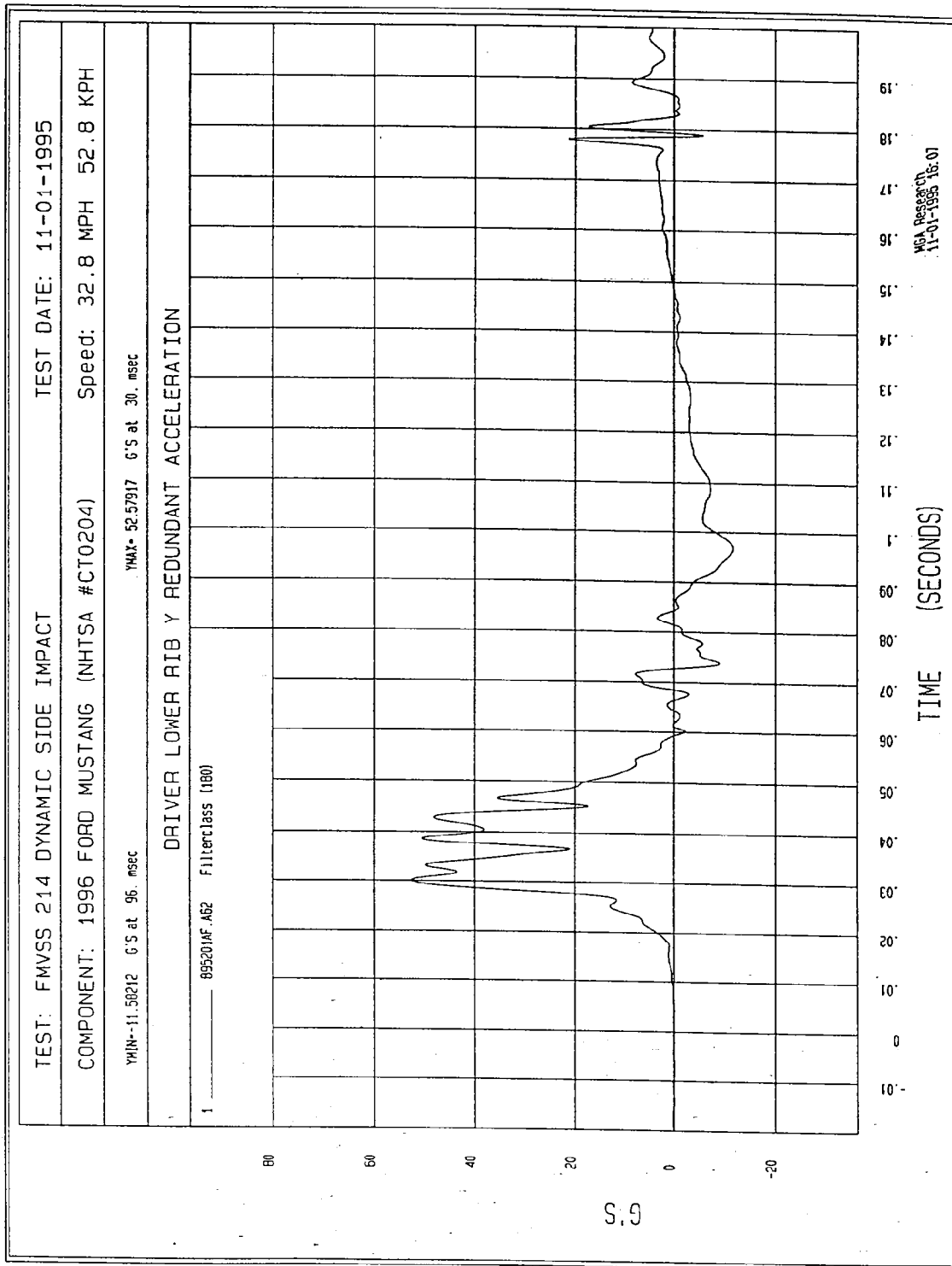


Figure B-70 - Driver Lower Rib Y Redundant Acceleration vs. Time

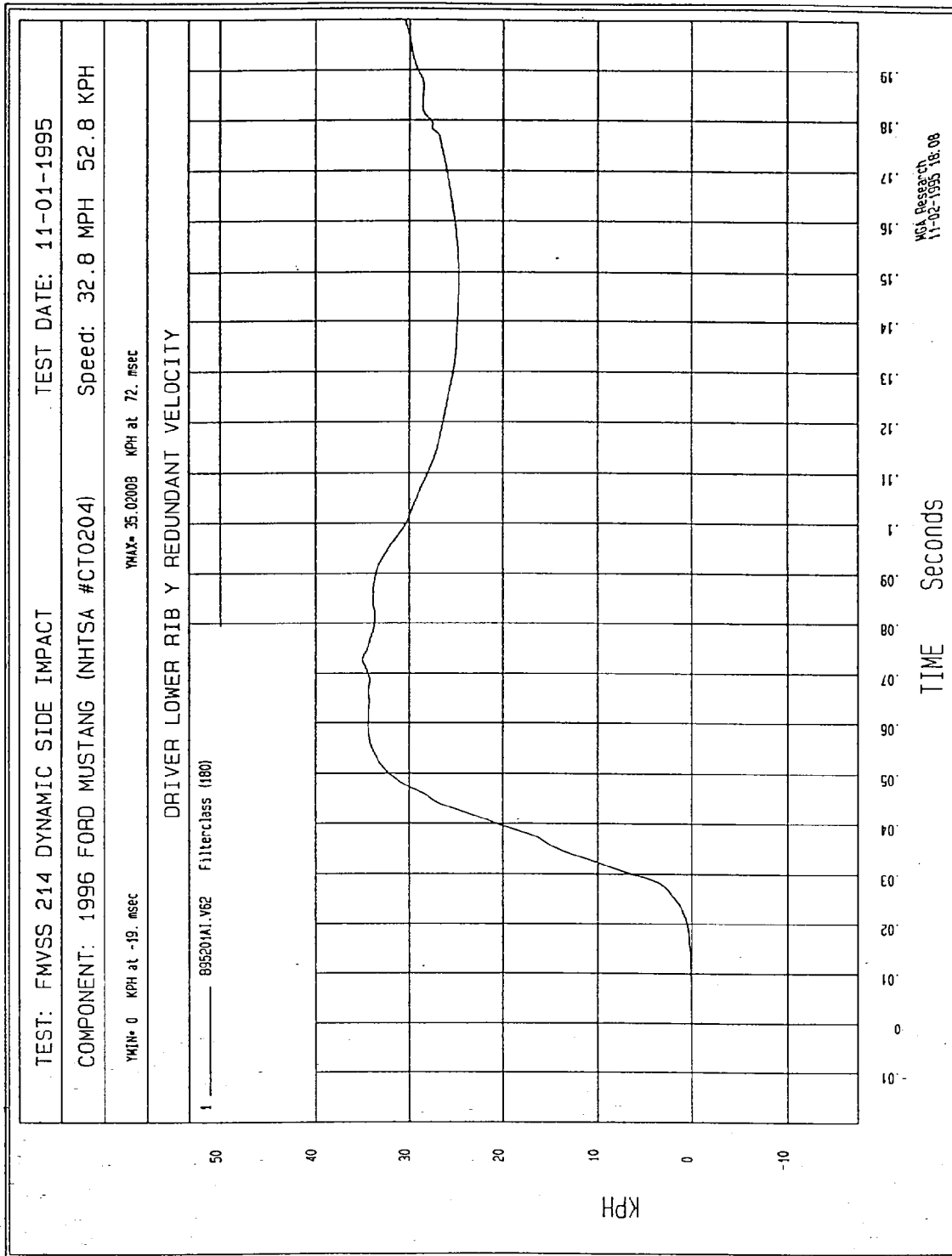


Figure B-71 - Driver Lower Rib Y Redundant Velocity vs. Time

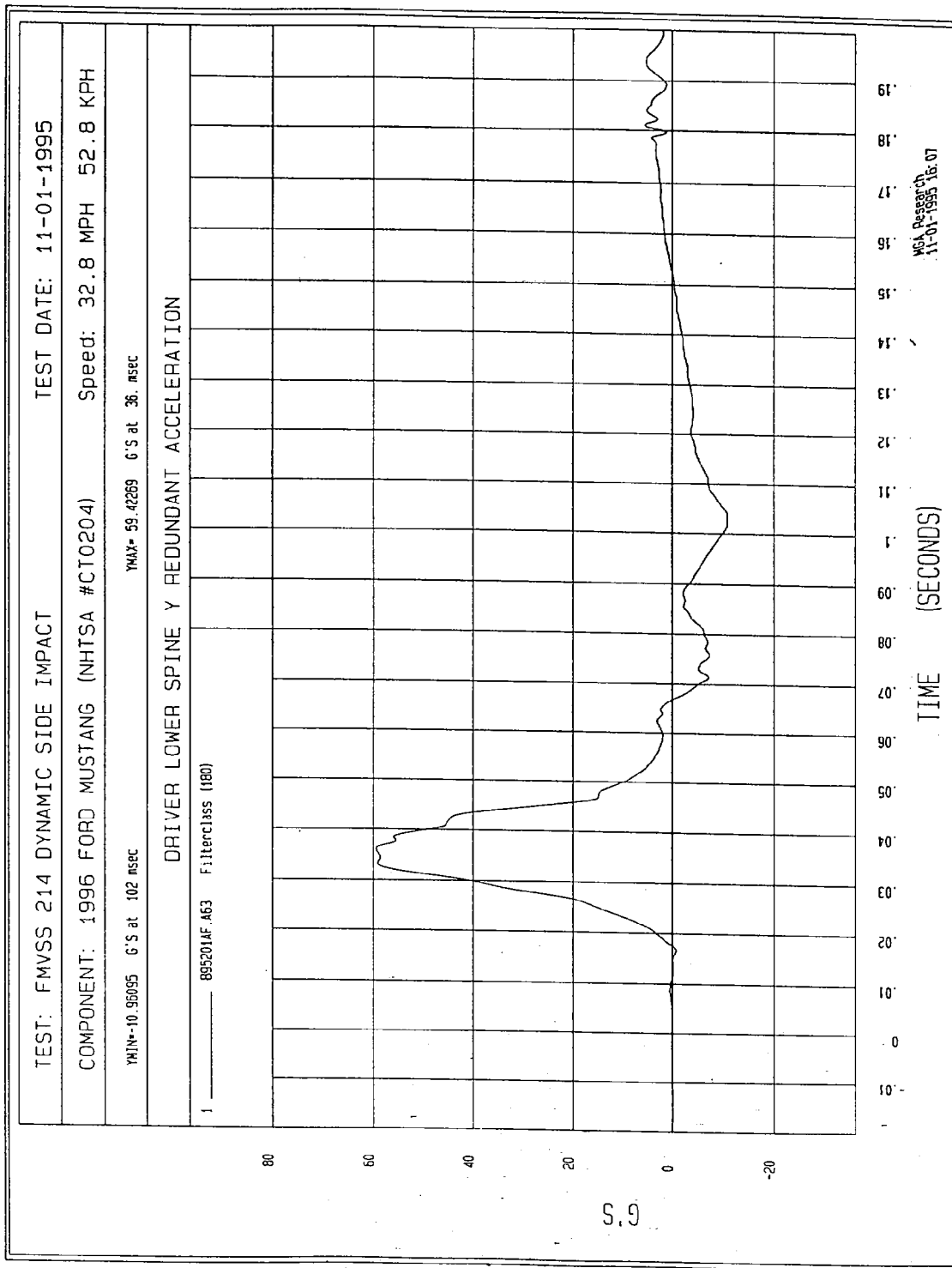


Figure B-72 - Driver Lower Spine Y Redundant Acceleration vs. Time

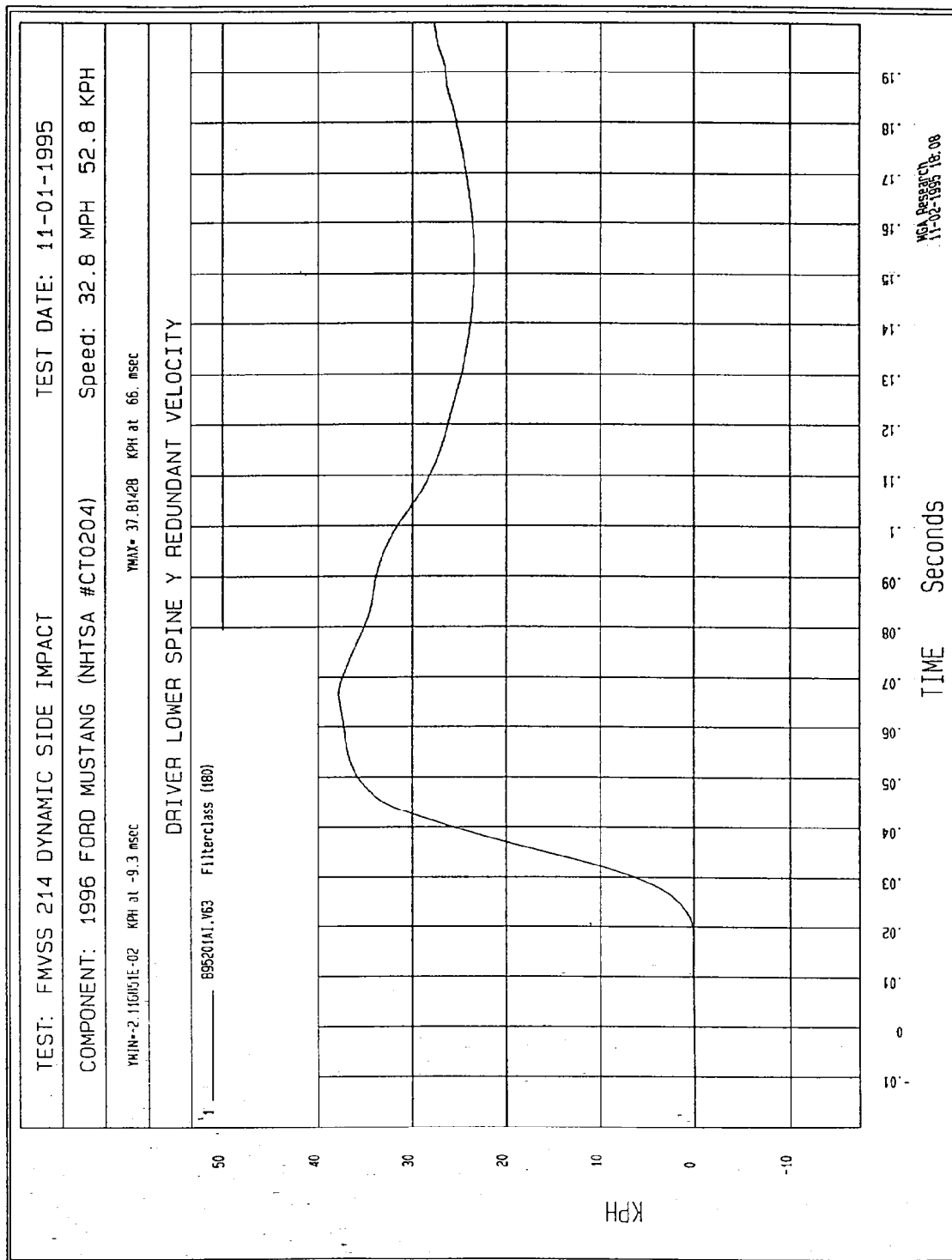


Figure B-73 - Driver Lower Spine Y Redundant Velocity vs. Time

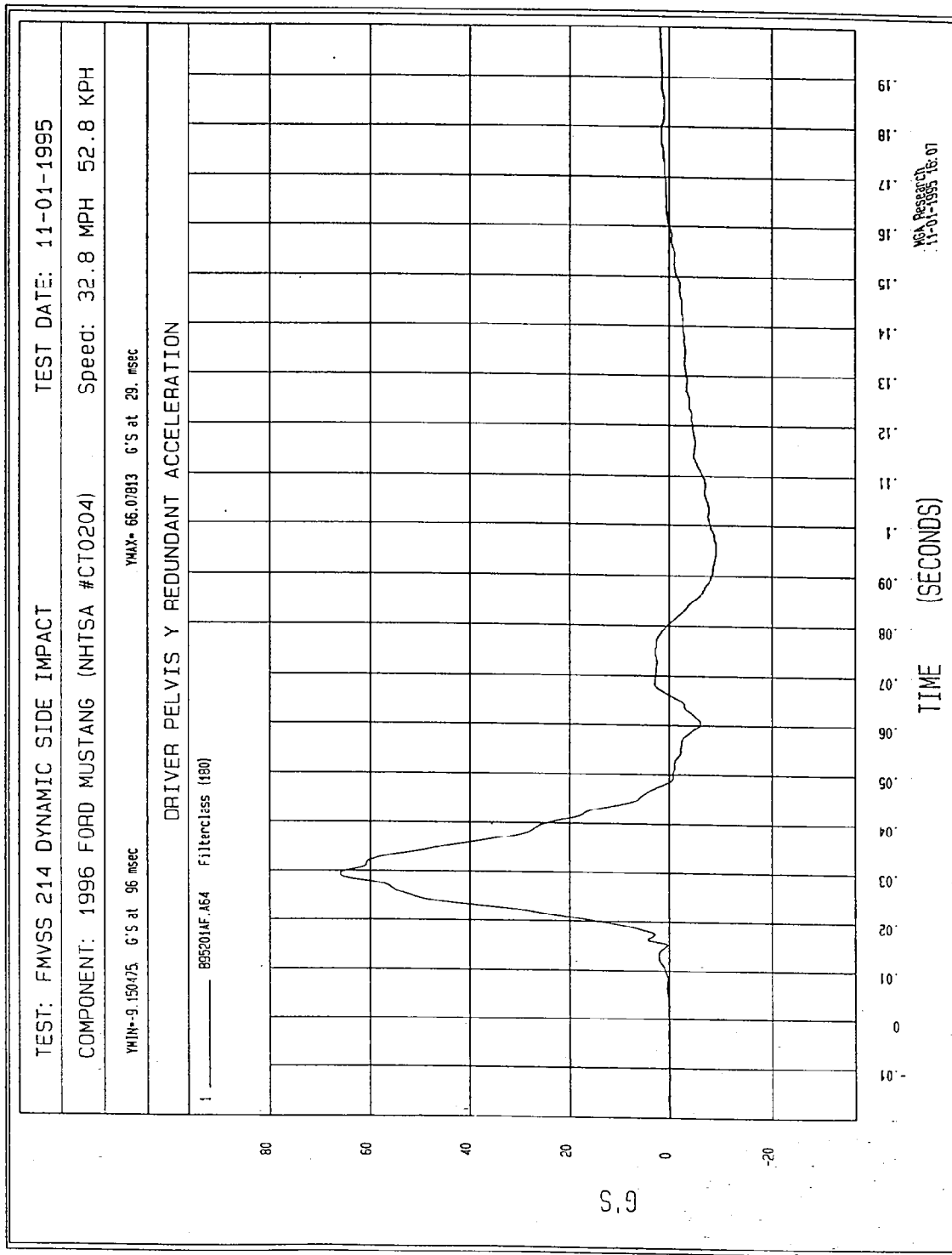


Figure B-74 - Driver Pelvis Y Redundant Acceleration vs. Time

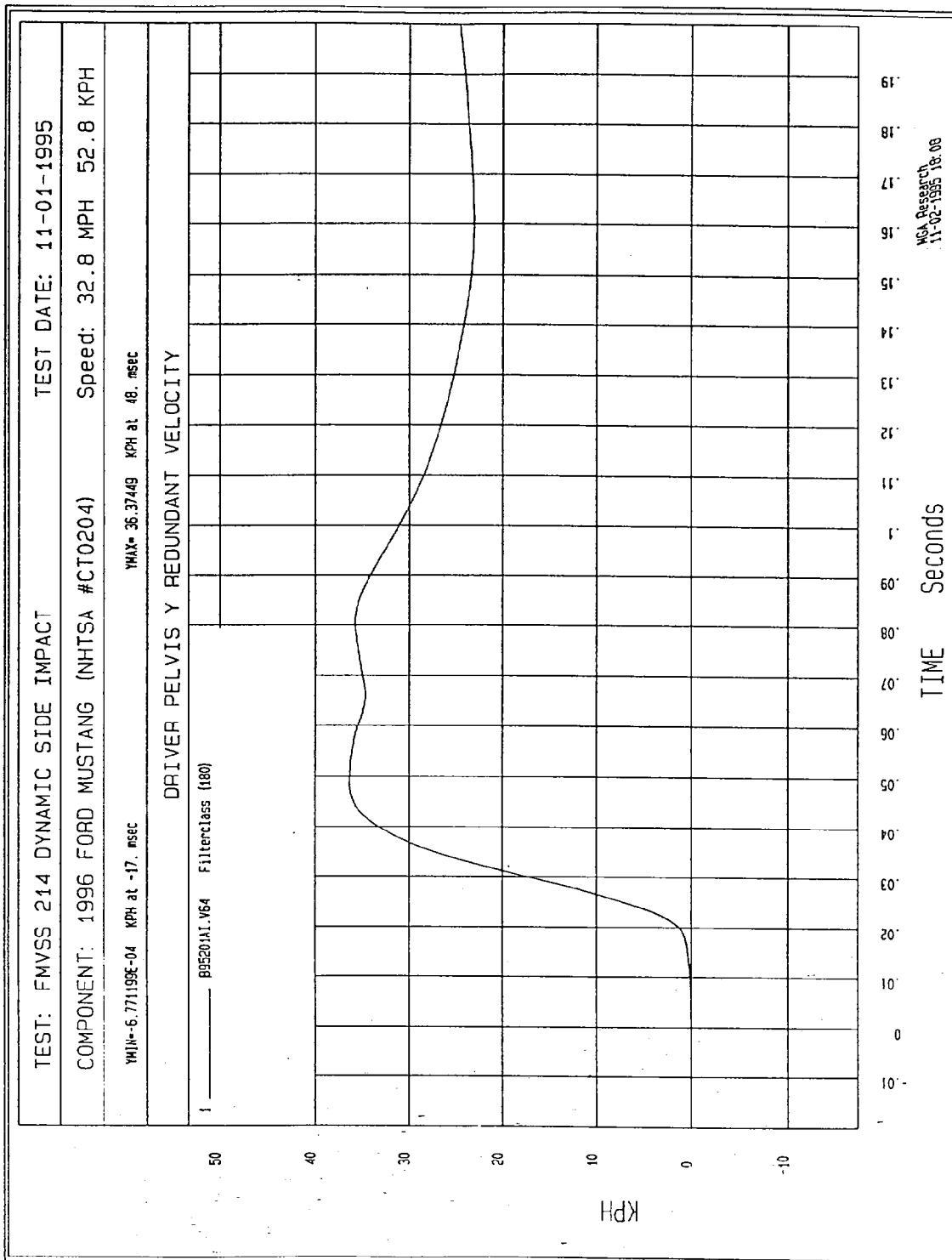


Figure B-75 - Driver Pelvis Y Redundant Velocity vs. Time

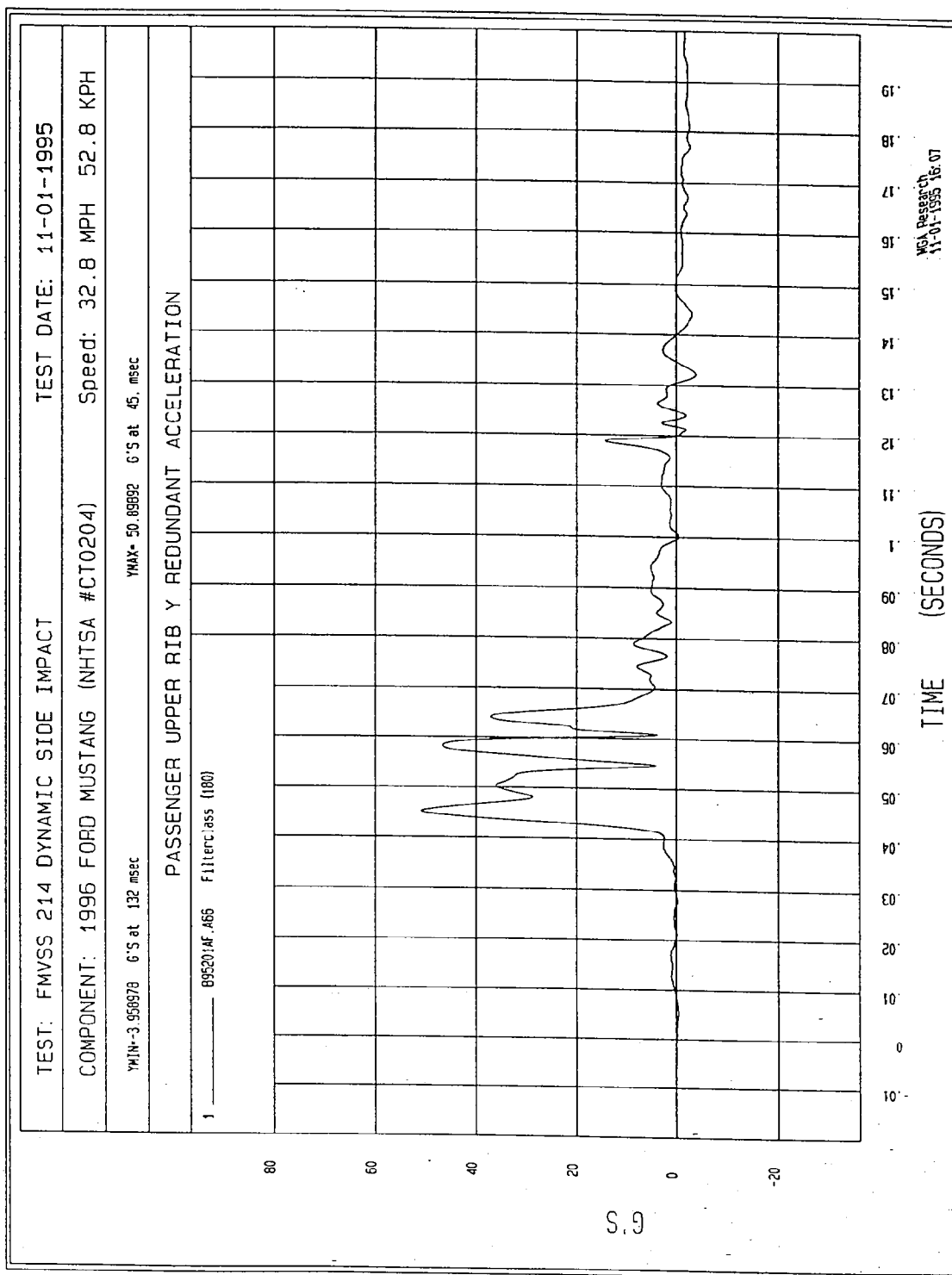


Figure B-76 - Passenger Upper Rib Y Redundant Acceleration vs. Time

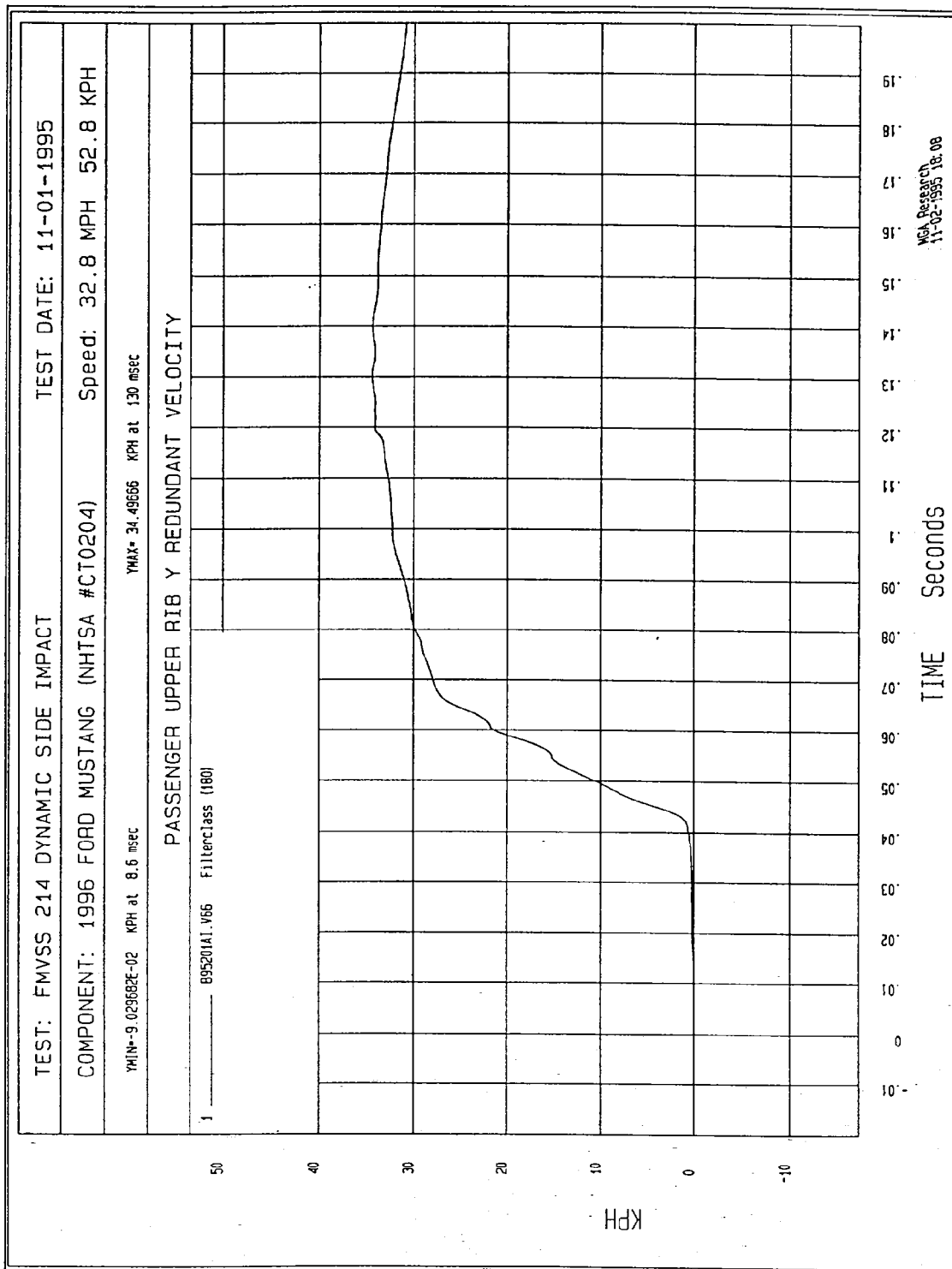


Figure B-77 - Passenger Upper Rib Y Redundant Velocity vs. Time

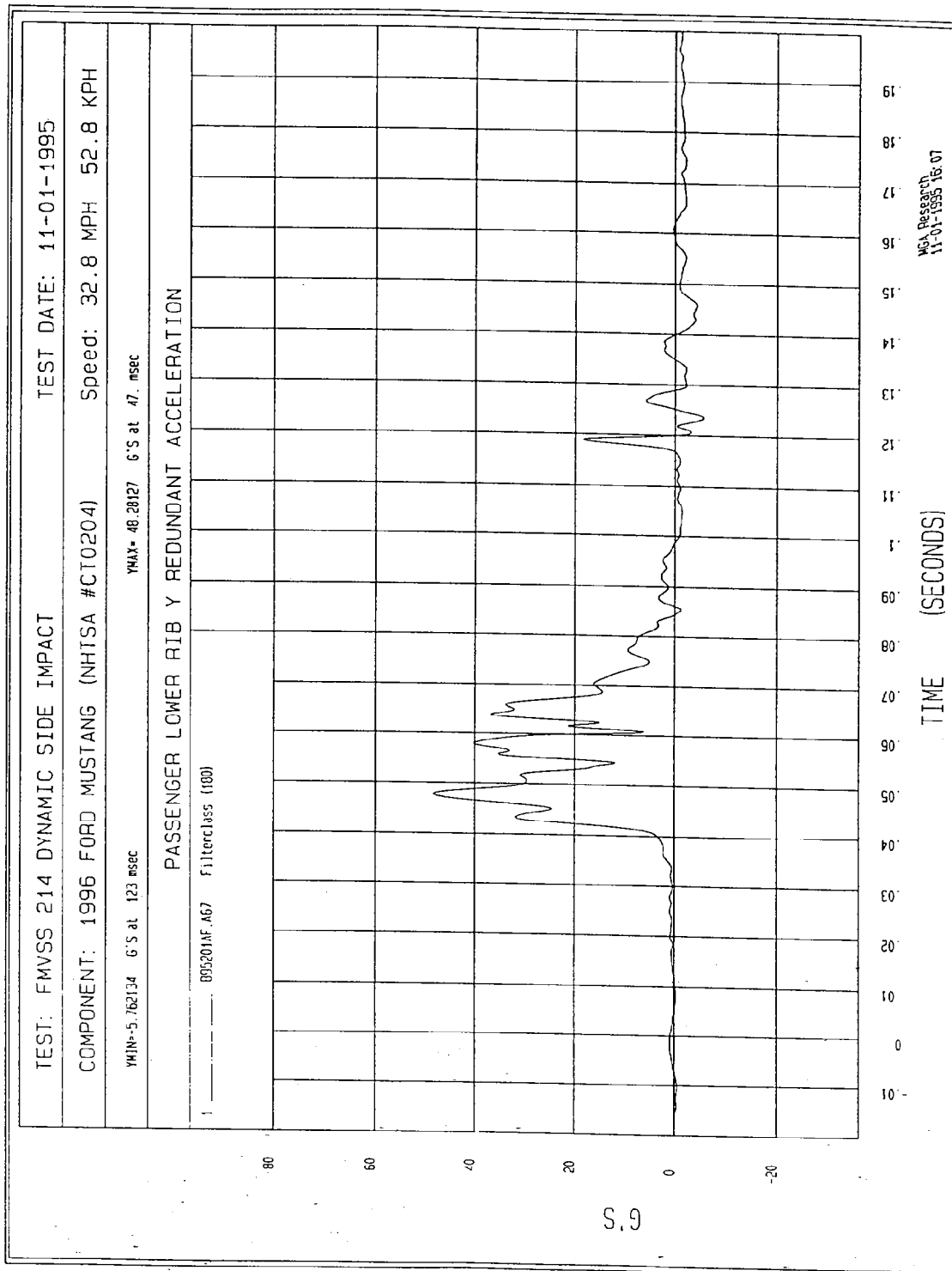


Figure B-78 - Passenger Lower Rib Y Redundant Acceleration vs. Time

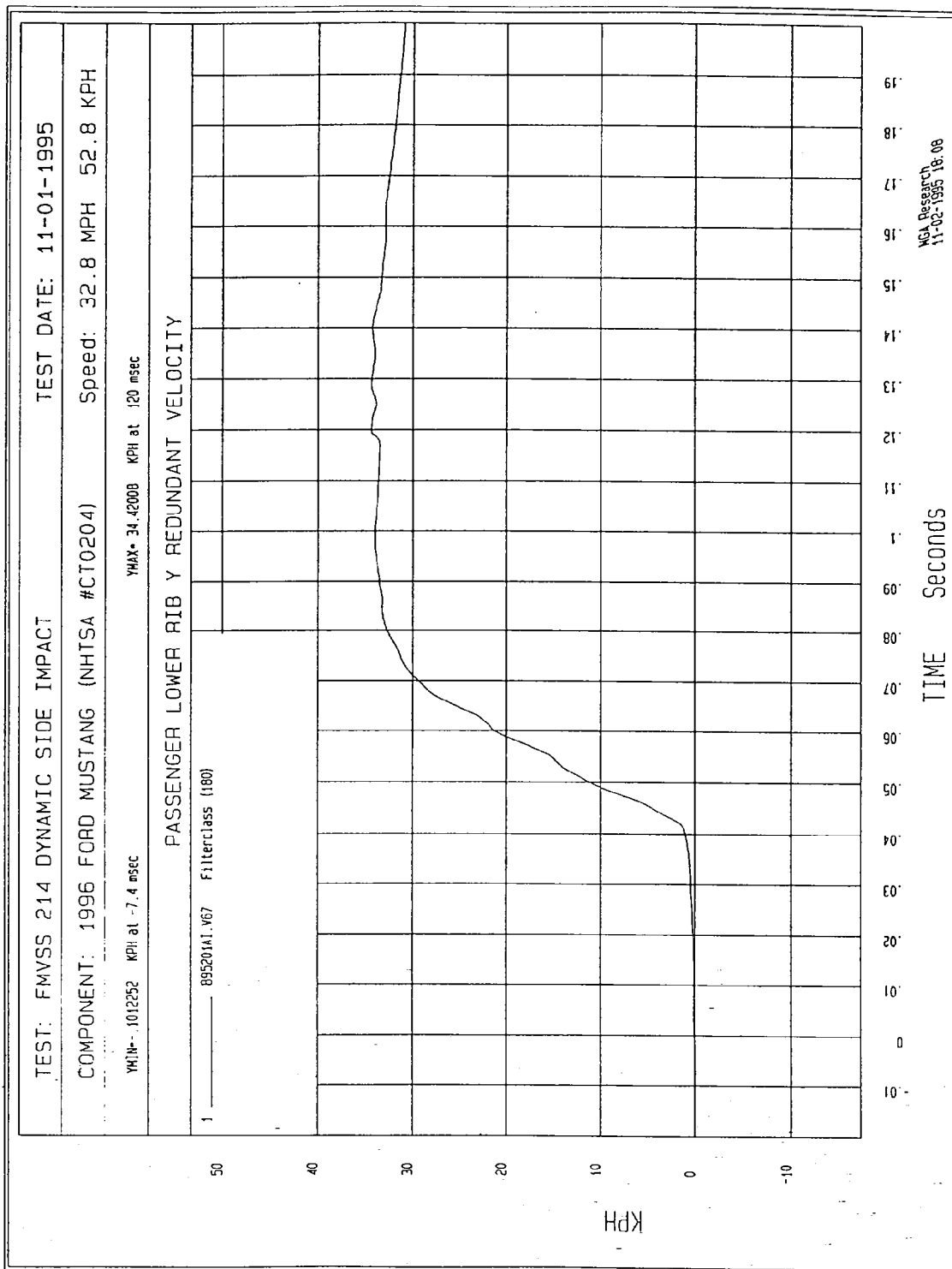


Figure B-79 - Passenger Lower Rib Y Redundant Velocity vs. Time

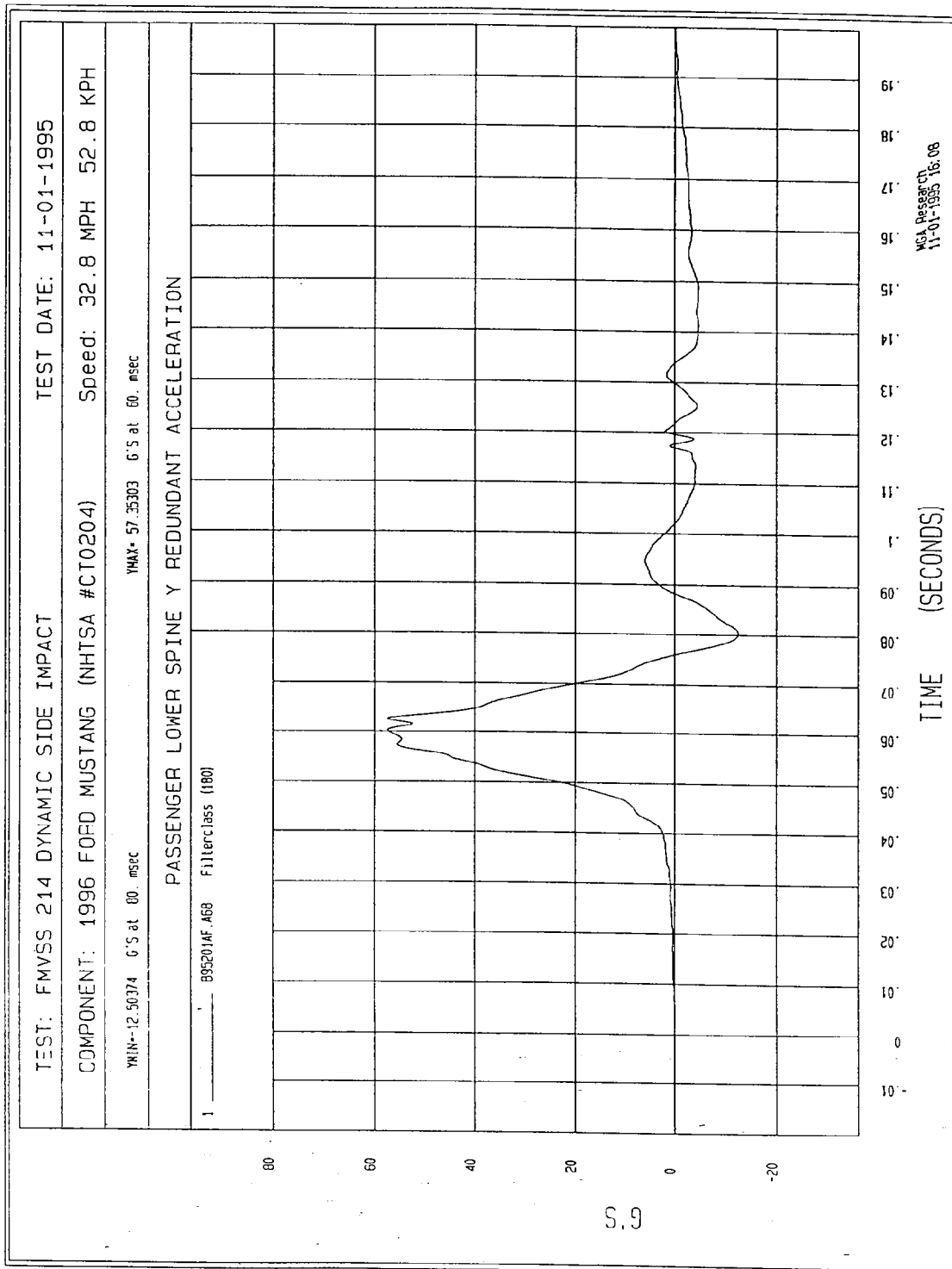


Figure B-80 - Passenger Lower Spine Y Redundant Acceleration vs. Time

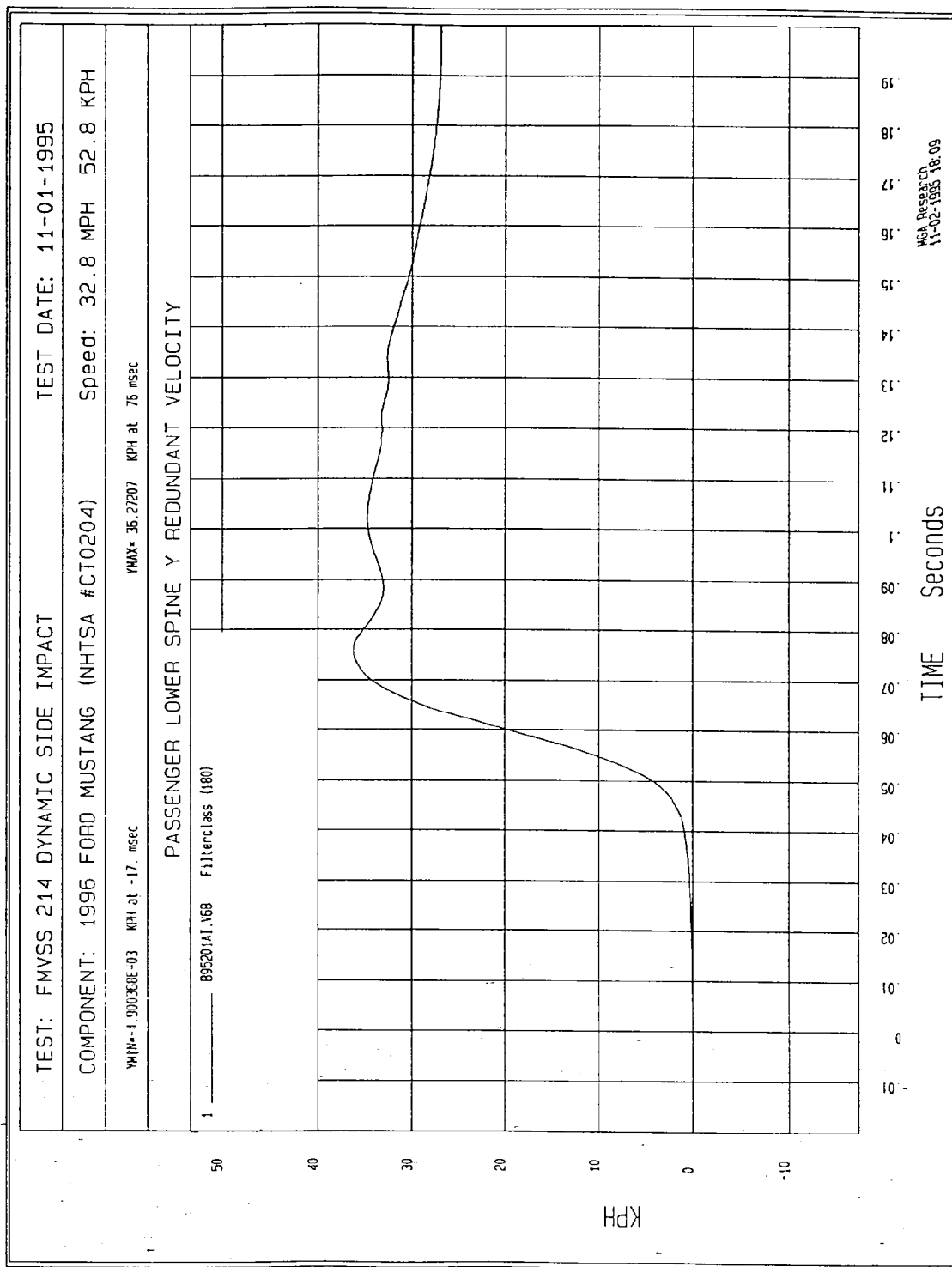


Figure B-81 - Passenger Lower Spine Y Redundant Velocity vs. Time

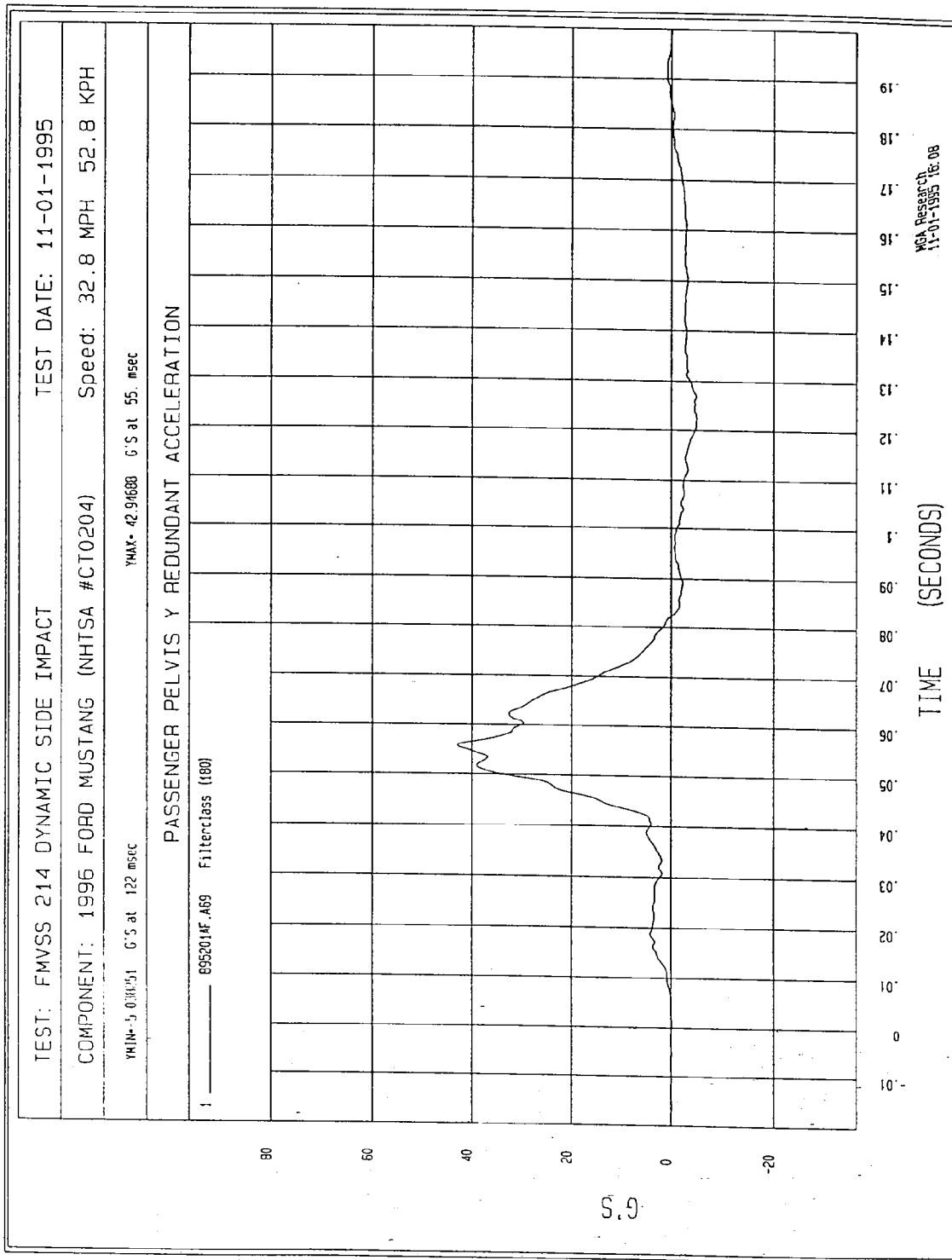


Figure B-82 - Passenger Pelvis Y Redundant Acceleration vs. Time

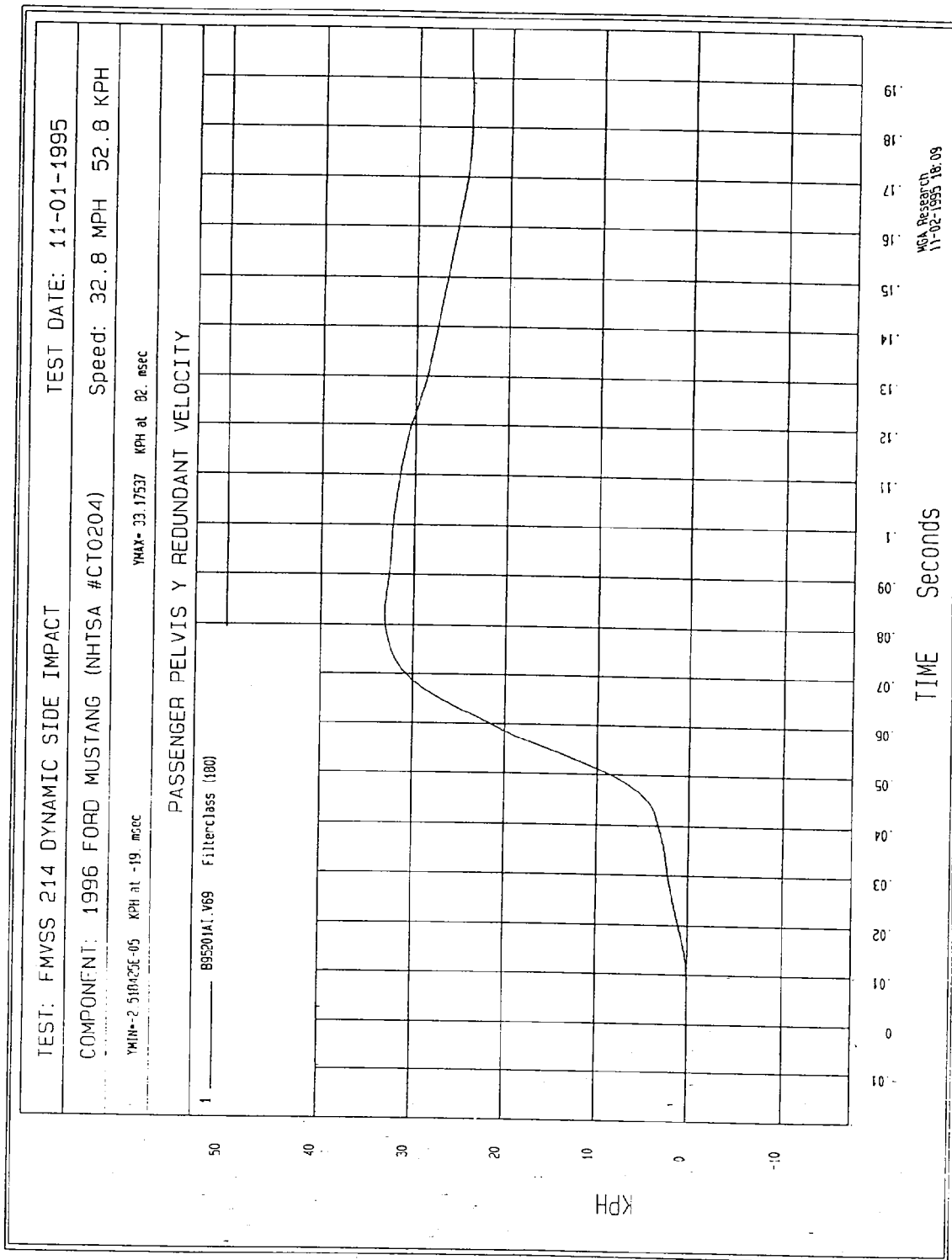


Figure B-83 - Passenger Pelvis Y Redundant Velocity vs. Time

FINITE IMPULSE RESPONSE (FIR) FILTERED DATA

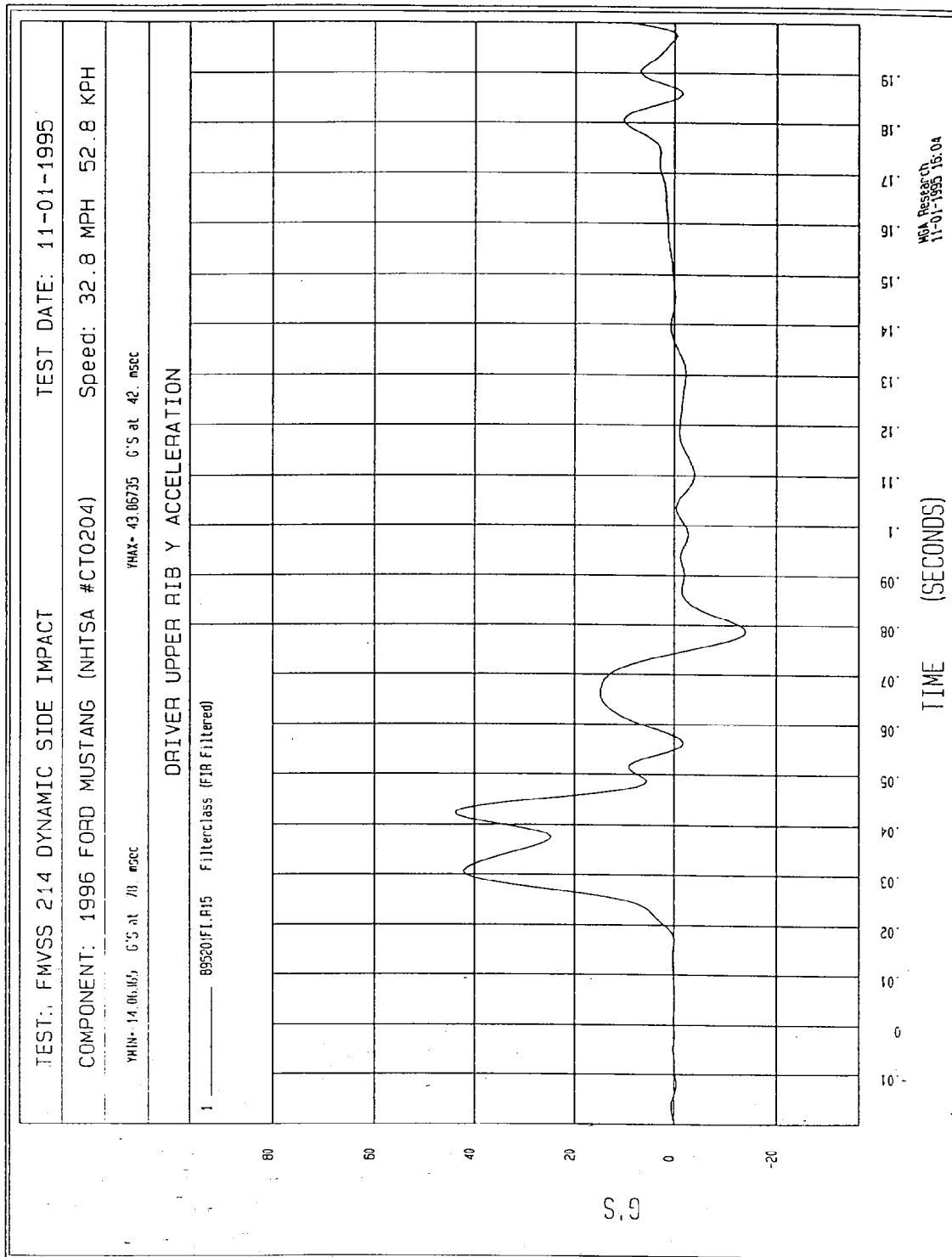


Figure B-84 - Driver Upper Rib Y Acceleration vs. Time

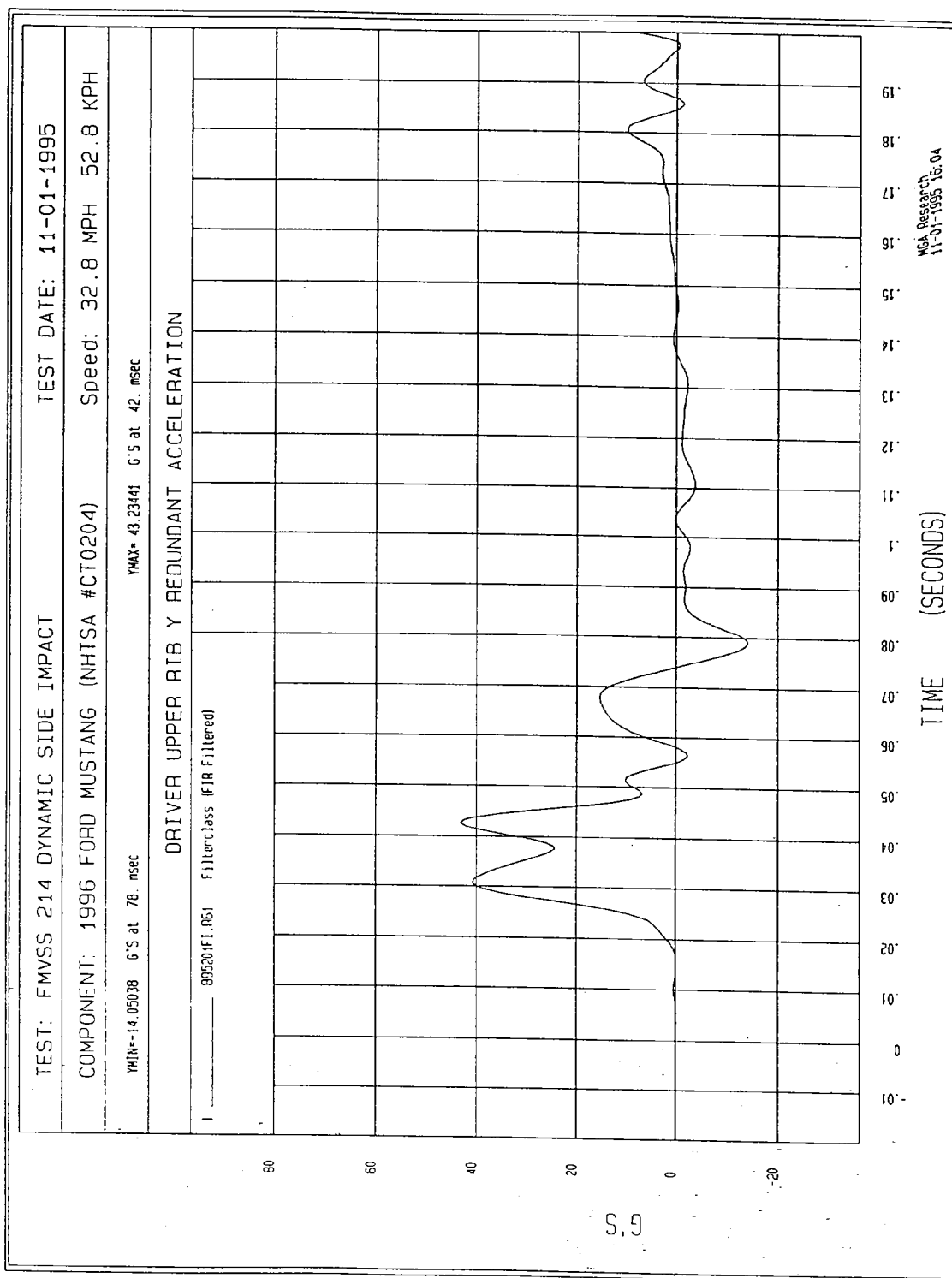


Figure B-85 - Driver Upper Rib Y Redundant Acceleration vs. Time

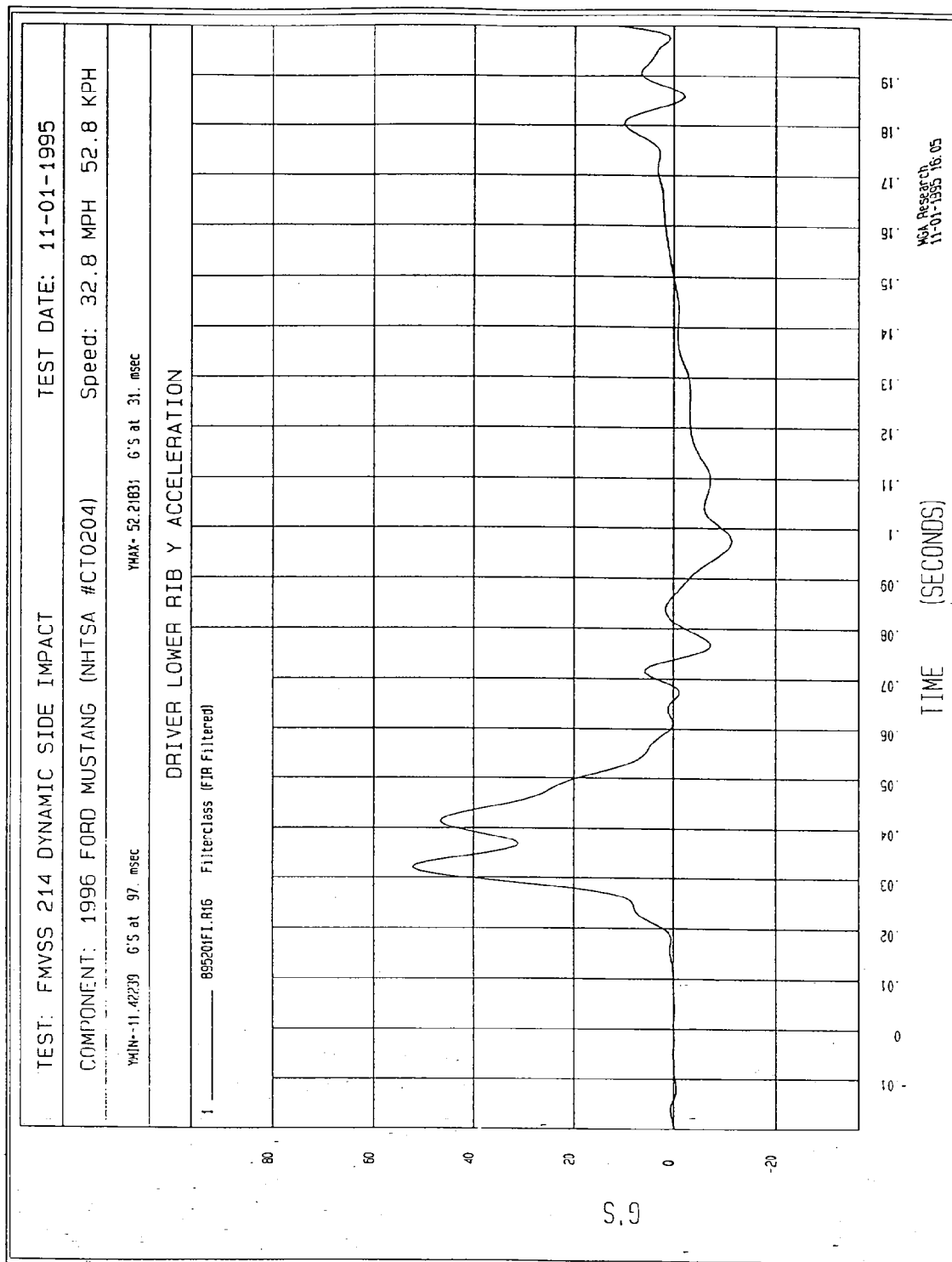


Figure B-86 - Driver Lower Rib Y Acceleration vs. Time

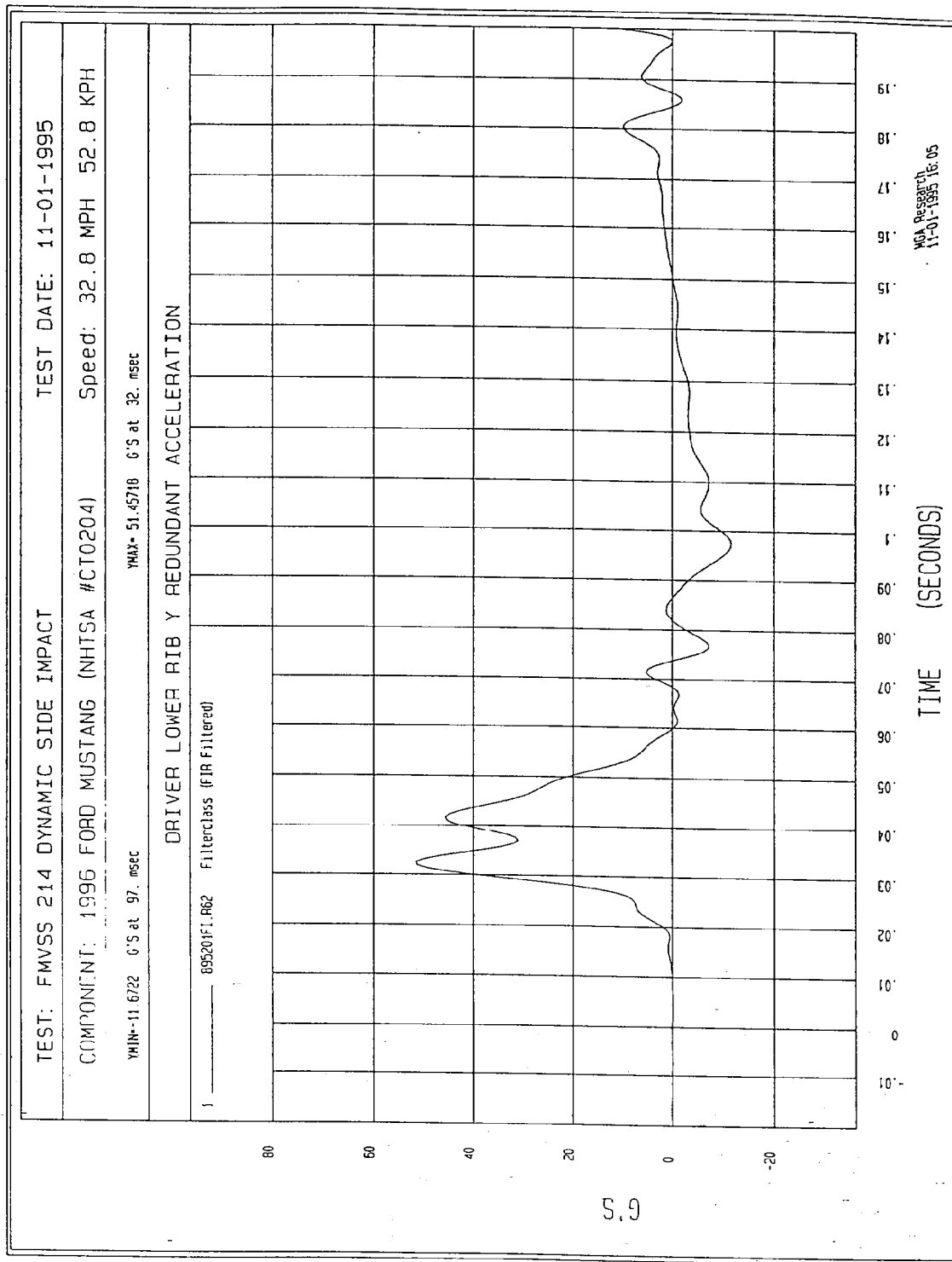


Figure B-87 - Driver Lower Rib Y Redundant Acceleration vs. Time

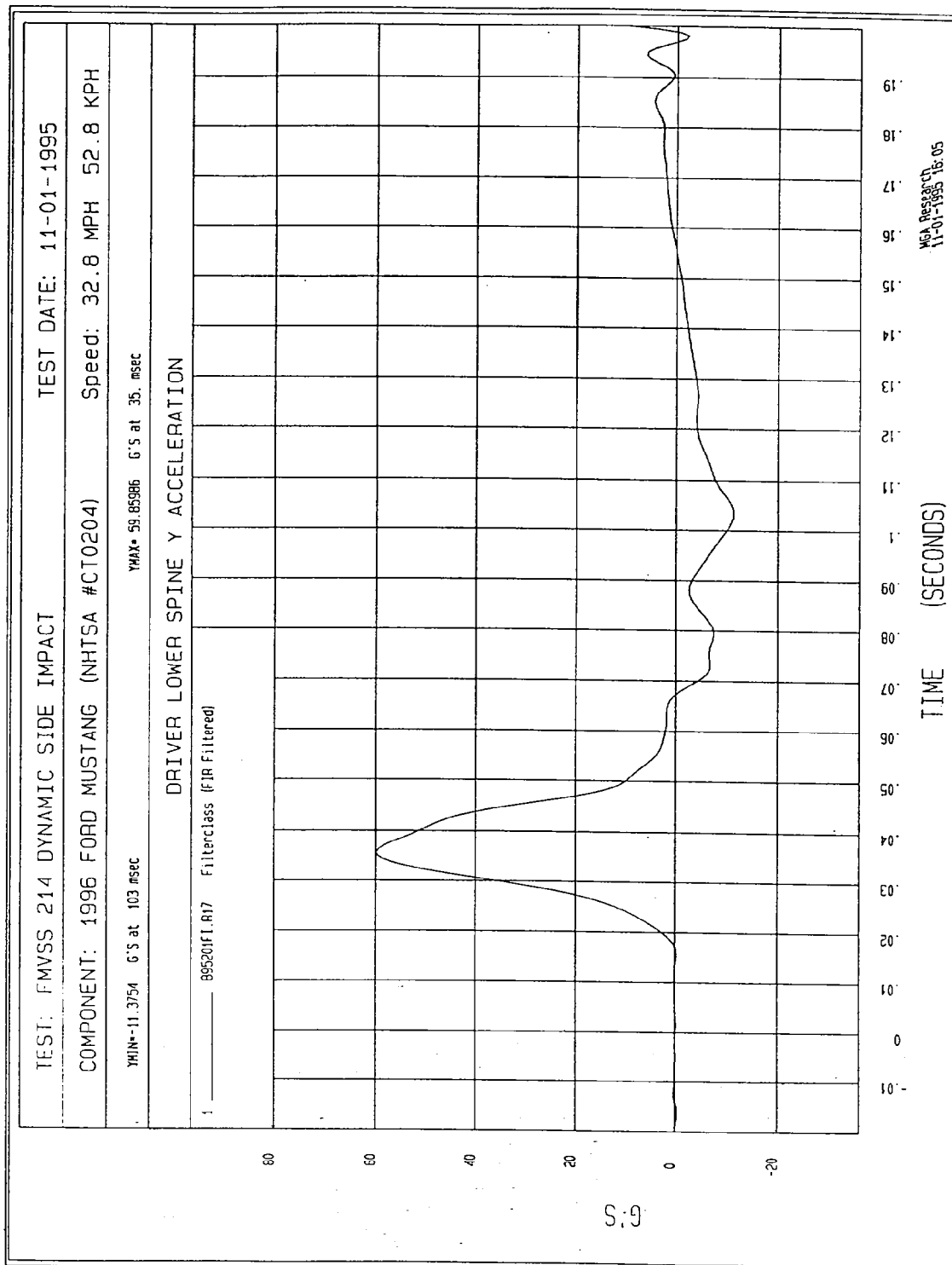


Figure B-88 - Driver Lower Spine Y Acceleration vs. Time

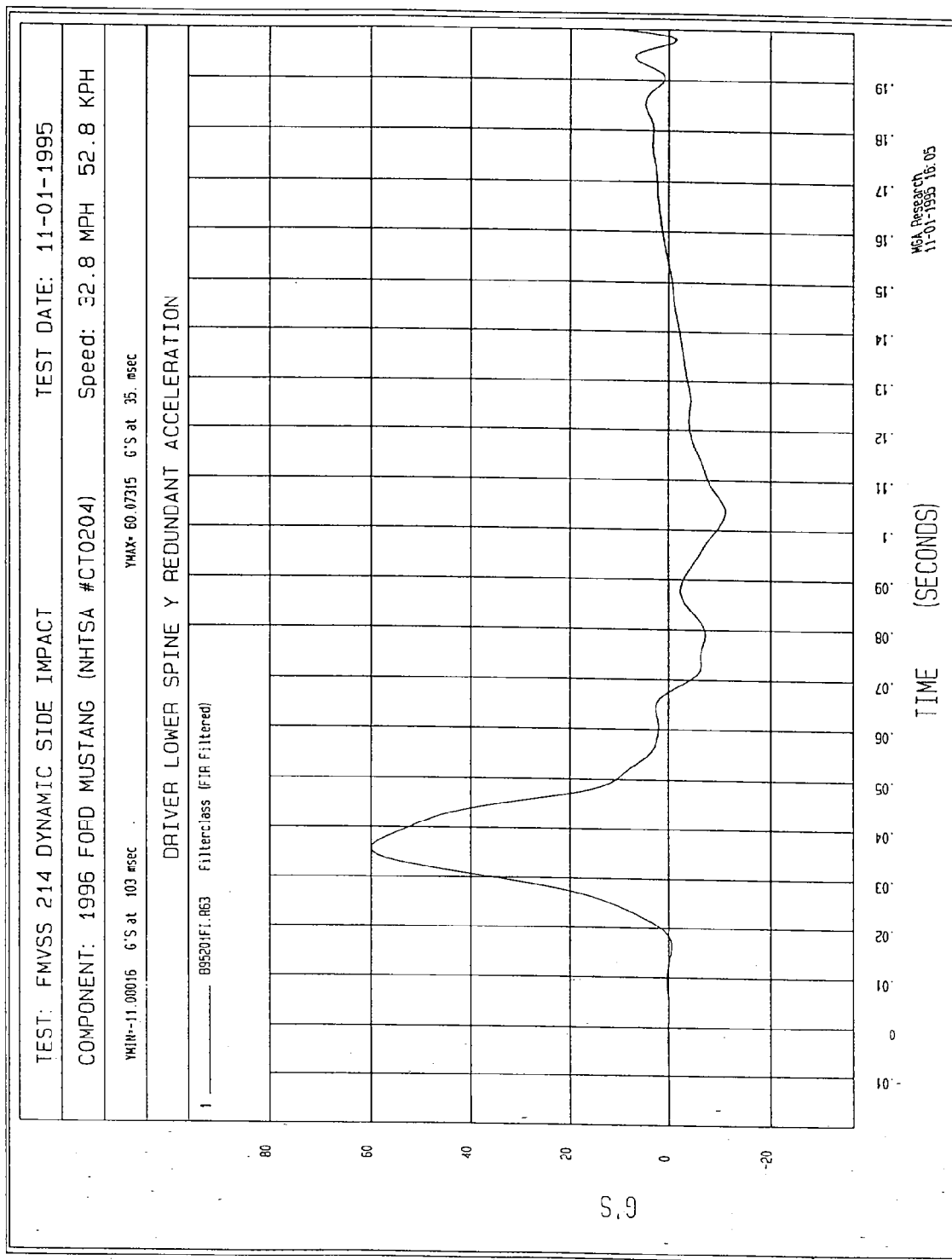


Figure B-89 - Driver Lower Spine Y Redundant Acceleration vs. Time

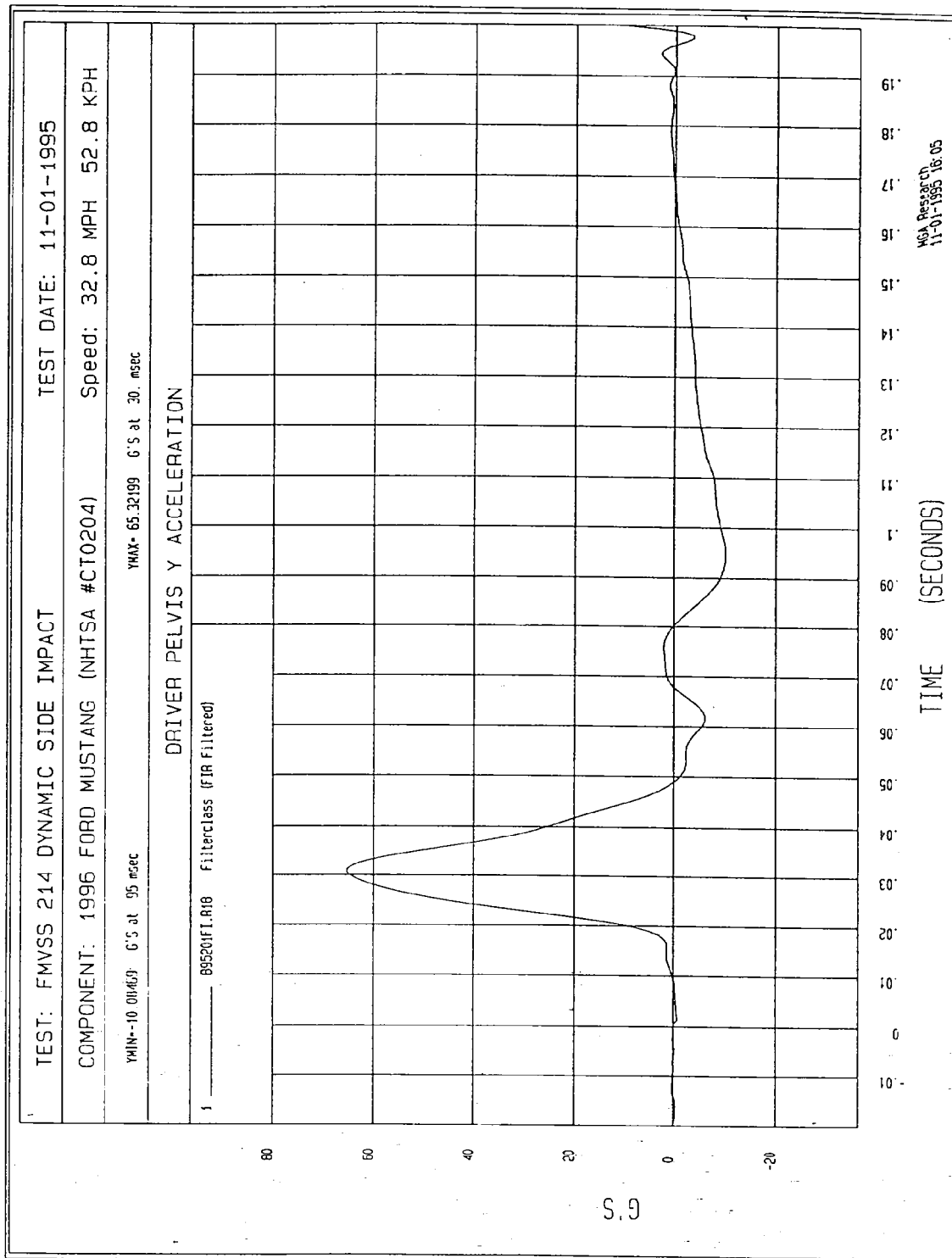


Figure B-90 - Driver Pelvis Y Acceleration vs. Time

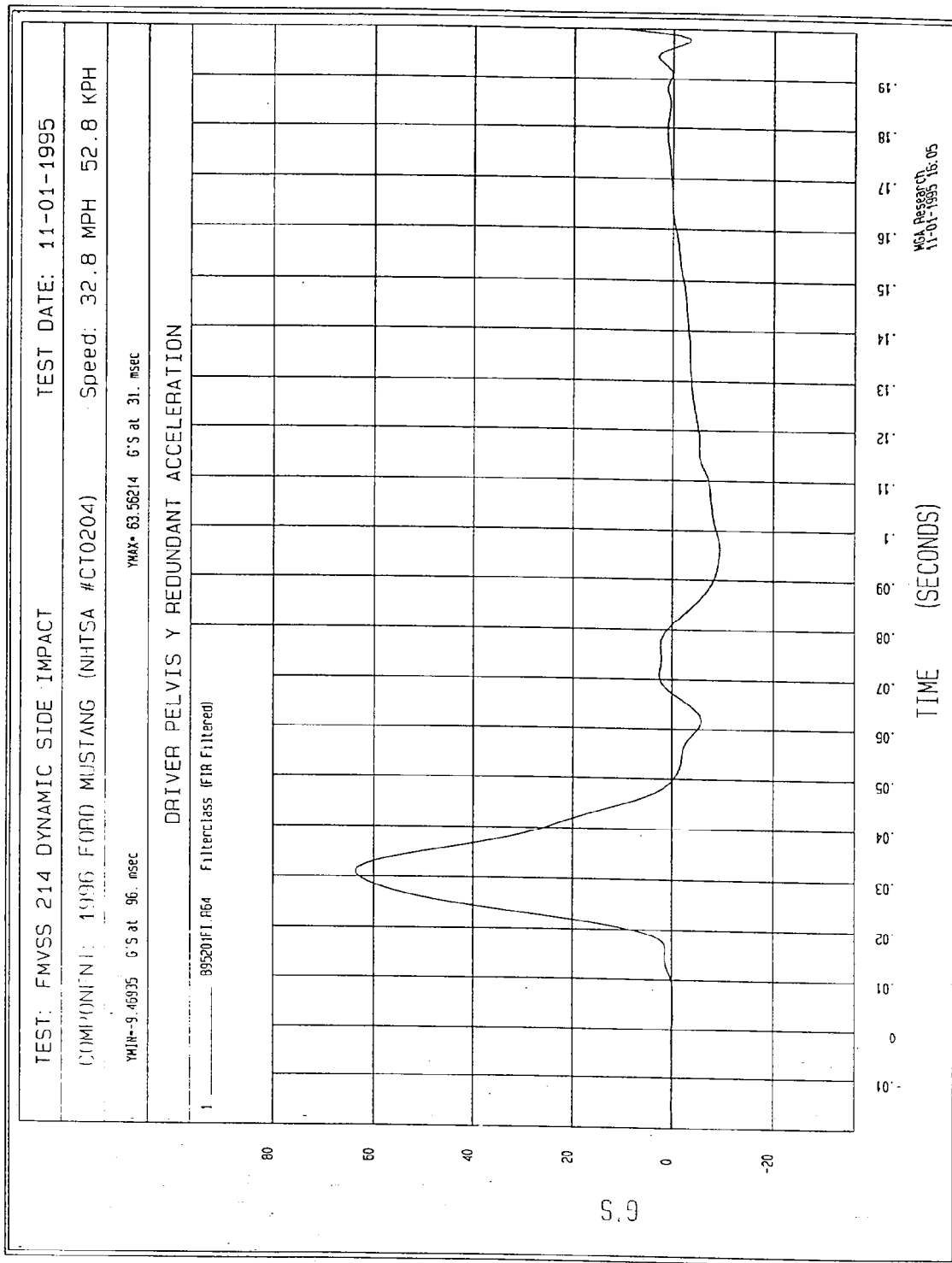


Figure B-91 - Driver Pelvis Y Redundant Acceleration vs. Time

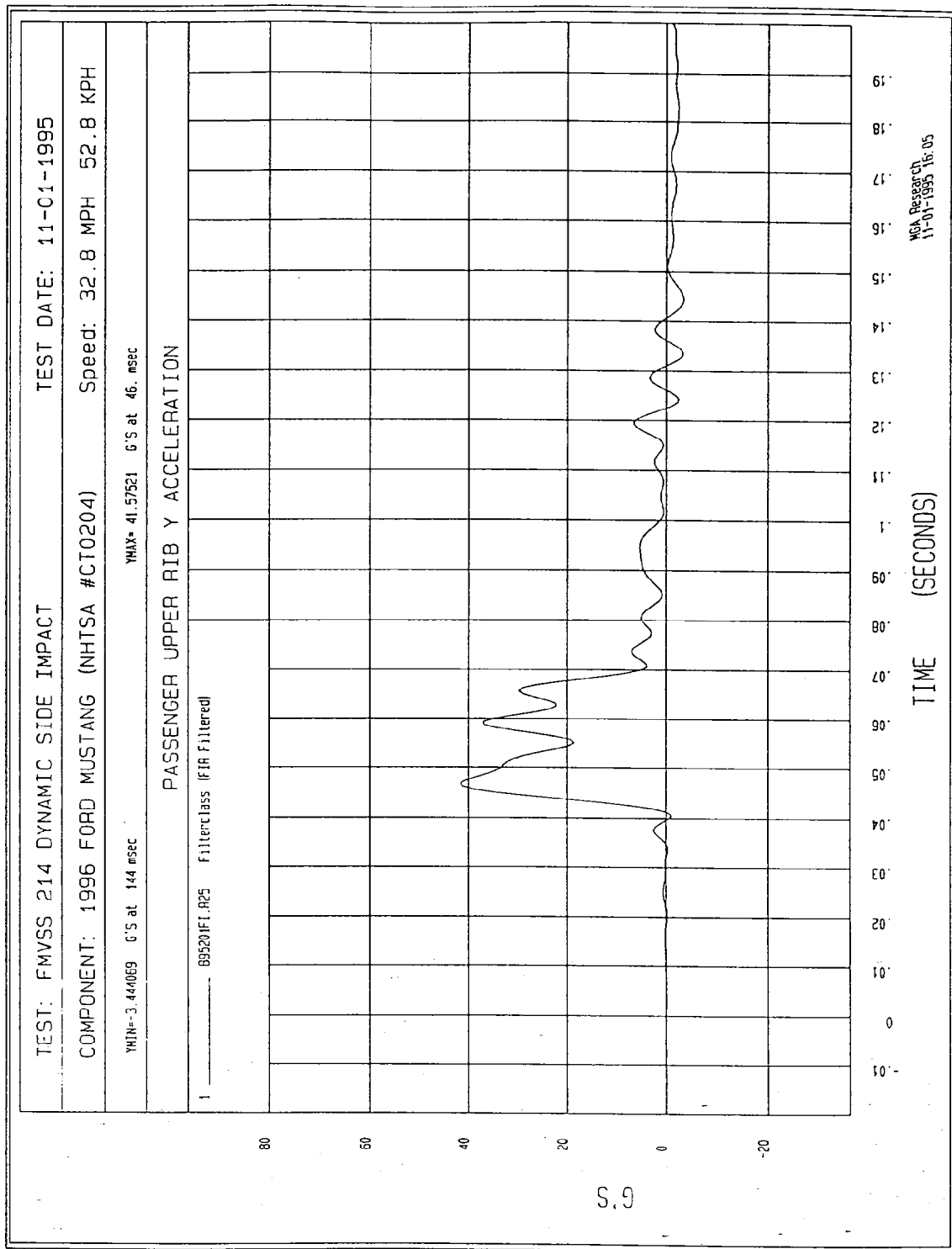


Figure B-92 - Passenger Upper Rib Y Acceleration vs. Time

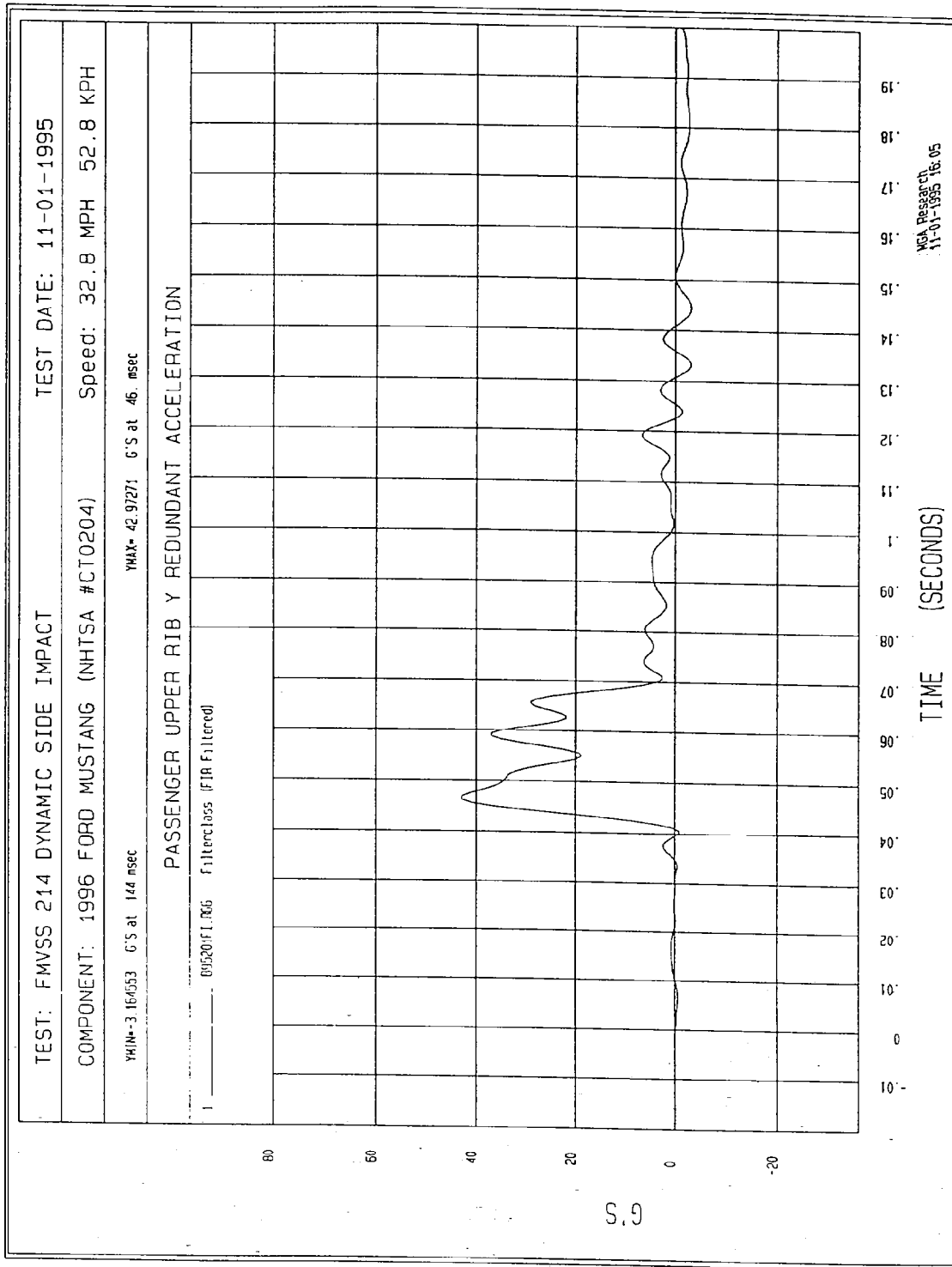


Figure B-93 - Passenger Upper Rib Y Redundant Acceleration vs. Time

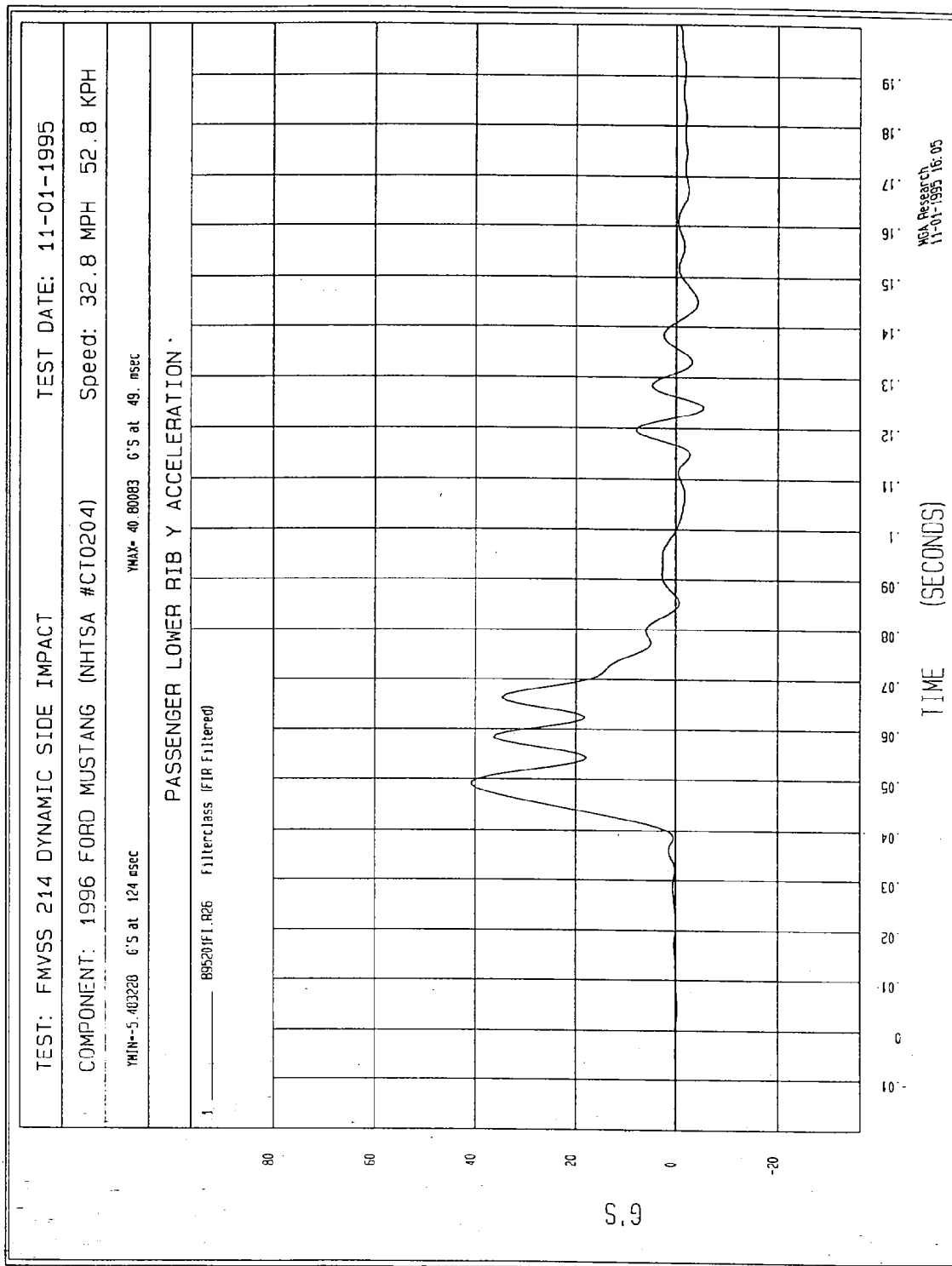


Figure B-94 - Passenger Lower Rib Y Acceleration vs. Time

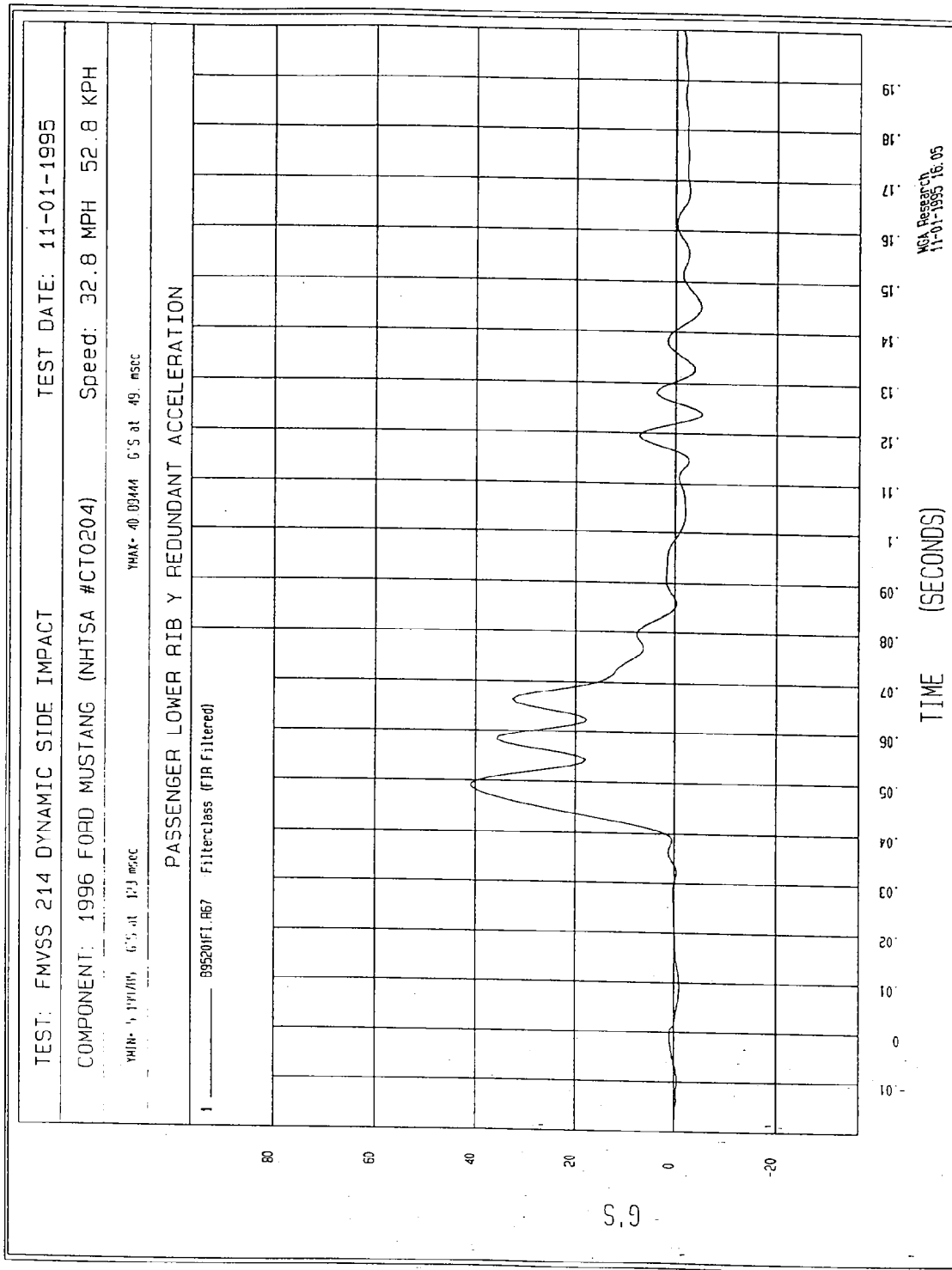


Figure B-95 - Passenger Lower Rib Y Redundant Acceleration vs. Time

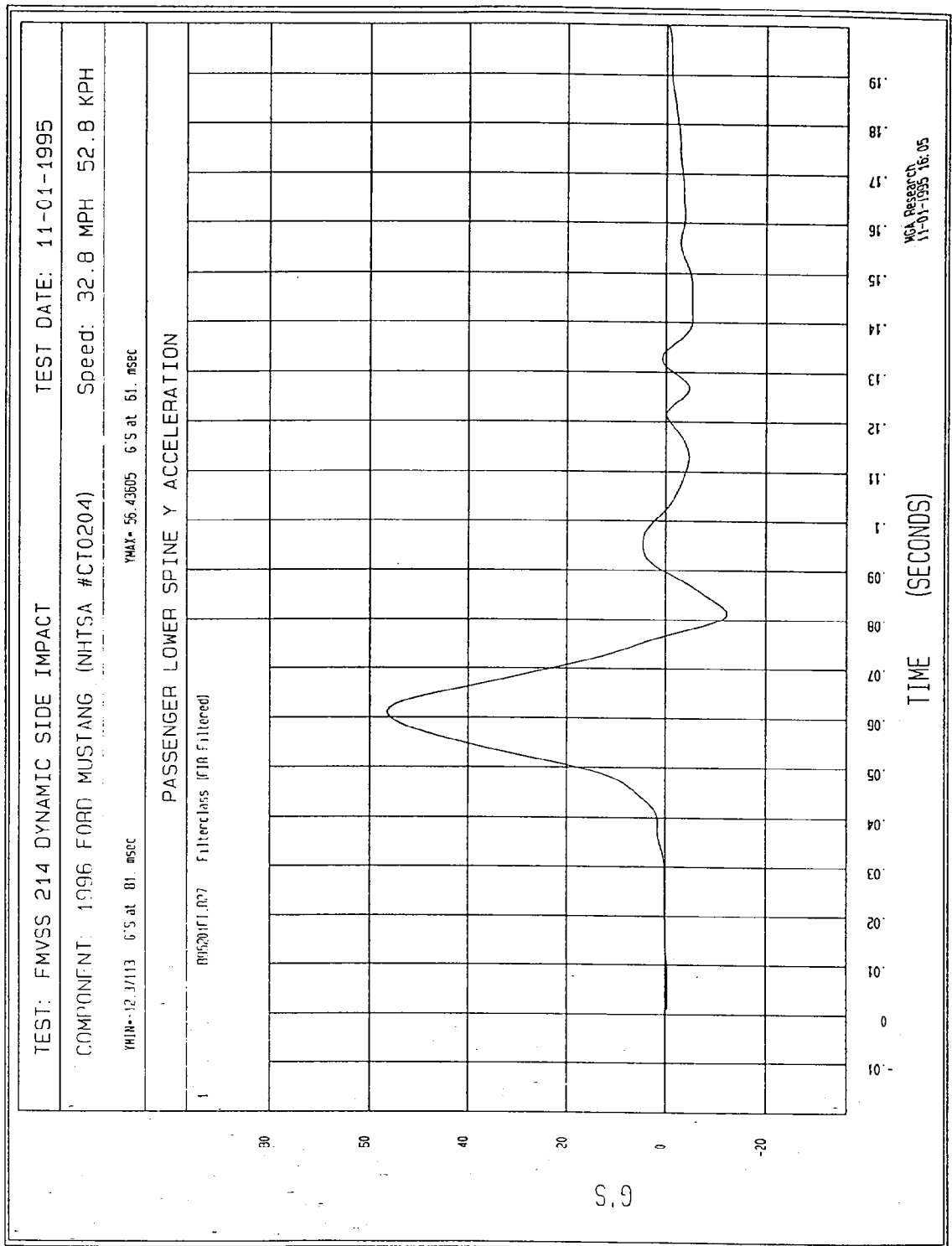


Figure B-96 - Passenger Lower Spine Y Acceleration vs. Time

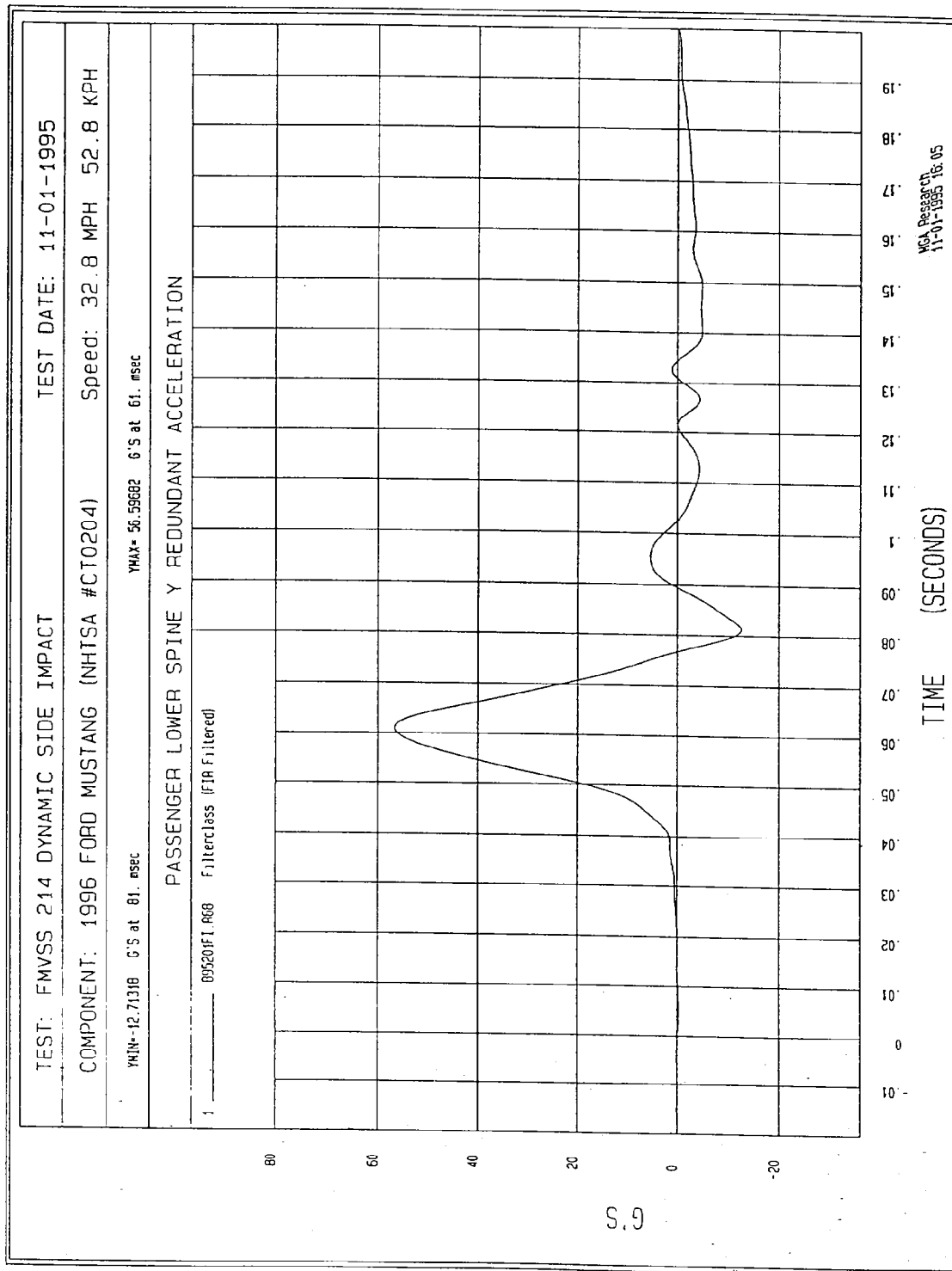


Figure B-97 - Passenger Lower Spine Y Redundant Acceleration vs. Time

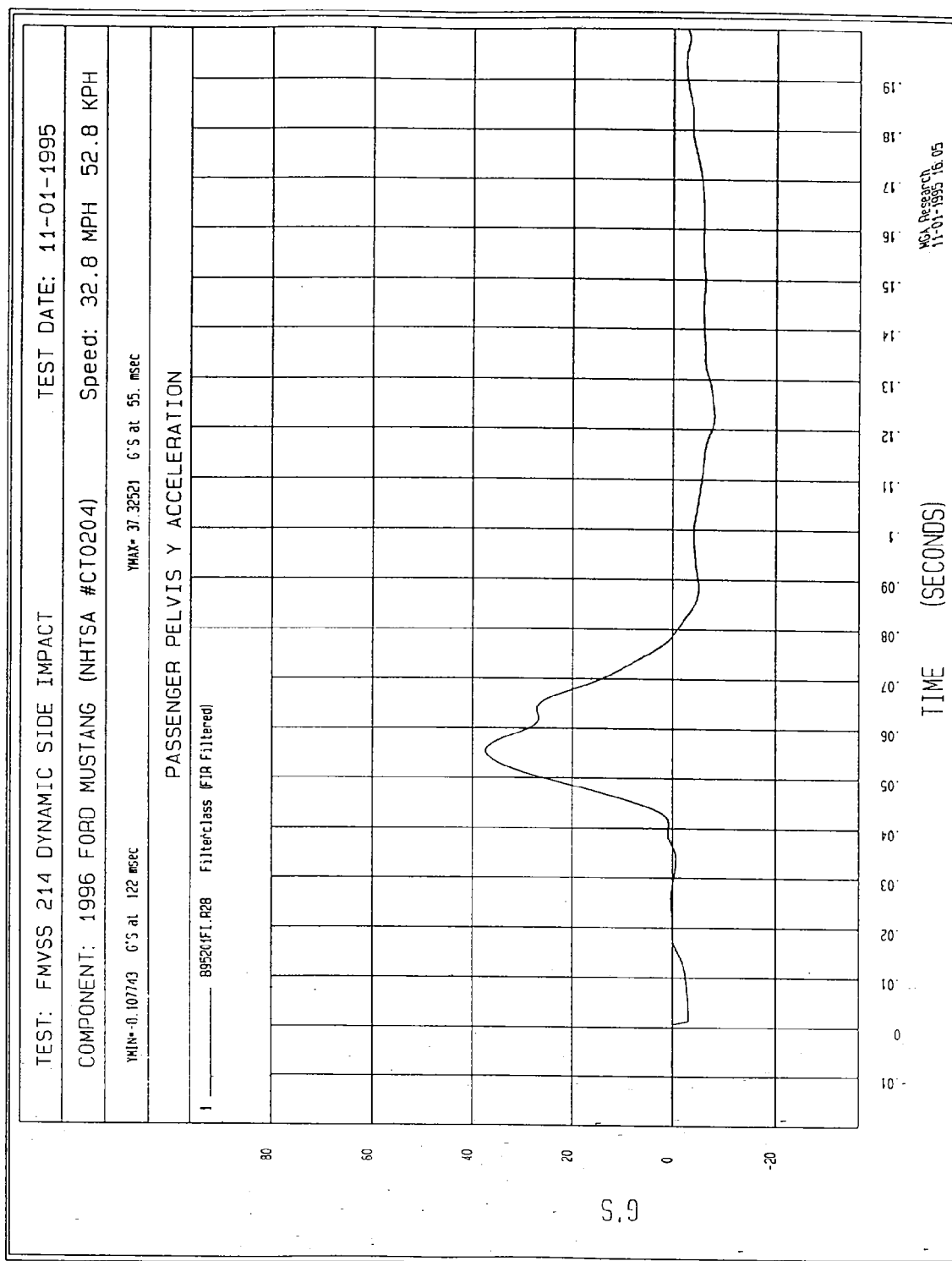


Figure B-98 - Passenger Pelvis Y Acceleration vs. Time

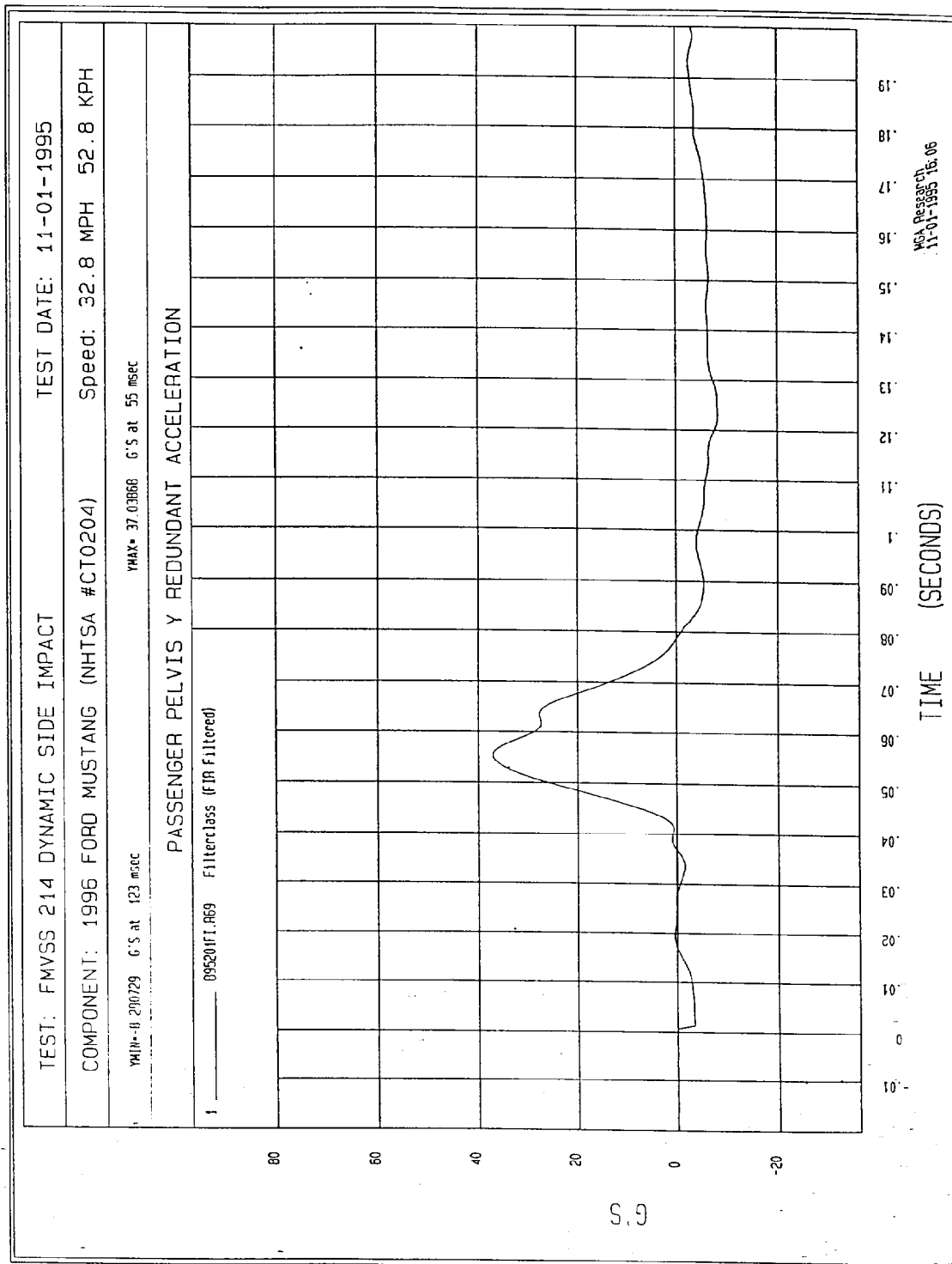


Figure B-99 - Passenger Pelvis Y Redundant Acceleration vs. Time

APPENDIX C
SID CONFIGURATION AND PERFORMANCE VERIFICATION

REPORT NO. MGA-96-DC04

DUMMY PERFORMANCE CALIBRATIONS

FMVSS 214 - SIDE IMPACT TEST

FORD MOTOR COMPANY
1996 FORD MUSTANG 2 DOOR
NHTSA NO. CT0204

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: November 1, 1995

Report Date: November 15, 1995

FINAL REPORT

Prepared For:

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

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PRE-TEST CERTIFICATION DATA

Driver Dummy Serial Number: 269

Calibration Test Results Summary

Dummy Serial Number: 269

Pre-Test Calibration

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

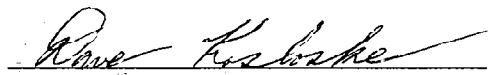
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 269

DATE OF VERIFICATION: October 19, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.1
RH - Rib Height	19.75" - 20.50"	20.10
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.3
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.5
SW - Knee Pivot to Floor	19.3" - 19.9"	19.4
HW - Hip Width	14.0" - 15.4"	15.1

MEASUREMENTS BY: 

APPROVED BY: 

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

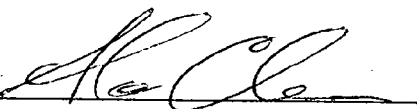
DATE: October 19, 1995

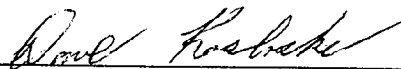
DUMMY NUMBER: 269

TEST NUMBER: D951522

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	40%
PROBE SPEED	13.8 - 14.2 fps	13.8
UPPER RIB	37 - 46 g's	40
LOWER RIB	37 - 46 g's	41
LOWER SPINE	15 - 22 g's	20

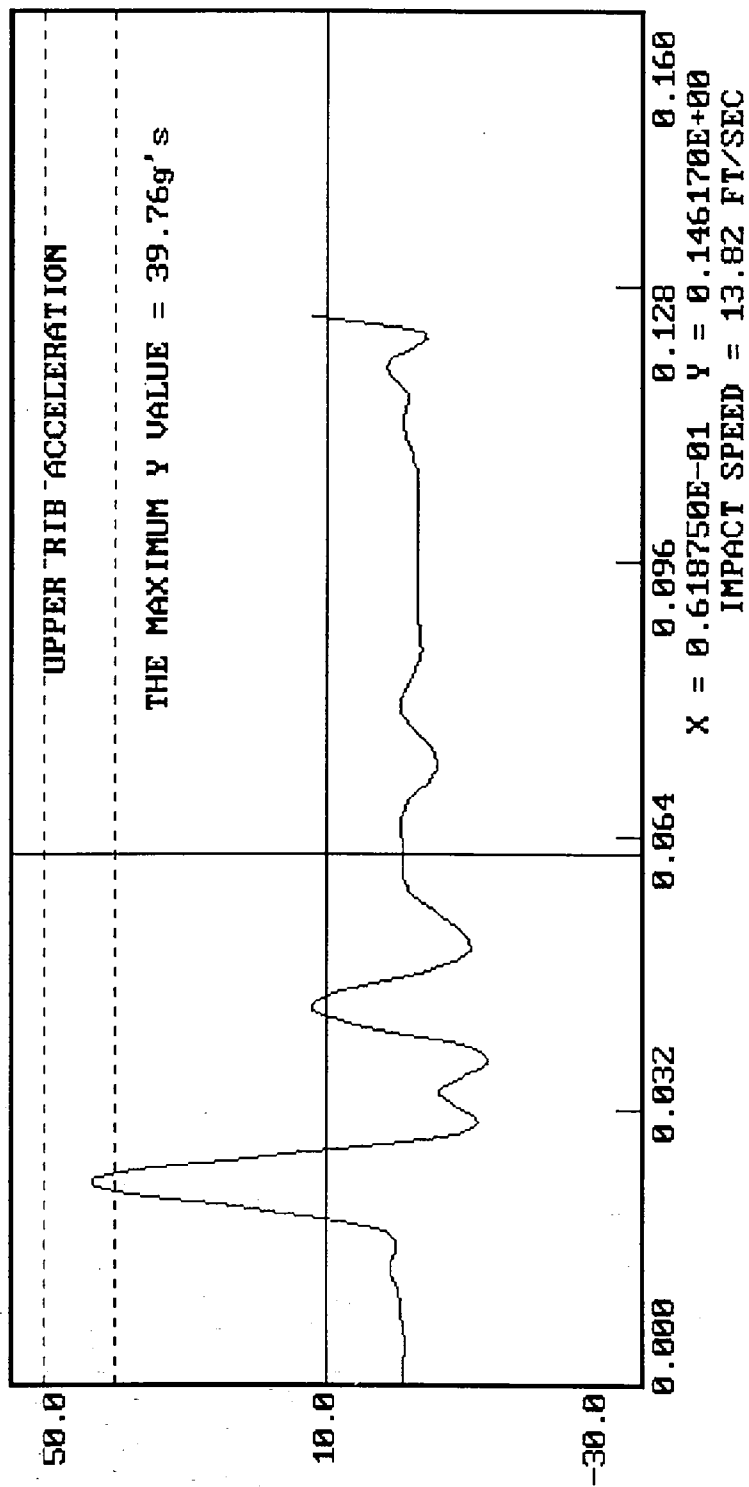
TEST MEETS SPECIFICATIONS

TECHNICIAN: 

APPROVED BY: 

10-19-1995 11:52

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

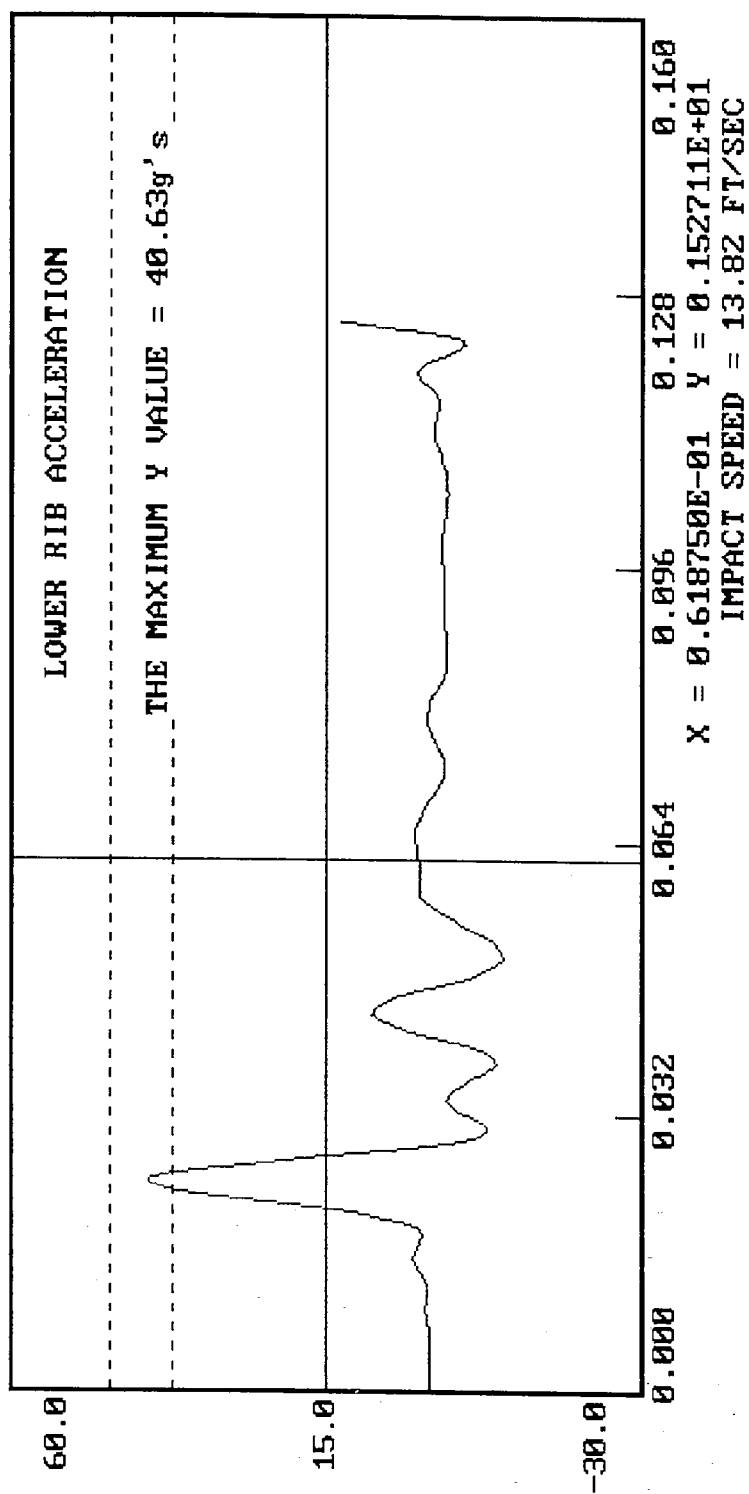


10-19-1995 11:52

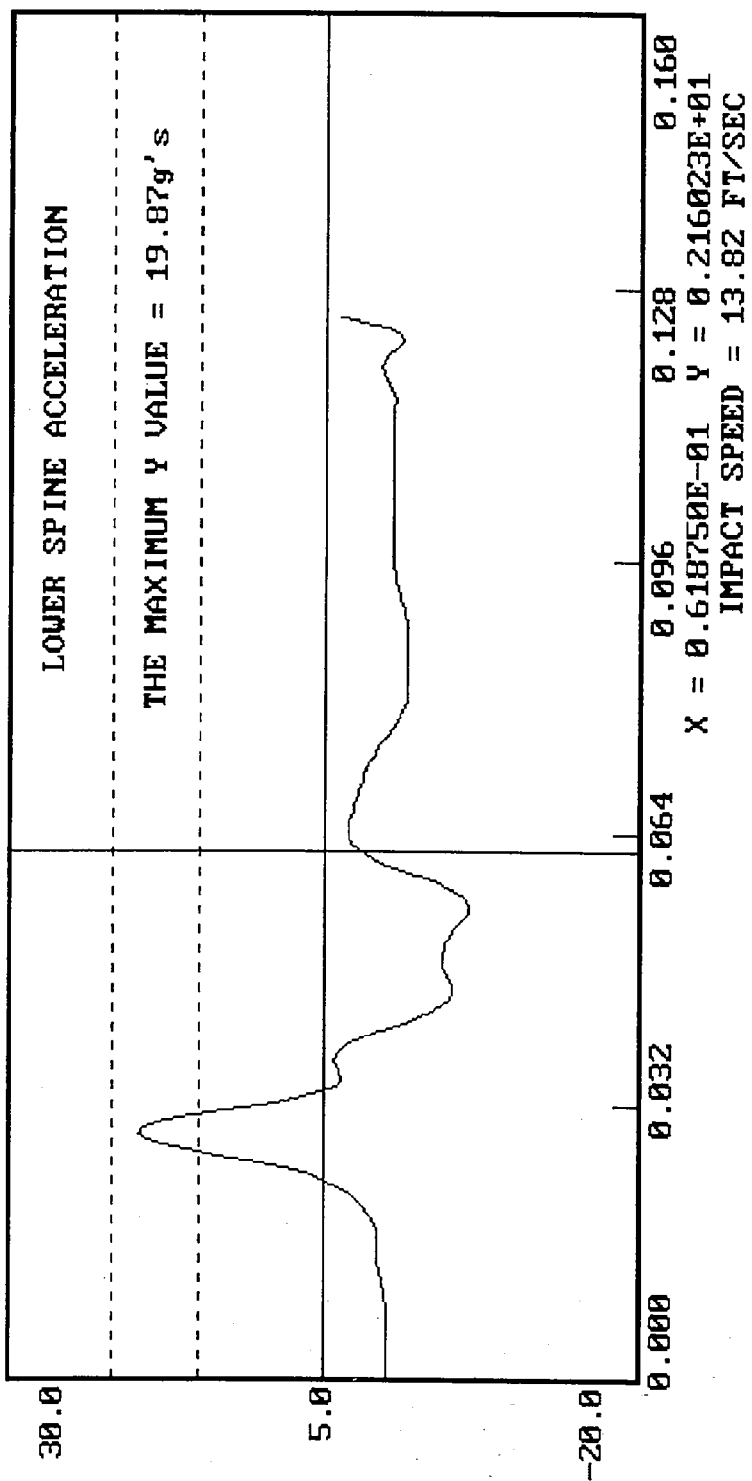
DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 269

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



DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 269
 10-19-1995 11:52
 ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: October 19, 1995

DUMMY NUMBER: 269

TEST NUMBER: D951323

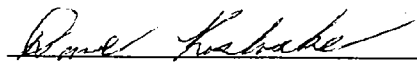
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	40%
PROBE SPEED	13.8 - 14.2 f/s	13.8
PELVIS ACCELERATION	40 - 60 g's	58

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY

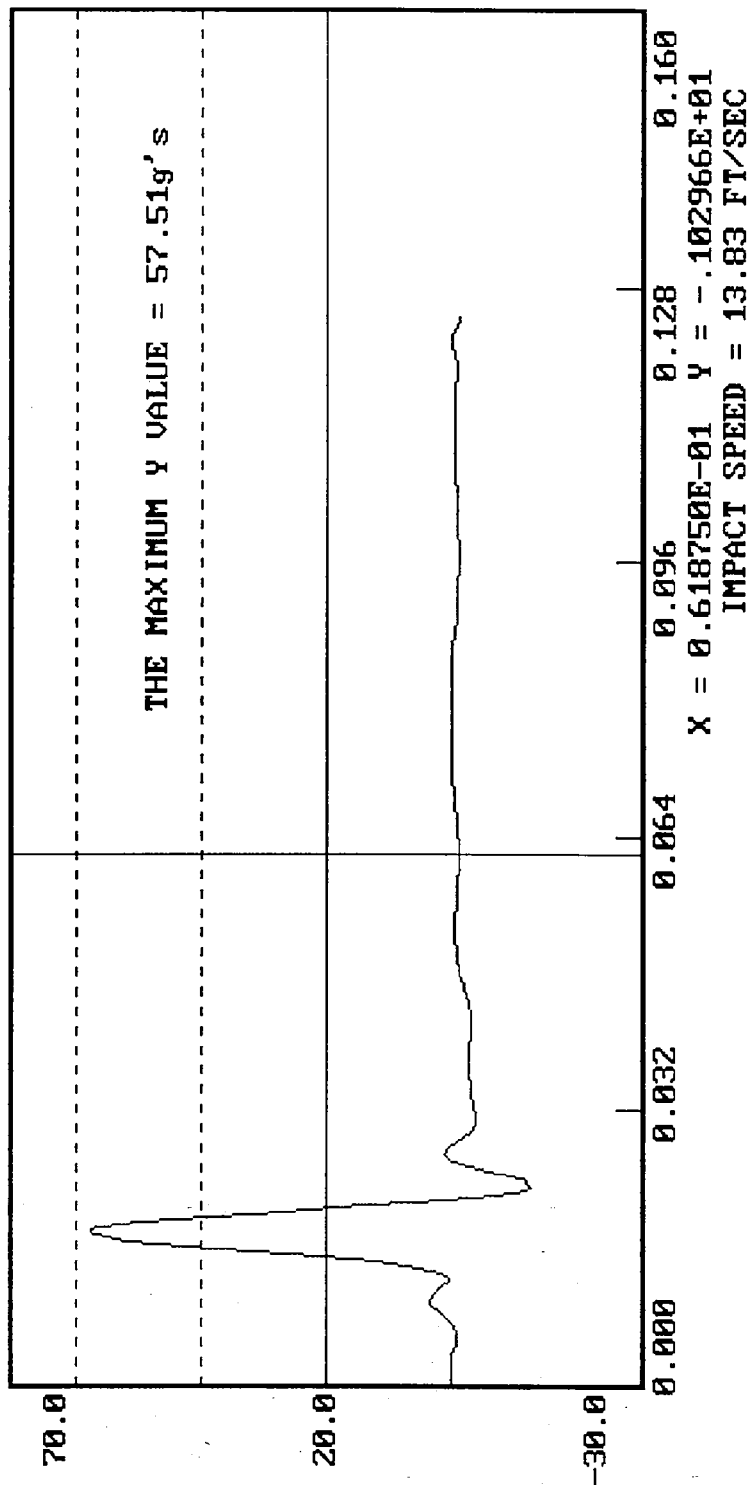


10-19-1995 11:57

DUMMY CALIBRATION - PELVIS IMPACT

DUMMY # 269

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



MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: October 17, 1995

DUMMY NUMBER: 269

TEST NUMBER: D951524

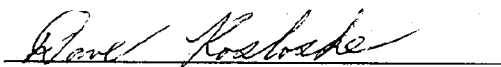
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	40%
FORCE @ 0.5 in	23.3 - 36.5 lbs	34.2
FORCE @ 0.75 in	36.7 - 49.8 lbs	45.7
FORCE @ 1.0 in	50 - 63 lbs	58
FORCE @ 1.3 in	73 - 88 lbs	76

TEST MEETS SPECIFICATIONS

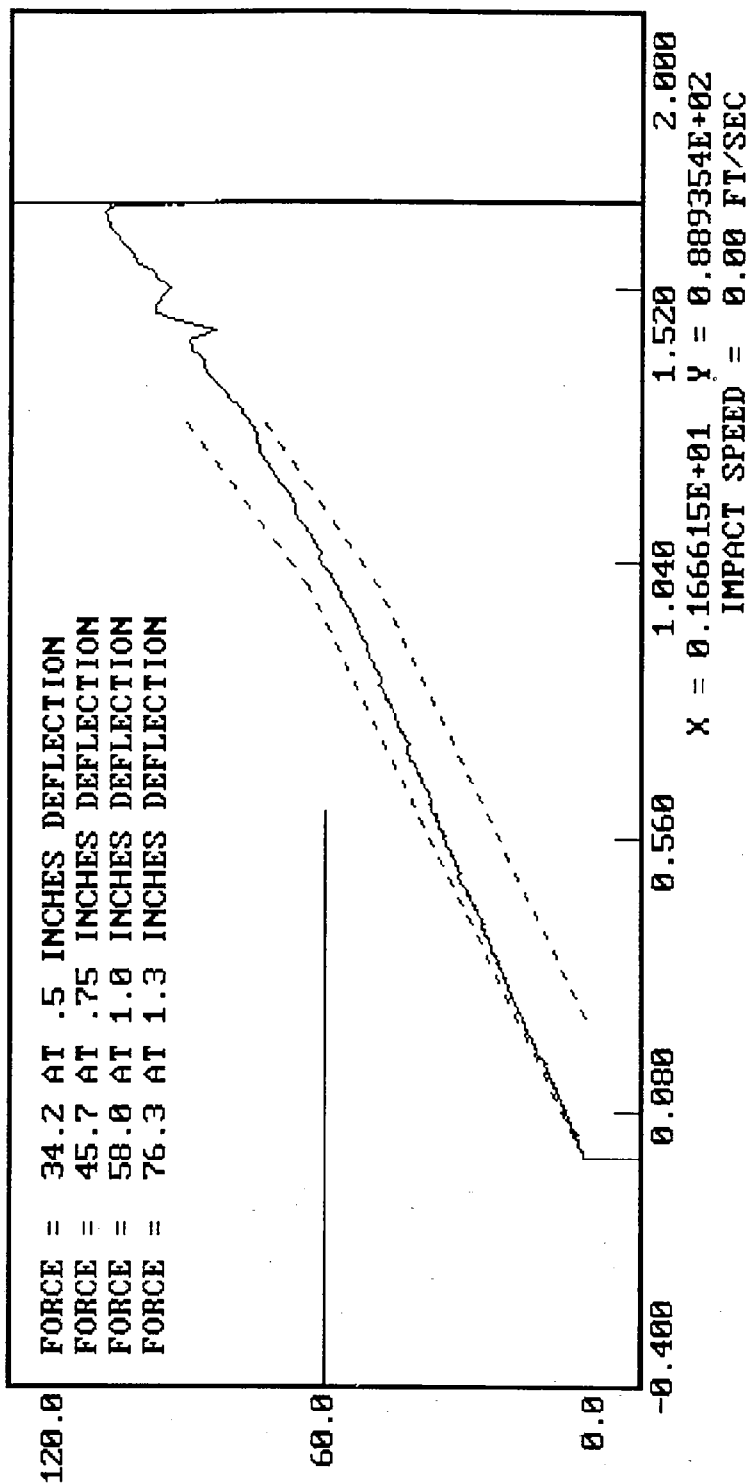
TECHNICIAN



APPROVED BY



DUMMY CALIBRATION - ABDOMEN COMPRESSION
 DUMMY # 269
 10-17-1995 22:07
 ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: October 19, 1995

DUMMY NUMBER: 269

TEST NUMBER: D951525

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	40%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	25
FORCE @ 30°	34 - 46 lbs	37
FORCE @ 40°	46 - 58 lbs	46
RETURN ANGLE	12° maximum	3°

TEST MEETS SPECIFICATIONS

TECHNICIAN *Al C. C.*

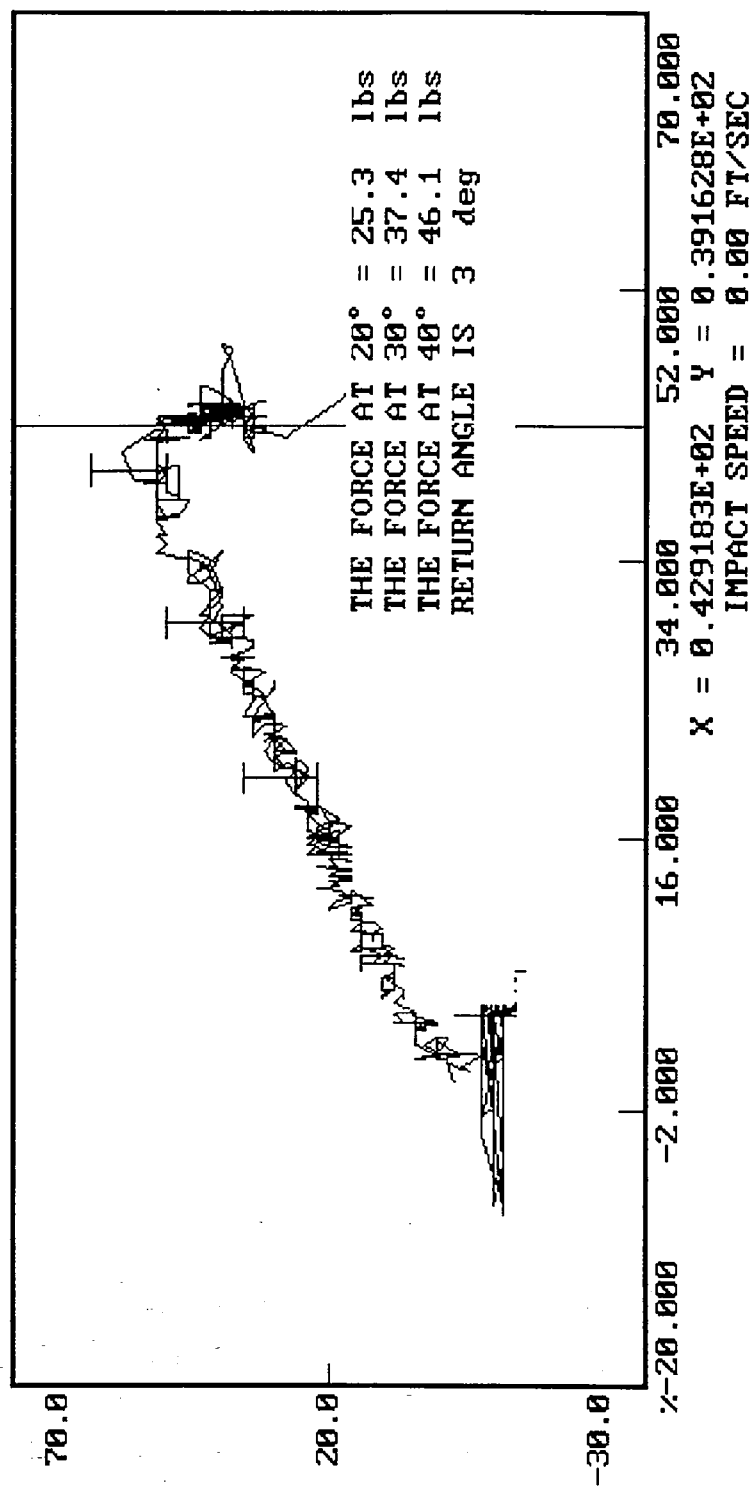
APPROVED BY *Steve Koshake*

DUMMY CALIBRATION - LUMBAR FLEXION

DUMMY # 269

FORCE () VS. TORSO ROTATION (DEGREES)

10-19-1995 14:32





PRE-TEST CERTIFICATION DATA

Passenger Dummy Serial Number: 270

Calibration Test Results Summary

Passenger Serial Number: 270

Pre-Test Calibration

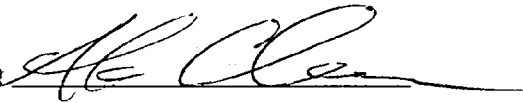
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion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

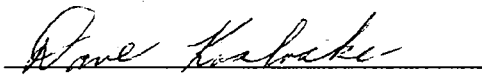
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 270

DATE OF VERIFICATION: October 19, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.3
RH - Rib Height	19.75" - 20.50"	20.50
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.5
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.7
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: October 19, 1995

DUMMY NUMBER: 270

TEST NUMBER: D951472

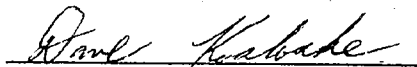
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	40%
PROBE SPEED	13.8 - 14.2 fps	14.0
UPPER RIB	37 - 46 g's	39
LOWER RIB	37 - 46 g's	38
LOWER SPINE	15 - 22 g's	20

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY

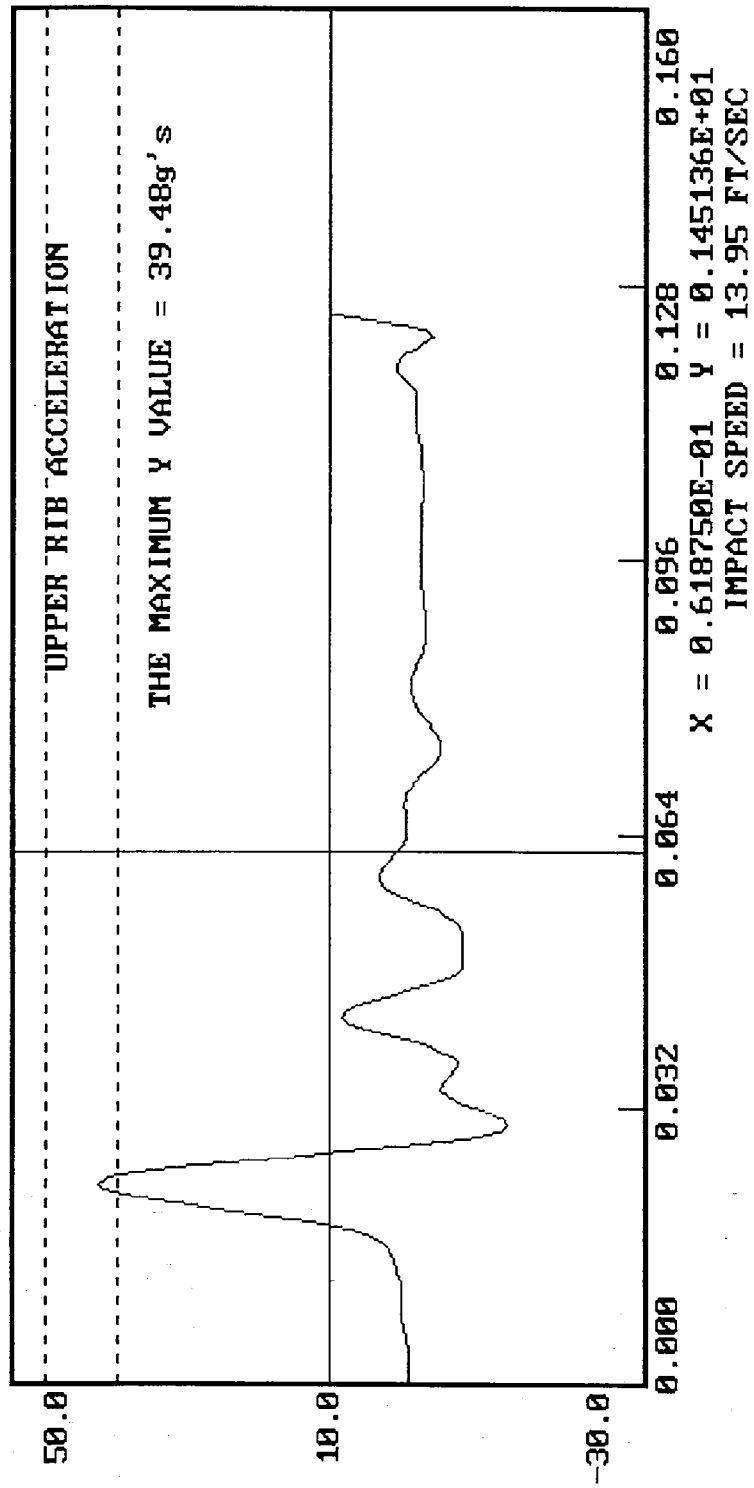


10-19-1995 16:56

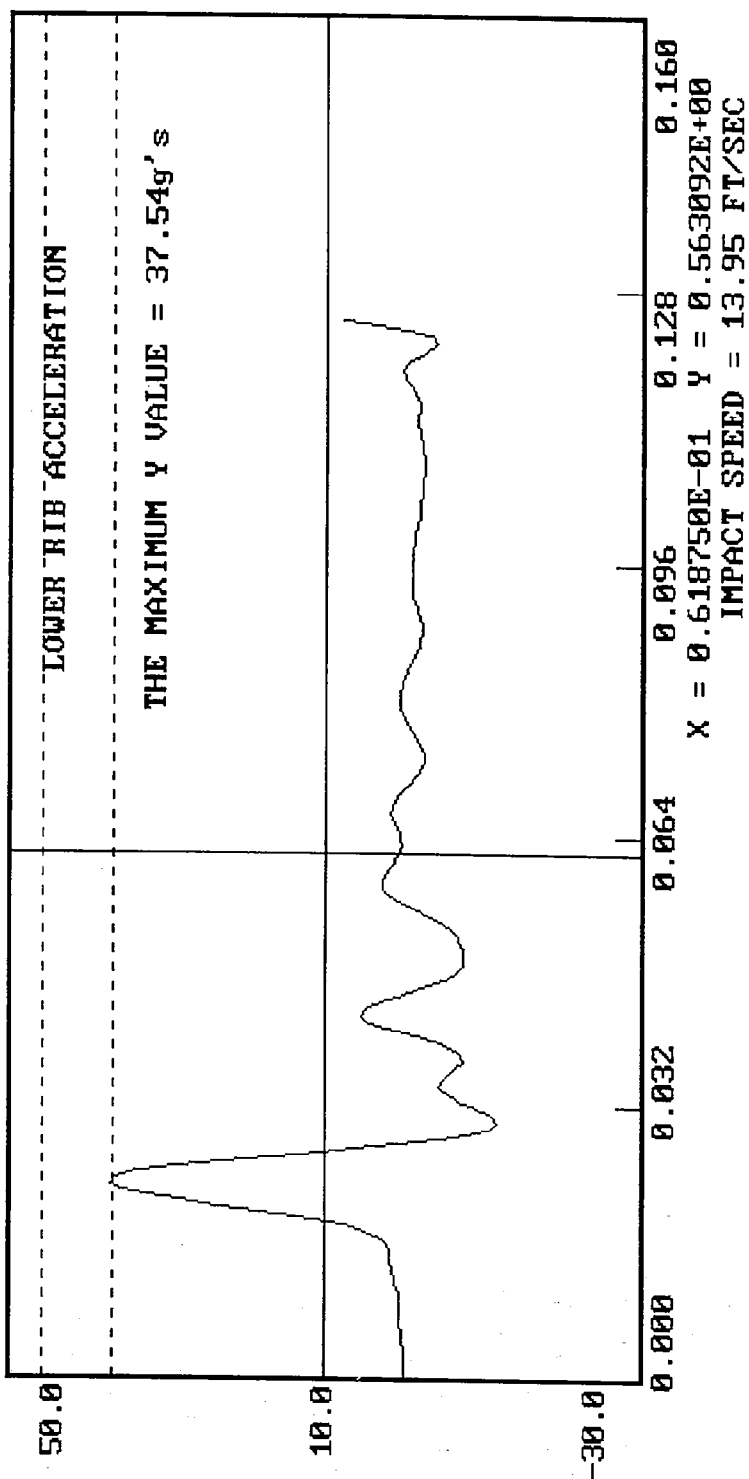
DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 270

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



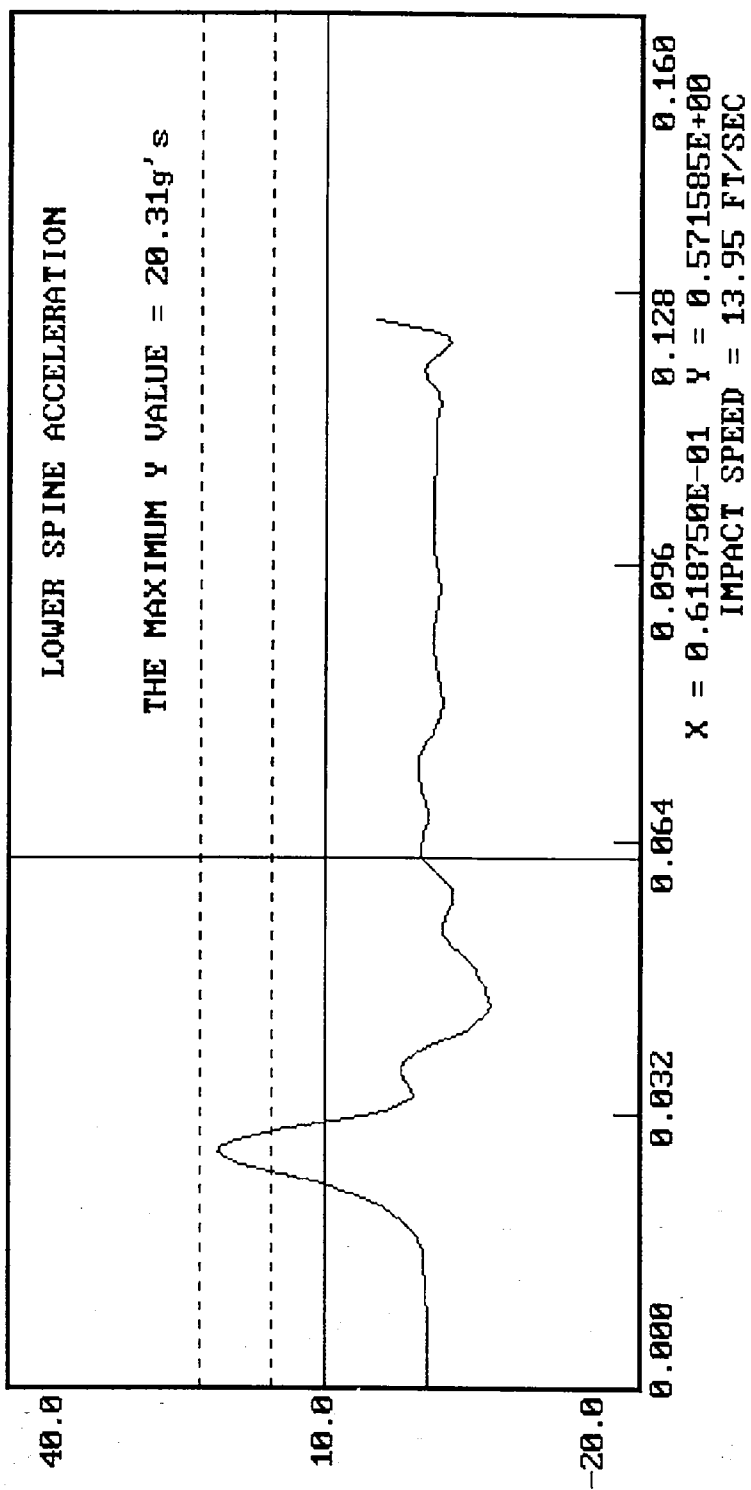
DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 270
 10-19-1995 16:56
 ACCELERATION (G'S) VS. TIME ((SECONDS))



10-19-1995 16:56

DUMMY CALIBRATION - THORAX IMPACT
DUMMY # 270

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



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: October 19, 1995

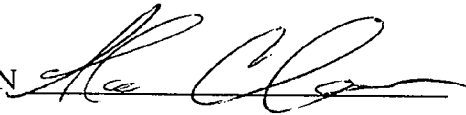
DUMMY NUMBER: 270

TEST NUMBER: D951473

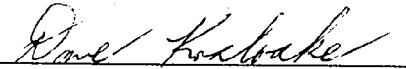
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	40%
PROBE SPEED	13.8 - 14.2 f/s	13.8
PELVIS ACCELERATION	40 - 60 g's	52

TEST MEETS SPECIFICATIONS

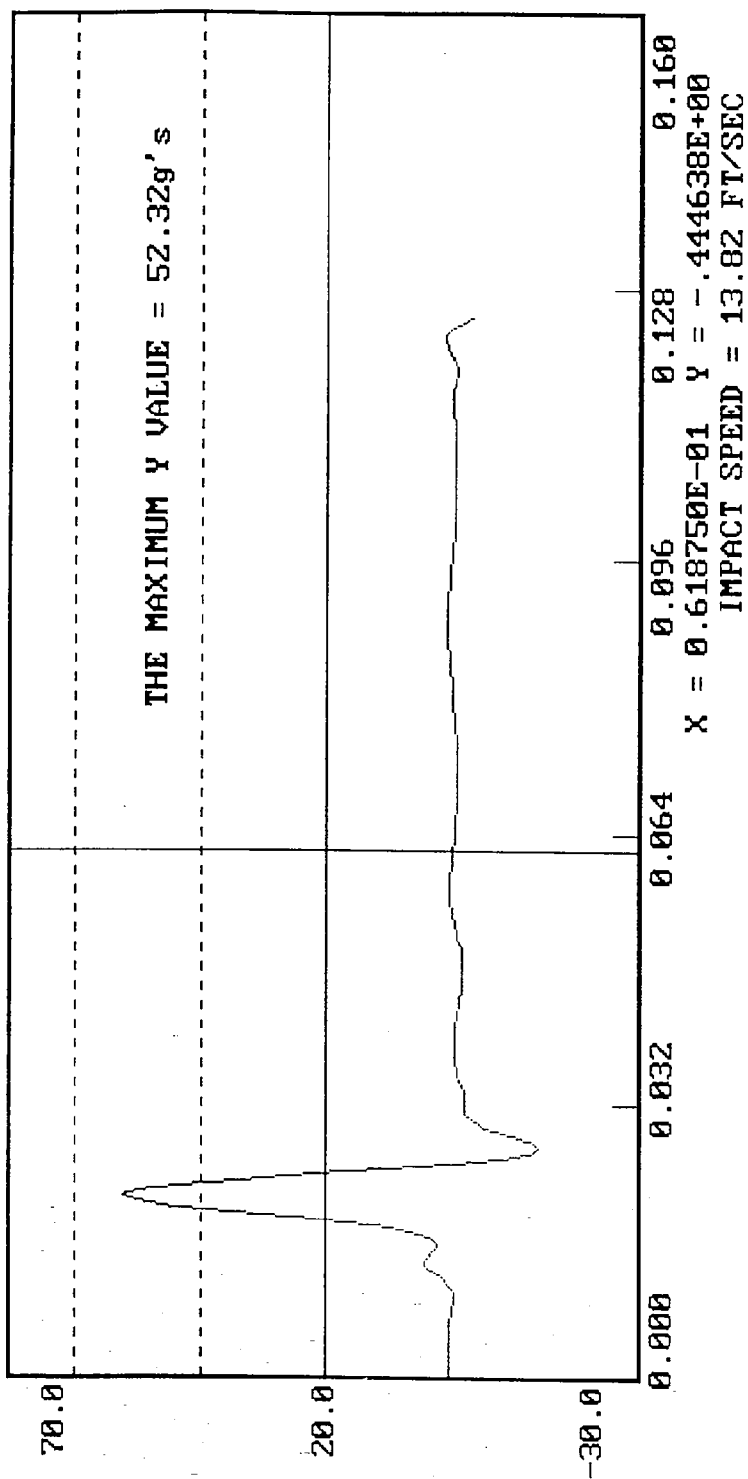
TECHNICIAN



APPROVED BY



DUMMY CALIBRATION - PELVIS IMPACT
DUMMY # 270
10-19-1995 17:05
ACCELERATION (G'S) VS. TIME ((SECONDS))



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

DATE: October 17, 1995

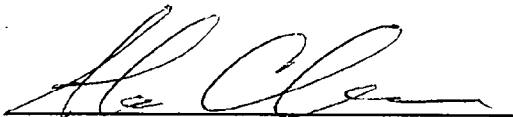
DUMMY NUMBER: 270

TEST NUMBER: D951474

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	40%
FORCE @ 0.5 in	23.3 - 36.5 lbs	32.4
FORCE @ 0.75 in	36.7 - 49.8 lbs	45.3
FORCE @ 1.0 in	50 - 63 lbs	60
FORCE @ 1.3 in	73 - 88 lbs	81

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY

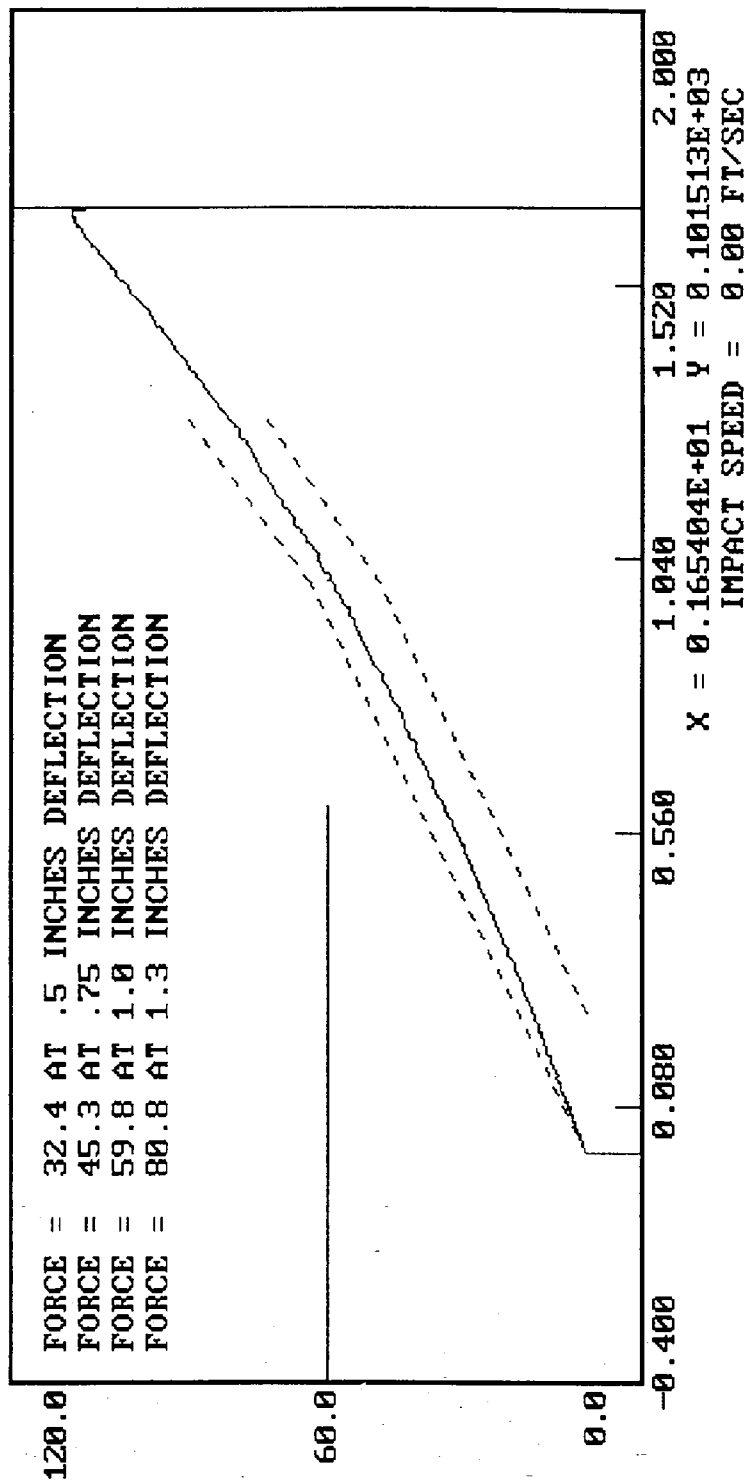


10-17-1995 22:13

DUMMY CALIBRATION - ABDOMEN COMPRESSION

DUMMY # 270

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



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: October 19, 1995

DUMMY NUMBER: 270

TEST NUMBER: D951475

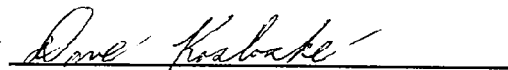
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	40%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	24
FORCE @ 30°	34 - 46 lbs	34
FORCE @ 40°	46 - 58 lbs	48
RETURN ANGLE	12° maximum	4°

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY

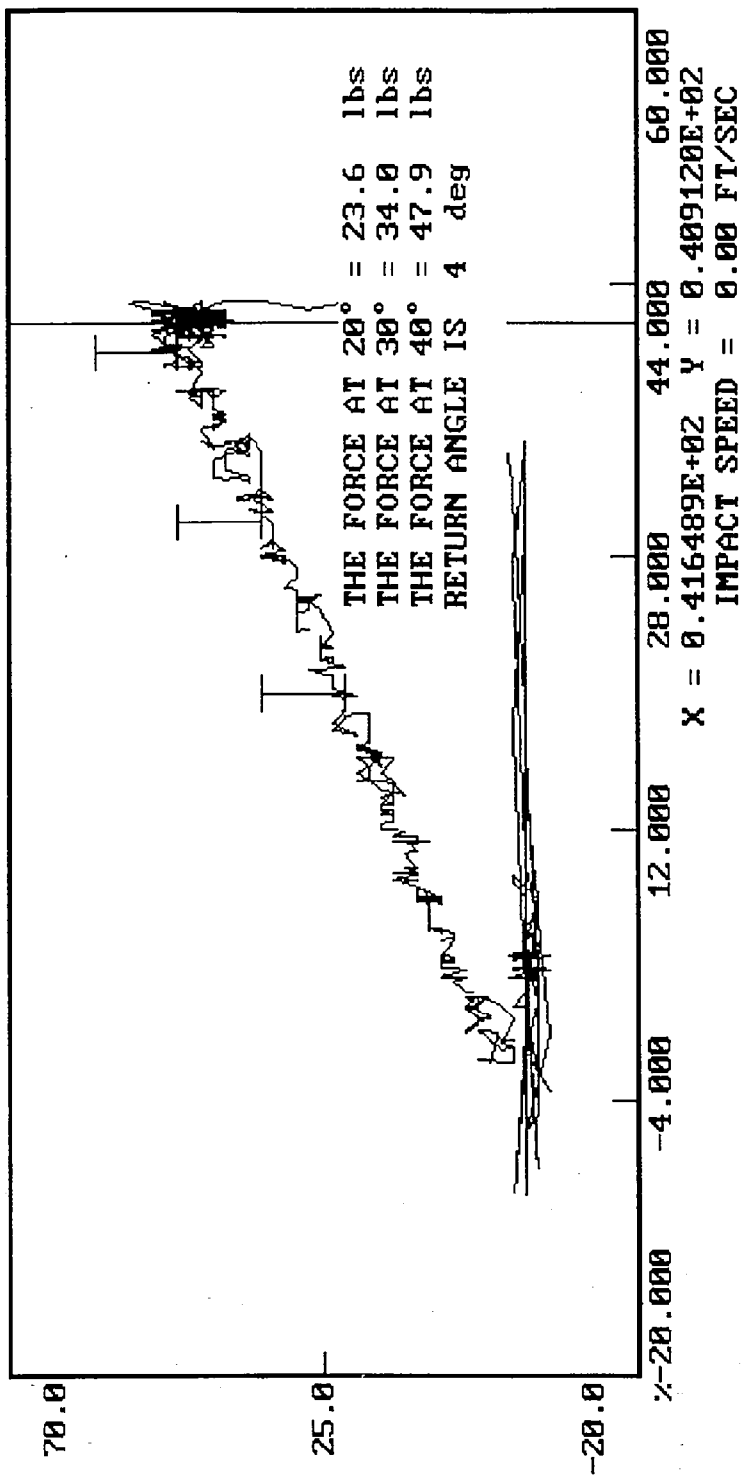


10-19-1995 16:23

DUMMY CALIBRATION - LUMBAR FLEXION

DUMMY # 270

FORCE () VS. TORSO ROTATION (DEGREES)





POST-TEST CERTIFICATION DATA

Driver Dummy Serial Number: 269

Calibration Test Results Summary

Dummy Serial Number: 269

Post-Test Calibration

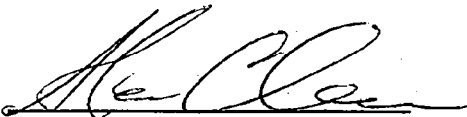
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion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

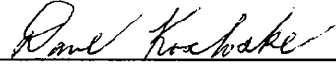
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 269

DATE OF VERIFICATION: November 14, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.1
RH - Rib Height	19.75" - 20.50"	20.10
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.3
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.5
SW - Knee Pivot to Floor	19.3" - 19.9"	19.4
HW - Hip Width	14.0" - 15.4"	15.1

MEASUREMENTS BY: 

APPROVED BY: 

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 8, 1995

DUMMY NUMBER: 269

TEST NUMBER: D951662

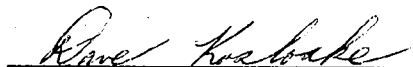
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 fps	14.0
UPPER RIB	37 - 46 g's	37
LOWER RIB	37 - 46 g's	39
LOWER SPINE	15 - 22 g's	20

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY

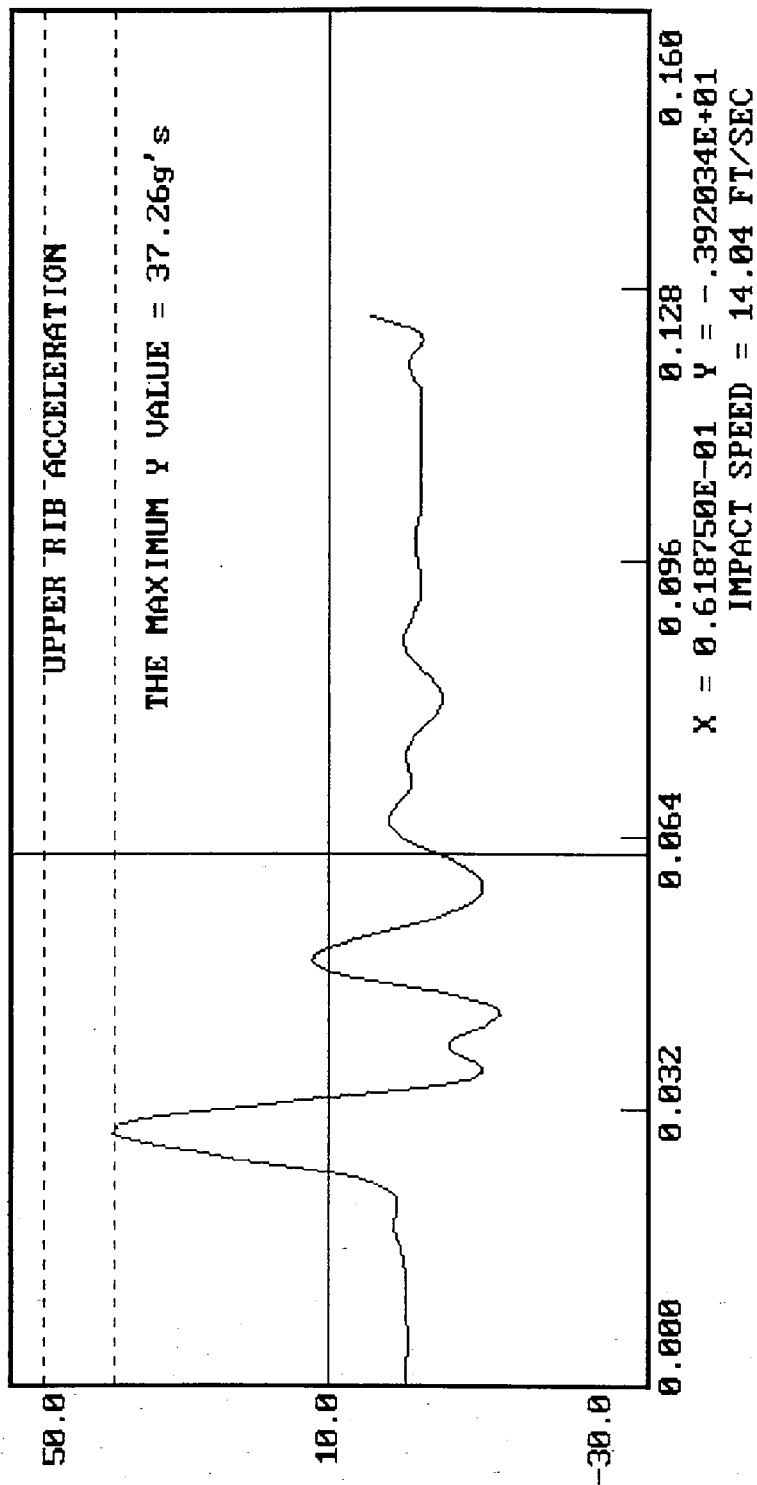


11-08-1995 09:41

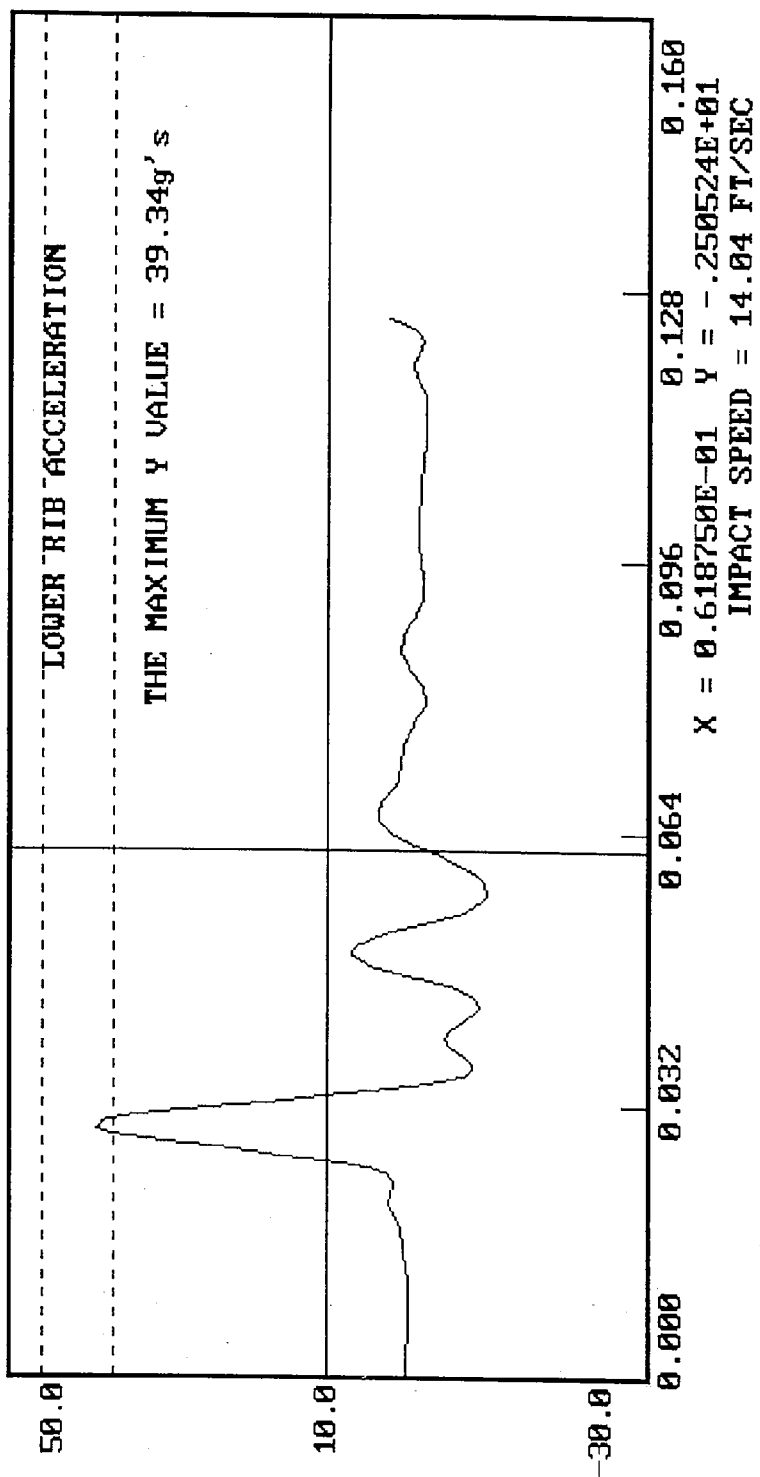
DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 269

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



DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 269
 11-08-1995 09:41
 ACCELERATION (G'S) VS. TIME ((SECONDS))

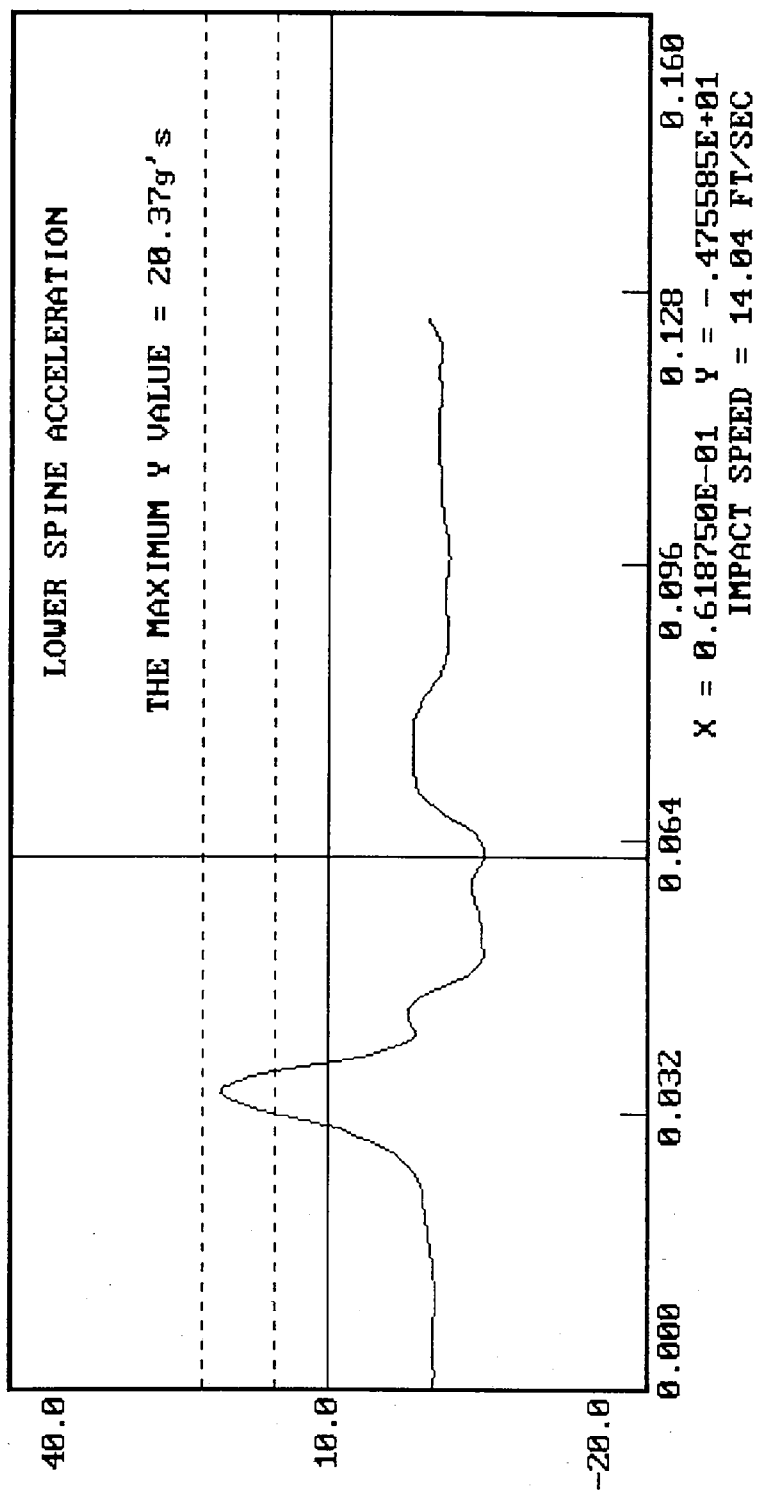


11-08-1995 09:41

DUMMY CALIBRATION - THORAX IMPACT

DUMMY # 269

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



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 8, 1995

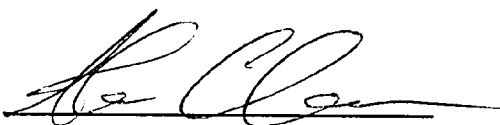
DUMMY NUMBER: 269

TEST NUMBER: D951663

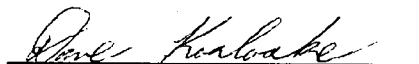
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 f/s	14.0
PELVIS ACCELERATION	40 - 60 g's	56

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY

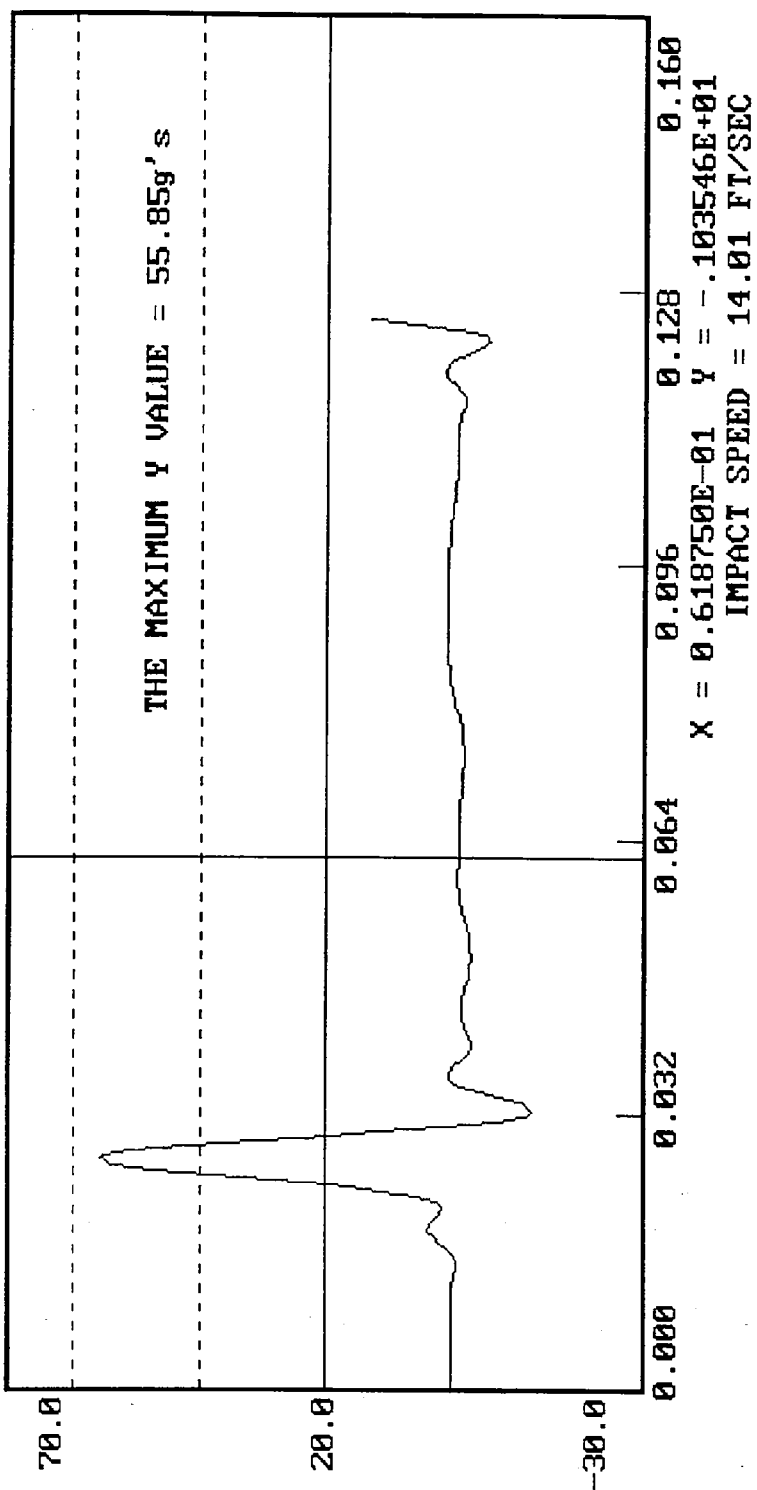


11-08-1995 10:15

DUMMY CALIBRATION - PELVIS IMPACT

DUMMY # 269

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



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

DATE: November 14, 1995

DUMMY NUMBER: 269

TEST NUMBER: D951664

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0.5 in	23.3 - 36.5 lbs	33.1
FORCE @ 0.75 in	36.7 - 49.8 lbs	45.5
FORCE @ 1.0 in	50 - 63 lbs	59
FORCE @ 1.3 in	73 - 88 lbs	80

TEST MEETS SPECIFICATIONS

TECHNICIAN

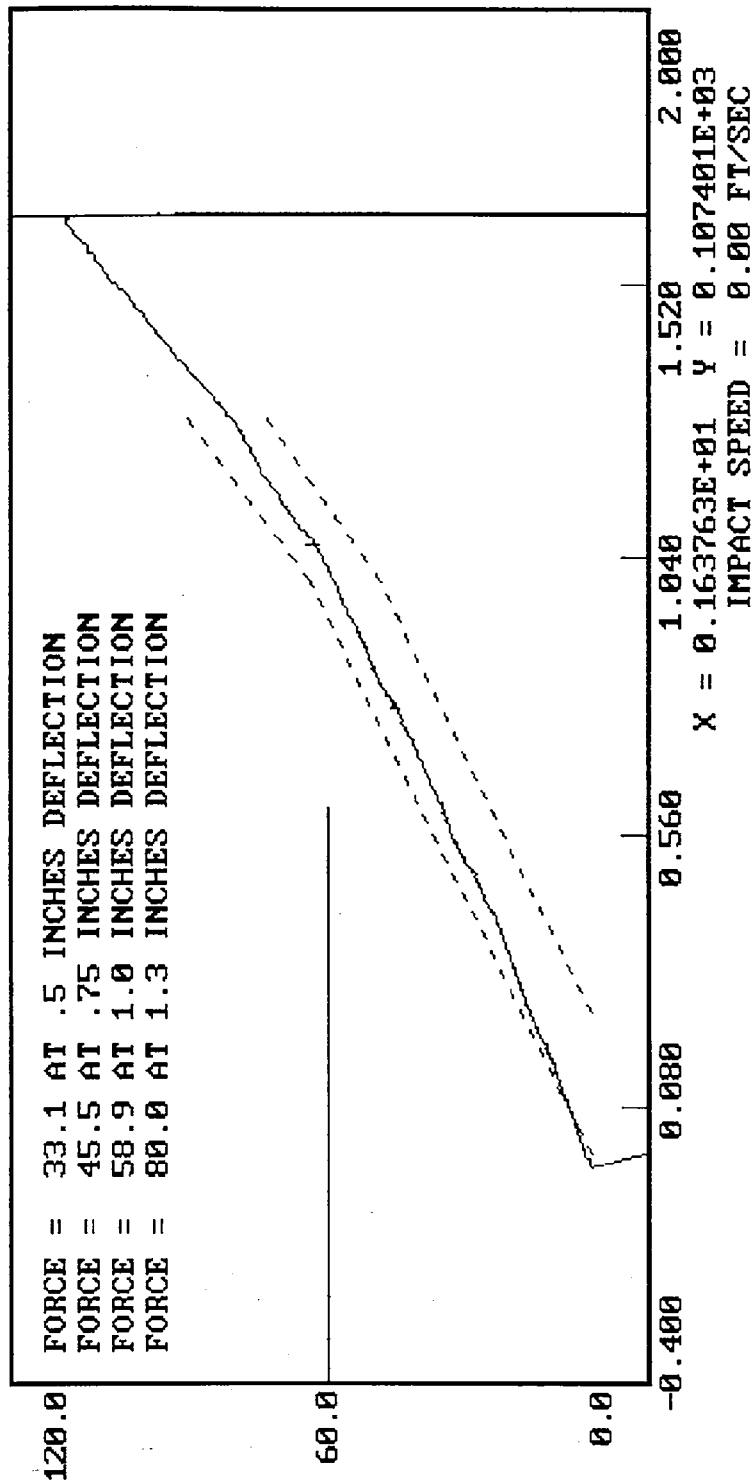


APPROVED BY



DUMMY CALIBRATION - ABDOMEN COMPRESSION
DUMMY # 269
11-14-1995 08:39

ABDOMEN FORCE () VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: October 10, 1995

DUMMY NUMBER: 269

TEST NUMBER: D951665

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	28
FORCE @ 30°	34 - 46 lbs	41
FORCE @ 40°	46 - 58 lbs	50
RETURN ANGLE	12° maximum	6°

TEST MEETS SPECIFICATIONS

TECHNICIAN



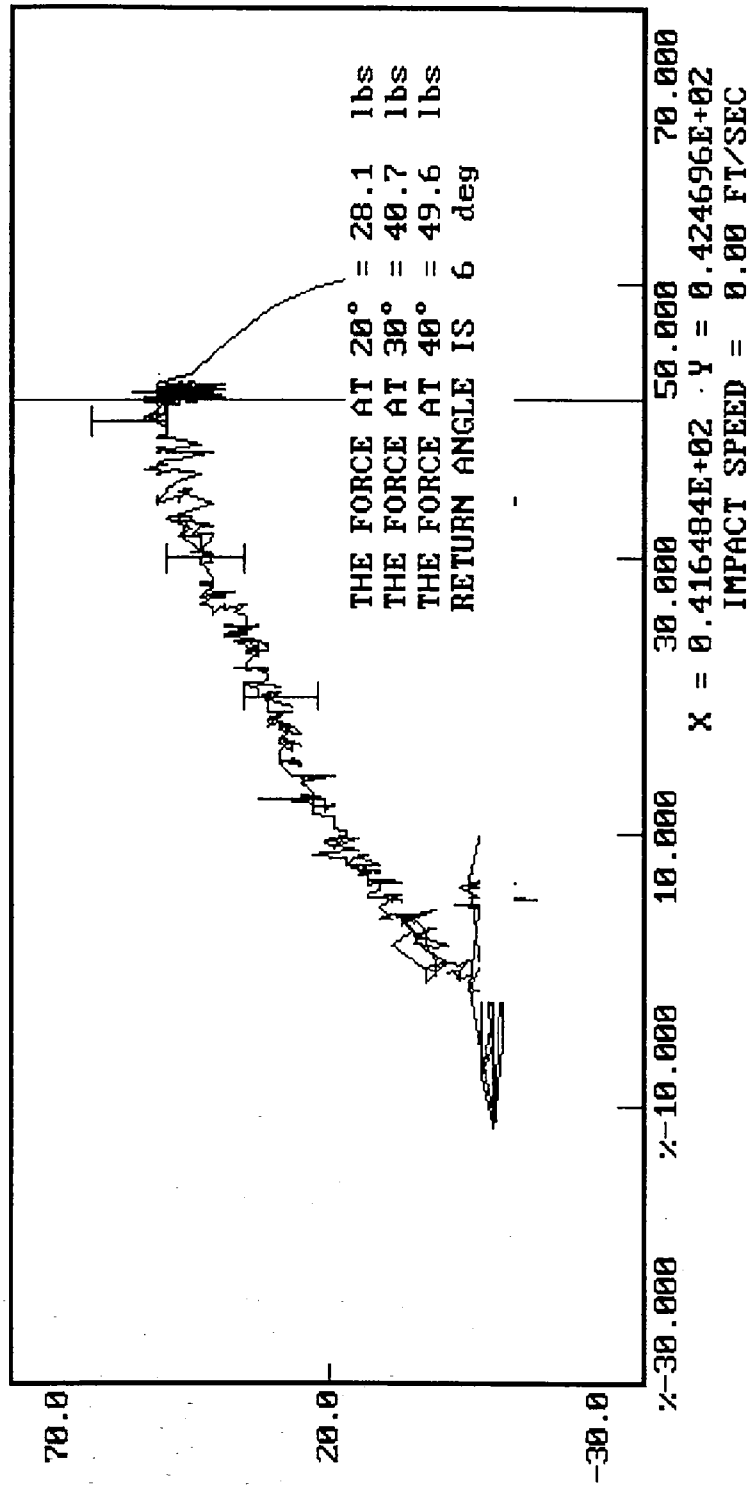
APPROVED BY

DUMMY CALIBRATION - LUMBAR FLEXION

DUMMY # 269

FORCE () VS. TORSO ROTATION (DEGREES)

11-10-1995 13:49



POST-TEST CERTIFICATION DATA

Passenger Dummy Serial Number: 270

Calibration Test Results Summary

Dummy Serial Number: 270

Post-Test Calibration

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

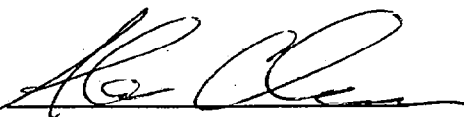
SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 270

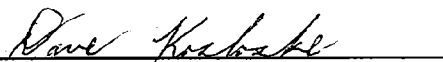
DATE OF VERIFICATION: November 14, 1995

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.3
RH - Rib Height	19.75" - 20.50"	20.50
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.5
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.7
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: 270

TEST NUMBER: D951672

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	39
LOWER RIB	37 - 46 g's	38
LOWER SPINE	15 - 22 g's	21

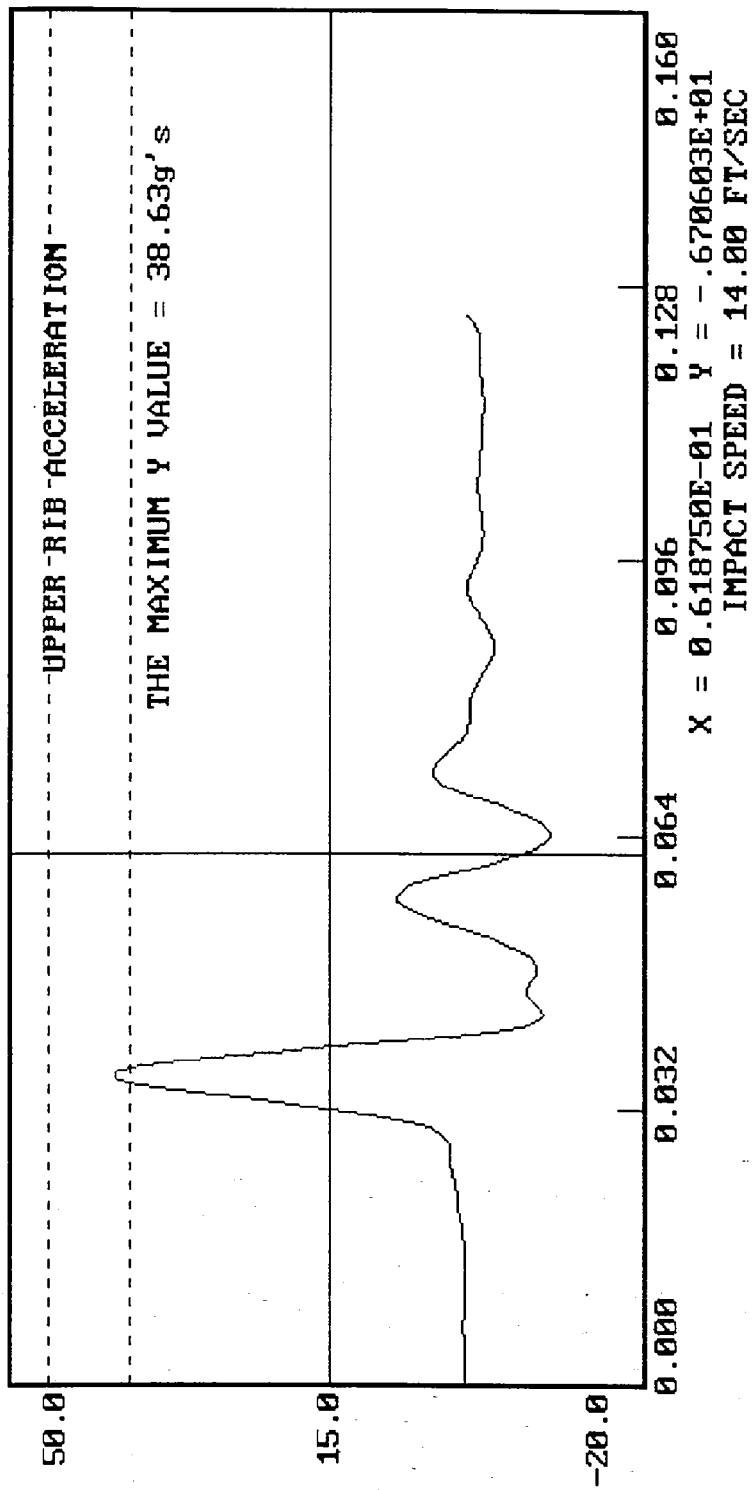
TEST MEETS SPECIFICATIONS

TECHNICIAN

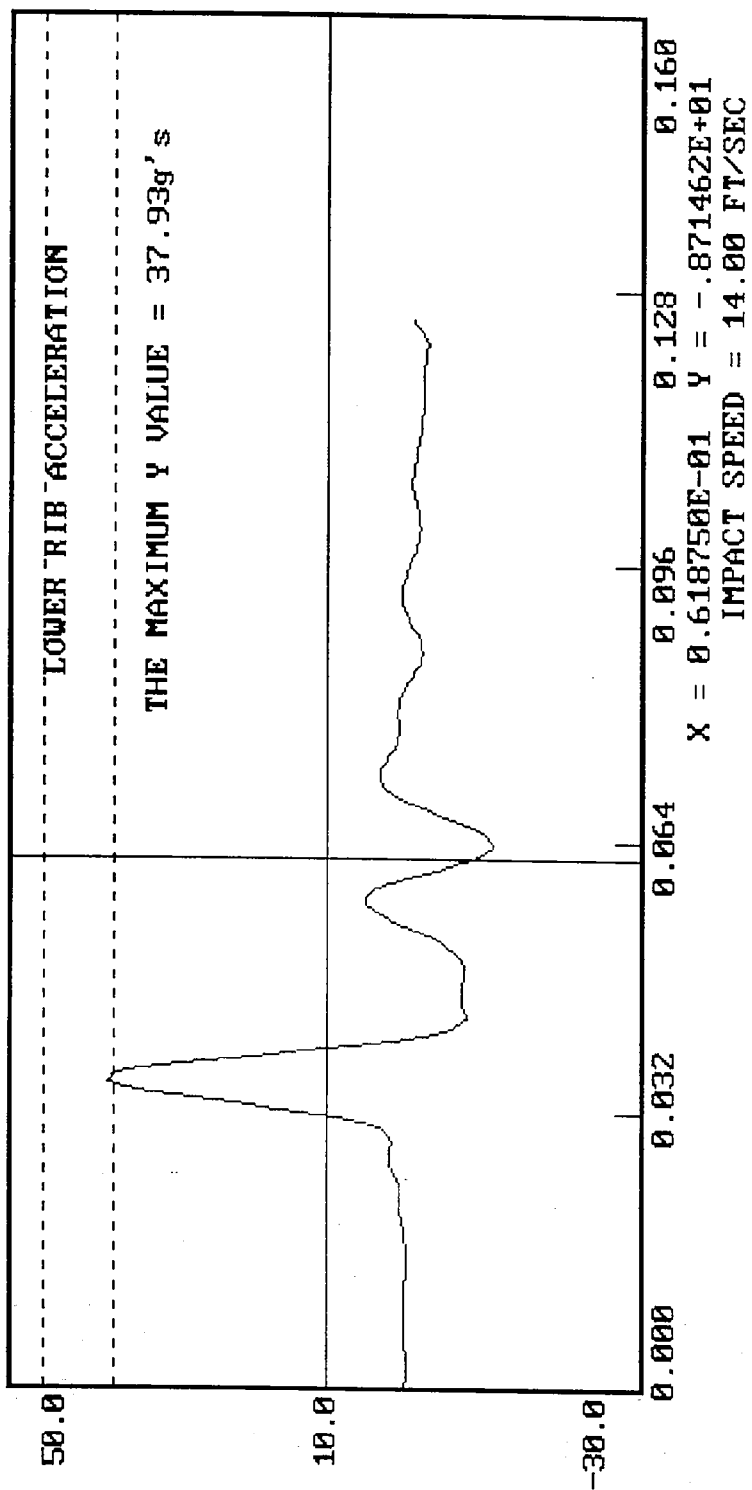


APPROVED BY

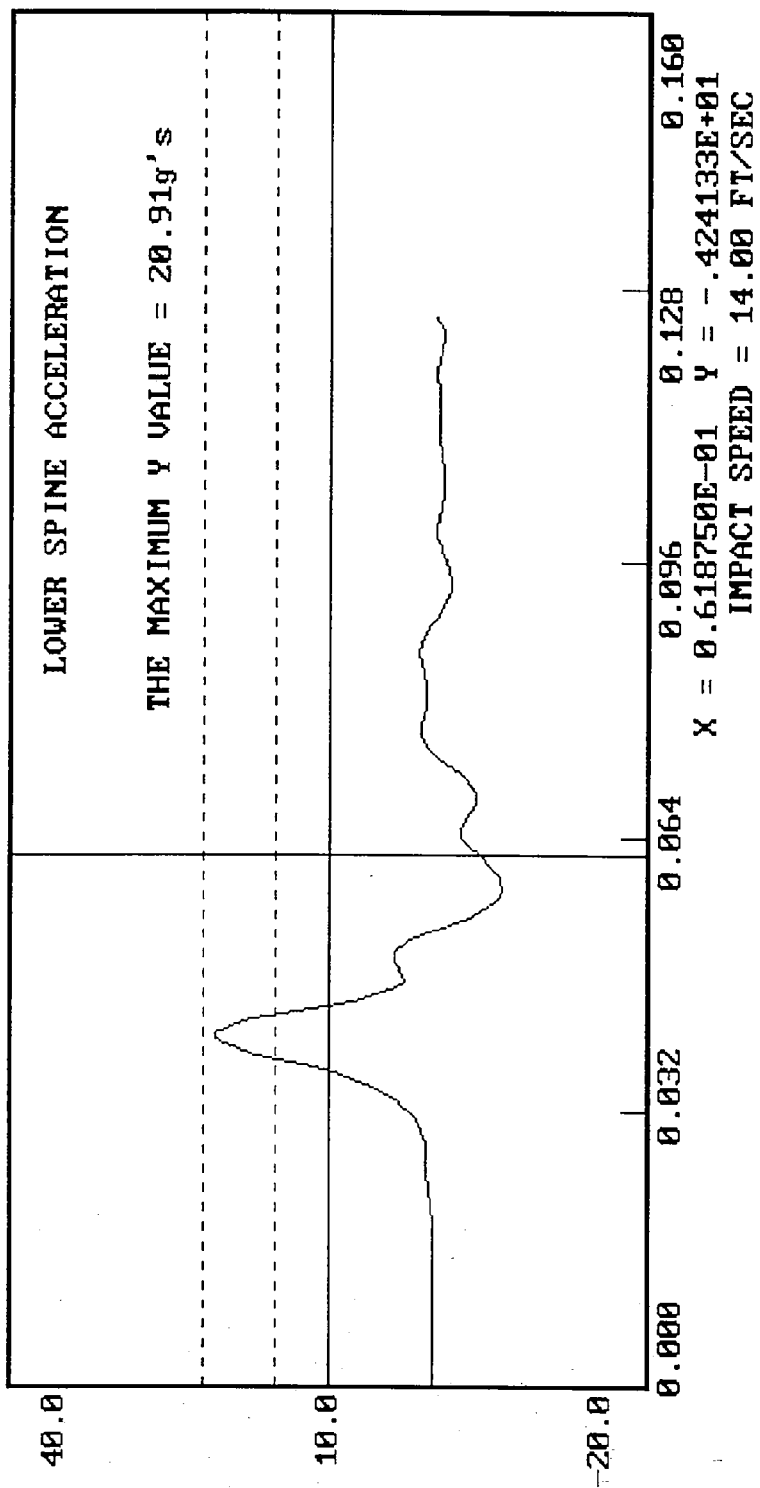
DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 270
 11-08-1995 10:51
 ACCELERATION (G'S) VS. TIME ((SECONDS))



DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 270
 11-08-1995 10:51
 ACCELERATION (G'S) VS. TIME ((SECONDS))



DUMMY CALIBRATION - THORAX IMPACT
 DUMMY # 270
 11-08-1995 10:51
 ACCELERATION (G'S) VS. TIME ((SECONDS))



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: November 8, 1995

DUMMY NUMBER: 270

TEST NUMBER: D951673

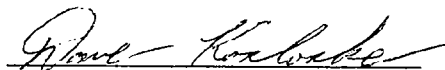
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	12%
PROBE SPEED	13.8 - 14.2 f/s	13.9
PELVIS ACCELERATION	40 - 60 g's	59

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY

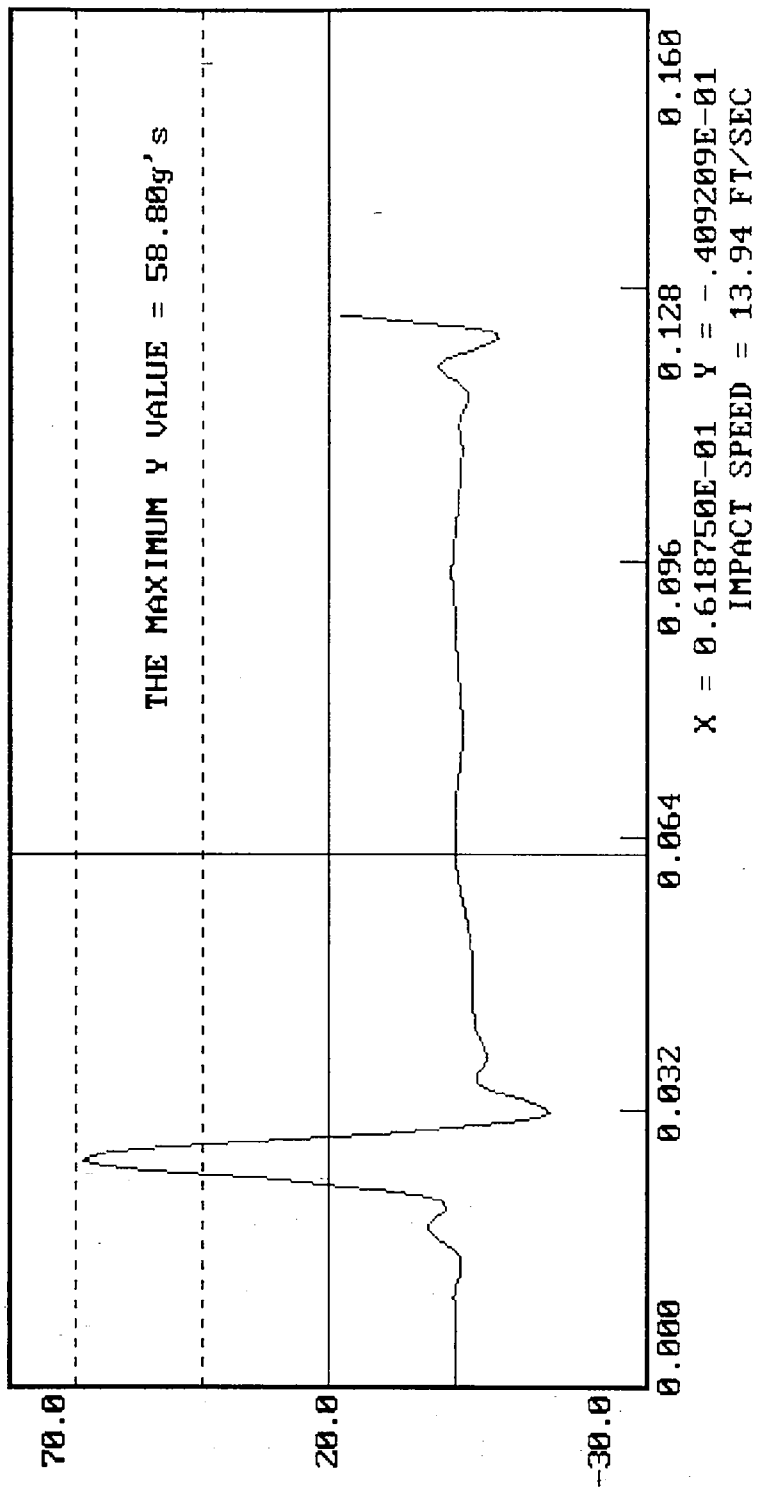


11-08-1995 11:09

DUMMY CALIBRATION - PELVIS IMPACT

DUMMY # 270

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



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

DATE: November 14, 1995

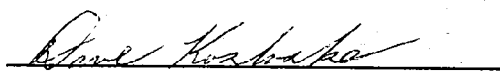
DUMMY NUMBER: 270

TEST NUMBER: D951674

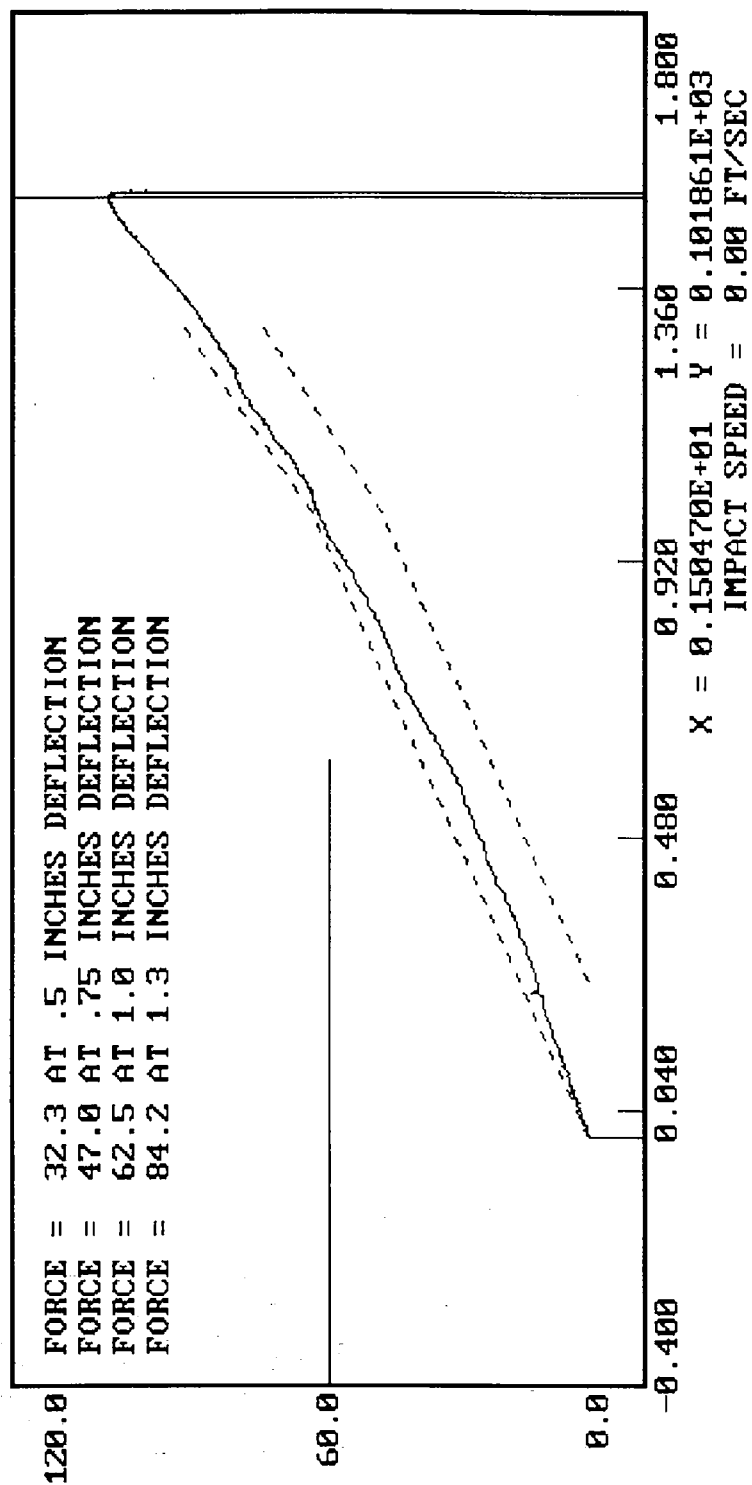
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	15%
FORCE @ 0.5 in	23.3 - 36.5 lbs	32.3
FORCE @ 0.75 in	36.7 - 49.8 lbs	47.0
FORCE @ 1.0 in	50 - 63 lbs	63
FORCE @ 1.3 in	73 - 88 lbs	84

TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 

DUMMY CALIBRATION - ABDOMEN COMPRESSION
 DUMMY # 270
 11-14-1995 08:48
 ABDOMEN FORCE (LBS) VS. ABDOMEN DISPLACEMENT (INCHES)



MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: November 10, 1995

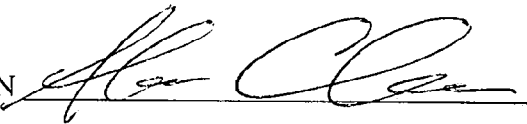
DUMMY NUMBER: 270

TEST NUMBER: D951675

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	22%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	25
FORCE @ 30°	34 - 46 lbs	35
FORCE @ 40°	46 - 58 lbs	51
RETURN ANGLE	12° maximum	4°

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY

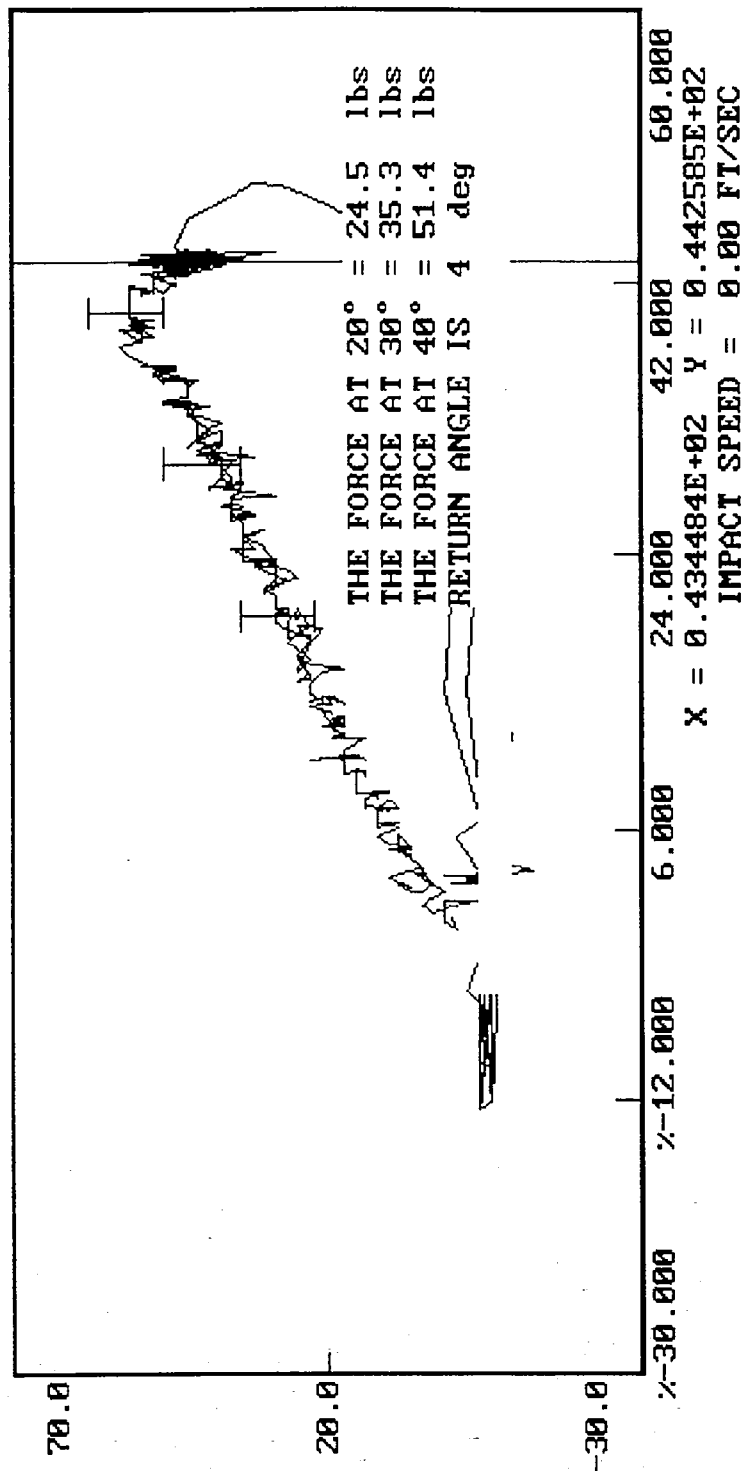


11-10-1995 16:23

DUMMY CALIBRATION - LUMBAR FLEXION

DUMMY # 270

FORCE () VS. TORSO ROTATION (DEGREES)



POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 269

Inspected By: Al Chalmers

Date: November 14, 1995

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual, cable torque	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure, stiffeners	OK
Sternum	visual	OK
Lumbar spine	visual	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual	OK
Knees	visual, stops, inserts	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: 270

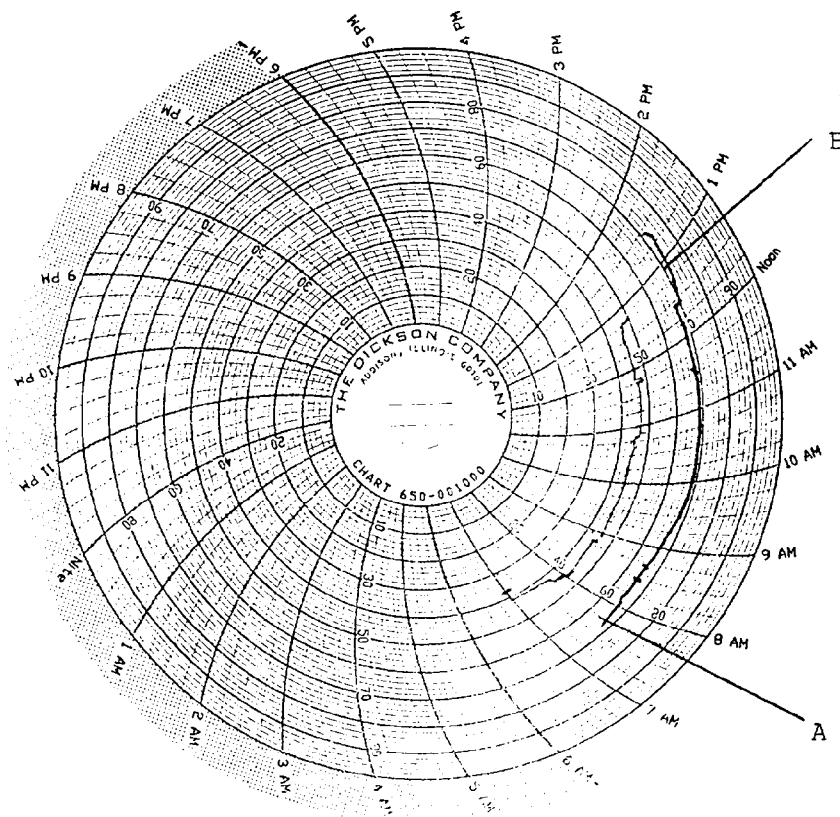
Inspected By: Al Chalmers

Date: November 10, 1995

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual, cable torque	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure, stiffeners	OK
Sternum	visual	OK
Lumbar spine	visual	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual	OK
Knees	visual, stops, inserts	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

DUMMY AND VEHICLE CALIBRATION DATA
INSTRUMENTS FOR DRIVER DUMMY NO. 269

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AJ9D6	Endevco	June 07, 1995
Lower Rib Y	AJ412	Endevco	June 12, 1995
Lower Spine Y	AJ816	Endevco	June 07, 1995
Pelvis Y	AHTC3	Endevco	June 07, 1995
Upper Rib Redundant Y	AJ9D8	Endevco	June 07, 1995
Lower Rib Redundant Y	AHRP6	Endevco	June 13, 1995
Lower Spine Redundant Y	AHT20	Endevco	June 07, 1995
Pelvis Redundant Y	AGP53	Endevco	June 07, 1995

INSTRUMENTS FOR PASSENGER DUMMY NO. 270

	LEFT REAR PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AP1H2	Endevco	September 25, 1995
Lower Rib Y	AJ9C2	Endevco	September 25, 1995
Lower Spine Y	AP2D7	Endevco	September 25, 1995
Pelvis Y	ALCH7	Endevco	September 15, 1995
Upper Rib Redundant Y	AH0B0	Endevco	September 25, 1995
Lower Rib Redundant Y	AHTT2	Endevco	September 25, 1995
Lower Spine Redundant Y	AP1T8	Endevco	September 25, 1995
Pelvis Redundant Y	AJ420	Endevco	September 15, 1995

VEHICLE INSTRUMENT CALIBRATION

VEHICLE ACCELEROMETERS			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier CG X	H07-A10	Entran	September 05, 1995
Moving Barrier CG Y	D06-A19	Entran	June 09, 1995
Moving Barrier CG Z	C06-G19	Entran	September 05, 1995
Moving Barrier Rear Axle X	E24-G02	Entran	September 05, 1995
Moving Barrier Rear Axle Y	L15-G03	Entran	October 19, 1995
Left Mid A-Post Y	J03-A13	Entran	October 24, 1995
Left Lower A-Post Y	C27-B05	Entran	October 05, 1995
Left Lower B-Post Y	H16-X19	Entran	September 21, 1995
Rear Floorpan Above Axle X	E24-G10	Entran	June 28, 1995
Rear Floorpan Above Axle Y	C06-G04	Entran	September 01, 1995
Rear Floorpan Above Axle Z	F07-A01	Entran	August 01, 1995
Driver Seat Track Y	B12-G07	Entran	October 05, 1995
Right Side Sill at Front Seat X	G19-G10	Entran	September 05, 1995
Right Side Sill at Front Seat Y	E25-G09	Entran	June 26, 1995
Right Side Sill at Front Seat Z	E24-G05	Entran	June 26, 1995
Right Side Sill at Rear Seat X	E24-G06	Entran	September 29, 1995
Right Side Sill at Rear Seat Y	G19-G01	Entran	September 29, 1995
Right Side Sill at Rear Seat Z	F07-A19	Entran	September 29, 1995
Left Side Sill at Front Seat Y	L22-G08	Entran	October 05, 1995

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Left Side Sill at Rear Seat Y	B12-G02	Entran	October 05, 1995
Right Rear Occupant Compartment Y	H07-A03	Entran	August 15, 1995
Vehicle CG X	L15-G20	Entran	August 29, 1995
Vehicle CG Y	C25-A05	Entran	August 29, 1995
Vehicle CG Z	C18-G12	Entran	August 29, 1995

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