V2429

REPORT NO. MGA-96-N017

NEW CAR ASSESSMENT PROGRAM (NCAP)

FRONTAL BARRIER IMPACT TEST

FORD MOTOR COMPANY
1996 LINCOLN TOWNCAR 4 DOOR
NHTSA NO. MT0206

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: March 28, 1996

Report Date: April 9, 1996

FINAL REPORT

Prepared For:

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF MARKET INCENTIVES
400 SEVENTH STREET, S.W.
Room No. 5313 (NRM-22)
400 Seventh Street, S.W.
Washington, D.C. 20590

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. MGA-96-N017	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle NHTSA New Car Assessment Program (NCAP) Frontal Barrier Impact Test of a 1996 Lincoln Towncar 4 Door NHTSA No. MT0100 to the requirements of FMVSS No. 208, 212, 219 (partial) and 301.		5. Report Date April 9, 1996 6. Performing Organization Code MGA
7. Author(s) John Fleck		8. Performing Organization Report No. MGA-OMI-017
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		10. Work Unit No. MGA-96-DOT-017 11. Contract or Grant No. DTNH22-90-D-12121
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (Mail Code: NEF-30) 400 Seventh St., S.W., Room 6115 Washington, D.C. 20590		13. Type of Report and Period Covered Final Report March 28, 1996 - April 9, 1996 14. Sponsoring Agency Code DOT/NHTSA/RM/OMI

15. Supplementary Notes

16. Abstract

A 56 kph (35 mph) frontal barrier impact using a 30 load cell barrier was conducted on a 1996 Lincoln Towncar 4 Door at the MGA Proving Grounds and Crash Test Center in Burlington, WI. on March 28, 1996.

The barrier impact velocity was 56.6 kph (35.1 mph), and the ambient temperature at the time of impact was 22°C. The post-test maximum static crush was 747 mm.

The test vehicle appeared to comply with the requirements of the following Federal Motor Vehicle Safety Standards:

1. FMVSS 212, "Windshield Mounting"
2. FMVSS 219 (partial), "Windshield Zone Intrusion"
3. FMVSS 301, "Fuel System Integrity"

With regard to FMVSS 208, "Occupant Crash Protection" injury criteria, the driver's HIC was 600 and the 3 msec. Clip (Chest g's) was 44 g's. The left and right femur loads for the driver were 5200 and 3551 Newtons, respectively. The passenger's HIC was 181 and the 3 msec Clip was 43 g's. The left and right femur maximum loads were 3768 and 2188 Newtons respectively.

17. Key Words	18. Distribution Statement
35 mph Frontal Barrier Impact Test New Car Assessment Program (NCAP) FMVSS 212 Indicant Testing FMVSS 219 (partial) Indicant Testing FMVSS 301 Indicant Testing	Copies of this report are available from: Technical Ref. Division, NHTSA, NASSIF Building, Room 5108 400 Seventh Street, S.W. Washington, D.C. 20590

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	242	

Form DOT F 1700.7 (8-69)

This publication is distributed by the U.S. Department of Transportation. National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United Stated Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-90-D-12121. This document is disseminated under the sponsorship of the U.S. Dept. of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

APPROVED BY: John Fleck

John Fleck
MGA Research Corporation

FINAL REPORT ACCEPTED BY:

_____
Manager, New Car Assess. Program (NCAP)

_____
Date of Report Acceptance

_____
Contracting Officer's Tech. Rep. (COTR)

_____
Date of Report Acceptance

TABLE OF CONTENTS

SECTION 1

PURPOSE AND TEST PROCEDURE

This 35 mph frontal barrier impact test is part of the Composite FY'96 Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-90-D-12121. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 48 kph (30 mph) FMVSS 208/212/219/301-75 requirements.

The 56 kph (35 mph) frontal barrier impact test was conducted in accordance with the National Highway Traffic Safety Administration (NHTSA) Indicant Test Procedure for New Car Assessment Program (NCAP) dated January 1, 1990. Data for FMVSS No. 212, "Windshield Mounting", FMVSS No. 219 (Partial), "Windshield Zone Intrusion", FMVSS No. 301-75, "Fuel System Integrity," as well as occupant performance data are provided herein.

SECTION 2

SUMMARY OF FRONTAL BARRIER IMPACT TEST

A load cell barrier consisting of 30 load cells was impacted by a 1996 Lincoln Towncar 4 Door at a velocity of 56.6 kph (35.1 mph). The test was performed at the MGA Proving Grounds and Crash Test Center on March 28, 1996. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by one real-time camera and 16 high speed cameras. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs) were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with head and chest primary and redundant triaxial accelerometers, pelvis triaxial accelerometers, chest displacement transducer, neck load cell, right/left femur load cells, right/left lower leg sensors, and right/left feet accelerometers. Seat belt load cells were also on the driver and passenger shoulder and lap belts to measure dummy torso and pelvic section loading. Calibrated ATDs, driver (serial No. 065), and the right front passenger (Serial No. 066), were used for this test. Certification details, along with instrumentation calibration data, are found in Appendix C and D.

The 109 channels of data were recorded on 10 computers. Appendix B contains the vehicle, load cell barrier and dummy response data traces.

The driver's head struck the inflated airbag. The driver HIC was 600 and the maximum chest (CLIP) deceleration over 3 milliseconds was 44 g's. The maximum chest displacement was 19 mm. The left and right femur loads were 5200 and 3551 Newtons respectively.

The right front passenger's head struck the inflated airbag. The passenger HIC was 181 and maximum chest (CLIP) deceleration over 3 milliseconds was 43 g's. The maximum chest displacement was 24 mm. The left and right femur loads were 3768 and 2188 Newtons respectively.

GENERAL TEST AND VEHICLE PARAMETER DATA

Vehicle Yr/Make/Model/Body Style: 1996/Lincoln/Towncar/4 Door

NHTSA No.: MT0206 VIN.: 1LNLM8IW2TY600846

Body color: Blue Date of Manufacture: 8/95

Engine: 8 Cylinders; __C.I.D.; 4.6 Liters;

X Gas; _Diesel; _Turbocharged

X Longitudinal; _Transverse

Transmission: 3 Speed; _Manual; X Automatic; X Overdrive

Final Drive: _Front Wheel; X Rear Wheel; _Four Wheel

Odometer Reading: 79 miles

X A/C; X P/S; XP/B; X P/wdo;

X P/seats; X Tilt Wheel; X Cruise Control;

Type of Occupant Restraint: Type II belts with driver and passenger airbags

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): Front 218 kPa (32 Psi) Rear 238 kPa (35 Psi)

Recommended Tire Size: P215/70R15

Recommended Cold Tire Pressure: Front 218 kPa (32 Psi) Rear 238 kPa (35 Psi)

Tires on Vehicle: P215/70R15 ; Manufacturer: Michelin

Number of Occupants: 3 Front; 3 Rear; _ 3rd Seat; 6 TOTAL

Type of Front Seats: _Bucket; _Bench; X Split Bench

Type of Front Seat Back: _Fixed; X Adj. With; X Power; _Lever

Vehicle Capacity Weight (VCW) = 499 kg. (A)

No. of Occupants x 68.0 kg. = 408 kg. (B)

Rated Cargo Weight (RCW) A-B = 91 kg.

GVWR 2425 kg. GAWR: Front 1156 kg.; Rear 1289 kg.

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (WITH MAXIMUM FLUIDS) = UDW:

Right Front = 500.8 kg Right Rear = 413.7 kg

Left Front = 510.3 kg Left Rear = 405.1 kg

TOTAL FRONT WEIGHT = 1011.1 kg (55.3% of Total Vehicle Weight)

TOTAL REAR WEIGHT = 818.8 kg (44.7% of Total Vehicle Weight)

TOTAL UNLOADED DELIVERED WEIGHT (UDW) = 1829.9 kg

CALCULATION FOR TARGET TEST WEIGHT:

UDW = Unloaded Delivered Weight 1829.9 kg

VCW = Vehicle Capacity Weight 499.0 kg

DSC = Designated Seating Capacity 6 RCW = VCW - 68 (DSC) = 91 kg

Target Test Weight = UDW + RCW + (2 dummies x 78.0 kg/dummy)

Target Test Weight = 2076.9 kg

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND CARGO:

Right Front = 524.4 kg Right Rear = 533.4 kg

Left Front = 516.7 kg Left Rear = 497.6 kg

TOTAL FRONT WEIGHT = 1041.1 kg (50.2% of Total Vehicle Weight)

TOTAL REAR WEIGHT = 1031.0 kg (49.8% of Total Vehicle Weight)

TOTAL TEST WEIGHT = 2072.1 kg

Weight of ballast secured in vehicle trunk area = 5.5 kg

Vehicle components removed to meet target weight: Spare tire, back seat, rear carpeting, taillights, rear belts

VEHICLE ATTITUDE (all dimensions in mm):

Delivered Attitude: RF 731 LF 738 RR 731 LR 741

Test Attitude: RF 722 LF 735 RR 668 LR 681

Wheel Base: 3000 mm; C.G. = 1493 mm rearward of front wheel C/L

Remarks: None Noted

* light trucks and MPVs RCW is 136 kgs or manufacturer's value, whichever is less

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

POST-IMPACT DATA:

Type of Test: 35 mph Frontal Impact Impact Angle: 90°

Date of Test: March 28, 1996 Time of Test: 2:30 p.m.

Ambient Temperature: 21 °C (Spec. Range = 18.8 to 25.6°C)

Temperature in Occupant Compartment: 21.° C

Windshield Molding Temperature: 21.° C

Required Impact Velocity Range: 55.5 to 57.1 kph

Impact Velocity: primary = 56.6 kph; secondary = 56.4 kph

Distance From Front Bumper to Barrier Face When

Entering Speed Trap: 254 mm

Exiting Speed Trap: 1254 mm

VEHICLE REBOUND AND CRUSH (mm):

Vehicle Length:	Pre-test	= R 5344 C_L 5525 L 5344
	Post-test	= R 4729 C_L 4778 L 4724
	Crush	= R 615 C_L 747 L 620

Distance from front of test vehicle to point of impact (rebound):

R 1020 mm C_L 995 mm L 1070 mm

VISIBLE DUMMY CONTACT POINTS:

	Driver	Passenger
Head	Airbag	Airbag
Chest	Airbag	Airbag
Abdomen	Belts	Belts
Left Knee	Knee bolster	Instrument panel
Right Knee	Knee bolster	Instrument panel

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

	Front	
Post-Test Door Opening	Left	Right
(without use of tools)	Yes	Yes

	Front	
Seat Movement	Left	Right
Seat Back Movement	0	0
Seat Shift (mm)	4 mm forward	4 mm forward

Glazing Damage

Backlight/Windshield Windshield cracked

Other Notable Impact Effects: Airbags deployed

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

POST TEST AIRBAG DATA

Vehicle Yr/Make/Model/Body Style: 1996/Lincoln/Towncar/4 Door

NHTSA No.: MT0206 VIN.: 1LNLM8IW2TY600846

A. Number of Vent Holes: Driver 2 ; Passenger 1

B. Size of Vent Holes: Driver 15 mm ; Passenger 30 mm

C. Total Vent Area; Driver .04 cm^2 Passenger .07 cm^2

D. Deflated Airbag Length and Width Dimensions or, if Round, Diameter

Driver; Length___, Width___, Diameter 610 mm

Passenger; Length 42 mm, Width 21 , Diameter ___ mm

E. Is the Airbag Tethered?

Driver; X Yes; __ No; If yes, record length of tether 330 mm

Passenger; __ Yes; X No, If yes, record length of tether N/A mm

SECTION 3

SUMMARY OF RESULTS FOR-------

FMVSS 212, "Windshield Mounting"

FMVSS 219 (Partial), "Windshield Zone Intrusion"

FMVSS 301-75, "Fuel System Integrity"

FMVSS NO. 212, "WINDSHIELD MOUNTING", DATA SHEET

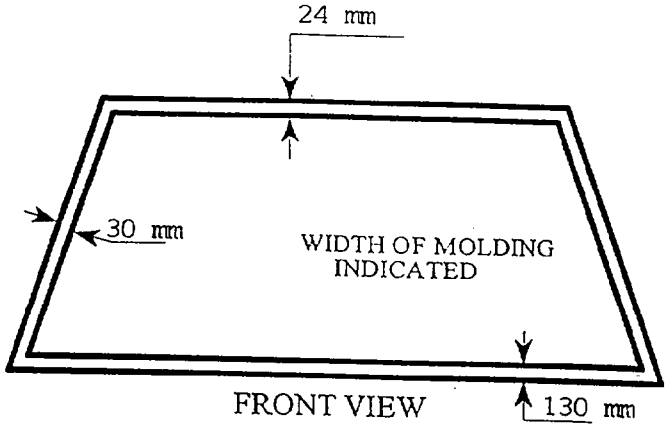
Details of windshield mounting such as retention method, trim type, etc.:
Windshield set in rubber molding with glue

FMVSS 212 Requirements: The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

FMVSS 212 TEST DATA:

	WINDSHIELD PERIPHERY		
	PRE-TEST (mm)	POST-TEST (mm)	PERCENT RETENTION
RIGHT SIDE	2187	2187	100%
LEFT SIDE	2188	2188	100%
TOTAL	4375	4375	100%

AREA OF RETENTION FAILURE: None



FRONT VIEW

FAILURE DETAILS: None

FMVSS NO. 219, "WINDSHIELD ZONE INTRUSION", DATA SHEET

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 6.5" dia. rigid sphere weighing 15 pounds in a position such that it simultaneously contacts the inner surface of the windshield and the surface of the instrument panel, including padding, and drawing the locus of points on the inner surface of the windshield contactable by the sphere across the width of the instrument panel. From the outermost contact points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and ½" distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection onto the outer surface of the windshield of this line.

FMVSS 219 TEST DATA:

A= 1329 mm

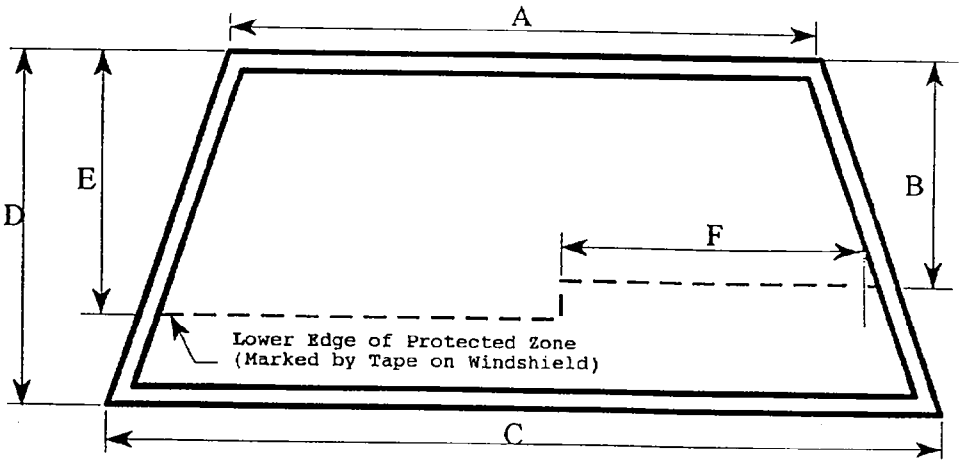
B= 389 mm

C= 1740 mm

D= 669 mm

E= 396 mm

F= 732 mm



FRONT VIEW

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 1/4":
(Show location of penetration)

NONE

FMVSS NO. 301-75, FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

FMVSS NO. 301

TEST VEHICLE NHTSA NO.: MT0206 Test Date: March 28, 1996

Vehicle Mfgr./Make/Model: Lincoln/Towncar/4 Door

Usable Capacity of Vehicle's Fuel Tank: 75.7 Liters
(figure furnished by vehicle manufacturer)

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.

AMOUNT OF STODDARD SOLVENT ADDED TO VEHICLE'S FUEL TANK:

70.4 Liters which is 93.0 % of the stated USABLE CAPACITY.

TEST VEHICLE IMPACT TYPE: _X_ Frontal (35 mph)

___ Oblique (30 mph) with __° barrier face first contacting (driver/passenger) side

___ Rear Moving Barrier (30 mph)

___ Side Impact MDB (33.2 mph)

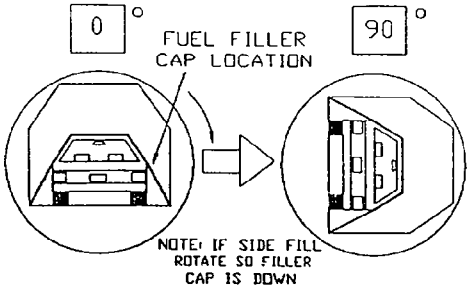
FUEL SPILLAGE MEASUREMENT:

	ACTUAL	MAX ALLOWED
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

SOLVENT SPILLAGE DETAILS: None

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: 0° - 90° Vehicle NHTSA ID No.: MT0206



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 48 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 48 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min FROM onset of rotation	6th min.	7th min.	8th min. if reqd.

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

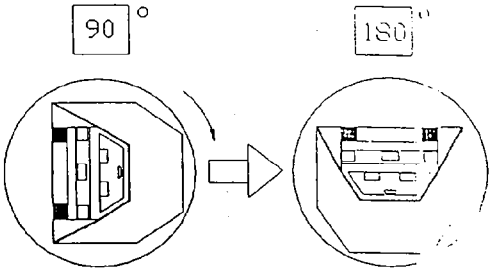
0	0	0	0

Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: 90° - 180° Vehicle NHTSA ID No.: MT0206



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 31 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 31 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min FROM onset of rotation	6th min.	7th min.	8th min. if reqd.

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

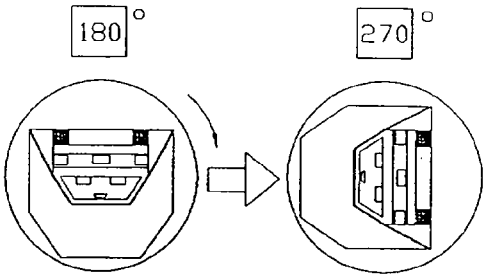
0	0	0	0

Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: 180° - 270° Vehicle NHTSA ID No.: MT0206



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 24 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 24 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min FROM onset of rotation	6th min.	7th min.	8th min. if reqd.

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

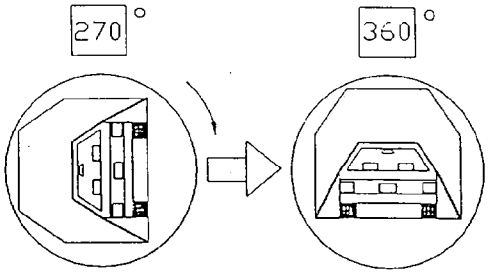
0	0	0	0

Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: 270° - 360° Vehicle NHTSA ID No.: MT0206



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time 2 minutes 49 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 49 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min FROM onset of rotation	6th min.	7th min.	8th min. if reqd.

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0

Note: Record Spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

SECTION 4

OMI FINAL DATA

Occupant and Vehicle Information

I. OMI DATA

1. Dummy Injury Criteria Data Summary
2. Dummy Positioning Data
3. Seat Belt Positioning Data
4. Seat Belt Performance Assessment Data
5. Camera Locations
6. Vehicle Target Locations

II. OVR DATA

1. Load Cell Barrier Data
2. Vehicle Accelerometer Data
3. Test Vehicle Measurements

III. AID DATA

1. Accident Investigation Damage Data Summary

FMVSS NO. 208, "OCCUPANT CRASH PROTECTION", DATA SHEET

VEH. YR./MAKE/MODEL/BODY STYLE: 1996/Lincoln/Towncar/4 Door
VEH. NHTSA NO.: MT0206 TEST DATE: March 28, 1996

MAX. ACCELERATION VALUES: (g's)	DRIVER #065	PASSENGER #066
Head Channel X	-54.1 @ 104 msec.	-30.2 @ 106 msec.
Head Channel Y	14.9 @ 122 msec.*	-14.4 @ 117 msec.
Head Channel Z	19.2 @ 85 msec.	16.9 @ 106 msec.
HEAD RESULTANT	55.4 @ 95 msec.*	35.2 @ 106 msec.
Chest Channel X	-41.6 @ 96 msec.	-46.6 @ 94 msec.
Chest Channel Y	6.4 @ 148 msec.	6.0 @ 103 msec.
Chest Channel Z	-20.6 @ 131 msec.*	-20.1 @ 132 msec.
CLIP	44.2*	42.9
TIME INTERVAL (msec) [0.003 seconds minimum]	t_1 = 93.6 t_2 = 96.7	t_1 = 92.8 t_2 = 95.9

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	600	181
t_1 = (msec)	83.9	81.8
t_2 = (msec)	119.9	117.8
Avg. Accel. t_1 to t_2 (g's)	48.8	30.2

[The maximum time interval from t_1 to t_2 is 36 milliseconds.]

MAX. COMPRESSIVE FEMUR FORCES:

Left Side (N)	-5200	-3768
Right Side (N)	-3551	-2188

MAXIMUM SEAT BELT FORCES:

Lap Belt (N)	2557	5713
Shoulder Belt (N)	7450	5705

* Redundant channel data used

HYBRID III NECK, CHEST AND PELVIS DATA SHEET

VEHICLE YR./MAKE/MODEL/BODY STYLE: 1996/Lincoln/Towncar/4 Door

VEHICLE NHTSA NO.: MT0206 TEST DATE: March 28, 1996

MAXIMUM VALUES	DRIVER DUMMY #065	PASSENGER DUMMY #066
Neck Load X (N)	-297 @ 88 msec.	-775 @ 159 msec.
Neck Load Y (N)	-156 @ 82 msec.	-242 @ 83 msec.
Neck Load Z (N)	2306 @ 95 msec.	1682 @ 82 msec.
Neck Moment X (NM)	-15.0 @ 105 msec.	-16.3 @ 64 msec.
Neck Moment Y (NM)	-26.0 @ 85 msec.	-59.1 @ 161 msec.
Neck Moment Z (NM)	-21.6 @ 138 msec.	36.6 @ 108 msec.
Chest Deflection X (mm)	-19	-24
Time of Max. Occurrence	96 msec.	95 msec.
Pelvis X Acceleration (g's)	-42.1 @ 79 msec.	-45.4 @ 81 msec.
Pelvis Y Acceleration (g's)	-9.0 @ 81 msec.	-11.0 @ 127 msec.
Pelvis Z Acceleration (g's)	-27.3 @ 131 msec.	-23.5 @ 115 msec.
Pelvis Resultant (g's)	42.9 @ 81 msec.	46.5 @ 81 msec.

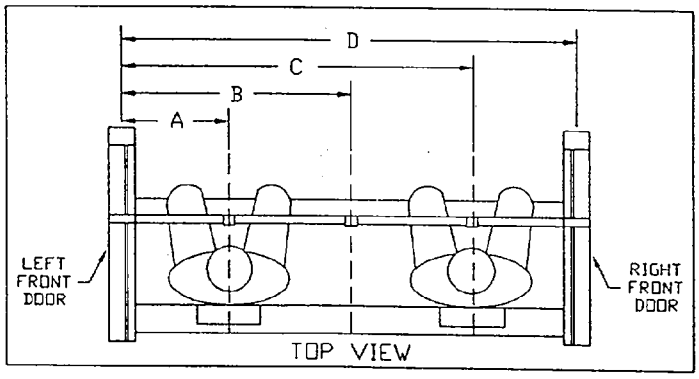
PART 572 DUMMY IN-VEHICLE POSITION

Vehicle NHTSA No.: MT0206 Vehicle: 1996 Lincoln Towncar 4 Door

SEAT TYPE:	ADJUSTER TYPE:	BUCKET SEAT BACK TYPE:
____Bench	Driver: ____Manual	____Fixed
____Bucket	__X__Power	__X__Adjustable Reclining
__X__Split Bench		
	Passenger: ____Manual	
	__X__Power	

DRIVER SEAT POSITION
Mid position
129 mm of 258 mm total travel

PASSENGER SEAT POSITION
Mid position
129 mm of 258 total travel



065 DUMMY ID 066

A	= Left Door to Driver Centerline	494 mm
B	= Left Door to Center Passenger Centerline	878 mm
C	= Left Door to Right Passenger Centerline	1279 mm
D	= Left Door to Right Door	1756 mm

FRONT SEAT MEASUREMENT TABLE

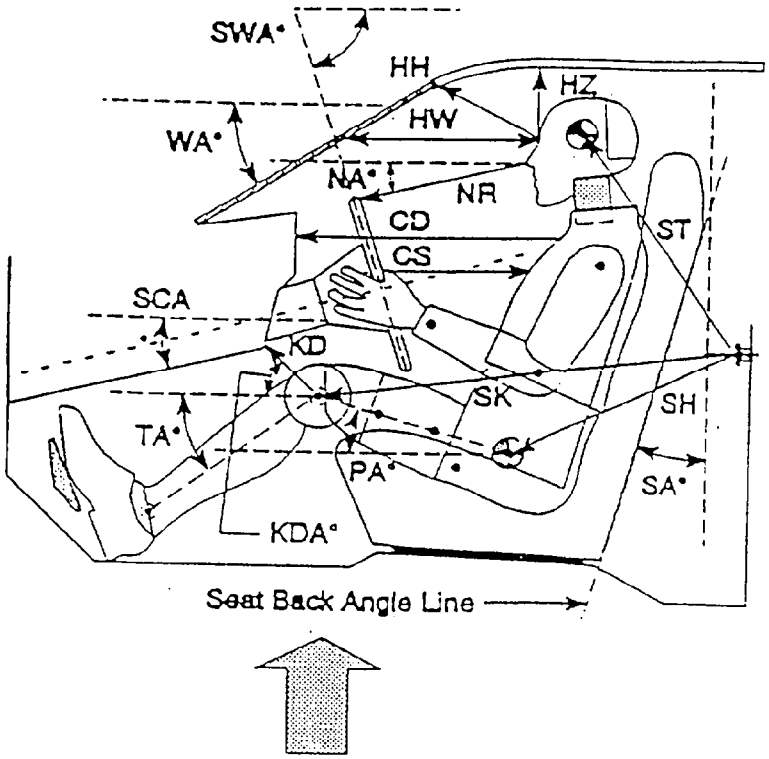
Units (mm)

	DRIVER (Serial #065)	PASSENGER (Serial #066)
WA°	35.3°	
SWA°	24.5°	N/A
SCA°	114.5°	N/A
SA°	20.7°	20.7°
HZ	175	167
HH	326	342
HW	538	545
HR	259	256
NR	342 Angle (NA) 14.2°	N/A
CD	529	576
CS	249	N/A
RA	537	N/A
KDL	137 Angle (KDA) 32.9°	160
KDR	91	155 Angle 20.9°
PA°	24.4°	24.0°
TA°	36.4°	33.1°
KK	324	260
ST*	527 Angle 11.3°	529 Angle 14.5°
SK*	516 Angle 91.6°	613 Angle 94.6°
SH*	269 Angle 119.3°	271 Angle 120.9°
SHY	297	281
HS	359	354
HD	178	160
AD	138	138

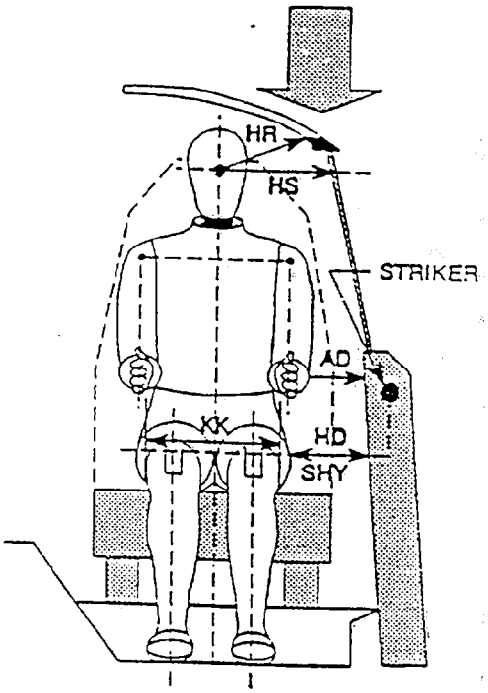
N/A = Not Applicable

* Angles measured from vertical

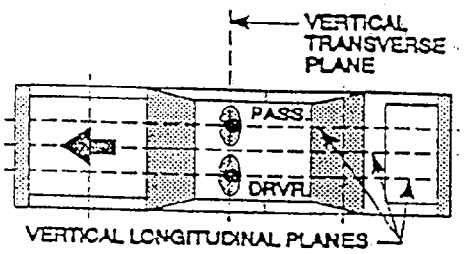
FRONT SEAT MEASUREMENTS



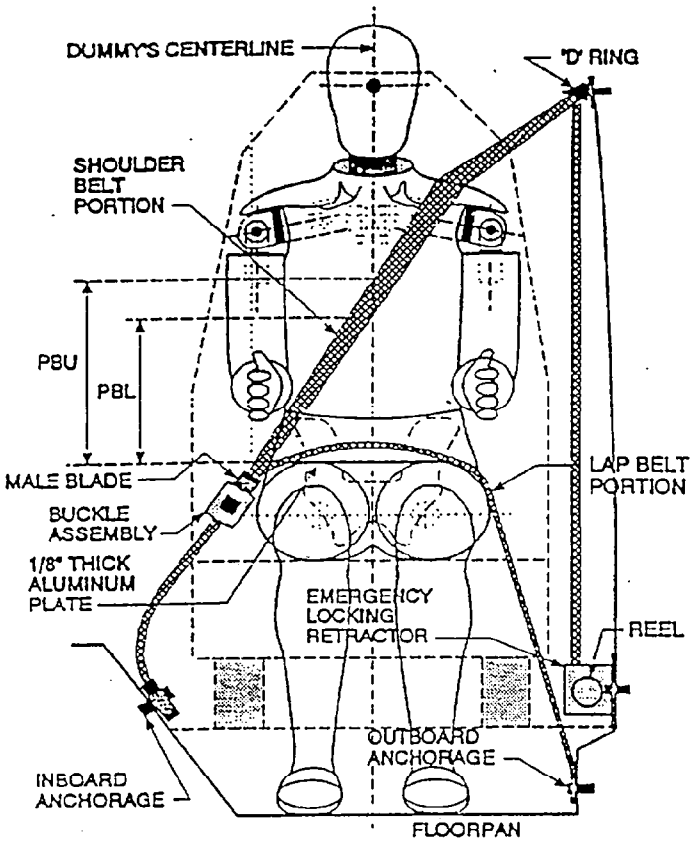
AD - Arm to Door
HD - H-Point to Door
HR - Head to Side Header
HS - Head to Side Window
KK - Knee to Knee
SHY - Striker to H-Point (Y-Direction)



CD - Chest to Dash
CS - Steering Wheel to Chest
HH - Head to Header
HW - Head to Windshield
HZ - Head to Roof
KDA - Knee to Dash Angle
KDL - Left Knee to Dash
KDR - Right Knee to Dash
NA - Nose to Rim Angle
NR - Nose to Rim
PA - Pelvic Angle
RA - Rim to Abdomen
SA - Seat Back Angle
SCA - Steering Column Angle
SH - Striker to H-Point
SK - Striker to Knee
ST - Striker to Head
SWA - Steering Wheel Angle
TA - Tibial Angle
WA - Windshield Angle



SEAT BELT POSITIONING DATA



FRONT VIEW OF DUMMY

(illustration)

Dimension = mm

	DRIVER DUMMY	PASSENGER DUMMY
PBU -- Top surface of alum. plate to upper edge	347	335
PBL -- Top surface of alum. plate to belt lower edge	270	250

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:	Driver	Passenger	
Length from trim above retractor reel to "D" ring as measured on dummy.	257 mm	243 mm	
Shoulder belt length as measured on Part 572 Dummy.	851 mm	825 mm	
Lap belt length as measured on Part 572 Dummy.	909 mm	848 mm	
SHOULDER BELT SPOOL-OFF DATA:			
As determined by film analysis	40 mm	72 mm	at shoulder
As determined mechanically	46 mm	59 mm	at retractor
	57 mm	70 mm	at shoulder
BELT STRETCH DATA:			
Measured electronically between shoulder belt load cell and the "D" ring.	NR	NR	
Measured mechanically	NR	NR	
RETRACTOR LOCK-UP TIME:			
As determined by shoulder belt spool-off observed in on-board cameras	90	94	

NR Not Recorded

CAMERA LOCATIONS

VEH. NHTSA NO.: MT0206 ; TEST DATE: March 28, 1996 ; TIME: 2:30 p.m.

VEH. YEAR/MAKE/MODEL/BODY STYLE: 1996/Lincoln/Towncar/4 Door

CAMERA POSITION NO.	VIEW	CAMERA POSITIONS (mm.)*			ANGLE (deg)	FILM PLANE TO HEAD TARGET (mm)	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Left Side View	-	-	-	-	-		
2	Left Front View	760	9760	1540	90°	9255	25	1000
3	Steering Column Top	2190	8630	1570	90°	8125	25	926
4	Steering Column Bottom	2180	8620	1040	90°	8115	25	1046
5	Left Driver Close-up	1600	9150	1550	90°	8645	50	877
6	Left Angle	5440	6100	2000			50	952
7	Driver Onboard						35	1020
8	Passenger Onboard						35	1020
9	Right Overall	2870	-10150	1575	90°	9645	13	971
10	Right Front	1180	-9050	1540	90°	8545	25	971
11	Right Passenger Close-up	1900	-11660	1510	90°	11155	75	1075
12	Right Angle	5500	-5430	2040			50	833
13	Top View Wide	1760	0	5200			8	990
14	Top Driver	80	680	1740			13	1020
15	Top Passenger	90	710	1730			13	1000
16	Pit Engine	1140	0	-3145			13	1031
17	Fuel Tank	2970	0	-3175			13	980

* COORDINATES:

+X = film plane rearward of barrier

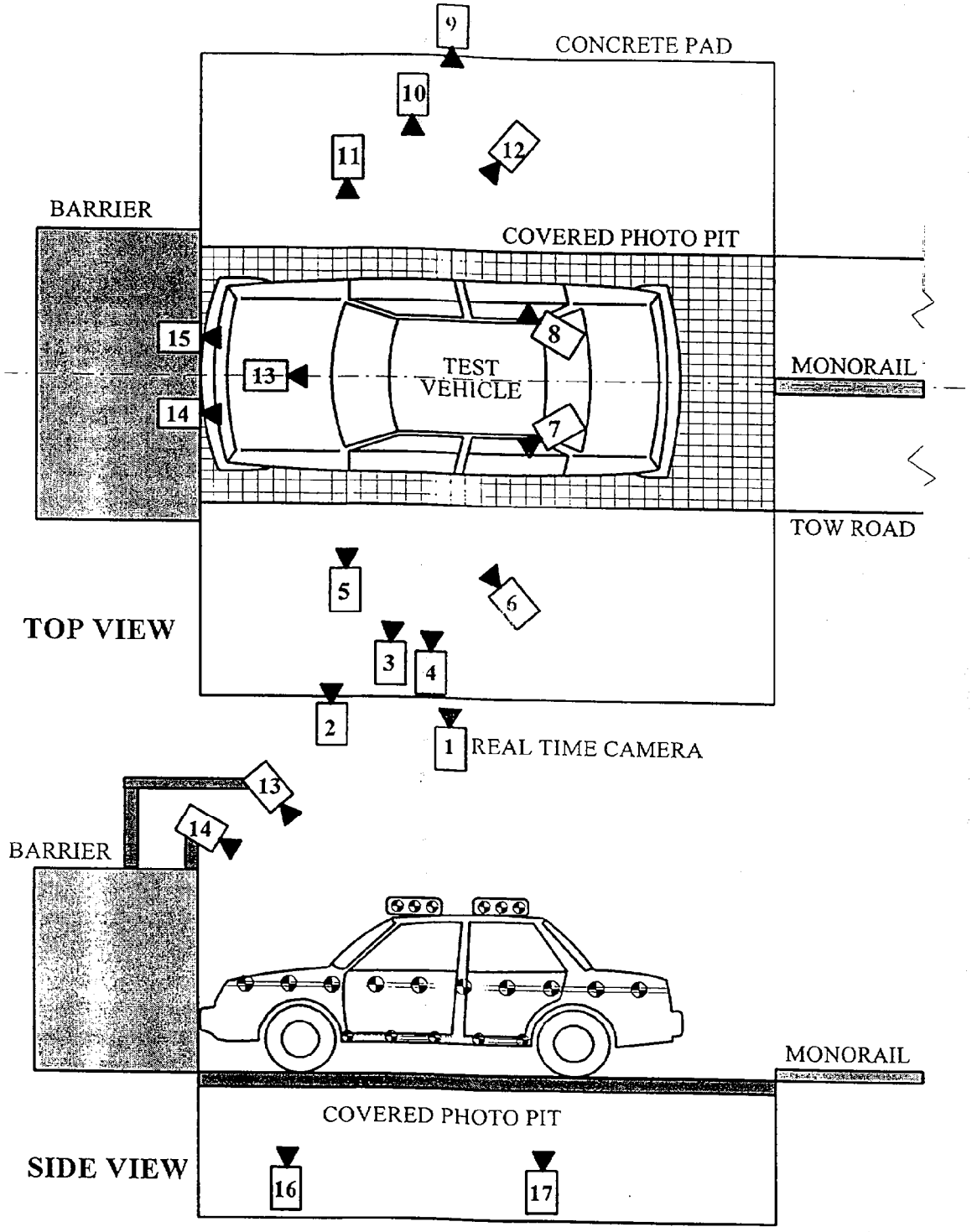
+Y = film plane to left of monorail centerline

+Z = film plane to above ground level

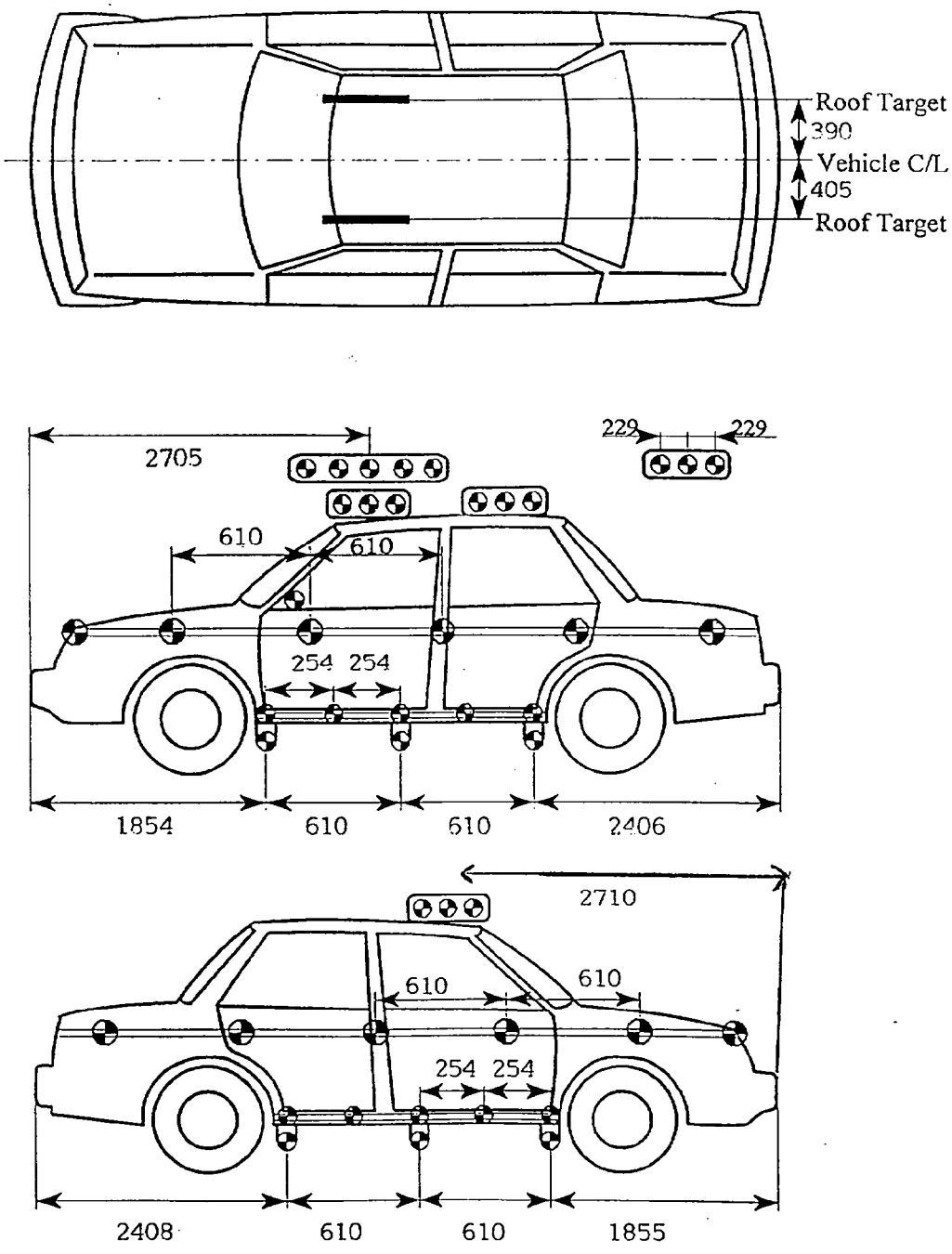
ORIGIN: For X and Y it is the Impact Point. For Z it is the Floor.

CAMERA LOCATIONS (Cont'd)

CAMERA LOCATIONS (Cont'd)



VEHICLE TARGET LOCATIONS



(DIMENSIONS IN MM)

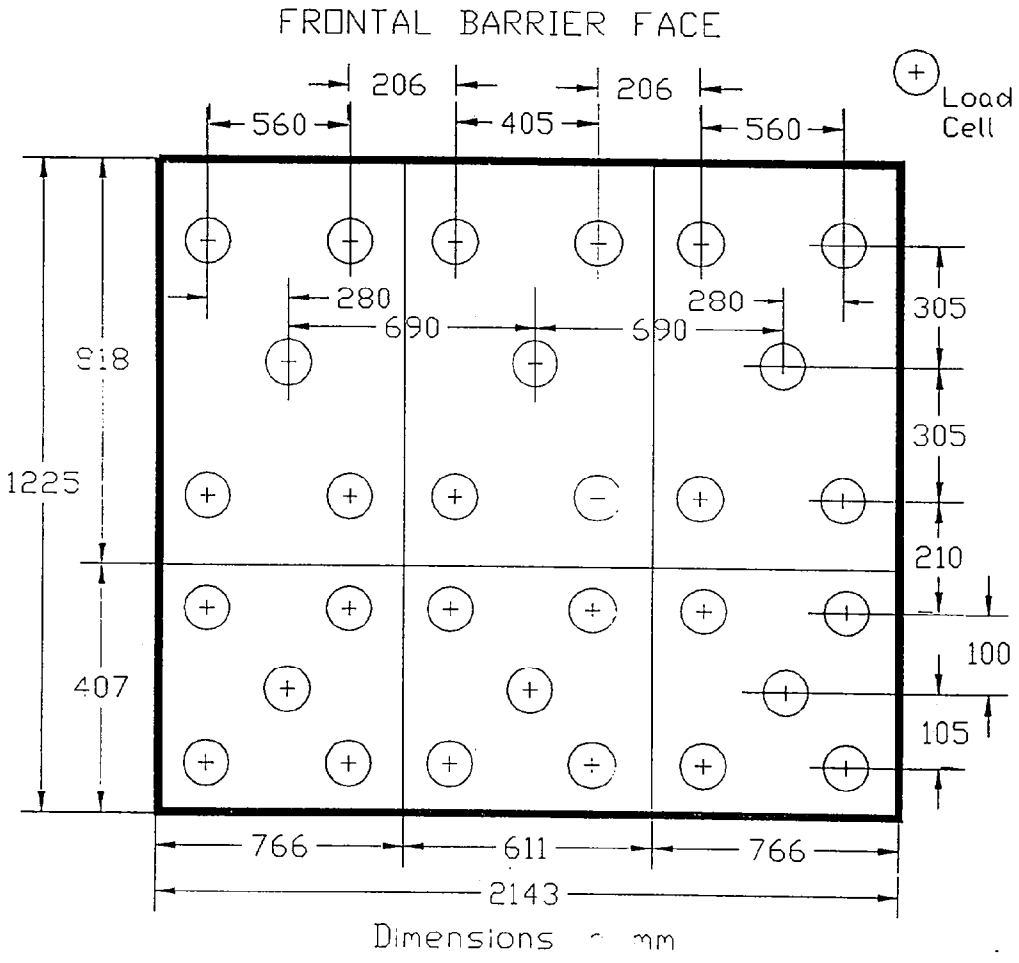
LOAD CELL LOCATIONS ON FIXED BARRIER

30 Load Cells

6 Rows

9 Columns

6 Groupings (5 cells/group)

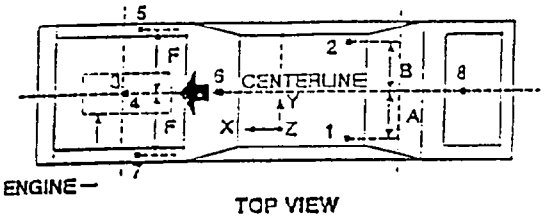


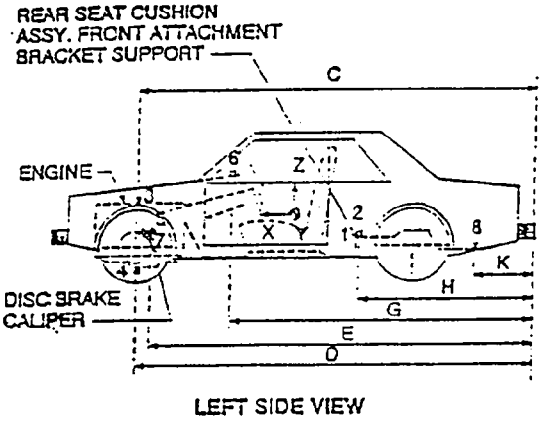
The following data is presented in Appendix B:

(1) Total or Sum of 30 individual load cells

(2) Data from 6 Groupings shown above (5 cells/group)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY





Units: (mm)

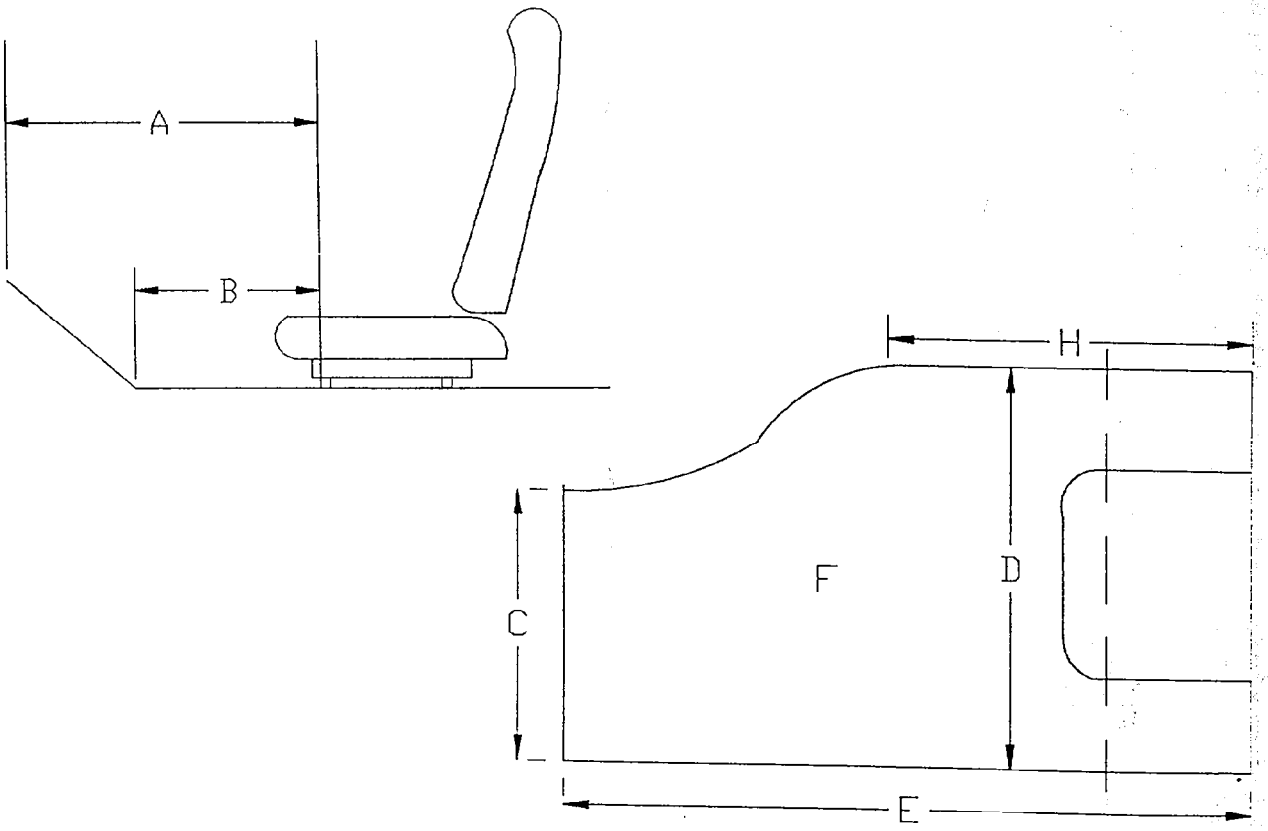
Dimension	Length
A	675
B	675
C	4454
D	4139
E	4191
F	670
G	3464
H	2261
J	670

ACCEL. NO.	ACCELEROMETER	DIRECTION
1 and 8	Left Rear Seat Crossmember	X
2 and 9	Right Rear Seat Crossmember	X
3	Top of Engine	X
4	Bottom of Engine	X
5	Right Side Brake Caliper	X
6	Instrument Panel	X
7	Left Disc Brake Caliper	X

TEST VEHICLE MEASUREMENTS

STATIC FOOTWELL DEFORMATION

Driver's Side



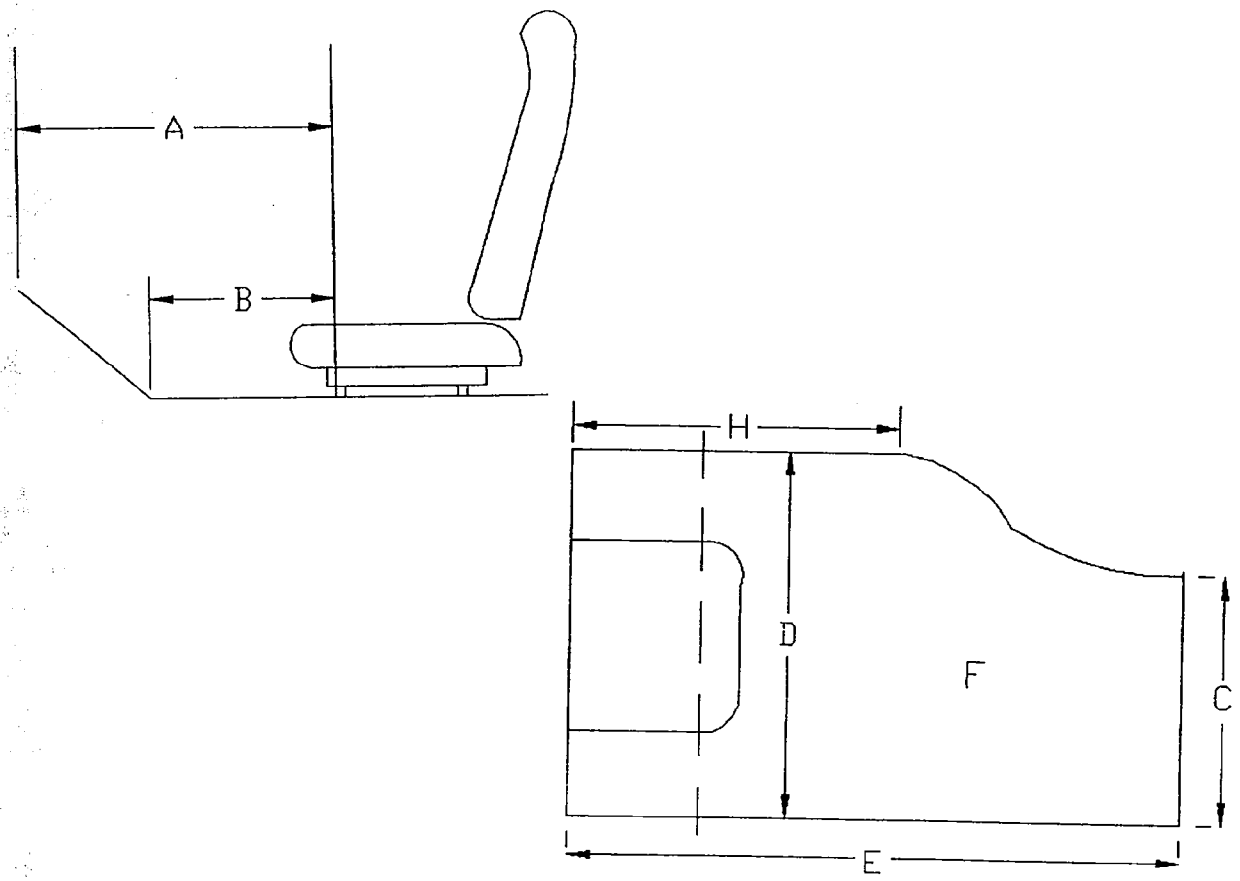
Units = mm

MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
A	725	569	156
B	510	411	99
C	410	398	12
D	495	429	66
E	1952	1814	138
H	1703	1715	-12

TEST VEHICLE MEASUREMENTS (Cont'd)

STATIC FOOTWELL DEFORMATION

Passenger's Side

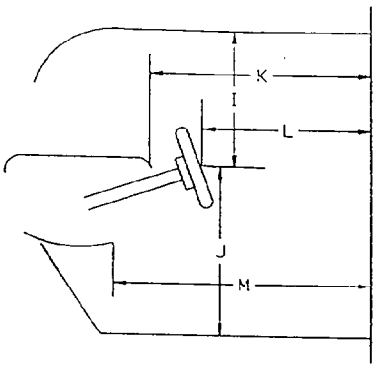


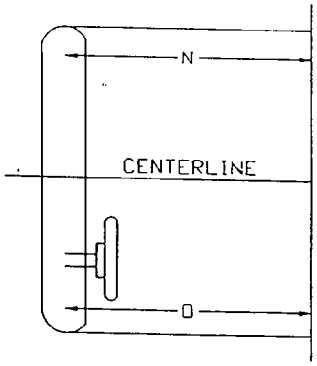
Units = mm

MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
A	630	517	113
B	545	429	116
C	370	376	-6
D	400	403	-3
E	1933	1868	65
H	1709	1619	90

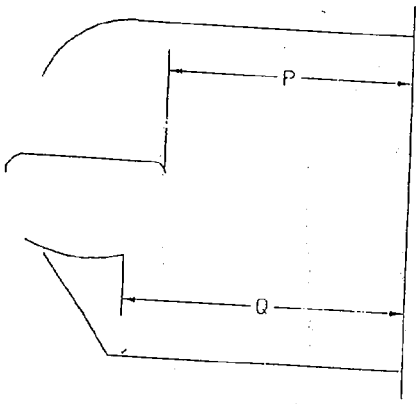
TEST VEHICLE MEASUREMENTS (Cont'd)

STATIC PASSENGER COMPARTMENT INTRUSION





MEASUREMENTS
FROM C-PILLAR
BELT ANCHORAGE



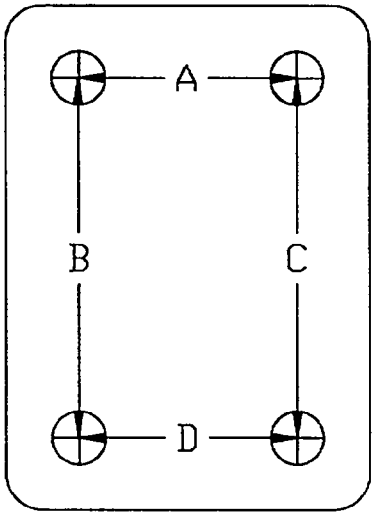
Units = mm

MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
I	378	397	-19
J	635	763	-128
K	1716	1703	13
L	1422	1416	6
M	1577	1633	-56
N	1857	1854	3
O	1875	1872	3
P	1734	1738	-4
Q	1777	1724	53

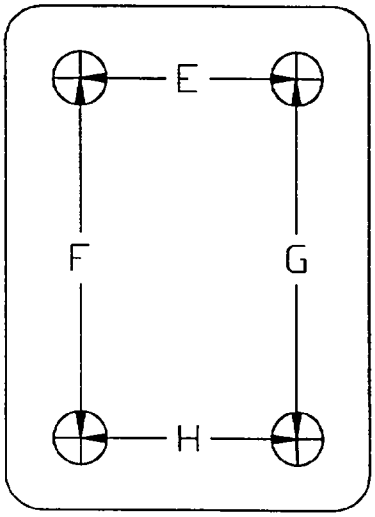
TEST VEHICLE MEASUREMENTS (Cont'd)

UNDERBODY FLOORBOARD DEFORMATION

DRIVER'S SIDE



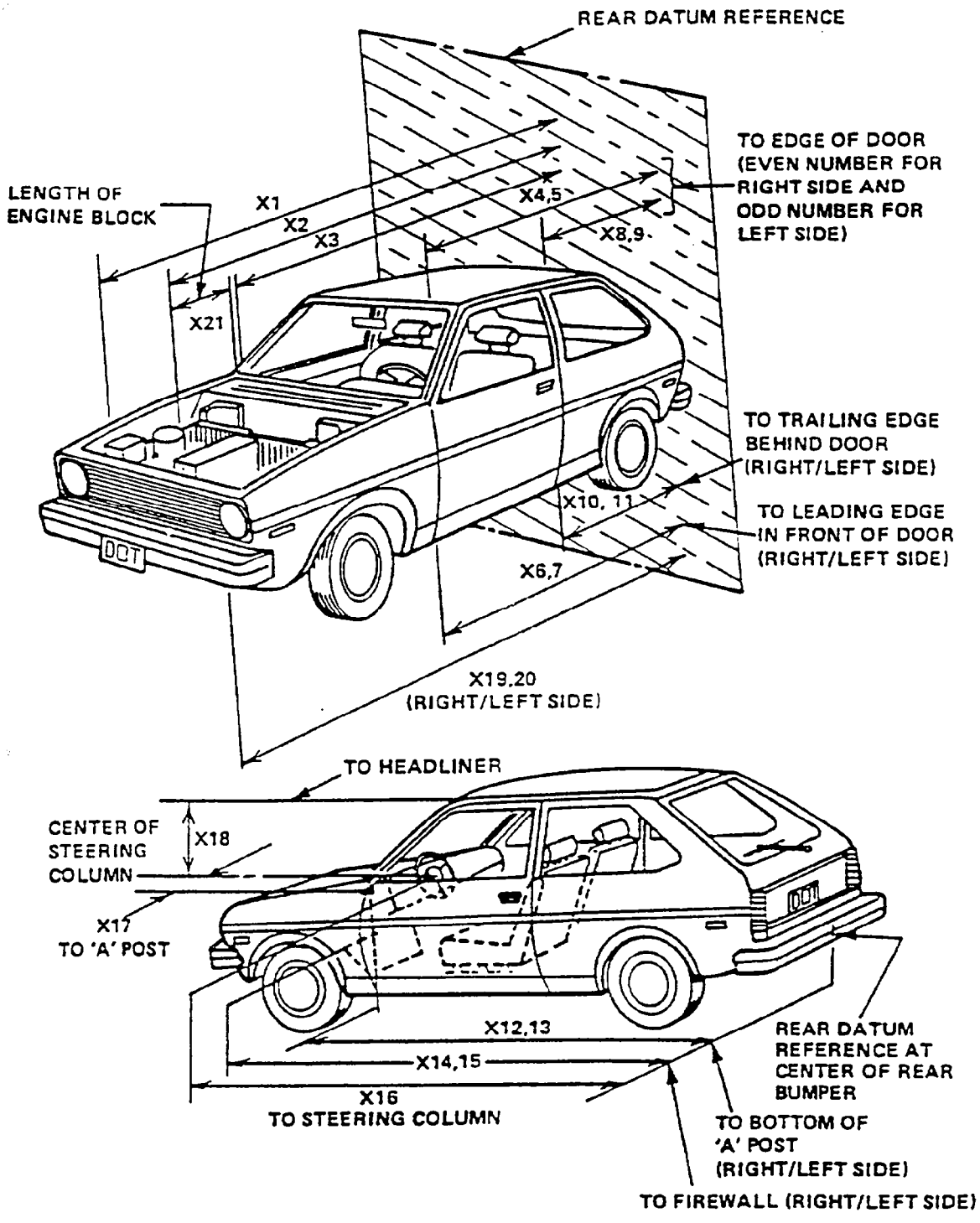
PASSENGER'S SIDE



MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
A	358	355	3
B	470	457	13
C	560	469	-9
D	390	388	2
E	329	328	1
F	511	473	38
G	510	497	13
H	390	386	4

TEST VEHICLE MEASUREMENTS (Cont'd)

No.	MEASUREMENT DESCRIPTION:	Pre-Test (mm)	Post-Test (mm)	Diff. (mm)
X1	Total Length of Test Vehicle at Centerline	5525	4778	747
X2	Rear Surface of Vehicle to Front of Engine	4570	4307	263
X3	Rear Surface of Vehicle to Firewall	4065	3767	298
X4	Rear Surface to Upr. Leading Edge of Rt. Door	3653	3659	-6
X5	Rear Surface to Upr. Leading Edge of Left Door	3662	3674	-12
X6	Rear Surface to Lwr. Leading Edge of Rt. Door	3660	3653	7
X7	Rear Surface to Lwr. Leading Edge of Left Door	3672	3672	0
X8	Rear Surface to Upr. Trailing Edge of Rt. Door	2623	2616	7
X9	Rear Surface to Upr. Trailing Edge of Left Door	2620	2628	-8
X10	Rear Surface to Lwr. Trailing Edge of Rt. Door	2547	2537	10
X11	Rear Surface to Lwr. Trailing Edge of Left Door	2550	2547	3
X12	Rear Surface to Bottom of A-Post on Rt. Side	3723	3710	13
X13	Rear Surface to Bottom of A-Post on Left Side	3737	3734	3
X14	Rear Surface to Firewall on Right Side	3928	3907	21
X15	Rear Surface to Firewall on Left Side	4031	3988	43
X16	Rear Surface to Steering Column	3178	3209	-31
X17	Center of Steering Column to A-Post	398	387	11
X18	Center of Steering Column to Headlining	442	417	25
X19	Rear Surface to Right Side of Front Bumper	5344	4729	615
X20	Rear Surface to Left Side of Front Bumper	5344	4724	620
X21	Length of Engine Block	480	480	0


REAR DATUM REFERENCE
TO EDGE OF DOOR (EVEN NUMBER FOR RIGHT SIDE AND ODD NUMBER FOR LEFT SIDE)
LENGTH OF ENGINE BLOCK
X1
X2
X3
X4,5
X8,9
X21
TO TRAILING EDGE BEHIND DOOR (RIGHT/LEFT SIDE)
X10, 11
TO LEADING EDGE IN FRONT OF DOOR (RIGHT/LEFT SIDE)
X6,7
X19,20 (RIGHT/LEFT SIDE)
TO HEADLINER
CENTER OF STEERING COLUMN
X18
X17 TO 'A' POST
X12,13
X14,15
X16 TO STEERING COLUMN
REAR DATUM REFERENCE AT CENTER OF REAR BUMPER
TO BOTTOM OF 'A' POST (RIGHT/LEFT SIDE)
TO FIREWALL (RIGHT/LEFT SIDE)

ACCIDENT INVESTIGATION DIVISION DATA

FOR 35 MPH FRONTAL BARRIER IMPACT

VEHICLE MAKE/MODEL/BODY STYLE: 1996/Lincoln/Towncar/4 Door

VEH. NHTSA NO.: MT0206 ; VIN: 1LNLM8IW2TY600846

MODEL YEAR: 1996 ; BUILD DATE: 8/95 ; TEST DATE: March 28, 1996

VEH. SIZE CATEGORY: Full Size ; TEST WEIGHT: 2072.1 kg

VEH. WHEELBASE: 3000 mm; FRONT OVERHANG: 1076 mm; OVERALL WIDTH: 1554 mm

ACCELEROMETER DATA:

LOCATION: As per measurements on pages 4-13

CALIBRATION PROCEDURE: As per MGA Calibration Procedure

LINEARITY: >99.9% ; INTEGRATION ALGORITHM: Trapezoidal

VEH: IMPACT SPEED: 56.6 kph ; TIME OF SEPARATION: msec

VELOCITY CHANGE: kph

COLLISION DEFORMATION CLASSIFICATION (CDC) CODE: F (Frontal)

CRUSH DEPTH DIMENSIONS:

C1 = 620 mm

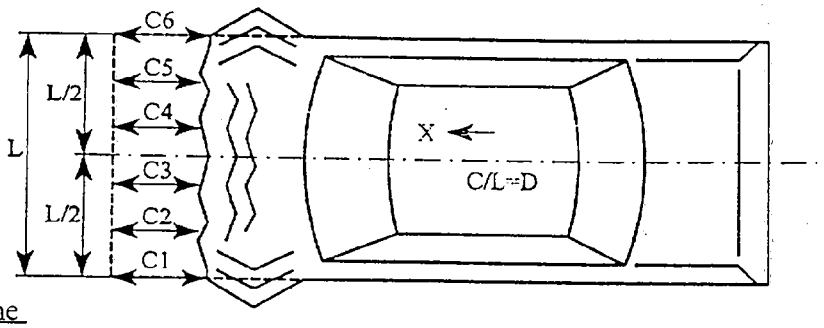
C2 = 537 mm

C3 = 724 mm

C4 = 752 mm

C5 = 678 mm

C6 = 615 mm



MIDPOINT OF DAMAGE: D = Vehicle Centerline (Longitude)

LENGTH OF DAMAGED REGION: L = 1554 mm

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS (Cont'd)

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

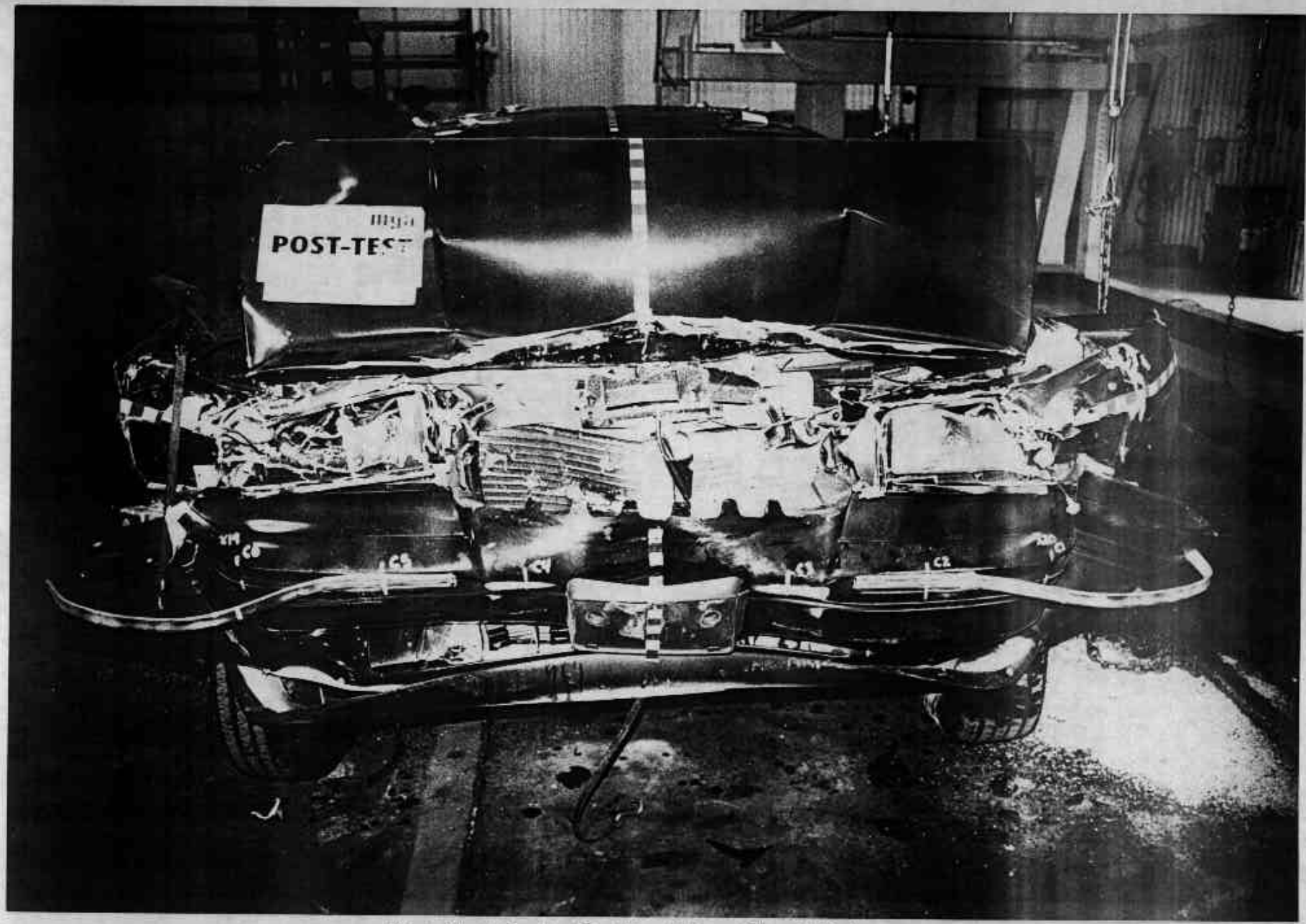


Photo No. A-2 - Post-Test Front View of Test Vehicle

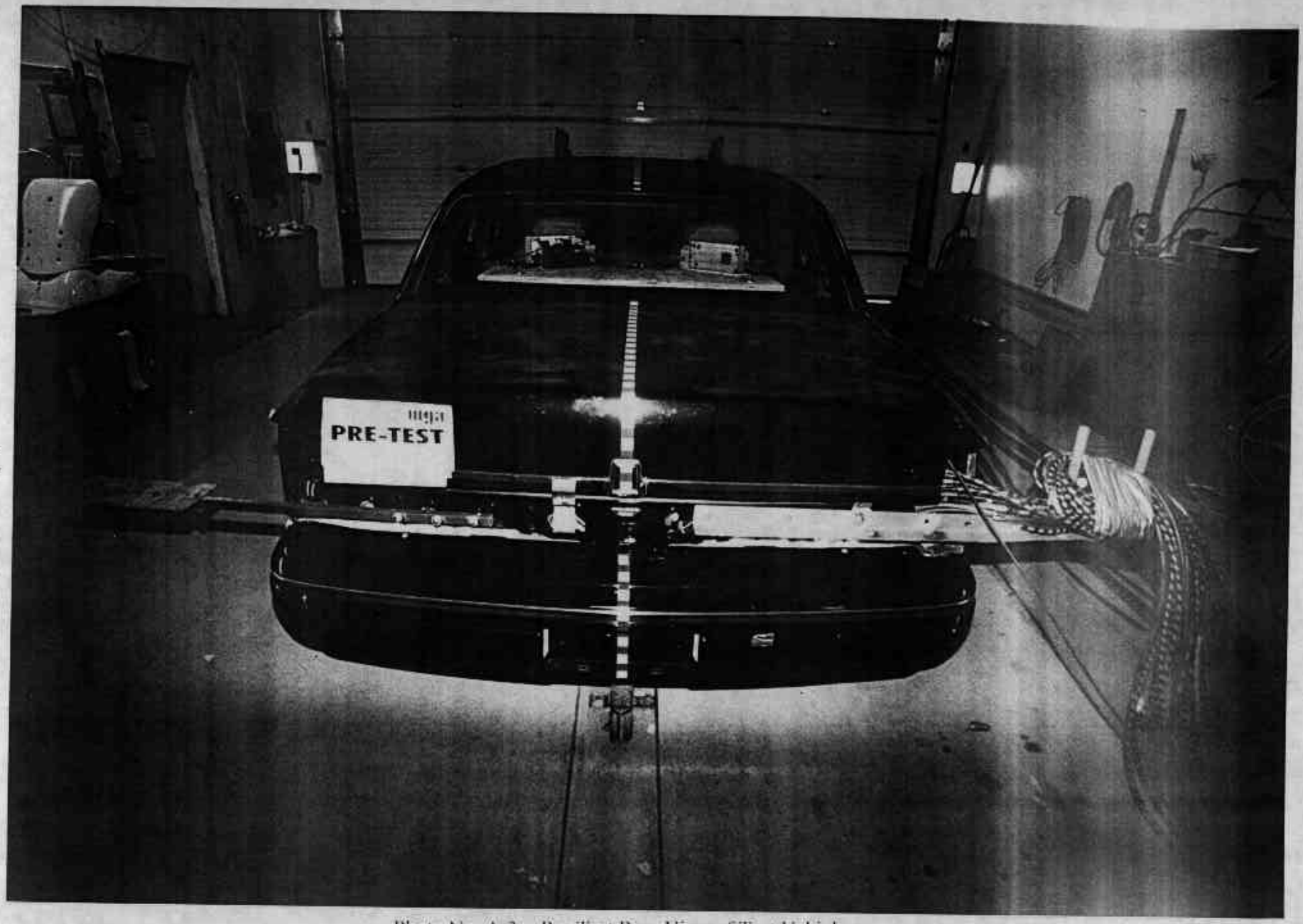


Photo No. A-3 - Pre-Test Rear View of Test Vehicle

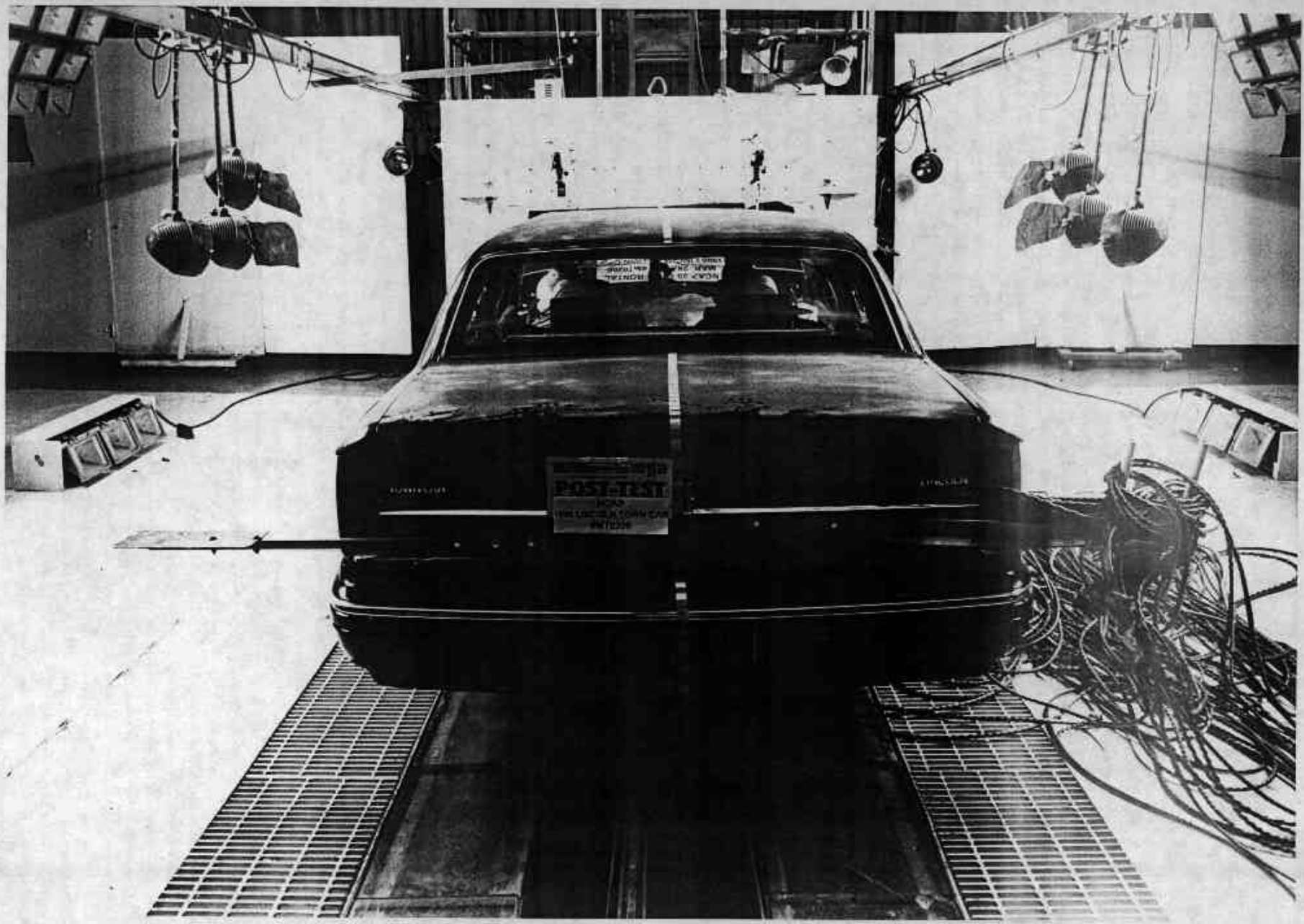


Photo No. A-4 - Post-Test Rear View of Test Vehicle

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

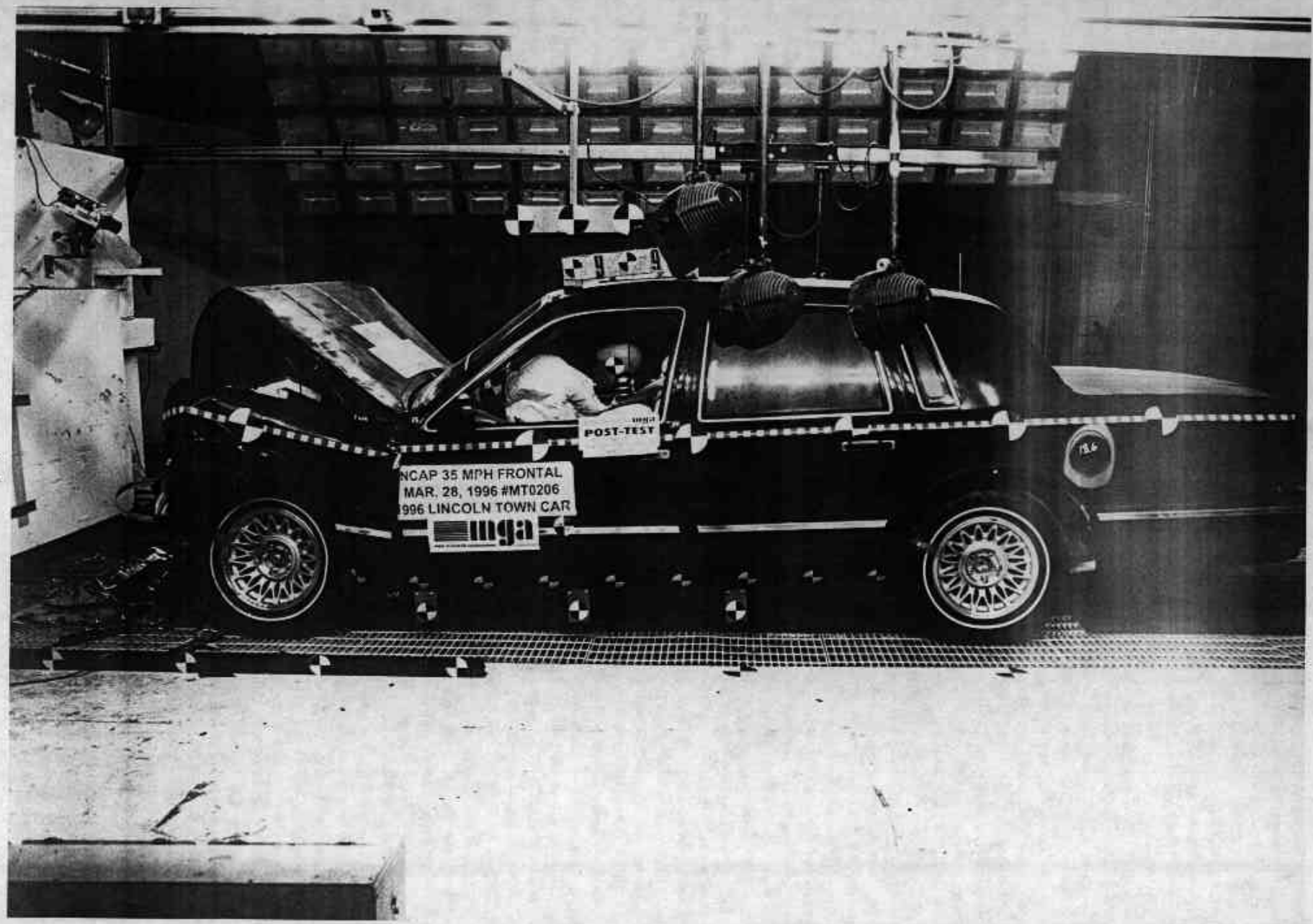


Photo No. A-6 – Post-Test Left Side View of Test Vehicle

A-7

Photo No. A-7 - Pre-Test Left Rear Three-Quarter View of Test Vehicle

A-8

Photo No. A-8 - Post-Test Left Rear Three-Quarter View of Test Vehicle

Photo No. A-9 - Pre-Test Right Side View of Test Vehicle

A-10

Photo No. A-10 - Post-Test Right Side View of Test Vehicle

Photo No. A-11 - Pre-Test Right Front Three-Quarter View of Test Vehicle

A-12

Photo No. A-12 - Post-Test Right Front Three-Quarter View of Test Vehicle

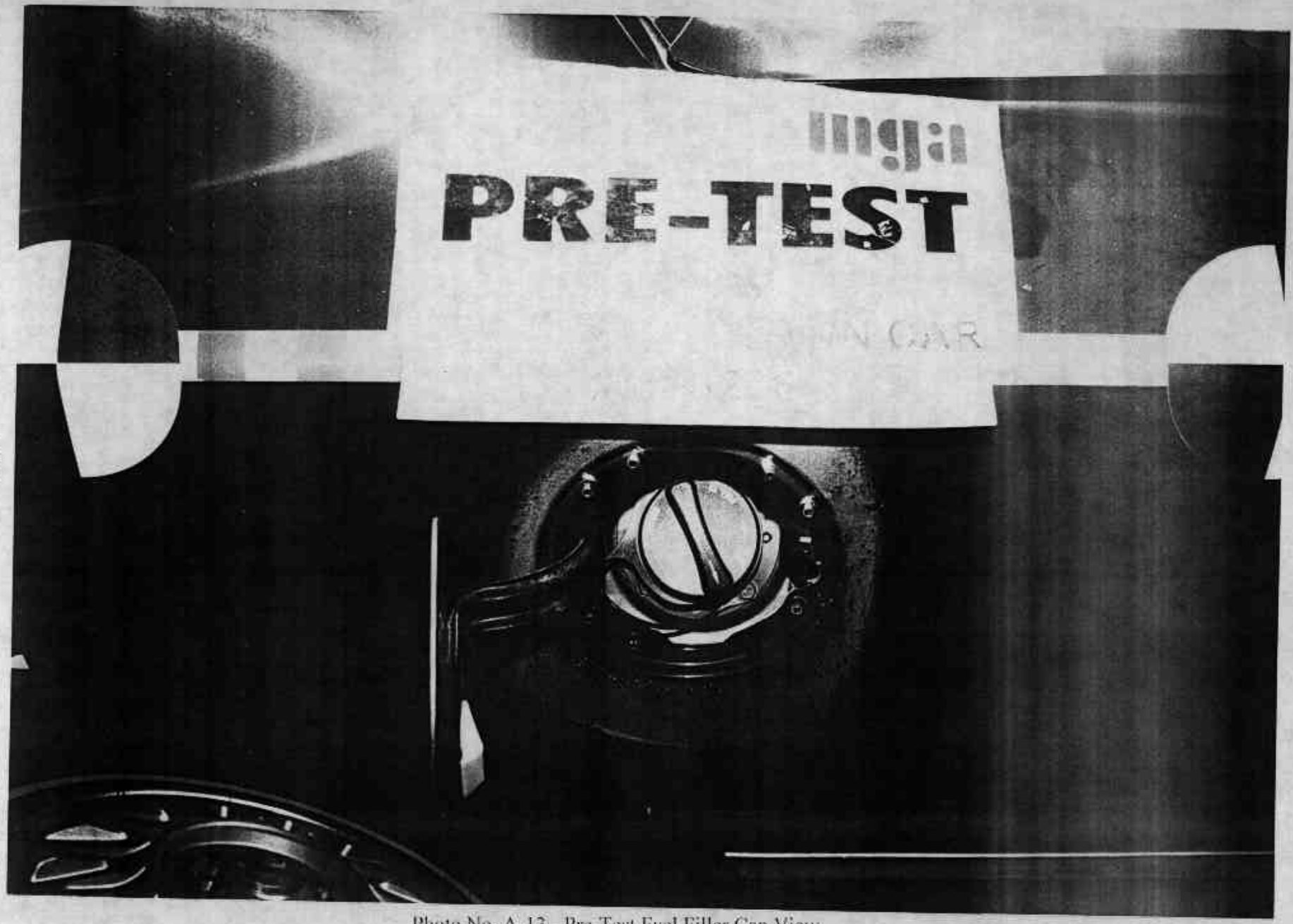


Photo No. A-13 - Pre-Test Fuel Filler Cap View

Photo No. A-14 - Pre-Test Engine Compartment View

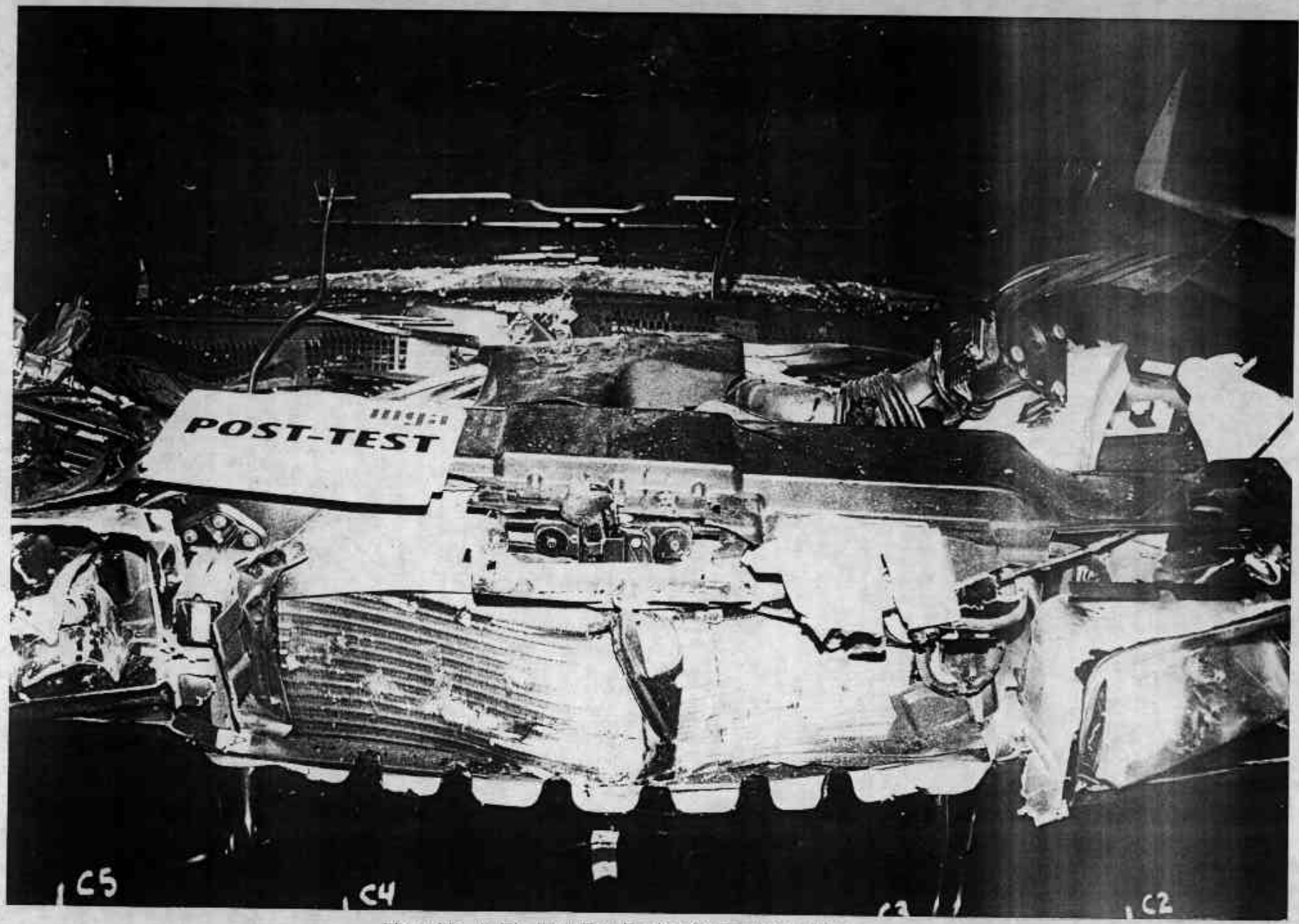


Photo No. A-15 - Post-Test Engine Compartment View

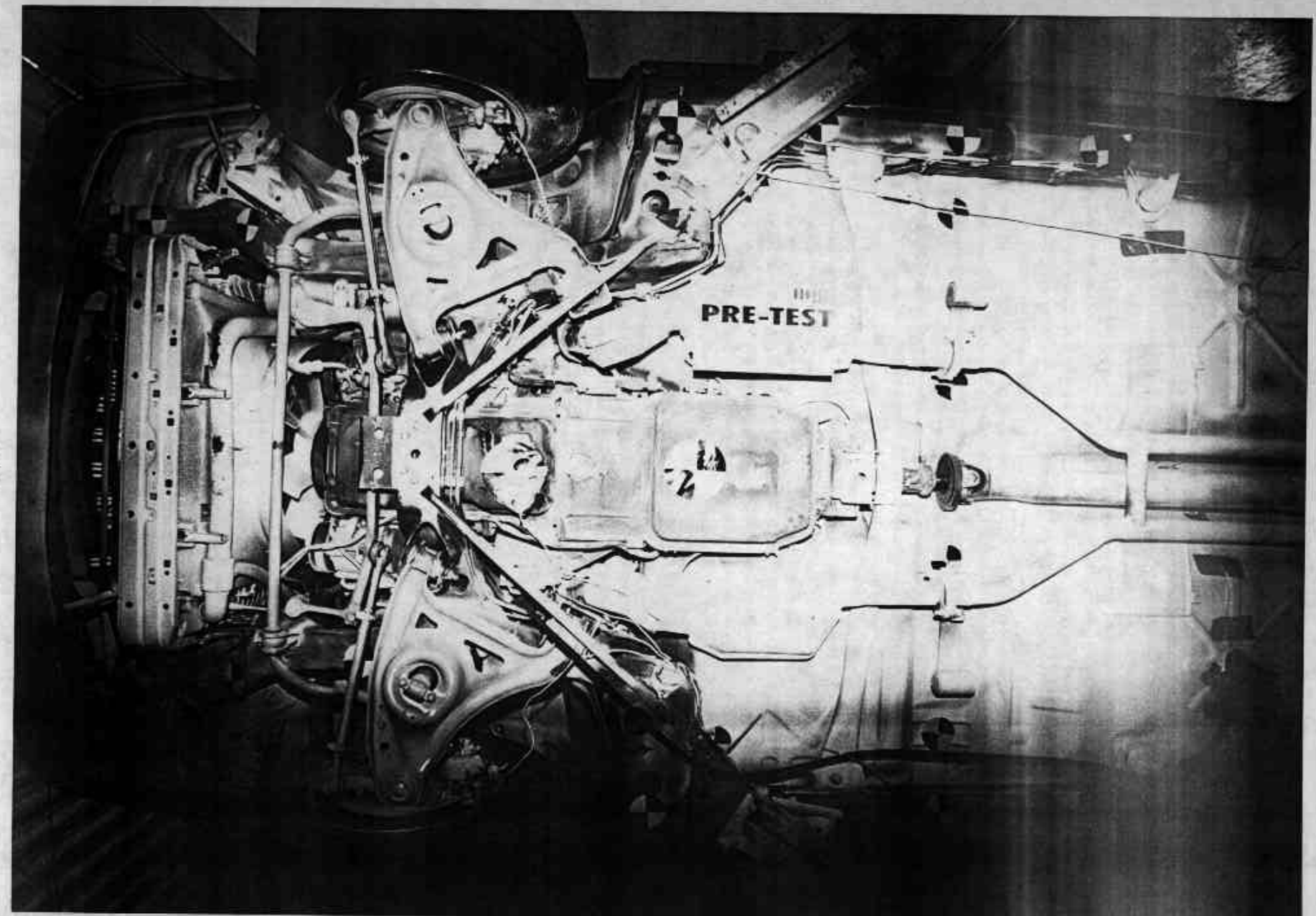


Photo No. A-16 - Pre-Test Front Underbody View

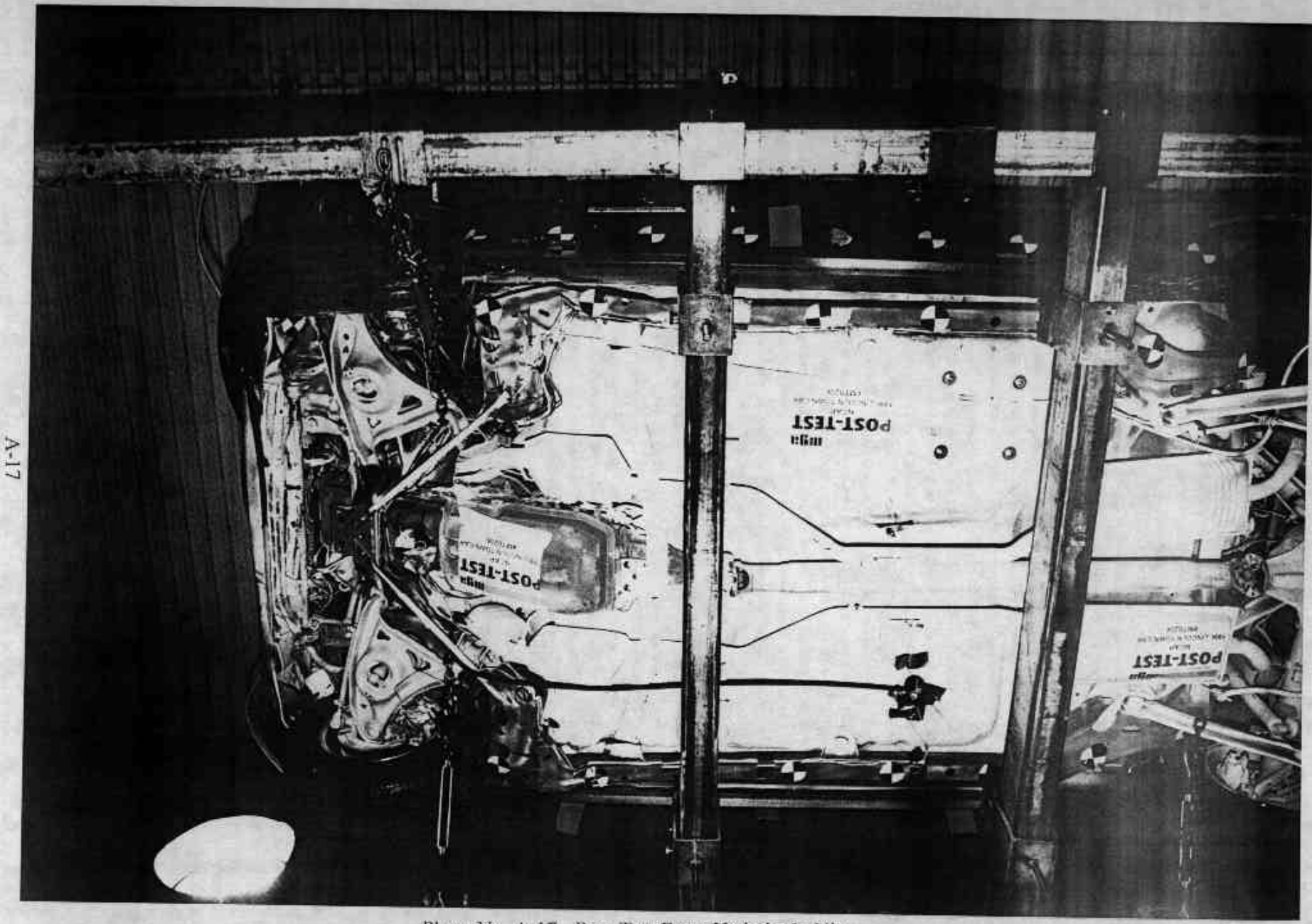


Photo No. A-17 - Post-Test Front Underbody View

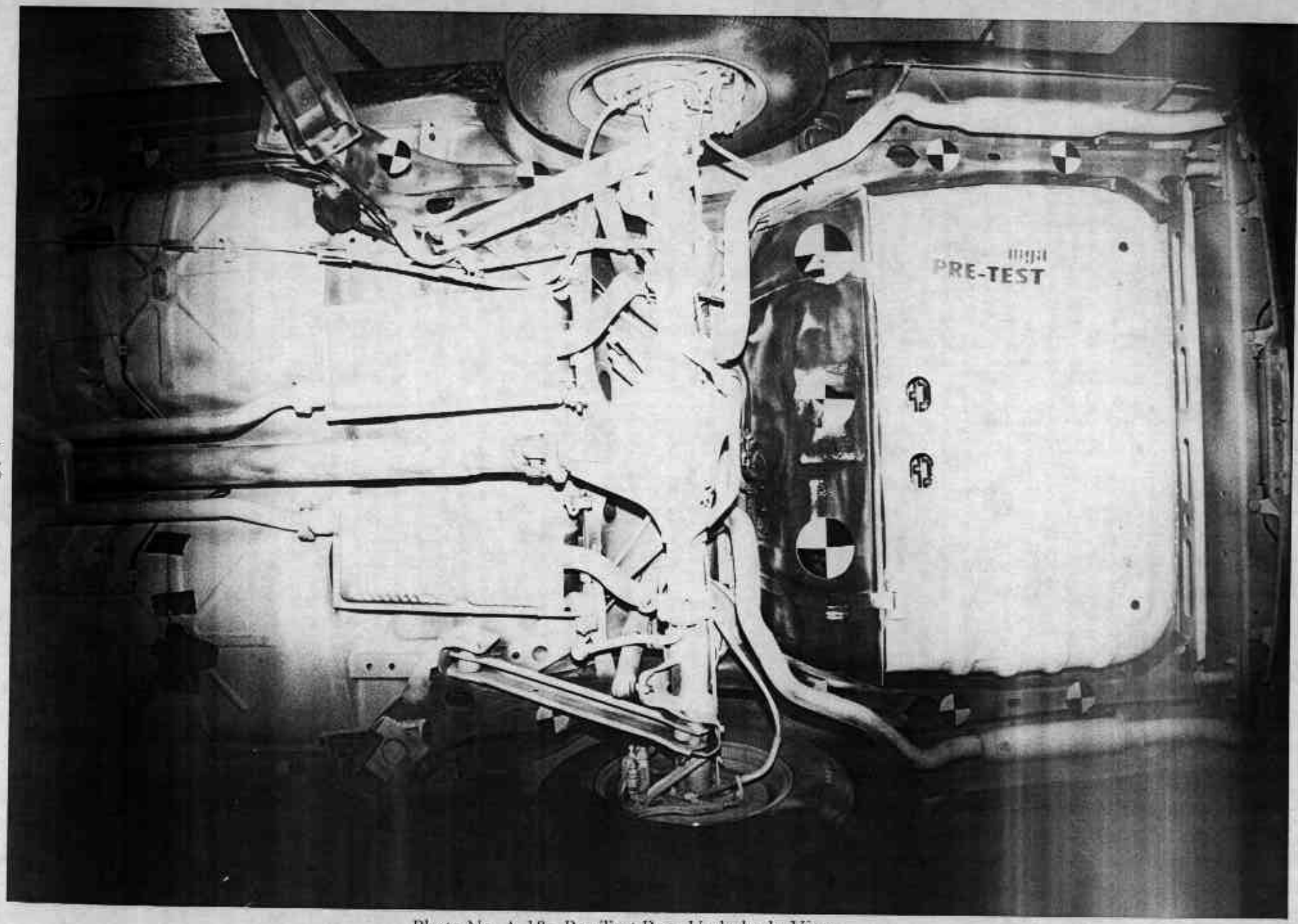


Photo No. A-18 - Pre-Test Rear Underbody View

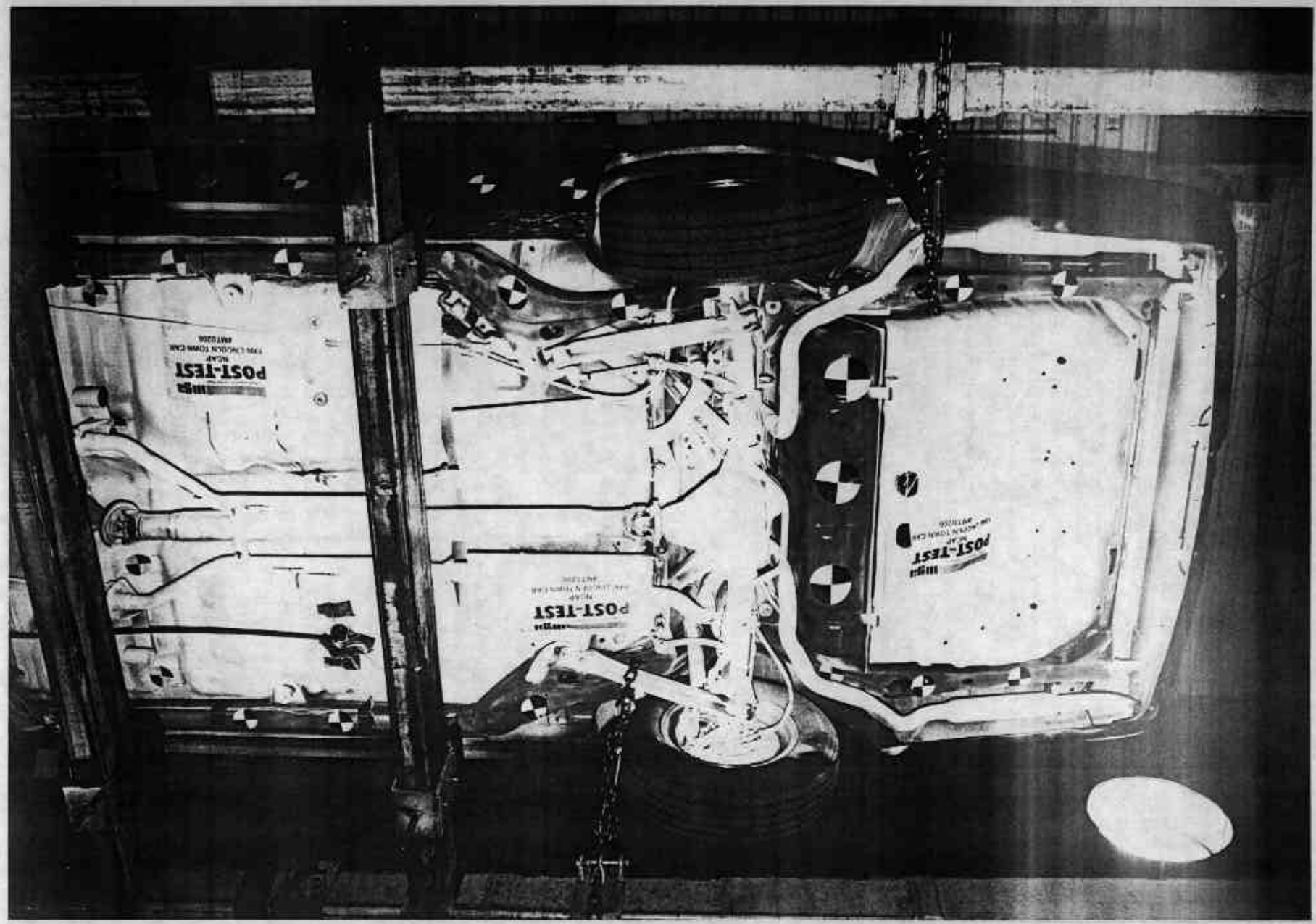


Photo No. A-19 - Post-Test Rear Underbody View

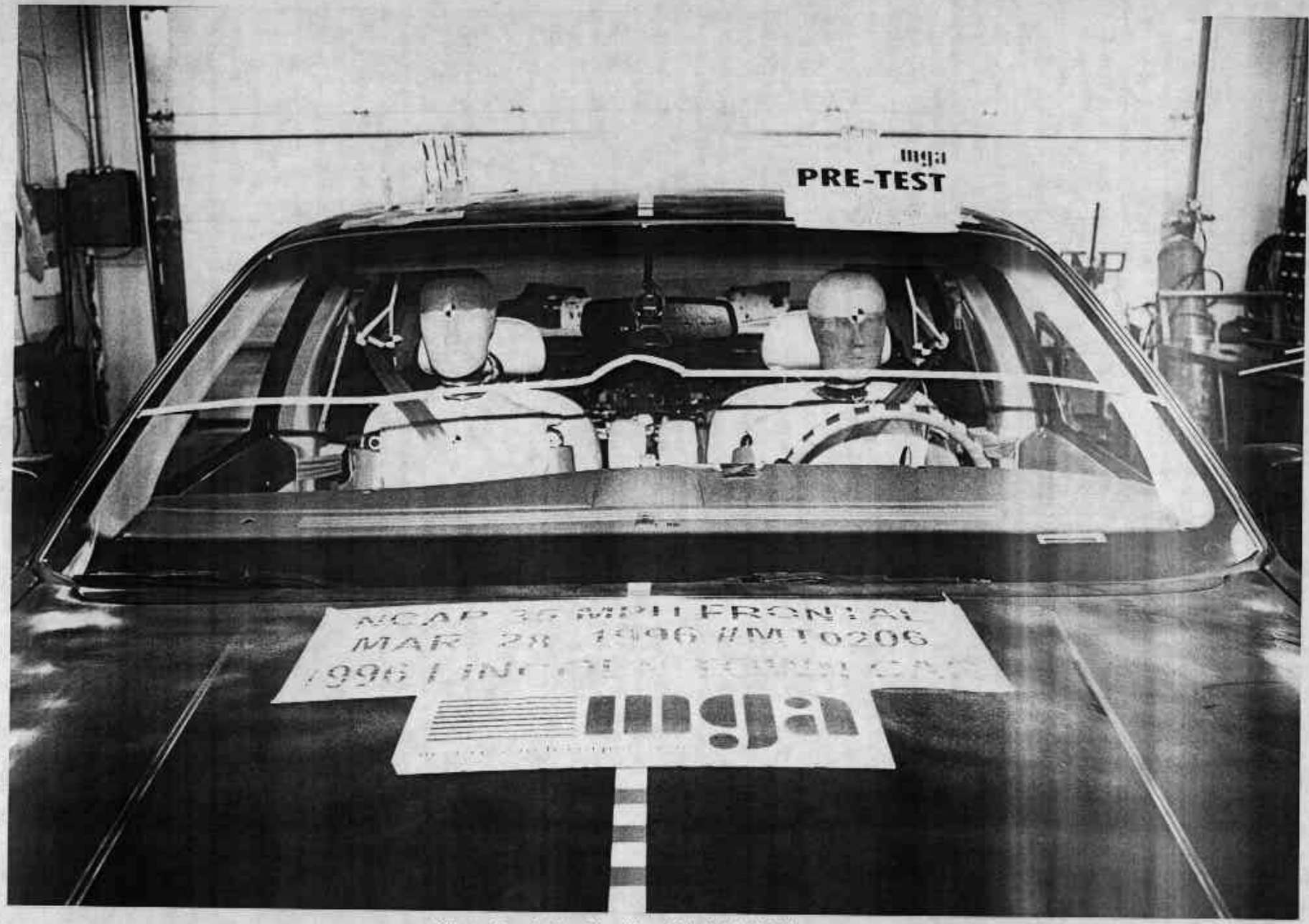


Photo No. A-20 - Pre-Test Windshield View

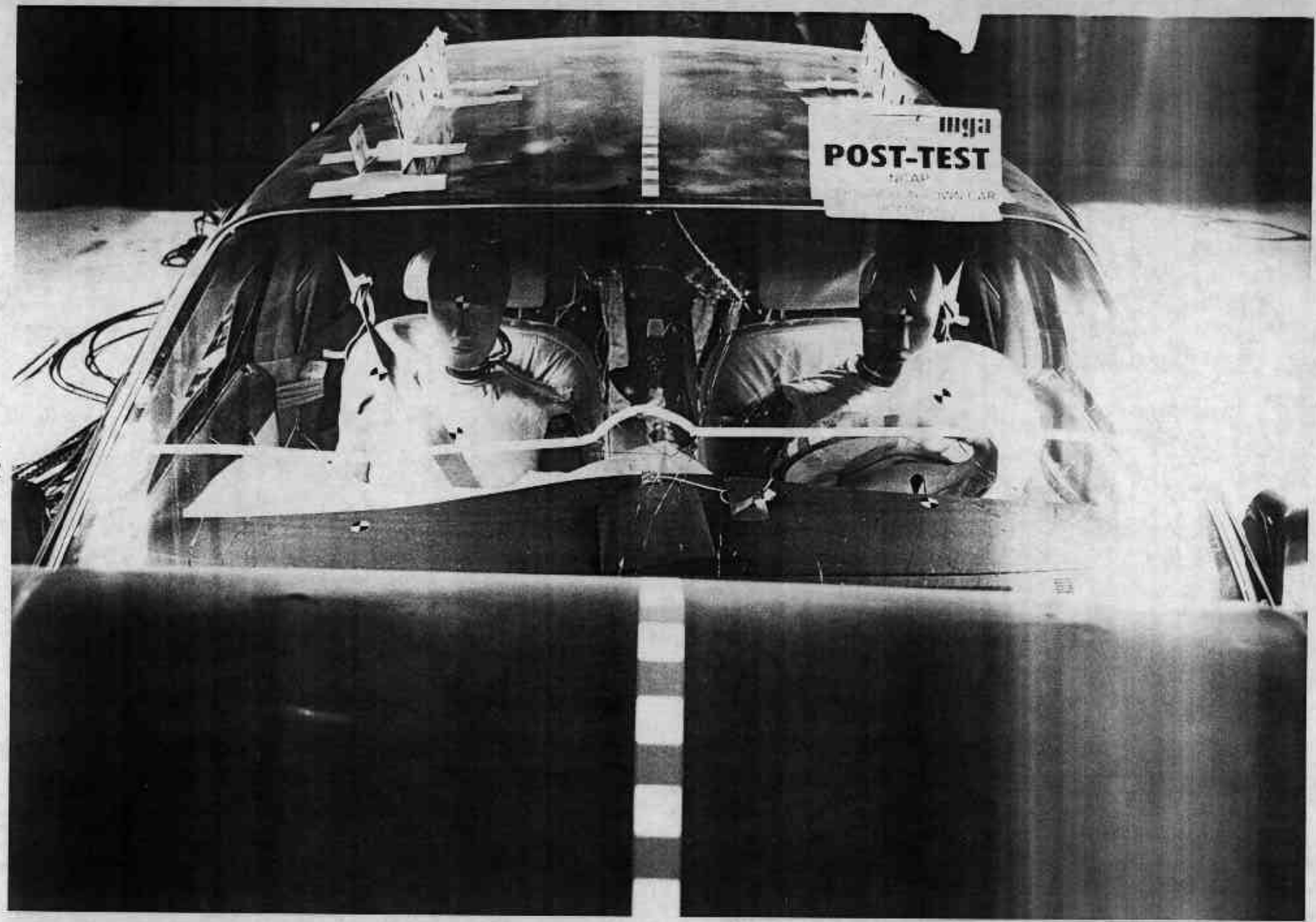


Photo No. A-21 - Post-Test Windshield View

A-22

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

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

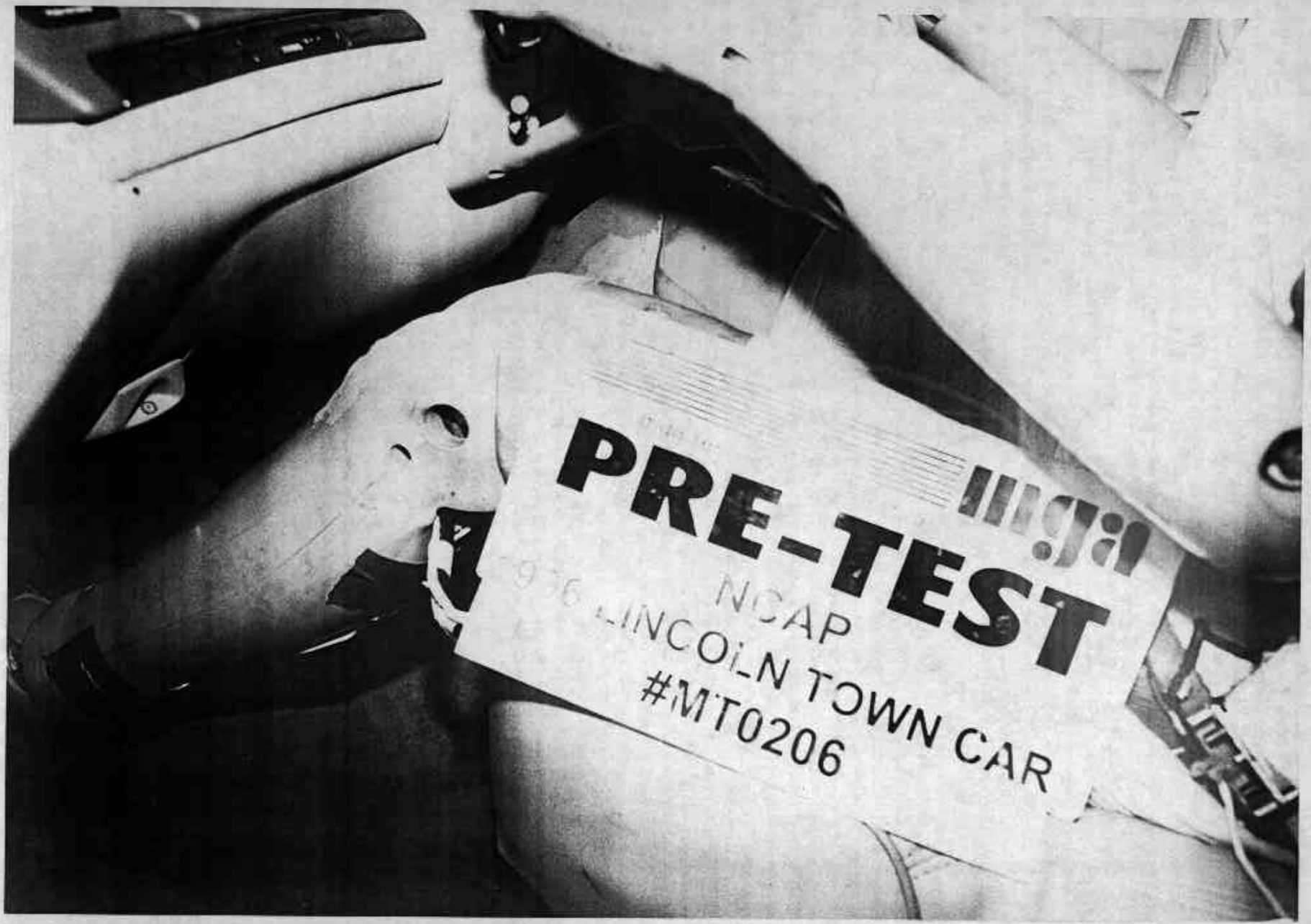
Photo No. A-24 - Pre-Test Driver Dummy Position Left Side View (Door Open)

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

A-26

Photo No. A-26 - Pre-Test Driver Seat Position View

Photo No. A-27 - Post-Test Driver Seat Position View



A-28

Photo No. A-28 - Pre-Test Driver Dummy Knee Position

Photo No. A-29 - Post-Test Driver Dummy Knee Position

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

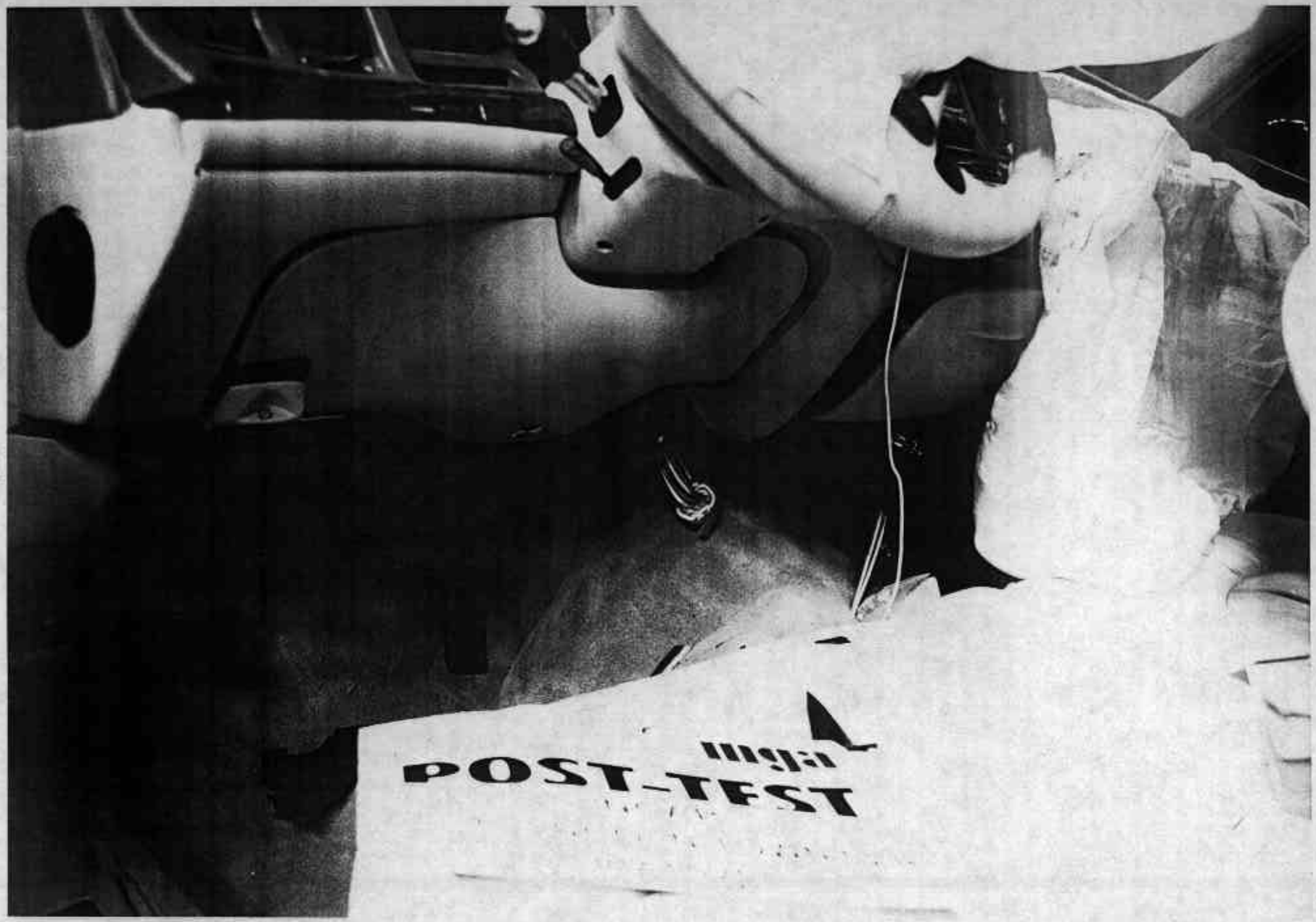


Photo No. A-31 - Post-Test Driver Knee Contact View

A-32

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

A-33

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

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

Photo No. A-35 - Post-Test Passenger Dummy Position Right Side View (Door Open)

Photo No. A-36 - Pre-Test Passenger Seat Position View

Photo No. A-37 - Post-Test Passenger Seat Position View

Photo No. A-38 - Pre-Test Passenger Dummy Knee Position

Photo No. A-39 - Post-Test Passenger Dummy Knee Position

Photo No. A-40 - Post-Test Passenger Airbag Contact

Photo No. A-41 - Post-Test Passenger Knee Contact View

A-42

Photo No. A-42 - Vehicle Certification Label

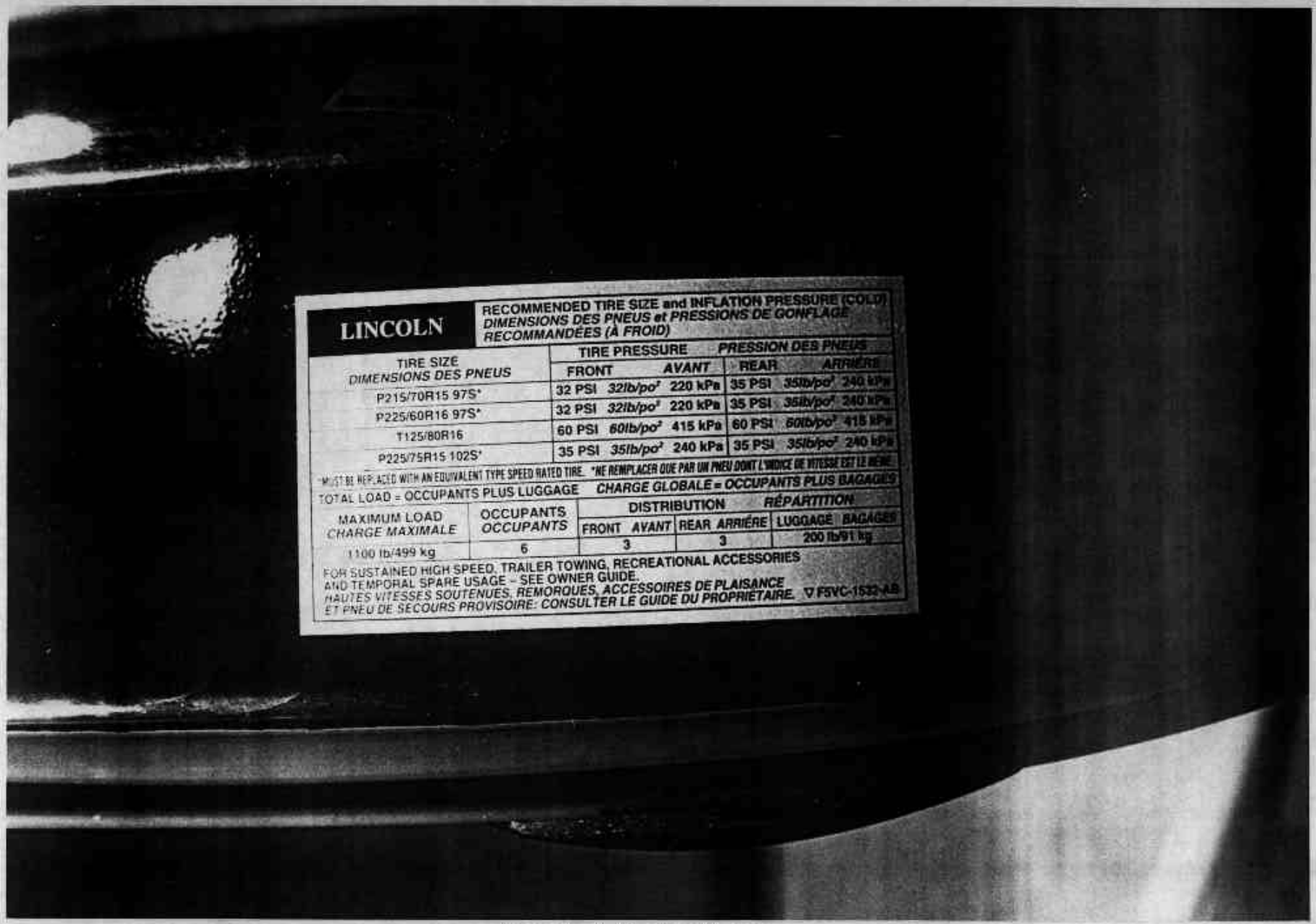


Photo No. A-43 - Tire Placard

Photo No. A-44 - Vehicle Impact

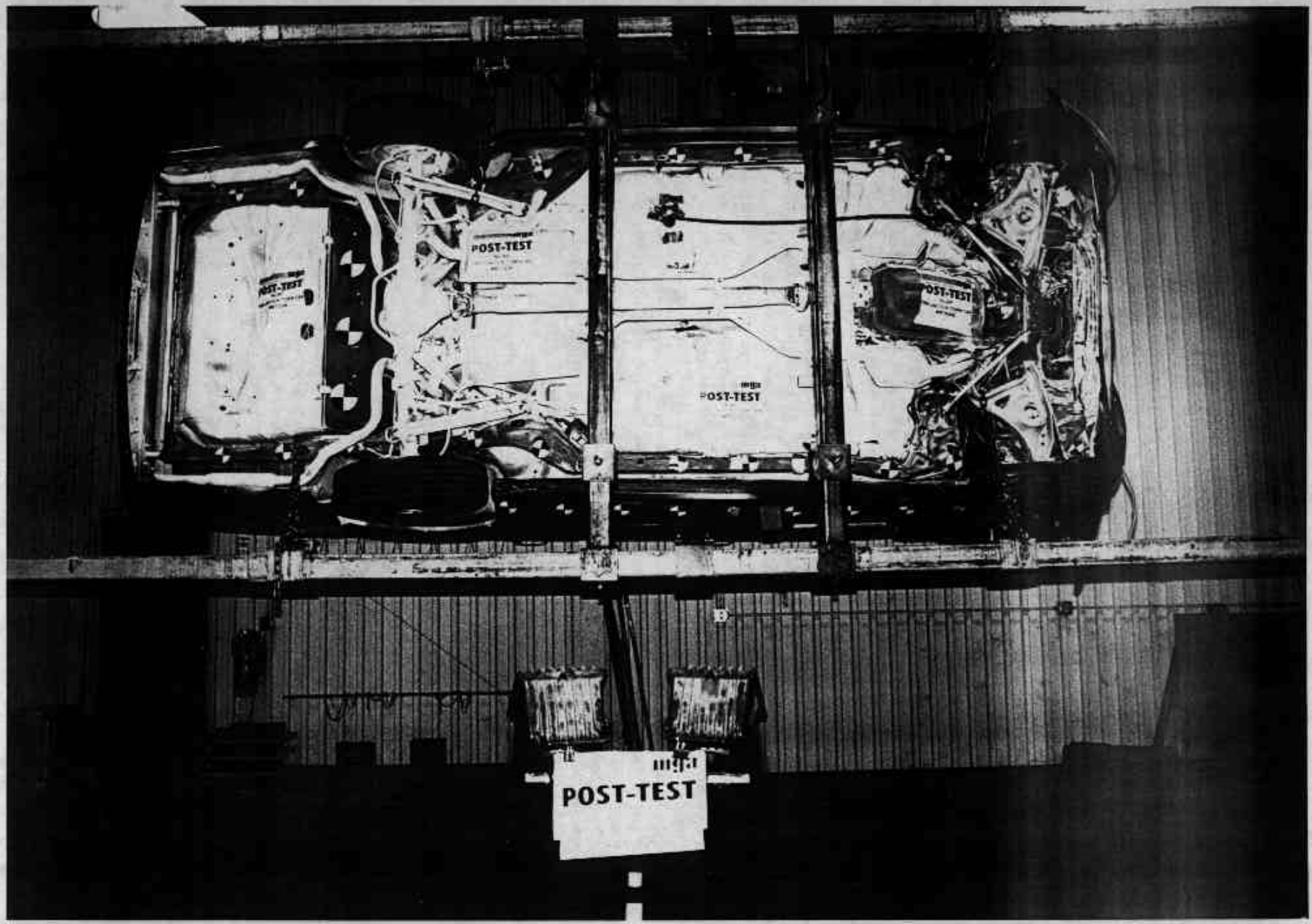


Photo No. A-45 - Rollover 90°

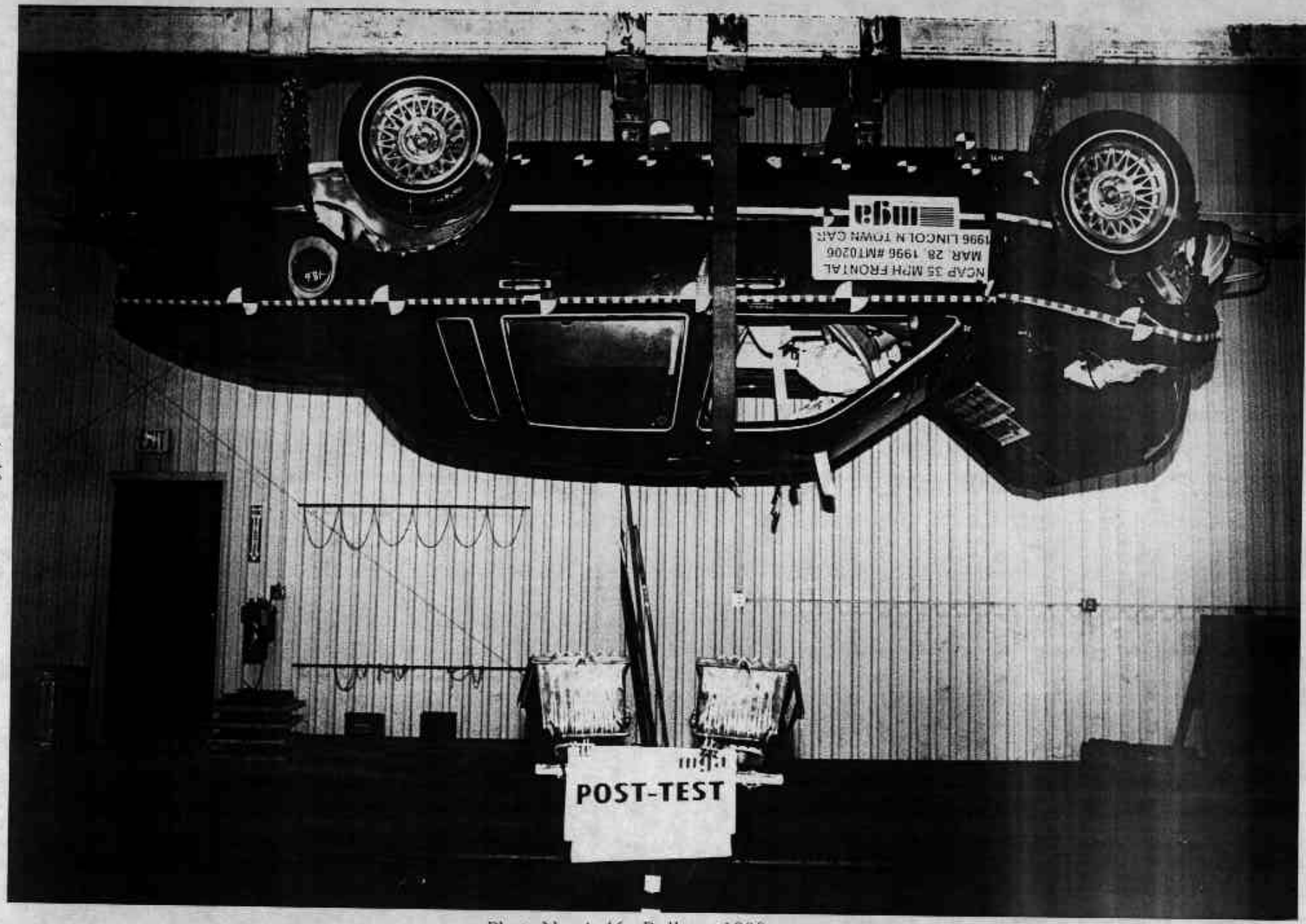


Photo No. A-46 - Rollover 180°

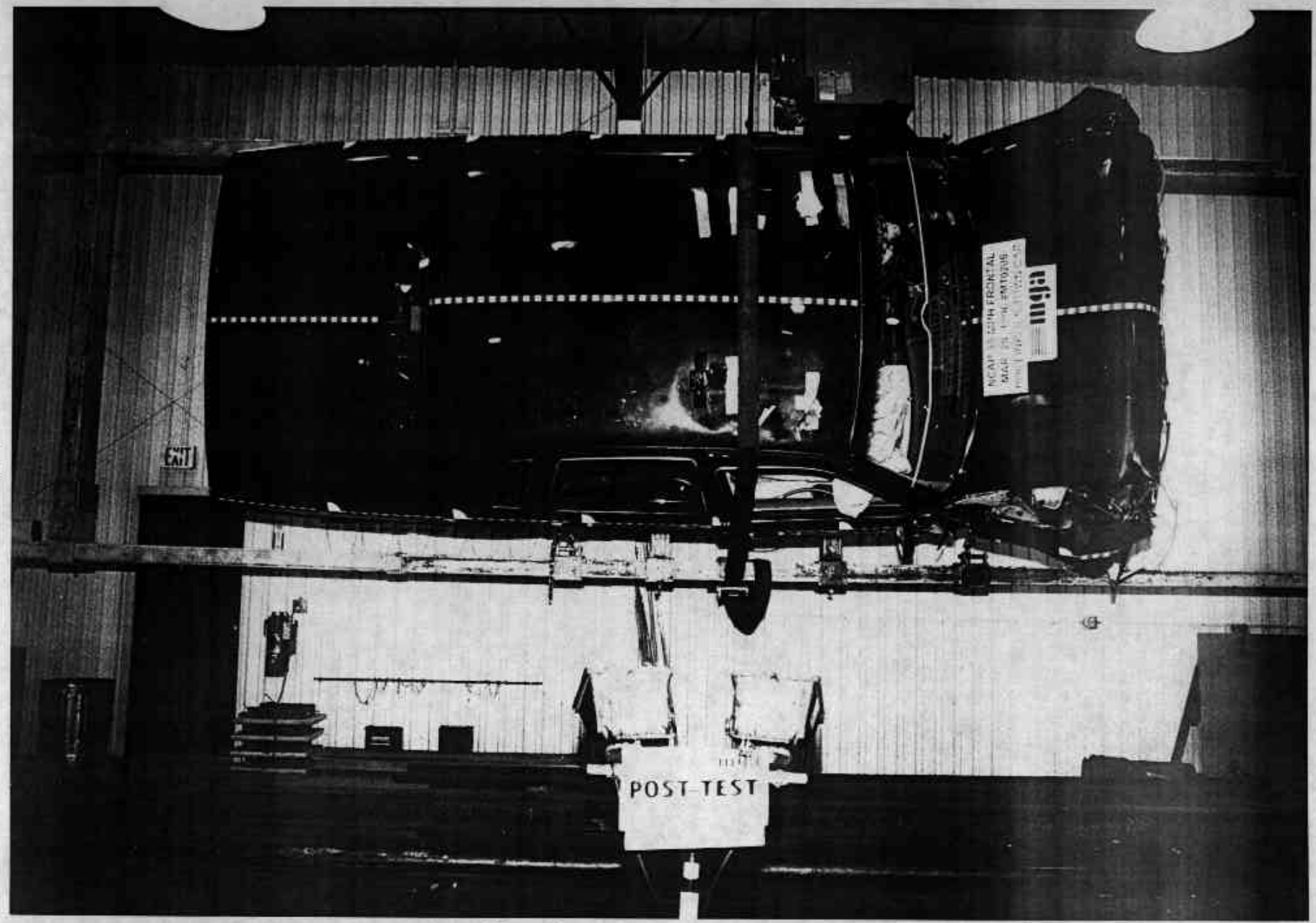


Photo No. A-47 - Rollover 270°

Photo No. A-48 - Rollover 360°

APPENDIX B

Vehicle, Load Cell Barrier and Dummy Response Data

1996 Lincoln Towncar 4 Door

NHTSA NO.: MT0206

VEHICLE DATA FILTER CHANNEL CLASS

Head Accelerations 1000 (1650 Hz)

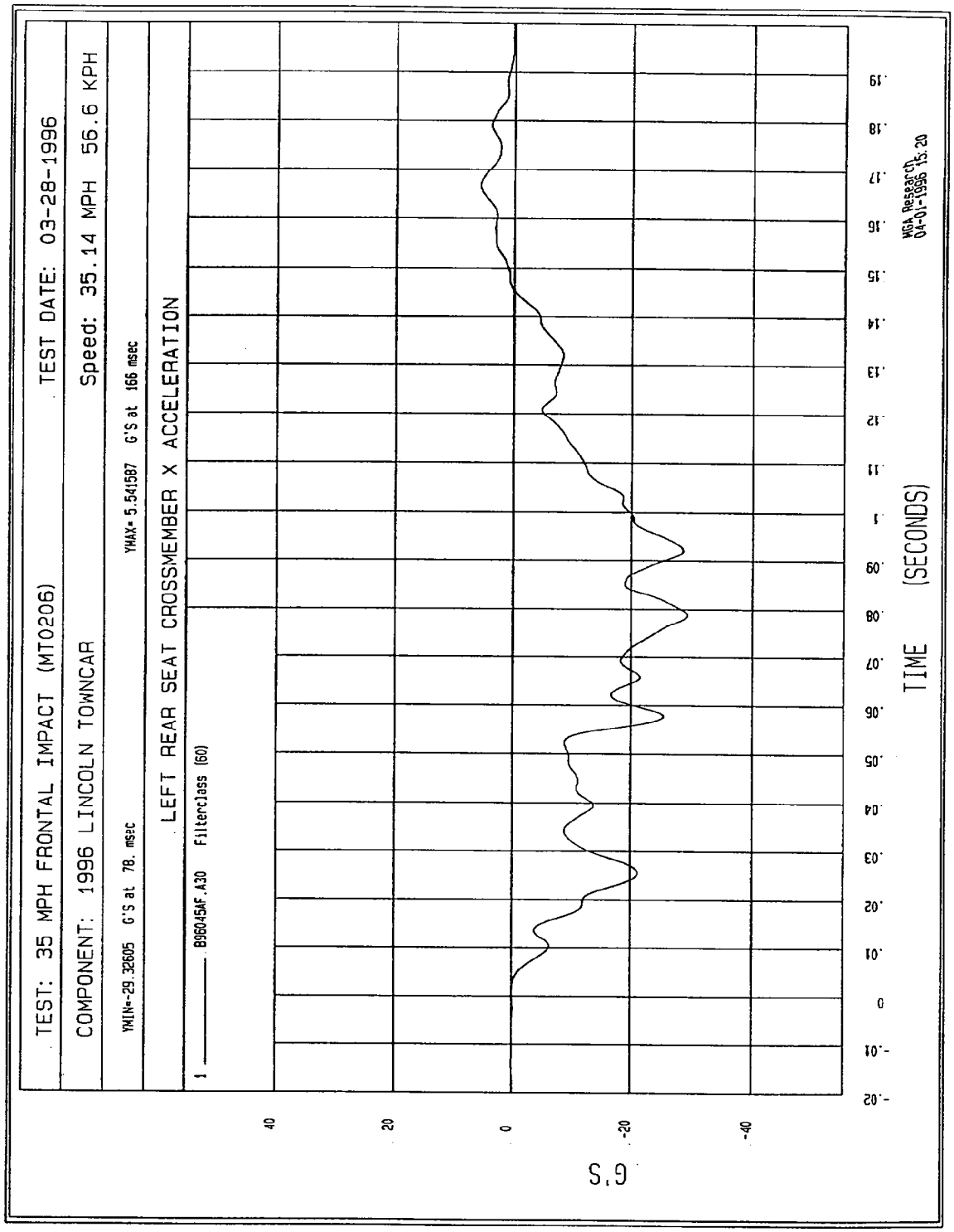
Chest Accelerations 180 (300 Hz)

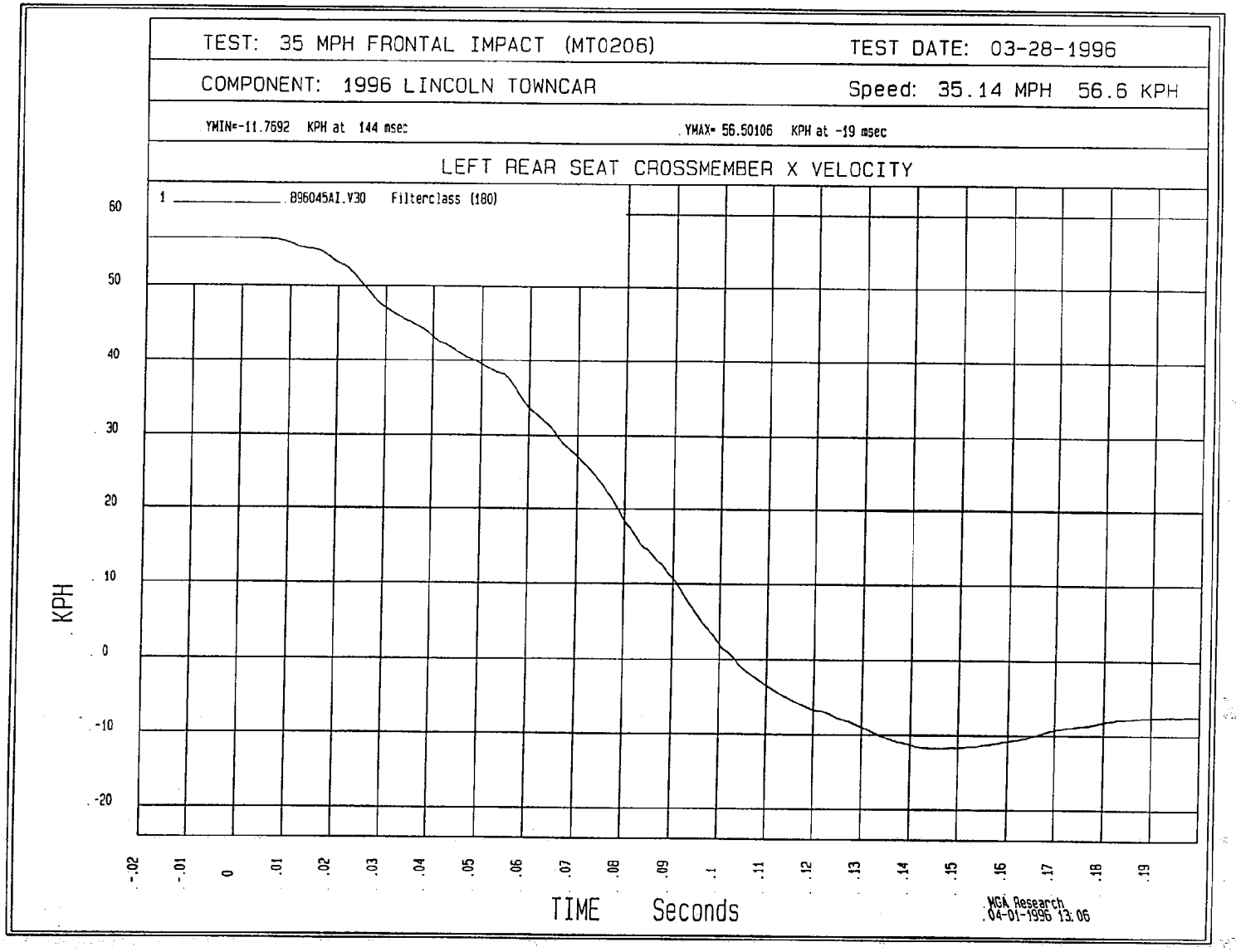
Vehicle Accelerations 60 (100 Hz)

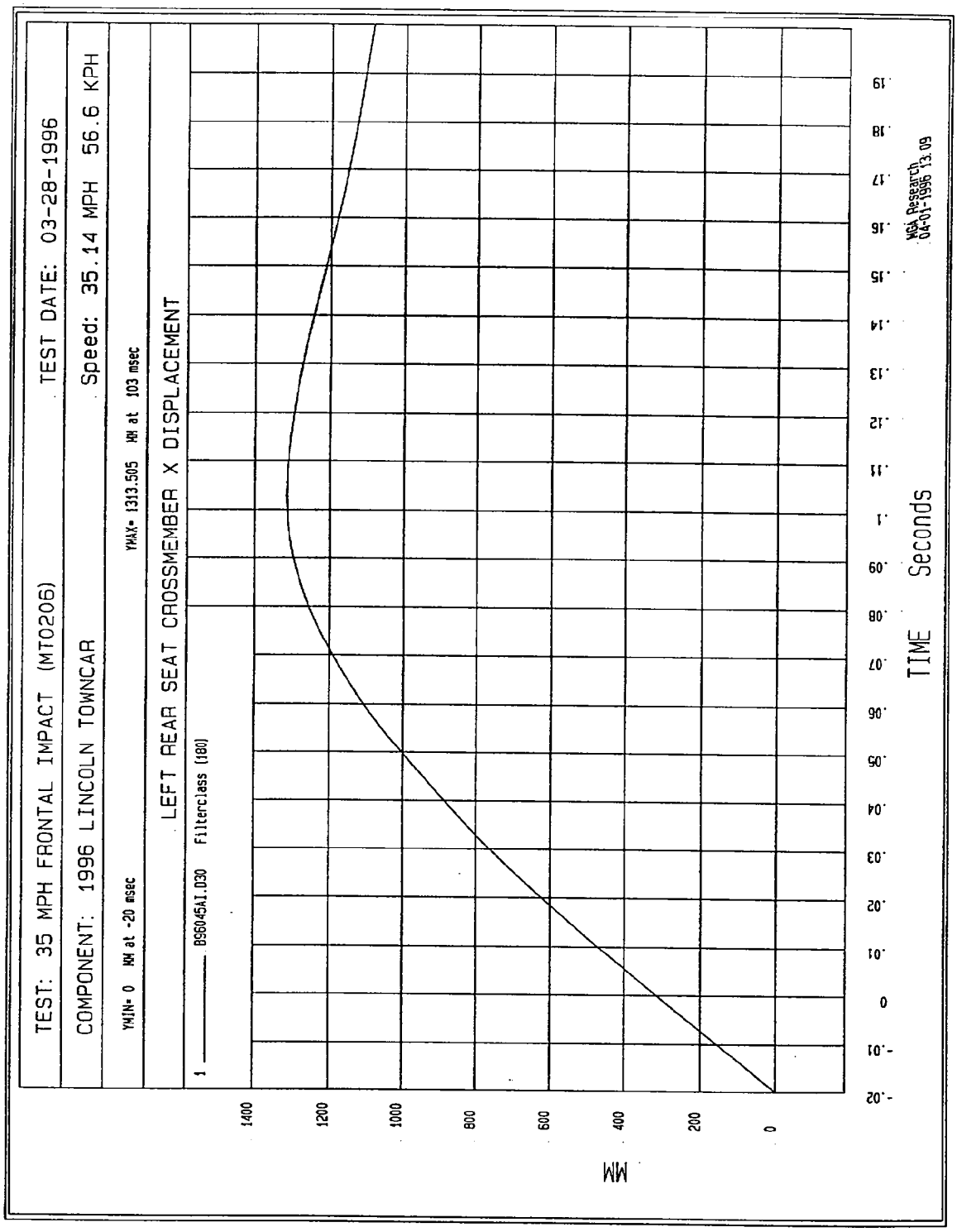
Barrier Load Cells 60 (100 Hz)

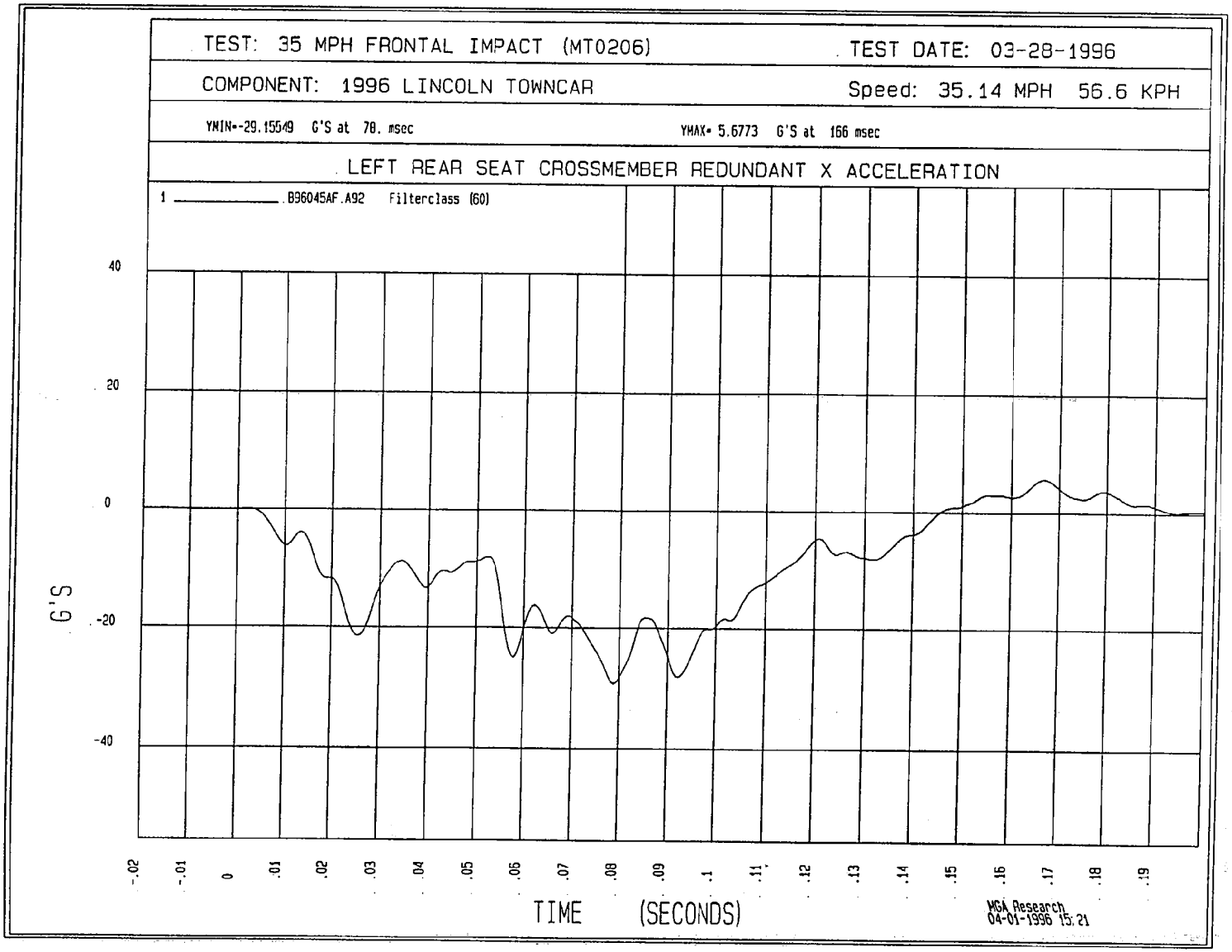
Femur Load Cells 600 (1000 Hz)

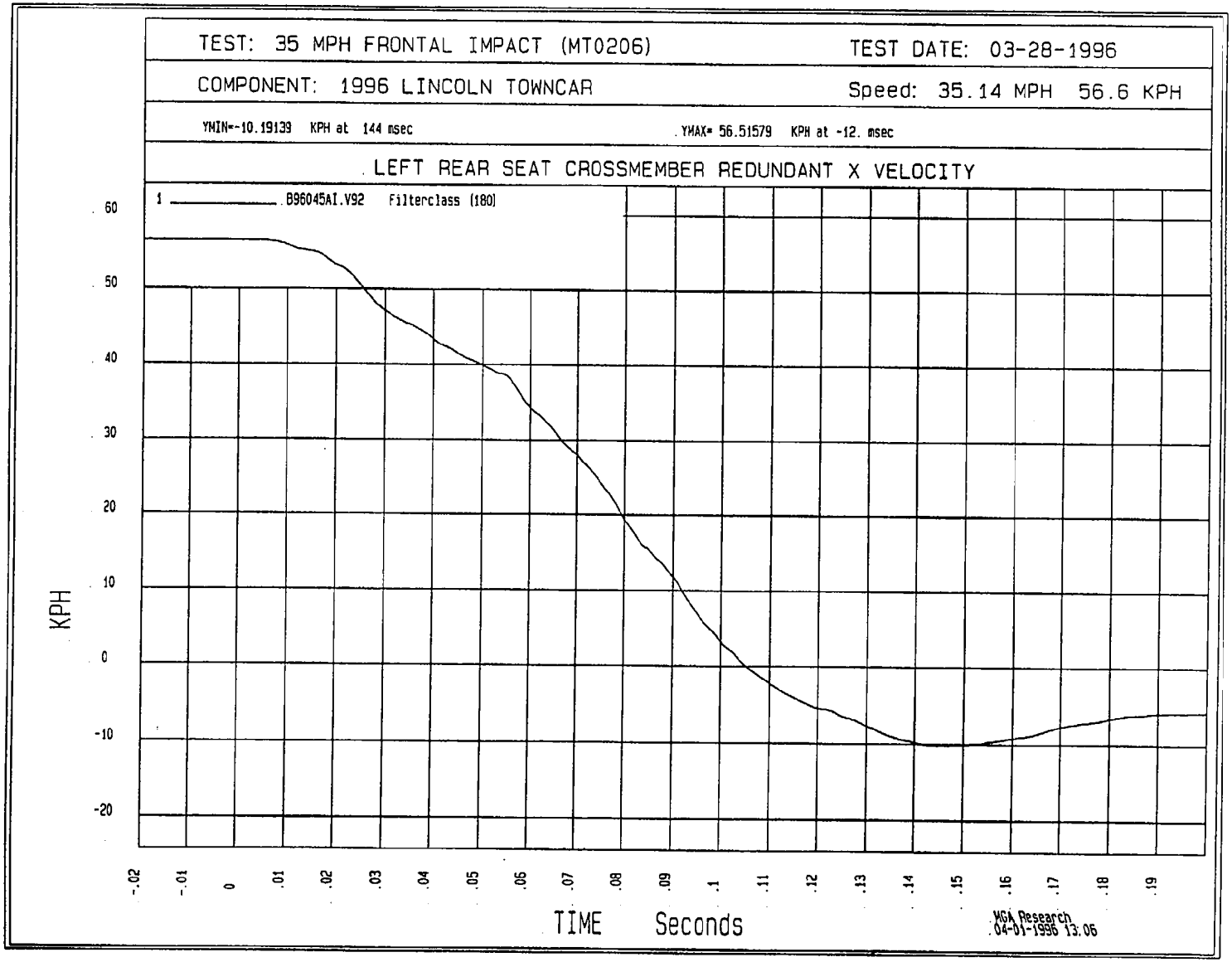
Lap and Torso Belts 60 (100 Hz)

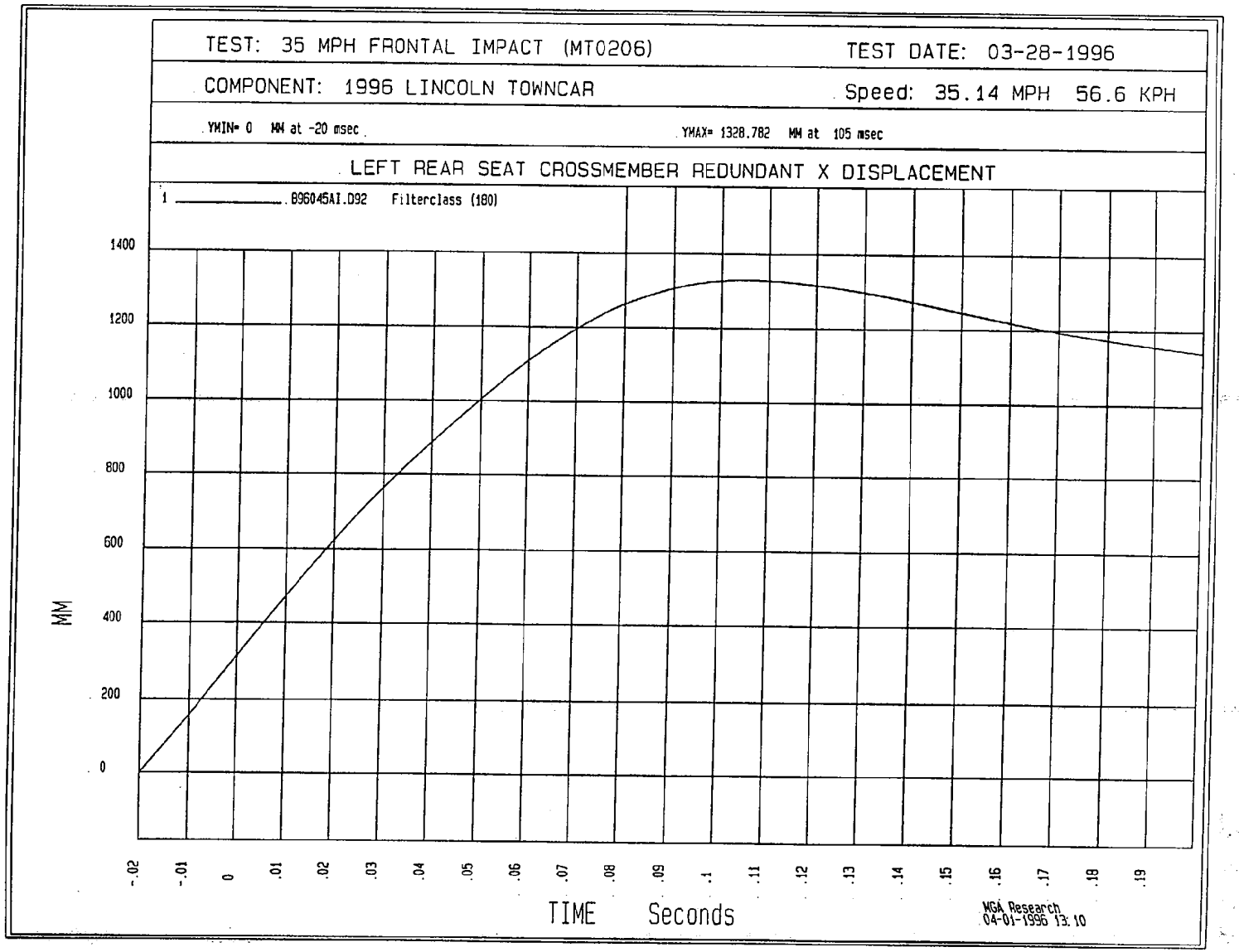

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-29.32605 G'S at 78. msec
YMAX= 5.541587 G'S at 166 msec
LEFT REAR SEAT CROSSMEMBER X ACCELERATION
1 B96045AF.A30 Filterclass (60)
40
20
0
-20
-40
G'S
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
04-01-1996 15:20

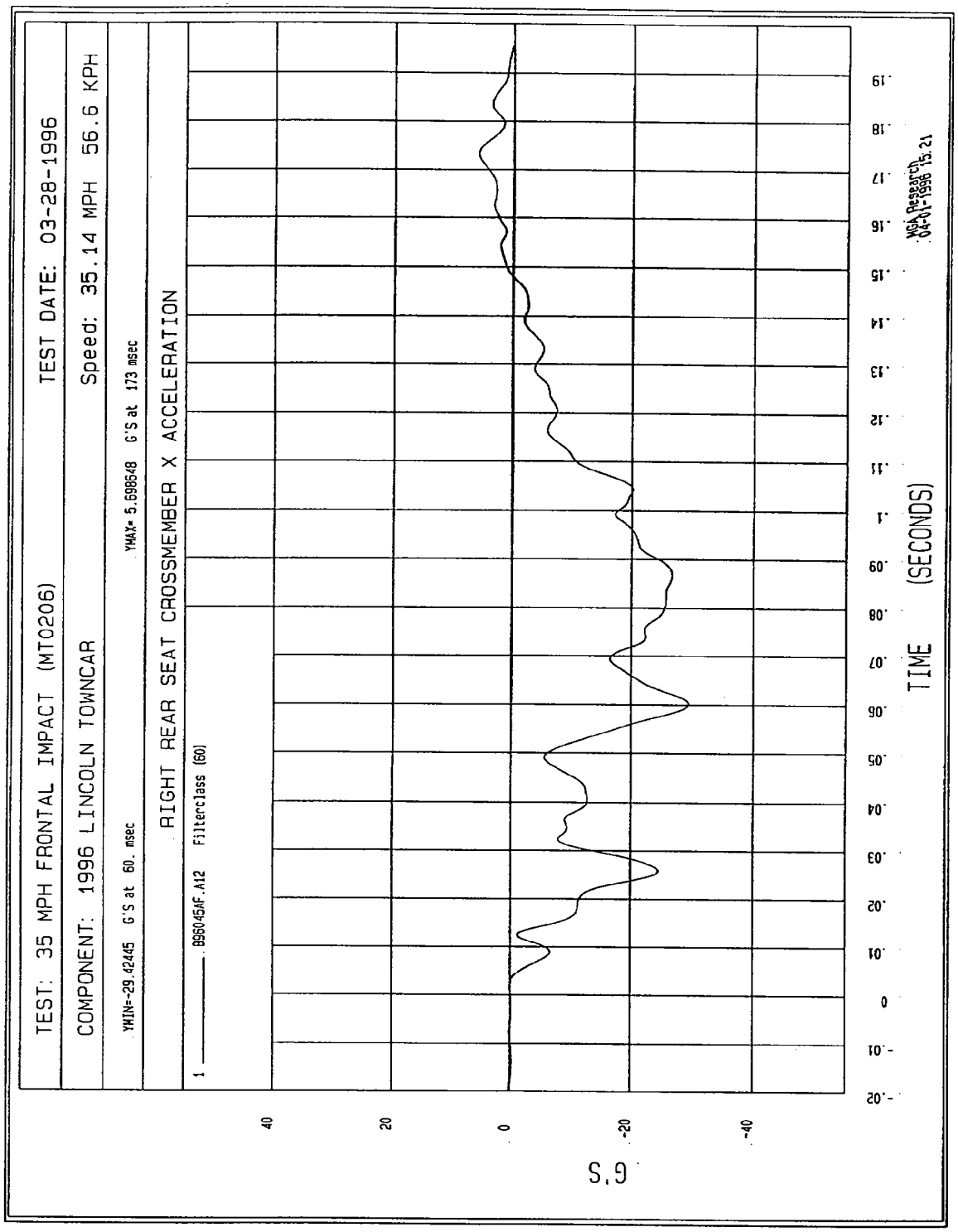

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-11.7692 KPH at 144 msec
YMAX= 56.50106 KPH at -19 msec
LEFT REAR SEAT CROSSMEMBER X VELOCITY
1 B96045AI.V30 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:06

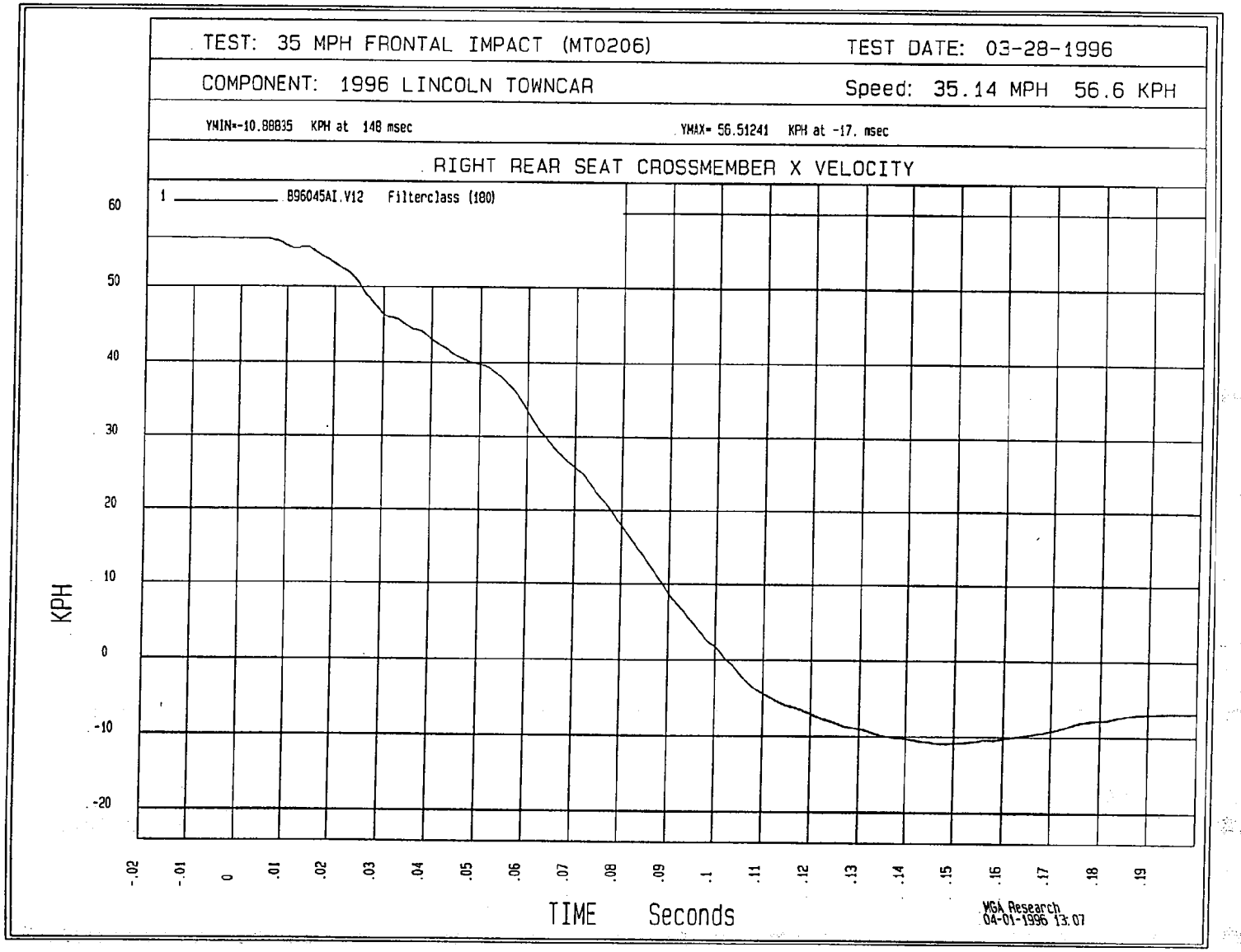

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 0 MM at -20 msec
YMAX= 1313.505 MM at 103 msec
LEFT REAR SEAT CROSSMEMBER X DISPLACEMENT
1 B96045AI.030 Filterclass (180)
MM
TIME Seconds
MGA Research
04-01-1996 13:09

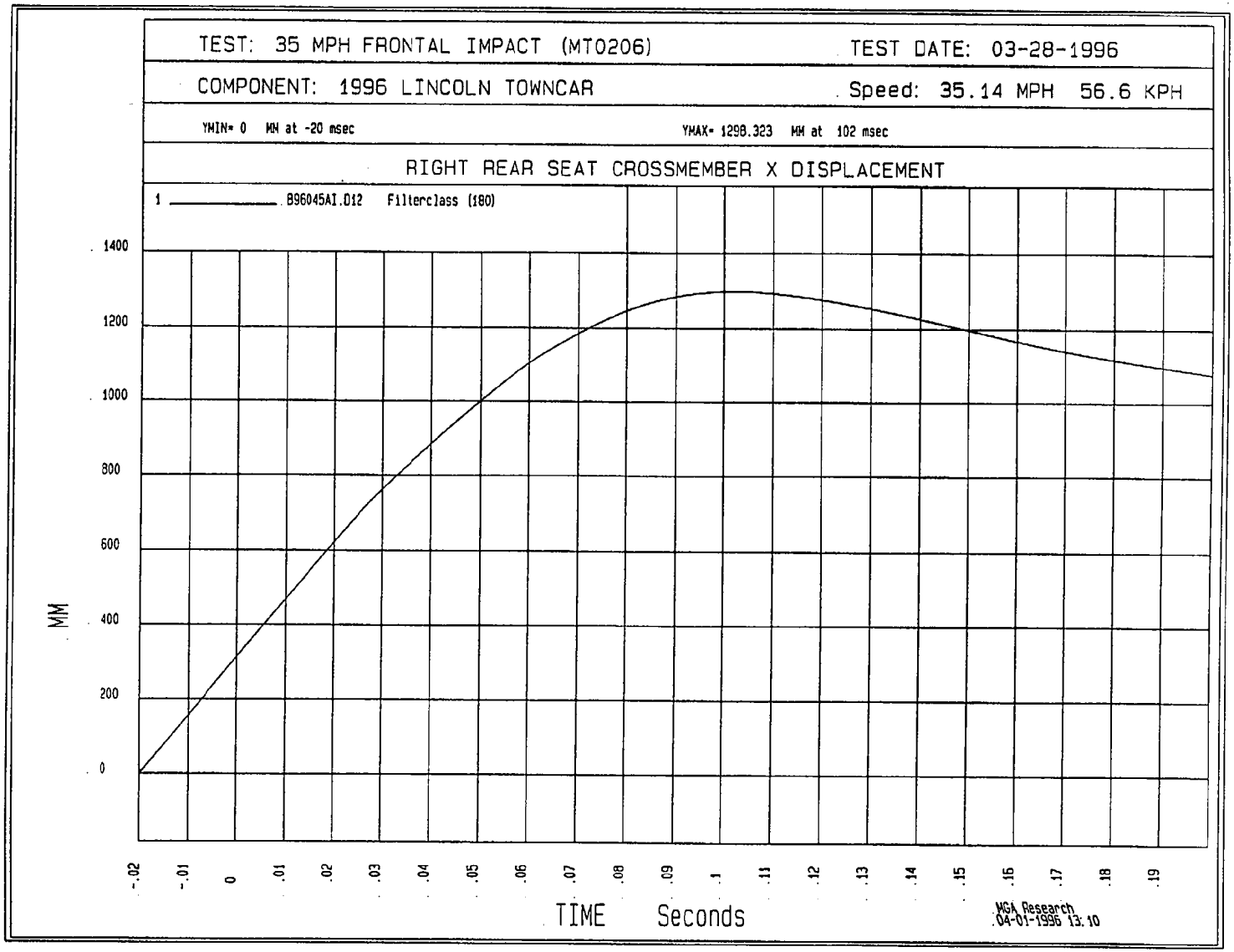

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-29.1559 G'S at 78. msec
YMAX= 5.6773 G'S at 166 msec
LEFT REAR SEAT CROSSMEMBER REDUNDANT X ACCELERATION
1 B96045AF.A92 Filterclass (60)
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1996 15:21

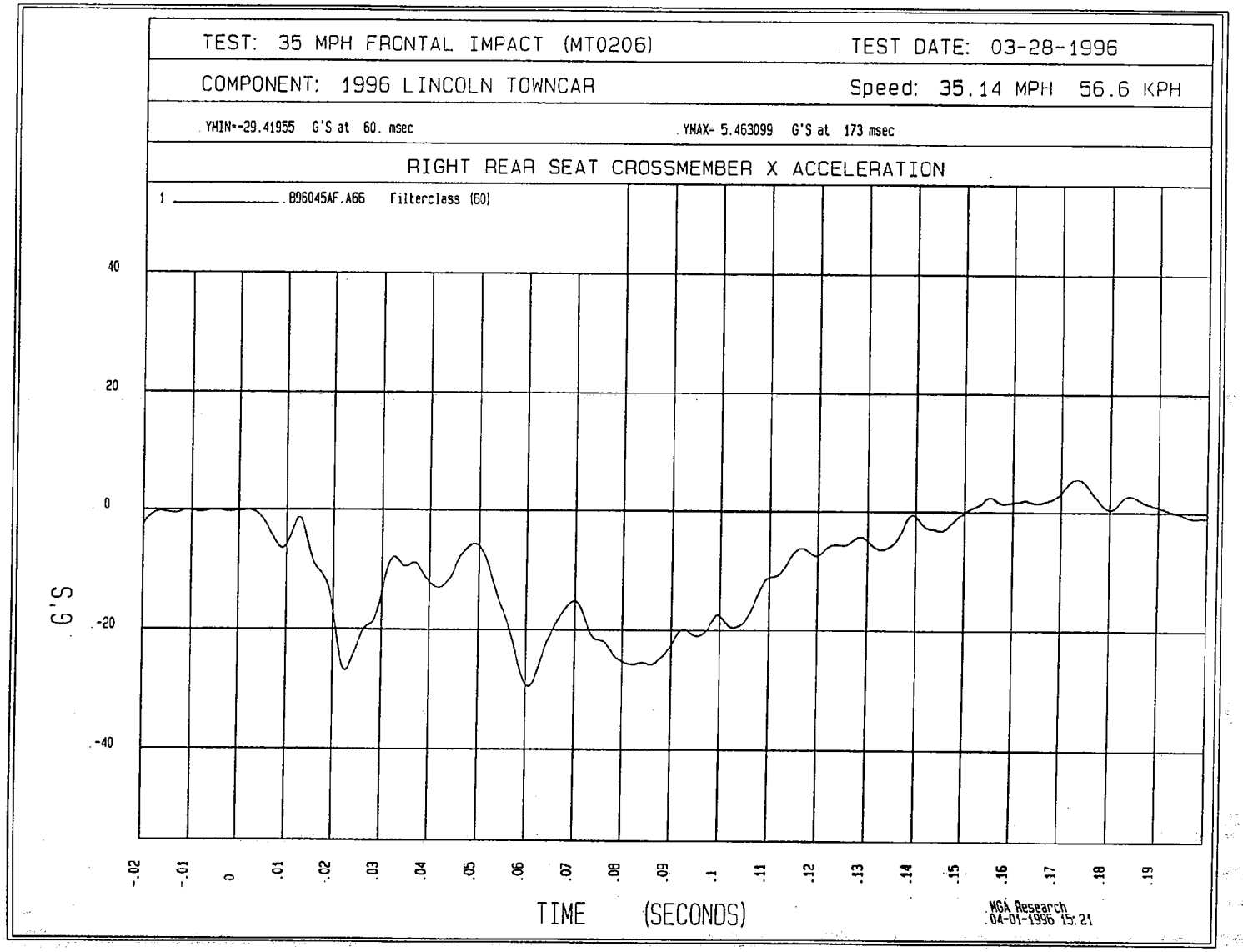

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-10.19139 KPH at 144 msec
YMAX= 56.51579 KPH at -12. msec
LEFT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY
1 B96045AI.V92 Filterclass (180)
KPH
60
50
40
30
20
10
0
-10
-20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:06

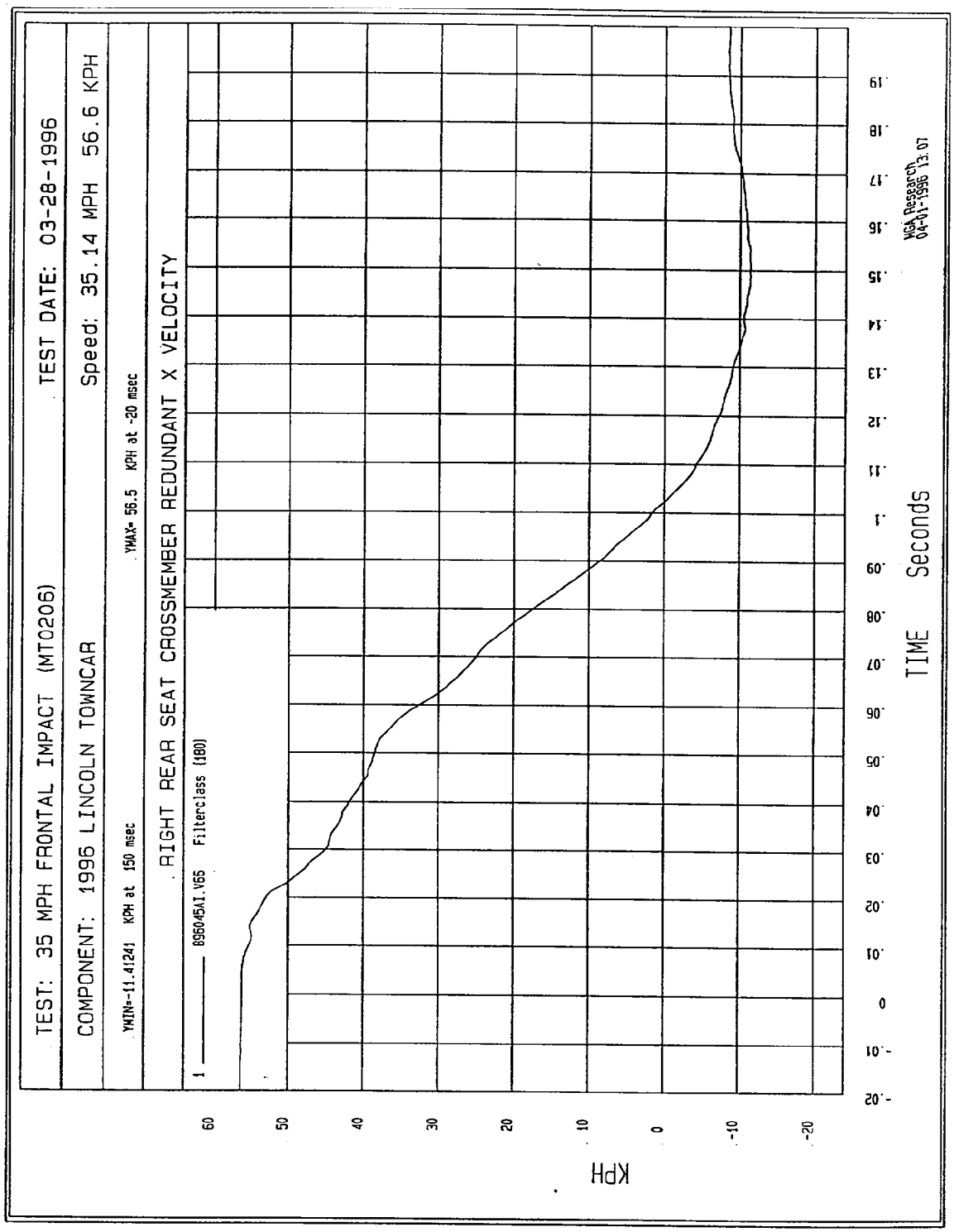

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 0 MM at -20 msec
YMAX= 1328.782 MM at 105 msec
LEFT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT
1 B96045AI.D92 Filterclass (180)
MM
1400
1200
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:10

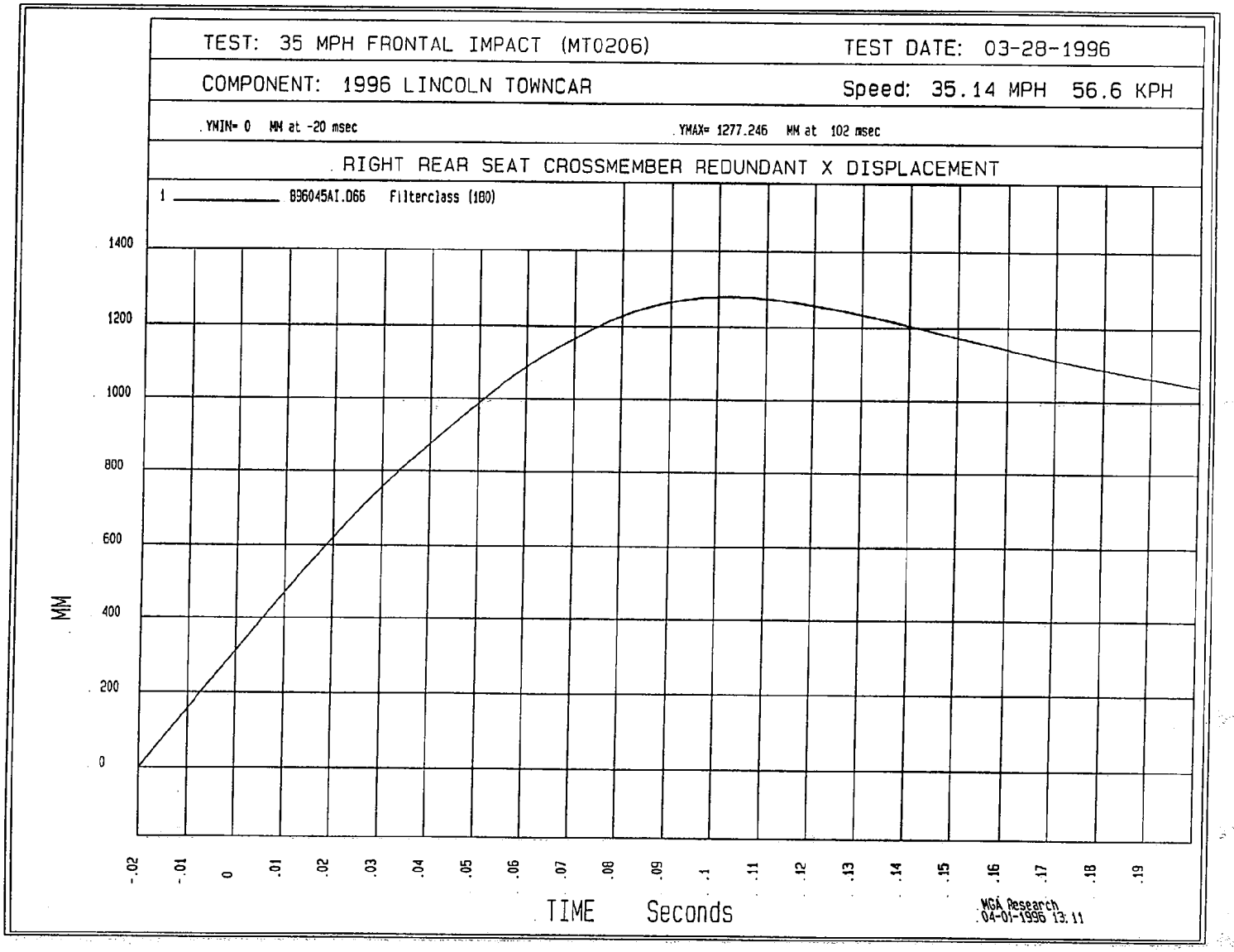

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-29.42445 G'S at 60. msec
YMAX= 5.698648 G'S at 173 msec
RIGHT REAR SEAT CROSSMEMBER X ACCELERATION
1 _____ 896045AF.A12 Filterclass (60)
40
20
0
-20
-40
G'S
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
04-01-1996 15:21

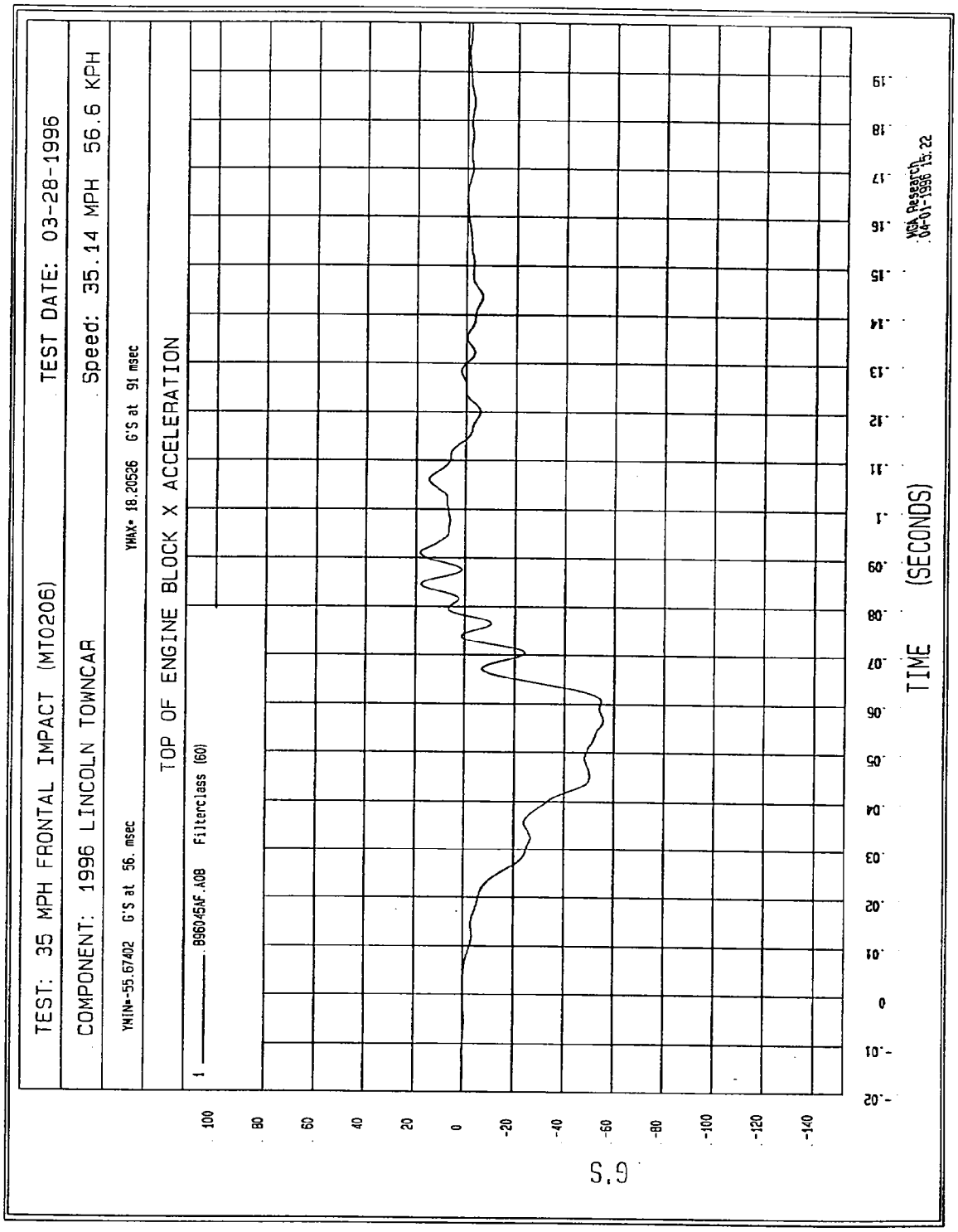

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-10.88835 KPH at 148 msec
YMAX= 56.51241 KPH at -17. msec
RIGHT REAR SEAT CROSSMEMBER X VELOCITY
1 B96045AI.V12 Filterclass (180)
60
50
40
30
20
10
0
-10
-20
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:07

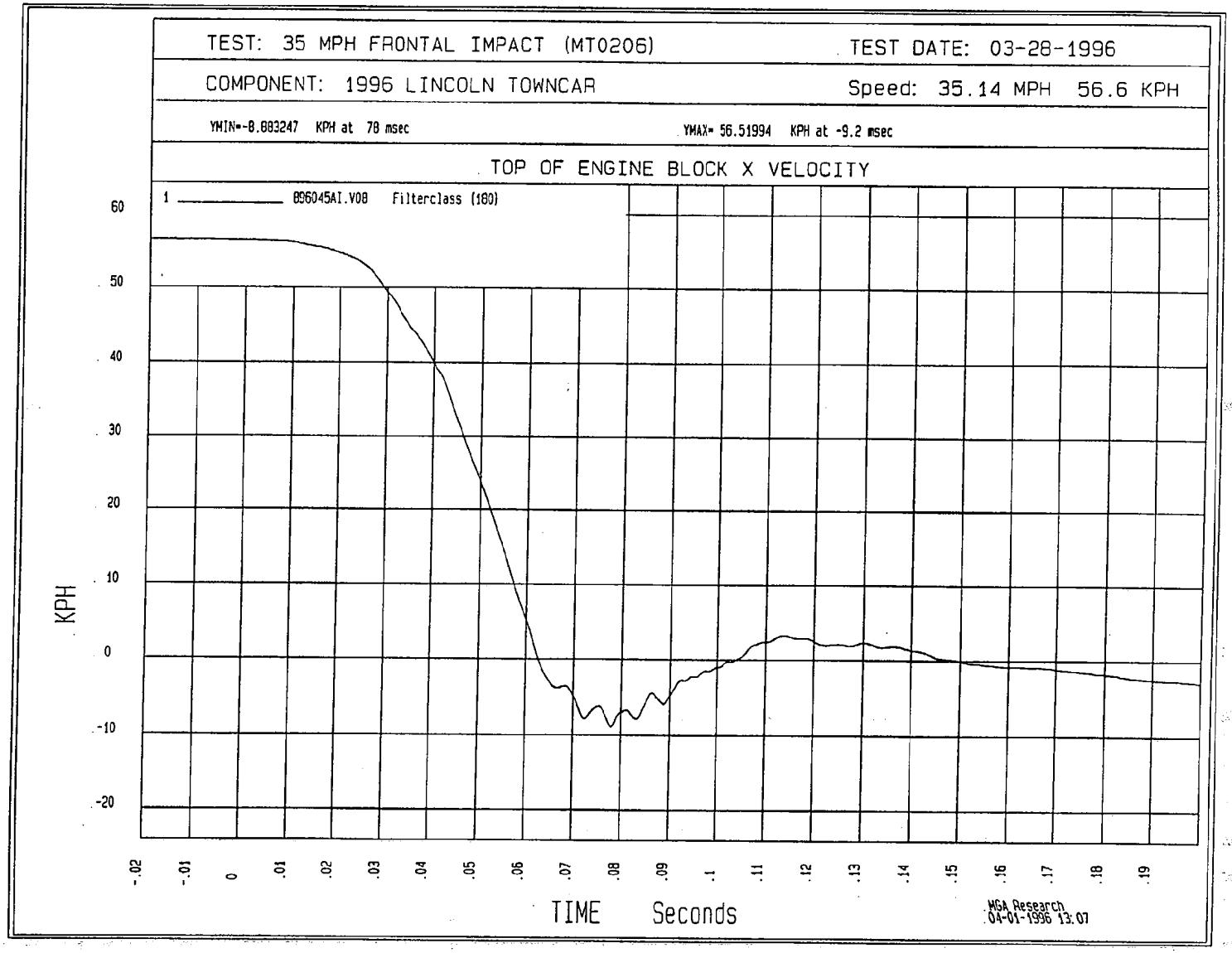

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 0 MM at -20 msec
YMAX= 1298.323 MM at 102 msec
RIGHT REAR SEAT CROSSMEMBER X DISPLACEMENT
1 B96045AI.D12 Filterclass (180)
MM
1400
1200
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:10

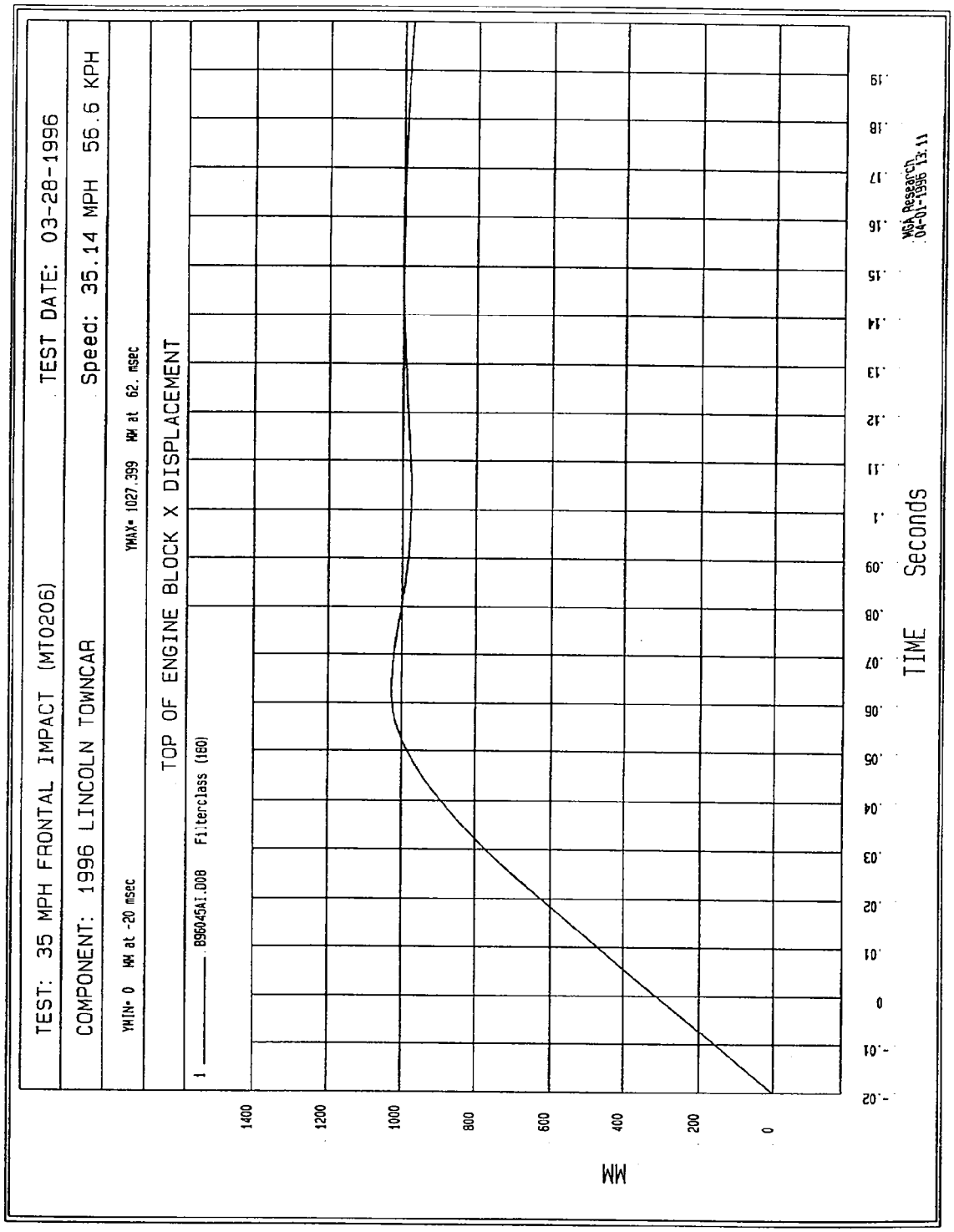

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-29.41955 G'S at 60. msec
YMAX= 5.463099 G'S at 173 msec
RIGHT REAR SEAT CROSSMEMBER X ACCELERATION
1 B96045AF.A66 Filterclass (60)
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1996 15:21

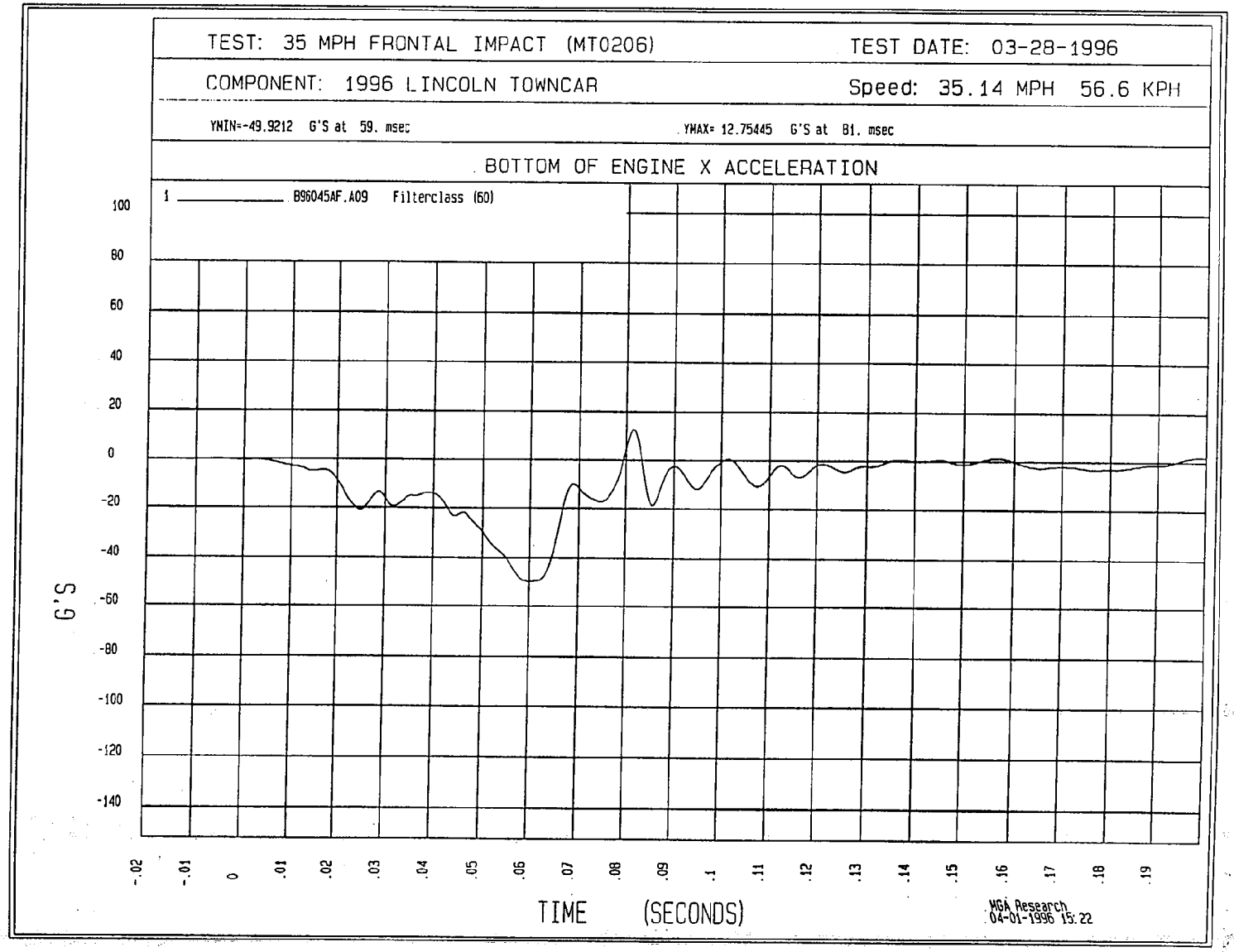

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-11.41241 KPH at 150 msec
YMAX= 56.5 KPH at -20 msec
RIGHT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY
1 ——— 8960A5A1.V65 Filterclass (180)
KPH
TIME Seconds
MGA Research
04-01-1996 13:07

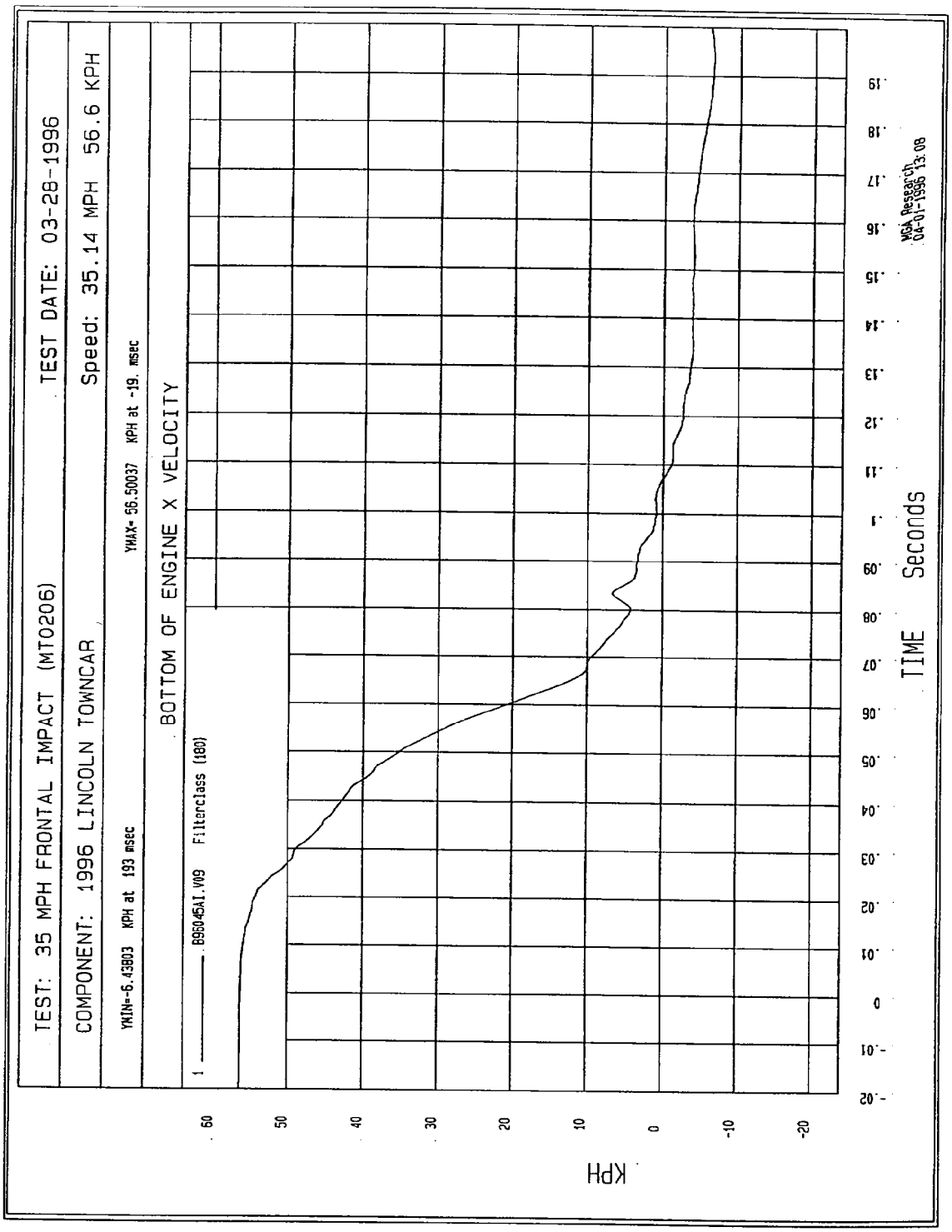

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 0 MM at -20 msec
YMAX= 1277.246 MM at 102 msec
RIGHT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT
1 B96045AI.D66 Filterclass (180)
MM
1400
1200
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:11

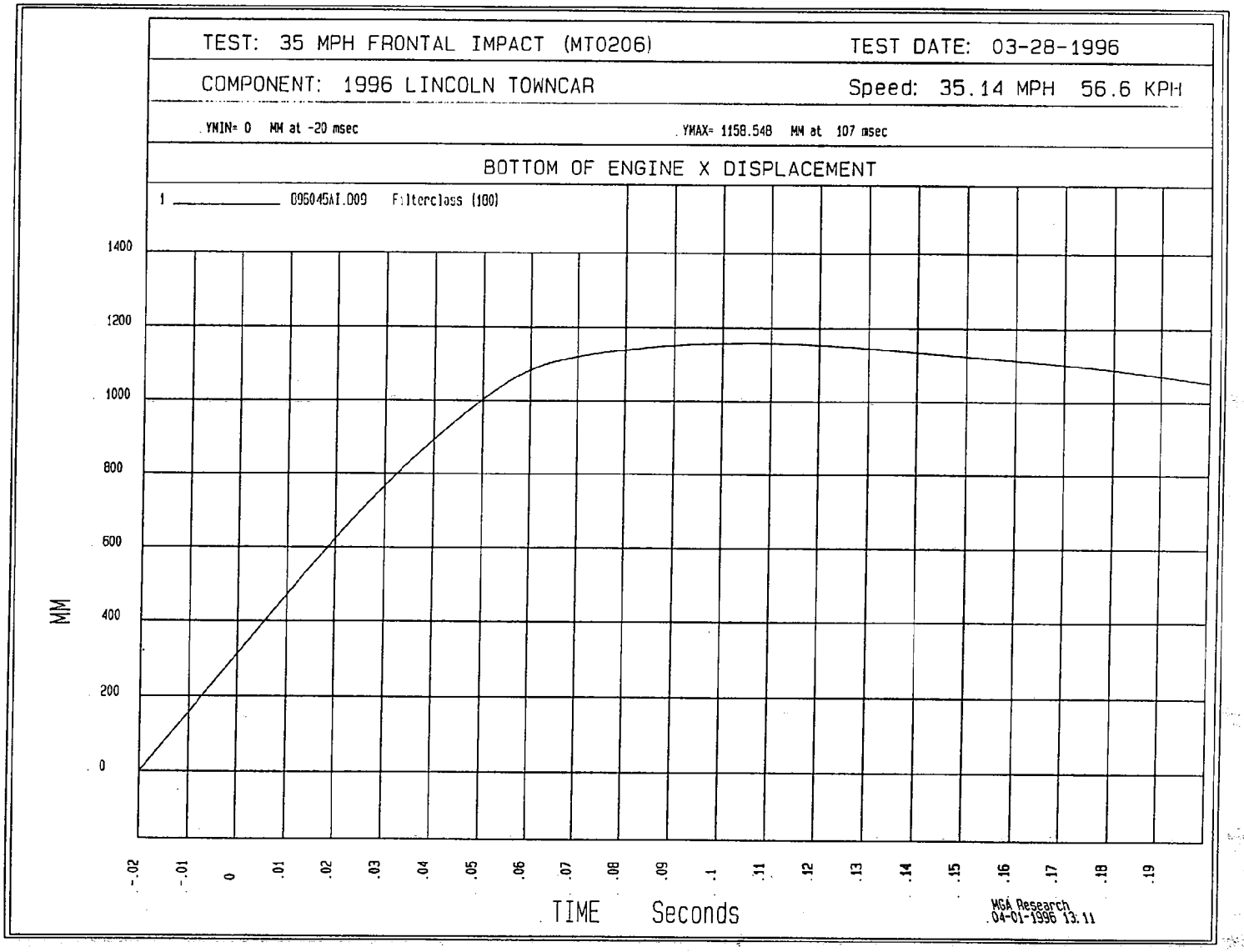

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-55.67402 G'S at 56. msec
YMAX= 18.20526 G'S at 91 msec
TOP OF ENGINE BLOCK X ACCELERATION
1 B960145AF.A0B Filterclass (60)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1996 15:22
S.9

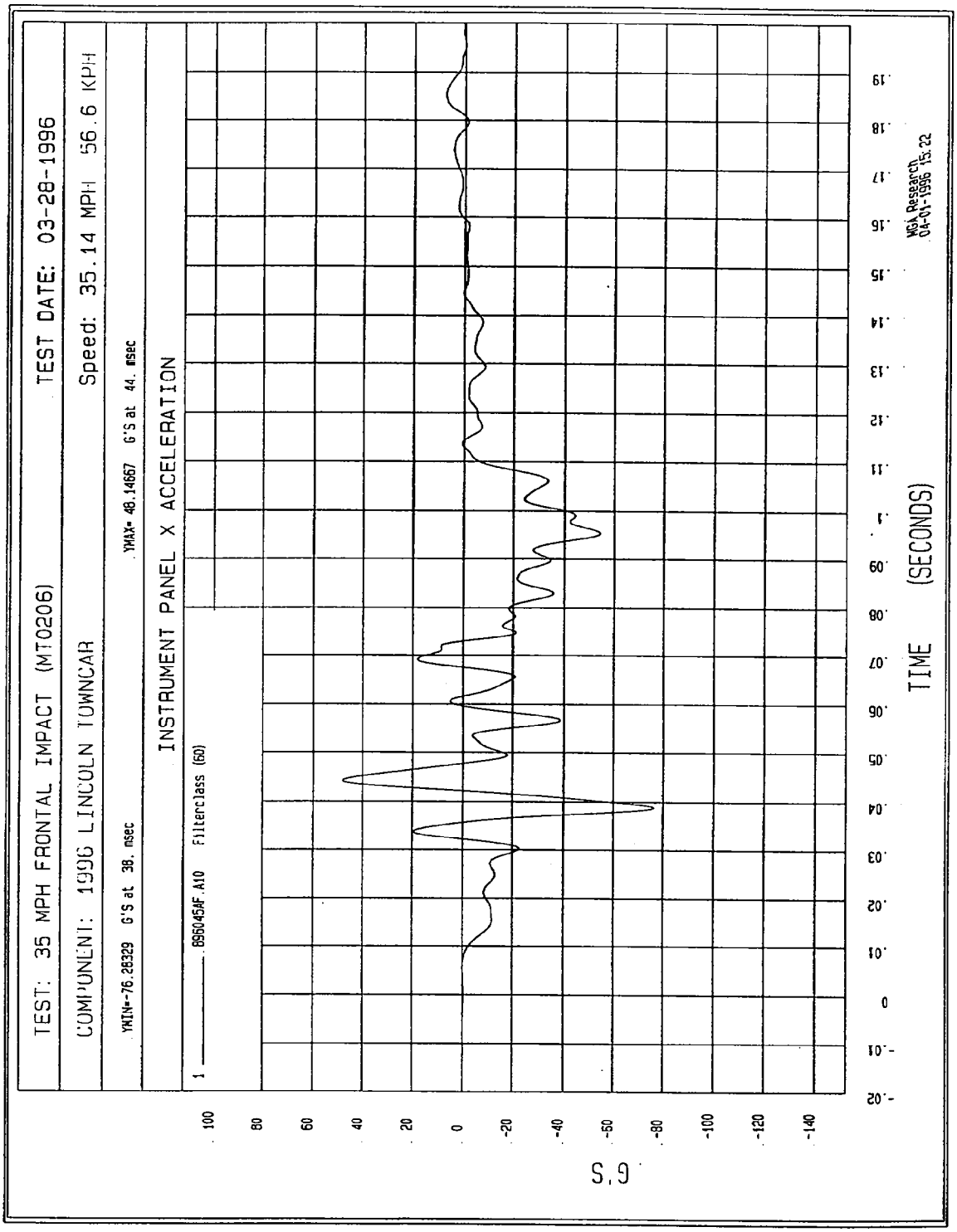

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-8.883247 KPH at 78 msec
YMAX= 56.51994 KPH at -9.2 msec
TOP OF ENGINE BLOCK X VELOCITY
1 896045AI.V08 Filterclass (180)
KPH
60
50
40
30
20
10
0
-10
-20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:07

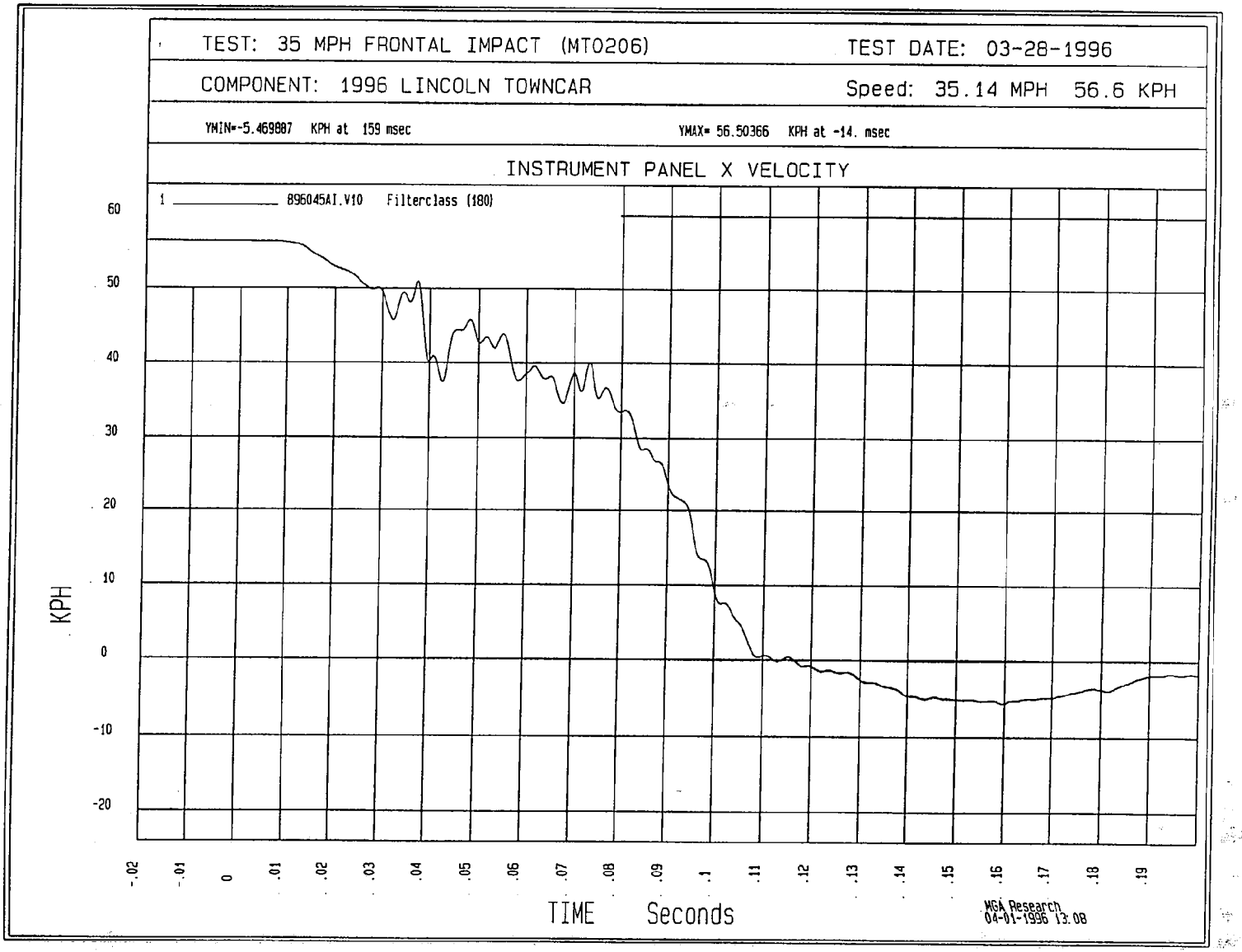

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 0 MM at -20 msec
YMAX= 1027.399 MM at 62. msec
TOP OF ENGINE BLOCK X DISPLACEMENT
1 B96045AT.DO8 Filterclass (180)
MM
1400
1200
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:11

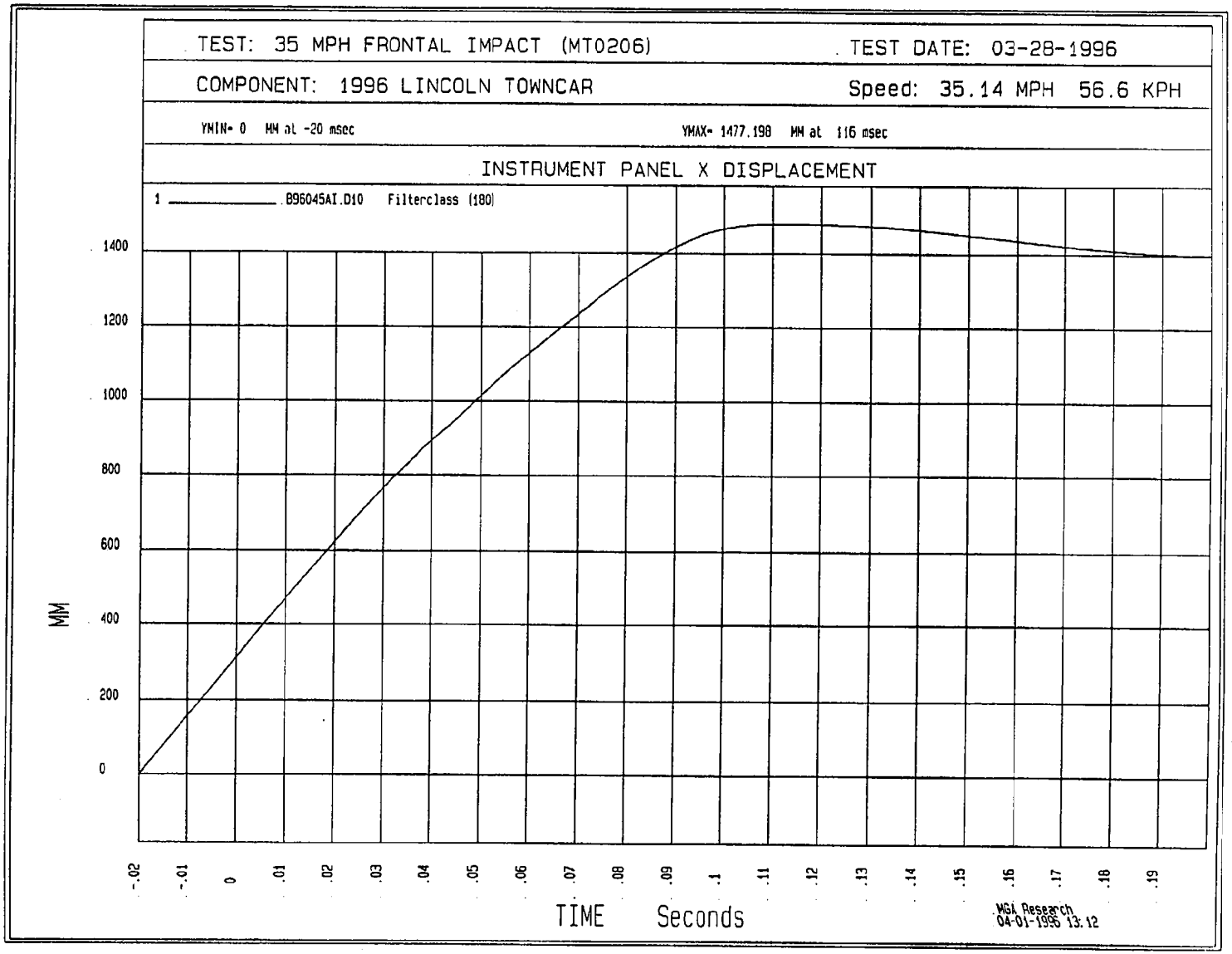

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-49.9212 G'S at 59. msec
YMAX= 12.75445 G'S at 81. msec
BOTTOM OF ENGINE X ACCELERATION
1 B96045AF.A09 Filterclass (60)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1996 15:22

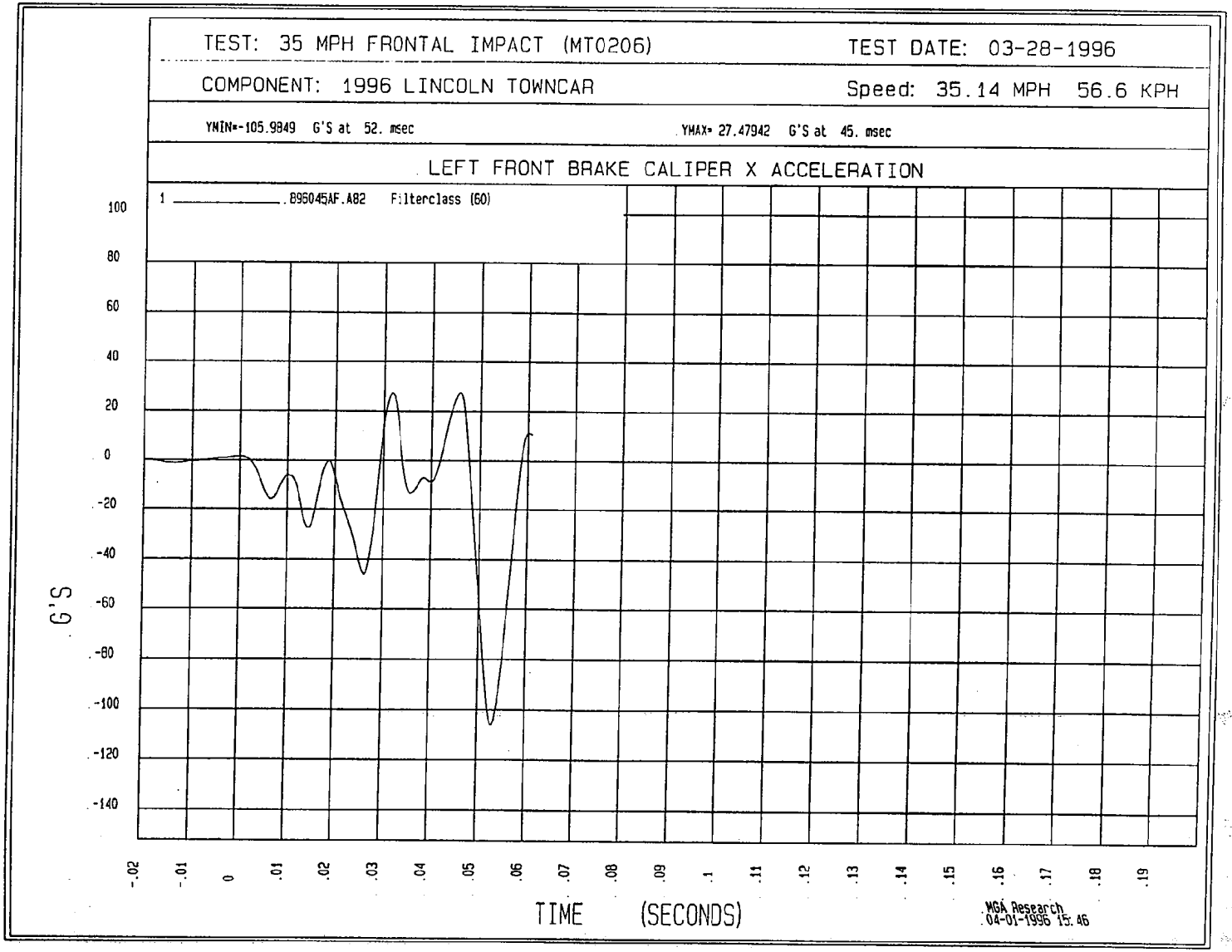

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-6.43803 KPH at 193 msec
YMAX= 56.50037 KPH at -19. msec
BOTTOM OF ENGINE X VELOCITY
1 B96045AI.W09 Filterclass (180)
KPH
TIME Seconds
MGA Research
04-01-1996 13:08

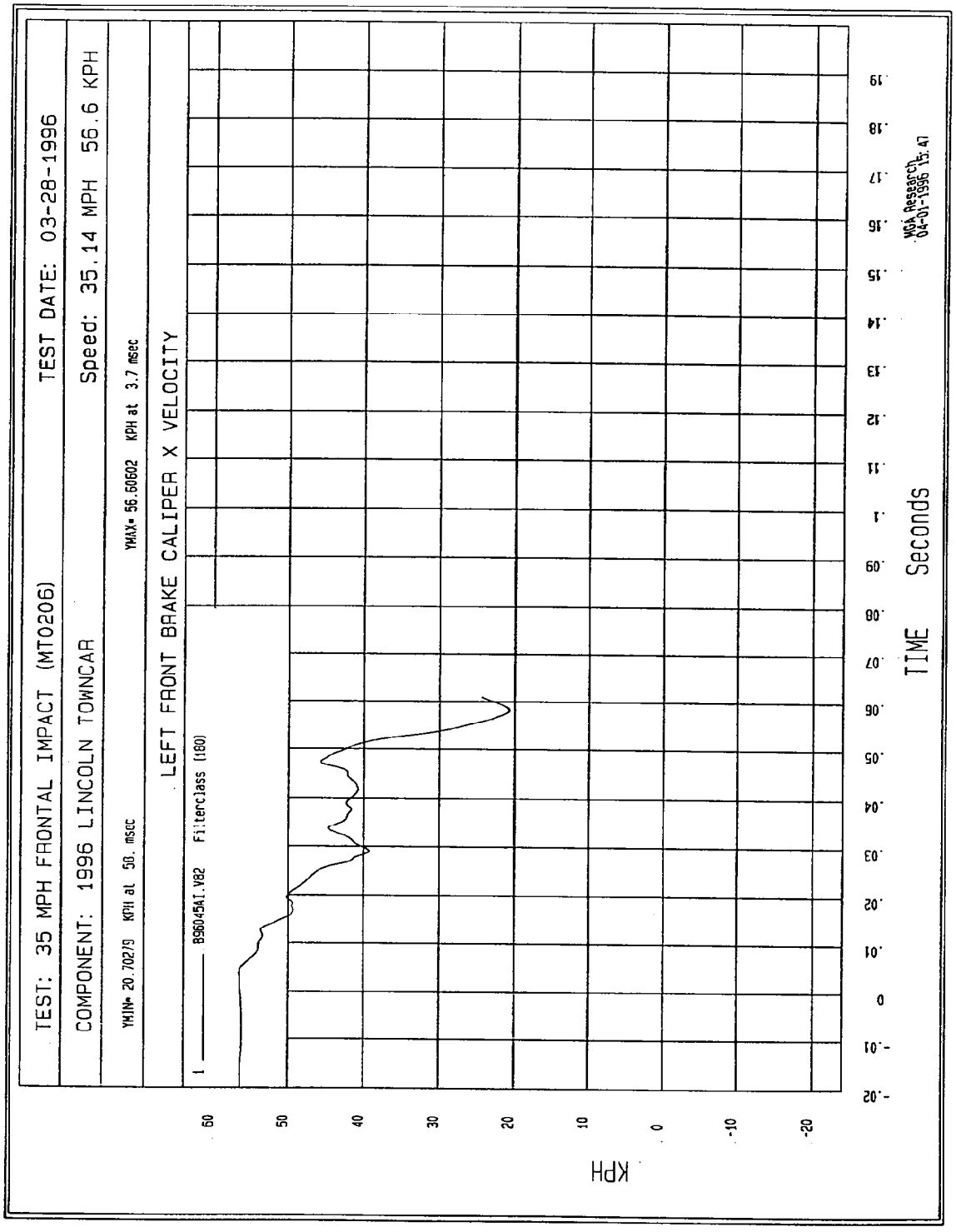

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 0 MM at -20 msec
YMAX= 1158.548 MM at 107 msec
BOTTOM OF ENGINE X DISPLACEMENT
1 _____ 096045AI.D09 Filterclass (180)
MM
1400
1200
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:11

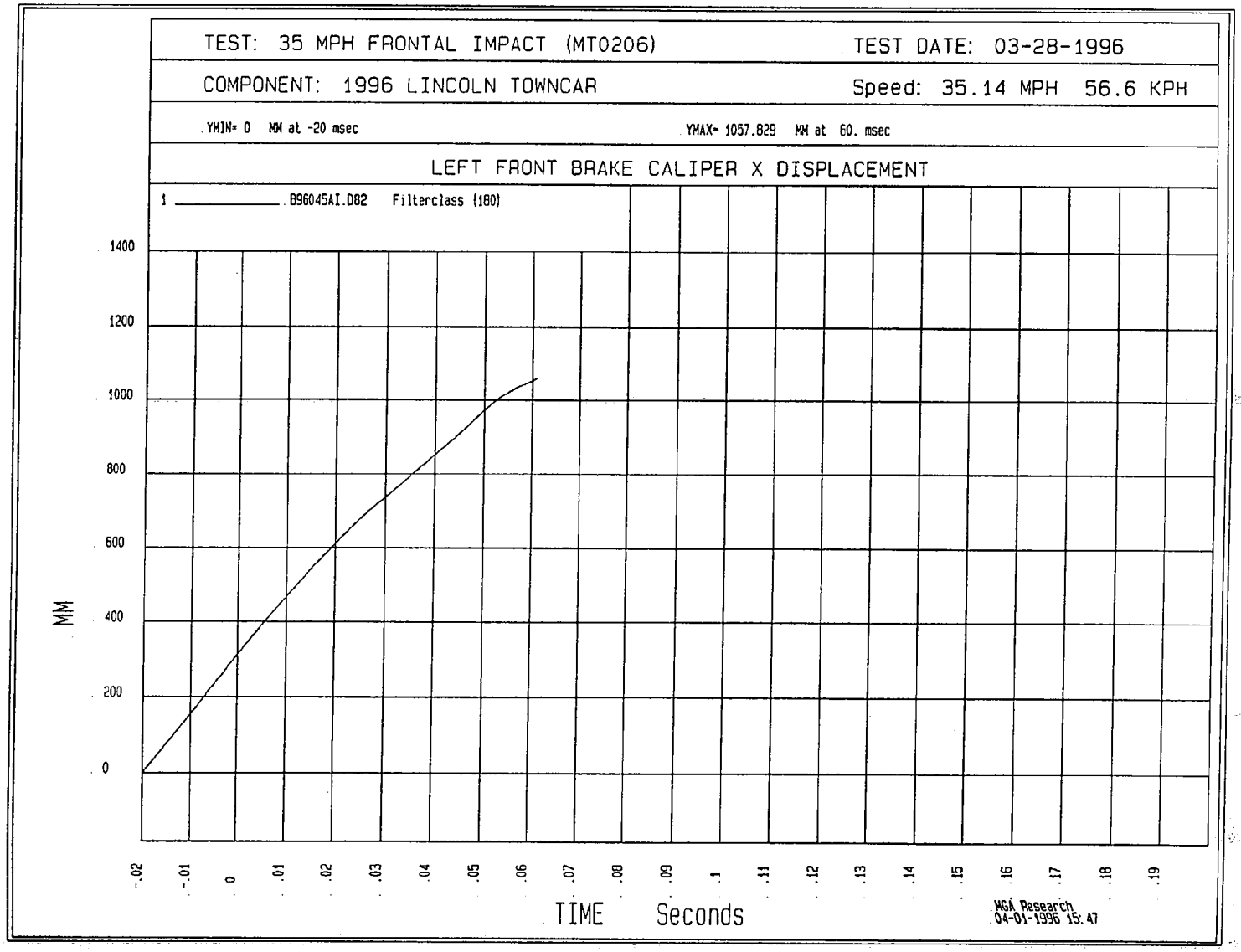

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-76.28329 G'S at 38. msec
YMAX= 48.14667 G'S at 44. msec
INSTRUMENT PANEL X ACCELERATION
1 896045AF.A10 Filterclass (60)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
G'S
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
04-01-1996 15:22

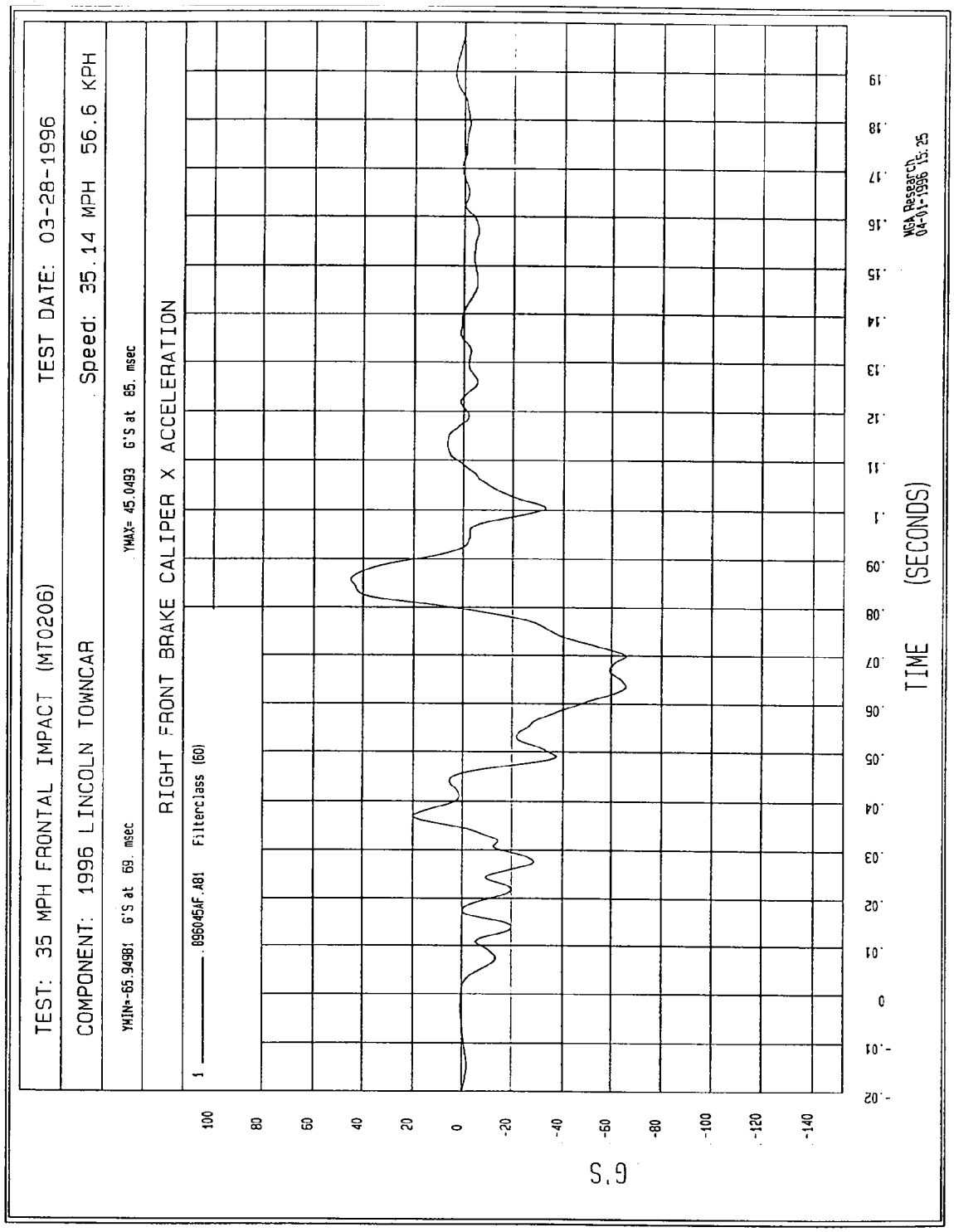

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-5.469887 KPH at 159 msec
YMAX= 56.50366 KPH at -14. msec
INSTRUMENT PANEL X VELOCITY
1 896045AI.V10 Filterclass (180)
KPH
60
50
40
30
20
10
0
-10
-20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:08

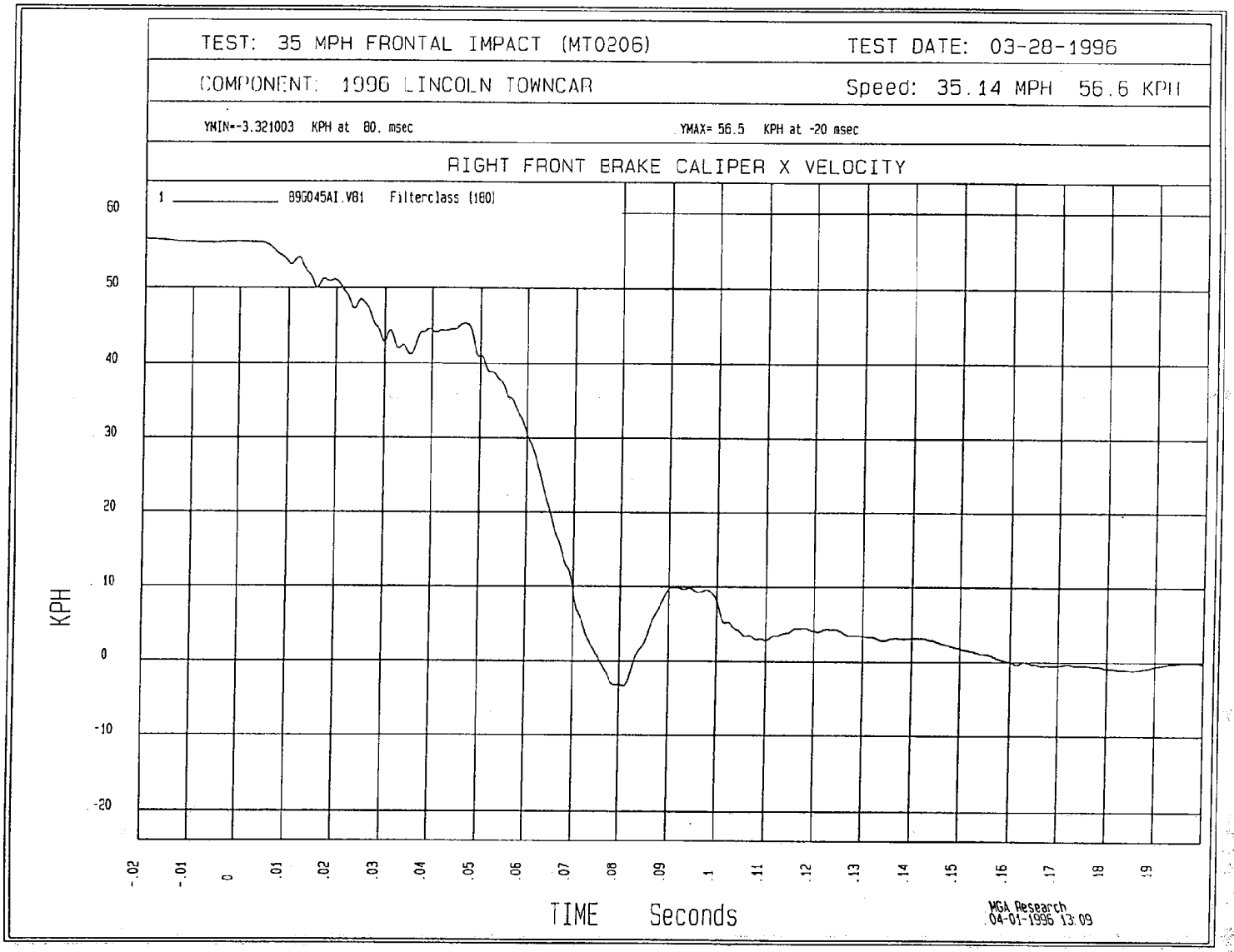

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 0 MM at -20 msec
YMAX= 1477.198 MM at 116 msec
INSTRUMENT PANEL X DISPLACEMENT
1 B96045AI.D10 Filterclass (180)
MM
1400
1200
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:12

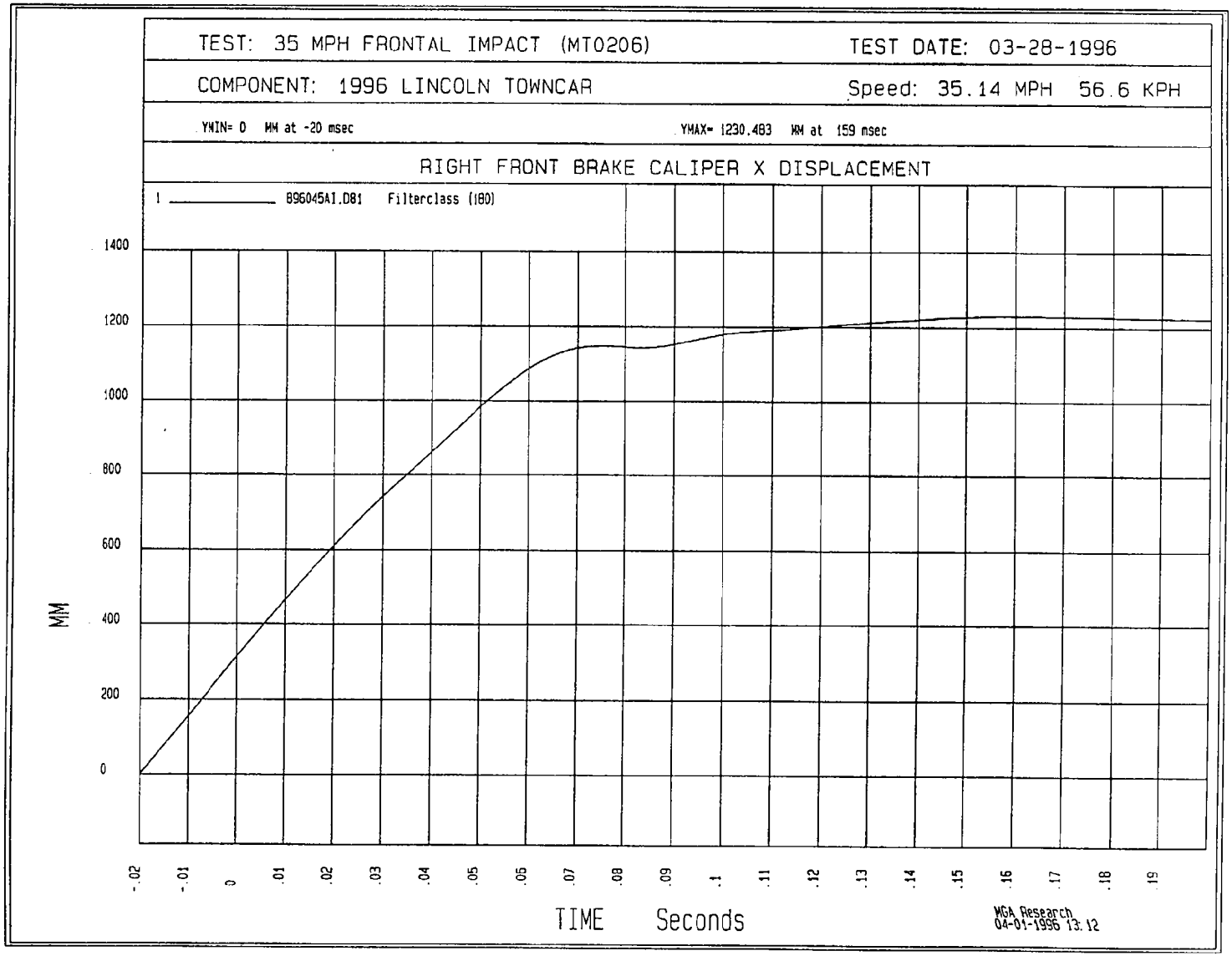

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-105.9849 G'S at 52. msec
YMAX= 27.47942 G'S at 45. msec
LEFT FRONT BRAKE CALIPER X ACCELERATION
1 _____ .B96045AF.A82 Filterclass (60)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1996 15:46

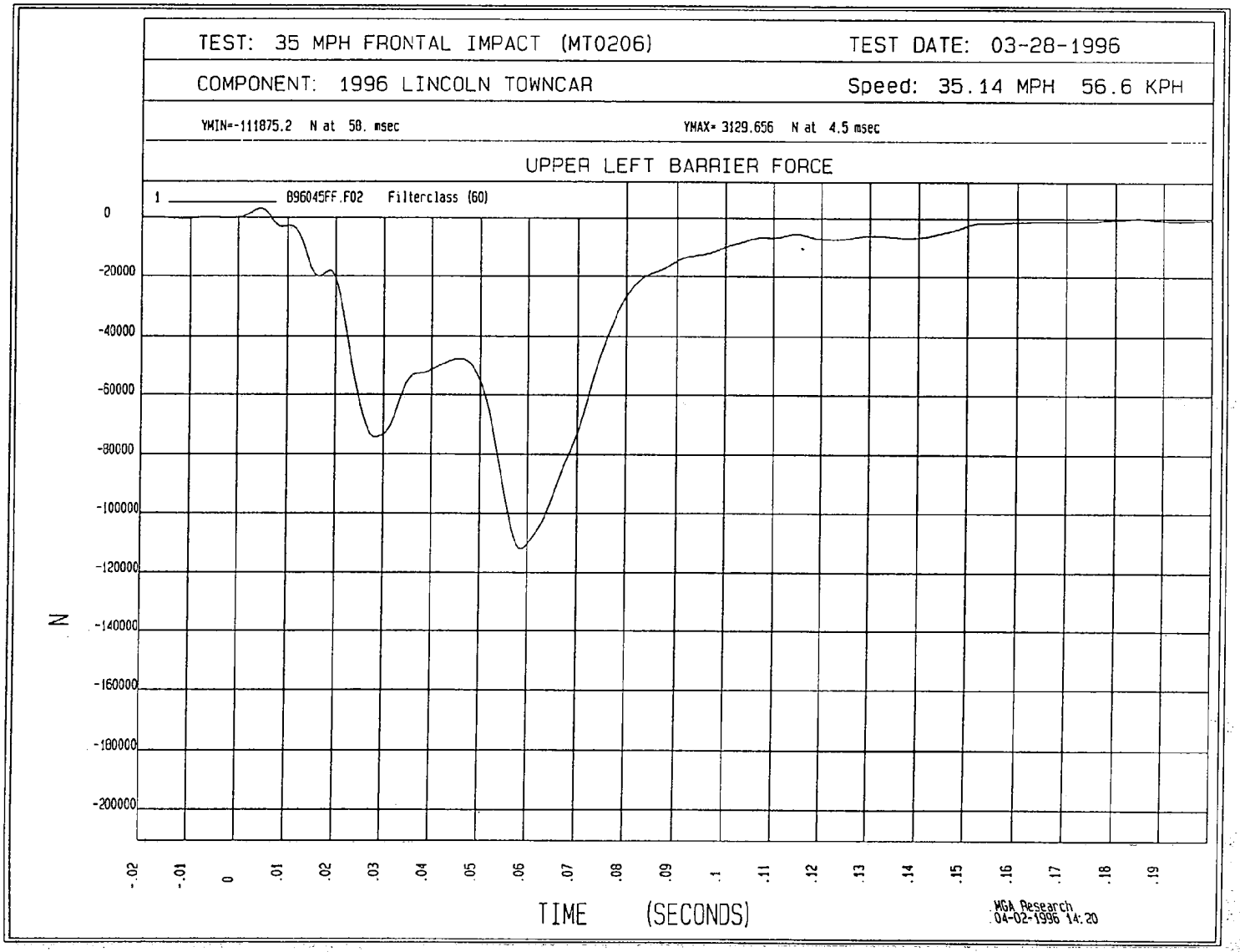

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 20.70279 KPH at 50. msec
YMAX= 56.60602 KPH at 3.7 msec
LEFT FRONT BRAKE CALIPER X VELOCITY
1 B960454I.V82 Filterclass (180)
KPH
TIME Seconds
MGA Research
04-01-1996 15:47

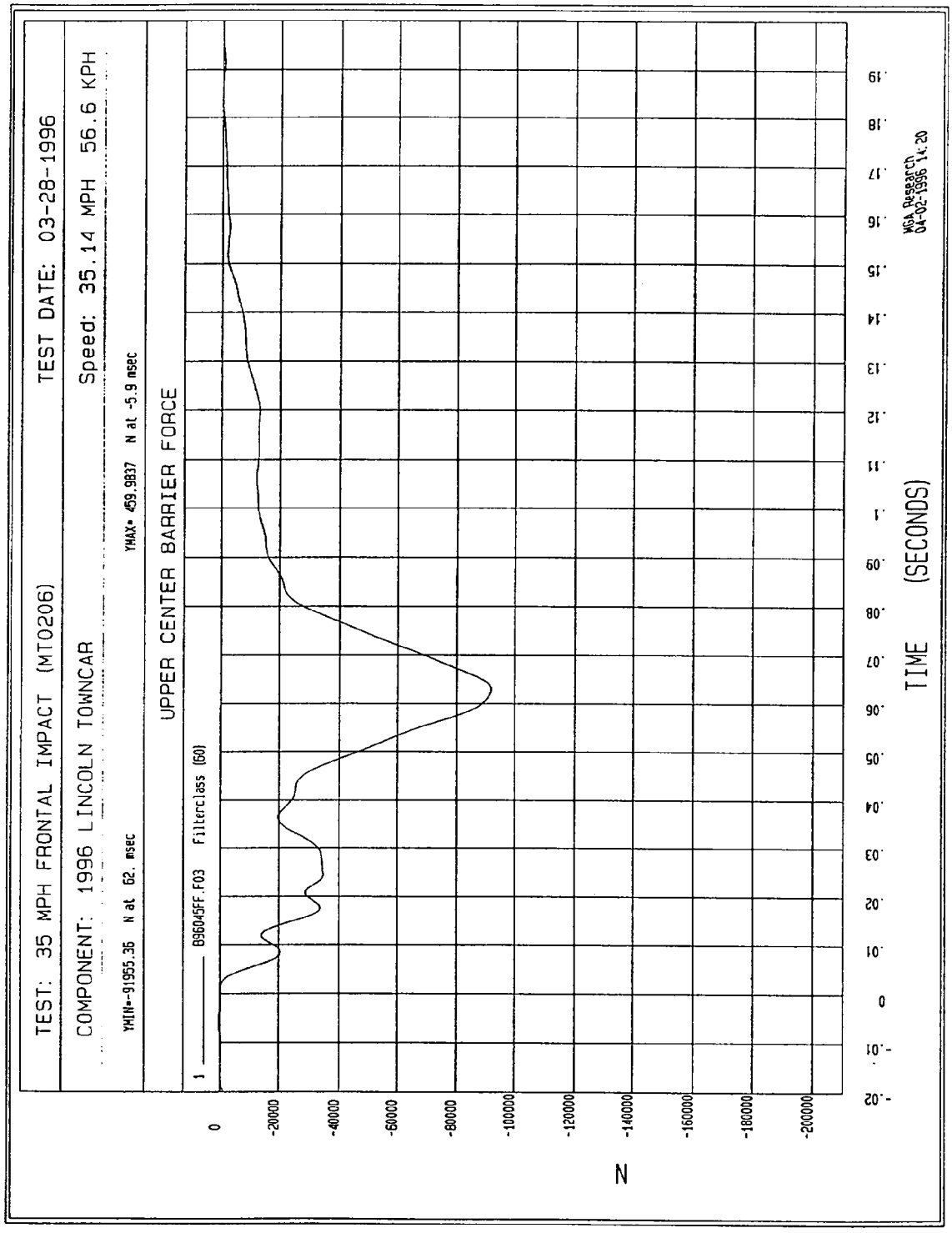

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 0 MM at -20 msec
YMAX= 1057.829 MM at 60. msec
LEFT FRONT BRAKE CALIPER X DISPLACEMENT
1 B96045AI.D82 Filterclass (180)
MM
1400
1200
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 15:47

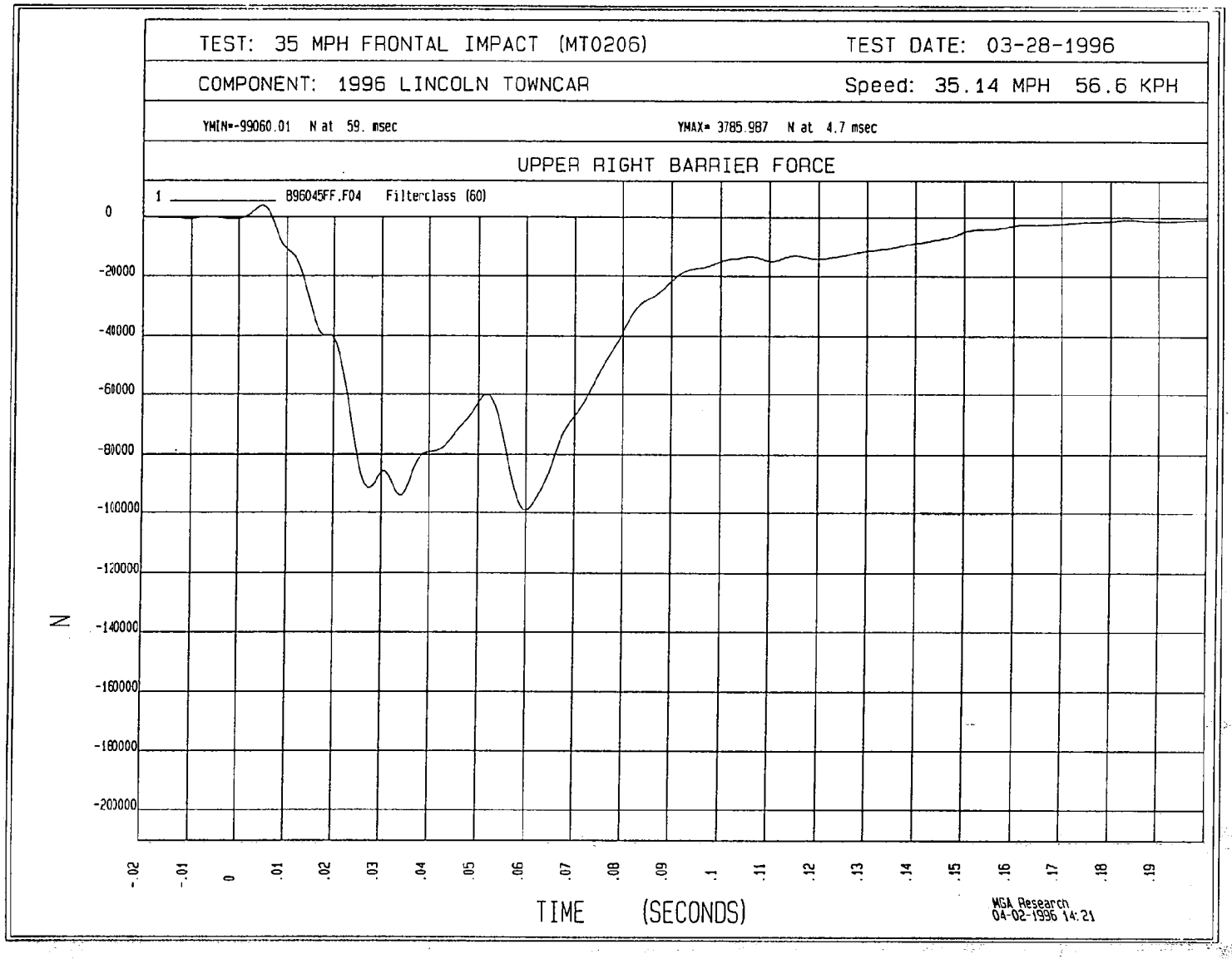

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-65.94981 G'S at 69. msec
YMAX= 45.0493 G'S at 85. msec
RIGHT FRONT BRAKE CALIPER X ACCELERATION
1 _____ .0960454F.A81 Filterclass (60)
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-01-1996 15:25

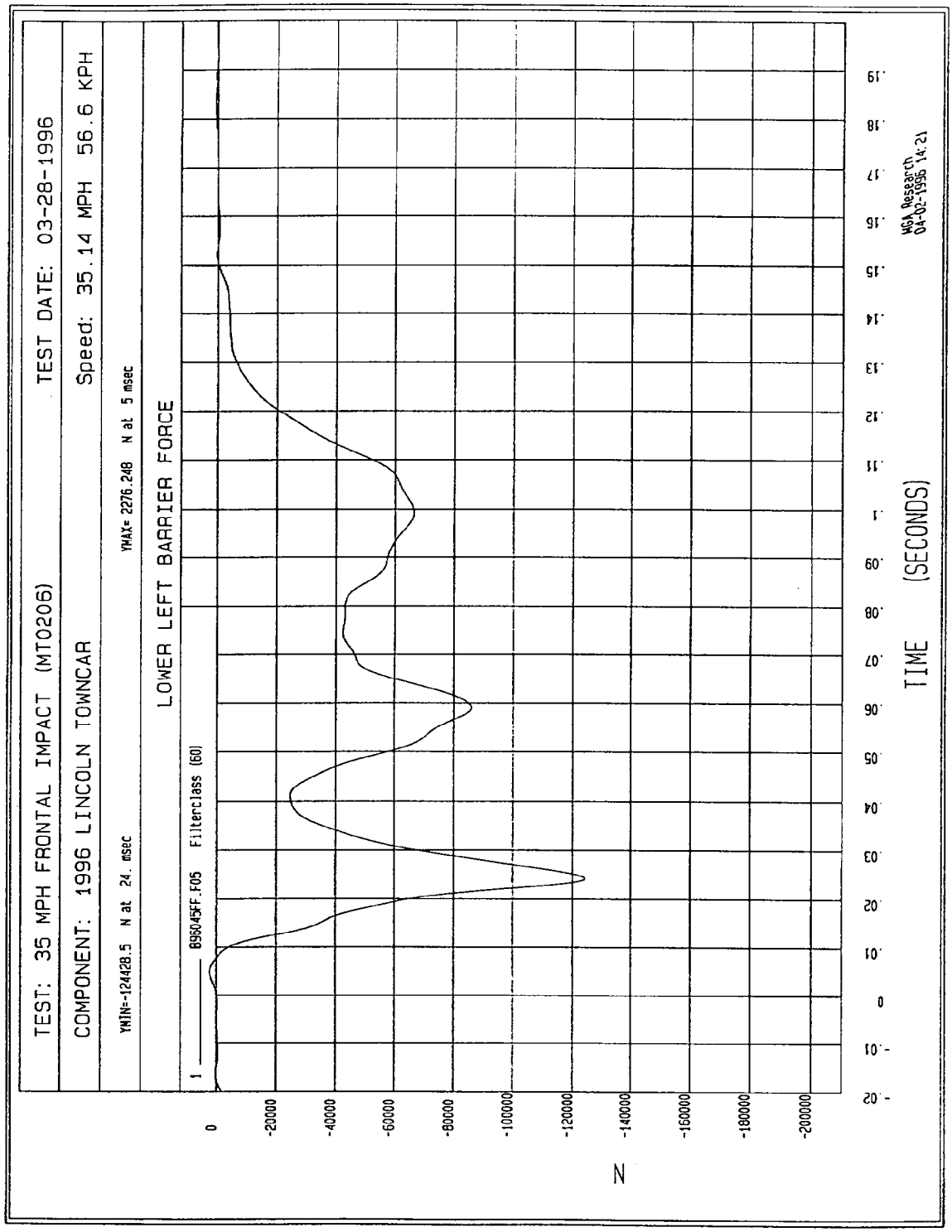

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-3.321003 KPH at 80. msec
YMAX= 56.5 KPH at -20 msec
RIGHT FRONT BRAKE CALIPER X VELOCITY
1 896045AI.V81 Filterclass (180)
KPH
60
50
40
30
20
10
0
-10
-20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:09

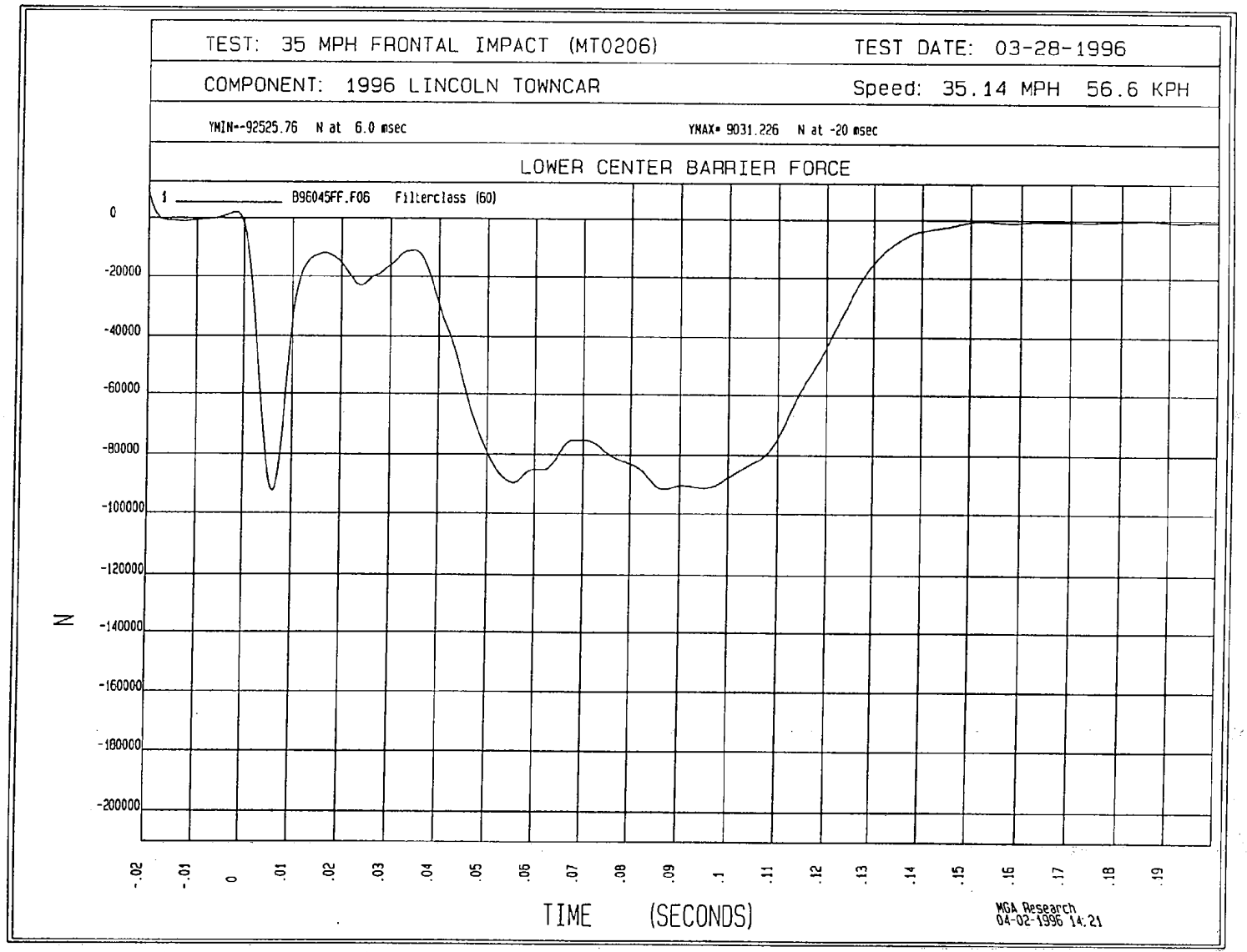

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 0 MM at -20 msec
YMAX= 1230.483 MM at 159 msec
RIGHT FRONT BRAKE CALIPER X DISPLACEMENT
1 B96045A1.D81 Filterclass (180)
MM
1400
1200
1000
800
600
400
200
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
04-01-1996 13:12

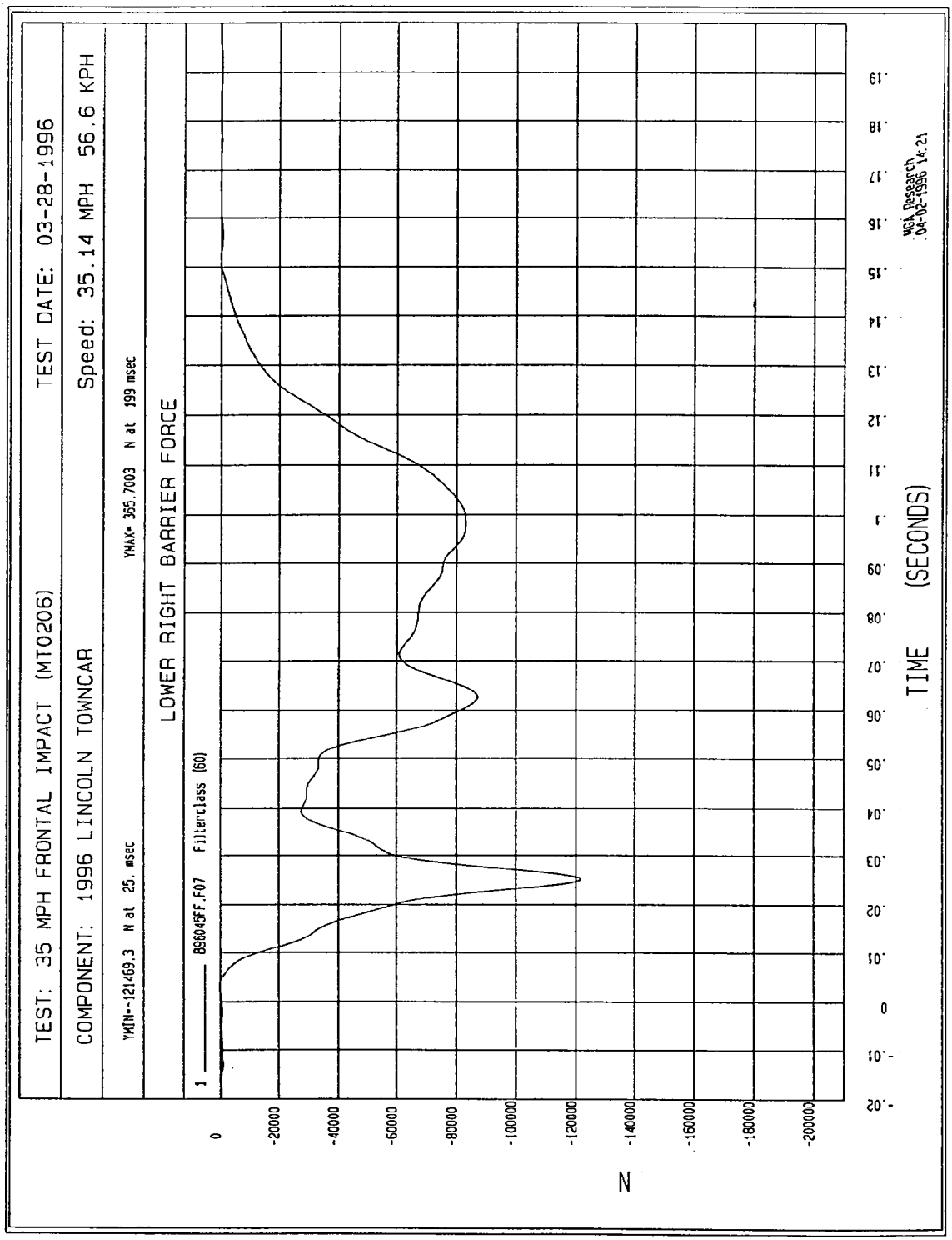

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-111875.2 N at 58. msec
YMAX= 3129.656 N at 4.5 msec
UPPER LEFT BARRIER FORCE
1 B96045FF.F02 Filterclass (60)
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
-160000
-180000
-200000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-02-1996 14:20

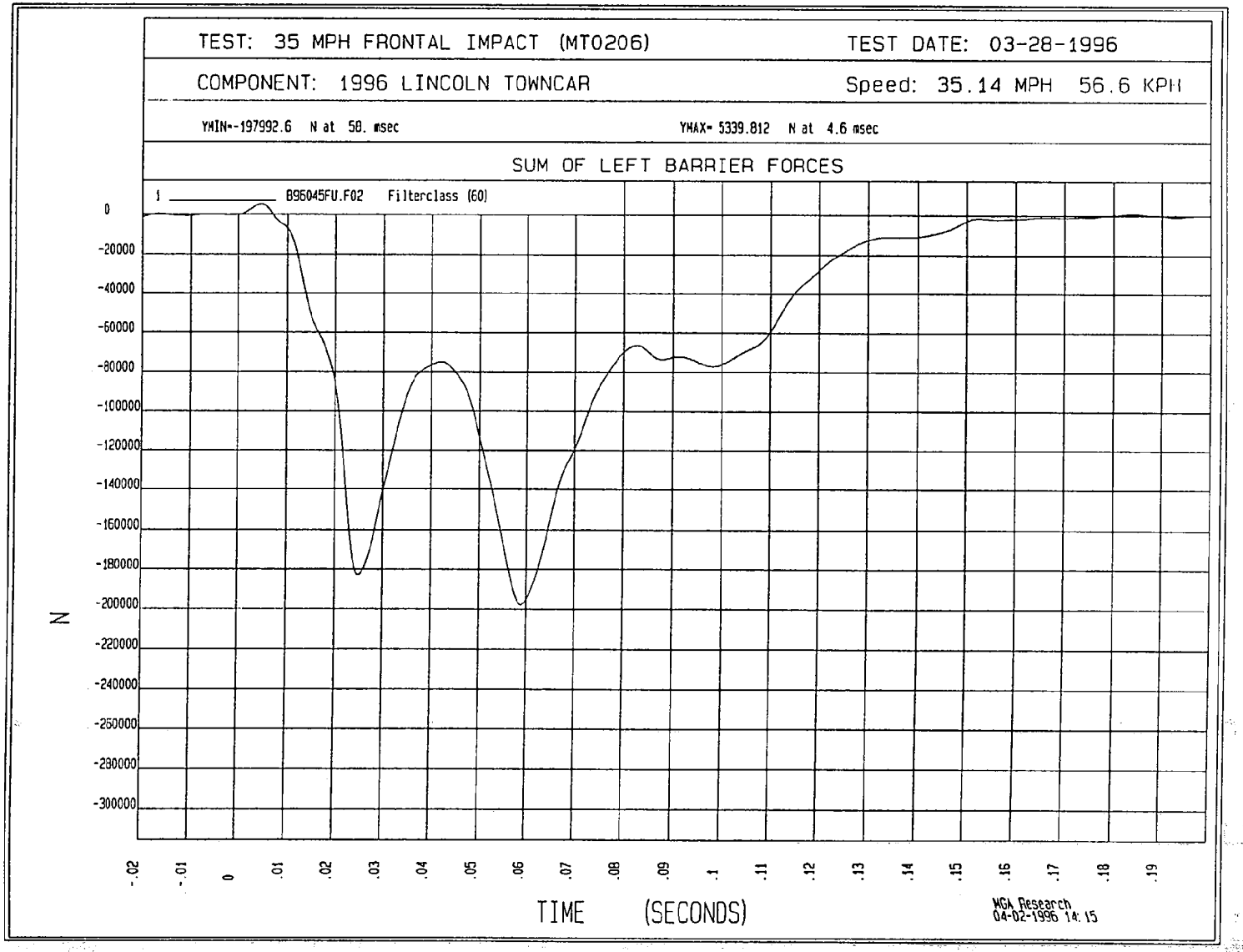

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-91955.36 N at 62. msec
YMAX= 459.9837 N at -5.9 msec
UPPER CENTER BARRIER FORCE
1 B9604SFF.F03 Filterclass (60)
N
TIME (SECONDS)
MGA Research
04-02-1996 14:20

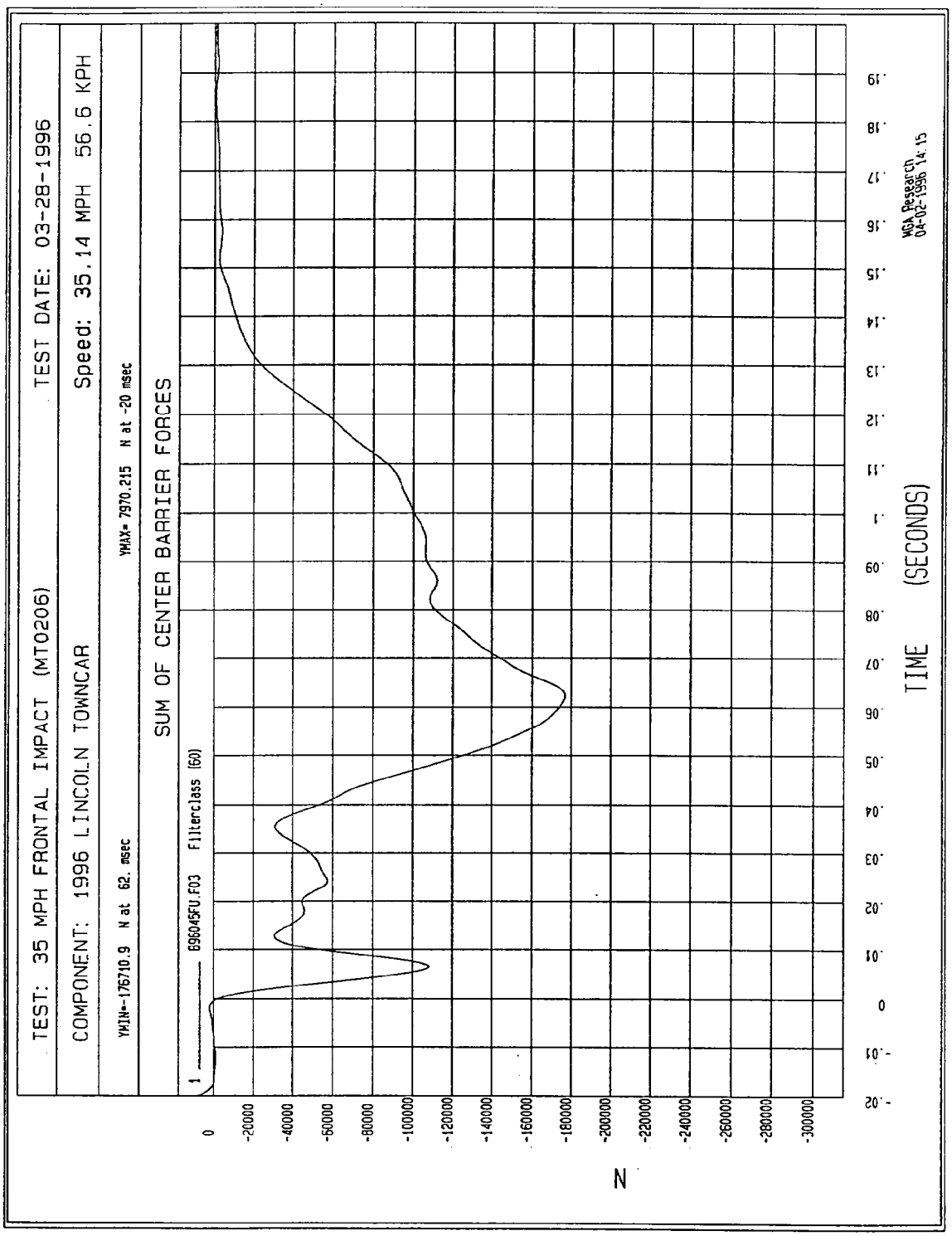

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-99060.01 N at 59. msec
YMAX= 3785.987 N at 4.7 msec
UPPER RIGHT BARRIER FORCE
1 896045FF.F04 Filterclass (60)
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
-160000
-180000
-200000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-02-1996 14:21

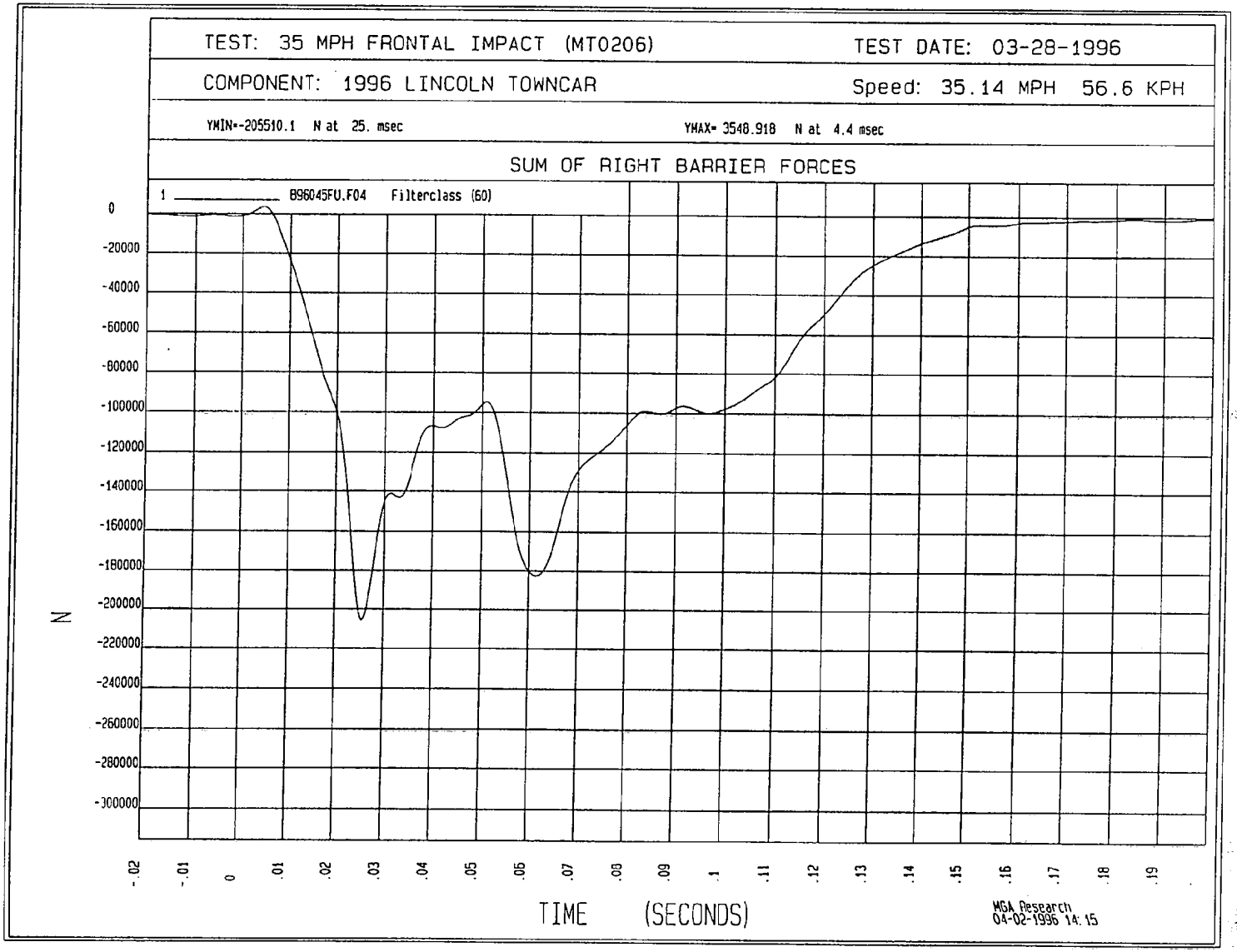

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-124428.5 N at 24. msec
YMAX= 2276.248 N at 5 msec
LOWER LEFT BARRIER FORCE
1 _____ 896045FF.F05 Filterclass (60)
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
-160000
-180000
-200000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-02-1996 14:21

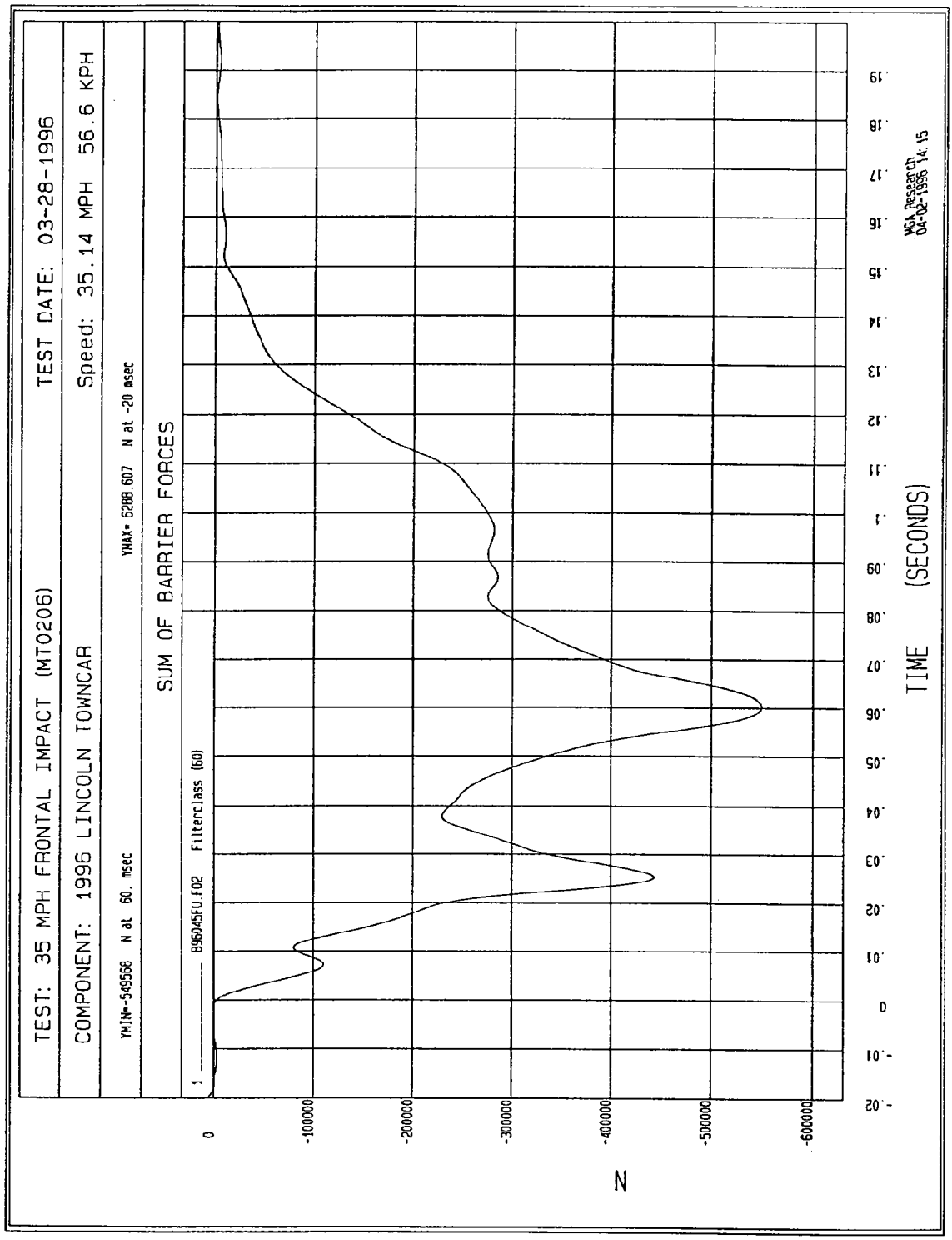

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-92525.76 N at 6.0 msec
YMAX= 9031.226 N at -20 msec
LOWER CENTER BARRIER FORCE
1 B96045FF.F06 Filterclass (60)
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
-160000
-180000
-200000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-02-1996 14:21

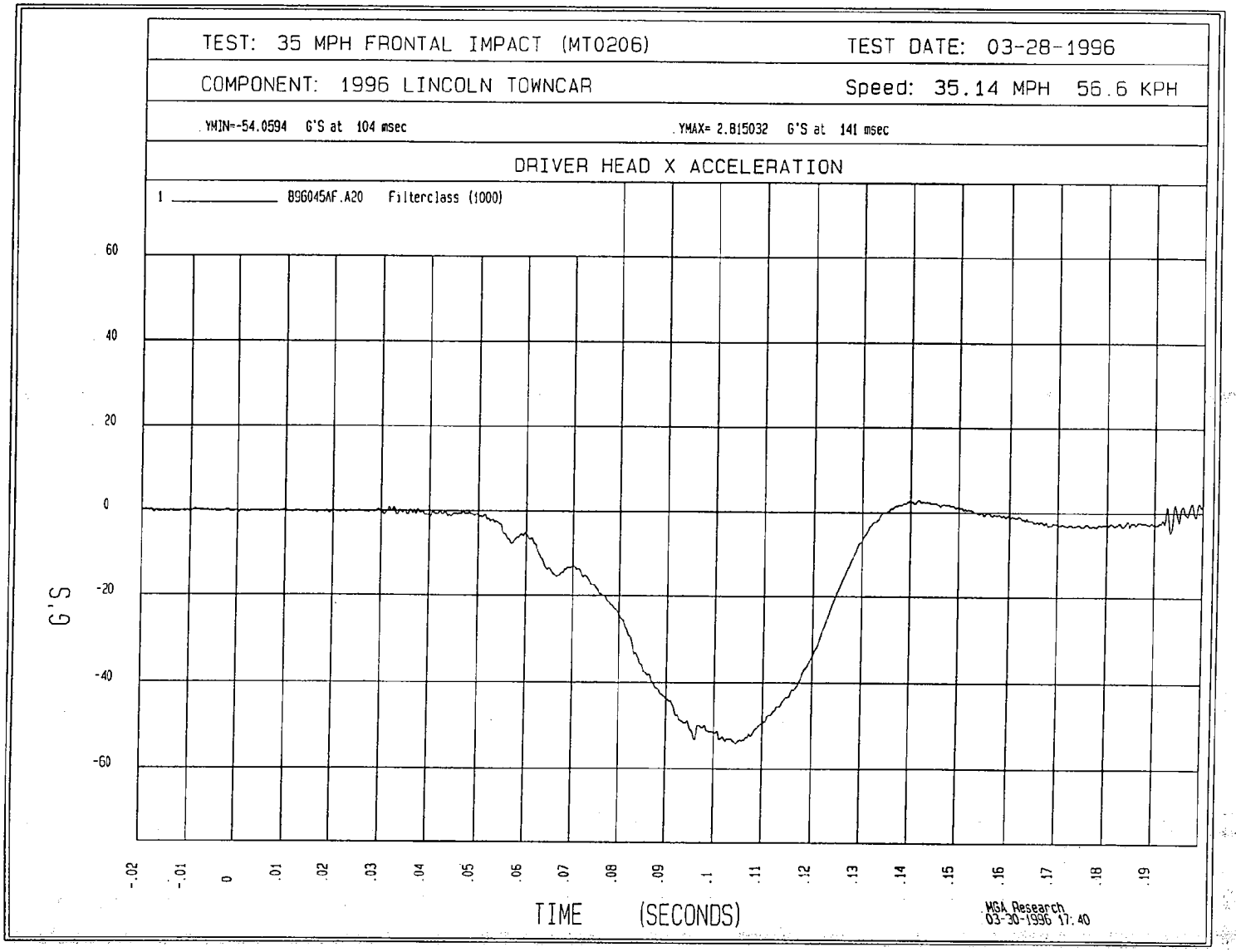

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-121469.3 N at 25. msec
YMAX= 365.7003 N at 199 msec
LOWER RIGHT BARRIER FORCE
1 B9604SFF.F07 Filterclass (60)
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
-160000
-180000
-200000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-02-1996 14:21

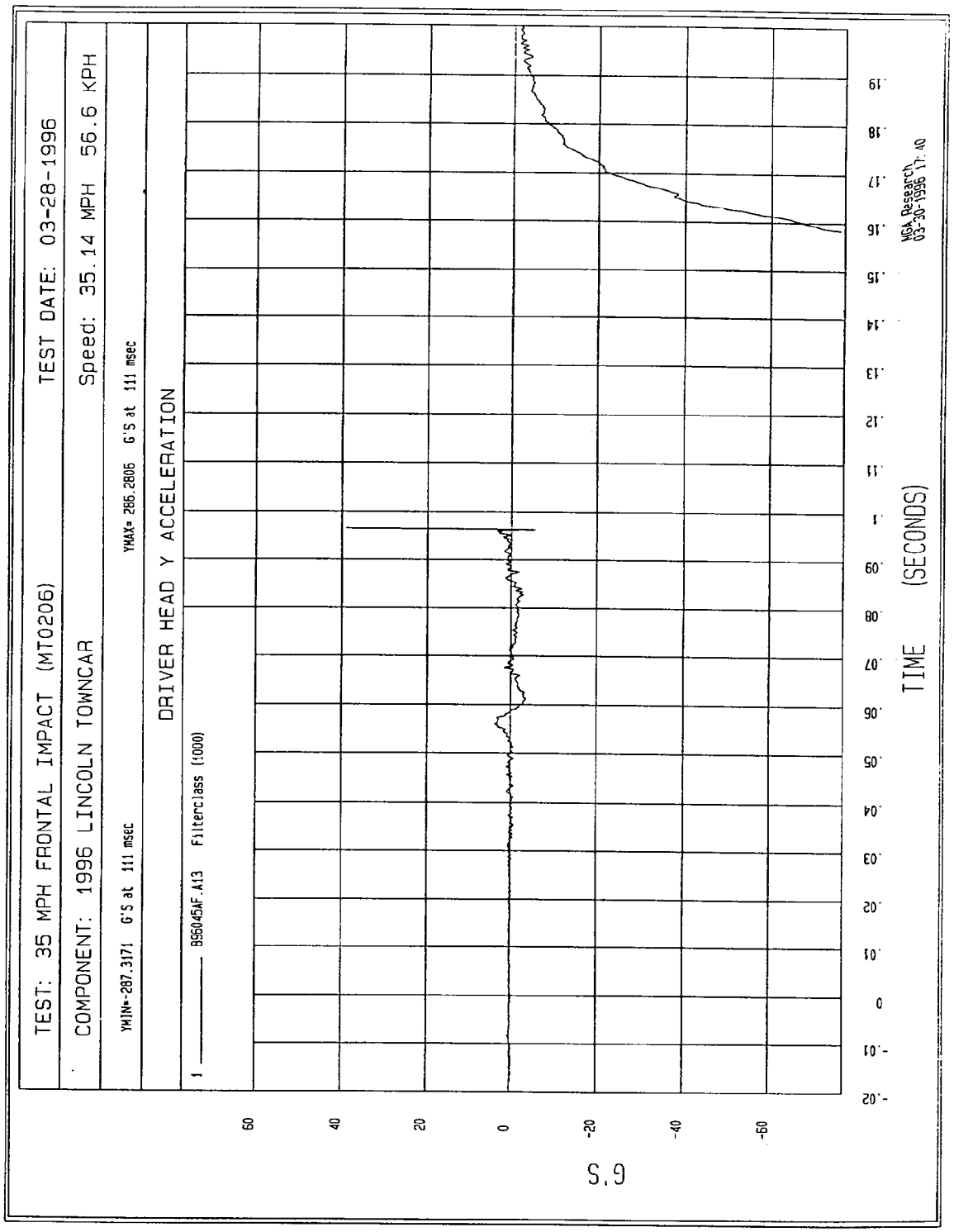

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-197992.6 N at 58. msec
YMAX= 5339.812 N at 4.6 msec
SUM OF LEFT BARRIER FORCES
1 B96045FU.F02 Filterclass (60)
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
-160000
-180000
-200000
-220000
-240000
-250000
-280000
-300000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-02-1996 14:15

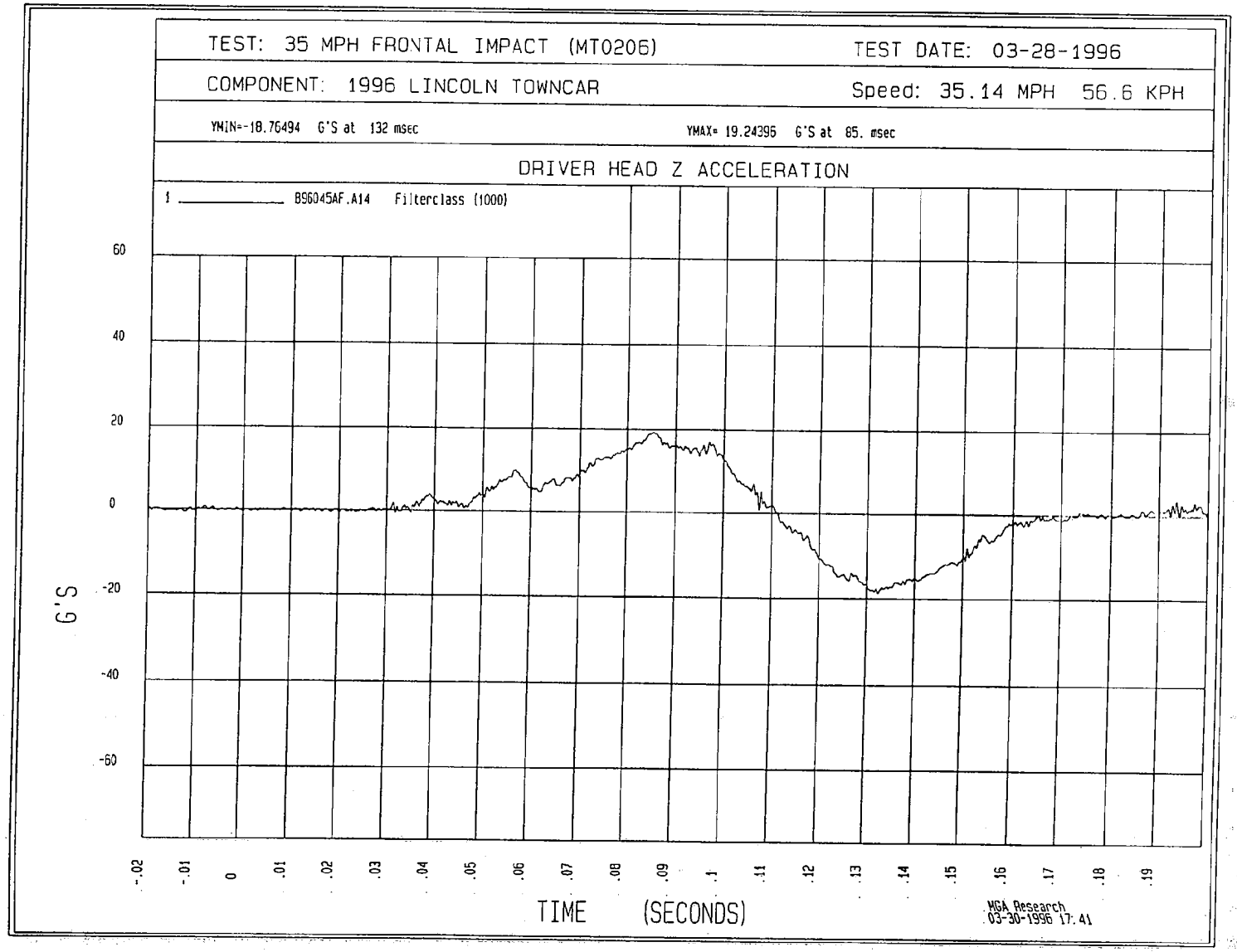

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-176710.9 N at 62. msec
YMAX= 7970.215 N at -20 msec
SUM OF CENTER BARRIER FORCES
1 ——— 696045FU.F03 Filterclass (60)
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
-160000
-180000
-200000
-220000
-240000
-260000
-280000
-300000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-02-1996 14:15

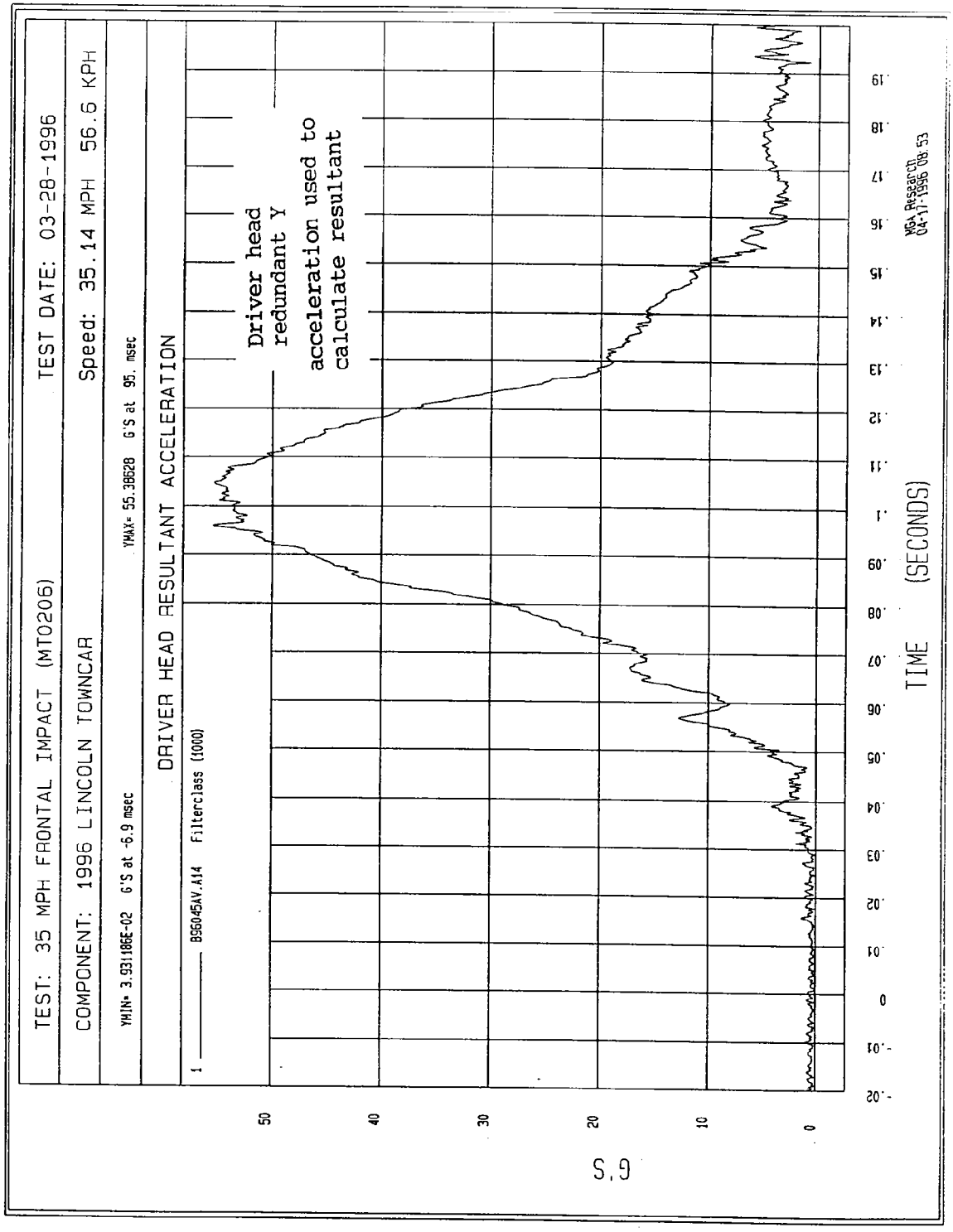

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-205510.1 N at 25. msec
YMAX= 3548.918 N at 4.4 msec
SUM OF RIGHT BARRIER FORCES
1 B96045FU.F04 Filterclass (60)
0
-20000
-40000
-60000
-80000
-100000
-120000
-140000
-160000
-180000
-200000
-220000
-240000
-260000
-280000
-300000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-02-1996 14:15

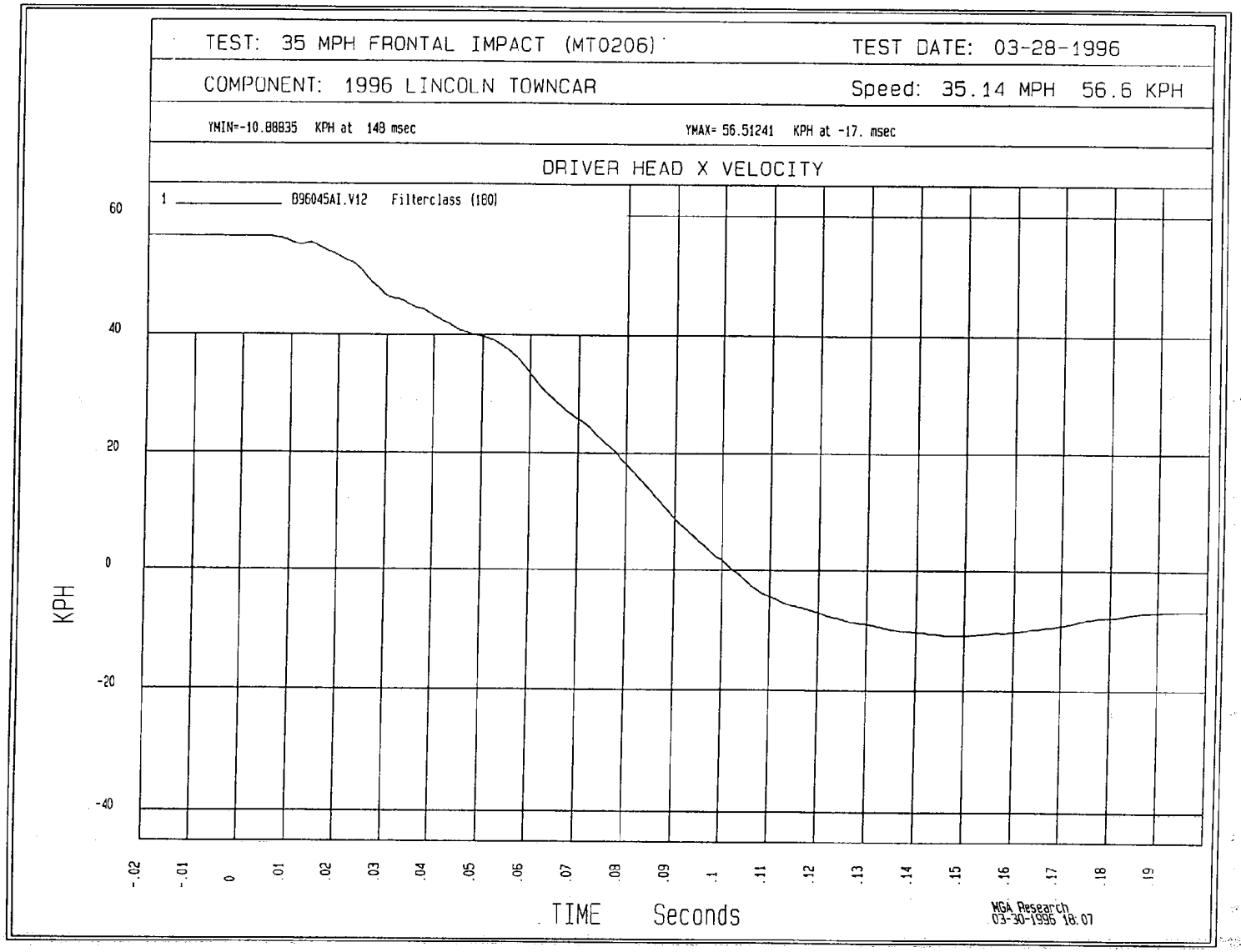

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-549568 N at 60. msec
YMAX= 6288.607 N at -20 msec
SUM OF BARRIER FORCES
1 ——— 960405FU.F02 Filterclass (60)
0
-100000
-200000
-300000
-400000
-500000
-600000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-02-1996 14:15

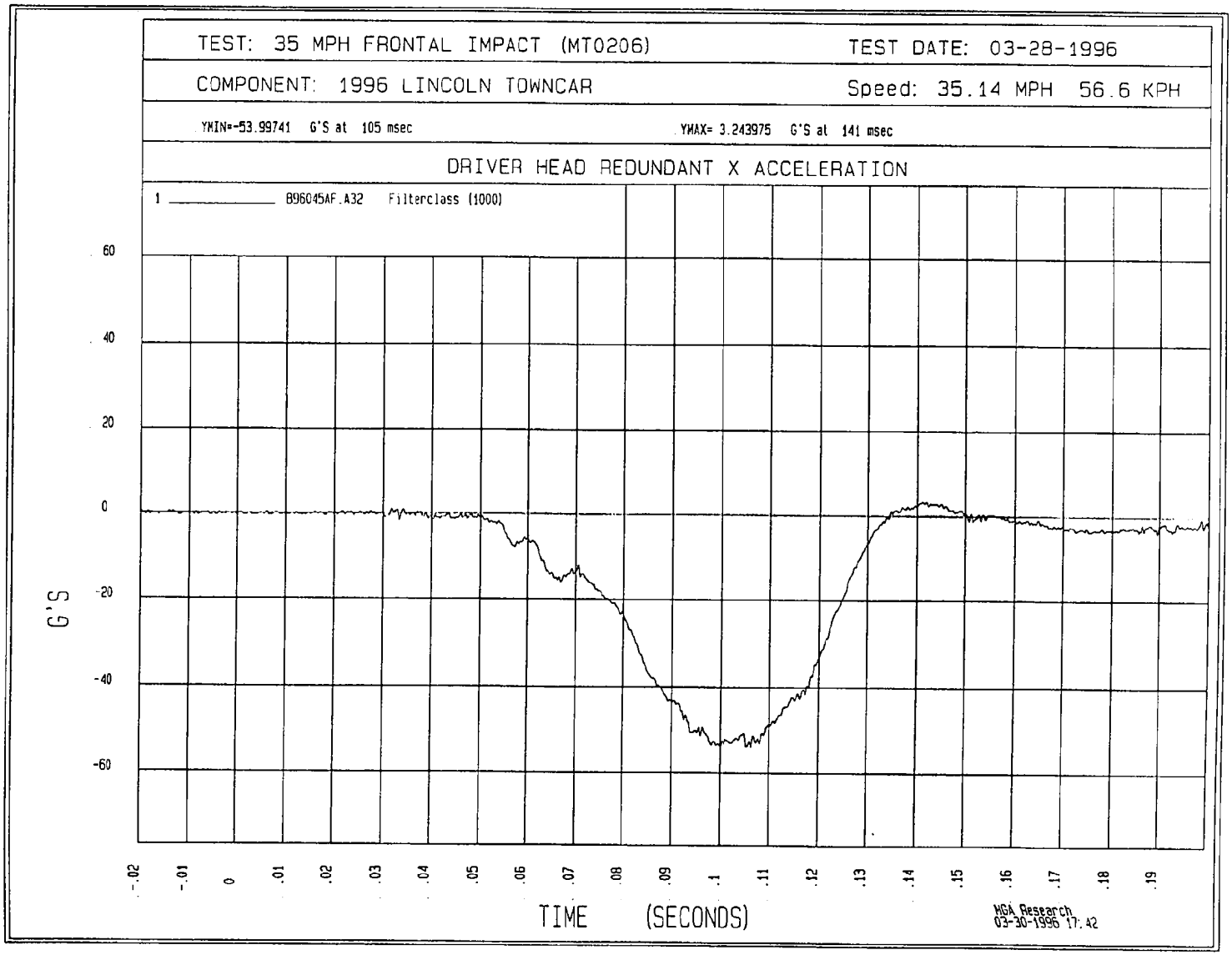

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-54.0594 G'S at 104 msec
YMAX= 2.815032 G'S at 141 msec
DRIVER HEAD X ACCELERATION
1 896045AF.A20 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:40

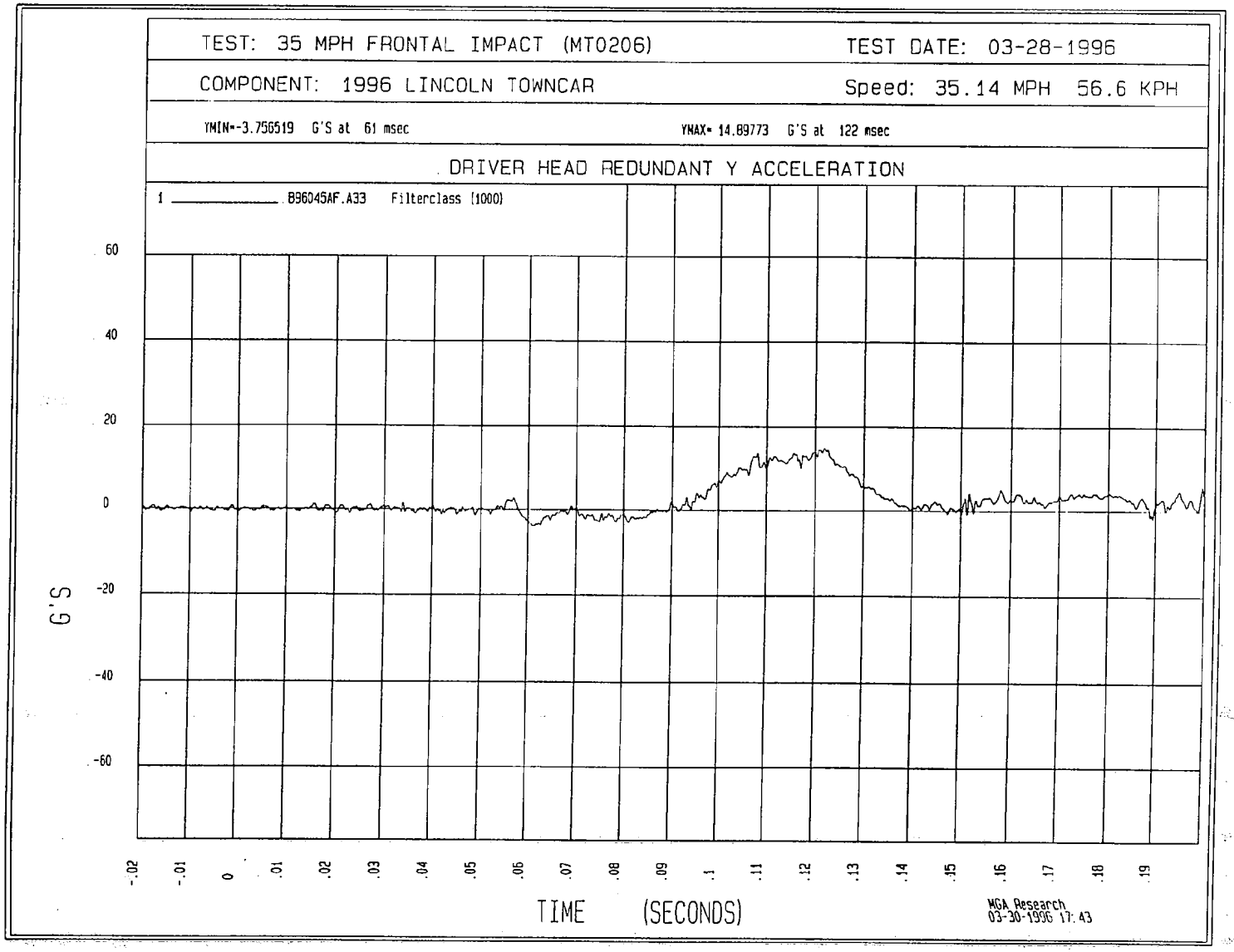

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-287.3171 G'S at 111 msec
YMAX= 286.2806 G'S at 111 msec
DRIVER HEAD Y ACCELERATION
1 B960405AF.A13 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:40

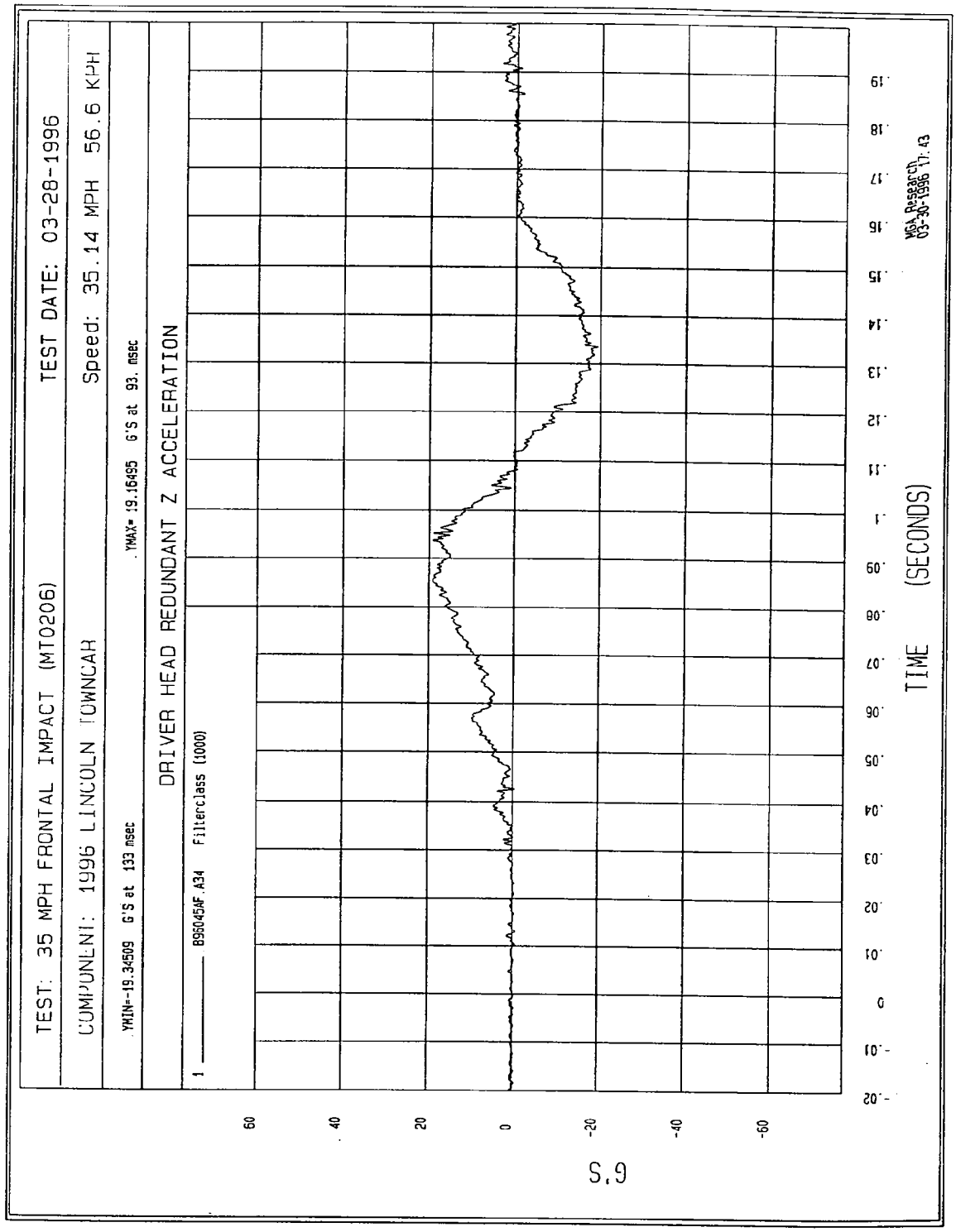

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-18.76494 G'S at 132 msec
YMAX= 19.24395 G'S at 85. msec
DRIVER HEAD Z ACCELERATION
1 B96045AF.A14 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
NGA Research
03-30-1996 17:41


TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 3.931186E-02 G'S at -6.9 msec
YMAX= 55.38628 G'S at 95. msec
DRIVER HEAD RESULTANT ACCELERATION
1 B96045AV.A14 Filterclass (1000)
Driver head redundant Y acceleration used to calculate resultant
G'S
TIME (SECONDS)
MGA Research 04-17-1996 08:53

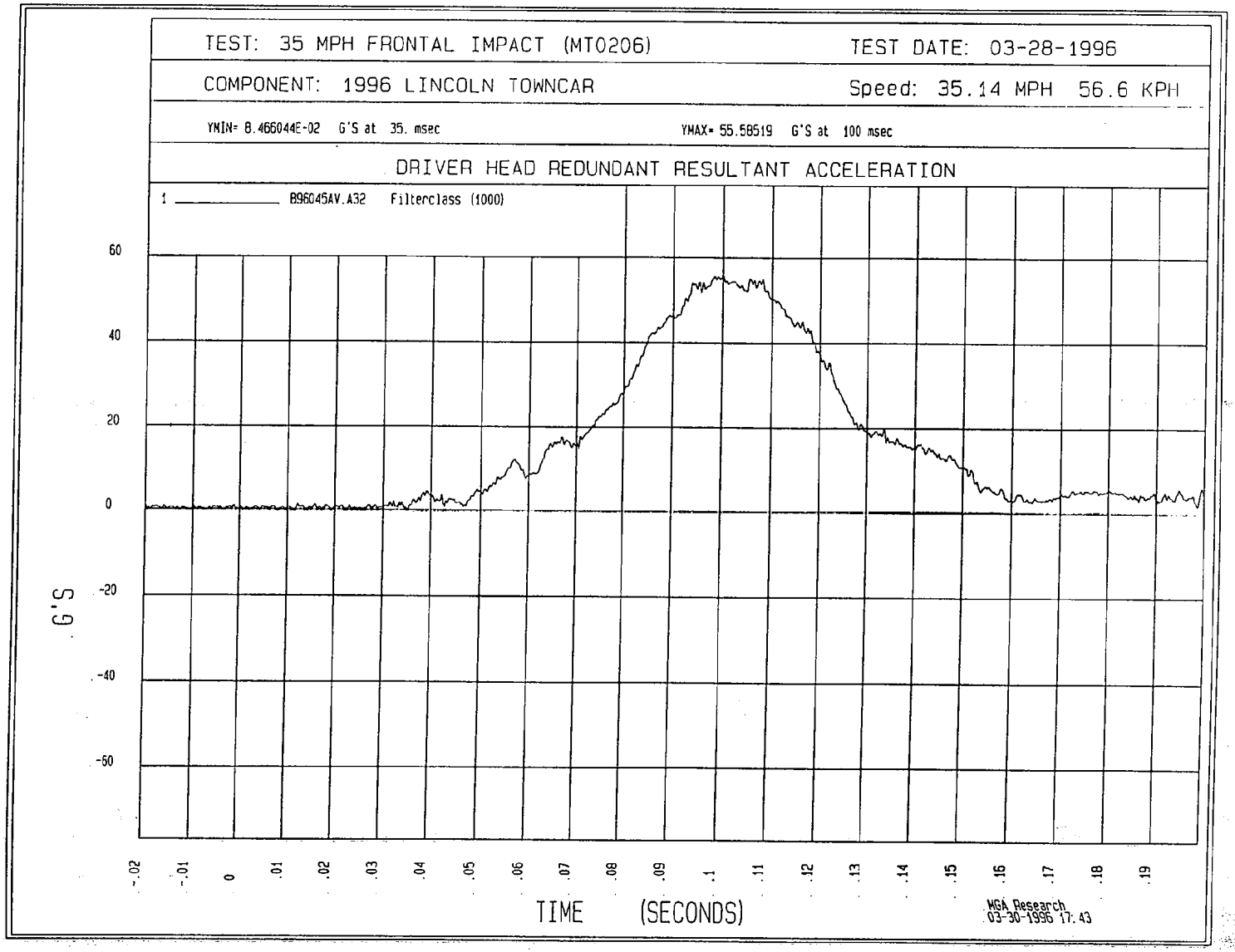

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-10.88835 KPH at 148 msec
YMAX= 56.51241 KPH at -17. msec
DRIVER HEAD X VELOCITY
1 ——— 096045AI.V12 Filterclass (180)
60
40
20
0
-20
-40
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
03-30-1996 18:07

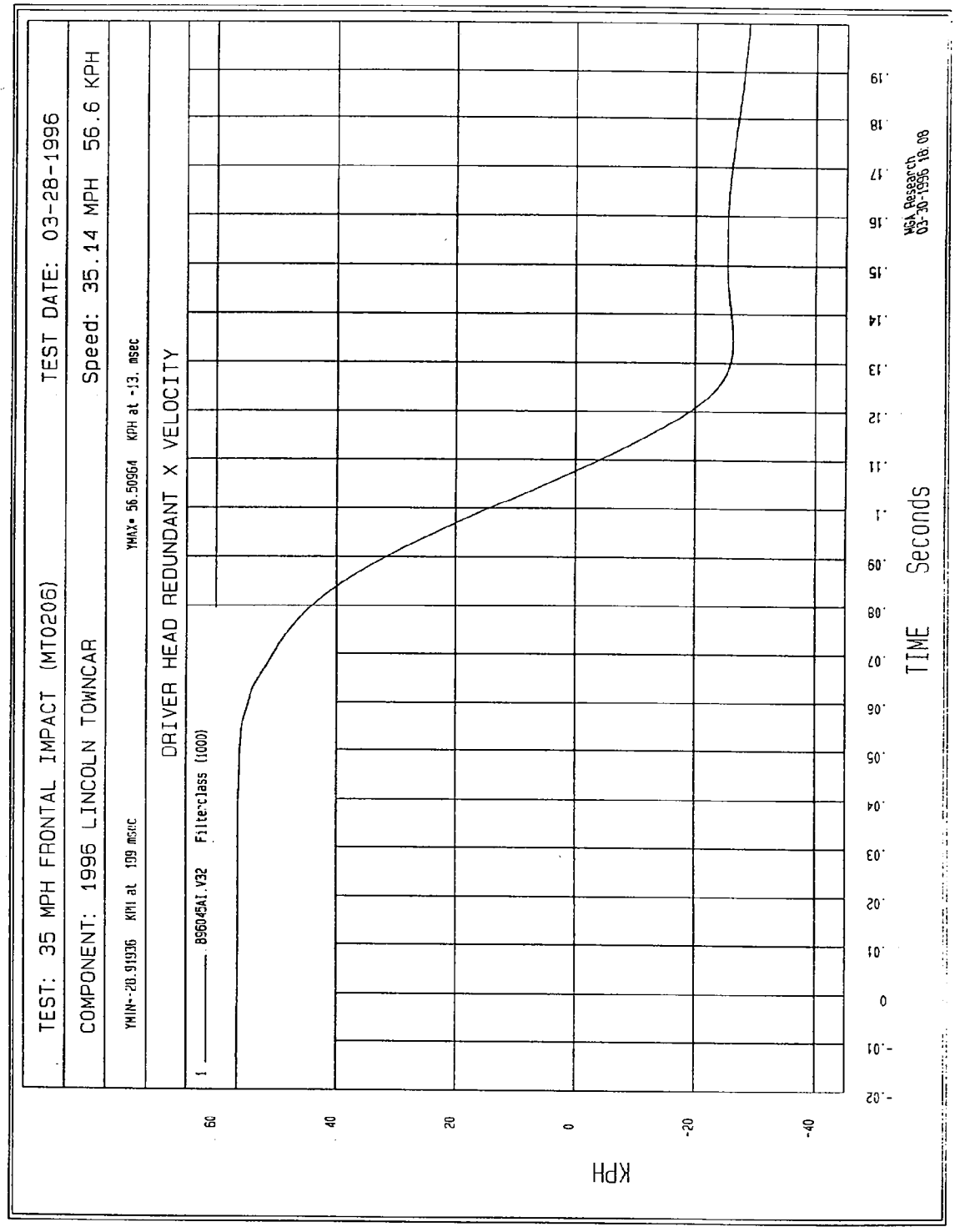

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-53.99741 G'S at 105 msec
YMAX= 3.243975 G'S at 141 msec
DRIVER HEAD REDUNDANT X ACCELERATION
1 B96045AF.A32 Filterclass (1000)
60
40
20
0
-20
-40
-60
G's
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:42

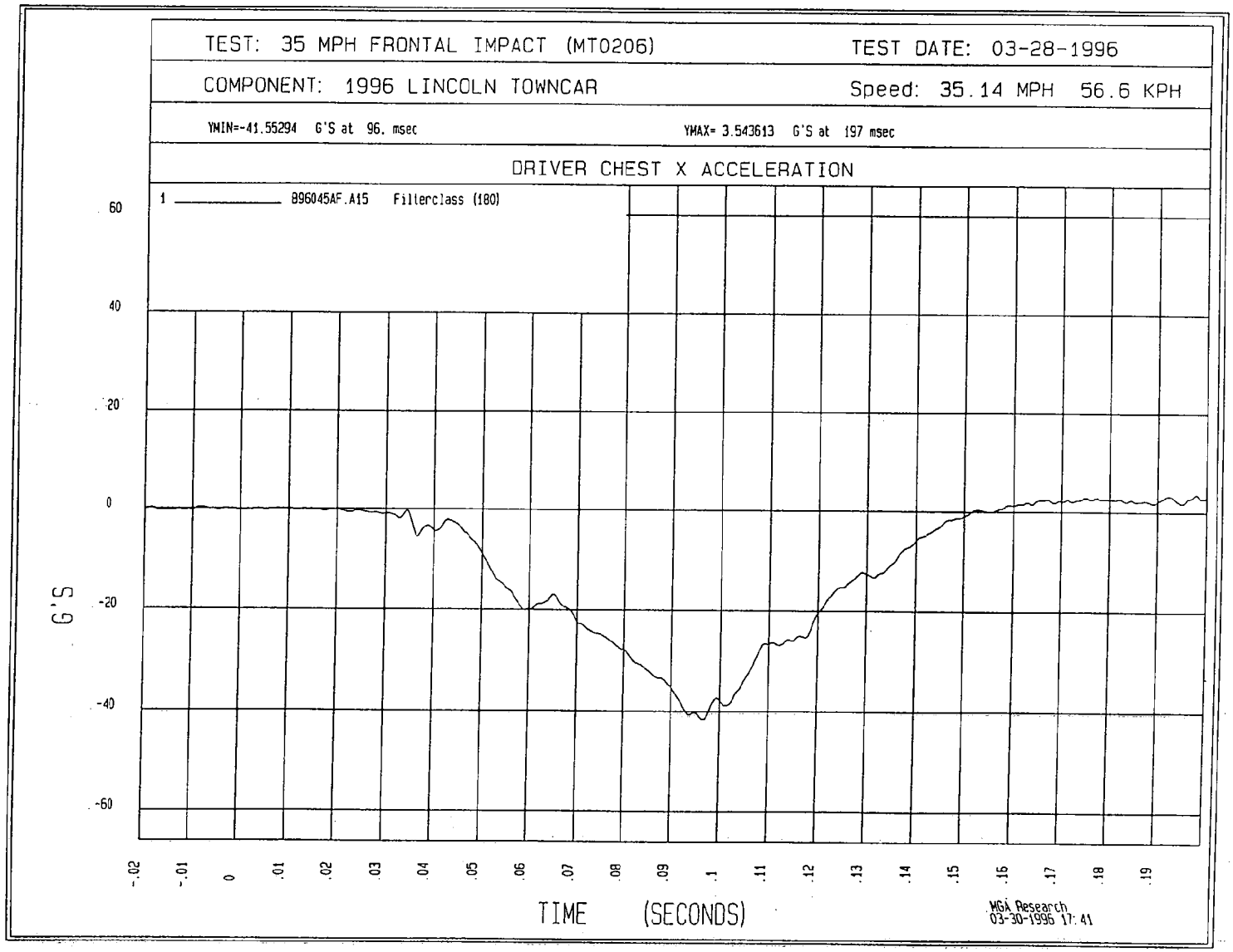

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-3.756519 G'S at 61 msec
YMAX= 14.89773 G'S at 122 msec
DRIVER HEAD REDUNDANT Y ACCELERATION
1 B96045AF.A33 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:43

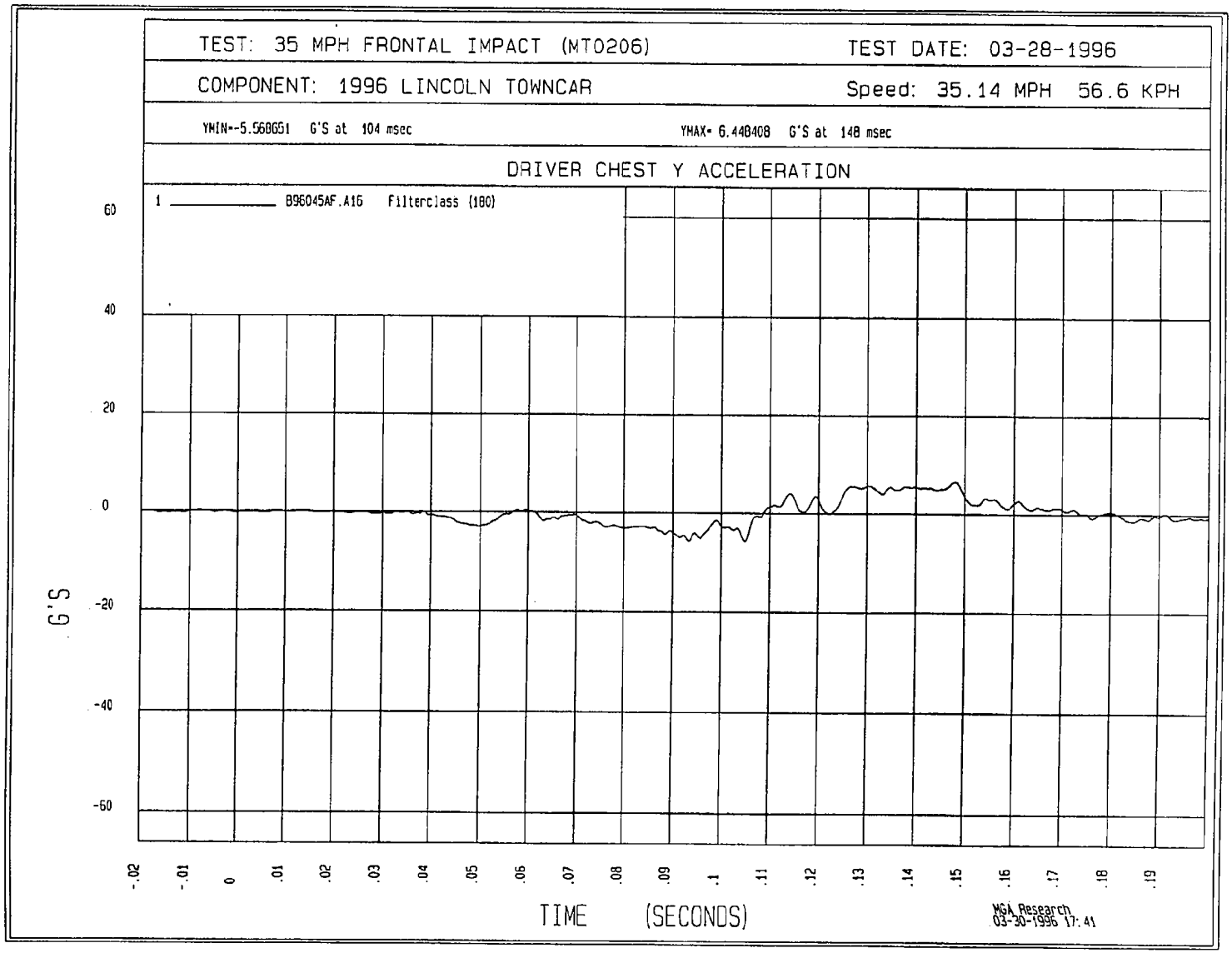

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPUNLNI: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-19.34509 G'S at 133 msec
YMAX= 19.16495 G'S at 93. msec
DRIVER HEAD REDUNDANT Z ACCELERATION
1 B960404F.A34 Filterclass (1000)
60
40
20
0
-20
-40
-60
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:43

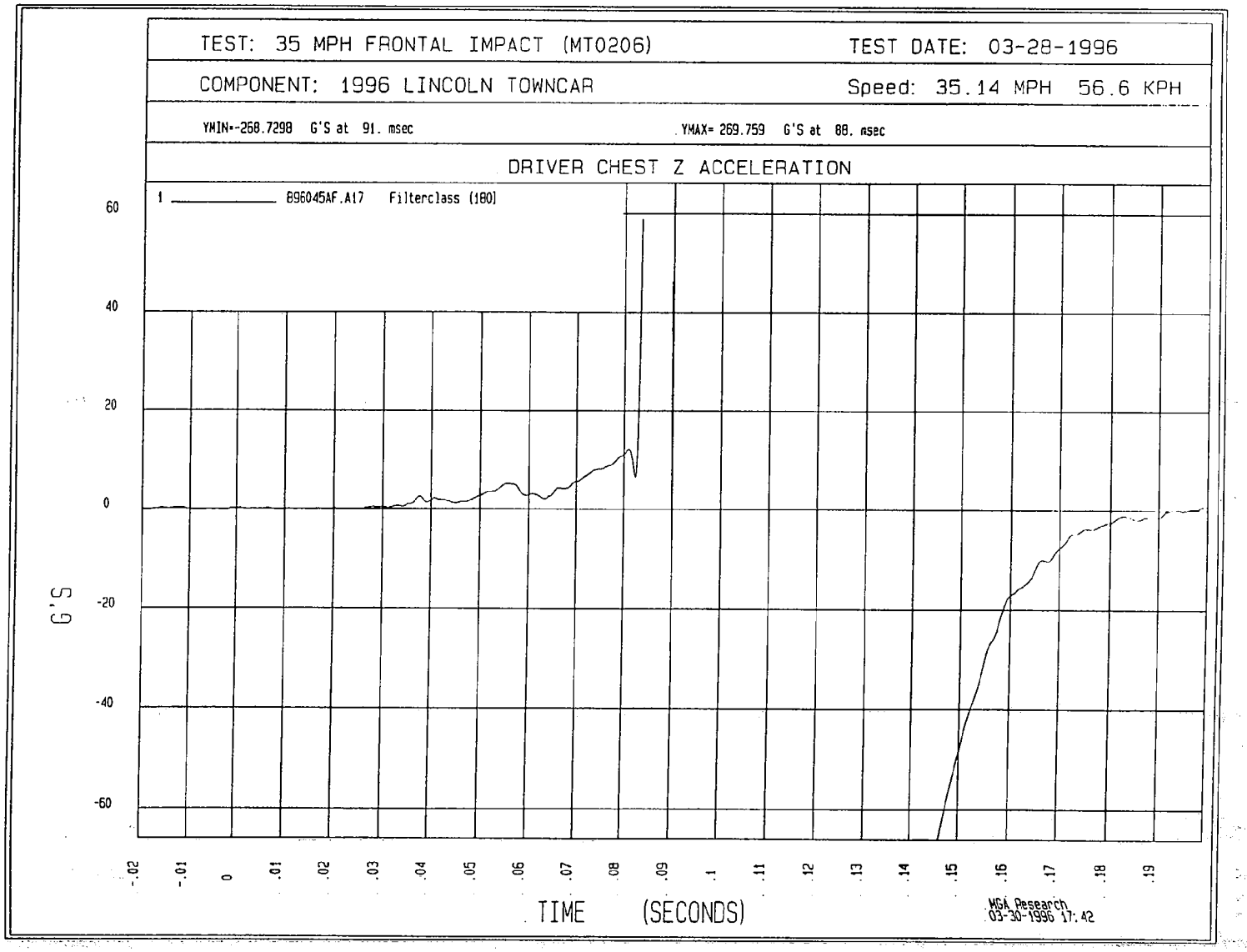
S.9

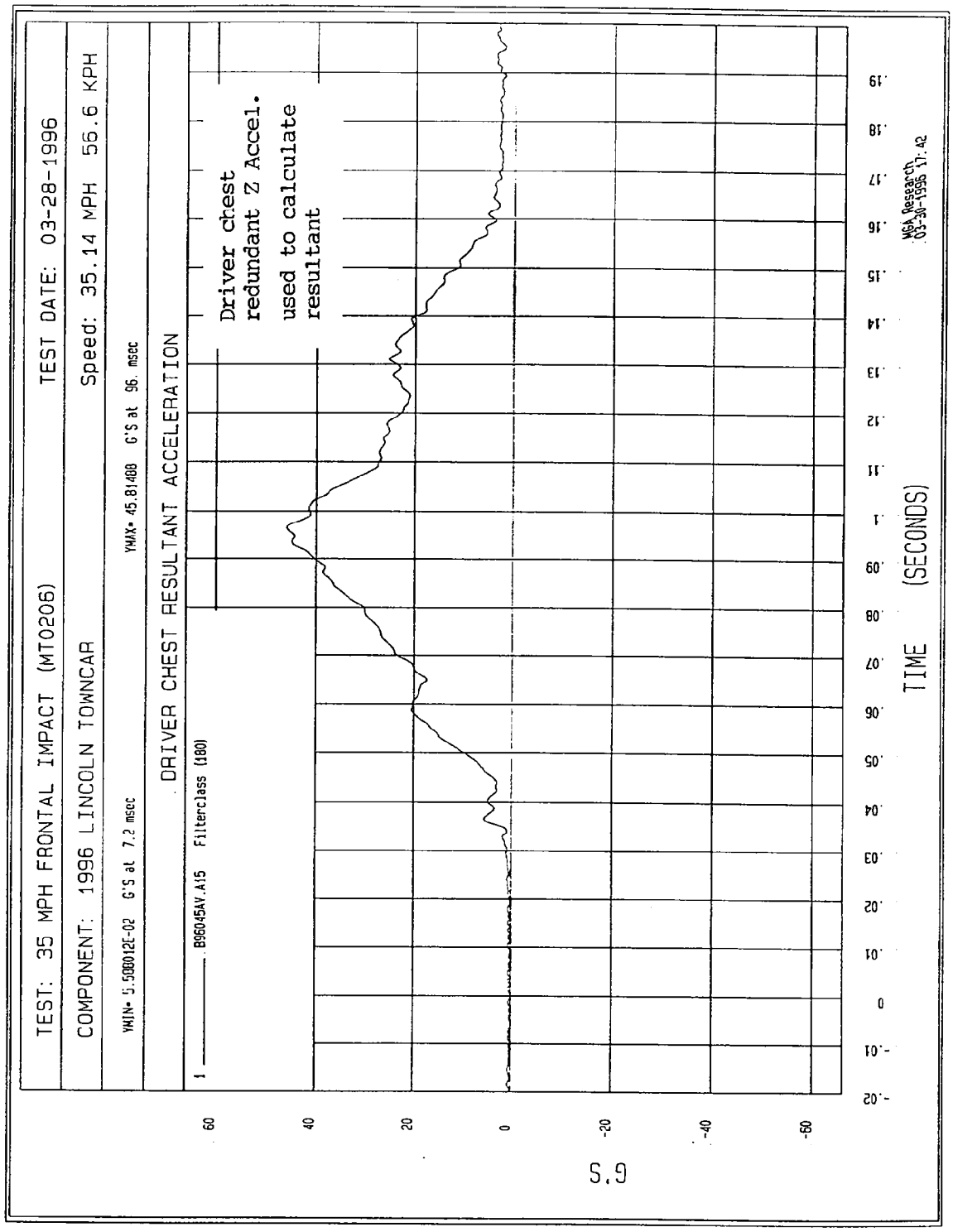

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 8.466044E-02 G'S at 35. msec
YMAX= 55.58519 G'S at 100 msec
DRIVER HEAD REDUNDANT RESULTANT ACCELERATION
1 B96045AV.A32 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:43

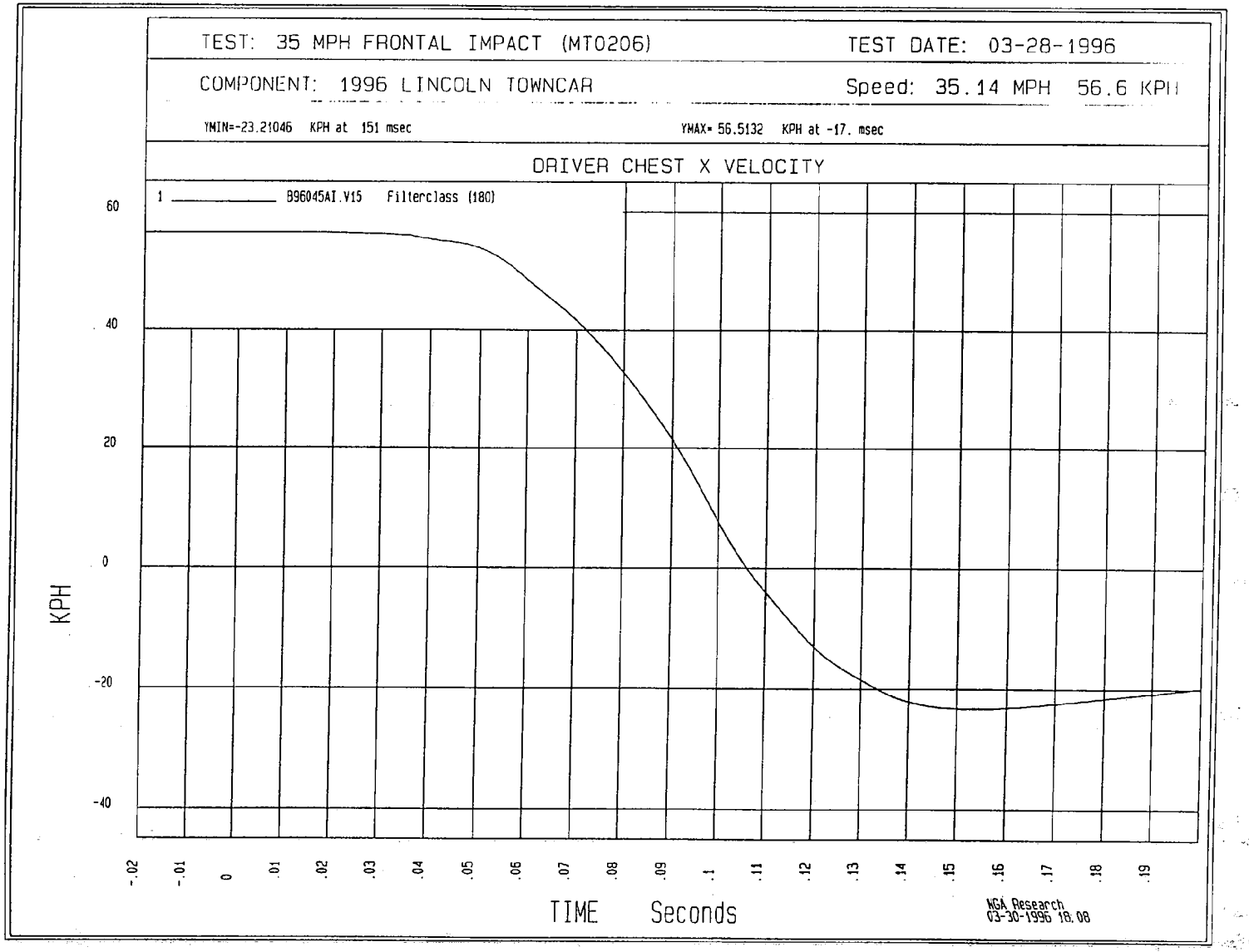

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-20.91936 KPH at 109 msec
YMAX= 56.50964 KPH at -13. msec
DRIVER HEAD REDUNDANT X VELOCITY
1 B960451.V32 Filter-class (1000)
KPH
60
40
20
0
-20
-40
TIME Seconds
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
03-30-1996 18:08

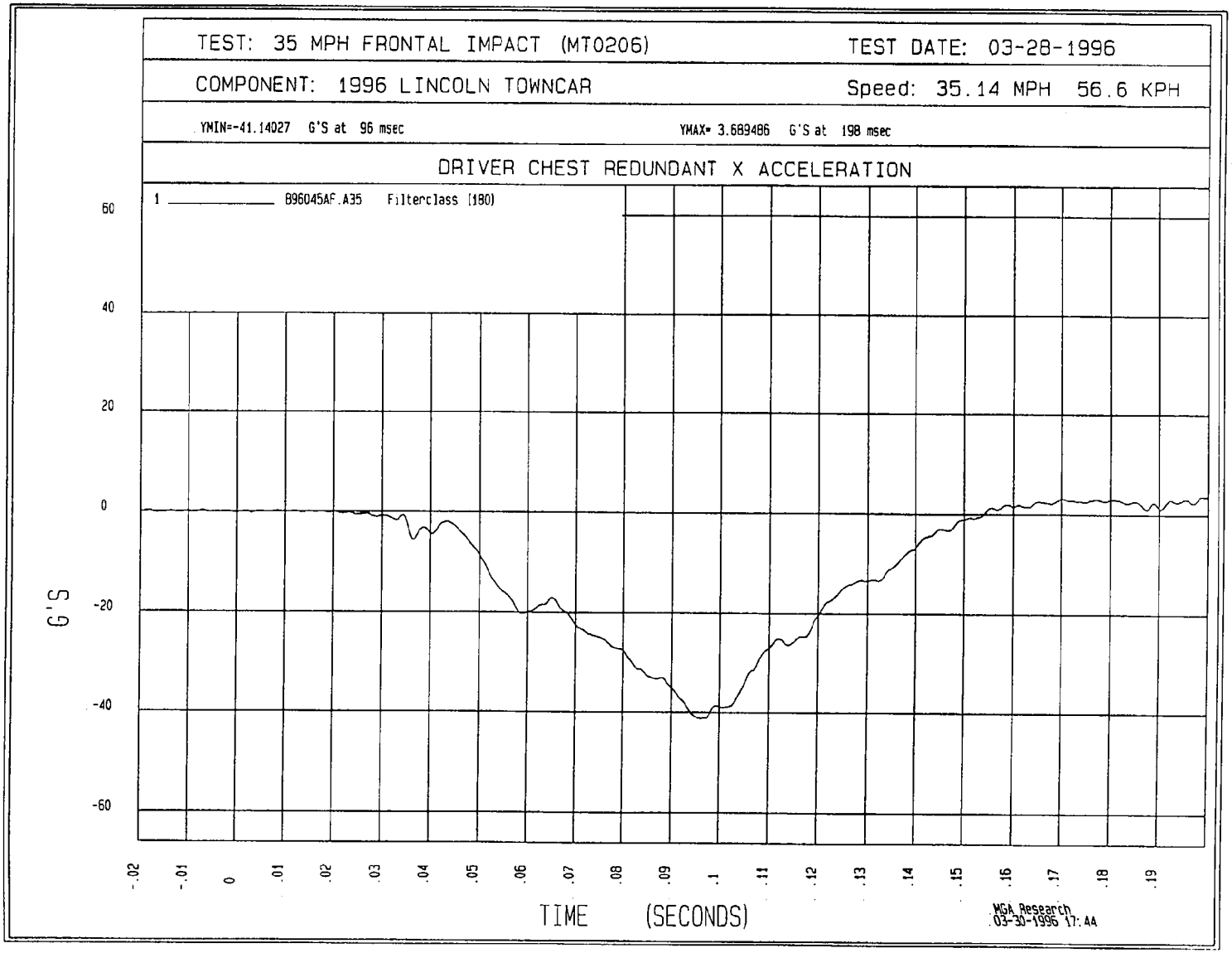

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-41.55294 G'S at 96. msec
YMAX= 3.543613 G'S at 197 msec
DRIVER CHEST X ACCELERATION
1 B96045AF.A15 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:41

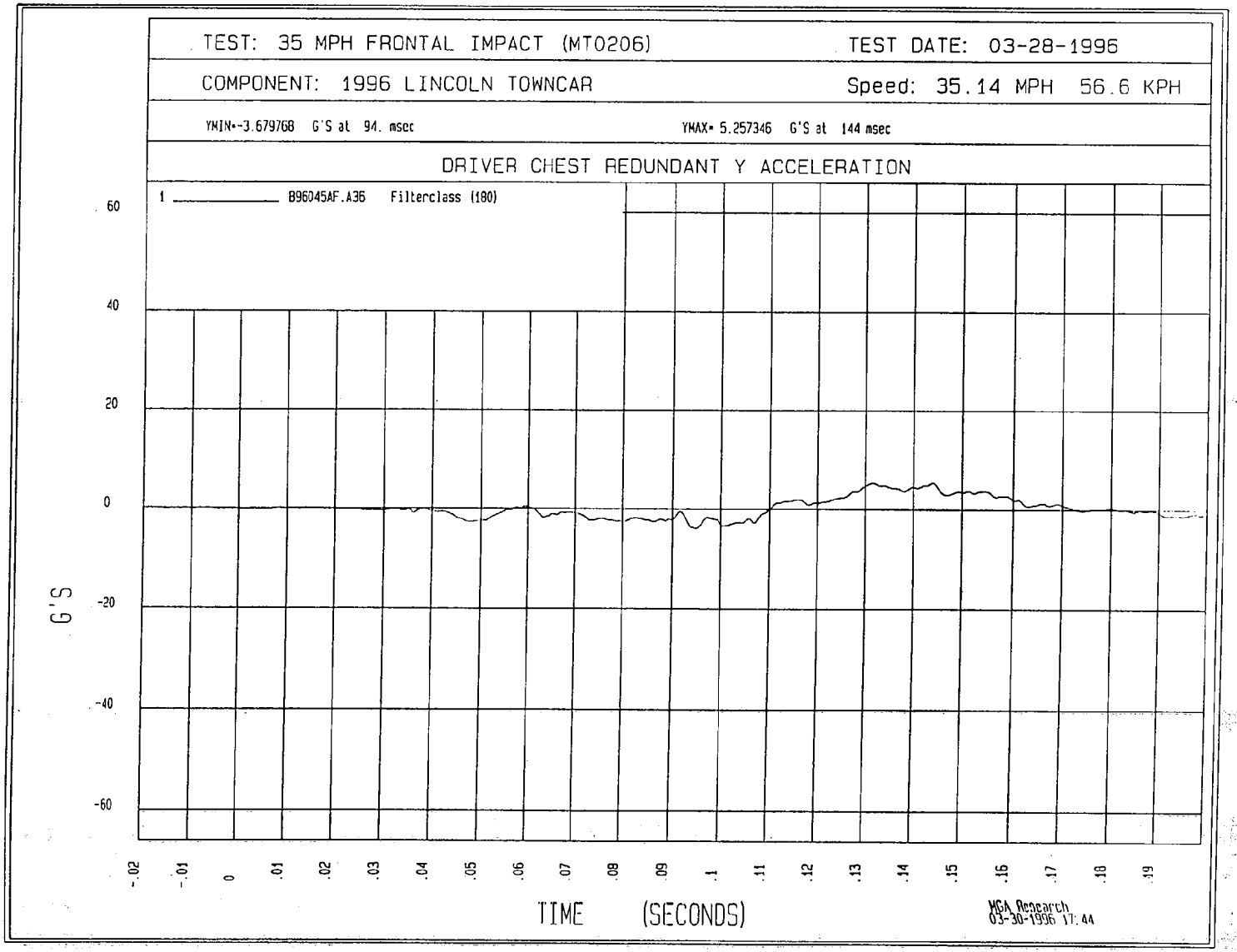

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-5.568651 G'S at 104 msec
YMAX= 6.448408 G'S at 148 msec
DRIVER CHEST Y ACCELERATION
1 B96045AF.A16 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:41

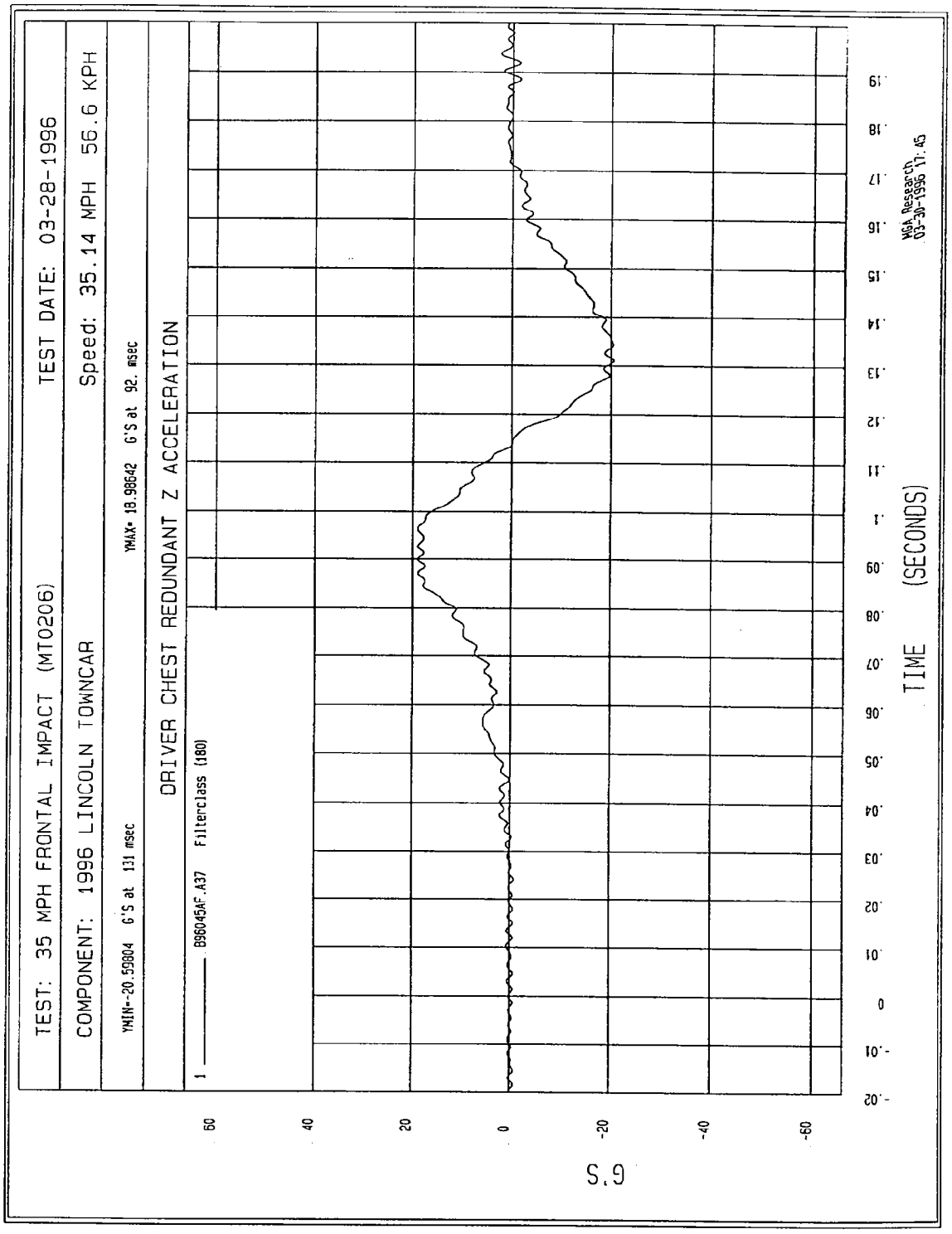

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-268.7298 G'S at 91. msec
YMAX= 269.759 G'S at 88. msec
DRIVER CHEST Z ACCELERATION
1 B96045AF.A17 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:42

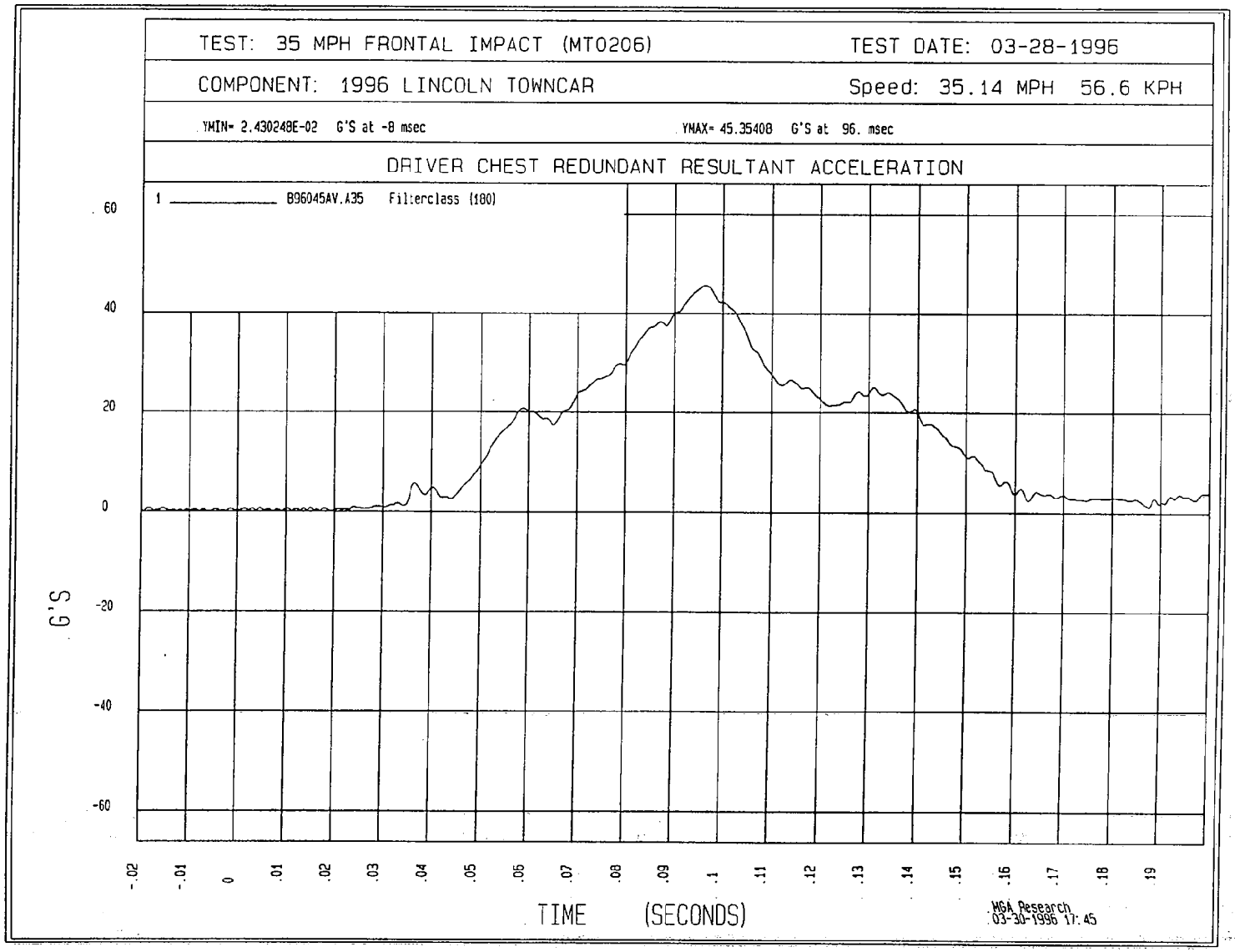

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= -5.508012E-02 G'S at 7.2 msec
YMAX= 45.81488 G'S at 96. msec
DRIVER CHEST RESULTANT ACCELERATION
1 B96045AV.A15 Filterclass (180)
Driver chest redundant Z Accel. used to calculate resultant
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research 03-30-1996 17:42

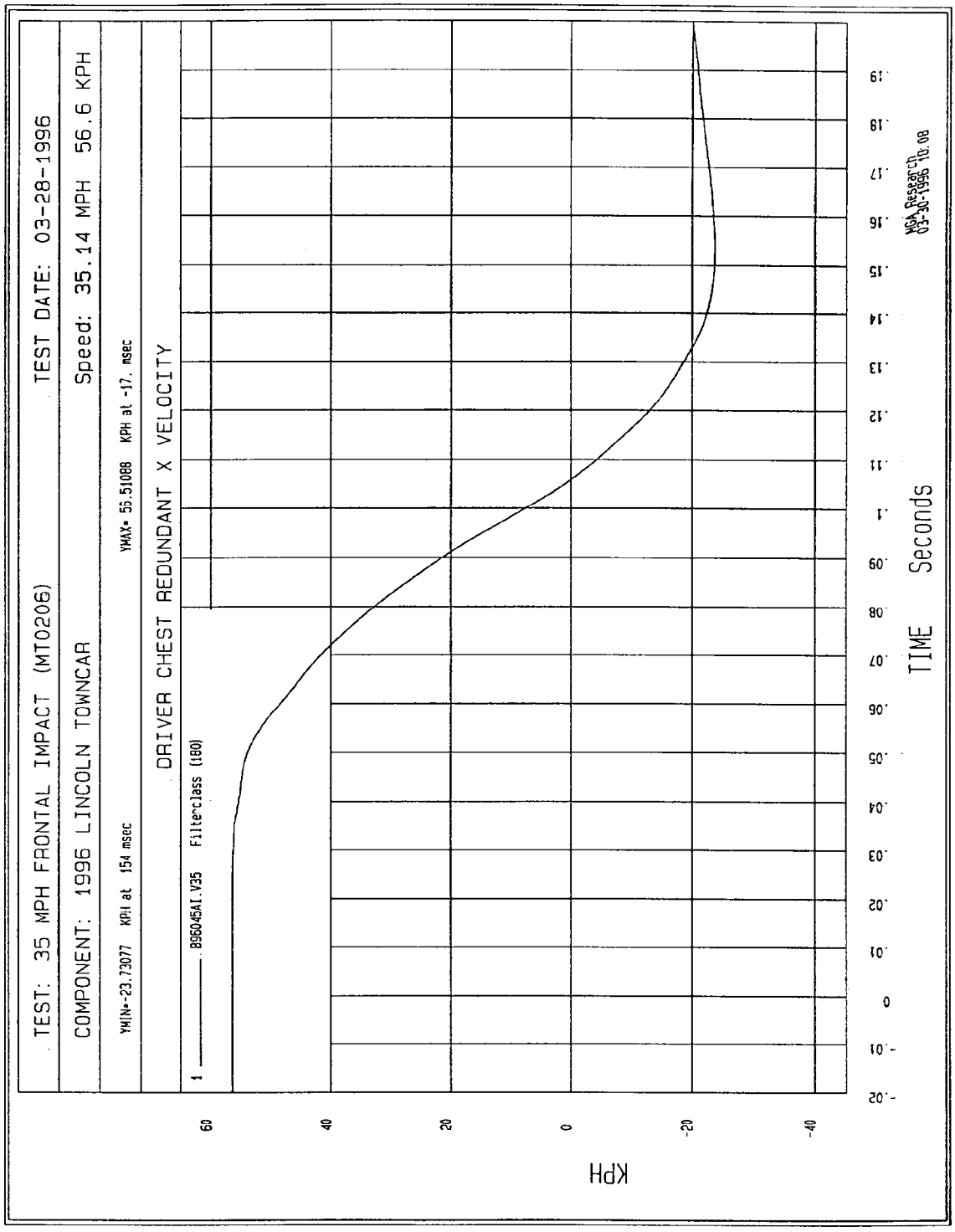

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-23.21046 KPH at 151 msec
YMAX= 56.5132 KPH at -17. msec
DRIVER CHEST X VELOCITY
1 B96045AI.V15 Filterclass (180)
60
40
20
0
-20
-40
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
NGA Research
03-30-1996 18:08

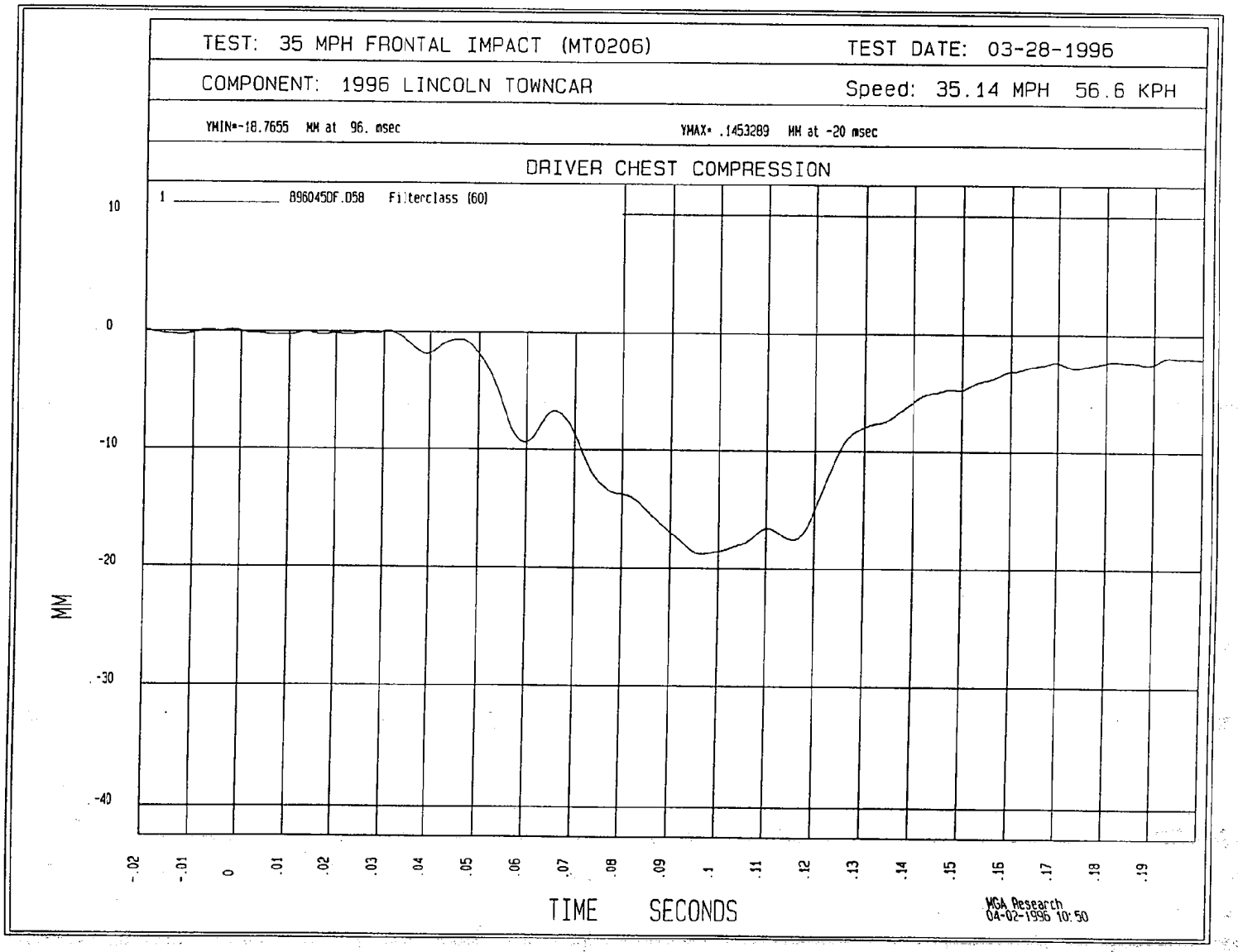

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-41.14027 G'S at 96 msec
YMAX= 3.689486 G'S at 198 msec
DRIVER CHEST REDUNDANT X ACCELERATION
1 896045AF.A35 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:44

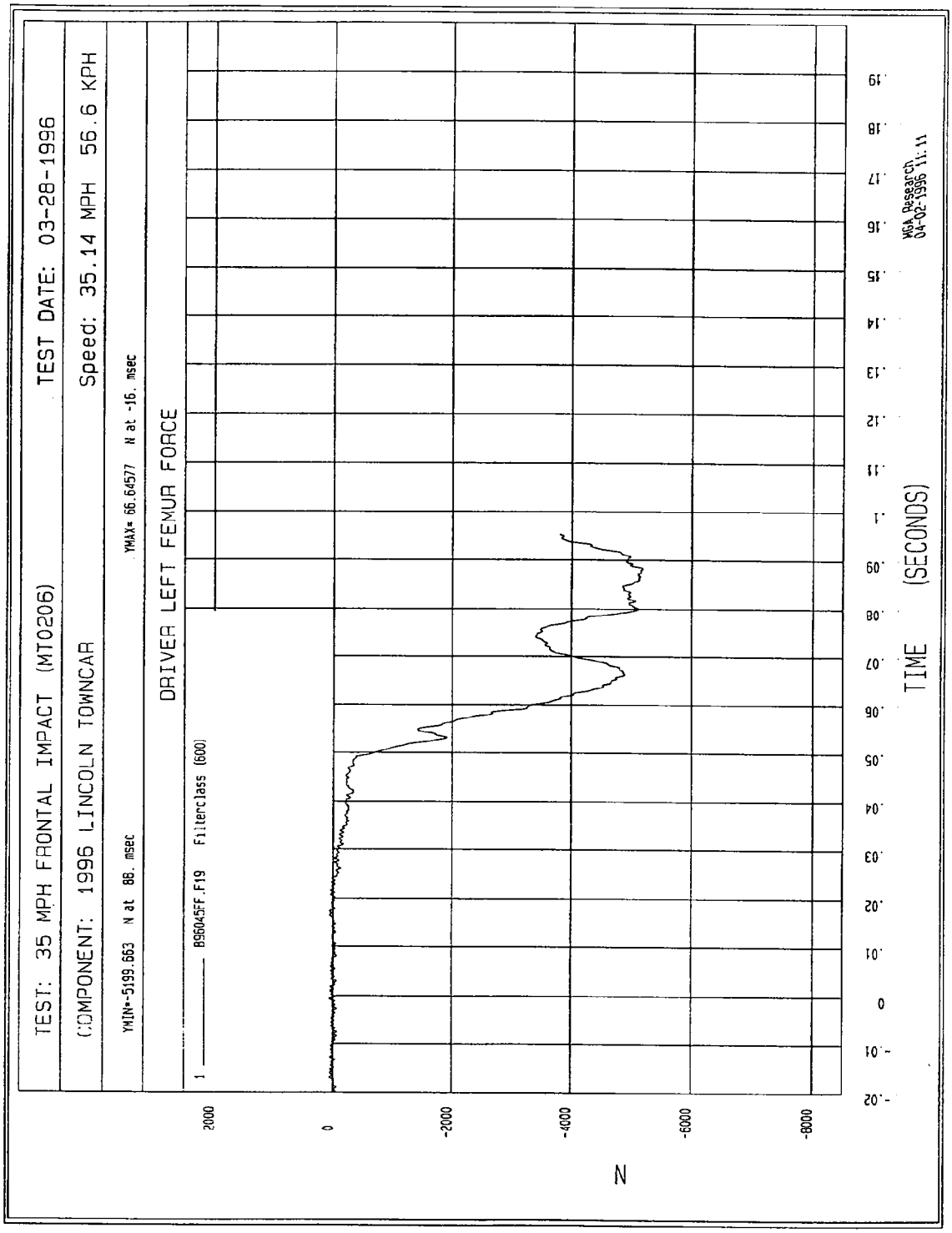

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-3.679768 G'S at 94. msec
YMAX= 5.257346 G'S at 144 msec
DRIVER CHEST REDUNDANT Y ACCELERATION
1 B96045AF.A36 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:44

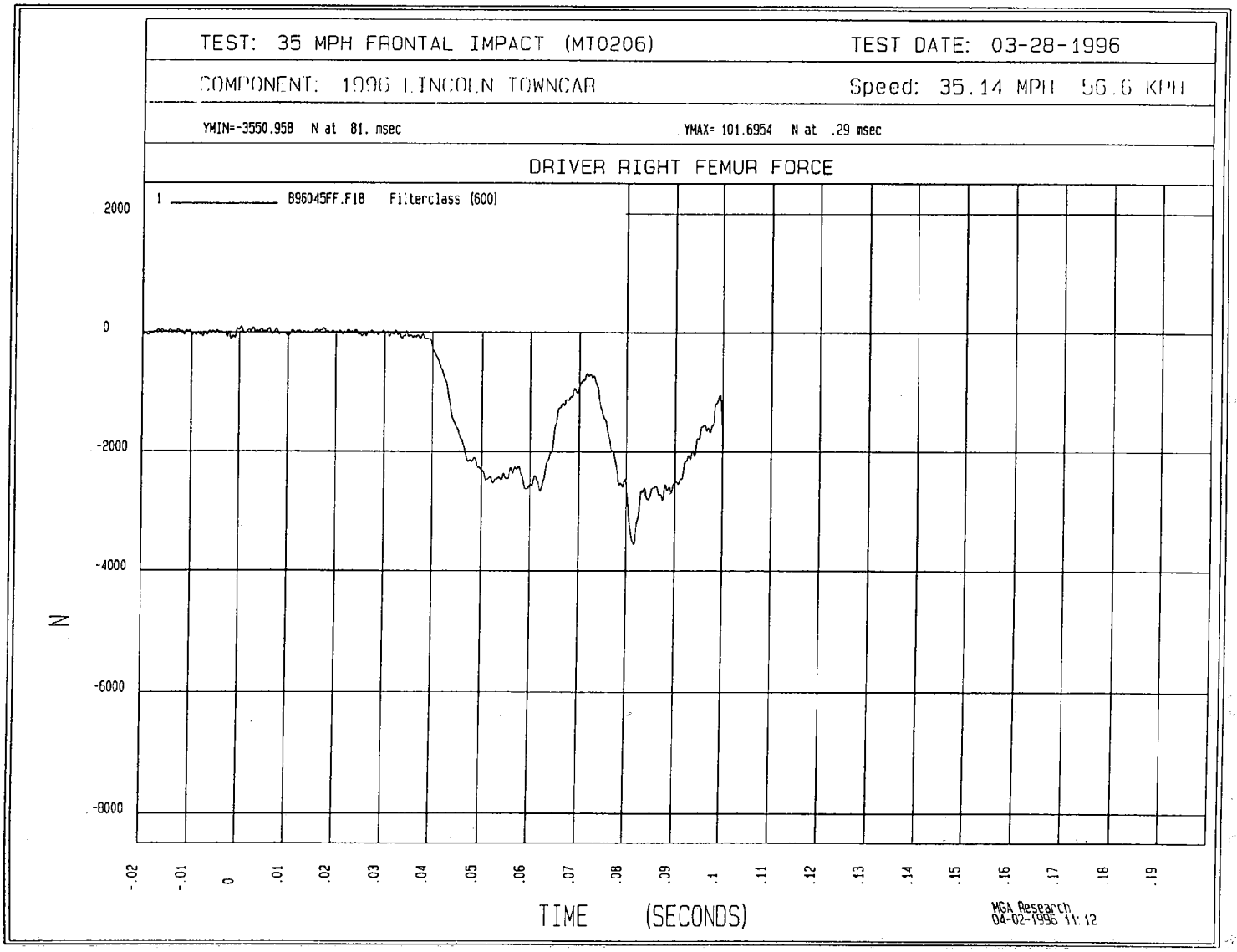

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-20.59804 G'S at 131 msec
YMAX= 18.98642 G'S at 92. msec
DRIVER CHEST REDUNDANT Z ACCELERATION
1 B96045AF.A37 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
03-30-1996 11:45

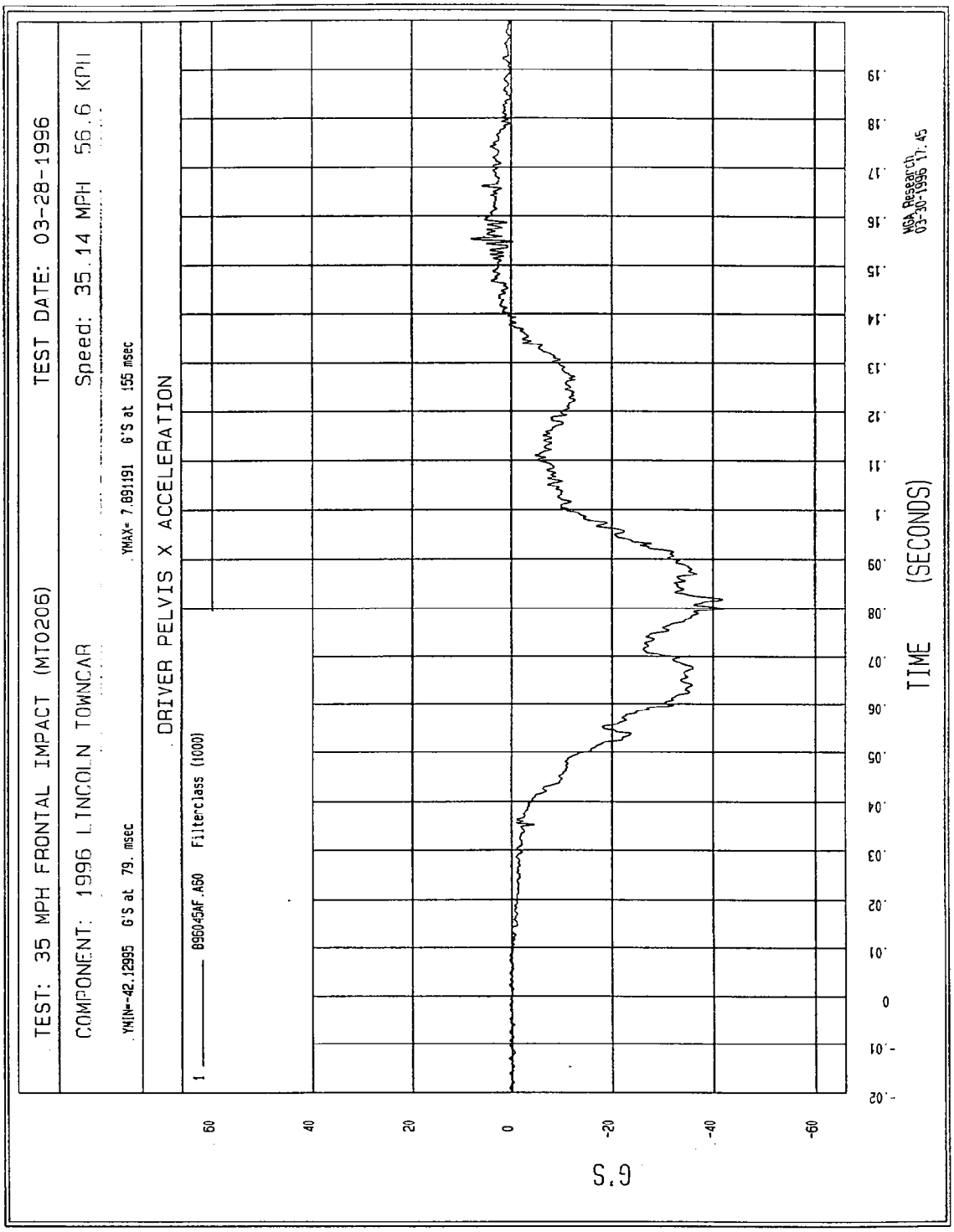

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 2.430248E-02 G'S at -8 msec
YMAX= 45.35408 G'S at 96. msec
DRIVER CHEST REDUNDANT RESULTANT ACCELERATION
1 B96045AV.A35 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:45

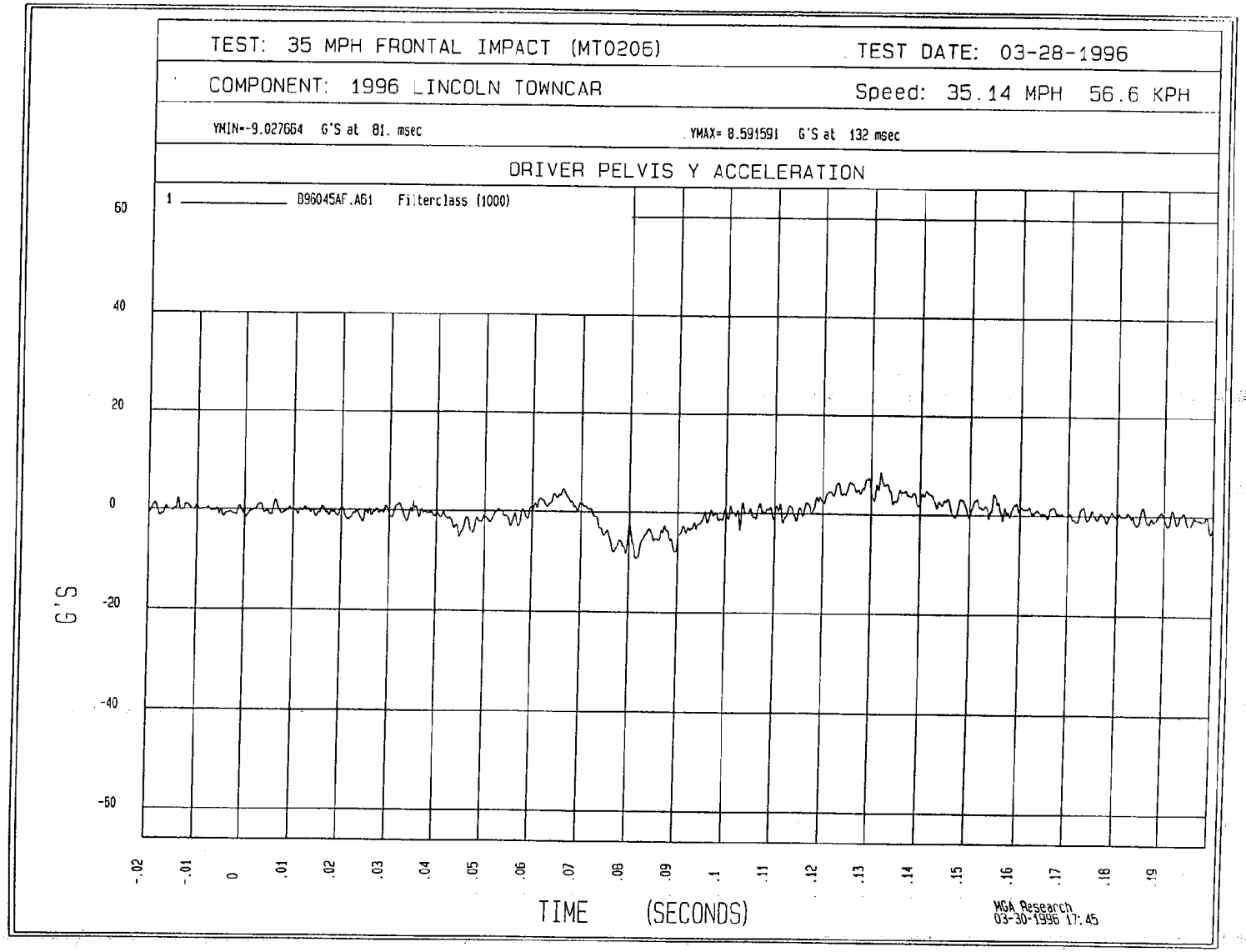

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-23.73077 KPH at 154 msec
YMAX= 55.51088 KPH at -17. msec
DRIVER CHEST REDUNDANT X VELOCITY
1 ——— 896045AI.V35 Filterclass (180)
KPH
60
40
20
0
-20
-40
TIME Seconds
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
03-30-1996 10:08

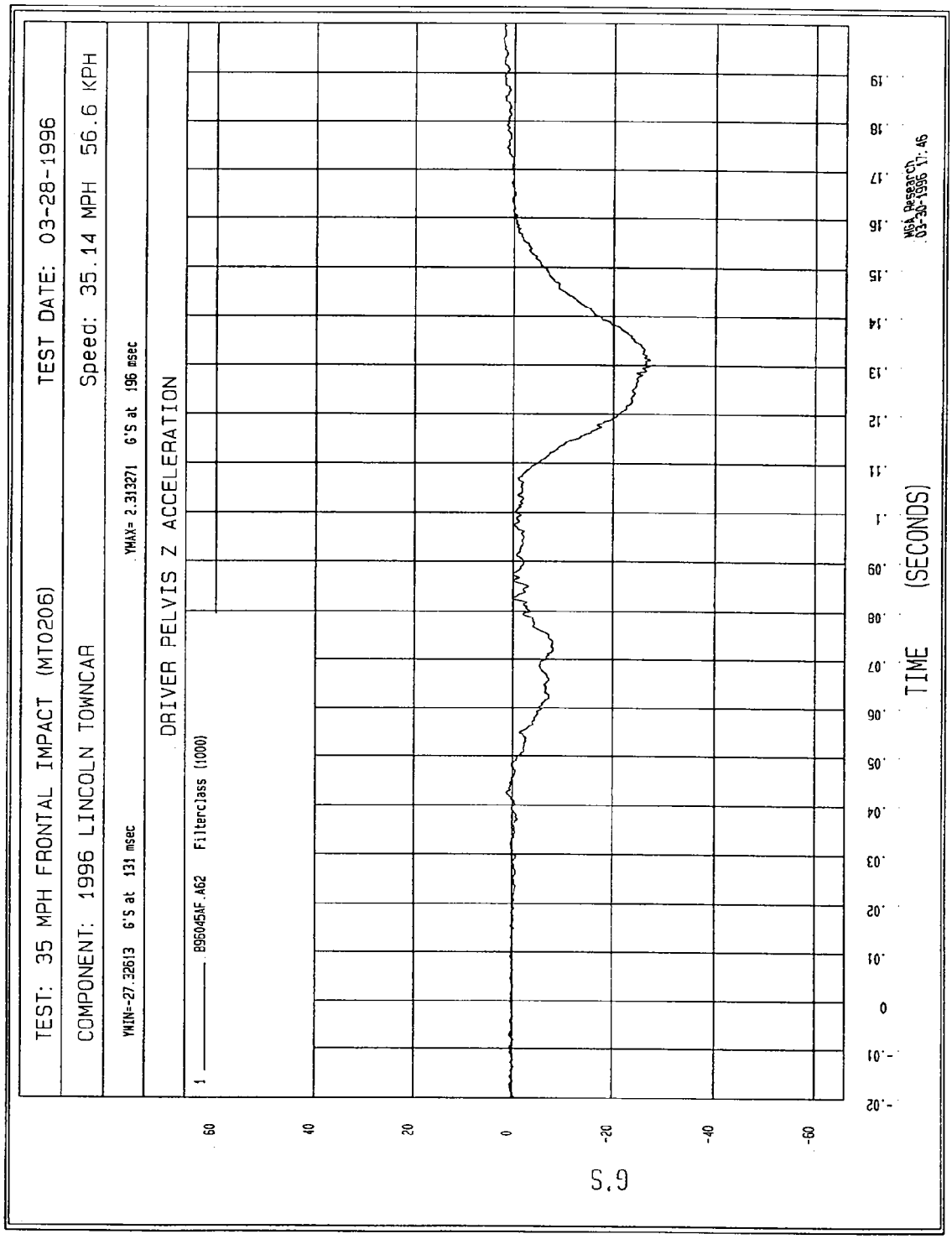

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-18.7655 MM at 96. msec
YMAX= .1453289 MM at -20 msec
DRIVER CHEST COMPRESSION
1 896045DF.D58 Filterclass (60)
MM
10
0
-10
-20
-30
-40
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME SECONDS
MGA Research
04-02-1996 10:50

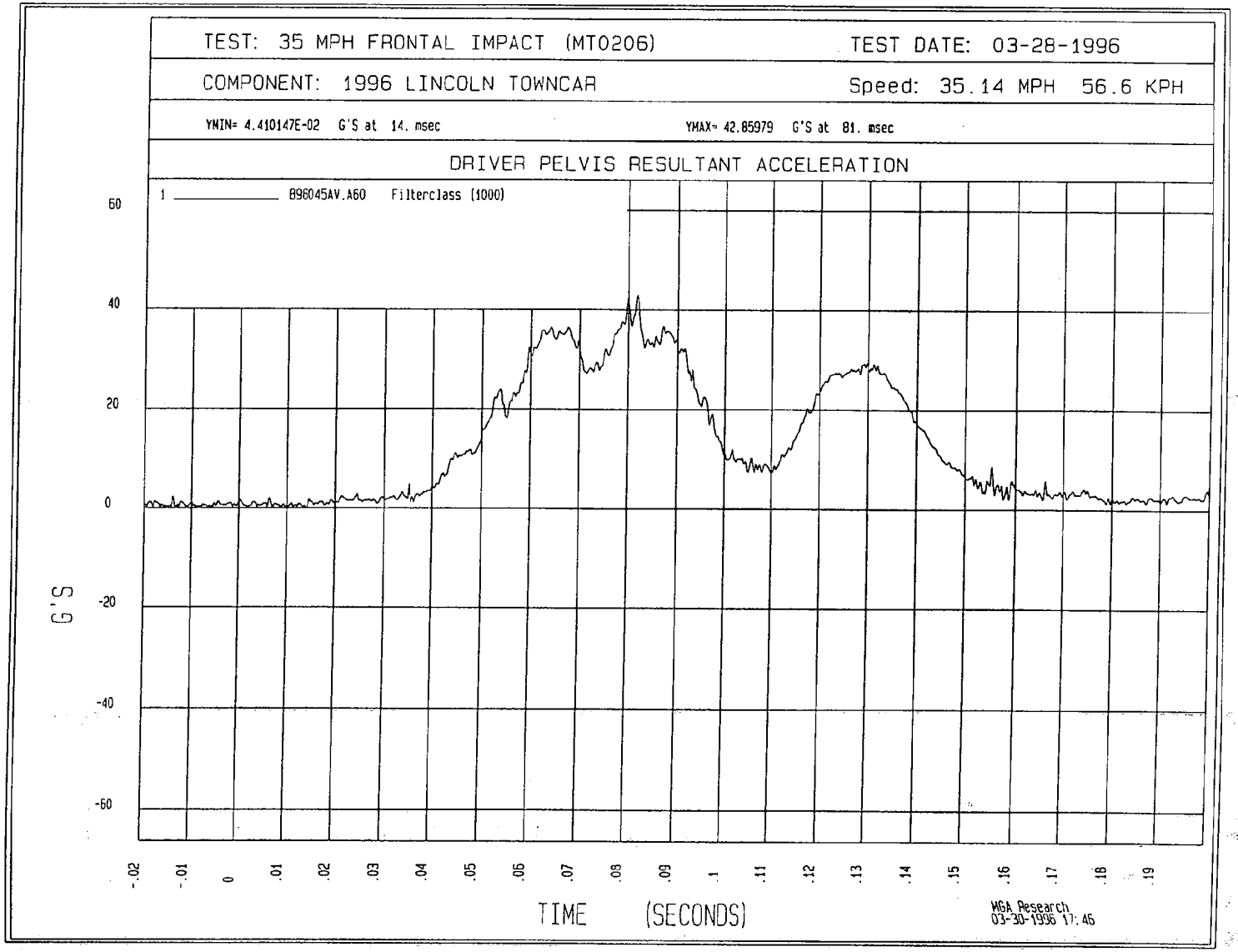

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-5199.663 N at 88. msec
YMAX= 66.64577 N at -16. msec
DRIVER LEFT FEMUR FORCE
1 B96045FF.F19 Filterclass (600)
2000
0
-2000
-4000
-6000
-8000
N
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
04-02-1996 11:11

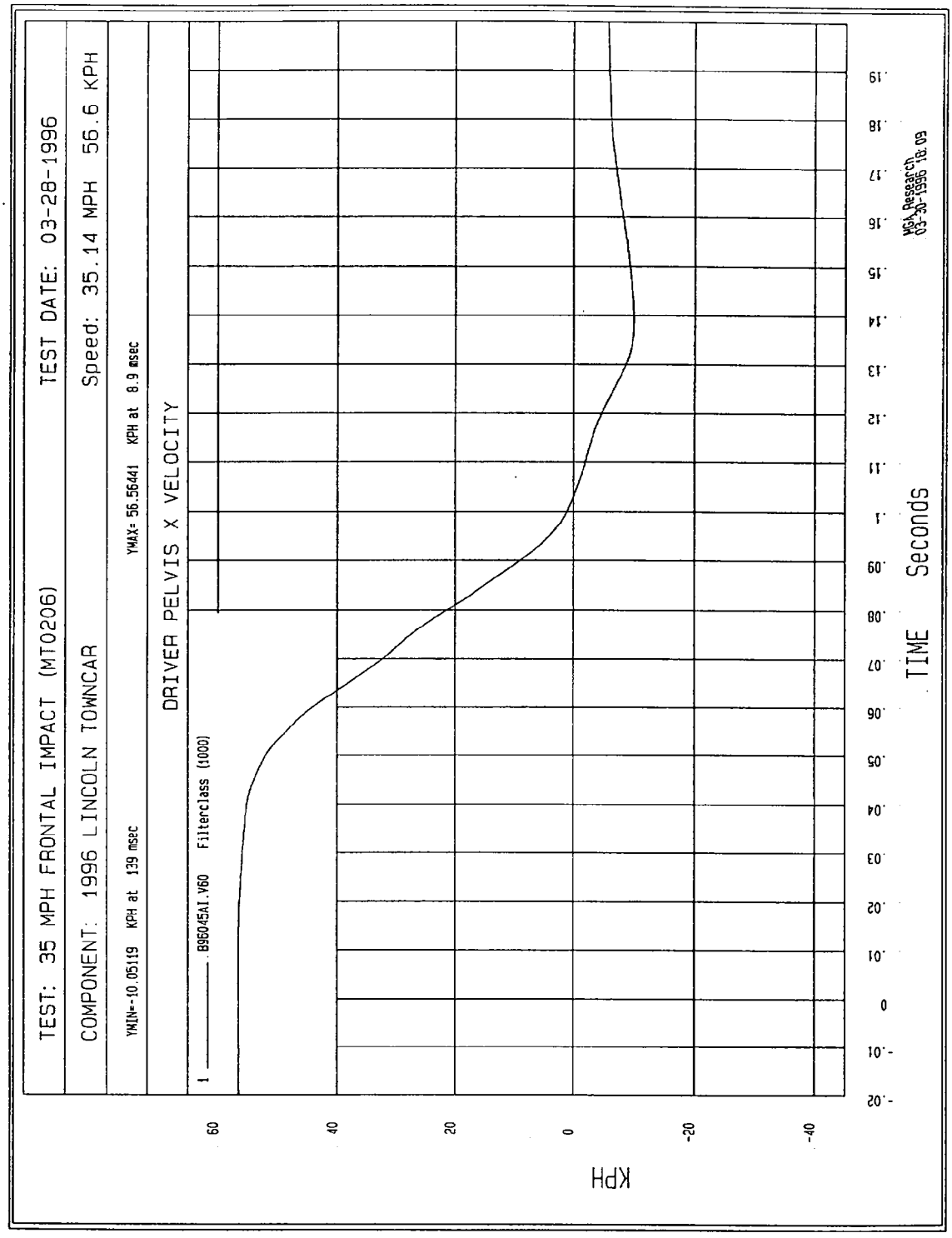

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-3550.958 N at 81. msec
YMAX= 101.6954 N at .29 msec
DRIVER RIGHT FEMUR FORCE
1 B96045FF.F18 Filterclass (600)
2000
0
-2000
-4000
-6000
-8000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
04-02-1996 11:12

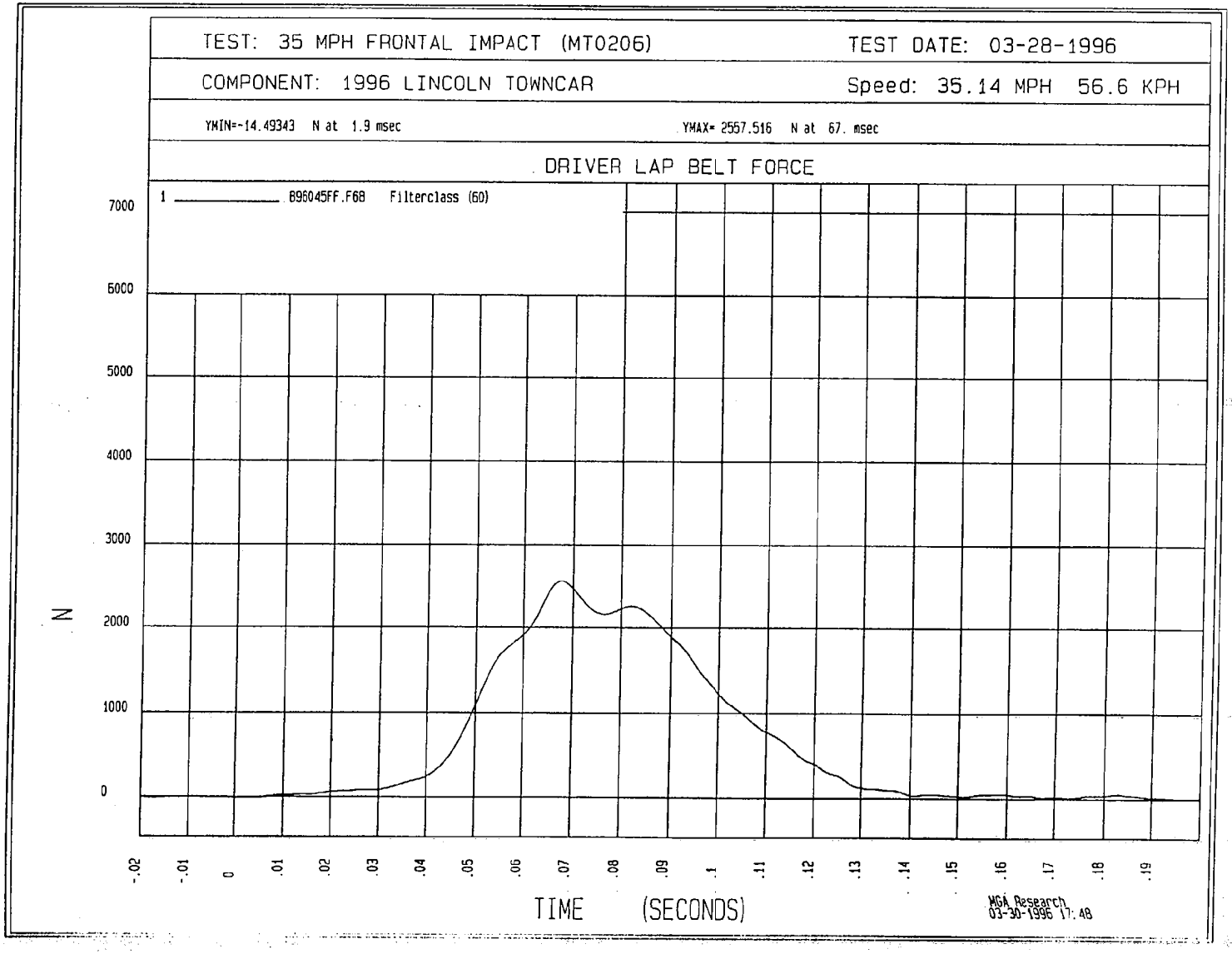

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-42.12995 G'S at 79. msec
YMAX= 7.891191 G'S at 155 msec
DRIVER PELVIS X ACCELERATION
1 896045AF.A60 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
03-30-1996 17:45

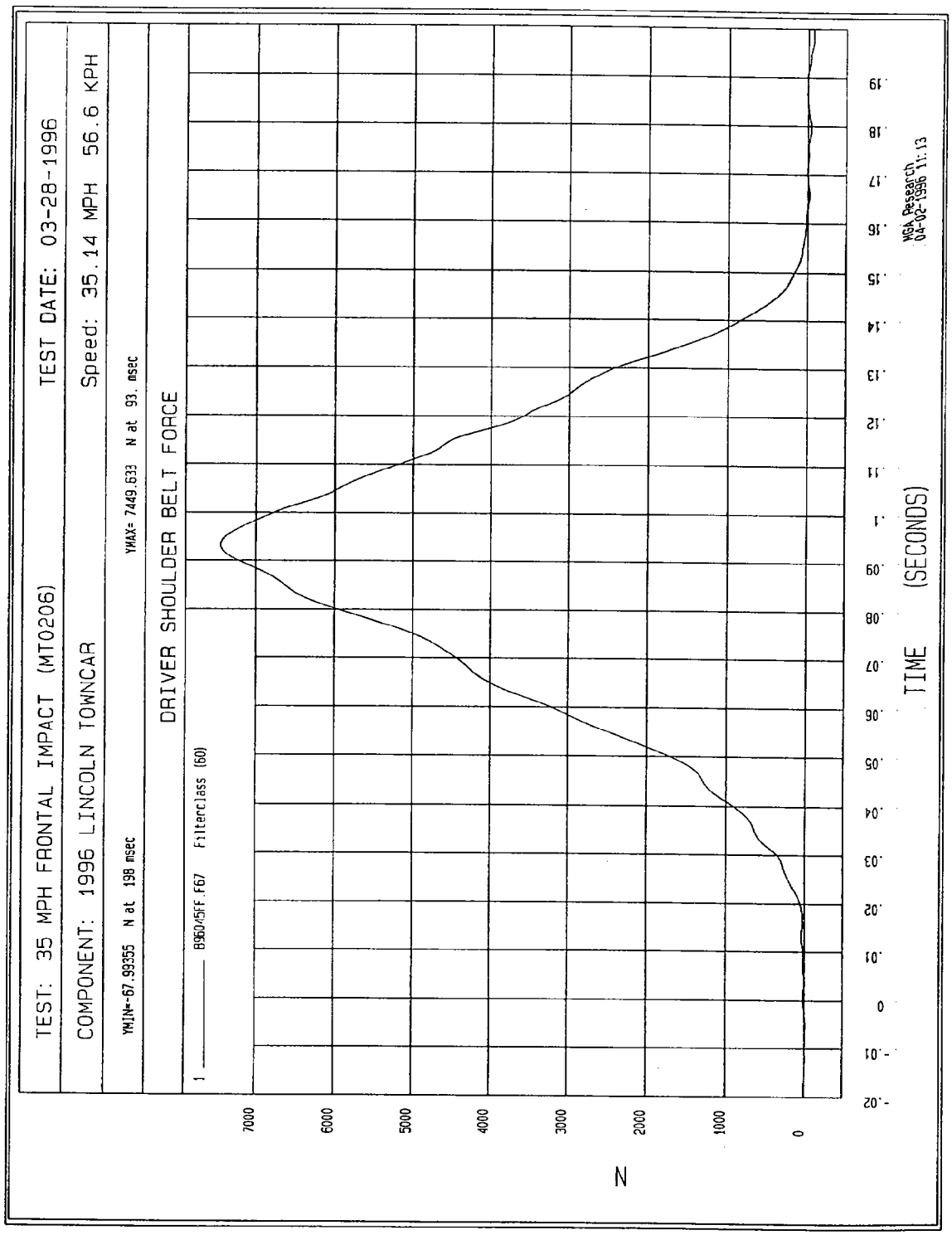

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-9.027664 G'S at 81. msec
YMAX= 8.591591 G'S at 132 msec
DRIVER PELVIS Y ACCELERATION
1 B96045AF.A61 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:45

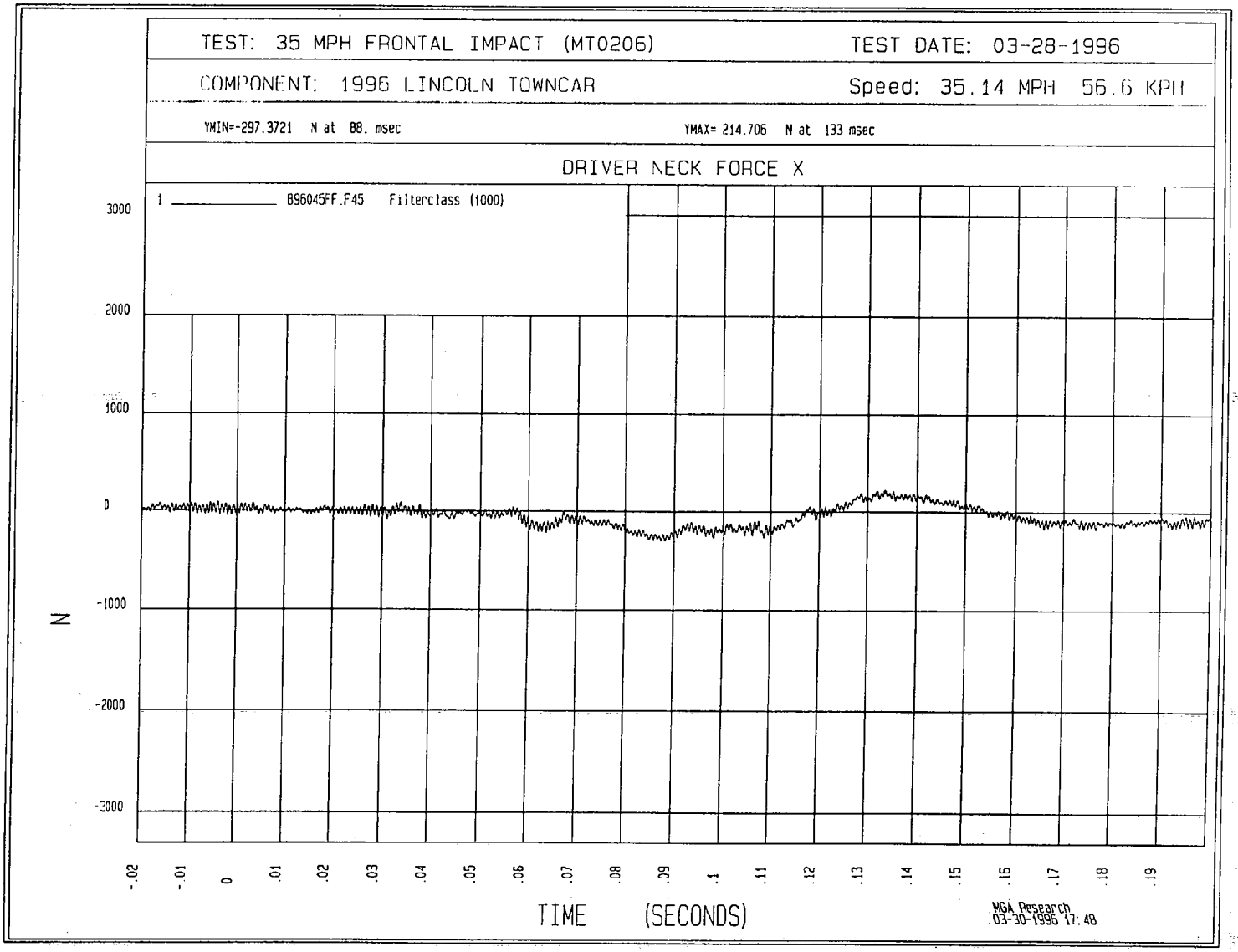

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-27.32613 6'S at 131 msec
YMAX= 2.313271 6'S at 196 msec
DRIVER PELVIS Z ACCELERATION
1 B96045AF.A62 Filterclass (1000)
60
40
20
0
-20
-40
-60
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
03-30-1996 17:46

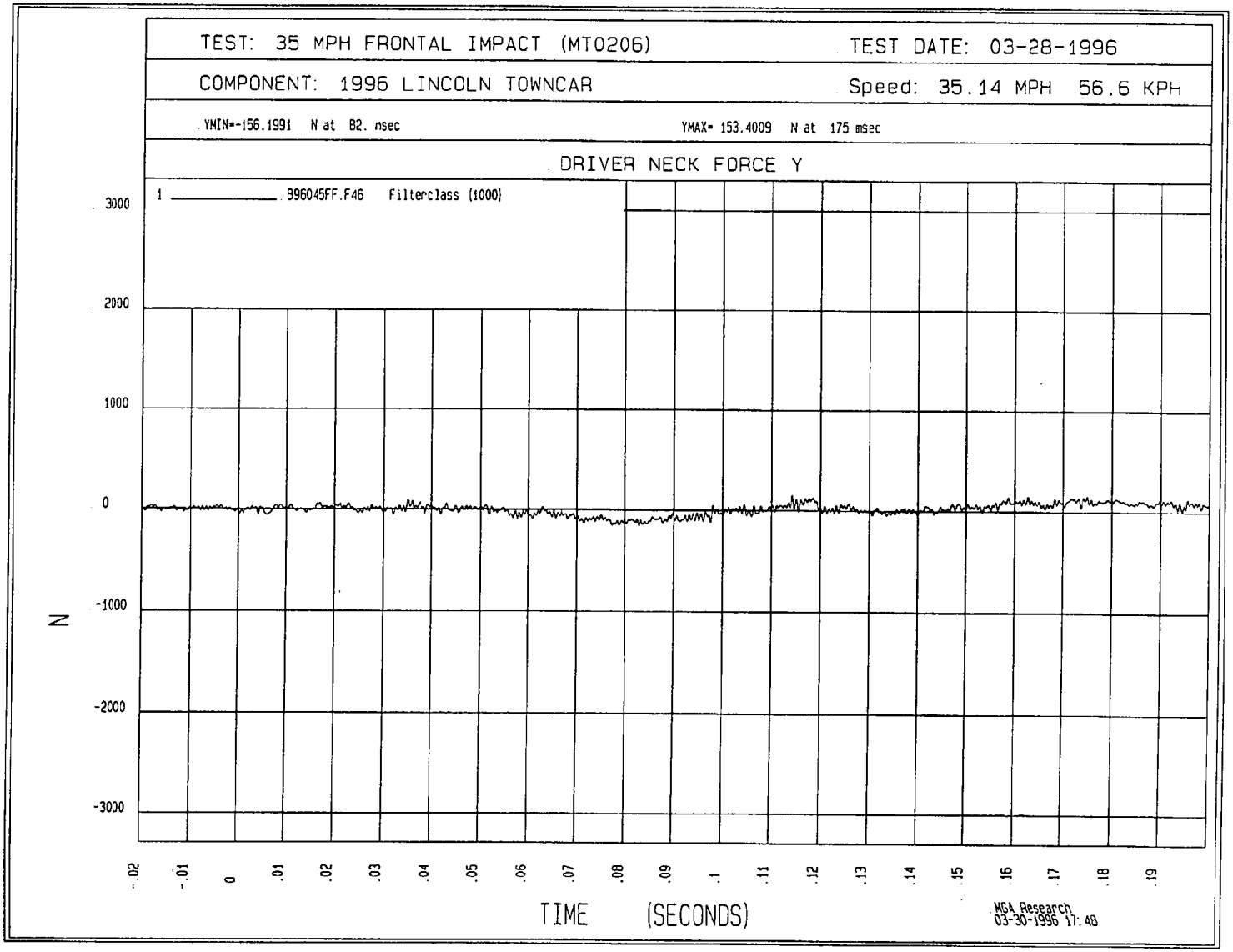

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 4.410147E-02 G'S at 14. msec
YMAX= 42.85979 G'S at 81. msec
DRIVER PELVIS RESULTANT ACCELERATION
1 B96045AV.A60 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:45

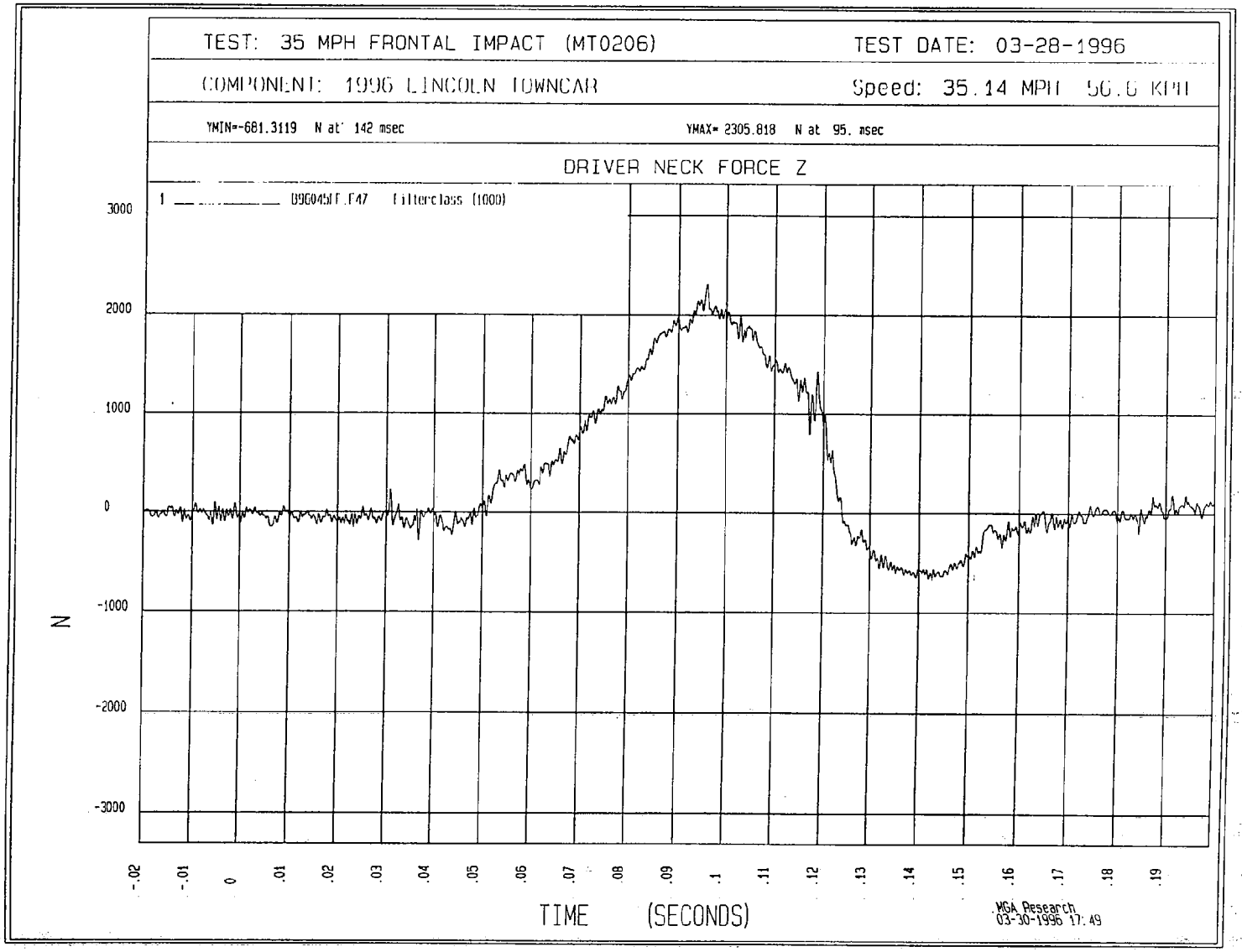

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-10.05119 KPH at 139 msec
YMAX= 56.56441 KPH at 8.9 msec
DRIVER PELVIS X VELOCITY
1 B9604SAI.V60 Filterclass (1000)
KPH
60
40
20
0
-20
-40
TIME Seconds
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
03-30-1996 18:09

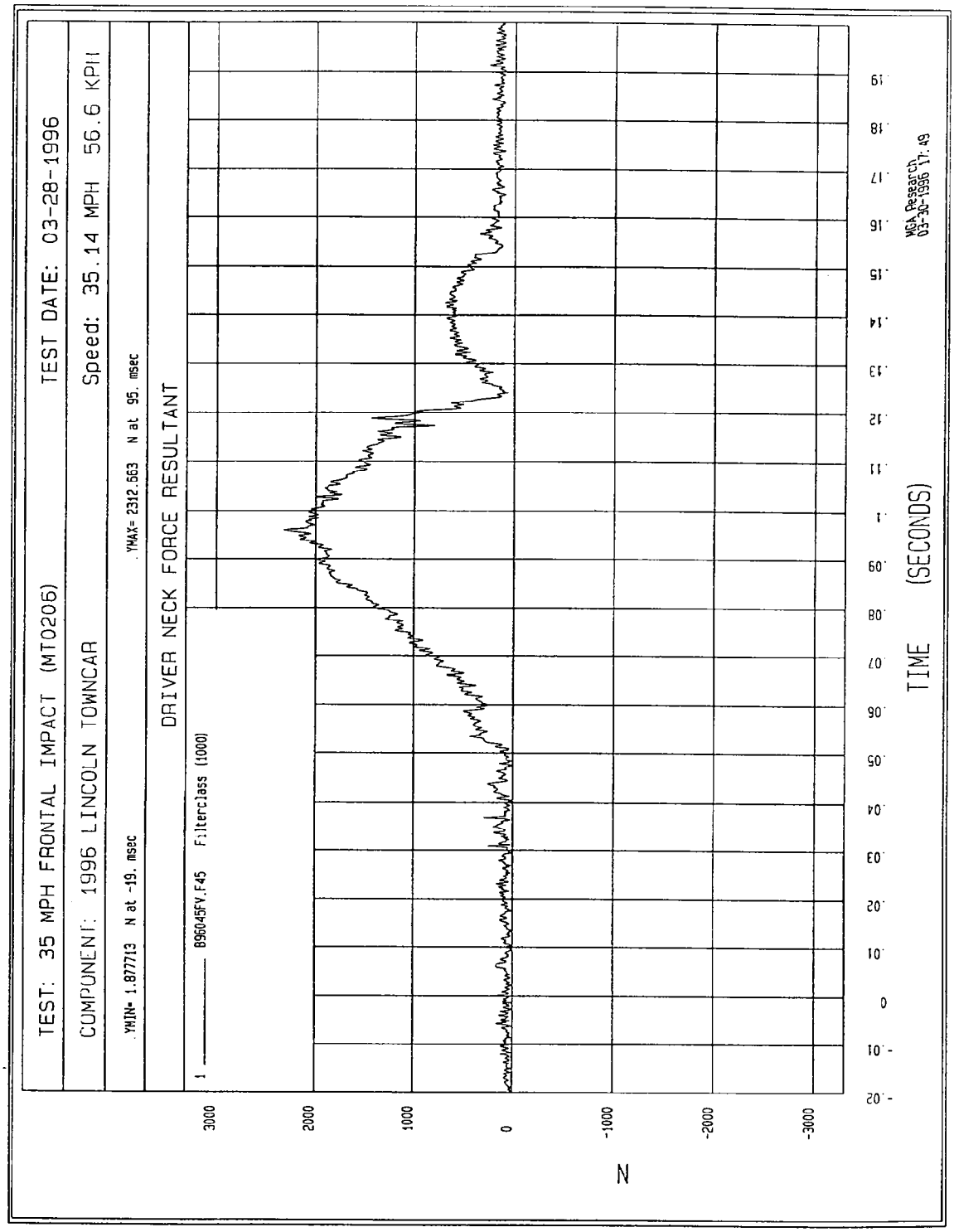

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-14.49343 N at 1.9 msec
YMAX= 2557.516 N at 67. msec
DRIVER LAP BELT FORCE
1 896045FF.F68 Filterclass (60)
7000
6000
5000
4000
3000
2000
1000
0
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:48

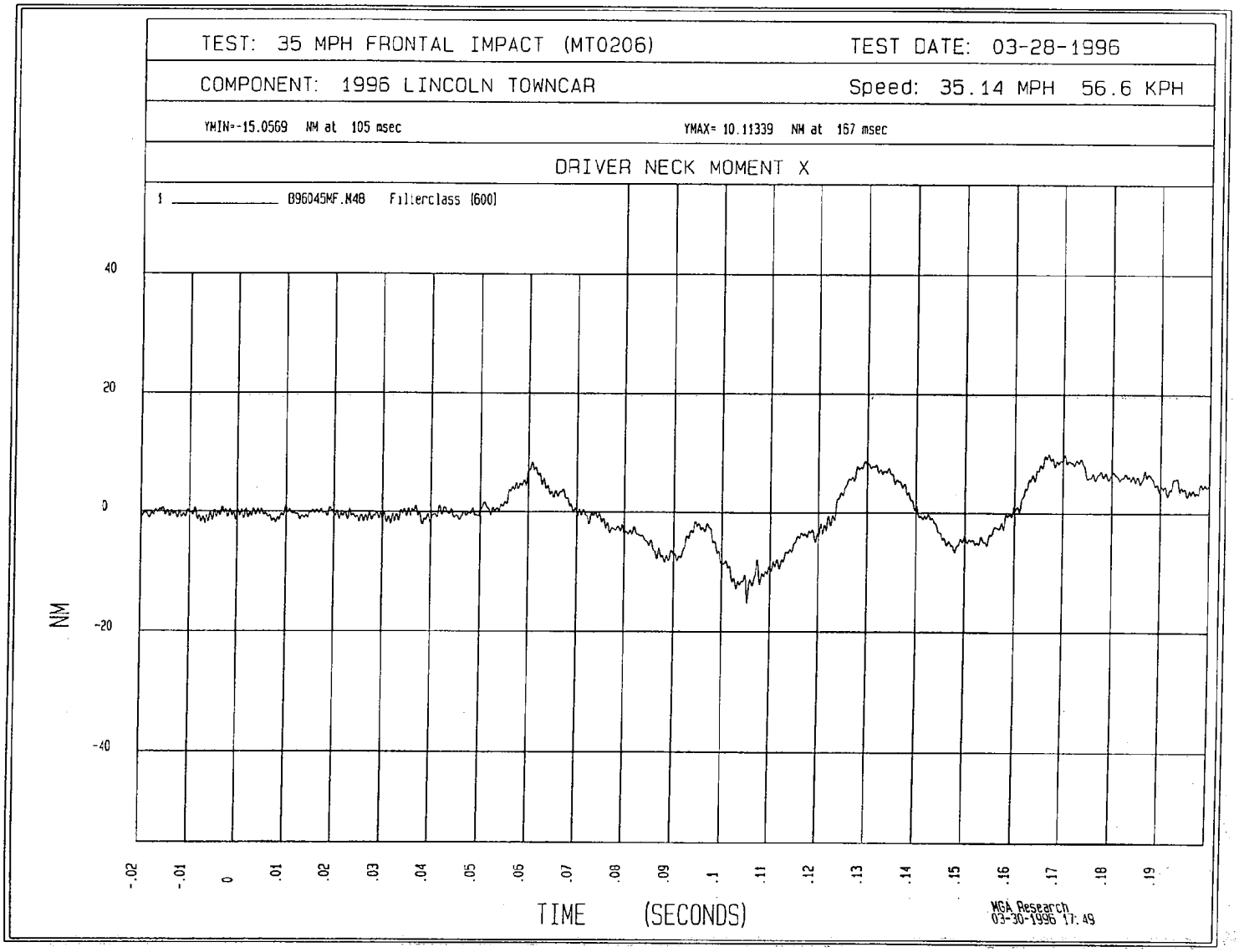

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-67.99355 N at 198 msec
YMAX= 7449.633 N at 93. msec
DRIVER SHOULDER BELT FORCE
1 B960415F.F67 Filterclass (60)
N
TIME (SECONDS)
MGA Research
04-02-1996 11:13

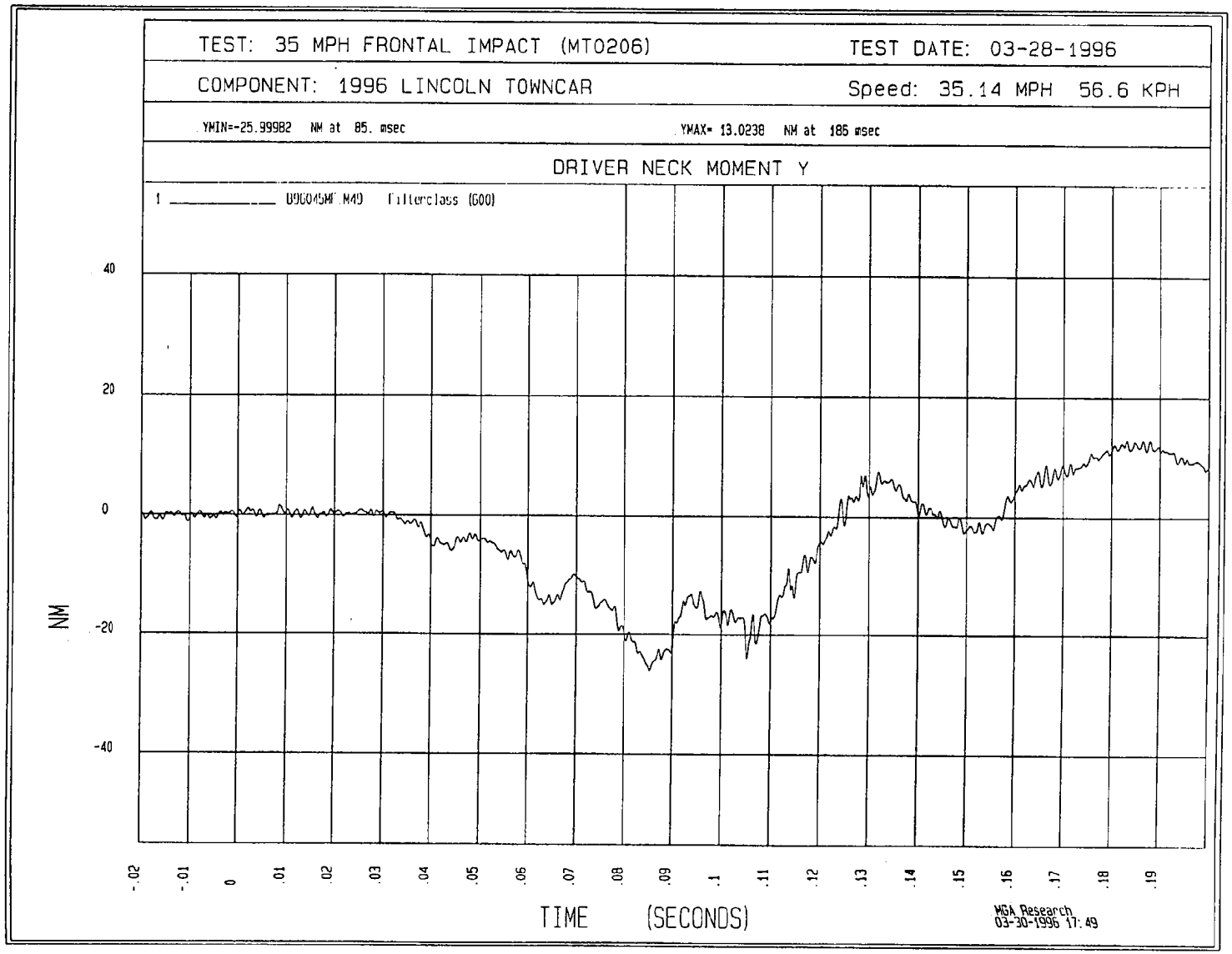

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-297.3721 N at 88. msec
YMAX= 214.706 N at 133 msec
DRIVER NECK FORCE X
1 B96045FF.F45 Filterclass (1000)
3000
2000
1000
0
-1000
-2000
-3000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:48

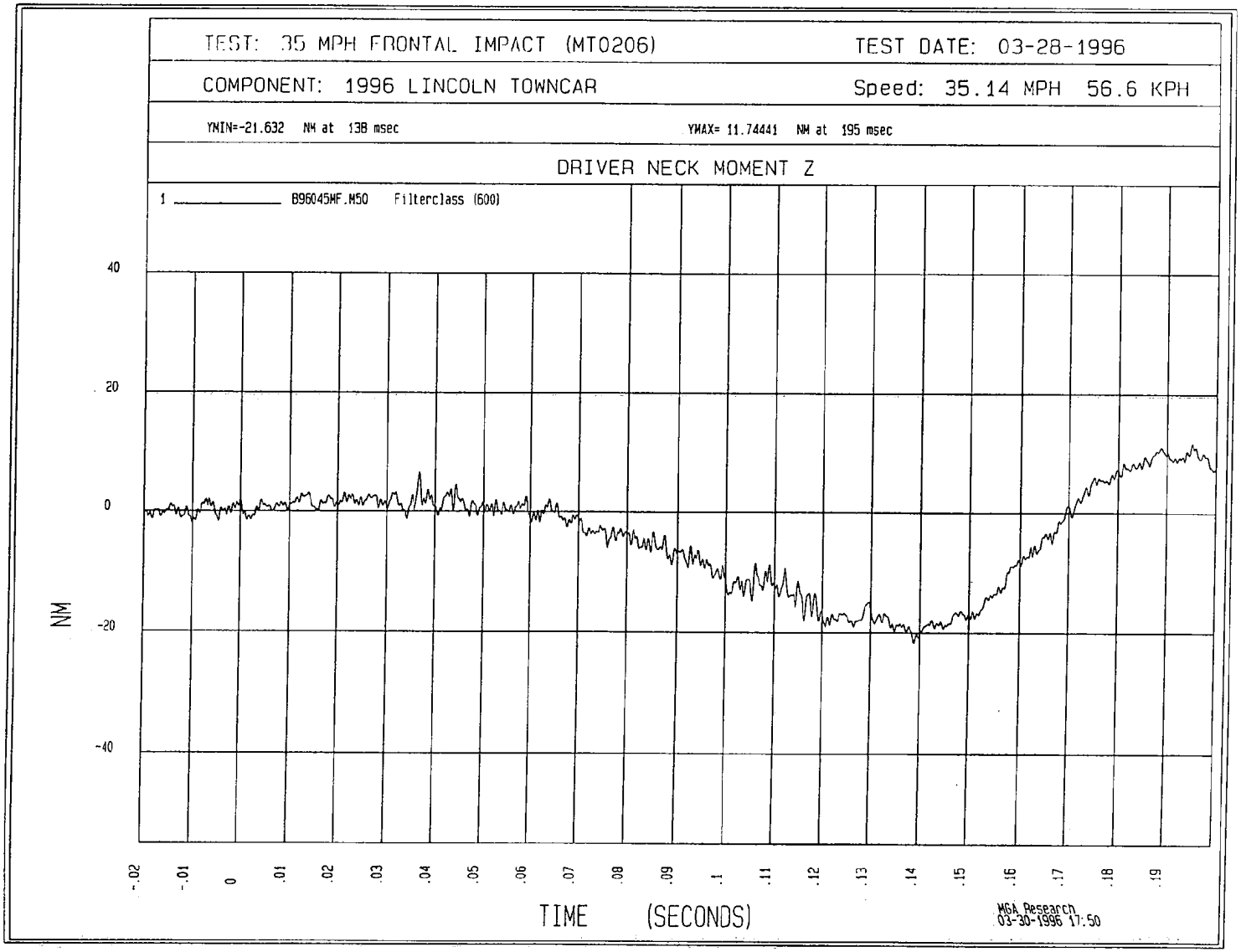

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-156.1991 N at 82. msec
YMAX= 153.4009 N at 175 mSec
DRIVER NECK FORCE Y
1 896045FF.F46 Filterclass (1000)
3000
2000
1000
0
-1000
-2000
-3000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:48

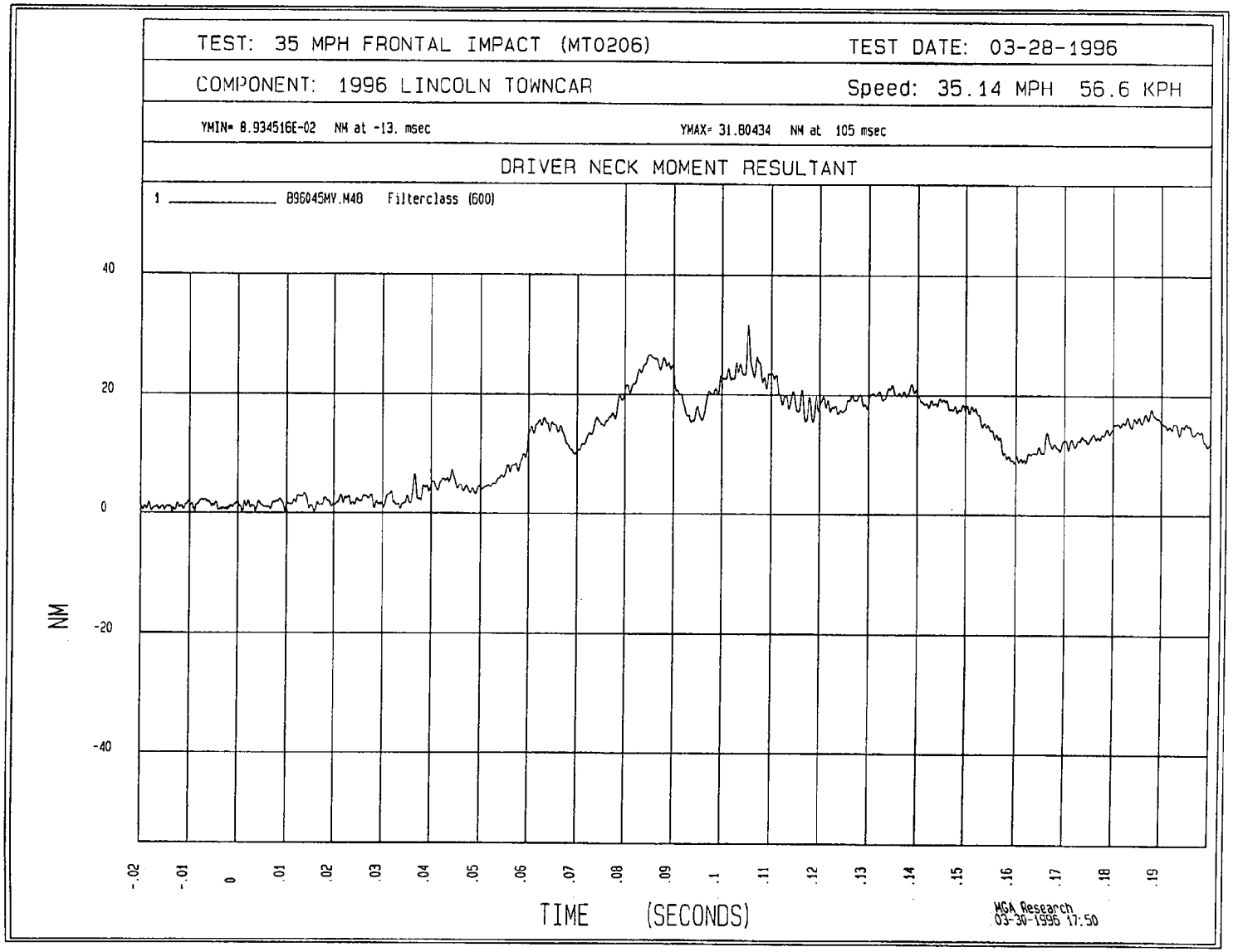

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-681.3119 N at 142 msec
YMAX= 2305.818 N at 95. msec
DRIVER NECK FORCE Z
1 ——— 096045NF.F47 Filterclass (1000)
3000
2000
1000
0
-1000
-2000
-3000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:49

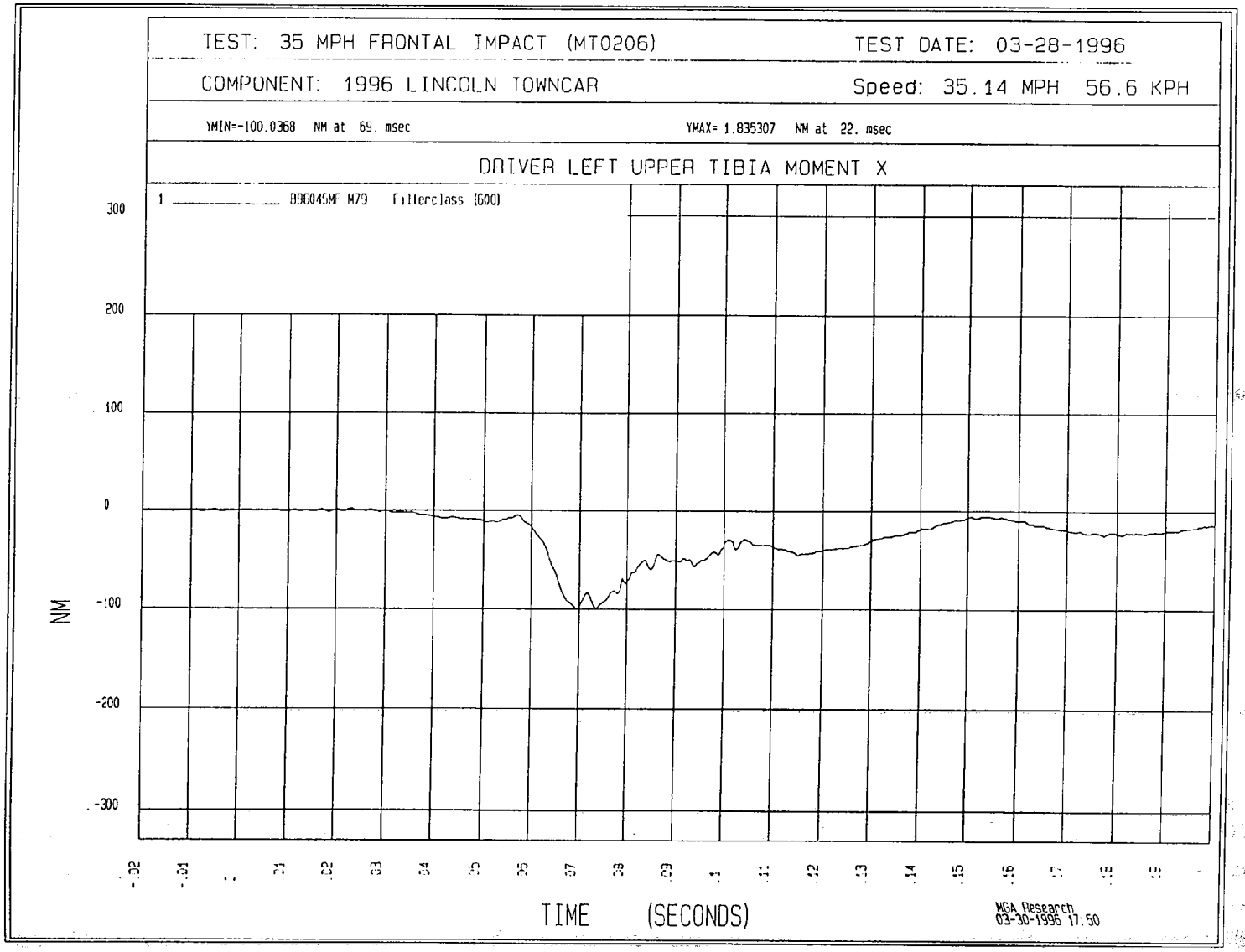

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 1.877713 N at -19. msec
YMAX= 2312.563 N at 95. msec
DRIVER NECK FORCE RESULTANT
1 B96045FV.F45 Filterclass (1000)
3000
2000
1000
0
-1000
-2000
-3000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:49

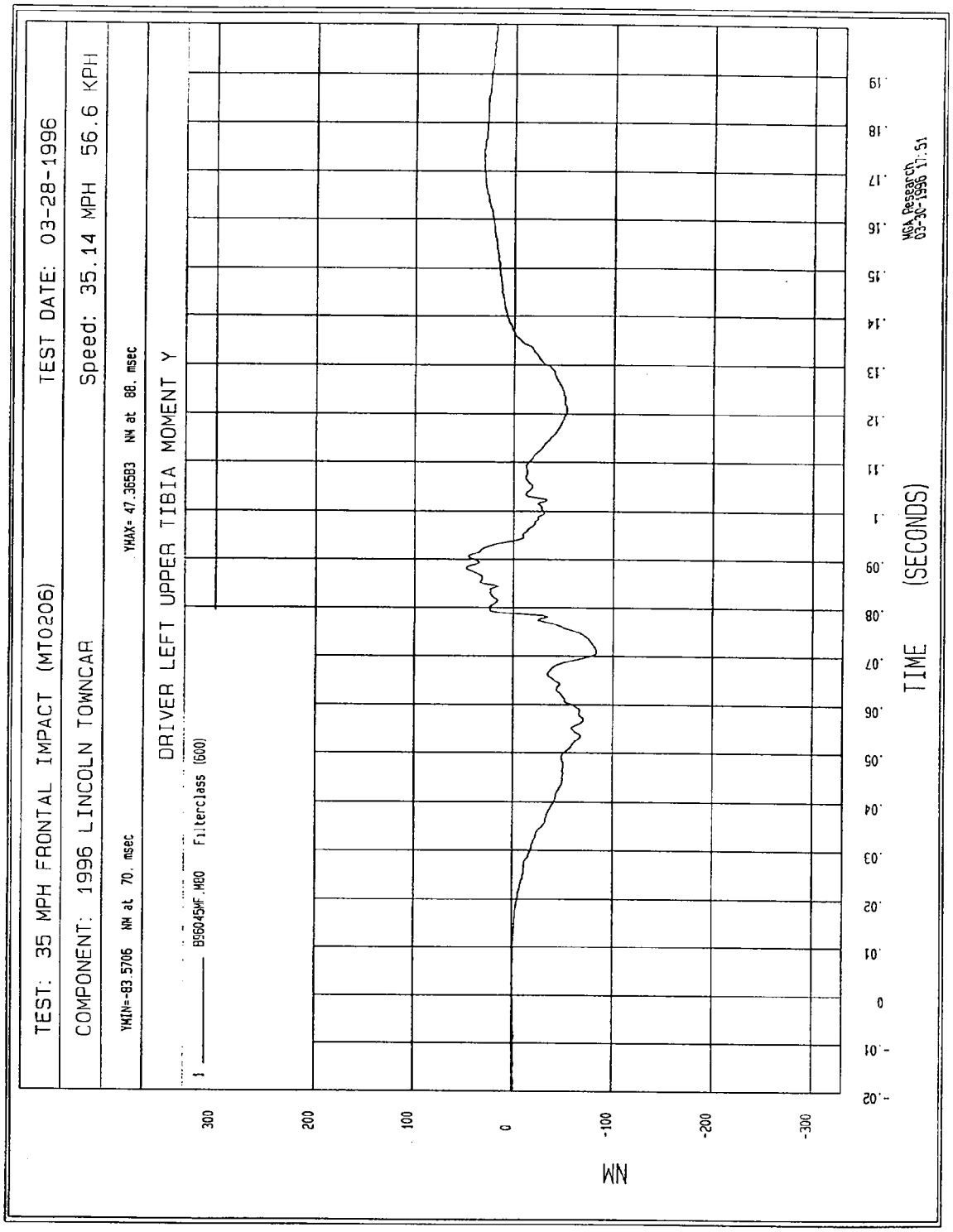

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-15.0569 NM at 105 msec
YMAX= 10.11339 NM at 167 msec
DRIVER NECK MOMENT X
1 B96045MF.N48 Filterclass (600)
NM
40
20
0
-20
-40
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:49

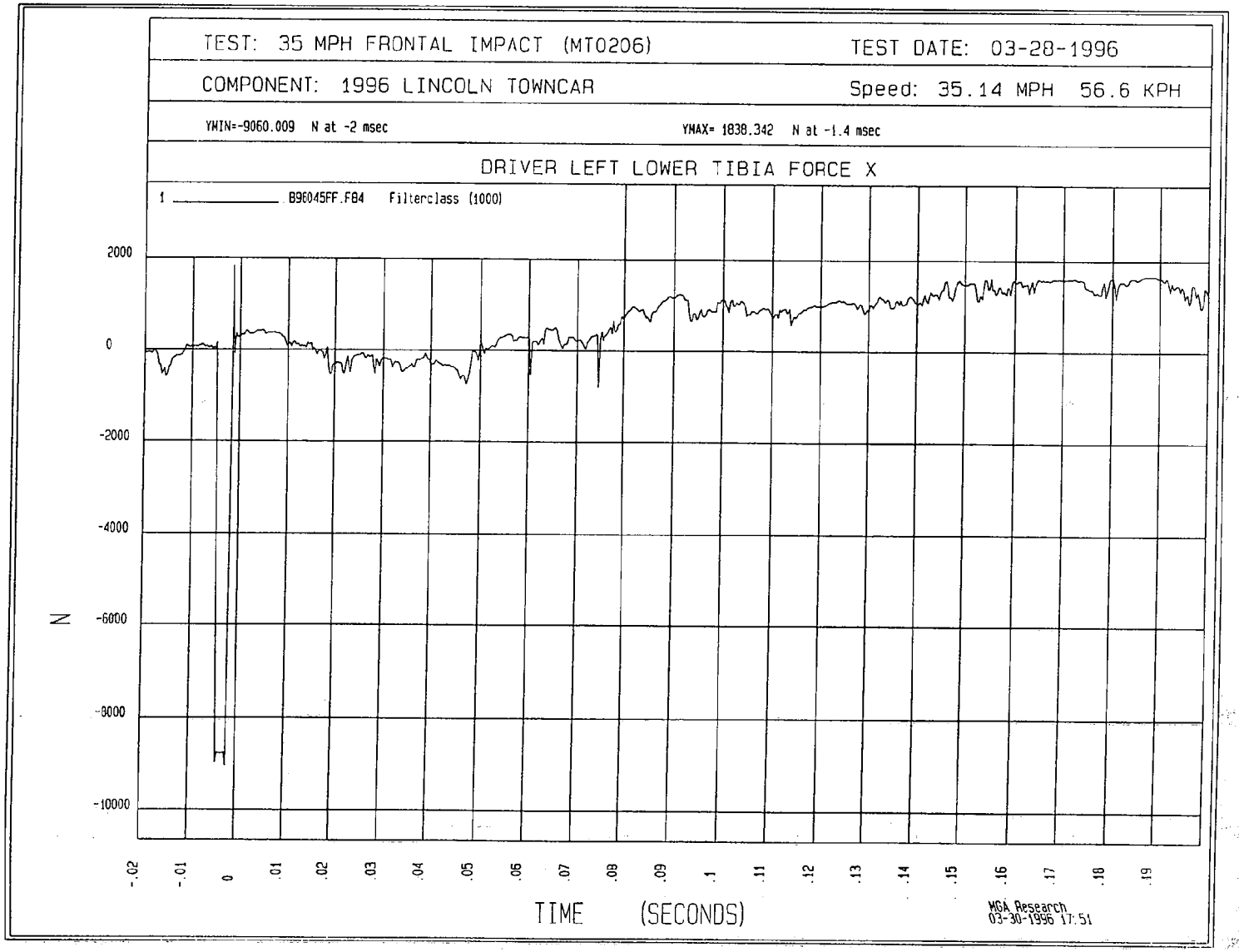

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-25.99982 NM at 85. msec
YMAX= 13.0238 NM at 186 msec
DRIVER NECK MOMENT Y
1 _____ U9604SMF M40 Filterclass (600)
40
20
0
-20
-40
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:49

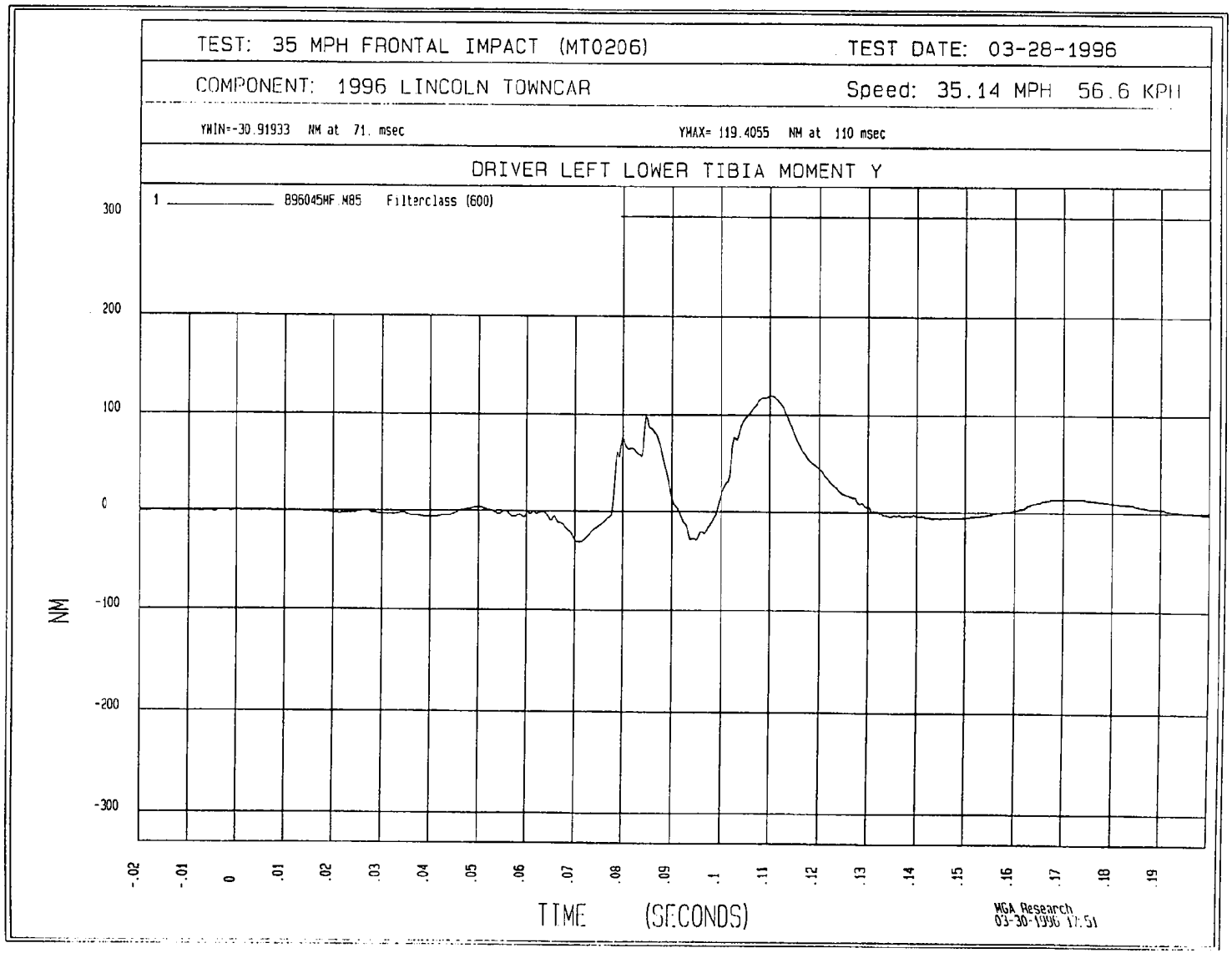

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-21.632 NM at 138 msec
YMAX= 11.74441 NM at 195 msec
DRIVER NECK MOMENT Z
1 B96045MF.M50 Filterclass (600)
NM
40
20
0
-20
-40
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:50

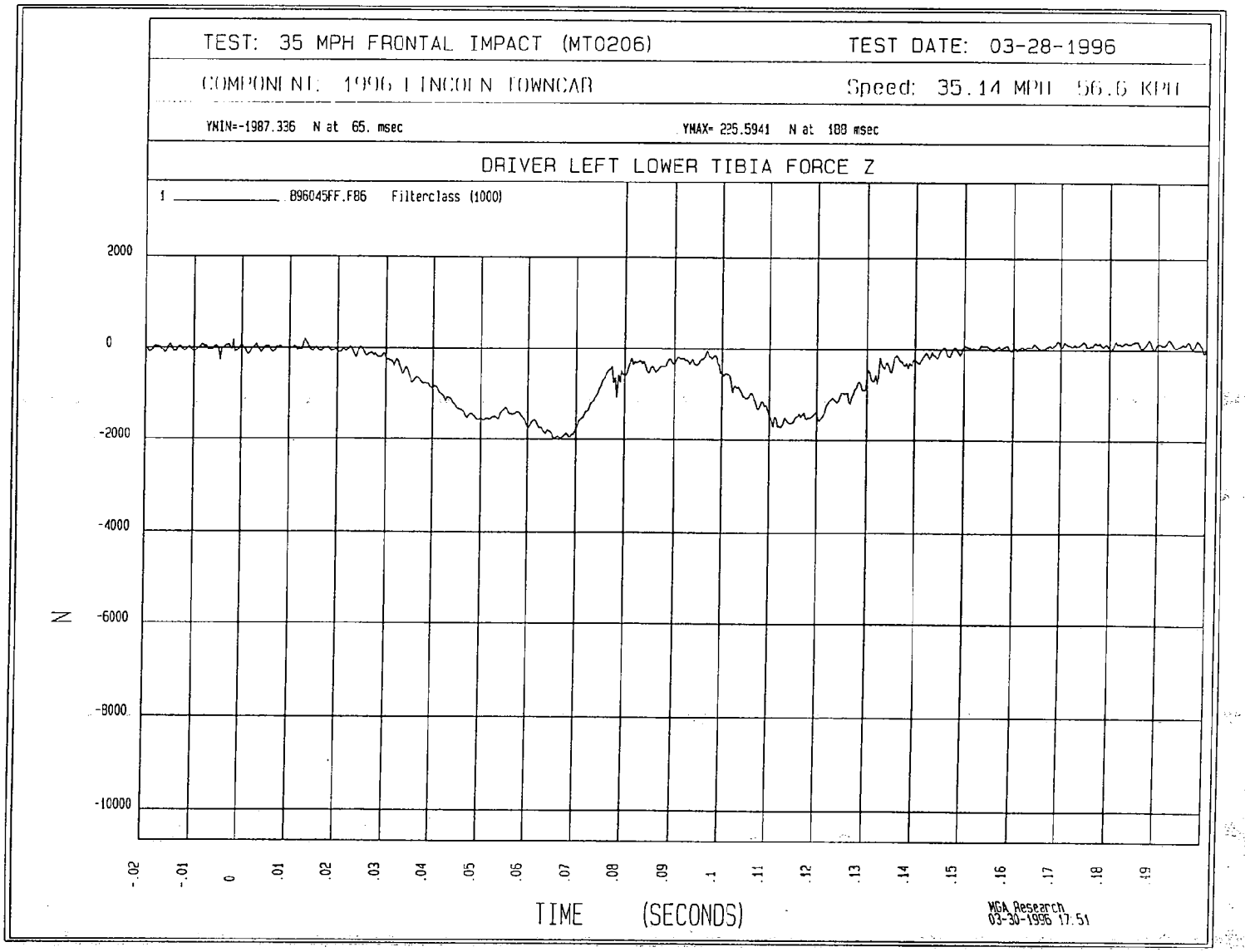

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 8.934516E-02 NM at -13. msec
YMAX= 31.80434 NM at 105 msec
DRIVER NECK MOMENT RESULTANT
1 B96045MV.M40 Filterclass (600)
NM
40
20
0
-20
-40
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:50

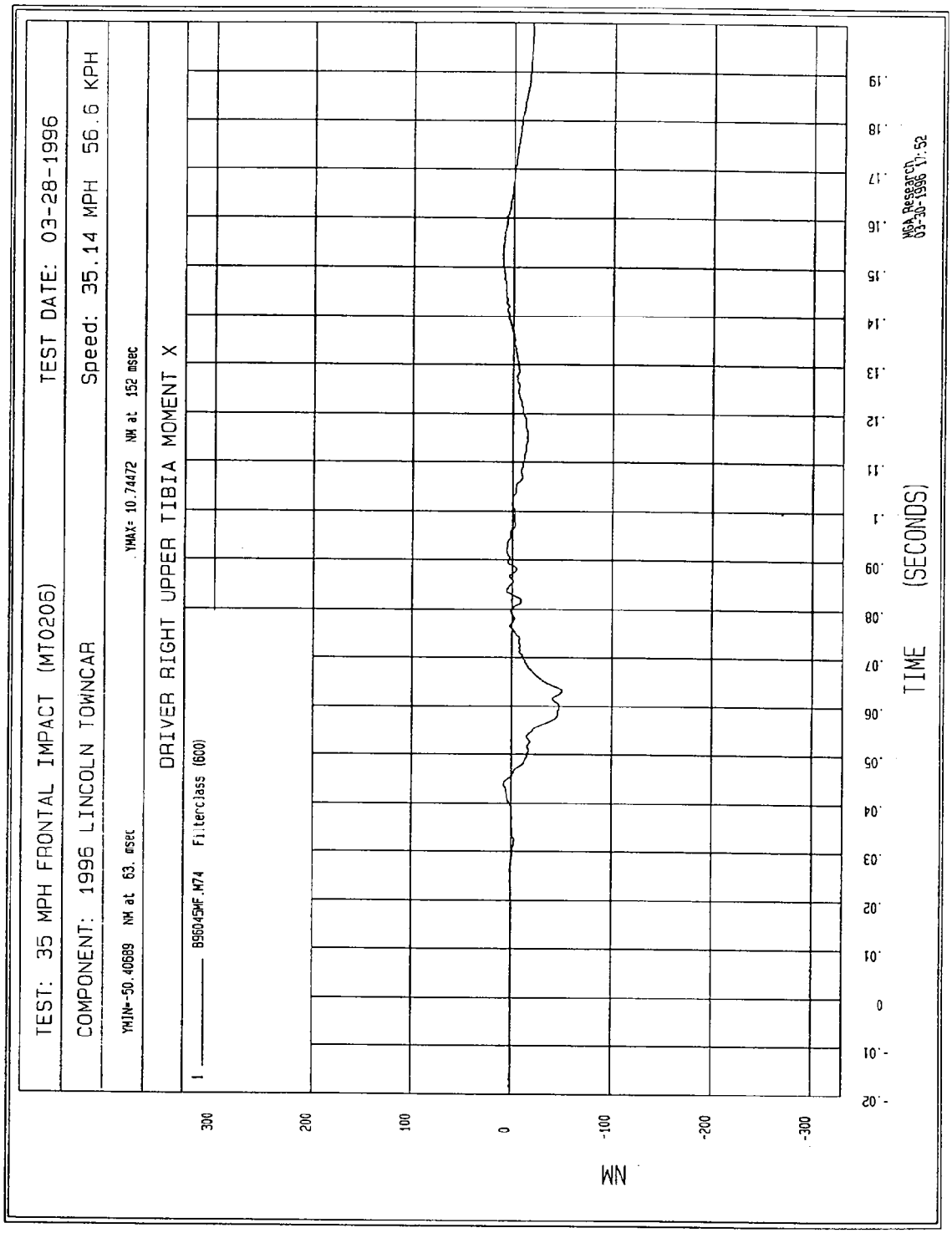

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-100.0368 NM at 69. msec
YMAX= 1.835307 NM at 22. msec
DRIVER LEFT UPPER TIBIA MOMENT X
1 B96045MF M79 Filterclass (600)
300
200
100
0
-100
-200
-300
NM
-.02
-.01
.
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:50

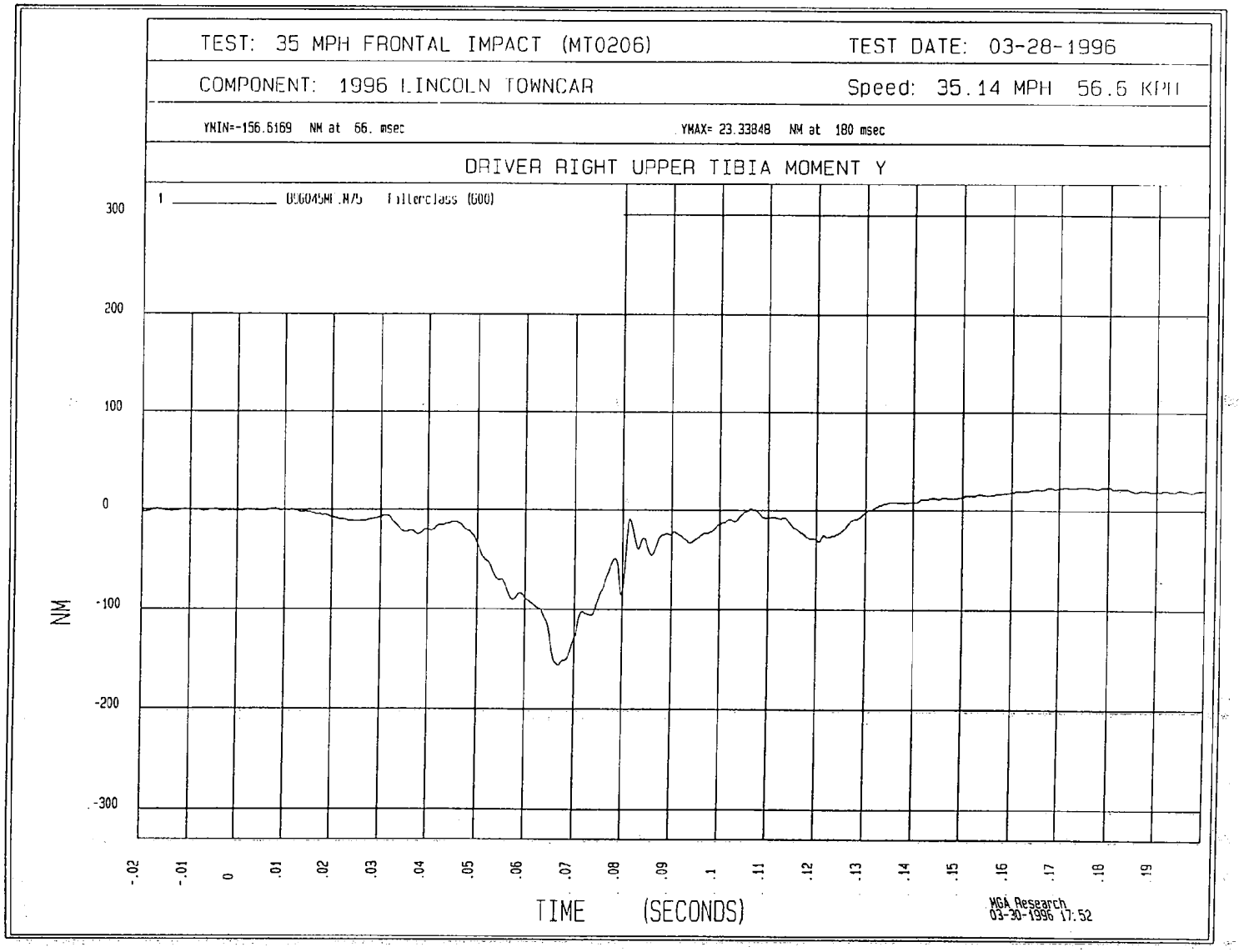

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-83.5706 NM at 70. msec
YMAX= 47.36583 NM at 88. msec
DRIVER LEFT UPPER TIBIA MOMENT Y
1 B96045MF.M00 Filterclass (600)
NM
300
200
100
0
-100
-200
-300
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 11:51

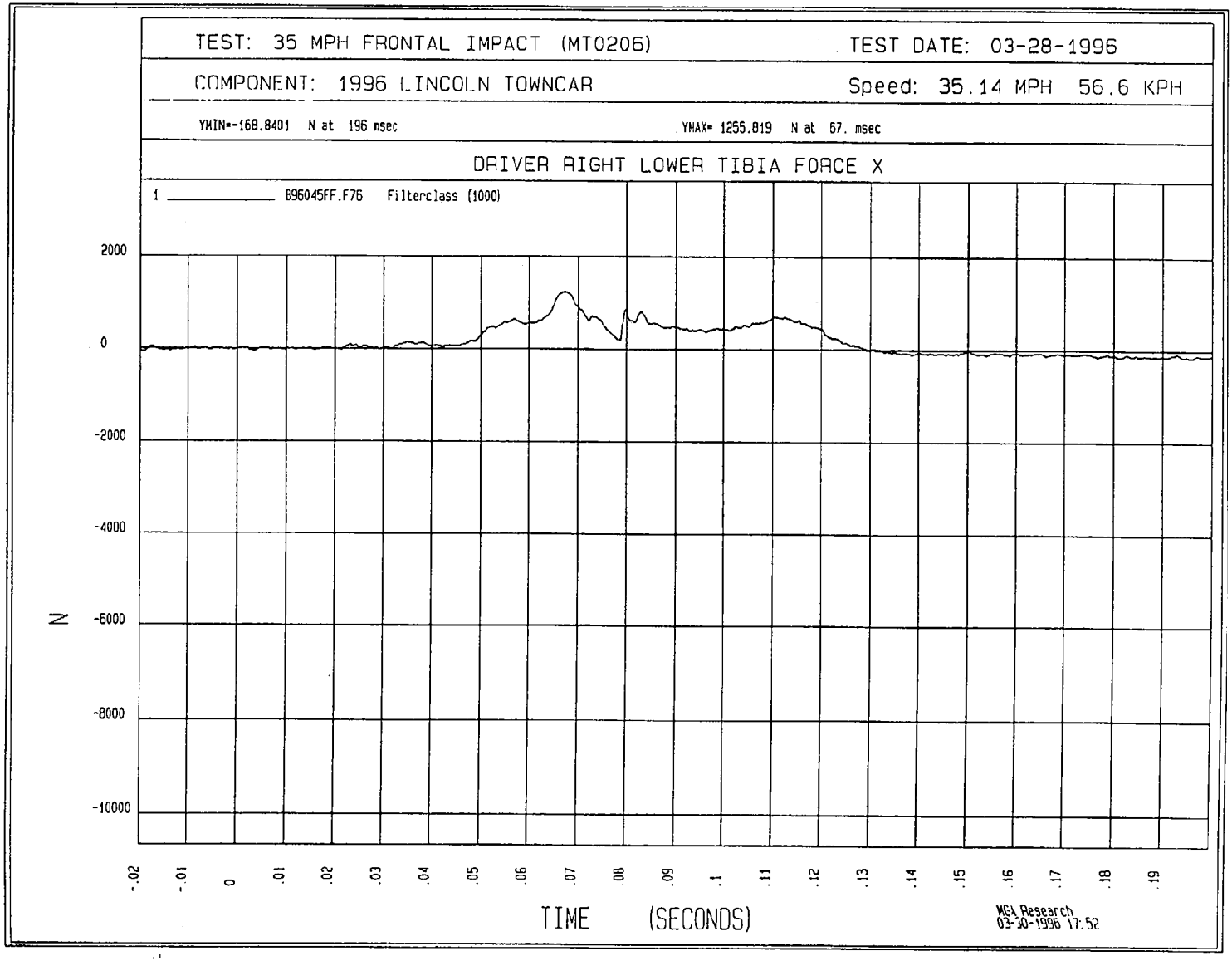

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-9060.009 N at -2 msec
YMAX= 1838.342 N at -1.4 msec
DRIVER LEFT LOWER TIBIA FORCE X
1 B96045FF.F84 Filterclass (1000)
2000
0
-2000
-4000
-6000
-8000
-10000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:51

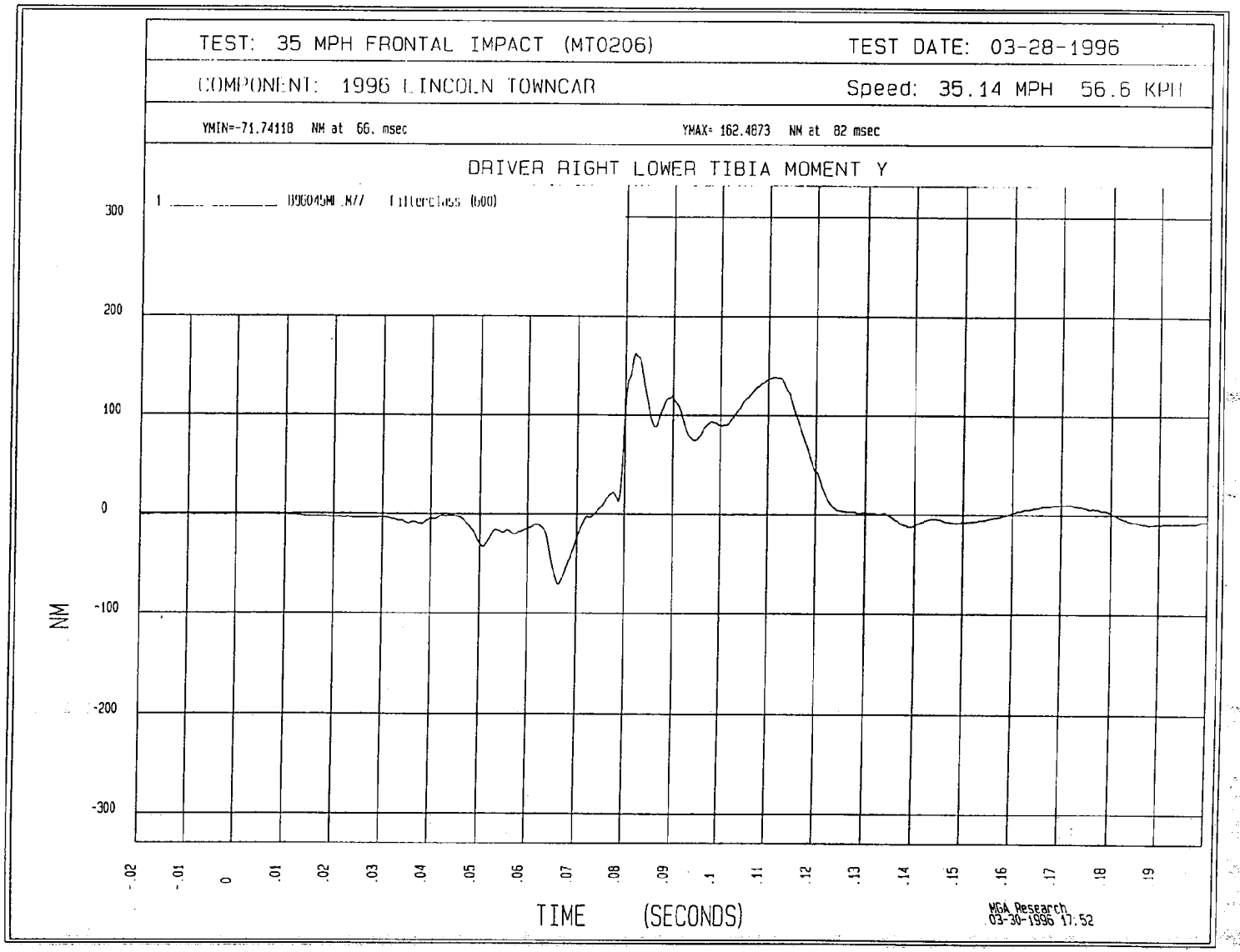

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-30.91933 NM at 71. msec
YMAX= 119.4055 NM at 110 msec
DRIVER LEFT LOWER TIBIA MOMENT Y
1 896045MF.M85 Filterclass (600)
300
200
100
0
-100
-200
-300
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:51

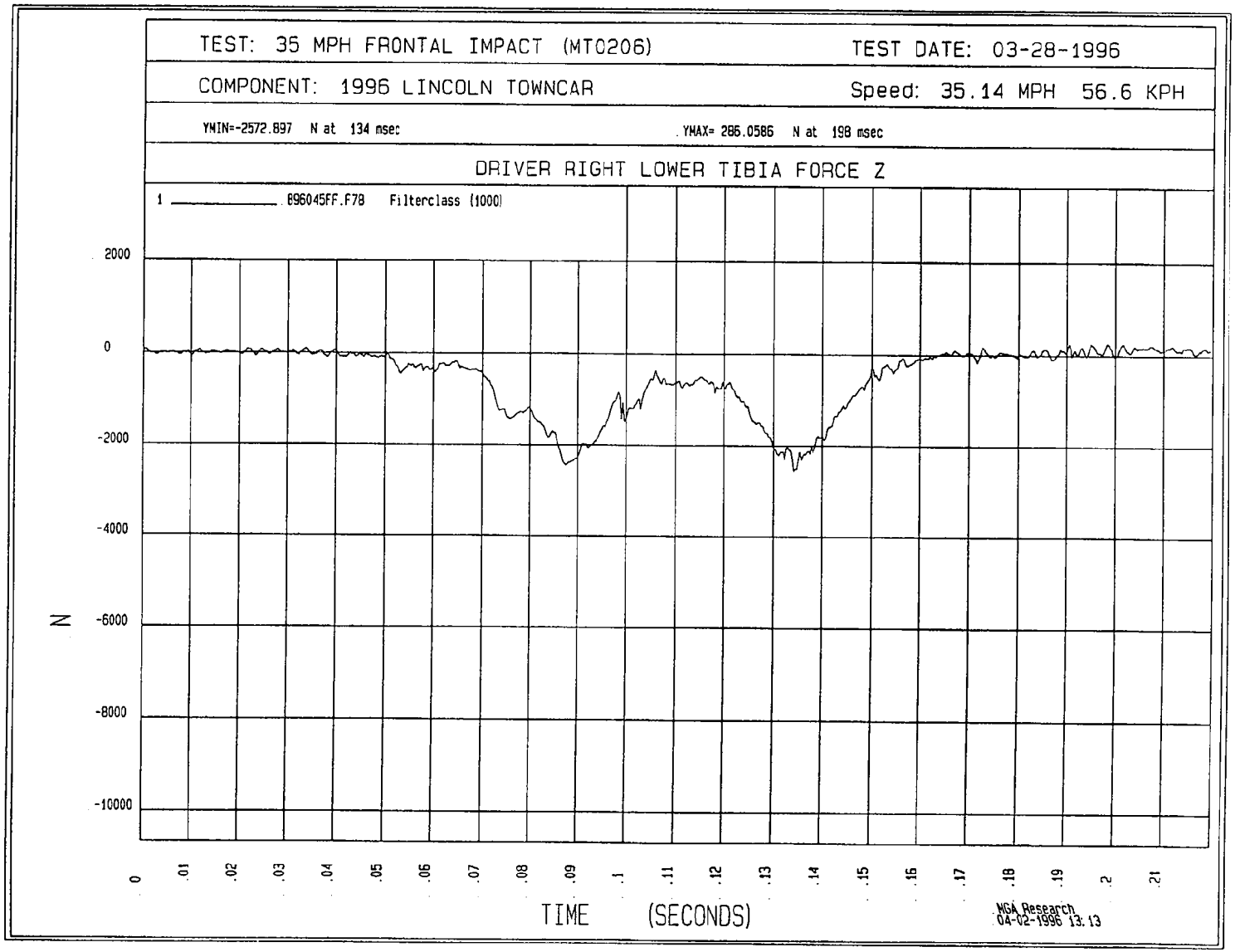

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-1987.336 N at 65. msec
YMAX= 225.5941 N at 188 msec
DRIVER LEFT LOWER TIBIA FORCE Z
1 B96045FF.F86 Filterclass (1000)
2000
0
-2000
-4000
-6000
-8000
-10000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:51

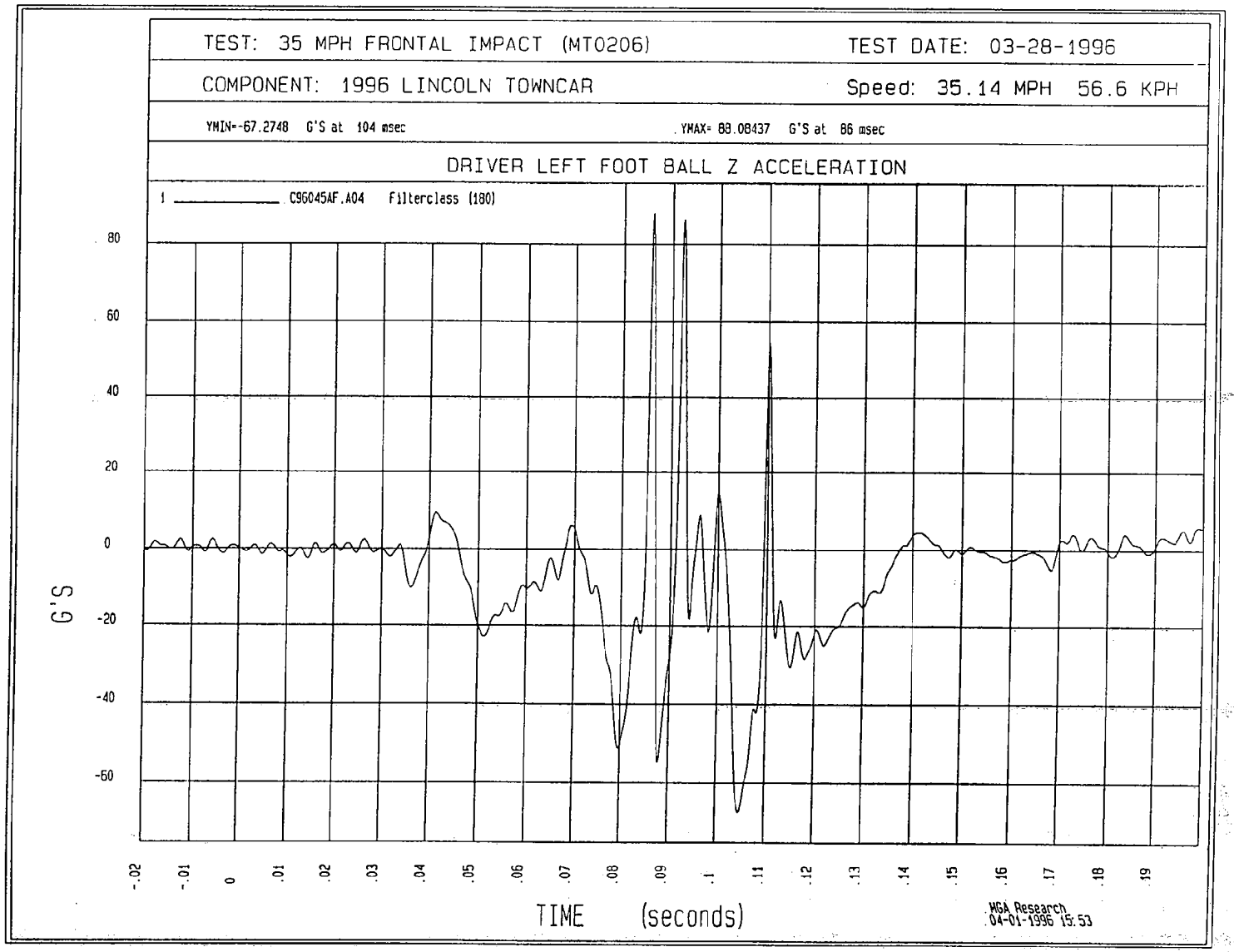

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-50.40689 NM at 63. msec
YMAX= 10.74472 NM at 152 msec
DRIVER RIGHT UPPER TIBIA MOMENT X
1 B96045MF.M74 Filterclass (600)
NM
300
200
100
0
-100
-200
-300
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 11:52

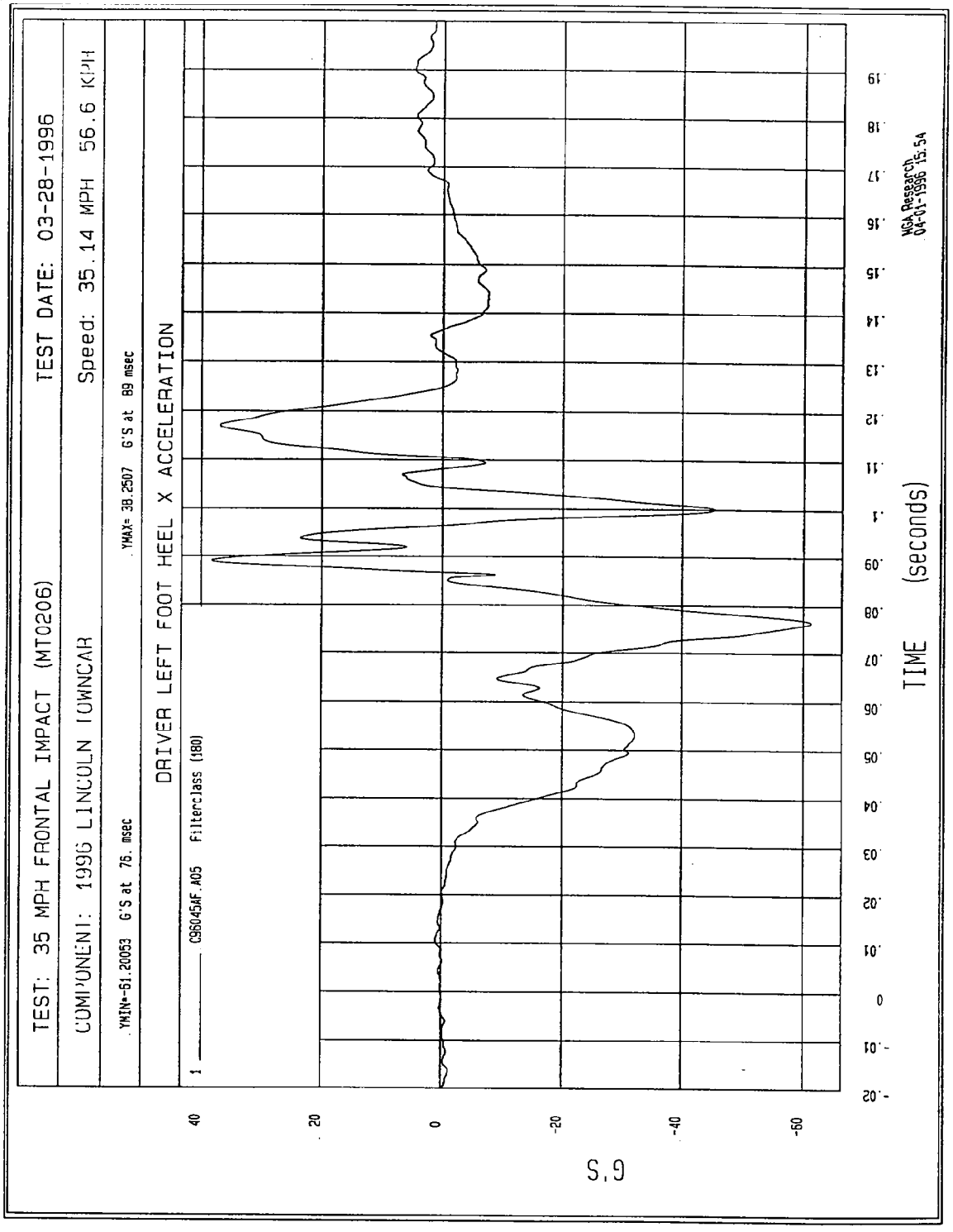

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-156.6169 NM at 66. msec
YMAX= 23.33848 NM at 180 msec
DRIVER RIGHT UPPER TIBIA MOMENT Y
1 ———— 060045MH.M/5 Filterclass (600)
300
200
100
0
-100
-200
-300
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:52

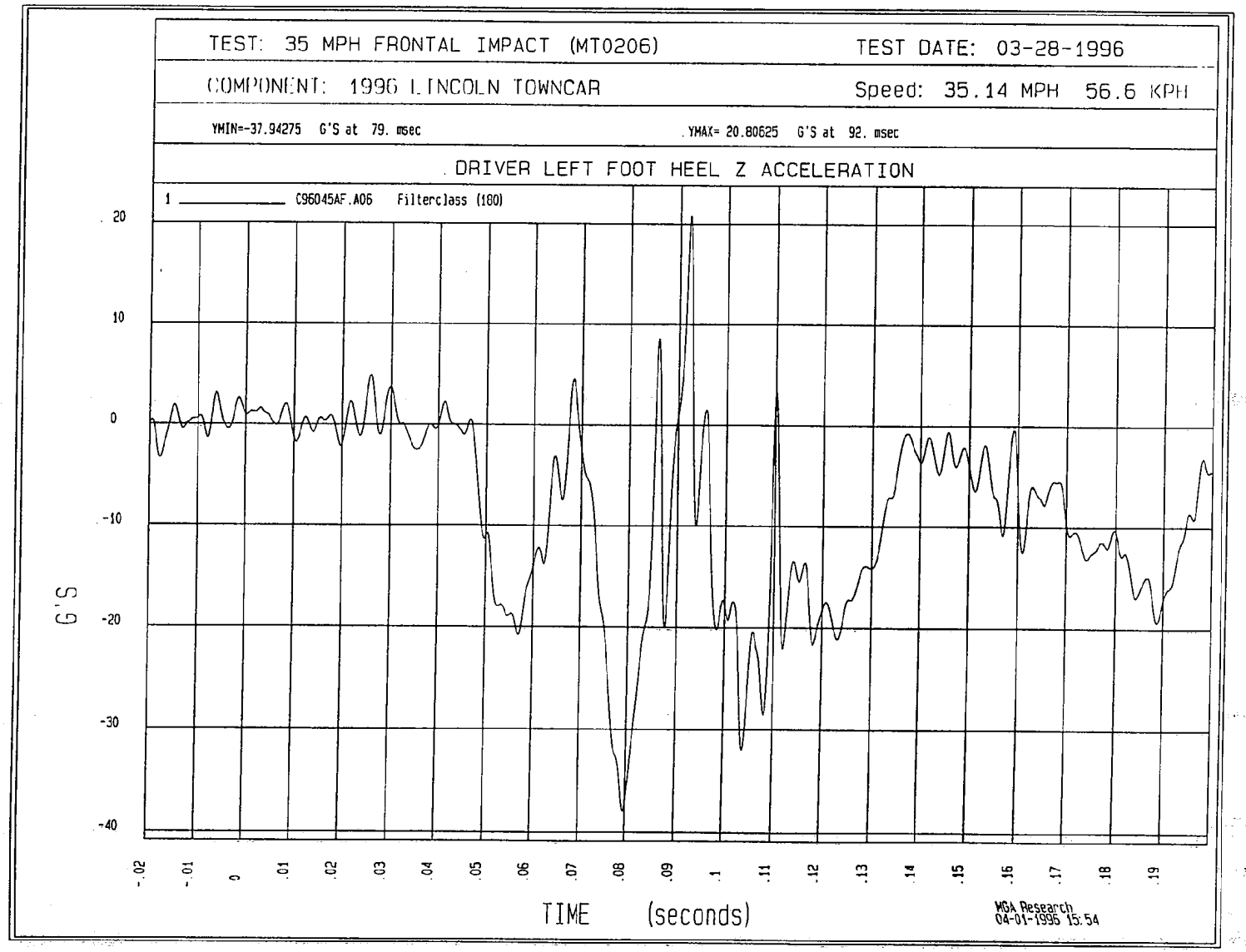

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-168.8401 N at 196 msec
YMAX= 1255.819 N at 67. msec
DRIVER RIGHT LOWER TIBIA FORCE X
1 896045FF.F76 Filterclass (1000)
2000
0
-2000
-4000
-6000
-8000
-10000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:52

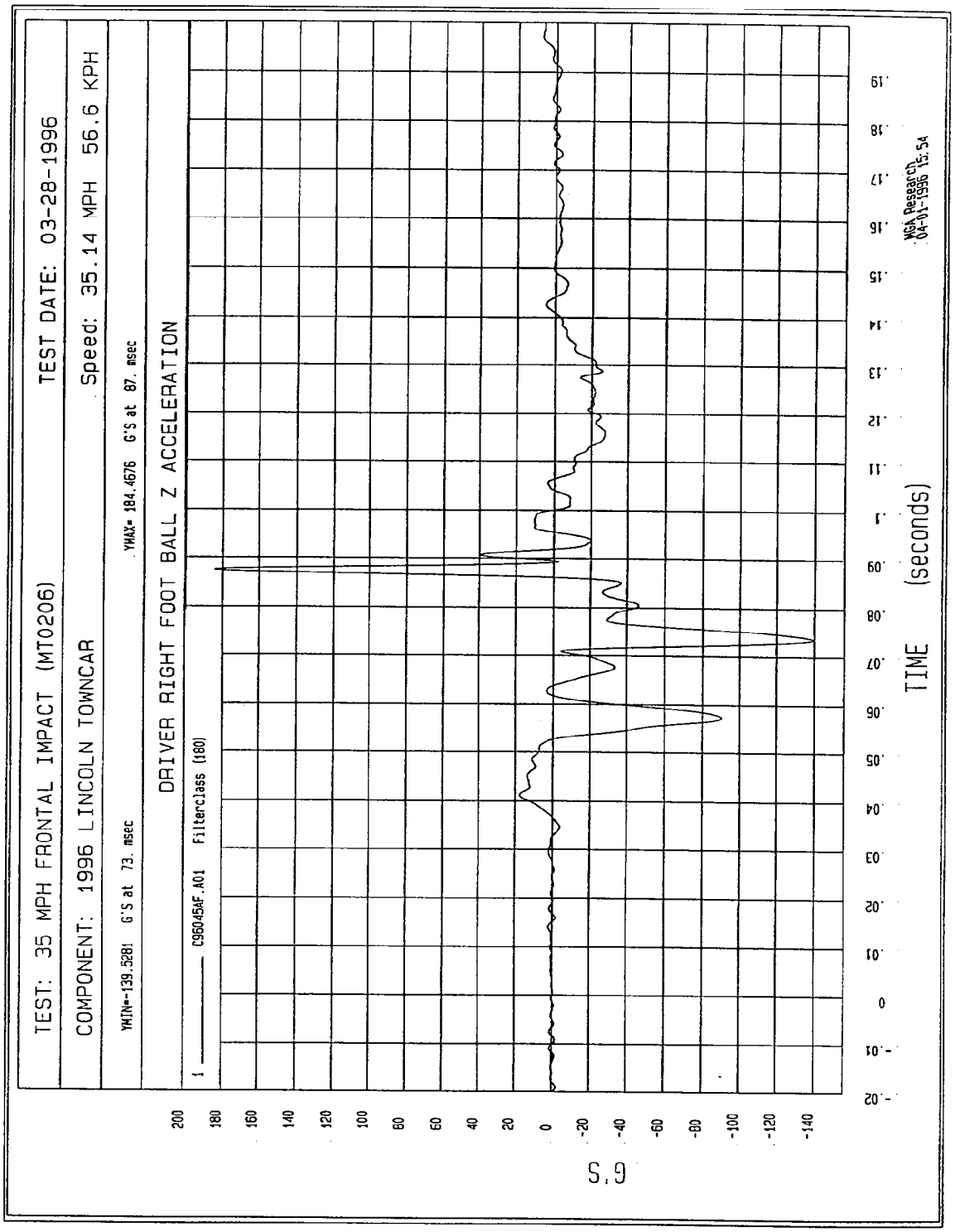

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-71.74118 NM at 66. msec
YMAX= 162.4873 NM at 82 msec
DRIVER RIGHT LOWER TIBIA MOMENT Y
300
200
100
0
-100
-200
-300
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:52

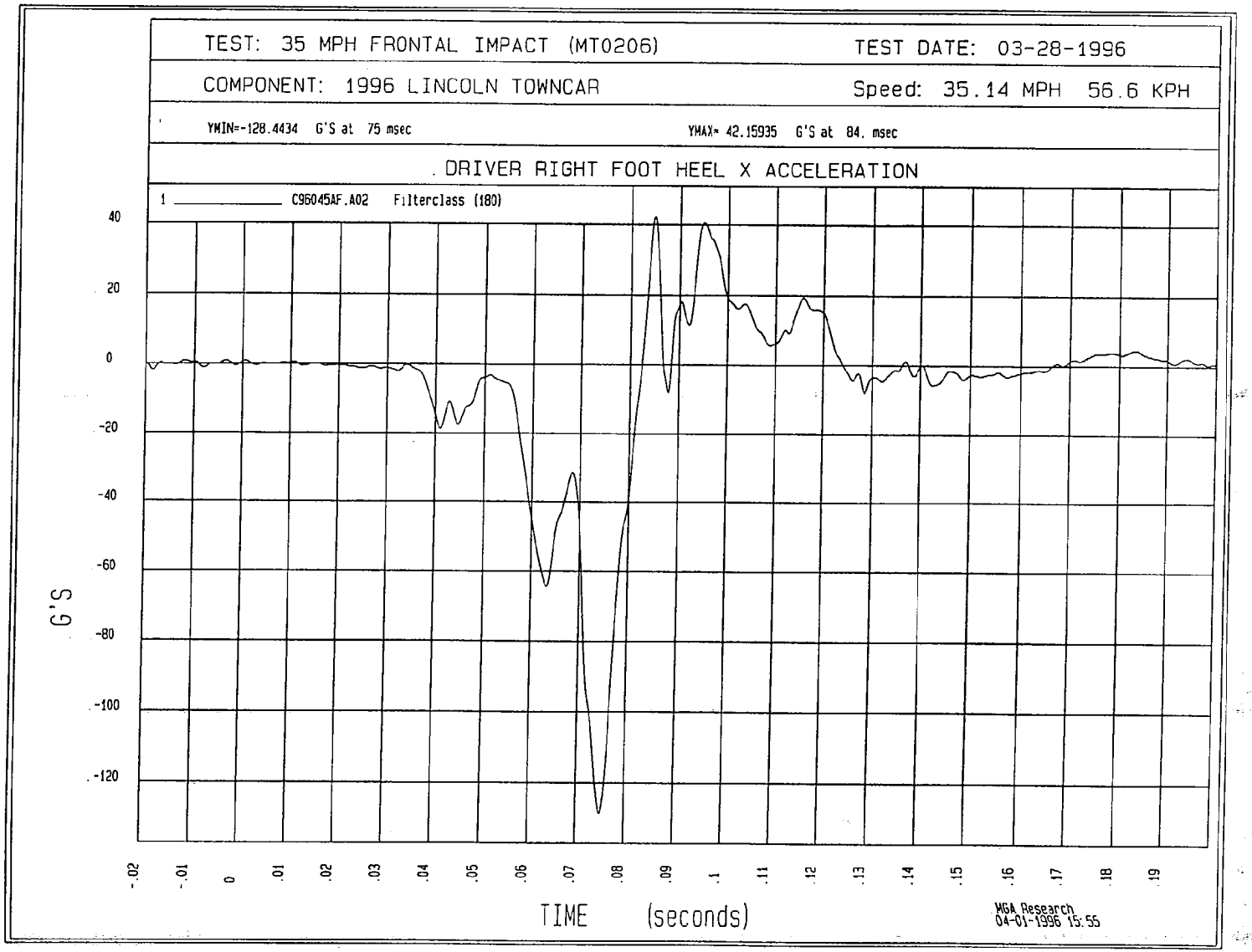

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-2572.897 N at 134 msec
YMAX= 286.0586 N at 198 msec
DRIVER RIGHT LOWER TIBIA FORCE Z
1 896045FF.F78 Filterclass (1000)
2000
0
-2000
-4000
-6000
-8000
-10000
N
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
.2
.21
TIME (SECONDS)
NGA Research
04-02-1996 13:13

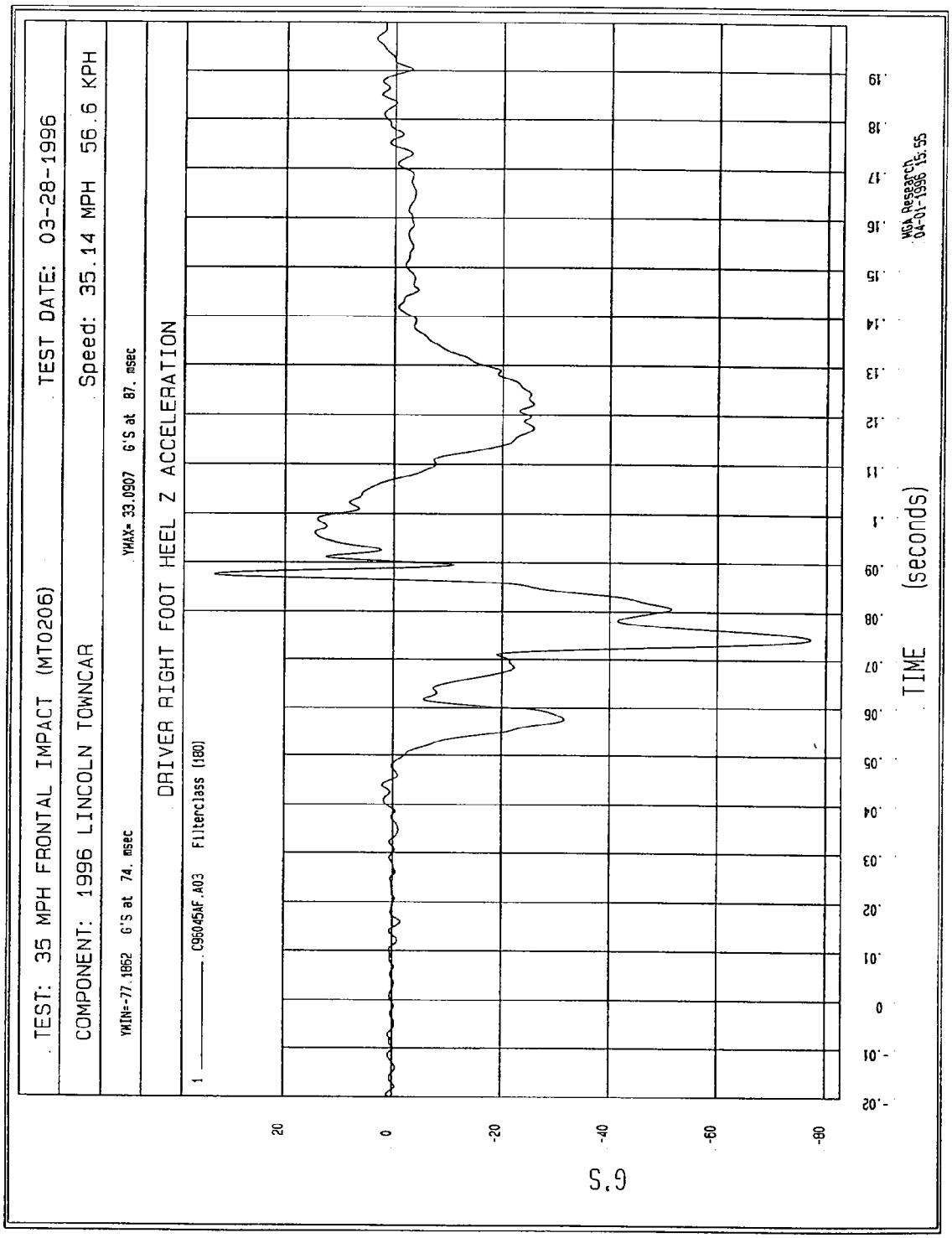

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-67.2748 G'S at 104 msec
YMAX= 88.08437 G'S at 86 msec
DRIVER LEFT FOOT BALL Z ACCELERATION
1 C96045AF.A04 Filterclass (180)
80
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1996 15:53

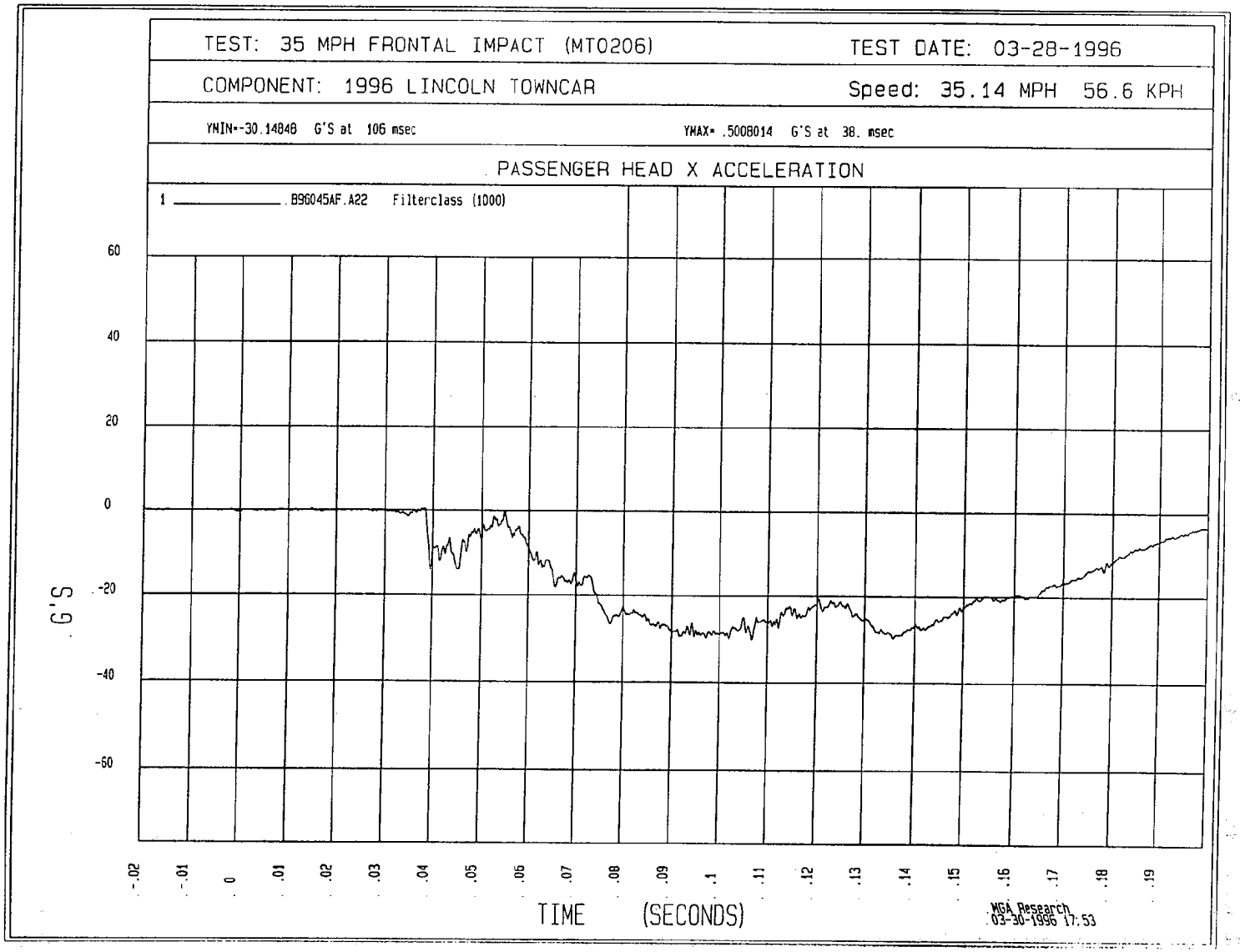

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-51.20063 G'S at 76. msec
YMAX= 38.2507 G'S at 89 msec
DRIVER LEFT FOOT HEEL X ACCELERATION
1 C95045AF.A05 FilterClass (180)
40
20
0
-20
-40
-60
G'S
TIME (seconds)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
04-01-1996 15:54

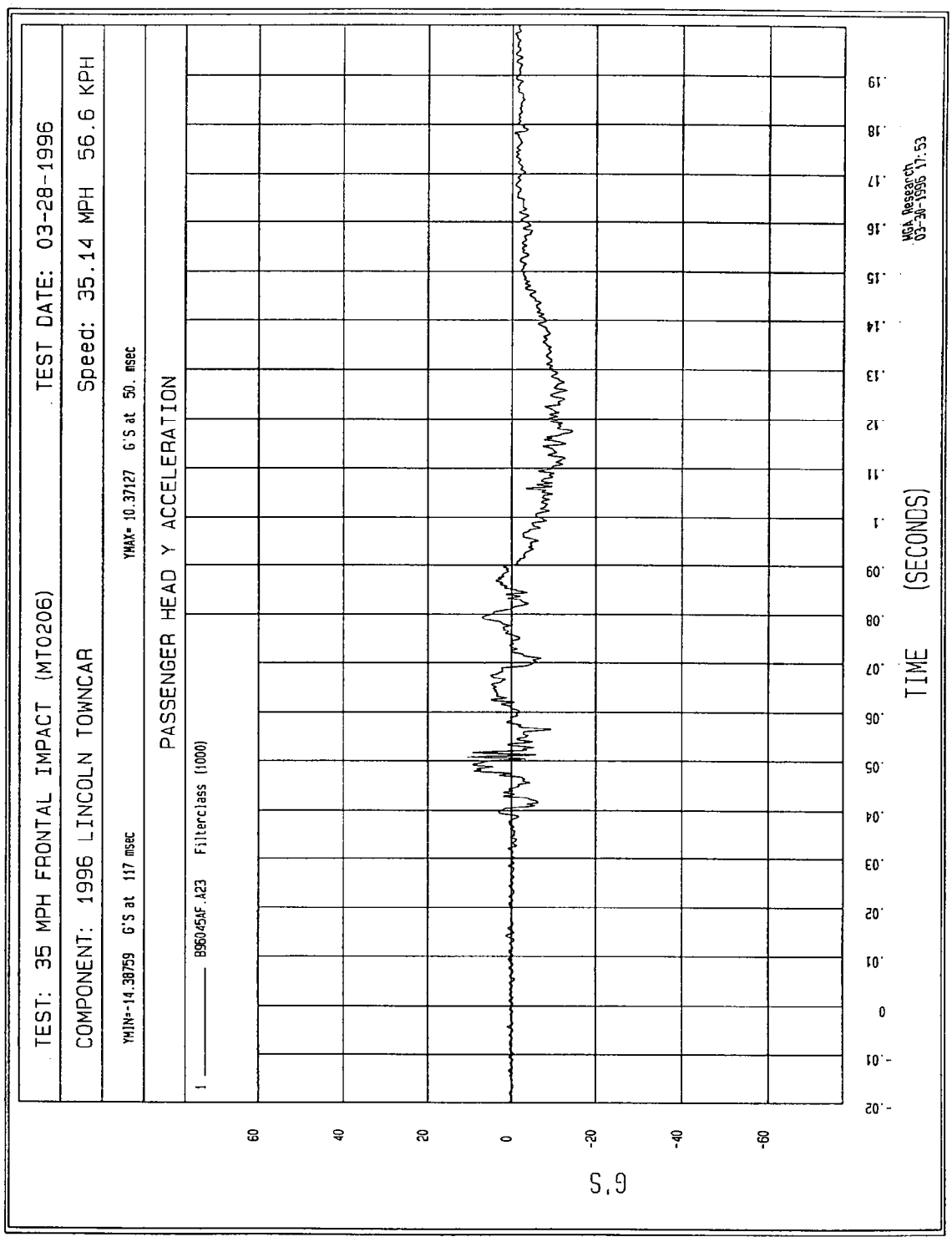

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-37.94275 G'S at 79. msec
YMAX= 20.80625 G'S at 92. msec
DRIVER LEFT FOOT HEEL Z ACCELERATION
1 C96045AF.A06 Filterclass (180)
20
10
0
-10
-20
-30
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1996 15:54

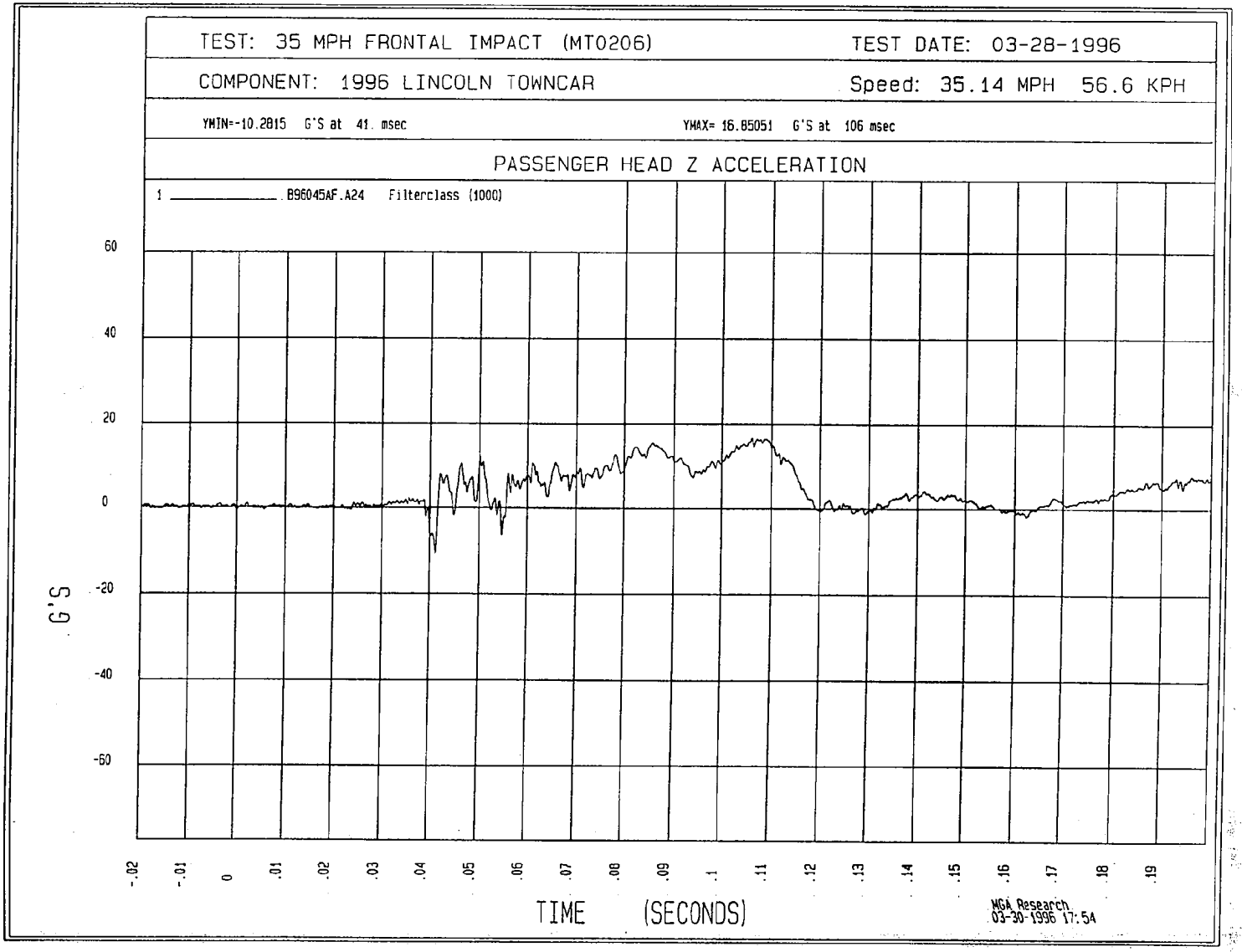

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-139.5281 G'S at 73. msec
YMAX= 184.4676 G'S at 87. msec
DRIVER RIGHT FOOT BALL Z ACCELERATION
1 C960454F.A01 Filterclass (180)
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
G'S
.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1996 15:54

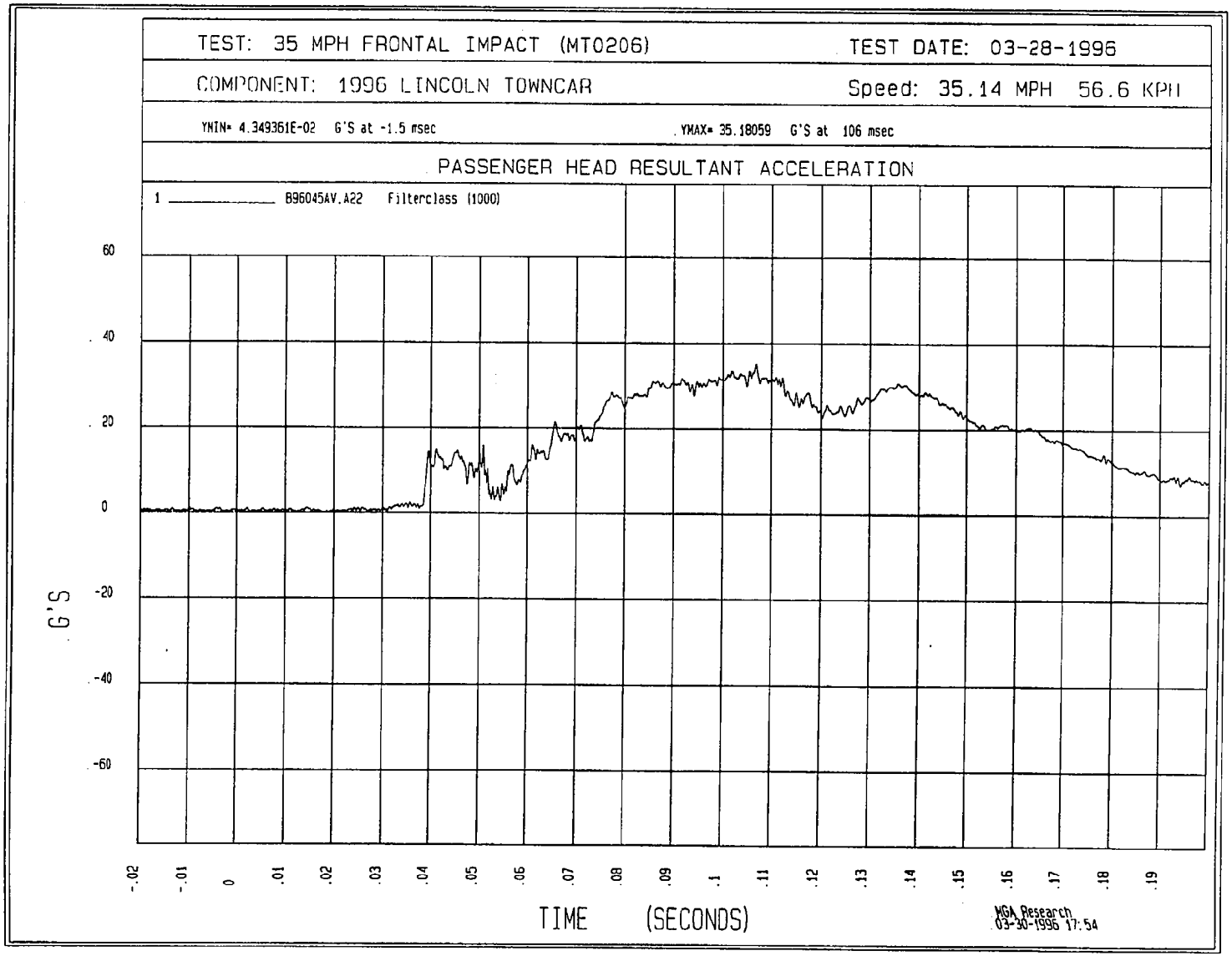

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-128.4434 G'S at 75 msec
YMAX= 42.15935 G'S at 84. msec
. DRIVER RIGHT FOOT HEEL X ACCELERATION
1 C96045AF.A02 Filterclass (180)
40
20
0
-20
-40
-60
-80
-100
-120
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1996 15:55

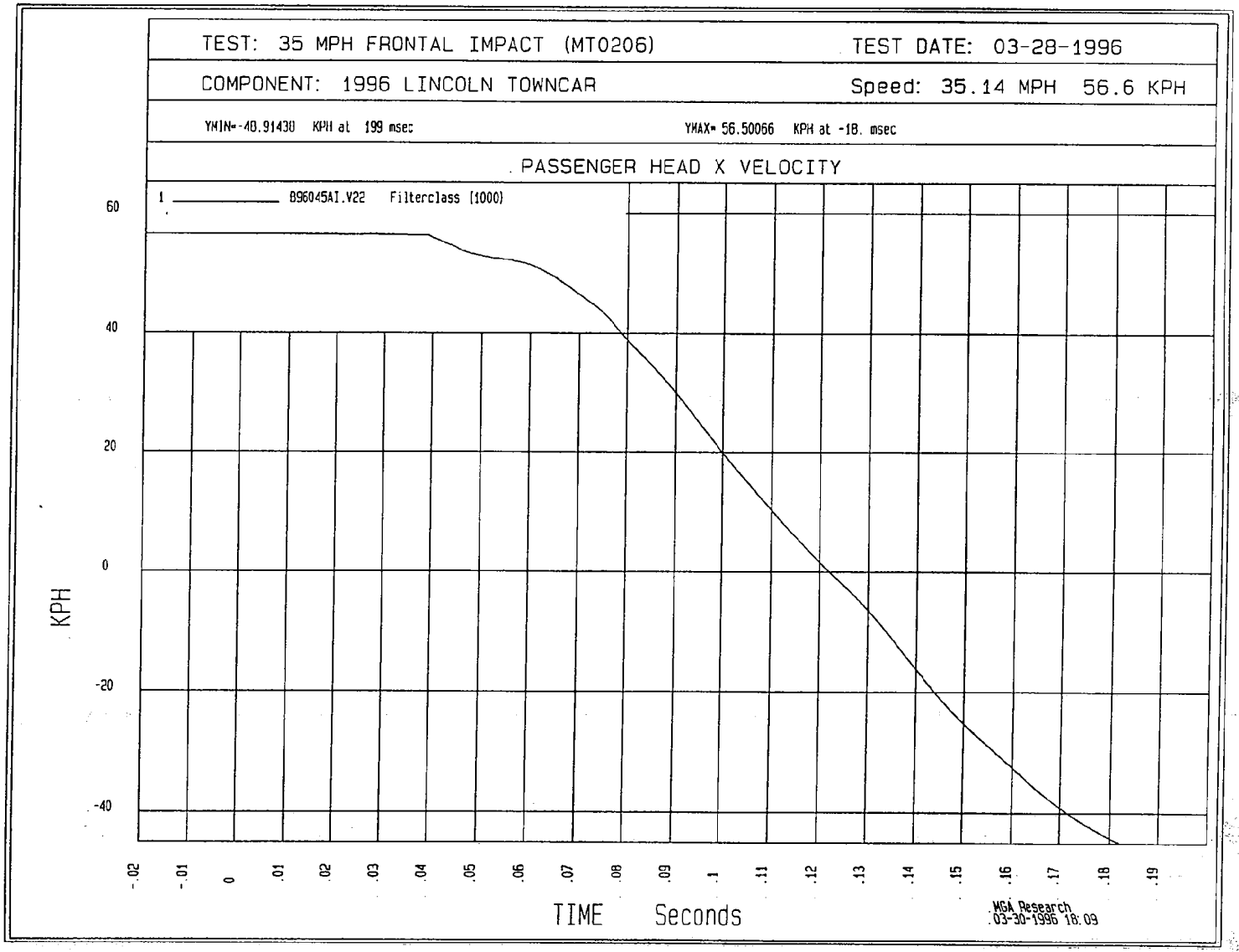

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-77.1862 G'S at 74. msec
YMAX= 33.0907 G'S at 87. msec
DRIVER RIGHT FOOT HEEL Z ACCELERATION
1 C96045AF.A03 Filterclass (180)
20
0
-20
-40
-60
-80
G's
TIME (seconds)
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
MGA Research
04-01-1996 15:55

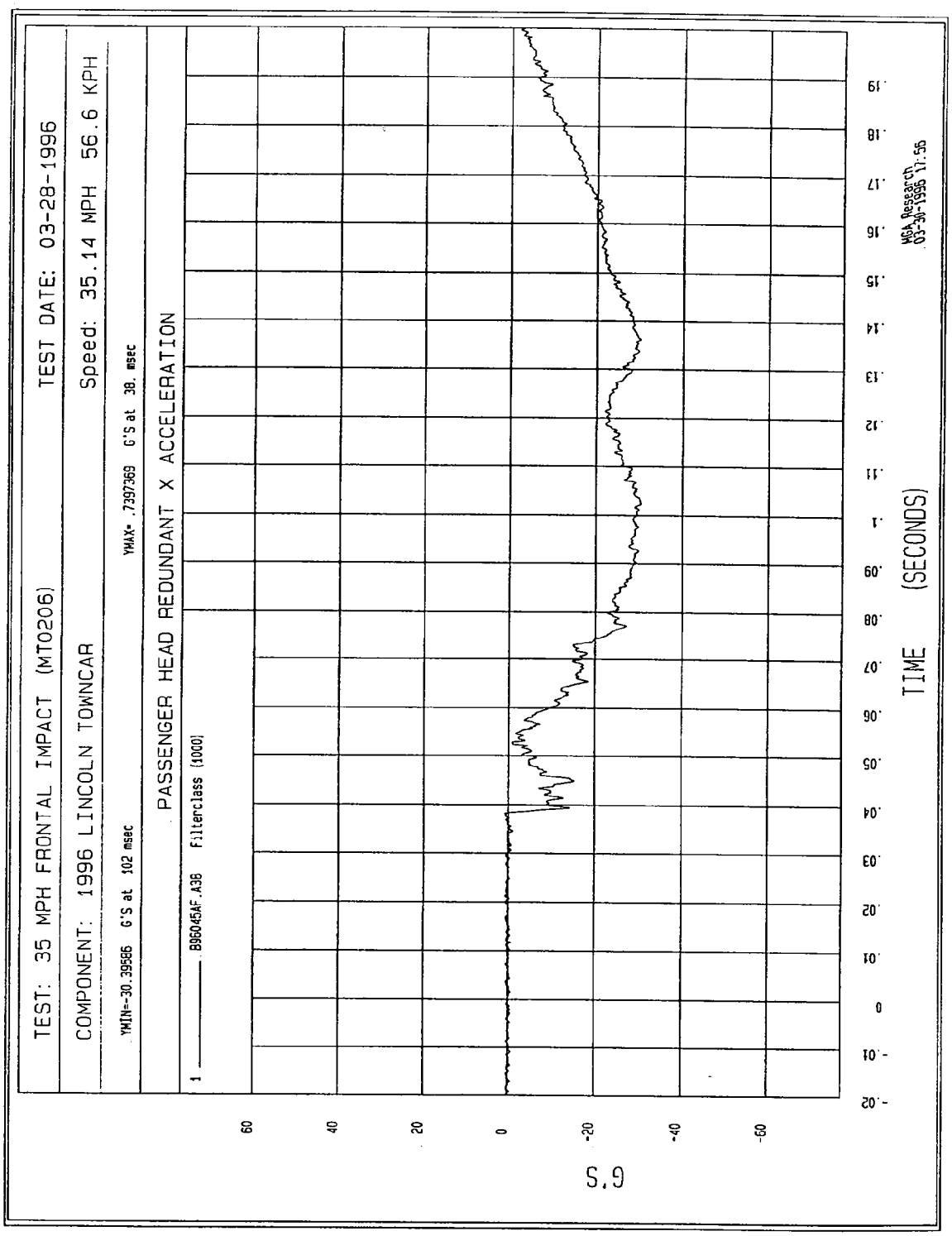

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-30.14848 G'S at 106 msec
YMAX= .5008014 G'S at 38. msec
PASSENGER HEAD X ACCELERATION
1 B96045AF.A22 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:53

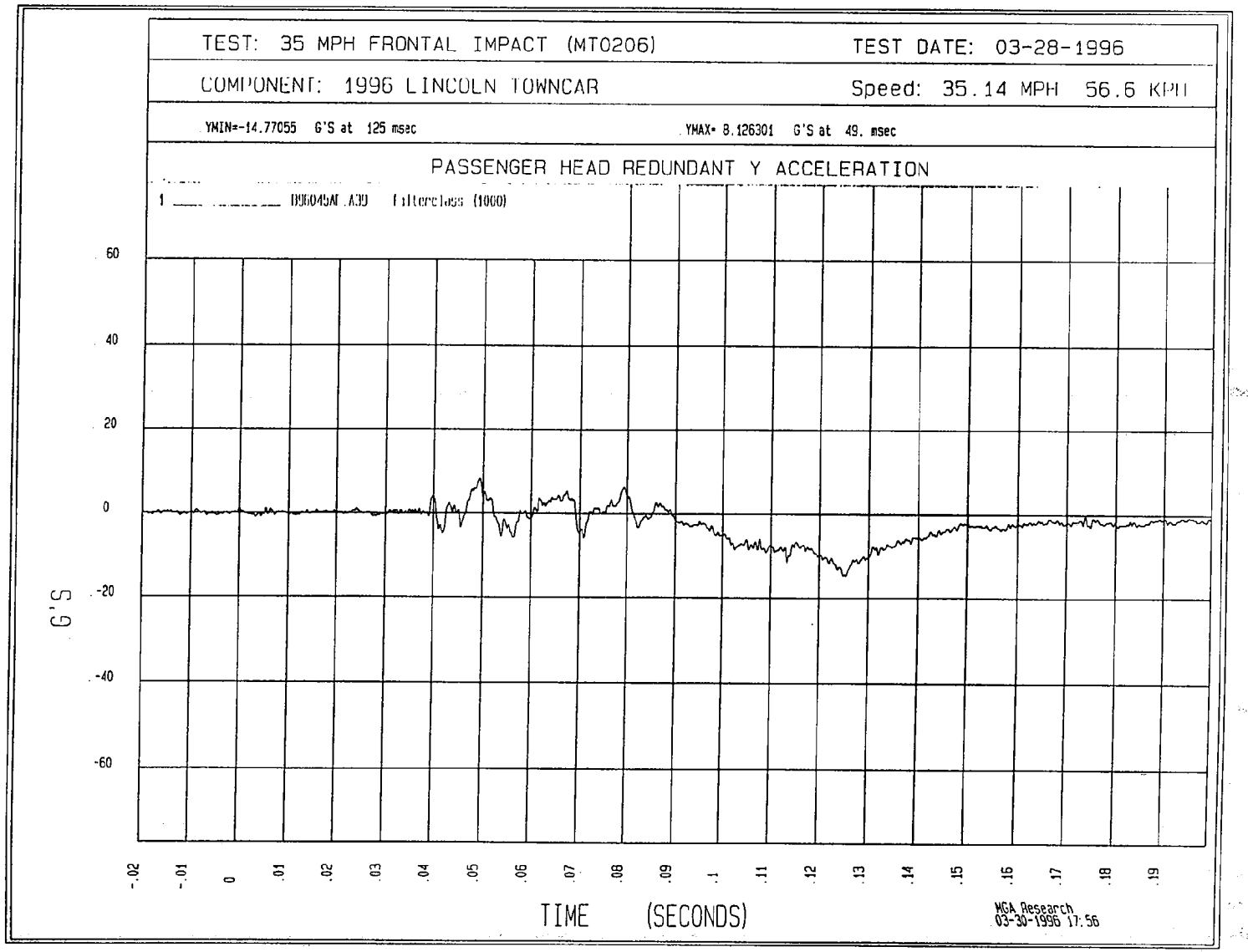

TEST: 35 MPH FRONTAL IMPACT (MTO206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-14.38759 G'S at 117 msec
YMAX= 10.37127 G'S at 50. msec
PASSENGER HEAD Y ACCELERATION
1 B96045AF.A23 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
03-30-1996 17:53

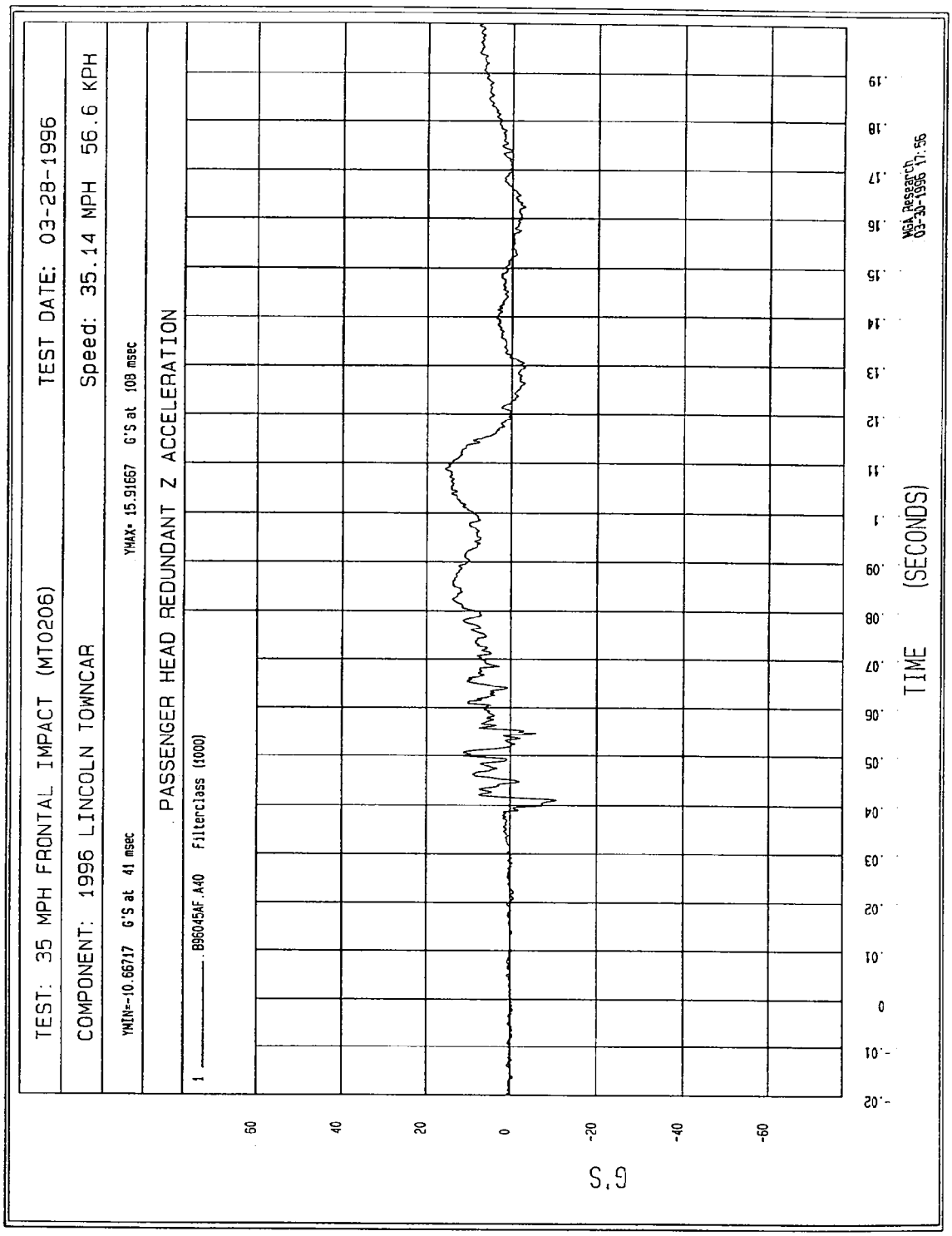

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-10.2815 G'S at 41. msec
YMAX= 16.85051 G'S at 106 msec
PASSENGER HEAD Z ACCELERATION
1 B96045AF.A24 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
NGA Research
03-30-1996 17:54

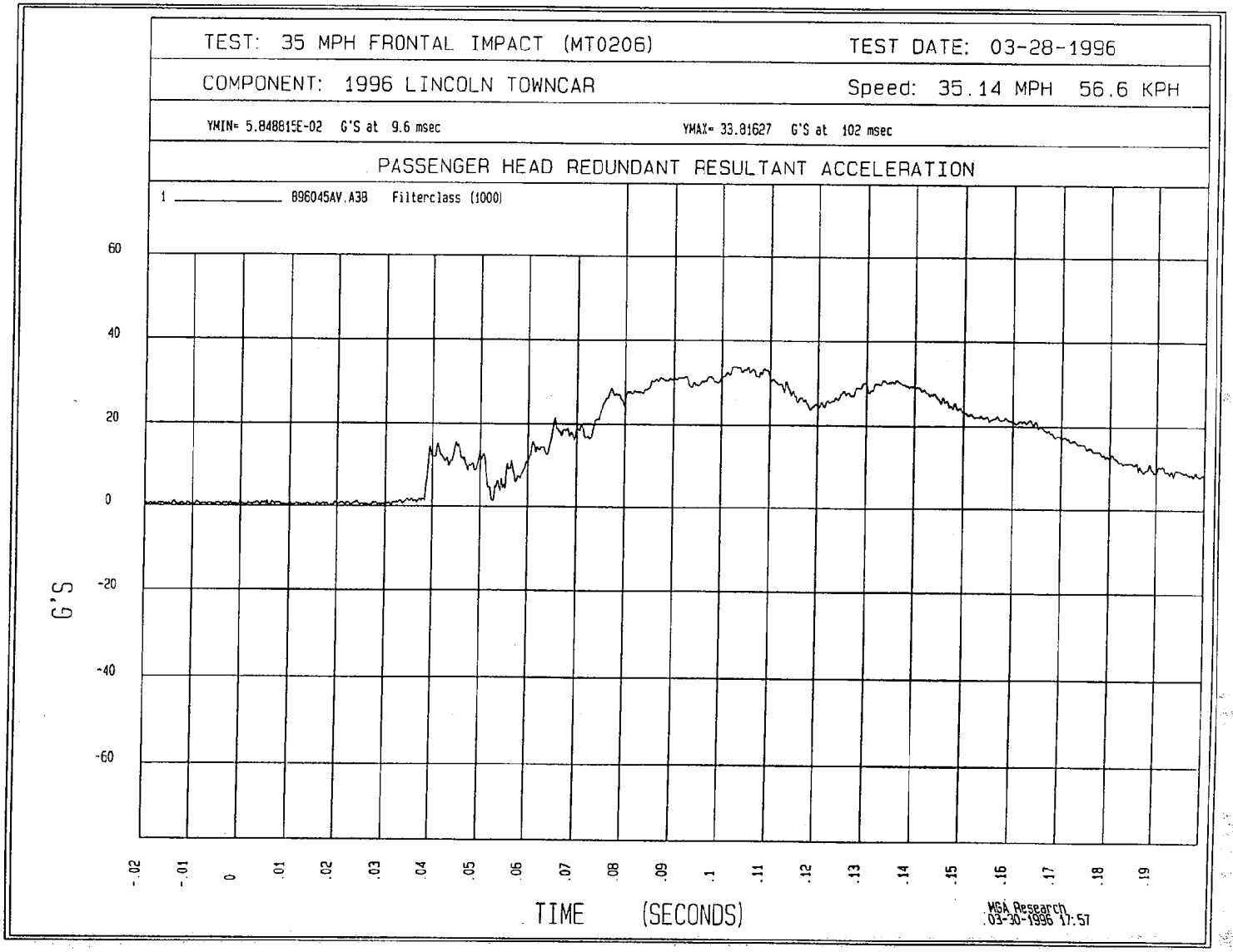

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 4.349361E-02 G'S at -1.5 msec
YMAX= 35.18059 G'S at 106 msec
PASSENGER HEAD RESULTANT ACCELERATION
1 B96045AV.A22 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:54

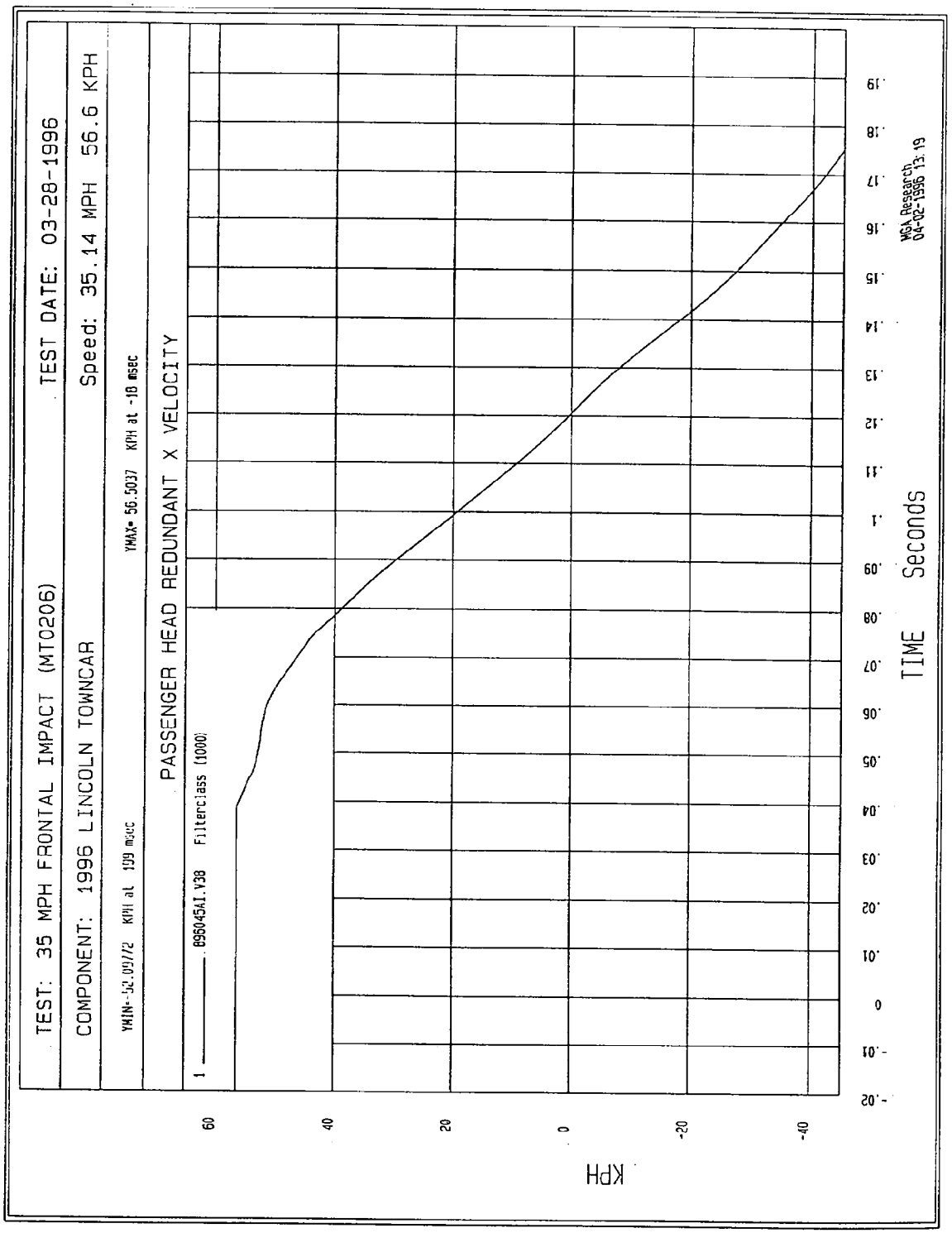

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-40.91430 KPH at 199 msec
YMAX= 56.50066 KPH at -18. msec
PASSENGER HEAD X VELOCITY
1 B96045AI.V22 Filterclass (1000)
60
40
20
0
-20
-40
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
03-30-1996 18:09

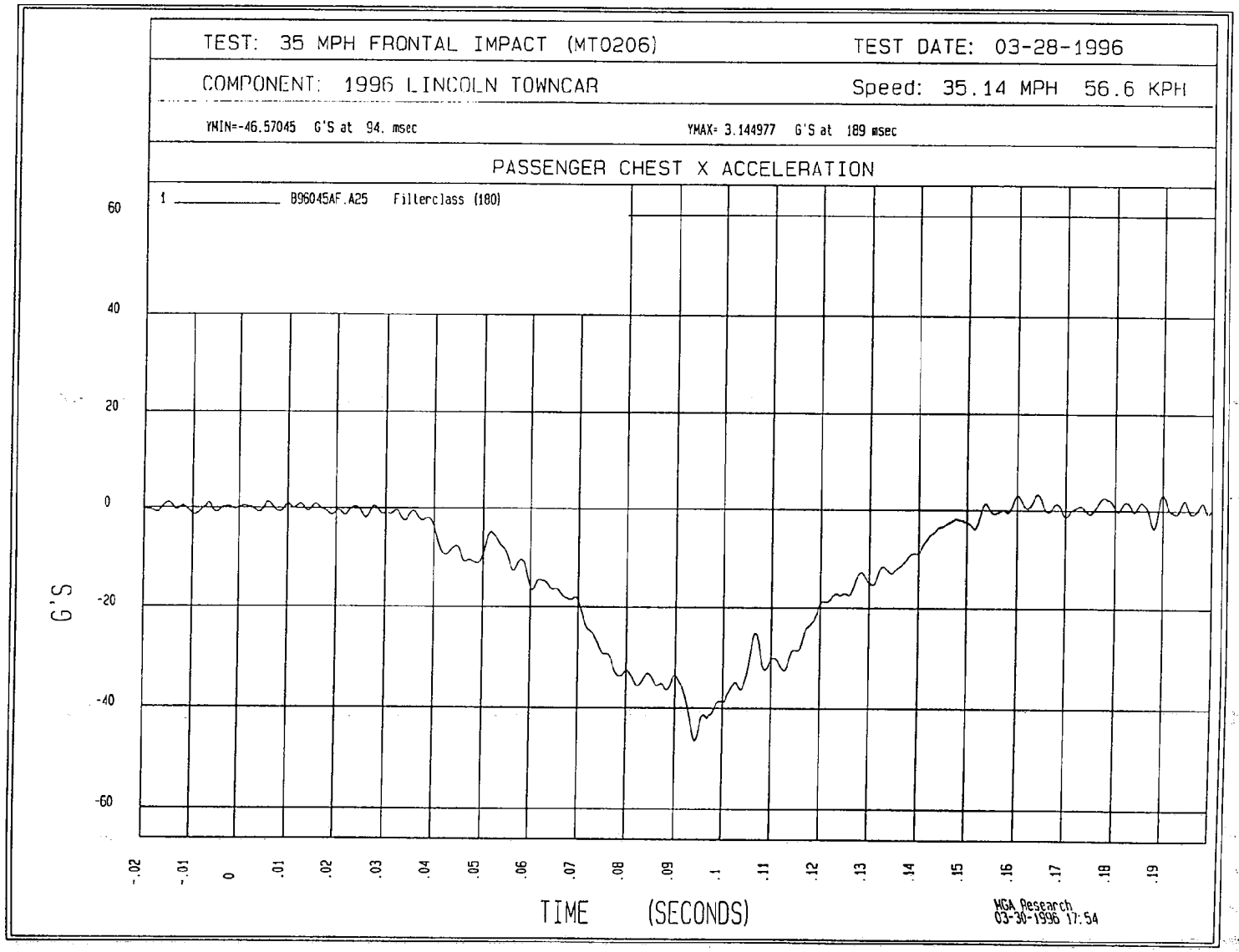

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-30.39586 G'S at 102 msec
YMAX= .7397369 G'S at 38. msec
PASSENGER HEAD REDUNDANT X ACCELERATION
1 B96045AF.A3B Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
03-30-1995 11:56

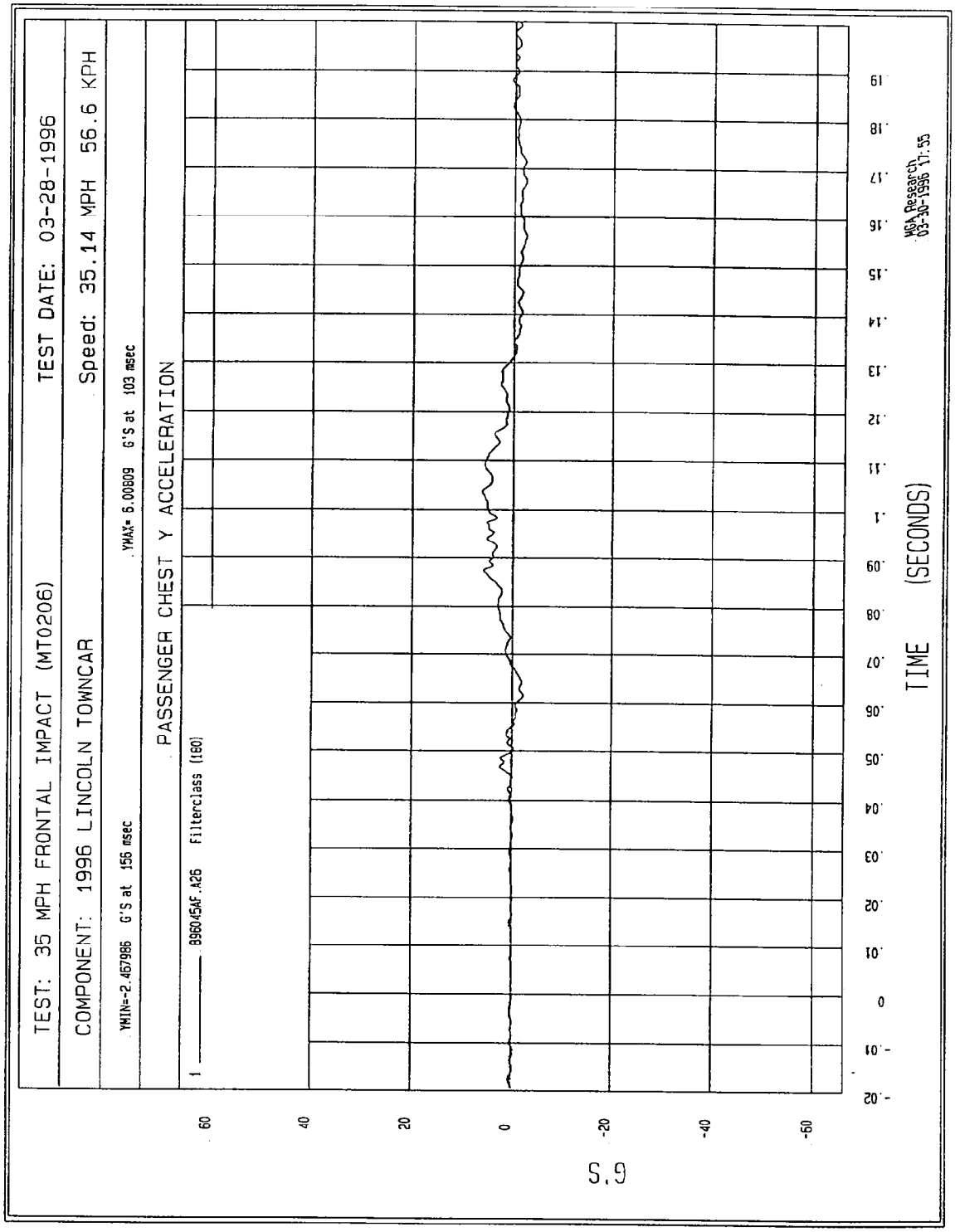

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-14.77055 G'S at 125 msec
YMAX= 8.126301 G'S at 49. msec
PASSENGER HEAD REDUNDANT Y ACCELERATION
1 ____ ____ D96045AF.A3D Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:56


TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-10.66717 G'S at 41 msec
YMAX= 15.91667 G'S at 108 msec
PASSENGER HEAD REDUNDANT Z ACCELERATION
1 B96045AF.A40 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
TIME (SECONDS)
.19
.18
.17
.16
.15
.14
.13
.12
.11
1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
MGA Research
03-30-1996 17:56

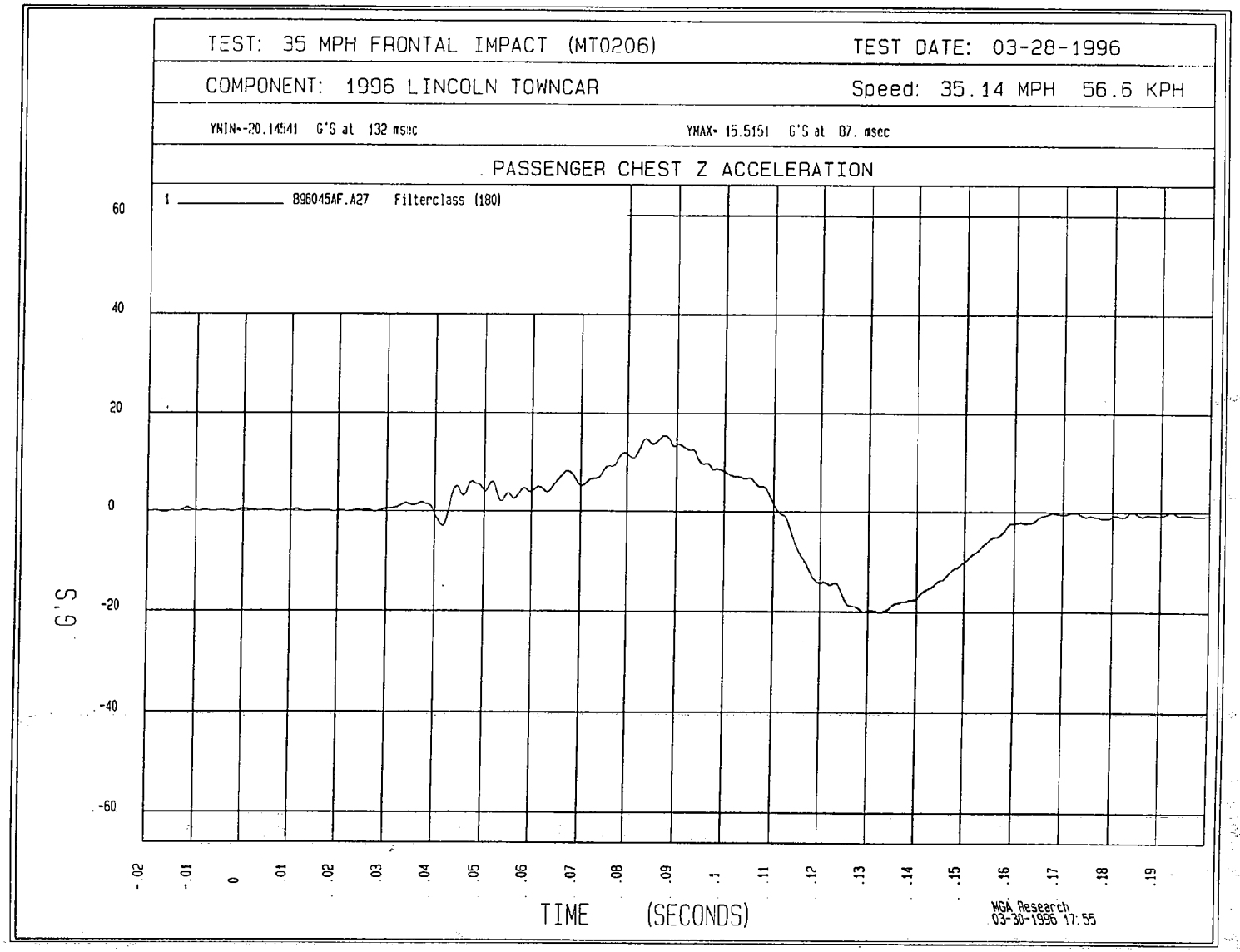

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 5.848815E-02 G'S at 9.6 msec
YMAX= 33.81627 G'S at 102 msec
PASSENGER HEAD REDUNDANT RESULTANT ACCELERATION
1 B96045AV.A3B Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:57

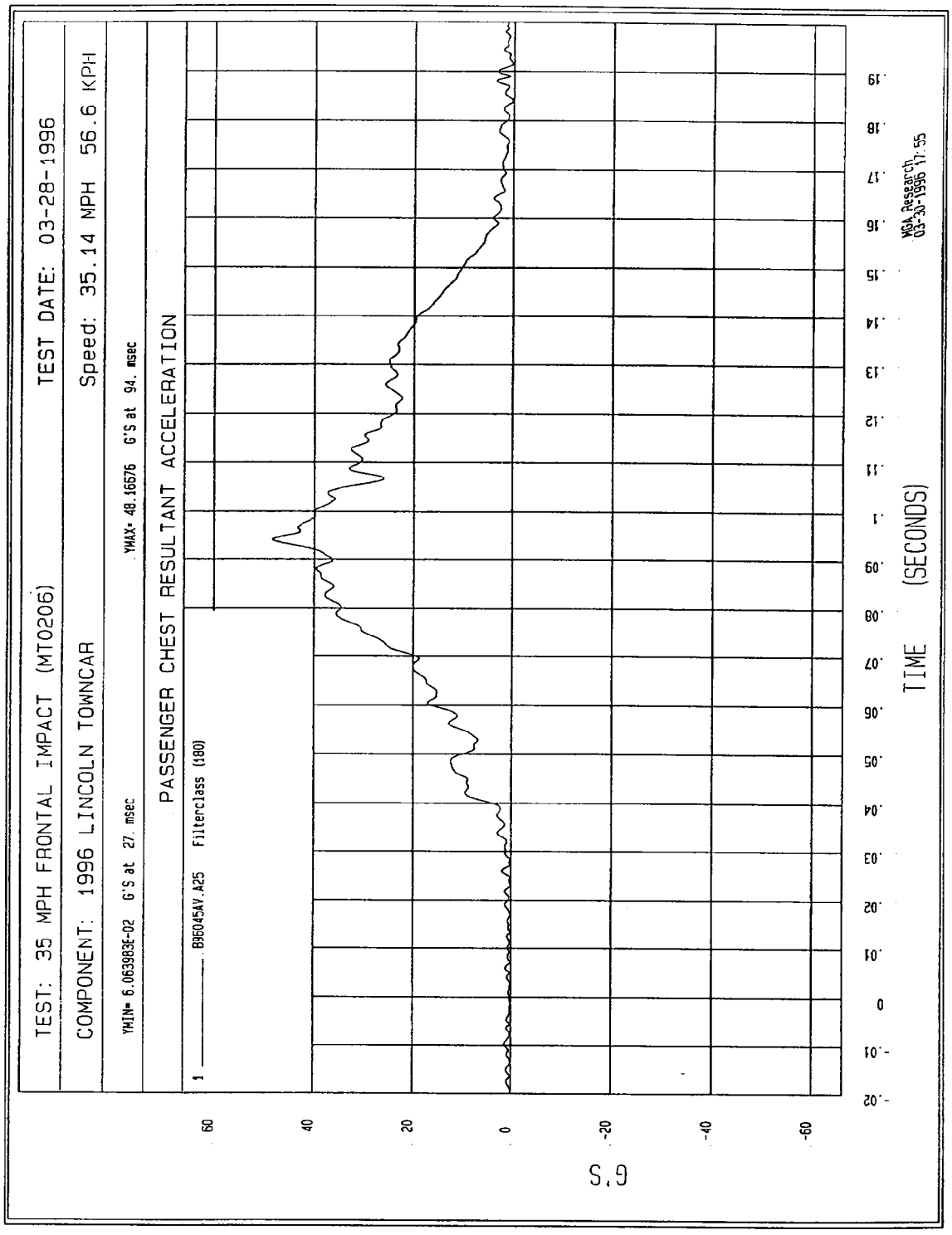

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-52.0077/2 KPH at 199 msec
YMAX= 56.5037 KPH at -18 msec
PASSENGER HEAD REDUNDANT X VELOCITY
1 ——— 8950451.V38 Filterclass (1000)
60
40
20
0
-20
-40
KPH
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME Seconds
MGA Research
04-02-1996 13:19

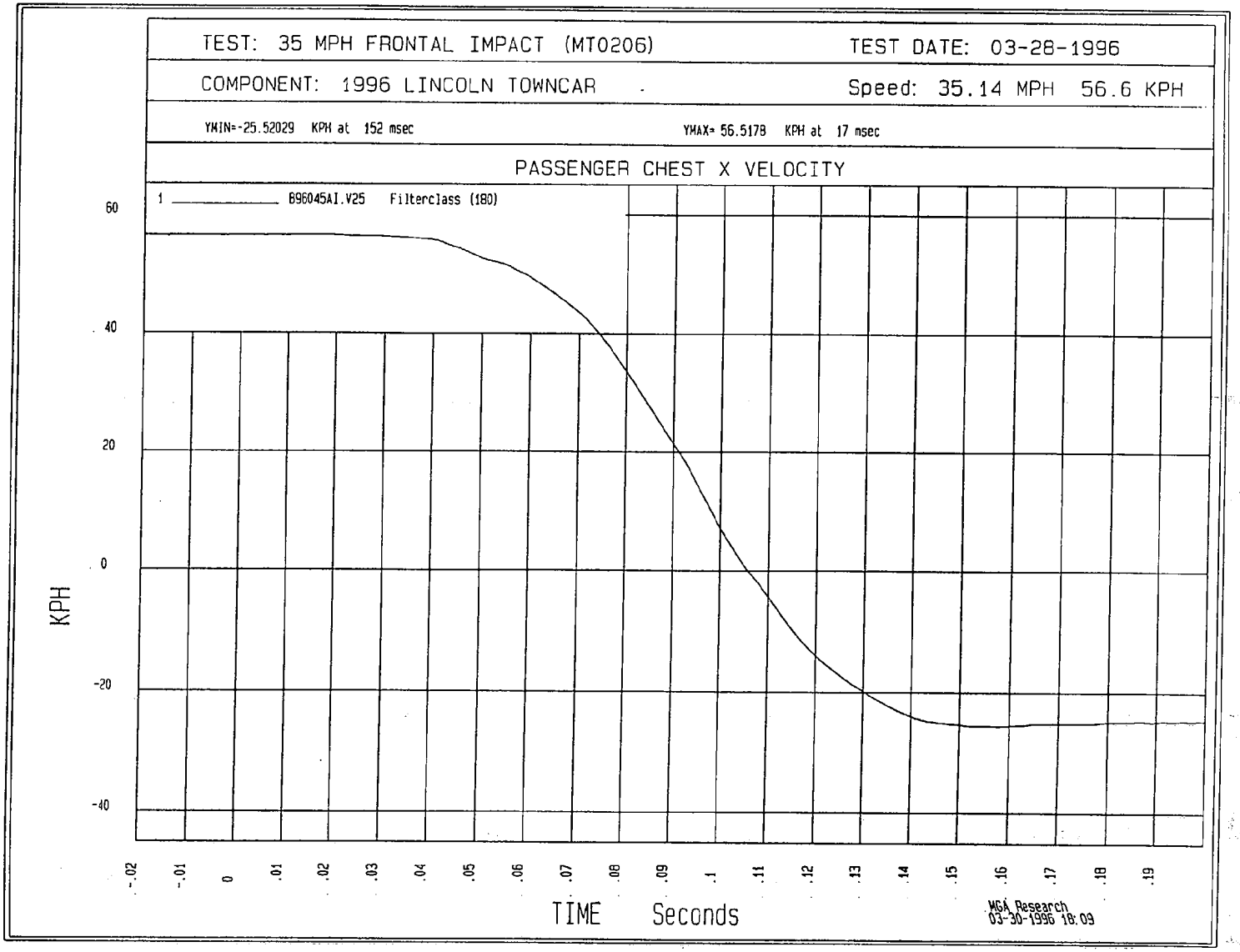

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-46.57045 G'S at 94. msec
YMAX= 3.144977 G'S at 189 msec
PASSENGER CHEST X ACCELERATION
1 B96045AF.A25 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:54

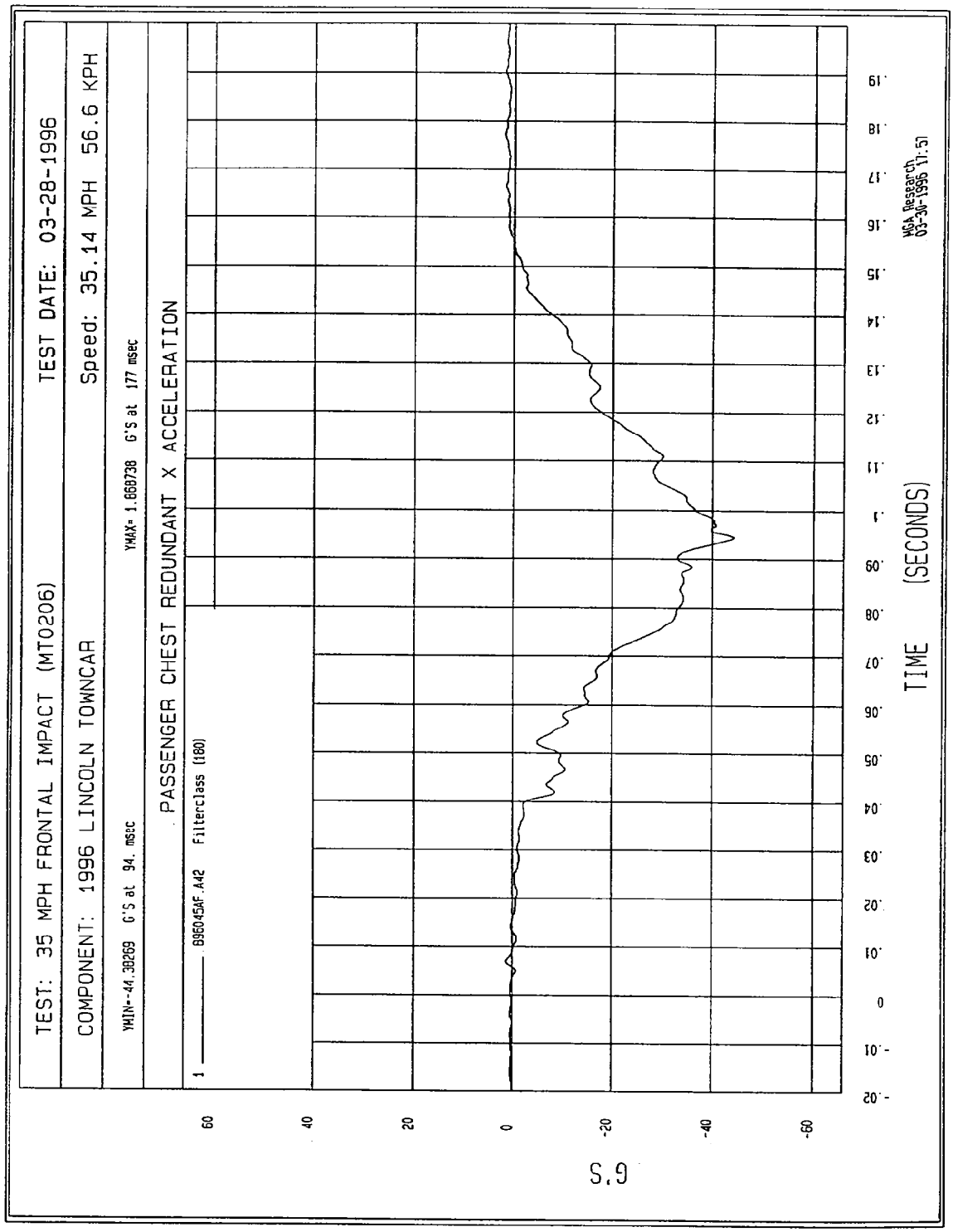

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-2.467986 G'S at 155 msec
YMAX= 6.00809 G'S at 103 msec
PASSENGER CHEST Y ACCELERATION
1 ——— 9960454F.A26 Filterclass (180)
60
40
20
0
-20
-40
-60
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
03-30-1996 17:55

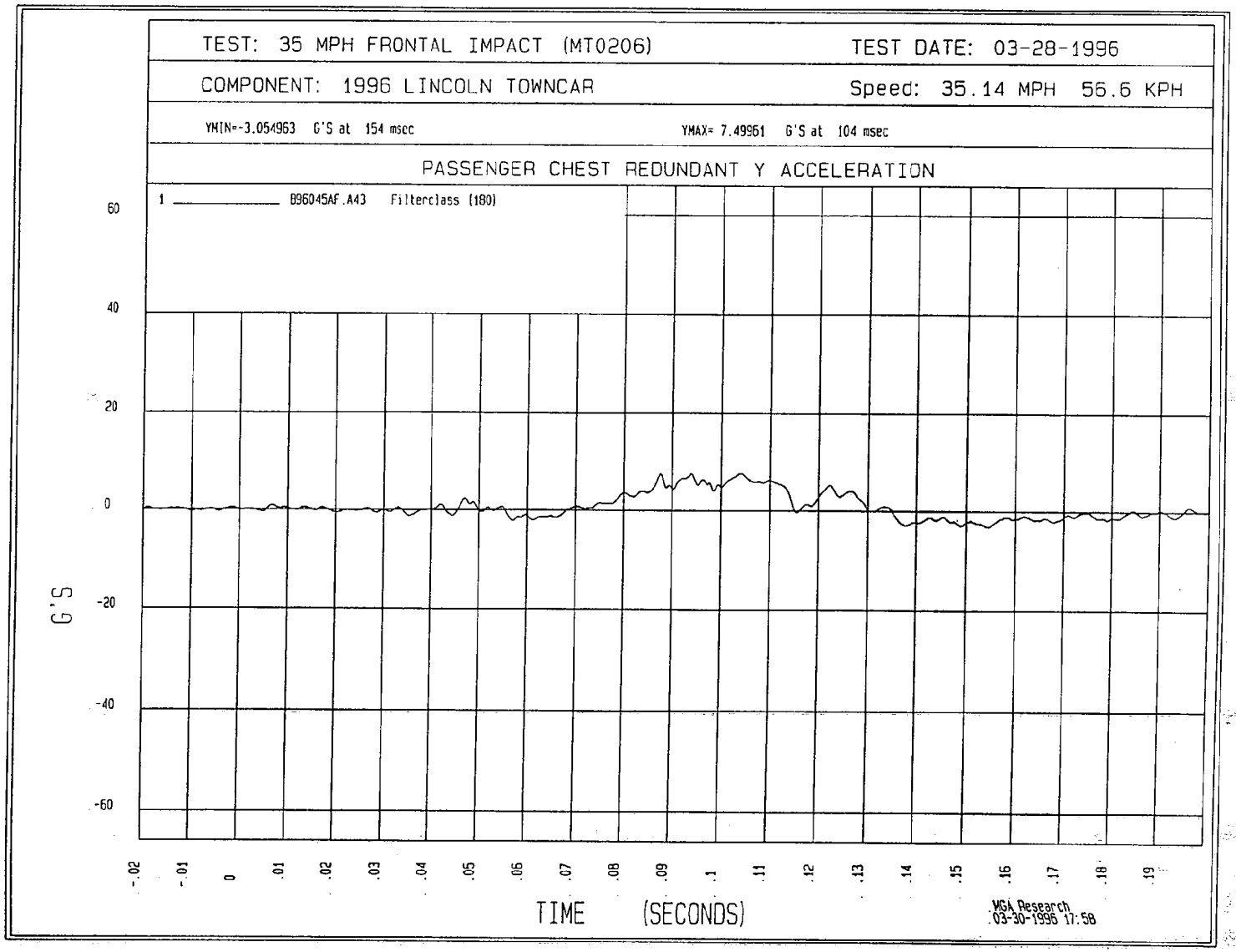
S.9

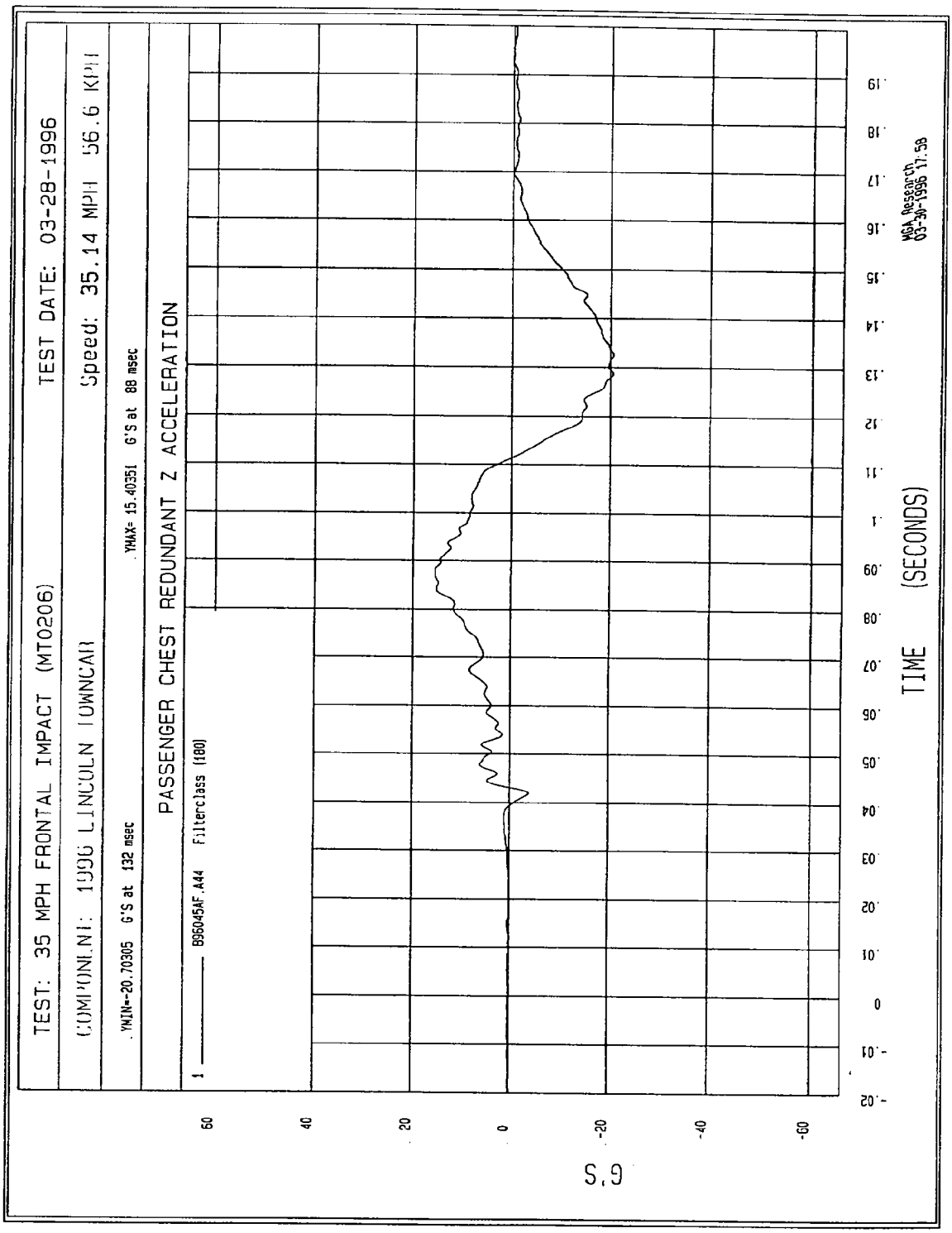

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-20.14541 G'S at 132 msec
YMAX= 15.5151 G'S at 87. msec
PASSENGER CHEST Z ACCELERATION
1 B96045AF.A27 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
NGA Research
03-30-1996 17:55

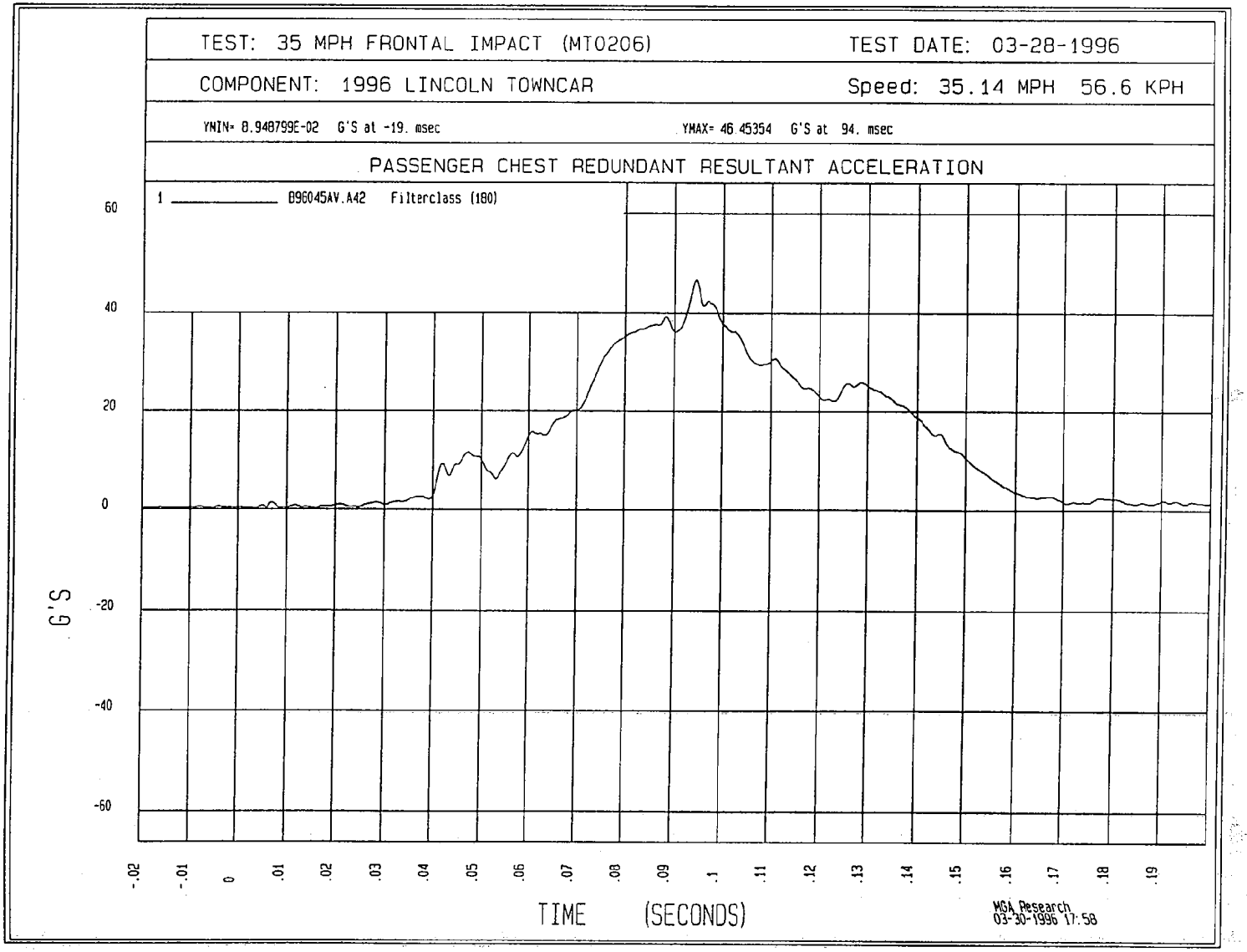

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 6.0639836-02 G'S at 27. msec
YMAX= 48.16576 G'S at 94. msec
PASSENGER CHEST RESULTANT ACCELERATION
1 B9604SAV.A25 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
TIME (SECONDS)
MGA Research
03-30-1996 17:55

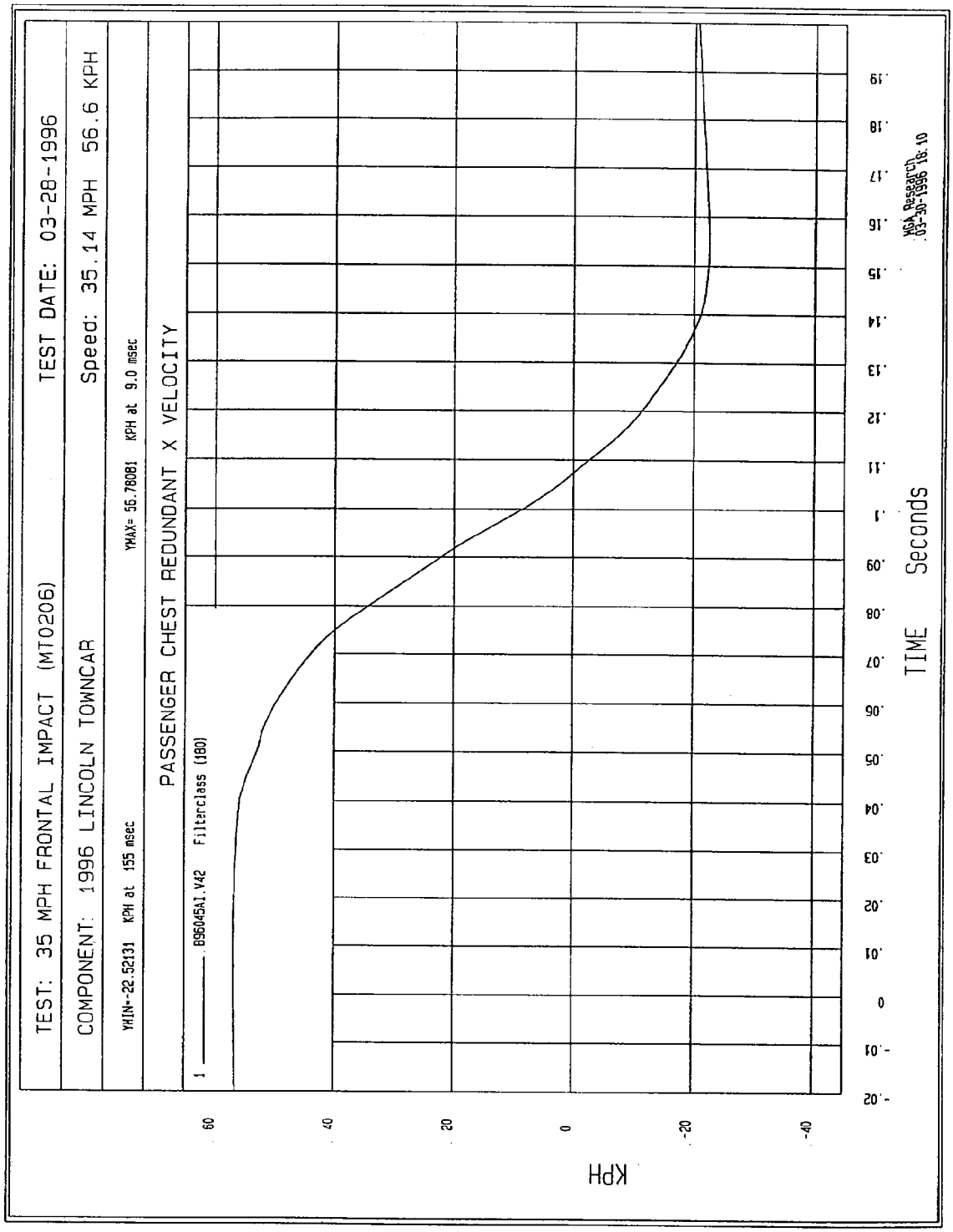

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-25.52029 KPH at 152 msec
YMAX= 56.5178 KPH at 17 msec
PASSENGER CHEST X VELOCITY
1 B96045AI.V25 Filterclass (180)
60
40
20
0
-20
-40
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME Seconds
MGA Research
03-30-1996 18:09

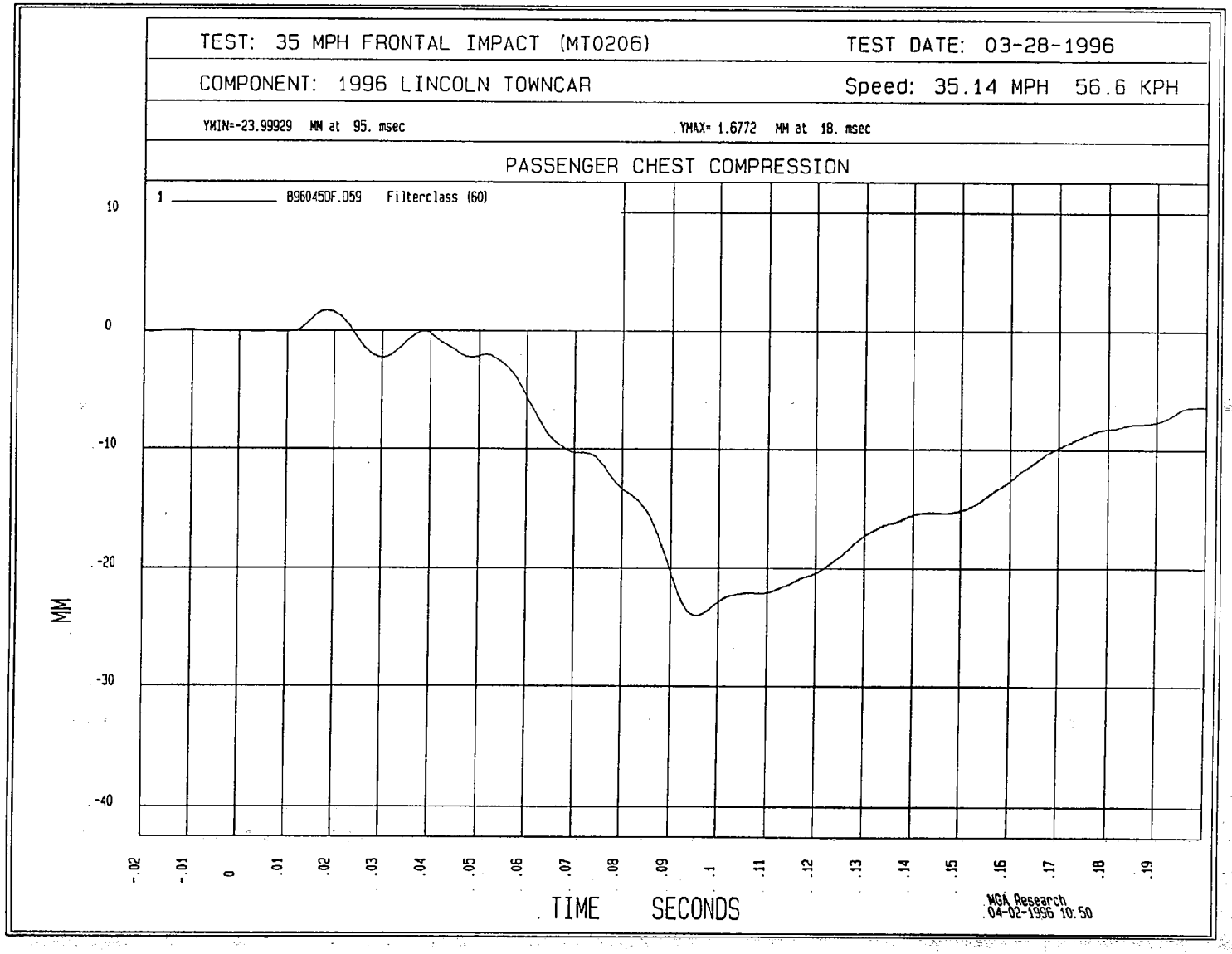

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-44.38269 G'S at 94. msec
YMAX= 1.668738 G'S at 177 msec
PASSENGER CHEST REDUNDANT X ACCELERATION
1 B96045AF.A42 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
TIME (SECONDS)
MGA Research
03-30-1996 11:51

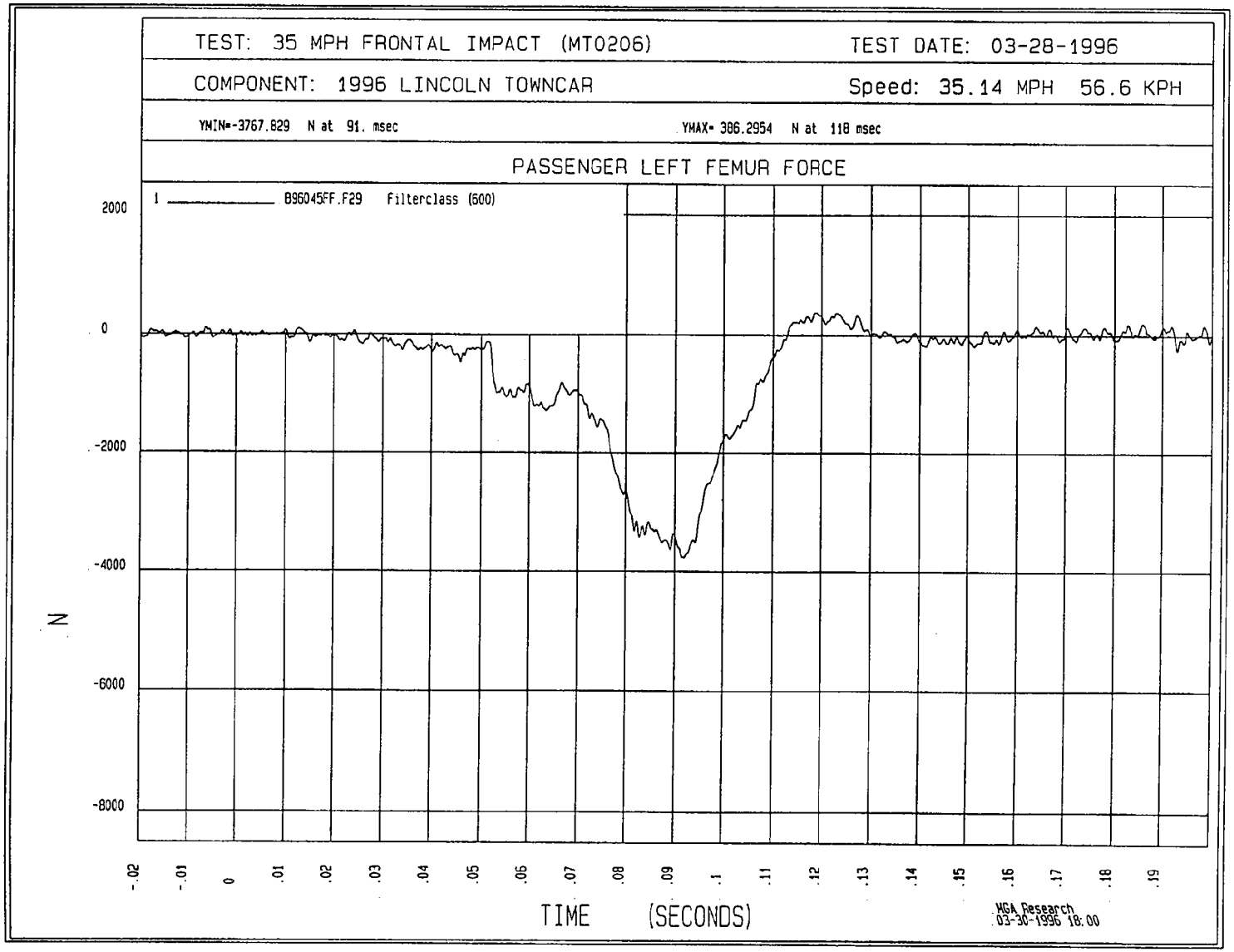

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-3.054953 G'S at 154 msec
YMAX= 7.49961 G'S at 104 msec
PASSENGER CHEST REDUNDANT Y ACCELERATION
1 B96045AF.A43 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:58

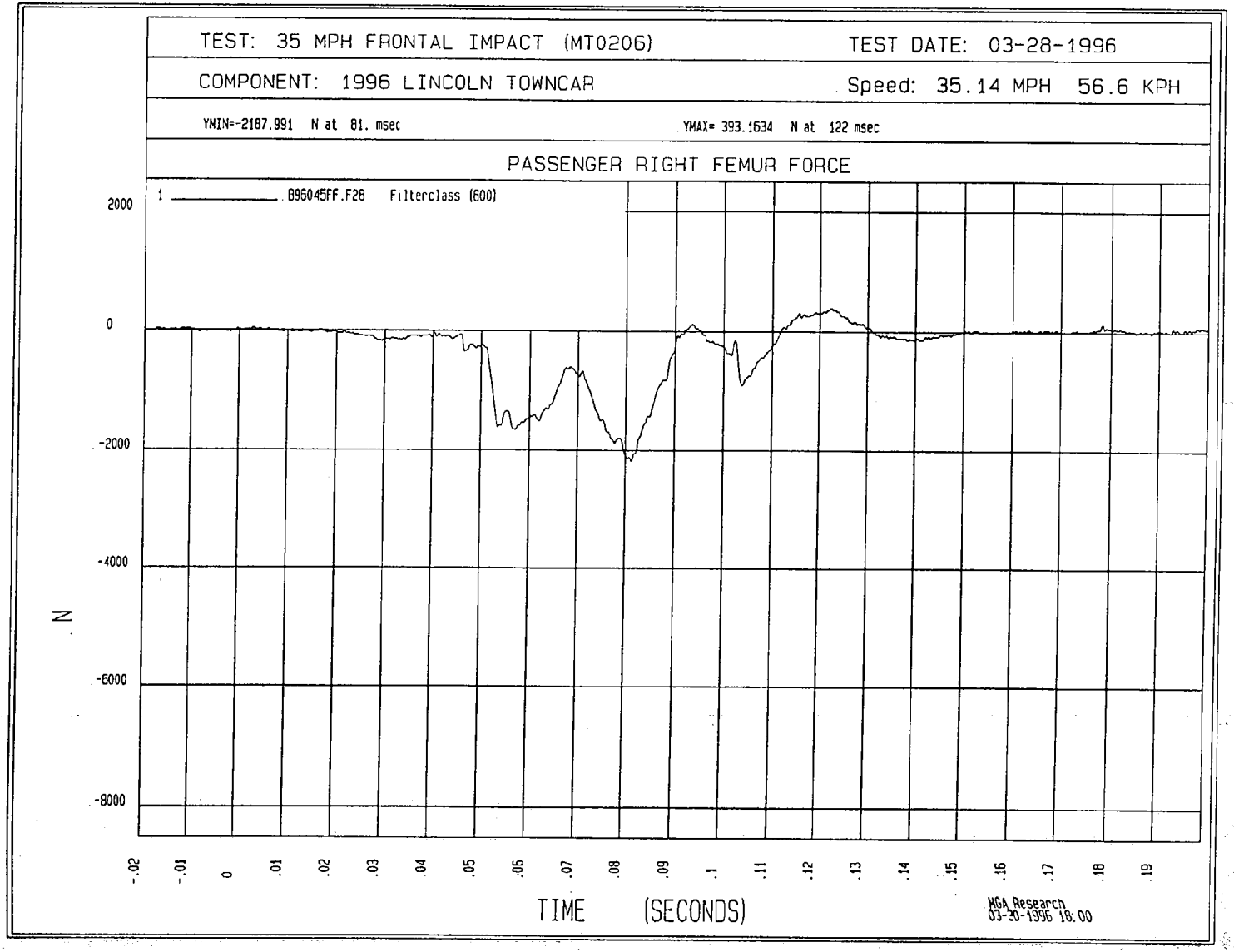

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-20.70305 G'S at 132 msec
YMAX= 15.40351 G'S at 88 msec
PASSENGER CHEST REDUNDANT Z ACCELERATION
1 B96045AF.A44 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:58

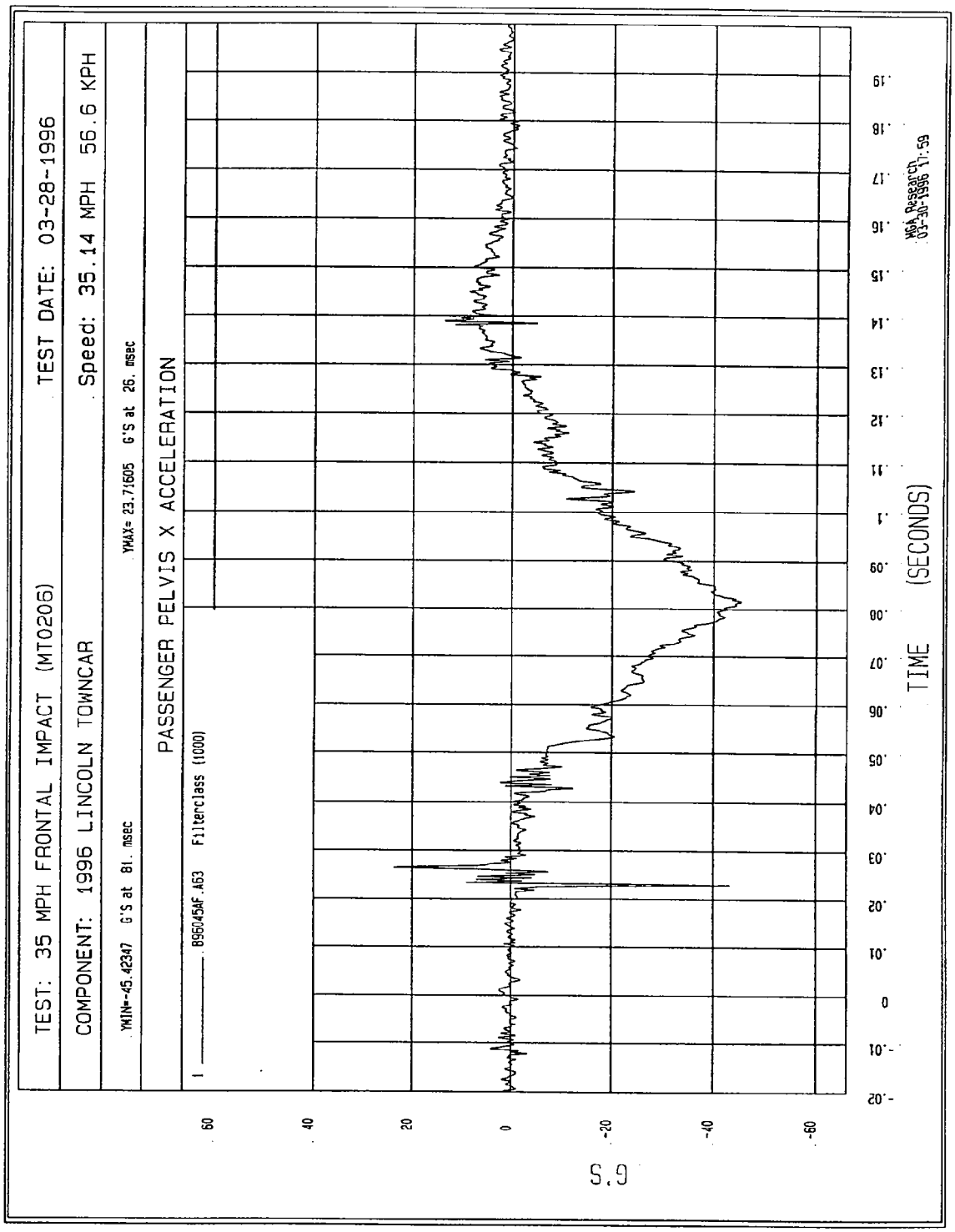

TEST: 35 MPH FRONTAL IMPACT (MTO206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 8.948799E-02 G'S at -19. msec
YMAX= 46.45354 G'S at 94. msec
PASSENGER CHEST REDUNDANT RESULTANT ACCELERATION
1 B96045AV.A42 Filterclass (180)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:58

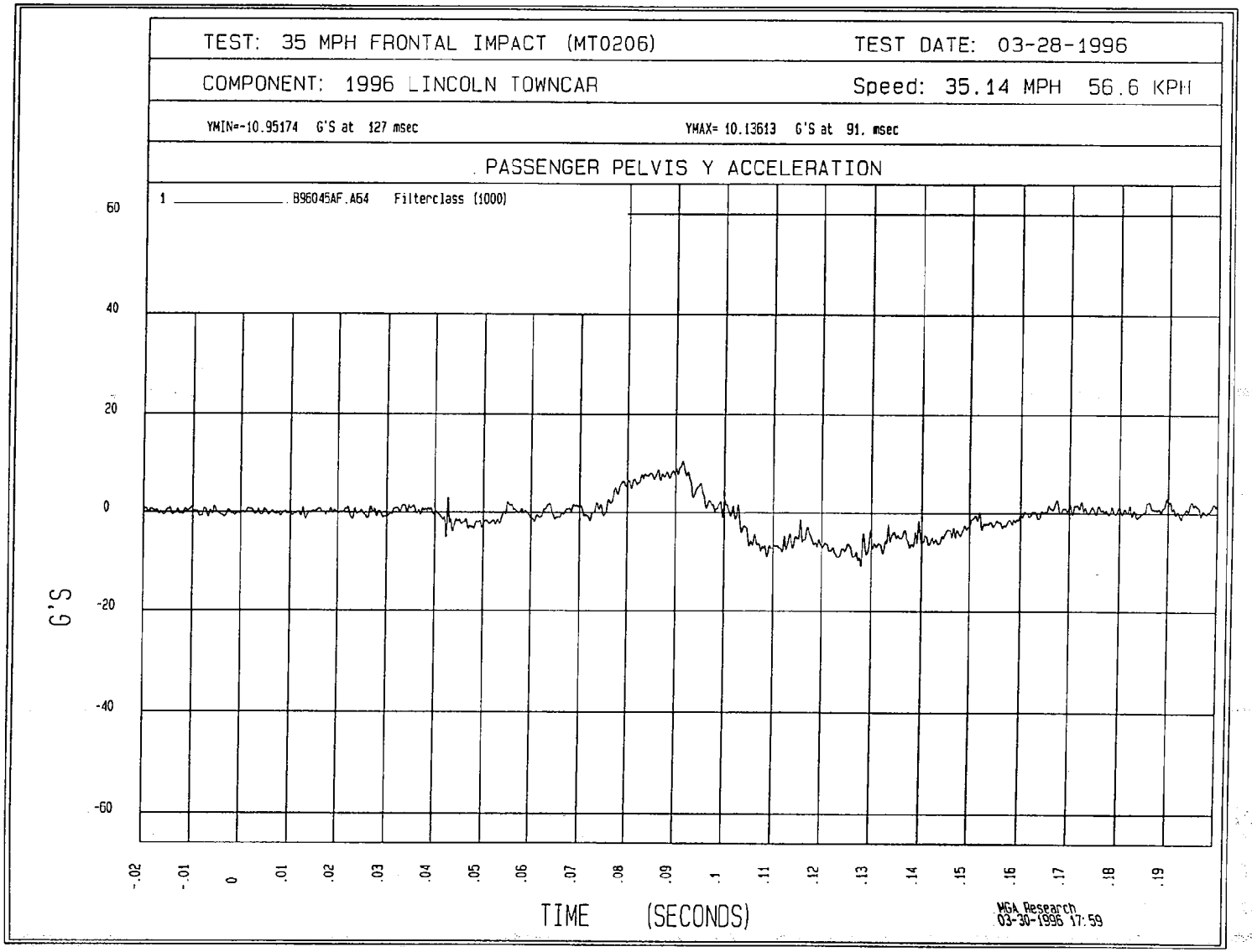

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-22.52131 KPH at 155 msec
YMAX= 56.78081 KPH at 9.0 msec
PASSENGER CHEST REDUNDANT X VELOCITY
1 B96045A1.V42 Filterclass (180)
KPH
60
40
20
0
-20
-40
TIME Seconds
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
03-30-1996 18:10

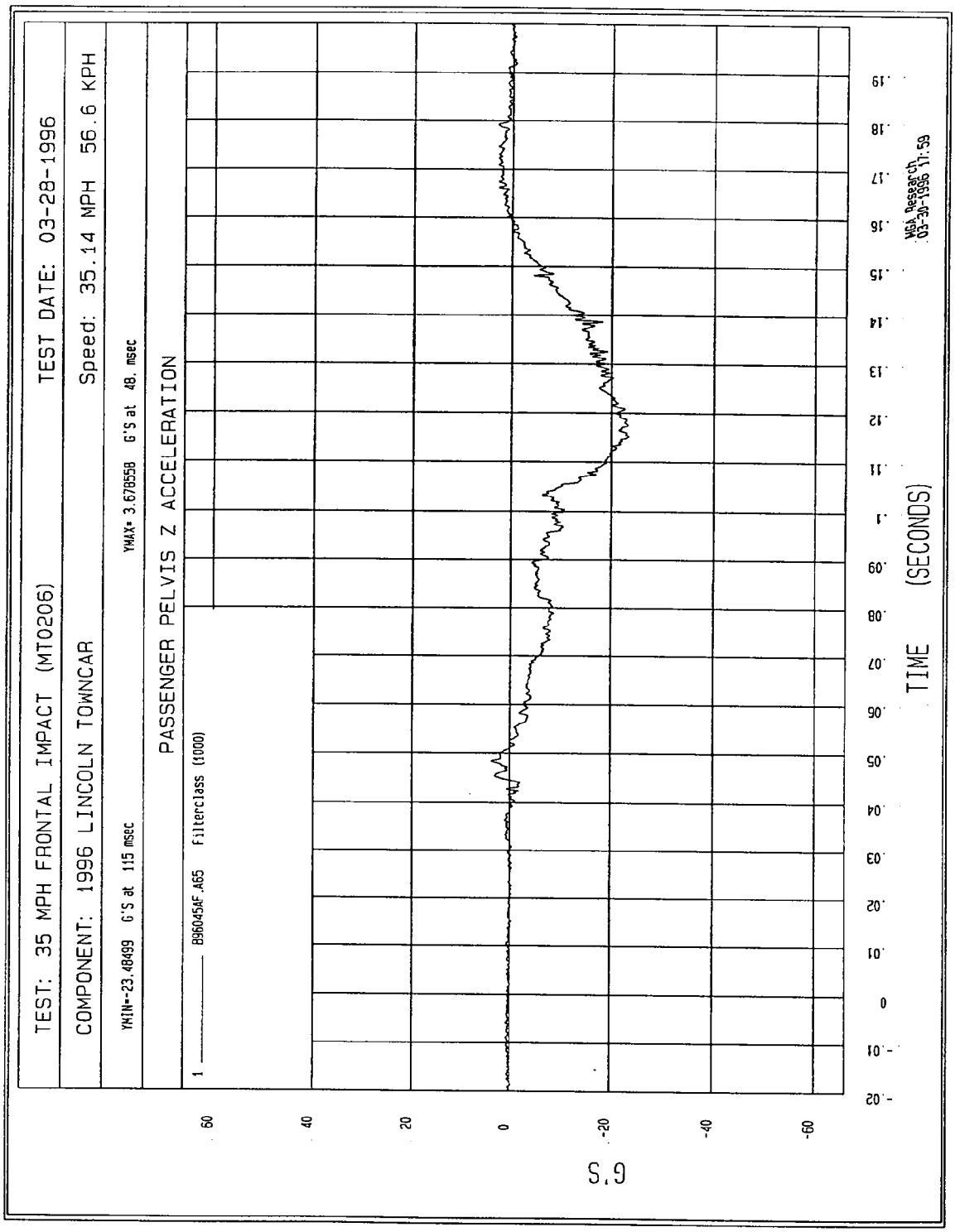

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-23.99929 MM at 95. msec
YMAX= 1.6772 MM at 18. msec
PASSENGER CHEST COMPRESSION
1 B960450F.059 Filterclass (60)
10
0
-10
-20
-30
-40
MM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME SECONDS
MGA Research
04-02-1996 10:50

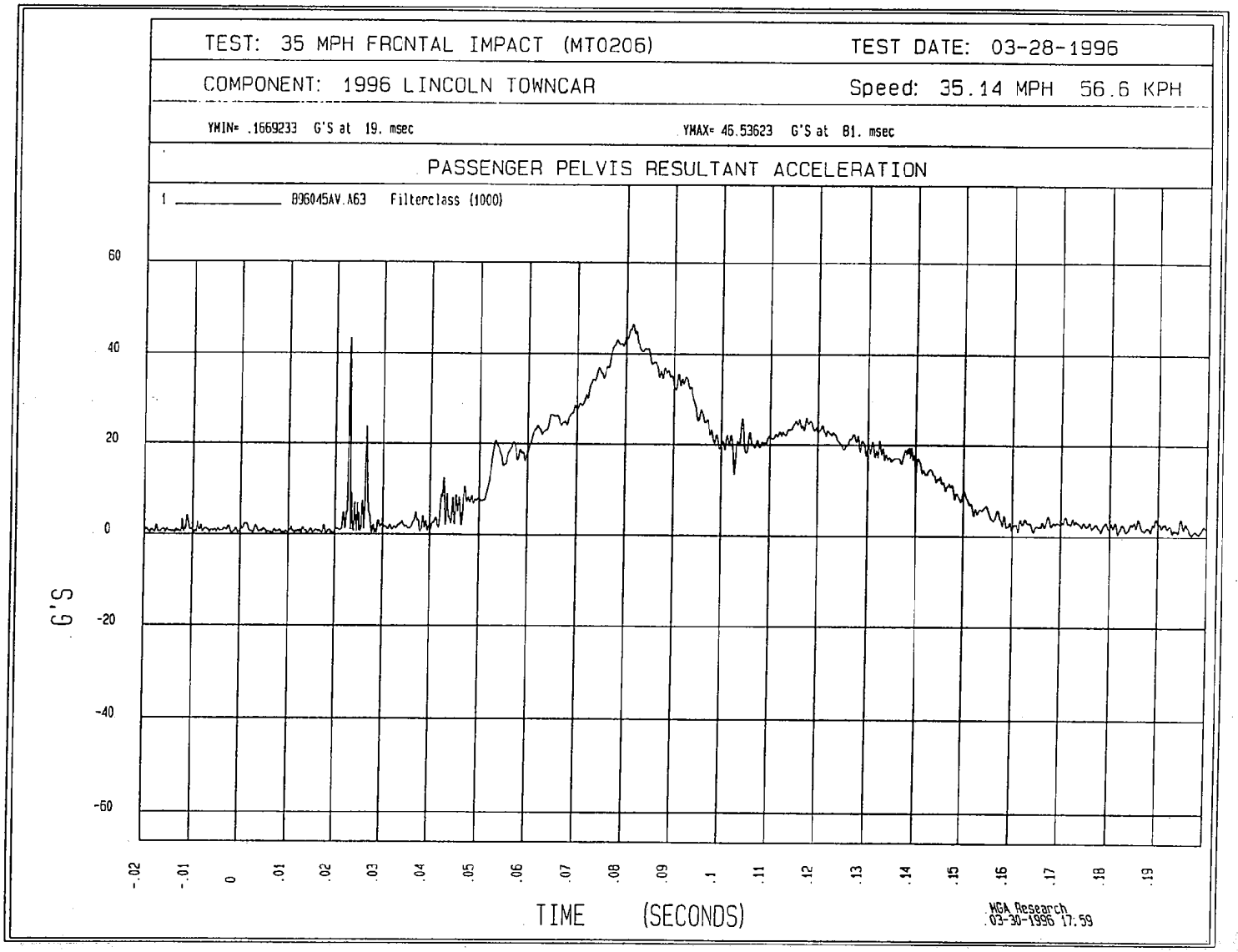

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-3767.829 N at 91. msec
YMAX= 386.2954 N at 118 msec
PASSENGER LEFT FEMUR FORCE
1 B96045FF.F29 Filterclass (600)
2000
0
-2000
-4000
-6000
-8000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:00

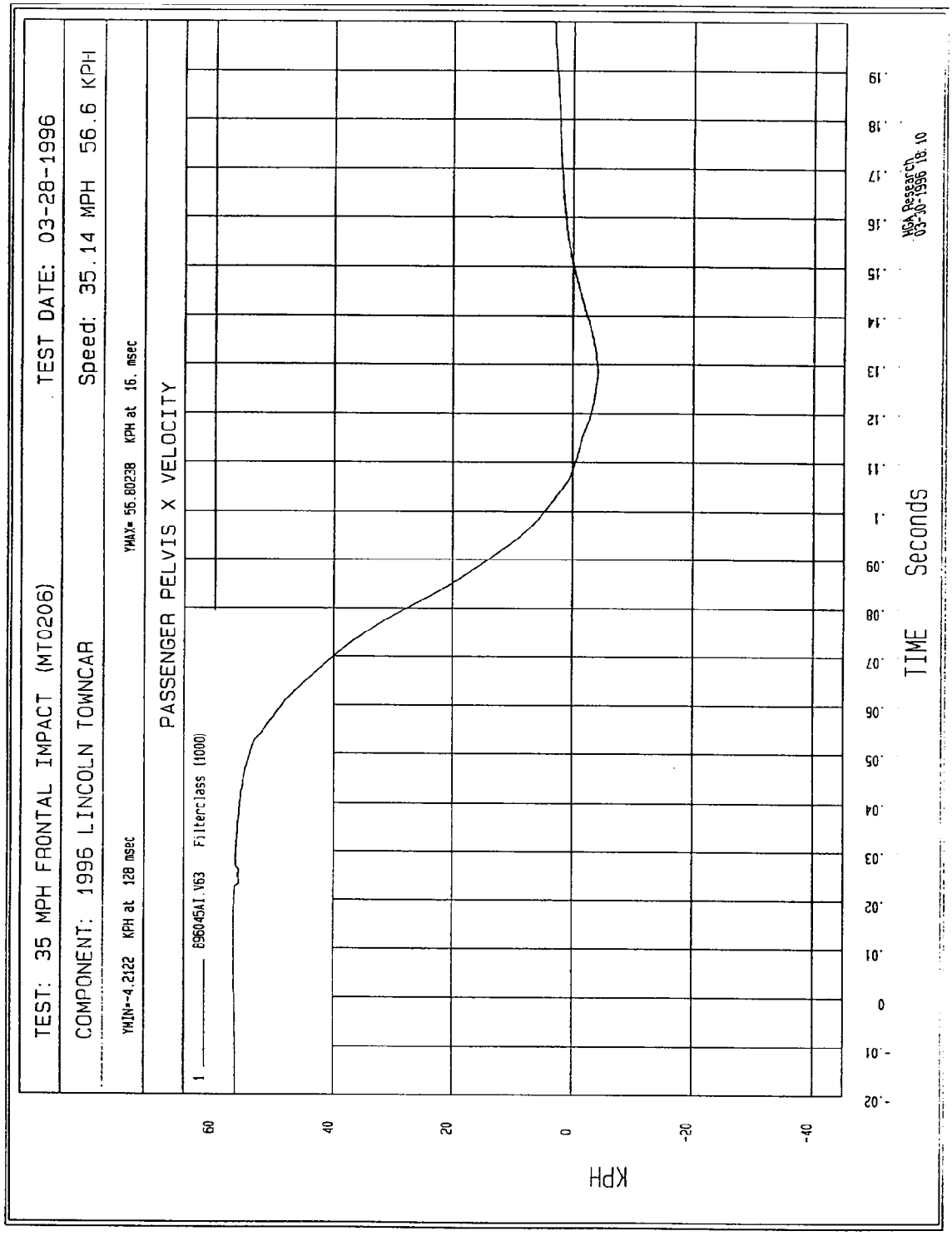

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-2187.991 N at 81. msec
YMAX= 393.1634 N at 122 msec
PASSENGER RIGHT FEMUR FORCE
1 B96045FF.F28 Filterclass (600)
2000
0
-2000
-4000
-6000
-8000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 10:00

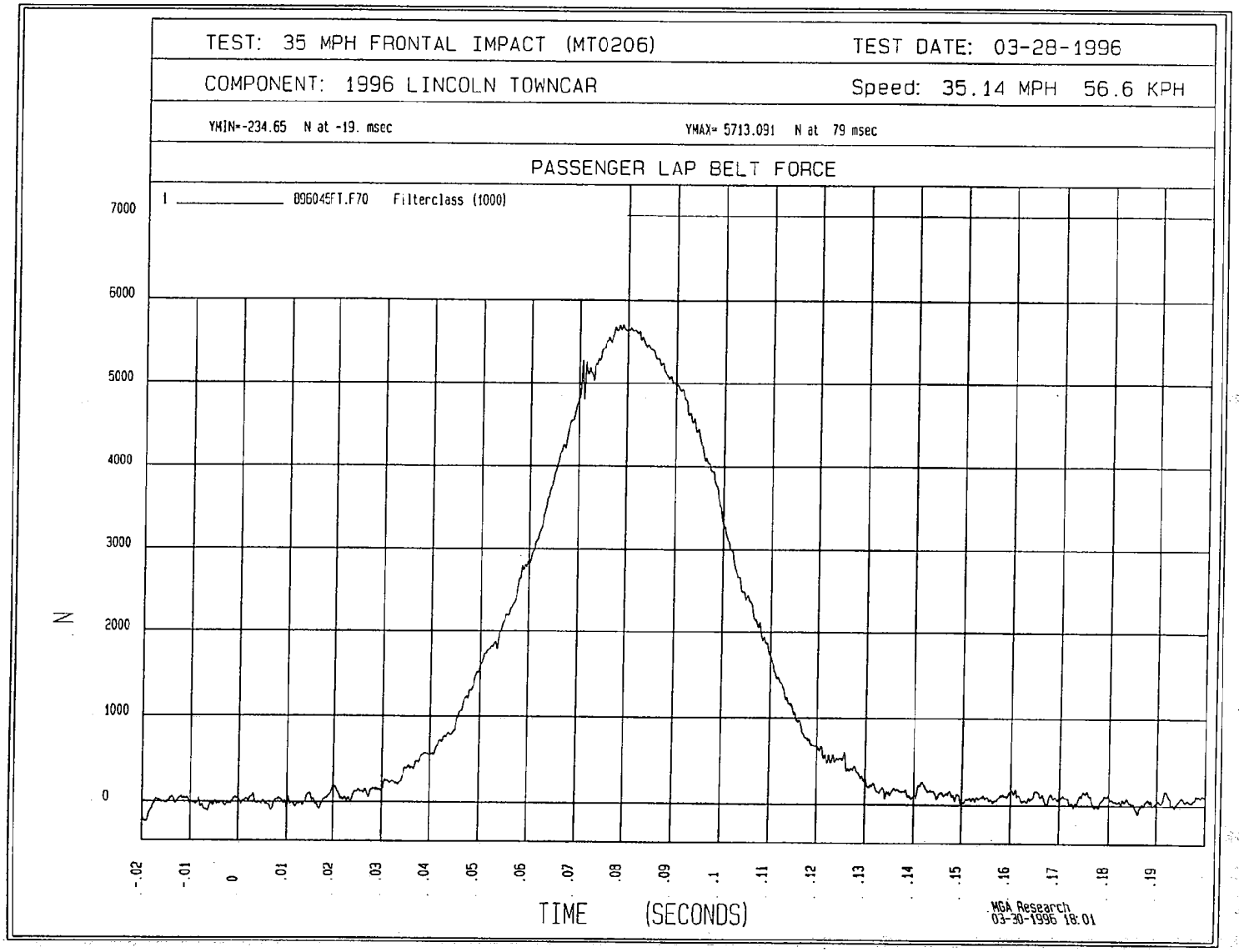

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-45.42347 G'S at 81. msec
YMAX= 23.71605 G'S at 26. msec
PASSENGER PELVIS X ACCELERATION
1 896045AF.A63 Filterclass (1000)
60
40
20
0
-20
-40
-60
G's
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:59

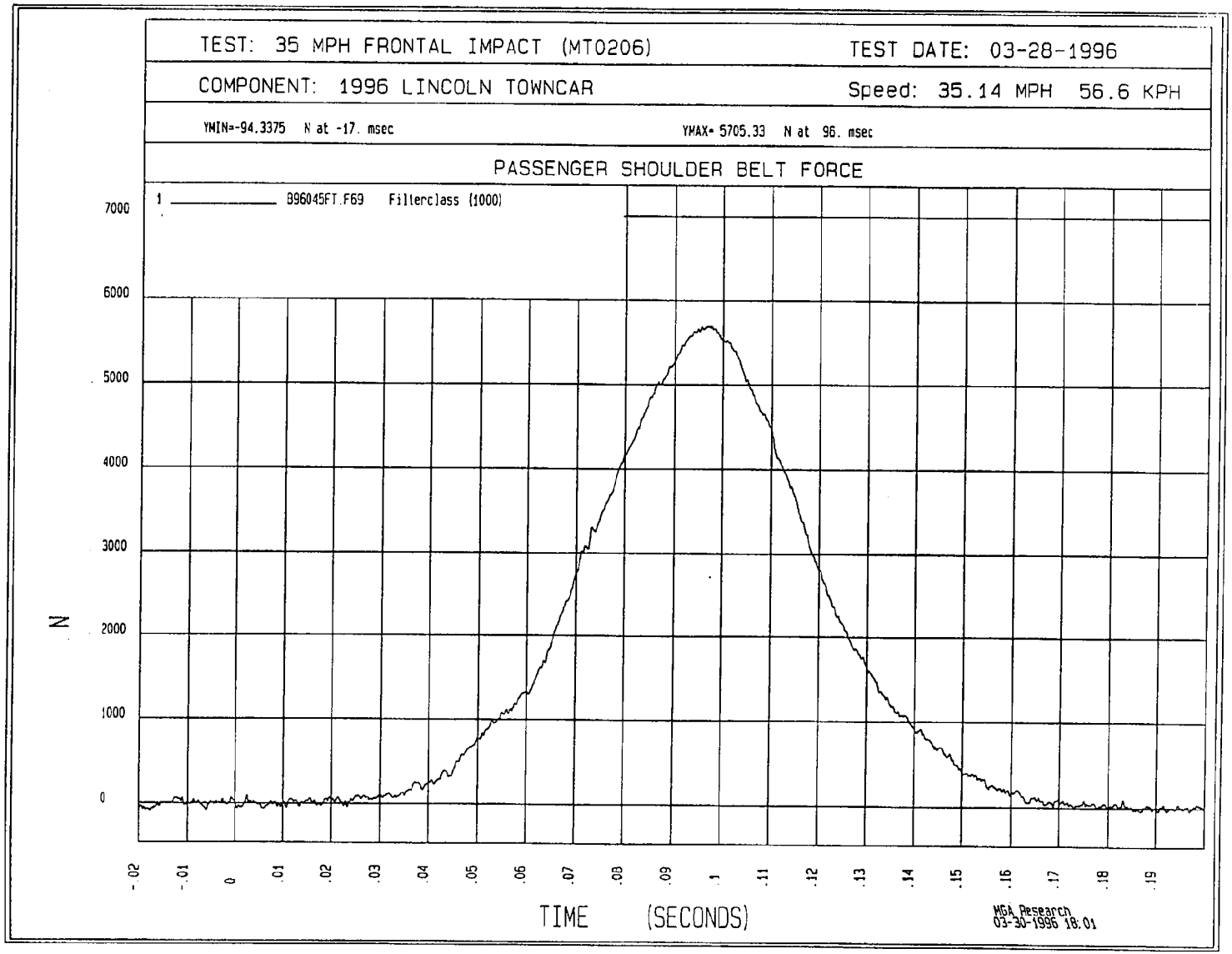

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-10.95174 G'S at 127 msec
YMAX= 10.13613 G'S at 91. msec
PASSENGER PELVIS Y ACCELERATION
1 B96045AF.A64 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1995 17:59

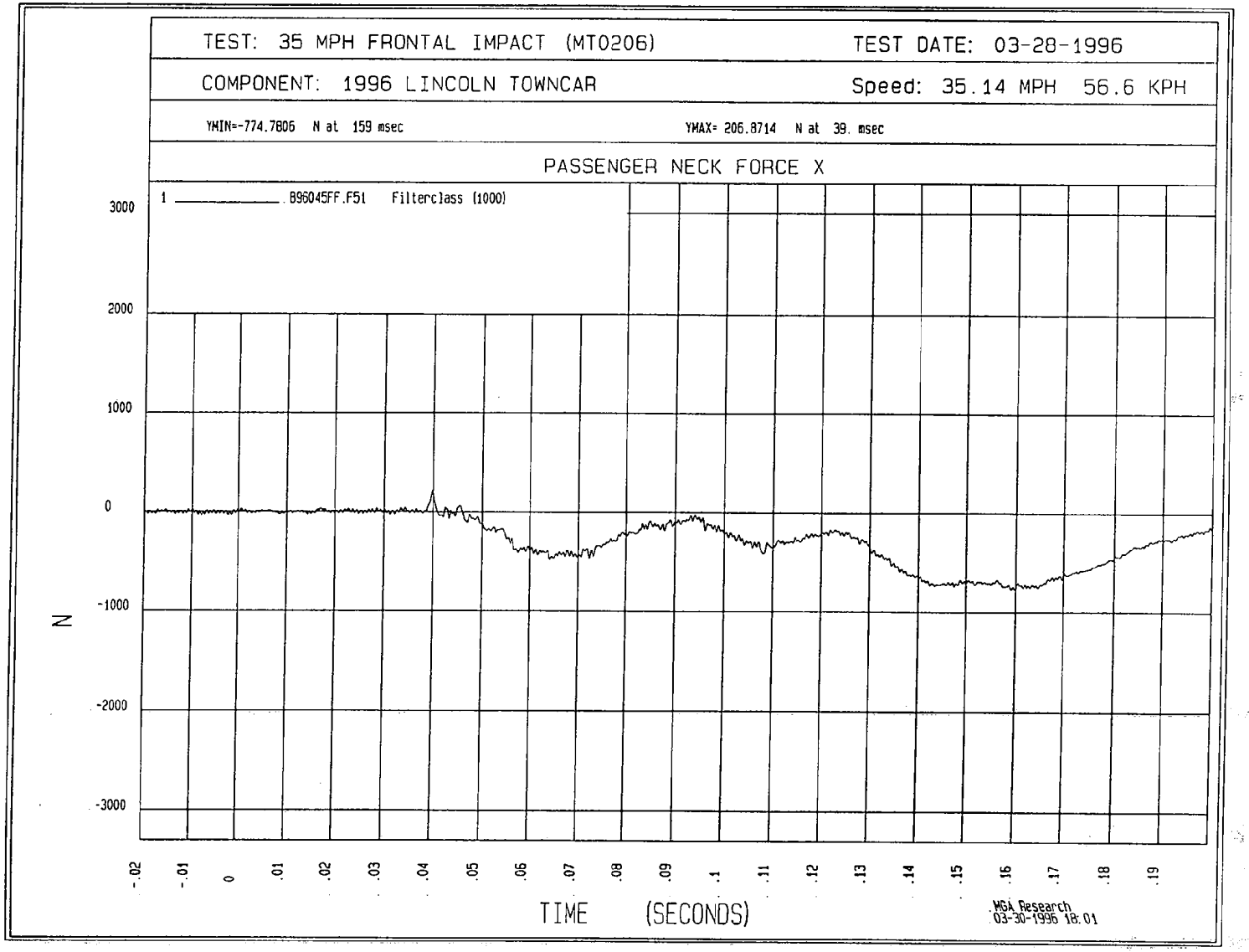

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-23.48499 G'S at 115 msec
YMAX= 3.678558 G'S at 48. msec
PASSENGER PELVIS Z ACCELERATION
1 B96045AF.A65 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
.02
.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 11:59

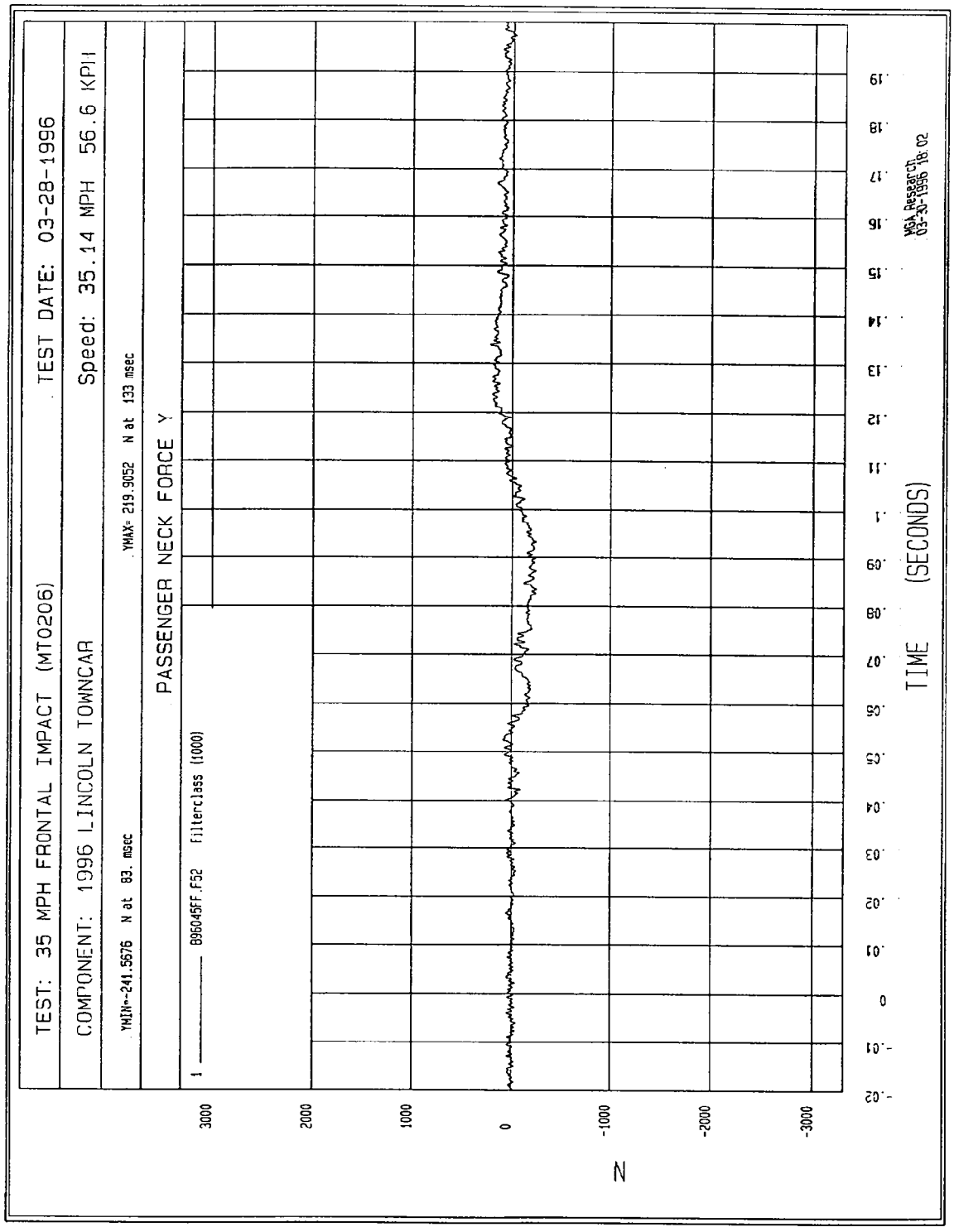

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= .1669233 G'S at 19. msec
YMAX= 46.53623 G'S at 81. msec
PASSENGER PELVIS RESULTANT ACCELERATION
1 B96045AV.A63 Filterclass (1000)
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 17:59

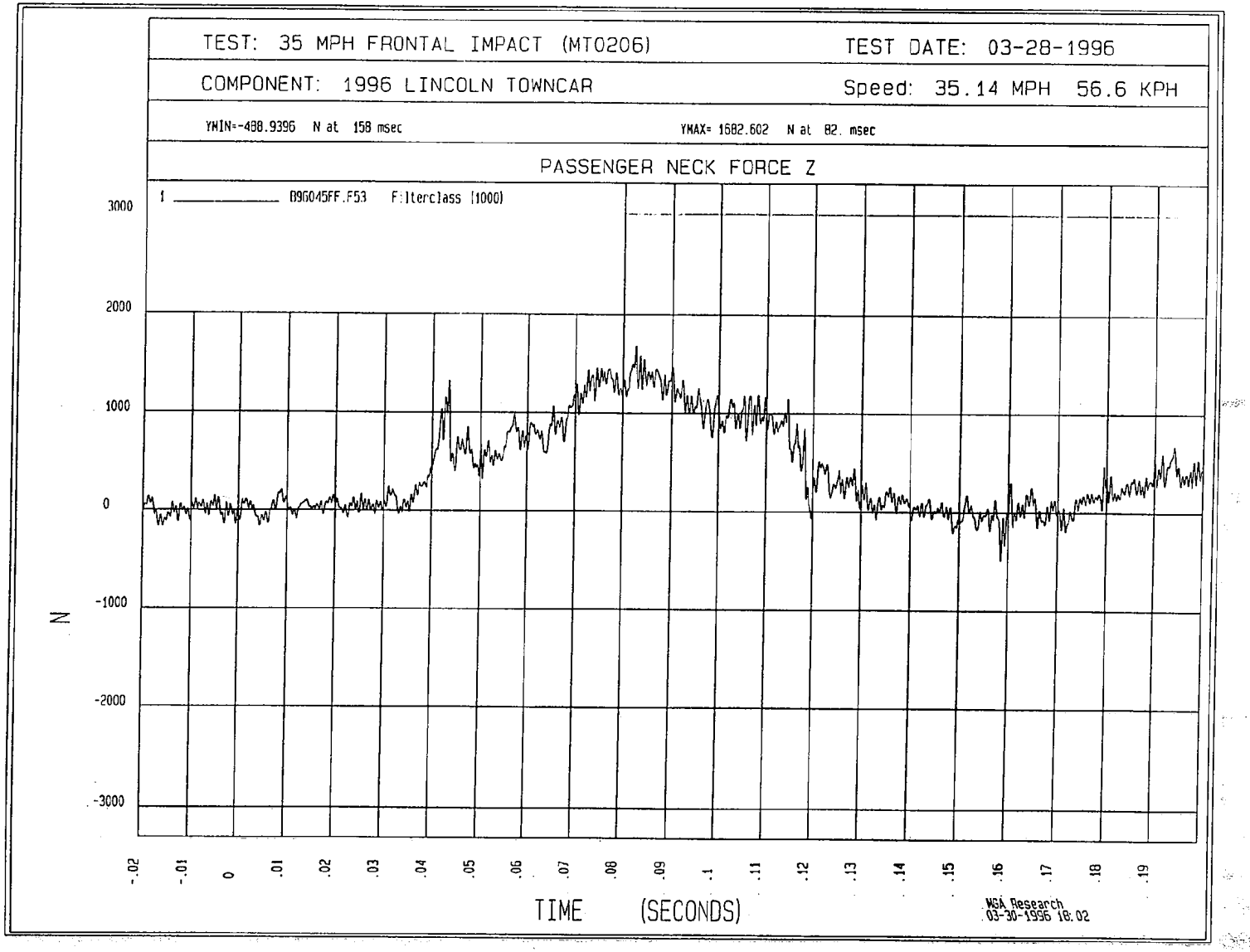

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-4.2122 KPH at 128 msec
YMAX= 56.80238 KPH at 16. msec
PASSENGER PELVIS X VELOCITY
1 ——— 6960045A1.V63 Filterclass (1000)
KPH
60
40
20
0
-20
-40
TIME Seconds
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
NGA Research
03-30-1996 18.10

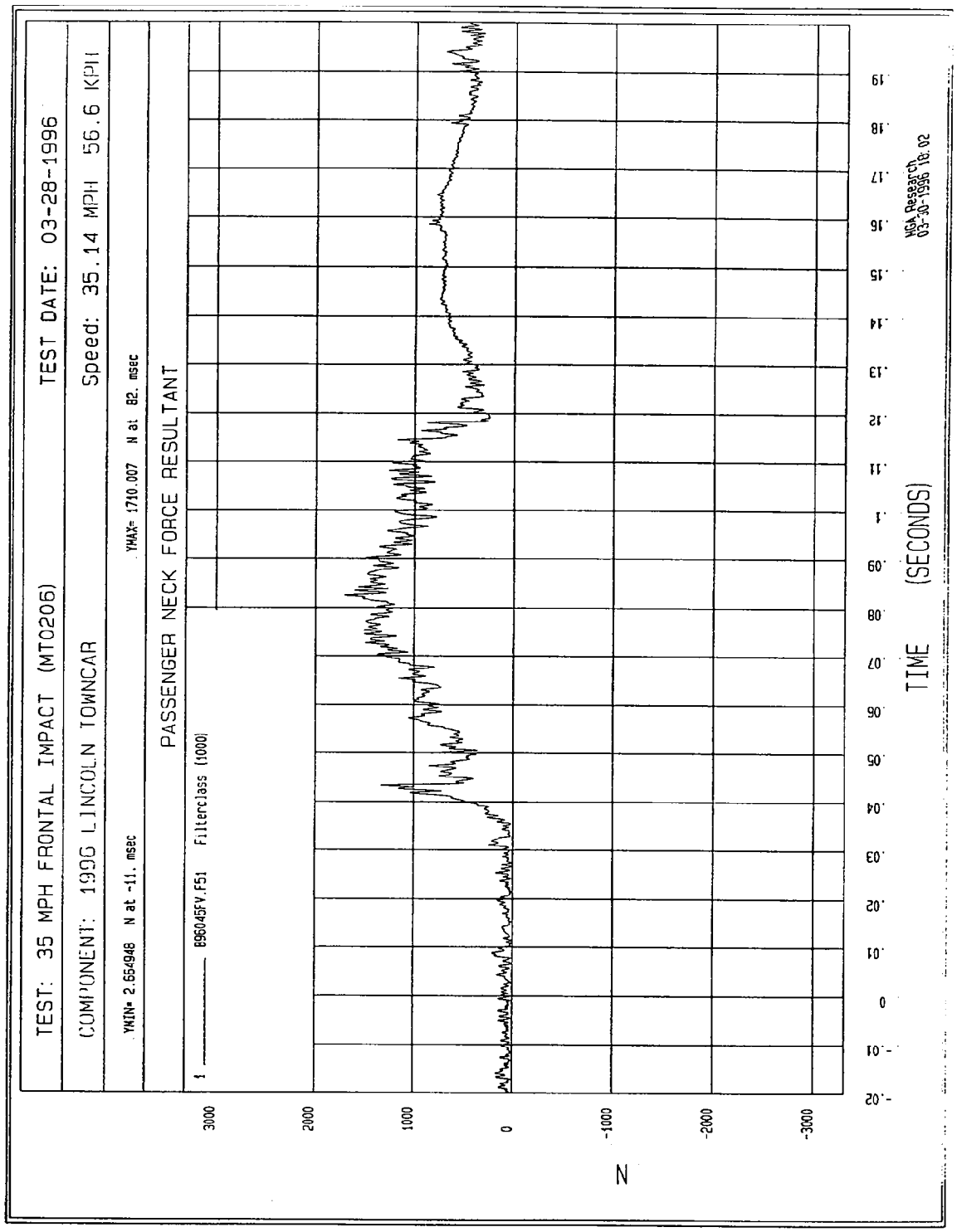

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-234.65 N at -19. msec
YMAX= 5713.091 N at 79 msec
PASSENGER LAP BELT FORCE
1 ——— 096045FT.F70 Filterclass (1000)
7000
6000
5000
4000
3000
2000
1000
0
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:01

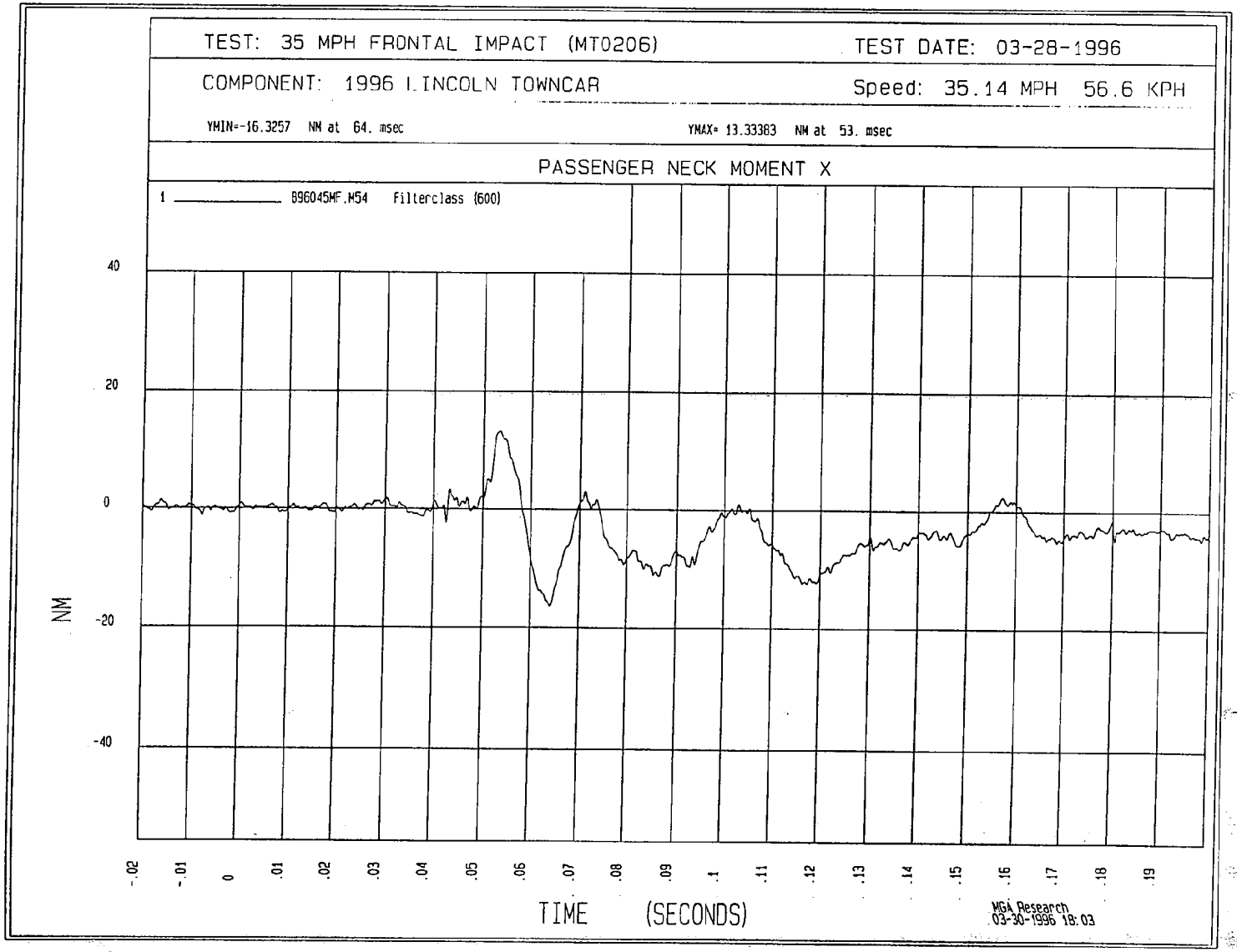

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-94.3375 N at -17. msec
YMAX= 5705.33 N at 96. msec
PASSENGER SHOULDER BELT FORCE
1 ——— 960045FT.F69 Filterclass (1000)
7000
6000
5000
4000
3000
2000
1000
0
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:01

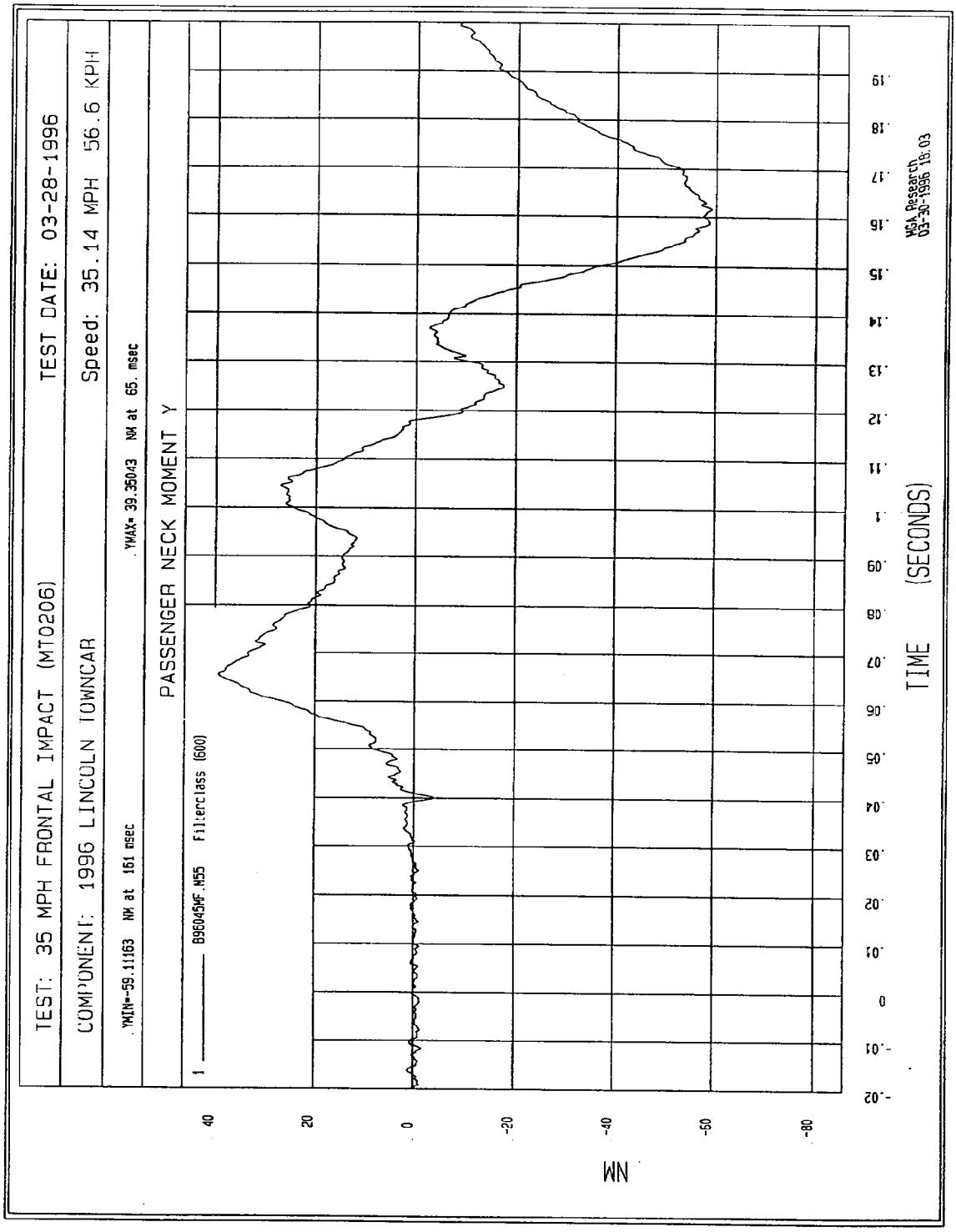

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-774.7806 N at 159 msec
YMAX= 206.8714 N at 39. msec
PASSENGER NECK FORCE X
1 B96045FF.F51 Filterclass (1000)
3000
2000
1000
0
-1000
-2000
-3000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:01

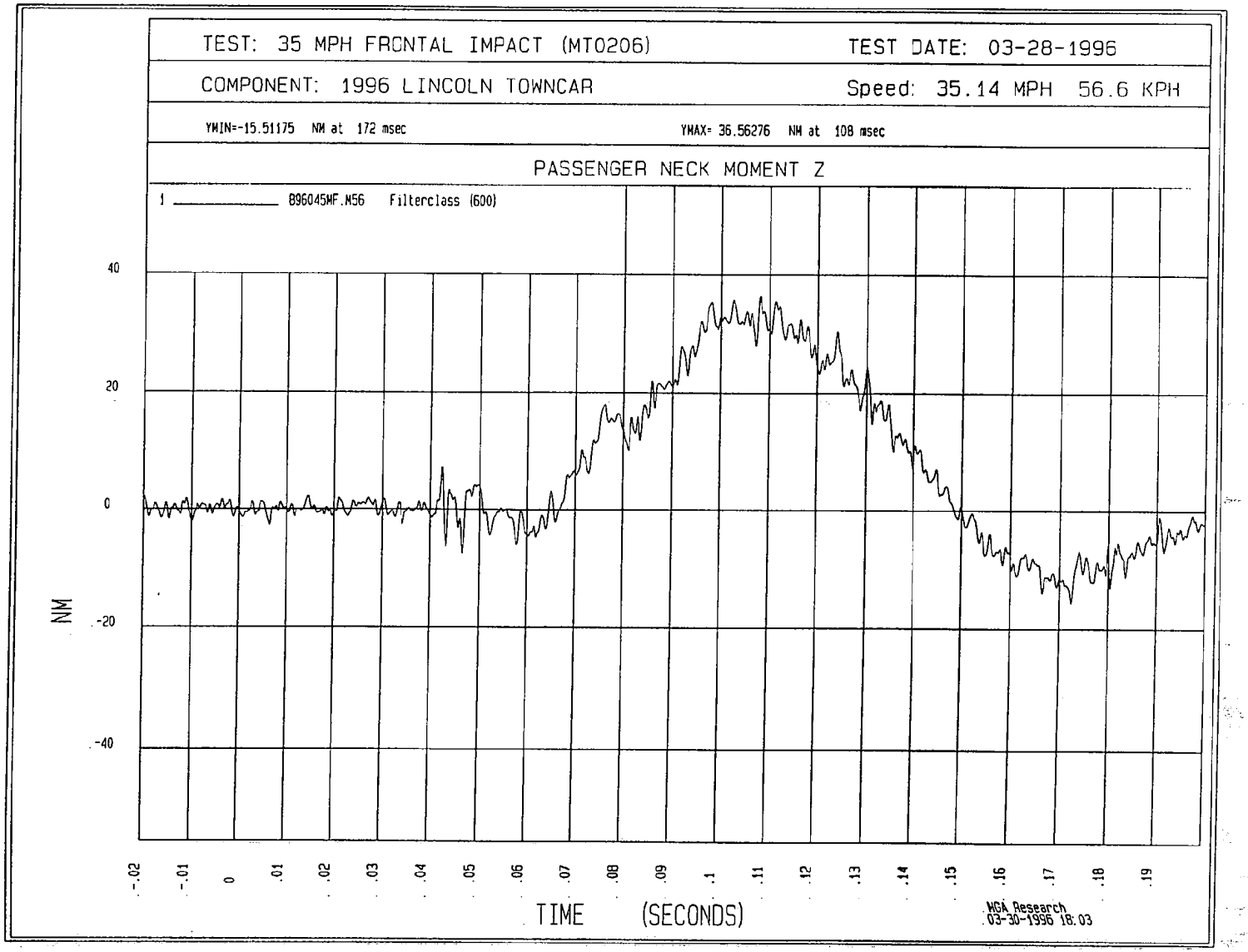

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-241.5676 N at 83. msec
YMAX= 219.9052 N at 133 msec
PASSENGER NECK FORCE Y
1 B96045FF.F52 Filterclass (1000)
3000
2000
1000
0
-1000
-2000
-3000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.07
.08
.09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
03-30-1996 18:02

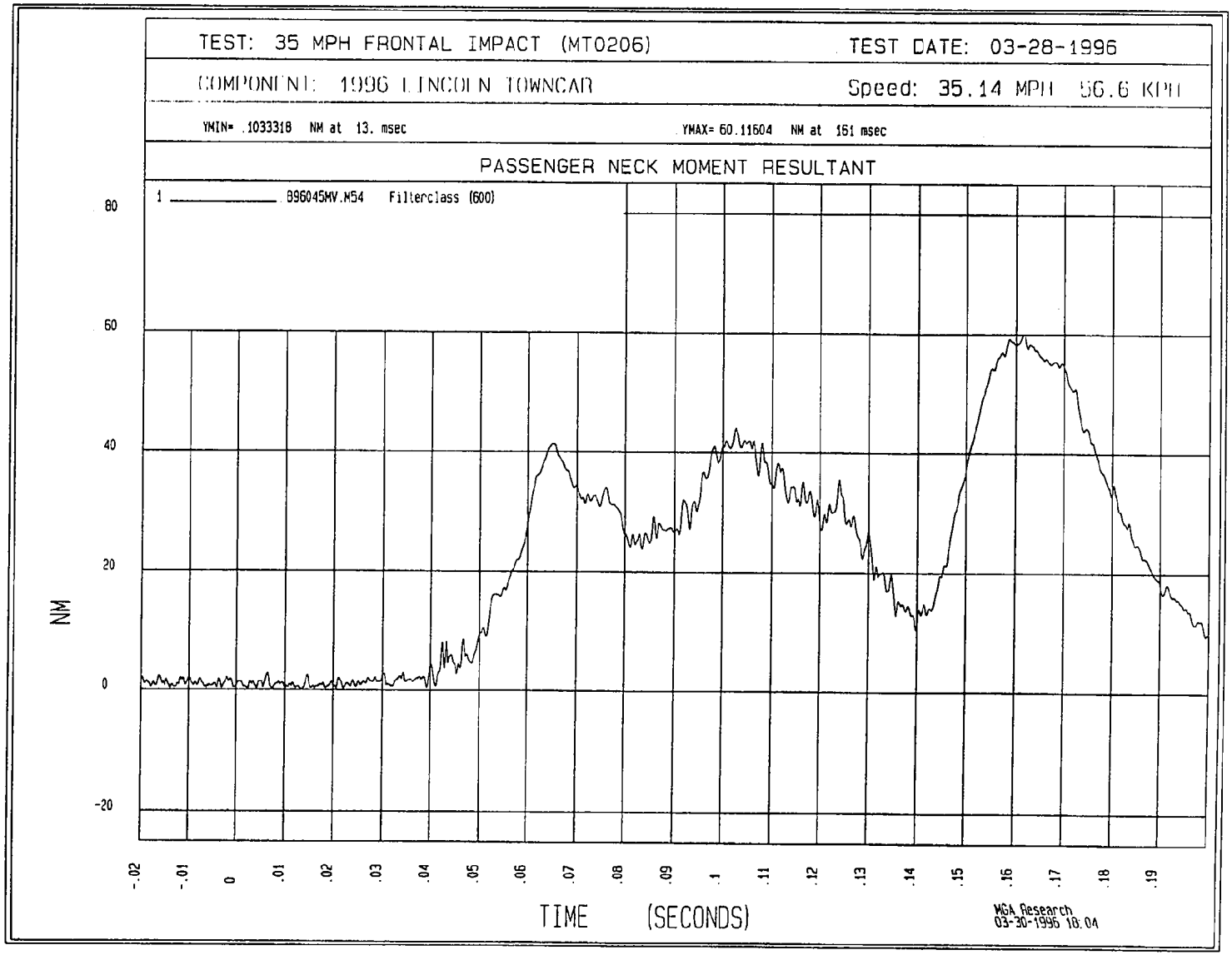

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-488.9396 N at 158 msec
YMAX= 1682.602 N at 82. msec
PASSENGER NECK FORCE Z
1 B96045FF.F53 F:\terclass (1000)
3000
2000
1000
0
-1000
-2000
-3000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
NGA Research
03-30-1996 18:02

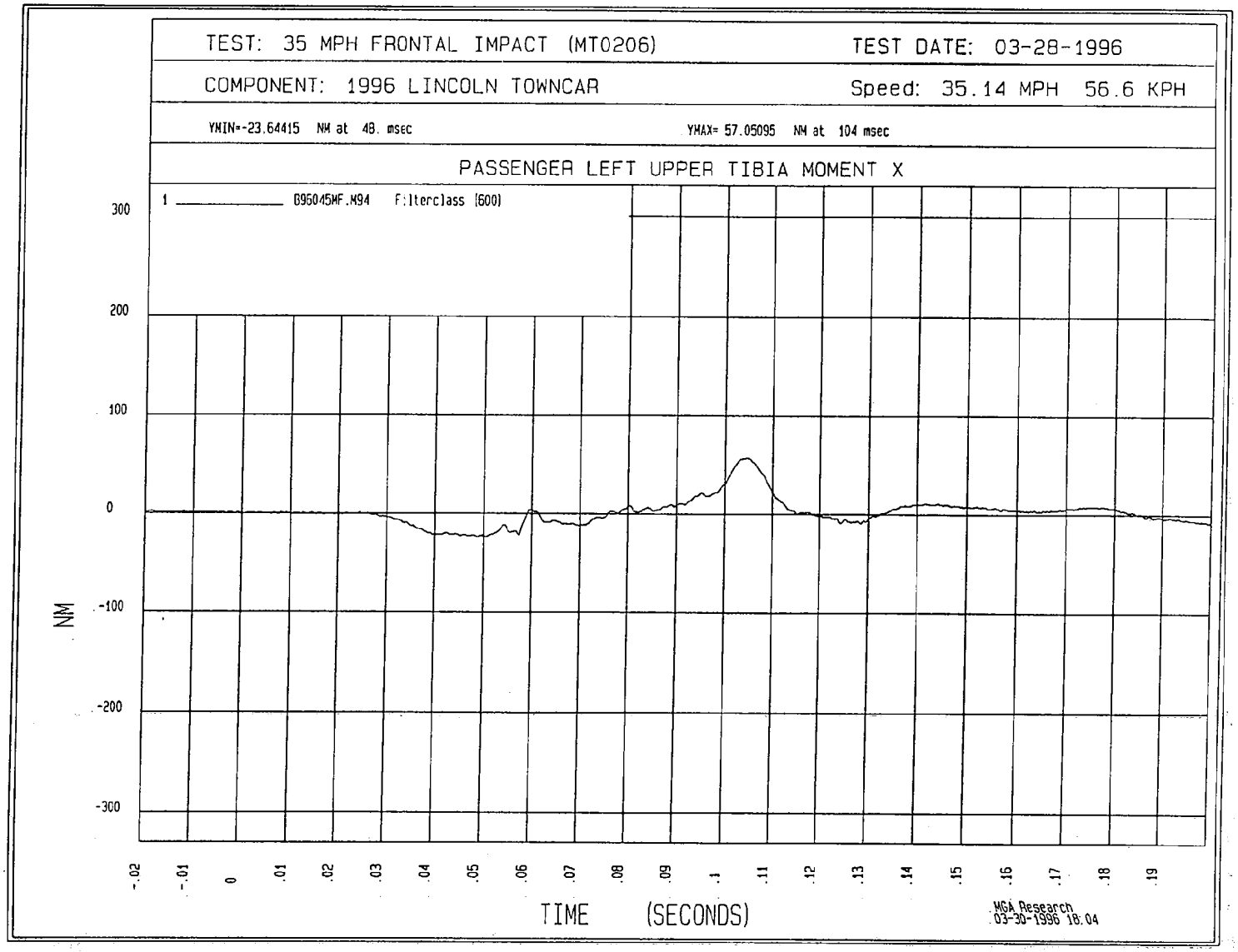

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= 2.654948 N at -11. msec
YMAX= 1710.007 N at 82. msec
PASSENGER NECK FORCE RESULTANT
1 _____ 896045FY.F51 Filterclass (1000)
3000
2000
1000
0
-1000
-2000
-3000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:02

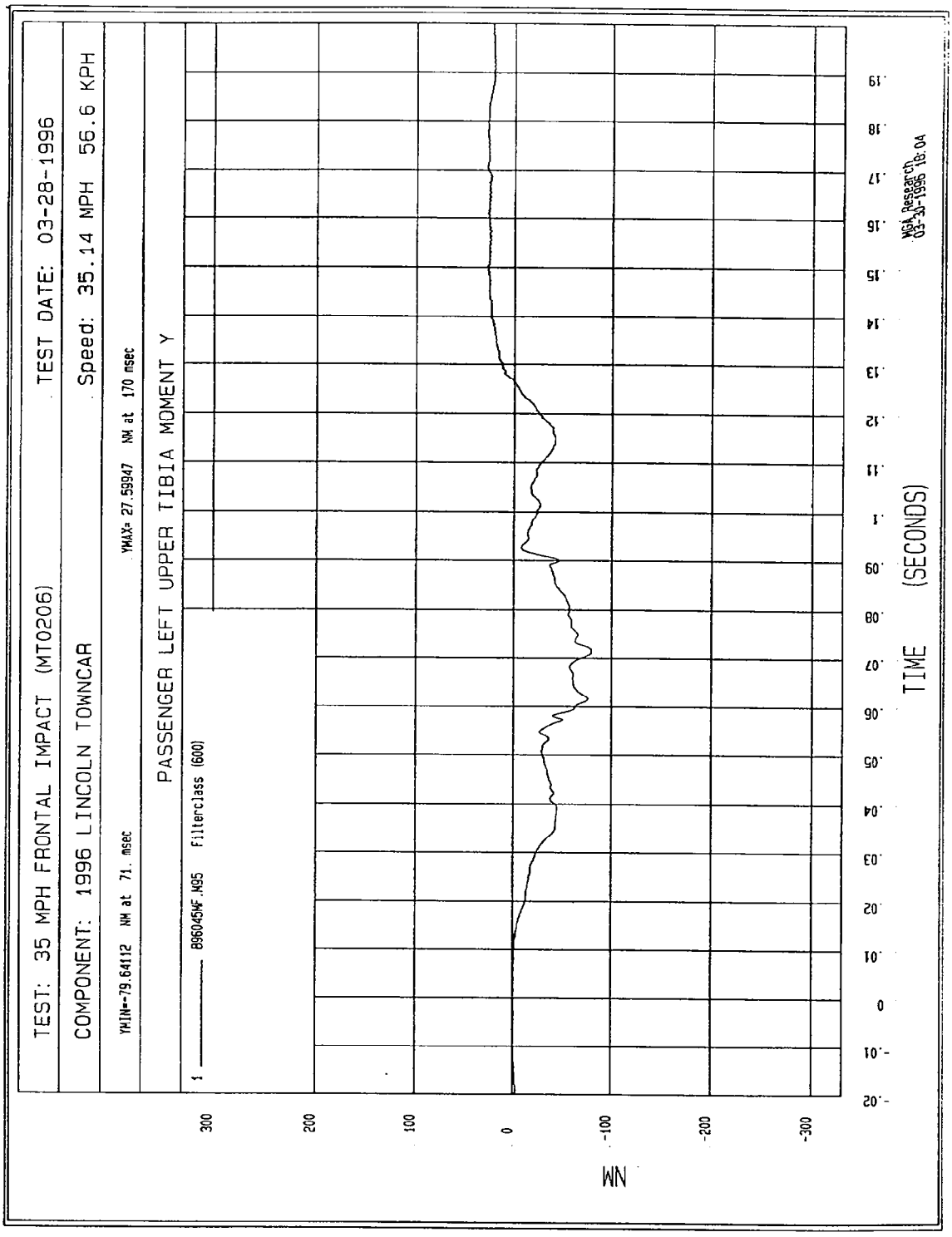

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-16.3257 NM at 64. msec
YMAX= 13.33383 NM at 53. msec
PASSENGER NECK MOMENT X
1 B96045MF.M54 Filterclass (600)
40
20
0
-20
-40
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:03

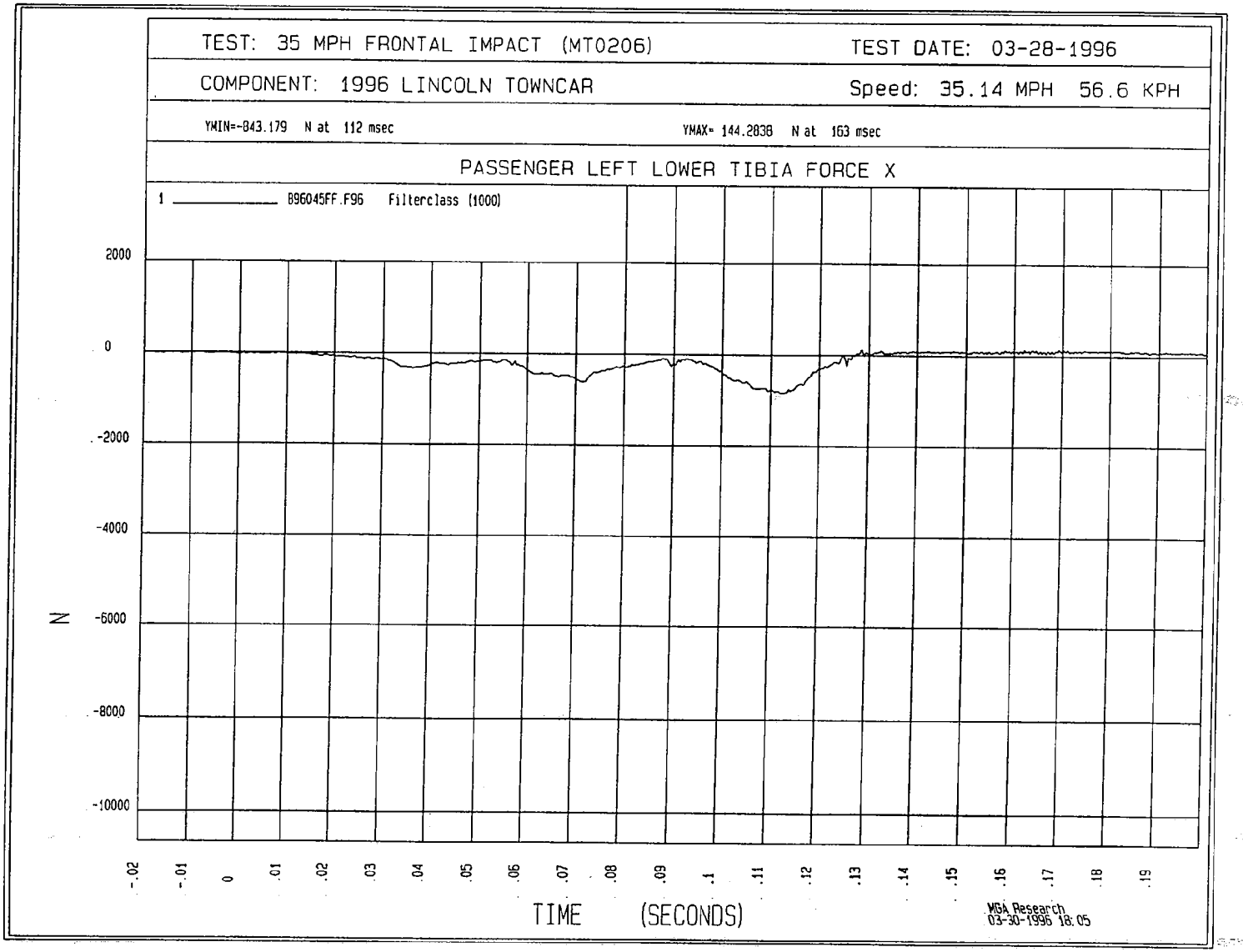

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-59.11163 NM at 161 msec
YMAX= 39.35043 NM at 65. msec
PASSENGER NECK MOMENT Y
1 B96045MF.M55 Fiberglass (600)
NM
TIME (SECONDS)
MGA Research
03-30-1996 16:03

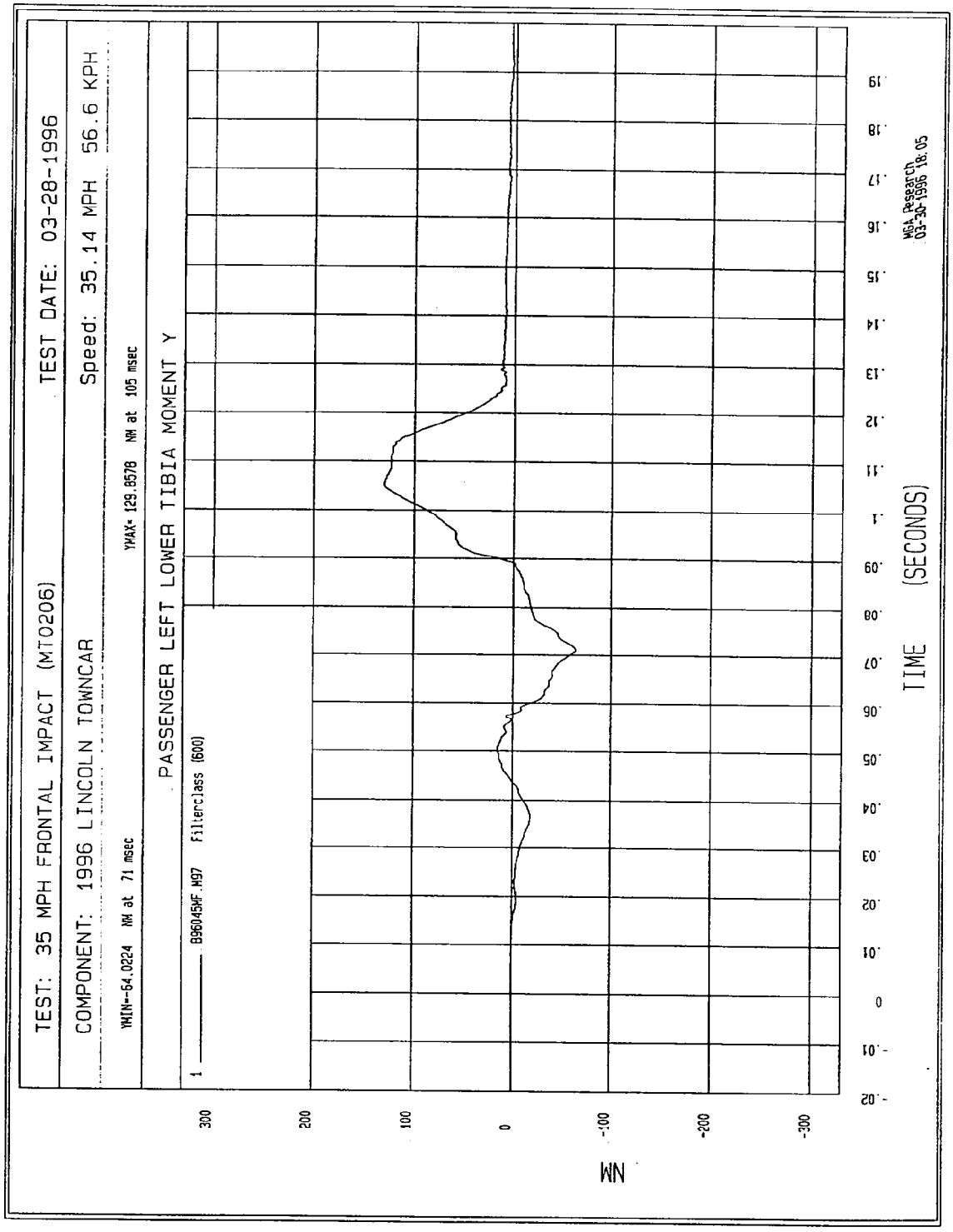

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-15.51175 NM at 172 msec
YMAX= 36.56276 NM at 108 msec
PASSENGER NECK MOMENT Z
1 B96045MF.M56 Filterclass (600)
NM
40
20
0
-20
-40
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:03

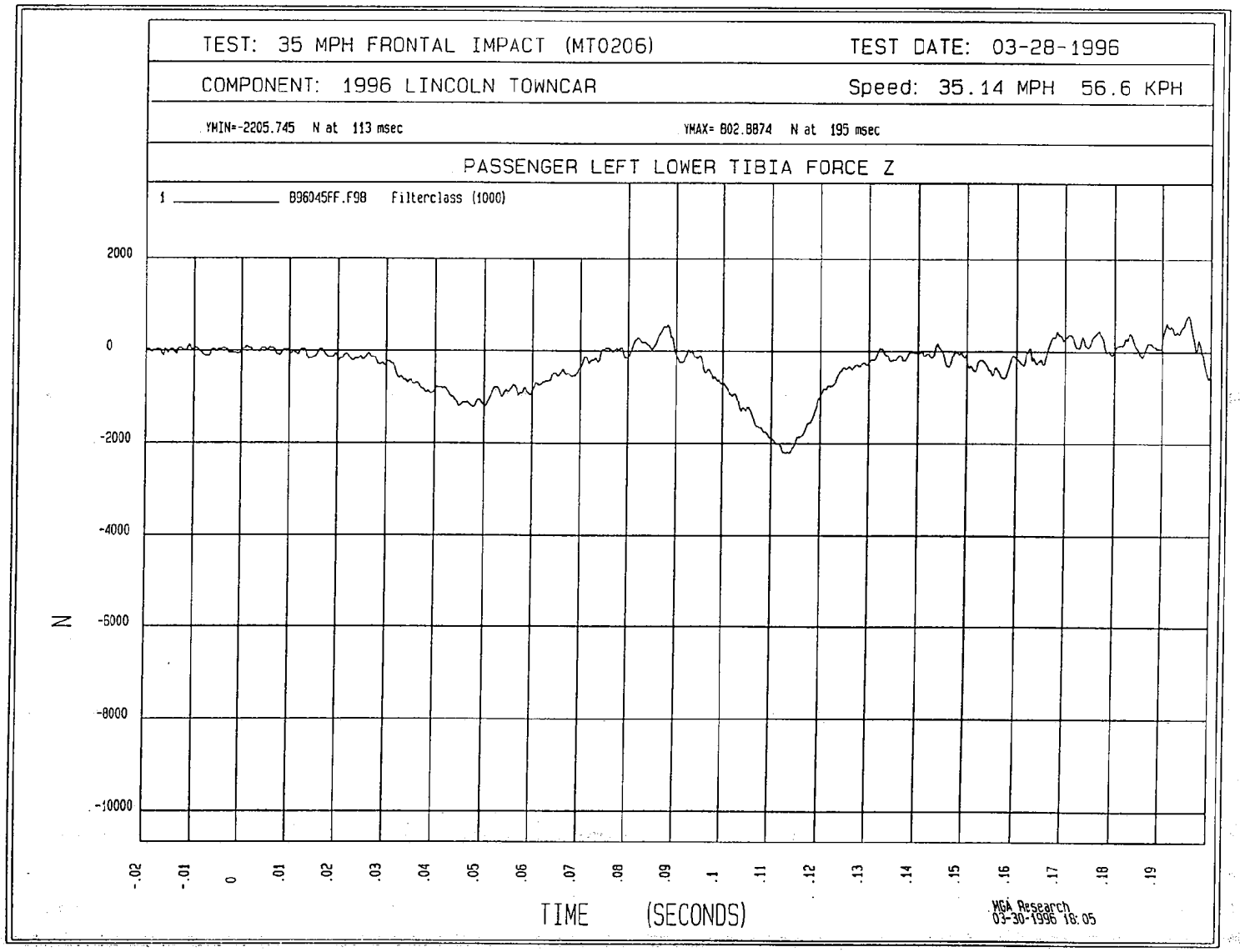

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN= .1033318 NM at 13. msec
YMAX= 60.11604 NM at 151 msec
PASSENGER NECK MOMENT RESULTANT
1 896045MV.M54 Filterclass (600)
80
60
40
20
0
-20
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 10:04

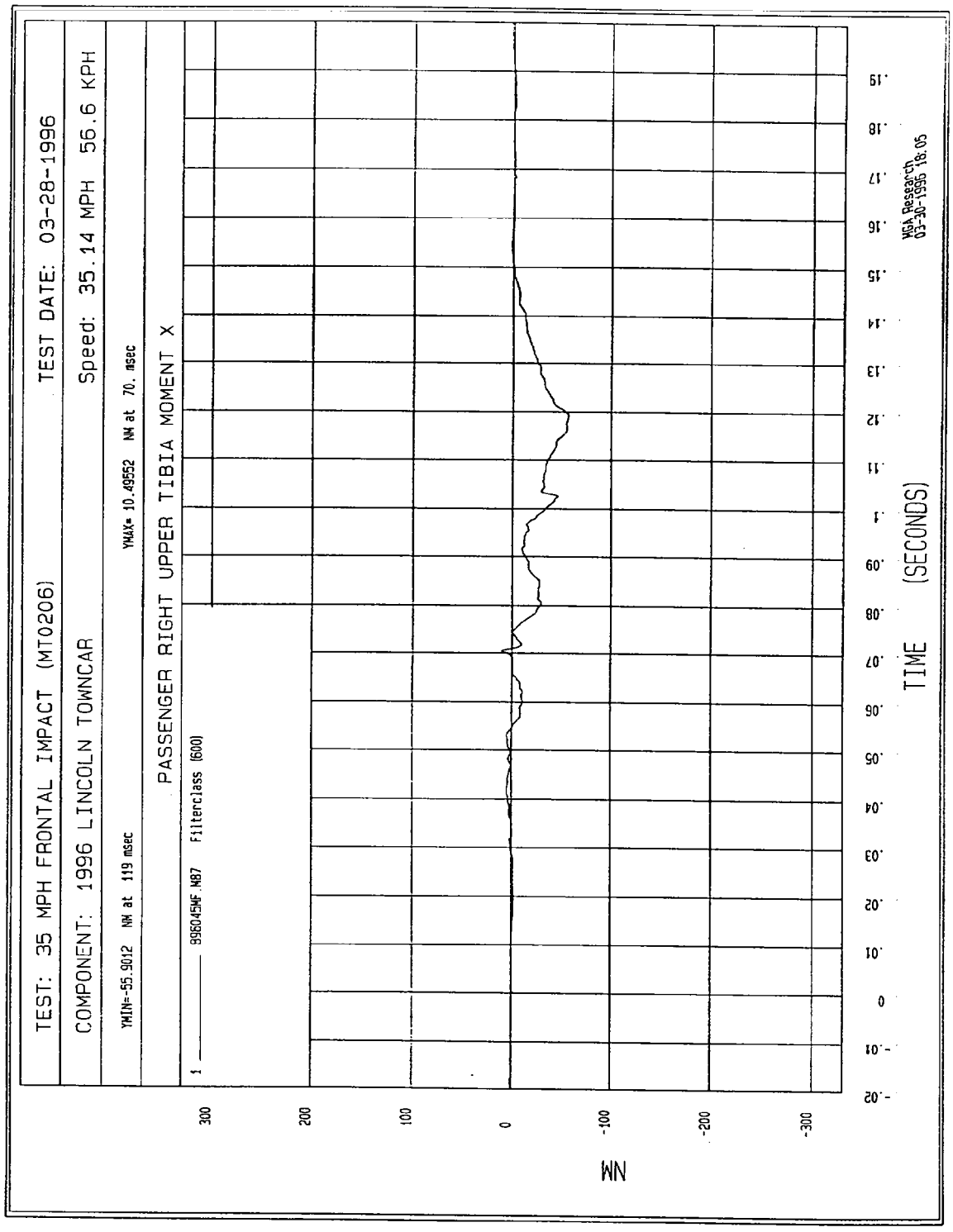

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-23.64415 NM at 48. msec
YMAX= 57.05095 NM at 104 msec
PASSENGER LEFT UPPER TIBIA MOMENT X
1 B95045MF.M94 F:\terclass (600)
300
200
100
0
-100
-200
-300
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:04

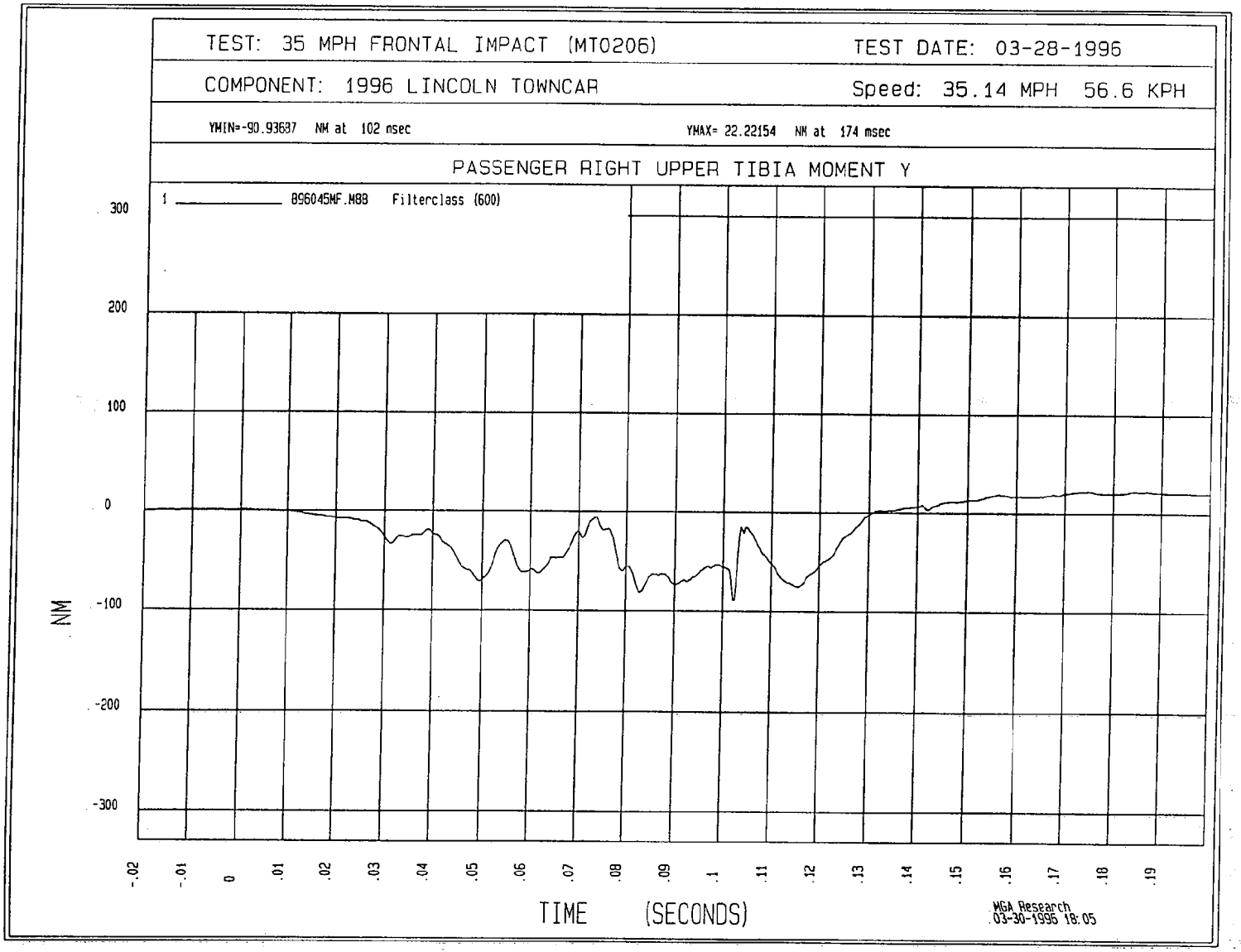

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-79.64112 NM at 71. msec
YMAX= 27.59947 NM at 170 msec
PASSENGER LEFT UPPER TIBIA MOMENT Y
1 896045NF.M95 Filterclass (600)
NM
TIME (SECONDS)
Wgh Research
03-30-1996 18:04

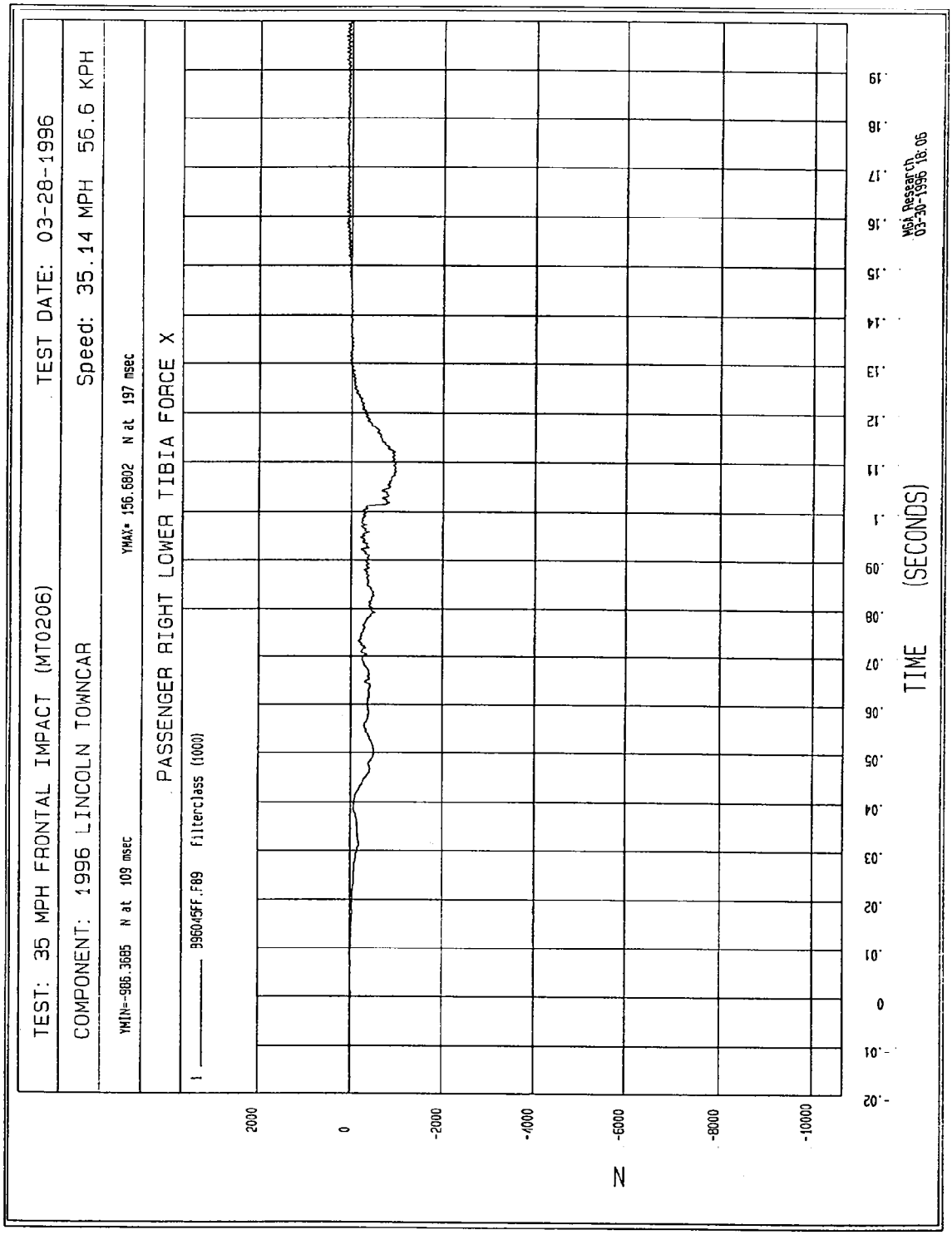

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-843.179 N at 112 msec
YMAX= 144.2838 N at 163 msec
PASSENGER LEFT LOWER TIBIA FORCE X
1 B96045FF.F96 Filterclass (1000)
2000
0
-2000
-4000
-6000
-8000
-10000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:05

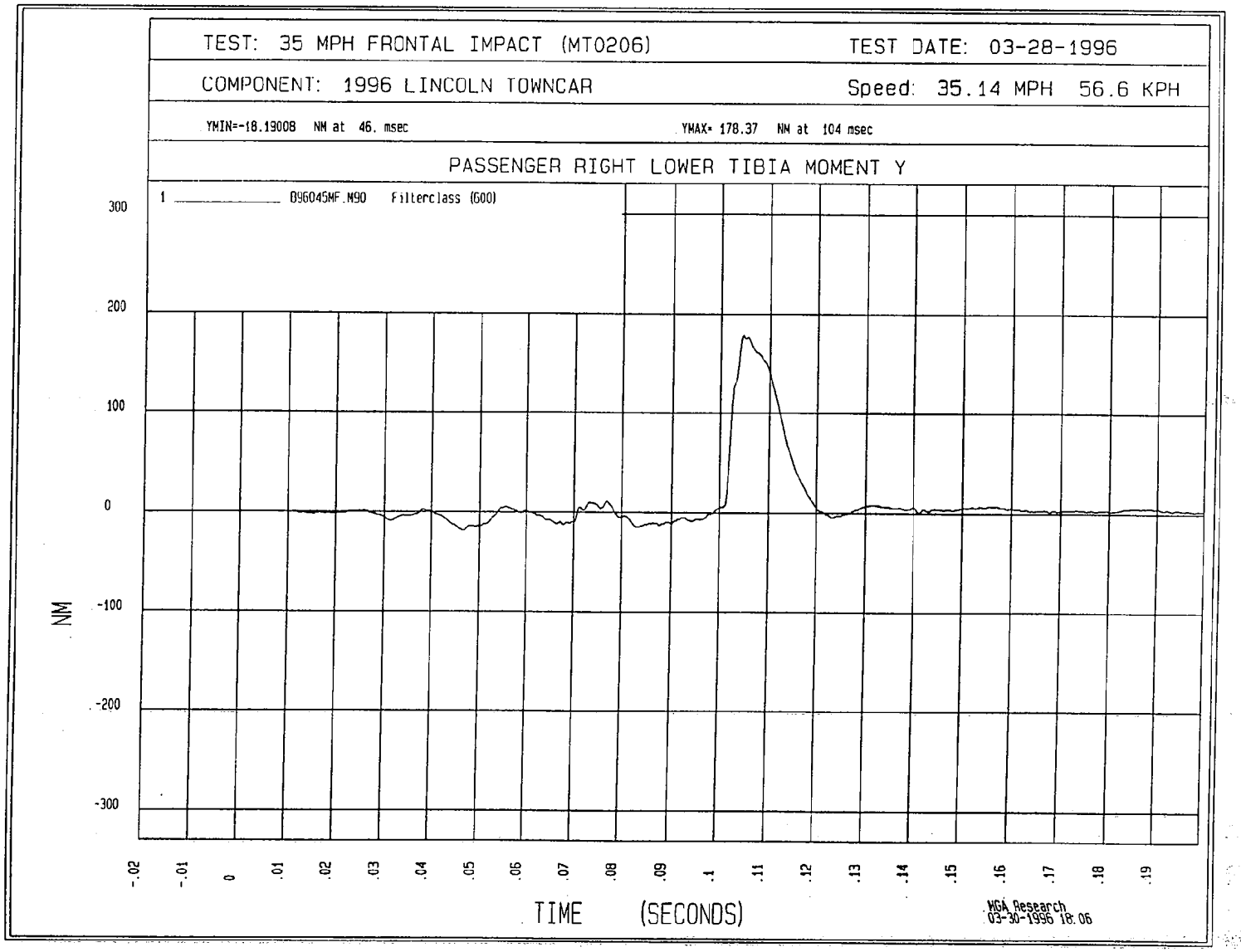

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-64.0224 NM at 71 msec
YMAX= 129.8578 NM at 105 msec
PASSENGER LEFT LOWER TIBIA MOMENT Y
1 B96045HF.H97 Filterclass (600)
NM
300
200
100
0
-100
-200
-300
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:05

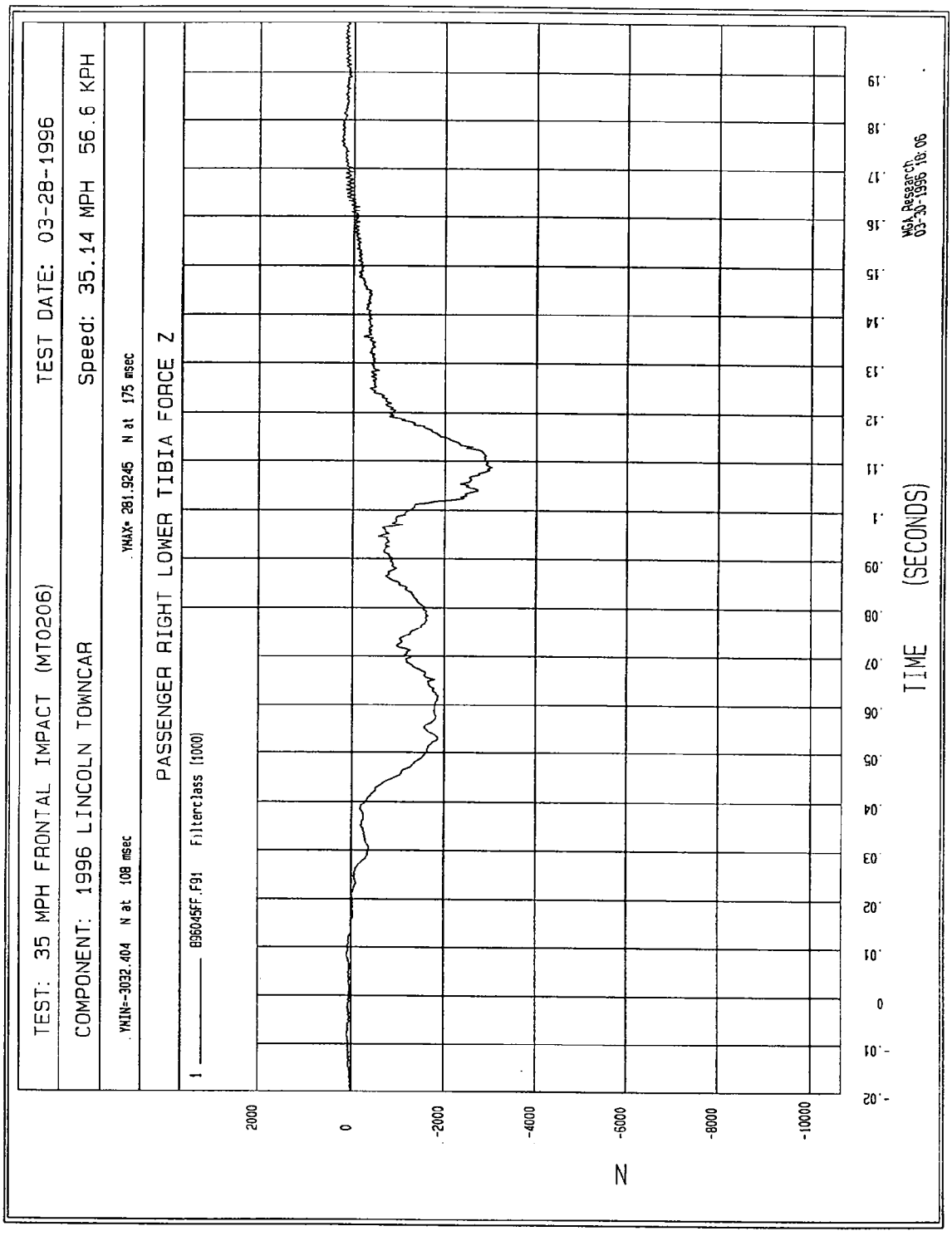

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-2205.745 N at 113 msec
YMAX= 802.8874 N at 195 msec
PASSENGER LEFT LOWER TIBIA FORCE Z
1 B96045FF.F98 Filterclass (1000)
2000
0
-2000
-4000
-6000
-8000
-10000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 16:05

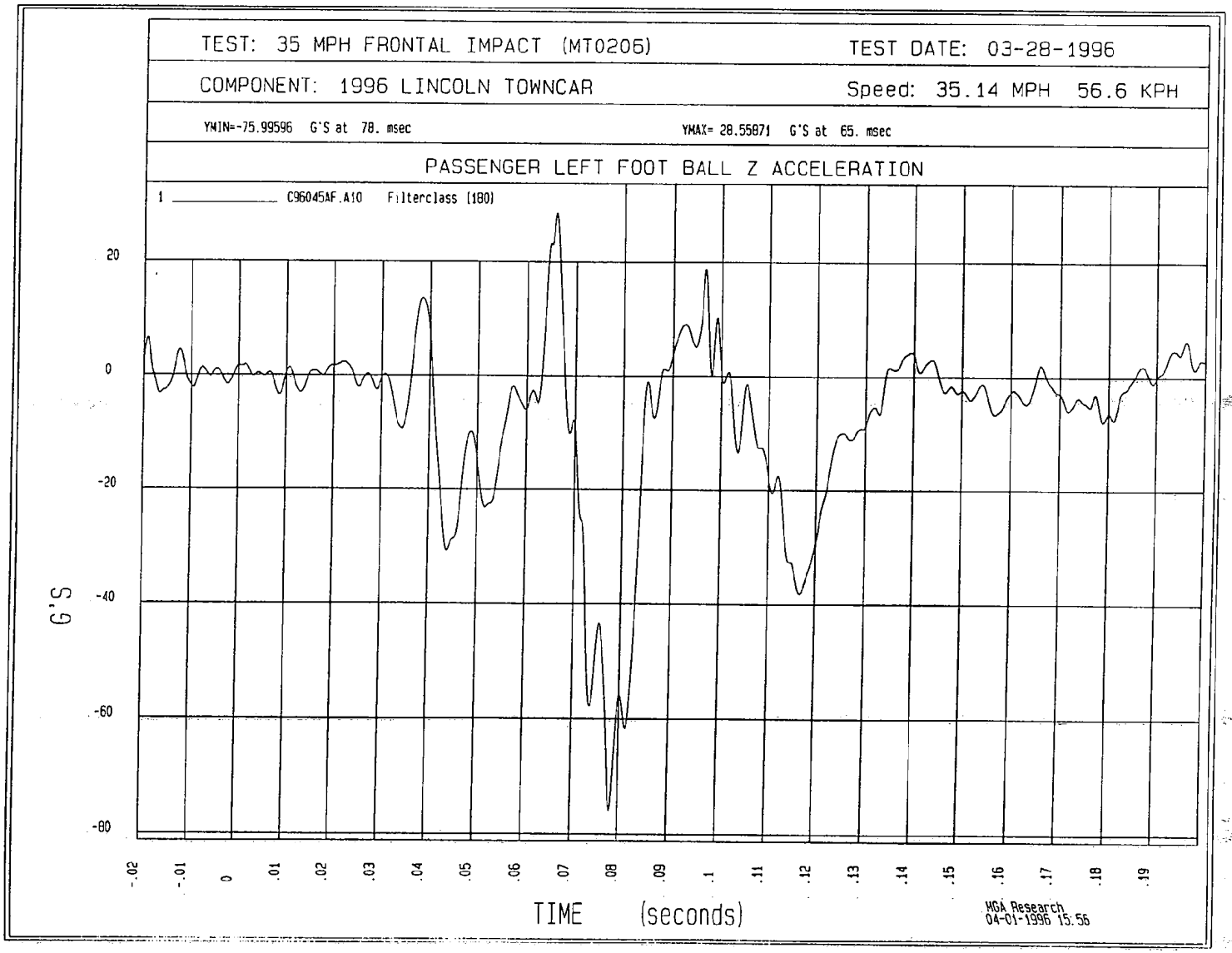

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-55.9012 NM at 119 msec
YMAX= 10.49552 NM at 70. msec
PASSENGER RIGHT UPPER TIBIA MOMENT X
1 ——— 9960045MF.M87 Filterclass (600)
NM
300
200
100
0
-100
-200
-300
TIME (SECONDS)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
MGA Research
03-30-1995 18:05

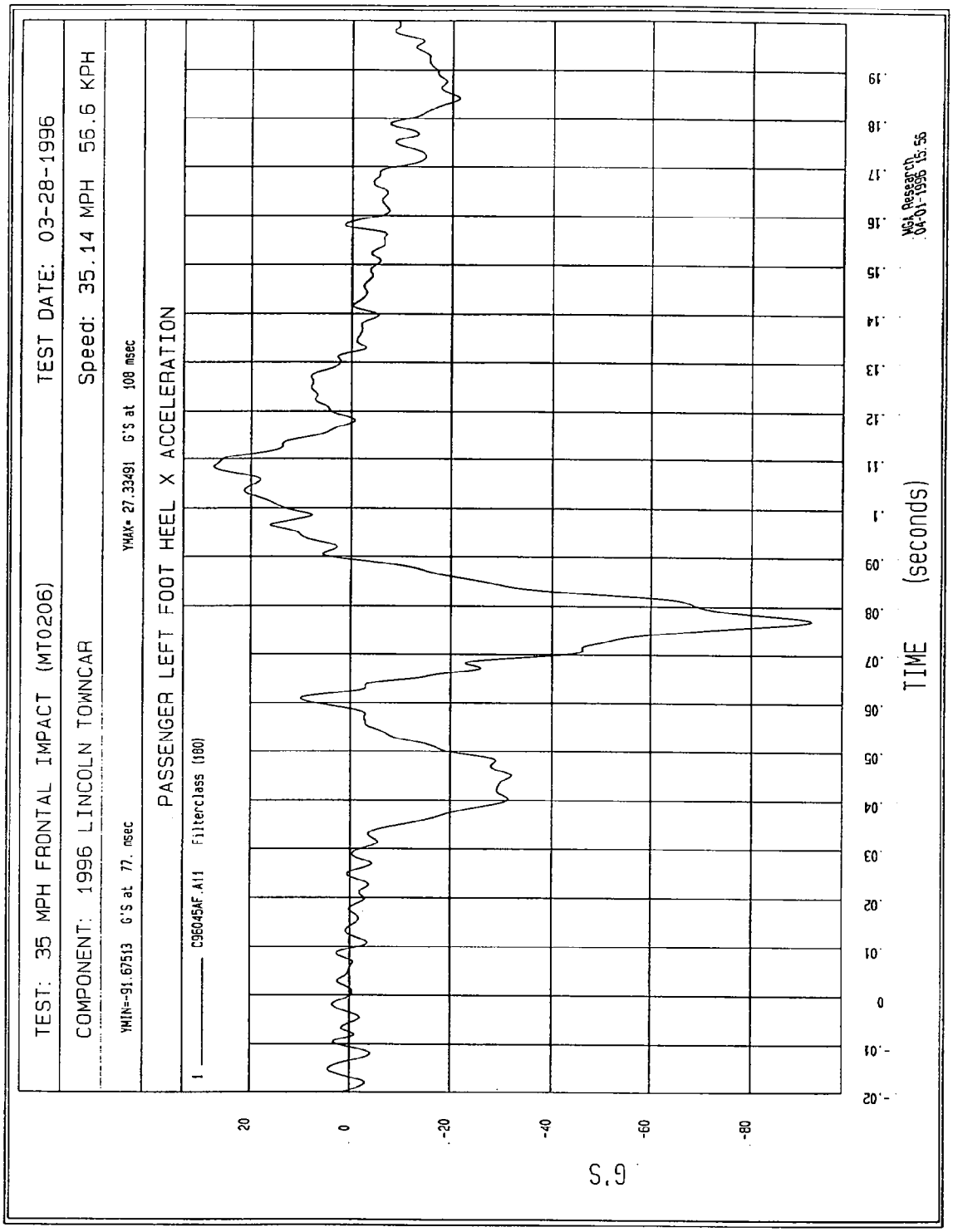

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-90.93687 NM at 102 msec
YMAX= 22.22154 NM at 174 msec
PASSENGER RIGHT UPPER TIBIA MOMENT Y
1 896045MF.M88 Filterclass (600)
300
200
100
0
-100
-200
-300
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1995 18:05

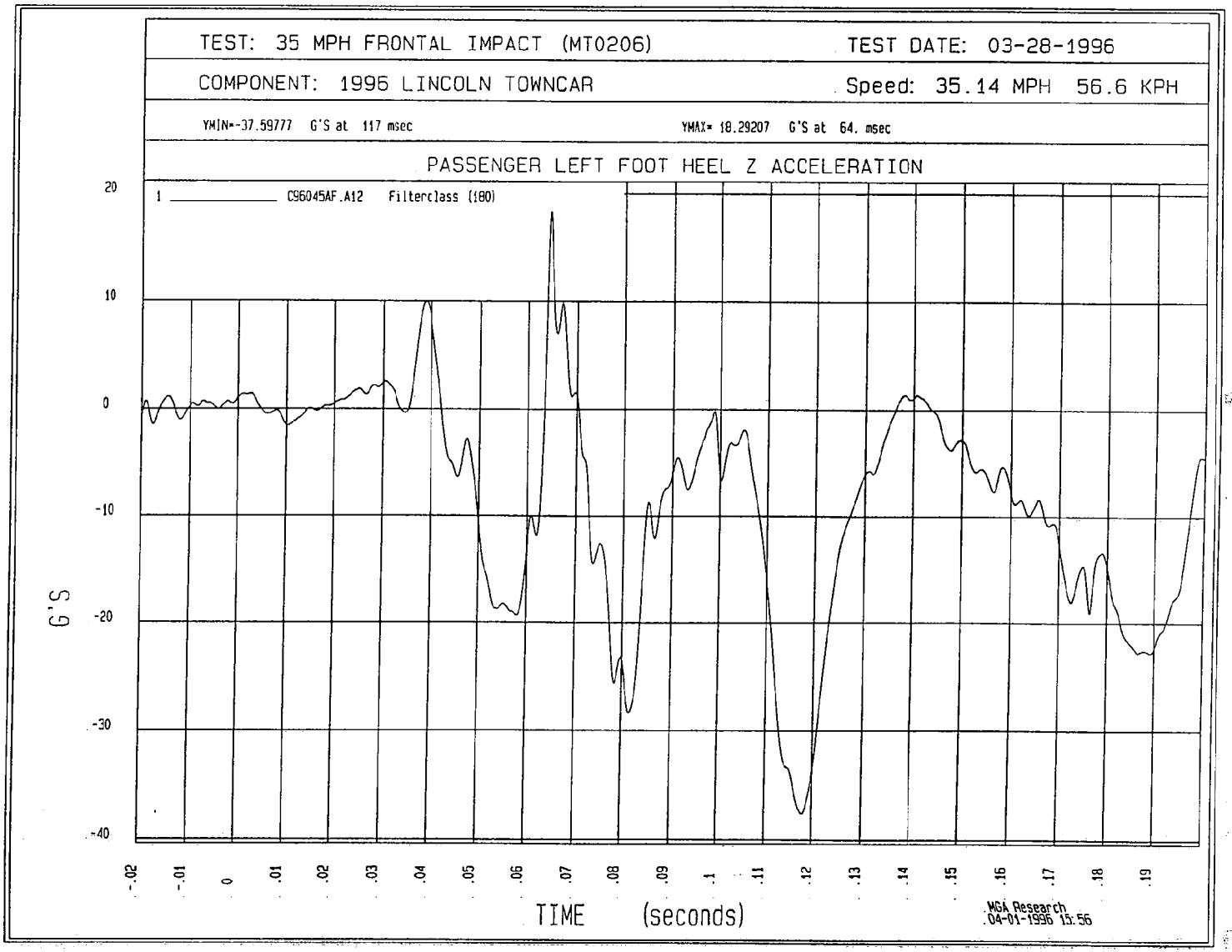

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-986.3685 N at 109 msec
YMAX= 156.6802 N at 197 msec
PASSENGER RIGHT LOWER TIBIA FORCE X
1 ——— 9960459FF.F89 filterclass (1000)
2000
0
-2000
-4000
-6000
-8000
-10000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:05

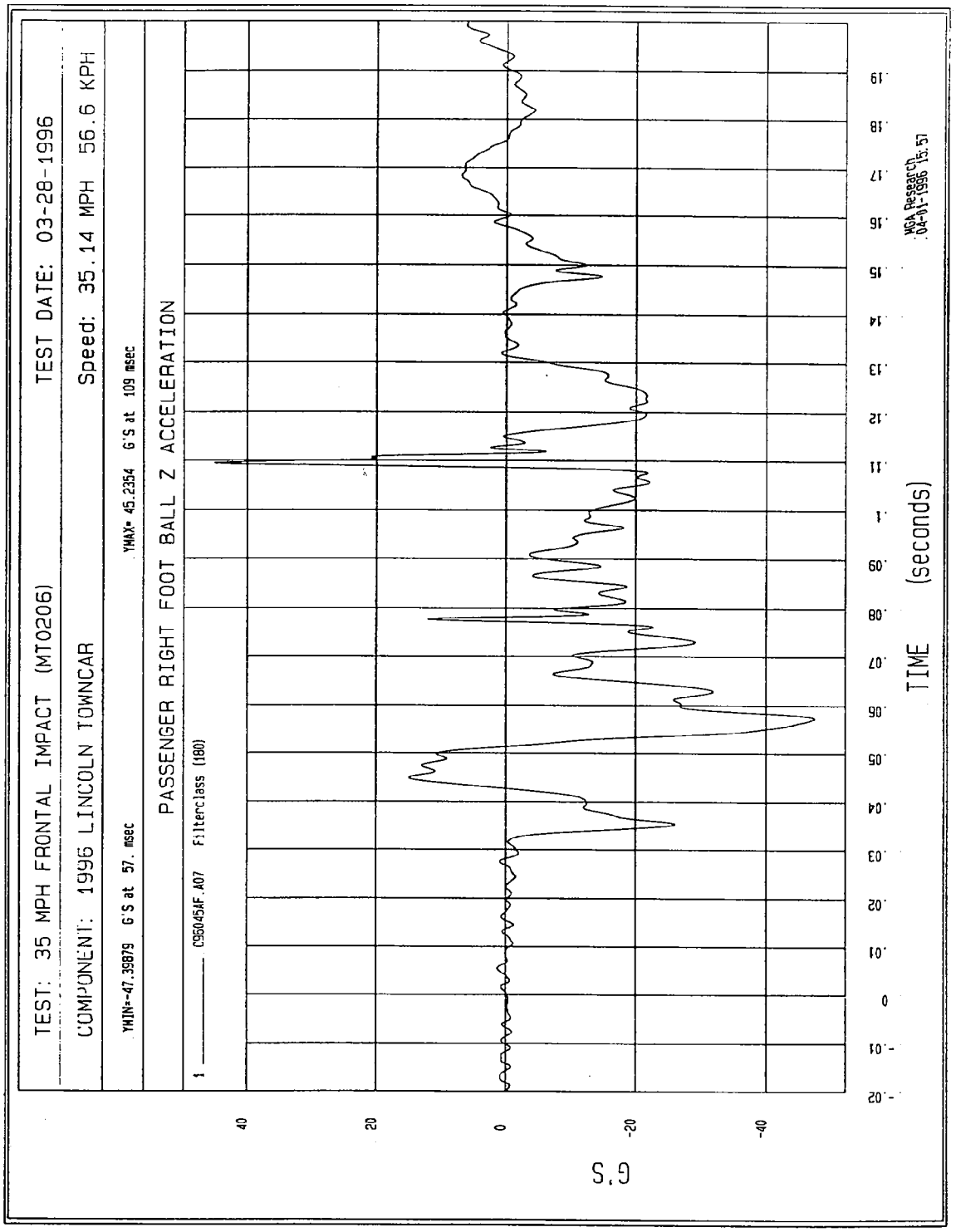

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-18.19008 NM at 46. msec
YMAX= 178.37 NM at 104 msec
PASSENGER RIGHT LOWER TIBIA MOMENT Y
1 B96045MF.M90 Filterclass (600)
300
200
100
0
-100
-200
-300
NM
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:06

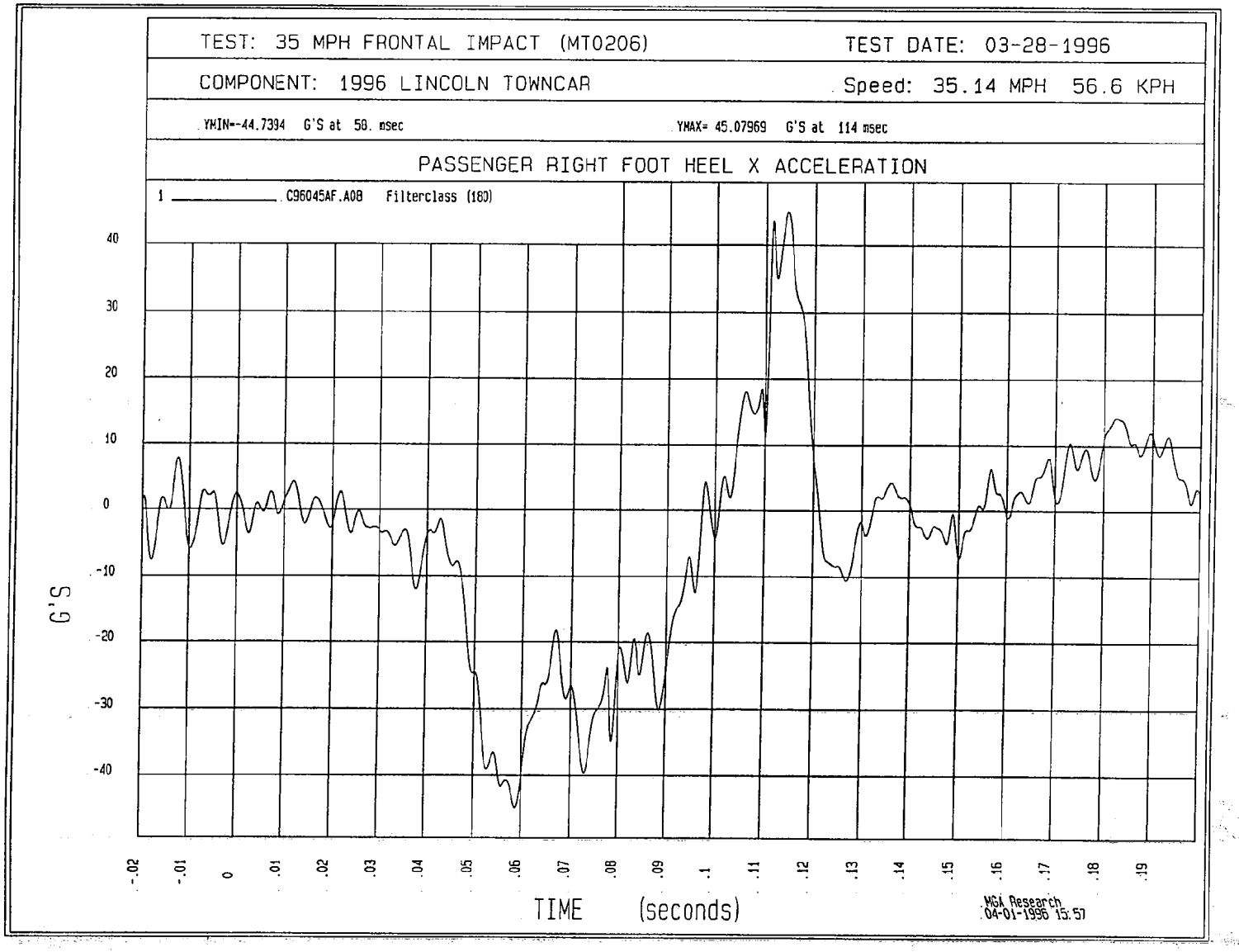

TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-3032.404 N at 108 msec
YMAX= 281.9245 N at 175 msec
PASSENGER RIGHT LOWER TIBIA FORCE Z
1 _____ B96045FF.F91 Filterclass (1000)
2000
0
-2000
-4000
-6000
-8000
-10000
N
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
03-30-1996 18:06

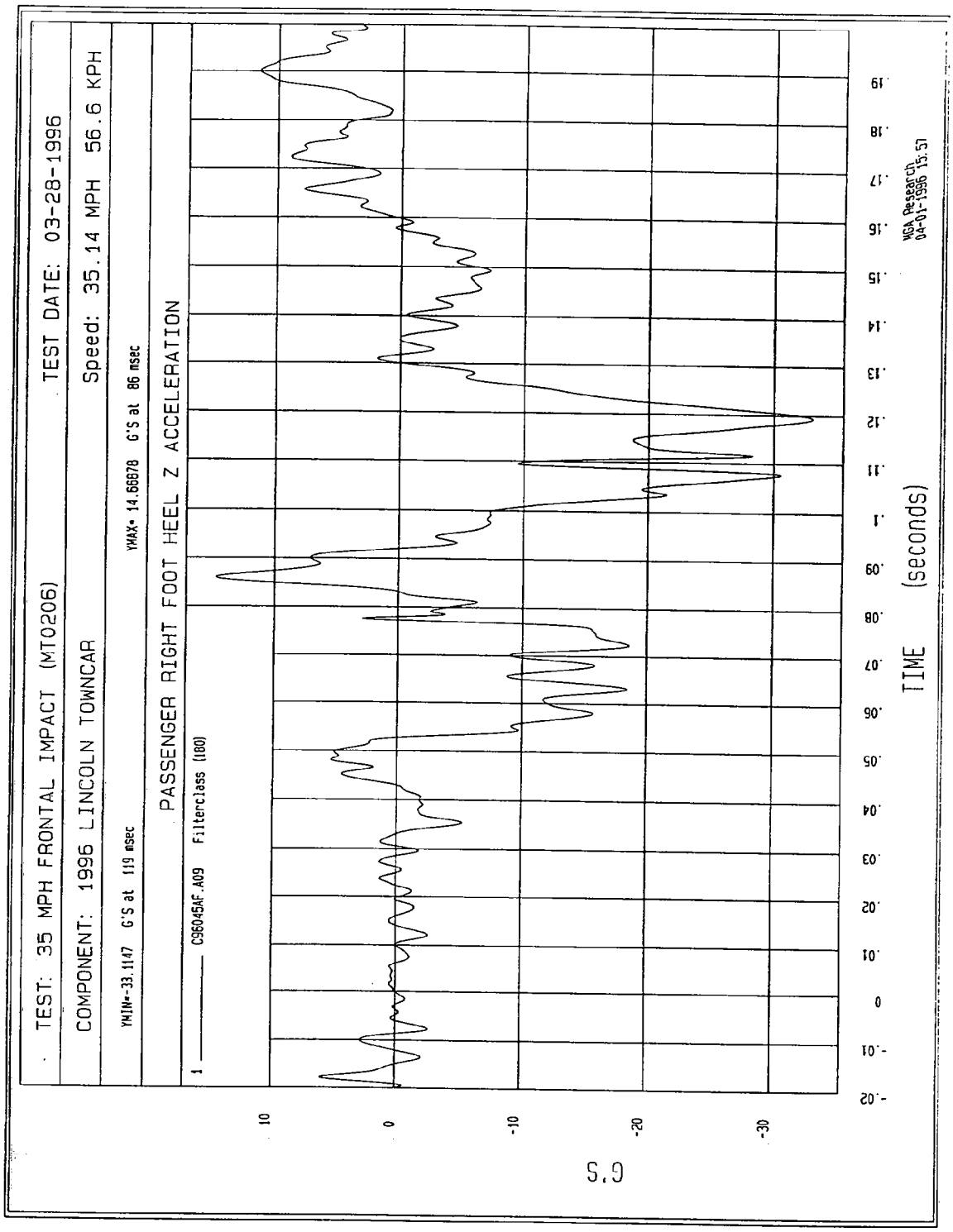

TEST: 35 MPH FRONTAL IMPACT (MT0205)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-75.99596 G'S at 78. msec
YMAX= 28.55871 G'S at 65. msec
PASSENGER LEFT FOOT BALL Z ACCELERATION
1 C96045AF.A10 Filterclass (180)
20
0
-20
-40
-60
-80
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1996 15:56


TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-91.67513 G'S at 77. msec
YMAX= 27.33491 G'S at 108 msec
PASSENGER LEFT FOOT HEEL X ACCELERATION
1 C96045AF.A11 Filterclass (180)
20
0
-20
-40
-60
-80
G'S
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (seconds)
MGA Research
04-01-1996 15:56


TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-37.59777 G'S at 117 msec
YMAX= 18.29207 G'S at 64. msec
PASSENGER LEFT FOOT HEEL Z ACCELERATION
1 C96045AF.A12 Filterclass (180)
20
10
0
-10
-20
-30
-40
G's
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1996 15:56


TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-47.39879 G'S at 57. msec
YMAX= 45.2354 G'S at 109 msec
PASSENGER RIGHT FOOT BALL Z ACCELERATION
1 C950045AF.A07 Filterclass (180)
40
20
0
-20
-40
G'S
TIME (seconds)
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
NGA Research
04-01-1996 15:57


TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-44.7394 G'S at 58. msec
YMAX= 45.07969 G'S at 114 msec
PASSENGER RIGHT FOOT HEEL X ACCELERATION
1 C96045AF.A08 Filterclass (180)
40
30
20
10
0
-10
-20
-30
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (seconds)
MGA Research
04-01-1996 15:57


TEST: 35 MPH FRONTAL IMPACT (MT0206)
TEST DATE: 03-28-1996
COMPONENT: 1996 LINCOLN TOWNCAR
Speed: 35.14 MPH 56.6 KPH
YMIN=-33.1147 G'S at 119 msec
YMAX= 14.66878 G'S at 86 msec
PASSENGER RIGHT FOOT HEEL Z ACCELERATION
1 C960045AF.A09 Filterclass (180)
10
0
-10
-20
-30
G'S
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (seconds)
MGA Research
04-01-1996 15:51

APPENDIX C

Dummy Configuration & Performance Verification Data

HYBRID III DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 065 DUMMY CALIBRATION BY: Al Chalmers

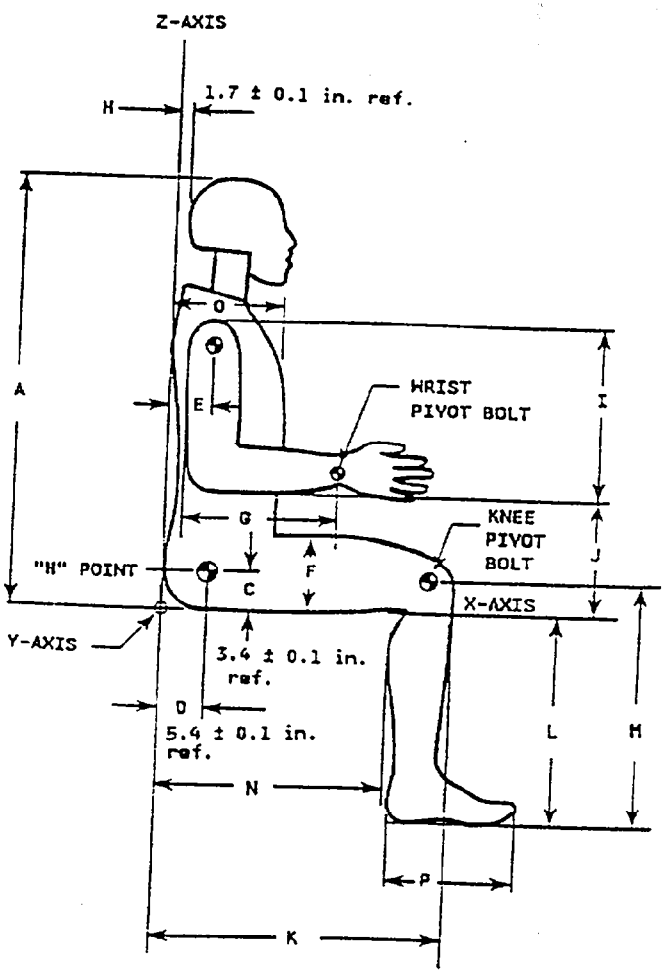
I. CONFIGURATION VERIFICATION DATA

DATE OF VERIFICATION: 2-7-96

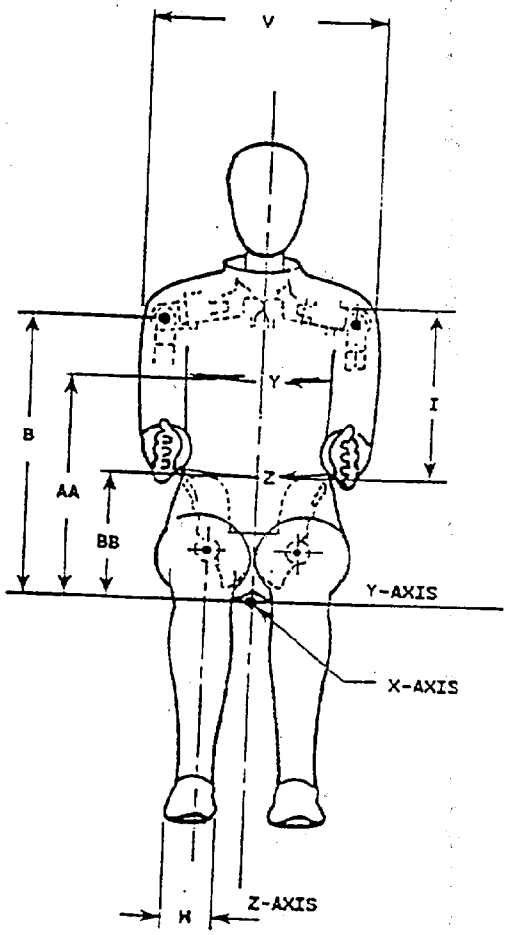
DESCRIPTION	SPECIFICATION (inches)	ACTUAL MEASUREMENT (inches)
A - Total Sitting Height	34.6 - 35.0	34.9
B - Shoulder Pivot Height	19.9 - 20.5	20.5
C - "H" Point Height	3.3 - 3.5	3.5
D - "H" Point from Seat Back	5.3 - 5.5	5.5
E - Shoulder Pivot From Backline	3.3 - 3.7	3.5
F - Thigh Clearance	5.5 - 6.1	6.1
G - Back of Elbow to Wrist Pivot	11.4 - 12.0	11.5
H - Skull Cap Skin to Backline	1.6 - 1.8	1.7
I - Shoulder - Elbow Length	13.0 - 13.6	13.0
J - Elbow Rest Height	7.5 - 8.3	8.0
K - Buttock to Knee Length	22.8 - 23.8	23.5
L - Popliteal Height	16.9 - 17.9	17.0
M - Knee Pivot Height	19.1 - 19.9	19.5
N - Buttock Popliteal Length	17.8 - 18.8	18.5
O - Chest Depth at 3rd Rib	8.4 - 9.0	8.8
P - Foot Length	9.9 - 10.5	10.3
V - Shoulder Breadth	16.6 - 17.2	16.8
W - Foot Breadth	3.6 - 4.2	4.0
Y - Chest Circumference	38.2 - 39.4	39.0
Z - Waist Circumference	32.9 - 34.1	33.5

Note: (See next page for external dimensions)

HYBRID III EXTERNAL DIMENSIONS



SIDE VIEW



FRONT VIEW

Note: Figure is referenced to the erect seated position. The curved lumbar does not allow the hybrid III to be positioned in a perfect erect attitude.

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET

DUMMY NO.: 065 DUMMY CALIBRATION BY: Al Chalmers

VERIFICATION DATE: 2-7-96

VERIFICATION LABORATORY TEMPERATURE (66° - 78°): 70°

1.0 HEAD DROP TEST

	SPECIFICATION	MEASUREMENT
Peak Resultant Acceleration	225 - 275 G	273
Peak Lateral Acceleration	15 G. MAX	9
Is Acceleration Curve Unimodel	within 10% of peak	Yes

2.0 NECK FLEXION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		22.6 - 23.4 FT/SEC	23.0
Pendulum Deceleration	10 MS	22.50 - 27.50 G	25.31
	20 MS	17.60 - 22.60 G	21.48
	30 MS	12.50 - 18.50 G	13.58
Max. Pendulum G Above 30 MS		29.0 G MAX	13.5
Deceleration - Time Curve Decay Time to 5 G		34 - 42 MS	40
D Plane Rotation	MAX	64 - 78 DEG.	74
	TIME	57 - 64 MS	60
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 MS	115
Moment About Occipital Condyle	MIN.	65 - 80 FT.LBS	71
	TIME	47 - 58 MS	52
Positive Moment - Time Curve Decay Time to Zero		97 - 107 MS	104

3.0 NECK EXTENSION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		19.50 - 20.30 F/S	20.05
Pendulum Deceleration	10 MS	17.20 - 21.20 G	20.02
	20 MS	14.00 - 19.00 G	18.35
	30 MS	11.00 - 16.00 G	13.39
Max. Pendulum G Above 30 MS		22 G Max	14
Deceleration - Time Curve Decay Time to 5 G		38 - 46 MS	40
D Plane Rotation	MAX	81 - 106 DEG.	103
	TIME	72 - 82 MS	75
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 MS	155
Moment About Occipital Condyle	MIN.	-59.0/-39.0 FT LBS	-52.0
	TIME	65 - 79 MS	71
Positive Moment - Time Curve Decay Time to Zero		120 - 148 MS	142

4.0 CHEST IMPACT TESTS

	SPECIFICATION	MEASUREMENT
Probe Speed	21.6 to 22.4 F/S	22.1
Peak Deflection	2.50 to 2.86 IN.	2.72
Peak Resistive Force	1160 to 1325 LBS.	1218
Internal Hysteresis	69 to 85%	74

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

5.0 KNEE IMPACT TESTS

LEFT KNEE	SPECIFICATION	MEASUREMENT
Probe Speed	6.8 to 7.0 F/S	6.8
Maximum Force	1060 - 1300 LBS.	1139

RIGHT KNEE	SPECIFICATION	MEASUREMENT
Probe Speed	6.8 to 7.0 F/S	7.0
Maximum Force	1060 - 1300 LBS.	1181

HYBRID III DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 066 DUMMY CALIBRATION BY: Al Chalmers

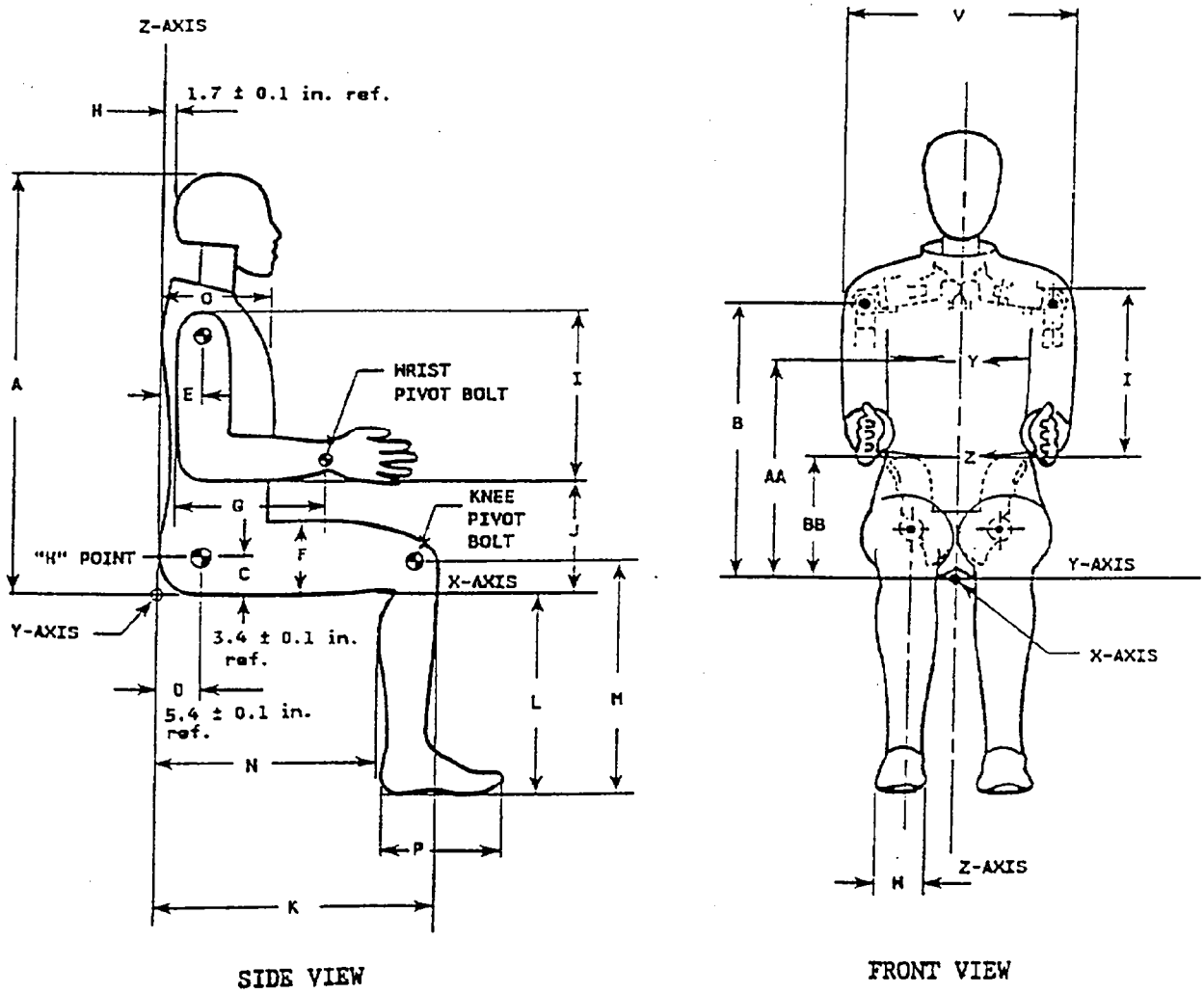
I. CONFIGURATION VERIFICATION DATA

DATE OF VERIFICATION: 2-7-96

DESCRIPTION	SPECIFICATION (Inches)	ACTUAL MEASUREMENT (inches)
A - Total Sitting Height	34.6 - 35.0	34.8
B - Shoulder Pivot Height	19.9 - 20.5	20.5
C - "H" Point Height	3.3 - 3.5	3.5
D - "H" Point from Seat Back	5.3 - 5.5	5.5
E - Shoulder Pivot From Backline	3.3 - 3.7	3.5
F - Thigh Clearance	5.5 - 6.1	6.1
G - Back of Elbow to Wrist Pivot	11.4 - 12.0	11.5
H - Skull Cap Skin to Backline	1.6 - 1.8	1.7
I - Shoulder Elbow Length	13.0 - 13.6	13.0
J - Elbow Rest Height	7.5 - 8.3	8.0
K - Buttock Knee Length	22.8 - 23.8	23.5
L - Popliteal Height	16.9 - 17.9	17.0
M - Knee Pivot Height	19.1 - 19.9	19.5
N - Buttock Popliteal Length	17.8 - 18.8	18.5
O - Chest Depth at 3rd Rib	8.4 - 9.0	8.8
P - Foot Length	9.9 - 10.5	10.3
V - Shoulder Breadth	16.6 - 17.2	16.8
W - Foot Breadth	3.5 - 4.2	4.0
Y - Chest Circumference	38.2 - 39.4	39.0
Z - Waist Circumference	32.9 - 34.1	33.5

Note: (See next page for external dimensions)

HYBRID III EXTERNAL DIMENSIONS



Note: Figure is referenced to the erect seated position. The curved lumbar does not allow the hybrid III to be positioned in a perfect erect attitude.

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

DUMMY NO.: 066 DUMMY CALIBRATION BY: Al Chalmers

VERIFICATION DATE: 2-7-96

VERIFICATION LABORATORY TEMPERATURE (66° - 78°): 70°

1.0 HEAD DROP TEST

	SPECIFICATION	MEASUREMENT
Peak Resultant Acceleration	225 - 275 G	274
Peak Lateral Acceleration	15 G. MAX	11
Is Acceleration Curve Unimodal	within 10% of peak	Yes

2.0 NECK FLEXION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		22.6 - 23.4 FT/SEC	23.0
Pendulum Deceleration	10 MS	22.50 - 27.50 G	25.31
	20 MS	17.60 - 22.60 G	12.32
	30 MS	12.50 - 18.50 G	14.52
Max. Pendulum G Above 30 MS		29.0 G MAX	14.5
Deceleration - Time Curve Decay Time to 5 G		34 - 42 MS	39
D Plane Rotation	MAX	64 - 78 DEG.	76
	TIME	57 - 64 MS	59
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 MS	115
Moment About Occipital Condyle	MIN.	65 - 80 FT.LBS	72
	TIME	47 - 58 MS	52
Positive Moment - Time Curve Decay Time to Zero		97 - 107 MS	104

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

3.0 NECK EXTENSION TEST

		SPECIFICATION	MEASUREMENT
Pendulum Speed		19.50 - 20.30 F/S	20.00
Pendulum Deceleration	10 MS	17.20 - 21.20 G	19.99
	20 MS	14.00 - 19.00 G	17.52
	30 MS	11.00 - 16.00 G	13.42
Max. Pendulum G Above 30 MS		22 G Max	14
Deceleration - Time Curve Decay Time to 5 G		38 - 46 MS	41
D Plane Rotation	MAX	81 - 106 DEG.	102
	TIME	72 - 82 MS	76
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 MS	154
Moment About Occipital Condyle	MIN.	-59.0/-39.0 FT LBS	-51.9
	TIME	65 - 79 MS	71
Positive Moment - Time Curve Decay Time to Zero		120 - 148 MS	143

4.0 CHEST IMPACT TESTS

	SPECIFICATION	MEASUREMENT
Probe Speed	21.6 to 22.4 F/S	22.1
Peak Deflection	2.50 to 2.86 IN.	2.70
Peak Resistive Force	1160 to 1325 LBS.	1242
Internal Hysteresis	69 to 85%	71

HYBRID III DUMMY CALIBRATION DATA SUMMARY SHEET (CONT.)

5.0 KNEE IMPACT TESTS

LEFT KNEE	SPECIFICATION	MEASUREMENT
Probe Speed	6.8 to 7.0 F/S	6.9
Maximum Force	1060 - 1300 LBS.	1148

RIGHT KNEE	SPECIFICATION	MEASUREMENT
Probe Speed	6.8 to 7.0 F/S	6.9
Maximum Force	1060 - 1300 LBS.	1158

APPENDIX D

Dummy, Vehicle and Laboratory Calibration Data

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 065

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	AAMN8	Endevco	1/03/96
Head Y	ACC61	Endevco	1/03/96
Head Z	ACCW9	Endevco	1/03/96
Head X Redundant	AJ621	Endevco	1/03/96
Head Y Redundant	AJ619	Endevco	1/03/96
Head Z Redundant	AH454	Endevco	1/03/96
Chest X	ACC78	Endevco	12/21/95
Chest Y	ACCE6	Endevco	12/21/95
Chest Z	ACC43	Endevco	12/21/95
Chest X Redundant	AJ9J7	Endevco	12/21/95
Chest Y Redundant	AJ7A2	Endevco	12/21/95
Chest Z Redundant	AJ819	Endevco	12/21/95
Right Femur Load Cell	259	Denton	1/03/96
Left Femur Load Cell	260	Denton	1/03/96
Pelvis X	ALB87	Endevco	12/21/95
Pelvis Y	AGNB3	Endevco	12/21/95
Pelvis Z	AL834	Endevco	12/21/95

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 065

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Neck Load Cell X	442	Denton	12/18/95
Neck Load Cell Y	442	Denton	12/18/95
Neck Load Cell Z	442	Denton	12/18/95
Neck Moment X	442	Denton	12/18/95
Neck Moment Y	442	Denton	12/18/95
Neck Moment Z	442	Denton	12/18/95
Chest Deflection Gauge	065	Servo	1/04/96
Lap Belt Load Cell	661	Lebow	10/17/95
Torso Belt Load Cell	212	Lebow	10/17/95

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 065

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Right Tibia Moment X	436	Denton	10/26/95
Upper Right Tibia Moment Y	436	Denton	10/26/95
Lower Right Tibia Moment Y	424	Denton	10/26/95
Lower Right Tibia Force X	424	Denton	10/26/95
Lower Right Tibia Force Z	424	Denton	10/26/95
Upper Left Tibia Moment X	438	Denton	10/26/95
Upper Left Tibia Moment Y	438	Denton	10/26/95
Lower Left Tibia Moment Y	424	Denton	10/26/95
Lower Left Tibia Force X	424	Denton	10/26/95
Lower Left Tibia Force Z	424	Denton	10/26/95
Right Foot Ball Z	AP0P6	Endevco	9/26/95
Right Foot Heel X	AP0T3	Endevco	9/26/95
Right Foot Heel Z	AP122	Endevco	9/26/95
Left Foot Ball Z	ACC81	Endevco	9/26/95
Left Foot Heel X	AP1Y1	Endevco	9/26/95
Left Foot Heel Z	AMTB8	Endevco	9/26/95

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 066

	PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	ACC46	Endevco	12/22/95
Head Y	ACCH1	Endevco	12/22/95
Head Z	AAMW5	Endevco	12/22/95
Head X Redundant	AJ9D2	Endevco	12/21/95
Head Y Redundant	AH1E2	Endevco	12/21/95
Head Z Redundant	AJ7K3	Endevco	12/21/95
Chest X	ACCY1	Endevco	12/21/95
Chest Y	ACCC8	Endevco	12/21/95
Chest Z	ACCT7	Endevco	12/21/95
Chest X Redundant	AJ9D4	Endevco	12/21/95
Chest Y Redundant	AJ9F3	Endevco	12/21/95
Chest Z Redundant	AJ9D9	Endevco	12/21/95
Right Femur Load Cell	261	Denton	1/03/96
Left Femur Load Cell	262	Denton	1/03/96
Pelvis X	ALDY8	Endevco	12/21/95
Pelvis Y	ALEK9	Endevco	12/21/95
Pelvis Z	ALE80	Endevco	12/21/95

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 066

	PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Neck Load Cell X	443	Denton	12/18/95
Neck Load Cell Y	443	Denton	12/18/95
Neck Load Cell Z	443	Denton	12/18/95
Neck Moment X	443	Denton	12/18/95
Neck Moment Y	443	Denton	12/18/95
Neck Momemt Z	443	Denton	12/18/95
Chest Deflection Gauge	066	Servo	1/04/96
Lap Belt Load Cell	312	Lebow	10/17/95
Torso Belt Load Cell	313	Lebow	10/17/95

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 066

	PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Right Tibia Moment X	036	Denton	12/20/95
Upper Right Tibia Moment Y	036	Denton	12/20/95
Lower Right Tibia Moment Y	040	Denton	12/22/95
Lower Right Tibia Force X	040	Denton	12/22/95
Lower Right Tibia Force Z	040	Denton	12/22/95
Upper Left Tibia Moment X	039	Denton	12/20/95
Upper Left Tibia Moment Y	039	Denton	12/20/95
Lower Left Tibia Moment Y	033	Denton	12/22/95
Lower Left Tibia Force X	033	Denton	12/22/95
Lower Left Tibia Force Z	033	Denton	12/22/95
Right Foot Ball Z	AP120	Endevco	12/22/95
Right Foot Heel X	AP2C4	Endevco	12/22/95
Right Foot Heel Z	AP0Y2	Endevco	12/22/95
Left Foot Ball Z	AN8M6	Endevco	12/22/95
Left Foot Heel X	AHY99	Endevco	12/22/95
Left Foot Heel Z	AP0E1	Endevco	12/22/95

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Rear Seat Crossmember X	J23-E02	Entran	1/22/96
Right Rear Seat Crossmember X	J10-E16	Entran	1/22/96
Top of Engine Block X	H07-A06	Entran	10/23/95
Bottom of Engine X	J10-E04	Entran	1/22/96
Left Brake Caliper X	H16-X15	Entran	1/31/96
Right Brake Caliper X	L14-D14	Entran	10/24/95
Instrument Panel X	L14-D10	Entran	10/28/95
Redundant Left Rear Seat Crossmember X	J06-D20	Entran	1/22/96
Redundant Right Rear Seat Crossmember X	L15-G03	Entran	2/02/96

	LABORATORY INSTRUMENTS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Neck Bending Pendulum Accelerometer	AH5N9	Endevco	5/08/95
Neck Bending Head Rotary Potentiometer	018	Spectrol	3/13/95
Neck Bending Pendulum Rotary Potentiometer	019	Spectrol	3/13/95
Chest Probe Accelerometer	AN8A4	Endevco	6/12/95
Knee Impact Accelerometer	MGA001	Entran	4/21/95

APPENDIX E

Vehicle Owner's Occupant Restraint System Instructions

Safety Restraints

Important Safety Belt Information

The use of safety belts helps to restrain you and your passengers in case of a collision. In most states and in Canada the law requires their use.

Safety belts provide best restraint when:

- ❑ the seatback is upright
- ❑ the occupant is sitting upright (not slouched)
- ❑ the lap belt is snug and low on the hips
- ❑ the shoulder belt is snug against the chest
- ❑ the knees are straight forward

To help you remember to fasten your safety belt, a warning light may come on and a chime may sound. See *Safety Belt Warning Light and Chime* in the *Warning Lights and Gauges* chapter.

See the following sections in this chapter for directions on how to properly use these safety belts. Also see *Safety Restraints for Children* in this chapter for special instructions about using safety belts for children.

⚠WARNING

Make sure that you and your passengers wear safety belts. Always drive and ride with your seatback upright and the lap belt snug and low across the hips.

⚠WARNING

Never wear the shoulder belt under the arm. Never swing it around the neck over the inside shoulder. Never use a single belt for more than one person or across more than one seating position. Each seating position in your vehicle has a specific safety belt assembly which is made up of one buckle and one tongue that are designed to be used as a pair. Failure to follow these precautions could increase the risk and/or severity of injury in a collision.

⚠WARNING

Never drive or ride with a twisted or jammed safety belt. If you cannot untwist or unjam the safety belt, see the nearest qualified technician immediately.

⚠WARNING

To reduce the risk of serious injury in a collision, children should always ride with the seatback upright.

⚠WARNING

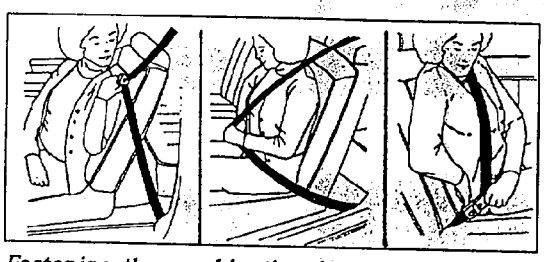
Never let a passenger hold a child on his or her lap while the vehicle is moving. The passenger cannot protect the child from injury in a collision.

Lock the doors of your vehicle before driving to lessen the risk of the door coming open in a collision.

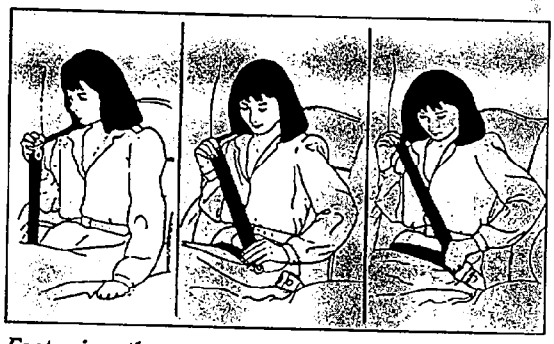
Combination Lap and Shoulder Belts

While your vehicle is in motion, the combination lap and shoulder belt adjusts to your movement. However, if you brake hard, corner hard or if your vehicle receives an impact of 5 mph (8 km/h) or more, the lap and shoulder belt locks and helps reduce your forward movement.

After you get into your vehicle, close the door and lock it. Then adjust the seat to the position that suits you best.



Fastening the combination lap and shoulder belt

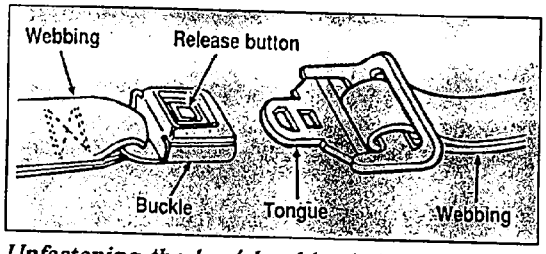


Fastening the rear seat lap and shoulder belt

NOTE: Be sure to read and understand ***Important Safety Belt Information*** at the beginning of this chapter.

To adjust the lap part of the belt, pull up on the shoulder belt until the lap belt fits snugly and as low as possible around your hips.

While the belt retracts, guide the tongue to its original position to prevent it from striking you or the vehicle.



Unfastening the lap/shoulder belts

Shoulder Belt Height Adjustment

Driver and right front passenger

You can adjust the shoulder belt height to one of five (5) positions. To adjust, pinch the release button (see Figures 1 and 2) and slide it up or down until the belt rests across the middle of your shoulder. Release the button and make sure the adjuster is firmly in one of the five (5) positions.

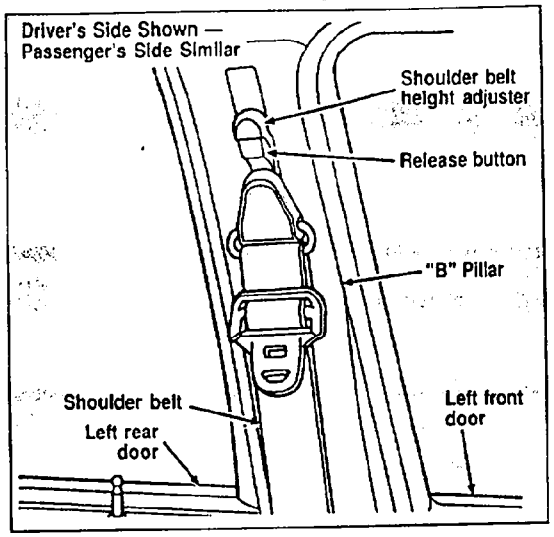


Figure 1 — The shoulder belt height adjuster

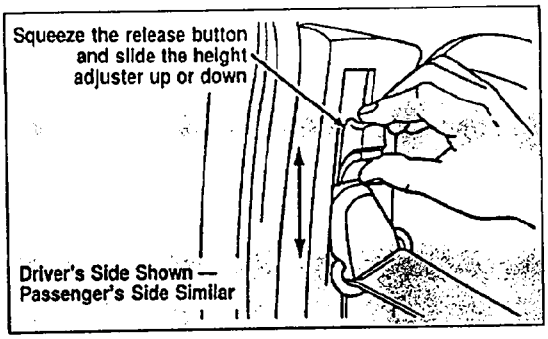


Figure 2 — The shoulder belt height adjuster

⚠WARNING

Position the shoulder belt height adjuster so that the belt rests across the middle of your shoulder. Be sure the shoulder belt is properly positioned on your shoulder each time you use the belt. If the shoulder belt is off your shoulder, on your upper arm or neck, there is a greater risk of severe injury in a collision.

Right Front or Rear Window Seating Positions

Your vehicle is equipped with a dual locking mode retractor on the shoulder belt portion of the combination lap/shoulder safety belt for front seat passenger and rear outboard passengers.

Dual locking mode retractors operate in two ways:

Vehicle sensitive (emergency) locking mode

In this operating mode, the shoulder belt retractor will allow the occupant freedom of movement, locking tight only on hard braking, hard cornering or impacts of approximately 5 mph (8 km/h) or more. The retractor can also be made to lock by pulling on the belt.

Automatic locking mode

In this operating mode, the shoulder belt retractor will be automatically locked and will remain locked when the combination lap/shoulder safety belt is buckled, and does not allow the occupant freedom of movement. This mode provides the following:

- ❑ A tight lap/shoulder belt on the occupant.
- ❑ Child seat installation restraint.

⚠WARNING

Rear facing infant seats should never be placed in the front seat.

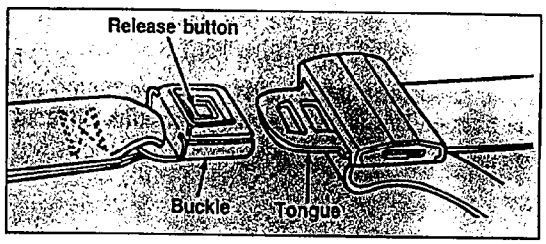
This mode must be used when installing a child seat on the front pasenger seat and rear window seats where dual locking retractors are provided. To switch the retractor from the emergency locking mode to the automatic locking mode, perform the following steps:

1. Buckle the lap/shoulder combination belt.
2. Grasp the shoulder portion of the belt and pull downward until all of the belt is extracted and a click is heard. At this time, the retractor is in the automatic locking mode (child restraint mode).
3. A clicking sound will contnue to be heard as the belt is allowed to retract.

NOTE: When the combination lap/shoulder belt is unbuckled and allowed to retract completely, the retractor will switch to the vehicle sensitive (emergency) locking mode. See the detailed instructions under ***Safety Seats for Children*** in this chapter.

Lap Belts

The lap belts in the center of the front and rear seats do not adjust automatically. You must adjust them to fit snugly and as low as possible around your hips. Do not wear them around your waist.



Unfastening center lap safety belts

NOTE: Be sure to read and understand ***Important Safety Belt Information*** at the beginning of this chapter.

Pull the belt across your hips and **insert the tongue into the correct buckle** on your seat until you hear a snap and feel it lock. Make sure the buckle is securely fastened.

If you need to lengthen the belt, unfasten it and tip the belt tongue at a right angle to the belt. Pull the belt tongue over your lap until it reaches the buckle.

If you need to shorten the belt, pull on the loose end of the webbing until the belt fits snugly.

To unfasten the belt, push the release button on the buckle. This allows the tongue to unlatch from the buckle.

Safety Belt Extension Assembly

For some people, the safety belt may be too short even when it is fully extended. You can add about eight inches (20 cm) to the belt length with a safety belt extension assembly (part number 611C22). Safety belt extensions are available at no cost from your dealer.

Use only extensions manufactured by the same supplier as the safety belt. Manufacturer identification is located at the end of the webbing on the label. Also, use the safety belt extension only if the safety belt is too short for you when fully extended. Do not use extension to change the fit of the shoulder belt across the torso.

⚠WARNING

Failure to follow these instructions will affect the performance of the safety belts and increase the risk of personal injury.

Safety Belt Maintenance

Check the safety belt systems periodically to make sure that they work properly and are not damaged.

All safety belt assemblies, including retractors, buckles, front seat belt buckle support assemblies (slide bar) (if equipped), child safety seat tether bracket assemblies (if equipped), and attaching hardware, should be inspected after any collision. Ford recommends that all safety belt assemblies used in vehicles involved in a collision be replaced. However, if the collision was minor and a qualified technician finds that the belts do not show damage and continue to operate properly, they do not need to be replaced. Safety belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

Cleaning the Safety Belts

Clean the safety belts with any mild soap solution that is recommended for cleaning upholstery or carpets. Do not bleach or dye the belt webbing because this may weaken it.

Air Bag Supplemental Restraint System (SRS)

The driver and right front passenger air bags are Supplemental Restraint Systems (SRS), provided at these seating positions in addition to the lap/shoulder belt, and are designed to supplement the protection provided to properly belted occupants in moderate to severe frontal collisions. The supplemental air bag system does not provide restraint to the lower body.

⚠WARNING

The supplemental air bags are not designed to protect occupants in the front center seating position.

The Importance of Wearing Safety Belts

⚠WARNING

Safety belts must be worn by all vehicle occupants to be properly restrained and help reduce the risk of injury in a collision.

⚠WARNING

All occupants of the vehicle, including the driver, should always wear their safety belts, even when an air bag Supplemental Restraint System is provided.

There are four very important reasons to use safety belts even with an air bag system. Use your safety belts to:

- ❑ help keep you in the proper position (away from the air bag) when it inflates
- ❑ reduce the risk of harm in rollover, side or rear impact collisions, because an air bag is not designed to inflate in such situations
- ❑ reduce the risk of harm in frontal collisions that are not severe enough to activate the supplemental air bag
- ❑ reduce the risk of being thrown from your vehicle

The Importance of Being Properly Seated

In a collision, the air bag must inflate extremely fast to help provide additional protection for you. In order to do this, the air bag must inflate with considerable force. If you are not seated in a normal riding position with your back against the seatback, the air bag may not protect you properly and could possibly hurt you as it inflates.

⚠WARNING

If a passenger is not properly seated and restrained, an inflating air bag could cause serious injury.

In rear-facing infant seats, the infant's head is closer to the air bag. The force of the rapidly inflating air bag could push the top of the rear-facing seat against the vehicle seatback or center armrests (if so equipped), or center console (if so equipped).

Children weighing less than 40 lbs. (18 kg) should use child or infant seats. Forward facing child seats must have the passenger seat moved as far back from the instrument panel as possible.

Your vehicle is equipped with a right front passenger air bag. Front passengers, especially children and small adults, should never sit on the edge of the seat, stand near the glove compartment of the instrument panel, or lean over with their faces near the glove compartment when the vehicle is moving. All occupants should sit with their backs against the seatback and use the safety belts.

⚠WARNING

REAR-FACING INFANT SEATS SHOULD NEVER BE USED IN THE FRONT SEAT. REAR-FACING INFANT SEATS MUST ALWAYS BE PLACED IN THE REAR SEAT. Failure to follow these instructions could result in serious injury.

⚠WARNING

Do not place objects or mount equipment on or near the air bag cover on the steering wheel or in front seat areas that may come in contact with a deploying air bag. Failure to follow this instruction may increase the risk of personal injury in the event of a collision.

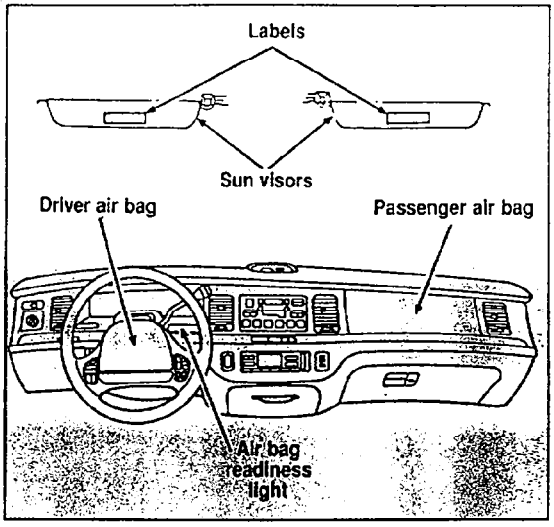
For further information about the proper mounting of equipment in the front seat of this vehicle, please refer to Ford's brochure entitled *Some Important Information About Air Bag Supplemental Restraint System* which can be obtained by calling Helm Inc. at 1-800-782-4356. Ask for brochure FPS-8602.

For additional important safety information on the proper use of seat belts, child seats, and infant seats, please read the other sections of this part of the Owner Guide, especially sections entitled *Safety Belts for Children* and *Safety Seats for Children.*

How the Air Bag Supplemental Restraint System Operates

The Air Bag Supplemental Restraint System consists of the Driver and Passenger air bags, impact sensors, a system diagnostic module, a readiness light and tone, and the electrical wiring which connects the components.

The driver air bag is in the center of the steering wheel and is indicated by the letters "SRS." The right front passenger seat air bag is in the upper right-hand section of the instrument panel ledge above the glove compartment. The letters "SRS" appear there. Both air bags are designed to stay out of sight until they are activated.



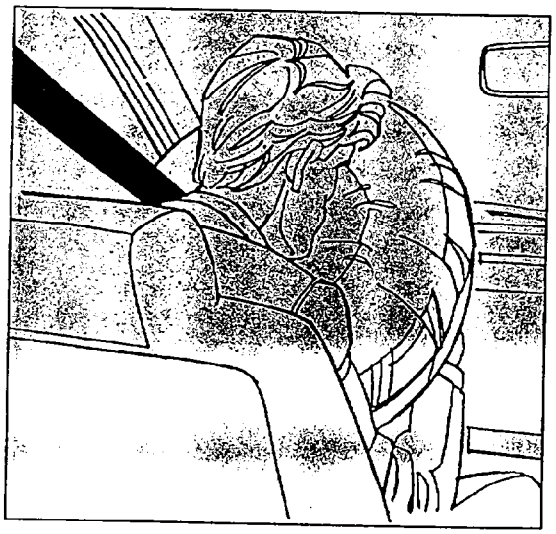
The location of air bags and warning labels

If a collision occurs, the sensors sense the severity of the impact and activates the air bags if necessary. The air bag system is designed to deploy in frontal and front-angled collisions more severe than hitting a parked vehicle (of similar size and weight) head-on at about 28 mph (45 km/h). Because the system senses the crash severity rather than vehicle speed, some frontal collisions at speeds above 28 mph (45 km/h) will not inflate the air bag.

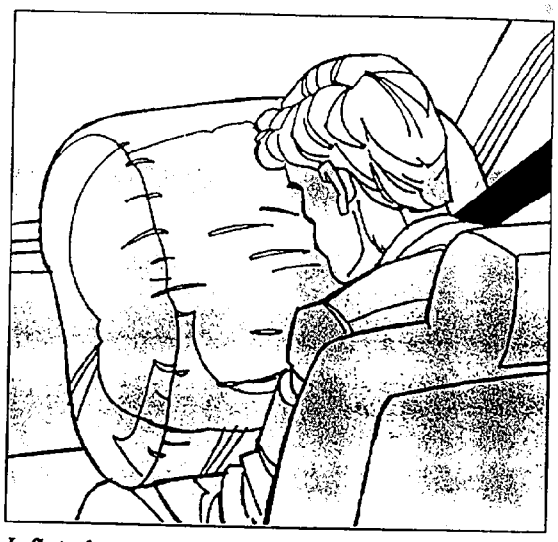
When the sensors activate the system, the air bags inflate rapidly, filling with non-toxic nitrogen gas in a fractioin of a second. Immediately after inflation, the air bags deflate by releasing the nitrogen gas through vent holes. The whole process takes place in a matter of seconds.

⚠WARNING

Air bag system components get hot after inflation. Do not touch them after inflation.



Inflated driver side air bag



Inflated passenger side air bag

⚠WARNING

If the air bag is inflated, THE AIR BAG WILL NOT FUNCTION AGAIN AND MUST BE REPLACED IMMEDIATELY. If the air bag is not replaced, the unrepaired area will increase the risk of injury in a collision.

To ensure that the air bag system will operate as intended in a crash, the system is equipped with a diagnostic module, which controls a readiness lamp and a warning tone. The diagnostic module monitors its own circuits, the air bag electrical system, the air bag readiness light, the air bag power, and the air bag inflators.

The air bag system uses a readiness light on the instrument cluster and a tone to indicate the condition of the system. When you turn the ignition key to the ON position, this light will illuminate for approximately six (6) seconds and then turn off. This indicates that the system is operating normally.

NOTE: Maintenance of the air bag system is not required.

A problem with the system is indicated by one or more of the following:

- ❑ the readiness light will either flash or stay lit,
- ❑ or it will not light immediately after ignition is turned on,
- ❑ or a group of five beeps will be heard. The tone pattern will repeat periodically until the problem and light are repaired.

If any of these things happen, have the air bag system serviced at your Ford or Lincoln-Mercury dealer immediately. Unless serviced, the air bag supplemental restraint system may not function properly in the event of a collision.

⚠WARNING

Do not attempt to service, repair, or modify the Air Bag Supplemental Restraint System or its fuses. See your Ford or Lincoln-Mercury dealer.

Disposal of air bags or air bag equipped vehicles

For disposal of air bags or air bag equipped vehicles, see your local Ford or Lincoln-Mercury dealer. Air bags **MUST** be disposed of by qualified personnel.