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Dynamic Science Report No. 212-DYS-79-013
Dynamic Science Report No. 219-DYS-79-012
Dynamic Science Report No. 301-DYS-79-026

NEW VEHICLE ASSESSMENT AND STANDARDS ENFORCEMENT INDICANT TESTING

FMVSS 212, 219, AND 301-75

FORD MOTOR COMPANY
1979 FORD MUSTANG 2-DOOR COUPE
NHTSA NO. 790206

Prepared by:

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A Talley Industries Company
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Phoenix, Arizona 85027

FINAL REPORT

OCTOBER 1979

Prepared for:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
-----ENFORCEMENT-----
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, S.W.
WASHINGTON, D.C. 20590

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FINAL REPORT ACCEPTED BY:

_____

NHTSA Contract Technical Manager
FMVSS 212/219/301-75

_____

Date of Report Acceptance

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16. Abstract

The vehicle was tested using test parameter values which are in excess of the current upper limits of the subject FMVSS in order to obtain research and vehicle rating data. This test, therefore, can only be viewed as an "indicant" test by the Office of Vehicle Safety Compliance.

The front of the test vehicle impacted the fixed collision barrier at a speed of 34.65 mph.

The test was conducted October 2, 1979, with the following results:

(a) FMVSS 212 - No loss of windshield retention
(b) FMVSS 219 - No intrusion into windshield protected zone
(c) FMVSS 301 - No fuel system leakage or observable damage

17. Key Words Frontal Impact Fuel System Integrity Windshield Testing	18. Distribution Statement Available from Technical Reference Division, National Highway Traffic Safety Administration, Room 5108, NASSIF Bldg., 400 Seventh Street, S.W. Washington, D.C. 20590		
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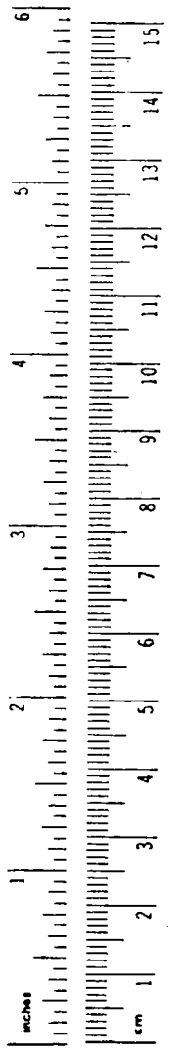
METRIC CONVERSION FACTORS

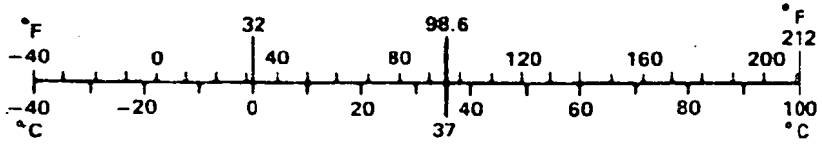
Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
	AREA			
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
	MASS (weight)			
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	metric ton	t
	VOLUME			
tsp	teaspoons	5	milliliters	mL
Tbsp	tablespoons	15	milliliters	mL
in^3	cubic inches	16	milliliters	mL
fl oz	fluid ounces	30	milliliters	mL
c	cups	0.24	liters	L
pt	pints	0.47	liters	L
qt	quarts	0.95	liters	L
gal	gallons	3.8	liters	L
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
	TEMPERATURE (exact)			
°F	degrees Fahrenheit	5 9 (after subtracting 32)	degrees Celsius	°C



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
	AREA			
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10 000 m^2)	2.5	acres	
	MASS (weight)			
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	metric ton (1000 kg)	1.1	short tons	
	VOLUME			
mL	milliliters	0.03	fluid ounces	fl oz
mL	milliliters	0.06	cubic inches	in^3
L	liters	2.1	pints	pt
L	liters	1.06	quarts	qt
L	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
	TEMPERATURE (exact)			
°C	degrees Celsius	9/5 (then add 32)	degrees Fahrenheit	°F



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LIST OF ILLUSTRATIONS

LIST OF ILLUSTRATIONS (CONTD)

SECTION 1
PURPOSE AND INTRODUCTION

PURPOSE:

The purpose of the test was to subject a 1979 Ford Mustang 2-Door Coupe to the indicant test requirements of DOT Test Plan TP-212-01, March 20, 1979, Standard Enforcement Indicant Testing for FMVSS No. 212, "Windshield Mounting," FMVSS No. 219, "Windshield Zone Intrusion," and FMVSS 301-75, "Fuel System Integrity." The vehicle was tested using test parameters which are in excess of the current upper limits of the subject FMVSS, in order to obtain research and vehicle rating data. This test, therefore, can only be viewed as an "indicant" test by the Office of Vehicle Safety Compliance (OVSC).

INTRODUCTION:

The test procedure describing the facilities used and the test checklists completed for each vehicle indicant tested for FMVSS 212, 219, 301-75 are contained in Appendix A. Section 2 contains General Test and Vehicle Parameter Data. Section 3 contains Compliance Related Data for FMVSS 212, 219, 301-75 Indicant Testing, together with photographs related to these tests. Appendix B contains Calcomp plots.

SECTION 2
GENERAL TEST AND VEHICLE PARAMETER DATA

The following data sheets and photographs describe the General Test and Vehicle Parameter Data.

SECTION 2
GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Vehicle Manufacturer: Ford Motor Company
Make/Model: Ford Mustang
Body Style: 2-Door Coupe Model Year: 1979
VIN: 9F02Y215317 Build Date: 01/79
NHTSA No.: 790206 Color: Blue
Engine Data: 4 cylinders; 2300 cc displacement
Transmission Data: 4 speed (X) Manual ( ) Automatic
Date Vehicle Received by Laboratory: September 24, 1979
Dealer Name & Address: General Environments Corporation
Hartwood, Virginia 22471

DATA FROM CERTIFICATION LABEL ON LEFT DOOR REAR FACE OR B-POST:

Vehicle Manufactured By: Ford Motor Company
Date of Manufacture: 01/79 ; VIN: 9F02Y215317
GVWR: 3664 lb; GAWR: Front = 1917 lb; Rear = 1767 lb

DATA FROM "RECOMMENDED TIRE PRESSURE" LABEL ON DOOR, POST, GLOVE BOX, ETC.:

Vehicle Load:	FRONT	REAR	RECOMMENDED TIRE SIZE:	LOAD RANGE:
Up to Capacity	30 psi	30 psi	B78-13	B

Vehicle Capacity:

Type of Seats -		Number of Occupants =		
	Bench	(Designated Seating	2	Front
X	Bucket	Capacity)	2	Rear
	Split Bench		4	Total

CARGO LOAD = 100 lb
TOTAL = 700 lb

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with max. fluids) (UDW)

Right Front = 717 lb Right Rear = 538 lb
Left Front = 728 lb Left Rear = 532 lb
TOTAL FRONT WEIGHT = 1445 lb (57.5% of Total Vehicle Weight)
TOTAL REAR WEIGHT = 1070 lb (42.5% of Total Vehicle Weight)
TOTAL DELV. WEIGHT = 2515 lb

TARGET WEIGHT = CARGO LOAD + UDW + 164 (NO. OF DUMMIES) = 2943 lb

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 100 lb CARGO:

Right Front = 808 lb Right Rear = 718 lb
Left Front = 727 lb Left Rear = 698 lb
TOTAL FRONT WEIGHT = 1535 lb (52.0% of Total Vehicle Weight)
TOTAL REAR WEIGHT = 1416 lb (48.0% of Total Vehicle Weight)
TOTAL TEST WEIGHT = 2951 lb

Weight of ballast secured in vehicle trunk area = 0 lb

TEST CONDITIONS:

Date of Test: October 2, 1979 Time of Test: 1035

Ambient Temperature: 90 °F at impact area.

Temperature in Occupant Compartment: 73 °F Windshield Molding Temperature: 73 °F

VEHICLE ATTITUDE: (all dimensions in inches)

Delivered Attitude: RF 30.0 LF 30.0 RR 30.0 LR 30.0

Test Attitude: RF 29.3 LF 29.5 RR 28.2 LR 28.3

VEHICLE TIRE DATA:

Recommended Cold Tire Pressure: Front = 30 psi
Rear = 30 psi

Recommended Tire Size: B 78-13
Load Range: B

Tires on Vehicle: B 78-13

Is Spare Tire a "Space Saver": No (yes/no)

Is Spare Tire standard equipment: Yes (yes/no)

TEST FLUID DATA:

Test Fluid Type: Red Stoddard Solvent ; Spec. Grav.: 0.764

Kinematic Viscosity: 0.99 centistokes

Spill Point Volume: 12.57 Gallons (SPV)

Test Volume: 11.47 Gallons (90 to 91% of SPV)

Fuel System Capacity (data from Owner's Manual): NA gallons

Details of Fuel System: Fuel tank mounted by two tank straps aft of the rear axle. A plastic shield is secured between rear axle and fuel tank. The filler tube inserts into a grommet on the top right side of the tank and terminates on the right side of right rear wheel. Filler tube is sealed by a twist-type cap and is concealed by a hinged access door.

Electric Fuel Pump: No (yes/no); Fuel Injection: No (yes/no)

Does electric fuel pump operate with ignition switch "on" and the engine not operating: NA (yes/no)

VEHICLE REBOUND AND CRUSH:

Overall Length of Test Vehicle: Pre-test = R 169.5 L 169.5 inches
Post-test = R 153.0 L 153.0 inches

CRUSH = R 16.5 L 16.5

FOR FRONTAL IMPACTS, distance from front of test vehicle to the barrier after impact = 7.9 inches

VISIBLE DUMMY CONTACT POINTS

	Driver	Passenger	Child
Head	Steering Wheel Rim and Hub	Glovebox; Right Leg	Passenger Seatback; legs
Chest	Steering Wheel	None	None
Abdomen	None	None	None
Left Knee	Dash Panel	Dash Panel	None
Right Knee	Dash Panel	Dash Panel	None

	Front		Rear	
DOOR OPENING	Left	Right	Left	Right
Easy		X	NA	NA
Difficult	X			
Tools Required				
SEAT BACK				
Failure	No	No		
GLAZING DAMAGE				
Windshield	Cracked			
Backlight			Not in place for test	
Others	No	No	No	Not in place

OTHER NOTABLE IMPACT EFFECTS: Steering wheel hub cover came off, permitting driver head to strike unpadded bolt. Right seat moved forward 2 inches in seat track. All plastic moldings at base of windshield came loose, and 8 inches of right lower side windshield molding also came loose.

NOTE: Torso belts had a twist that could not be removed, which is inherent in this system (same problem on Mercury Capri, NHTSA No. 790212), documented in Figures 4-3, 4-7, 4-9, and 4-12.

Figure 2-1. Pre-test Front View.

Figure 2-2. Post-test Front View.

Figure 2-3. Pre-test Overall Side View.

Figure 2-4. Post-test Left Side View of Impact Area.

Figure 2-5. Post-test Right Side View of Impact Area.

Figure 2-6. Post-test Left Front Quarter View.

Figure 2-7. Post-test Right Front Quarter View.

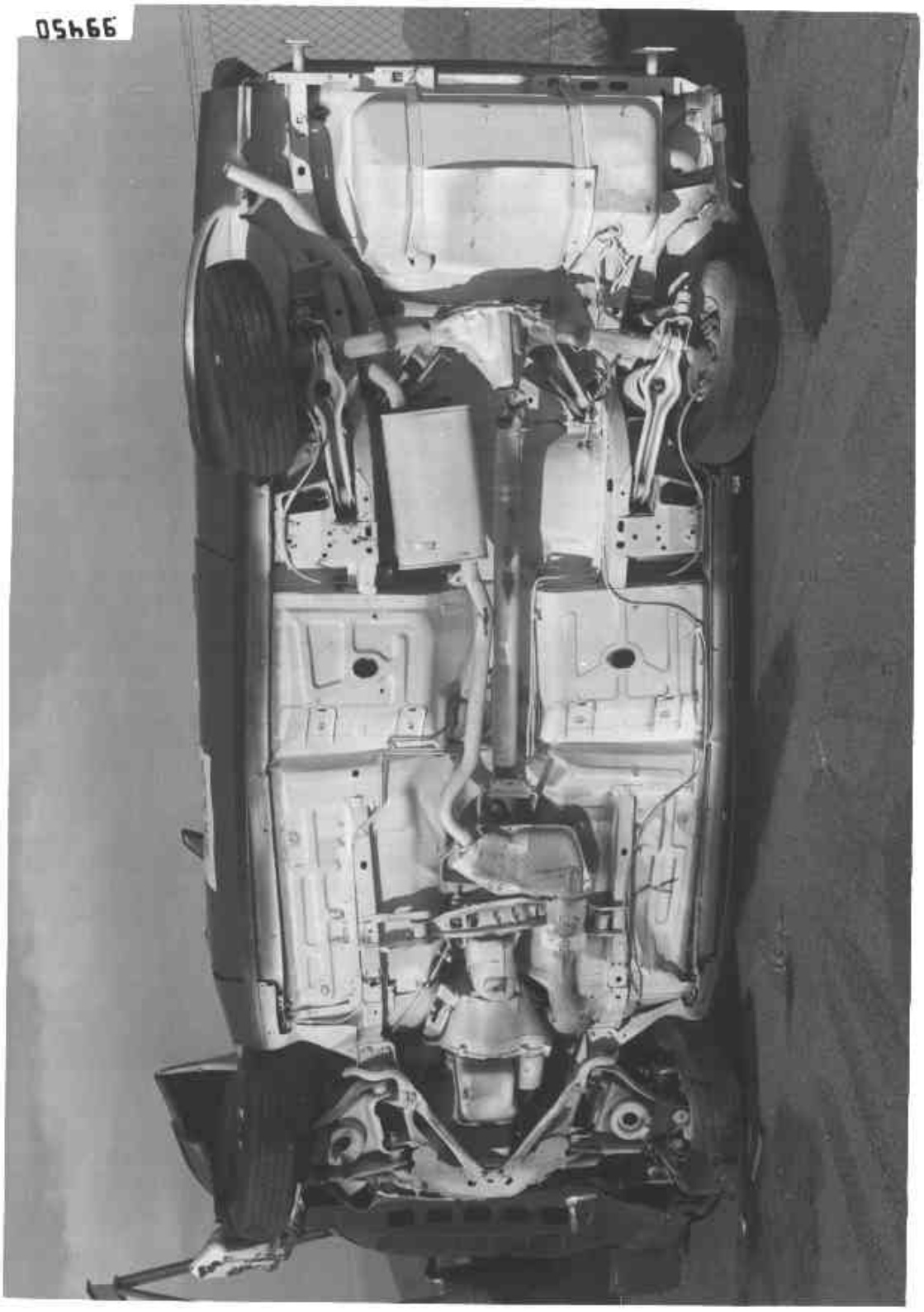


Figure 2-8. Post-test Overall Underside View.

SECTION 3

COMPLIANCE-RELATED DATA
FMVSS 212, 219, 301-75 INDICANT TESTING

The following data sheets and photographs document compliance data related to FMVSS 212, 219, and 301-75.

SECTION 3
SUMMARY OF RESULTS
FMVSS 212 INDICANT DATA

VEHICLE DATA:

Manufacturer: Ford Motor Company Model Year: 1979

Make/Model: Ford Mustang

Body Style: 2-Door Coupe Manufacture Date: 01/79

VIN: 9F02Y215317 NHTSA No.: 790206

Delivery Weight: 2515 lb; Test Weight: 2943 lb; GVWR: 3664 lb

Engine: No. of Cylinders 4 Displacement 2300 cc

Vehicle Mileage: 140.0 miles

Remarks: No optional equipment except tinted glass. Test was run without rear bumper, trunk lid, and backlight to achieve target weight. Spare tire was in place during test.

GENERAL TEST CONDITIONS:

Vehicle Impact Speed:

Primary 34.65 mph; Secondary 34.73 mph

Speed Range Specified by CTM: 34.5 to 35.5 mph

Ambient Temperature at Time of Test: 90 °F

Date of Test: October 2, 1979 Time: 1035

Windshield Molding Temperature: 73 °F

SUMMARY FOR FMVSS NO. 212:

			Actual Data	Standard Requirement	Pass/Fail
1.	Pre-test Windshield Periphery (in.)	Right	74.8		
		Left	74.8		
		Total	149.6		
2.	Post-test Windshield Periphery (in.)	Right	74.8		
		Left	74.8		
		Total	149.6	75% Minimum	Pass

LABORATORY INFORMATION:

Project Engineer: M. Pozzi Date: October 1979

Project Manager: E. Enserink Date: October 1979

SECTION 3

TEST DATA SHEET FOR
FMVSS 212 INDICANT DATA

VEHICLE DATA:

NHTSA No.: 790206 Tire Size and Type: B 78-13, 2 ply Goodyear

Cold Tire Inflation Pressure (psi): RF 30 LF 30 RR 30 LR 30 Spare 30

Delivered Vehicle Attitude (in.):

RF 30.0 LF 30.0 RR 30.0 LR 30.0

Vehicle Test Attitude (in.):

RF 29.3 LF 29.5 RR 28.2 LR 28.3

Static Crush: 16.5 in. (Right Side) 16.5 in. (Left Side)

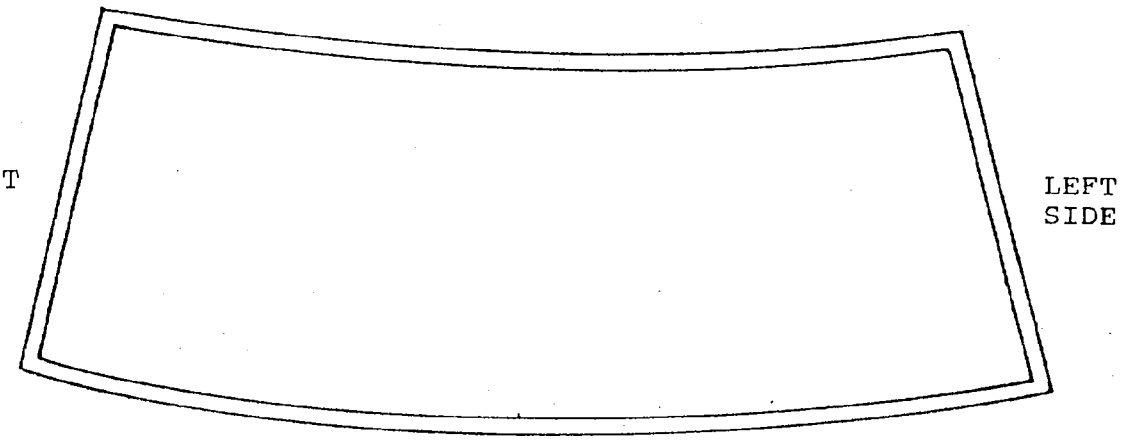
Rebound Distance: Right 7.5 in. Left 7.9 in.

SPECIFIC TEST DATA FOR FMVSS 212:

Details of Windshield Mounting:

Windshield is secured to vehicle body by a 3/4" wide black mastic on top, left and right sides, and by a 2" wide mastic at bottom. A 1" wide chrome metal molding strip borders windshield periphery on top, left and right sides, and is attached to body by plastic clips. A 2" wide black plastic strip connects to this metal molding at bottom corners, and covers bottom edge of windshield.

Area of Retention Failure (as noted): None

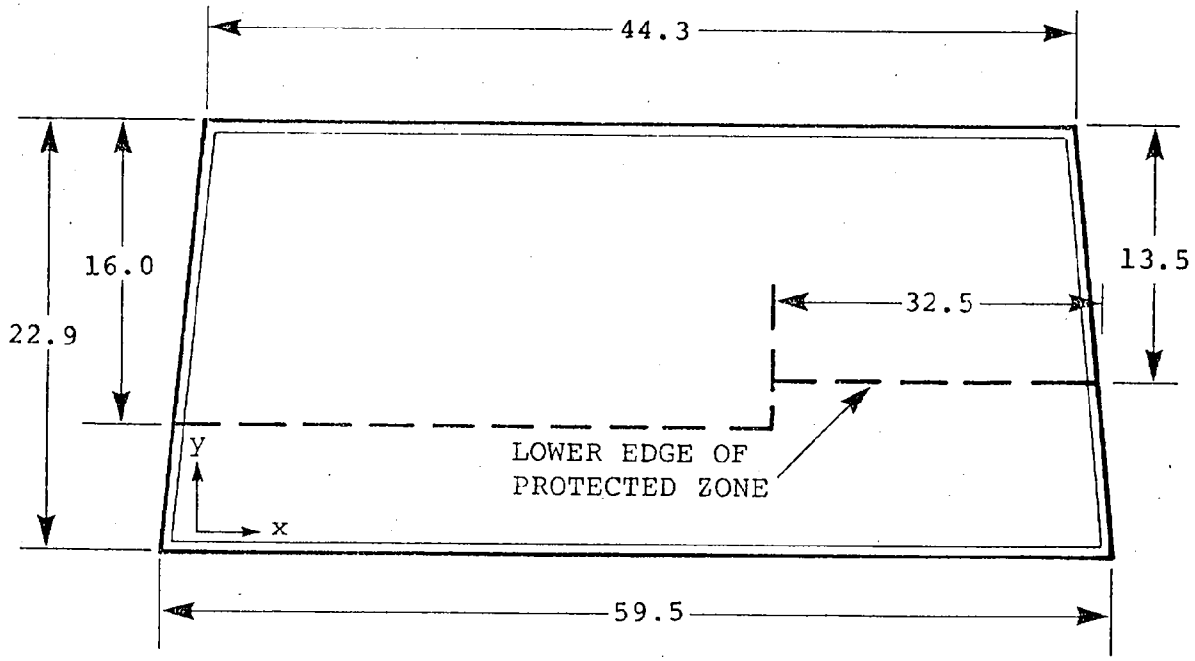


FRONT VIEW

SECTION 3

FMVSS 219 INDICANT DATA

1. PROTECTED ZONE DEFINITION:



FRONT VIEW OF WINDSHIELD

Method of adhering styrofoam to the windshield:
One-half inch cut cell foam panels glued on with 3M cement and at least 24 hours of compression. Template then undergoes final 45° contouring and is recovered to protect template.

2. TEST RESULTS:

Zone Intrusion Description/Cause: None

	Coordinates X	Coordinates Y	Depth (in.)
1.	NA	NA	NA
2.	NA	NA	NA
3.	NA	NA	NA

SECTION 3
FMVSS 301-75 INDICANT DATA

GENERAL TEST CONDITIONS:

Vehicle Impact Speed:

Primary 34.65 mph Secondary 34.73 mph

Speed Range Specified by CTM: 34.5 to 35.5 mph

Ambient Temperature at Time of Test: 90 °F

Date of Test: October 2, 1979 Time: 1035

FUEL SYSTEM DATA:

Test Fluid: Stoddard Solvent No. 2 Specific Gravity: 0.764

Kinematic Viscosity: 0.99 centistokes

Spill Point Volume: 12.57 U.S. gal/lb Liquid Temp: 80 °F

Test Volume: 11.47 U.S. gal/lb Liquid Temp: 80 °F

Details of Fuel Tank, Filler Pipes, and Connections:

Fuel tank is mounted by two tank straps aft of the rear axle. A plastic shield is secured between rear axle and fuel tank. The filler tube inserts into a grommet on the top right side of tank and terminates on right side of body aft of right rear wheel. Filler tube is sealed by twist-type cap and is concealed by a hinged access door.

PERFORMANCE SUMMARY FOR FMVSS NO. 301-75:

	Actual Data	Standard Requirement	Pass/Fail
1. Transimpact Fluid Loss (oz)	0	1 oz maximum	Pass
2. Post-impact Fluid Loss (oz) (30-minute period post-impact)	0	1 oz/ minute maximum	Pass

Details of Leakage: None

3. Static Rollover: See following four pages

LABORATORY INFORMATION:

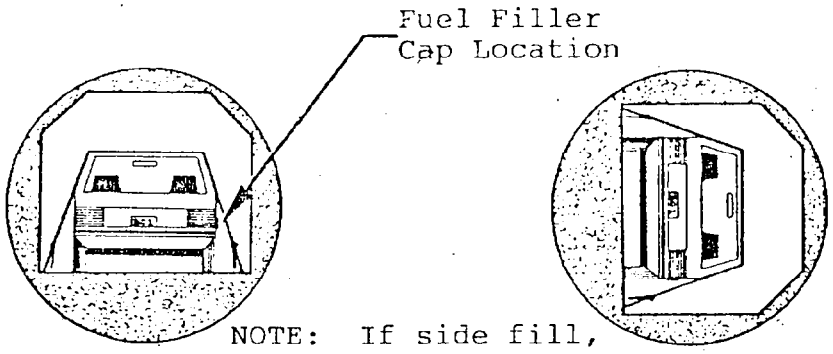
Project Engineer: M. Pozzi Date: October 1979

Project Manager: E. Enserink Date: October 1979

SECTION 3

FMVSS 301-75 INDICANT STATIC ROLLOVER DATA SHEET

TEST PHASE: 0° to 90° VEHICLE NHTSA NO. 790206



NOTE: If side fill, rotate so that filler cap is down.

DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time.... = 1 min, 39 sec +
(Spec. Range = 1 to 3 min)

FMVSS 301 Position Hold Time..... = 5 min, 00 sec =

Total..... = 6 min, 39 sec

Next Whole Minute Interval..... = 7 min

FMVSS 301 REQUIREMENTS AND ACTUAL TEST RESULTS:

Time Period	First 5 min (from onset)	6th min	7th min	8th min (if req'd)
Maximum Spillage Allowed (oz)	5	1	1	1
Actual Spillage Recorded	0	0	0	-

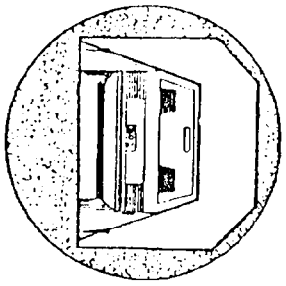
NOTE: Spillage is recorded in whole minute intervals only - as determined above.

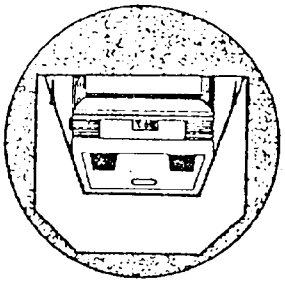
SOLVENT SPILLAGE LOCATION(S):

SECTION 3

FMVSS 301-75 INDICANT STATIC ROLLOVER DATA SHEET

TEST PHASE: 90° to 180° VEHICLE NHTSA NO. 790206





DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time.... = 1 min, 40 sec +
(Spec. Range = 1 to 3 min)

FMVSS 301 Position Hold Time..... = 5 min, 00 sec =

Total..... = 6 min, 40 sec

Next Whole Minute Interval..... = 7 min

FMVSS 301 REQUIREMENTS AND ACTUAL TEST RESULTS:

Time Period	First 5 min (from onset)	6th min	7th min	8th min (if req'd)
Maximum Spillage Allowed (oz)	5	1	1	1
Actual Spillage Recorded	0	0	0	-

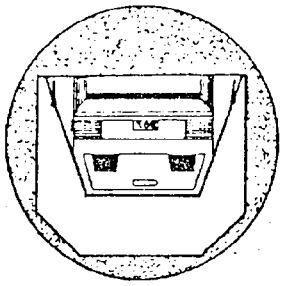
NOTE: Spillage is recorded in whole minute intervals only - as determined above.

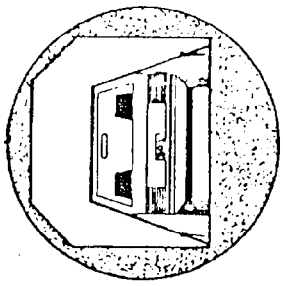
SOLVENT SPILLAGE LOCATION(S):

SECTION 3

FMVSS 301-75 INDICANT STATIC ROLLOVER DATA SHEET

TEST PHASE: 180° to 270° VEHICLE NHTSA NO. 790206





DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time.... = 1 min, 40 sec +
(Spec. Range = 1 to 3 min)

FMVSS 301 Position Hold Time..... = 5 min, 00 sec =

Total..... = 6 min, 40 sec

Next Whole Minute Interval..... = 7 min

FMVSS 301 REQUIREMENTS AND ACTUAL TEST RESULTS:

Time Period	First 5 min (from onset)	6th min	7th min	8th min (if req'd)
Maximum Spillage Allowed (oz)	5	1	1	1
Actual Spillage Recorded	0	0	0	-

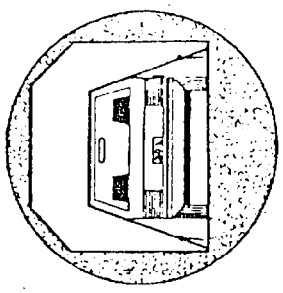
NOTE: Spillage is recorded in whole minute intervals only - as determined above.

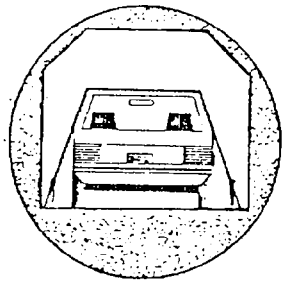
SOLVENT SPILLAGE LOCATION(S):

SECTION 3

FMVSS 301-75 INDICANT STATIC ROLLOVER DATA SHEET

TEST PHASE: 270° to 360° VEHICLE NHTSA NO. 790206





DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time.... = 1 min, 38 sec +
(Spec. Range = 1 to 3 min)

FMVSS 301 Position Hold Time..... = 5 min, 00 sec =

Total..... = 6 min, 38 sec

Next Whole Minute Interval..... = 7 min

FMVSS 301 REQUIREMENTS AND ACTUAL TEST RESULTS:

Time Period	First 5 min (from onset)	6th min	7th min	8th min (if req'd)
Maximum Spillage Allowed (oz)	5	1	1	1
Actual Spillage Recorded	0	0	0	-

NOTE: Spillage is recorded in whole minute intervals only - as determined above.

SOLVENT SPILLAGE LOCATION(S):

Figure 3-1. Pre-test Windshield - Overall View.

Figure 3-2. Post-test Windshield - Overall View.

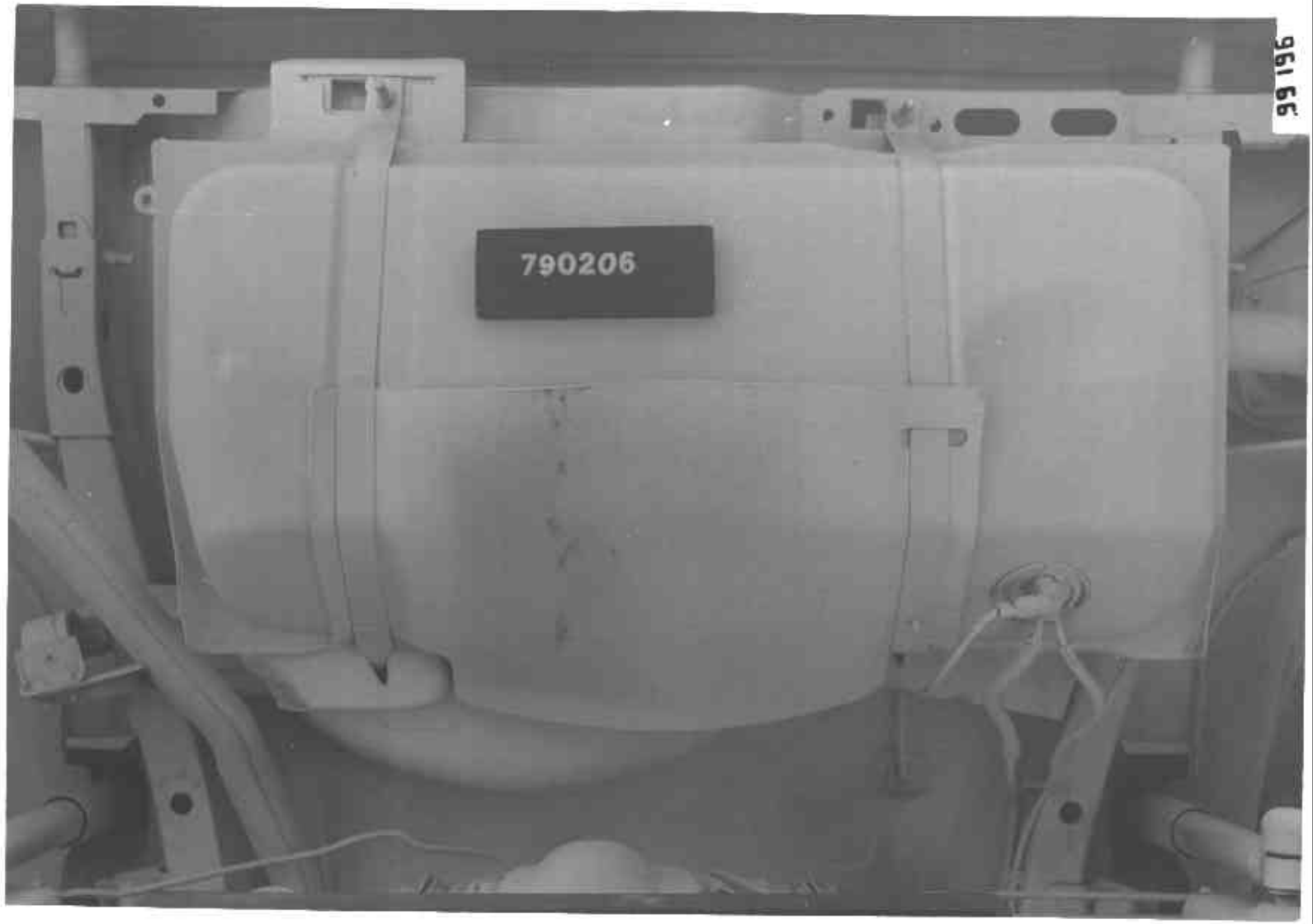


Figure 3-3. Pre-test View of Fuel Tank.

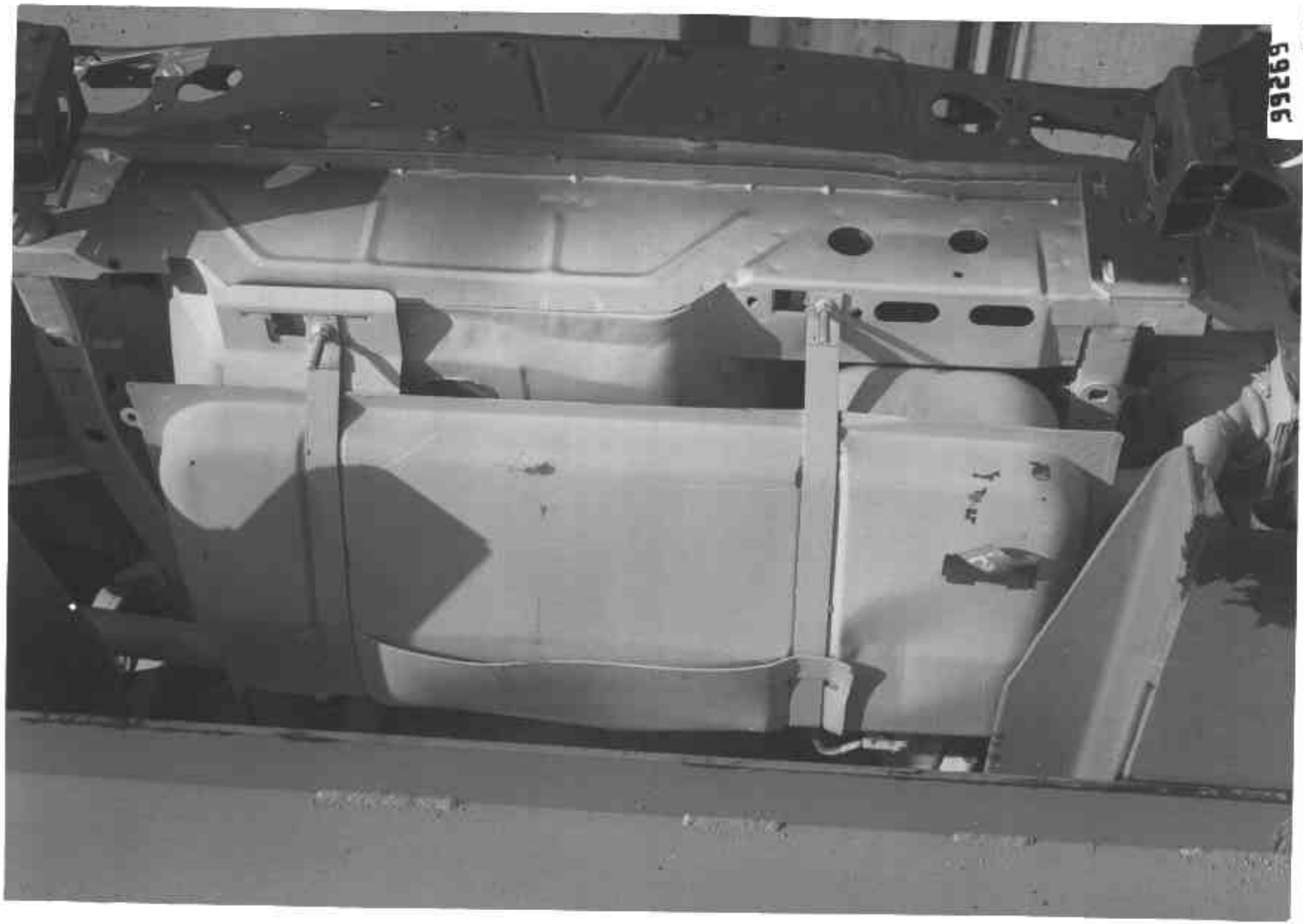


Figure 3-4. Post-test View of Fuel Tank.

SECTION 4
DATA REQUIRED BY R&D AND OAR

The following pages are included in this section:

1. Dummy positional data
2. Dummy injury summaries
3. Vehicle crush data
4. Accelerometer location and data summary
5. Photographs pertinent to R&D and OAR

Calcomp plots of dummy and vehicle accelerometer data are presented in Appendix B.

SECTION 4
DUMMY POSITIONING

Pre-test Dummy Positions

Measurement	Driver (in.)	Passenger (in.)	Child (in.)
Dummy Centerline to Vehicle Centerline	16	16	NA
Nose to Upper Rim Steering Wheel	19.4	NA	NA
Nose to Windshield (Horizontal Distance)	22.6	17.9	NA
Left Knee to Closest Point on Lower Panel	6	4.5	NA
Right Knee to Closest Point on Lower Panel	5.8	4.5	NA
Ankle Distance	10	7.5	NA
Knee Distance	9	9	NA
Nose to Seatback	NA	NA	18.3

Additional dummy positioning information is presented in the PART 572 DUMMY IN-VEHICLE POSITION RECORDING SHEET which follows.

SECTION 4

PART 572 DUMMY IN-VEHICLE POSITION RECORDING SHEET

NHTSA No.: 790206 Manufacturer: Ford Motor Company

Make/Model: Ford Mustang 2-Door Coupe Model Year: 1979

SEAT TYPE:
___ Bench X Bucket
___ Split Bench

ADJUSTER TYPE:
X Manual
___ Power

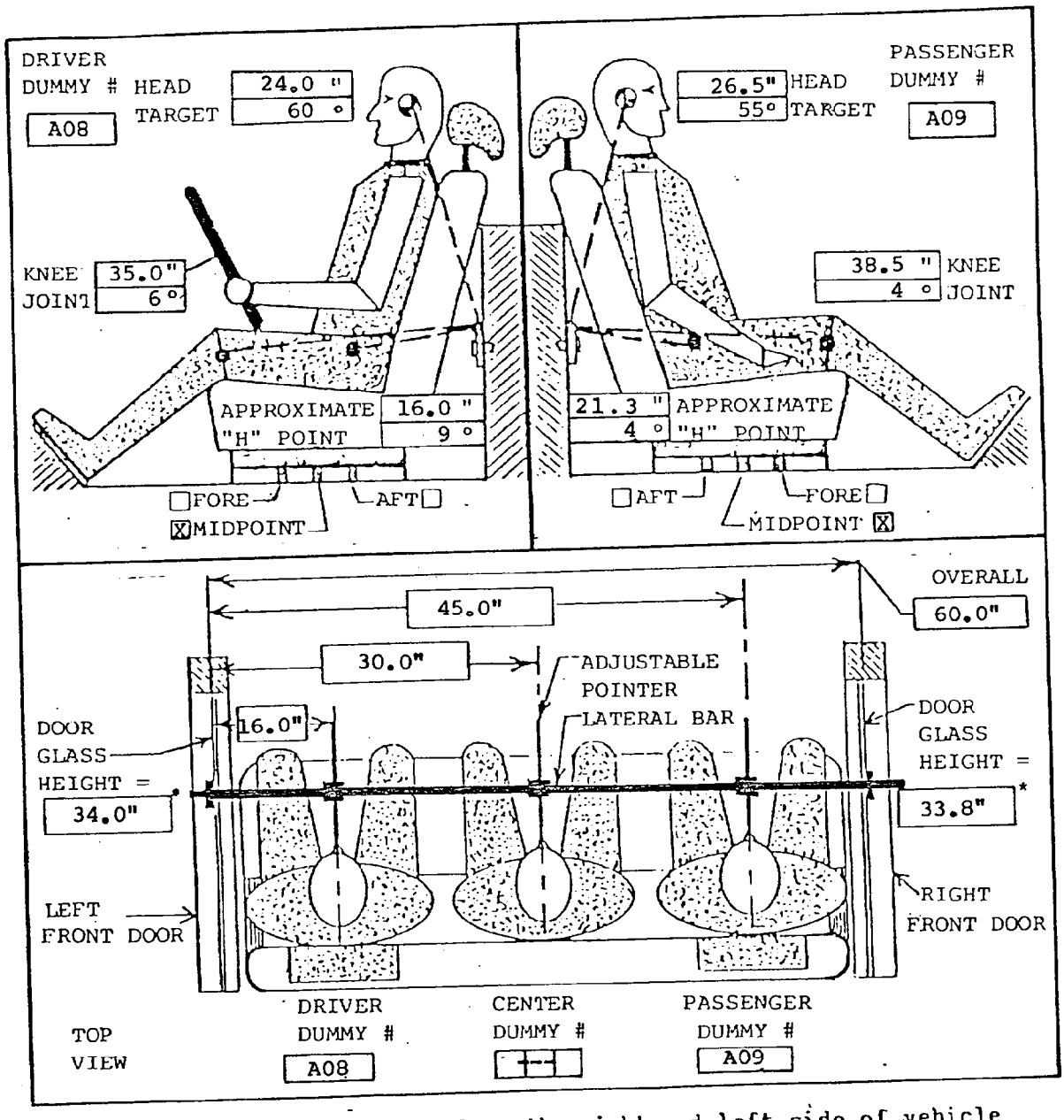
BUCKET SEAT BACK TYPE:
___ Adjustable Reclining
X Fixed

AMBIENT TEMPERATURE: 73 °F; TIME: 1000

POSITIONING DATE: October 2, 1979

TECHNICIANS: 1. Mark Pozzi
2.

All front seat dummies shall be positioned according to the procedure "OSE RECOMMENDED PROCEDURE FOR POSITIONING PART 572 DUMMIES IN TEST VEHICLE."



*Door glass height is equal on the right and left side of vehicle

SECTION 4
PART 572 DUMMY DATA SUMMARY

	Driver Dummy				Passenger Dummy			
	Positive Direction*		Negative Direction**		Positive Direction*		Negative Direction**	
	Peak (G)	Time (msec)	Peak (G)	Time (msec)	Peak (G)	Time (msec)	Peak (G)	Time (msec)
Head Acceleration								
Longitudinal	3.3	14	114.4	89	6.9	198	58.0	123
Lateral	6.0	182	42.3	89	10.3	137	5.5	190
Vertical	42.0	101	14.7	114	62.2	111	3.6	10
Resultant	122.0	89			73.0	111		
HIC	818.6 @ 88 - 127 MSEC				567.1 @ 96 - 131 MSEC			
Chest Acceleration								
Longitudinal	1.8	199	39.0	99	4.0	156	36.1	116
Lateral	10.3	74	12.8	88	11.9	97	6.0	138
Vertical	4.6	31	32.5	85	7.9	67	9.7	137
Resultant (Max)	43.0	95			36.2	116		
Resultant (clip)	41.1	97			33.1	118		
TIME > 60 G	0 MSEC				0 MSEC			
SEVERITY INDEX	332.1 @ 200 MSEC				272.5 @ 200 MSEC			
	Peak (lb)	Time (msec)	Peak (lb)	Time (msec)	Peak (lb)	Time (msec)	Peak (lb)	Time (msec)
Femur Loads								
Left	193.6	68	221.4	92	93.2	57	780.7	77
Right	124.3	110	945.6	79	40.5	73	375.6	87
Belt Loads								
Lap	1541.2	76			1248.7	74		
Torso	1421.0	106			NO DATA			
	Vehicle Impact Speed (mph): 34.65							

*Longitudinal: Forward
Lateral: Rightward
Vertical: Downward
**Longitudinal: Rearward
Lateral: Leftward
Vertical: Upward

SECTION 4
CHILD DUMMY DATA SUMMARY

	Child Dummy			
	Positive Direction*		Negative Direction**	
	Peak G	Time (msec)	Peak G	Time (msec)
Head Acceleration				
Longitudinal	13.2	109	214.0	120
Lateral	4.4	72	84.2	121
Vertical	92.8	121	13.1	142
Resultant	235.1	120		
HIC	1961.7 @ 91 - 127 MSEC			
Chest Acceleration				
Longitudinal	16.4	114	78.5	125
Lateral	27.6	103	32.7	124
Vertical	106.3	124	5.5	164
Resultant (Maximum)	133.5	124		
Resultant (clip)	94.7	126		
TIME > 60 G	12 MSEC			
SEVERITY INDEX	1276.5 @ 200 MSEC			
Belt Loads	None			

Vehicle Impact Speed (mph): 34.65

*Longitudinal: Forward
Lateral: Rightward
Vertical: Downward
**Longitudinal: Rearward
Lateral: Leftward
Vertical: Upward

SECTION 4

PRE-/POST-TEST STATIC MEASUREMENT DATA
(See Following Page for Dimension Definition)

Vehicle: 1979 Ford Mustang 2-Door Coupe NHTSA No.: 790206

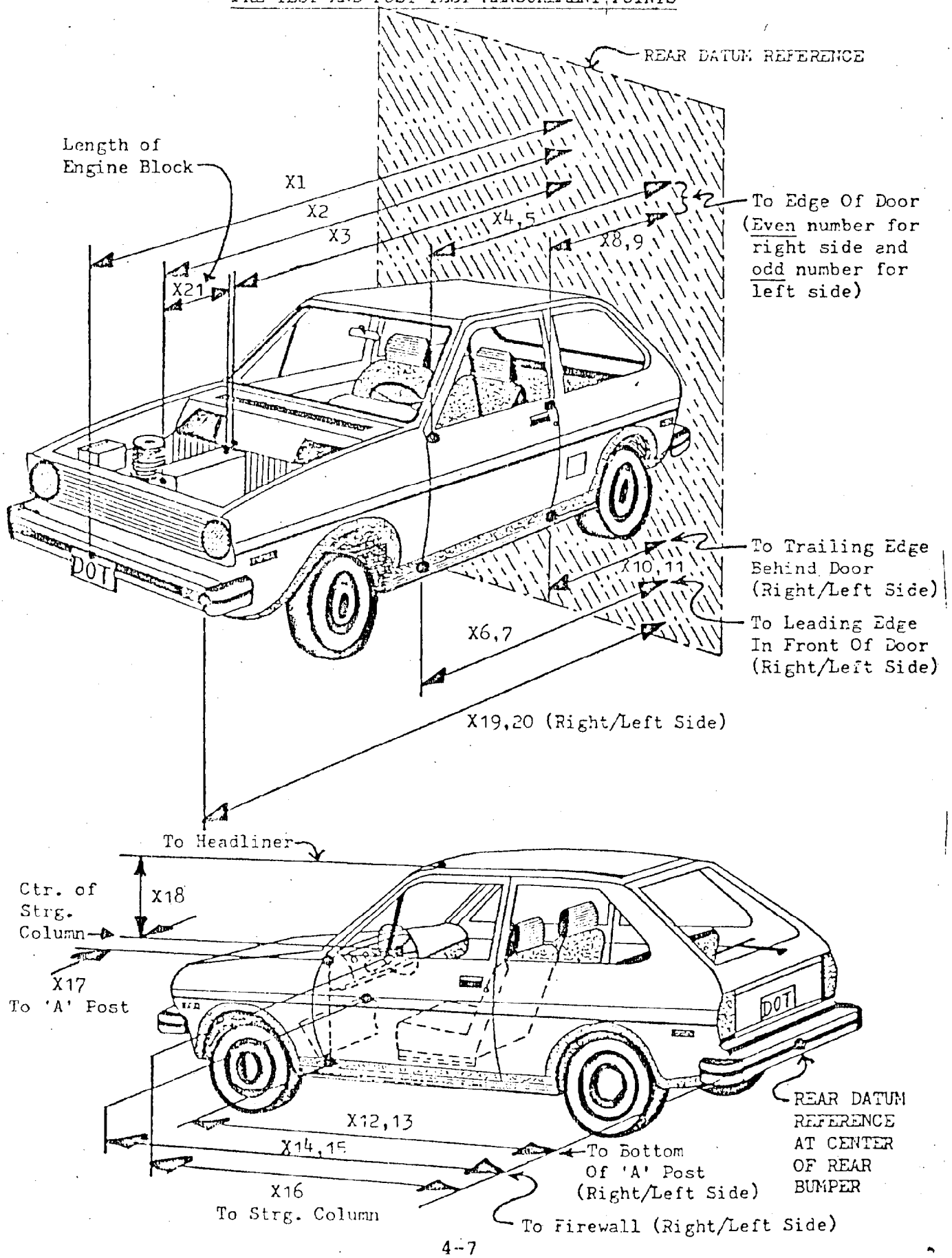
Test Date: October 2, 1979 D.S. No.: 971

Reference Dimension	Pre-test Measurement	Post-test Measurement	Change
X_1*[1]	174.1	153.0	21.1
X_2	143.9	134.0	9.9
X_3	122.6	114.0	8.6
X_4	107.5	106.9	0.6
X_5	107.3	106.8	0.5
X_6	111.0	110.8	0.2
X_7	111.0	110.5	0.5
X_8*	60.5	59.8	0.7
X_9*	60.4	59.6	0.8
X_{10}	58.3	58.1	0.2
X_{11}	58.3	58.1	0.2
X_{12}	110.3	110.1	0.2
X_{13}	110.2	110.0	0.2
X_{14}	125.0	121.0	4.0
X_{15}	125.8	122.0	3.8
X_{16}	95.0	94.5	0.5
X_{17}	16.0	15.5	0.5
X_{18}	17.5	20.6	3.1
X_{19}*	169.5	153.0	16.5
X_{20}*	169.5	153.0	16.5
X_{21}	21.3	20.0	1.3

*Rear impact data requirements.

[1]Rear bumper removed; shortened length approximately 5 inches from original dimensions.

PRE-TEST AND POST-TEST MEASUREMENT POINTS



SECTION 4
VEHICLE PROFILE DATA SHEET

Vehicle: 1979 Ford Mustang D.S. No.: 971 Test Date: October 2, 1979

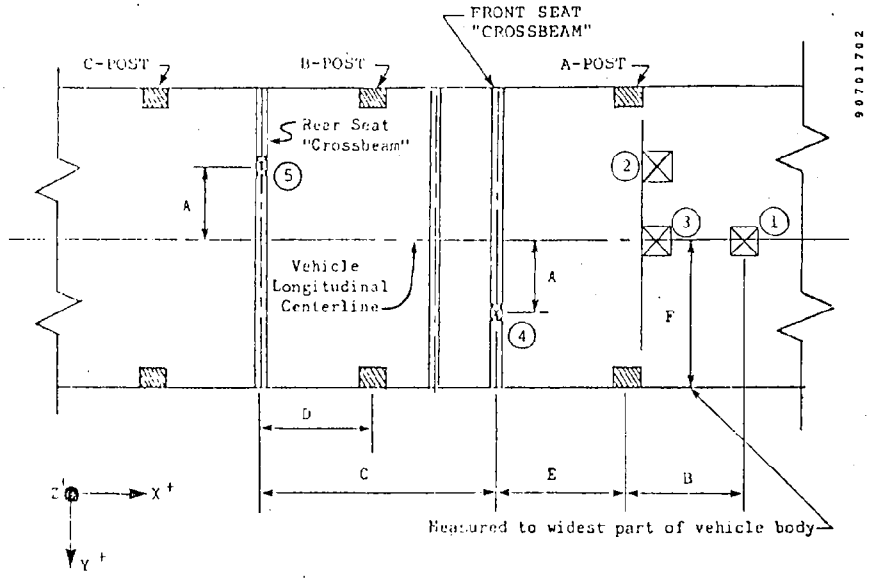
Measurement Date: Pre-test: 10/2/79 Post-test 10/10/79

Exterior Measurements Referenced to Plane: 16 feet
Forward of: rear edge of rear bumper mounts

Location	Height	Vehicle Left (in.) 30	24	18	12	6	0	Vehicle Right (in.) 6	12	18	24	30
Pre-test Profile (in.)												
Top of Front Bumper	22.0	23.6	22.1	20.6	19.4	19.2	19.0	19.2	19.4	20.6	22.0	23.6
Front of Hood	30.0		27.5	26.4	25.2	24.6	24.6	24.6	24.8	26.0	27.2	
Post-test Profile (in.)												
Top of Front Bumper	21.7	38.8	39.3	39.4	39.9	41.1	42.2	42.6	39.4	38.5	38.2	38.2
Front of Hood	30.8		45.5	46.2	46.3	45.7	44.8	43.2	41.1	40.8	42.9	
Post-test Static Crush (in.)												
Top of Front Bumper	0.3	15.2	17.2	18.8	20.5	21.9	23.2	23.4	20.0	17.9	16.2	14.6
Front of Hood	0.8		18.0	19.8	21.1	21.1	20.2	18.6	16.3	14.8	15.7	

TEST VEHICLE ACCELEROMETER LOCATION DEFINITION AND DATA SUMMARY

Dim.	Length (in.)
A	15
B	28.5
C	48.5
D	-2
E	17
F	34



No.	Location Description	Component Direction X	Y	Z	Data Summary Peak G @ MSEC X "+"	X "-"	Y "+"	Y "-"	Z "+"	Z "-"
1	Engine			✓	68.9 @ 57	113.8 @ 51	@	@	22.4 @ 53	14.0 @ 30
2	Firewall above steering column			✓	30.6 @ 21	64.5 @ 70	@	@	23.7 @ 28	32.8 @ 22
3	Firewall @ vehicle centerline			✓	28.3 @ 70	49.9 @ 24	@	@	44.5 @ 35	44.5 @ 50
4	Below front seat area	✓	✓	✓	14.4 @ 123	58.6 @ 61	12.5 @ 56	26.6 @ 75	50.9 @ 61	24.6 @ 71
5	Below rear seat area			✓	4.6 @ 189	43.9 @ 60	@	@	19.5 @ 10	23.8 @ 24

SECTION 4
DUMMY KINEMATIC SUMMARY

DRIVER - Struck top of steering wheel rim with right side of face. At the same time, the steering wheel hub cover popped loose, exposing hub bolt, which gouged into the side of the dummy face. Dummy underwent general counterclockwise rotation due to action of torso belt, which was jammed in B-pillar ring after impact. Note correlation between torso rotation and femur loads; right leg load was over 4 times greater than left leg load.

PASSENGER - Head struck cntr portion of dash panel and glovebox lid as well as right knee. Dummy underwent general clockwise rotation due to action of torso belt, which was jammed in B-pillar ring after impact. Note correlation between torso rotation and femur loads; left leg load was over 2 times greater than right leg. For documentation of torso belt activity, see Figures 4-3, 4-7, 4-9, and 4-12.

CHILD - Struck rear of passenger seatback and its own legs with face and forehead. Entire impact appears to be in parietal area of skull (no lateral motion or rotation).

Came to rest upright with arms flung overhead.

OTHER COMMENTS: No data from passenger torso belt.

Figure 4-1. Engine Compartment Accelerometer Location.

Figure 4-2. Pre-test Driver Dummy Position.

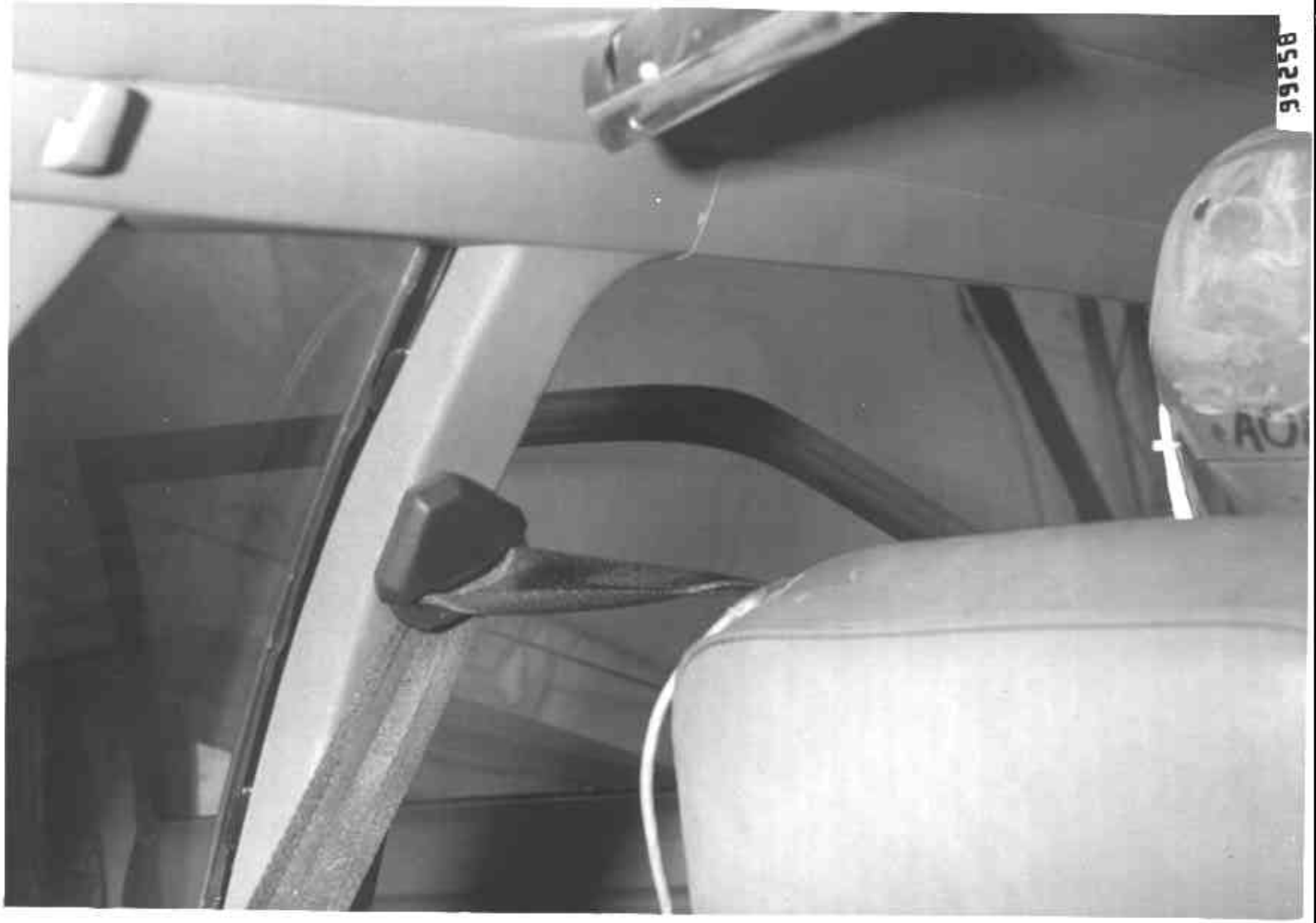


Figure 4-3. Pre-test Driver Torso Belt at B-Pillar (Note Twist Inherent in System).

Figure 4-4. Post-test Driver Dummy Position.

Figure 4-5. Post-test Driver Dummy Position.

Figure 4-6. Post-test Driver Compartment.

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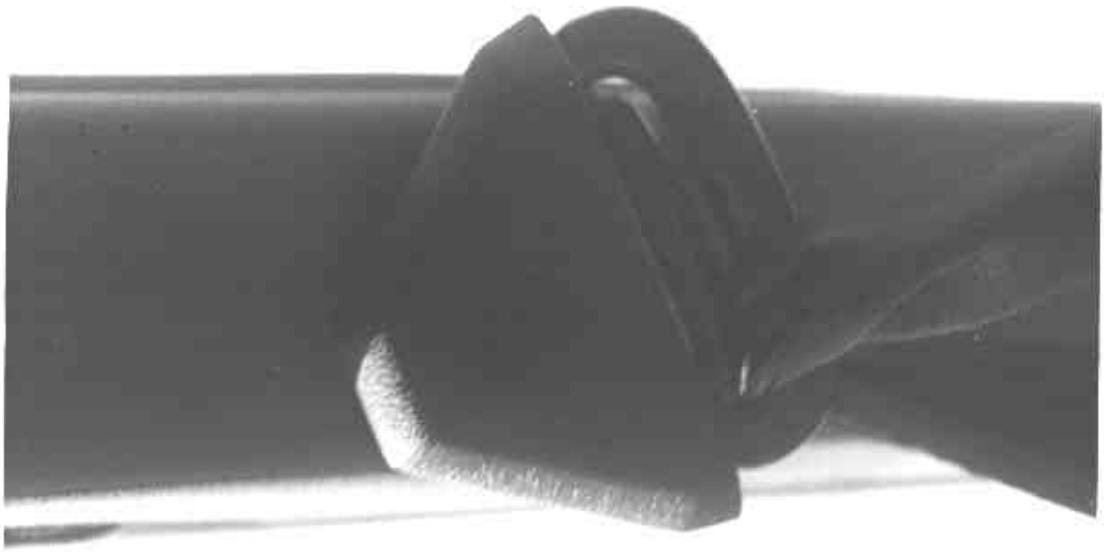


Figure 4-7. Post-test Driver Torso Belt at B-Pillar.

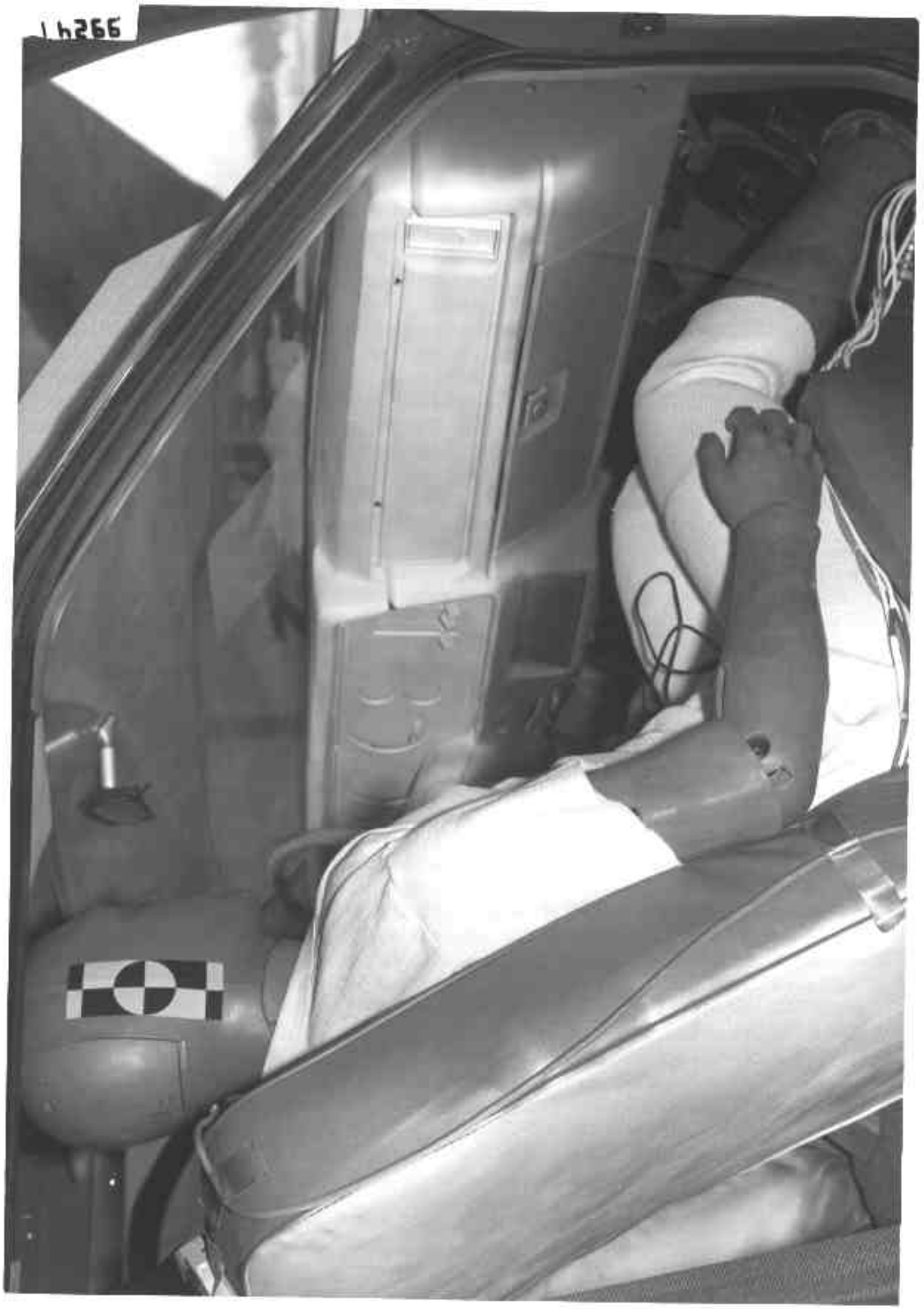


Figure 4-8. Pre-test Passenger Position.

Figure 4-9. Pre-test Passenger Torso Belt at B-Pillar (Note Twist Inherent in System).

Figure 4-10. Post-test Passenger Position.

Figure 4-11. Post-test Passenger Position.

Figure 4-12. Post-test Passenger Compartment.

Figure 4-13. Post-test Passenger Torso Belt at B-Pillar.

Figure 4-14. Pre-test Child Dummy Position.

Figure 4-15. Post-test Child Dummy Position.

Figure 4-16. Post-test Child Dummy Position.

APPENDIX A

TEST FACILITIES AND PROCEDURE

TEST FACILITY AND EQUIPMENT FOR FMVSS 301-75 and 219 IMPACT TESTS

General Test Facility Description

FMVSS 301-75 and 219 impact tests are conducted at the Dynamic Science, Inc. Phoenix Facility in Phoenix, Arizona. Figure A-1 is an overall aerial view of that facility.

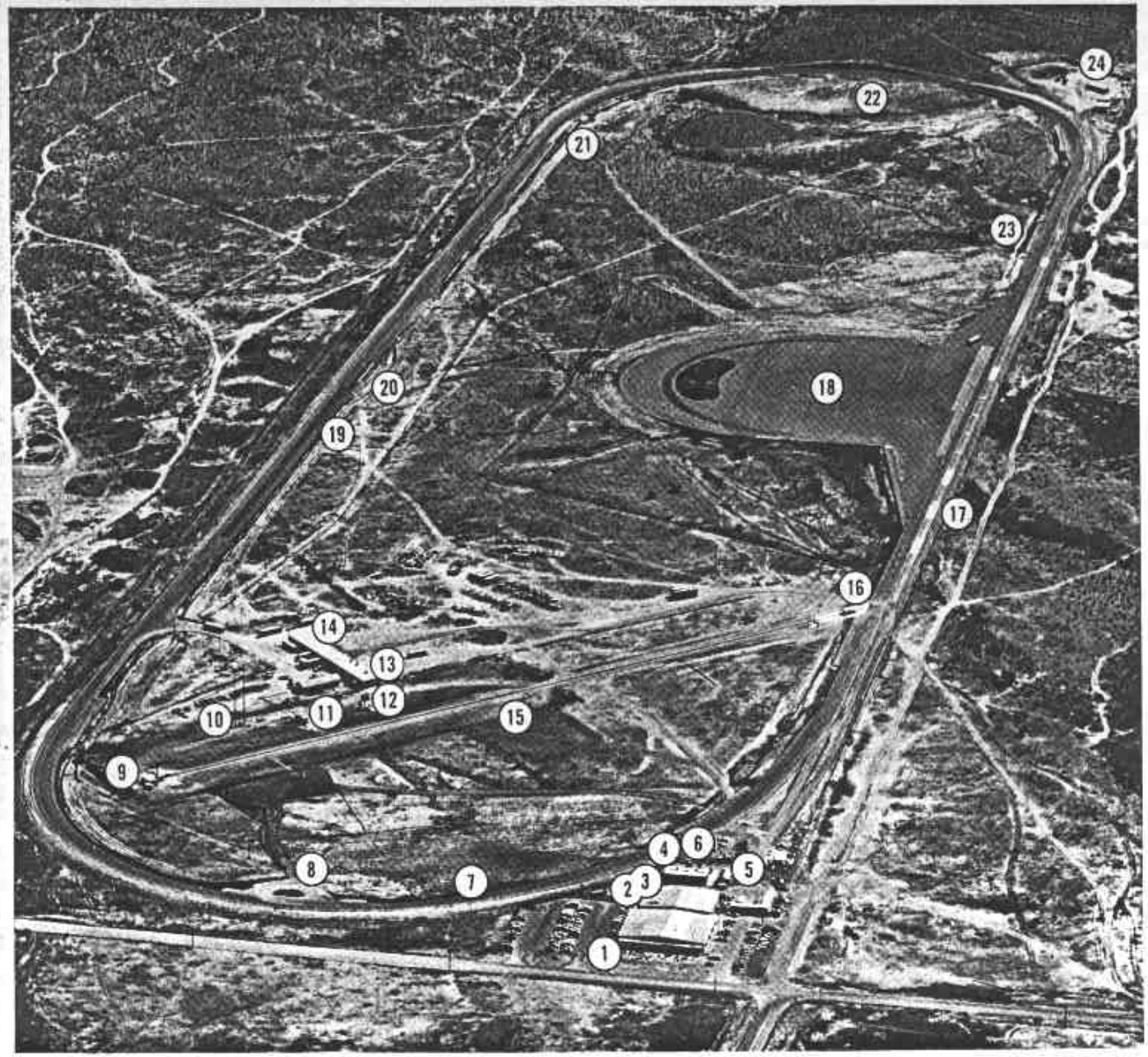
More specifically, the Monorail Impact Facility shown schematically in Figure A-2 is used. As indicated in Figure A-2, the Monorail Impact Facility accommodates a variety of test modes and configurations.

Test Track and Guidance System

The test track consists of 1,200 feet of asphalt pavement (SN = 75 ±5), 14 feet in width. The length allows sufficient acceleration distance to accommodate impact speeds in excess of 60 mph with sufficient distance remaining to abort the test if necessary. Guidance for the test vehicle is provided by a sliding shoe attached to the vehicle. The sliding shoe rides on the monorail embedded in the test track. Prior to impact, the shoe is mechanically released from the test vehicle.

Tow System and Velocity Control

The tow system consists of a drum-driven endless cable powered by a pair of 390-cubic-inch engines driven in tandem driving a modified three-speed C-6 automatic truck transmission. The tow system can propel a 6,000-pound vehicle into the fixed barrier at 75 mph. Velocity control is achieved through a manually controlled throttle system. A visual readout of speed versus distance is provided and compared with the "ideal curve." Velocity control under ±0.5 mph is realizable down to 20 mph and ±2.0 percent down to zero mph.



1. ENGINEERING/ADMINISTRATION CENTER
2. MECHANICAL/INSTRUMENTATION SHOPS
3. DUMMY CALIBRATION LABORATORY
4. GARAGE/MAINTENANCE SHOP
5. ENVIRONMENTAL CHAMBER
6. STATIC CRUSH FACILITY
7. TWO-MILE OVAL
8. TURNAROUND (TYPICAL OF TWO)
9. BARRIER IMPACT FACILITY
10. DROP TOWER/SLED TEST FACILITY
11. CENTRAL DATA ACQUISITION AND CONTROL STATION
12. PENDULUM FACILITY
13. NONMETALLICS LABORATORY
14. TEST SERVICE FACILITY
15. VEHICLE-TO-VEHICLE TEST FACILITY
16. ROLLOVER TEST FACILITY
17. RIDE QUALITY COURSE
18. SKID PAD
19. HIGH AND LOW SKID NUMBER BRAKING LANES
20. SALT WATER TROUGH
21. BELGIAN BLOCK
22. PARKING BRAKE TEST RAMP
23. PULL-OFF AREA (TYPICAL OF THIRTEEN)
24. BALLISTIC TEST RANGE

Figure A-1. The Dynamic Science, Inc. Phoenix Facility.

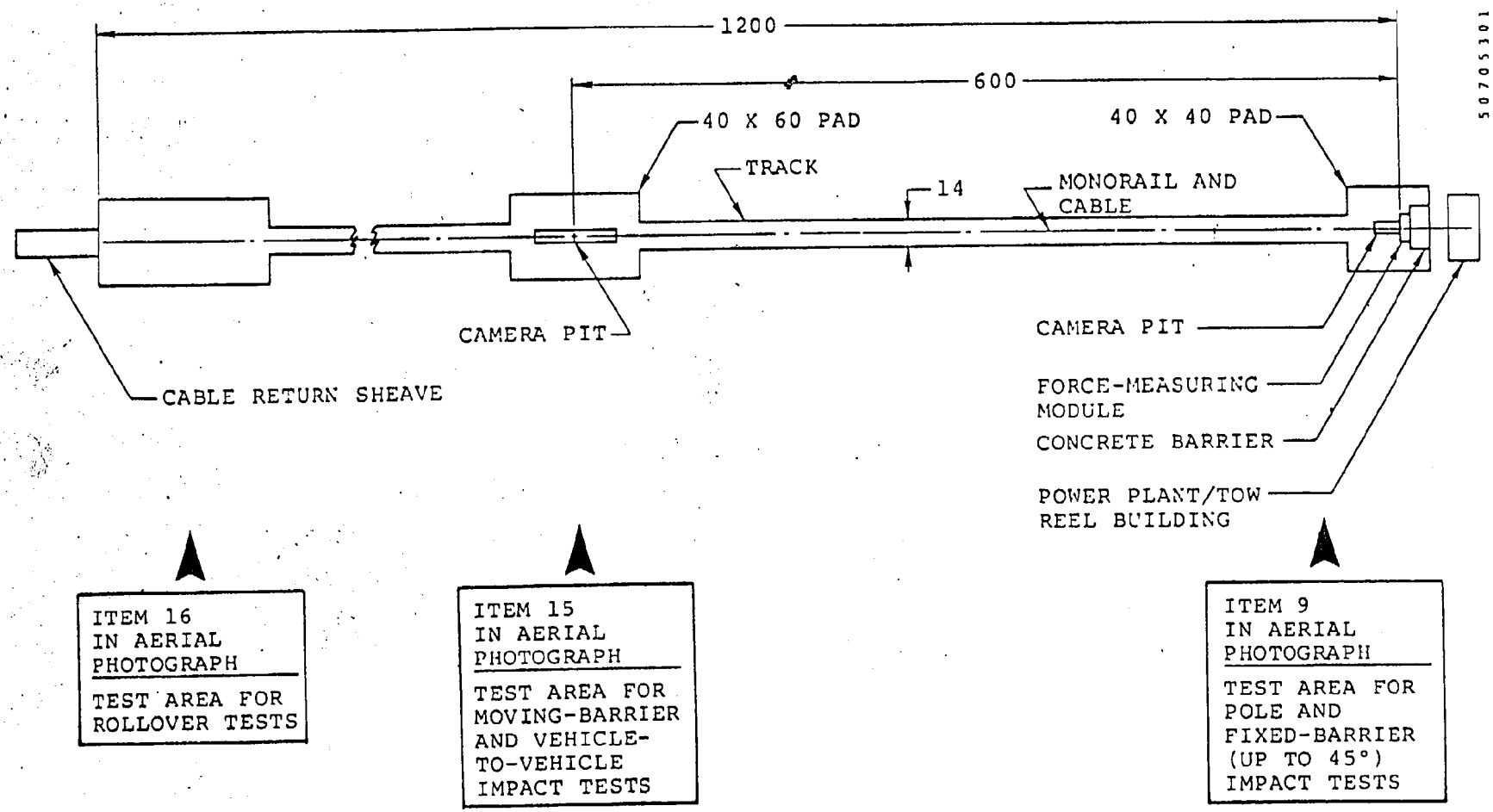


Figure A-2. Monorail Impact Facility.

Automatic abort capability is provided through the vehicle service brakes which are actuated by releasing high-pressure air into the hydraulic system. Abort criteria consist of vehicle speed, data acquisition and instrumentation system readiness, and stability of the vehicle on the test track. The first two criteria are automatically monitored by the test control system, while the third criterion is visually monitored by the test conductor. Manual abort provisions are available to the test conductor. Upon verifying vehicle speed, the test control system automatically deactivates the abort system to preclude inadvertent test abort immediately prior to impact.

Control System

The master control system used for impact tests controls and monitors all primary system functions that must operate throughout a predetermined interval during a test. This includes the starting and stopping of the tape recorder, high-speed cameras, and oscillograph, and control of the power winch which propels the test vehicle. The operation of the various devices is confirmed, including vehicle velocity and tape recorder speed synchronization, before it passes through a "commit" window. When the vehicle is committed, the abort system is disarmed, preventing an accidental abort after the point of no return is reached.

Any system malfunction, including improper vehicle velocity up to the commit window, generates an abort. The control system uses the pulse output from the IRIG time base generator as a clock with a manual push button defining time zero. The logic circuits compare pulse counts from time zero to preset values dialed in at the control panel. As each control circuit gets an equal comparison, that circuit is turned on. If the self-test circuit does not verify, the abort system is automatically activated. After successful vehicle test, the last control circuit shuts the entire system down. The manual backup control system provides the test conductor the option for manually aborting the test if the need arises.

Fixed Collision Barrier

The basic fixed collision barrier conforms to the definition in Part 571-1, Paragraph 571.3 - Definitions, 36 F.R. 11242, dated July 14, 1970 and effective September 1, 1970. The fixed impact barrier is a reinforced concrete structure, 6-feet high, 6-feet thick, 12-feet wide, and weighing approximately 100,000 pounds. The barrier face is adjustable for conducting 30-degree oblique impact tests.

Fuel Simulation

As prescribed in the FMVSS 301-75 Laboratory Procedure, the vehicle fuel system is filled to 90-91 percent of capacity with Stoddard Solvent.

The fuel is pumped out of the fuel tank, and the residual fuel in the fuel lines and the carburetor is burned by operating the vehicle engine. The fuel system is filled with Stoddard Solvent No. 2. The solvent is then pumped into the fuel lines, up to the carburetor. The weight of the Stoddard Solvent added and removed is determined with two Western Beam Scales (Model No. WP 2000).

The solvent used, Stoddard Solvent No. 2, has a specific gravity of 0.764 at 75°F and a viscosity of 0.99 centistokes.

Windshield Zone Intrusion Template

A windshield zone intrusion template is laid out and fabricated for each vehicle to spatially define the windshield protected zone.

Windshield Protected Zone Boundaries

The lower boundary of the protected zone is determined as follows:

1. A 6.5-inch diameter rigid sphere, weighing 15 pounds, is positioned so it simultaneously contacts the inner surface of the windshield glazing and the surface of the instrument panel, and the locus of points contacted by the sphere is marked. The line is then extended horizontally to the edge of the glazing material.

2. A line is drawn on the inner surface of the windshield below and one-half inch distant from the locus of points determined in Step 1.

The top and side boundaries of the zone are the top and sides of the windshield opening. The protected zone extends three inches outward from the outer surface of the windshield measured perpendicular to any point along the outer boundary of the zone. The protected zone is shown in **Figure A-3.**

Fabrication of Windshield Zone Intrusion Template

In order to determine whether or not there is any penetration into the protected zone, FMVSS No. 219 specifies that a template be formed of Styrofoam, type DB, cut cell, conforming to the shape of the zone and attached to the windshield. The Styrofoam exhibits essentially only plastic deformation characteristics, making it excellent for recording possible intrusion but difficult to shape to the windshield contour. The ultimate thickness of 3 inches is achieved by laminating six 1/2-inch-thick layers which can be individually bent to the windshield curvature, an operation not possible with 3-inch-thick Styrofoam because of its brittleness. The laminations are glued together in place on the windshield and the 45° bevel is applied to the perimeter of the template after it is bonded to the windshield.

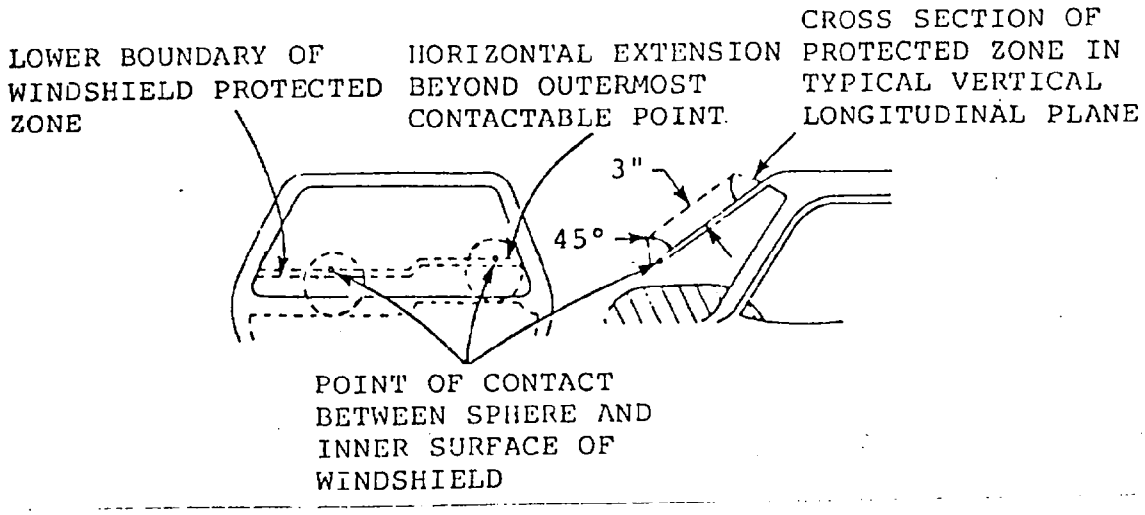


Figure A-3. Windshield Protected Zone.

Camera Coverage

Eight high-speed cameras are positioned on and around the impact barrier and test vehicle to provide total coverage of the barrier impact (Figure A-4). Specific locations are:

1. Left side overall
2. Offboard vehicle right side to view windshield.
3. At the front end of the pit to view possible fuel spillage in the engine compartment.
4. In the pit under the fuel tank to view possible fuel spillage from the tank.
5. Right side closeup of dummy motion and the windshield zone template.
6. Left side closeup of dummy motion and the windshield zone template.
7. On the barrier to provide a front view of the windshield template.

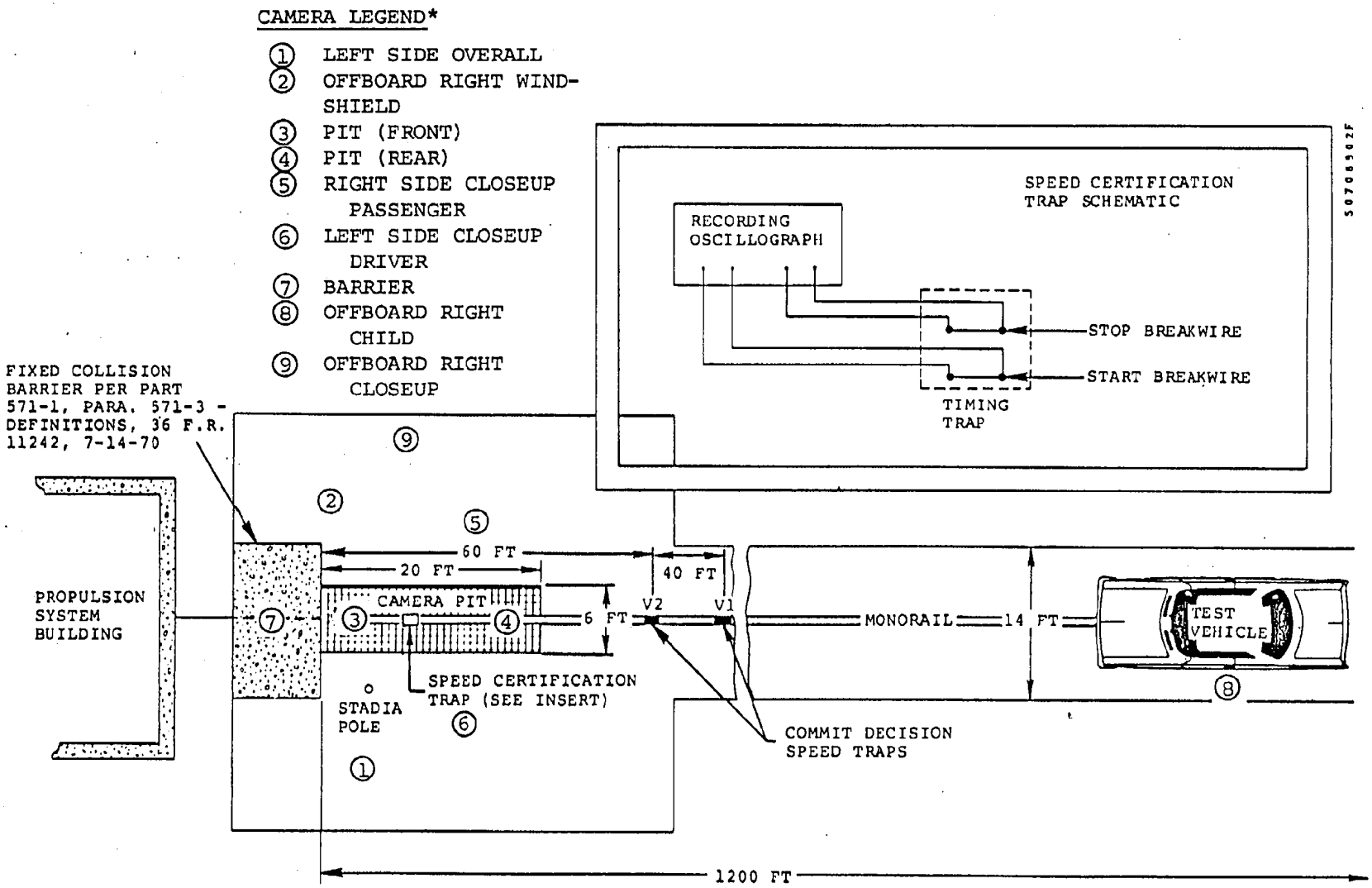


Figure A-4. FMVSS 301-75 and 219 (Frontal Impact Test) Barrier Test Site Layout.

Test Equipment List and Function

Item	Manufacturer	Model	Purpose
Timing Trap	Dynamic Science	None	Determine impact speed by furnishing a start and stop signal to recording oscillograph.
Oscillograph	Bell and Howell	5-134	Records timing start and stop signals from timing traps, cable drum drive rpm, and impact switch.
Speed Control	Dynamic Science	None	Precision control of cable drive drum rpm.
Beam Scales	Western	WP 2000	Used to determine vehicle test weights.
High-speed Motion Picture Cameras	Photosonics Milliken Red Lake Labs	16-1B 5A 164-5AC	Used for front, side, overhead, and underside film coverage.
Motion Picture Camera	Canon Scoopic		Panning and documentation.
Still Camera	Mamiya	RB 67	Documentary photo coverage.
100 and 1000 Hz Time Code Generators	Dynamic Science	None	Furnish timing signal for high-speed cameras and a 1 second timing for velocity determination.
Stop Watch	Brietling	None	Time for collection of fuel leak samples.
Containers	-	-	Collection for fuel leak samples.
Graduated Cylinder	Pyrex	3022	Fuel volume measurement.
Graduated Cylinder	Kimax	-	Fuel volume measurement.
Calibrated Steel Rule	Starret	48 in.	Precision measurement of velocity trap spacing.
Anthropomorphic Dummies	Alderson Research Labs	Hybrid II	To ballast the vehicle and to gather occupant response data.

8. Offboard right to view child in rear seat.

9. Offboard right to view two-thirds of vehicle.

Ballast Weight

The ballast used in this program is weighed on a Howe platform scale prior to installation in the test vehicle.

The platform scale is calibrated by placing precision weights thereon and recording the scale reading. The accuracy of the ballast weights is:

- ±1/2 pound for 0 to 300-pound weights
- ±1 pound for 300 to 1000-pound weights.

Vehicle Weight

The weights of the test vehicle are determined by placing each wheel on a Western Model WP 2000 beam scale, certified with test weights scaled to National Bureau of Standards Class B tolerances.

Dummy Positioning

The following table summarizes the steps taken to position the instrumented, calibrated dummies in the test vehicle. The dummies were kept in a temperature-controlled enclosure at the head of the track until t-30 seconds. The temperatures both in the enclosure, and the outside ambient temperature were recorded immediately prior to rollout.

DUMMY PLACEMENT AND POSITIONING

Part 572 Dummy	Driver DSP	Passenger DSP
HEAD	Surface of transverse instrument mounting platform is horizontal & midsagittal plane falls in longitudinal plane.	Surface of transverse instrument mounting platform is horizontal & midsagittal plane falls in longitudinal plane.
UPPER TORSO	Placed against seat back. Midsagittal plane is vertical & longitudinal & passes through center point of steering wheel rim.	Placed against seat back. Midsagittal plane is vertical, longitudinal, & the same distance from vehicle longitudinal centerline as driver dummy midsagittal plane.
UPPER ARMS	Initially placed against seat back & tangent to side of Upper Torso. Push arms rearward into seat back with bending at elbows.	Initially placed against seat back & tangent to side of Upper Torso. Push arms rearward into seat back with bending at elbows. Remains tangent.
LOWER ARMS	Initially placed against the outside of the thighs. Centerline as close as possible in a vertical plane.	Initially placed against the outside of the thighs. Centerline as close as possible in a vertical plane.
HAND PALMS	Palms contact outer part of steering wheel rim at horizontal centerline.	Palms contact the outsides of the thighs.
HAND THUMBS	Placed over steering wheel rim.	
HAND LITTLE FINGERS		Barely in contact with the seat cushion.

DUMMY PLACEMENT AND POSITIONING (CONTD)

Part 572 Dummy	Driver DSP	Passenger DSP
LOWER TORSO	Centered on bucket seat cushion. Midsagittal plane is vertical & longitudinal. For bench seat, midsagittal plane is vertical & longitudinal & passes through center point of plane described by steering wheel rim.	Centered on bucket seat cushion. Midsaggital plane is vertical & longitudinal. For bench seat, midsagittal plane is vertical, longitudinal, and same distance from vehicle longitudinal centerline as driver dummy midsagittal plane.
UPPER LEGS (thighs or femurs)	Placed against seat cushion. Plane defined by femur and tibia centerlines is as close as possible to vertical.	Placed against seat cushion. Plane defined by femur and tibia centerlines is as close as possible to vertical.
RIGHT KNEE	Knees initially set 14.5" apart between pivot bolt head outer surfaces.	Located so that plane defined by femur and tibia centerlines is as close as possible to vertical.
LEFT KNEE	Outer surface of pivot bolt head is 5.9" from midsagittal plane of dummy.	Located as above.
LOWER LEGS (tibias)	Plane defined by femur and tibia centerlines is as close as possible to vertical longitudinal plane.	Plane defined by femur and tibia centerlines is as close as possible to vertical longitudinal plane.
RIGHT FOOT	Placed on undepressed accelerator pedal--rearmost point of heel on floorpan in plane of pedal.	Centerline falls in vertical longitudinal plane. Placed on toeboard--rearmost point of heel on floorpan as close as possible to intersection of toeboard and floorpan.
LEFT FOOT	Placed on toeboard--rearmost point of heel on floorpan as close as possible to intersection of toeboard and floorpan. Centerline falls in vertical longitudinal plane.	Centerline falls in vertical longitudinal plane. Placed on toeboard--rearmost point of heel on floorpan as close as possible to intersection of toeboard and floorpan.

APPENDIX B

CALCOMP PLOT PRESENTATION

Calcomp plots generated from the crash test data are presented on the following pages. All data will be recorded on magnetic tape for inclusion in the NHTSA crash test data base system. All data was filtered according to SAE J211. Plot legends and test anomalies are listed below:

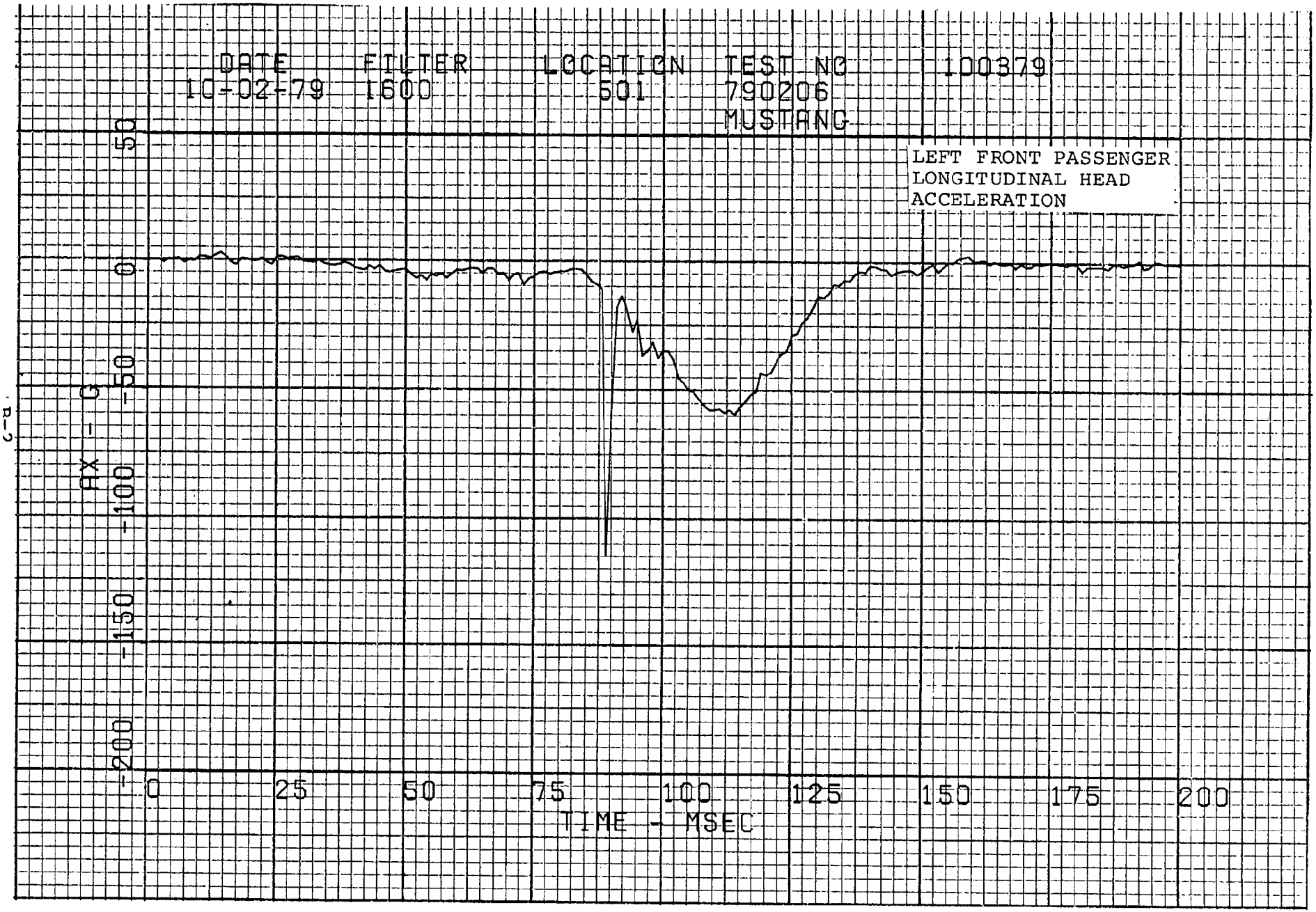
PLOT LEGEND

Dummy Data

Driver	RF Outboard Passenger	RR 6-year-Child	Data Description
501	503	506	Head Acceleration
1101	1103	1106	Chest Acceleration
2111	2131		Left Femur Load
2112	2132		Right Femur Load
4101	4103		Torso Belt and Lap Belt Loads

Vehicle Data

	Location
101	Engine
102	Firewall
103	Firewall at Vehicle Centerline
104	Front Seat Area
105	Rear Seat Area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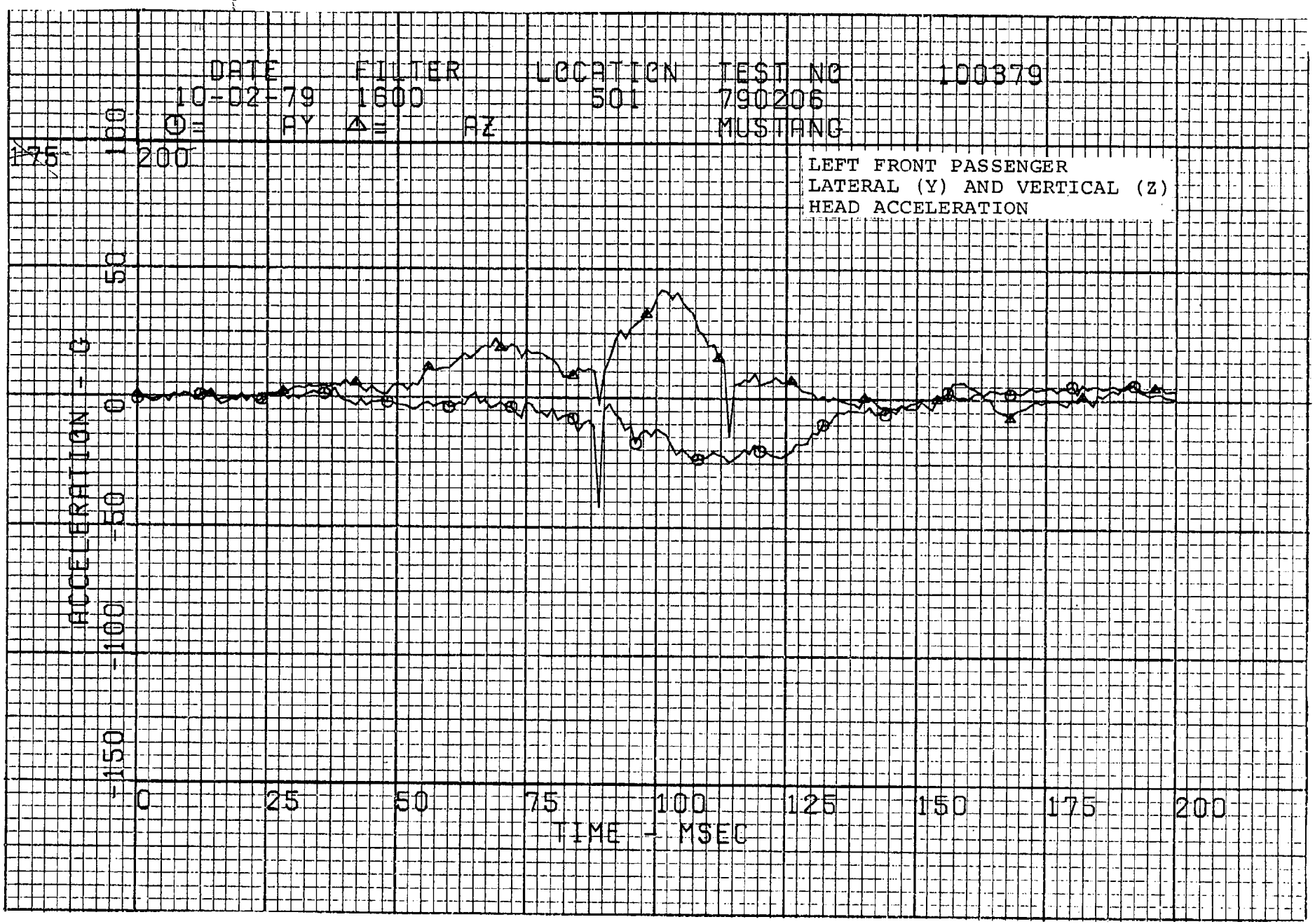
501
TEST NO
790206
MUSTANG
100379
LEFT FRONT PASSENGER
LONGITUDINAL HEAD
ACCELERATION
AX - G
50
0
-50
-100
-150
-200
0
25
50
75
100
125
150
175
200
TIME - MSEC


DATE
10-02-79
FILTER
1600
LOCATION
501
TEST NO
790206
100379
MUSTANG
Θ=
AY
Δ=
AZ
LEFT FRONT PASSENGER
LATERAL (Y) AND VERTICAL (Z)
HEAD ACCELERATION
ACCELERATION - G
175
150
100
50
0
-50
-100
-150
0
25
50
75
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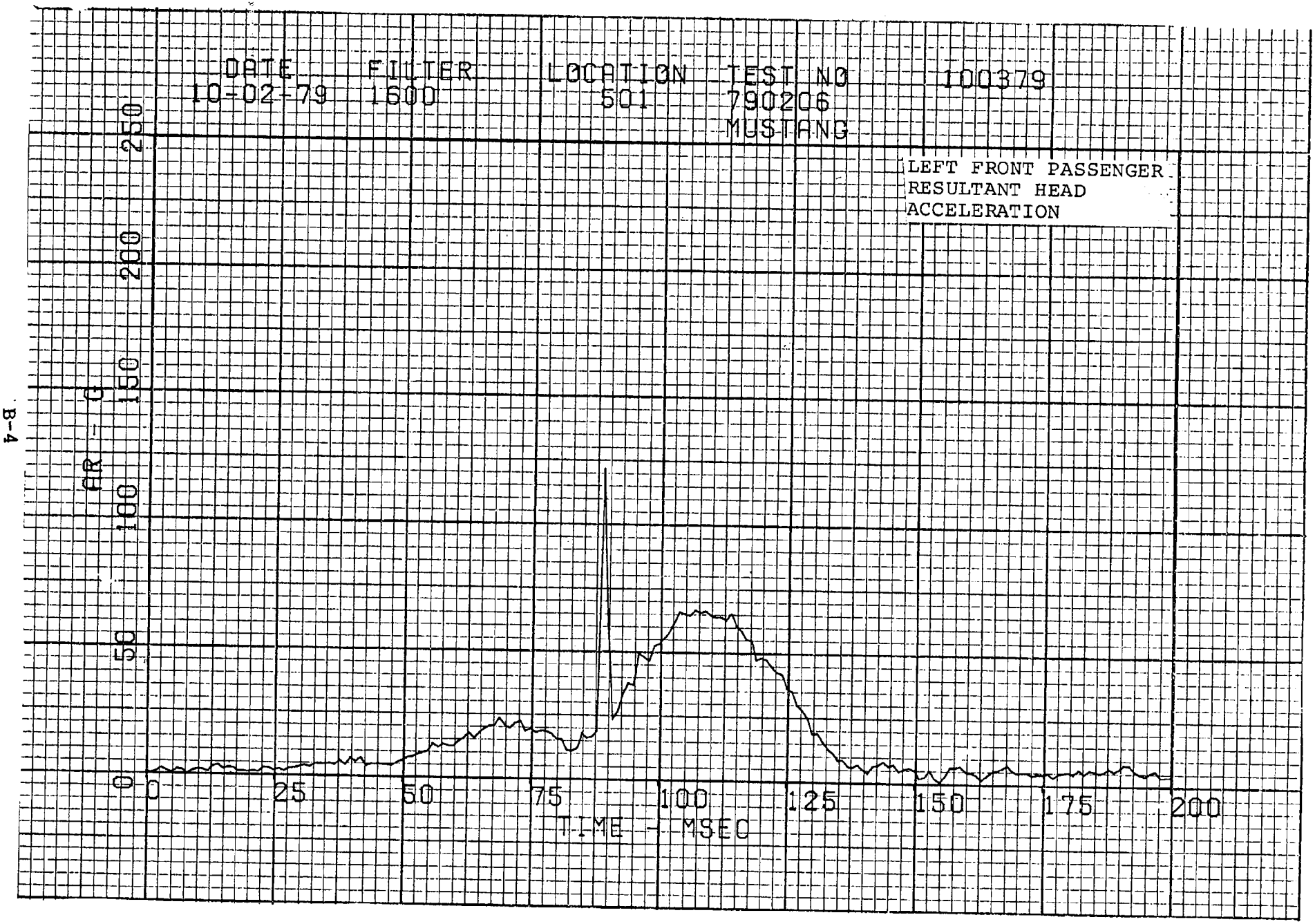
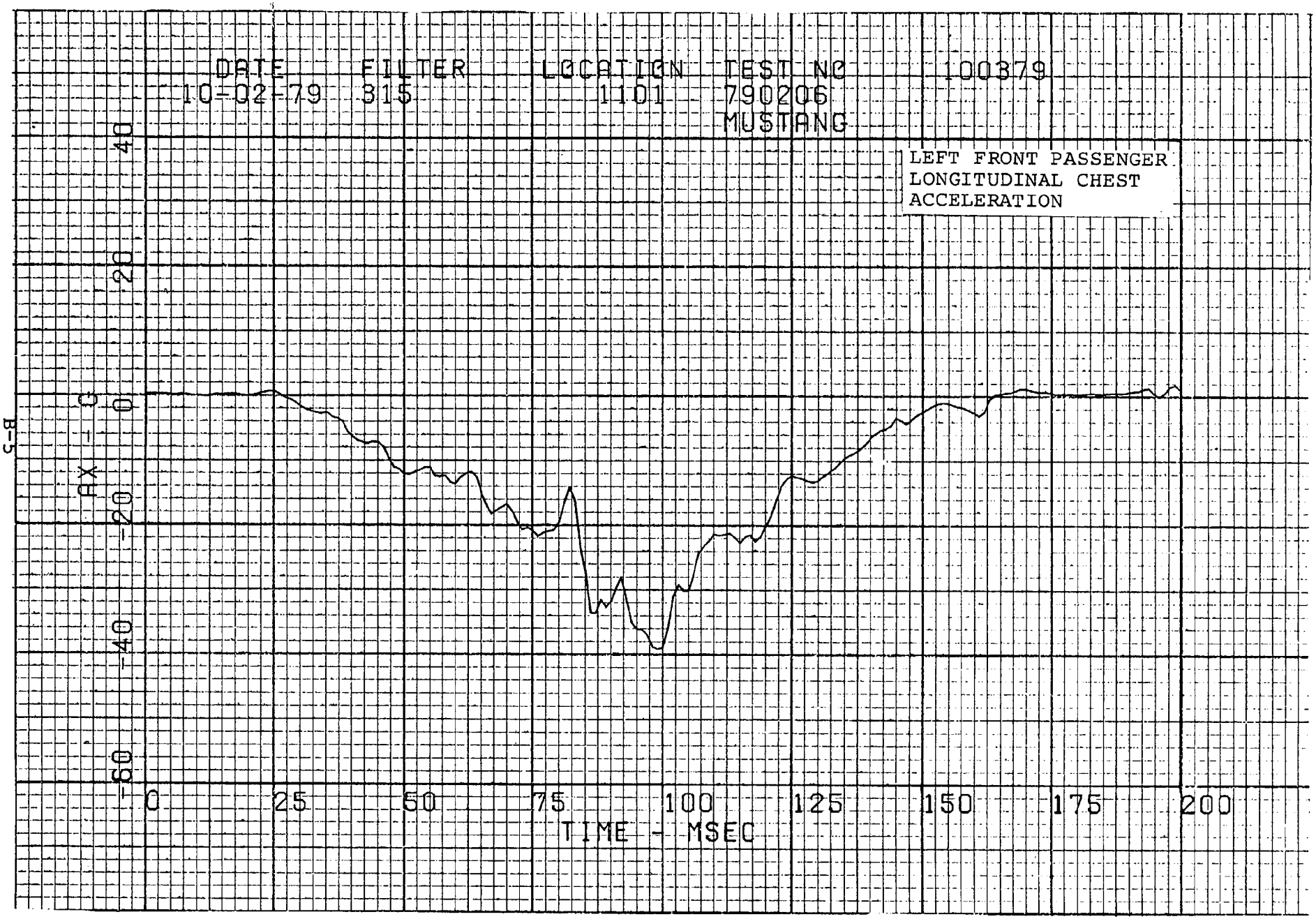
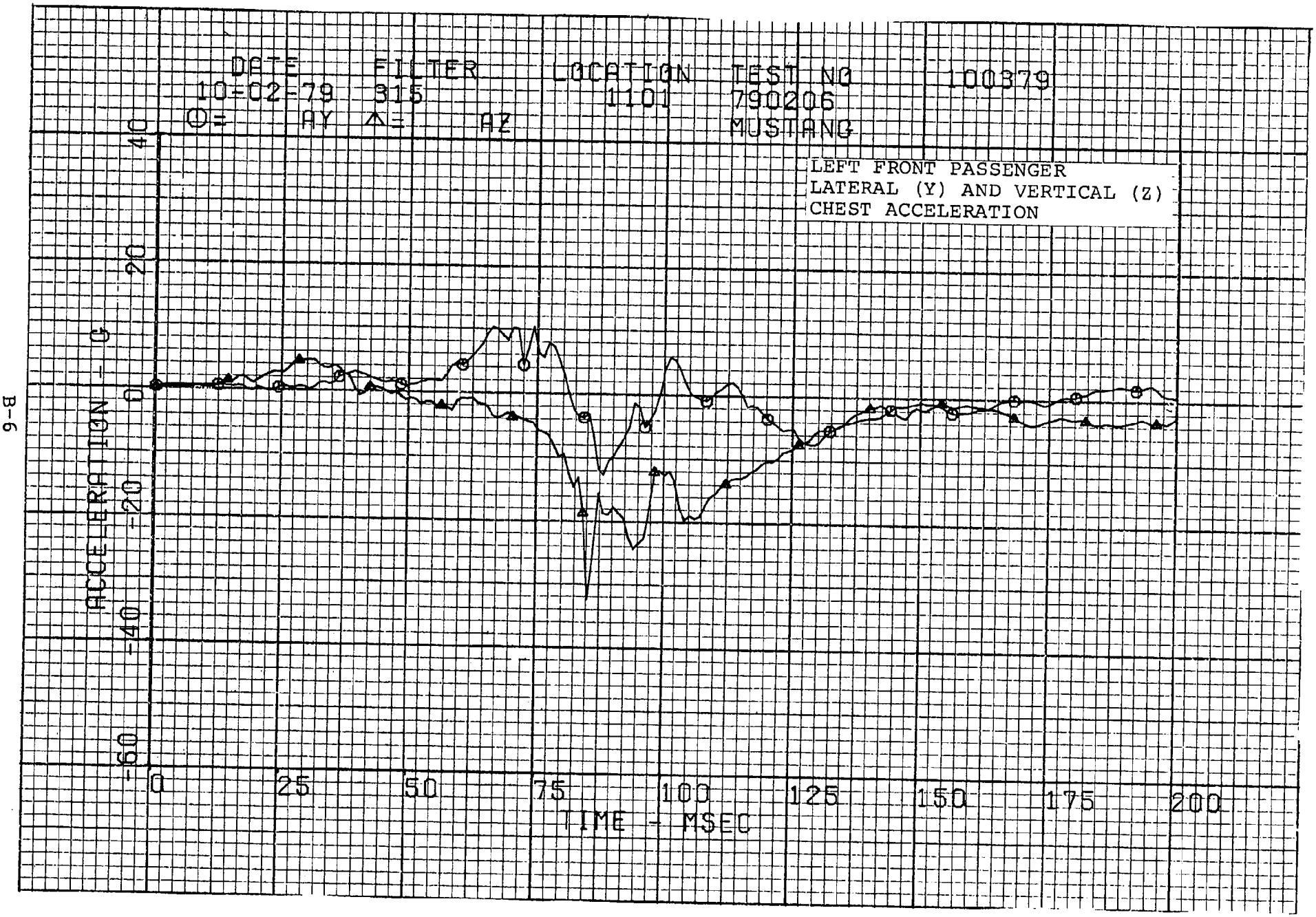
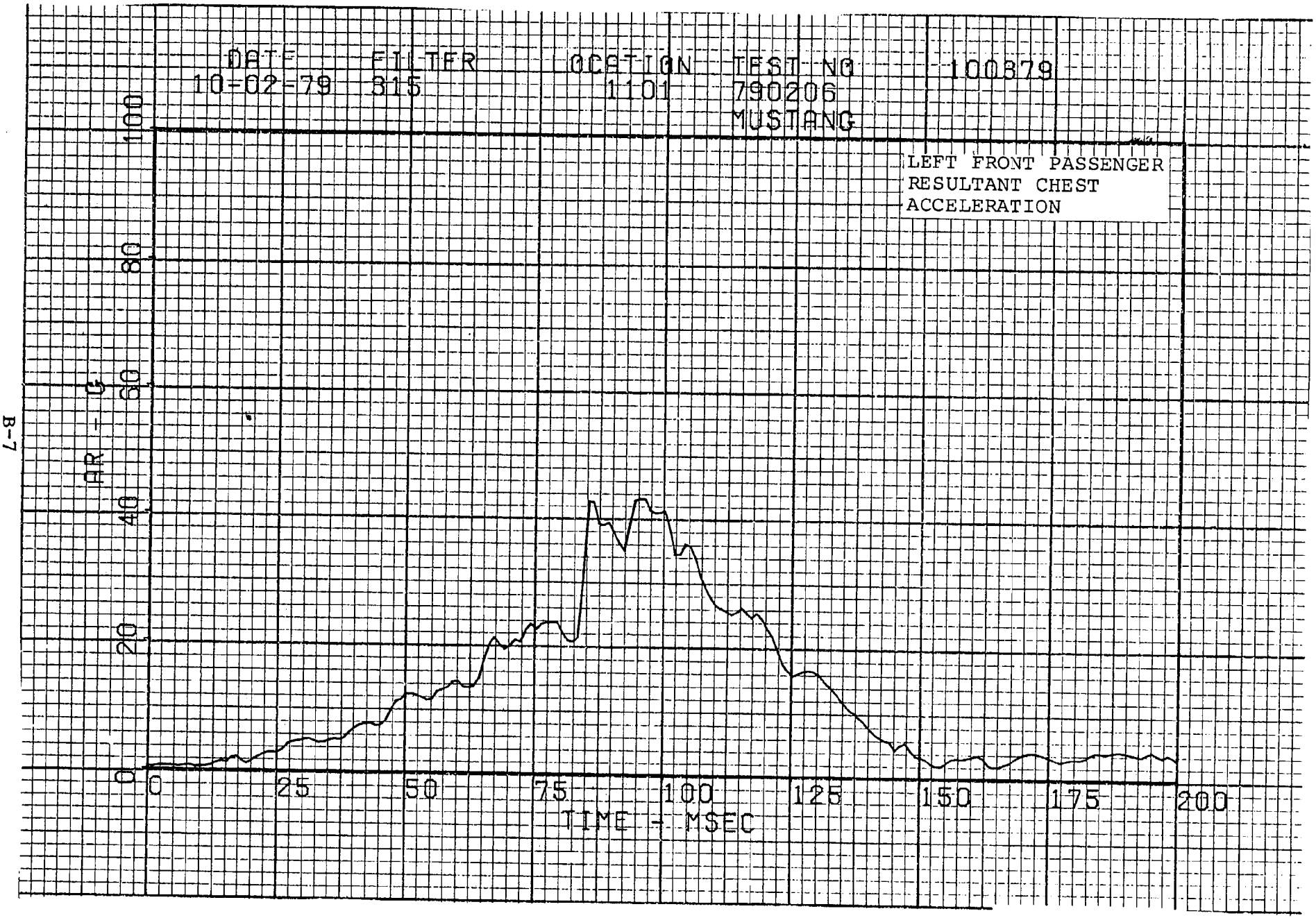
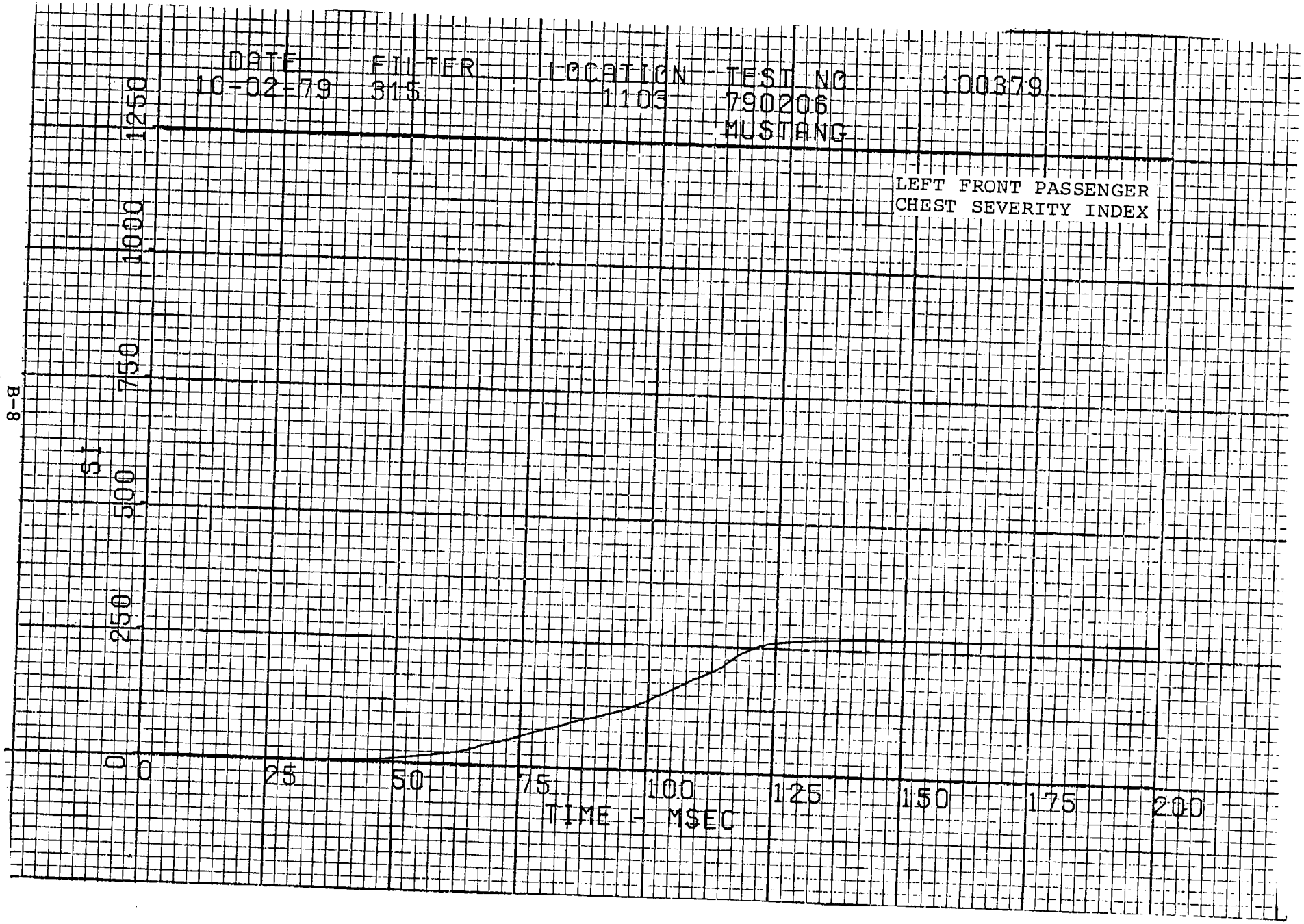
125
150
175
200
TIME - MSEC

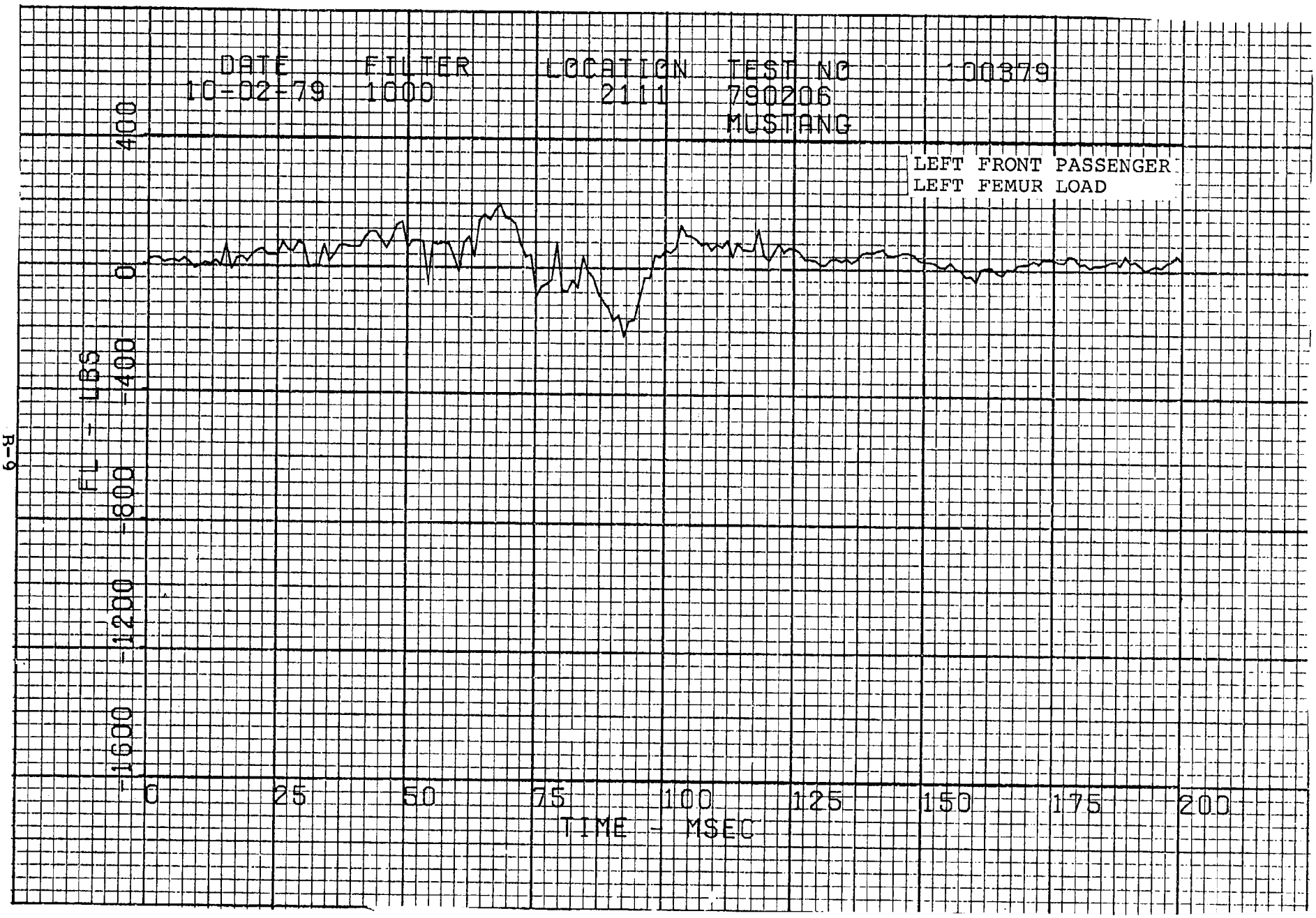

DATE
10-02-79
FILTER
1600
LOCATION
501
TEST NO
790206
MUSTANG
100379
LEFT FRONT PASSENGER
RESULTANT HEAD
ACCELERATION
ER - G
0
50
100
150
200
250
0
25
50
75
100
125
150
175
200
TIME - MSEC

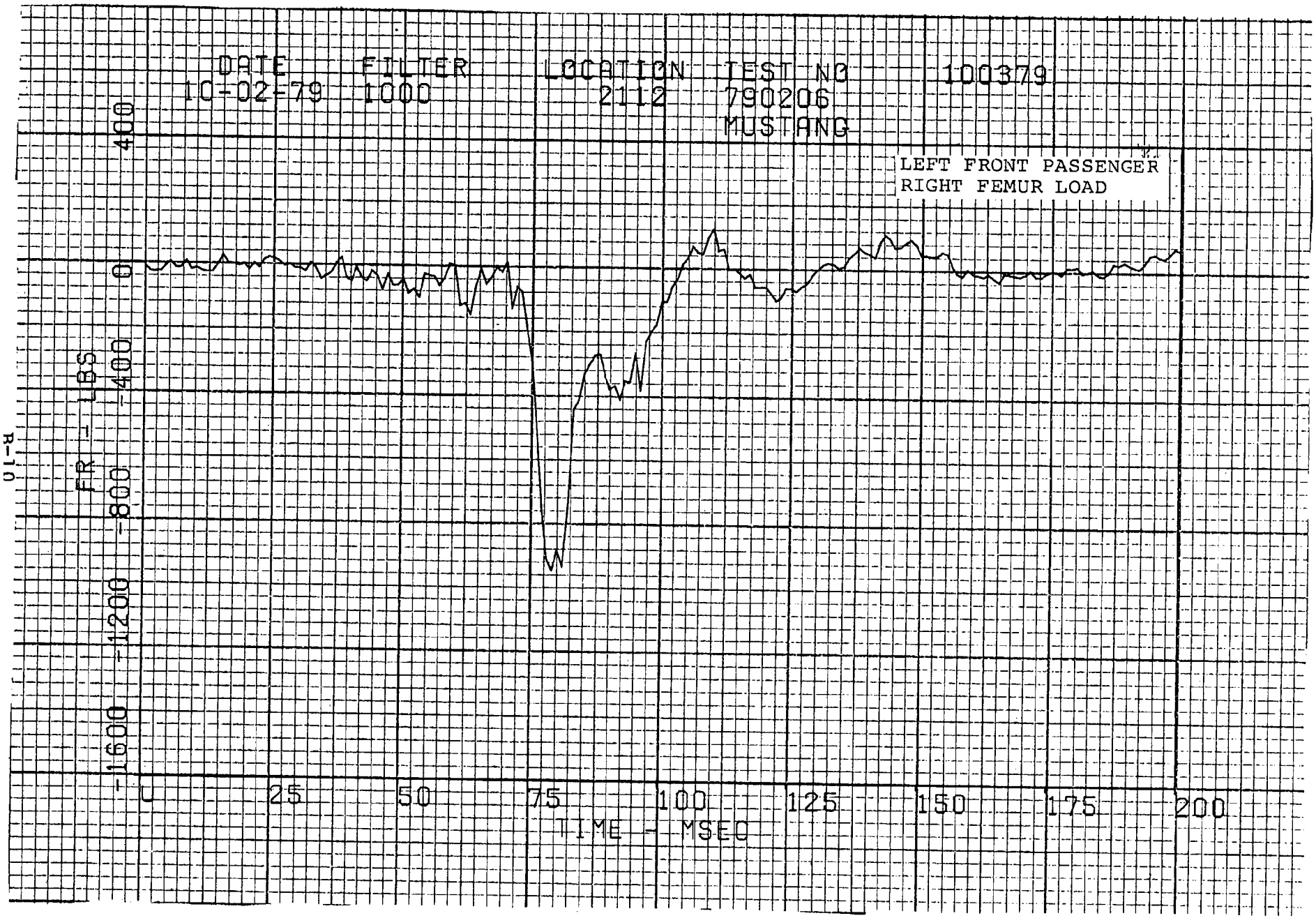

DATE
10-02-79
FILTER
315
LOCATION
1101
TEST NO
790206
MUSTANG
100379
LEFT FRONT PASSENGER
LONGITUDINAL CHEST
ACCELERATION
AX - G
0
-20
-40
-60
0
25
50
75
100
125
150
175
200
TIME - MSEC

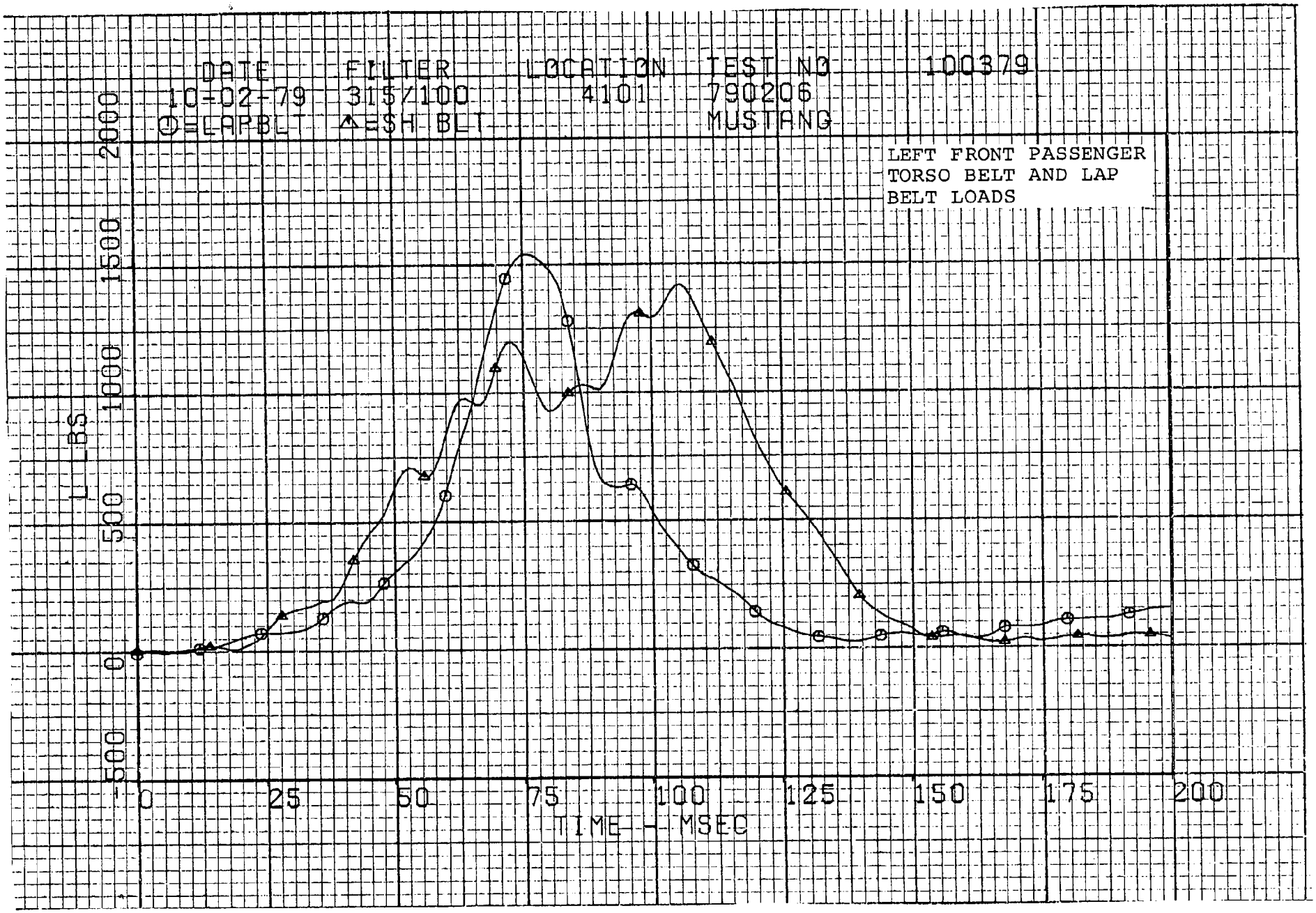

DATE
10-02-79
FILTER
315
LOCATION
1101
TEST NO
790206
MUSTANG
100379
O= AY
Δ= AZ
LEFT FRONT PASSENGER
LATERAL (Y) AND VERTICAL (Z)
CHEST ACCELERATION
ACCELERATION - G
40
20
0
-20
-40
-60
0
25
50
75
100
125
150
175
200
TIME - MSEC

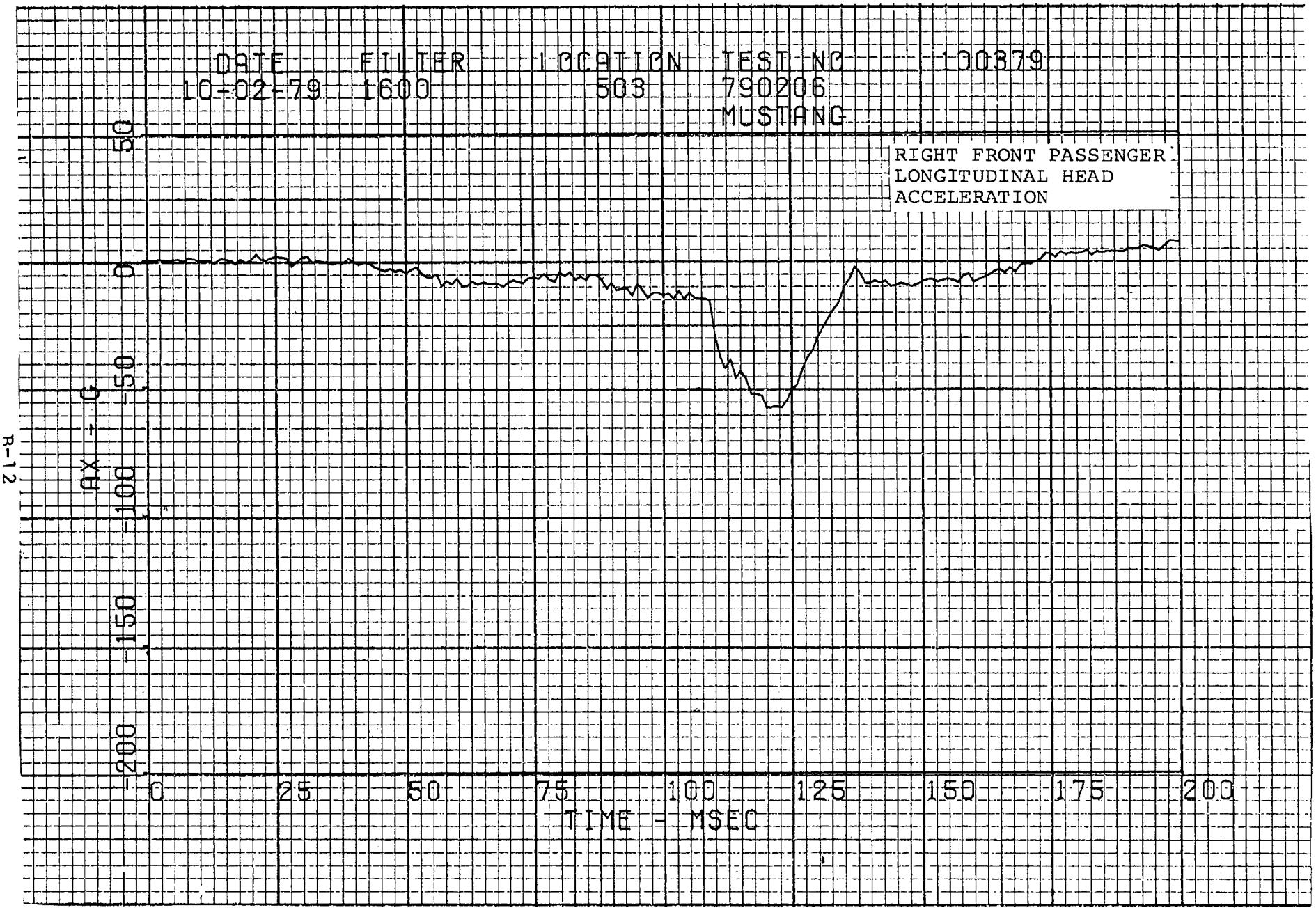

DATE
10-02-79
FILTER
315
OCCTION
1101
TEST NO
790206
MUSTANG
100379
LEFT FRONT PASSENGER
RESULTANT CHEST
ACCELERATION
AR - G
0
20
40
60
80
100
0
25
50
75
100
125
150
175
200
TIME - MSEC

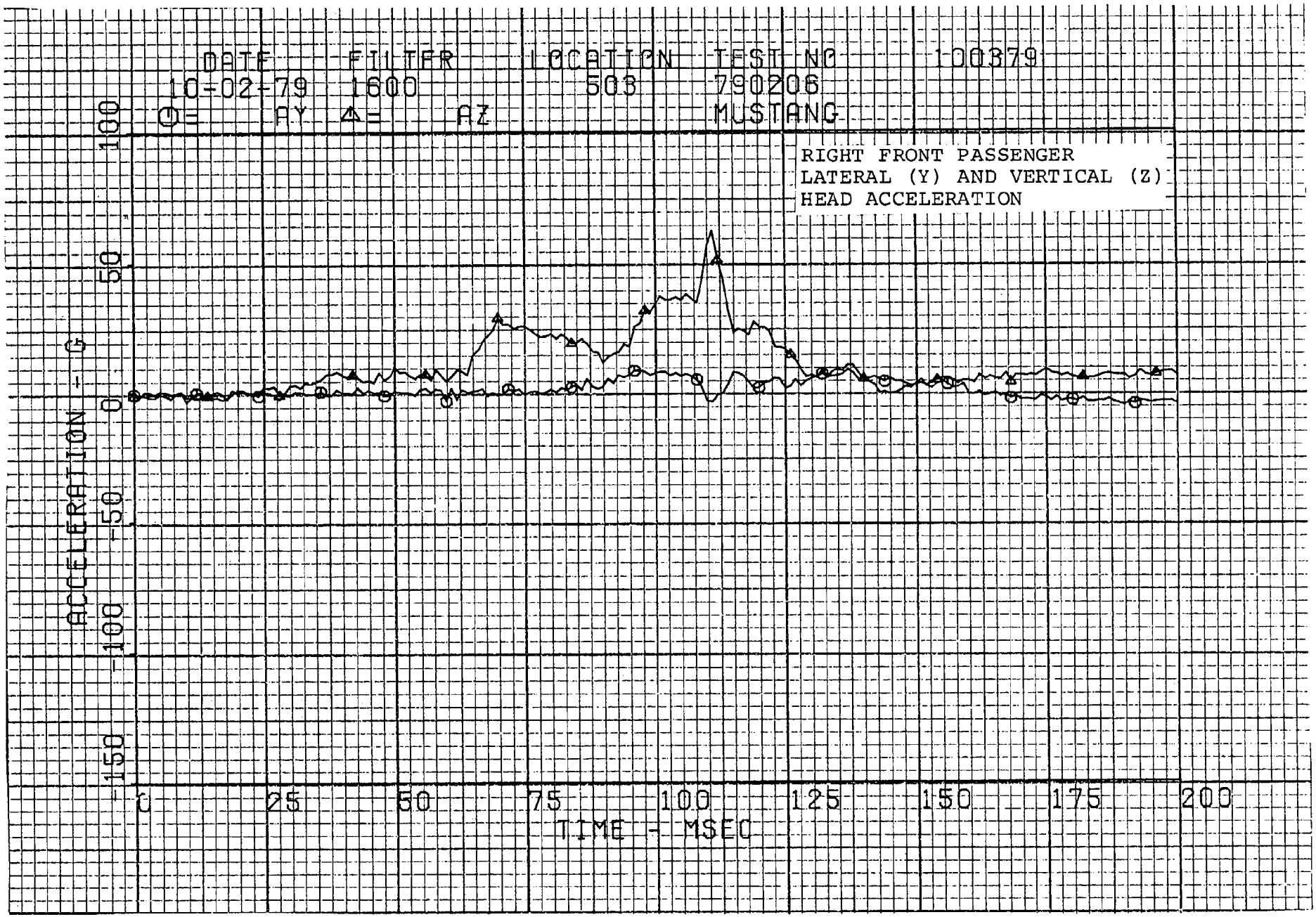

DATE
10-02-79
FILTER
315
LOCATION
1103
TEST NO
790206
MUSTANG
100379
LEFT FRONT PASSENGER
CHEST SEVERITY INDEX
1250
1000
750
500
250
0
SI
0
25
50
75
100
125
150
175
200
TIME - MSEC

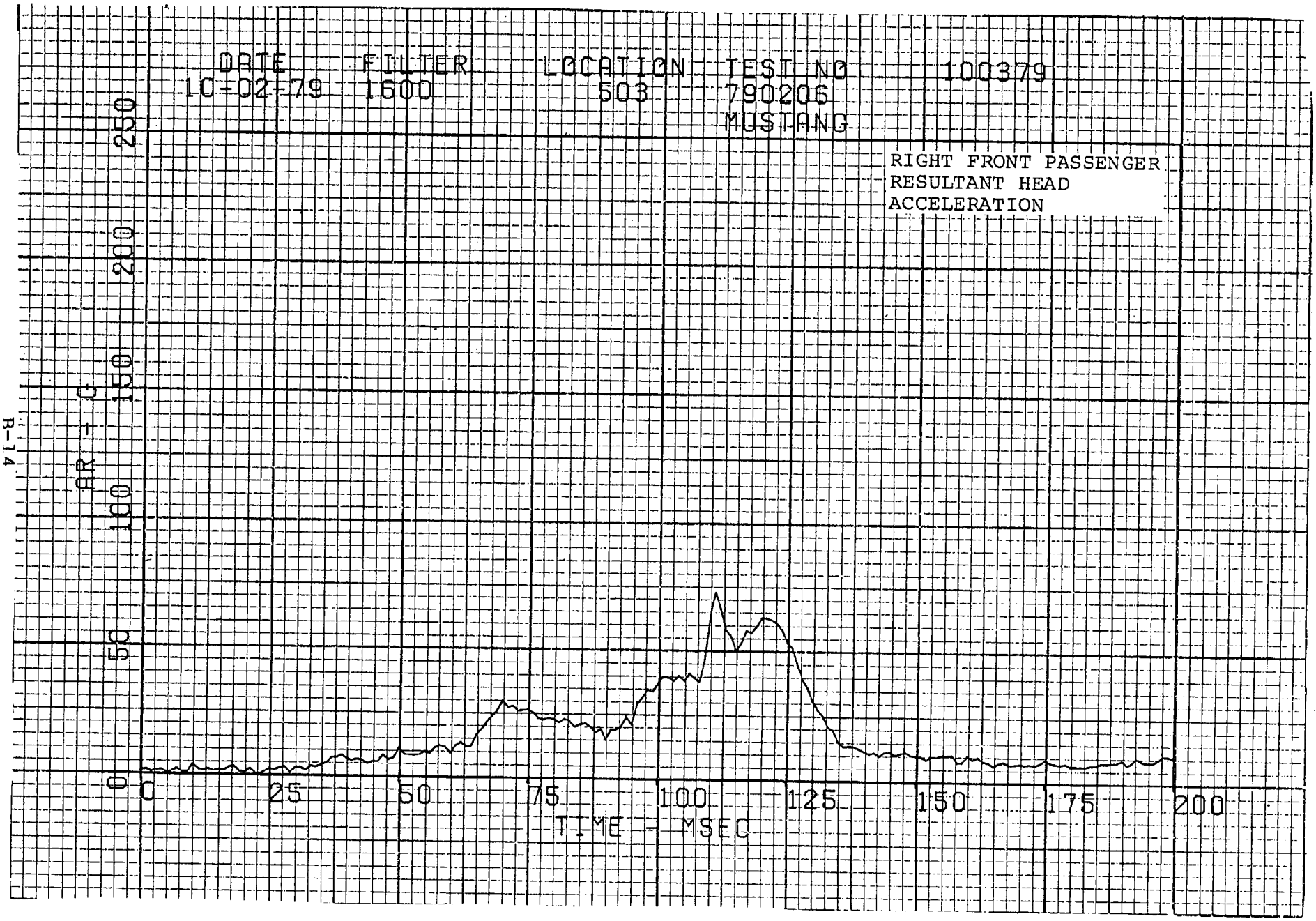

DATE
10-02-79
FILTER
1000
LOCATION
2111
TEST NO
790206
MUSTANG
100379
LEFT FRONT PASSENGER
LEFT FEMUR LOAD
FL - LBS
400
0
-400
-800
-1200
-1600
0
25
50
75
100
125
150
175
200
TIME - MSEC

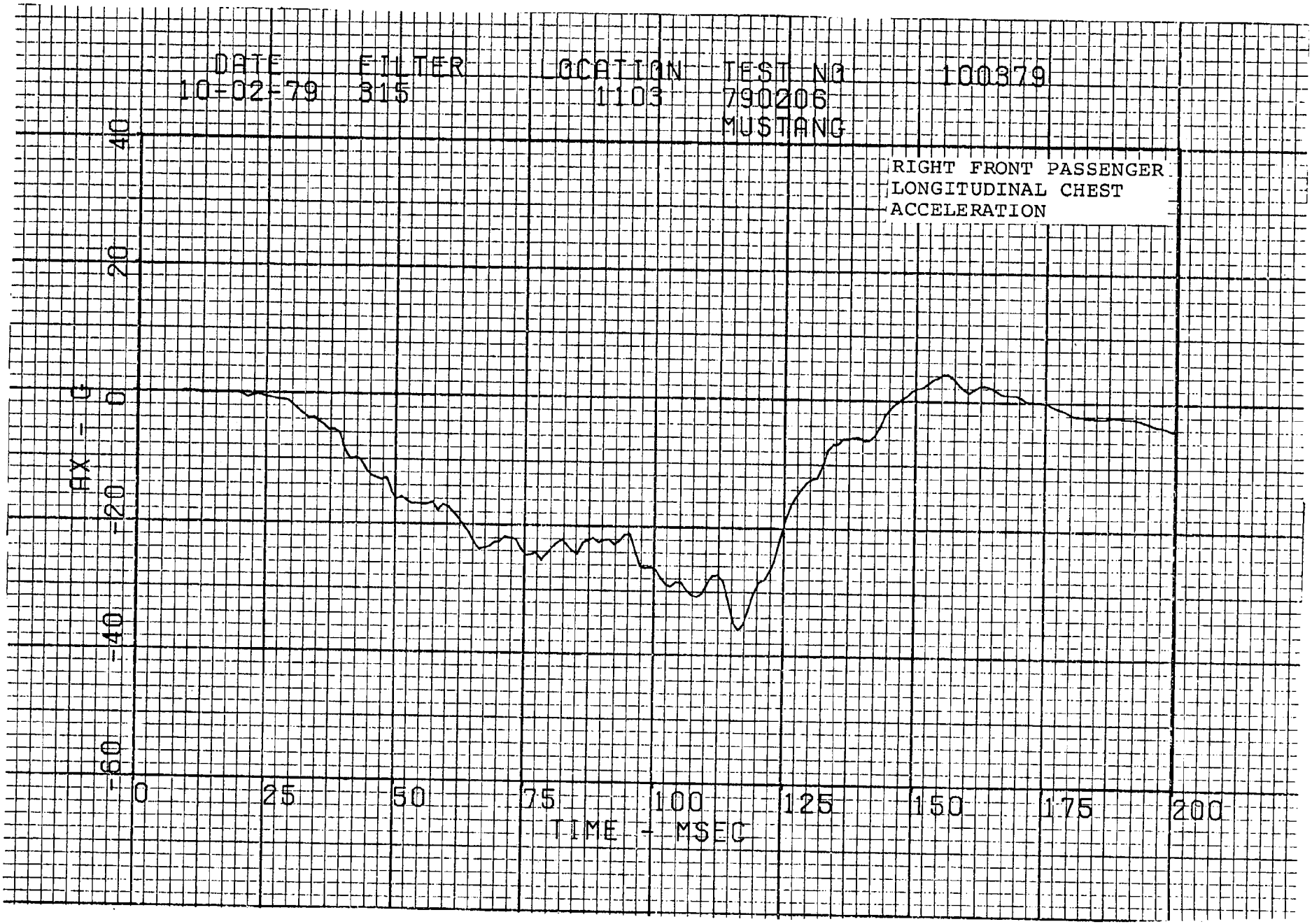

DATE
10-02-79
FILTER
1000
LOCATION
2112
TEST NO
790206
MUSTANG
100379
LEFT FRONT PASSENGER
RIGHT FEMUR LOAD
FR - LBS
400
0
-400
-800
-1200
-1600
0
25
50
75
100
125
150
175
200
TIME - MSEC

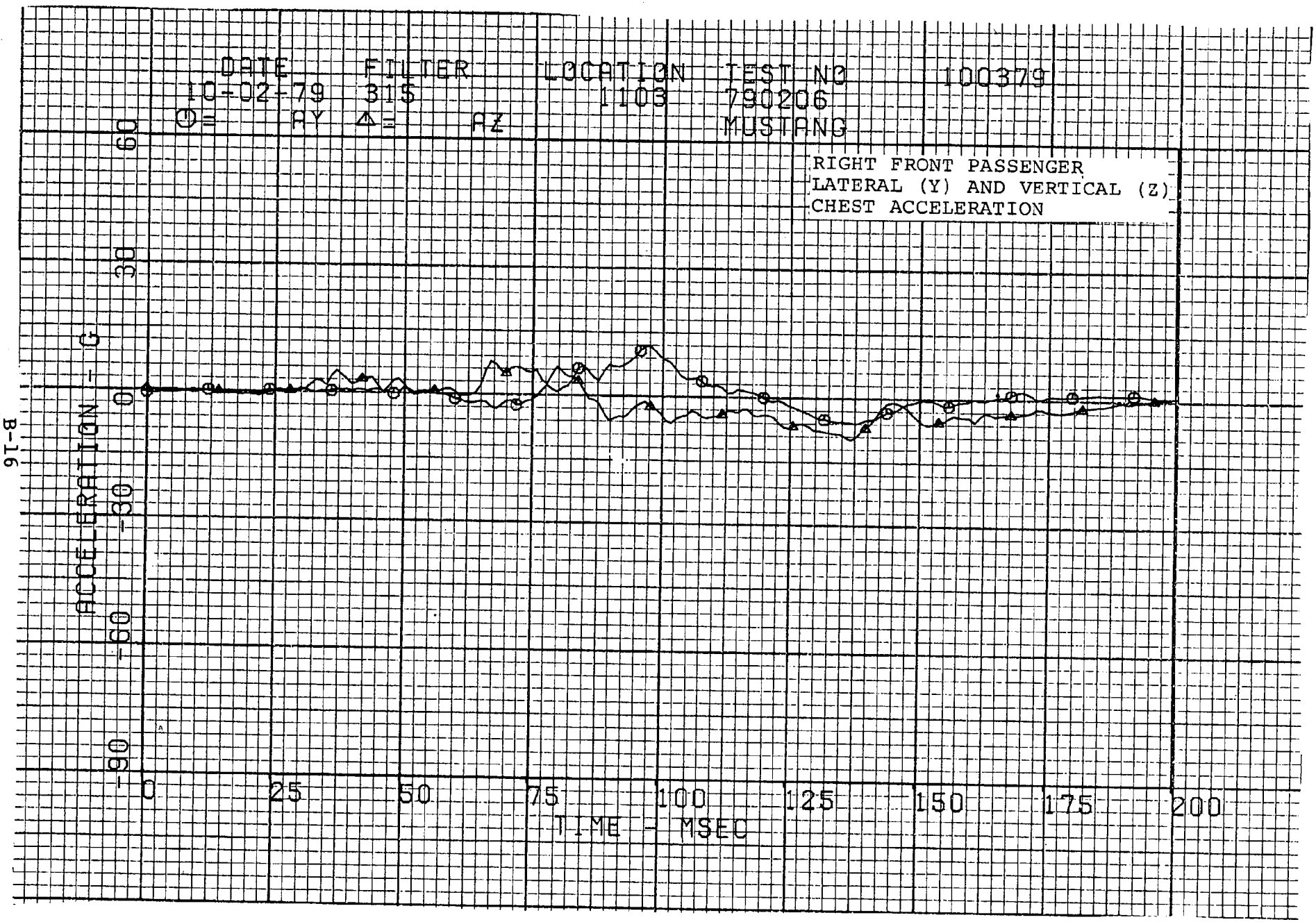

DATE
10-02-79
FILTER
315/100
LOCATION
4101
TEST NO
790206
MUSTANG
100379
⊖=LAPBLT
△=SH BLT
LEFT FRONT PASSENGER
TORSO BELT AND LAP
BELT LOADS
LBS
2000
1500
1000
500
0
500
0
25
50
75
100
125
150
175
200
TIME - MSEC

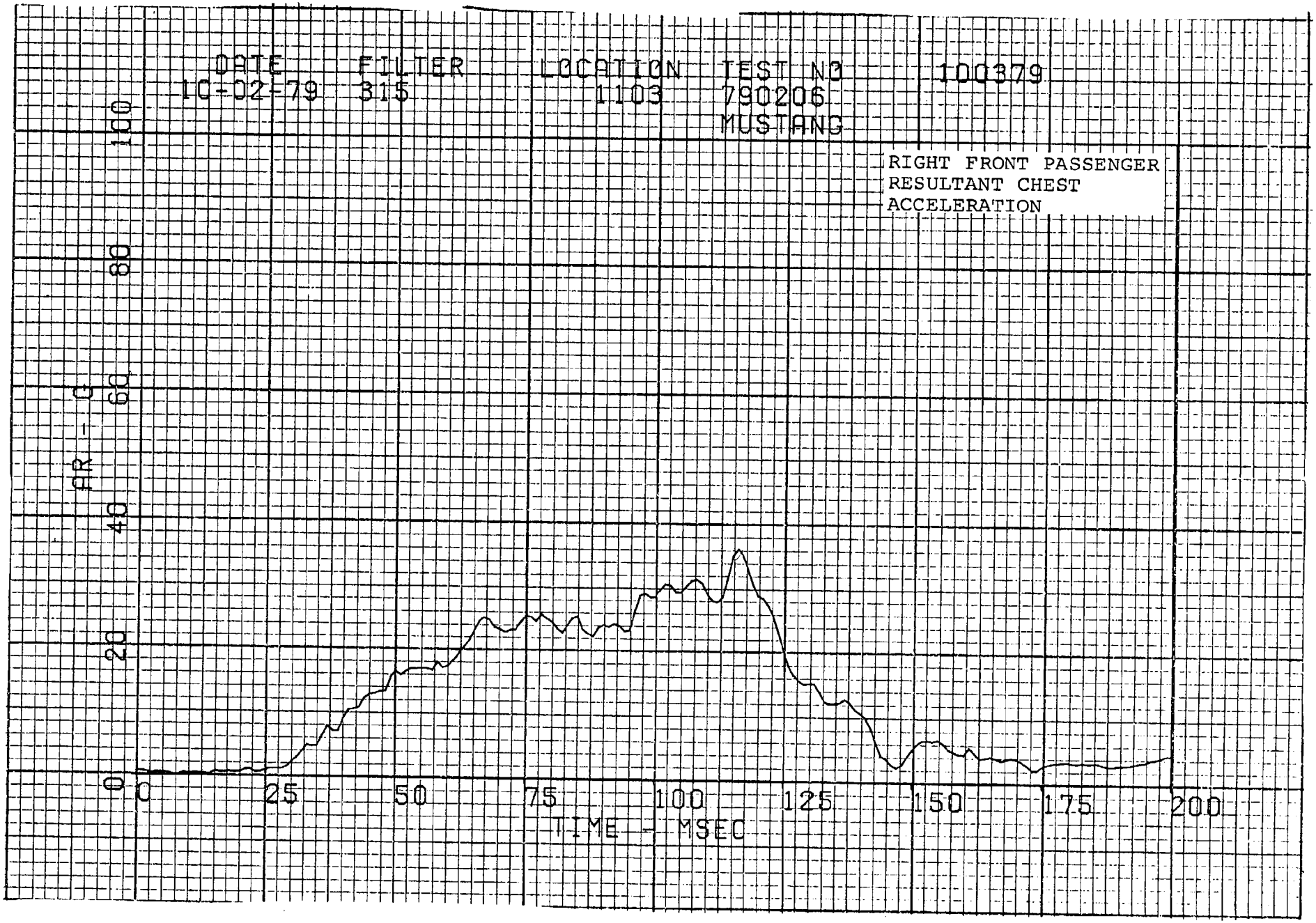

DATE
10-02-79
FILTER
1600
LOCATION
503
TEST NO
790206
MUSTANG
100379
RIGHT FRONT PASSENGER
LONGITUDINAL HEAD
ACCELERATION
AX - G
50
0
-50
-100
-150
-200
0
25
50
75
100
125
150
175
200
TIME - MSEC

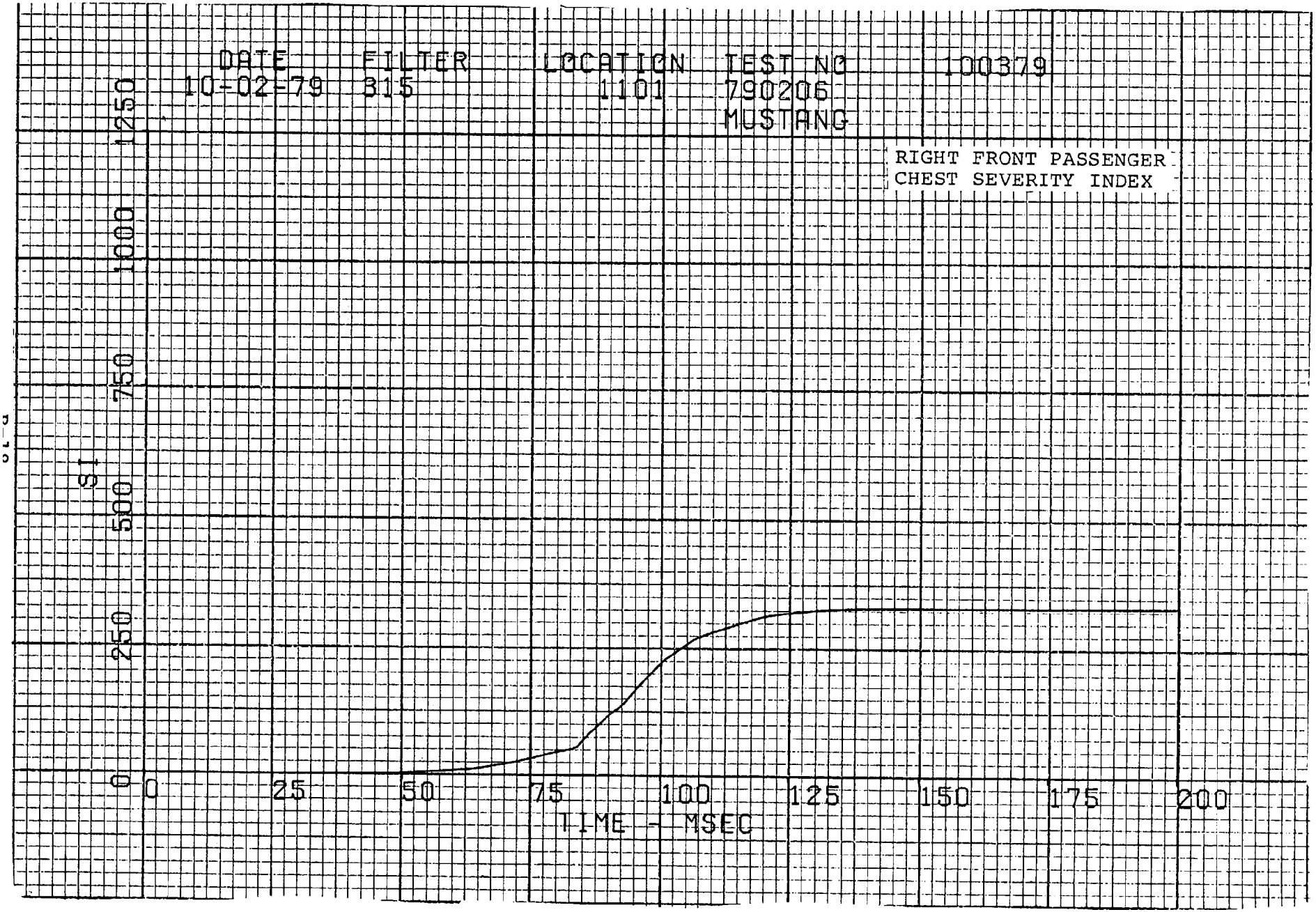

DATE
10-02-79
FILTER
1600
LOCATION
503
TEST NO
790206
100379
MUSTANG
Θ=
AY
Δ=
AZ
RIGHT FRONT PASSENGER
LATERAL (Y) AND VERTICAL (Z)
HEAD ACCELERATION
ACCELERATION - G
100
50
0
-50
-100
-150
0
25
50
75
100
125
150
175
200
TIME - MSEC

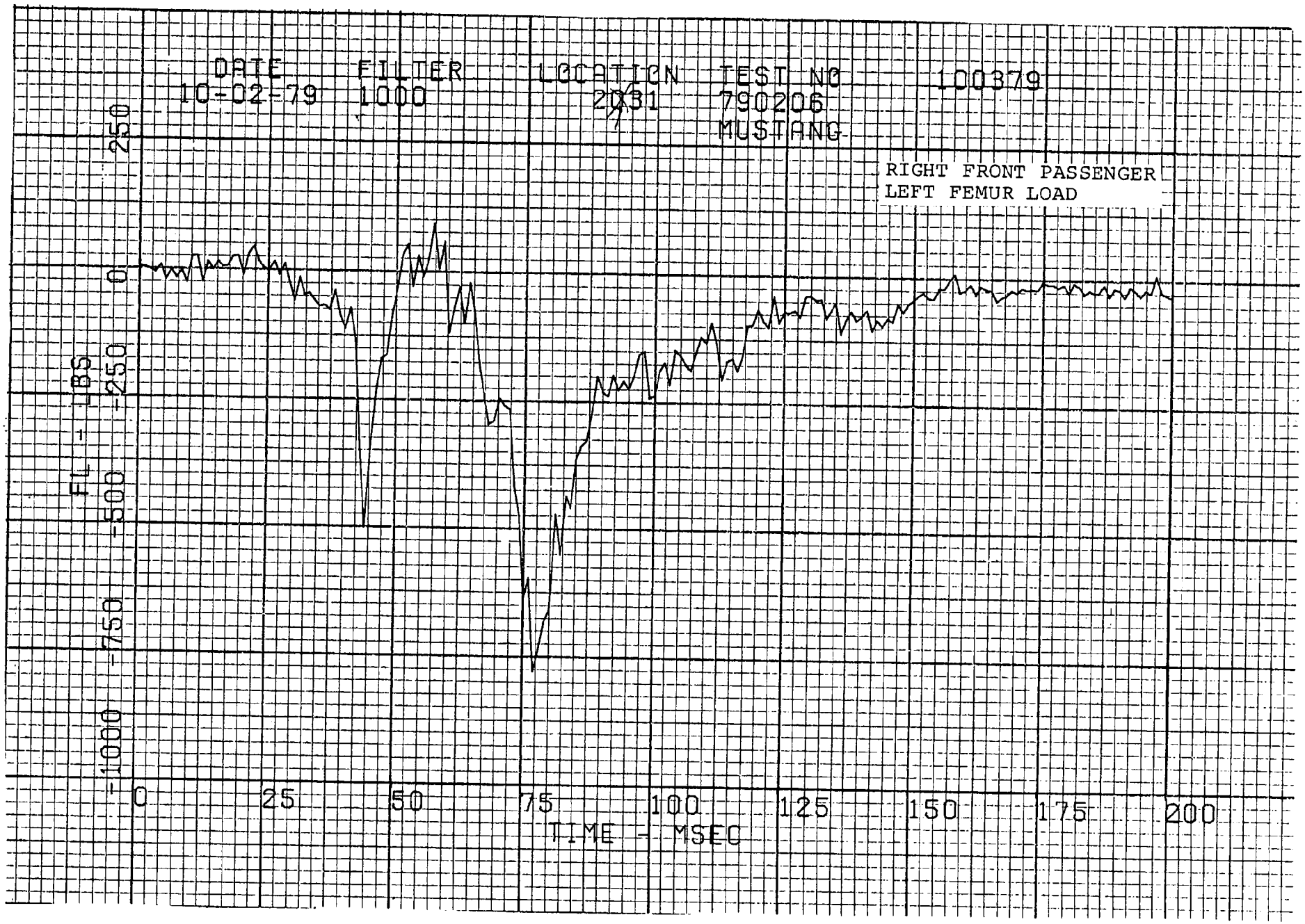

DATE
10-02-79
FILTER
1600
LOCATION
503
TEST NO
790206
MUSTANG
100379
RIGHT FRONT PASSENGER
RESULTANT HEAD
ACCELERATION
AR - G
0
50
100
150
200
250
0
25
50
75
100
125
150
175
200
TIME - MSEC

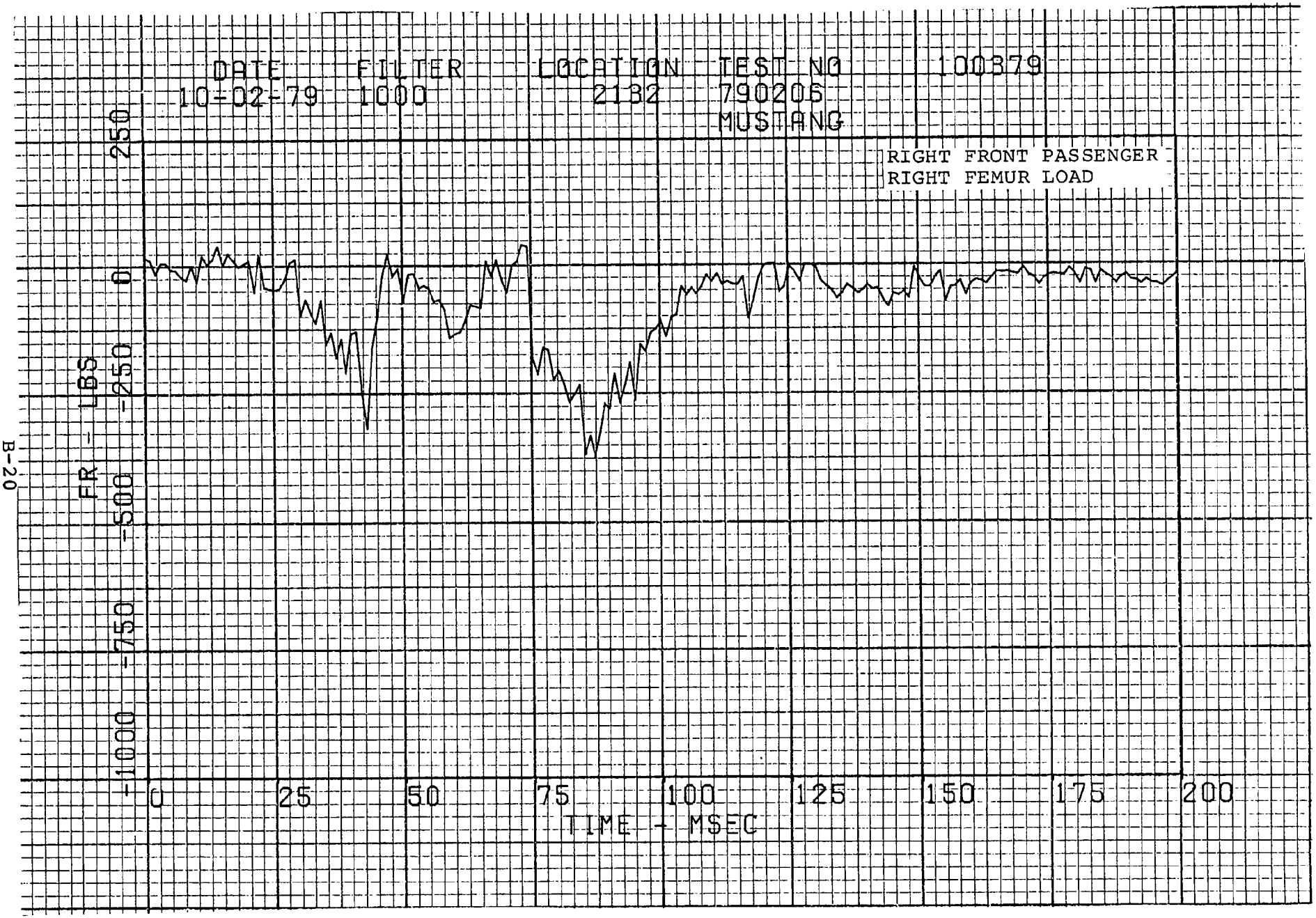

DATE
10-02-79
FILTER
315
LOCATION
1103
TEST NO
790206
MUSTANG
100379
RIGHT FRONT PASSENGER
LONGITUDINAL CHEST
ACCELERATION
-40
-20
0
-40
-60
ax - G
0
25
50
75
100
125
150
175
200
TIME - MSEC

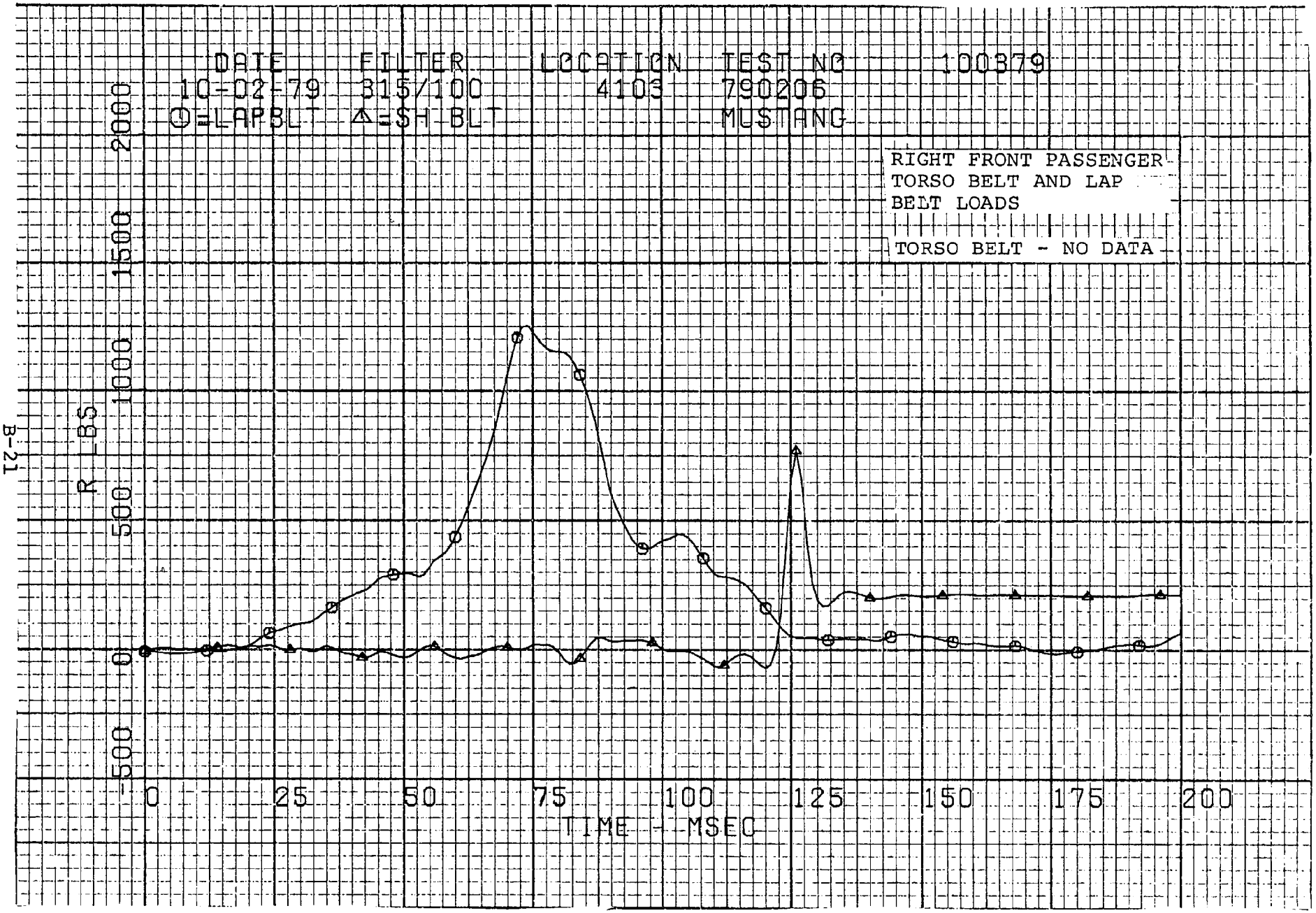

DATE
10-02-79
FILTER
315
LOCATION
1103
TEST NO
790206
100379
MUSTANG
RIGHT FRONT PASSENGER
LATERAL (Y) AND VERTICAL (Z)
CHEST ACCELERATION
ACCELERATION - G
-90
-60
-30
0
30
60
0
25
50
75
100
125
150
175
200
TIME - MSEC

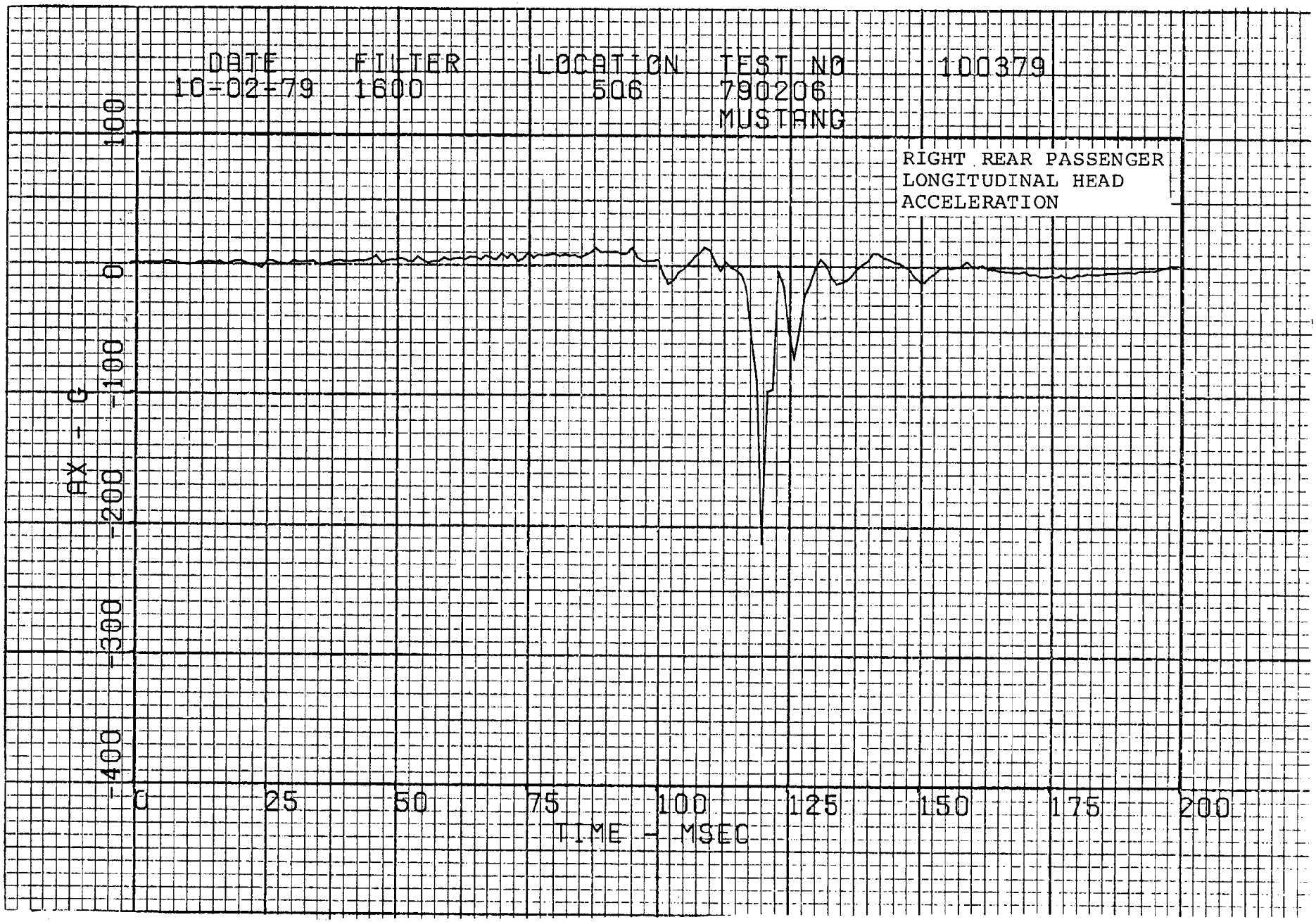

DATE
10-02-79
FILTER
315
LOCATION
1103
TEST NO
790206
MUSTANG
100379
RIGHT FRONT PASSENGER
RESULTANT CHEST
ACCELERATION
AR - G
0
20
40
60
80
100
0
25
50
75
100
125
150
175
200
TIME - MSEC

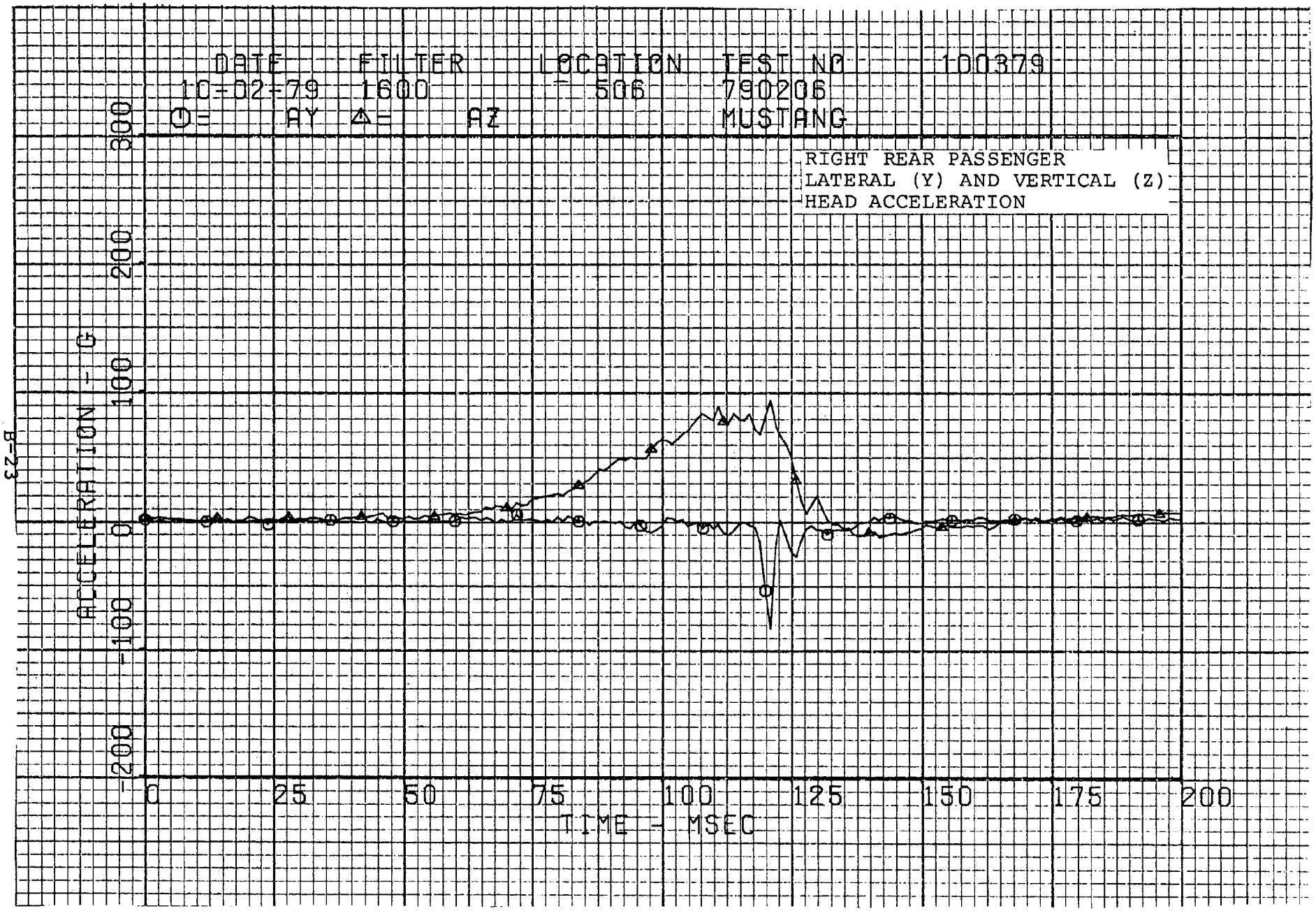

DATE
10-02-79
FILTER
315
LOCATION
1101
TEST NO
790206
MUSTANG
100379
RIGHT FRONT PASSENGER
CHEST SEVERITY INDEX
1250
1000
750
500
250
0
SI
0
25
50
75
100
125
150
175
200
TIME - MSEC

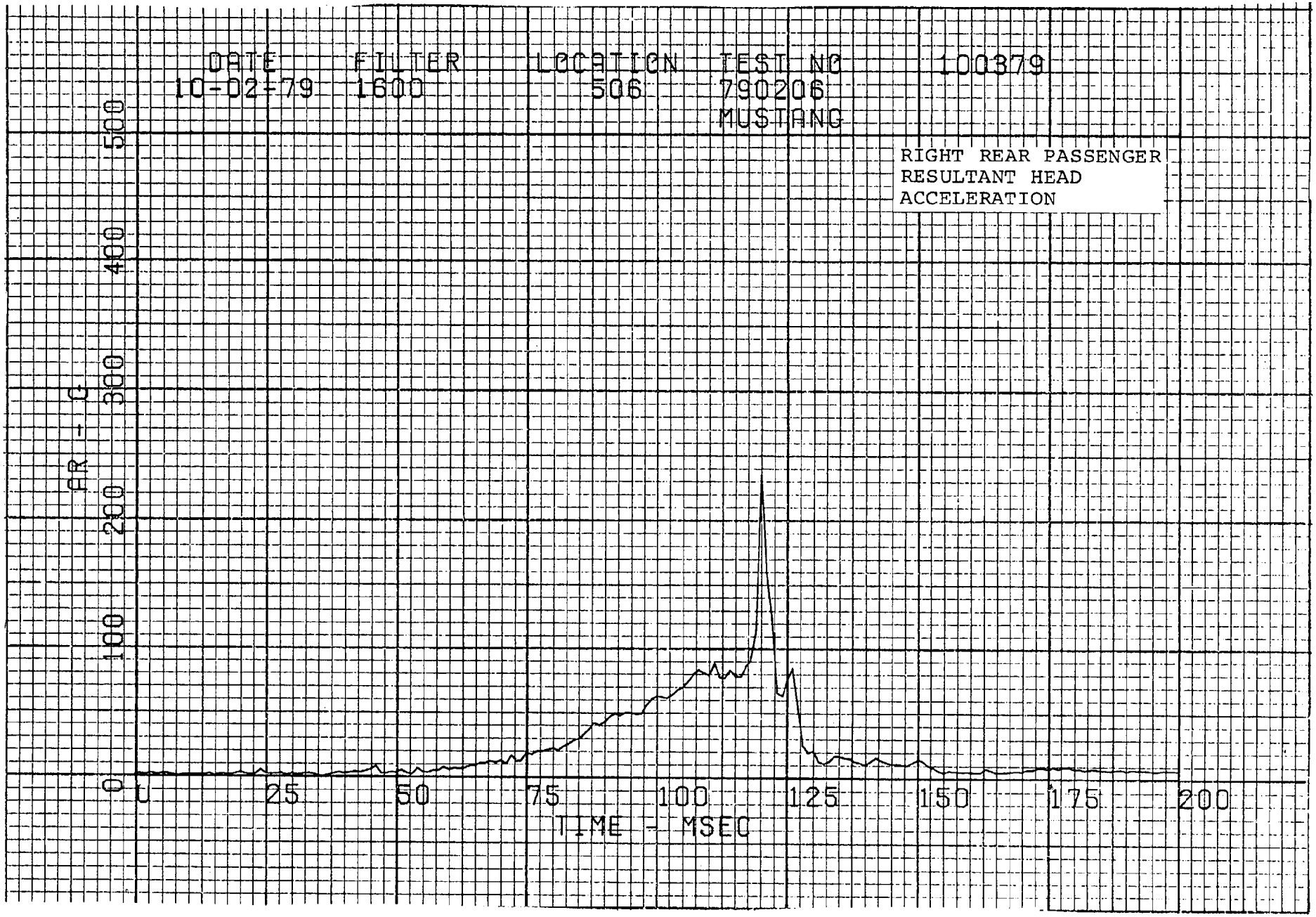

DATE
10-02-79
FILTER
1000
LOCATION
2031
TEST NO
790206
MUSTANG
100379
RIGHT FRONT PASSENGER
LEFT FEMUR LOAD
FL - LBS
250
0
-250
-500
-750
-1000
0
25
50
75
100
125
150
175
200
TIME - MSEC

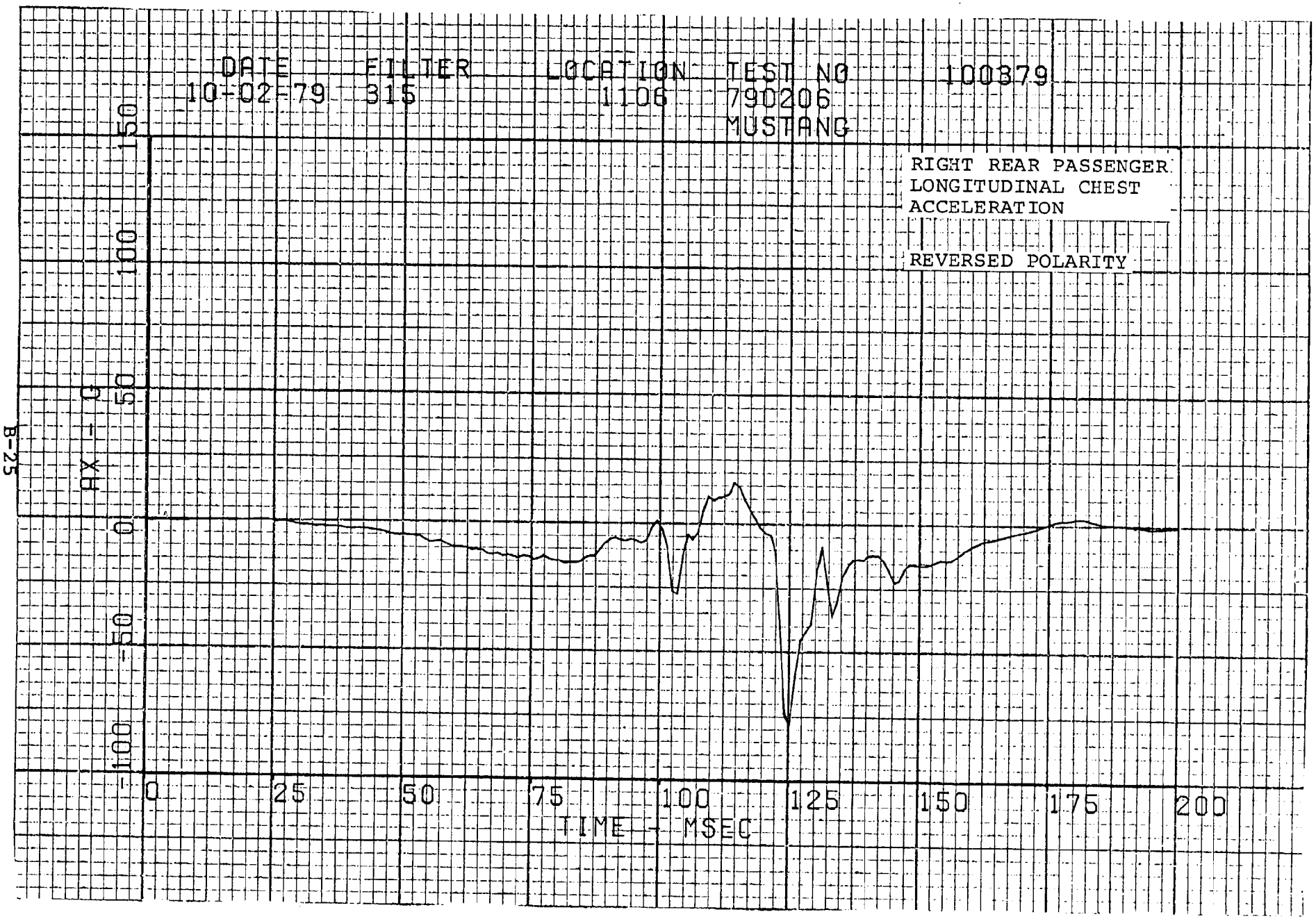

DATE
10-02-79
FILTER
1000
LOCATION
2132
TEST NO
790206
MUSTANG
100379
RIGHT FRONT PASSENGER
RIGHT FEMUR LOAD
FR - LBS
250
0
-250
-500
-750
-1000
0
25
50
75
100
125
150
175
200
TIME - MSEC

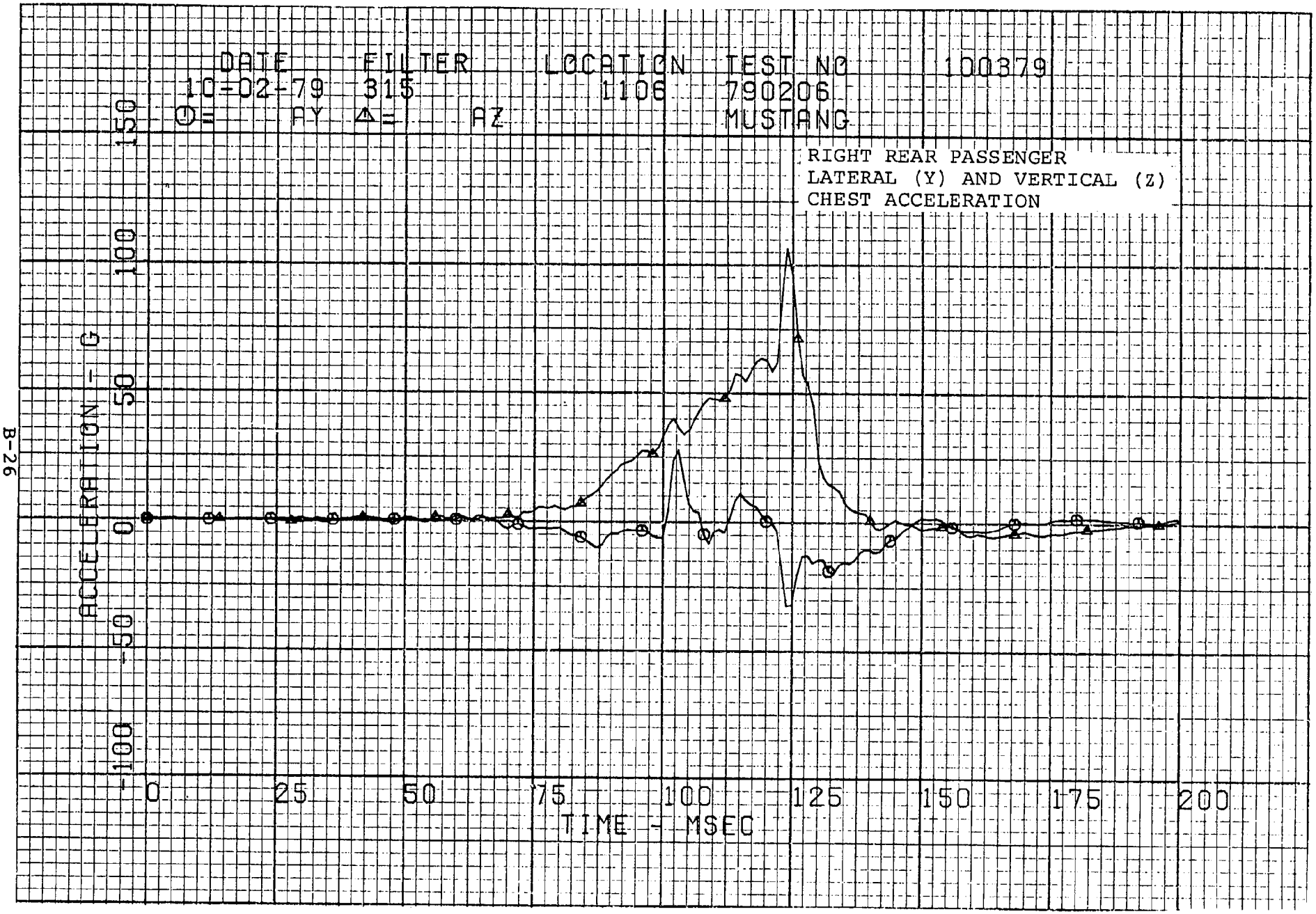

DATE
10-02-79
⊙=LAPBLT
FILTER
315/100
△=SH BLT
LOCATION
4103
TEST NO
790206
MUSTANG
100379
RIGHT FRONT PASSENGER
TORSO BELT AND LAP
BELT LOADS
TORSO BELT - NO DATA
R LBS
2000
1500
1000
500
0
-500
0
25
50
75
100
125
150
175
200
TIME - MSEC

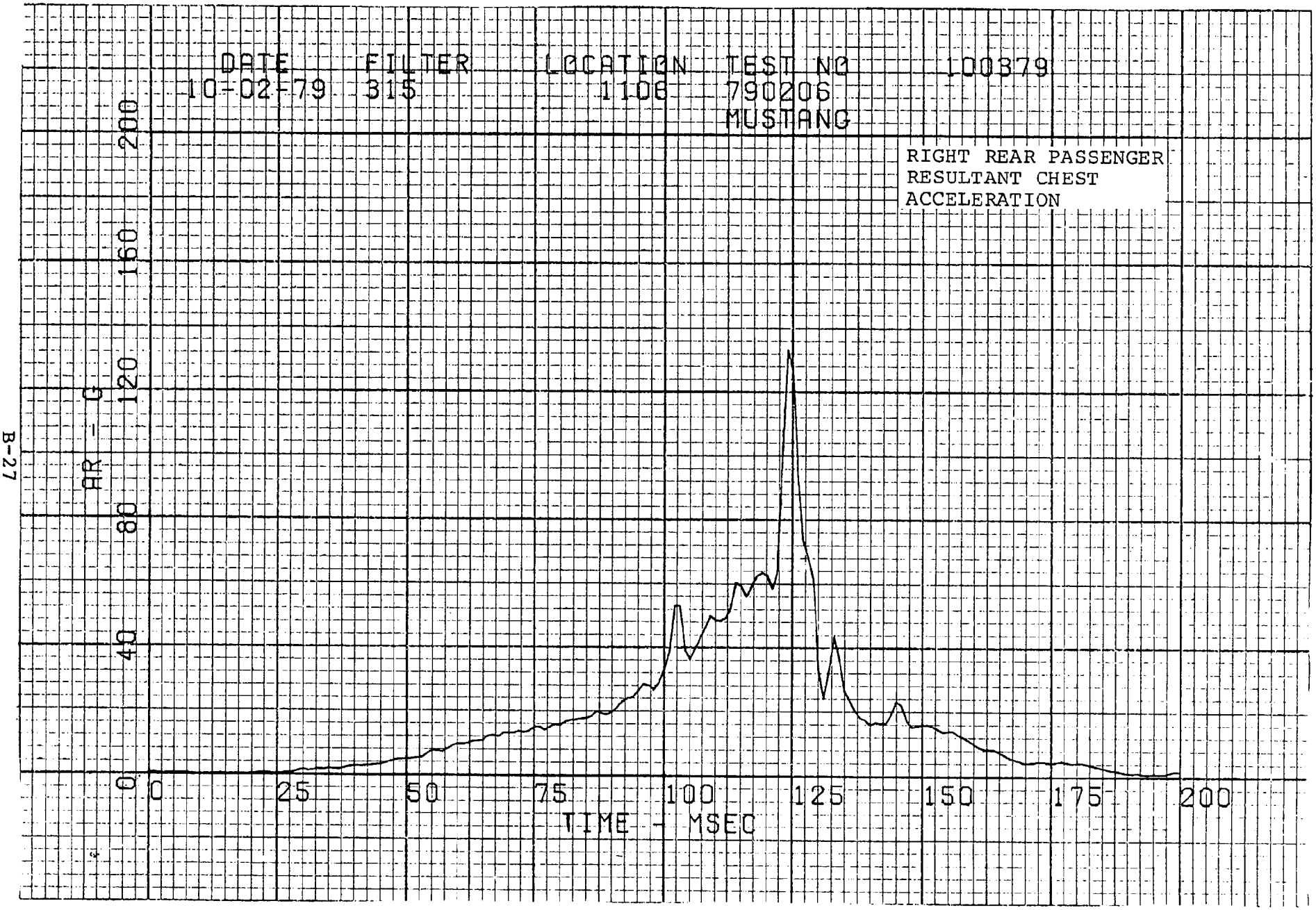

DATE
10-02-79
FILTER
1600
LOCATION
506
TEST NO
790206
MUSTANG
100379
RIGHT REAR PASSENGER
LONGITUDINAL HEAD
ACCELERATION
100
0
-100
-200
-300
-400
EX - G
0
25
50
75
100
125
150
175
200
TIME - MSEC

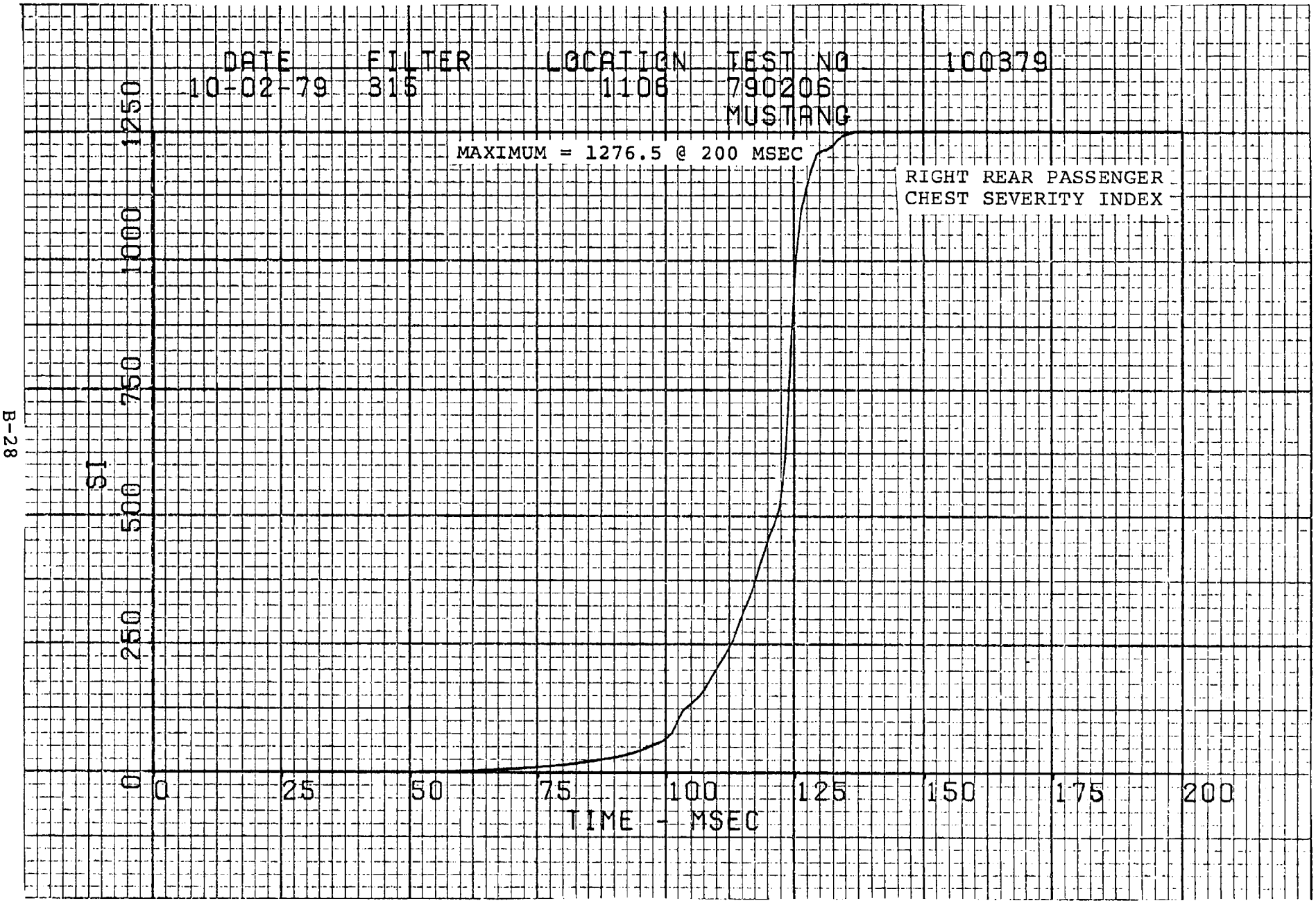

DATE
10-02-79
FILTER
1600
LOCATION
506
TEST NO
790206
100379
MUSTANG
Θ=
AY
Δ=
AZ
RIGHT REAR PASSENGER
LATERAL (Y) AND VERTICAL (Z)
HEAD ACCELERATION
ACCELERATION - G
300
200
100
0
-100
-200
0
25
50
75
100
125
150
175
200
TIME - MSEC

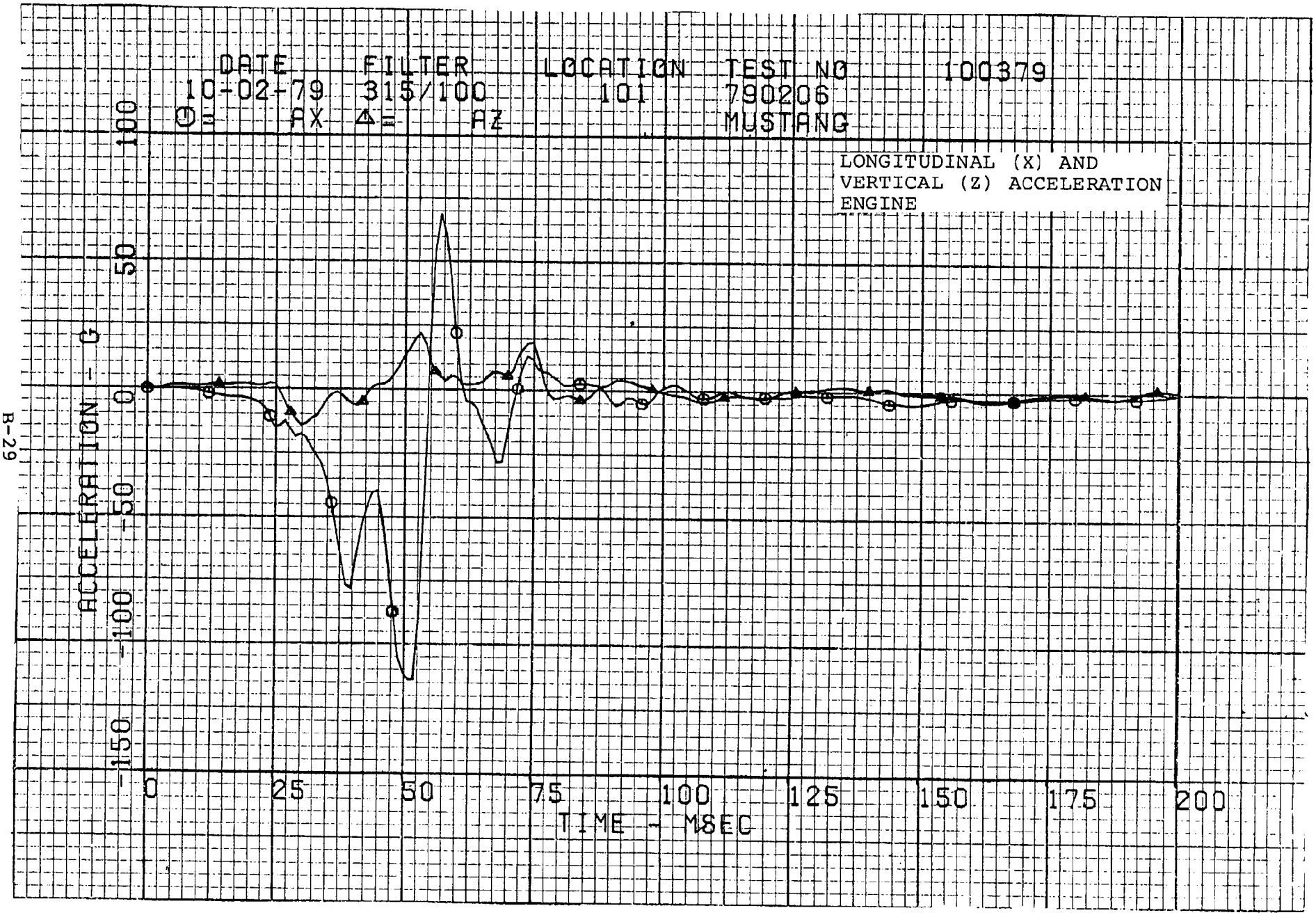

DATE
10-02-79
FILTER
1600
LOCATION
506
TEST NO
790206
MUSTANG
100379
RIGHT REAR PASSENGER
RESULTANT HEAD
ACCELERATION
RR - G
0
100
200
300
400
500
0
25
50
75
100
125
150
175
200
TIME - MSEC

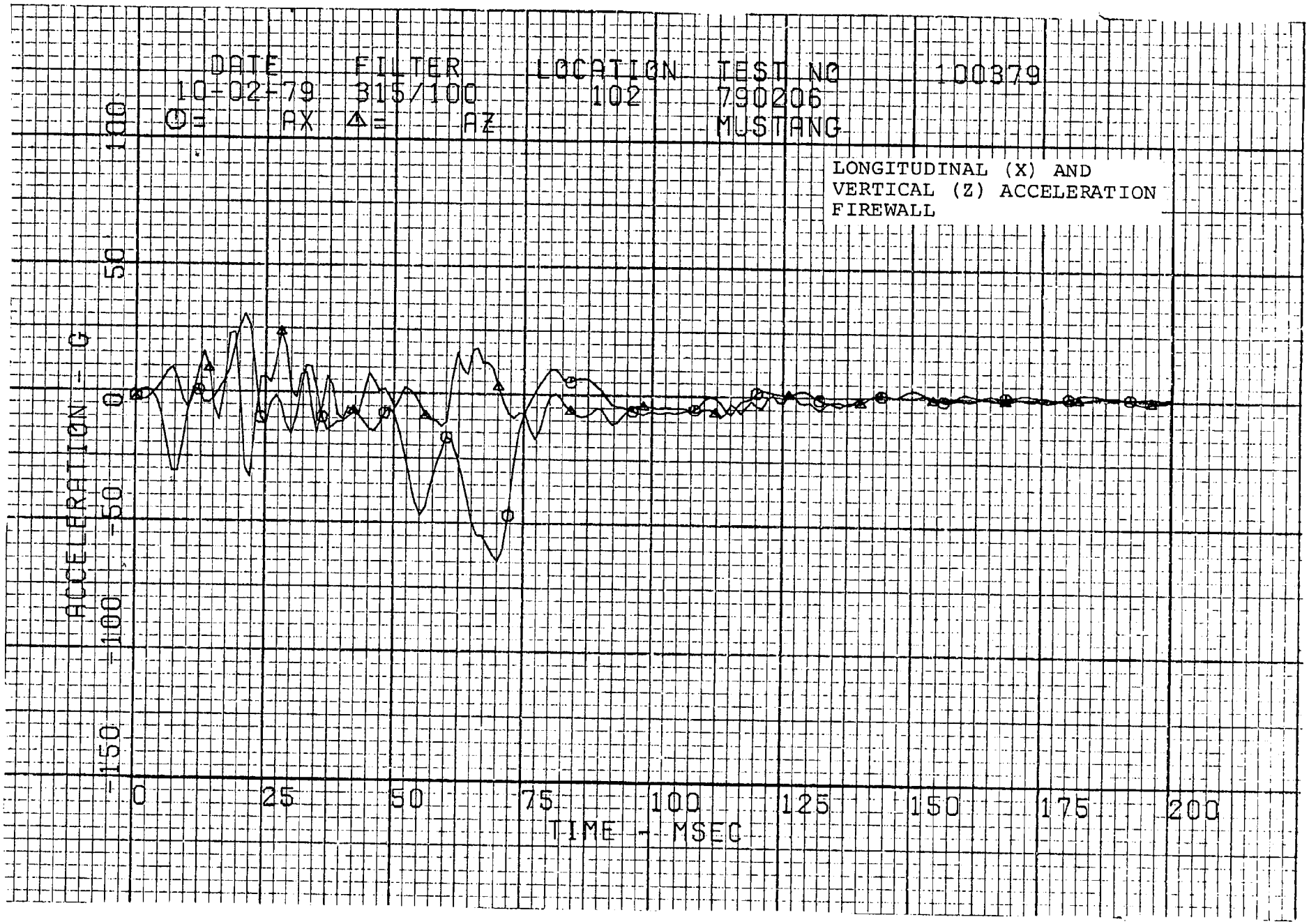

DATE
10-02-79
FILTER
315
LOCATION
1106
TEST NO
790206
MUSTANG
100379
RIGHT REAR PASSENGER
LONGITUDINAL CHEST
ACCELERATION
REVERSED POLARITY
AX - G
150
100
50
0
-50
-100
0
25
50
75
100
125
150
175
200
TIME - MSEC

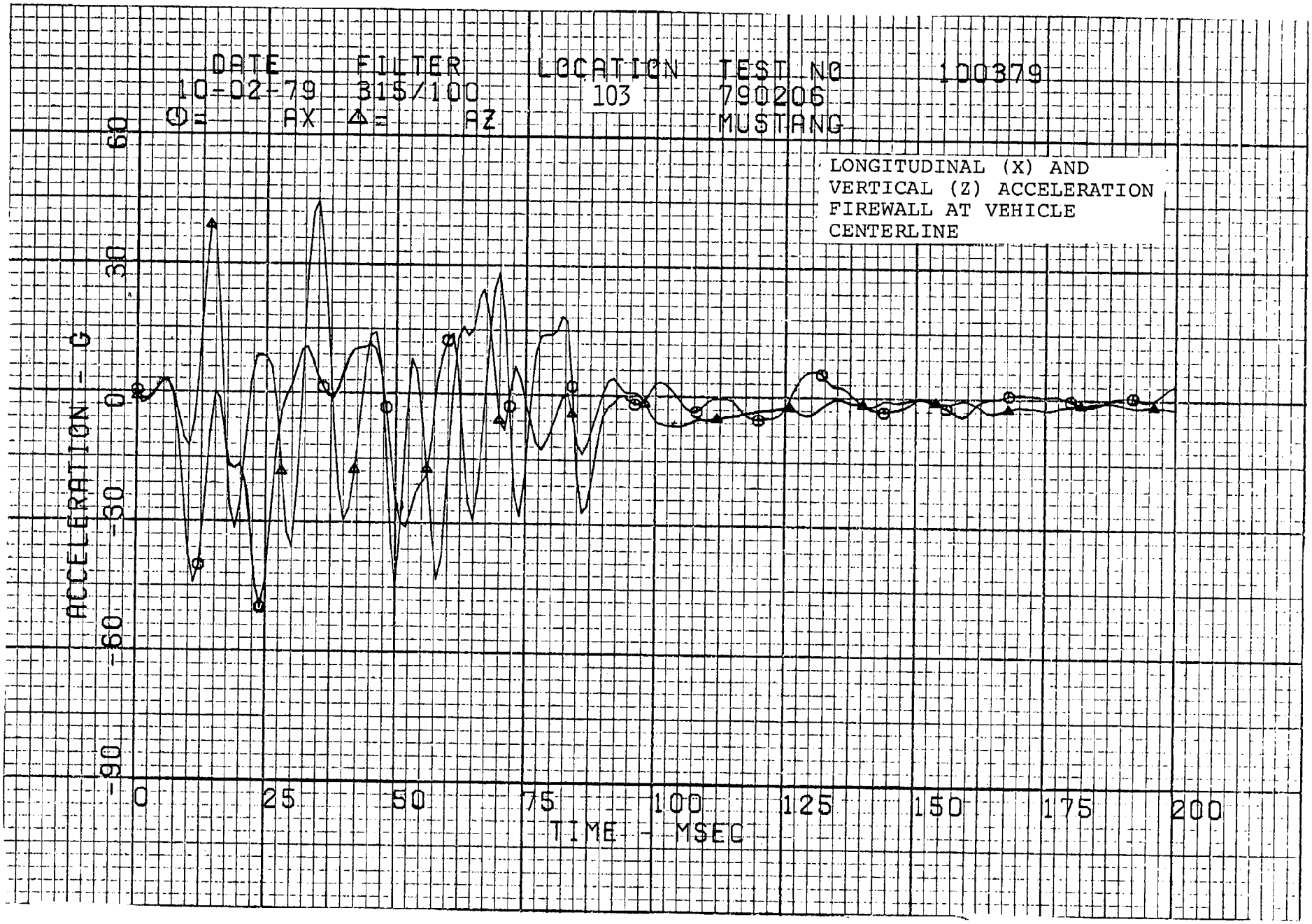

DATE
10-02-79
FILTER
315
LOCATION
1106
TEST NO
790206
100379
MUSTANG
① = AY
△ = AZ
RIGHT REAR PASSENGER
LATERAL (Y) AND VERTICAL (Z)
CHEST ACCELERATION
ACCELERATION - G
150
100
50
0
-50
-100
0
25
50
75
100
125
150
175
200
TIME - MSEC

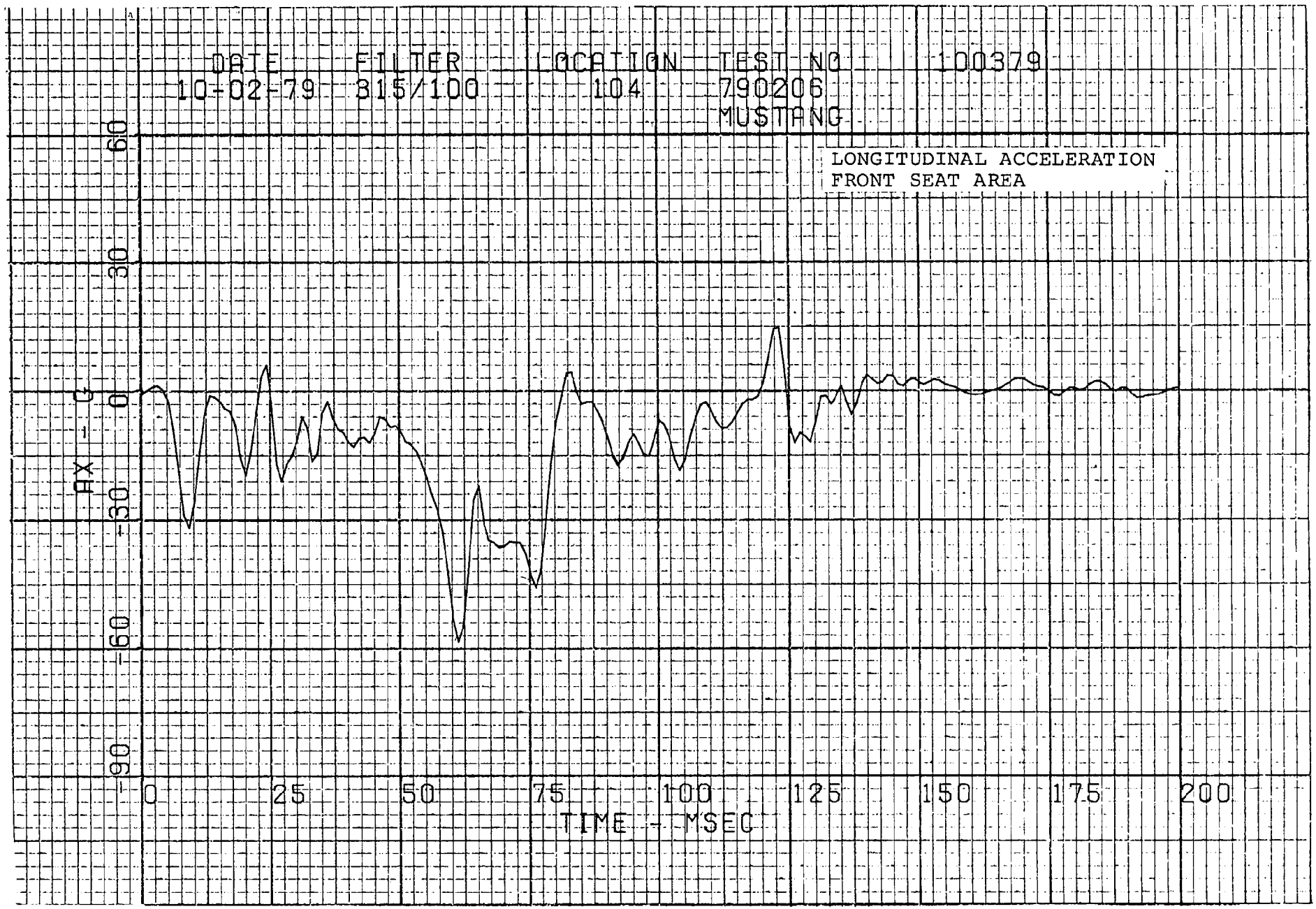

DATE
10-02-79
FILTER
315
LOCATION
1106
TEST NO
790206
MUSTANG
100379
RIGHT REAR PASSENGER
RESULTANT CHEST
ACCELERATION
AR - G
0
40
80
120
160
200
0
25
50
75
100
125
150
175
200
TIME - MSEC

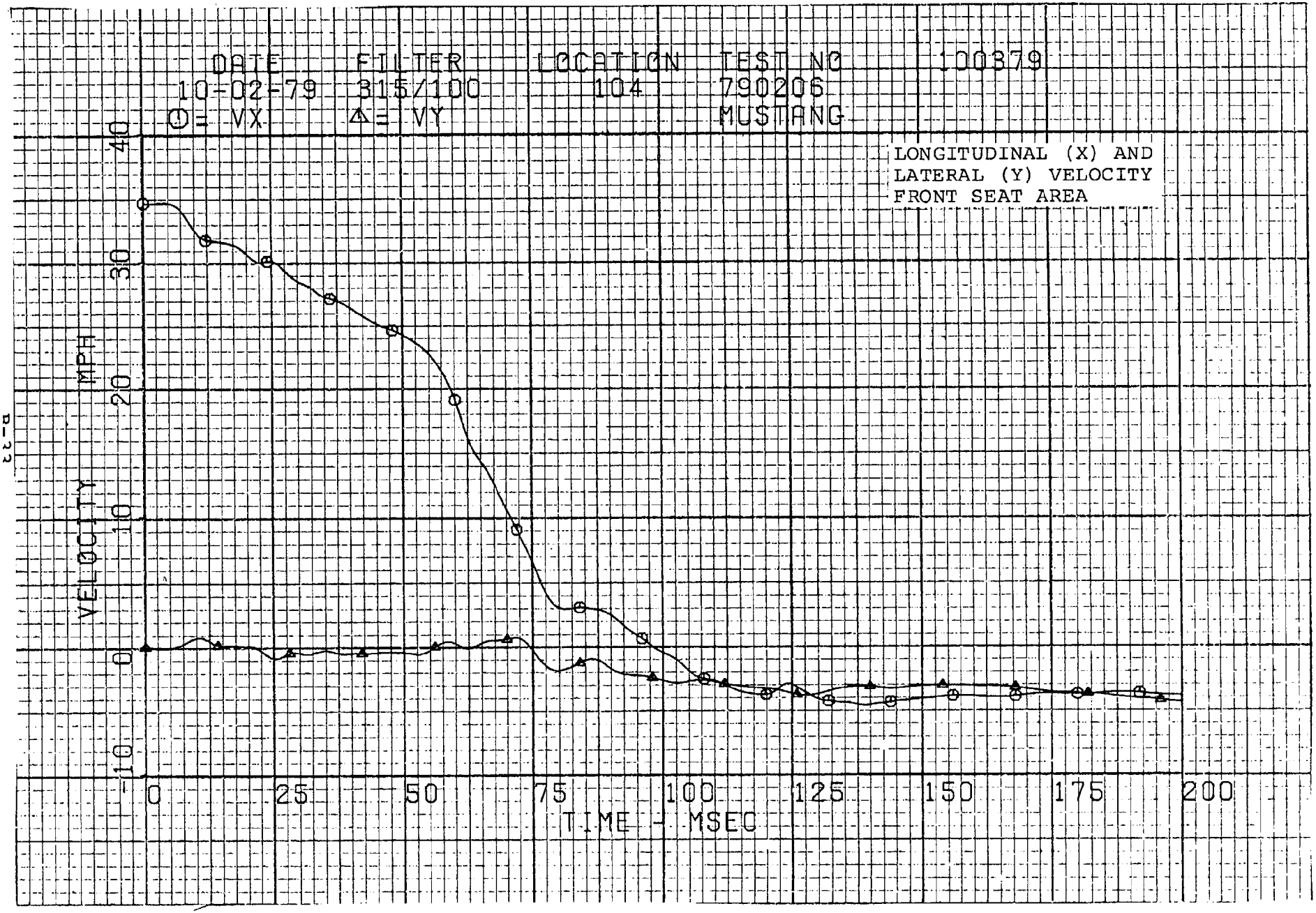

DATE
10-02-79
FILTER
315
LOCATION
1106
TEST NO
790206
MUSTANG
100379
MAXIMUM = 1276.5 @ 200 MSEC
RIGHT REAR PASSENGER
CHEST SEVERITY INDEX
IS
0
250
500
750
1000
1250
0
25
50
75
100
125
150
175
200
TIME - MSEC

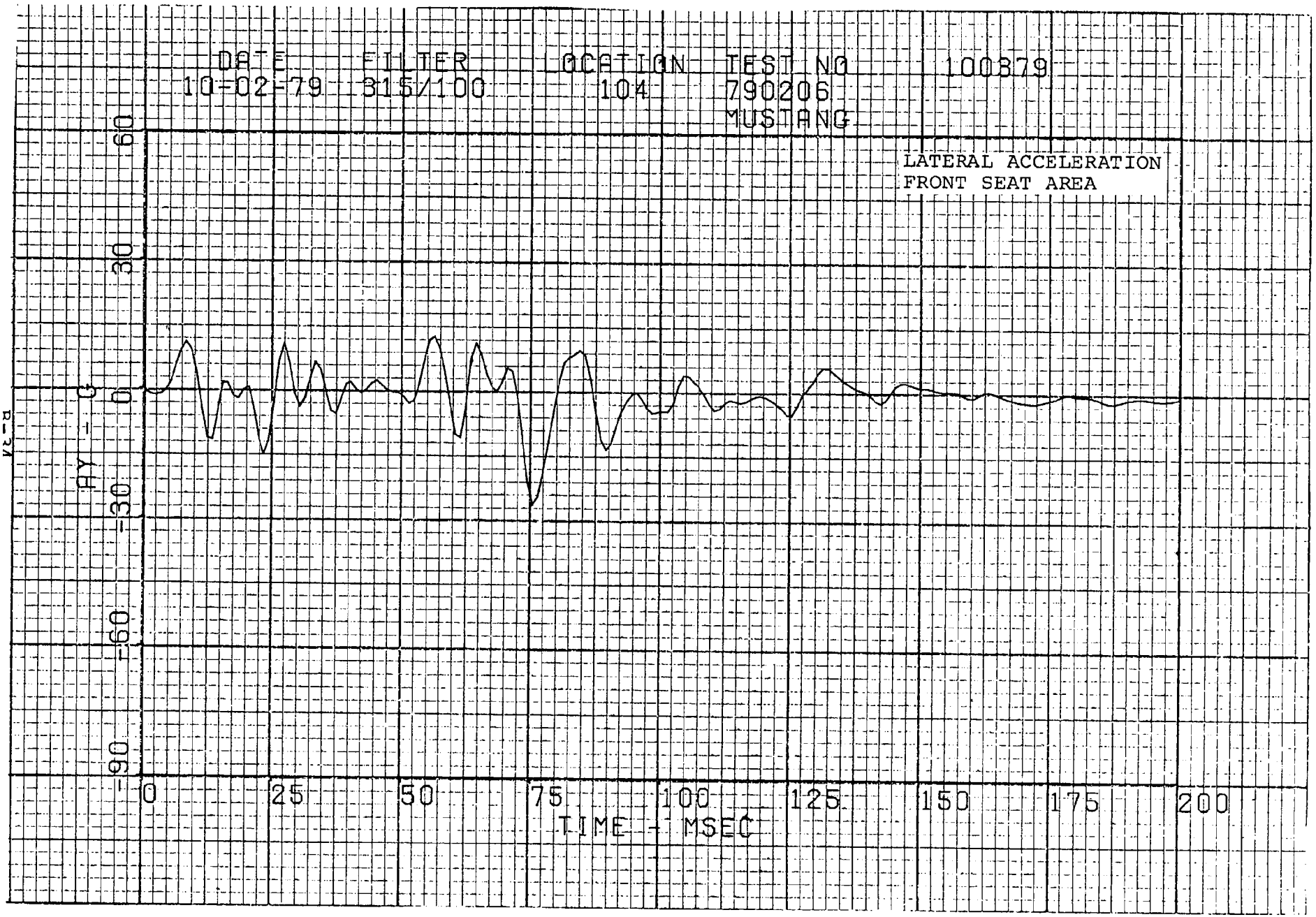

DATE
10-02-79
FILTER
315/100
LOCATION
101
TEST NO
790206
100379
MUSTANG
○ = AX △ = AZ
LONGITUDINAL (X) AND
VERTICAL (Z) ACCELERATION
ENGINE
ACCELERATION - G
100
50
0
-50
-100
-150
0
25
50
75
100
125
150
175
200
TIME - MSEC

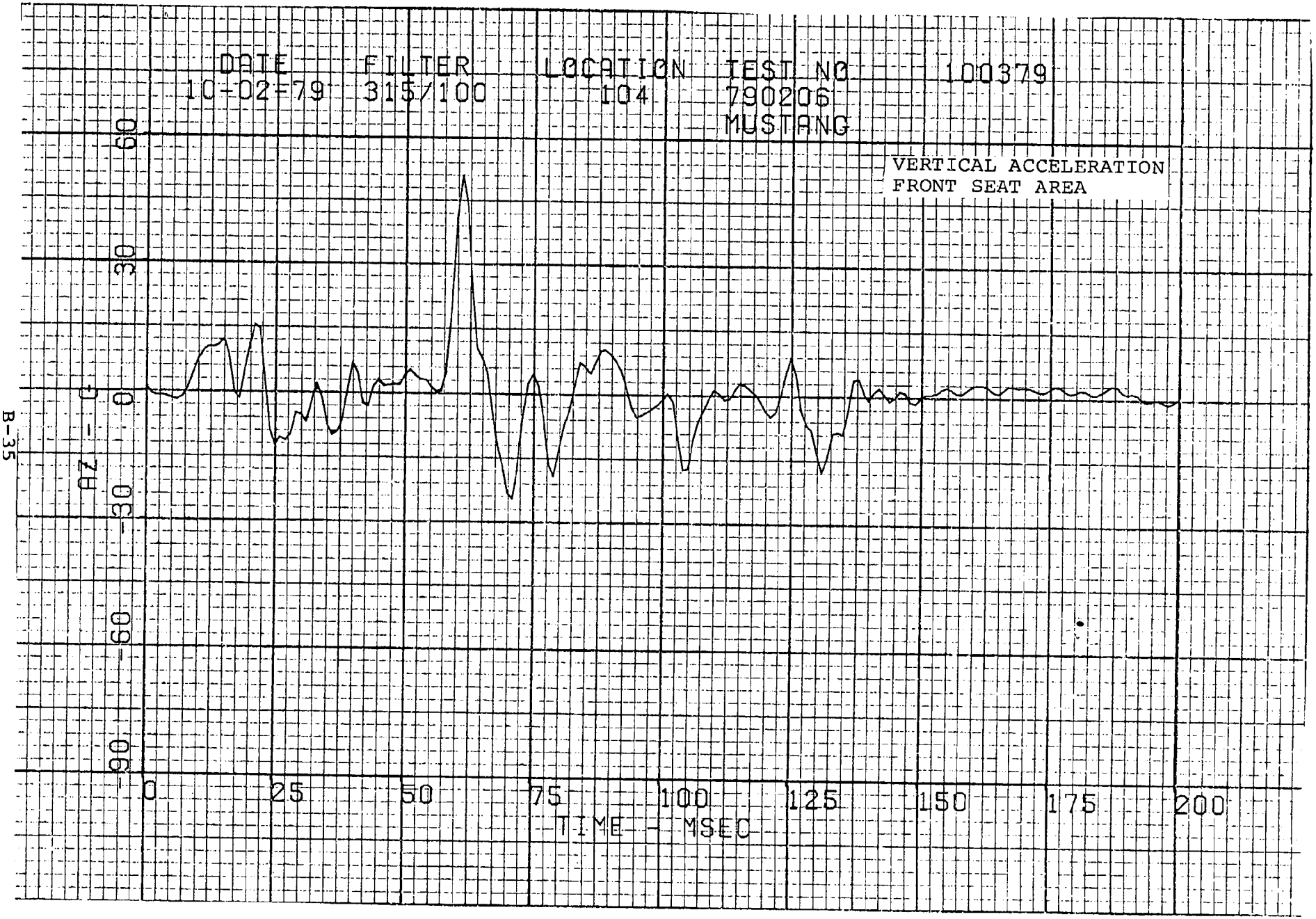

DATE
10-02-79
FILTER
315/100
LOCATION
102
TEST NO
790206
100379
MUSTANG
O= AX Δ= AZ
LONGITUDINAL (X) AND
VERTICAL (Z) ACCELERATION
FIREWALL
ACCELERATION - G
100
50
0
-50
-100
-150
0
25
50
75
100
125
150
175
200
TIME - MSEC

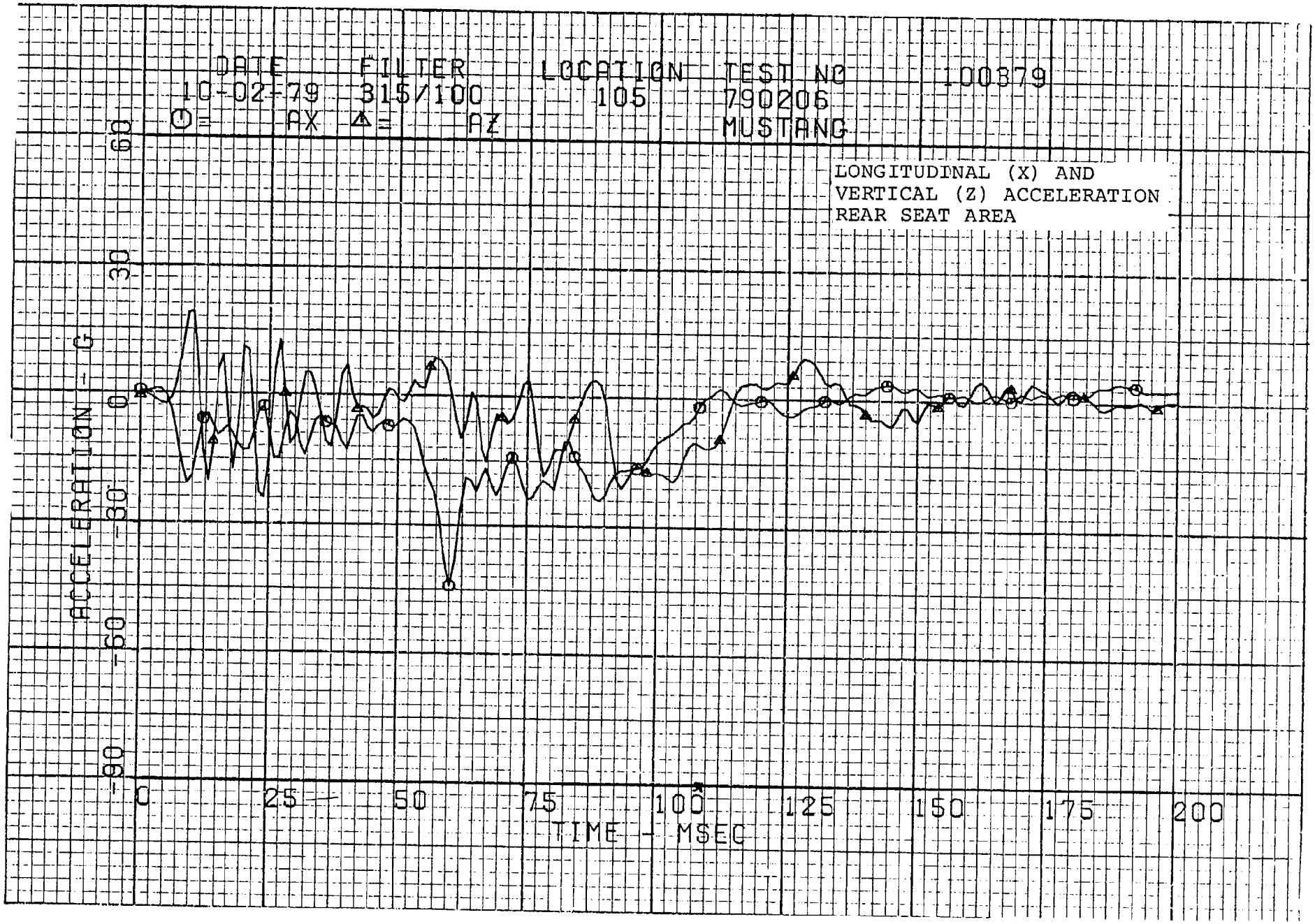

DATE
10-02-79
FILTER
315/100
LOCATION
103
TEST NO
790206
100379
MUSTANG
O = AX Δ = AZ
LONGITUDINAL (X) AND
VERTICAL (Z) ACCELERATION
FIREWALL AT VEHICLE
CENTERLINE
ACCELERATION - G
60
30
0
-30
-60
-90
0
25
50
75
100
125
150
175
200
TIME - MSEC


DATE
10-02-79
FILTER
315/100
LOCATION
104
TEST NO
790206
MUSTANG
100379
LONGITUDINAL ACCELERATION
FRONT SEAT AREA
AX - G
60
30
0
-30
-60
-90
0
25
50
75
100
125
150
175
200
TIME - MSEC


DATE
10-02-79
FILTER
315/100
LOCATION
104
TEST NO
790206
100379
MUSTANG
O = VX
Δ = VY
LONGITUDINAL (X) AND
LATERAL (Y) VELOCITY
FRONT SEAT AREA
VELOCITY MPH
40
30
20
10
0
-10
0
25
50
75
100
125
150
175
200
TIME - MSEC


DATE
10-02-79
FILTER
315/100
OCCUPATION
104
TEST NO
790206
MUSTANG
100379
LATERAL ACCELERATION
FRONT SEAT AREA
AY - G
60
30
0
-30
-60
-90
0
25
50
75
100
125
150
175
200
TIME - MSEC


DATE
10-02-79
FILTER
315/100
LOCATION
104
TEST NO
790206
MUSTANG
100379
VERTICAL ACCELERATION
FRONT SEAT AREA
60
30
0
-30
-60
-90
-Gz
0
25
50
75
100
125
150
175
200
TIME - MSEC


DATE
10-02-79
FILTER
315/100
LOCATION
105
TEST NO
790206
100879
MUSTANG
LONGITUDINAL (X) AND
VERTICAL (Z) ACCELERATION
REAR SEAT AREA
ACCELERATION - G
-90
-60
-30
0
30
60
0
25
50
75
100
125
150
175
200
TIME - MSEC

TEST ANOMALIES:

Passenger torso belt - no data.