

HS 706 936

DOT 4870

MVMA SIDE IMPACT TESTING

MDB-TO-CAR SIDE IMPACT TEST OF  
A 26° CRABBED MOVING DEFORMABLE BARRIER  
TO A 1985 FORD LTD  
AT 33.5 MPH

PREPARED BY:  
TRANSPORTATION RESEARCH CENTER OF OHIO  
ST. RT. 33 LOGAN COUNTY  
EAST LIBERTY, OHIO 43319

TEST REPORT  
TEST NO.: 850805  
TEST DATE: AUGUST 5, 1985  
TEST CONDITIONS: MODIFIED STRUCTURE, DUMMY  
SEATED 5 INCHES FROM HARDBOARD DOOR PANEL

PREPARED FOR:  
MGA RESEARCH CORPORATION  
12790 MAIN ROAD  
AKRON, NEW YORK 14001-0071

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# METRIC CONVERSION FACTORS

## Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
<b>LENGTH</b>				
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
<b>AREA</b>				
in <sup>2</sup>	square inches	6.5	square centimeters	cm <sup>2</sup>
ft <sup>2</sup>	square feet	0.09	square meters	m <sup>2</sup>
yd <sup>2</sup>	square yards	0.8	square meters	m <sup>2</sup>
mi <sup>2</sup>	square miles	2.6	square kilometers	km <sup>2</sup>
acres	acres	0.4	hectares	ha
<b>MASS (weight)</b>				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons	0.9	metric ton	t
	(2000 lb.)			
<b>VOLUME</b>				
tsp	teaspoons	5	milliliters	ml.
Tbsp	tablespoons	15	milliliters	ml.
in <sup>3</sup>	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 <sup>3</sup>	cubic feet	0.03	cubic meters	m <sup>3</sup>
yd <sup>3</sup>	cubic yards	0.76	cubic meters	m <sup>3</sup>
<b>TEMPERATURE (exact)</b>				
°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
<b>LENGTH</b>				
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
<b>AREA</b>				
cm <sup>2</sup>	square centimeters	0.16	square inches	in <sup>2</sup>
m <sup>2</sup>	square meters	1.2	square yards	yd <sup>2</sup>
km <sup>2</sup>	square kilometers	0.4	square miles	mi <sup>2</sup>
ha	hectares	2.5	acres	
	(10,000 m <sup>2</sup> )			
<b>MASS (weight)</b>				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	metric ton	1.1	short tons	
	(1000 kg)			
<b>VOLUME</b>				
ml	milliliters	0.03	fluid ounces	fl oz
ml	milliliters	0.06	cubic inches	in <sup>3</sup>
L	liters	2.1	pints	pt
L	liters	1.06	quarts	qt
L	liters	0.26	gallons	gal
m <sup>3</sup>	cubic meters	35	cubic feet	ft <sup>3</sup>
m <sup>3</sup>	cubic meters	1.3	cubic yards	yd <sup>3</sup>
<b>TEMPERATURE (exact)</b>				
°C	degrees Celsius	9/5 (then add 32)	degrees Fahrenheit	°F

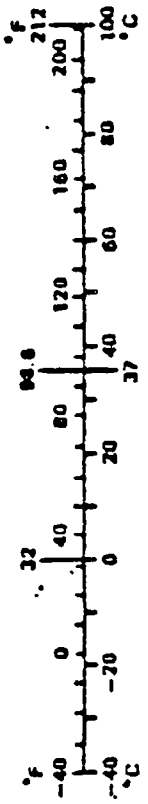


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SECTION 1.0  
PURPOSE AND INTRODUCTION

PURPOSE

The main purpose of this test was to evaluate occupant responses in a vehicle with a modified A-post and B-post structure and a hardboard door panel in a 90° side impact crash test.

INTRODUCTION

A stationary 1985 Ford LTD 4-door sedan was impacted on the right side by a Moving Deformable Barrier (MDB) on August 5, 1985. The test was to simulate an intersection collision with the striking vehicle travelling at 30 mph and the struck vehicle travelling at 15 mph. The orientation angle of the striking vehicle was 90° clockwise with respect to the longitudinal axis of the struck vehicle. The leading edge of contact was to be 37 inches forward of the vehicle center of gravity which is defined by accident investigation to be the midpoint of the wheelbase.

To simulate this collision, the MDB was to be towed into the stationary Ford LTD at 33.5 mph with the MDB's wheels crabbed counterclockwise to 26°. The actual test speed was 33.5 mph and the actual leading edge of contact was 38.1 inches forward of the midpoint of the Ford LTD's wheelbase.

The vehicle contained structural modifications in the A-post and B-post areas. The front passenger inner door panel was replaced with a hardboard panel. A side impact dummy (SID) was seated in the right front passenger seat with its shoulder five inches from the hardboard panel.

Section 2 contains test parameter data. Section 3 contains crash test data. Appendix A contains Data Plots. Appendix B contains Dummy Certification Data.

SECTION 2.0  
TEST PARAMETER DATA

This section includes the following information:

1. General Test Vehicle Information
2. Dummy Temperature Control and Positioning Data
3. High Speed Camera Information
4. Transducer Information

TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Ford Motor Company

MAKE/MODEL: Ford LTD

VIN: 1FABP39A0FG215191

BODY STYLE: 4-Door Sedan

MODEL YEAR: 1985

NHTSA NO.: DNA

COLOR: Midnight Blue

ENGINE DATA: TYPE: Inline CYLINDERS: 4 DISPLACEMENT 140 cu. in.

TRANSMISSION DATA: Automatic

DATE VEHICLE RECEIVED: 7/30/85

ODOMETER READING: 45

DEALER'S NAME AND ADDRESS: NA

ACCESSORIES:

POWER STEERING	Yes	AUTOMATIC TRANSMISSION	Yes
POWER BRAKES	Yes	AUTOMATIC SPEED CONTROL	No
POWER SEATS	No	TILTING STEERING WHEEL	No
POWER WINDOWS	No	TELESCOPING STEERING WHEEL	No
TINTED GLASS	No	AIR CONDITIONING	No
RADIO	No	ANTI-SKID BRAKE	No
CLOCK	No	REAR WINDOW DEFROSTER	No
OTHER			

REMARKS:

1. IS THE VEHICLE STOCK THROUGHOUT? NO (Test Modifications)
2. DOES VEHICLE SHOW EVIDENCE OF PRIOR ACCIDENT HISTORY? No
3. DOES VEHICLE SHOW ANY SIGNIFICANT CORROSION? No
4. CONDITION OF THE FRONT/REAR BUMPER AND FRAME: Good

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

VEHICLE MANUFACTURED BY: Ford Motor Company

DATE OF MANUFACTURE: 4/85

GVWR: 4225 LBS.,

GAWR: FRONT 2103 LBS., REAR 2255 LBS.

VEHICLE TIRE DATA

RECOMMENDED COLD TIRE PRESSURE: FRONT 30 psi; REAR 30 psi

TIRES ON VEHICLE (MFGR. & LINE, SIZE): General Ameriway Radial P195/75R14

BIAS PLY, BELTED, OR RADIAL: Radial

PLY RATING: 3

IS SPARE TIRE "SPACE SAVER"? Yes

IS SPARE TIRE STANDARD EQUIPMENT? Yes

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

RIGHT FRONT	799	LBS.	RIGHT REAR	691	LBS.
LEFT FRONT	812	LBS.	LEFT REAR	672	LBS.
TOTAL FRONT WEIGHT	1611	LBS.	(54.2 % OF TOTAL VEHICLE WEIGHT)		
TOTAL REAR WEIGHT	1363	LBS.	(45.8 % OF TOTAL VEHICLE WEIGHT)		
TOTAL DELIVERED WEIGHT	2974	LBS.			

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

DELIVERED ATTITUDE:	RF 26 3/16	;LF 26 5/16	;RR 24 3/16	;LR 24 5/16
PRE-TEST ATTITUDE:	RF 25 1/4	;LF 25 7/8	;RR 22 7/16	;LR 23 1/4
POST-TEST ATTITUDE:	RF 25 1/2	;LF 26	;RR 22 1/2	;LR 23 1/16

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 114 LBS. CARGO:

RIGHT FRONT	895	LBS.	RIGHT REAR	786	LBS.
LEFT FRONT	759	LBS.	LEFT REAR	822	LBS.
TOTAL FRONT WEIGHT	1654	LBS.	(50.7% OF TOTAL VEHICLE WEIGHT)		
TOTAL REAR WEIGHT	1608	LBS.	(49.3 % OF TOTAL VEHICLE WEIGHT)		
TOTAL TEST WEIGHT	3262	LBS.			

WEIGHT OF BALLAST SECURED IN VEHICLE TRUNK AREA: 0 LBS.

TEST FLUID DATA

TEST FLUID TYPE: RED STODDARD SOLVENT 2; SPEC. GRAVITY: 0.764  
KINEMATIC VISCOSITY: 0.99 CENTISTOKES  
"USEABLE" CAPACITY\*: NA GALLONS ACTUAL  
TEST VOLUME: 14.9 GALLONS  
FUEL SYSTEM CAPACITY (DATA FROM OWNERS MANUAL): 16.0 GALLONS  
DETAILS OF FUEL SYSTEM: DNA

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ELECTRIC FUEL PUMP: No FUEL INJECTION: No  
DOES ELECTRIC FUEL PUMP OPERATE WITH IGNITION SWITCH "ON" AND THE ENGINE NOT OPERATING? DNA

DATA FROM "RECOMMENDED TIRE PRESSURE" LABEL ON DOOR, POST, GLOVEBOX, ETC.

VEHICLE LOAD (UP TO CAPACITY): FRONT 30 psi; REAR 30 psi  
RECOMMENDED TIRE SIZE: P195/75R14 LOAD RANGE X B, C,  
VEHICLE CAPACITY: TYPES OF SEATS: Bench

NUMBER OF OCCUPANTS (DESIGNATED SEATING CAPACITY): 3 FRONT  
3 REAR  
CARGO LOAD 100 LBS. 6 TOTAL  
TOTAL 1000 LBS.

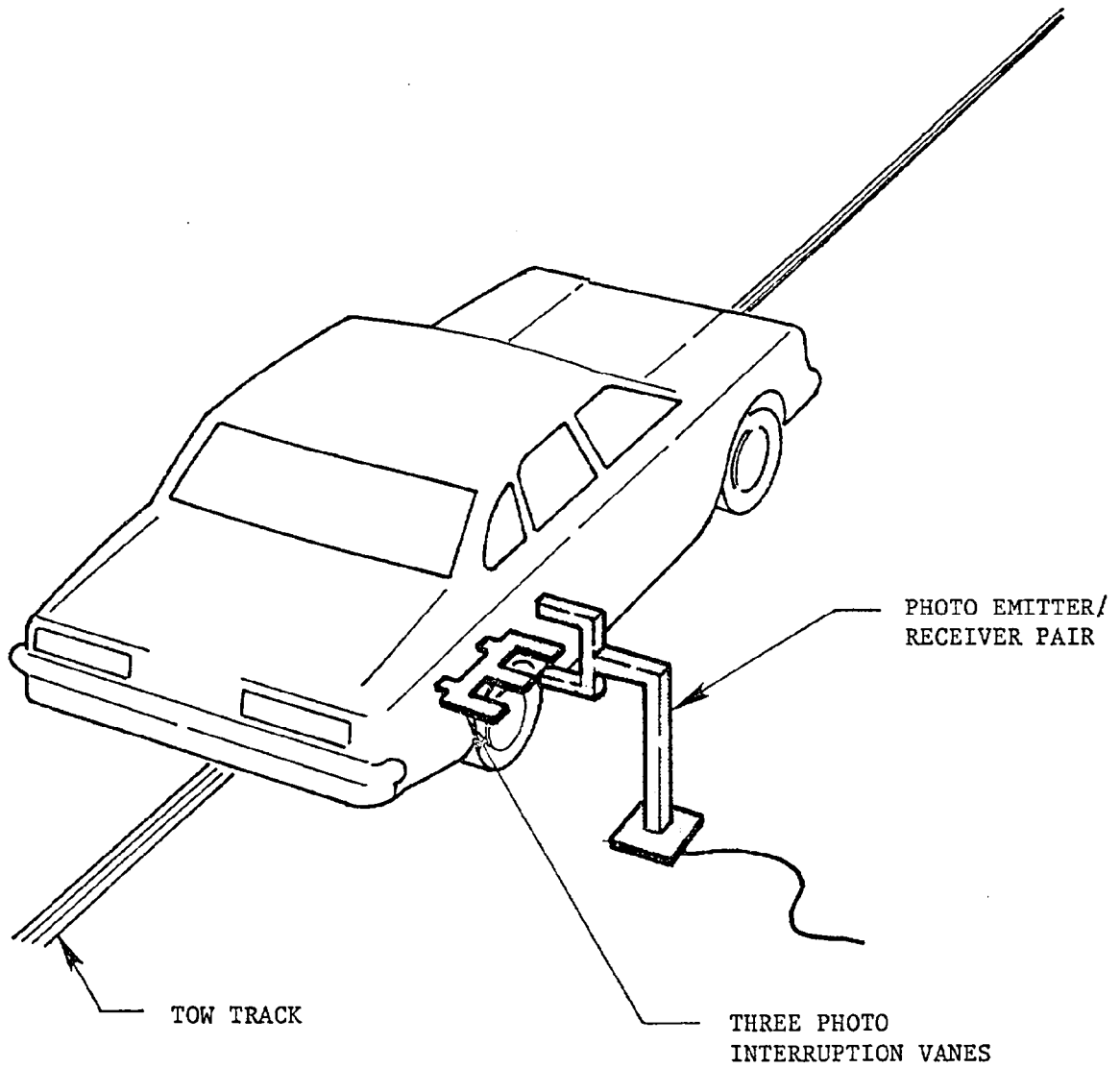
\*WITH ENTIRE FUEL SYSTEM FILLED WITH FUEL TANK THROUGH CARBURETOR BOWL.

VEHICLE TEST WEIGHT CALCULATION

$$\begin{aligned} \text{Test Weight} &= \text{Unloaded Delivered Weight} + \\ &\quad \text{Number of Dummies} \times 174 \text{ lbs.} + \\ &\quad \text{Cargo Weight} \\ &= 2974 + 1 \times 174 + 100 \text{ lbs.} \\ &= 3248 \text{ lbs.} \end{aligned}$$

To achieve test weight the battery was removed and 14.9 gallons of Stoddard Solvent were added in the fuel tank. The weight of the test vehicle was measured by placing each wheel on a Force Plate manufactured by K.J. Law Engineers, Inc., Detroit, Michigan.

IMPACT VELOCITY MEASUREMENT SYSTEM



The final vane clears emitter/receiver 24 inches before impact.

The vanes have one foot spacing.

DUMMY TEMPERATURE CONTROL AND POSITIONING

The vehicle was kept inside the temperature controlled crash test building until approximately 2 hours prior to the test. Temperature inside the vehicle and ambient temperature at the crash area were recorded. Dummy temperature while outside the crash test building was maintained portably until approximately 1 minute prior to the test.

The following table summarizes the steps taken to position the instrumented, calibrated dummies in the test vehicle.

## SIDE IMPACT DUMMY SEATING PROCEDURE

The following is an outline of the Side Impact Dummy Seating Procedure which is currently being developed.

1. The seat is placed in the midpoint of the fore to aft adjustment.
2. The H-point location of the NHTSA Side Impact Dummy (SID) is located by using the SAE three-dimensional H-point machine (SAE J826 APR80 - 50TH Percentile Male Configuration). The H-point machine is positioned in the right front outboard designated seating position such that the midsagittal plane is vertical and longitudinal. The H-point is located and documented using Sections 4 through 6 of SAE Standard J826 APR80.
3. The H-point machine is removed and the SID is positioned in the right front passenger seat such that its right shoulder is either five inches from or against the hardboard or padded inner door panel. The knees are initially set 11 1/2 inches apart, measured between the outer surfaces of the knee pivot bolt heads, if possible. The H-point is then positioned to within 1/2 inch of the coordinates of the H-point machine H-point location found in Step 2 by applying force in the appropriate direction to the dummy's lower torso. If the dummy's upper torso does not rest against the seatback, position the torso without moving the H-point so the upper torso does rest against the seatback. The dummy's feet are then positioned such that the heels rest on the floorpan and the feet are on the toeboard. If the dummy's feet will not reach the toeboard, the feet are positioned such that the feet are at right angles to the lower legs. If wheelhouse projections interfere with the above positioning of the feet, the heel is placed on the floorpan with the foot perpendicular to the lower leg by twisting the foot about the ankle.
4. Prior to the crash test the dummy's longitudinal and lateral head locations are rechecked. The dummy is then visually checked.

DUMMY IN-VEHICLE POSITION RECORDING SHEET

MFR./MAKE/MODEL: Ford LTD

FRONT SEAT TYPE:      BENCH  
     BUCKET  
  X   SPLIT BENCH

ADJUSTER TYPE:   X   MANUAL  
     POWER

BUCKET SEAT BACK TYPE:   X   FIXED  
     ADJUSTABLE

TECHNICIANS:  
1. G. Watters

POSITIONING DATE: 8/5/85

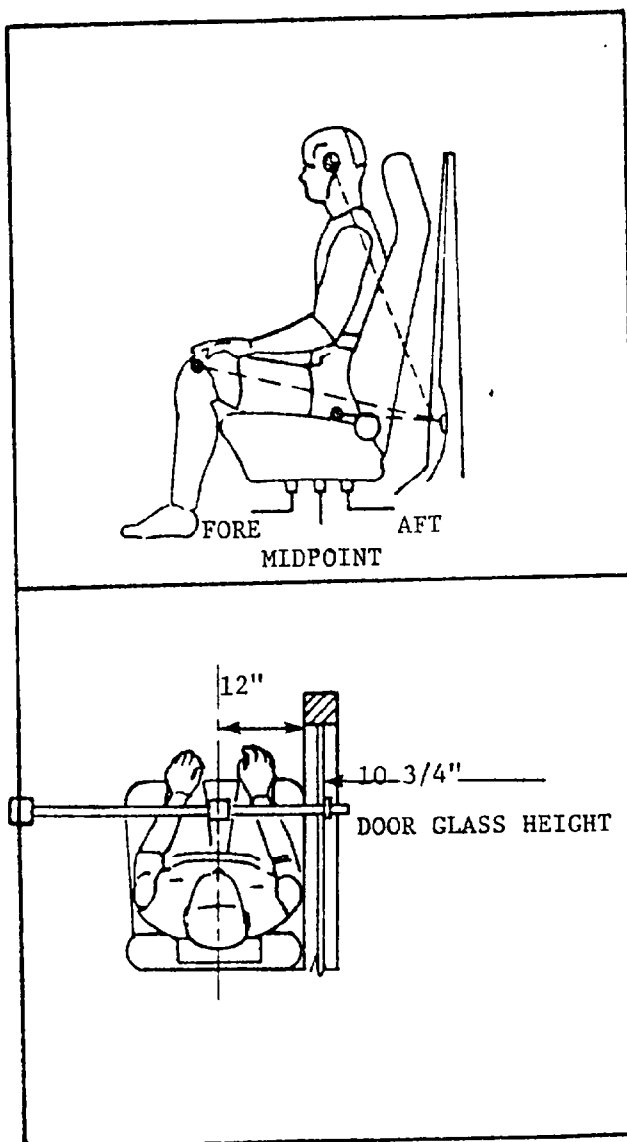
2. J. Claridge

AMBIENT TEMP: 67 °F      TIME: 9:30

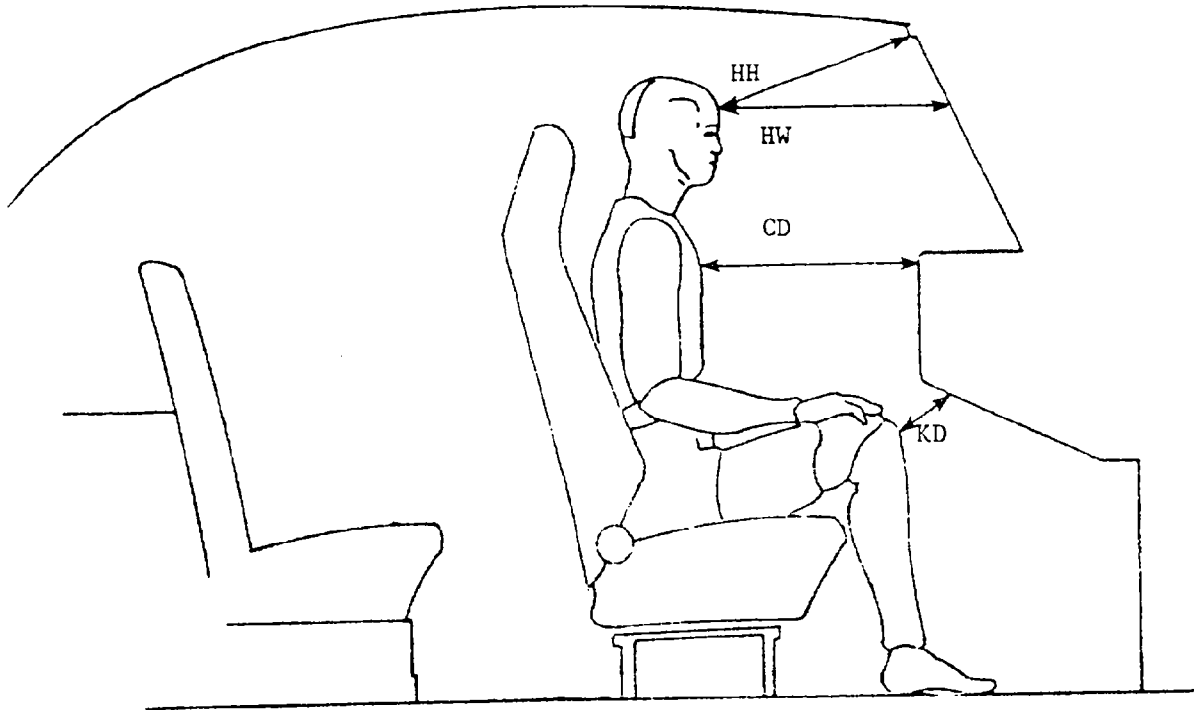
3.                     

FRONT PASSENGER DUMMY #119

20 3/4 " HEAD  
    4 " TARGET\*  
  
24 15/16 " KNEE  
    89 " JOINT  
  
APPROX.  
    11 " "H"  
   116 " POINT



\*All passenger dummy dimensions referenced to top of front door striker bolt and all angles referenced to vertical.

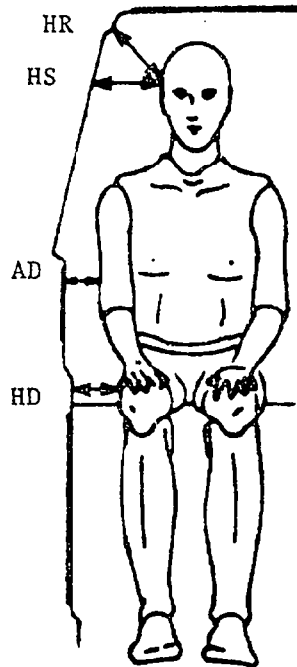


PASSENGER 119

HH	12 1/4
HW	18 1/4
CD	20
KDL	6 1/16
KDR	6 5/16

ALL MEASUREMENTS IN INCHES

DUMMY LONGITUDINAL CLEARANCE DIMENSION



PASSENGER 119

HR	7
HS	9 1/4
AD	5
HD,	6 1/8

ALL MEASUREMENTS IN INCHES

DUMMY LATERAL CLEARANCE DIMENSIONS

LOCATIONS OF OFFBOARD HIGH SPEED CAMERAS

CAMERA NO.	X	Y	Z
7	-6'11 1/2"	-25'10 1/2"	+ 3'3"
6	-23'4 3/4"	+41'6 1/2"	+ 3'1"
4	0	0	+40'
5	+1'	0	+40'

-----  
Origin of Coordinate System is Point of Impact

- +X = Forward with Respect to Striking Vehicle's Velocity Vector
- +Y = Rightward with Respect to Striking Vehicle's Velocity Vector
- +Z = Upward with Respect to Striking Vehicle's Velocity Vector

CAMERA INFORMATION

CAMERA NO.	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1		Beaulieu	18-86	24	Documentary
2	Right Panning	Kodak	16	24	Real Time
3	MDB Wide	Photosonic 1B	13	495	View Impact
4	Overhead Tight	Photosonic 1B	25	500	View Impact
5	Overhead Wide	Photosonic 1B	8	445	Vehicle Crush
6	Right	Photosonic 1B	25	498	Vehicle Crush
7	Left	Photosonic 1B	13	505	Vehicle Crush
8	Onboard Windshield	Photosonic 1B	8	990	Dummy Kinematics
9	Onboard Roof	Photosonic 1B	8	1005	Dummy Kinematics
10	Onboard Door	Photosonic 1B	8	1013	Dummy Kinematics

TRANSDUCER INFORMATION

PARAMETER BEING MEASURED	LOCATION	TYPE OF TRANSDUCER	MFGR	MODEL NUMBER	SERIAL NUMBER
HEDXG2	HEAD CENTER OF GRAVITY	ACCEL.	ENDEVCO	2264	AY95
HEDYG2	HEAD CENTER OF GRAVITY	ACCEL.	ENDEVCO	2264	BA26
HEDZG2	HEAD CENTER OF GRAVITY	ACCEL.	ENDEVCO	2264	BA30
T01XG2	UPPER SPINE	ACCEL.	ENDEVCO	2264	AR93
T01YG2	UPPER SPINE	ACCEL.	ENDEVCO	2264	AN61
T01YGB	UPPER SPINE	ACCEL.	ENDEVCO	2264	AZ77
T01ZG2	UPPER SPINE	ACCEL.	ENDEVCO	2264	AN37
T12XG2	LOWER SPINE	ACCEL.	ENDEVCO	2264	AZ55
T12YG2	LOWER SPINE	ACCEL.	ENDEVCO	2264	BA64
T12YGB	LOWER SPINE	ACCEL.	ENDEVCO	2264	AZ74
T12ZG2	LOWER SPINE	ACCEL.	ENDEVCO	2264	AR86
RURYG2	RIGHT UPPER RIB	ACCEL.	ENDEVCO	2264	AR82
RURYGB	RIGHT UPPER RIB	ACCEL.	ENDEVCO	2264	AZ24
RLRYG2	RIGHT LOWER RIB	ACCEL.	ENDEVCO	2264	AN60
RLRYGB	RIGHT LOWER RIB	ACCEL.	ENDEVCO	2264	AY78
PEVXG2	PELVIS	ACCEL.	ENDEVCO	2264	AR78
PEVYG2	PELVIS	ACCEL.	ENDEVCO	2264	AN01
PEVZG2	PELVIS	ACCEL.	ENDEVCO	2264	AJ35
RRTYD2	RIGHT RIB TO SPINE DISPLACEMENT	LINEAR POT.	BOURNS	5184	4081-191
RFDYG1	RIGHT FRONT DOOR-POSITION 1	ACCEL.	ENDEVCO	2264	AT26
RFDYG2	RIGHT FRONT DOOR-POSITION 2	ACCEL.	ENDEVCO	2264	AS36
RFDYG3	RIGHT FRONT DOOR-POSITION 3	ACCEL.	ENDEVCO	2264	BC29
RFDYG4	RIGHT FRONT DOOR-POSITION 4	ACCEL.	ENDEVCO	7264	AN86
LFSXG	LEFT FRONT SILL	ACCEL.	B & H*	4-202-0001	18840
LFSYG	LEFT FRONT SILL	ACCEL.	B & H	4-202-0001	18236
LFSZG	LEFT FRONT SILL	ACCEL.	B & H	4-202-0001	18837
BCGXG	BARRIER CENTER OF GRAVITY	ACCEL.	B & H	4-202-0001	18851
BCGYG	BARRIER CENTER OF GRAVITY	ACCEL.	B & H	4-202-0001	18859
BCGZG	BARRIER CENTER OF GRAVITY	ACCEL.	B & H	4-202-0001	18836
BRCXG	BARRIER REAR CROSS MEMBER	ACCEL.	B & H	4-202-0001	19022
BRCYG	BARRIER REAR CROSS MEMBER	ACCEL.	B & H	4-202-0001	18237

\*Bell & Howell

SECTION 3.0  
CRASH TEST DATA

The following pages are included in this section:

1. Test conditions
2. Dummy accelerometer data summary
3. Dummy contact points and kinematic summary
4. Vehicle accelerometer locations and data summary
5. Vehicle static crush table and profiles
6. Deformable moving barrier accelerometer locations and data summary
7. Test anomalies

TEST CONDITIONS

TEST NUMBER: 850805

DATE OF TEST: August 5, 1985

TIME OF TEST: 1604

WIND VELOCITY: 3-6 mph 207°

HUMIDITY: NA

AMBIENT TEMPERATURE AT IMPACT AREA: 69° F

TEMPERATURE IN OCCUPANT COMPARTMENT: 74° F

DUMMY TEMPERATURE: 70° F

SUBJECT VEHICLE DATA

	<u>ACTUAL</u>	<u>INTENDED</u>
VEHICLE TEST WEIGHT (LBS.)	3262	3248
MDB TEST WEIGHT (LBS.)	2991	2992
MDB VELOCITY (MPH)	33.5	33.5
IMPACT POINT (INCHES)	38.1	37.0

DUMMIES

	<u>DRIVER</u>	<u>MIDDLE PASSENGER</u>	<u>RT. FRONT PASSENGER</u>	<u>LEFT REAR PASSENGER</u>	<u>RT. REAR PASSENGER</u>
TYPE:			SID		
SERIAL NO.:			119		
INSTRUMENTATION:					
HEAD ACCEL.:			3		
CHEST ACCEL.:			12		
FEMUR L.C.'S:			0		
OTHER:			3 Pelvis		
			1 Rib Disp.		

RESTRAINT SYSTEM: Dummy was unrestrained.

SIDE IMPACT DUMMY DATA SUMMARY

	PASSENGER DUMMY			
	POSITIVE		NEGATIVE	
	DIRECTION*		DIRECTION**	
	MAX	TIME	MAX	TIME
	(g)	(msec)	(g)	(msec)
HEAD ACCELERATION				
LONGITUDINAL	8.07	59.75	20.62	205.88
LATERAL	14.65	43.88	32.72	55.38
VERTICAL	35.46	70.88	9.79	202.00
RESULTANT	36.45 @ 76.25			
HIC	121.28	from 43.750	to 101.875	
DELTA V (MPH)	-8.7 @ 161.75			
CHEST ACCELERATION				
UPPER SPINE				
LONGITUDINAL	18.57	46.25	12.04	57.50
LATERAL(P)***	21.63	72.50	67.49	46.88
LATERAL(R)***	23.82	72.50	64.91	46.88
VERTICAL	5.94	92.50	9.15	36.88
RESULTANT (P)	69.65 @ 46.88			
RESULTANT (R)	67.15 @ 46.88			
DELTA V (MPH)****	-20.8 @ 67.50 (P)		-19.5 @ 66.88 (R)	
LOWER SPINE				
LONGITUDINAL	26.00	58.13	19.15	44.38
LATERAL (P)	13.31	66.87	101.06	43.75
LATERAL (R)	14.07	66.25	100.32	43.75
VERTICAL	3.47	221.88	16.47	46.88
RESULTANT (P)	103.47 @ 43.75			
RESULTANT (R)	102.75 @ 43.75			
DELTA V (MPH)	-25.5 @ 60.00 (P)		-24.4 @ 59.63 (R)	
RIGHT UPPER RIB				
LATERAL (P)	12.66	86.25	54.00	42.50
LATERAL (R)	11.63	86.25	55.93	42.50
DELTA V (MPH)	-19.3 @ 81.12 (P)		-19.4 @ 81.12 (R)	
RIGHT LOWER RIB				
LATERAL (P)	3.51	116.25	60.38	42.50
LATERAL (R)	4.23	102.50	63.08	41.87
DELTA V (MPH)	-21.3 @ 84.12 (P)		-21.9 @ 84.88 (R)	
PELVIS ACCELERATION				
LONGITUDINAL	5.05	162.50	28.71	41.88
LATERAL	6.81	26.50	118.69	40.75
VERTICAL	8.49	47.50	14.95	45.63
RESULTANT	120.92 @ 40.88			
DELTA V (MPH)	-24.8 @ 55.25			

SIDE IMPACT DUMMY DATA SUMMARY CONTD

	PASSENGER DUMMY			
	POSITIVE DIRECTION*		NEGATIVE DIRECTION**	
	MAX (in)	TIME (msec)	MAX (in)	TIME (msec)
RIB DEFLECTION	6.06	186.25	1.63	66.13

* LONGITUDINAL:	FORWARD	** LONGITUDINAL	REARWARD
LATERAL:	RIGHTWARD	LATERAL	LEFTWARD
VERTICAL:	DOWNWARD	VERTICAL:	UPWARD

\*\*\* For dummy channels, Delta V is the velocity change at the approximate time of separation from the contact area.

\*\*\*\* (P) = Primary Sensor, (R) = Redundant Sensor

Compression: Negative

VISIBLE DUMMY CONTACT POINTS:

	DRIVER DNA	PASSENGER 119
Head	<u>DNA</u>	<u>Right window sill</u>
Chest	<u></u>	<u>Inner door panel</u>
Abdomen	<u></u>	<u>Inner door panel</u>
Left Knee	<u></u>	<u>Right knee</u>
Right Knee	<u></u>	<u>Inner door panel</u>

DOOR OPENING:

	LEFT	RIGHT
Front	<u>Normal</u>	<u>Tools required</u>
Rear	<u>Normal</u>	<u>DNA</u>

SEAT MOVEMENT:

	SEAT BACK FAILURE	SEAT SHIFT
Front	<u>None</u>	<u>None</u>
Rear	<u>None</u>	<u>None</u>

GLAZING DAMAGE:

All right side door glass expect for rear wing  
window was shattered.  
Front windshield was cracked.

OTHER NOTABLE IMPACT EFFECTS:

## DUMMY KINEMATIC SUMMARY

During impact, the dummy's right leg and right side of the torso contacted the hardboard inner door panel. The dummy's head rotated to the right, about the neck, coming into contact with the right front door window sill. Upon rebound, the dummy became airborne and crossed the car with lower torso leading and then rebounded off the left side to rest sitting behind the steering wheel.

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

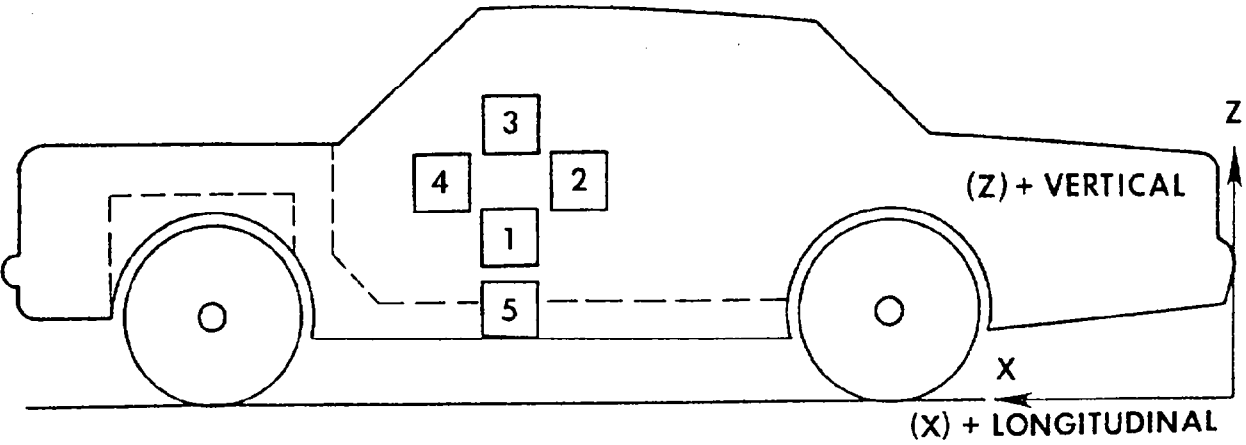
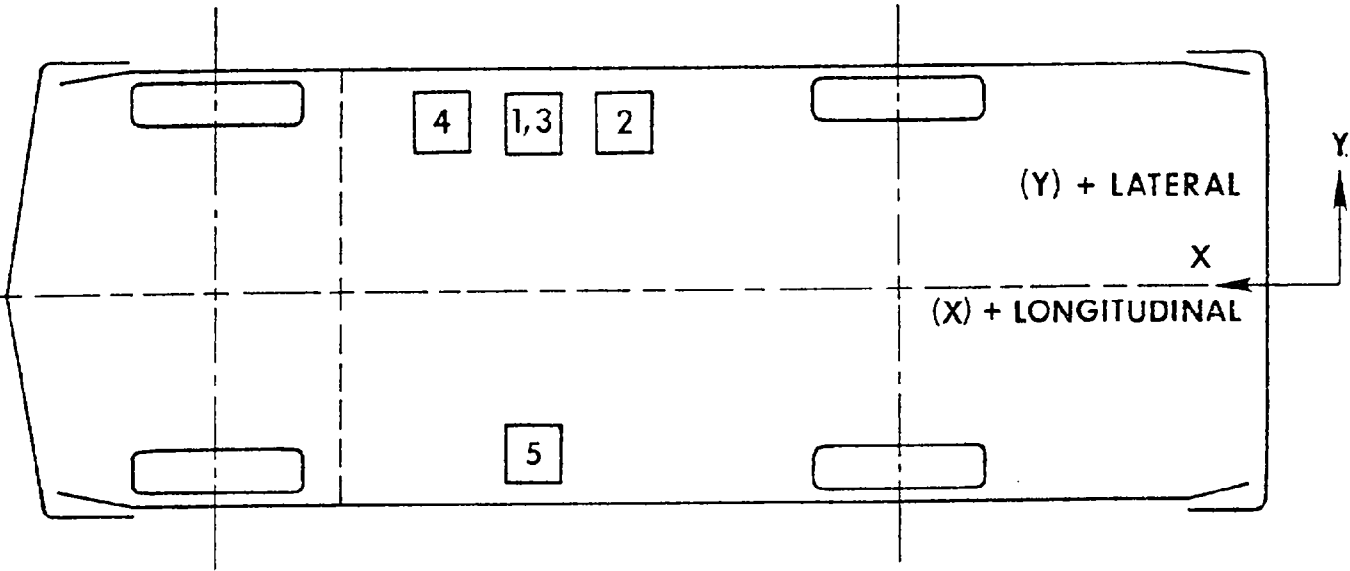
NO.	LOCATION	X*	Y*	Z*	POSITIVE** DIRECTION		NEGATIVE*** DIRECTION	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	RIGHT FRONT DOOR CENTERLINE (LATERAL)	120.8	28.6	22.4				
		$\Delta V = -29.0 \text{ mph @ } 21.00 \text{ msec}$			112.98	31.75	151.50	12.63
2	MIDREAR OF RIGHT FRONT DOOR (LATERAL)	100.5	28.2	24.0				
		$\Delta V = -15.3 \text{ mph @ } 19.38 \text{ msec}$			103.83	16.75	143.27	21.38
3	UPPER RIGHT FRONT DOOR CENTERLINE (LATERAL)	112.0	28.0	20.1				
		$\Delta V = -27.9 \text{ mph @ } 24.13 \text{ msec}$			127.31	30.75	185.80	24.00
4	MIDFRONT OF RIGHT FRONT DOOR (LATERAL)	111.8	28.5	22.6				
		$\Delta V = -23.6 \text{ mph @ } 24.00 \text{ msec}$			173.18	29.38	128.32	11.50
5	LEFT SILL AT FRONT SEAT (LONGITUDINAL)	117.5	-26.8	13.1				
	(LATERAL)	$\Delta V = -14.5 \text{ mph @ } 52.63 \text{ msec}$			3.97	46.88	7.39	26.13
	(VERTICAL)				6.99	59.13	22.54	13.25
	(RESULTANT)				4.07	65.38	8.75	17.63
					23.38 @ 13.50			

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

\*\*LONGITUDINAL: FORWARD                      \*\*\*LONGITUDINAL: REARWARD  
LATERAL: RIGHTWARD                              LATERAL: LEFTWARD  
VERTICAL: DOWNWARD                              VERTICAL: UPWARD

All measurements of accelerometer locations in inches.

VEHICLE ACCELEROMETER PLACEMENT



VEHICLE EXTERIOR PROFILES AND STATIC CRUSH  
ZERO DISTANCE AT PROJECTED IMPACT POINT\*

LOCATION	HEIGHT (in)	78	72	66	60	54	48	42	36	30	24	18	12	6	0	
		PRE-TEST PROFILE (DISTANCE IN INCHES FROM REFERENCE PLANE**)														
Axle Height	12.1	X	17.6	17.6	17.5	17.4	17.4	17.3	17.2	17.2	17.2	17.2	17.2	17.1	17.2	X
H-Point	21.8		13.1	13.8	13.6	13.6	13.6	13.6	13.8	13.8	13.9	13.9	14.0	14.2	14.2	X
Window Sill	35.4		16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.2	16.2	16.4	16.5
Window Top	53.8	24.5	24.2	24.2	24.0	24.0	24.0	24.0	24.2	24.8	X	X	X	X	X	X

POST-TEST PROFILE (DISTANCE IN INCHES FROM REFERENCE PLANE\*\*)

Axle Height	12.1	X	20.5	21.0	21.8	23.4	22.6	22.8	23.4	23.9	24.5	25.0	25.5	23.1	21.2	X
H-Point	21.8		15.5	24.5	28.1	26.8	25.6	22.6	24.0	25.0	24.7	24.4	24.0	23.2	19.8	X
Window Sill	35.4		18.9	22.6	26.8	26.2	25.8	23.4	22.5	22.2	22.1	22.0	21.5	20.6	19.1	18.5 18.1
Window Top	53.8	26.8	26.8	26.8	26.9	27.0	27.2	27.3	27.9	28.0	X	X	X	X	X	X

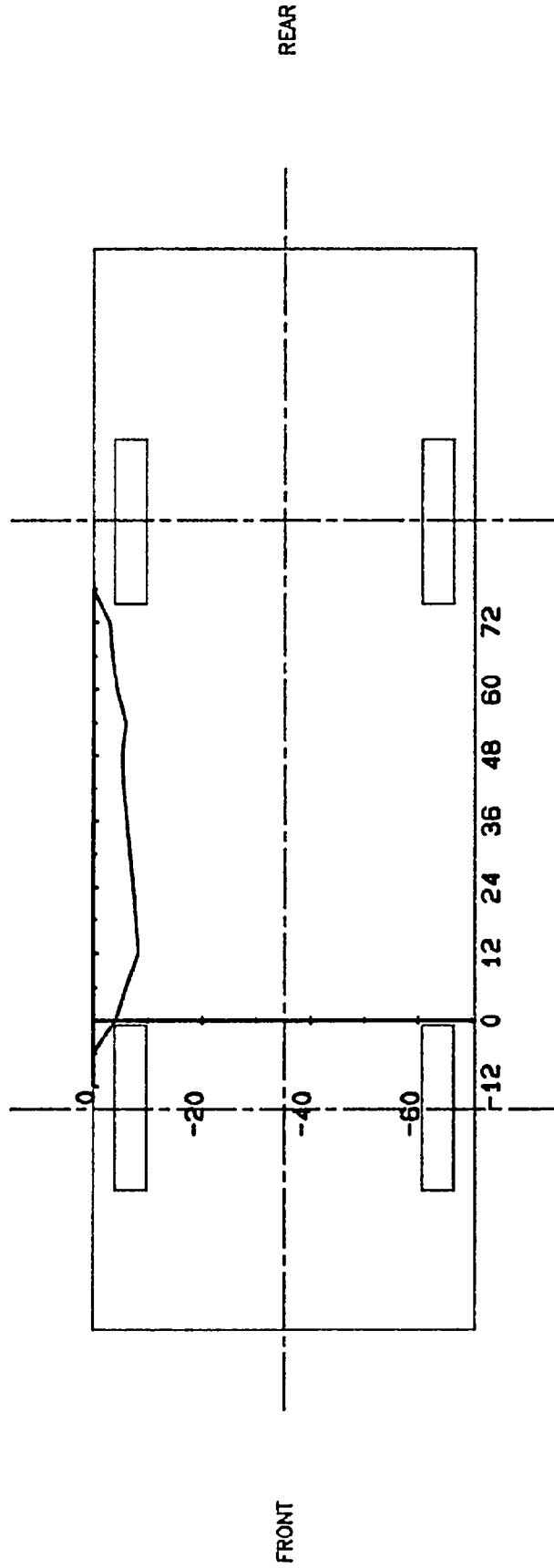
STATIC CRUSH (IN)

Axle Height	12.1	X	2.9	3.4	4.3	6.0	5.2	5.5	6.2	6.7	7.3	7.8	8.3	6.0	4.0	X
H-Point	21.8		2.4	10.7	14.3	13.2	12.0	10.4	11.2	11.2	10.8	10.5	10.0	9.0	5.6	X
Window Sill	35.4		2.8	5.5	10.7	10.1	9.7	7.3	6.4	6.1	6.0	5.4	4.4	2.9	2.1	1.6
Window Top	53.8	2.3	2.6	2.6	2.9	3.0	3.2	3.3	3.7	3.2	X	X	X	X	X	X

\* Projected impact point is 37 inches forward of passenger side wheelbase midpoint. Column readings are rear to front from left to right.

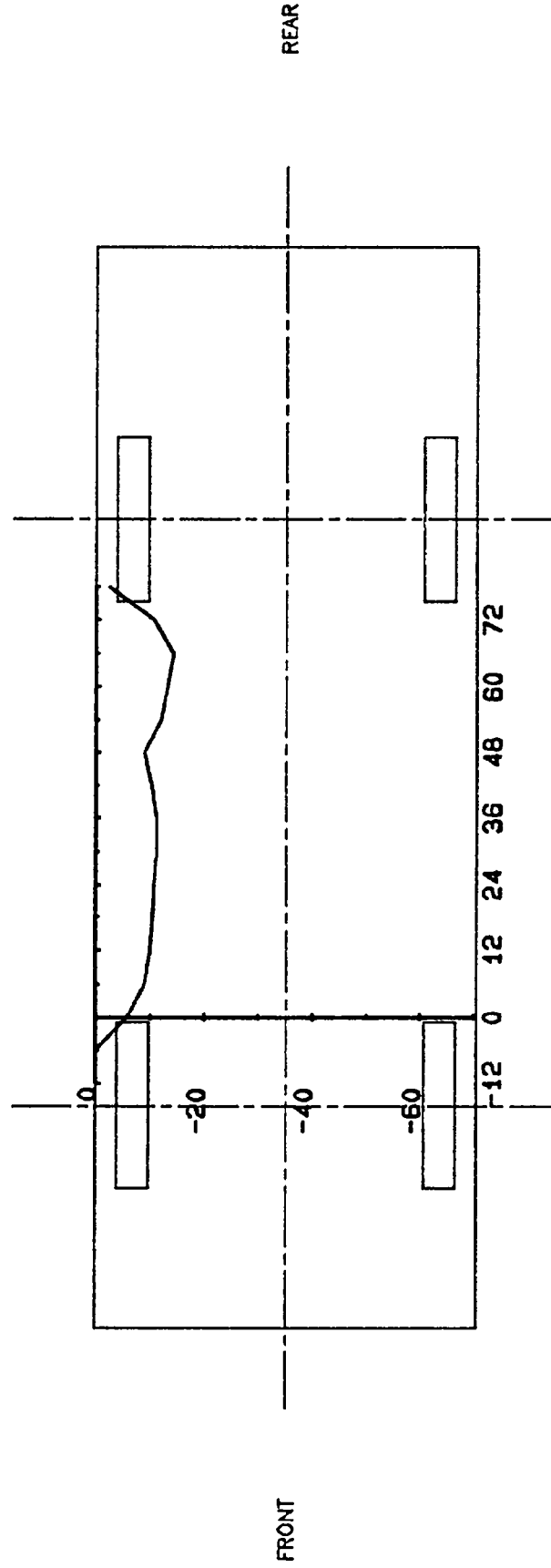
\*\* Reference plane is parallel to and 48 inches from the vehicle longitudinal centerline.

# VEHICLE EXTERIOR STATIC CRUSH PROFILE



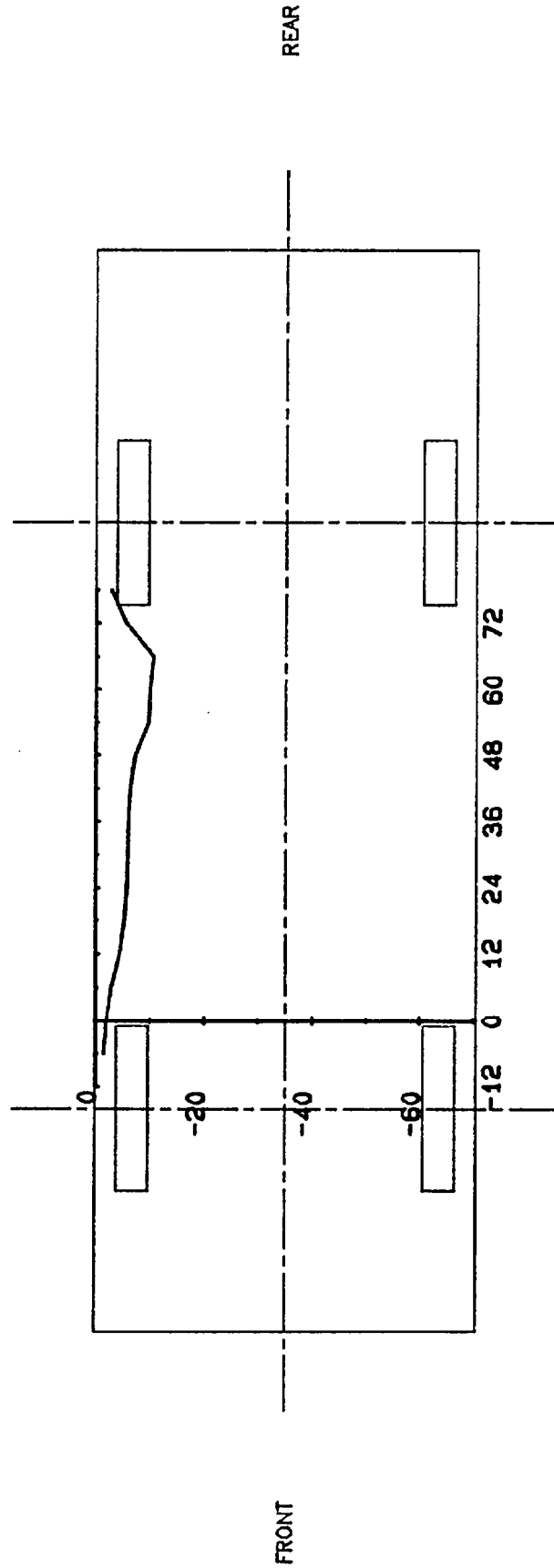
PROFILE LEVEL EQUALS AXLE HEIGHT WHICH IS 12.1" ABOVE GROUND LEVEL  
(0,0) EQUALS PROJECTED IMPACT POINT  
SCALE FACTOR EQUALS 0.033

# VEHICLE EXTERIOR STATIC CRUSH PROFILE



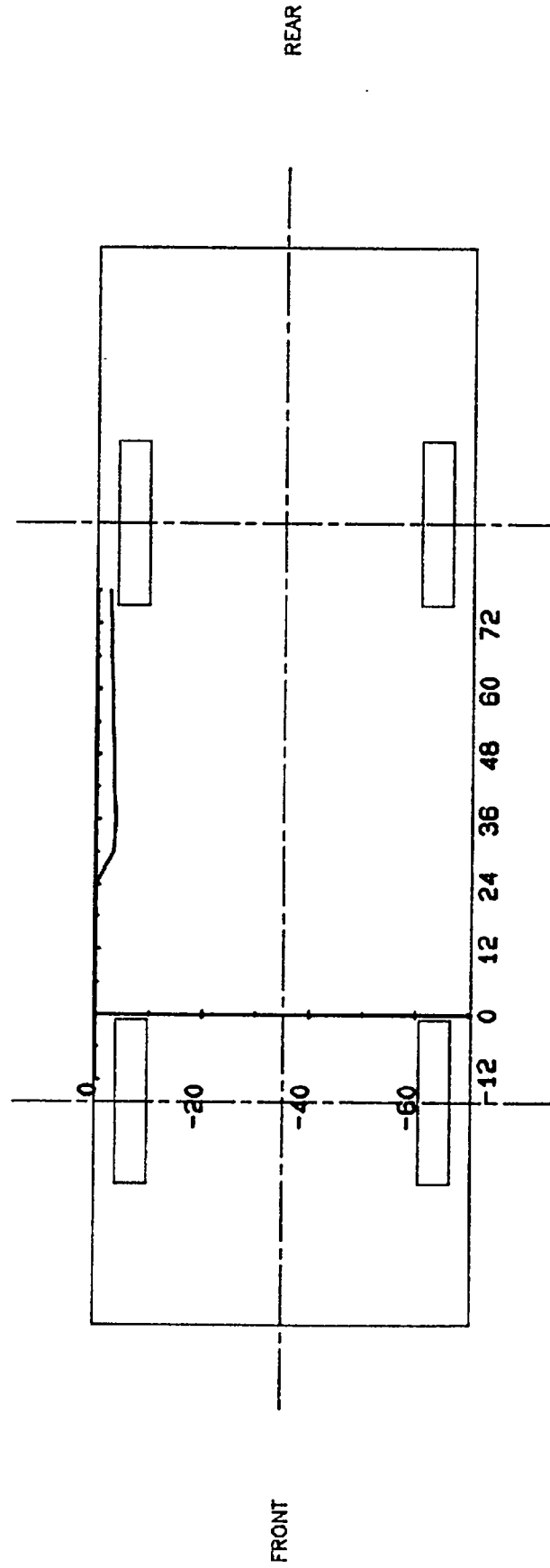
PROFILE LEVEL EQUALS H-POINT HEIGHT WHICH IS 21.8" ABOVE GROUND LEVEL  
(0,0) EQUALS PROJECTED IMPACT POINT  
SCALE FACTOR EQUALS 0.033

# VEHICLE EXTERIOR STATIC CRUSH PROFILE



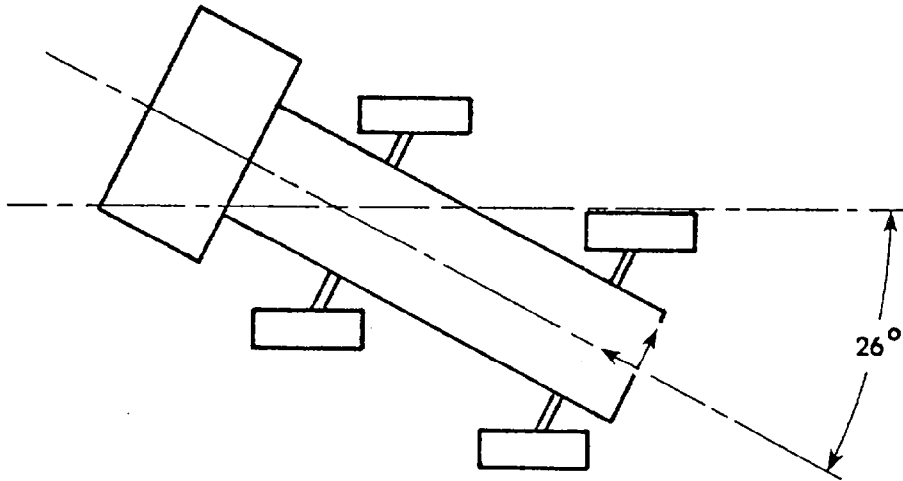
PROFILE LEVEL EQUALS WINDOW SILL HEIGHT WHICH IS 35.4" ABOVE GROUND LEVEL  
(0,0) EQUALS PROJECTED IMPACT POINT  
SCALE FACTOR EQUALS 0.033

# VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS WINDOW TOP HEIGHT WHICH IS 53.8" ABOVE GROUND LEVEL  
(0,0) EQUALS PROJECTED IMPACT POINT  
SCALE FACTOR EQUALS 0.033

MOVING BARRIER ACCELEROMETER LOCATIONS AND DATA SUMMARY



NO.	LOCATION	X*	Y*	Z*	POSITIVE** DIRECTION		NEGATIVE*** DIRECTION	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	CENTER OF GRAVITY	73.0	0.9	11.9				
	(LONGITUDINAL)					---	X	17.60
	(LATERAL)				9.01	28.50	3.72	54.25
	(VERTICAL)				19.26	40.50	8.19	30.63
	(RESULTANT)					20.97 @ 30.75		
2	REAR FRAME MEMBER	18.5	-19.2	11.9				
	(LONGITUDINAL)				1.64	130.75	13.81	31.50
	(LATERAL)				3.32	99.13	7.04	24.63

\* Reference: X - Rear Most Point of Frame (+ To Forward), Y - Barrier Centerline (+ To Right), Z - Ground Level (+ To Up)

\*\*LONGITUDINAL: FORWARD                      \*\*\*LONGITUDINAL: REARWARD  
 LATERAL: RIGHTWARD                              LATERAL: LEFTWARD  
 VERTICAL: DOWNWARD                              VERTICAL: UPWARD

All measurements of accelerometer locations in inches.

X There were no positive values in the time interval of interest.

APPENDIX A

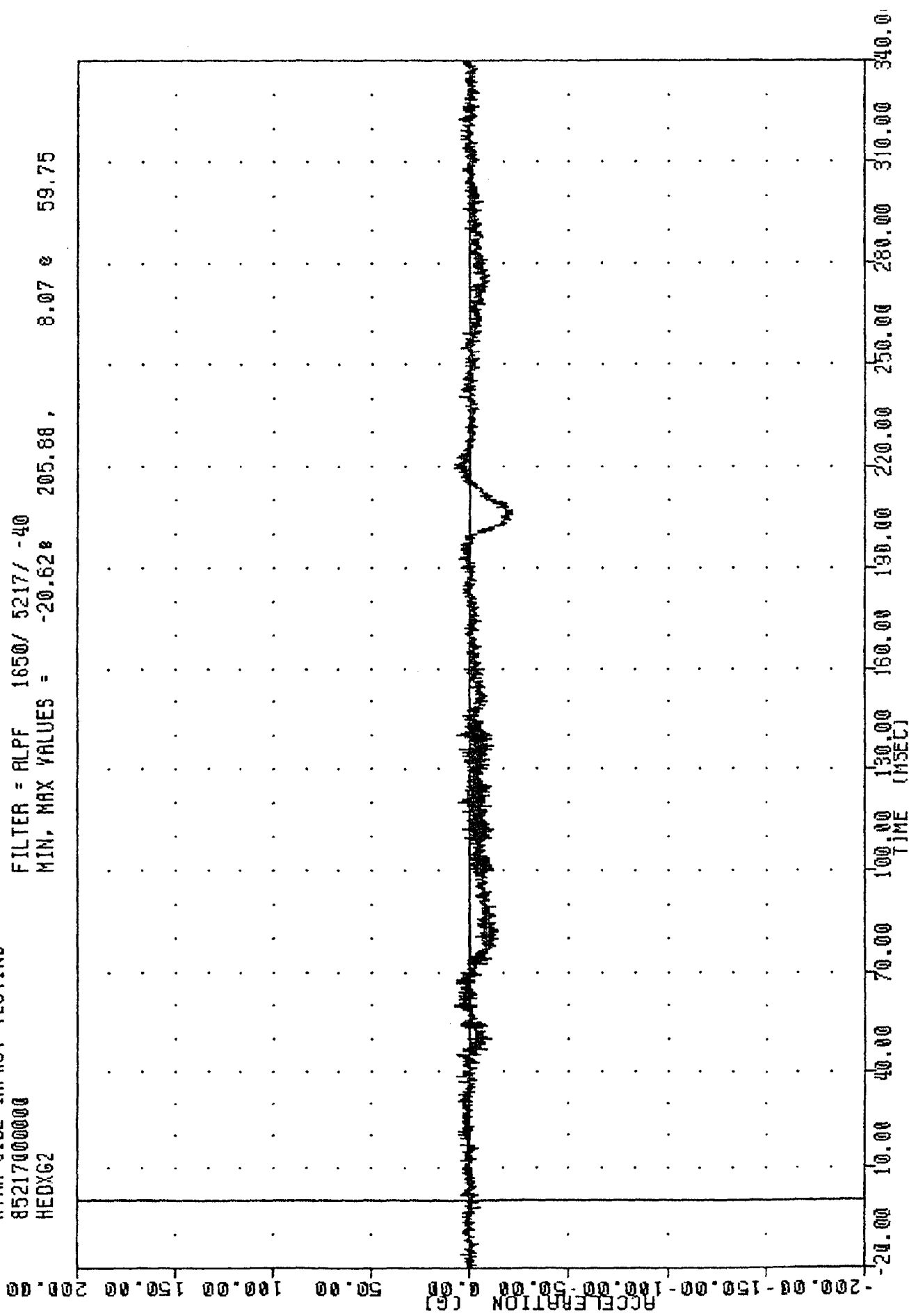
DATA PLOTS

Data plots generated from the crash test data are presented on the following pages. All data are recorded on magnetic tape for inclusion in the NHTSA crash test data base system. All data were filtered according to SAE J211, except that dummy thorax data were filtered using the HSRI filter.

TRC 85217000000 7-AUG-83 13:55:23

NYMA SIDE IMPACT TESTING  
85217000000  
HEDXG2

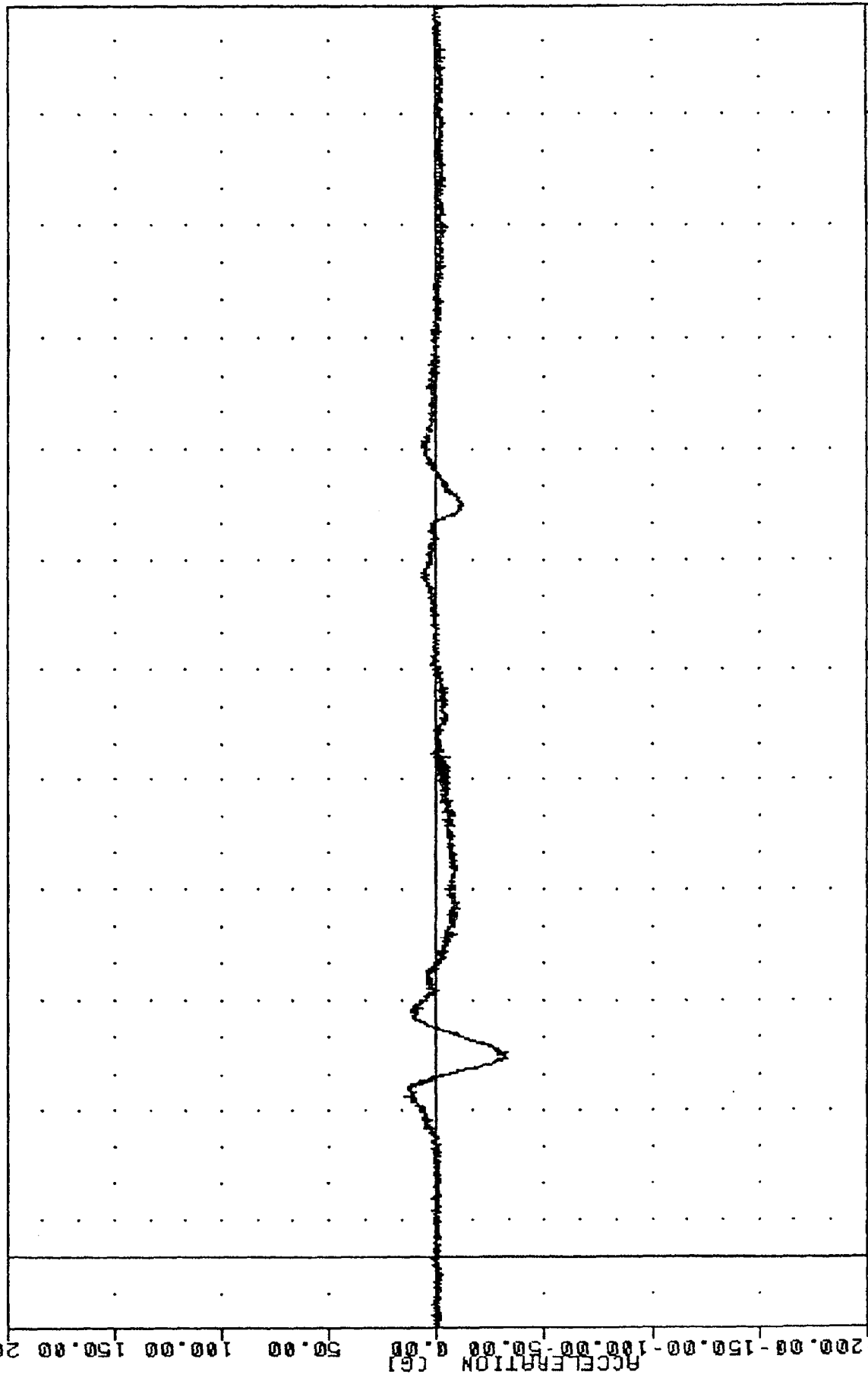
FILTER = ALPF 1650/ 5217/ -40  
MIN, MAX VALUES = -20.62g 205.68g 8.07g 59.75



NYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
PASSENGER HEAD ACCELERATION X AXIS

THU 030800Z AUG 68 13:35:23  
 MYNA SIDE IMPACT TESTING  
 85217000000  
 HEDYG2

FILTER = ALPF 1650/ 5217/ -40  
 MIN, MAX VALUES = -32.72g 55.38g, 14.65g 43.88g



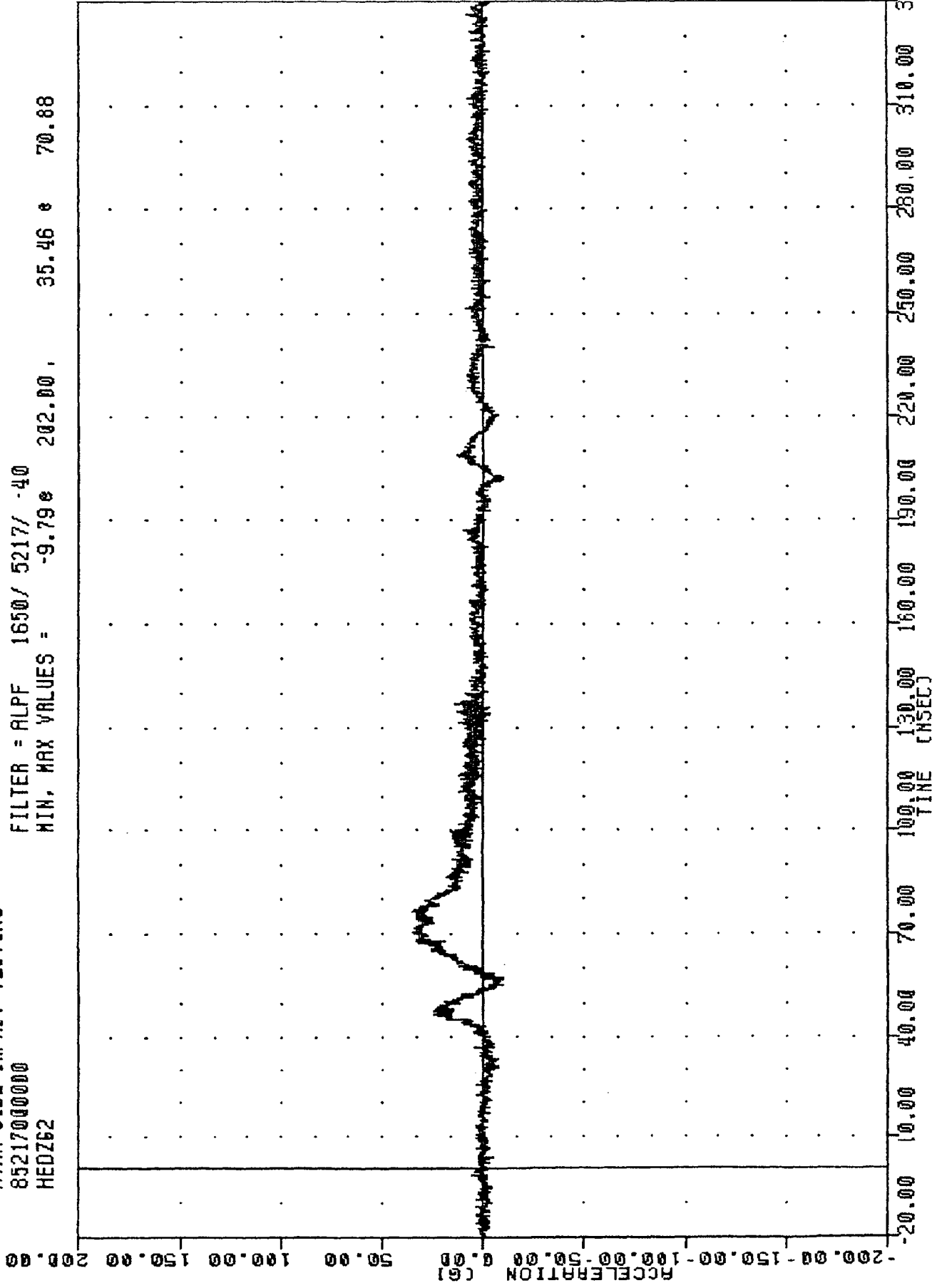
-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00  
 TIME (MSEC)  
 PASSENGER HEAD ACCELERATION Y AXIS

MYNA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING

TIME 00:00:00  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 HEDZ52

PLATE DATE 1985-25

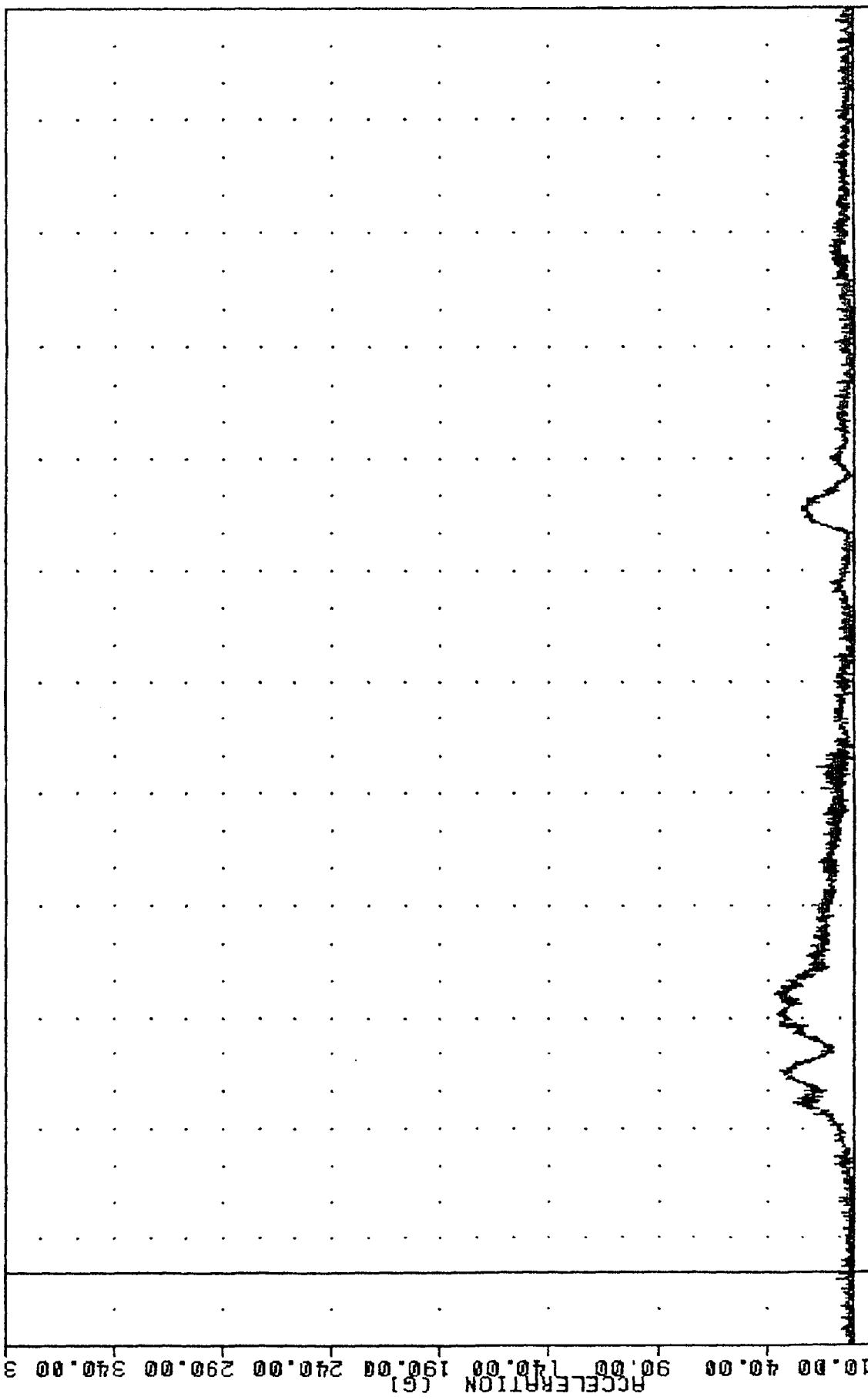
FILTER = ALPF 1650/ 5217/ -40  
 MIN. MAX VALUES = -9.79e 202.00, 35.46 e 70.88



MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER HEAD ACCELERATION Z AXIS

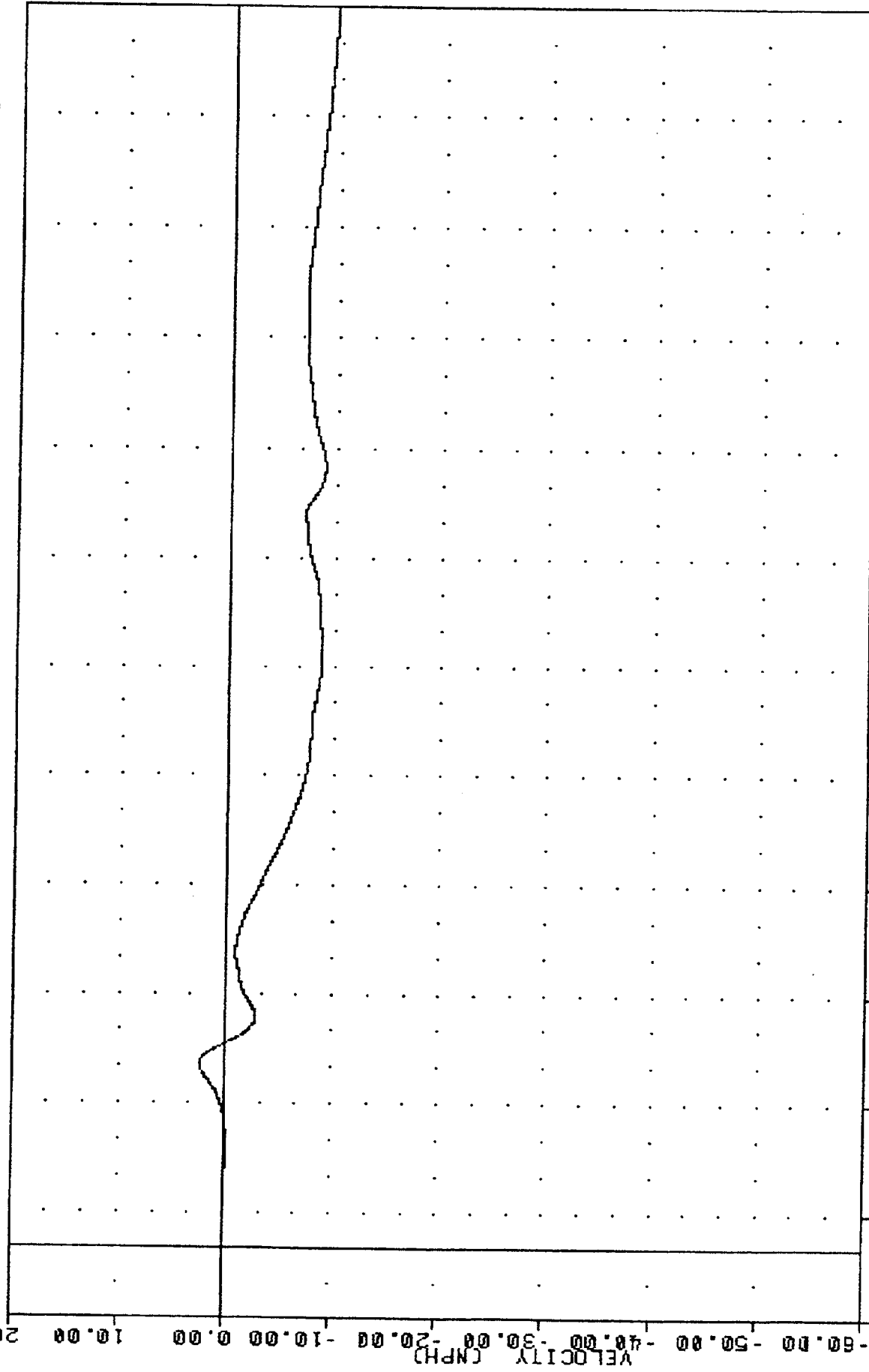
THE 1980S PLANT DATE 7 AUG 83 13:55:23  
 NYMA SIDE IMPACT TESTING  
 85217000000  
 HEDRG2

FILTER = ALPF 1650/ 5217/ -40  
 MIN, MAX VALUES = 0.218 14.75, 36.45 @ 76.25



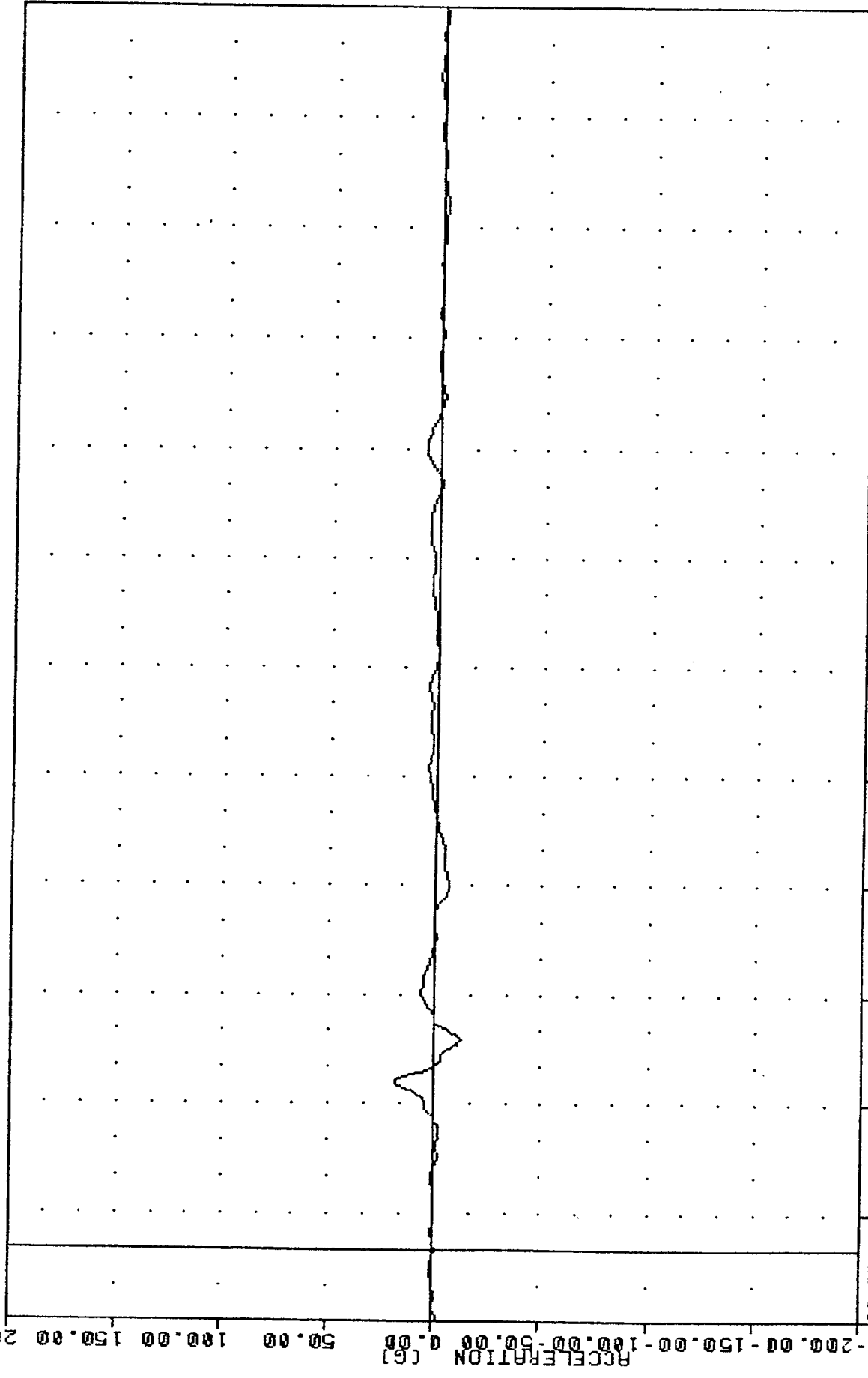
-10.00 40.00 90.00 140.00 190.00 240.00 290.00 340.00 390.00  
 ACCELERATION (G)  
 -20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER HEAD RESULTANT ACCELERATION

THC 8500805  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 HEDYV2  
 PLOT DATE 7 AUG 63 13:37:57  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -9.51e 337.00, 2.36 e 50.63



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 HEAD VELOCITY Y AXIS

INC 85217000000 T01XG2  
 NVMA SIDE IMPACT TESTING  
 FILTER = HSR( 136/ 189/ -50  
 MIN, MAX VALUES = -12.04B 57.50 , 18.57 @ 46.25  
 PLOT DATE 7 AUG 83 13:37:15



-200.00 10.00 40.00 70.00 100.00 130.00 150.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER UPPER SPINE ACCELERATION X AXIS

TAL  
850805  
7-AUG-85 13:57:13

MYNA SIDE IMPACT TESTING  
85217000000  
T01Y62

FILTER = HSRI 136/ 189/ -50  
MIN, MAX VALUES = -67.49e 46.88 , 21.63 e 72.50

PLUT DATE

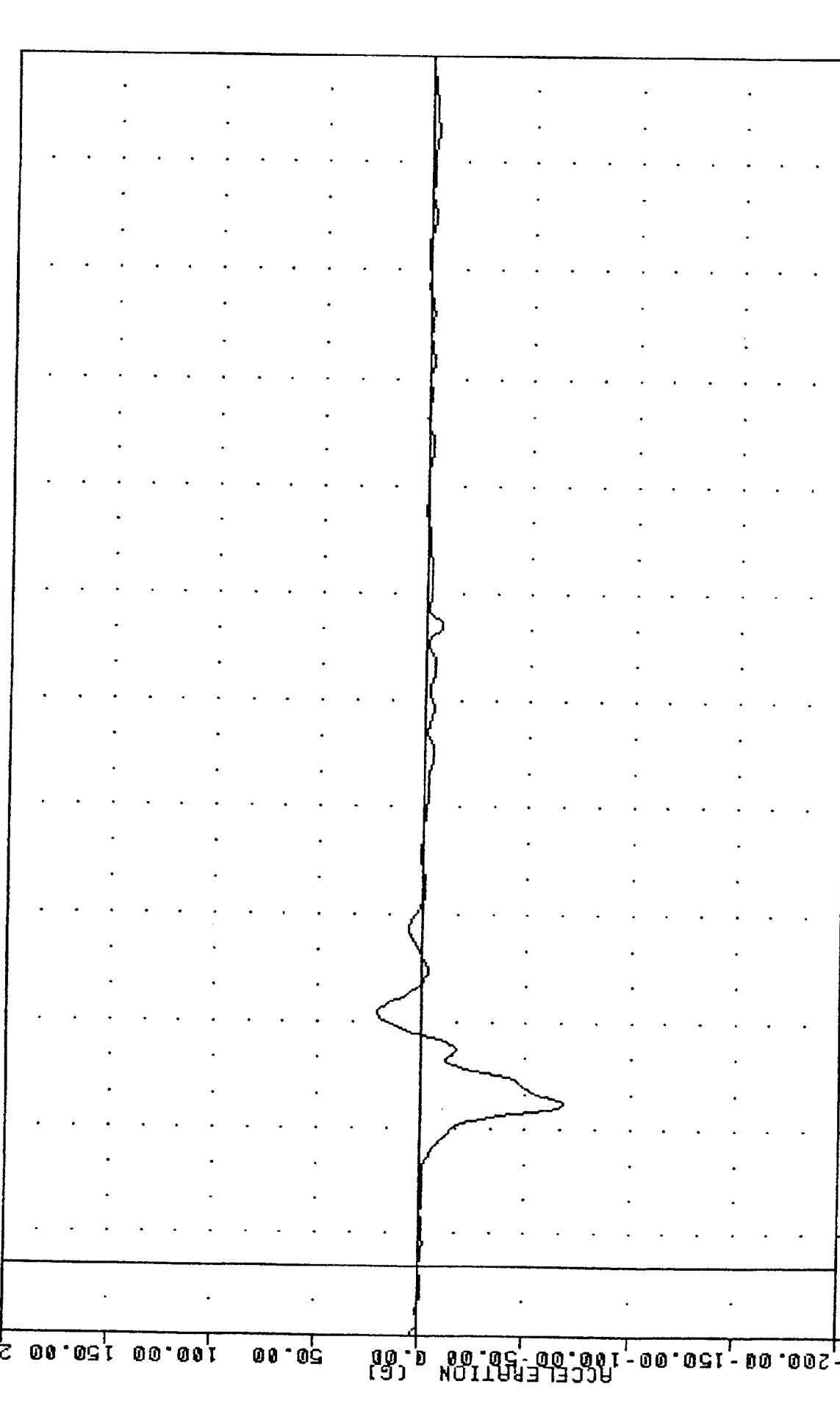
850805

7-AUG-85 13:57:13

MYNA SIDE IMPACT TESTING

85217000000

T01Y62

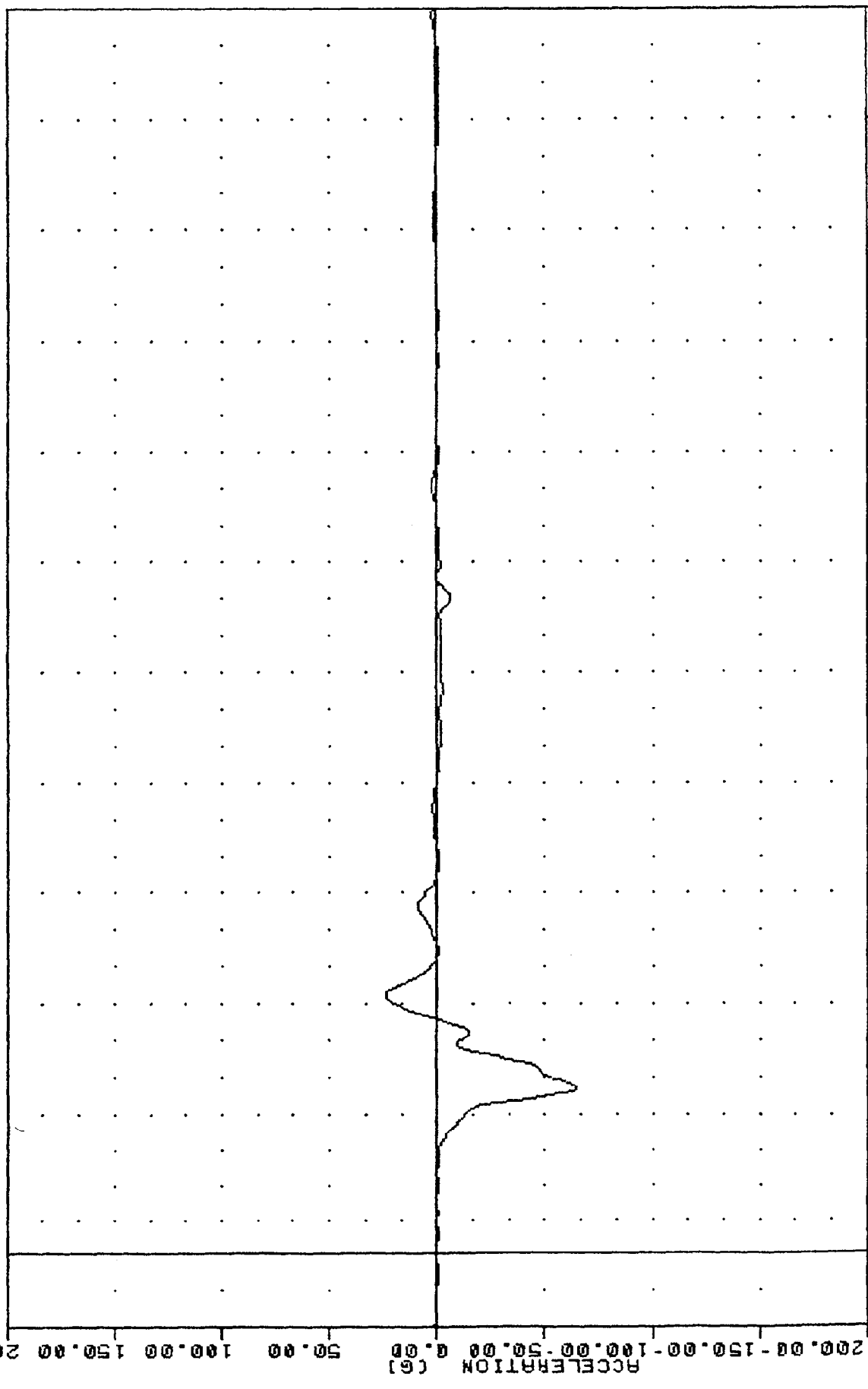


-200.00 -150.00 -100.00 -50.00 0.00 50.00 100.00 150.00 200.00  
TIME (MSEC) 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00

MYNA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
PASSENGER UPPER SPINE ACCELERATION Y AXIS

TRC 800805 PLOT DATE 7-106-83 15:37:15  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 T01Y68

FILTER = HSRI 136/ 189/ .50  
 MIN, MAX VALUES = -64.91e 46.88 , 29.82 e 72.50



-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00  
 TIME (MSEC)  
 MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER UPPER SPINE ACCELERATION -2 Y AXIS

TRC

830805

PLOT DATE

7 AUG 63

13:37:13

NYMA SIDE IMPACT TESTING

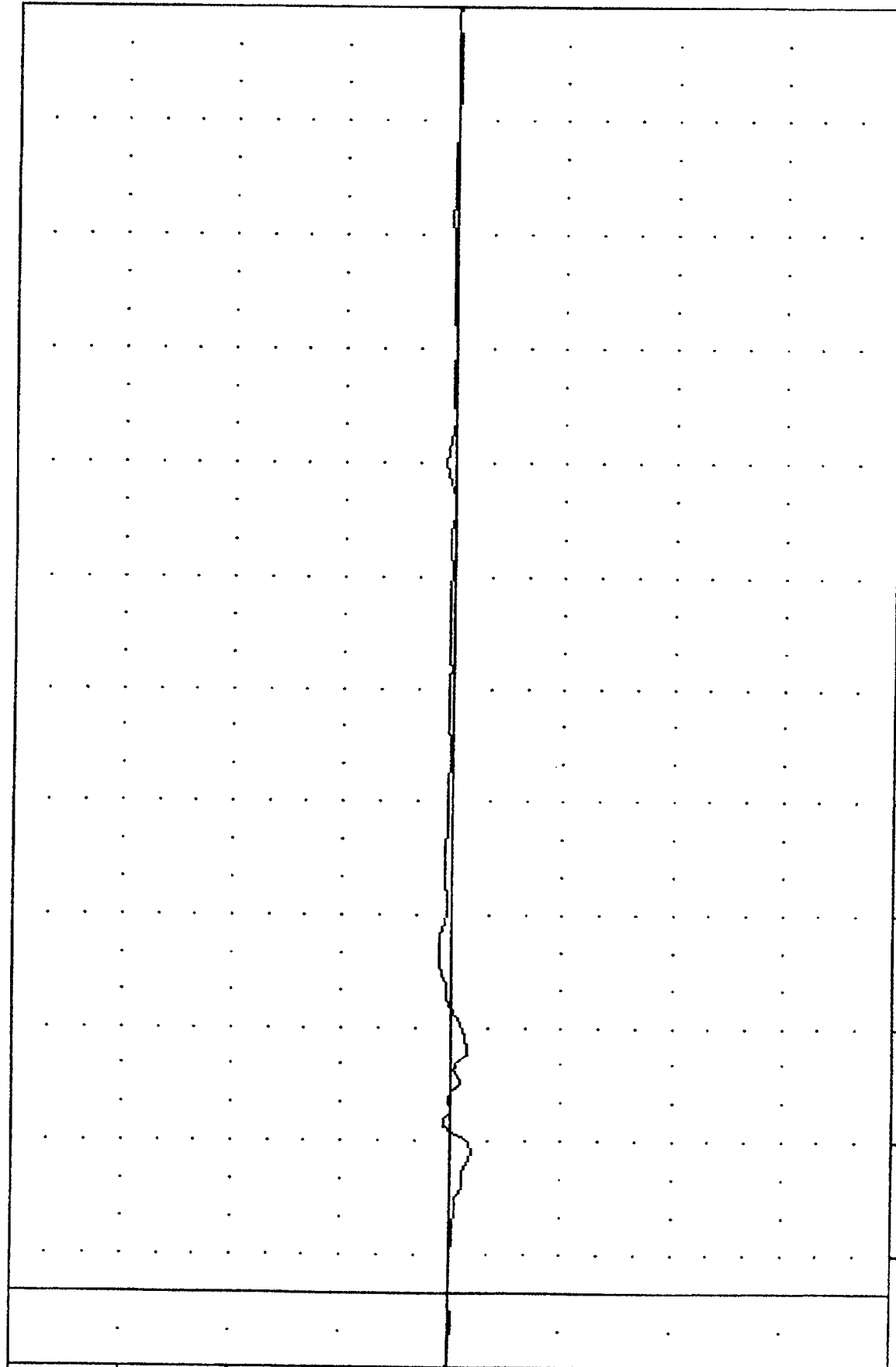
85217000000

T01Z62

FILTER = HSRI 136/ 189/ -50

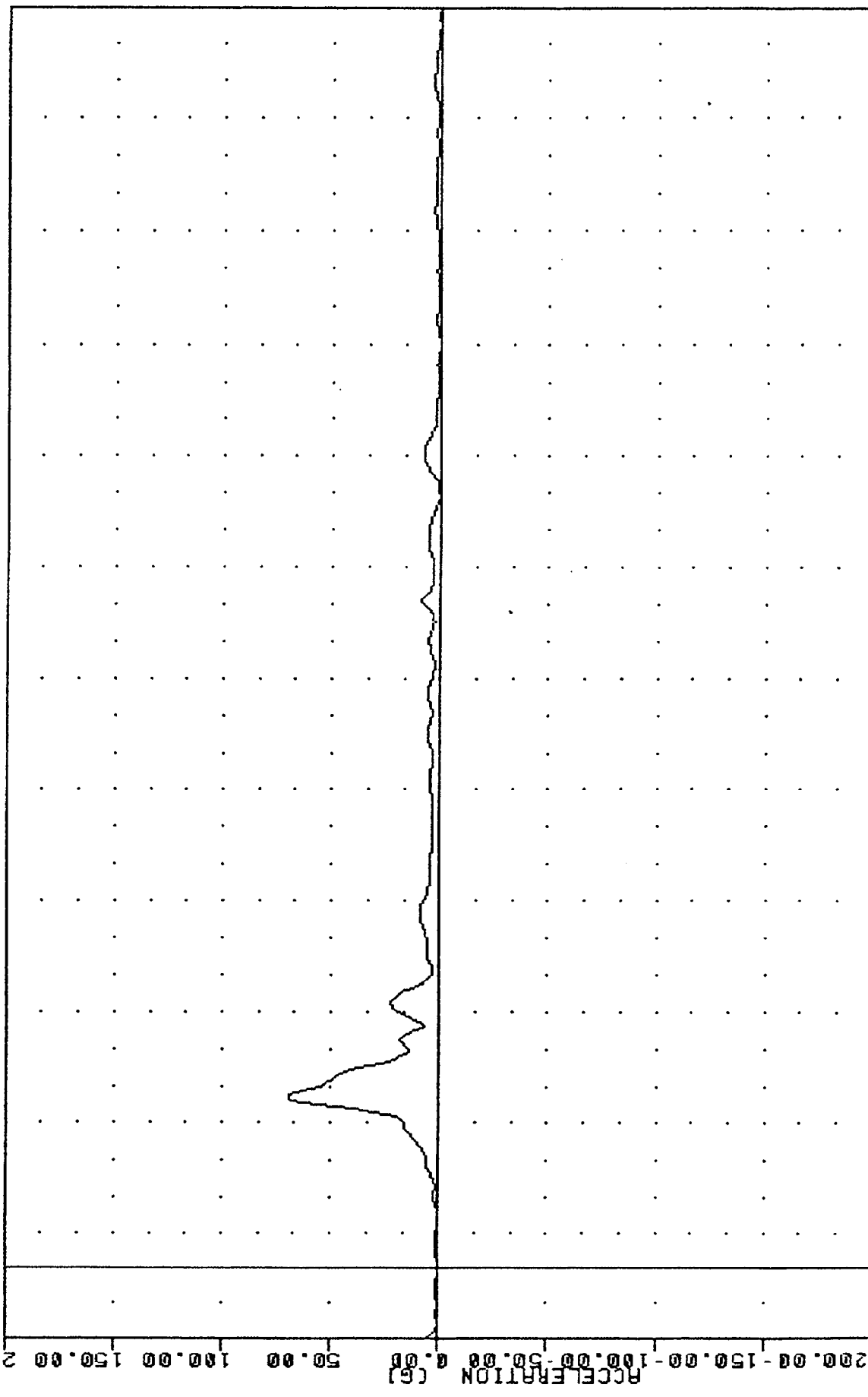
MIN, MAX VALUES = -9.15e 36.88 , 5.94 e 92.50

ACCELERATION (G)



NYMA SIDE IMPACT TEST -- MODIFIED STRAUCURE/HARDBOARD/FAR SEATING  
PASSENGER UPPER SPINE ACCELERATION Z AXIS

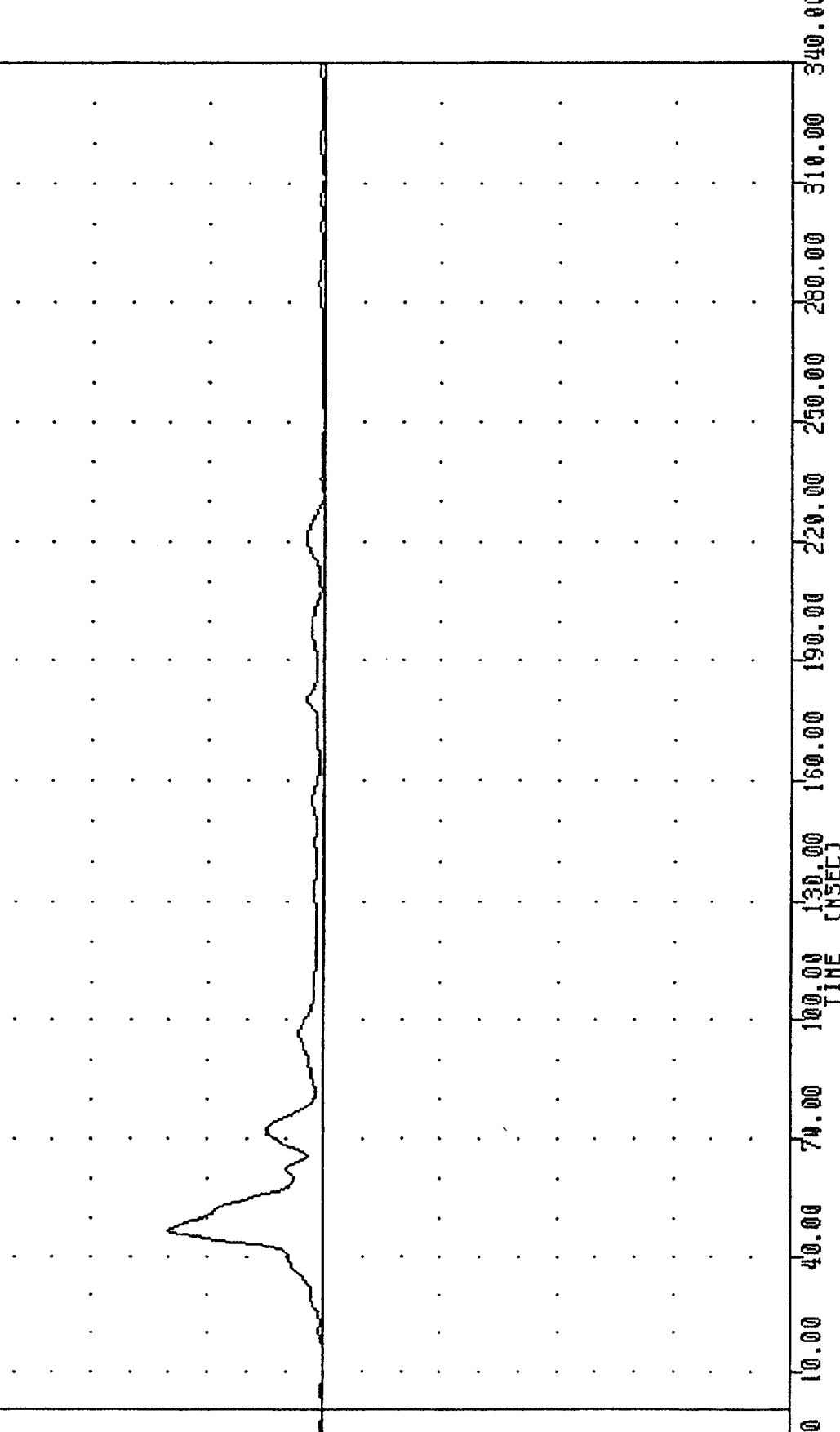
TRC ██████████, 850803 ██████████ PLOT DATE ██████████ 7 AUG 63 ██████████ 13:37:13 ██████████  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 T01RG2



-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER UPPER SPINE RESULTANT ACCELERATION

TRC 800805  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 T01R6B

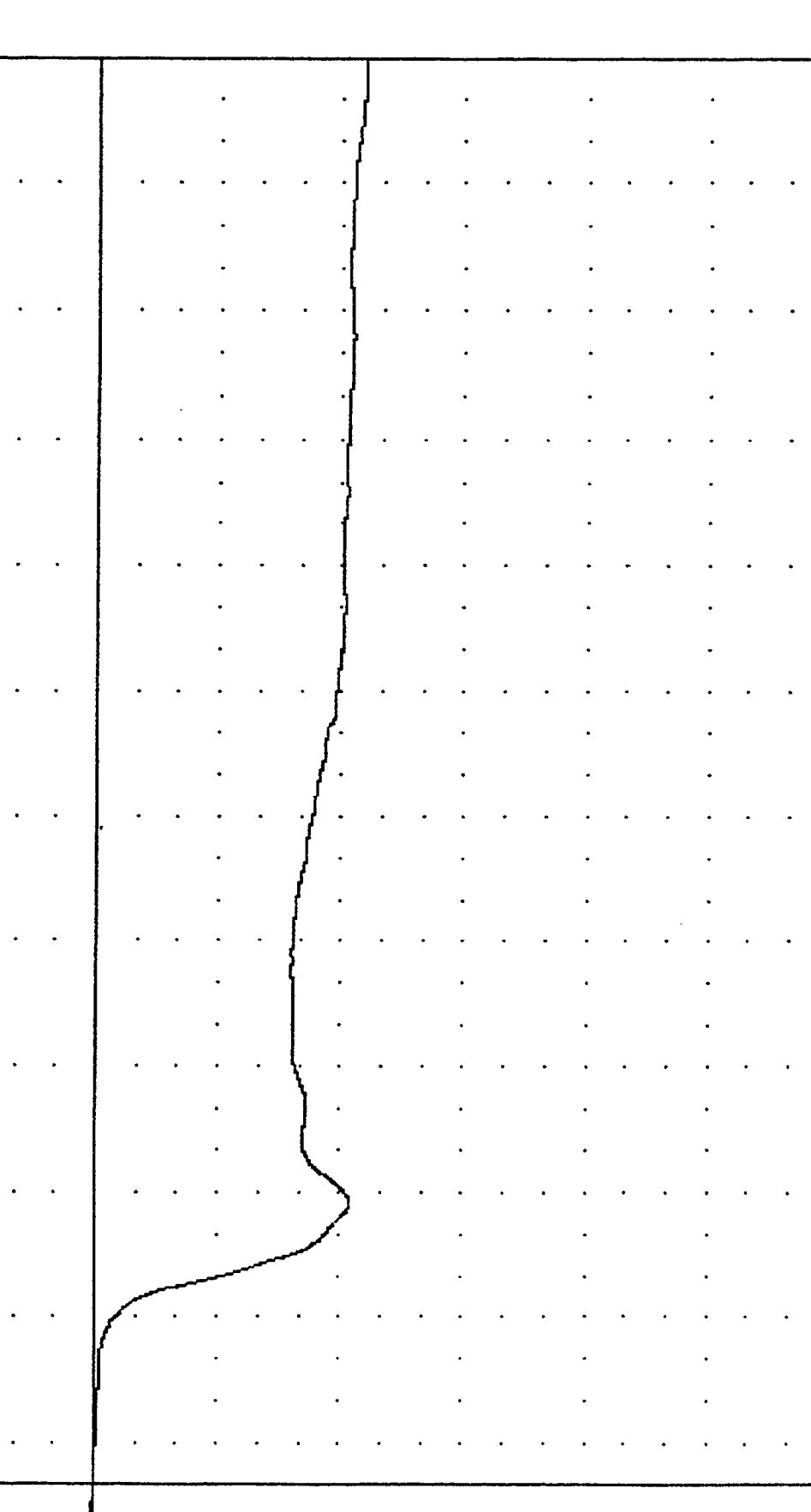
PLUT DATE 7-NOV-85 13:57:13  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = 0.11e -1.88, 67.15 e 46.88



MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER UPPER SPINE RESULTANT ACCELERATION #2

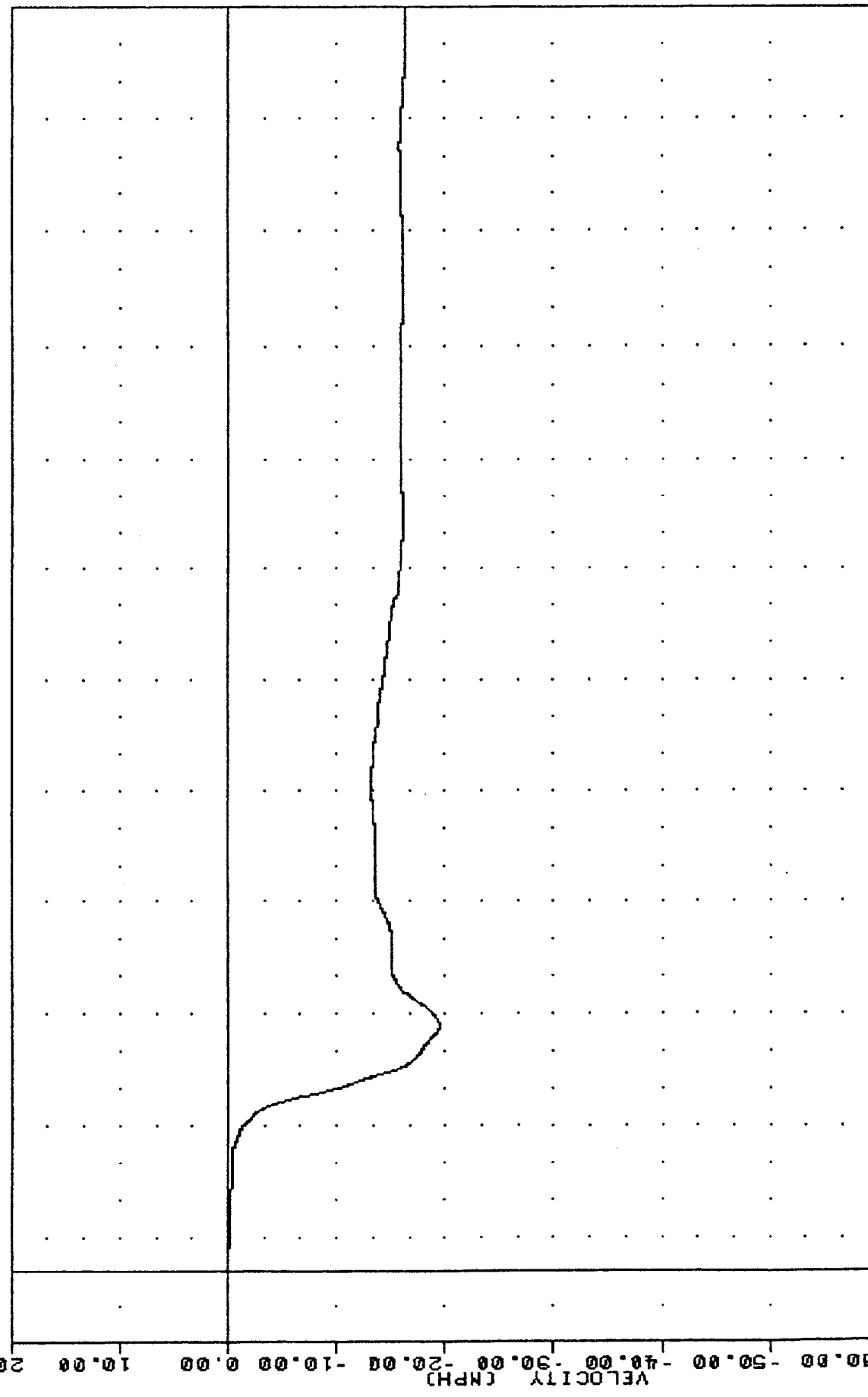
TRC 850805  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 T01YV2

PLUT DATE 7-HUG-85 13:57:57  
 FILTER = BLPF 300 / 949 / -40  
 MIN, MAX VALUES = -21.85e 336.50, 0.15 e -9.50



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 UPPER SPINE VELOCITY Y AXIS

TRC [REDACTED] 850805 [REDACTED] 7-HUG-85 13:57:57  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 T01YYB  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = -19.47e 66.88, 0.06 e -10.38

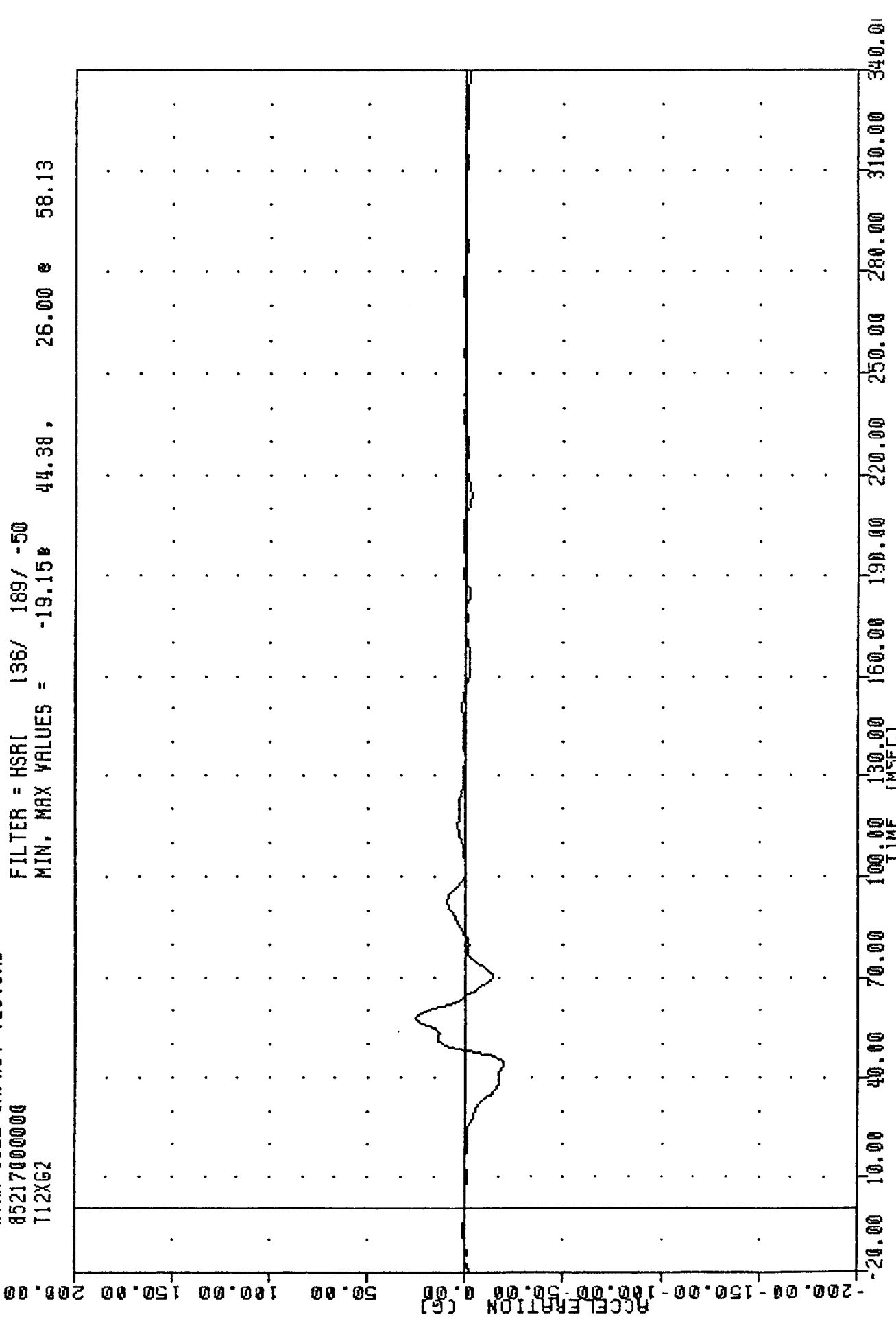


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 UPPER SPINE VELOCITY #2 Y AXIS

TRC 830805  
 NYMA SIDE IMPACT TESTING  
 85217000000  
 T12XG2

PLOT DATE 7-AUG-85 13:57:13

FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -19.15 44.38, 26.00 e 58.13

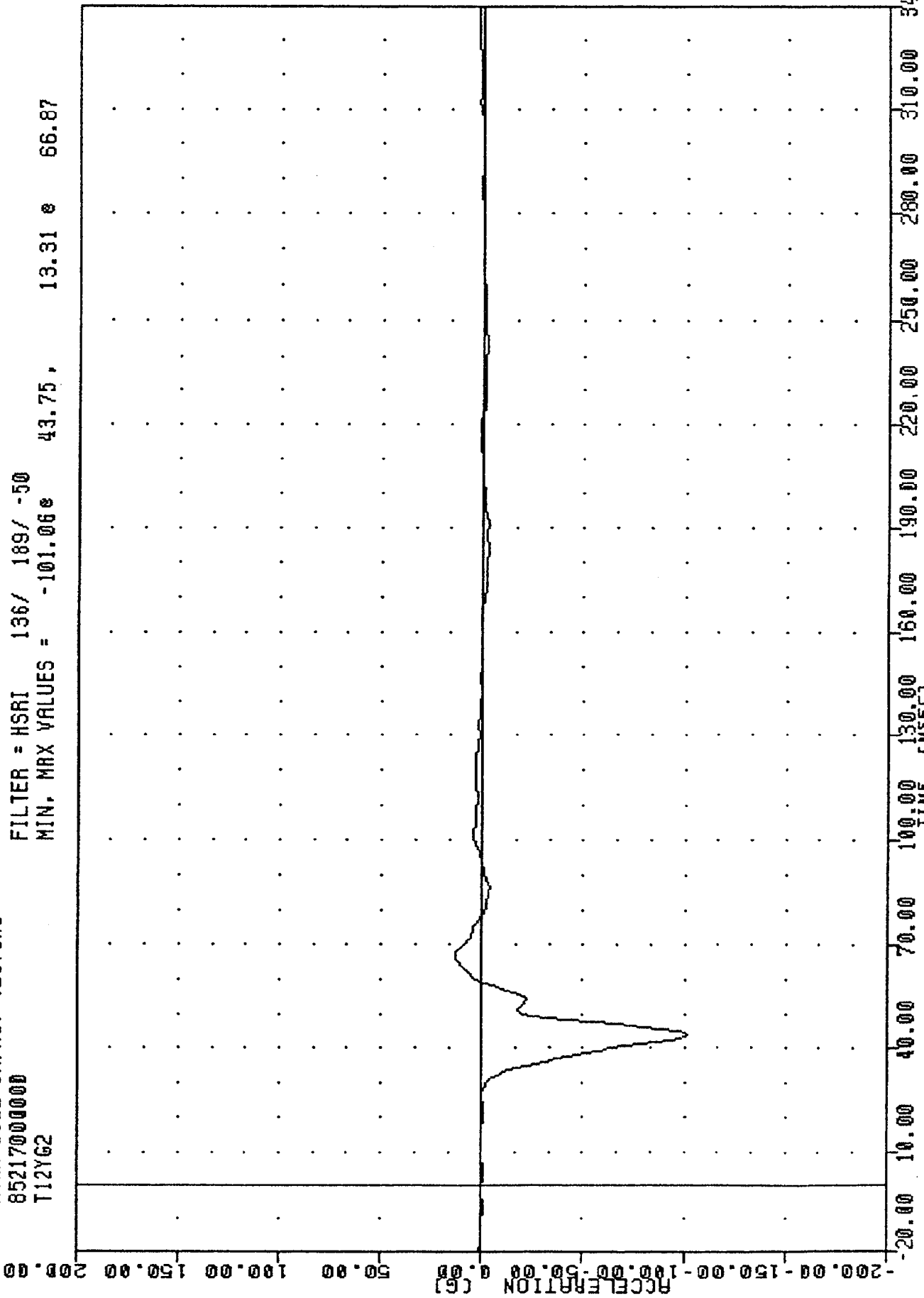


NYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER LOWER SPINE ACCELERATION X AXIS

TRC  
 850803  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 T12Y62

PLUT DATE 7-AUG-85 13:57:13

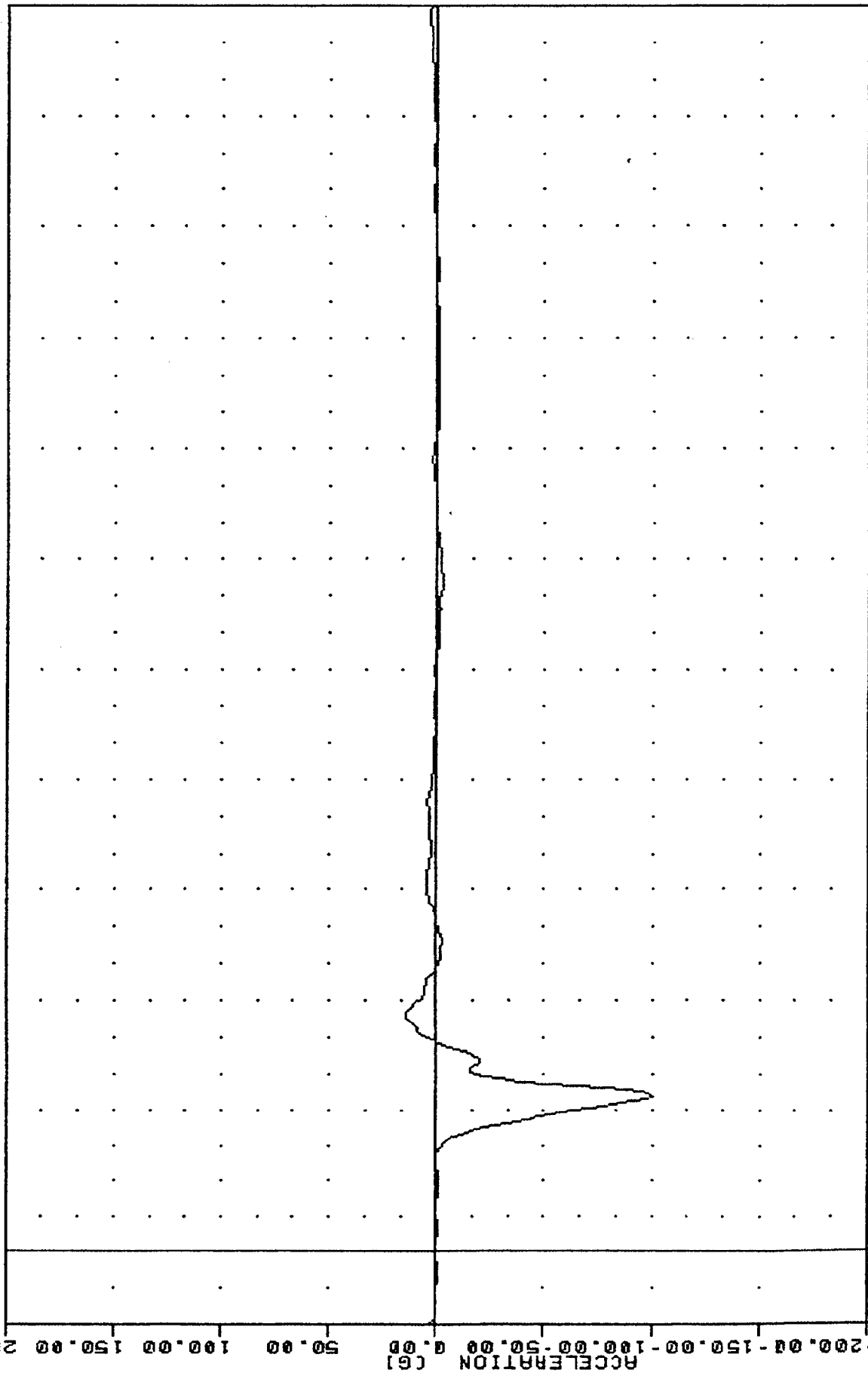
FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -101.06e 43.75, 13.31 e 66.87



MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER LOWER SPINE ACCELERATION Y AXIS

TRC 830805 PLOT DATE 7 NOV 83 15:37:13  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 T12Y6B

FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -100.32e 43.75, 14.07 e 66.25



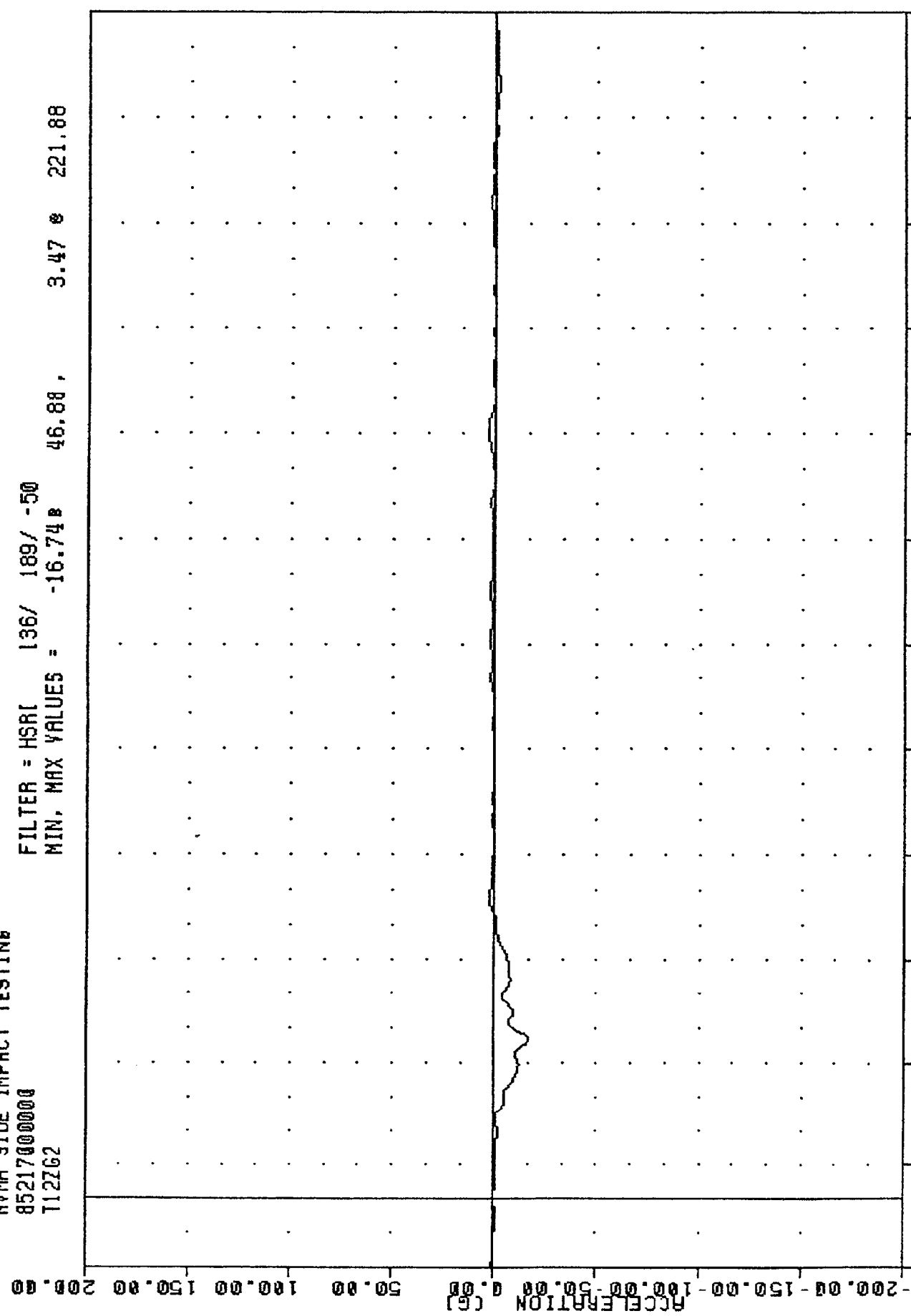
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 ACCELERATION (G)

MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER LOWER SPINE ACCELERATION #2 Y AXIS

TRC  
 85217000000  
 NYMA SIDE IMPACT TESTING  
 T12Z62

PLOT DATE 7 AUG 89 13:57:13

FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -16.74B 46.88 , 3.47 e 221.88

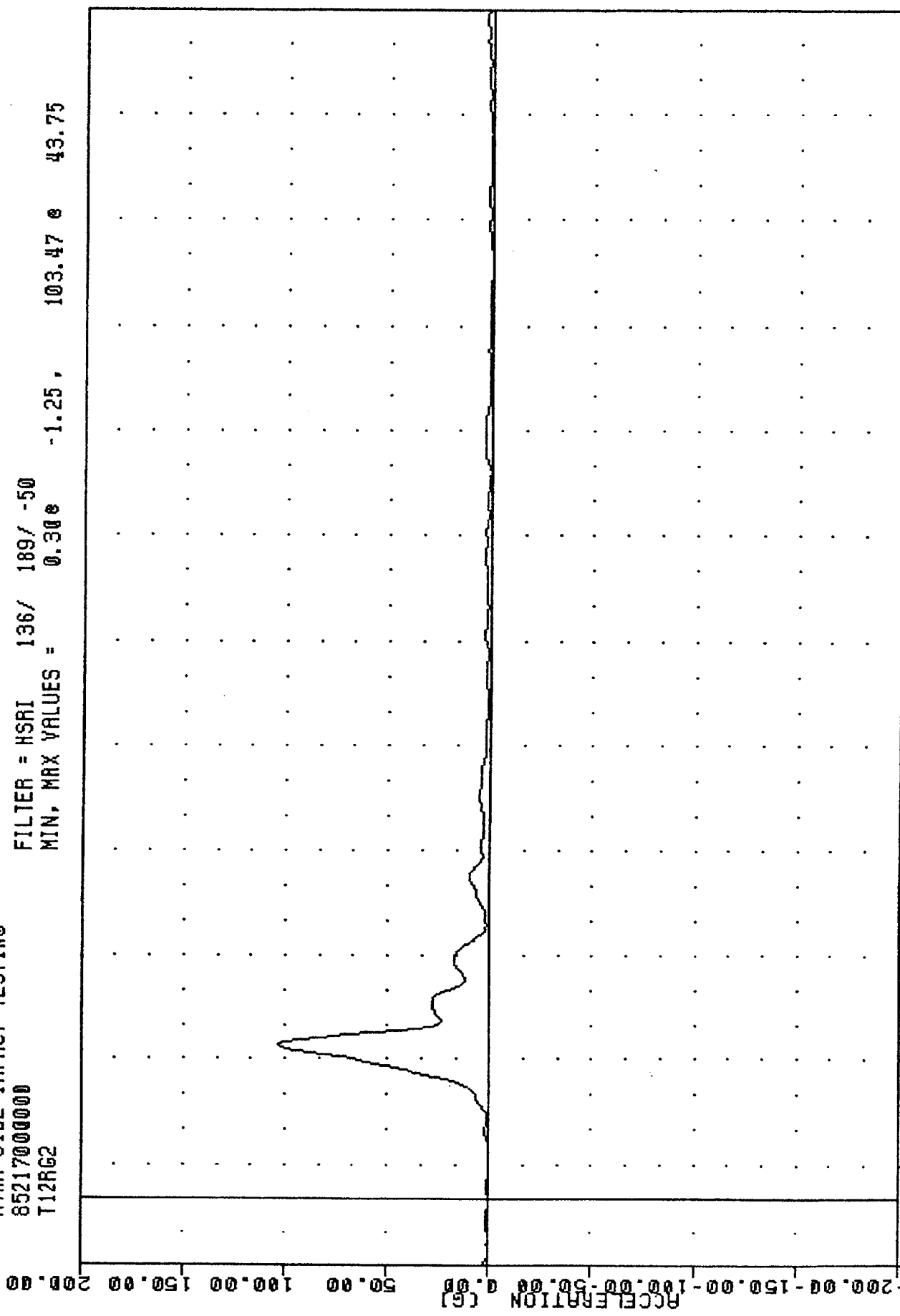


-20.00 10.00 40.00 70.00 100.00 130.00 150.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 NYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER LOWER SPINE ACCELERATION Z AXIS

TAC 800805  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 T12R02

PLUT DATE 7-H06-85 13:37:13

FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = 0.30e -1.25, 103.47 e 43.75



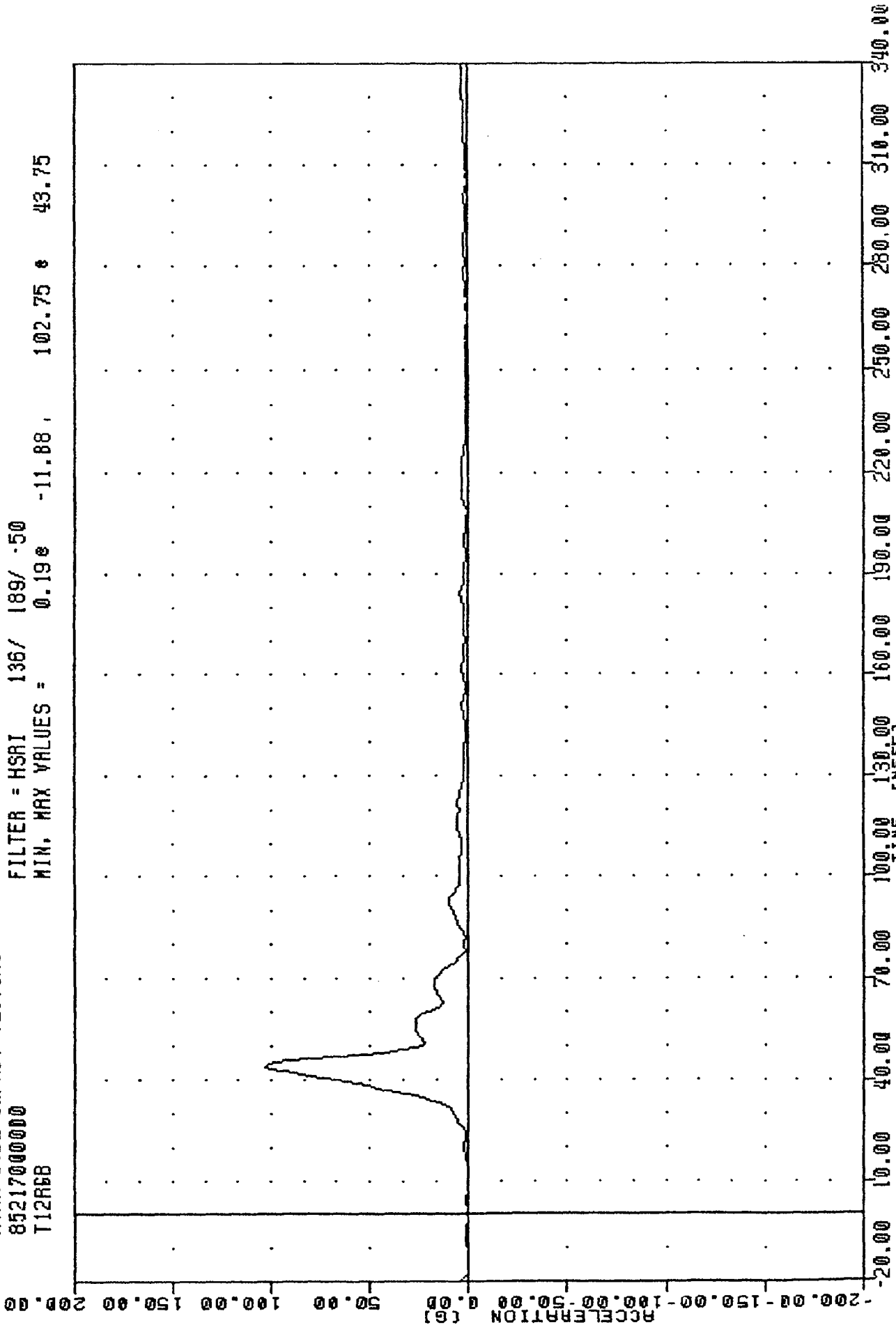
200.00 150.00 100.00 50.00 0.00 -50.00 -100.00 -150.00 -200.00  
 -20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)

MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER LOWER SPINE RESULTANT ACCELERATION

TRC  
 85217000000  
 T12R6B  
 MYMA SIDE IMPACT TESTING

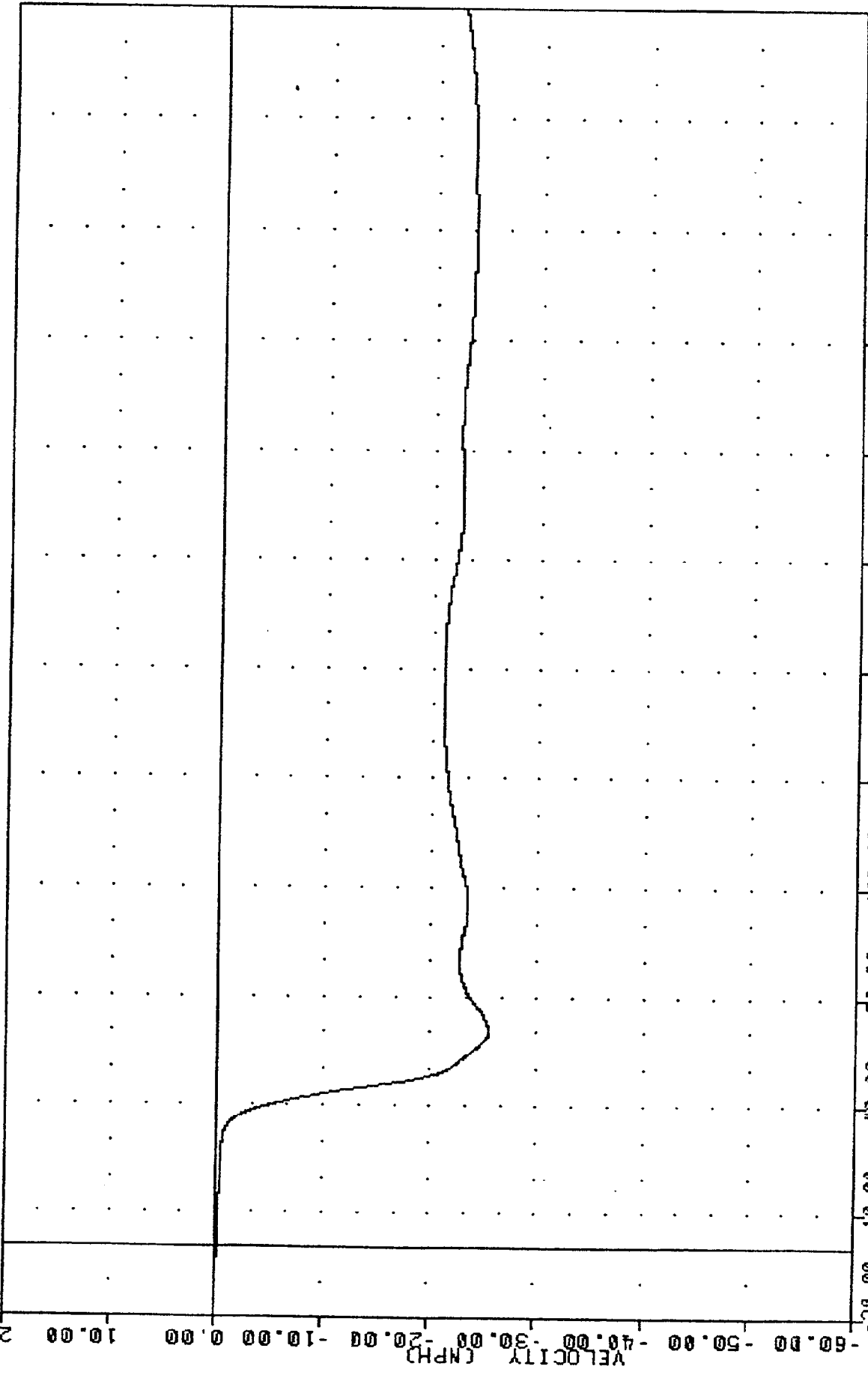
PLOT DATE 7-AUG-85 13:57:13

FILTER = HSAT 136/ 189/ .50  
 MIN, MAX VALUES = 0.19e -11.88, 102.75 e 43.75



MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER LOWER SPINE RESULTANT ACCELERATION -2

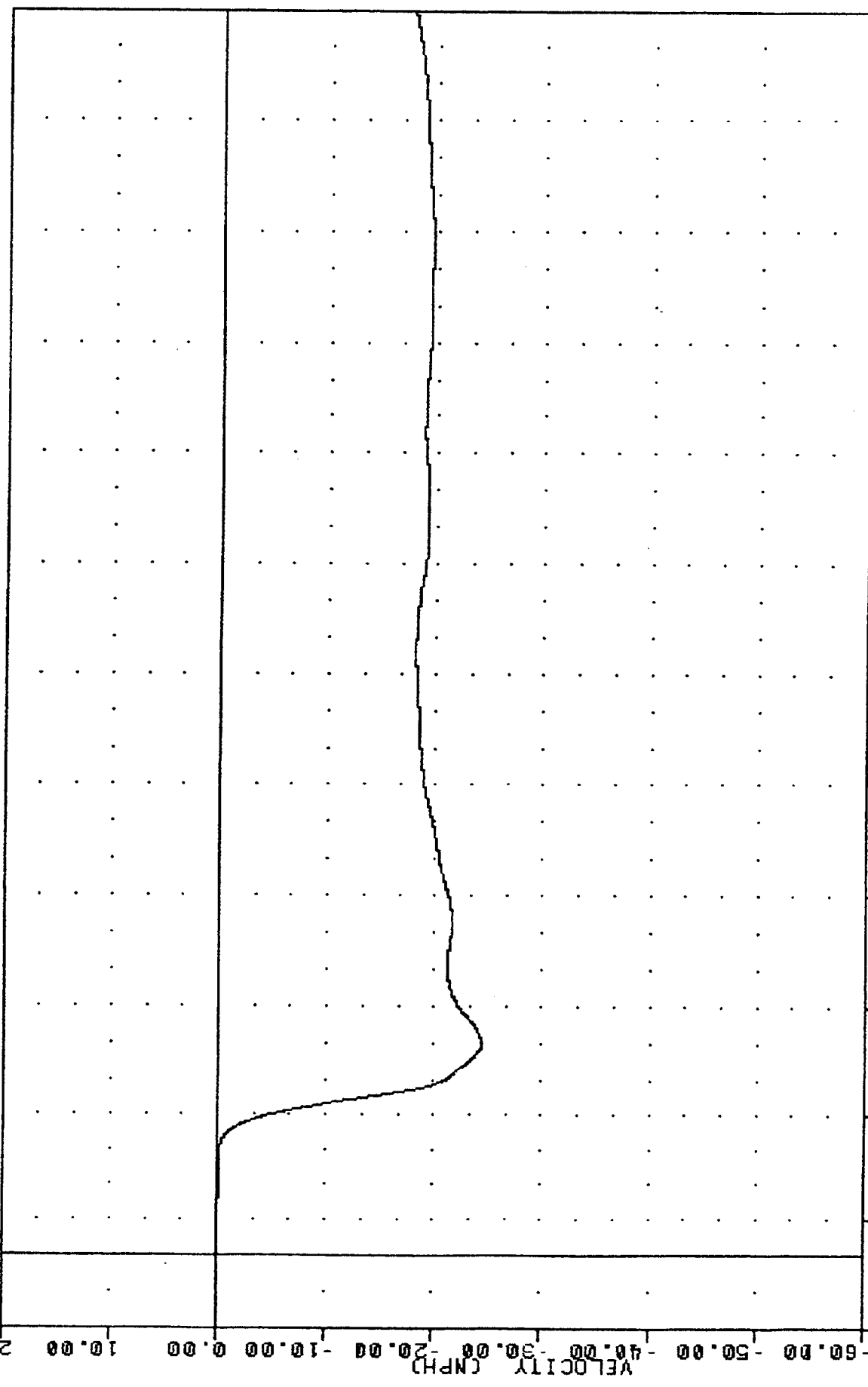
TRC  
 NYMA SIDE IMPACT TESTING  
 85217000000  
 T12YV2  
 PLOT DATE 7-AUG-85 13:57:57  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = -25.50 60.00 0.00 e -20.00



MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 LOWER SPINE VELOCITY Y AXIS

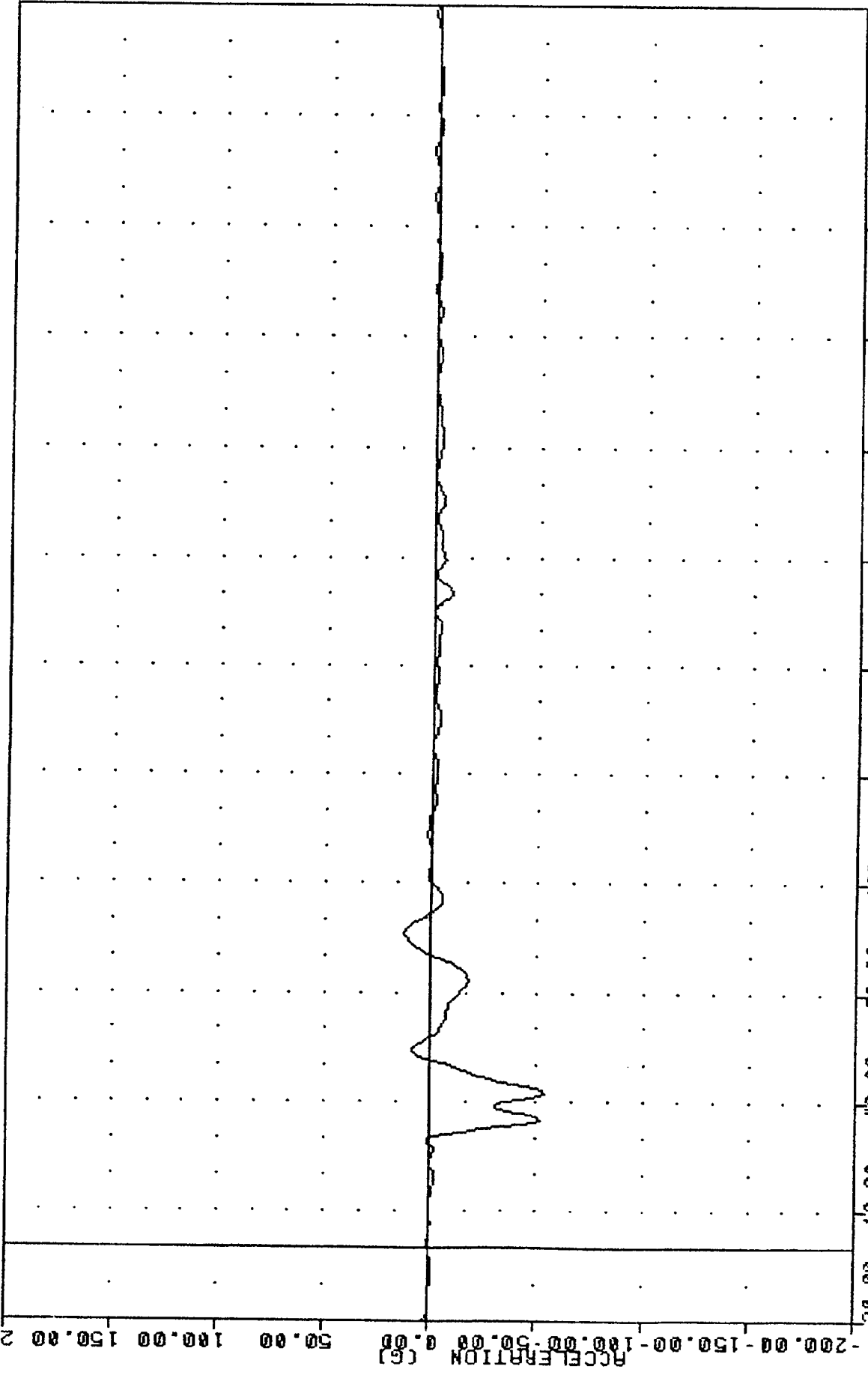
THC [REDACTED] , 850805 [REDACTED] PLOT DATE [REDACTED] 13:57:57 [REDACTED]  
 MVMA SIDE IMPACT TESTING [REDACTED]  
 85217000000 [REDACTED]  
 T12YVB [REDACTED]

FILTER = BLPF 300/ 919/ -40  
 MIN. MAX VALUES = -24.44e 59.63, 0.04 e -10.75



-20.00 10.00 40.00 70.00 100.00 130.00 150.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (CMSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 LOWER SPINE VELOCITY #2 Y AXIS

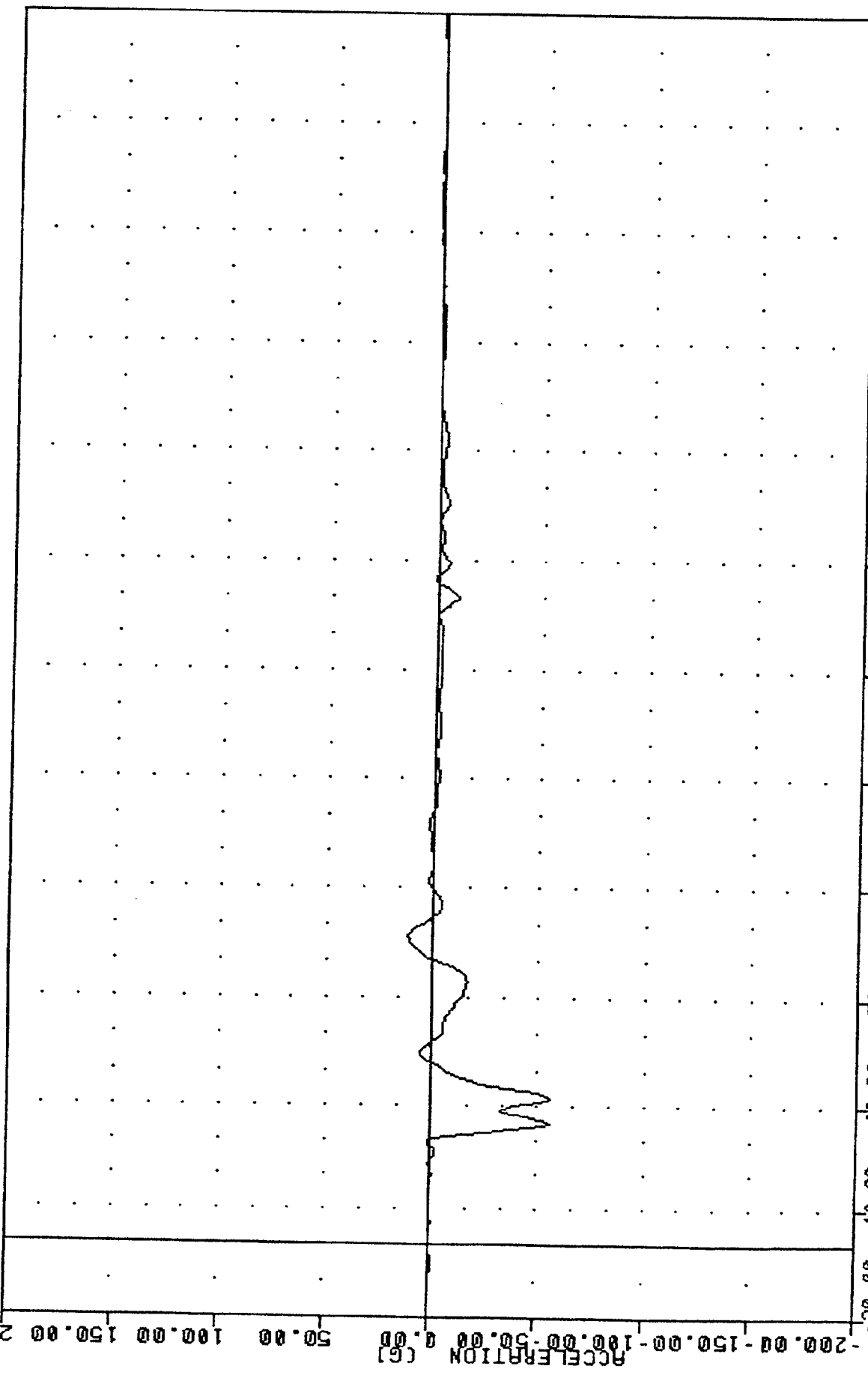
TRC [REDACTED], 830805 [REDACTED] PLOT DATE [REDACTED] 7-AUG-85 [REDACTED] 13:57:13 [REDACTED]  
 NYMA SIDE IMPACT TESTING  
 85217000000  
 RURY62  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -54.00e 42.50, 12.66 e 86.25



-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00  
 TIME (MSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER RIGHT UPPER RIB ACCELERATION Y AXIS

TRC  
 850805  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 RURYGB

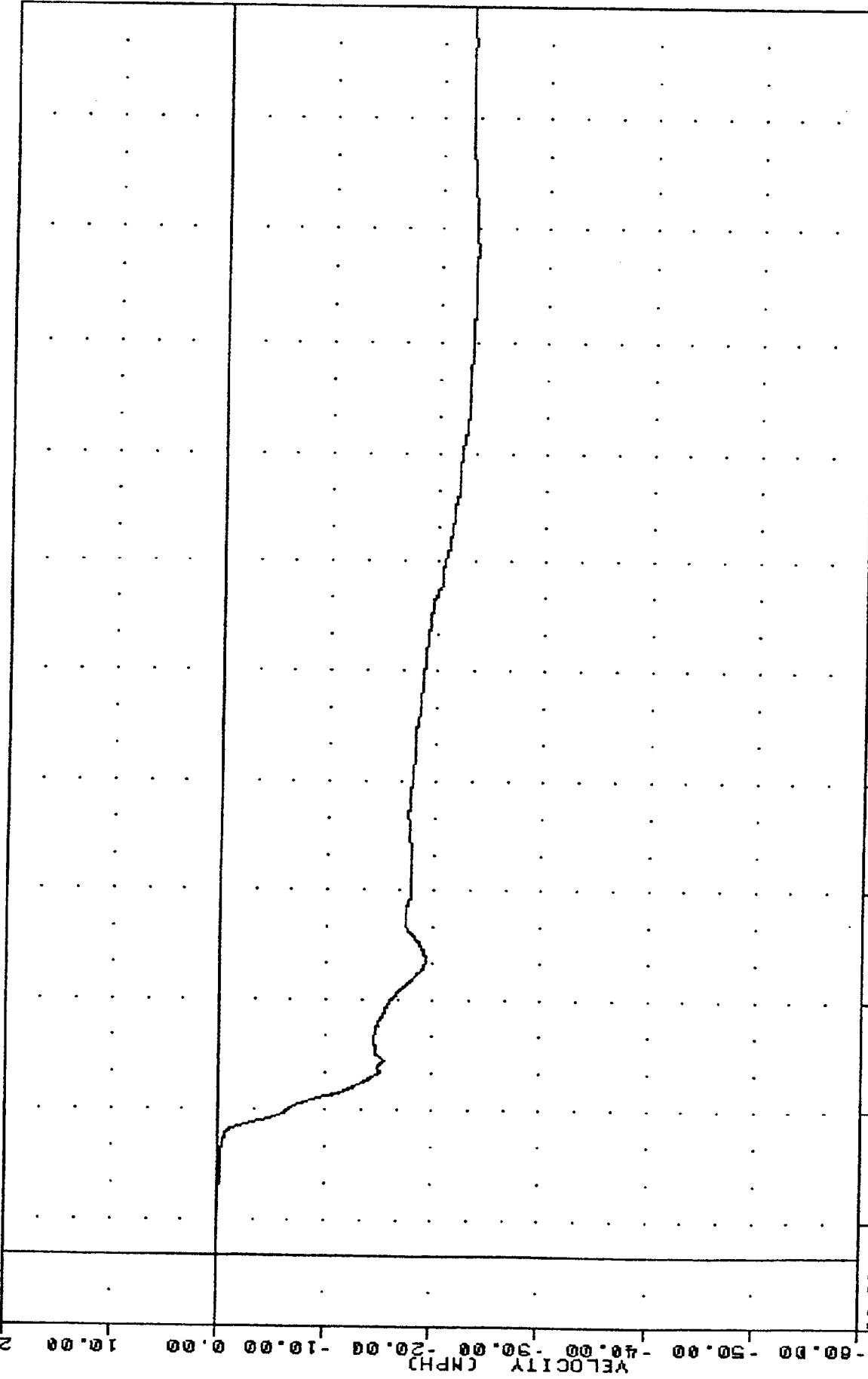
7-AUG-85 13:57:3  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -55.93e 42.50 . 11.63 e 86.25



ACCELERATION (G)  
 TIME (MSEC)  
 200.00  
 150.00  
 100.00  
 50.00  
 0.00  
 -50.00  
 -100.00  
 -150.00  
 -200.00  
 0.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00  
 MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER RIGHT UPPER RIB ACCELERATION -2 Y AXIS

TRC [REDACTED], 850805 [REDACTED] PLOT DATE [REDACTED] 7-ADG-85 13:57:57 [REDACTED]  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 RURYV2

FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -23.26 e 275.13 , 0.07 e -10.25

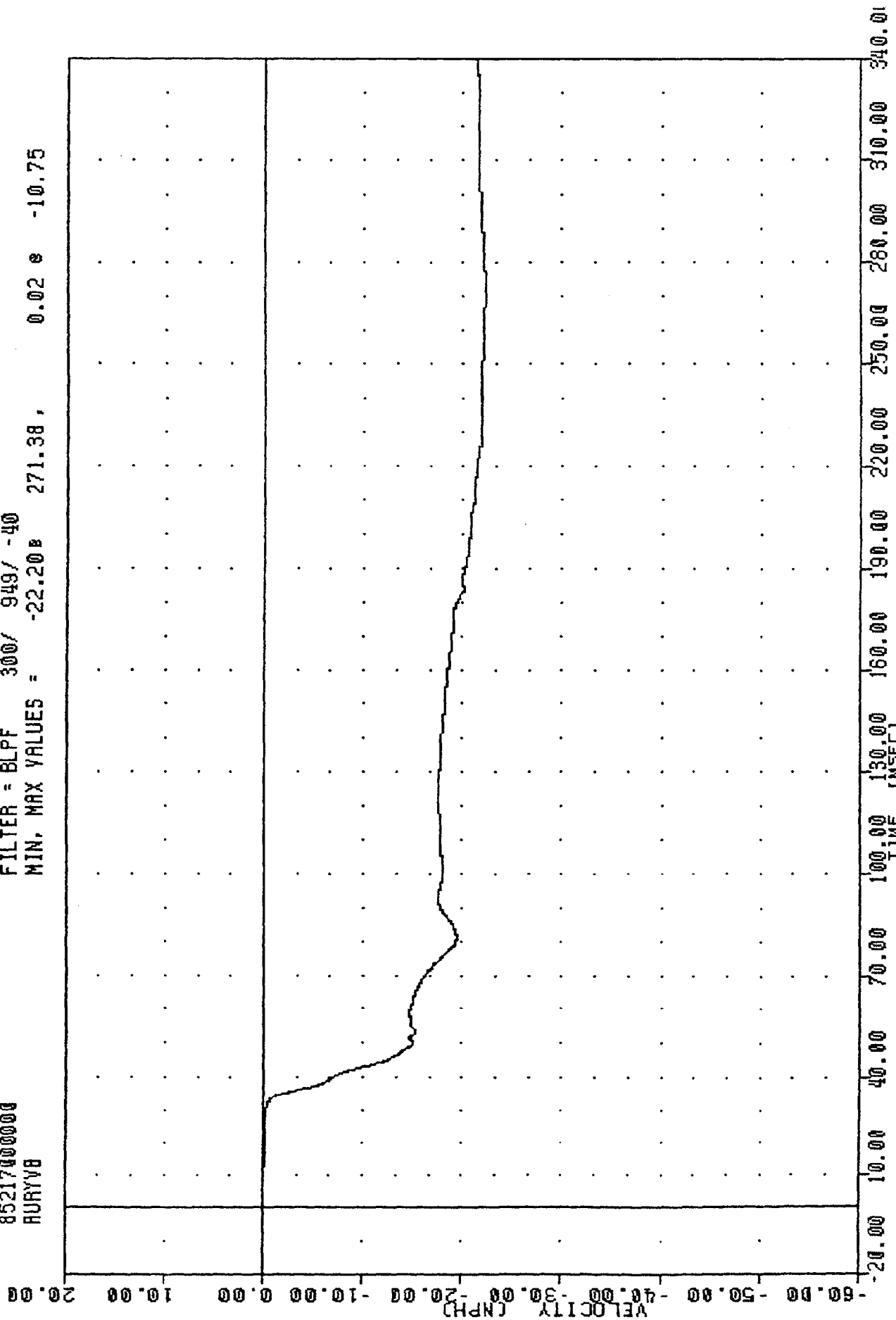


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 RIGHT UPPER RIB VELOCITY Y AXIS

TAC 850805  
MVMA SIDE IMPACT TESTING  
85217000000  
RURYVB

PLOT DATE 7-AUG-85 13:57:57

FILTER = BLPF 300/ 949/ -40  
MIN. MAX VALUES = -22.20 271.38, 0.02 e -10.75



MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
RIGHT UPPER RIB VELOCITY -2 Y AXIS

TAC

850805  
MVMA SIDE IMPACT TESTING  
8521700000  
RLRY62

PLT DATE

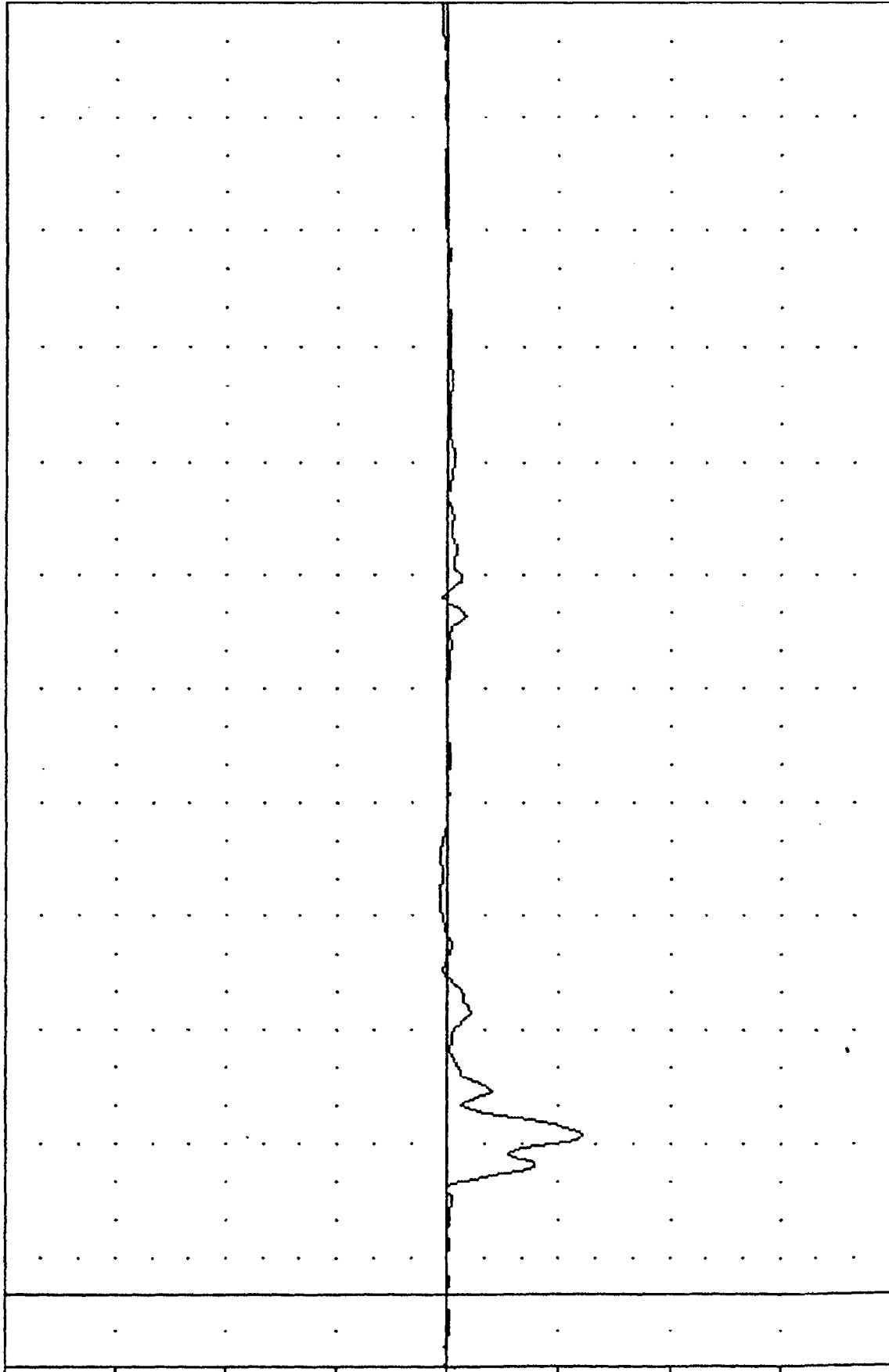
7-AUG-85

13:57:13

FILTER = HSRI 136/ 189/ .50

MIN, MAX VALUES = -60.38 e 42.50 , 3.51 e 116.25

ACCELERATION (G)



-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00

MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
PASSENGER RIGHT LOWER RIB ACCELERATION Y AXIS

TRC 850805

NVMA SIDE IMPACT TESTING

8521700000

RLRYGB

PLOT DATE

7-AUG-85

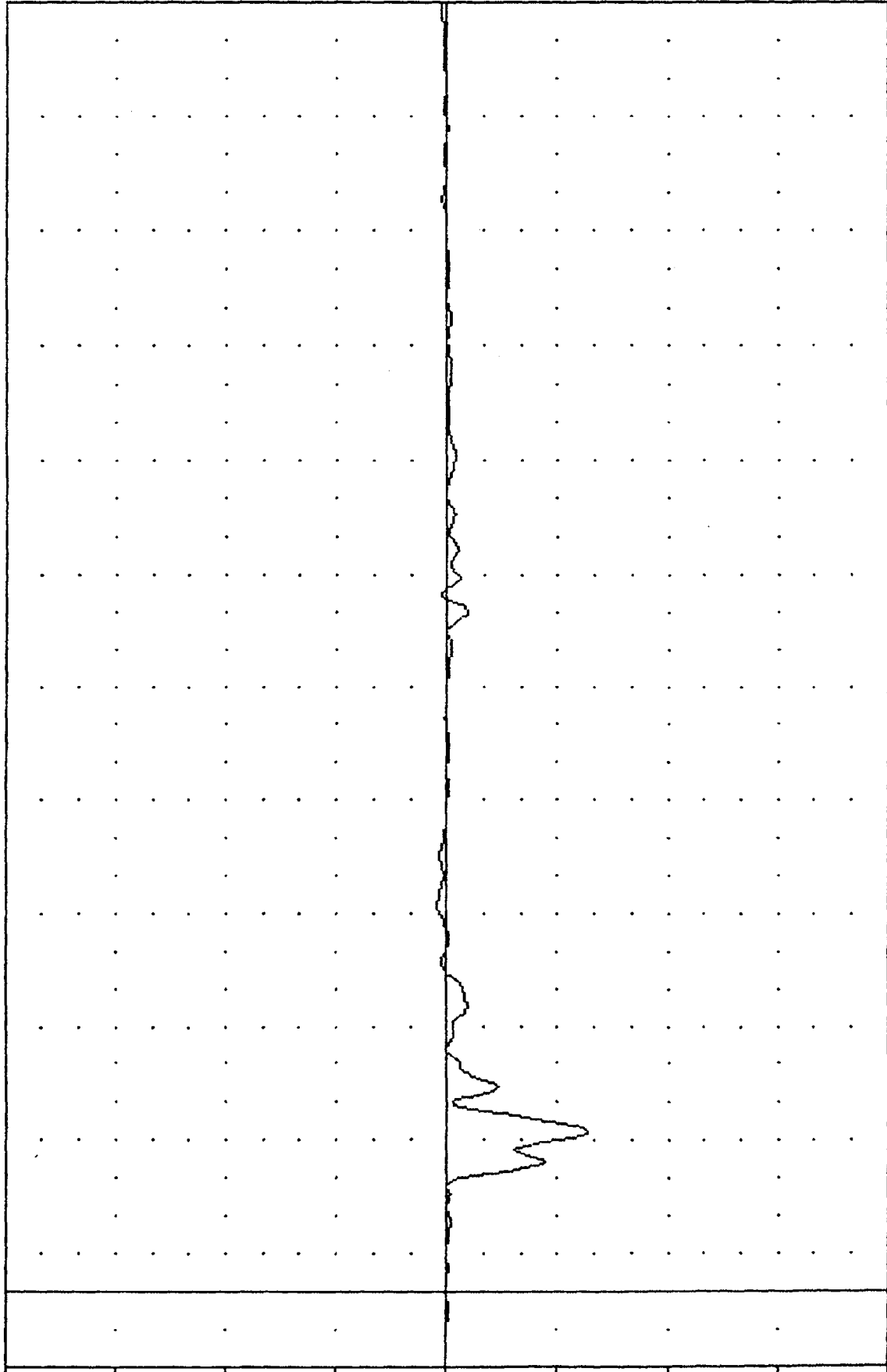
13:57:13

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -63.08 41.87

4.23 102.50

ACCELERATION (G)



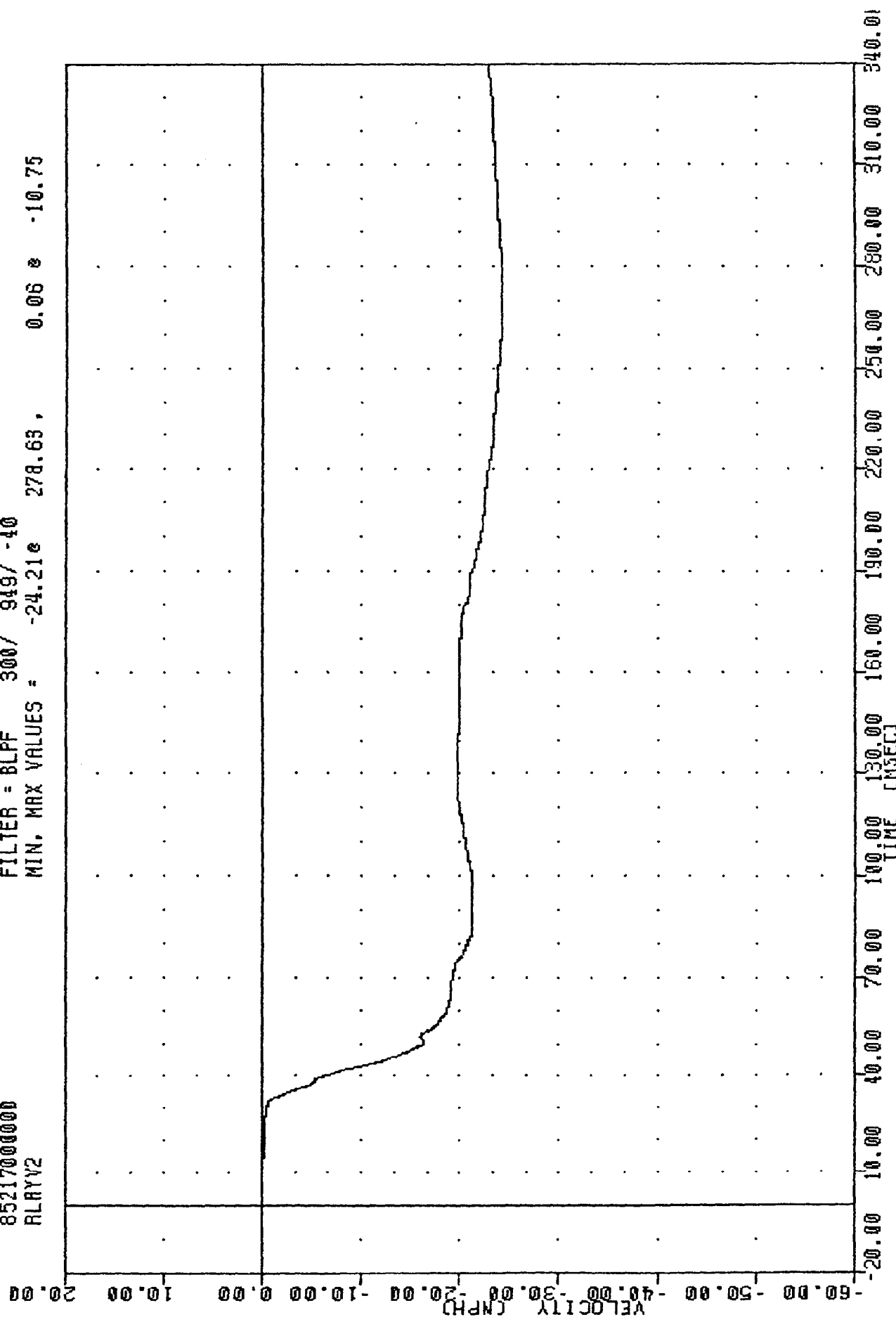
TIME (MSEC)

MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
PASSENGER RIGHT LOWER RIB ACCELERATION - 2 Y AXIS

TAC 850803 PLOT DATE 7-AUG-85 13:57:57

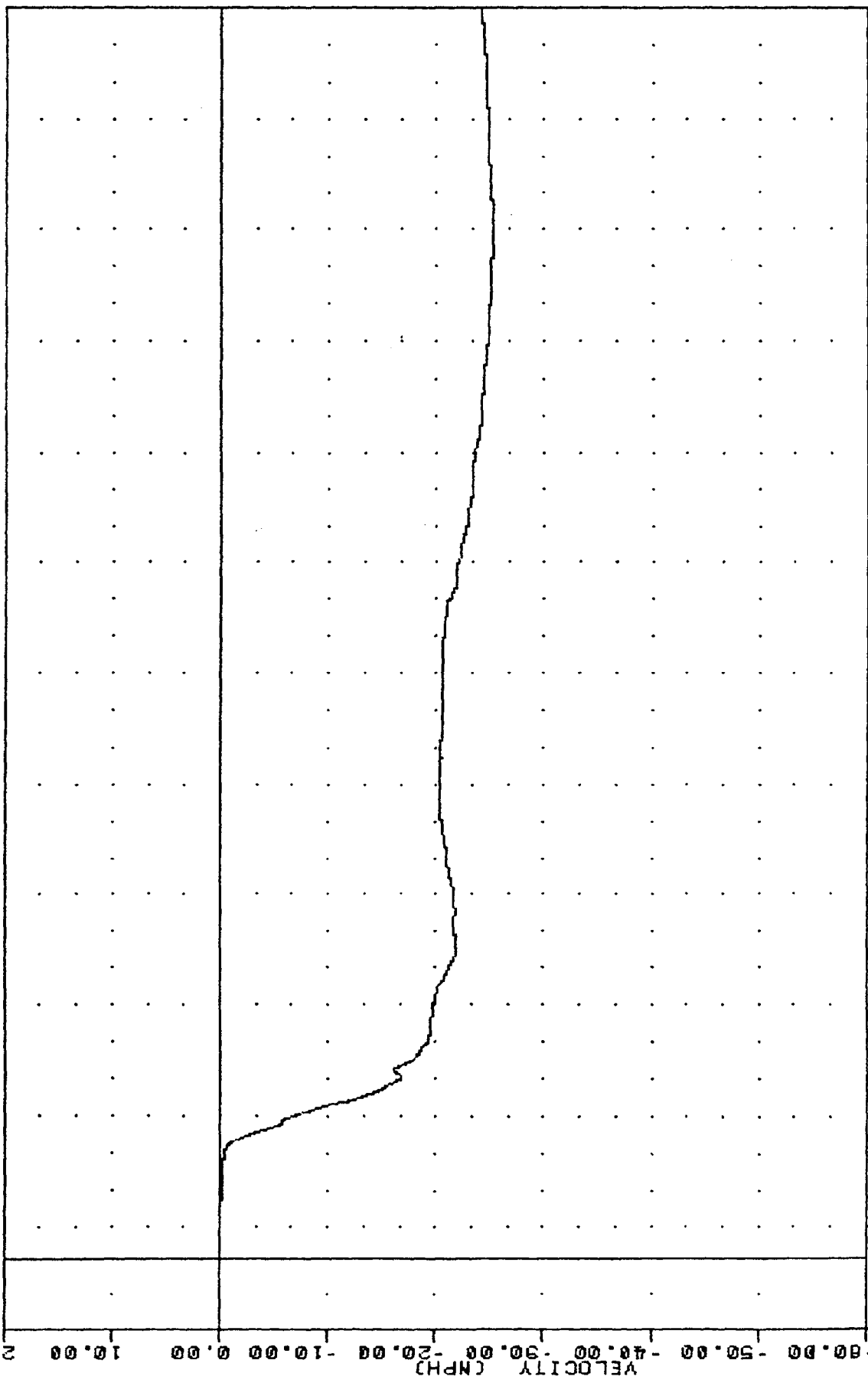
MYMA SIDE IMPACT TESTING  
 8521700000  
 RLRYV2

FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -24.21e 278.63, 0.06 e -10.75



MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 RIGHT LOWER RIB VELOCITY

TRC 850805 PLOT DATE 7-HUG-85 13:57:57  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 ALRYVB  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -25.23e 282.25, 0.07 e -10.00

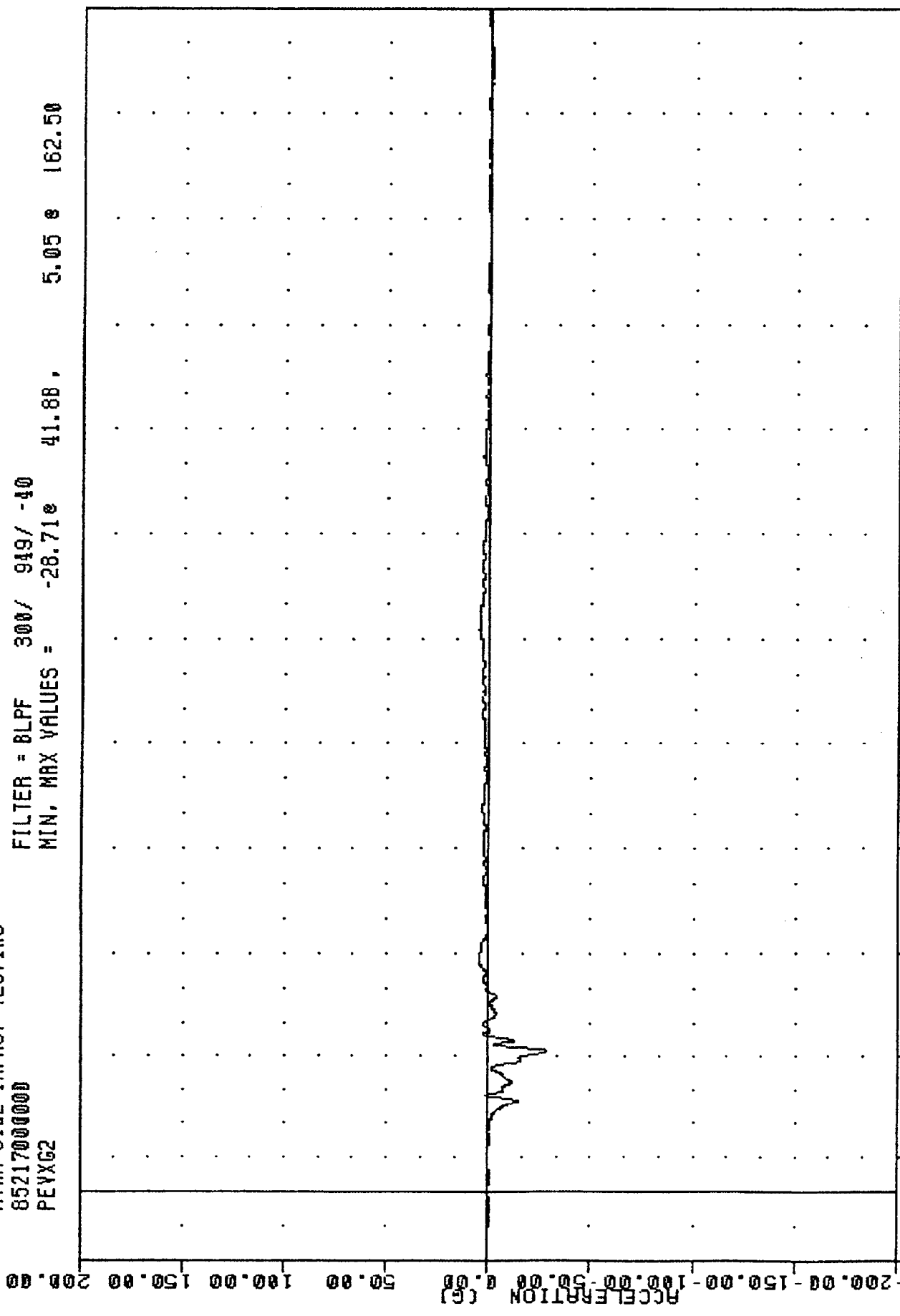


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 RIGHT LOWER RIB VELOCITY #2 Y AXIS

TMC  
 MVNA SIDE IMPACT TESTING  
 85217000000  
 PEYXG2

PLOT DATE 7 AUG 69 13:55:25

FILTER = 8LPF 300/ 919/ -40  
 MIN, MAX VALUES = -28.71e 41.88, 5.05 e 162.50



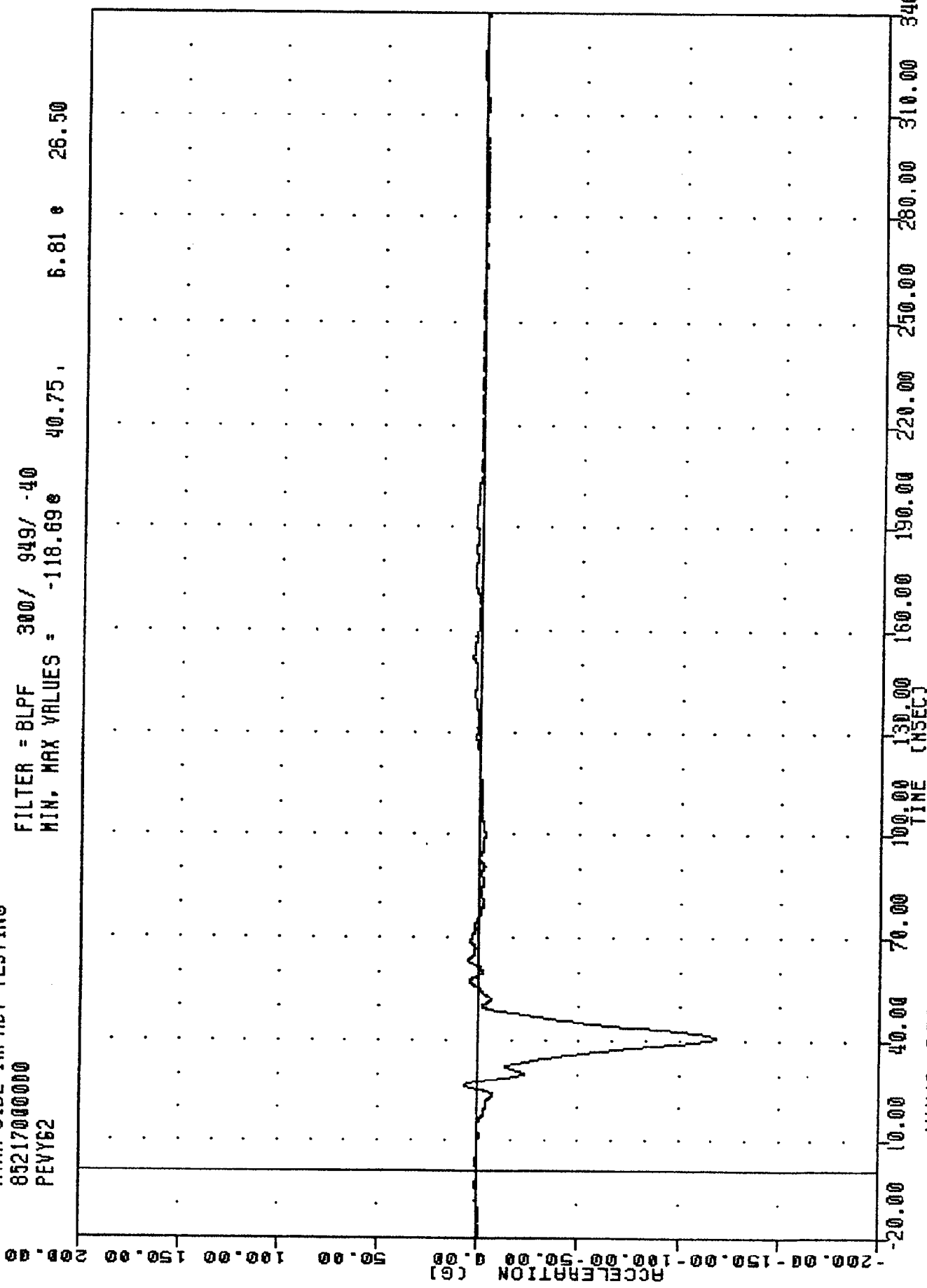
-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00  
 TIME (MSEC)

MVNA SIDE IMPACT TEST - MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER PELVIS ACCELERATION X AXIS

TRC  
 850805  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 PEVY62

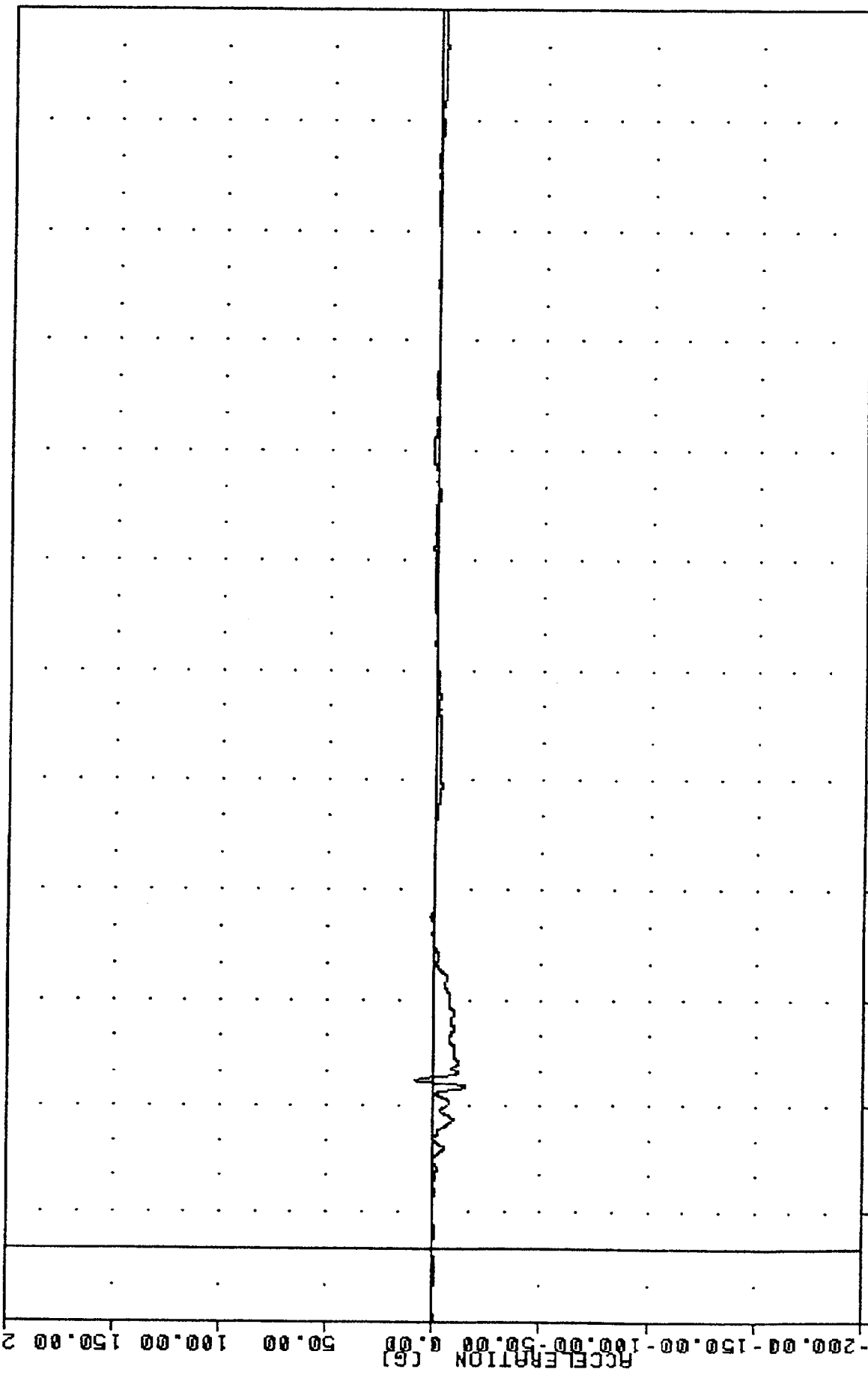
PLUT DATE 7-AUG-85 13:55:23

FILTER = BLPF 300 / 949 / -40  
 MIN, MAX VALUES = -118.69e 40.75, 6.81 e 26.50



MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER PELVIS ACCELERATION Y AXIS

TRC 850805 7-AUG-85 13:55:23  
 NVMA SIDE IMPACT TESTING  
 8521700000  
 PEYZG2  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -14.95 45.61, 8.49 47.50

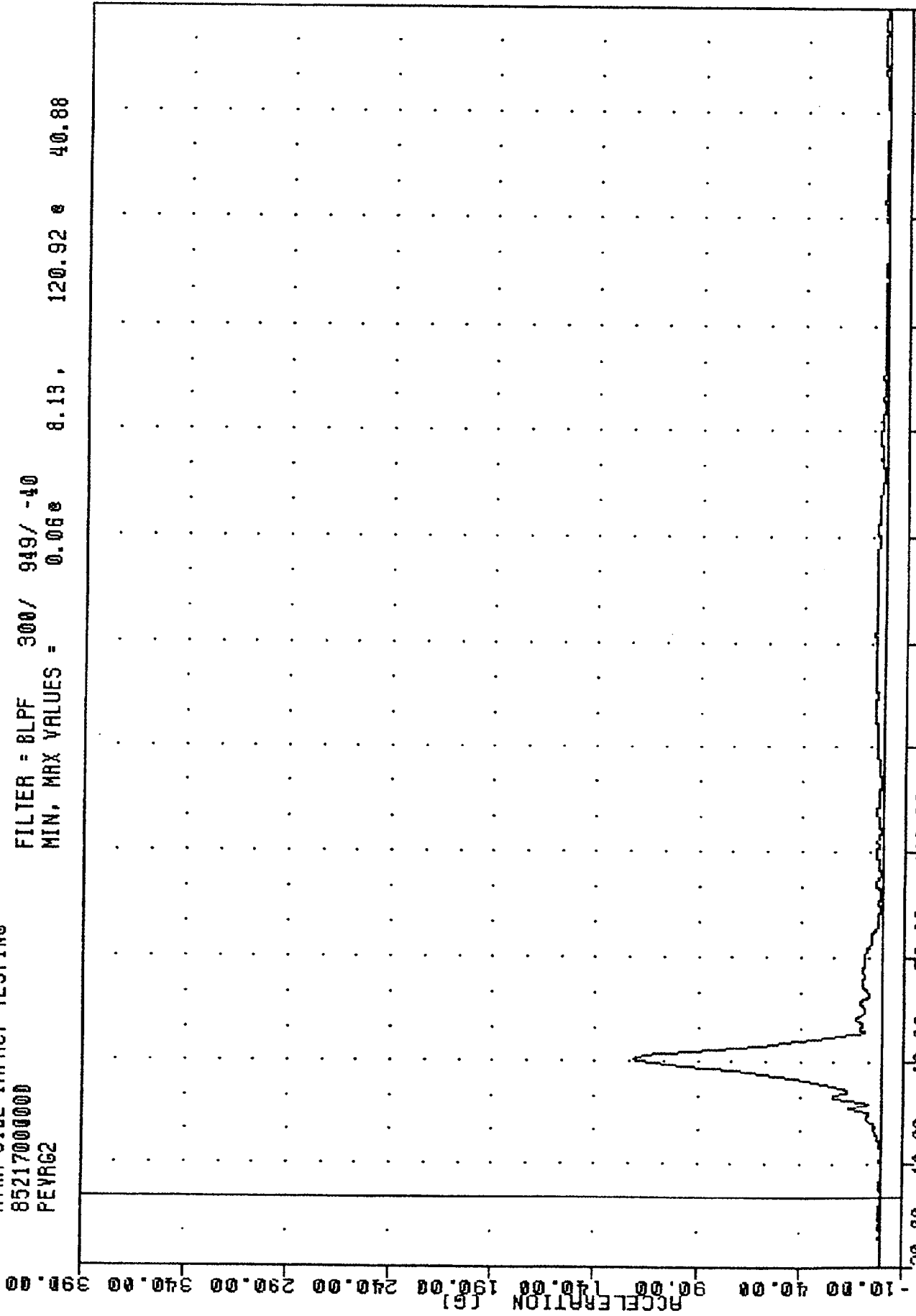


-200.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER PELVIS ACCELERATION Z AXIS

THC  
850805  
MVNA SIDE IMPACT TESTING  
85217000000  
PEYRG2

PLOT DATE 7-AUG-85 13:55:23

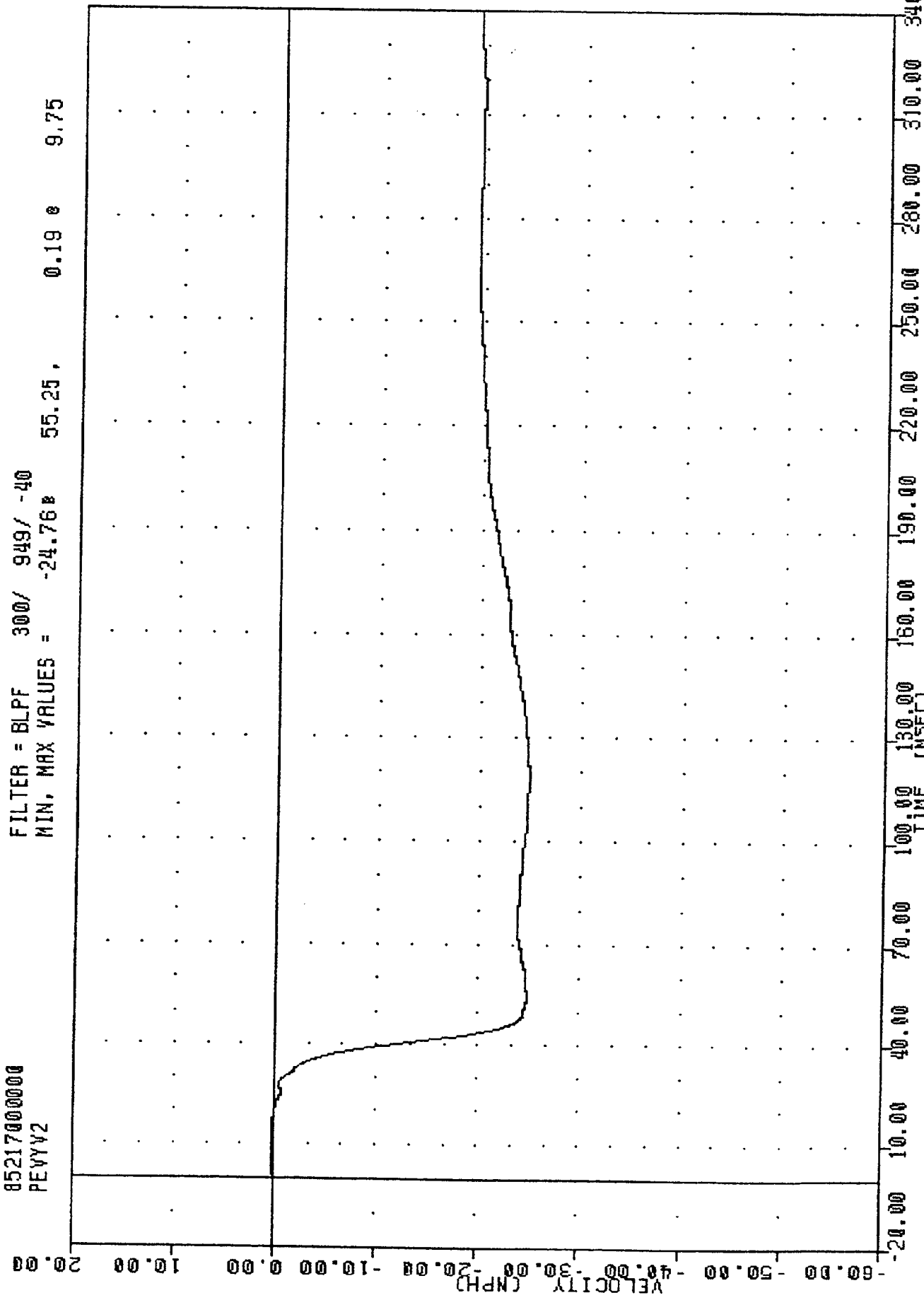
FILTER = BLPF 300/ 949/ -40  
MIN, MAX VALUES = 0.06e 8.13, 120.92 e 40.88



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
TIME (MSEC)

MVNA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
PASSENGER PELVIS RESULTANT ACCELERATION

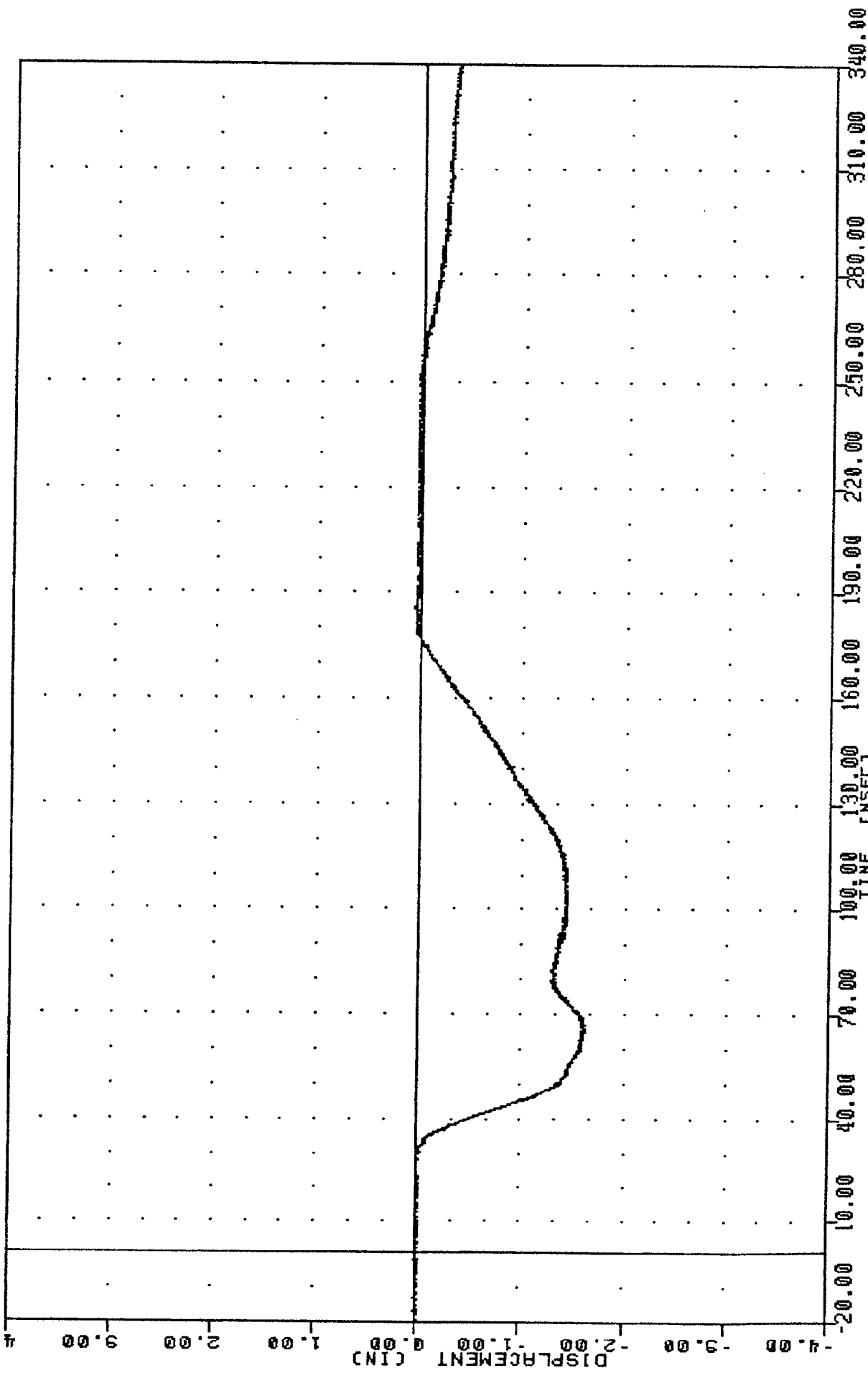
TRC  
 NVMA SIDE IMPACT TESTING  
 85217000000  
 PEVYV2  
 800805  
 PLUT DATE 7-AUG-85 13:57:57  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -24.76 55.25, 0.19 9.75



MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PELVIS VELOCITY Y AXIS

TAC 850805 PLOT DATE 7-AUG-85 13:55:23  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 RRTY02

FILTER = ALPF 1650/ 5217/ -40  
 MIN. MAX VALUES = -1.63 66.13, 0.06 186.25

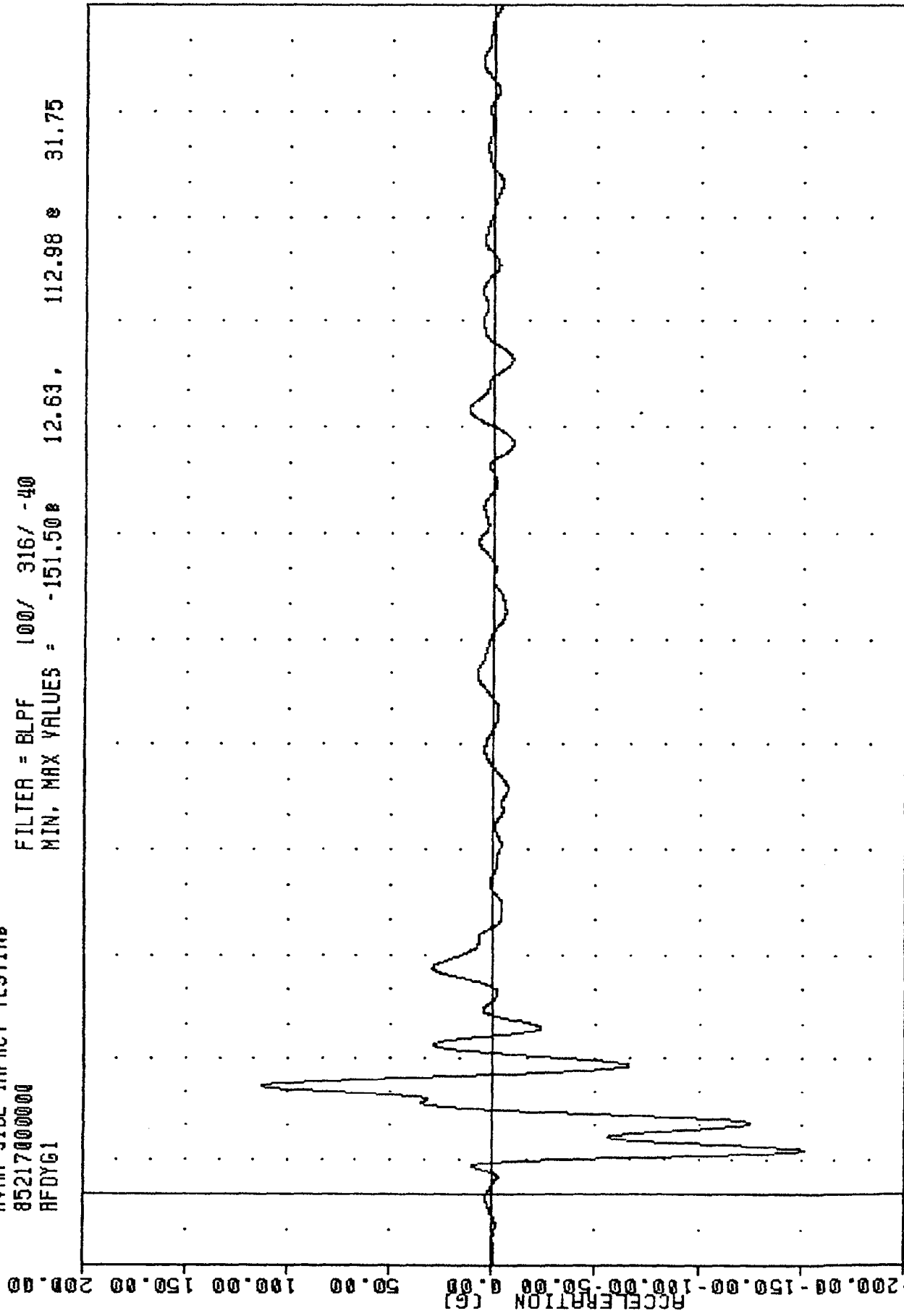


MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 PASSENGER RIGHT RIB TO SPTRF DISPLACEMENT INCHFS

INC 850805  
NYMA SIDE IMPACT TESTING  
8521700000  
AFDYG1

PLUT DATE 7-AUG-85 16:41:32

FILTER = BLPF 100/ 316/ -40  
MIN. MAX VALUES = -151.50 12.63, 112.98 e 31.75

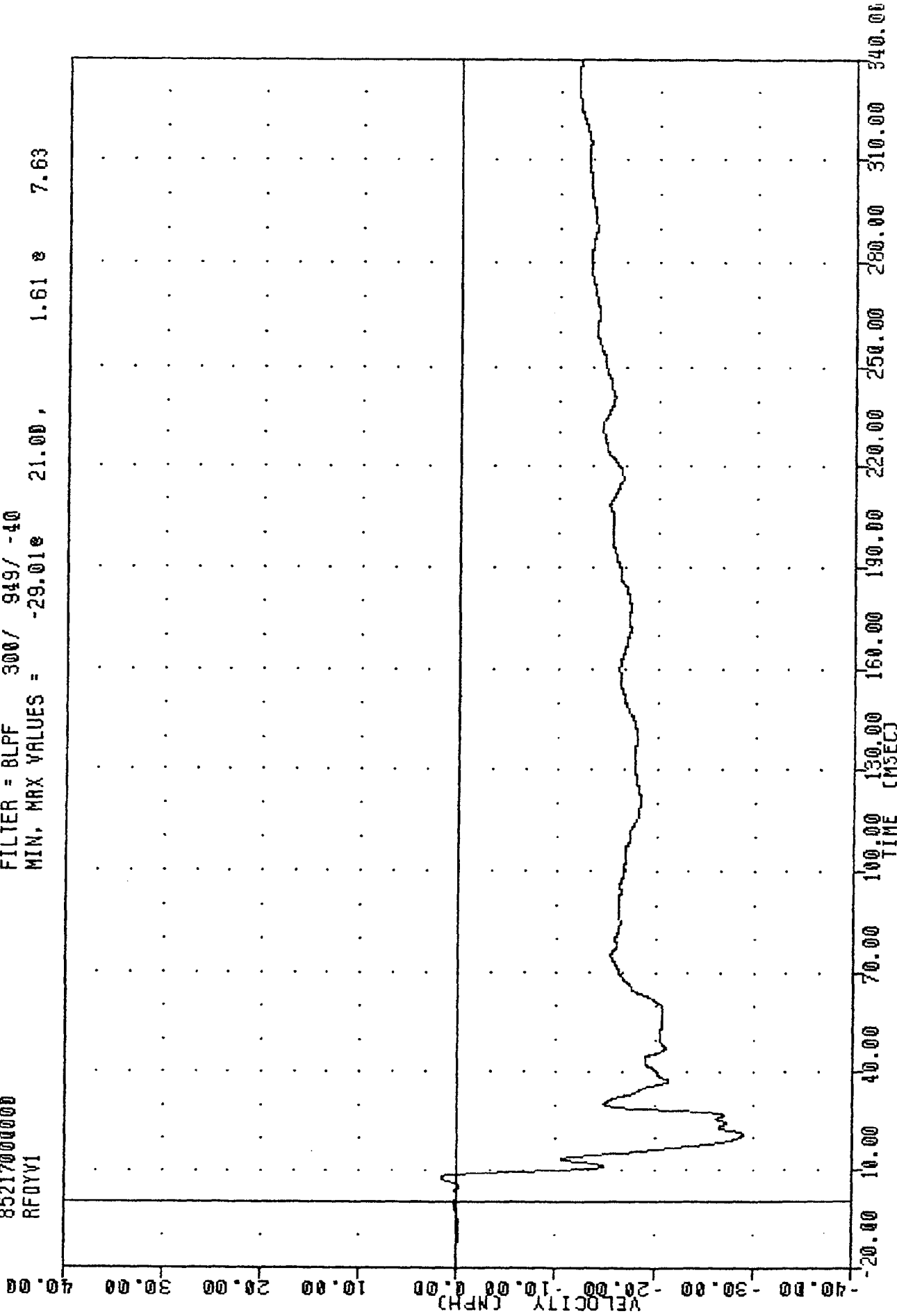


200.00 150.00 100.00 50.00 0.00 -50.00 -100.00 -150.00 -200.00  
-20.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00  
NYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
VEHICLE RIGHT FRONT DOOR (POSITION 1) ACCELERATION Y AXIS

TRC  
850805  
MVMA SIDE IMPACT TESTING  
8521700000  
RF0Y1

PLOT DATE 7-AUG-85 13:57:57

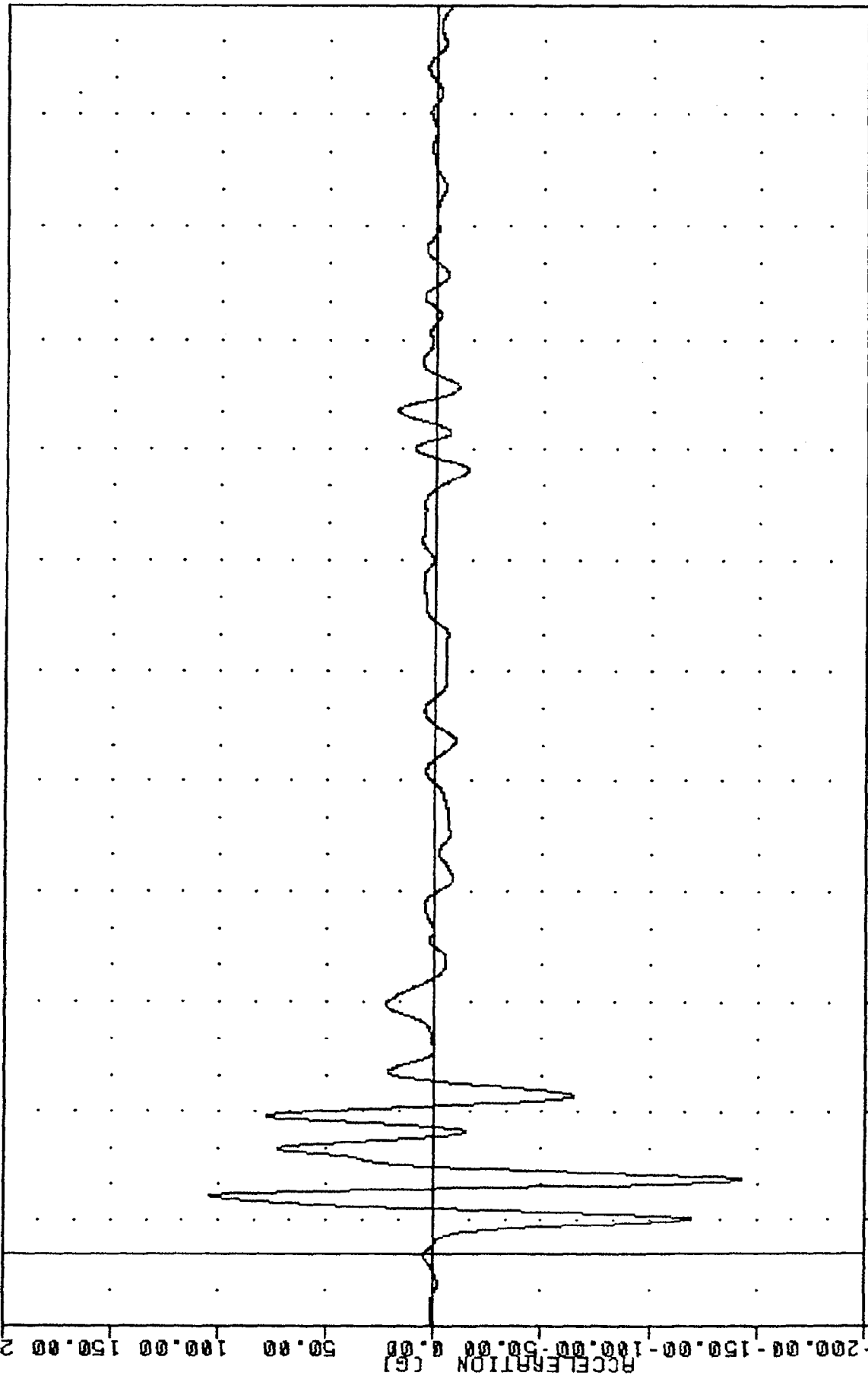
FILTER = BLPF 300/ 949/ -40  
MIN, MAX VALUES = -29.01e 21.00, 1.61 e 7.63



MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
RIGHT FRONT CORNER POSITION 11 VELOCITY Y AXYS

TRC 850805 PLOT DATE 7-AUG-85 16:41:32

MYNA SIDE IMPACT TESTING  
85217000000  
AFDYG2  
FILTER = 8LPF 100/ 316/ -40  
MIN, MAX VALUES = -143.27e 21.38, 103.83 e 16.75



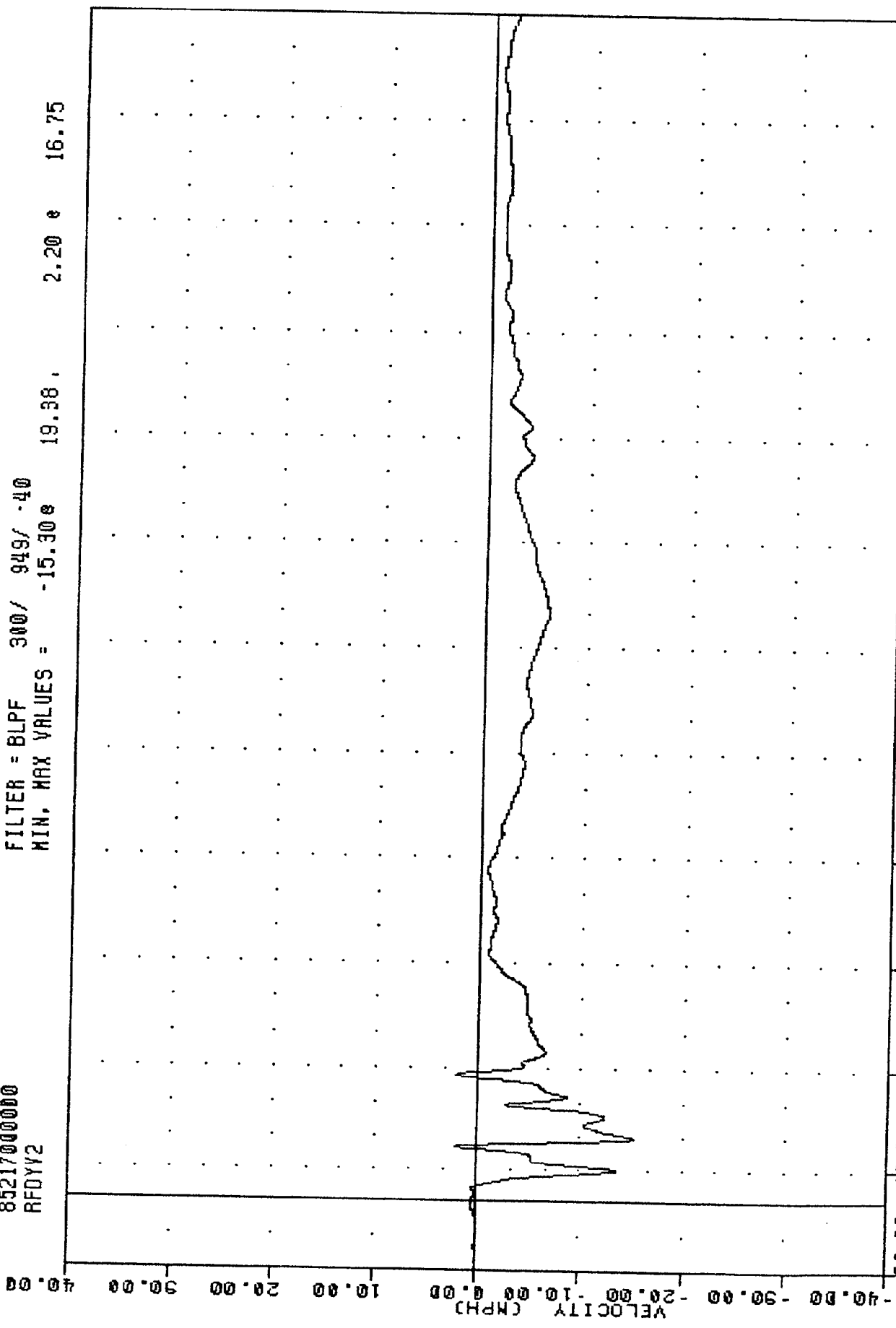
96-A

MYNA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
VEHICLE RIGHT FRONT DOOR POSITION 21 ACCELERATION Y AXYS

TAC  
850805  
MVMA SIDE IMPACT TESTING  
85217000000  
RFDYY2

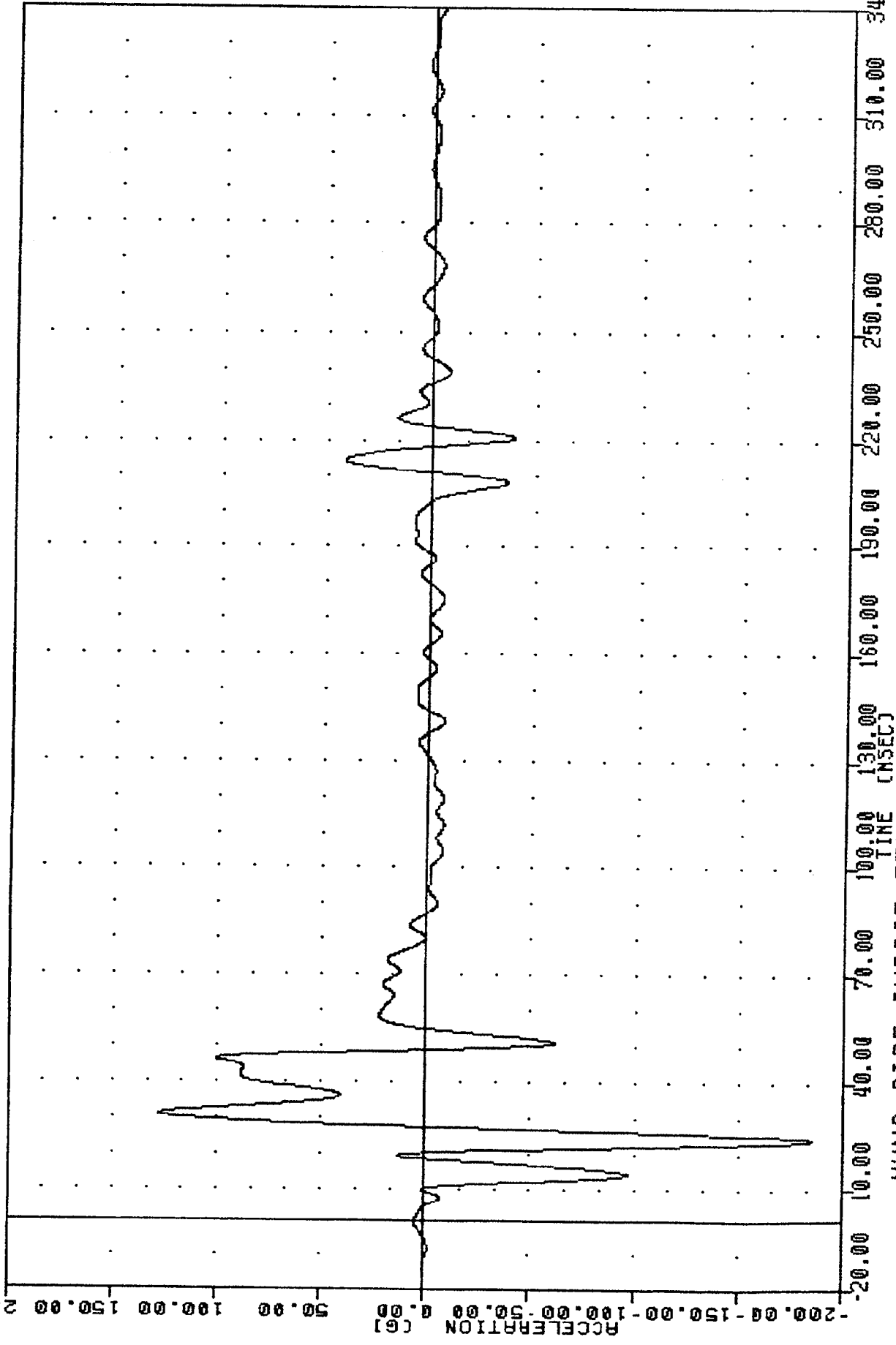
PLUT DATE 7-AUG-85 13:57:57

FILTER = BLPF 300/ 949/ -40  
MIN. MAX VALUES = -15.30e 19.98 , 2.20 e 16.75



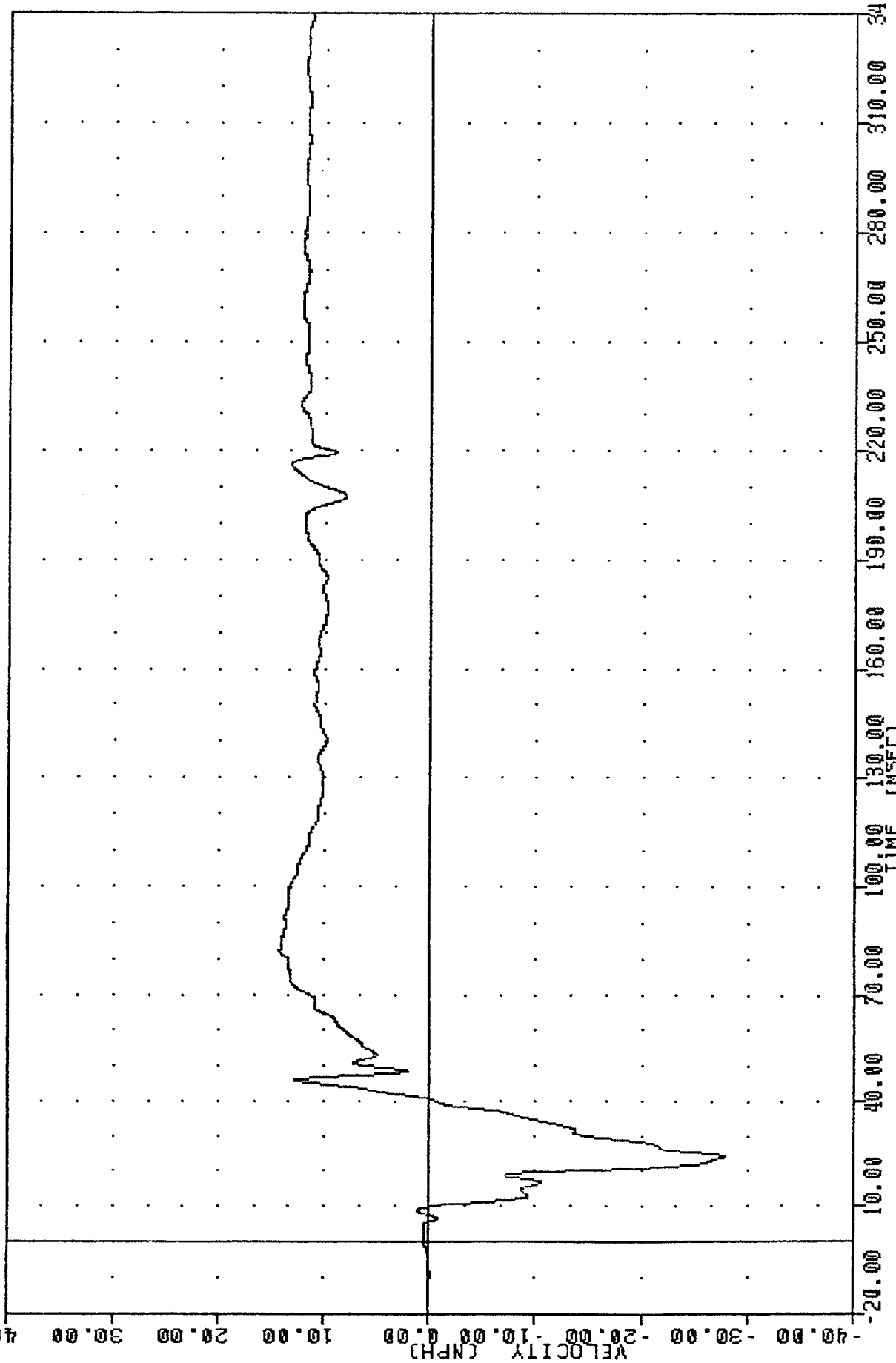
340.00 310.00 280.00 250.00 220.00 190.00 160.00 130.00 100.00 70.00 40.00 10.00  
TIME (MSEC)  
MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
RIGHT FRONT DOOR POSITION 21 VELOCITY Y AXIS

TRC ██████████, 850805 ██████████  
 MYMA SIDE IMPACT TESTING  
 8521700000  
 RFDY63  
 PLUT DATE ██████████ 7-AUG-85 ██████████ 13:55:23  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -185.80e 24.00, 127.31 e 30.75



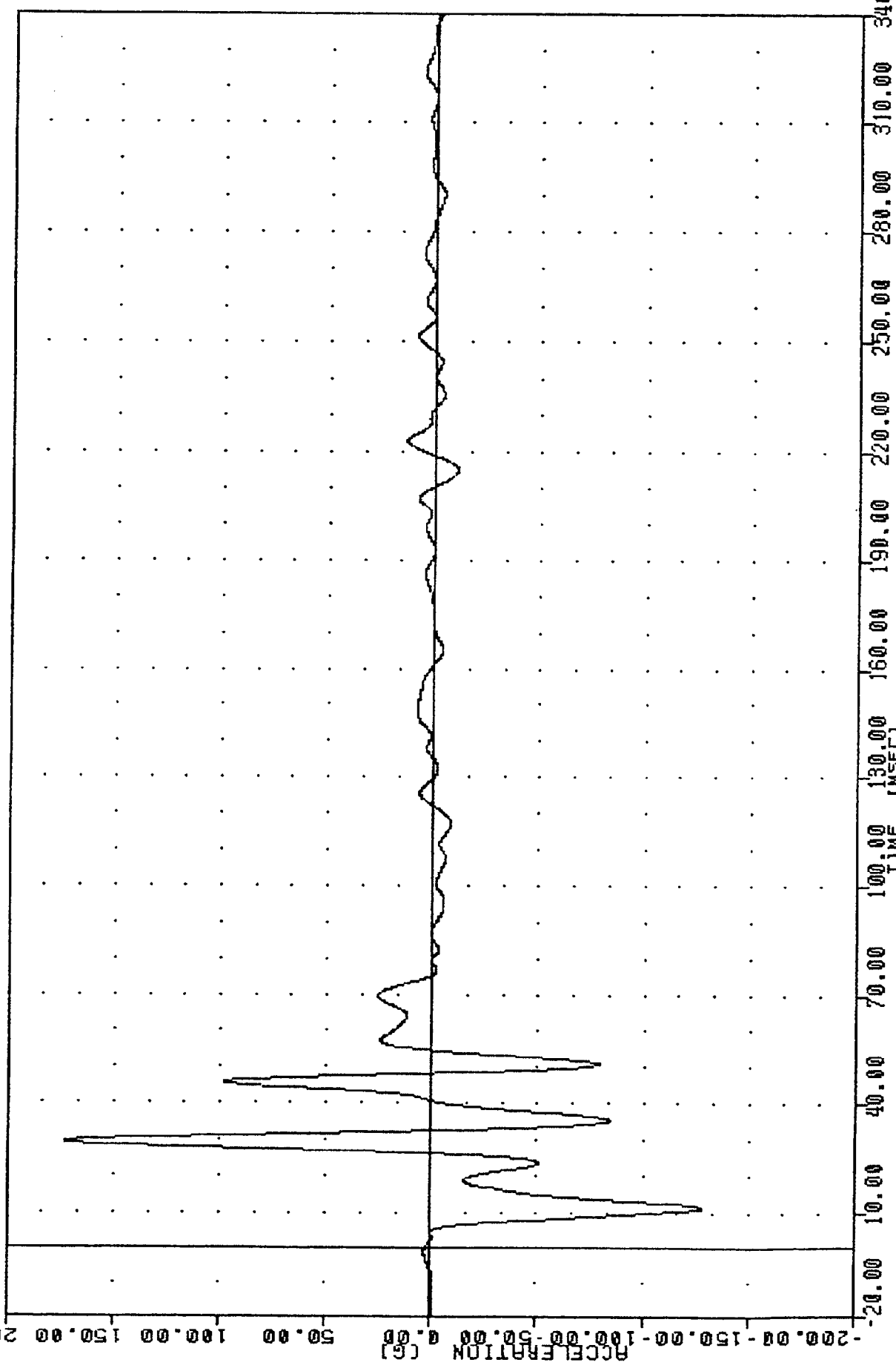
MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 VEHICLE RIGHT FRONT DOOR (POSITION 3) ACCELERATION Y AXIS

TRC  
 830803  
 NVMA SIDE IMPACT TESTING  
 85217000000  
 RFDYV3  
 PLOT DATE 7-AUG-85 13:37:57  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -27.87 B 24.13, 14.18 e 82.00



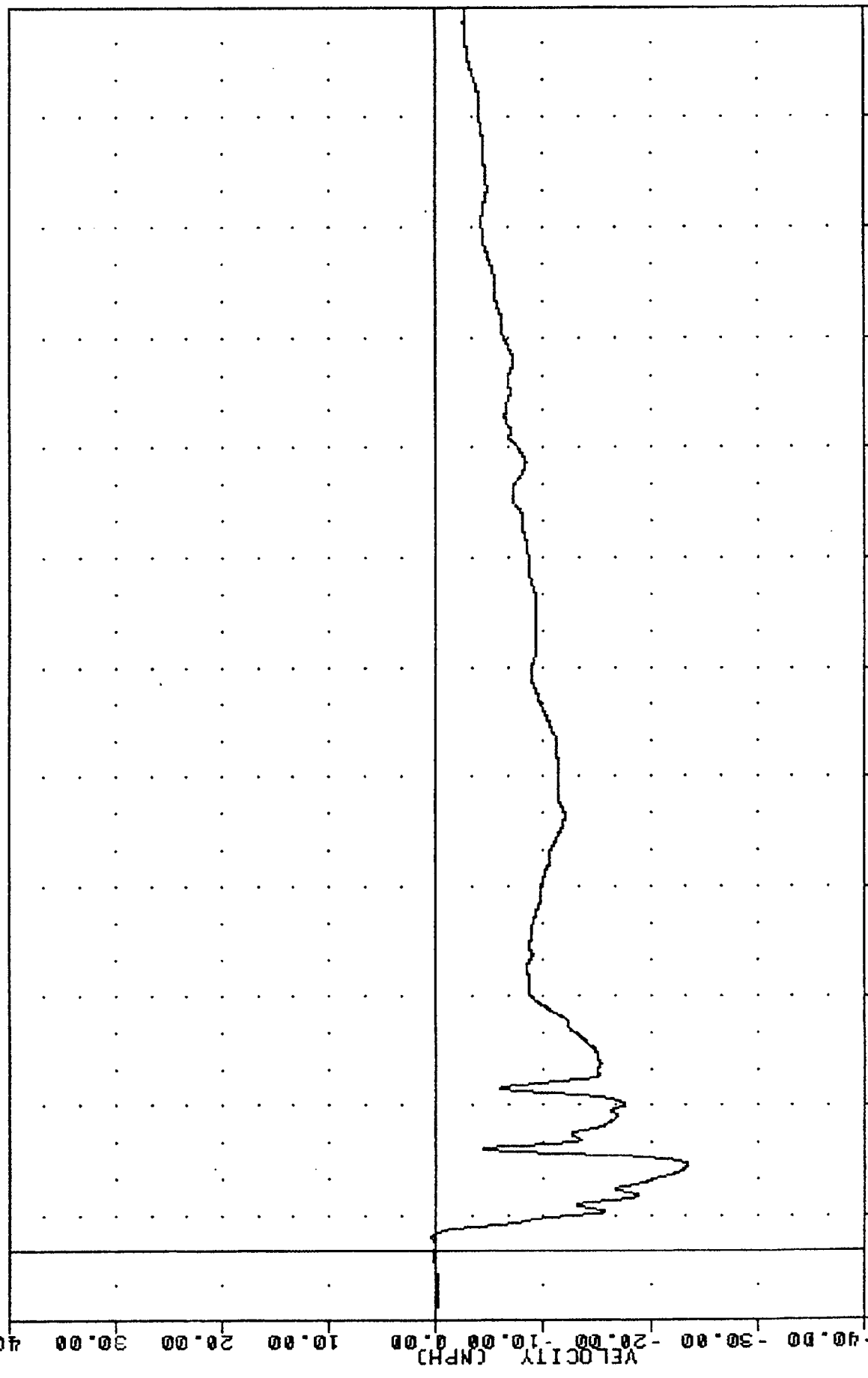
MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 RIGHT FRONT DOOR (POSITION 3) VELOCITY Y AXIS

TRC 850805 PLOT DATE 7-AUG-85 13:55:23  
 NVMA SIDE IMPACT TESTING  
 85217000000  
 AFDYG4  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -128.32e 11.50, 173.18 e 29.38



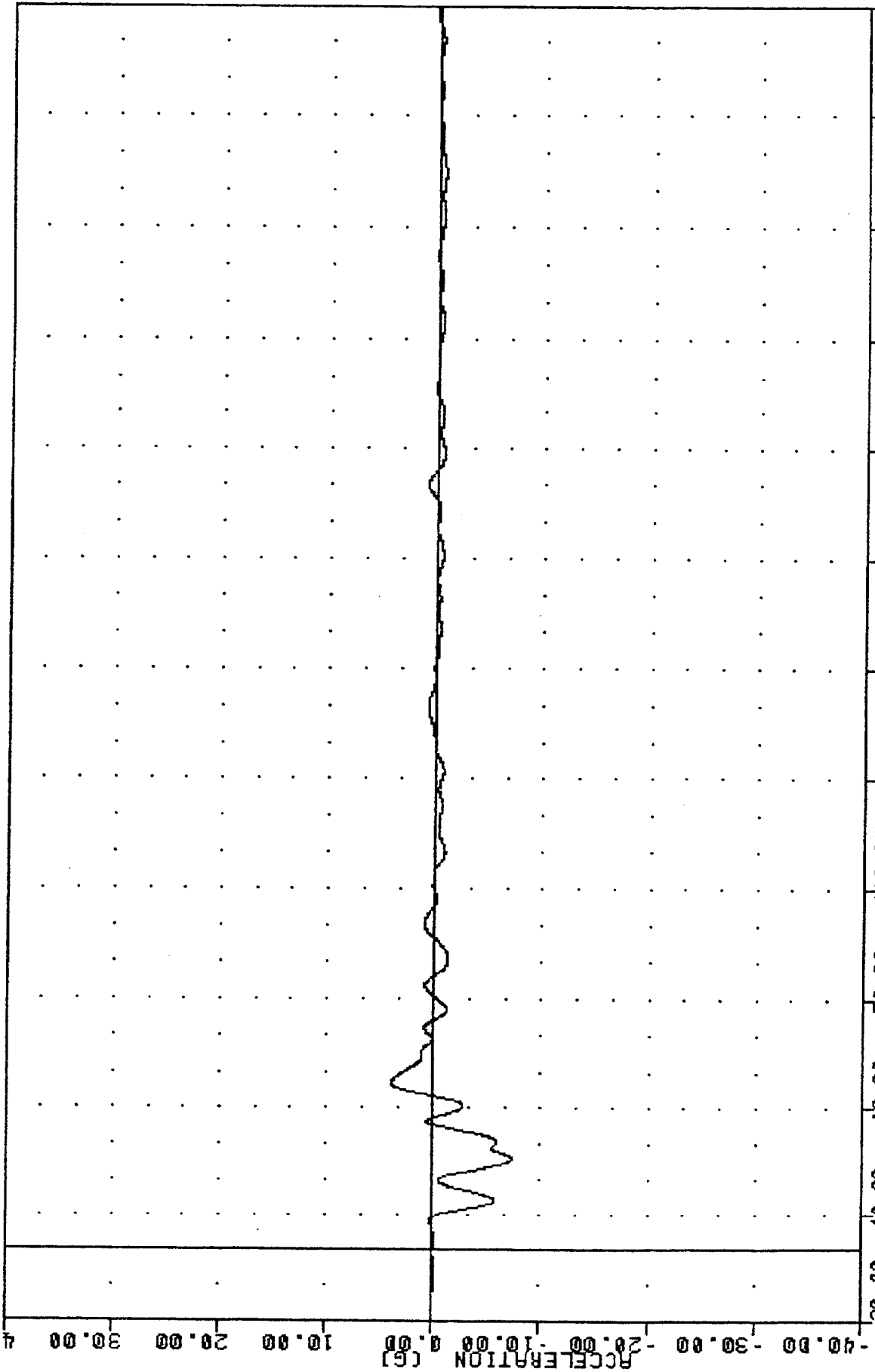
MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 VEHICLE RIGHT FRONT DOOR (POSITION 4) ACCELERATION Y AXIS

TRC 850805 PLOT DATE 10-27-57  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 RFDYV4  
 FILTER = 8LPF 300 / 949 / -40  
 MIN. MAX VALUES = -23.57 24.00 0.49 4.00



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 RIGHT FRONT DOOR (POSITION 4) VELOCITY Y AXIS

TRC  
 850805  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 LFSXG  
 PLOT DATE 7-AUG-85 13:55:23  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -7.39e 26.13, 3.97 e 46.88

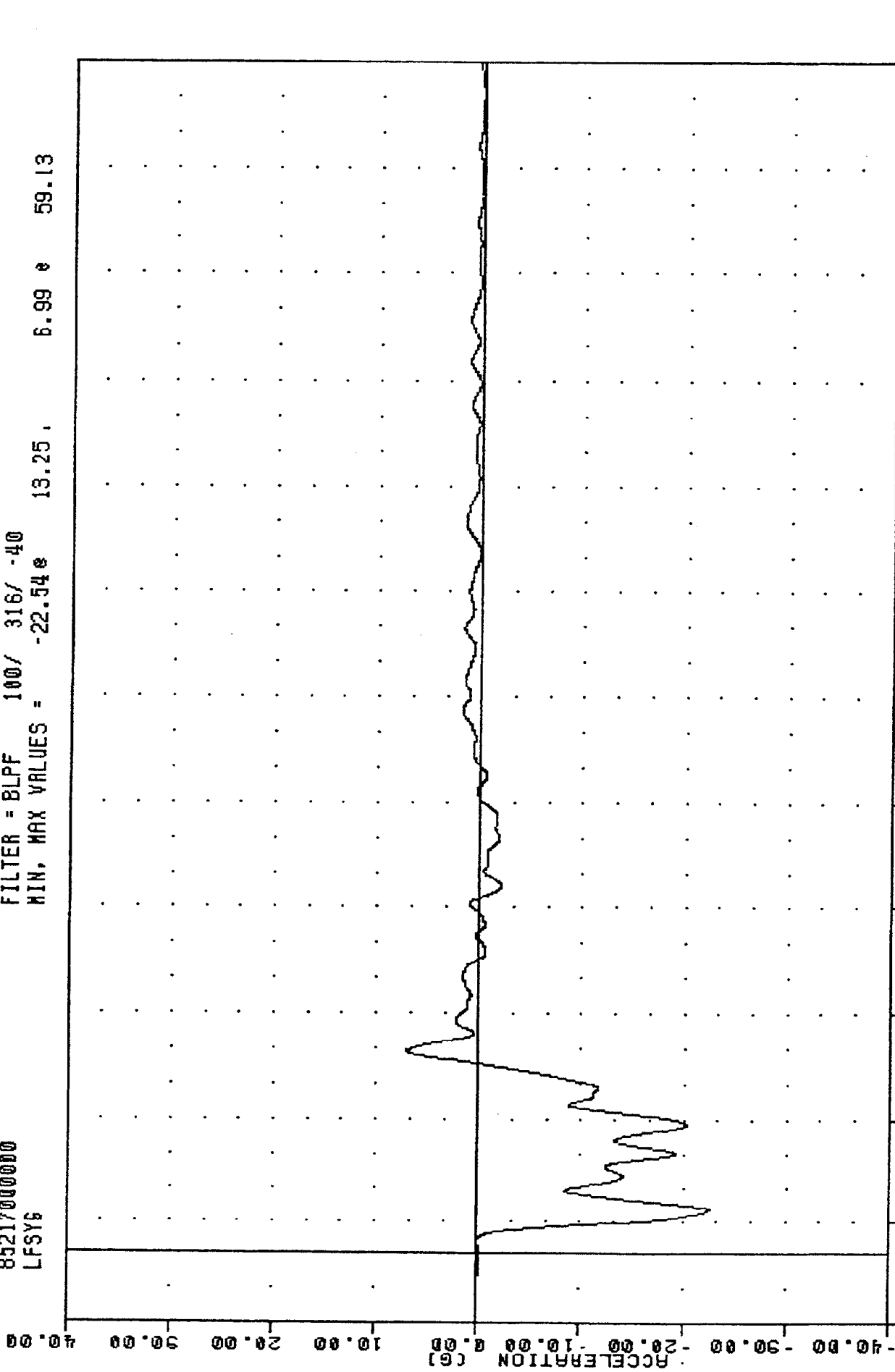


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 VEHICLE LEFT FRONT SILL ACCELERATION X AXIS

TAC 850805  
MVMA SIDE IMPACT TESTING  
85217000000  
LFSY6

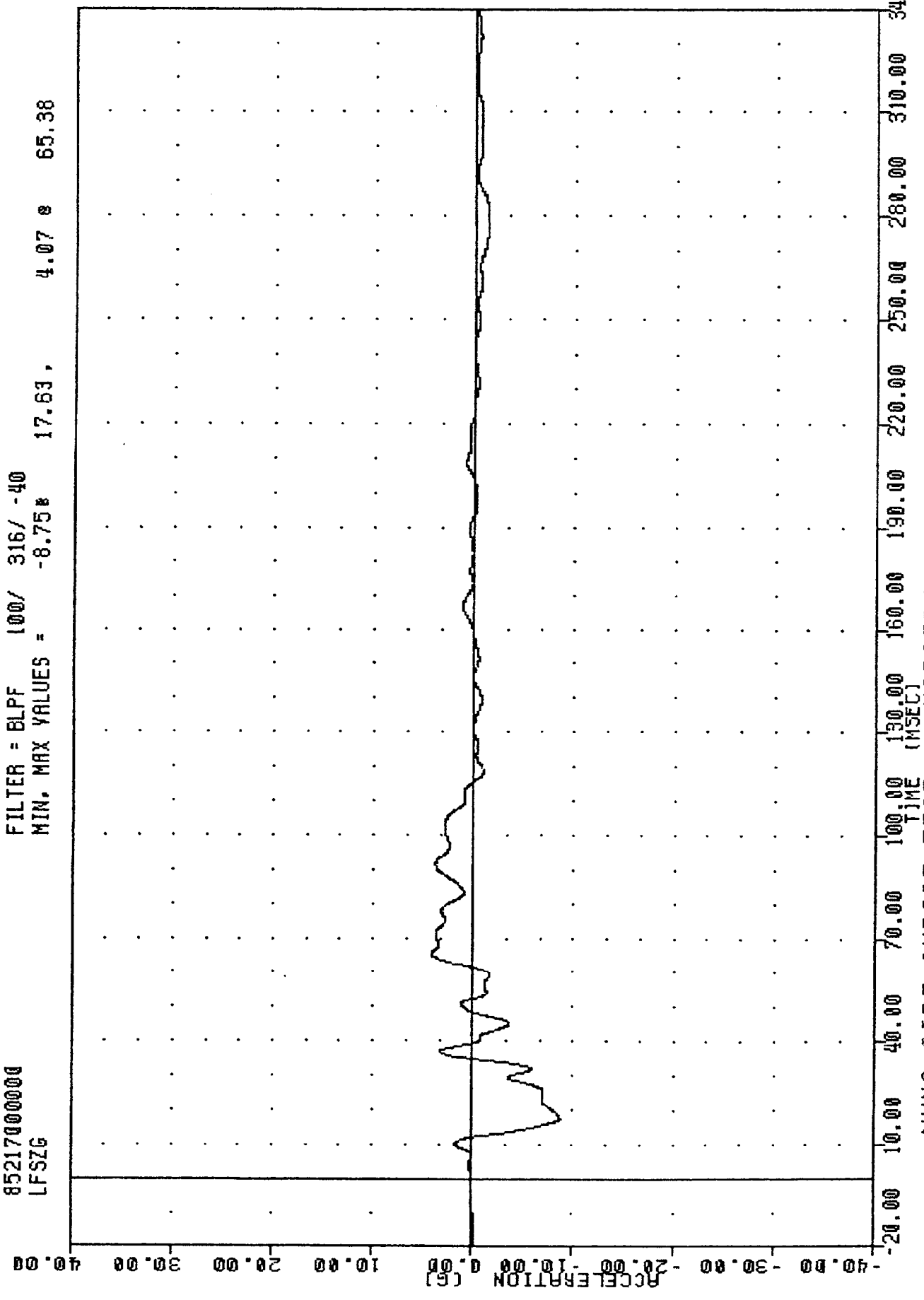
PLOT DATE 7-HUG-85 13:55:23

FILTER = BLPF 100/ 316/ -40  
MIN. MAX VALUES = -22.54e 13.25, 6.99 e 59.13



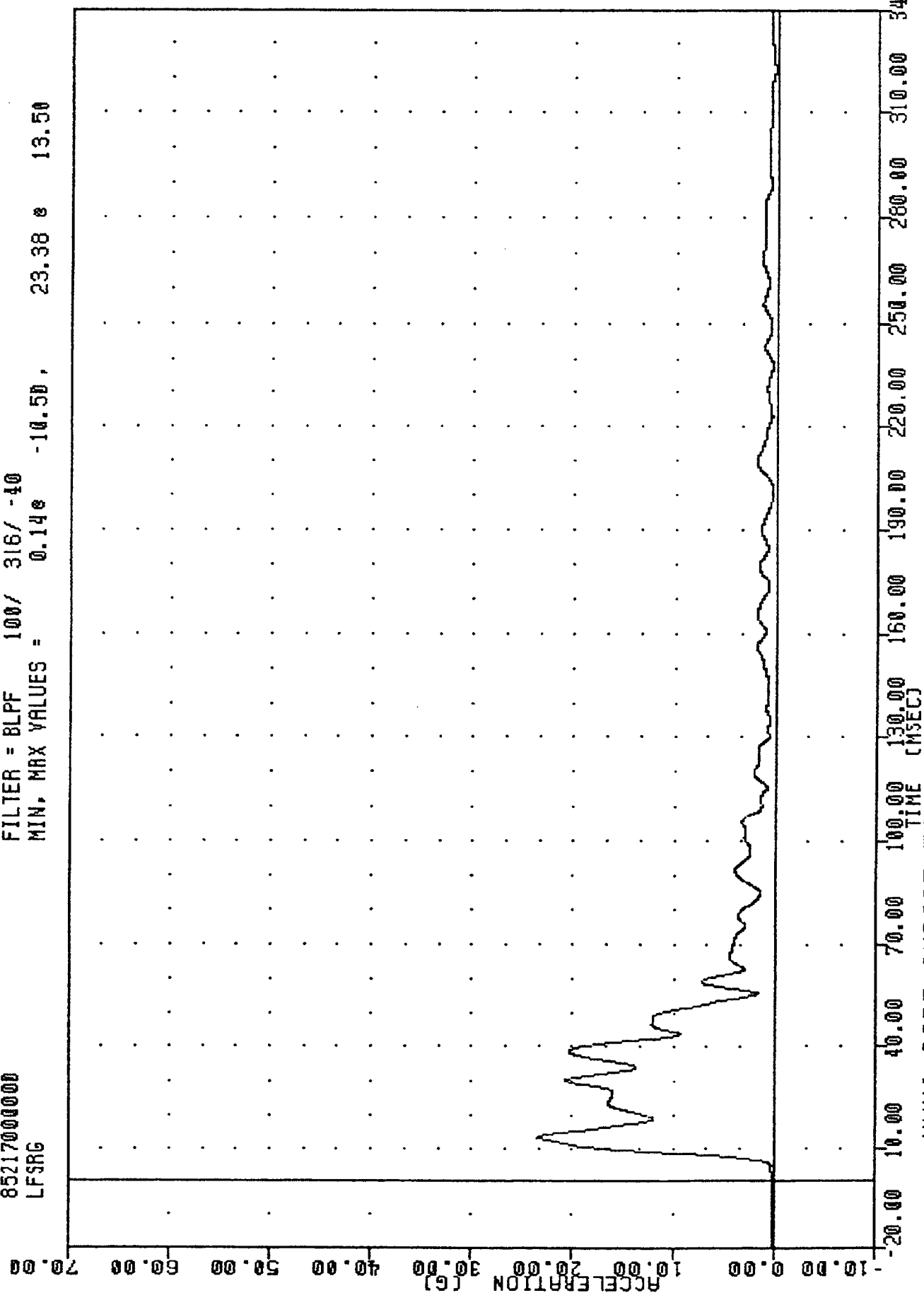
40.00  
30.00  
20.00  
10.00  
0.00  
-10.00  
-20.00  
-30.00  
-40.00  
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
TIME (MSEC)  
MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
VEHICLE LEFT FRONT SILL ACCELERATION Y AXIS

TRC [REDACTED] 850805 [REDACTED] 7-AUG-85 [REDACTED] 13:55:23 [REDACTED]  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 LFSZG  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = -8.75 17.63, 4.07 65.38



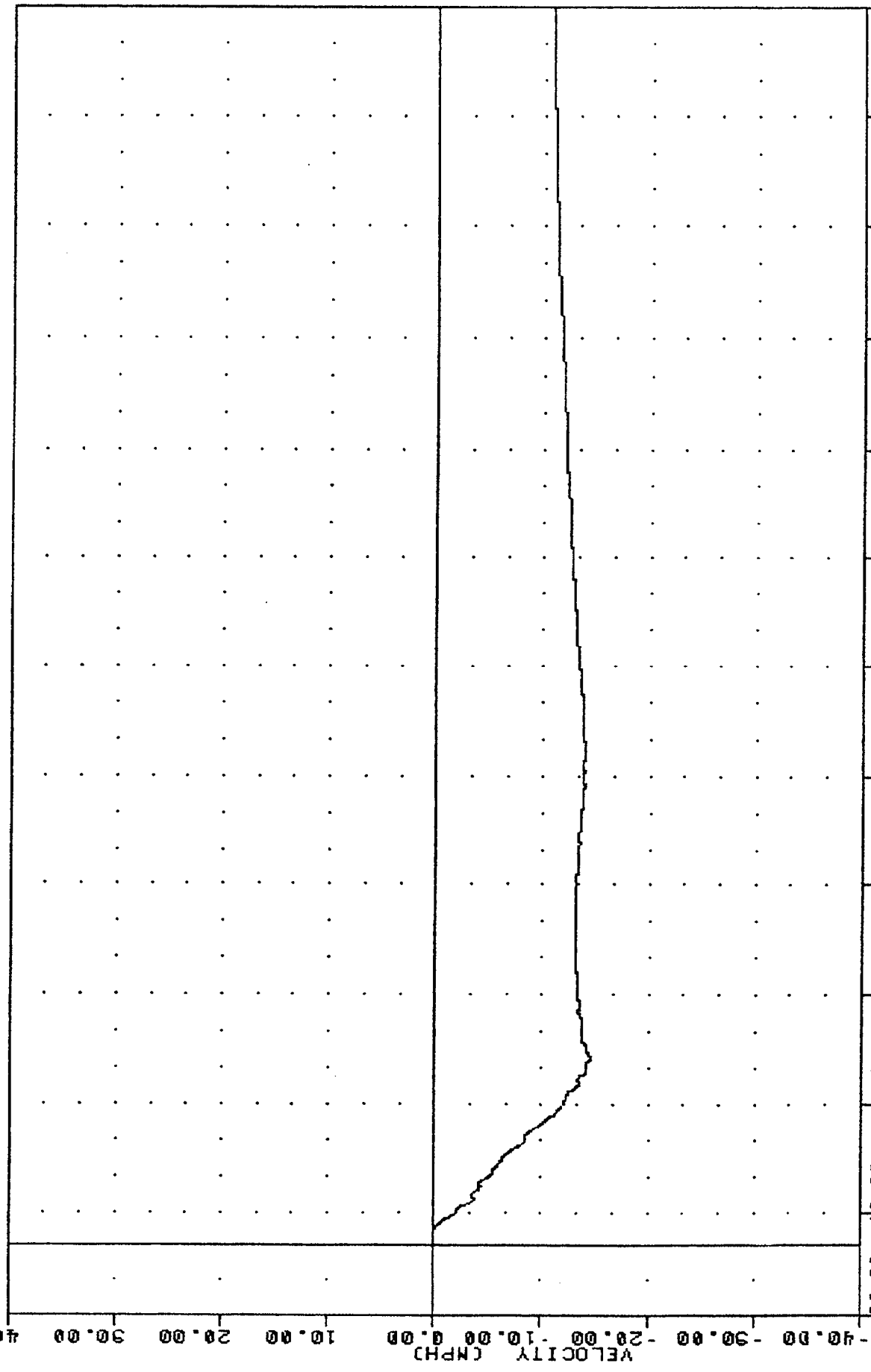
MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 VEHICLE LEFT FRONT SILL ACCELERATION Z AXIS

TRC 830803 PLOT DATE 7-10-65 13:35:23  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 LFSRG  
 FILTER = BLPF 100/ 316/ -10  
 MIN. MAX VALUES = 0.14e -10.50 , 23.38 e 13.50



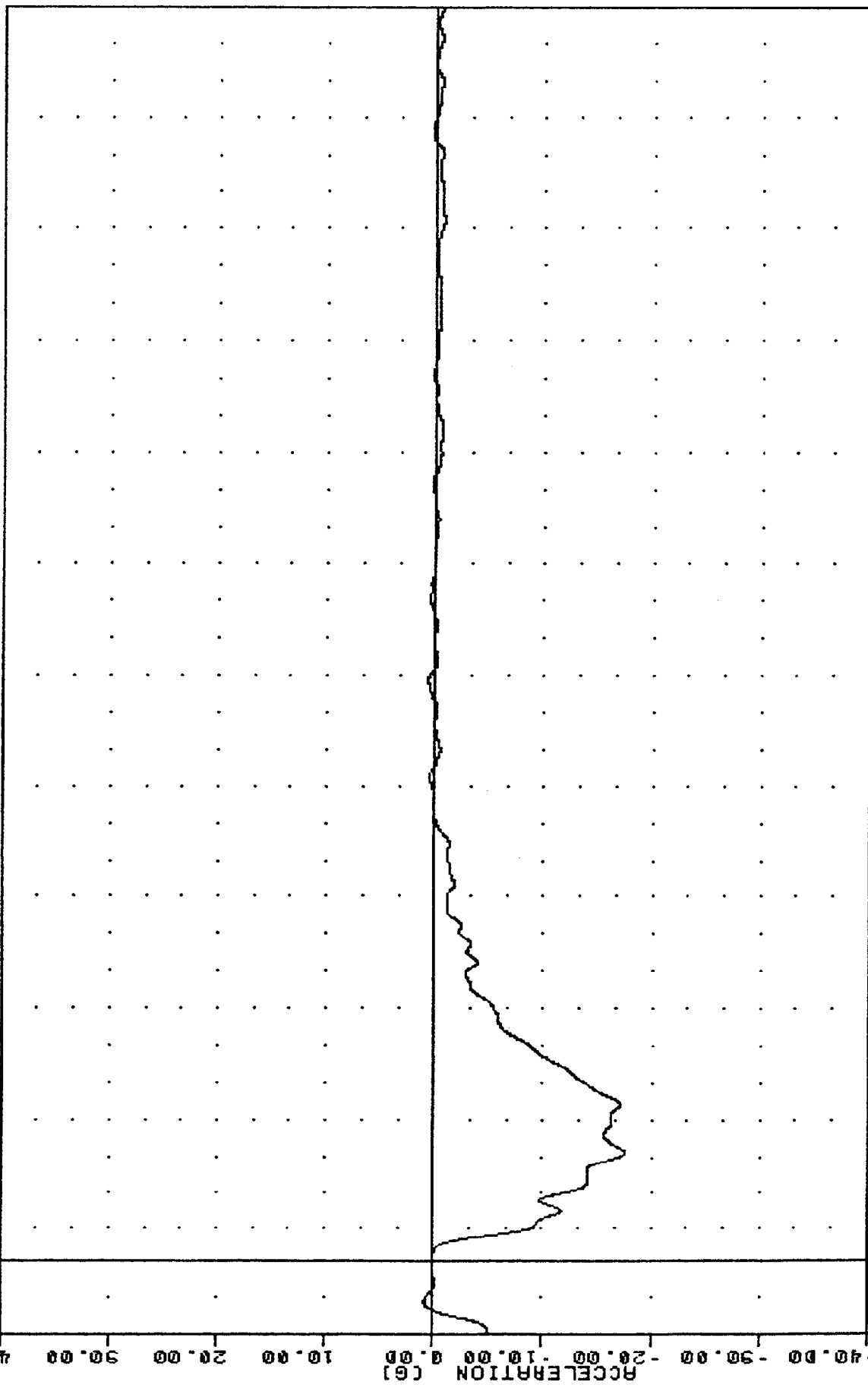
MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 VEHICLE LEFT FRONT SILL RESULTANT

TRC 030805 PLOT DATE 7 NOV 83 15:37:57  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 LFSYV  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -14.51 52.63, D.01 \* -9.88



-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 LEFT FRONT SILL VELOCITY Y AXIS

TRC 850805 7-AUG-85 13:55:23  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 BCGXB  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = -17.60e 31.25. 0.80 e -11.25



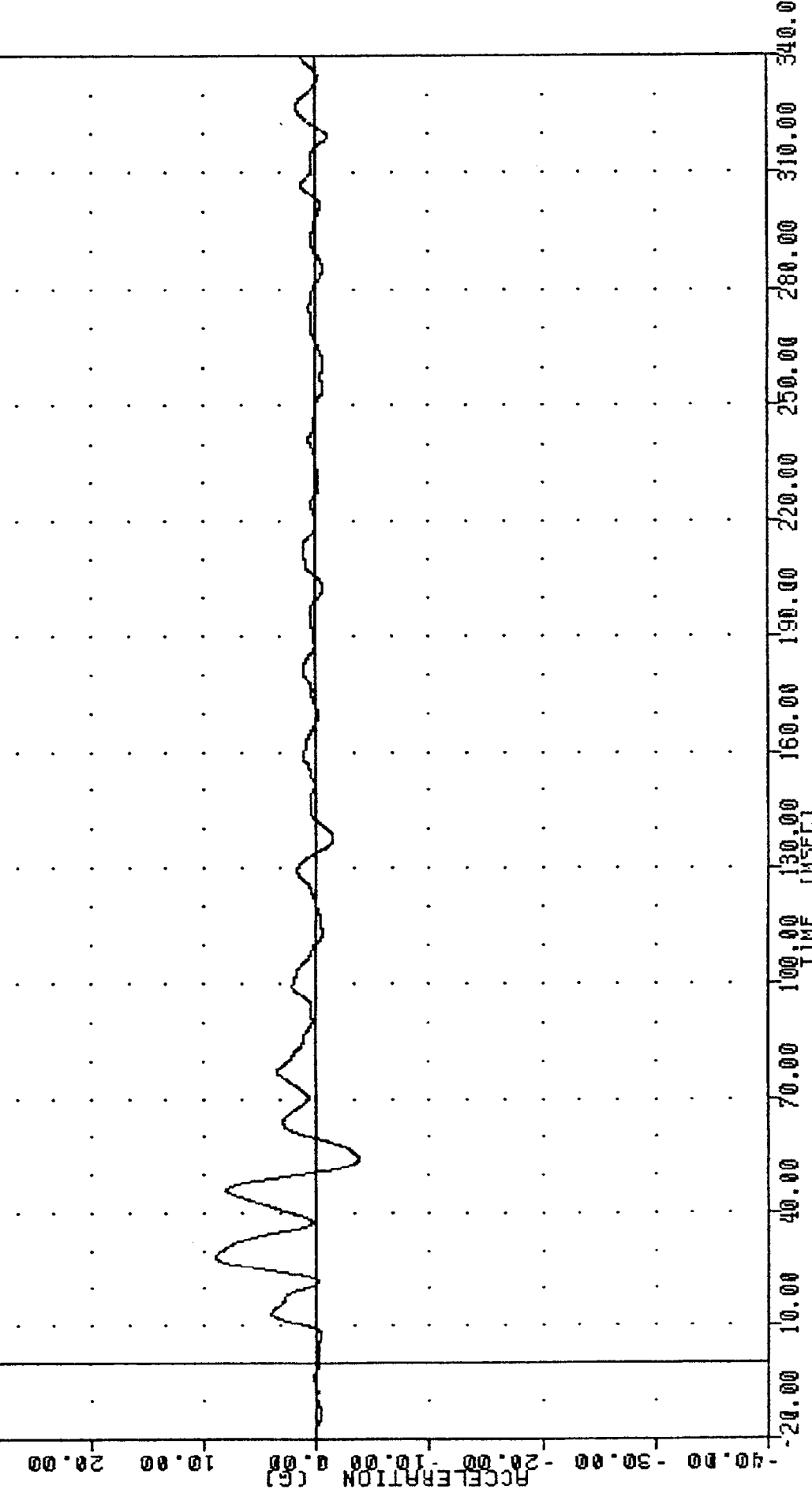
-40.00  
 -30.00  
 -20.00  
 -10.00  
 0.00  
 10.00  
 20.00  
 30.00  
 40.00  
 ACCELERATION (G)

-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)

MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 BARRIER CENTER OF GRAVITY X AXIS

TRC 85217000000  
 NYMA SIDE IMPACT TESTING  
 85217000000  
 BCCYG

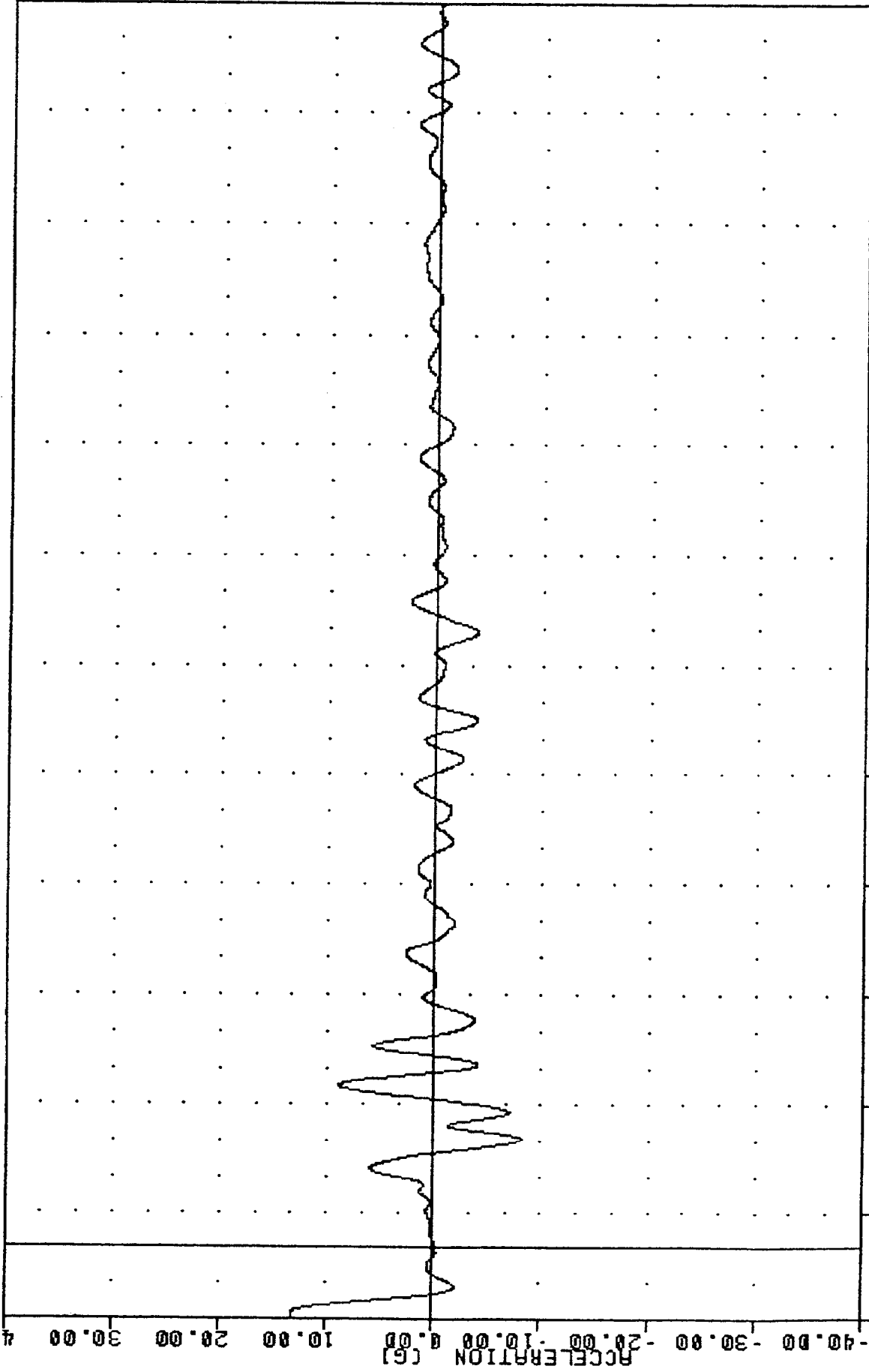
PLOT DATE 7 AUG 69 13:35:29  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -3.72e 54.25, 9.01 e 28.50



NYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 BARRIER CENTER OF GRAVITY Y AXIS

TRC [REDACTED], 830805 [REDACTED] PLOT DATE [REDACTED] 7 AUG 89 13:55:23 [REDACTED]  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 BCGZG

FILTER = 8LPF 100/ 316/ -40  
 MIN, MAX VALUES = -8.19e 30.63, 13.27 e -20.00



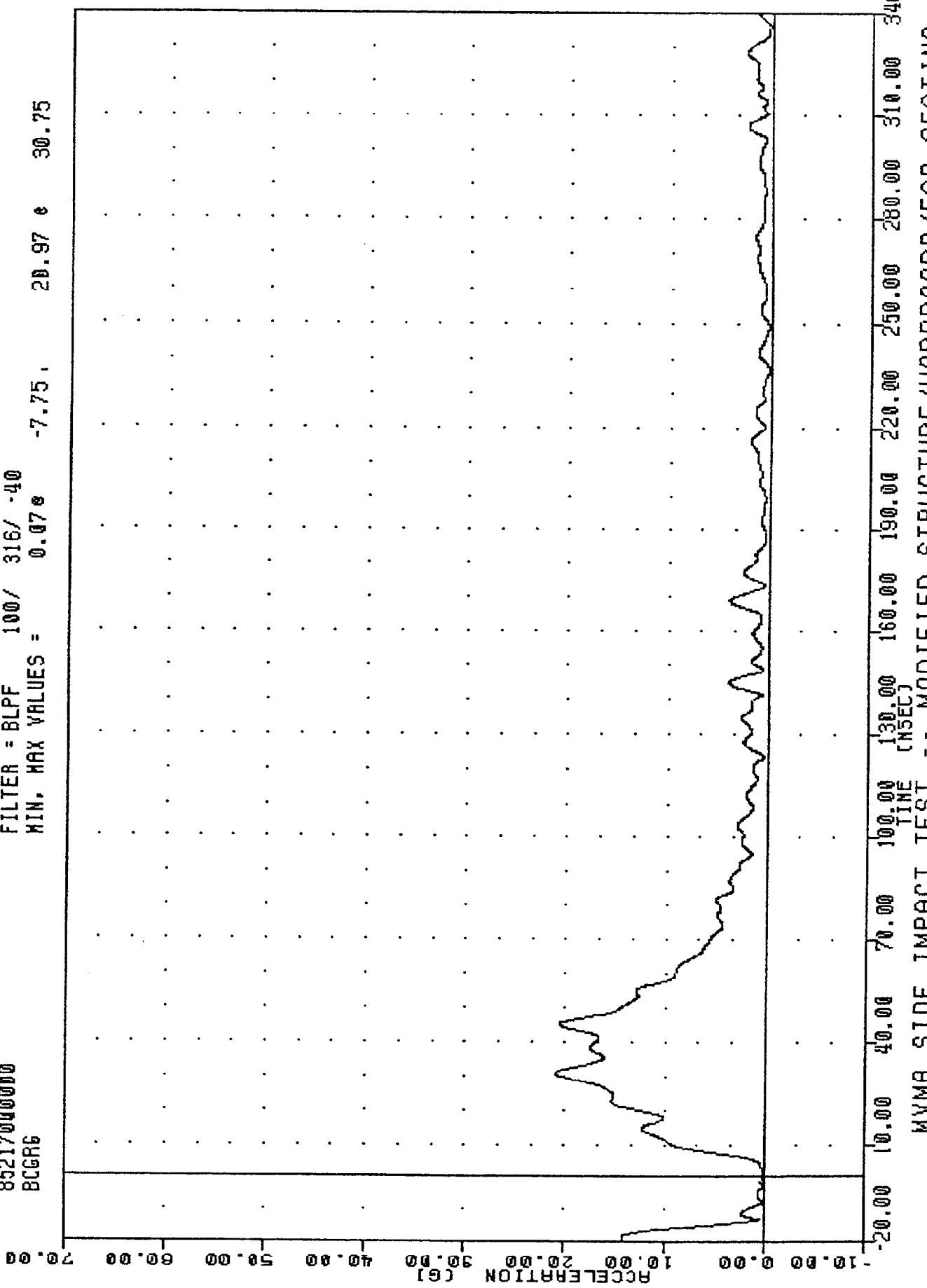
-40.00  
 -30.00  
 -20.00  
 -10.00  
 0.00  
 10.00  
 20.00  
 30.00  
 40.00  
 -20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)

MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 BARRIER CENTER OF GRAVITY Z AXIS

TAC 850805  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 BCGR6

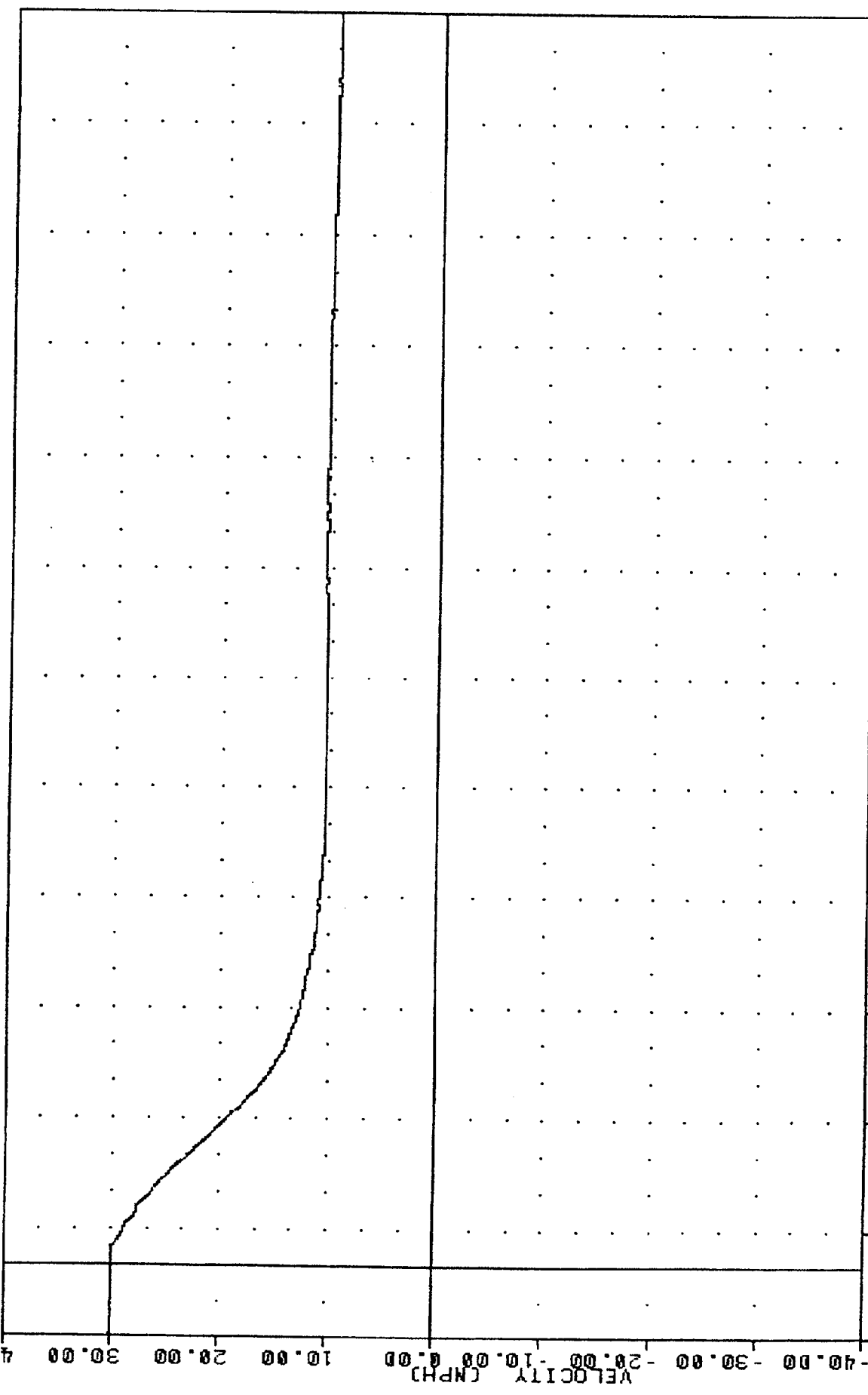
PLOT DATE 7-HUG-85 13:55:23

FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = 0.07 e -7.75, 20.97 e 30.75



MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 BARRIER CENTER OF GRAVITY RESULTANT ACCELERATION

TRC 850805 PLOT DATE 7-AUG-85 13:57:57  
 NVMA SIDE IMPACT TESTING  
 8521700000  
 BCGXY  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = 9.75 340.00, 30.10 8 -20.00

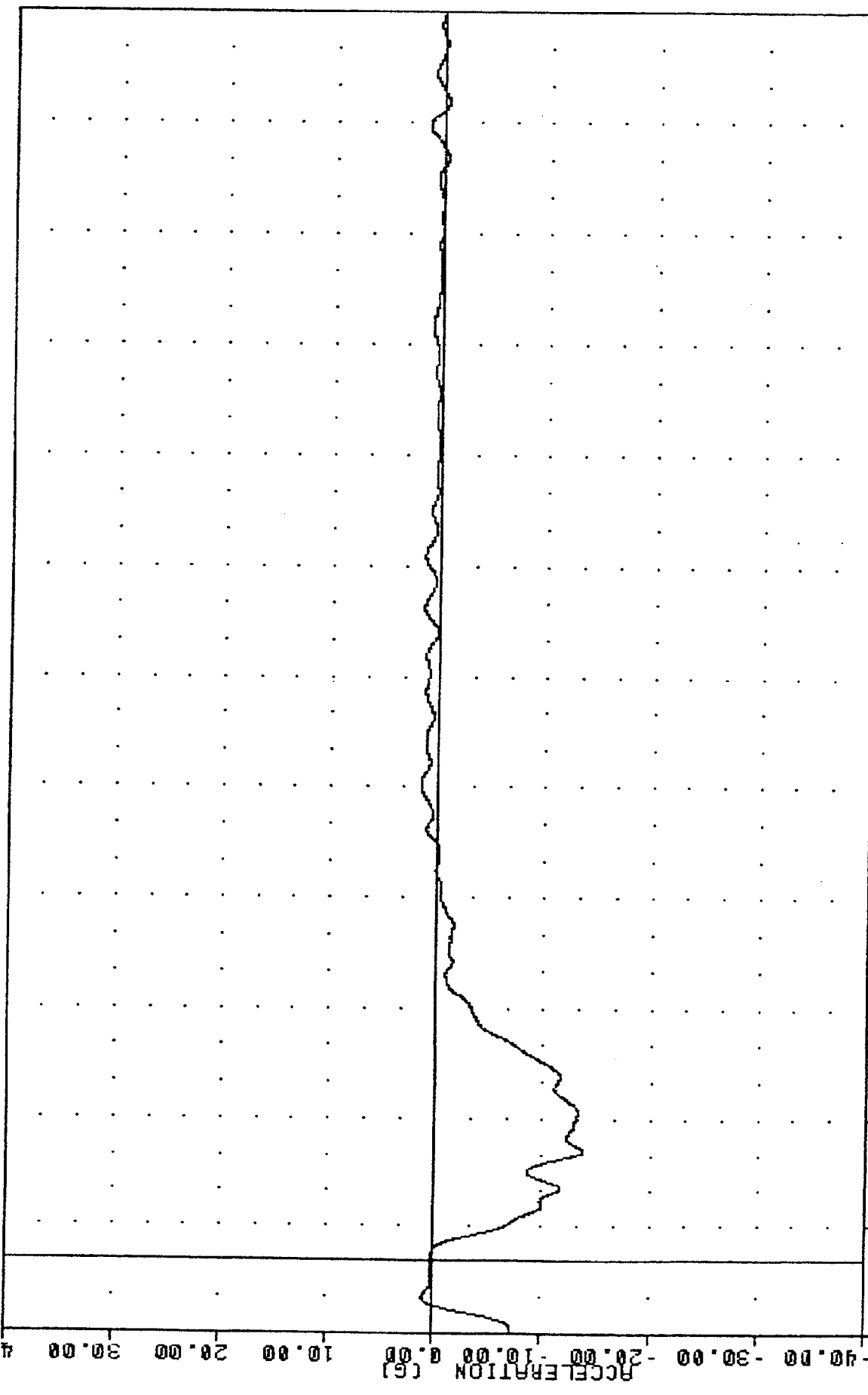


-40.00  
 -30.00  
 -20.00  
 -10.00  
 0.00  
 10.00  
 20.00  
 30.00  
 40.00  
 TIME (MSEC)  
 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 BARRIER CENTER OF GRAVITY VELOCITY X AXIS



TRC  
 850805  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 BRXG

PLOT DATE 7-AUG-83 13:55:23  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -13.818 31.50, 1.64 @ 130.75



-40.00  
 -30.00  
 -20.00  
 -10.00  
 0.00  
 10.00  
 20.00  
 30.00  
 40.00

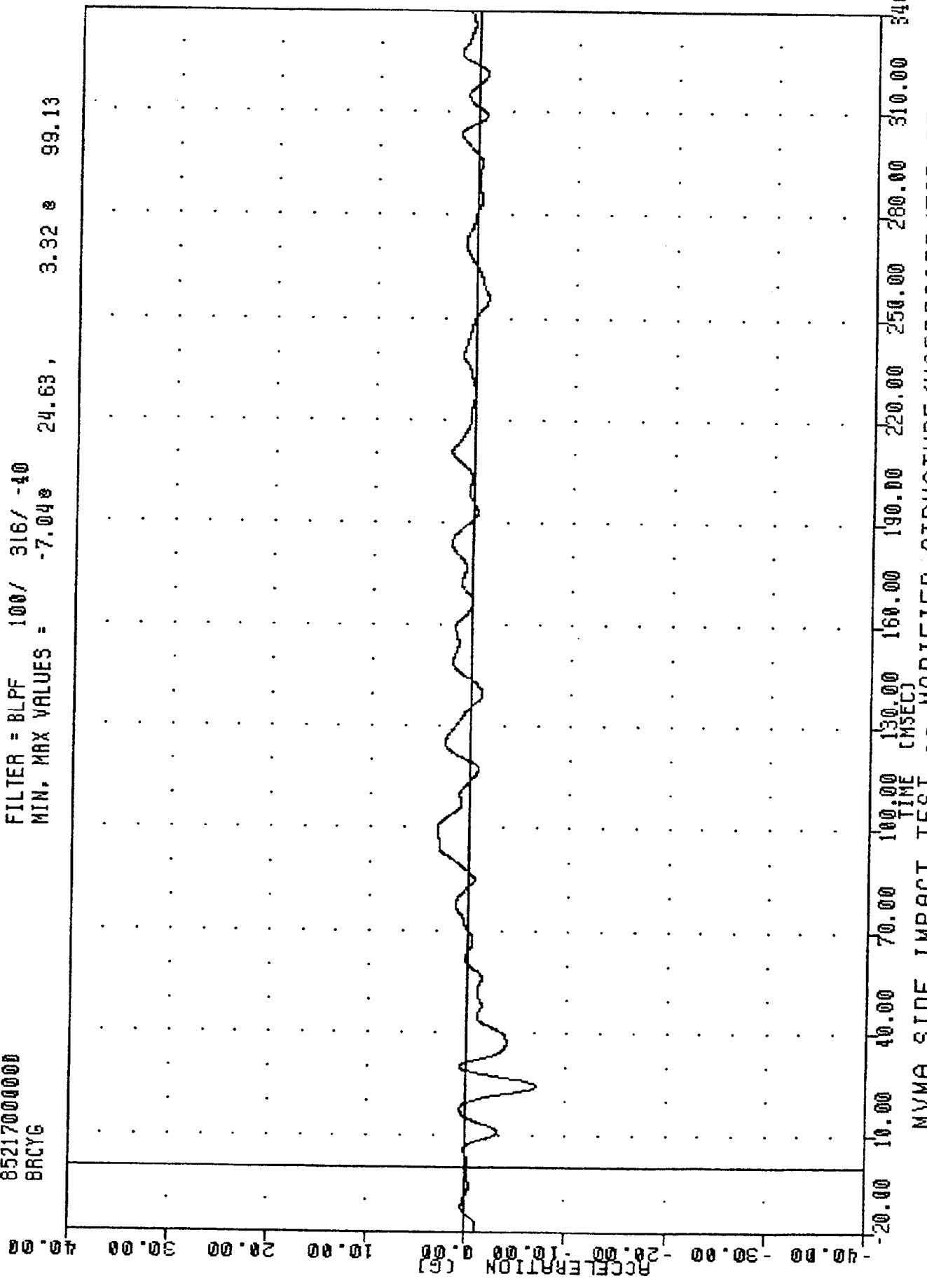
ACCELERATION (G)

0.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00

TIME (MSEC)

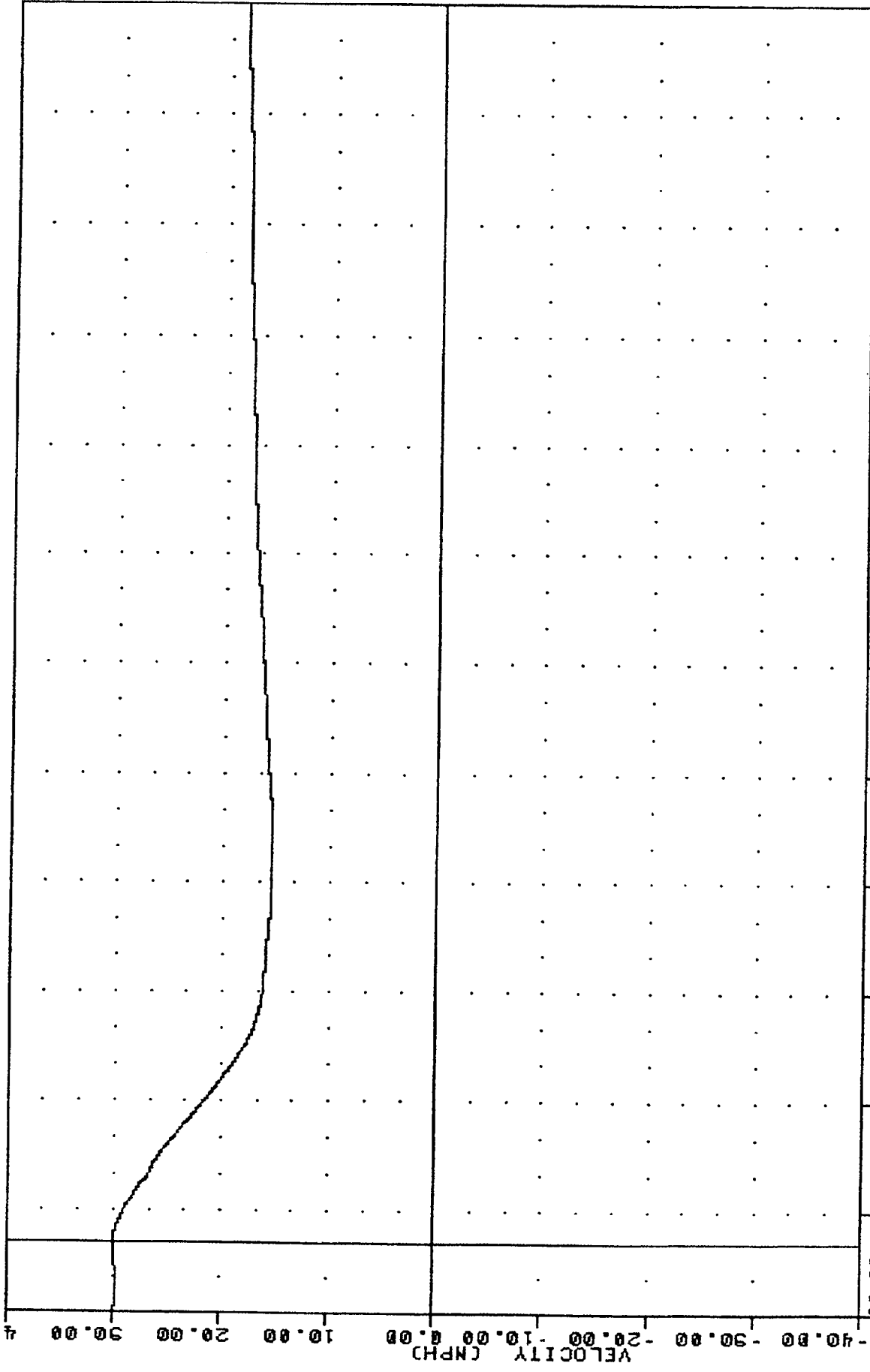
MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 BARRIER REAR CROSSMEMBER ACCELERATION X AXIS

TRC 05080J PLOT DATE 7 AUG 69 13:35:25  
 MYMA SIDE IMPACT TESTING  
 85217000000  
 BRCYG  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = -7.04e 24.63, 3.32 e 99.13



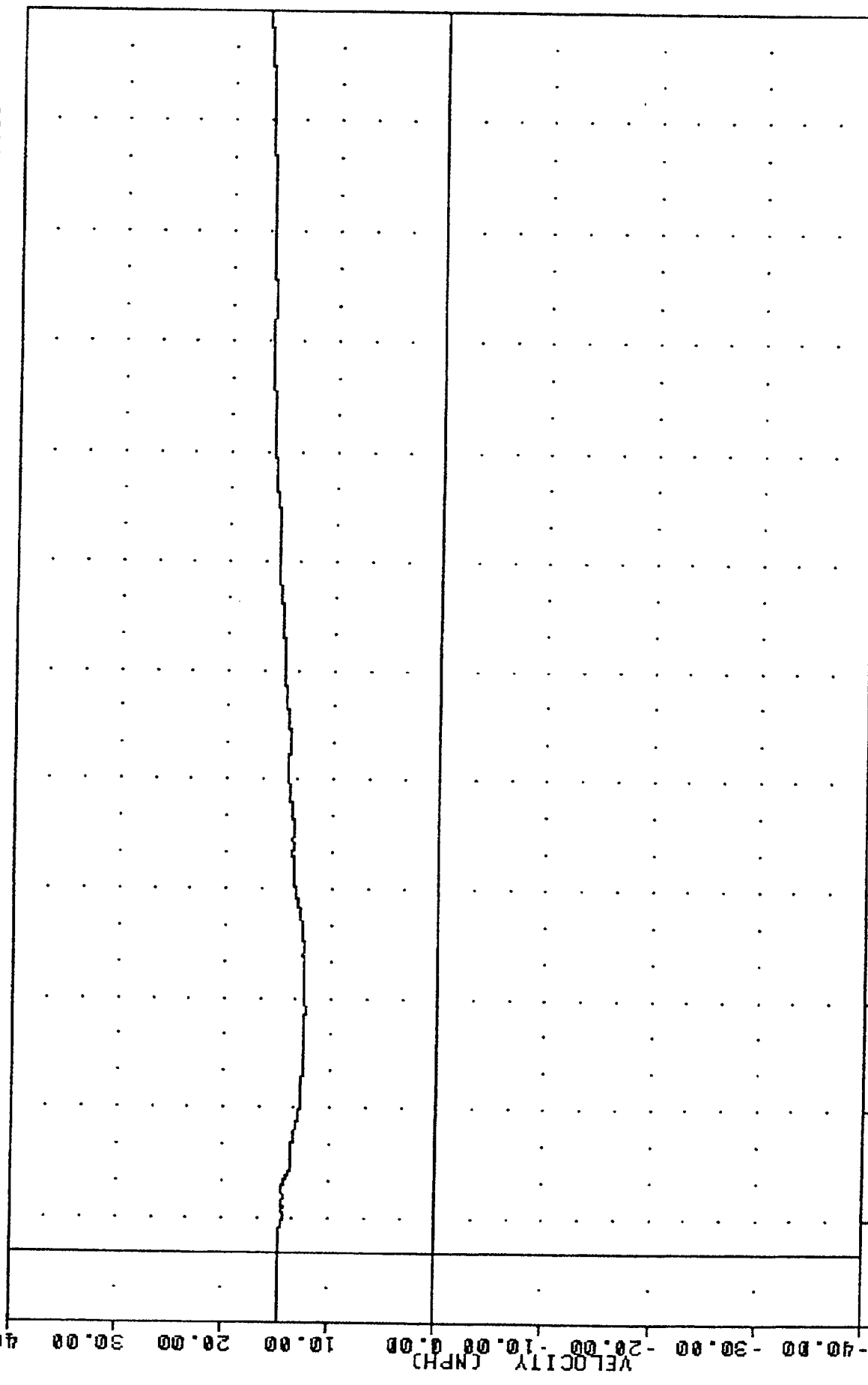
MYMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 BARRIER REAR CROSSMEMBER ACCELERATION Y AXIS

TRC 000805 PLOT DATE 7-NOV-80 13:37:57  
 MVMA SIDE IMPACT TESTING  
 85217000000  
 BACXY  
 FILTER = BLPF 300 / 949 / -40  
 MIN, MAX VALUES = 15.47 e 109.25 , 30.10 e -20.00



-40.00  
 -30.00  
 -20.00  
 -10.00  
 0.00  
 10.00  
 20.00  
 30.00  
 40.00  
 100.00  
 130.00  
 160.00  
 190.00  
 220.00  
 250.00  
 280.00  
 310.00  
 340.00  
 TIME (MSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 BARRIER REAR CROSSMEMBER VELOCITY X AXIS

TRC  
 NVMA SIDE IMPACT TESTING  
 85217000000  
 BRCYV  
 , 830805  
 7-AUG-85 13:57:57  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = 12.45 67.00, 16.81 340.00



-40.00  
 -30.00  
 -20.00  
 -10.00  
 0.00  
 10.00  
 20.00  
 30.00  
 40.00  
 100.00  
 130.00  
 160.00  
 190.00  
 220.00  
 250.00  
 280.00  
 310.00  
 340.00  
 TIME (MSEC)  
 MVMA SIDE IMPACT TEST -- MODIFIED STRUCTURE/HARDBOARD/FAR SEATING  
 BARRIER REAR CROSSMEMBER VELOCITY Y AXIS

APPENDIX B  
DUMMY CERTIFICATION

SIDE IMPACT DUMMY CALIBRATION

Hybrid III Dummy  
Damage Checklist

Dummy S/N 119

<u>OK</u>	<u>Damaged</u>	
<u>X</u>	<u>      </u>	Outer skin on entire dummy (gashes, rips, etc.)
<u>X</u>	<u>      </u>	Head - Gashes, rips, general appearance, etc.
<u>X</u>	<u>      </u>	Neck - broken or cracks in rubber
<u>X</u>	<u>      </u>	Spine - broken or cracks in rubber
<u>X</u>	<u>      </u>	Ribs - check all ribs for damage (bent or broken), damping material separation.
<u>X</u>	<u>      </u>	Bourns Pot. - bent shaft - electrical discontinuity
<u>X</u>	<u>      </u>	Accelerometer Leads - torn cables
<u>X</u>	<u>      </u>	Accelerometer Mountings (Head, Thorax, Pelvis) - check for secure mounting
<u>X</u>	<u>      </u>	Other

If upon visual examination, damage is apparent in any of these areas, a VRTC representative is to be consulted for a decision on repair or replacement of parts.

Repair or Replacement Approved By:

\_\_\_\_\_  
Signature Date

Comments on repair or replacement of parts:

Visual OK  
8-1-85 check spine for loose weight. OK

TRC Personnel

Checked By:

Gregg Wells                      16 July 85  
Signature Date

VRTC Personnel

Checked and Approved for Testing By:

\_\_\_\_\_  
Signature Date

SIDE IMPACT DUMMY CALIBRATION  
 DUMMY SERIAL NUMBER 119  
 CALIBRATION 05

TEST/ DATE	CHANNEL	FILTER CLASS	PEAK ACCELERATION (g) SPECIFICATION*	TEST RESULT
HEAD 8/19/85	HEAD Y-AXIS	1000	150-175	163.72
THORAX 7/31/85	UPPER SPINE Y-AXIS			
	PRIMARY	180	16-24.6	19.75
	REDUNDANT	180	16-24.6	19.76
	LOWER SPINE Y-AXIS			
	PRIMARY	180	17.6-26.4	18.02
	REDUNDANT	180	17.6-26.4	18.24
	RIGHT UPPER RIB Y-AXIS			
	PRIMARY	180	36-50	45.02
	REDUNDANT	180	36-50	45.51
	RIGHT LOWER RIB Y-AXIS			
	PRIMARY	180	36-50	45.12
	REDUNDANT	180	36-50	45.14
PELVIS 8/1/85	PELVIS Y-AXIS	180	50-65	51.99

\*Side impact test specifications currently in use by VRTC-NHTSA.



M. 1985  
SID 119 HEAD IMPACT CAL 05  
85213  
PISXY

PISTON VELOCITY  
12:06:30  
FILTER = ALPF 1650/ 5214/ -40  
MIN. MAX VALUES = 3.03e 110.00, 7.07 e -5.63

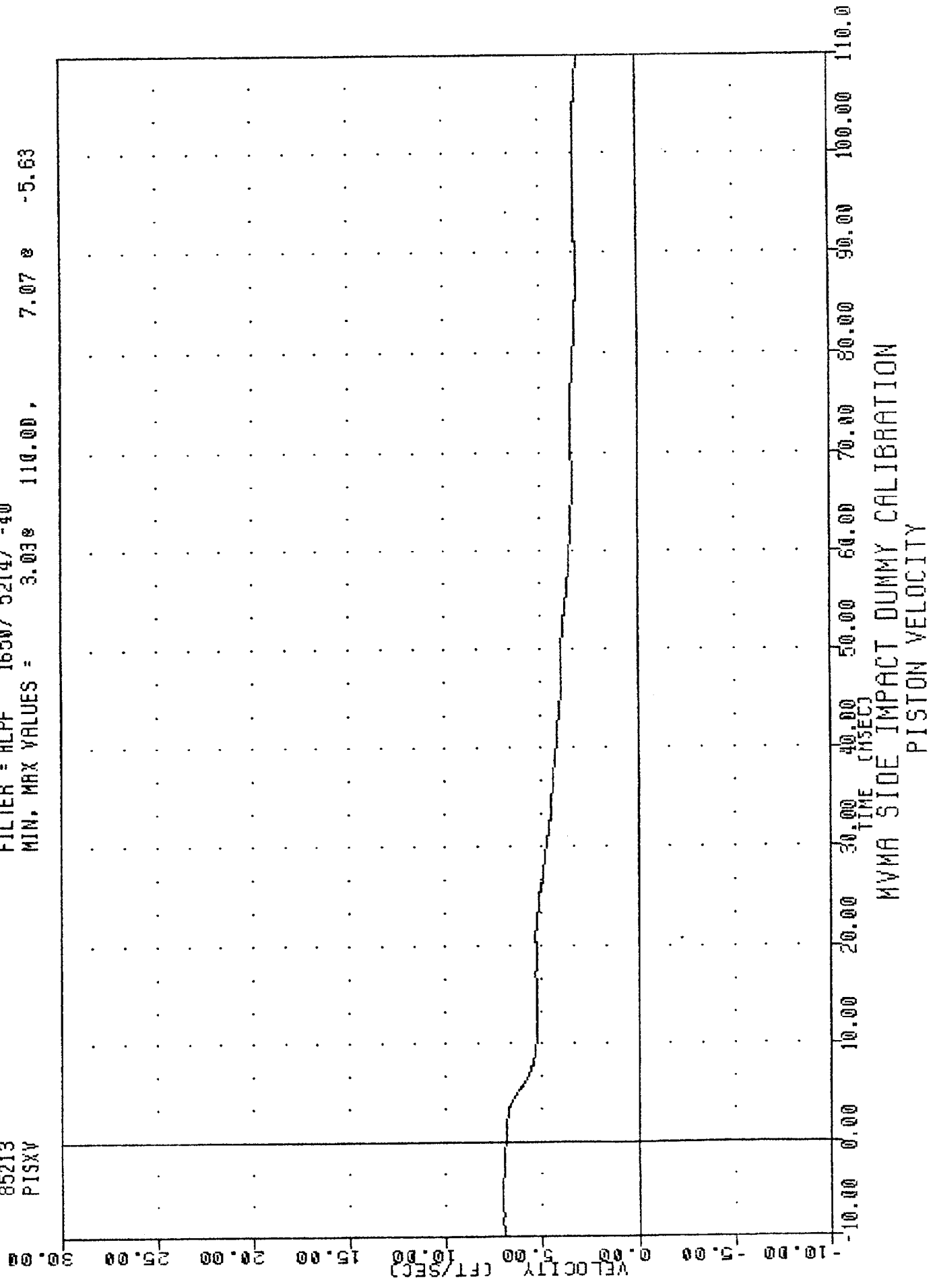
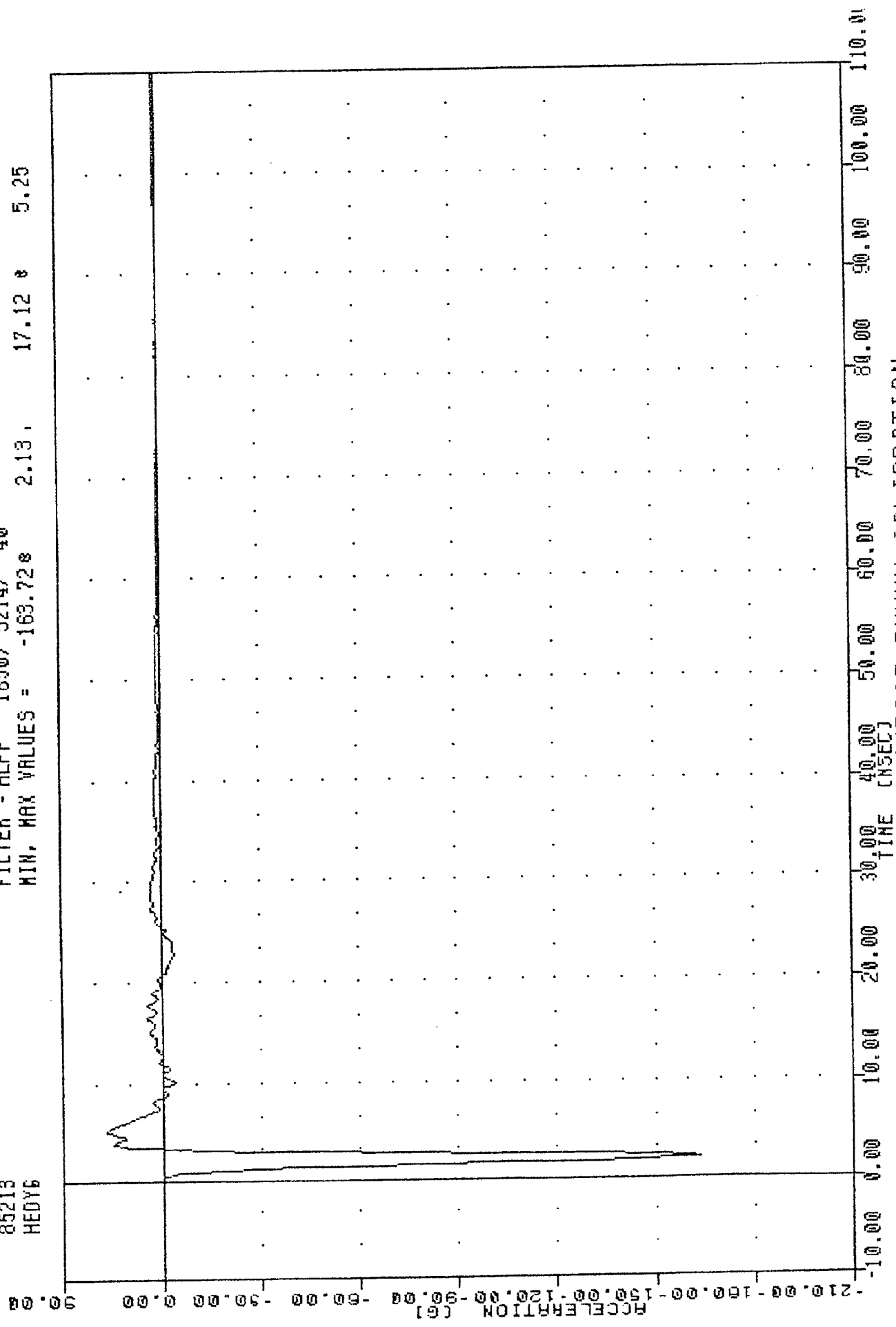


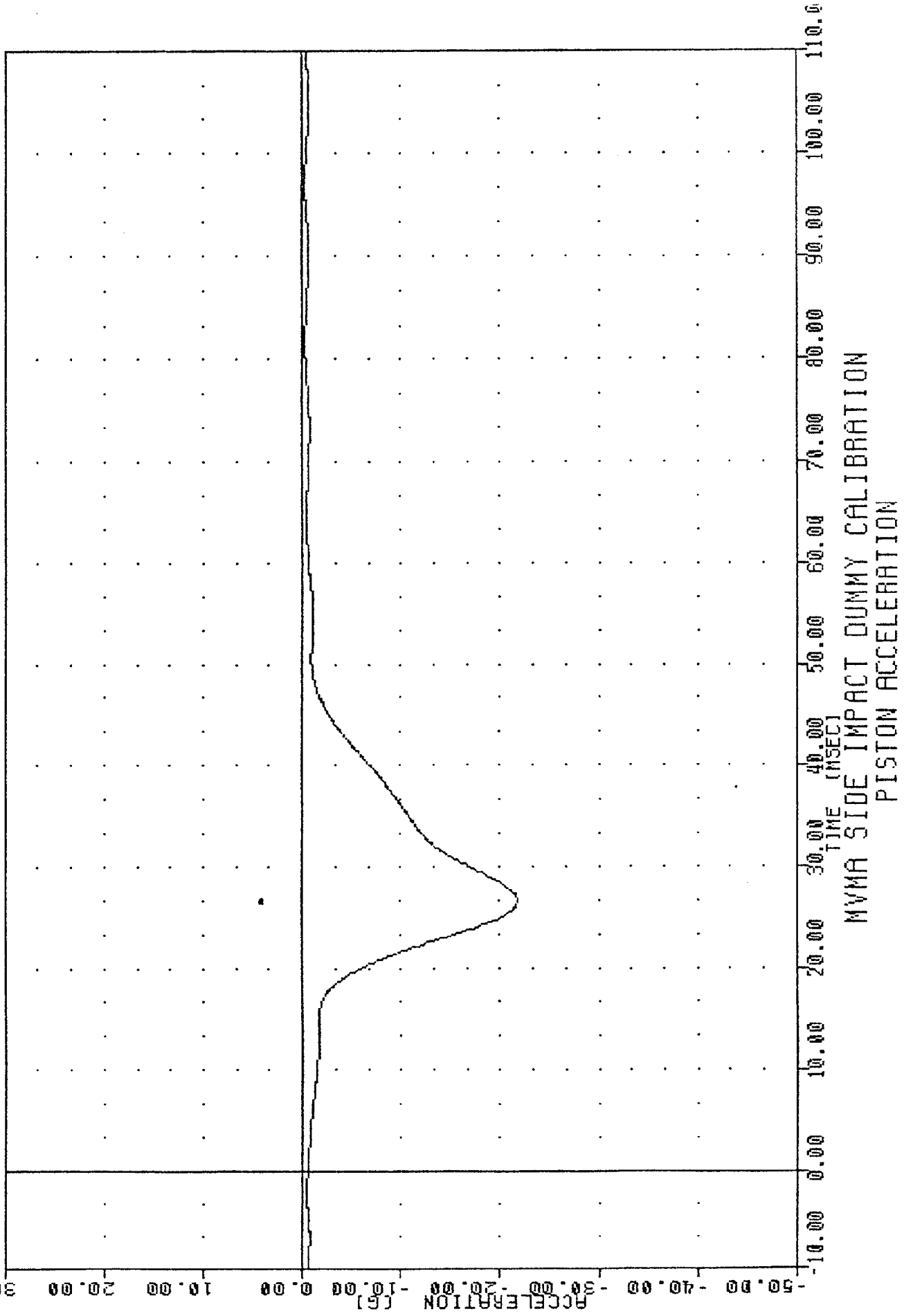
PLATE  
SID 119 HEAD IMPACT CAL 05  
85213  
HEDY6

FILTER = ALPF 1650/ 5214/ -40  
MIN. MAX VALUES = -163.72 2.13 17.12 5.25



NYMM  
 SID 119 THORAX IMPACT CAL 05  
 85212  
 PISXG

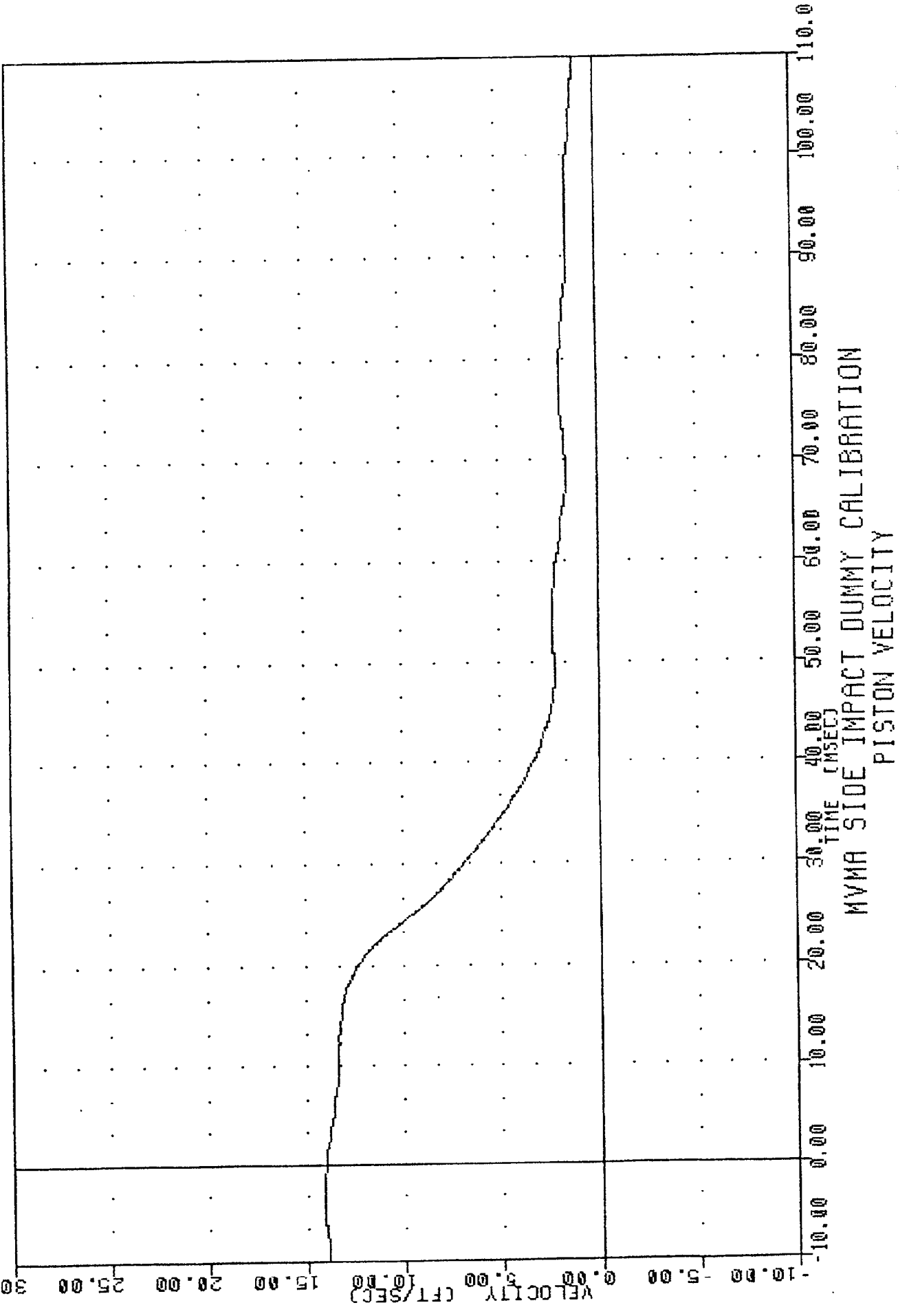
FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -21.798 26.63, -0.24 & 97.13



MVMA SIDE IMPACT DUMMY CALIBRATION  
 PISTON ACCELERATION

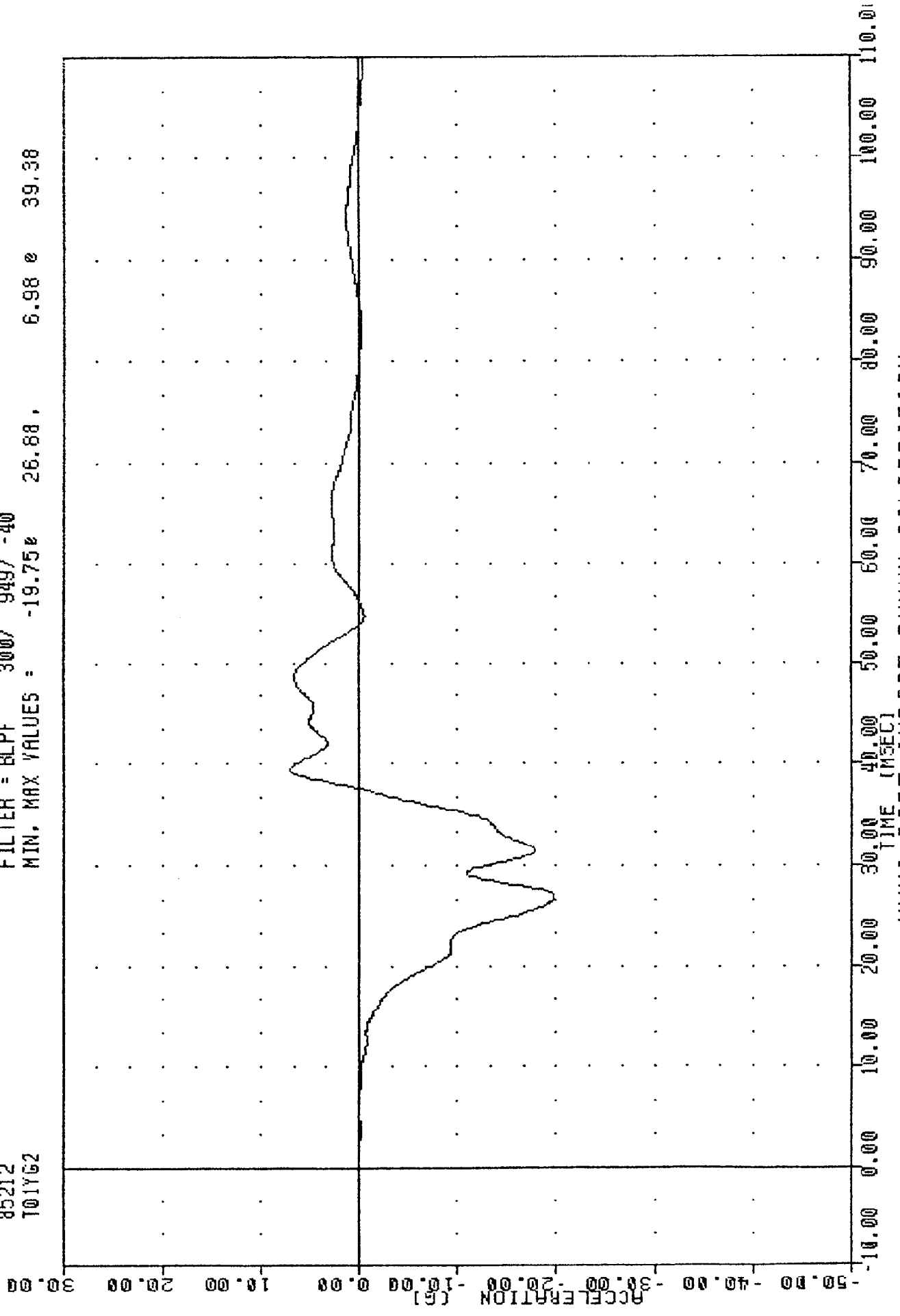
MV 190 PLORATE 198-8 00:00  
 SID 119 THORAX IMPACT CAL 05  
 85212  
 PISXY

FILTER = ALPF 1650/ 5214/ -40  
 MIN, MAX VALUES = 1.01e 109.63, 14.19 e -2.63



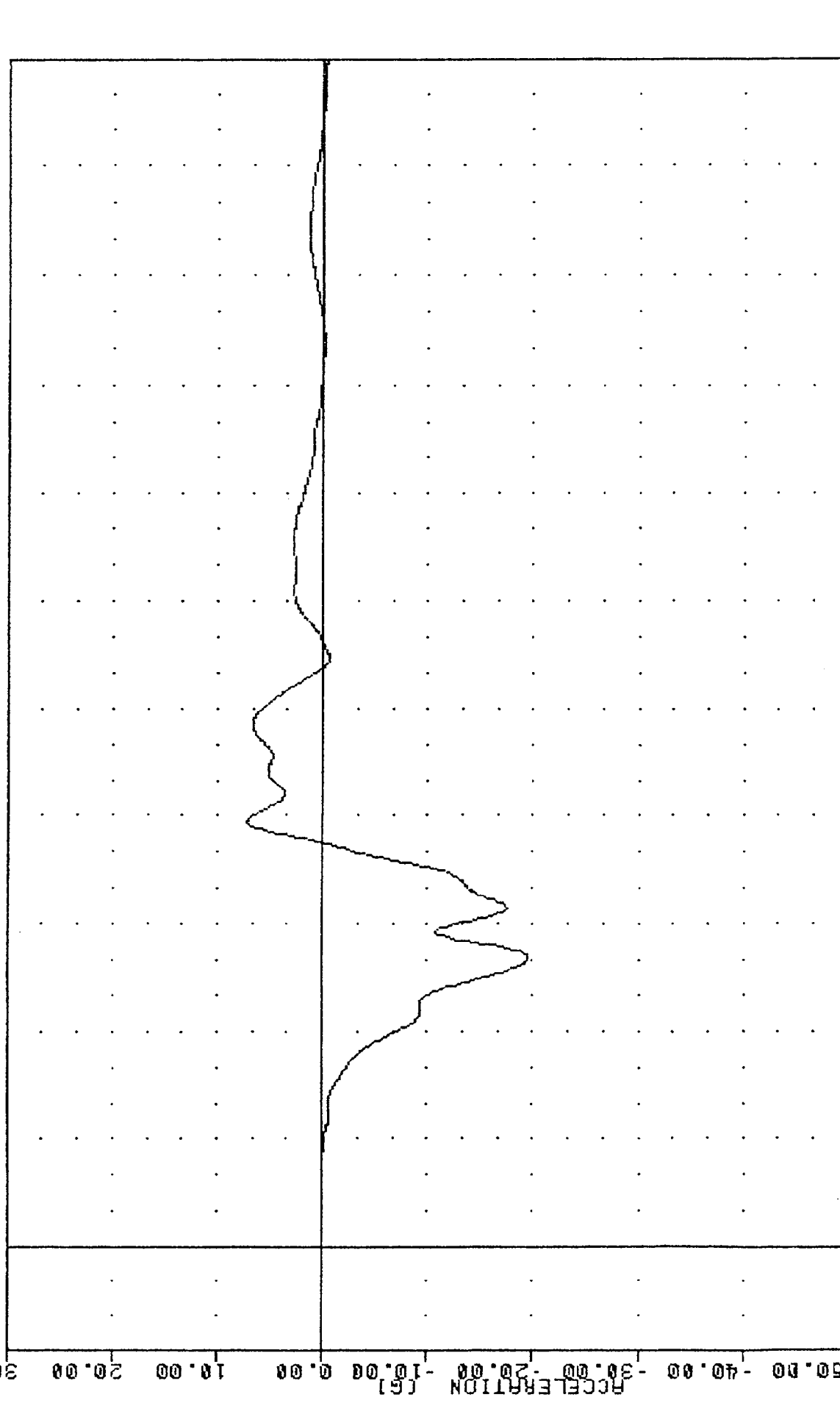
MVMA SIDE IMPACT DUMMY CALIBRATION  
 PISTON VELOCITY

NVMA, ST11900, PLOT DATE 1 AUG 63 07:54:03  
 SID 119 THORAX IMPACT CAL 05  
 85212  
 T01Y62  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = -19.75e 26.88, 6.98 e 39.38



MVMA SIDE IMPACT DUMMY CALIBRATION  
 UPPER SPINE ACCELERATION Y AXIS - PRIMARY

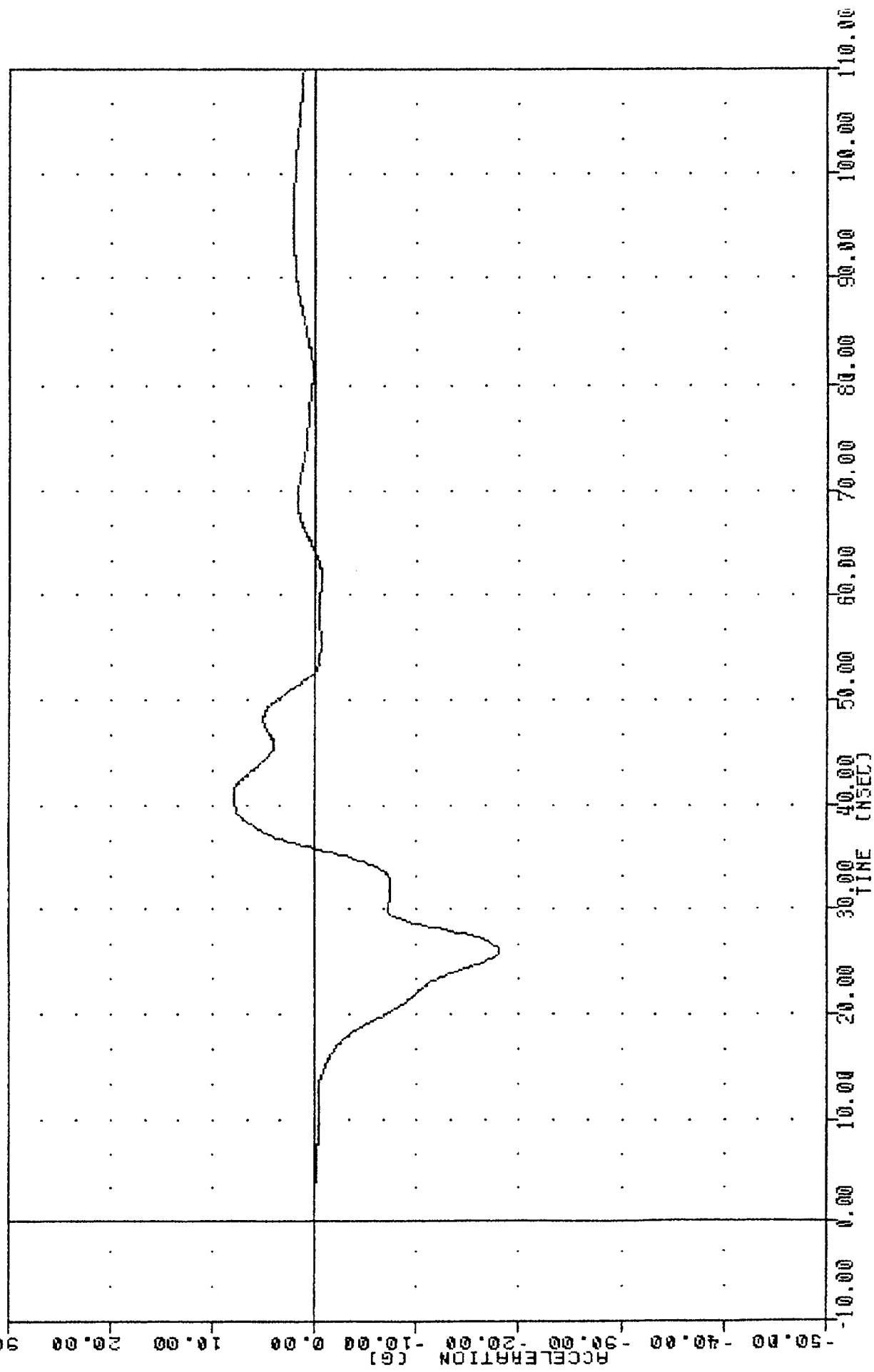
MVNR 111905 PLOT DATE 1-AUG-65 07:54:03  
 SID 119 THORAX IMPACT CAL 05  
 85212  
 T01YGB  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -19.55e 26.88, 7.15 e 39.38



MVMA SIDE IMPACT DUMMY CALIBRATION  
 UPPER SPINE ACCELERATION Y AXIS -REDUNDANT

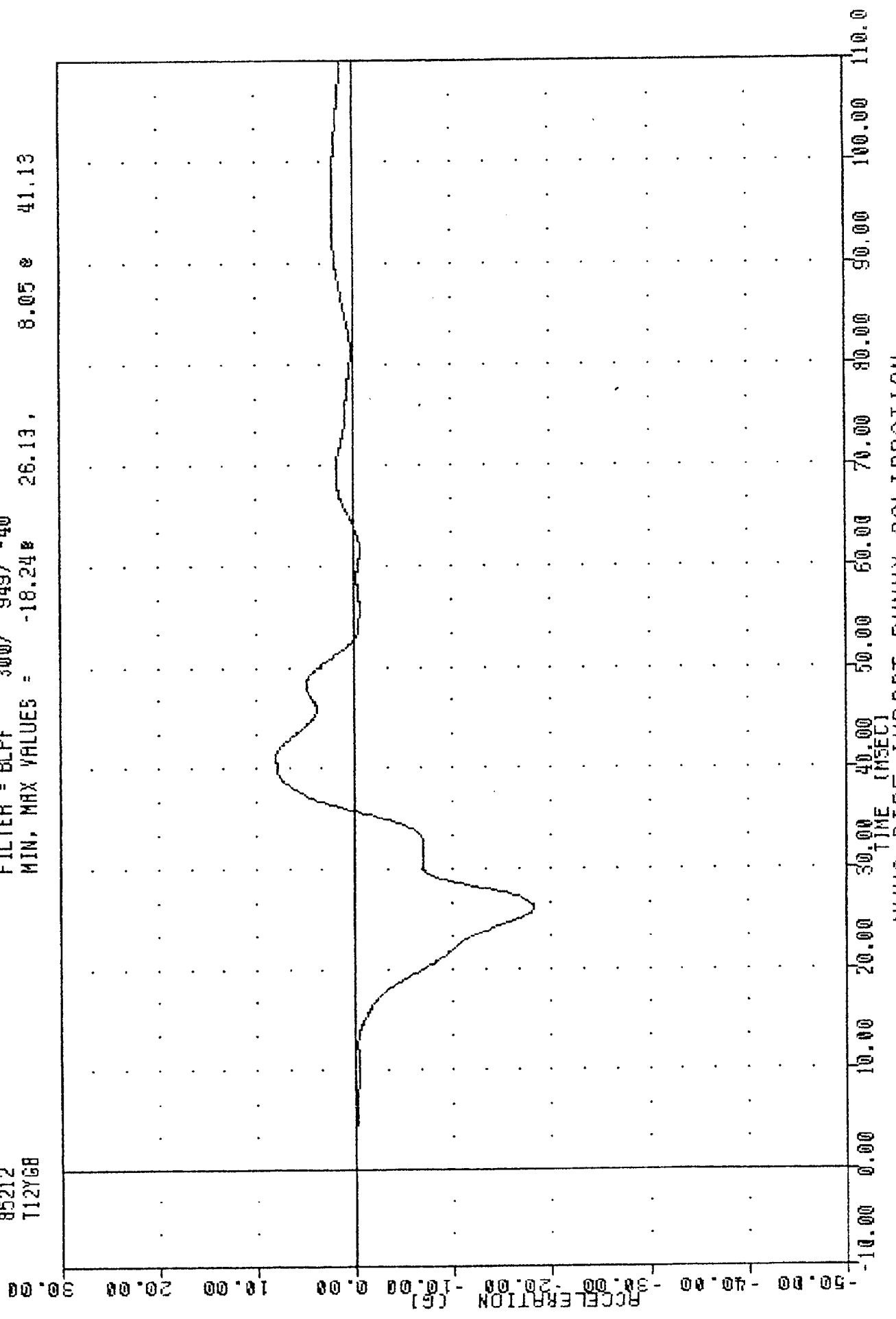
MYMA ST11905 PLOT DATE 1-HUB-85 07:54:03  
 SID 118 THORAX IMPACT CAL 05  
 85212  
 T12Y62

FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = -18.01e 26.13, 7.94 e 41.13



MYMA SIDE IMPACT DUMMY CALIBRATION  
 LOWER SPINE ACCELERATION Y AXIS -PRIMARY

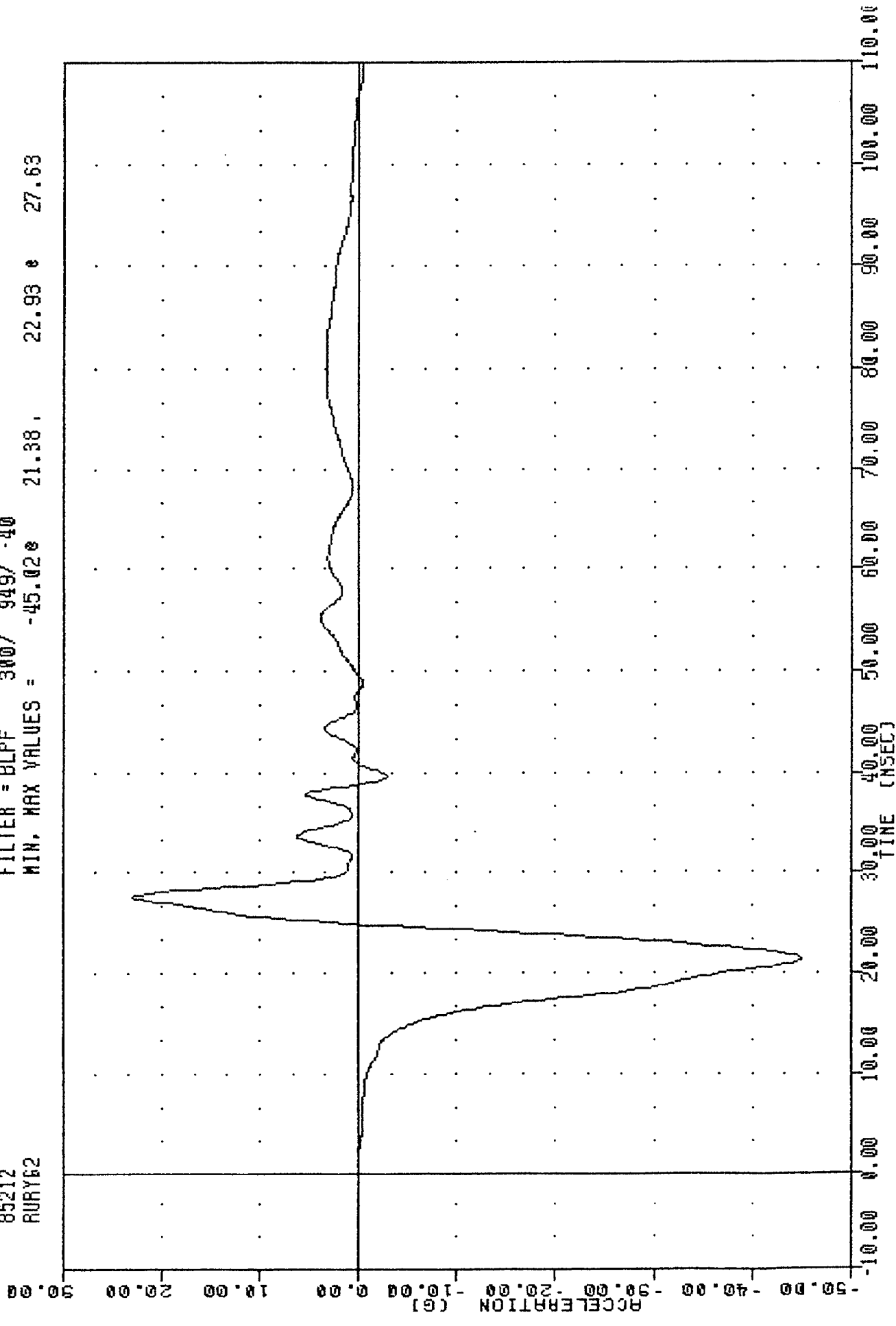
MVMA SID 119 THORAX IMPACT CAL 05  
 85212  
 T12Y6B  
 PLOT DATE 1-AUG-83 07:54:03  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = -18.24# 26.13, 8.05 @ 41.13



MVMA SIDE IMPACT DUMMY CALIBRATION  
 LOWER SPINE ACCELERATION Y AXIS - REDUNDANT

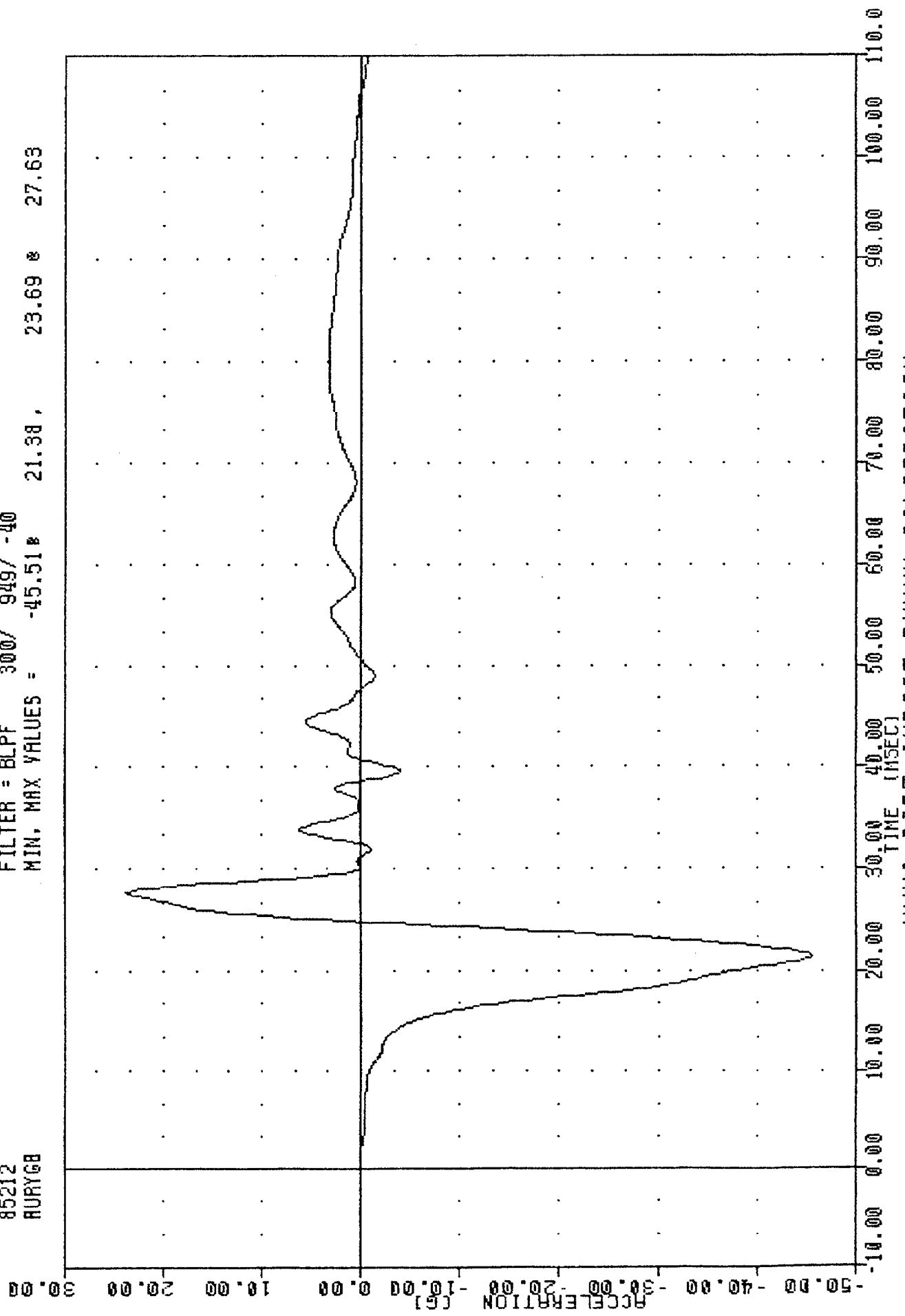
MVMA , ST11905  
 SID 118 THORAX IMPACT CAL 05  
 85212  
 RURY62

PLOT DATE 1-AUG-85 07:54:03  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -45.02e 21.38, 22.93 e 27.63



MVMA SIDE IMPACT DUMMY CALIBRATION  
 RIGHT UPPER RIB ACCELERATION Y AXIS -PRIMARY

MVMA , ST11905 PLOT DATE 1-AUG-65 07:54:03  
 SID 119 THORAX IMPACT CAL 05  
 85212 FILTER = BLPF 300/ 949/ -40  
 RURYGB MIN. MAX VALUES = -45.51g 21.38g 23.69g 27.63

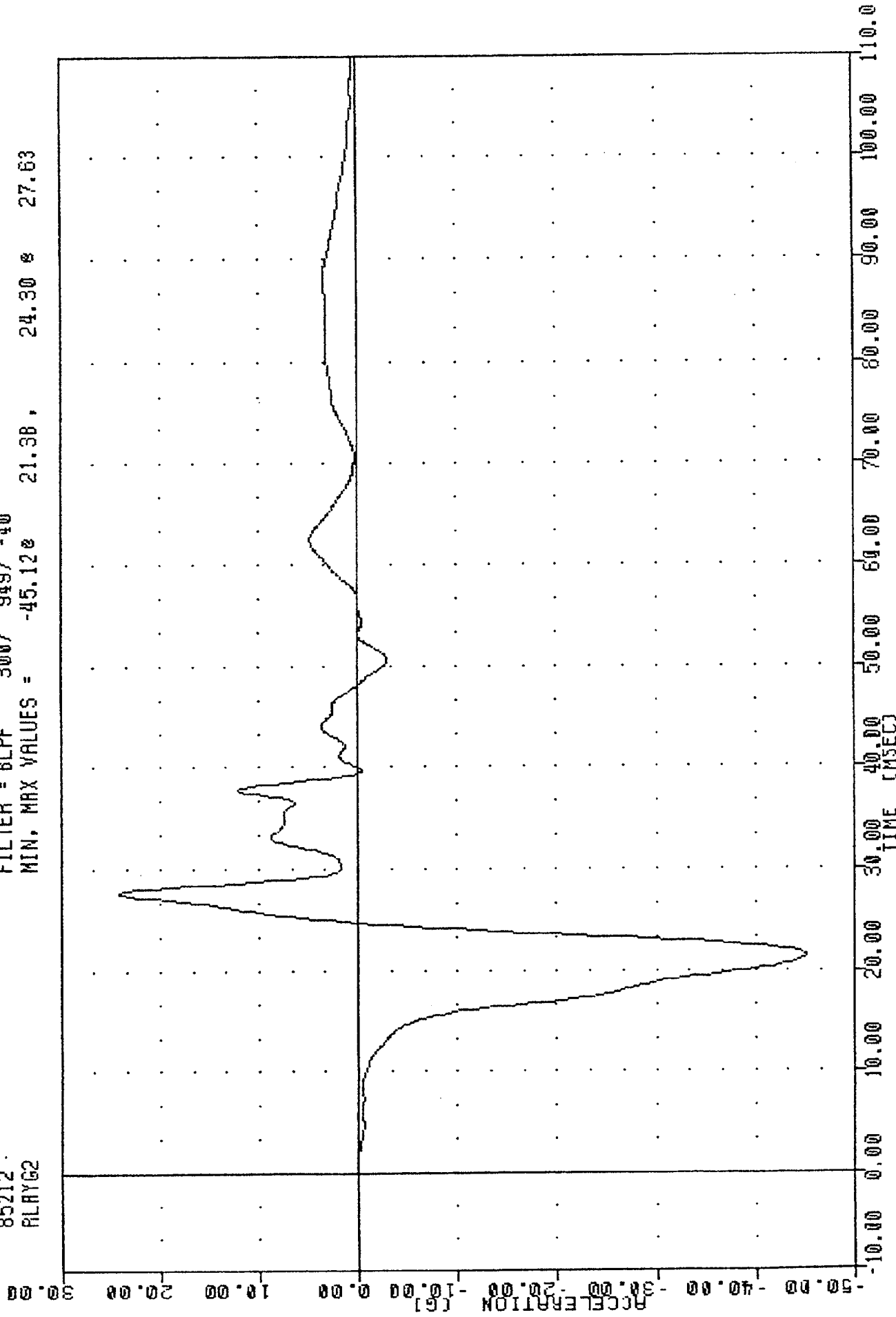


MVMA SIDE IMPACT DUMMY CALIBRATION  
 RIGHT UPPER RTR ACCELERATION Y AXIS - REMNANT

MVNA  
ST11905  
SID 119 THORAX IMPACT CAL 05  
85212  
PLAYG2

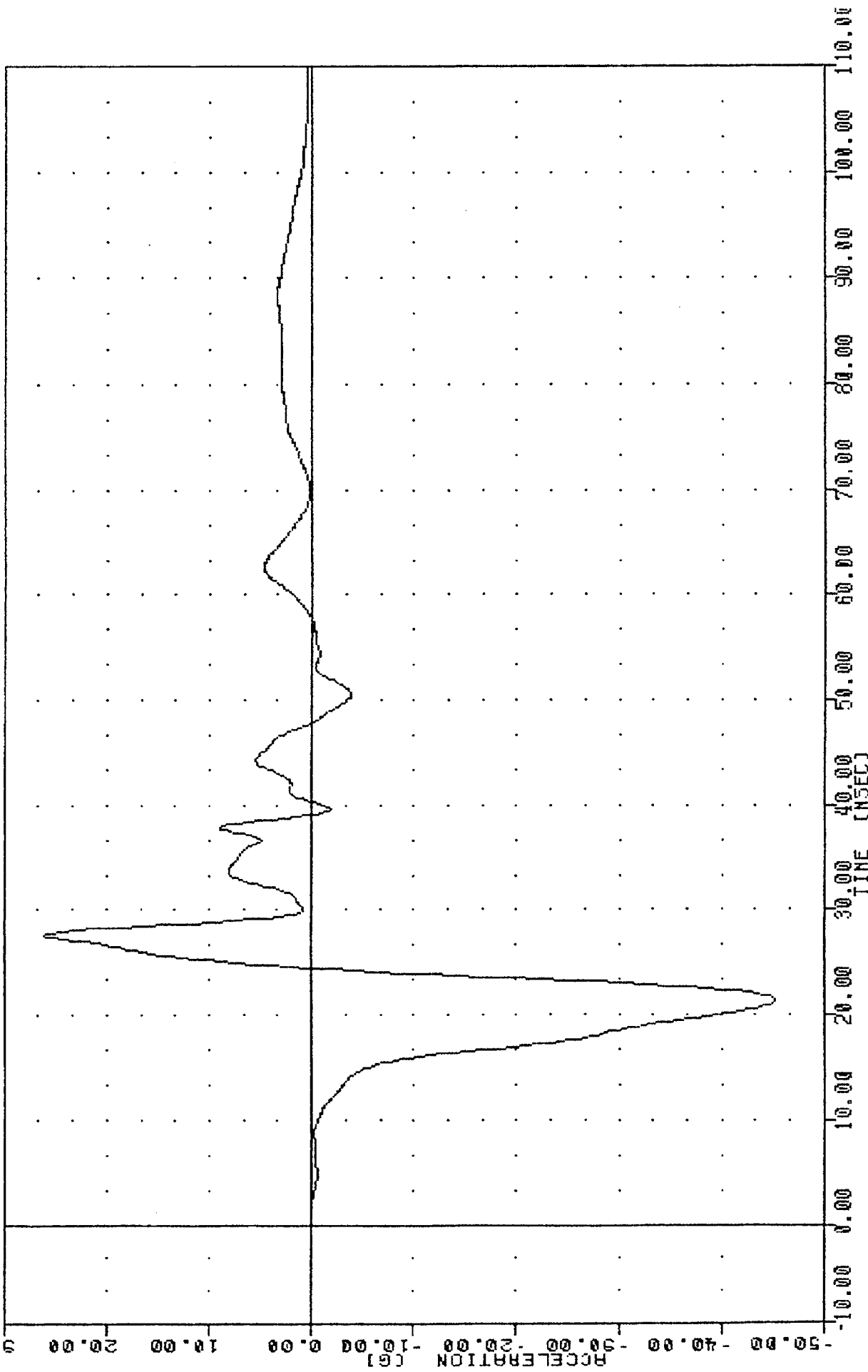
PLOT DATE 1-AUG-85 07:54:03

FILTER = 8LPF 300/ 949/ -40  
MIN. MAX VALUES = -45.12e 21.38, 24.30 e 27.63



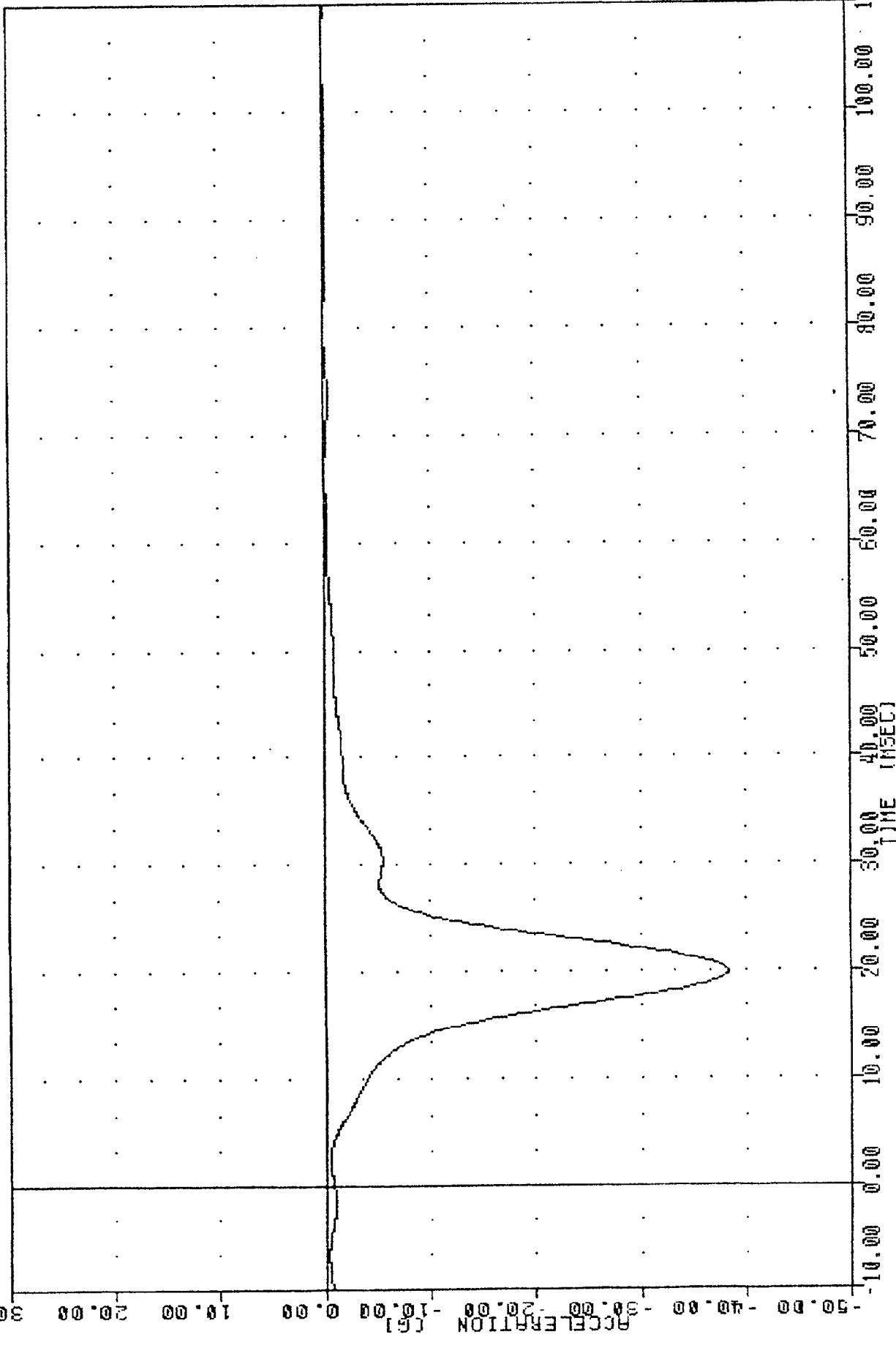
MVNA SIDE IMPACT DUMMY CALIBRATION  
RIGHT LOWER RTB ACCELERATION Y AXIS -PRIMARY

MYMA [REDACTED], STJ1905 [REDACTED] PLOT DATE 1-AUG-85 07:54:03  
 SID 119 THORAX IMPACT CAL 05  
 85212  
 RLY6B  
 FILTER = BLPF 300/ 949/ -40  
 MIN, MAX VALUES = -45.140 21.38, 26.15 27.63



MVMA SIDE IMPACT DUMMY CALIBRATION  
 RIGHT LOWER RIB ACCELERATION Y AXIS - REDUNDANT

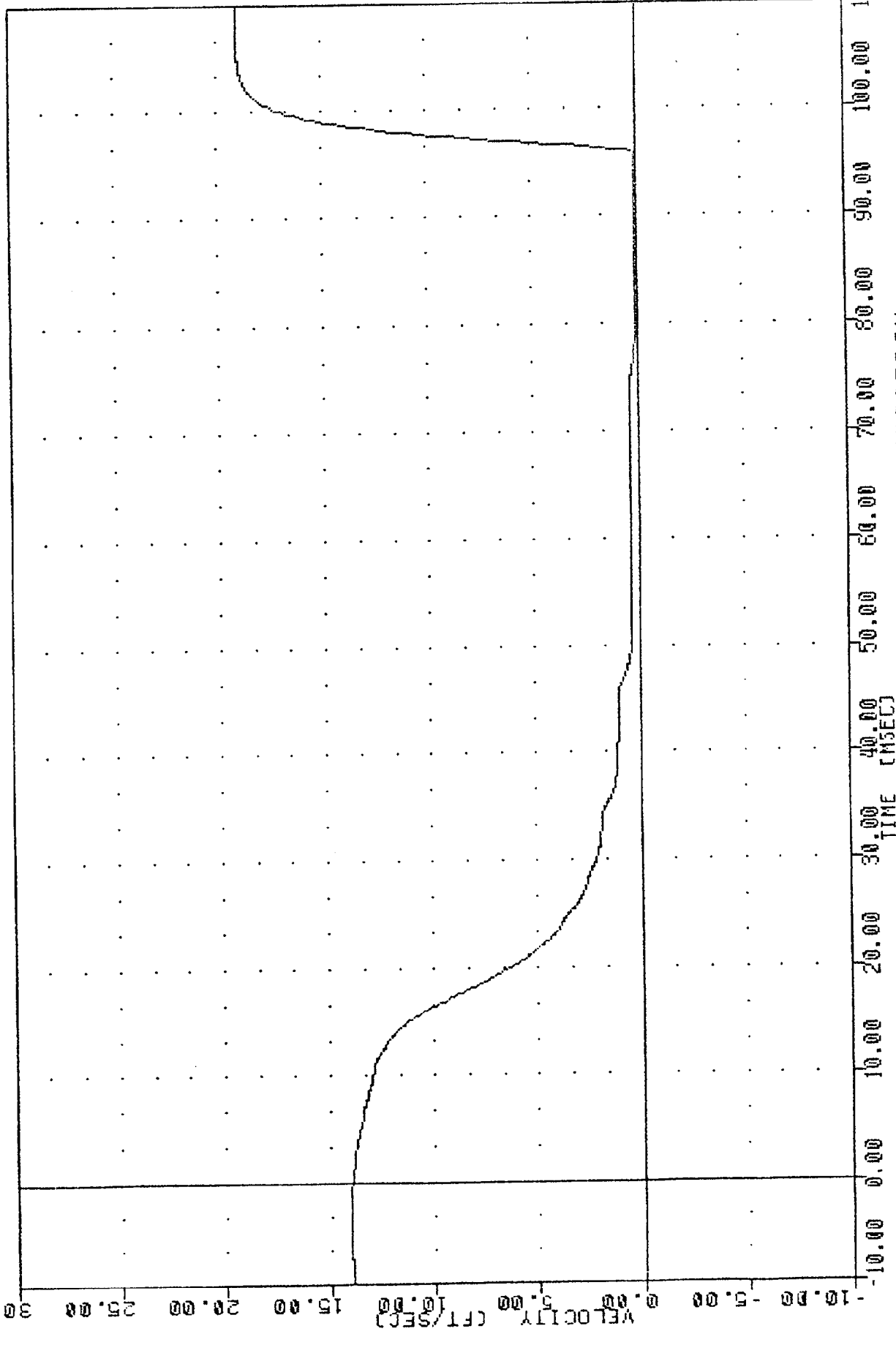
NVMA , SPT1905 , 1-AUG-85 10:13:00  
 SID 119 PELVIC IMPACT CAL 05  
 85213  
 PISXG  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = -38.37g 19.88, 0.01 g 106.00



MVMA SIDE IMPACT DUMMY CALIBRATION  
 PISTON ACCELERATION

MVMA , SPI1905 PLOT DATE 1-AUG-85 10:13:00  
 SID 119 PELVIC IMPACT CAL 05  
 85213  
 PISXV

FILTER = ALPF 1650/ 5214/ -40  
 MIN. MAX VALUES = 0.05 83.25 , 19.06 107.88

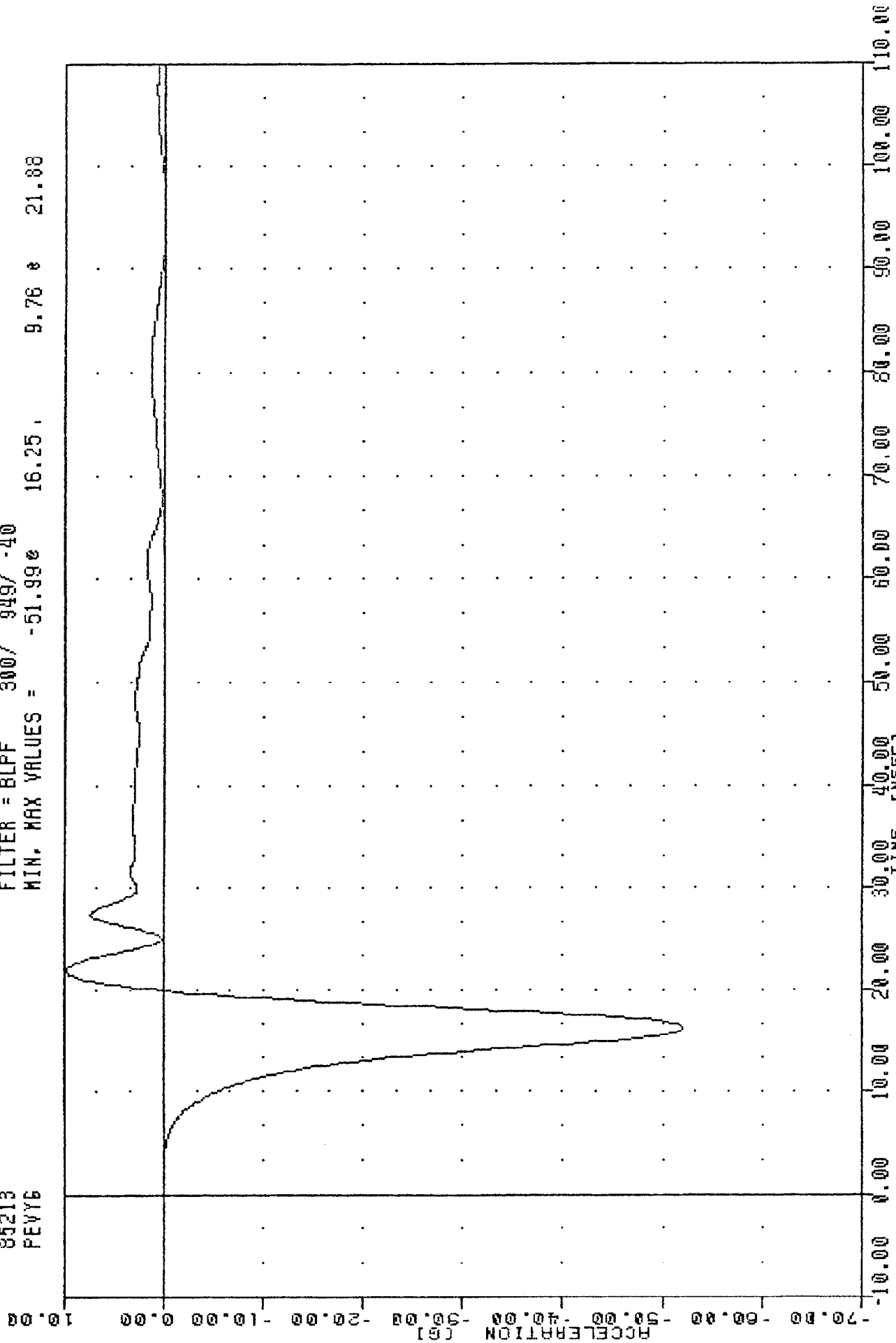


MVMA SIDE IMPACT DUMMY CALIBRATION  
 PISTON VELOCITY

MVMA , SP11905  
SID 118 PELVIC IMPACT CAL 05  
85213  
PEVY6

PLOT DATE 1-AUG-85 10:13:00

FILTER = BLPF 300/ 949/ -40  
MIN, MAX VALUES = -51.99e 16.25 , 9.76 e 21.88



MVMA SIDE IMPACT DUMMY CALIBRATION  
PELVIS ACCELERATION Y AXIS