

EVALUATION OF NHTSA MODIFIED  
VOLKSWAGEN RABBITS

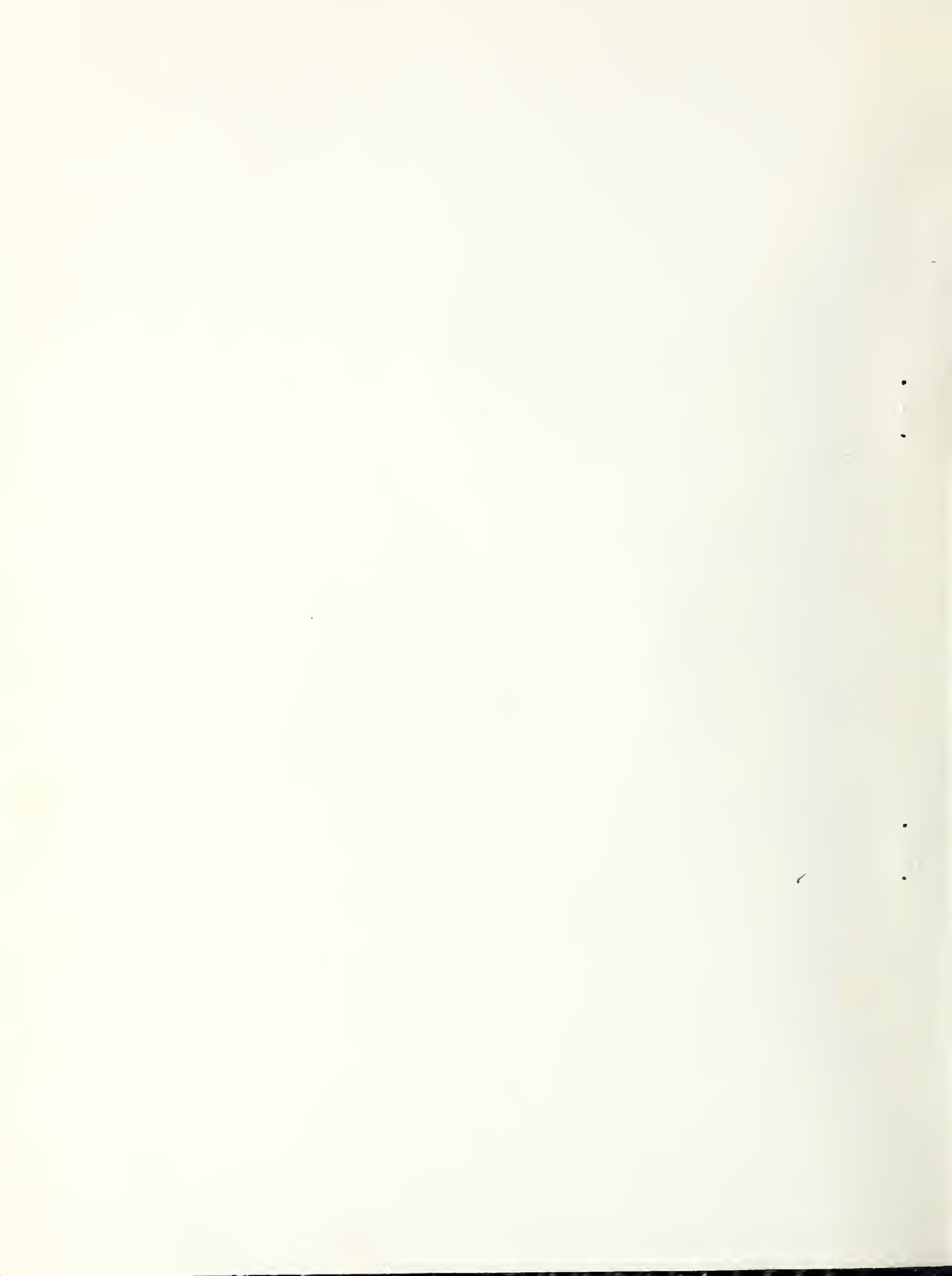
MDB-TO-CAR SIDE IMPACT TEST OF  
A 19° CRABBED MOVING DEFORMABLE BARRIER  
TO A 1976 VOLKSWAGEN RABBIT  
AT 34.3 MPH

PREPARED BY:  
VEHICLE RESEARCH AND TEST CENTER  
ST. RT. 33 LOGAN COUNTY  
EAST LIBERTY, OHIO 43319



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PREPARED FOR:  
U.S. DEPARTMENT OF TRANSPORTATION  
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15. Supplementary Notes					
16. Abstract  This test report documents one of a series of twelve crash tests to evaluate the NHTSA's Modified Volkswagen Rabbits. Testing was conducted on a 1976 Volkswagen Rabbit 2-door hatchback with structural modification designated as Heavy Weight at the TRCO Crash Test Facility, East Liberty, Ohio. The test vehicle was impacted on the left side by a moving deformable barrier, crabbled to 19 <sup>0</sup> , at 34.3 mph. Occupant responses of two side impact dummies were measured. One dummy was located in the driver's designated seating position and one was located in the left rear seating position. The test date was August 30, 1983 and the ambient temperature was 92 <sup>0</sup> F.					
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SECTION 1.0  
PURPOSE AND INTRODUCTION

PURPOSE

The main purpose of this test was to evaluate the NHTSA fleet of modified Volkswagen Rabbits with and without padding. The vehicle was tested using conditions not currently contained in a Federal Motor Vehicle Safety Standard.

INTRODUCTION

A stationary 1976 Volkswagen Rabbit 2-door hatchback was impacted on the left side by a Moving Deformable Barrier (MDB) on August 30, 1983. The test was to simulate an intersection collision with the striking vehicle traveling at 26 mph and the struck vehicle traveling at 13 mph. The orientation angle of the striking vehicle was 60° counterclockwise with respect to the longitudinal axis of the struck vehicle. The impact point 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 Volkswagen Rabbit at 34.4 mph with the MDB's wheels crabbed clockwise to 19°. The actual test speed was 34.3 mph and the actual impact point was 37 inches forward of the midpoint of the Volkswagen Rabbit's wheelbase.

The vehicle was structurally modified to the level designated "Heavy Weight". The driver door and left rear occupant wall contained three inches of padding.

Section 2 contains General Test and Vehicle Parameter Data. Section 3 contains data required by R & D. Appendix A contains pre-test and post-test vehicle and dummy photographs. Appendix B contains Data Plots. Appendix C contains Dummy Certification Data.



SECTION 2.0

GENERAL TEST AND VEHICLE PARAMETER DATA

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

TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Volkswagenwerk AG

MAKE/MODEL: Volkswagen Rabbit

VIN: 1763260800

BODY STYLE: 2-Door Hatchback

MODEL YEAR: 1976

NHTSA NO.: R & D

COLOR: Blue

ENGINE DATA: TYPE: Transverse

CYLINDERS: 4

DISPLACEMENT 97 CID

TRANSMISSION DATA: 4 Speed Manual

DATE VEHICLE RECEIVED: 8/8/83

ODOMETER READING: 61650

DEALER'S NAME AND ADDRESS: NA

ACCESSORIES:

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

REMARKS:

1. IS THE VEHICLE STOCK THROUGHOUT? No, structurally optimized.
2. DOES VEHICLE SHOW EVIDENCE OF PRIOR ACCIDENT HISTORY? Yes\*
3. DOES VEHICLE SHOW ANY SIGNIFICANT CORROSION? Yes
4. CONDITION OF THE FRONT/REAR BUMPER AND FRAME: Good

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

VEHICLE MANUFACTURED BY: Volkswagenwerk AG

DATE OF MANUFACTURE: 3/76

GVWR: 2777 LBS.,

GAWR: FRONT 1609 LBS., REAR 1278 LBS.

\*Upper right portion of grill is pushed in; chrome trim is missing from left rear quarter panel and from rocker panel on left side.



VEHICLE TIRE DATA

RECOMMENDED COLD TIRE PRESSURE: FRONT 27 psi; REAR 27 psi

TIRES ON VEHICLE (MFG. & LINE, SIZE): Front - Sears Sport Radial 155SR13  
Rear - Michelin ZX Radial 155SR13

BIAS PLY, BELTED, OR RADIAL: Radial

PLY RATING: 3

IS SPARE TIRE "SPACE SAVER"? No

IS SPARE TIRE STANDARD EQUIPMENT? Yes

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

RIGHT FRONT 620 LBS. RIGHT REAR 350 LBS.

LEFT FRONT 650 LBS. LEFT REAR 370 LBS.

TOTAL FRONT WEIGHT 1270 LBS. (63.8 % OF TOTAL VEHICLE WEIGHT)

TOTAL REAR WEIGHT 720 LBS. (36.2 % OF TOTAL VEHICLE WEIGHT)

TOTAL DELIVERED WEIGHT 1990 LBS.

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

DELIVERED ATTITUDE: RF 26 1/16 ;LF 25 3/16 ;RR 25 3/8 ;LR 24 13/16

PRE-TEST ATTITUDE: RF 24 1/4 ;LF 23 7/8 ;RR 22 3/4 ;LR 22 7/16

POST-TEST ATTITUDE: RF 22 7/16 ;LF 24 3/4 ;RR 21 1/2 ;LR 24 1/8

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 162 LBS. CARGO:

RIGHT FRONT 670 LBS. RIGHT REAR 545 LBS.

LEFT FRONT 710 LBS. LEFT REAR 575 LBS.

TOTAL FRONT WEIGHT 1380 LBS. (55.2 % OF TOTAL VEHICLE WEIGHT)

TOTAL REAR WEIGHT 1120 LBS. (44.8 % OF TOTAL VEHICLE WEIGHT)

TOTAL TEST WEIGHT 2500 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\*: 11.3 GALLONS  
TEST VOLUME: 2.0 GALLONS  
FUEL SYSTEM CAPACITY (DATA FROM OWNERS MANUAL): 10.0 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?

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

VEHICLE LOAD (UP TO CAPACITY): FRONT 27 psi; REAR 27 psi  
RECOMMENDED TIRE SIZE: 155 SR 13 LOAD RANGE X B, C, \_\_\_\_\_  
VEHICLE CAPACITY: TYPES OF SEATS: Front - Bucket  
Rear - Bench  
NUMBER OF OCCUPANTS (DESIGNATED SEATING CAPACITY): 2 FRONT  
2 REAR  
CARGO LOAD 142 LBS. 4 TOTAL  
TOTAL 642 LBS.

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

TEST CONDITIONS

TEST NUMBER: 830830

DATE OF TEST: August 30, 1983

TIME OF TEST: 13:20

WIND VELOCITY: 3-6 234° SW

HUMIDITY: 40%

AMBIENT TEMPERATURE AT IMPACT AREA: 92° F

TEMPERATURE IN OCCUPANT COMPARTMENT: 78° F

SUBJECT VEHICLE DATA

	<u>ACTUAL</u>	<u>INTENDED</u>
VEHICLE TEST WEIGHT (LBS.)	2500	2480
MDB TEST WEIGHT (LBS.)	2990	3000
MDB VELOCITY (MPH)*	34.3	34.4
IMPACT POINT (INCHES)**	37.	37

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			SID	
SERIAL NO.:	06			U02	
INSTRUMENTATION:					
HEAD ACCEL.:	Yes			Yes	
CHEST ACCEL.:	Yes (Upper/Lower)			Yes (Upper/Lower)	
FEMUR L.C.'S:	No			No	
OTHER:	Pelvis/Ribs			Pelvis/Ribs	

RESTRAINT SYSTEM: Both dummies were unrestrained

\* As measured over final one foot of travel.

\*\* As measured forward of the midpoint of the Volkswagen's wheelbase.

GENERAL TEST AND VEHICLE PARAMETER DATA

VISIBLE DUMMY CONTACT POINTS:

	DRIVER # 06	PASSENGER # U02
Head	<u>Left Side Window</u>	<u>Left Side Header</u>
Chest	<u>Padding</u>	<u>Padding</u>
Abdomen	<u>Padding</u>	<u>Padding</u>
Left Knee	<u>Padding</u>	<u>Left Quarter Panel</u>
Right Knee	<u>Left Knee</u>	<u>Left Knee</u>

DOOR OPENING:

	LEFT	RIGHT
Front	<u>Tools Required</u>	<u>Easy</u>
Rear	<u>DNA</u>	<u>DNA</u>

SEAT MOVEMENT:

	SEAT BACK FAILURE	SEAT SHIFT
Front	<u>No</u>	<u>No</u>
Rear	<u>No</u>	<u>No</u>

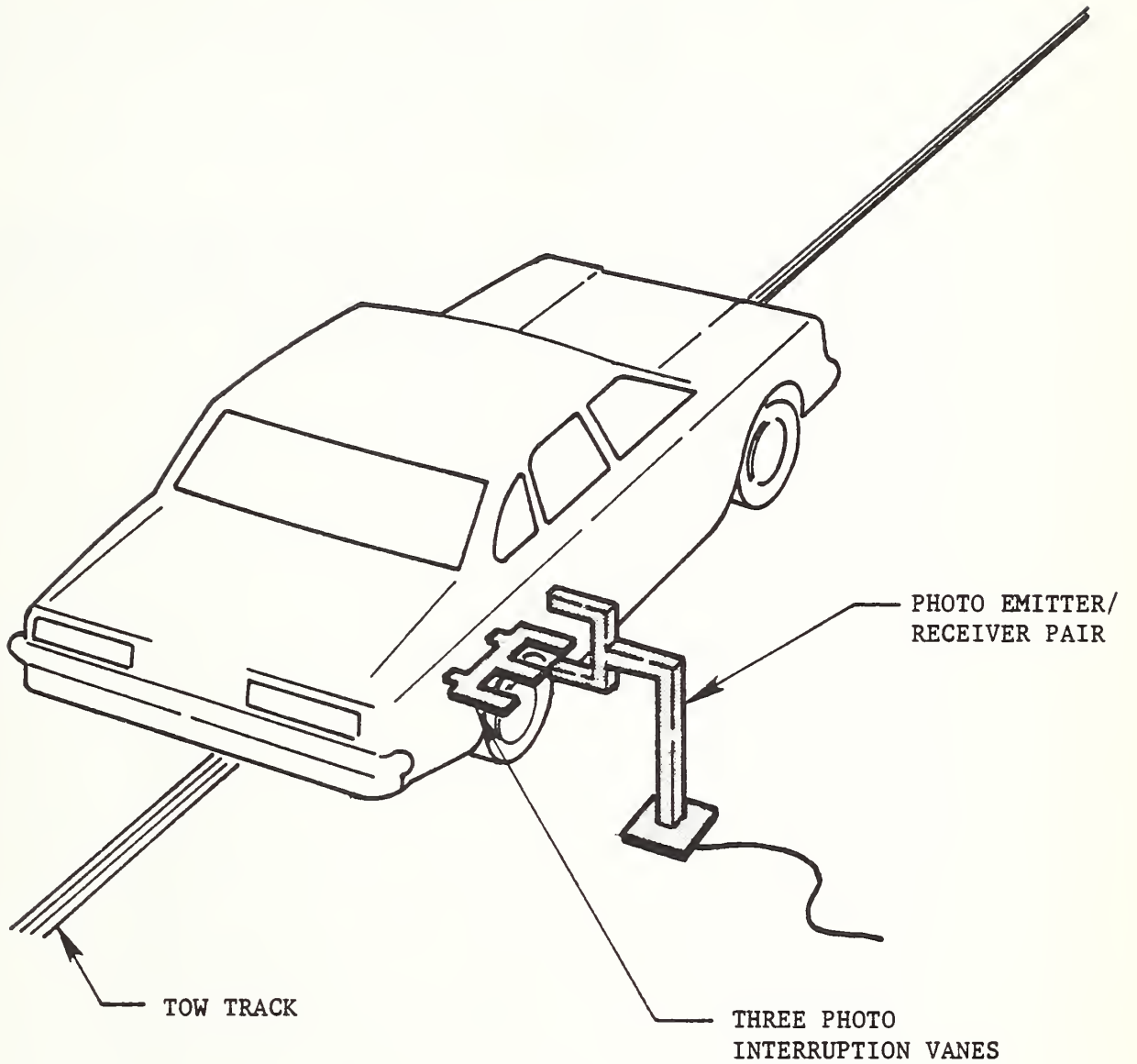
GLAZING DAMAGE:

Windshield cracked, driver window shattered,  
left rear side window separated intact, no  
backlight damage.

OTHER NOTABLE IMPACT EFFECTS:

Door sill deformed upward.  
\_\_\_\_\_

IMPACT VELOCITY MEASUREMENT SYSTEM



The final vane is located two inches before impact.

The vanes have one foot spacing.

VEHICLE TEST WEIGHT CALCULATION

$$\begin{aligned} \text{Test Weight} &= \text{Unloaded Delivered Weight} + \\ &\quad \text{Number of Dummies} \times 174 \text{ lbs.} + \\ &\quad \text{Cargo Weight} \\ &= 1990 + 2 \times 174 + 142 \text{ lbs.} \\ &= 2480 \text{ lbs.} \end{aligned}$$

To achieve test weight, 2 gallons of Stoddard Solvent was added in the fuel tank. The weight of the test vehicle was measured by placing each wheel on a Loadmeter Corporation Hiway Loadometer.

## TEST ANOMALIES

The film in high speed camera #8, located in the front passenger window viewing driver kinematics, broke on start-up. The mechanical components of the camera were checked post-test, but no faults were found.





SECTION 3.0  
DATA REQUIRED BY R&D

The following pages are included in this section:

1. Dummy temperature control and positioning data
2. Dummy kinematic summary
3. Vehicle crush data
4. Dummy and vehicle accelerometer location and data summary
5. High speed camera information
6. Transducer information

## 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.

DUMMY PLACEMENT AND POSITIONING

SIDE IMPACT

DUMMY\*

DRIVER DSP

REAR PASSENGER DSP

HEAD	Surface of transverse instrument mounting platform is as horizontal as possible without inducing torso movement & midsagittal plane falls in longitudinal plane.	Surface of transverse instrument mounting platform is as horizontal as possible without inducing torso movement & midsagittal plane falls in longitudinal plane.
UPPER TORSO	Placed against seat back. Midsagittal plane is vertical and centered on bucket seat.	Placed against seat back. Midsagittal plane is vertical and contained in the same longitudinal plane as the driver's midsagittal plane.
LOWER TORSO	Midsagittal plane is vertical and centered on bucket seat.	Midsagittal plane is vertical and contained in the same longitudinal plane as the driver's midsagittal plane.
UPPER LEGS (thighs or femurs)	Placed against seat cushion. Planes defined by femur and tibia centerlines are as close as possible to vertical.	Placed against seat cushion. Planes defined by femur and tibia centerlines are as close as possible to vertical.
KNEES	Knees set 14.5" apart between pivot bolt head outer surfaces. Outer surface of right knee pivot bolt is 8.6" from midsagittal plane of dummy. Outer surface of left knee pivot bolt is 5.9" from midsagittal plane of dummy.	Located so that planes defined by femur and tibia centerlines are as close as possible to vertical.
LOWER LEGS	Plane defined by femur and tibia centerlines are as close as possible to vertical longitudinal plane.	Plane defined by femur and tibia centerlines are as close as possible to vertical longitudinal plane.
RIGHT FOOT	Placed on undepressed accelerator pedal -- rearmost point of heel on floorplan in plane of pedal.	Centerline falls in vertical longitudinal plane. Placed on floor as far forward as possible without front seat interference.
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 floor as far forward as possible without front seat interference.

\*NOTE: THE SIDE IMPACT DUMMY DOES NOT INCLUDE ARMS.

\*\* Due to structural modifications, the left foot was turned inward.

DUMMY IN-VEHICLE POSITION RECORDING SHEET

VEHICLE NHTSA NO. R & D

MFR./MAKE/MODEL: Volkswagen Rabbit

FRONT SEAT TYPE:      BENCH  
  X   BUCKET  
     SPLIT BENCH

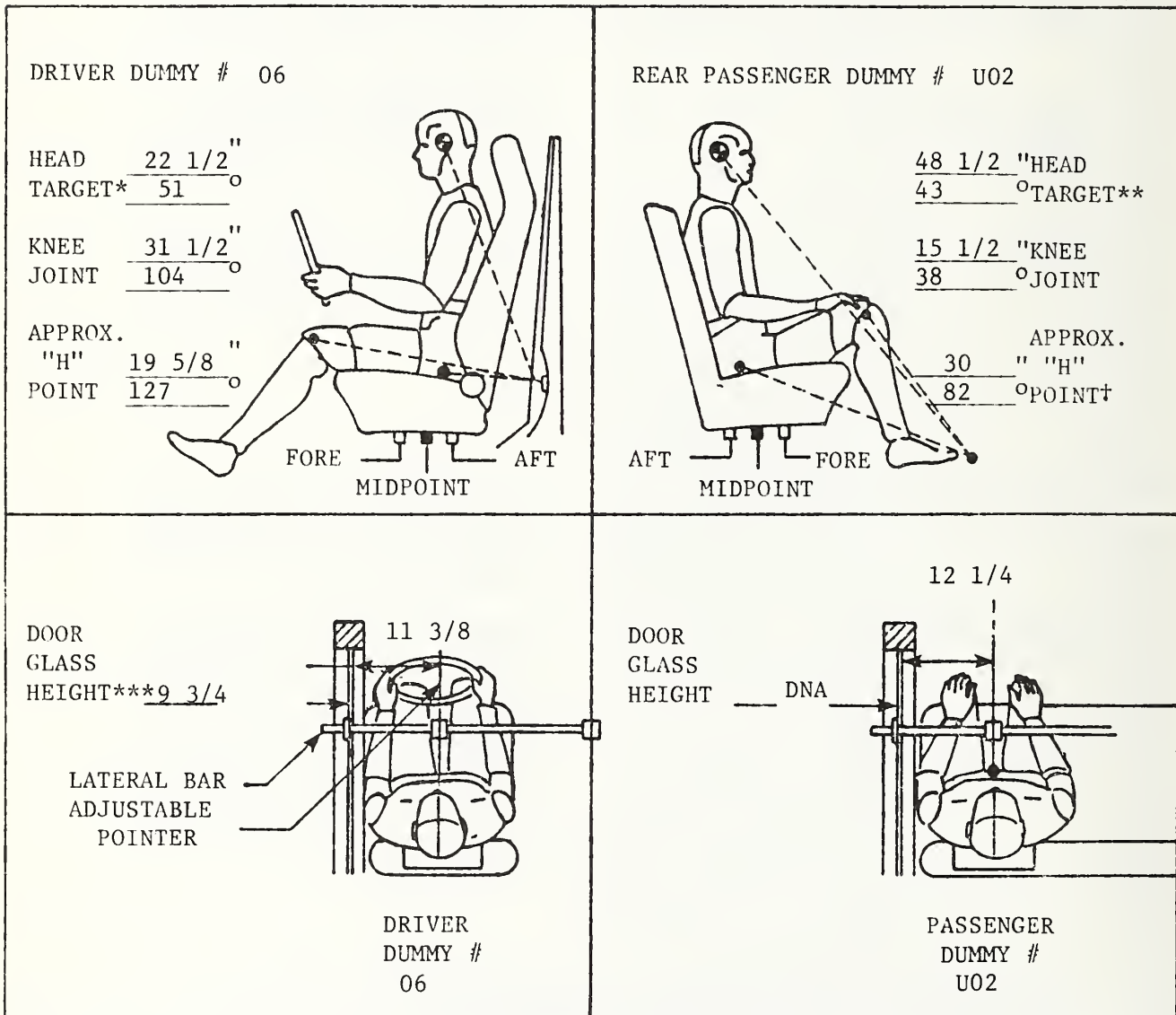
ADJUSTER TYPE:   X   MANUAL  
     POWER

BUCKET SEAT BACK TYPE:   X   FIXED  
     ADJUSTABLE

TECHNICIANS:  
 1. J. Kokoruda  
 2. M. Garrison  
 3.                     

POSITIONING DATE: 8/30/83

AMBIENT TEMP.: 71° F. TIME: 7:00 AM

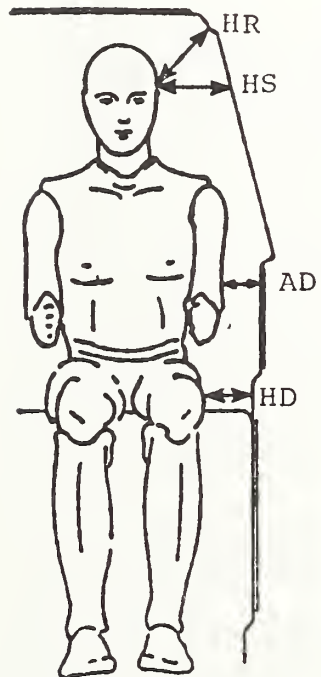
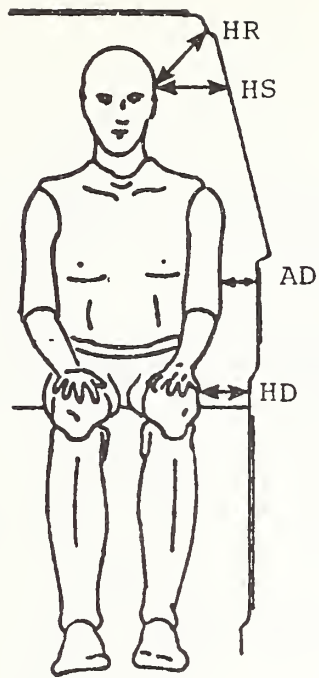


\*All driver dummy dimensions referenced to top of striker bolt and all angles referenced to vertical.

\*\*All passenger dummy dimensions referenced to front seat back latch bolt with front seat in mid-position and all angles referenced to vertical.

\*\*\*Door glass height is equal on the right and left side of vehicle at dummy nose level.

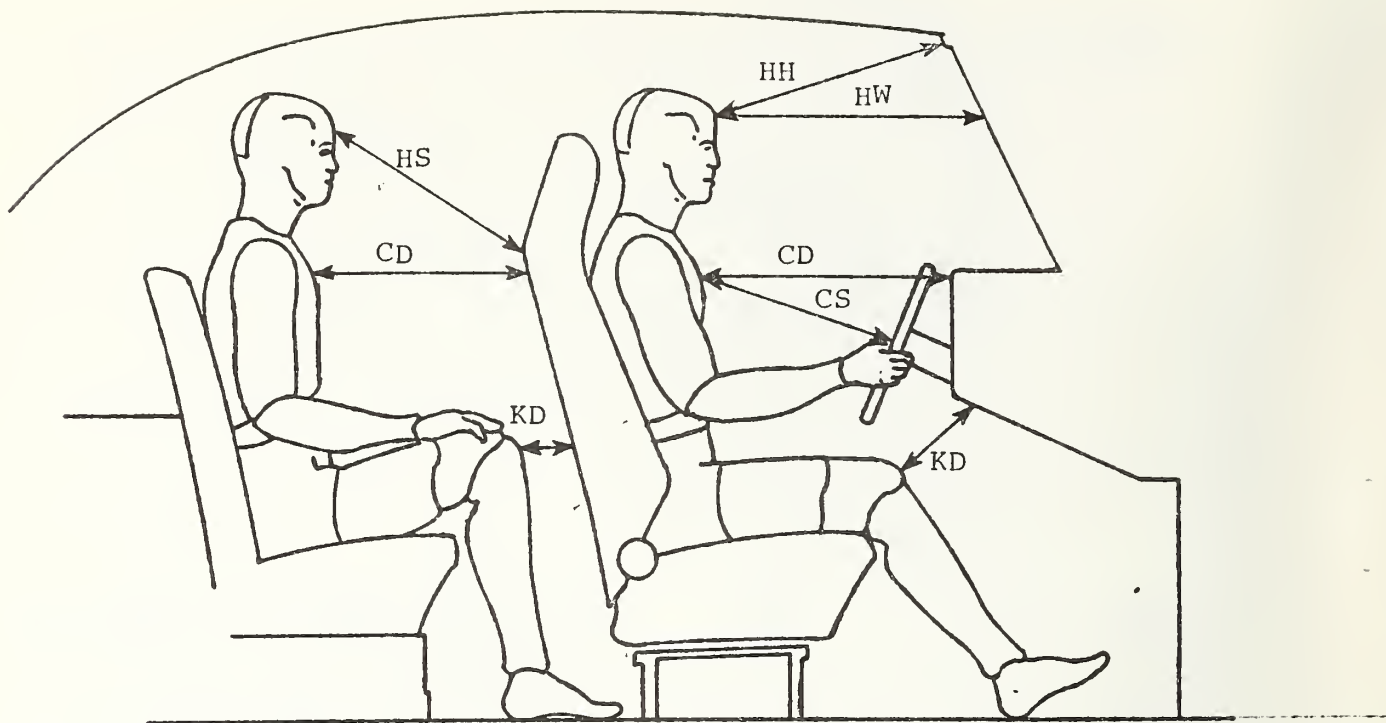
†Due to structural modifications interference, the "H" Point location was estimated.



	06 DRIVER	U02 PASSENGER
HR	5 1/8	7 3/16
HS	7 1/2	9 3/16
AD	0	7/8
HD	2 1/4	2 1/2

NOTE: ALL MEASUREMENTS IN INCHES

DUMMY LATERAL CLEARANCE DIMENSIONS



	06 DRIVER	U02 PASSENGER
HH	10 3/4	DNA
HW	18 3/4	DNA
HS	DNA	21 1/2
CD	20	18
CS	11 5/8	DNA
KDL	4 1/8	4
KDR	4 7/8	4 3/16

NOTE: ALL MEASUREMENTS IN INCHES

## DUMMY KINEMATIC SUMMARY

### DRIVER

During impact, the dummy's torso contacted the padded driver's door and the head contacted the driver's window and may have contacted the top of the deformable barrier although no clear physical evidence of barrier contact exists. The dummy rebounded from the driver's door and its buttocks passed through the passenger's side window. The dummy came to rest sitting upright across the front bucket seats facing the driver's side.

### PASSENGER

During impact, the dummy's torso contacted the padded left rear occupant side wall and the head contacted the side window and side header. The dummy rebounded and struck the right rear occupant side wall with the left shoulder passing partially through the right rear passenger window. The dummy came to rest laying across the rear bench seat with its head laying on the right rear window sill.

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

LOCATION	HEIGHT (in)	6	0	6	12	18	24	30	36	42	48	54	60	66	72	78
		PRE-TEST PROFILE (DISTANCE IN INCHES FROM REFERENCE PLANE**)														
Axle Height	8.6	X	X	18.1	18.8	18.8	18.8	18.9	19.0	19.0	19.1	19.1	19.1	19.3	X	X
H-Point	16.3	X	X	16.8	16.7	16.7	16.6	16.7	16.8	16.8	17.0	17.1	17.3	X	X	X
Mid Door	22.7	15.8	16.7	16.6	16.6	16.6	16.5	16.5	16.5	16.5	16.6	16.7	16.8	16.8	17.1	X
Window Sill	33.3	X	18.8	18.8	18.5	18.3	18.1	18.0	18.0	18.0	18.0	18.0	18.2	18.1	18.2	18.2
Window Top	51.9	X	X	X	X	X	26.5	26.1	26.0	25.9	25.7	25.8	25.8	25.9	26.3	26.7

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

Axle Height	8.6	X	X	21.3	23.0	23.1	23.4	24.0	22.9	22.5	22.0	21.6	20.7	20.6	X	X
H-Point	16.3	X	X	23.5	25.0	26.9	27.8	27.9	27.0	25.0	23.0	22.4	20.4	X	X	X
Mid Door	22.7	21.3	22.4	21.9	24.7	26.5	27.8	27.4	26.3	24.5	23.0	22.0	20.1	19.1	18.5	X
Window Sill	33.3	X	21.2	23.4	25.6	27.7	27.2	25.3	23.1	21.8	22.9	21.0	20.4	20.1	19.8	20.3
Window Top	51.9	X	X	X	X	X	28.6	28.0	27.7	27.5	27.4	27.4	27.4	27.4	27.5	27.8

STATIC CRUSH (IN)

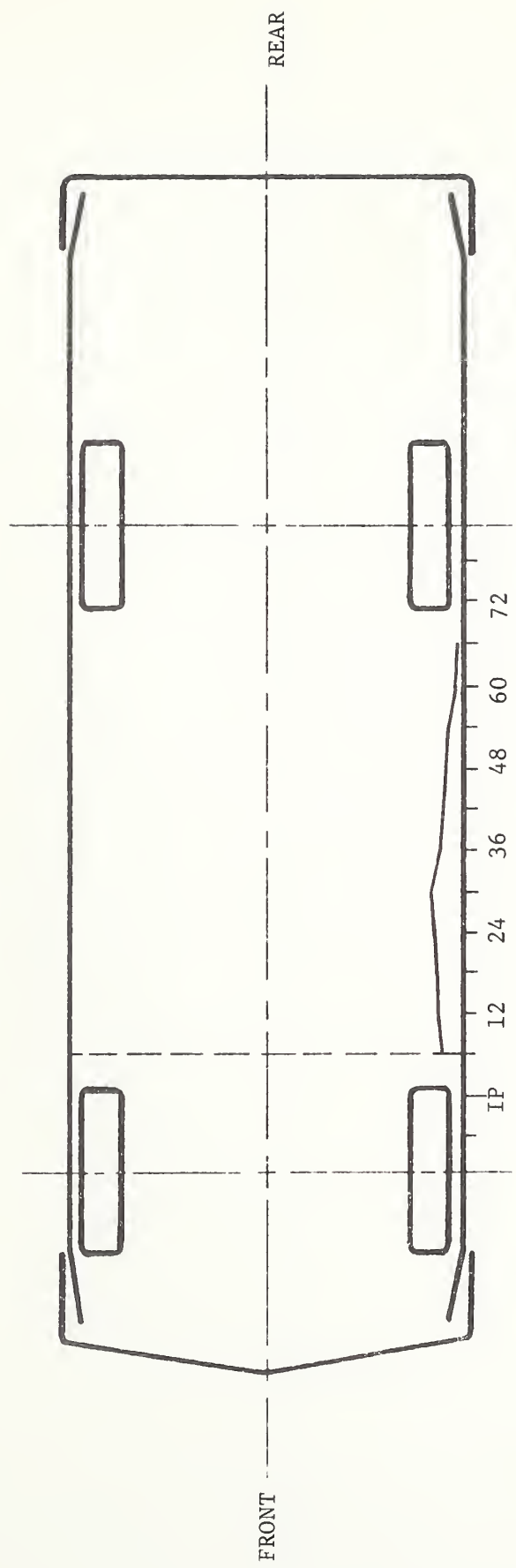
Axle Height	8.6	X	X	3.2	4.2	4.3	4.6	5.1	3.9	3.5	2.9	2.5	1.6	1.3	X	X
H-Point	16.3	X	X	6.7	8.3	10.2	11.2	10.2	8.2	6.0	5.3	3.1	X	X	X	X
Mid Door	22.7	5.5	5.7	5.3	8.1	9.9	11.3	10.9	9.8	8.0	6.4	5.3	3.3	2.3	1.4	X
Window Sill	33.3	X	2.4	4.6	7.1	9.4	9.1	7.3	5.1	3.8	4.9	3.0	2.2	2.0	1.6	2.1
Window Top	51.9	X	X	X	X	X	2.1	1.9	1.7	1.6	1.7	1.6	1.6	1.5	1.2	1.1

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

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



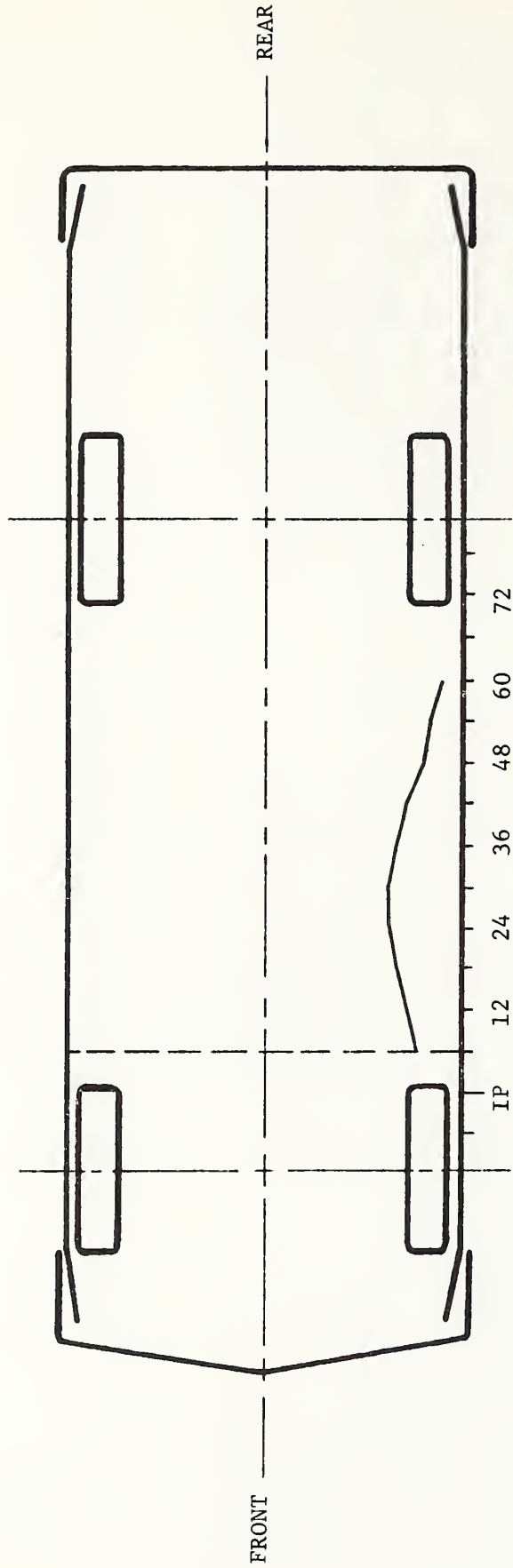
VEHICLE EXTERIOR STATIC CRUSH PROFILE



Profile level equals axle height.

IP equals projected impact point.

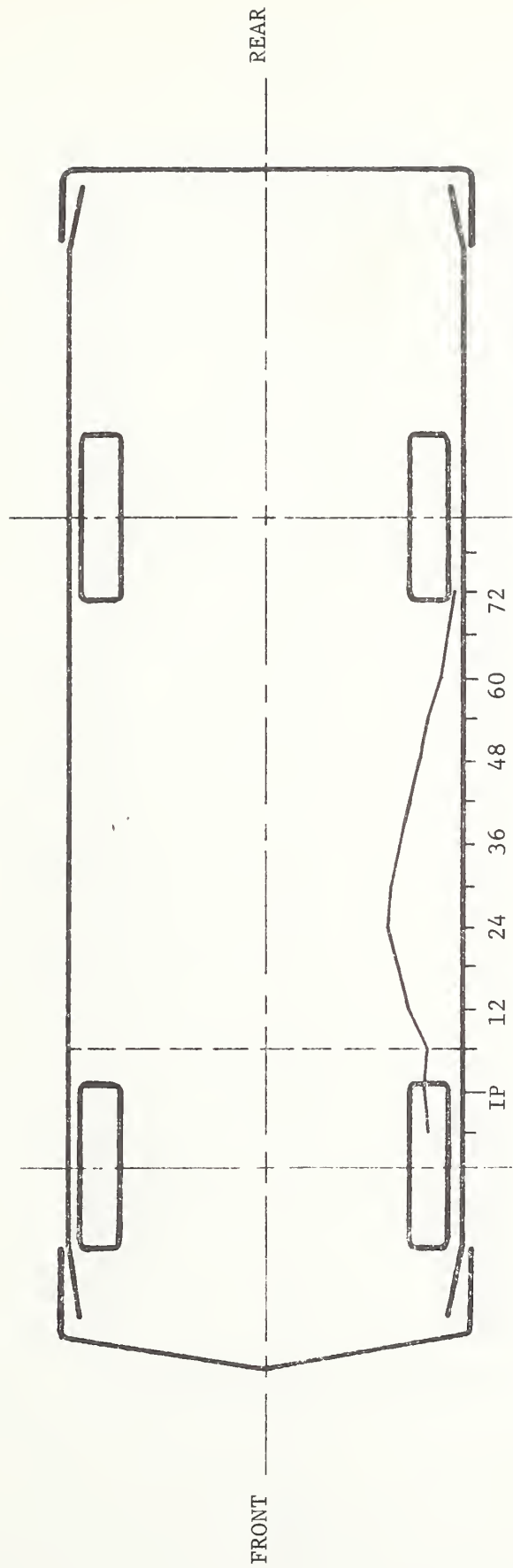
VEHICLE EXTERIOR STATIC CRUSH PROFILE



Profile level equals H-Point height.

IP equals projected impact point.

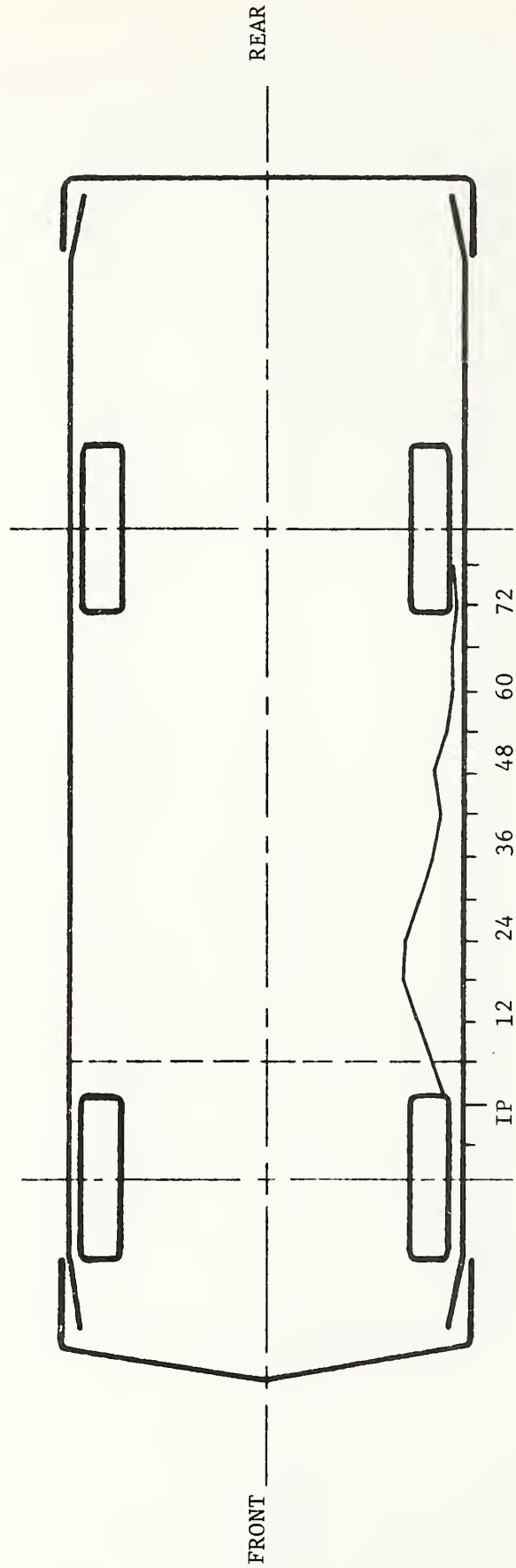
VEHICLE EXTERIOR STATIC CRUSH PROFILE



Profile level equals mid-door height.

IP equals projected impact point.

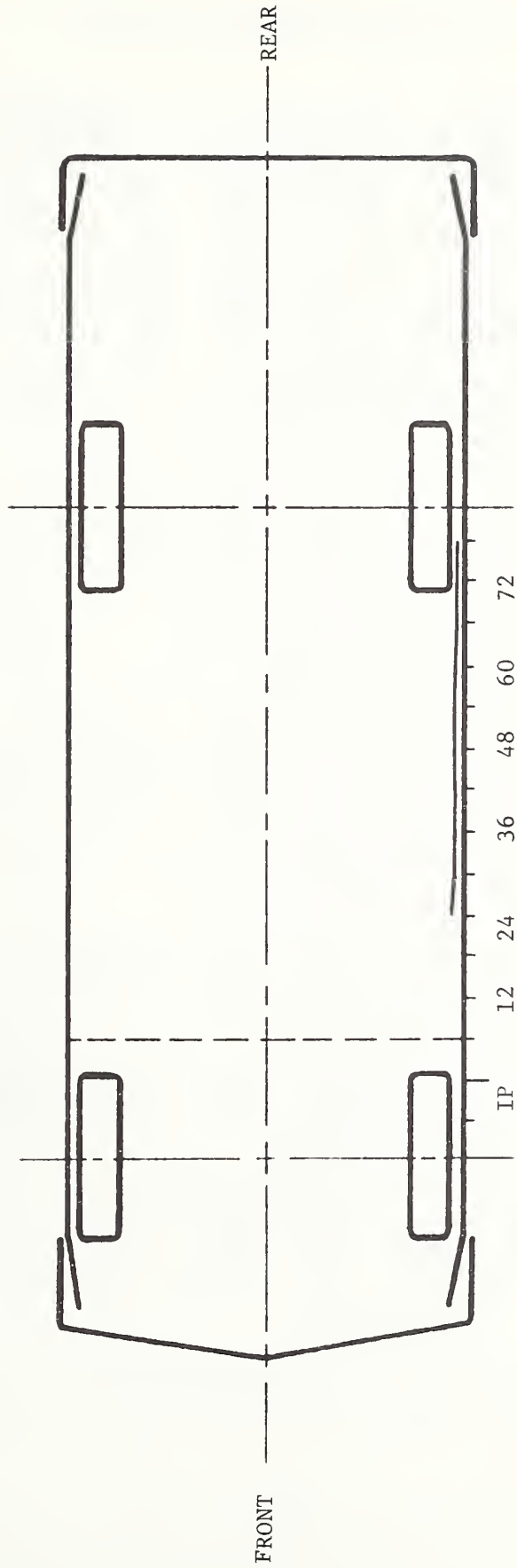
VEHICLE EXTERIOR STATIC CRUSH PROFILE



Profile level equals window sill height.

IP equals projected impact point.

VEHICLE EXTERIOR STATIC CRUSH PROFILE



Profile level equals window top height.

IP equals projected impact point.

SIDE IMPACT DUMMY DATA SUMMARY

	<u>DRIVER DUMMY</u>				<u>PASSENGER DUMMY</u>			
	<u>POSITIVE</u>		<u>NEGATIVE</u>		<u>POSITIVE</u>		<u>NEGATIVE</u>	
	<u>DIRECTION*</u>		<u>DIRECTION**</u>		<u>DIRECTION*</u>		<u>DIRECTION**</u>	
	<u>MAX</u>	<u>TIME</u>	<u>MAX</u>	<u>TIME</u>	<u>MAX</u>	<u>TIME</u>	<u>MAX</u>	<u>TIME</u>
	<u>(g)</u>	<u>(msec)</u>	<u>(g)</u>	<u>(msec)</u>	<u>(g)</u>	<u>(msec)</u>	<u>(g)</u>	<u>(msec)</u>
<b>HEAD ACCELERATION</b>								
LONGITUDINAL	11.79	161.88	63.93	114.88	6.77	310.50	25.37	82.38
LATERAL	38.16	114.88	11.15	190.13	68.03	81.38	9.73	167.13
VERTICAL	5.55	47.63	47.43	90.75	29.93	115.25	18.99	83.88
RESULTANT		78.49 @	114.88			72.85 @	81.38	
HIC	309.12	from 70.75 to 119.38			238.26	from 77.50 to 86.13		
<b>CHEST ACCELERATION</b>								
<b>UPPER SPINE</b>								
LONGITUDINAL	10.66	93.75	13.31	79.38	4.76	340.00	16.91	96.88
LATERAL (P)***	63.55	72.50	9.67	91.87	25.95	101.25	8.10	338.75
LATERAL (R)***	64.60	72.50	9.18	91.25	26.36	101.88	7.54	338.75
VERTICAL	3.44	48.13	10.60	70.00	6.32	77.50	7.05	114.37
RESULTANT (P)		65.23 @	72.50			30.33 @	100.63	
RESULTANT (R)		66.25 @	72.50			30.62 @	100.63	
DELTA V (MPH)****		20.6 @	82.50 (P)			18.6 @	123.75 (P)	
		20.1 @	83.13 (R)			18.8 @	123.13 (R)	
<b>LOWER SPINE</b>								
LONGITUDINAL	33.76	59.38	16.50	85.00	6.20	218.13	22.85	101.25
LATERAL (P)	58.61	61.87	23.15	84.38	32.56	100.63	5.64	119.38
LATERAL (R)	58.81	63.13	22.92	85.00	32.92	100.63	5.42	119.38
VERTICAL	8.64	65.00	3.39	100.63	9.70	95.63	4.37	135.62
RESULTANT (P)		64.52 @	60.00			40.02 @	100.63	
RESULTANT (R)		60.13 @	60.62			40.31 @	100.63	
DELTA V (MPH)		27.9 @	77.50 (P)			21.7 @	113.13 (P)	
		27.7 @	77.50 (R)			22.2 @	113.13 (R)	
<b>LEFT UPPER RIB</b>								
LATERAL (P)	54.66	66.87	12.64	94.38	42.42	160.00	14.90	165.00
LATERAL (R)	53.69	66.25	15.19	94.38	42.88	160.00	16.44	165.62
DELTA V (MPH)		23.2 @	91.25 (P)			22.7 @	130.00 (P)	
		23.2 @	91.88 (R)			21.8 @	127.50 (R)	
<b>LEFT LOWER RIB</b>								
LATERAL (P)	60.17	56.87	25.67	89.38	35.33	160.00	17.94	165.62
LATERAL (R)	61.90	56.87	23.60	89.38	35.34	160.00	18.59	165.00
DELTA V (MPH)		24.3 @	86.25 (P)			22.3 @	121.88 (P)	
		24.9 @	85.63 (R)			20.4 @	121.88 (R)	
<b>PELVIS ACCELERATION</b>								
LONGITUDINAL	7.29	76.00	16.22	65.63	4.91	132.50	25.97	91.75
LATERAL	64.42	53.38	8.62	102.50	57.57	80.75°	5.06	206.88
VERTICAL	10.95	60.88	6.97	54.75	11.38	101.38	4.92	132.13
RESULTANT		64.82 @	53.63			59.36 @	80.63°	
DELTA V (MPH)		27.3 @	84.88			22.7 @	128.25°	

SIDE IMPACT DUMMY DATA SUMMARY CONTD

	<u>DRIVER DUMMY</u>				<u>PASSENGER DUMMY</u>			
	<u>POSITIVE DIRECTION*</u>		<u>NEGATIVE DIRECTION**</u>		<u>POSITIVE DIRECTION*</u>		<u>NEGATIVE DIRECTION**</u>	
	<u>MAX (in)</u>	<u>TIME (msec)</u>	<u>MAX (in)</u>	<u>TIME (msec)</u>	<u>MAX (in)</u>	<u>TIME (msec)</u>	<u>MAX (in)</u>	<u>TIME (msec)</u>
RIB DEFLECTION †	0.06	277.88	1.90	132.13	0.10	164.25	1.90	116.88

\* LONGITUDINAL: FORWARD  
 LATERAL: RIGHTWARD  
 VERTICAL: UPWARD

\*\*LONGITUDINAL: REARWARD  
 LATERAL: LEFTWARD  
 VERTICAL: DOWNWARD

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

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

† Compression: Negative

o The CTM has judged that intermittent rattling may have occurred in this channel and therefore the peak values reported are questionable as are applicable resultants and Delta V's.

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

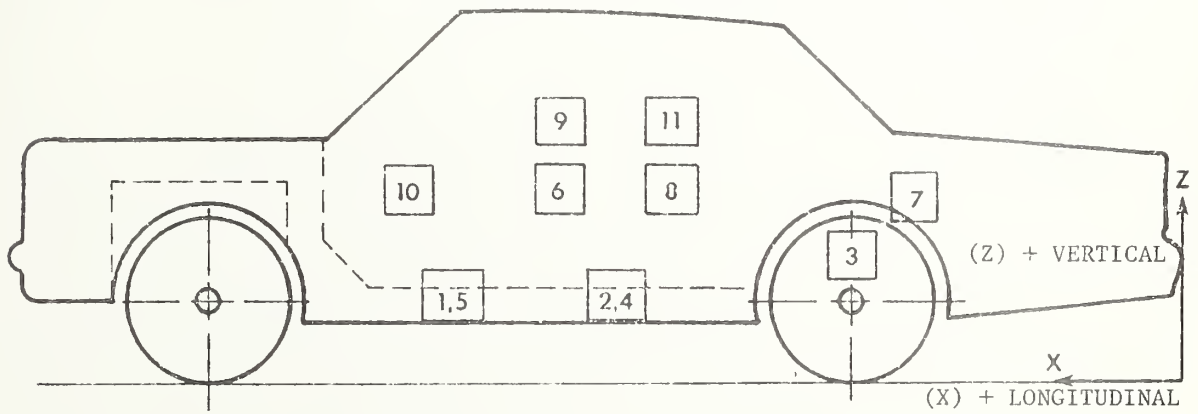
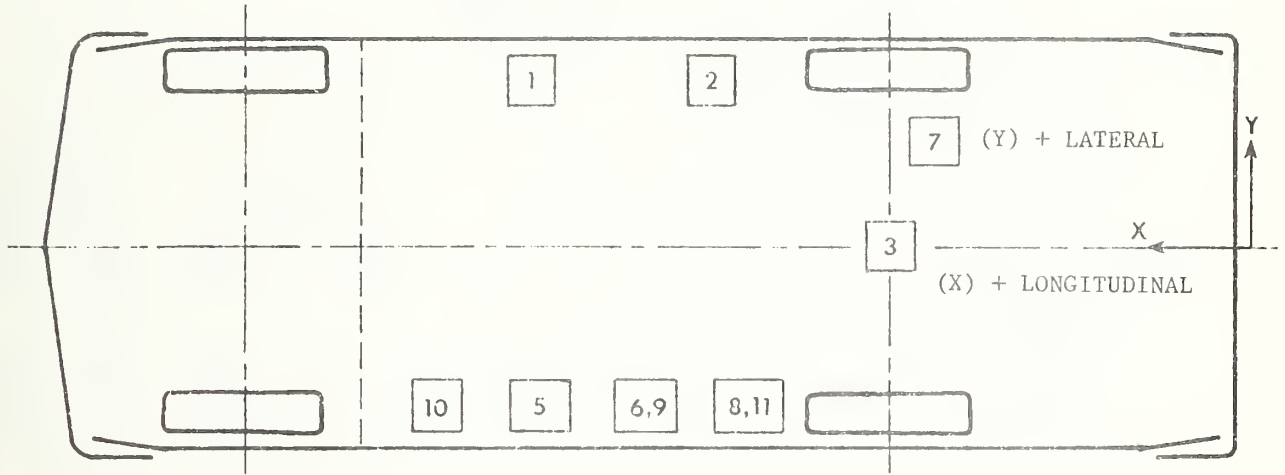
NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	RIGHT SILL AT FRONT SEAT (LONGITUDINAL) (LATERAL) (VERTICAL) (RESULTANT)	83.7	23.6	9.8				
					1.05	33.38	6.92	16.88
					10.64	62.50	2.01	155.88
					3.45	86.00	2.92	54.75
						11.51 @ 15.63		
2	RIGHT SILL AT REAR SEAT (LONGITUDINAL) (LATERAL) (VERTICAL) (RESULTANT)	61.4	23.6	8.1				
					1.69	33.38	6.77	17.00
					13.31	62.38	2.44	137.35
					2.75	62.63	4.18	39.63
						13.72 @ 62.38		
3	REAR DECK OVER AXLE (LONGITUDINAL) (LATERAL) (VERTICAL) (RESULTANT)	31.7	0.0	7.4				
					2.42	163.88	7.72	75.25
					14.68	71.50	3.45	120.13
					3.53	164.25	5.22	92.13
						15.99 @ 74.50		
4	LEFT SILL AT REAR SEAT (LATERAL)	61.1	-23.7	8.2				
					15.56	62.13	2.10	136.50
5	LEFT SILL AT FRONT SEAT (LATERAL)	83.6	-23.7	10.1				
					19.00	65.63	20.98	72.13
6	LEFT FRONT DOOR CENTERLINE (LATERAL)	81.0	-25.9	24.4				
					87.13	34.63	37.78	51.88
7	RIGHT REAR COMPARTMENT (LONGITUDINAL)	31.6	15.5	14.2				
					1.94	33.25	7.16	17.00
8	MIDREAR OF LEFT FRONT DOOR (LATERAL)	60.6	-25.9	25.1				
					76.42	61.13	23.72	83.75
9	UPPER LEFT FRONT DOOR CENTERLINE (LATERAL)	82.0	-25.6	33.5				
					124.96	42.38	150.41	52.38
10	MIDFRONT OF LEFT FRONT DOOR (LATERAL)	99.6	-25.9	23.0				
					63.44	13.25	51.85	38.25
11	UPPER REAR OF LEFT FRONT DOOR (LATERAL)	70.8	-25.6	33.9				
					67.38	61.13	45.05	51.25

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

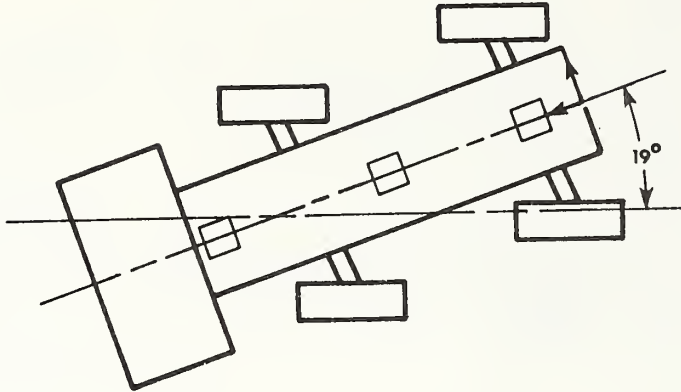
All measurements of accelerometer locations in inches.



VEHICLE ACCELEROMETER LOCATIONS



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	74.5	0.0	11.5				
	(LONGITUDINAL)	$\Delta V = -15.1 \text{ mph @ } 135.00 \text{ msec}$			0.55	214.88	10.98	63.50
	(LATERAL)	$\Delta V = 0.4 \text{ mph @ } 135.00 \text{ msec}$			1.56	102.88	2.06	39.75
	(VERTICAL)				6.91	81.63	5.59	51.38
	(RESULTANT)					12.73 @	63.38	
2	FRONT FRAME MEMBER	130.3	0.0	11.3				
	(LONGITUDINAL)	$\Delta V = -14.4 \text{ mph @ } 135.00 \text{ msec}$			0.55	235.50	10.67	64.13
3	REAR FRAME MEMBER	23.3	0.0	11.5				
	(LONGITUDINAL)	$\Delta V = -14.6 \text{ mph @ } 135.00 \text{ msec}$			0.69	289.38	10.44	63.25

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

All measurements of accelerometer locations in inches.

HIGH SPEED CAMERA INFORMATION

CAMERA NO.	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1	Overhead	Photosonics 1B	8	775	Vehicle Dynamics
2	Overhead	Photosonics 1B	25	812	Close-up of Impact Point
3	Onboard MDB	Stalex	25	500	Close-up of Impact Point
4	Onboard MDB	Photosonics 1B	13	780	Driver Kinematics
5	Ground Level - Right Side	Hycam	25	770	Overall View
6	Ground Level - Left Side	Photosonics 1B	17	825	Overall View
7	Onboard Vehicle	Photosonics 1B	8	822	Driver Kinematics - Front View
8	Onboard Vehicle	Photosonics 1B	8		Driver Kinematics
9	Onboard Vehicle	Photosonics 1B	8	795	Passenger Kinematics

NOTE: CAMERAS ARE NUMBERED ACCORDING TO SPLICING SEQUENCE OF FILM.  
 (24 fps) REAL TIME MOVIE FILM COVERAGE OF PRE-CRASH, POST-CRASH  
 AND CRASH EVENT SPLICED AT START AND END OF FILM.

LOCATIONS OF OFFBOARD HIGH SPEED CAMERAS

CAMERA NO.	X	Y	Z
1	0	-57"	23'
2	0	-57"	23'
5	+26'4"	+60'	45"
6	-19'7"	-11'3"	45"

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

NON-GOVERNMENT FURNISHED TRANSDUCER INFORMATION

PARAMETER BEING MEASURED	TYPE OF TRANSDUCER	MODEL NUMBER	SERIAL NUMBER	MFGR.	DATE OF LAST CALIBRATION	SENSITIVITY	DESIRED FULL SCALE (ENGR. UNITS)
BCGXG	Accel	4-202-0001	18845	Bell Howell	8/9/83	.236 MV/G	50 G
BCYGG	Accel	4-202-0001	18858	Bell Howell	8/9/83	.2385 MV/G	50 G
BCGZG	Accel	4-202-0001	18857	Bell Howell	8/9/83	.2385 MV/G	50 G
BFCXG	Accel	4-202-0001	18240	Bell Howell	8/9/83	.2385 MV/G	50 G
BRCXG	Accel	4-202-0001	19022	Bell Howell	8/9/83	.221 MV/G	50 G

All dummy and struck vehicle accelerometers were Government Furnished Equipment and were Endevco 2264 Accelerometers.



APPENDIX A  
PHOTOGRAPHS

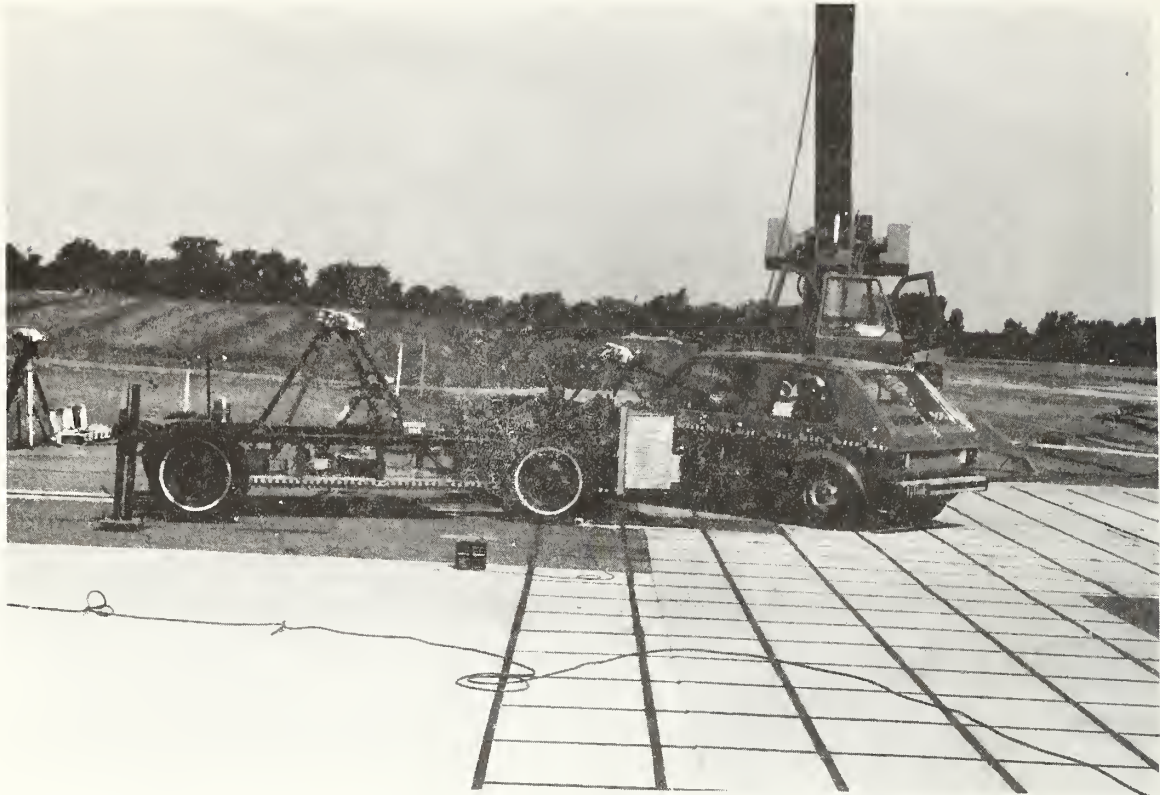


Figure A-1. PRE-TEST OVERALL - VIEW 1

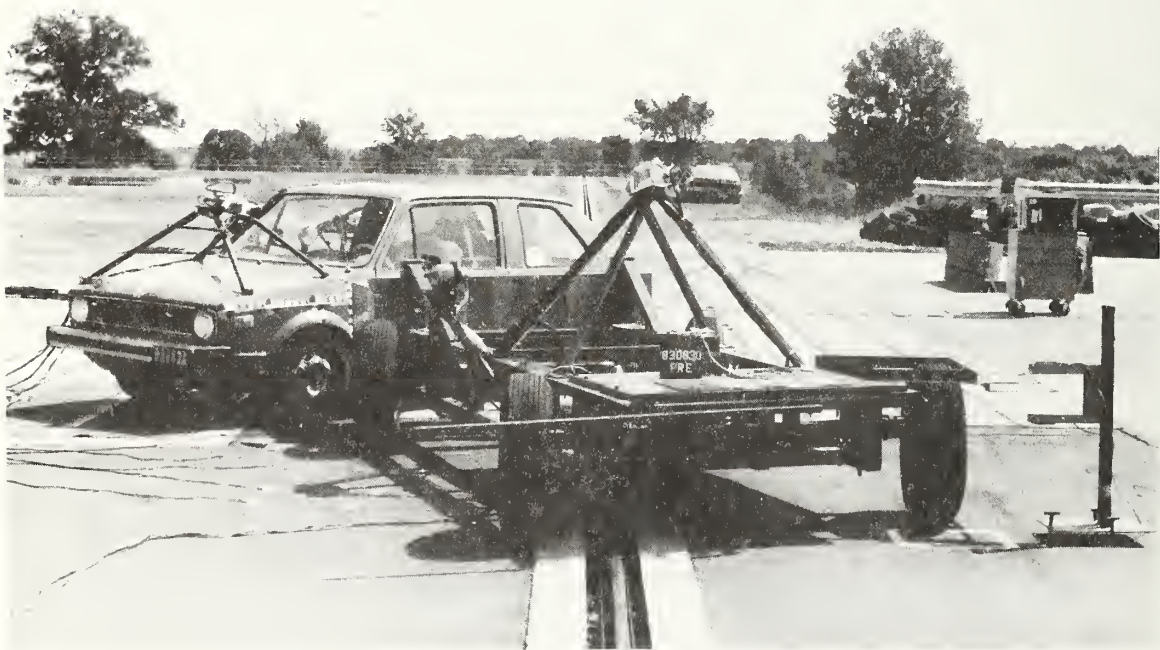


Figure A-2. PRE-TEST OVERALL - VIEW 2





Figure A-3. PRE-TEST OVERALL - VIEW 3

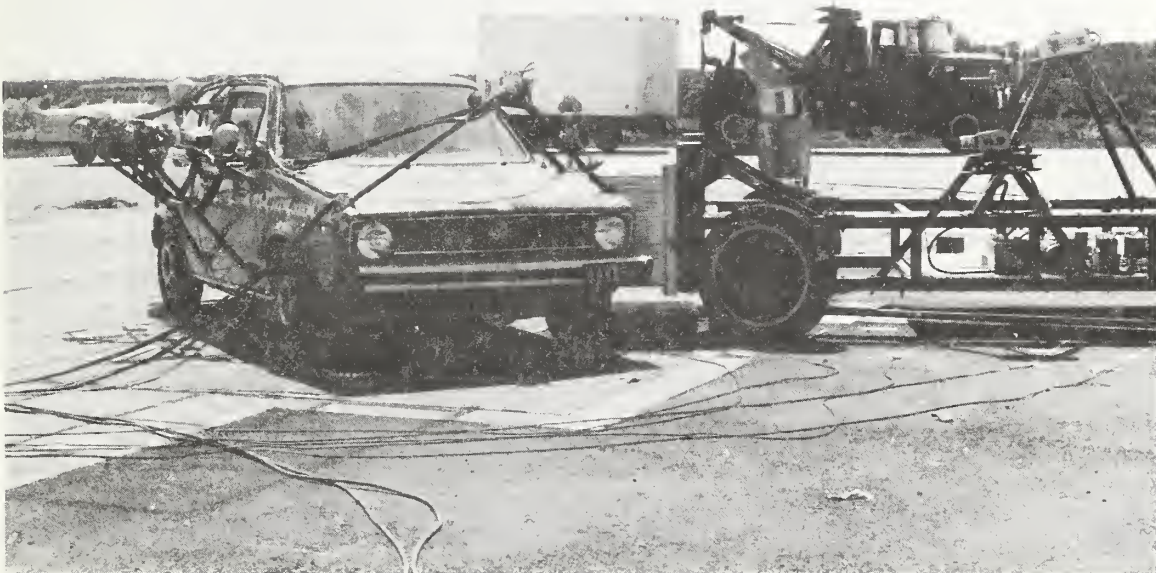




Figure A-5. PRE-TEST CLOSEUP - VIEW 1

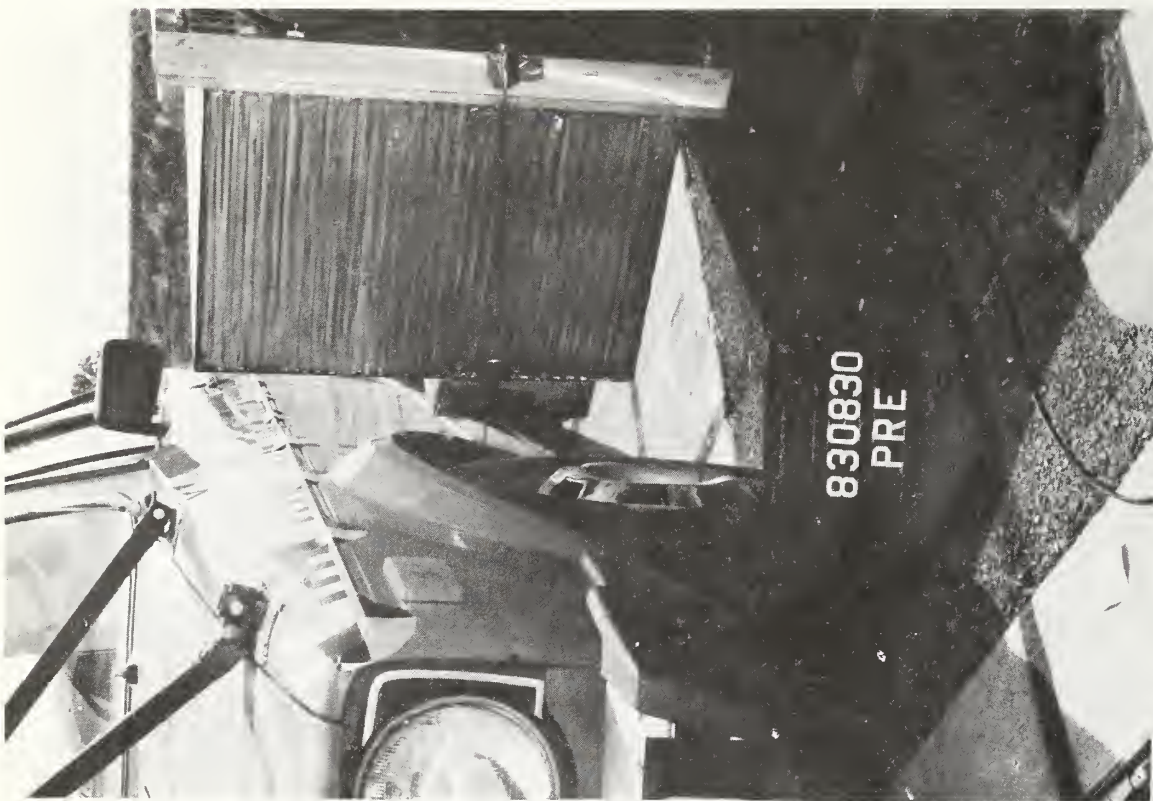


Figure A-6. PRE-TEST CLOSEUP - VIEW 2



Figure A-7. PRE-TEST CLOSEUP - VIEW 3



Figure A-8. PRE-TEST DRIVER DUMMY - VIEW 1



Figure A-9. PRE-TEST DRIVER DUMMY - VIEW 2

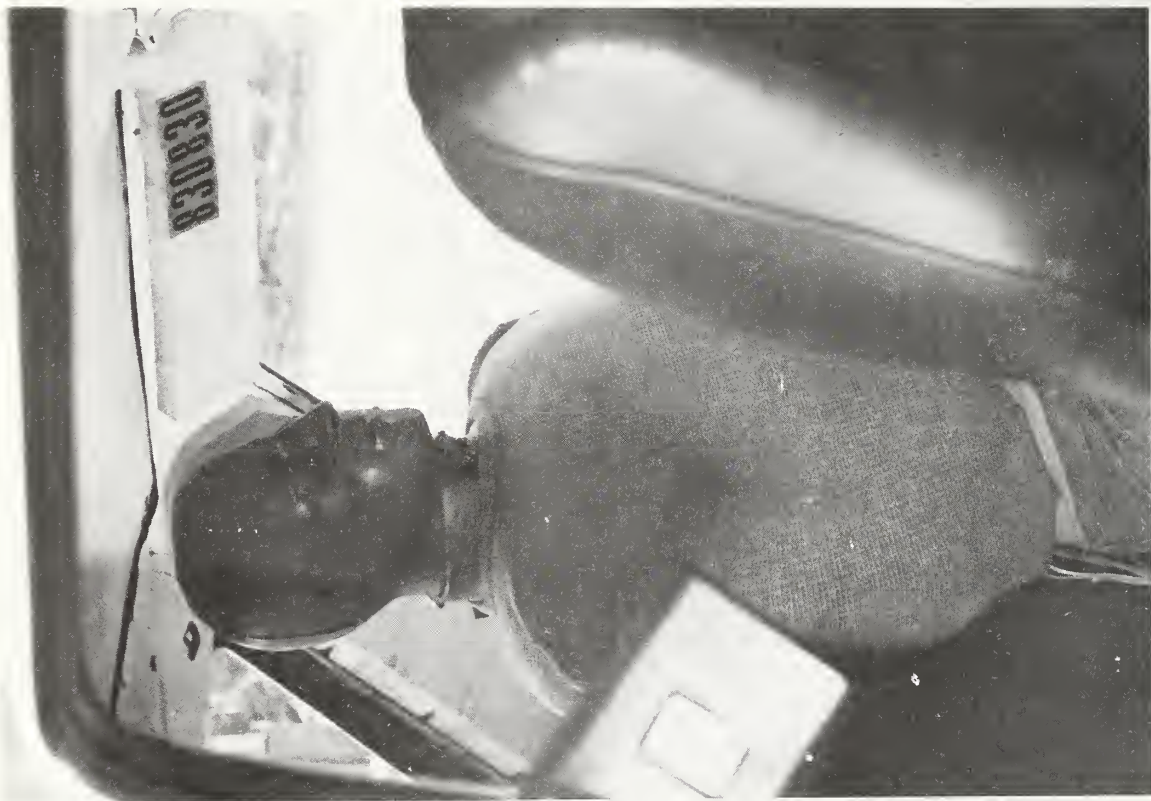


Figure A-10. PRE-TEST PASSENGER DUMMY - VIEW 1



Figure A-11. PRE-TEST PASSENGER DUMMY - VIEW 2



Figure A-12. CRASH EVENT PHOTOGRAPH

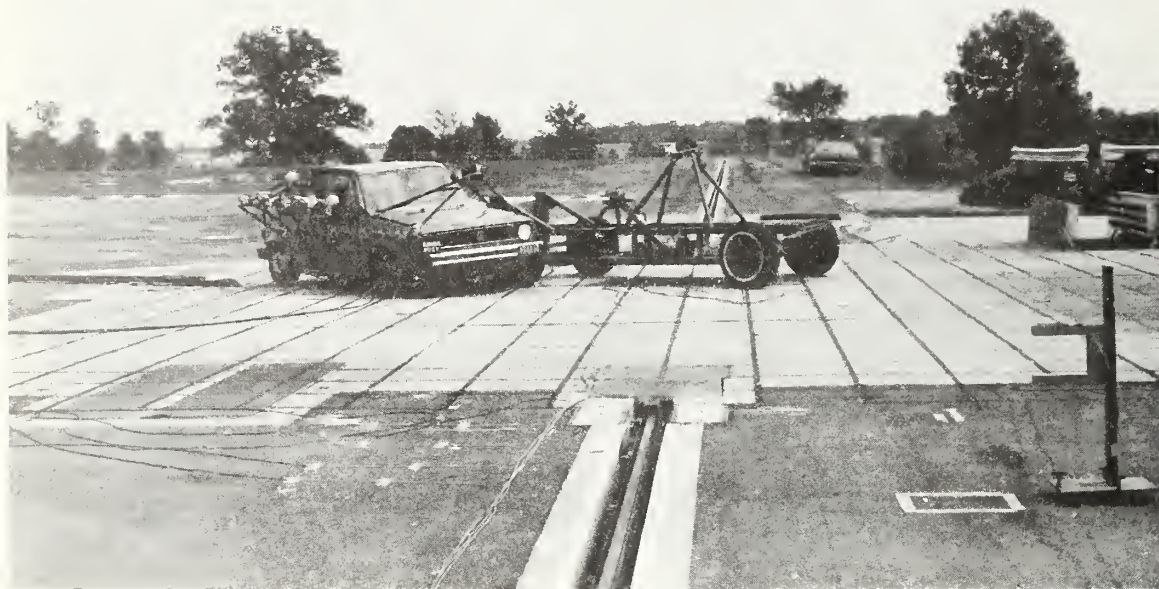


Figure A-13. POST-TEST OVERALL - VIEW 1

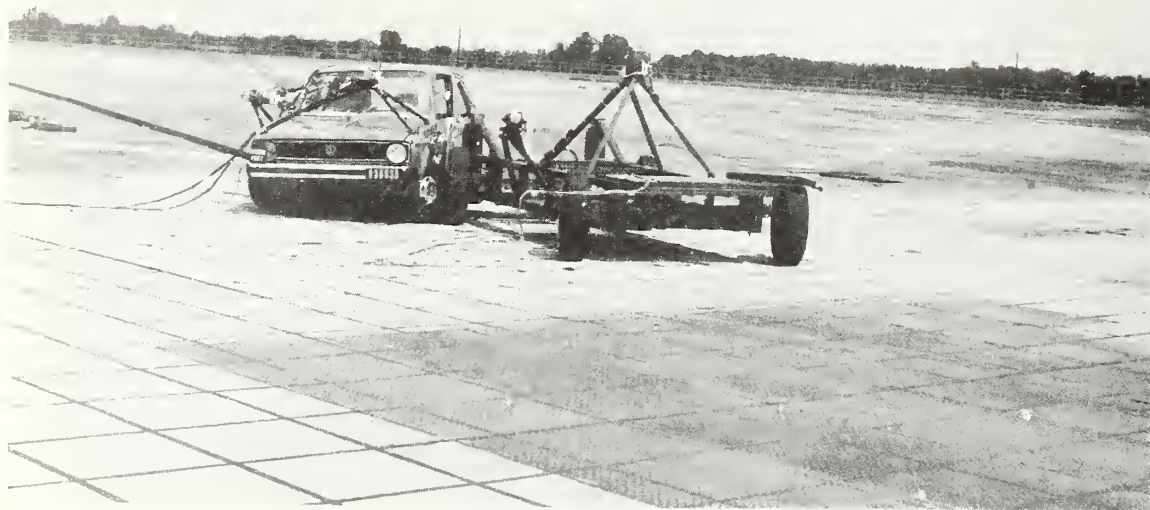


Figure A-14. POST-TEST OVERALL - VIEW 2

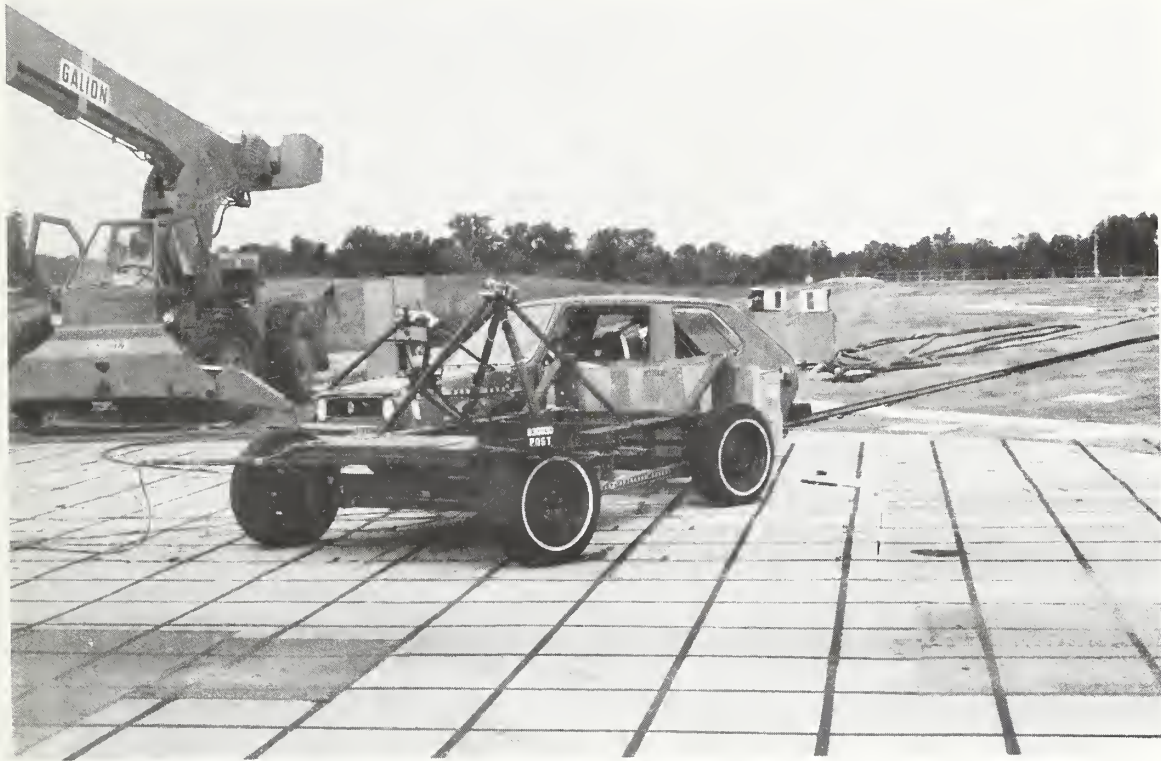


Figure A-15. POST-TEST OVERALL - VIEW 3



Figure A-16. POST-TEST OVERALL - VIEW 4



Figure A-17. POST-TEST CLOSEUP - VIEW 1



Figure A-18. POST-TEST CLOSEUP - VIEW 2





Figure A-19. POST-TEST CLOSEUP - VIEW 3



Figure A-20. POST-TEST DRIVER DUMMY - VIEW 1



Figure A-21. POST-TEST DRIVER DUMMY - VIEW 2

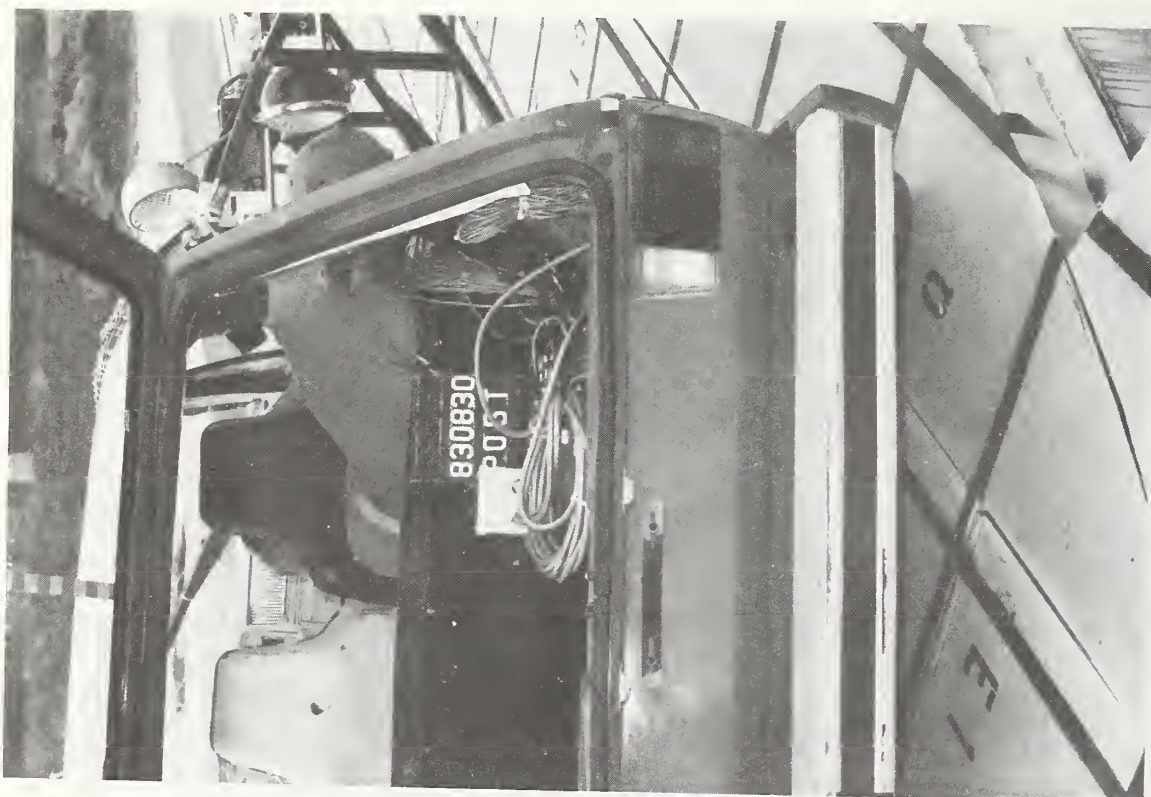


Figure A-22. POST-TEST PASSENGER DUMMY - VIEW 1

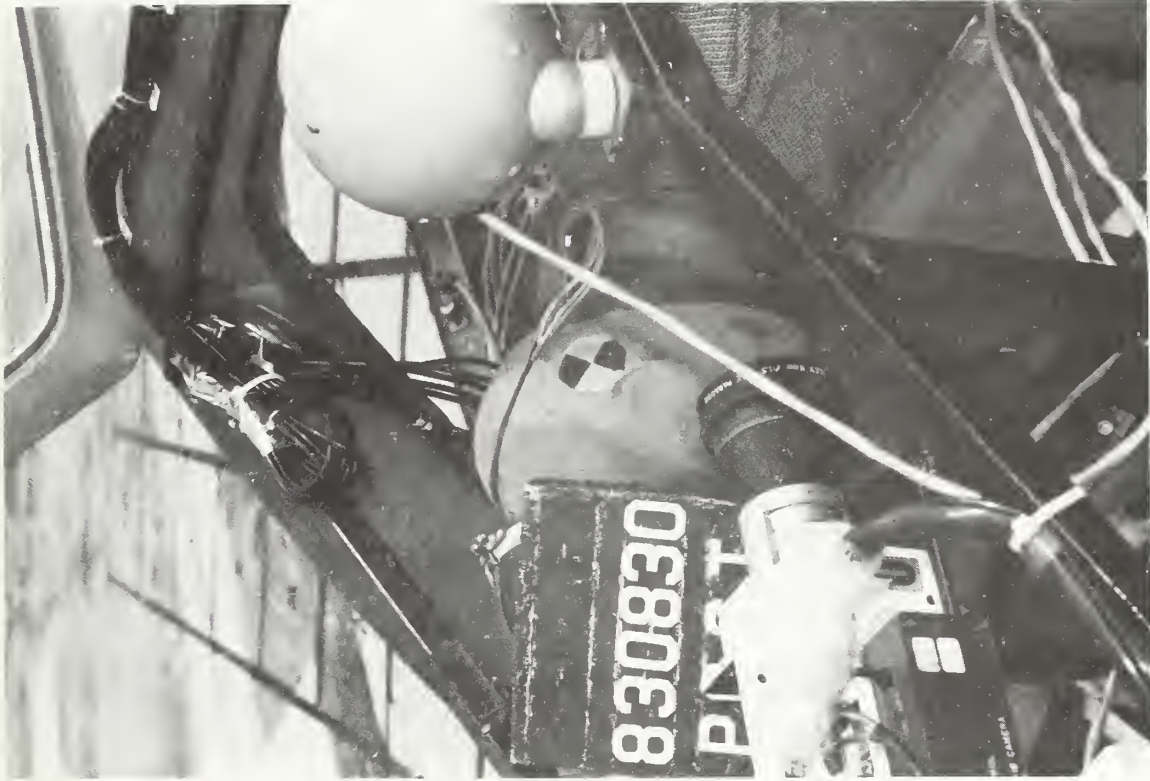


Figure A-23. POST-TEST PASSENGER DUMMY - VIEW 2

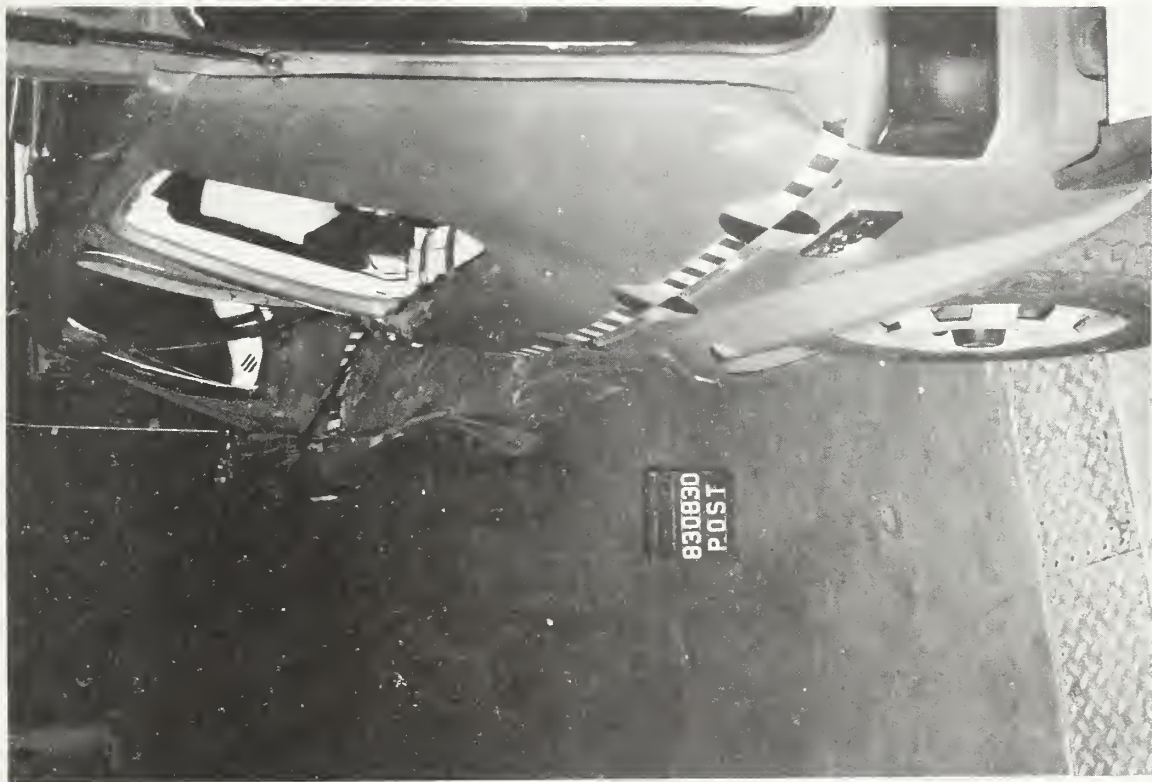


Figure A-24. POST-TEST VEHICLE DAMAGE - VIEW 1

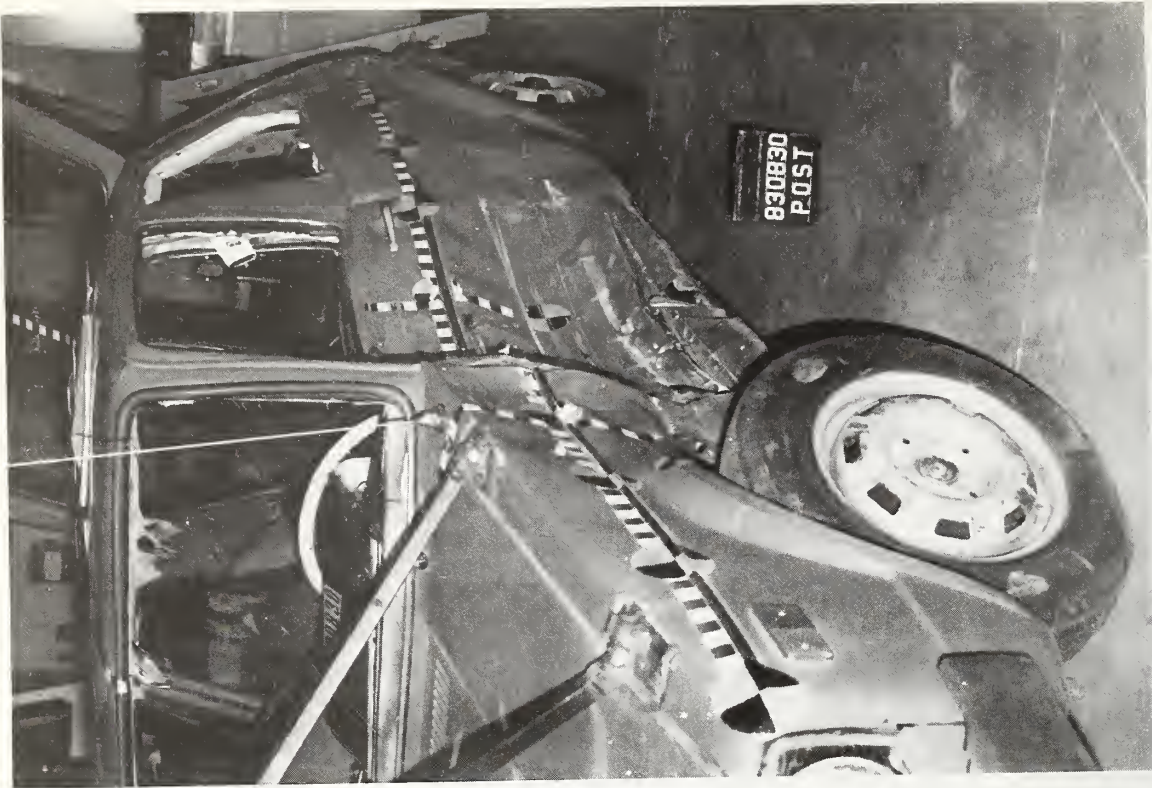


Figure A-25. POST-TEST VEHICLE DAMAGE - VIEW 2

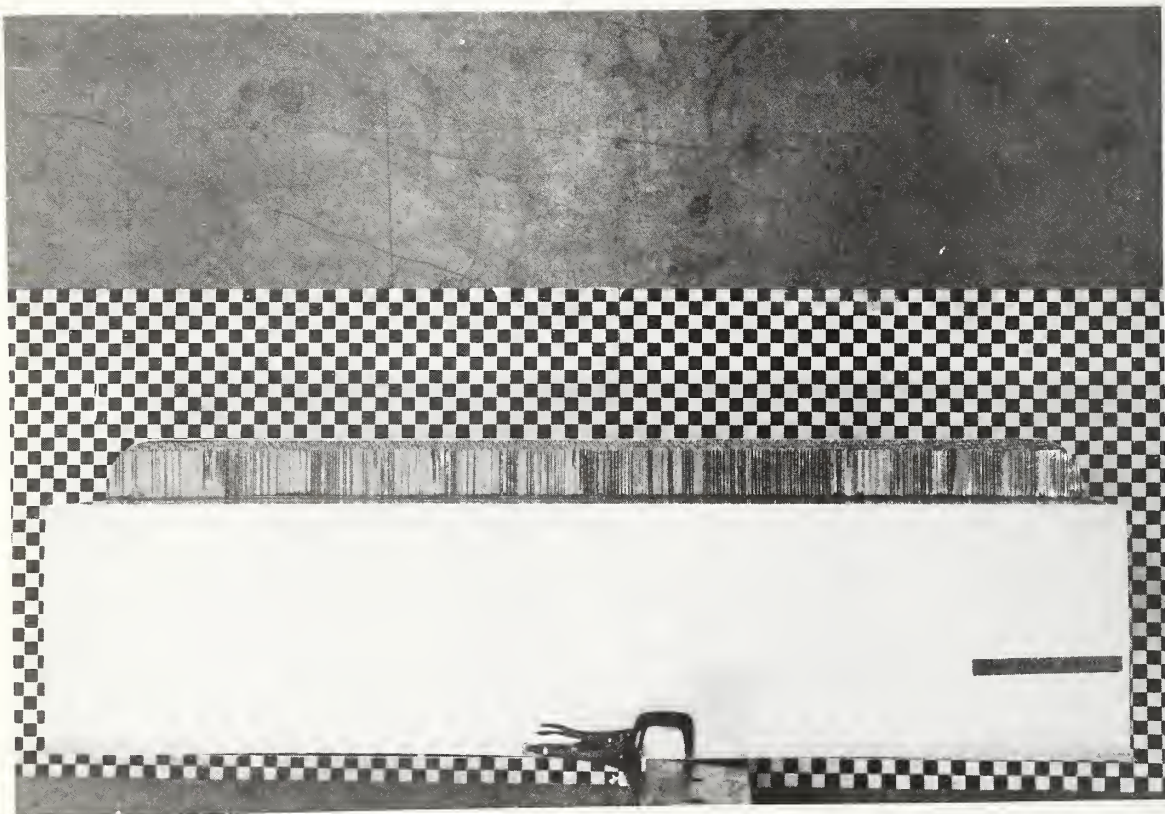


Figure A-26. PRE-TEST MDB FACE - VIEW 1

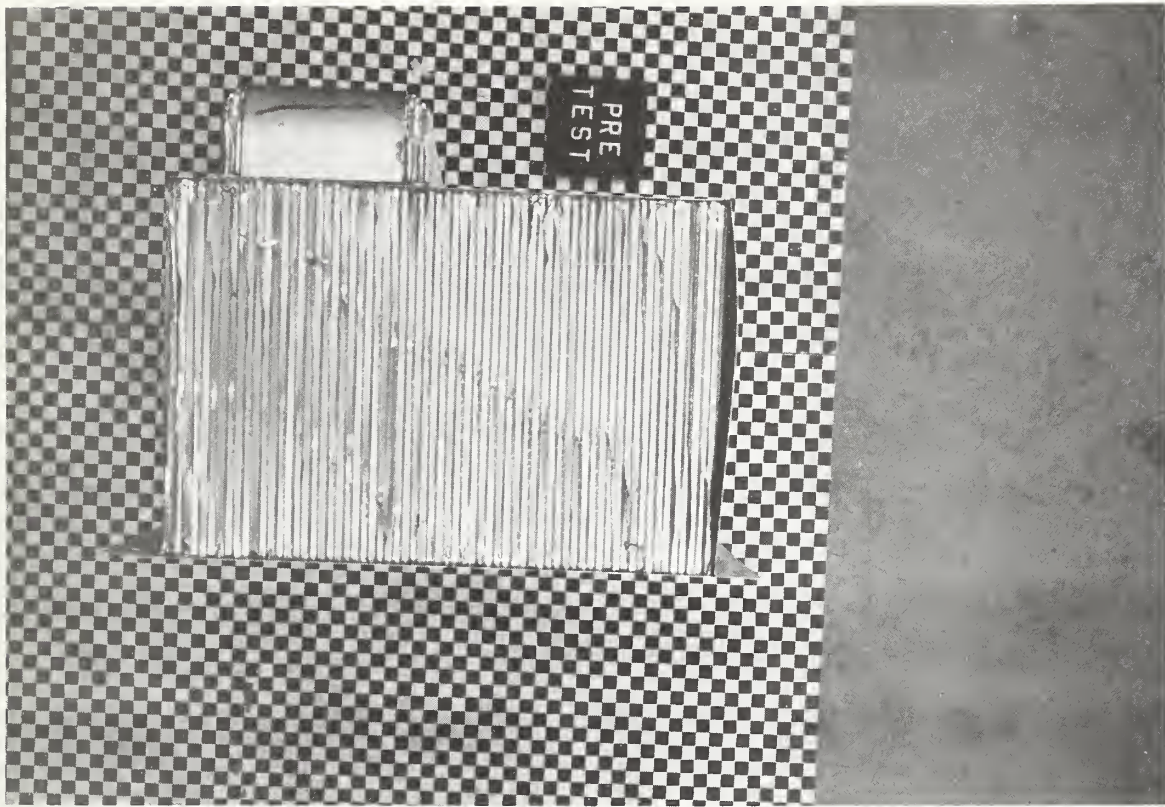


Figure A-27. PRE-TEST MDB FACE - VIEW 2

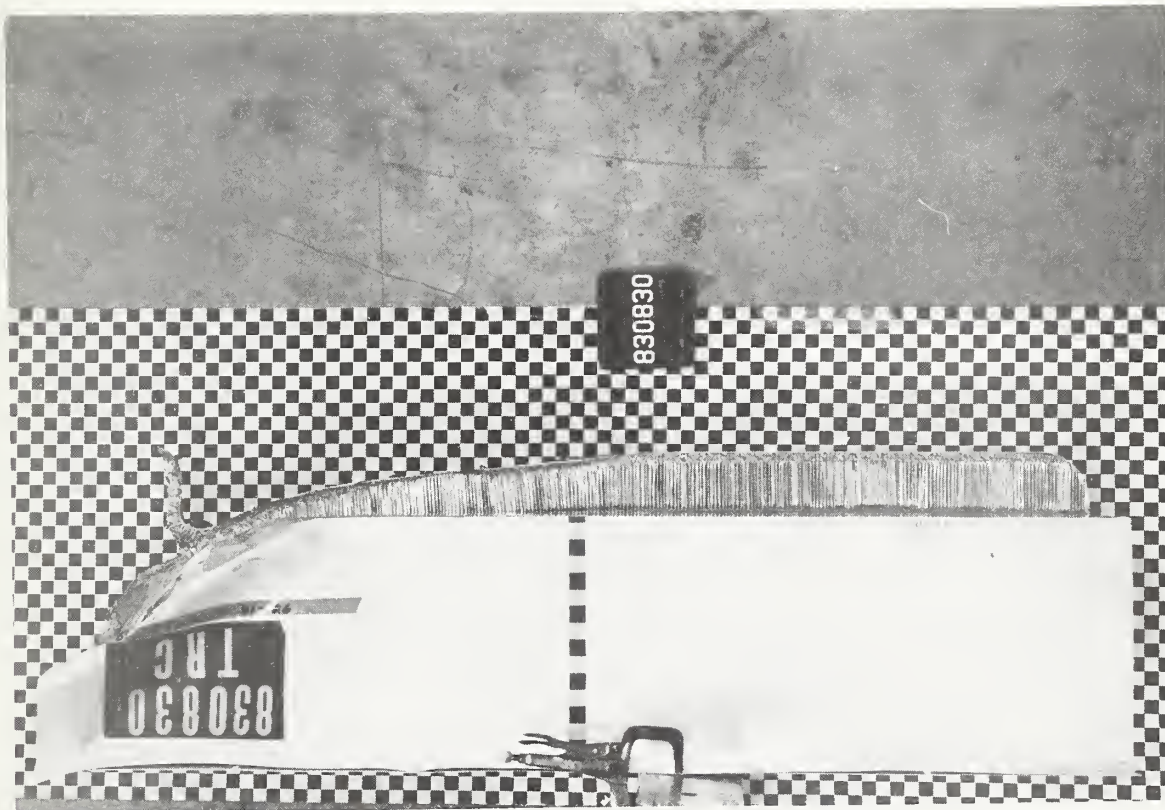


Figure A-28. POST-TEST MDB FACE - VIEW 1

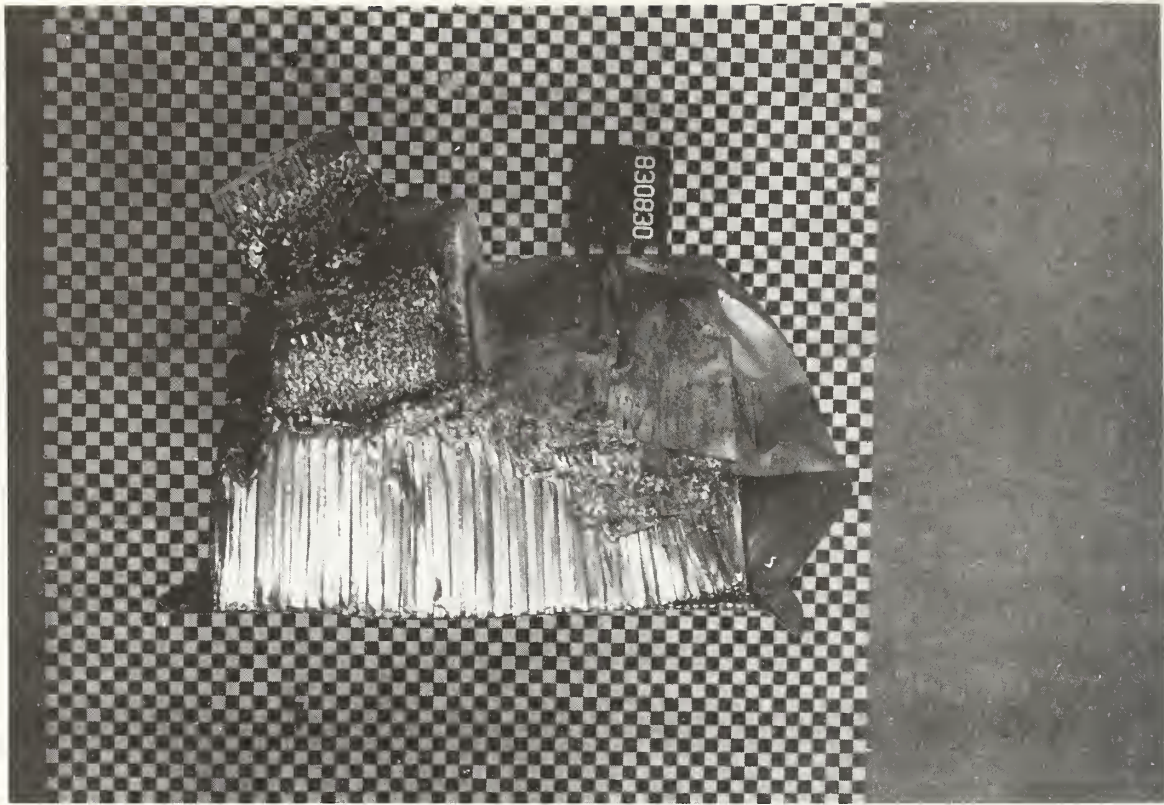


Figure A-29. POST-TEST MDB FACE - VIEW 2



Figure A-30. POST-TEST PADDING CONDITION

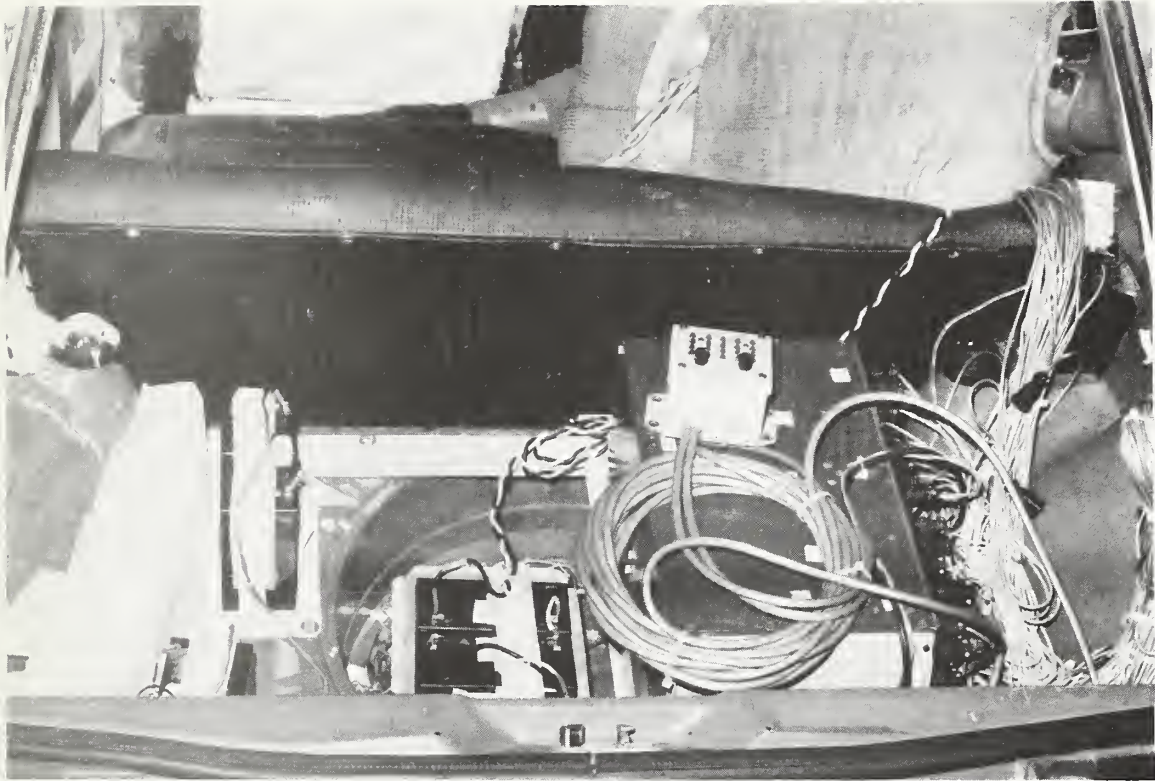


Figure A-31. INSTRUMENTATION SETUP

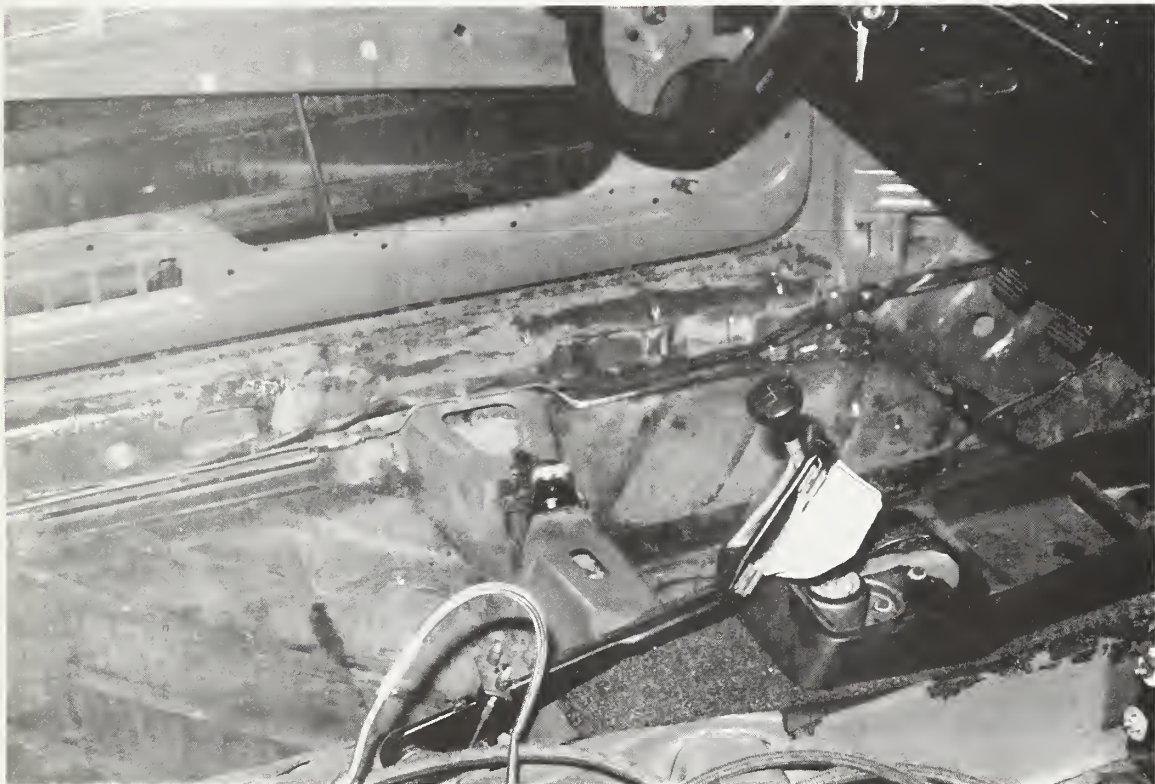


Figure A-32. VEHICLE INITIAL RUSTED CONDITION - VIEW 1



Figure A-33. VEHICLE INITIAL RUSTED CONDITION - VIEW 2



Figure A-34. VEHICLE INITIAL RUSTED CONDITION - VIEW 3



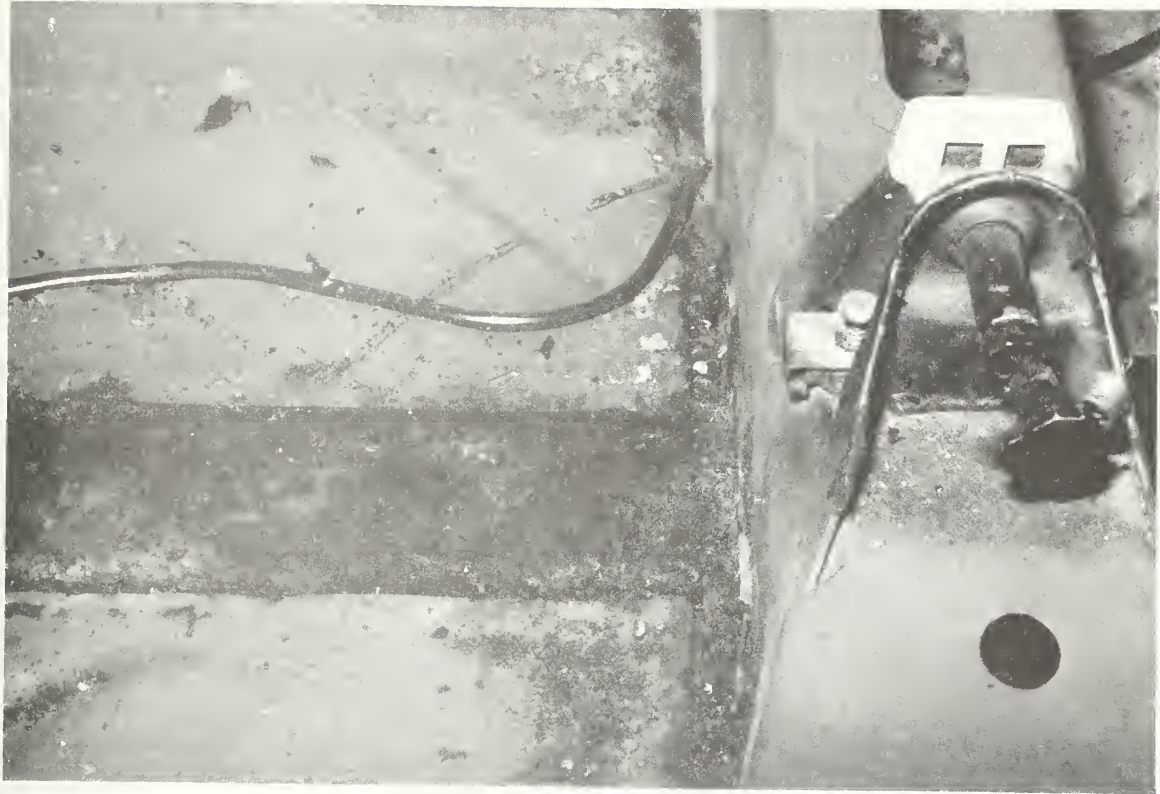


Figure A-32. VEHICLE INITIAL RUSTED CONDITION - VIEW 4



## APPENDIX B

### DATA PLOT PRESENTATION

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 330830  
EVALUATION OF MOD YN FLEET  
3324200000  
HEDXG1

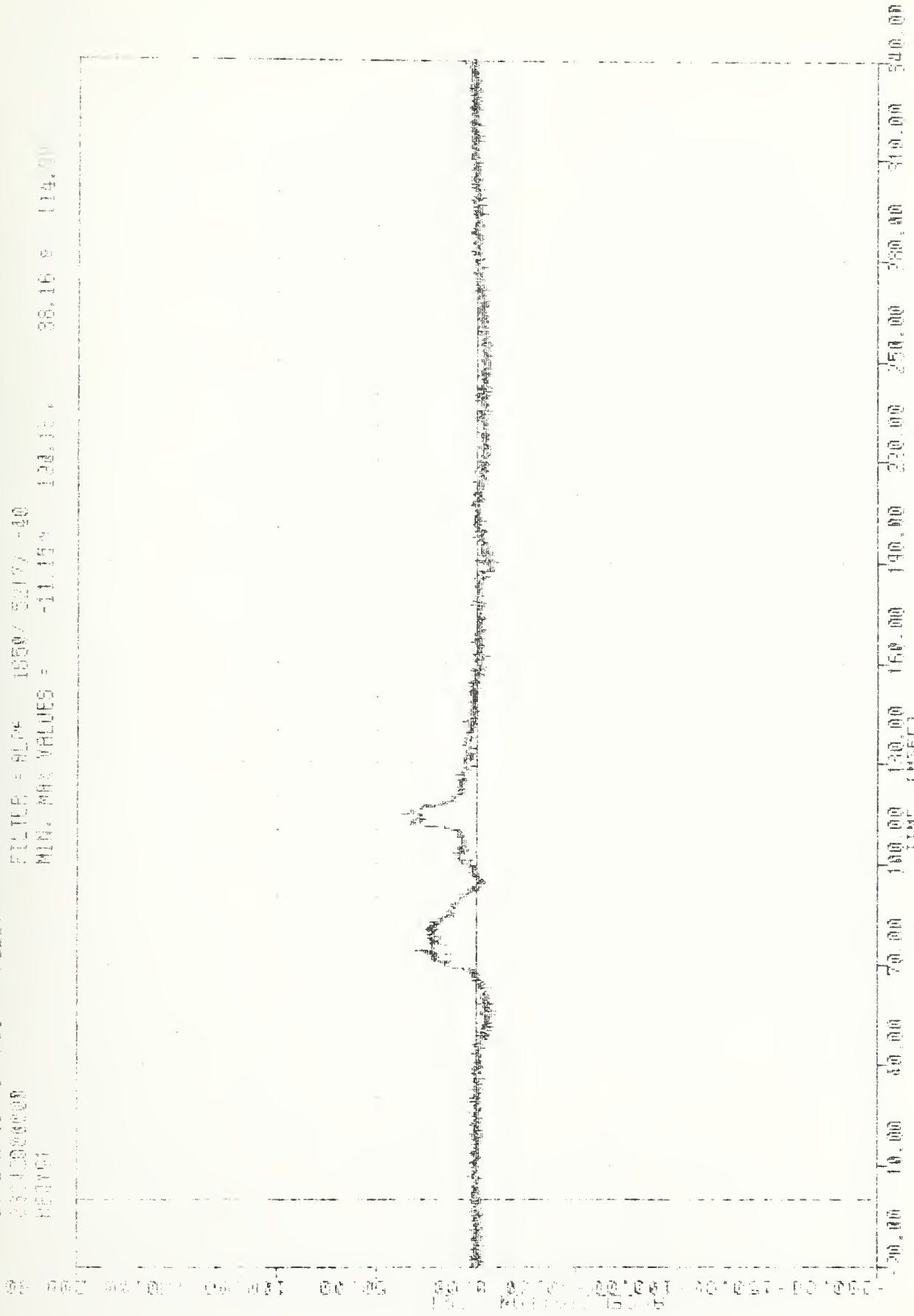
PLOT DATE 2-SEP-63 14:57:30

FILTER = ALPF 1650/ 5217/ -40  
MIN, MAX VALUES : -53.93e 114.86. 11.79 e 161.68



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RIBBIT  
DRIVER HEAD INFLATION X H317

PLT 0012 0-SEP-83 14.57135  
EVALUATION OF MOD BY PLETT  
30/1200000  
REACT  
FILTER = RLP# 1850 / 5017 / -10  
MIN. MAX VALUES = -11.19% 124.13% 36.16% 114.90%



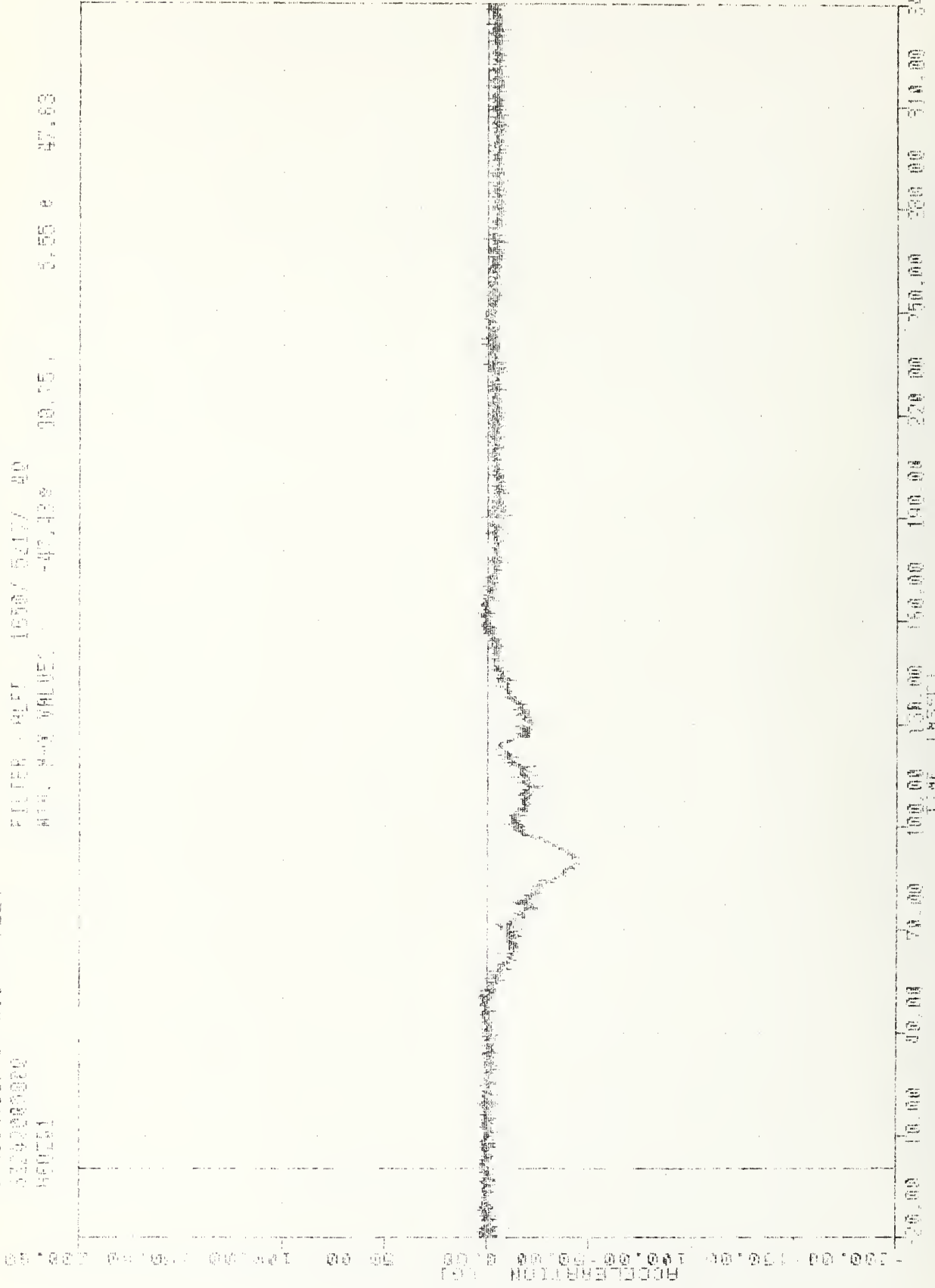
MOVING DETECTABLE CURRENT INTO VOLKSWAGEN RABBIT  
RABBIT INTO RECEPTION Y 0015

TRC  
 EVALUATION OF MOB W/ FLD  
 5329200000  
 H01251

PLUT DATE 2-20-66 (1157:33)

FILTER - HLF 1600V 5217/ 20

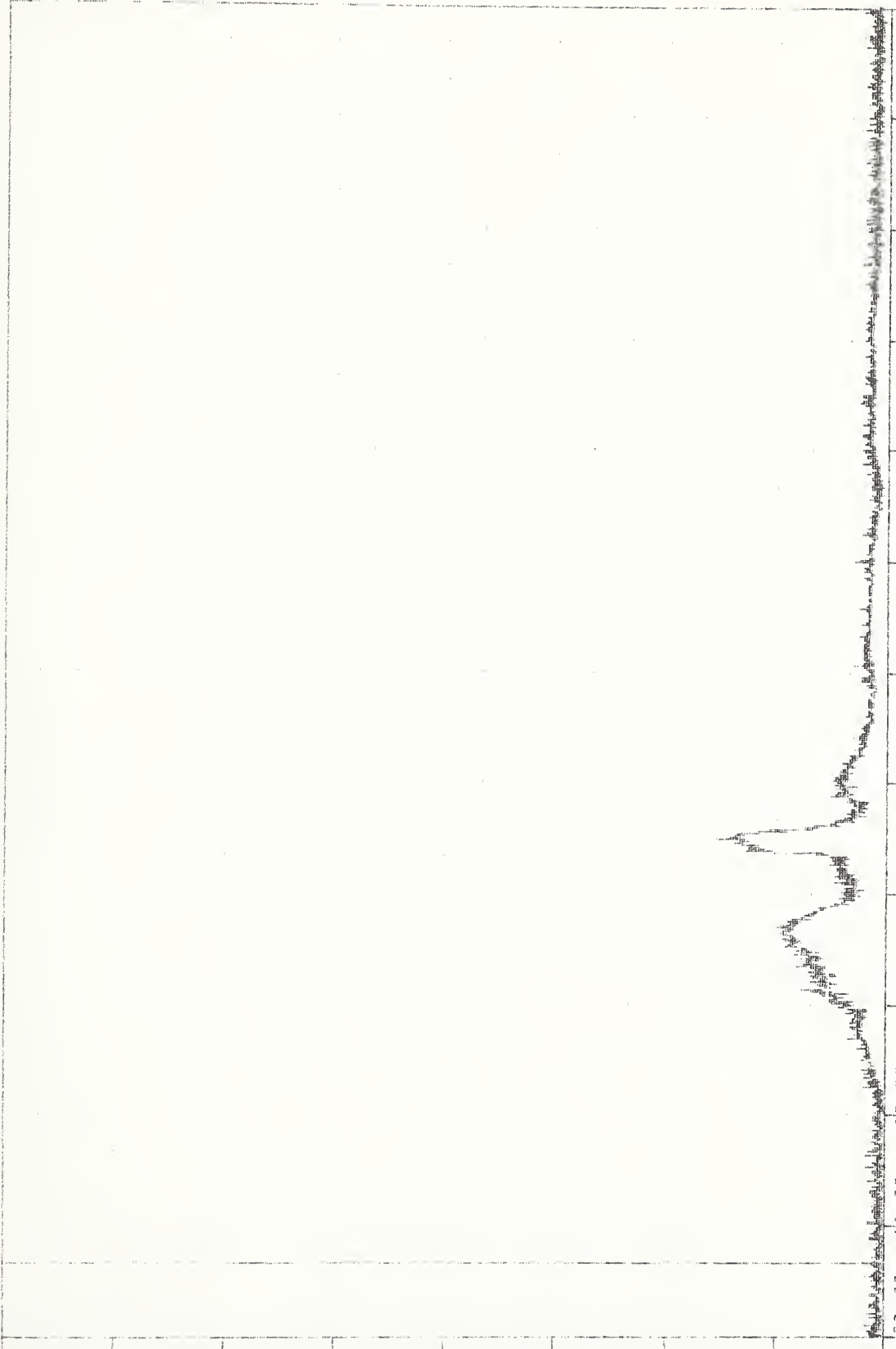
HTH. H-V VALUES -47.13% 90.75 3.55 e 47.53



MOVING DETECTOR BARREL INTO VOLKSWAGEN BRABDI  
 DIVISION OF ELECTRONICS / 1177

030820 PLOT DATE 2-SEP-81 14:01:33  
 EVALUATION OF H00 V4 FILET  
 23142000000  
 HEDR61  
 FILTER - ALPF 1650/ 5217/ -40  
 MIN, MAX VALUES = 0.120 5.68 79.49 e 114.68

ACCELERATION (G)



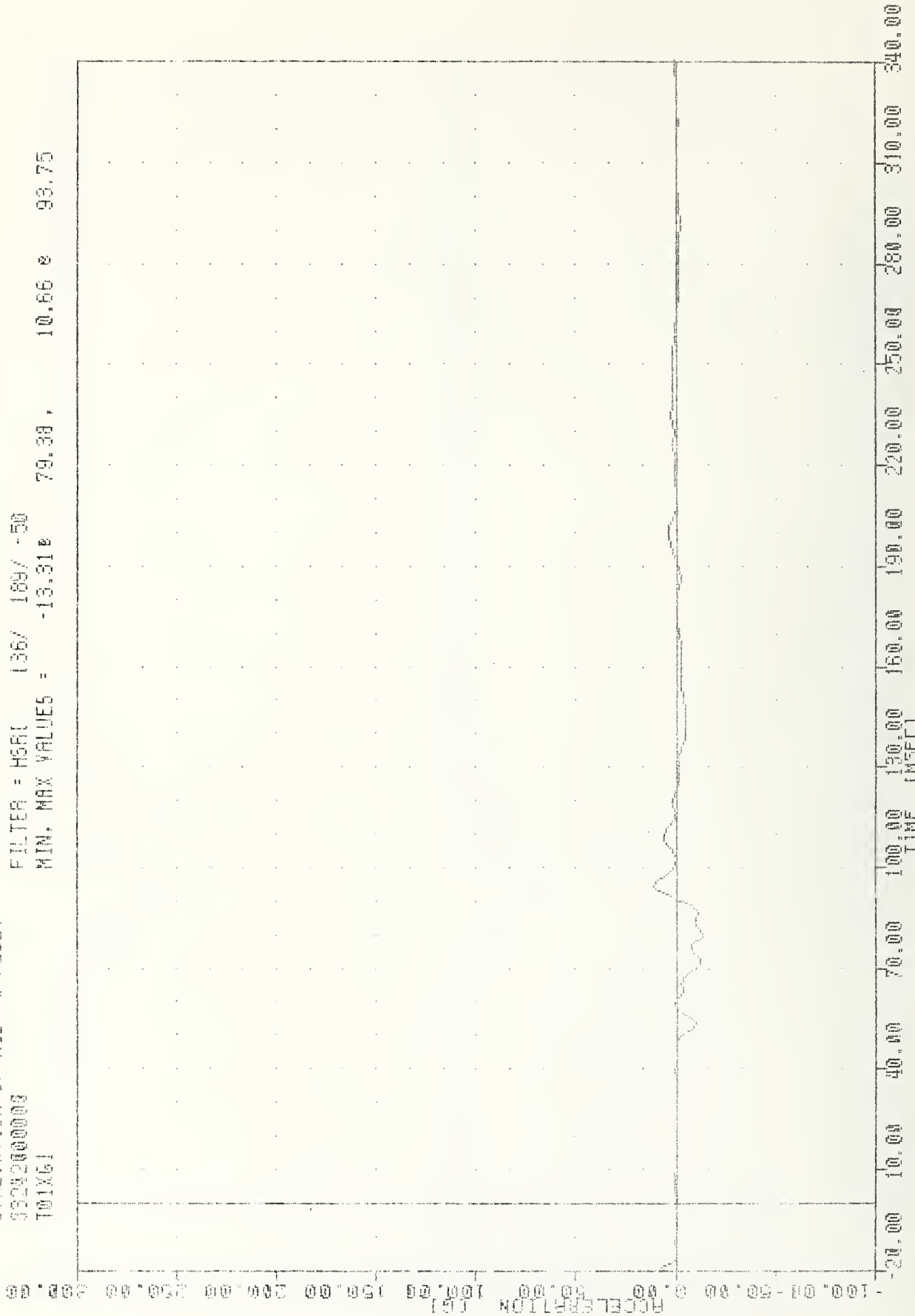
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER HEAD RESULTANT

TRC  
EVALUATION OF NOD VW FLEET  
922920000008  
T01XG1

PLU1 DATE 2-SEP-83 15:46:27

FILTER = HSRI 136/ 169/ -50

MIN. MAX VALUES = -13.31e 79.38 , 10.66 e 93.75



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER UPPER SPINE ACCELERATION X AXIS

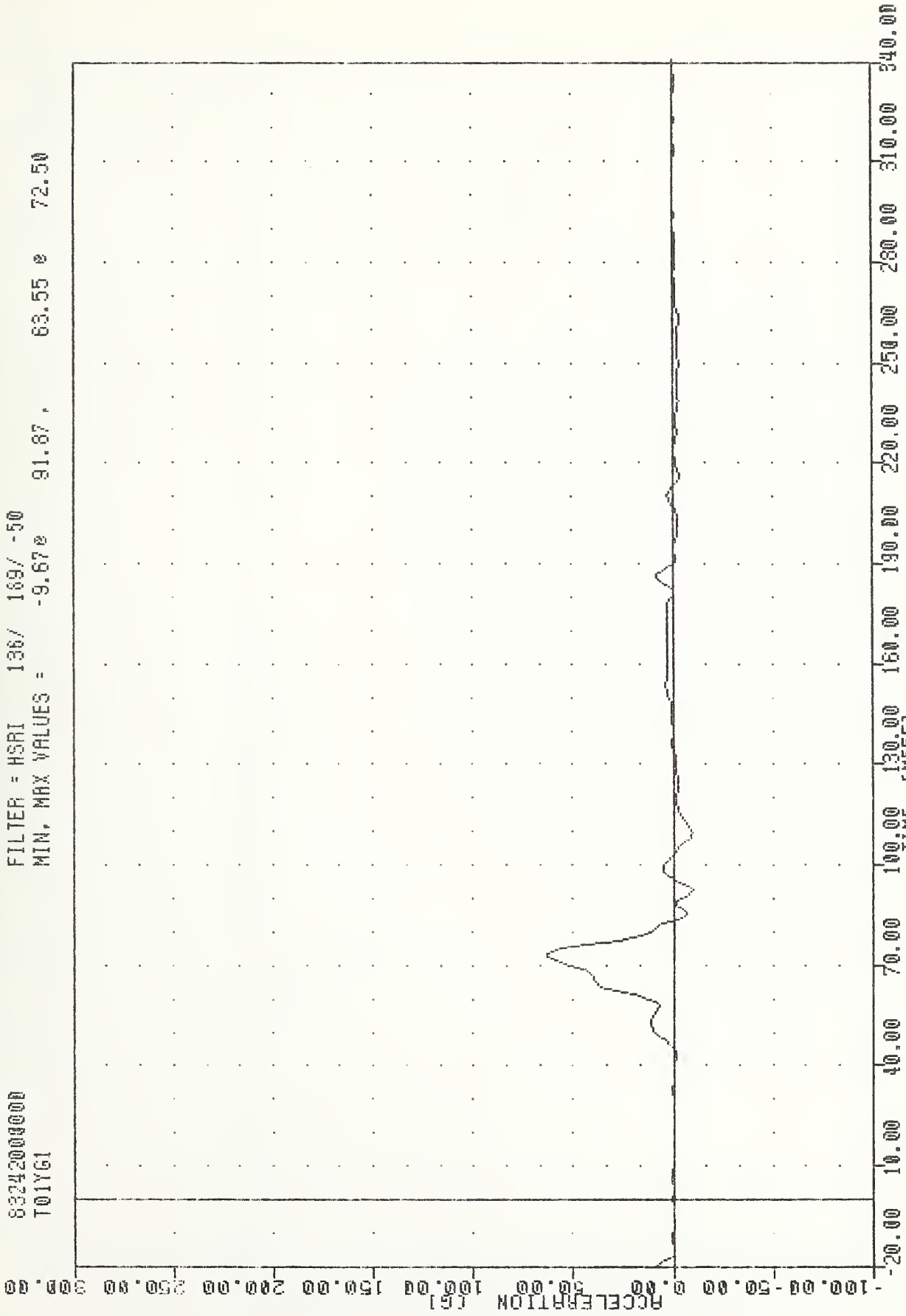


TRC , 830830  
EVALUATION OF MDD VW FLEET  
83242000000  
T01Y61

PLOT DATE 2-SEP-83 15:46:27

FILTER = HSRI 136/ 169/ -50

MIN, MAX VALUES = -9.67e 91.87, 63.55 e 72.50



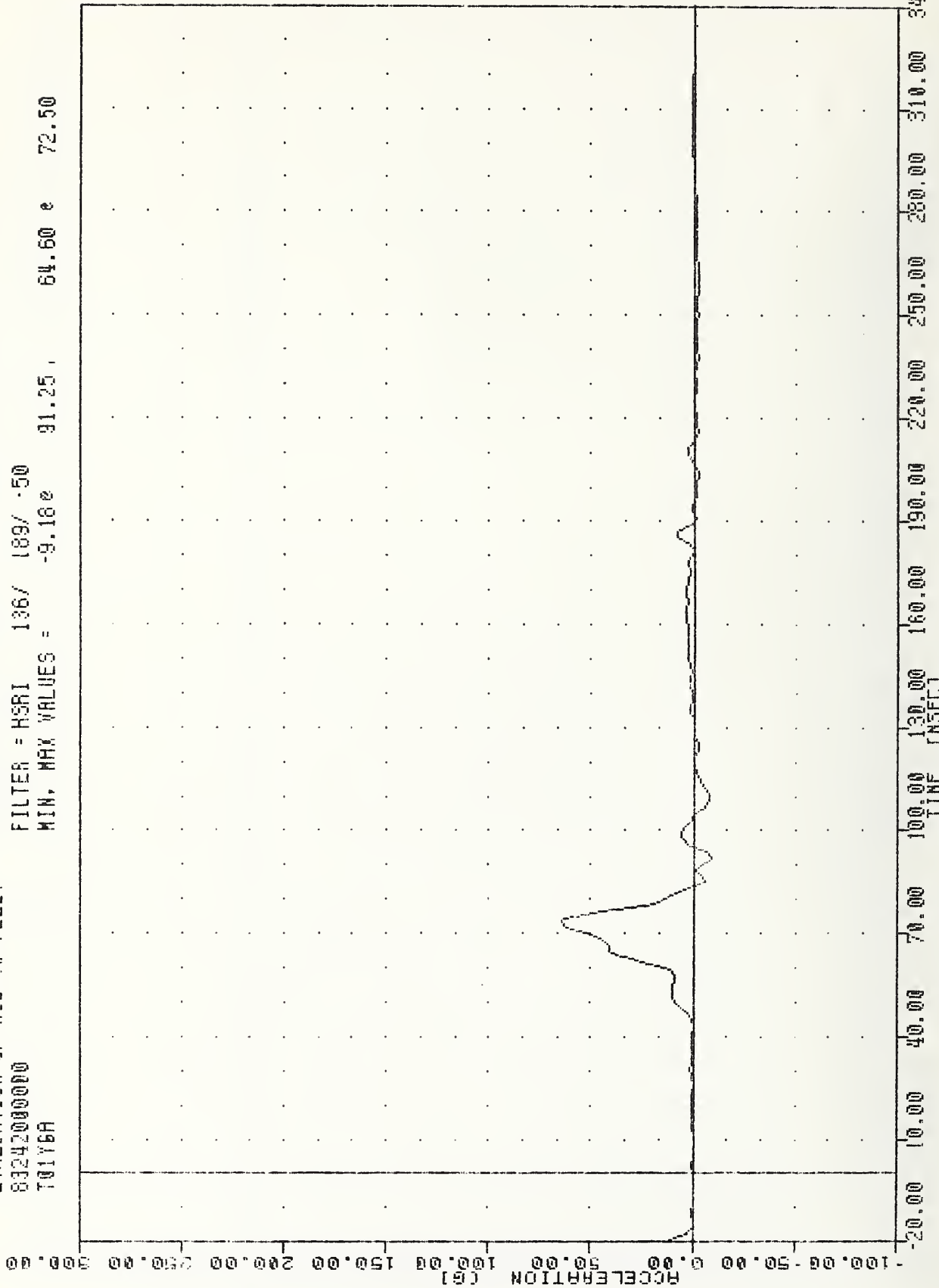
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER UPPER SPINE ACCELERATION Y AXIS

TAC , 830830  
EVALUATION OF MOO VN FLEET  
83242000000  
T01Y6A

PLOT DATE 2-SEP-83 15:46:27

FILTER = HSRI 136/ 189/ .50

MIN, MAX VALUES = -9.16e 91.25 , 64.60 e 72.50

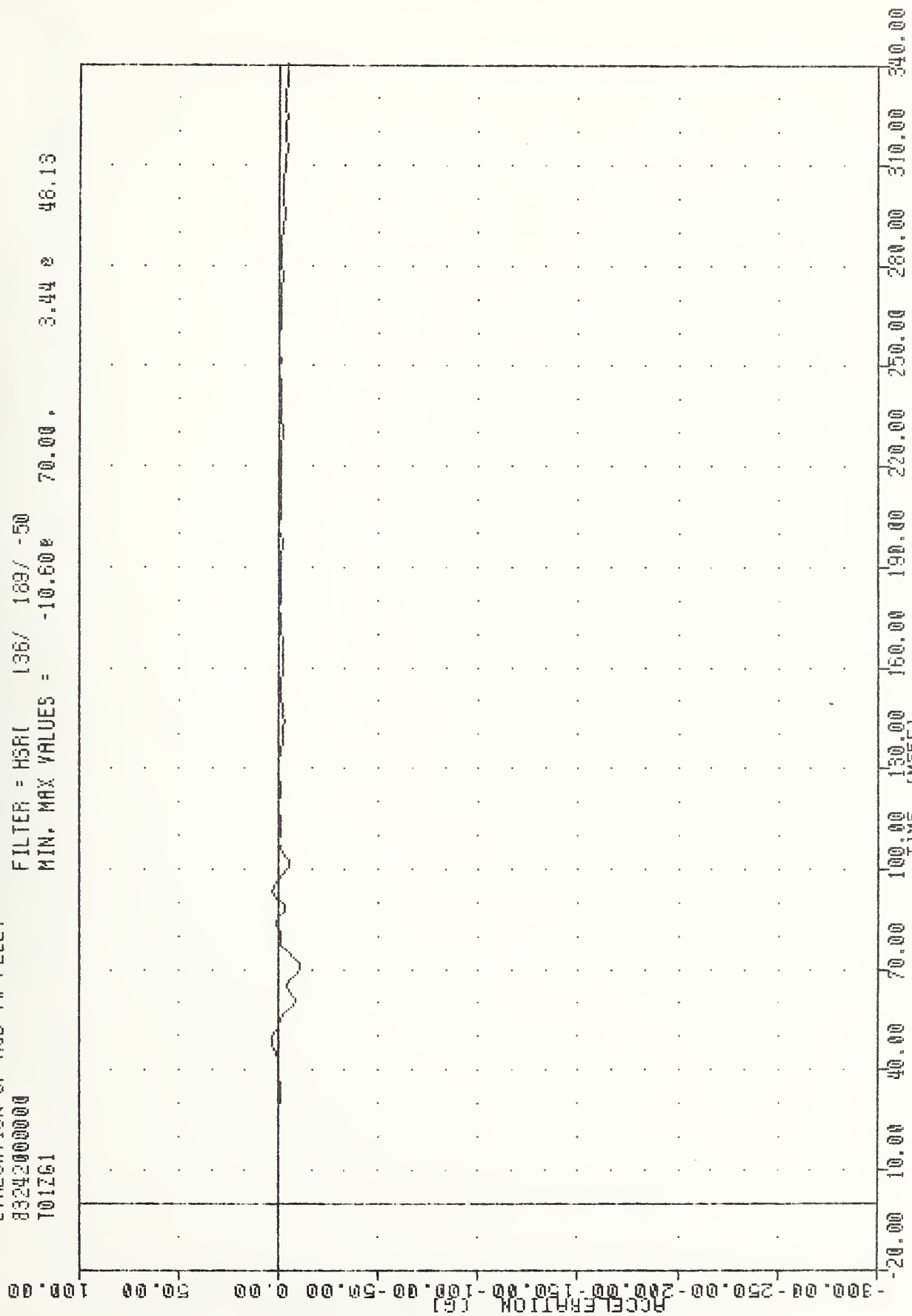


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER UPPER SPINE ACCELERATION -2 Y AXIS

TRC  
 EVALUATION OF MOD VW FLEET  
 83242000000  
 T01Z61

FLUI DATE 2-SEP-88 15:46:27

FILTER = HSRI 136/ 169/ -50  
 MIN. MAX VALUES = -10.60e 70.00 . 3.44 e 46.13



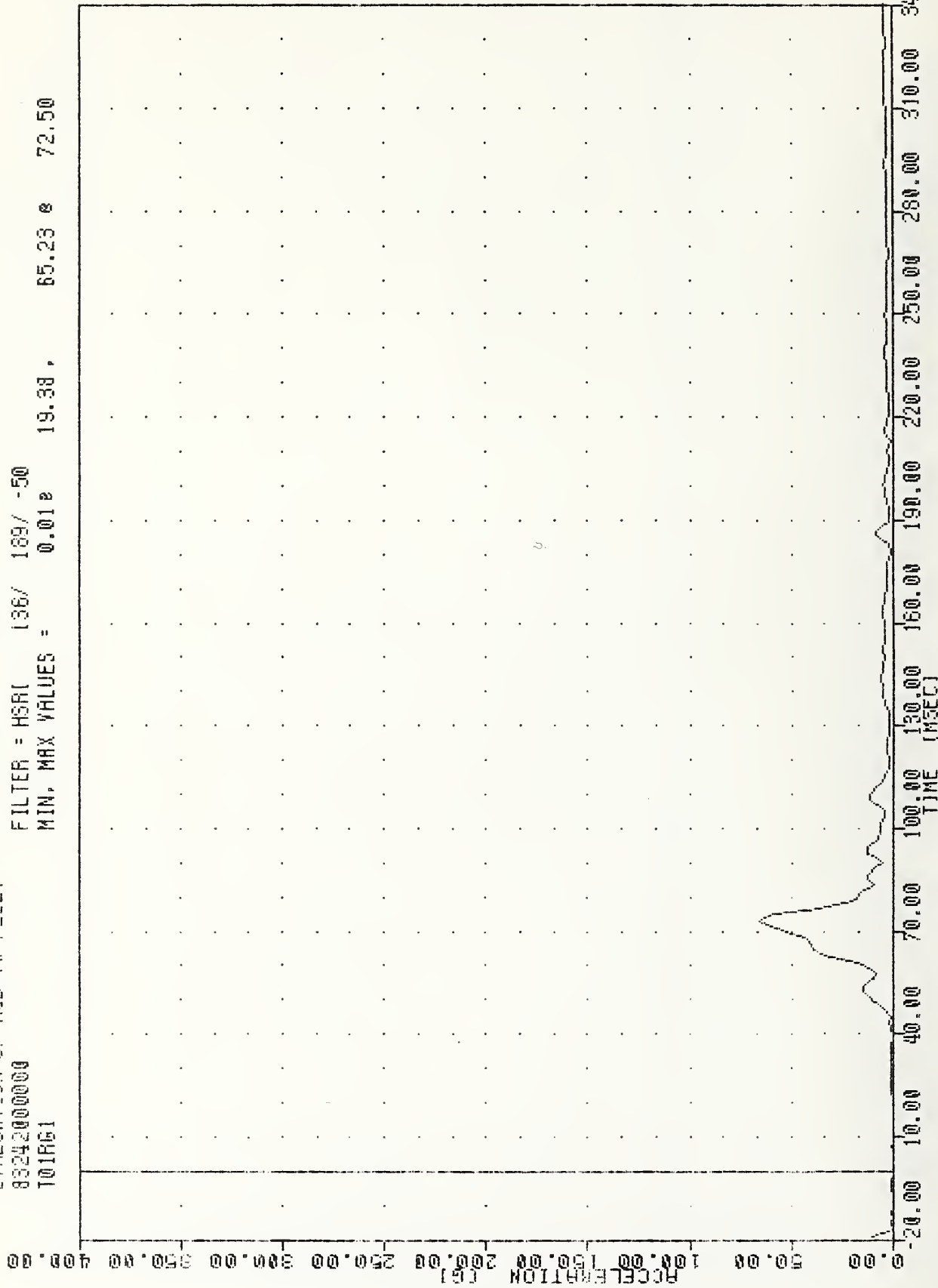
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER UPPER SPINE ACCELERATION Z AXIS

IMC  
EVALUATION OF MOD VEHICLE FLEET  
832420000000  
T01RG1

FLUI DATE 6-SEP-83 09:23:37

FILTER = HSR( 136/ 189/ -50

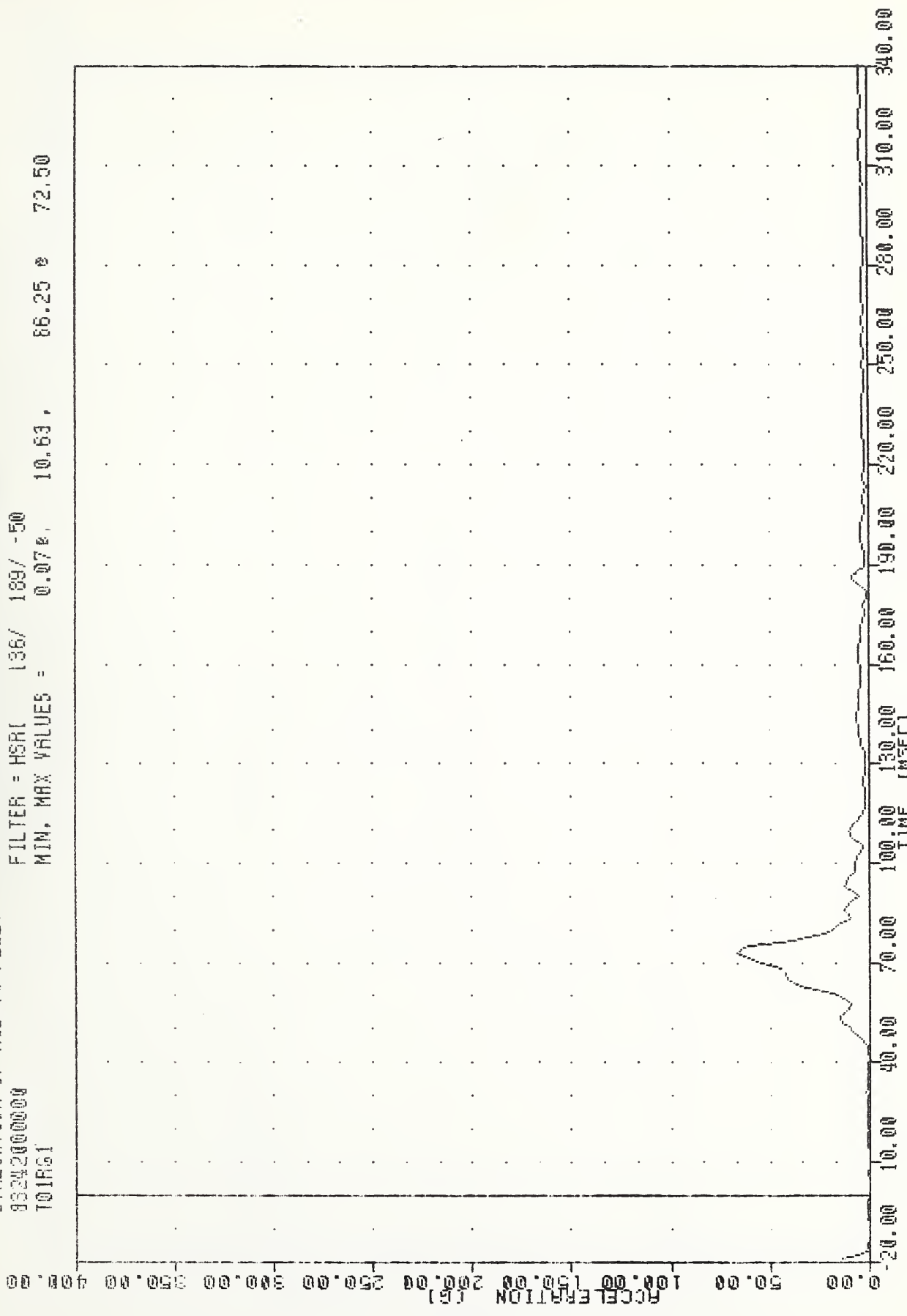
MIN, MAX VALUES = 0.01e 19.38 , 55.23 e 72.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER UPPER SPINE RESULTANT

INC 630830  
EVALUATION OF MOD VV FLEET  
93242000000  
TOIRG1

PLOT DATE 8-SEP-83 15:13:06  
FILTER = HSR1 136/ 189/ -50  
MIN. MAX VALUES = 0.07g, 10.63, 86.25 g 72.50



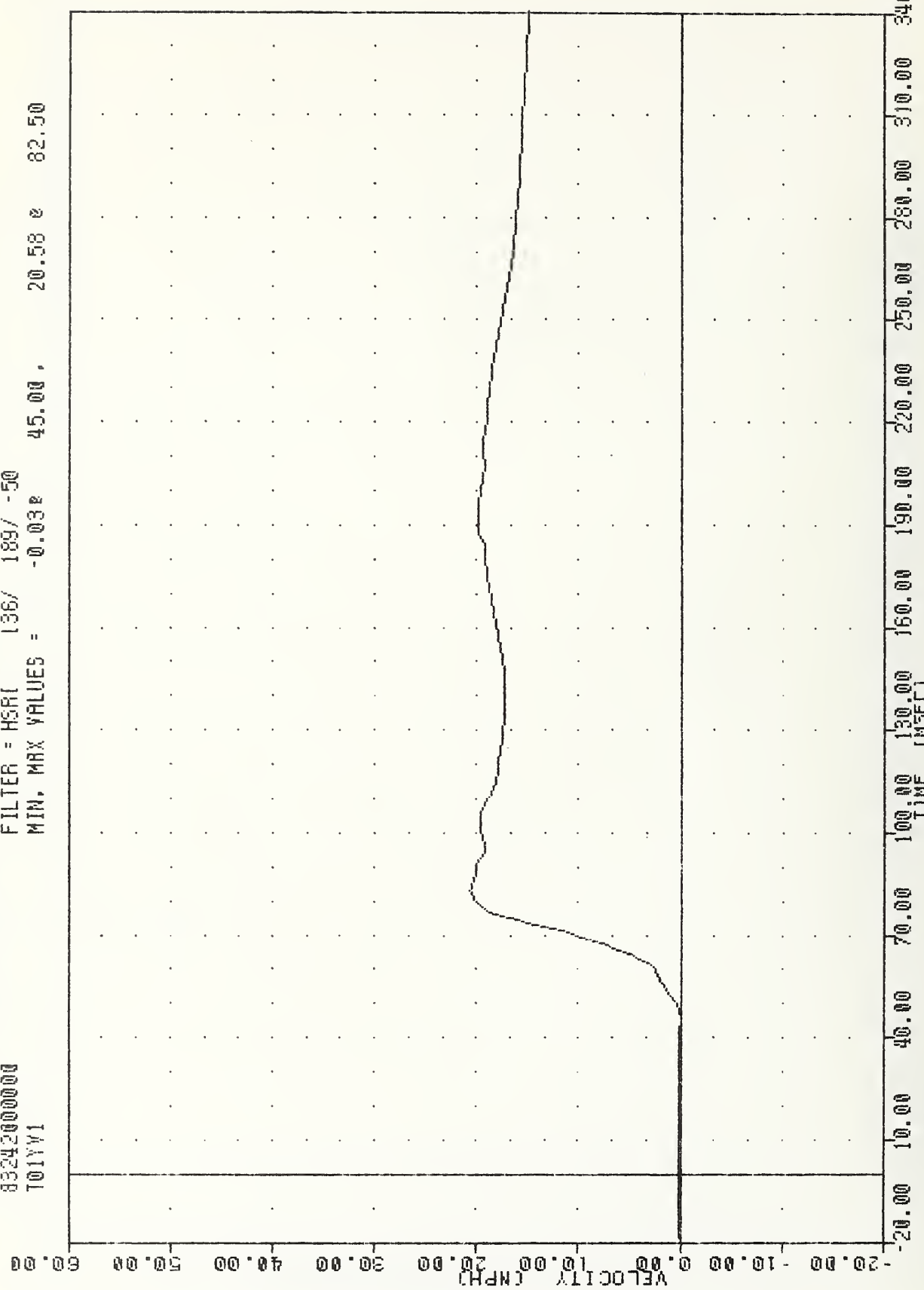
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER UPPER SPINE RESULTANT USING T01YGA

INC 830230  
EVALUATION OF MOD YV FLEET  
83242000000  
T01YV1

PLOT DATE 6-SEP-83 15:06:46

FILTER = HSR1 136/ 189/ -50

MIN. MAX VALUES = -0.03E 20.58 E 82.50

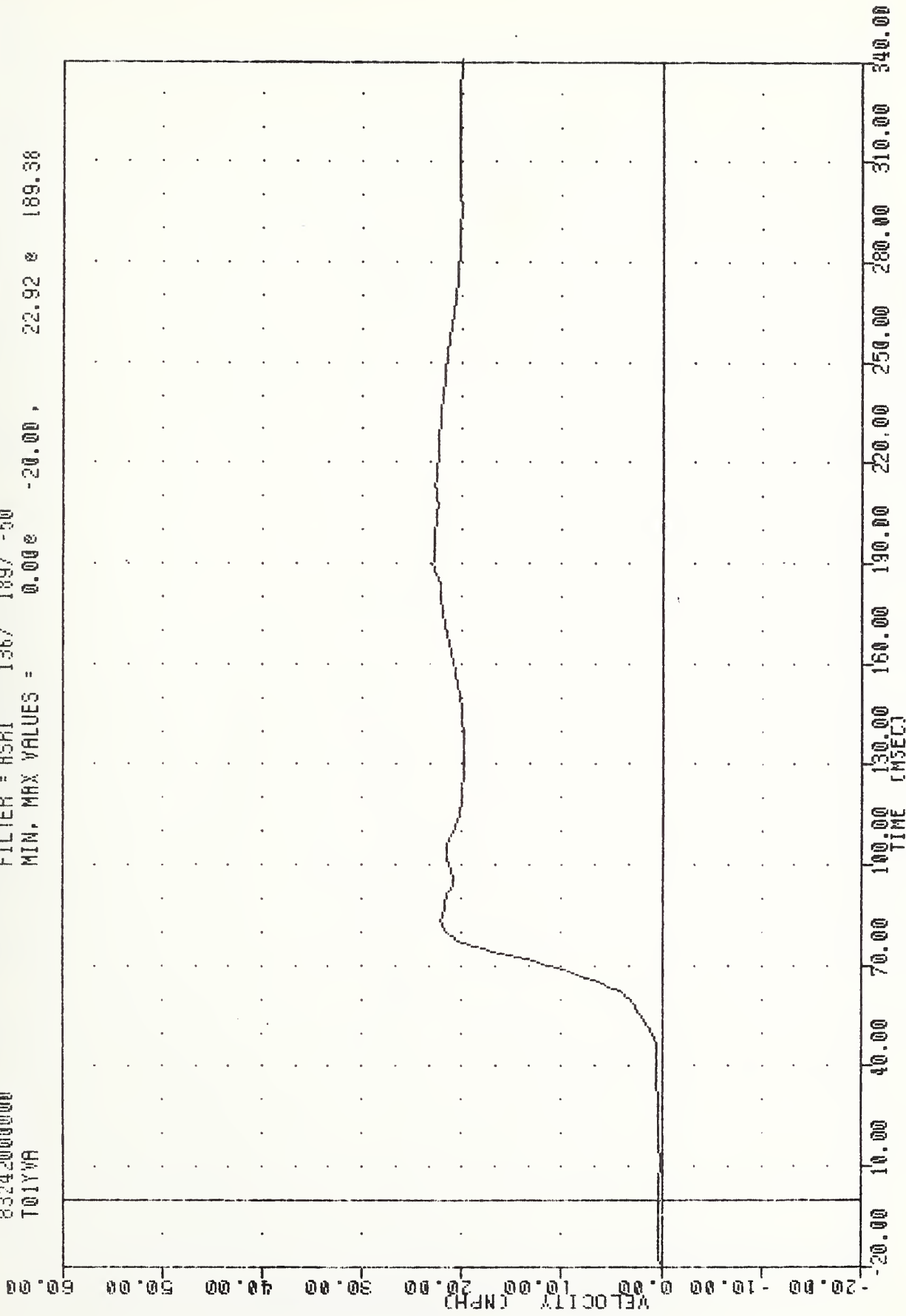


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING T01YV1

TRC  
EVALUATION OF MOD VW FLEET  
83242000000  
T01YVR

PLOT DATE 8-SEP-93 15:06:48

FILTER = HSRI 136/ 189/ -50  
MIN. MAX VALUES = 0.00e -20.00, 22.92 e 189.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING T01YGR

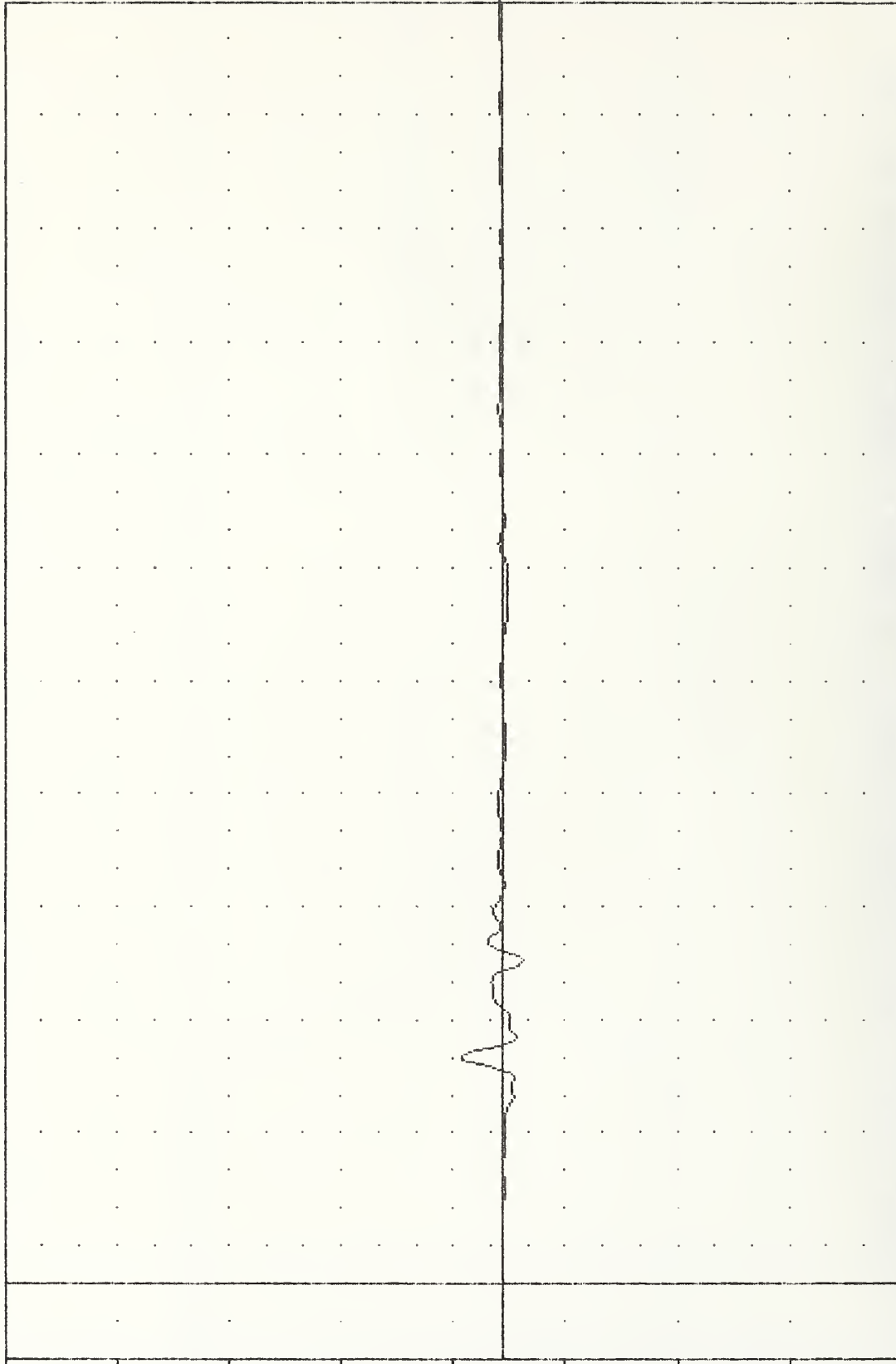
TRC  
830830  
EVALUATION OF MDD VW FLEET  
83242000000  
T12XG1

PLOT DATE 2-SEP-83 15:46:27

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -16.50g 85.00g 33.76g 59.38

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)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER LOWER SPINE ACCELERATION X AXIS

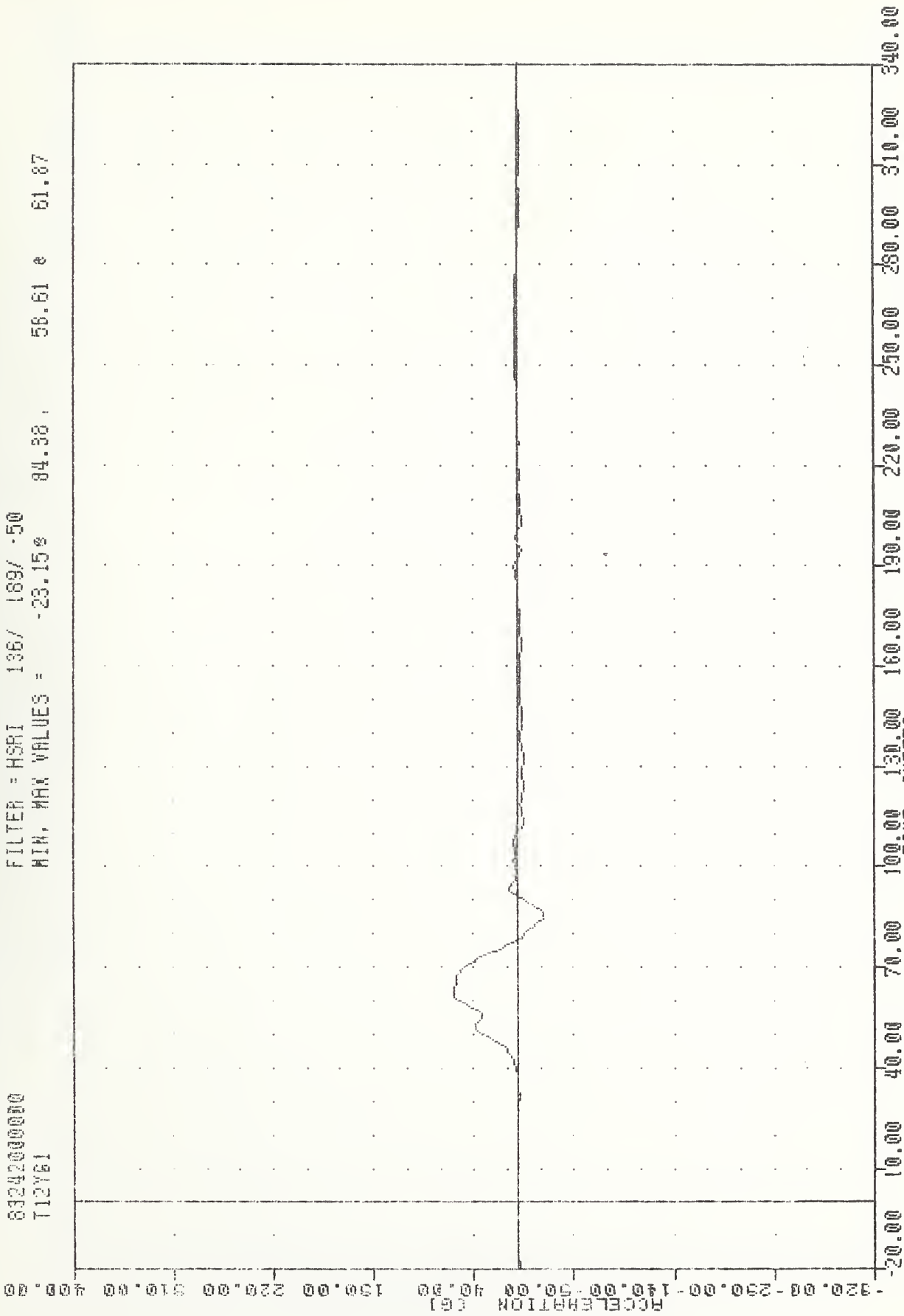


TAC  
EVALUATION OF MOD VEHICLE FLEET  
83242000000  
T12761

PLU1 DATE 2-SEP-83 15:46:27

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -23.15% 84.88 , 58.61 e 61.87



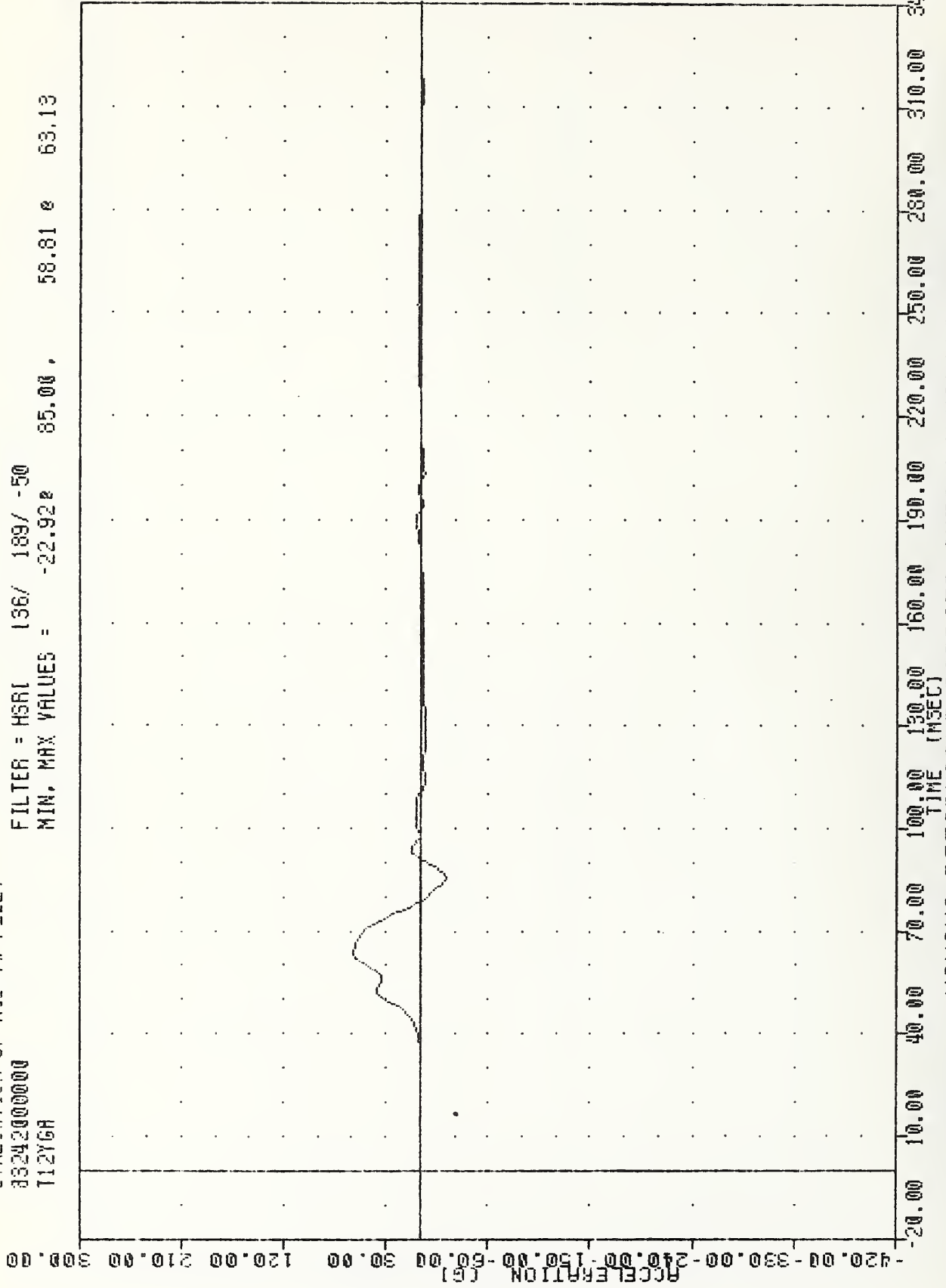
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER LOWER SPINE ACCELERATION Y AXIS

INC 830830  
EVALUATION OF M00 YW FLEET  
33242000000  
T12Y6H

PLOT DATE 2-SEP-83 15:46:27

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -22.92e 85.00e 58.81e 63.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER LOWER SPINE ACCELERATION -2 Y AXIS

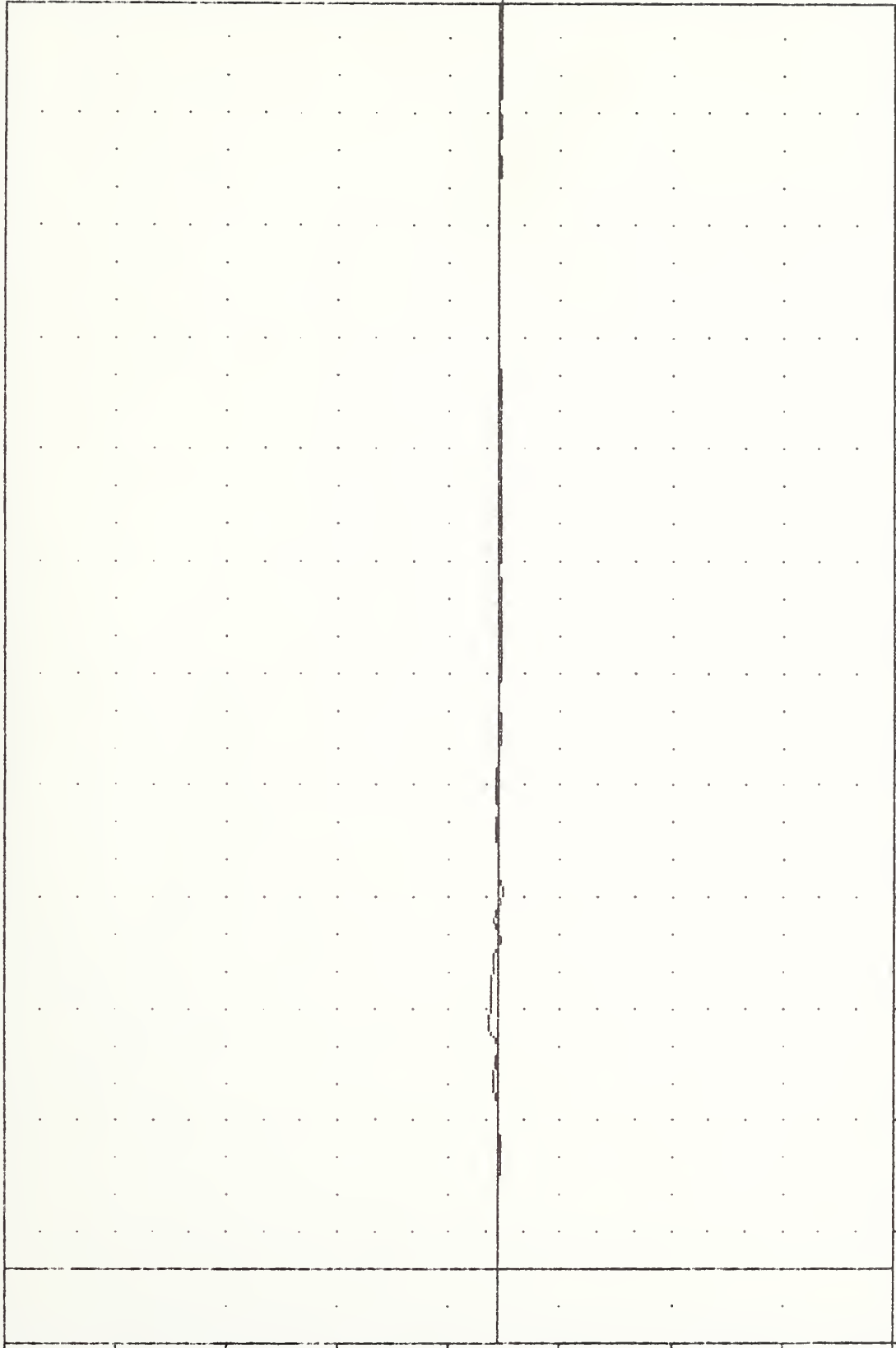
TRC 830030  
EVALUATION OF MDD W/ FLEET  
83242000000  
T12Z61

PLUT DATE 2-SEP-83 15:46:27

FILTER = HSR1 136/ 189/ -50

MIN. MAX VALUES = -3.39e 100.63. 8.64 e 65.00

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

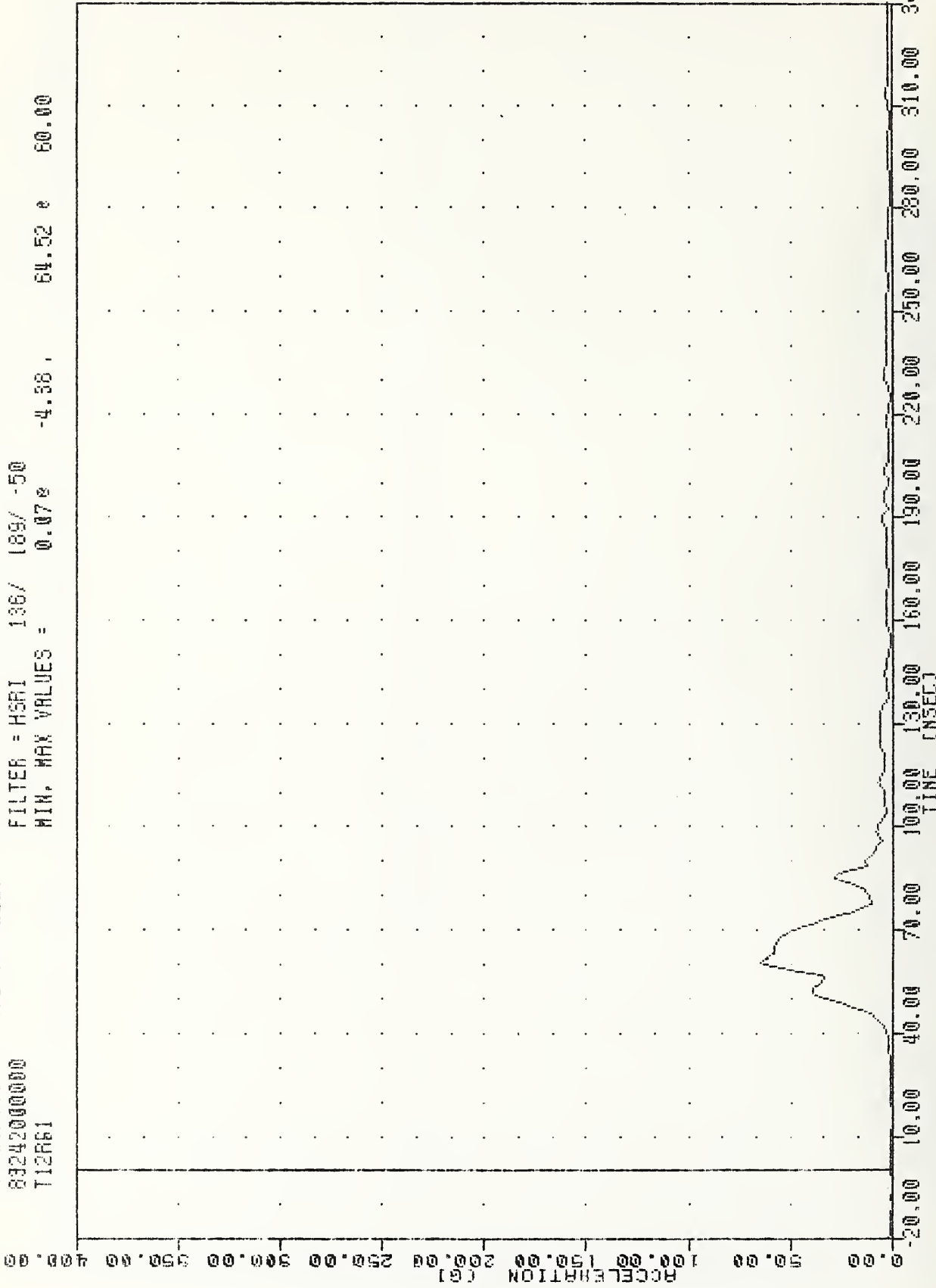
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER LOWER SPINE ACCELERATION Z AXIS

TAC 830830  
EVALUATION OF HOO VW FLEET  
83242000000  
T12R61

PLOT DATE 6-SEP-83 09:23:37

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = 0.07e -4.58 , 64.52 e 60.00



MOWING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER LOWER SPINE RESULTANT

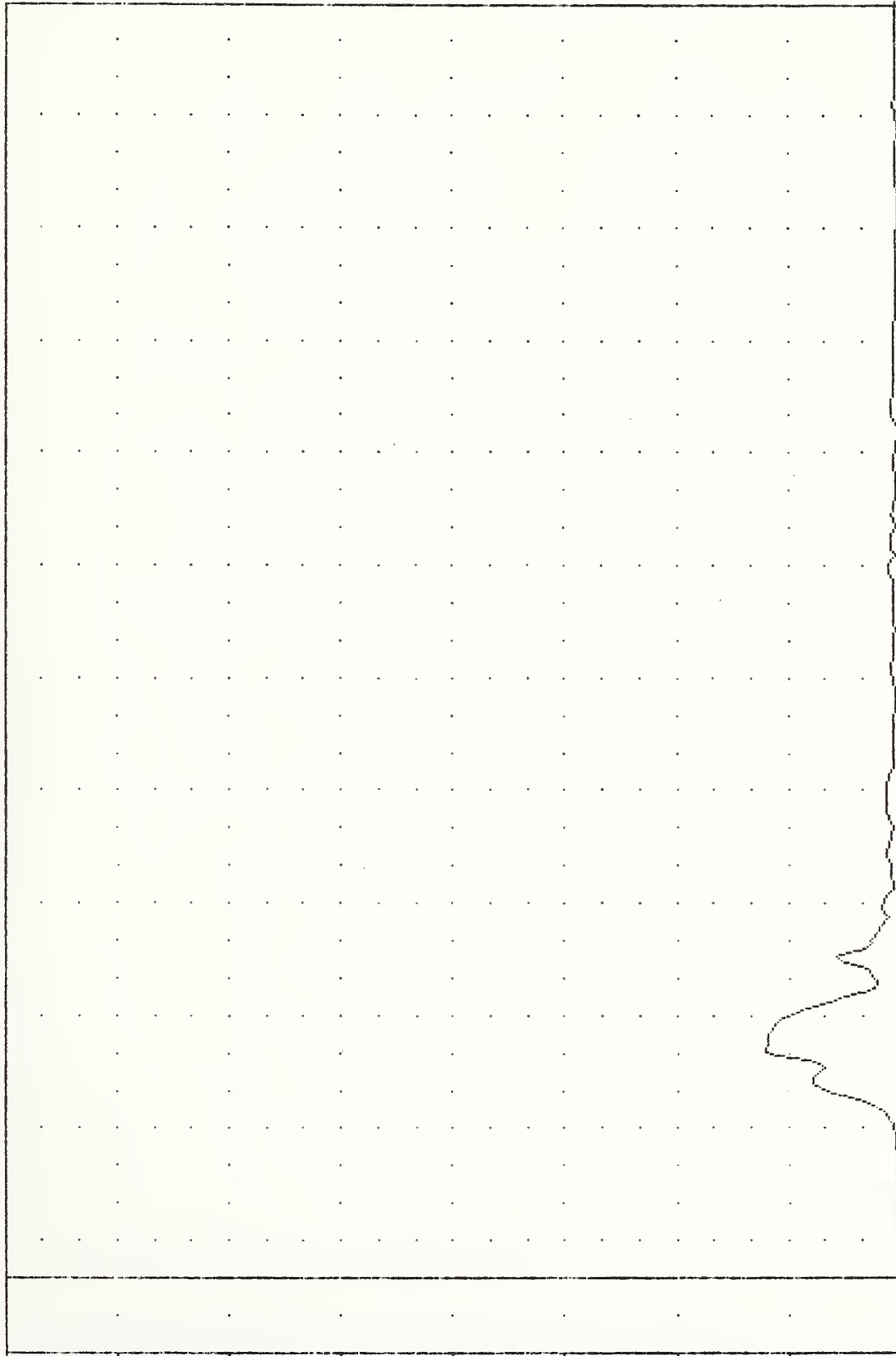
IHC  
EVALUATION OF MOD VW FLEET  
83242000000  
T12R61

FLUT DATE 8-SEP-83 10:13:06

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = 0.07g 60.13 g 60.62

ACCELERATION (G)



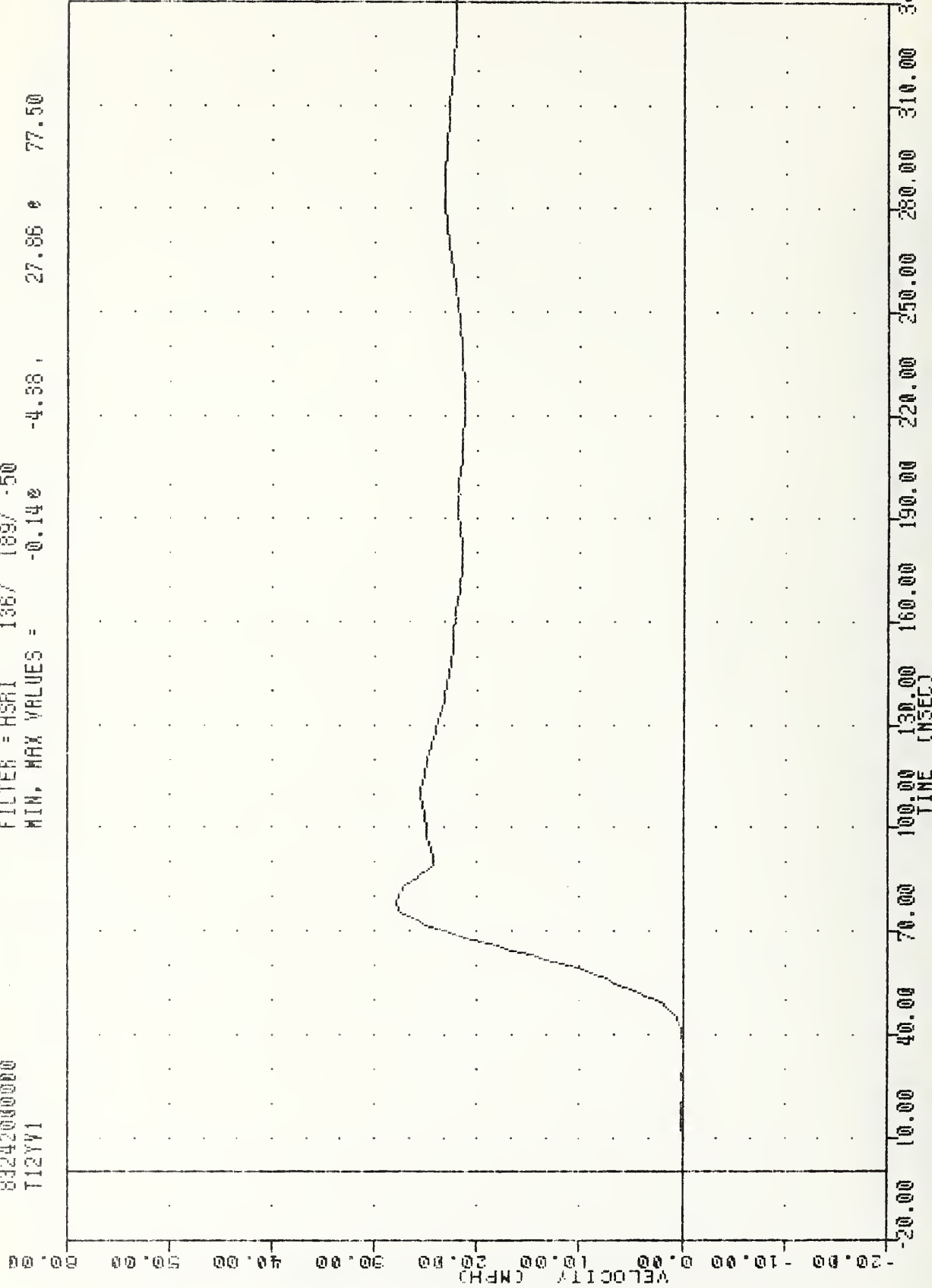
0.00  
50.00  
100.00  
150.00  
200.00  
250.00  
300.00  
350.00  
400.00  
-20.00  
0.00  
10.00  
40.00  
70.00  
100.00  
130.00  
160.00  
190.00  
220.00  
250.00  
280.00  
310.00  
340.00  
TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER LOWER SPINE RESULTANT USING T12Y6A

TAC  
EVALUATION OF MOD VN FLEET  
8324200000  
T12YV1

PLUT DATE 6-SEP-83 15:06:46

FILTER = HSAI 136/ 189/ -50  
MIN, MAX VALUES = -0.14e -4.88, 27.86 e 77.50

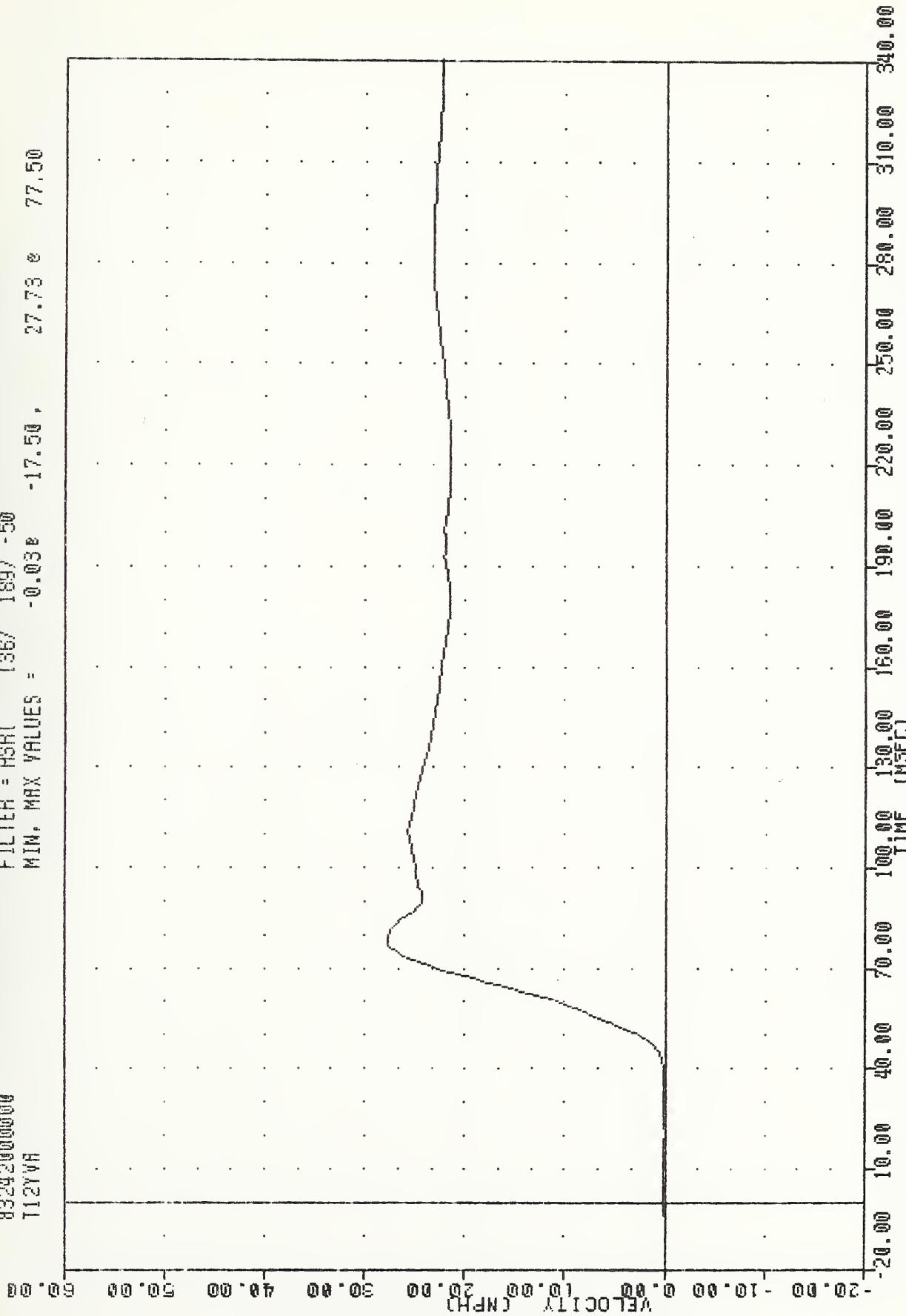


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING T12YV1

T8C  
EVALUATION OF MOD VW FLEET  
83242000000  
T12YVA

PLOT DATE 6-SEP-83 15:06:46

FILTER = HSRC 136/ 189/ -50  
MIN. MAX VALUES = -0.03e -17.50 , 27.73 e 77.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING T12YGA

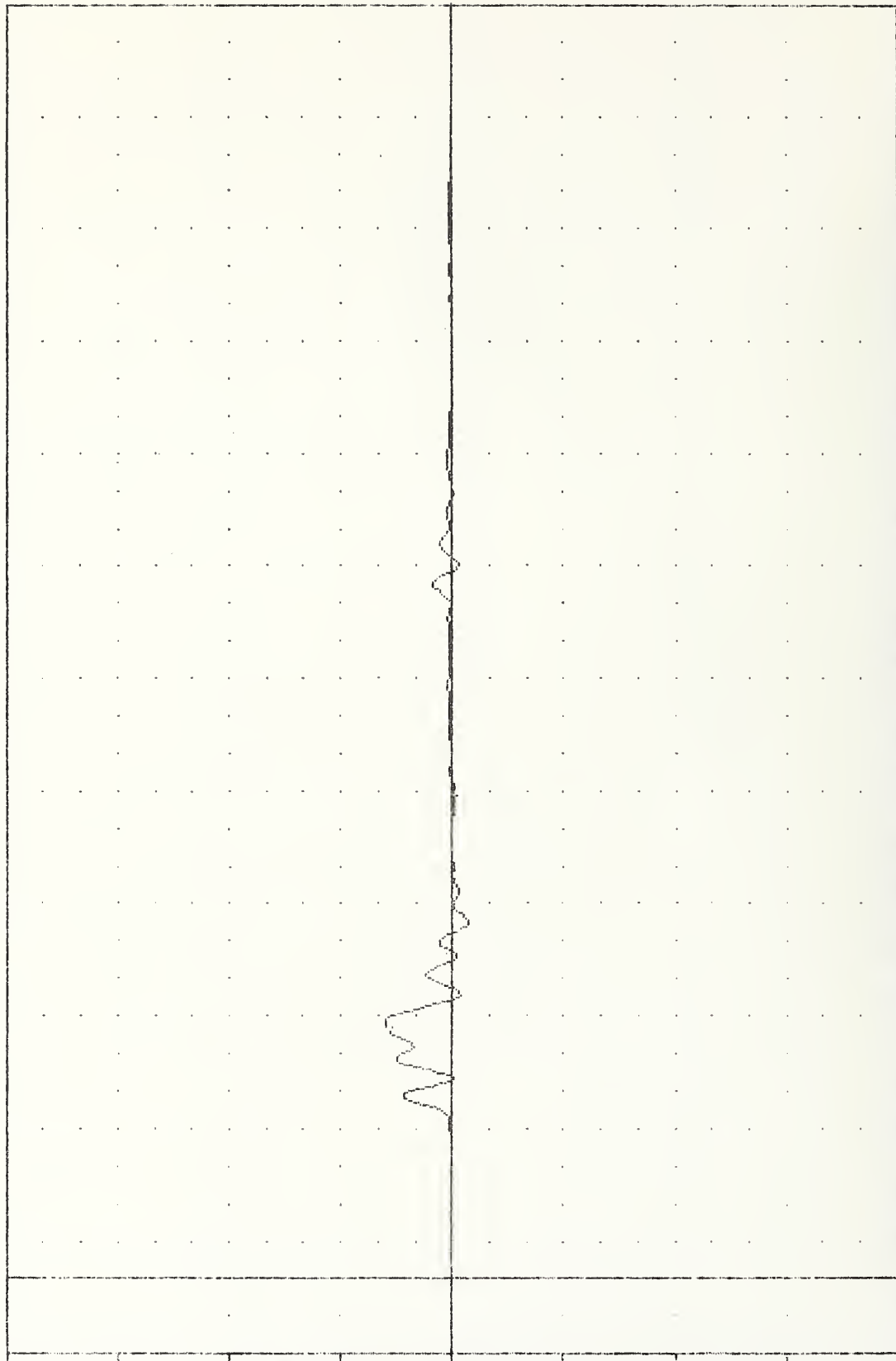
PLT DATE 2-SEP-88 15:46:27

832420000000

FILTER = HSAI 135/ 189/ -50

MIN. MAX VALUES = -12.64e 94.38 , 54.66 \* 68.87

ACCELERATION (G)



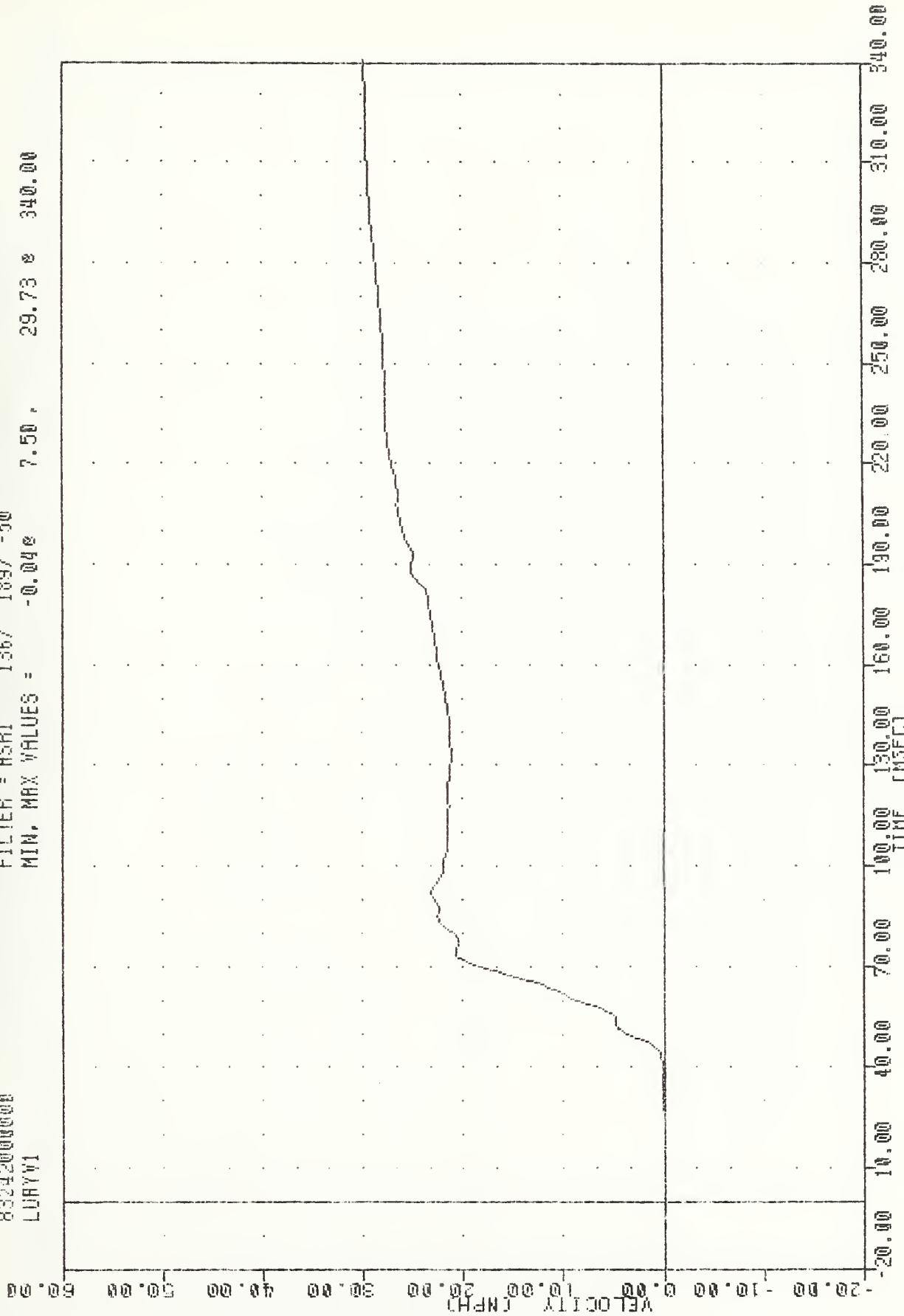
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT DRIVER LEFT UPPER RIB ACCELERATION Y AXIS



TRC  
EVALUATION OF MOD VV FLEET  
83242000000  
LURYV1

PLOT DATE 6-SEP-83 15:06:46

FILTER = HSRI 136/ 189/ -50  
MIN. MAX VALUES = -0.04e 7.50 , 29.73 e 340.00

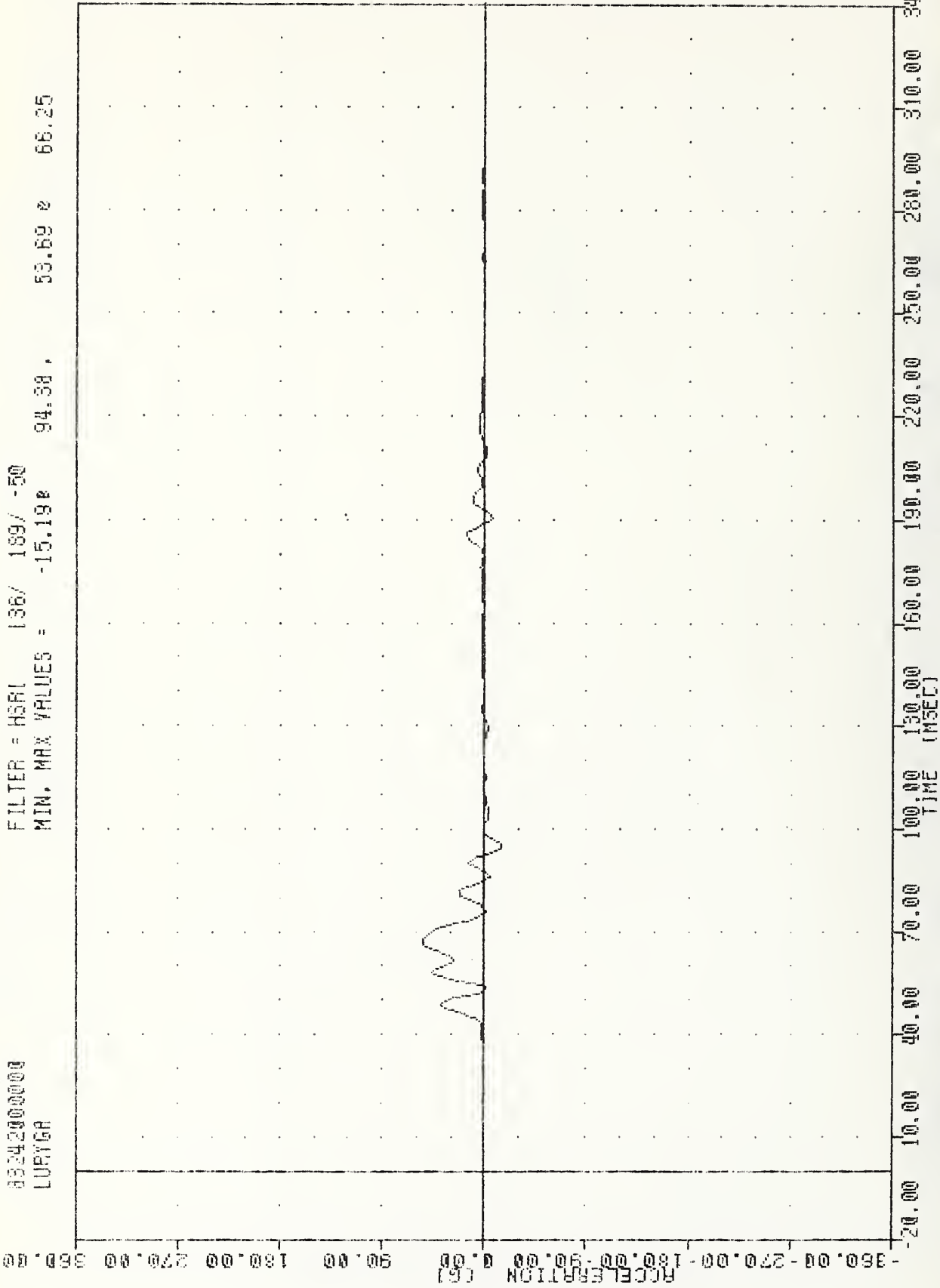


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING LURYGI

PLOT DATE 2-SEP-83 15:46:27

IRL 830830  
EVALUATION OF HOD VW FLEET  
8324200000  
LURY6R

FILTER = HSR1 136/ 189/ -50  
MIN. MAX VALUES = -15.19% 94.38 , 53.69 % 66.25



350.00  
300.00  
250.00  
200.00  
150.00  
90.00  
0.00  
-90.00  
-150.00  
-200.00  
-250.00  
-300.00  
-350.00

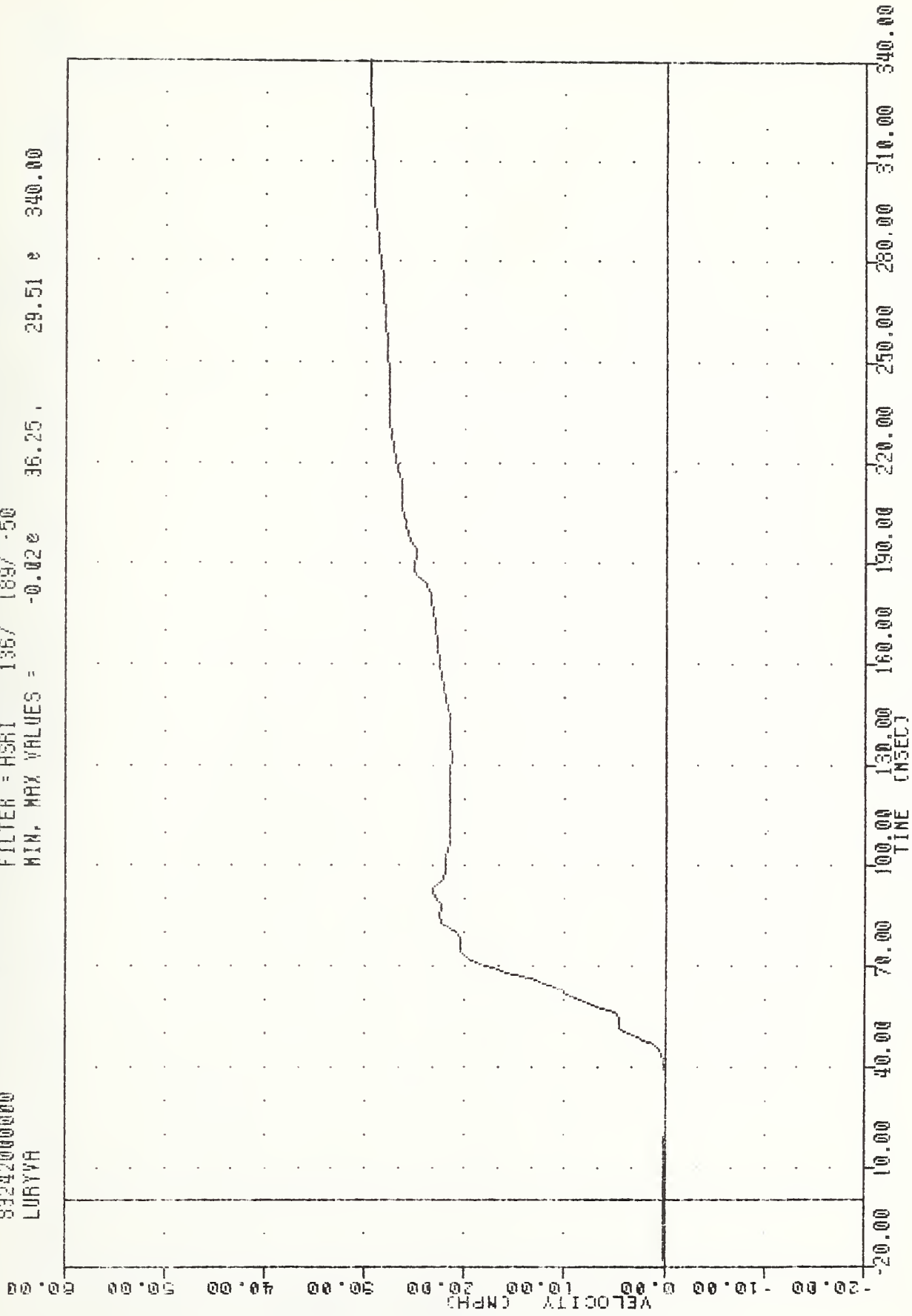
0.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00 110.00 120.00 130.00 140.00 150.00 160.00 170.00 180.00 190.00 200.00 210.00 220.00 230.00 240.00 250.00 260.00 270.00 280.00 290.00 300.00 310.00 320.00 330.00 340.00

TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER LEFT UPPER RIB ACCELERATION -2 Y AXIS

TAC  
EVALUATION OF MDD VW FLEET  
83242000000  
LURYVA

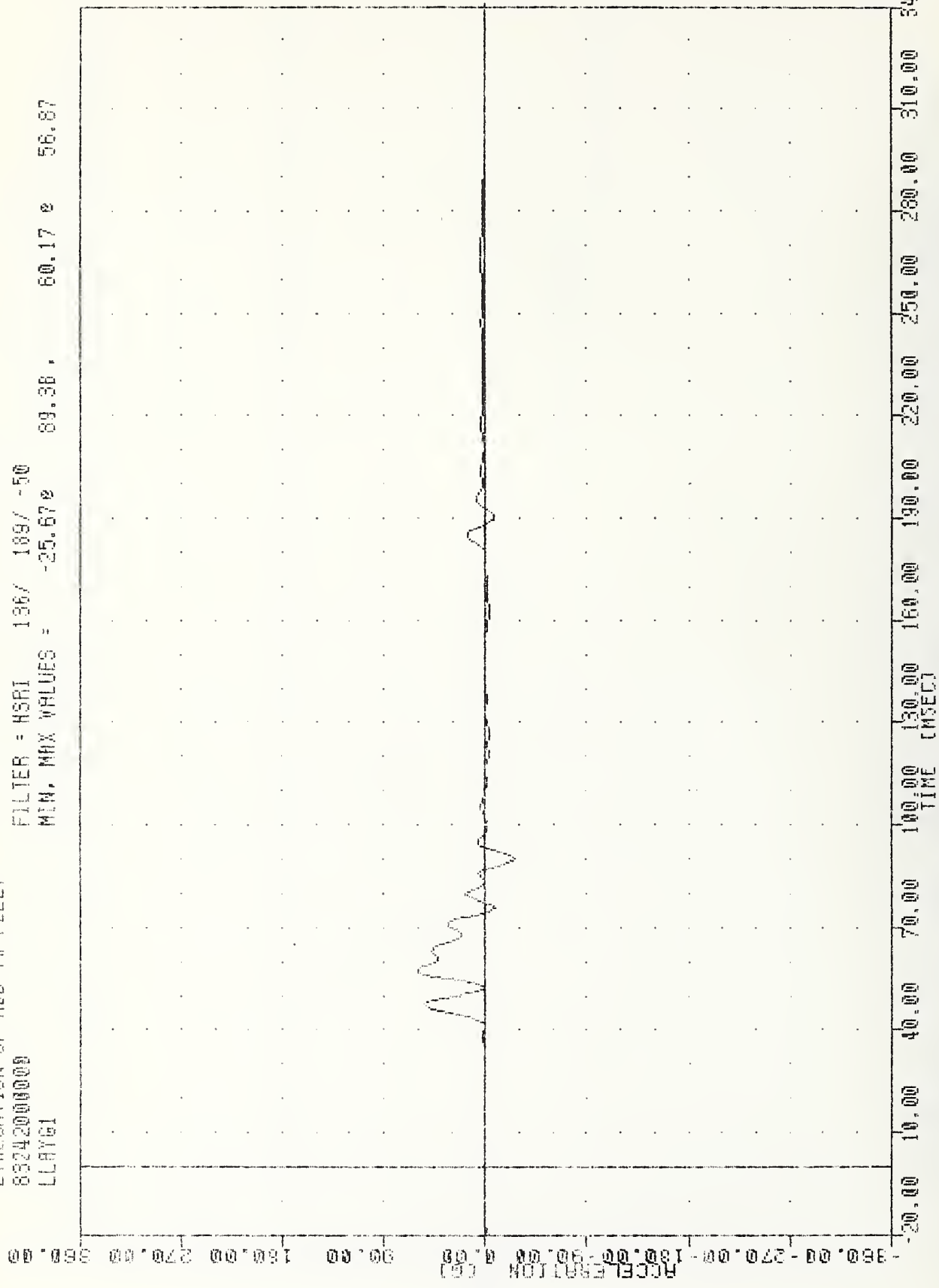
PLOT DATE 6-SEP-83 15:06:46  
FILTER = HSRI 186/ 189/ -50  
MIN. MAX VALUES = -0.02e 36.25, 29.51 e 340.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING LURYVA

TRE \* 8300360  
 EVALUATION OF MDD VW FLEET  
 83242000009  
 LLAGGI

PLOT DATE 2-SEP-83 16:48:27  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -25.67% 89.38, 60.17 % 56.87



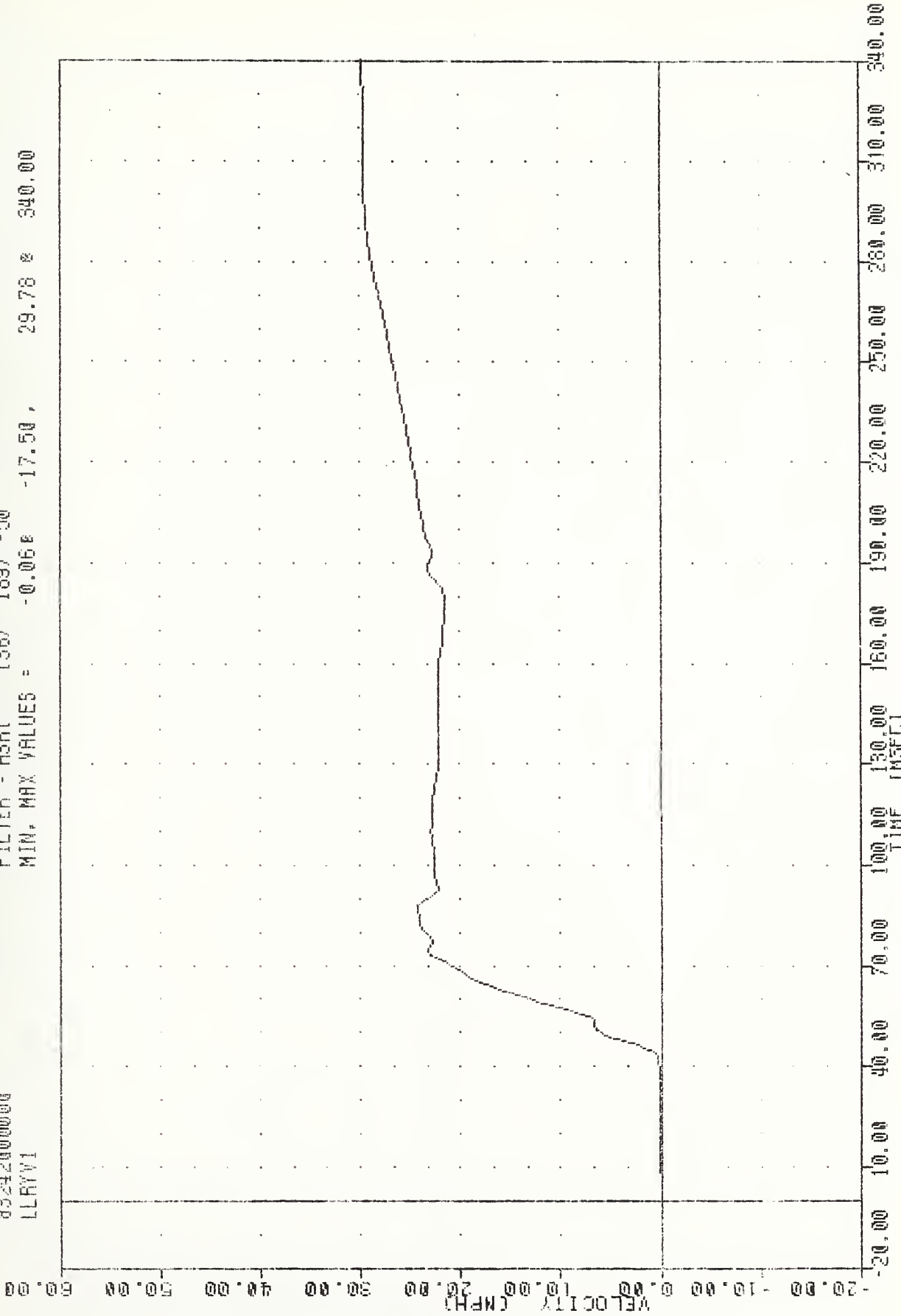
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER LEFT LOWER RIB ACCELERATION Y AXIS

IRC  
EVALUATION OF MOD YW FLEET  
83242000000  
LLRYV1

PLOT DATE 8-SEP-83 09:42:44

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.06E -17.50, 29.78 E 340.00



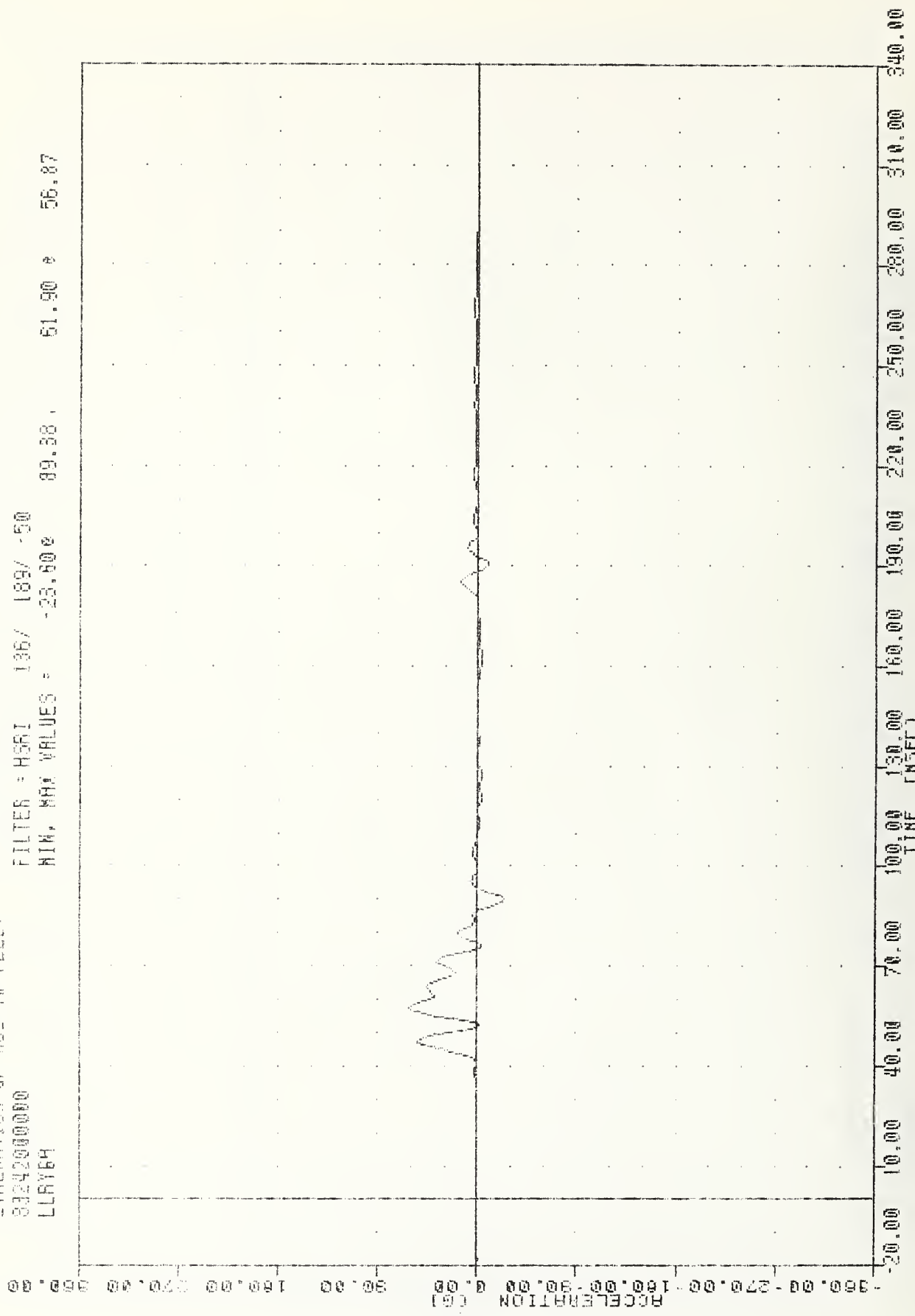
B-27

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING L1AYG1

IHL  
 EVALUATION OF HOC VEHICLE FLEET  
 83242000000  
 LLRY64

PLOT UNIT 43000000 10:46:27

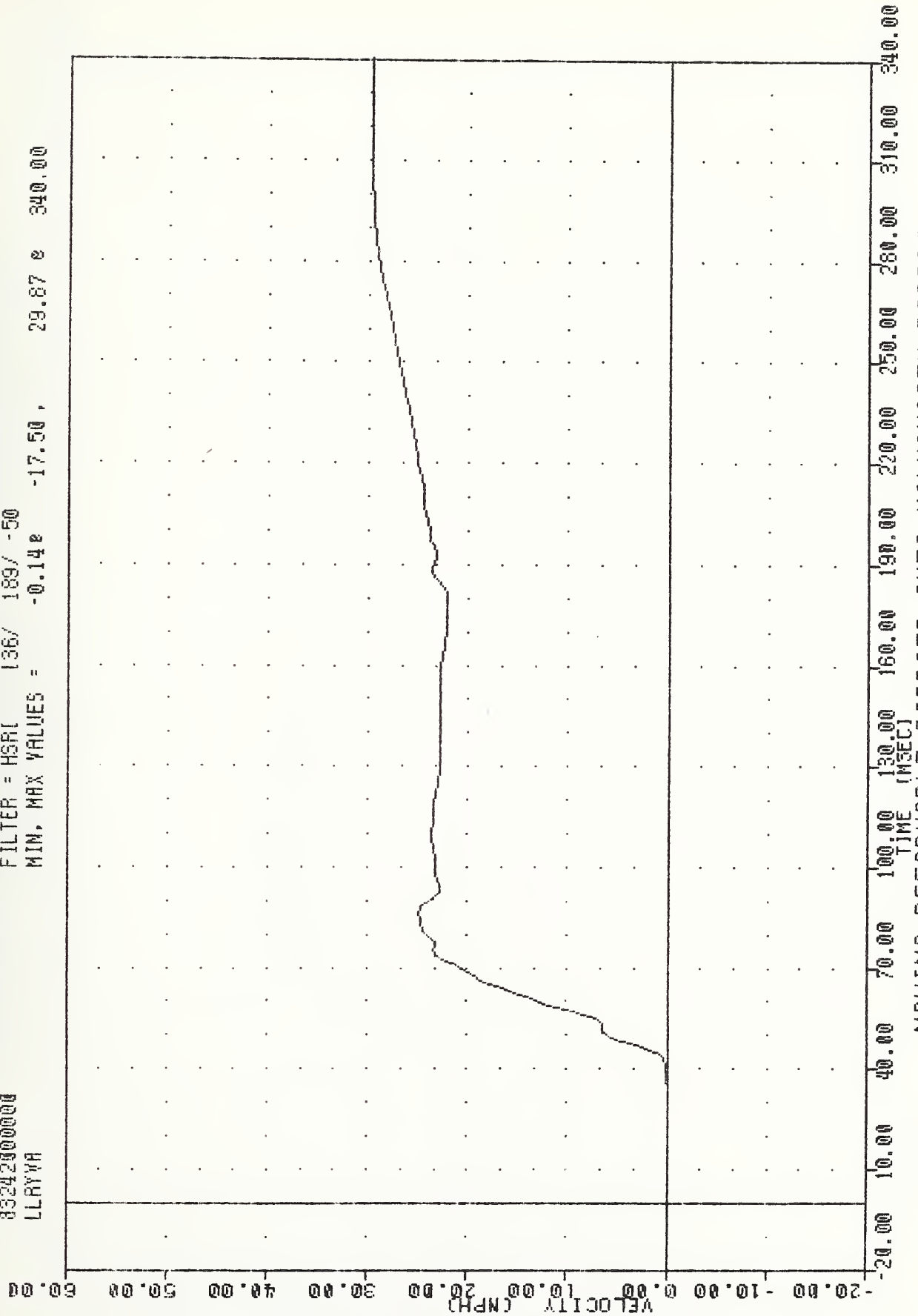
FILTER = HSAI 136/ 189/ -50  
 MIN. MAX VALUES = -28.600 89.38 61.90 56.87



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER LEFT LOWER RIB ACCELERATION +2 Y AXIS

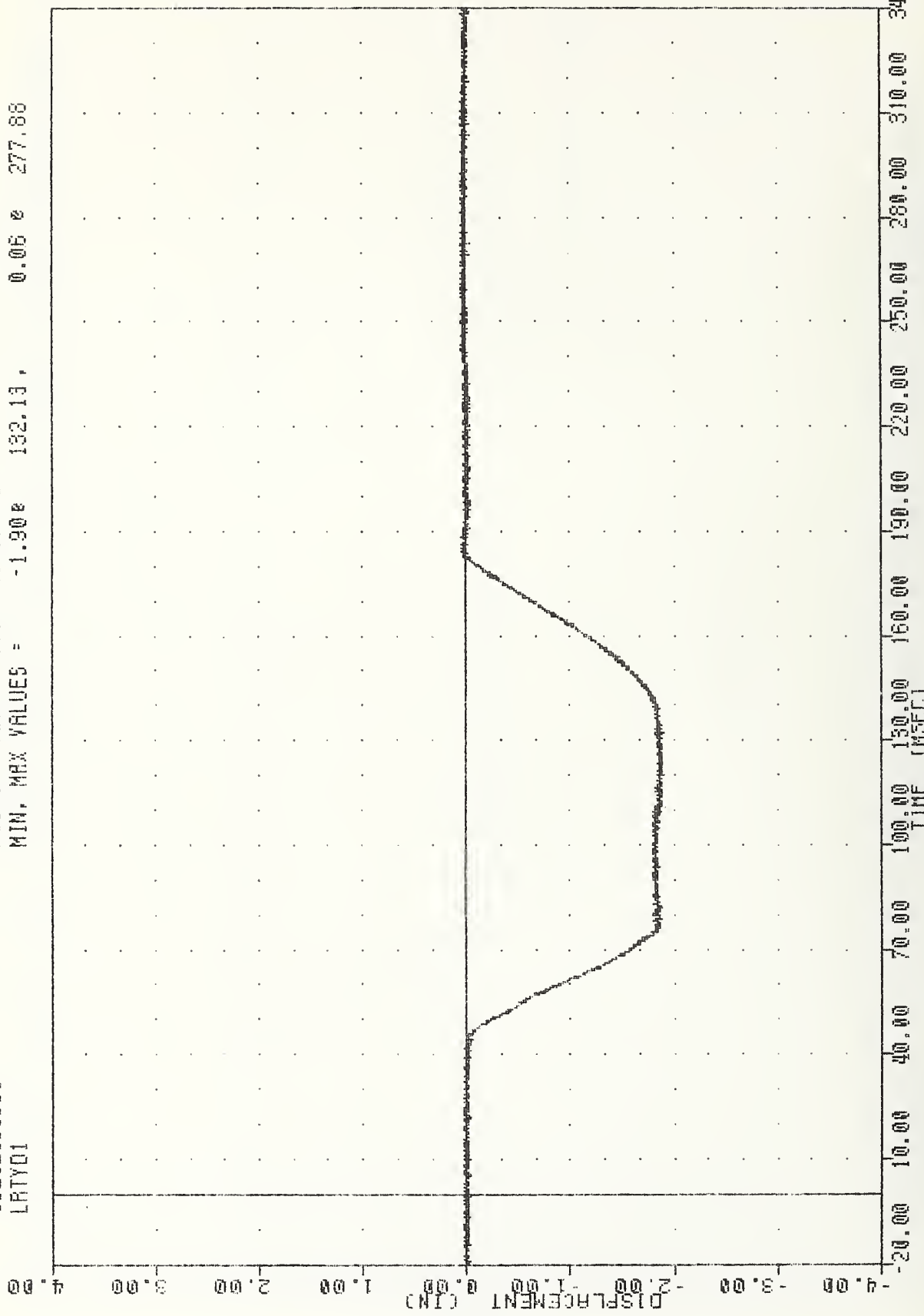
TRC  
 EVALUATION OF MOD YW FLEET  
 832420000000  
 LLYYVA

PLOT DATE 6-SEP-93 15:06:46  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -0.14e -17.50 , 29.87 e 340.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LLYYVA

TRC 830830 PLOT DATE 2-SEP-83 14:57:33  
 EVALUATION OF MOD YW FLEET  
 83242000000 FILTER = ALPF 1650/ 5217/ -40  
 LRTYD1 MIN. MAX VALUES = -1.90e 132.13, 0.05 e 277.88

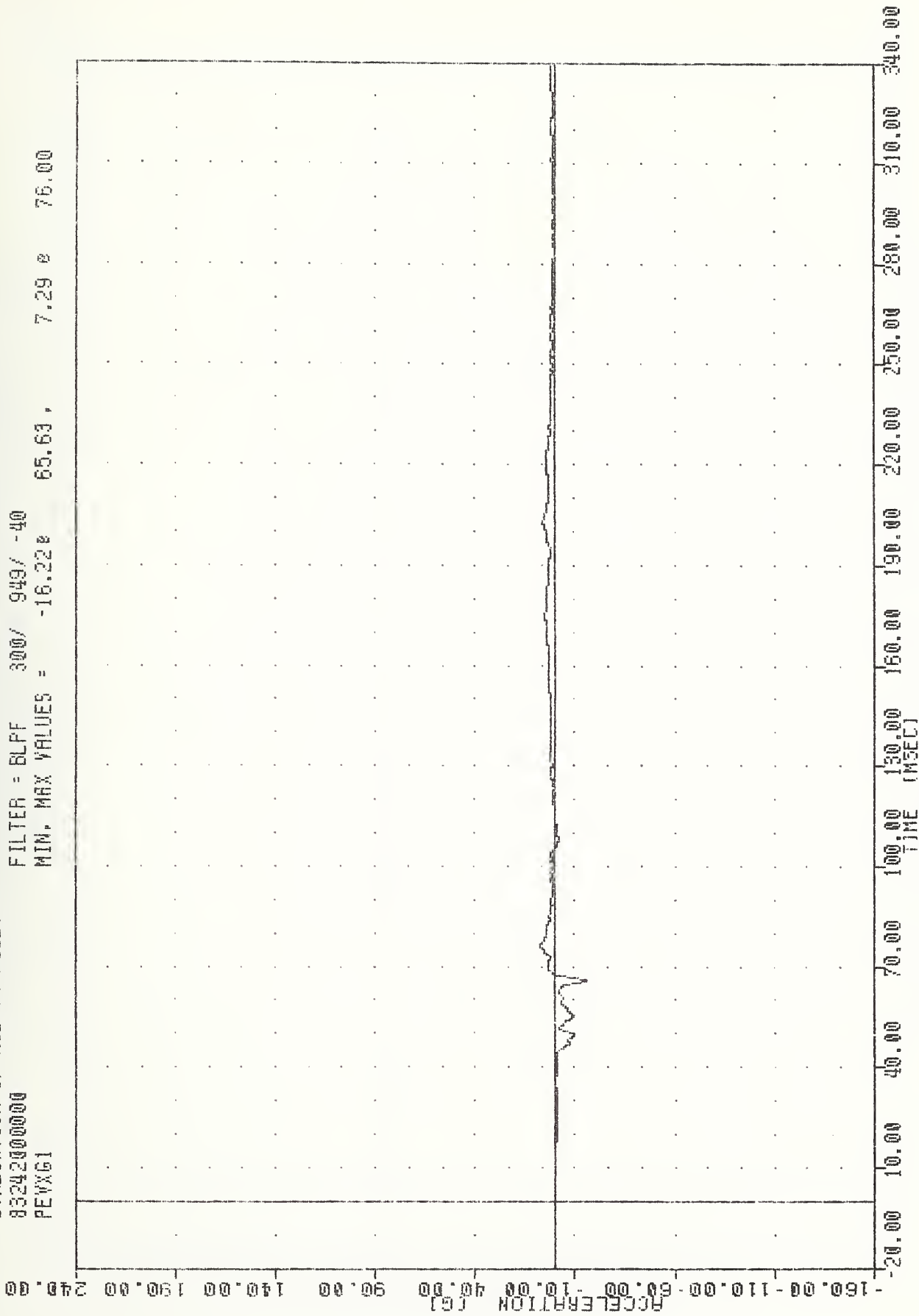


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DRIVER LEFT RIG TO SPINE DISPLACEMENT INCHES



TRC  
EVALUATION OF MOD YW FLEET  
83242000000  
PEVXG1

PLUT DATE 2-SEP-83 14:57:33  
FILTER = BLPF 300/ 949/ -40  
MIN. MAX VALUES = -16.22e 65.63, 7.29 e 76.00

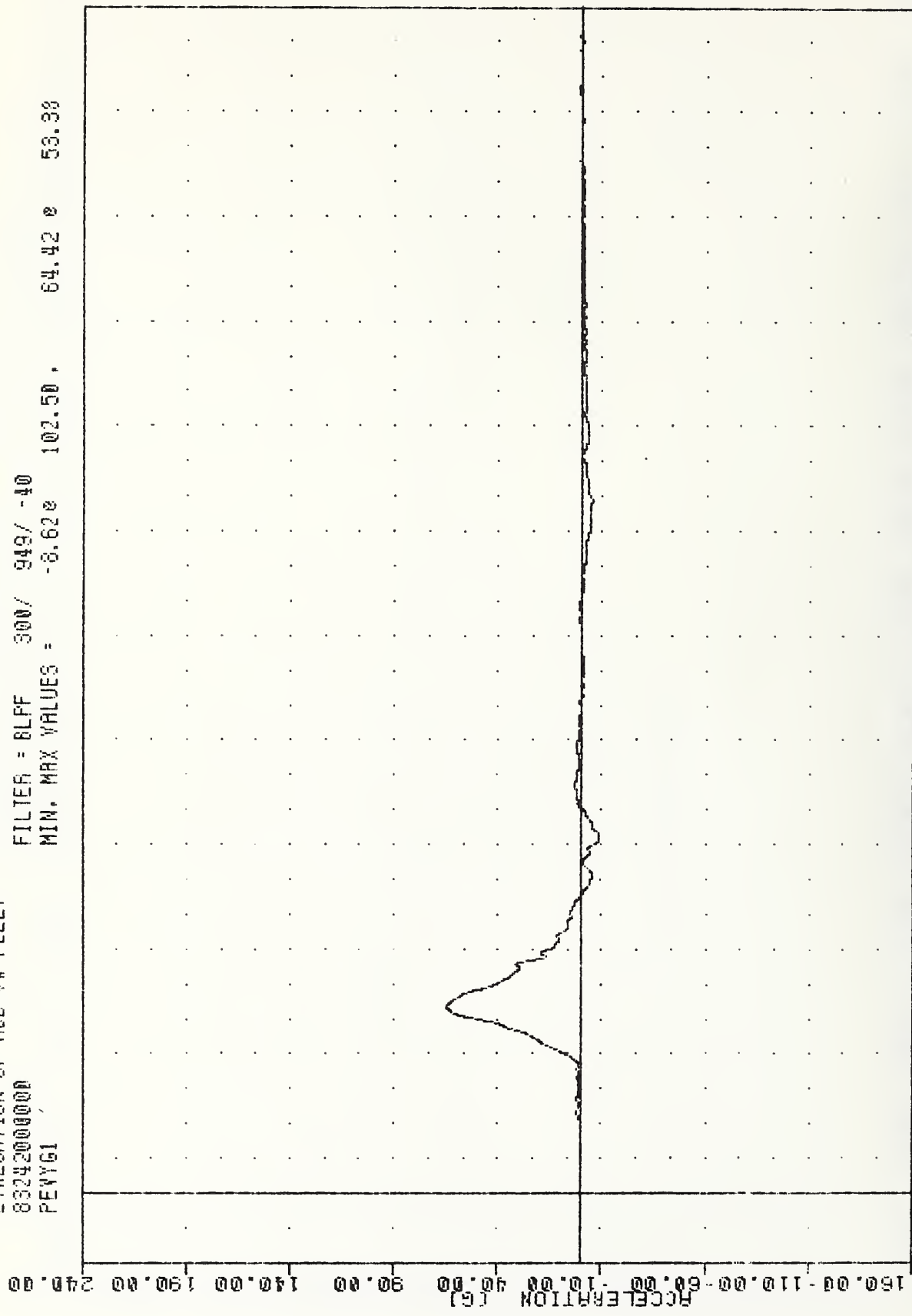


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER PELVIS ACCELERATION X AXIS

IML  
EVALUATION OF MOD VW FLEET  
83242000000  
PEVY61

PLOT DATE 2-SEP-83 14:57:33

FILTER = BLFF 300/ 949/ -10  
MIN. MAX VALUES = -8.62e 102.50 , 64.42 e 53.38



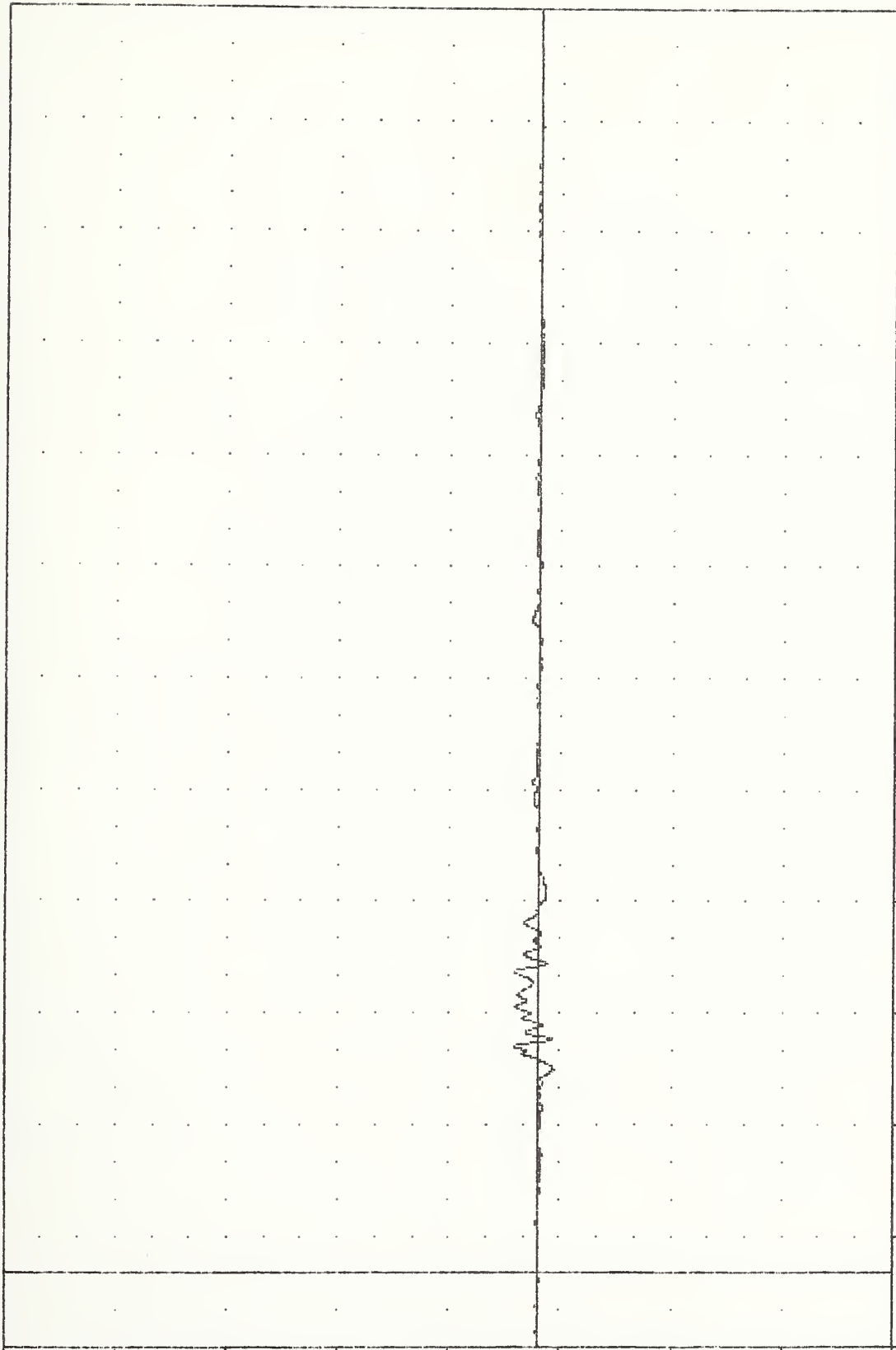
ACCELERATION (G)  
-150.00 -110.00 -70.00 -30.00 10.00 50.00 90.00 130.00 170.00 210.00 250.00 290.00 330.00 370.00  
TIME (MSEC)  
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER PELVIS ACCELERATION Y AXIS

TRC , 830830 -  
EVALUATION OF MOD VN FLEET  
8324200000  
PEVIG1

PLOT DATE 2-SEP-83 14:57:33  
FILTER = BLPF 300/ 949/ -40  
MIN. MAX VALUES = -6.97e 54.75 , 10.95 e 60.88

ACCELERATION (G)  
-150.00 -140.00 -130.00 -120.00 -110.00 -100.00 -90.00 -80.00 -70.00 -60.00 -50.00 -40.00 -30.00 -20.00



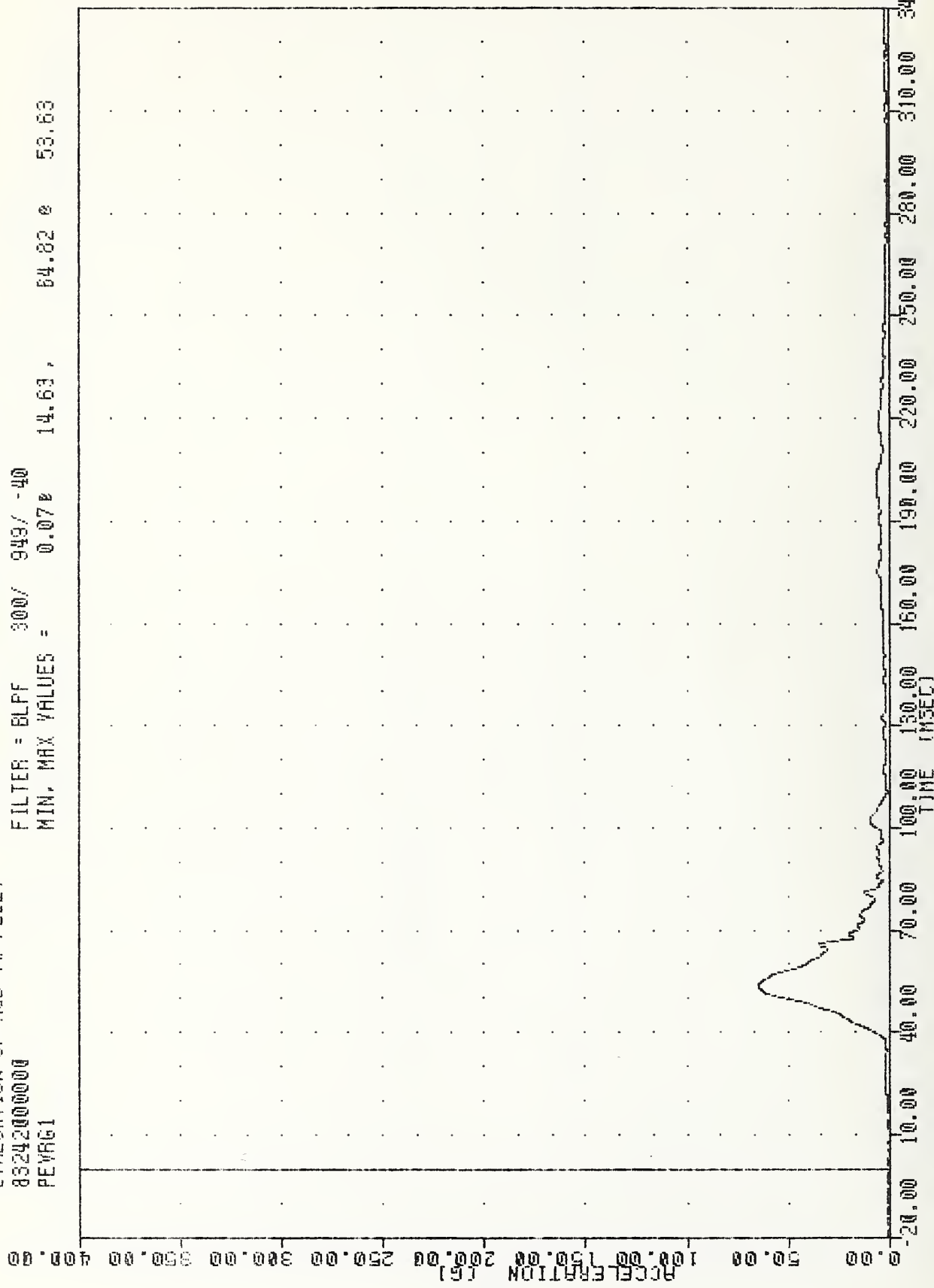
340.00  
310.00  
280.00  
250.00  
220.00  
190.00  
160.00  
130.00  
100.00  
70.00  
40.00  
10.00  
-20.00  
TIME (MSEC)  
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER PELVIS ACCELERATION Z AXIS

TRC 830830  
EVALUATION OF MOD YW FLEET  
83242000000  
PEVRG1

PLOT DATE 2-SEP-83 14:57:33

FILTER = BLPF 300/ 949/ -40

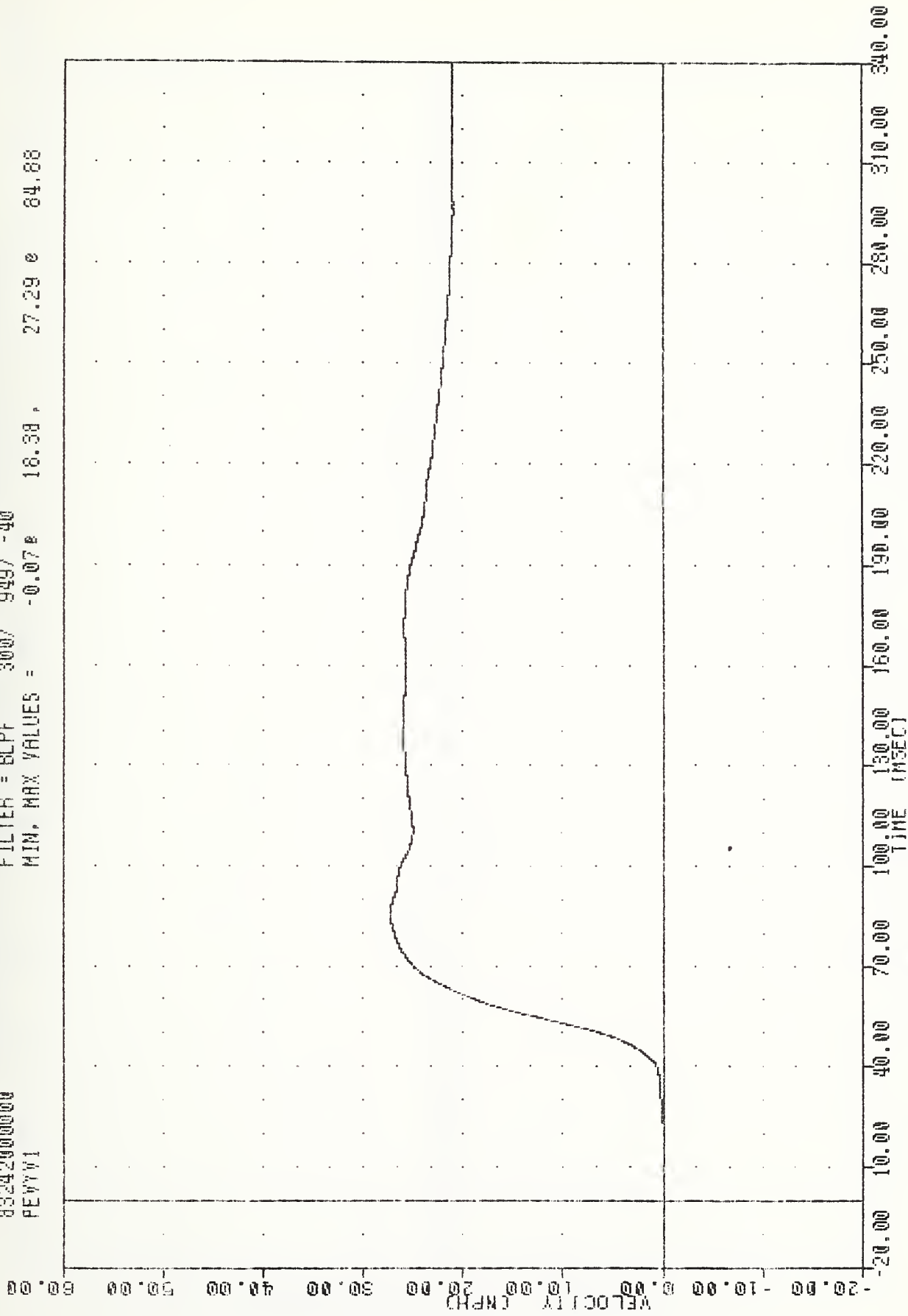
MIN. MAX VALUES = 0.07% 14.63, 64.82 @ 53.63



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DRIVER PELVIS RESULTANT

TRC  
EVALUATION OF MOD VW FLEET  
83242000000  
PEVYV1

PLU1 UR1E 0-SEP-83 14:46:22  
FILTER = 6LFF 300/ 949/ -40  
MIN. MAX VALUES = -0.07E 18.38 , 27.29 e .84.88

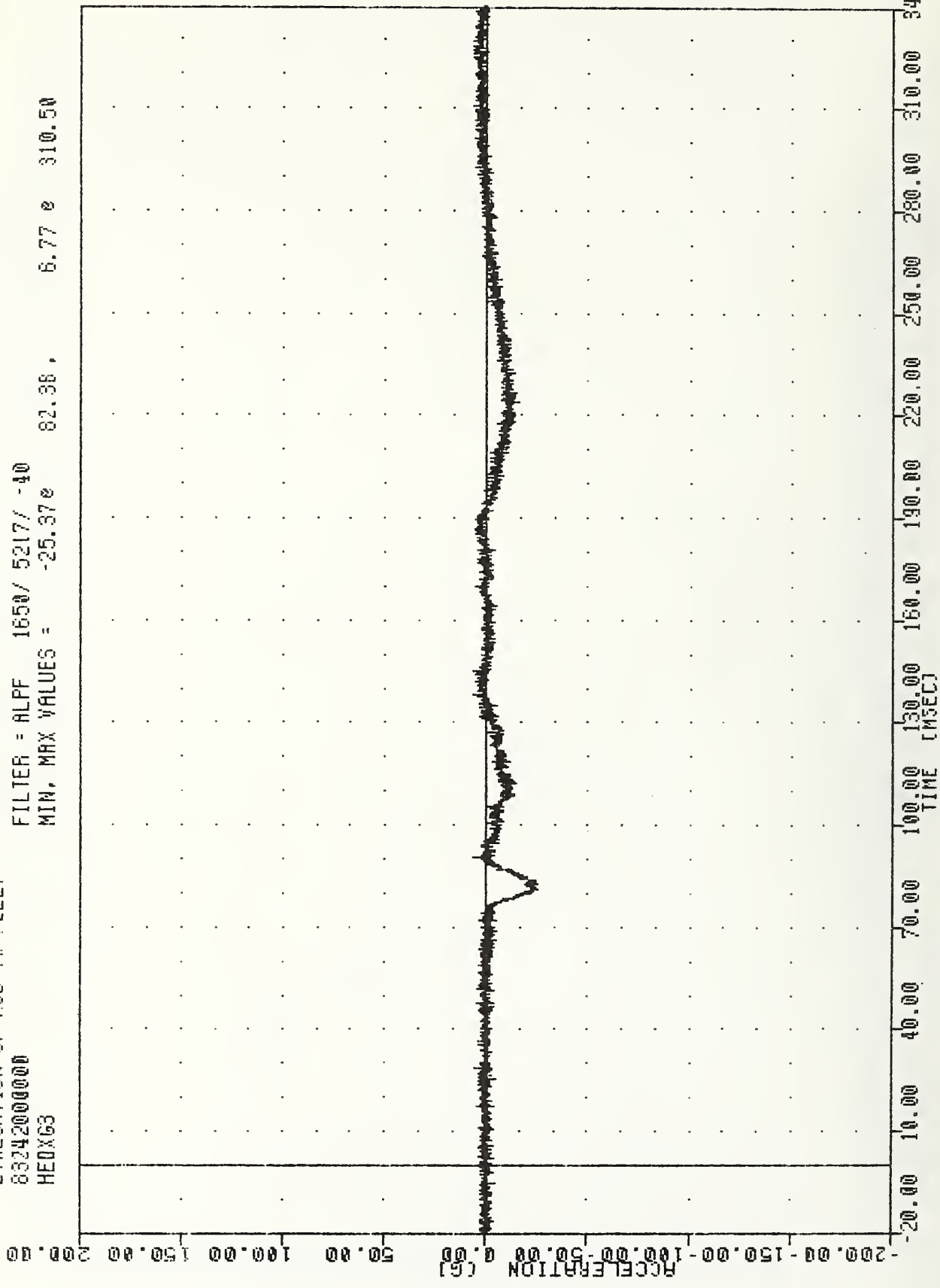


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING PEVYV1

TRC , 830830  
EVALUATION OF MDD VV FLEET  
83242000000  
HEDX63

PLOT DATE 2-SEP-83 14:57:33

FILTER = ALPF 1650/ 5217/ -40  
MIN. MAX VALUES = -25.37e 82.36 , 6.77 e 310.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER HEAD ACCELERATION X AXIS

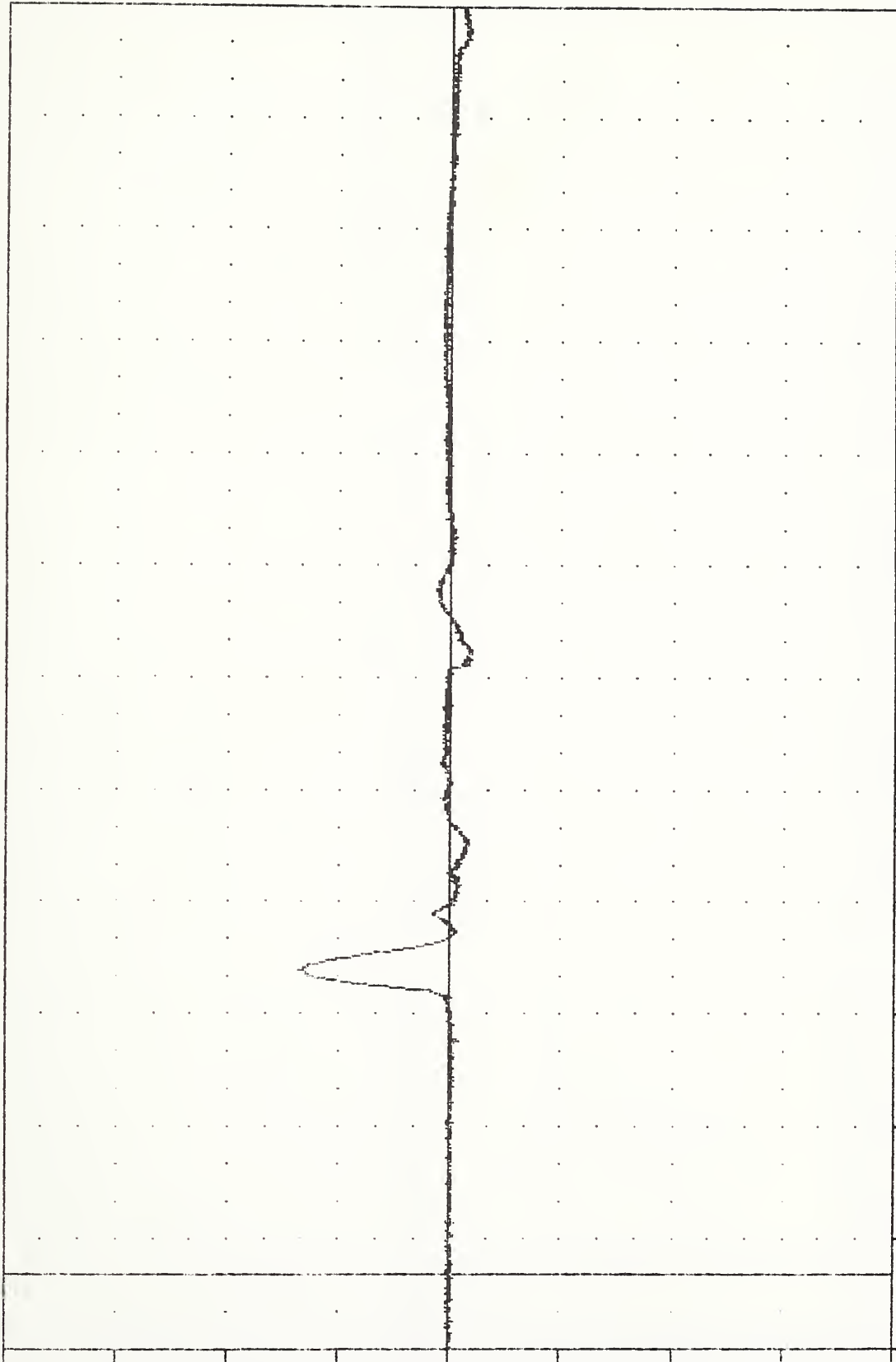
TAC  
EVALUATION OF MOD VW FLEET  
83242000000  
HEDY63

PLUT DATE 2-SEP-83 14:57:100

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -9.730 167.131 68.030 81.38

ACCELERATION (G)



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

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER HEAD ACCELERATION Y AXIS

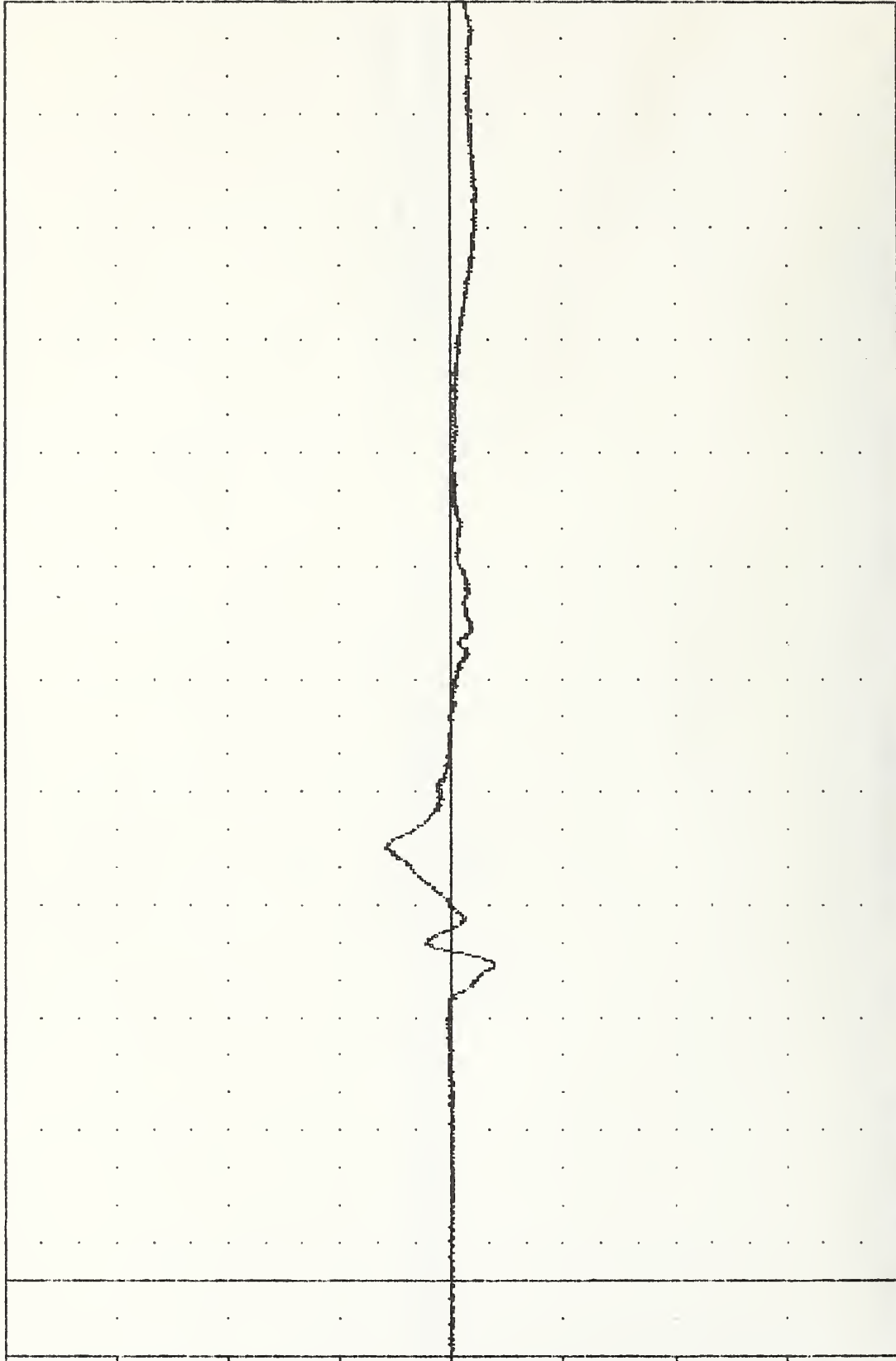
TRC , 830830  
EVALUATION OF MOD YW FLEET  
8324200000  
HEDZG3

PLOT DATE 2-SEP-83 14:57:33

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -18.99E 83.88 , 29.93 e 115.25

ACCELERATION (G)



TIME (MSEC)

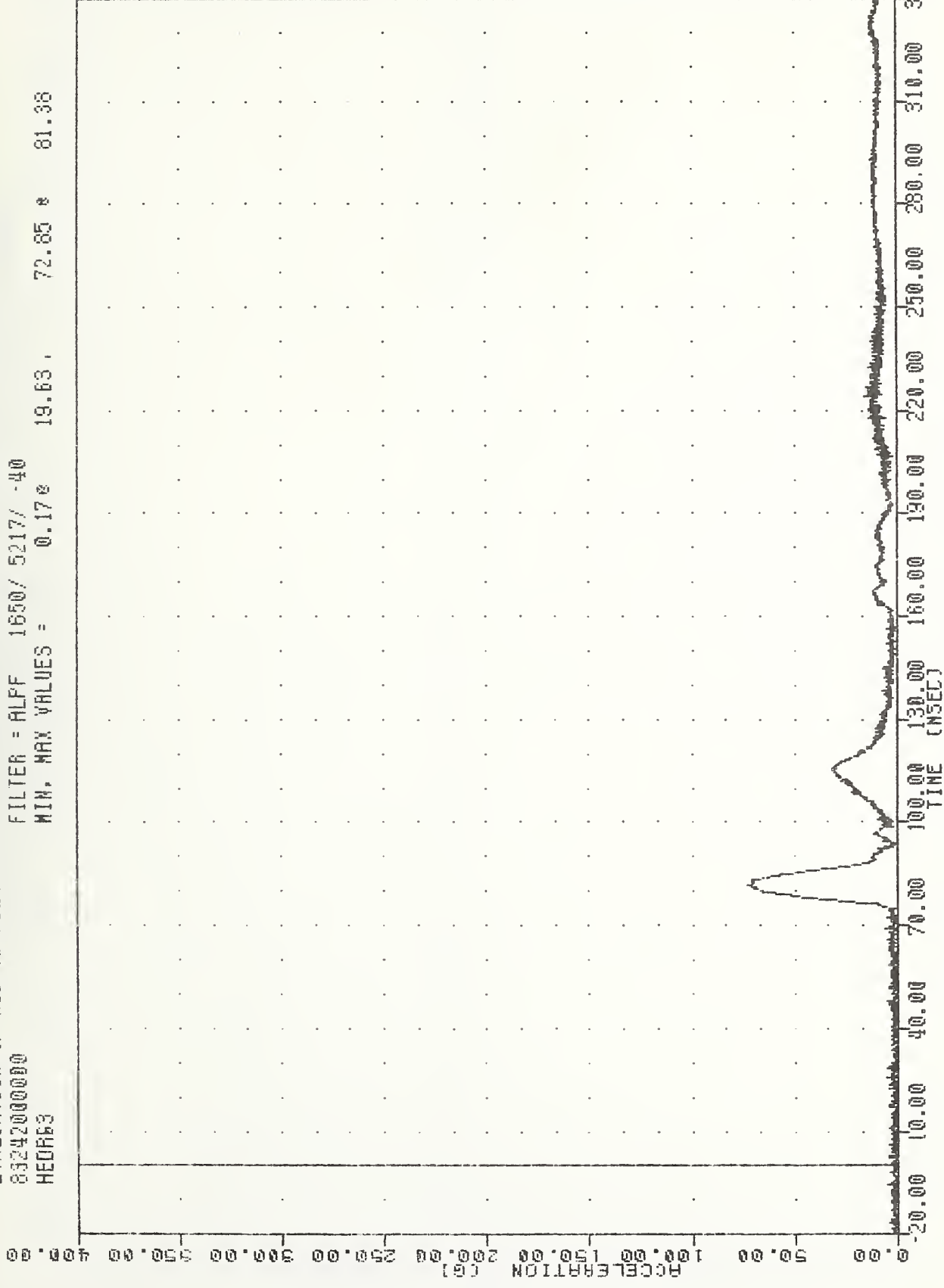
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER HEAD ACCELERATION Z AXIS



1HL  
EVALUATION OF MOD V# FLEET  
8324200000  
HEAD63

PLU1 0H1E 2-SEP-83 14:57:33

FILTER = ALPF 1650/ 5217/ -40  
MIN. MAX VALUES = 0.17e 19.63, 72.85 \* 81.38



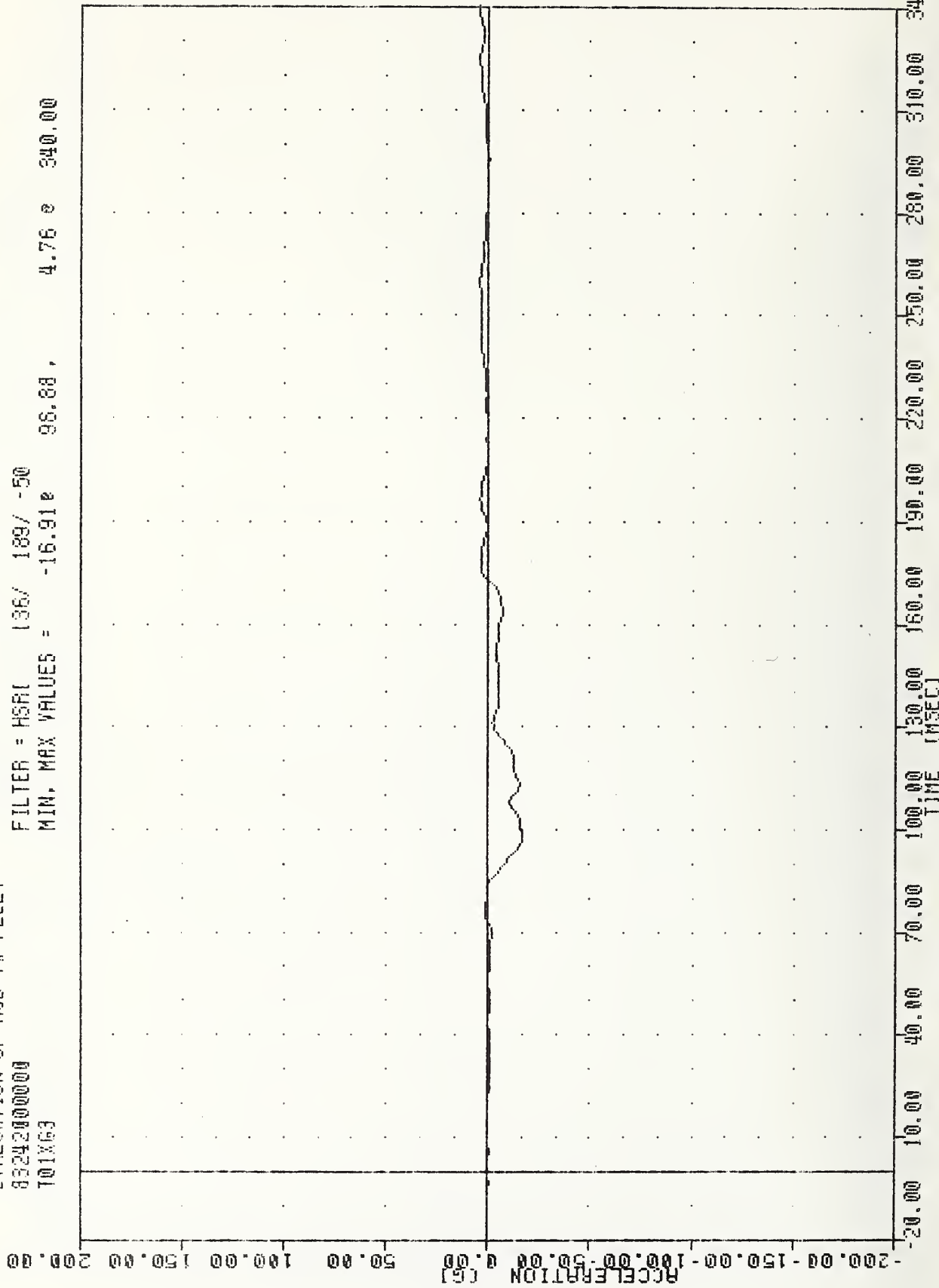
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER HEAD RESULTANT

TRC  
EVALUATION OF MOD VM FLEET  
83242000000  
T01X63

PLOT DATE 2-SEP-83 15:46:27

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -16.91e 96.88, 4.76 e 340.00



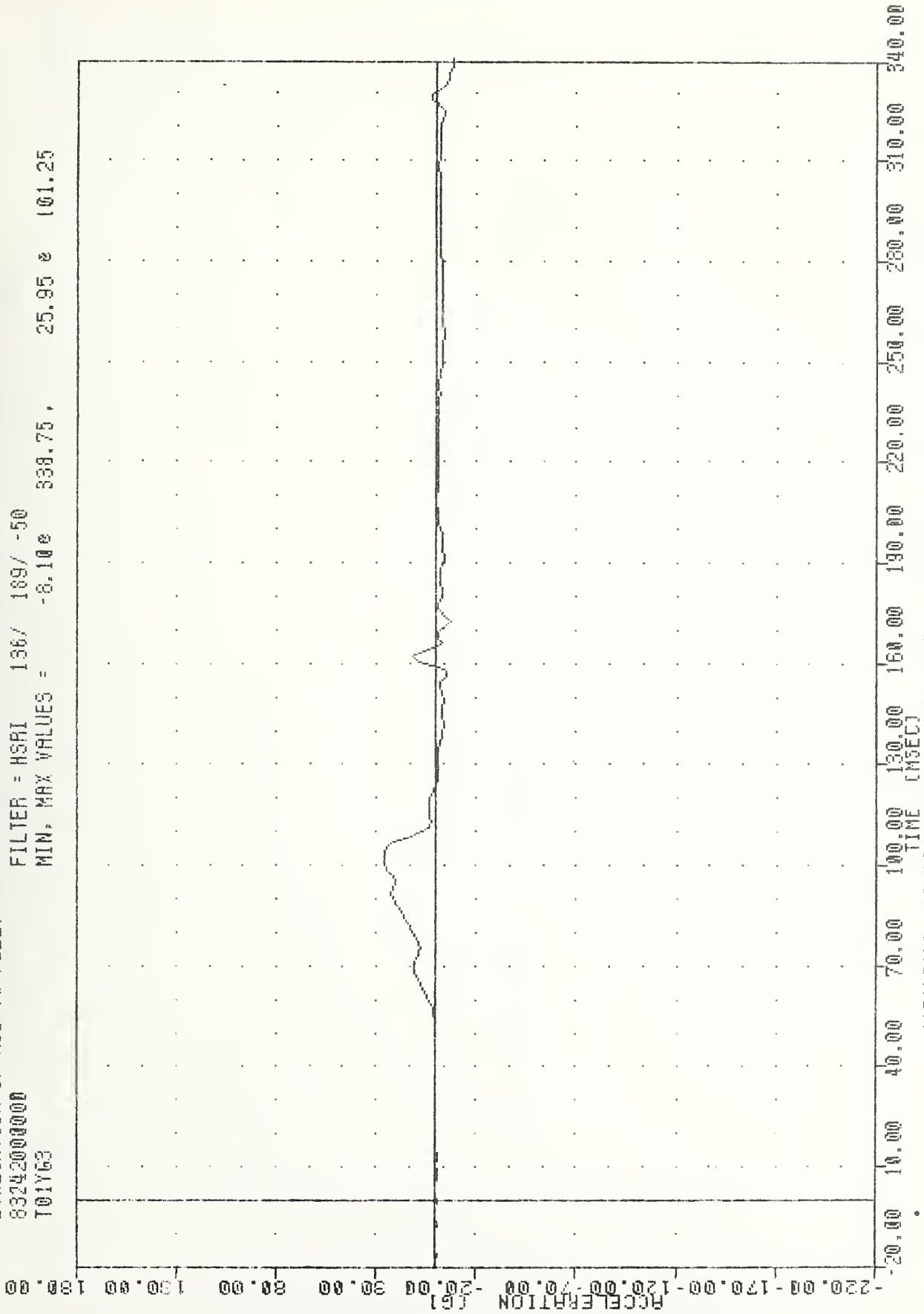
B-40

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER UPPER SPINE ACCIFFERATION X AXIS

IRC 830830  
EVALUATION OF MOD VW FLEET  
8324200000  
T01Y63

PLOT DATE 2-SEP-83 15:46:27

FILTER = HSRI 136/ 189/ -50  
MIN, MAX VALUES = -8.10e 338.75, 25.95 e 101.25



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER UPPER SPINE ACCELERATION Y AXIS

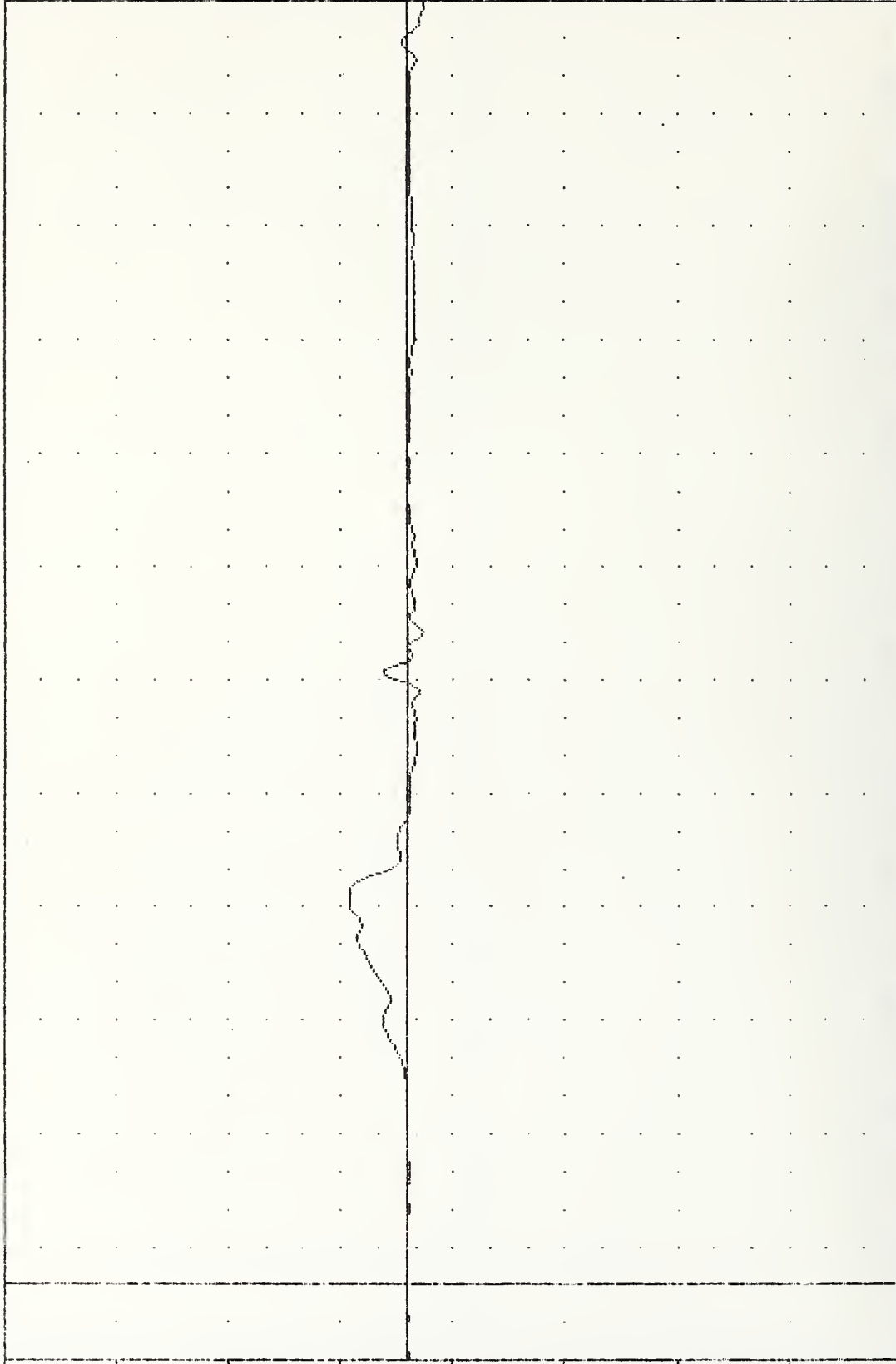
TAC  
EVALUATION OF HOO VM FLEET  
83242000000  
T01Y6C

PLOT DATE 2-SEP-83 15:46:27

FILTER = HSAI 136/ 189/ -50

MIN. MAX VALUES = -7.54\* 338.75, 26.36 \* 101.88

ACCELERATION (G)  
-220.00 -170.00 -120.00 -70.00 -20.00 20.00 50.00 100.00 150.00 199.00

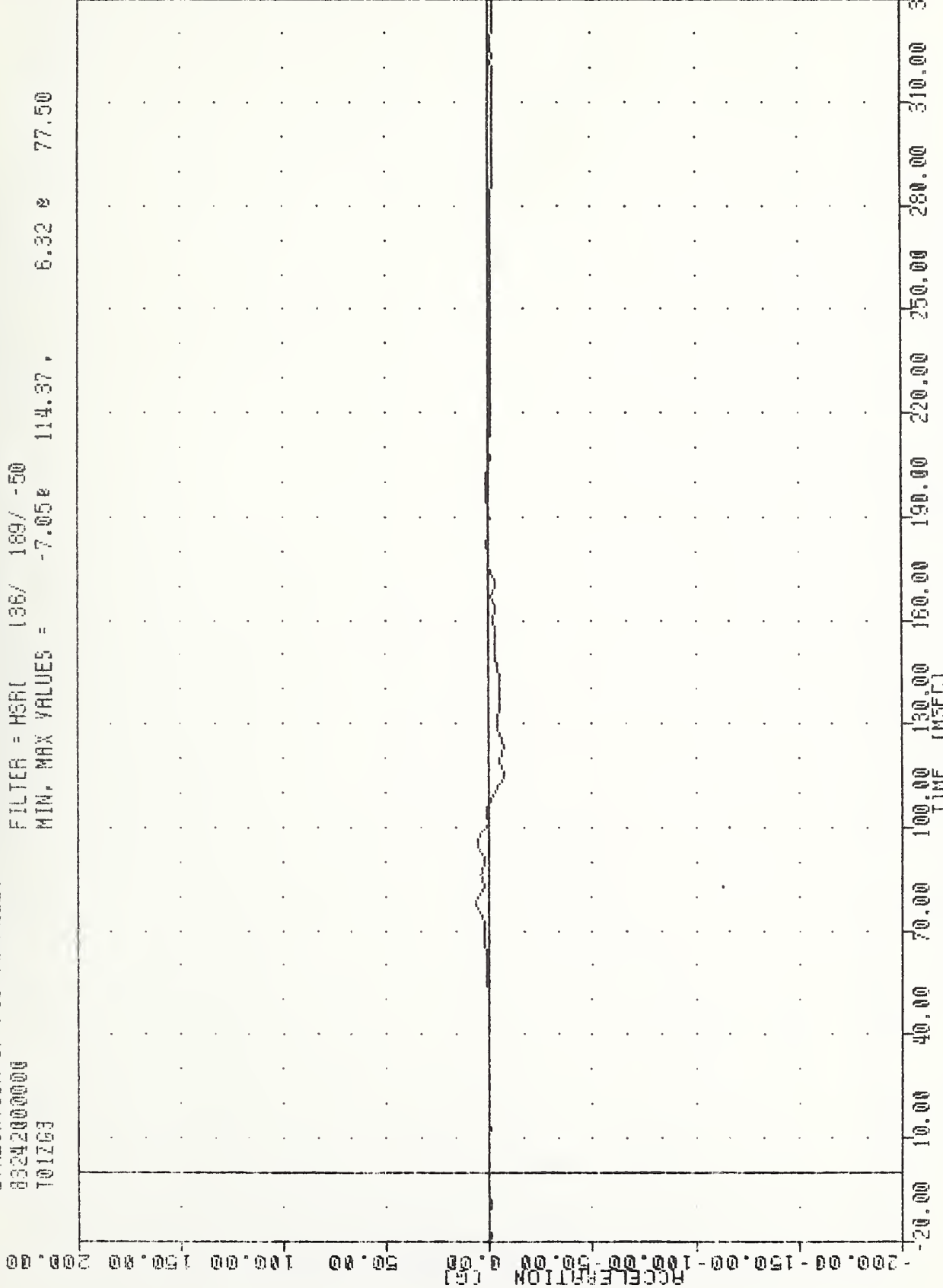


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
TIME (MSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER UPPER SPINE ACCELERATION -Z Y AXIS

INC 830830  
 EVALUATION OF MOD VN FLEET  
 8324200000  
 T017G3

PLOT DATE 2-SEP-83 15:46:27  
 FILTER = HSR1 136/ 189/ -50  
 MIN. MAX VALUES = -7.05e 114.37, 6.32 e 77.50

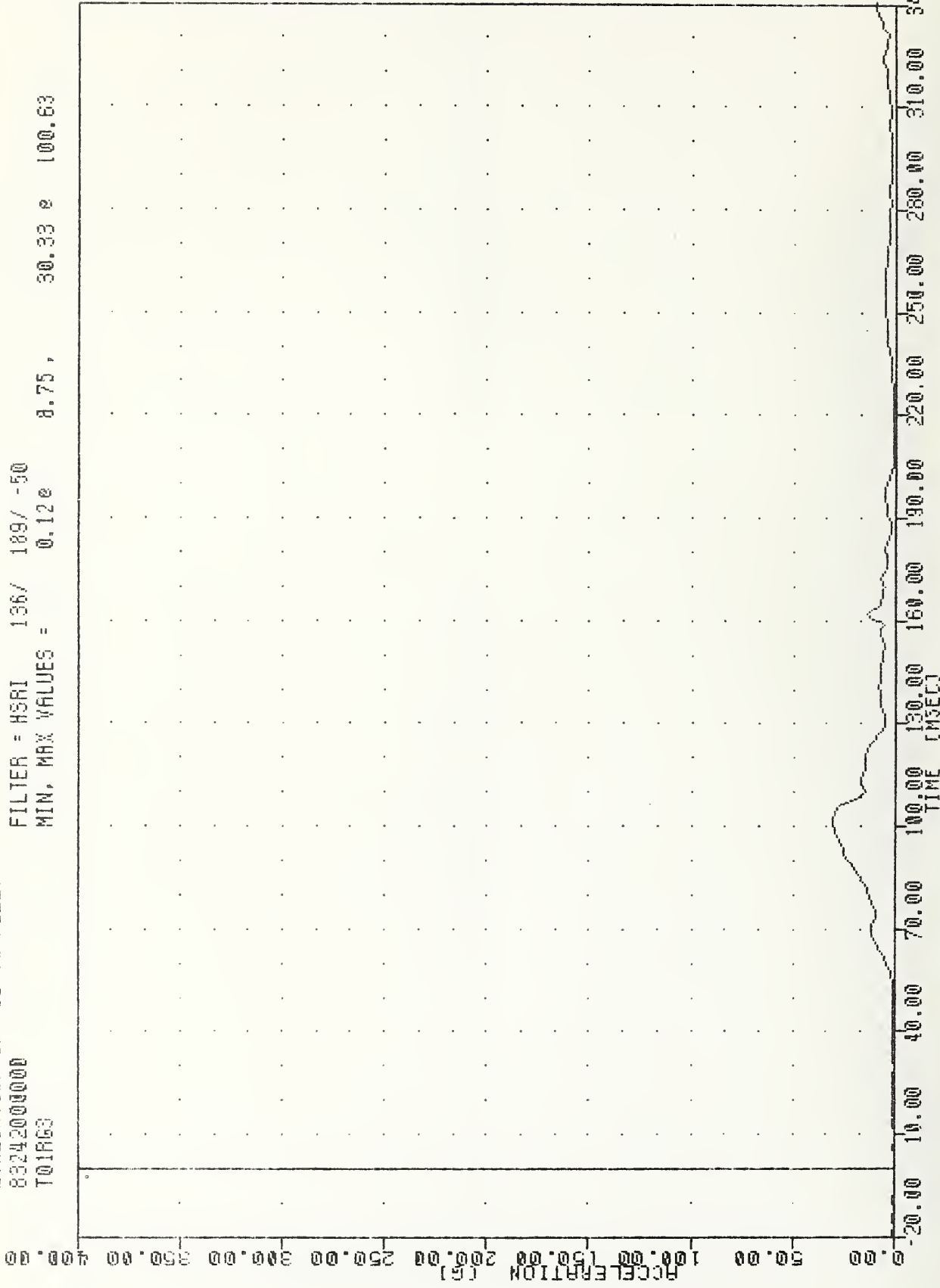


B-43

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER UPPER SPINE ACCELERATION Z AXIS

TAC \* 830830  
EVALUATION OF MOD VW FLEET  
83242000000  
TQ1R63

PLOT DATE 6-SEP-83 09:23:37  
FILTER = HSRI 136/ 189/ -50  
MIN. MAX VALUES = 0.12e 8.75, 30.33 e 100.63



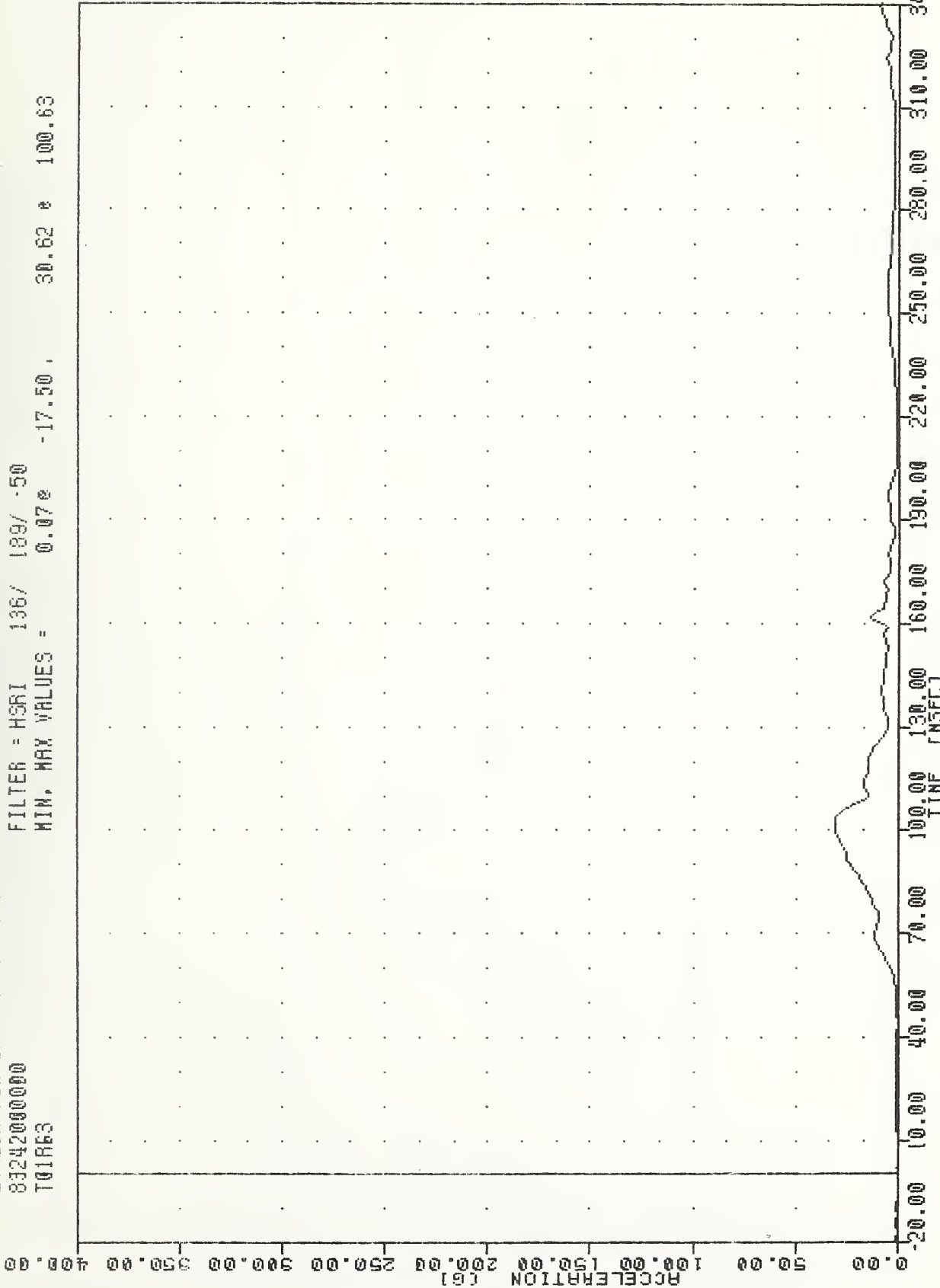
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER UPPER SPINE RESULTANT

TAC 830830  
EVALUATION OF MOD VW FLEET  
8324200000  
T01R63

PLOT DATE 8-SEP-83 15:13:06

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = 0.07e -17.50 , 30.62 e 100.63

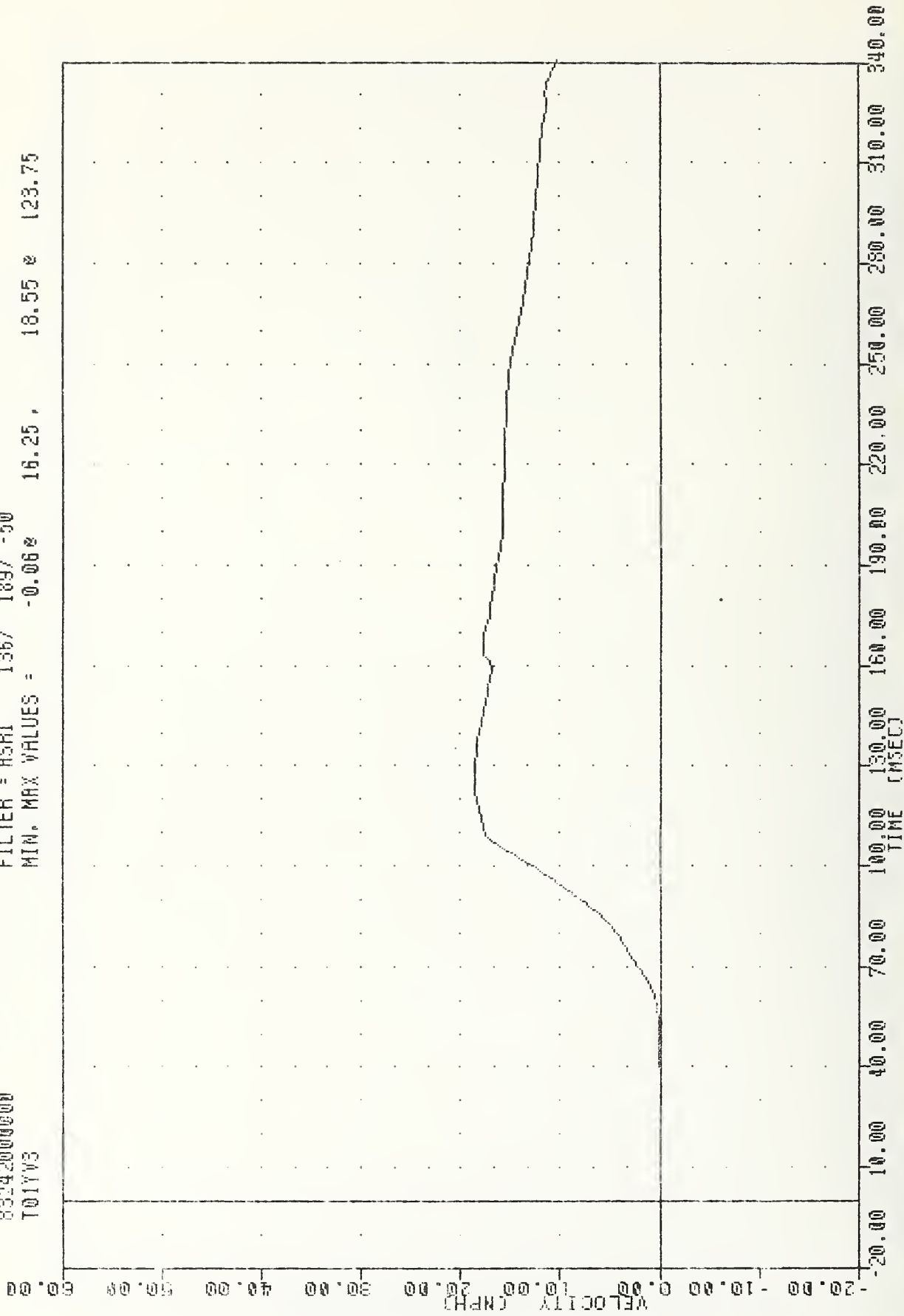


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER UPPER SPINE RESULTANT T01Y6C

IRC , 830830  
EVALUATION OF MDO VW FLEET  
83242000000  
T01YV3

PLOT DATE 6-SEP-83 15:06:46

FILTER = HSRI 136/ 189/ -50  
MIN. MAX VALUES = -0.06e 18.55 e 123.75

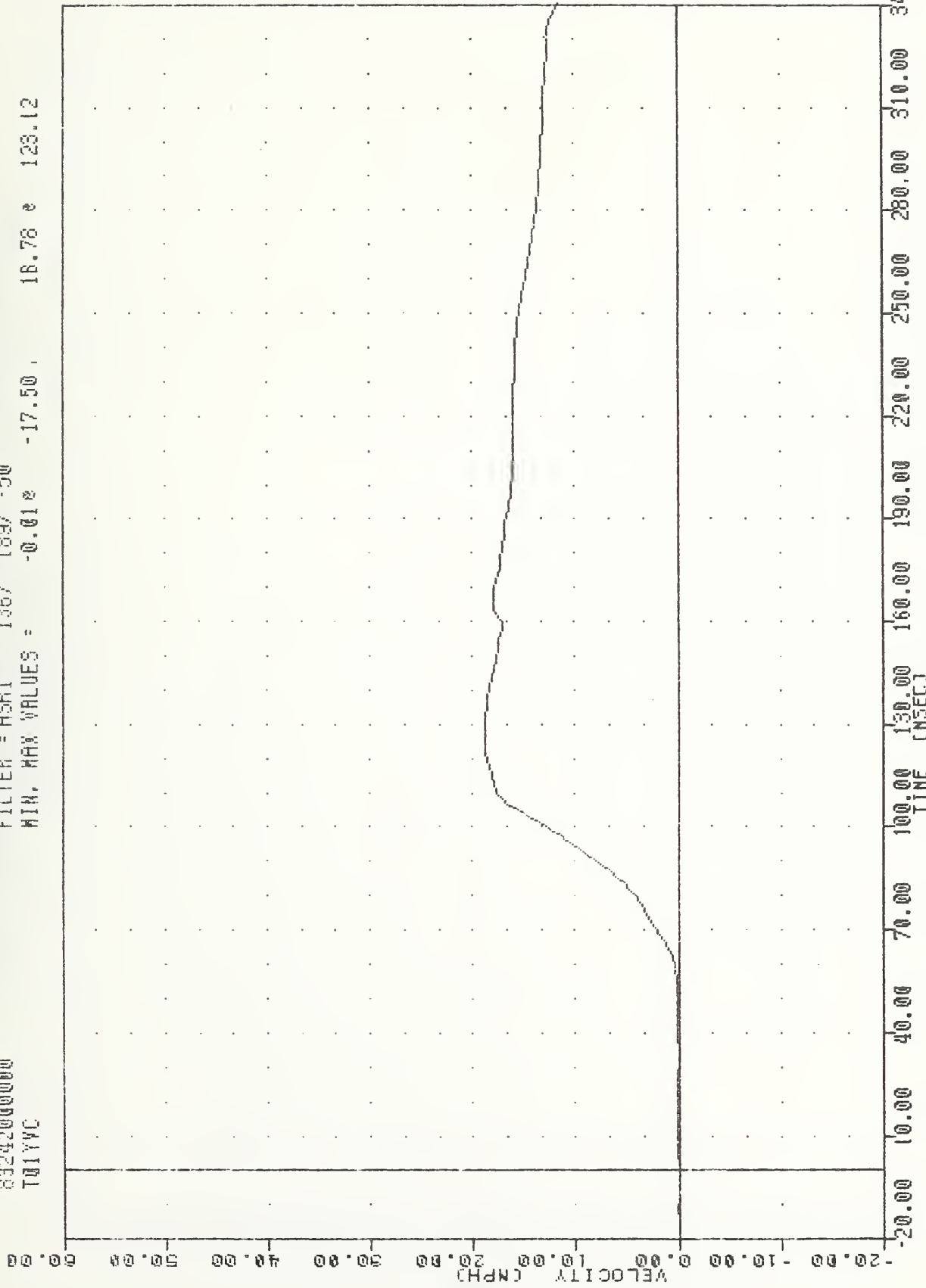


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING T01Y63



TAC  
 EVALUATION OF HOO VW FLEET  
 83242000000  
 T01YVC

PLOT DATE 6-SEP-83 15:06:46  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -0.01 e -17.50 , 16.78 e 123.12

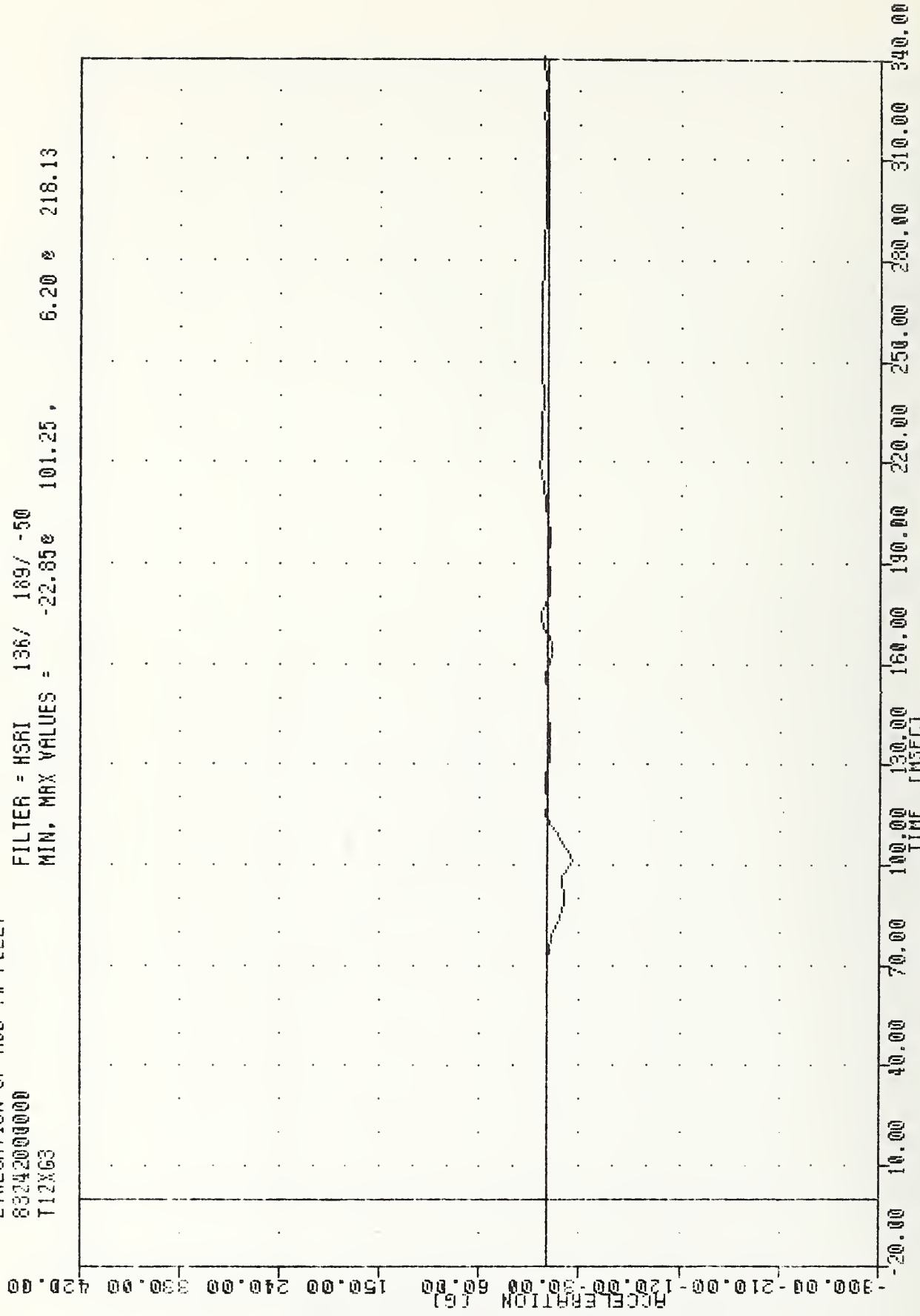


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING T01YGC

TRC 830830  
 EVALUATION OF M00 VW FLEET  
 8324200000  
 T12XG3

PLOT DATE 2-SEP-83 15:46:27

FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -22.85e 101.25. 6.20 e 218.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER LOWER SPINE ACCELERATION X AXIS

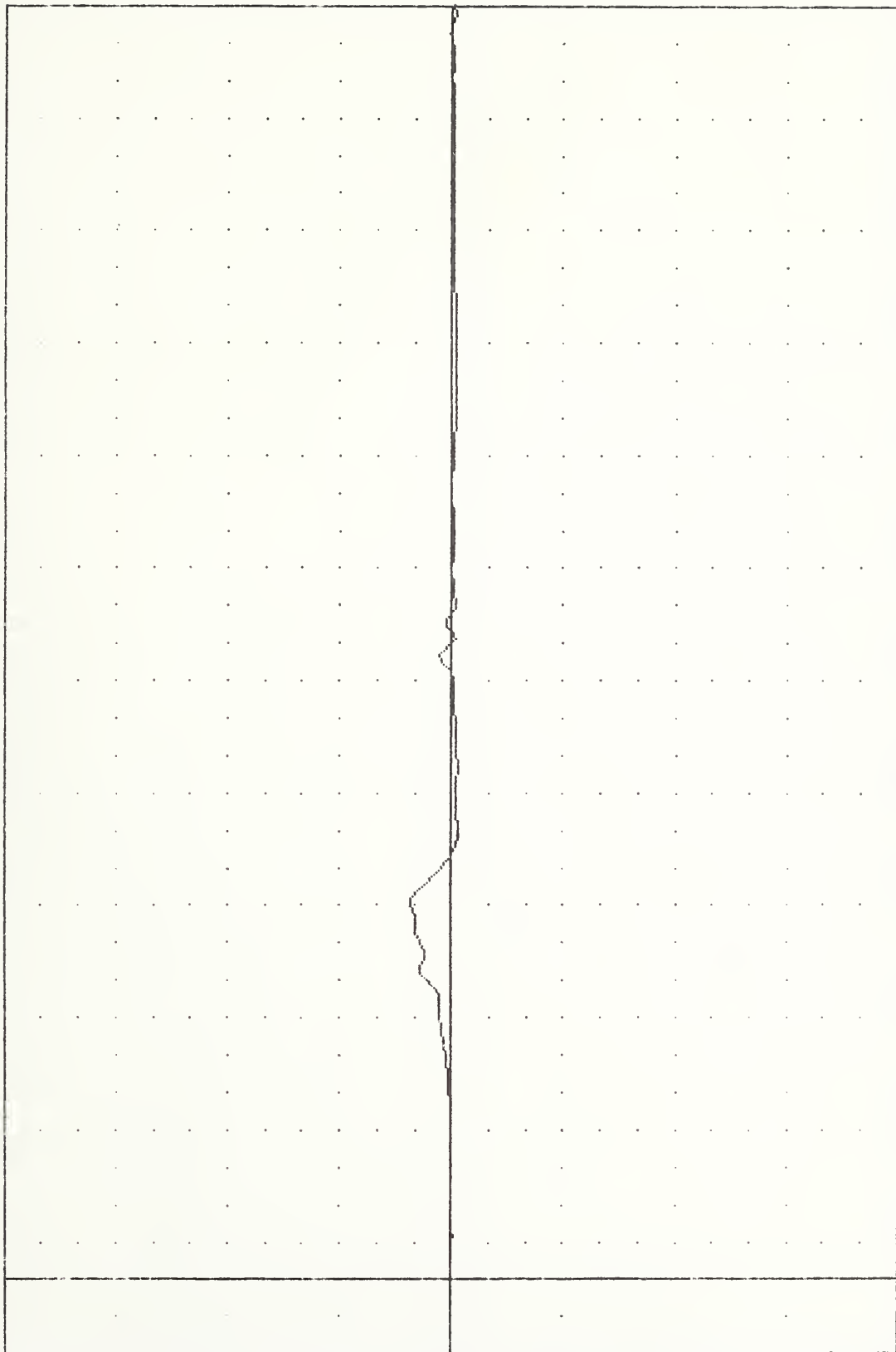
TRC  
 EVALUATION OF MOD VN FLEET  
 83242000000  
 T12Y63

PLUT DATE 2-SEP-83 15:46:27

FILTER = HSRI 136/ 189/ -50

MIN, MAX VALUES = -5.64e 119.38, 32.56 e 100.63

ACCELERATION (G)  
 -360.00 -270.00 -180.00 -90.00 0.00 90.00 180.00 270.00 360.00



-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 (NSEC)

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER LOWER SPINE ACCELERATION Y AXIS

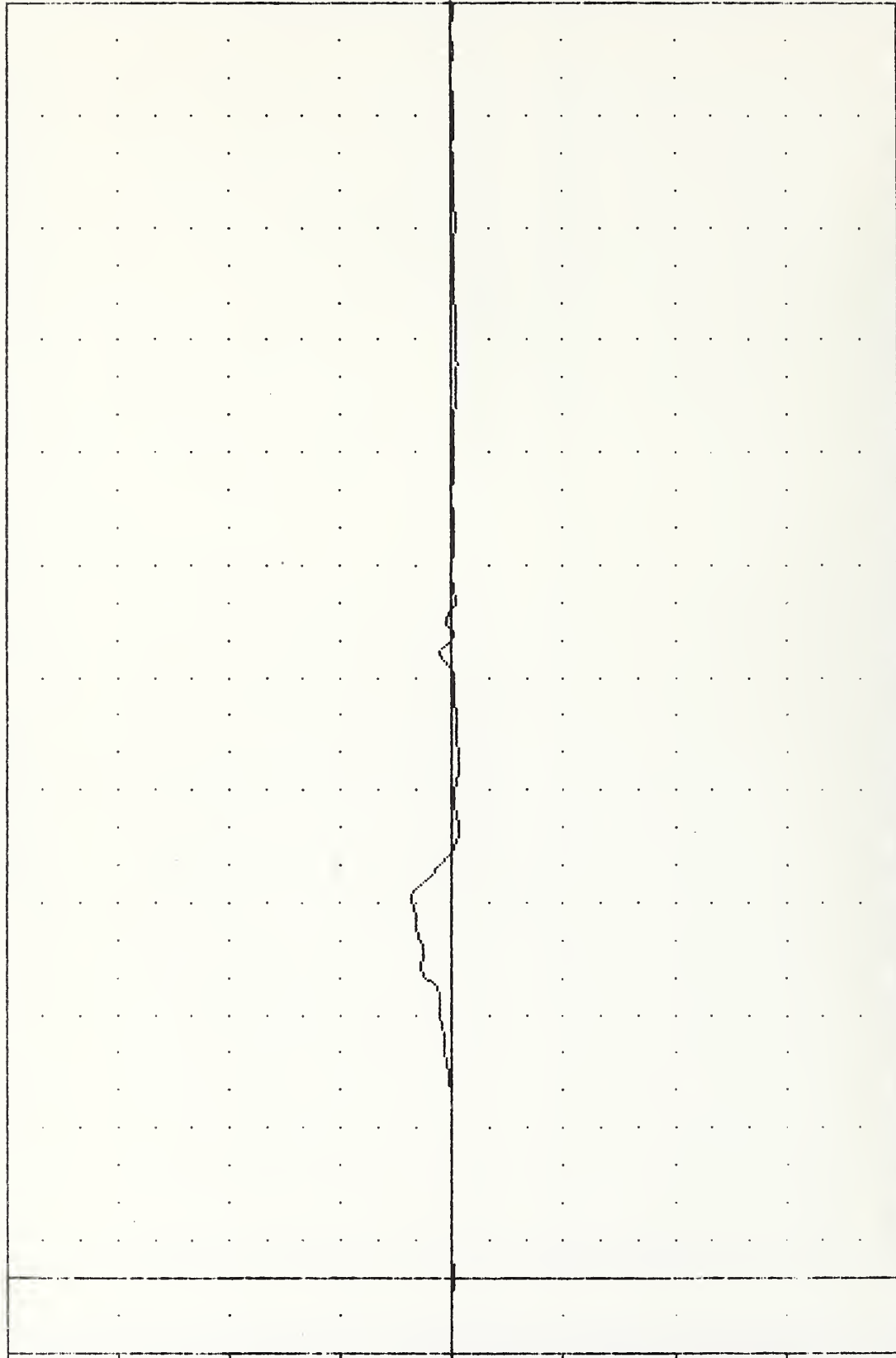
TRC  
EVALUATION OF HOD YW FLEET  
8324200000  
T12Y6C

PLOT DATE 2-SEP-83 10:46:27

FILTER = HSAI 136/ 189/ -50

MIN. MAX VALUES = -5.42% 119.38, 52.92 & 100.63

ACCELERATION (G)  
-350.00 -270.00 -180.00 -90.00 0.00 90.00 180.00 270.00 350.00



20.00 40.00 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

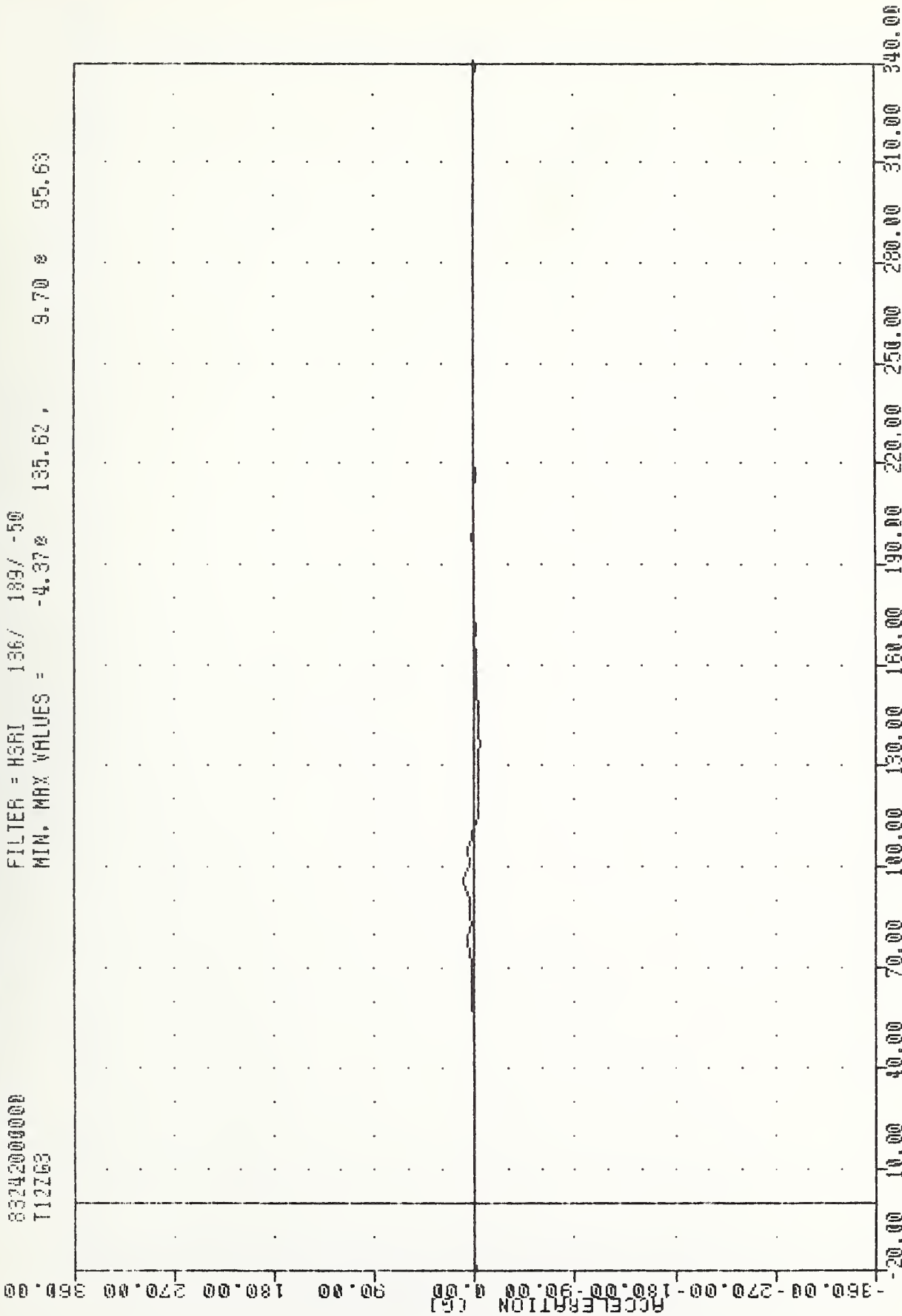
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER LOWER SPINE ACCELERATION #2 Y AXIS

TRC 830030  
 EVALUATION OF MOD VW FLEET  
 8324200000  
 T12163

PLOT DATE 2-SEP-83 15:46:27

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -4.37% 135.62, 9.70 % 95.63



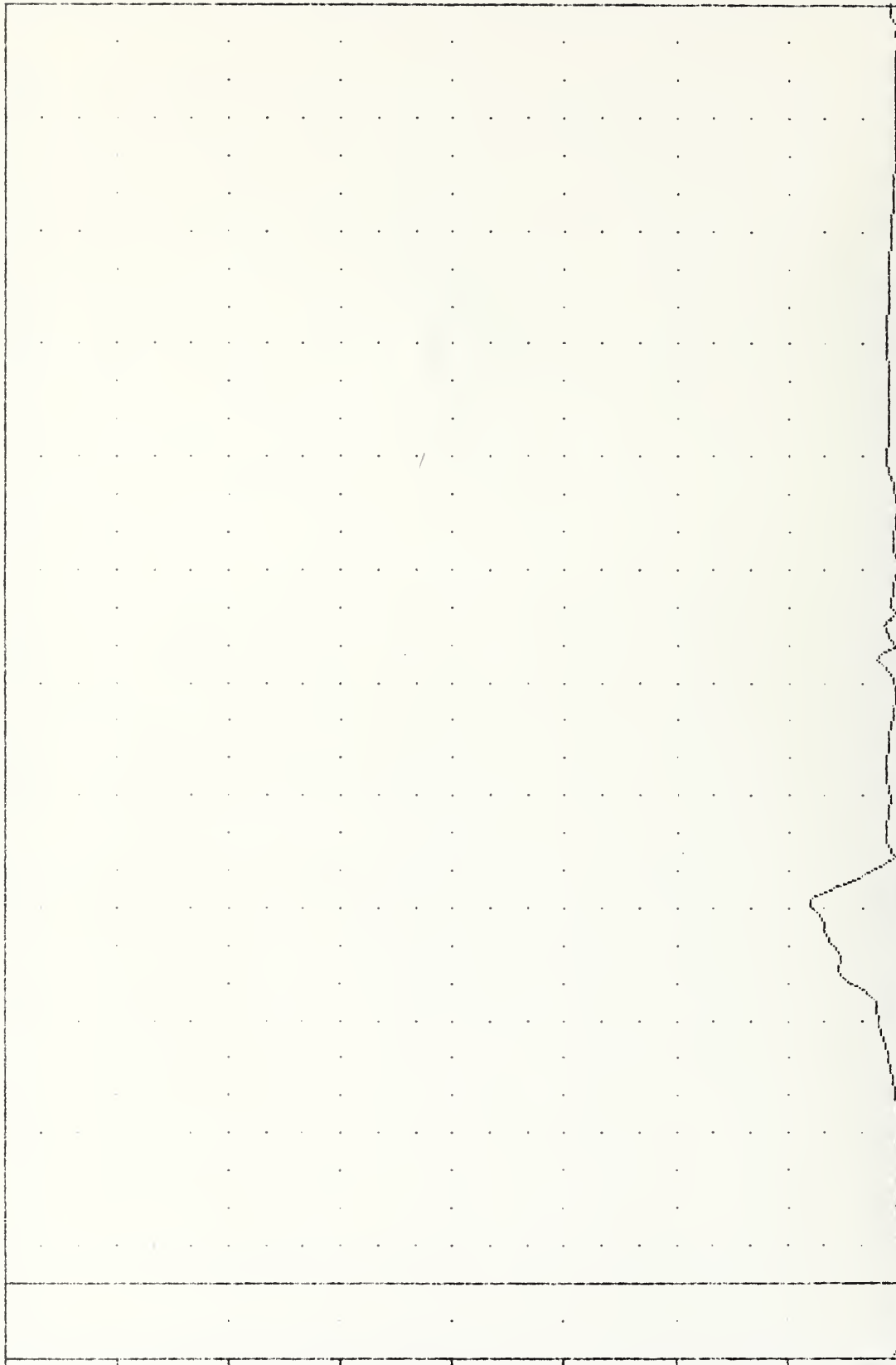
TRC  
EVALUATION OF MOD VV FLEET  
83242000000  
T12RF63

PLOT DATE 6-SEP-83 09:23:37

FILTER = MSRI 156/ 189/ -50

MIN. MAX VALUES = 0.10E 13.75 , 40.02 e 100.63

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

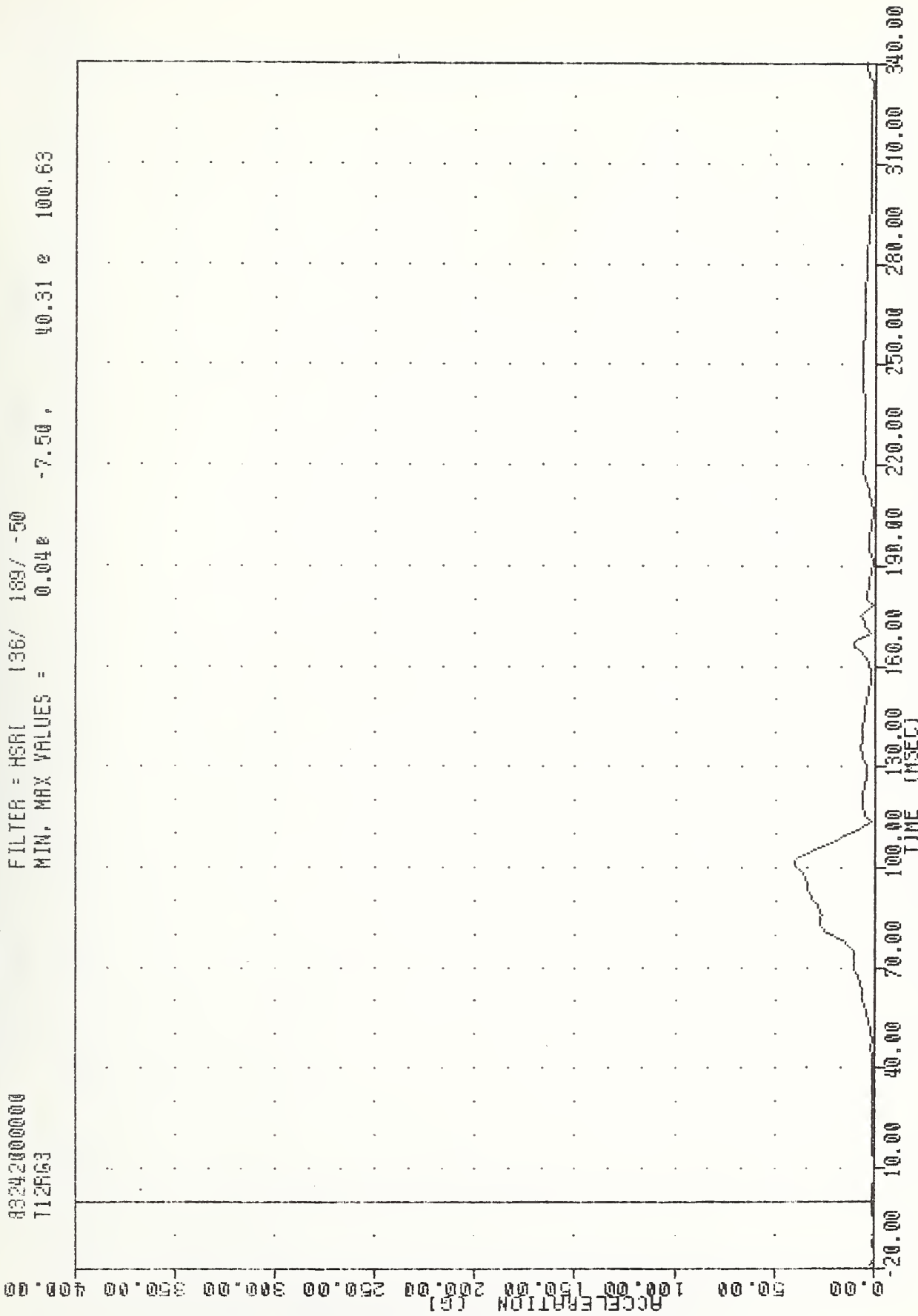
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER LOWER SPINE RESULTANT

TRC , 830830  
EVALUATION OF MOD YW FLEET  
83242000000  
T12563

PLU DATE 8-SEP-83 15:13:06

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = 0.04e -7.50 , 40.31 e 100.63

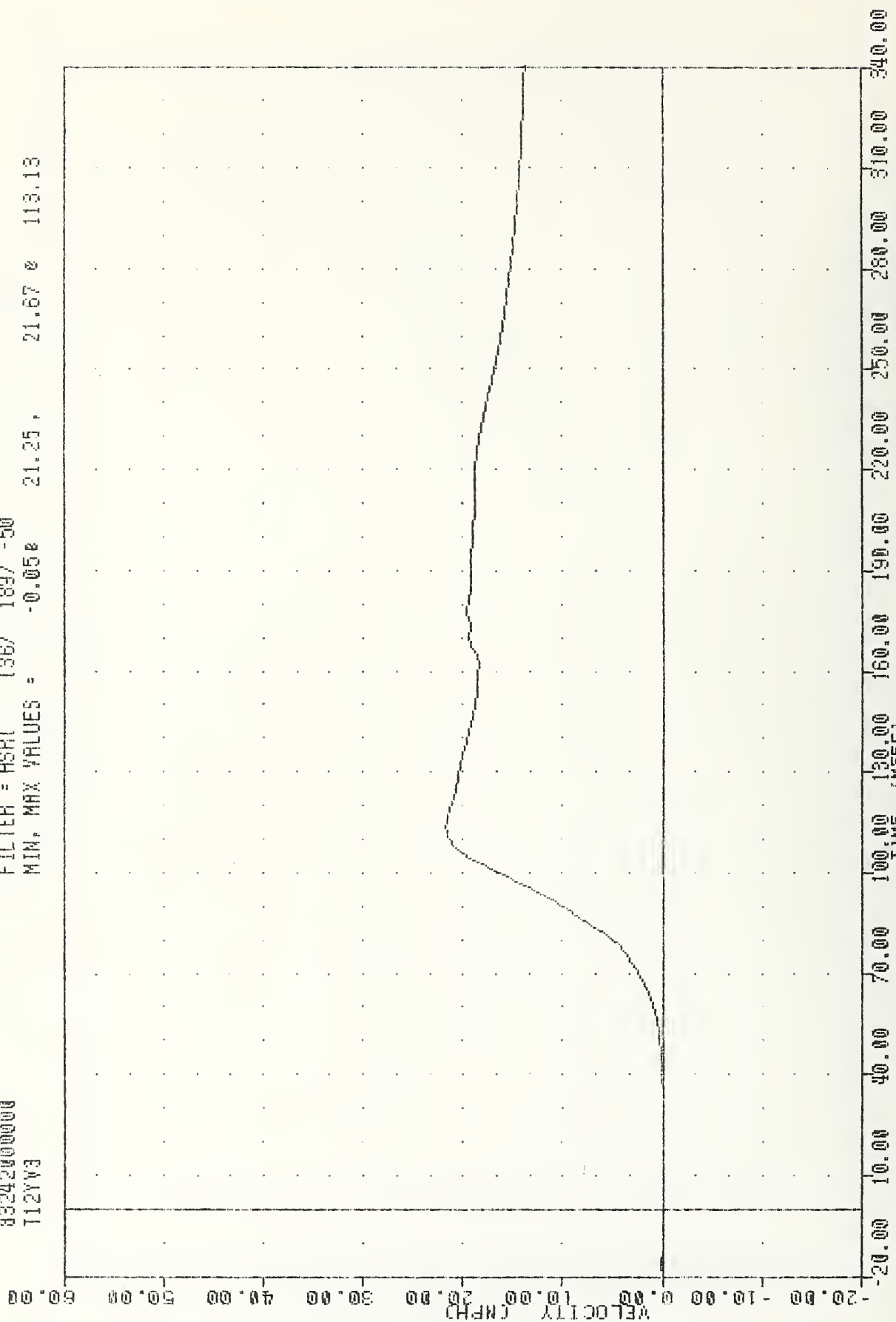


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER LOWER SPINE RESULTANT USING T12YGC

TRC  
EVALUATION OF MOD VW FLEET  
83242000000  
T12YV3

PLOT DATE 6-SEP-83 15:06:46

FILTER = HSRI 136/ 189/ -50  
MIN, MAX VALUES = -0.058 21.25, 21.67 @ 113.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING T12Y63

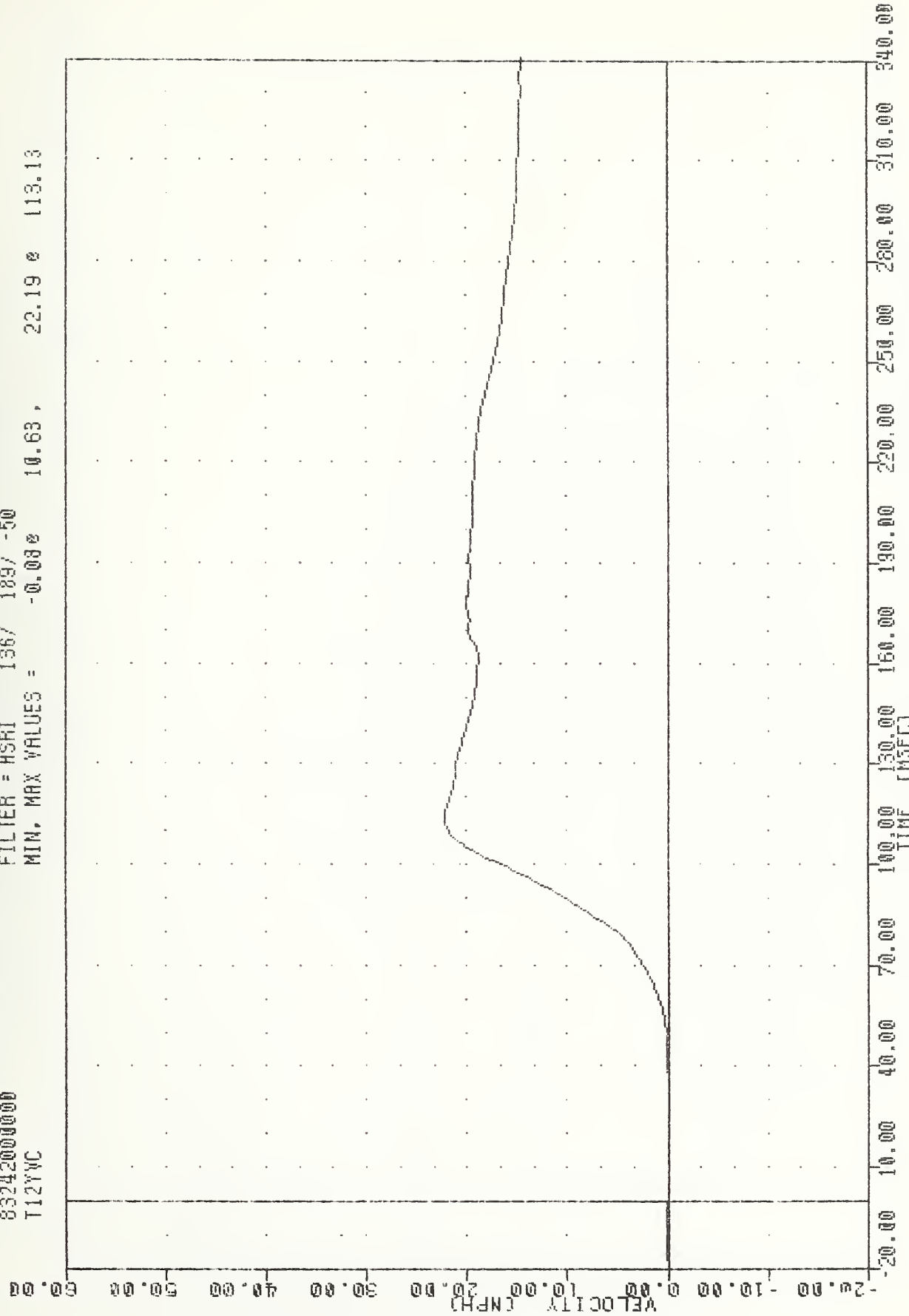


TRC  
EVALUATION OF MOD VW FLEET  
83242000000  
T12YVC

PLOT DATE 6-SEP-83 15:06:46

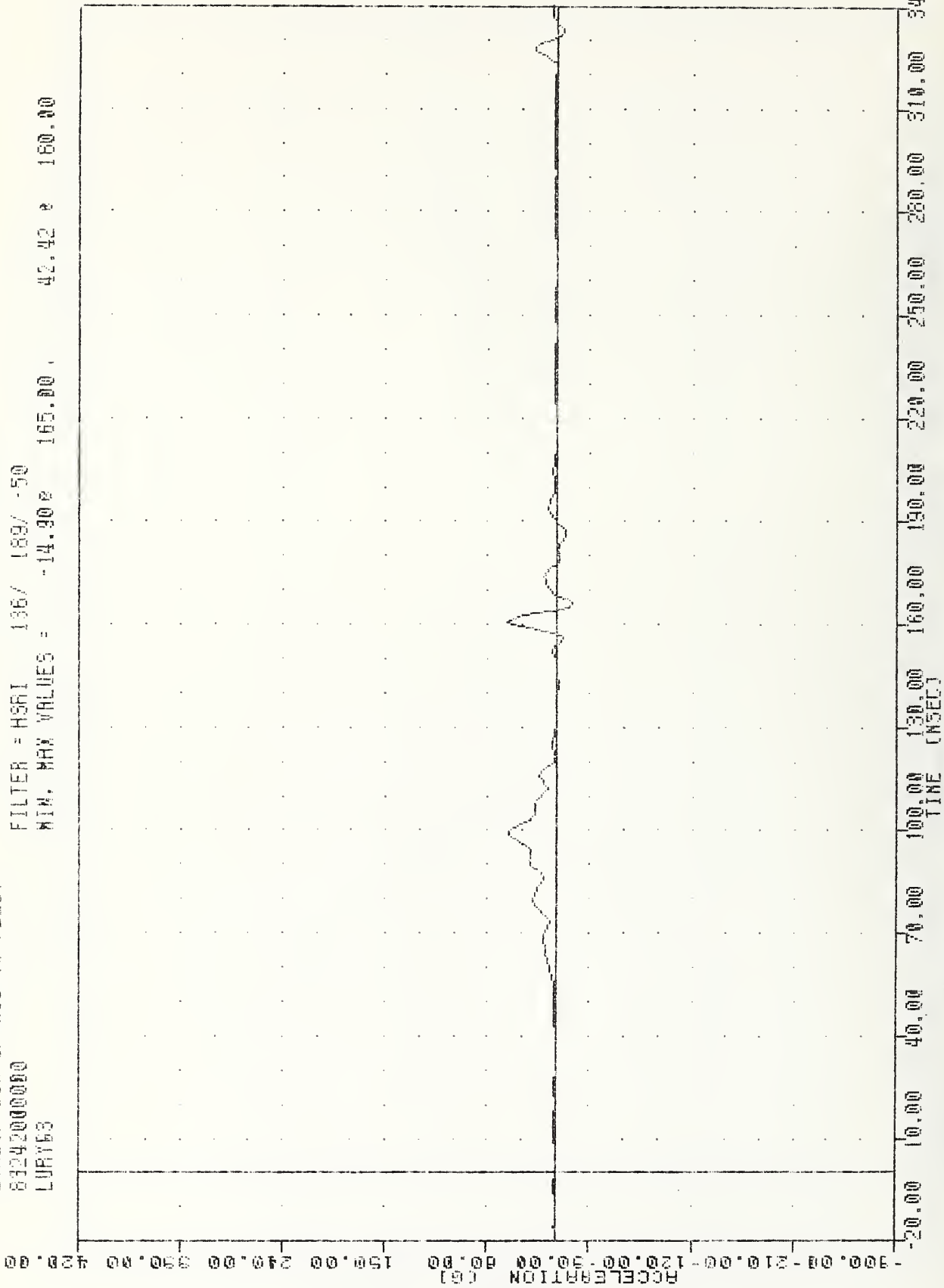
FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.00e 10.63, 22.19 e 113.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING T12Y6C

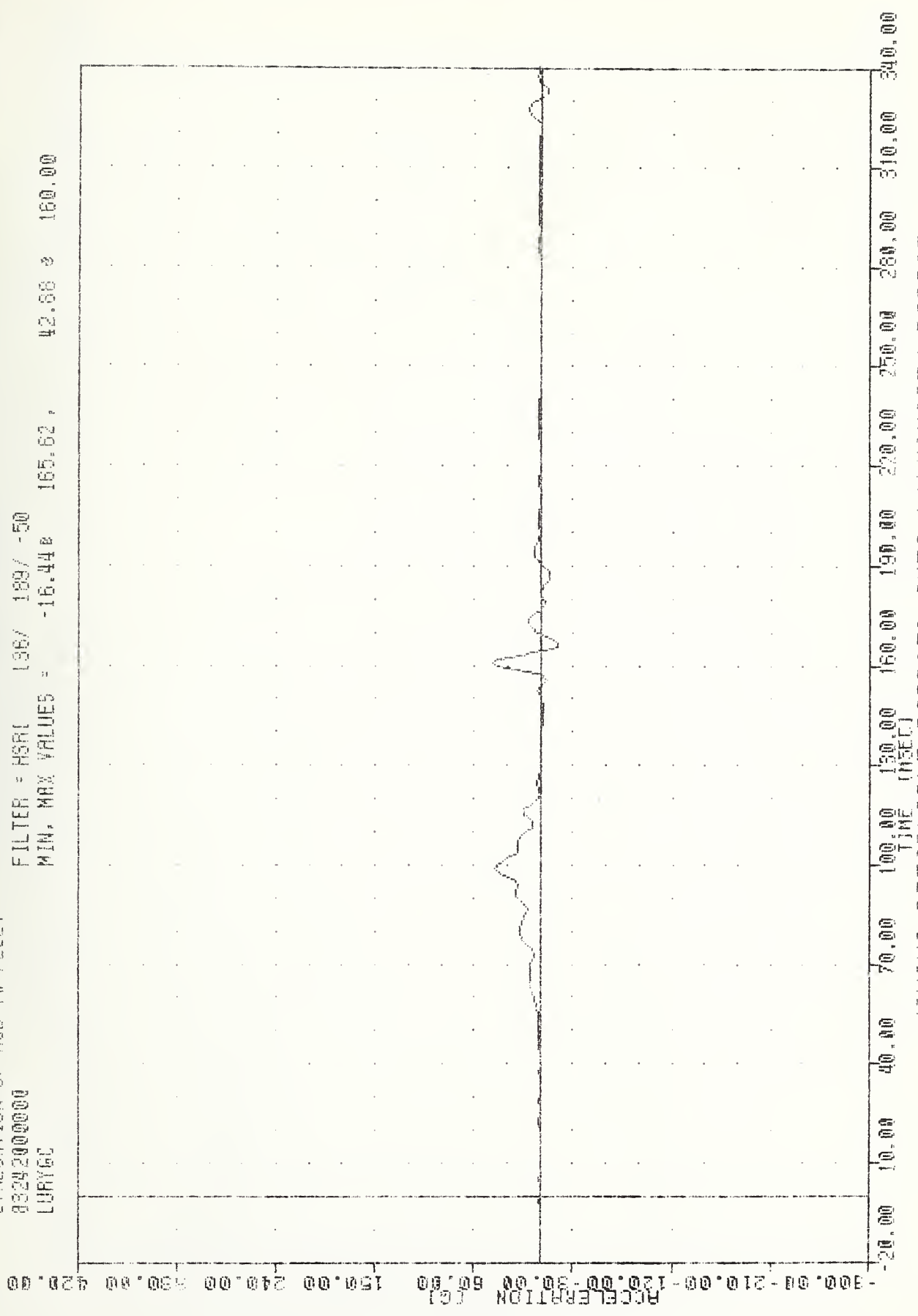
TRC , 830800  
 EVALUATION OF MOD VN FLEET  
 83242000000  
 LUR163  
 PLOT DATE 2-SEP-86 15:46:27  
 FILTER = HSRI 136/ 189/ -50  
 MIN, MAX VALUES = -14.90g 165.00 , 42.42 \* 180.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER LEFT UPPER RIB ACCELERATION Y AXIS

TAC 630830  
EVALUATION OF MOD YW FLEET  
93242000000  
LURY6C

FLIGHT DATE 2-SEP-83 15:46:27  
FILTER = HSRI 196/ 189/ -50  
MIN. MAX VALUES = -16.44e 165.62, 42.66 e 160.00



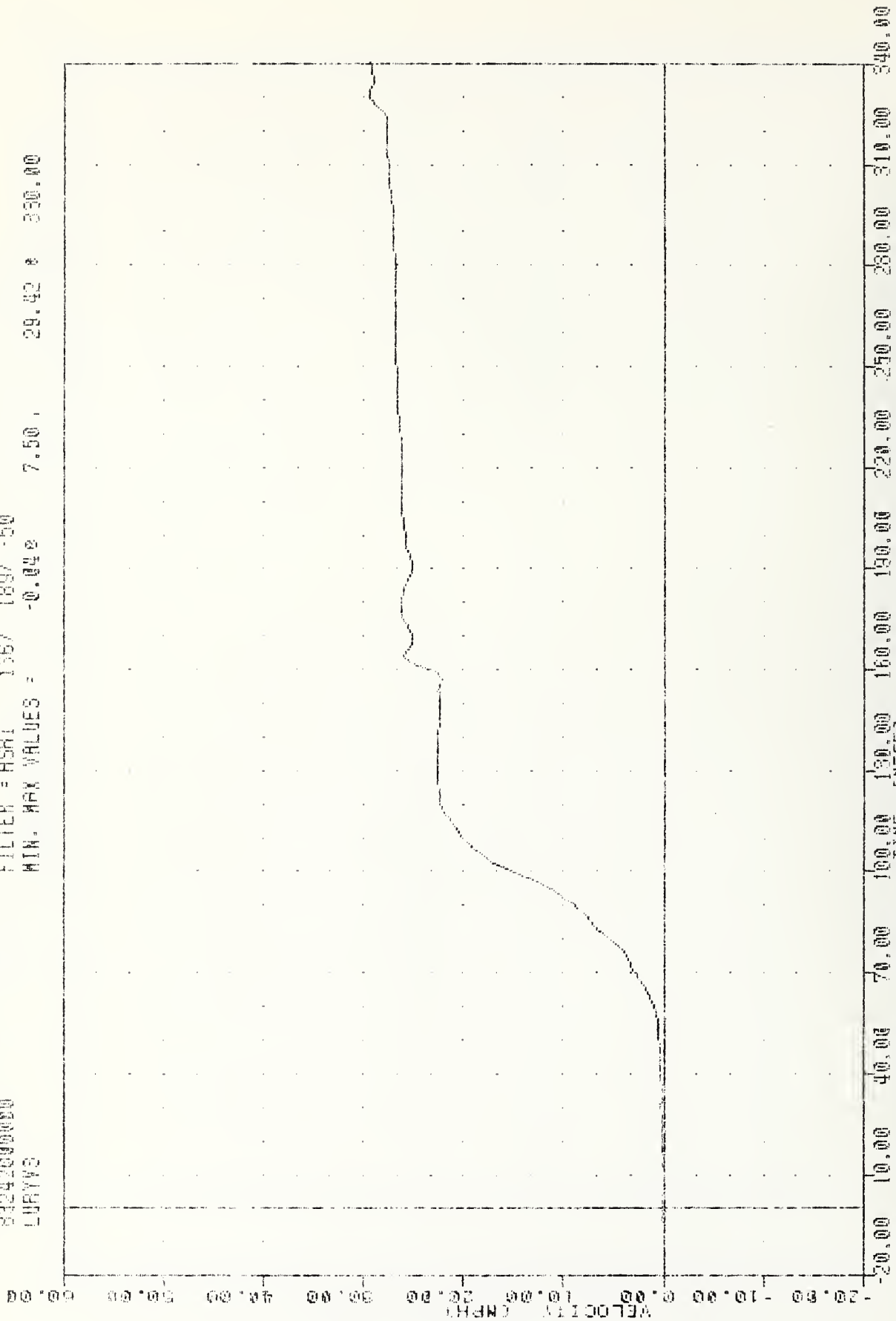
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER LEFT UPPER AIRS ACCELERATION -Z Y AXIS

TAC 0306:00  
EVALUATION OF MOD VV FLEET  
83242000000  
LURTVG

PLAT DATE 6-SEP-88 13:06:46

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -0.042 7.50 29.42 \* 350.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING LURTVG

TRF 8000000

EVALUATION OF MOD V4 FLEET

03242000000

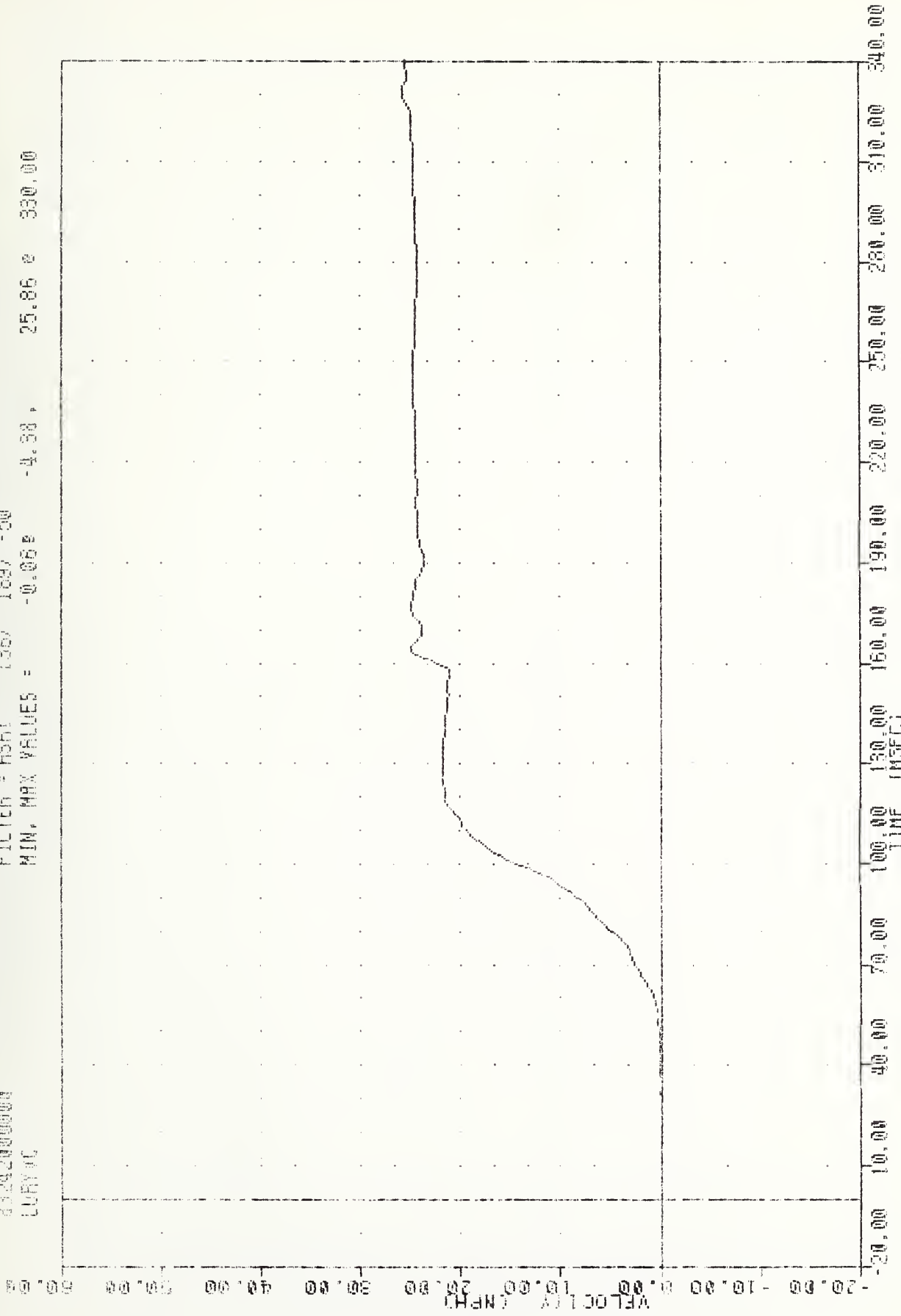
LURYTC

PLOT DATE 8-SEP-88 15:06:46

FILTER = HSRI 1367 1897 -50

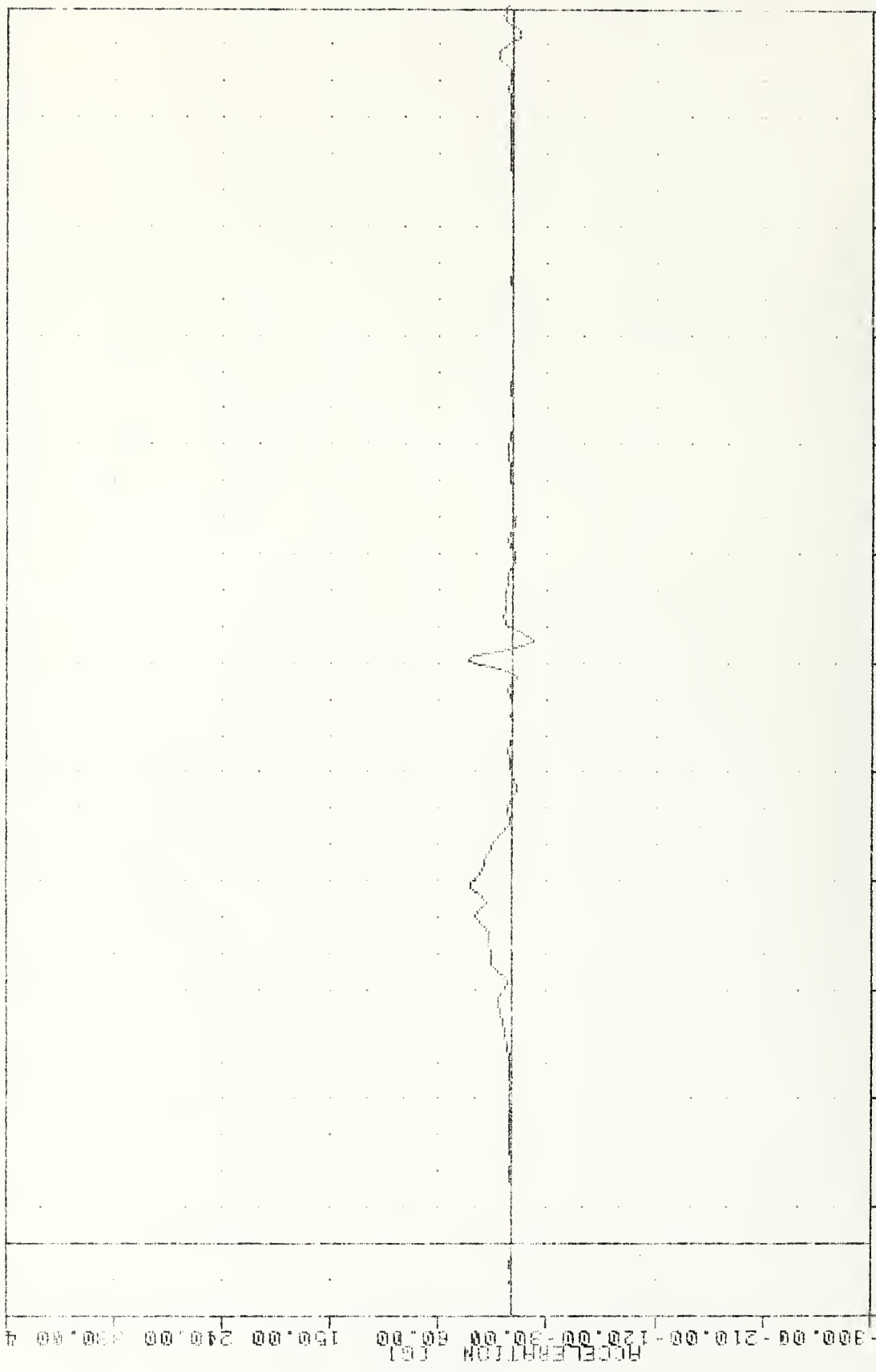
MIN. MAX VALUES = -0.068 -4.38

25.86 e 330.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING LURYTC

TRC . 880830      PLOT DATE 2-SEP-88      15:48:27  
 EVALUATION OF NND VV FLEET  
 8924000000      FILTER = HSRI      136/      189/      -50  
 LLAY52      MIN. MAX VALUES =      -17.94e      165.62 ,      35.33 e      150.00

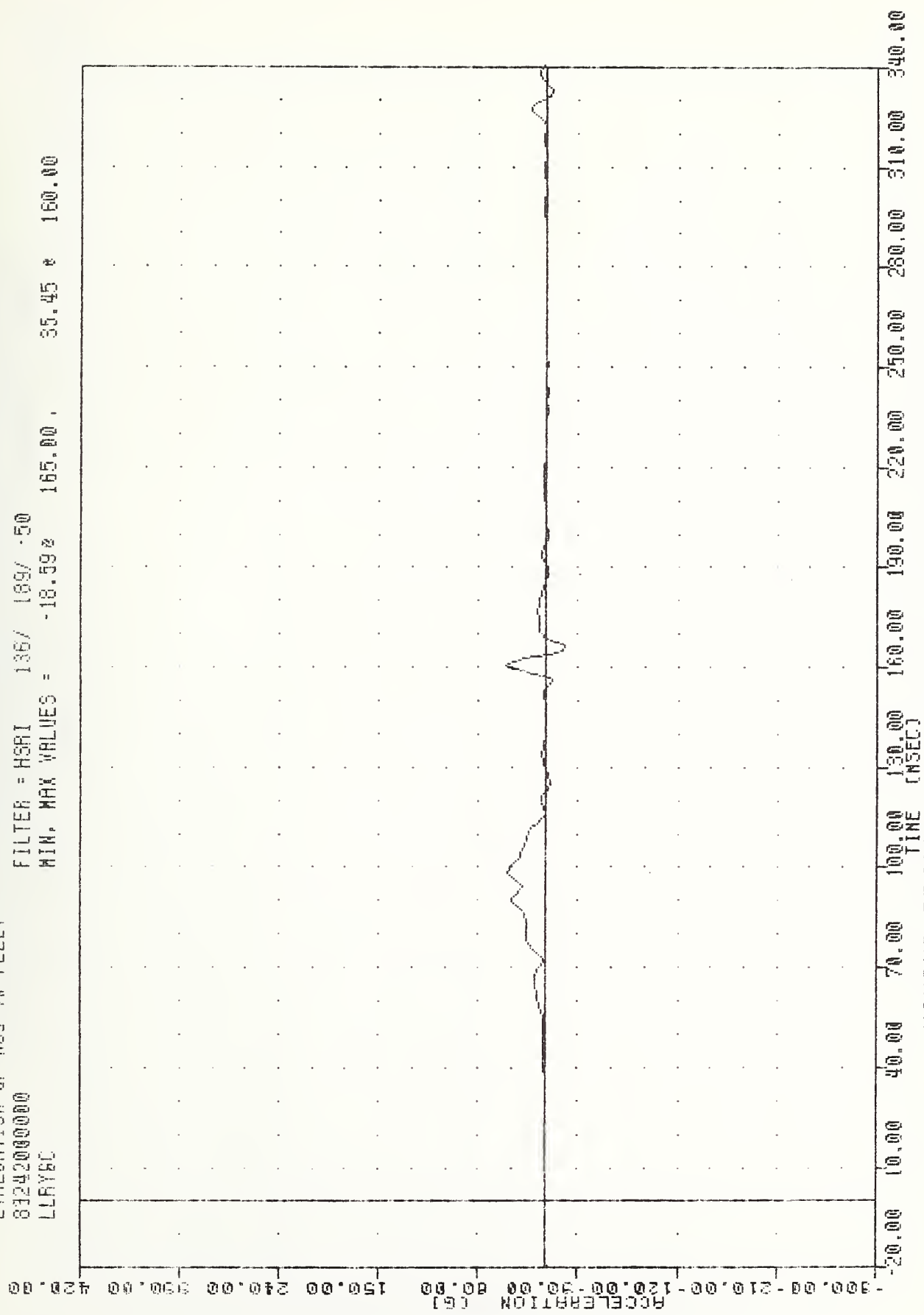


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSECS)  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER LEFT LOWER RID ACCELERATION Y AXIS

TAC  
 EVALUATION OF M00 VW FLEET  
 83242000000  
 LLRY8C

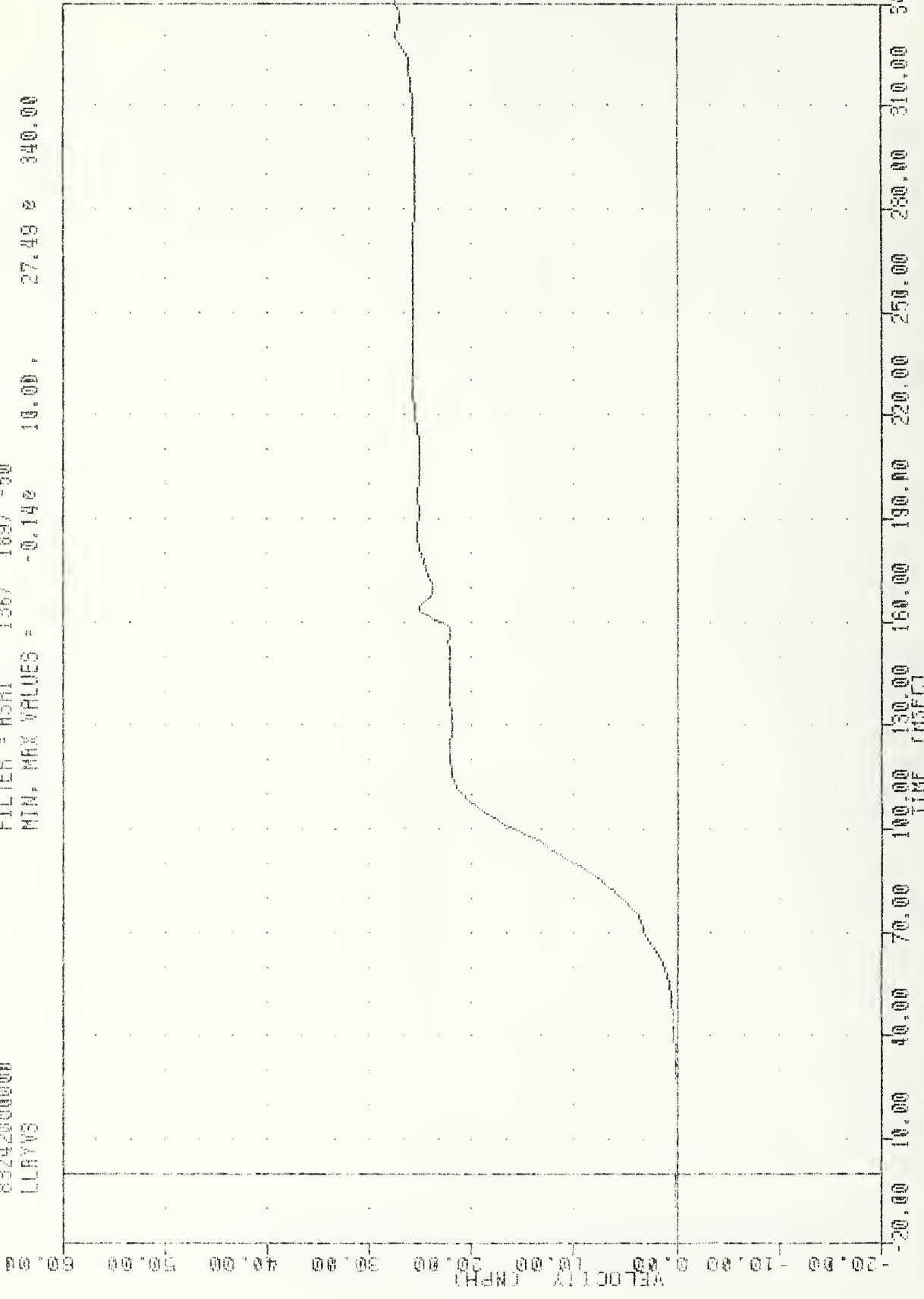
PLOT DATE 2-SEP-88 15:46:27

FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -18.59% 165.00 35.45 \* 160.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER LEFT LOWER RIB ACCELERATION Y AXIS

TRC 830830 PLOT DATE 8-SEP-83 15:05:48  
 EVALUATION OF MDD VW FLEET  
 89242000000  
 LLAYVS  
 FILTER = HSRI 136/ 189/ -50  
 MIN. MAX VALUES = -0.14e 10.00, 27.49 e 340.00

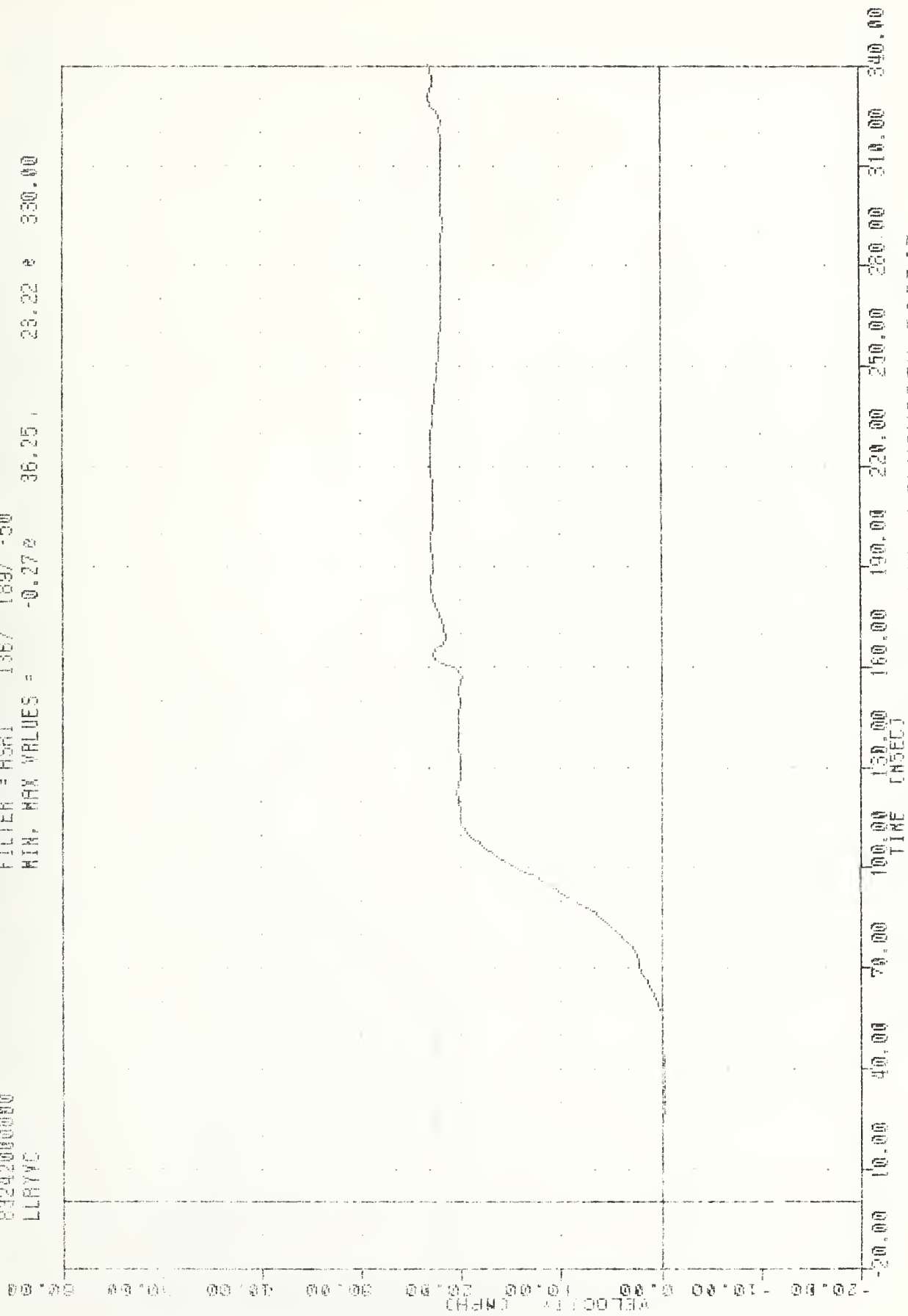


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LLAYVS



TRC  
EVALUATION OF MOD VPI FLEET  
83242000000  
LLRYVC

FLY DATE 6-SEP-88 15:05:46  
FILTER = HSRI 136/ 189/ -50  
MIN. MAX VALUES = -0.272 36.25 23.22 \* 330.00



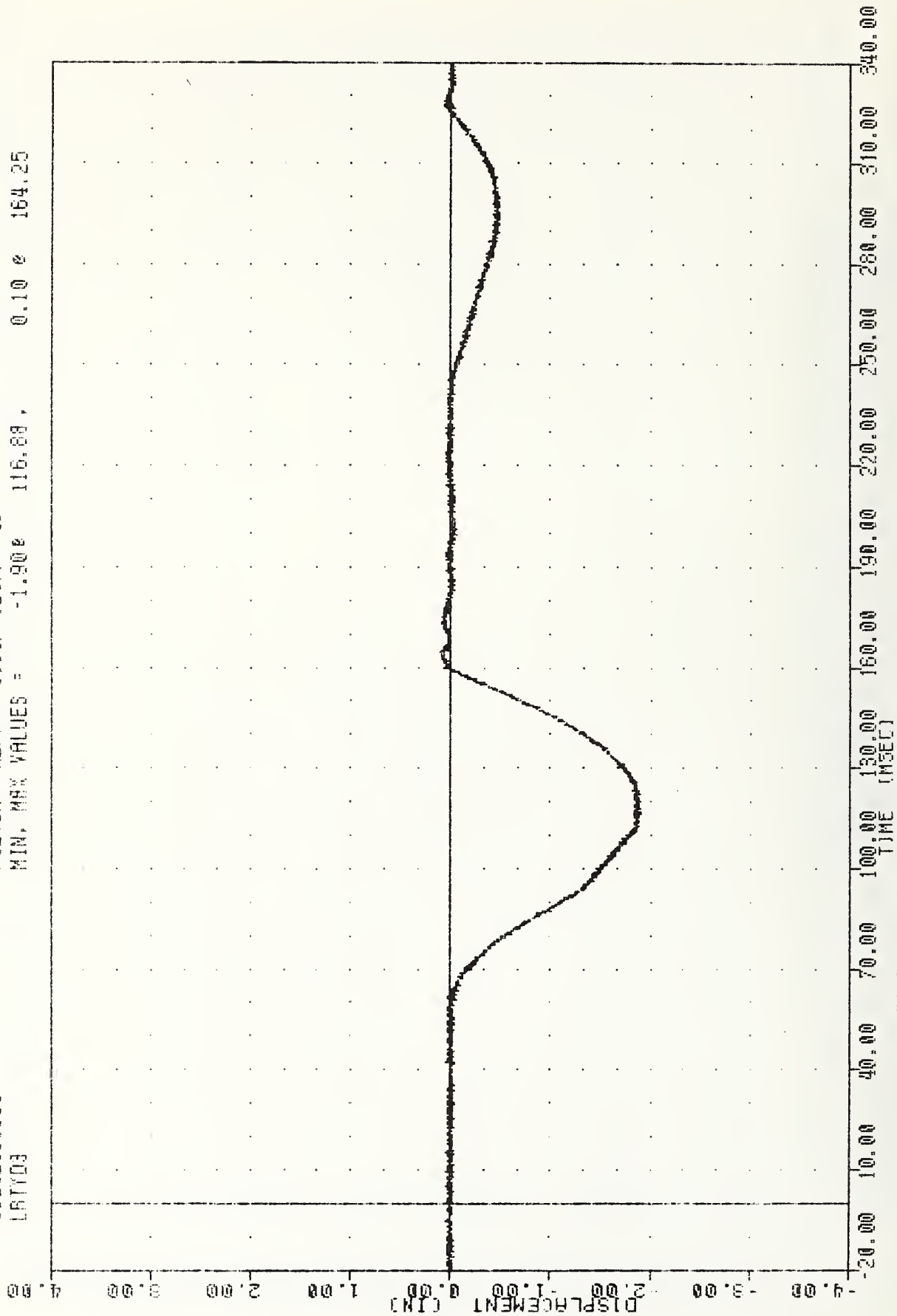
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING LLRYVC

TRC 830630  
EVALUATION OF MOD VW FLEET  
8524200000  
LRTY03

PLOT DATE 6-SEP-80 09:56:23

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -1.90e 116.89 , 0.10 e 164.25



B-64

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER LEFT RIB TO SPINE DISPLACEMENT INCHES

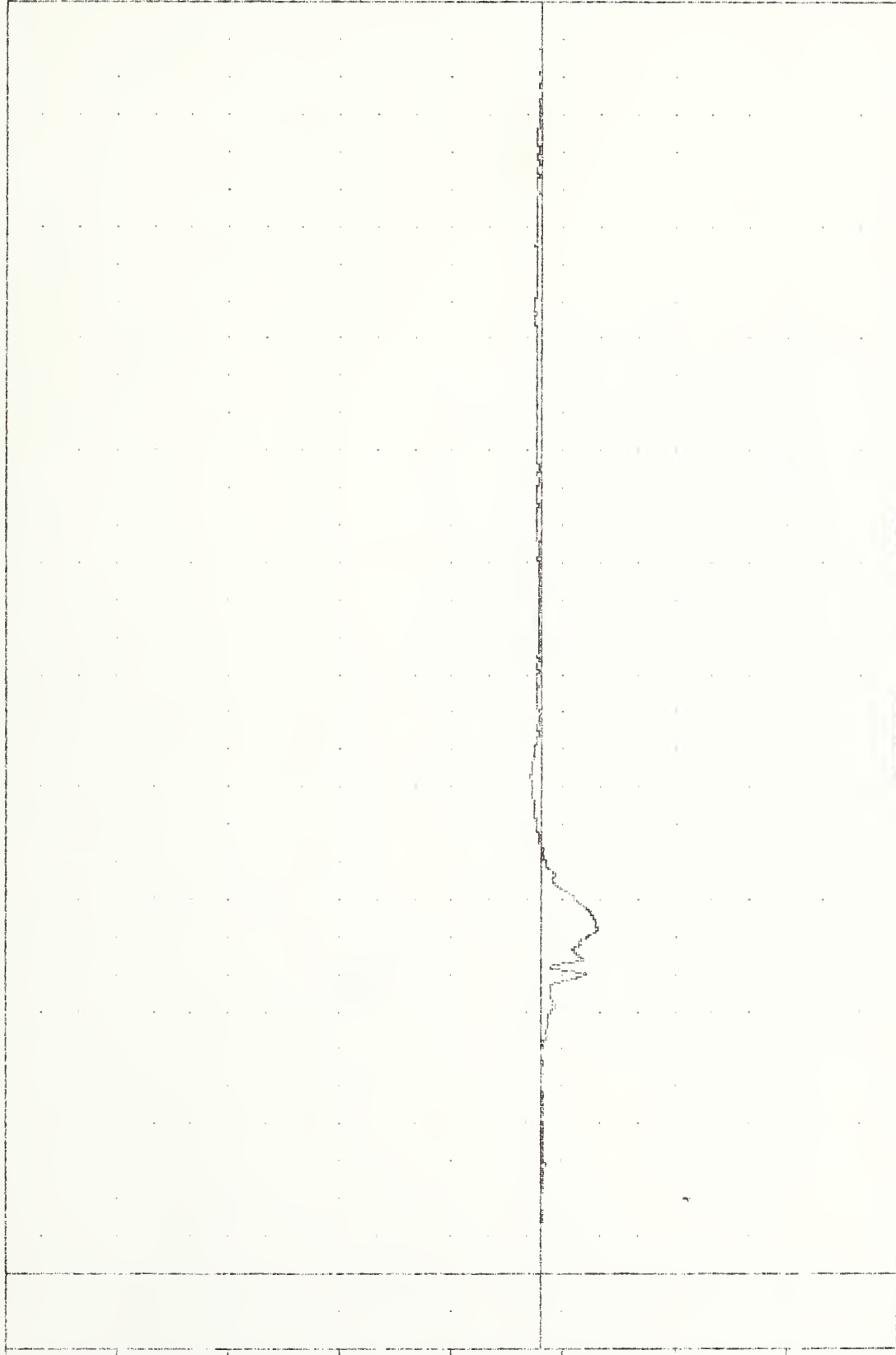
TRC 8300830  
EVALUATION OF HUD VW FLEET  
33242000000  
PEVXG3

PLOT DATE 6-SEP-85 09:56:29

FILTER = BLFF 300/ 849/ -40

MIN. MAX VALUES = -25.97e 91.75, 4.91 e 132.50

ACCELERATION (G)

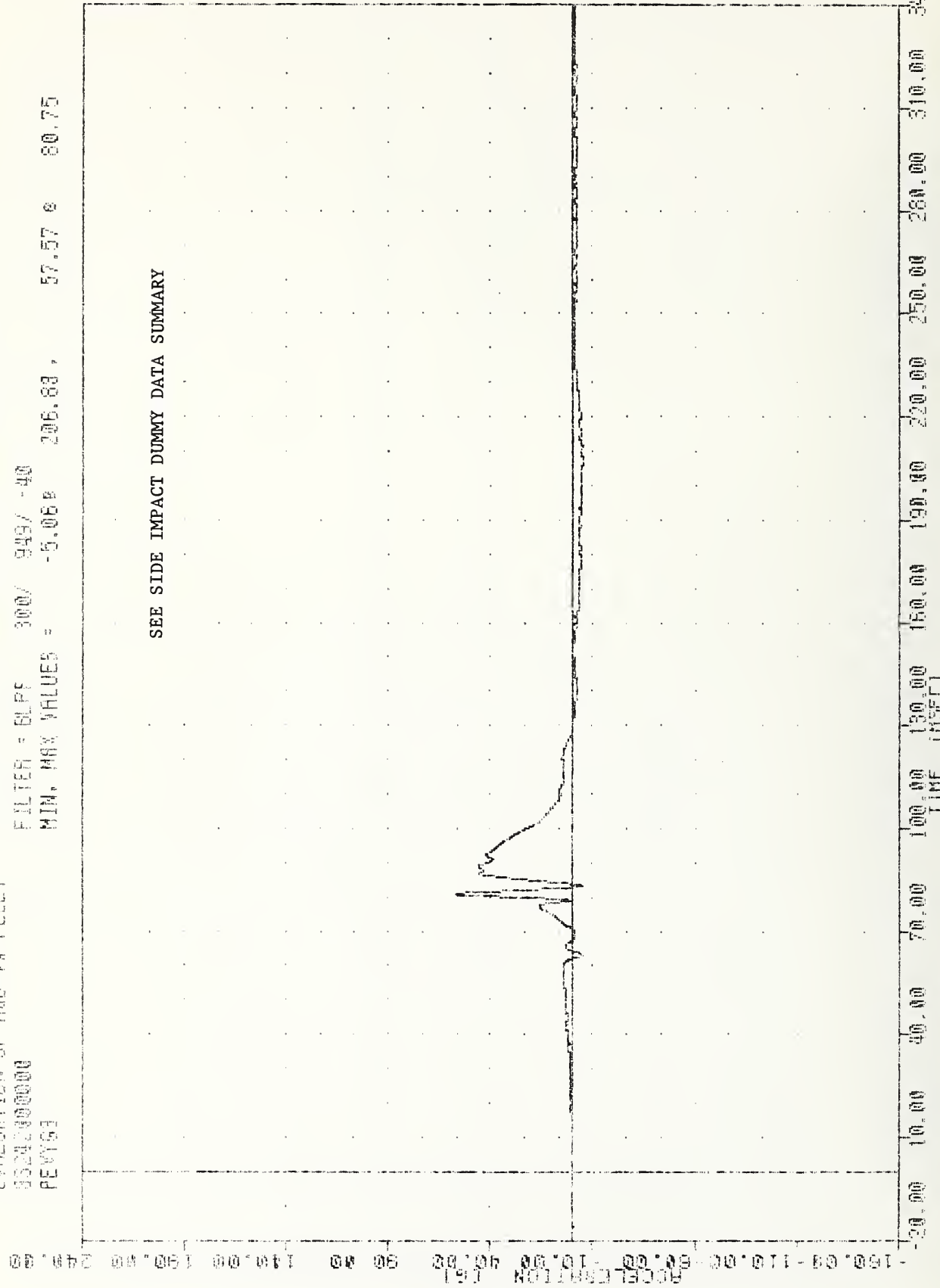


-20.00 10.00 40.00 70.00 100.00 130.00 150.00 190.00 220.00 250.00 280.00 310.00 340.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER PELVIS ACCELERATION X AXIS

TRC \* 030030  
 EVALUATION OF HMO VW FLEET  
 0524200000  
 PEVYSJ

PLUT UNIT 6-SEP-83 10:56:56  
 FILTER = 6LPE 300/ 949/ -40  
 MIN. MAX VALUES = -5.06g 206.83, 57.57 g 80.75

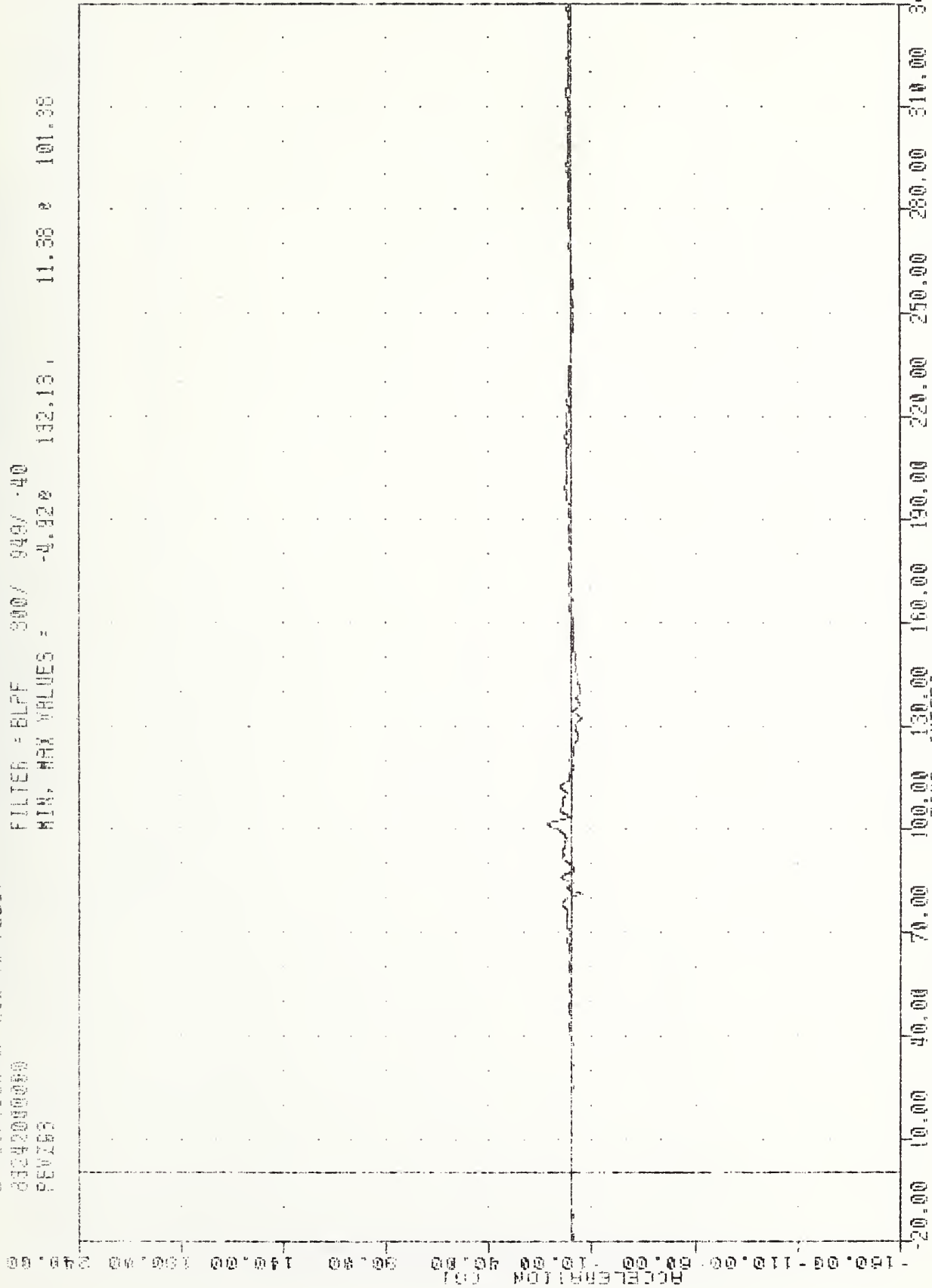


SEE SIDE IMPACT DUMMY DATA SUMMARY

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 PASSENGER PELVIS ACCELERATION Y AXIS

VAL  
EVALUATION OF RCU VV FLEET  
832420800000  
REVISED

PLT DATE 8-SEP-83 09:56:23  
FILTER = BLPF 300/ 949/ -40  
MIN. MAX VALUES = -4.920 192.13 11.38 e 101.38



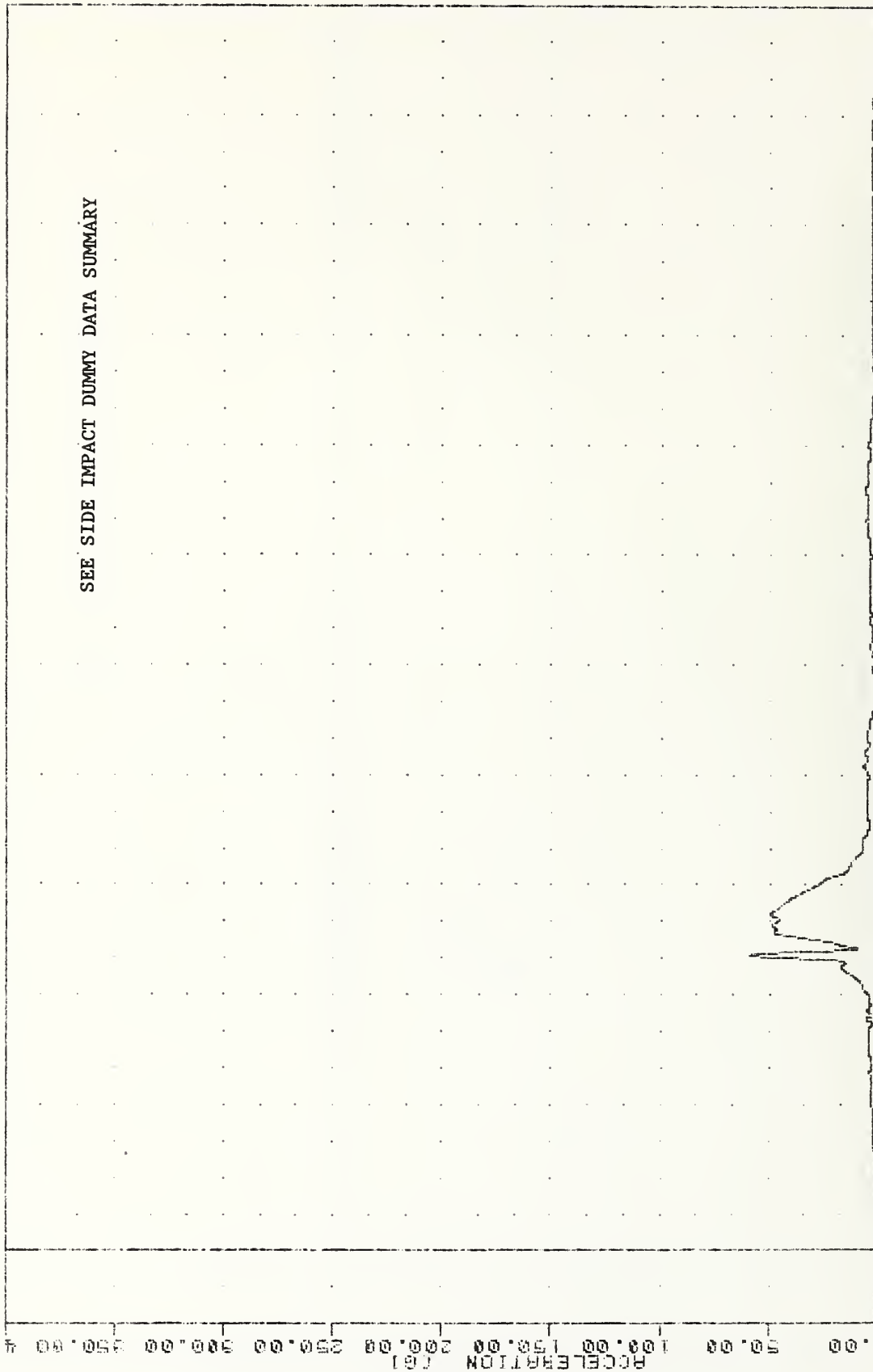
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER PELVIS ACCELERATION Z AXIS

TAC 832420000000  
EVALUATION OF 400 VW FLEET  
FEW663

PLU1 VARI 60667-80 02106123

FILTER = 6LFF 300/ 949/ -40

MIN. MAX VALUES = 0.09% -15.00, 58.36 & 80.63



SEE SIDE IMPACT DUMMY DATA SUMMARY

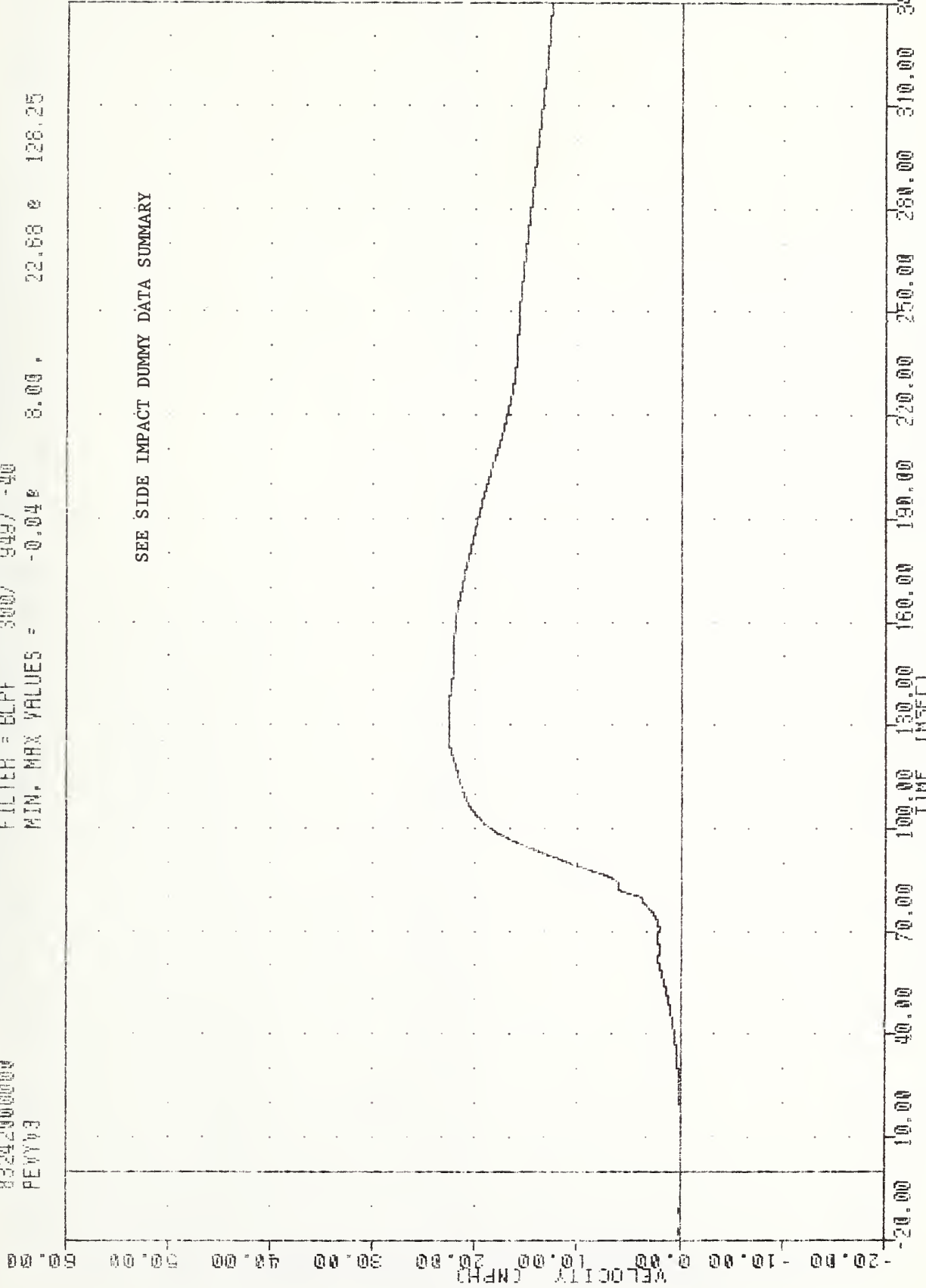
ACCELERATION (G) 0.00 50.00 100.00 150.00 200.00 250.00 300.00 350.00 400.00

TIME (MSEC) -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

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
PASSENGER PELVIS RESULTANT

TRC 830630  
EVALUATION OF MOD VW FLEET  
83242000000  
PEVY03

PLUT DATE 6-SEP-83 14:00:22  
FILTER = BLPF 300/ 949/ -40  
MIN. MAX VALUES = 8.00 22.68 e 126.25



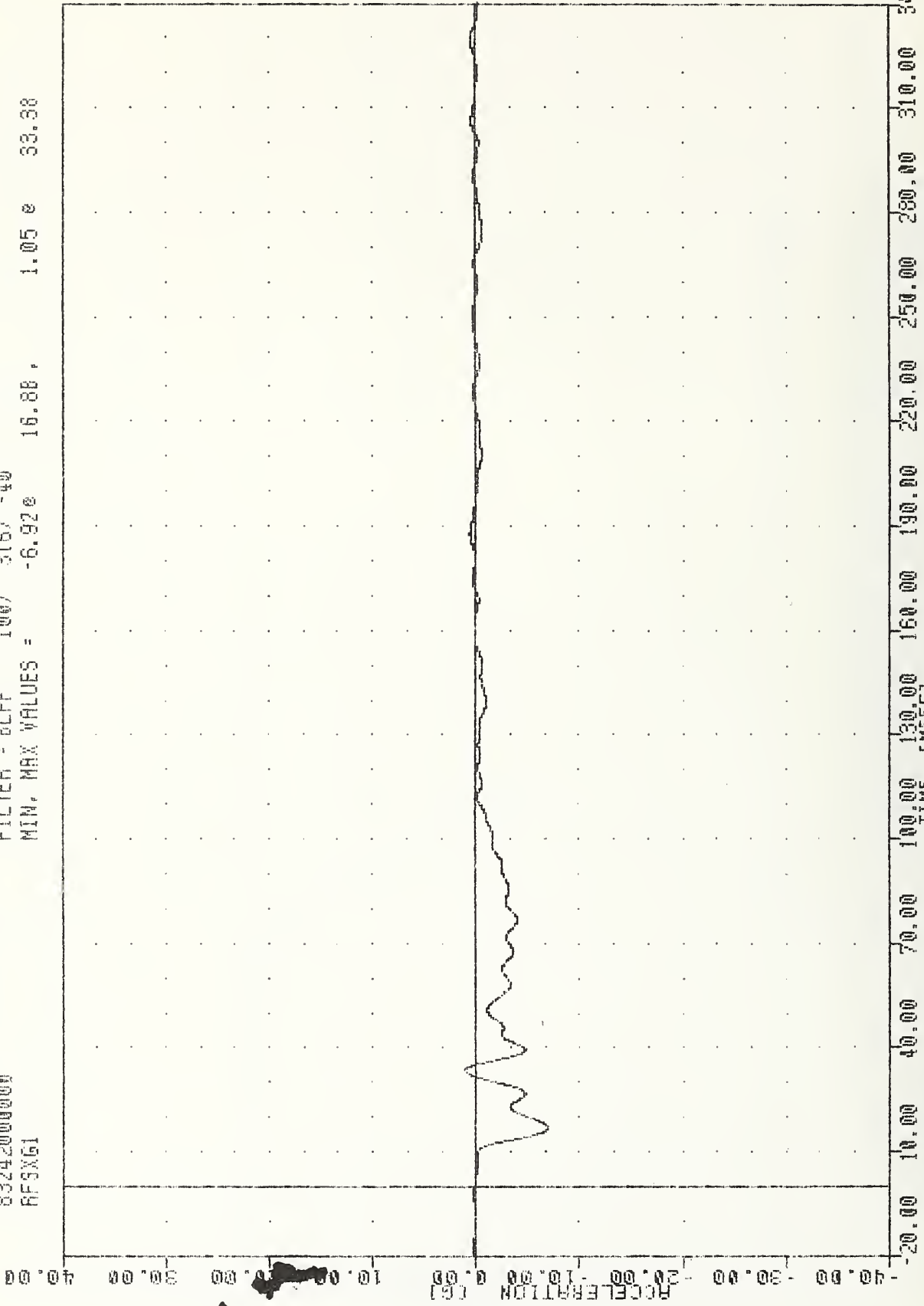
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING PEVY03

IRC 830030  
EVALUATION OF MDD VW FLEET  
8324200000  
RFSX61

PLOT DATE 8-SEP-83 09:56:23

FILTER = BLPF 100/ 315/ -40

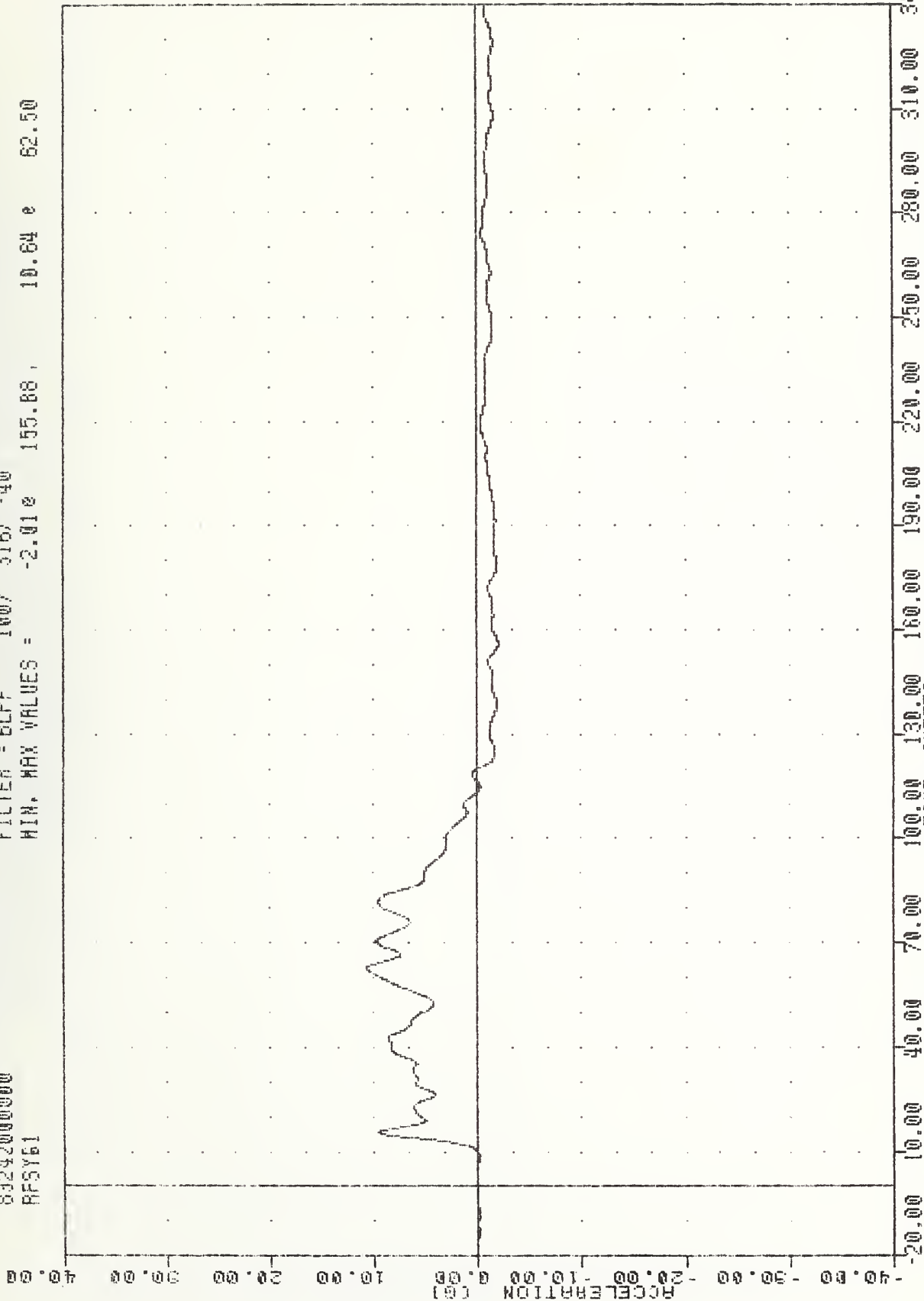
MIN. MAX VALUES = -6.92e 16.88, 1.05 e 33.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE RIGHT FRONT SILL ACCELERATION X AXIS



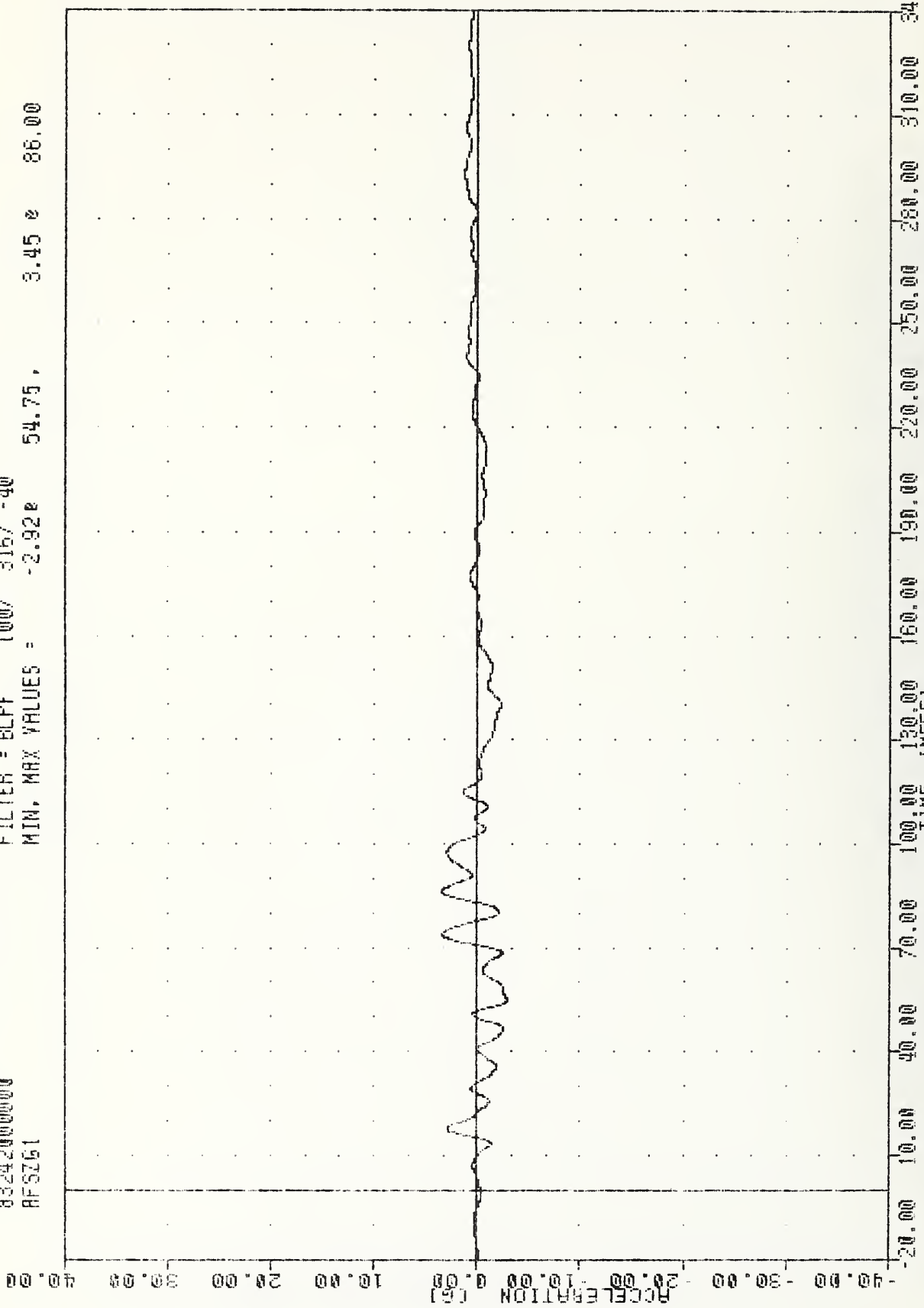
TAC 830830 PLOT DATE 6-SEP-83 09:06:23  
 EVALUATION OF A00 VH FLEET  
 83242000000  
 RFSY61  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = -2.01e 155.88 , 10.64 e 62.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE RIGHT FRONT SILL ACCELERATION Y AXIS

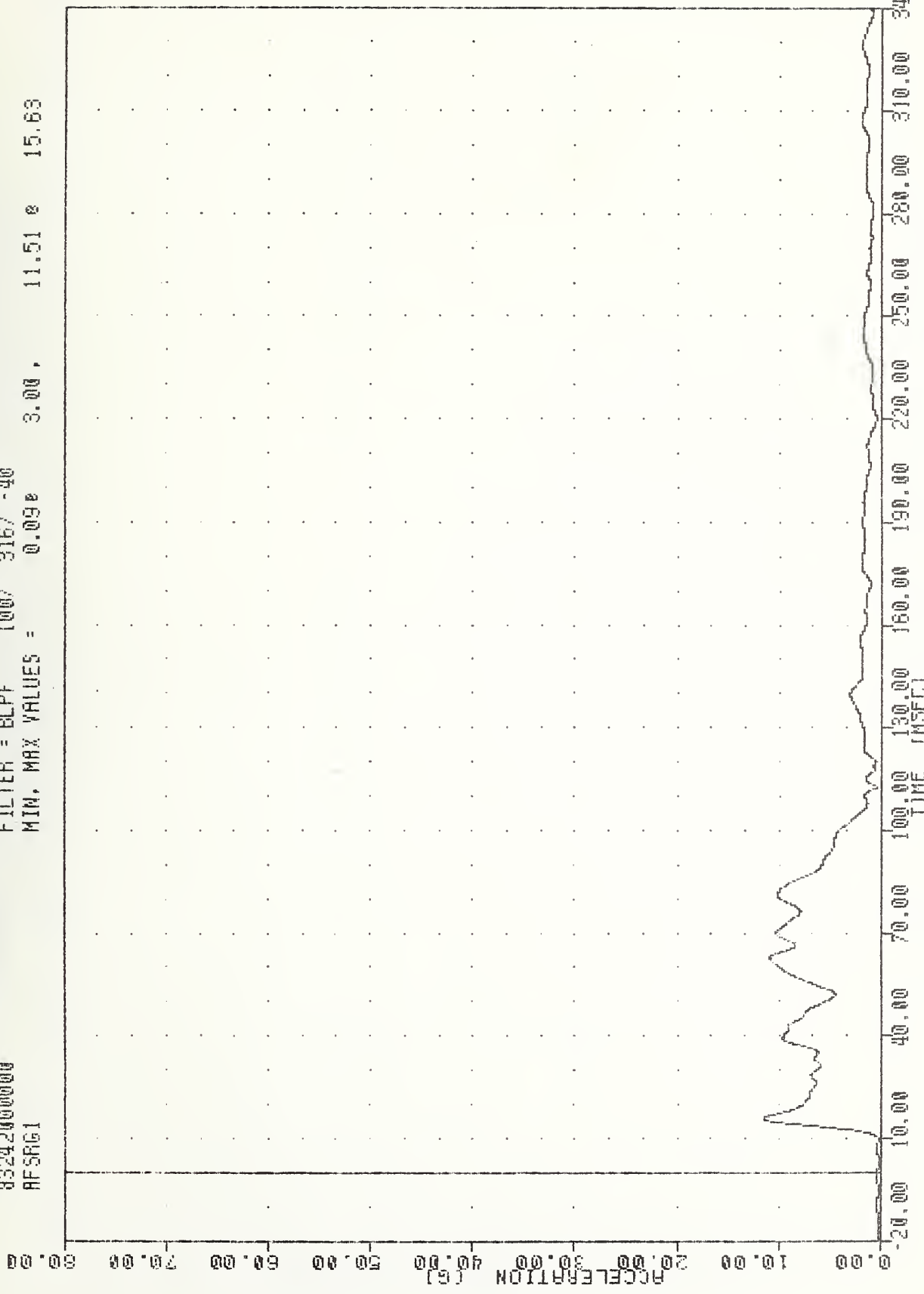
IMC 8300000  
 EVALUATION OF M00 VW FLEET  
 83242000000  
 AFSZ61

PLOT DATE 6-SEP-83 09:56:23  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = -2.92e 54.75, 3.45e 86.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE RIGHT FRONT STILL ACCELERATION Z AXIS

TAC 830830 PLOT DATE 6-SEP-83 09:56:25  
 EVALUATION OF MID YW FLEET  
 83242000000  
 AFSRG1  
 FILTER = BLPF 100/ 316/ -40  
 MIN. MAX VALUES = 0.09e 3.00, 11.51 e 15.63

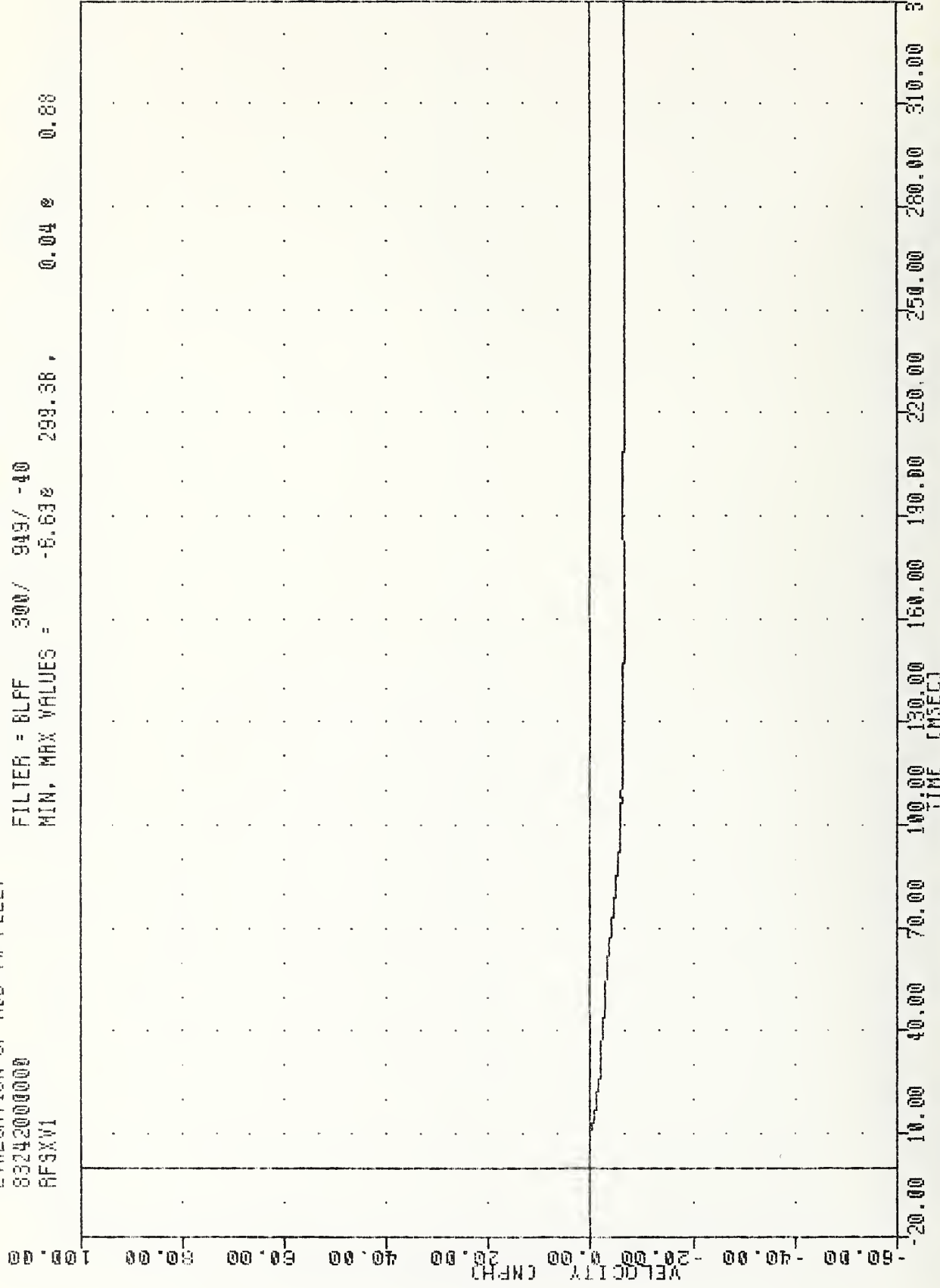


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE RIGHT FRONT SILL RESULTANT

TAC  
 EVALUATION OF MOD VW FLEET  
 83242000000  
 RFSXV1

PLOT DATE 6-SEP-83 14:00:22

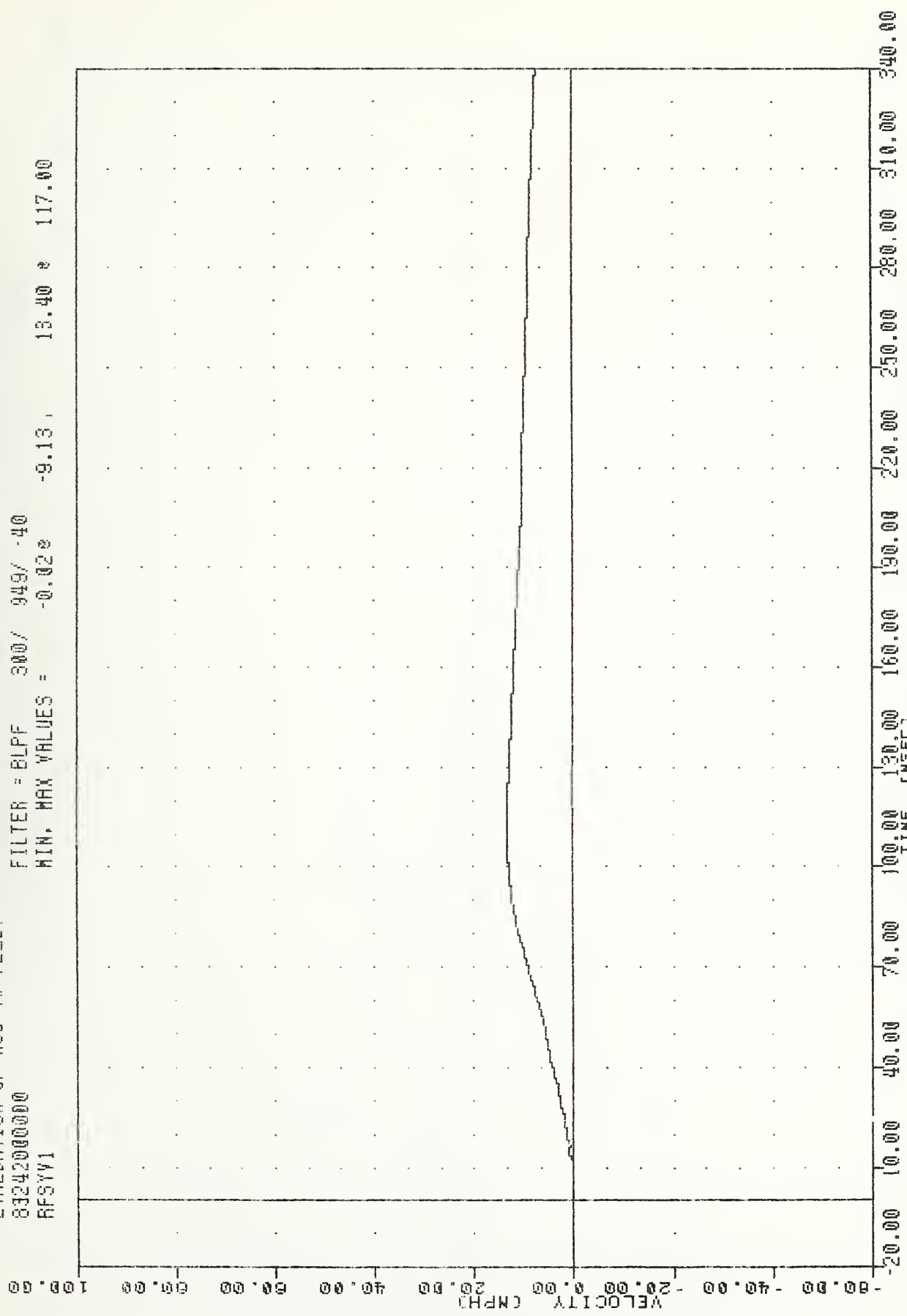
FILTER = BLFF 300/ 949/ -40  
 MIN, MAX VALUES = -6.63e 299.38, 0.04 e 0.88



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING RFSX61

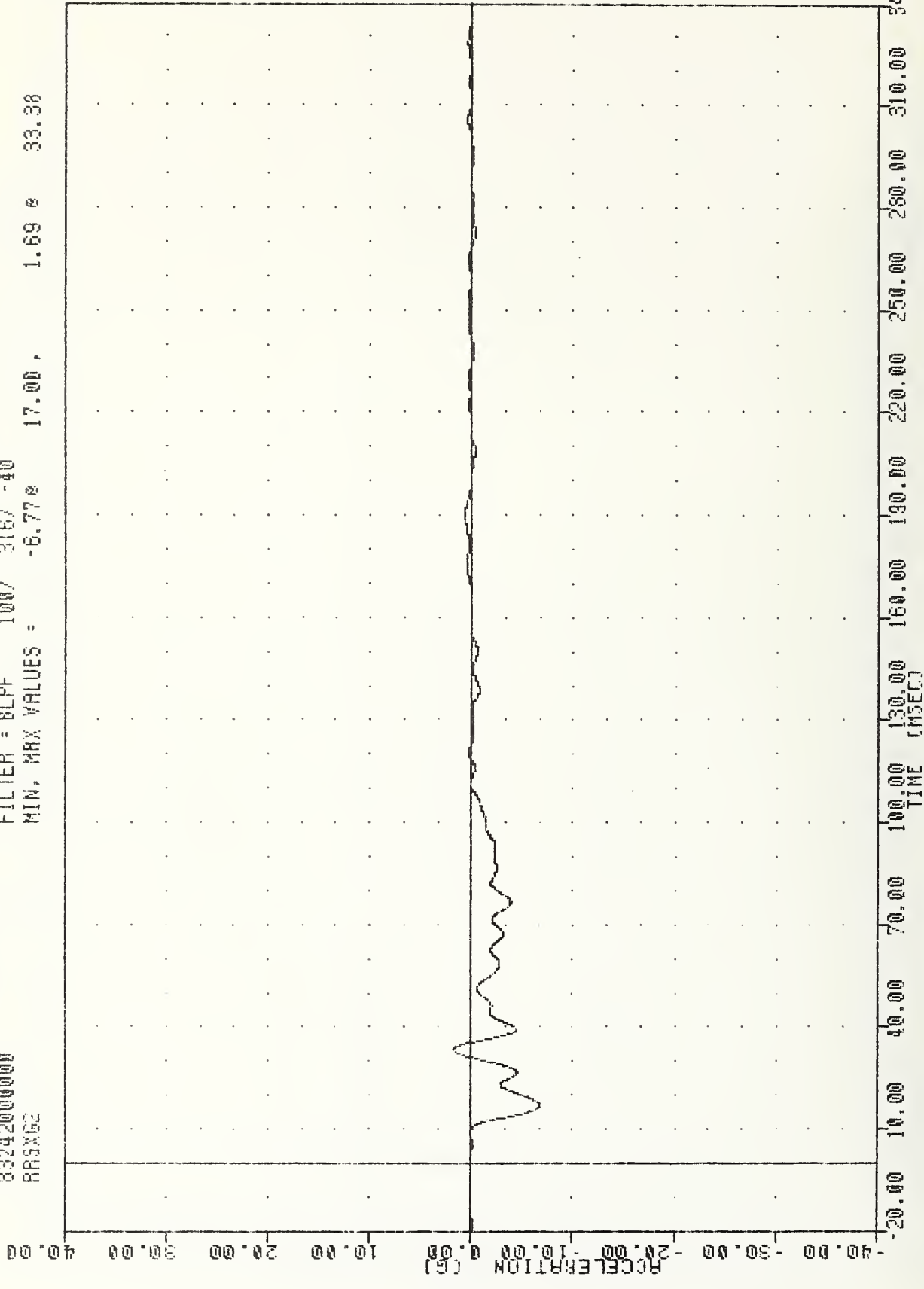
IRL  
 EVALUATION OF MOD VN FLEET  
 83242000000  
 RFSYV1

FLUT DATE 6-SEP-83 14:00:22  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = -0.020 -9.13, 13.40 & 117.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING RFSYGI

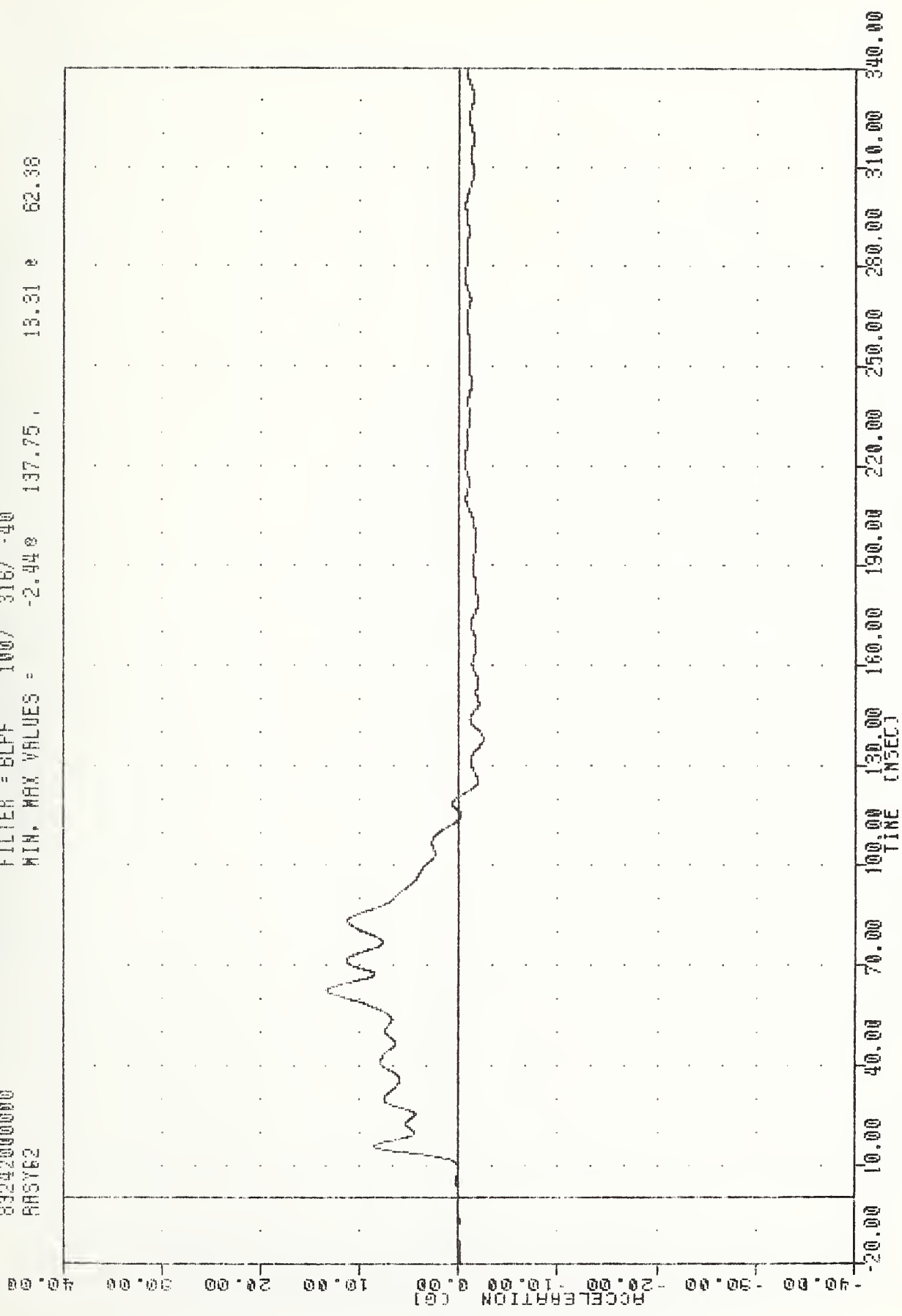
TRC , 830830 PLOT DATE 8-SEP-83 09:56:23  
 EVALUATION OF MOD VN FLEET  
 83242000000  
 RRSX62  
 FILTER = 8LFF 100/ 316/ -40  
 MIN, MAX VALUES = -6.77% 17.00, 1.69% 33.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE RIGHT REAR SILL ACCELERATION X AXIS

TAC  
EVALUATION OF MOO VN FLEET  
83242000000  
ARST62

PLOT DATE 6-SEP-83 09:56:23  
FILTER = BLFF 100/ 316/ -40  
MIN. MAX VALUES = -2.448 137.75 13.31 e 62.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE RIGHT REAR SILL ACCELERATION Y AXIS

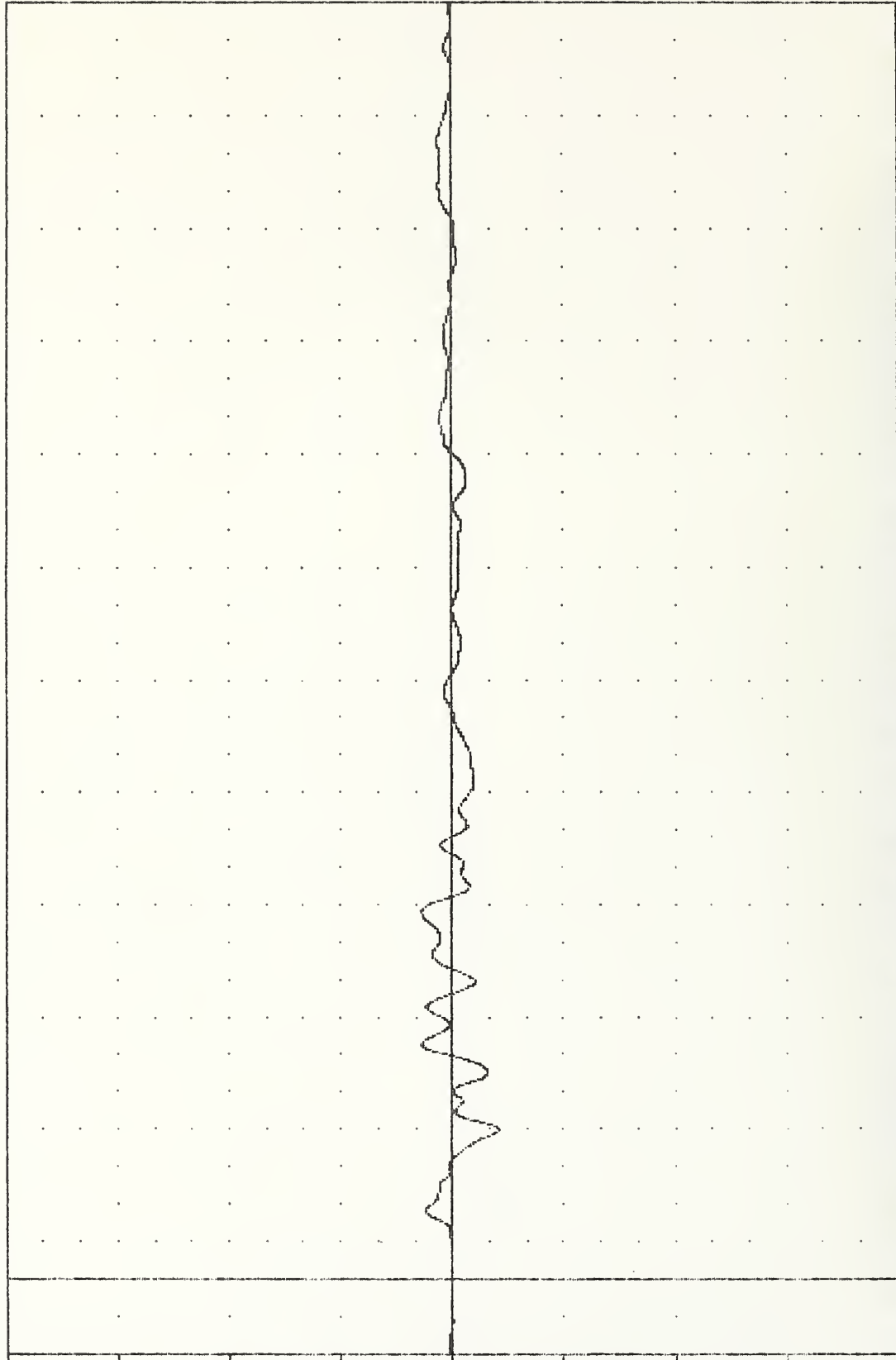
IRC  
EVALUATION OF MOD YW FLEET  
93242000000  
AR5ZG2

PLOT DATE 6-SEP-83 09:56:23

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -4.18e 39.63, 2.75 e 62.63

ACCELERATION (G)



TIME (MSEC) 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

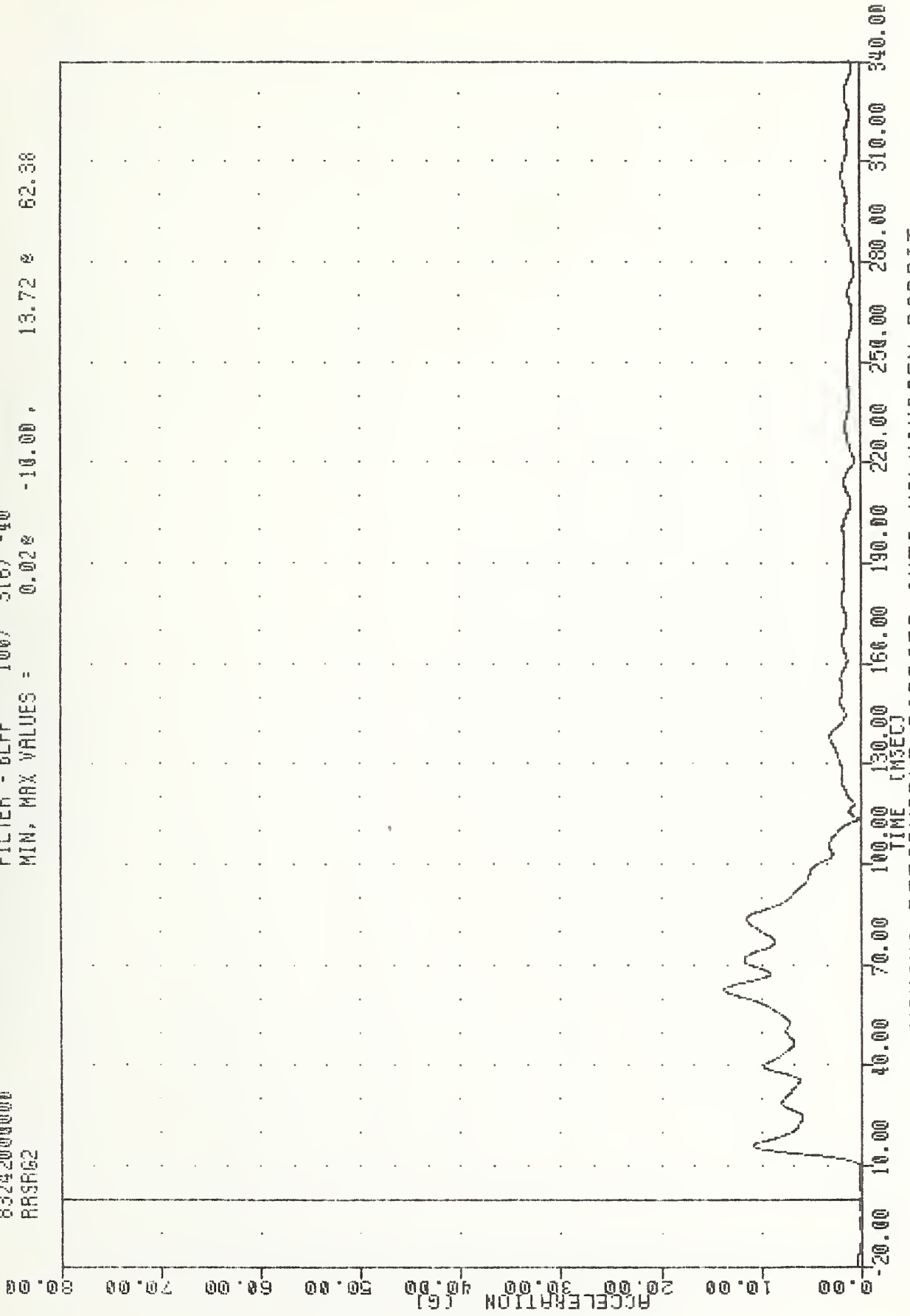
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE RIGHT REAR SILL ACCELERATION Z AXIS



TAC  
EVALUATION OF MDD VW FLEET  
83242000000  
RRSR62

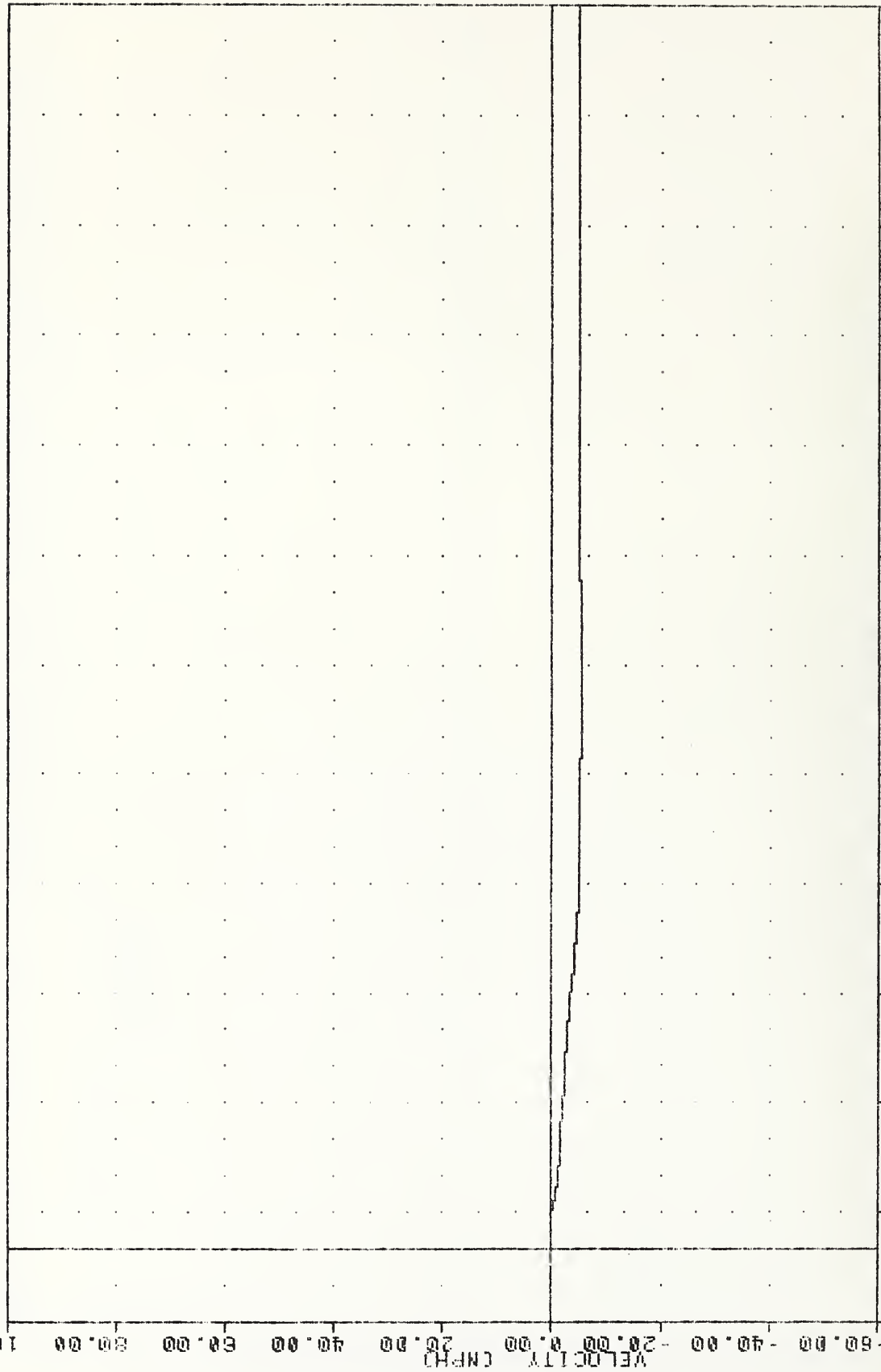
PLOT DATE 6-SEP-83 09:56:23

FILTER = BLPF 100/ 316/ -40  
MIN, MAX VALUES = 0.02e -10.00, 13.72 e 62.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE RIGHT REAR SILL RESULTANT

IHL 830830 PLOT DATE 6-SEP-83 14:00:22  
 EVALUATION OF MOD YW FLEET  
 83242000000  
 RRSXWZ  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = -5.29e 150.00 . 0.01 e 7.13

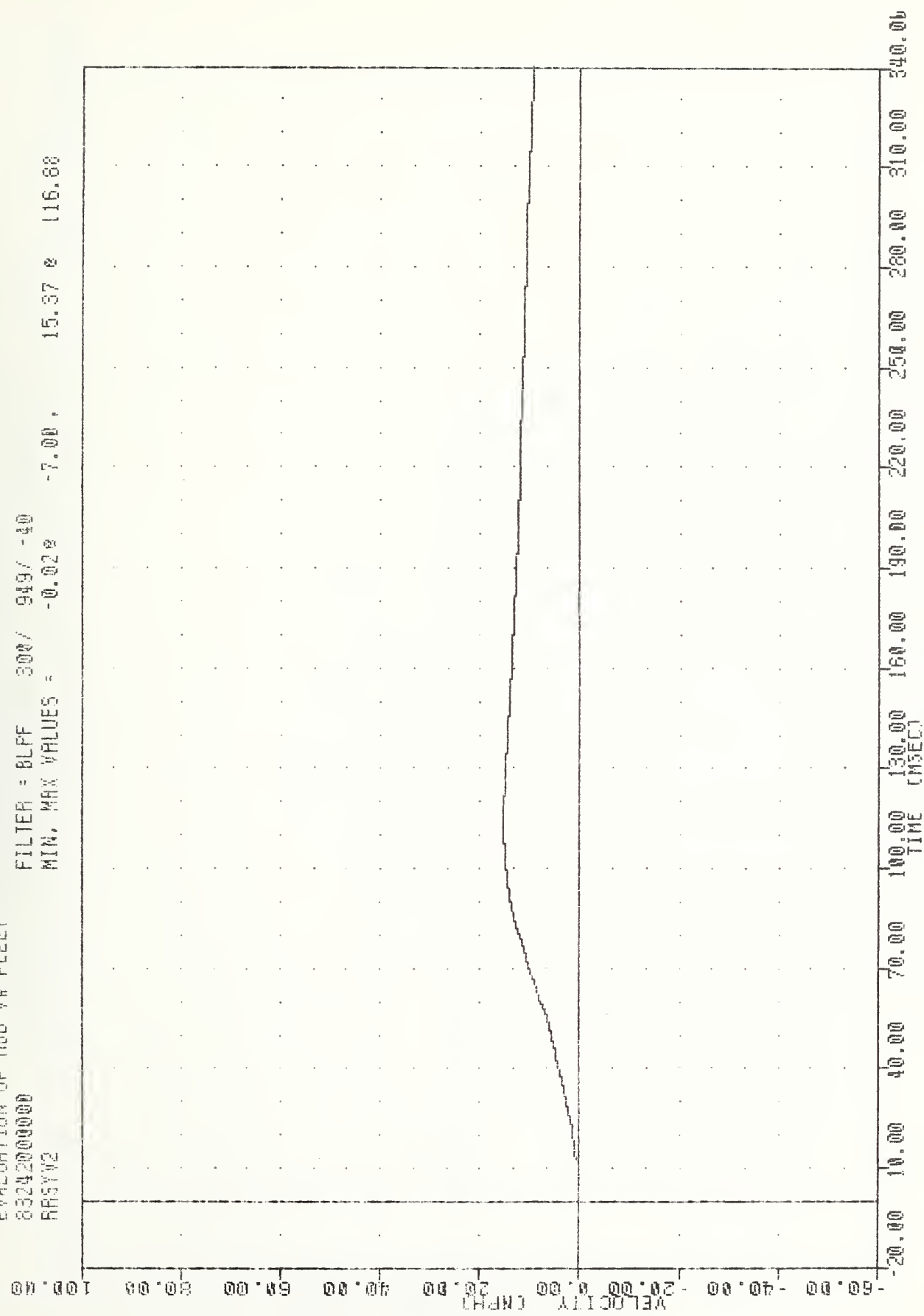


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
 TIME (MSEC)  
 MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING RRSXG2

TSC  
 EVALUATION OF NOD V# FLEET  
 83242000000  
 RRSYV2

PLOT DATE 6-SEP-88 14:00:22

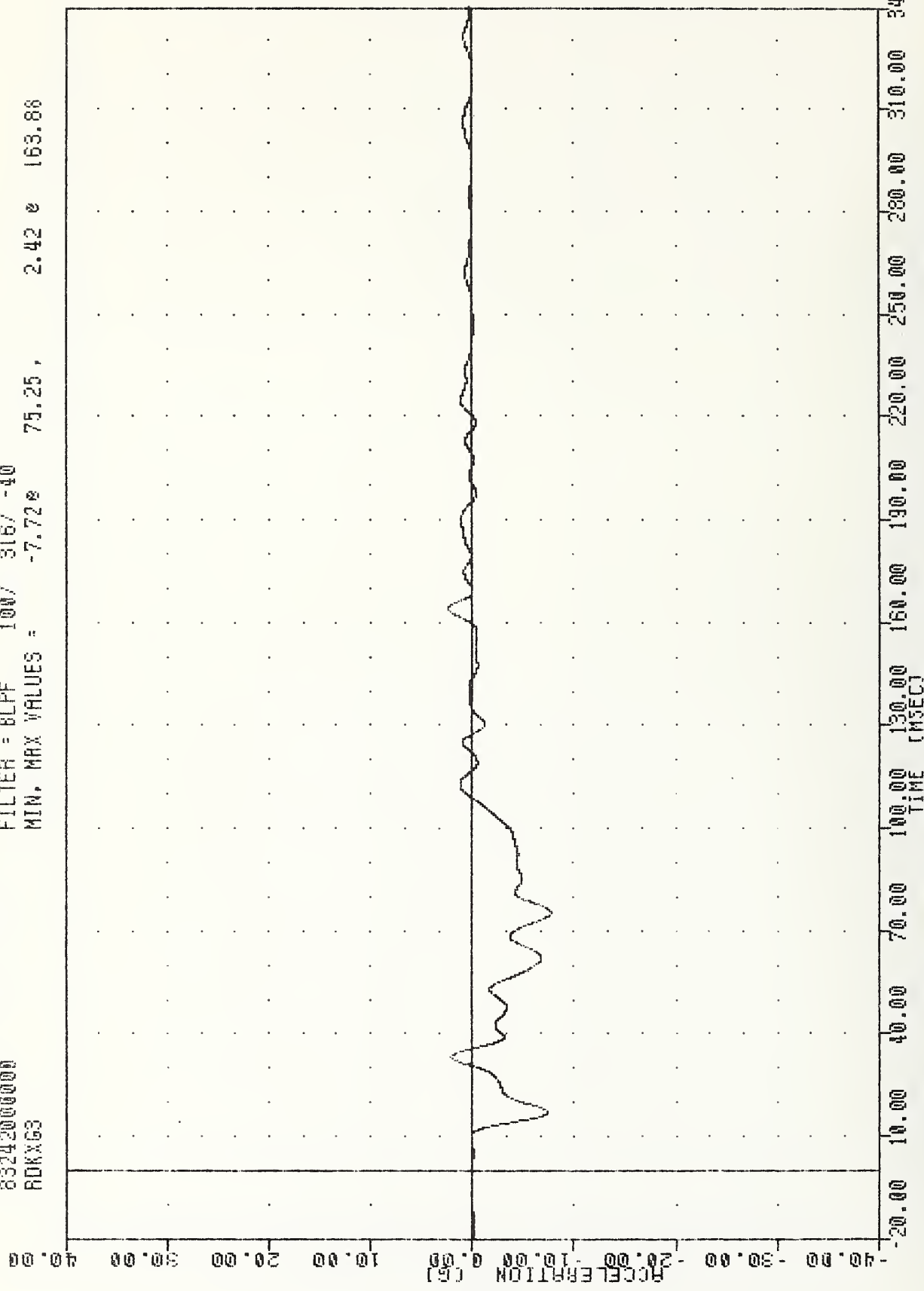
FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = -0.02% 15.37% 116.68



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING RRSY62

TRC , 830830  
 EVALUATION OF MDD VW FLEET  
 8324200000  
 RDKXG3

PLOT DATE 6-SEP-83 09:56:23  
 FILTER = 8LFF 100/ 316/ -40  
 MIN, MAX VALUES = -7.72e 75.25, 2.42 e 163.88

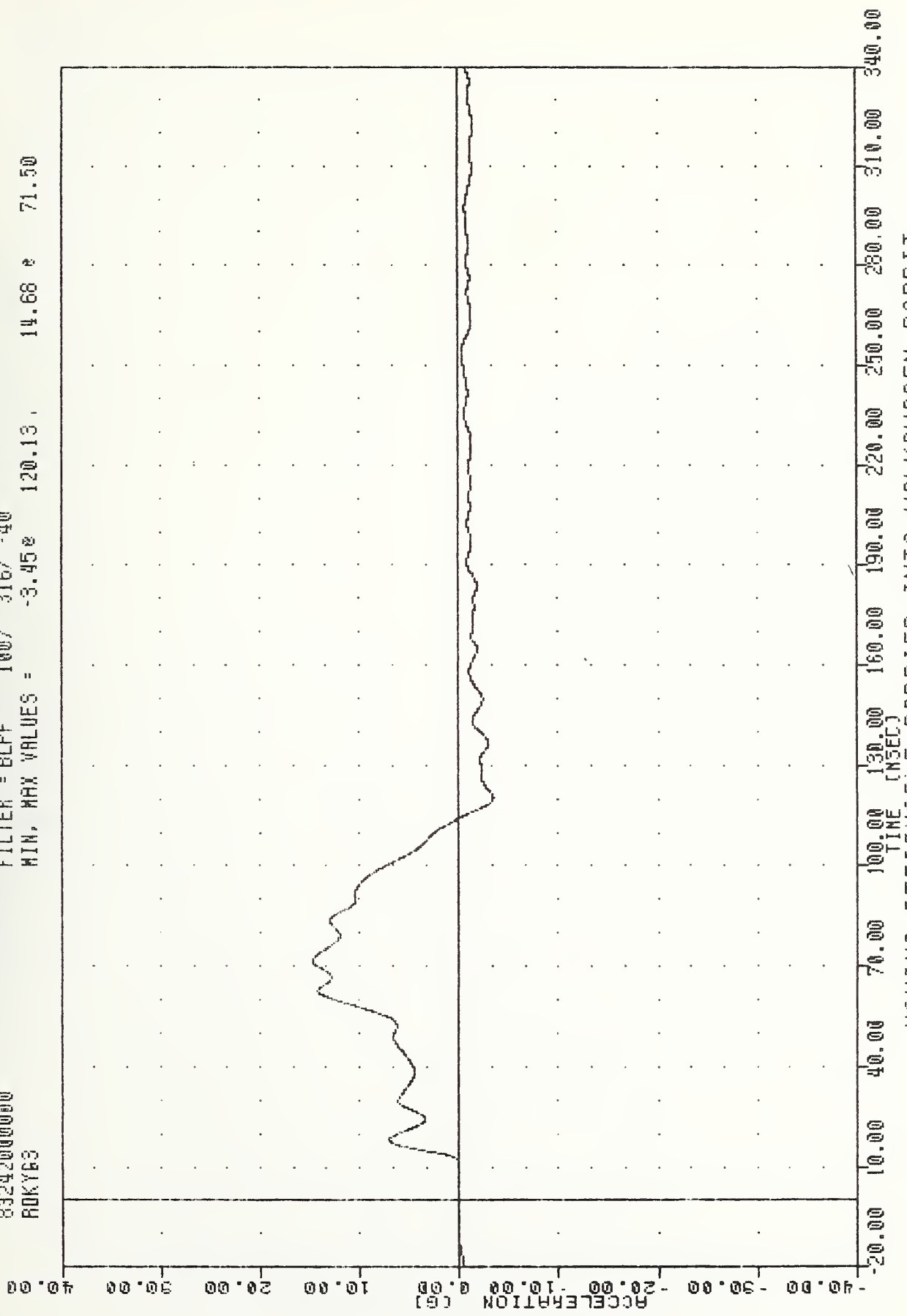


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE REAR DECK ACCELERATION X AXIS

TAC  
EVALUATION OF MOD VN FLEET  
83242000000  
RDKY63

PLOT DATE 6-SEP-88 09:56:23

FILTER = BLFF 100/ 316/ -40  
MIN, MAX VALUES = -3.45e 120.13, 14.68 e 71.50



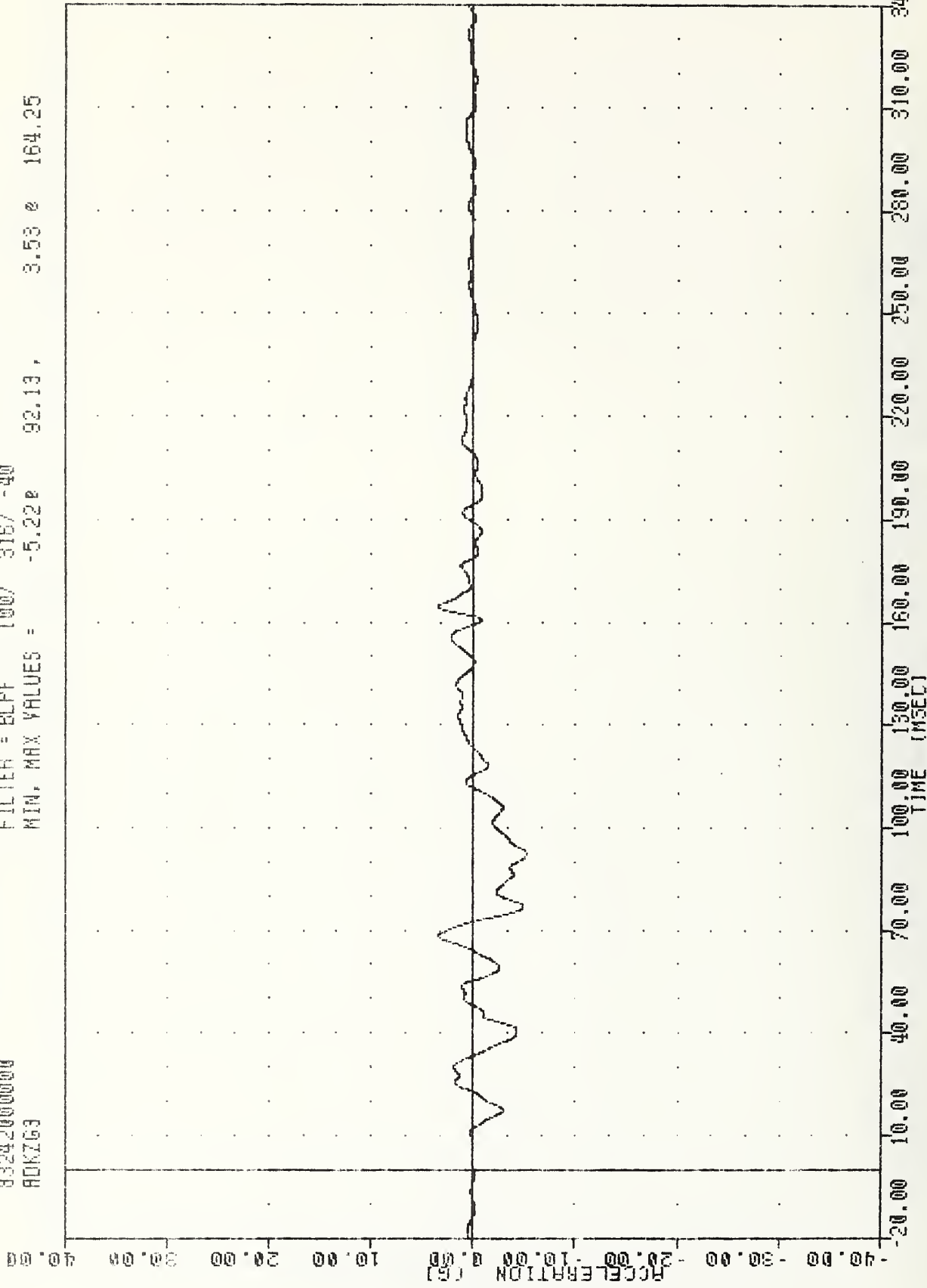
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE REAR DECK ACCELERATION Y AXIS

TRC  
EVALUATION OF MGD VEHICLE FLEET  
83242000000  
ADKZG3

PLT DATE 6-SEP-83 09:56:23

FILTER = BLPF 100/ 315/ -40

MIN. MAX VALUES = -5.22g 92.13, 3.53 g 164.25



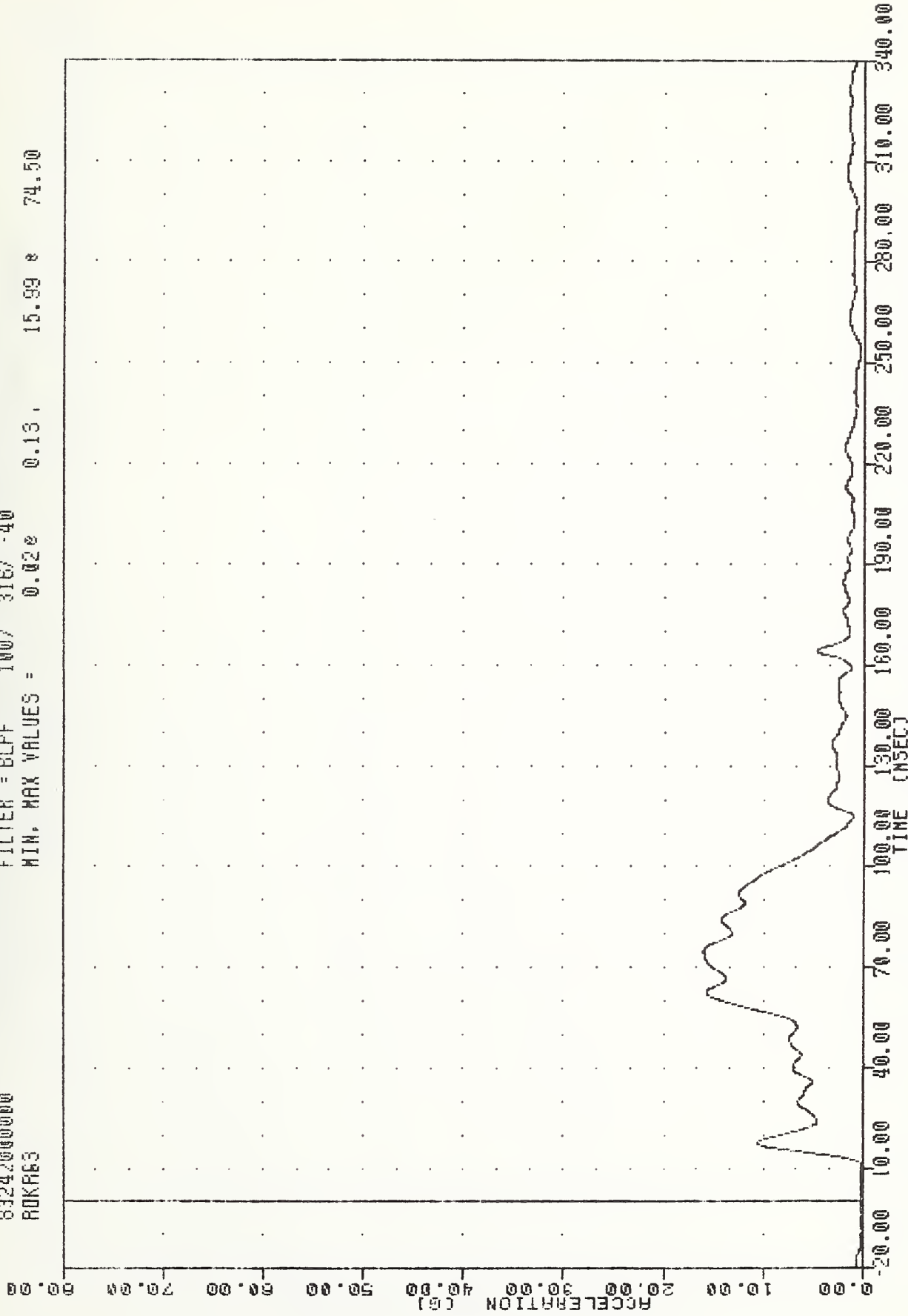
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE REAR DECK ACCELERATION Z AXIS

TAC  
EVALUATION OF MOO YW FLEET  
8324200000  
R0KRB3

PLOT DATE 6-SEP-83 09:56:23

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = 0.02e 0.13, 15.99 e 74.50

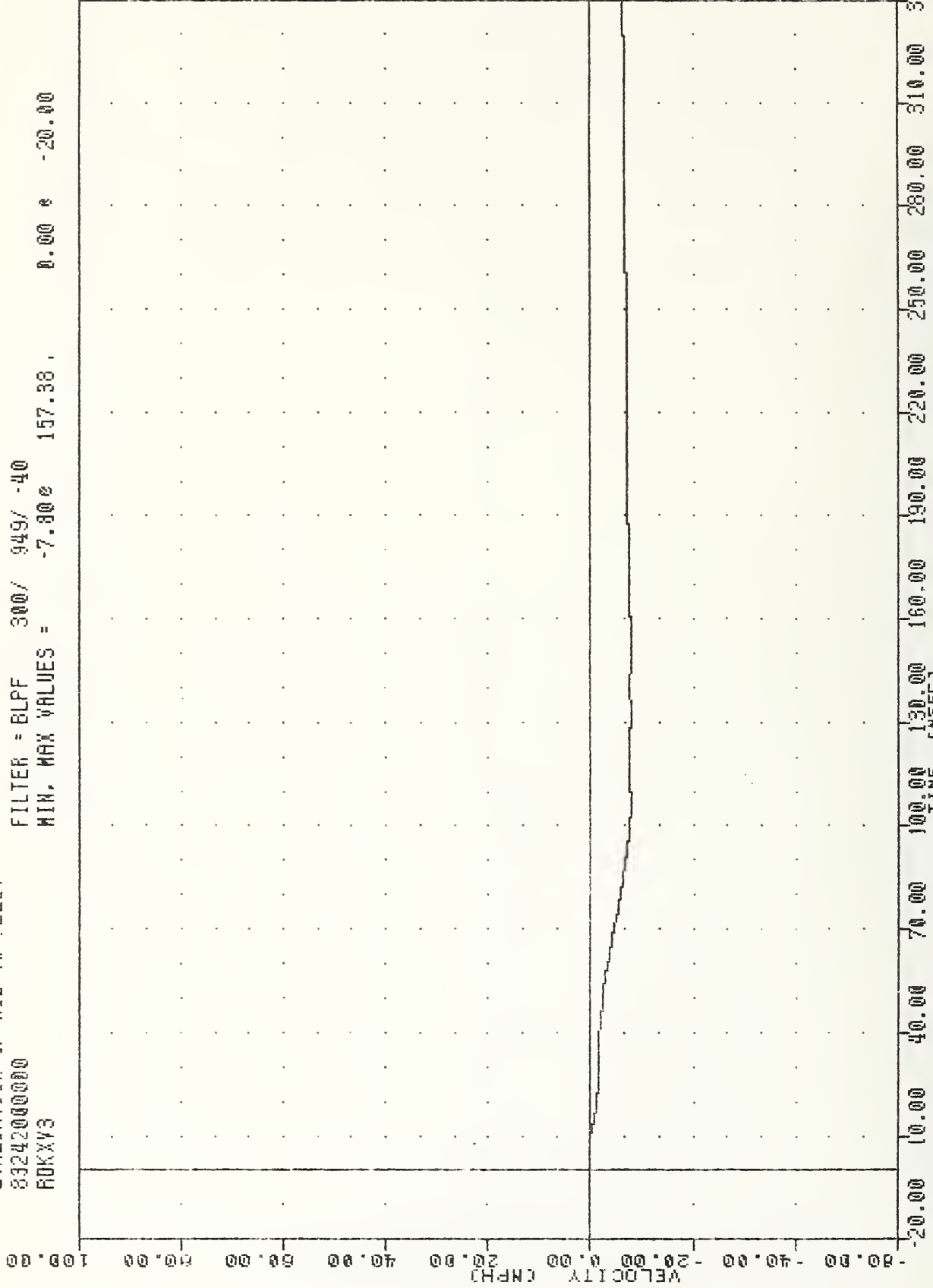


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE REAR DECK RESULTANT

INC 830830  
EVALUATION OF MOD VW FLEET  
83242000000  
RDKXY3

PLOT DATE 6-SEP-83 14:00:22

FILTER = BLPF 300/ 949/ -40  
MIN, MAX VALUES = -7.80e 157.38, 0.00 e -20.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING RDKXG3



IMC  
EVALUATION OF MOD YW FLEET  
83242000000  
ADKYW3

PLU1 UNIT 03DEF83 14:00:22

FILTER = BLPF 300/ 949/ -40  
MIN. MAX VALUES = -0.02e 17.67 e 111.68

100.00

80.00

60.00

40.00

20.00

0.00

-20.00

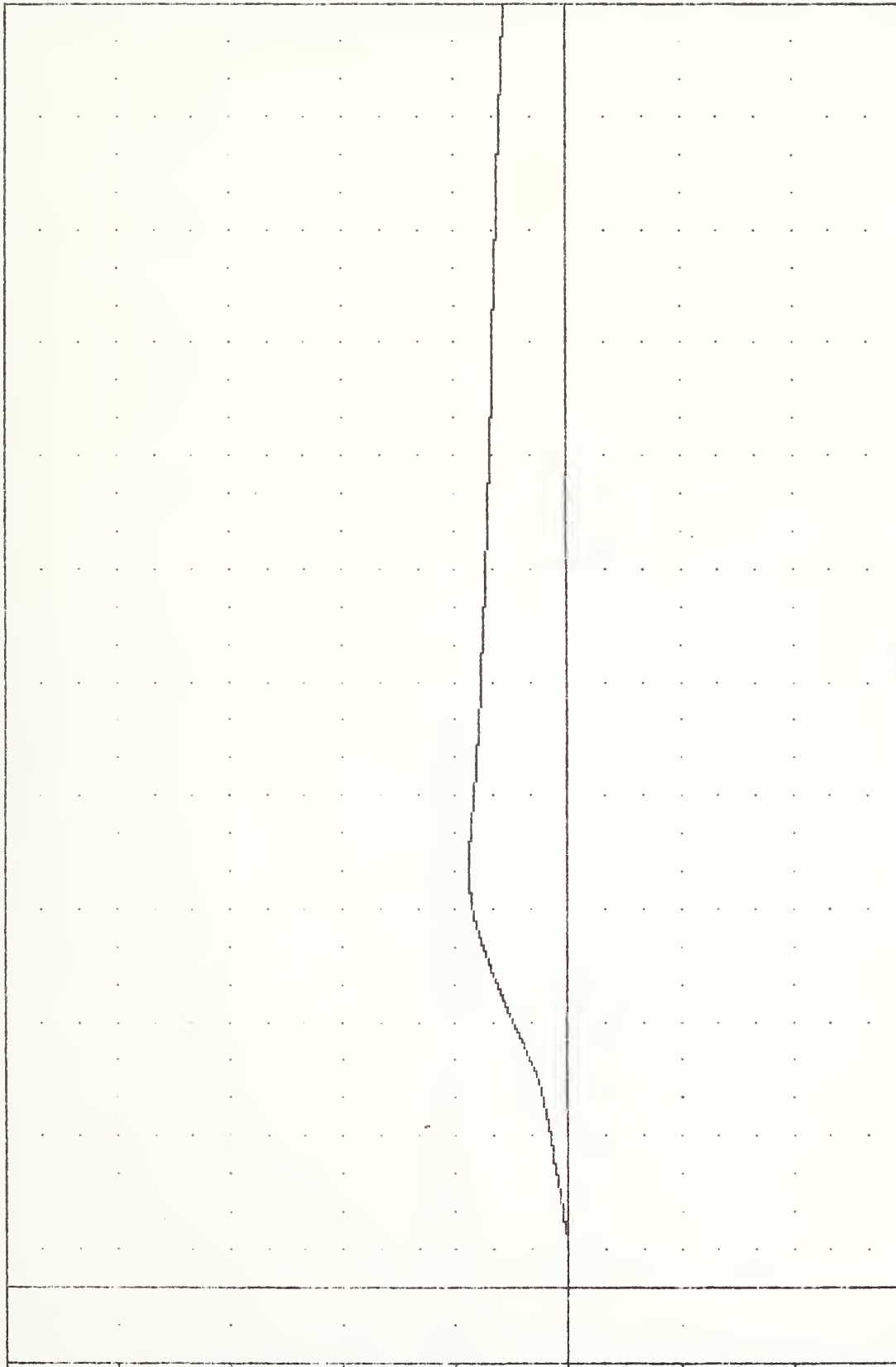
-40.00

-60.00

-80.00

-100.00

B-87



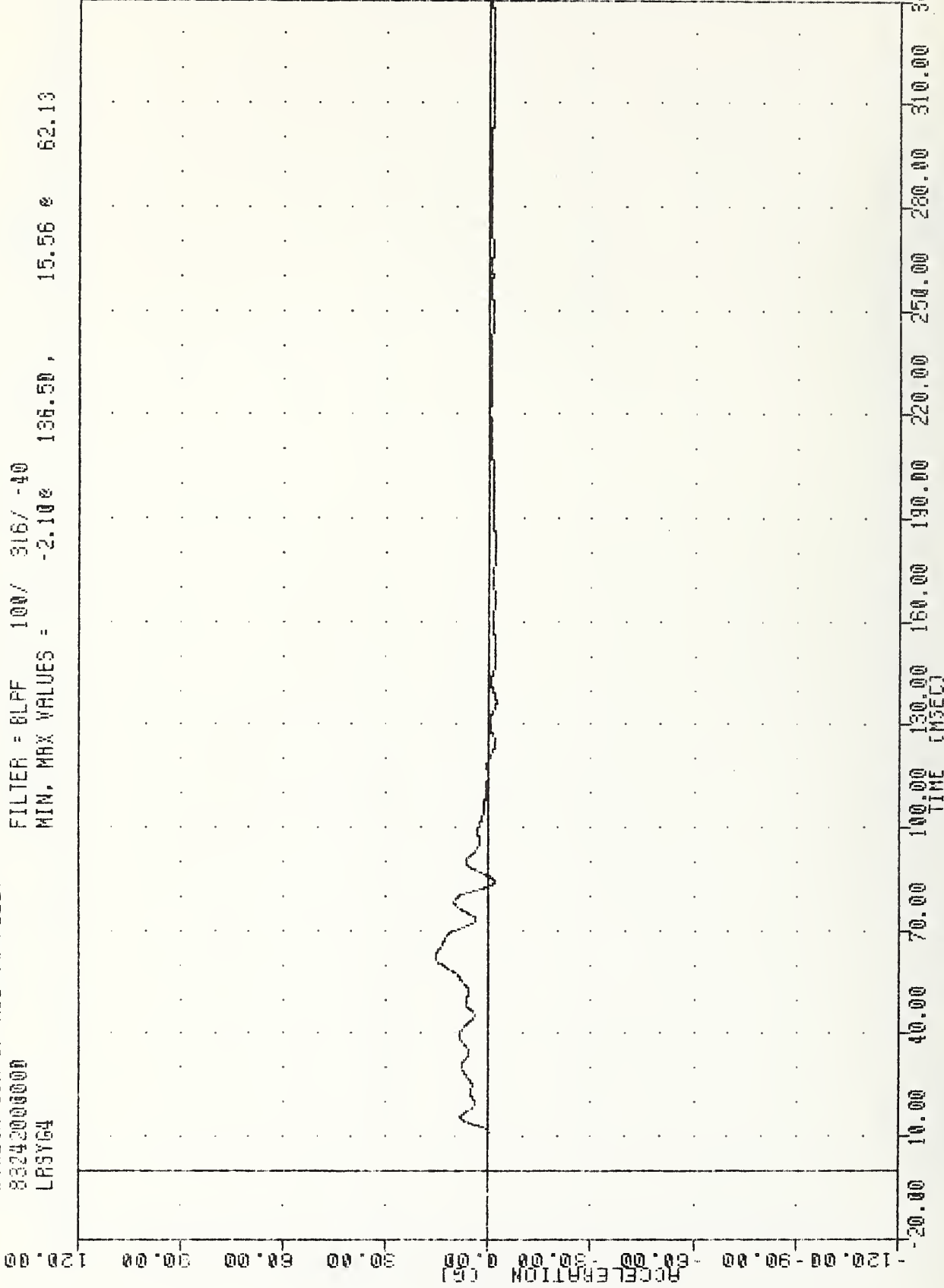
340.00 310.00 280.00 250.00 220.00 190.00 160.00 130.00 100.00 70.00 40.00 10.00 -20.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING ADKYG3

TAC  
EVALUATION OF MDD VW FLEET  
83242000000  
LR5Y64

FLOT ORTE 8-SEP-68 09:56:23

FILTER = 6LFF 100/ 316/ -40  
MIN. MAX VALUES = -2.10% 136.50, 15.56% 62.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE LEFT REAR SILL ACCELERATION Y AXIS

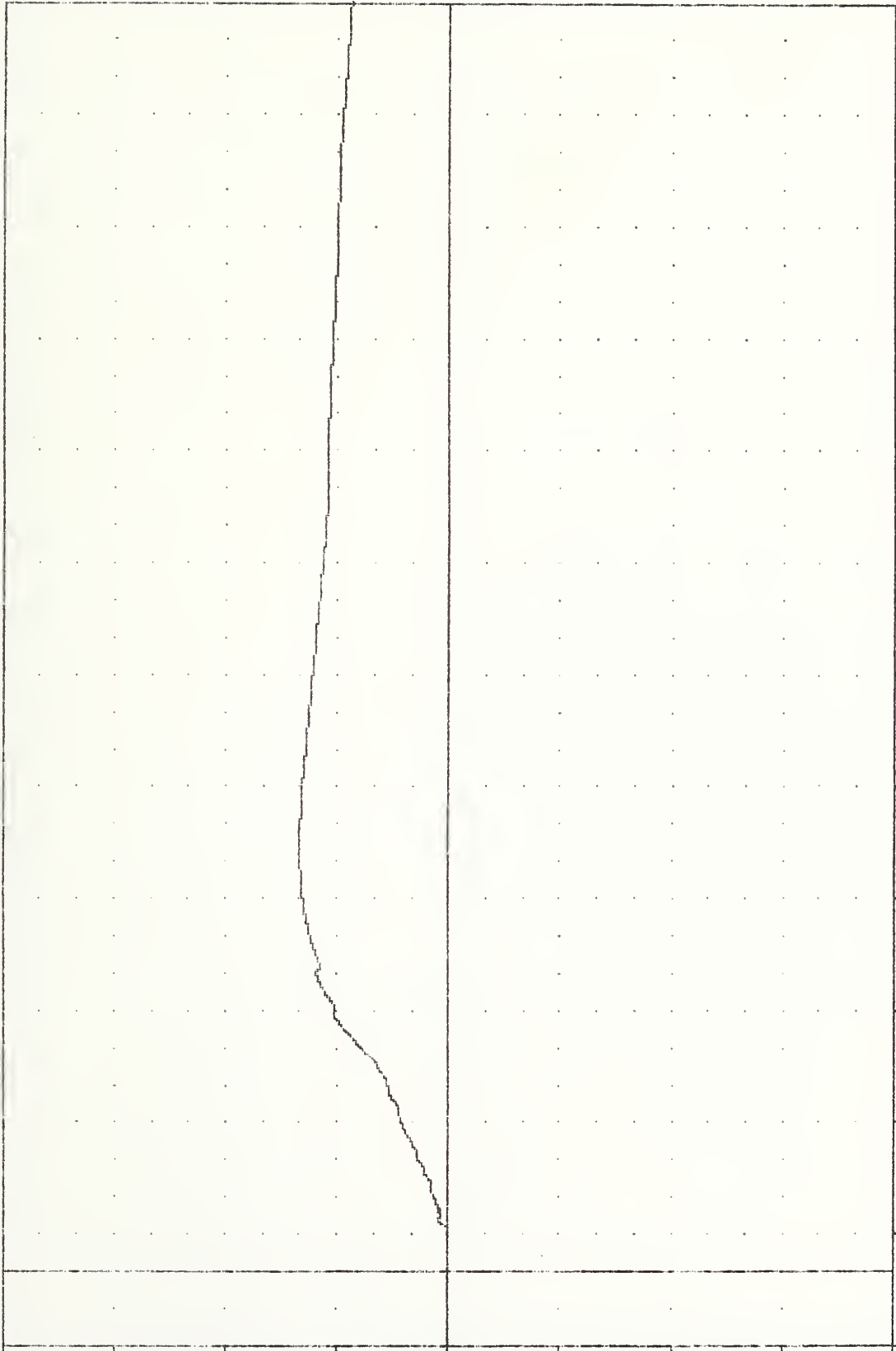
TRC  
EVALUATION OF MDD VW FLEET  
83242000000  
LR5Y74

830050  
FLOT DATE 6-SEP-83 14:00:22

FILTER = BLFF 300/ 949/ -40

MIN. MAX VALUES = -0.02e 11.00, 13.44 e 116.63

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



340.00  
310.00  
280.00  
250.00  
220.00  
190.00  
160.00  
130.00  
100.00  
70.00  
40.00  
10.00  
-20.00

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING LR5Y64

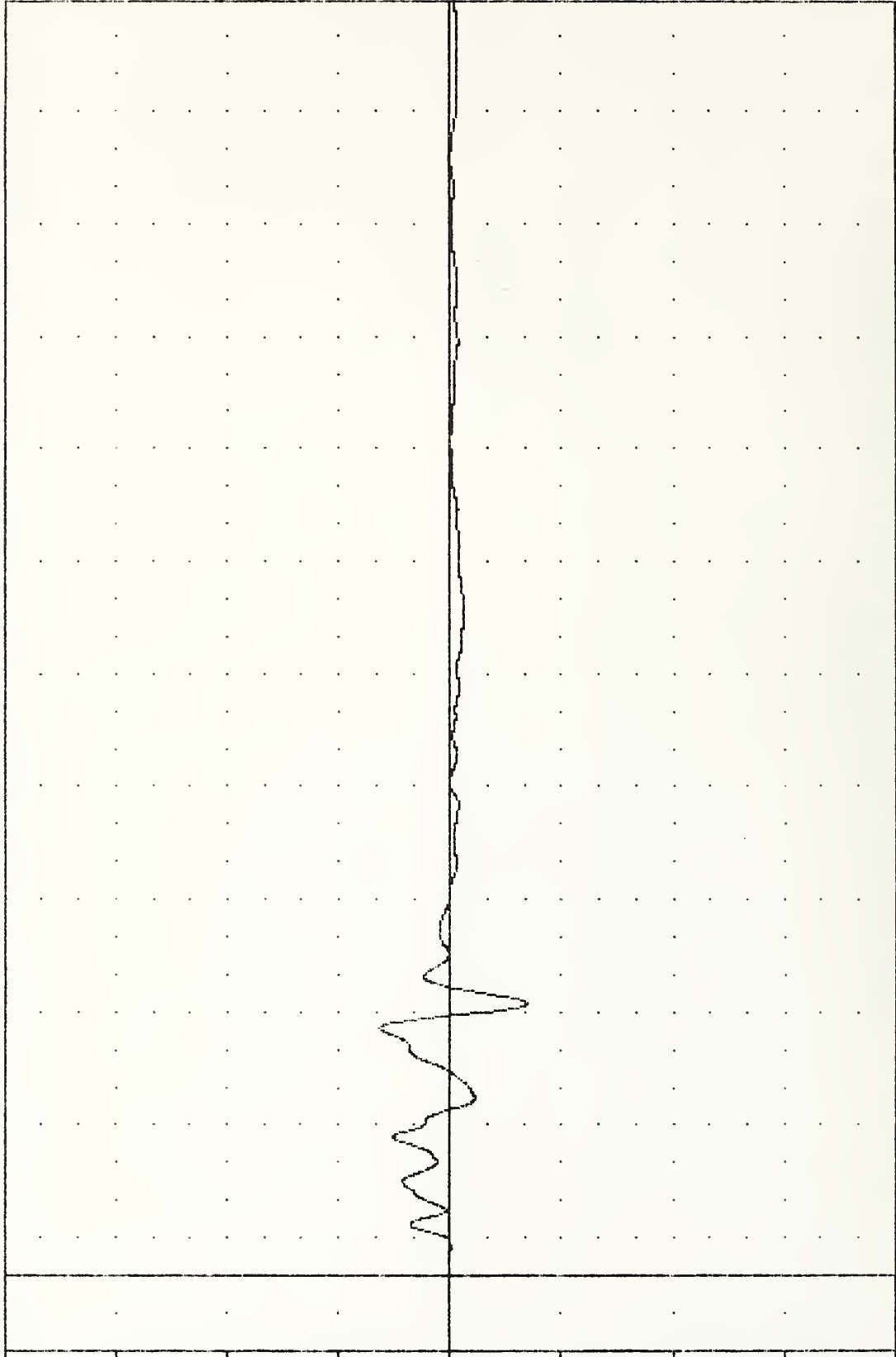
TRL 830830  
EVALUATION OF NOD VW FLEET  
8324200000  
LF5Y65

PLOT DATE 6-SEP-83 10:56:56

FILTER = 6LFF 100/ 316/ -40

MIN. MAX VALUES = -20.98e 72.13, 19.00e 65.63

ACCELERATION (G)



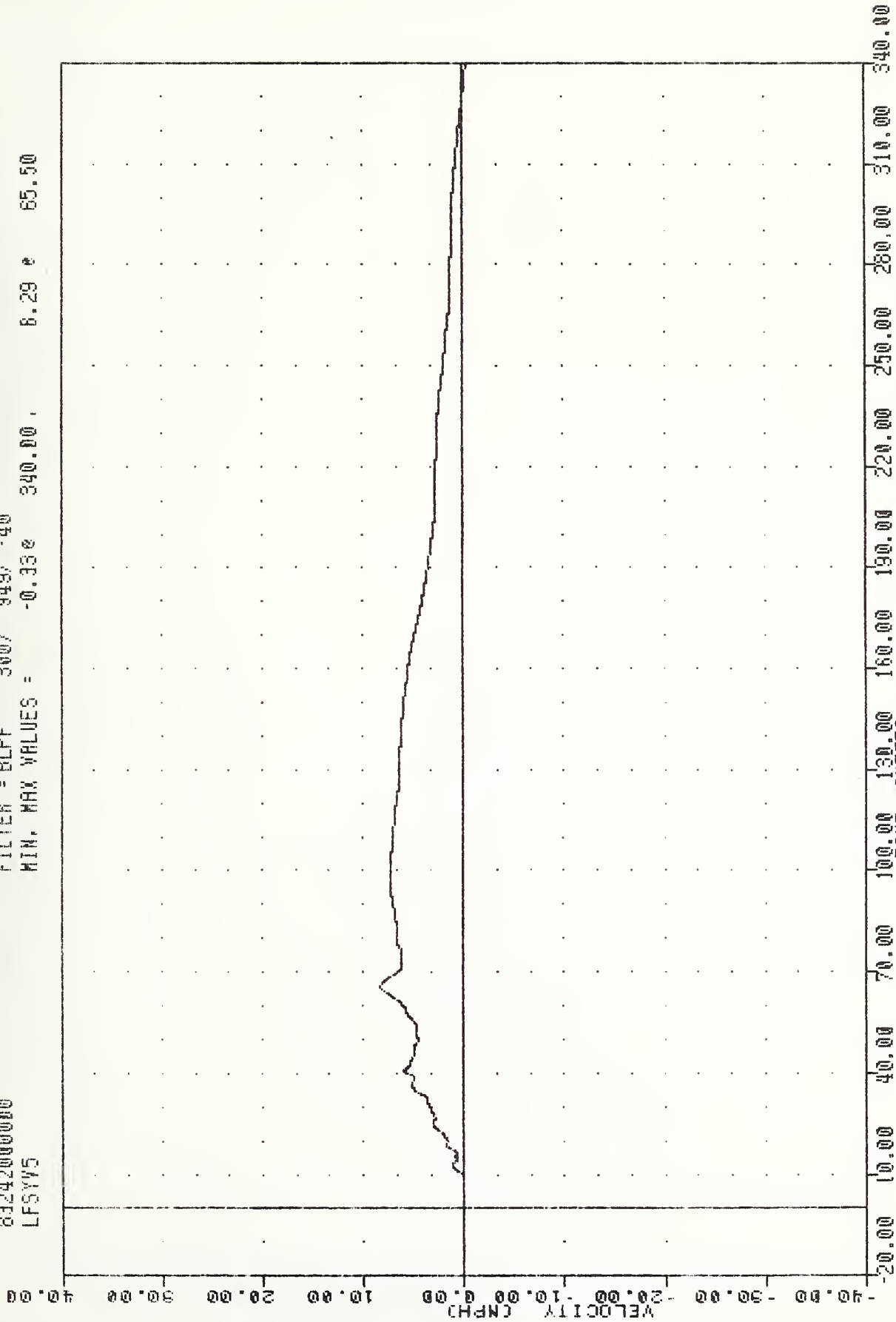
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE LEFT FRONT SILL ACCELERATION Y AXIS

TRC  
EVALUATION OF MOD VW FLEET  
83242000000  
LFSYV5

PLOT DATE 6-SEP-83 14:00:22

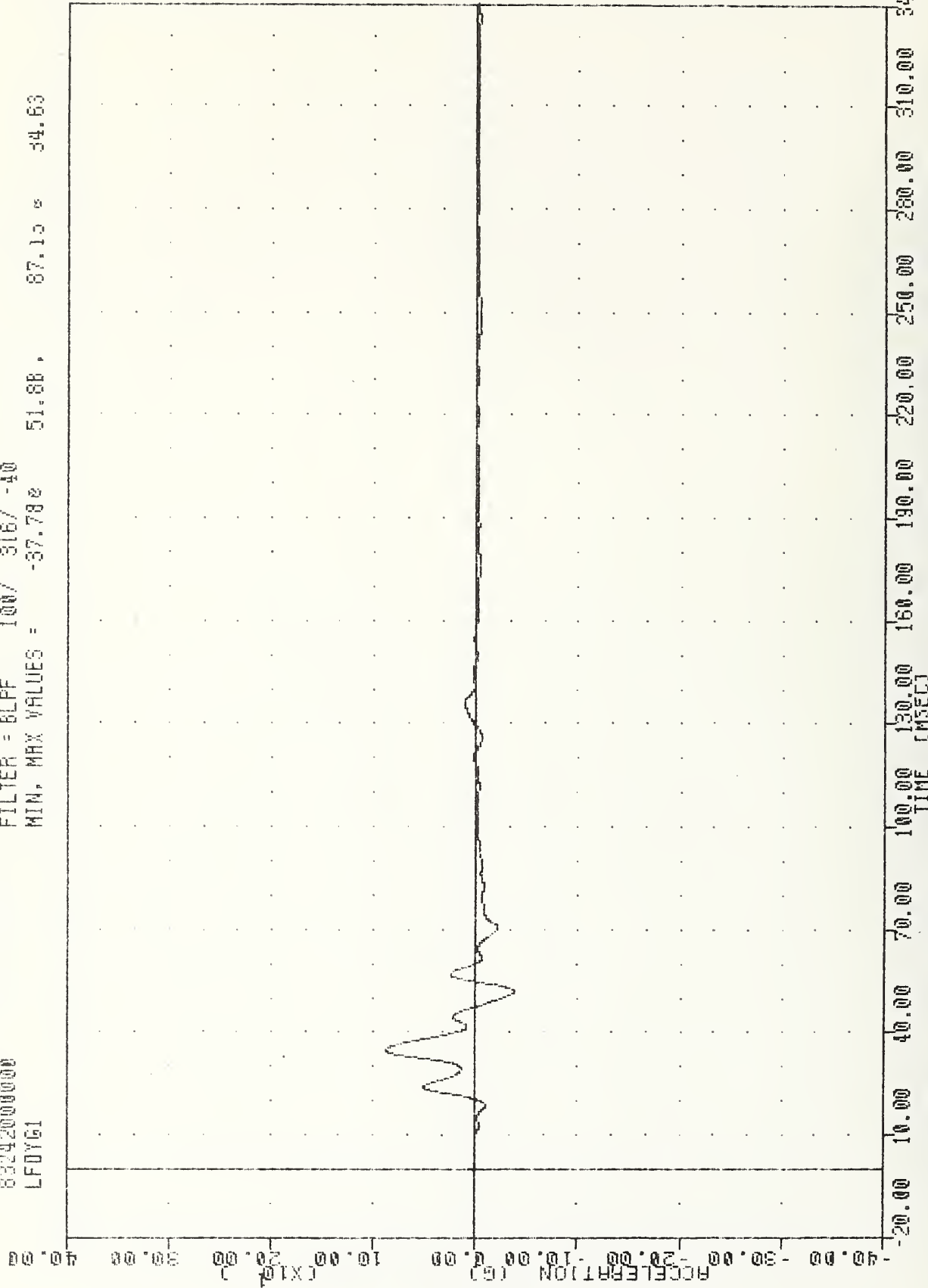
FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -0.35e 340.00 8.29 \* 65.50



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA W USING LFSYG5

TRC \_\_\_\_\_, 8300350 PLOT DATE 6-SEP-83 09:56:23  
 EVALUATION OF MDD VW FLEET  
 83242000000  
 LFDY61  
 FILTER = 6LFF 100/ 316/ -40  
 MIN. MAX VALUES = -37.782 51.88, 87.15 \* 34.63

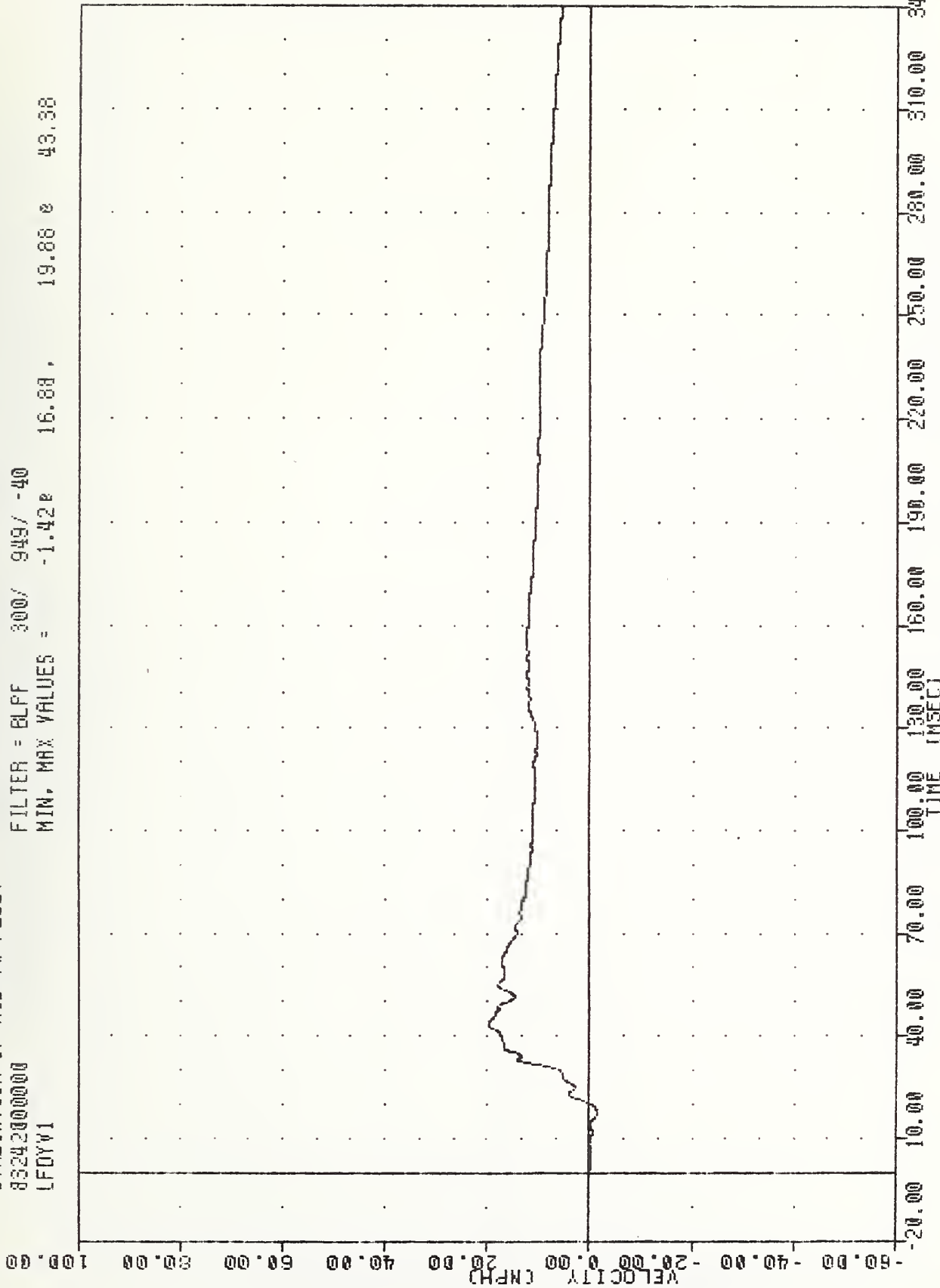


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE LEFT FRONT DOOR (POSITION 6) ACCELERATION Y AXIS

TRC  
 EVALUATION OF MOD YW FLEET  
 83242000000  
 LFOYV1

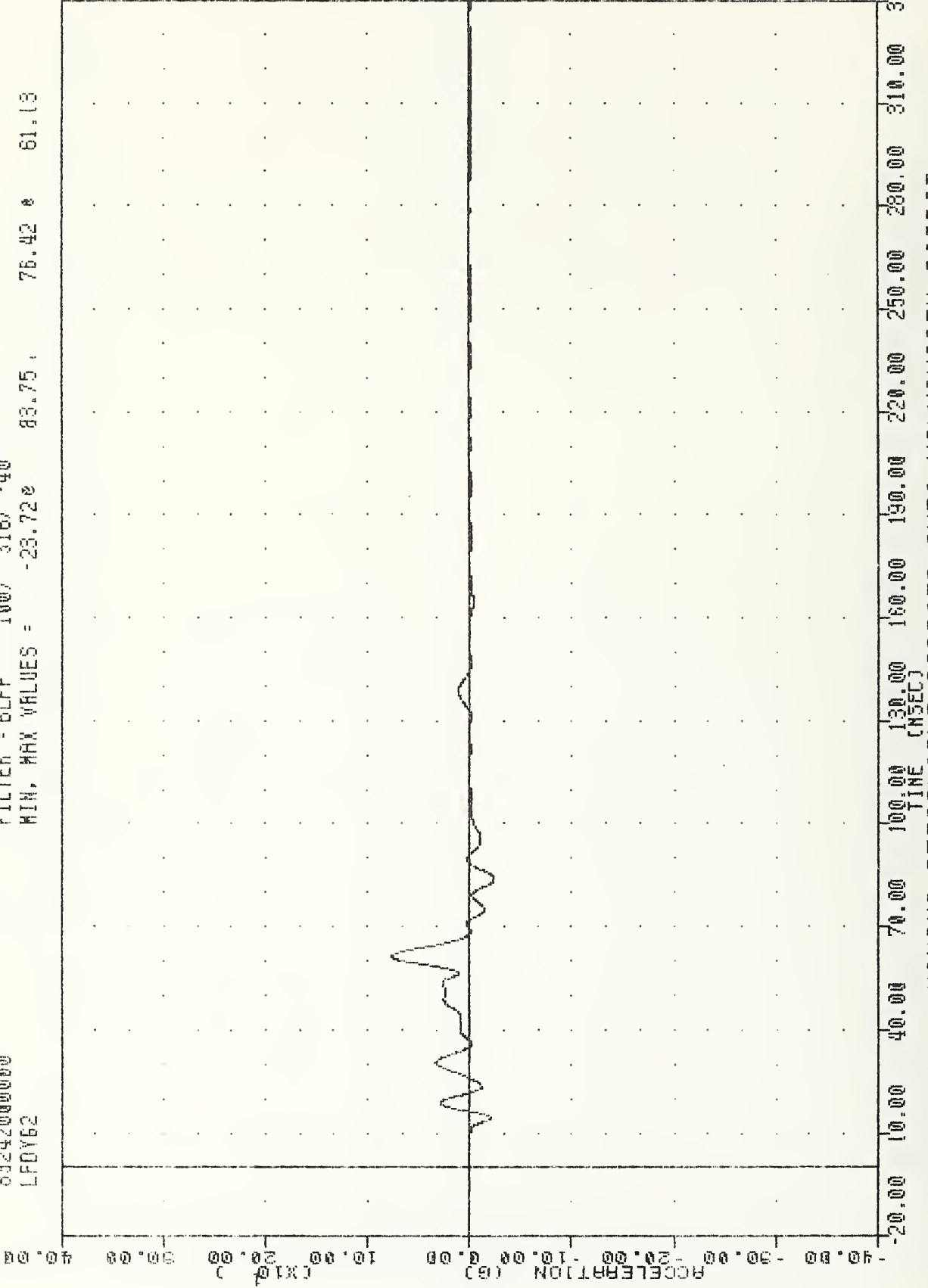
PLOT DATE 6-SEP-83 14:00:22

FILTER = BLFF 300/ 949/ -40  
 MIN. MAX VALUES = -1.42E 16.88, 19.88 e 43.38



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING LFOYGI

IAC 830830  
 EVALUATION OF MOD VW FLEET  
 83242000000  
 LFDY62  
 PLOT DATE 6-SEP-80 09:56:23  
 FILTER = BLPF 100/ 316/ -40  
 MIN, MAX VALUES = -23.72e 83.75, 76.42 \* 61.13



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE LEFT FRONT DODR (POSITION 8) ACCELERATION Y AXIS



TRC , 830830  
EVALUATION OF MOD VW FLEET  
83242000000  
LFDYW2

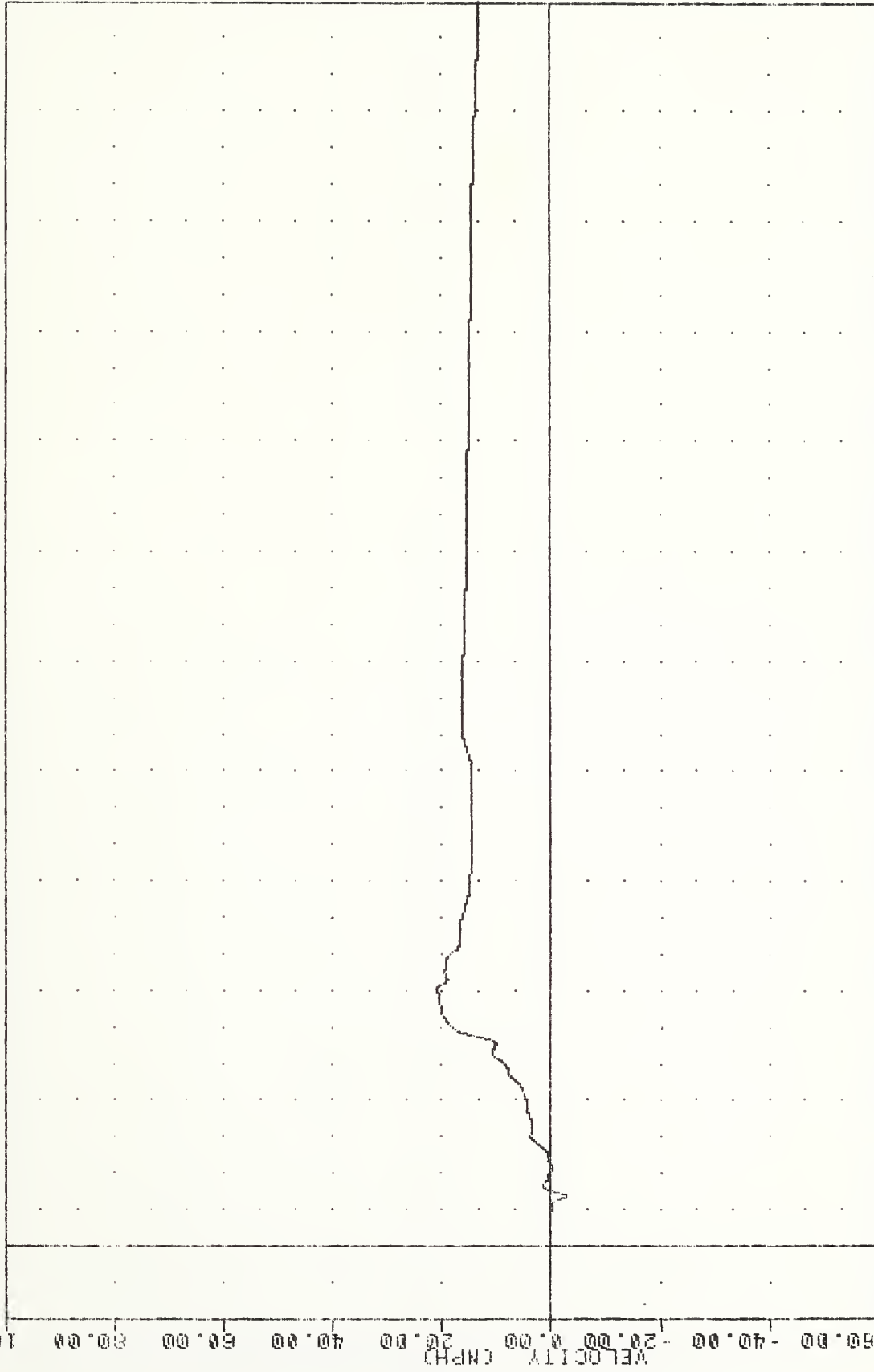
PLOT DATE 6-SEP-83 14:00:22

FILTER = BLPF 300/ 949/ -10

MIN. MAX VALUES = -2.90e 13.63, 20.94 e 70.25

100.00  
80.00  
60.00  
40.00  
20.00  
0.00  
-20.00  
-40.00  
-50.00

B-95



-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

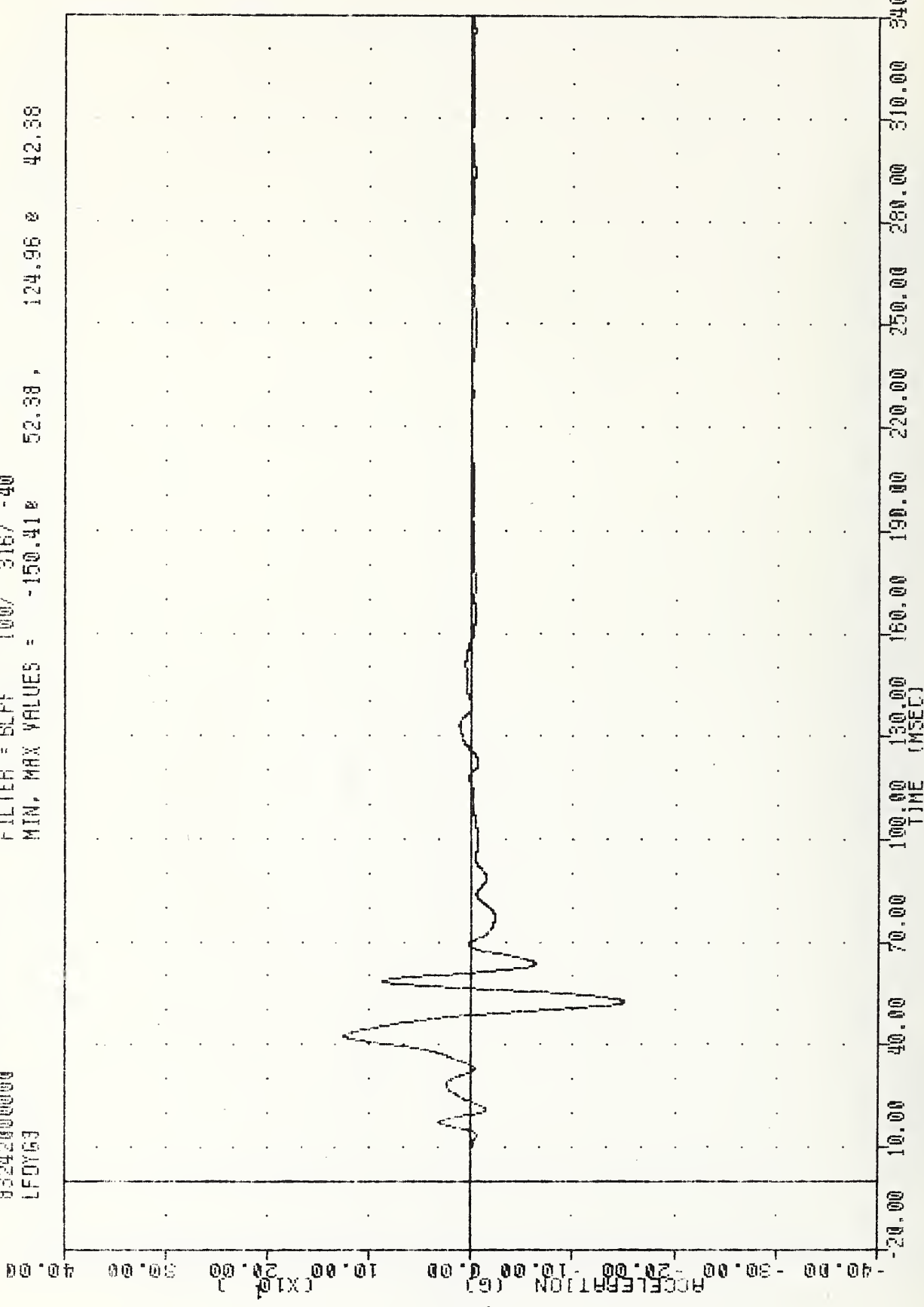
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING LFDY62

IRL  
EVALUATION OF NOD VV FLEET  
93242000000  
LFDY63

PLU1 UN1E 6-SEP-83 09:56:23

FILTER = BLFF 100/ 316/ -40

MIN, MAX VALUES = -150.41# 52.38, 124.96 # 42.38



B-96

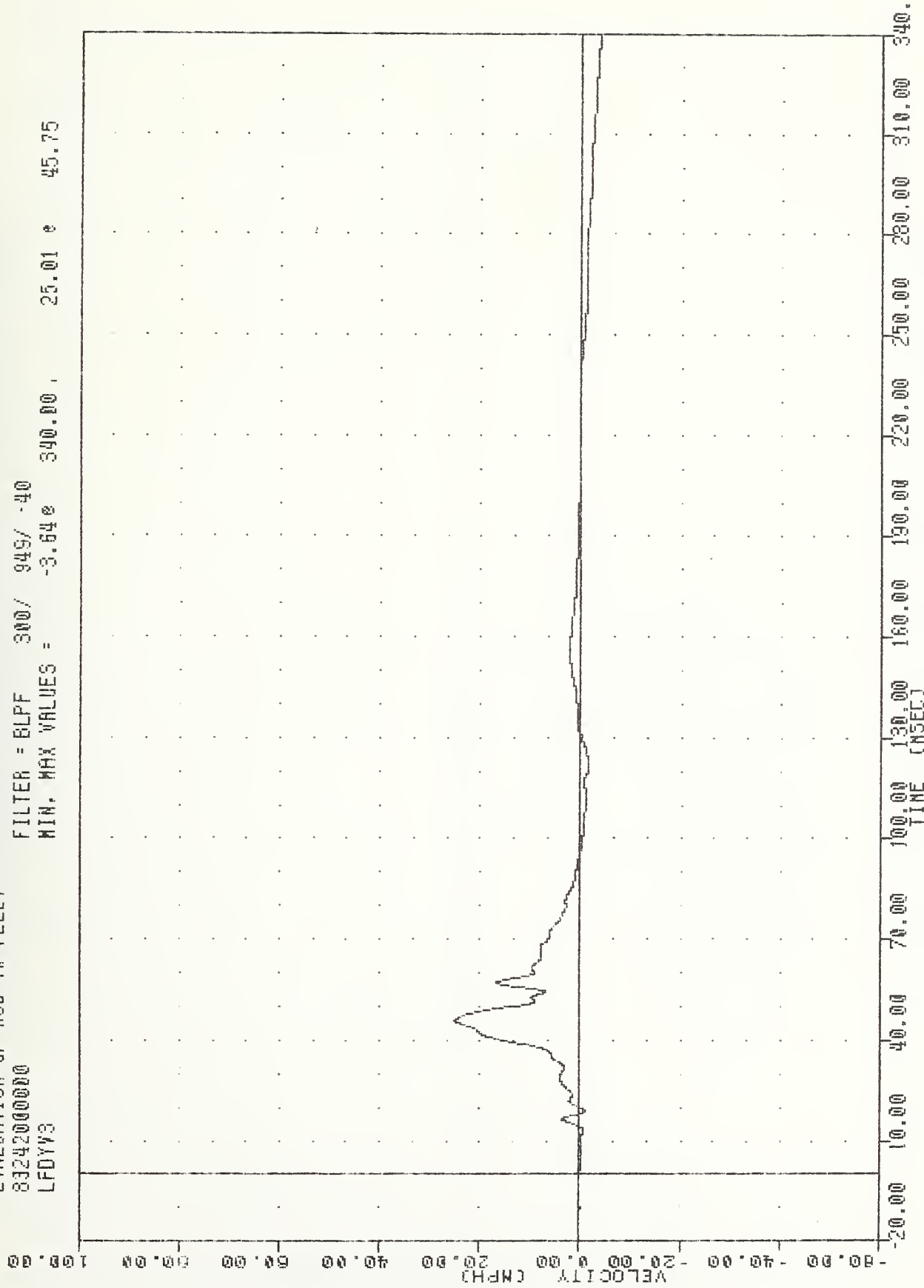
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE LEFT FRONT DOOR (POSITION 9) ACCELERATION Y AXIS

IHC , 830830  
EVALUATION OF MOD VN FLEET  
83242000000  
LFDYV3

PLOT DATE 6-SEP-83 14:00:22

FILTER = BLPF 300/ 949/ -40

MIN. MAX VALUES = -3.64e 340.00 , 25.01 e 45.75



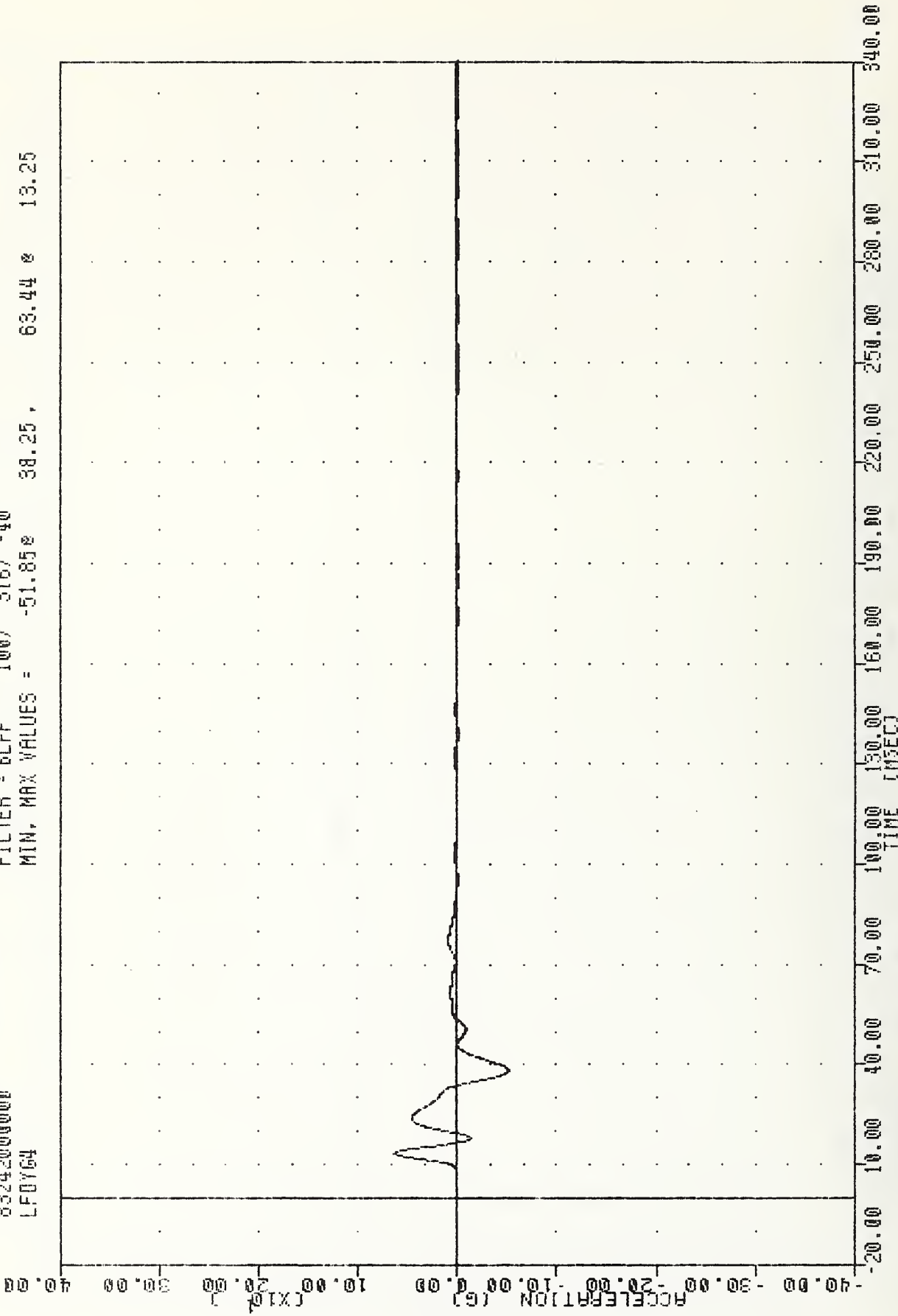
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING LFDYV3

TRC 830030  
EVALUATION OF MID VW FLEET  
8324200000  
LF0Y64

PLOT DATE 8-SEP-83 09:56:23

FILTER = 6LFF 100/ 316/ -40

MIN, MAX VALUES = -51.85g 63.44g 13.25

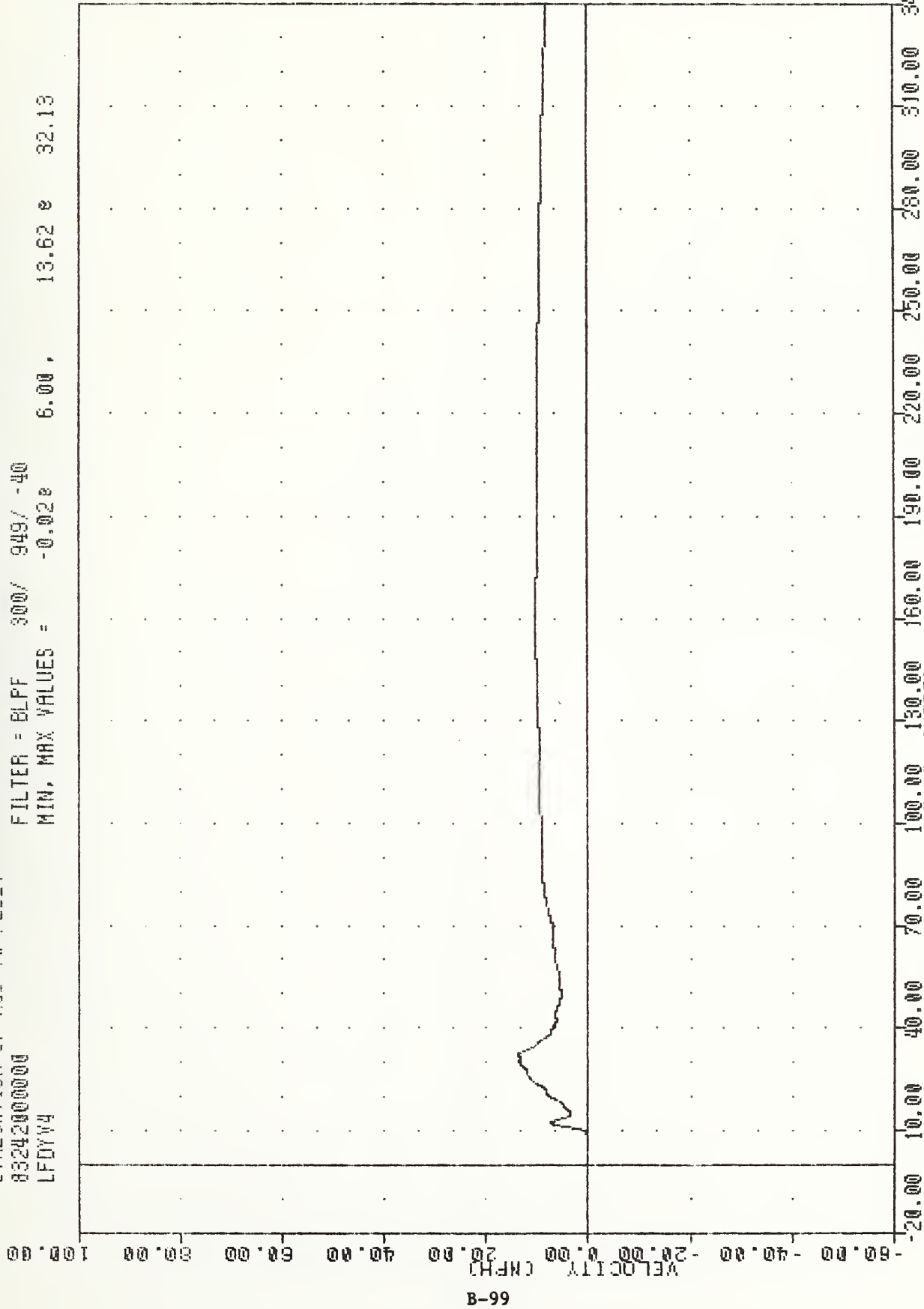


B-98

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE LEFT FRONT DOOR (POSITION 10) ACCELERATION Y AXIS

TRC  
EVALUATION OF MOD VN FLEET  
83242000000  
LFDYV4

PLUT DATE 6-SEP-83 14:00:22  
FILTER = BLPF 300/ 949/ -40  
MIN, MAX VALUES = 6.00, 13.62 e 32.13



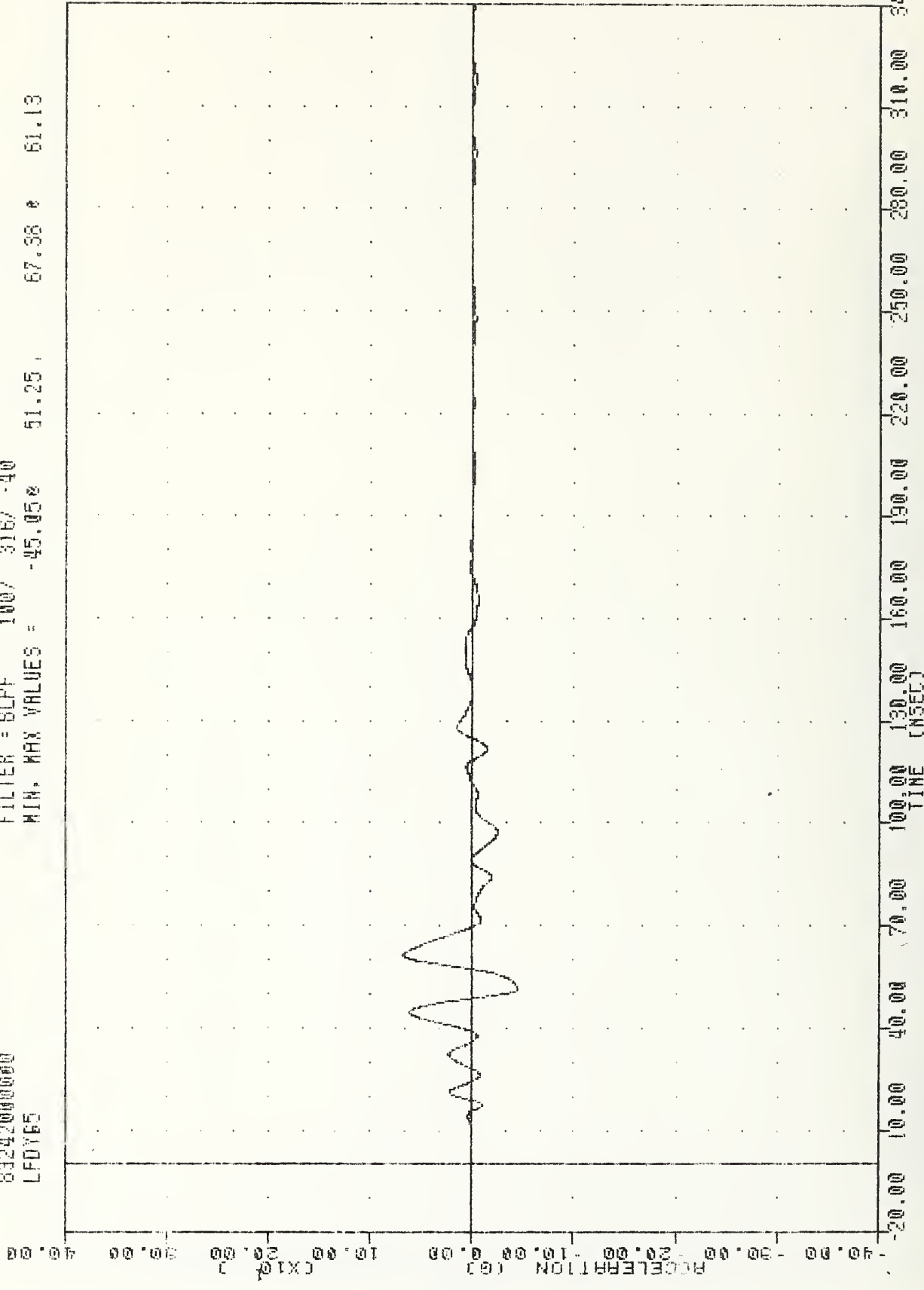
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING LFDYV4

TAC : 850830  
EVALUATION OF MOD VN FLEET  
83242000000  
LFDY65

PLOT DATE 6-SEP-88 09:56:28

FILTER = 5LPF 100/ 316/ -40

MIN. MAX VALUES = -45.05% 51.25 , 67.38 \* 61.13



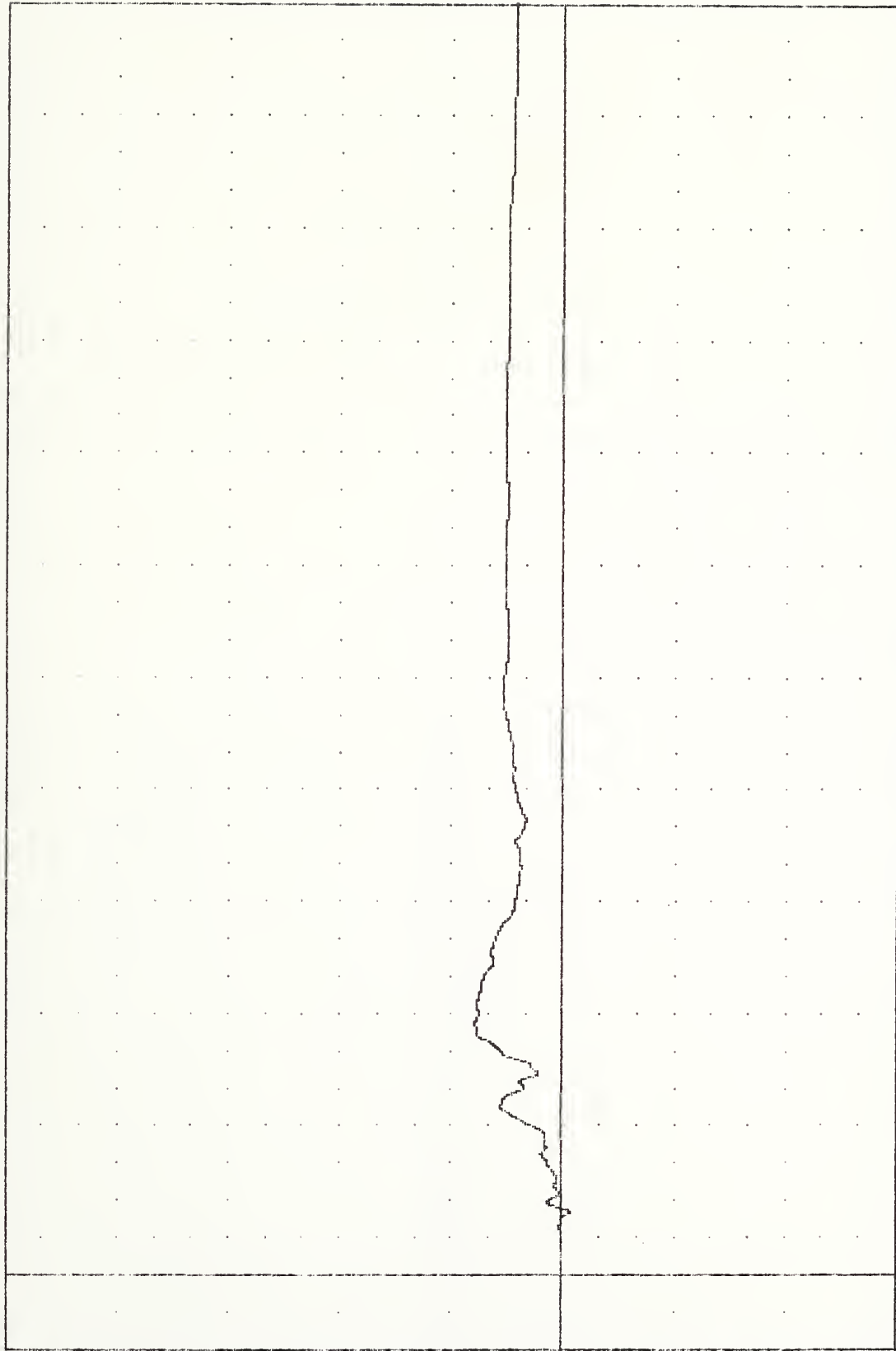
B-100

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
VEHICLE LEFT FRONT DOOR (POSITION 1) ACCELERATION Y AXIS

TAC 830830  
EVALUATION OF MOD VW FLEET  
83242000000  
LFOYV5

PLOT DATE 6-SEP-83 14:00:22  
FILTER = BLFF 300/ 949/ -40  
MIN, MAX VALUES = -1.35 16.63 15.77 67.00

100.00  
80.00  
60.00  
40.00  
20.00  
0.00  
-20.00  
-40.00  
-60.00



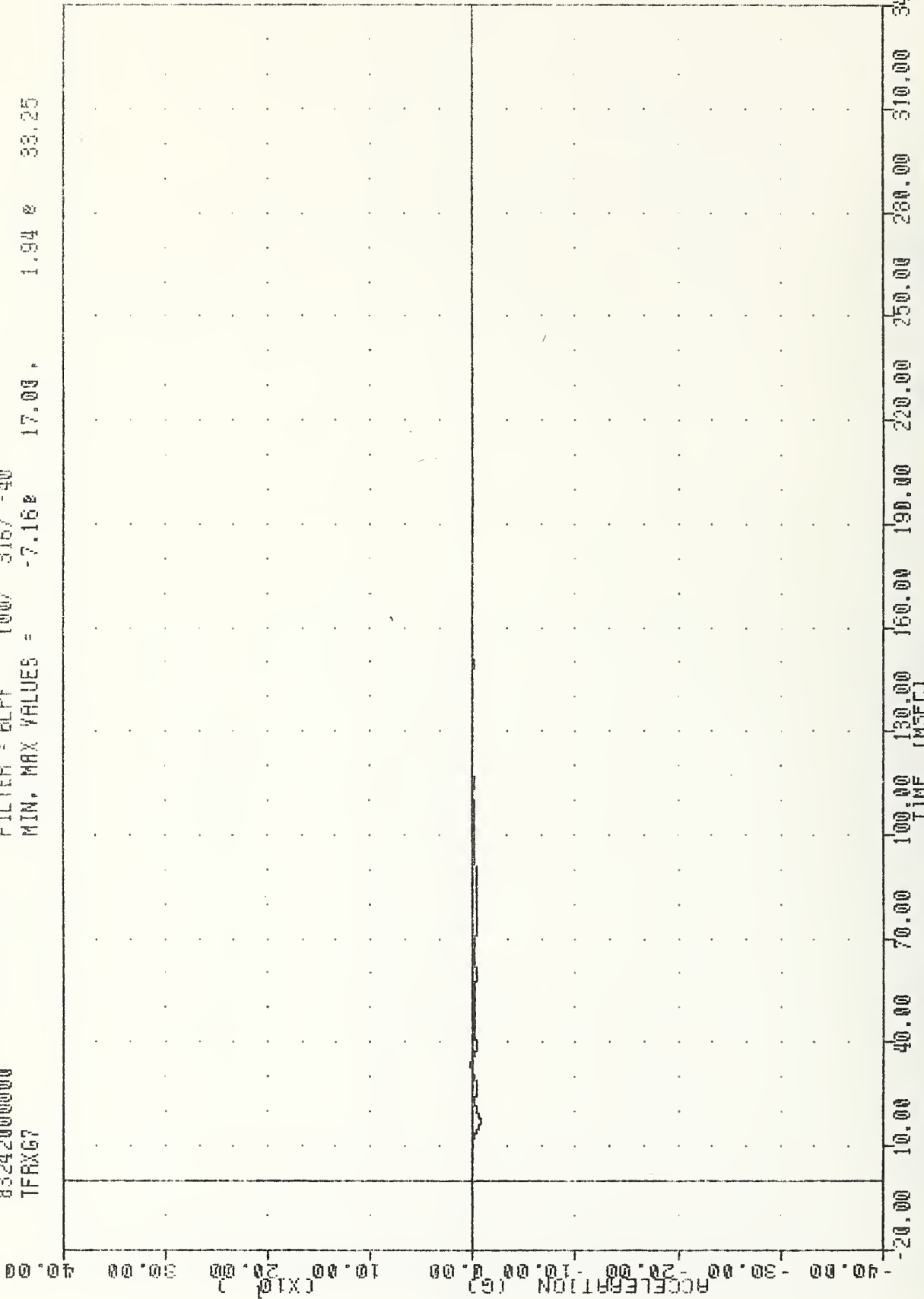
101-B

WELCITY (MPH)  
TIME (MSEC)  
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING LFOYV5  
340.00 310.00 280.00 250.00 220.00 190.00 160.00 130.00 100.00 70.00 40.00 10.00

TRC 8330630  
 EVALUATION OF MOD VW FLEET  
 83242000000  
 TFRXG7

PLUI URIB 0-307-00 W9:20:20

FILTER = BLPF 100/ 315/ -40  
 MIN. MAX VALUES = -7.16g 17.00g 1.94g 33.25



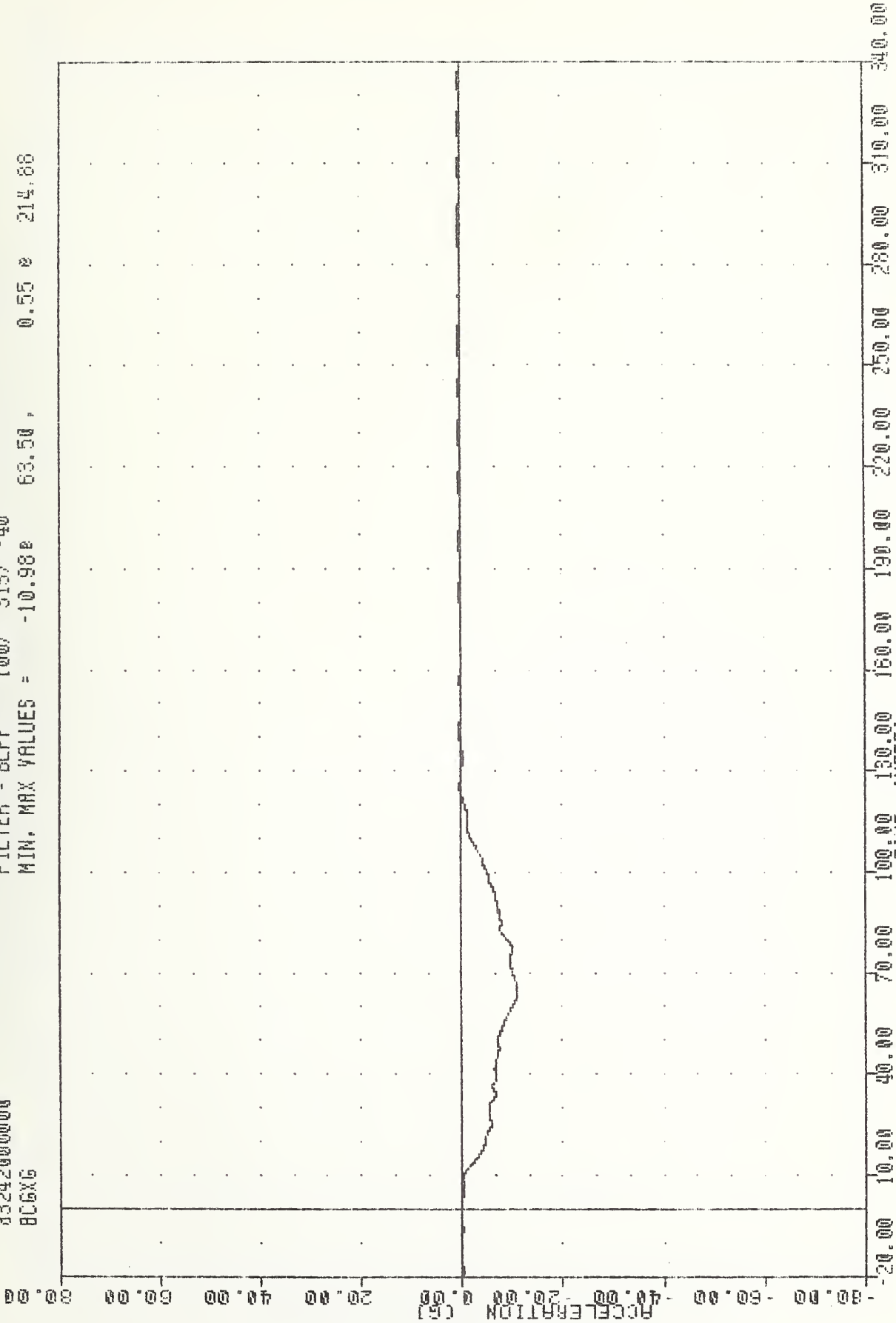
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 VEHICLE TRUNK FLOOR RIGHT ACCELERATION X AXIS



TRC  
EVALUATION OF MOD VW FLEET  
83242000000  
BC6XG

PLUI DATE 9-SEP-83 14:18:51

FILTER = BLPF 100/ 315/ -40  
MIN. MAX VALUES = -10.98e 63.50, 0.55 e 214.68



B-103

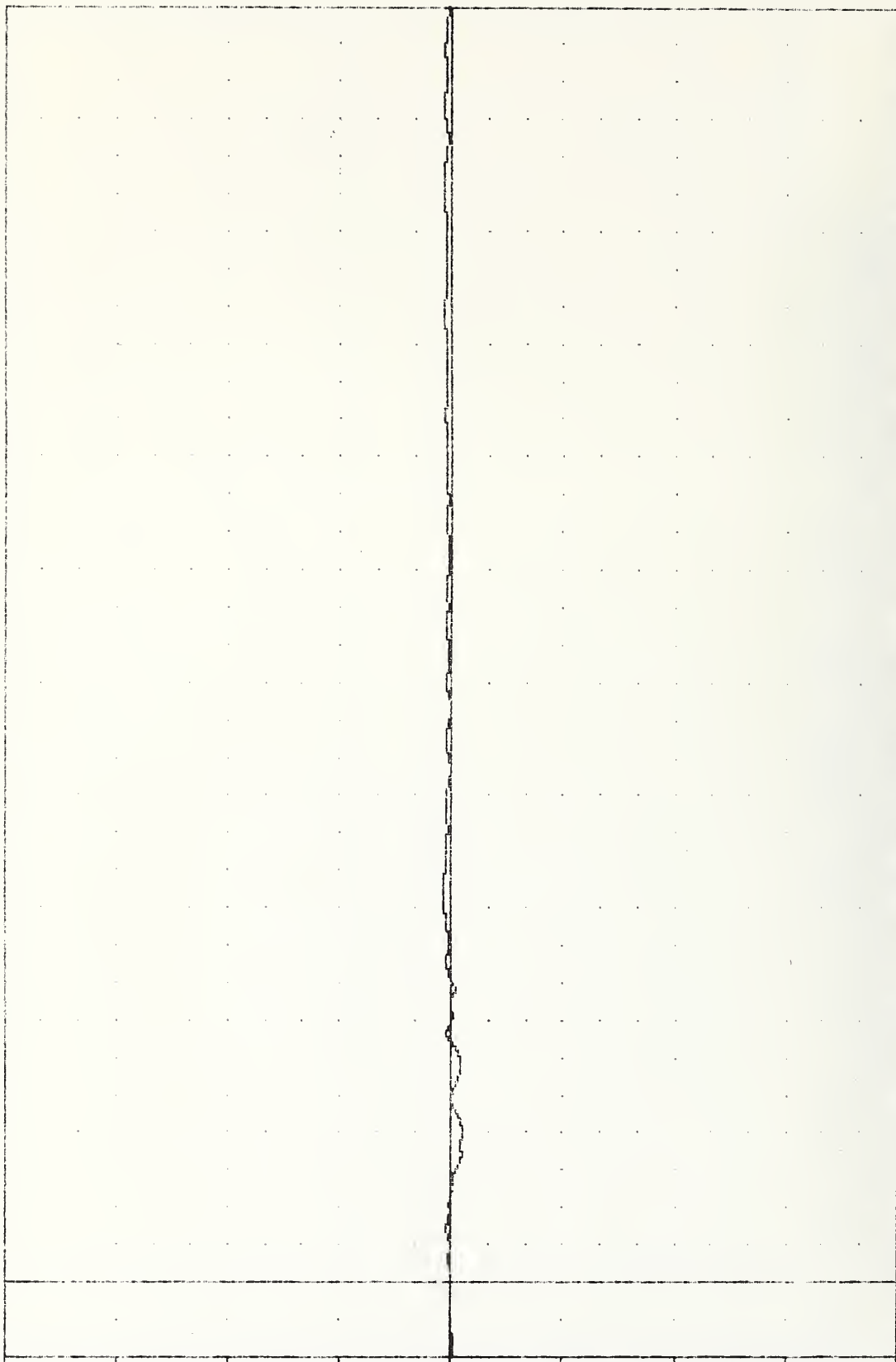
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
BARRIER CENTER OF GRAVITY X AXIS

WIND UNIT 6-SEP-88 14:10:23

TRC 880830  
EVALUATION OF 800 YW FLEET  
83242000000  
80676

PLUT DATE 8-SEP-88 14:18:01  
FILTER = 8LFF 100 3167 -10  
MIN. MAX VALUES = -2.000 39.75 1.56 e 102.88

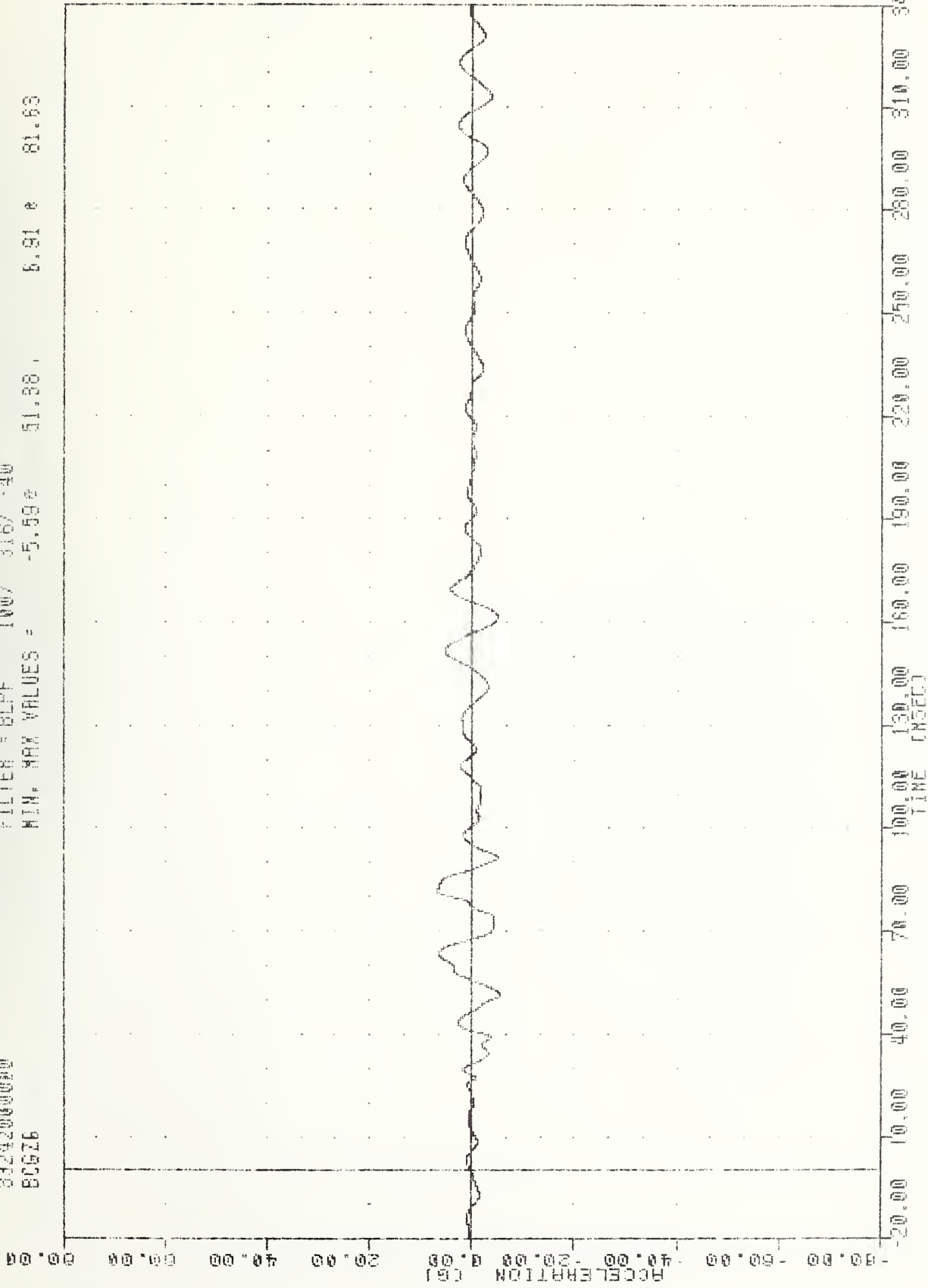
ACCELERATION (G)



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
BARRIER CENTER OF GRAVITY Y AXIS

TAC 030800  
EVALUATION OF MGD VV FLEET  
0324200000  
B05Z6

PLU1 DATE 6 SEP 88 09:56:28  
FILTER = BLPF 100/ 316/ -40  
MIN. MAX VALUES = -5.59e 51.38 6.91 e 81.63

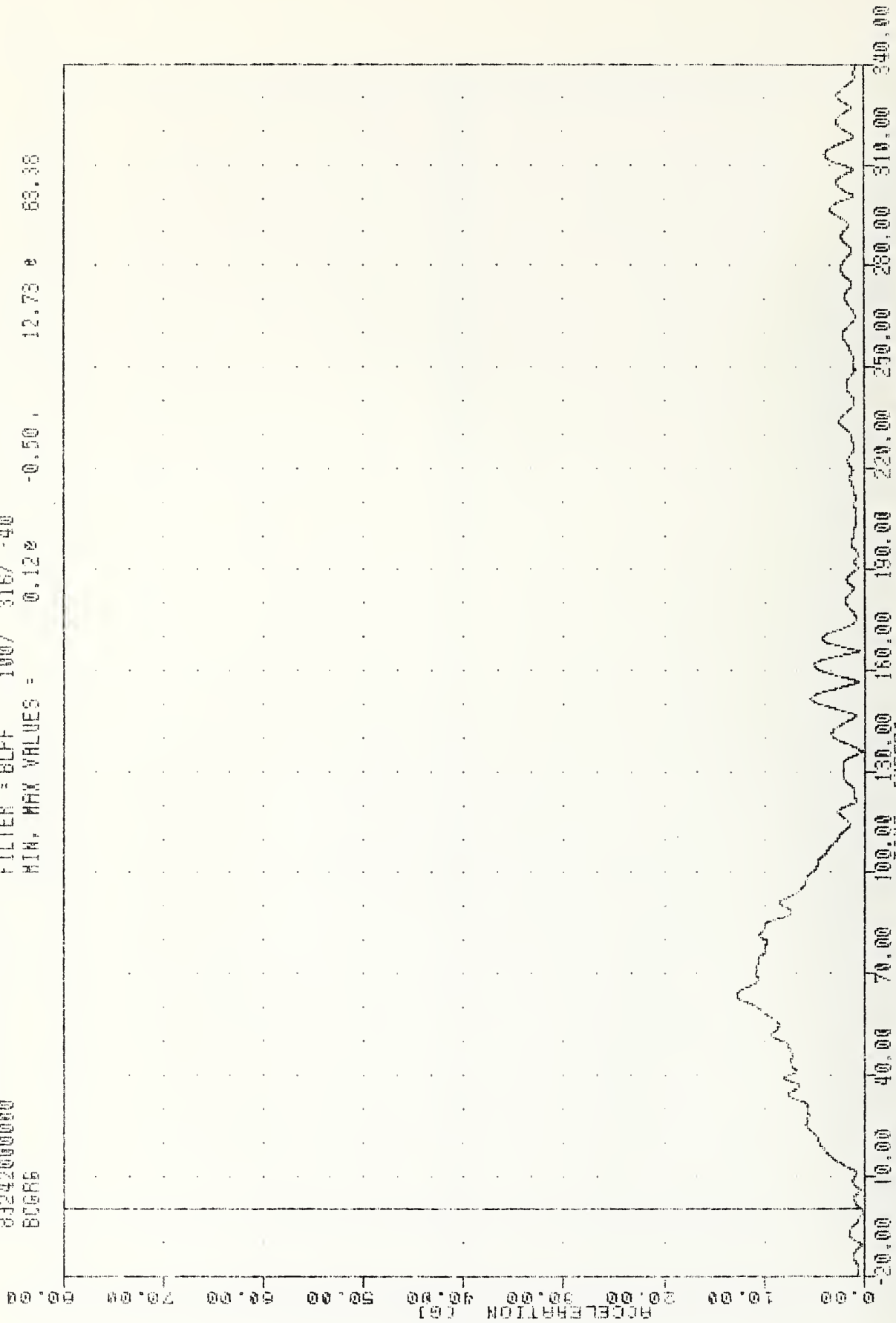


B-105

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
BARRIER CENTER OF GRAVITY Z AXIS

PLU1 DATE 6-SEP-83 10:56:56  
FILTER = BLPF 100/ 316/ -40  
MIN. MAX VALUES = 0.12e -0.50e 12.73e 63.36

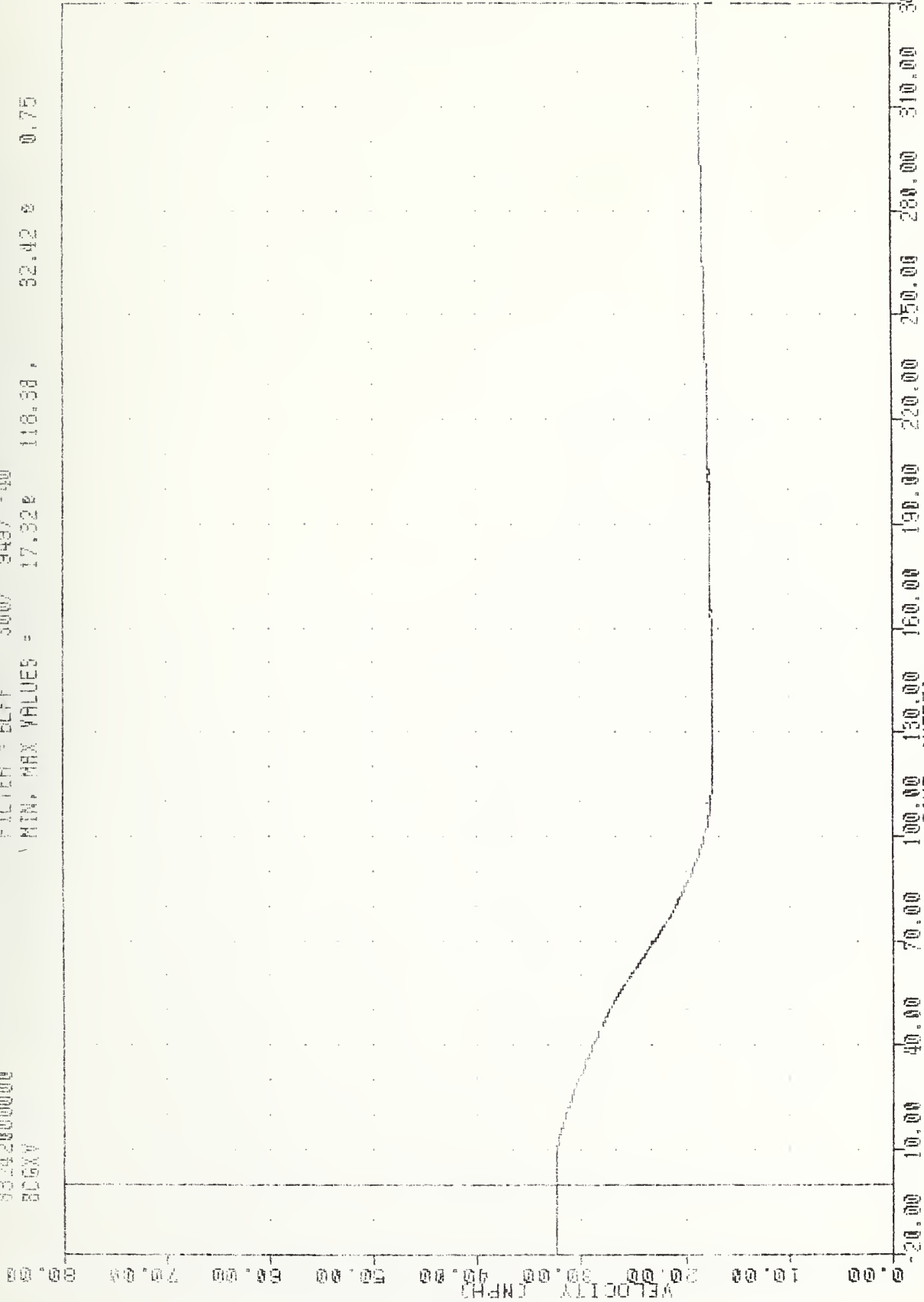
EVALUATION OF MOD VW FLEET  
83242000000  
BCGR5



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
BARRIER CG RESULTANT

TRC  
EVALUATION OF NOD VW FLEET  
83242000000  
BCGXV

830050  
PLOT DATE 9-SEP-83 14:19:55  
FILTER = BLFF 300/ 949/ -40  
MIN. MAX VALUES = 17.32% 118.38, 32.42% 0.75

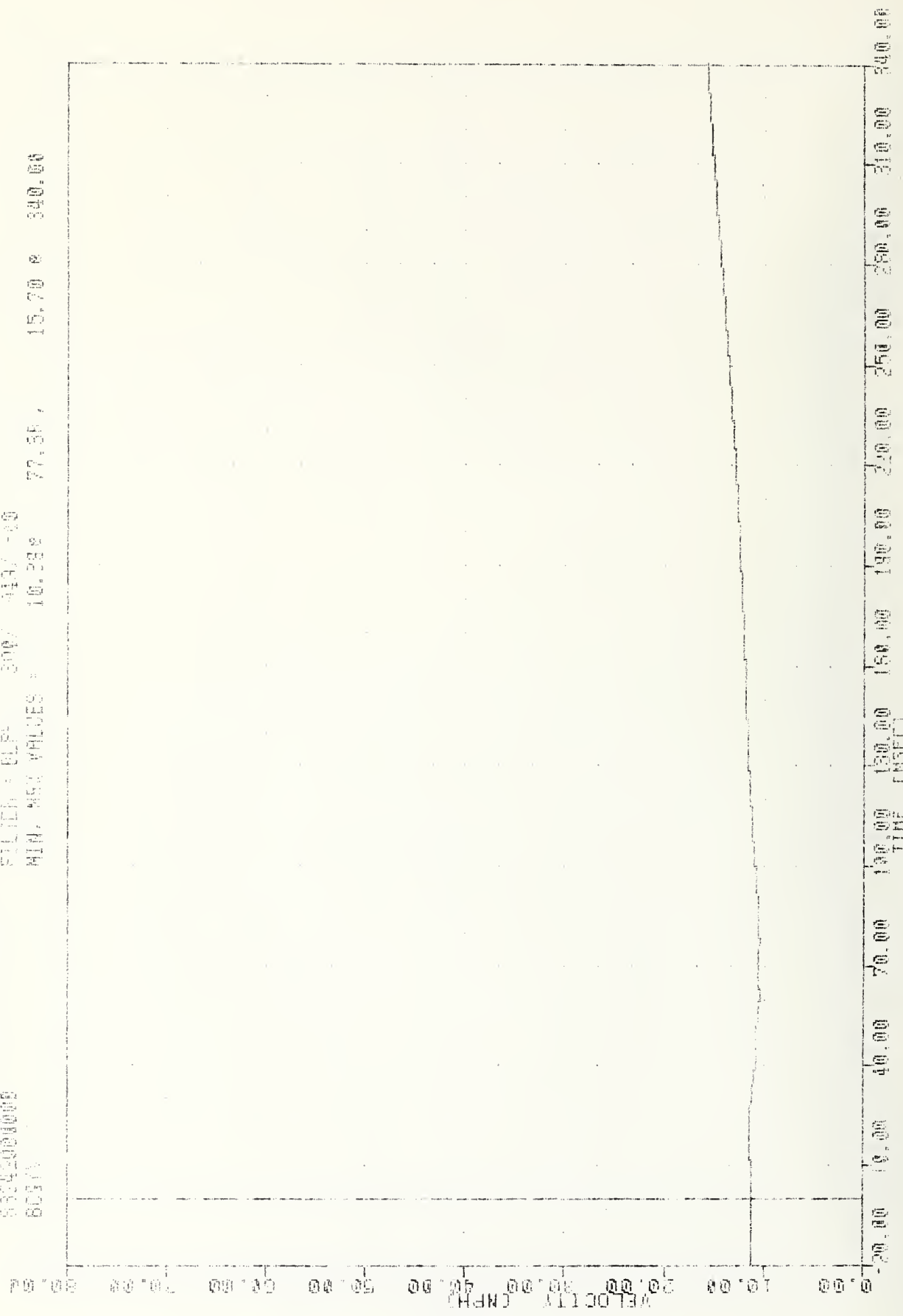


B-107

MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING BCGXV

150  
 EVALUATION OF MOVING DEFORMABLE BARRIER  
 80342000000  
 80317

21.1.1971 8 SEP 71 1419.70  
 FILTER = 0.5μ  
 MIN. RES. VALUES = 10.28e 77.35e 15.70e 340.00



B-108

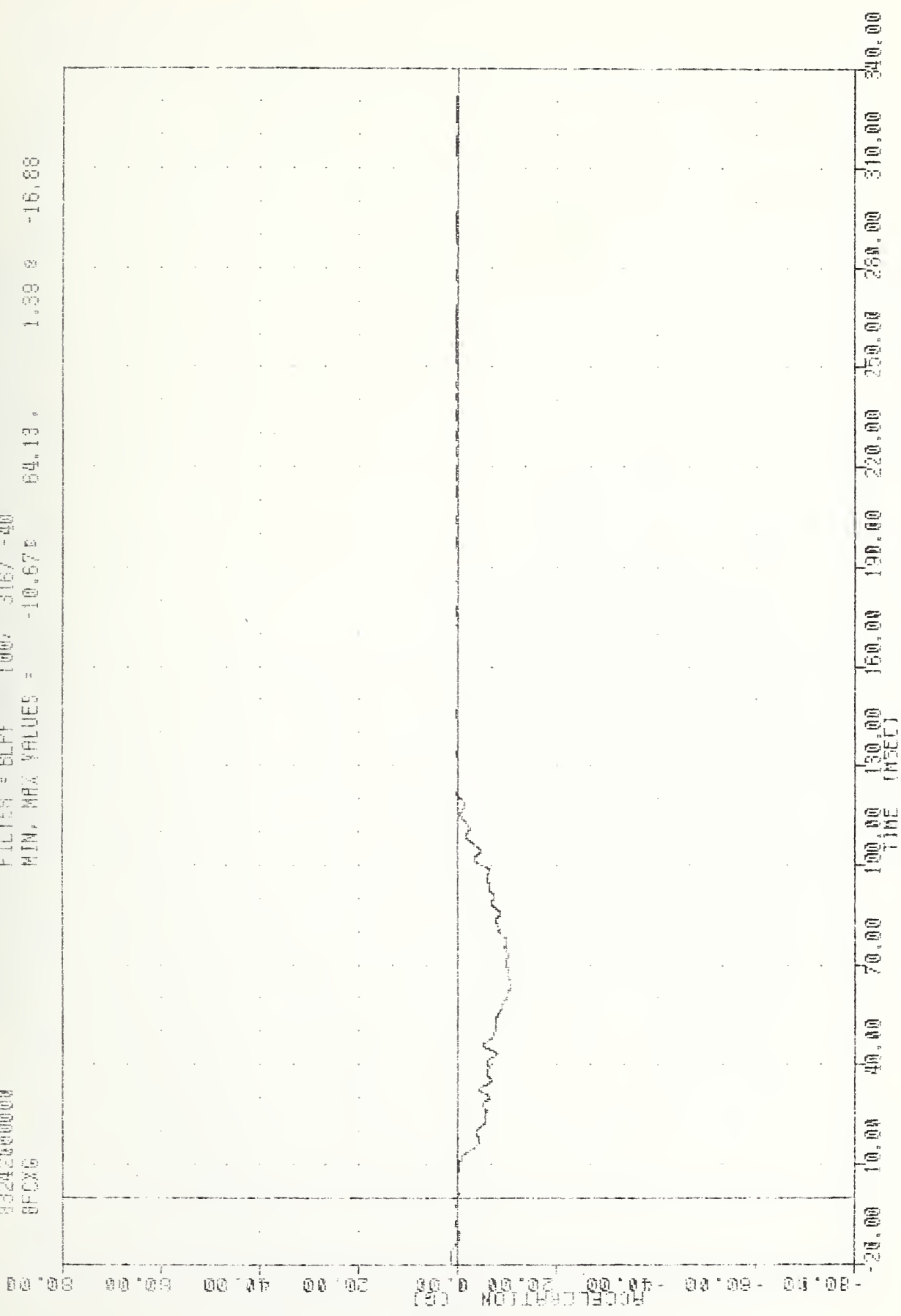
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN PABBIT  
 DATA V. 1.1.1971

TRC 830830  
EVALUATION OF MID VW FLEET  
8324260000  
BFCXG

PLU1 DATE 9-SEP-83 13:27:07

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -10.675 64.13 1.38 2 -16.88



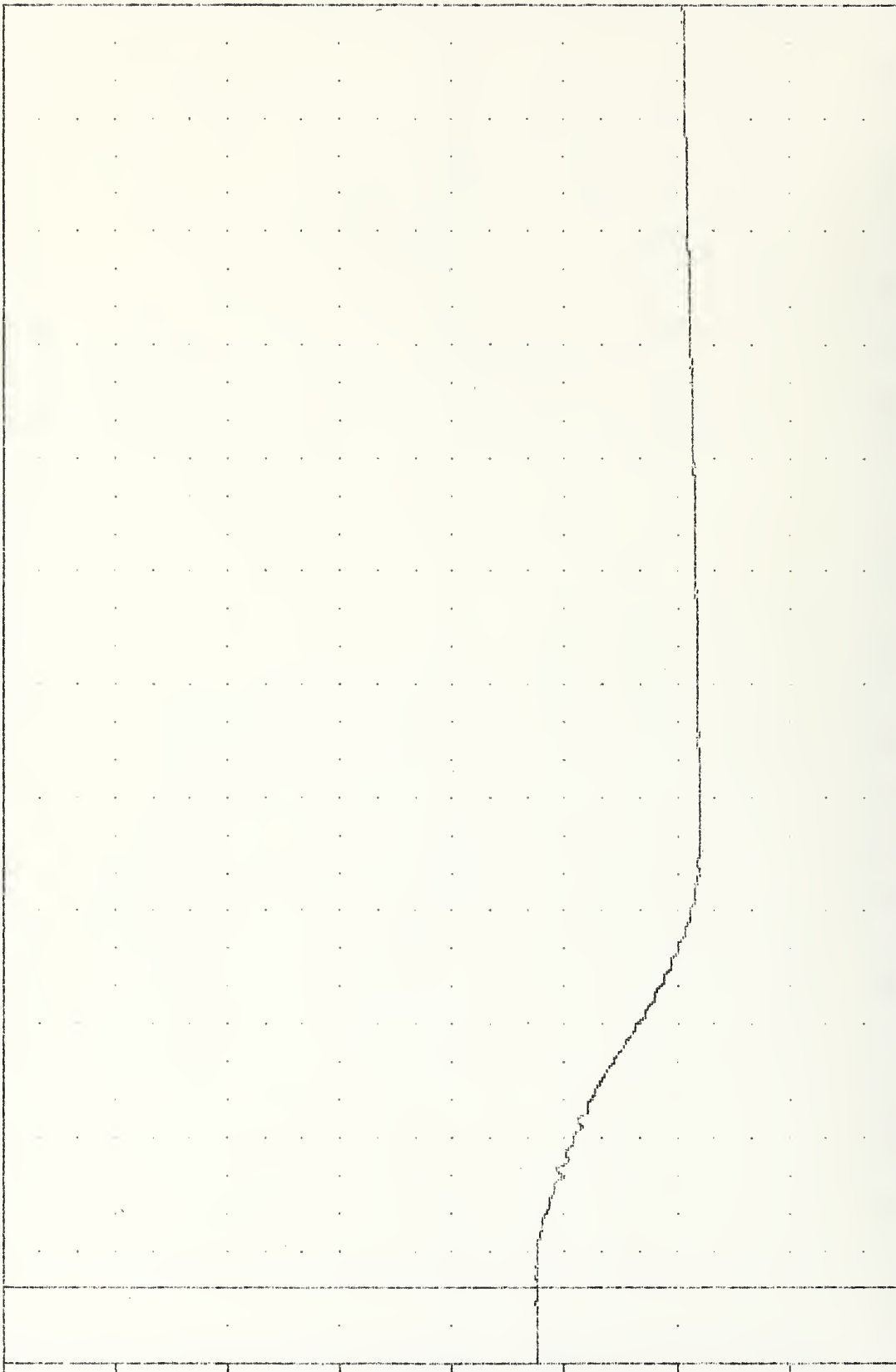
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
BARRIER FRONT CROSSMEMBER ACCELERATION X AXIS

TRC  
EVALUATION OF MOD VW FLEET  
83242000000  
BFCXV

PLOT DATE 9-SEP-85 13:36:31

FILTER = BLPF 300/ 949/ -40  
MIN. MAX VALUES = 17.92e 122.50 , 32.56 e 2.75

0.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00  
VELOCITY (MPH)



0.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00  
TIME (MSEC) 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

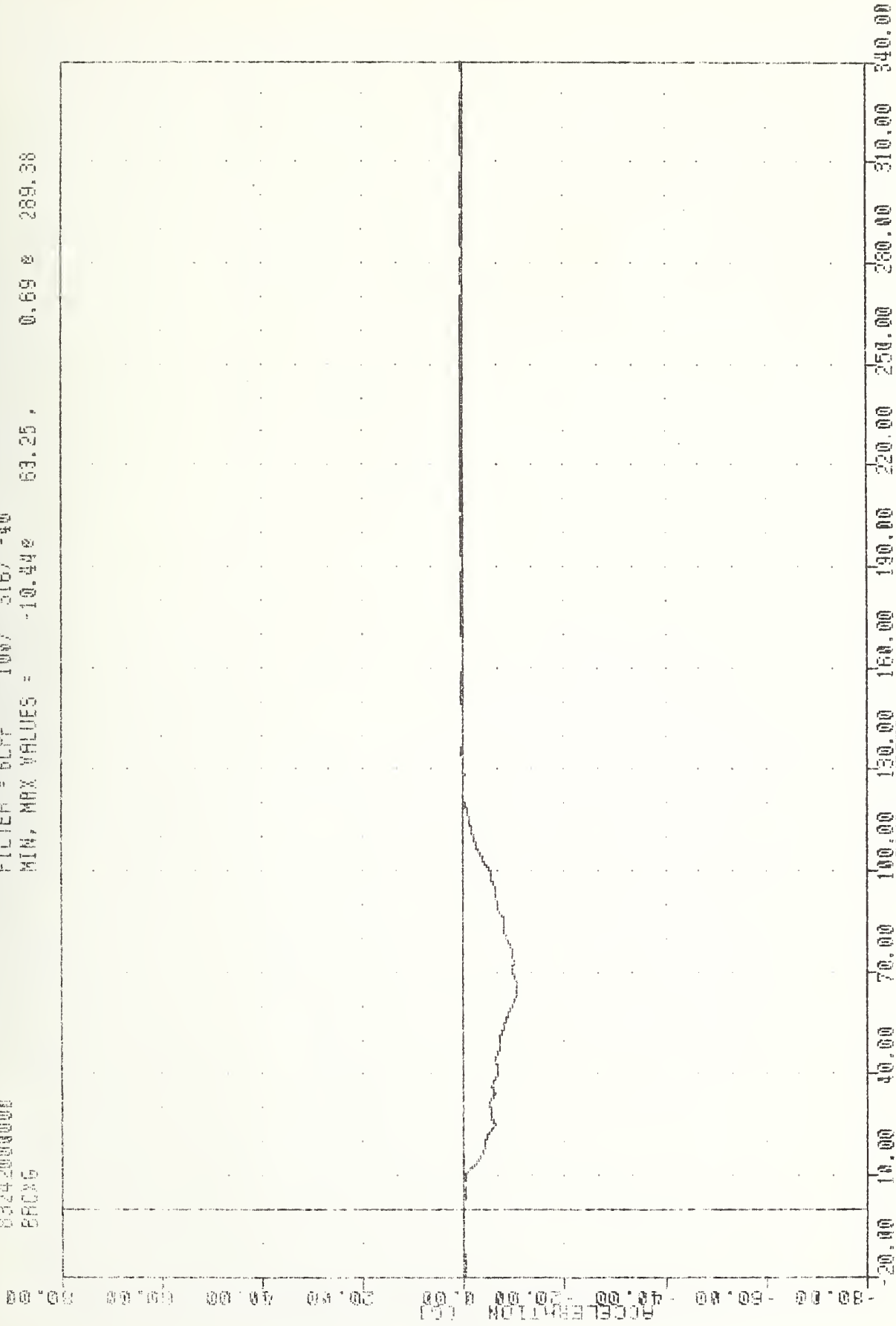
MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
DELTA V USING BFCXG



TRC  
EVALUATION OF MDD VW FLEET  
03242000000  
BRCX6

PLOT DATE 6-SEP-89 08:56:20

FILTER = 6LFF 100/ 316/ -40  
MIN, MAX VALUES = -10.44% 63.25, 0.69 % 289.38

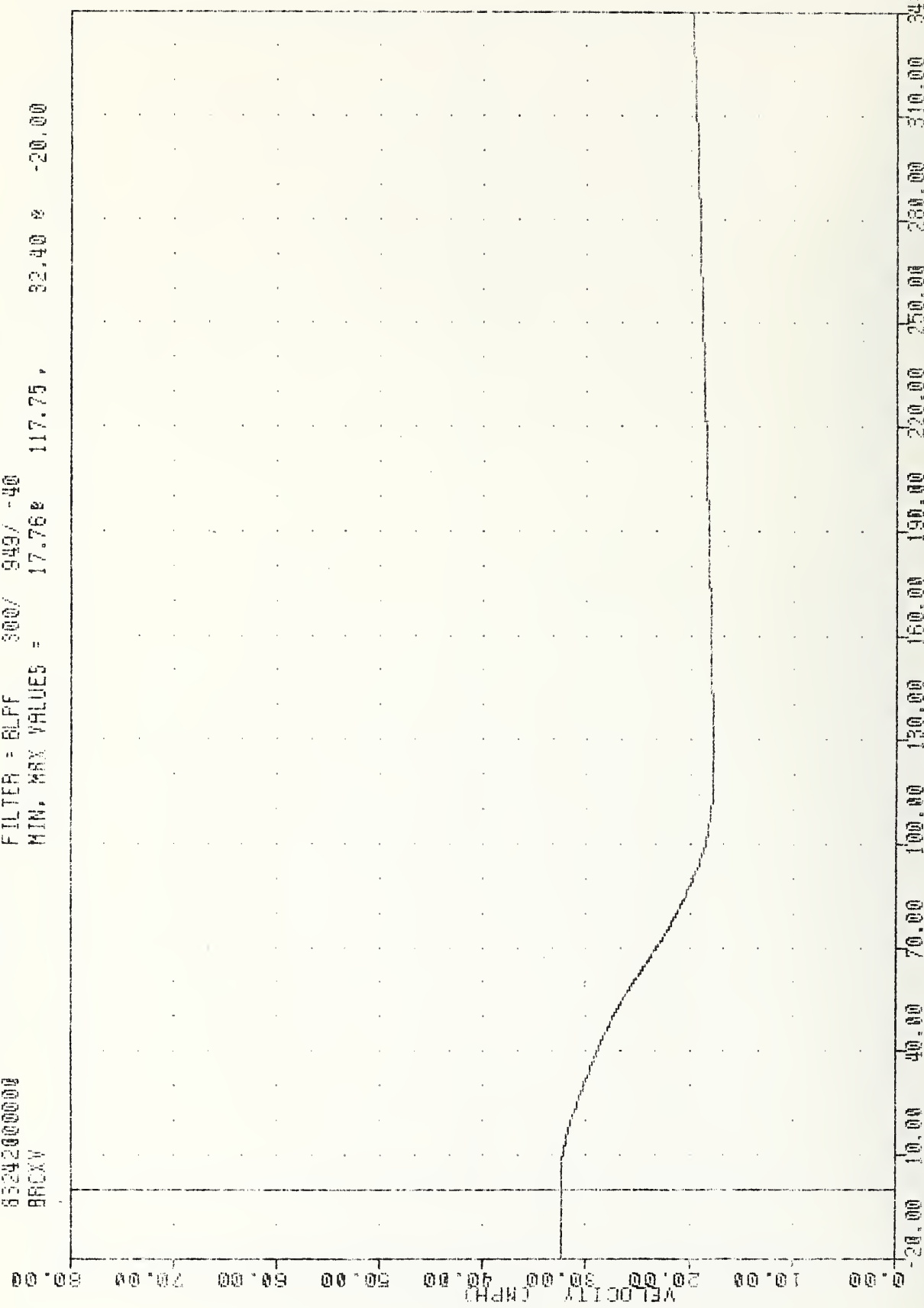


MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
BARRIER REAR CROSSMEMBER ACCELERATION X AXIS

1000

TRC  
 EVALUATION OF MOD VV FLEET  
 83242000000  
 BRXXV

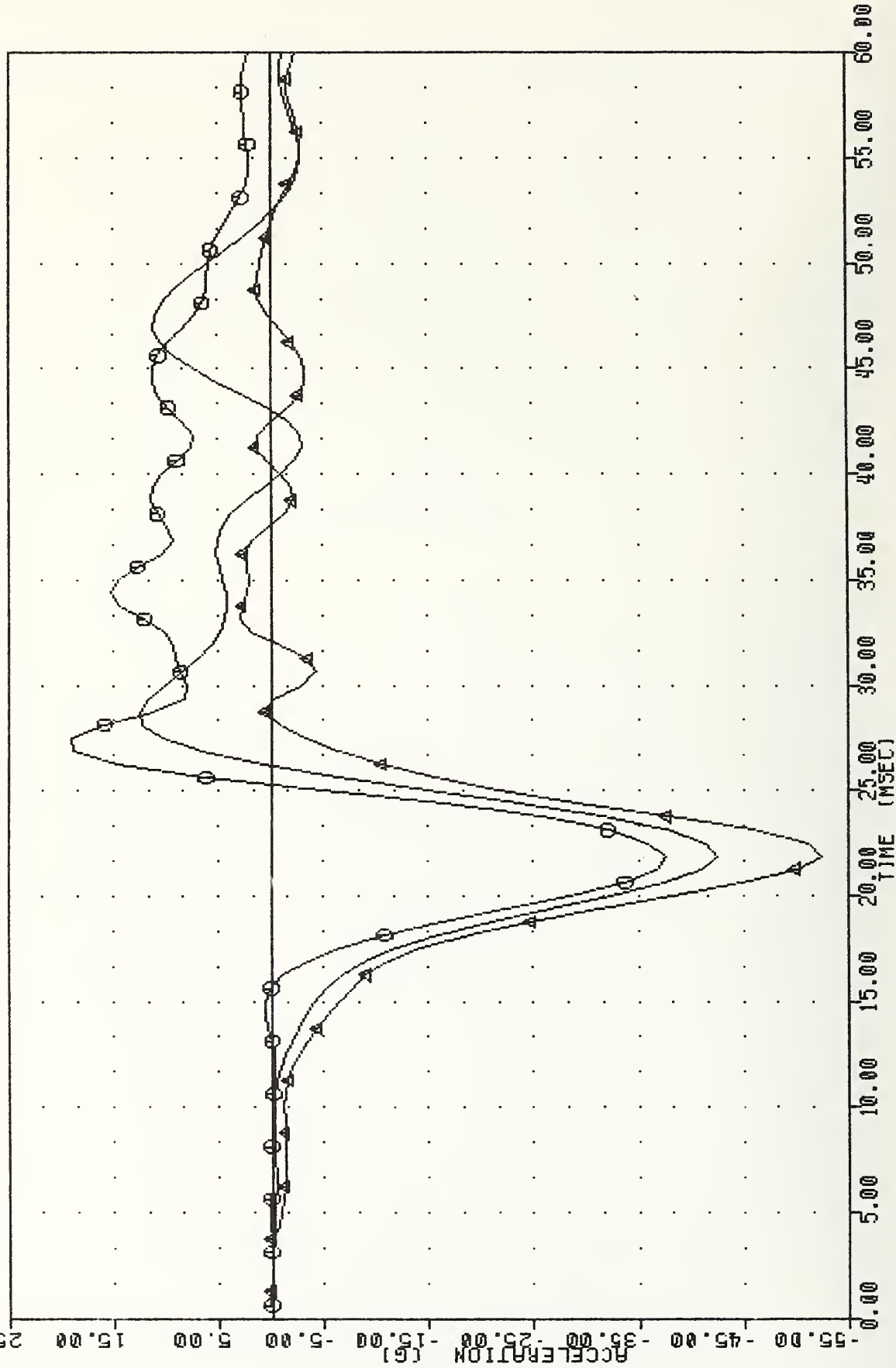
8300300  
 9-SEP-83 14:19:55  
 FILTER = BLPF 300/ 949/ -40  
 MIN. MAX VALUES = 17.76% 32.40% -20.00



MOVING DEFORMABLE BARRIER INTO VOLKSWAGEN RABBIT  
 DELTA V USING BRXXG

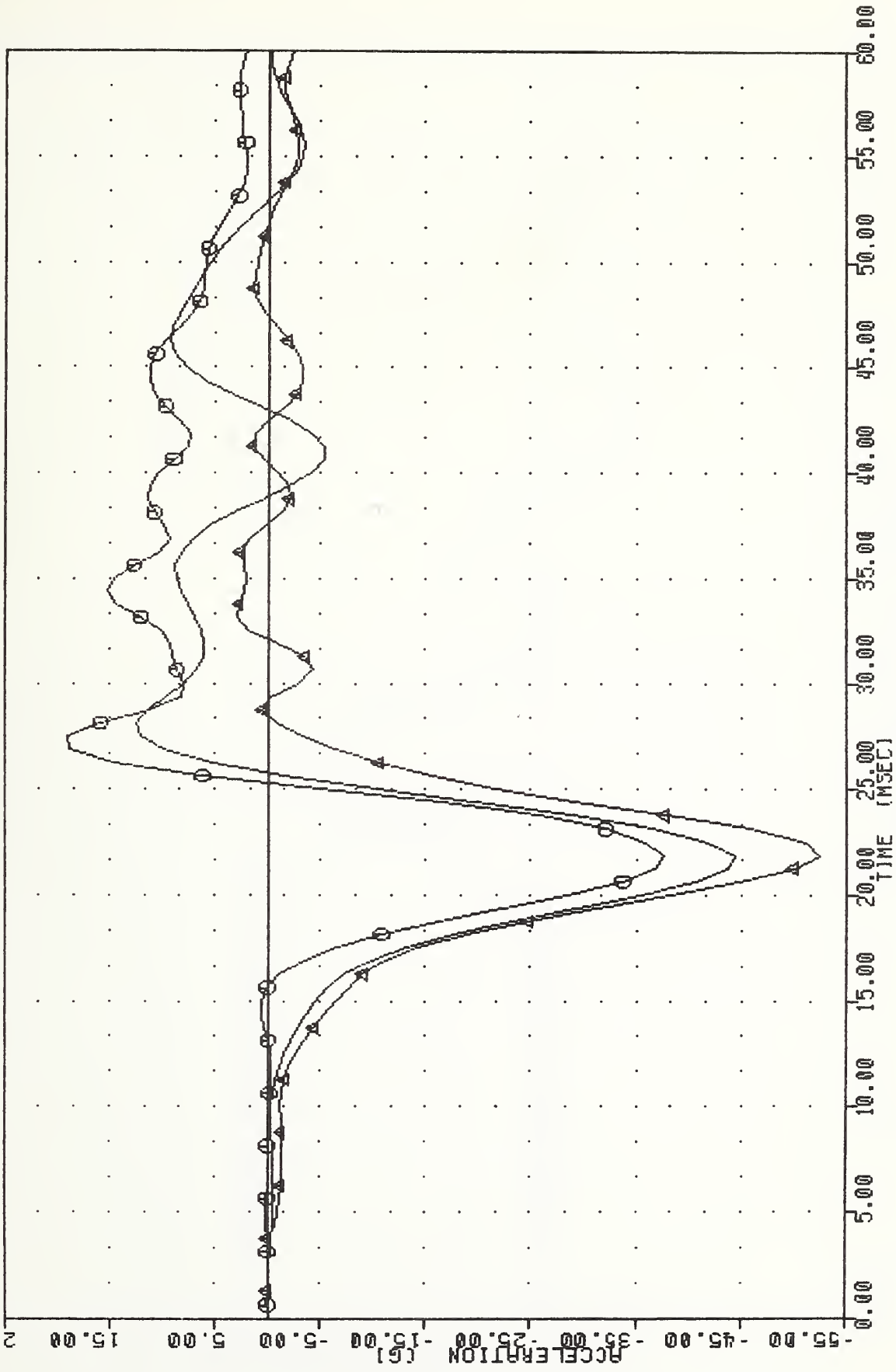
APPENDIX C  
DUMMY CERTIFICATION

VRTC SRL26 , ARL6 CAL58 SID THORAX 6 BODY 318 CAL 58 83227 18-AUG-83 10:30:47  
 LLRY61 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -42.55 e 12.36 e 28.13  
 MN-250 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -37.66 e 19.00 e 26.87  
 MN-250 A FILTER : HSRI 136/ 189/ -50 MIN. MAX = -52.52 e 2.94 e 32.50



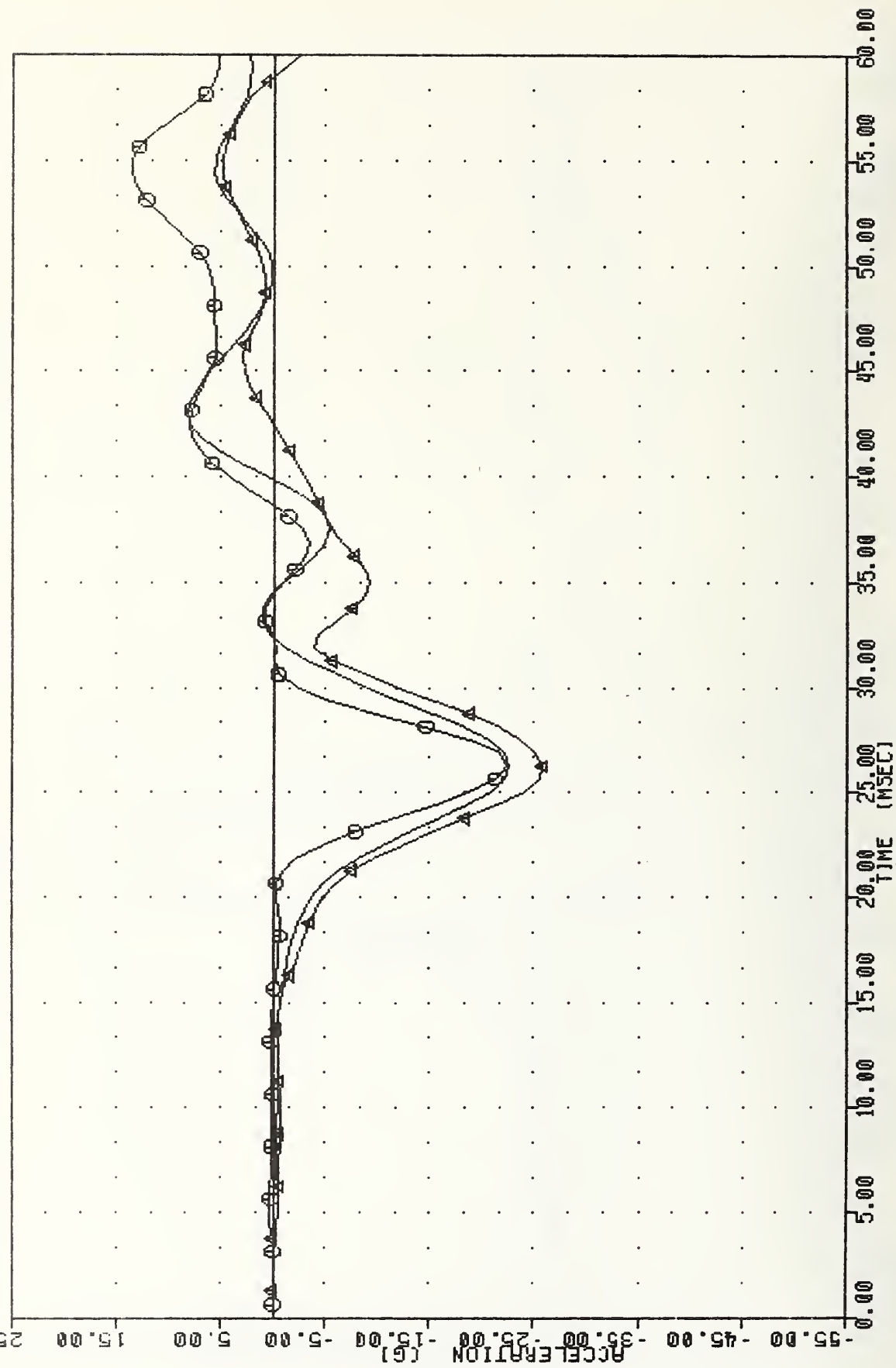
SIDE IMPACT TEST (ARL6)  
 LEFT LOWER RIB ACCELERATION Y AXIS -1

VRIC SRL26 , ARL6 CAL58 SID THORAX 6 BODY 318 CAL 58 83227 18-AUG-83 10:35:28  
 LLRYGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -44.39 e 12.36 e 27.50  
 MN-280 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -37.68 e 18.00 e 26.87  
 MN-280 4 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -52.52 e 2.94 e 32.50



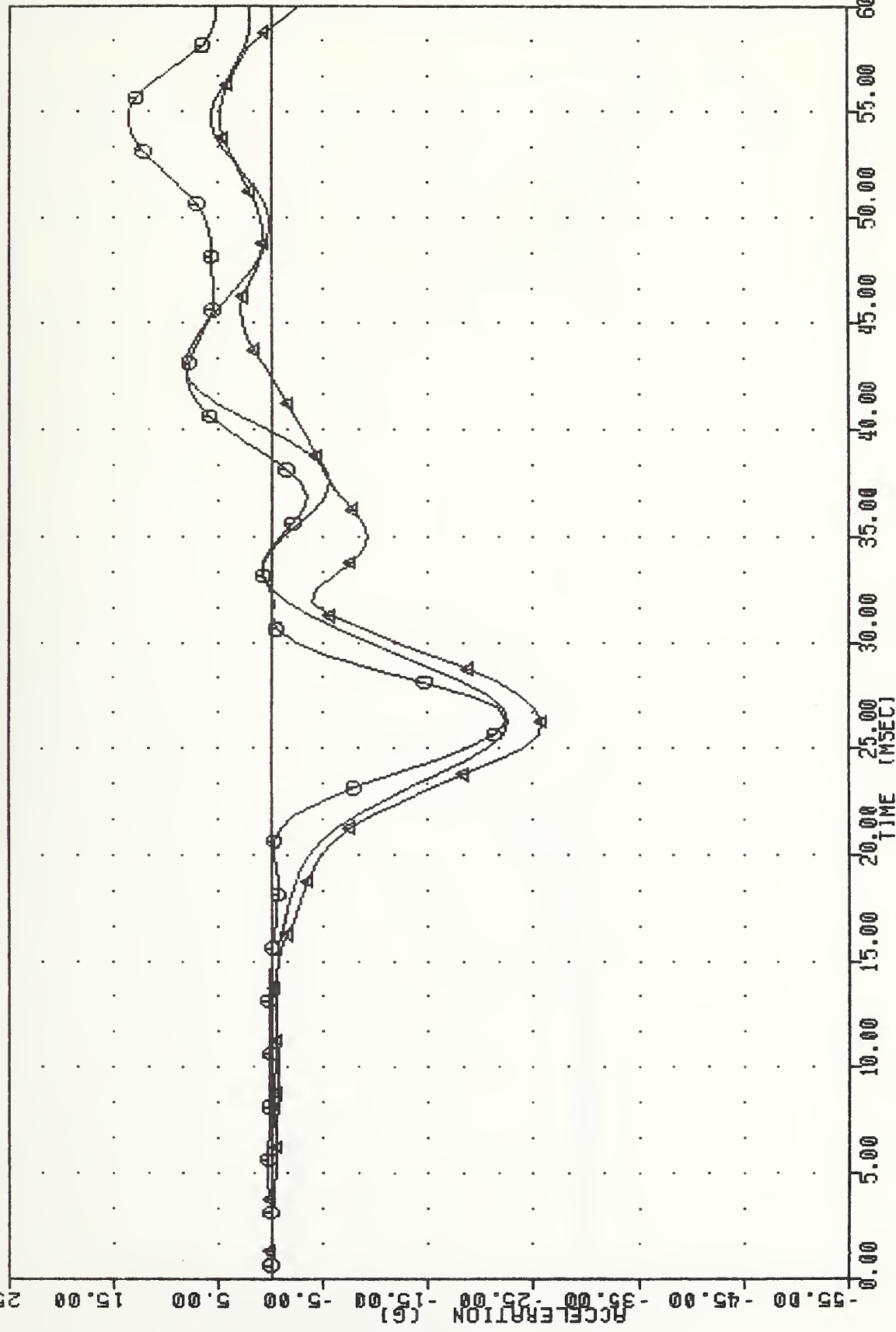
SIDE IMPACT TEST (ARL6)  
 LEFT LOWER RIB ACCELERATION Y AXIS - A

YRIC SRL26 , AR16 CAL58, SID THORAX 6 BODY 318 CHL 58 83227 18-AUG-63 10:37:07  
 T12Y61 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -22.66 e 25.63 e 6.10 e 42.50  
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -22.37 e 25.63 e 13.54 e 53.75  
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -25.84 e 25.63 e 4.85 e 53.75



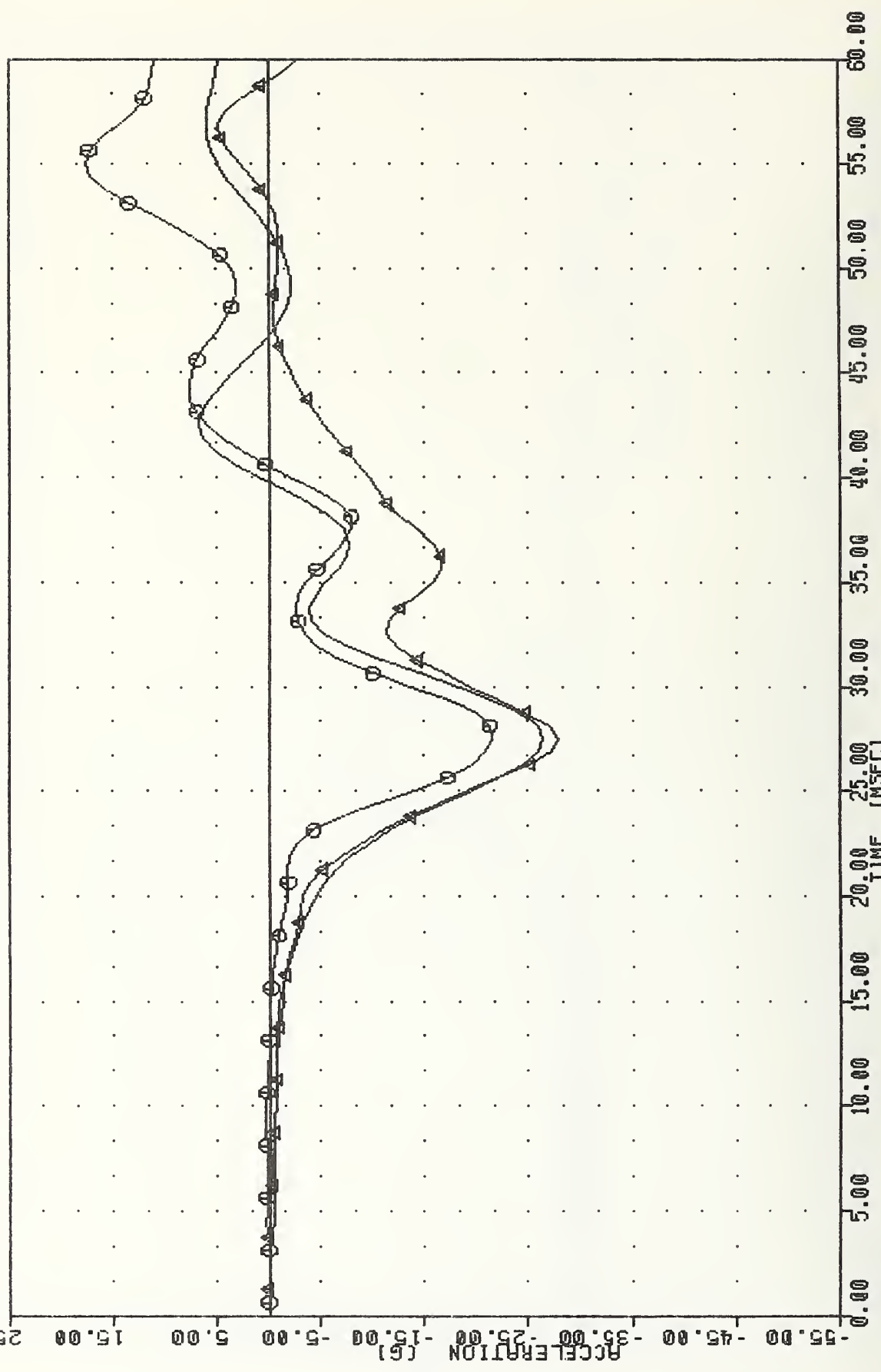
SIDE IMPACT TEST (AR16)  
 LOWER SPINE ACCELERATION Y AXIS -1

VRTC SAL26 , ARL6 CAL58 SID THORAX 6 BODY 318 CAL 58 83227 18-AUG-83 10:38:44  
 T12YGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -22.58 e 25.63 e 8.15 e 42.51  
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -22.37 e 25.63 e 13.54 e 53.75  
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -25.84 e 25.63 e 4.85 e 53.75



SIDE IMPACT TEST (ARL6)  
 LOWER SPINE ACCELERATION Y AXIS -A

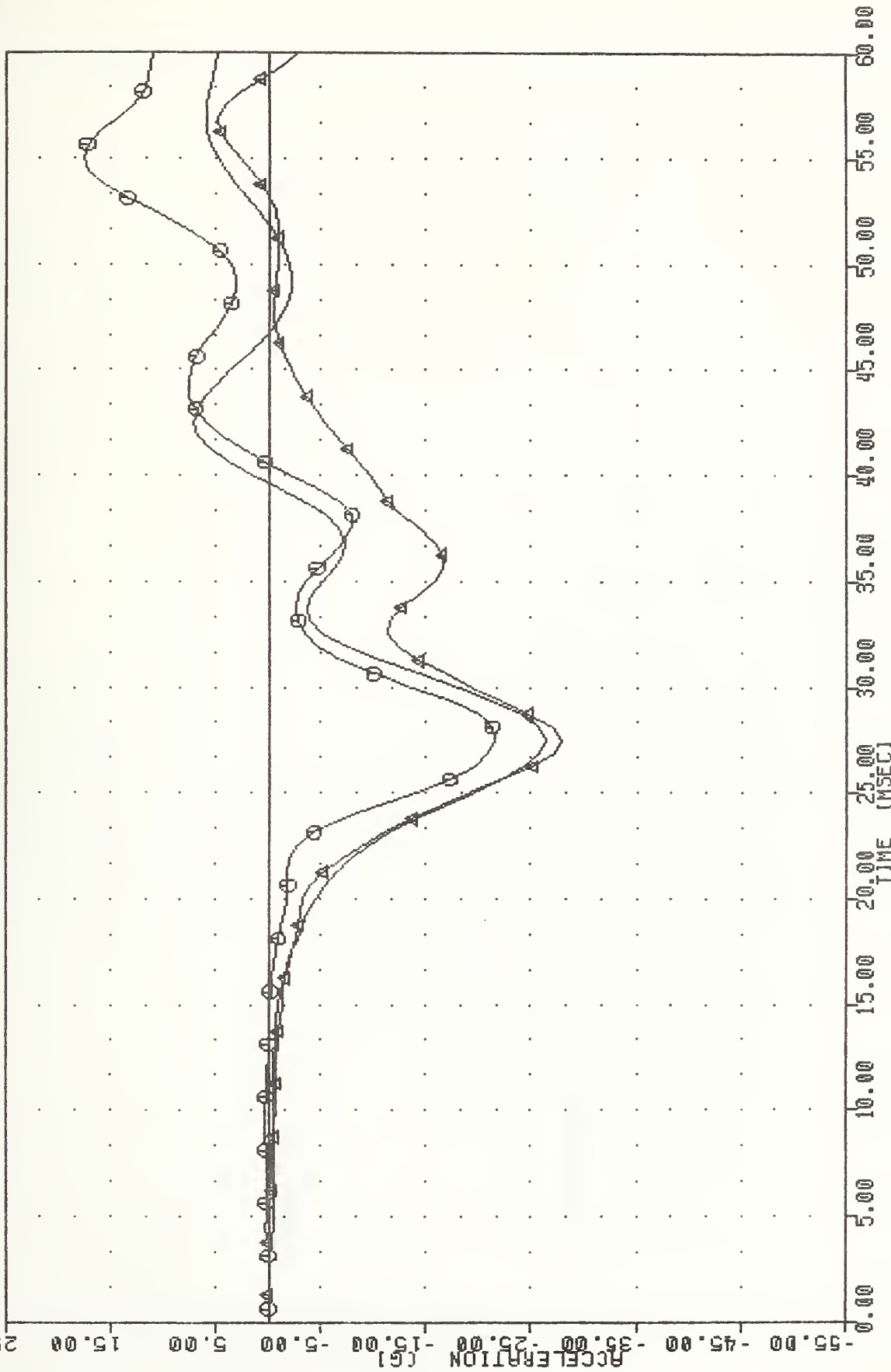
WRTC SRL26 , ARL6 CAL58 SID THORAX 6 BODY 318 CAL 58 83227 FLUI WHIE 18-MUG 03 10:43:46  
 T01YGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -26.44 e 26.87, 6.65 e 41.87  
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -21.58 e 26.87, 17.54 e 54.38  
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -27.91 e 26.87, 4.78 e 56.25



SIDE IMPACT TEST (ARL6)  
 UPPER RIB ACCELERATION Y AXIS -A

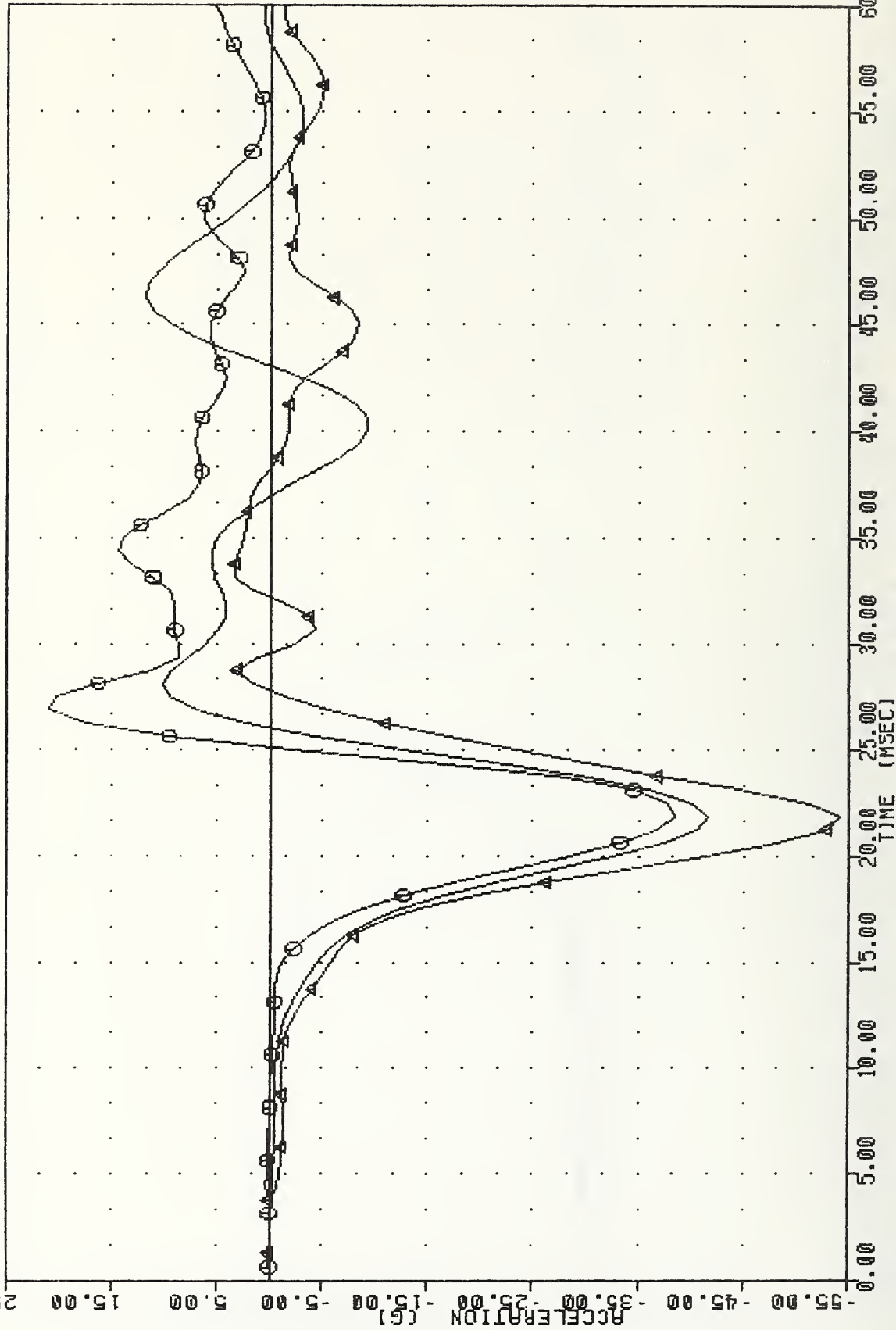


VRTC SRL26    ARL6 CAL58    SID THORAX 6 BODY 318 CAL 58    83227    PLOT DATE 18-AUG-83    10:44:33  
 T01Y61    FILTER : HSRI    136/ 189/ -50    MIN, MAX =    -26.32    26.87    7.03    41.87  
 MN-2SD    0    FILTER : HSRI    136/ 189/ -50    MIN, MAX =    -21.58    26.87    17.54    54.38  
 MN-2SD    4    FILTER : HSRI    136/ 189/ -50    MIN, MAX =    -27.91    26.87    4.78    56.25



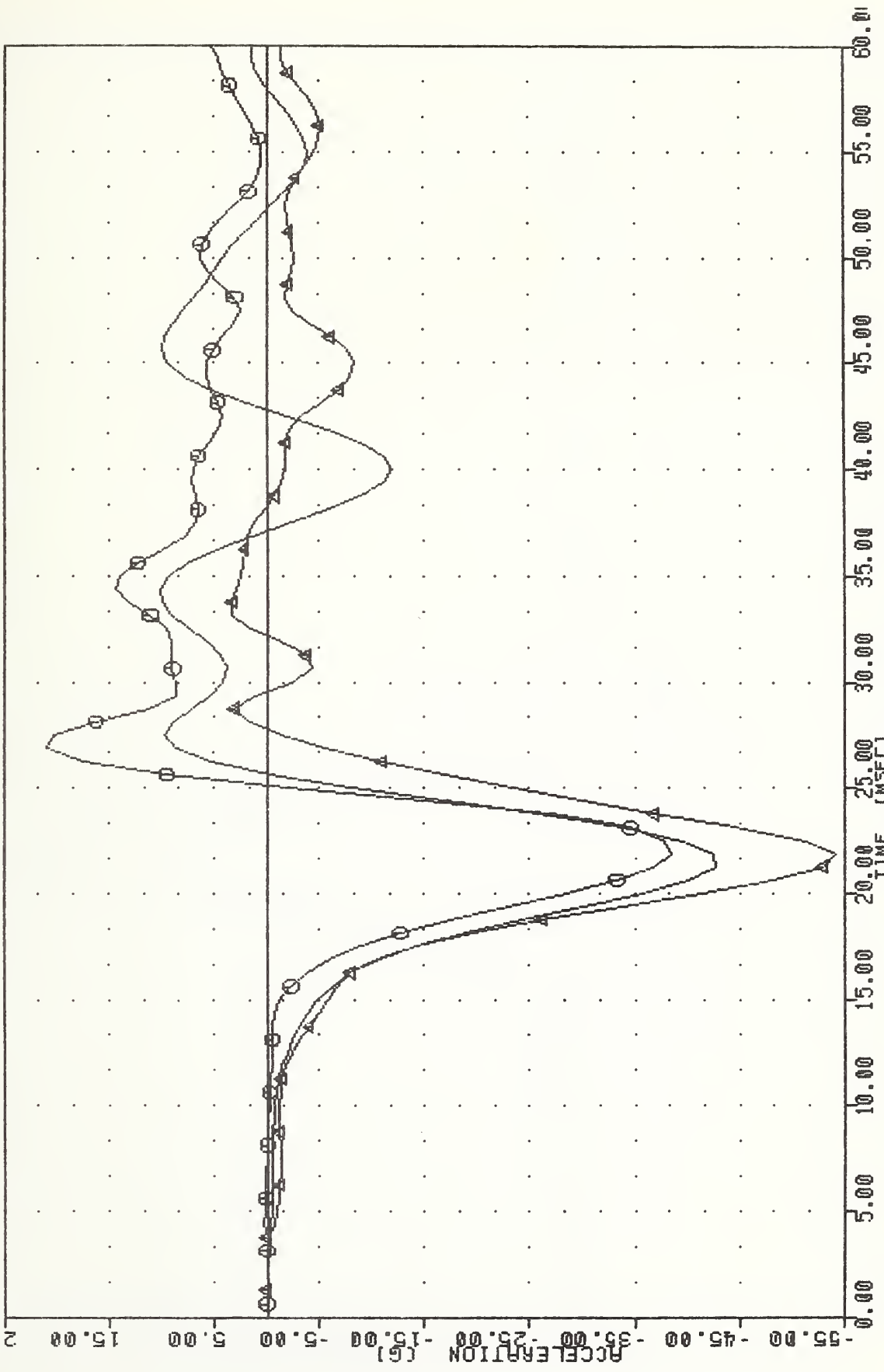
SIDE IMPACT TEST (ARL6)  
 UPPER SPINE ACCELERATION Y AXIS -1

WRTC SRL26 \* ARL6 CAL58 SID THORAX B BODY 318 CAL 58 83227 PLOT DATE 17-AUG-83 14:35:35  
 LURYGI FILTER : HSRI 136/ 189/ -50 MIN. MAX = -41.76 21.25 11.75 45.62  
 MN-250 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -38.44 21.25 20.92 26.25  
 MN-250 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -54.08 21.25 3.31 33.13



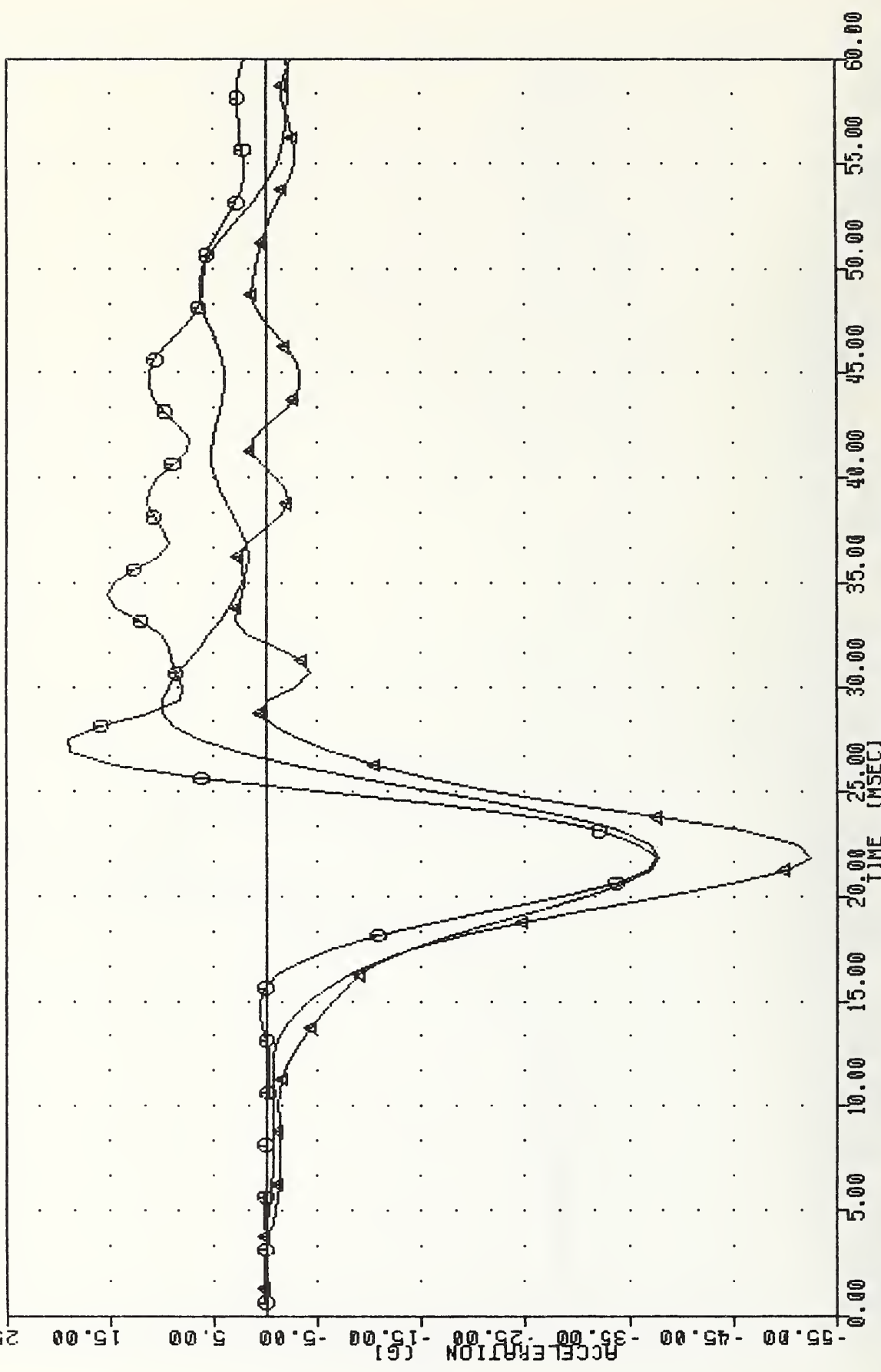
SIDE IMPACT TEST (ARL6)  
 LEFT UPPER RIB ACCELERATION Y AXIS - 1

YRTC SRL26 • ARL6 CAL58 SID THORAX 6 BODY 318 CAL 58 83227 17-AUG-83 14:37:58  
 LURYGA FILTER : HSRI 136/ 189/ -50 MIN. MAX = -42.69 g 10.15g 33.75  
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -38.44 g 20.92g 26.25  
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -54.08 g 21.25g 33.13



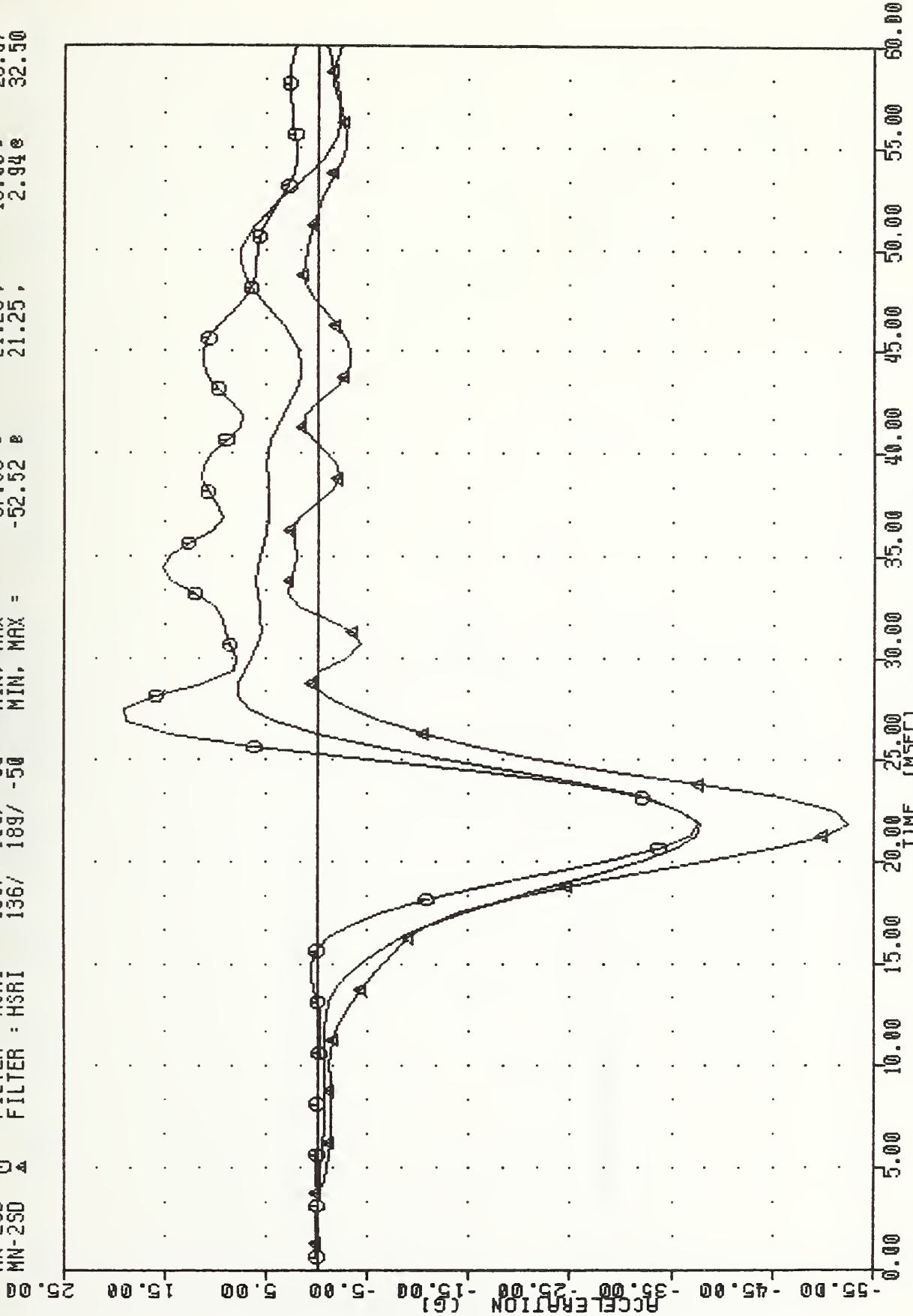
SIDE IMPACT TEST (ARL6)  
 LEFT UPPER ACCELERATION Y AXIS -A

VRIC SRL26 , U02 CAL60 SID THORAX U02 BODY 830 CAL 60 83230 PLOT DATE 18-AUG-83 11:05:47  
 LRYGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -37.87 9.92 28.75  
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -37.86 19.00 26.87  
 MN-2SD A FILTER : HSRI 136/ 189/ -50 MIN, MAX = -52.52 21.25 32.50



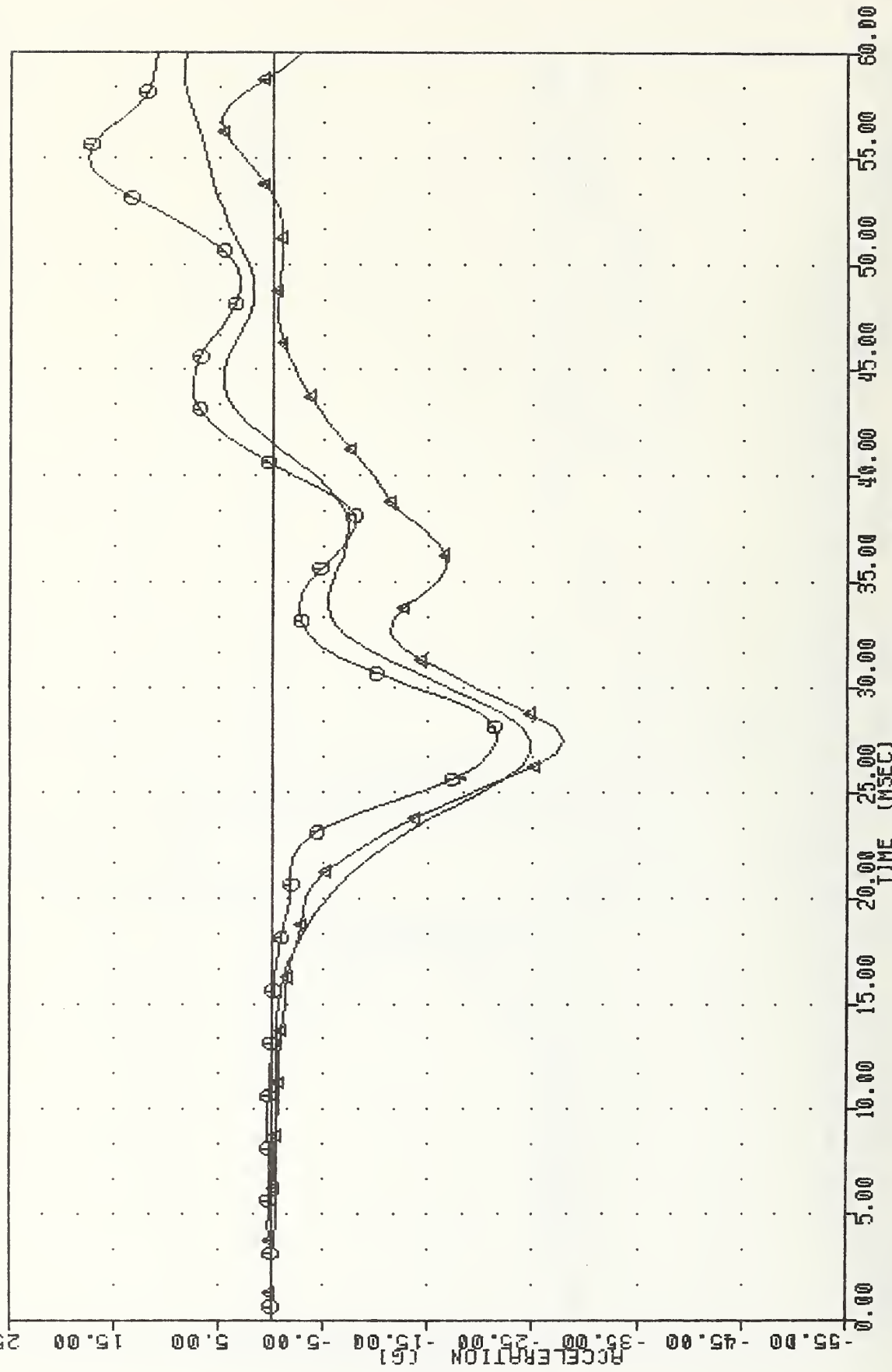
SIDE IMPACT TEST (U02)  
 LEFT LOWER RIB ACCELERATION Y AXIS -A

VRTC SRL26 , U02 CAL60 SID THORAX U02 BODY 830 CAL 60 83230 PLOT DATE 18-AUG-83 11:02:21  
 LLRY61 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -37.77 e 7.74 e 26.13  
 MN-250 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -37.66 e 19.00 e 26.87  
 MN-250 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -52.52 e 2.94 e 32.50



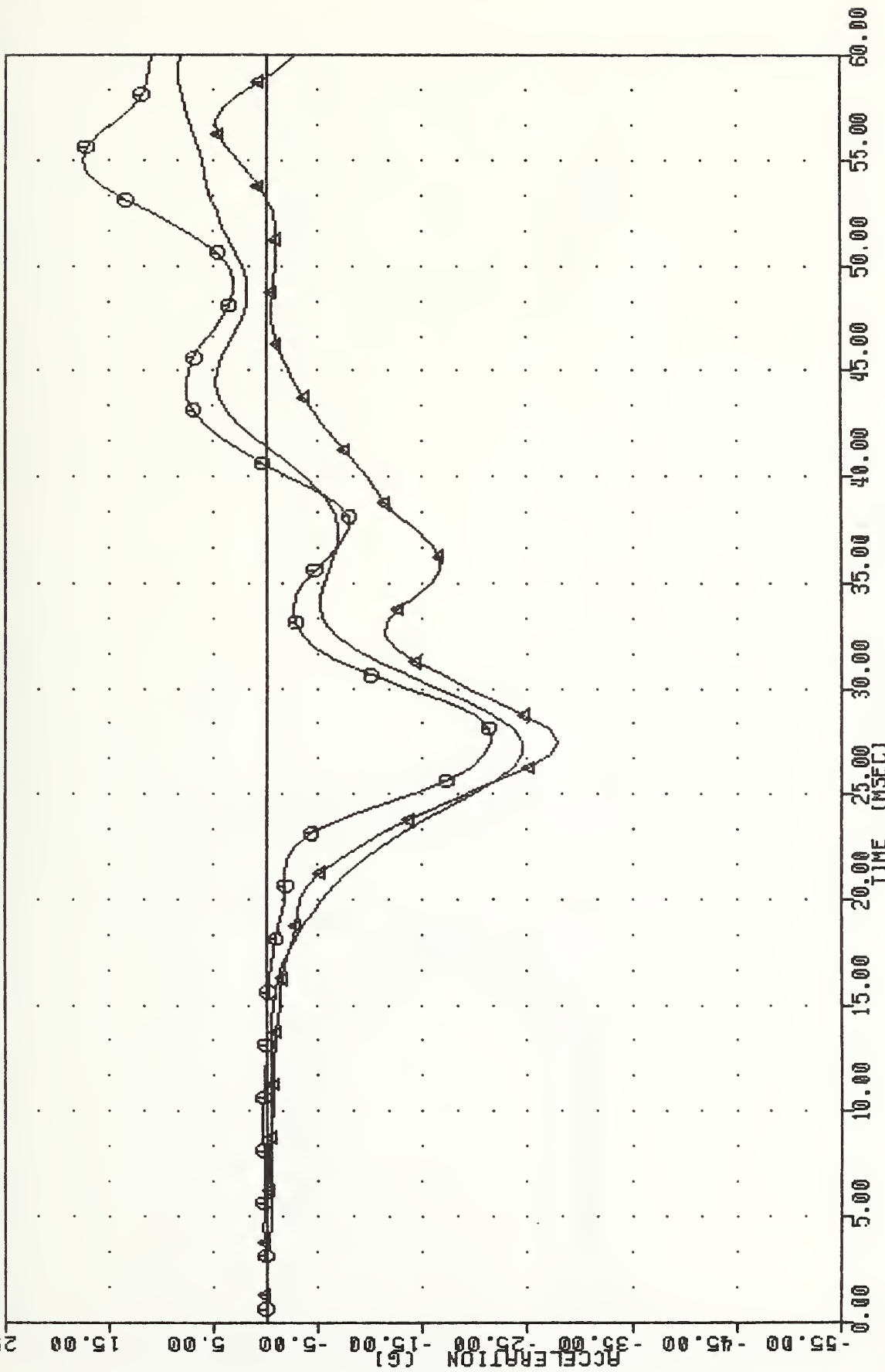
SIDE IMPACT TEST (U02)  
 LEFT LOWER RIB ACCELERATION Y AXIS -1

VRIC SRL26 U02 CAL60 SID THORAX U02 BODY 830 CAL 60 83230 PLOT DATE 18-AUG-83 11:10:06  
 TO1YGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -24.77 e 8.39 e 56.75  
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -21.58 e 17.54 e 54.38  
 MN-2SD Δ FILTER : HSRI 136/ 189/ -50 MIN, MAX = -27.91 e 26.87 e 56.25



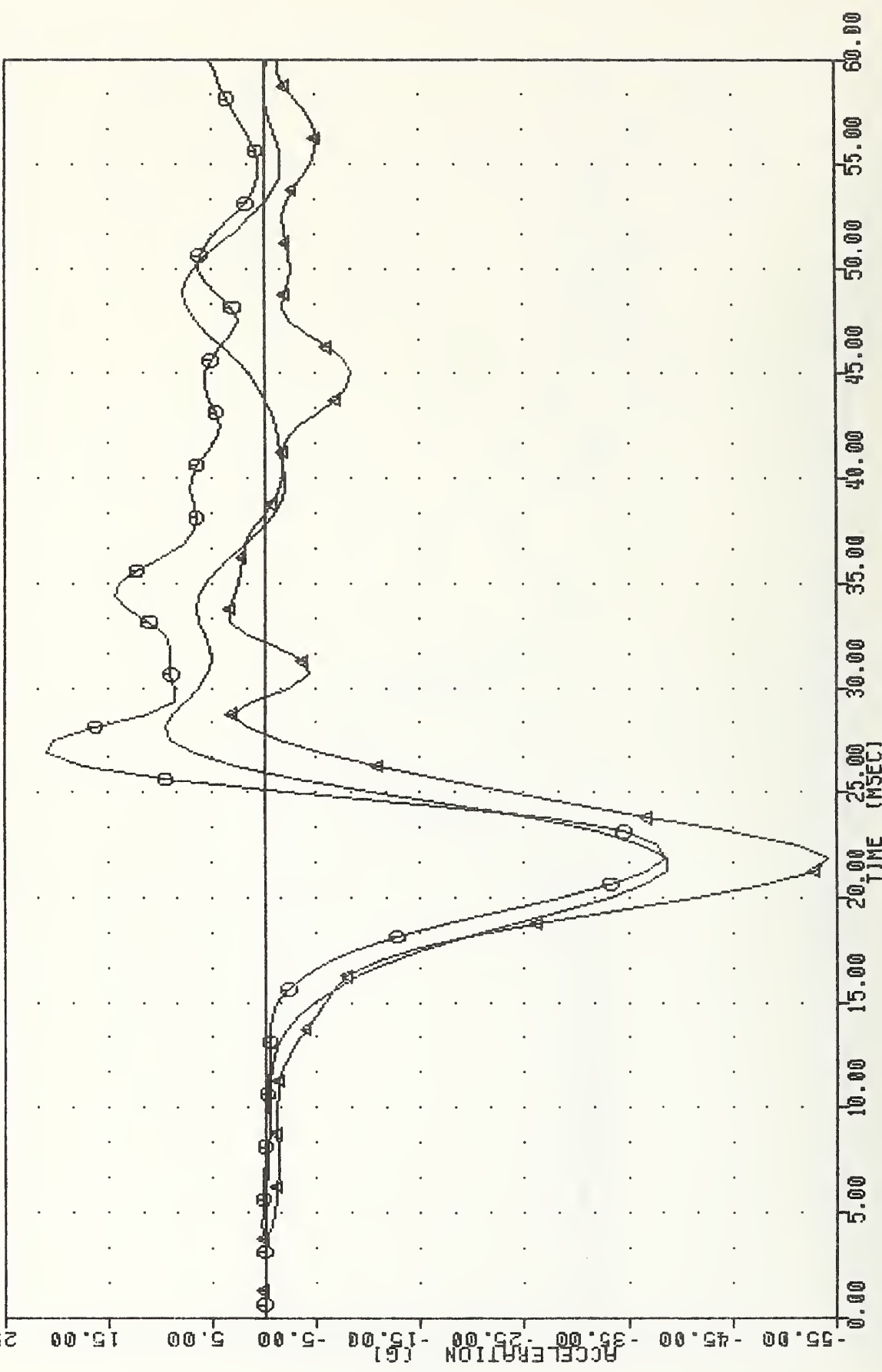
SIDE IMPACT TEST (U02)  
 UPPER SPINE ACCELERATION Y AXIS - A

WRTC SRL26 , U02 CAL60 SID THORAX U02 BODY 830 CAL 60 83230 PLOT DATE 18-HUG-83 11:57:42  
 T01Y61 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -24.50 8 26.87 8 8.36 8 58.75  
 MN-2SD 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -21.58 8 26.87 8 17.54 8 54.38  
 MN-2SD 4 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -27.91 8 26.87 8 4.78 8 56.25



SIDE IMPACT TEST (U02)  
 UPPER SPINE ACCELERATION Y AXIS -1

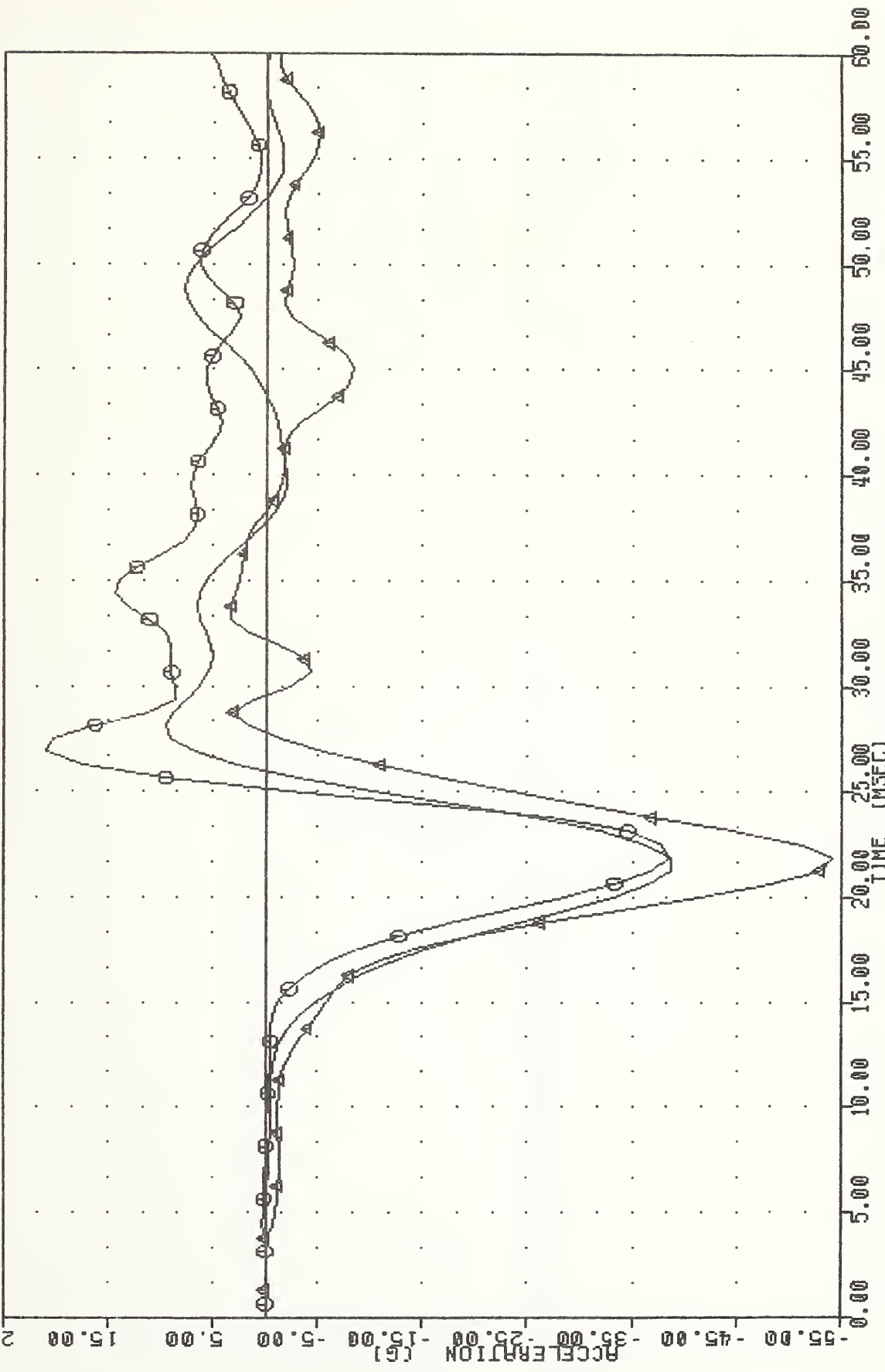
VRTC SRL26 U02 CAL60 SID THURHX UMZ BUUY 030 UHL 600 83230 PLOT DATE 18-AUG-83 10:56:48  
 LURYGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -38.61 e 9.42 e 27.50  
 MN-250 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -38.44 e 20.92 e 26.25  
 MN-250 A FILTER : HSRI 136/ 189/ -50 MIN, MAX = -54.08 e 21.25 e 33.13



SIDE IMPACT TEST (U02)  
 LEFT UPPER RIB ACCELERATION Y AXIS - A

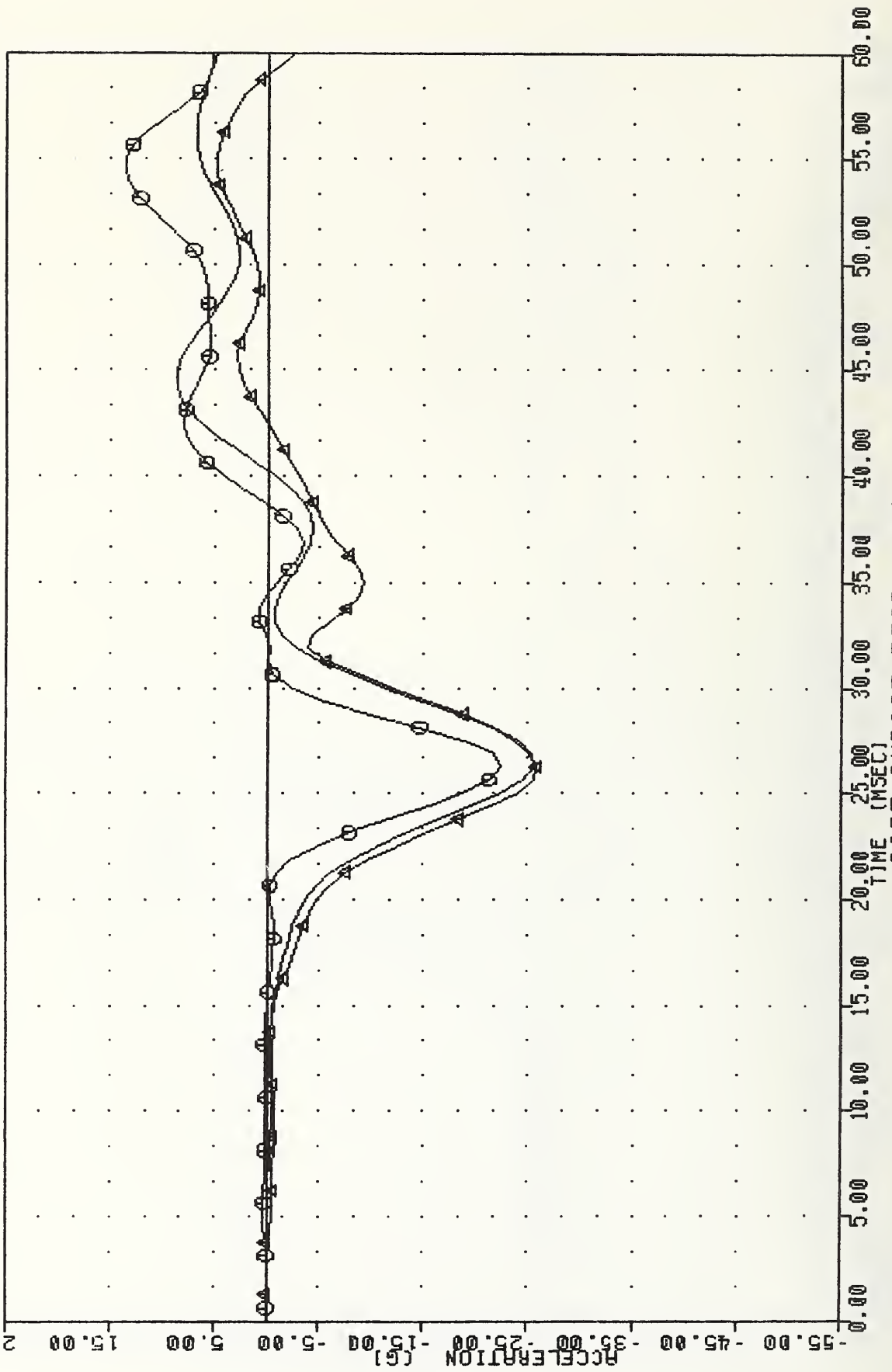


VRIC SRL26 U02 CAL60 SID THORAX U02 BODY 830 CAL 60 83230 PLOT DATE 18-AUG-83 10:58:49  
 LURYGA FILTER : HSRI 136/ 189/ -50 MIN, MAX = -38.61 e 9.42 e 27.50  
 MN-2SD U FILTER : HSRI 136/ 189/ -50 MIN, MAX = -38.44 e 20.92 e 26.25  
 MN-2SD A FILTER : HSRI 136/ 189/ -50 MIN, MAX = -54.08 e 3.31 e 33.13



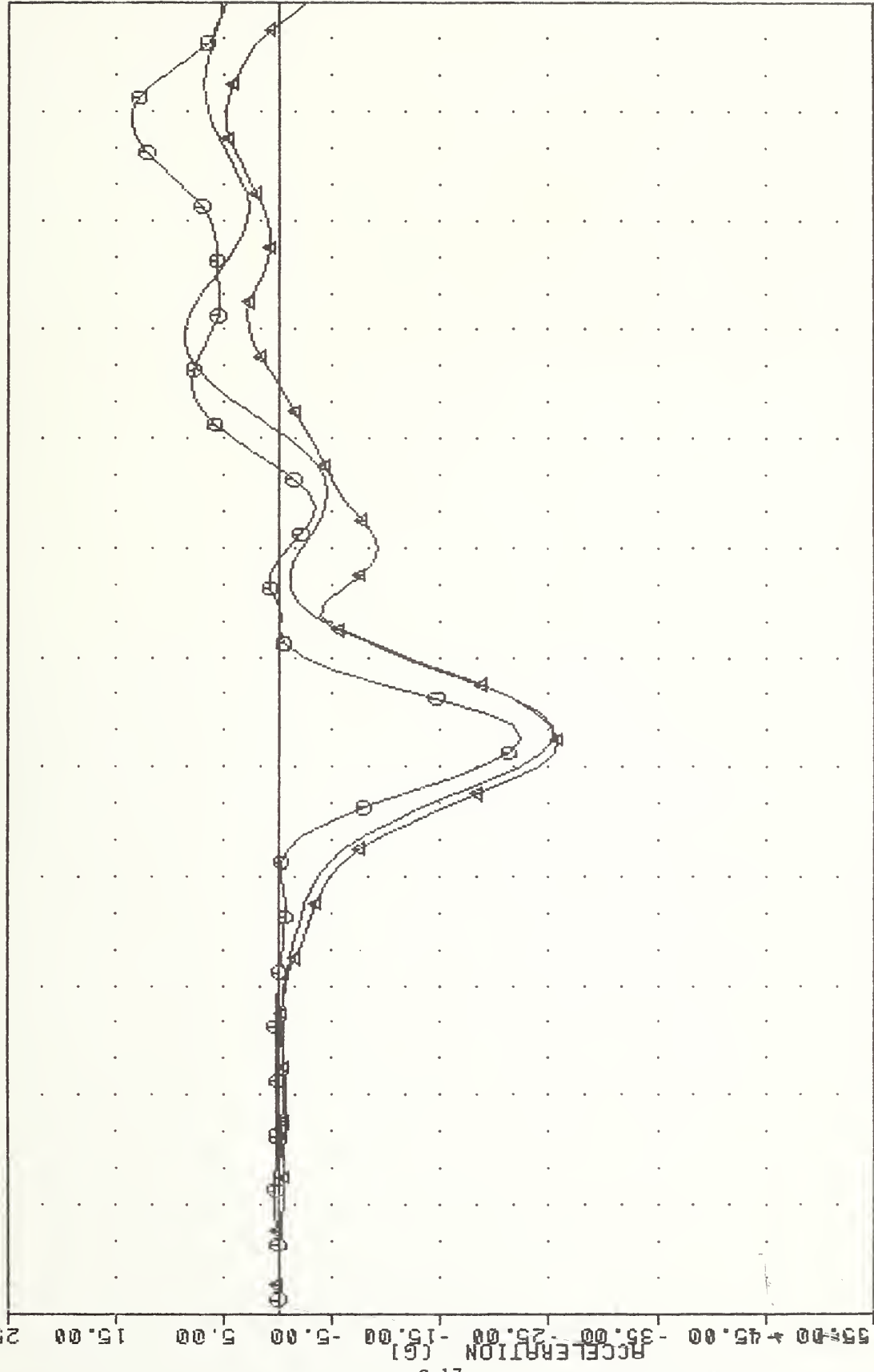
SIDE IMPACT TEST (U02)  
 LEFT UPPER RIB ACCELERATION Y AXIS - A

VRIC SRL26 U02 CAL60 SID THORAX U02 BODY 830 CAL 60 83230 PLOT DATE 18-AUG-83 17:12:37  
 T12Y61 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -25.45 e 8.61 e 43.75  
 MN-250 0 FILTER : HSRI 136/ 189/ -50 MIN. MAX = -22.37 e 13.54 e 53.75  
 MN-250 A FILTER : HSRI 136/ 189/ -50 MIN. MAX = -25.84 e 4.85 e 53.75



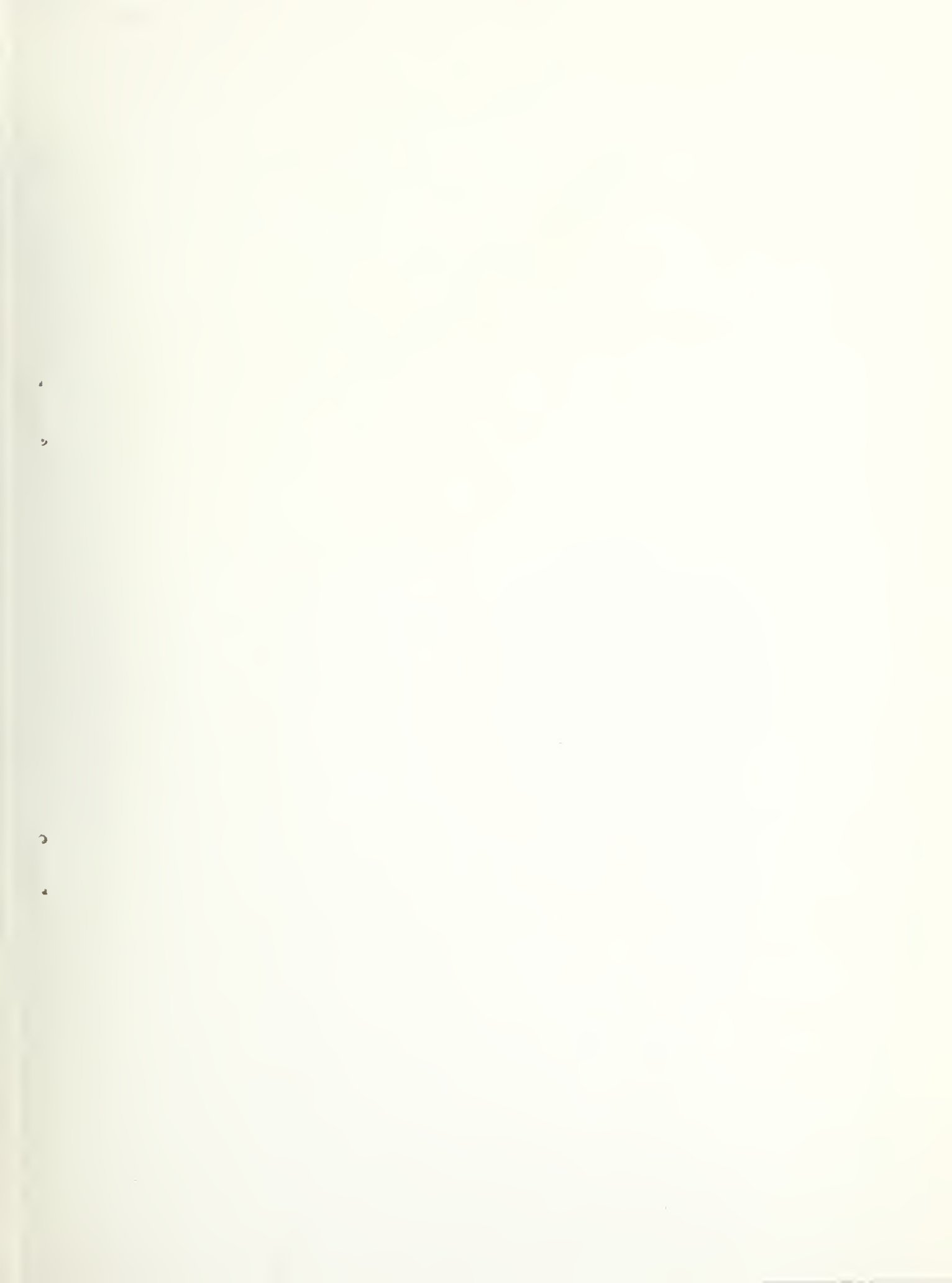
SIDE IMPACT TEST (U02)  
 LOWER SPINE ACCELERATION Y AXIS -1

YRIC SRL26 U02 CAL60 SID THORAX U02 BODY 830 CAL 60 83230 PLOT DATE 18-AUG-83 11:13:19  
 T12Y6A FILTER : HSRI 136/ 189/ -50 MIN, MAX = -25.34 8 25.63 8 8.58 8 43.75  
 MN-250 0 FILTER : HSRI 136/ 189/ -50 MIN, MAX = -22.37 8 25.63 8 13.54 8 53.75  
 MN-250 A FILTER : HSRI 136/ 189/ -50 MIN, MAX = -25.84 8 25.63 8 4.85 8 53.75

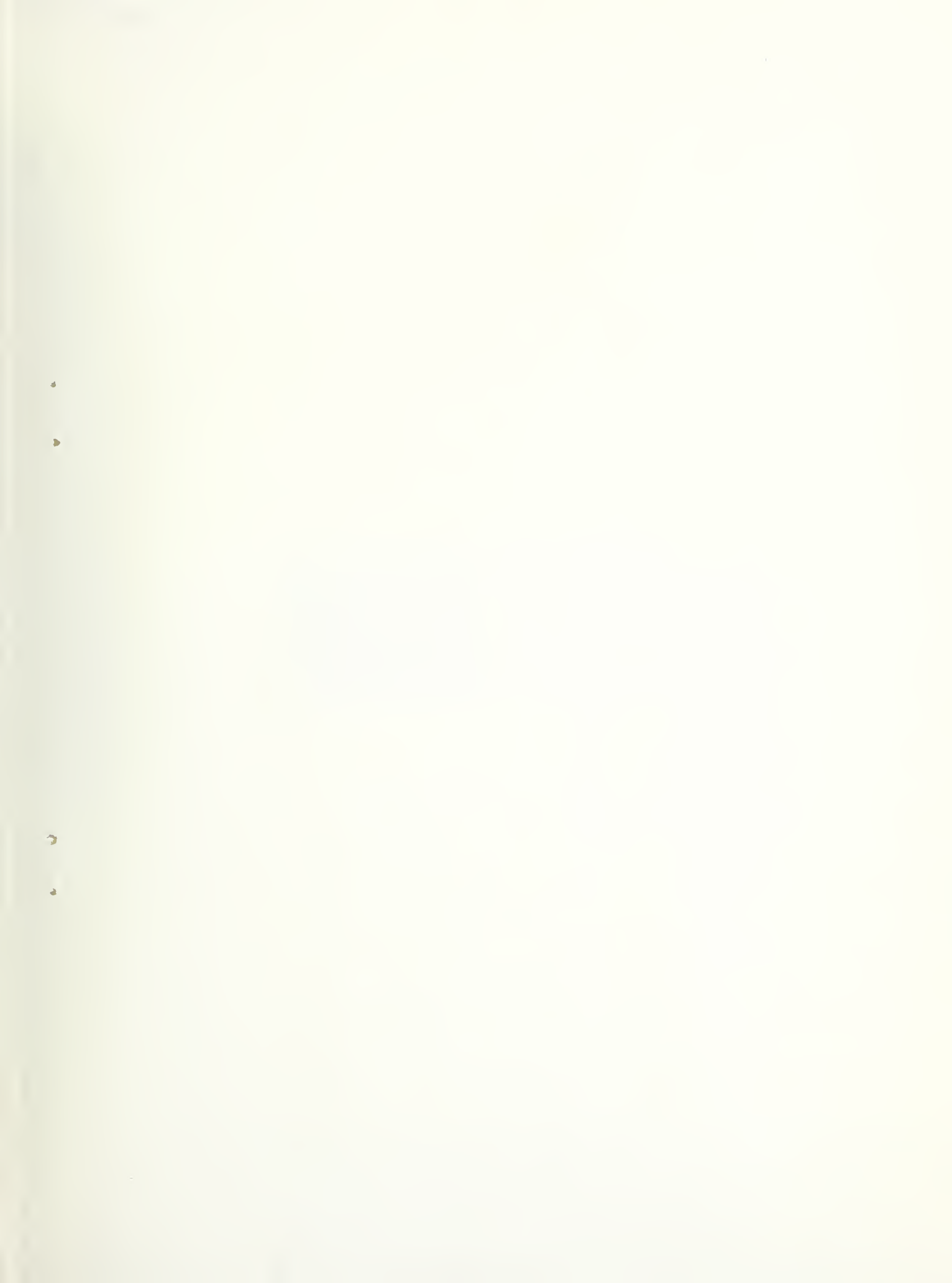


0.00 5.00 10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00  
 TIME (MSEC)  
 SIDE IMPACT TEST (U02)  
 LOWER SPINE ACCELERATION Y AXIS -A













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