

DOT 821

REPORT NO. TRC-85-NO7

NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST

FORD-WERKE AG
1985 FORD MERKUR XR4Ti
3-DOOR HATCHBACK
NHTSA NO. CF0201
TRCO TEST NO. 850508

THE TRANSPORTATION RESEARCH CENTER OF OHIO
ST. RT. 33, LOGAN COUNTY
EAST LIBERTY, OHIO 43319



JUNE 1985
TEST REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF MARKET INCENTIVES
400 SEVENTH STREET, S.W.
ROOM NO. 5313 (NRM-22)
WASHINGTON, DC 20590

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-84-D-11149. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

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JUN 10 1985

Date of Report Acceptance

1. Report No. TRC-85-N07	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle NHTSA NEW CAR ASSESSMENT PROGRAM (NCAP) FRONTAL BARRIER IMPACT TEST ON 1985 FORD MERKUR XR4Ti 3-DOOR HATCHBACK TO INDICANT REQUIREMENTS OF FMVSS NOS. 212, 219 (PARTIAL), AND 301-75		5. Report Date JUNE 1985	
		6. Performing Organization Code TRC	
7. Author(s) J.C. Stultz, Project Engineer, TRCO		8. Performing Organization Report No. TRC-OMI-07	
9. Performing Organization Name and Address Transportation Research Center of Ohio St. Rt. 33, Logan County East Liberty, Ohio 43319		10. Work Unit No. (TRAIS) TRC-85-DOT-7	
		11. Contract or Grant No. DTNH22-84-D11149	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Market Incentives (NRM-20) 400 Seventh St., S.W., Washington, DC 20590		13. Type of Report and Period Covered TEST REPORT May-June 1985	
		14. Sponsoring Agency Code DOT/NHTSA/RM/OMI	
15. Supplementary Notes			
16. Abstract A 35 mph frontal barrier impact test using a load cell barrier was conducted on a 1985 Ford Merkur XR4Ti 3-door hatchback at the Transportation Research Center of Ohio in East Liberty, Ohio on May 8, 1985. The barrier impact velocity was 34.9 mph, and the ambient temperature at the barrier face at the time of impact was 75°F. The post-test vehicle crush maximum was 23.9 inches and intrusion of the firewall into the compartment was 5.9 inches. The test vehicle appeared to comply with the indicant requirements of the following Federal Motor Vehicle Safety Standards: 1. FMVSS No. 212, "Windshield Mounting" 2. FMVSS No. 219 (Partial), "Windshield Zone Intrusion" 3. FMVSS No. 301-75, "Fuel System Integrity" Driver HIC: 1008.9 Passenger HIC: 1449.5			
17. Key Words 35 mph Frontal Barrier Impact Test New Car Assessment Program (NCAP) FMVSS 212 Indicant Testing FMVSS 219 (Partial) Indicant Testing FMVSS 301-75 Indicant Testing		18. Distribution Statement Available from: National Technical Information Service Springfield, Virginia 22161	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 168	22. Price

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

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

Approximate Conversions from Metric Measures

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



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SECTION 1.0
PURPOSE AND TEST PROCEDURE

This 35 mph frontal barrier impact test is part of the Composite FY'85 Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-84-D-11149. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 30 mph FMVSS 212/219/301-75 requirements.

The 35 mph frontal barrier impact test was conducted in accordance with the Office of Market Incentives (OMI) Laboratory Indicant Test Procedure. Standards Enforcement Indicant Test Program data for FMVSS No. 212, "Windshield Mounting", FMVSS No. 219 (Partial), "Windshield Zone Intrusion", FMVSS No. 301-75, "Fuel System Integrity", as well as occupant performance data are provided herein.

SECTION 2.0
SUMMARY OF TEST NUMBER CF0201

A load cell barrier consisting of 36 load cells was impacted by a 1985 Ford Merkur XR4Ti 3-door Hatchback at a velocity of 34.9 mph. The test was performed at the Transportation Research Center of Ohio on May 8, 1985. Pre- and post-test photographs of the vehicle and occupants can be found in Appendix A.

Two Part 572, 50th percentile male anthropomorphic test devices (ATDs) were placed in the driver and right-front passenger designated seating positions, according to dummy placement procedures specified in Laboratory Indicant Test Procedure dated April 1, 1985.

Both ATDs were instrumented with head and chest triaxial accelerometers and right/left femur load cells. In addition, load cells were placed on the driver's and passenger's lap and shoulder belts to measure dummy upper torso and pelvic section loading. A summary of dummy calibration test data can be found in Appendix C.

The crash event was recorded by one real-time camera and 16 high-speed cameras. Camera locations and other pertinent camera information are found in Section 4 of this report.

The 67 channels of data were recorded on two 14 track tape drives. Appendix B contains the vehicle, load cell barrier and dummy response data plots.

CRASH TEST SUMMARY

TEST NO. 850508 PROJECT: CF0201
DATE: May 8, 1985 TIME: 13:18 TEMP: 75°F
VEHICLE: Ford Merkur XR4Ti 3-door Hatchback
TEST WEIGHT (LBS): 3452
IMPACT ANGLE (DEG)*: 0
IMPACT VELOCITY (MPH)**: 34.9
MAX CRUSH (IN) STATIC: 23.9

DUMMIES

TYPE:	Part 572	Part 572
LOCATION:	Front Left	Front Right
RESTRAINT:	3-pt. Production Seat Belt	3-pt. Production Seat Belt
NUMBER OF DATA CHANNELS:	67	
NUMBER OF HIGH SPEED CAMERAS:	16 and 1 real-time camera	

*With respect to tow track centerline.
**Speed trap measurement (+ .05% accuracy).

GENERAL COMMENTS

The 1985 Ford Merkur XR4Ti 3-door hatchback was equipped with a 2300 cubic centimeter, 4-cylinder inline engine and manual 5-speed transmission. The total test weight with two 50th percentile male dummies, instrumentation and two on-board cameras was 3452 pounds.

The test vehicle impacted the frontal load cell barrier at a velocity of 34.9 mph and appeared to comply with FMVSS Nos. 212, "Windshield Mounting" and 301-75, "Fuel System Integrity". There was 95.7 percent windshield retention and no fuel leakage after impact or any phase of the rollover test.

The vehicle sustained 23.9 inches of static crush. Maximum load cell barrier force measured by the 36 load cells was 118,883.0 pounds at 40.3 milliseconds.

The driver's "Head Injury Criteria" was 1008.9. The maximum chest deceleration over 3 milliseconds was 55.0 g's, and right and left femur loads were 735.5 and 446.5 pounds respectively.

The right-front passenger's HIC was 1449.5, the maximum chest deceleration over 3 milliseconds was 52.1 g's, and the right and left femur loads were 953.3 and 670.0 pounds respectively.

The belt-related data for each occupant are presented in Section 4.0 of this report.

TEST ANOMALIES

The signal cables were severed from the following data channels:

ENGXG2 - Bottom of Engine Block Acceleration

TLRXG1 - Left Rear Seat Acceleration

TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Ford - Werke AG

MAKE/MODEL: Ford Merkur XR4Ti

VIN: WF1BP80WOFM618615

BODY STYLE: 3-door Hatchback

MODEL YEAR: 1985

NHTSA NO.: CF0201

COLOR: Gray

ENGINE DATA: TYPE: Inline CYLINDERS: 4 DISPLACEMENT: 2300 cc

X GAS, DIESEL, TURBOCHARGE

TRANSMISSION DATA: 5 SPEED, X MANUAL, AUTOMATIC, FWD X RWD

DATE VEHICLE RECEIVED: 5-1-85

ODOMETER READING: 12.2

DEALER'S NAME AND ADDRESS: NA

ACCESSORIES:

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

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

VEHICLE MANUFACTURED BY: Ford - Werke AG

DATE OF MANUFACTURE: 1/85

GVWR: 3875 LBS.,

GAWR: FRONT 1803 LBS., REAR 2092 LBS.

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

VEHICLE LOAD (UP TO CAPACITY): FRONT 32 psi; REAR 32 psi

RECOMMENDED TIRE SIZE: 195/60HR14 LOAD RANGE X B, C, D

TIRES ON VEHICLE (MFGR., LINE, SIZE): Pirelli P6 195/60R14 85H

IS SPARE TIRE A "SPACE SAVER": Yes

IS SPARE TIRE STANDARD EQUIPMENT: Yes

VEHICLE CAPACITY: TYPES OF SEATS Front - Bucket
Rear - Bench

TYPE OF FRONT SEAT BACKS Adjustable , Manual

NUMBER OF OCCUPANTS 2 FRONT 3 REAR 5 TOTAL

CARGO LOAD 150 LBS. TOTAL 900 LBS.

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

RIGHT FRONT 701 LBS. RIGHT REAR 691 LBS.

LEFT FRONT 775 LBS. LEFT REAR 697 LBS.

TOTAL FRONT WEIGHT 1476 LBS. (51.5 % OF TOTAL VEHICLE WEIGHT)

TOTAL REAR WEIGHT 1388 LBS. (48.5 % OF TOTAL VEHICLE WEIGHT)

TOTAL DELIVERED WEIGHT 2864 LBS.

CALCULATION FOR TARGET TEST WEIGHT:

RCLW = RATED CARGO AND LUGGAGE WEIGHT

UDW = UNLOADED DELIVERED WEIGHT (2864 LBS)

VCW = VEHICLE CAPACITY WEIGHT (900 LBS)

DSC = DESIGNATED SEATING CAPACITY (5)

RCLW = VCW - 150 (DCS) =

= 900 - 750 = 150 LBS

TARGET TEST WEIGHT = UDW + RCLW + (2 DUMMIES X 164 LBS/DUMMY)

= 2864 + 150 + 328 LBS

TARGET TEST WEIGHT = 3342 LBS

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 260 LBS. CARGO:

RIGHT FRONT	820	LBS.	RIGHT REAR	856	LBS.
LEFT FRONT	867	LBS.	LEFT REAR	909	LBS.
TOTAL FRONT WEIGHT	1687		LBS. (48.9 % OF TOTAL VEHICLE WEIGHT)		
TOTAL REAR WEIGHT	1765		LBS. (51.1 % OF TOTAL VEHICLE WEIGHT)		
TOTAL TEST WEIGHT	3452		LBS. (3.2 % OVER TARGET WEIGHT)		

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

COMPONENTS REMOVED TO MEET TARGET WEIGHT: None

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

DELIVERED ATTITUDE:	RF 27 3/8	;LF 27 3/16	;RR 27 1/16	;LR 26 13/16
PRE-TEST ATTITUDE:	RF 25 3/4	;LF 25 9/16	;RR 24 9/16	;LR 25
POST-TEST ATTITUDE:	RF 29	;LF 23 1/4	;RR 22 1/2	;LR 23 1/4
WHEELBASE:	103.3	INCHES		

CG = 52.8 INCHES REARWARD OF FRONT WHEEL CENTERLINE

TEST CONDITIONS

TEST NUMBER: 850508

DATE OF TEST: May 8, 1985

TIME OF TEST: 13:18

TYPE OF TEST: Frontal Load Cell Barrier Impact IMPACT ANGLE: 0 °

AMBIENT TEMPERATURE AT IMPACT AREA: 75°F

TEMPERATURE IN OCCUPANT COMPARTMENT: 71°F

IMPACT VELOCITY: PRIMARY = 34.9 MPH

(SPECIFIED RANGE = 34.5 TO 35.5 MPH)

VEHICLE REBOUND AND CRUSH (ALL DIMENSIONS IN INCHES)

OVERALL LENGTH OF TEST VEHICLE:	PRE-TEST:	R 174	;C 179 1/8	;L 174 1/4
	POST-TEST:	R 154 5/8	;C 155 3/8	;L 154 3/8
TOTAL CRUSH:		R 19 3/8	;C 23 3/4	;L 19 7/8

FOR FRONTAL IMPACTS, DISTANCE FROM FRONT OF TEST VEHICLE TO BARRIER AFTER IMPACT: R: 20 5/8 ;C: 20 1/8 ;L: 20 5/8

VISIBLE DUMMY CONTACT POINTS:

	DRIVER 826	PASSENGER 830
Head	Steering Hub, Upper Steering Wheel	Instrument Panel, Left Knee, Right Knee
Chest	Lower Steering Wheel	None
Abdomen	None	None
Left Knee	Instrument Panel	Instrument Panel
Right Knee	Instrument Panel	Instrument Panel

DOOR OPENING:

	LEFT	RIGHT
Front	Tools Required	Tools Required
Rear	DNA	DNA

SEAT MOVEMENT:

	SEAT BACK FAILURE	SEAT SHIFT
Front	No	No
Rear	DNA	DNA

GLAZING DAMAGE:

Entire windshield cracked, no windshield penetration,
no other glazing damage.

OTHER NOTABLE IMPACT EFFECTS:

SECTION 3.0

SUMMARY OF RESULTS FOR - - -

FMVSS 212, "Windshield Mounting"

FMVSS 219 (Partial), "Windshield Zone Intrusion"

FMVSS 301-75, "Fuel System Integrity"

SUMMARY OF FMVSS 212 AND 301 DATA

PRE-IMPACT DATA

MAKE/MODEL: Ford Merkur XR4Ti

BODY STYLE: 3-door Hatchback

MODEL YEAR: 1985

NHTSA NO.: CF0201

COLOR: Gray

DATA FROM CERTIFICATION LABEL

VEHICLE MANUFACTURER: Ford - Werke AG

DATE OF MANUFACTURE: 1/85

VIN: WF1BP80W0FM618615

GVWR: 3875 LBS., GAWR: FRONT 1803 LBS., REAR 2092 LBS.

POST-IMPACT DATA

TYPE OF TEST: Frontal Load Cell Barrier Impact

DATE OF TEST: 5/8/85

TIME: 13:18

TEMP:

75⁰F

REQUIRED IMPACT VELOCITY RANGE: 34.5 MPH TO 35.5 MPH

IMPACT VELOCITY: PRIMARY = 34.9 MPH

TEST WEIGHT = 3452 LBS., STATIC CRUSH MAX. = 23.9 IN., REBOUND = 20.6 IN.

FUEL SYSTEM DATA

TEST FLUID TYPE: RED STODDARD SOLVENT #2; SPEC. GRAVITY: 0.764

KINEMATIC VISCOSITY: 0.99 CENTISTOKES

"USEABLE" CAPACITY*: 15.0 GALLONS (FURNISHED BY CTM)

TEST VOLUME: 13.9 GALLONS (92-94% OF USEABLE)

FUEL SYSTEM CAPACITY (DATA FROM OWNERS MANUAL): 15.0 GALLONS

DETAILS OF FUEL SYSTEM: DNA

ELECTRIC FUEL: Yes

FUEL INJECTION: Yes

DOES ELECTRIC FUEL PUMP OPERATE WITH IGNITION SWITCH "ON" AND THE ENGINE NOT OPERATING? Yes

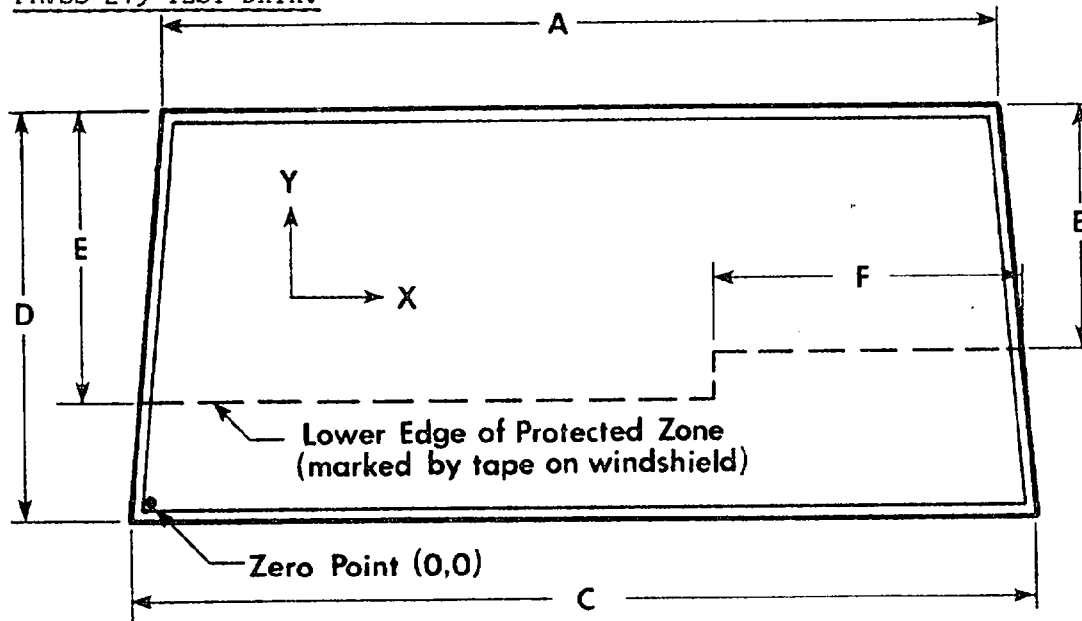
*WITH ENTIRE FUEL SYSTEM FILLED FROM FUEL TANK THROUGH CARBURETOR BOWL.

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

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 6.5" dia. rigid sphere weighing 15 pounds in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. Draw the locus of points on the inner surface of the windshield contactable by the sphere across the width of the instrument panel. From the outermost contactable points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and 1/2" distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection onto the outer surface of the windshield of this line.

FMVSS 219 TEST DATA:



FRONT VIEW

A = 41.0

C = 52.3

E = 17.5

B = 14.1

D = 24.8

F = 31.8

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

COORDINATES

	X	Y
1.		
2.		
3.		
4.		

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

Details of windshield mounting such as retention method, trim type, etc.:

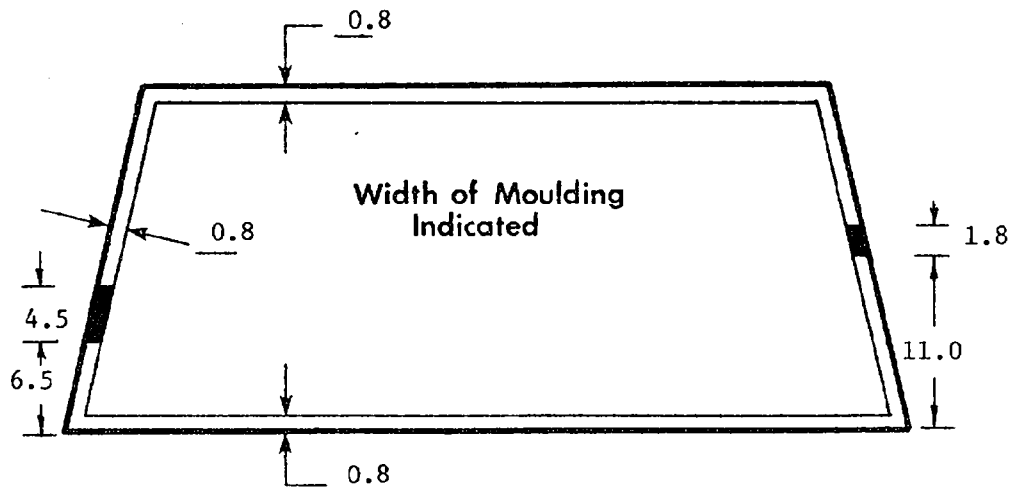
FMVSS 212 REQUIREMENTS: The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

FMVSS 212 TEST DATA:

WINDSHIELD PERIPHERY

	PRE-TEST (in.)	POST-TEST (in.)	PERCENT RETENTION
RIGHT SIDE	73.6	69.1	93.9%
LEFT SIDE	73.3	71.5	97.5%
TOTAL	146.9	140.6	95.7%

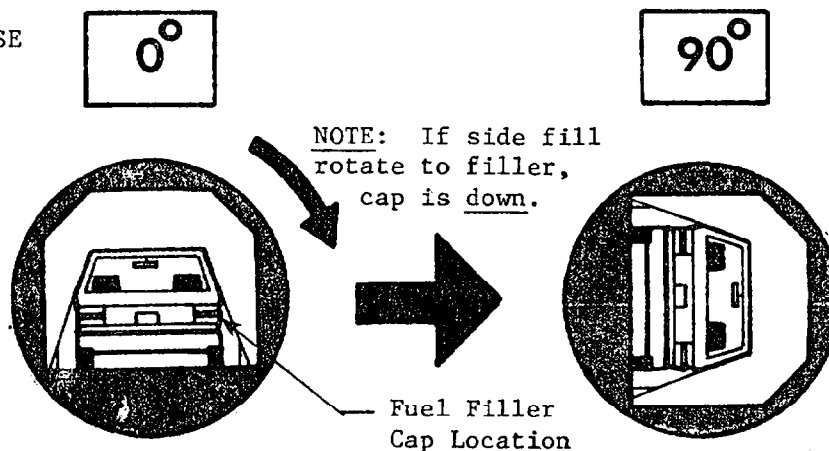
AREA OF RETENTION FAILURE:



FAILURE DETAILS: Both retention failures due to local windshield buckling.

FMVSS NO. 301-75 STATIC ROLLOVER DATA SHEET

TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1 to 3 min.)

Time req. for machine to rotate 90° = 2 minutes, 00 seconds

FMVSS 301-75 Position Hold Time = 5 minutes, 00 seconds

TOTAL - - - - - = 7 minutes, 00 seconds

Next Whole Minute Interval - - - - = 7 minutes

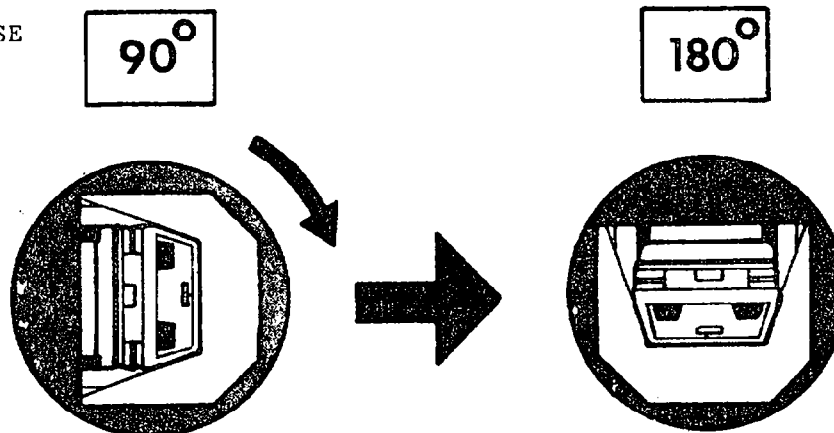
FMVSS 301-75 REQUIREMENTS

	First 5 Minutes FROM ONSET OF ROTATION	6th Minute	7th Minute
Maximum Allowable Solvent Spillage - -	5 oz.	1 oz.	1 oz.
0 to 90° (filler cap down) - - - - -	0	0	0

SOLVENT SPILLAGE LOCATION(S)

FMVSS NO. 301-75 STATIC ROLLOVER DATA SHEET

TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1 to 3 min.)

Time req. for machine to rotate 90° = 2 minutes, 00 seconds
 FMVSS 301-75 Position Hold Time = 5 minutes, 00 seconds
 TOTAL - - - - - = 7 minutes, 00 seconds
 Next Whole Minute Interval - - - - = 14 minutes

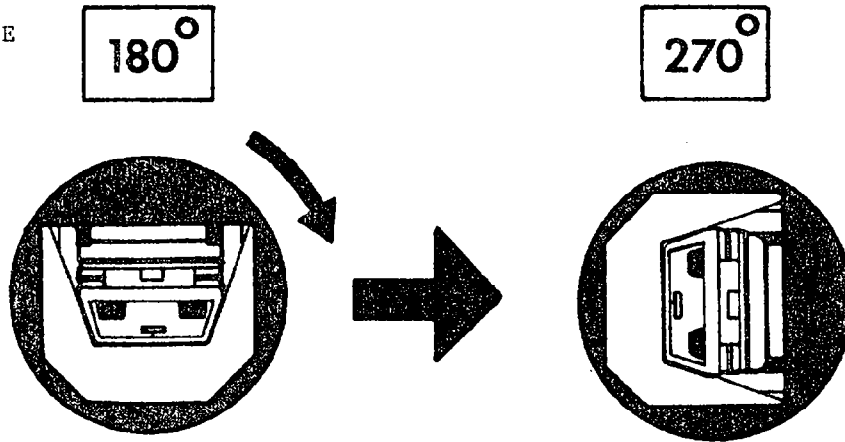
FMVSS 301-75 REQUIREMENTS

	First 5 Minutes FROM ONSET OF ROTATION	6th Minute	7th Minute
Maximum Allowable Solvent Spillage -	5 oz.	1 oz.	1 oz.
90° to 180° (filler cap down) - - -	0	0	0

SOLVENT SPILLAGE LOCATION(S)

FMVSS NO. 301-75 STATIC ROLLOVER DATA SHEET

TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1 to 3 min.)

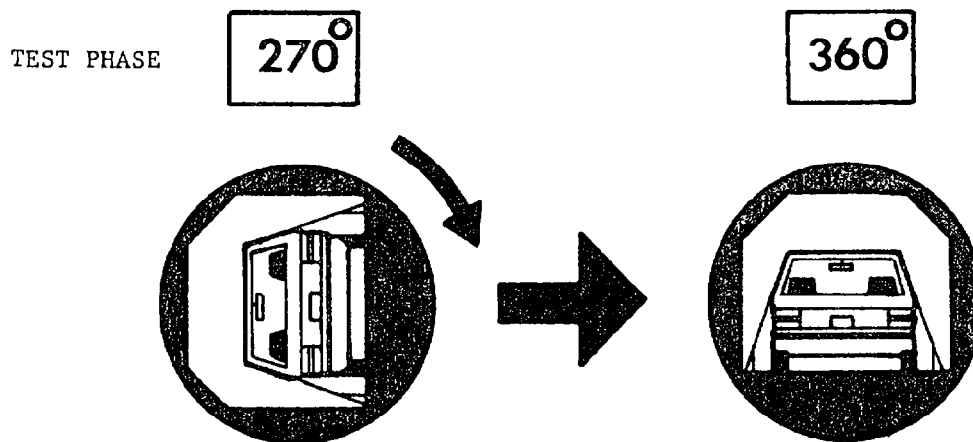
Time req. for machine to rotate 90° = 2 minutes, 00 seconds
 FMVSS 301-75 Position Hold Time = 5 minutes, 00 seconds
 TOTAL - - - - - = 7 minutes, 00 seconds
 Next Whole Minute Interval - - - - = 21 minutes

FMVSS 301-75 REQUIREMENTS

	First 5 Minutes FROM ONSET OF ROTATION	6th Minute	7th Minute
Maximum Allowable Solvent Spillage - -	5 oz.	1 oz.	1 oz.
180° to 270° (filler cap down) - - - -	0	0	0

SOLVENT SPILLAGE LOCATION(S)

FMVSS NO. 301-75 STATIC ROLLOVER DATA SHEET



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1 to 3 min.)

Time req. for machine to rotate 90° = 2 minutes, 00 seconds

FMVSS 301-75 Position Hold Time = 5 minutes, 00 seconds

TOTAL - - - - - = 7 minutes, 00 seconds

Next Whole Minute Interval - - - - = 28 minutes

FMVSS 301-75 REQUIREMENTS

	First 5 Minutes FROM ONSET OF ROTATION	6th Minute	7th Minute
Maximum Allowable Solvent Spillage - -	5 oz.	1 oz.	1 oz.
270° to 360° (filler cap down) - - -	0	0	0

SOLVENT SPILLAGE LOCATION(S)

VEHICLE STATIC ROLLOVER DATA SUMMARY:

MAXIMUM ALLOWABLE SOLVENT SPILLAGE	FIRST 5 MINUTES FROM ONSET OF ROTATION 5 OZ	6TH MIN. 1 OZ	7TH MIN. 1 OZ
0 TO 90° (FILLER CAP DOWN) - - - - -	0	0	0
90 TO 180° - - - - -	0	0	0
180 to 270° - - - - -	0	0	0
270 to 360° - - - - -	0	0	0

SECTION 4.0

OCCUPANT, VEHICLE AND LOAD CELL BARRIER INFORMATION

DUMMY INJURY CRITERIA

	MAXIMUM ACCELERATION ('G')							
	HEAD				CHEST			
	X	Y	Z	R	X	Y	Z	R*
DRIVER	-155.5	-29.6	-55.0	164.2	-59.1	-16.2	-23.9	55.0
PASSENGER	-100.9	22.0	-149.8	172.3	-51.2	18.9	15.6	52.1

	MAXIMUM FORCE-FEMUR LOAD (LBS)	
	RIGHT FEMUR	LEFT FEMUR
DRIVER	735.5	446.5
PASSENGER	953.3	670.0

	MAXIMUM FORCE-SEAT BELT LOADS (LBS)		
	SHOULDER STRAP UPPER BELT LOAD	LAP STRAP RIGHT BELT LOAD	LAP STRAP LEFT BELT LOAD
DRIVER	2086.0	---	1648.4
PASSENGER	1601.6	1943.3	---

	HEAD INJURY CRITERIA**		
	HIC	t ₁ (MSEC)	t ₂ (MSEC)
DRIVER	1008.9	72.9	112.6
PASSENGER	1449.5	71.0	117.4

*Defined as exceeding 0.003 sec. duration

**As defined in FMVSS No. 208

DUMMY KINEMATIC SUMMARY

DRIVER

During impact, the knees translated forward and struck the instrument panel. The dummy's head and upper torso rotated forward and to the right until the dummy's upper face struck the upper right steering wheel rim and the lower face struck the steering wheel hub. The upper chest struck the lower steering wheel rim. The dummy rebounded rearward into the right half of the seat back. The head partially struck the right side edge of the head restraint. The dummy came to rest seated upright and facing forward.

PASSENGER

During impact, the knees translated forward and struck the instrument panel. The head and upper torso rotated forward with little lateral rotation until the face struck the instrument panel and the right and left knees. The dummy rebounded rearward into the seatback and the head struck the head restraint. The dummy came to rest seated upright and facing forward.

DUMMY IN-VEHICLE POSITION RECORDING SHEET

VEHICLE NHTSA NO. CF0201

MFR./MAKE/MODEL: Ford Merkur XR4Ti

SEAT TYPE: Bench
X Bucket
Split Bench

ADJUSTER TYPE: X Manual
Power

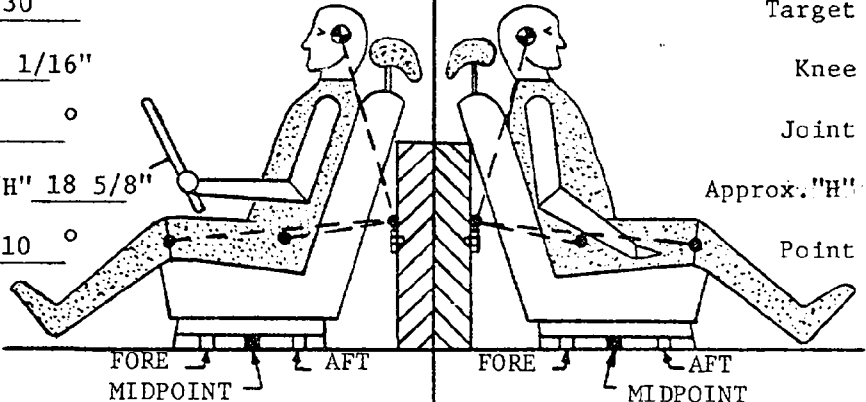
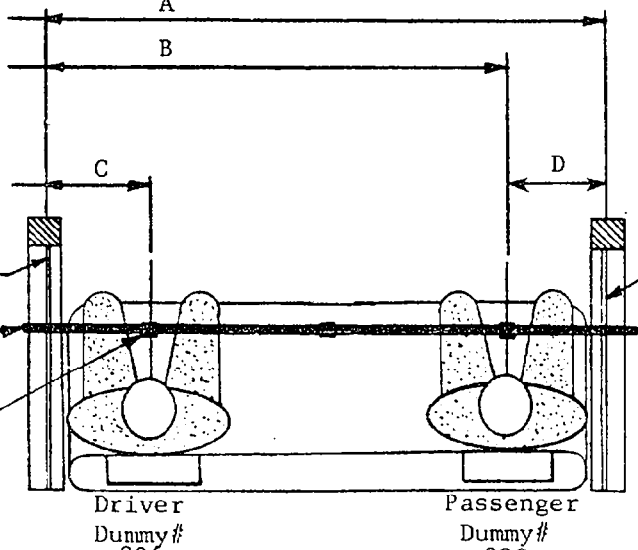
BUCKET SEAT BACK TYPE: Fixed
X Adjustable Reclining

TECHNICIANS:

1. D. Carpenter
2. J. Clarridge
3. R. Benavides
4. J. Kauffman

POSITIONING DATE: May 8, 1985

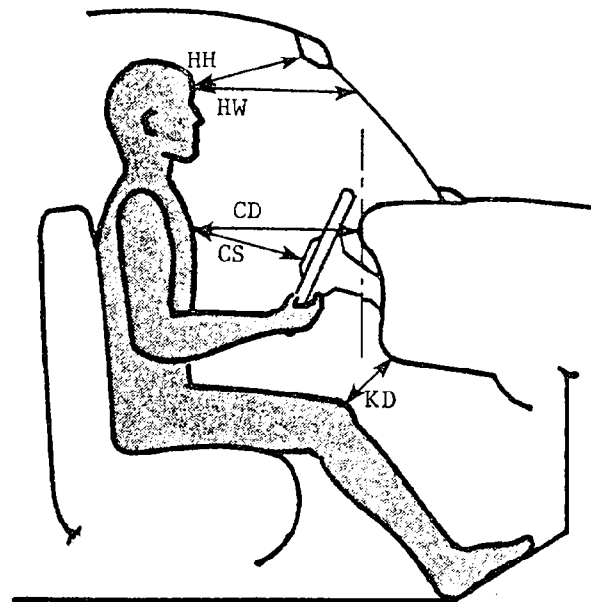
AMBIENT TEMP.: 73° F. TIME: 10:30

DRIVER DUMMY # <u>826</u> TYPE <u>P572</u> Head <u>23"</u> Target <u>30</u> ° Knee <u>33 1/16"</u> Joint <u>95</u> ° Approx. "H" <u>18 5/8"</u> Point <u>110</u> °	PASSENGER DUMMY # <u>830</u> TYPE <u>P572</u> Head <u>21 5/8"</u> Target <u>22</u> ° Knee <u>34 1/2"</u> Joint <u>93</u> ° Approx. "H" <u>20 1/4"</u> Point <u>103</u> °
	
A = <u>50</u> " B = <u>39</u> " C = <u>11</u> " D = <u>11</u> "	Door Glass Height* <u>11 1/2"</u> Lateral Bar Adjustable Pointer Left Front Door Driver Dummy# <u>826</u>
	
Door Glass Height* <u>11 1/2"</u> Right Front Door Passenger Dummy# <u>830</u>	

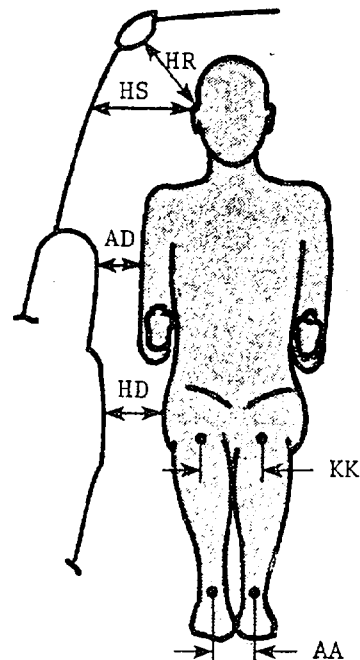
* Door glass height is equal on the right and left side of vehicle.

DUMMY IN-VEHICLE POSITION RECORDING SHEET

	DRIVER 826	PASSENGER 830
HH	16 15/16	16 1/4
HW	24 13/16	24 7/8
CD	24 1/8	26 9/16
CS	16 15/16	NA
KDL	7 1/2	7 5/16
KDR	6 13/16	7 1/8
TA	25°	25°
SA	25°	25°



	DRIVER 826	PASSENGER 830
HR	6 1/8	6 3/8
HS	8	8
AD	4 3/8	3 1/2
HD	5 1/2	4 5/8
KK	9 1/8	9 1/4
AA	8 1/2	9



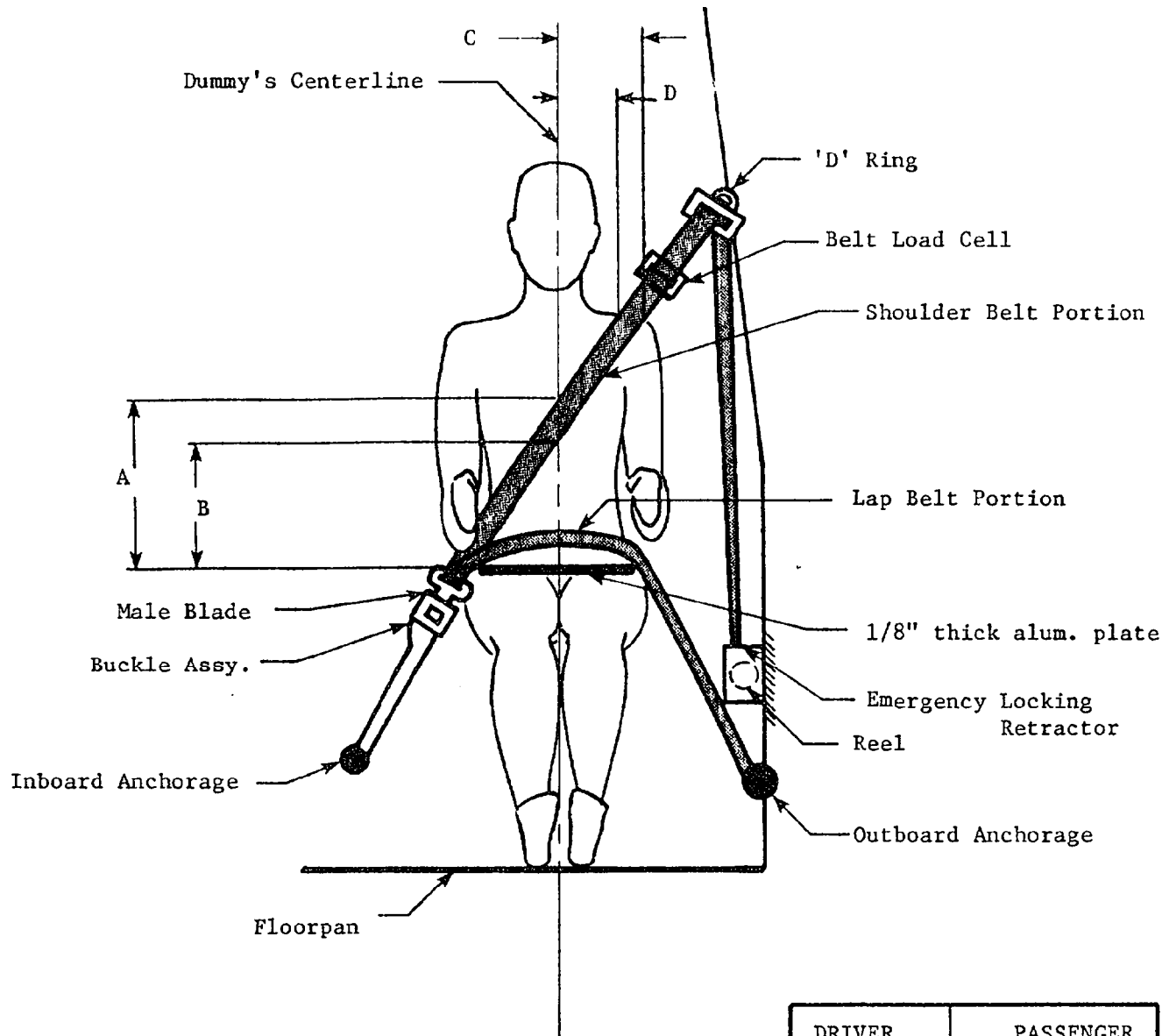
HH = Head to Windshield Header
 HW = Head to Windshield
 CD = Chest to Dash
 CS = Chest to Steering Wheel
 KD = Knees to Dash
 TA = Torso Angle
 SA = Seat Back Angle

HR = Head to Side Roof
 HS = Head to Side Window
 AD = Arm to Door
 HD = Hip to Door
 KK = Knee to Knee
 AA = Ankle to Ankle

Torso and seat back angles are relative to vertical.

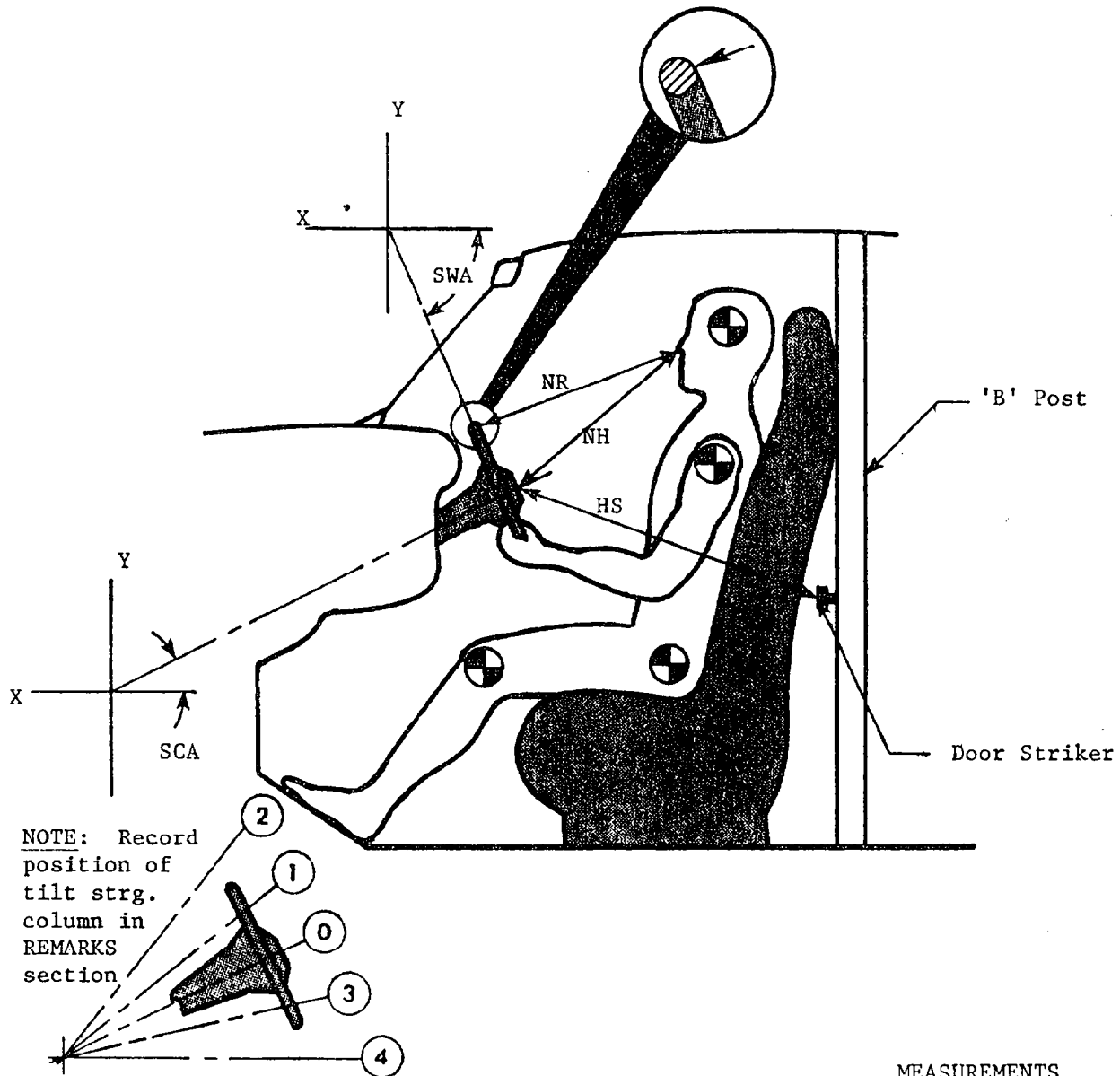
ALL MEASUREMENTS IN INCHES

SEAT BELT POSITIONING DATA



	DRIVER DUMMY	PASSENGER DUMMY
A - Top surface of alum. plate to belt upper edge (in)	18 1/4"	18 3/8"
B - Top surface of alum. plate to belt lower edge (in)	16 1/4"	16 1/2"
C - Dummy centerline to outer edge of belt at chest flesh top (in)	6 1/2"	5 3/4"
D - Dummy centerline to inner edge of belt at chest flesh top (in)	3 1/2"	2 1/2"
LAP BELT TENSION (lbs)	4	4
SHOULDER BELT TENSION (lbs)	4	4

DRIVER DUMMY TO STEERING COLUMN/WHEEL ASSY. REFERENCE DIMENSIONS



MEASUREMENTS

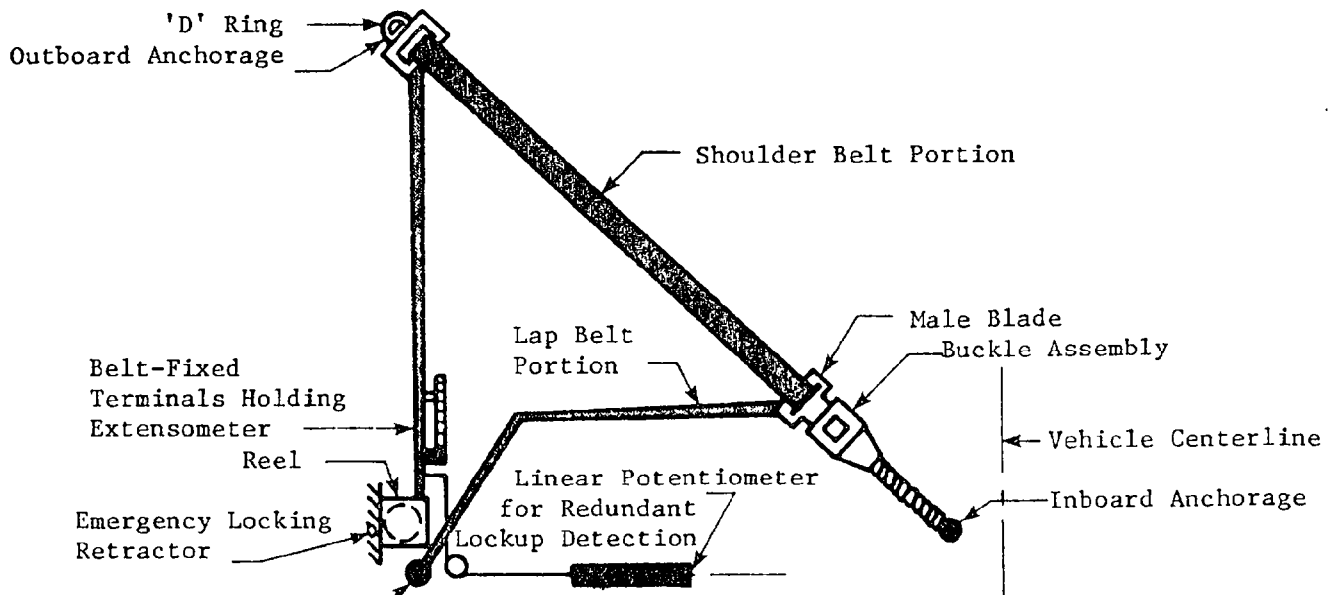
NR - Distance from tip of dummy's nose to top rear surface of steering wheel rim.	21 1/2"
NH - Distance from tip of dummy's nose to center of steering column hub.	21 3/8"
HS - Distance from center of steering column hub to the forward surface of the door lock striker pin.	37 5/8"
SCA - Angle of steering column relative to the horizontal X axis.	25°
SWA - Angle of steering wheel relative to the horizontal X axis.	65°

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

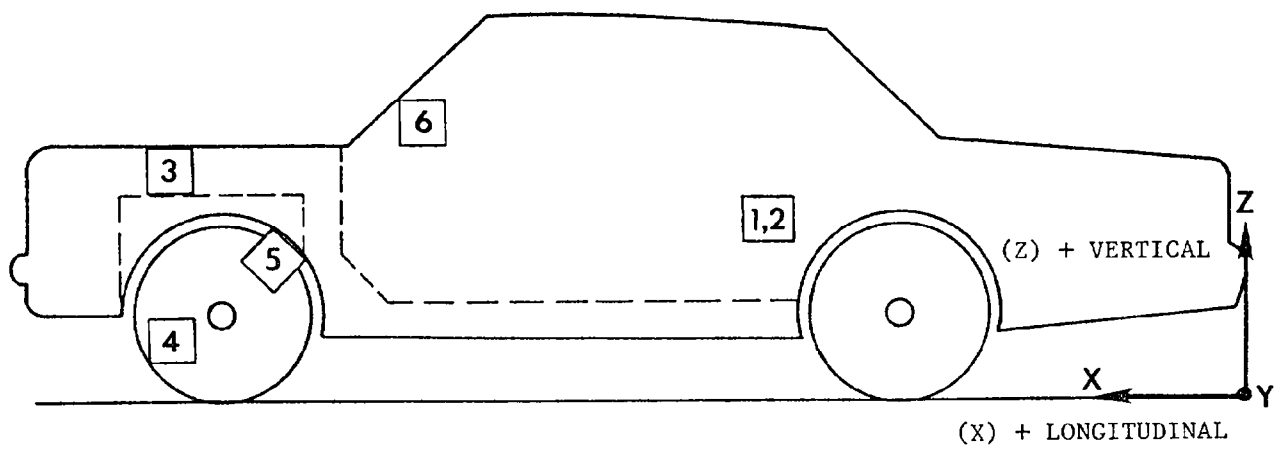
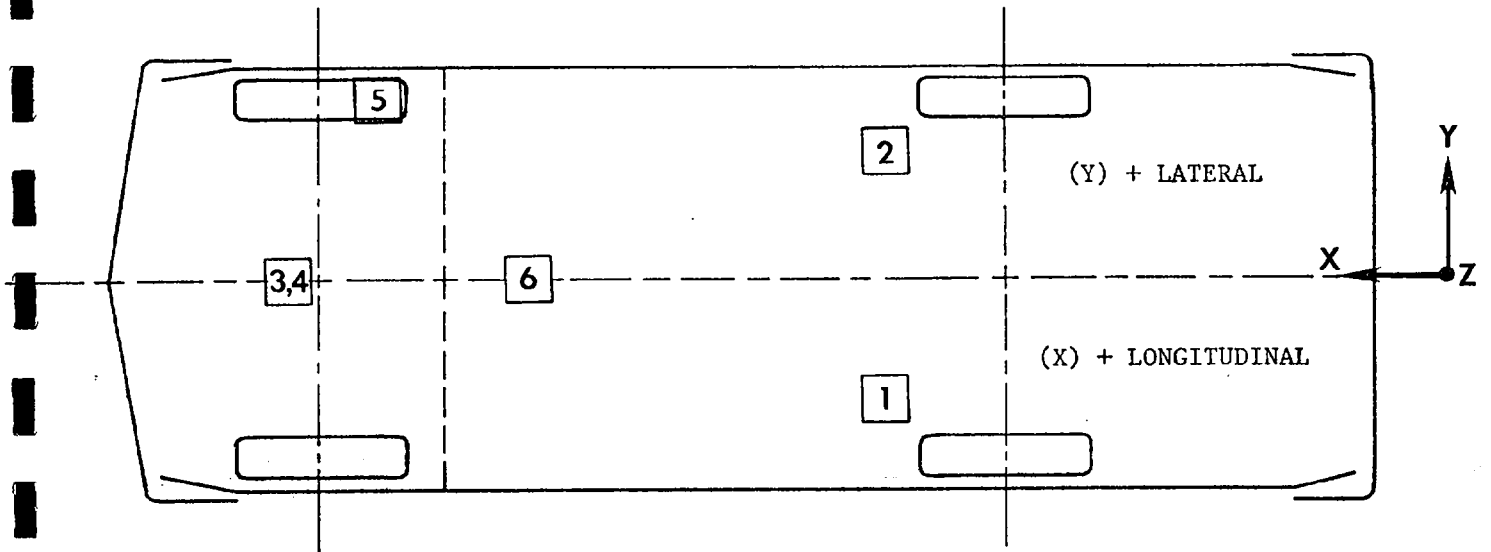
BELT LENGTH DATA:

	DRIVER SIDE		PASSENGER SIDE	
	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
Total belt length from retractor reel to bolt hole anchor point for continuous webbing systems.	105.8	106.0	106.6	107.2
Retractor reel to 'D' ring as measured on Part 572 dummy.	10.0	10.0	10.3	10.3
Shoulder belt length as measured on Part 572 dummy.	37.0	40.5	38.0	40.5
Lap belt length as measured on Part 572 dummy.	30.3	31.0	30.8	28.0
Remainder of belt webbing left on retractor reel.	28.5	24.5	27.5	28.4
<u>BELT SPOOL-OFF DATA:</u>				
As determined by film analysis	DNA	4.1	DNA	4.5
As determined electronically	DNA	5.8 ^Y	DNA	6.2 ^Y
<u>BELT STRAIN DATA:</u>				
Measured between retractor reel and 'D' ring.	2.0	2.0	2.0	2.1

^YString whip is visible in onboard high-speed cameras.



VEHICLE ACCELEROMETER LOCATIONS



VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION**		NEGATIVE DIRECTION**	
					MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
1	REAR SEAT X-MEMBER AT LEFT SIDE LONGITUDINAL	68.2	16.8	13.8	---	--- Y	---	---Y
2	REAR SEAT X-MEMBER AT RIGHT SIDE LONGITUDINAL	68.0	-17.3	16.9	2.7	24.3	52.7	49.8
3	TOP OF ENGINE BLOCK LONGITUDINAL	151.5	2.6	32.5	17.8	46.1	134.7	38.6
4	BOTTOM OF ENGINE BLOCK LONGITUDINAL	142.8	0.9	5.9	---	--- Y	---	---Y
5	BRAKE CALIPER AT RIGHT SIDE LONGITUDINAL	140.3	-24.5	10.9	18.1	70.1	61.1	45.4
6	DASH PANEL LONGITUDINAL	114.6	0.0	38.6	22.0	127.0	67.0	53.3

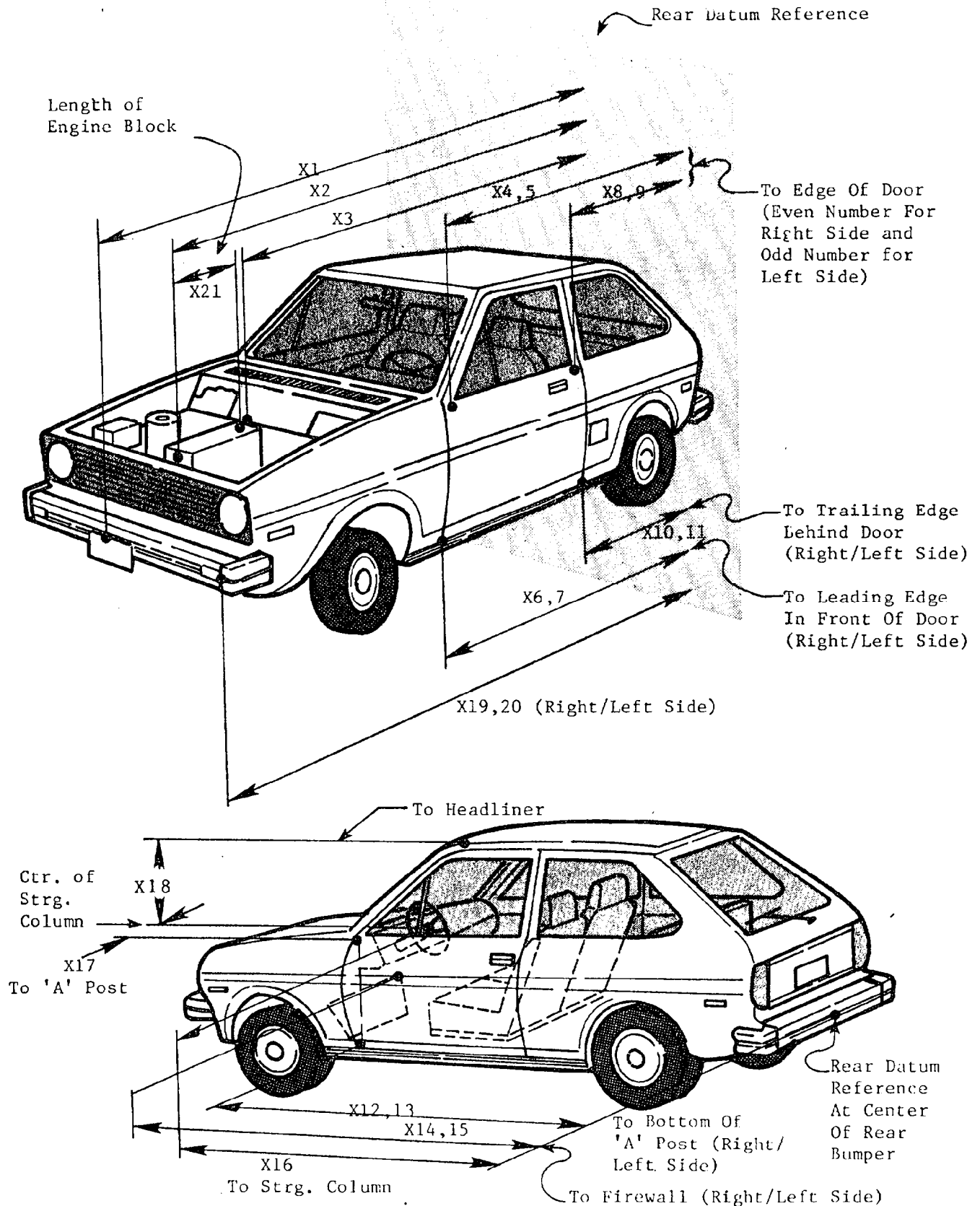
* X + Forward from rear bumper
Y + Left vehicle centerline
Z + Up from ground

** LONGITUDINAL: FORWARD
LATERAL: LEFTWARD
VERTICAL: UPWARD

MEASUREMENTS IN INCHES

Y See TEST ANOMALIES

PRE-TEST AND POST-TEST MEASUREMENT POINTS



IMPACTED VEHICLE MEASUREMENTS

VEHICLE MAKE/MODEL Ford Merkur XR4Ti TEST NUMBER 850508

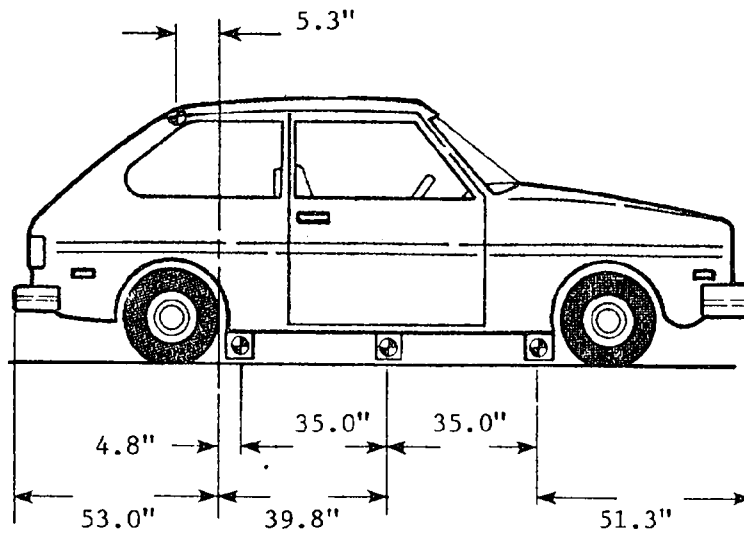
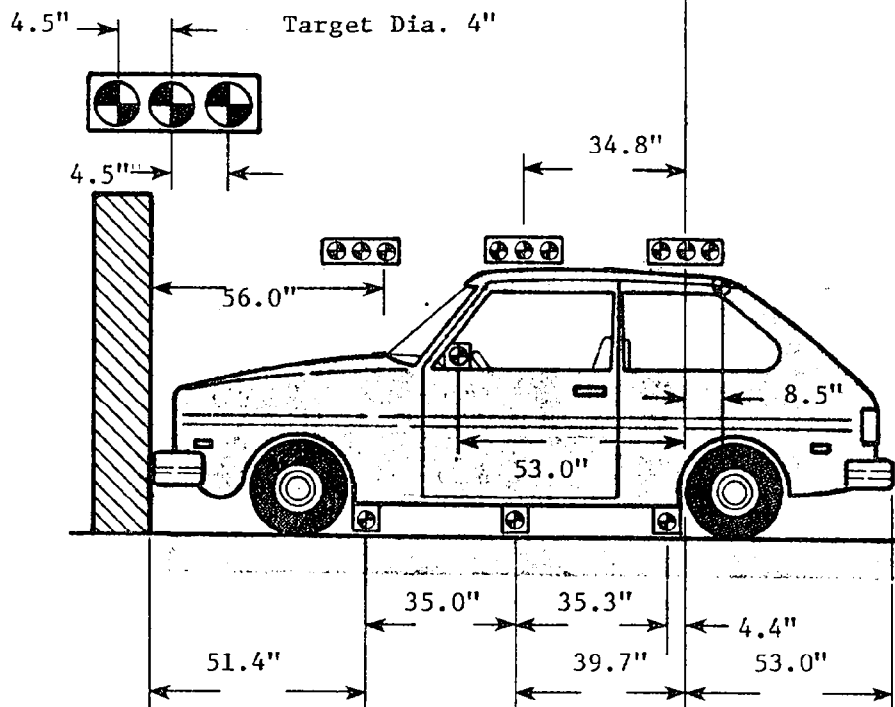
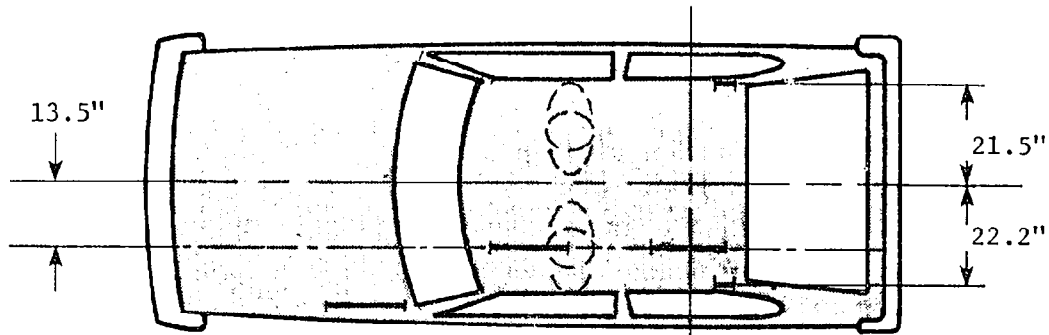
DIMENSIONS IN INCHES				
NO.	TYPE OF MEASUREMENT	PRE-TEST	POST-TEST	DIFF.
X 1	TOTAL LENGTH OF VEHICLE AT CENTERLINE	179.1	155.4	23.7
X 2	REAR SURFACE OF VEHICLE TO FRONT OF ENGINE BLOCK	153.3	142.8	10.5
X 3	REAR SURFACE OF VEHICLE TO FIREWALL	134.1	123.8	10.3
X 4	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF RIGHT DOOR	120.6	119.1	1.5
X 5	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF LEFT DOOR	120.3	118.9	1.4
X 6	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF RIGHT DOOR	119.8	118.6	1.2
X 7	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF LEFT DOOR	120.5	118.3	2.2
X 8	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF RIGHT DOOR	70.9	69.7	1.2
X 9	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF LEFT DOOR	70.9	70.6	0.3
X 10	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF RIGHT DOOR	69.0	67.9	1.1
X 11	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE ON LEFT DOOR	69.3	68.2	1.1
X 12	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON RIGHT SIDE	117.8	116.1	1.7
X 13	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON LEFT SIDE	118.5	117.0	1.5
X 14	REAR SURFACE OF VEHICLE TO FIREWALL - RIGHT SIDE	126.6	122.3	4.3
X 15	REAR SURFACE OF VEHICLE TO FIREWALL - LEFT SIDE	135.8	129.9	5.9
X 16	REAR SURFACE OF VEHICLE TO STEERING WHEEL CENTER	104.3	101.4	2.9
X 17	CENTER OF STEERING COLUMN TO "A" POST	16.1	13.5	2.6

IMPACTED VEHICLE MEASUREMENTS CONTD

VEHICLE MAKE/MODEL Ford Merkur XR4Ti TEST NUMBER 850508

NO.	TYPE OF MEASUREMENT	DIMENSIONS IN INCHES		
		PRE-TEST	POST-TEST	DIFF.
X18	CENTER OF STEERING COLUMN TO HEADLINING	17.0	18.4	-1.4
X19	REAR SURFACE OF VEHICLE TO RIGHT SIDE OF FRONT BUMPER	174.0	154.6	19.4
X20	REAR SURFACE OF VEHICLE TO LEFT SIDE OF FRONT BUMPER	174.3	154.4	19.9
X21	LENGTH OF ENGINE BLOCK	20.3	20.3	0.0

VEHICLE TARGET LOCATIONS



ACCIDENT INVESTIGATION DIVISION DATA
FOR 35 MPH FRONTAL BARRIER IMPACT

VEHICLE MAKE/MODEL/BODY STYLE: Ford Merkur XR4Ti 3-door Hatchback
 VEH. NHTSA NO.: CF0201; VIN: WF1BP80W0FM618615
 MODEL YEAR: 1985; BUILD DATE: 1/85; TEST DATE 5/8/85
 VEH. SIZE CATEGORY: Compact; TEST WEIGHT: 3452
 VEH. WHEELBASE: 103.3

COLLISION DEFORMATION CLASSIFICATION (CDC) CODE: 12FDEW2

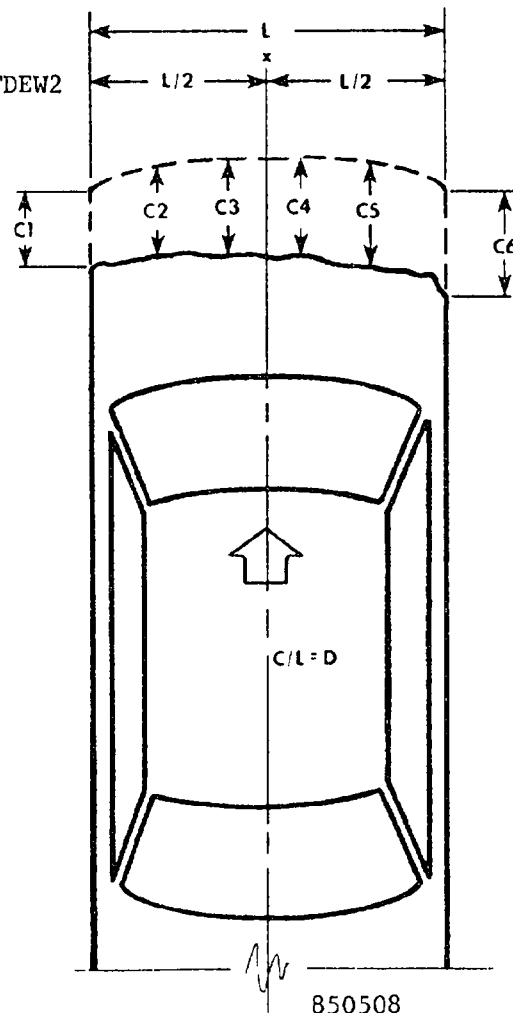
F (Frontal)

CRUSH DEPTH
DIMENSIONS:

C1 = 19.9 inches
 C2 = 21.4 inches
 C3 = 23.9 inches
 C4 = 23.2 inches
 C5 = 19.7 inches
 C6 = 19.4 inches

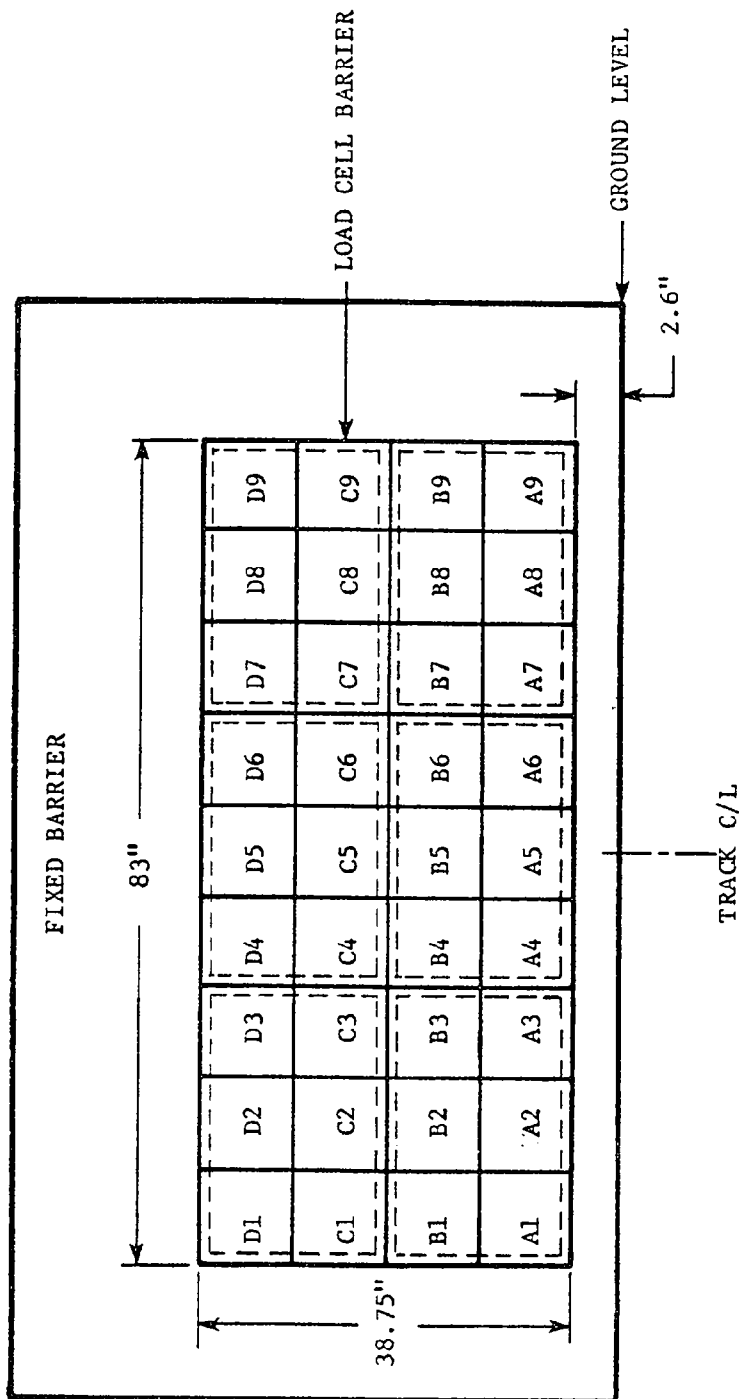
MIDPOINT OF DAMAGE: D = Vehicle Centerline
(Longitudinal)

LENGTH OF DAMAGED
REGION: L = 57.0 inches



36 LOAD CELLS
4 ROWS
9 COLUMNS

FRONT VIEW



BARRIER LOAD CELL CONFIGURATION

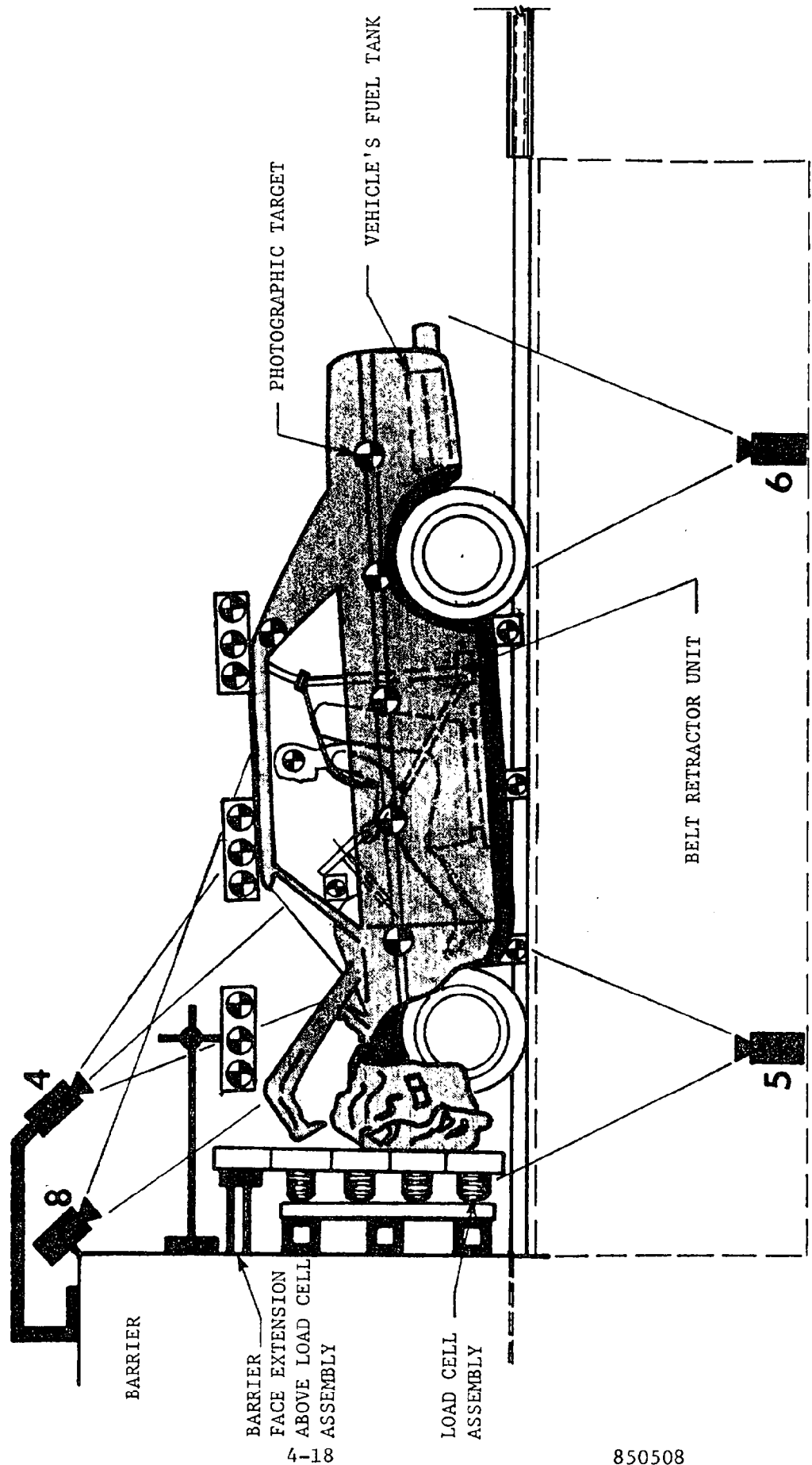
- GROUP 1: D1 thru C3
- GROUP 2: D4 thru C6
- GROUP 3: D7 thru C9
- GROUP 4: B1 thru A3
- GROUP 5: B4 thru A6
- GROUP 6: B7 thru A9

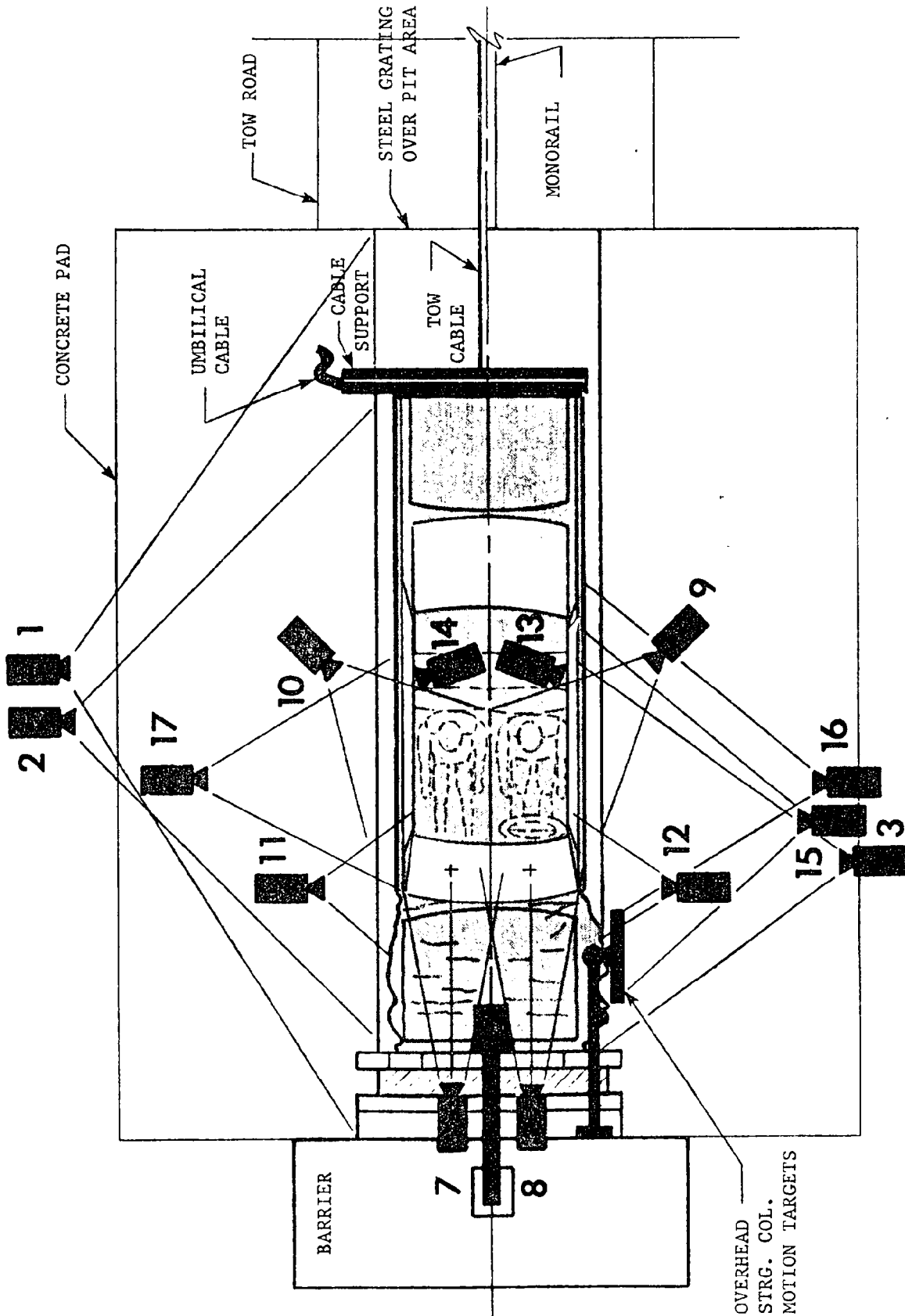
LOAD CELL BARRIER SUMMARY

POSITION	POSITIVE DIRECTION*		NEGATIVE DIRECTION*	
	MAX (lb)	TIME (msec)	MIN (lb)	TIME (msec)
TOTAL GROUP 1	7498.6	47.1	430.7	16.1
TOTAL GROUP 2	10009.5	47.3	670.7	16.1
TOTAL GROUP 3	5718.1	47.4	545.3	15.8
TOTAL GROUP 4	23105.1	41.9	245.6	276.4
TOTAL GROUP 5	69658.3	39.3	235.4	276.4
TOTAL GROUP 6	19060.2	47.9	117.9	253.1
TOTAL LOAD CELL FORCE	118883.0	40.3	682.0	277.3

*REFERENCE: COMPRESSION IS POSITIVE
TENSION IS NEGATIVE

CAMERA POSITIONS





CAMERA POSITIONS

HIGH SPEED CAMERA LOCATIONS

TEST NO.: 850508 VEHICLE: Ford Merkur XR4Ti

CAMERA NO.	VIEW	CAMERA POSITIONS (IN)**			ANGLE ** (DEG)	FILM PLANE TO HEAD TARGET	LENS (MM)	SPEED (FPS)
		X	Y	Z				
1	Real-time Panning	-142	504	61	NA	NA	16	24
2	Vehicle Crush	-81.3	266.4	37.1	0	NA	13	500
3	Dummy Kinematics	-41.5	-295	44	-3	272 1/2"	25	510
4	Windshield Damage	-36.4	0	120	-85	NA	13	490
5	Crush & Fluid Spillage	-50.5	0	-92.4	90	NA	13	500
6	Fluid Spillage	-99.3	0	-99	90	NA	13	498
7	Passenger Kinematics	4.5	13.8	115	-55	NA	17	450
8	Driver Kinematics	6.8	-14.5	113.3	-55	NA	17	475
9	Driver Kinematics	-157.3	-166.9	74.1	-13	159 3/16"	25	503
10	Passenger Kinematics	-152.1	167.9	76	-15	158 1/2"	25	510
11	Windshield Intrusion	-53.9	306.1	44	0	NA	50	500
12	Windshield Intrusion	-53	-309.4	42.3	0	NA	50	495
13	Driver Seatbelt Movement	NA	NA	NA	NA	NA	13	500
14	Passenger Seatbelt Movement	NA	NA	NA	NA	NA	13	498
15	Column Movement	-104	-286	100	-15	NA	25	495
16	Column Movement	-104	-286	72.5	-10	NA	25	503
17	Passenger Kinematics	-38.8	210.8	45.3	5	195 7/16"	13	508

* X = Film plane to plane of barrier face
Y = Film plane to monorail centerline
Z = Film plane to ground
** Referenced to horizontal plane

APPENDIX A
PHOTOGRAPHS

1. PRE-TEST FRONT VIEW
2. POST-TEST FRONT VIEW
3. PRE-TEST LEFT SIDE VIEW
4. POST-TEST LEFT SIDE VIEW
5. PRE-TEST RIGHT SIDE VIEW
6. POST-TEST RIGHT SIDE VIEW
7. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW
8. POST-TEST RIGHT FRONT THREE-QUARTER VIEW
9. PRE-TEST LEFT REAR THREE-QUARTER VIEW
10. POST-TEST LEFT REAR THREE-QUARTER VIEW
11. POST-TEST TOP VIEW (VEHICLE ON ROLLOVER MACHINE)
12. PRE-TEST WINDSHIELD VIEW
13. POST-TEST WINDSHIELD VIEW
14. POST-TEST ENGINE COMPARTMENT VIEW
15. PRE-TEST FRONT UNDERBODY VIEW
16. POST-TEST FRONT UNDERBODY VIEW
17. PRE-TEST REAR UNDERBODY VIEW
18. POST-TEST REAR UNDERBODY VIEW
19. PRE-TEST DRIVER DUMMY POSITION VIEW
20. PRE-TEST PASSENGER DUMMY POSITION VIEW
21. PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)
22. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)
23. PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)
24. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)
25. POST-TEST DRIVER DUMMY HEAD CONTACT AREA
26. POST-TEST PASSENGER DUMMY HEAD/KNEE CONTACT
27. DRIVER SEAT BELT ANCHORAGE
28. DRIVER SEAT BELT LATCH ANCHORAGE



Figure 1. PRE-TEST FRONT VIEW



Figure 2. POST-TEST FRONT VIEW
A-2

850508



Figure 3. PRE-TEST LEFT SIDE VIEW



Figure 4. POST-TEST LEFT SIDE VIEW
A-3

850508

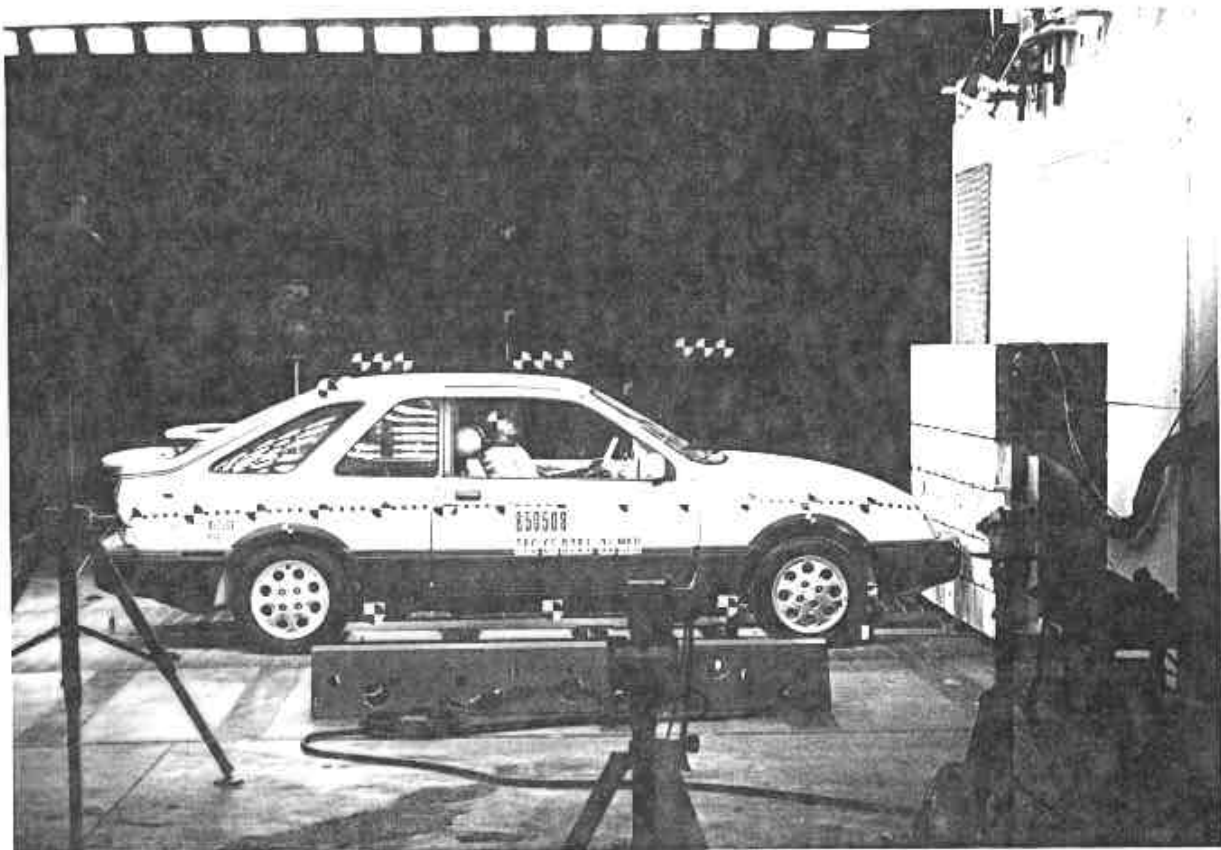


Figure 5. PRE-TEST RIGHT SIDE VIEW

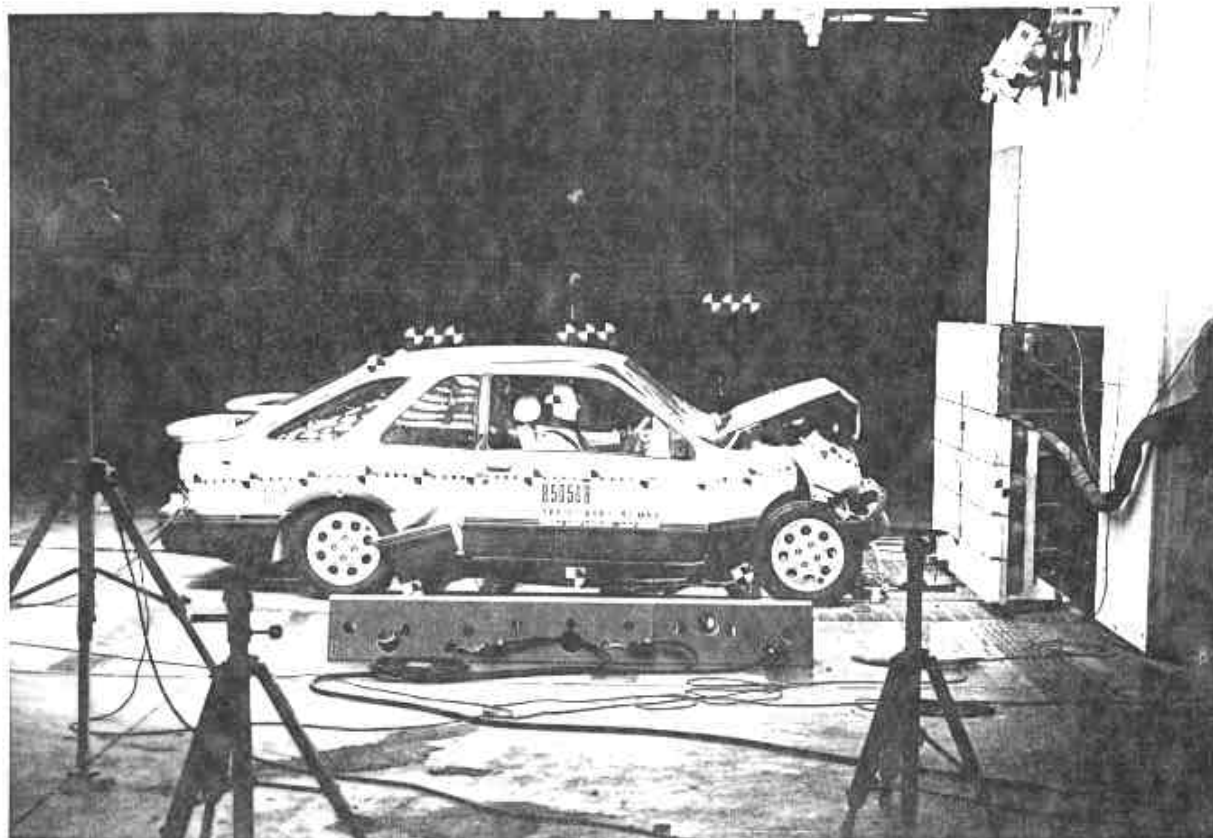


Figure 6. POST-TEST RIGHT SIDE VIEW
A-4

850508



Figure 7. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure 8. POST-TEST RIGHT FRONT THREE-QUARTER VIEW
A-5

850508



Figure 9. PRE-TEST LEFT REAR THREE-QUARTER VIEW

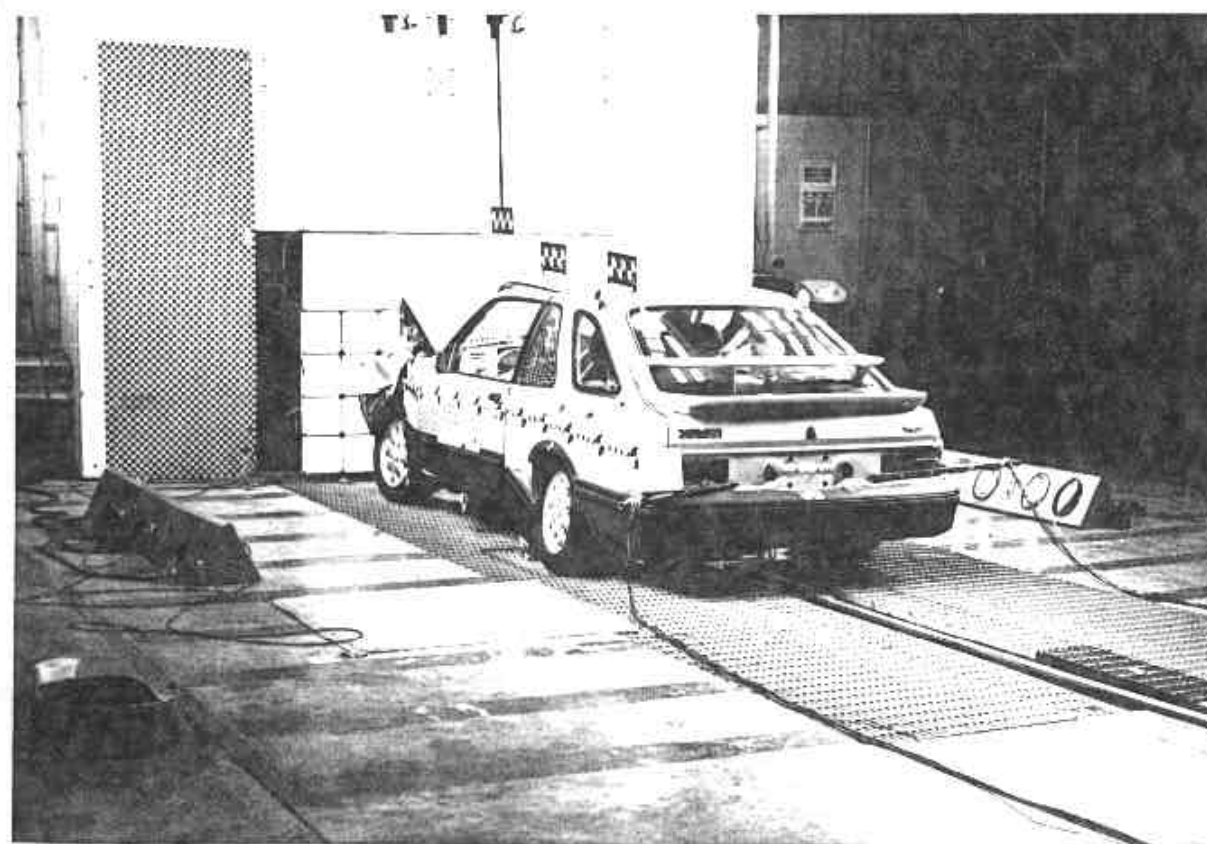


Figure 10. POST-TEST LEFT REAR THREE-QUARTER VIEW
A-6

850508

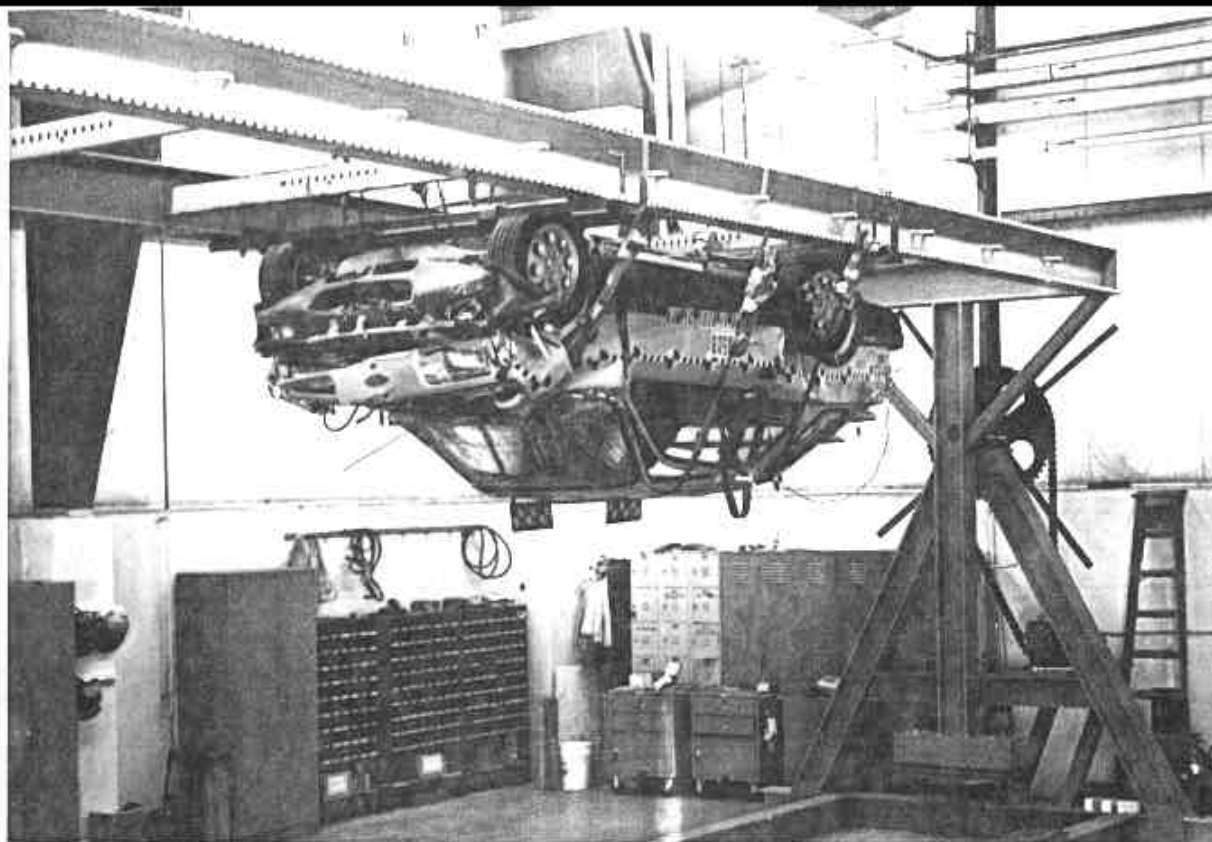


Figure 11. POST-TEST TOP VIEW (VEHICLE ON ROLLOVER MACHINE)



Figure 12. PRE-TEST WINDSHIELD VIEW
A-7

850508

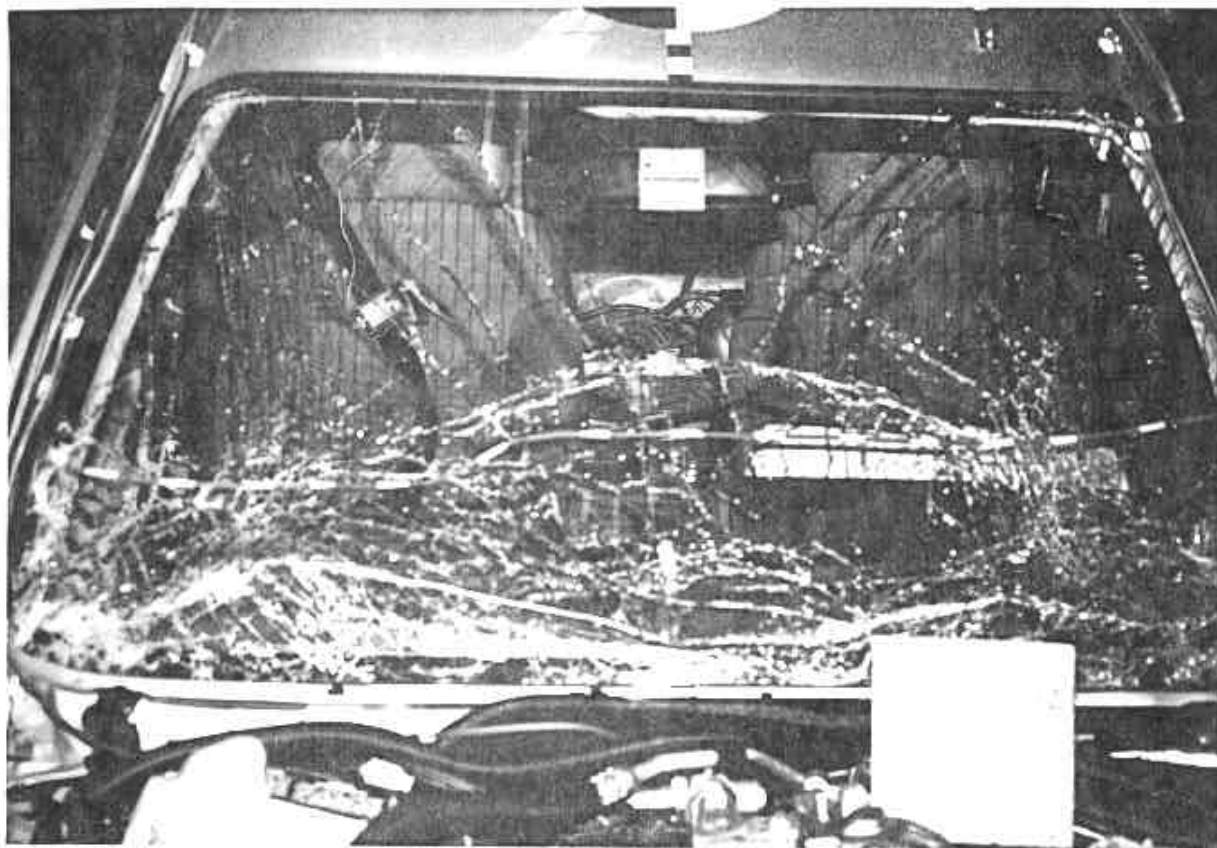


Figure 13. POST-TEST WINDSHIELD VIEW

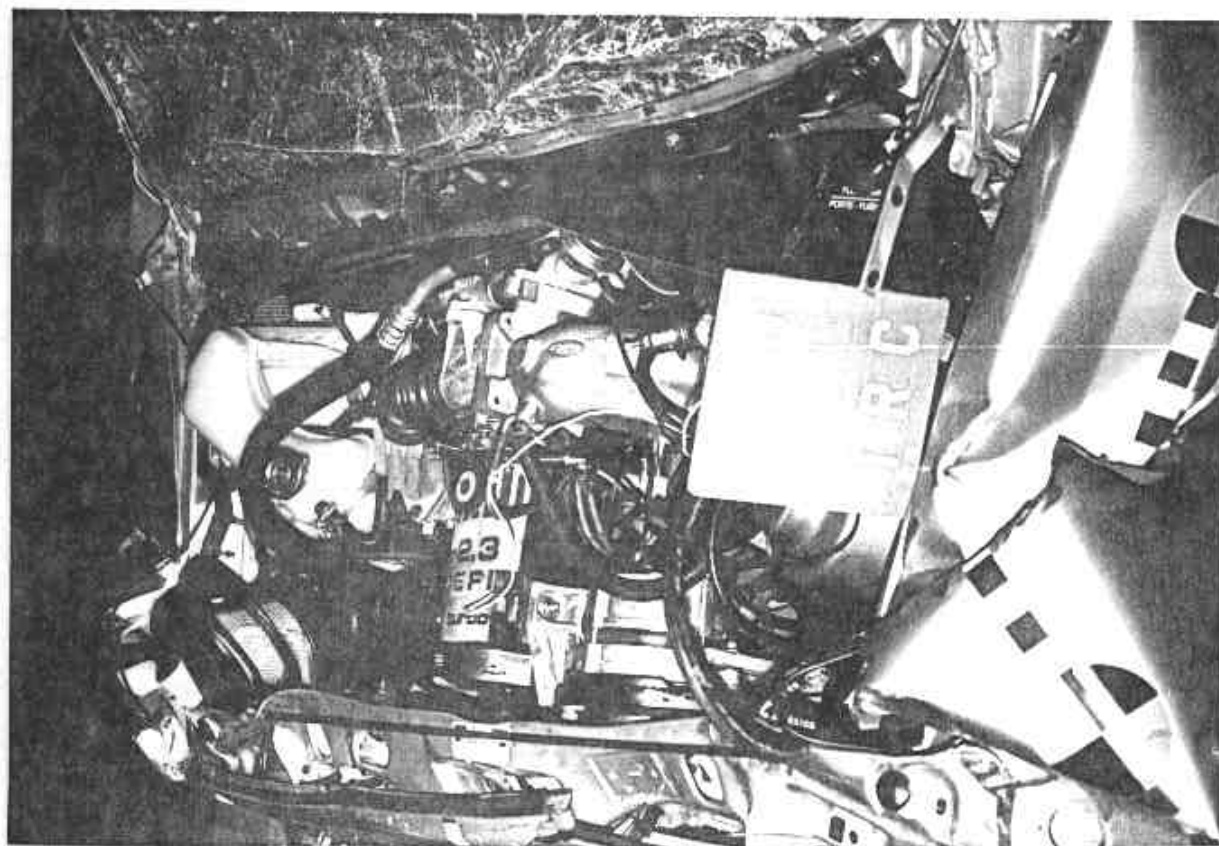


Figure 14. POST-TEST ENGINE COMPARTMENT VIEW
A-8

850508

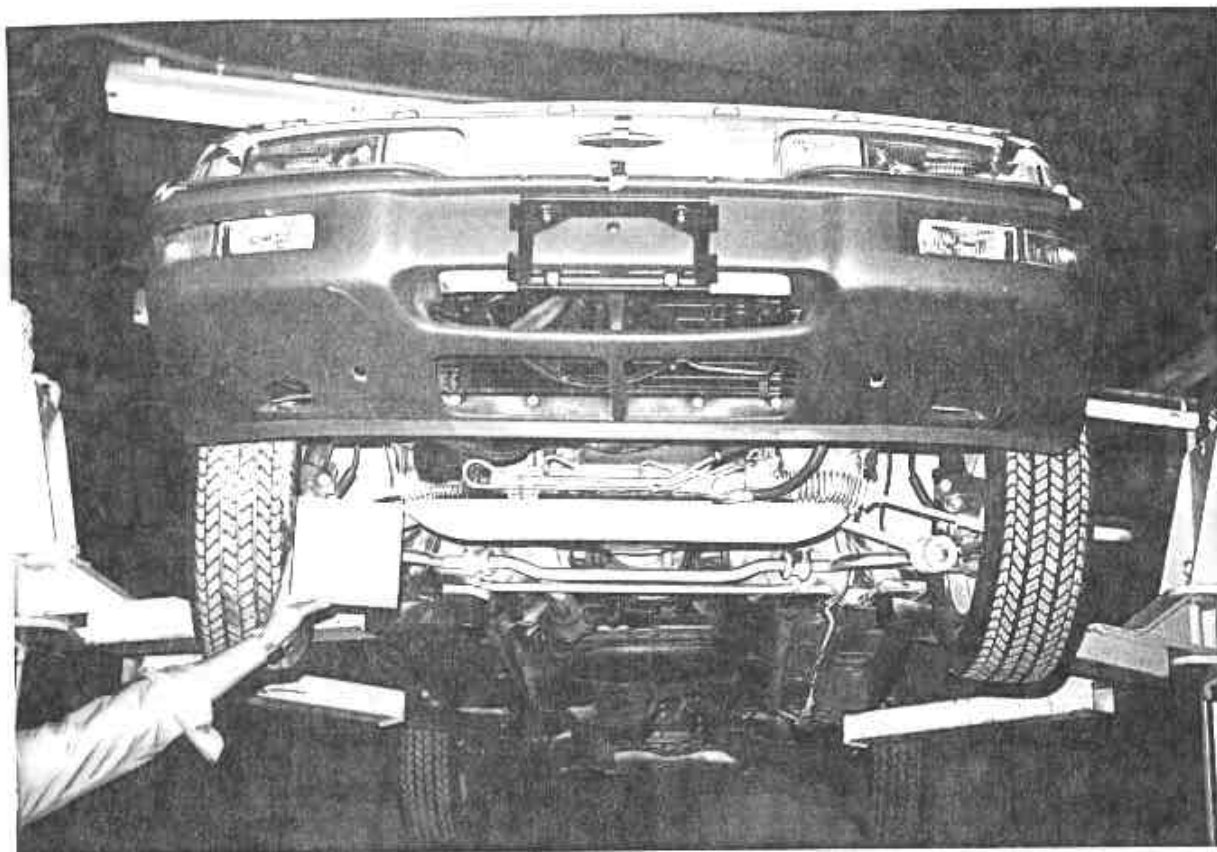


Figure 15. PRE-TEST FRONT UNDERBODY VIEW

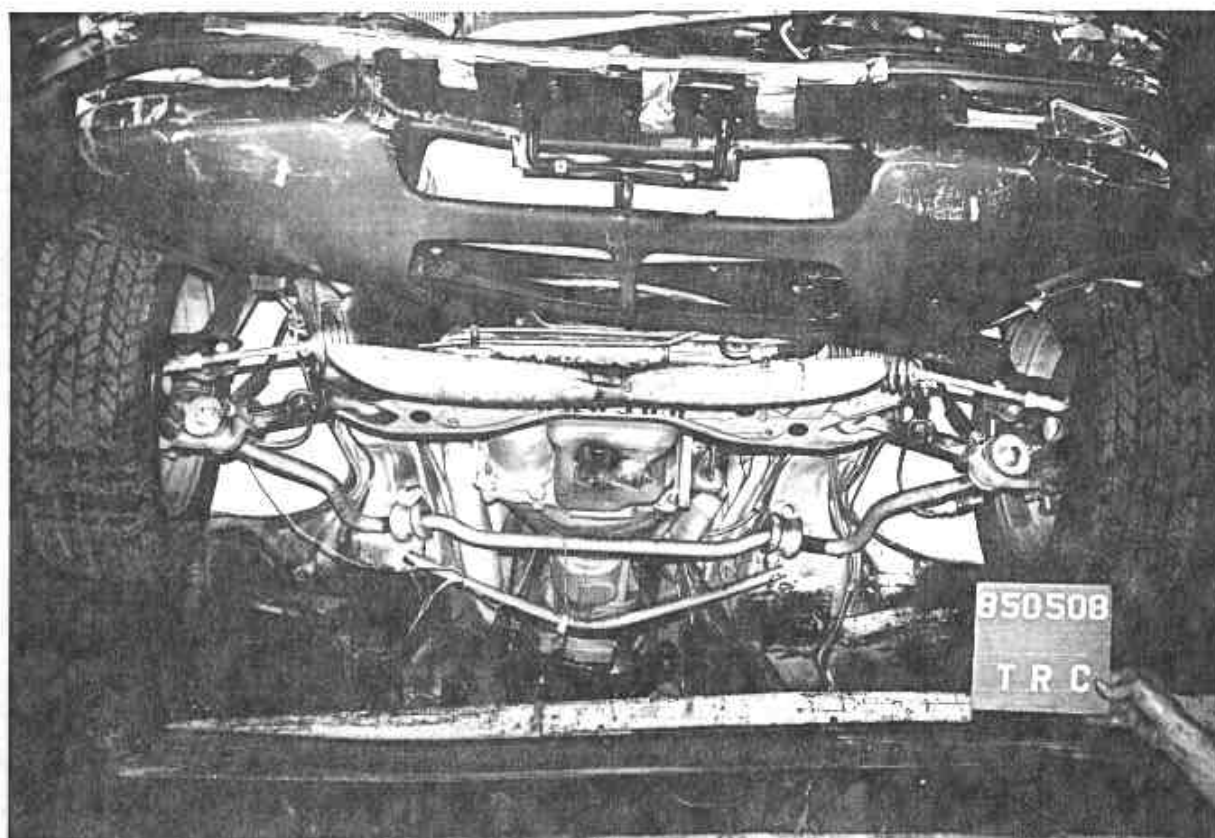


Figure 16. POST-TEST FRONT UNDERBODY VIEW
A-9

850508

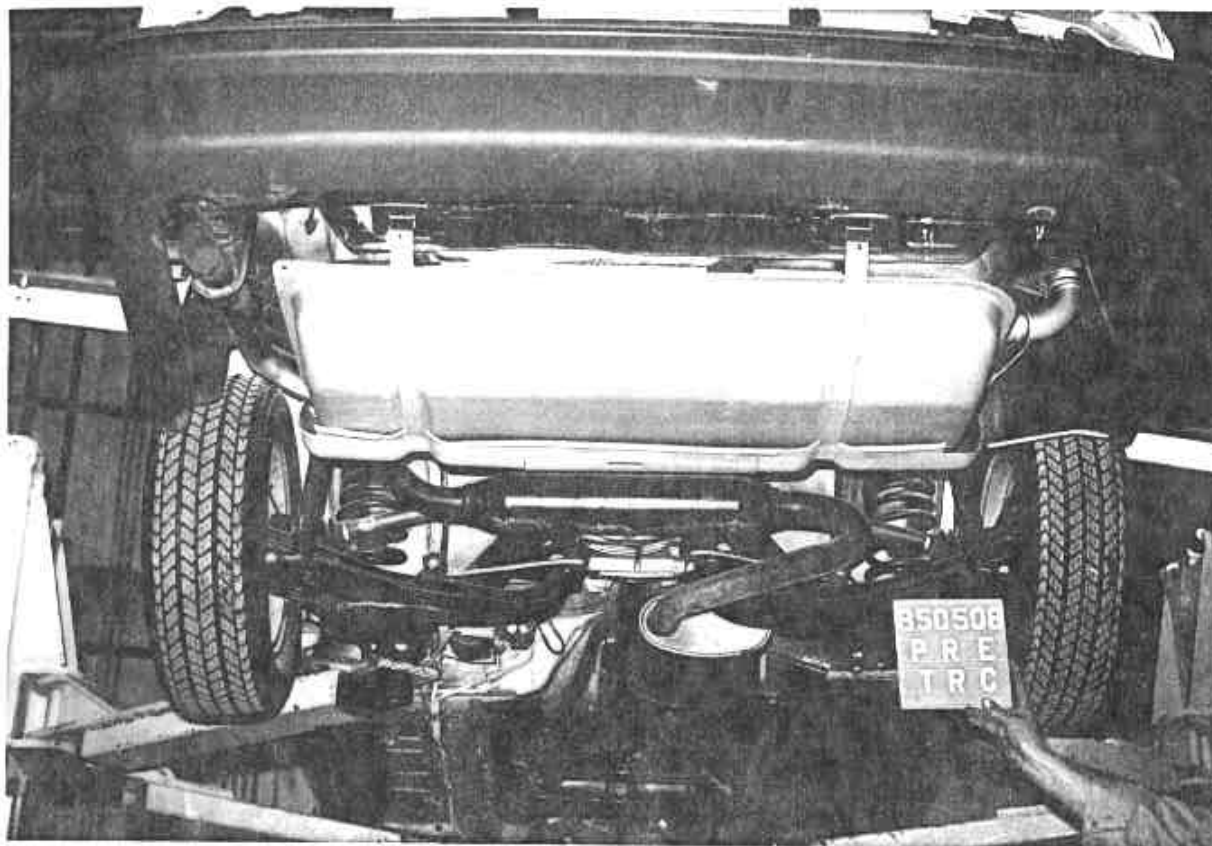


Figure 17. PRE-TEST REAR UNDERBODY VIEW

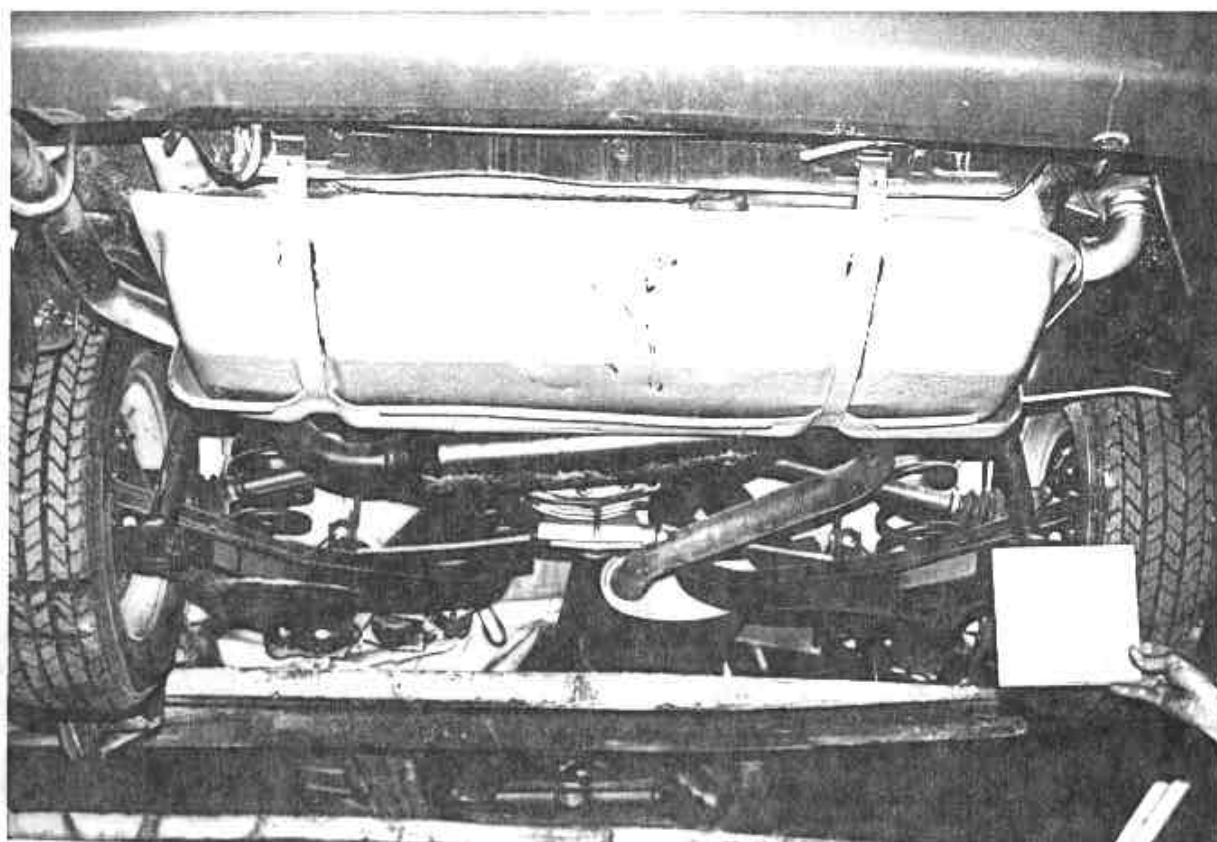


Figure 18. POST-TEST REAR UNDERBODY VIEW
A-10

850508



Figure 19. PRE-TEST DRIVER DUMMY POSITION VIEW



Figure 20. PRE-TEST PASSENGER DUMMY POSITION VIEW
A-11

850508

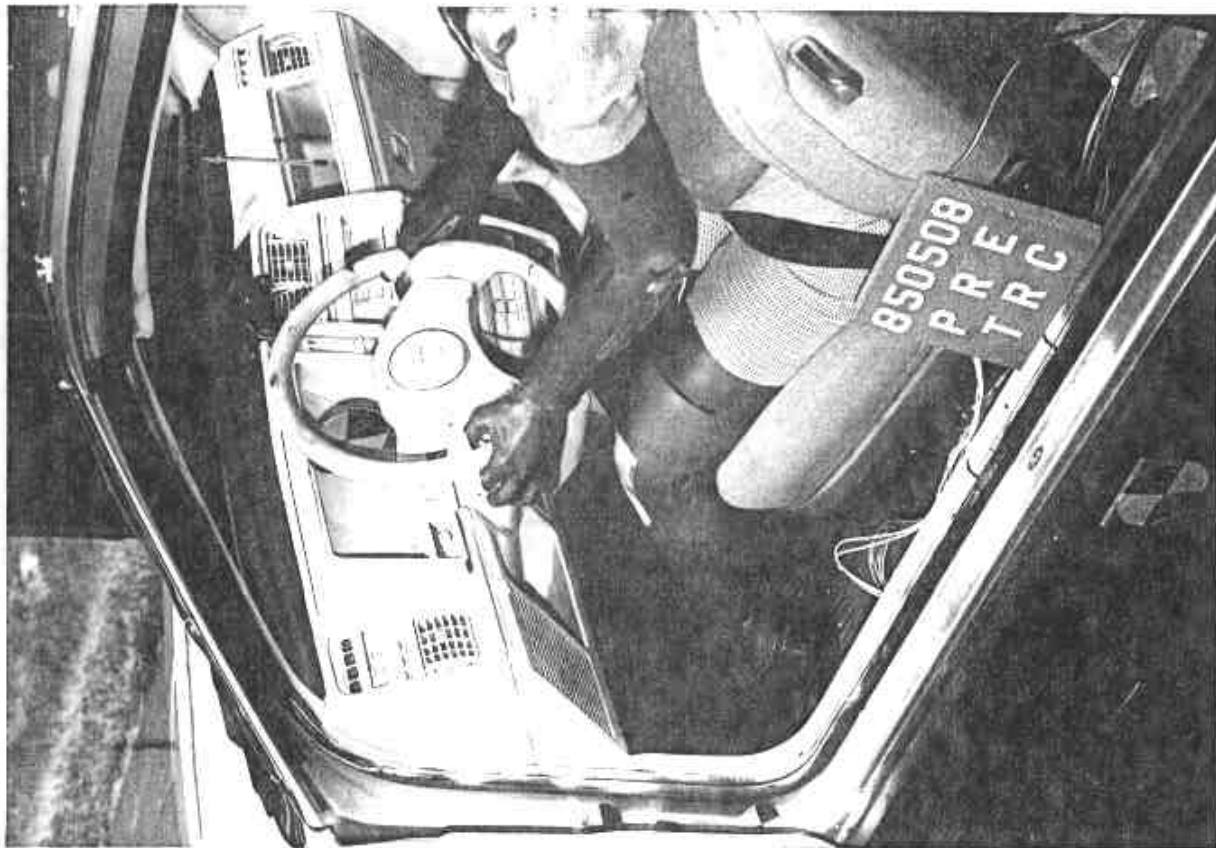


Figure 21. PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)

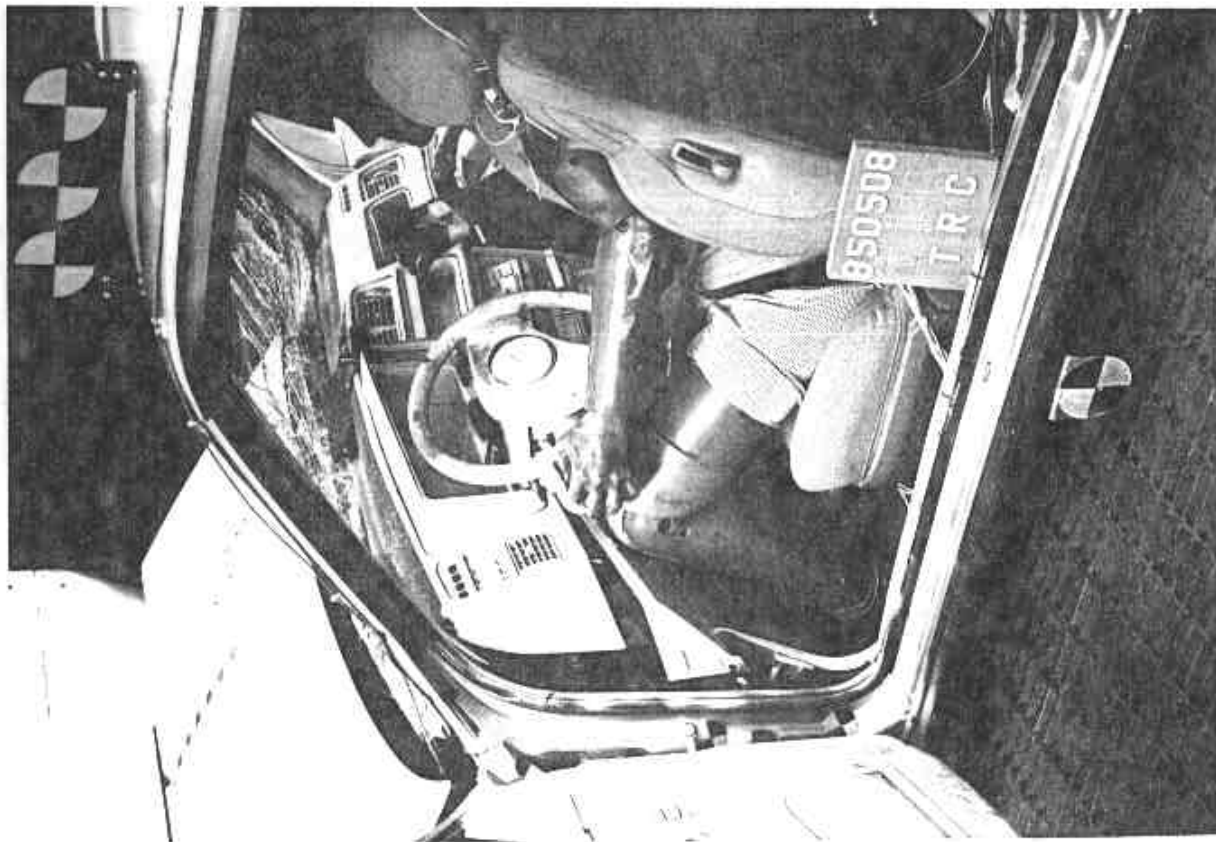


Figure 22. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)



Figure 23. PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR (DOOR OPEN)



Figure 24. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR (DOOR OPEN)



Figure 25. POST-TEST DRIVER DUMMY HEAD CONTACT AREA

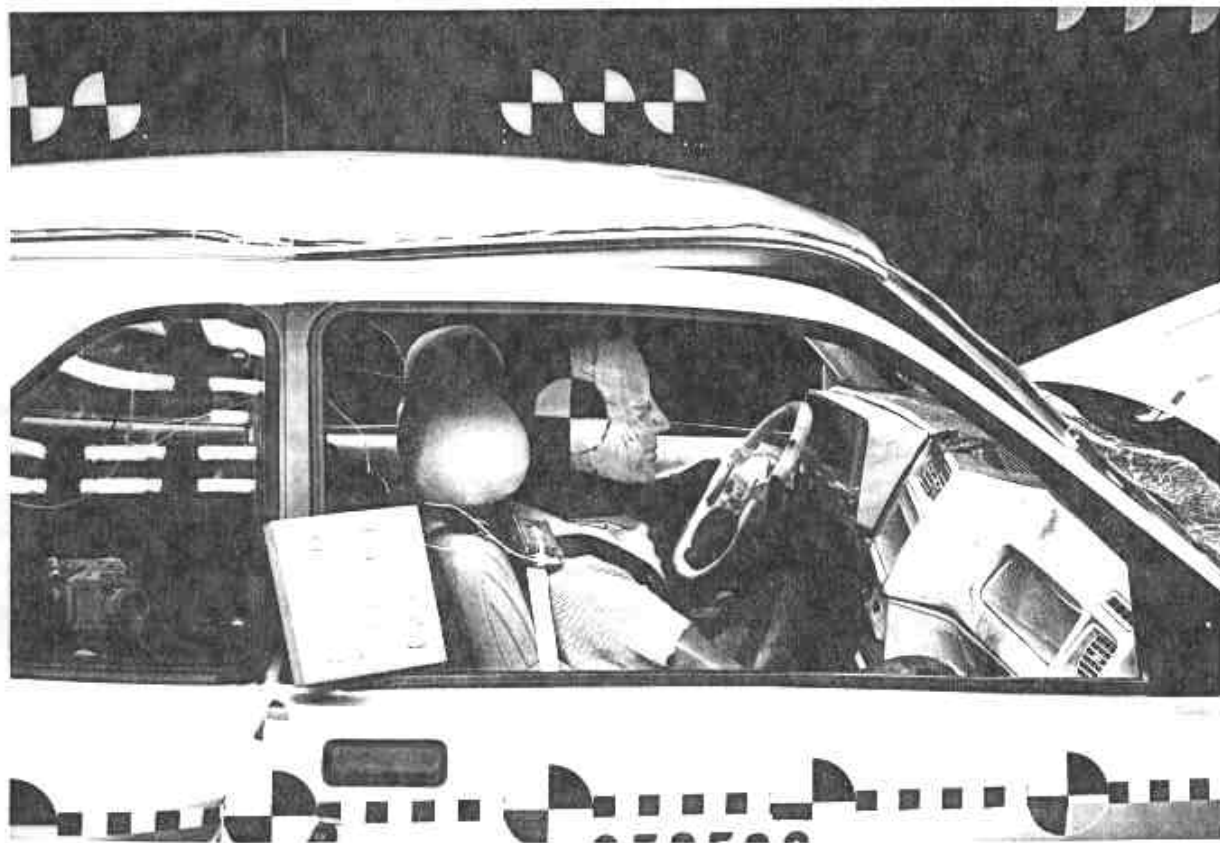


Figure 26. POST-TEST PASSENGER DUMMY HEAD/KNEE CONTACT



Figure 27. DRIVER SEAT BELT ANCHORAGE

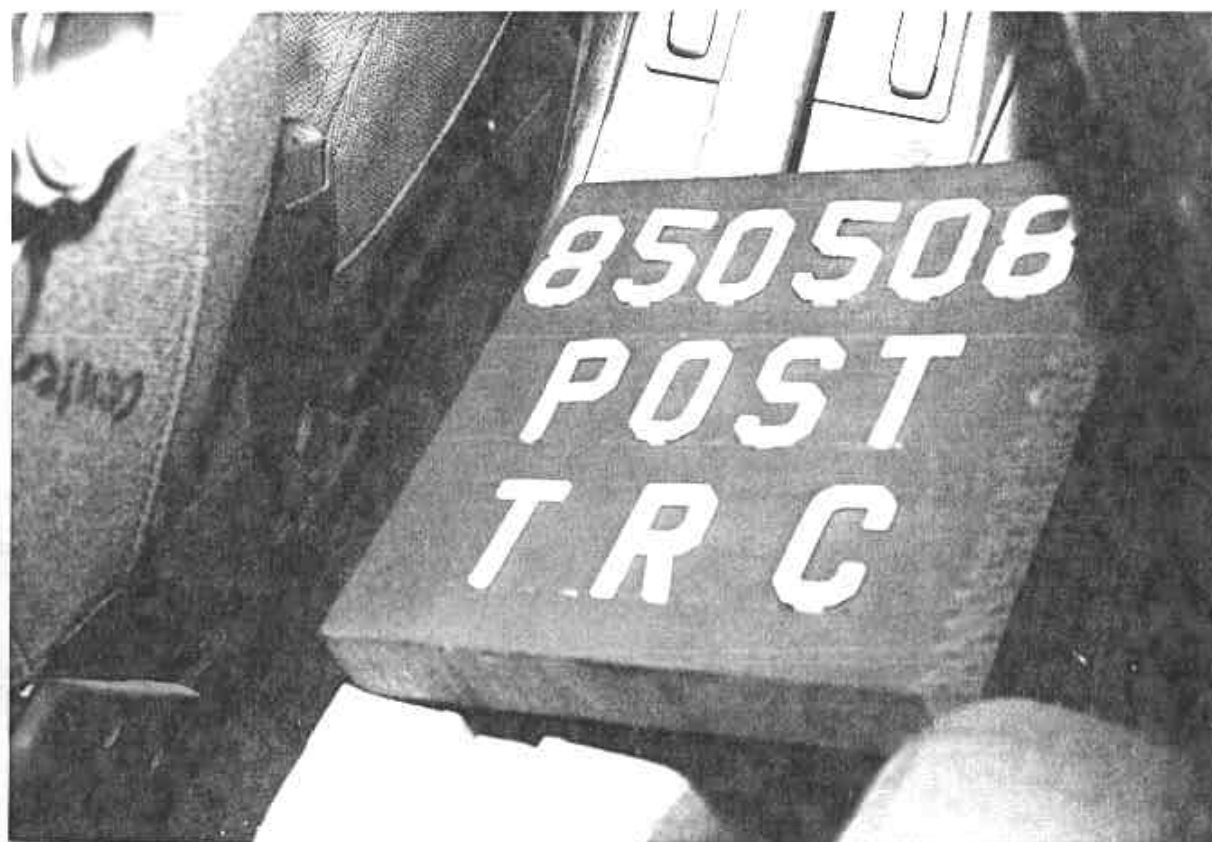


Figure 28. DRIVER SEAT BELT LATCH ANCHORAGE
A-15

850508

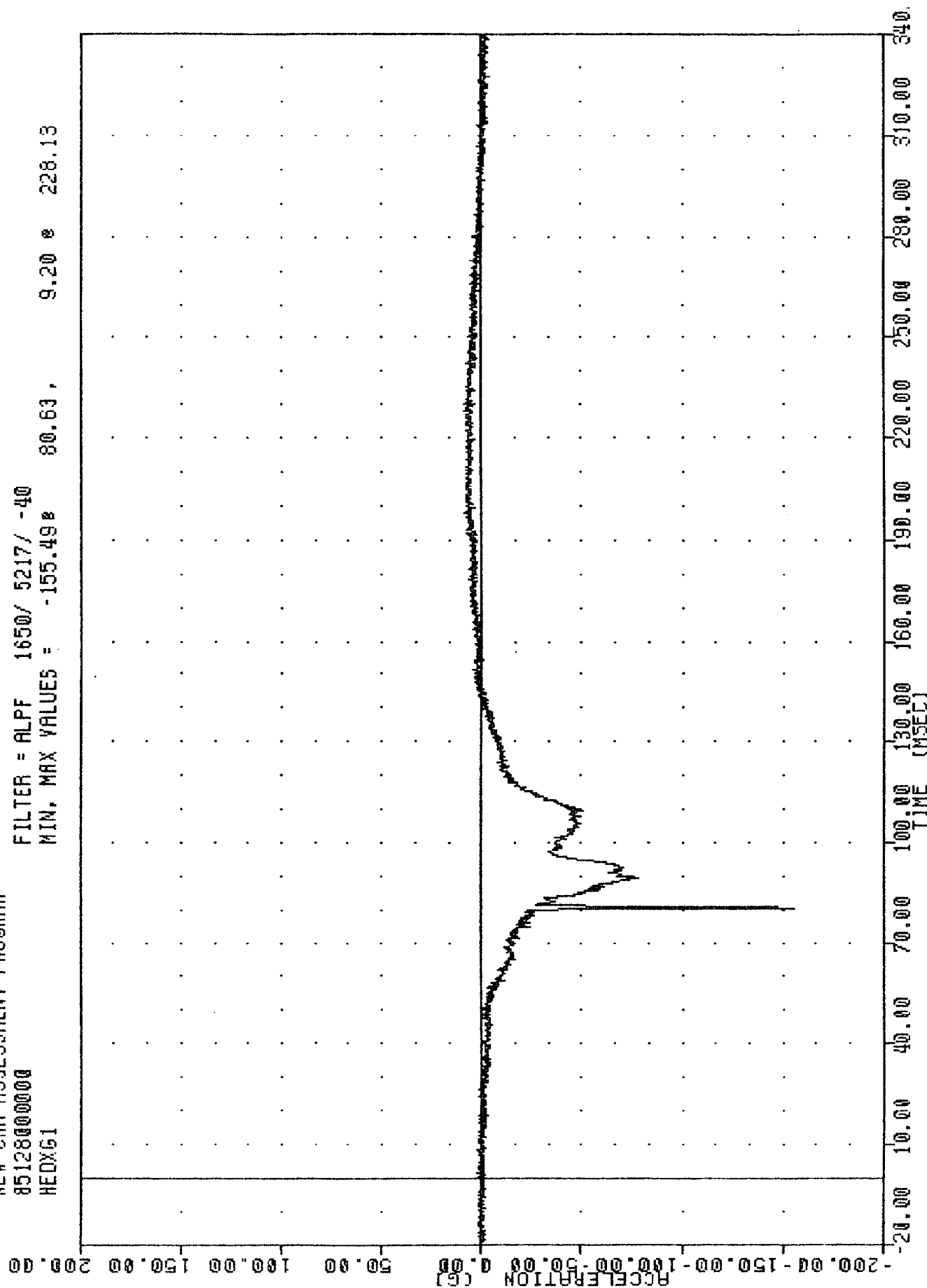
APPENDIX B
DATA PLOTS

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
HEDXG1

PLOT DATE 14-MAY-85 10:25:03

FILTER = ALPF 1650/ 5217/ -40

MIN. MAX VALUES = -155.49 80.63, 9.20 228.13

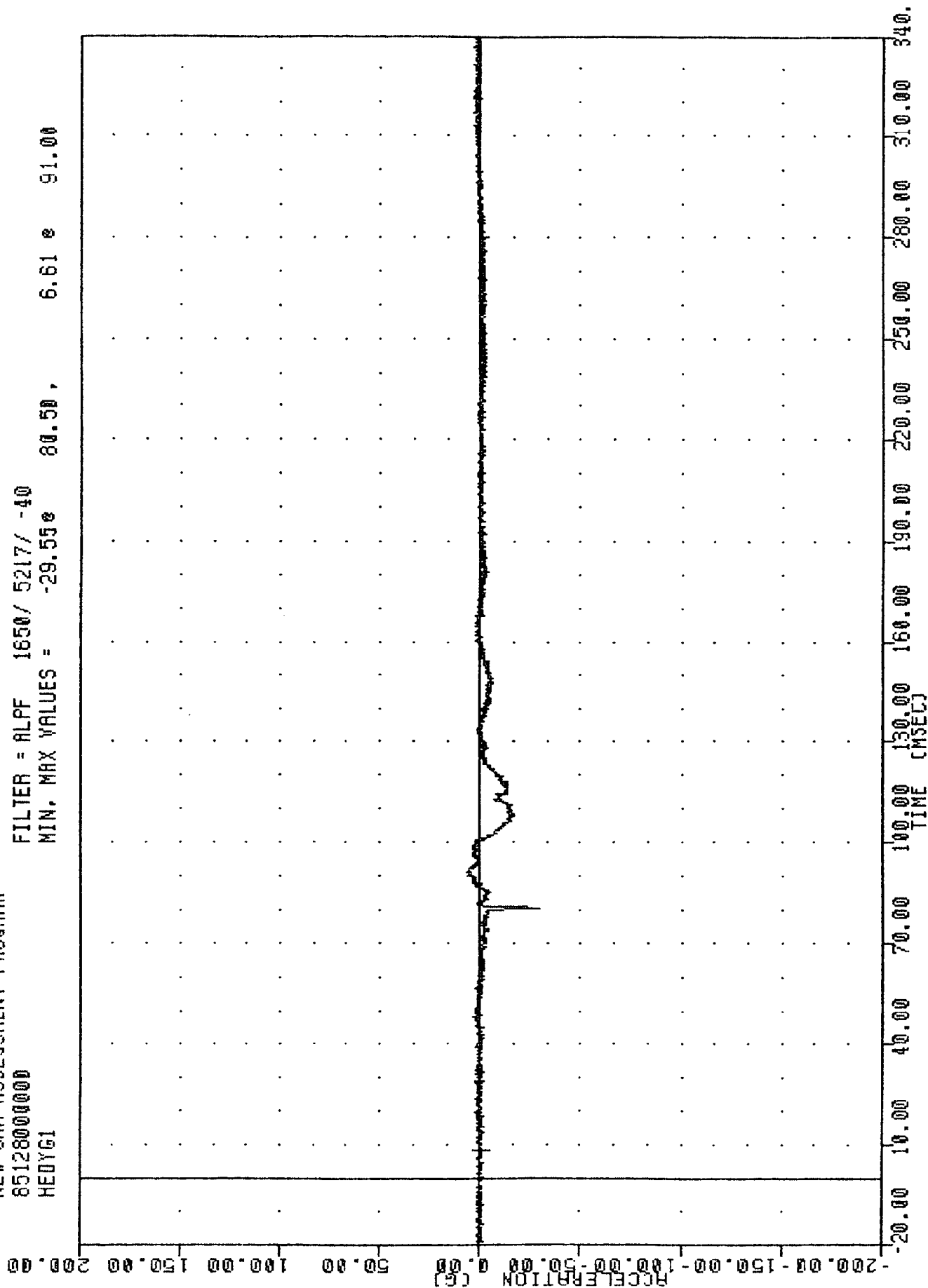


FORD MERKUR INTO LOAD CELL BARRIER
DRIVER HEAD ACCELERATION Y AXIS

TAC
NEW CAR ASSESSMENT PROGRAM
85128000000
HEDYG1

PLOT DATE 14-MAY-85 10:25:03

FILTER = ALPF 1650/ 5217/ -40
MIN. MAX VALUES = -29.55e 80.50, 6.61 e 91.00

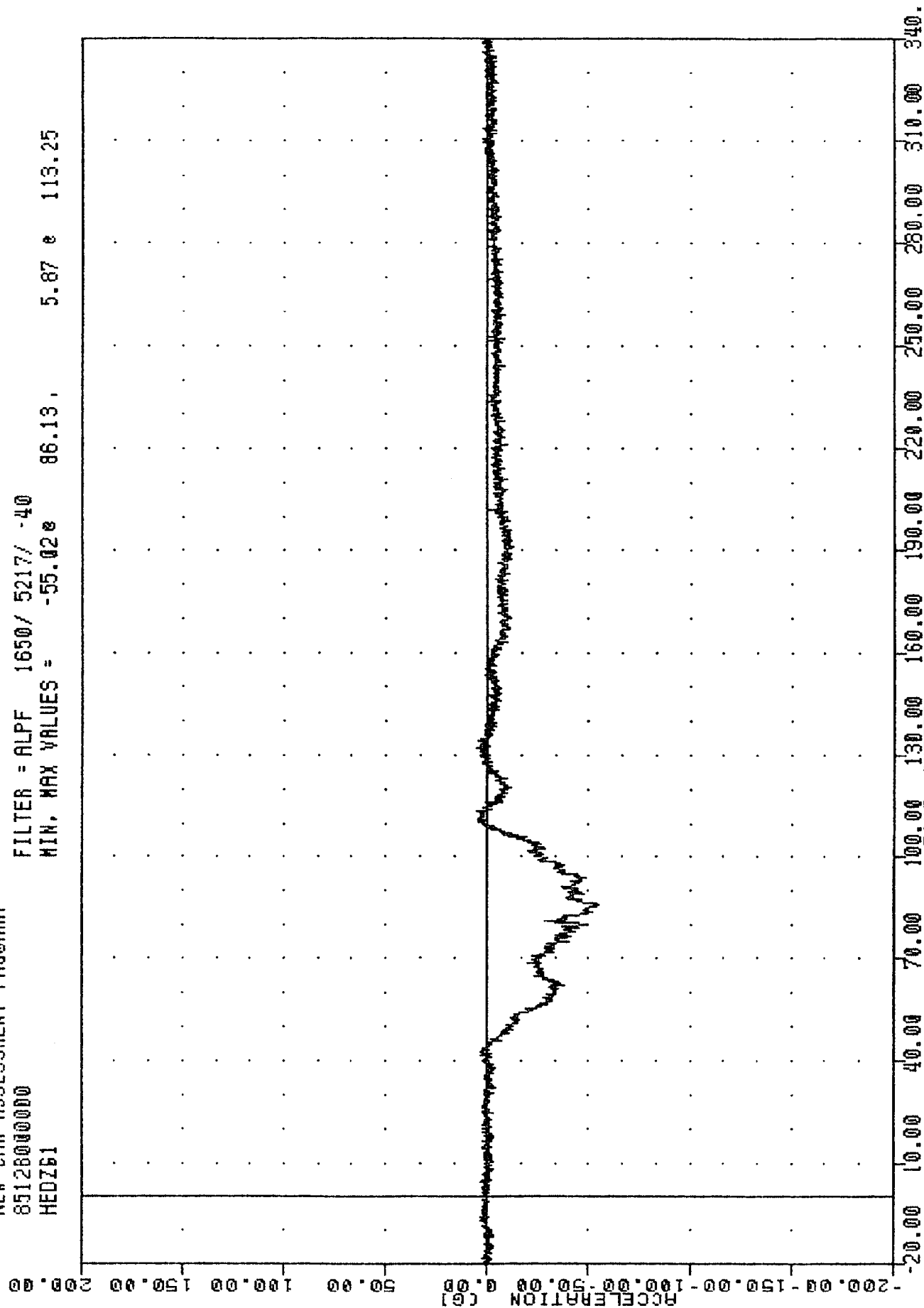


FORD MERKUR INTO LOAD CELL BARRIER
DRIVER HEAD ACCELERATION Y AXIS

TAC
NEW CAR ASSESSMENT PROGRAM
85126000000
HEDZ61

PLOT DATE 14-MAY-85 10:25:03

FILTER = ALPF 1650/ 5217/ -40
MIN. MAX VALUES = -55.02 e 86.13, 5.87 e 113.25

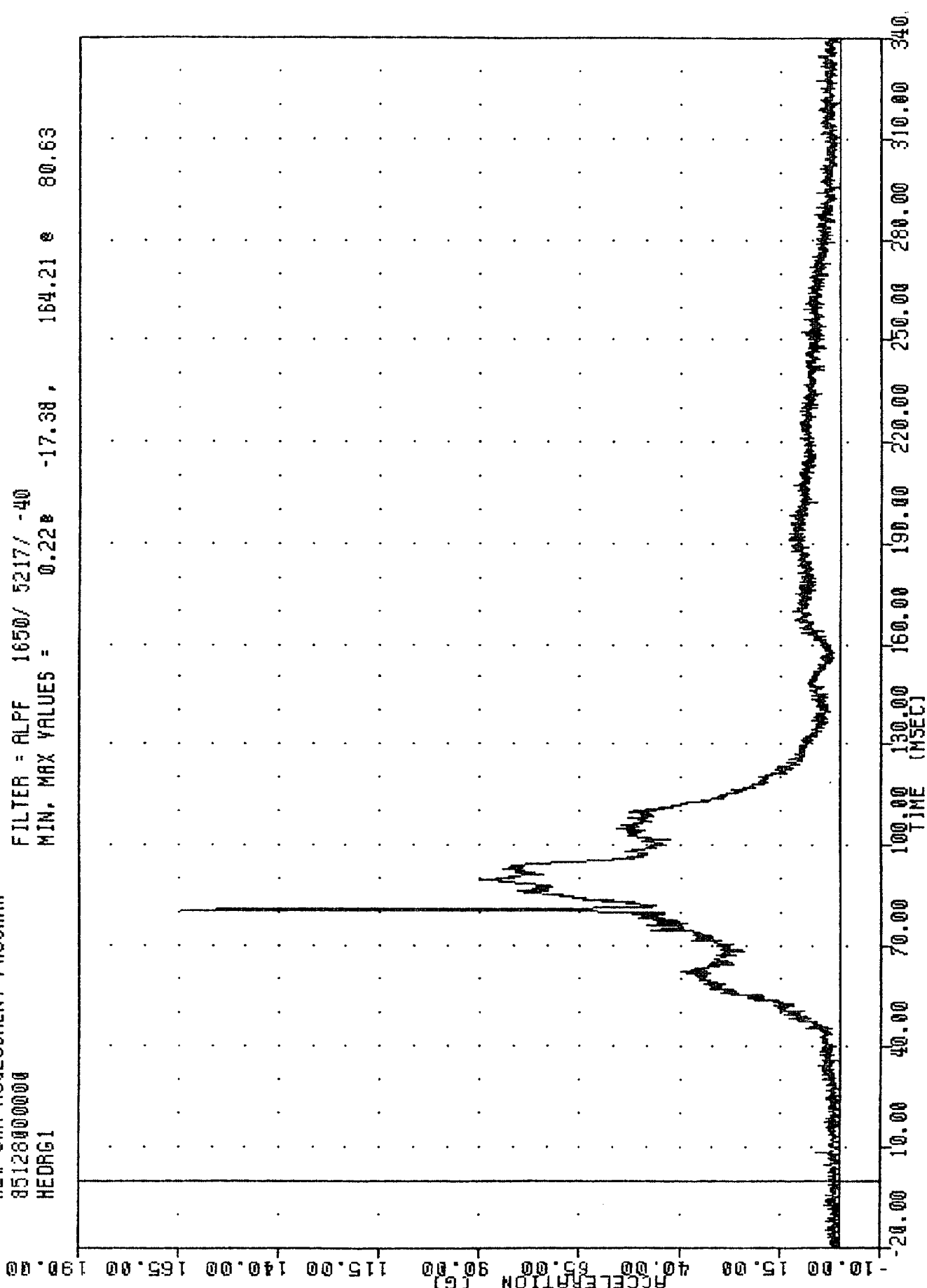


FORD MERKUR INTO LOAD CELL BARRIER
DRIVER HEAD ACCELERATION 7 AXIS

TRC , 850508
NEW CAR ASSESSMENT PROGRAM
85128000000
HEDRG1

PLOT DATE 14-MAY-85 10:25:03

FILTER = ALPF 1650/ 5217/ -40
MIN, MAX VALUES = 0.228 -17.38, 164.21 80.63

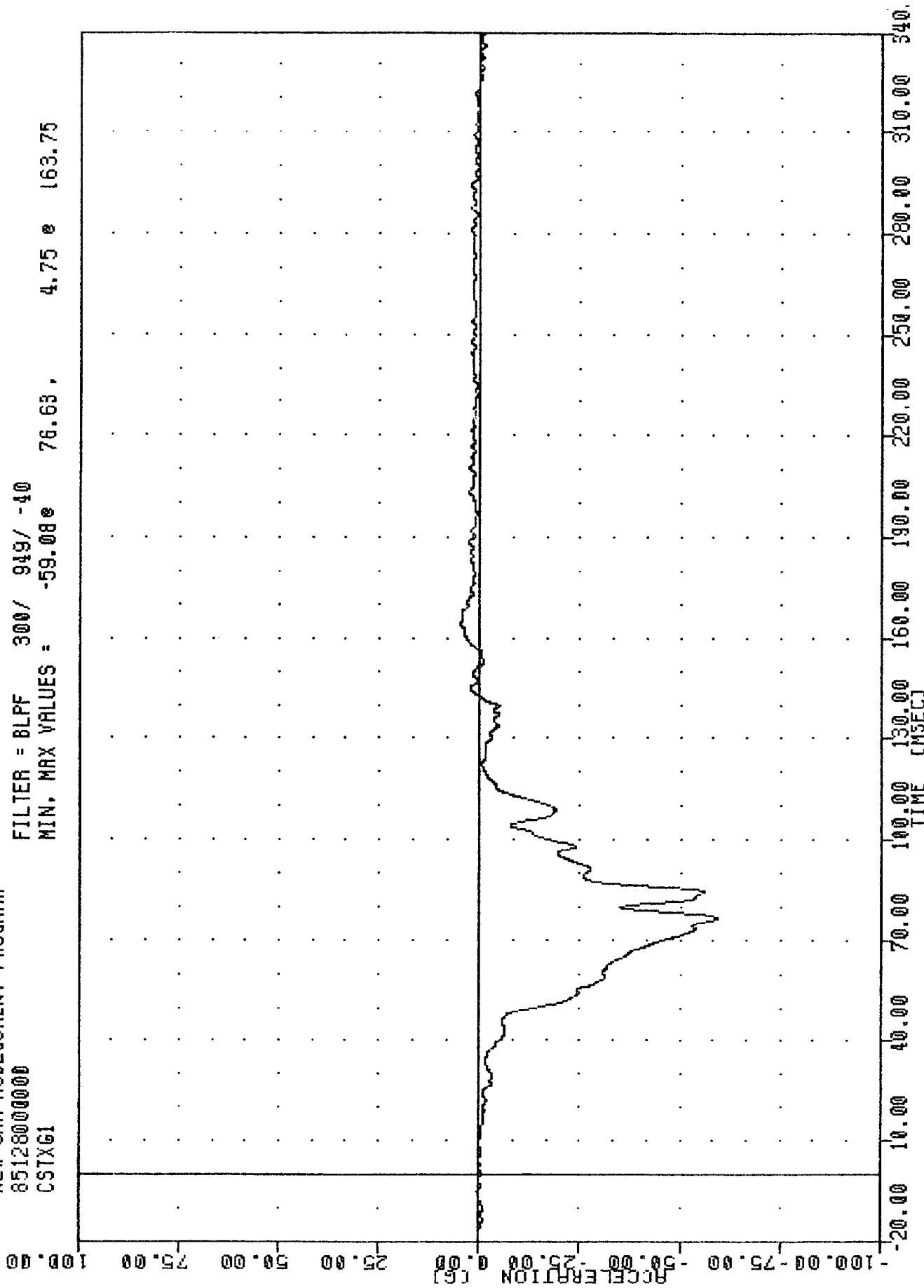


FORD MERKUR INTO LOAD CELL BARRIER
DRIVER HEAD RESULTANT

TRC
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 CSTXG1

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = -59.08e 76.63, 4.75 e 163.75

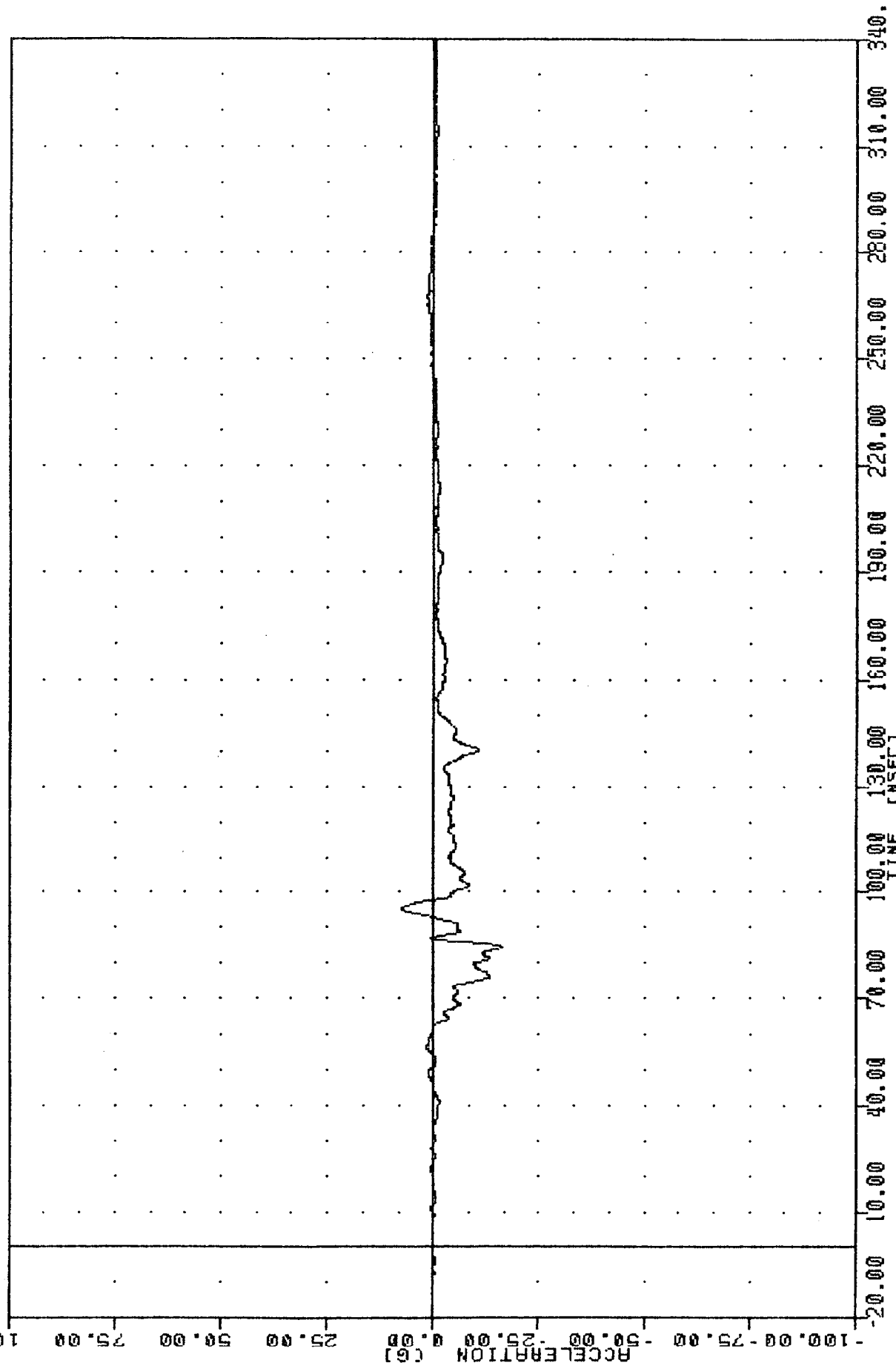


FORD MERKUR INTO LOAD CELL BARRIER
 DRIVER CHEST ACCELERATION X AXIS

TAC
NEW CAR ASSESSMENT PROGRAM
85128000000
CSTY61

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = -16.18 84.50 7.38 95.25

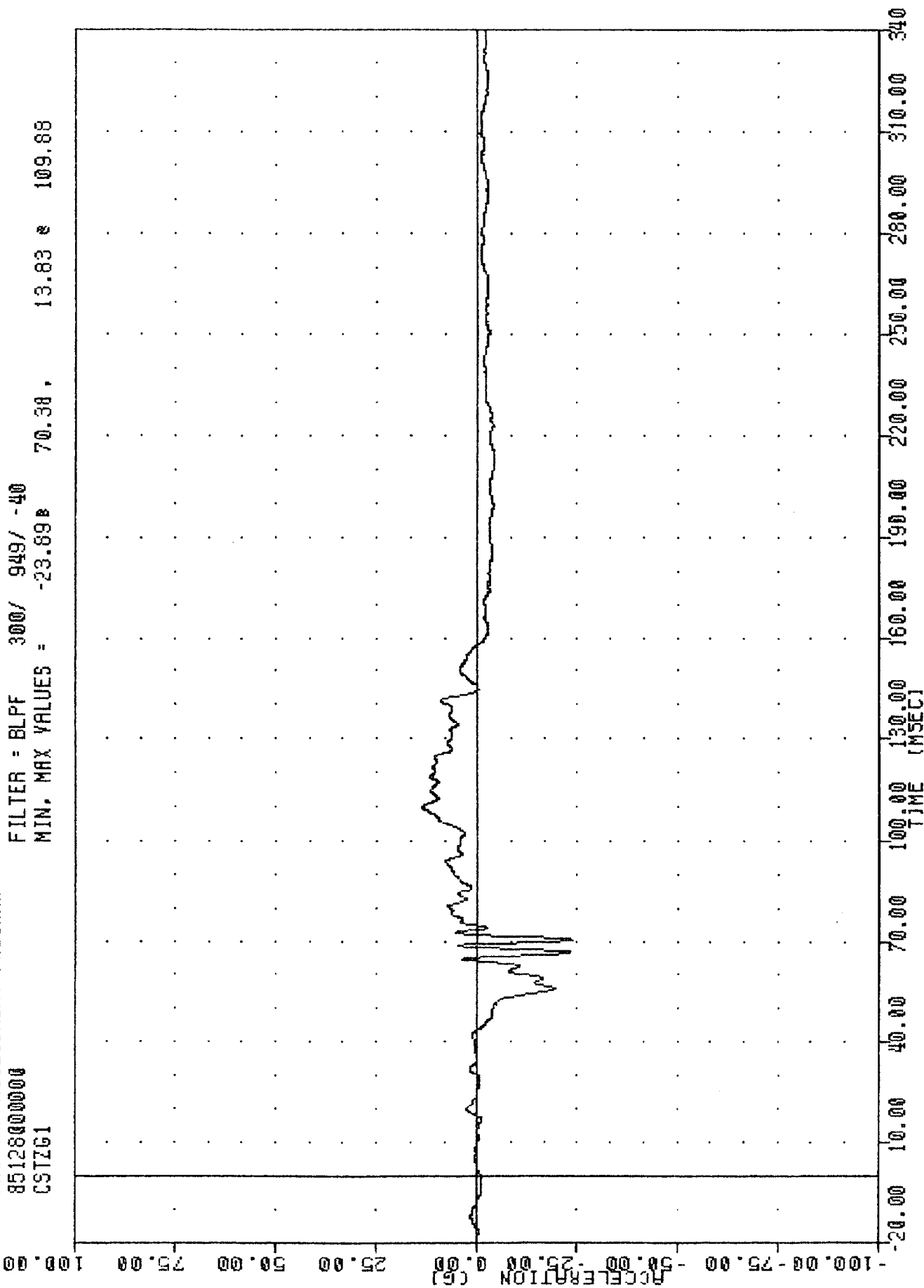


FORD MERKUR INTO LOAD CELL BARRIER
DRIVER CHEST ACCELERATION Y AXIS

TRC 850508
NEW CAR ASSESSMENT PROGRAM
85128000000
CSTZG1

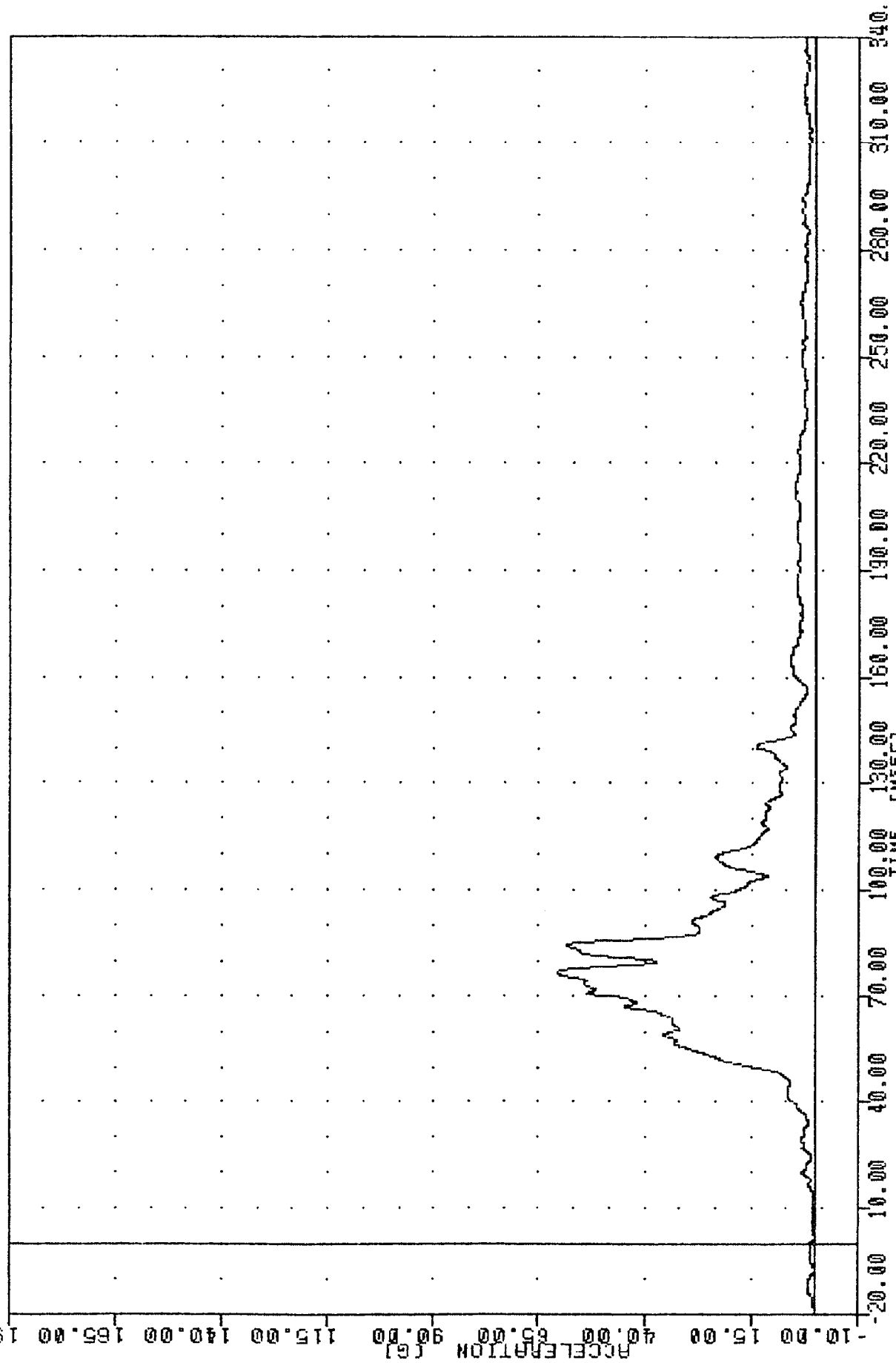
PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 300/ 949/ -40
MIN. MAX VALUES = -23.89 70.38 13.83 109.88



FORD MERKUR INTO LOAD CELL BARRIER
DRIVER CHEST ACCELERATION Z AXIS

THC 850508
 NEW CAR ASSESSMENT PROGRAM
 851280000000
 CSTRG1
 PLOT DATE 14-MAY-85 10:25:03
 FILTER = 8LPF 300/ 949/ -40
 MIN. MAX VALUES = 0.06e 9.75, 60.59 e 76.63

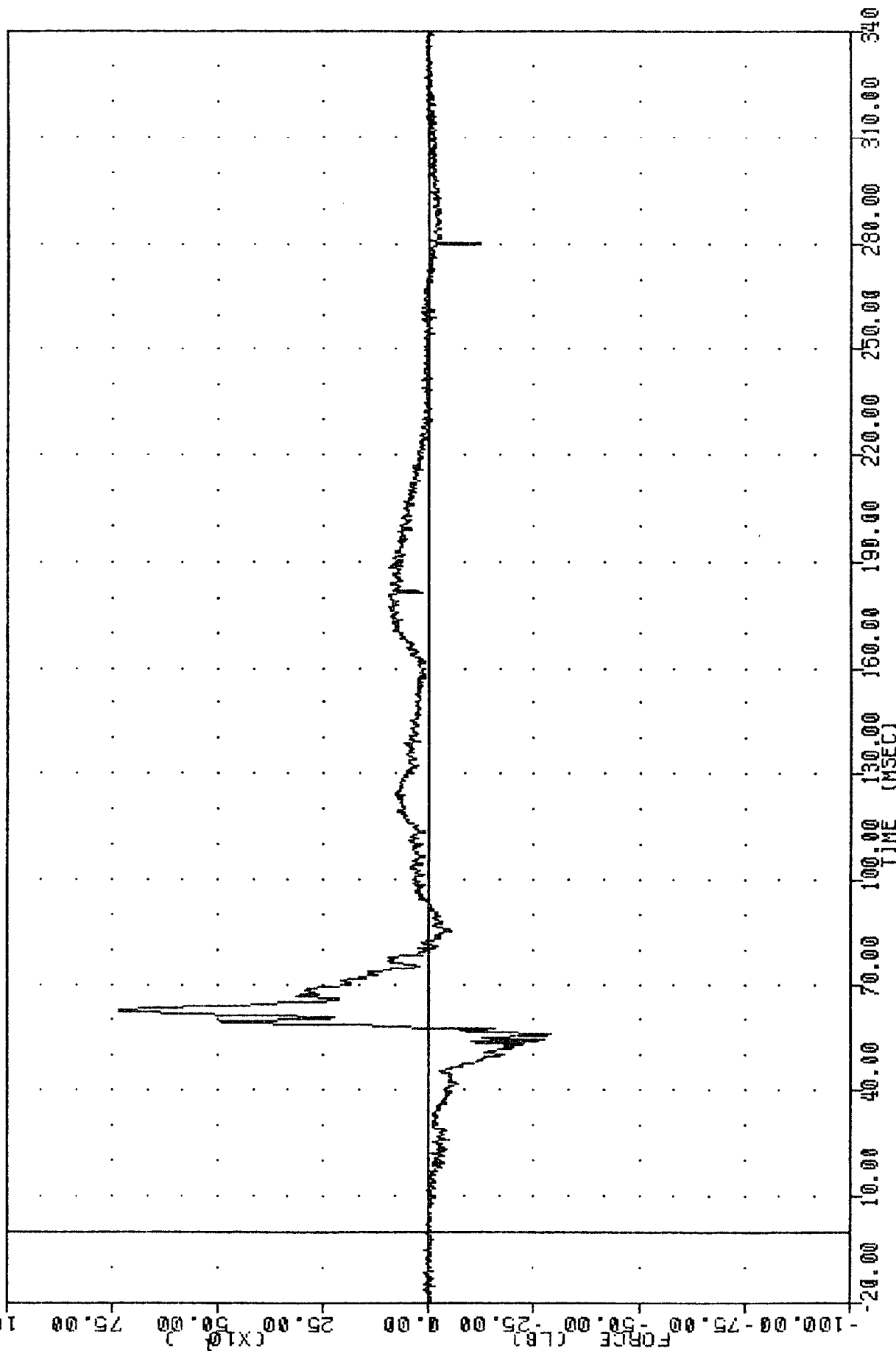


FORD MERKUR INTO LOAD CELL BARRIER
 DRIVER CHEST RESULTANT

TRC 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 RFMF1

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 1000/ 3162/ -40
 MIN. MAX VALUES = -290.67 735.53 62.63



FORD MERKUR INTO LOAD CELL BARRIER
 DRIVER RIGHT FEMUR FORCE LBS

TAC , 850508
NEW CAR ASSESSMENT PROGRAM

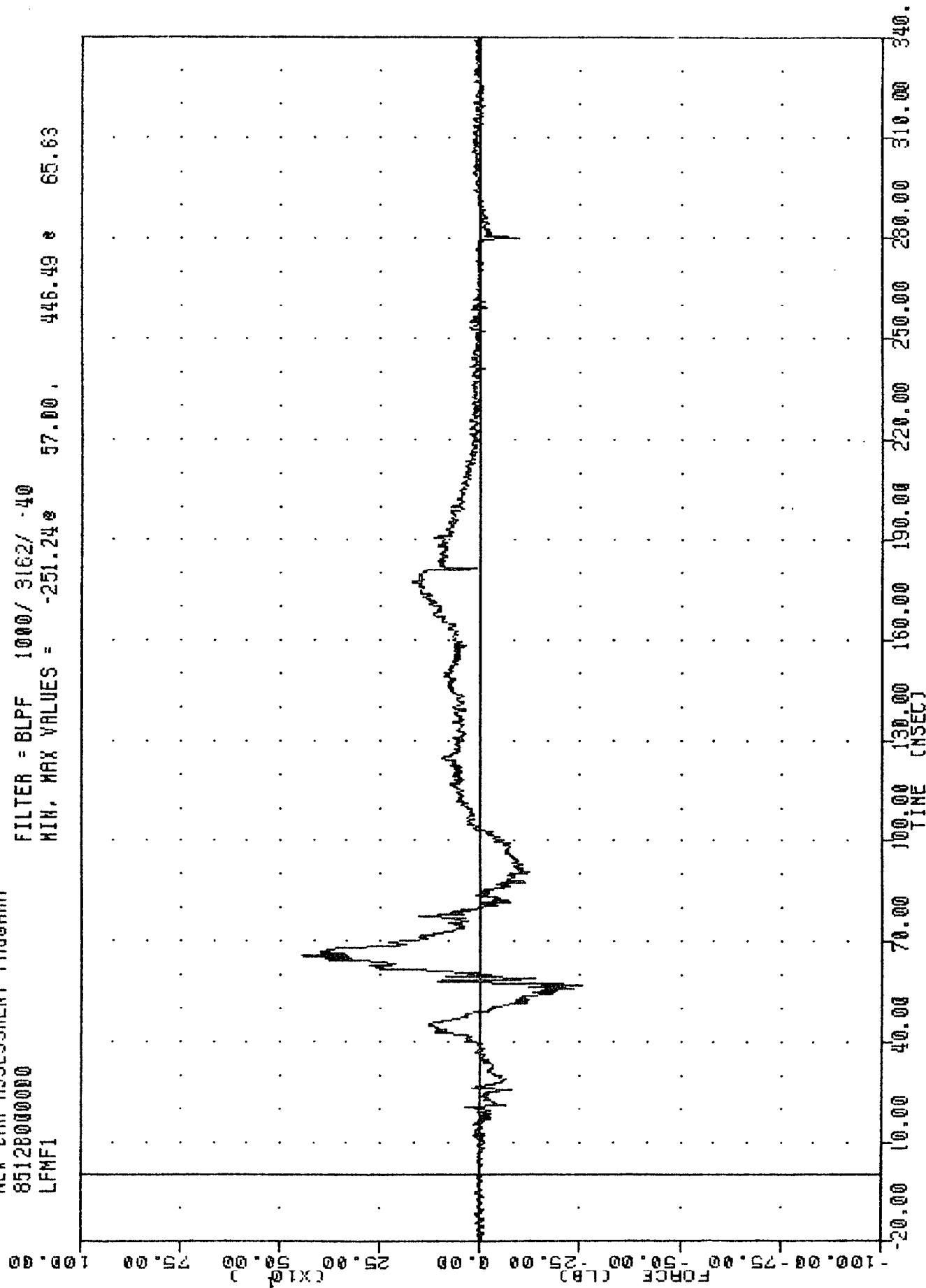
851280000000

LFMF1

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 1000/ 3162/ -40

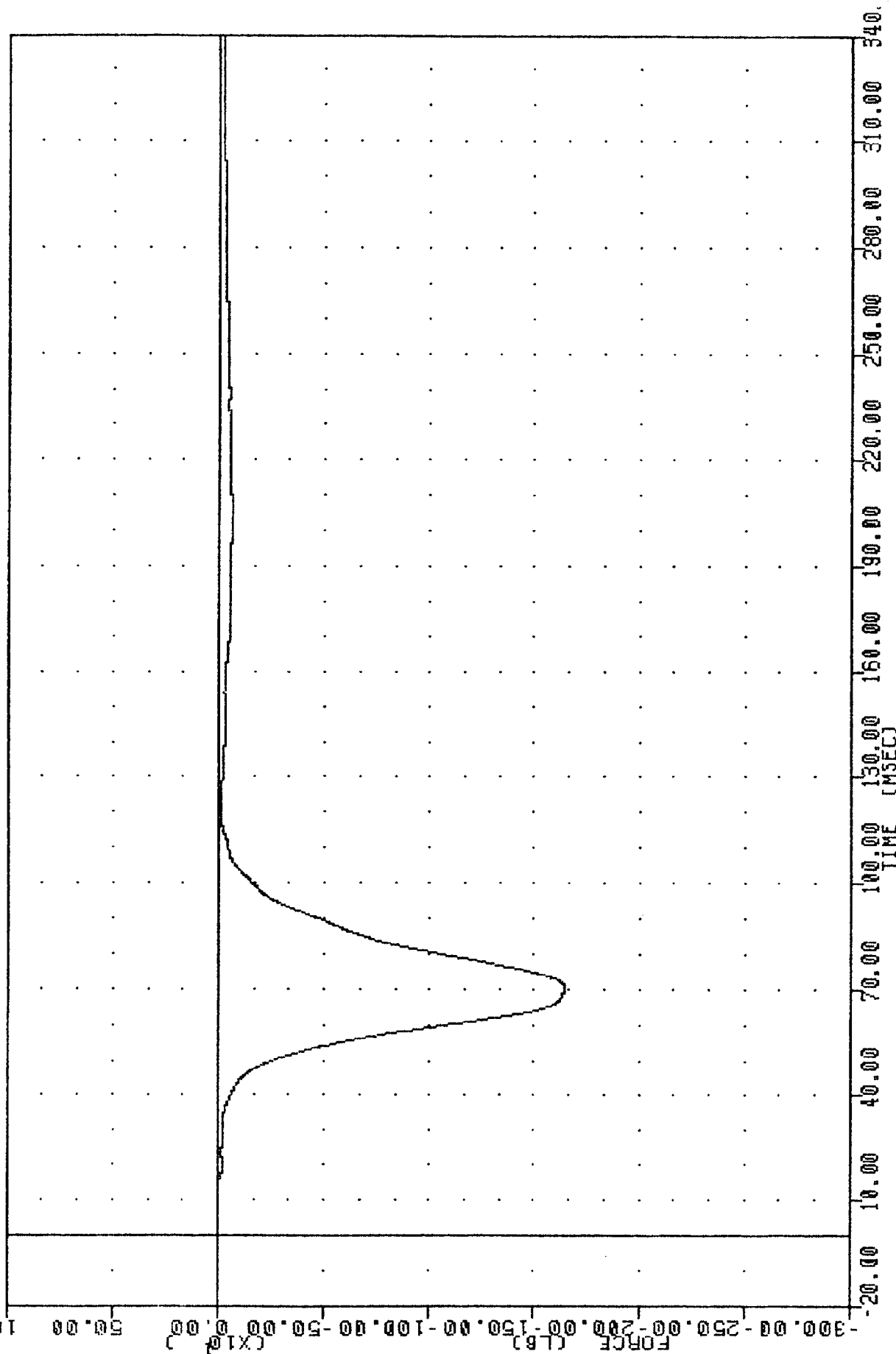
MIN, MAX VALUES = -251.24 57.00 446.49 65.63



TRC
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 LB0F1

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -1648.35 74.38 3.46 13.00

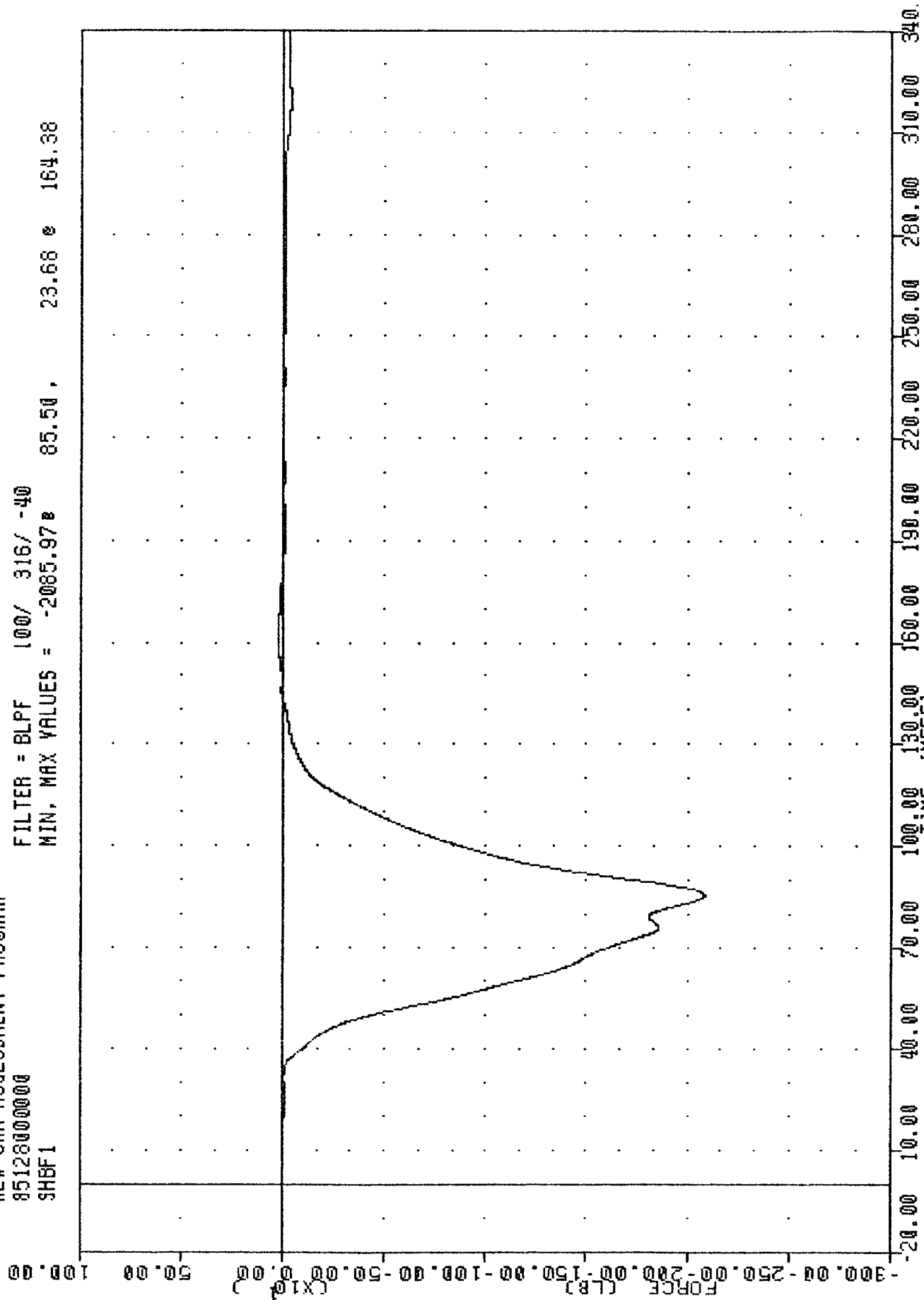


FORD MERKUR INTO LOAD CELL BARRIER
 LAP BELT OUTBOARD FORCE #1 LBS

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
9HBF1

PLOT DATE 14-MAY-85 10:25:03

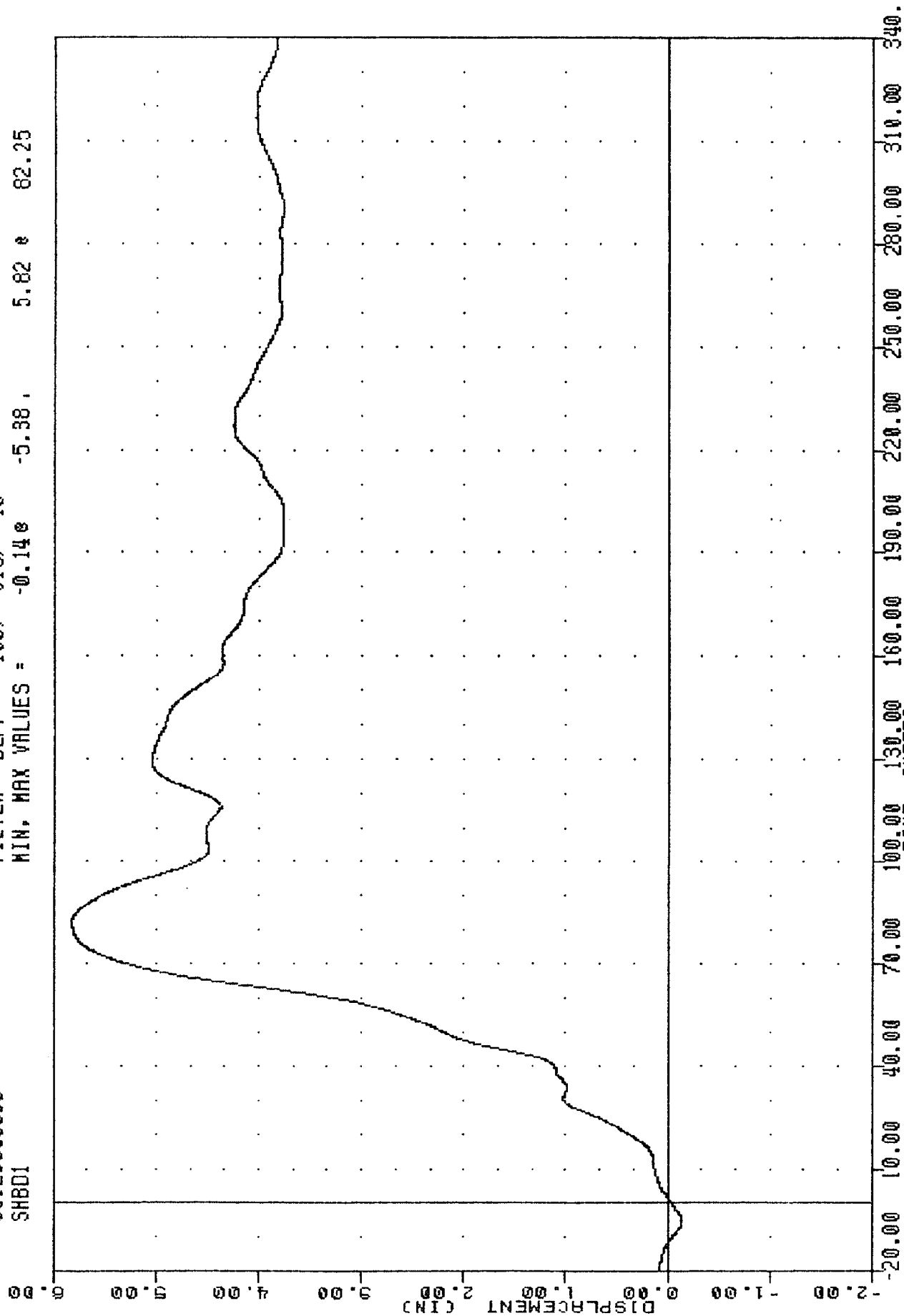
FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -2085.97 85.50, 23.68 164.38



TAC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 SHBD1

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -0.140 -5.38 , 5.82 & 82.25

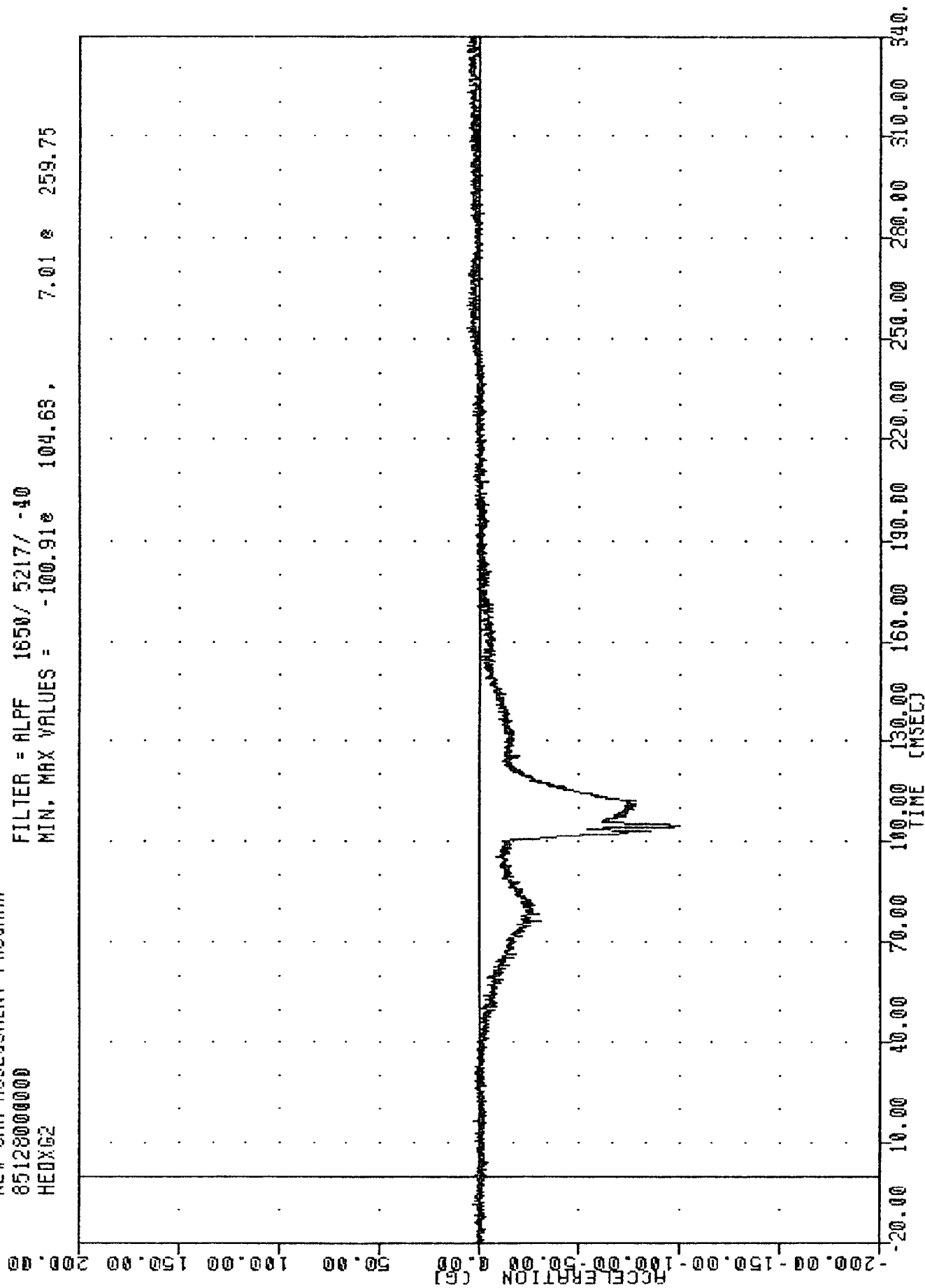


FORD MERKUR INTO LOAD CELL BARRIER
 SHOWN FOR REFIT #1 DISPLACEMENT INCHES

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
HEDXG2

PLOT DATE 14-MAY-85 10:25:03

FILTER = ALPF 1650/ 5217/ -40
MIN. MAX VALUES = -100.91e 104.63, 7.01 e 259.75

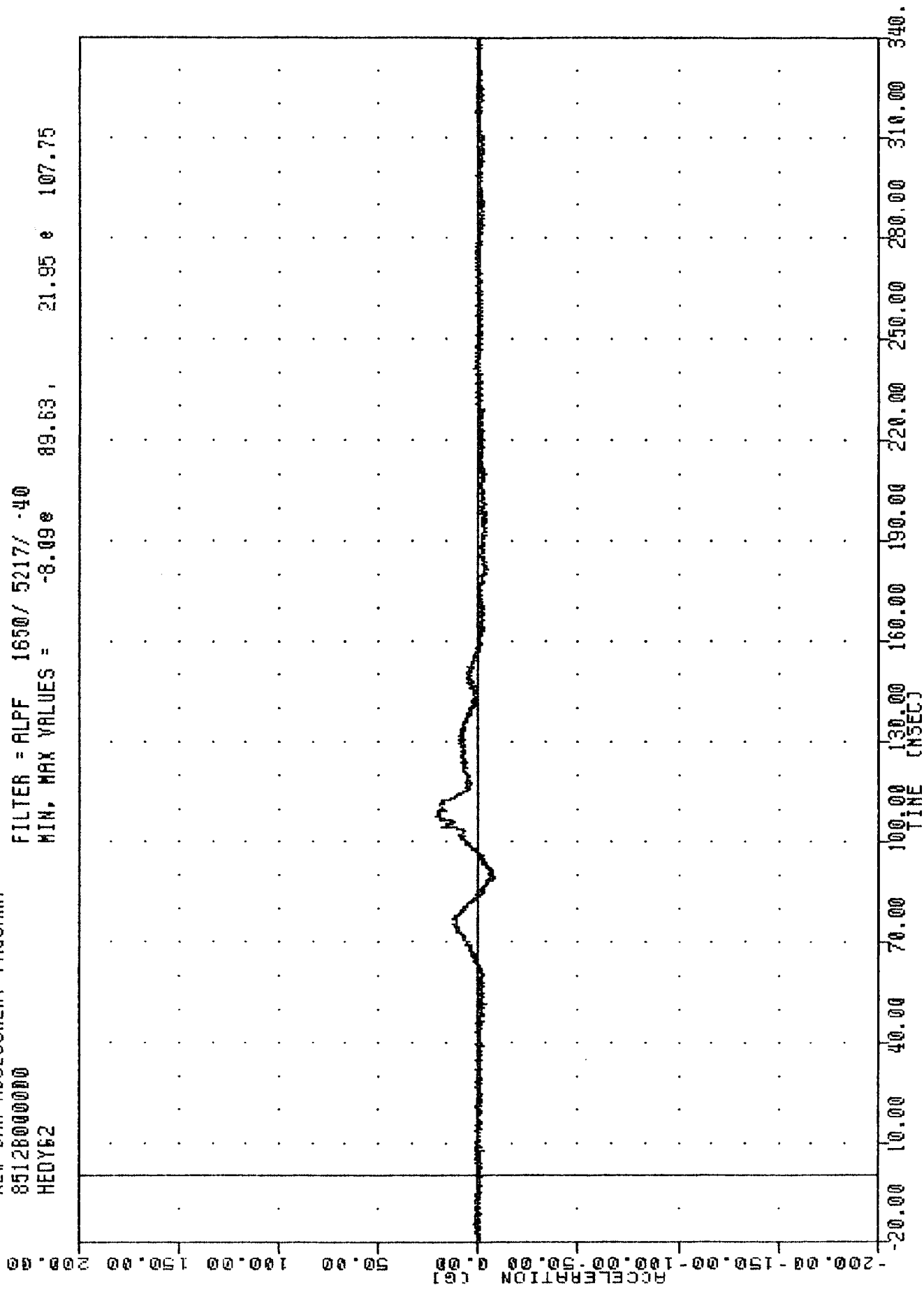


FORD MERKUR INTO LOAD CELL BARRIER
PASSENGER HEAD ACCELERATION Y AXIS

TAC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 HEDY62

PLOT DATE 14-MAY-85 10:25:03

FILTER = ALPF 1650/ 5217/ -40
 MIN, MAX VALUES = -8.09e 89.63, 21.95 e 107.75

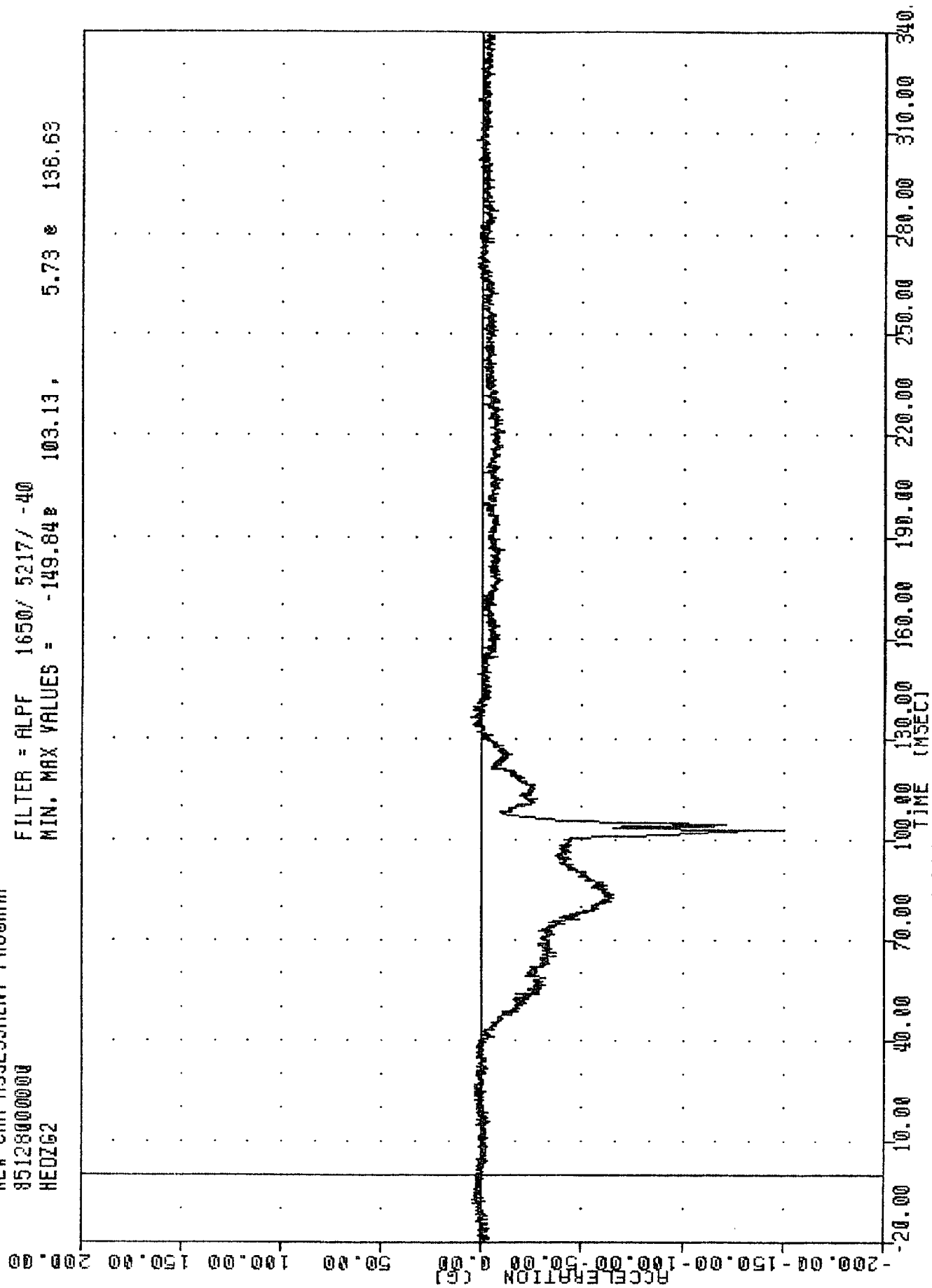


FORD MERKUR INTO LOAD CELL BARRIER
 PASSENGER HEAD ACCELERATION Y AXIS

TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 HEDZG2

PLOT DATE 14-MAY-85 10:25:03

FILTER = ALPF 1650/ 5217/ -40
 MIN. MAX VALUES = -149.84 103.13, 5.73 136.63



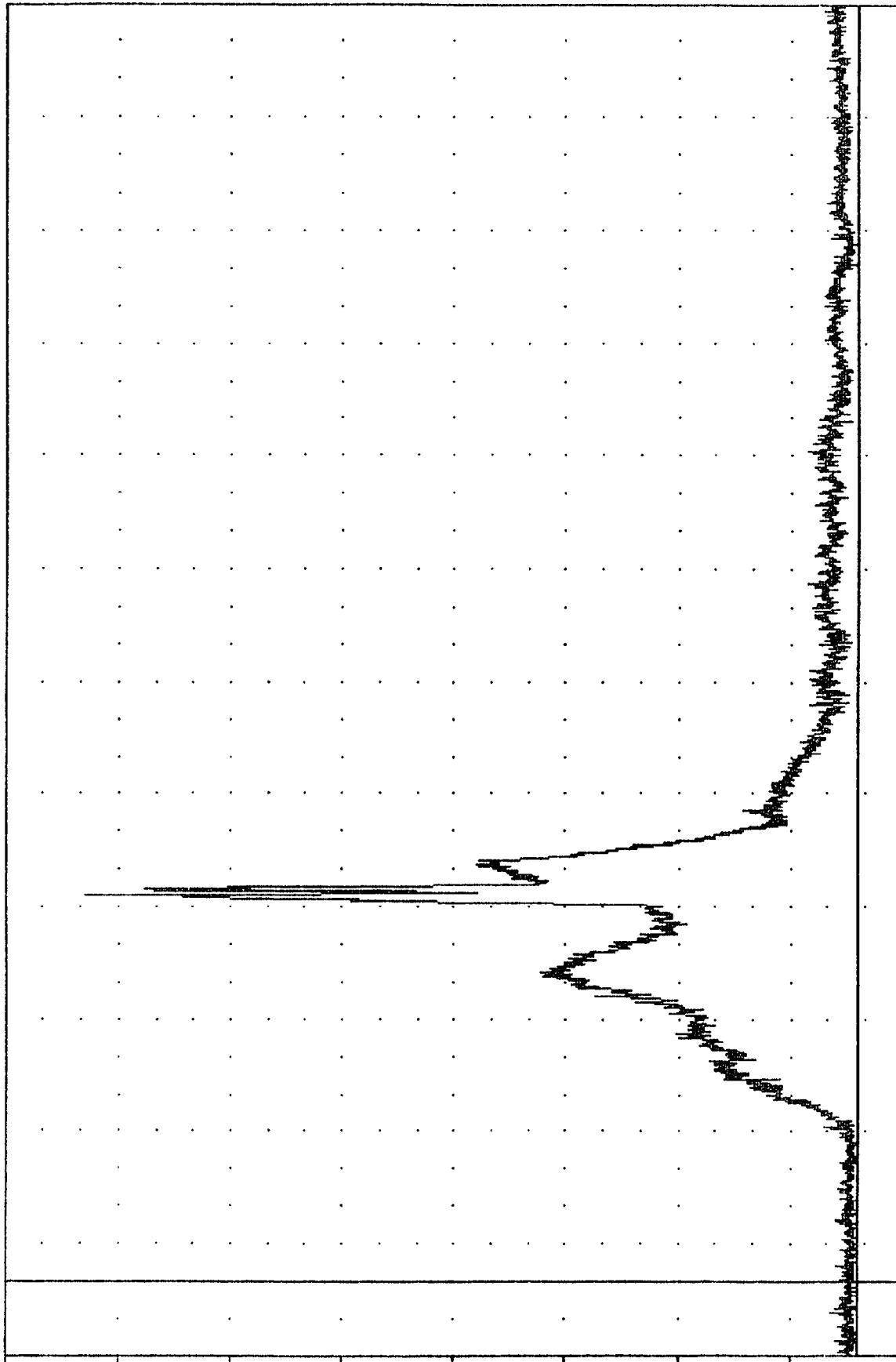
FORD MERKUR INTO LOAD CELL BARRIER
 PASSENGER HEAD ACCELERATION 7 AXES

TRC 850508
NEW CAR ASSESSMENT PROGRAM
85128000000
HEDRG2

PLOT DATE 14-MAY-85 10:25:03

FILTER = ALPF 1650/ 5217/ -40
MIN, MAX VALUES = 0.27e 31.63, 172.26 e 103.13

ACCELERATION (G)



TIME (MSEC)

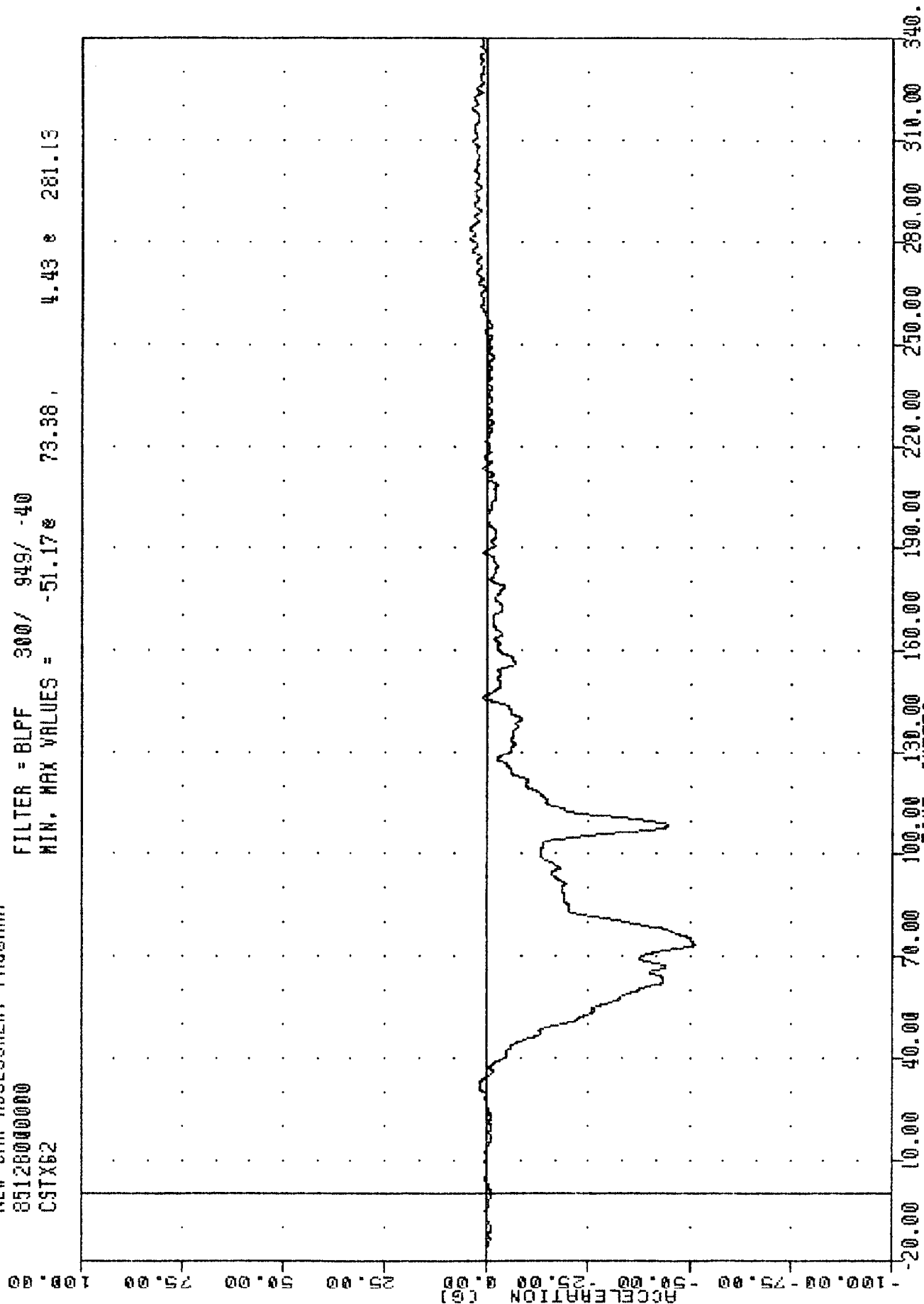
FORD MERKUR INTO LOAD CELL BARRIER
PASSENGER HEAD RESULTANT

TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 CSTX62

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 300/ 949/ -40

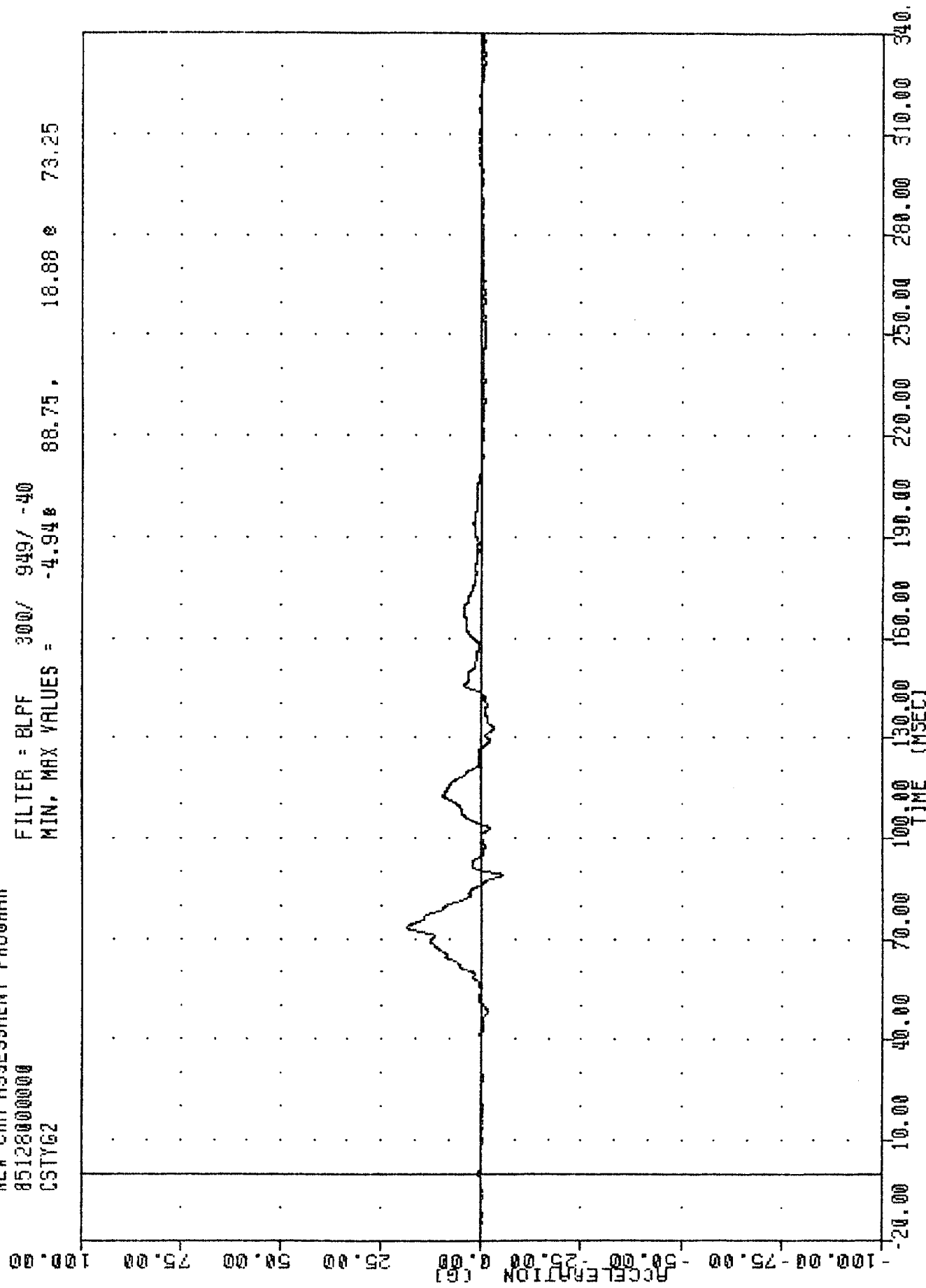
MIN. MAX VALUES = -51.17e 73.38, 4.43 e 281.13



TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
CSTY62

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -4.948 88.75, 18.88 73.25



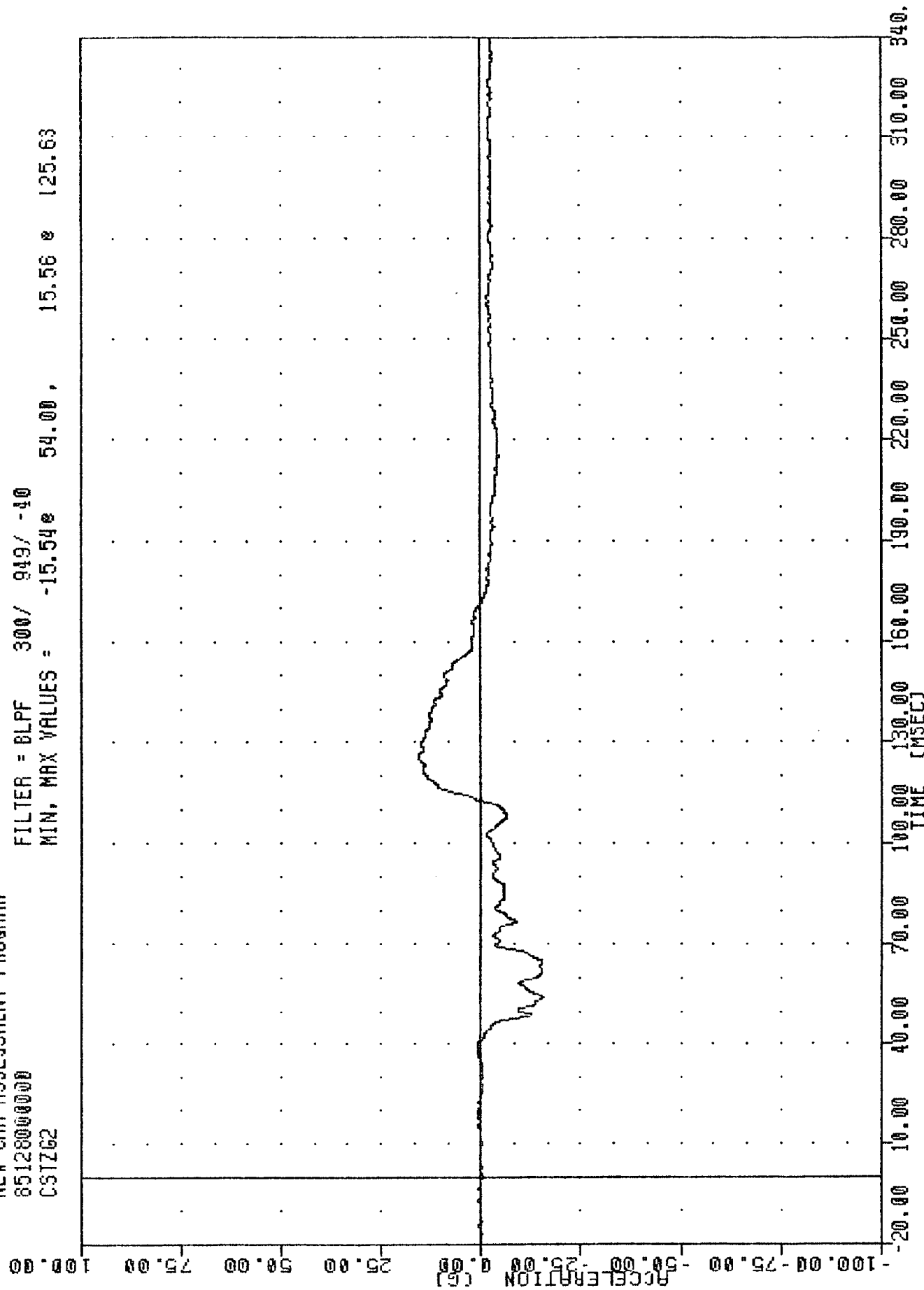
FORD MERKUR INTO LOAD CELL BARRIER
PASSENGER CHFT ACCELERATION Y AXIS

TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 CSTZG2

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 300/ 949/ -40

MIN, MAX VALUES = -15.54e 54.00, 15.56 e 125.63

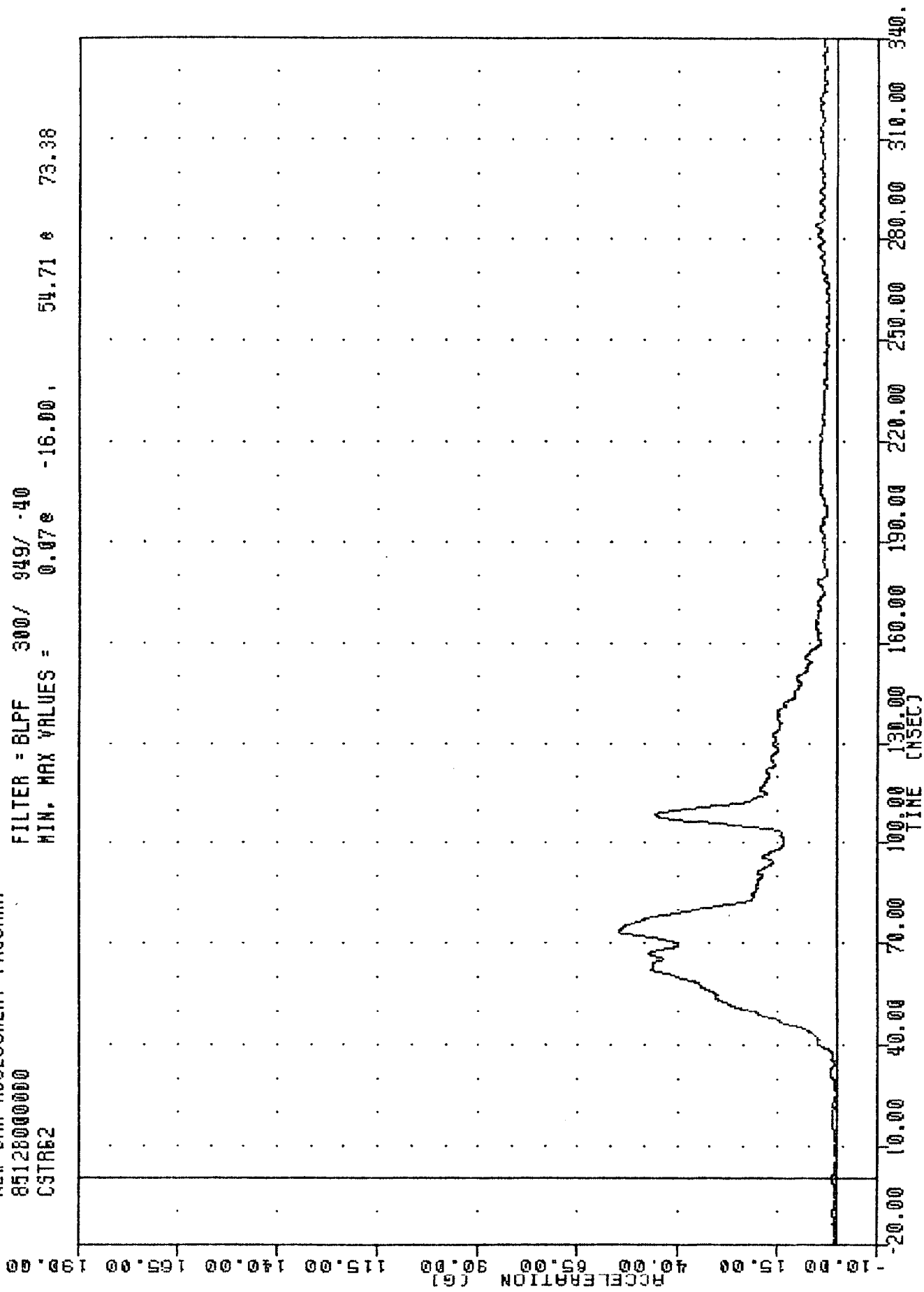


FORD MERKUR INTO LOAD CELL BARRIER
 PASSENGER CHEST ACCELERATION Z AXIS

TRC
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 C3TR62

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 300/ 949/ -40
 MIN. MAX VALUES = 0.07e -16.00, 54.71 e 73.38

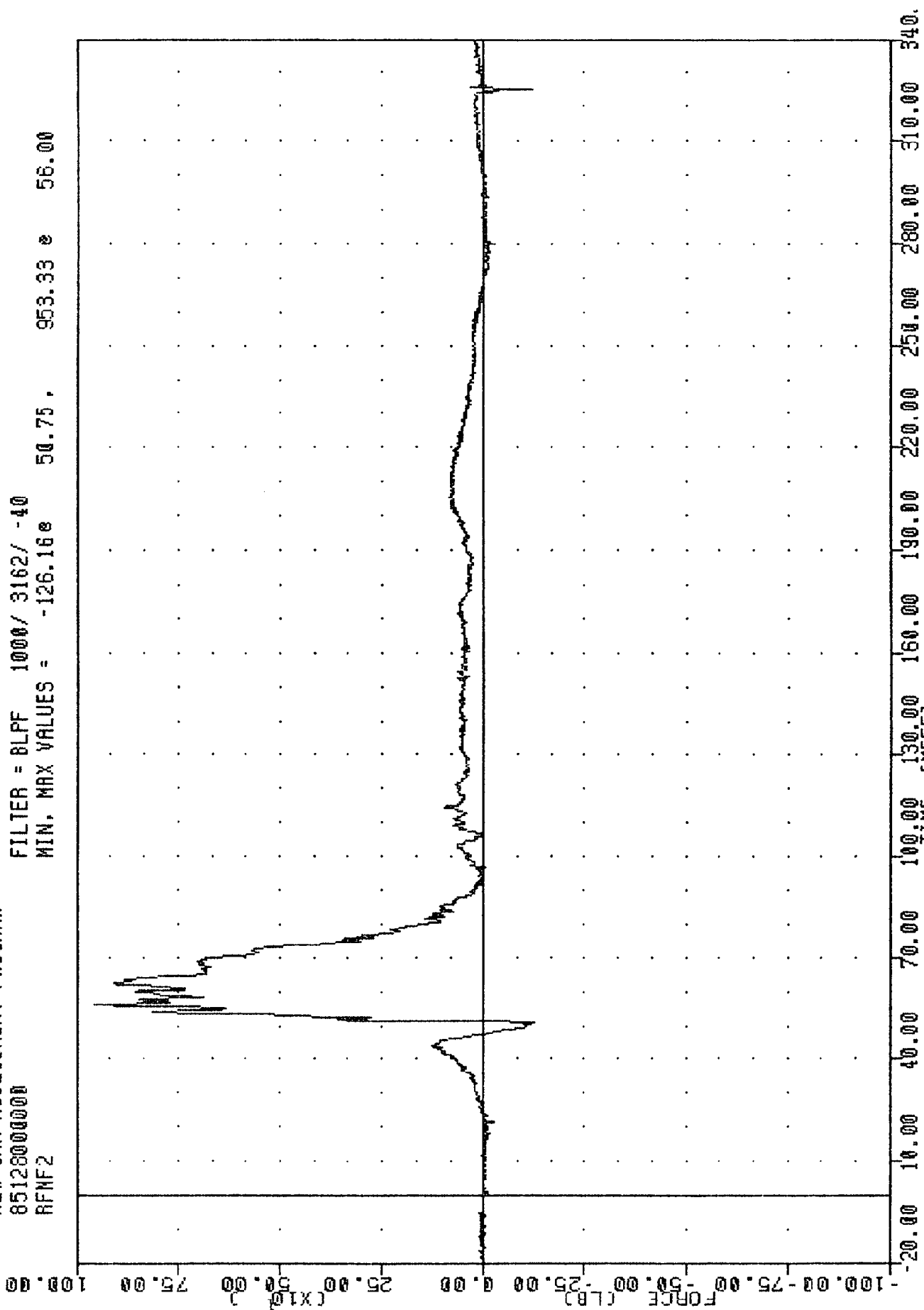


FORD MERKUR INTO LOAD CELL BARRIER
 PASSENGER CHEST RESULTANT

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
RFNF2

PLOT DATE 14-MAY-85 10:25:03

FILTER = 8LPF 1000/ 3162/ -40
MIN. MAX VALUES = -126.16e 50.75, 953.33 e 56.00

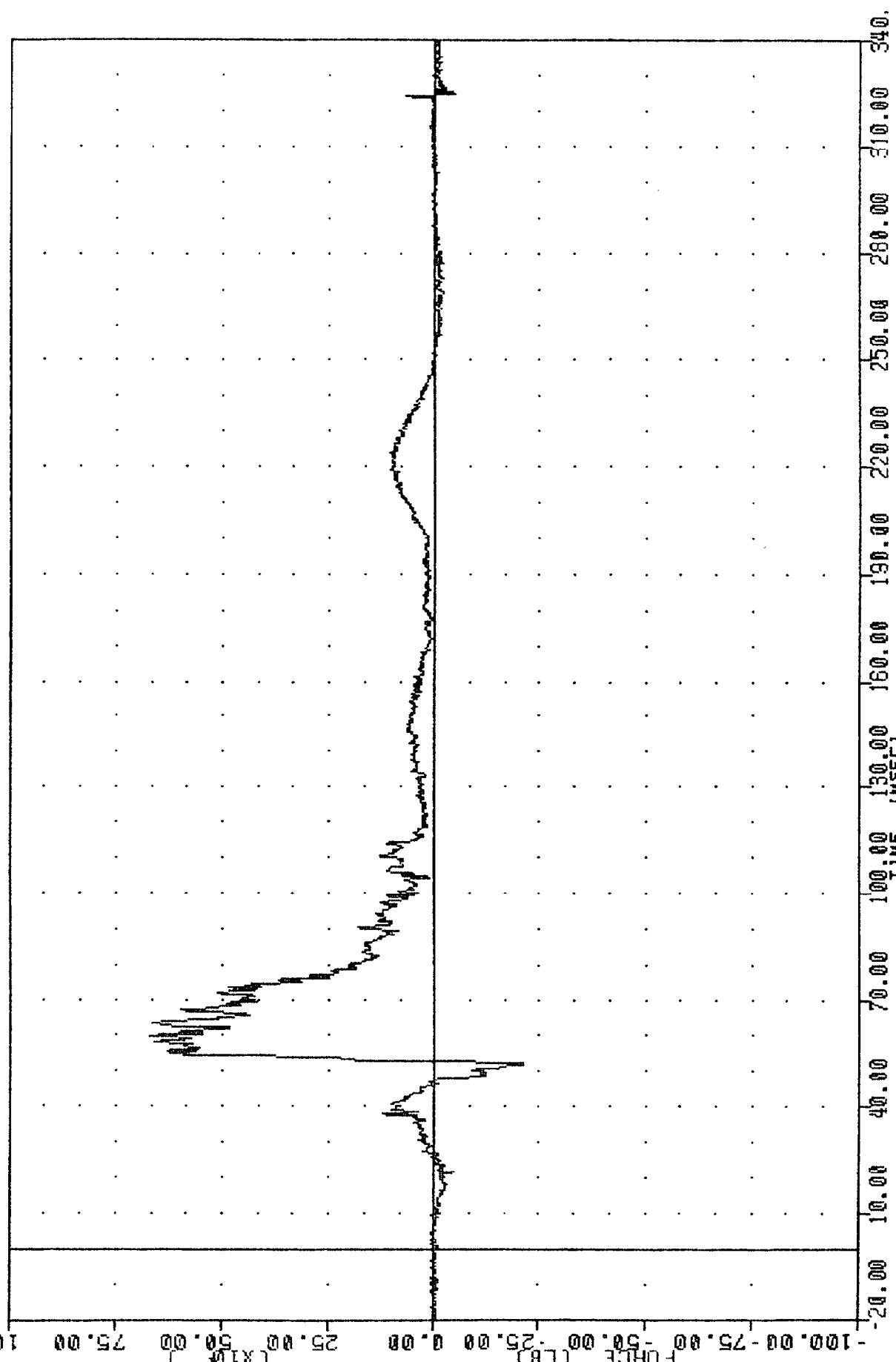


FORD MERKUR INTO LOAD CELL BARRIER
PASSENGER RIGHT FEMUR FORCE LBS

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
LFMF2

PLOT DATE 14-MAY-85 10:44:14

FILTER = BLPF 1000/ 3162/ -40
MIN, MAX VALUES = -211.66 52.13, 669.97 59.75



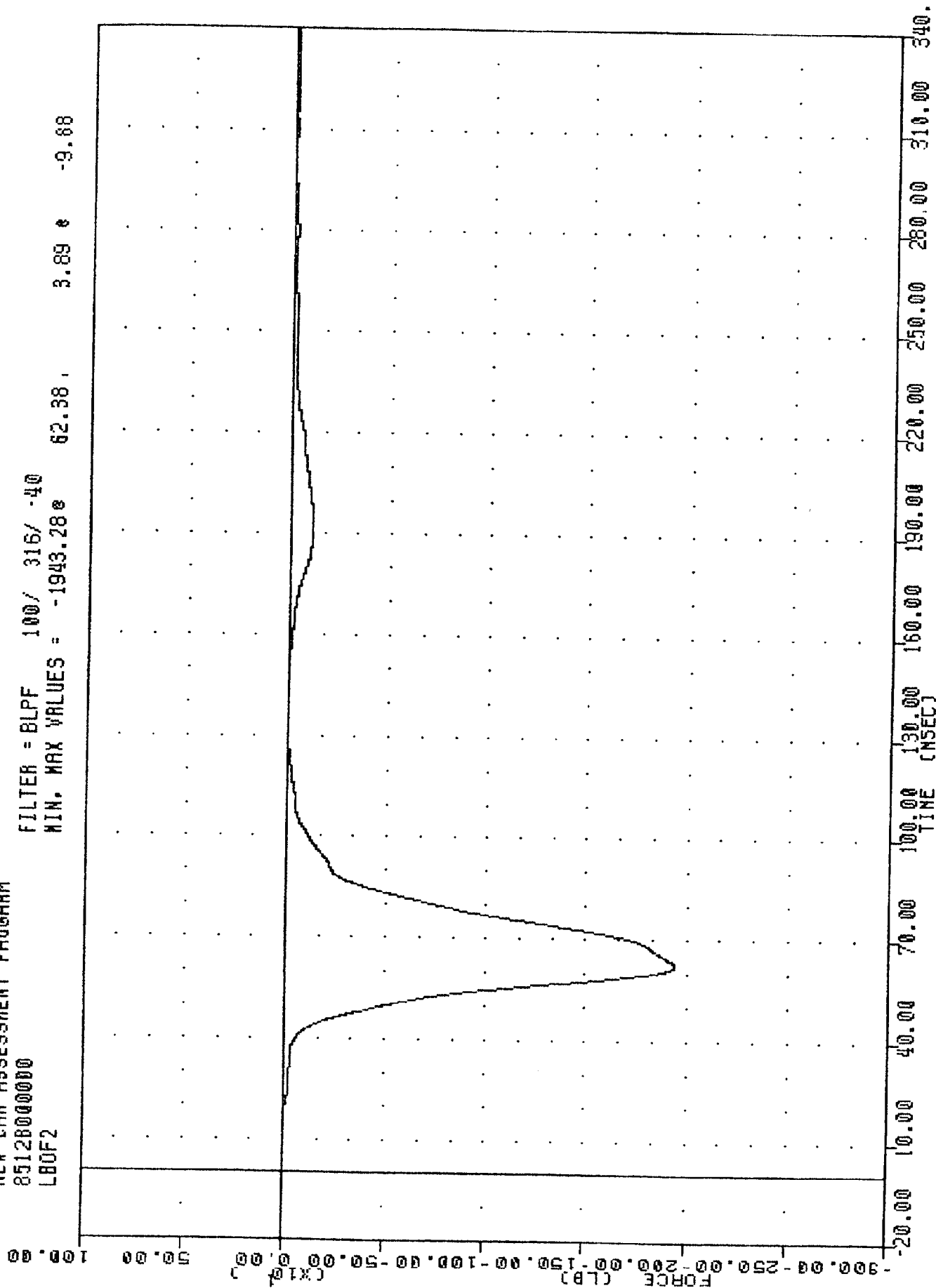
FORD MERKUR INTO LOAD CELL BARRIER
PASSENGER LEFT FFMIR FORCE IRS

TAC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 LB0F2

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -1943.28 62.38 , 3.89 -9.88



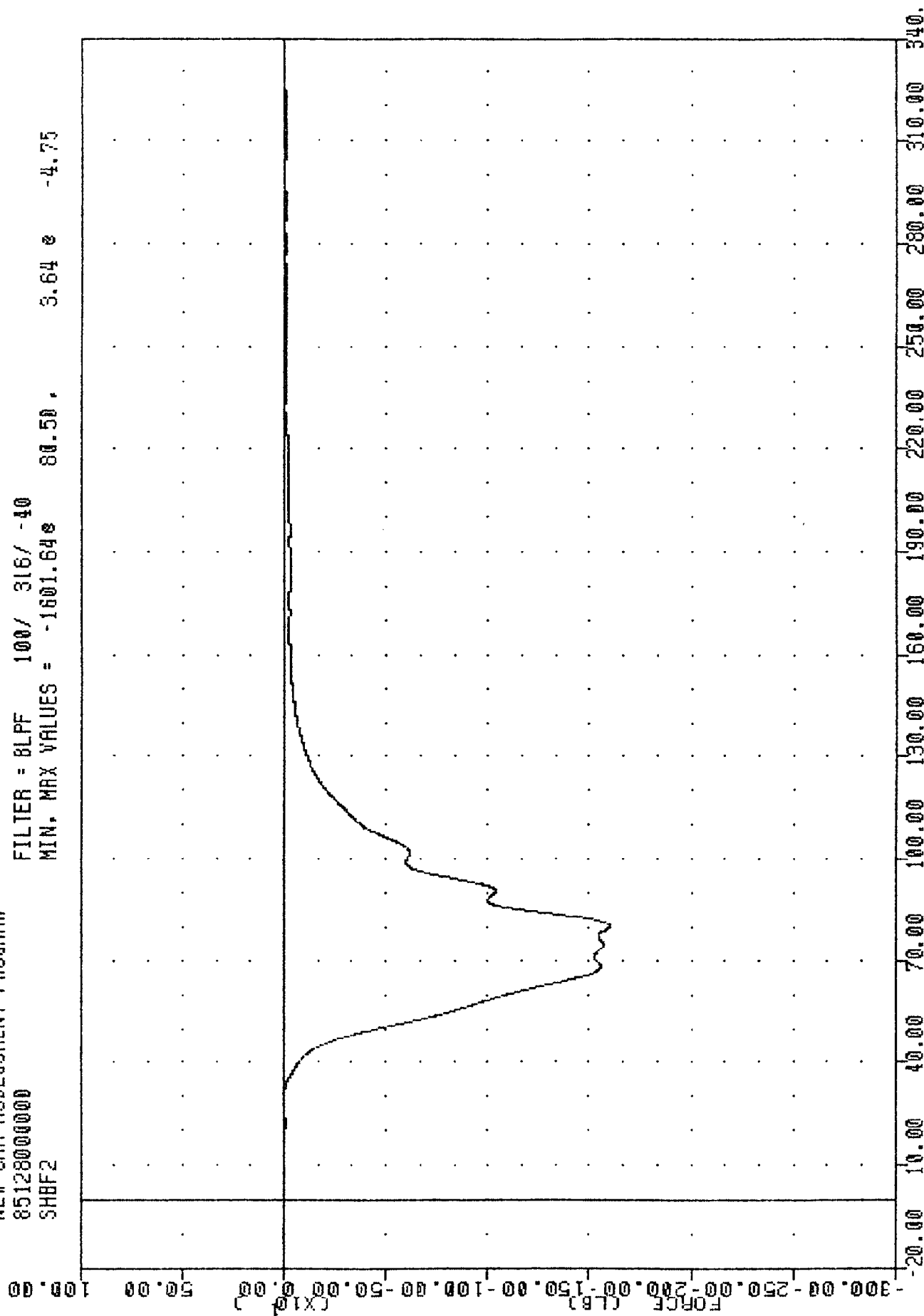
FORD MERCURY INTO LOAD CELL BARRIER
 LAP BELT OUTBOARD FORCE -2 LBS

TRC
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 SHBF2

PLOT DATE 14-MAY-85 10:25:03

FILTER = 8LPF 100/ 316/ -40

MIN. MAX VALUES = -1601.64 80.50, 3.64 -4.75

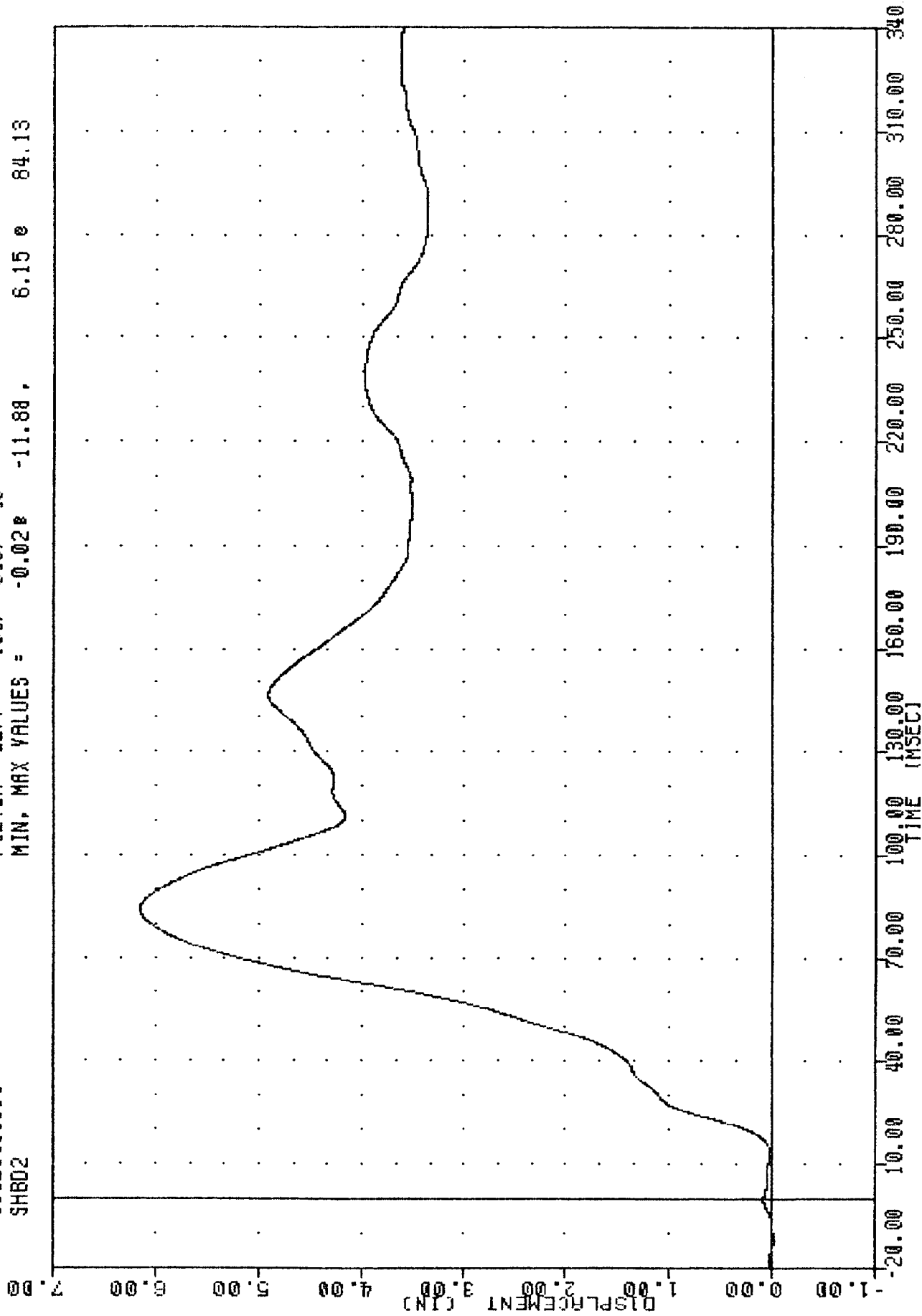


FORD MERCURY INTO LOAD CELL BARRIER
 SHNII NR RFT FORCE #2 IRS

TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 SHBD2

PLOT DATE 14-MAY-85 12:48:05

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -0.028 -11.88, 6.15 e 84.13

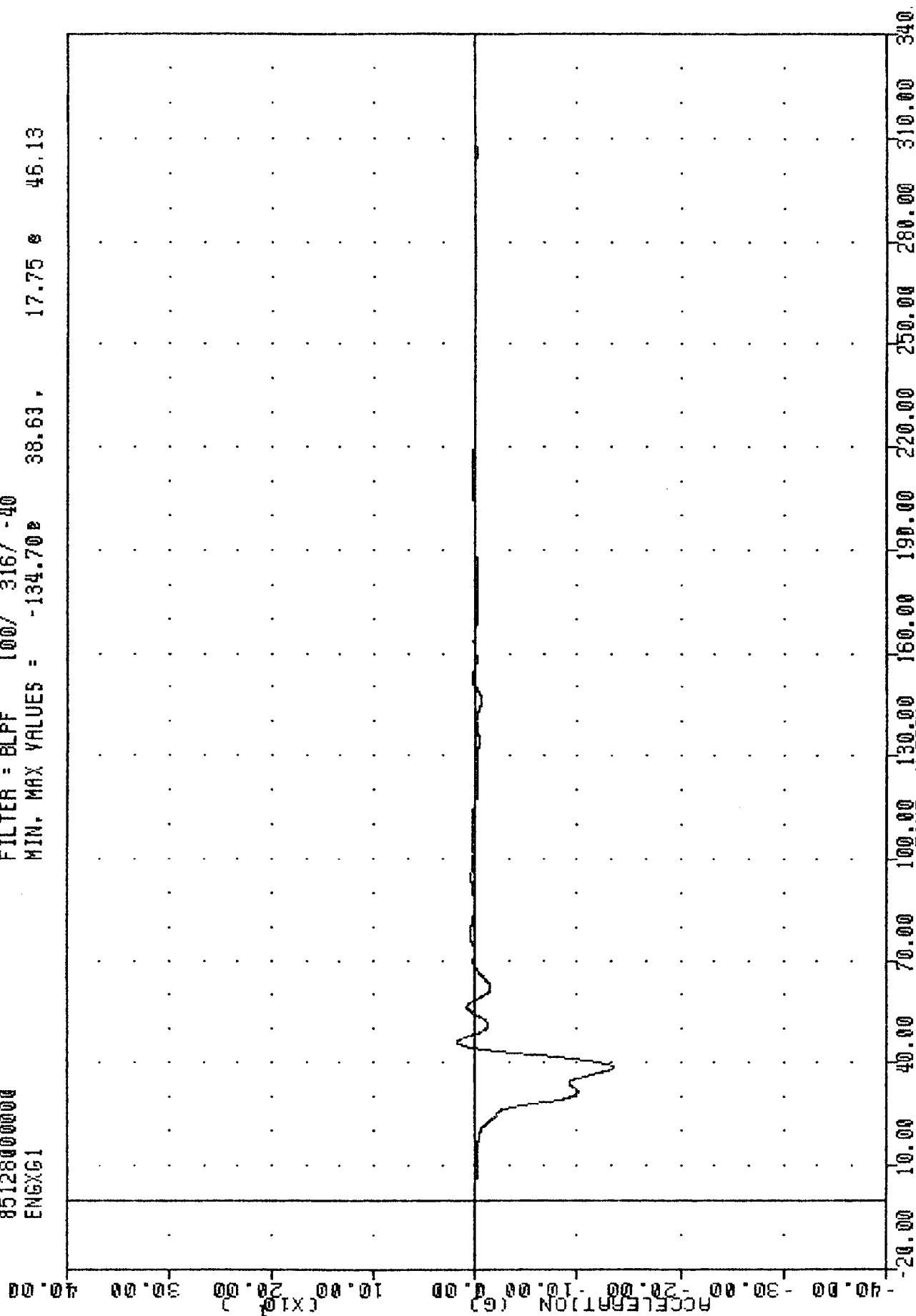


FORD MERKUR INTO LOAD CELL BARRIER
 SHOULDER BELT DISPLACEMENT INCHES

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
ENGXG1

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -134.70 38.63, 17.75 46.13

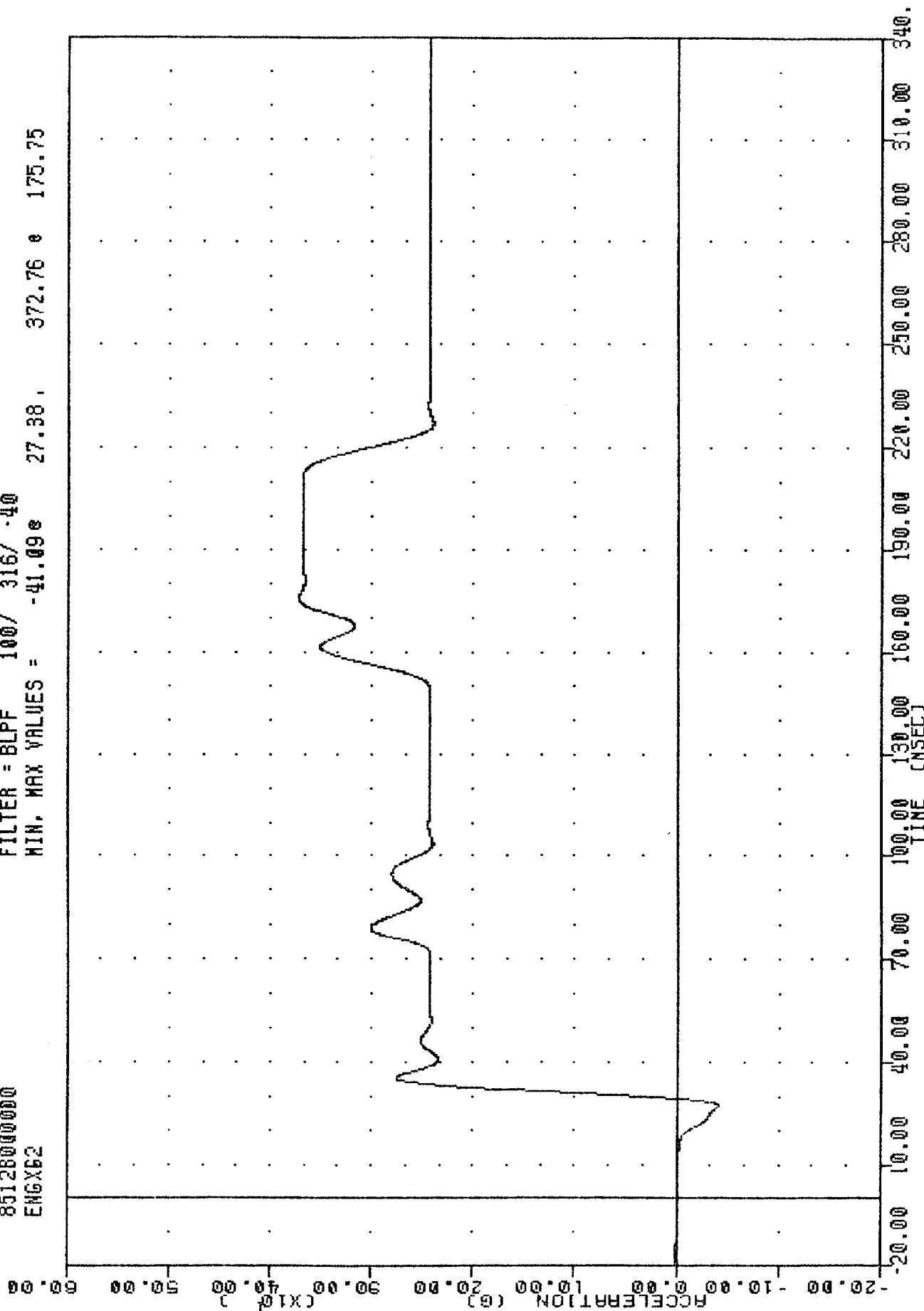


FORD MERKUR INTO LOAD CELL BARRIER
ENGINE BLOCK ACCELERATION -1 X AXIS

TAC
NEW CAR ASSESSMENT PROGRAM
851280000000
ENGXB2

PLOT DATE 14-MAY-85 10:25:03

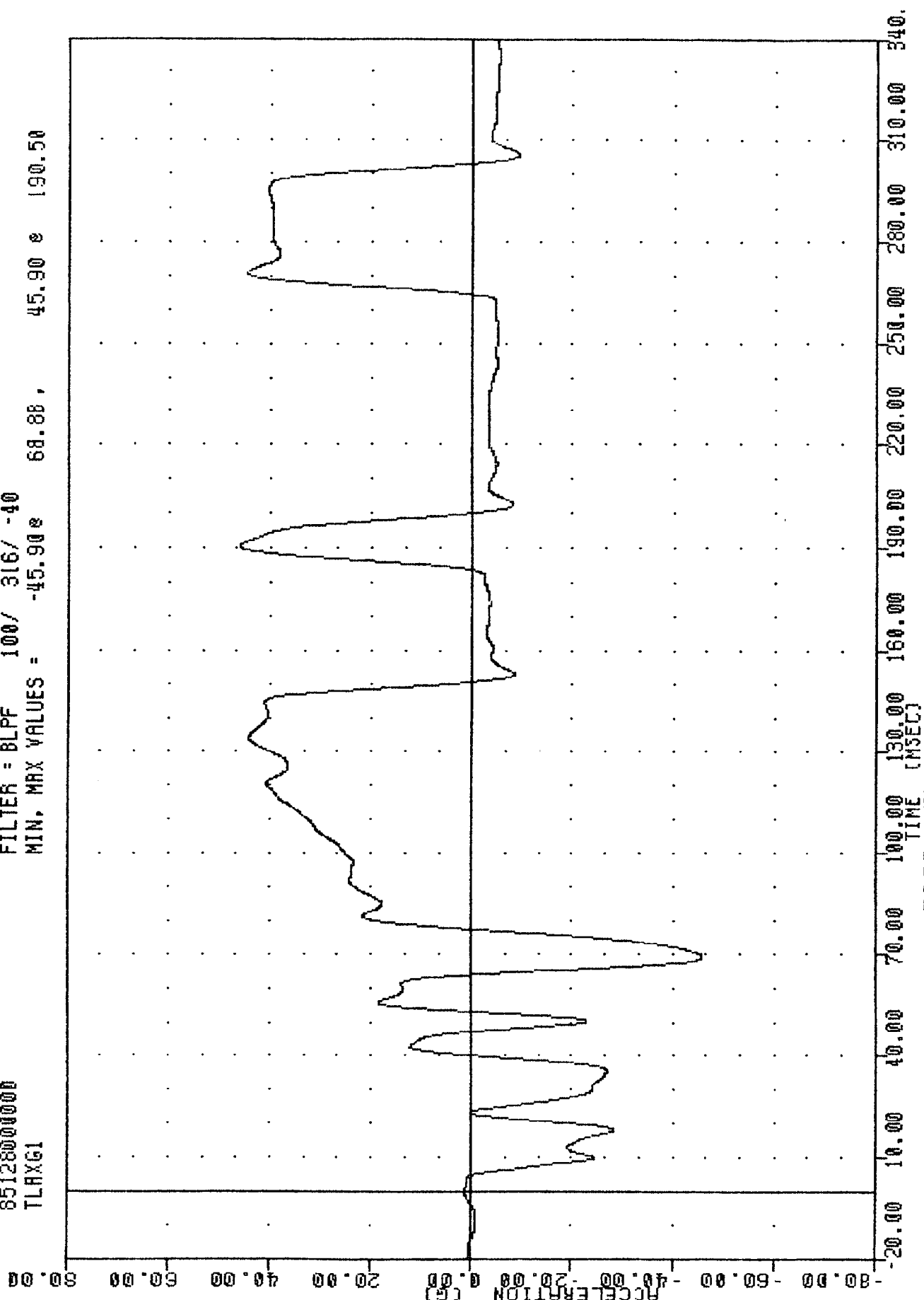
FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -41.09e 27.38, 372.76 e 175.75



TRC
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 TLXG1

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -45.90 68.88, 45.90 190.50



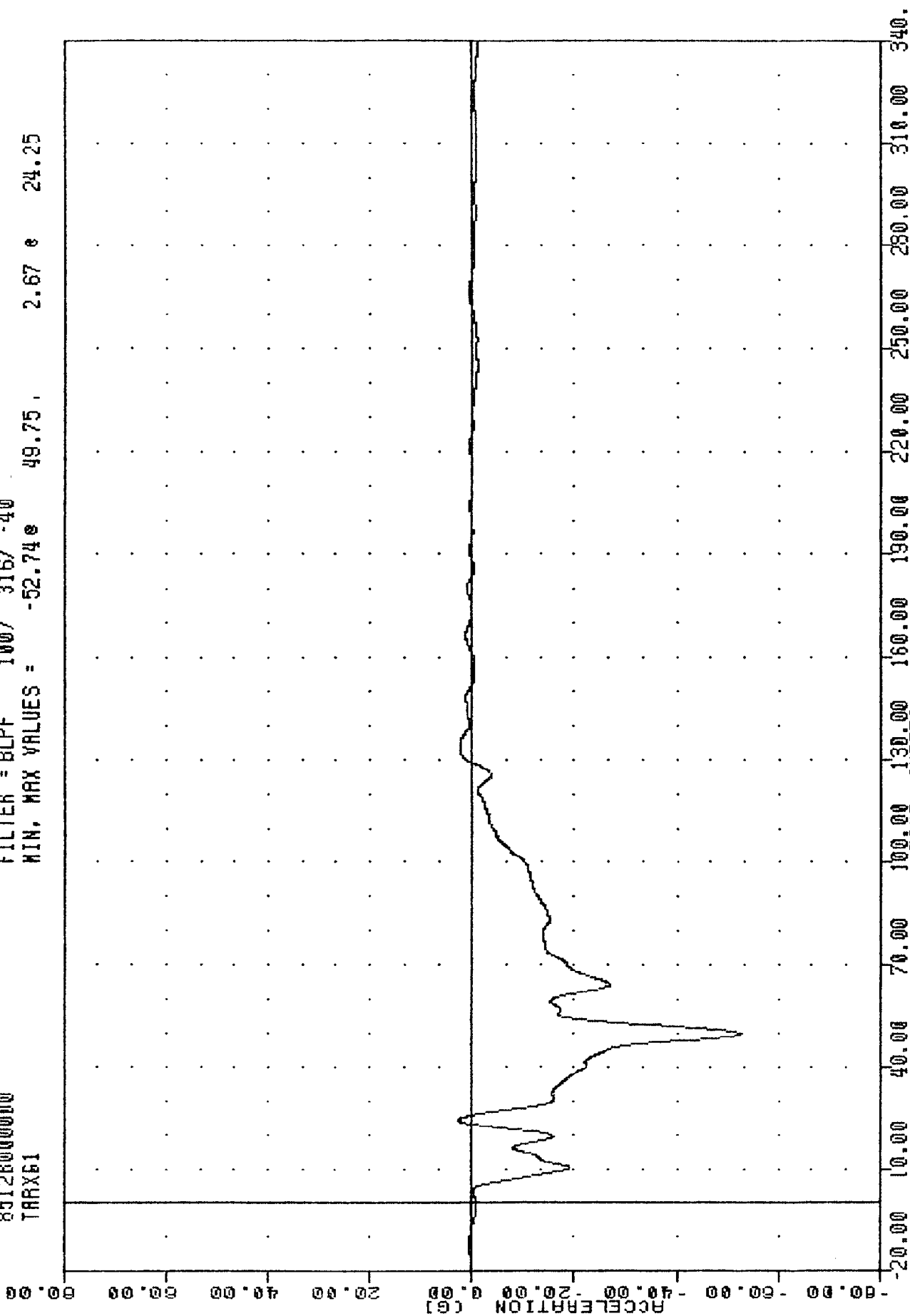
FORD MERKUR INTO LOAD CELL BARRIER
 LEFT REAR SEAT ACCELERATION X AXIS

TAC
NEW CAR ASSESSMENT PROGRAM
85128000000
TARX61

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -52.74 49.75 2.67 24.25



FORD MERKUR INTO LOAD CELL BARRIER
RIGHT REAR SEAT ACCELERATION Y AXIS

TRC , 850508
NEW CAR ASSESSMENT PROGRAM

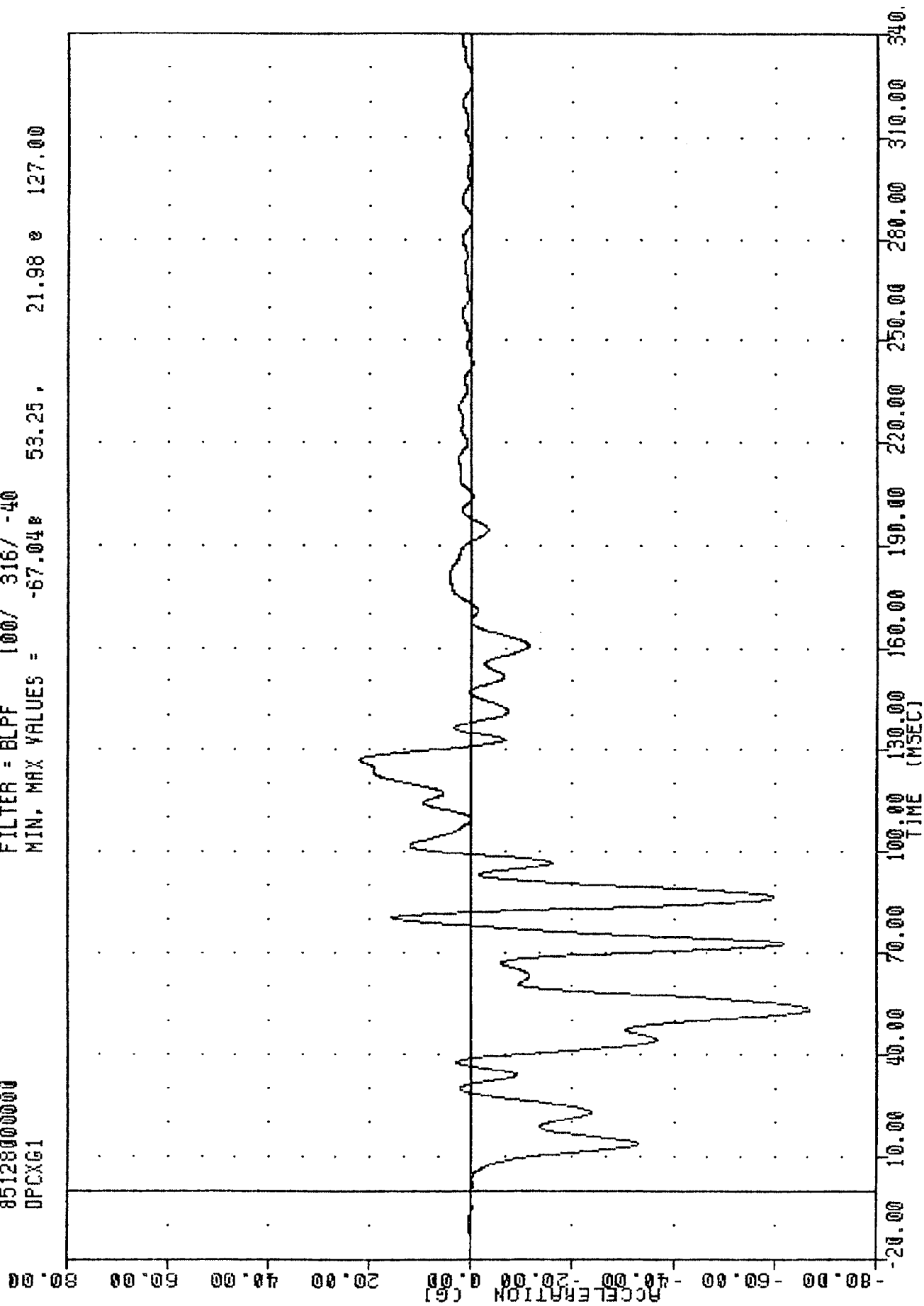
85128000000

DPCXG1

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -67.048 53.25, 21.98 e 127.00

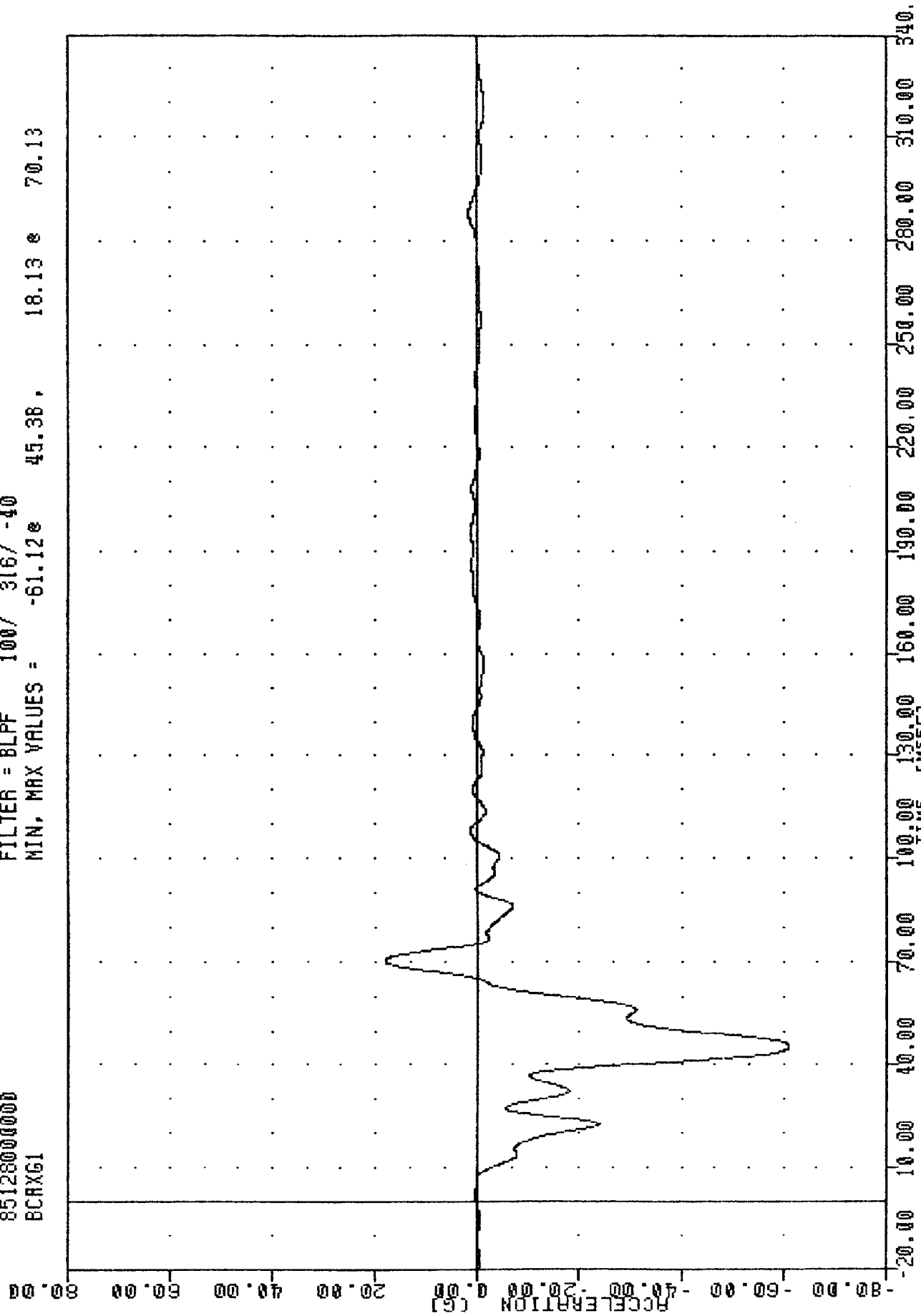


FORD MERKUR INTO LOAD CELL BARRIER
NASH PANFI CENTER ACCELERATION X AXIS

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
BCRXG1

PLOT DATE 14-MAY-85 10:25:03

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -61.12e 45.38e 18.13e 70.13

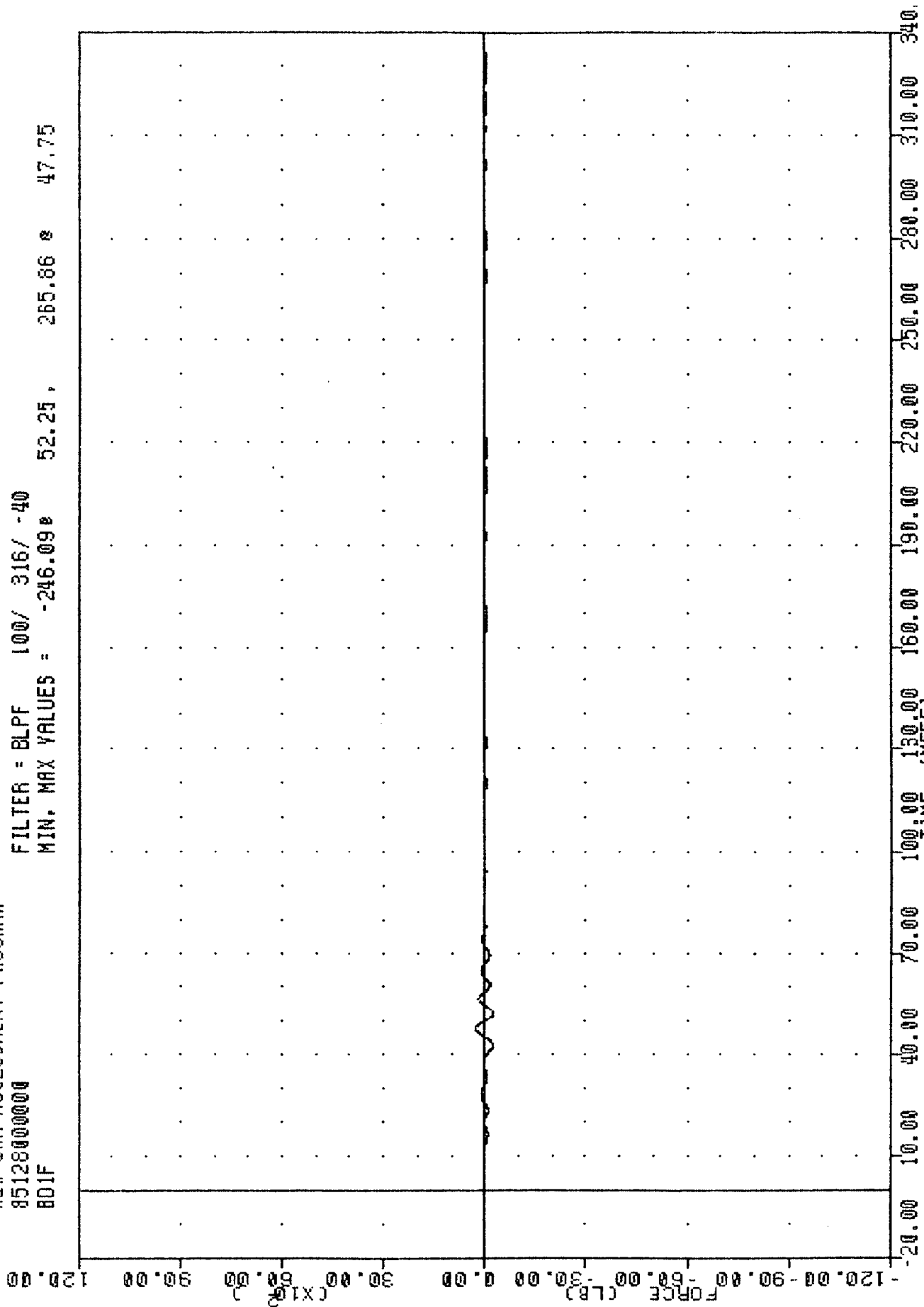


FORD MERKUR INTO LOAD CELL BARRIER
RIGHT BRAKE CALIPER ACCELERATION X AXIS

TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 801F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -246.09 52.25, 265.86 47.75

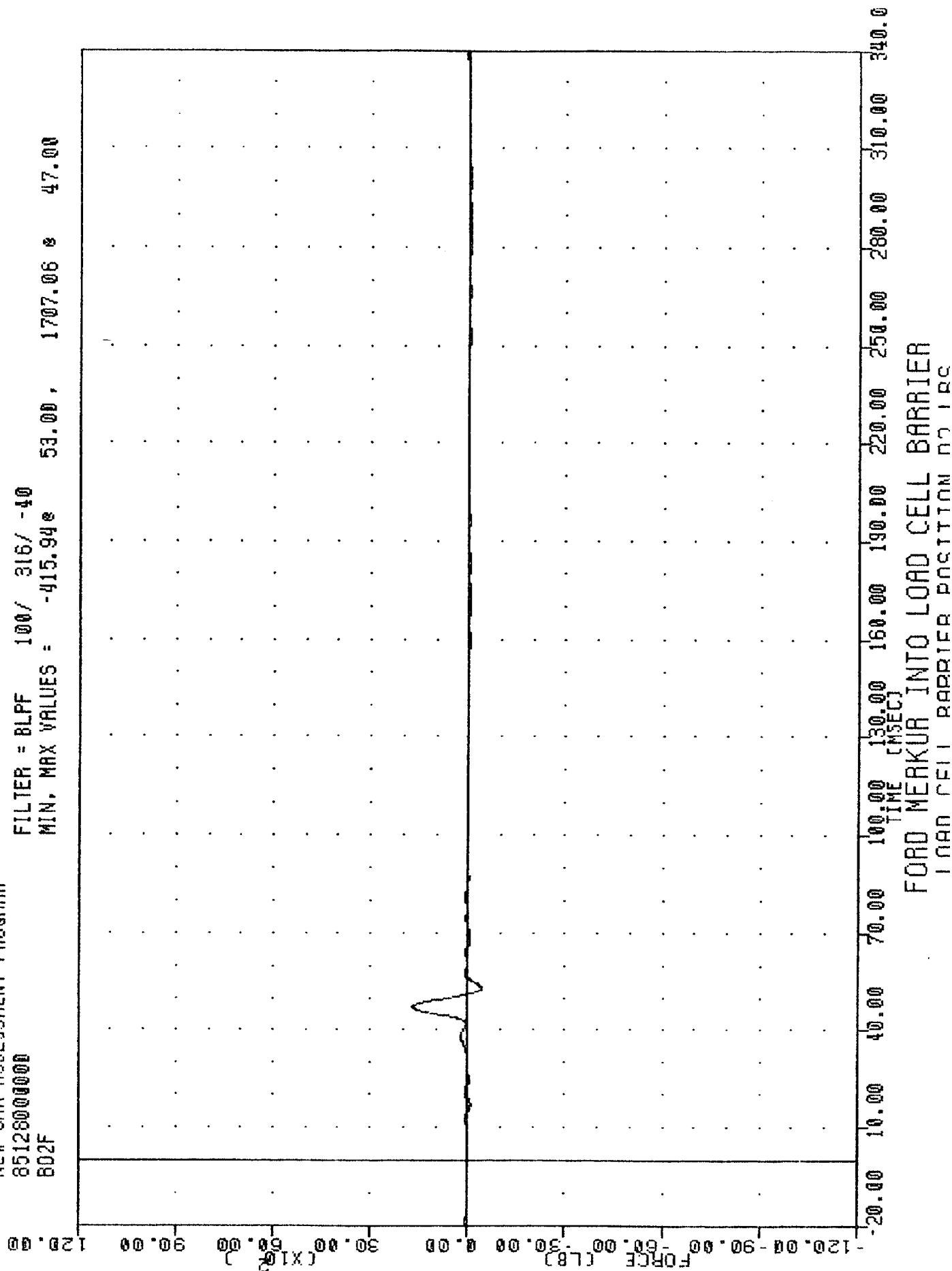


FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION 011RS

TRC , 850508
 NEW CHR ASSESSMENT PROGRAM
 851280000000
 802F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -415.94s 53.00, 1707.06 s 47.00

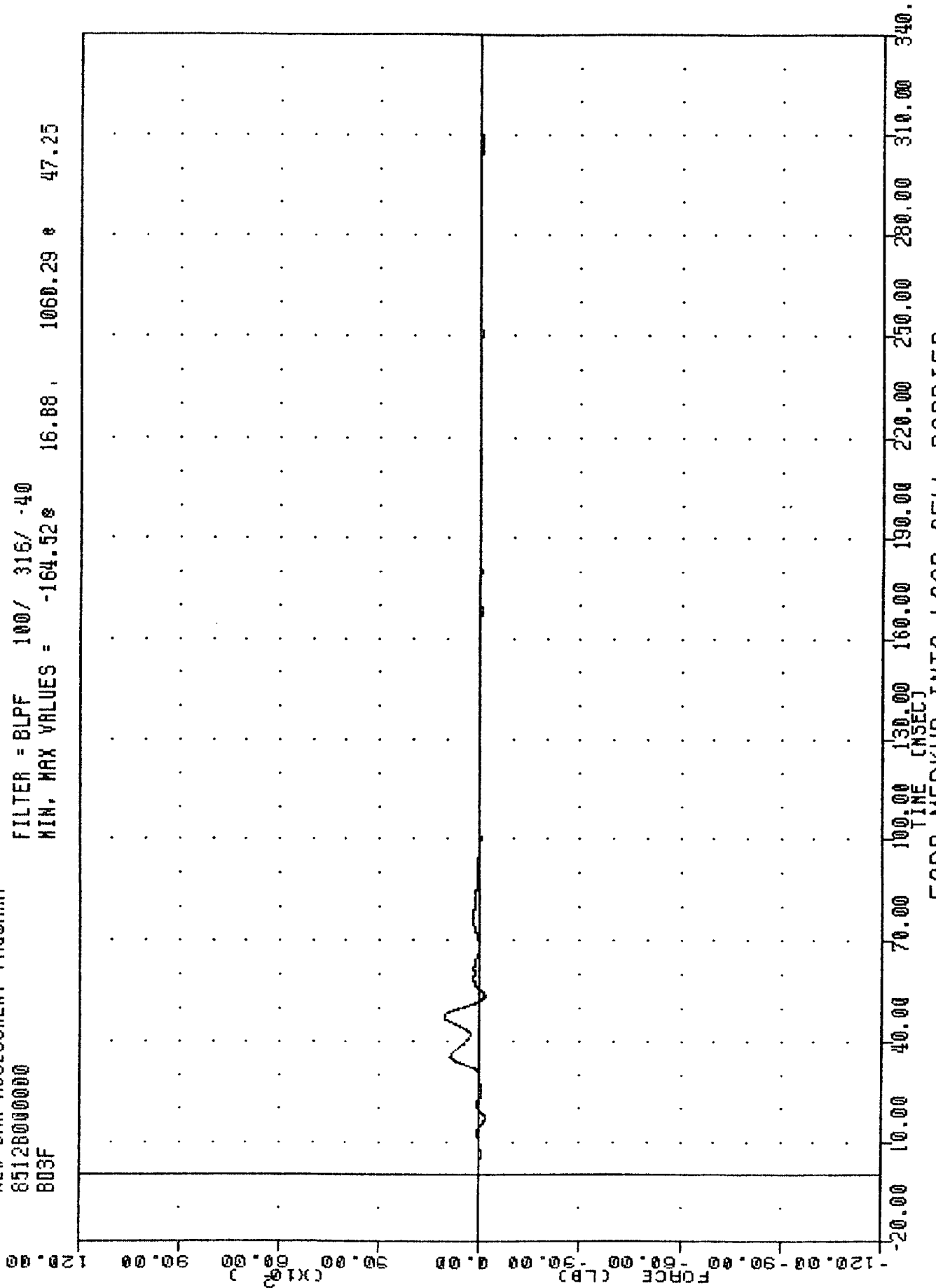


FORD MERKUR INTO LOAD CELL BARRIER
 INAN CELL BARRIER POSITION 071RC

TAC
NEW CAR ASSESSMENT PROGRAM
85128000000
B03F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -164.52 16.88 1060.29 47.25



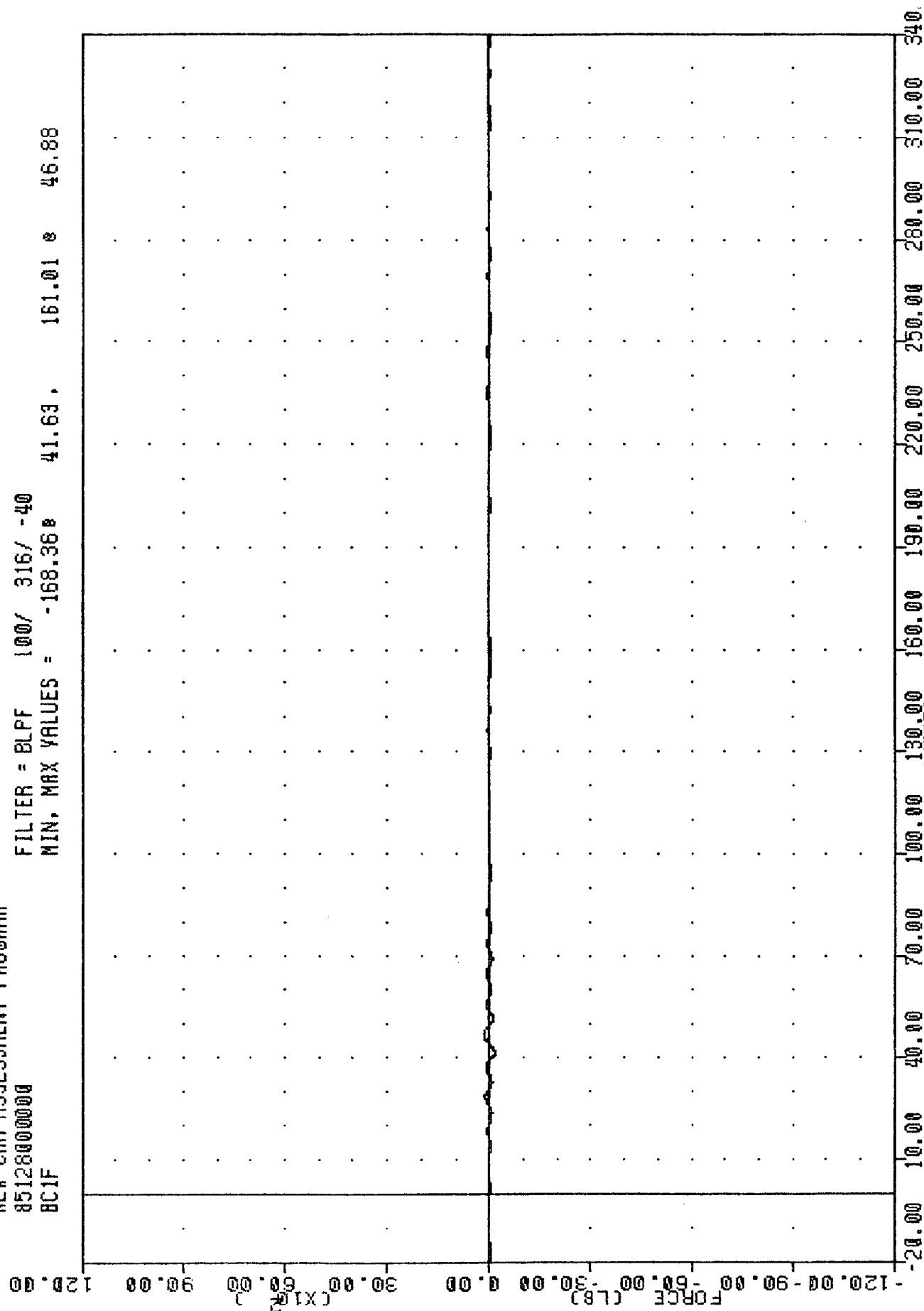
FORD MERCURY INTO LOAD CELL BARRIER
IN AN OFF BARRIER POSITION 031RS

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
BC1F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -168.36 41.63, 161.01 46.88

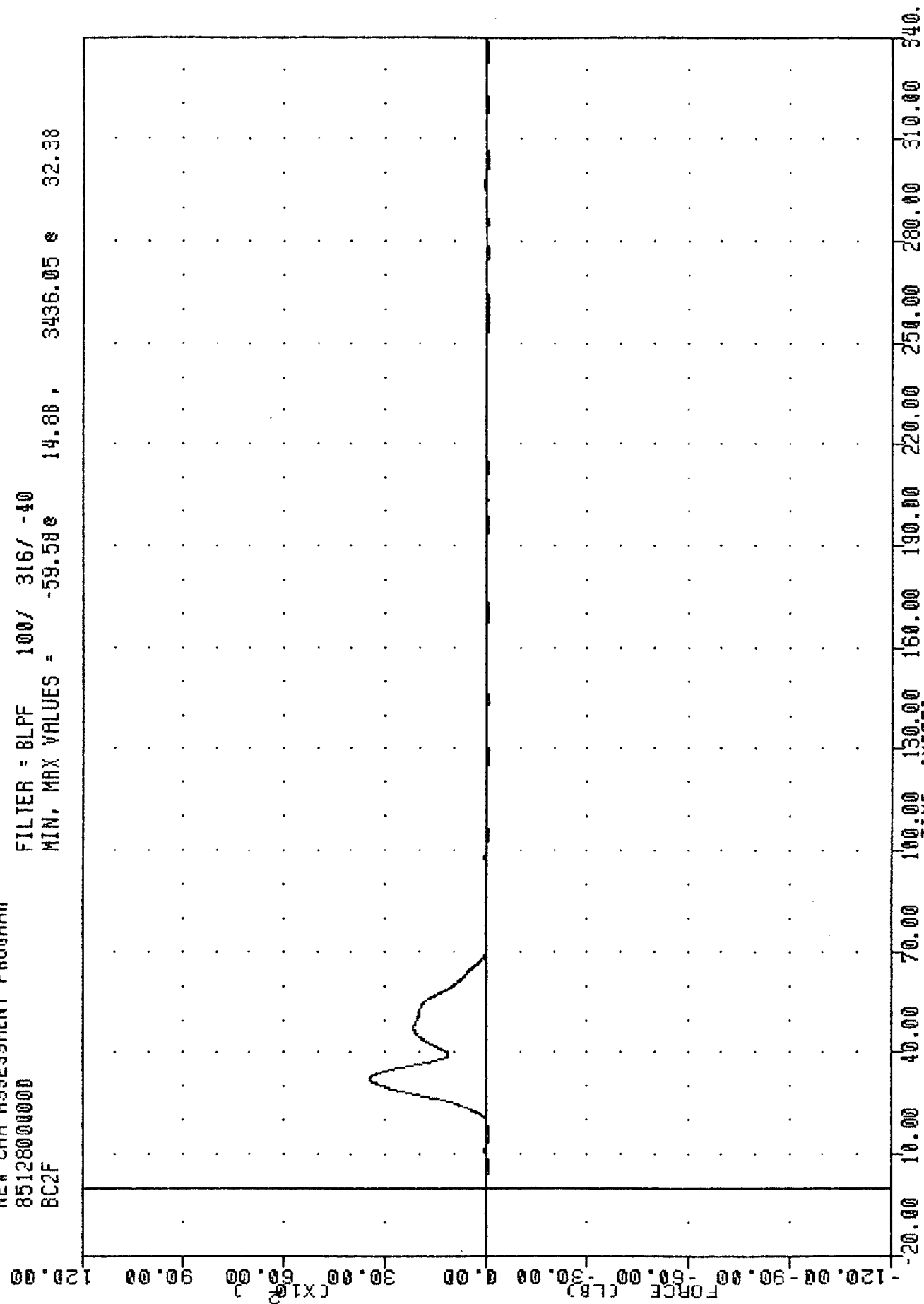


FORD MERKUR INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C1 LBS

TRC
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BC2F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -59.58 14.88, 3436.05 32.38

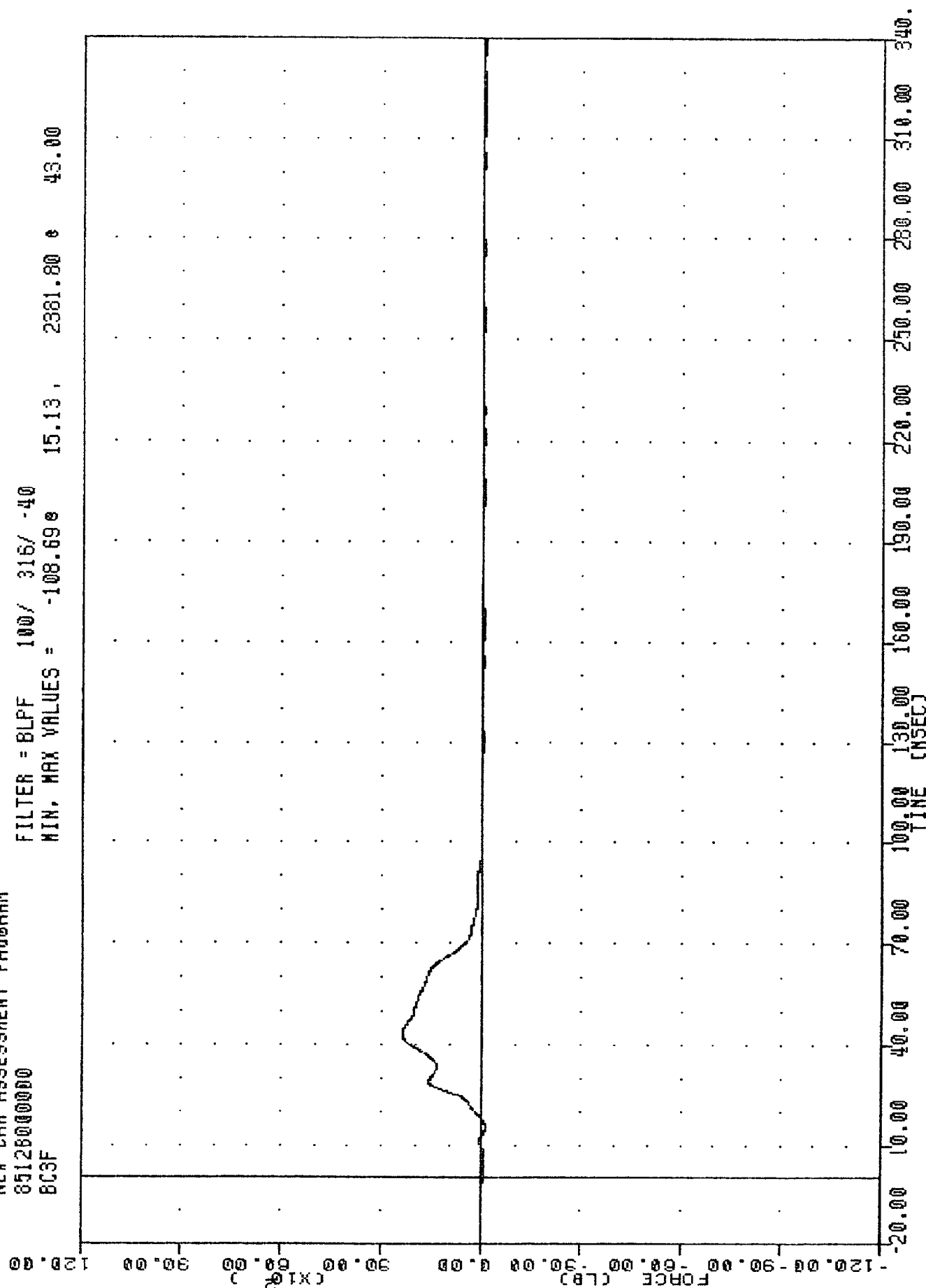


FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION 171RS

TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BC3F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -108.698 15.13, 2381.80 43.00



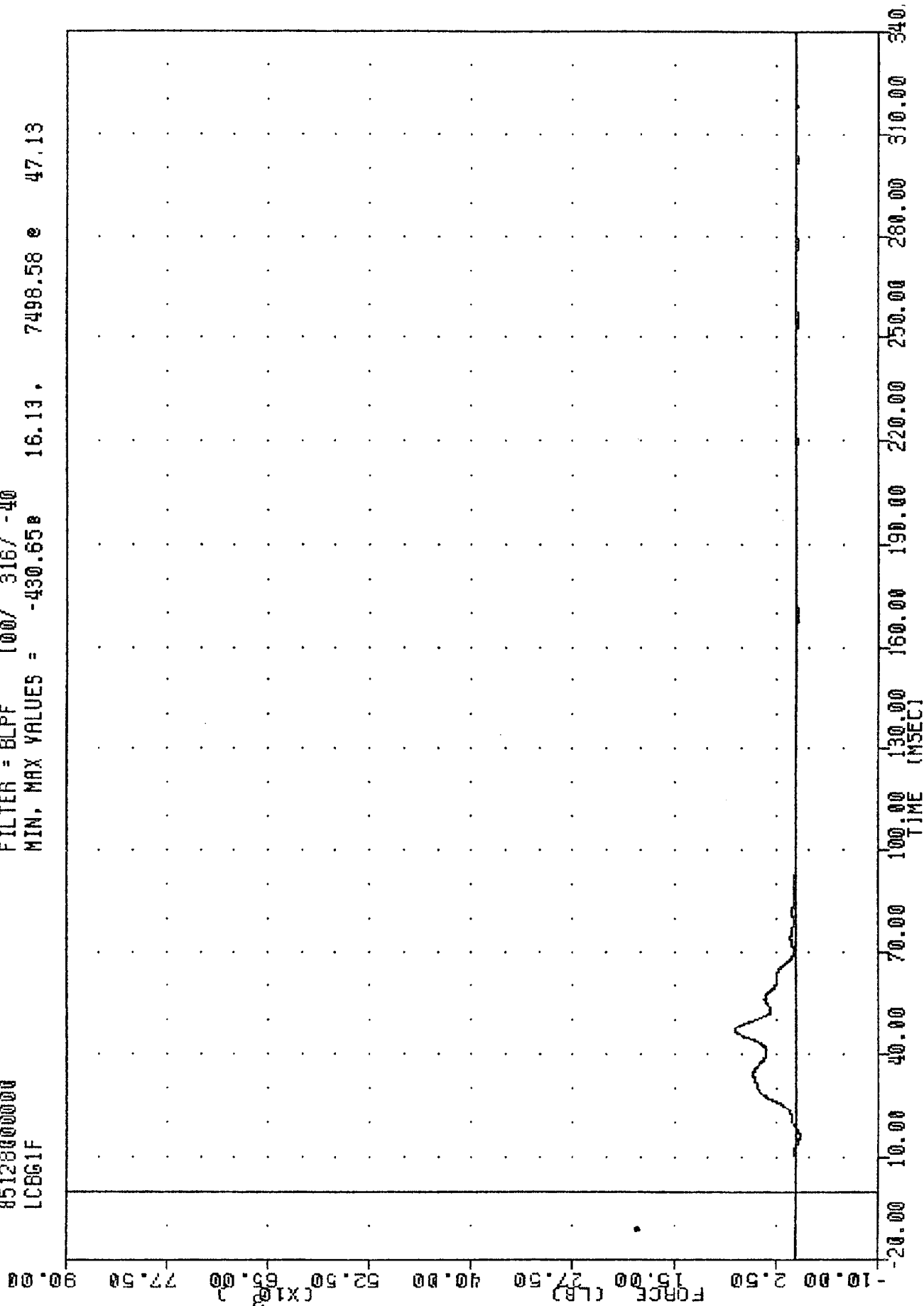
FORD MERCUR INTO LOAD CELL BARRIER
 INAN CELL BARRIER POSITION 03108

TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 LCBG1F

PLOT DATE 14-MAY-85 10:17:37

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -430.658 16.13, 7498.58 e 47.13



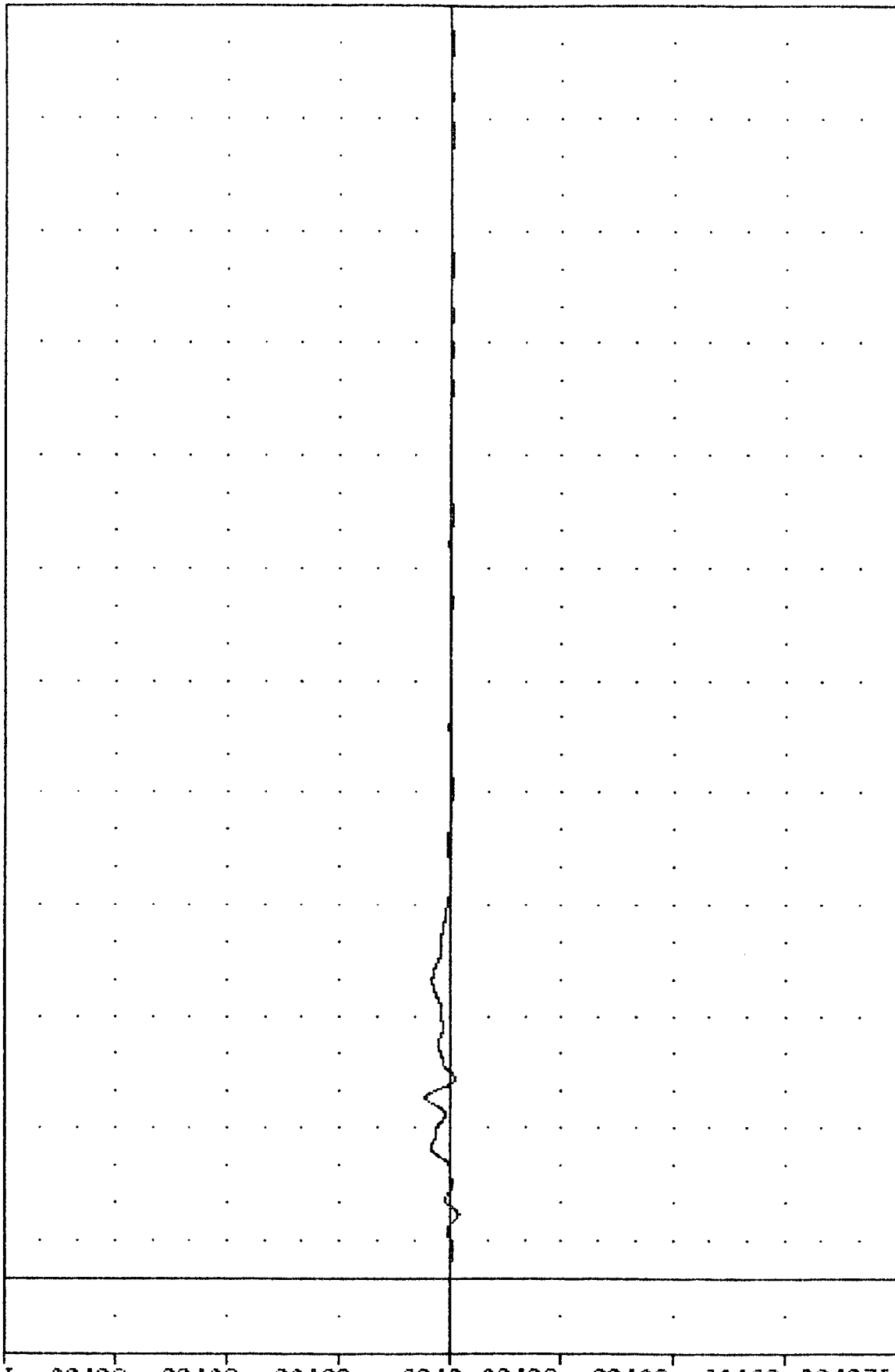
FORD MERCUR INTO LOAD CELL BARRIER
 1 NON CELL DODGED ROAD 11 FORCE TOTAL

TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 804F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -209.60 16.75, 686.15 48.25

120.00
 90.00
 60.00
 30.00
 0.00
 -30.00
 -60.00
 -90.00
 -120.00



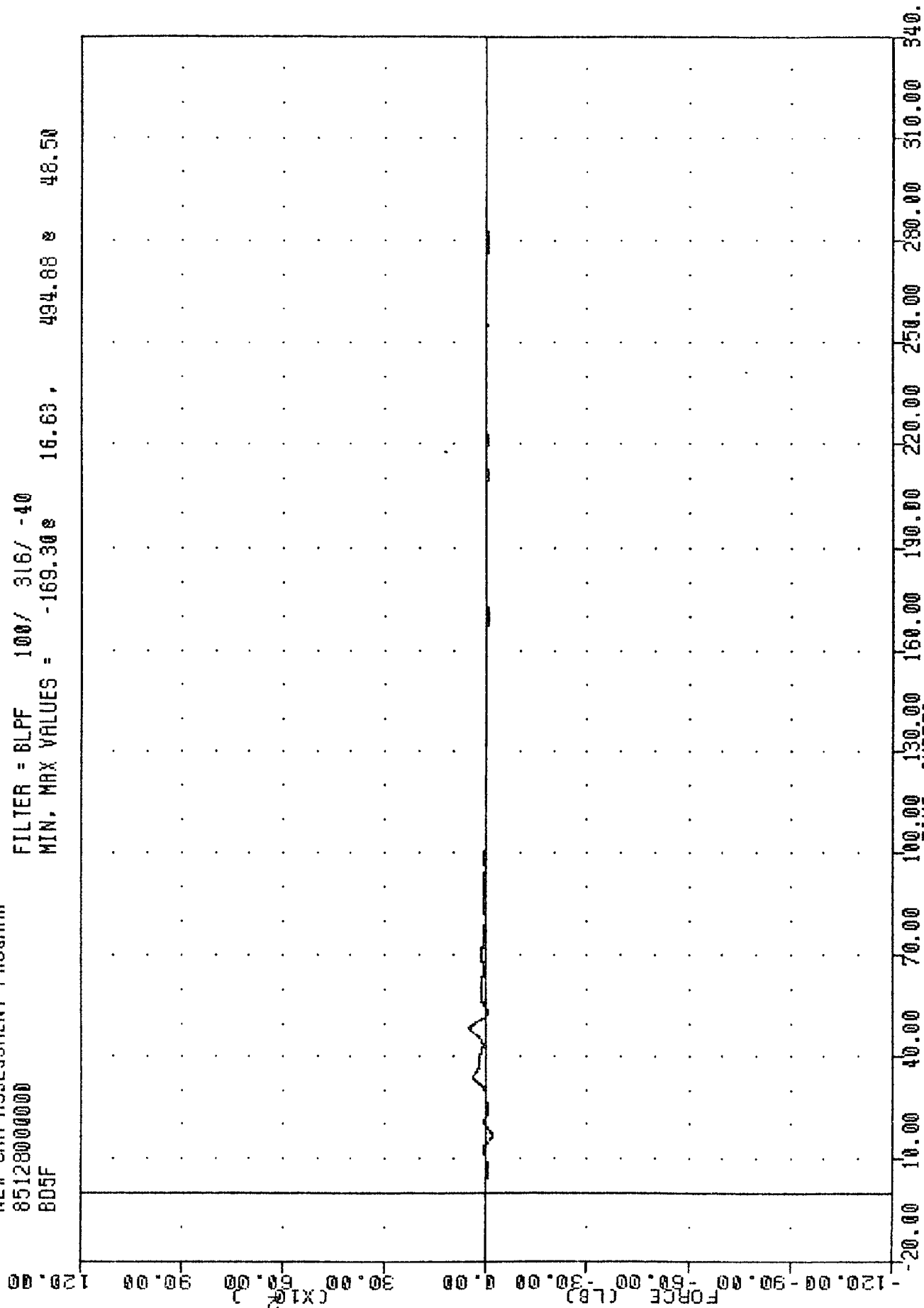
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

TIME (MSEC)
 FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL POSITION 111 DC

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
805F

PLOT DATE 14-MAY-85 10:29:04

FILTER = 8LPF 100/ 316/ -40
MIN. MAX VALUES = -169.30 494.88 48.50

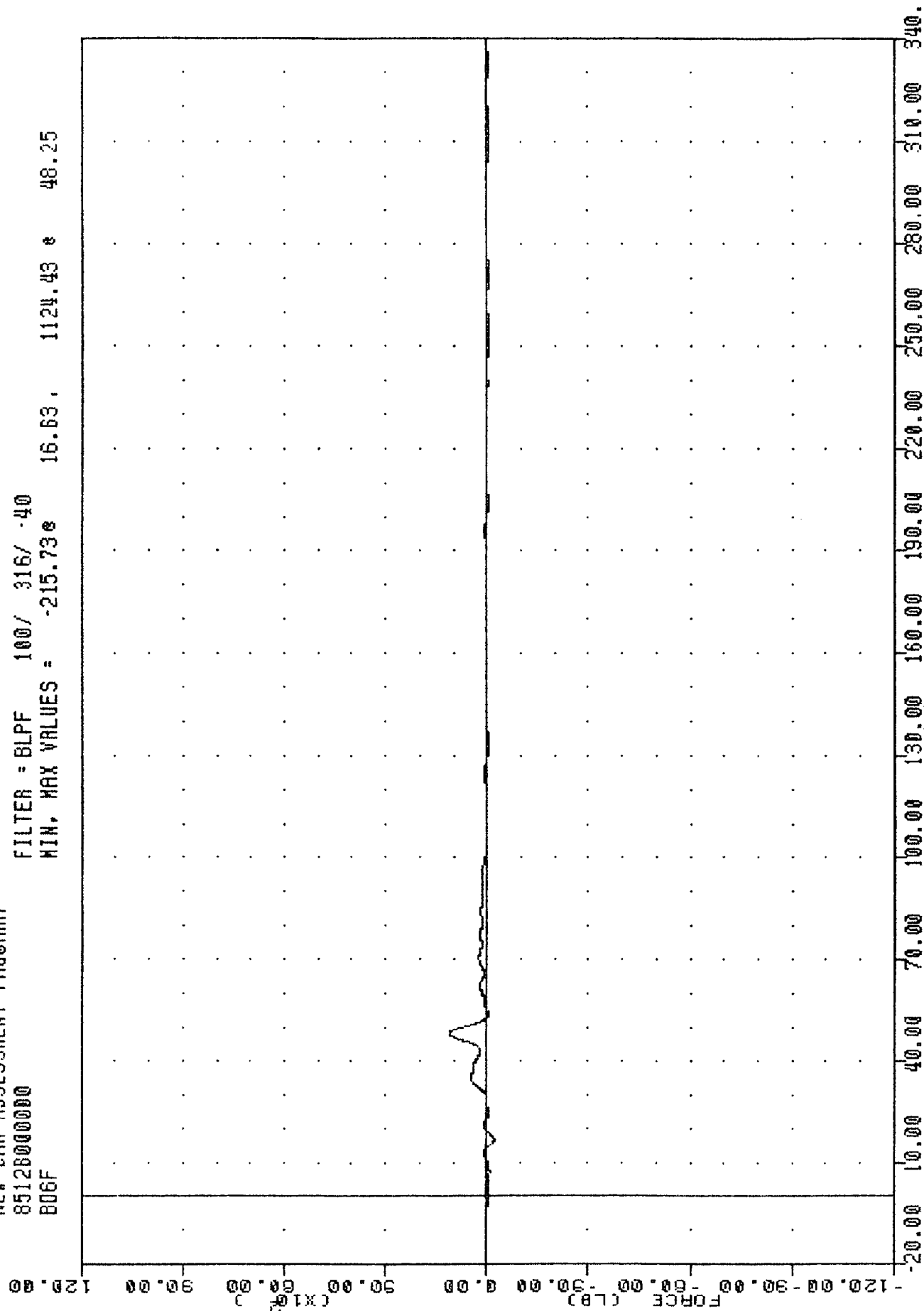


FORD MERKUR INTO LOAD CELL BARRIER
IN AN CELL BARRIER POSITION 051RS

TAC 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 B06F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -215.73 16.63, 1124.43 48.25



FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION 061RS

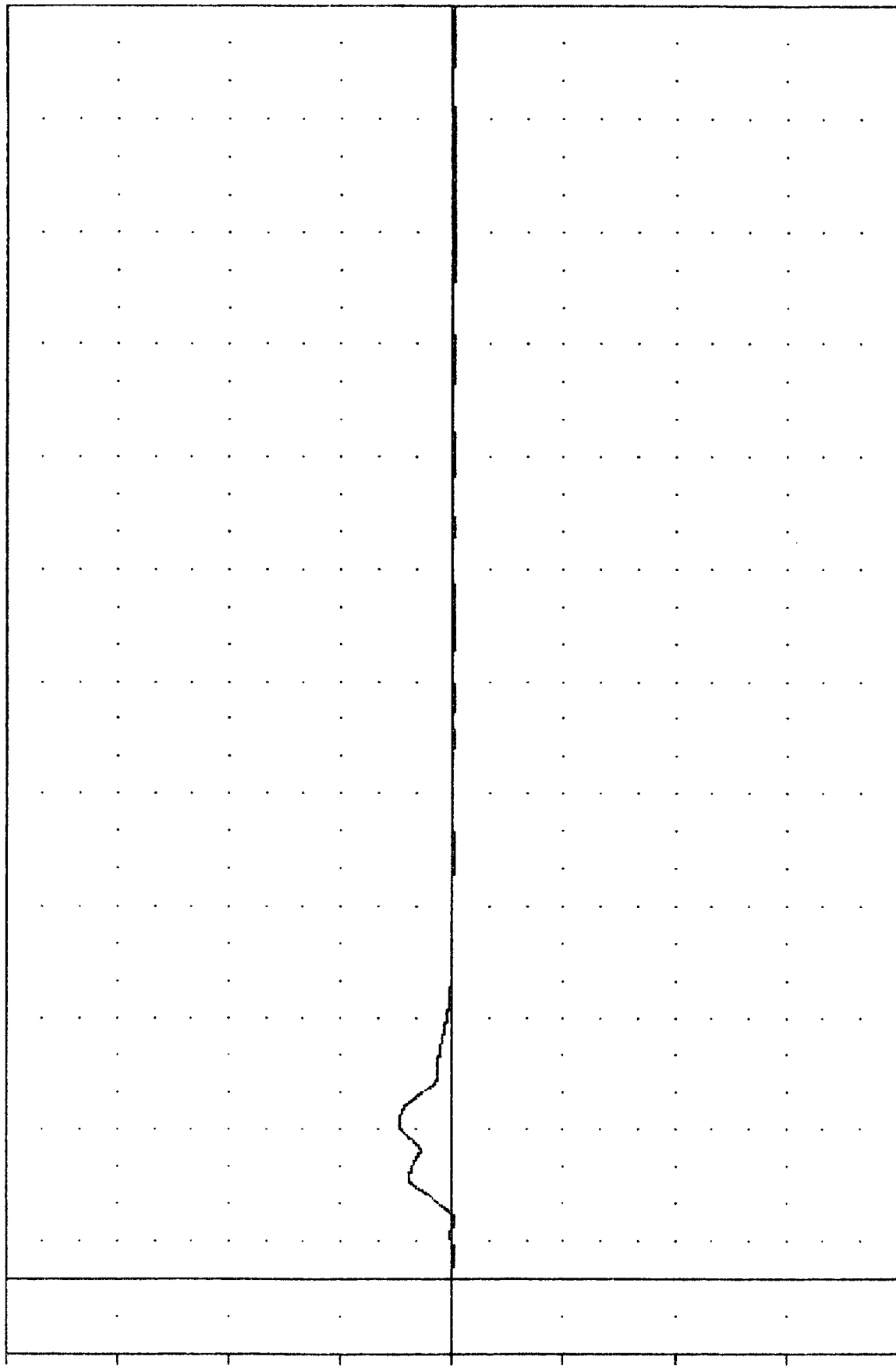
TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BC4F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -79.36 15.13, 1435.83 41.50

120.00
 90.00
 60.00
 30.00
 0.00
 -30.00
 -60.00
 -90.00
 -120.00

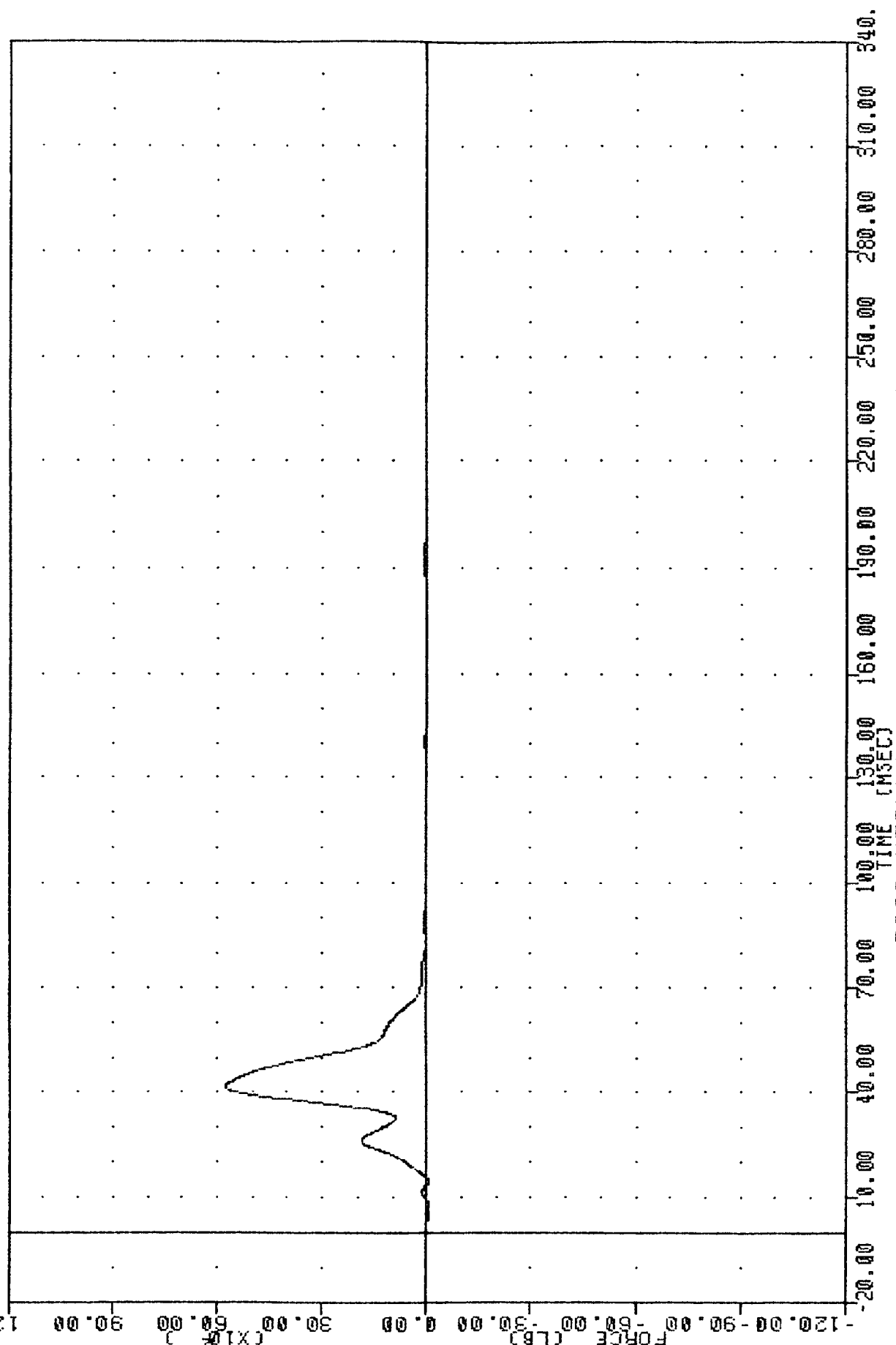


FORD MERKUR INTO LOAD CELL BARRIER
 IN AN CELL BARRIER POSITION C41RS

TRC
 NEW CAR ASSESSMENT PROGRAM
 85126001000
 BC5F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -49.16 6.13, 5753.05 41.63

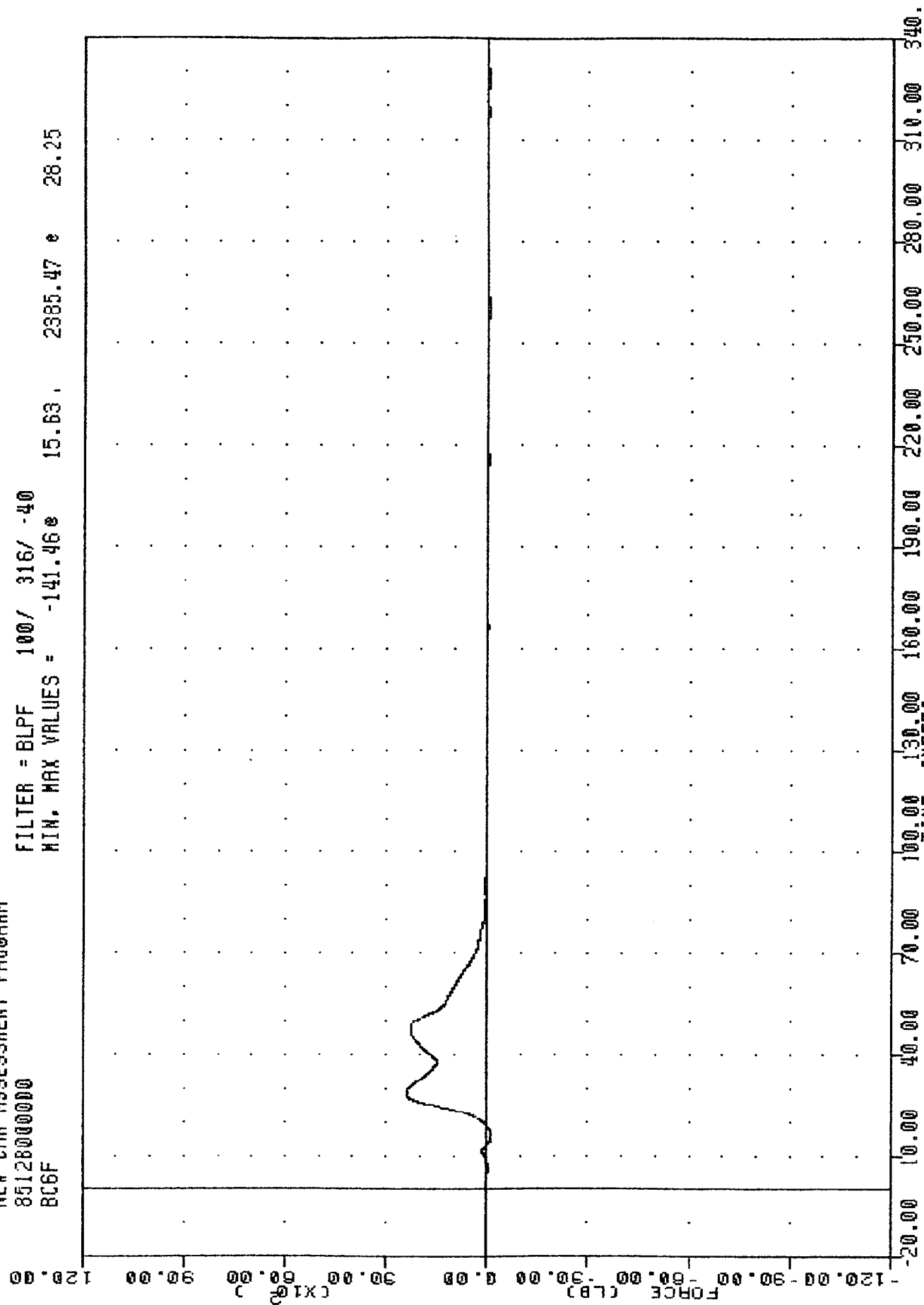


FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION C5 LBS

TAC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BC6F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -141.46 e 2385.47 e 28.25



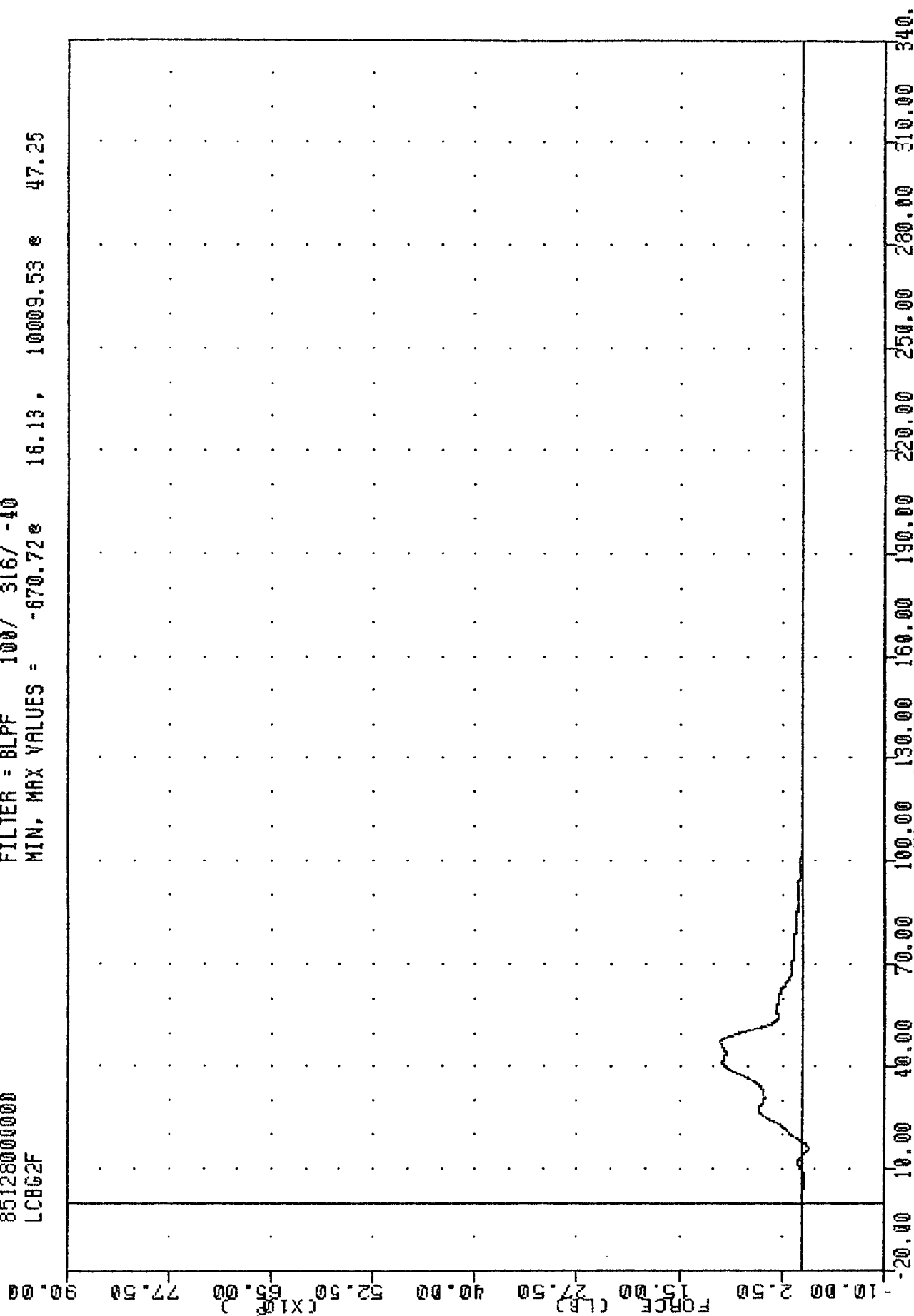
FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION 66 IRS

TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 851280000000
 LC8G2F

PLOT DATE 14-MAY-85 10:17:37

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -670.72e 16.13, 10009.53 e 47.25

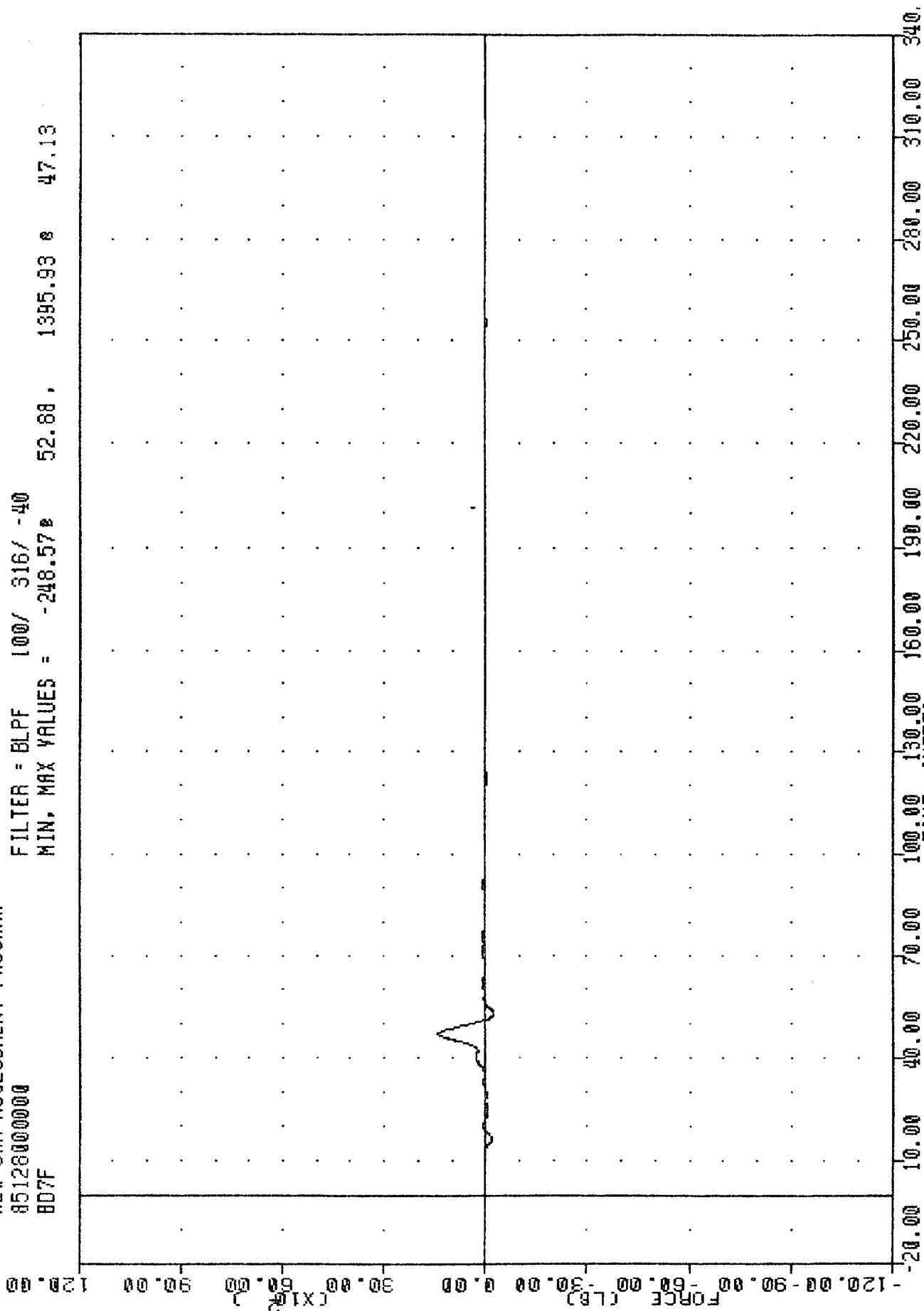


FORD MERKUR INTO LOAD CELL BARRIER
 1000 CELL BARRIER GROUP 2 FORCE TOTAL

TRC 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BD7F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -248.57 52.88, 1395.93 47.13

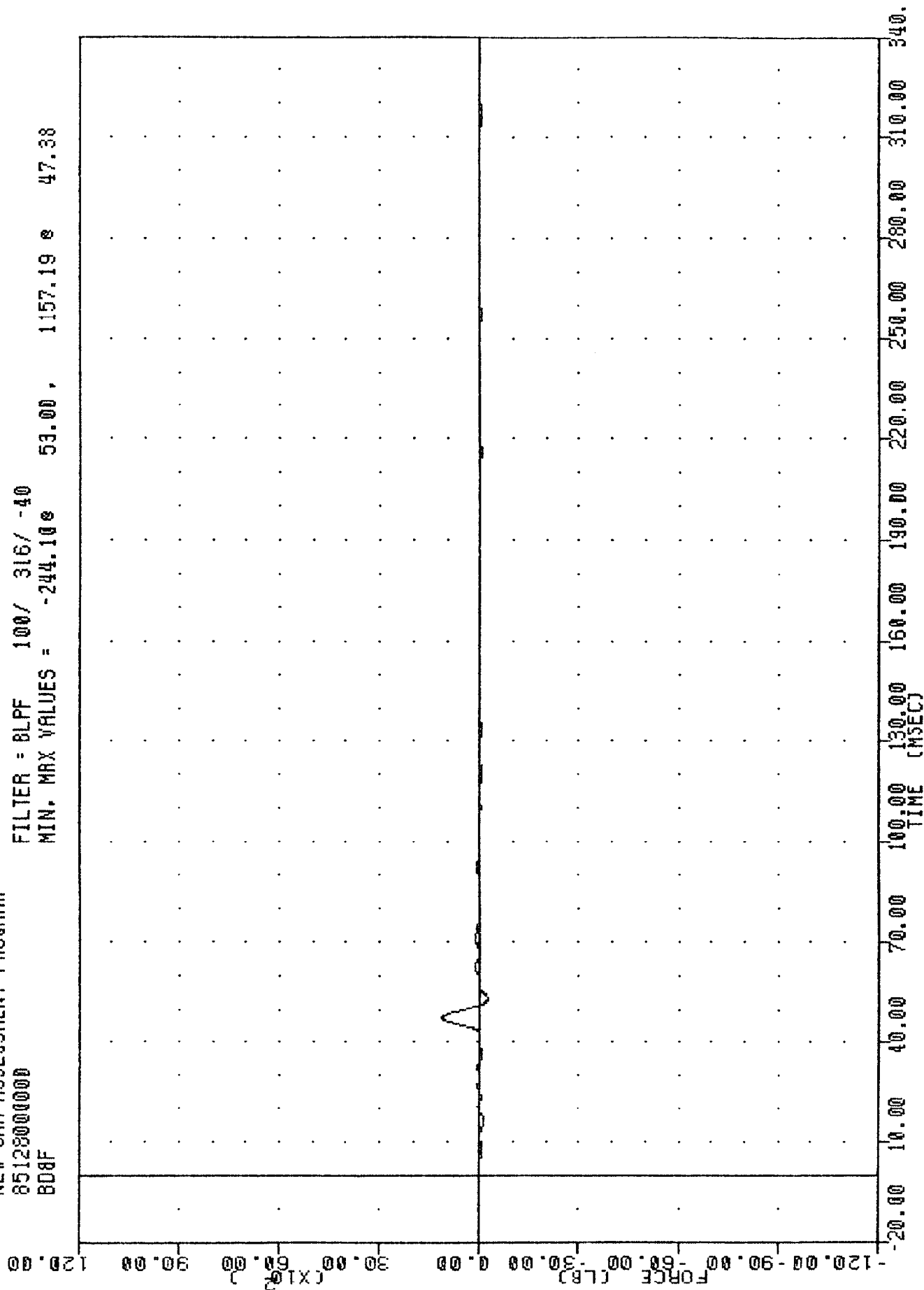


FORD MERKUR INTO LOAD CELL BARRIER
 INAN CELL BARRIER POSITION 07 IRS

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
BD8F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -244.10e 53.00, 1157.19 e 47.38



FORD MERKUR INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION NR 1RS

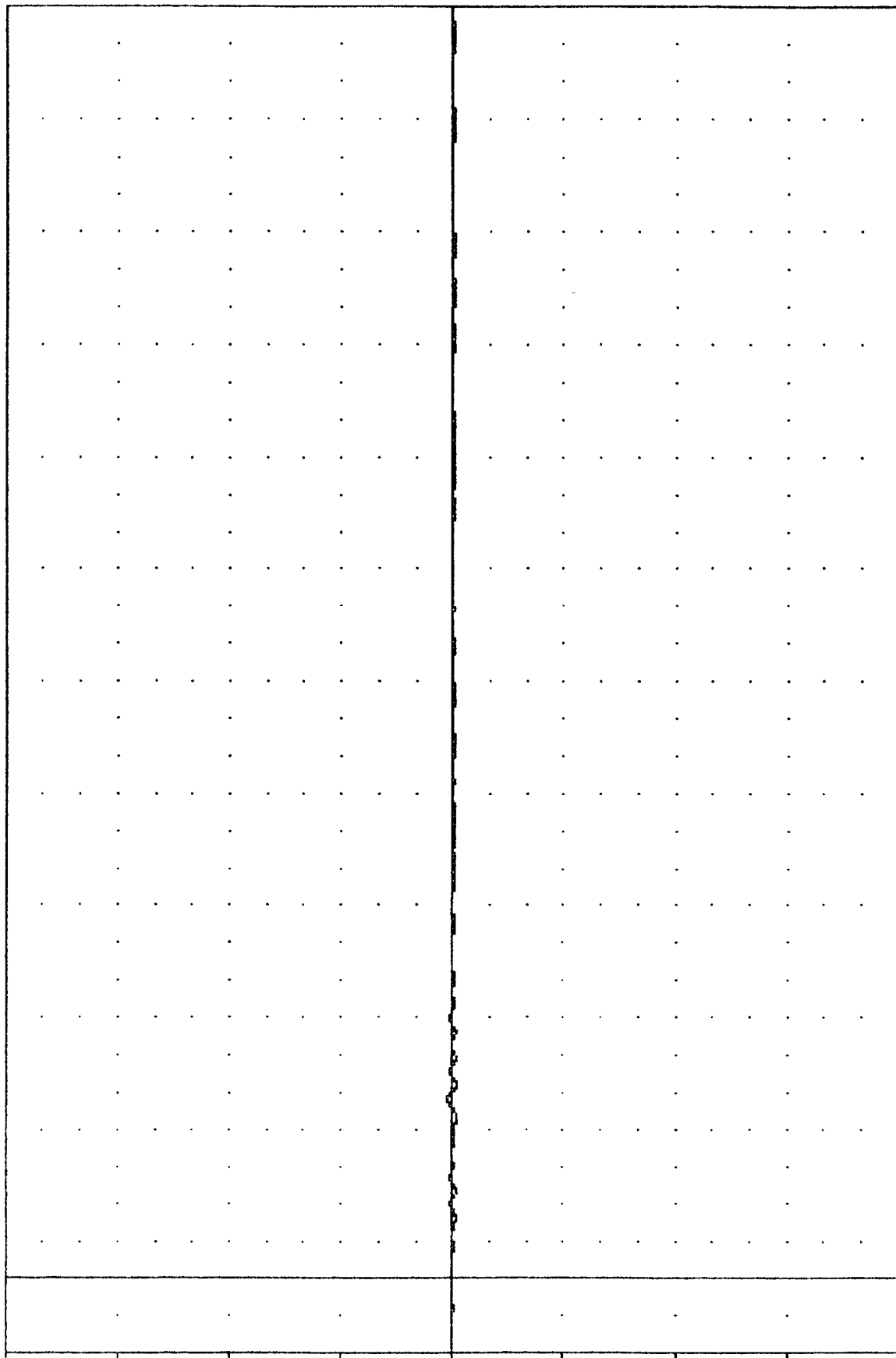
TAC
NEW CAR ASSESSMENT PROGRAM
85120000000
809F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -129.33e 52.13, 141.05 e 48.25

120.00
90.00
60.00
30.00
0.00
-30.00
-60.00
-90.00
-120.00



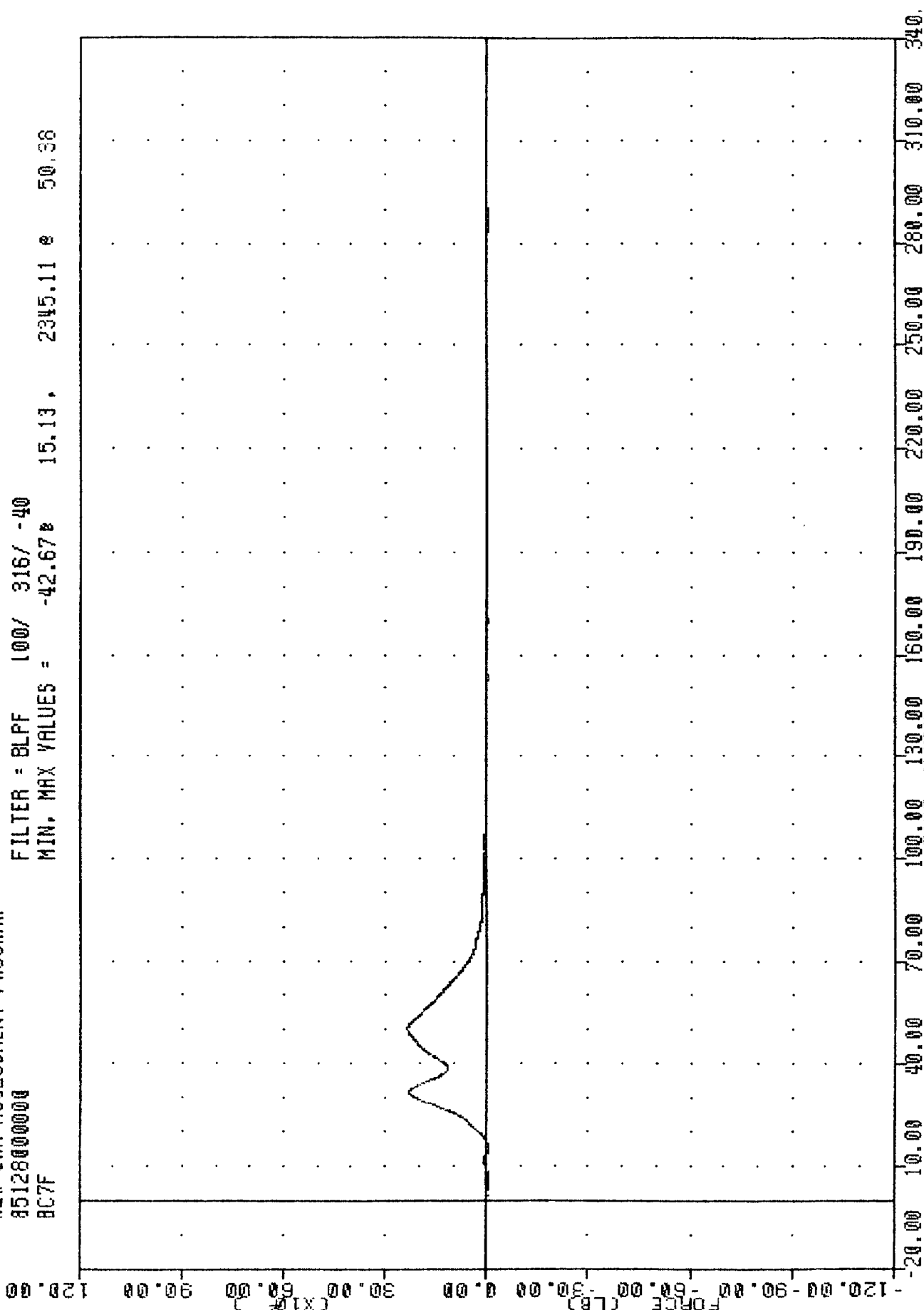
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

FORD MERKUR INTO LOAD CELL BARRIER
INAD CELL BARRIER POSITION 091RS

TRC
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BC7F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -42.67 15.13, 2345.11 50.38

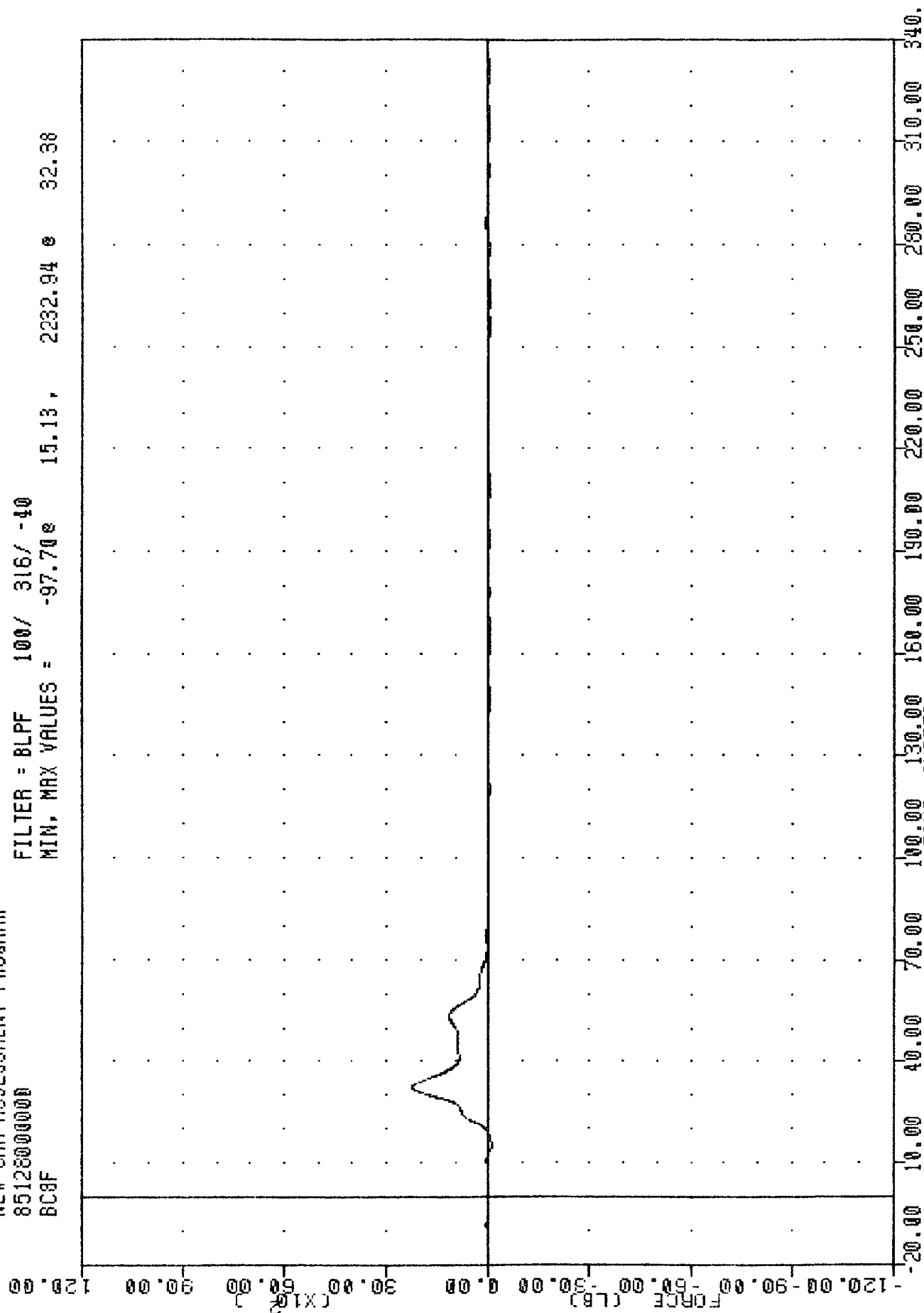


FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION C7 LBS

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
BC8F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -97.70 2232.94 32.38

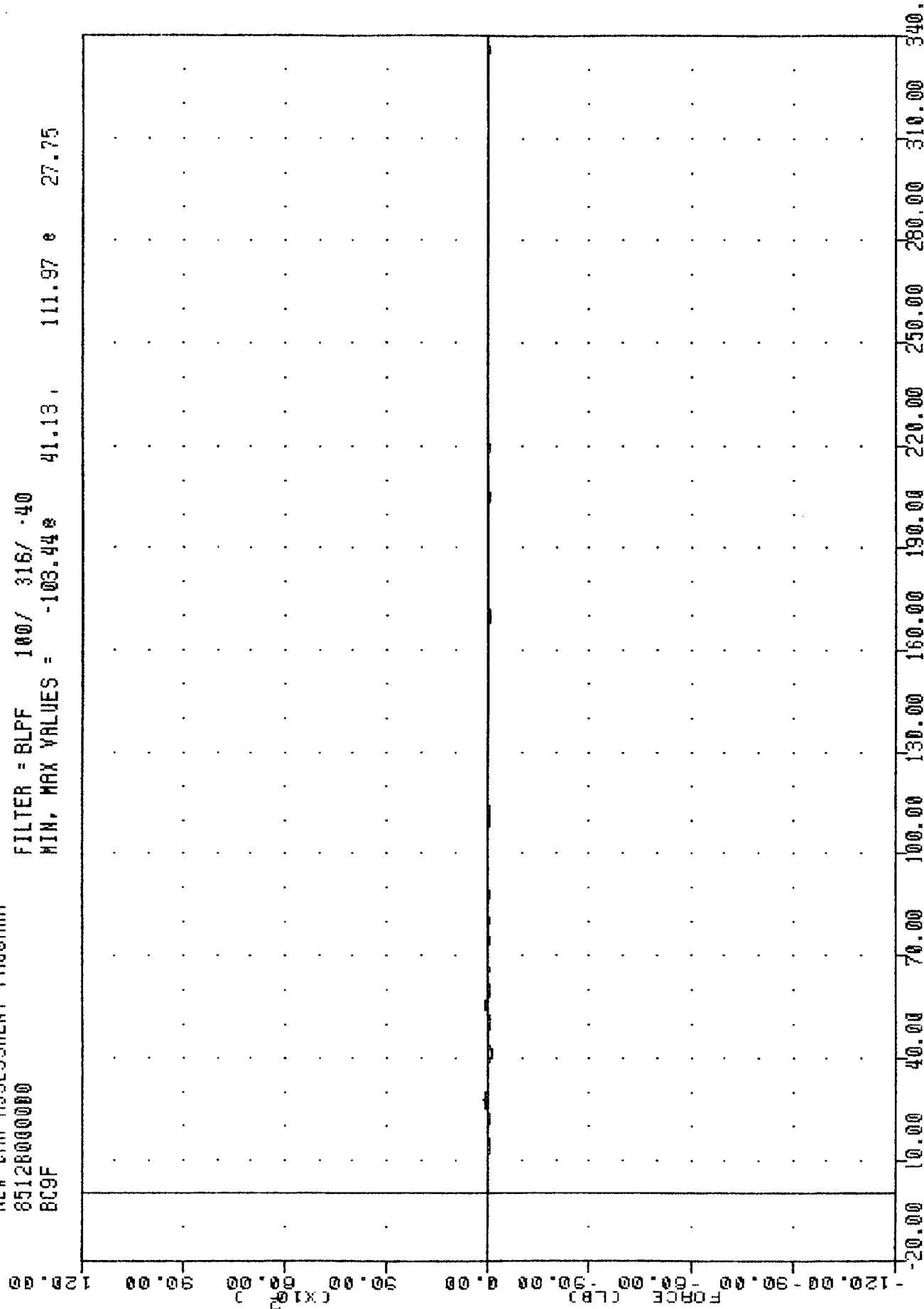


FORD MERKUR INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C8 LBS

TAC 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BC9F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ .40
 MIN, MAX VALUES = -103.44 41.13, 111.97 e 27.75

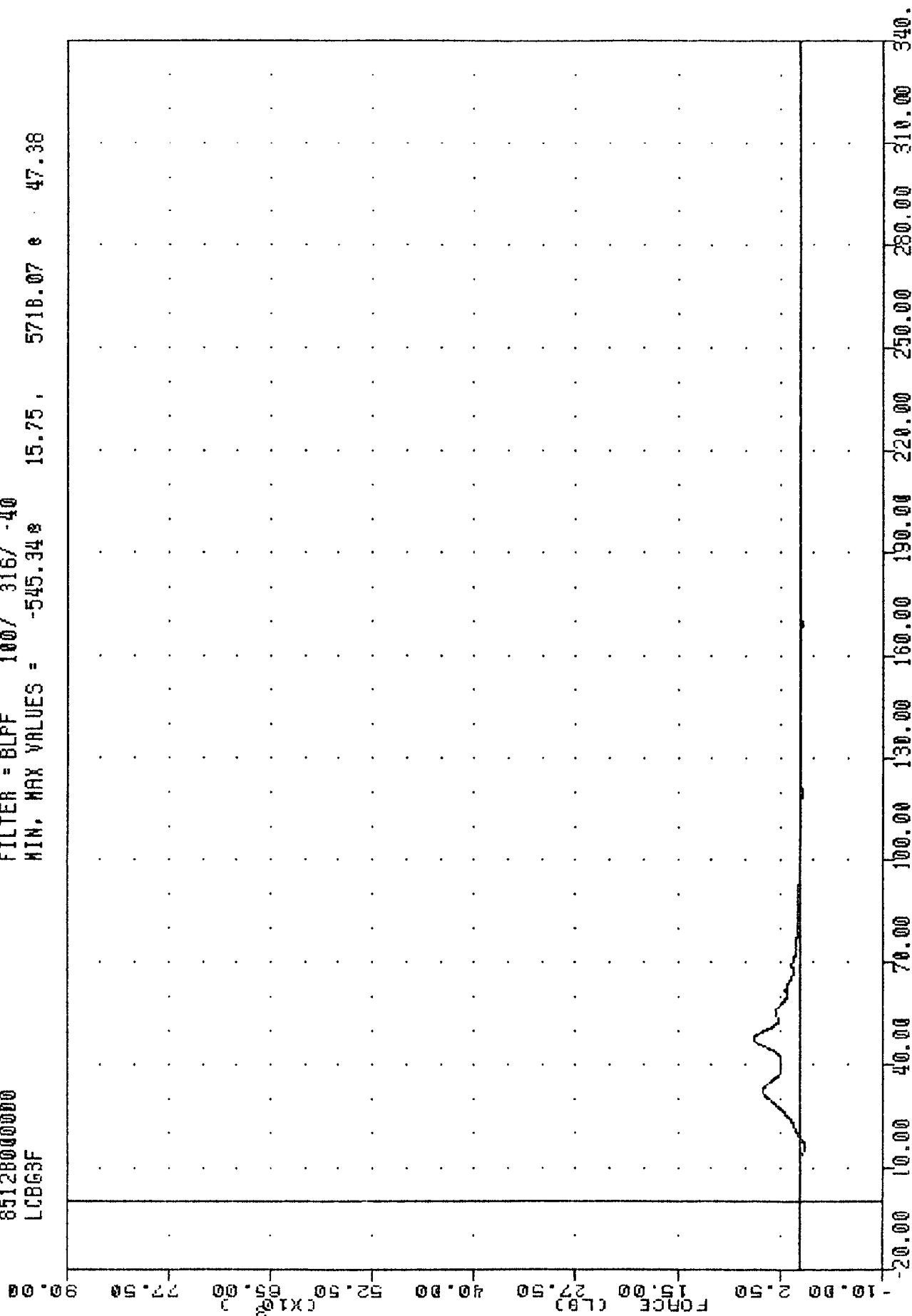


FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION C9 LBS

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
LCB63F

PLOT DATE 14-MAY-85 10:17:37

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -545.348 15.75, 5718.07 & 47.38



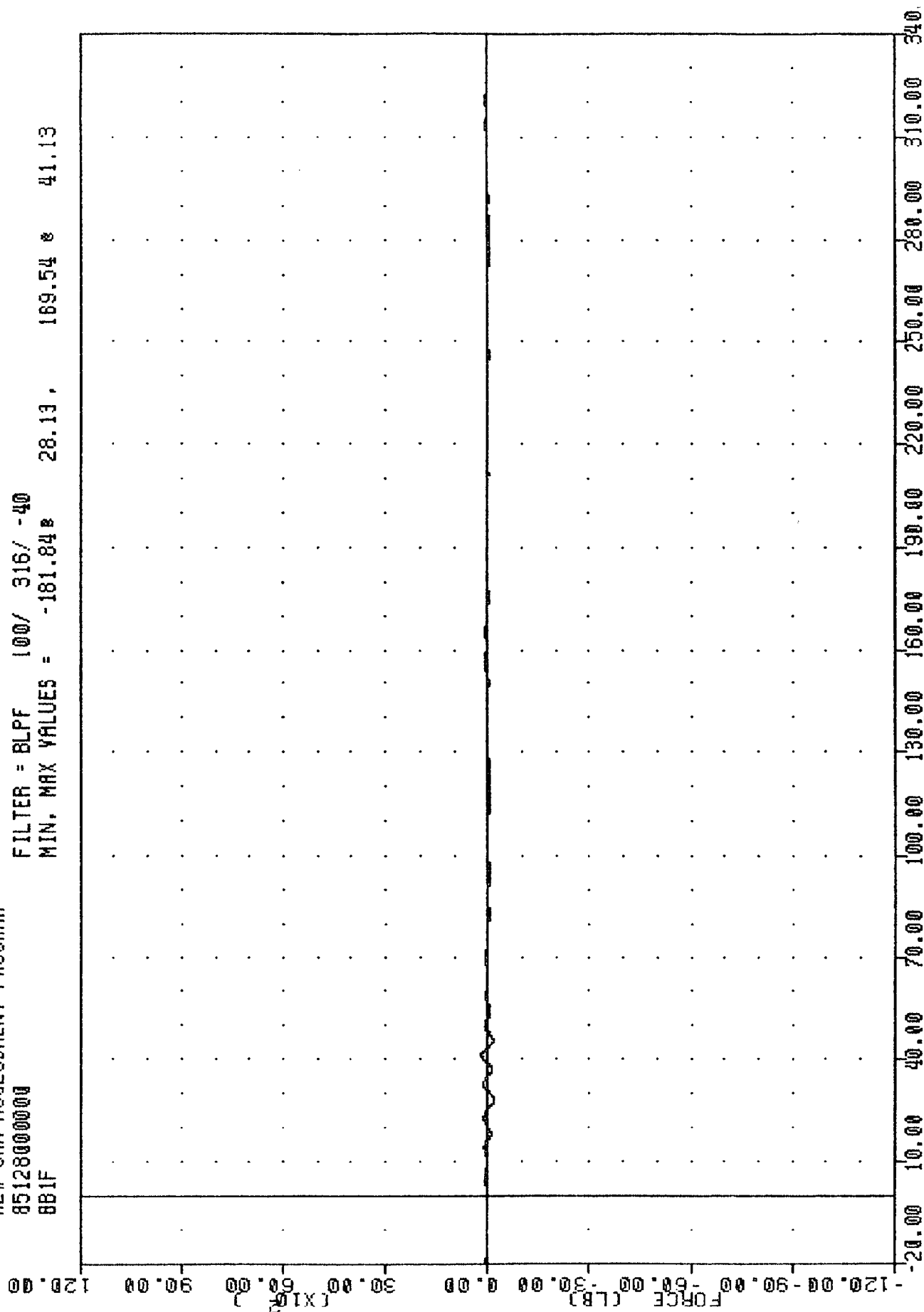
FORD MERKUR INTO LOAD CELL BARRIER
LOAD CELL BARRIER GROUP #3 FORCE TOTAL

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
8B1F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -181.84 28.13 189.54 41.13



FORD MERKUR INTO LOAD CELL BARRIER
IN AN CELL BARRIER POSITION R1 IRS

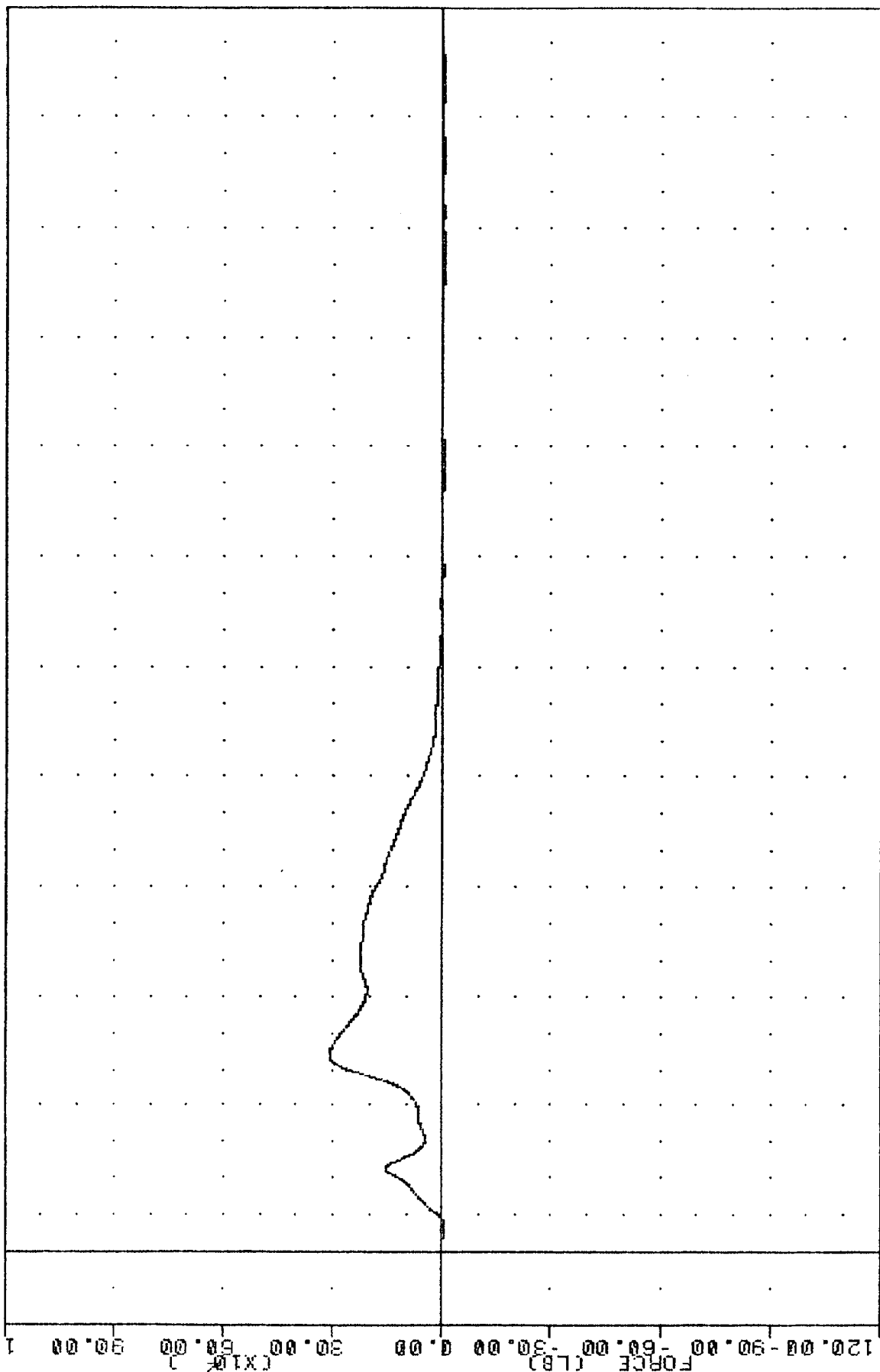
TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BB2F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -45.79 6.88 , 3084.92 53.75

FORCE (LB)
 (x10²)

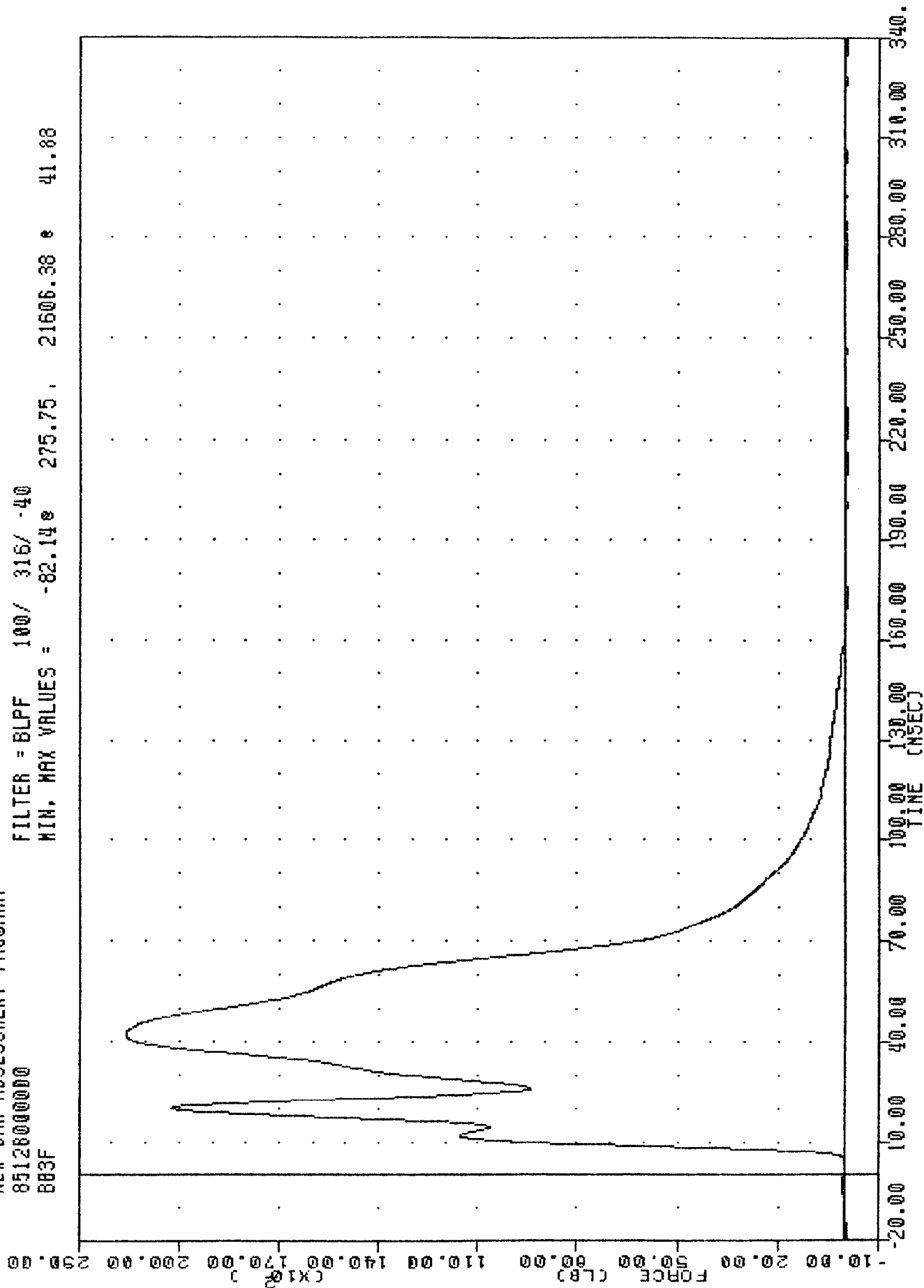


FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL POSITION 00100

TAC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 803F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -82.14 275.75 21606.38 41.88



FORD MERCURY INTO LOAD CELL BARRIER
 IN AN CELL BARRIER POSITION R3 IRS

TRC , 850508
NEW CAR ASSESSMENT PROGRAM

851280000000

BARF

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -208.50 e 27.75, 243.63 e 41.13

120.00
90.00
60.00
30.00
0.00
-30.00
-60.00
-90.00
-120.00

(X10²)

FORCE (LB)

-

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)

FORD MERKUR INTO LOAD CELL BARRIER
IN AN CELL BARRIER POSITION A11RS

TRC , 850508
NEW CAR ASSESSMENT PROGRAM

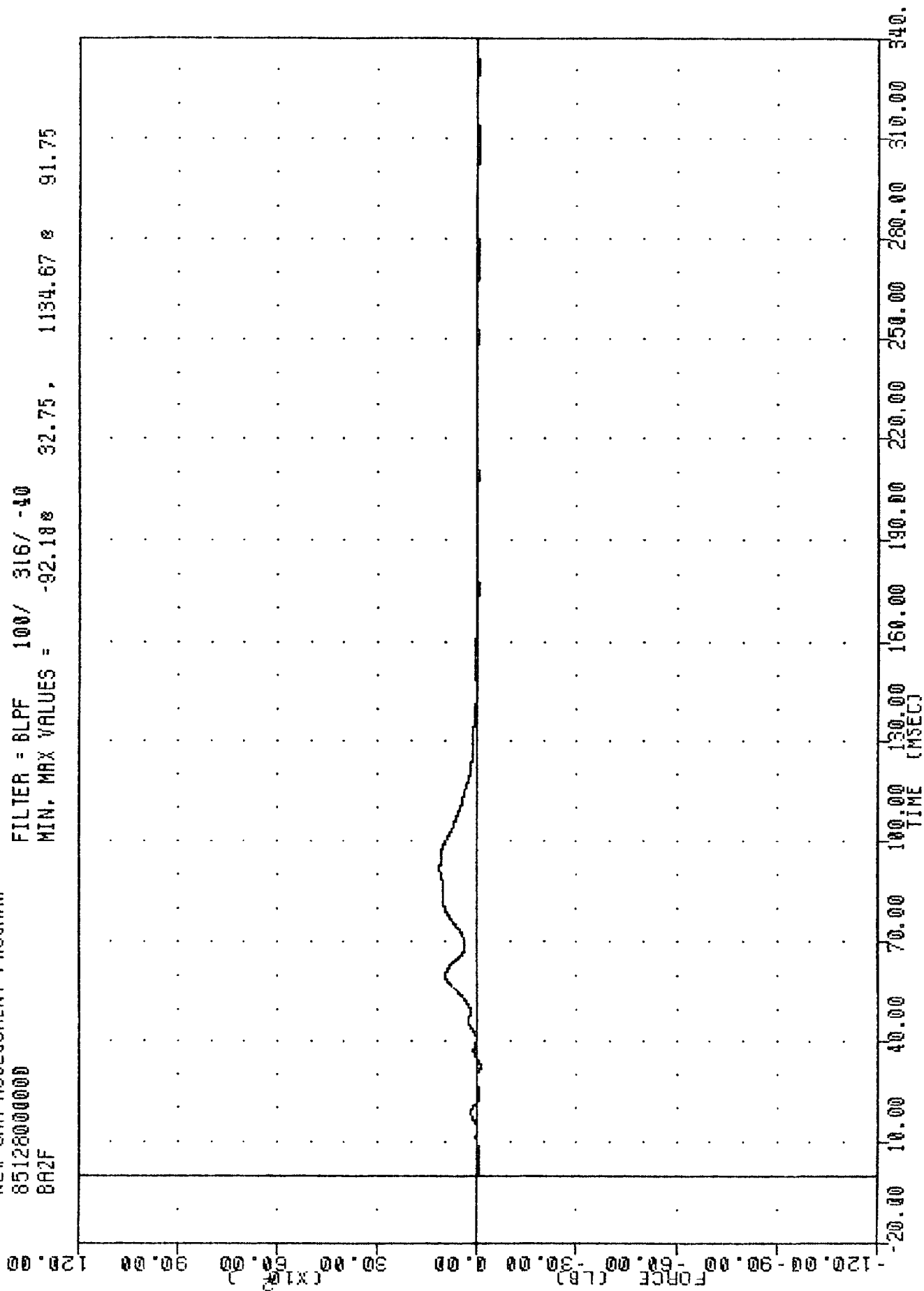
85128000000

8A2F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -92.18 32.75, 1134.67 91.75



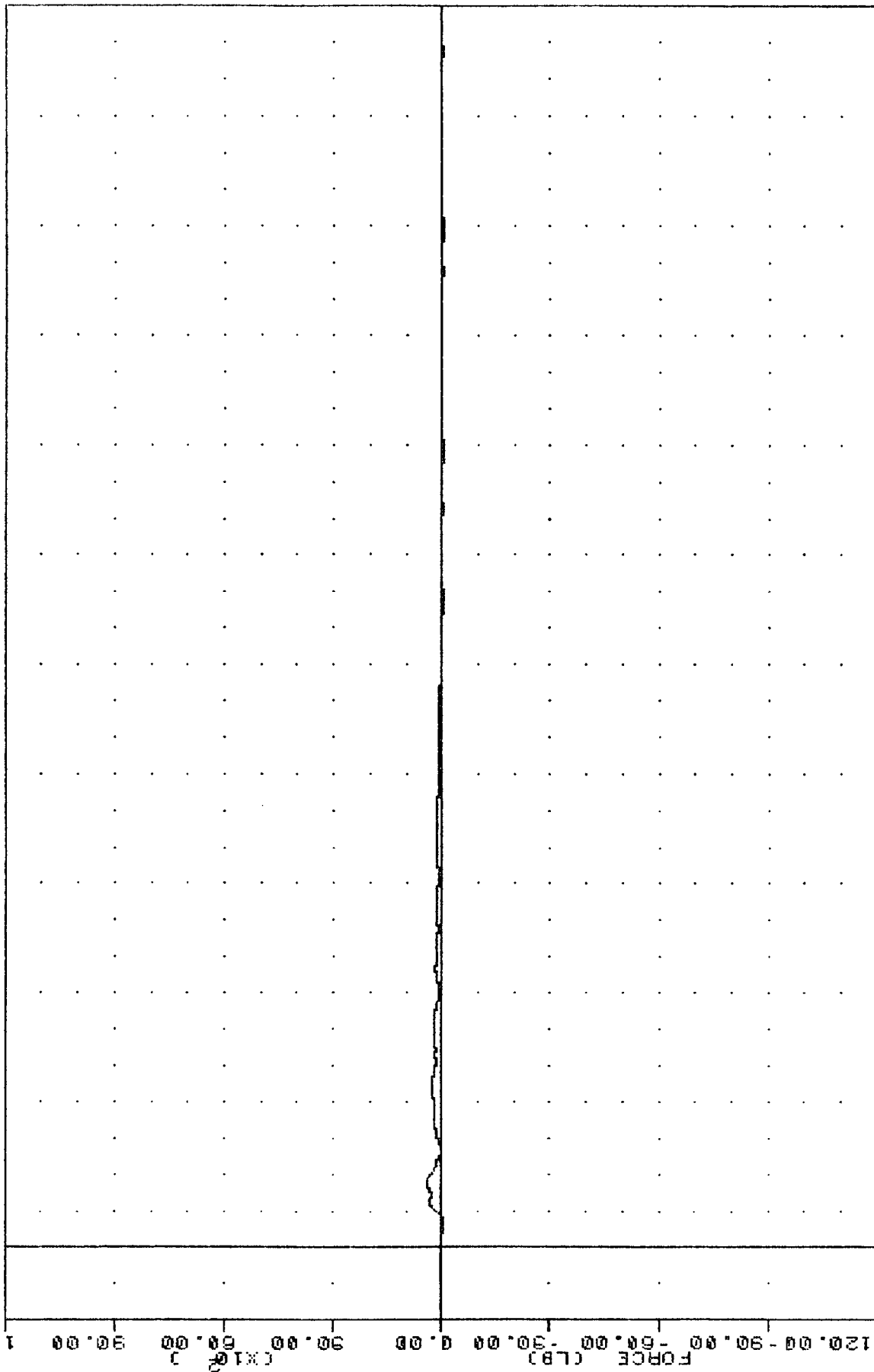
TAC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BA3F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -73.148 7.00 , 421.15 17.75

120.00 90.00 60.00 30.00 0.00 -30.00 -60.00 -90.00 -120.00



FORD MERKUR INTO LOAD CELL BARRIER
 IN CAR CELL DROPPED DIRECTION OF 100

TRC , 850508
NEW CAR ASSESSMENT PROGRAM

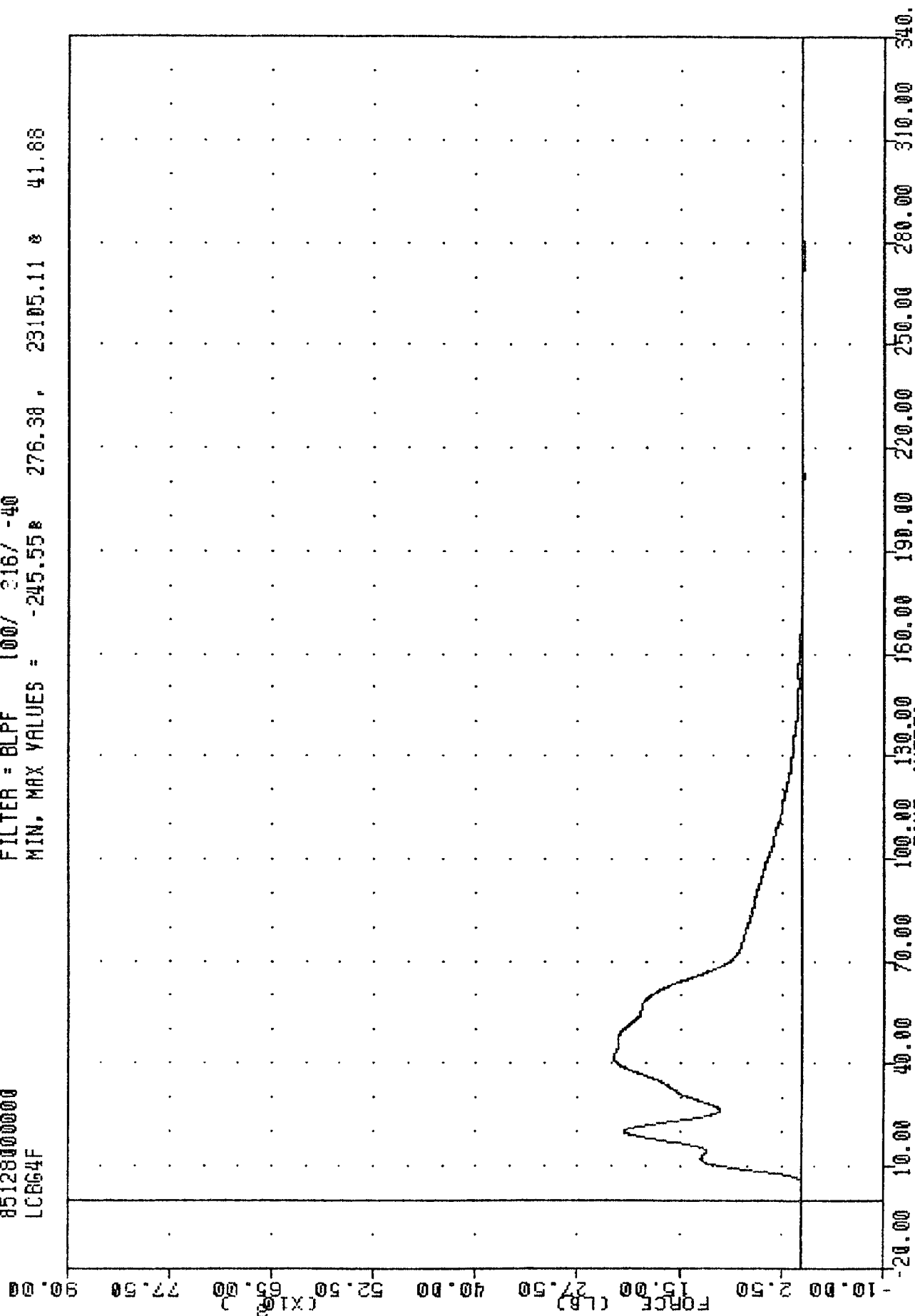
85128000000

LC864F

PLOT DATE 14-MAY-85 10:17:37

FILTER = BLPF 100/ 316/ -40

MIN, MAX VALUES = -245.55 276.38, 23105.11 41.88

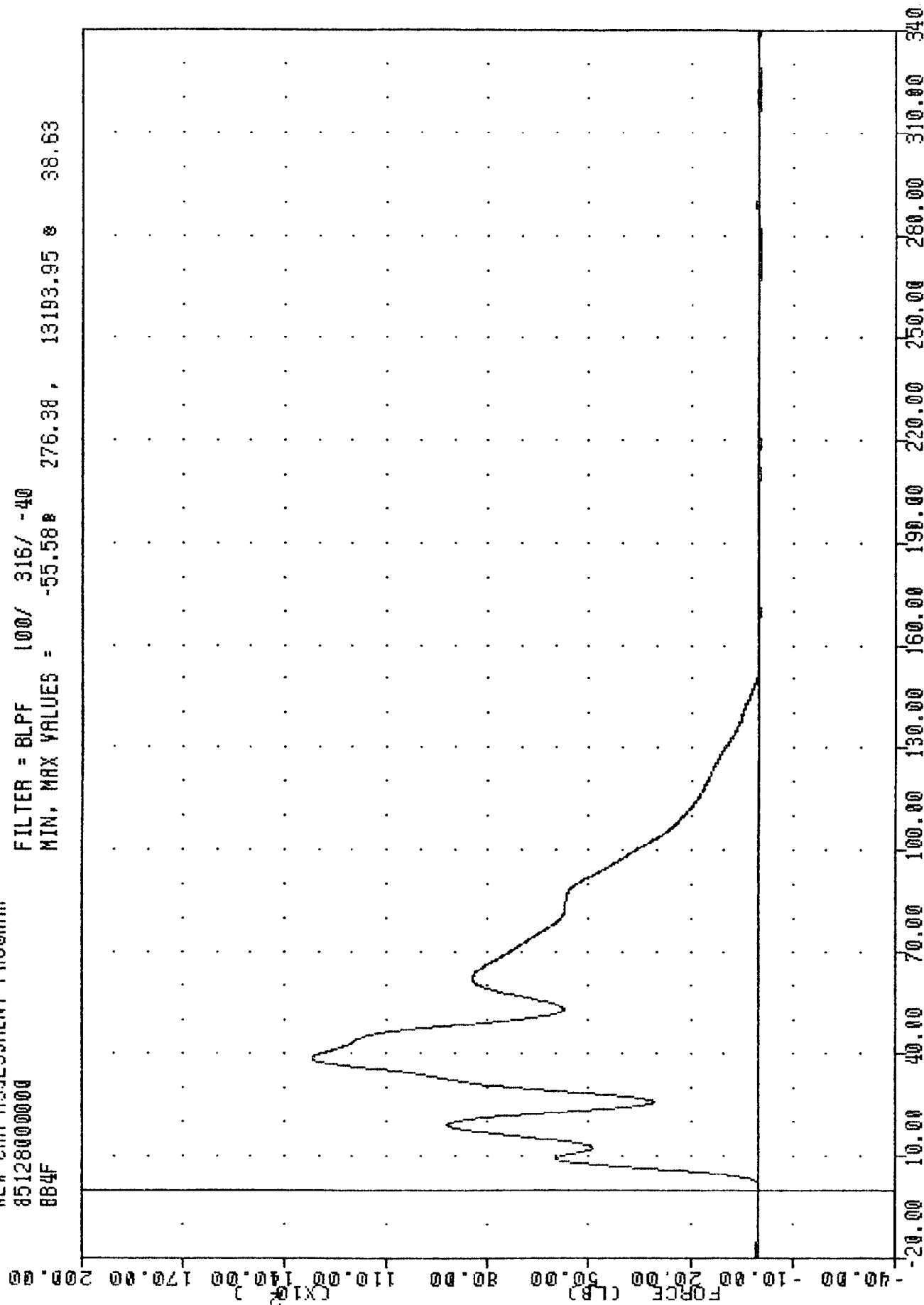


FORD MERKUR INTO LOAD CELL BARRIER
LOAD CELL BARRIER GROUP #4 FORCE TOTAL

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
884F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -55.58 276.38 , 13193.95 38.63

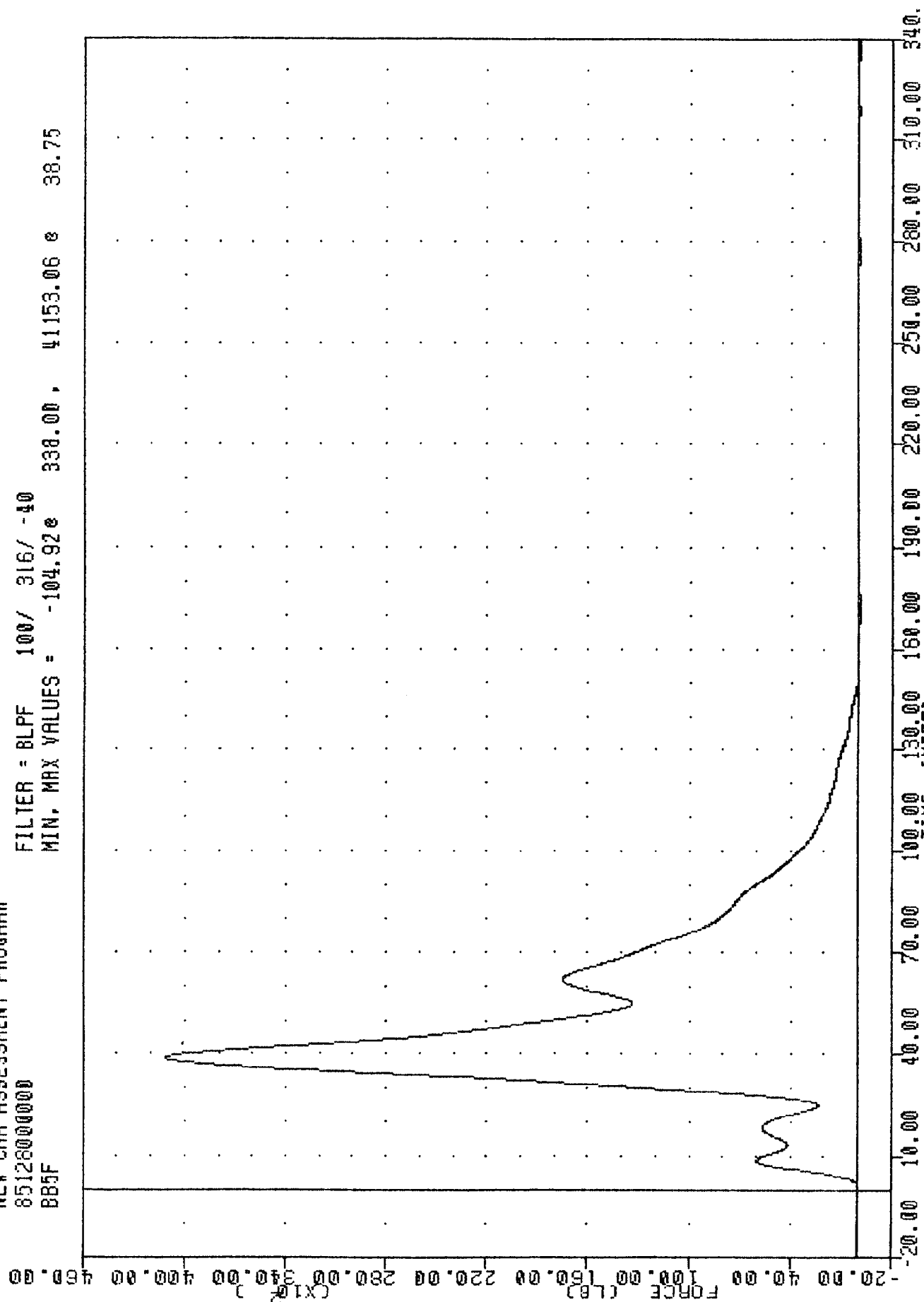


FORD MERKUR INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION 84 LBS

TRC 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BB5F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -104.92e 338.00, 41153.06 e 38.75

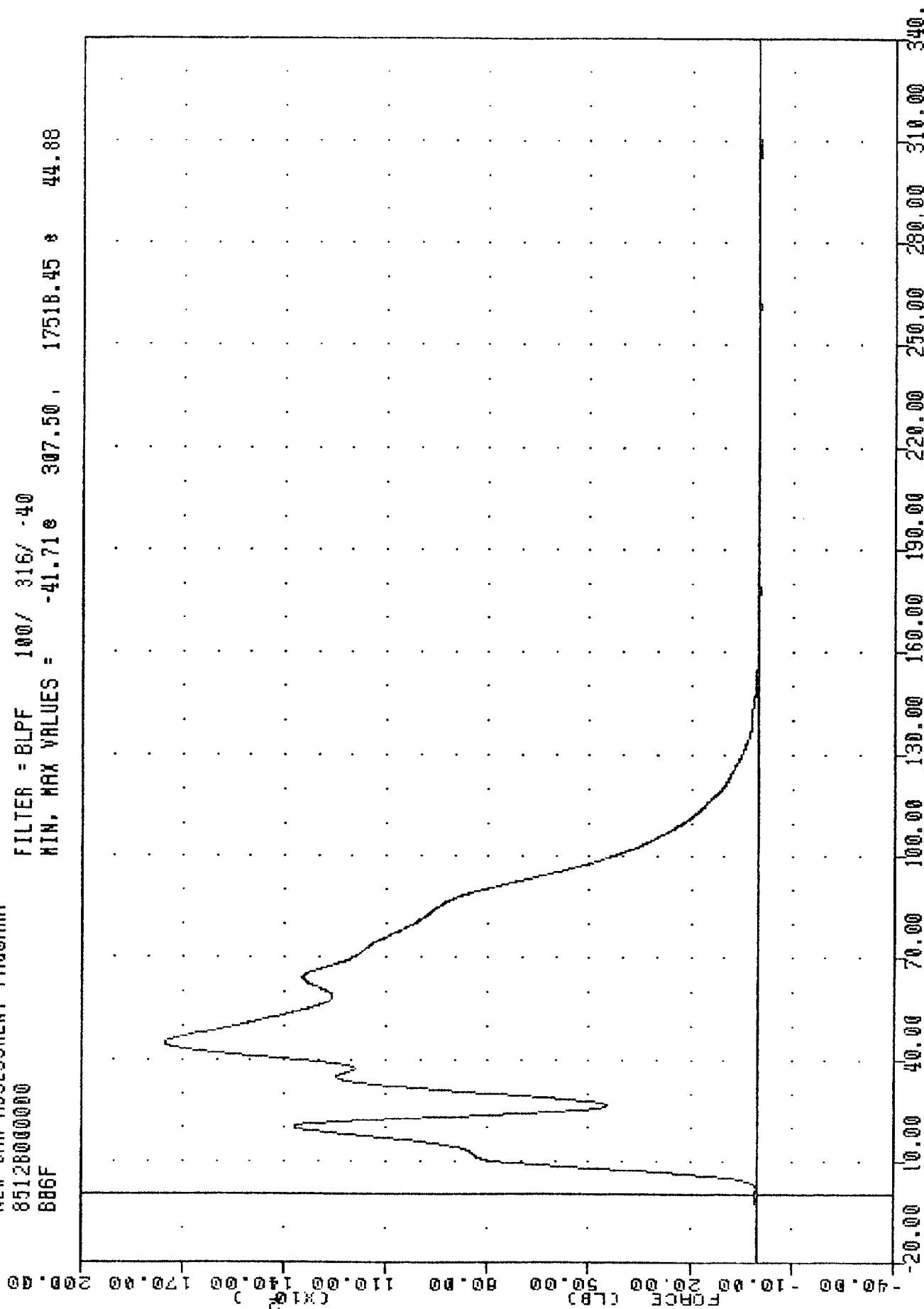


FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION R5 IRS

TAC 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 886F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -41.71e 307.50, 17518.45 * 44.88



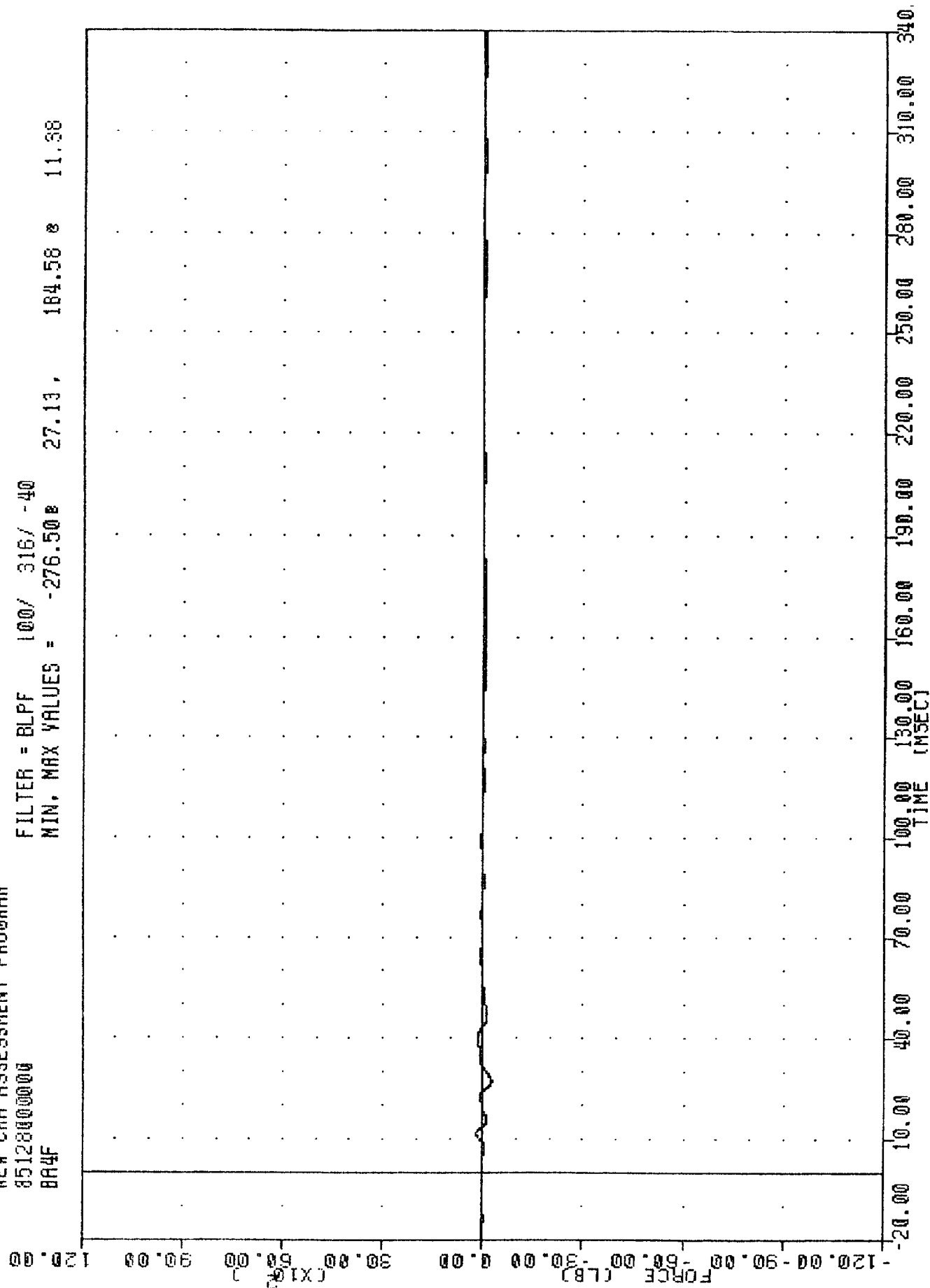
FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION 861RS

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
BA4F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -276.50 27.13, 184.58 11.38



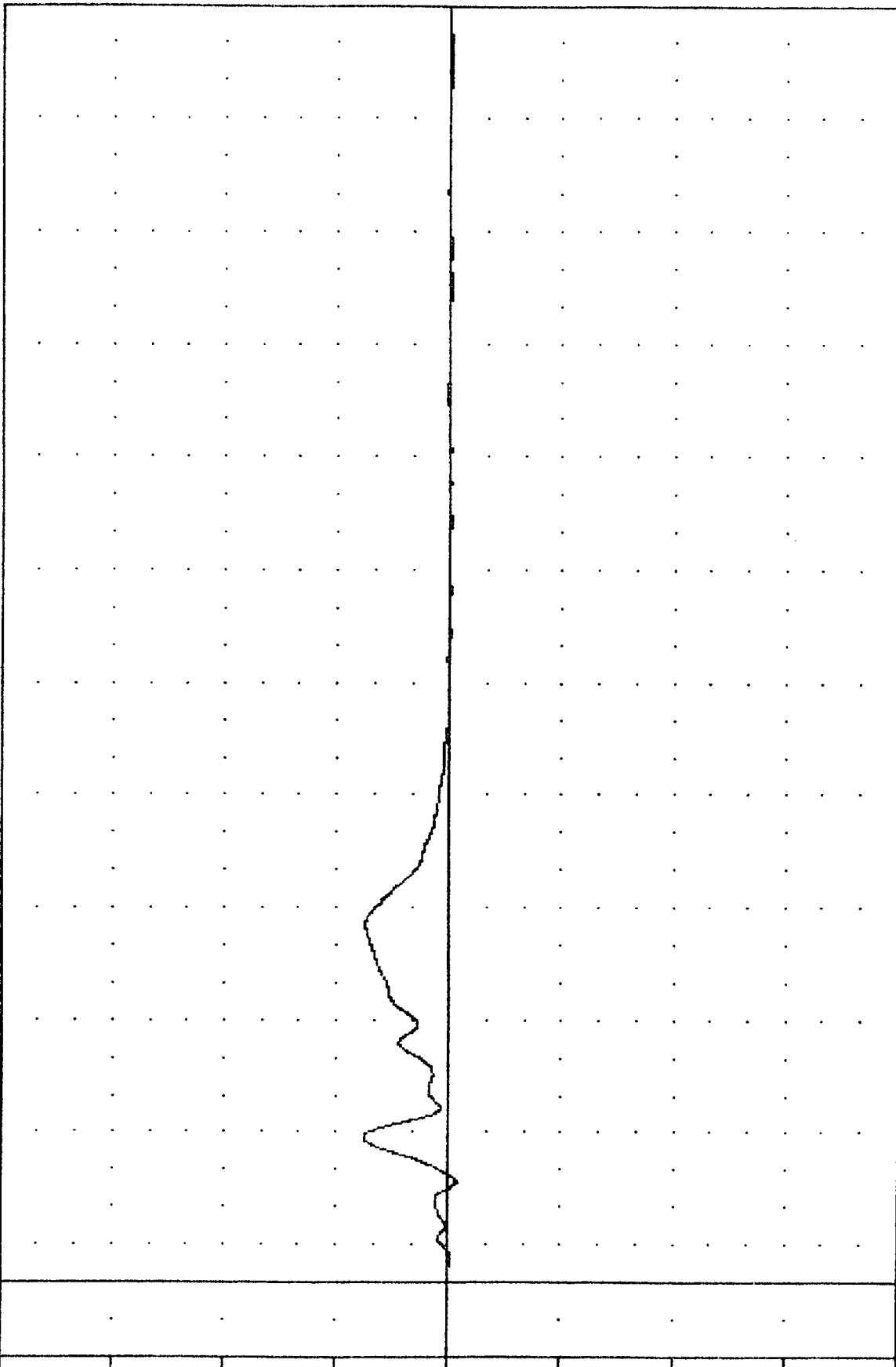
FORD MERKUR INTO LOAD CELL BARRIER
INAD CELL BARRIER POSITION AT 1 RS

TRC
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 850508
 85F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -217.00e 26.75, 2261.18 e 38.63

FORCE (LB)
 (x10³)

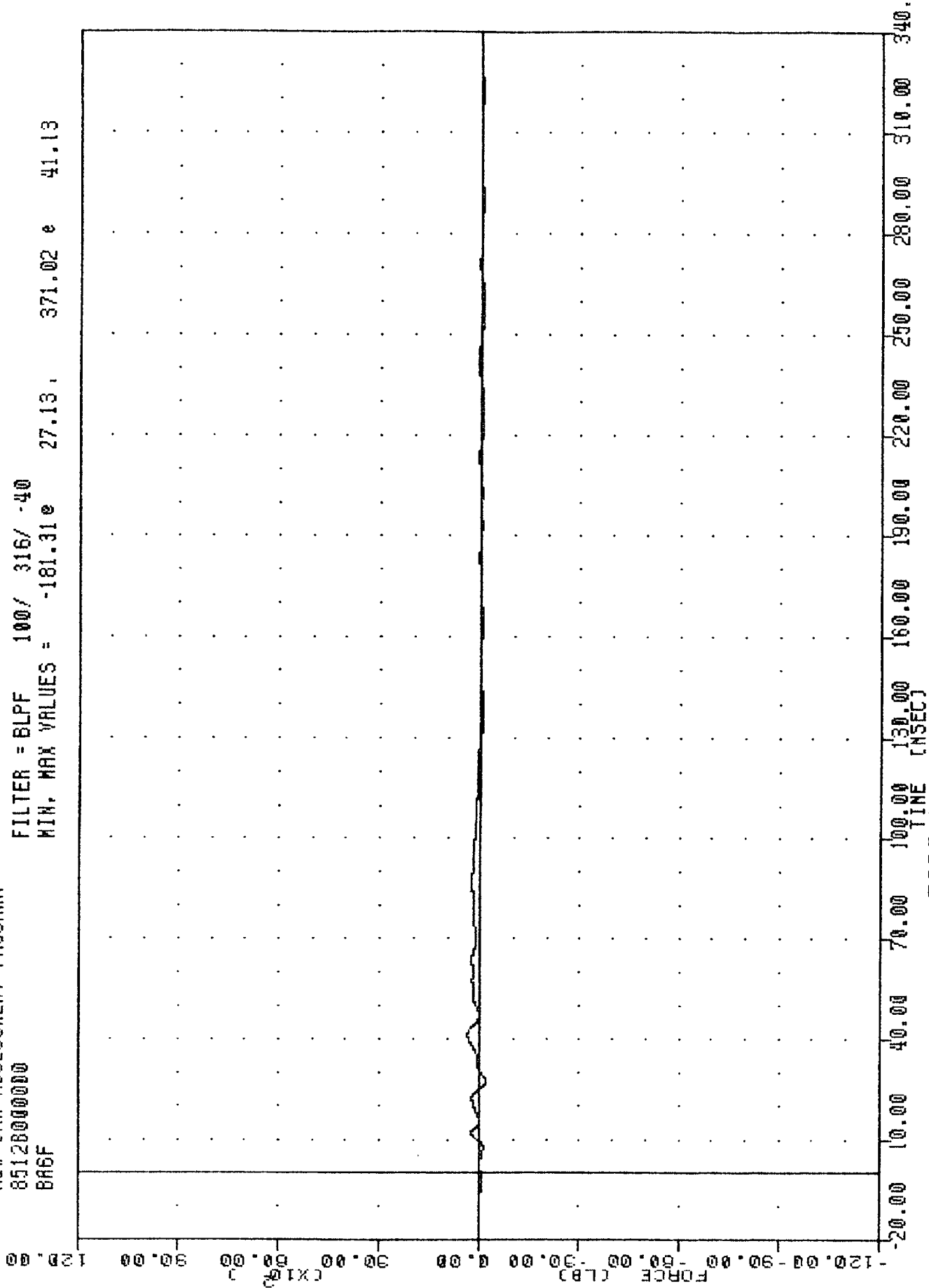


FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION AS IRS

TAC 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BASF

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -181.31e 27.13, 371.02 e 41.13

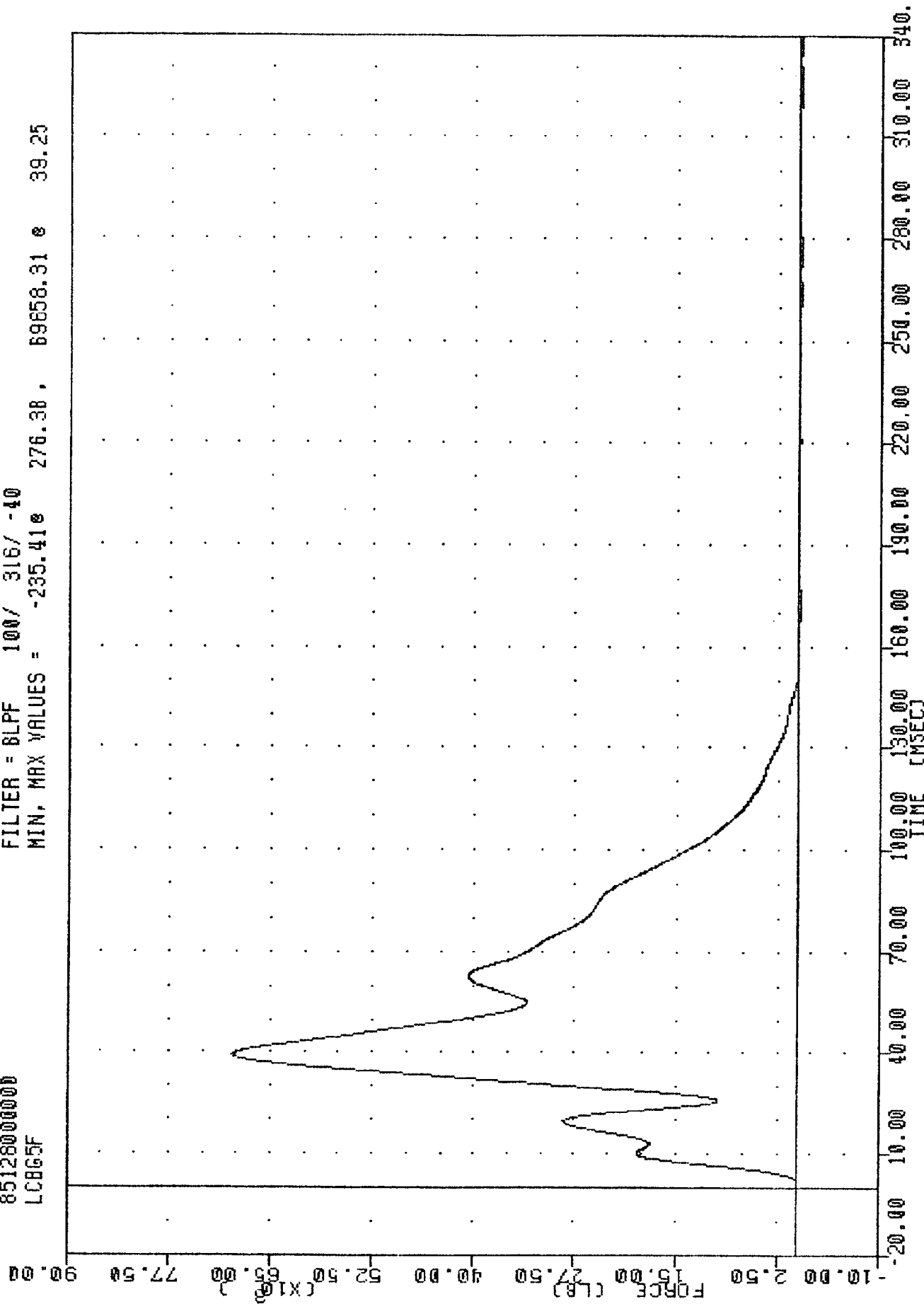


FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION A6 LBS

TRC
NEW CAR ASSESSMENT PROGRAM
85128000000
LC865F

PLOT DATE 14-MAY-85 10:17:37

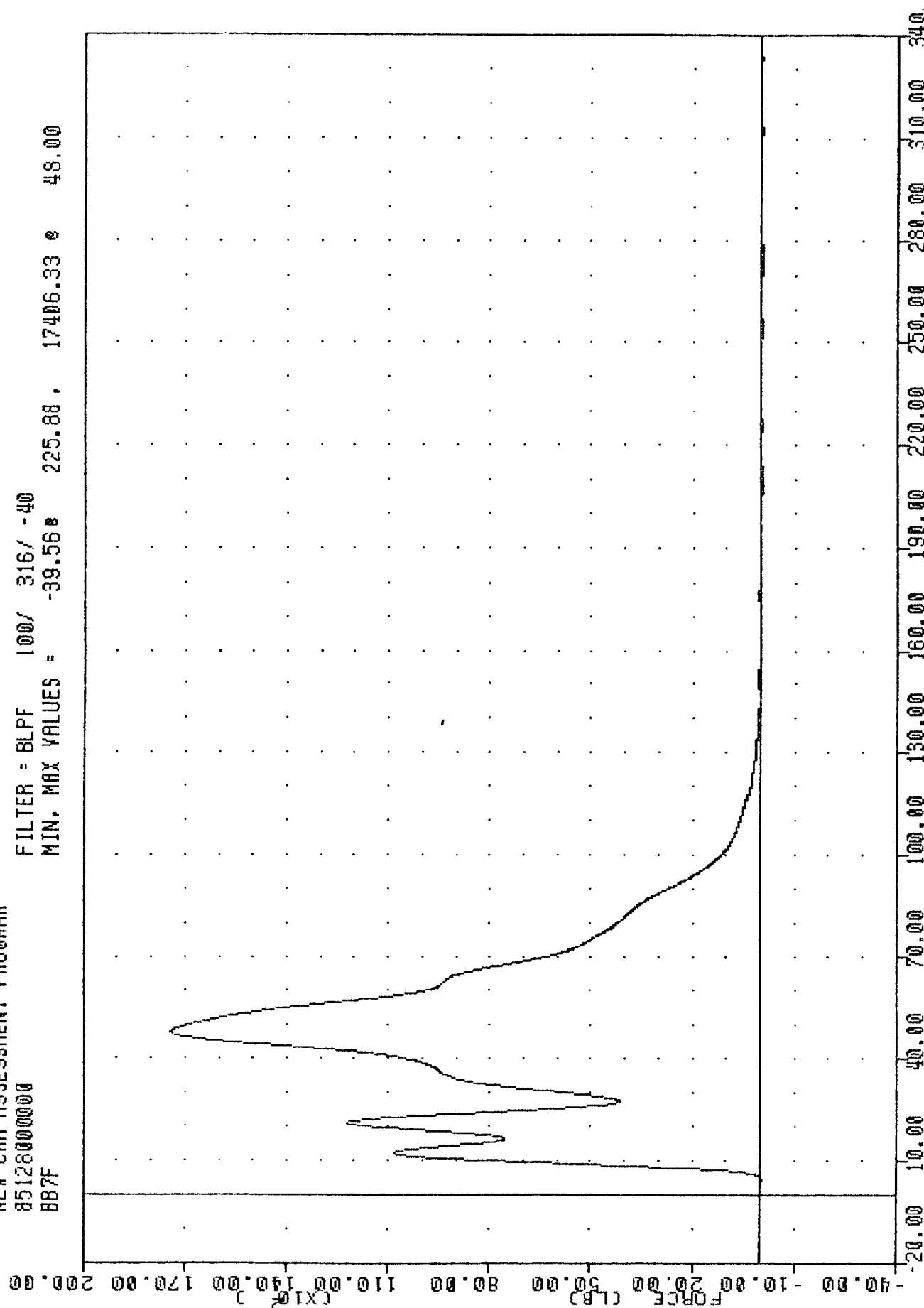
FILTER = 8LPF 100/ 316/ -40
MIN, MAX VALUES = -235.41e 276.38 , 69858.31 e 39.25



TRC .850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 887F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -39.568 225.88, 17406.33 @ 48.00



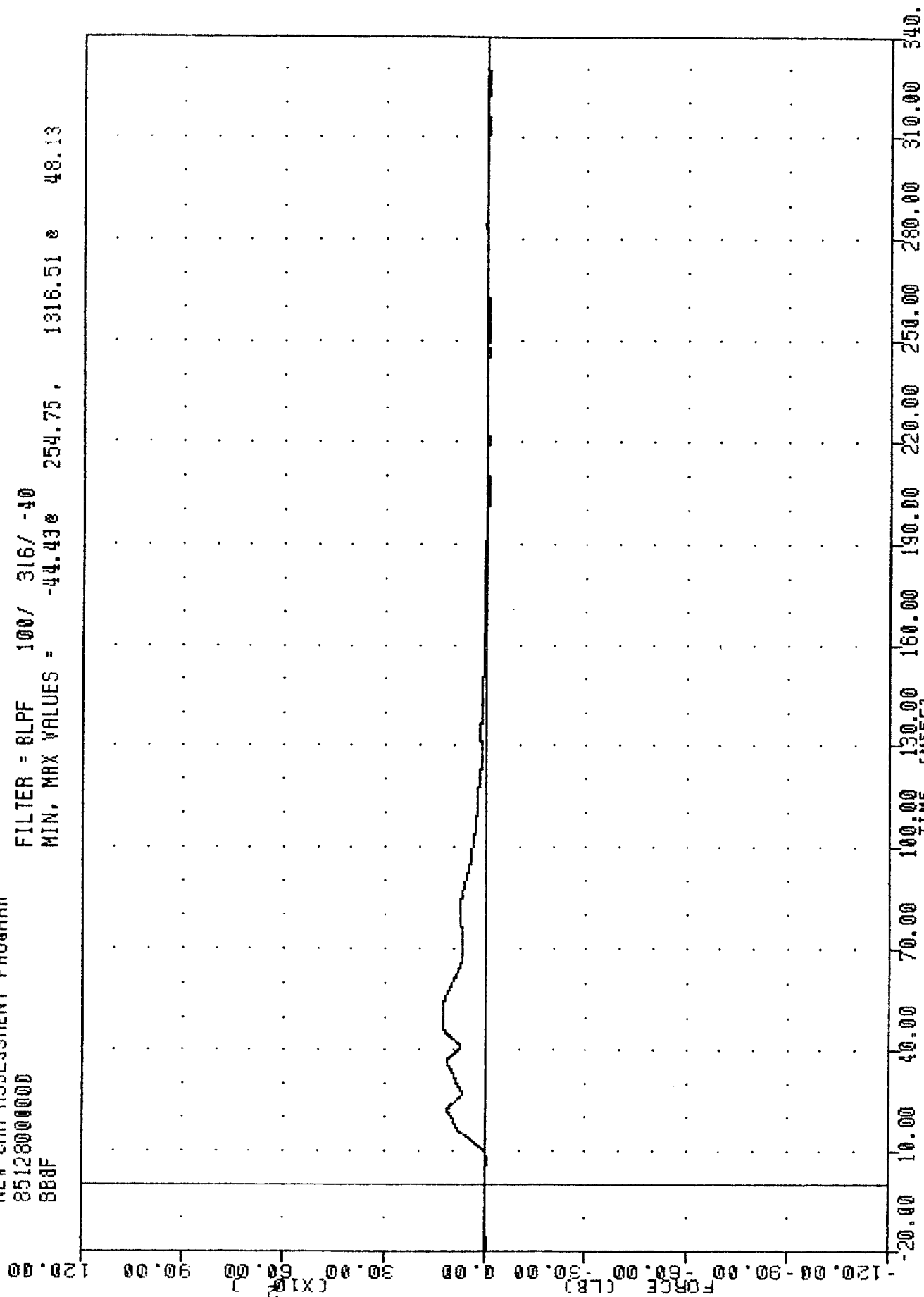
FORD MERKUR INTO LOAD CELL BARRIER
 INAD CELL BARRIER POSITION R7 IRS

TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 851280000000
 888F

PLOT DATE 14-MAY-85 10:29:04

FILTER = 8LPF 100/ 316/ -40

MIN, MAX VALUES = -44.438 254.75 , 1316.51 e 48.13

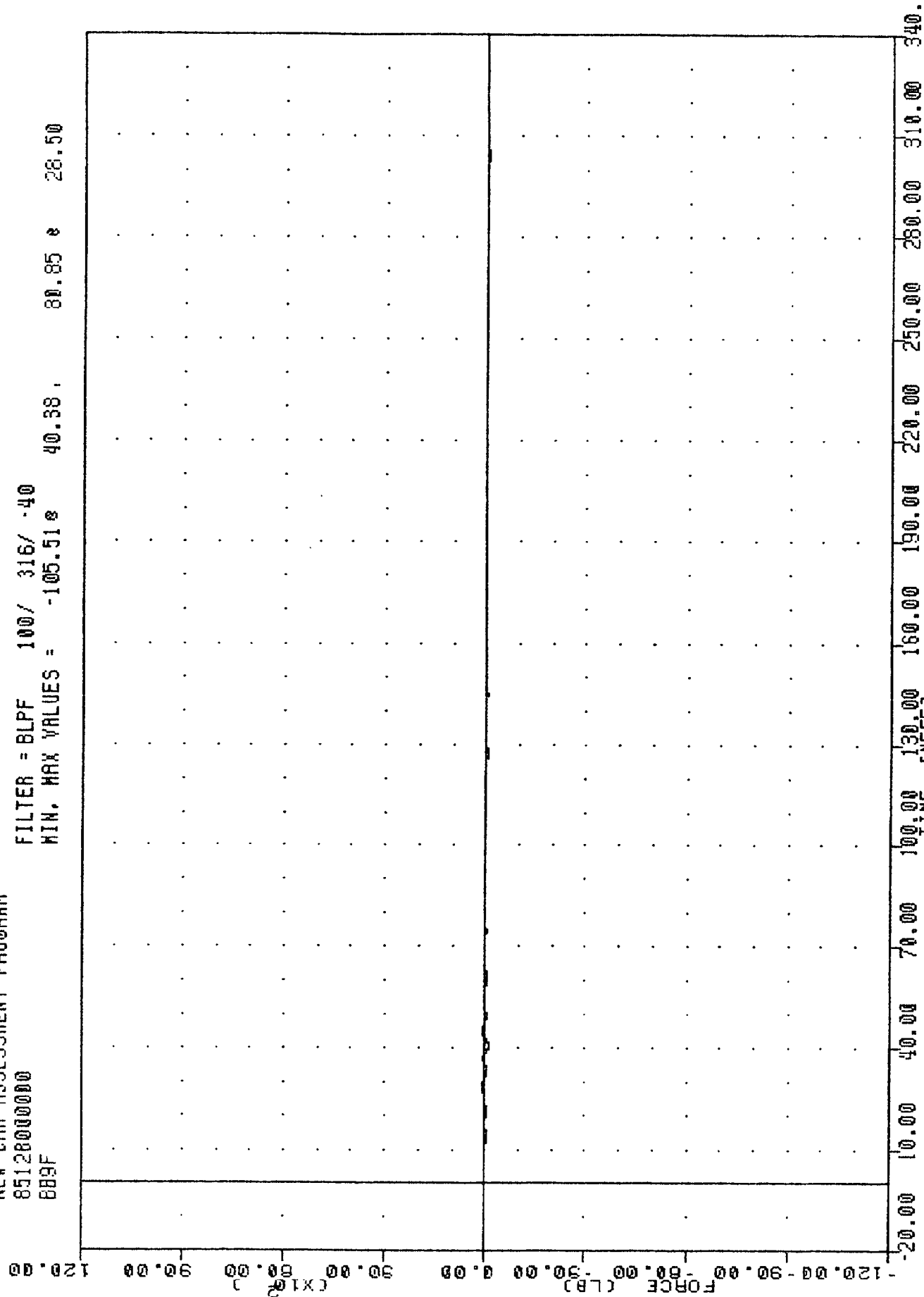


FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION RAIRS

TAC
NEW CAR ASSESSMENT PROGRAM
85128000000
889F

PLOT DATE 14-MAY-85 10:29:04

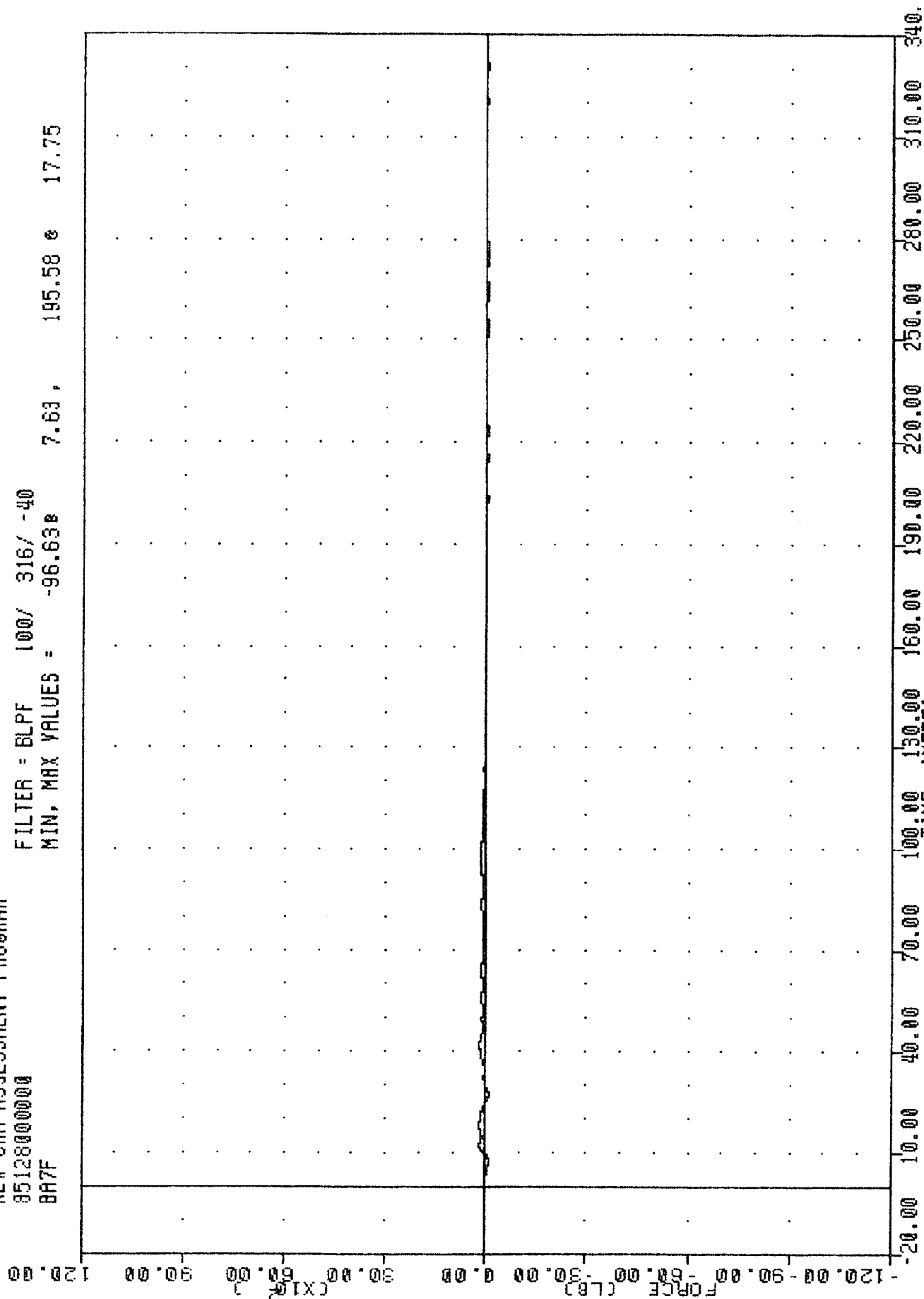
FILTER = BLPF 100/ 316/ -40
MIN. MAX VALUES = -105.51 80.85 28.50



TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 BR7F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -96.638 7.63, 195.58 & 17.75



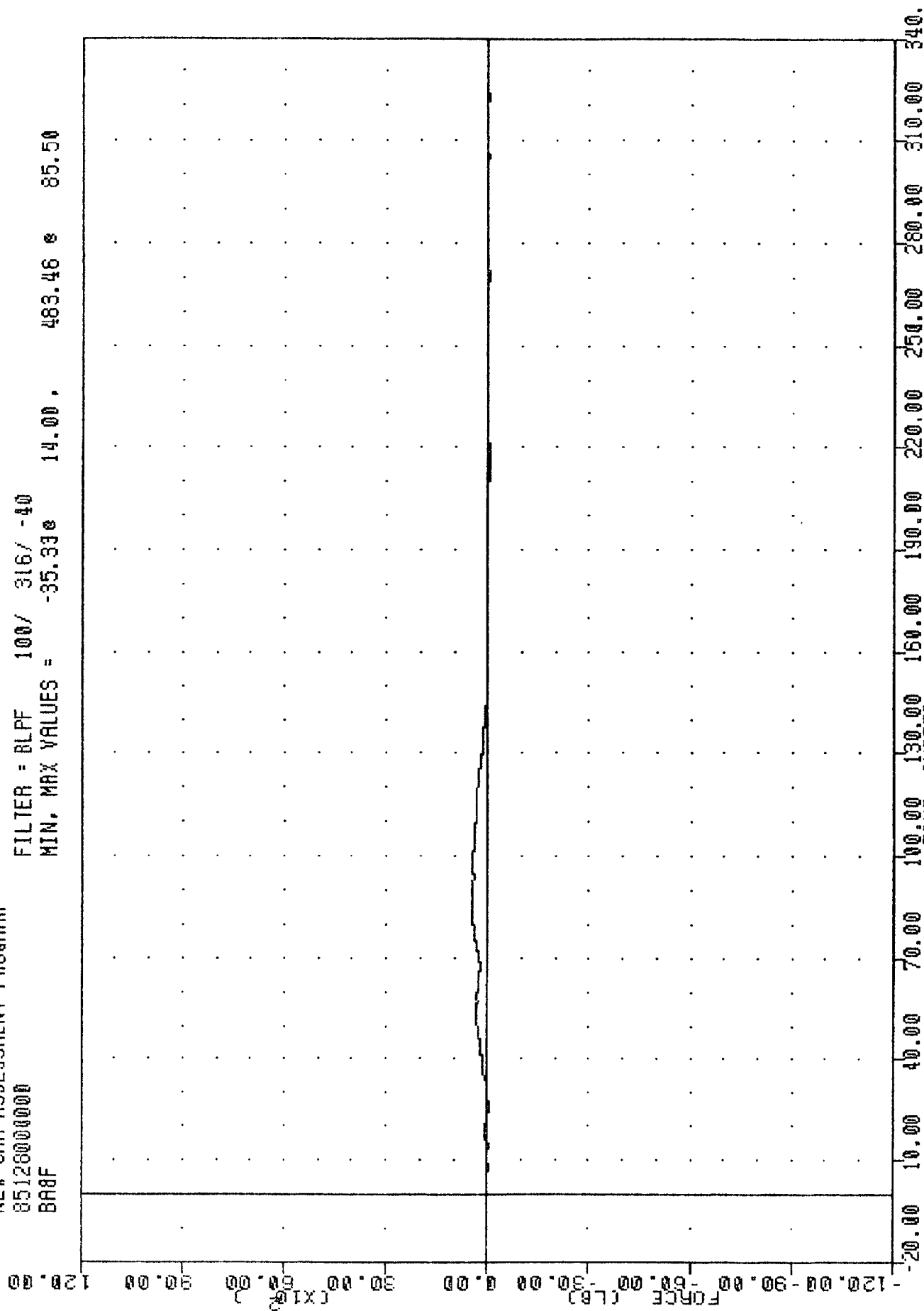
FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION A71A5

TRC
NEW CAR ASSESSMENT PROGRAM
85126000000
B88F

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40

MIN. MAX VALUES = -35.33e 14.00. 483.46 e 85.50

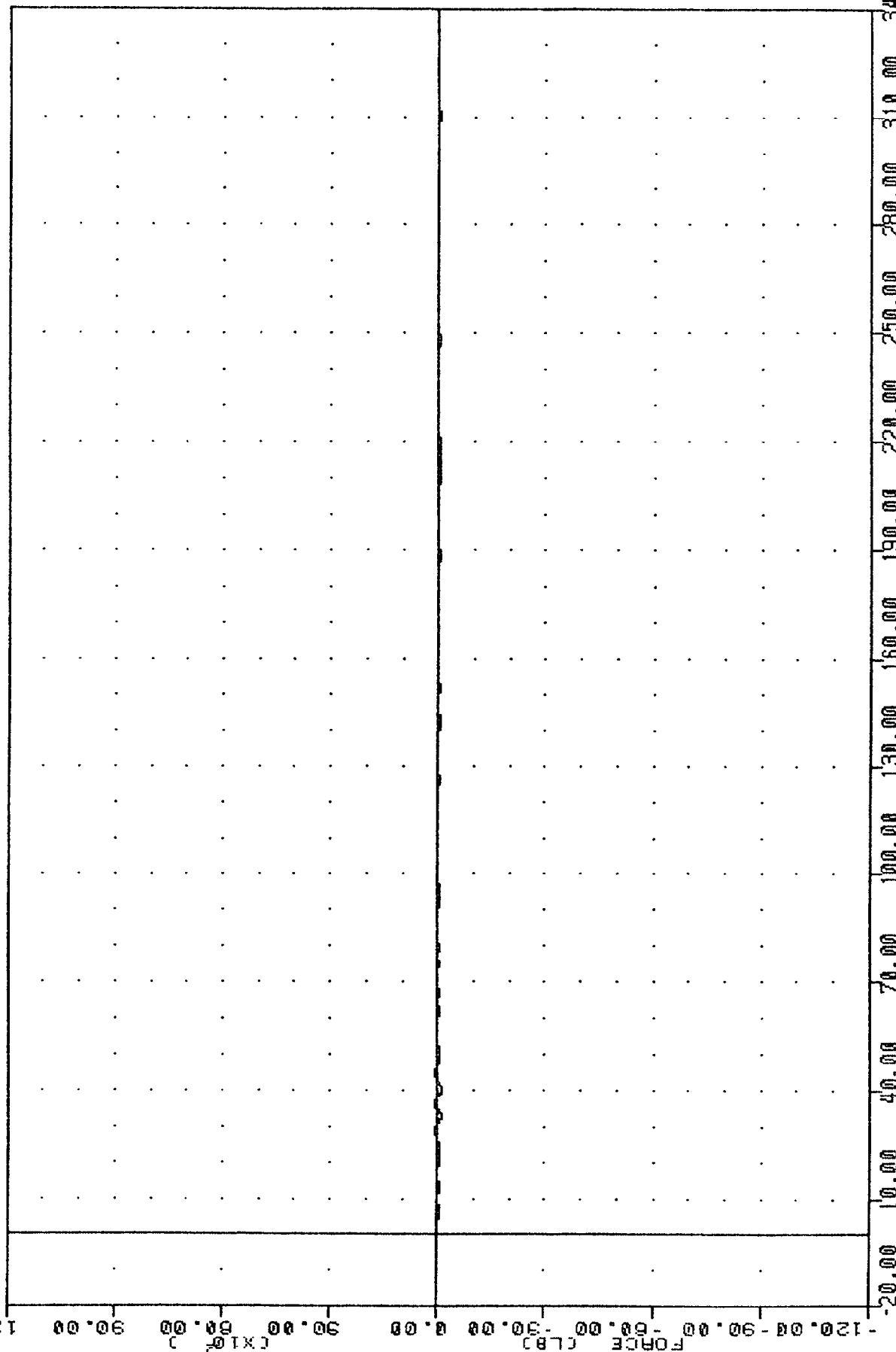


FORD MERKUR INTO LOAD CELL BARRIER
INAD CELL BARRIER POSITION AR IRS

TAC
NEW CAR ASSESSMENT PROGRAM
85128000000
BAGF

PLOT DATE 14-MAY-85 10:29:04

FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = -115.59 40.13, 100.18 36.38

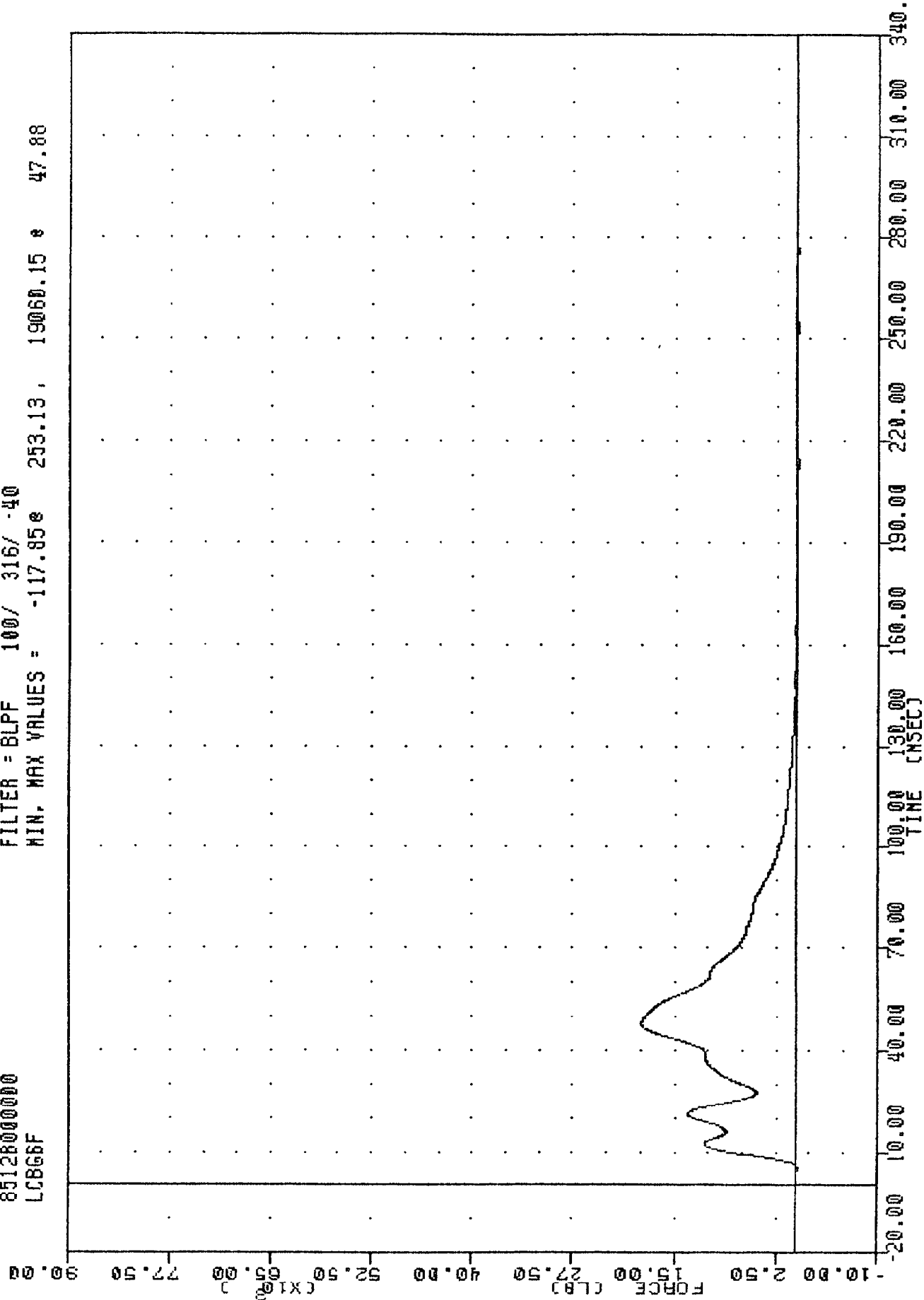


FORD MERKUR INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A9 LBS

TAC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 LCB66F

PLOT DATE 14-MAY-85 10:17:37

FILTER = BLPF 100/ 316/ -40
 MIN, MAX VALUES = -117.85 253.13, 19060.15 47.88

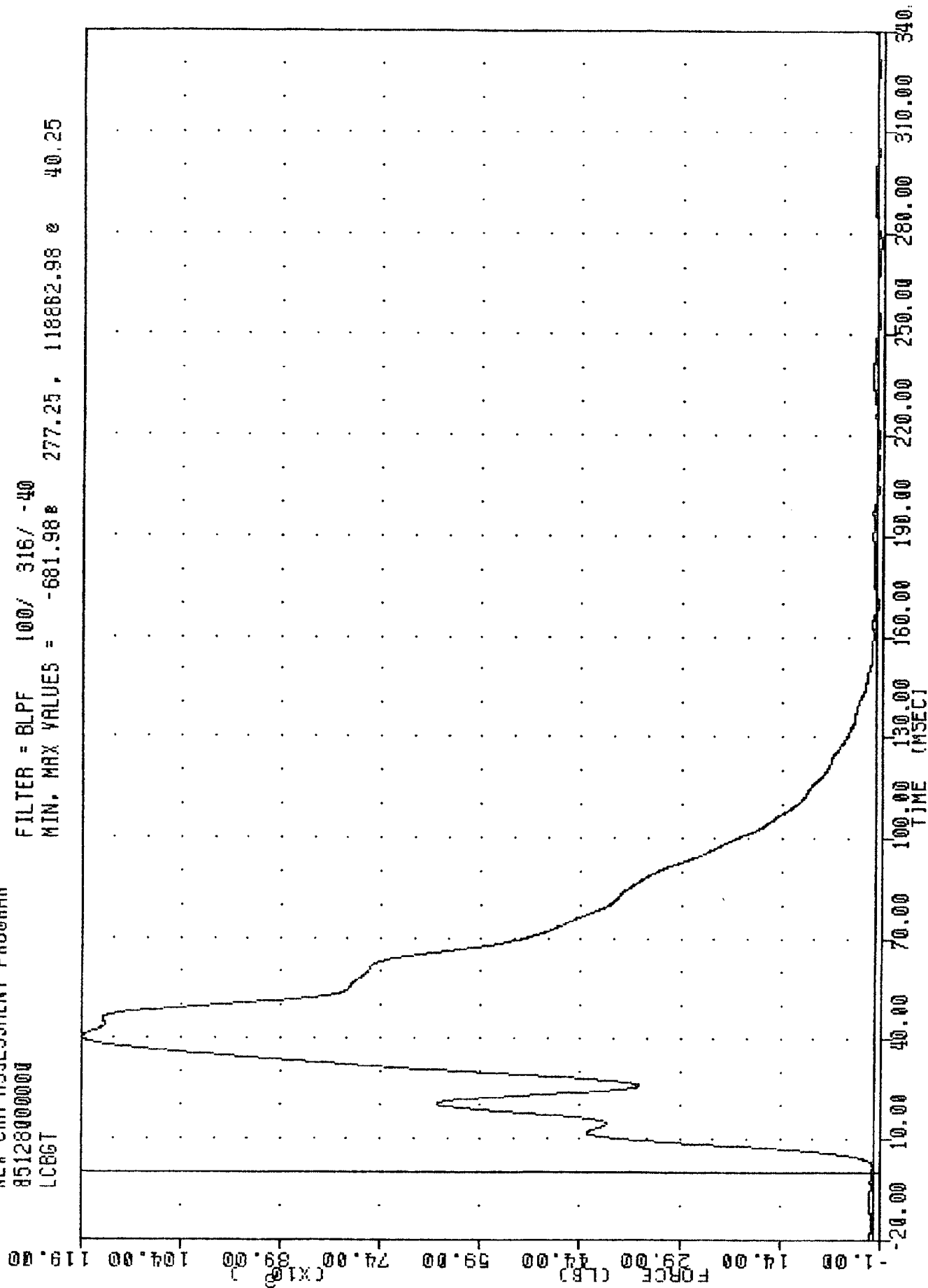


FORD MERKUR INTO LOAD CELL BARRIER
 LOAD CELL BARRIER GROUP #6 FORCE TOTAL

TRC , 850508
 NEW CAR ASSESSMENT PROGRAM
 85128000000
 LCBGT

PLOT DATE 14-MAY-85 10:17:37

FILTER = BLPF 100/ 316/ -40
 MIN. MAX VALUES = -681.98 277.25, 118862.98 40.25



FORD MERKUR INTO LOAD CELL BARRIER
 SUM OF 1000 CFI BARRIER FORCES

APPENDIX C
DUMMY CERTIFICATION

TRANSPORTATION RESEARCH CENTER OF OHIO

EXTERNAL DIMENSIONS

PART 572

TEMPERATURE 67.00 F
NHTSA NCA ED82621RELATIVE HUMIDITY 62.00 %
572 SN 826 EXT.DIMENSIONS 21

DESCRIPTION	SPECIFICATION	TEST RESULTS
SN ALDERSON RESEARCH LAB 826		
Sitting Height	35.6 - 35.8IN	35.6 INS
Shoulder Pivot Height	21.8 - 22.4IN	22.3 INS
Hip Pivot Height	3.9 IN (ref.)	3.9 INS
Hip Pivot From Backline	4.8 IN (ref.)	4.8 INS
Knee Pivot From Backline	20.1 - 20.7IN	20.7 INS
Rear of Head From Backline	1.7 IN (ref)	1.7 INS
Chest Depth	9.1 - 9.6IN	9.5 INS
Shoulder Width	17.8 - 18.4IN	17.8 INS
Chest Circumference Over Nipples	36.8 - 40.0IN	37.5 INS
Waist Circumference at Min. Girth	31.4 - 32.6IN	32.4 INS
Hip Width	14.0 - 15.4IN	14.9 INS
Knee Pivot From Floor	19.3 - 19.9IN	19.6 INS

TECHNICIAN

Larry L. Phelps

TEST SUPERVISOR

W. L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

LUMBAR FLEXION TEST

PART 572

TEMPERATURE 69.00 F
NHTSA NCA LF82621

RELATIVE HUMIDITY 63.00 %
572 SN 826 LUMBAR FLEX CAL 21

DEFLECTION	SPECIFICATION	TEST RESULTS
0 Deg.	0 LBS	0.00 LBS
20 Deg	22.00 - 34.00 LBS	31.00 LBS
30 Deg	34.00 - 46.00 LBS	36.00 LBS
40 Deg	46.00 - 58.00 LBS	47.00 LBS
NET RETURN ANGLE	< 12 DEG	5.62 DEG

TECHNICIAN

Mary L Phelps

TEST SUPERVISOR

V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

ABDOMINAL COMPRESSION TEST

PART 572

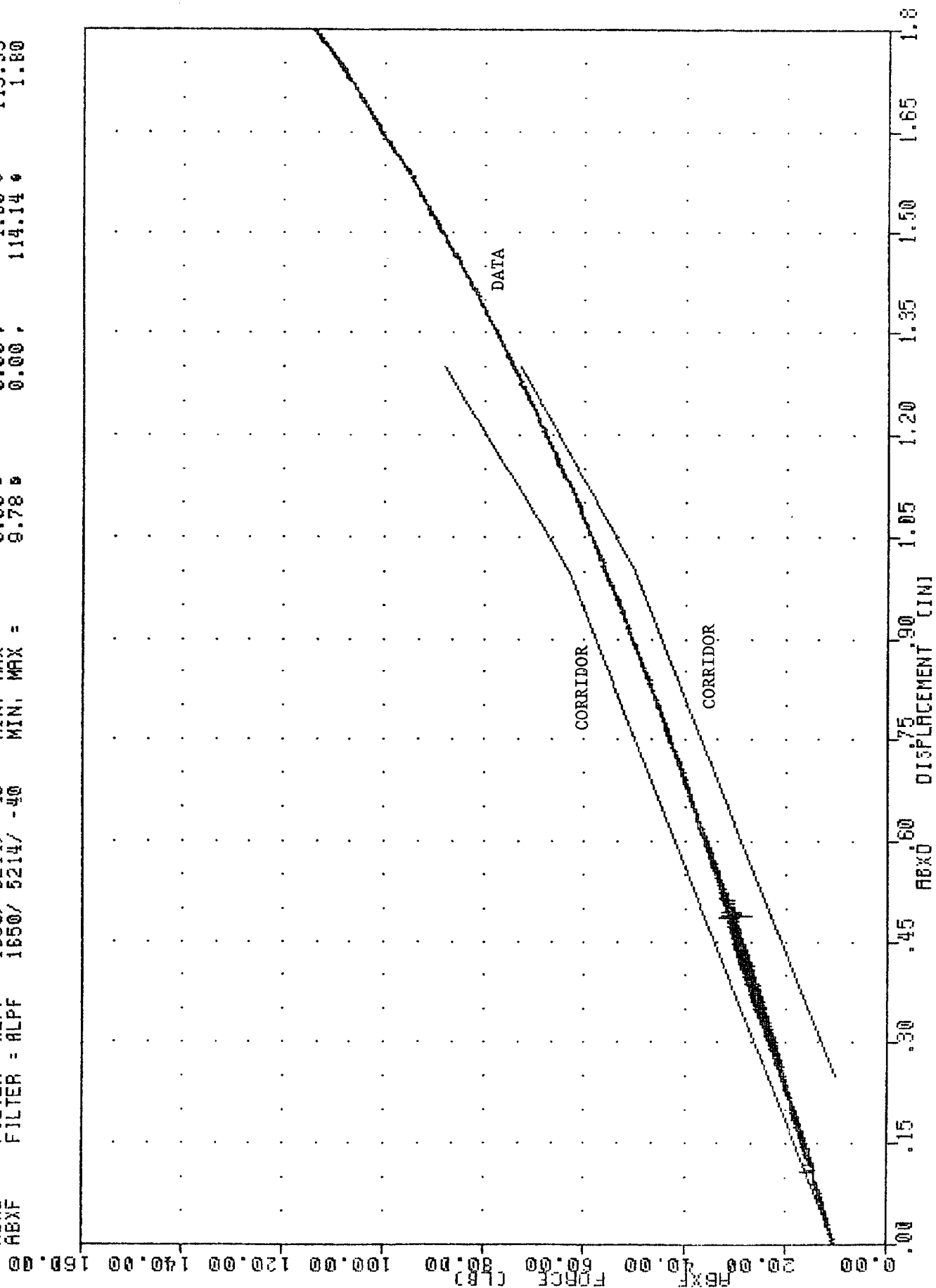
TEMPERATURE 69.00 F
NHTSA NCA ABB2621

RELATIVE HUMIDITY 63.00 %
572 SN 826 ABDOM COMPR CAL 21

TEST CORRIDORS		
DISPLACEMENT	FORCE	TEST RESULTS
0 IN.	10 LBS	10 LBS
.50 IN.	23.00 - 36.00 LBS	31.82 LBS
.75 IN.	36.00 - 50.00 LBS	42.77 LBS
1.00 IN.	50.00 - 63.00 LBS	56.19 LBS
1.30 IN.	73.00 - 88.00 LBS	74.44 LBS

TECHNICIAN *Harry L. Phelps*
TEST SUPERVISOR *V. L. Watters*

NHTSA NDA: AB82621
 FILTER = ALPF
 ABXD 572 SN 826 ABDOM COMPH CHL 21 85113
 1650/ 5214/ -40 MIN, MAX = 0.00 9.78
 1650/ 5214/ -40 MIN, MAX = 0.00 114.14
 PLOT DATE 23-APR-85 09:12:04
 0.00 113.99
 0.00 1.80



ABDOMINAL COMPRESSION VS DISPLACEMENT

TRANSPORTATION RESEARCH CENTER OF OHIO

HEAD DROP TEST

PART 572

TEMPERATURE 69 F
NHTSA NCA HD82621

RELATIVE HUMIDITY 63 %
572 SN 826 HEAD DROP CAL 21

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PEAK RESULTANT ACCELERATION	210 - 260 G	250.33 G
TIME ABOVE 100 G LEVEL	0.9 - 1.5 MS	1.25 MS
PEAK LATERAL ACCELERATION	10 G MAX	6.64 G
IS ACCELERATION CURVE UNIMODAL?		YES

TECHNICIAN Mary L. Phelps

TEST SUPERVISOR V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

NECK PENDULUM TEST

PART 572

TEMPERATURE 69.00 F
NHTSA NCA HN82621

RELATIVE HUMIDITY 64.00 %
572 SN 826 HEAD/NECK CAL 21

Test Parameter	Specification	Test Results
Pendulum velocity	21.5 to 25.5 fps	22.22 fps
Pendulum Deceleration:		
T1 - T2: 5 - 20 G	3 ms. max	2.26 ms.
T2 - T3: 20 - 20 G	25 - 30 ms.	26.45 ms.
T3 - T4: 20 - 5 G	10 ms. max	6.34 ms.
Avg. G level T2 - T3	20 - 24 G	22.79 G
Maximum Rotation Angle	63 - 73 deg.	66.65 deg.
Peak Head Resultant Accel	26 G max	22.95 G

Test Parameter	Specification	Test Results
Rotation Angle	Time	Chordal Disp.
(degrees)	(ms.)	(in.)
0	-2.0 - +2.0	-0.5 - +0.5
30	25.6 - 34.4	2.1 - 3.1
60	40.3 - 51.7	4.3 - 5.3
max	53.2 - 66.8	5.0 - 6.0
60	67.0 - 83.0	4.3 - 5.3
30	85.4 - 104.6	2.1 - 3.1
0	101.0 - 123.0	-0.5 - +0.5

TECHNICIAN *Harry L. Phelps*

TEST SUPERVISOR *V.K. Watters*

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572

TEMPERATURE 69 F
NHTSA NCA TL82621

RELATIVE HUMIDITY 66 %
572 SN 826 L.S. THORAX CAL 21

TEST PARAMETER	LOW SPEED TEST	TEST RESULTS
	SPECIFICATION	
PENDULUM VELOCITY	13.86-14.14 FT/SEC	14.04 FT/SEC
PEAK DEFLECTION	1.1 INCHES MAX.	0.85 INCHES
PEAK RESISTIVE FORCE	1,450. POUNDS MAX.	1396. POUNDS
INTERNAL HYSTERESIS	50% - 70%	66.5%

TECHNICIAN Gary L. Phelps

TEST SUPERVISOR V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572

TEMPERATURE 68 F
NHTSA NCA TH82621

RELATIVE HUMIDITY 70 %
572 SN 826 H.S. THORAX CAL 21

TEST PARAMETER	HIGH SPEED TEST	
	SPECIFICATION	TEST RESULTS
PENDULUM VELOCITY	21.78-22.22 FT/SEC	22.22 FT/SEC
PEAK DEFLECTION	1.7 INCHES MAX.	1.35 INCHES
PEAK RESISTIVE FORCE	2,250. POUNDS MAX.	2124. POUNDS
INTERNAL HYSTERESIS	50% - 70%	67.1%

TECHNICIAN

Mary J. Phelps

TEST SUPERVISOR

V. L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

KNEE IMPACT TEST

PART 572

TEMPERATURE 69 F
RIGHT KNEE
NHTSA NCA RK82621

RELATIVE HUMIDITY 70 %
572 SN 826 R.KNEE IMP CAL 21

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.84 FT/SEC
PEAK KNEE IMPACT FORCE	1850 - 2500 LBS.	1986.60 LBS.
DURATION ABOVE 1000 LBS.	>=1.7 MS.	1.76 MS.

TECHNICIAN

Gary L. Phelps

TEST SUPERVISOR

V. J. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

KNEE IMPACT TEST

PART 572

TEMPERATURE 68 F
LEFT KNEE
NHTSA NCA LK82621

RELATIVE HUMIDITY 70 %
572 SN 826 L.KNEE IMP CAL 21

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.84 FT/SEC
PEAK KNEE IMPACT FORCE	1850 - 2500 LBS.	1856.68 LBS.
DURATION ABOVE 1000 LBS.	≥ 1.7 MS.	1.75 MS.

TECHNICIAN Larry J. Phelps
TEST SUPERVISOR K. Z. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

EXTERNAL DIMENSIONS

PART 572

TEMPERATURE 77.00 F
NCA ED83005

RELATIVE HUMIDITY 60.00 %
572 SN 830 EXT. DIMENSIONS 05

DESCRIPTION	SPECIFICATION	TEST RESULTS
SN ALDERSON RESEARCH LAB 830		
Sitting Height	35.6 - 35.8IN	35.7 INS
Shoulder Pivot Height	21.8 - 22.4IN	22.4 INS
Hip Pivot Height	3.9 IN (ref.)	3.9 INS
Hip Pivot From Backline	4.8 IN (ref.)	4.8 INS
Knee Pivot From Backline	20.1 - 20.7IN	20.4 INS
Rear of Head From Backline	1.7 IN (ref)	1.7 INS
Chest Depth	9.1 - 9.6IN	9.3 INS
Shoulder Width	17.8 - 18.4IN	17.8 INS
Chest Circumference Over Nipples	36.8 - 40.0IN	37.5 INS
Waist Circumference at Min. Girth	31.4 - 32.6IN	32.5 INS
Hip Width	14.0 - 15.4IN	14.6 INS
Knee Pivot From Floor	19.3 - 19.9IN	19.5 INS

TECHNICIAN

Gary L. Phelps

TEST SUPERVISOR

V. F. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

LUMBAR FLEXION TEST

PART 572

TEMPERATURE 71.00 F
NCA LF83005

RELATIVE HUMIDITY 46.00 %
572 SN830 LUMBAR FLEX CAL 05

DEFLECTION	SPECIFICATION	TEST RESULTS
0 Deg.	0 LBS	0.00 LBS
20 Deg	22.00 - 34.00 LBS	29.00 LBS
30 Deg	34.00 - 46.00 LBS	35.00 LBS
40 Deg	46.00 - 58.00 LBS	47.00 LBS
NET RETURN ANGLE	< 12 DEG	9.60 DEG

TECHNICIAN

Mary L. Phelps

TEST SUPERVISOR

V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

ABDOMINAL COMPRESSION TEST

PART 572

TEMPERATURE 72.00 F
NHTSA NCA ABB3005

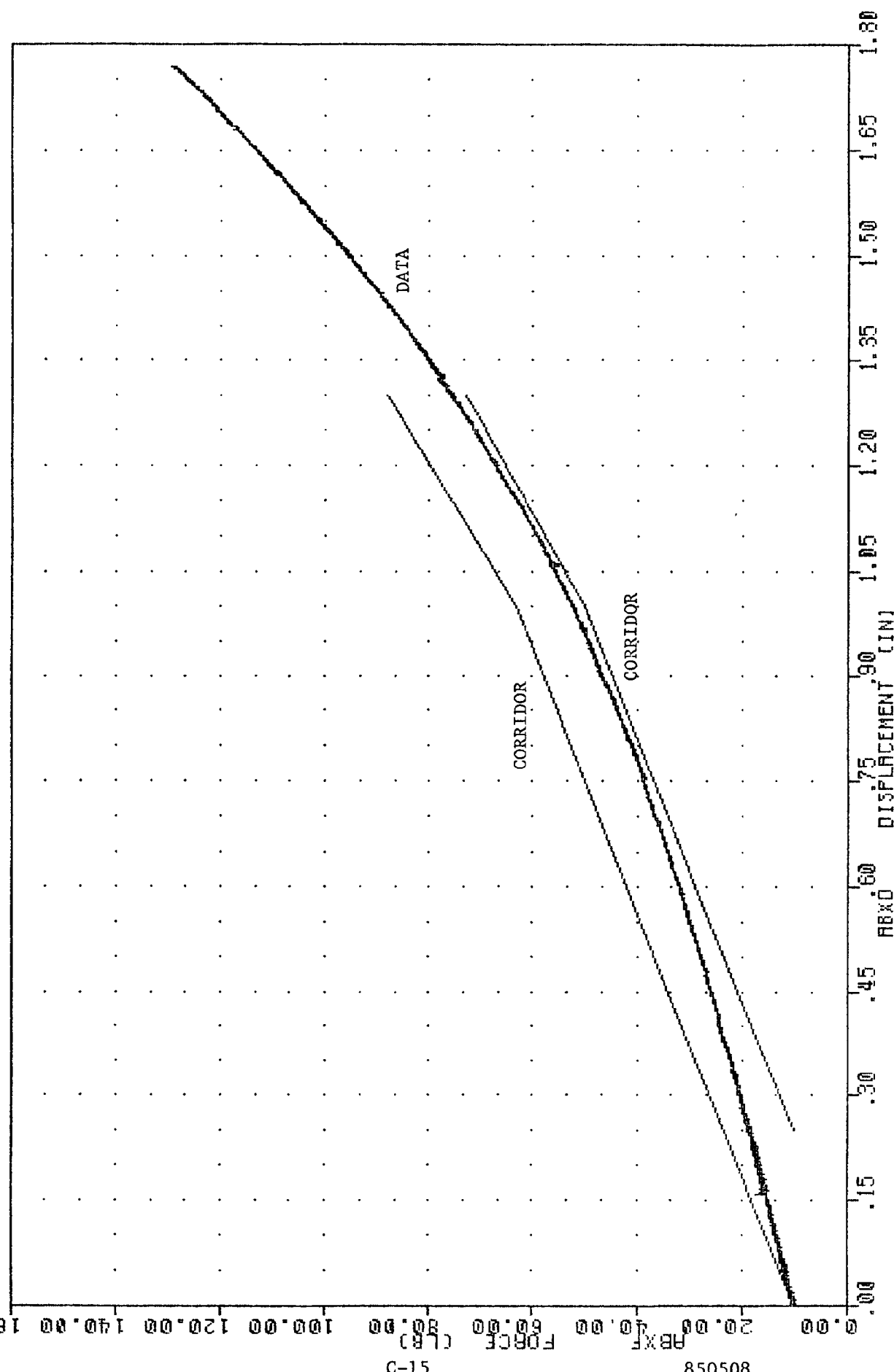
RELATIVE HUMIDITY 43.00 %
572 SN 830 ABDOM COMPR CAL 05

TEST CORRIDORS		
DISPLACEMENT	FORCE	TEST RESULTS
0 IN.	10 LBS	10 LBS
.50 IN.	23.00 - 36.00 LBS	27.87 LBS
.75 IN.	36.00 - 50.00 LBS	38.82 LBS
1.00 IN.	50.00 - 63.00 LBS	52.54 LBS
1.30 IN.	73.00 - 88.00 LBS	75.60 LBS

TECHNICIAN *Gary L. Phelps*
TEST SUPERVISOR *V.L. Watters*

NHISA NCA : AB83005
 ABXD FILTER = ALPF
 ABXF FILTER = ALPF
 572 SN 830 ABDOM COMP CAL 05
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 1650/ 5214/ -40 MIN, MAX =
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 0.63
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 1.77
 129.31
 14:18:52
 128.87
 1.77

150.00



C-15

850508

ORIGINATOR: CONSTRUCTION OF STRESS CORRELATION

TRANSPORTATION RESEARCH CENTER OF OHIO

HEAD DROP TEST

PART 572

TEMPERATURE 72 F
NHTSA NCA HD83005

RELATIVE HUMIDITY 43 %
572 SN 830 HEAD DROP CAL 05

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PEAK RESULTANT ACCELERATION	210 - 260 G	213.93 G
TIME ABOVE 100 G LEVEL	0.9 - 1.5 MS	1.28 MS
PEAK LATERAL ACCELERATION	10 G MAX	3.97 G
IS ACCELERATION CURVE UNIMODAL?		YES

TECHNICIAN

Harry L. Phelps

TEST SUPERVISOR

V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

NECK PENDULUM TEST

PART 572

TEMPERATURE 72.00 F
NHTSA NCA HN83005

RELATIVE HUMIDITY 39.00 %
572 SN 830 HEAD/NECK CAL 05

Test Parameter	Specification	Test Results
Pendulum velocity	21.5 to 25.5 fps	24.24 fps
Pendulum Deceleration:		
T1 - T2: 5 - 20 G	3 ms. max	2.17 ms.
T2 - T3: 20 - 20 G	25 - 30 ms.	27.70 ms.
T3 - T4: 20 - 5 G	10 ms. max	7.24 ms.
Avg. G level T2 - T3	20 - 24 G	23.77 G
Maximum Rotation Angle	63 - 73 deg.	65.79 deg.
Peak Head Resultant Accel	26 G max	24.67 G

Test Parameter	Specification	Test Results
Rotation Angle	Time Chordal Disp.	Time Chordal Disp.
(degrees)	(ms.) (in.)	(ms.) (in.)
0	-2.0 - +2.0 -0.5 - +0.5	0.13 0.03
30	25.6 - 34.4 2.1 - 3.1	30.29 2.32
60	40.3 - 51.7 4.3 - 5.3	46.96 4.48
max	53.2 - 66.8 5.0 - 6.0	57.25 5.09
60	67.0 - 83.0 4.3 - 5.3	69.09 4.55
30	85.4 - 104.6 2.1 - 3.1	89.47 2.20
0	101.0 - 123.0 -0.5 - +0.5	104.24 0.13

TECHNICIAN

Mary L. Phelps

TEST SUPERVISOR

V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572

TEMPERATURE 73 F
NHTSA NCA TL83005

RELATIVE HUMIDITY 35 %
572 SN 830 L.S.THORAX CAL 05

TEST PARAMETER	LOW SPEED TEST	
	SPECIFICATION	TEST RESULTS
PENDULUM VELOCITY	13.86-14.14 FT/SEC	14.04 FT/SEC
PEAK DEFLECTION	1.1 INCHES MAX.	0.83 INCHES
PEAK RESISTIVE FORCE	1,450. POUNDS MAX.	1396. POUNDS
INTERNAL HYSTERESIS	50% - 70%	62.5%

TECHNICIAN Gary L. Phelps
TEST SUPERVISOR V. J. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572

TEMPERATURE 73 F
NHTSA NCA TH83005

RELATIVE HUMIDITY 35 %
572 SN 830 H.S.THORAX CAL 05

TEST PARAMETER	HIGH SPEED TEST	
	SPECIFICATION	TEST RESULTS
PENDULUM VELOCITY	21.78-22.22 FT/SEC	22.22 FT/SEC
PEAK DEFLECTION	1.7 INCHES MAX.	1.35 INCHES
PEAK RESISTIVE FORCE	2,250. POUNDS MAX.	2154. POUNDS
INTERNAL HYSTERESIS	50% - 70%	60.7%

TECHNICIAN *Harry L. Phelps*

TEST SUPERVISOR *V. L. Watters*

TRANSPORTATION RESEARCH CENTER OF OHIO

KNEE IMPACT TEST

PART 572

TEMPERATURE 73 F
RIGHT KNEE
NHTSA NCA RK83005

RELATIVE HUMIDITY 35 %
572 SN 830 R.KNEE IMP CAL 05

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.96 FT/SEC
PEAK KNEE IMPACT FORCE	1850 - 2500 LBS.	2104.18 LBS.
DURATION ABOVE 1000 LBS.	≥ 1.7 MS.	1.73 MS.

TECHNICIAN

Mary L. Phelps

TEST SUPERVISOR

K.L. Waters

TRANSPORTATION RESEARCH CENTER OF OHIO

KNEE IMPACT TEST

PART 572

TEMPERATURE 74 F
LEFT KNEE
NHTSA NCA LK83005

RELATIVE HUMIDITY 36 %
572 SN 830 L.KNEE IMP CAL 05

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.96 FT/SEC
PEAK KNEE IMPACT FORCE	1850 - 2500 LBS.	1869.28 LBS.
DURATION ABOVE 1000 LBS.	≥ 1.7 MS.	1.81 MS.

TECHNICIAN

Larry L. Phelps

TEST SUPERVISOR

V.L. Watters

POST-TEST CALIBRATION

TRANSPORTATION RESEARCH CENTER OF OHIO

EXTERNAL DIMENSIONS

PART 572

TEMPERATURE 69.00 F
NHTSA NCA ED82622RELATIVE HUMIDITY 68.00 %
572 SN 826 EXT.DIMENSIONS 22

DESCRIPTION	SPECIFICATION	TEST RESULTS
SN ALDERSON RESEARCH LAB B26		
Sitting Height	35.6 - 35.8IN	35.6 INS
Shoulder Pivot Height	21.8 - 22.4IN	22.3 INS
Hip Pivot Height	3.9 IN (ref.)	3.9 INS
Hip Pivot From Backline	4.8 IN (ref.)	4.8 INS
Knee Pivot From Backline	20.1 - 20.7IN	20.5 INS
Rear of Head From Backline	1.7 IN (ref)	1.7 INS
Chest Depth	9.1 - 9.6IN	9.3 INS
Shoulder Width	17.8 - 18.4IN	17.9 INS
Chest Circumference Over Nipples	36.8 - 40.0IN	37.5 INS
Waist Circumference at Min. Girth	31.4 - 32.6IN	32.0 INS
Hip Width	14.0 - 15.4IN	14.6 INS
Knee Pivot From Floor	19.3 - 19.9IN	19.3 INS

TECHNICIAN

Mary L. Phelps

TEST SUPERVISOR

V.L. Witter

TRANSPORTATION RESEARCH CENTER OF OHIO

LUMBAR FLEXION TEST

PART 572

TEMPERATURE 70.00 F
NHTSA NCA LF82622

RELATIVE HUMIDITY 67.00 %
572 SN826 LUMBAR FLEX CAL 22

DEFLECTION	SPECIFICATION	TEST RESULTS
0 Deg.	0 LBS	0.00 LBS
20 Deg	22.00 - 34.00 LBS	29.00 LBS
30 Deg	34.00 - 46.00 LBS	35.00 LBS
40 Deg	46.00 - 58.00 LBS	48.00 LBS
NET RETURN ANGLE	< 12 DEG	10.37 DEG

TECHNICIAN *Gary L. Phelps*
TEST SUPERVISOR *V.L. Watters*

TRANSPORTATION RESEARCH CENTER OF OHIO

ABDOMINAL COMPRESSION TEST

PART 572

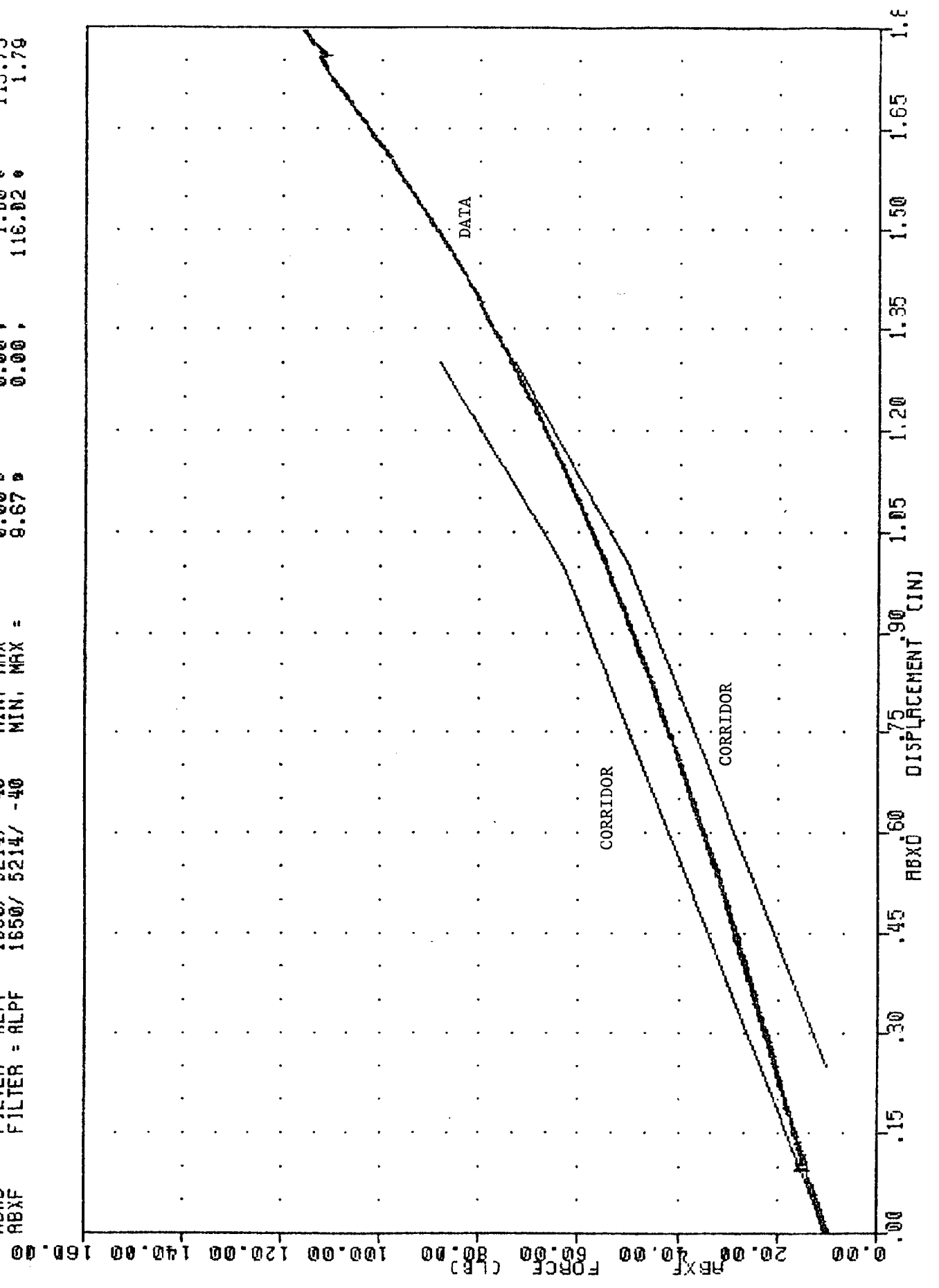
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NHTSA NCA ABB2622

RELATIVE HUMIDITY 70.00 %
572 SN 826 ABDOM COMPR CAL 22

TEST CORRIDORS		
DISPLACEMENT	FORCE	TEST RESULTS
0 IN.	10 LBS	10 LBS
.50 IN.	23.00 - 36.00 LBS	30.65 LBS
.75 IN.	36.00 - 50.00 LBS	42.01 LBS
1.00 IN.	50.00 - 63.00 LBS	54.83 LBS
1.30 IN.	73.00 - 88.00 LBS	73.63 LBS

TECHNICIAN *Harry S. Phelps*
TEST SUPERVISOR *V. L. Watters*

NHISA NCR : AB82622
 ABXD FILTER = ALPF
 ABXF FILTER = ALPF
 572 SN 826 ABDOM COMP CAL 22 85141
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 0.00, 116.02
 1.79



ABDOMINAL COMPRESSION VS DISPLACEMENT

TRANSPORTATION RESEARCH CENTER OF OHIO

HEAD DROP TEST

PART 572

TEMPERATURE 69 F
NHTSA NCA HD82622

RELATIVE HUMIDITY 70 %
572 SN 826 HEAD DROP CAL 22

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PEAK RESULTANT ACCELERATION	210 - 260 G	258.35 G
TIME ABOVE 100 G LEVEL	0.9 - 1.5 MS	1.24 MS
PEAK LATERAL ACCELERATION	10 G MAX	9.66 G
IS ACCELERATION CURVE UNIMODAL?		YES

TECHNICIAN

Mary L. Phelps

TEST SUPERVISOR

V. F. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

NECK PENDULUM TEST

PART 572

TEMPERATURE 70.00 F
NHTSA NCA HN82622

RELATIVE HUMIDITY 69.00 %
572 SN 826 HEAD/NECK CAL 22

Test Parameter	Specification	Test Results
Pendulum velocity	21.5 to 25.5 fps	22.31 fps
Pendulum Deceleration:		
T1 - T2: 5 - 20 G	3 ms. max	1.94 ms.
T2 - T3: 20 - 20 G	25 - 30 ms.	27.05 ms.
T3 - T4: 20 - 5 G	10 ms. max	4.91 ms.
Avg. G level T2 - T3	20 - 24 G	23.09 G
Maximum Rotation Angle	63 - 73 deg.	67.02 deg.
Peak Head Resultant Accel	26 G max	24.18 G

Test Parameter	Specification	Test Results
Rotation Angle (degrees)	Time (ms.) Chordal Disp. (in.)	Time (ms.) Chordal Disp. (in.)
0	-2.0 - +2.0 -0.5 - +0.5	0.13 0.03
30	25.6 - 34.4 2.1 - 3.1	30.02 2.58
60	40.3 - 51.7 4.3 - 5.3	45.91 4.69
max	53.2 - 66.8 5.0 - 6.0	60.50 5.45
60	67.0 - 83.0 4.3 - 5.3	73.64 4.90
30	85.4 - 104.6 2.1 - 3.1	94.51 2.33
0	101.0 - 123.0 -0.5 - +0.5	109.26 0.13

TECHNICIAN

Mary L Phelps

TEST SUPERVISOR

V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572

TEMPERATURE 68 F
NHTSA NCA TL82622

RELATIVE HUMIDITY 65 %
572 SN 826 L.S.THORAX CAL 22

LOW SPEED TEST		
TEST PARAMETER	SPECIFICATION	TEST RESULTS
PENDULUM VELOCITY	13.86-14.14 FT/SEC	14.03 FT/SEC
PEAK DEFLECTION	1.1 INCHES MAX.	0.84 INCHES
PEAK RESISTIVE FORCE	1,450. POUNDS MAX.	1368. POUNDS
INTERNAL HYSTERESIS	50% - 70%	59.1%

TECHNICIAN

Larry L. Phelps

TEST SUPERVISOR

K. L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572

TEMPERATURE 69 F
NHTSA NCA TH82622RELATIVE HUMIDITY 64 %
572 SN 826 H.S.THORAX CAL 22

HIGH SPEED TEST		
TEST PARAMETER	SPECIFICATION	TEST RESULTS
PENDULUM VELOCITY	21.78-22.22 FT/SEC	22.22 FT/SEC
PEAK DEFLECTION	1.7 INCHES MAX.	1.19 INCHES
PEAK RESISTIVE FORCE	2,250. POUNDS MAX.	2112. POUNDS
INTERNAL HYSTERESIS	50% - 70%	62.5%

TECHNICIAN

Mary L. Phelps

TEST SUPERVISOR

V.L. Walters

TRANSPORTATION RESEARCH CENTER OF OHIO

KNEE IMPACT TEST

PART 572

TEMPERATURE 69 F
LEFT KNEE
NHTSA NCA LK82622B

RELATIVE HUMIDITY 65 %
572 SN 826 L.KNEE IMP CAL 22B

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.96 FT/SEC
PEAK KNEE IMPACT FORCE	1850 - 2500 LBS.	2027.06 LBS.
DURATION ABOVE 1000 LBS.	≥ 1.7 MS.	1.73 MS.

TECHNICIAN

Larry L. Phelps

TEST SUPERVISOR

L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

KNEE IMPACT TEST

PART 572

TEMPERATURE 71 F
RIGHT KNEE
NHTSA NCA RK82622

RELATIVE HUMIDITY 68 %

572 SN 826 R.KNEE IMP CAL 22

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.96 FT/SEC
PEAK KNEE IMPACT FORCE	1850 - 2500 LBS.	1882.05 LBS.
DURATION ABOVE 1000 LBS.	≥ 1.7 MS.	1.89 MS.

TECHNICIAN

Gary L. Phelps

TEST SUPERVISOR

V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

EXTERNAL DIMENSIONS

PART 572

TEMPERATURE 70.00 F
NHTSA NCA ED83006RELATIVE HUMIDITY 67.00 %
572 SN 830 EXT.DIMENSIONS 06

DESCRIPTION	SPECIFICATION	TEST RESULTS
SN ALDERSON RESEARCH LAB 830		
Sitting Height	35.6 - 35.8IN	35.8 INS
Shoulder Pivot Height	21.8 - 22.4IN	22.4 INS
Hip Pivot Height	3.9 IN (ref.)	3.9 INS
Hip Pivot From Backline	4.8 IN (ref.)	4.8 INS
Knee Pivot From Backline	20.1 - 20.7IN	20.4 INS
Rear of Head From Backline	1.7 IN (ref)	1.7 INS
Chest Depth	9.1 - 9.6IN	9.4 INS
Shoulder Width	17.8 - 18.4IN	17.9 INS
Chest Circumference Over Nipples	36.8 - 40.0IN	37.1 INS
Waist Circumference at Min. Girth	31.4 - 32.6IN	32.5 INS
Hip Width	14.0 - 15.4IN	14.6 INS
Knee Pivot From Floor	19.3 - 19.9IN	19.4 INS

TECHNICIAN

Mary L. Phelps

TEST SUPERVISOR

V. L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

LUMBAR FLEXION TEST

PART 572

TEMPERATURE 70.00 F
NHTSA NCA LFB3006

RELATIVE HUMIDITY 67.00 %
572 SNB30 LUMBAR FLEX CAL 06

DEFLECTION	SPECIFICATION	TEST RESULTS
0 Deg.	0 LBS	0.00 LBS
20 Deg	22.00 - 34.00 LBS	28.00 LBS
30 Deg	34.00 - 46.00 LBS	37.00 LBS
40 Deg	46.00 - 58.00 LBS	46.00 LBS
NET RETURN ANGLE	< 12 DEG	5.75 DEG

TECHNICIAN

Mary L. Phelps

TEST SUPERVISOR

V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

ABDOMINAL COMPRESSION TEST

PART 572

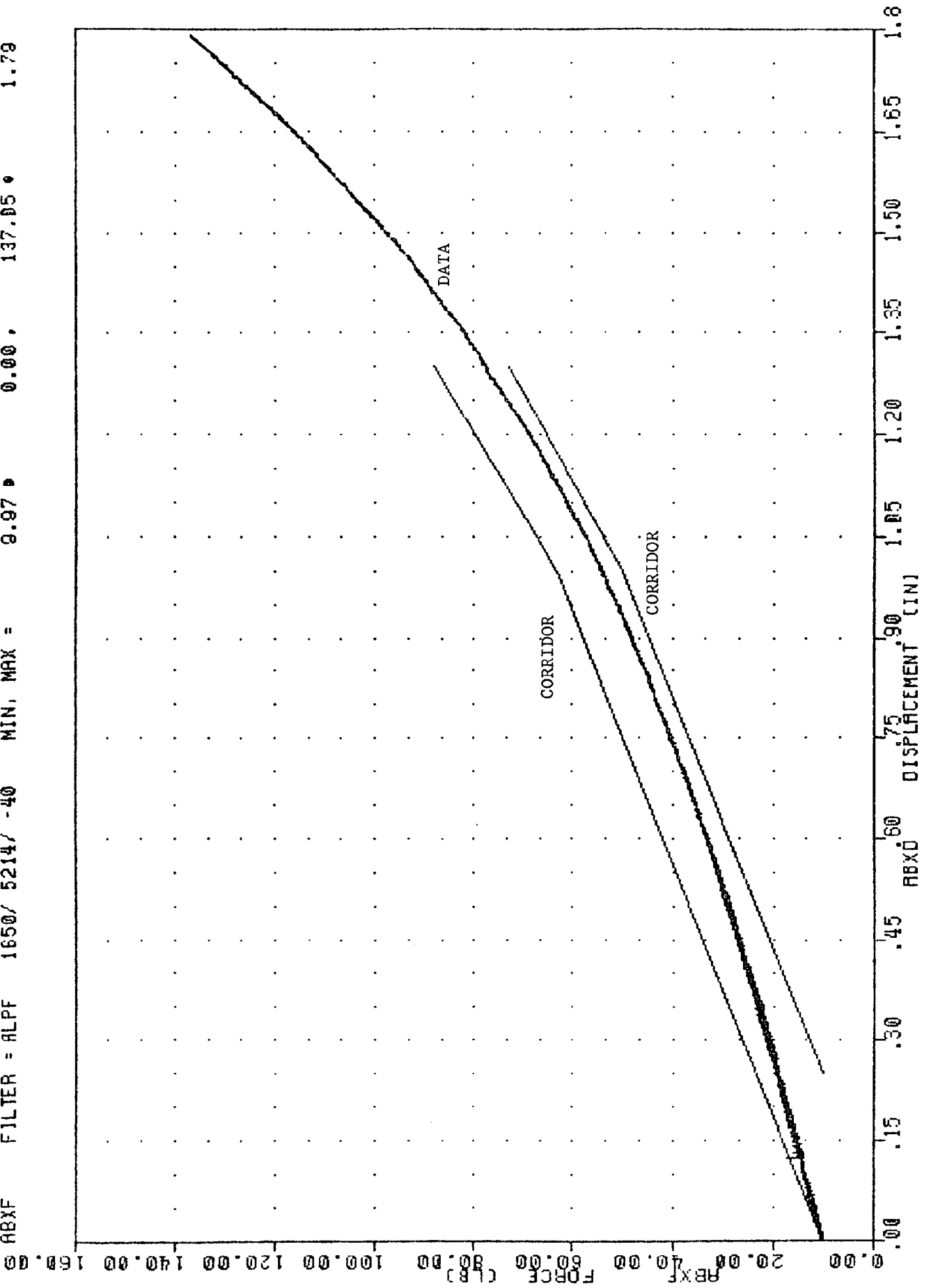
TEMPERATURE 68.00 F
NHTSA NCA ABB3006

RELATIVE HUMIDITY 70.00 %
572 SN 830 ABDOM COMPR CAL 06

TEST CORRIDORS		
DISPLACEMENT	FORCE	TEST RESULTS
0 IN.	10 LBS	10 LBS
.50 IN.	23.00 - 36.00 LBS	28.98 LBS
.75 IN.	36.00 - 50.00 LBS	40.24 LBS
1.00 IN.	50.00 - 63.00 LBS	54.13 LBS
1.30 IN.	73.00 - 88.00 LBS	77.68 LBS

TECHNICIAN *Harry L. Phelps*
TEST SUPERVISOR *V.L. Walters*

NHTSA NCRA, AB83006 572 SN 830 AB800M COMP CAL 06 85141 21-MAY-85 08:24:29
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 ABXF FILTER = ALPF 1650/ 5214/ -40 MIN, MAX = 0.00 0.00 1.79 137.05



TRANSPORTATION RESEARCH CENTER OF OHIO

HEAD DROP TEST

PART 572

TEMPERATURE 69 F
NHTSA NCA HD83006

RELATIVE HUMIDITY 69 %
572 SN 830 HEAD DROP CAL 06

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PEAK RESULTANT ACCELERATION	210 - 260 G	220.87 G
TIME ABOVE 100 G LEVEL	0.9 - 1.5 MS	1.27 MS
PEAK LATERAL ACCELERATION	10 G MAX	9.32 G
IS ACCELERATION CURVE UNIMODAL?		YES

TECHNICIAN Mary L. Phelps

TEST SUPERVISOR V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

NECK PENDULUM TEST

PART 572

TEMPERATURE 69.00 F
NHTSA NCA HN83006

RELATIVE HUMIDITY 63.00 %
572 SN 830 HEAD/NECK CAL 06

Test Parameter	Specification	Test Results
Pendulum velocity	21.5 to 25.5 fps	24.24 fps
Pendulum Deceleration:		
T1 - T2: 5 - 20 G	3 ms. max	1.91 ms.
T2 - T3: 20 - 20 G	25 - 30 ms.	26.81 ms.
T3 - T4: 20 - 5 G	10 ms. max	8.24 ms.
Avg. G level T2 - T3	20 - 24 G	23.65 G
Maximum Rotation Angle	63 - 73 deg.	67.77 deg.
Peak Head Resultant Accel	26 G max	24.49 G

Test Parameter	Specification	Test Results
Rotation Angle	Time Chordal Displ.	Time Chordal Displ.
(degrees)	(ms.) (in.)	(ms.) (in.)
0	-2.0 - +2.0 -0.5 - +0.5	0.00 0.01
30	25.6 - 34.4 2.1 - 3.1	29.77 2.48
60	40.3 - 51.7 4.3 - 5.3	45.13 4.51
max	83.2 - 66.8 5.0 - 6.0	57.25 5.15
60	67.0 - 83.0 4.2 - 5.3	69.95 4.50
30	85.4 - 104.6 2.1 - 3.1	88.86 2.16
0	101.0 - 123.0 -0.5 - +0.5	103.83 0.09

TECHNICIAN

Mary L. Phelps

TEST SUPERVISOR

V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572

TEMPERATURE 68 F
NHTSA NCA TL83006

RELATIVE HUMIDITY 64 %
572 SN 830 L.S.THORAX CAL 06

	LOW SPEED TEST	
TEST PARAMETER	SPECIFICATION	TEST RESULTS
PENDULUM VELOCITY	13.86-14.14 FT/SEC	14.04 FT/SEC
PEAK DEFLECTION	1.1 INCHES MAX.	0.81 INCHES
PEAK RESISTIVE FORCE	1,450. POUNDS MAX.	1436. POUNDS
INTERNAL HYSTERESIS	50% - 70%	63.7%

TECHNICIAN *Harry L. Phelps*

TEST SUPERVISOR *V. L. Watters*

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572

TEMPERATURE 69 F
NHTSA NCA 7H85006RELATIVE HUMIDITY 64 %
572 SN 830 H.S. THORAX CAL 06

TEST PARAMETER	HIGH SPEED TEST	
	SPECIFICATION	TEST RESULTS
PENDULUM VELOCITY	21.79-22.22 FT/SEC	22.22 FT/SEC
PEAK DEFLECTION	1.7 INCHES MAX.	1.24 INCHES
PEAK RESISTIVE FORCE	2,250. POUNDS MAX.	2199. POUNDS
INTERNAL HYSTERESIS	50% - 70%	60.8%

TECHNICIAN

Gary L. Phelps

TEST SUPERVISOR

V. L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

KNEE IMPACT TEST

PART 572

TEMPERATURE 69 F
LEFT KNEE
NHTSA NCA LK83006

RELATIVE HUMIDITY 61 %
572 SN 930 L.KNEE IMP CAL 06

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.96 FT/SEC
PEAK KNEE IMPACT FORCE	1950 - 2500 LBS.	1878.74 LBS.
DURATION ABOVE 1000 LBS.	>=1.7 MS.	2.08 MS.

TECHNICIAN

Mary L. Phelps

TEST SUPERVISOR

V.L. Watters

TRANSPORTATION RESEARCH CENTER OF OHIO

KNEE IMPACT TEST

PART 572

TEMPERATURE 69 F
RIGHT KNEE
NHTSA NCA RK83006

RELATIVE HUMIDITY 61 %
572 SN 830 R.KNEE IMP CAL 06

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.96 FT/SEC
PEAK KNEE IMPACT FORCE	1850 - 2500 LBS.	2058.81 LBS.
DURATION ABOVE 1000 LBS.	≥ 1.7 MS.	1.86 MS.

TECHNICIAN

Harry L. Phelps

TEST SUPERVISOR

V.L. Watters

APPENDIX D
RESTRAINT INSTRUCTION FROM OWNER'S MANUAL

Ford Motor Company recommends that you always "buckle up" for safety. In some areas, seat belt usage is required by law.

WARNING—All vehicle occupants should wear their seat belts for maximum protection in the event of a collision or a sudden stop.

Front and Rear Lap/Shoulder Inertia Reel Seat Belts



The belt system allows for freedom of movement, locking tightly only on hard braking, sharp cornering or impacts of approximately 5 MPH (8 km/h) or more. The system can be made to lock by jerking on the belt, which can also be used to check the functioning of the seat belt.

tion) and then guide the seat belt back into the stowed position with the tongue facing in-board. Ensure that the front belt webbing has travelled to the rear of the slider bar and is not obstructing the door opening.

UNTANGLING BELTS—If the belt webbing becomes twisted by use, it may cause the retractor to jam. If this occurs, you can free the belt by:

- Pulling on the belt with both hands to tighten it on the retractor spool.
- Feeding the belt back into the retractor until it is completely rewound. Repeat the previous step if necessary.
- Pulling the belt out of the retractor as far as it will go. Remove any foreign matter or untwist the belt as necessary and let the belt steadily retract.

WARNING—Never wear the shoulder belt under the arm.

Never swing it around your neck over the inside shoulder.

Never use a seat belt for more than one person.

Use the shoulder belt on the outside shoulder only.

Be sure the lap portion of the belt is fitted snugly around the hips, not the waist.

After entering your vehicle, close the door and adjust the seat to obtain the best position for your driving comfort, access to controls and visibility (see Seat Adjustment Procedures).

FASTENING BELTS—Pull the lap/shoulder belt steadily from the retractor so the shoulder portion of the belt crosses your shoulder and chest and insert the belt tongue into the buckle until a click is heard (see illustration). Check that the tongue is latched securely in the buckle.

NOTE—For front seat belts, ensure that the webbing is located at the front of the slider bar when worn.

Also, if the vehicle is on an incline, it may not be possible to extract the webbing from the retractor. In this event, wait until the vehicle is on level ground before putting on the belt.

UNFASTENING BELTS—To release the belt, press the red button on the buckle (see illustration).

Never obstruct the belt travel along the slider bar, and always ensure that the webbing is located at the front of the bar whenever the seat belt is worn.

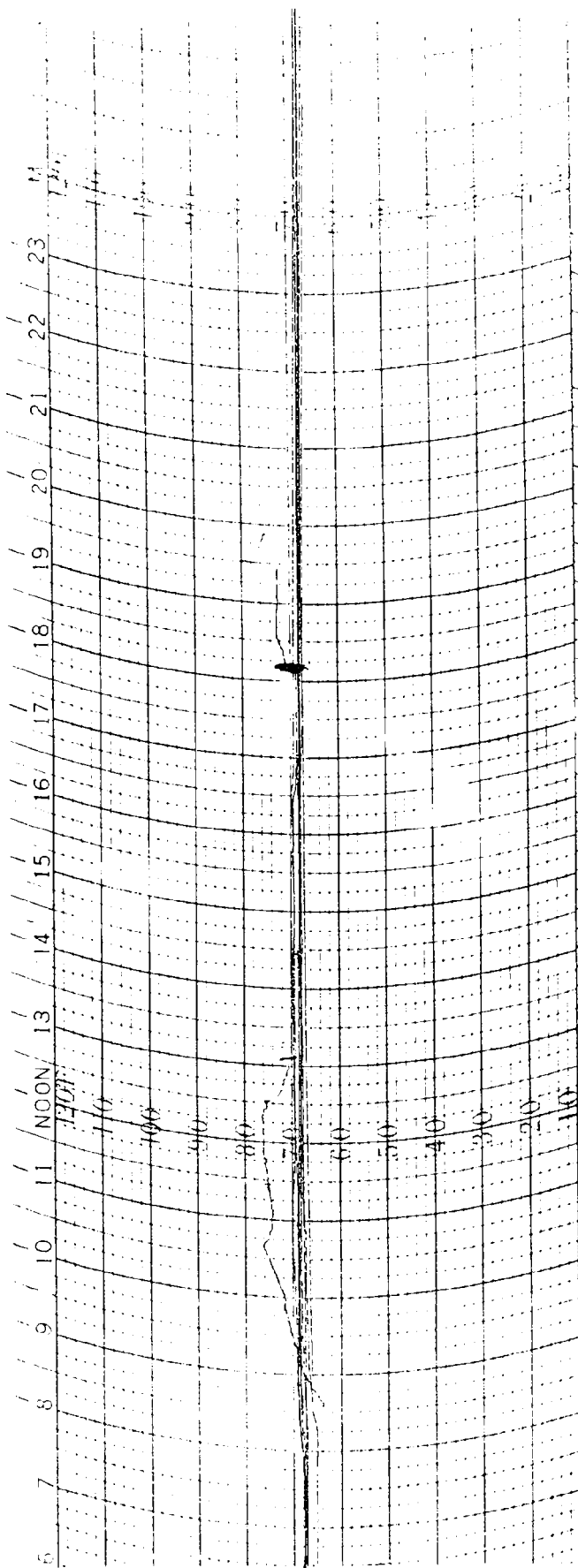
Always ensure that if the rear seat is folded, the webbing for the front seat belts is not trapped or restricted in movement.

After returning the rear seatback to its normal position, ensure that the rear seat belts are not trapped behind the seatback or cushion.

Failure to follow these precautions could increase the chance and/or severity of injury. If you have any doubts on the use of the seat belts, consult your Merkur dealer.

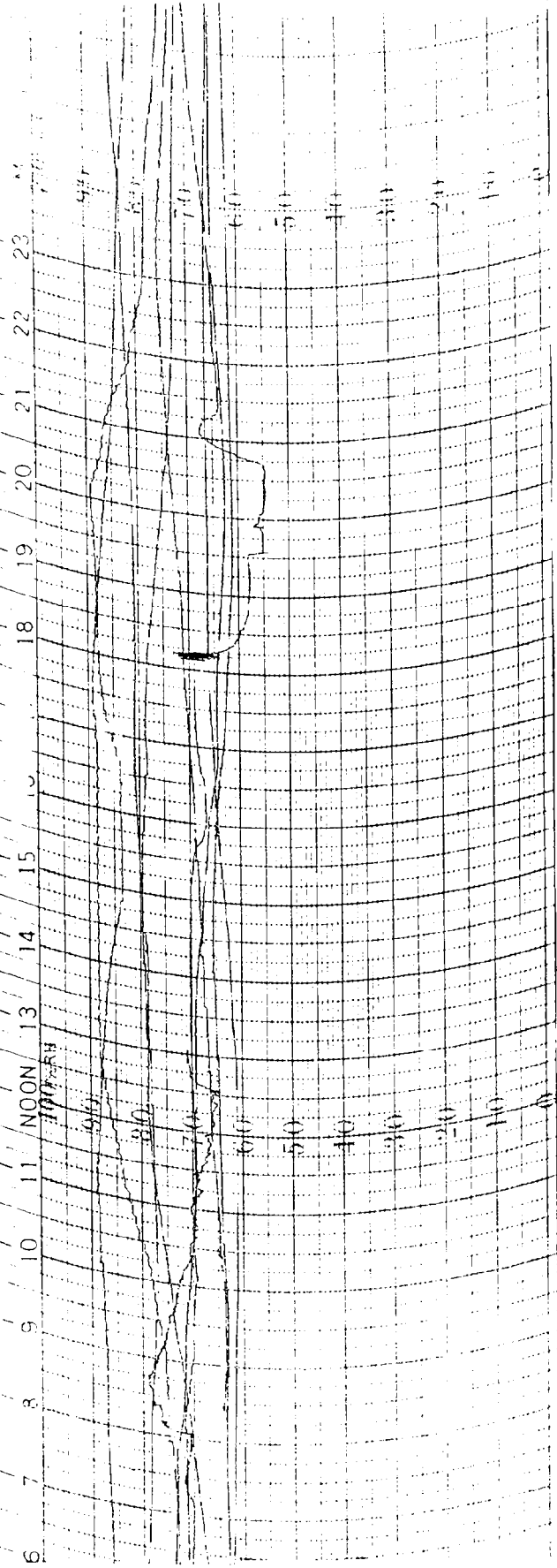
Center Rear Lap Belts

The rear center lap belts do not have retractors and therefore must be adjusted to the correct position for wearing, and should be shortened and fastened when not in use.



NCAP FORD MEYER

5-7-85



5-8-85