REPORT NO. TRC-87-03

DOT4995

NEW CAR ASSESSMENT PROGRAM (NCAP)

FRONTAL BARRIER IMPACT TEST

FORD MOTOR COMPANY

1987 FORD MUSTANG LX

3-DOOR HATCHBACK

MH0203

TRCO TEST NO. 870313

THE TRANSPORTATION RESEARCH CENTER OF OHIO

U.S. ROUTE 33, LOGAN COUNTY

EAST LIBERTY, OHIO 43319

APRIL 1987

FINAL REPORT

PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

OFFICE OF MARKET INCENTIVES

400 SEVENTH STREET, S.W.

ROOM NO. 5313 (NRM-22)

WASHINGTON, DC 20590

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15. Supplementary Notes

16. Abstract

A 35 mph frontal barrier impact test using a load cell barrier was conducted on a 1987 Ford Mustang LX 3-Door Hatchback at the Transportation Research Center of Ohio in East Liberty, Ohio on March 13, 1987.

The barrier impact velocity was 35.2 mph, and the ambient temperature at the barrier face at the time of impact was 71°F. The post-test vehicle crush maximum was 24.4 inches, and intrusion of the firewall into the compartment was 7.2 inches.

Driver HIC: 479
Passenger HIC: 301

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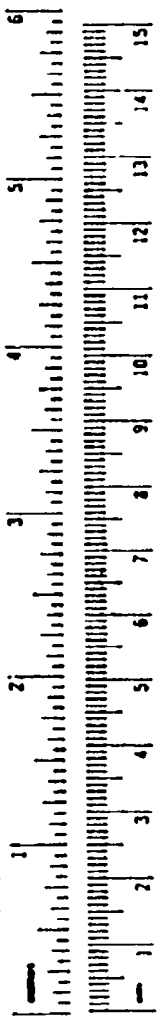
METRIC CONVERSION FACTORS

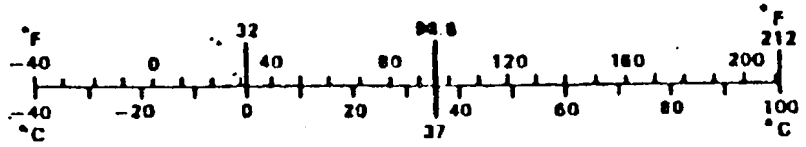
Approximate Conversions to Metric Measures

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



Approximate Conversions from Metric Measures

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



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SECTION 1.0

PURPOSE AND TEST SUMMARY

This 35 mph frontal barrier impact test is part of the Composite FY'87 Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-87-R-02012. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data.

The 35 mph frontal barrier impact test was conducted in accordance with the Office of Market Incentives (OMI) Laboratory Indicant Test Procedure.

SECTION 2.0

SUMMARY OF TEST NUMBER MH0203

A load cell barrier consisting of 36 load cells was impacted by a 1987 Ford Mustang LX 3-door hatchback at a velocity of 35.2 mph. The test was performed at the Transportation Research Center of Ohio on March 13, 1987. Pre- and post-test photographs of the vehicle and occupants are presented in Appendix A.

Two Part 572, 50th percentile adult 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 September 1, 1986.

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 the dummy performance verification test data is presented 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 3.0 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. 870313 PROJECT: MH0203

DATE: March 13, 1987 TIME: 13:25 TEMP: 71°F

VEHICLE: 1987 Ford Mustang LX 3-Door Hatchback

TEST WEIGHT (LBS): 3343

IMPACT ANGLE (DEG)*: 0

IMPACT VELOCITY (MPH)**: 35.2

MAX CRUSH (IN) STATIC: 24.4

DUMMIES:	DRIVER	PASSENGER
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 1987 Ford Mustang LX 3-door hatchback was equipped with a 2.3 liter, 4-cylinder inline engine, 5-speed manual transmission, power steering, power brakes and speed control. The total test weight with two 50th percentile male dummies, instrumentation and two on-board cameras was 3343 pounds. The test vehicle impacted the frontal load cell barrier at a velocity of 35.2 mph.

The vehicle sustained 24.4 inches of static crush. Maximum load cell barrier force measured by the 36 load cells was 108748 pounds at 52.9 milliseconds.

The driver's "Head Injury Criteria" was 479; the maximum chest deceleration over 3 milliseconds was 42 g's. The right and left femur loads were 1589 and 580 pounds, respectively.

The passenger's "Head Injury Criteria" was 301; the maximum chest deceleration over 3 milliseconds was 34 g's. The right and left femur loads were 290 and 921 pounds, respectively.

The belt-related data for each occupant are presented in Section 3.0 of this report.

DATA ACQUISITON EXPLANATIONS

1. The transducer (linear potentiometer) used to measure the belt stretch in data channel SBED2, Passenger Seat Belt Extension, failed at approximately 25 msec into the crash event. The failure was verified to be caused by off-axis loading on the sliding rod assembly applied by the belt. There was not any belt stretch indicated by the redundant thread sewn into the shoulder belt as described in the NCAP procedure.

2. A spike occurred in data channel SBED1, Driver Seat Belt Extension, at approximately 40 msec into the crash event. The cause could not be identified but is suspected to be the same as described for data channel SBED2 above.

TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Ford Motor Company

MAKE/MODEL: Ford Mustang LX VIN: 1FABP41A9HF137648

BODY STYLE: 3-Door Hatchback MODEL YEAR: 1987

NHTSA NO.: MH0203 COLOR: Dark Grey Metallic

ENGINE DATA: TYPE: Inline CYLINDERS: 4 DISPLACEMENT: 2.3 liter

__X__ GAS, ____ DIESEL, ____ TURBOCHARGE

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

DATE VEHICLE RECEIVED: 2/17/87 ODOMETER READING: 50

DEALER'S NAME AND ADDRESS: Gambine Ford, Inc
6157 South Transit Road
Lockport, NY 14094

ACCESSORIES:

POWER STEERING	Yes	AUTOMATIC TRANSMISSION	No
POWER BRAKES	Yes	AUTOMATIC SPEED CONTROL	Yes
POWER SEATS	No	TILTING STEERING WHEEL	No
POWER WINDOWS	No	TELESCOPING STEERING WHEEL	No
TINTED GLASS	No	AIR CONDITIONING	No
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 : Ford Motor Company

DATE OF MANUFACTURE: 12/86

GVWR: 3755 LBS.

GAWR: FRONT 2201 LBS., REAR 1966 LBS.

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

VEHICLE LOAD (UP TO CAPACITY): FRONT 35 psi; REAR 35 psi

RECOMMENDED TIRE SIZE: P195/75R14 LOAD RANGE X B, C, D

TIRES ON VEHICLE (MFGR., LINE, SIZE): Firestone Supreme P195/75R14

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 Manual adjustable

NUMBER OF OCCUPANTS 2 FRONT 2 REAR 4 TOTAL

CARGO LOAD 100 LBS. TOTAL 700 LBS.

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

RIGHT FRONT	745 LBS.	RIGHT REAR	642 LBS.
LEFT FRONT	827 LBS.	LEFT REAR	654 LBS.

TOTAL FRONT WEIGHT 1572 LBS. (54.8 % OF TOTAL VEHICLE WEIGHT)

TOTAL REAR WEIGHT 1296 LBS. (45.2 % OF TOTAL VEHICLE WEIGHT)

TOTAL DELIVERED WEIGHT 2868 LBS.

CALCULATION FOR TARGET TEST WEIGHT:

RCLW = RATED CARGO AND LUGGAGE WEIGHT

UDW = UNLOADED DELIVERED WEIGHT (2868 LBS)

VCW = VEHICLE CAPACITY WEIGHT (700 LBS)

DSC = DESIGNATED SEATING CAPACITY (4)

RCLW = VCW - 150 (DCS) = (100 LBS)

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

= 2868 + 100 + 328 LBS

TARGET TEST WEIGHT = 3296 LBS

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 147 LBS. CARGO:

RIGHT FRONT	843 LBS.	RIGHT REAR	826 LBS.
LEFT FRONT	872 LBS.	LEFT REAR	802 LBS.

TOTAL FRONT WEIGHT 1715 LBS. (51.3 % OF TOTAL VEHICLE WEIGHT)

TOTAL REAR WEIGHT 1628 LBS. (48.7 % OF TOTAL VEHICLE WEIGHT)

TOTAL TEST WEIGHT 3343 LBS. (1.4 % OVER TARGET WEIGHT)

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

COMPONENTS REMOVED TO MEET TARGET WEIGHT: Rear bumper, rear light assembly

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

DELIVERED ATTITUDE:	RF 27.7	;LF 27.1	;RR 27.9	;LR 27.3
PRE-TEST ATTITUDE:	RF 26.9	;LF 26.5	;RR 26.0	;LR 25.5
POST-TEST ATTITUDE:	RF 23.6	;LF 24.0	;RR 25.6	;LR 26.9

WHEELBASE: 100.3 INCHES

CG = 48.8 INCHES REARWARD OF FRONT WHEEL CENTERLINE

TEST CONDITIONS

TEST NUMBER: 870313

DATE OF TEST: March 13, 1987 TIME OF TEST: 13:25

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

AMBIENT TEMPERATURE AT IMPACT AREA: 71°F

TEMPERATURE IN OCCUPANT COMPARTMENT: 69°F

IMPACT VELOCITY: PRIMARY = 35.2 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 174.8	;C 179.8	;L 174.5
	POST-TEST:	R 153.4	;C 156.8	;L 151.5
	TOTAL CRUSH:	R 21.4	;C 23.0	;L 23.0

FOR FRONTAL IMPACTS, DISTANCE FROM FRONT OF TEST VEHICLE TO BARRIER AFTER IMPACT: R: 5.1 ;C: 2.8 ;L: 3.1

VISIBLE DUMMY CONTACT POINTS:

	DRIVER #880	PASSENGER #411
Head	Upper steering wheel rim and steering wheel hub	None
Chest	Lower steering wheel rim	None
Abdomen	None	None
Left Knee	Instrument panel	Instrument panel
Right Knee	Instrument panel	Instrument panel

DOOR OPENING:

	LEFT	RIGHT
Front	No tools required	No tools required
Rear	DNA	DNA

SEAT MOVEMENT:

	SEAT BACK FAILURE	SEAT SHIFT
Front	No	No
Rear	DNA	DNA

GLAZING DAMAGE: Entire windshield cracked. No other glazing damage.

OTHER NOTABLE IMPACT EFFECTS: Exhaust system separated on impact.

SECTION 3.0

OCCUPANT, VEHICLE AND LOAD CELL BARRIER INFORMATION

DUMMY INJURY CRITERIA

	MAXIMUM ACCELERATION ('G')							
	HEAD				CHEST			
	X	Y	Z	R	X	Y	Z	R*
DRIVER	-155.4	54.7	-95.2	190.3	-39.8	19.9	15.8	42
PASSENGER	-21.4	-17.6	-42.1	44.9	-33.6	-17.6	16.5	34

	MAXIMUM FORCE-FEMUR LOAD (LBS)	
	RIGHT FEMUR	LEFT FEMUR
DRIVER	1589	580
PASSENGER	290	921

	MAXIMUM FORCE-SEAT BELT LOADS (LBS)		
	SHOULDER STRAP UPPER BELT LOAD	LAP STRAP RIGHT BELT LOAD	LAP STRAP LEFT BELT LOAD
DRIVER	1519	---	1202
PASSENGER	1636	1049	---

	HEAD INJURY CRITERIA**		
	HIC	t_1 (MSEC)	t_2 (MSEC)
DRIVER	479	79.2	115.2
PASSENGER	301	78.2	114.2

*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 until the dummy's face struck the upper steering wheel rim and the steering wheel hub. The dummy's chest contacted the lower steering wheel rim. Just prior to contact, the steering column had rotated upward. The dummy rebounded rearward into the seatback. The head contacted 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 until arrested by the restraint system. There were no head or chest contacts. The dummy rebounded from the restraint system until the upper torso contacted the seatback and the head contacted the head restraint. The dummy came to rest seated upright and facing forward.

FIGURE 15

DUMMY POSITIONING DATA FOR
35 MPH FRONTAL BARRIER IMPACT TEST

PRE-IMPACT DATA:

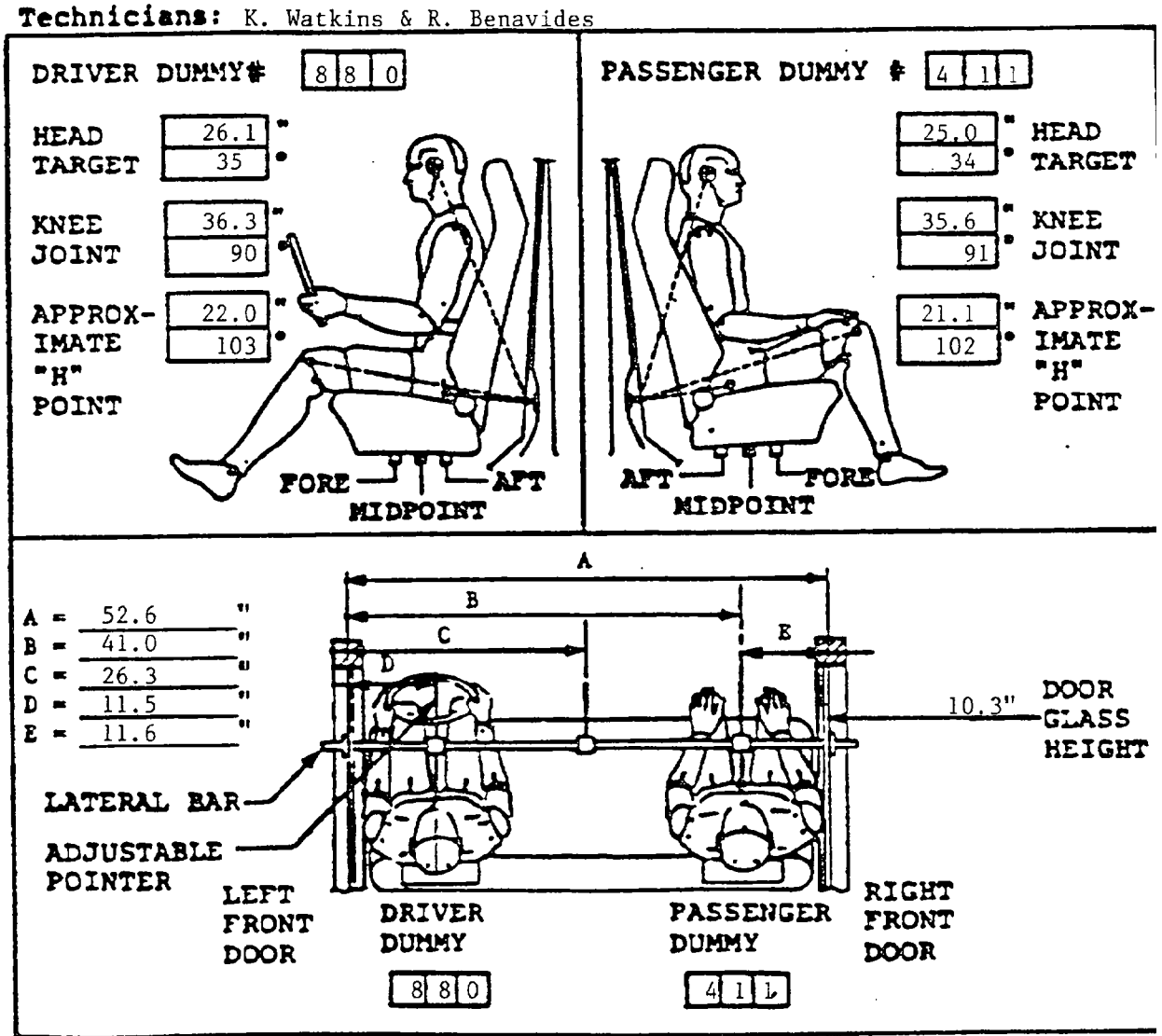
Make/Model: Ford Mustang LX
Body Style: 3-Door Hatchback **Model Year:** 1987
NHTSA No.: MH0203 **Color:** Dark Grey Metallic

DATA FROM CERTIFICATION LABEL:

Vehicle Manufacturer: Ford Motor Company
Date of Manufacture: 12/86 ; **VIN:** 1FABP41A9HF137648
GVWR: 3755 lb; **GAWR:** Front = 2201 lb; Rear = 1966 lb

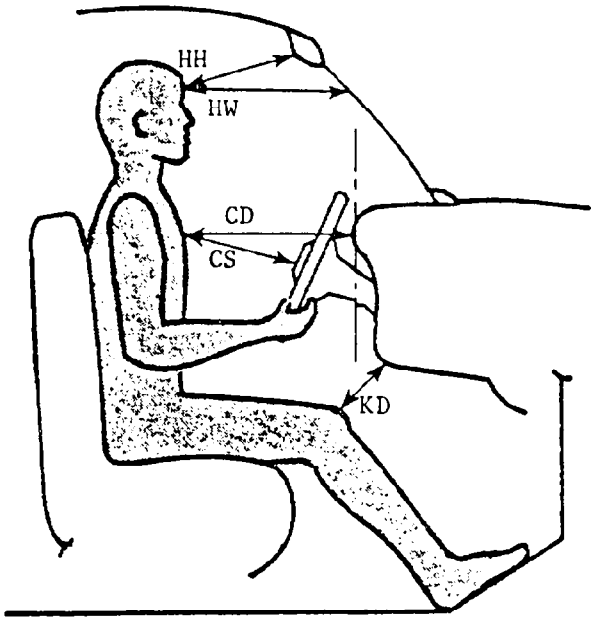
POST-IMPACT DATA:

Date of Test: 3/13/87 **Time:** 13:25 **Temperature** 71 °F
Required Impact Velocity Range: 34.5 to 35.5 mph
Impact Velocity: Primary = 35.2 mph Secondary = 35.2 mph
Seat Type: adjustable bucket **Adjuster Type:** manual
Bucket Seat Back Type: manually adjustable
Technicians: K. Watkins & R. Benavides

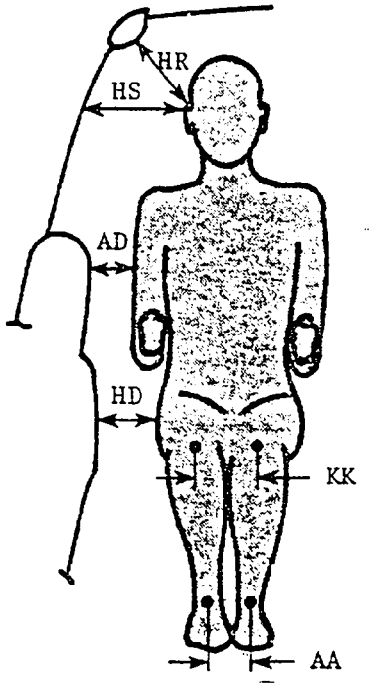


DUMMY IN-VEHICLE POSITION RECORDING SHEET

	DRIVER #880	PASSENGER #411
HH	10.8	12.8
HW	15.6	17.6
CD	20.1	22.4
CS	12.2	DNA
KDL	5.5	5.4
KDR	5.3	5.6
TA	18°	19°
SA	21.5°	21.5°



	DRIVER #880	PASSENGER #411
HR	6.0	5.3
HS	9.5	8.9
AD	4.1	3.6
HD	6.1	5.6
KK	10.3	8.1
AA	9.9	7.6



Knee outer bolt head to outer bolt head spacing:
Driver = 14.1
Passenger = 12.0

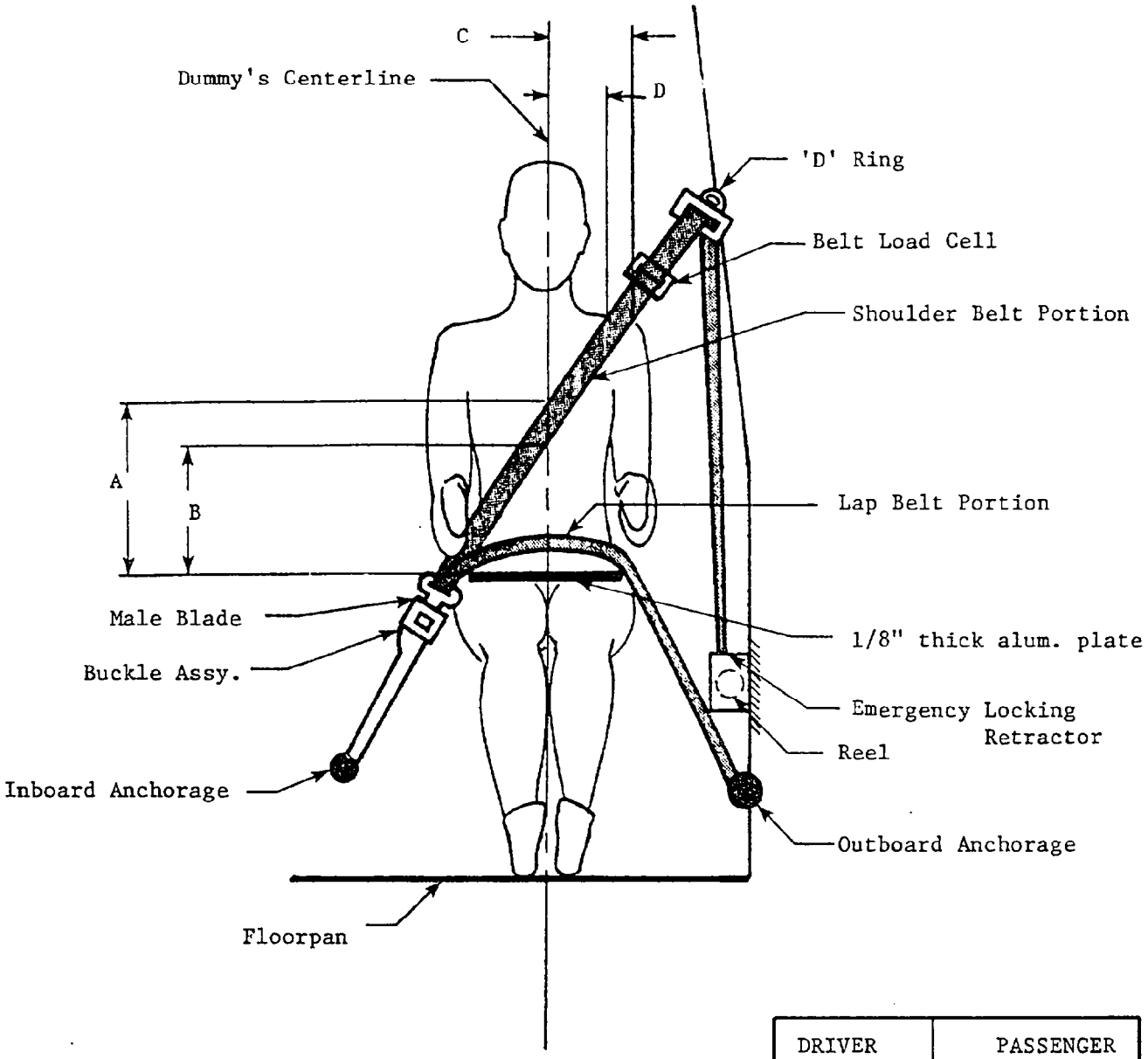
HH = Head to Windshield Header
HW = Head to Windshield
CD = Chest to Dash
CS = Chest to Steering Wheel
KD = Knees to Dash
TA = Torso Angle
SA = Seat Back Angle

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.

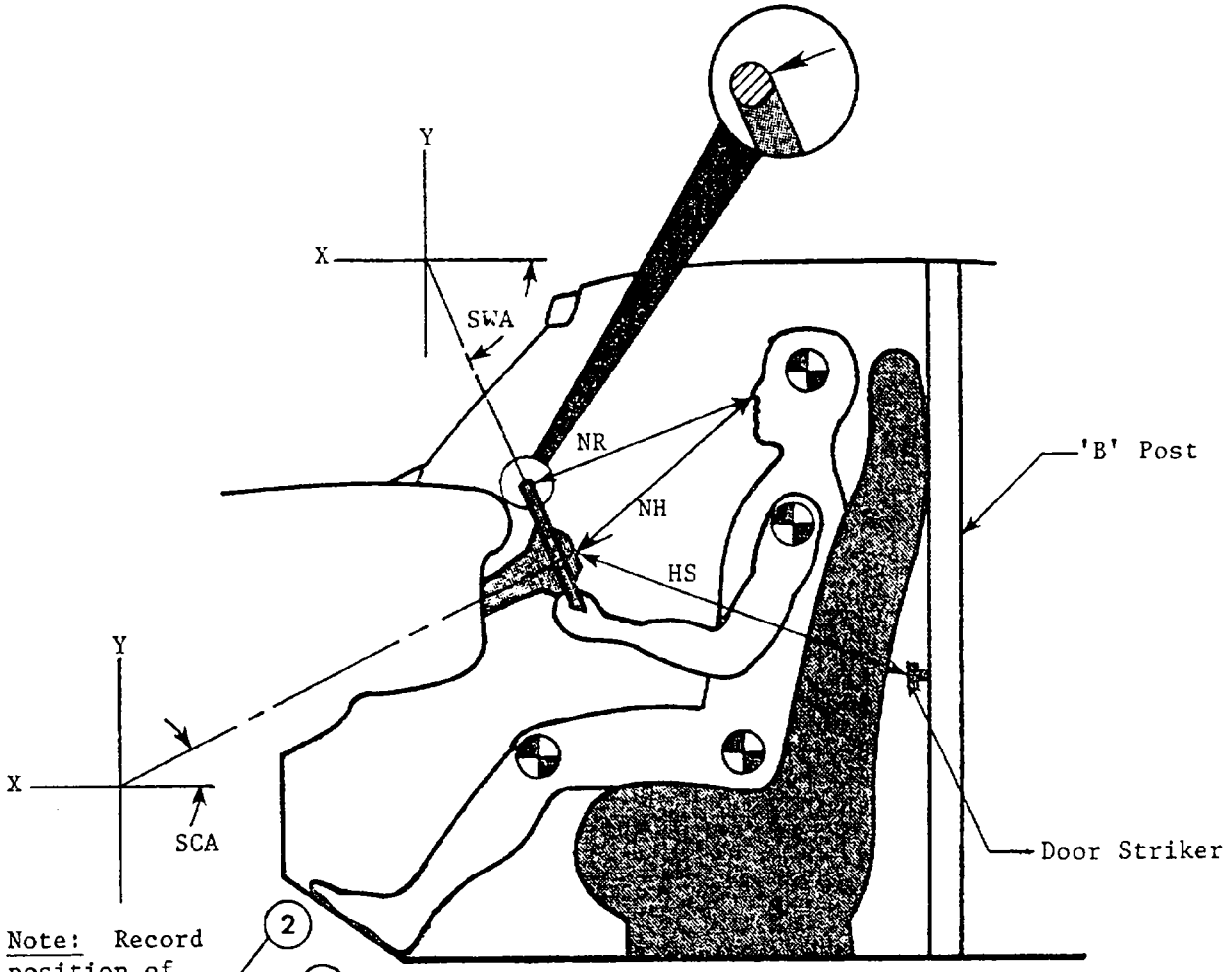
ALL MEASUREMENTS IN INCHES

SEAT BELT POSITIONING DATA



	DRIVER DUMMY	PASSENGER DUMMY
A - Top surface of alum. plate to belt upper edge (in)	13.0"	13.3"
B - Top surface of alum. plate to belt lower edge (in)	9.8"	10.1"
C - Dummy centerline to outer edge of belt at chest flesh top (in)	4.5"	4.3"
D - Dummy centerline to inner edge of belt at chest flesh top (in)	2.3"	2.0"
LAP BELT TENSION (lbs)	4	4
SHOULDER BELT TENSION (lbs)	4	4

DRIVER DUMMY TO STEERING COLUMN/WHEEL ASSY. REFERENCE DIMENSIONS



Note: Record position of tilt strg. column in REMARKS section.

REMARKS: Driver's seat set in the eight seating position. The forward most position is position one. There are 15 positions available.

Passenger's seat set in the sixth seating position. The forward most position is position one. There are 11 positions available.

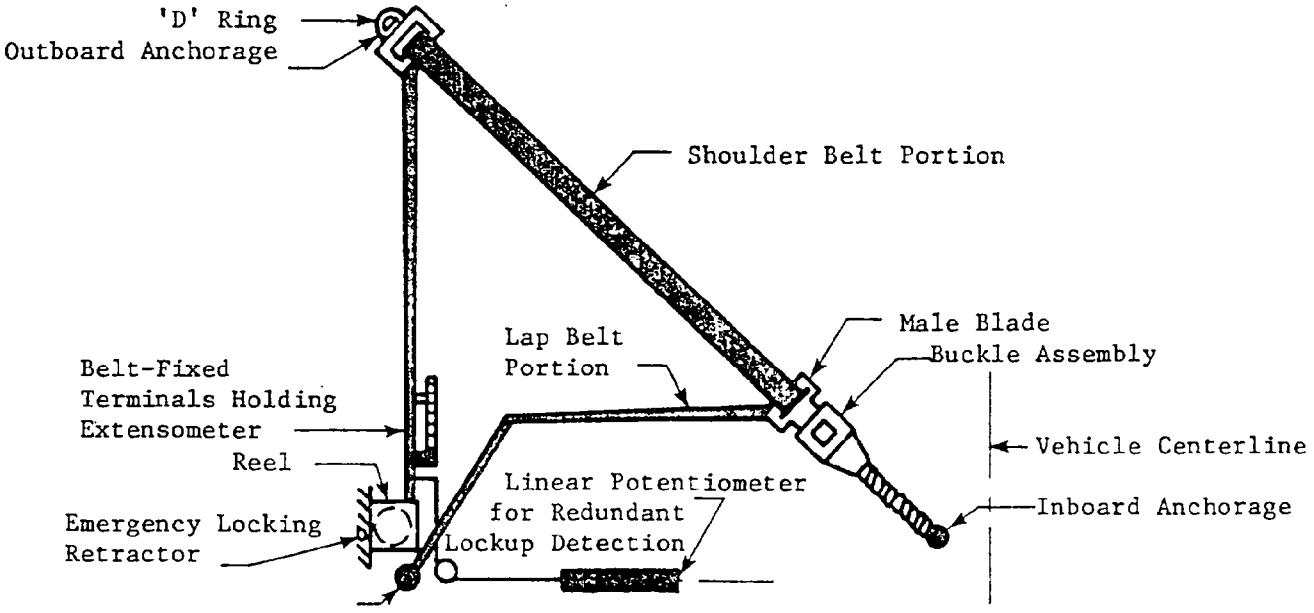
	MEASUREMENTS
NR - Distance from tip of dummy's nose to top rear surface of steering wheel rim.	14.1"
NH - Distance from tip of dummy's nose to center of steering column hub.	15.3"
HS - Distance from center of steering column hub to the forward surface of the door lock striker pin.	34.4"
SCA - Angle of steering column relative to the horizontal X axis.	25°
SWA - Angle of steering wheel relative to the horizontal X axis.	67°

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 continous webbing systems.	103.1	104.1	102.7	102.9
Retractor reel to 'D' ring as measured on Part 572 dummy.	23.1	9.3	23.3	11.1
Shoulder belt length as measured on Part 572 dummy.	37.6	41.0	36.3	36.3
Lap belt length as measured on Part 572 dummy.	31.8	32.5	31.9	30.5
Remainder of belt webbing left on retractor reel.	10.6	21.3	11.2	25.0
BELT SPOOL-OFF DATA:				
As determined by film analysis	DNA	2.2	DNA	2.7
As determined electronically	DNA	2.5	DNA	2.6
BELT STRAIN DATA:				
Measured between retractor reel and 'D' ring.	DNA	--- γ	DNA	--- γ

γ See DATA ACQUISITION EXPLANATIONS



PRE-IMPACT DATA

MAKE/MODEL: Ford Mustang LX

BODY STYLE: 3-Door Hatchback MODEL YEAR: 1987

NHTSA NO.: MH0203 COLOR: Dark Grey Metallic

DATA FROM CERTIFICATION LABEL

VEHICLE MANUFACTURER: Ford Motor Company

DATE OF MANUFACTURE: 12/86 VIN: 1FABP41A9HF137648

GVWR: 3755 LBS., GAWR: FRONT 2201 LBS., REAR 1966 LBS.

POST-IMPACT DATA

TYPE OF TEST: Frontal Load Cell Barrier Impact

DATE OF TEST: 3/13/87 TIME: 13:25 TEMP: 71°F

REQUIRED IMPACT VELOCITY RANGE: 34.5 MPH TO 35.5 MPH

IMPACT VELOCITY: PRIMARY = 35.2 MPH

TEST WEIGHT = 3343 LBS., STATIC CRUSH MAX. = 24.4 IN., REBOUND = 5.1 IN.

FUEL SYSTEM DATA

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

KINEMATIC VISCOSITY: 0.99 CENTISTOKES

"USEABLE" CAPACITY*: 15.4 GALLONS (FURNISHED BY CTM)

TEST VOLUME: 14.3 GALLONS (92-94% OF USEABLE)

FUEL SYSTEM CAPACITY (DATA FROM OWNERS MANUAL): 15.4 GALLONS

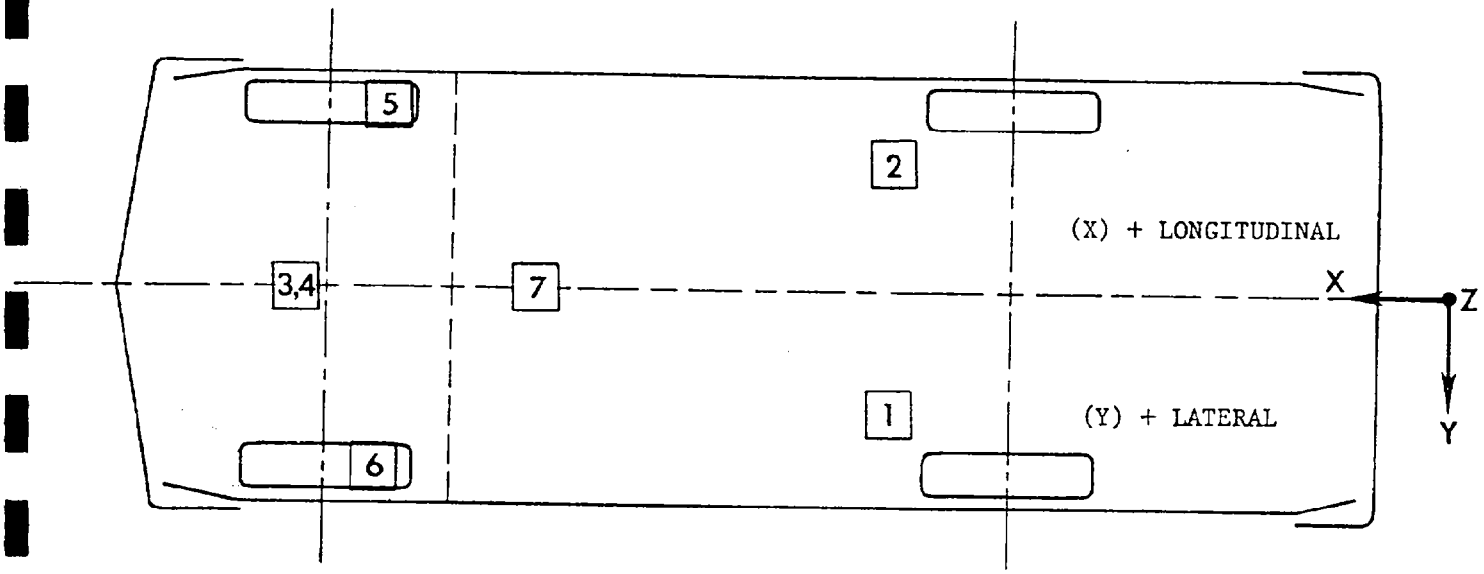
DETAILS OF FUEL SYSTEM: Fuel tank centrally located beneath cargo compartment. Filler cap located rearward of rear axle on right hand side. Fuel filler neck enters tank on right side of tank.

ELECTRIC FUEL PUMP: YES FUEL INJECTION: YES

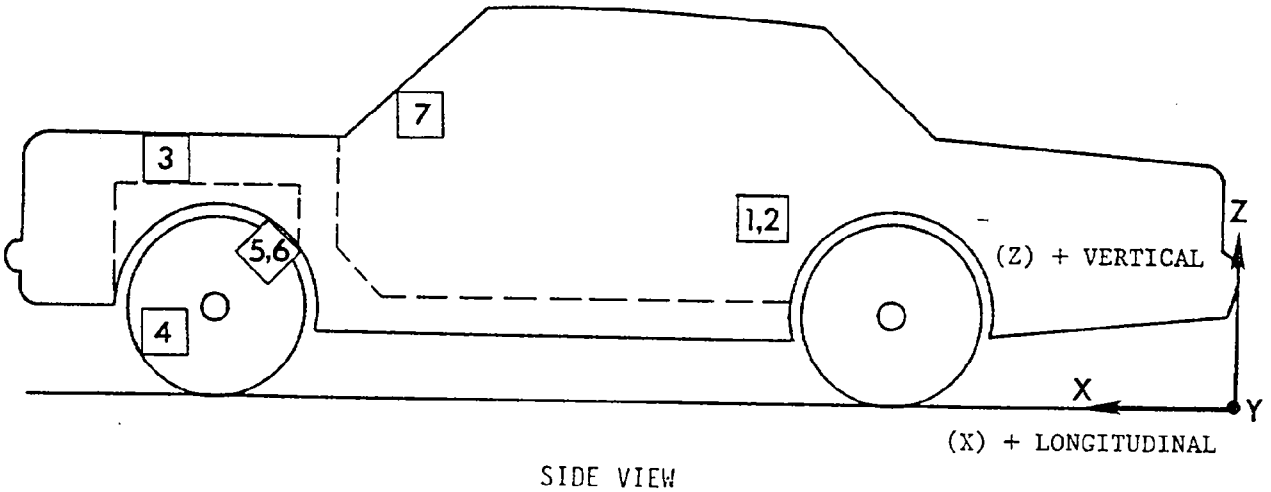
DOES ELECTRIC FUEL PUMP OPERATE WITH IGNITION SWITCH "ON" AND THE ENGINE NOT OPERATING? YES

*WITH ENTIRE FUEL SYSTEM FILLED.

VEHICLE ACCELEROMETER LOCATIONS



TOP VIEW



SIDE VIEW

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

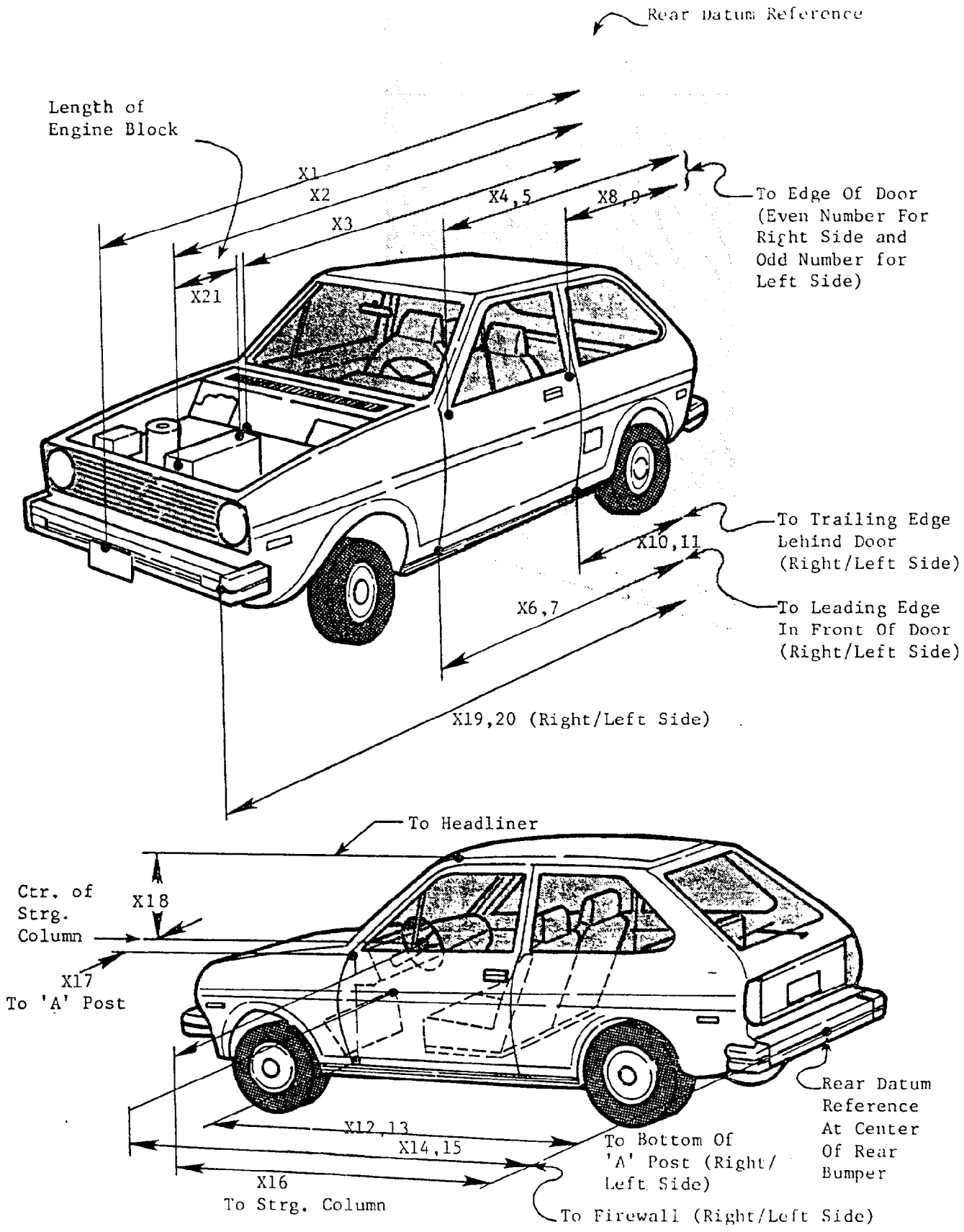
NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION** MAX (g)	POSITIVE DIRECTION** TIME (msec)	NEGATIVE DIRECTION MAX (g)	NEGATIVE DIRECTION TIME (msec)
1	REAR SEAT X-MEMBER AT LEFT SIDE LONGITUDINAL	62.6	17.0	11.0	1.6	177.6	39.0	58.8
2	REAR SEAT X-MEMBER AT RIGHT LONGITUDINAL	62.3	-17.0	11.5	1.4	184.1	42.6	59.2
3	TOP OF ENGINE BLOCK LONGITUDINAL	143.1	-0.6	32.8	12.3	83.5	102.0	49.9
4	BOTTOM OF ENGINE BLOCK LONGITUDINAL	135.1	-1.4	7.6	14.6	64.8	137.0	51.5
5	BRAKE CALIPER AT RIGHT SIDE LONGITUDINAL	137.2	-23.6	14.6	10.4	76.4	84.0	57.0
6	BRAKE CALIPER AT LEFT SIDE LONGITUDINAL	137.1	23.6	14.5	37.3	78.2	73.3	64.8
7	DASH PANEL LONGITUDINAL	110.9	0.0	33.0	21.2	106.1	84.9	62.9

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

** LONGITUDINAL: FORWARD
LATERAL: LEFTWARD
VERTICAL: UPWARD

MEASUREMENTS IN INCHES

PRE-TEST AND POST-TEST MEASUREMENT POINTS



IMPACTED VEHICLE MEASUREMENTS

VEHICLE MAKE/MODEL Ford Mustang 3-Door Hatchback

TEST NUMBER MH0203

DIMENSIONS IN INCHES

NO.	TYPE OF MEASUREMENT	PRE-TEST	POST-TEST	DIFF.
X 1	TOTAL LENGTH OF VEHICLE AT CENTERLINE	179.8	156.8	23.0
X 2	REAR SURFACE OF VEHICLE TO FRONT OF ENGINE BLOCK	149.5	140.9	8.6
X 3	REAR SURFACE OF VEHICLE TO FIREWALL	127.0	119.8	7.2
X 4	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF RIGHT DOOR	113.4	113.3	0.1
X 5	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF LEFT DOOR	114.0	113.6	0.4
X 6	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF RIGHT DOOR	115.0	113.8	1.2
X 7	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF LEFT DOOR	115.0	114.0	1.0
X 8	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF RIGHT DOOR	64.4	64.3	0.1
X 9	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF LEFT DOOR	64.4	64.5	-0.1
X10	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF RIGHT DOOR	64.6	63.4	1.2
X11	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE ON LEFT DOOR	64.6	63.6	1.0
X12	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON RIGHT SIDE	113.1	111.9	1.2
X13	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON LEFT SIDE	113.4	111.8	1.6
X14	REAR SURFACE OF VEHICLE TO FIREWALL - RIGHT SIDE	127.4	125.5	1.9
X15	REAR SURFACE OF VEHICLE TO FIREWALL - LEFT SIDE	127.4	123.7	3.7
X16	REAR SURFACE OF VEHICLE TO STEERING WHEEL CENTER	98.8	96.6	2.2
X17	CENTER OF STEERING COLUMN TO "A" POST	14.4	11.9	2.5

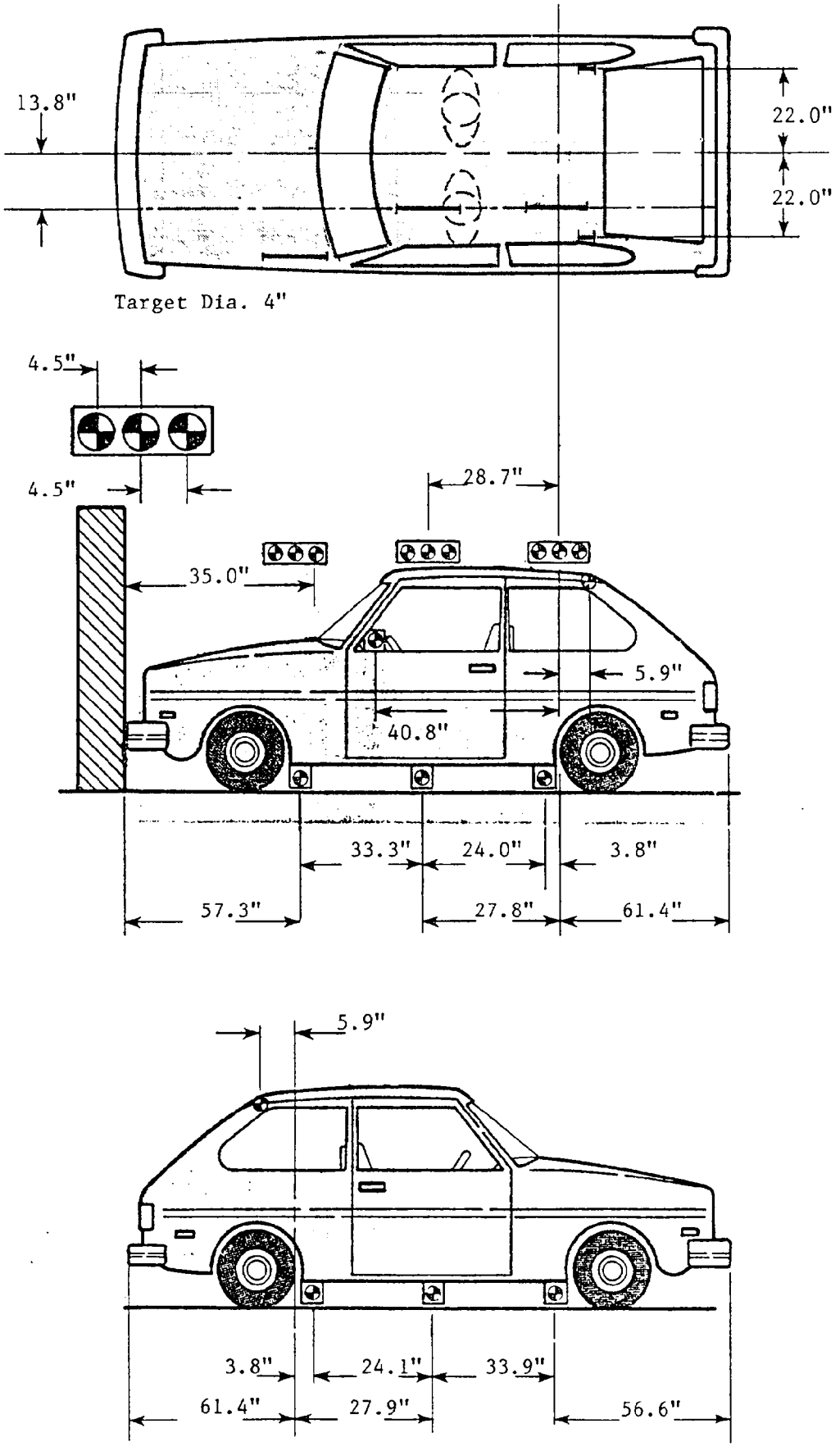
IMPACTED VEHICLE MEASUREMENTS CONTD

VEHICLE MAKE/MODEL Ford Mustang 3-Door Hatchback TEST NUMBER MH0203

DIMENSIONS IN INCHES

NO.	TYPE OF MEASUREMENT	PRE-TEST	POST-TEST	DIFF.
X18	CENTER OF STEERING COLUMN TO HEADLINING	16.4	18.9	-2.5
X19	REAR SURFACE OF VEHICLE TO RIGHT SIDE OF FRONT BUMPER	174.8	153.4	21.4
X20	REAR SURFACE OF VEHICLE TO LEFT SIDE OF FRONT BUMPER	174.5	151.5	23.0
X21	LENGTH OF ENGINE BLOCK	20.5	20.5	0.0

VEHICLE TARGET LOCATIONS



ACCIDENT INVESTIGATION DIVISION DATA
FOR 35 MPH FRONTAL BARRIER IMPACT

VEHICLE MAKE/MODEL/BODY STYLE: Ford Mustang LX 3-Door Hatchback

VEH. NHTSA NO.: MH0203 ; VIN: 1FABP41A9HF137648

MODEL YEAR: 1987 ; BUILD DATE: 12/86 ; TEST DATE 03/13/87

VEH. SIZE CATEGORY: Subcompact ; TEST WEIGHT: 3343

VEH. WHEELBASE: 100.3

COLLISION DEFORMATION CLASSIFICATION (CDC) CODE: 12FDEW3

F (Frontal)

CRUSH DEPTH DIMENSIONS:

C1 = 23.0 inches

C2 = 24.4 inches

C3 = 24.4 inches

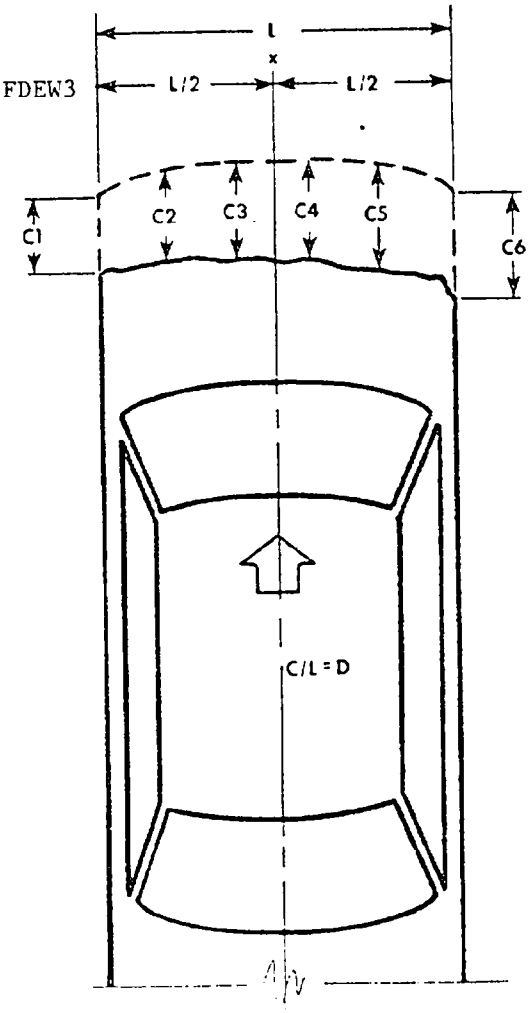
C4 = 23.3 inches

C5 = 23.0 inches

C6 = 21.4 inches

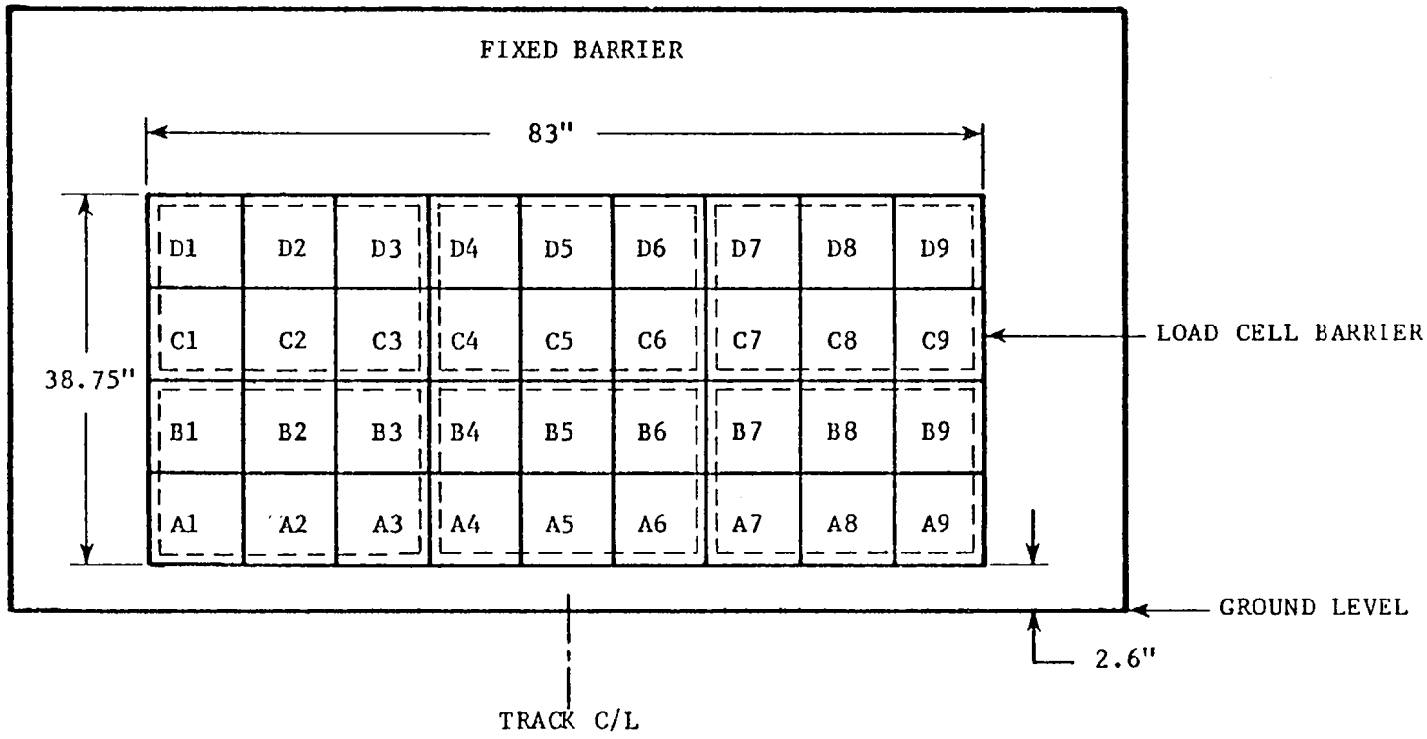
MIDPOINT OF DAMAGE: D = Vehicle Centerline (Longitudinal)

LENGTH OF DAMAGED REGION: L = 60.0 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

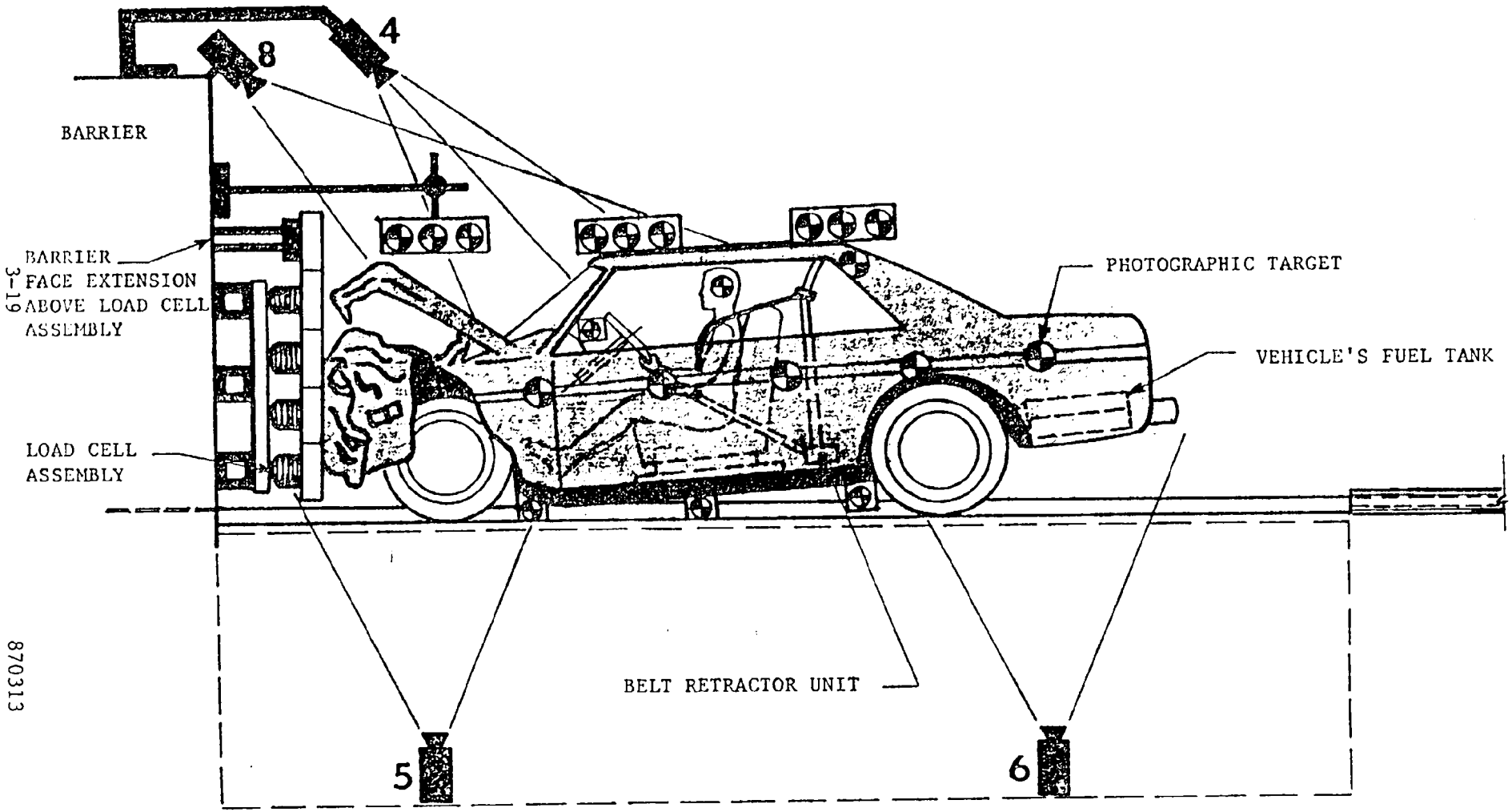
LOAD CELL BARRIER SUMMARY

POSITION	POSITIVE DIRECTION* MAX (lb)	TIME (msec)	NEGATIVE DIRECTION* MIN (lb)	TIME (msec)
TOTAL GROUP 1	335.1	274.0	15919.0	51.8
TOTAL GROUP 2	223.5	222.4	40940.1	51.9
TOTAL GROUP 3	419.0	223.4	8075.1	30.8
TOTAL GROUP 4	268.1	1.2	13689.2	22.4
TOTAL GROUP 5	---	--- ε	38800.5	68.9
TOTAL GROUP 6	461.0	0.1	19349.7	20.4
TOTAL LOAD CELL FORCE	1470.7	284.8	108747.7	52.9

ε No positive value in range of interest

*REFERENCE: TENSION IS POSITIVE
COMPRESSION IS NEGATIVE

CAMERA POSITIONS



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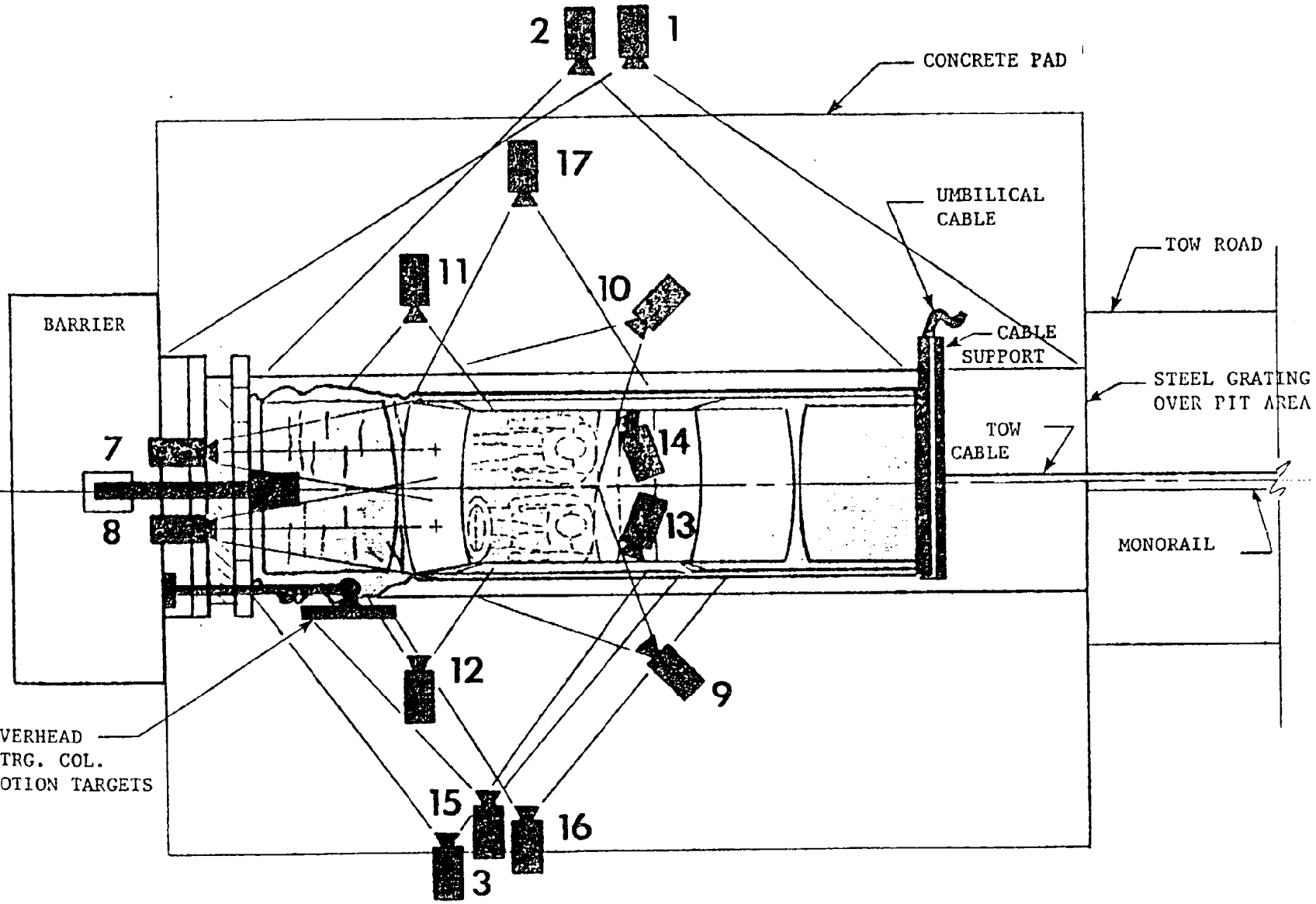


3-20

870313

CAMERA POSITIONS

HIGH SPEED CAMERA LOCATIONS

TEST NO.:_____ VEHICLE:_____

CAMERA NO.	VIEW	CAMERA POSITIONS (IN)* X	Y	Z	ANGLE ** (DEG)	FILM PLANE TO HEAD TARGET	LENS (MM)	SPEED (FPS)
1	Real time panning	-142.0	504.0	61.0	NA	NA	16	24
2	Vehicle crush	-81.3	266.4	37.1	-2	NA	13	510
3	Dummy kinematics	-41.5	-295.0	44.0	-4	274.5"	25	495
4	Windshield damage	-36.4	0.0	120.0	-83	NA	13	492
5	Crush & fluid spillage	-50.5	0.0	-99.0	90	NA	17	1002
6	Fluid spillage	-99.3	0.0	-99.0	90	NA	17	1002
7	Passenger kinematics	4.5	13.8	115.0	-60	NA	17	495
8	Driver kinematics	6.8	-14.5	113.3	-60	NA	17	495
9	Driver kinematics	-157.3	-166.9	74.1	-10	113.5"	25	495
10	Passenger kinematics	-152.1	167.9	76.0	-13	104.5"	25	498
11	Windshield intrusion	-38.1	306.1	44.0	0	NA	50	507
12	Windshield intrusion	-53.0	-309.4	42.3	0	NA	50	502
13	Driver seatbelt movement	NA	NA	NA	NA	NA	13	498
14	Passenger seatbelt movement	NA	NA	NA	NA	NA	13	490
15	Column movement	-96.0	-286.0	103.0	-14	NA	25	498
16	Column movement	-96.0	-286.0	75.1	-9	NA	25	498
17	Passenger kinematics	-38.8	293.0	45.3	-4	271.0"	25	502

* 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. PRE-TEST WINDSHIELD VIEW
12. POST-TEST WINDSHIELD VIEW
13. PRE-TEST ENGINE COMPARTMENT VIEW
14. POST-TEST ENGINE COMPARTMENT VIEW
15. PRE-TEST FUEL FILLER CAP VIEW
16. PRE-TEST FRONT UNDERBODY VIEW
17. POST-TEST FRONT UNDERBODY VIEW
18. PRE-TEST REAR UNDERBODY VIEW
19. POST-TEST REAR UNDERBODY VIEW
20. PRE-TEST DRIVER DUMMY POSITION VIEW
21. POST-TEST DRIVER DUMMY POSITION VIEW
22. PRE-TEST PASSENGER DUMMY POSITION VIEW
23. POST-TEST PASSENGER DUMMY POSITION VIEW
24. PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)
25. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)
26. PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)
27. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)
28. POST-TEST DRIVER DUMMY HEAD CONTACT
29. POST-TEST DRIVER DUMMY KNEE CONTACT
30. POST-TEST PASSENGER KNEE CONTACT

Figure 1. PRE-TEST FRONT VIEW

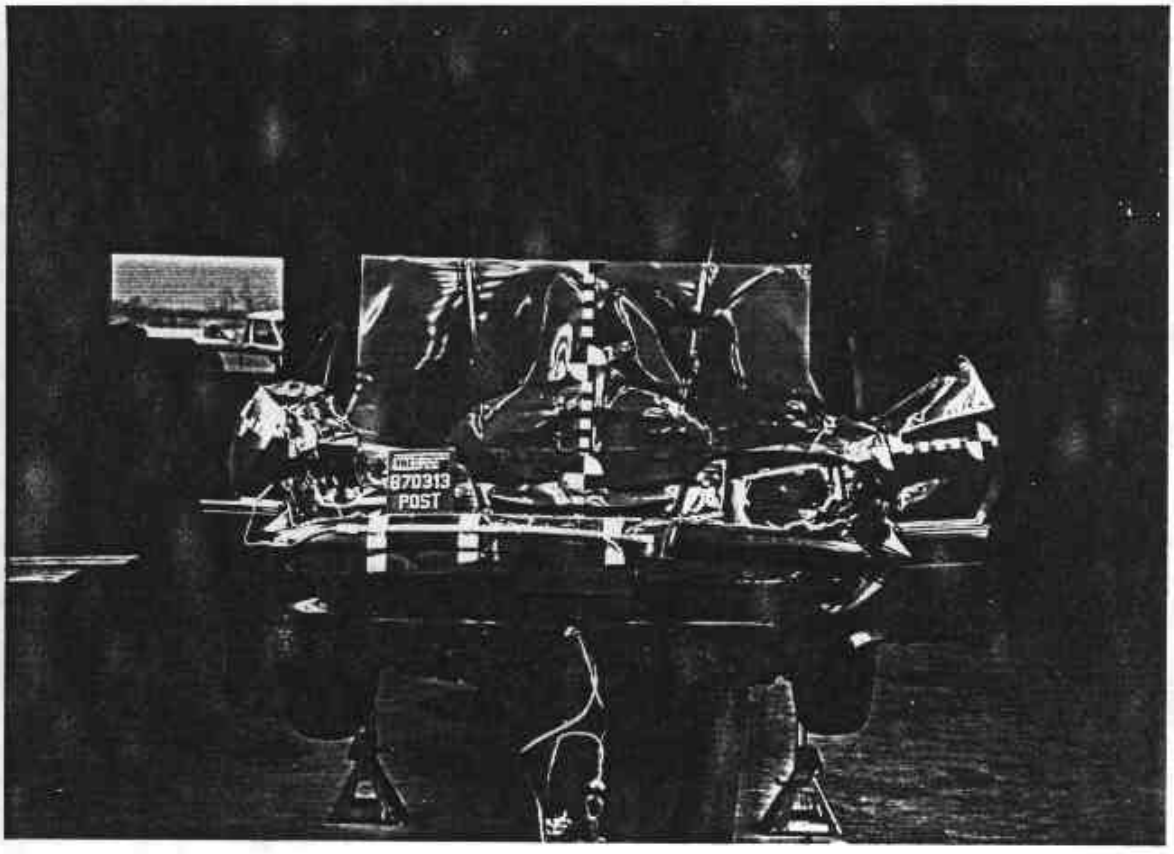


Figure 2. POST-TEST FRONT VIEW

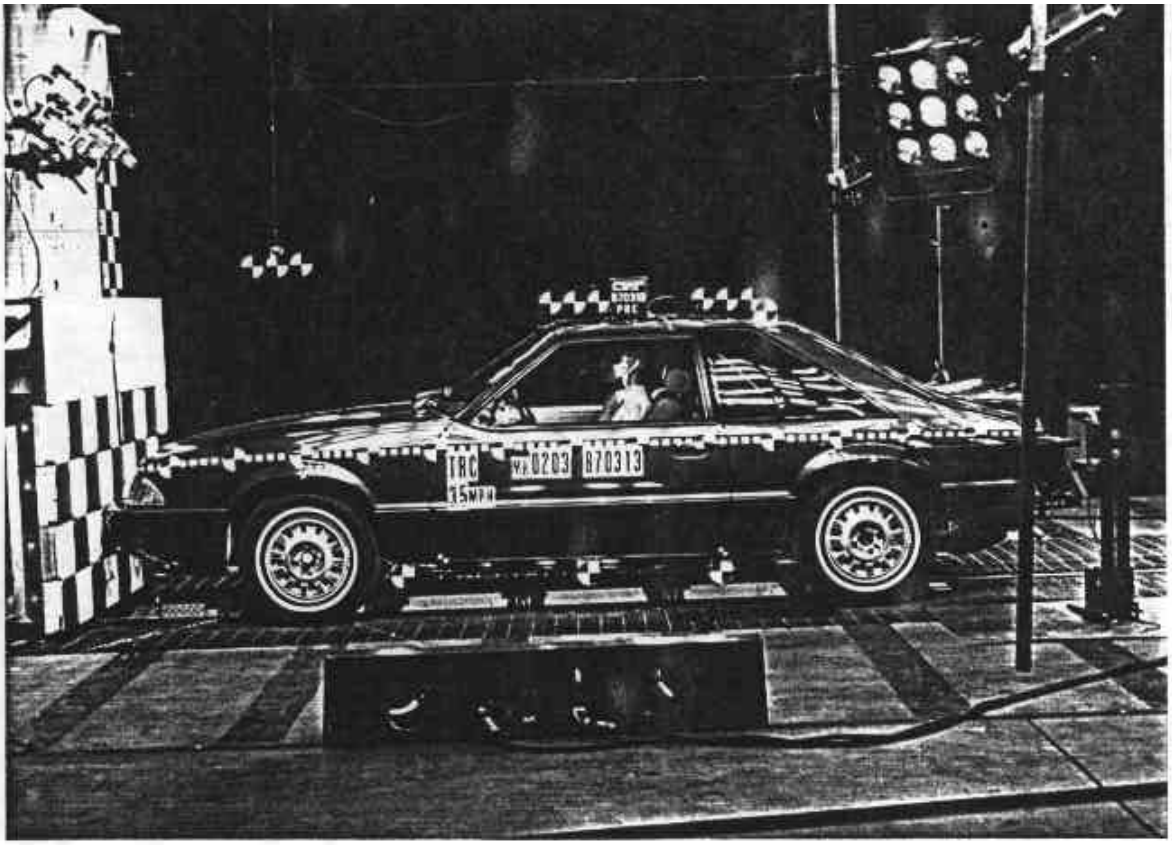


Figure 3. PRE-TEST LEFT SIDE VIEW

Figure 4. POST-TEST LEFT SIDE VIEW

Figure 5. PRE-TEST RIGHT SIDE VIEW

Figure 6. POST-TEST RIGHT SIDE VIEW

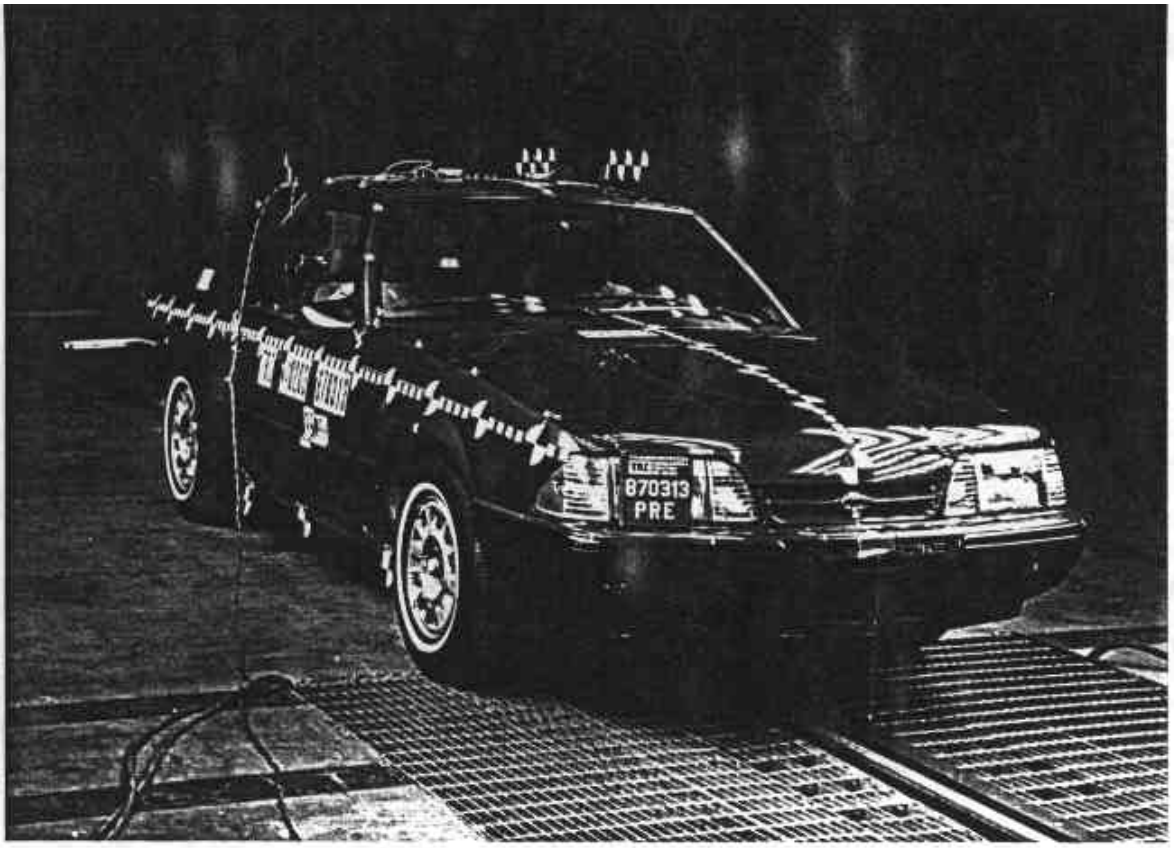


Figure 7. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW

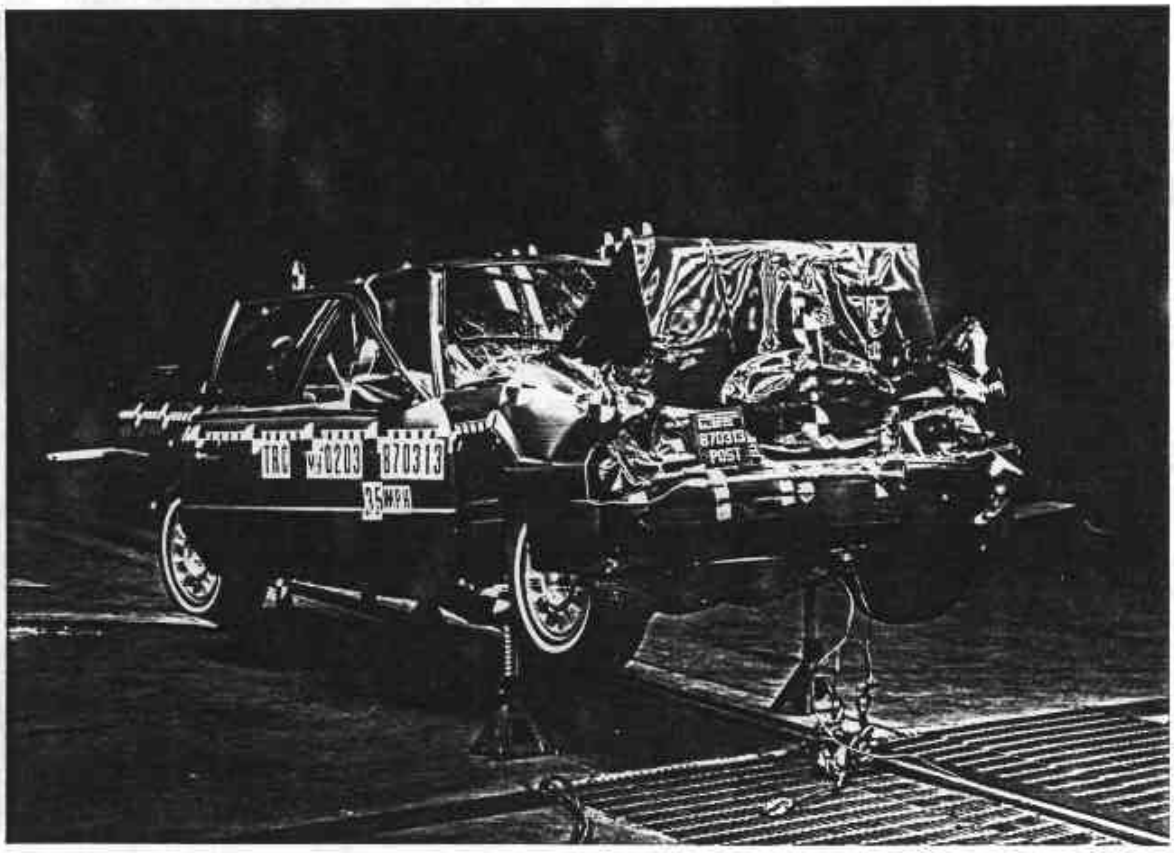


Figure 8. POST-TEST RIGHT FRONT THREE-QUARTER VIEW

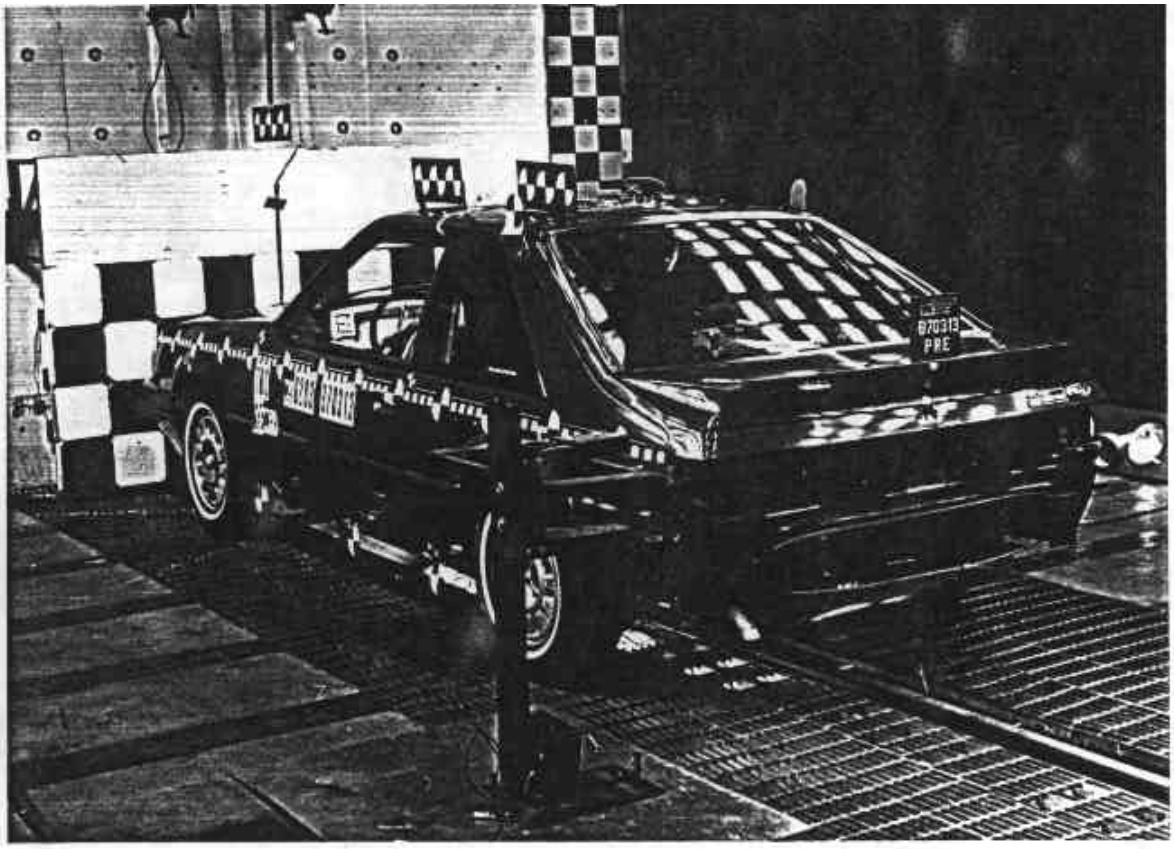


Figure 9. PRE-TEST LEFT REAR THREE-QUARTER VIEW

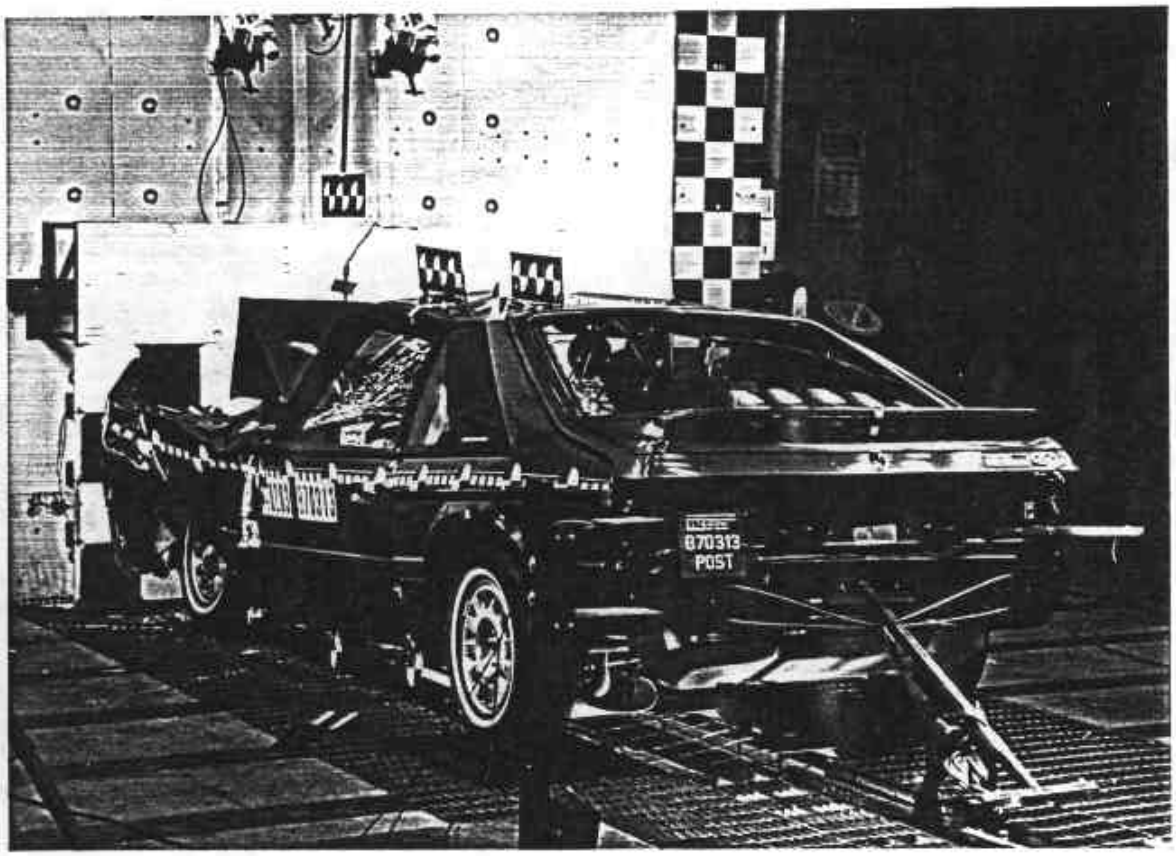


Figure 10. POST-TEST LEFT REAR THREE-QUARTER VIEW

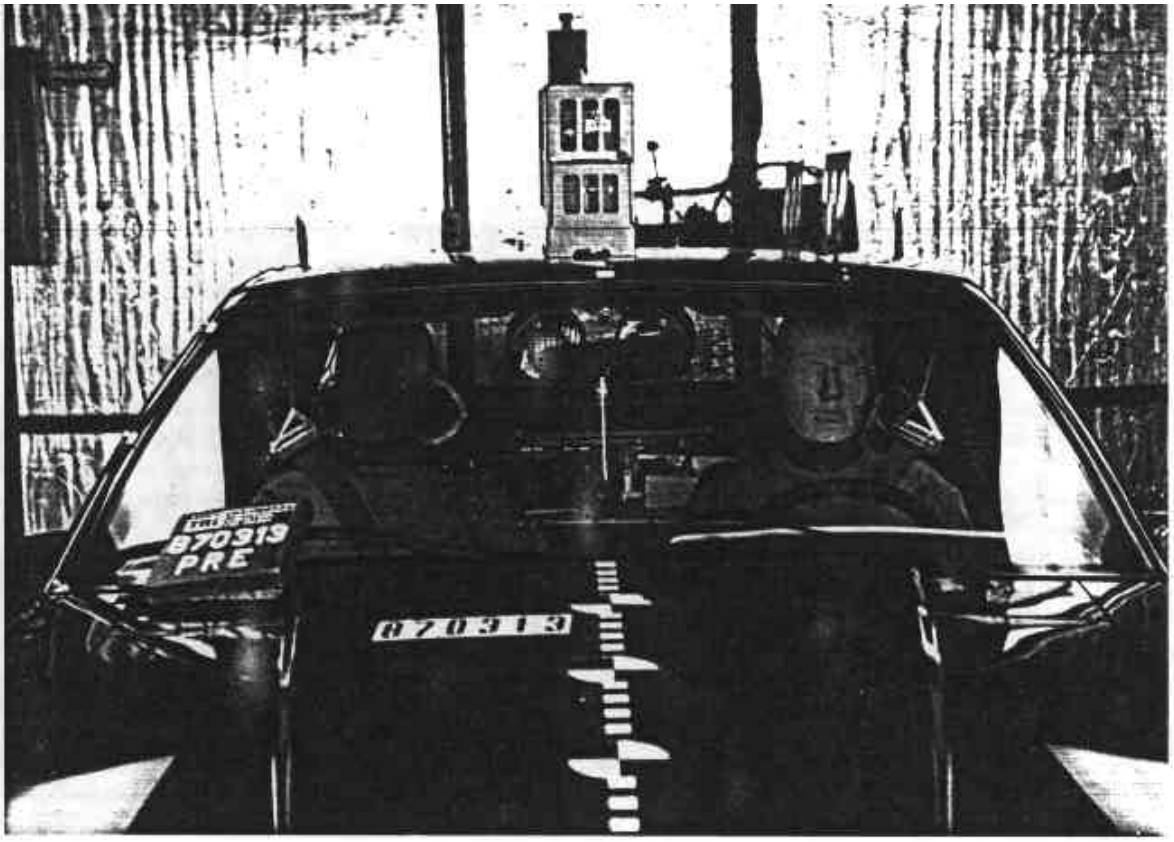


Figure 11. PRE-TEST WINDSHIELD VIEW

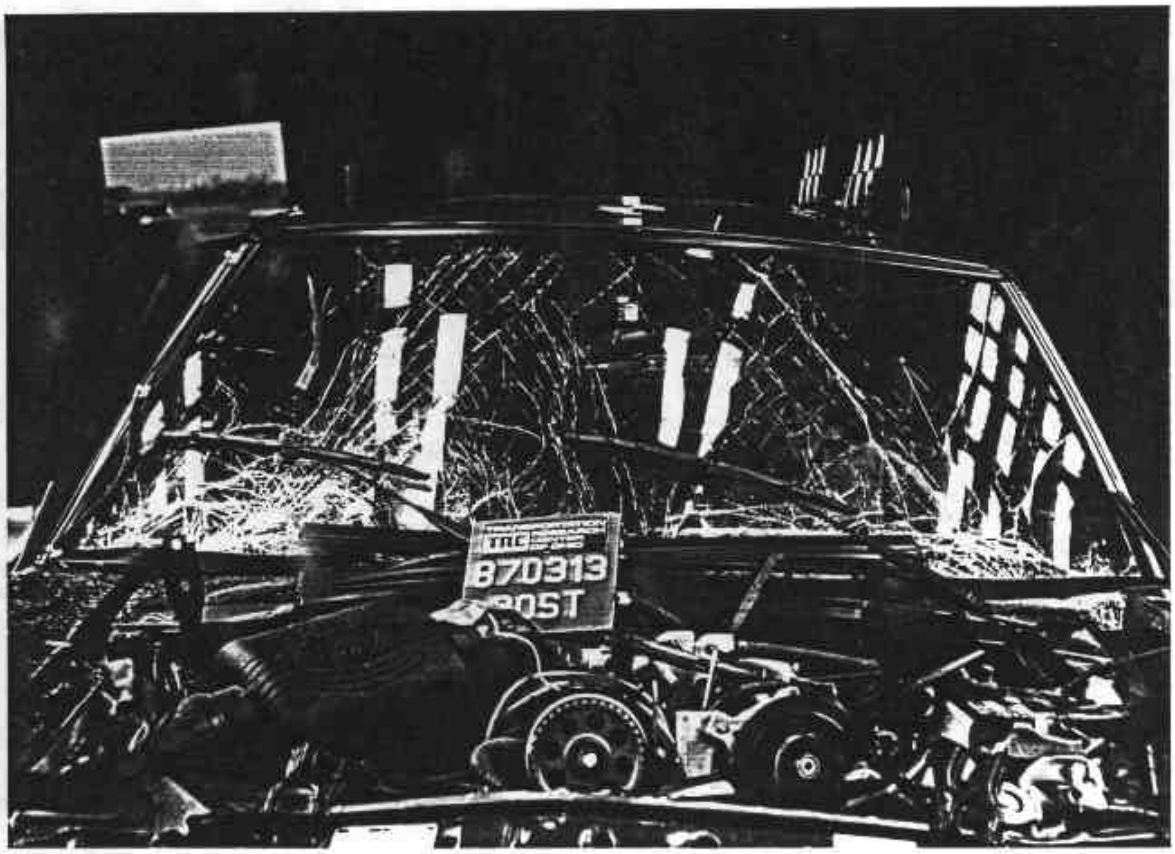


Figure 12. POST-TEST WINDSHIELD VIEW

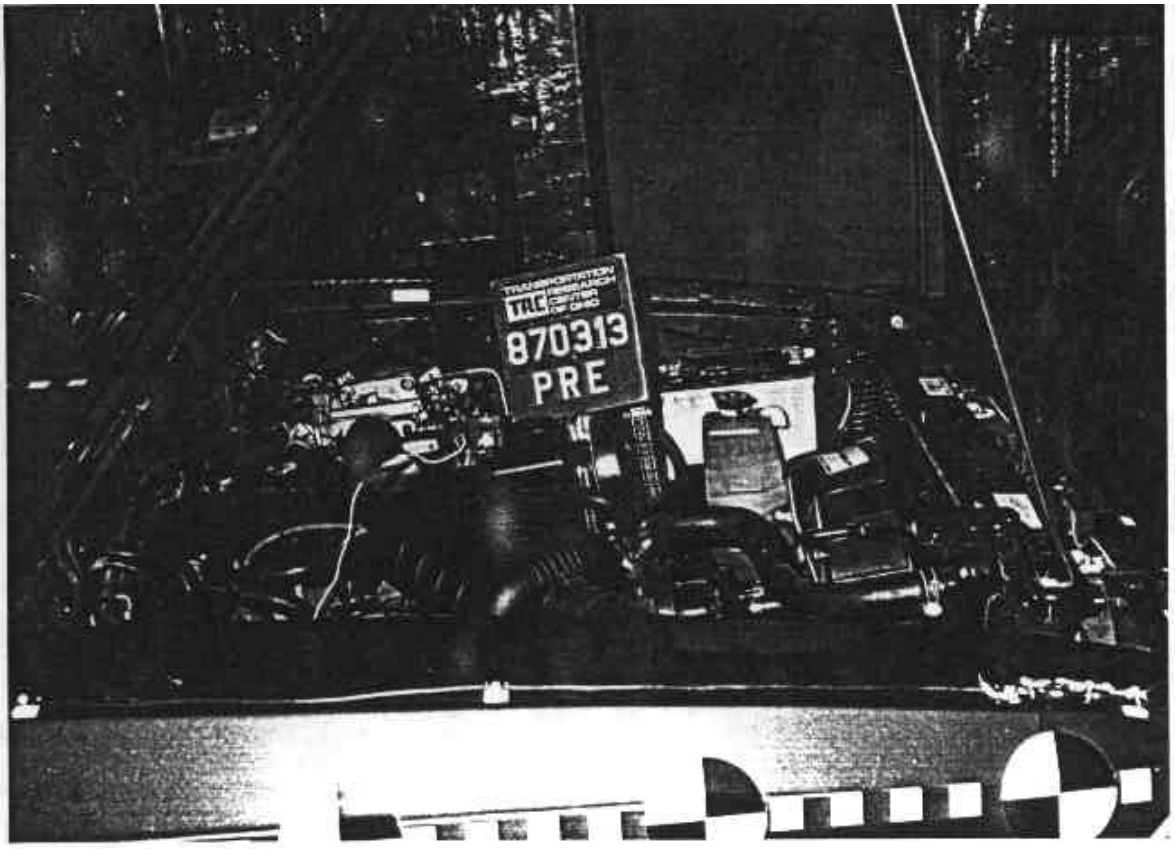


Figure 13. PRE-TEST ENGINE COMPARTMENT VIEW

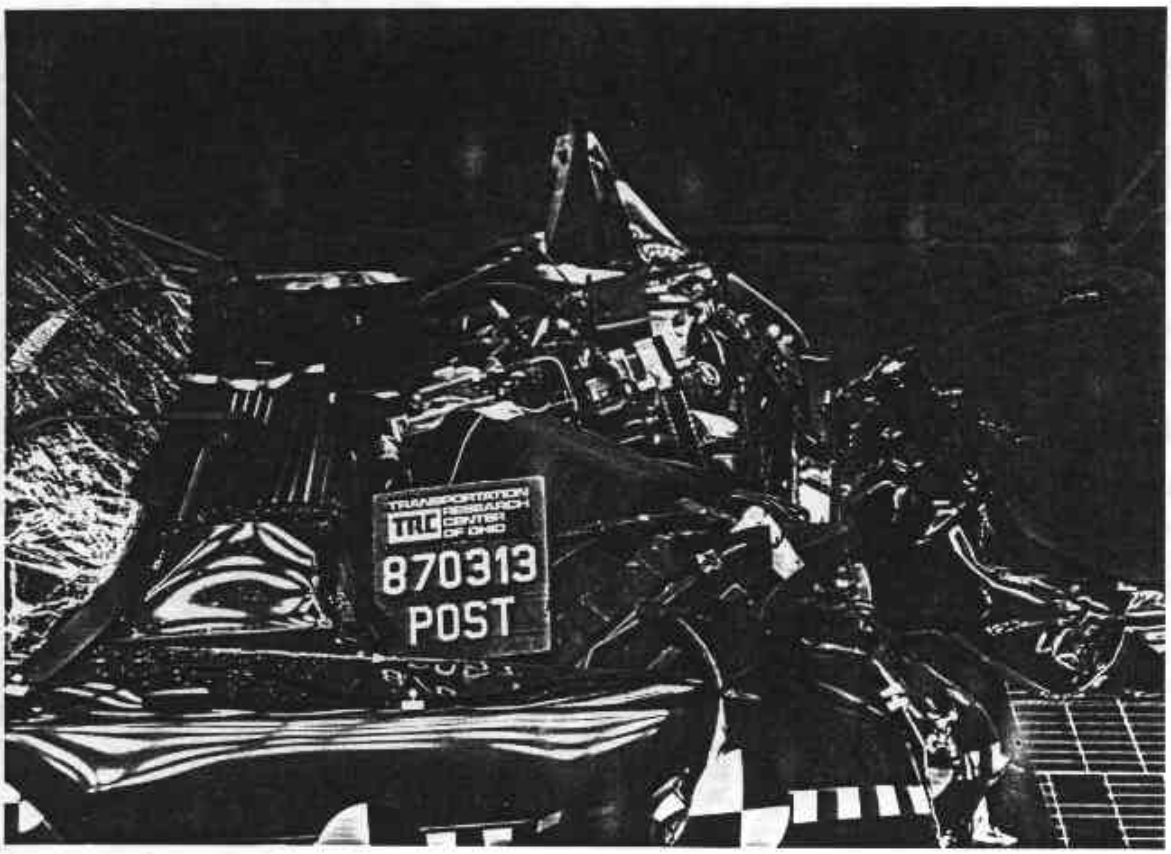


Figure 14. POST-TEST ENGINE COMPARTMENT VIEW

Figure 15. PRE-TEST FUEL FILLER CAP VIEW

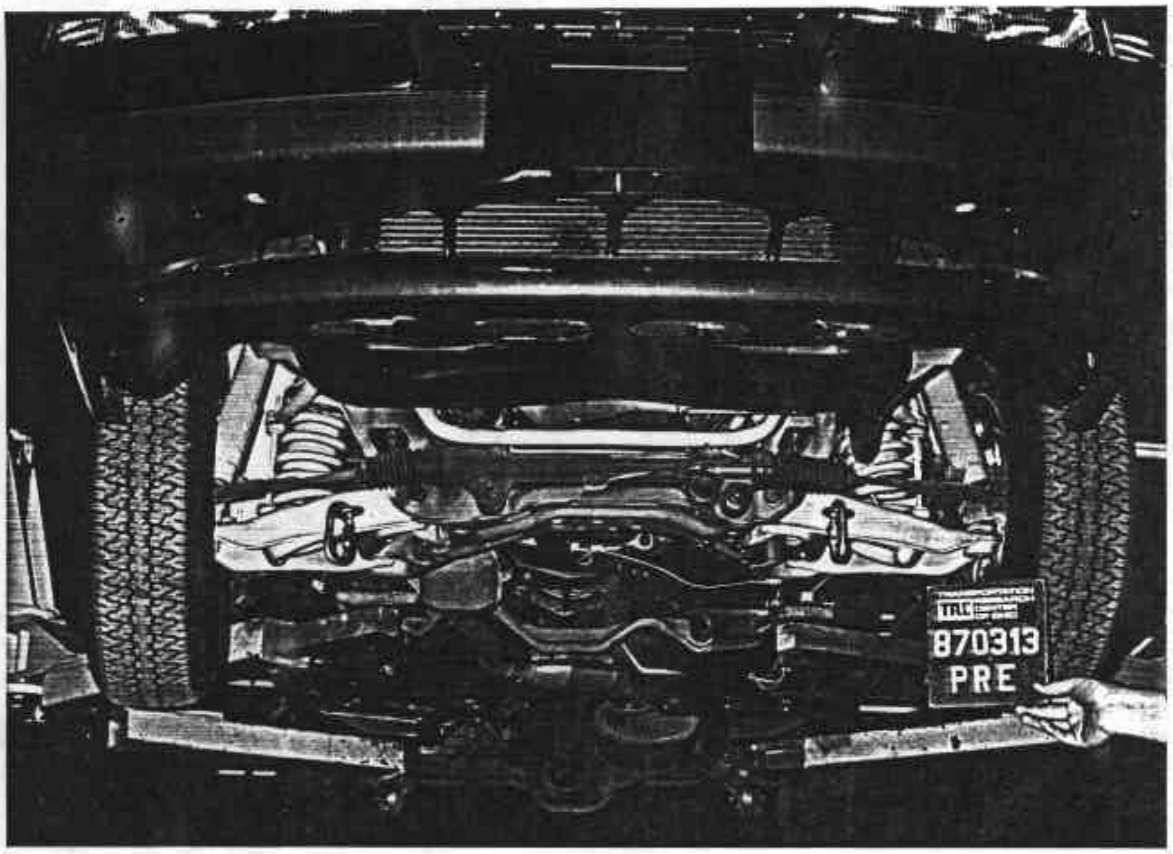


Figure 16. PRE-TEST FRONT UNDERBODY VIEW

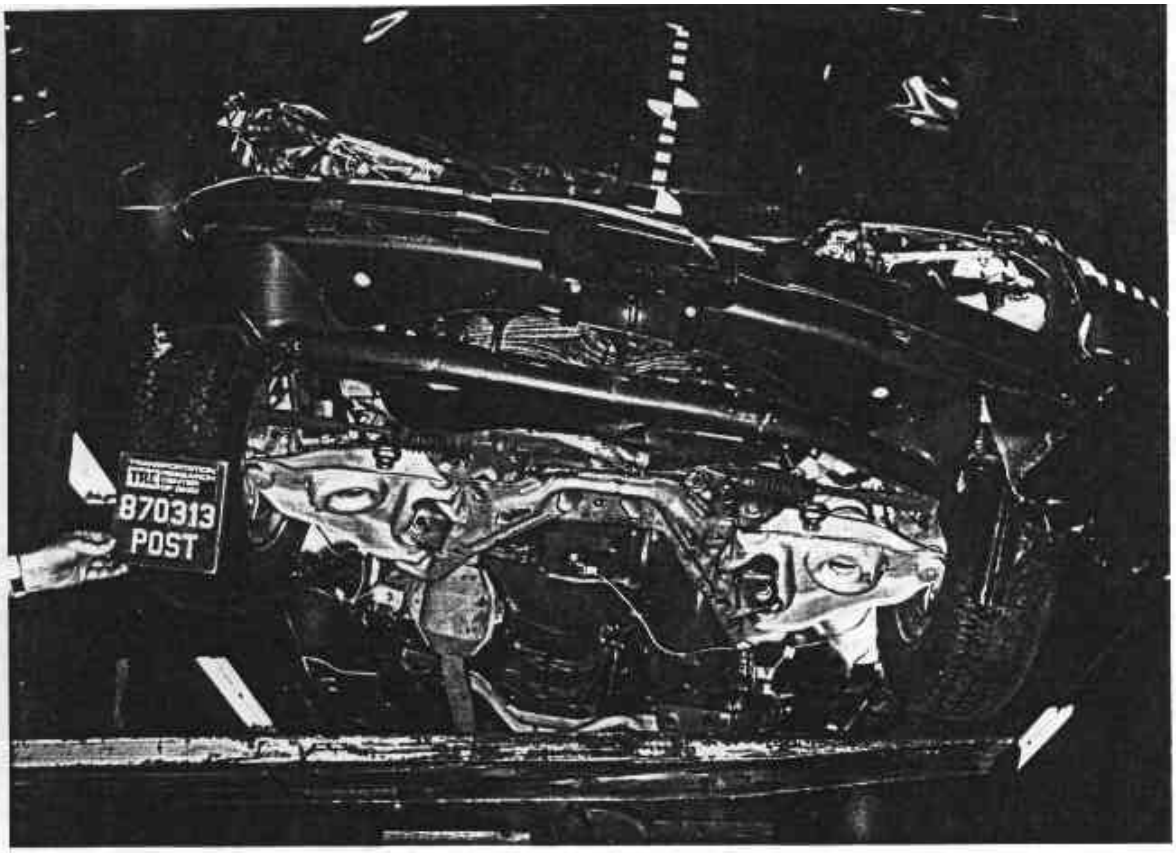


Figure 17. POST-TEST FRONT UNDERBODY VIEW

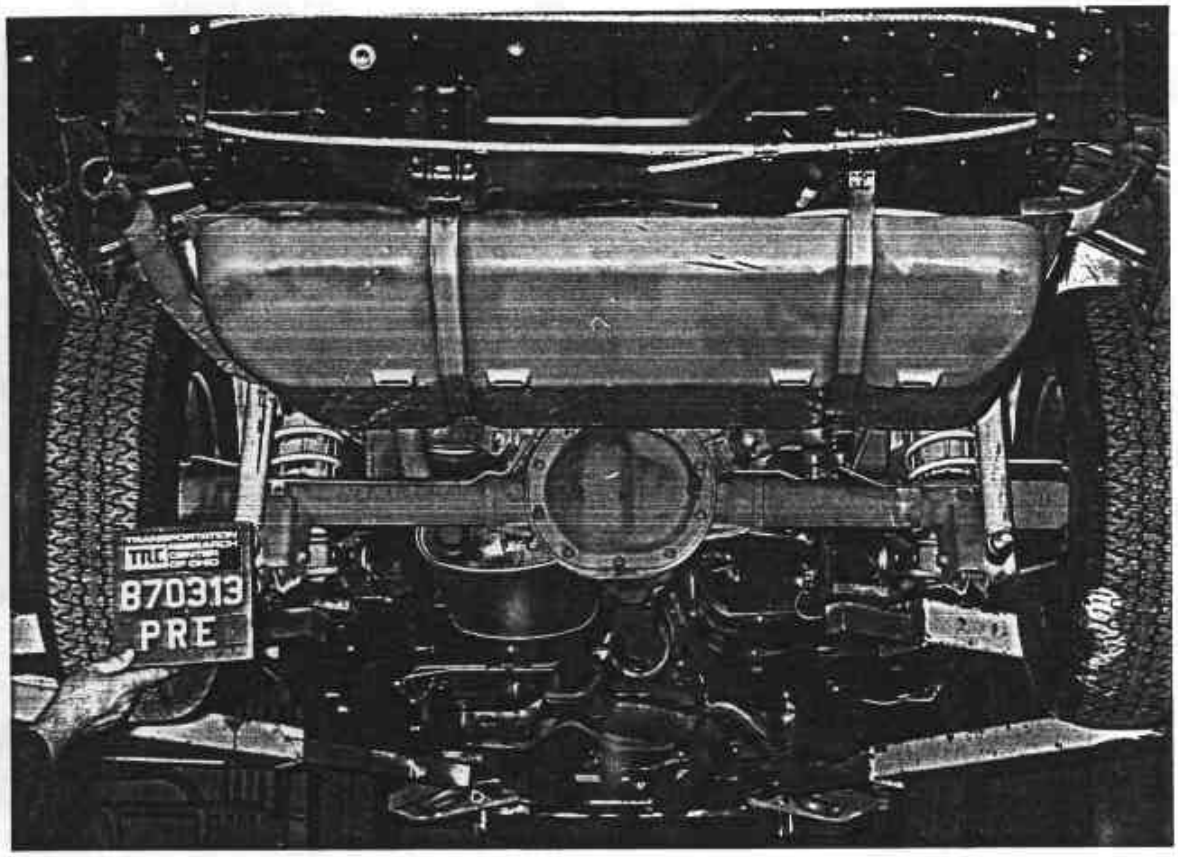


Figure 18. PRE-TEST REAR UNDERBODY VIEW

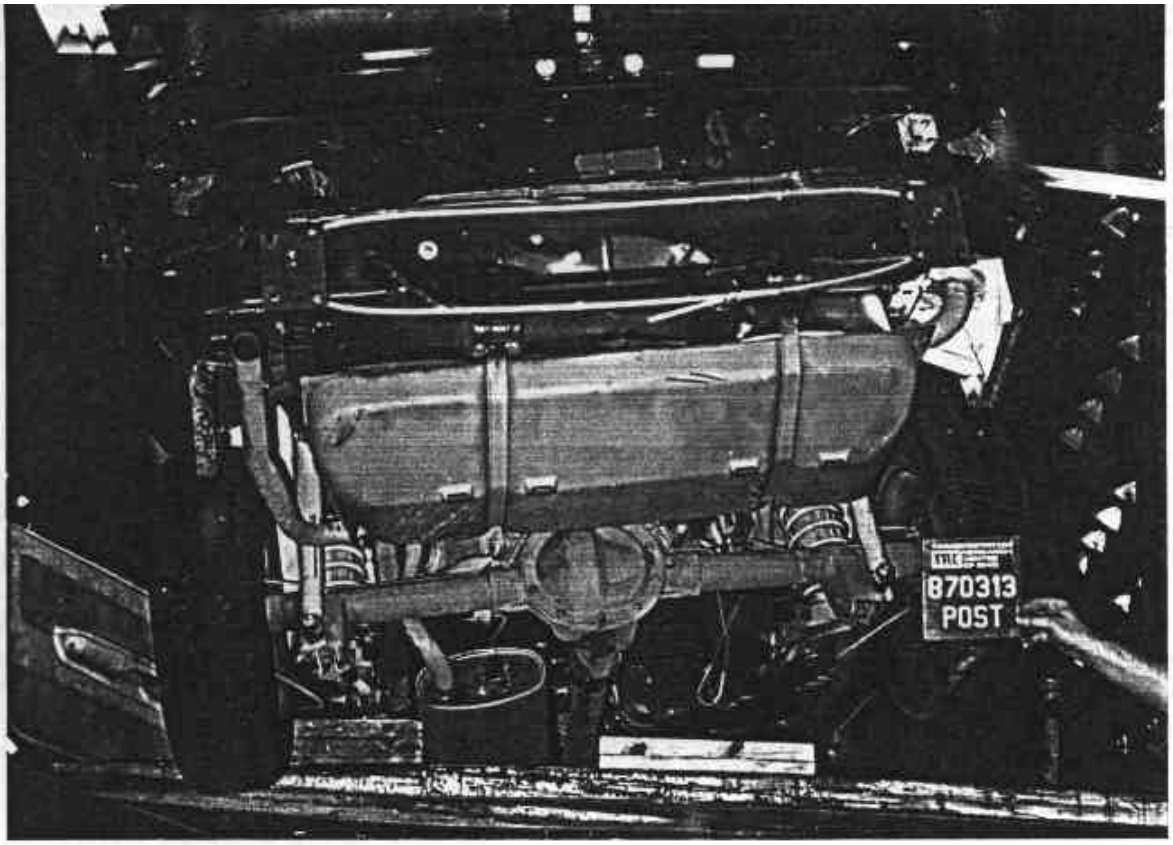


Figure 19. POST-TEST REAR UNDERBODY VIEW

Figure 20. PRE-TEST DRIVER DUMMY POSITION VIEW

Figure 21. POST-TEST DRIVER DUMMY POSITION VIEW

Figure 22. PRE-TEST PASSENGER DUMMY POSITION VIEW

Figure 23. POST-TEST PASSENGER DUMMY POSITION VIEW

Figure 24. PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)

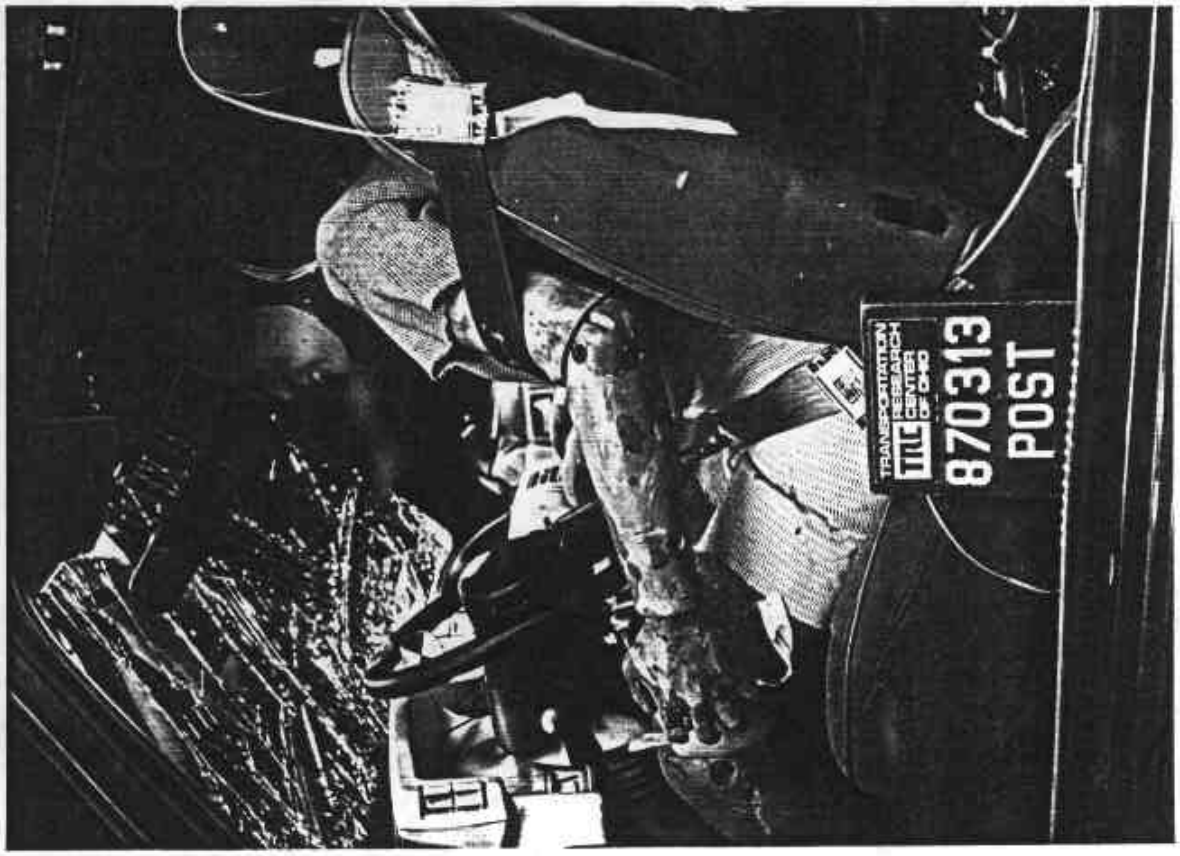


Figure 25. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)

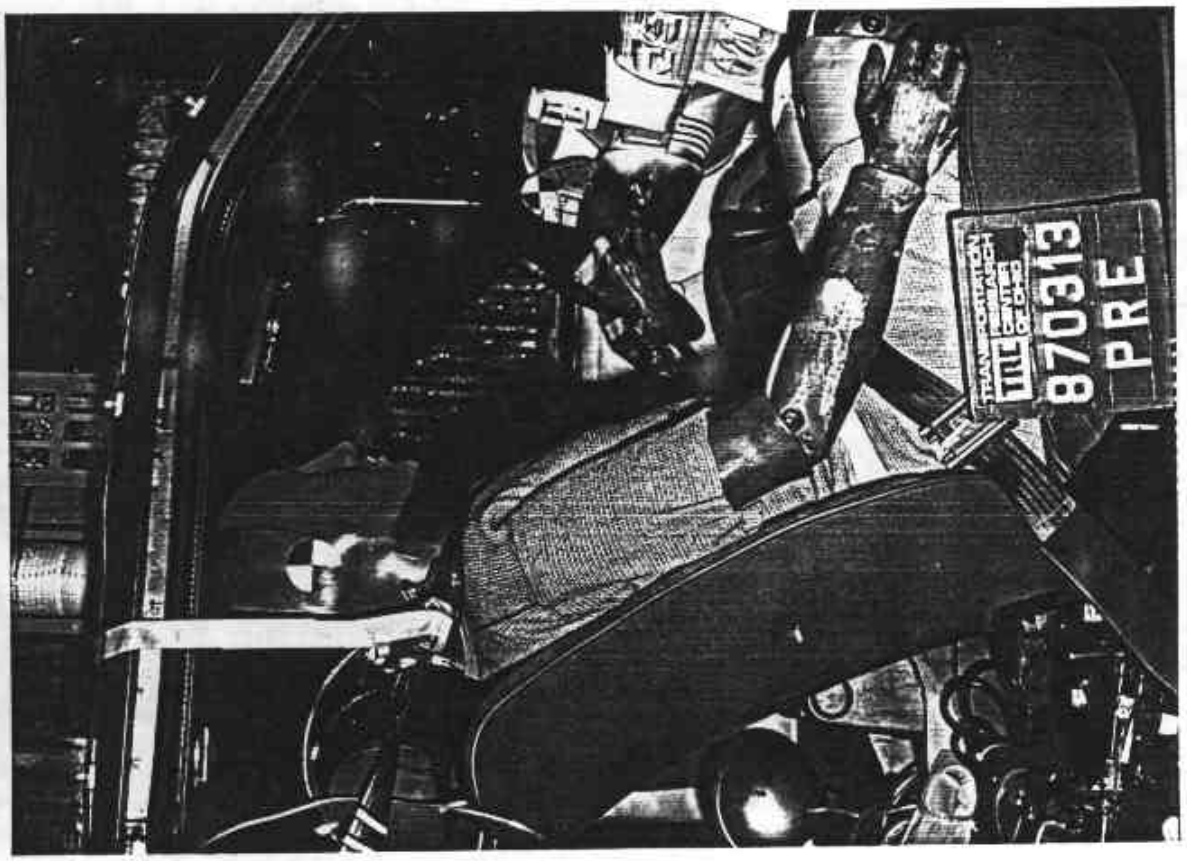


Figure 26. PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)

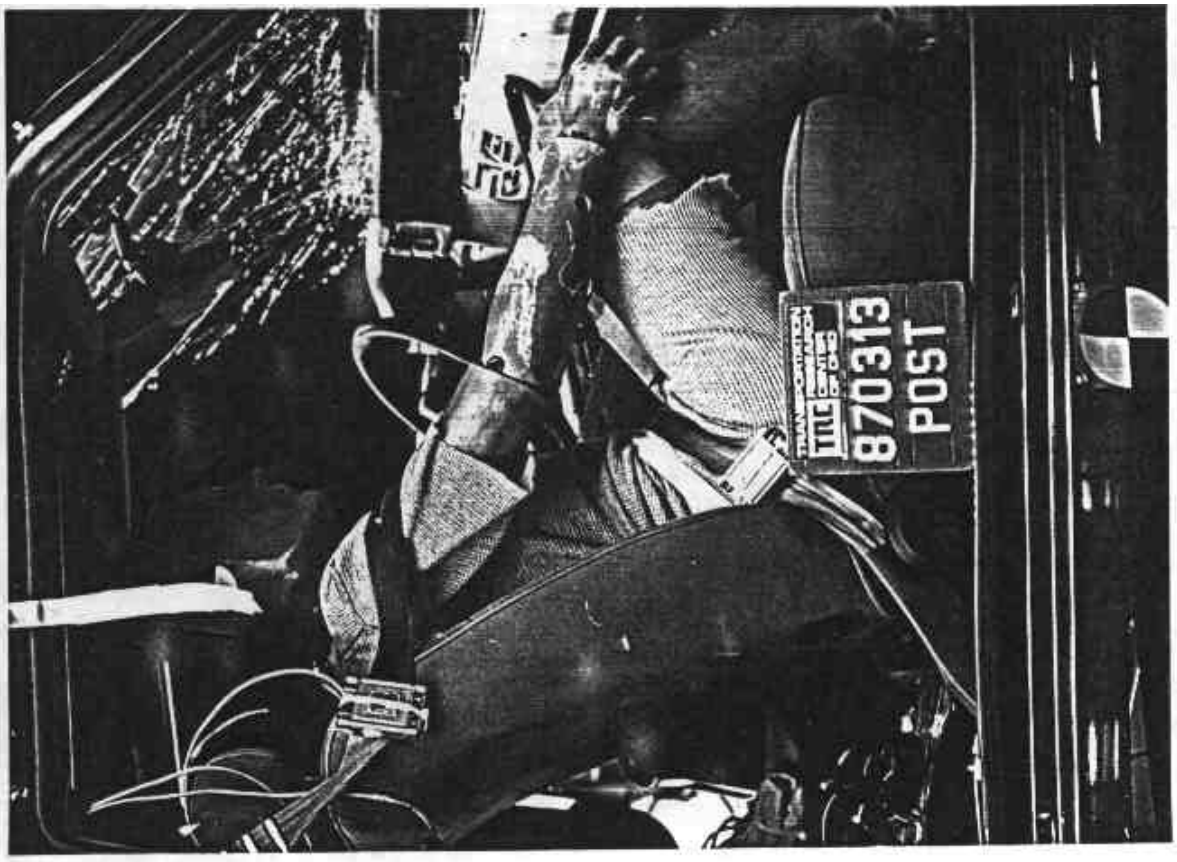


Figure 27. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (DOOR OPEN)

Figure 28. POST-TEST DRIVER DUMMY HEAD CONTACT

Figure 29. POST-TEST DRIVER DUMMY KNEE CONTACT

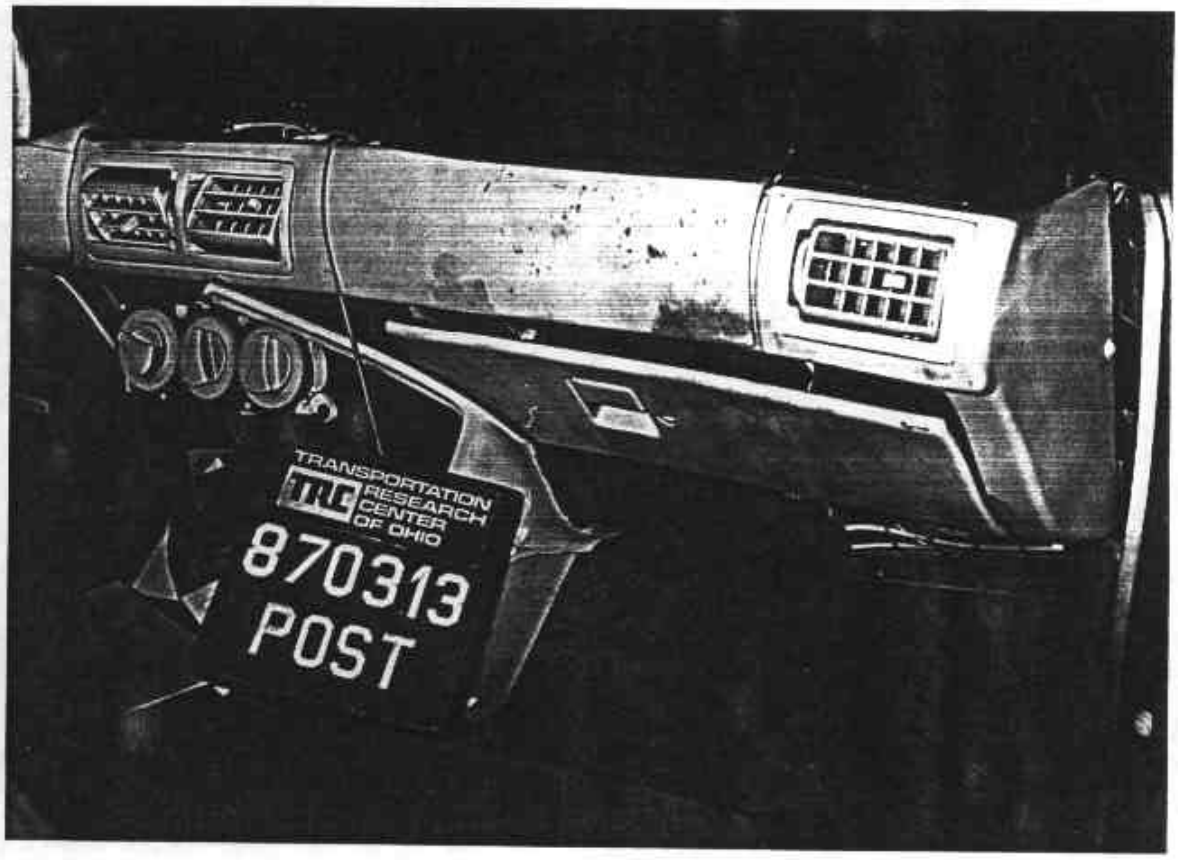
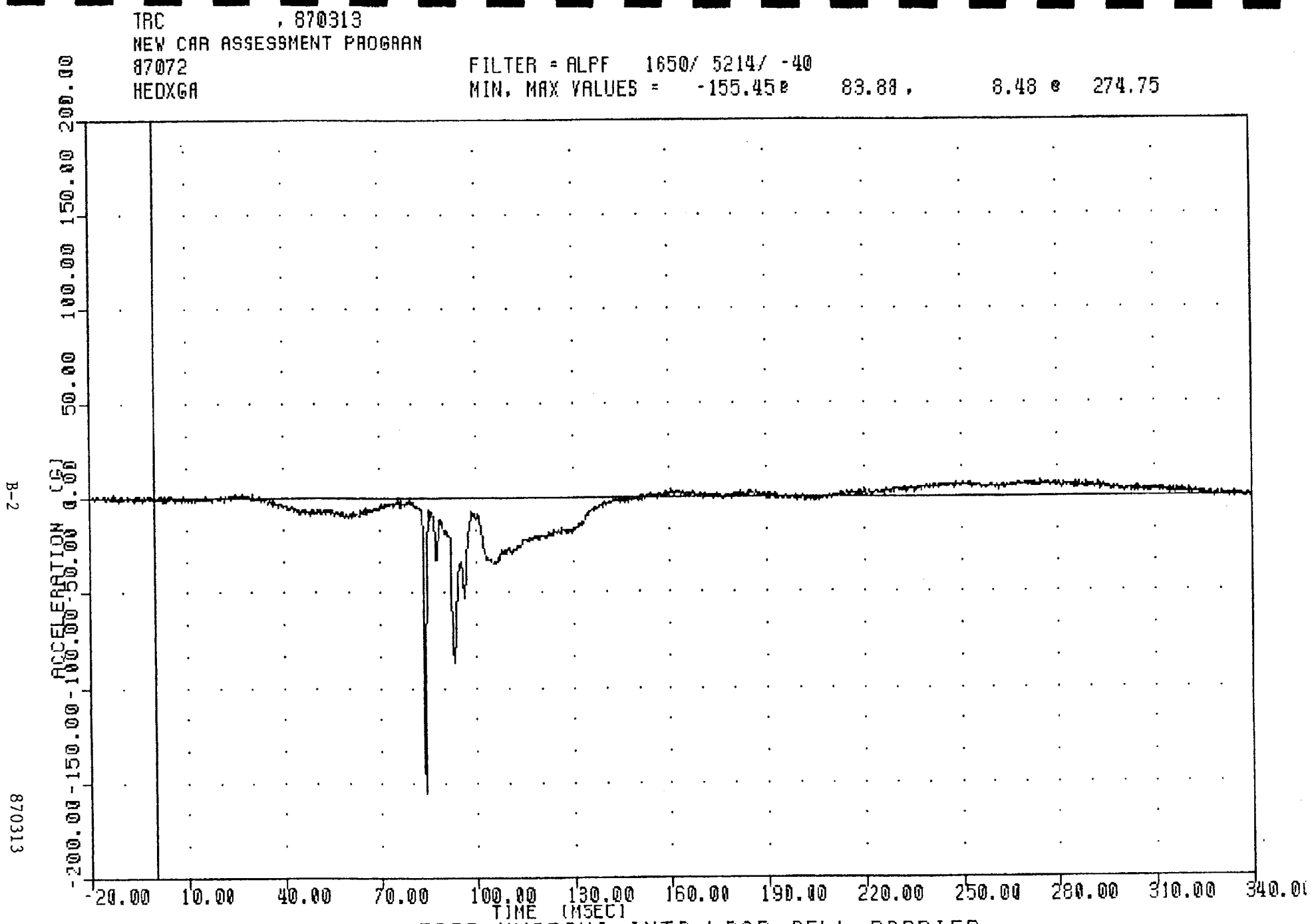


Figure 30. POST-TEST PASSENGER KNEE CONTACT

APPENDIX B

DATA PLOTS



FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER HEAD ACCELERATION X AXIS

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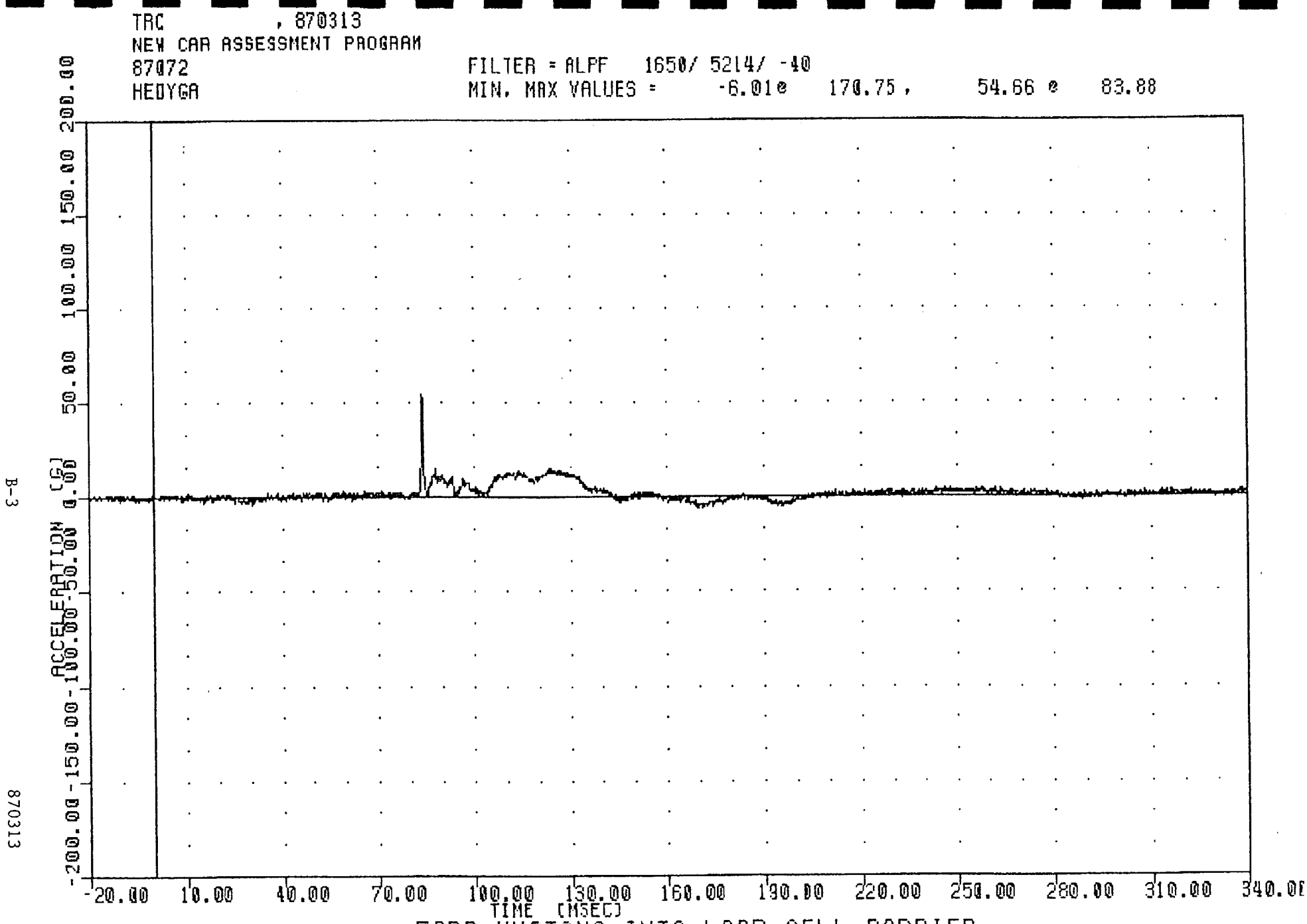
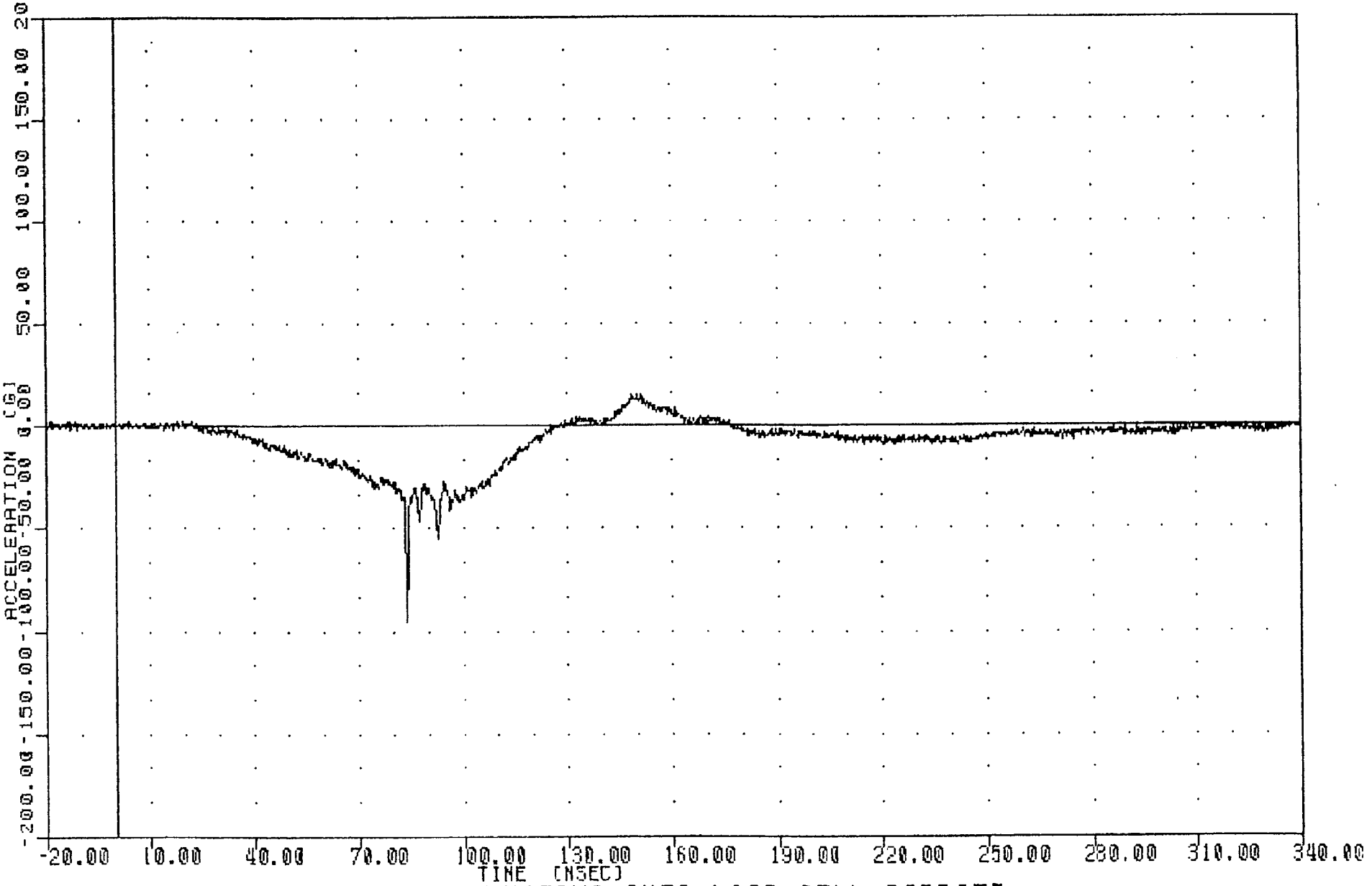


FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER HEAD ACCELERATION Y AXIS

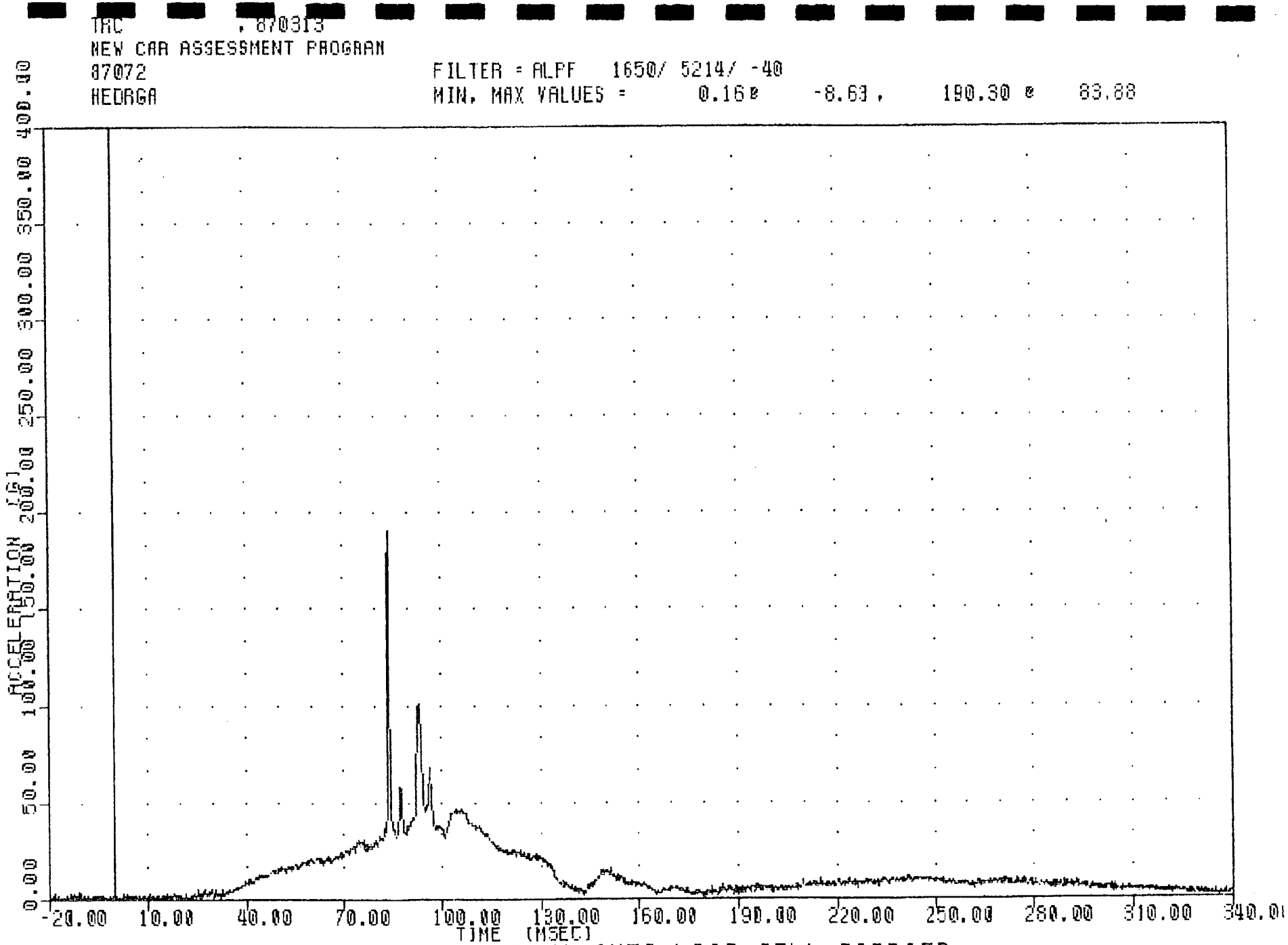
870313

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
HEDZGA
FILTER = ALPF 1650/ 5214/ -40
MIN, MAX VALUES = -95.20 @ 83.88 , 15.19 @ 151.25

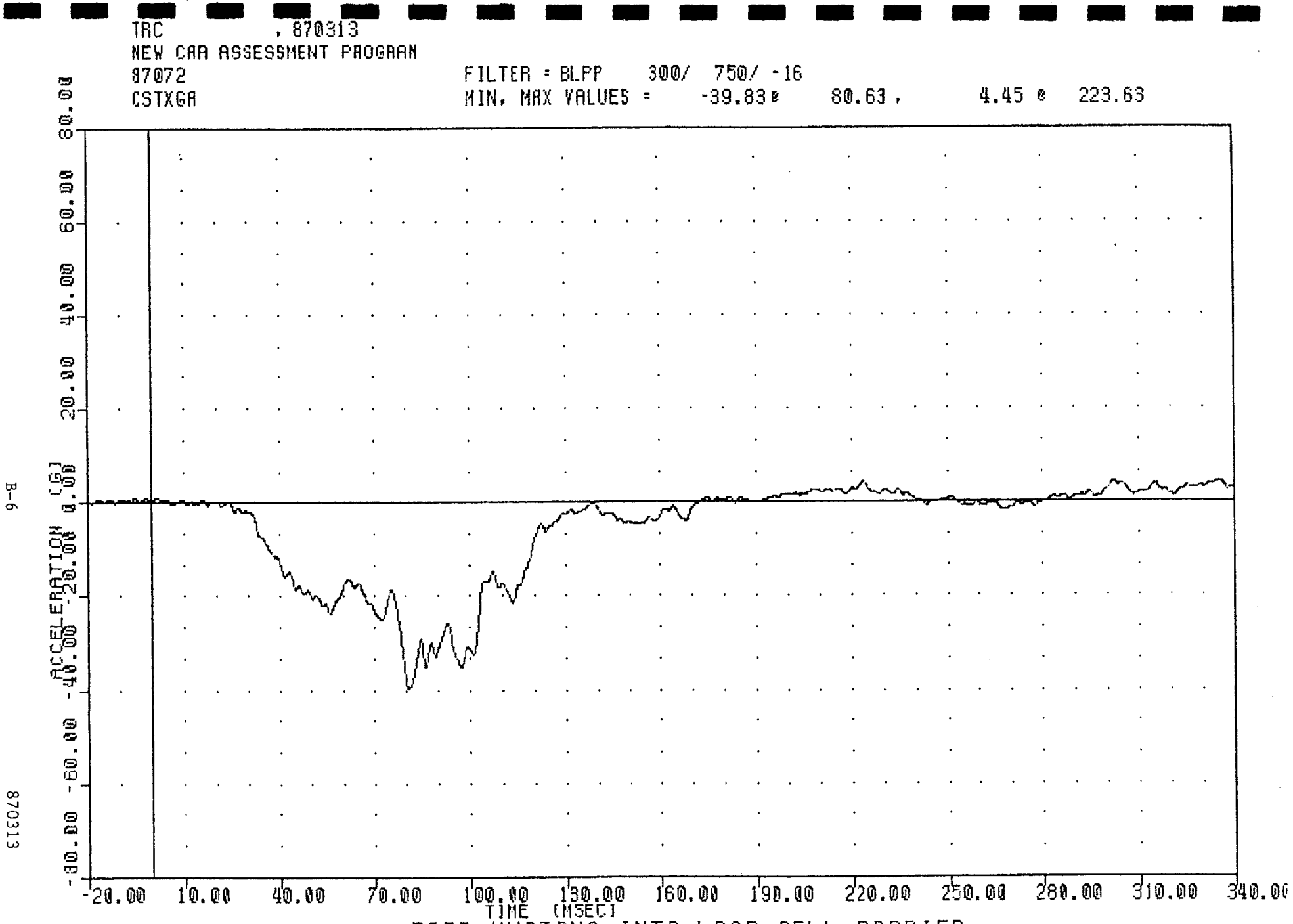


FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER HEAD ACCELERATION Z AXIS

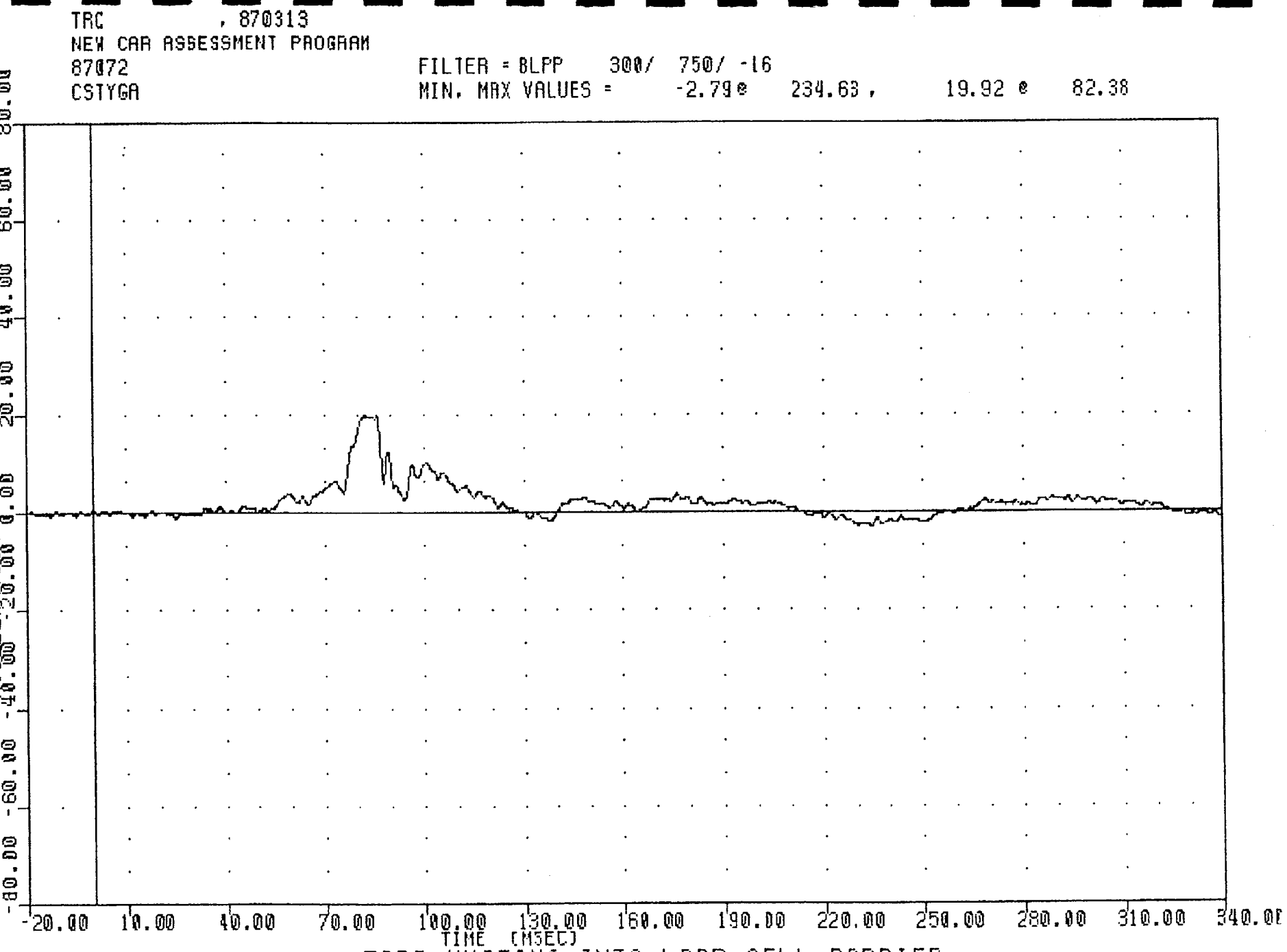
870313



FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER HEAD RESULTANT ACCELERATION



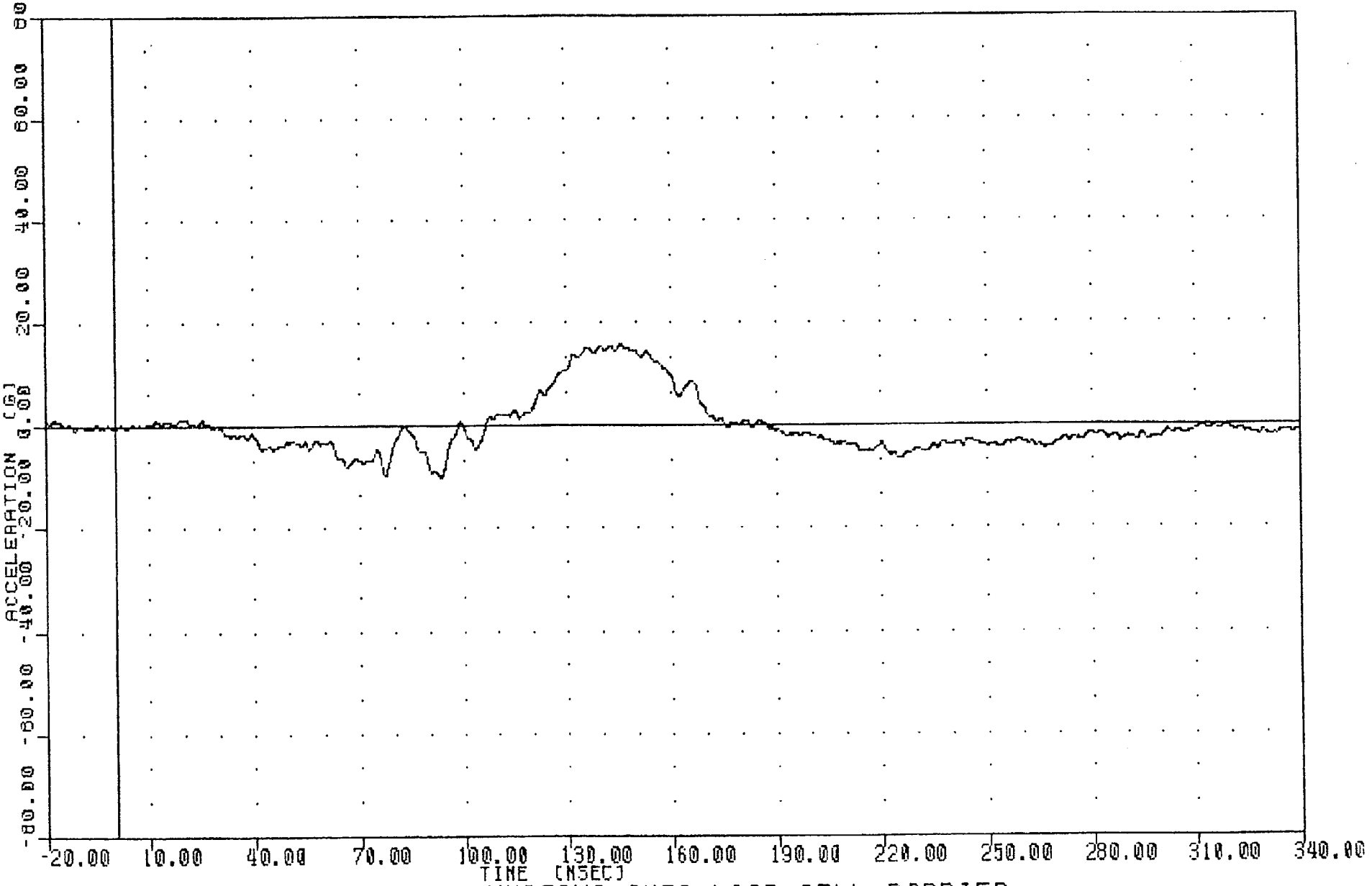
FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER CHEST ACCELERATION X AXIS



FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER CHEST ACCELERATION Y AXIS

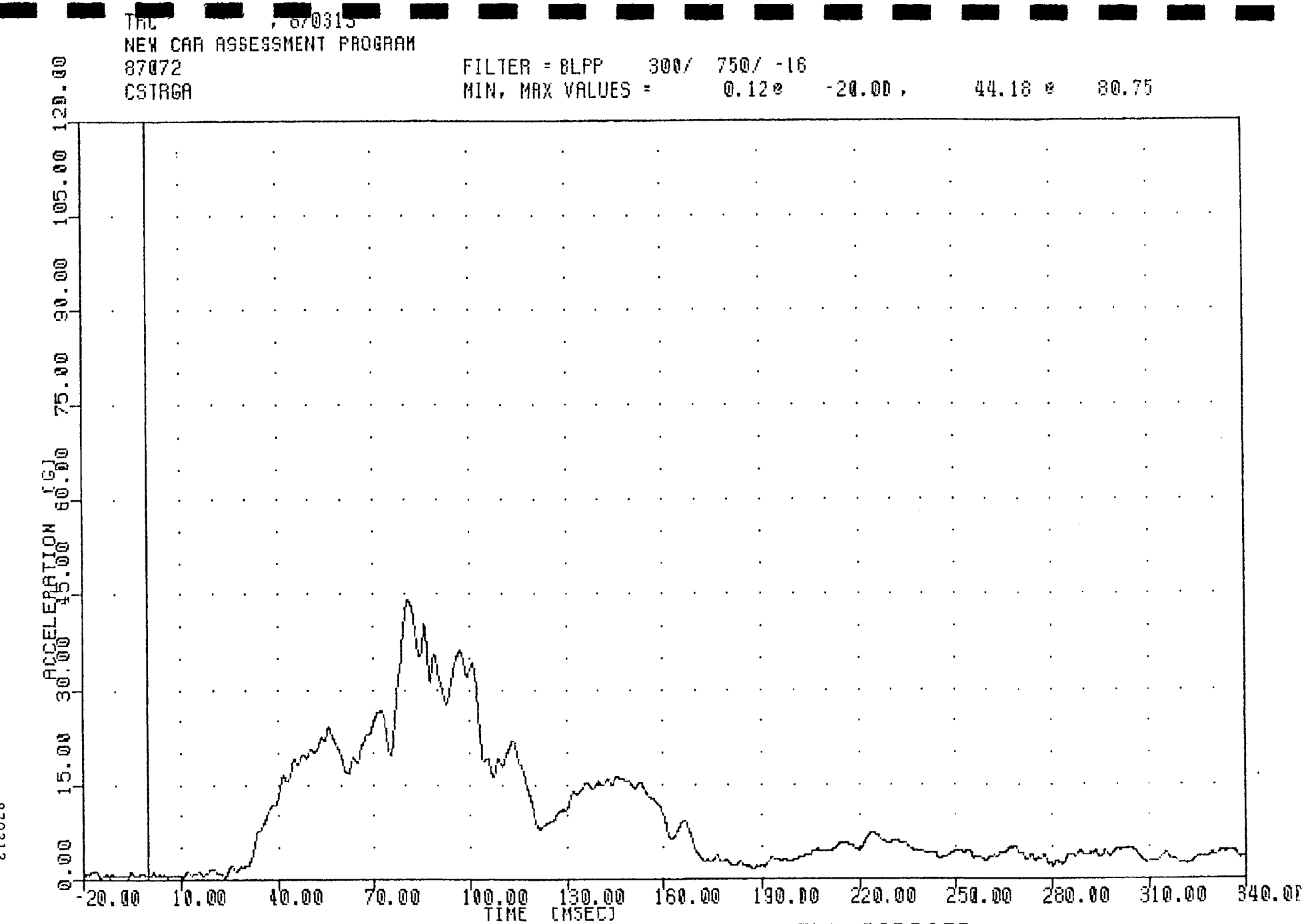
870313

TAC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
CSTZ6A
FILTER = BLPP 300/ 750/ -16
MIN, MAX VALUES = -10.00 @ 93.50 , 15.85 @ 145.38

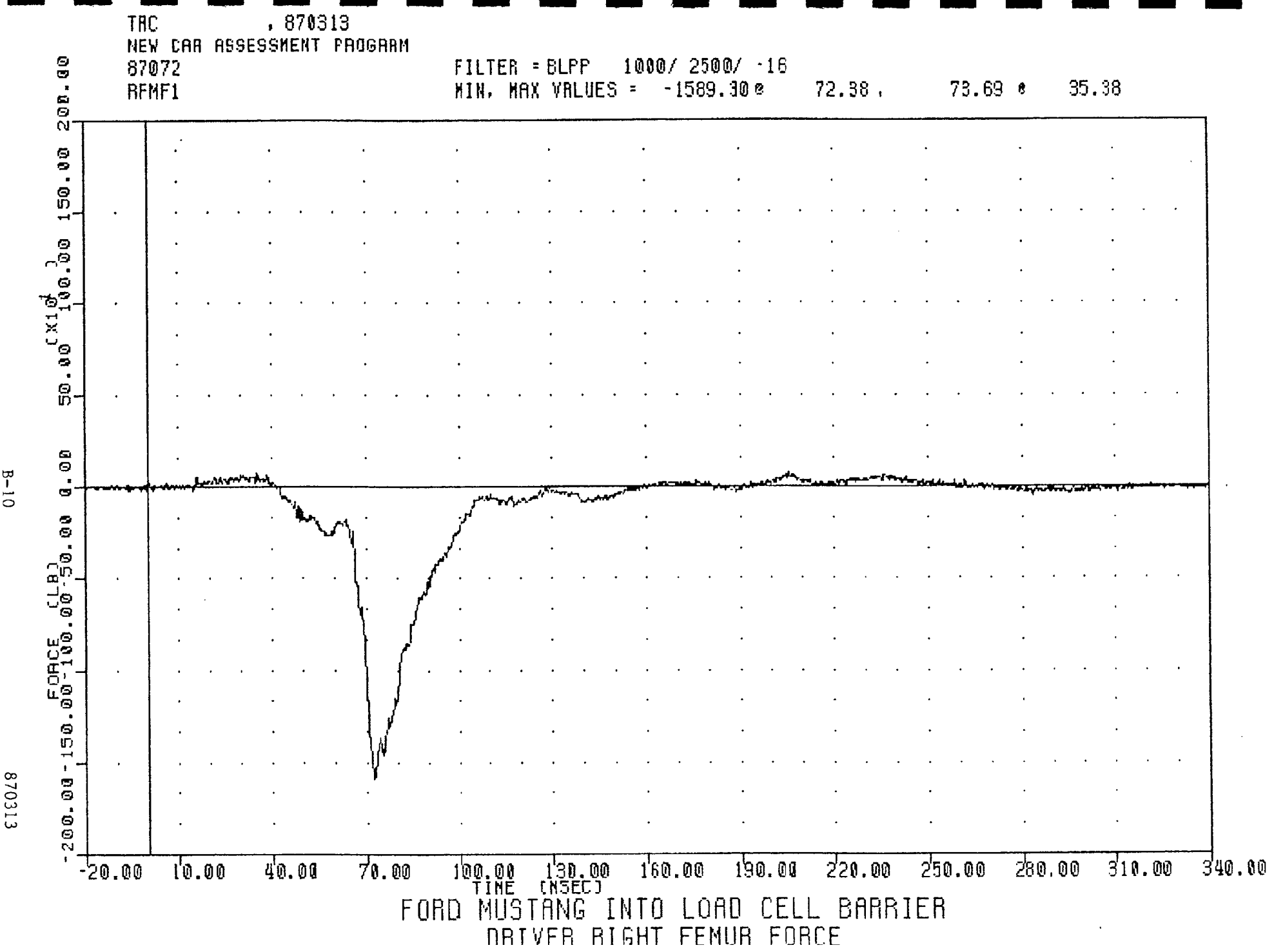


FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER CHEST ACCELERATION Z AXIS

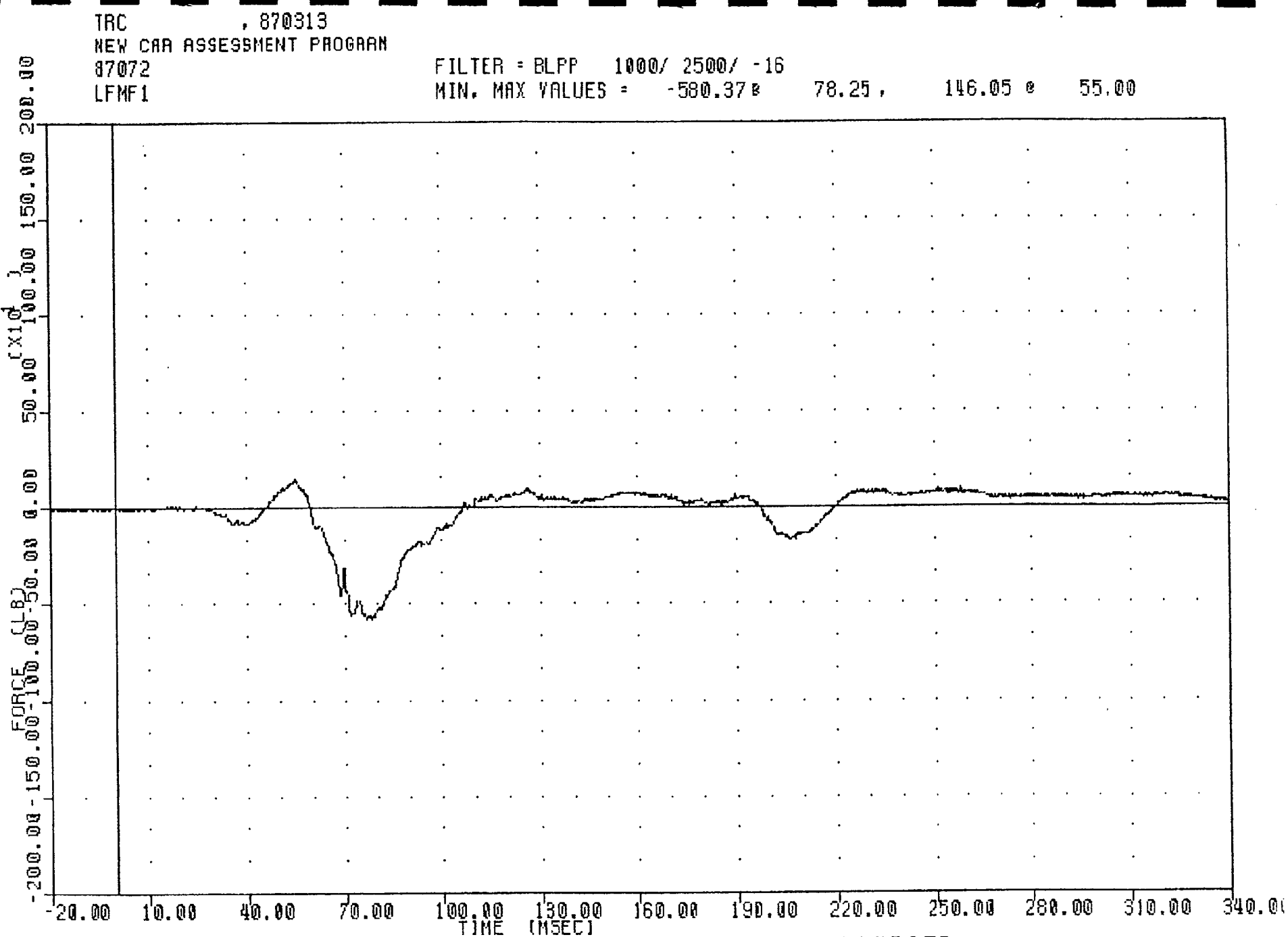
870313



FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER CHEST RESULTANT ACCELERATION



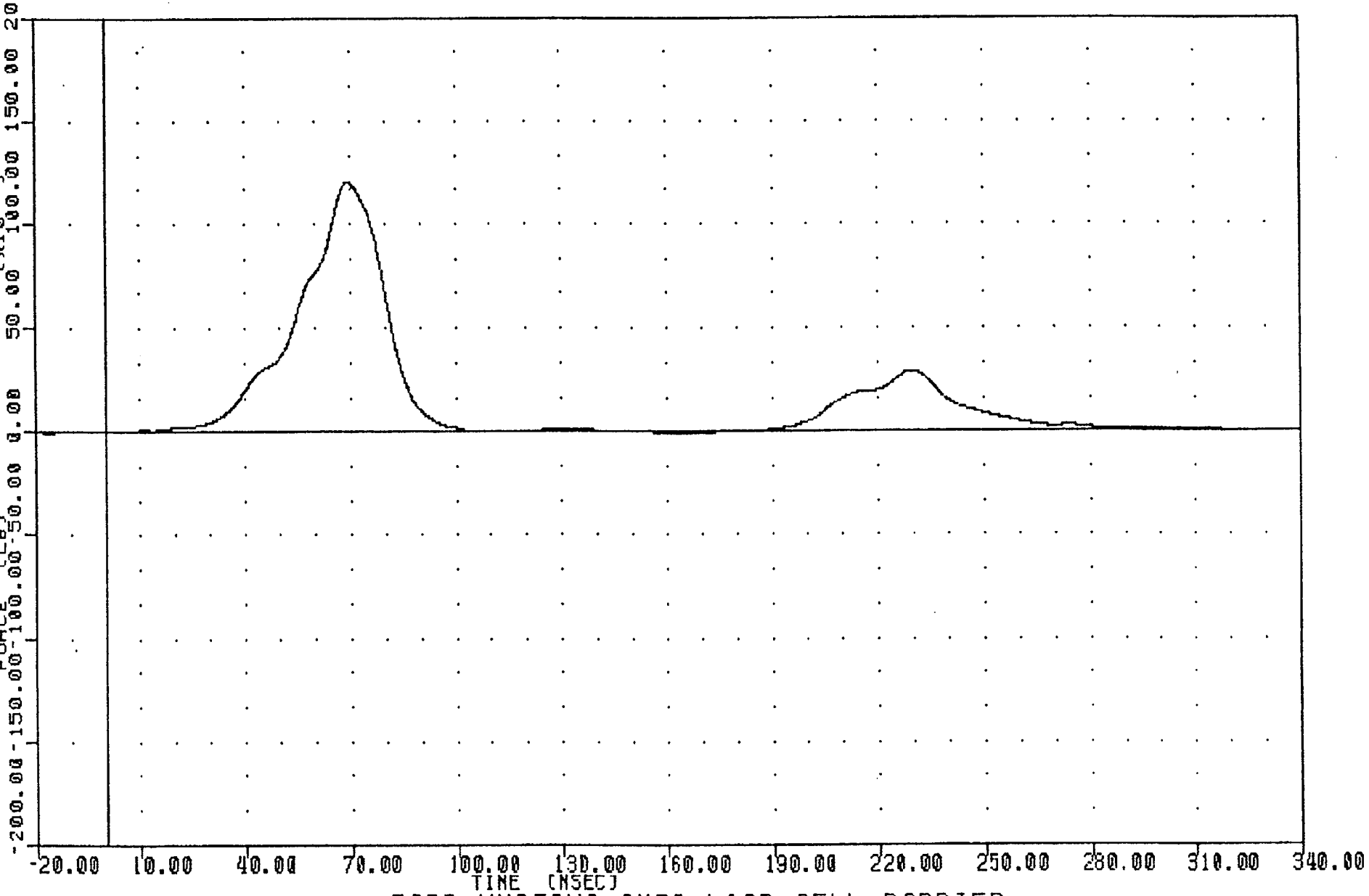
FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER RIGHT FEMUR FORCE



FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER LEFT FEMUR FORCE

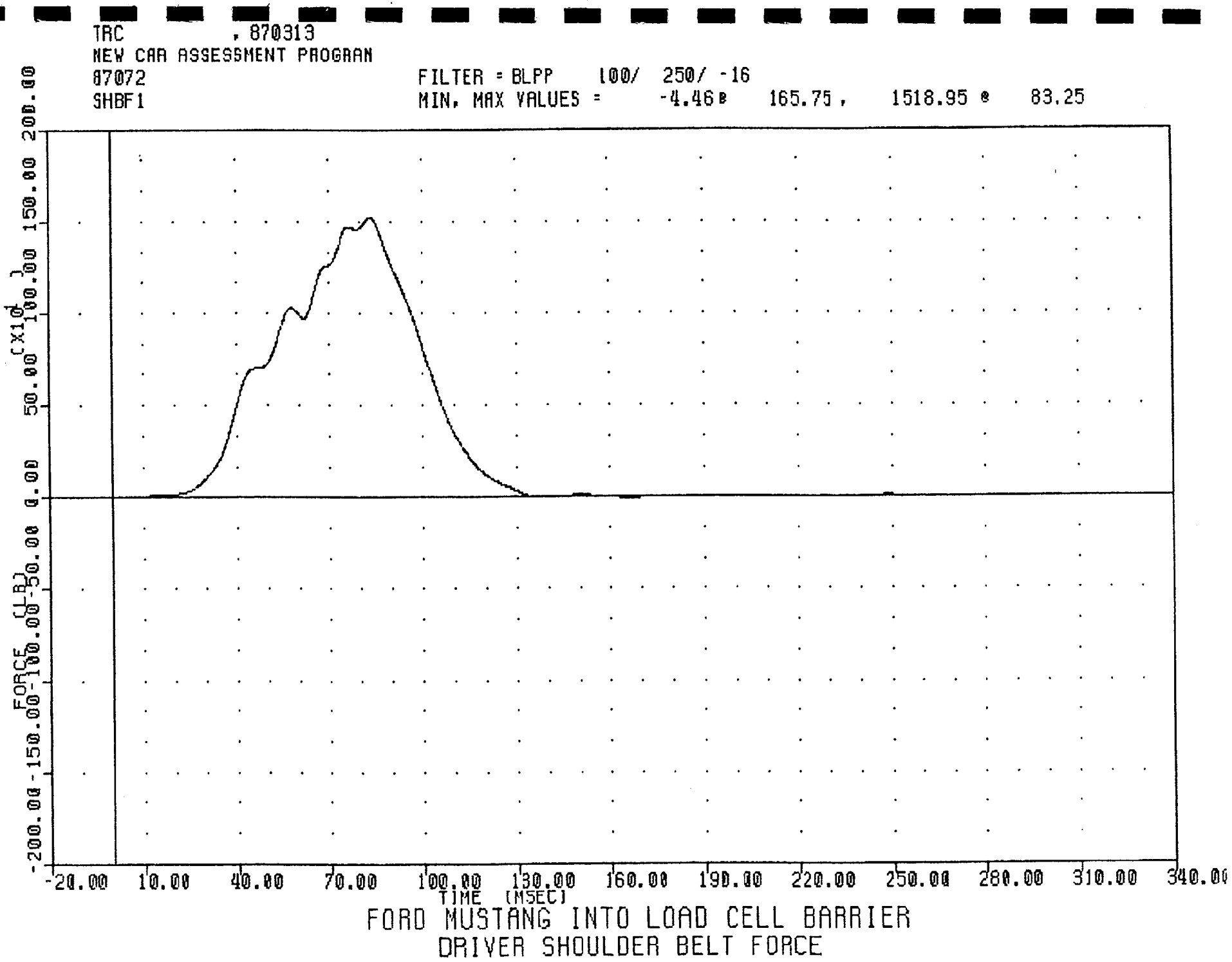
870313

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPP 100/ 250/ -16
L8OF1 MIN, MAX VALUES = -7.47 @ 168.75 , 1202.16 @ 69.38



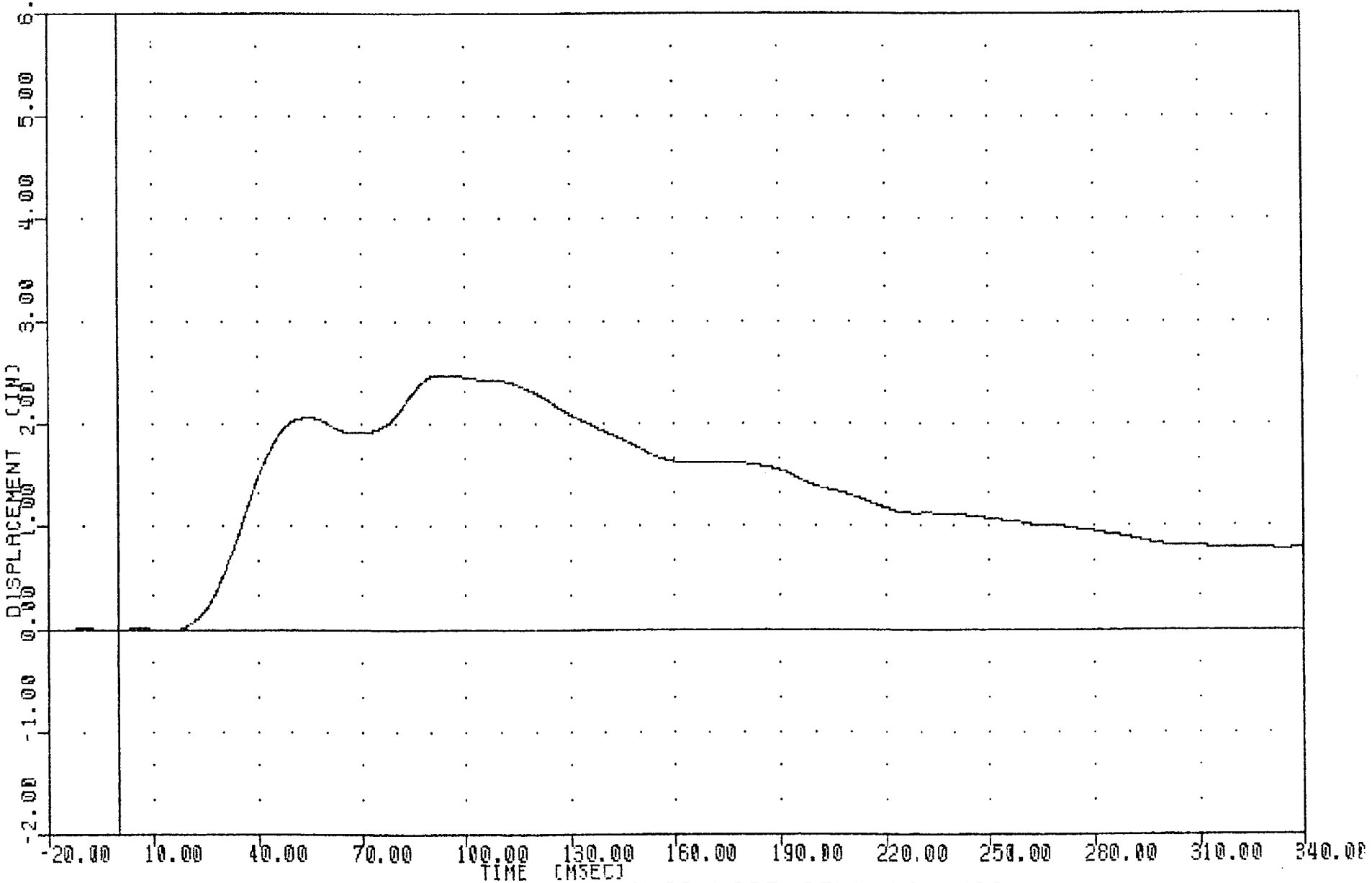
FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER LAP BELT OUTBOARD FORCE

870313



FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER SHOULDER BELT FORCE

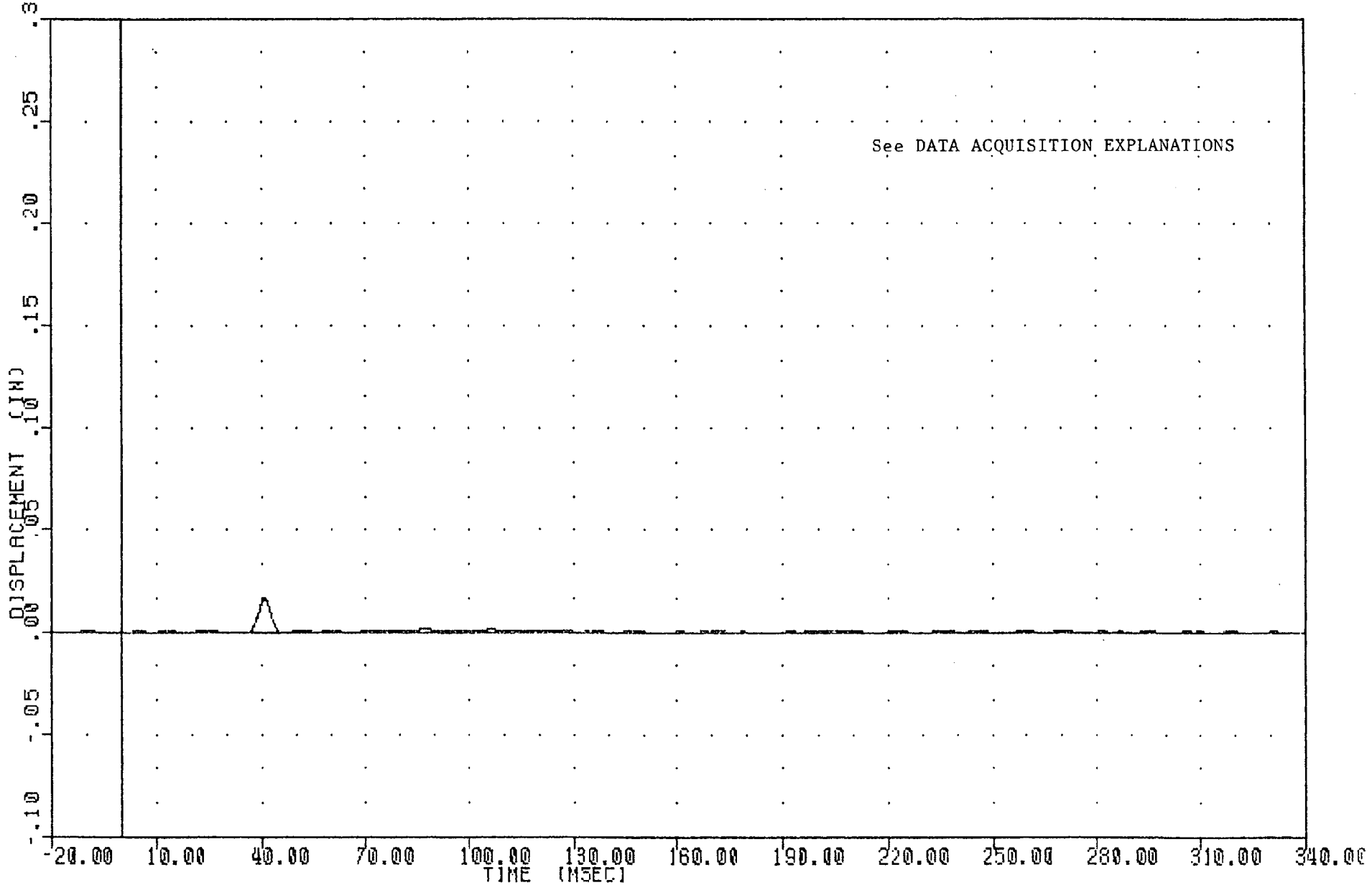
TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPP 100/ 250/ -16
SHBD1 MIN, MAX VALUES = -0.02 @ 15.25 , 2.48 @ 92.75



FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER SHOULDER BELT DISPLACEMENT

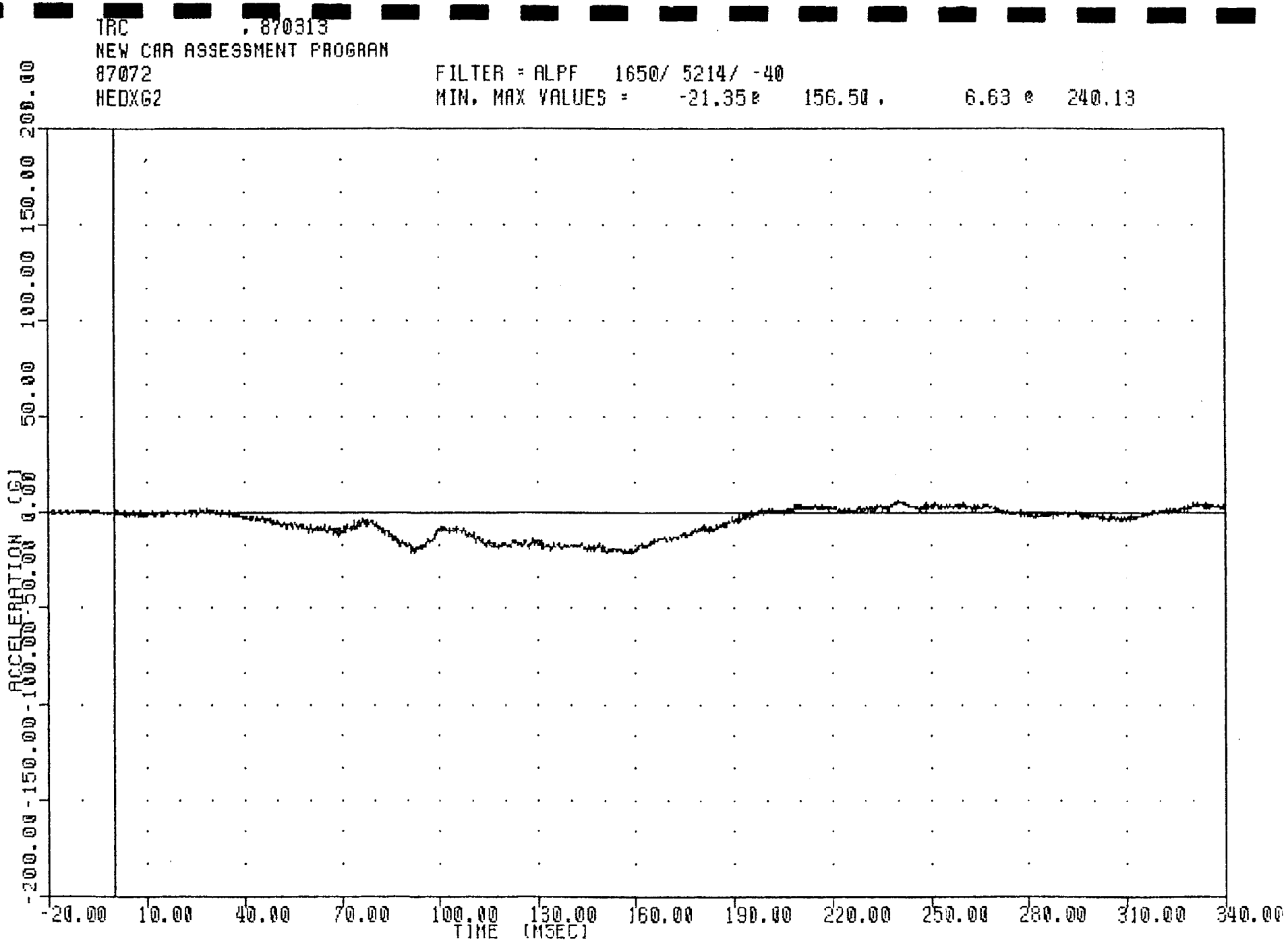
870313

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPP 100/ 250/ -16
SBED1 MIN, MAX VALUES = 0.00 @ 34.88 , 0.02 @ 40.88

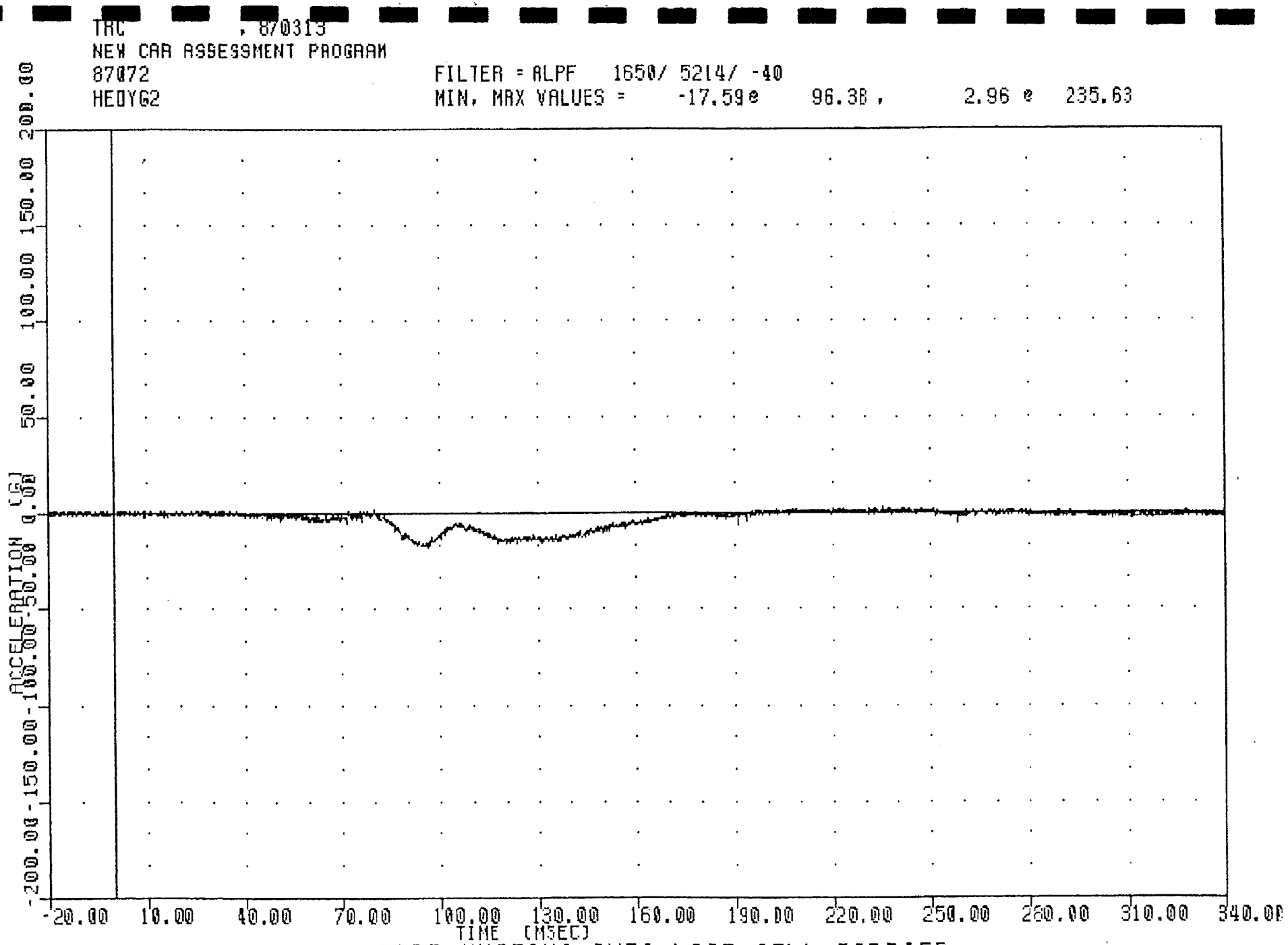


FORD MUSTANG INTO LOAD CELL BARRIER
DRIVER SEAT BELT EXTENSION

870313



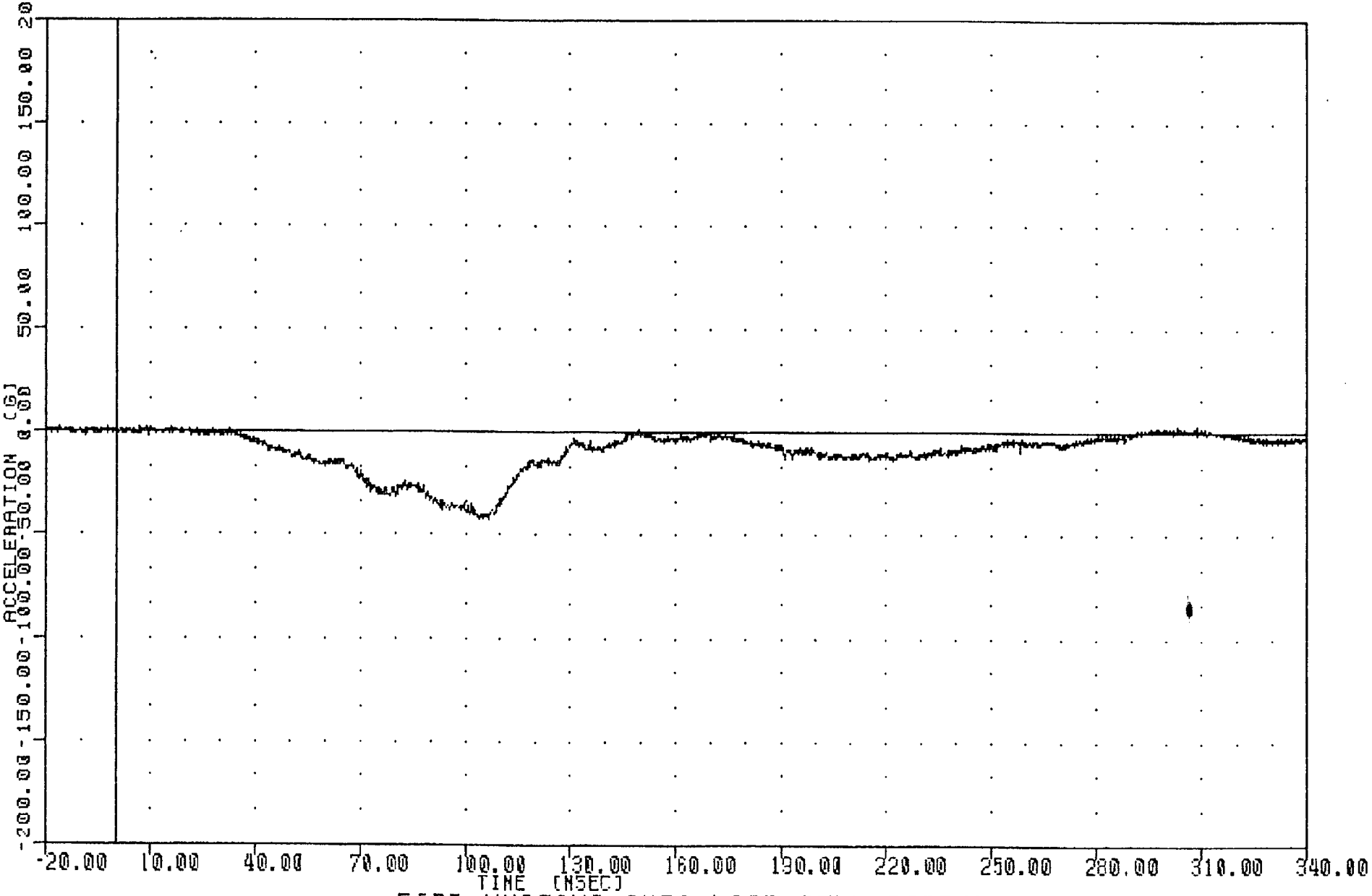
FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER HEAD ACCELERATION X AXIS



FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER HEAD ACCELERATION Y AXIS

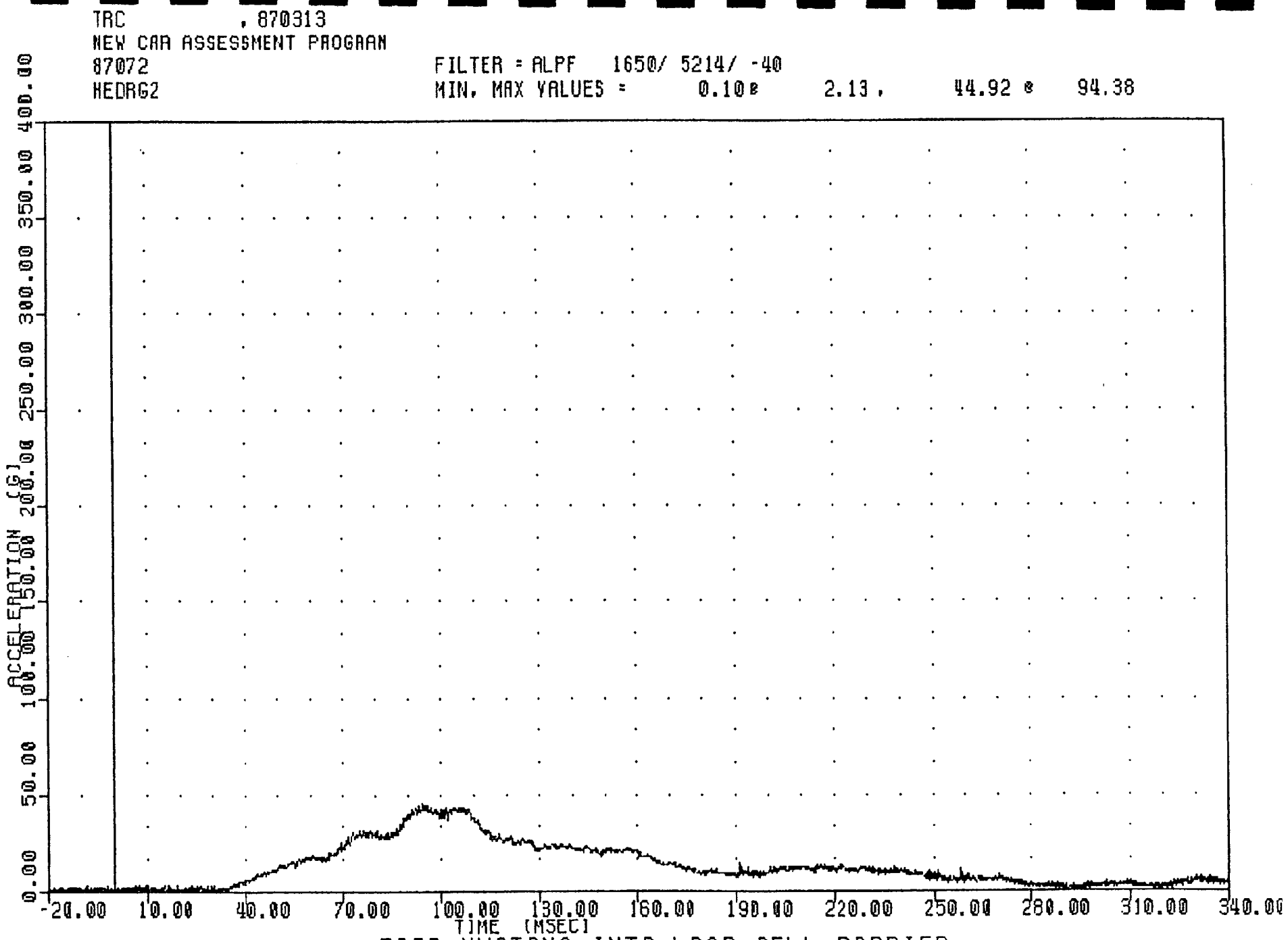
870313

THC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
HEDZ62
FILTER = ALPF 1650/ 5214/ -40
MIN, MAX VALUES = -42.07 @ 105.13 , 3.35 @ 302.88

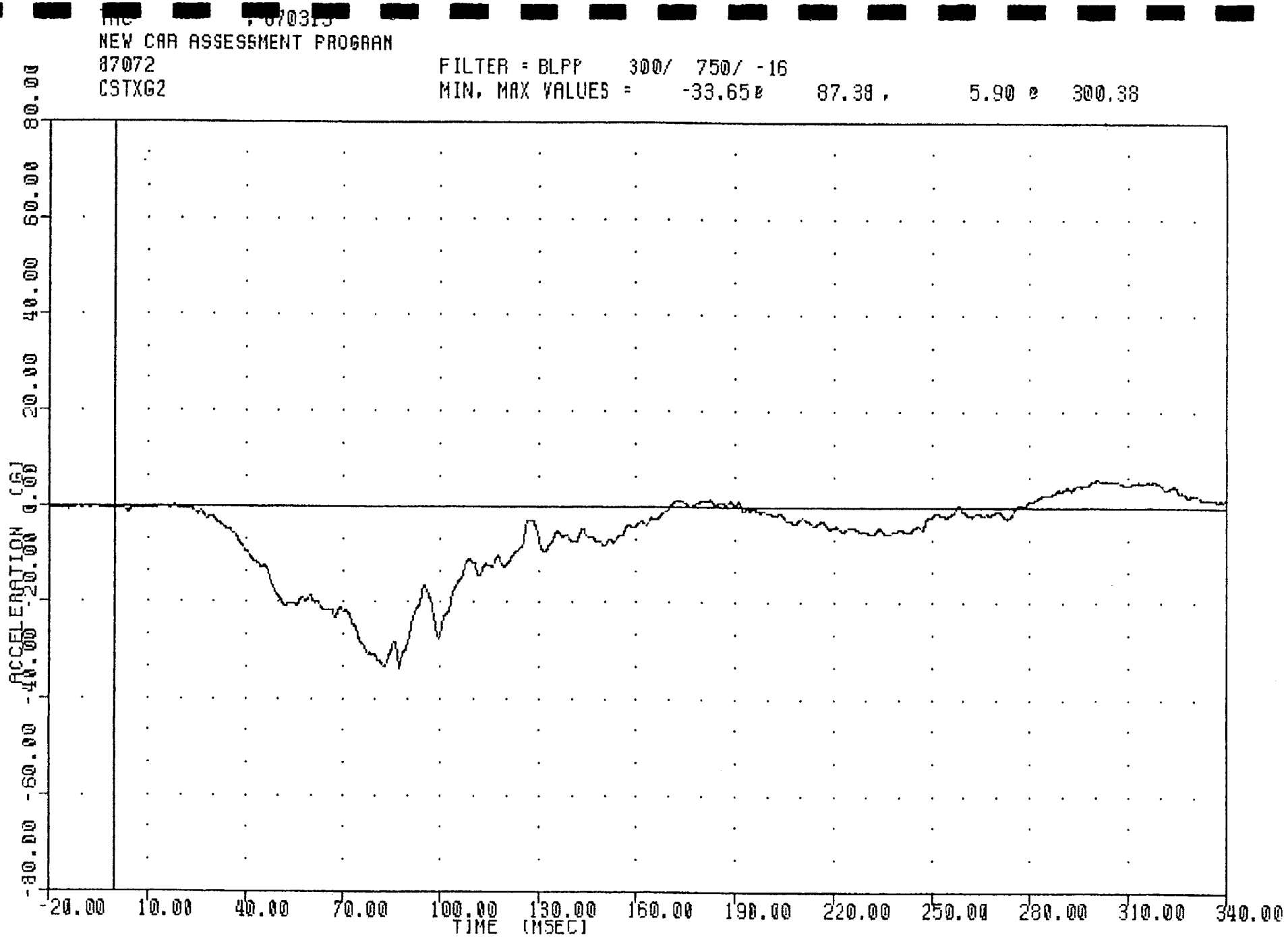


FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER HEAD ACCELERATION Z AXIS

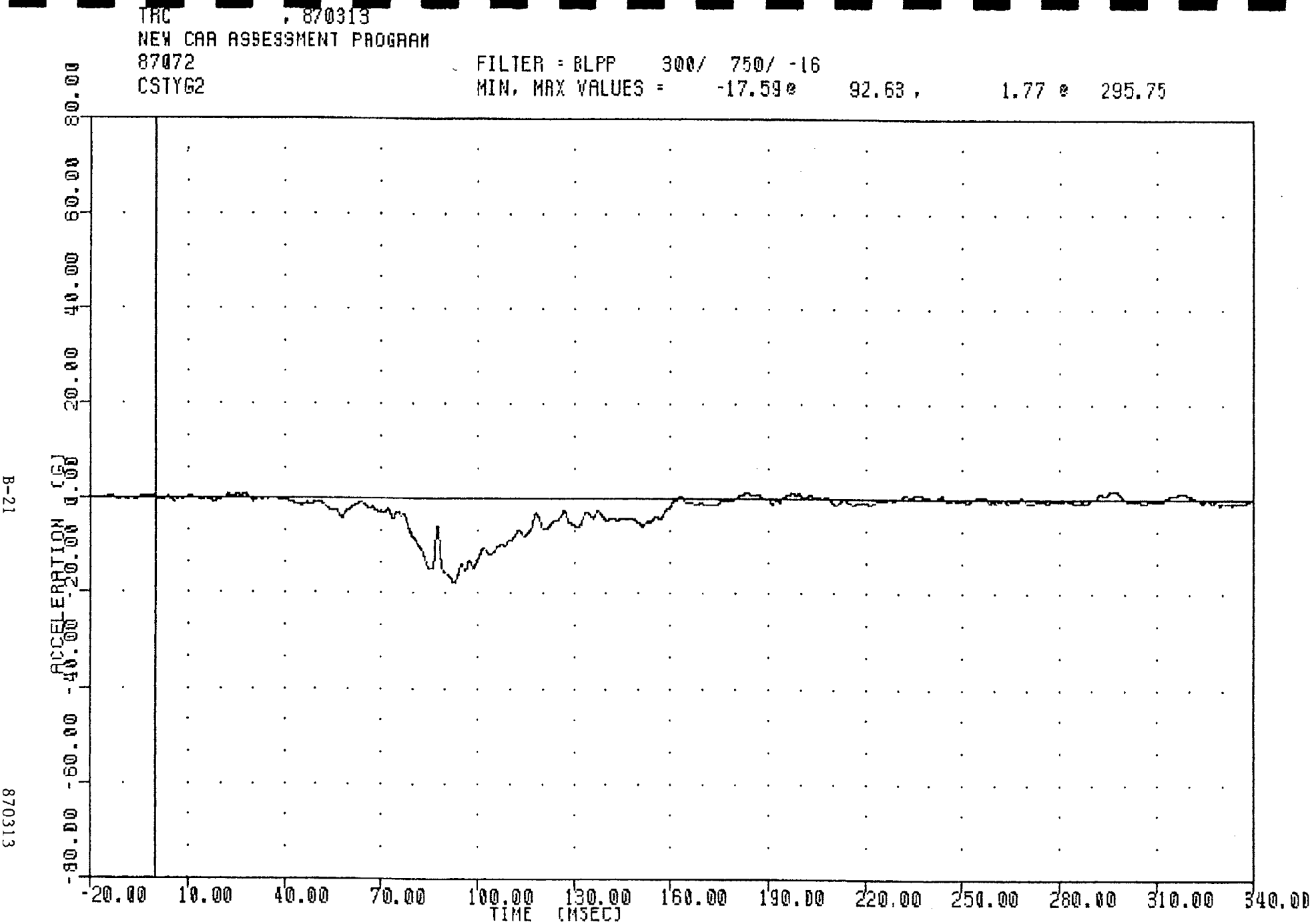
870313



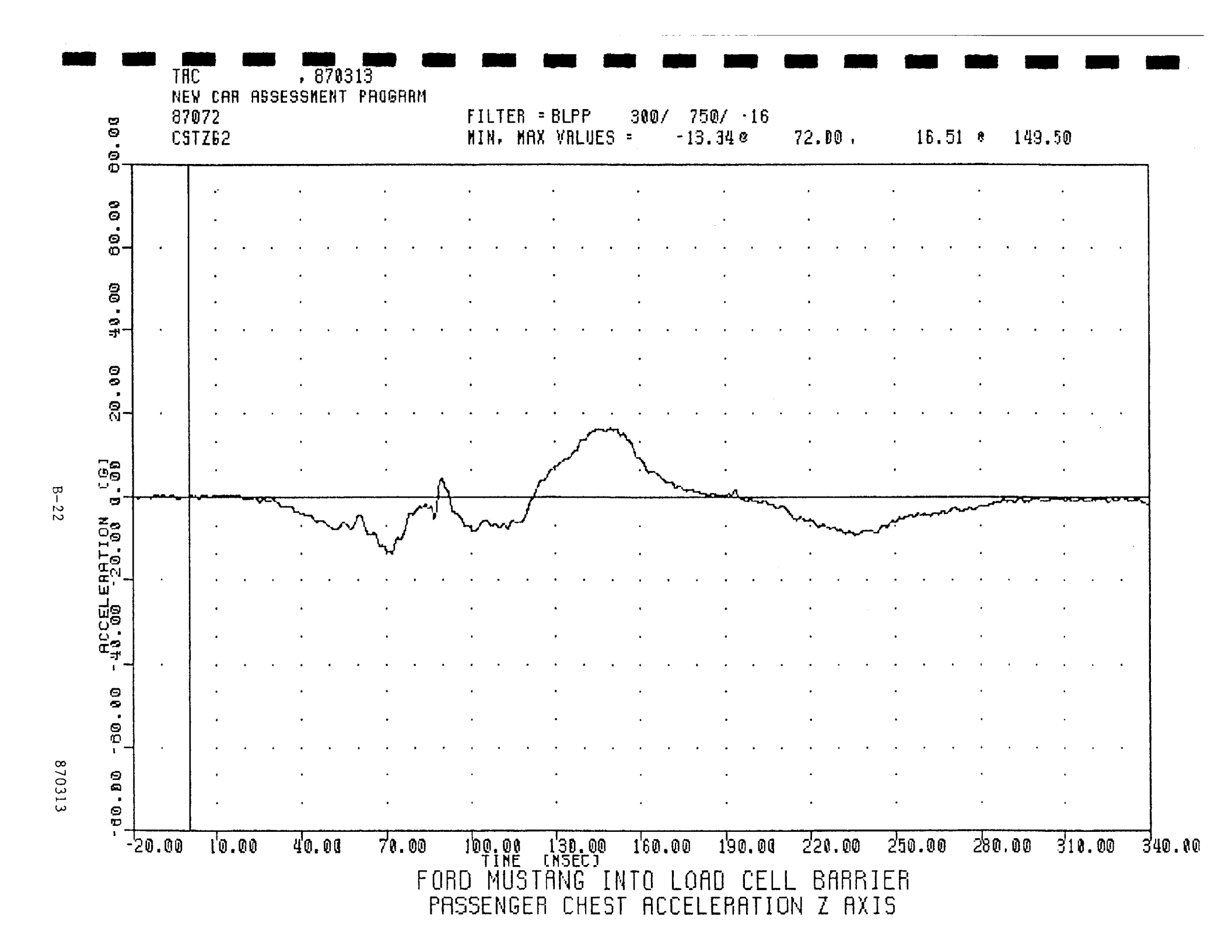
FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER HEAD RESULTANT ACCELERATION



FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER CHEST ACCELERATION X AXIS

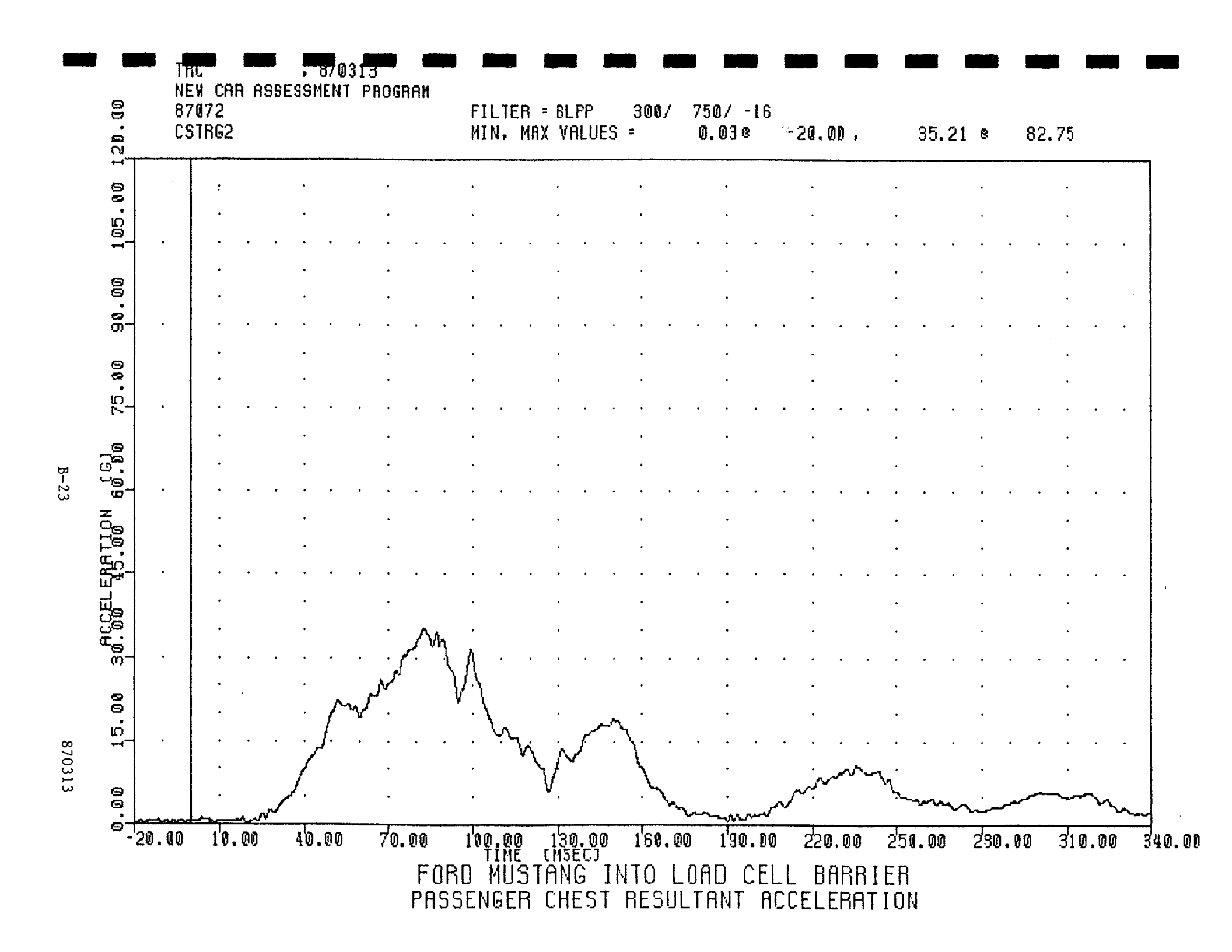


FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER CHEST ACCELERATION Y AXIS



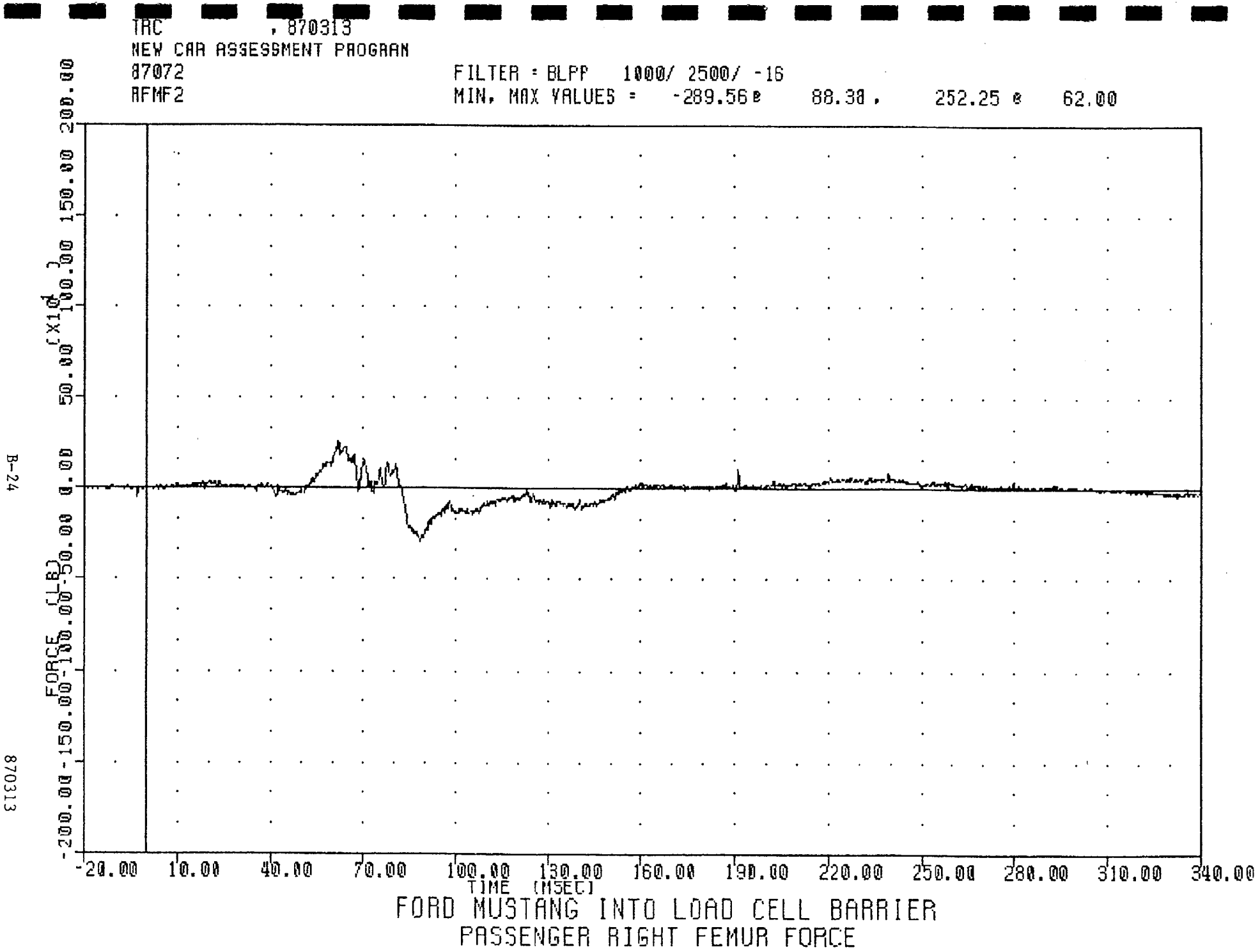
FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER CHEST ACCELERATION Z AXIS

870313



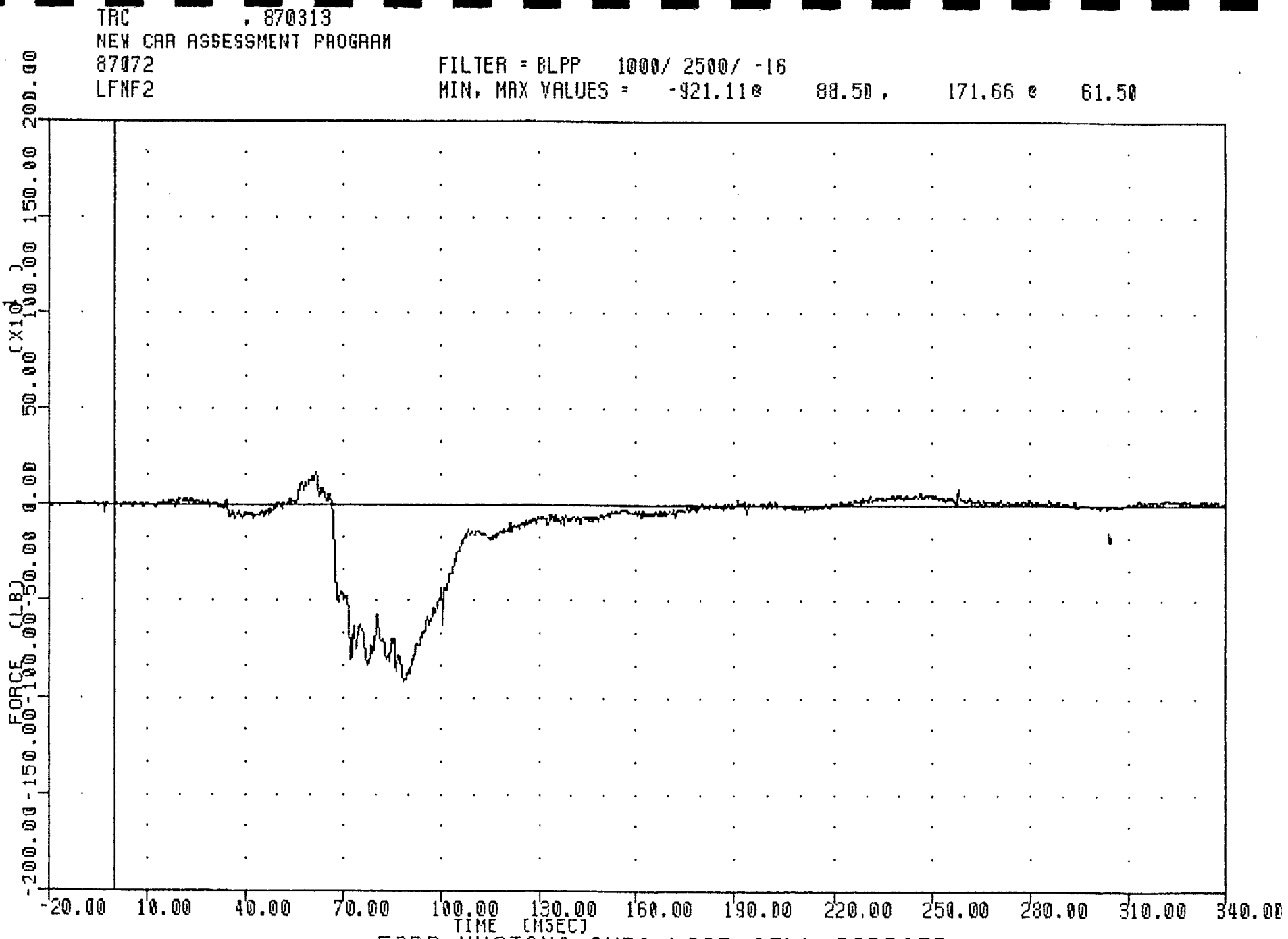
FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER CHEST RESULTANT ACCELERATION

870313



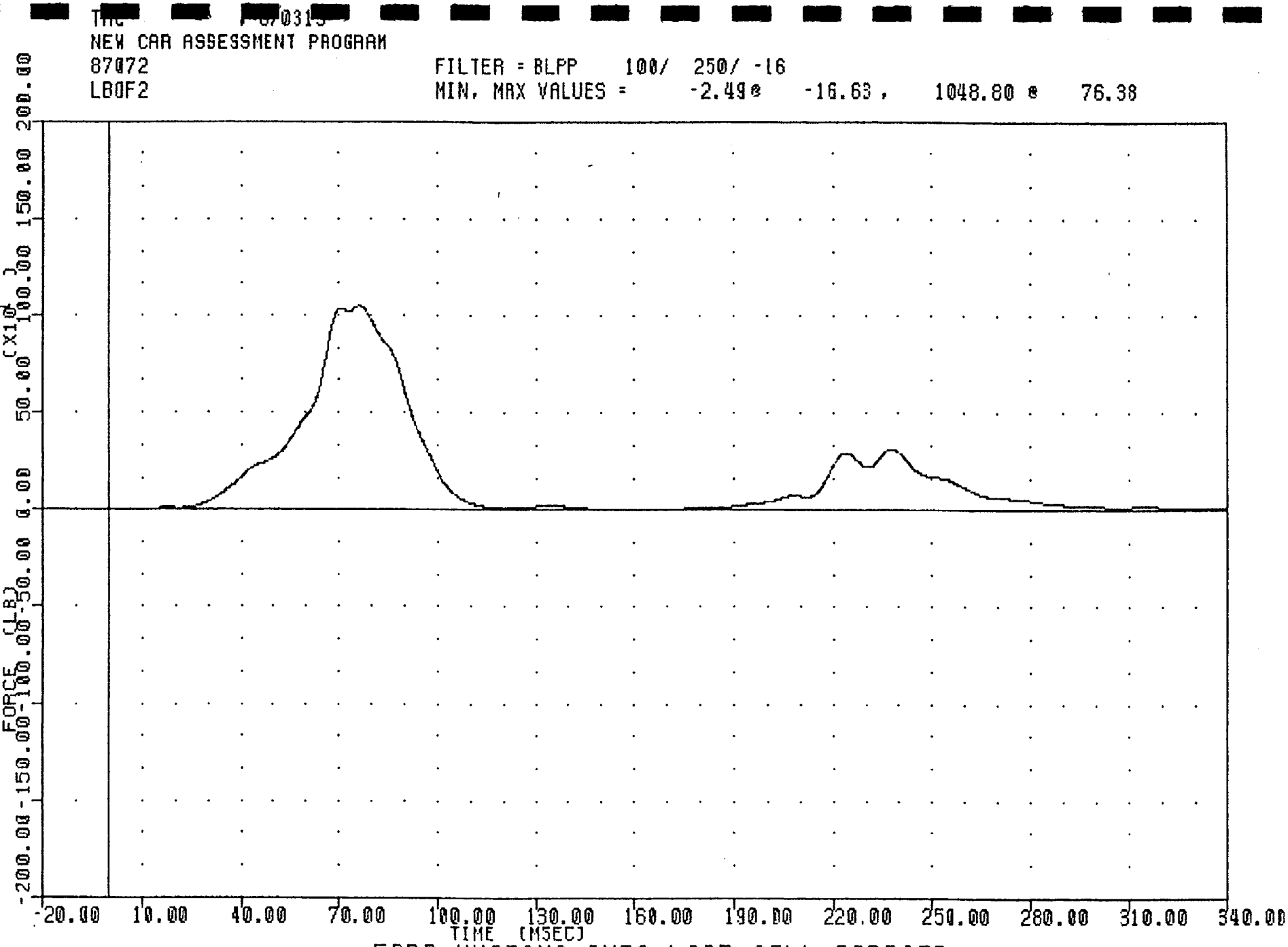
FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER RIGHT FEMUR FORCE

870313



FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER LEFT FEMUR FORCE

870313



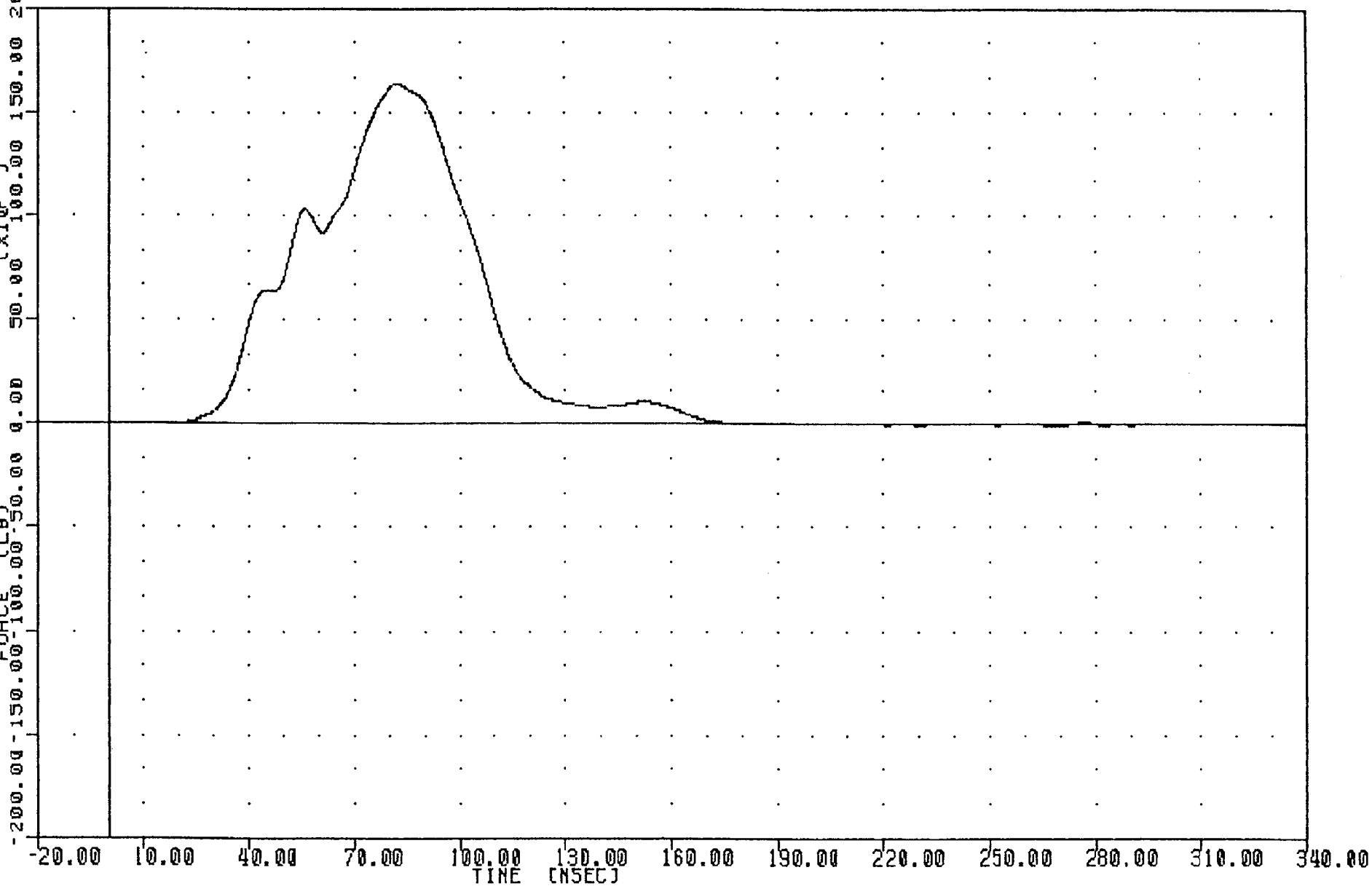
FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER LAP BELT OUTBOARD FORCE

[redacted] 870315

NEW CAR ASSESSMENT PROGRAM

87072 FILTER = BLPP 100/ 250/ -16

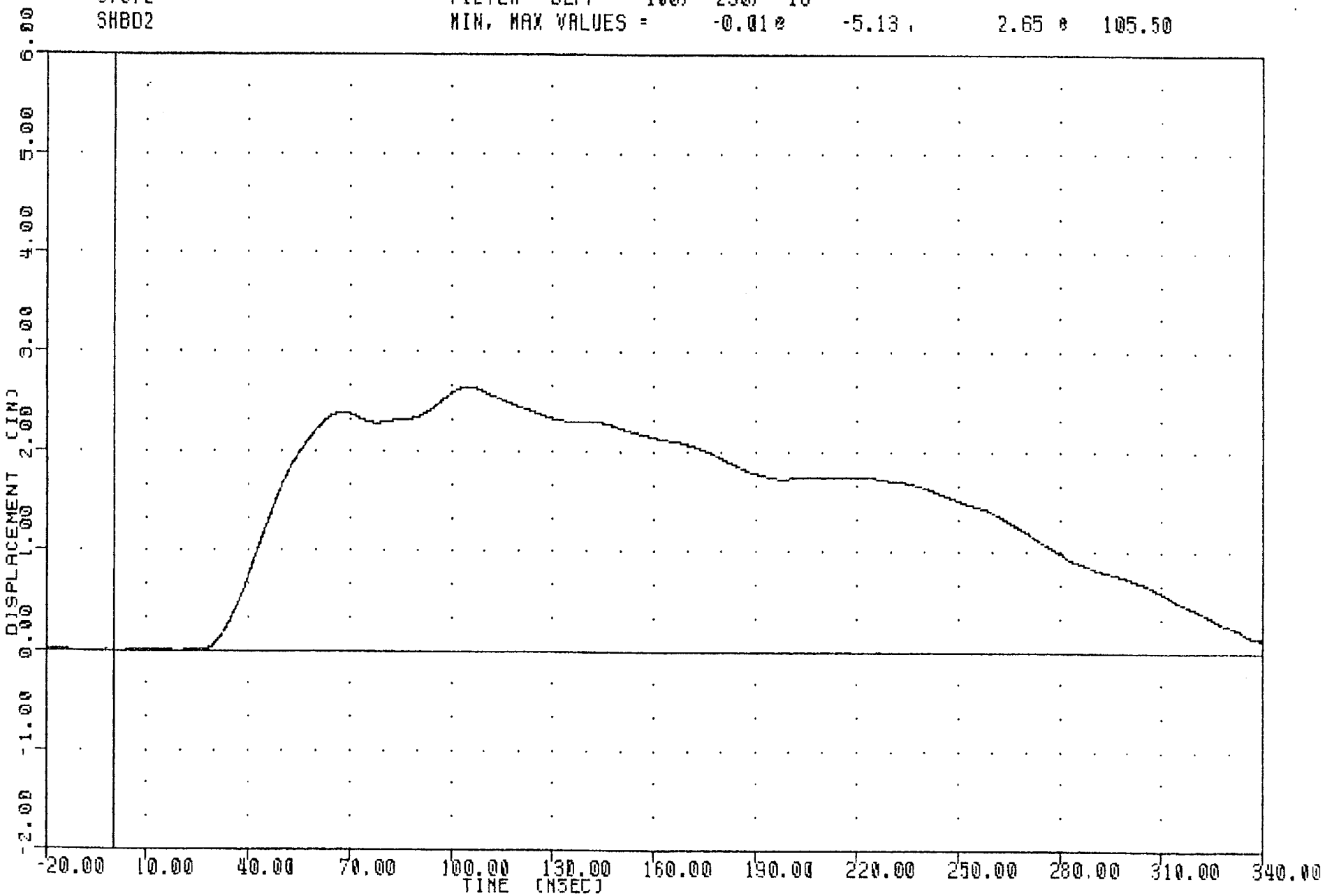
SHBF2 MIN, MAX VALUES = -4.34 @ 269.50 , 1636.31 @ 82.00



FORD MUSTANG INTO LOAD CELL BARRIER

PASSENGER SHOULDER BELT FORCE

TAC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPP 100/ 250/ -16
SHBD2 MIN, MAX VALUES = -0.01 @ -5.13 , 2.65 @ 105.50

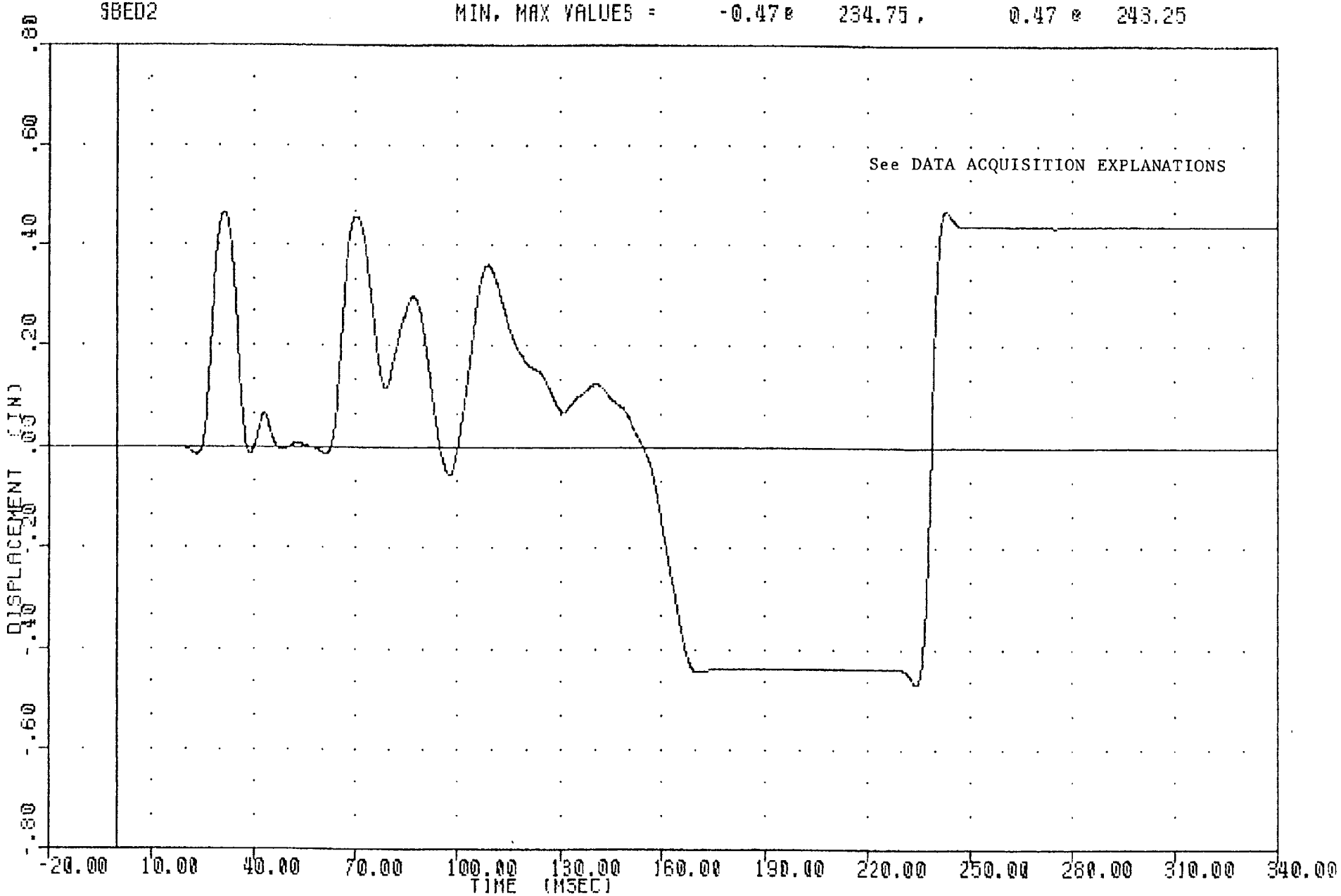


FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER SHOULDER BELT DISPLACEMENT

870313

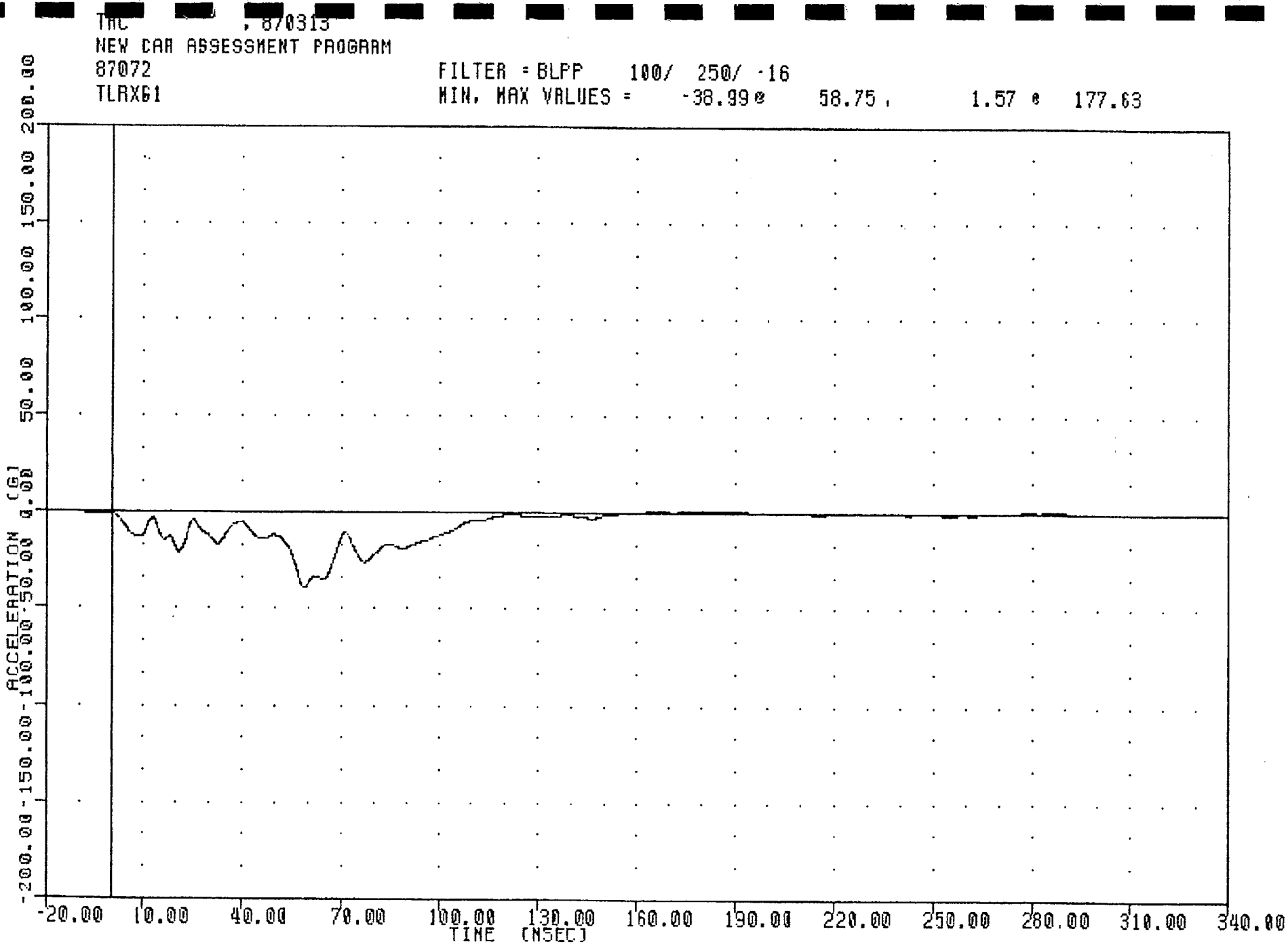
TRL , 870313
NEW CAR ASSESSMENT PROGRAM
87072
SBED2

FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -0.47 @ 234.75 , 0.47 @ 243.25

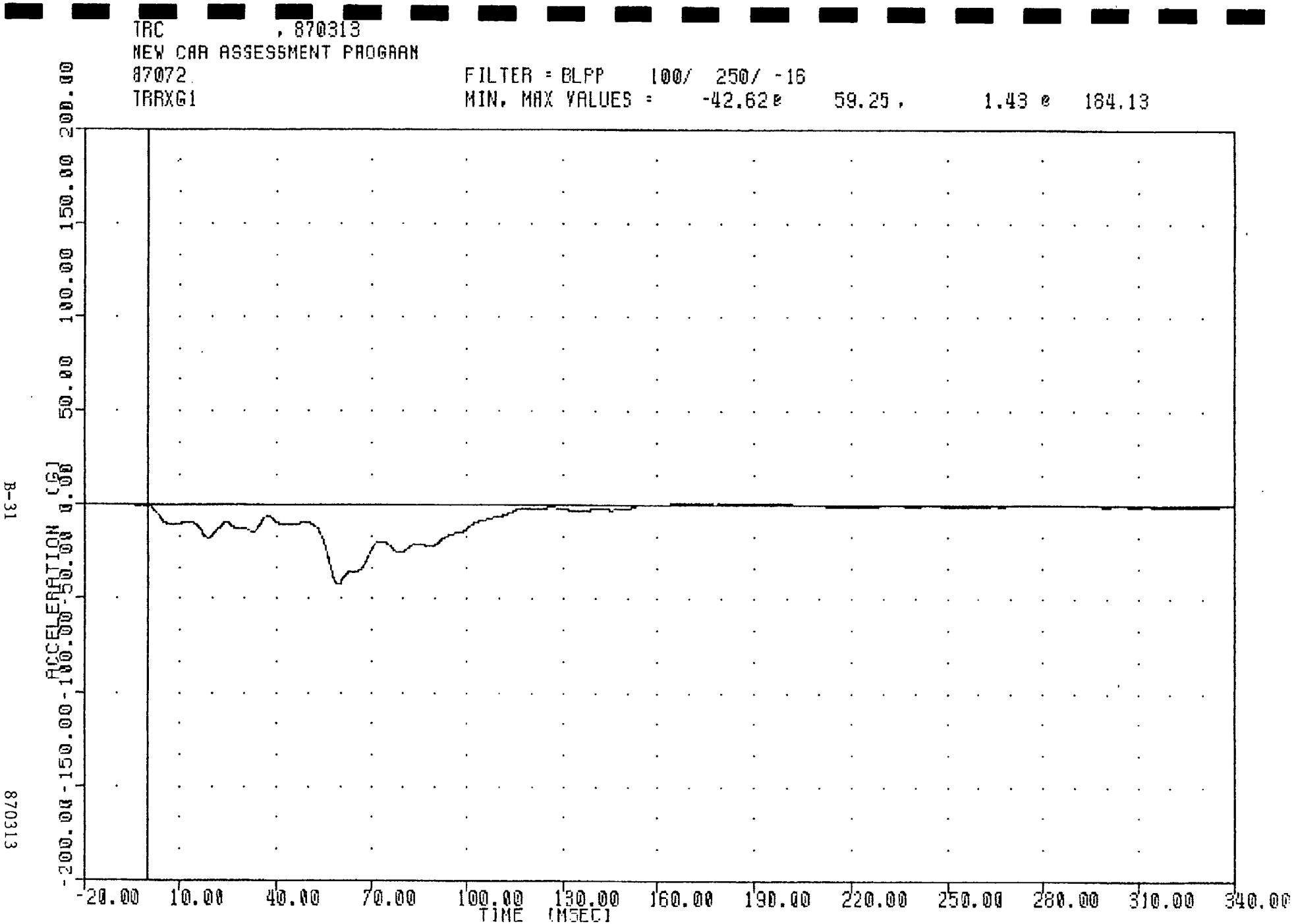


FORD MUSTANG INTO LOAD CELL BARRIER
PASSENGER SEAT BELT EXTENSION

870313

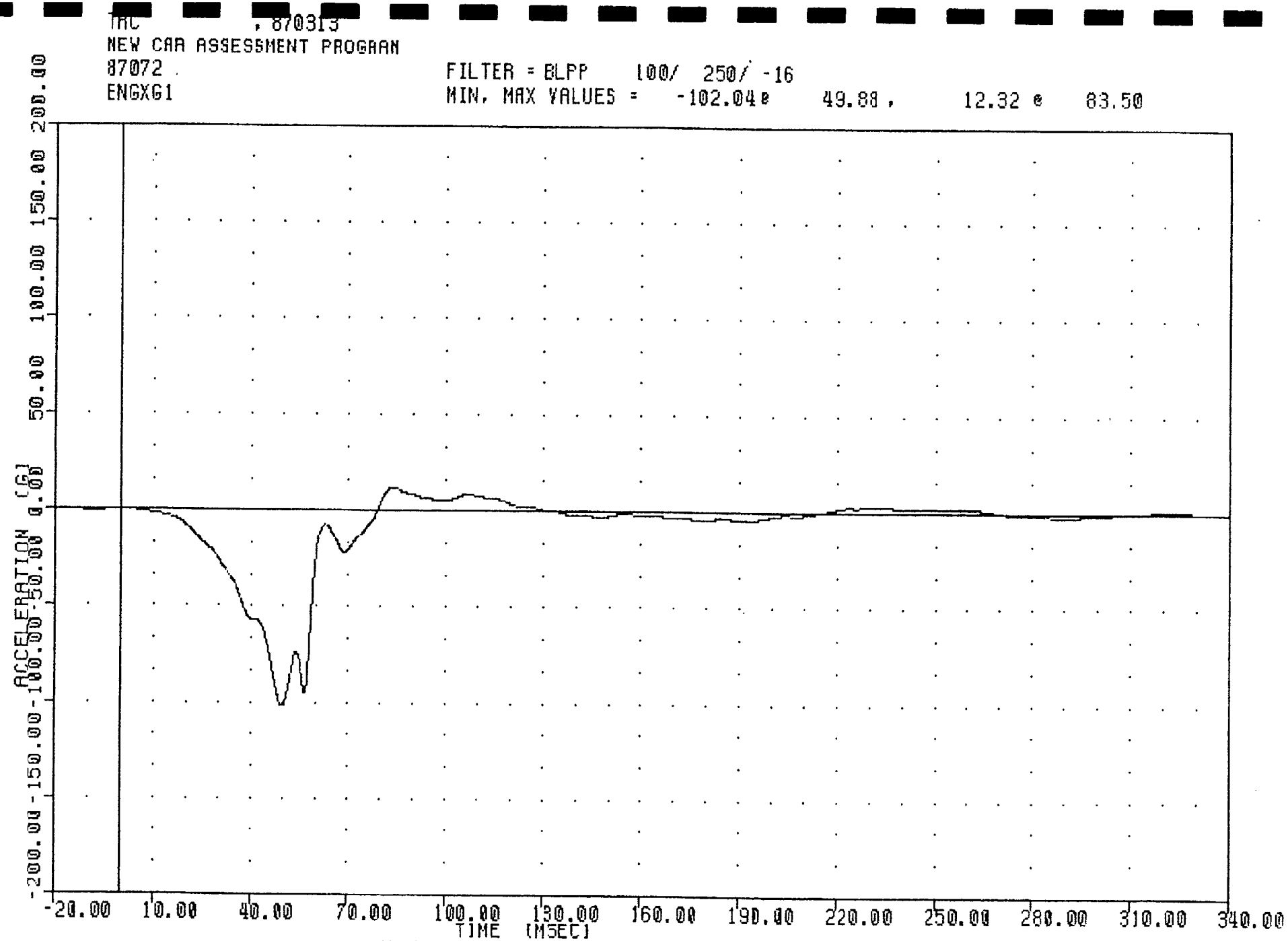


FORD MUSTANG INTO LOAD CELL BARRIER
LEFT REAR SEAT ACCELERATION X AXIS

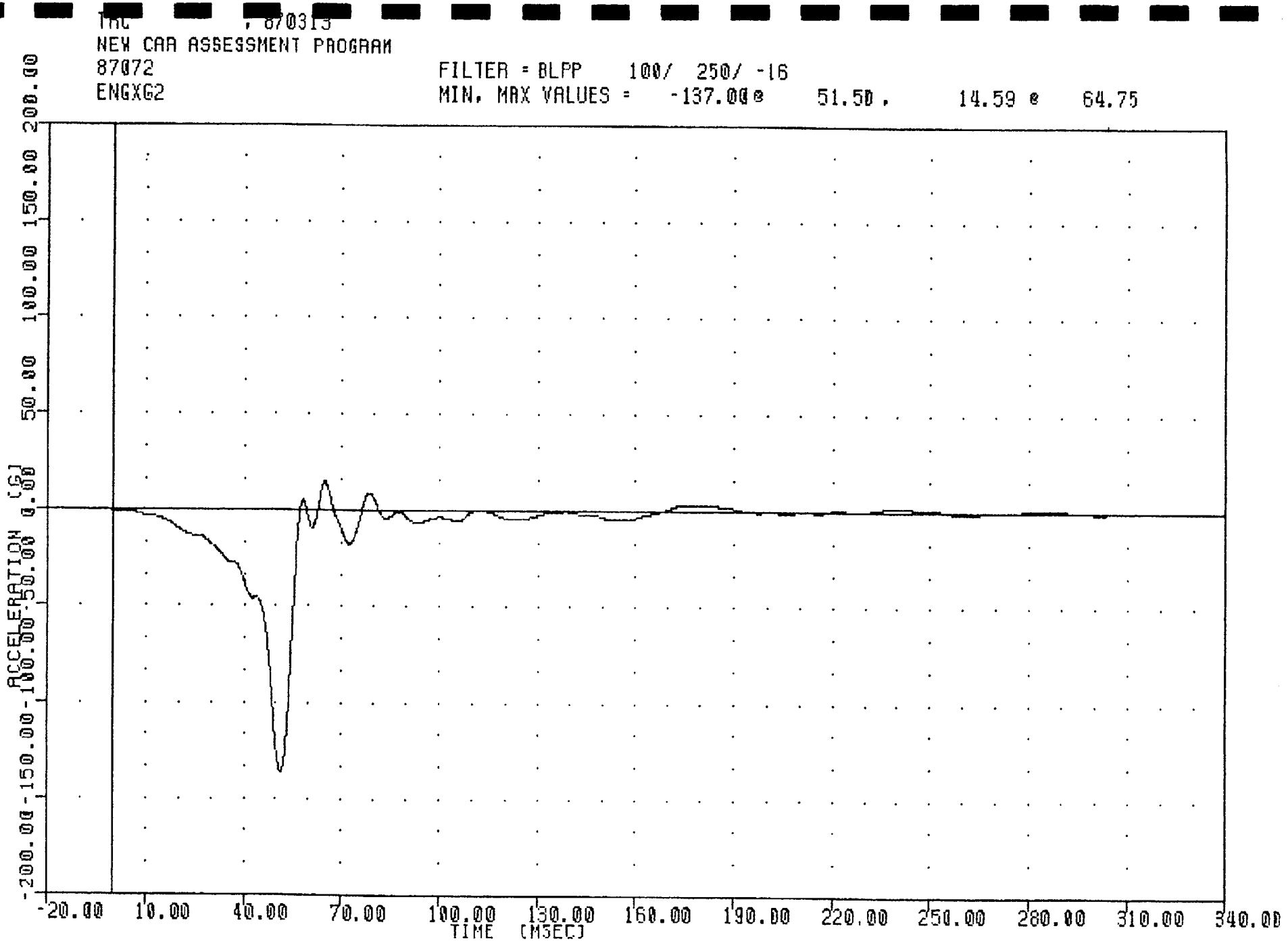


FORD MUSTANG INTO LOAD CELL BARRIER
RIGHT REAR SEAT ACCELERATION X AXIS

870313

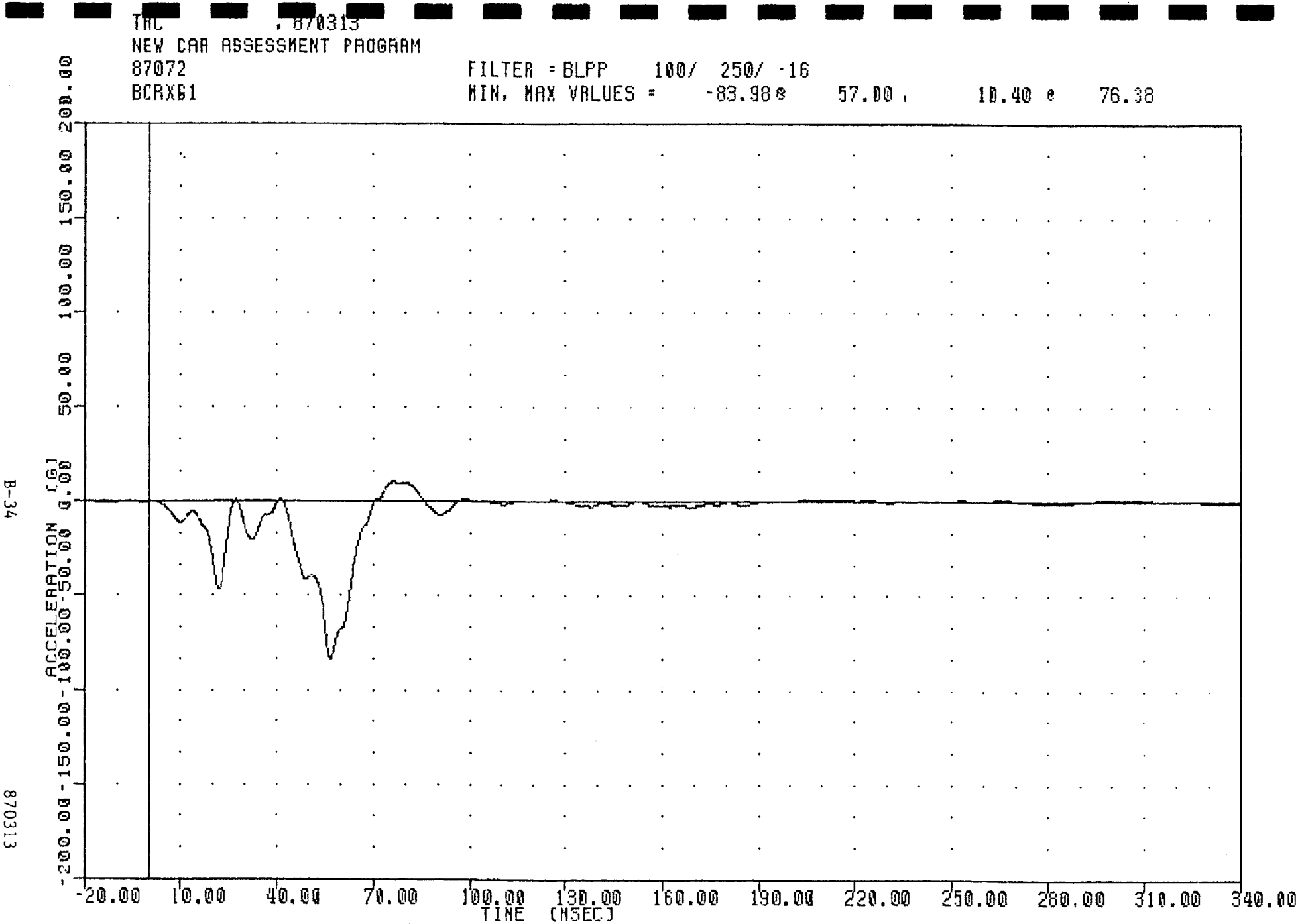


FORD MUSTANG INTO LOAD CELL BARRIER
ENGINE UPPER BLOCK ACCELERATION X AXIS

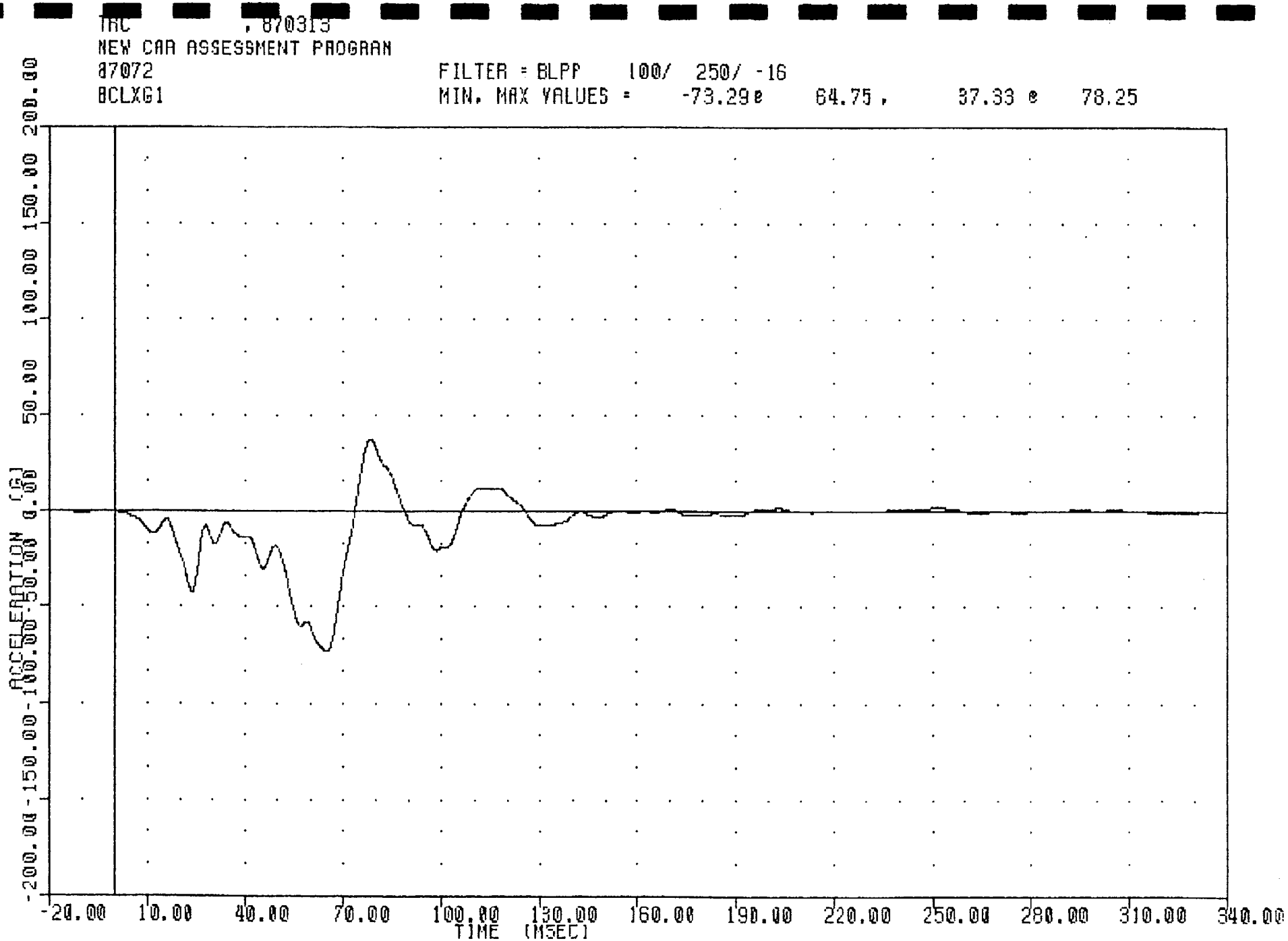


FORD MUSTANG INTO LOAD CELL BARRIER
ENGINE LOWER BLOCK ACCELERATION X AXIS

870313

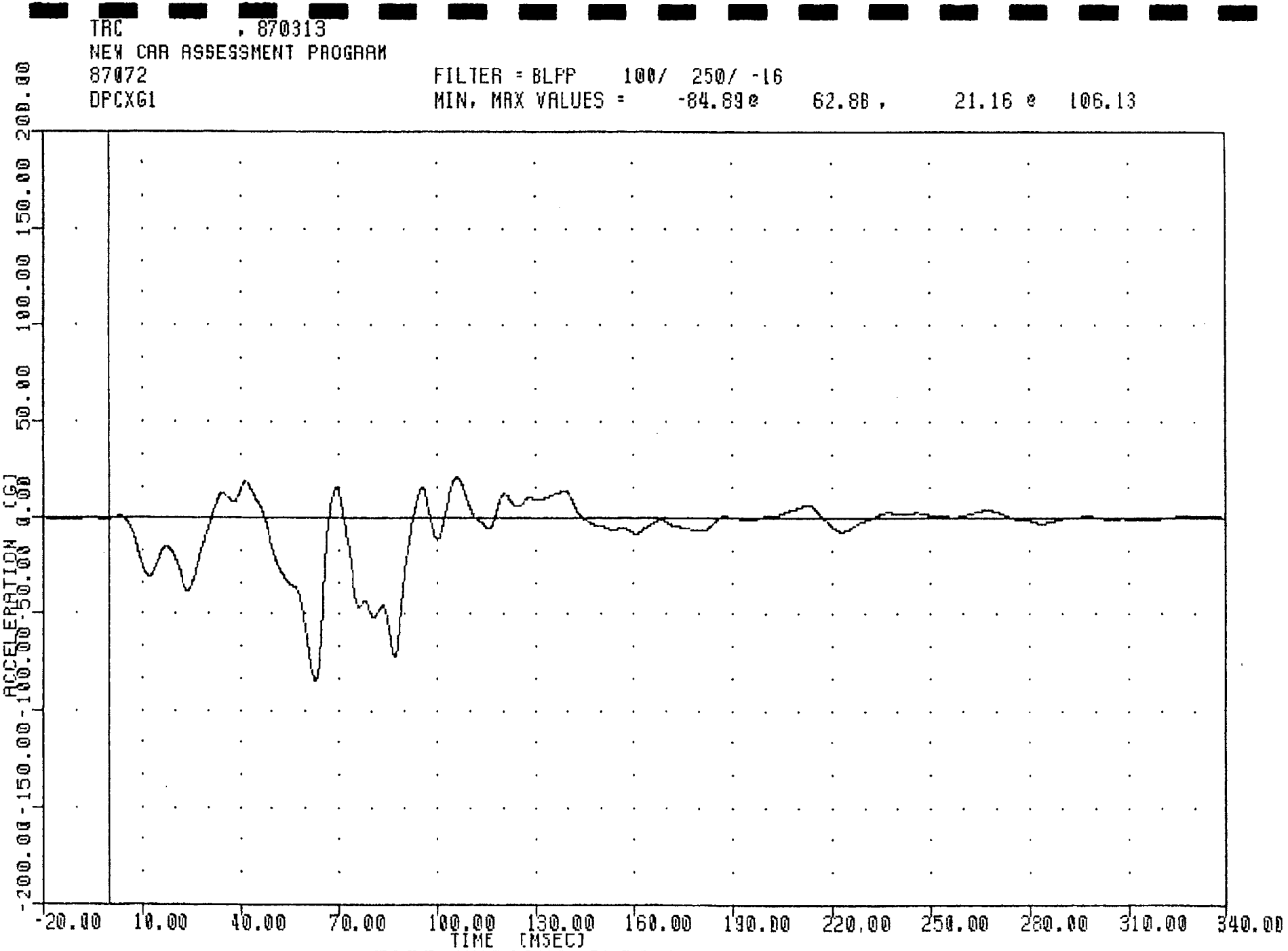


FORD MUSTANG INTO LOAD CELL BARRIER
RIGHT BRAKE CALIPER ACCELERATION X AXIS

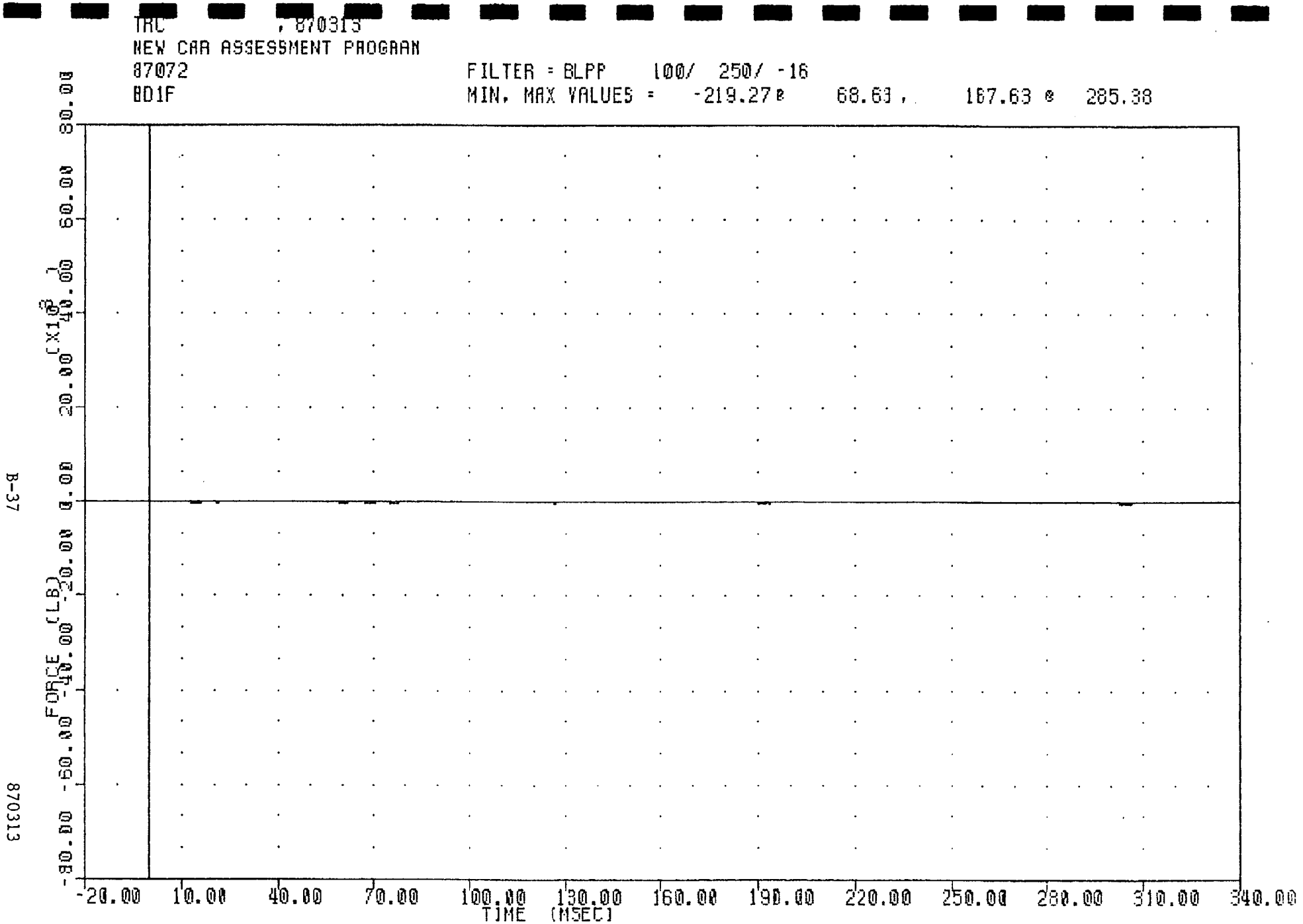


FORD MUSTANG INTO LOAD CELL BARRIER
LEFT BRAKE CALIPER ACCELERATION X AXIS

870313

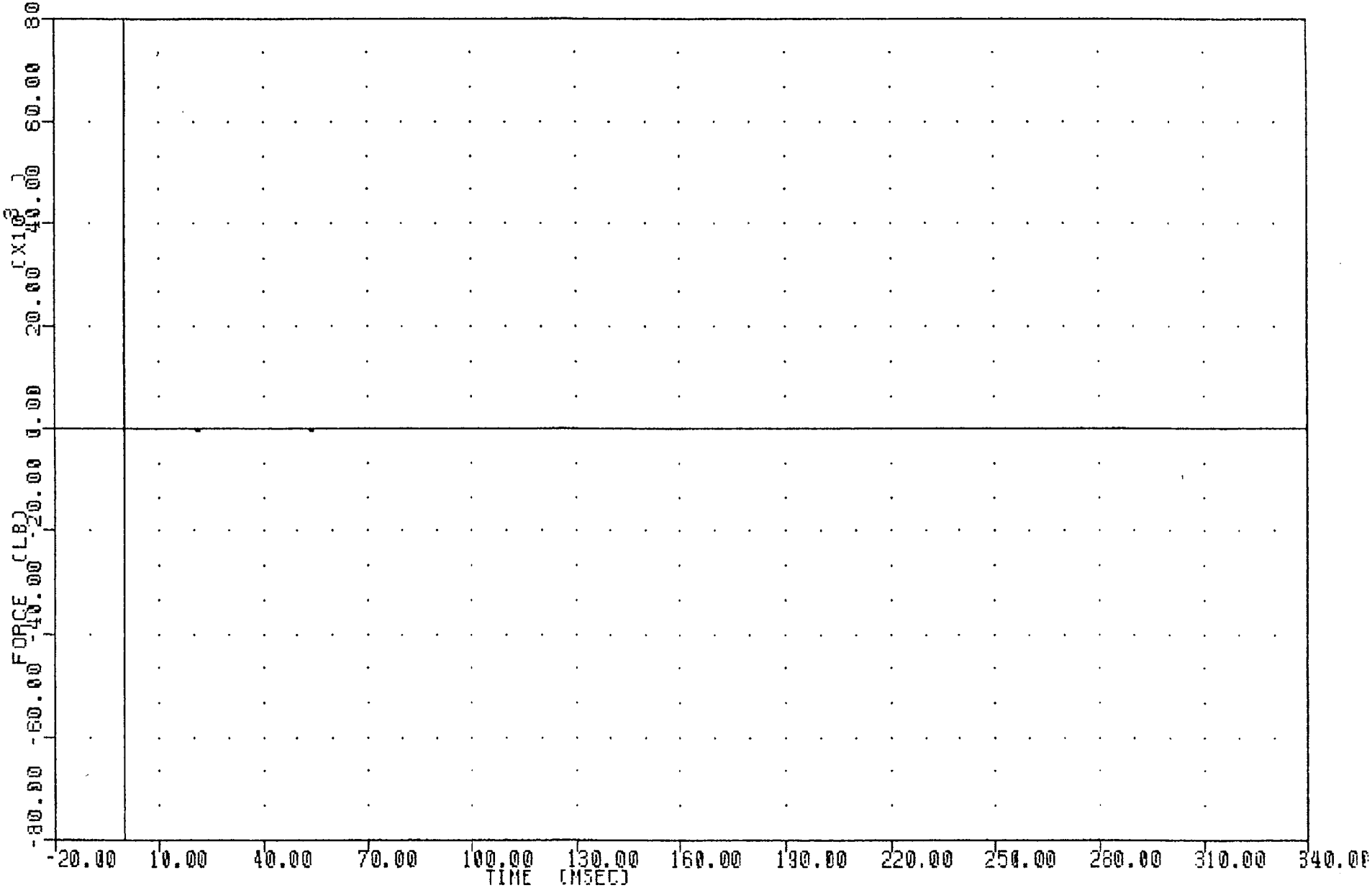


FORD MUSTANG INTO LOAD CELL BARRIER
DASH PANEL CENTER ACCELERATION X AXIS



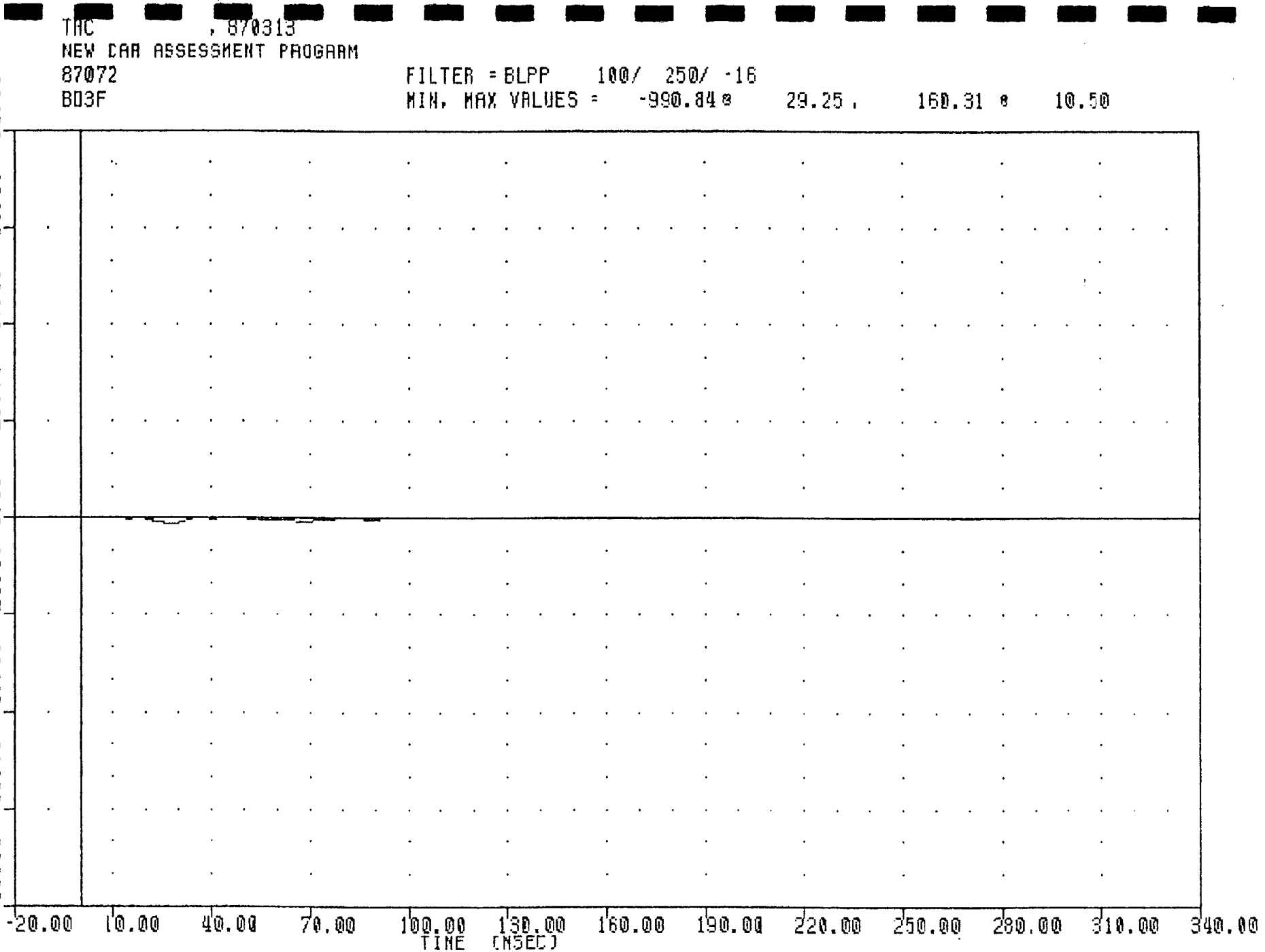
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D1 FORCE

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLFP 100/ 250/ -16
BD2F MIN, MAX VALUES = -121.74 @ 54.13 , 130.59 @ 10.88



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D2 FORCE

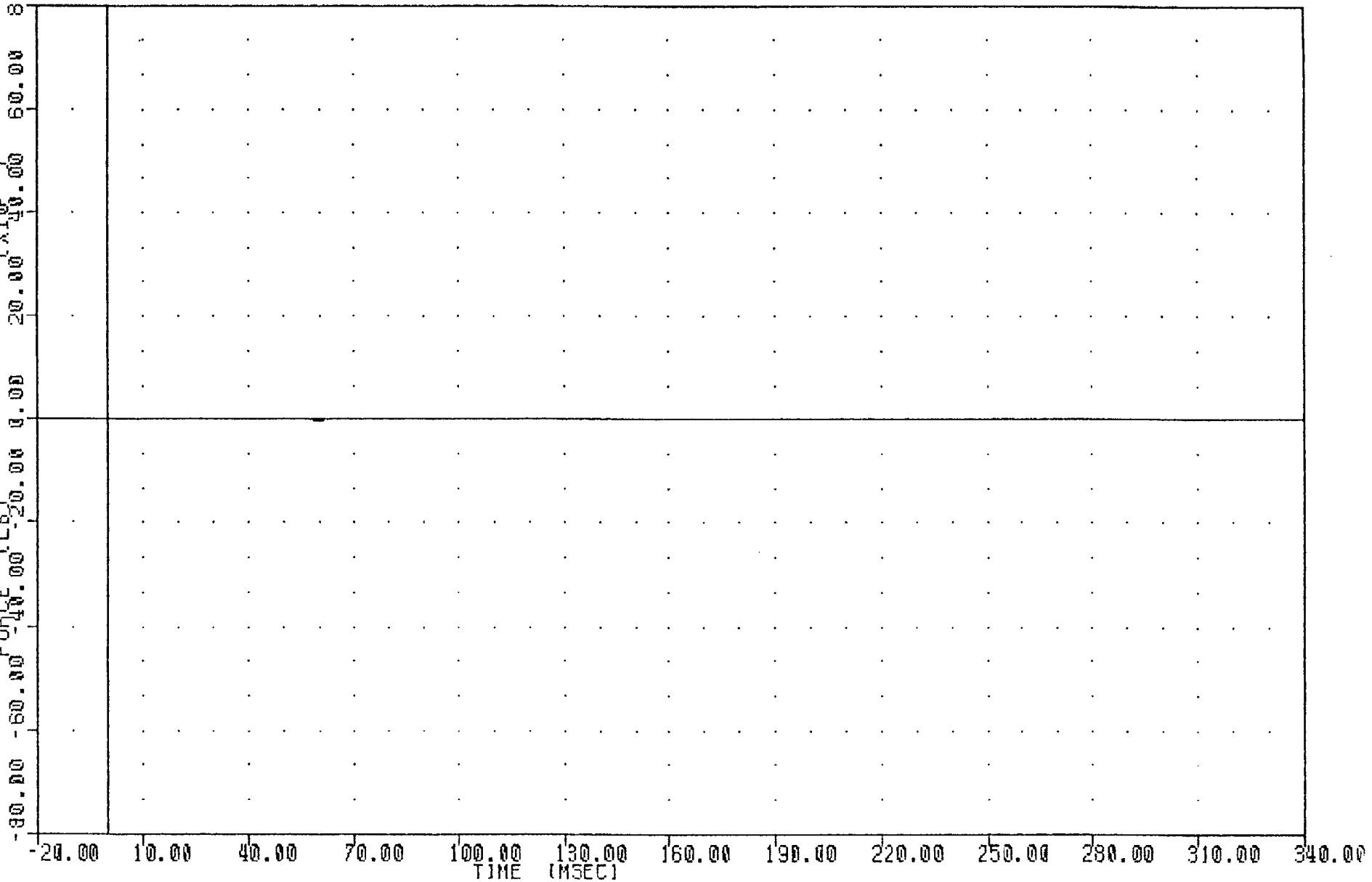
870313



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D3 FORCE

870313

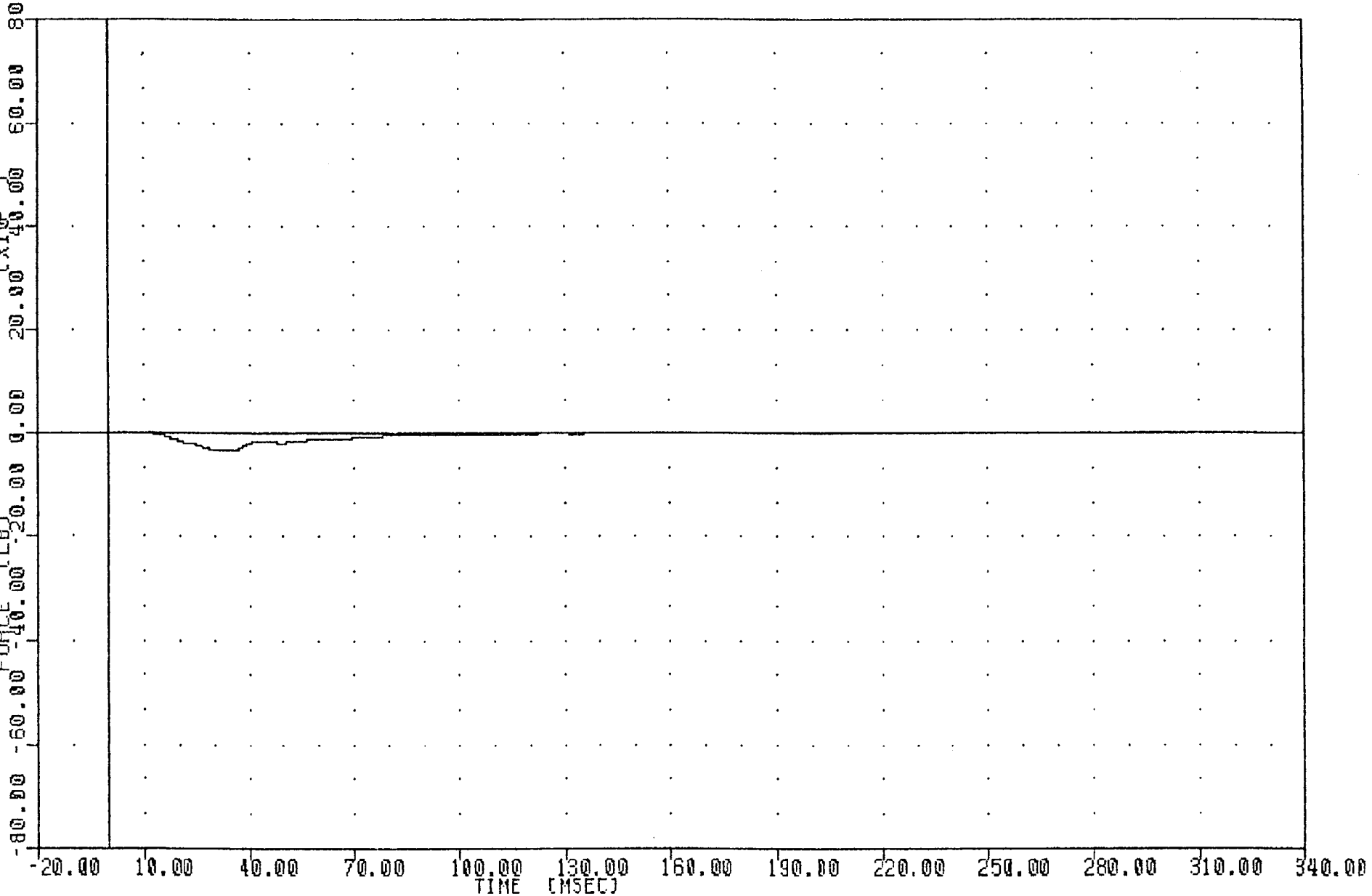
TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPP (00/ 250/ -16
BC1F MIN. MAX VALUES = -153.81 @ 60.00 , 142.78 @ 64.75



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C1 FORCE

870313

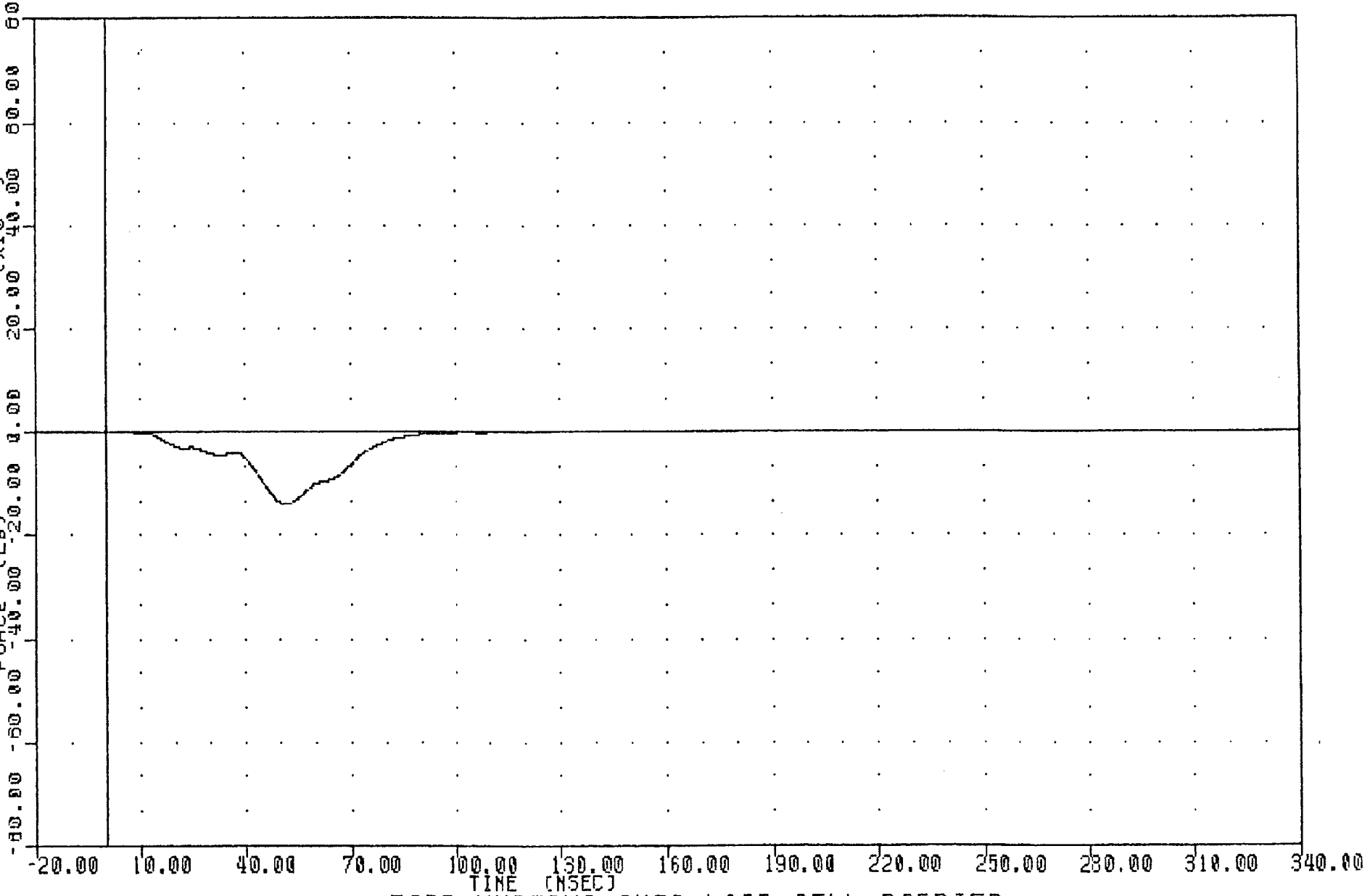
TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
BC2F
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -3392.58 @ 35.50 , 74.13 @ 214.25



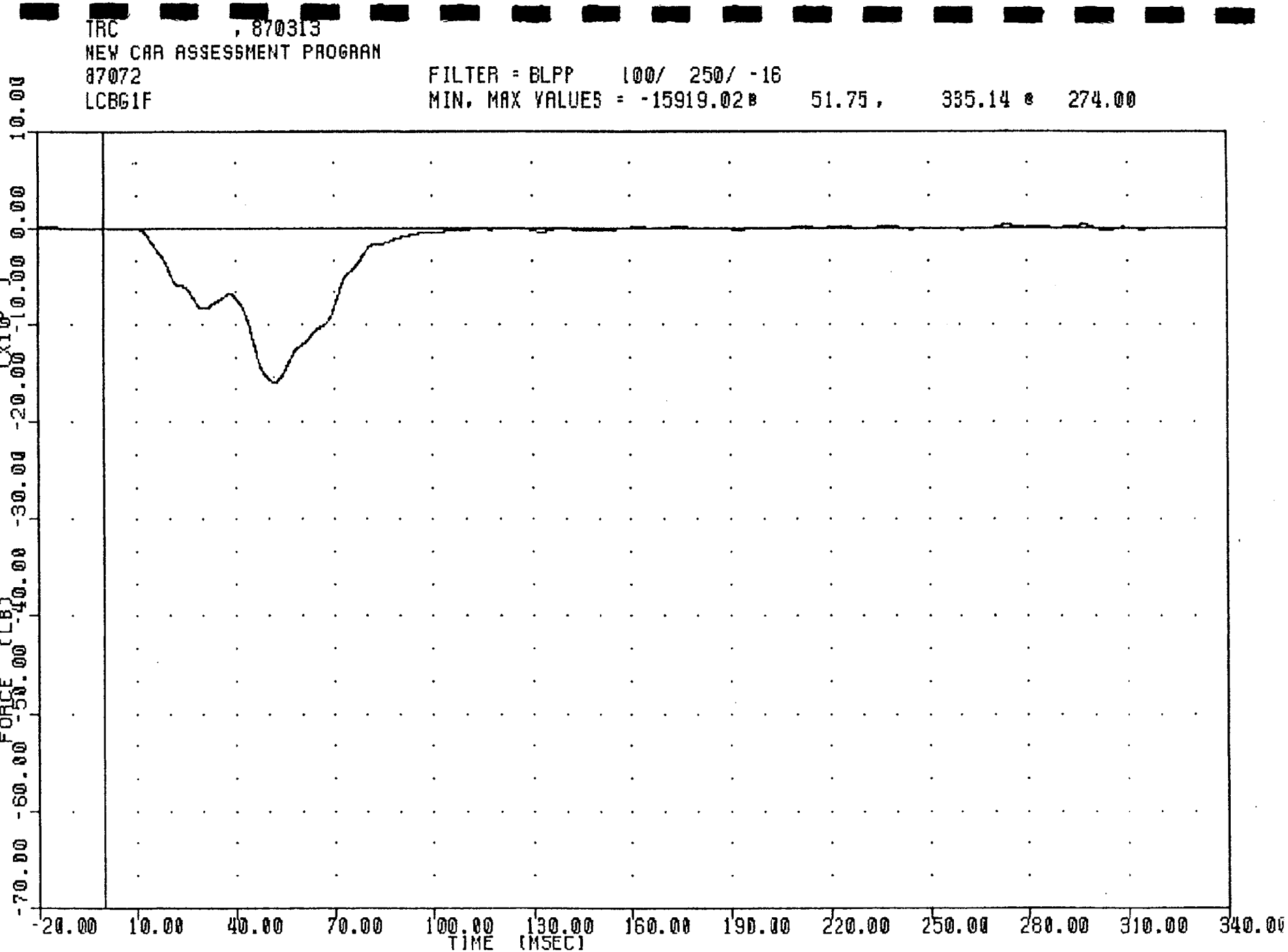
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C2 FORCE

870313

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPF 100/ 250/ -16
BC3F MIN, MAX VALUES = -14070.07 @ 51.50 , 66.17 @ 255.88



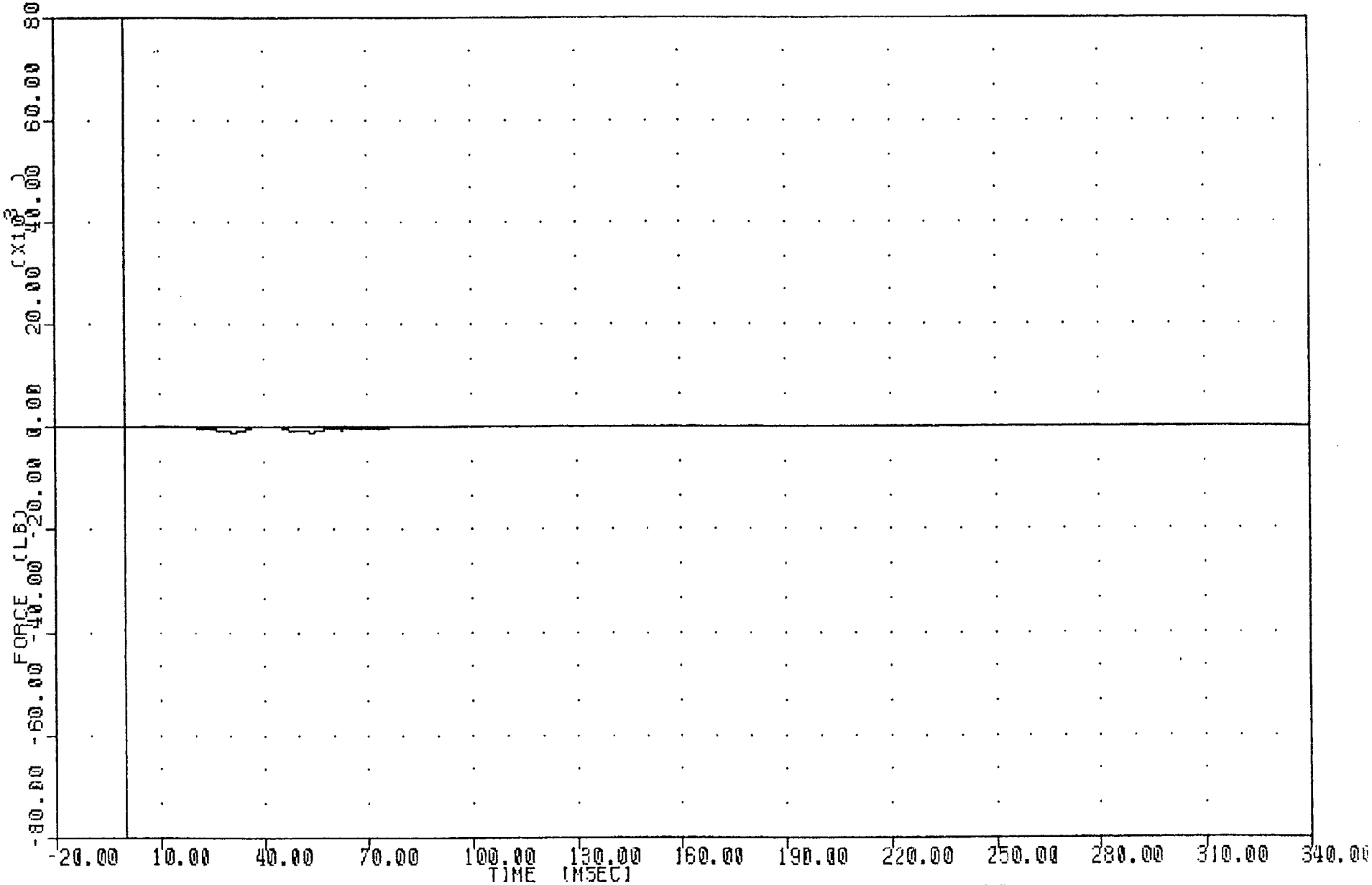
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C3 FORCE



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER GROUP - 1 FORCE TOTAL

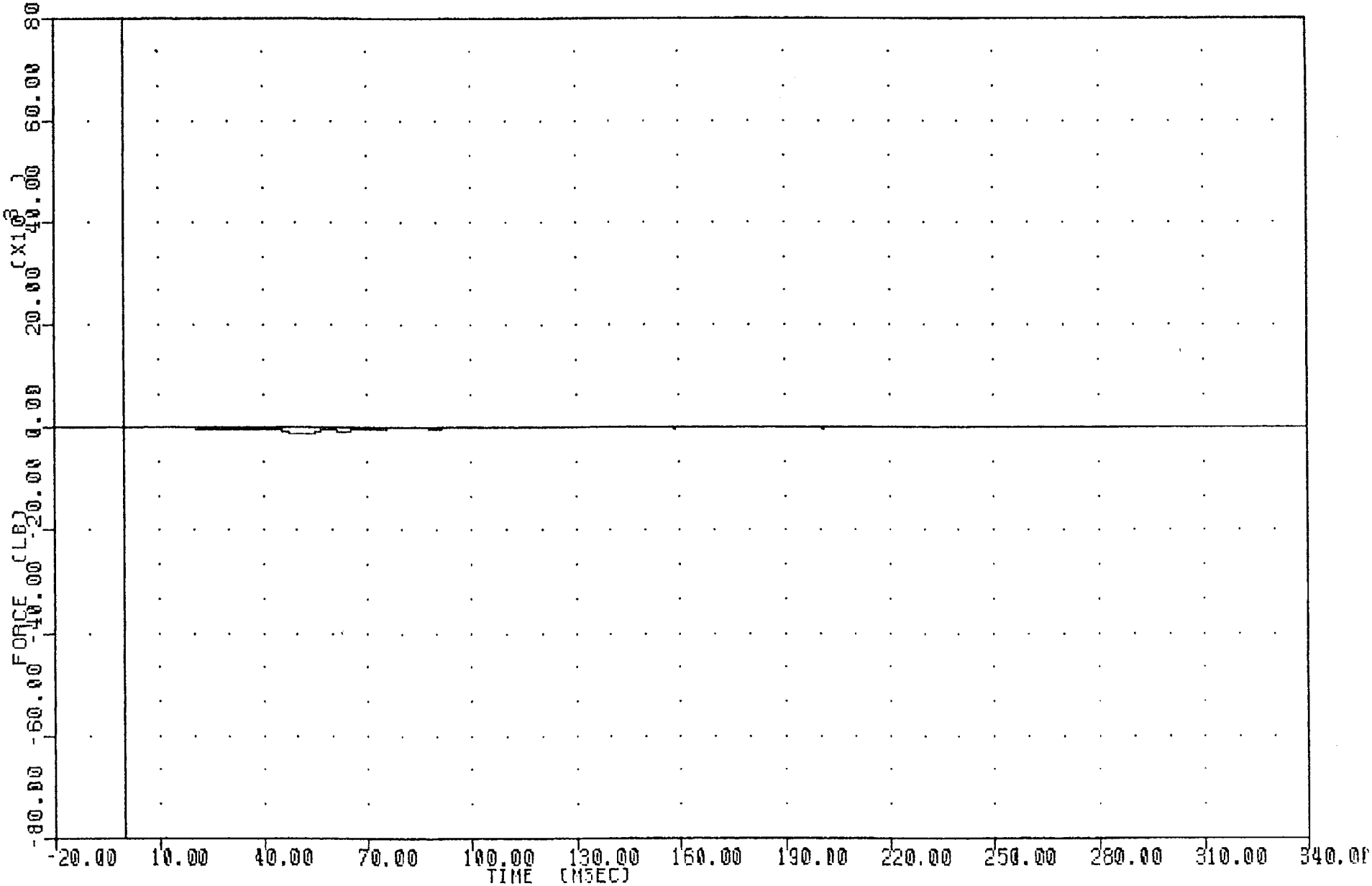
870313

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
8D4F
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -984.35 @ 54.00 , 153.68 @ 10.50



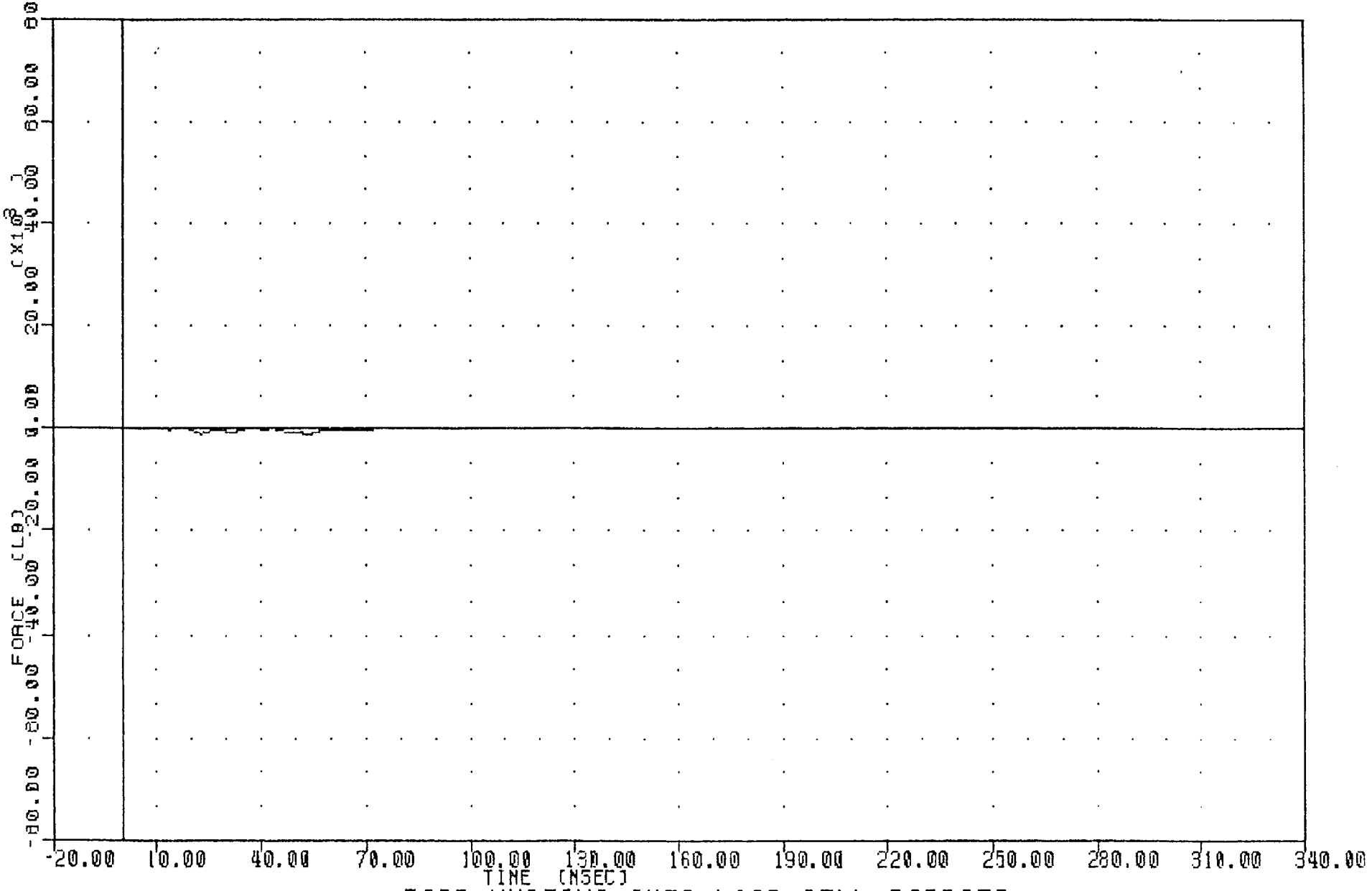
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION 04 FORCE

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPP 100/ 250/ -16
BD5F MIN, MAX VALUES = -1154.11@ 53.00 , 139.08 @ 10.75



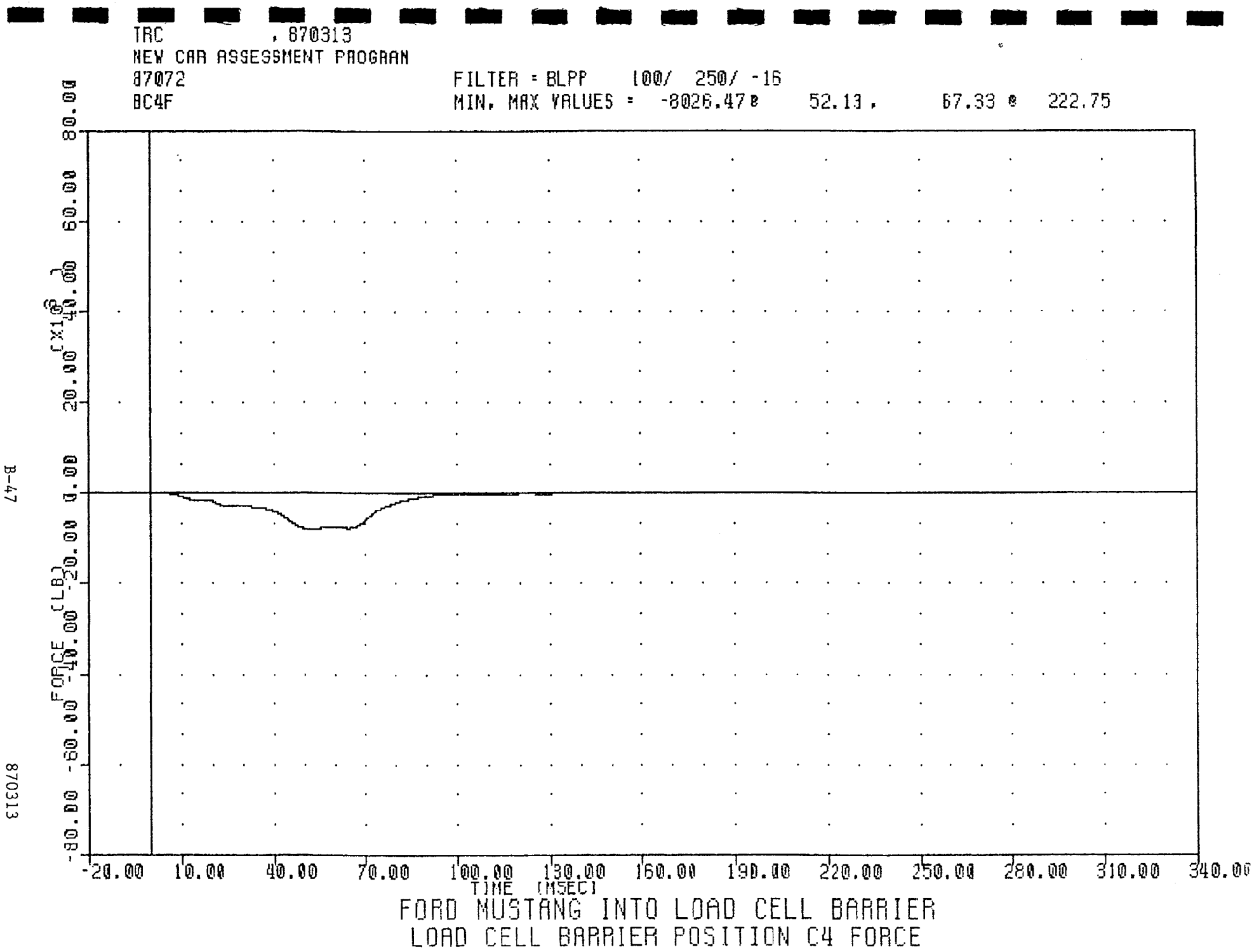
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D5 FORCE

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPP 100/ 250/ -16
B06F MIN, MAX VALUES = -1082.25 @ 53.50 , 145.11 @ 17.25



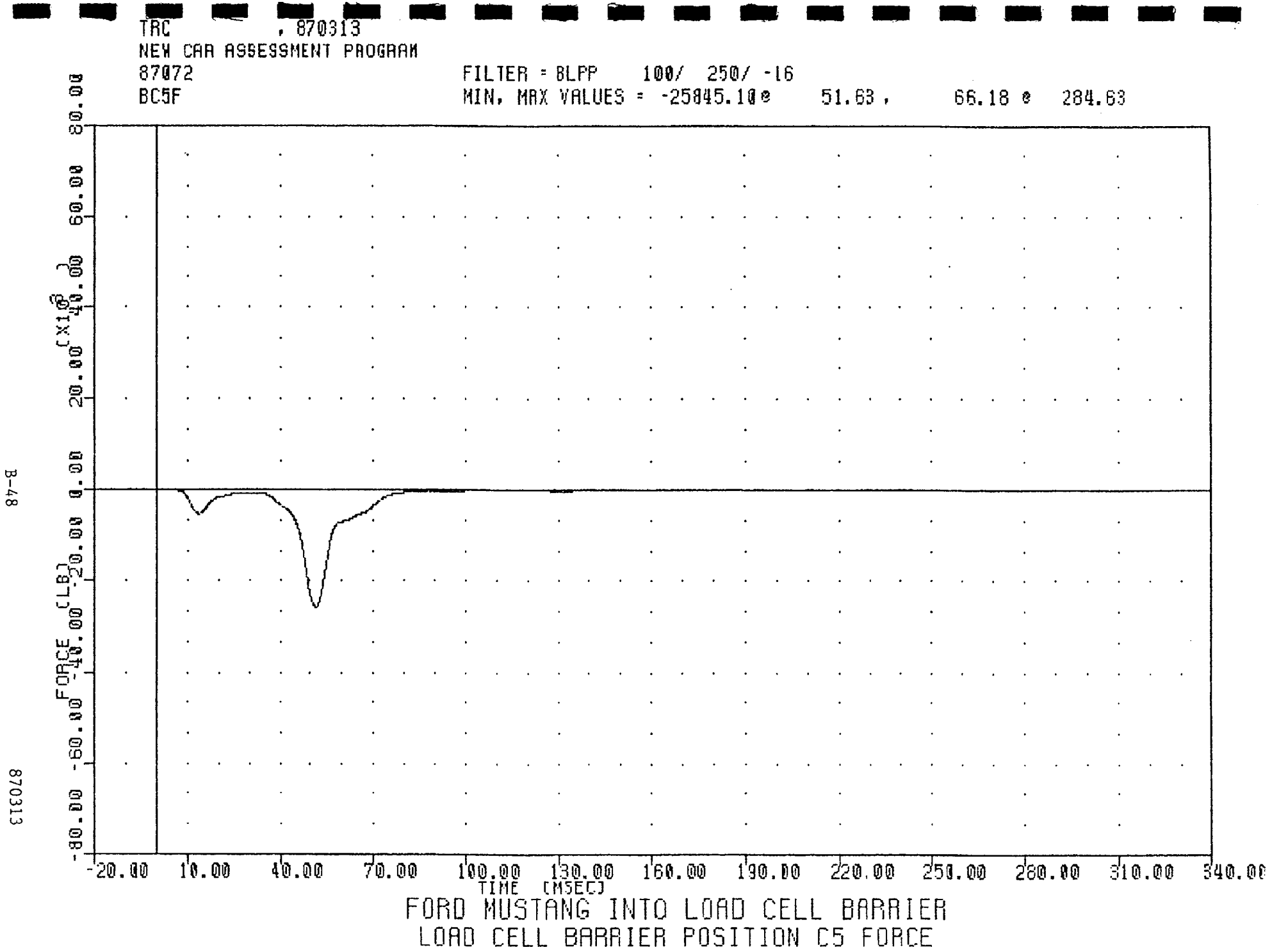
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D6 FORCE

870313

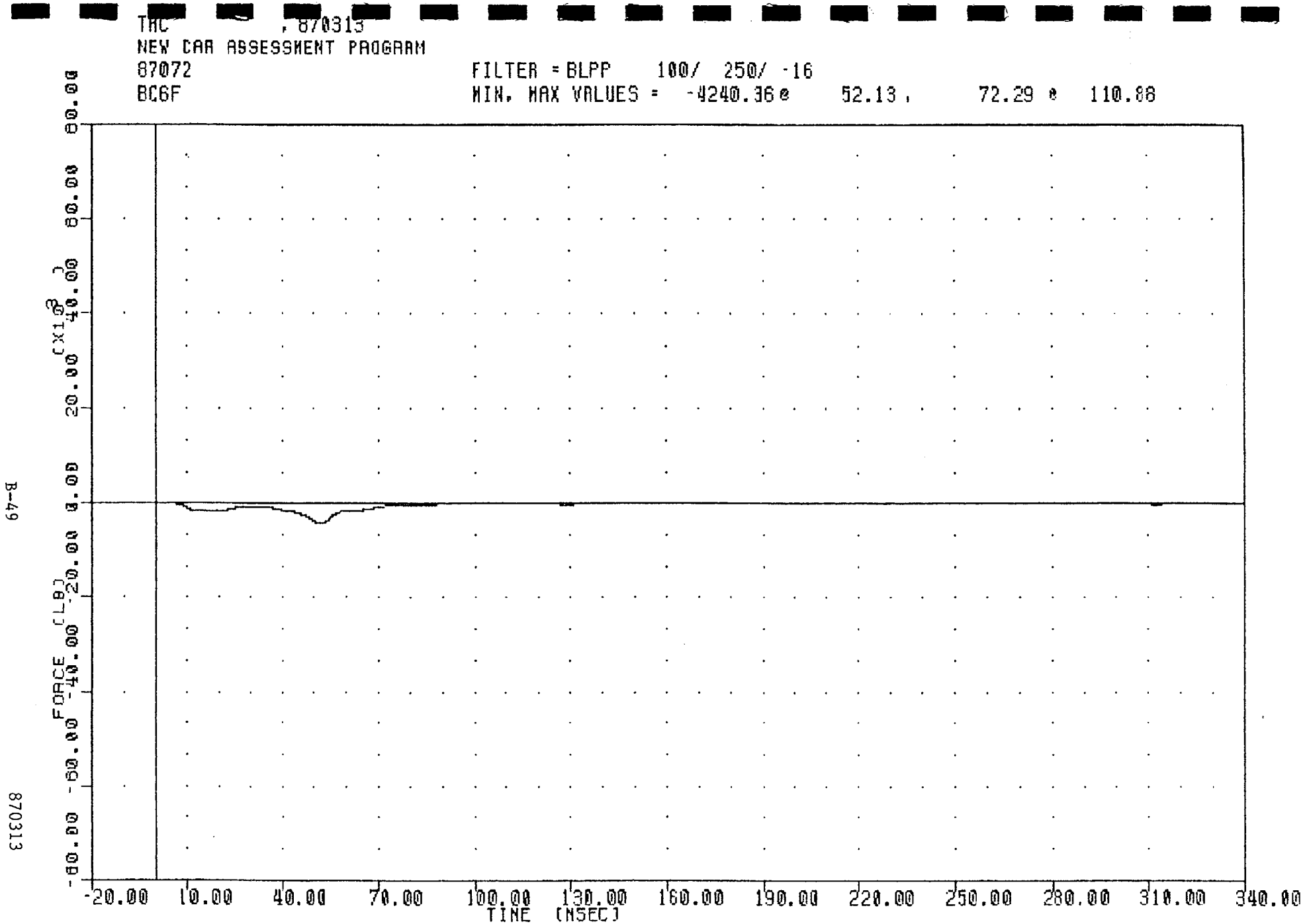


FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C4 FORCE

870313



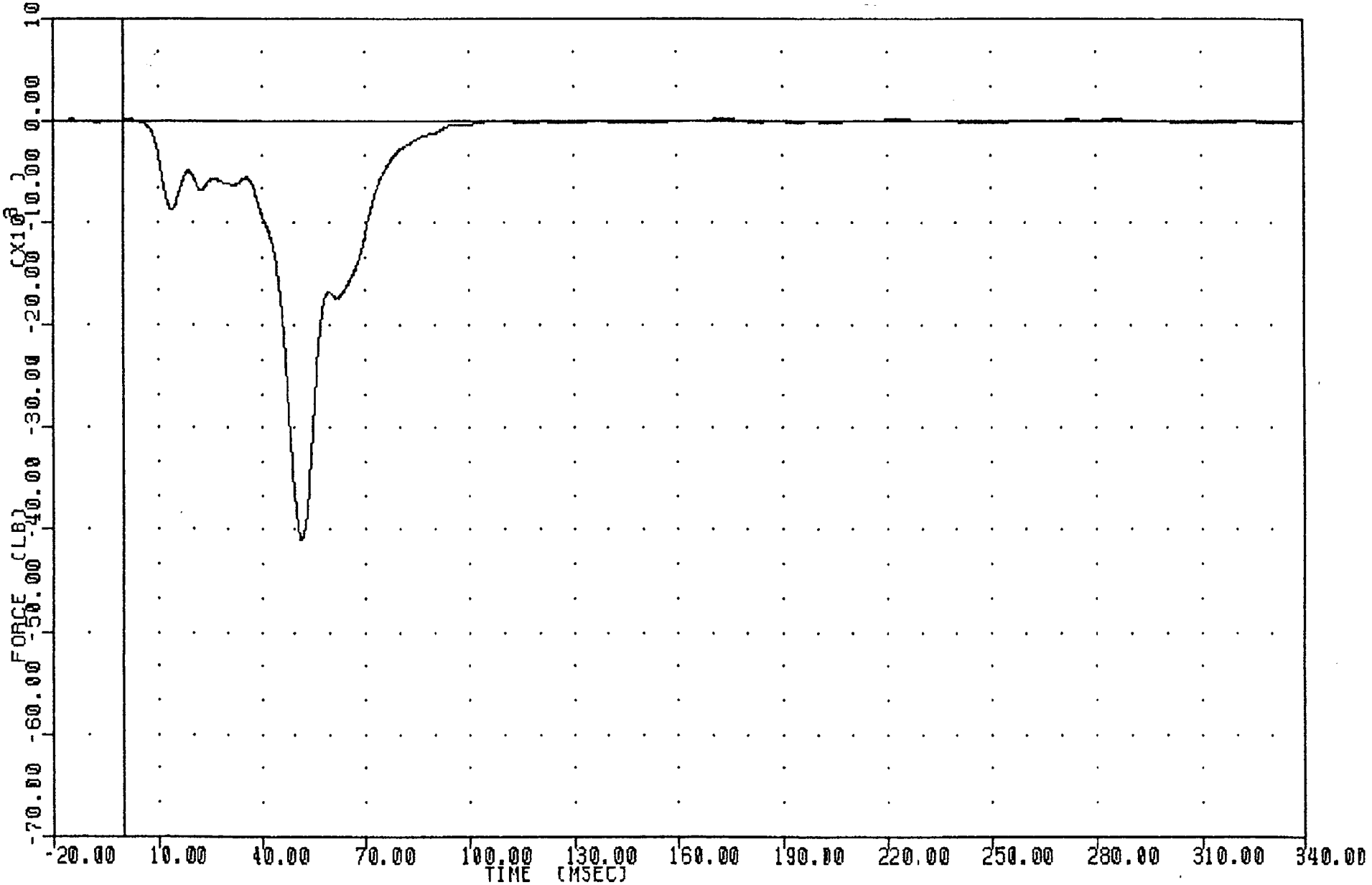
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C5 FORCE



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C6 FORCE

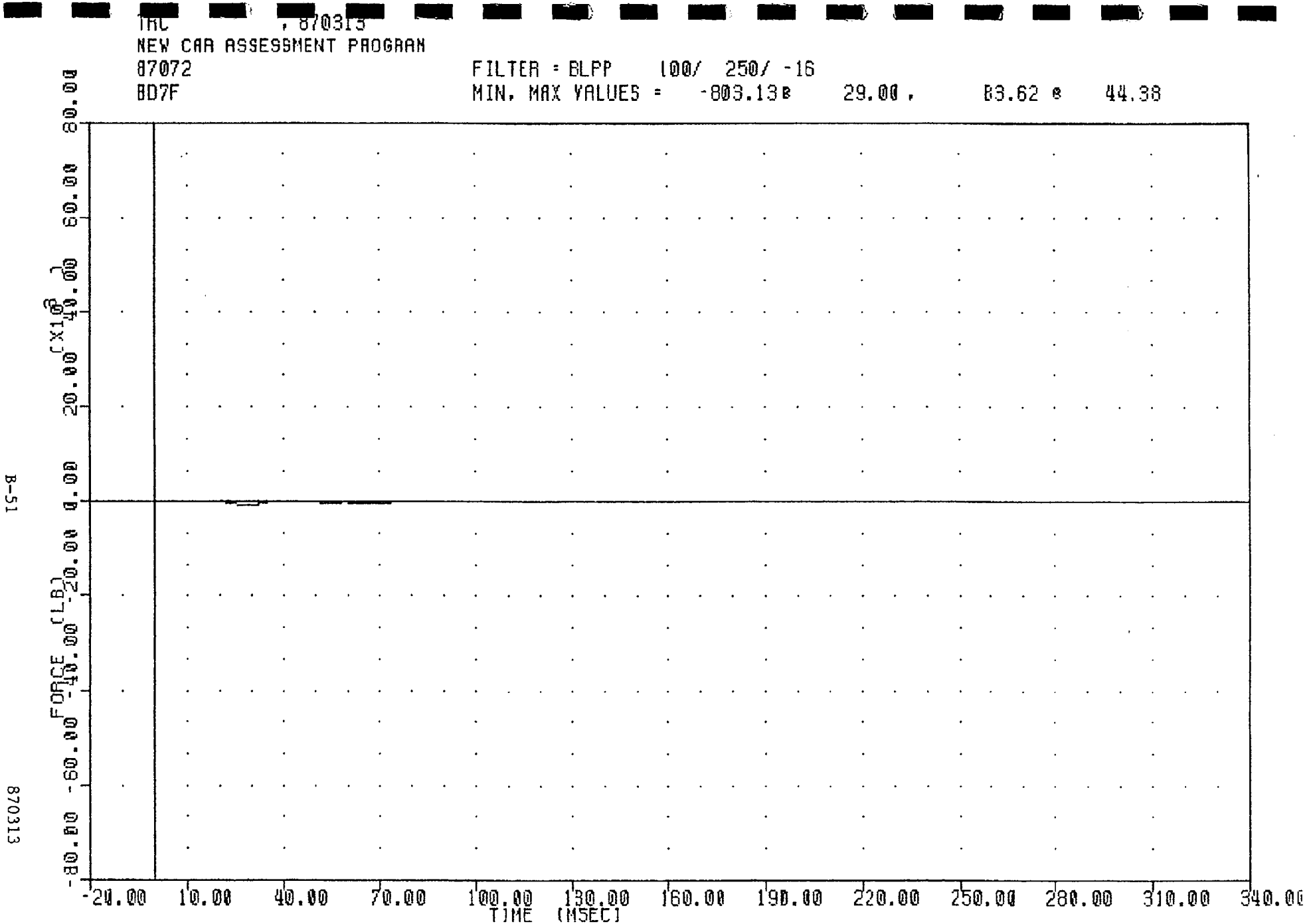
870313

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
LCBG2F
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -40940.08 @ 51.88 , 223.54 @ 222.38



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER GROUP - 2 FORCE TOTAL

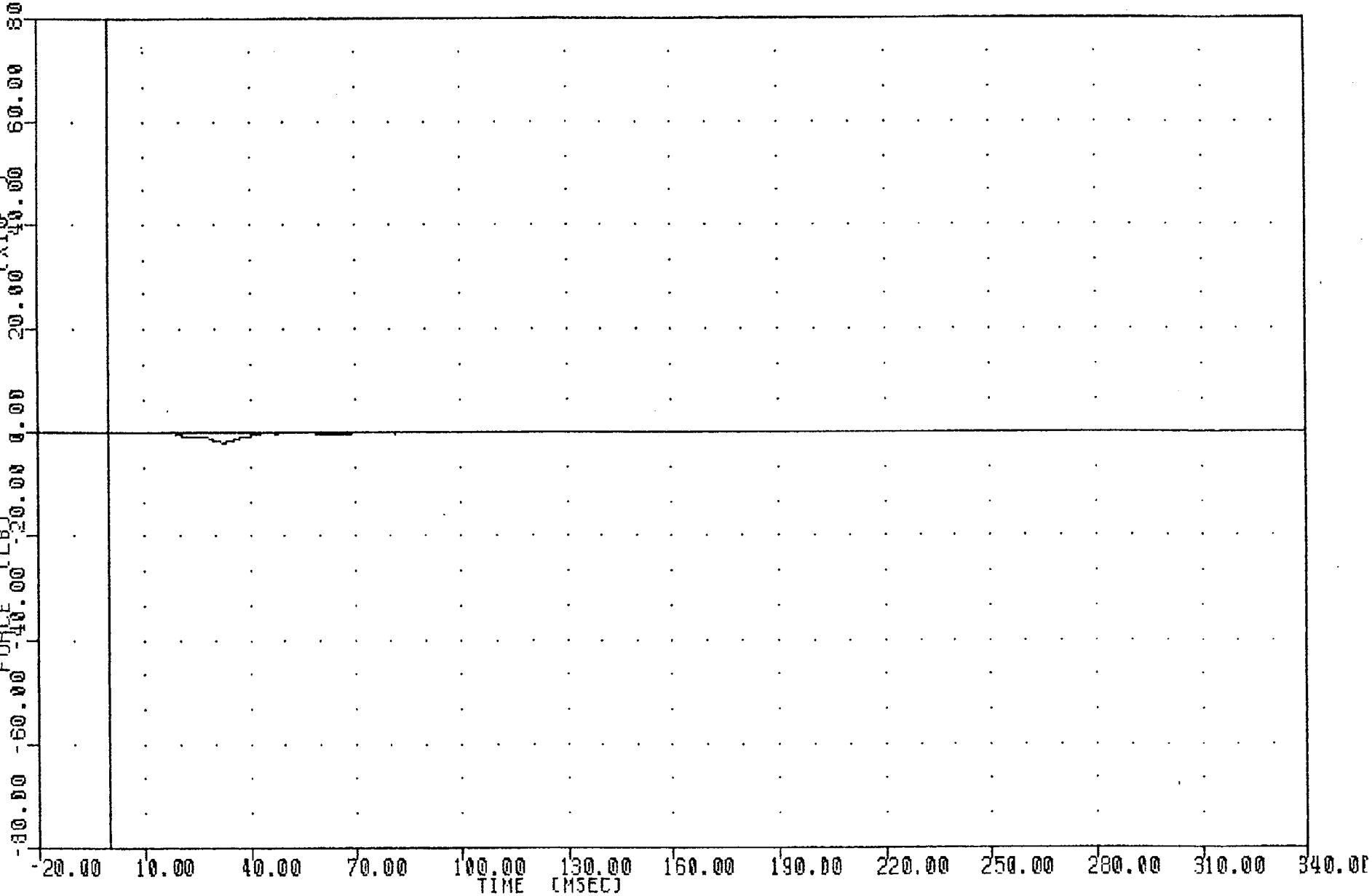
870313



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D7 FORCE

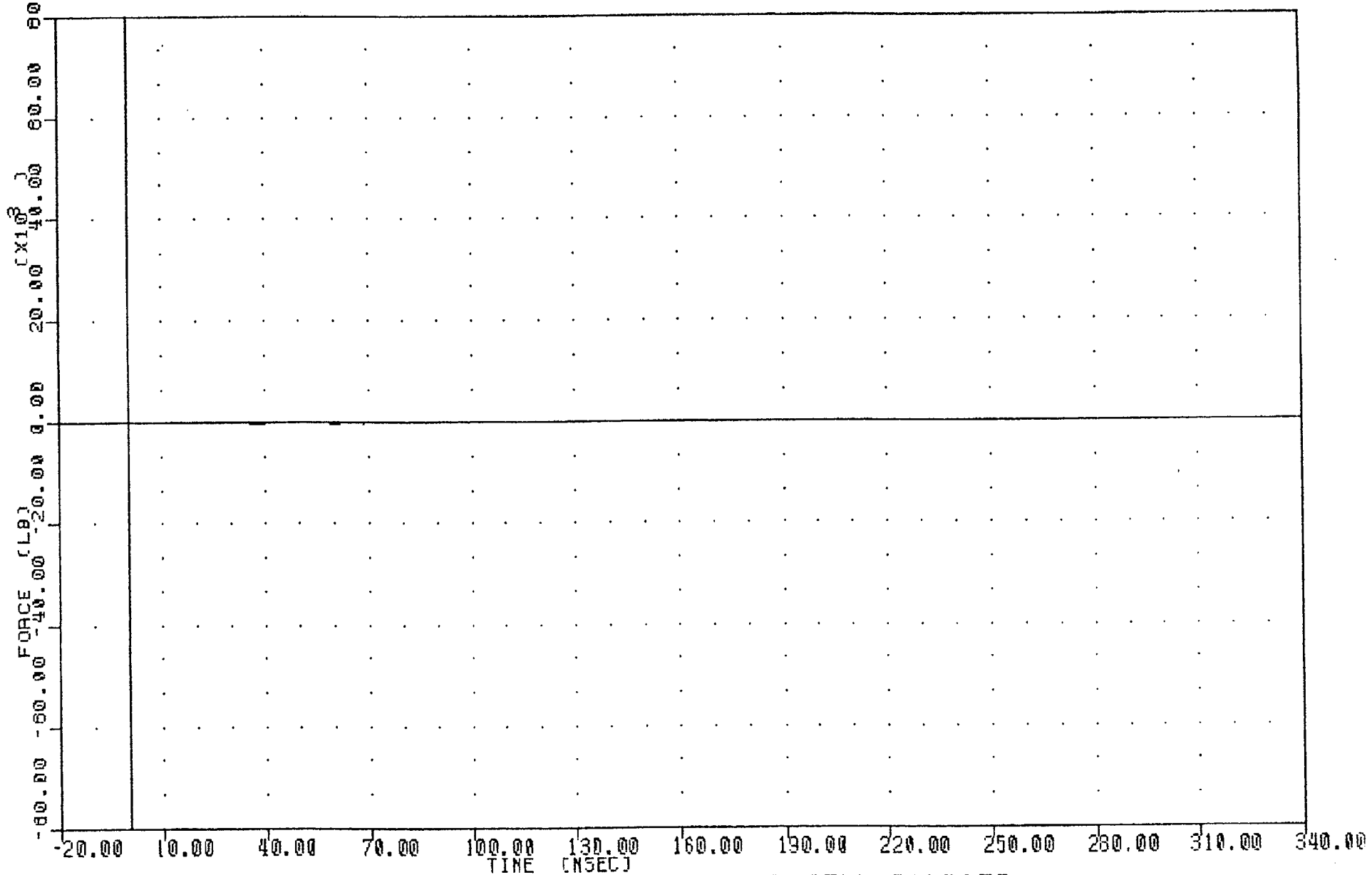
870313

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
BD8F
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -1847.88 @ 32.88 , 102.20 @ 16.88



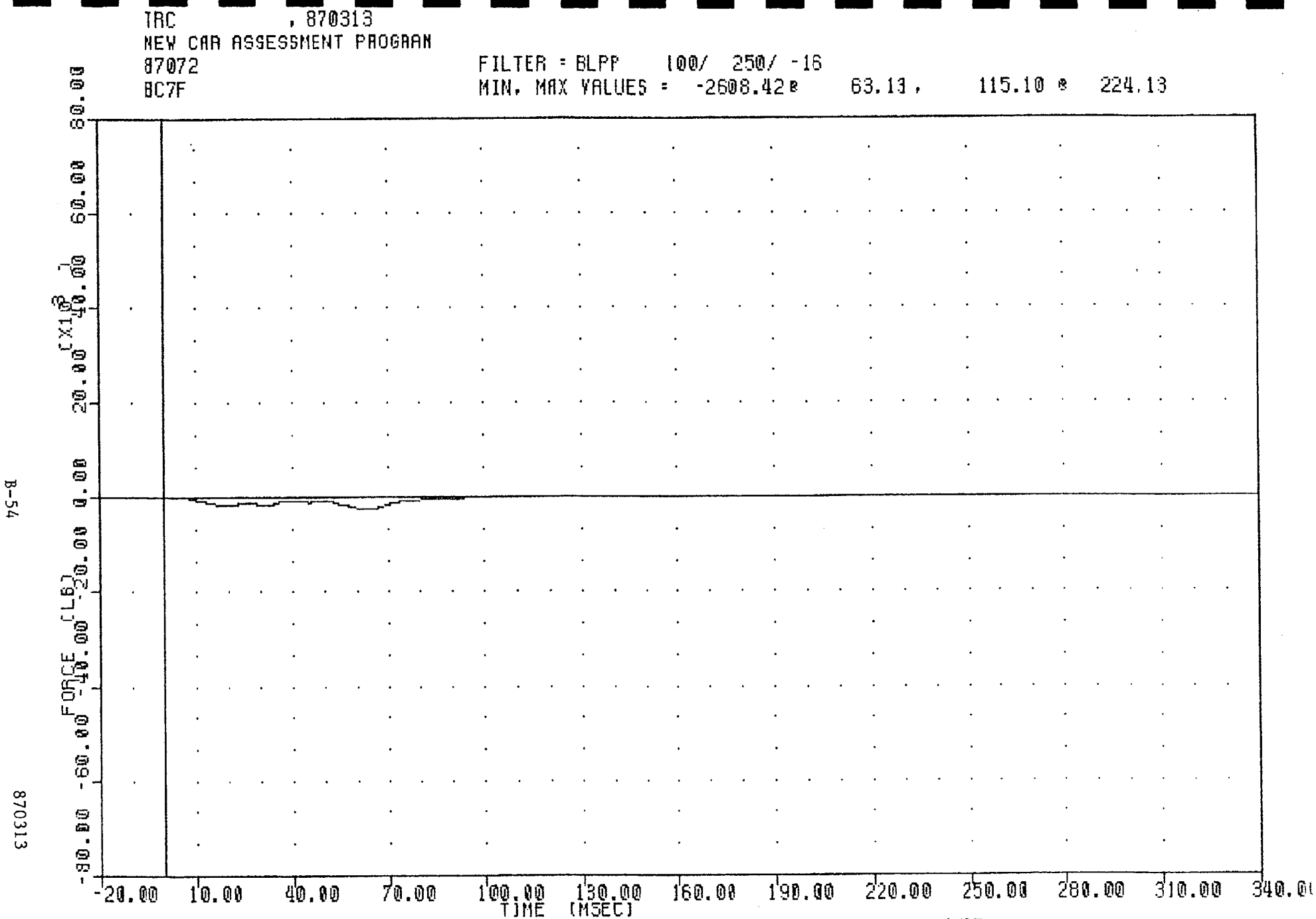
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D8 FORCE

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
B09F
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -219.09 @ 60.13 , 179.61 @ 44.00



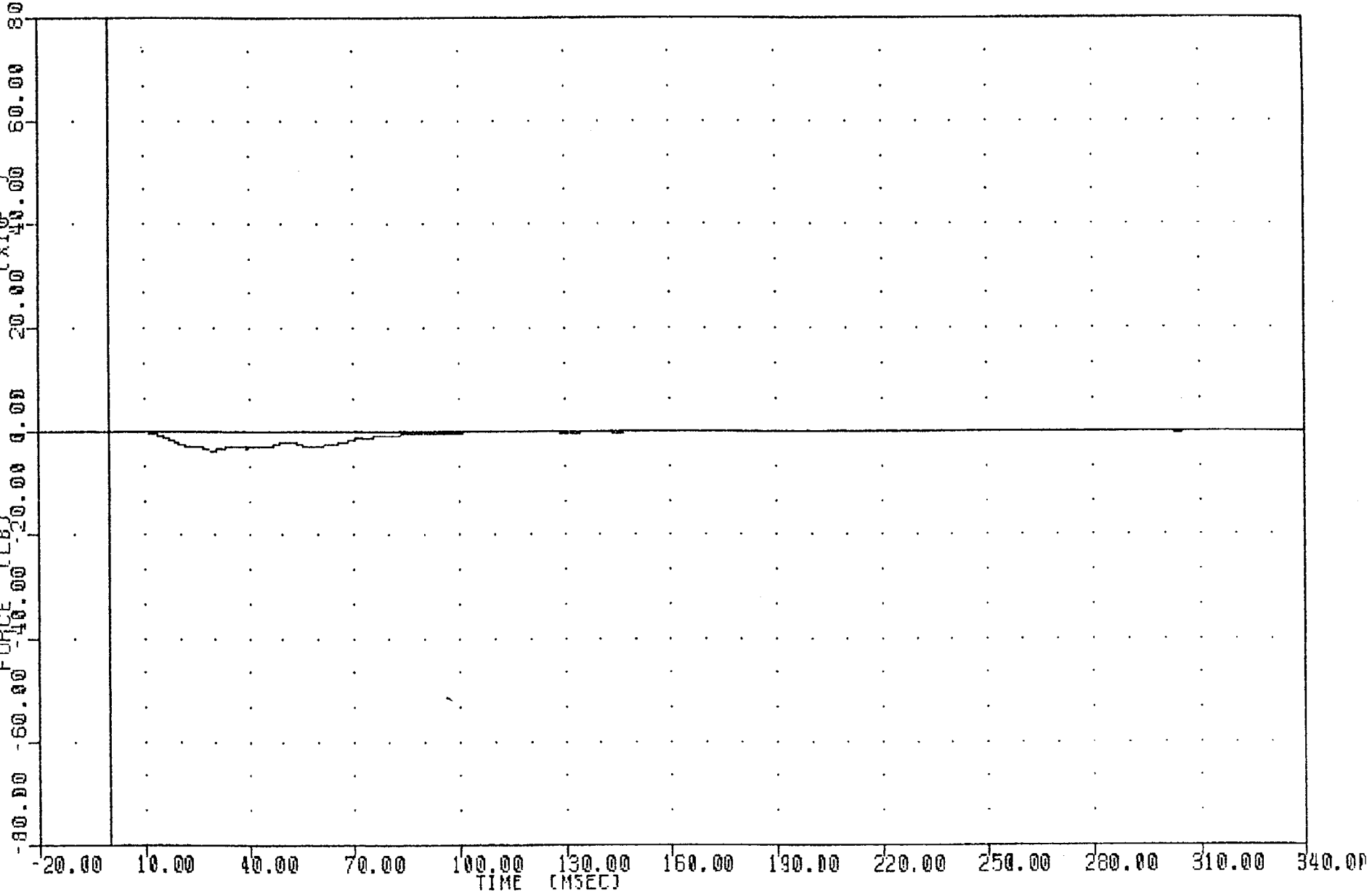
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D9 FORCE

870313



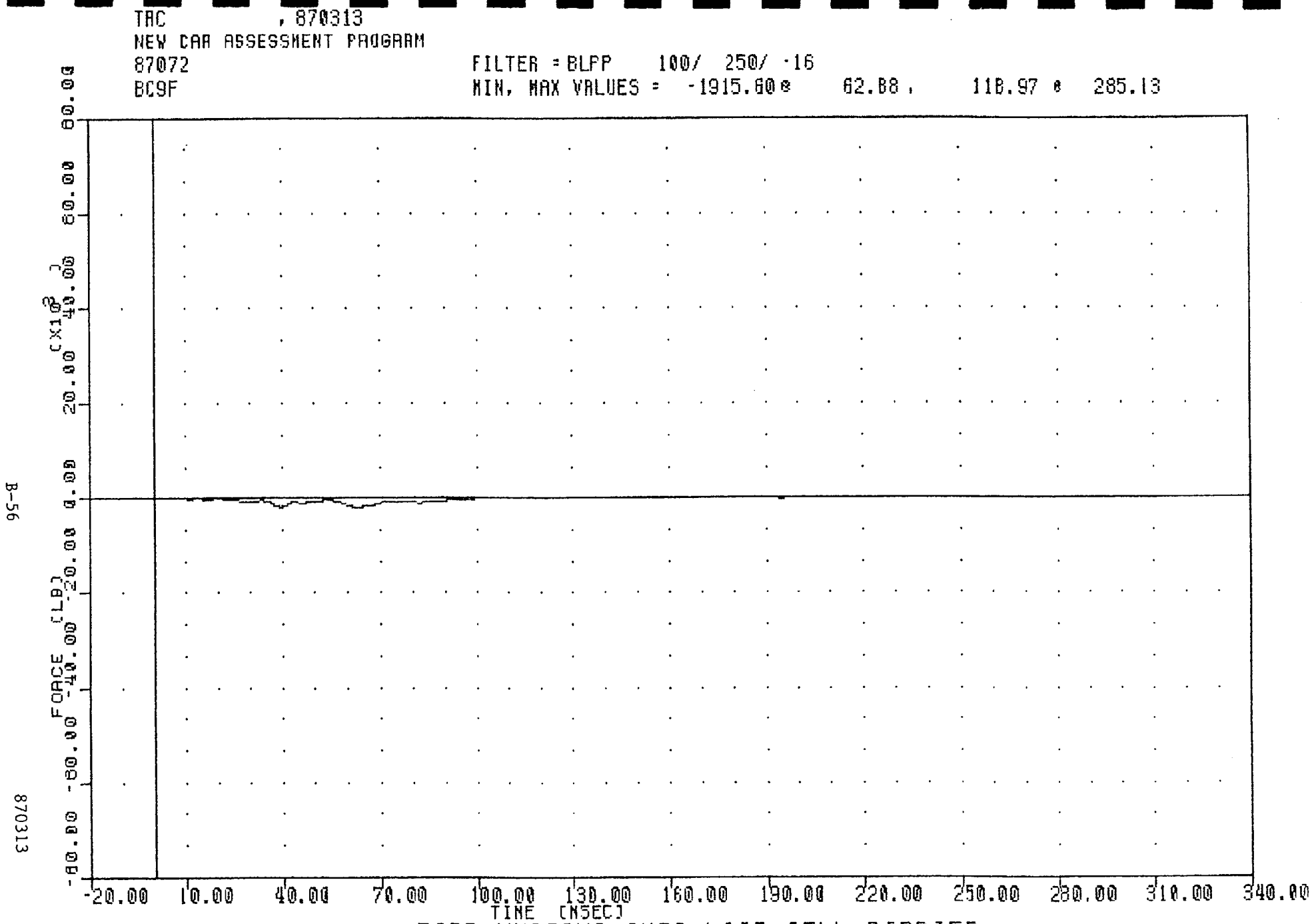
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C7 FORCE

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
BC8F
FILTER = 8LPP 100/ 250/ -16
MIN, MAX VALUES = -3579.69 @ 29.75 , 128.56 @ 286.75



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C8 FORCE

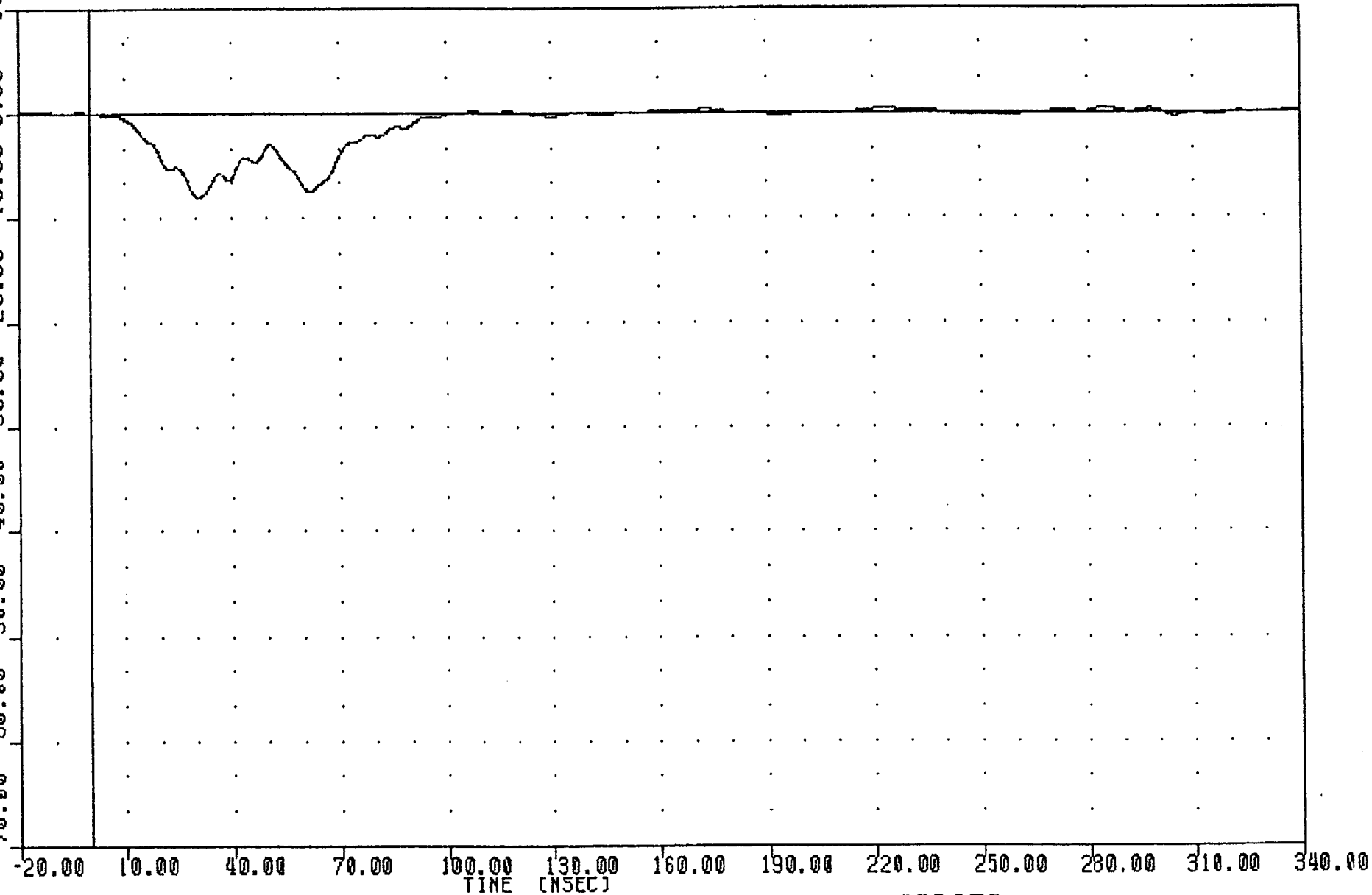
870313



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C9 FORCE

870313

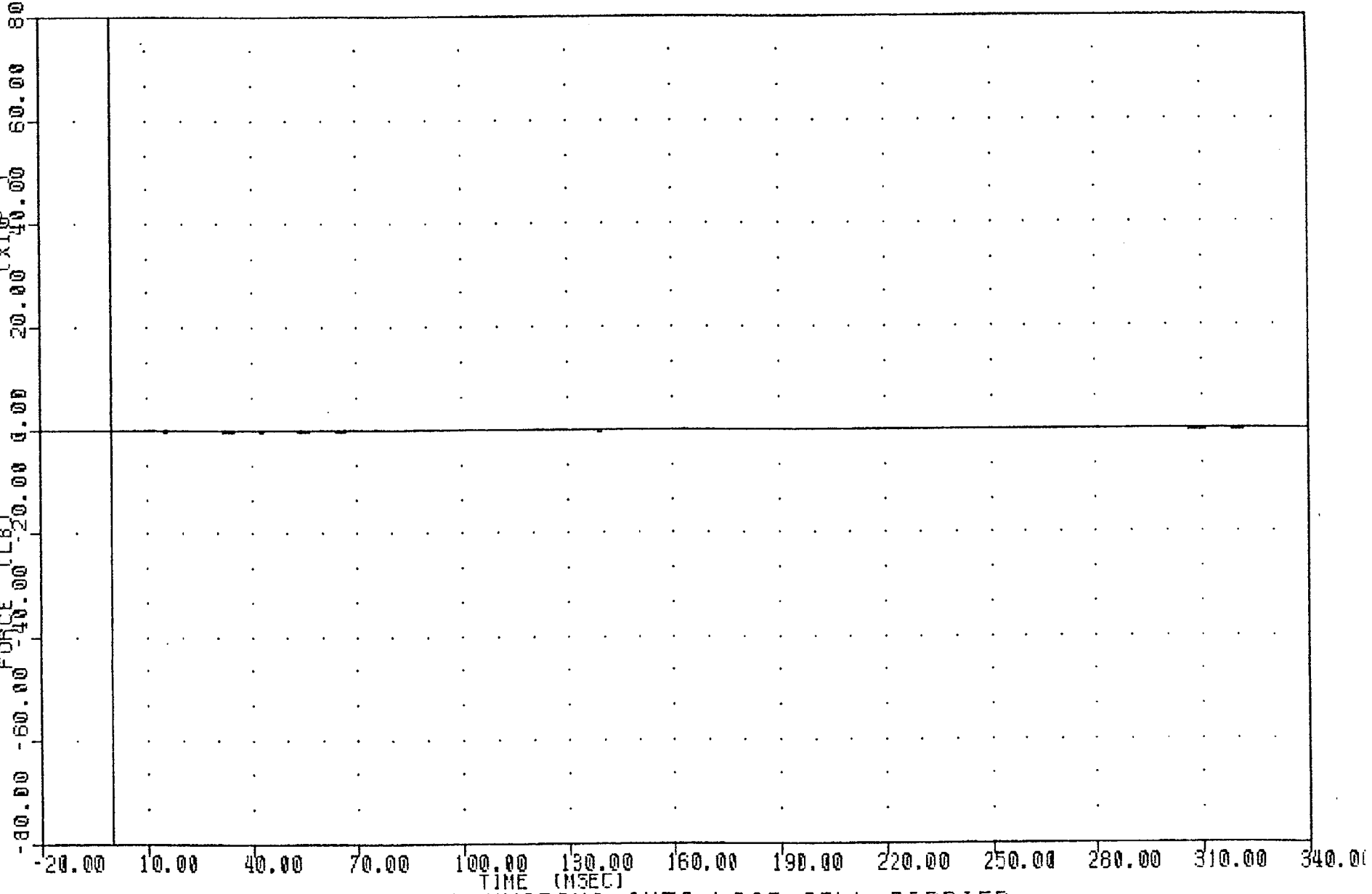
TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPP 100/ 250/ -16
LCBG3F MIN, MAX VALUES = -8075.12 @ 30.75 , 419.00 @ 223.38



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER GROUP - 3 FORCE TOTAL

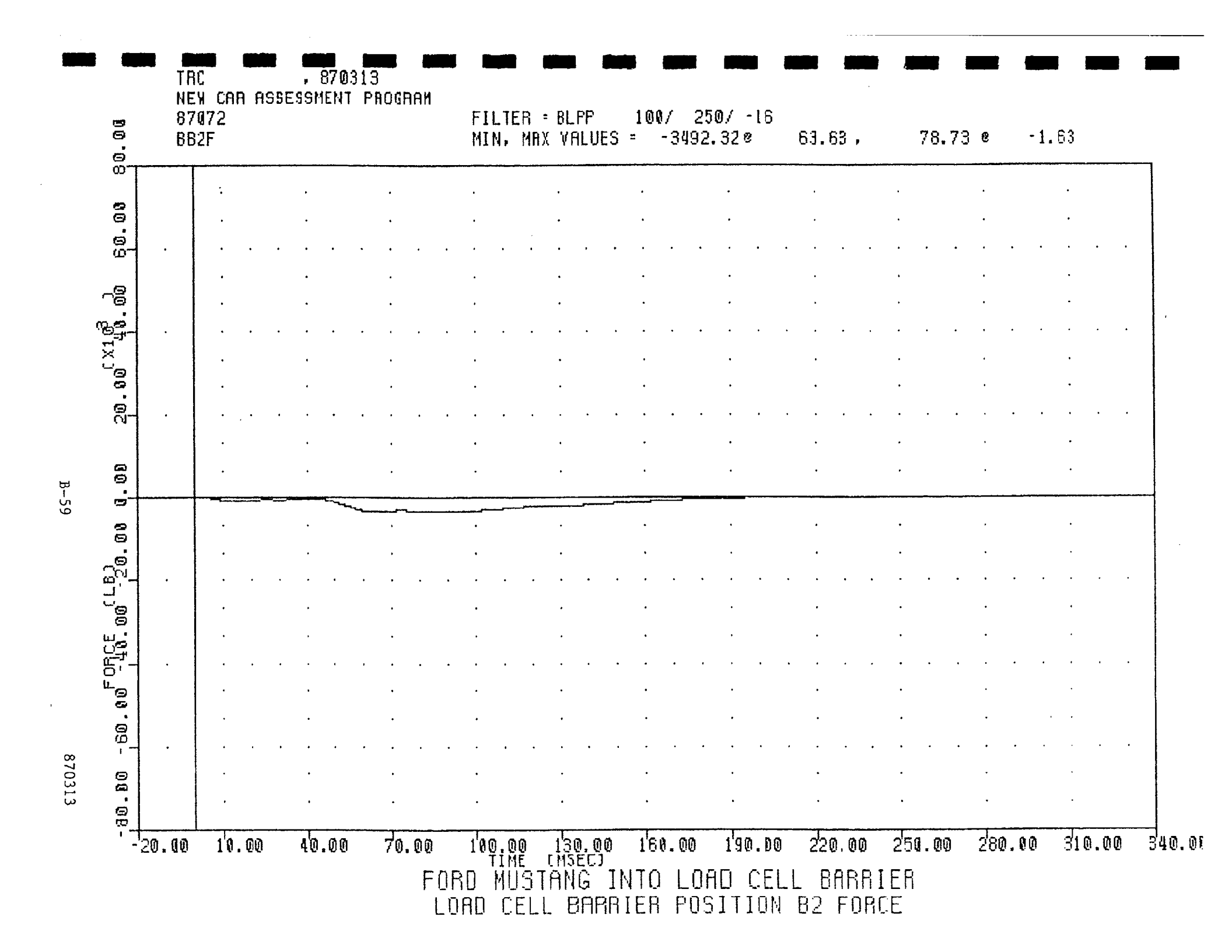
870313

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
8B1F
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -182.89 @ 65.00 , 245.66 @ 60.38



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B1 FORCE

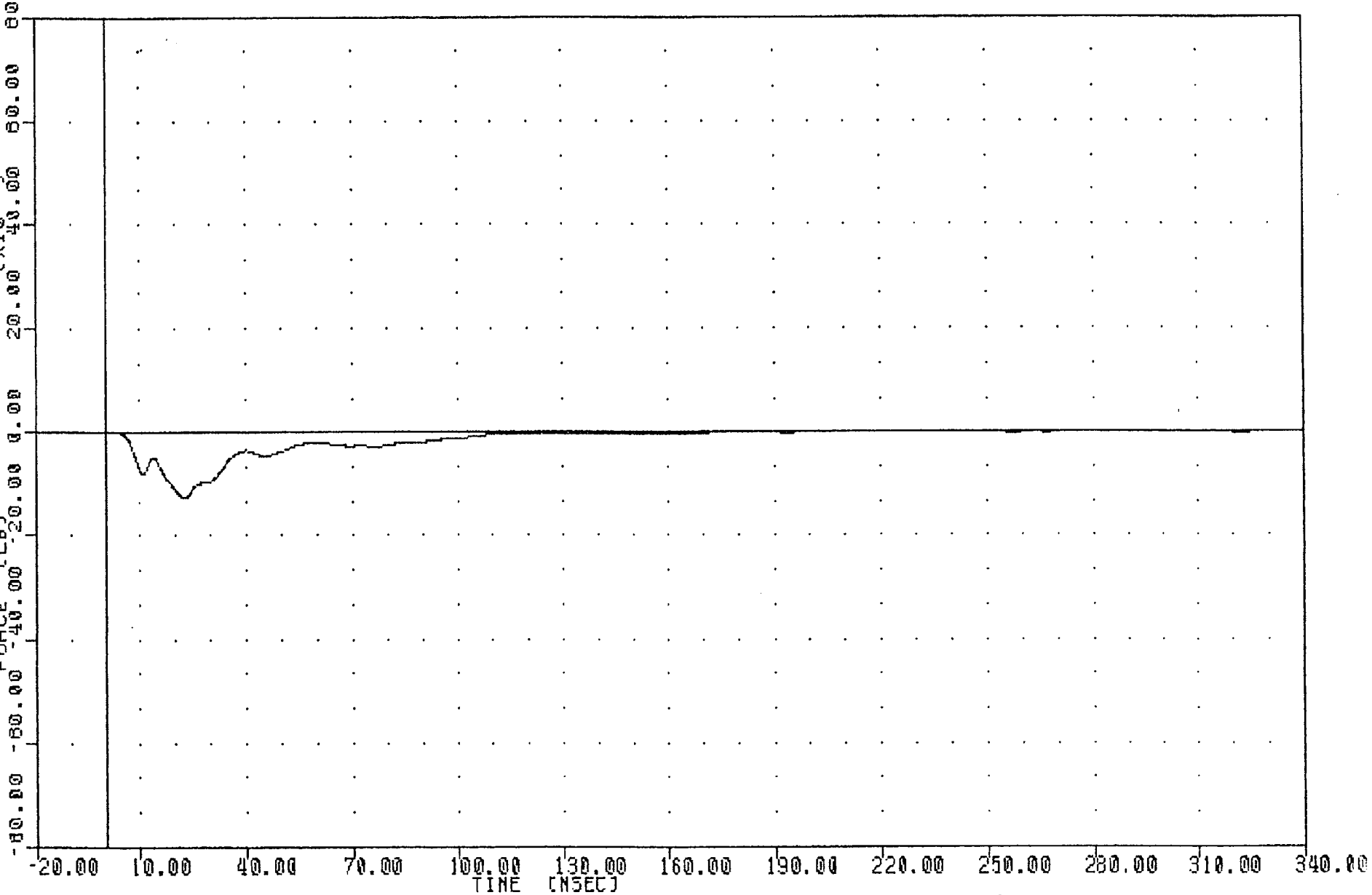
870313



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B2 FORCE

870313

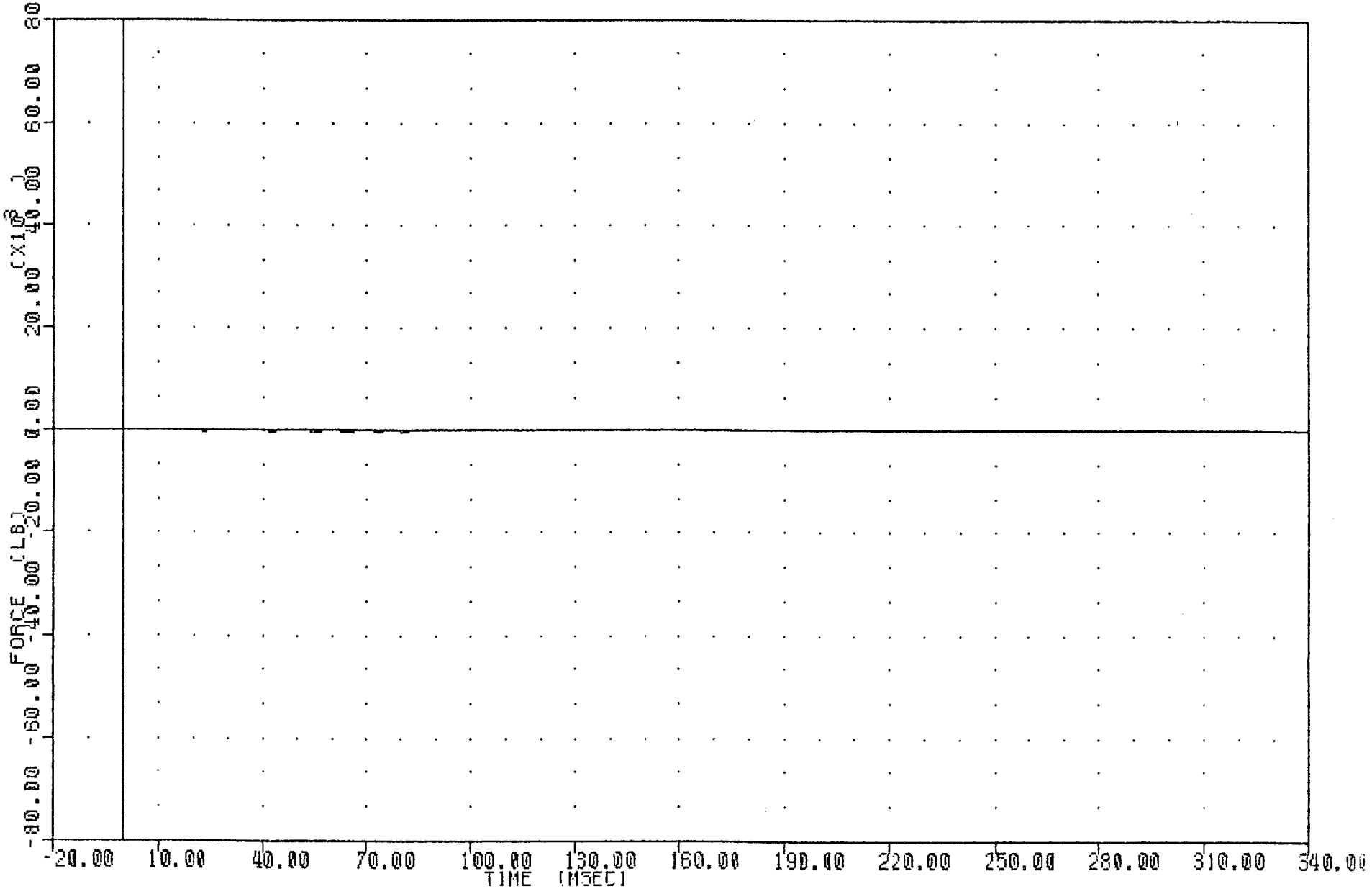
TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
B03F
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -12796.03 @ 22.50 , 135.45 @ 2.13



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B3 FORCE

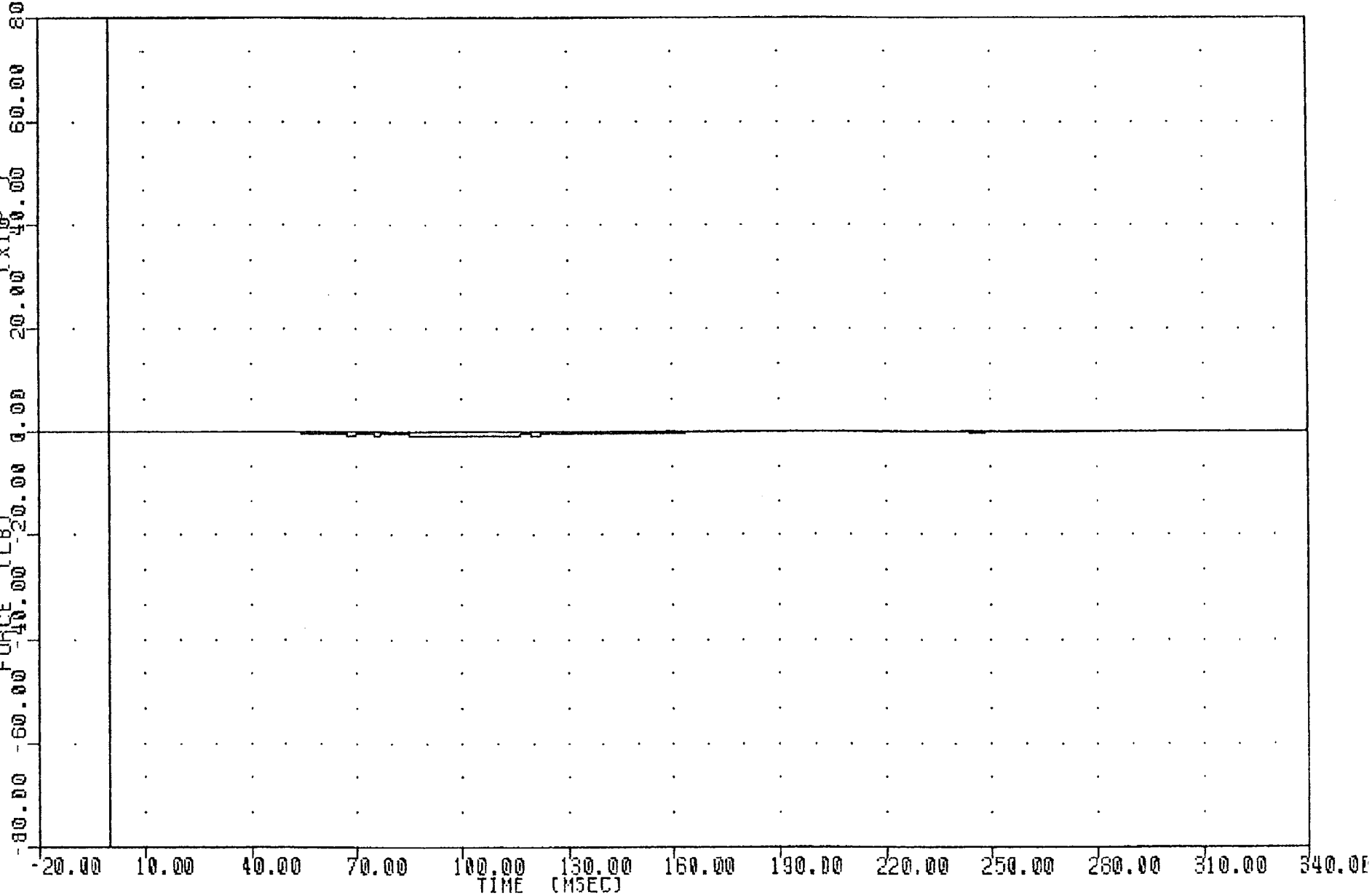
870313

INC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
BA1F
FILTER = BLPF 100/ 250/ -16
MIN, MAX VALUES = -267.67 @ 64.38 , 192.85 @ 60.13



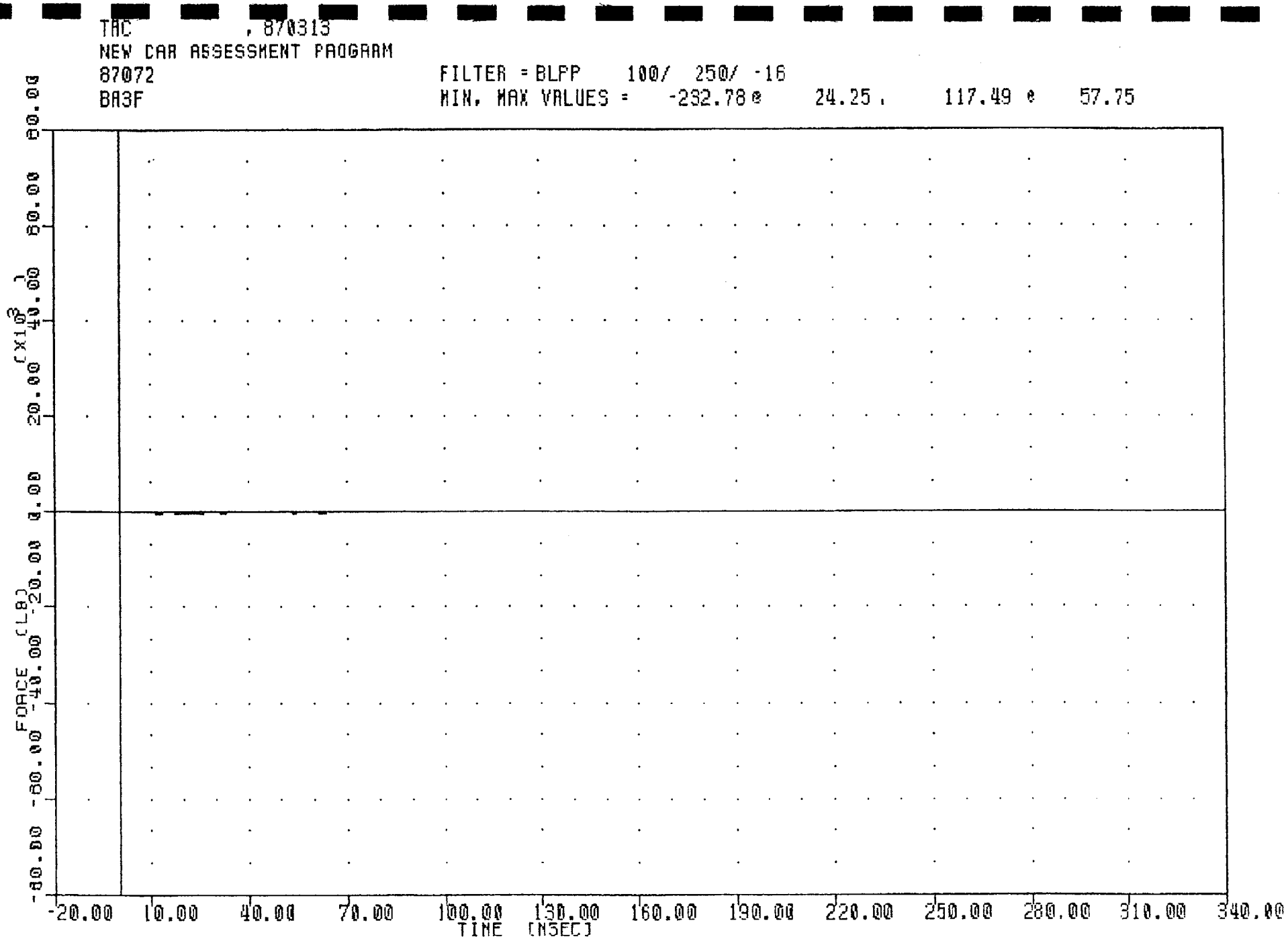
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A1 FORCE

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = 6LPP 100/ 250/ -16
BA2F MIN, MAX VALUES = -833.57@ 100.00 , 110.43 @ 28.50

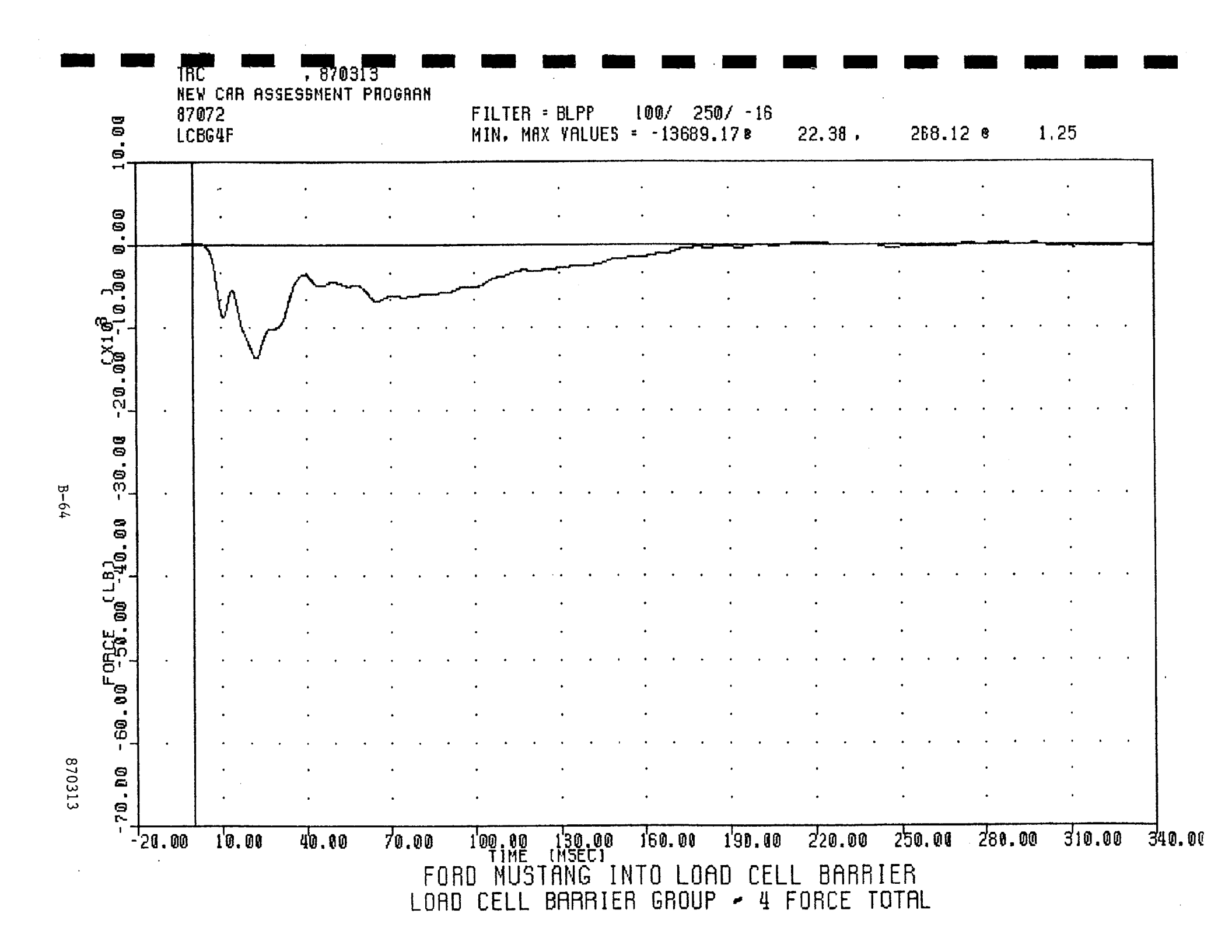


FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A2 FORCE

870313

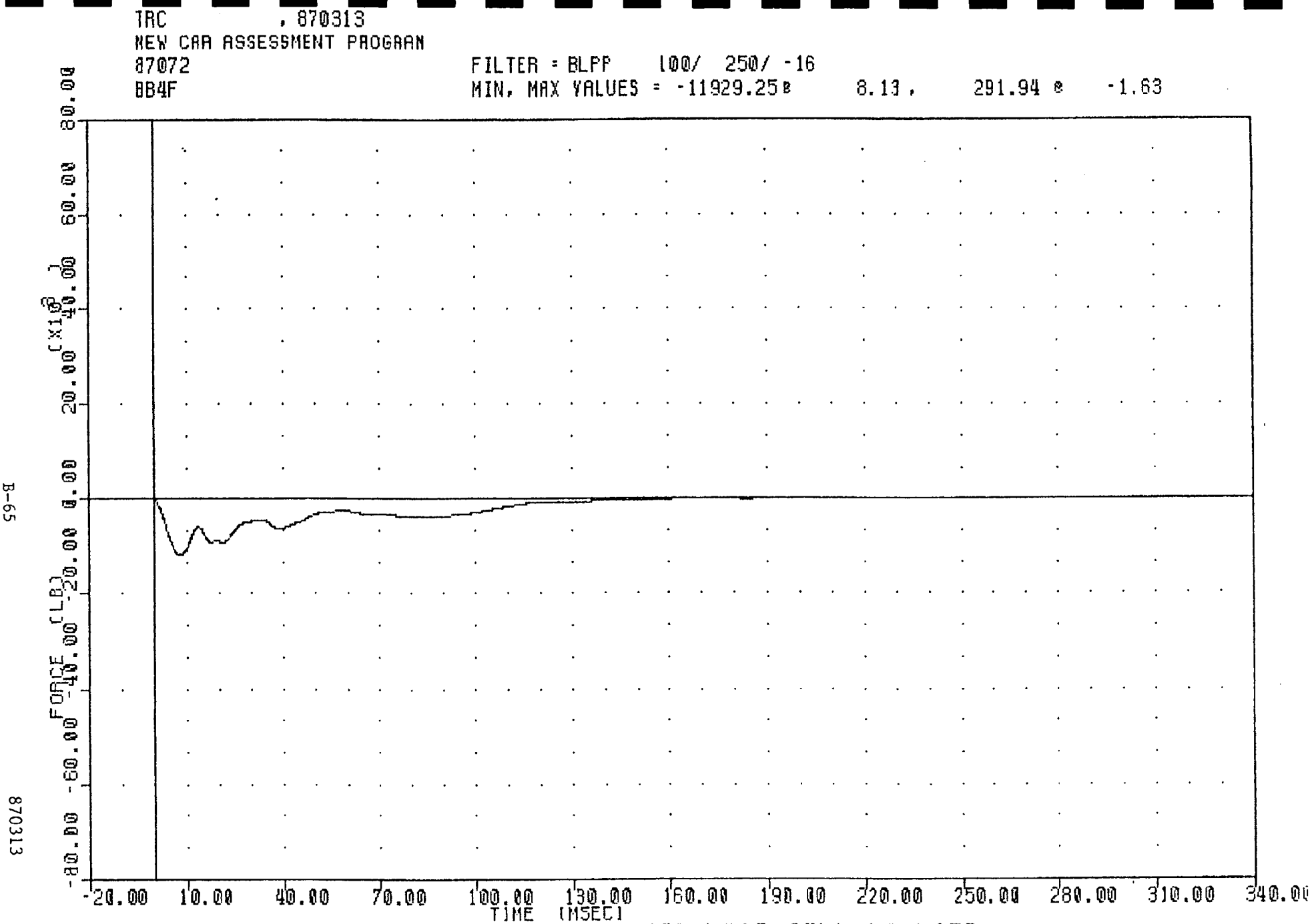


FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A3 FORCE



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER GROUP - 4 FORCE TOTAL

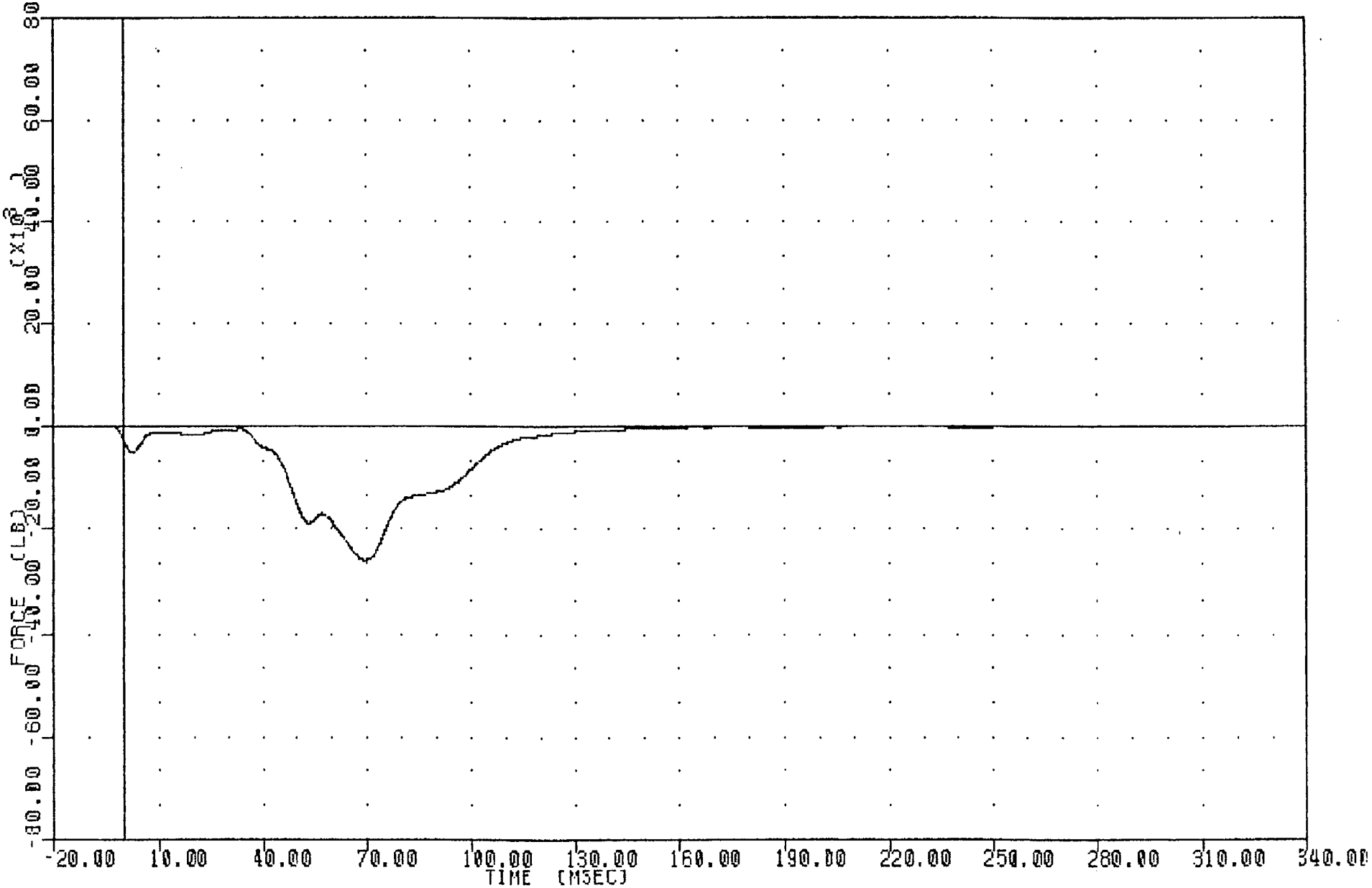
870313



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B4 FORCE

870313

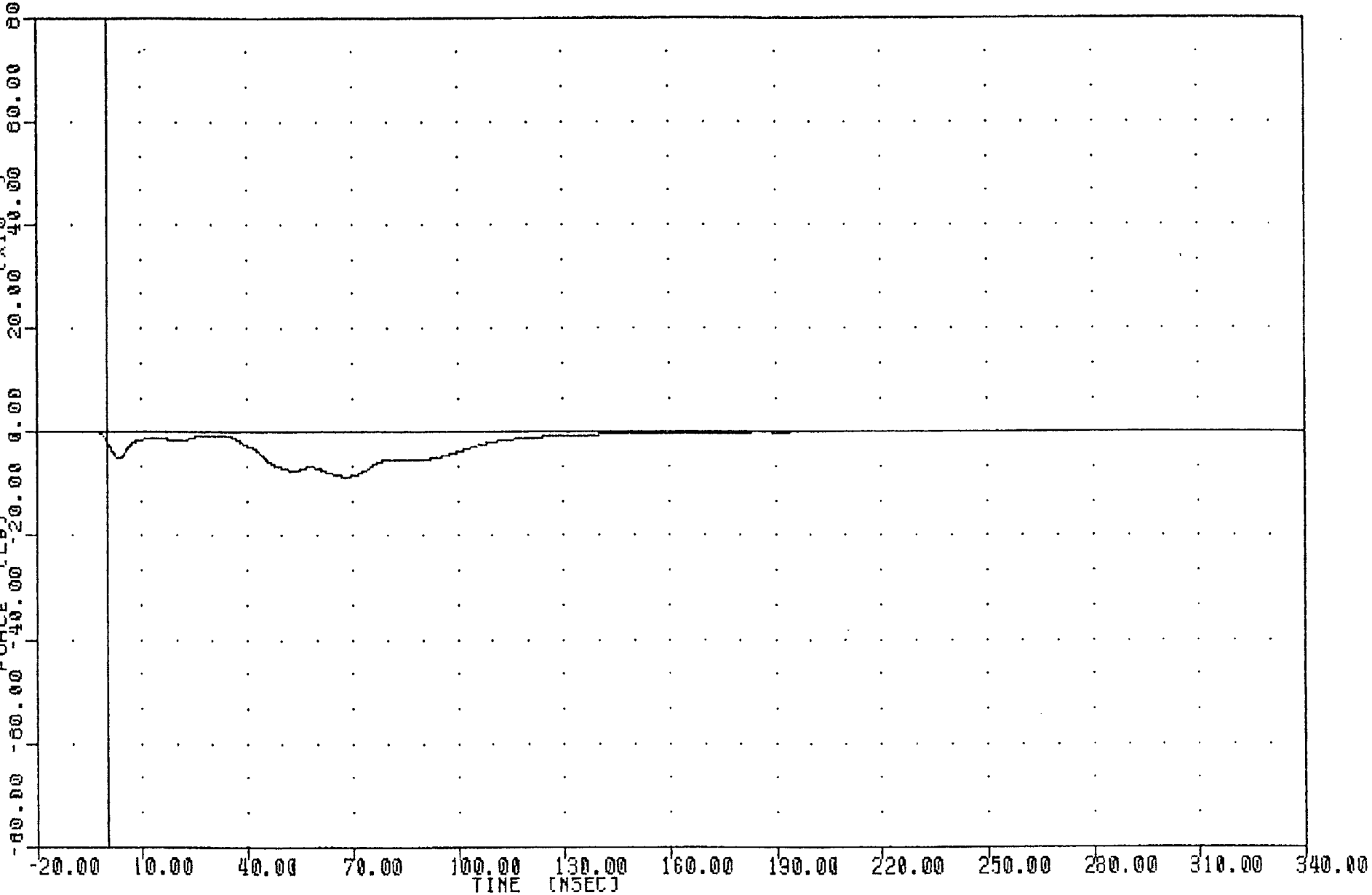
TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPP 100/ 250/ -16
BB5F MIN, MAX VALUES = -26039.03 @ 69.50 , 189.69 @ -4.00



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B5 FORCE

870313

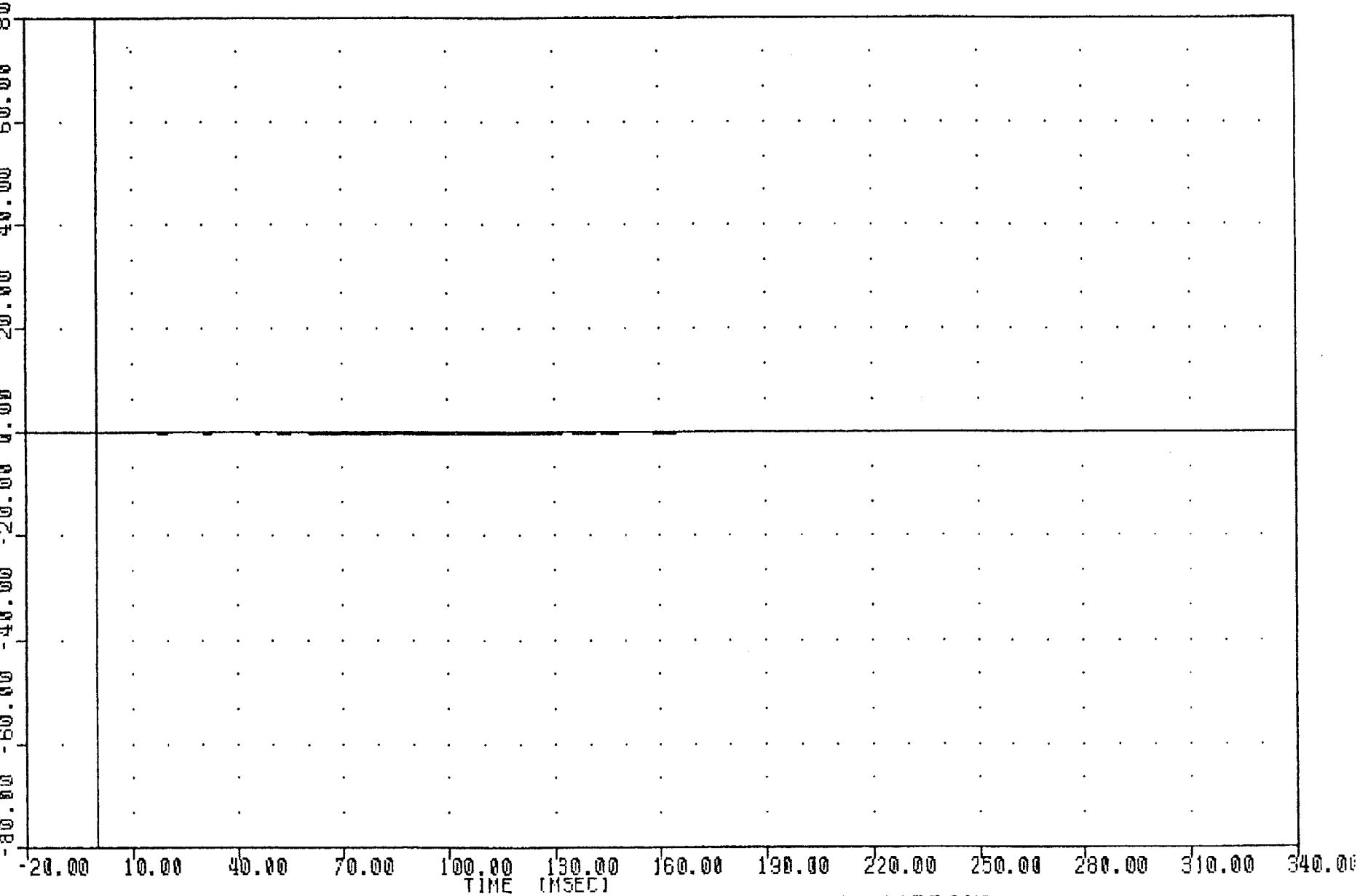
TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPP 100/ 250/ -16
B86F MIN, MAX VALUES = -8678.98 @ 68.38 , 161.52 @ -3.50



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B6 FORCE

870313

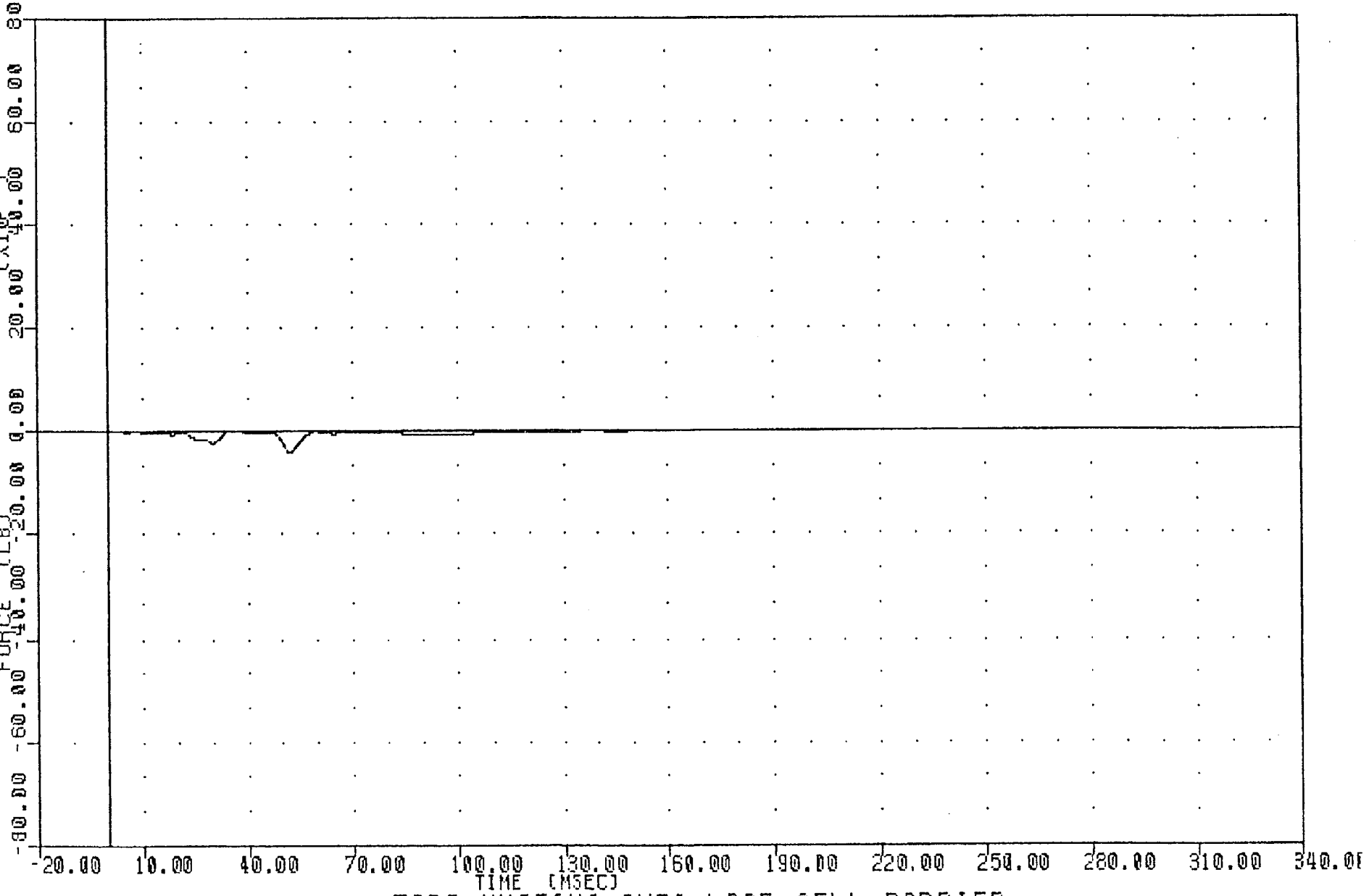
TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
BA4F
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -452.72 @ 98.13 , 214.84 @ 28.00



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A4 FORCE

870313

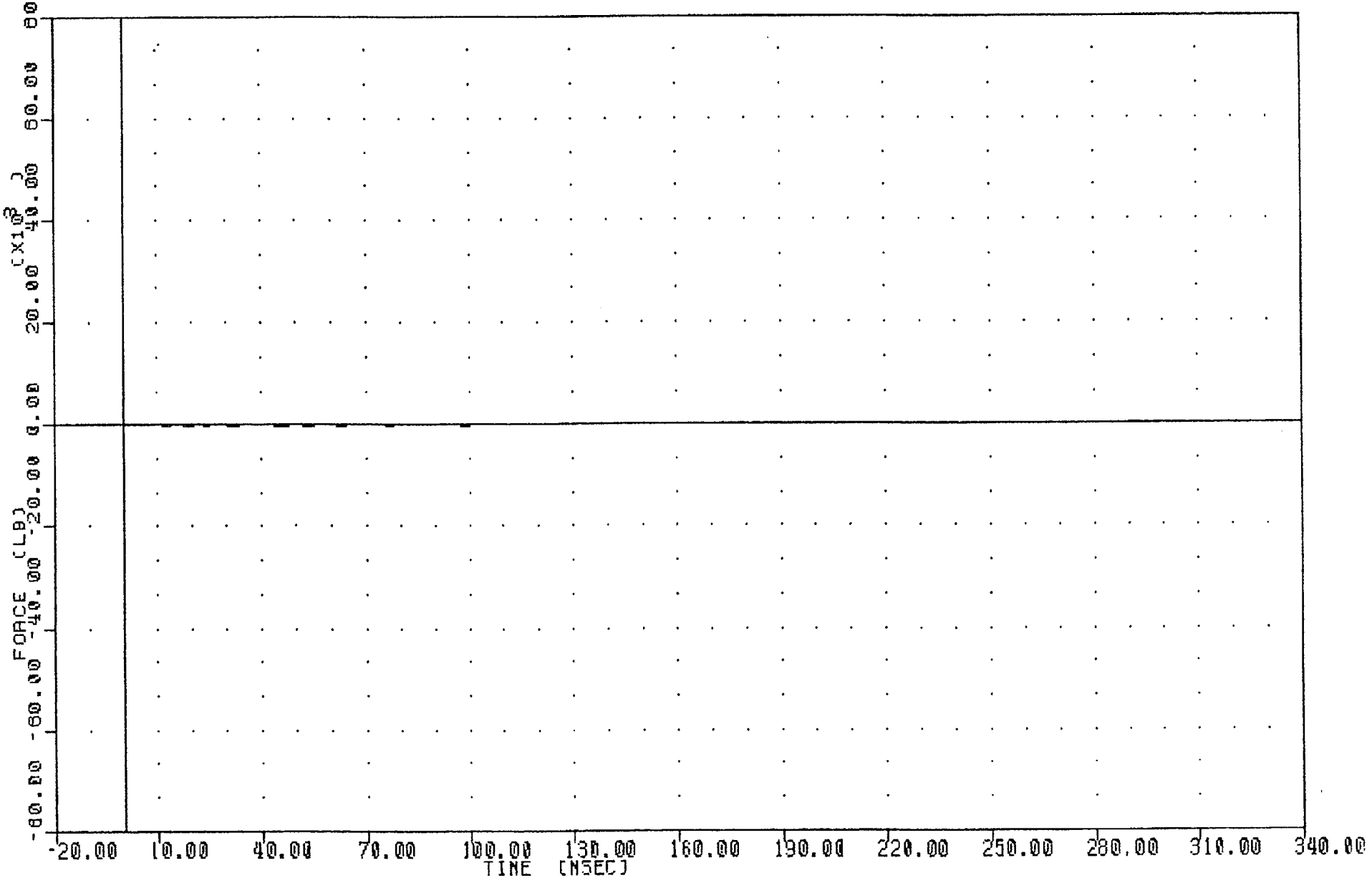
TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
BA5F
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -4123.46 @ 52.13 , 207.83 @ 35.88



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A5 FORCE

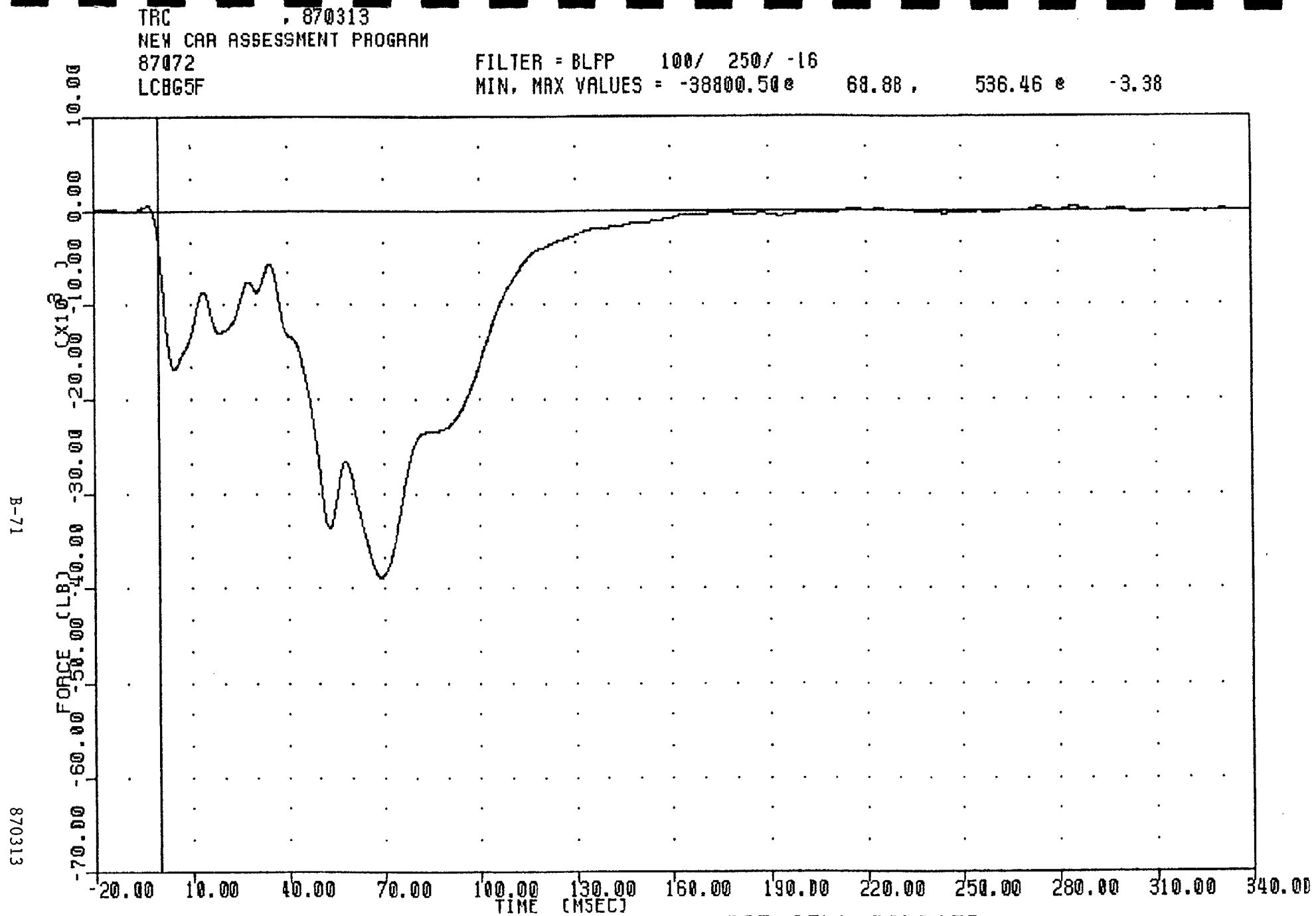
870313

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072 FILTER = BLPF 100/ 250/ -16
BA6F MIN, MAX VALUES = -303.84 @ 53.88 , 179.11 @ 27.88

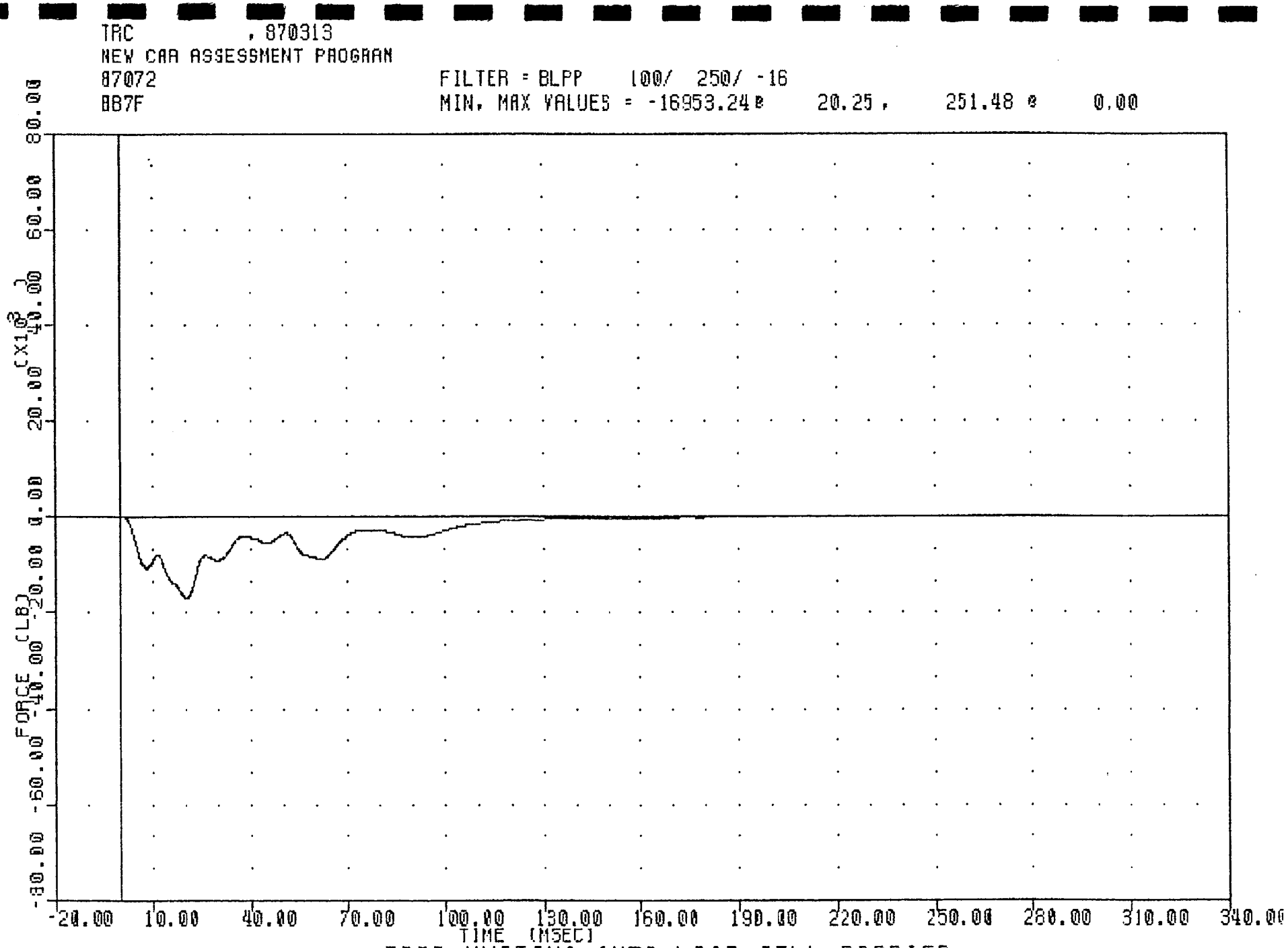


FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION AS FORCE

870313

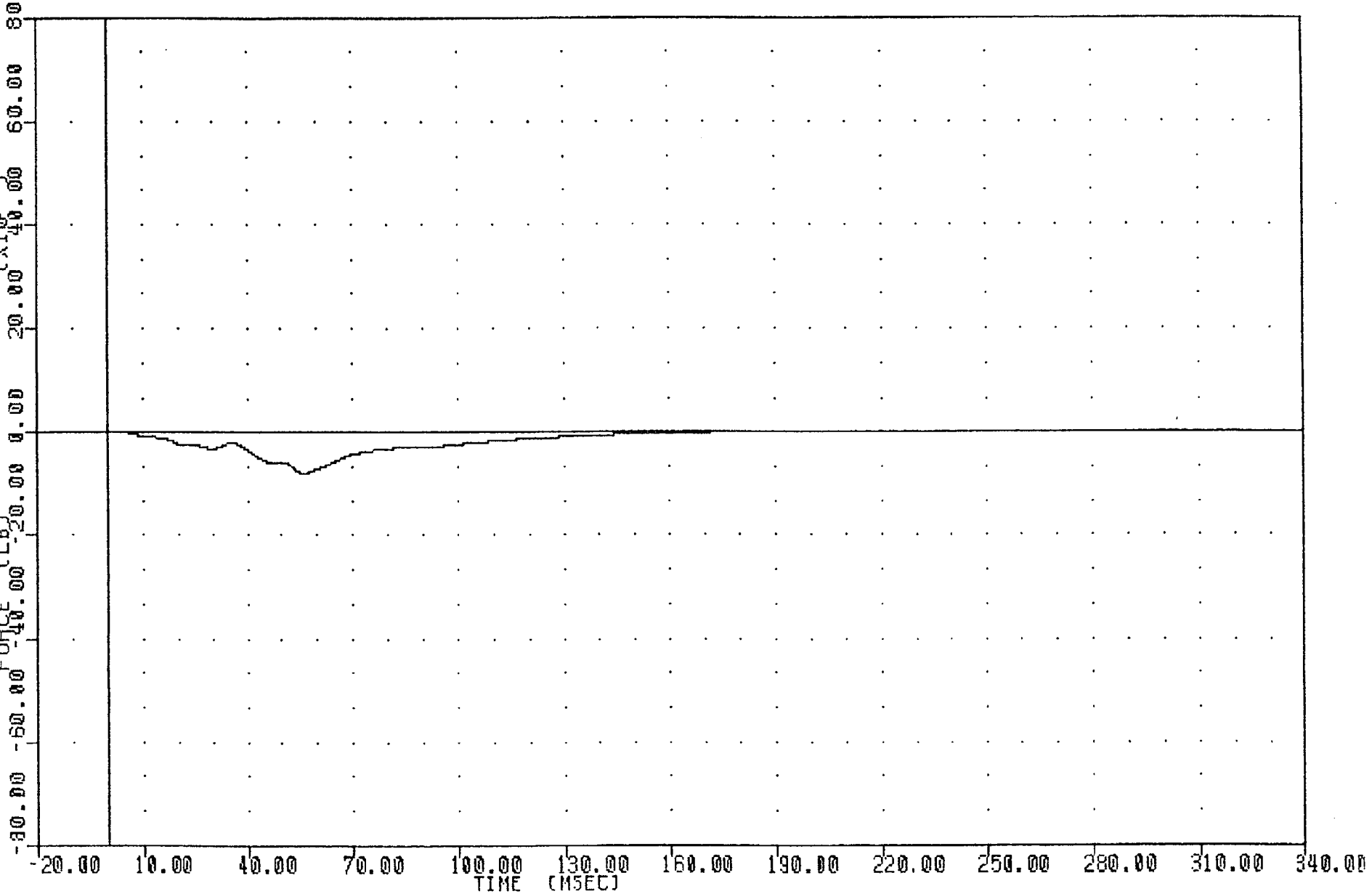


FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER GROUP - 5 FORCE TOTAL



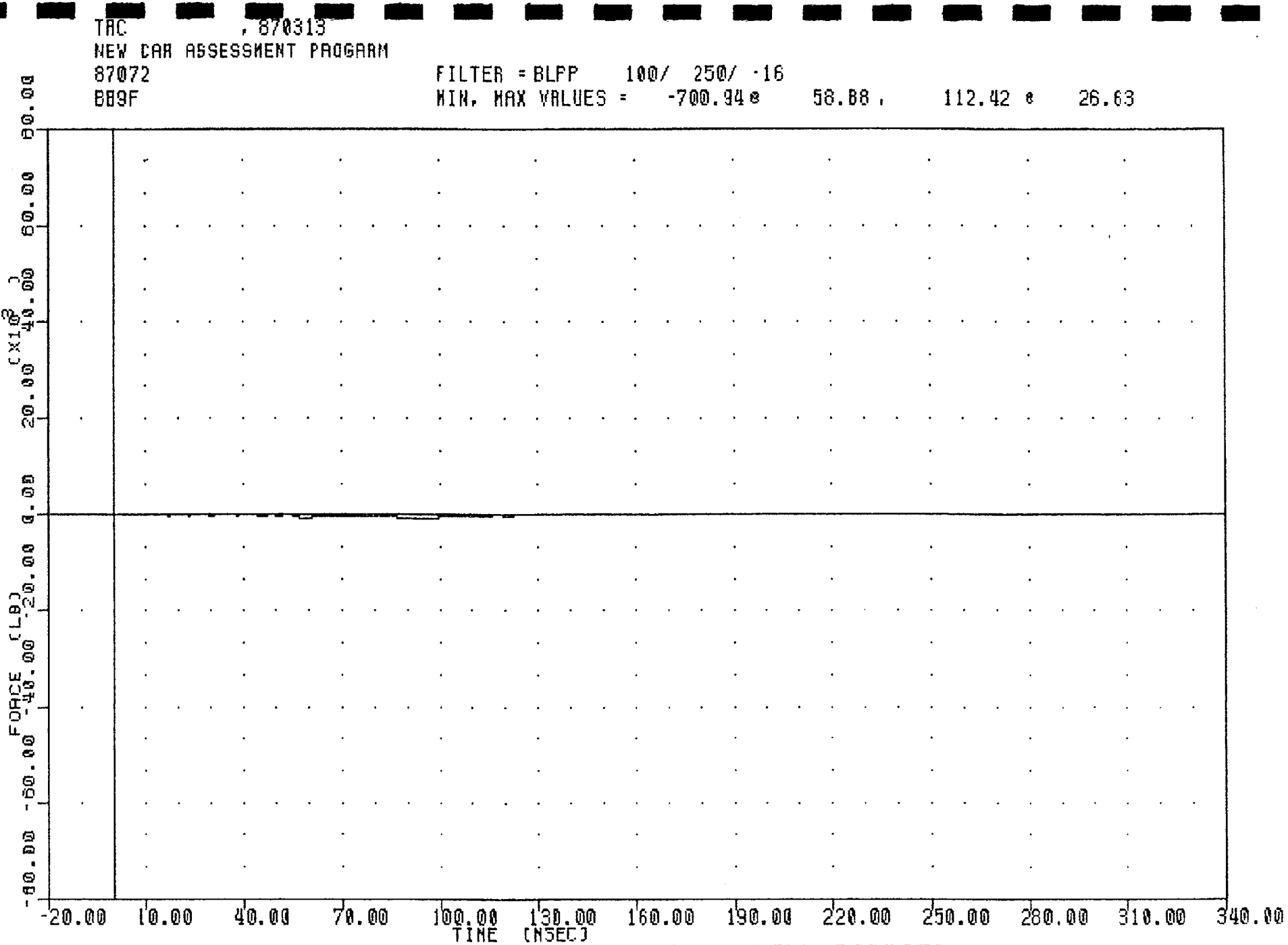
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B7 FORCE

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
BB8F
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -7908.80@ 56.25 , 66.06 @ 235.38



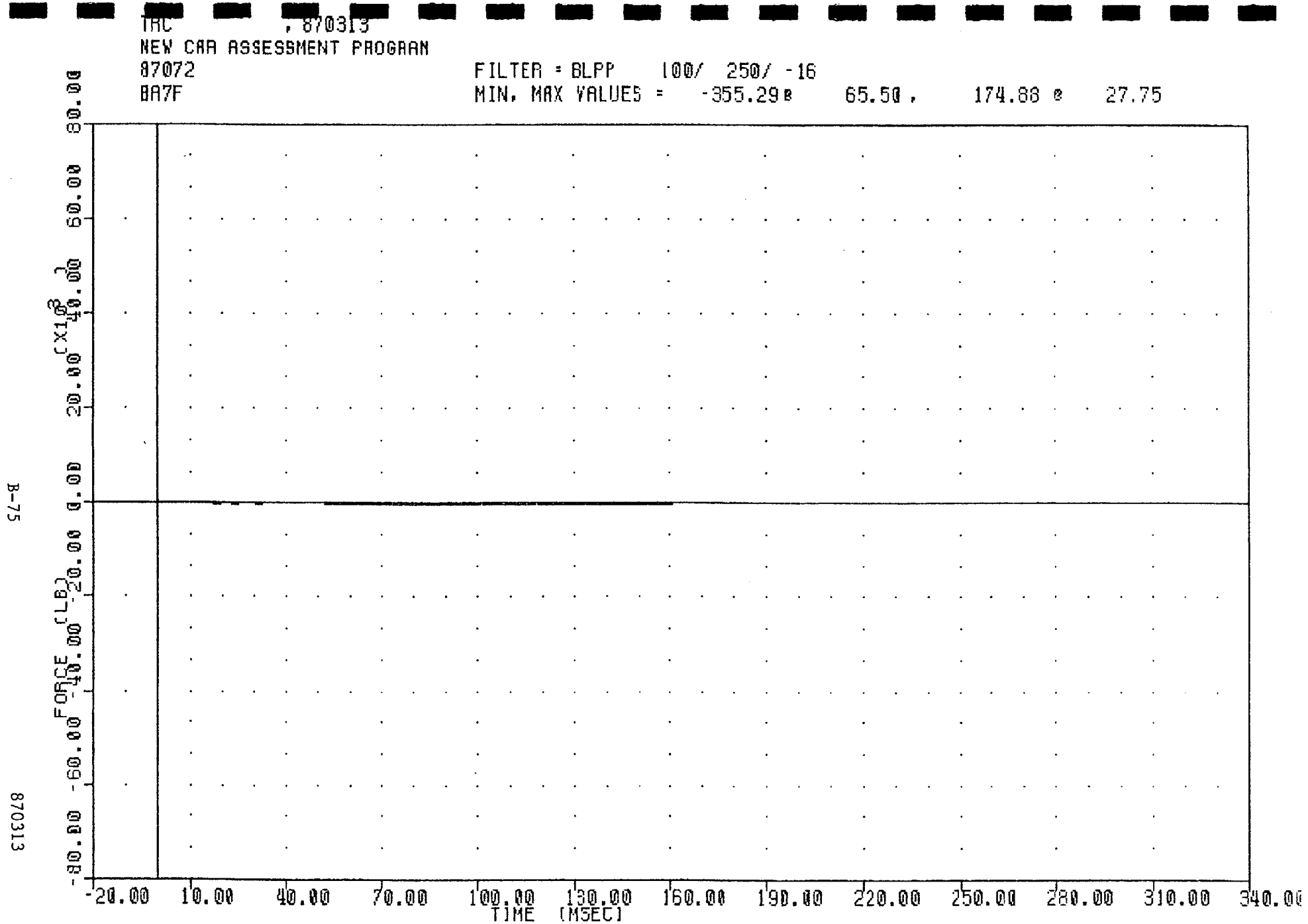
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B8 FORCE

870313



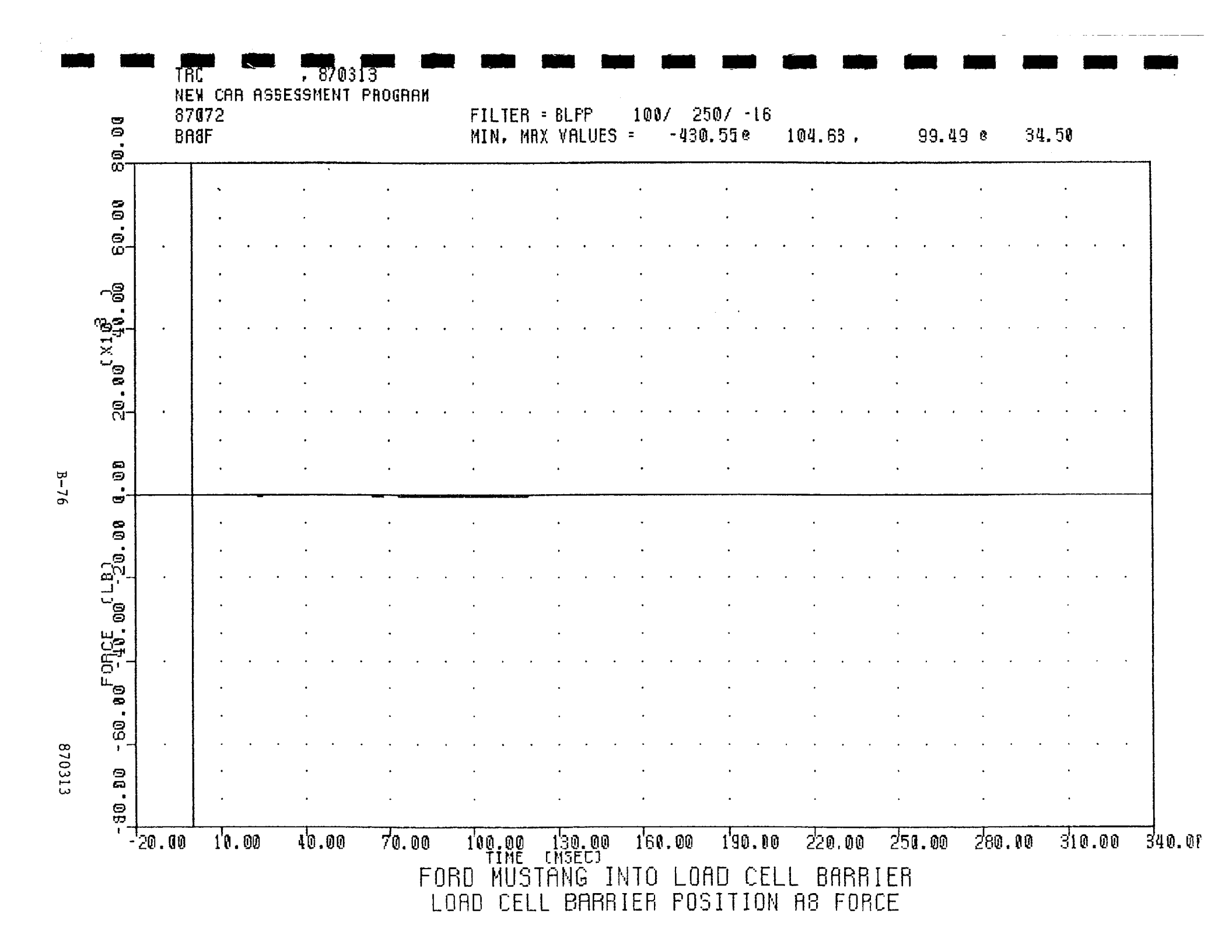
FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B9 FORCE

870313



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A7 FORCE

870313

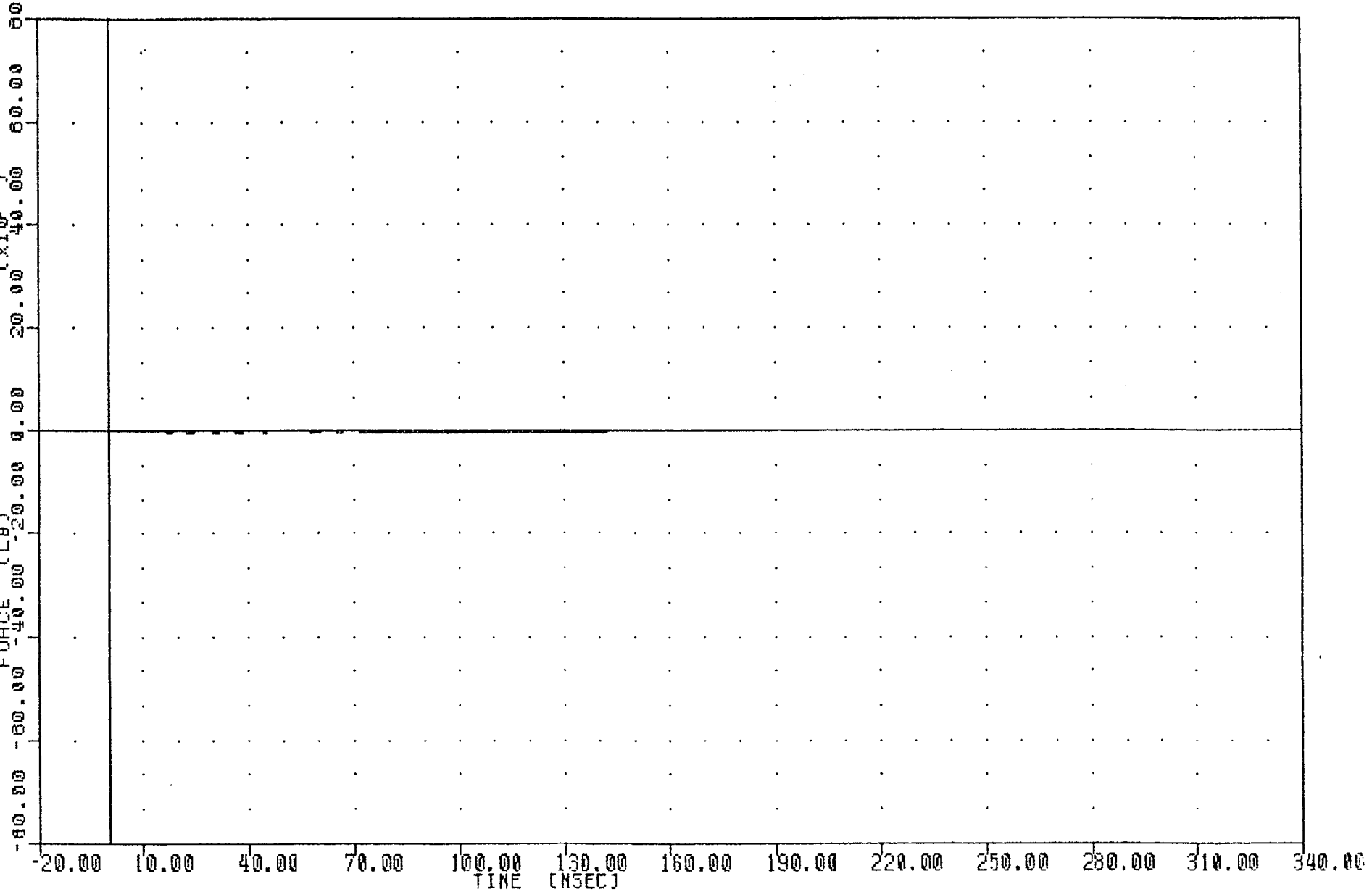


FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A8 FORCE

870313

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
BA9F

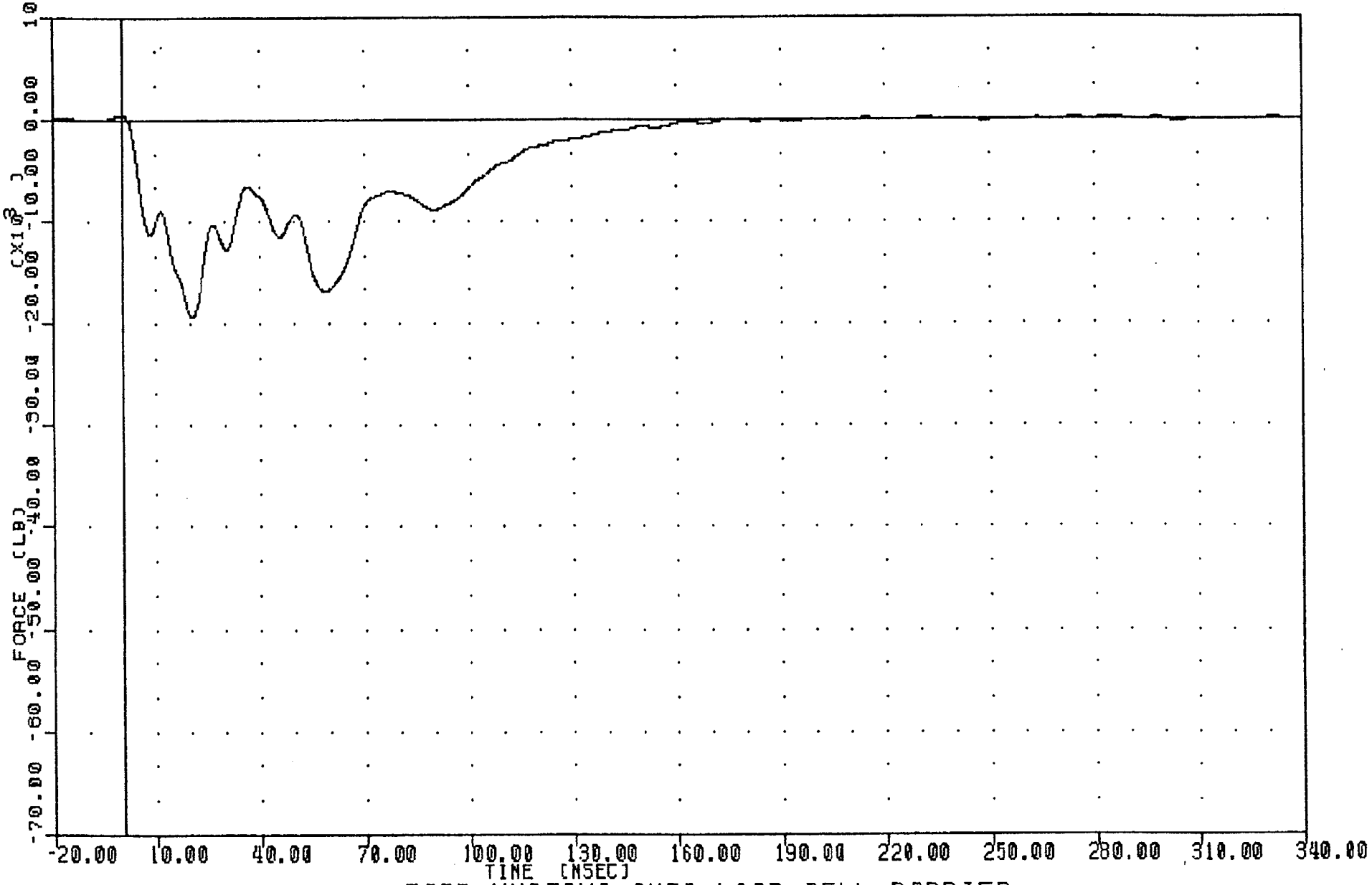
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -443.54 @ 104.88 , 189.34 @ 55.00



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A9 FORCE

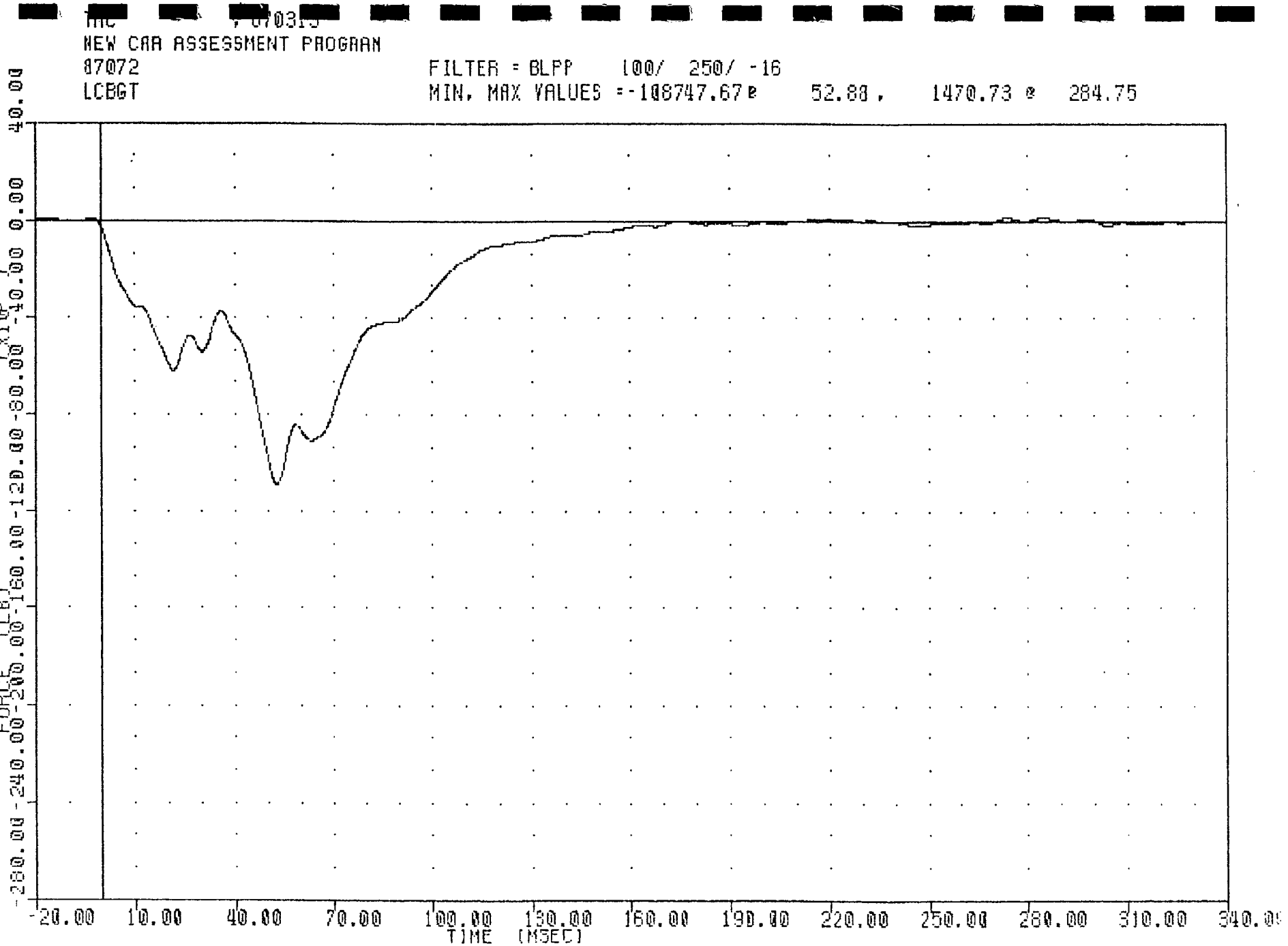
870313

TRC , 870313
NEW CAR ASSESSMENT PROGRAM
87072
LCBG6F
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -19349.67 @ 20.38 , 460.98 @ 0.13



FORD MUSTANG INTO LOAD CELL BARRIER
LOAD CELL BARRIER GROUP - 6 FORCE TOTAL

870313



FORD MUSTANG INTO LOAD CELL BARRIER
SUM OF LOAD CELL BARRIER FORCES

870313

APPENDIX C

DUMMY CERTIFICATION

TRANSPORTATION RESEARCH CENTER OF OHIO

EXTERNAL DIMENSIONS

PART 572 11-FEB-87

TEMPERATURE 70.00 F RELATIVE HUMIDITY 19.00 %
NCA ED88011 572 SN 880 EXT.DIMENSION CAL11

DESCRIPTION SN ALDERSON 880	SPECIFICATION	TEST RESULTS
Sitting Height	35.6 - 35.8IN	35.6 INS
Shoulder Pivot Height	21.8 - 22.4IN	22.1 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	9.5 INS
Shoulder Width	17.8 - 18.4IN	18.1 INS
Chest Circumference Over Nipples	36.8 - 40.0IN	37.6 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	19.4 INS

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Chas. Middlet

TRANSPORTATION RESEARCH CENTER OF OHIO

LUMBAR FLEXION TEST

PART 572 17-FEB-87

TEMPERATURE 70.00 F
NCA LF88011

RELATIVE HUMIDITY 17.00 %
572 SN 880 LUMBAR FLEX CAL 11

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	40.00 LBS
40 Deg	46.00 - 58.00 LBS	51.00 LBS
NET RETURN ANGLE	< 12 DEG	9.31 DEG

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Chas. Middleton

TRANSPORTATION RESEARCH CENTER OF OHIO

ABDOMINAL COMPRESSION TEST

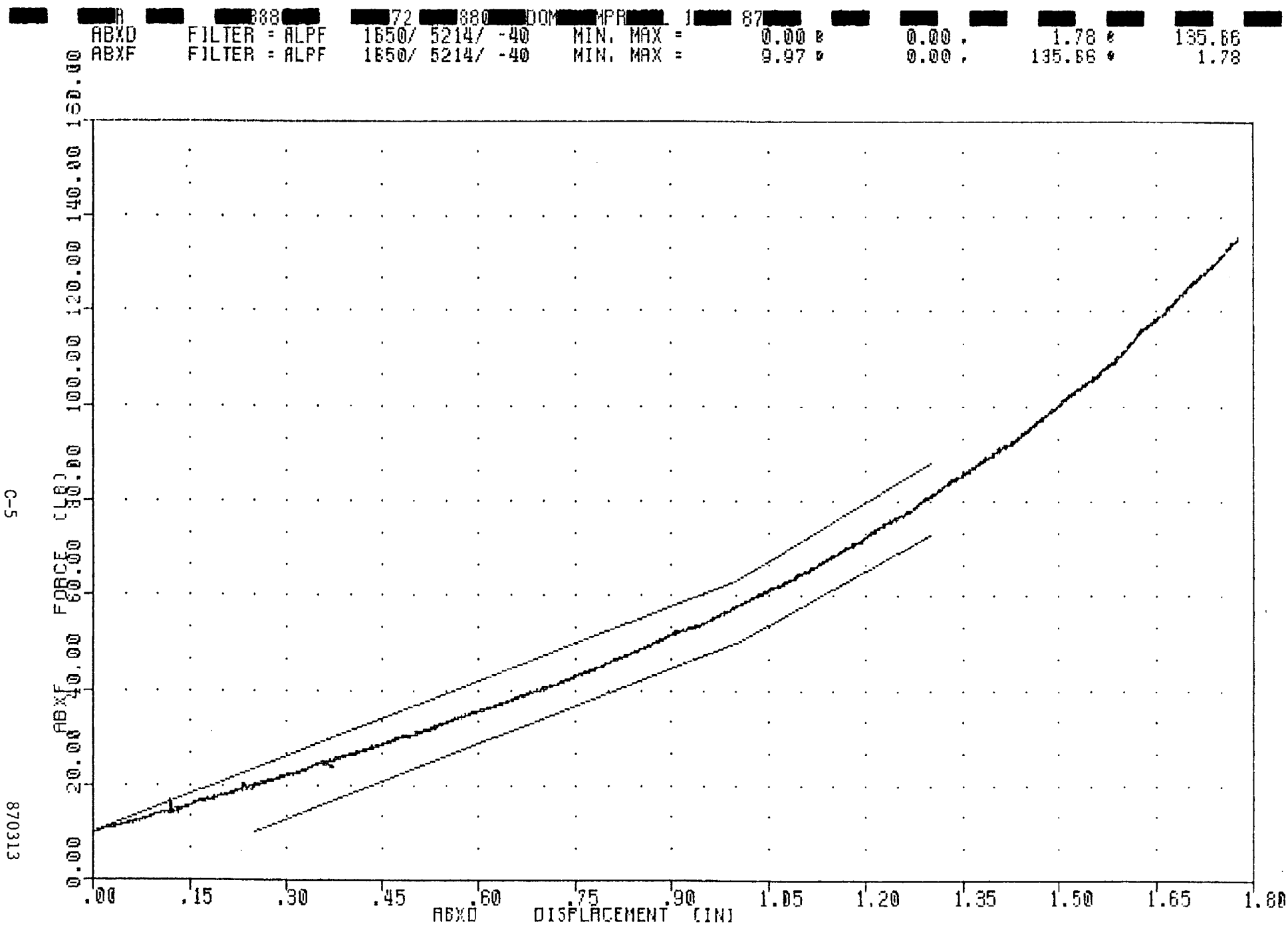
PART 572 12-FEB-87

TEMPERATURE 71.50 F RELATIVE HUMIDITY 27.00 %
NCA ABB8011 572 SN 880 ABDOM COMPR CAL 11

TEST CORRIDORS DISPLACEMENT	FORCE	TEST RESULTS
0 IN.	10 LB	10 LB
.50 IN.	23.00 - 36.00 LB	30.68 LB
.75 IN.	36.00 - 50.00 LB	42.85 LB
1.00 IN.	50.00 - 63.00 LB	57.87 LB
1.30 IN.	73.00 - 88.00 LB	80.80 LB

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Chas. Muddlet



ADOMINAL COMPRESSION VS DISPLACEMENT

TRANSPORTATION RESEARCH CENTER OF OHIO

HEAD DROP TEST

PART 572 16-FEB-87

TEMPERATURE 71 F RELATIVE HUMIDITY 15 %
NCA HD88011 572 SN 880 HEAD DROP CAL 11

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PEAK RESULTANT ACCELERATION	210 - 260 G	250.63 G
TIME ABOVE 100 G LEVEL	0.9 - 1.5 MS	1.14 MS
PEAK LATERAL ACCELERATION	10 G MAX	-5.51 G
IS ACCELERATION CURVE UNIMODAL?		YES

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Chas. Middlet

TRANSPORTATION RESEARCH CENTER OF OHIO

NECK PENDULUM TEST

PART 572 16-FEB-87

TEMPERATURE 70.50 F RELATIVE HUMIDITY 15.00 %
NCA HN88011 572 SN 880 HEAD/NECK CAL 11

Test Parameter	Specification	Test Results
Pendulum velocity	21.5 to 25.5 fps	23.16 fps
Pendulum Deceleration:		
T1 - T2: 5 - 20 G	3 ms. max	2.56 ms.
T2 - T3: 20 - 20 G	25 - 30 ms.	26.30 ms.
T3 - T4: 20 - 5 G	10 ms. max	8.85 ms.
Avg. G level T2 - T3	20 - 24 G	23.64 G
Maximum Rotation Angle	63 - 73 deg.	66.54 deg.
Peak Head Resultant Accel	26 G max	19.71 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	1.38	0.05
30	25.6 - 34.4	2.1 - 3.1	32.47	2.50
60	40.3 - 51.7	4.3 - 5.3	51.44	4.86
max	53.2 - 66.8	5.0 - 6.0	65.13	5.42
60	67.0 - 83.0	4.3 - 5.3	78.49	4.81
30	85.4 - 104.6	2.1 - 3.1	98.61	2.29
0	101.0 - 123.0	-0.5 - +0.5	112.84	0.15

* DUMMY MEETS SPECIFICATIONS

TECHNICAN Chas. Middlet

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572 13-FEB-87

TEMPERATURE 70 F RELATIVE HUMIDITY 18 %
NCA TL88011 572 SN 880 L.S.THORAX CAL 11

TEST PARAMETER	LOW SPEED TEST SPECIFICATION	TEST RESULTS
PENDULUM VELOCITY	13.86-14.14 FT/SEC	14.06 FT/SEC
PEAK DEFLECTION	1.1 IN. max.	0.93 IN.
PEAK RESISTIVE FORCE	1,450. LB. max.	1388. LB.
INTERNAL HYSTERESIS	50% - 70%	64.5%

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Chas. Maddox

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572 17-FEB-87

TEMPERATURE 70 F RELATIVE HUMIDITY 18 %
NCA TH88011 572 SN 880 H.S.THORAX CAL 11

TEST PARAMETER	HIGH SPEED TEST SPECIFICATION	TEST RESULTS
PENDULUM VELOCITY	21.78-22.22 FT/SEC	21.93 FT/SEC
PEAK DEFLECTION	1.7 IN. max.	1.44 IN.
PEAK RESISTIVE FORCE	2,250. LB. max.	2126. LB.
INTERNAL HYSTERESIS	50% - 70%	64.1%

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Chas. Middlet

TRANSPORTATION RESEARCH CENTER OF OHIO

KNEE IMPACT TEST

PART 572 17-FEB-87

TEMPERATURE 71 F RELATIVE HUMIDITY 17 %
LEFT KNEE
NCA LK88011 572 SN 880 L.KNEE IMP CAL 11

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.93 FT/SEC
PEAK KNEE IMPACT FORCE	1850 - 2500 LB.	1957.04 LB.
DURATION ABOVE 1000 LB.	>=1.7 MS.	1.86 MS.

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Chas. Middleton

TRANSPORTATION RESEARCH CENTER OF OHIO

KNEE IMPACT TEST

PART 572 17-FEB-87

TEMPERATURE 71 F RELATIVE HUMIDITY 17 %
RIGHT KNEE
NCA RK88011 572 SN 880 R.KNEE IMP CAL 11

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.92 FT/SEC
PEAK KNEE IMPACT FORCE	1850 - 2500 LB.	2056.12 LB.
DURATION ABOVE 1000 LB.	>=1.7 MS.	2.07 MS.

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Chas. Middlet

TRANSPORTATION RESEARCH CENTER OF OHIO

EXTERNAL DIMENSIONS

PART 572 11-FEB-87

TEMPERATURE 70.00 F RELATIVE HUMIDITY 19.00 %
NCA ED41113 572 SN 411 EXT.DIMENSION CAL13

DESCRIPTION SN HUMANOID 411	SPECIFICATION	TEST RESULTS
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	20.4 INS
Rear of Head From Backline	1.7 IN (ref)	1.7 INS
Chest Depth	9.1 - 9.6IN	9.1 INS
Shoulder Width	17.8 - 18.4IN	18.3 INS
Chest Circumference Over Nipples	36.8 - 40.0IN	37.4 INS
Waist Circumference at Min. Girth	31.4 - 32.6IN	32.5 INS
Hip Width	14.0 - 15.4IN	14.7 INS
Knee Pivot From Floor	19.3 - 19.9IN	19.5 INS

DUMMY MEETS SPECIFICATIONS

TECHNICIAN 

TRANSPORTATION RESEARCH CENTER OF OHIO

LUMBAR FLEXION TEST

PART 572 17-FEB-87

TEMPERATURE 70.00 F RELATIVE HUMIDITY 17.00 %
NCA LF41113 572 SN 411 LUMBAR FLEX CAL 13

DEFLECTION	SPECIFICATION	TEST RESULTS
0 Deg.	0 LBS	0.00 LBS
20 Deg	22.00 - 34.00 LBS	30.00 LBS
30 Deg	34.00 - 46.00 LBS	40.00 LBS
40 Deg	46.00 - 58.00 LBS	47.00 LBS
NET RETURN ANGLE	< 12 DEG	11.17 DEG

DUMMY MEETS SPECIFICATIONS

TECHNICIAN 

TRANSPORTATION RESEARCH CENTER OF OHIO

ABDOMINAL COMPRESSION TEST

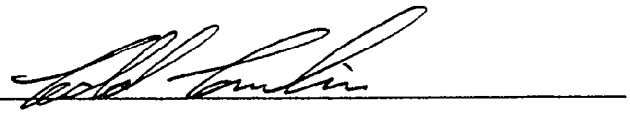
PART 572 12-FEB-87

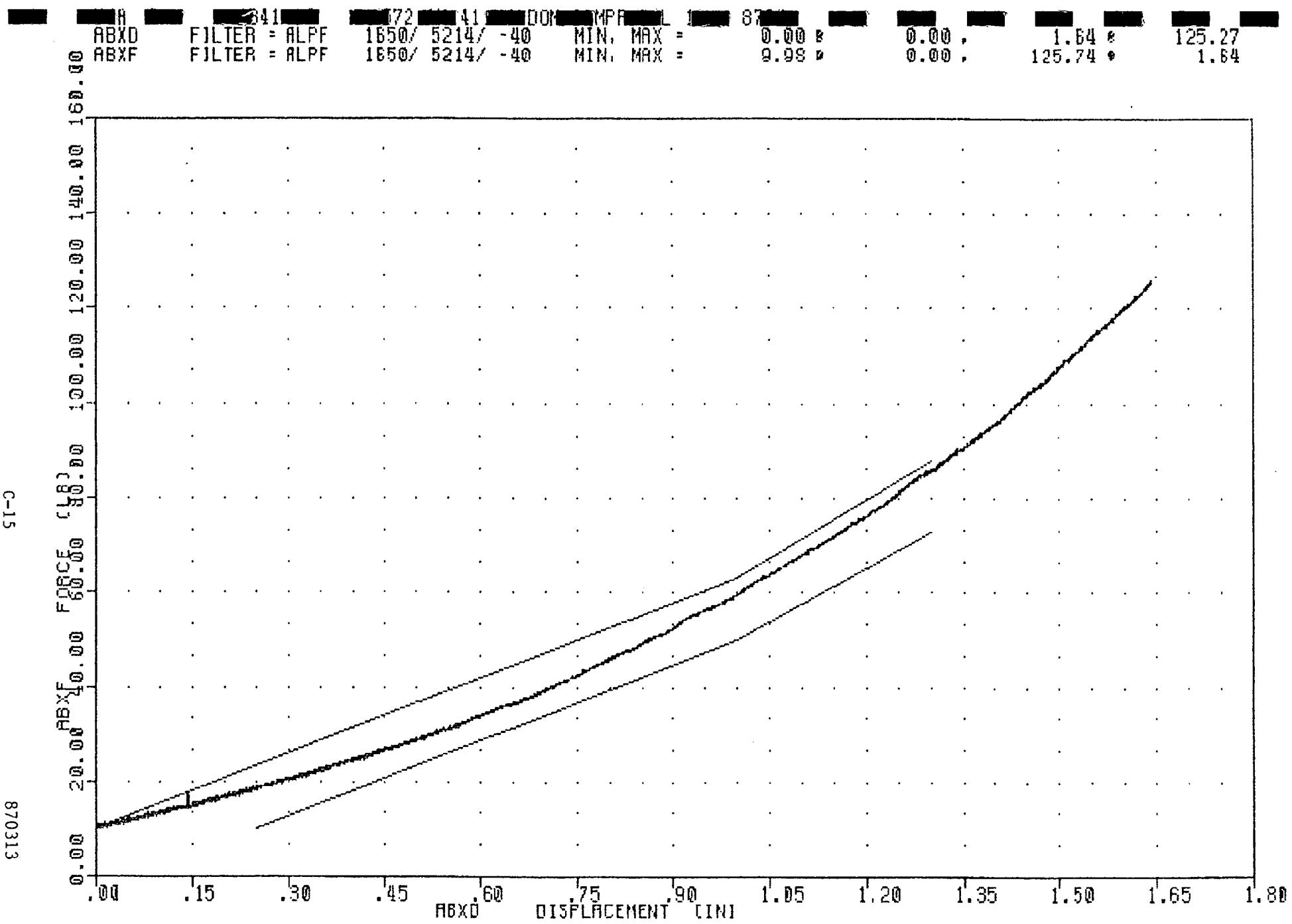
TEMPERATURE 71.00 F
NCA AB41113

RELATIVE HUMIDITY 27.00 %
572 SN 411 ABDOM COMPR CAL 13

TEST CORRIDORS DISPLACEMENT	FORCE	TEST RESULTS
0 IN.	10 LB	10 LB
.50 IN.	23.00 - 36.00 LB	28.83 LB
.75 IN.	36.00 - 50.00 LB	42.13 LB
1.00 IN.	50.00 - 63.00 LB	59.39 LB
1.30 IN.	73.00 - 88.00 LB	86.15 LB

DUMMY MEETS SPECIFICATIONS

TECHNICIAN 



ABDOMINAL COMPRESSION VS DISPLACEMENT

TRANSPORTATION RESEARCH CENTER OF OHIO

HEAD DROP TEST

PART 572 12-FEB-87

TEMPERATURE 71 F RELATIVE HUMIDITY 26 %
NCA HD41113 572 SN 411 HEAD DROP CAL 13

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PEAK RESULTANT ACCELERATION	210 - 260 G	252.99 G
TIME ABOVE 100 G LEVEL	0.9 - 1.5 MS	1.23 MS
PEAK LATERAL ACCELERATION	10 G MAX	4.64 G
IS ACCELERATION CURVE UNIMODAL?		YES

DUMMY MEETS SPECIFICATIONS

TECHNICIAN

TRANSPORTATION RESEARCH CENTER OF OHIO

NECK PENDULUM TEST

PART 572 16-FEB-87

TEMPERATURE 70.50 F RELATIVE HUMIDITY 14.00 %
NCA HN41113 572 SN 411 HEAD/NECK CAL 13

Test Parameter	Specification	Test Results
Pendulum velocity	21.5 to 25.5 fps	23.33 fps
Pendulum Deceleration:		
T1 - T2: 5 - 20 G	3 ms. max	2.36 ms.
T2 - T3: 20 - 20 G	25 - 30 ms.	27.96 ms.
T3 - T4: 20 - 5 G	10 ms. max	7.15 ms.
Avg. G level T2 - T3	20 - 24 G	23.88 G
Maximum Rotation Angle	63 - 73 deg.	64.49 deg.
Peak Head Resultant Accel	26 G max	22.90 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	1.25	0.00
30	25.6 - 34.4	2.1 - 3.1	32.23	2.53
60	40.3 - 51.7	4.3 - 5.3	51.35	4.97
max	53.2 - 66.8	5.0 - 6.0	63.38	5.37
60	67.0 - 83.0	4.3 - 5.3	73.26	4.98
30	85.4 - 104.6	2.1 - 3.1	93.67	2.37
0	101.0 - 123.0	-0.5 - +0.5	107.69	0.12

* DUMMY MEETS SPECIFICATIONS

TECHNICAN

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572 16-FEB-87

TEMPERATURE 71 F RELATIVE HUMIDITY 15 %
NCA TL41113 572 SN 411 L.S.THORAX CAL 13

TEST PARAMETER	LOW SPEED TEST SPECIFICATION	TEST RESULTS
PENDULUM VELOCITY	13.86-14.14 FT/SEC	13.97 FT/SEC
PEAK DEFLECTION	1.1 IN. max.	1.01 IN.
PEAK RESISTIVE FORCE	1,450. LB. max.	1349. LB.
INTERNAL HYSTERESIS	50% - 70%	58.9%

DUMMY MEETS SPECIFICATIONS

TECHNICIAN 

TRANSPORTATION RESEARCH CENTER OF OHIO

THORAX IMPACT TEST

PART 572 16-FEB-87

TEMPERATURE 70 F RELATIVE HUMIDITY 15 %
NCA TH41113 572 SN 411 H.S.THORAX CAL 13

TEST PARAMETER	HIGH SPEED TEST SPECIFICATION	TEST RESULTS
PENDULUM VELOCITY	21.78-22.22 FT/SEC	21.90 FT/SEC
PEAK DEFLECTION	1.7 IN. max.	1.55 IN.
PEAK RESISTIVE FORCE	2,250. LB. max.	2101. LB.
INTERNAL HYSTERESIS	50% - 70%	57.1%

DUMMY MEETS SPECIFICATIONS

TECHNICIAN 

TRANSPORTATION RESEARCH CENTER OF OHIO

KNEE IMPACT TEST

PART 572 17-FEB-87

TEMPERATURE 71 F RELATIVE HUMIDITY 17 %
LEFT KNEE
NCA LK41113 572 SN 411 L.KNEE IMP CAL 13

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.92 FT/SEC
PEAK KNEE IMPACT FORCE	1850 - 2500 LB.	1892.58 LB.
DURATION ABOVE 1000 LB.	>=1.7 MS.	1.91 MS.

DUMMY MEETS SPECIFICATIONS

TECHNICIAN 

TRANSPORTATION RESEARCH CENTER OF OHIO

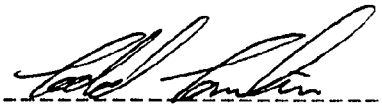
KNEE IMPACT TEST

PART 572 17-FEB-87

TEMPERATURE 71 F RELATIVE HUMIDITY 17 %
RIGHT KNEE
NCA RK41113 572 SN 411 R.KNEE IMP CAL 13

TEST PARAMETER	SPECIFICATION	TEST RESULTS
PROBE VELOCITY	6.76 - 7.04 FT/SEC	6.90 FT/SEC
PEAK KNEE IMPACT FORCE	1850 - 2500 LB.	2456.10 LB.
DURATION ABOVE 1000 LB.	>=1.7 MS.	1.75 MS.

DUMMY MEETS SPECIFICATIONS

TECHNICIAN 

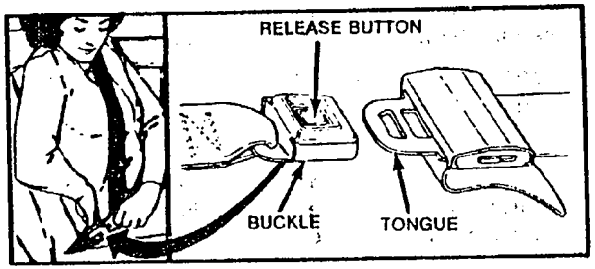
APPENDIX D

RESTRAINT INSTRUCTIONS FROM OWNER'S MANUAL

Front Lap-Shoulder Belts

The belt system allows freedom of movement, locking tight only on hard braking or impacts of approximately 5 mph (8 km/h) or more. The system cannot be made to lock by jerking on the belt.

After entering your vehicle, close the door and adjust the front seat to obtain the best position for your driving comfort, access to controls, and visibility. Then pull the lap-shoulder belt from the retractor so the shoulder portion of the belt crosses your shoulder and chest and insert the belt tongue into the proper buckle until you hear a snap and feel it latch.



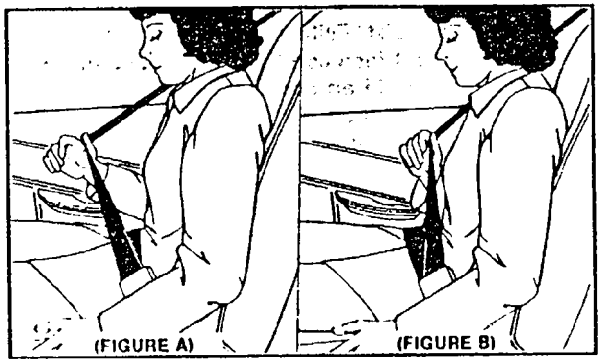
Pull up on the shoulder portion of the belt to tighten the lap portion to a snug fit. Be sure the belt is as low on your hips as possible. If the shoulder belt is uncomfortably tight, a comfort regulator is provided in the shoulder belt retractor to reduce belt pressure against your chest. The shoulder belt can be adjusted much like a window shade to maintain a small amount of slack in the belt. The adjacent door must be closed to use this comfort regulator feature.

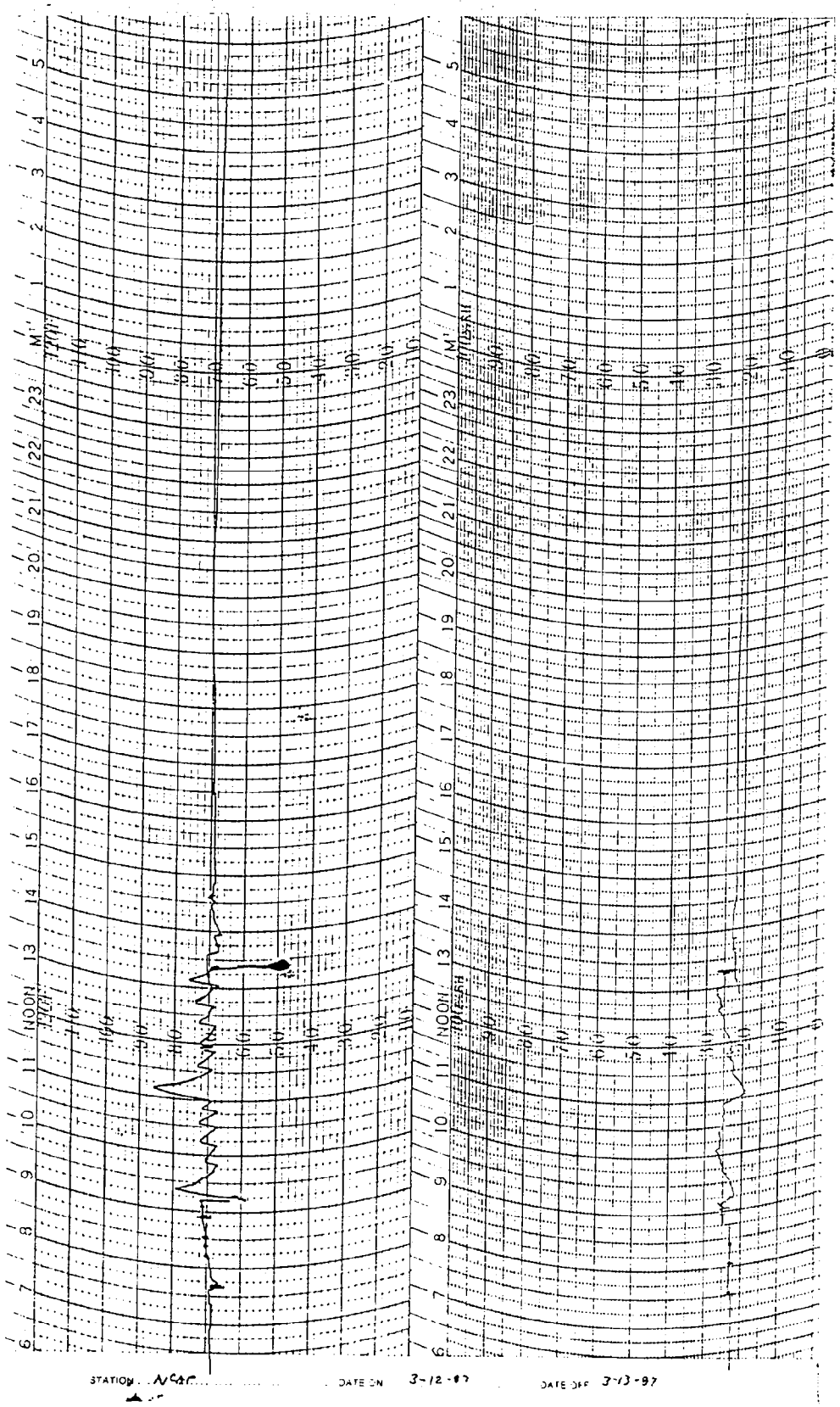
Adjustment Procedure

To set the comfort regulator, the shoulder belt initially should be positioned snug against the chest. If the belt is not snug, the comfort regulator may already be engaged. Disengagement is accomplished by the following procedure:

Figure A — Pull the shoulder belt outward 4 or 5 inches (10 to 13 cm), then release it and allow belt to fully retract. Repeat procedure if belt is not snug to the chest.

Figure B — Now the belt tension may be adjusted by pulling down **slightly** on the shoulder belt and releasing. The **least amount of slack** needed to relieve tension, but not more than 1 1/2 inches (3.8 cm), should be pulled out when using the comfort regulator system.

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