D010994

REPORT NO. CAL-86-N15

NEW CAR ASSESSMENT PROGRAM (NCAP)

FRONTAL BARRIER IMPACT TEST

FORD MOTOR COMPANY
1986 Ford Taurus
4-Door Sedan

NHTSA NO. MG0201

CALSPAN TEST NO. 7457-15

CALSPAN CORPORATION
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APRIL 23, 1986

FINAL REPORT

Prepared for:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF MARKET INCENTIVES
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NHTSA New Car Assessment Program (NCAP) Frontal Barrier Impact Test on 1986 Ford Taurus 4-Door Sedan to Indicant Requirements of FMVSS 212, 219 (Partial), and 301-75	April 23, 1986
	6. Performing Organization Code: CAL
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9. Performing Organization Name and Address: Calspan Advanced Technology Center, P.O. Box 400, Buffalo, NY 14225	10. Work Unit No.: 716-150-725
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12. Sponsoring Agency Name and Address: U. S. Department of Transportation, National Highway Traffic Safety Administration, Office of Vehicle Safety Compliance (NEF-30), 400 Seventh Street, S.W., Washington, DC 20590	13. Type of Report and Period Covered: April-May, 1986
	14. Sponsoring Agency Code: DOT/NHTSA/RM/OMI

15. Supplementary Notes

16. Abstract

A frontal load cell barrier test of a 1986 Ford Taurus 4-Door Sedan was performed at the Calspan Corporation, Advanced Technology Center crash test facility in Buffalo, New York, on April 23, 1986.

Impact speed was 35.0 mph, and the ambient temperature at the barrier face at the time of impact was 40 F. The maximum post-test vehicle crush was 21.9 inches.

The test vehicle appeared to comply with the indicant requirements of the following Federal Motor Vehicle Safety Standard.

1. FMVSS No. 212 "Windshield Mounting"
2. FMVSS No. 219 (Partial), "Windshield Zone Intrusion"
3. FMVSS No. 301-75, "Fuel System Integrity"

Type of Restraint System 3-point continuous webbing, manual system at each front outboard seating position.

17. Key Words	18. Distribution Statement
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	Copies of this report are available from: Technical Reference Division National Highway Traffic Safety Admin. Nassif Building, Room 5108 400 Seventh St., S.W., Washington, DC 20590

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Section 1
PURPOSE AND TEST PROCEDURE

This 35 mph frontal barrier impact test is part of the Composite FY 86 Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-84-D-01149. 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

SUMMARY OF TEST NUMBER MG0201

A load cell barrier consisting of 36 load cells was impacted by a 1986 Ford Taurus 4-Door Sedan at a velocity of 35.0 mph. The test was performed at the Calspan Corporation Advanced Technology Center on April 23, 1986. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by one real-time camera and 16 high-speed cameras. Camera locations and other pertinent camera information can be found in this report.

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

Both ATDs were fully instrumented with head and chest triaxial accelerometers and right/left femur load cells. Seat belt load cells were also on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. The driver ATD (Serial No. 320) and the right-front passenger ATD (Serial No. 1021) were certified prior to the test. Certification details, along with instrumentation calibration data, are found in Appendix C.

The 67 channels of data were recorded in six 14-channel FM tape recorders. Appendix B contains the vehicle, load cell barrier and dummy response data traces.

The driver's head struck the steering wheel rim and hub; the HIC was 1209.1. The maximum chest deceleration over 3 milliseconds was 53 g's and femur loads were 1485 and 824 pounds.

The right-front passenger HIC was 694.5 and maximum chest deceleration over 3 milliseconds was 37 g's. Femur loads were 502 and 566 pounds.

Table 1

GENERAL TEST AND VEHICLE DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1986 Ford Taurus 4-Door Sedan

NHTSA NO.: MG 0201 VIN.: 1FABP29U4GA116625

BODY COLOR: White DATE OF MANUFACTURE: January 1986

Engine: 6 cylinders; - C.I.D.; 3.0 Liters; - CC
x Gas; - Diesel; - Turbocharged
- Longitudinal; x Transverse

Transmission: 4 Speed - Manual; x Automatic; - Overdrive
Final Drive: x Front Wheel; - Rear Wheel; - Four Wheel

Date Received: 2-3-86 Odometer Reading: 18.0
- A/C; x P/S; x P/B; - P/wdo.; - Tilt Wheel
- P/seats; - Cruise Control

Type of Occupant Restraint: 3 Point Continous Belt

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): Front 35 psi, Rear 35 psi

Recommended Tire Size: P195-70R 14 M + S

Recommended Cold Tire Pressure: Front 35 psi, Rear 35 psi

Tires on Vehicle: P195-70R 14 M + S; Manufacturer: Firestone

Number of Occupants: 3 Front; 3 Rear; - 3rd Seat; 6 TOTAL

Type of Front Seats: - Bucket; x Bench; - Split Bench

Type of Front Seat Back: - Fixed; x Adj. With x Lever - Rot. Knot

Vehicle Capacity Weight (VCW) = 1100 lbs. (A)

No. of Occupants x 150 lbs. = 900 lbs. (B)

Rated Cargo and Luggage Weight (RCLW) A-B = 200 lbs.

GVWR 4550 lbs. GAWR: Front 2514 lbs. Rear 2071 lbs.

Table 1

GENERAL TEST AND VEHICLE PARAMETER DATA (cont'd)

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

Right Front = 960 lbs. Right Rear = 560 lbs.

Left Front = 990 lbs. Left Rear = 540 lbs.

TOTAL FRONT WEIGHT = 1950 lbs. (64 % of Total Vehicle Weight)

TOTAL REAR WEIGHT = 1100 lbs. (36 % of Total Vehicle Weight)

TOTAL DELIVERY WEIGHT = 3050 lbs.

CALCULATION FOR TARGET TEST WEIGHT:

UDW = Unloaded Delivered Weight (3050 lbs.)

VCW = Vehicle Capacity Weight (1100 lbs.)

DSC = Designated Seating Capacity (6)

RCLW = VCW - 150 (DSC) = 200 lbs.

Target Test Weight = UDW + RCLW + (2 dummies x 164 lbs./dummy)

Target Test Weight = 3578 lbs.

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 0 POUNDS CARGO:

Right Front = 1020 lbs. Right Rear = 710 lbs.

Left Front = 1050 lbs. Left Rear = 680 lbs.

TOTAL FRONT WEIGHT = 2070 lbs. (60 % of Total Vehicle Weight)

TOTAL REAR WEIGHT = 1390 lbs. (40 % of Total Vehicle Weight)

TOTAL TEST WEIGHT = 3460 lbs.

Weight of ballast secured in vehicle trunk area = 0 lbs.

VEHICLE ATTITUDE (all dimensions in inches):

Delivered Attitude: RF 27.5 LF 27.5 RR 25.9 LR 25.7

Test Attitude: RF 26.8 LF 27.1 RR 24.2 LR 24.1

Wheel Base: 106.1 in.; C.G. = 42.6 in. rearward of front wheel C/L

Remarks: _____

Table 1

GENERAL TEST AND VEHICLE PARAMETER DATA (cont'd)

POST-IMPACT DATA:

Type of Test: Frontal Barrier Impact Angle: 0 °

Date of Test: April 23, 1986 Time of Test: 12:10

Ambient Temperature: 40 °F at impact area

Temperature in Occupant Compartment: 72 °F.

Windshield Molding Temperature: 69 °F.

Required Impact Velocity Range: 34.5 to 35.5 mph

Impact Velocity: primary = 35.0 mph, secondary = 35.1 mph

Distance From Front Bumper to Barrier Face When Entering Speed Trap: 52 inches; Exiting Speed Trap: 12 inches

VEHICLE REBOUND AND CRUSH (inches):

Vehicle Length:	Pre-test	= R	184.3	C_L	189.3	L	184.7
	Post-test	= R	166.1	C_L	167.4	L	162.8
	Crush	= R	18.2	C_L	21.9	L	21.9

Distance from front of test vehicle to point of impact:

R 15.7 C/L 13.3 L 14.7

VISIBLE DUMMY CONTACT POINTS:

	Driver	Passenger
Head	Hub and Rim	No contact
Chest	No contact	No contact
Abdomen	No contact	No contact
Left Knee	Dash	Glove box
Right Knee	Dash	Glove box

Table 1

GENERAL TEST AND VEHICLE PARAMETER DATA (cont'd)

	Front		Rear	
	Left	Right	Left	Right
Door Opening	operable	operable	operable	operable

	Front	
Seat Movement	Left	Right
Seat Back Failure	None	None
Seat Shift (in.)	None	None

Section 3

SUMMARY OF RESULTS OF FMVSS NOS. 212, 219 AND 301-75

- "Windshield Mounting," FMVSS No. 212 Data
- "Windshield Zone Intrusion," FMVSS No. 219 (Partial) Data
- "Fuel System Integrity," FMVSS No. 301-75

Figure 1

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

DETAILS OF WINDSHIELD MOUNTING SUCH AS RETENTION METHOD, TRIM TYPE, ETC.:

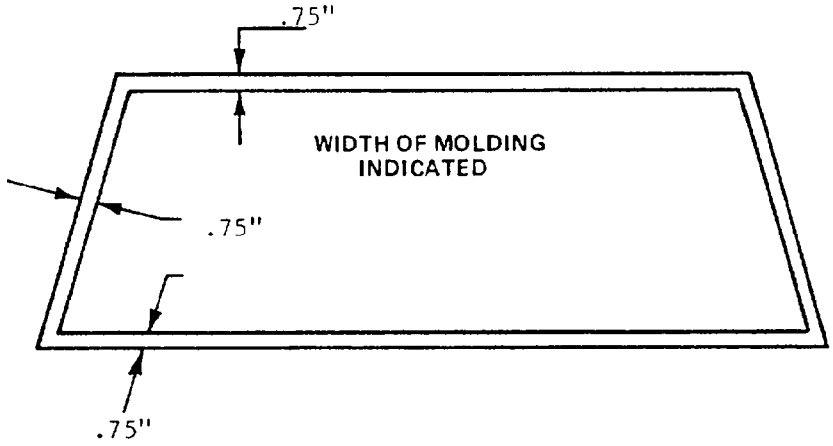
Windshield is glued in place and covered with .75" molding.

FMVSS 212 REQUIREMENTS: The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery mesurement 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 PREIPHERY		
	PRE-TEST (in.)	POST-TEST (in.)	PERCENT RETENTION
RIGHT SIDE	81.0	81.0	100%
LEFT SIDE	81.0	81.0	100%
TOTAL	162.0	162.0	100%

AREA OF RETENTION FAILURE:



FRONT VIEW

FAILURE DETAILS:

None

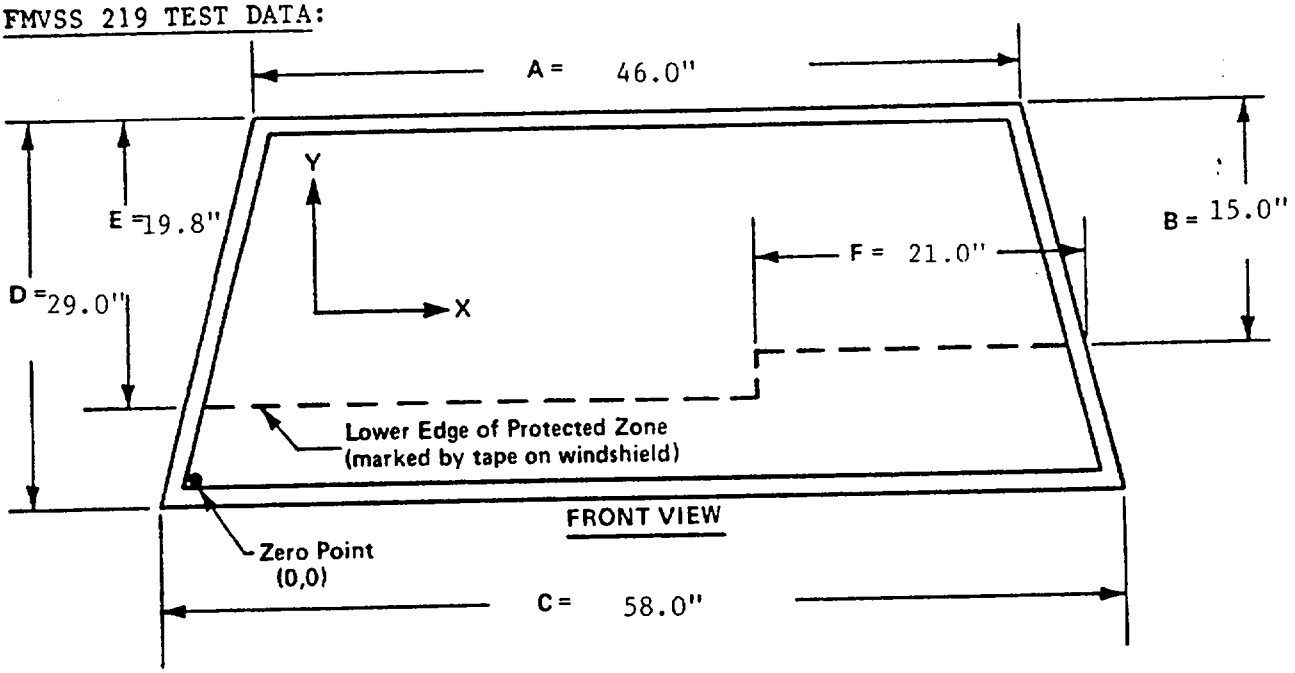
Figure 2

FMVSS NO. 219, (PARTIAL) "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. The locus of points is drawn on the inner surface of the windshield contacted 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 of this line onto the outer surface of the windshield.

FMVSS 219 TEST DATA:



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

None

	COORDINATES	
	X	Y
1.		
2.		
3.		
4.		

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Figure 3

FMVSS NO. 301-75, "FUEL SYSTEM INTEGRITY," DATA SHEETS

TEST VEHICLE NHTSA NO.: 716-150-725 ; TEST DATE: April 1986

VEHICLE MAKE/MODEL/BODY STYLE: Ford Taurus - 4 Door Sedan

USABLE CAPACITY OF VEHICLE'S FUEL TANK: 16 Gallons (figure furnished by vehicle manufacturer)

TEST REQUIREMENTS:

Test vehicle's engine operated to "run dry" condition, and then a small amount of Stoddard solvent which has been dyed purple shall be added to the vehicle's fuel tank. Operate the fuel pump enough to completely fill the fuel system ahead of the fuel tank, and add 92 to 94% of the stated USABLE CAPACITY to the fuel tank.

AMOUNT OF STODDARD SOLVENT ADDED TO VEHICLE'S FUEL TANK:

14.8 Gallons which is 93 % of the Stated USABLE CAPACITY.

SOLVENT SPILLAGE MEASUREMENT AFTER 35 MPH FRONTAL BARRIER IMPACT TEST:

	Actual	Maximum Allowable
From impact until vehicle motion ceases	0	1 oz.
For 5 min. period after vehicle motion ceases.	0	5 oz.
For next 25 minutes at barrier face.....	0	1 oz./1 minute

SOLVENT SPILLAGE DETAILS:

None

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

Time reqd. for machine to rotate 90° = 2 minutes, 58 seconds

FMVSS 301-75 Position Hold Time = 5 minutes, 0 seconds

TOTAL ..... = 7 minutes, 58 seconds

Next Whole Minute Interval.... = 8 minutes

Figure 3

FMVSS NO. 301-75 TEST DATA....Continued:

VEHICLE STATIC ROLLOVER DATA:

	First 5 Minutes FROM ONSET OF ROTATION	6th. Minute	7th. Minute	8th. Minute
Maximum Allowable Solvent Spillage.....	5 oz.	1 oz.	1 oz.	1 oz.
0 to 90° (filler cap down).	0	0	0	0
90 to 180°	0	0	0	0
180 to 270°.....	0	0	0	0
270 to 360°.....	0	0	0	0

SOLVENT SPILLAGE LOCATION(S):

None

Section 4

OMI FINAL DATA

Occupant and Vehicle Information

I. OMI DATA

1. Dummy Injury Criteria Data Summary
2. Dummy Positioning Data
3. Seat Belt Positioning Data
4. Seat Belt Performance Assessment Data
5. Driver Dummy to Steering Column Dimensions
6. Camera Locations
7. Vehicle Target Locations

II. OVR DATA

1. Load Cell Barrier Data
2. Vehicle Accelerometer Data

III. AID DATA

1. Test Vehicle Measurements
2. Accident Investigation Damage Data Summary

Table 2

DUMMY INJURY CRITERIA VALUES

	MAXIMUM ACCELERATION ("G")							
	HEAD				CHEST			
	X	Y	Z	R	X	Y	Z	R*
DUMMY (1)	-229	-104	176	297	-52	-24	-9	53
DUMMY (2)	55	31	61	65	-37	26	-8	37
DUMMY (3)								
DUMMY (4)								

	MAXIMUM FORCE - FEMUR LOAD (LBS)	
	RIGHT FEMUR	LEFT FEMUR
DUMMY (1)	1485	824
DUMMY (2)	502	566
DUMMY (3)		
DUMMY (4)		

	MAXIMUM FORCE - SEAT BELTS LOADS (LBS)		
	SHOULDER STRAP UPPER BELT LOAD	LAP STRAP RIGHT BELT LOAD	LAP STRAP LEFT BELT LOAD
DUMMY (1)	1836	-	876
DUMMY (2)	2134	1074	
DUMMY (3)			
DUMMY (4)			

	HEAD INJURY CRITERIA**			
	HIC	t_1 (SEC)	t_2 (SEC)	AVE. ACC. (g) t_1 TO t_2
DUMMY (1)	1209.1	.07695	.09135	93.2
DUMMY (2)	694.5	.06202	.12750	40.8
DUMMY (3)				
DUMMY (4)				

*DEFINED AS EXCEEDING 0.003 SEC. DURATION

**AS DEFINED IN FMVSS NO. 208

Figure 4

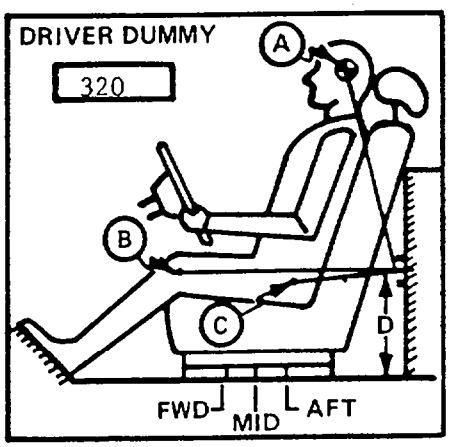
PART 572 DUMMY IN-VEHICLE POSITION

TEST NO.: MG0201 VEHICLE: 1986 Ford Taurus 4-Door Sedan

SEAT TYPE:
x Bench
____ Bucket
____ Split Bench

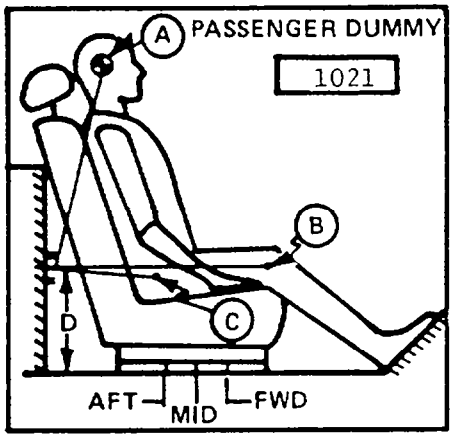
ADJUSTER TYPE:
x Manual
____ Power

BUCKET SEAT BACK TYPE:
see note Fixed
____ Adjustable Reclining

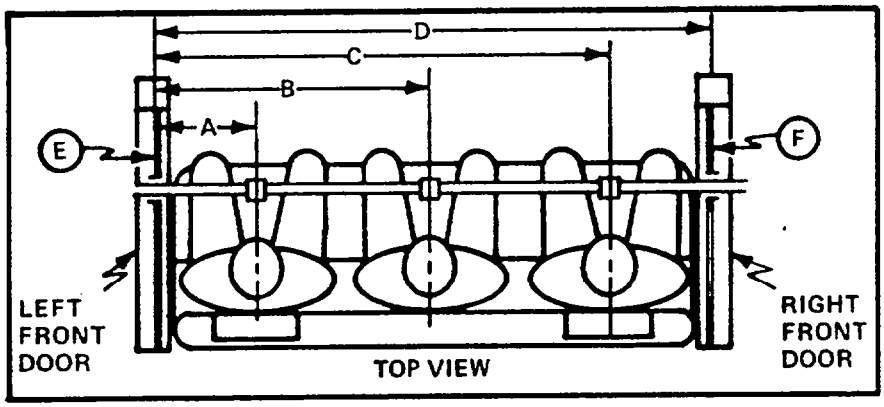


MEASUREMENT LOCATION

A - Head Target
B - Knee Joint
C - Approximate 'H' Point
D - Sill to Reference Point



A =	19.8	in.	0	Degrees	A =	20.6	in.	-2	Degrees
B =	22.4	in.	102	Degrees	B =	22.2	in.	101	Degrees
C =	8.3	in.	134	Degrees	C =	9.0	in.	135	Degrees
D =	13.8	in.			D =	13.8	in.		



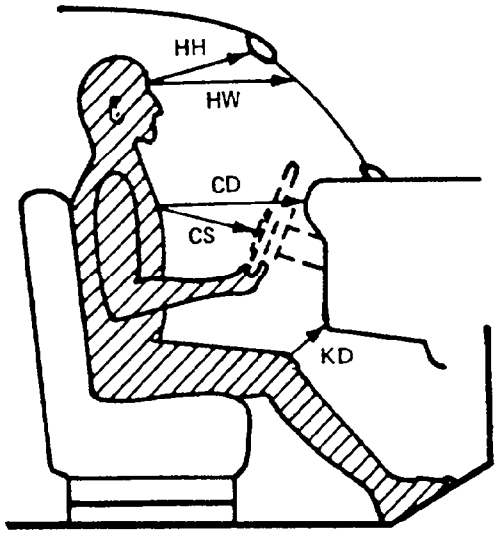
DUMMY ID	320	1021
A = Left Door to Driver Centerline	12.8 in.	
B = Left Door to Center Passenger Centerline	- in.	
C = Left Door to Right Passenger Centerline	41.2 in.	
D = Left Door to Right Door	54.0 in.	
E, F = Window Glass Height (Right and Left Must Be Equal)	11.0 in.	

Note: Driver's seat back is adjustable; passenger's seat back is fixed.

Figure 5

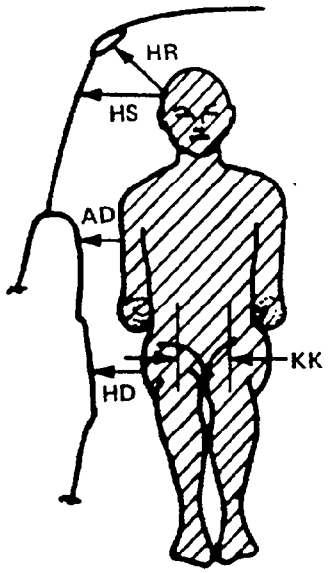
OCCUPANT CLEARANCE DIMENSIONS

	DRIVER	PASSENGER
HH	15.5	15.5
HW	20.5	20.0
CD	23.0	24.0
CS	14.5	--
KDL	6.4	8.2
KDR	5.5	8.7
SA	21.0	21.0
TA	20.0	20.0



HH = Head to Windshield Header
HW = Head to Windshield
CD = Chest to Dash
CS = Chest to Steering Wheel
KD(L/R)= Knee to Dash (Left/Right)
SA = Seat Back Angle
TA = Torso Angle

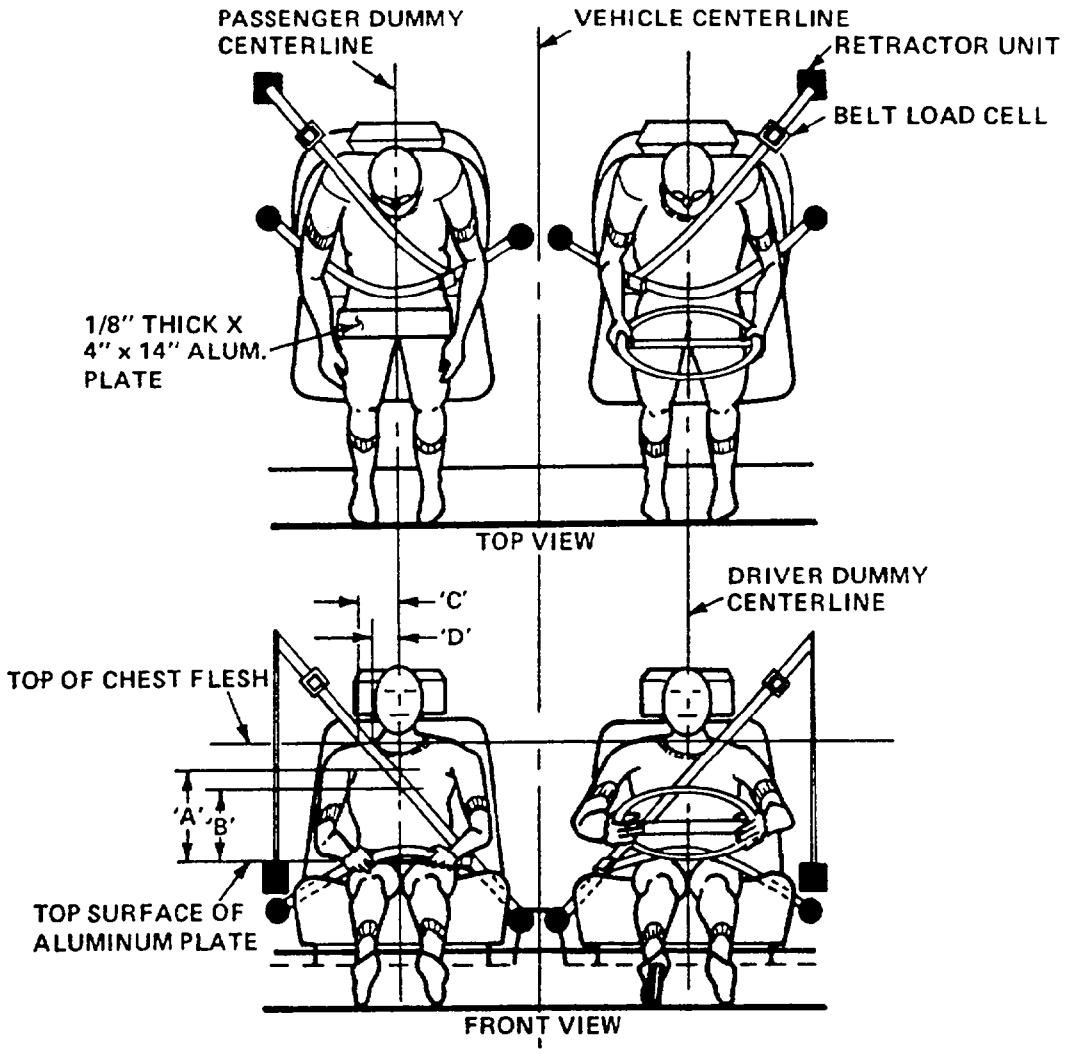
HR = Head to Side Roof
HS = Head to Side Window
AD = Arm to Door
HD = Hip to Door
KK = Knee to Knee



	DRIVER	PASSENGER
HR	5.5	5.9
HS	10.0	9.0
AD	4.6	5.0
HD	8.2	8.5
KK	9.5	8.0

Figure 6

SEAT BELT POSITIONING DATA



		DRIVER DUMMY (in.)	PASS. DUMMY (in.)
1.	Dimension 'A'--alum. plate to belt upper edge on dummy centerline.	13.4	13.2
2.	Dimension 'B'--alum. plate to belt lower edge on dummy centerline.	10.0	10.0
3.	Dimension 'C'--dummy centerline to outer edge at chest flesh top	6.5	7.0
4.	Dimension 'D'--dummy centerline to inner edge at chest flesh top	4.0	4.2
5.	Lap belt tension (lbs.)	0	0
6.	Shoulder belt tension (lbs.)	2#	2#

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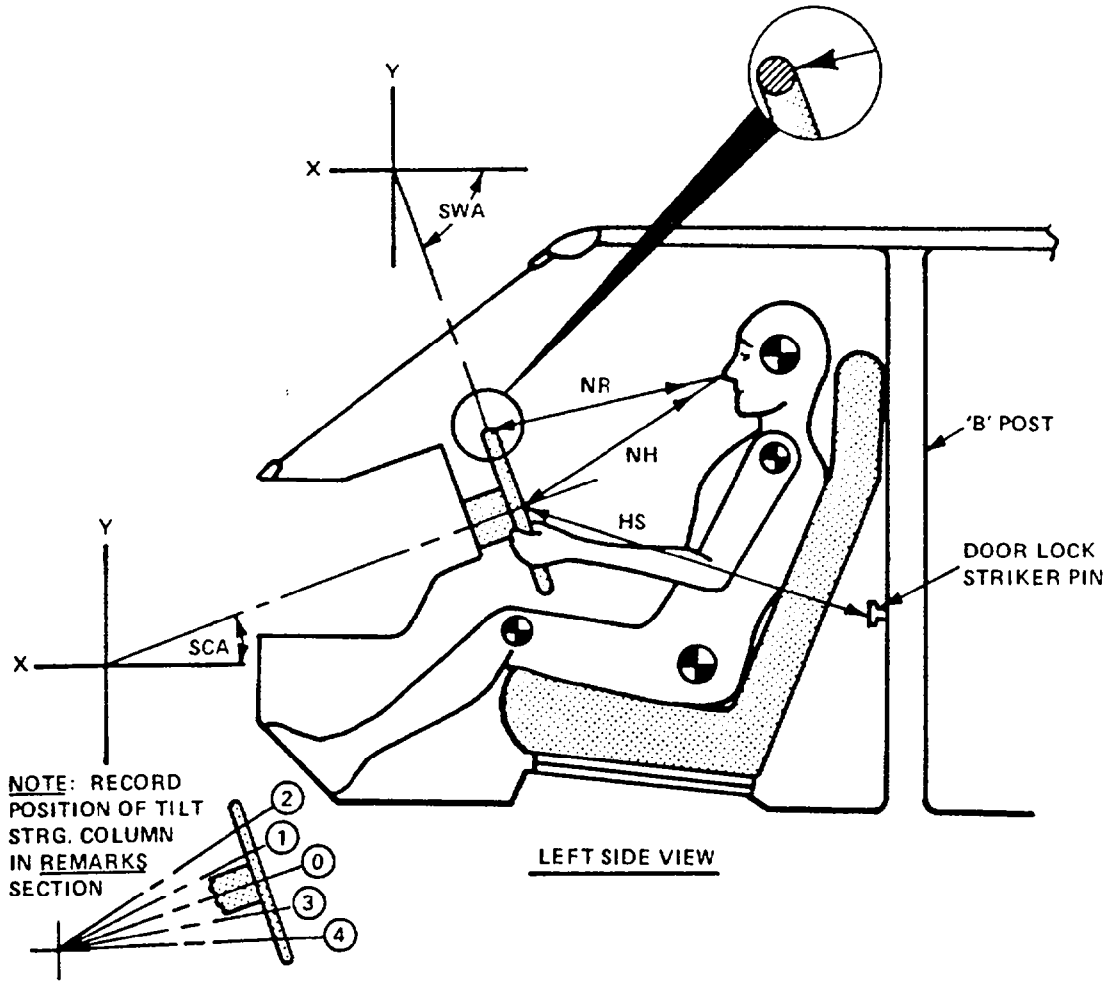
Table 3

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:	Driver	Passenger
Belt length from trim panel exit to bolt hole anchor point for continuous webbing systems.	66.0"	66.0"
Should belt length as measured on Part 572 Dummy.	31.0"	31.0"
Lap belt length as measured on Part 572 Dummy.	24.5"	24.5"
BELT SPOOL-OFF DATA:		
As determined by film analysis.	3.0"	3.0"
As determined mechanically.	2.4"	1.8"
As determined electronically.	2.4"	2.5"
BELT STRETCH DATA:		
Measured electronically between shoulder belt load cell and the "D" ring.	1.1"/foot	1.1"/foot
Measured Mechanically	0	0

Figure 7

DRIVER DUMMY TO STEERING COLUMN/WHEEL ASSY. REFERENCE DIMENSIONS



	MEASUREMENTS	
NR--Distance from tip of dummy's nose to top rear surface to steering wheel rim	19.5	Inches
NH--Distance from tip of dummy's nose to center of steering column hub	19.3	Inches
HS--Distance from center of steering column hub to the forward surface of the door lock striker pin	16=X 20.5=Y	Inches
SCA--Angle of steering column relative to the horizontal X axis	20	Degrees*
SWA--Angle of steering wheel relative to the horizontal X axis	-65	Degrees

REMARKS CONCERNING ADJUSTABLE OR TILT STEERING COLUMN IF VEHICLE IS SO EQUIPPED:

*Steering column is molded plastic

Figure 8

CAMERA POSITIONS FOR FRONTAL IMPACTS

NOTE: Camera Information Shown on Table 4

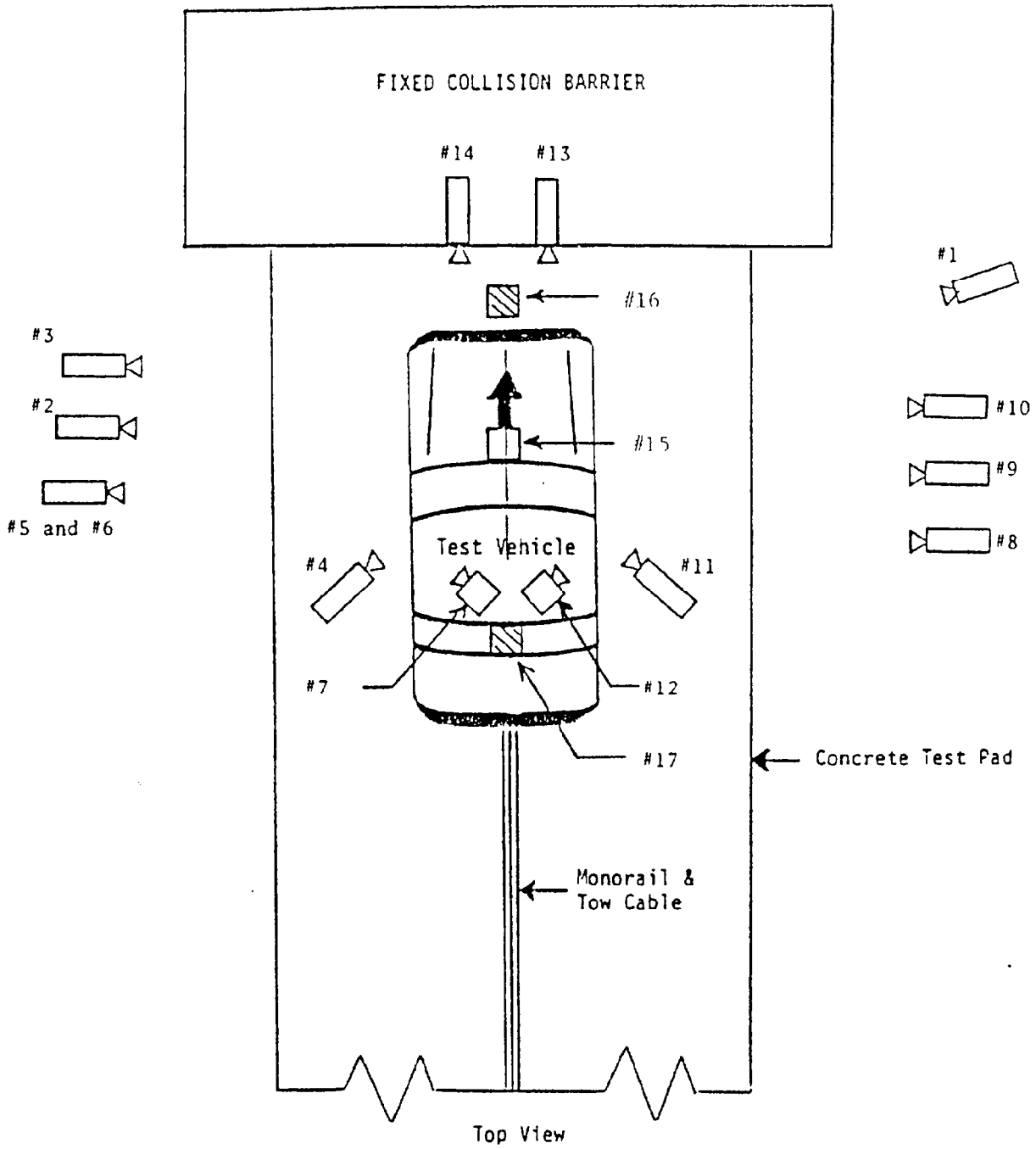


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Table

HIGH-SPEED CAMERA LOCATIONS

Test No. MG0201 Vehicle 1986 Ford Taurus 4-Door

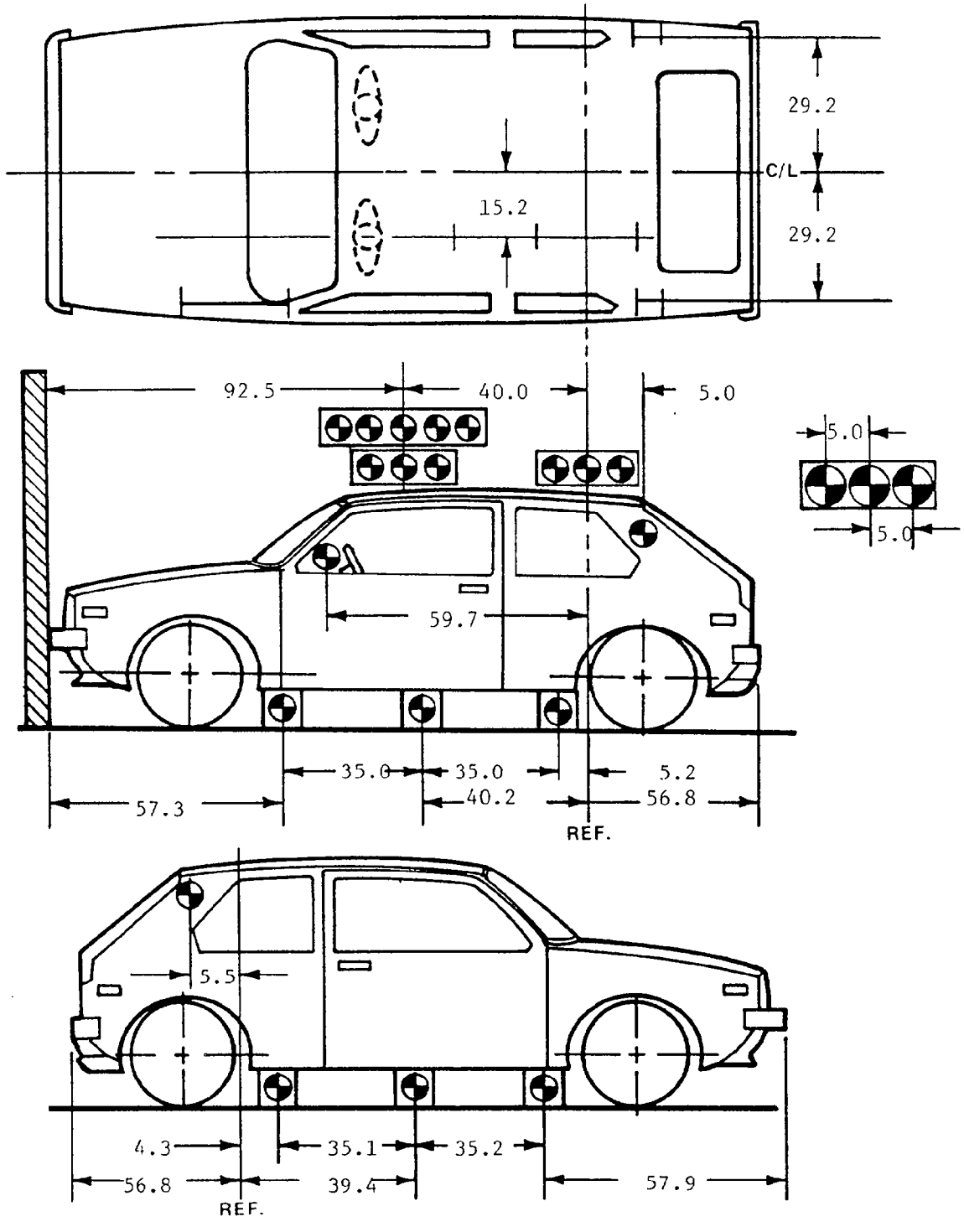
CAMERA NO.	VIEW	CAMERA POSITIONS (in)* X	Y	Z	ANGLE ** (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
1	Real-Time Camera	--	--	--	--	--	--	24
2	Overall Left Side	215	57	41	-5	--	13	540
3	Left Side View	205	37	50	-6	--	25	540
4	Driver and Interior View	101	124	70	-15	--	13	600
5	Steering Column (Bottom)	230	80	46	-5	213	25	550
6	Steering Column (Top)	230	80	70	-10	213	25	550 (1)
7	Left Belt	--	--	--	--	--	8	610 (1)
8	Overall Right Side	280	91	48	-6	--	13	810
9	Right Side View	270	79	47	-5	--	25	800
10	Right Passenger View	282	67	51	-4	265	35	770
11	Passenger and Interior View	101	124	72	-15	--	25	690
12	Right Belt	--	--	--	--	--	8	740 (1)
13	Passenger Front View	21	0	72	-38	103	13	560
14	Driver Front View	21	0	72	-38	103	13	620
15	Windshield View	0	0	126	-53	--	13	520
16	Pit View of Engine	0	36	-120	90	--	13	770
17	Pit View of Fuel Tank	0	130	-120	90	--	13	750

* X = film plane to monorail centerline
Y = film plane to impact location
Z = film plane to ground
** = referenced to horizontal plane

(1) Camera Speed is not recorded on film. Value is a nominal val

Figure 9

VEHICLE TARGET LOCATIONS



(DIMENSIONS IN INCHES)

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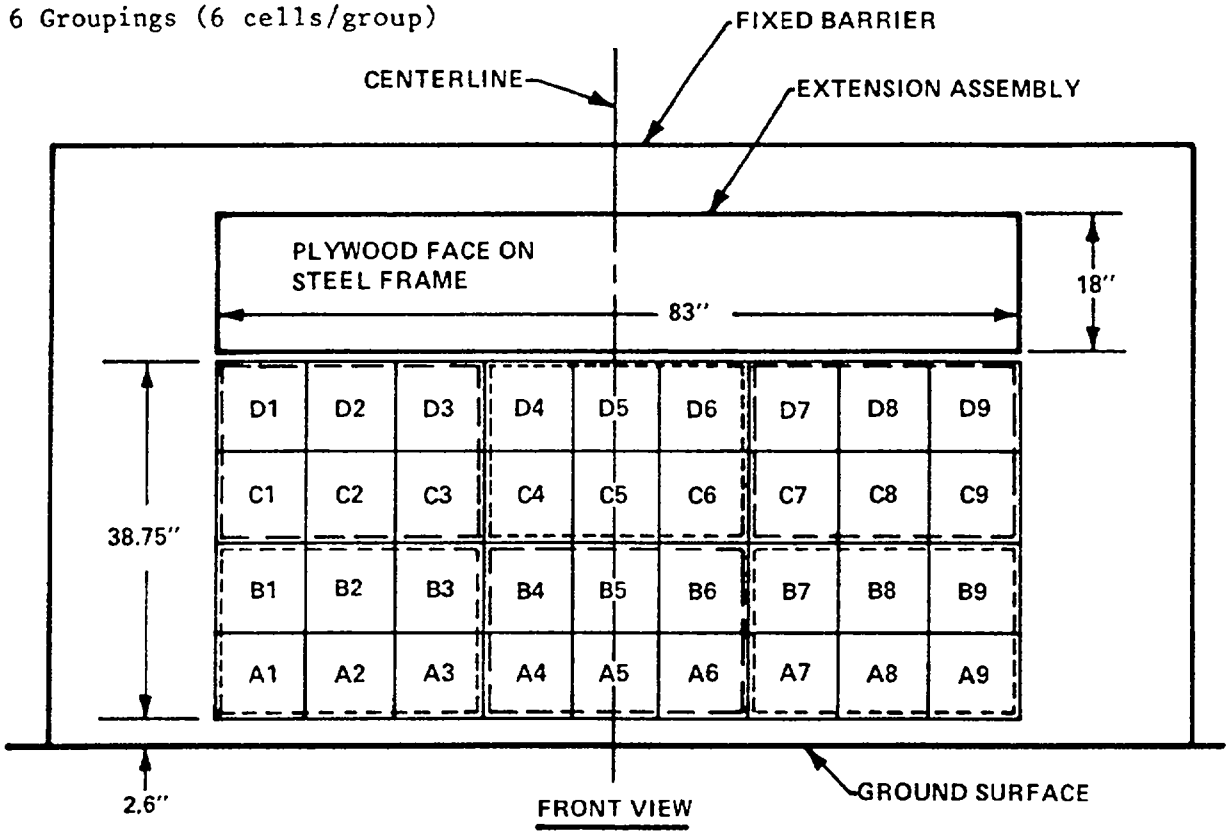
Figure 10

LOAD CELL LOCATIONS ON FIXED BARRIER

36 Load Cells
4 Rows
9 Columns
6 Groupings (6 cells/group)



6 GROUPS OF 6 LOAD CELLS EACH

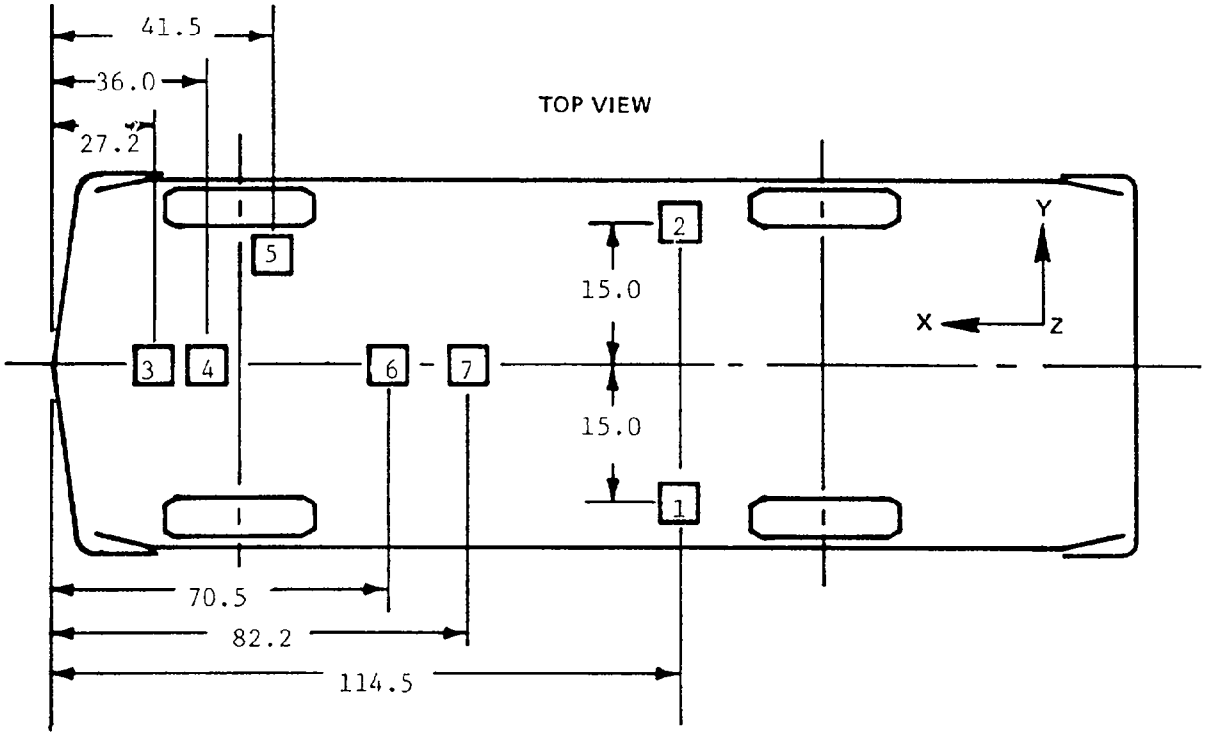
Group 4 C1 thru D3	Group 5 C4 thru D6	Group 6 C7 thru D9
Group 1 A1 thru B3	Group 2 A4 thru B6	Group 3 A7 thru B9

The following data is presented in Appendix B:

(1) Data from 36 individual load cells
(2) Total or Sum of 36 individual load cells
(3) Data from 6 Groupings shown above (6 cells/group)

Figure 11

VEHICLE ACCELEROMETER LOCATIONS



ACCELEROMETER NUMBER*	ACCELEROMETER LOCATION	DIRECTION		
		X	Y	Z
1	Left Rear Seat Crossmember	X		
2	Right Rear Seat Crossmember	X		
3	Top of Engine	X		
4	Bottom of Engine	X		
5	Right Disc Brake Caliper	X		
6	Instrument Panel	X		
7	Center of Gravity (C/G)	X		

*The accelerometer pack number can be correlated with the vehicle response data traces found in Appendix B.

Figure 12

TEST VEHICLE MEASUREMENTS

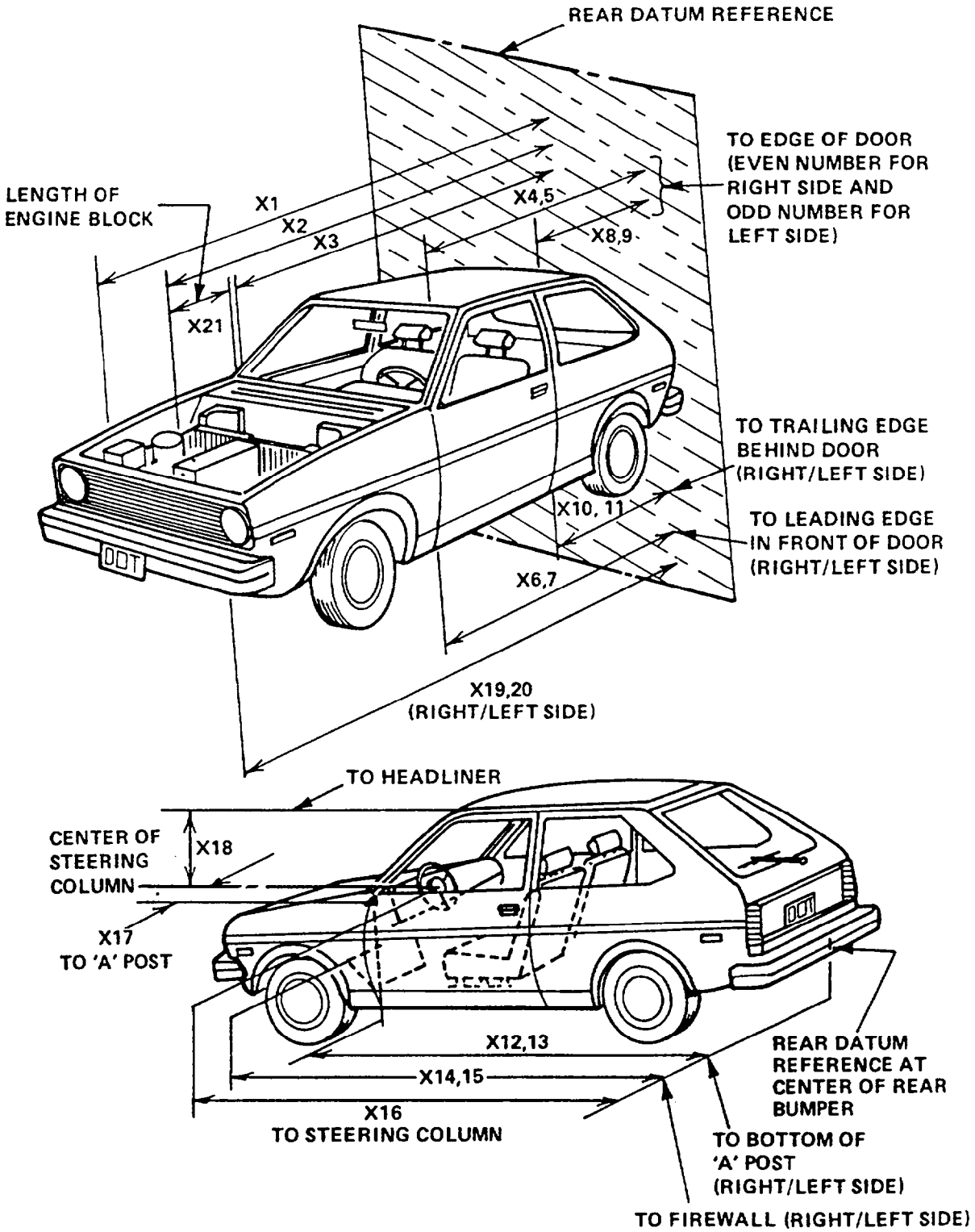


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Table

VEHICLE MEASUREMENTS

All Dimensions in Inches

No.		Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	189.3	167.4	21.9
X2	Rear Surface of Vehicle to Front of Engine	166.8	157.8	9.0
X3	Rear Surface of Vehicle to Firewall	142.4	139.9	2.5
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	129.6	128.9	.7
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	129.2	128.8	.4
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	127.7	127.2	.5
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	127.8	127.4	.4
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	87.5	87.0	.5
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	87.5	87.5	0
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	87.0	86.5	.5
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	86.9	86.7	.2
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	130.5	130.0	.5
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	130.0	130.0	0
X14	Rear Surface of Vehicle to Firewall, Right Side	137.3	132.0	5.3
X15	Rear Surface of Vehicle to Firewall, Left Side	137.5	134.2	3.3
X16	Rear Surface of Vehicle to Steering Column	111.7	111.0	.7
X17	Center of Steering Column to "A" Post	18.3	19.0	-.7
X18	Center of Steering Column to Headliner	14.5	14.0	.5
X19	Rear Surface of Vehicle to Right Side of Front Bumper	184.3	166.1	18.2
X20	Rear Surface of Vehicle to Left Side of Front Bumper	184.7	162.8	21.9
X21	Length of Engine Block	15.5	15.5	0

Note: Measurements are not done in the same location as Accident Investigation measurements. Therefore, measurements may not be equal.

Table 6

ACCIDENT INVESTIGATION DIVISION DATA
FOR 35 MPH FRONTAL BARRIER IMPACT

VEHICLE MAKE/MODEL/BODY STYLE: 1986 Ford Taurus 4-Door Sedan

VEH. NHTSA NO.: MG0201 ; VIN: 1FABP29U4GA116625

MODEL YEAR: 1986 ; BUILD DATE: 1-86 ; TEST DATE: April 23, 1986

VEH. SIZE CATEGORY: Mid-Size ; TEST WEIGHT: 3460

VEH. WHEELBASE: 106.1 ; FRONT OVERHANG: 39.6 ; OVERALL WIDTH: 70.4

ACCELEROMETER DATA:

LOCATION: 42.6 inches rearward of front wheel C/L

CALIBRATION PROCEDURE: Shaker Table/Least Squares

LINEARITY: ±0.75% ; INTEGRATION ALGORITHM: Hybrid Simpson-Newton 3/8

VEH. IMPACT SPEED: 35.0 ; TIME OF SEPARATION: 237.75 msec

VELOCITY CHANGE: 38.0

COLLISION DEFORMATION CLASSIFICATION (CDC) CODE:

F (Frontal) 12FDEW3

CRUSH DEPTH DIMENSIONS:

C1 = 17.9 inches

C2 = 19.9 inches

C3 = 20.9 inches

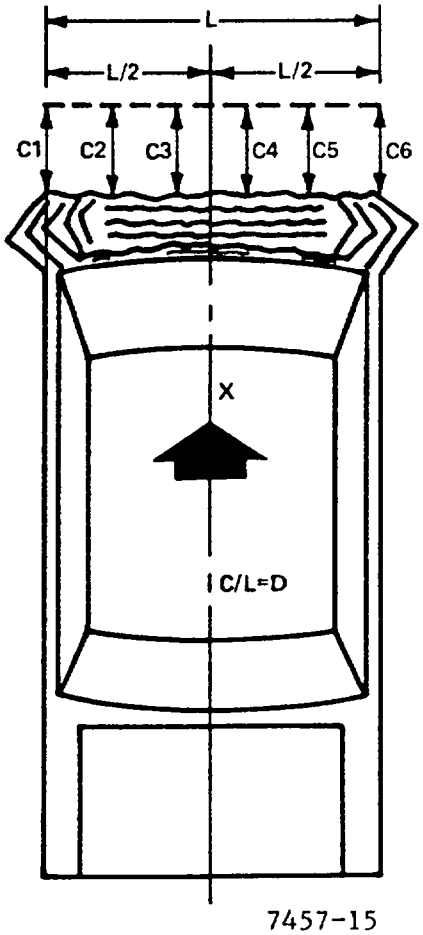
C4 = 21.8 inches

C5 = 21.8 inches

C6 = 21.8 inches

MIDPOINT OF DAMAGE: D = Vehicle Centerline (Longitud.)

LENGTH OF DAMAGED REGION: L = 60.3 inches



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National Accident Sampling System — Continuous Sampling Subsystem: Vehicle Data

FIELD MEASUREMENTS

NCI 1986 FORD TAURUS 1FABP29U4GA116625

Complete When Applicable

End Damage	Side Damage
Undeformed end width 60.3	Bowing: B1 _____ X1 _____
Corner shift: A1 _____	B2 _____ X2 _____
A2 _____	Bowing constant
End shift at frame (CDC) (check one)	$\frac{X1 + X2}{2}$ = _____
<4 inches _____	
≥4 inches _____	

Note: Measure C1 to C6 from Driver to Passenger side in Front or Rear impacts-
Rear to Front in Side impacts.

1 2 F D E W 3

Specific Impact Number	Plane* of C-Measurements	Direct Damage Width** (CDC)	Direct Damage Max*** Crush	Field L**	C_1	C_2	C_3	C_4	C_5	C_6	±D
1	Bumper	60.3	28.Ø	60.3	24.Ø	22.1	21.5	22.4	24.Ø	28.Ø	Ø
	Free/space		6.2		6.1	2.2	.6	.6	2.2	6.2	
1	Actual Crush	60.3	26.8	60.3	17.9	19.9	20.9	21.8	21.8	21.8	Ø

*Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, at beltline, etc.) or label adjustments (e.g., free space).

Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

**Measure and document on the vehicle diagram the beginning or end of the direct damage width and field L (e.g., side damage with respect to undamaged axle.)

***Measure and document on the vehicle diagram the location of the maximum crush.

Note: Use as many lines/columns as necessary to describe each damage profile.

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V.N.

DAMAGE DESCRIPTION

Tire—Wheel Damage

a. Rotation physically restricted

RF 2	
LF 2	
RR 2	
LR 2	

b. Tire deflated

RF 2	
LF 2	
RR 2	
LR 2	

(1) Yes, (2) No, (8) NA, (9) Unk.

TYPE OF TRANSMISSION

___Manual X Automatic

Average Track: ____
Maximum Width: ____
Test ~~Curb~~ Weight: ____
Overall Length: 189.3
Wheel Base: 106.0
Engine Size: cyl. V-6
displ. 3.0L

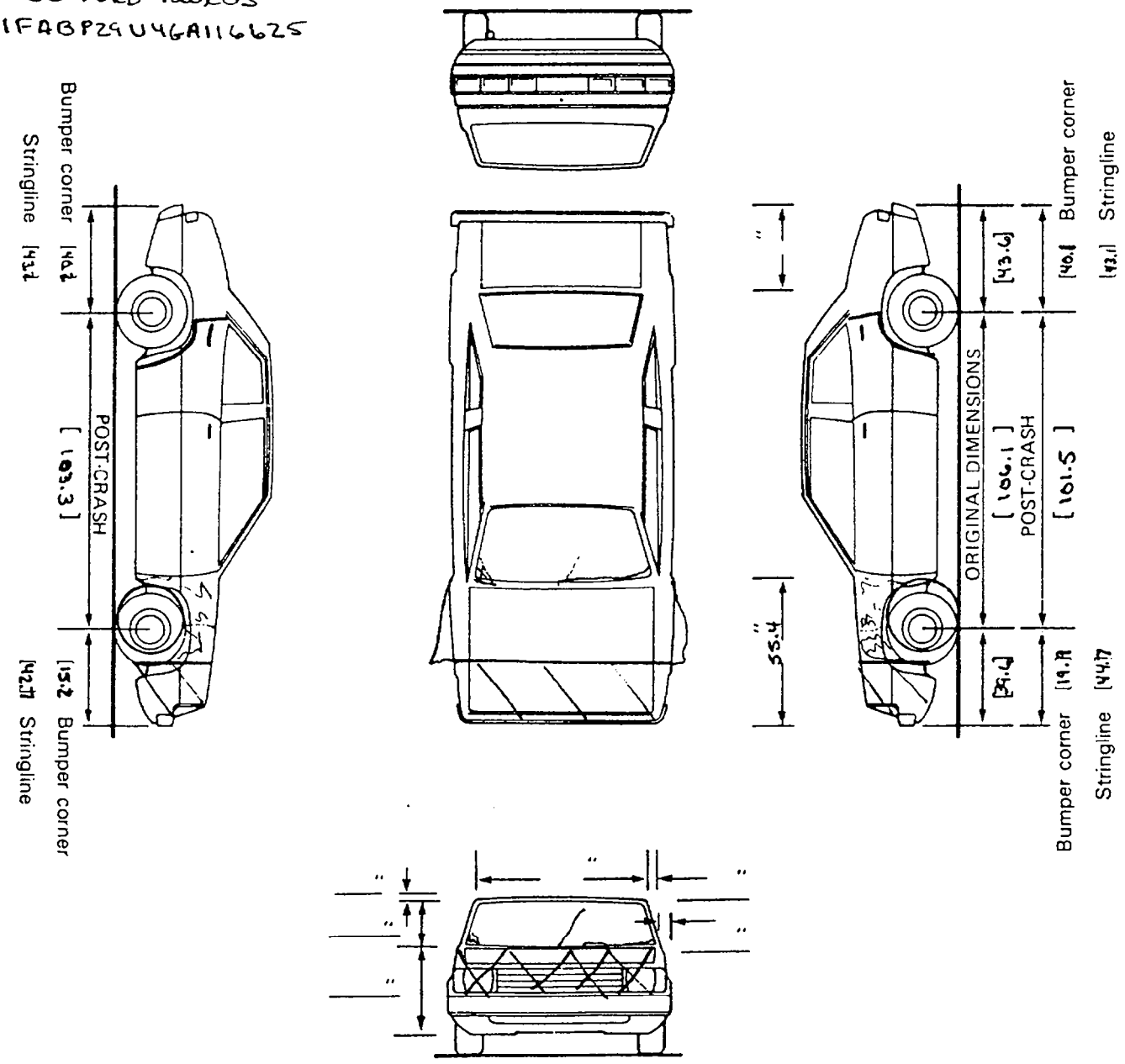
WHEEL STEER ANGLES

(For locked front wheels or displaced rear axles only)

RF ± N/A °
LF ± ° °
RR ± ° °
LR ± ° °

Within ± 5 degrees

1986 Ford Taurus
1FABP29U46A116625



Note Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewall, etc.)
If pulling trailer sketch type of trailer and damage received on the back of this page.
Annotate any damage caused by extrication such as component removal by torching, prying or hydraulic shears
If the vehicle contacted a pedestrian, complete page 6R

APPENDIX A

PHOTOGRAPHS

Figure A-1 PRE-TEST FRONT VIEW

Figure A-2 POST-TEST FRONT VIEW

Figure A-3 PRE-TEST LEFT SIDE VIEW

Figure A-4 POST-TEST LEFT SIDE VIEW

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A-6

7457-15

Figure A-5 PRE-TEST RIGHT SIDE VIEW

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Figure A-6 POST-TEST RIGHT SIDE VIEW

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

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A-9

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

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

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

Figure A-11 POST-TEST TOP VIEW

Figure A-12 PRE-TEST WINDSHIELD VIEW

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A-14

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Figure A-13 POST-TEST WINDSHIELD VIEW

Figure A-14 PRE-TEST ENGINE COMPARTMENT VIEW

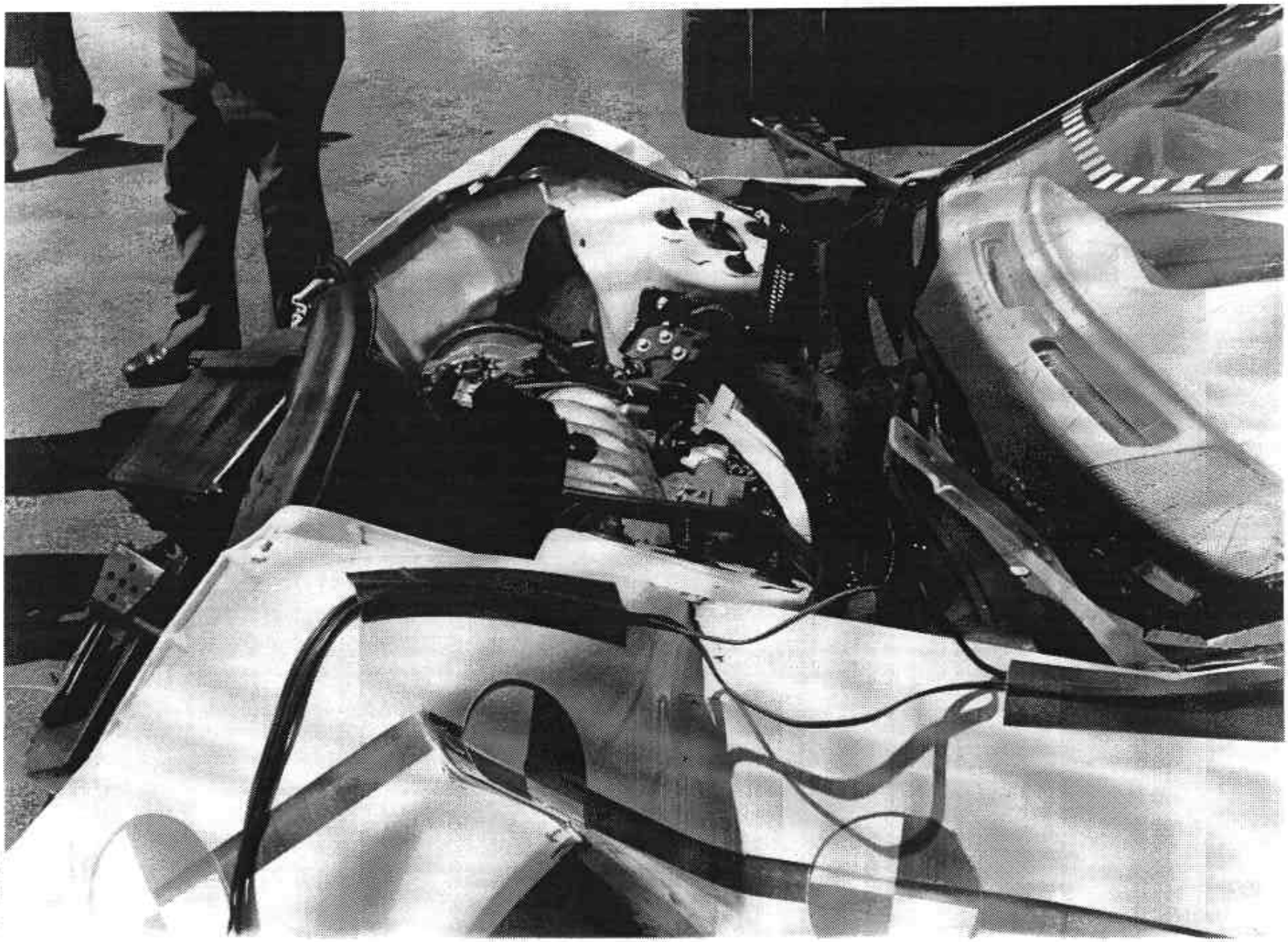
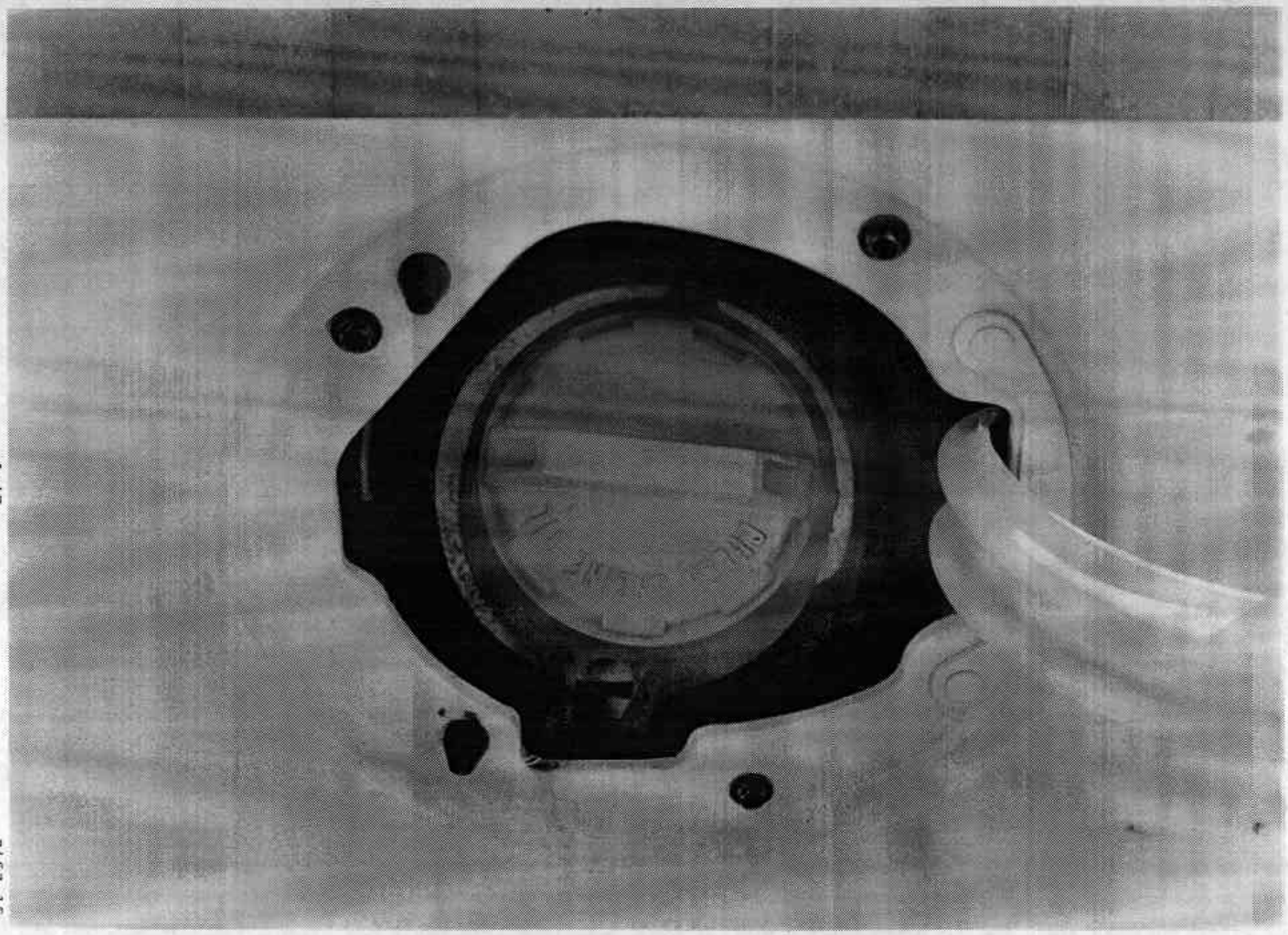


Figure A-15 POST-TEST ENGINE COMPARTMENT VIEW



A-17

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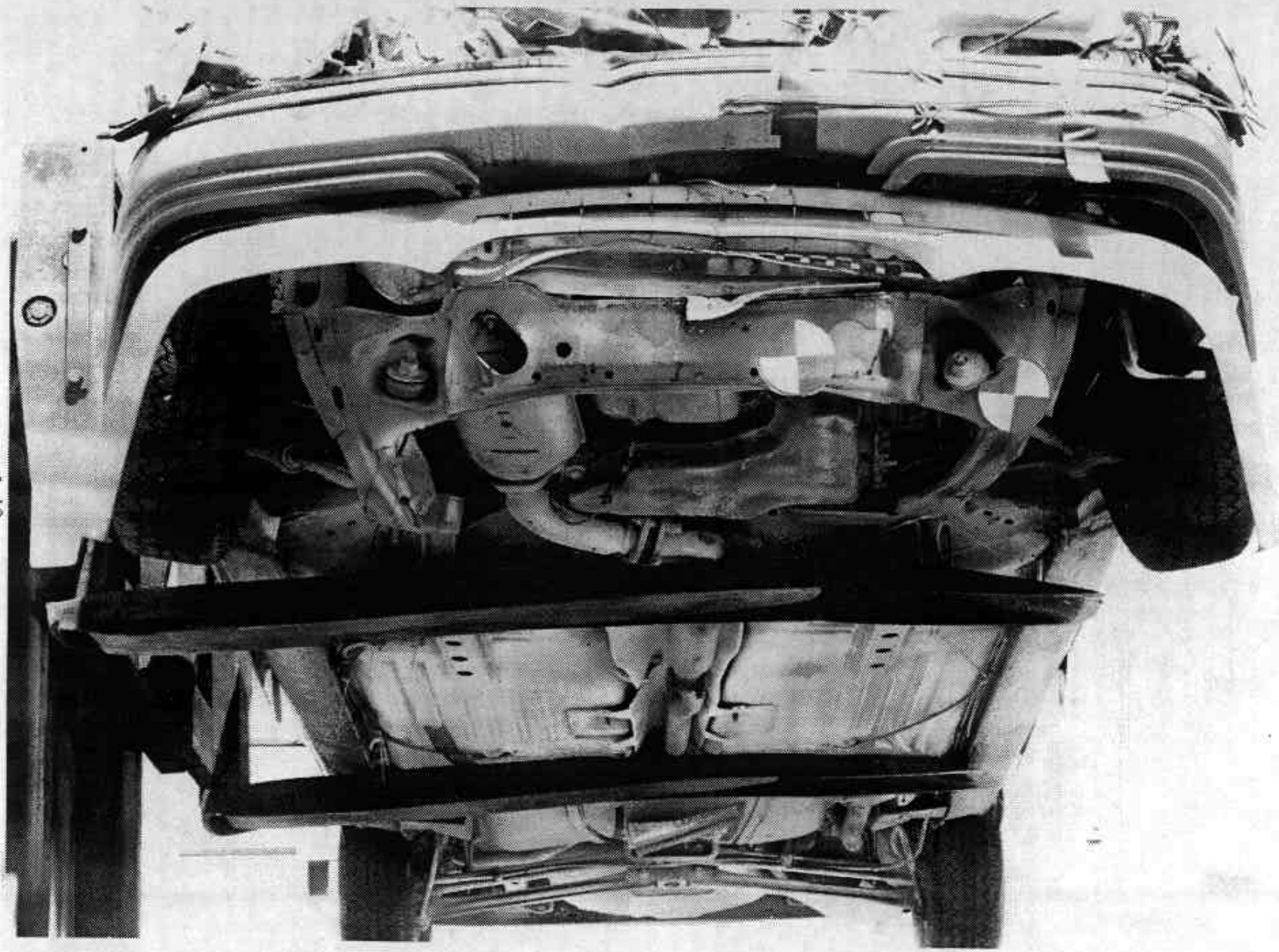
Figure A-16 PRE-TEST FUEL FILTER CAP VIEW

Figure A-17 PRE-TEST FRONT UNDERBODY VIEW



A-19

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Figure A-18 POST-TEST FRONT UNDERBODY VIEW

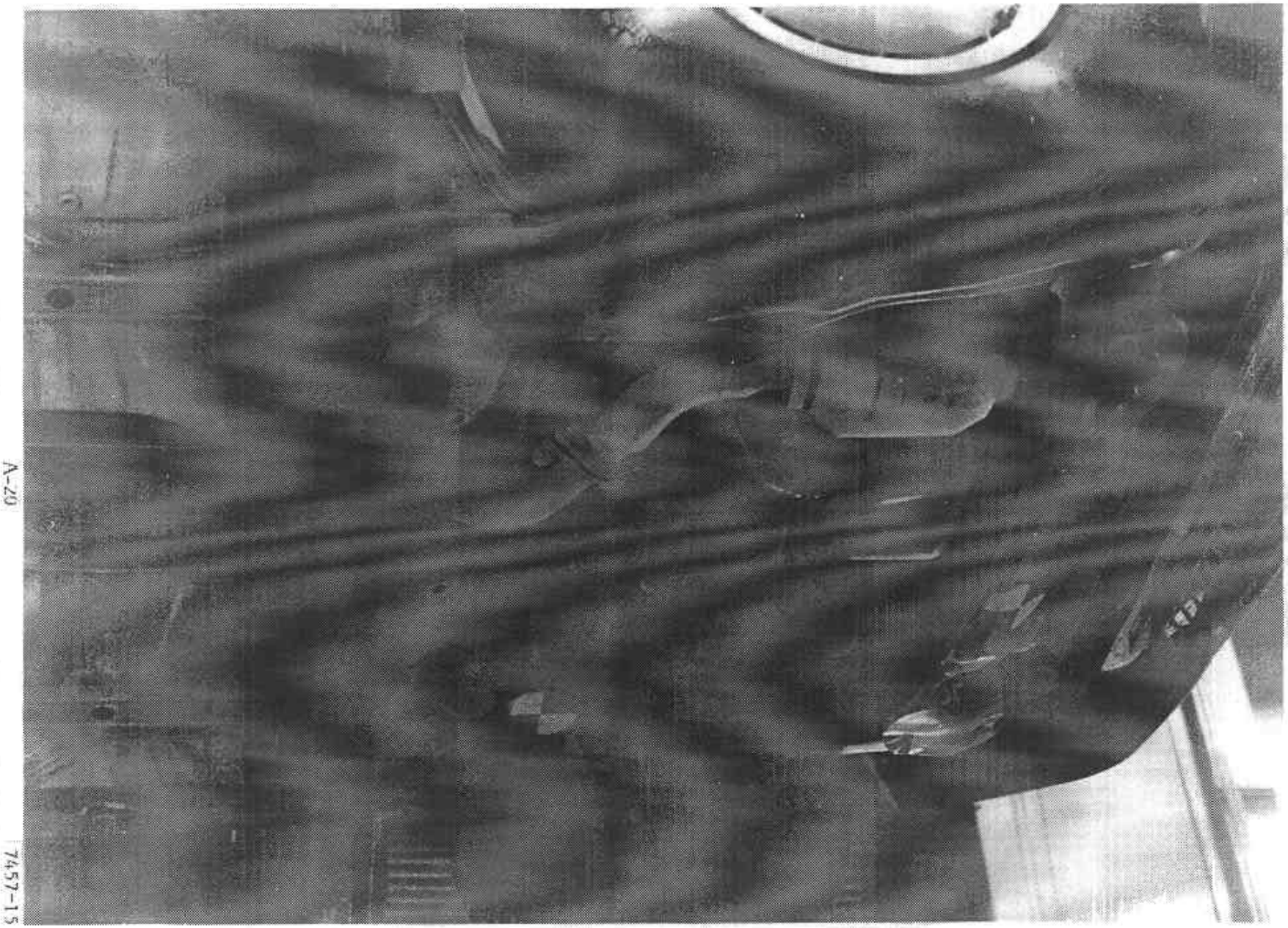

Figure A-19 PRE-TEST FRONT-SIDE UNDERBODY VIEW

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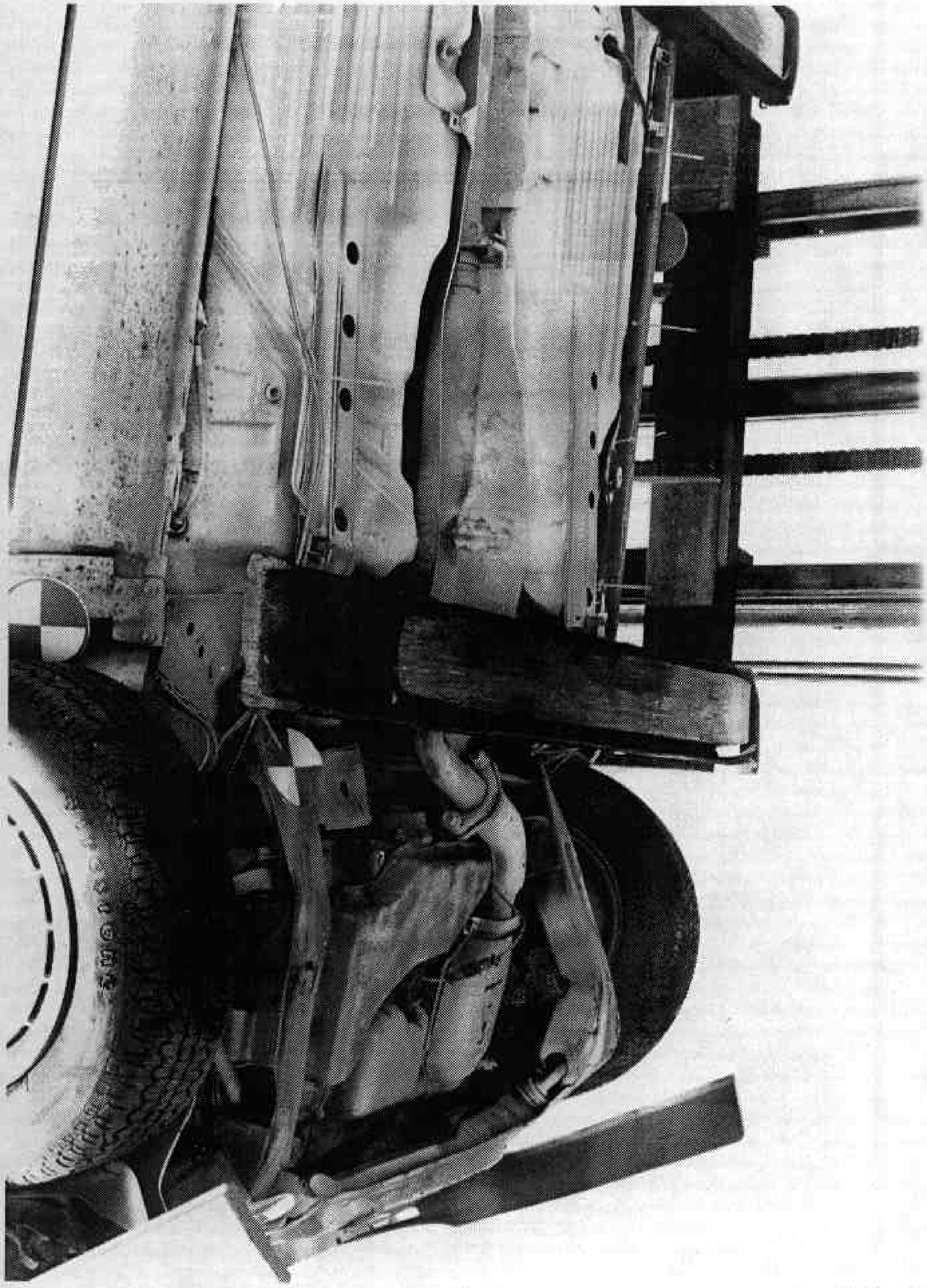

Figure A-20 POST-TEST FRONT-SIDE UNDERBODY VIEW

Figure A-21. PRE-TEST REAR UNDERBODY VIEW

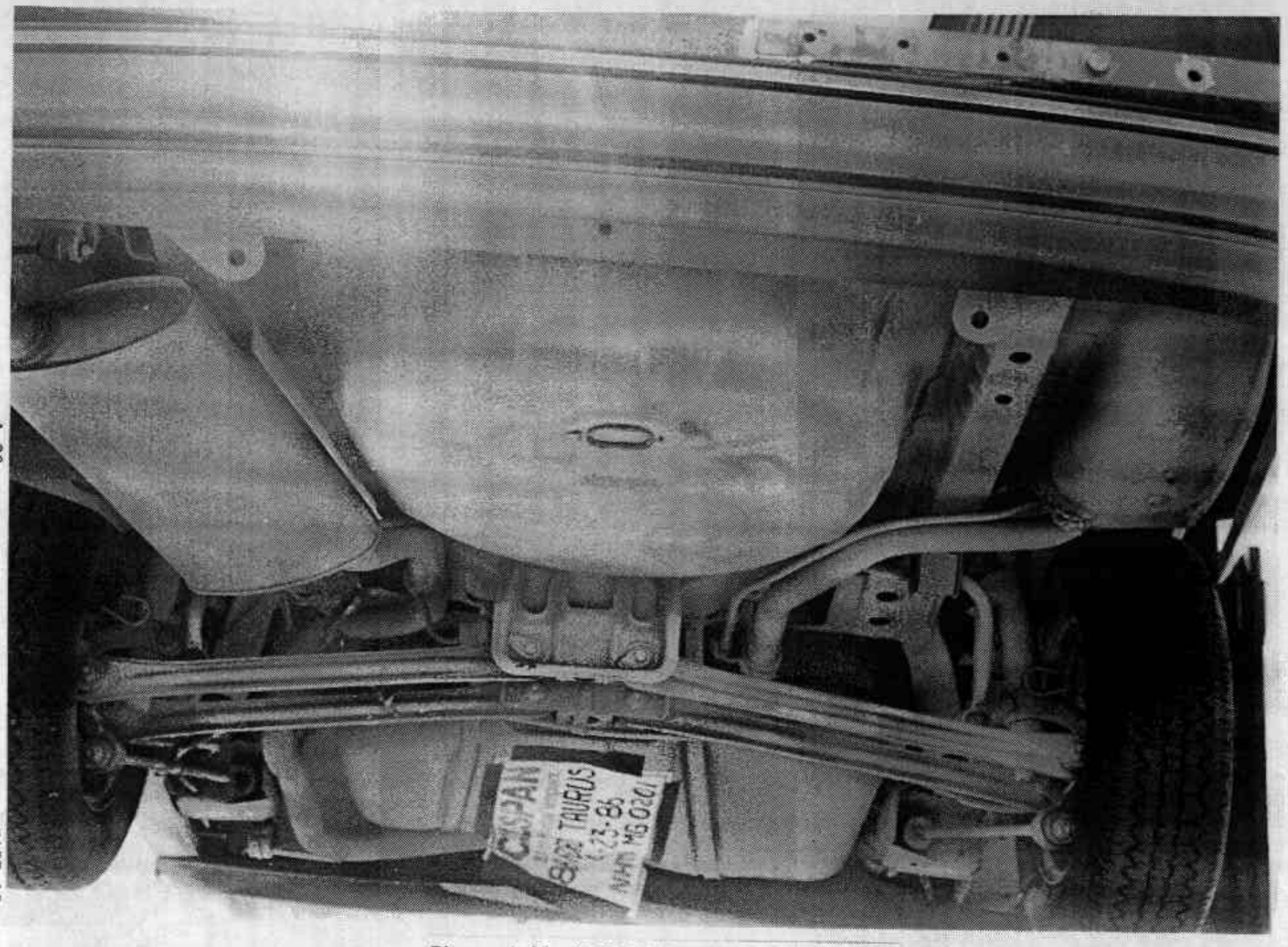

Figure A-22 POST-TEST REAR UNDERBODY VIEW

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Figure A-23 PRE-TEST DRIVER POSITION VIEW

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A-25

7457-15

Figure A-24 POST-TEST DRIVER POSITION VIEW

Figure A-25 PRE-TEST PASSENGER POSITION VIEW

A-27

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Figure A-26 POST-TEST PASSENGER POSITION VIEW

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Figure A-27 PRE-TEST DRIVER AND INTERIOR VIEW

A-29

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Figure A-28 POST-TEST DRIVER AND INTERIOR VIEW

Figure A-29 PRE-TEST PASSENGER AND ITNERIOR VIEW

74571-15

Figure A-30 POST-TEST PASSENGER AND INTERIOR VIEW

APPENDIX B

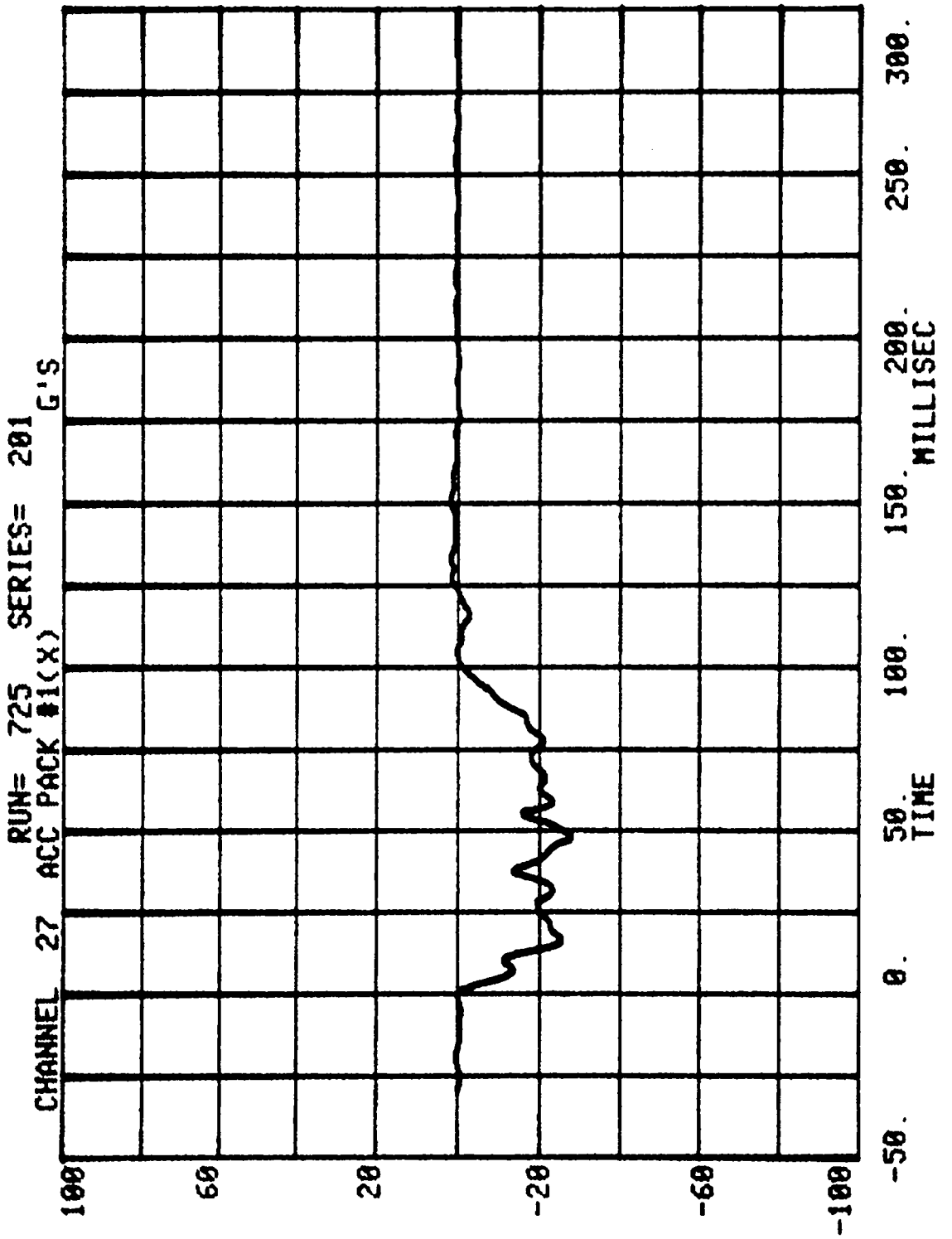
VEHICLE, DUMMY RESPONSE DATA AND LOAD CELL BARRIER DATA

Test No. MG0201

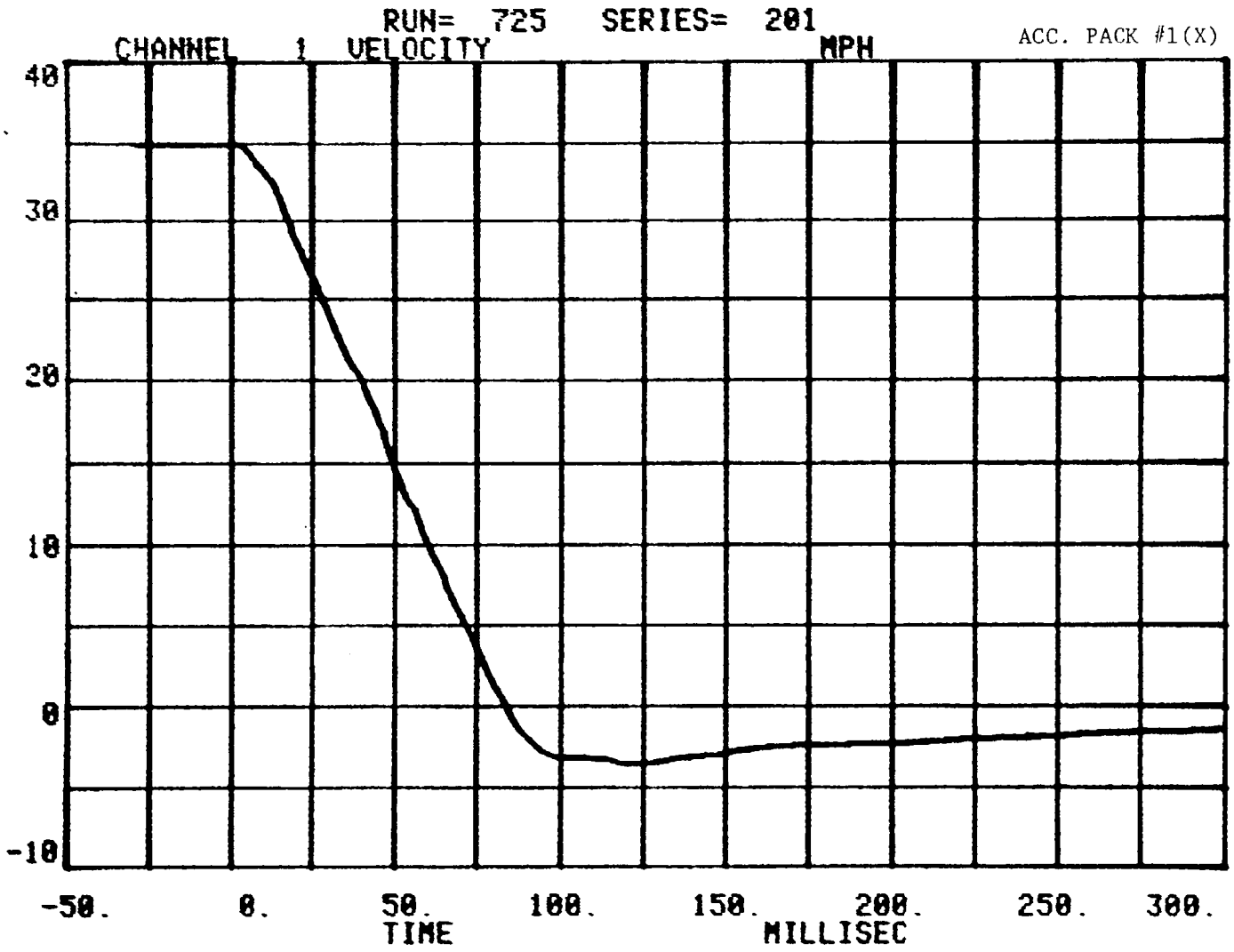
VEHICLE DATA

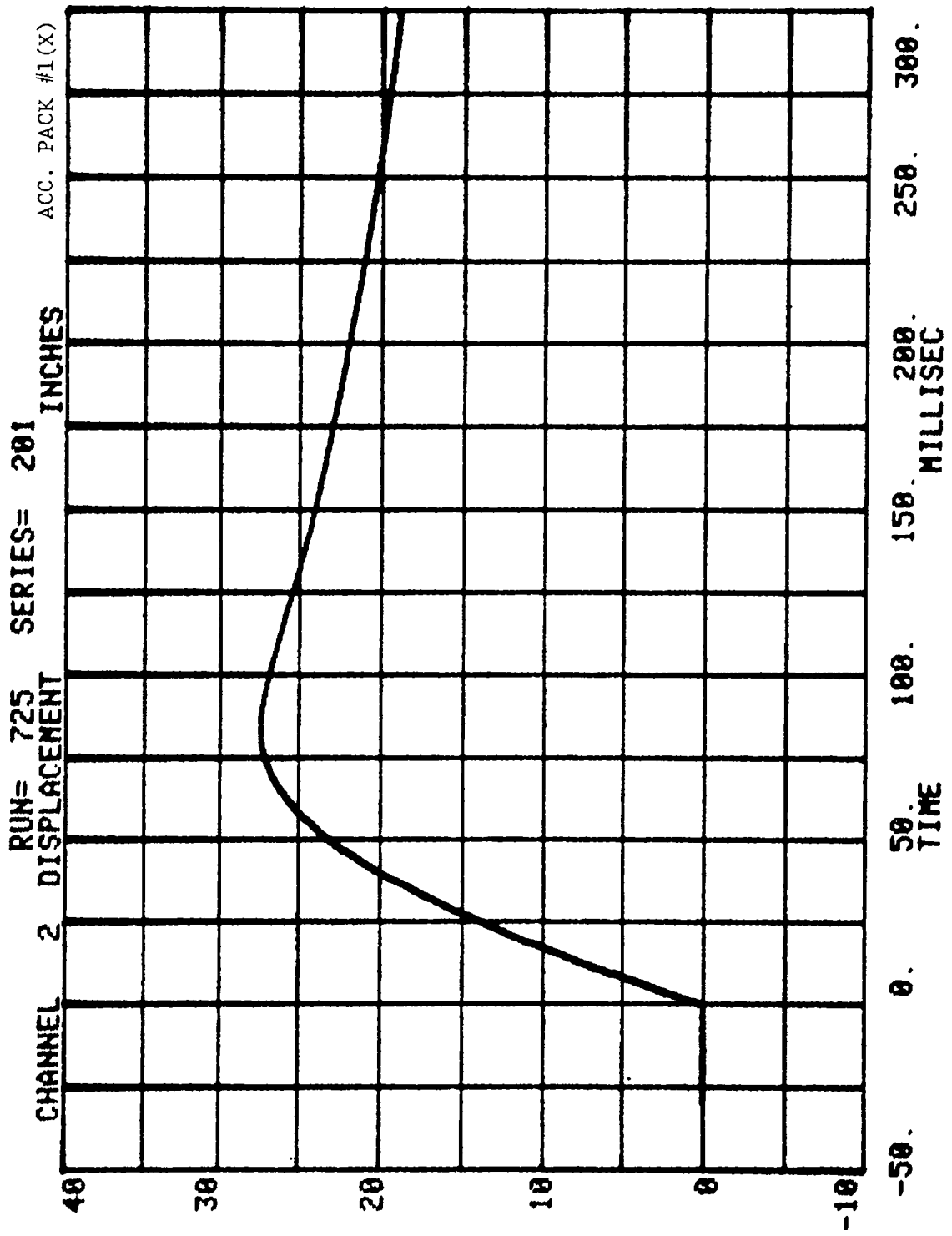
FILTER CHANNEL CLASS

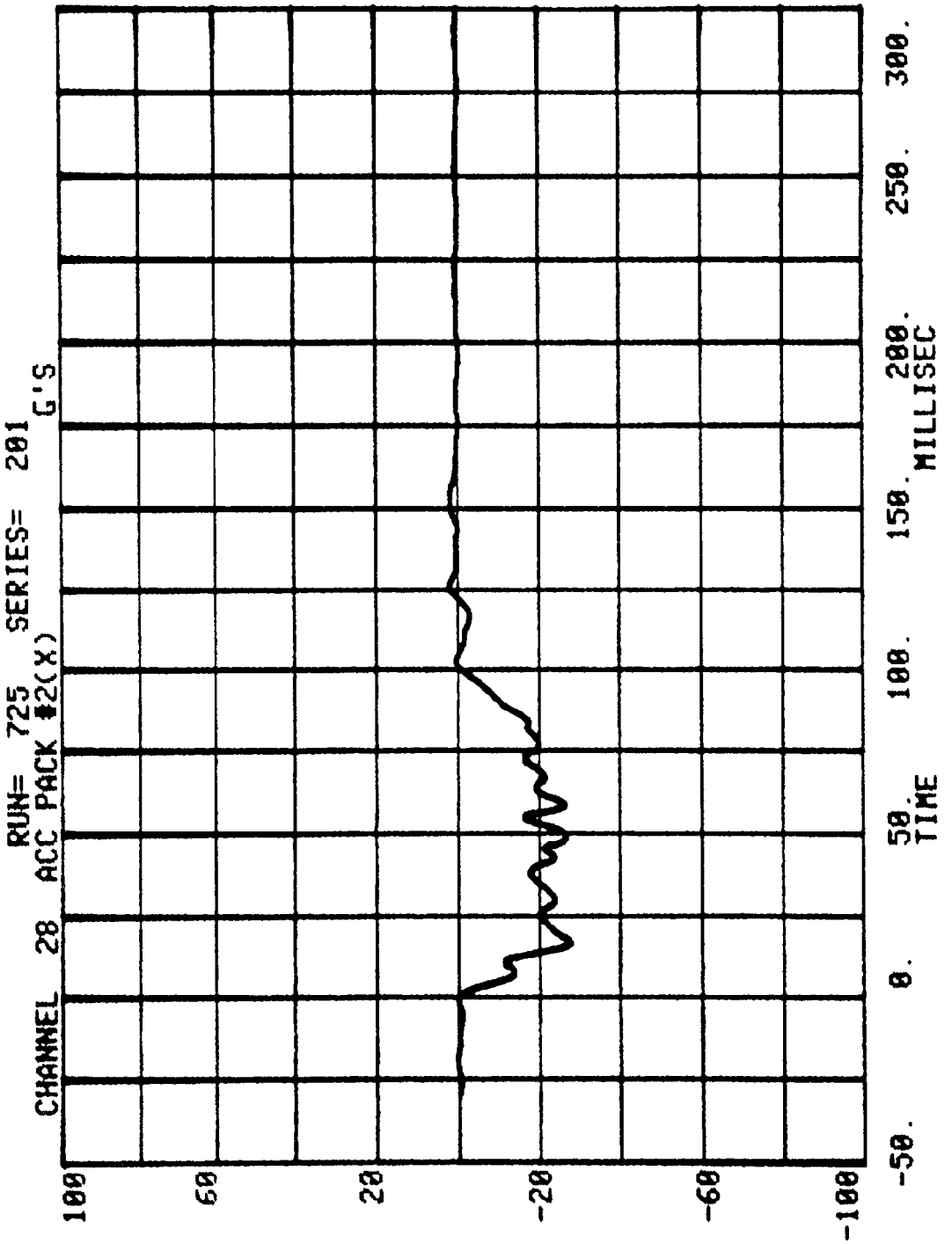
60


CHANNEL 27 ACC PACK #1(X)
RUN= 725 SERIES= 201
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


RUN= 725 SERIES= 201
CHANNEL 1 VELOCITY
MPH
ACC. PACK #1(X)
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


ACC. PACK #1(X)
CHANNEL 2 DISPLACEMENT
RUN= 725 SERIES= 201
INCHES
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 28 ACC PACK #2(X)
RUN= 725 SERIES= 201
G'S
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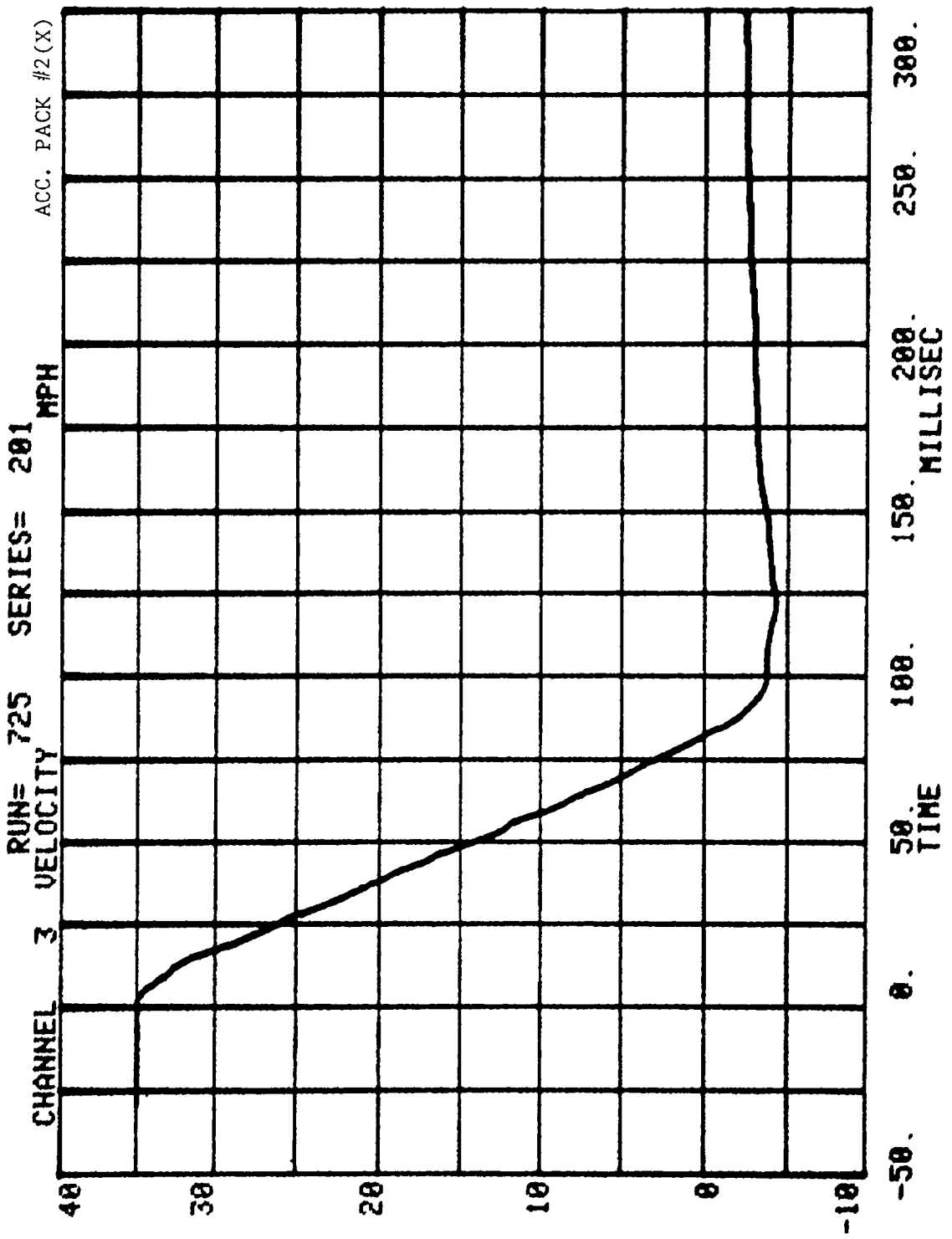
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


ACC. PACK #2(X)
CHANNEL 3 VELOCITY
RUN= 725 SERIES= 201
MPH
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30
20
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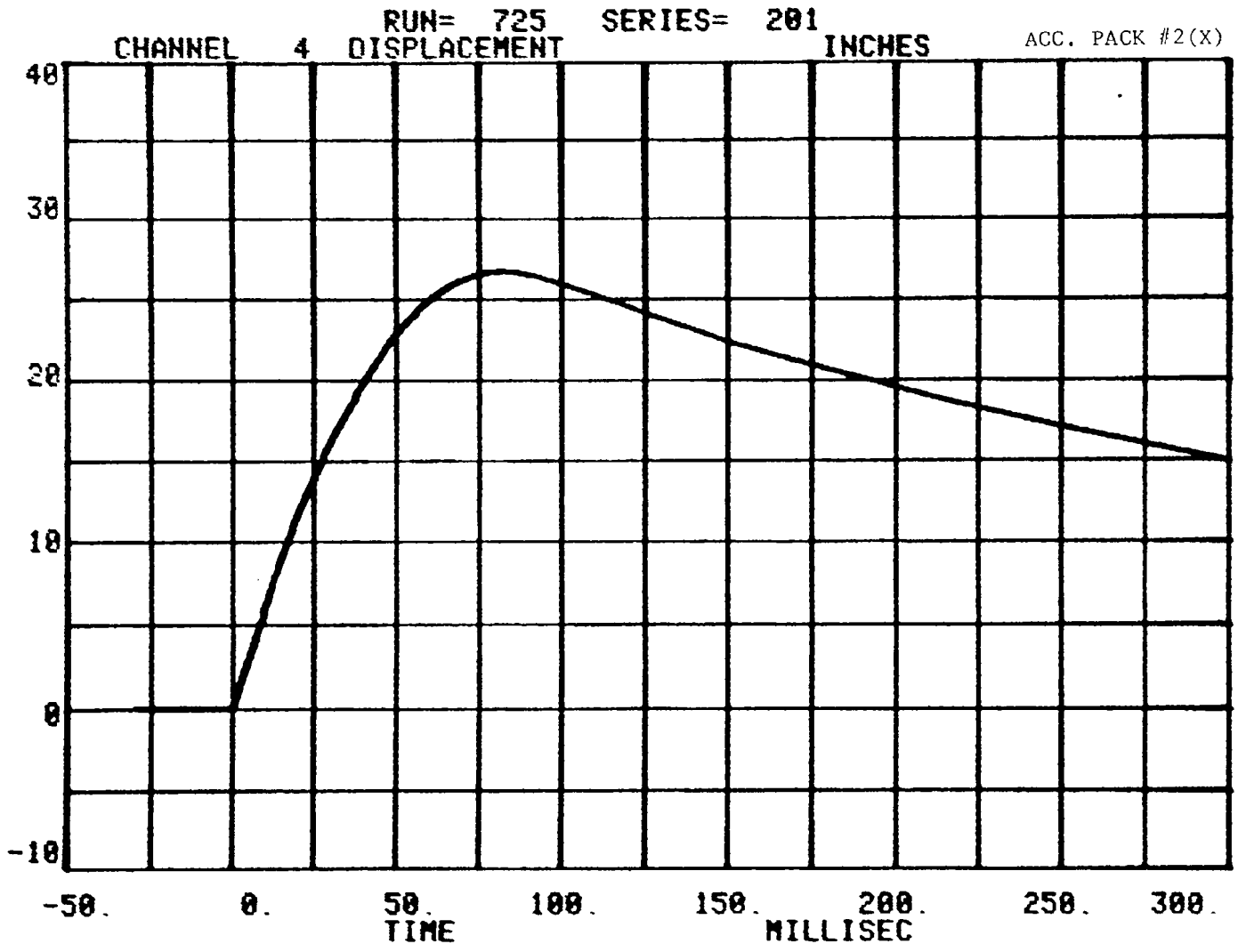
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 4 DISPLACEMENT INCHES
ACC. PACK #2(X)
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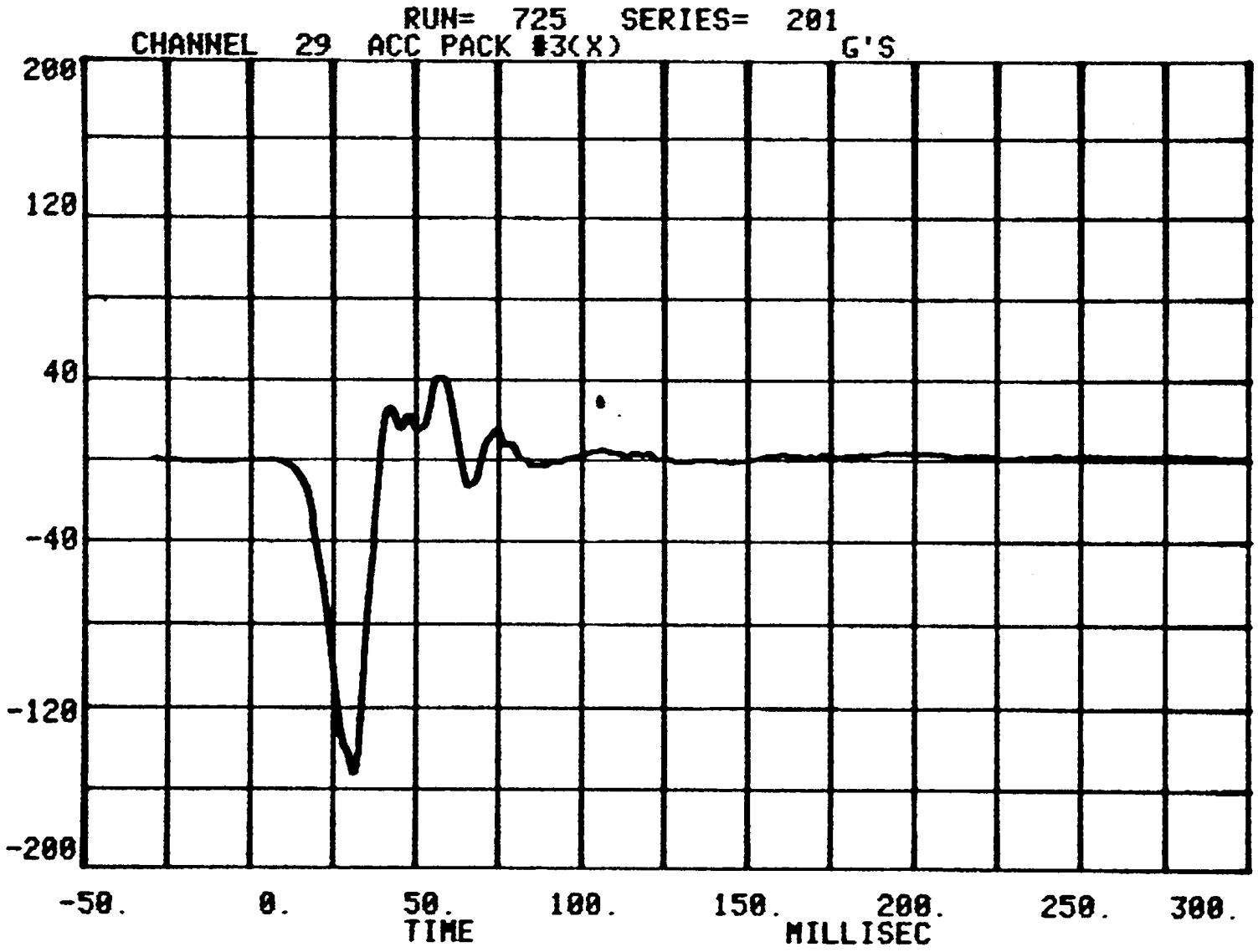
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME MILLISEC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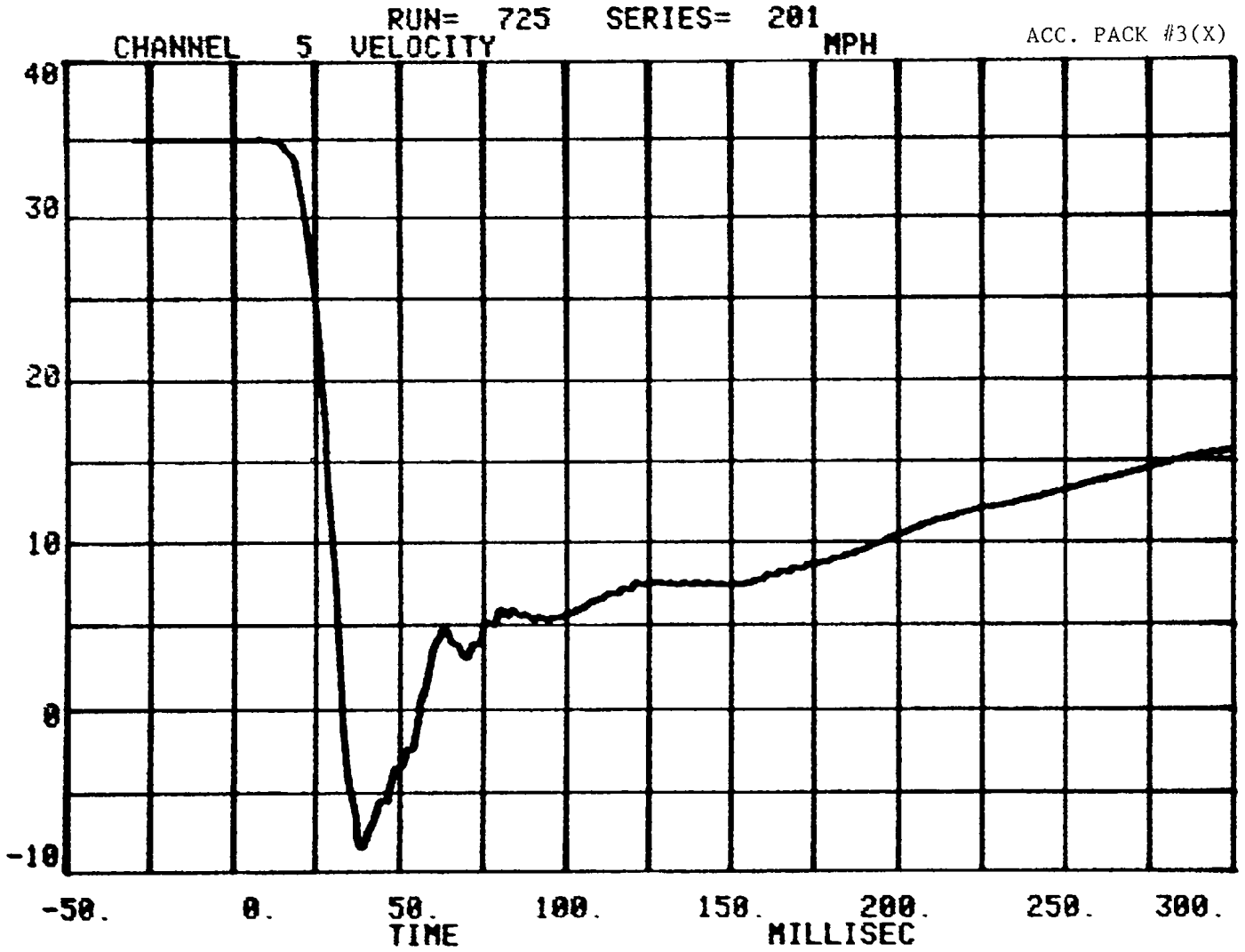
CHANNEL 29 ACC PACK #3(X) G'S
200
120
40
-40
-120
-200
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 5 VELOCITY
MPH
ACC. PACK #3(X)
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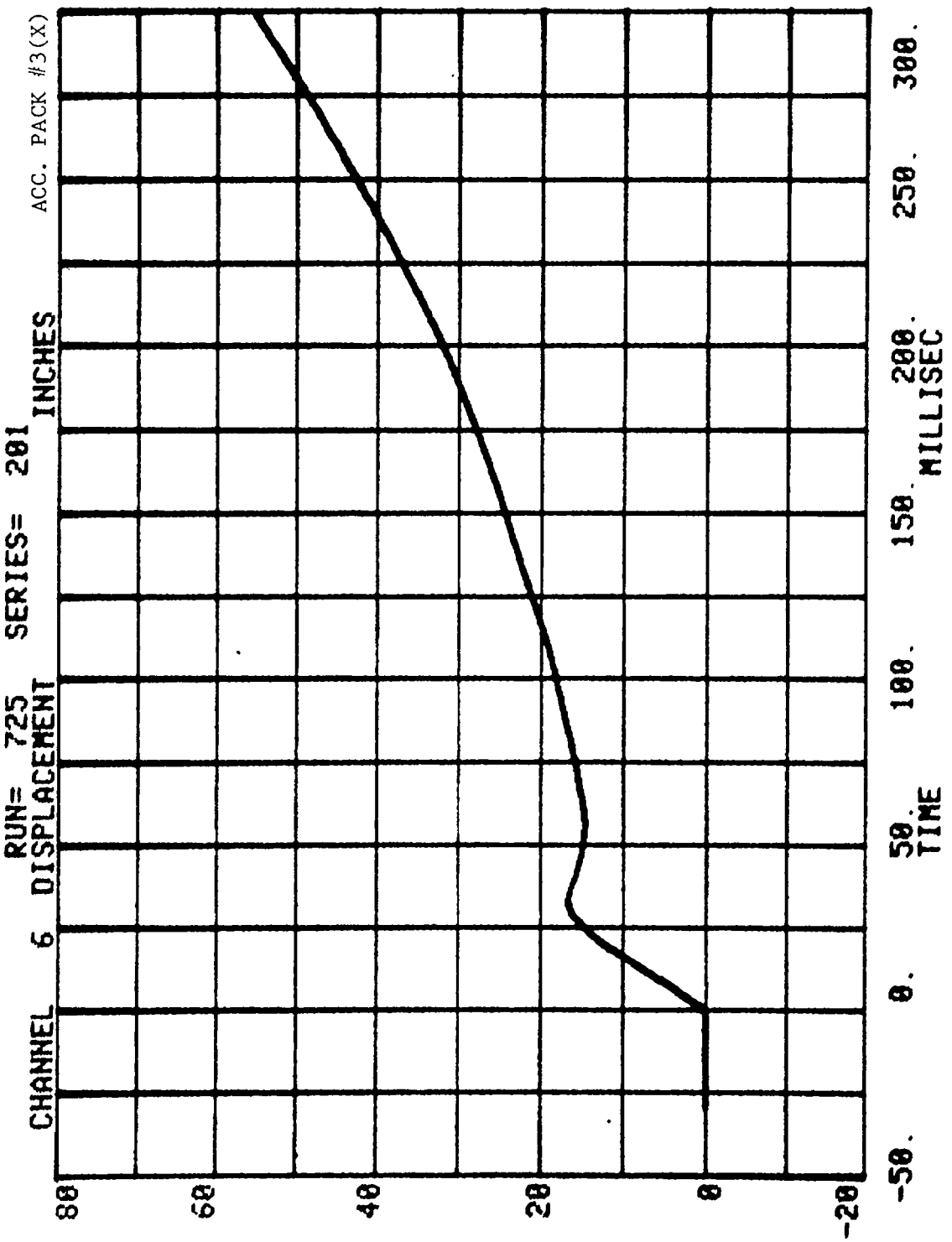
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


ACC. PACK #3(X)
CHANNEL 6 DISPLACEMENT
RUN= 725 SERIES= 201
INCHES
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60
40
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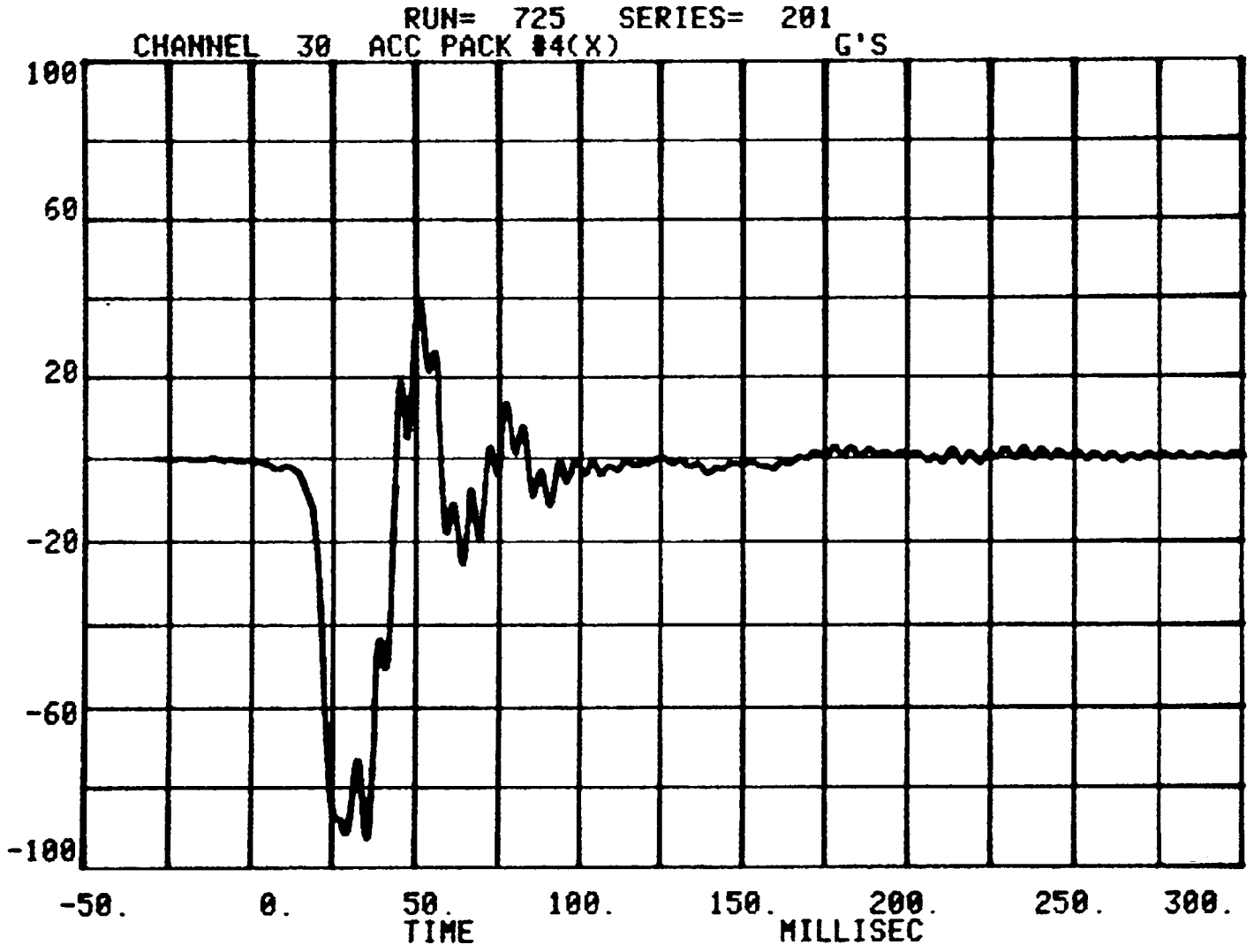
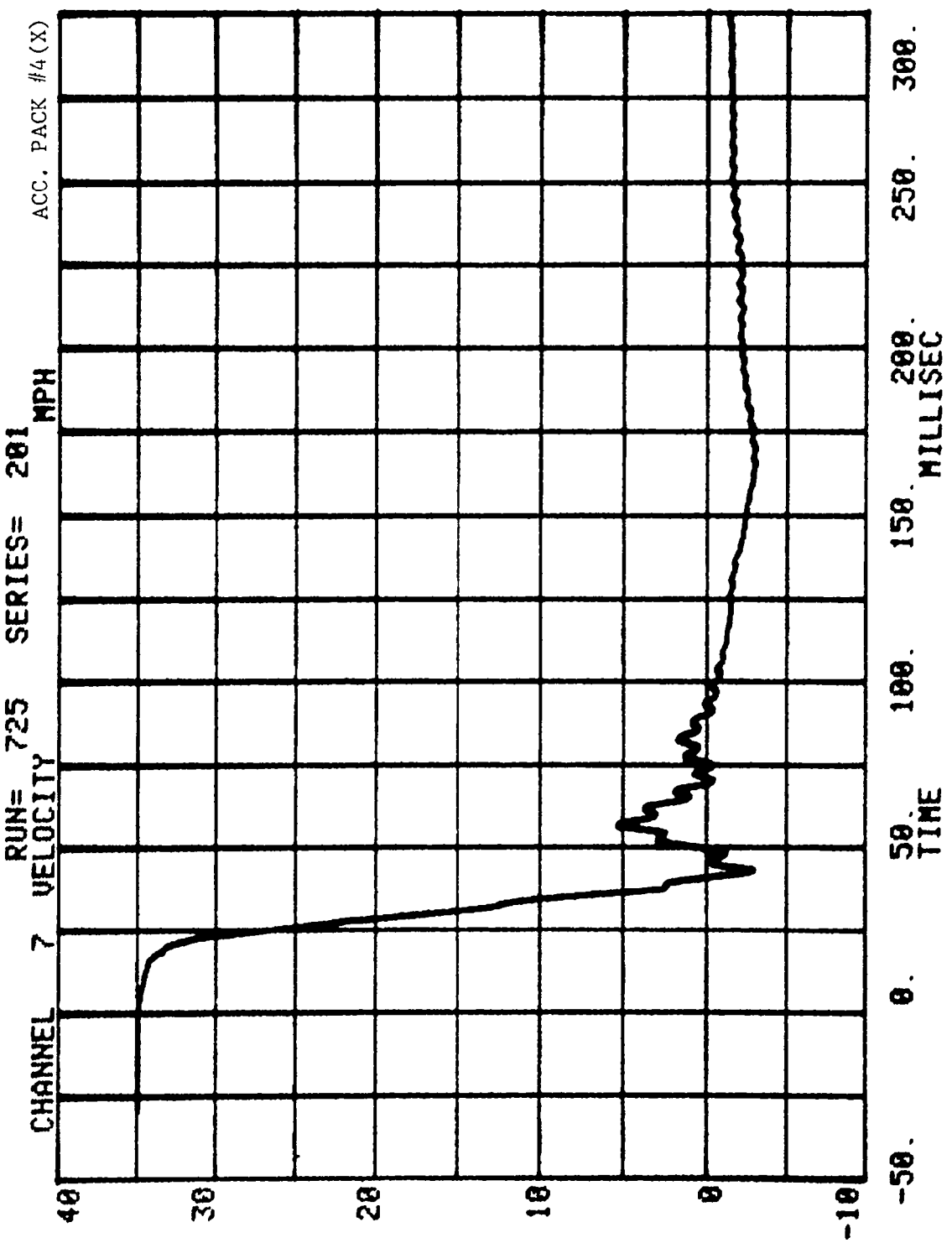
-20
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 30 ACC PACK #4(X)
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


ACC. PACK #4(X)
CHANNEL 7 VELOCITY
RUN= 725 SERIES= 201 MPH
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30
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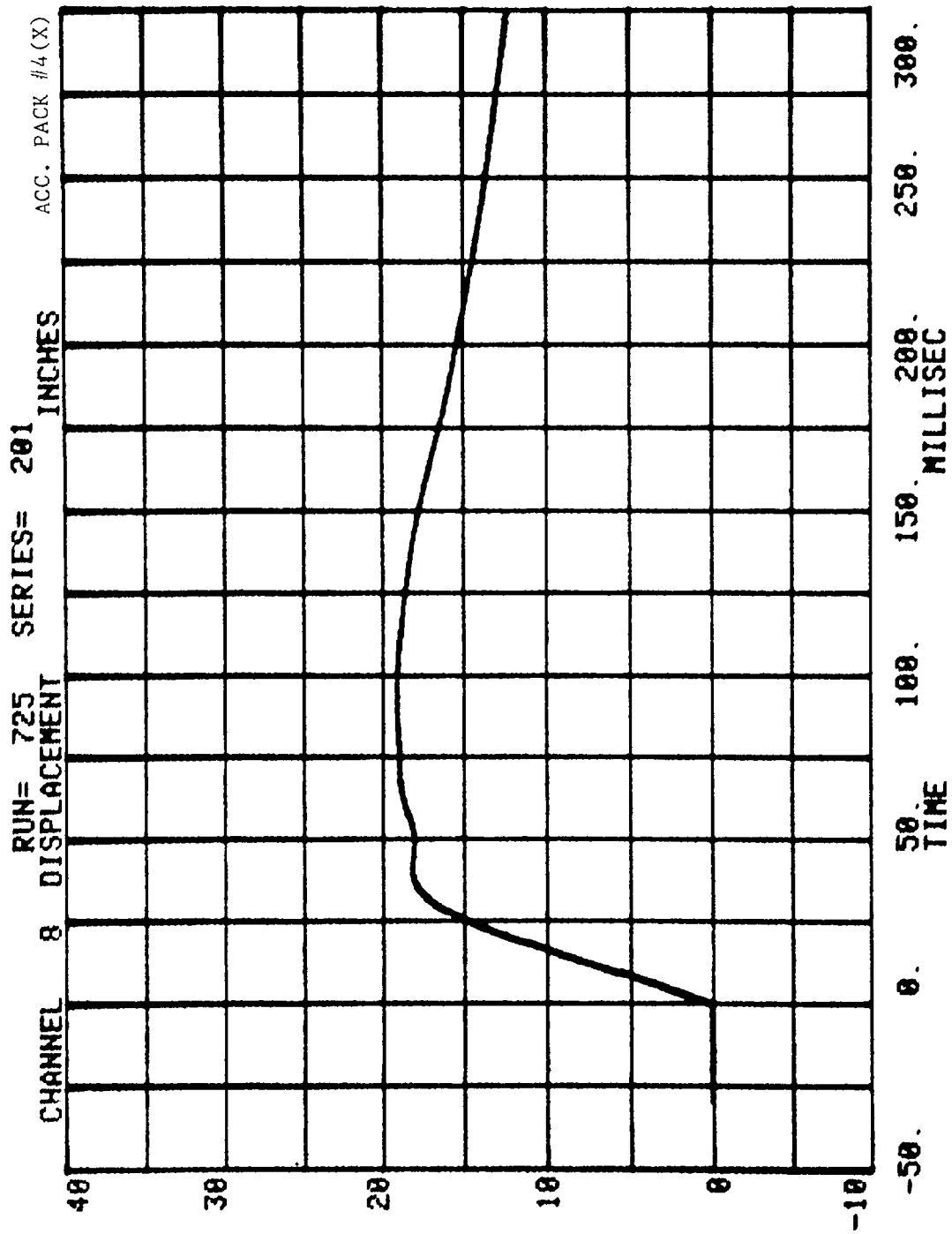
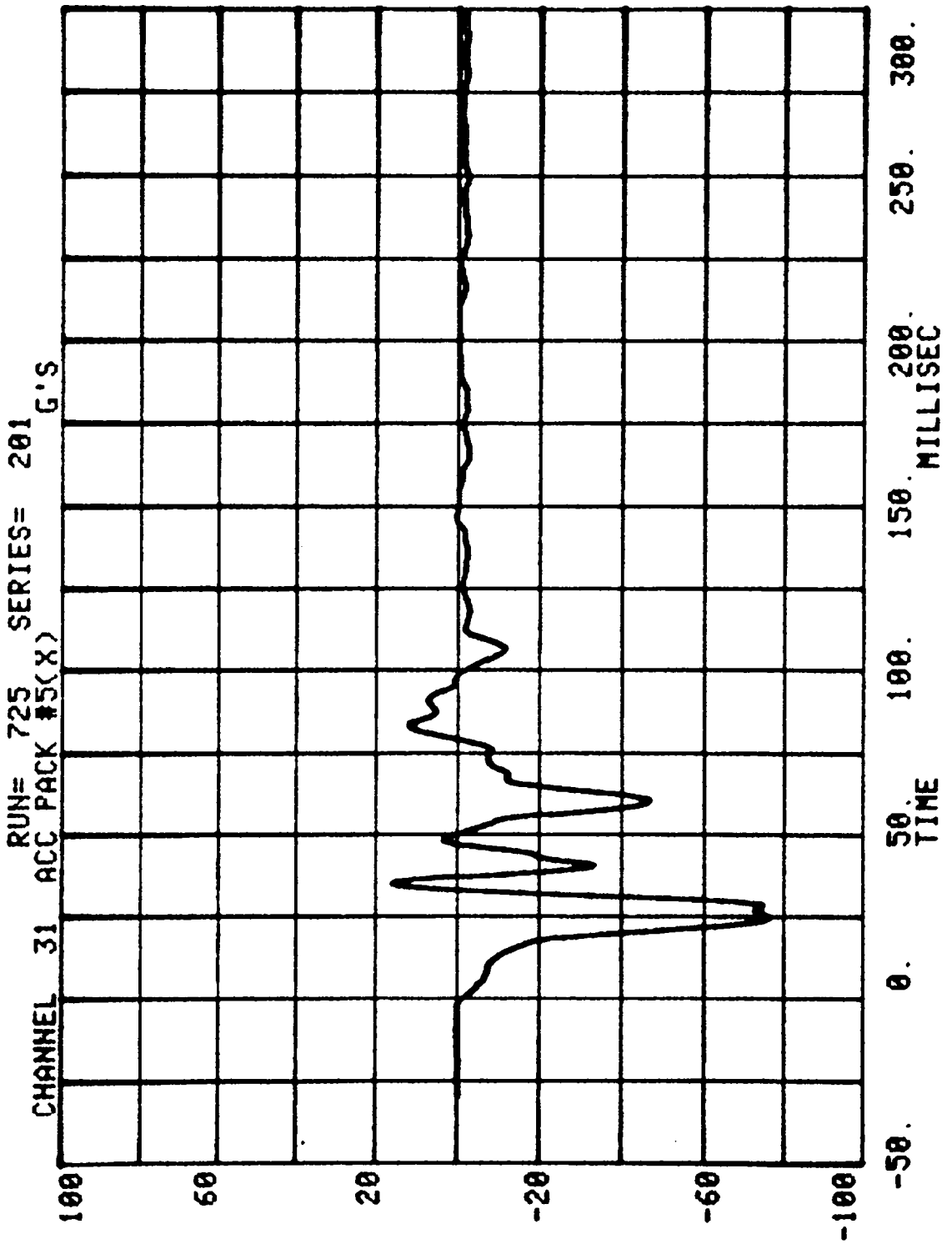
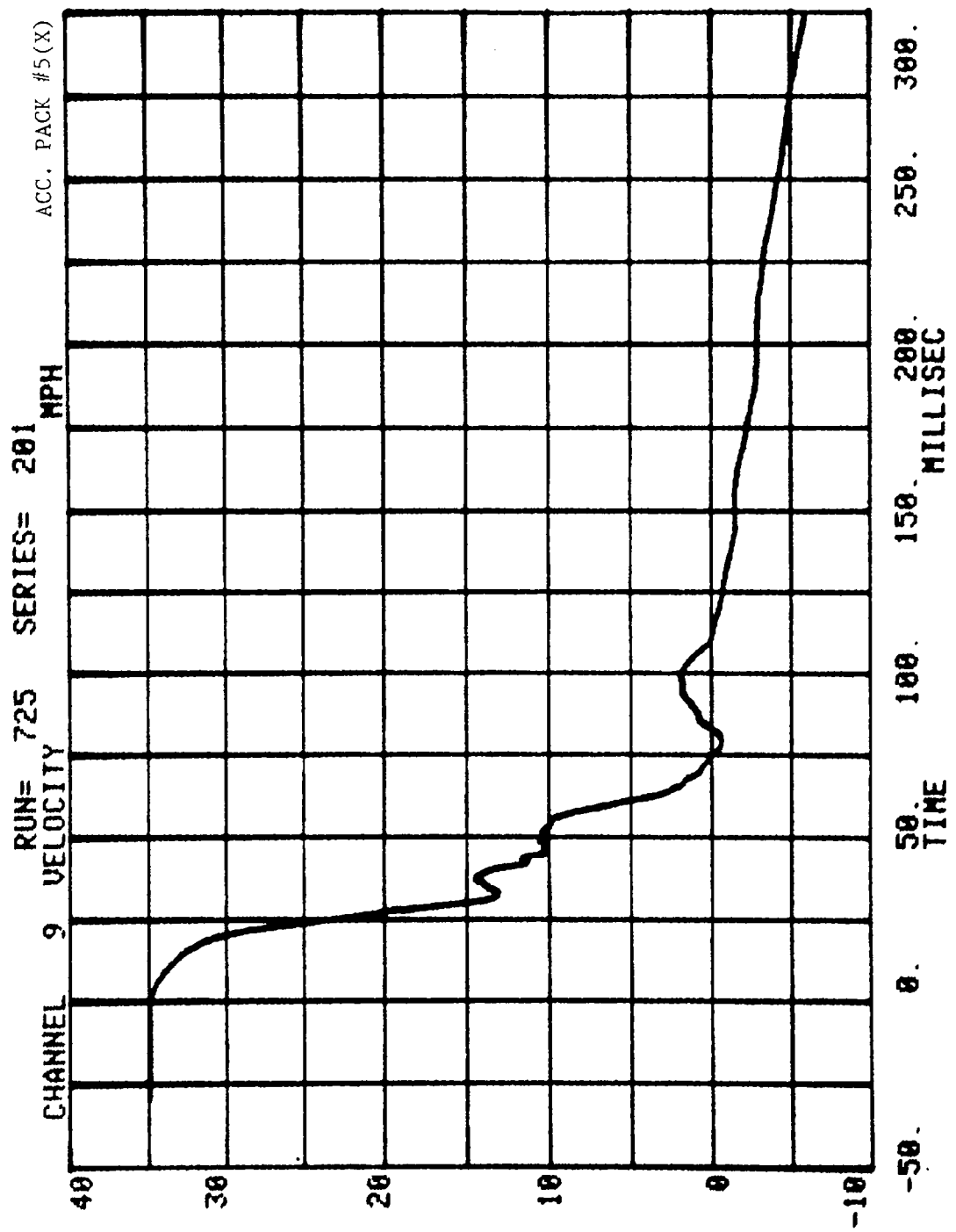
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


ACC. PACK #4(X)
CHANNEL 8 RUN= 725 SERIES= 201
DISPLACEMENT INCHES
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME MILLISEC


CHANNEL 31 ACC PACK #5(X)
RUN= 725 SERIES= 201
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


ACC. PACK #5(X)
CHANNEL 9 VELOCITY
RUN= 725 SERIES= 201 MPH
40
30
20
10
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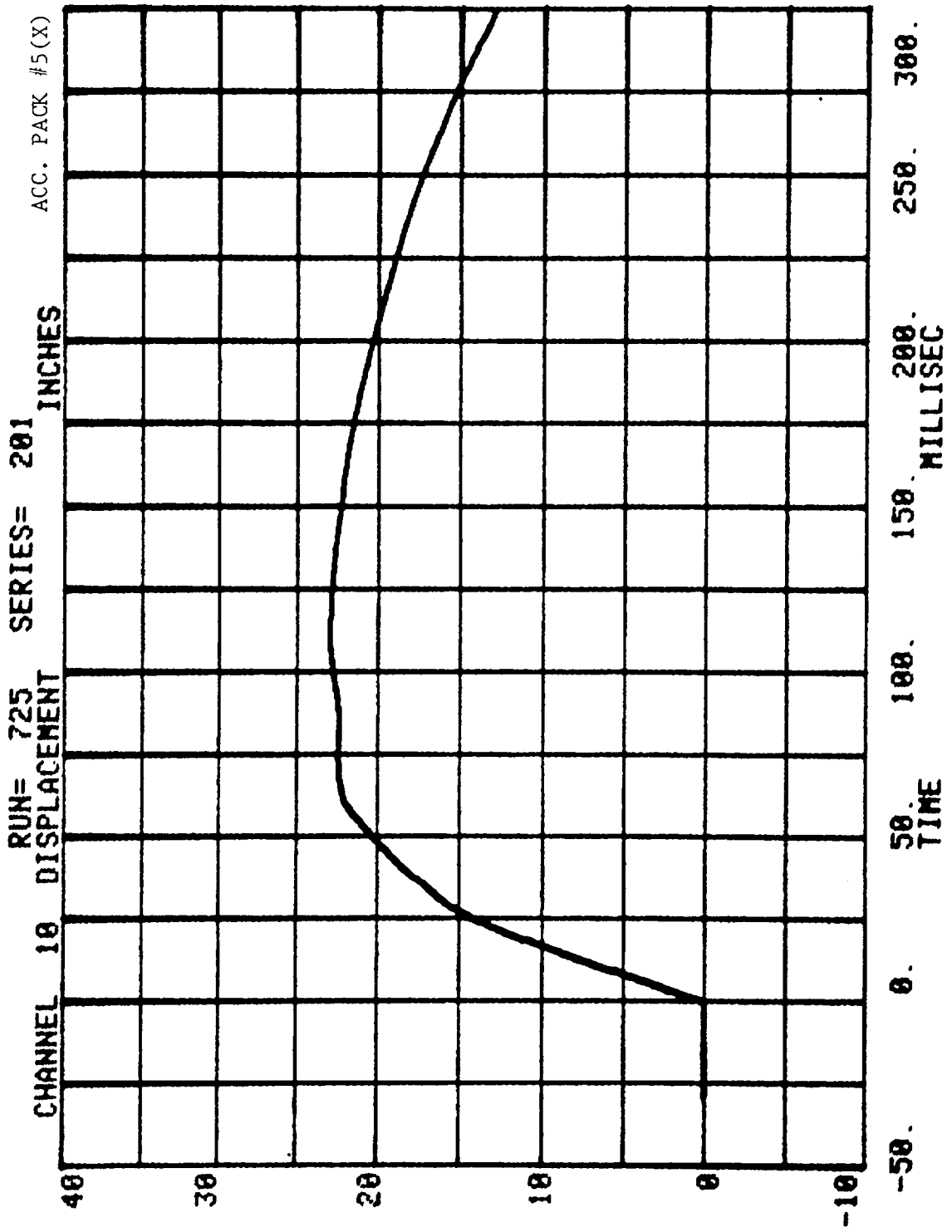
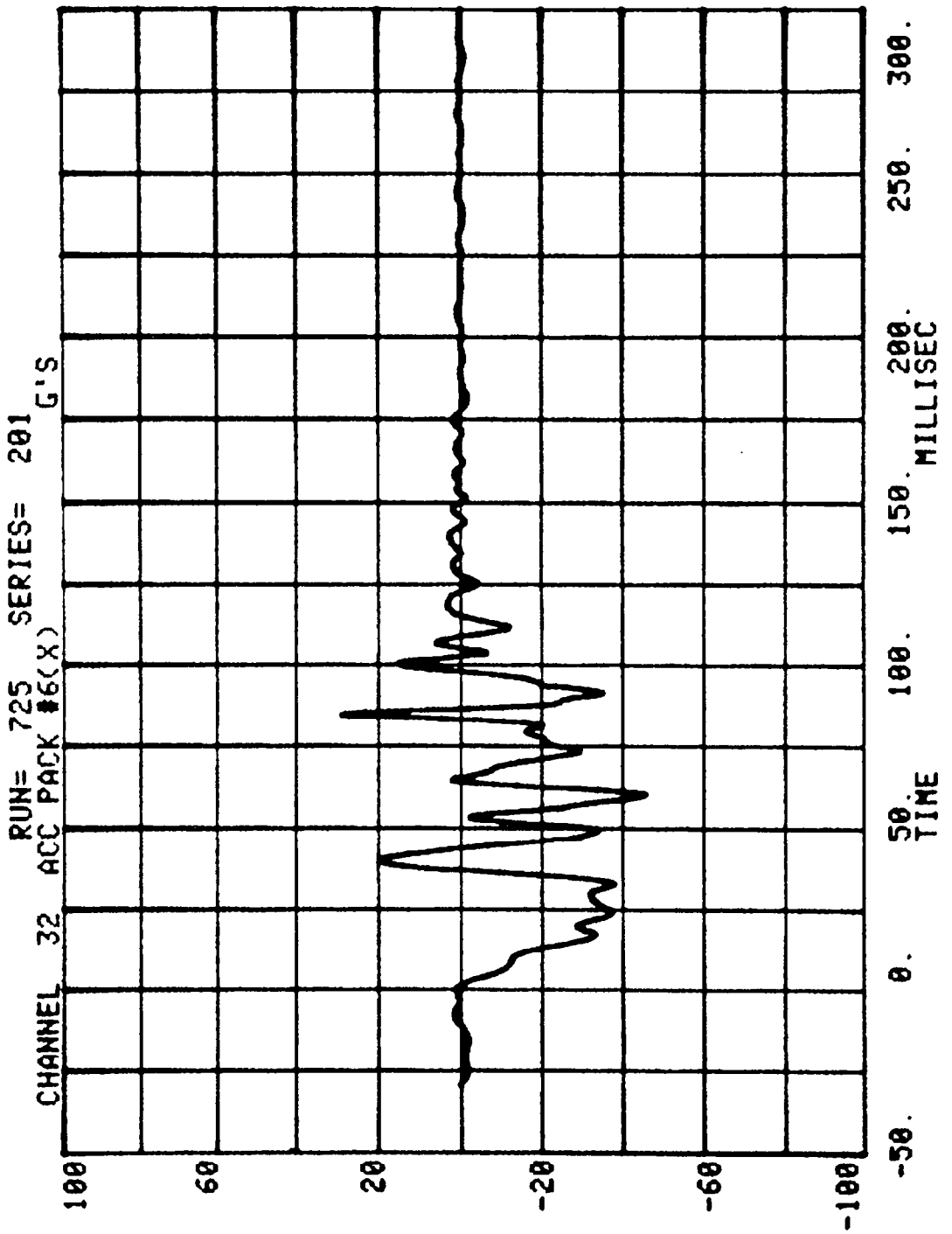
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


ACC. PACK #5(X)
CHANNEL 10 DISPLACEMENT
RUN= 725 SERIES= 201
INCHES
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


CHANNEL 32 ACC PACK #6(X)
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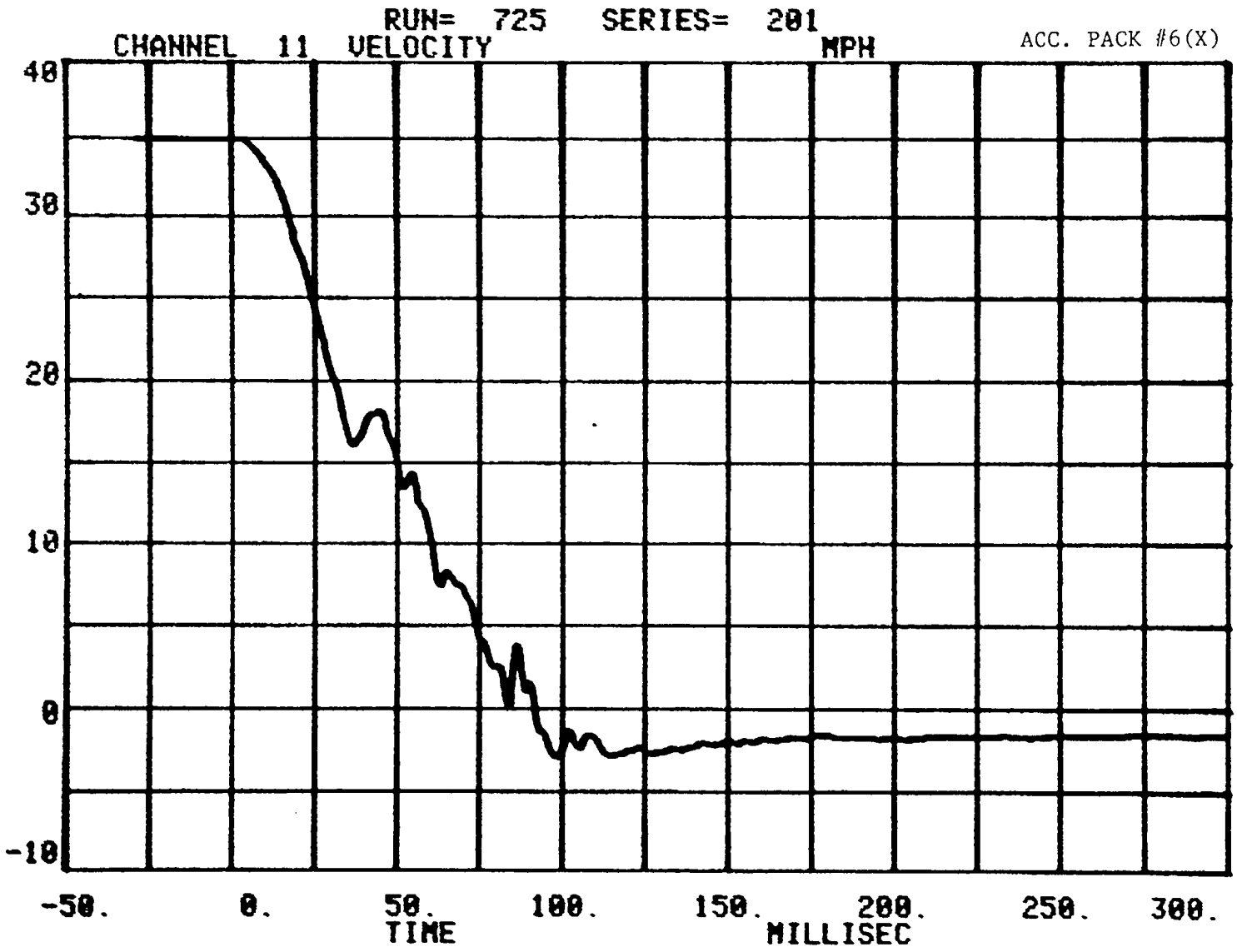
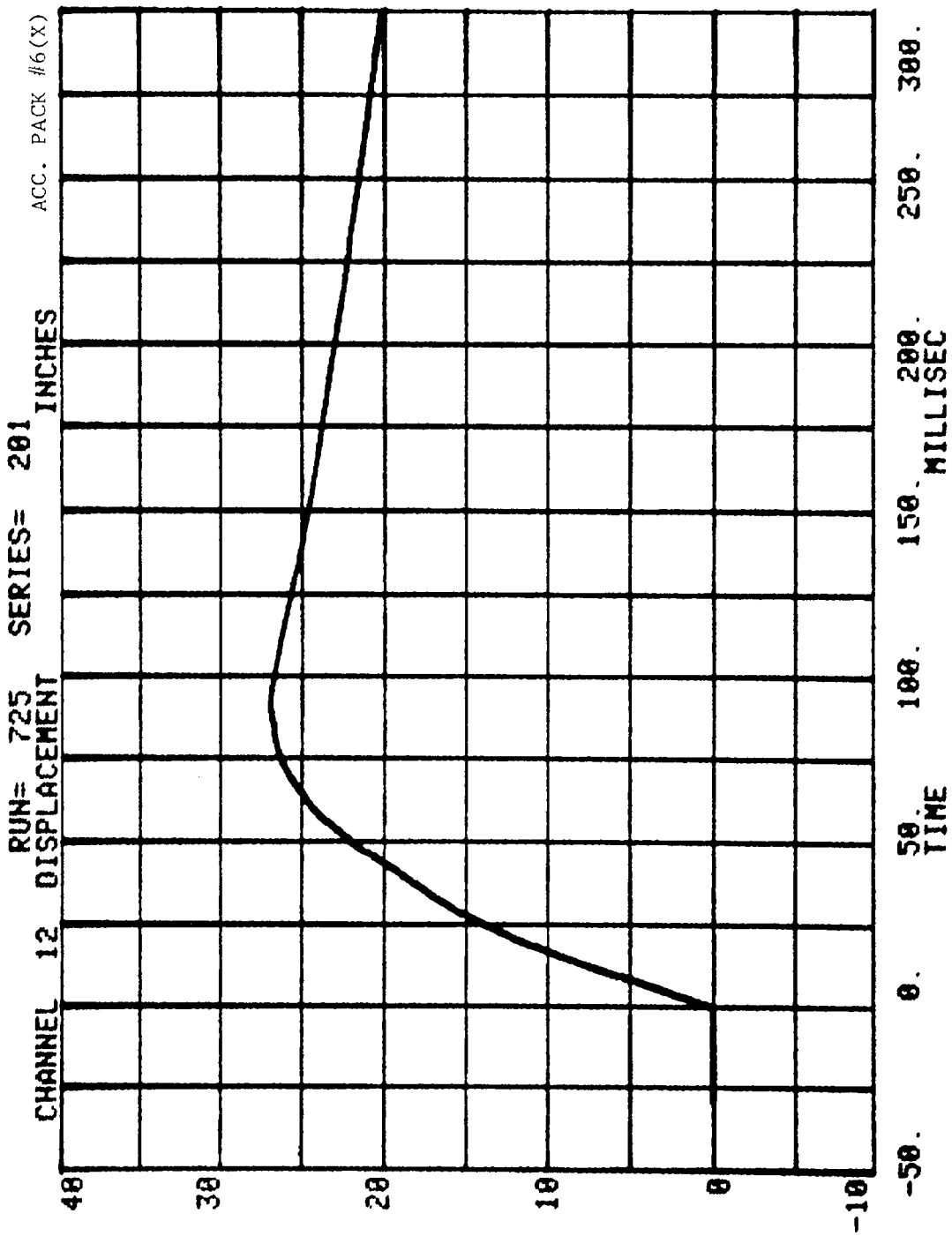
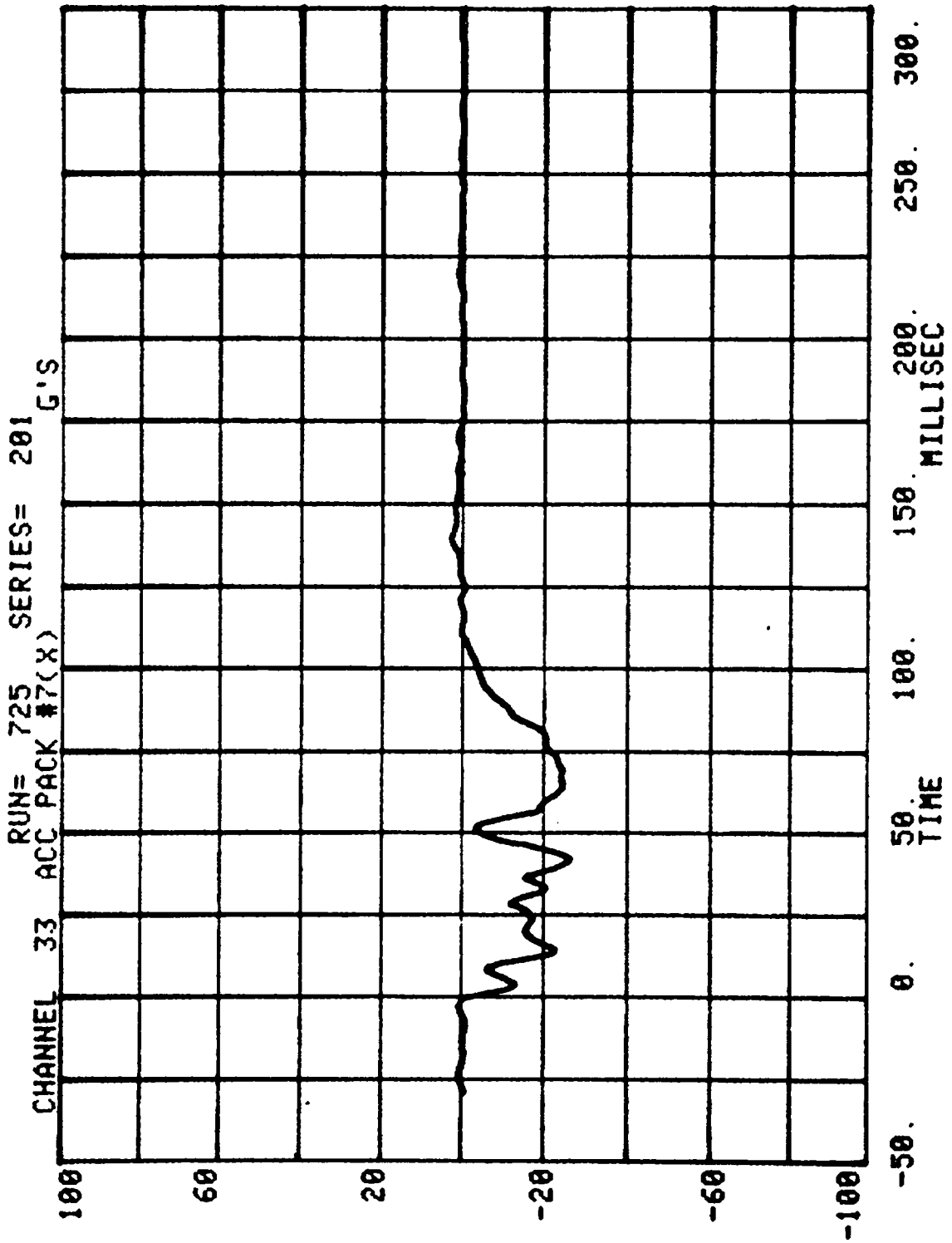
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


RUN= 725 SERIES= 201
CHANNEL 11 VELOCITY
MPH
ACC. PACK #6(X)
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 12 DISPLACEMENT
RUN= 725 SERIES= 201
INCHES
ACC. PACK #6(X)
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 33 ACC PACK #7(X)
RUN= 725 SERIES= 201
G'S
100
60
20
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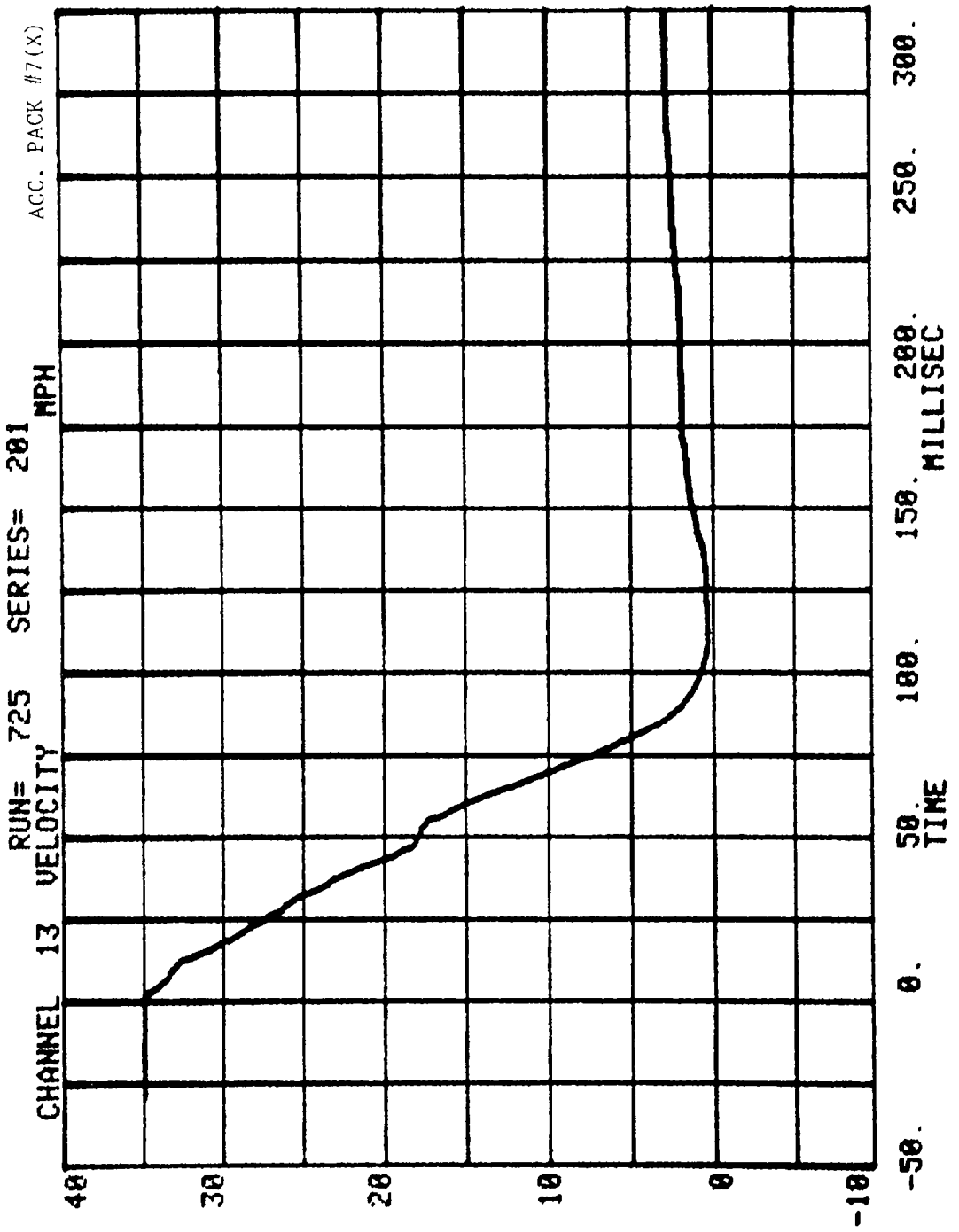
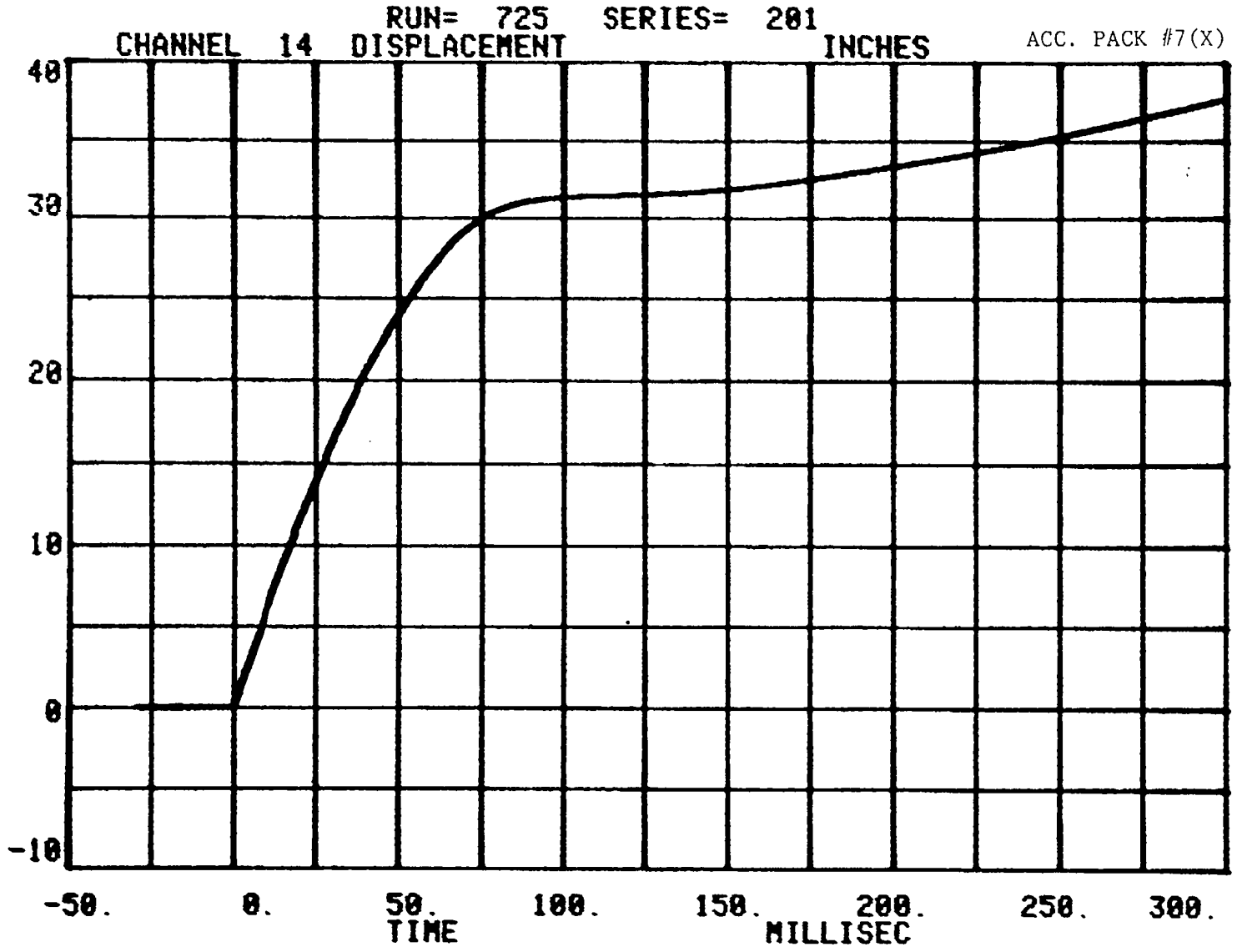
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


ACC. PACK #7(X)
CHANNEL 13 VELOCITY
RUN= 725 SERIES= 201 MPH
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15

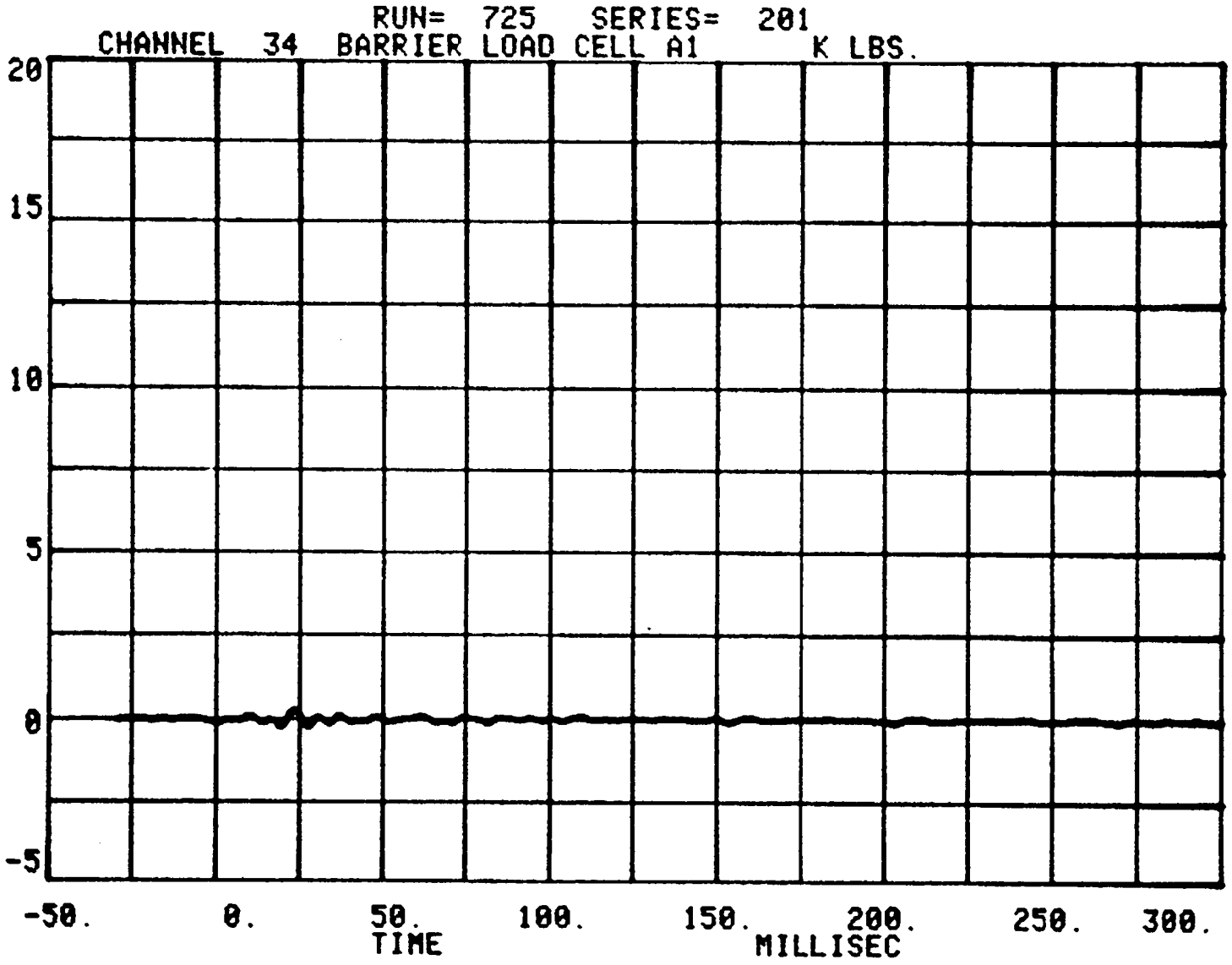

RUN= 725 SERIES= 201
CHANNEL 14 DISPLACEMENT INCHES
ACC. PACK #7(X)
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

Test No. MG0201

LOAD CELL BARRIER DATA

FILTER CHANNEL CLASS

60


RUN= 725 SERIES= 201
CHANNEL 34 BARRIER LOAD CELL A1
K LBS.
20
15
10
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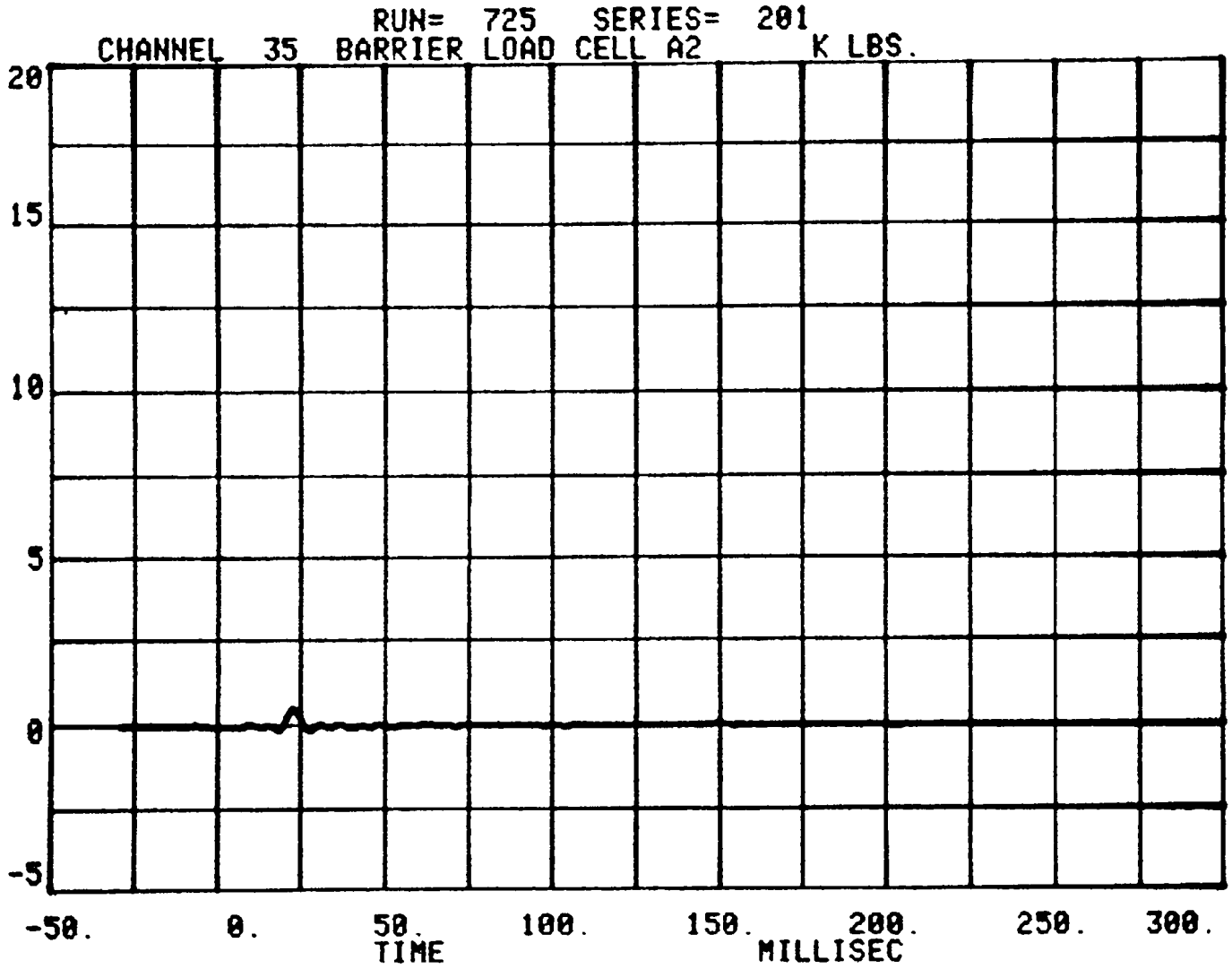
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 35 BARRIER LOAD CELL A2 K LBS.
20
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-5
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0.
50.
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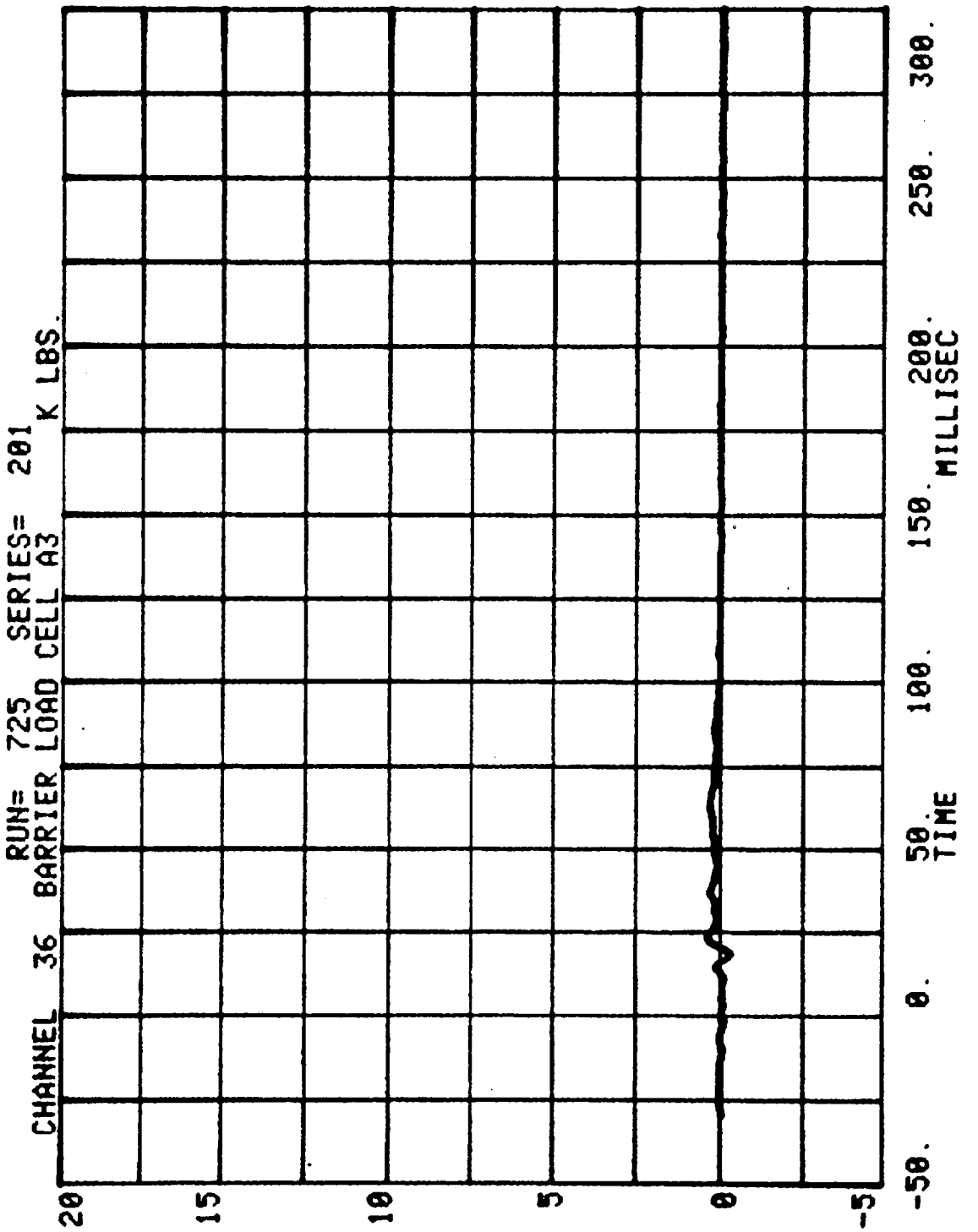
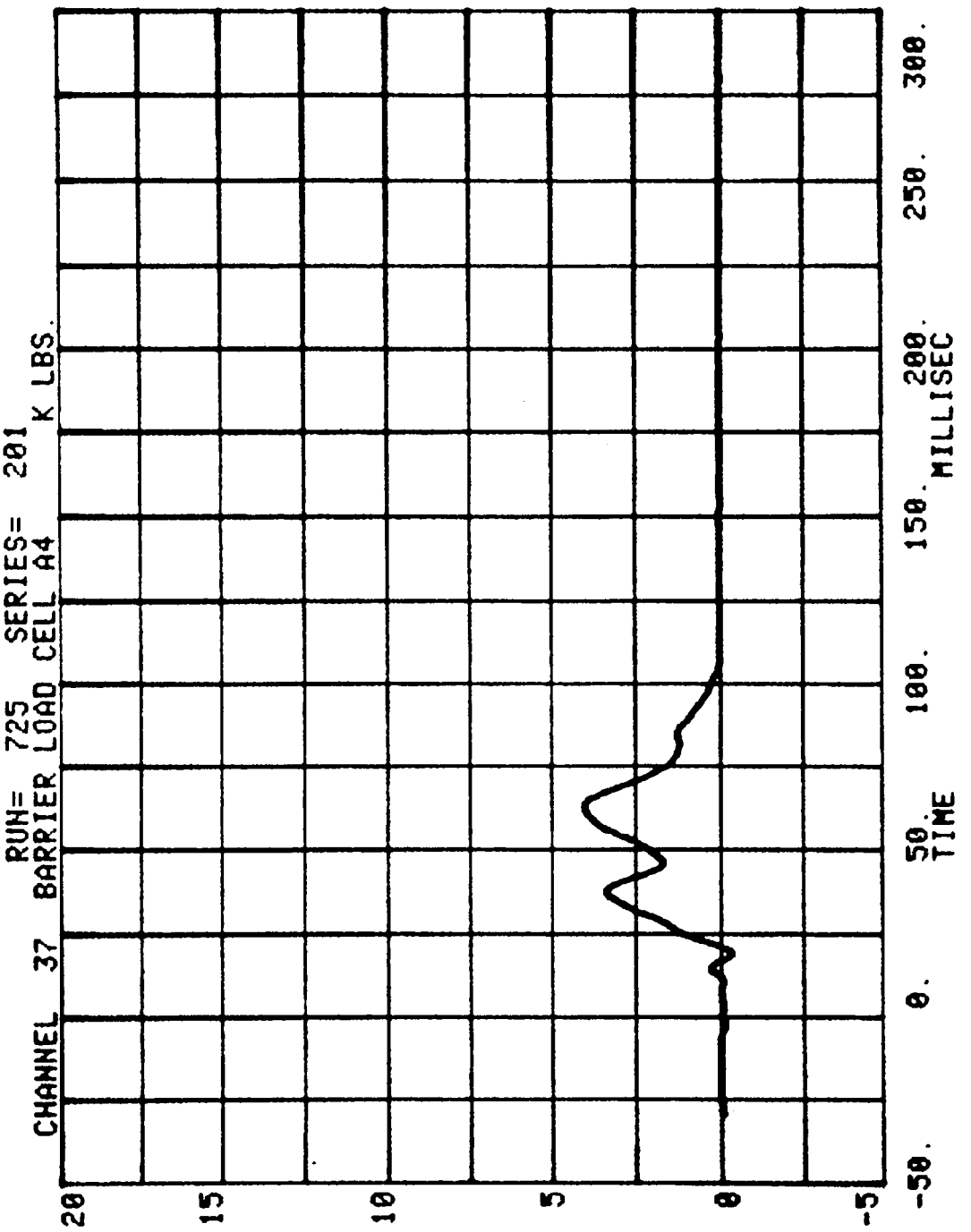
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 36 BARRIER LOAD CELL A3
RUN= 725 SERIES= 201
K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


CHANNEL 37 BARRIER LOAD CELL A4
RUN= 725 SERIES= 201
K LBS.
20
15
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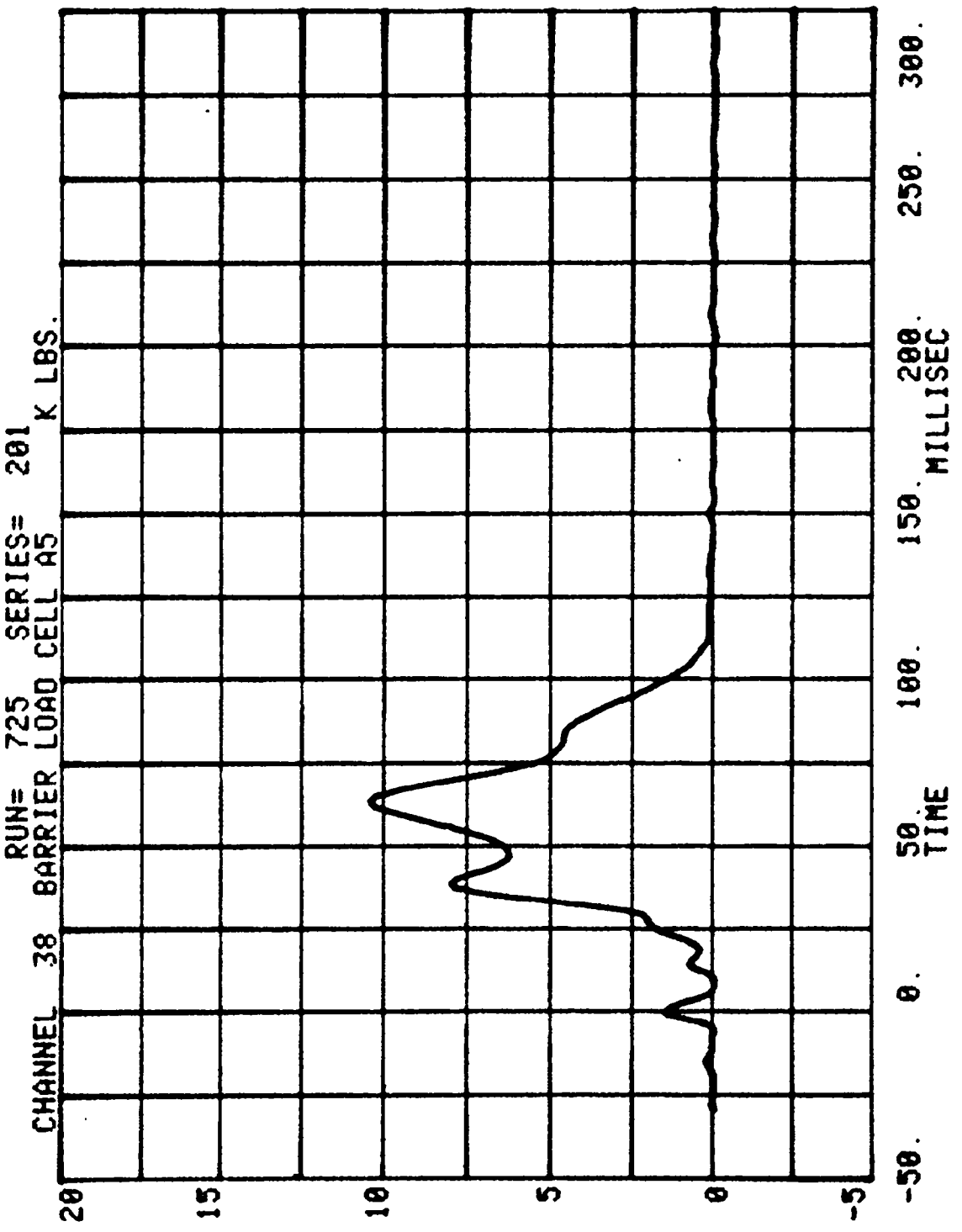
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 38 BARRIER LOAD CELL A5
RUN= 725 SERIES= 201
K LBS.
20
15
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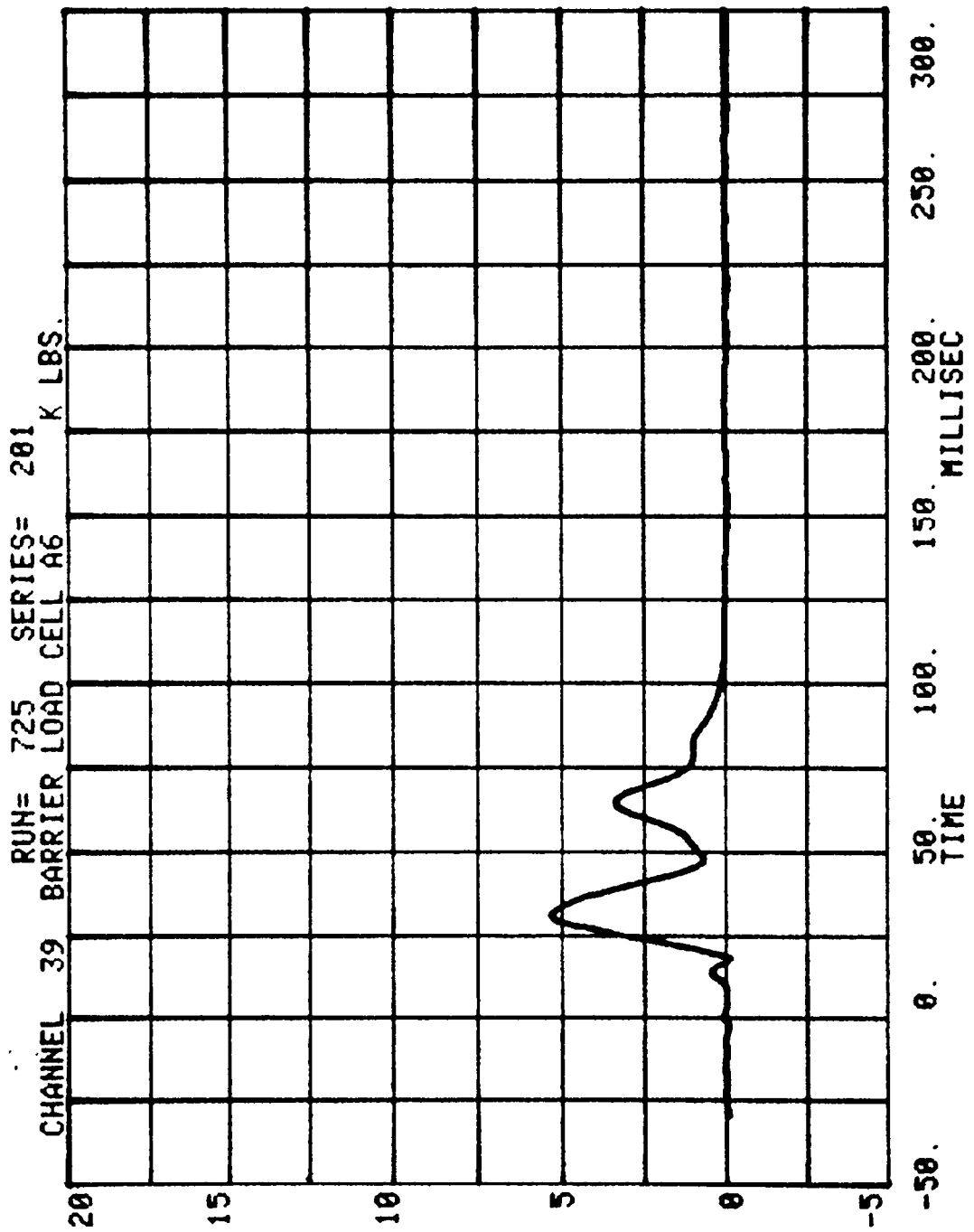
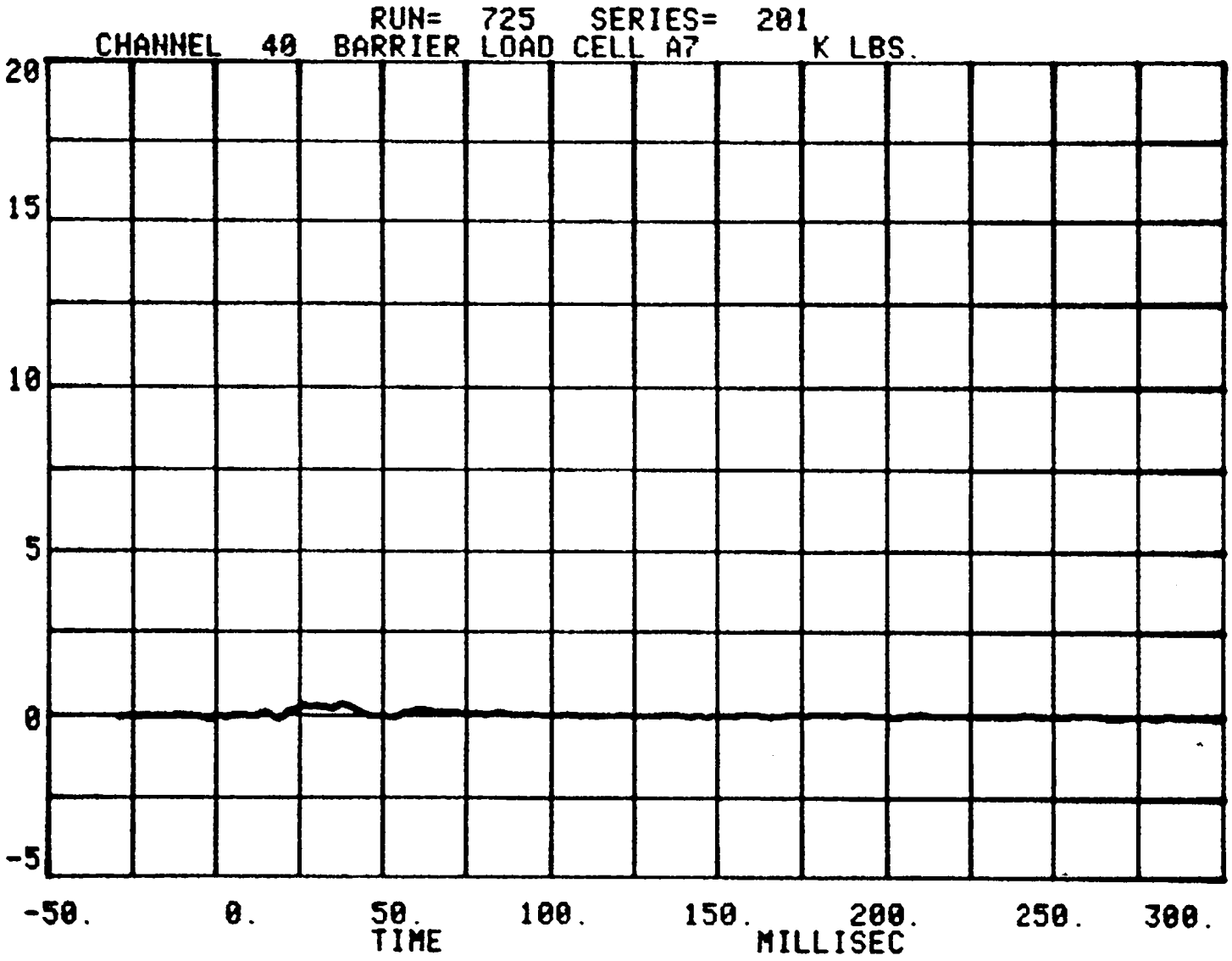
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 39 BARRIER LOAD CELL A6
RUN= 725 SERIES= 201
K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 40 BARRIER LOAD CELL A7
K LBS.
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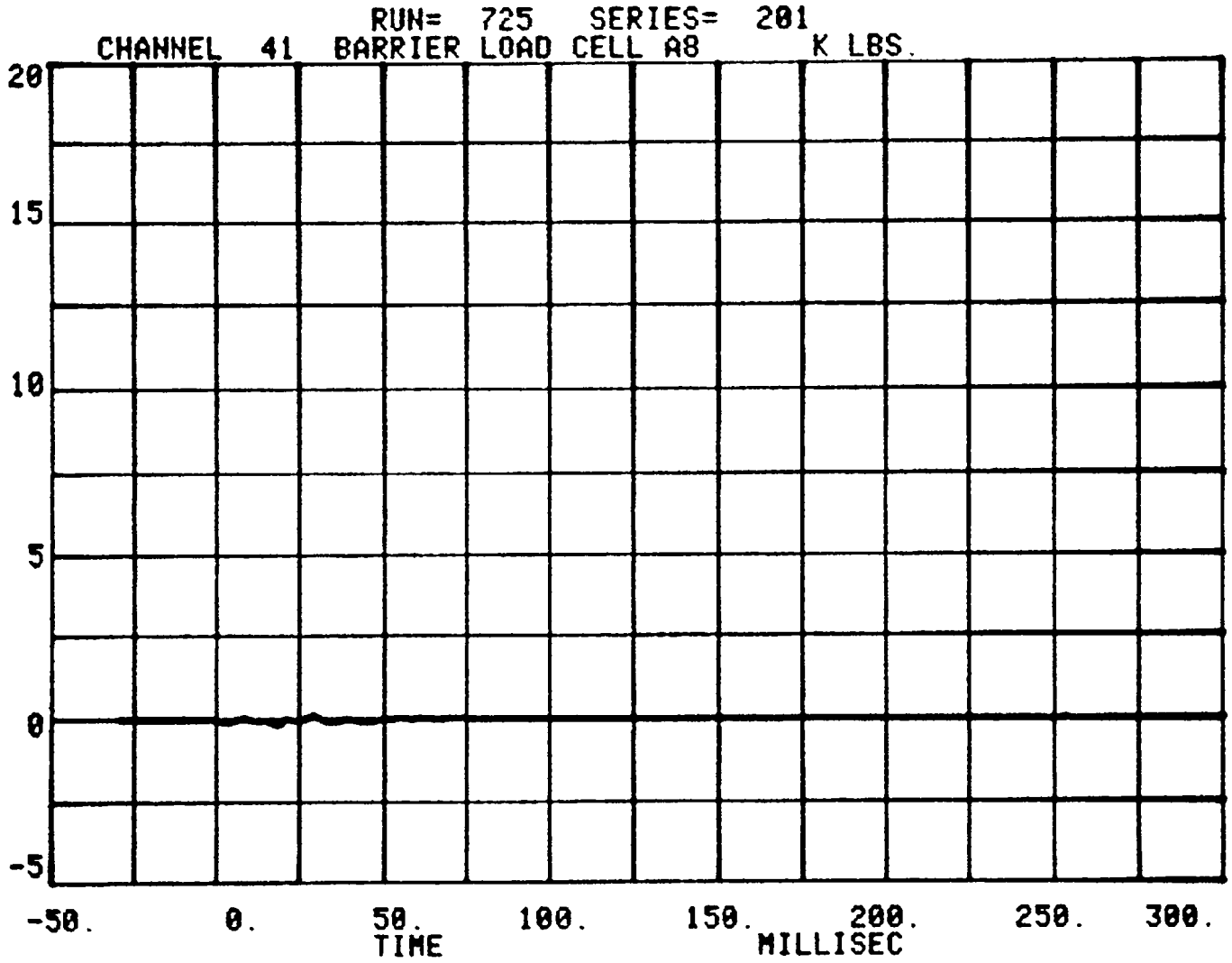
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 41 BARRIER LOAD CELL A8 K LBS.
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-5
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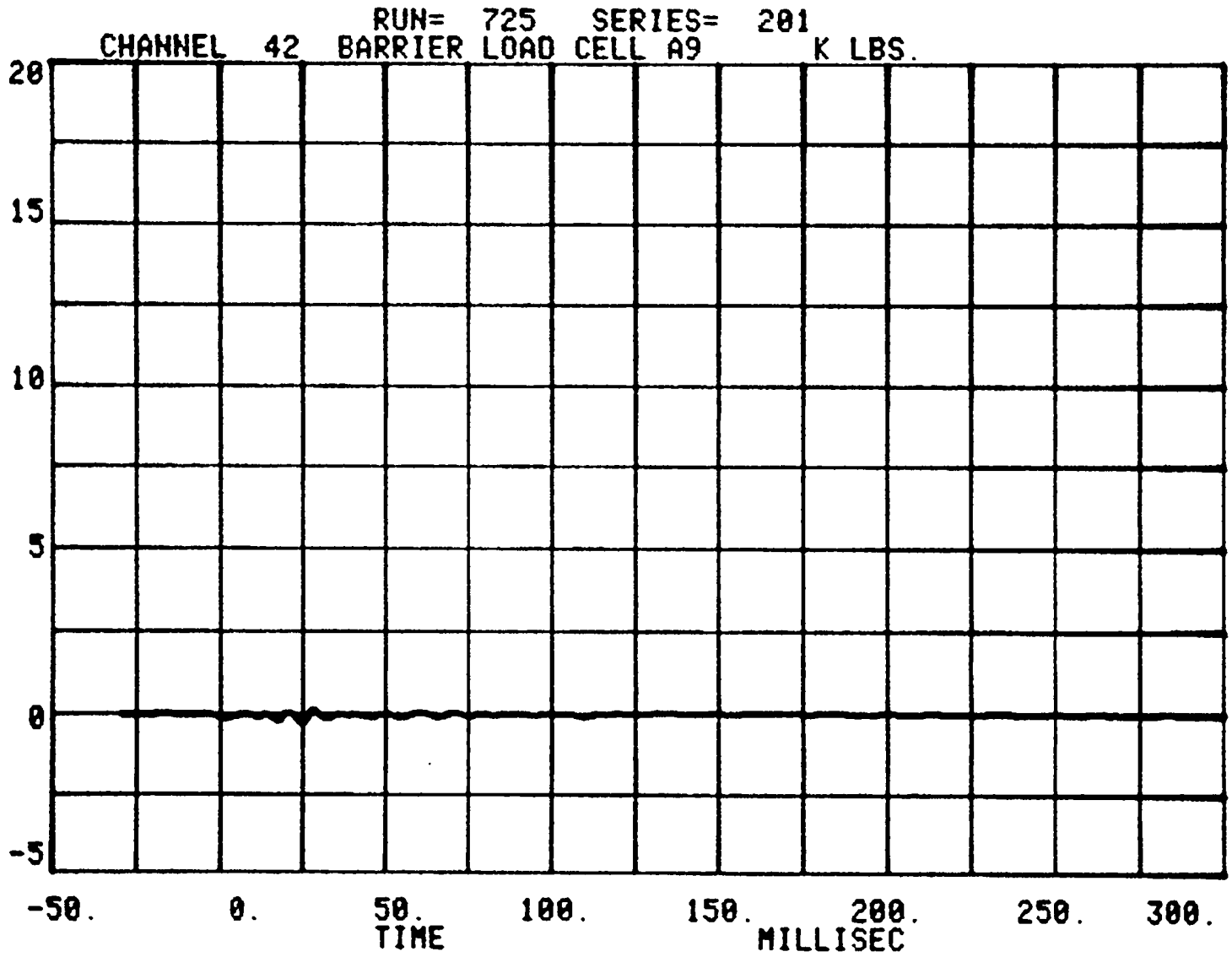
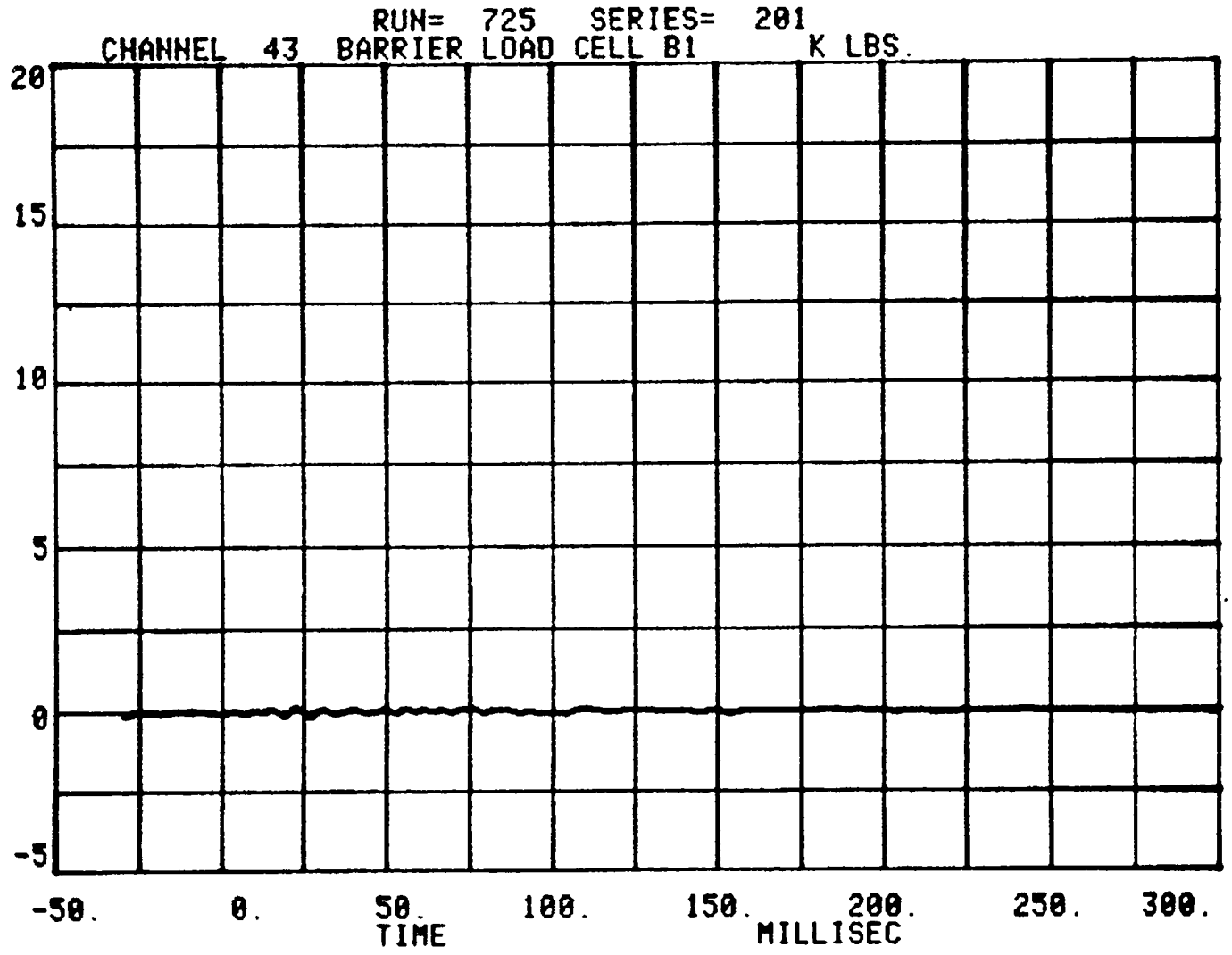
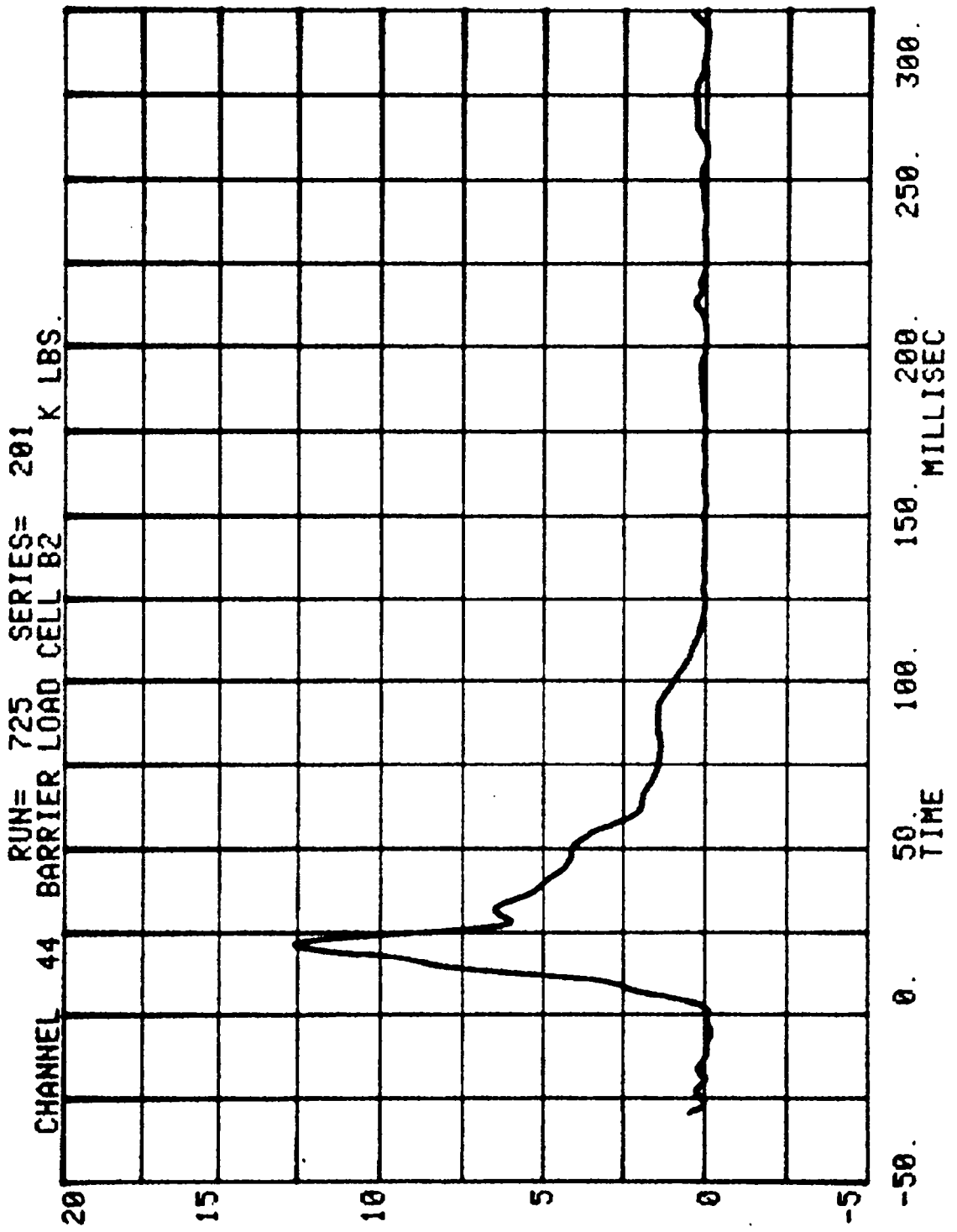
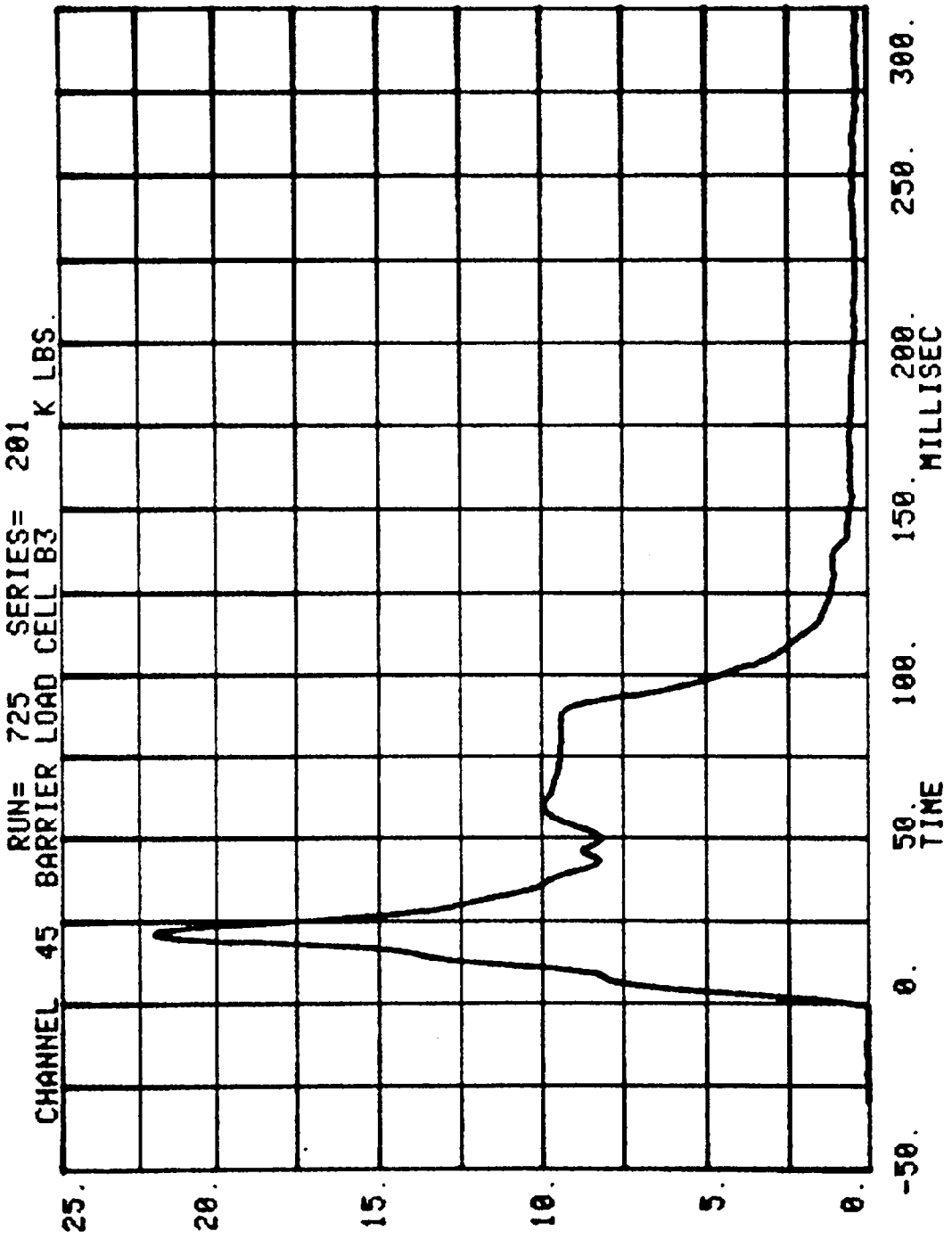
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 42 BARRIER LOAD CELL A9 K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

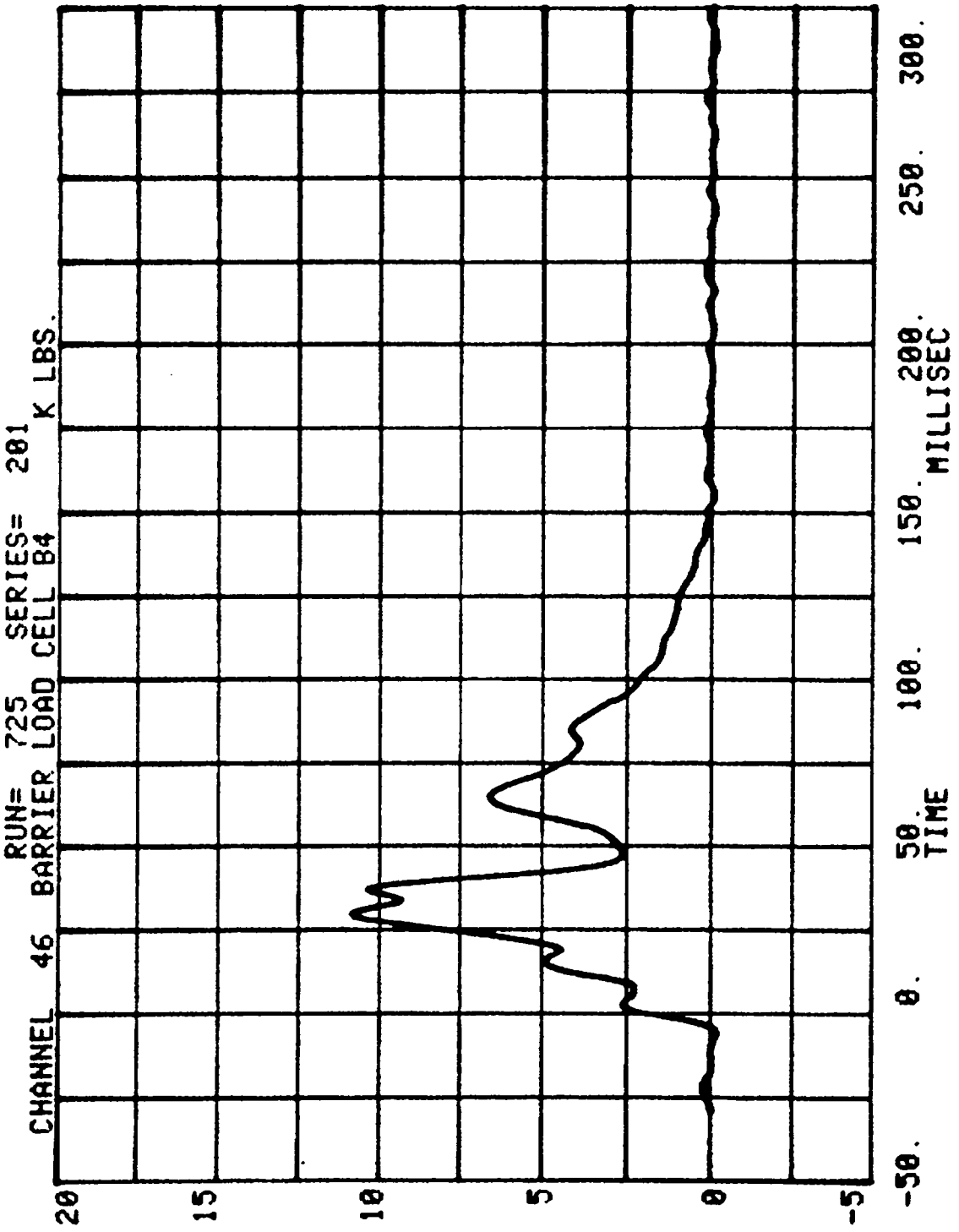

RUN= 725 SERIES= 201
CHANNEL 43 BARRIER LOAD CELL B1 K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 44 BARRIER LOAD CELL B2
RUN= 725 SERIES= 201
K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

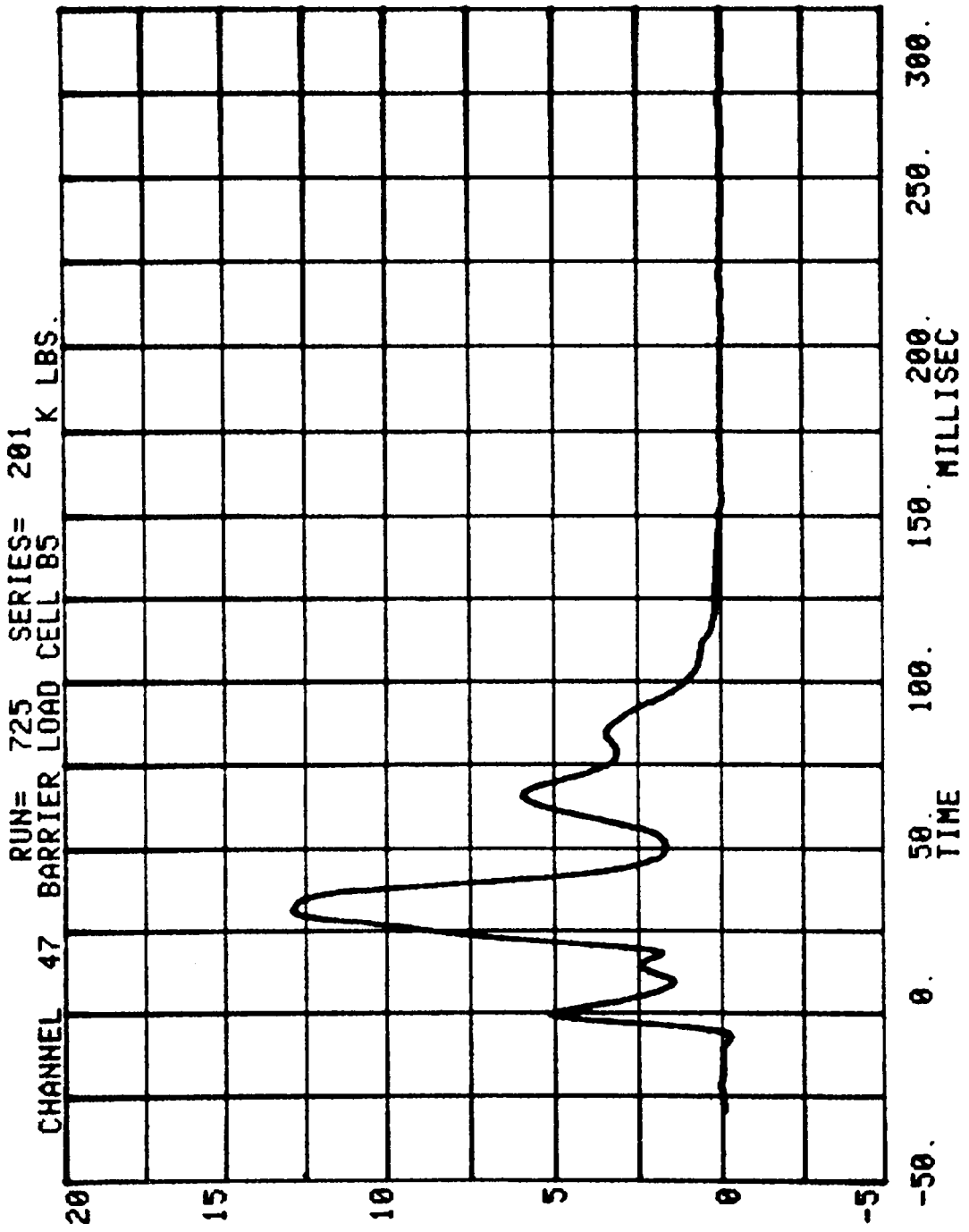
7457-15

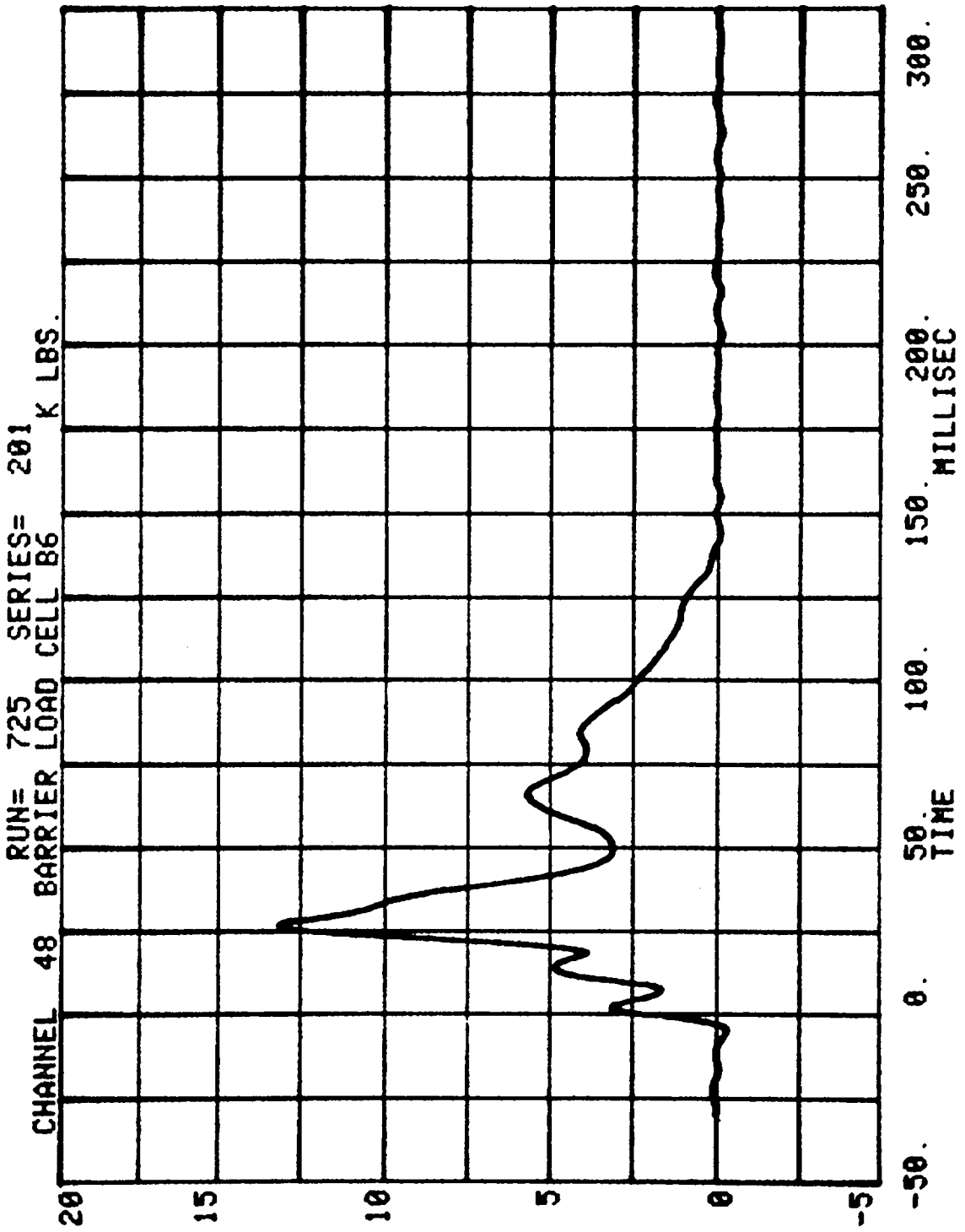

CHANNEL 45 BARRIER LOAD CELL B3
RUN= 725 SERIES= 201
K LBS.
25.
20.
15.
10.
5.
0.
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

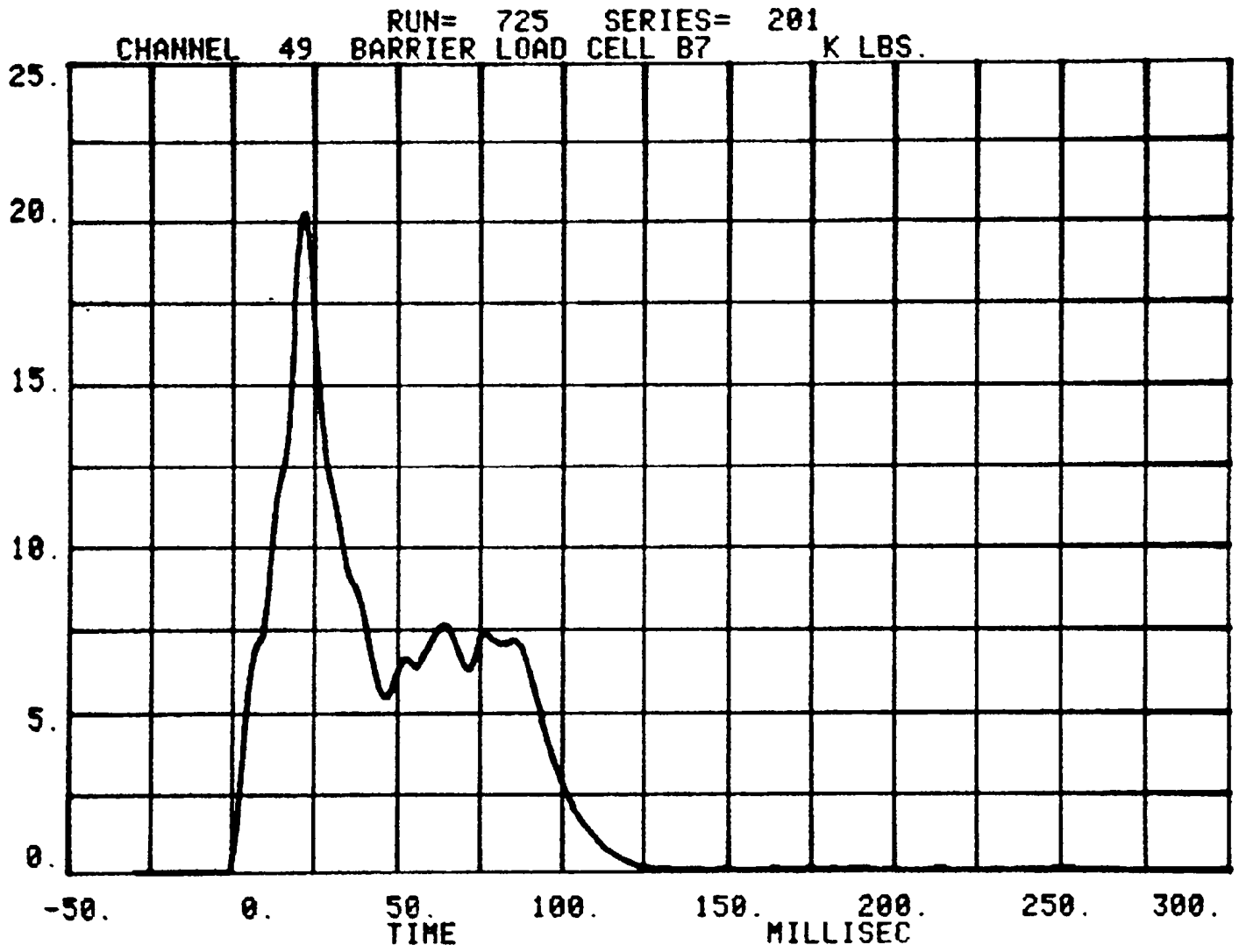
7457-15

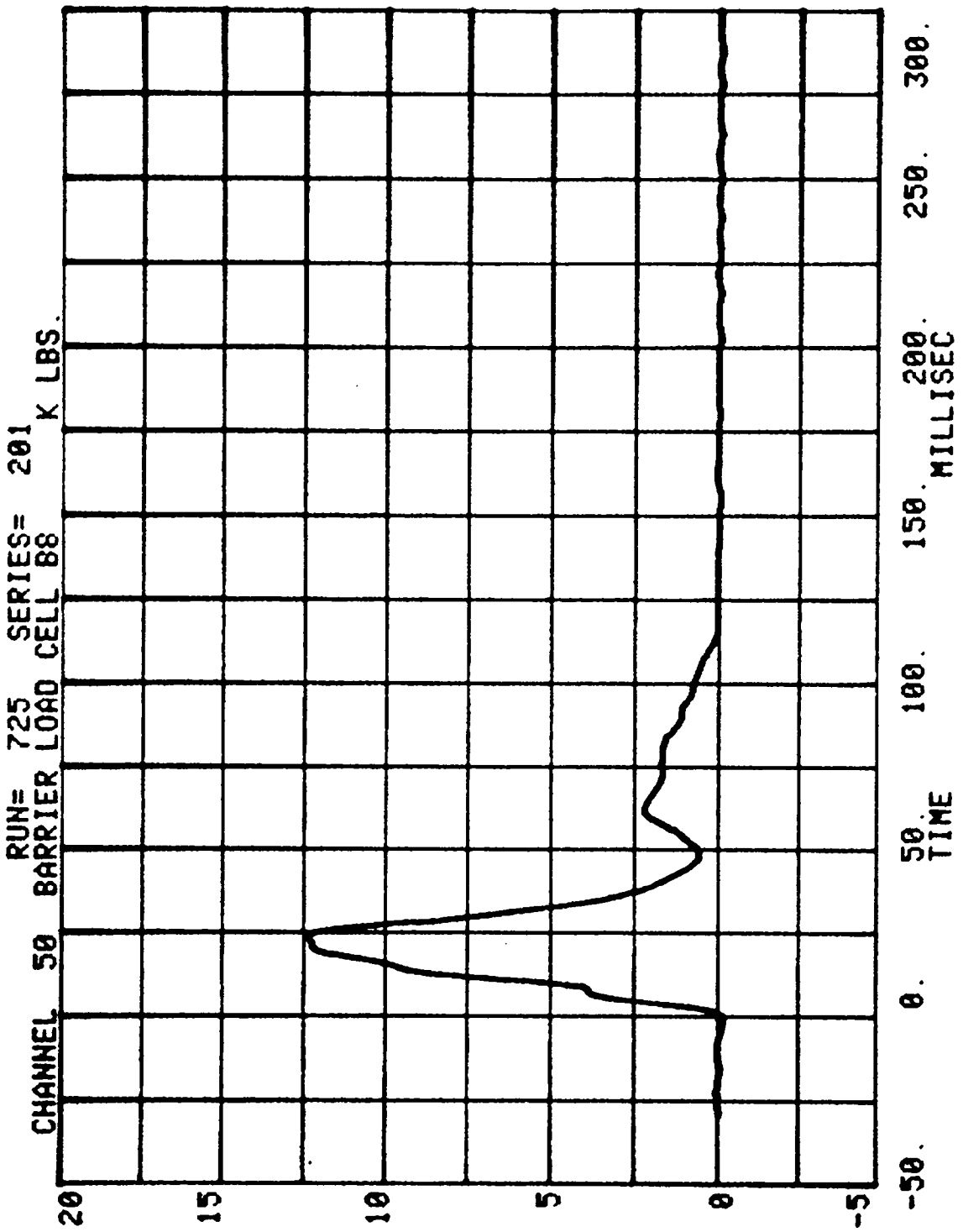

CHANNEL 46 BARRIER LOAD CELL B4
RUN= 725 SERIES= 201
K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

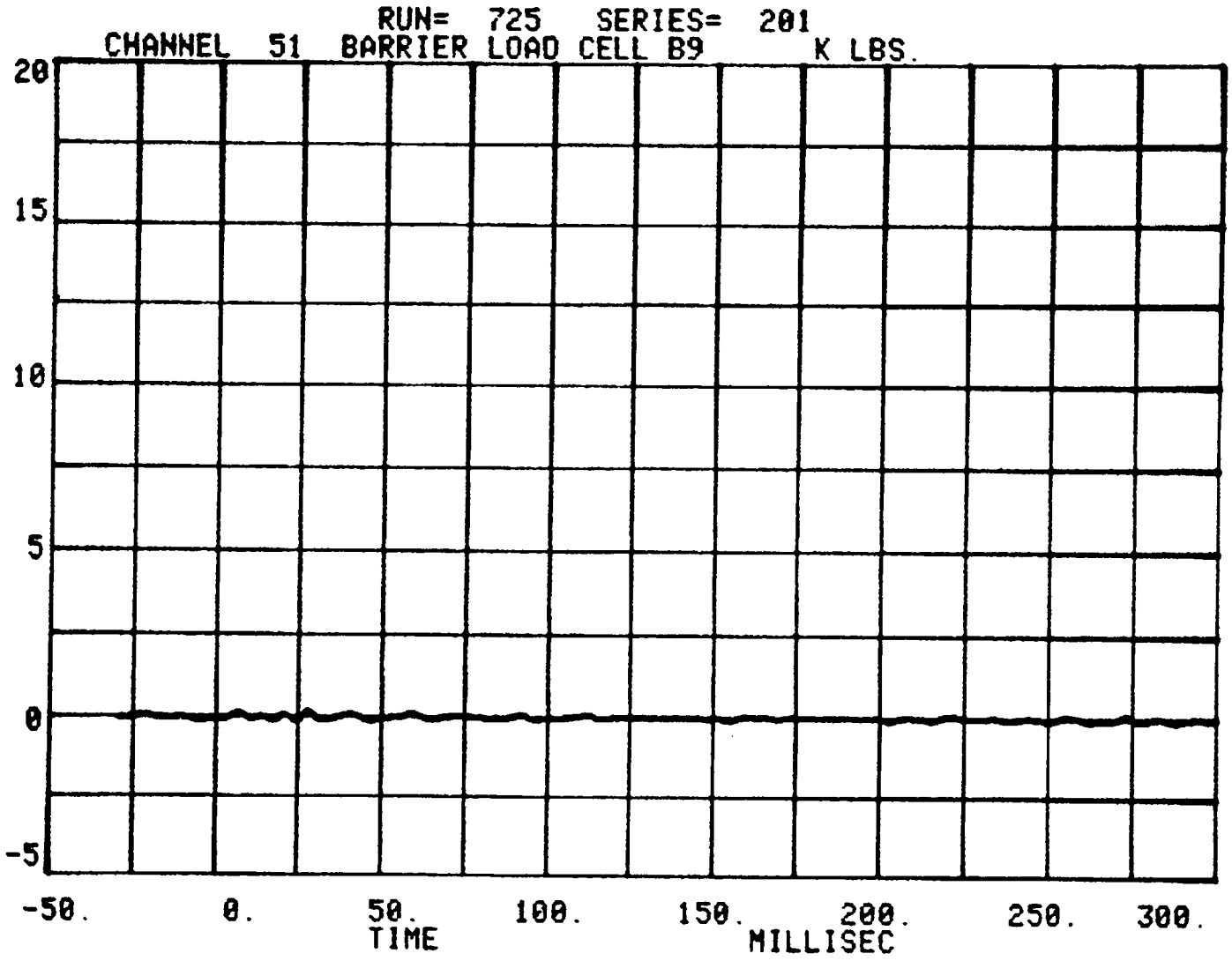
7457-15

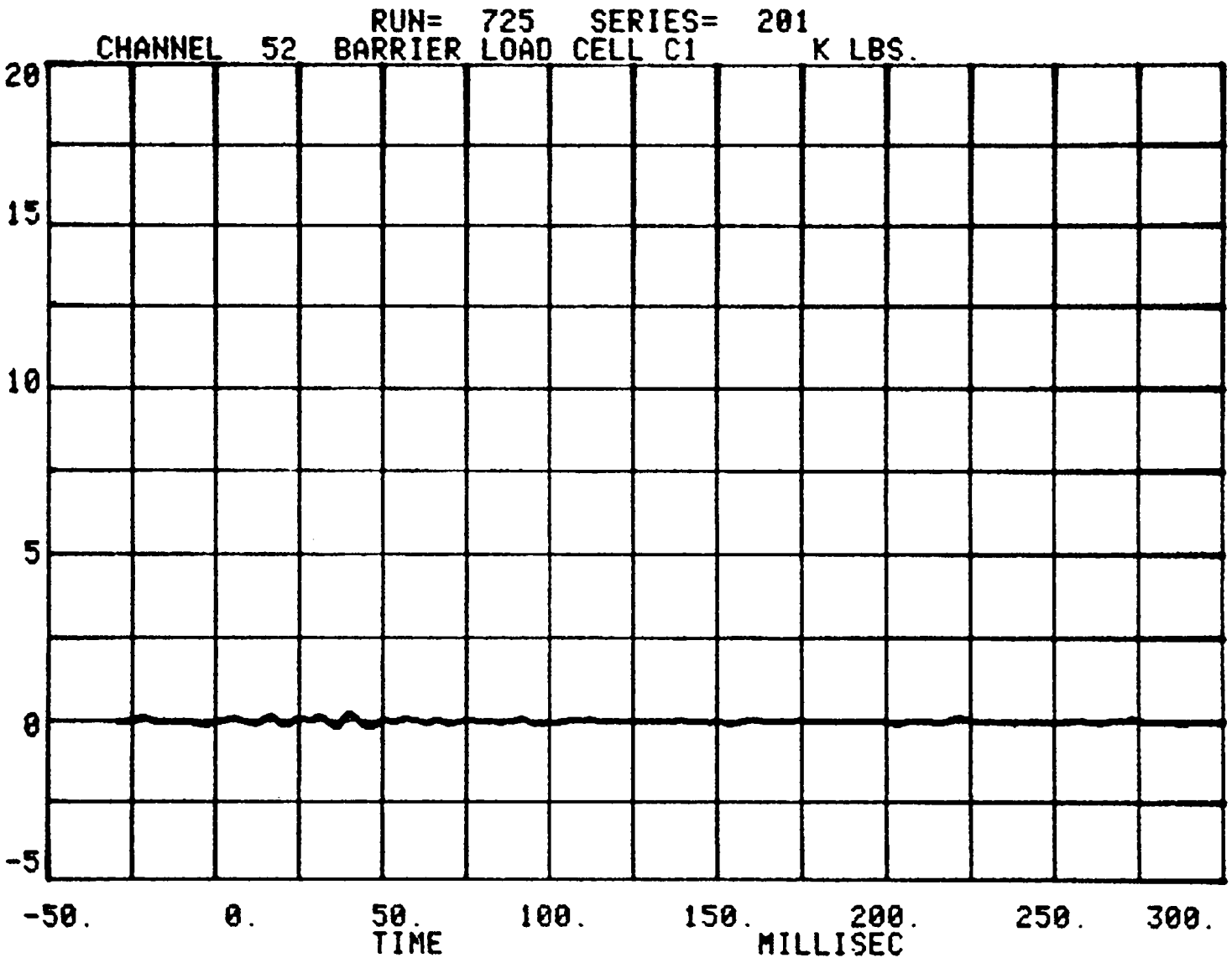

CHANNEL 47 BARRIER LOAD CELL B5
RUN= 725 SERIES= 201
K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

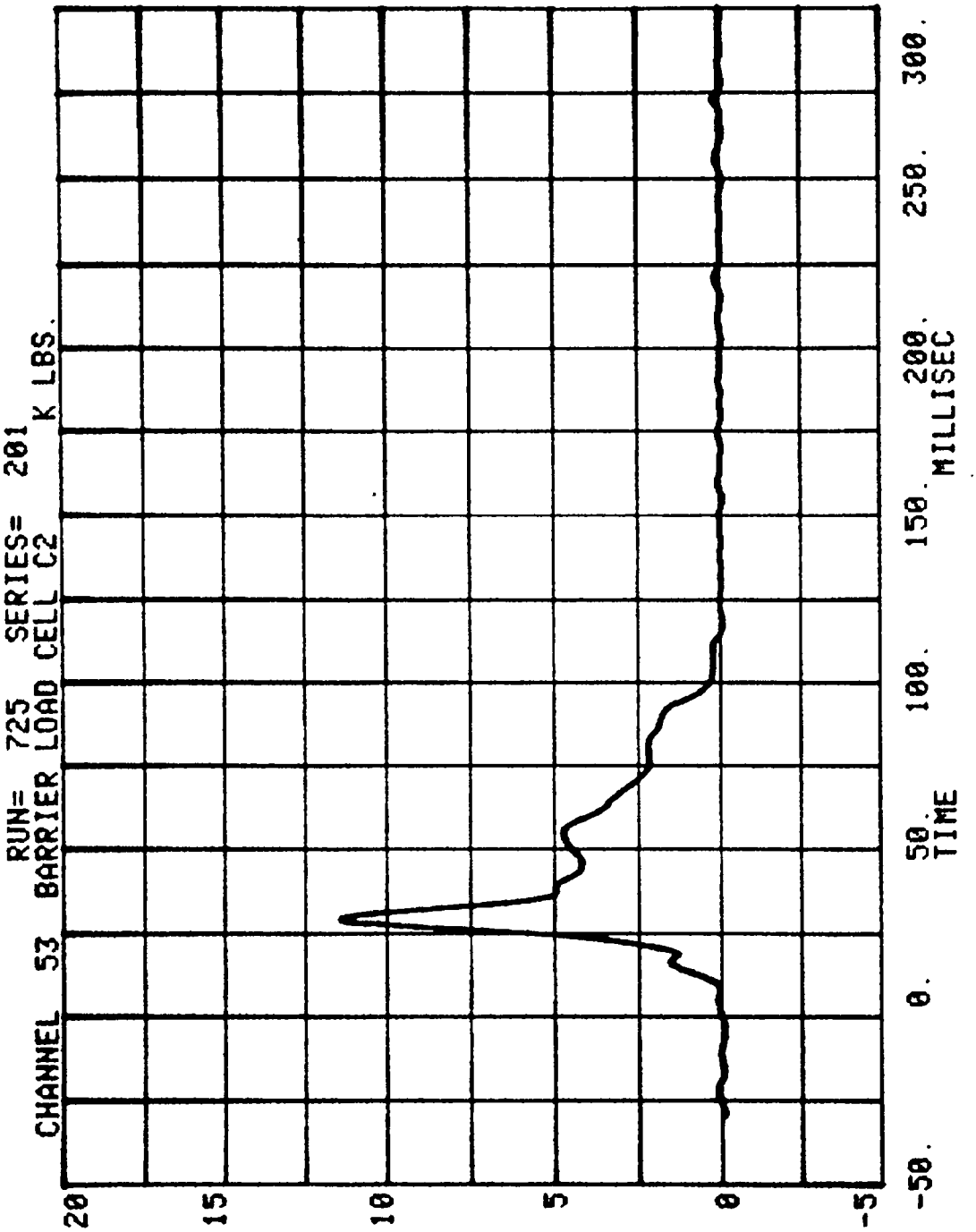

CHANNEL 48 BARRIER LOAD CELL B6
RUN= 725 SERIES= 201
K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 49 BARRIER LOAD CELL B7 K LBS.
25.
20.
15.
10.
5.
0.
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

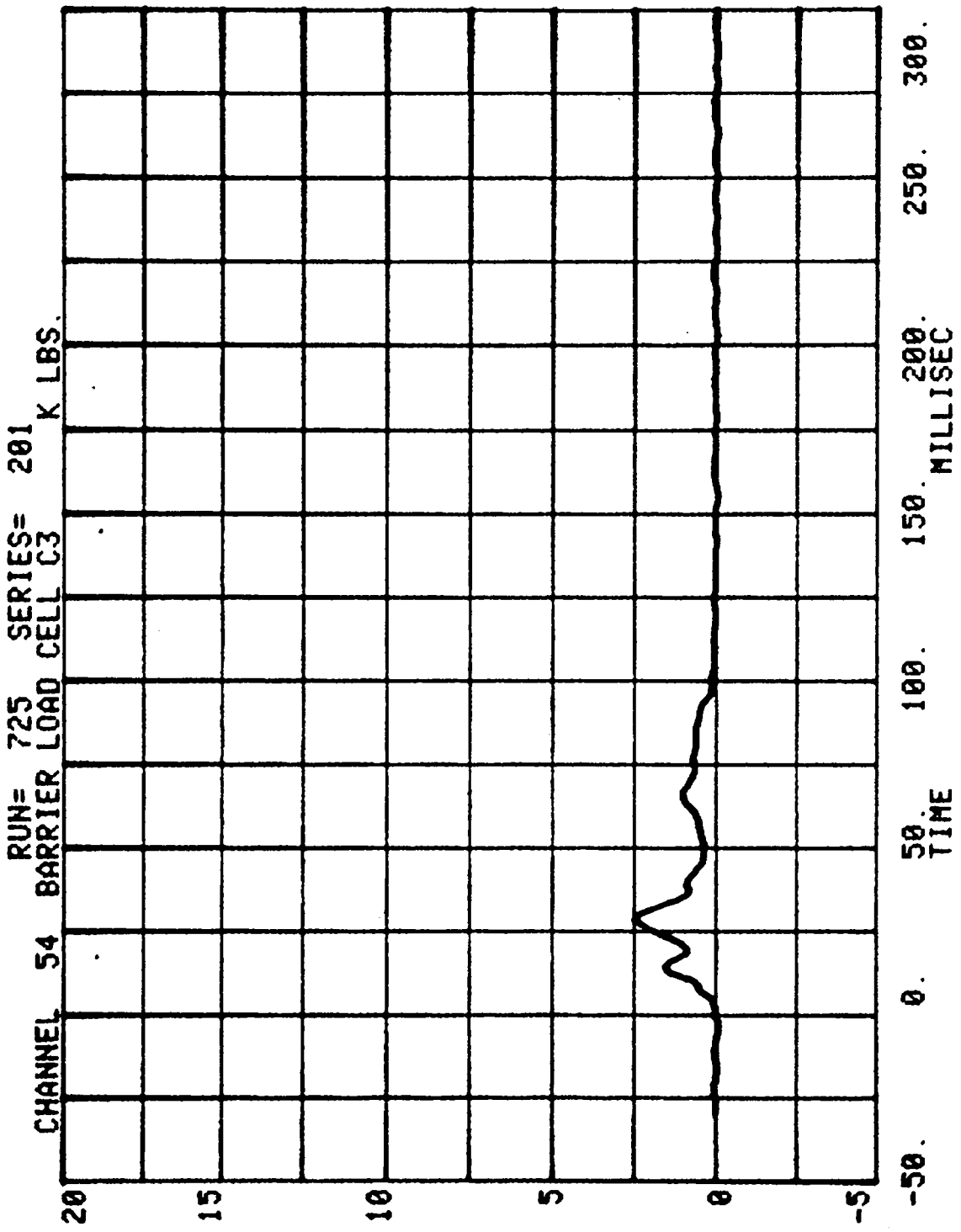

CHANNEL 50 BARRIER LOAD CELL 88
RUN= 725 SERIES= 201
K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 51 BARRIER LOAD CELL B9 K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 52 BARRIER LOAD CELL C1
K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 53 BARRIER LOAD CELL C2
RUN= 725 SERIES= 201
K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


CHANNEL 54 BARRIER LOAD CELL C3
RUN= 725 SERIES= 201
K LBS.
20
15
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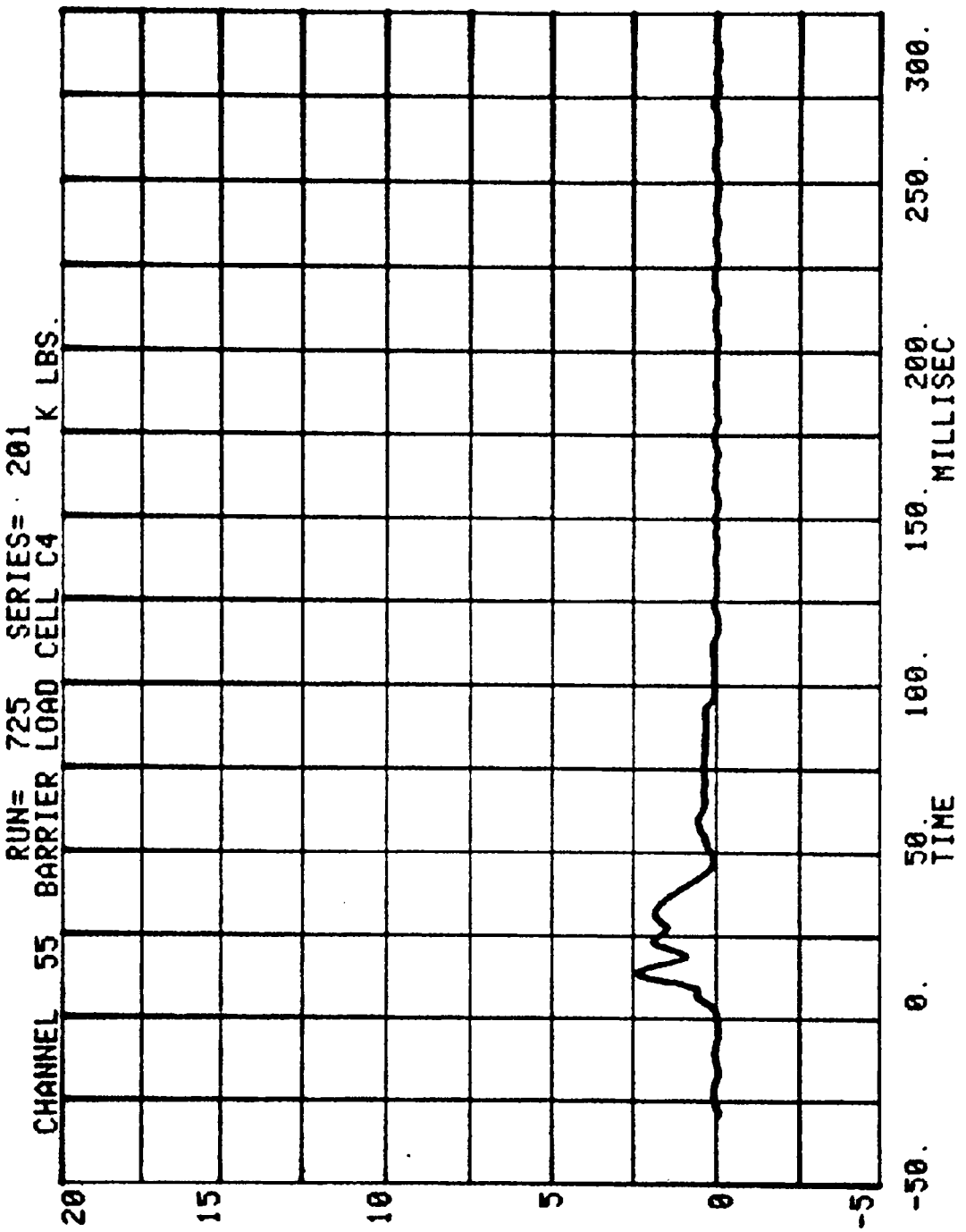
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 55 BARRIER LOAD CELL C4
RUN= 725 SERIES= 201
K LBS.
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15
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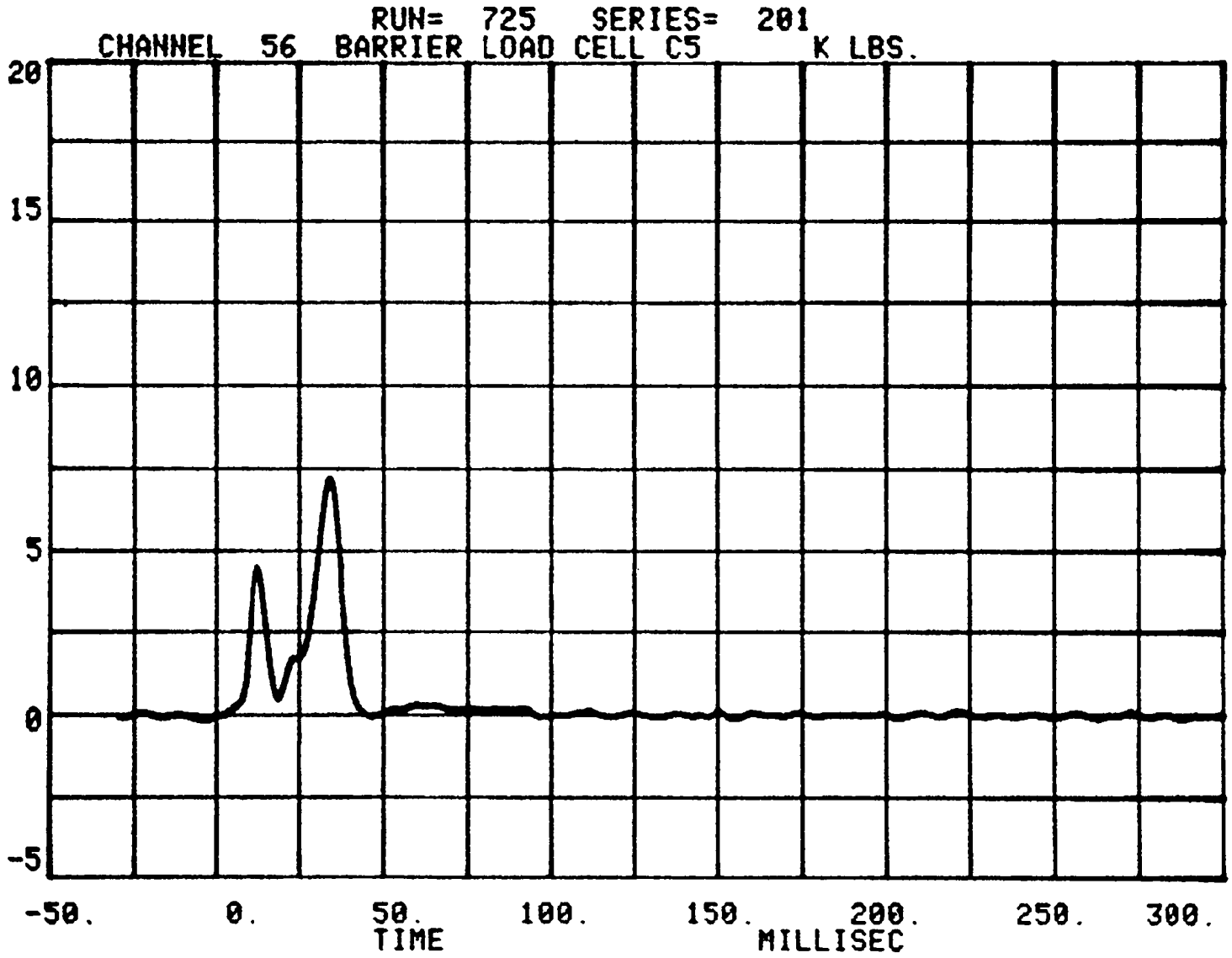
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


RUN= 725 SERIES= 201
CHANNEL 56 BARRIER LOAD CELL C5 K LBS.
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15
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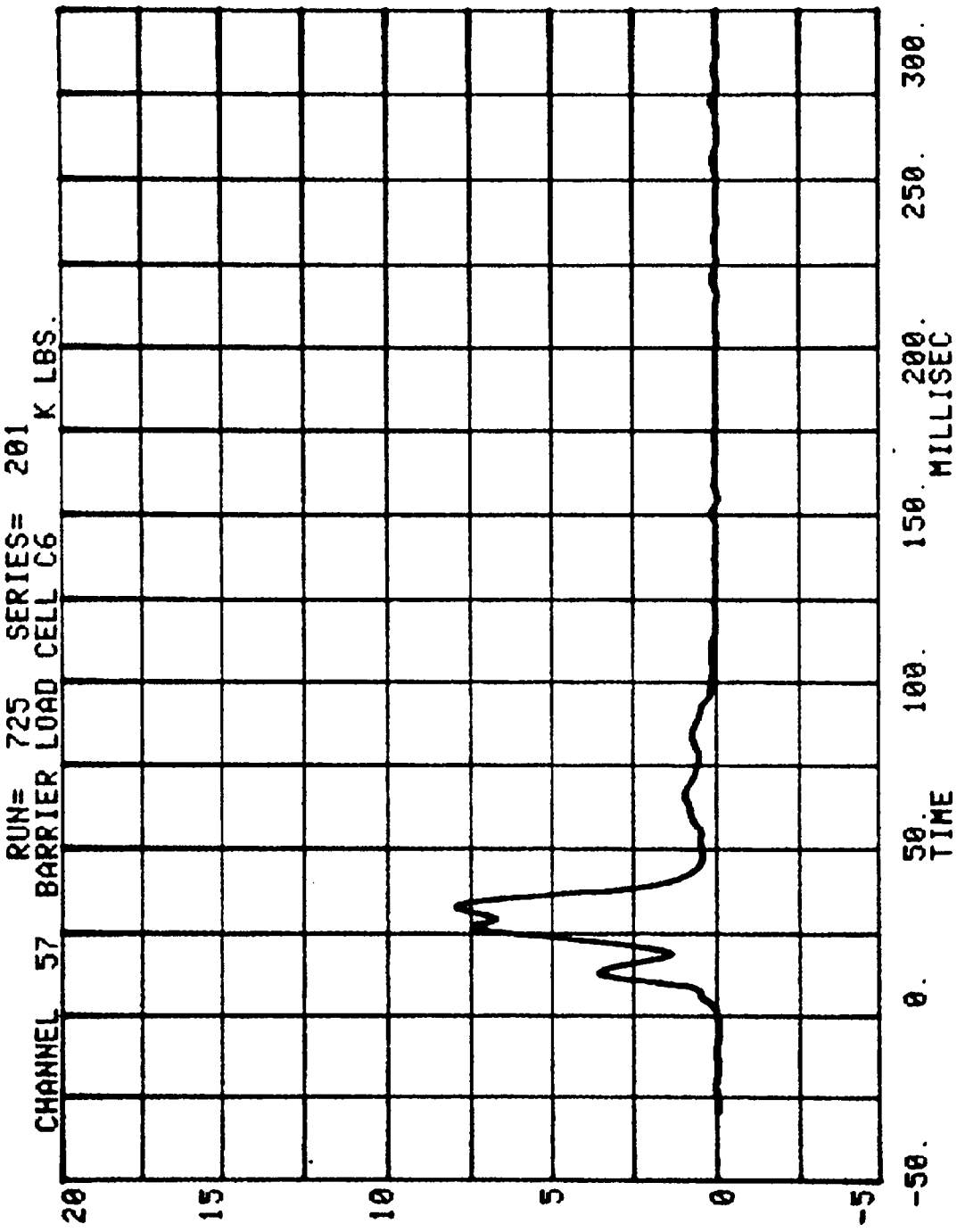
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
BARRIER LOAD CELL C6
CHANNEL 57
K LBS.
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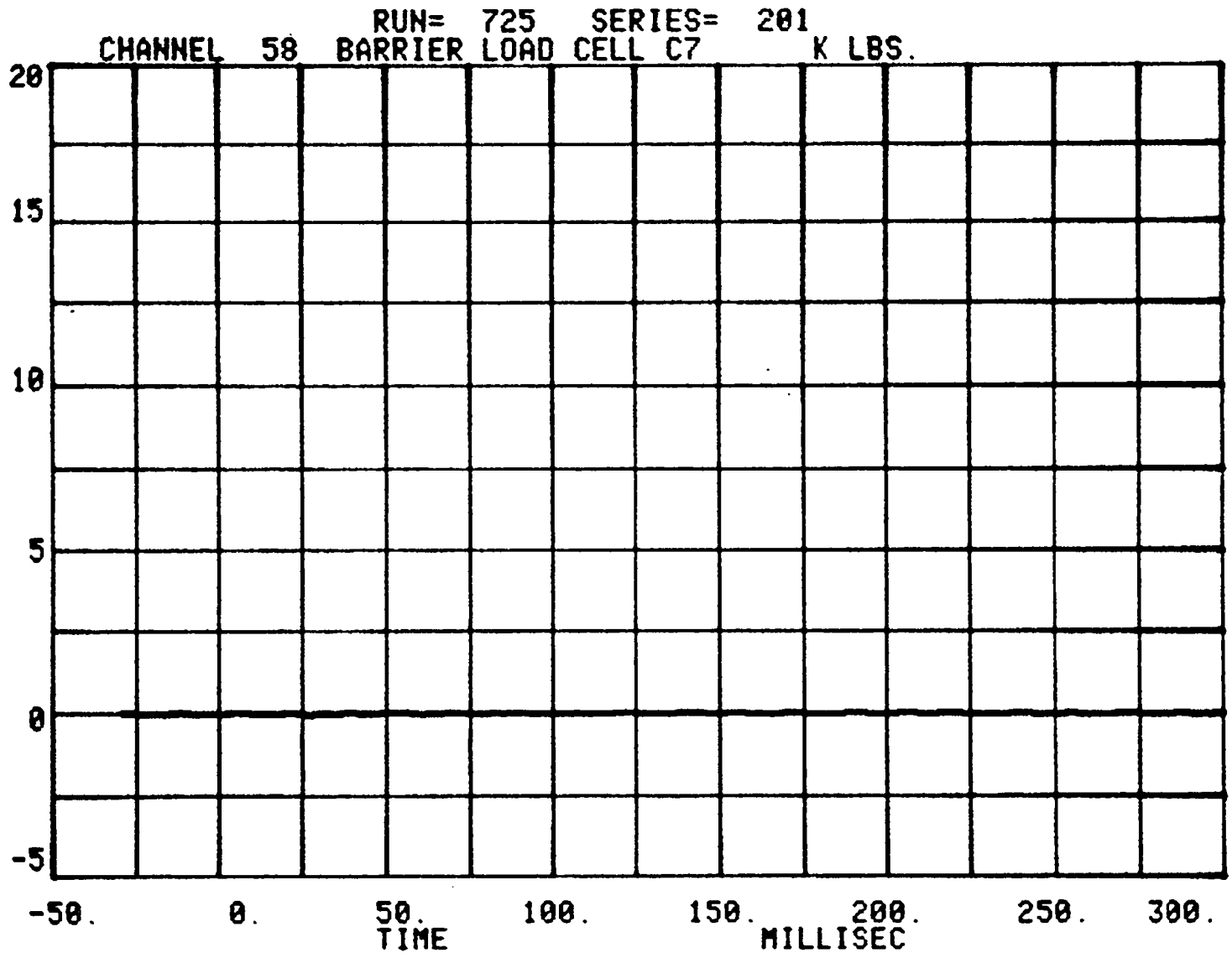
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 58 BARRIER LOAD CELL C7 K LBS.
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15
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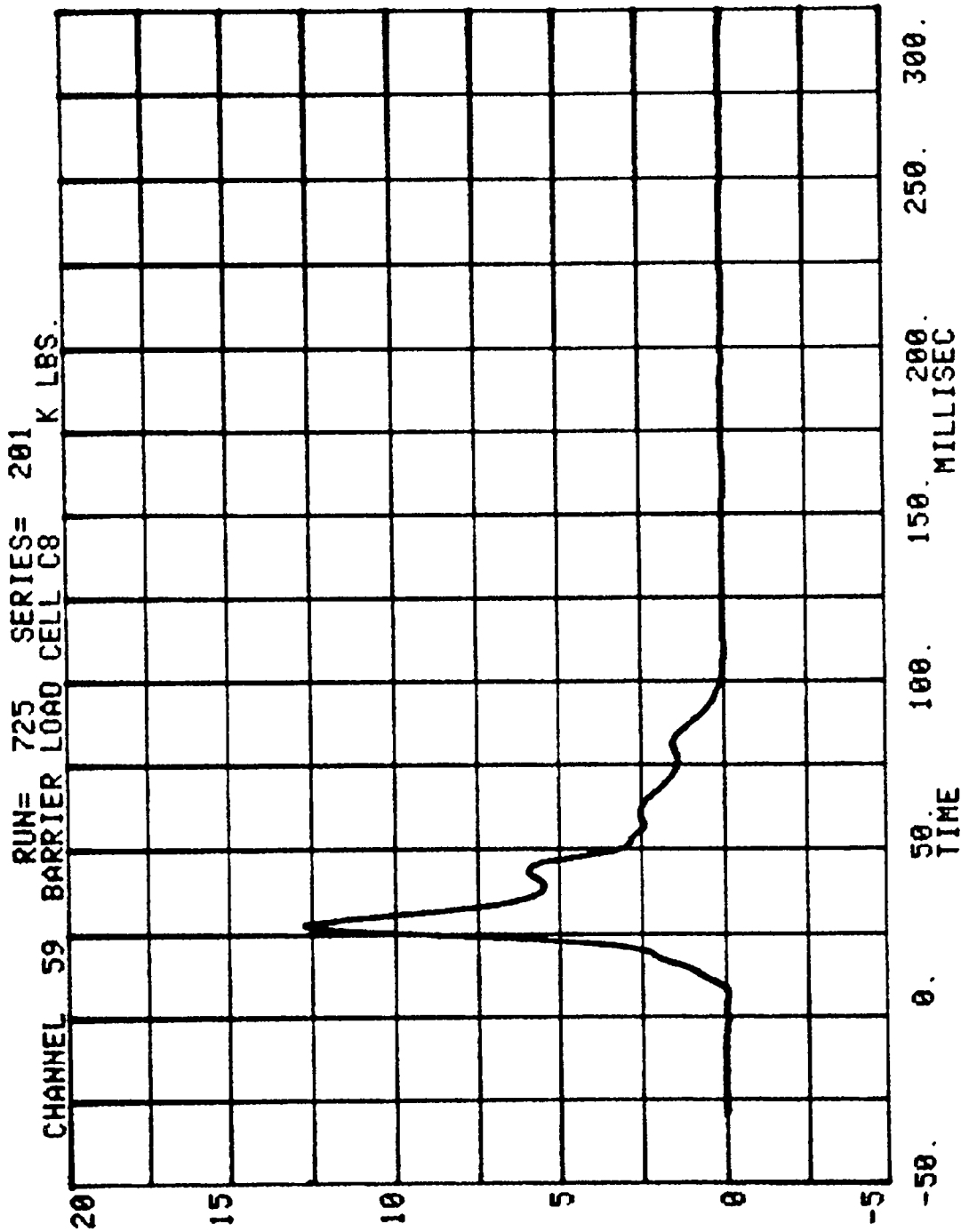
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 59 BARRIER LOAD CELL C8
RUN= 725 SERIES= 201
K LBS.
20
15
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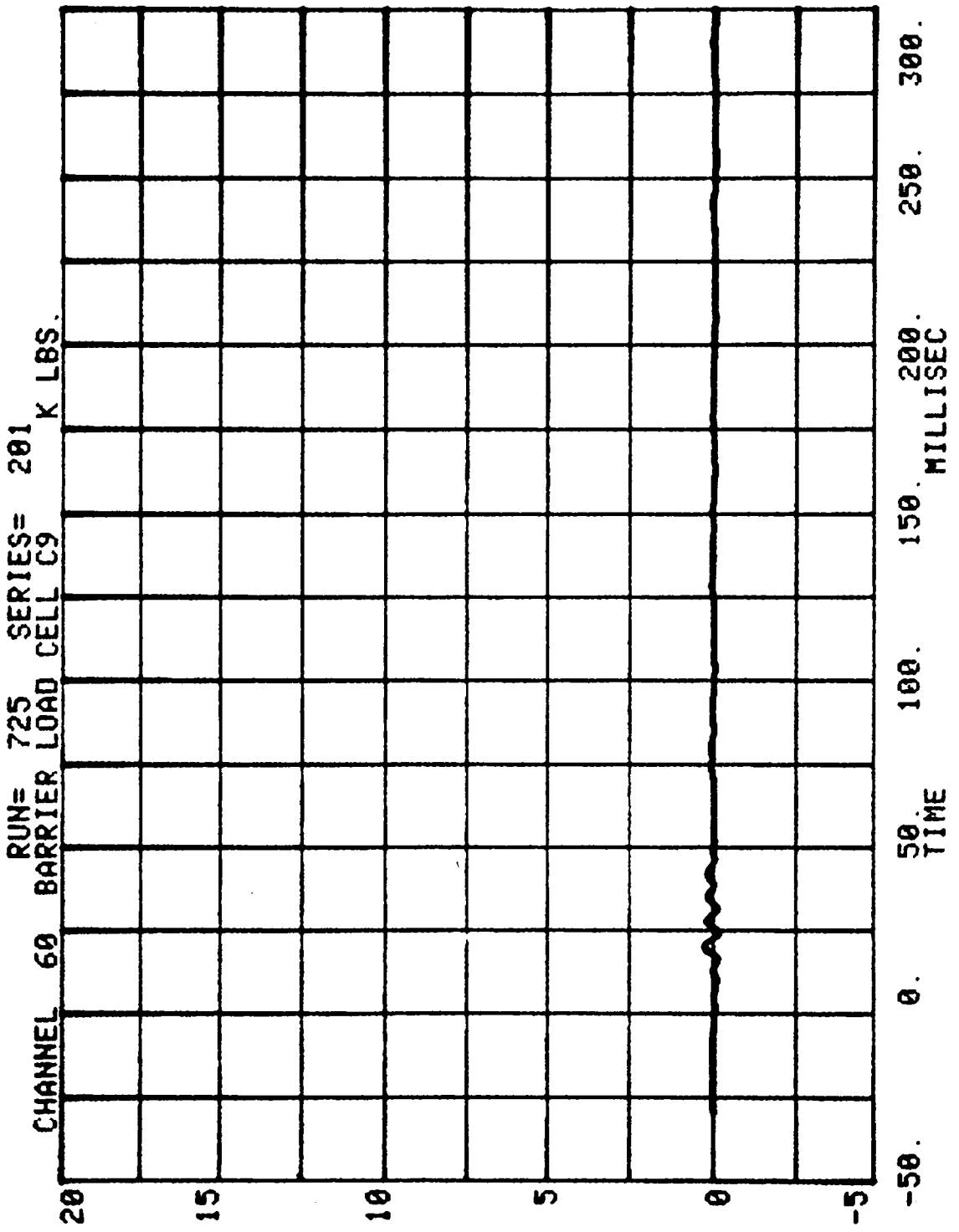
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


CHANNEL 60 BARRIER LOAD CELL C9
RUN= 725 SERIES= 201
K LBS.
20
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0
-5
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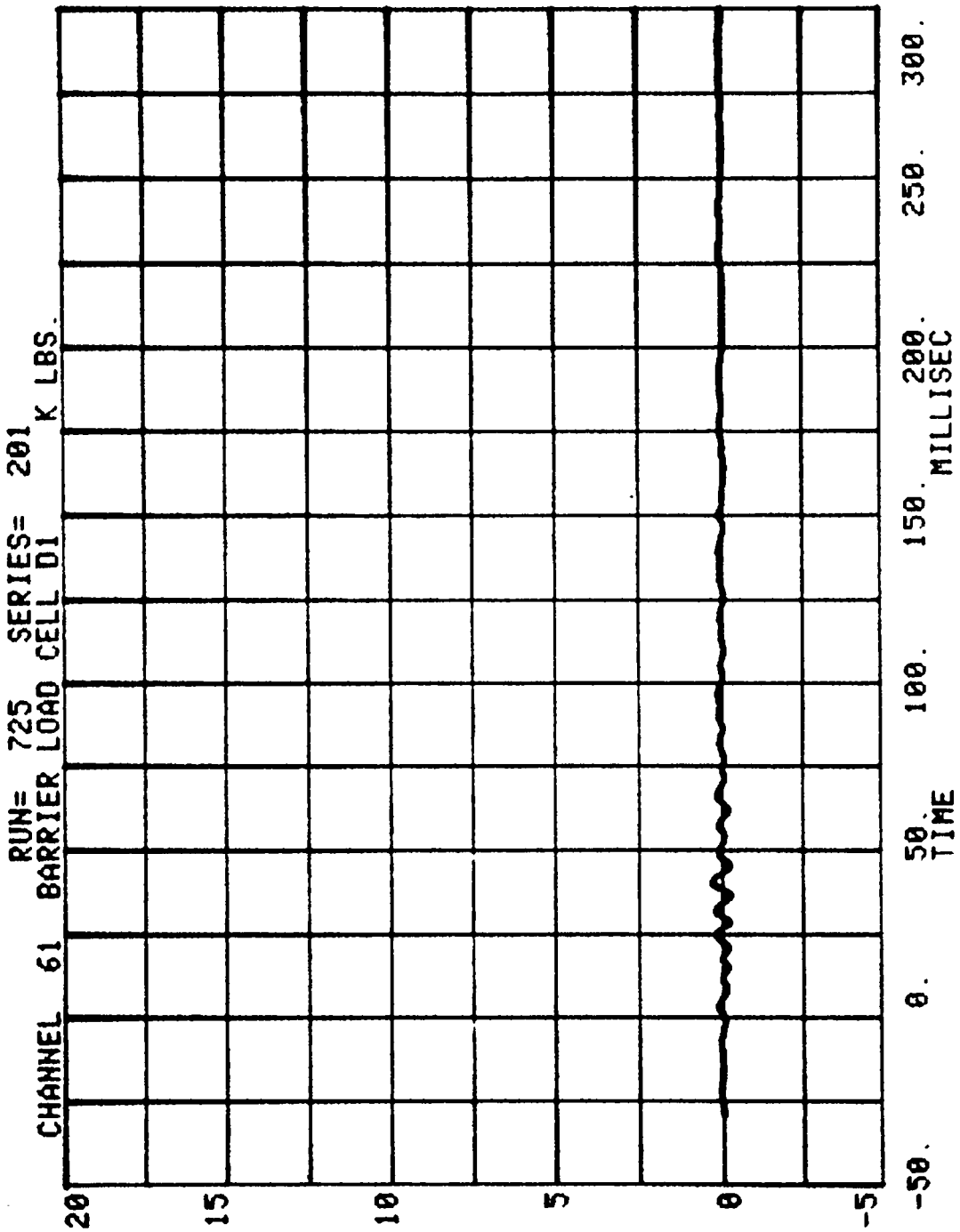
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 61 BARRIER LOAD CELL D1
RUN= 725 SERIES= 201
K LBS.
20
15
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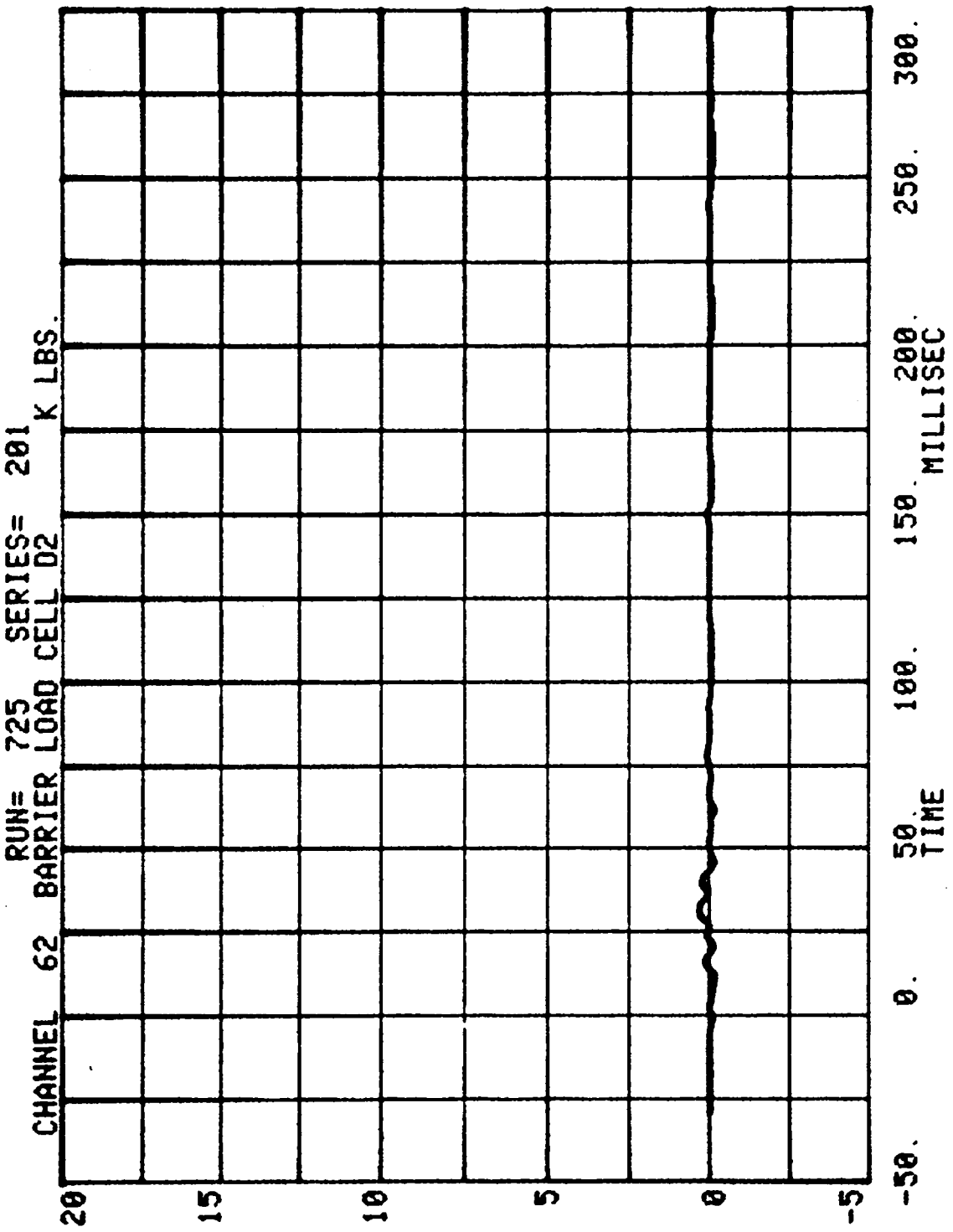
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 62 BARRIER LOAD CELL D2
RUN= 725 SERIES= 201
K LBS.
20
15
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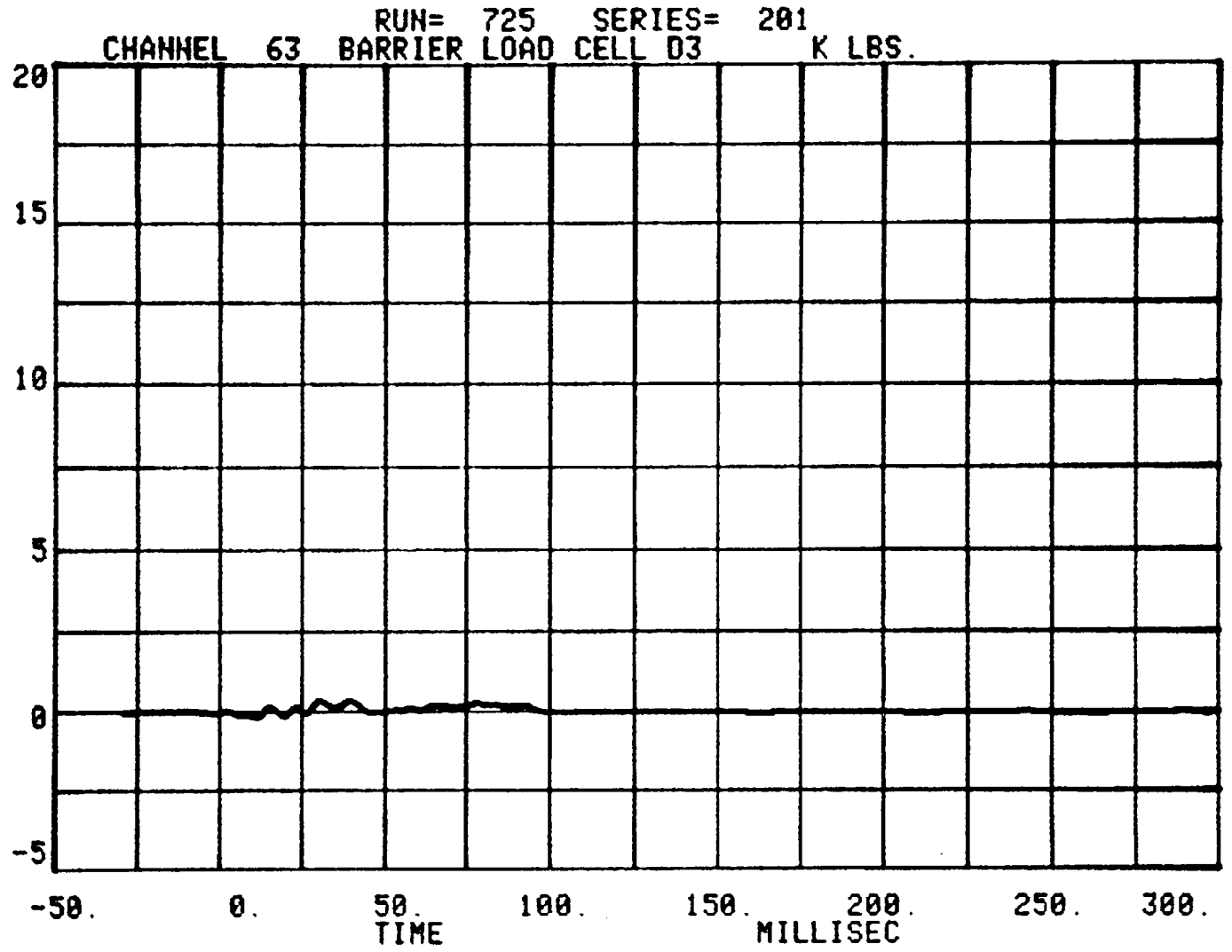
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 63 BARRIER LOAD CELL 03 K LBS.
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15
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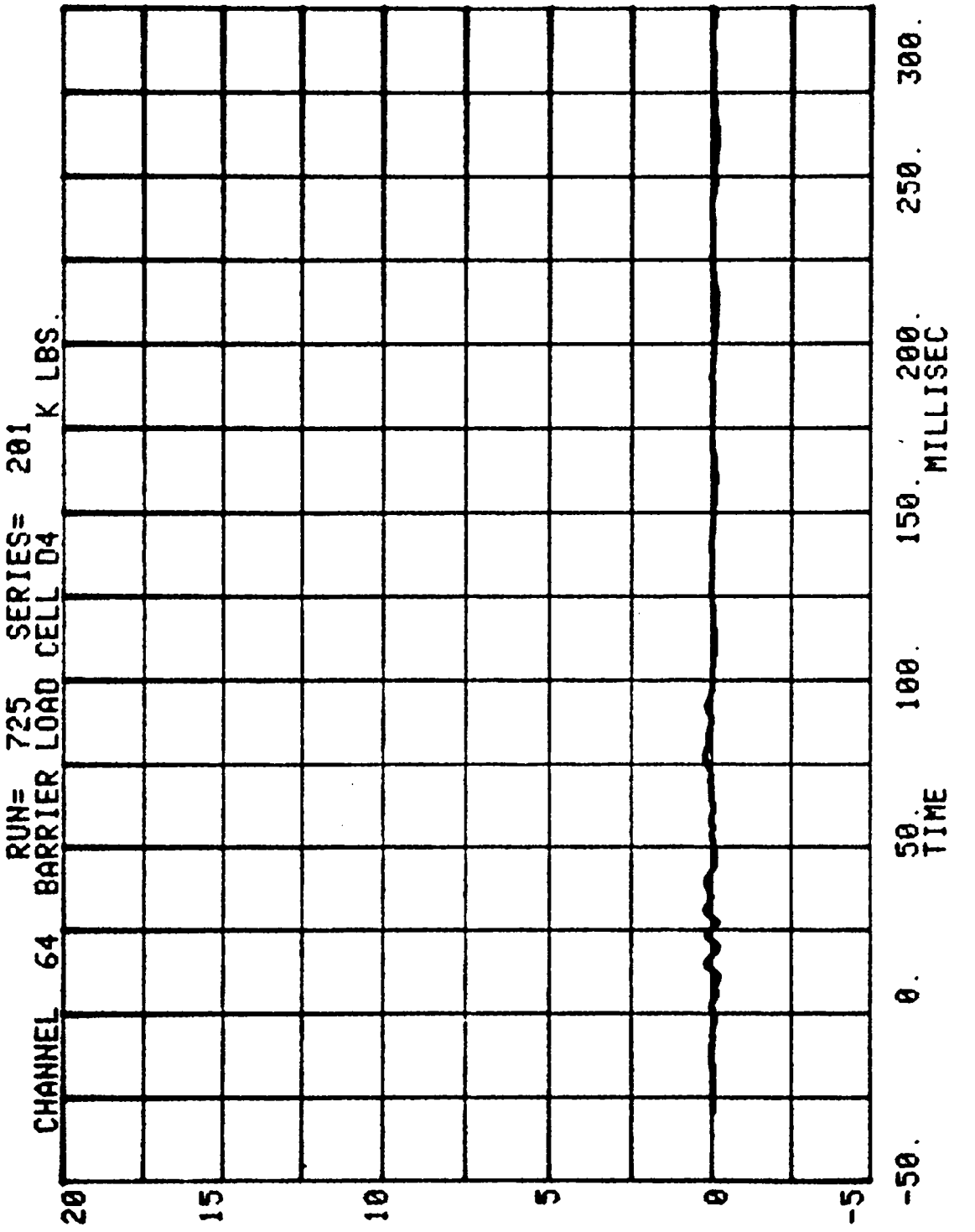
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 64 BARRIER LOAD CELL D4
RUN= 725 SERIES= 201
K LBS.
20
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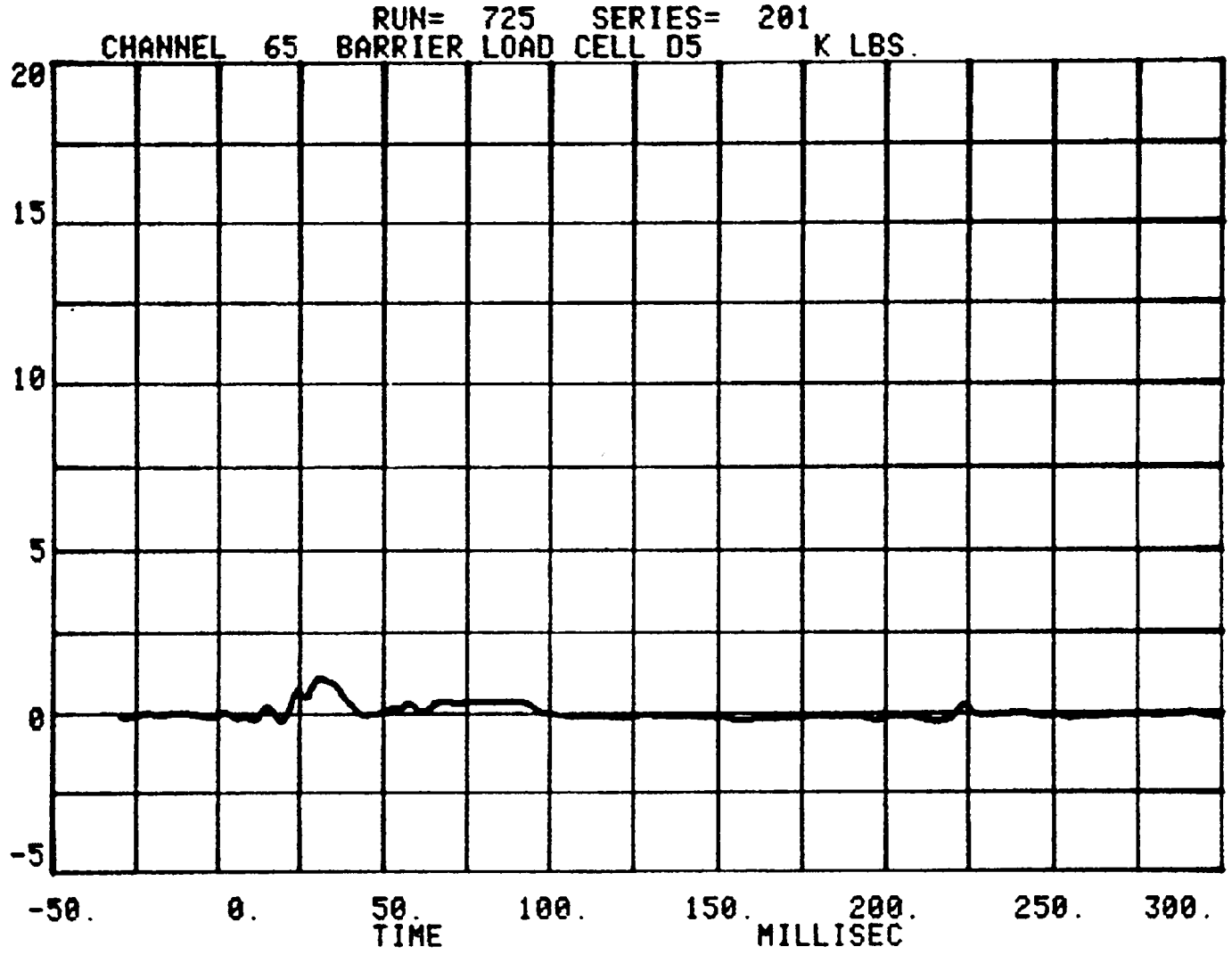
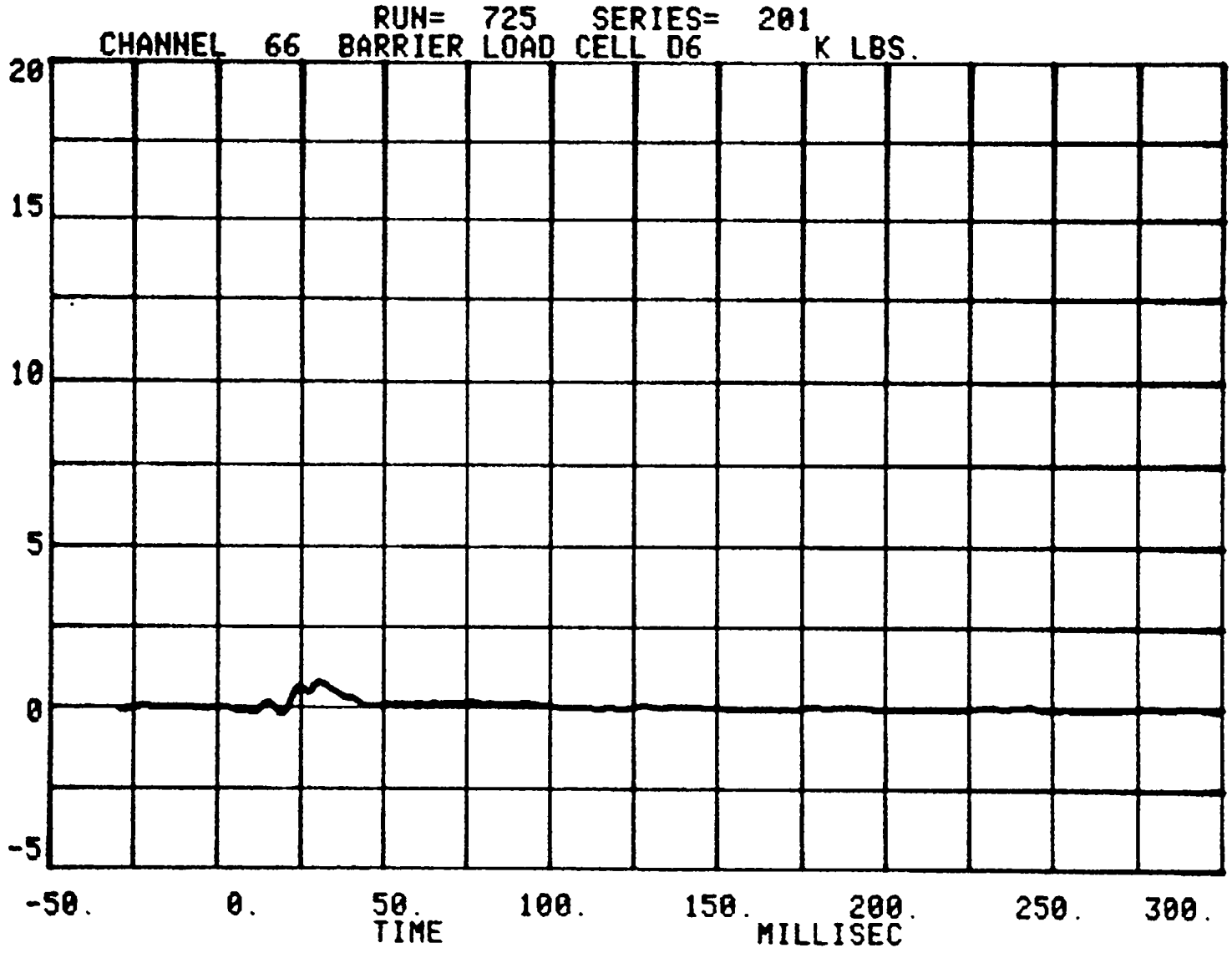
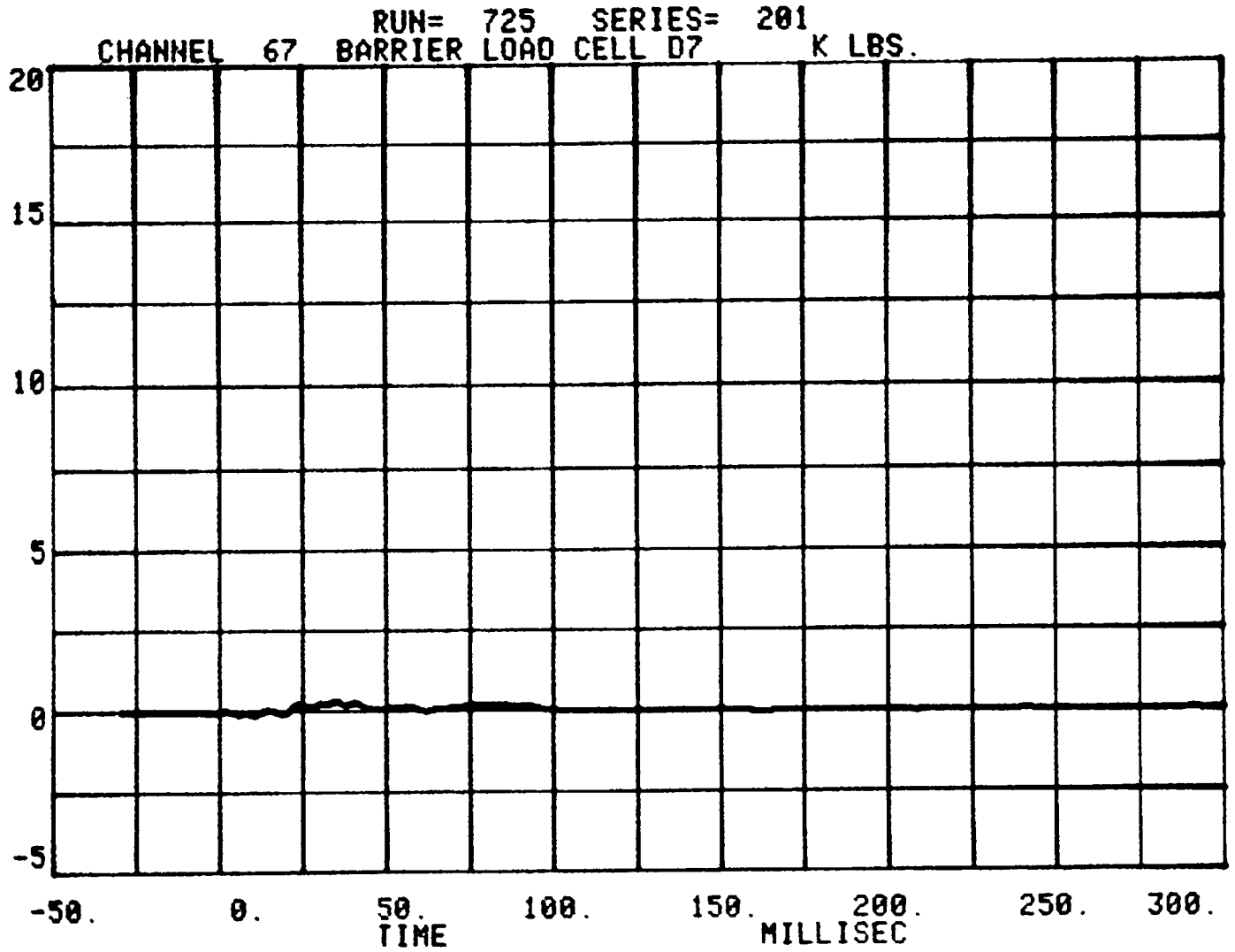
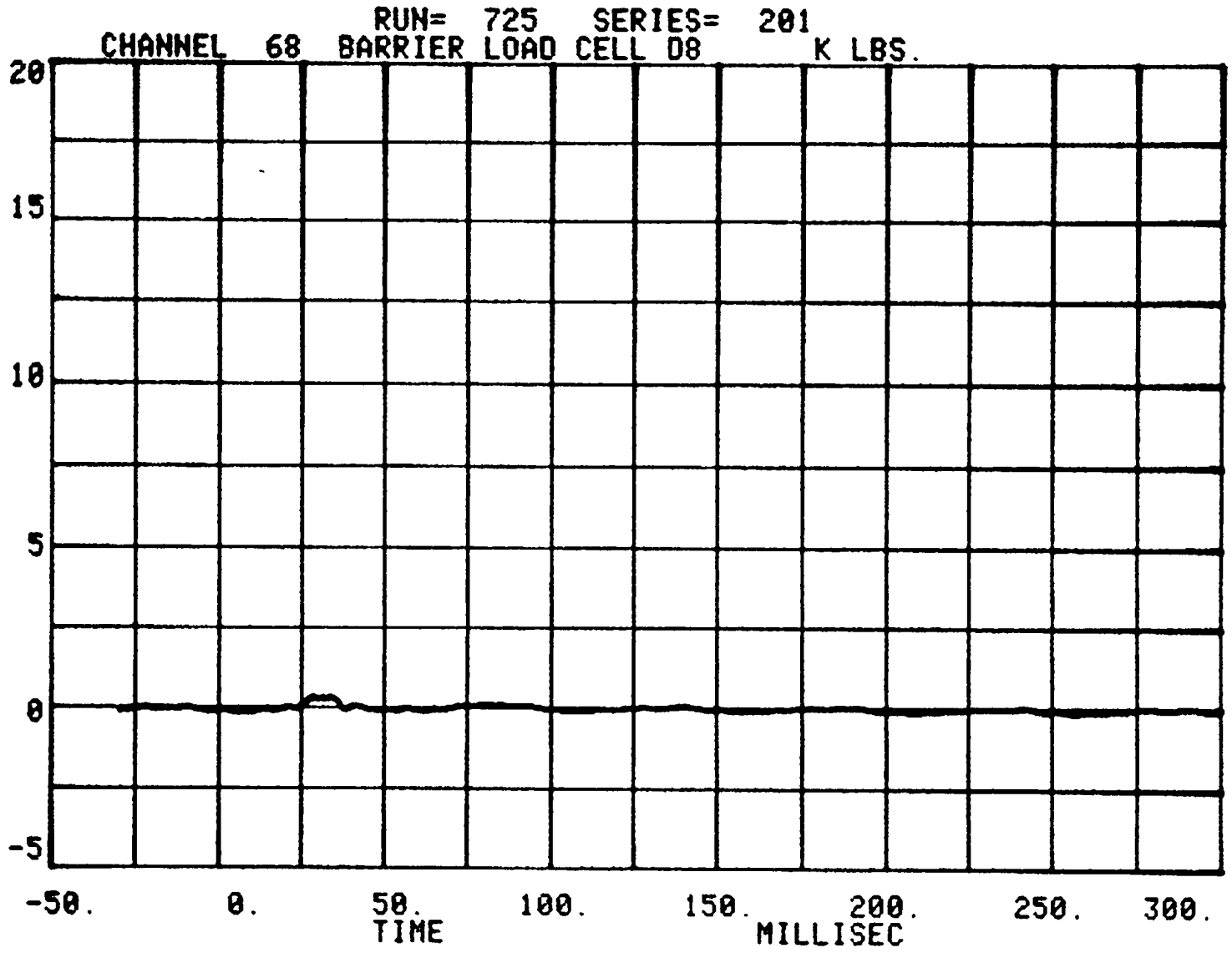
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

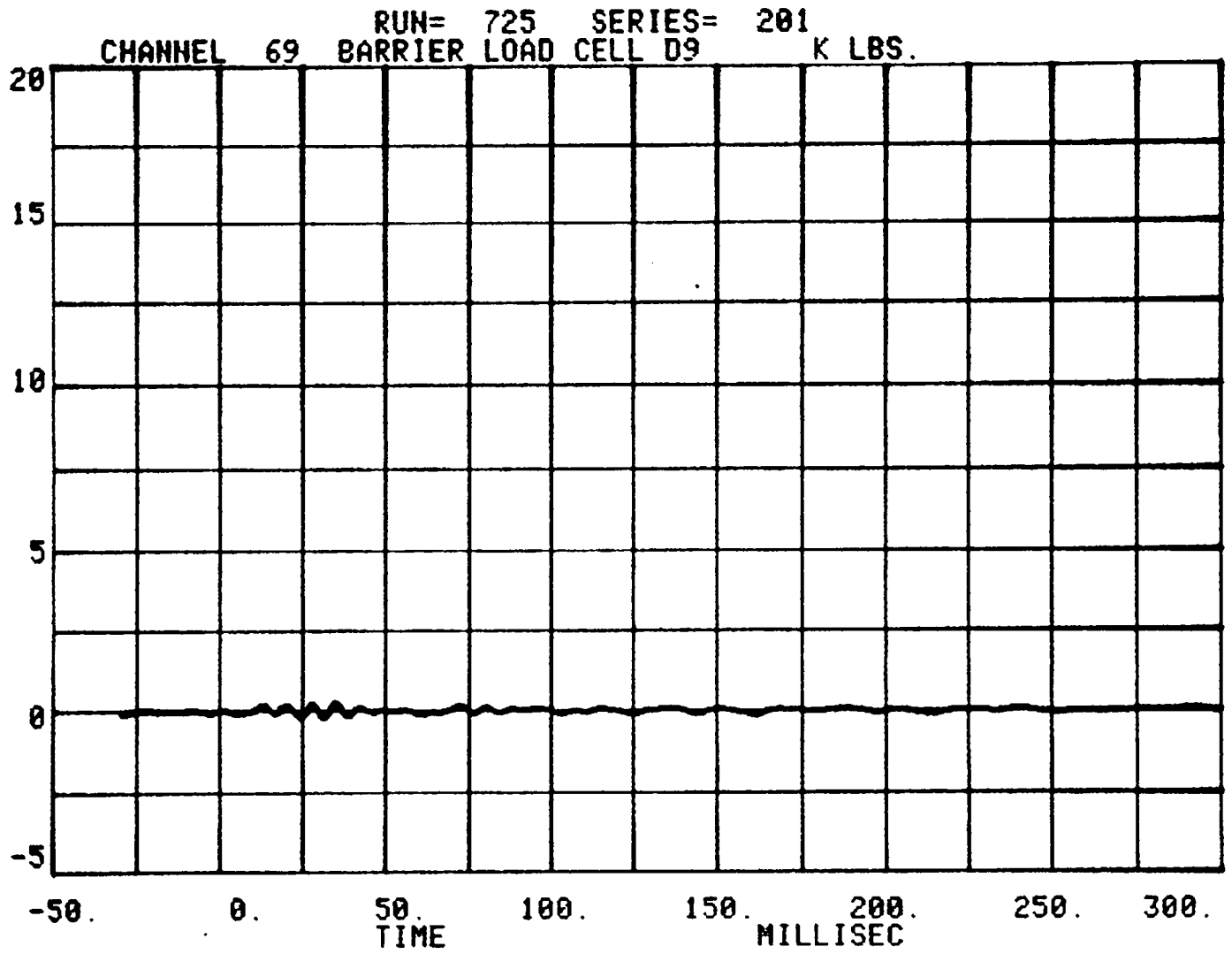

RUN= 725 SERIES= 201
CHANNEL 65 BARRIER LOAD CELL D5 K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 66 BARRIER LOAD CELL D6 K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 67 BARRIER LOAD CELL D7
K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15

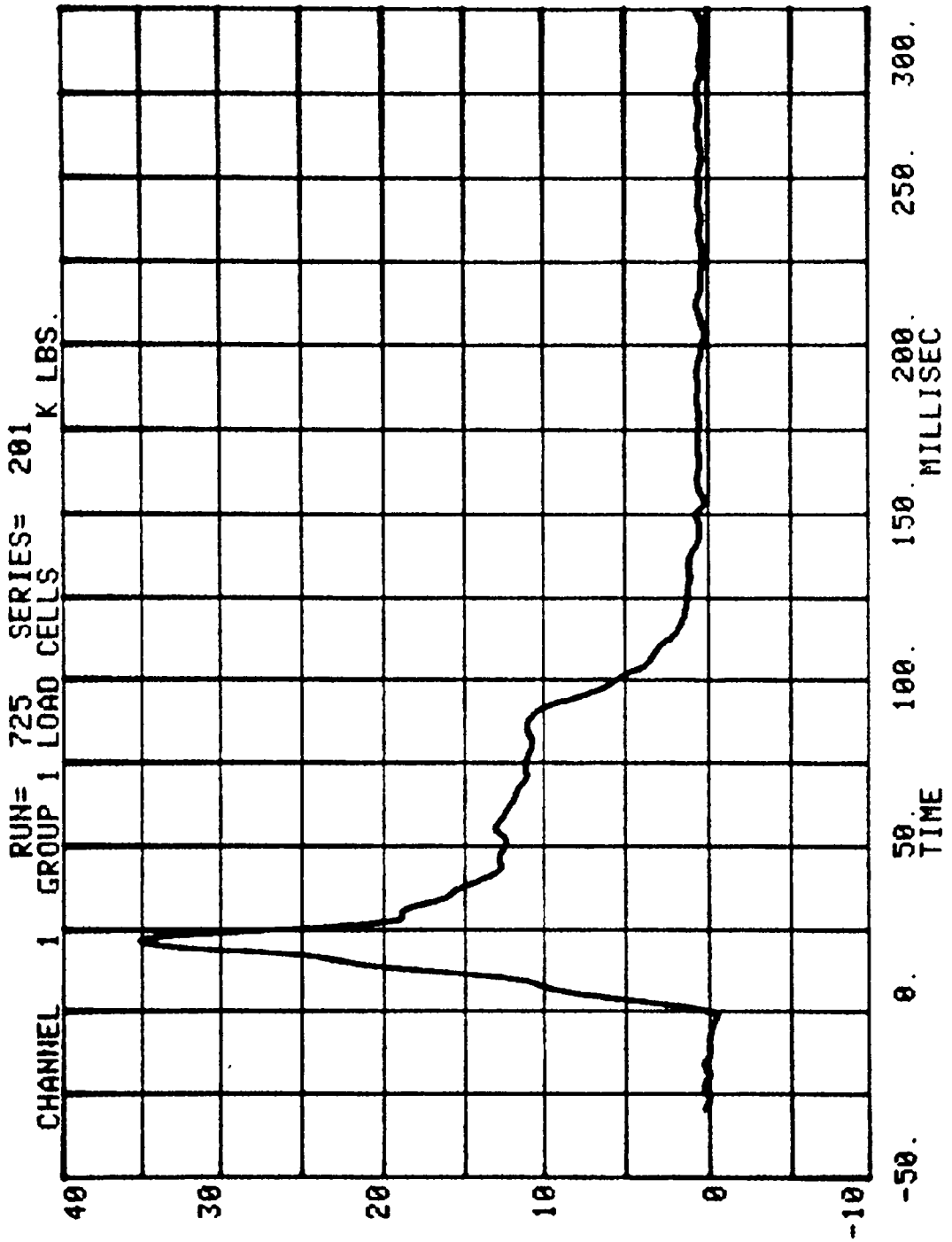

RUN= 725 SERIES= 201
CHANNEL 68 BARRIER LOAD CELL D8
K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 69 BARRIER LOAD CELL D9 K LBS.
20
15
10
5
0
-5
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

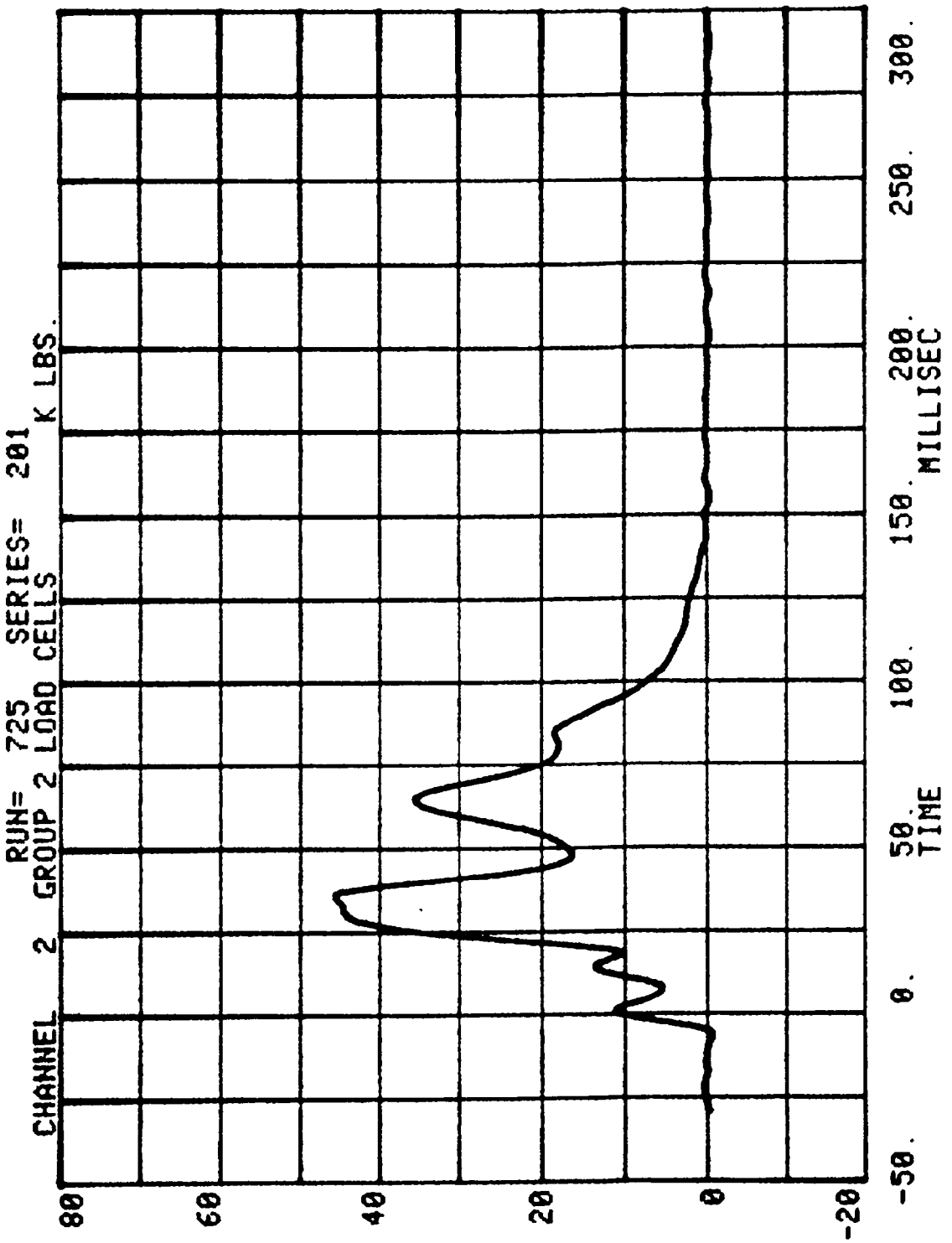
NEW CAR ASSESSMENT BARRIER TESTS - 1986

RUN # 725 SERIES # 201

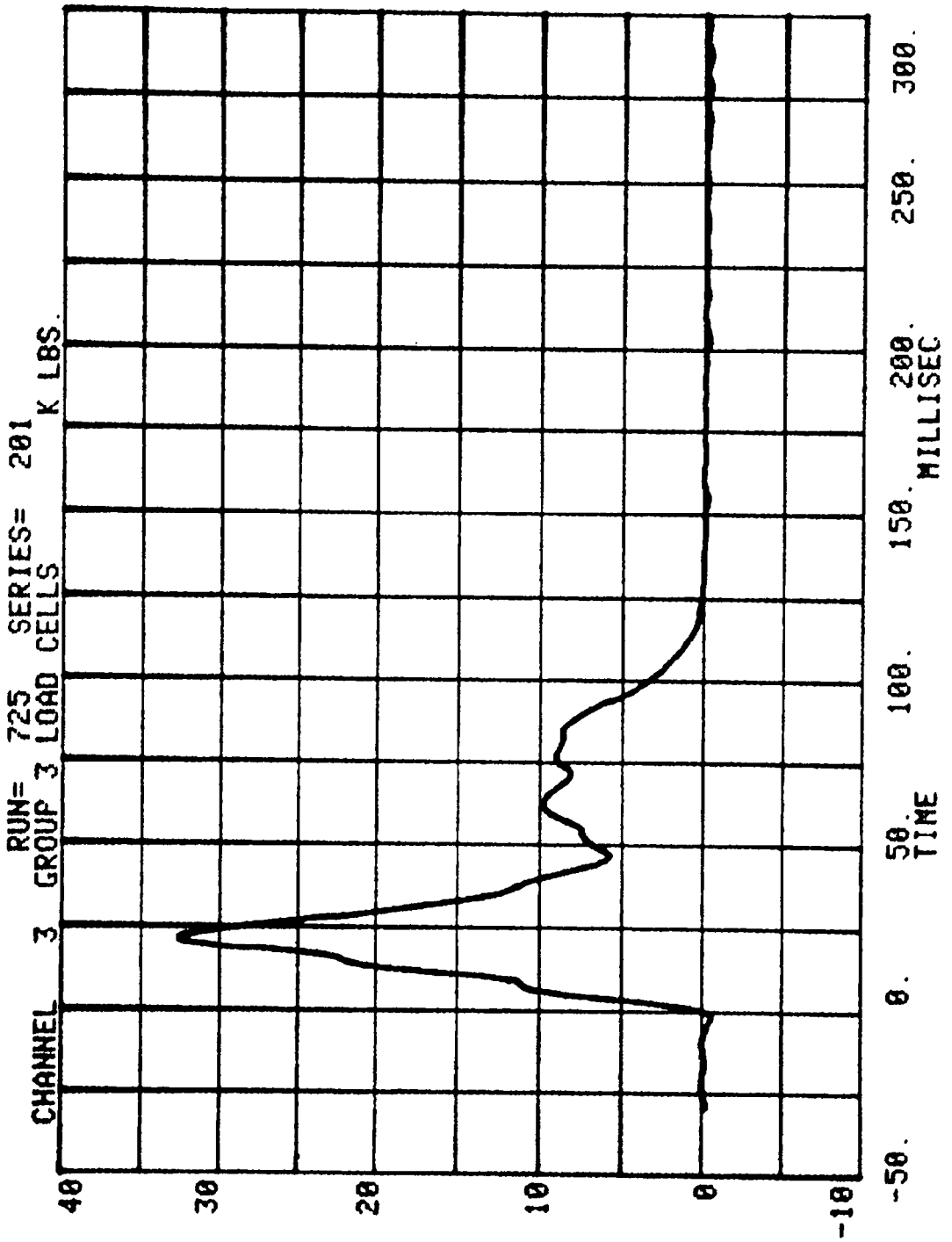
CHAN	TITLE	MINIMUM	MAXIMUM
1	GROUP 1 LOAD CELLS	-.420	35.172 K LBS.
2	GROUP 2 LOAD CELLS	-.581	45.938 K LBS.
3	GROUP 3 LOAD CELLS	-.518	32.711 K LBS.
4	GROUP 4 LOAD CELLS	-.386	14.312 K LBS.
5	GROUP 5 LOAD CELLS	-.587	18.517 K LBS.
6	GROUP 6 LOAD CELLS	-.383	13.509 K LBS.
7	TOTAL LOAD CELL SUM	-1.472	123.748 K LBS.


CHANNEL 1
RUN= 725 SERIES= 201
GROUP 1 LOAD CELLS
K LBS.
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

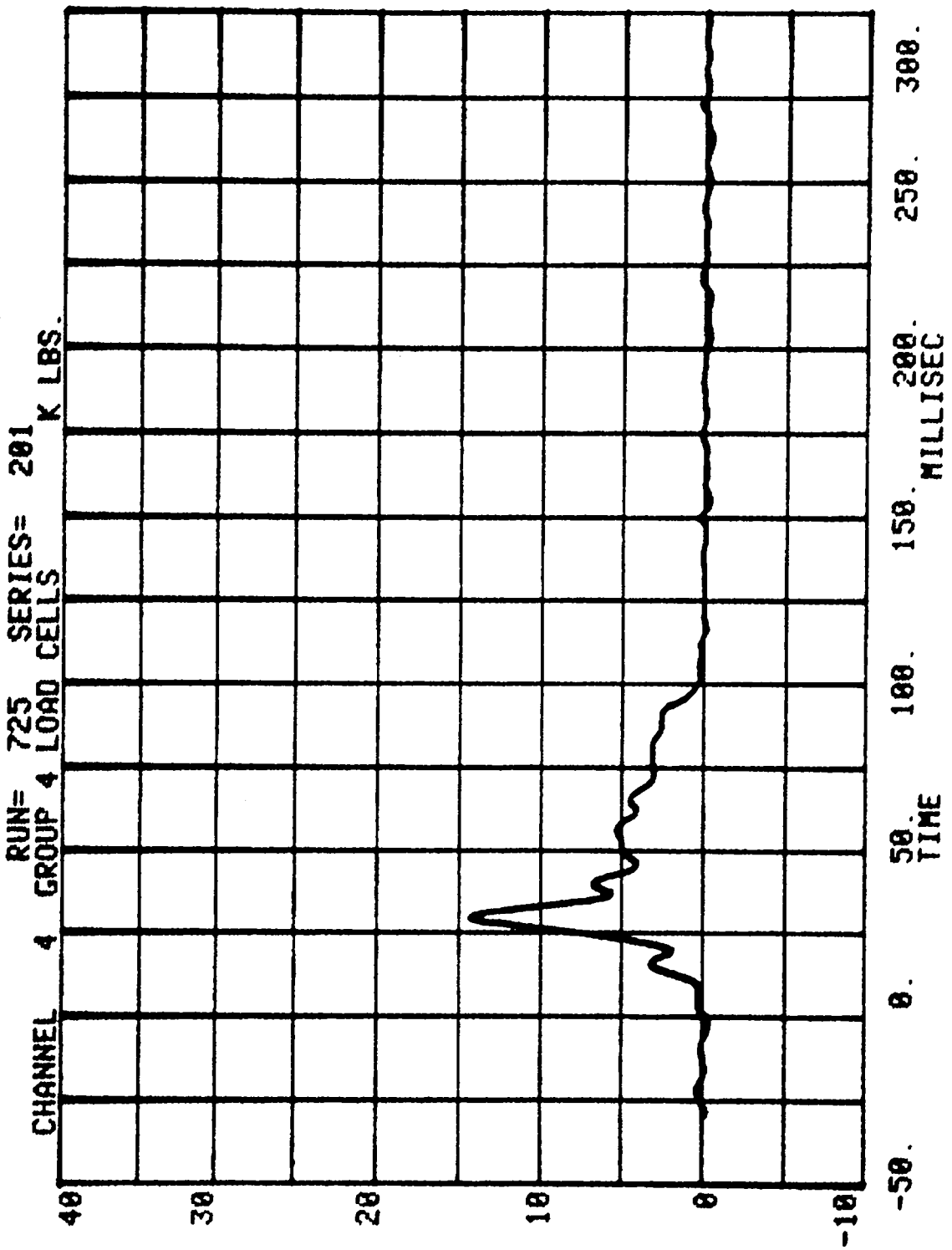
7457-15

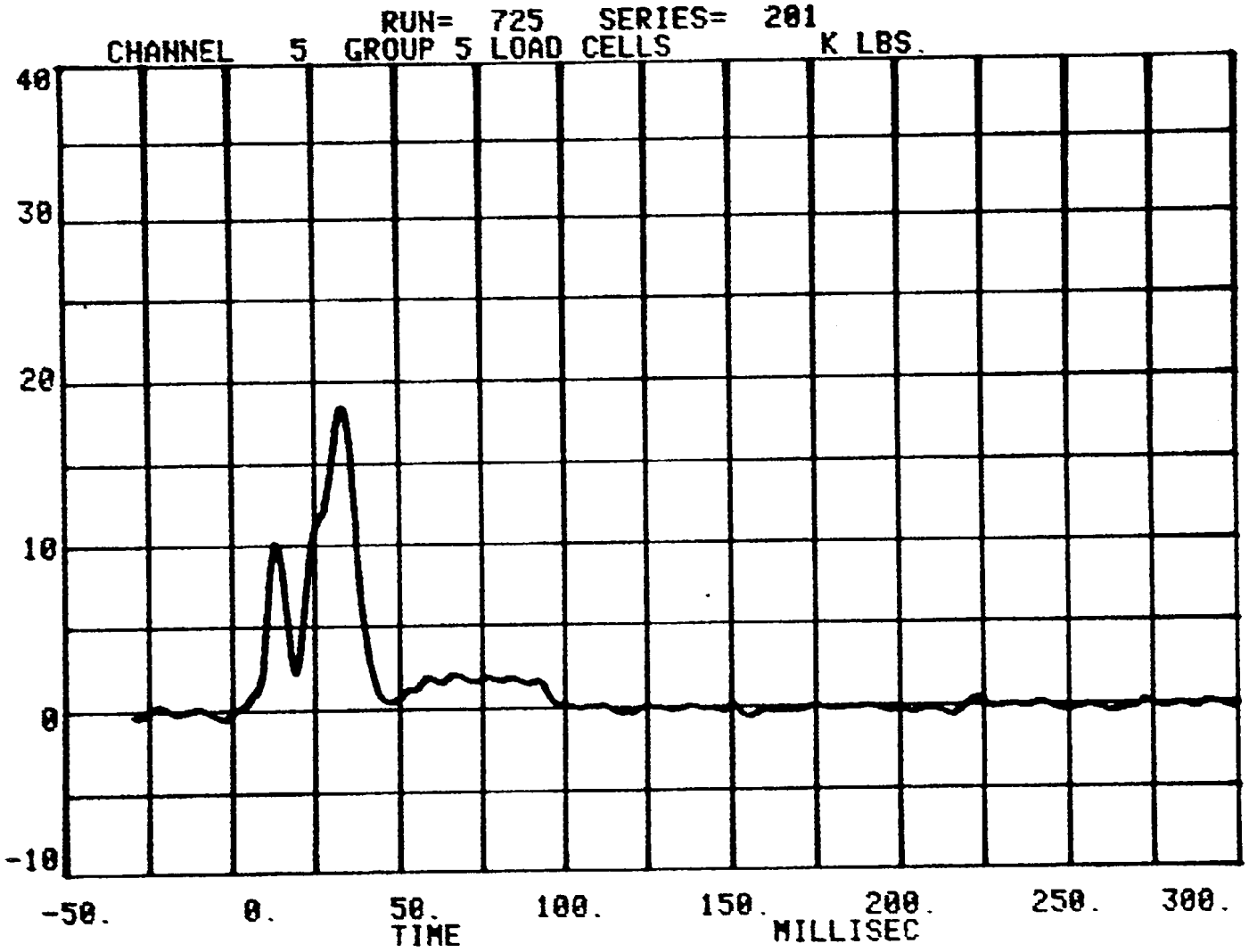

CHANNEL 2
RUN= 725 SERIES= 201
GROUP 2 LOAD CELLS
K LBS.
80
60
40
20
0
-20
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

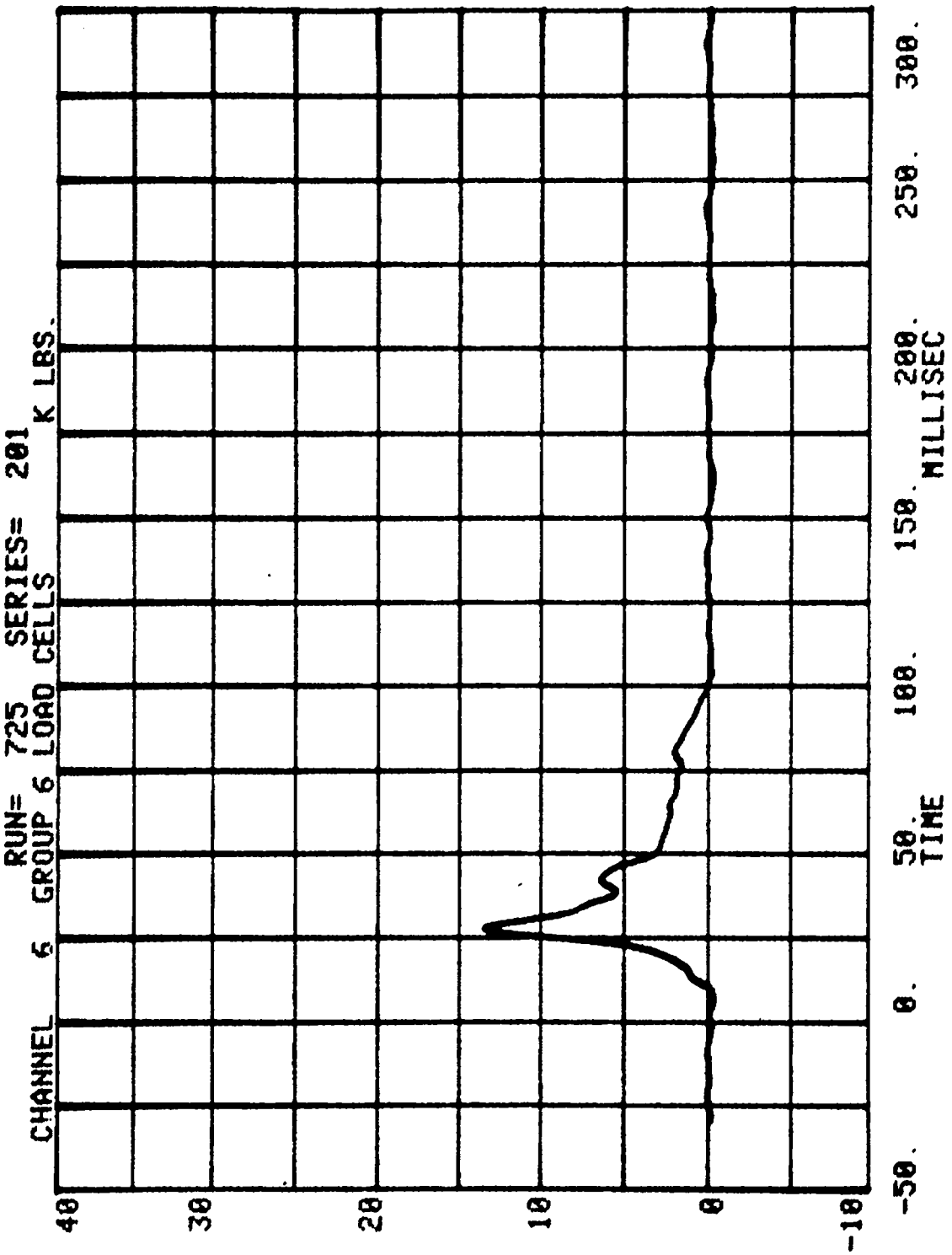
7457-15

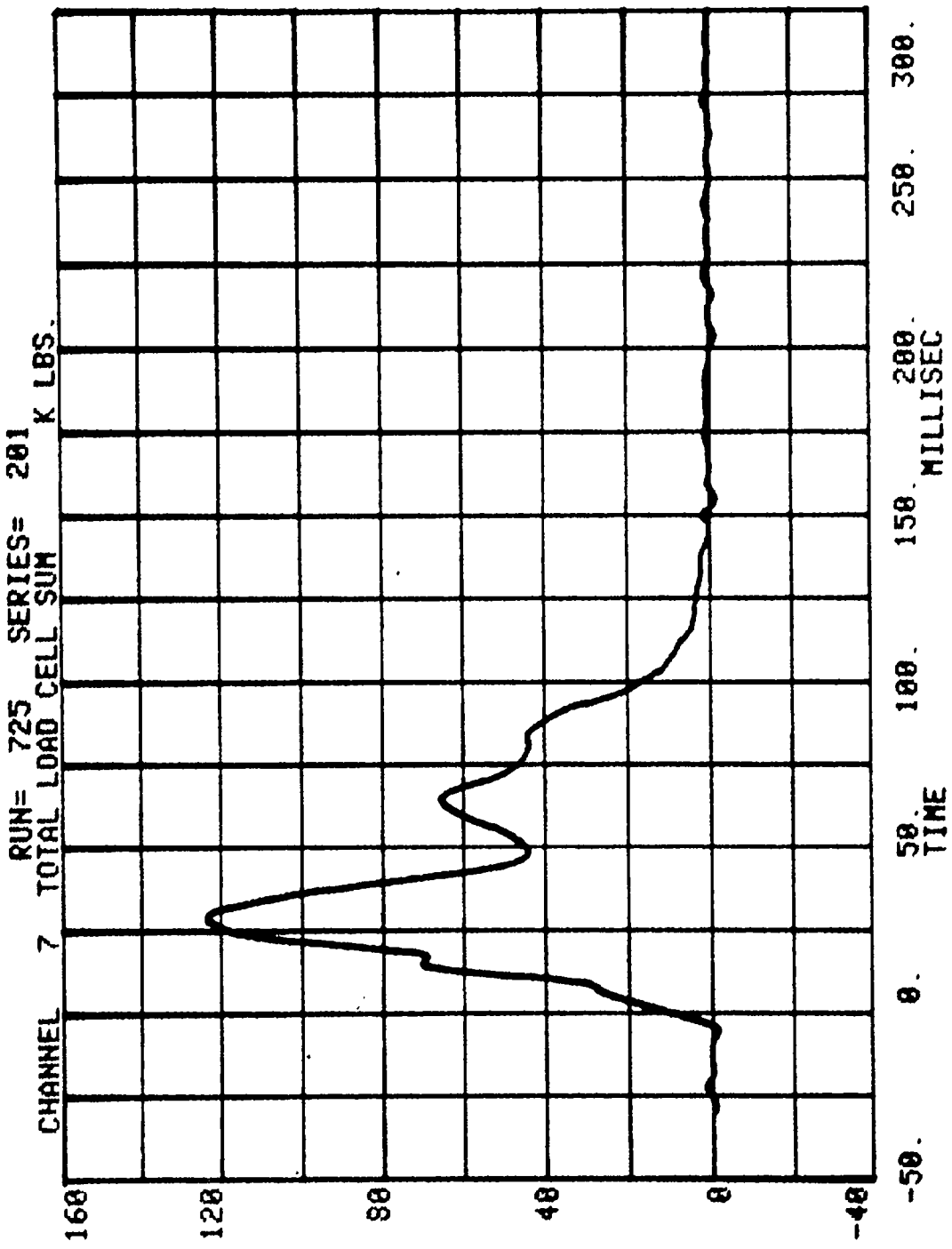

CHANNEL 3 GROUP 3 LOAD CELLS
RUN= 725 SERIES= 201
K LBS.
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


CHANNEL 4 GROUP 4 LOAD CELLS
RUN= 725 SERIES= 201
K LBS.
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 5 GROUP 5 LOAD CELLS
K LBS.
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 5 GROUP 6 LOAD CELLS
RUN= 725 SERIES= 201
K LBS.
40
30
20
10
0
-10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 7 TOTAL LOAD CELL SUM
RUN= 725 SERIES= 201
K LBS.
160
120
80
40
0
-40
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

Test No. MG0201

DUMMY DATA

	FILTER CHANNEL CLASS
HEAD ACCELERATIONS	1000
CHEST ACCELERATIONS	180
FEMUR FORCES	600
BELT LOADS	60

HEAD INJURY CRITERION
HEAD SEVERITY INDEX

NEW CAR ASSESSMENT BARRIER TESTS - 1986

RUN= 725

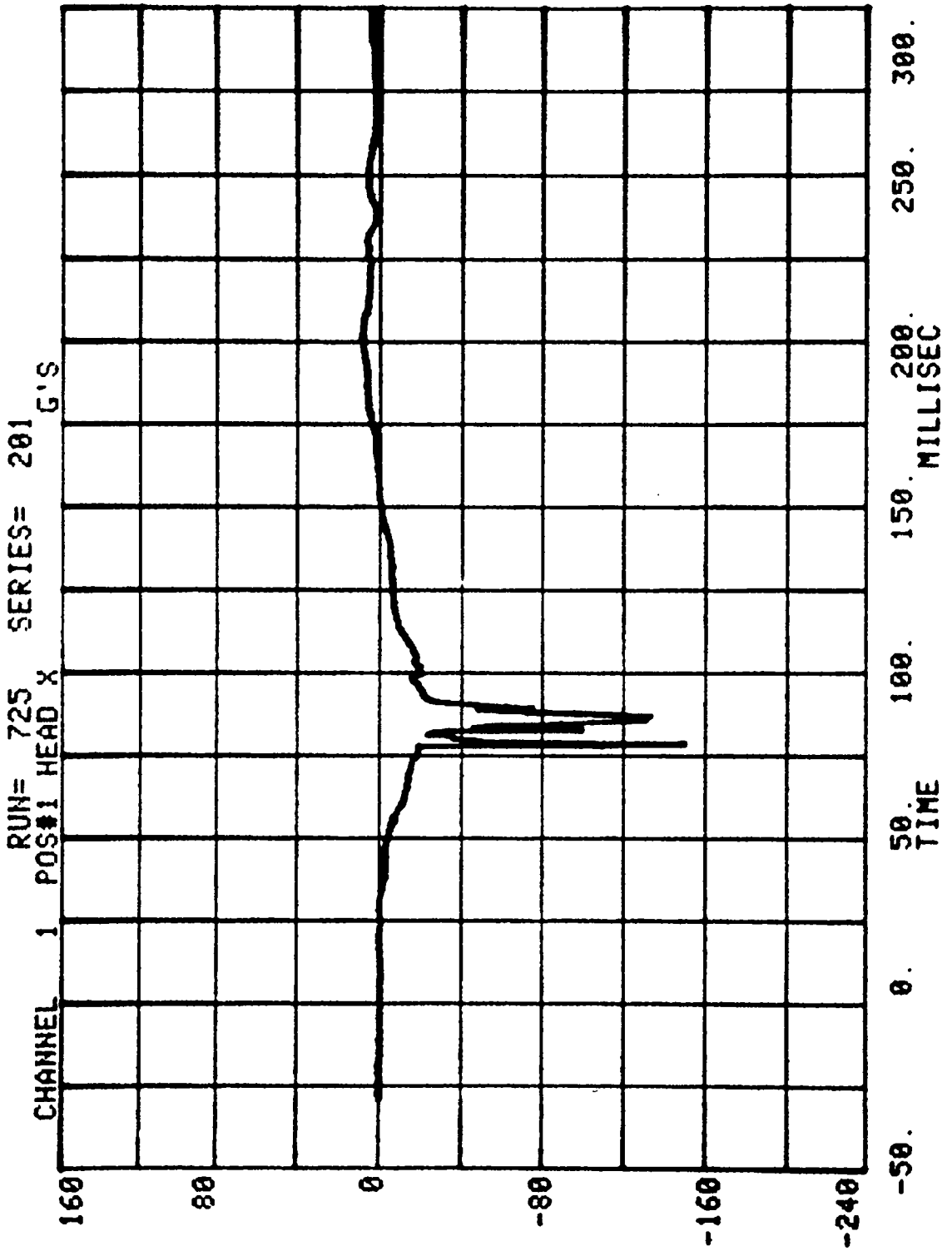
POS#1 HEAD R

HIC=1209.1 FROM T1= .07695 TO T2= .09135

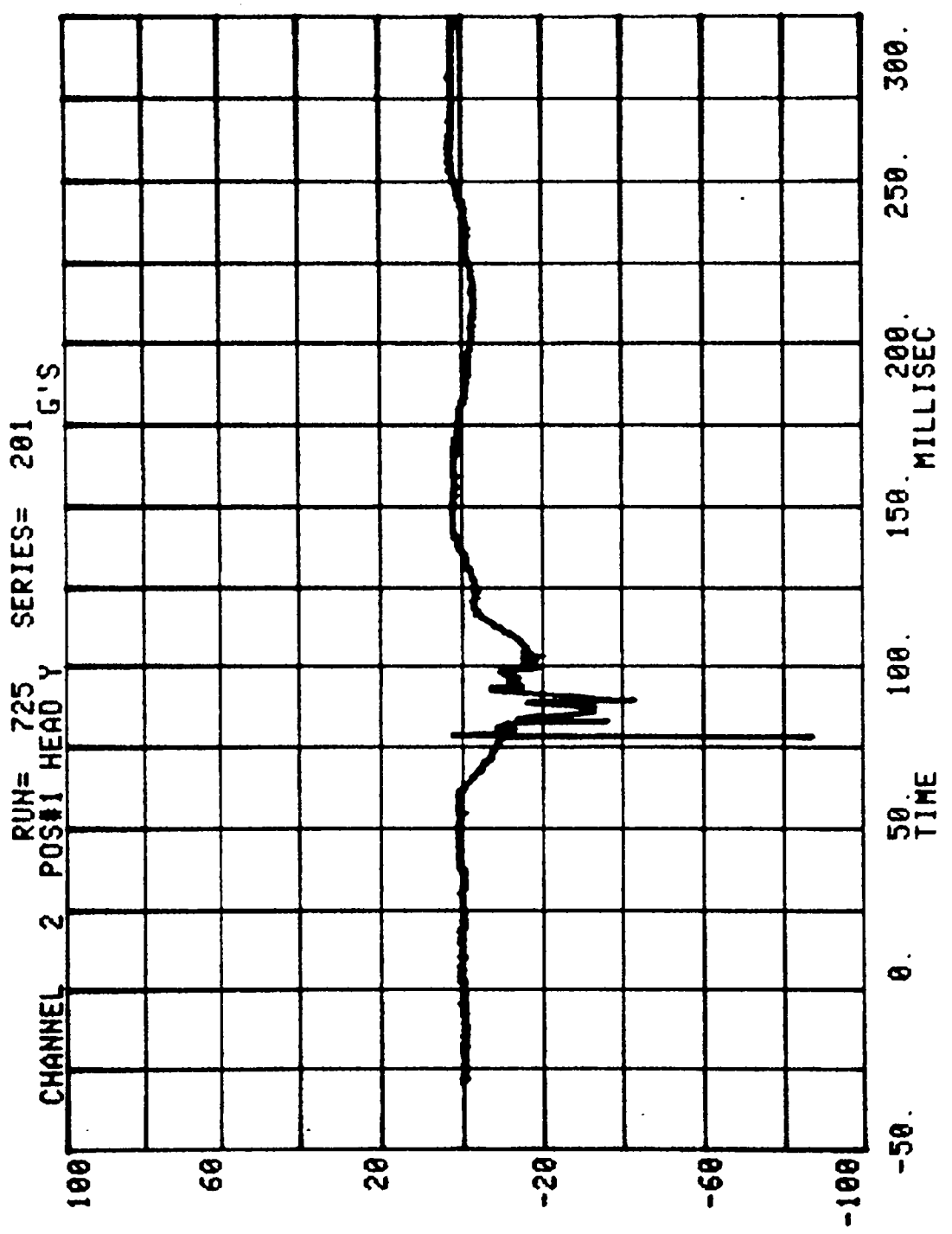
AVERAGE ACCELERATION BETWEEN T1 AND T2= 93.2G'S

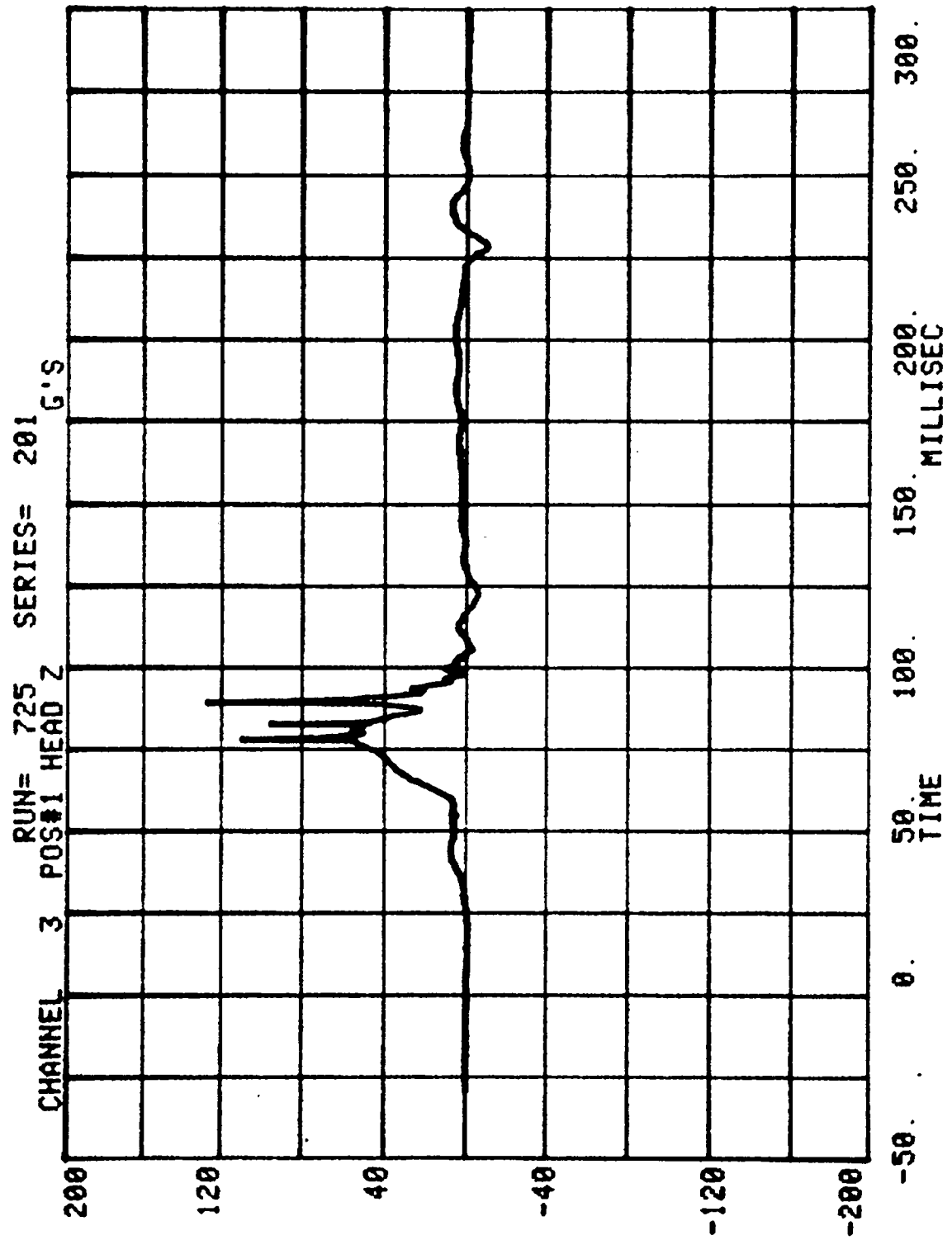
EVENT TIME= 300.0 MSEC

SEVERITY INDEX=1969.2

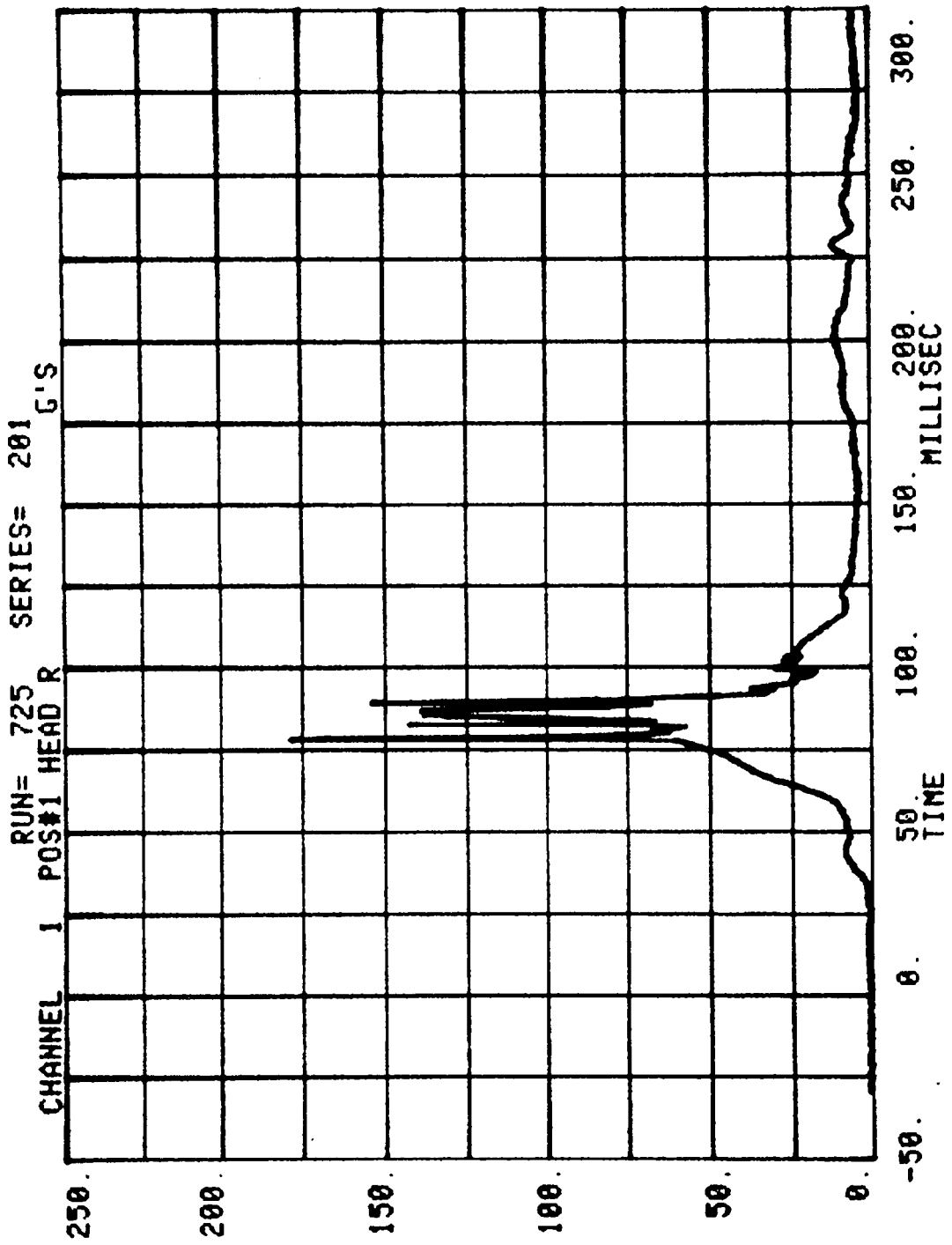

CHANNEL 1
RUN= 725 SERIES= 201
POS#1 HEAD X
G'S
160
80
0
-80
-160
-240
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15

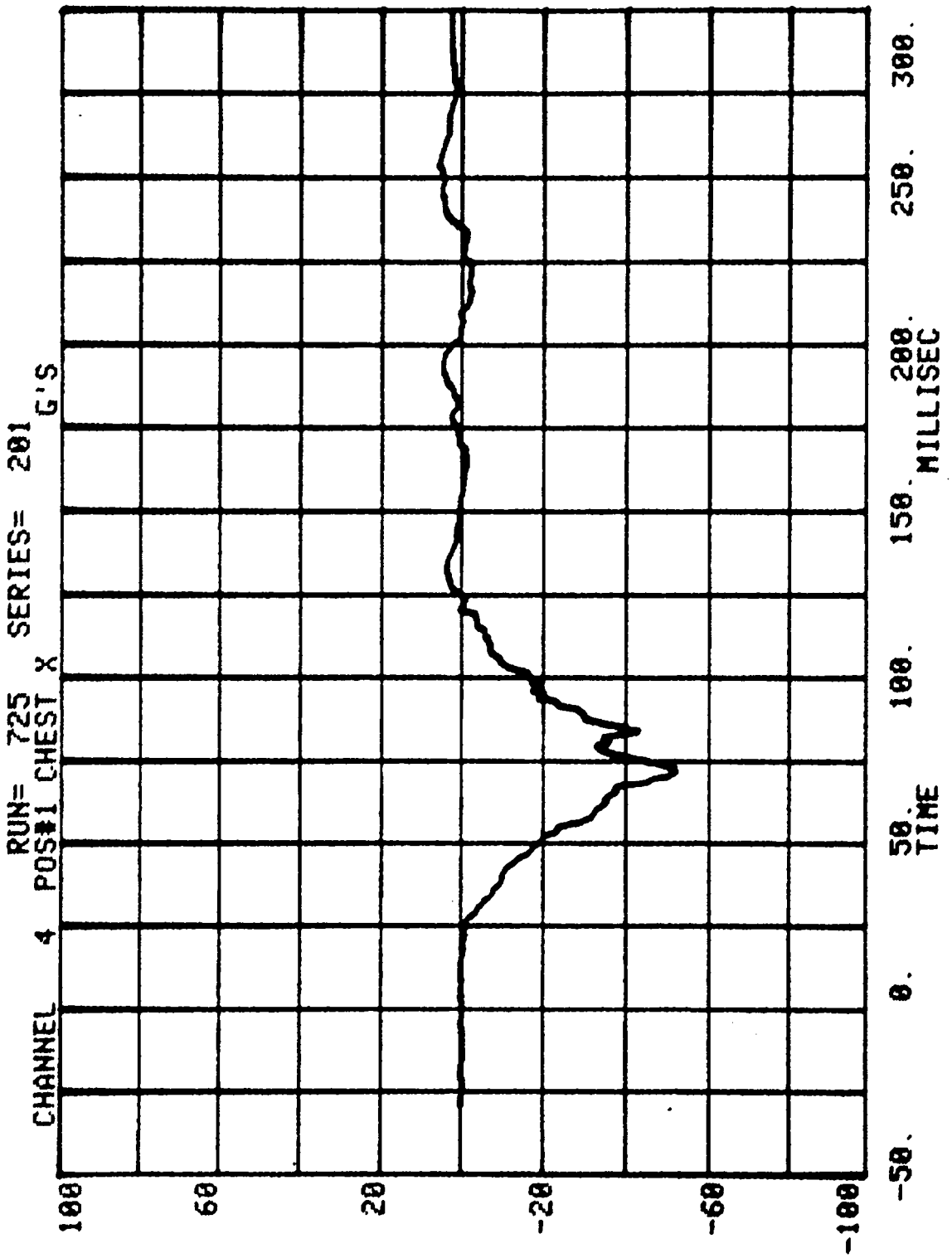

CHANNEL 2 POS#1 HEAD Y
RUN= 725 SERIES= 201
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

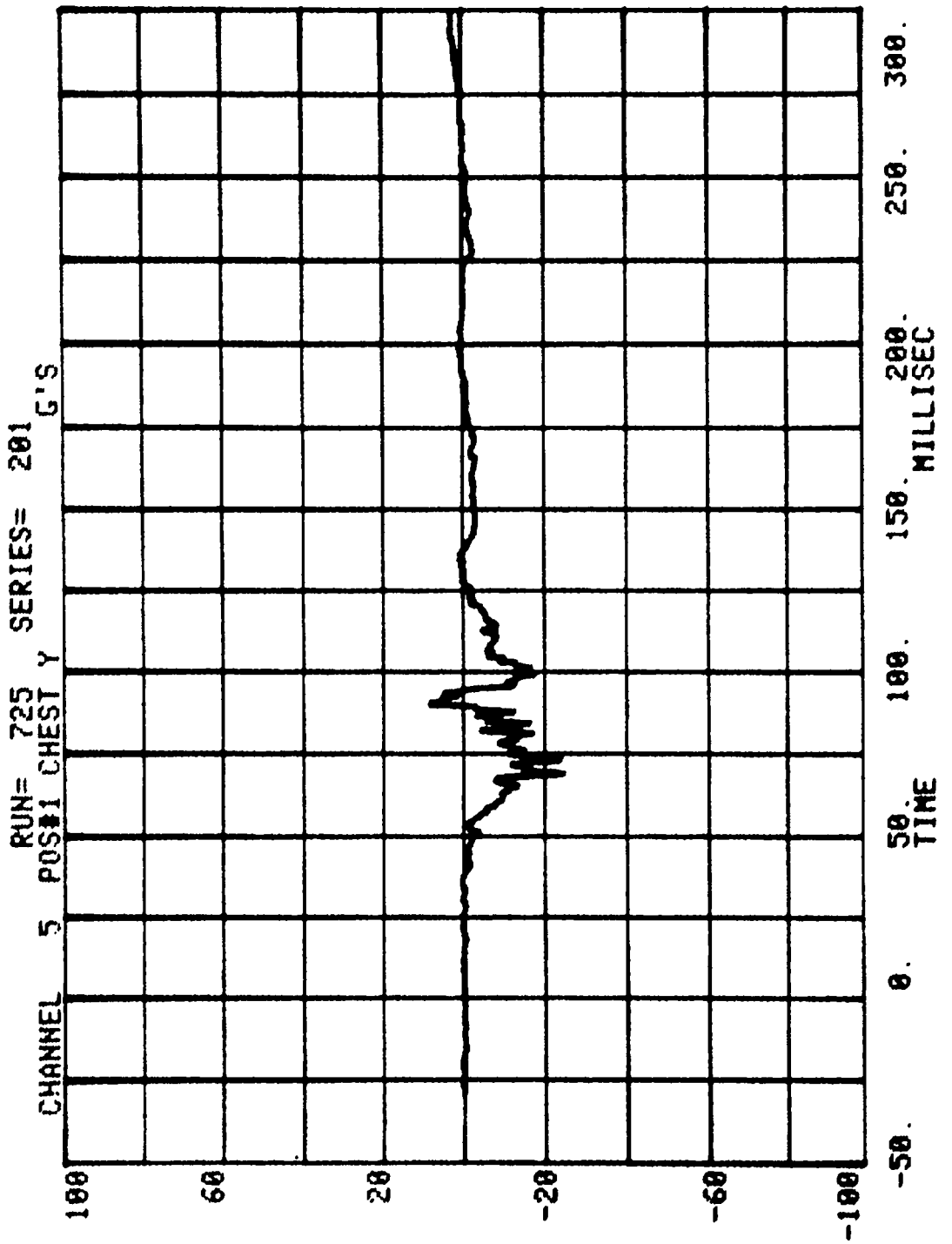

CHANNEL 3 POS#1 HEAD Z
RUN= 725 SERIES= 201
G'S
200
120
40
-40
-120
-200
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

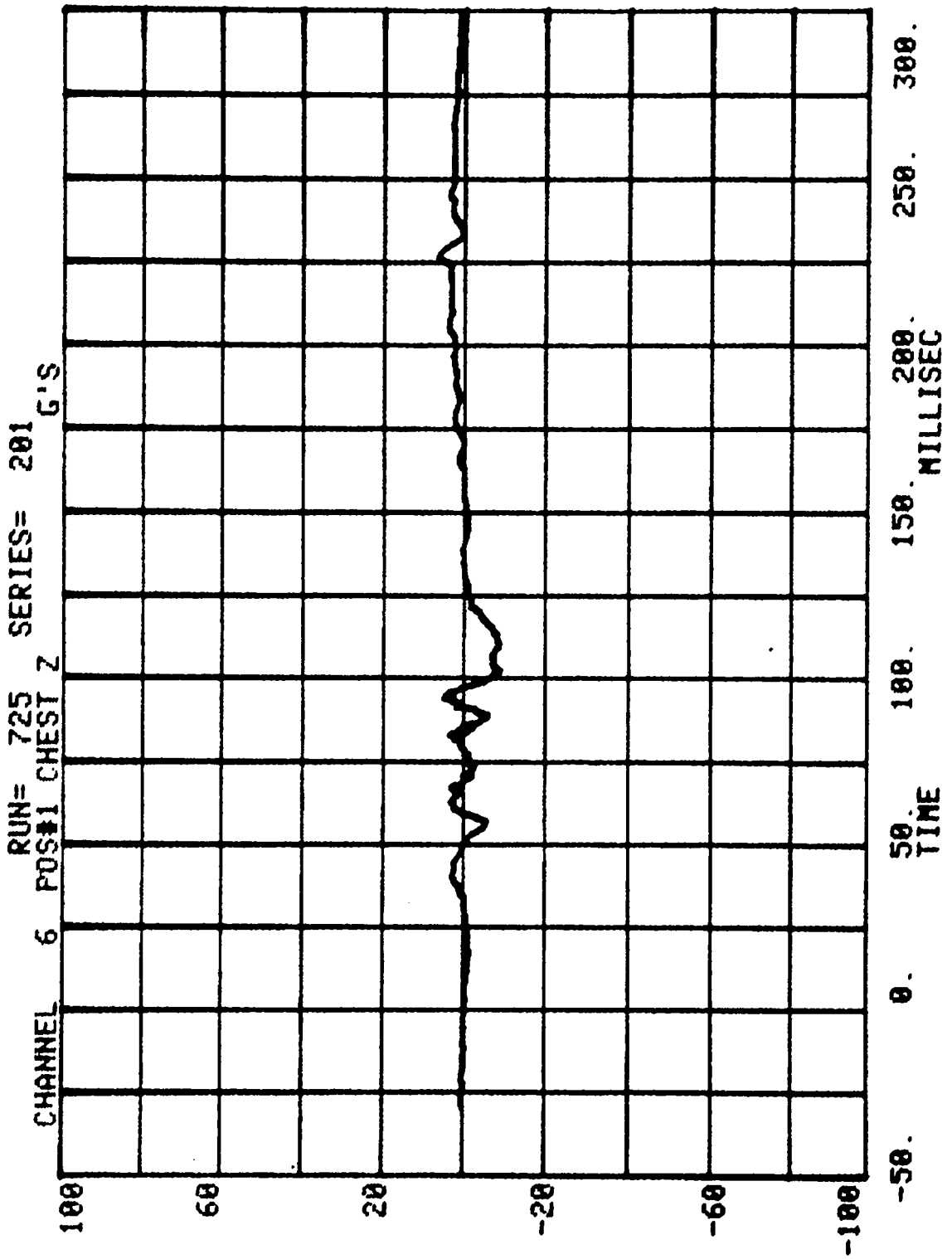
7457-15

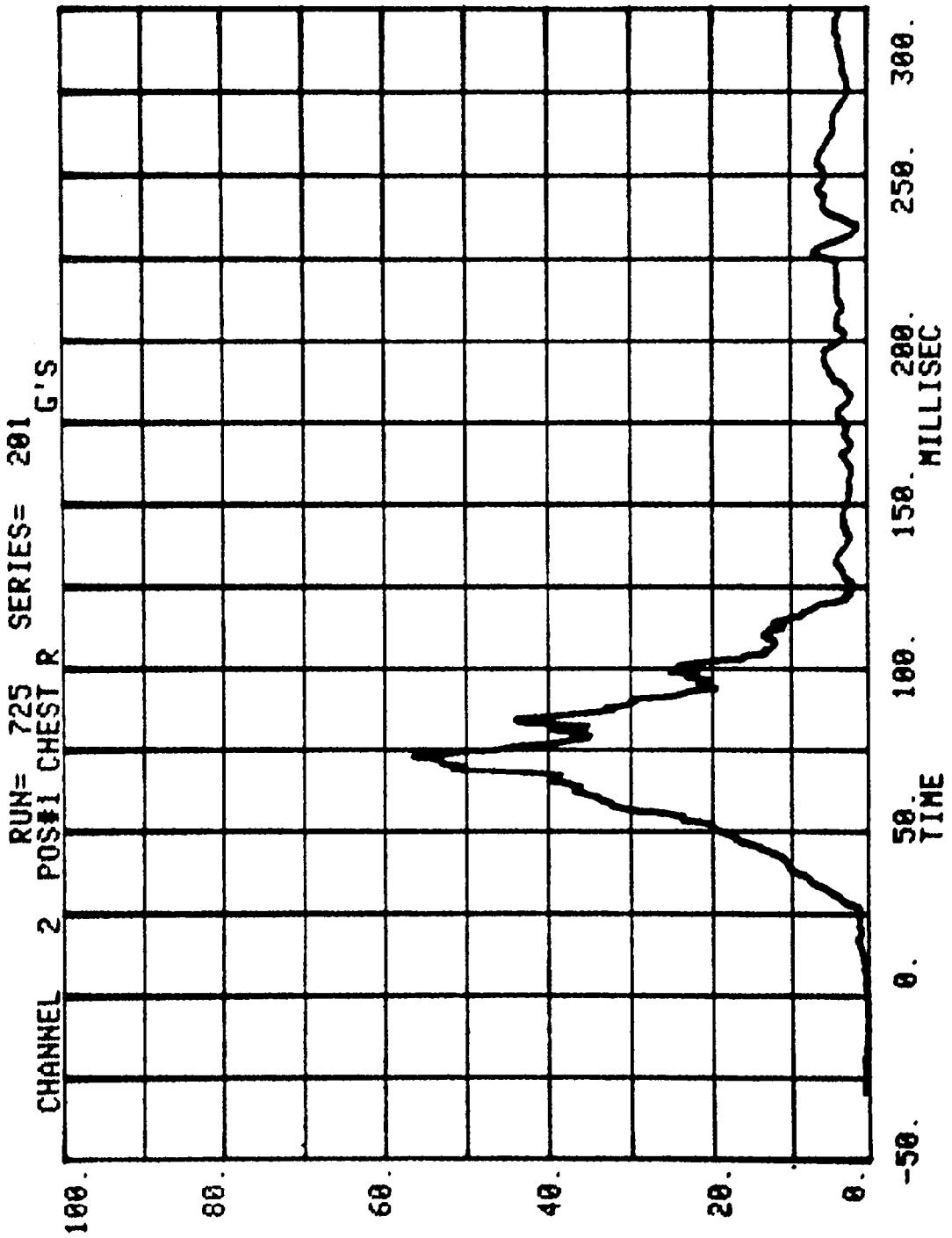

CHANNEL 1 POS#1 HEAD R
RUN= 725 SERIES= 201
G'S
250.
200.
150.
100.
50.
0.
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15

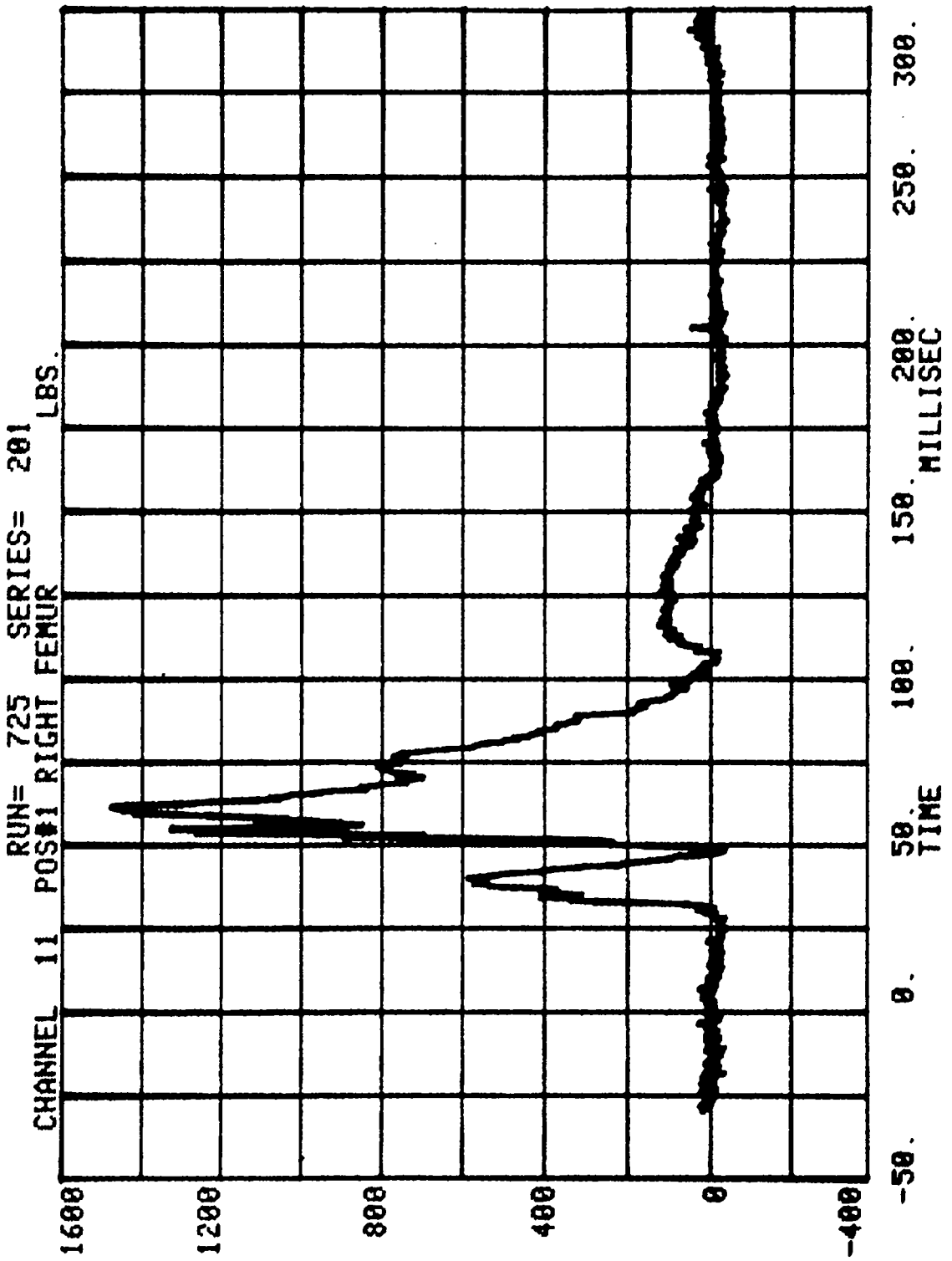

CHANNEL 4 RUN= 725 SERIES= 201
POS#1 CHEST X G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME MILLISEC


CHANNEL 5 POS#1 CHEST Y
RUN= 725 SERIES= 201
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

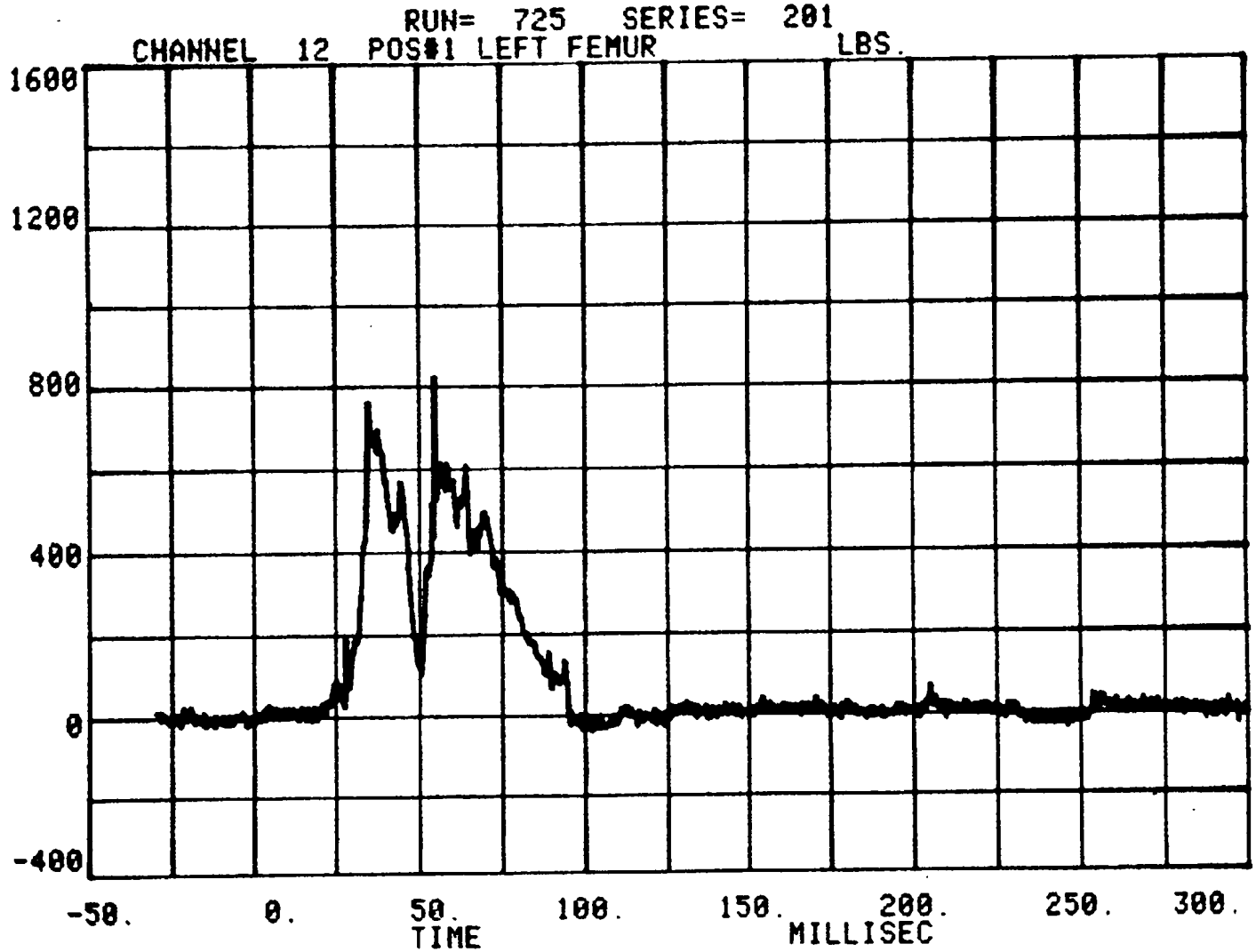

CHANNEL 6 POS#1 CHEST Z
RUN= 725 SERIES= 201
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

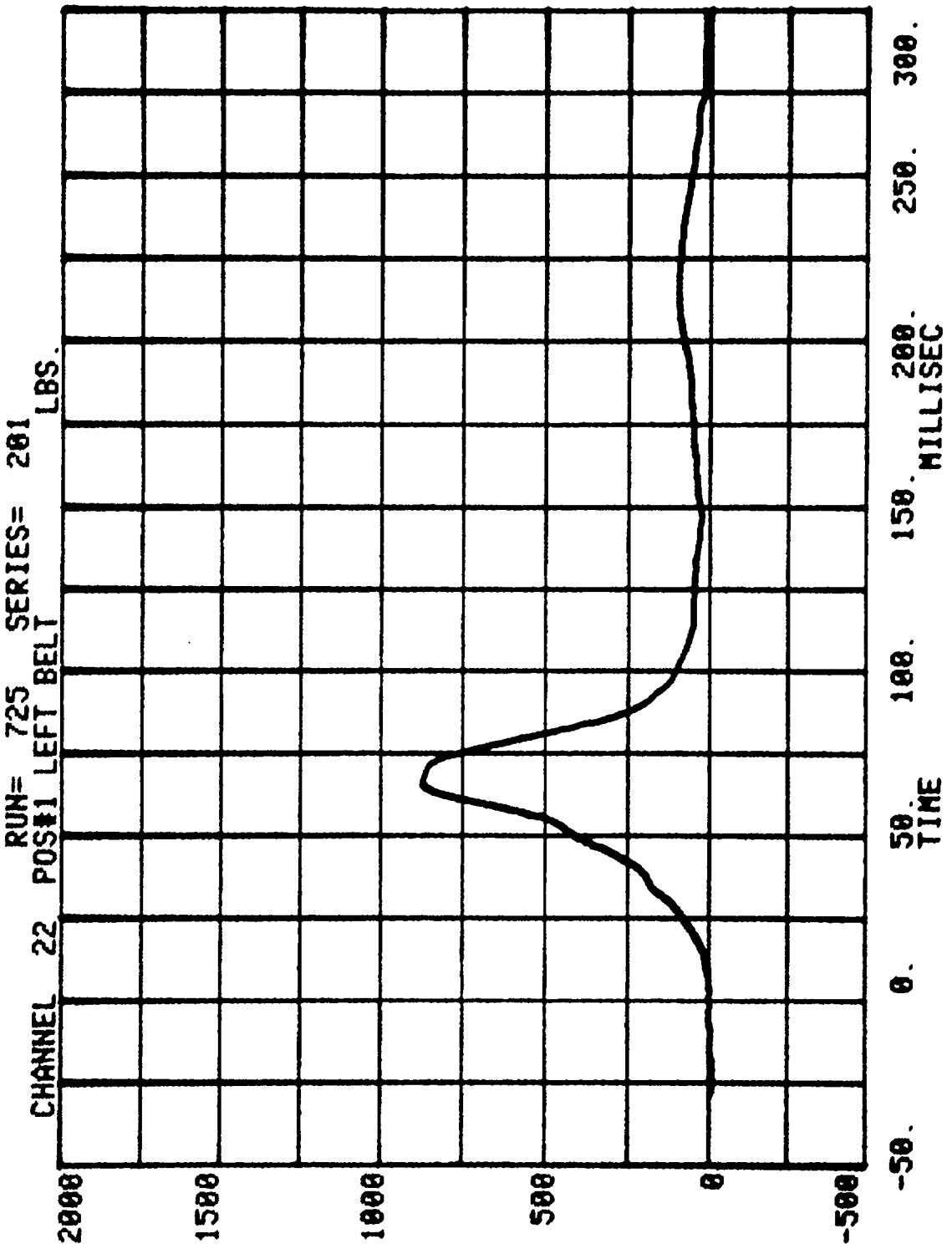

CHANNEL 2 POS#1 CHEST R
RUN= 725 SERIES= 201
G'S
100.
80.
60.
40.
20.
0.
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

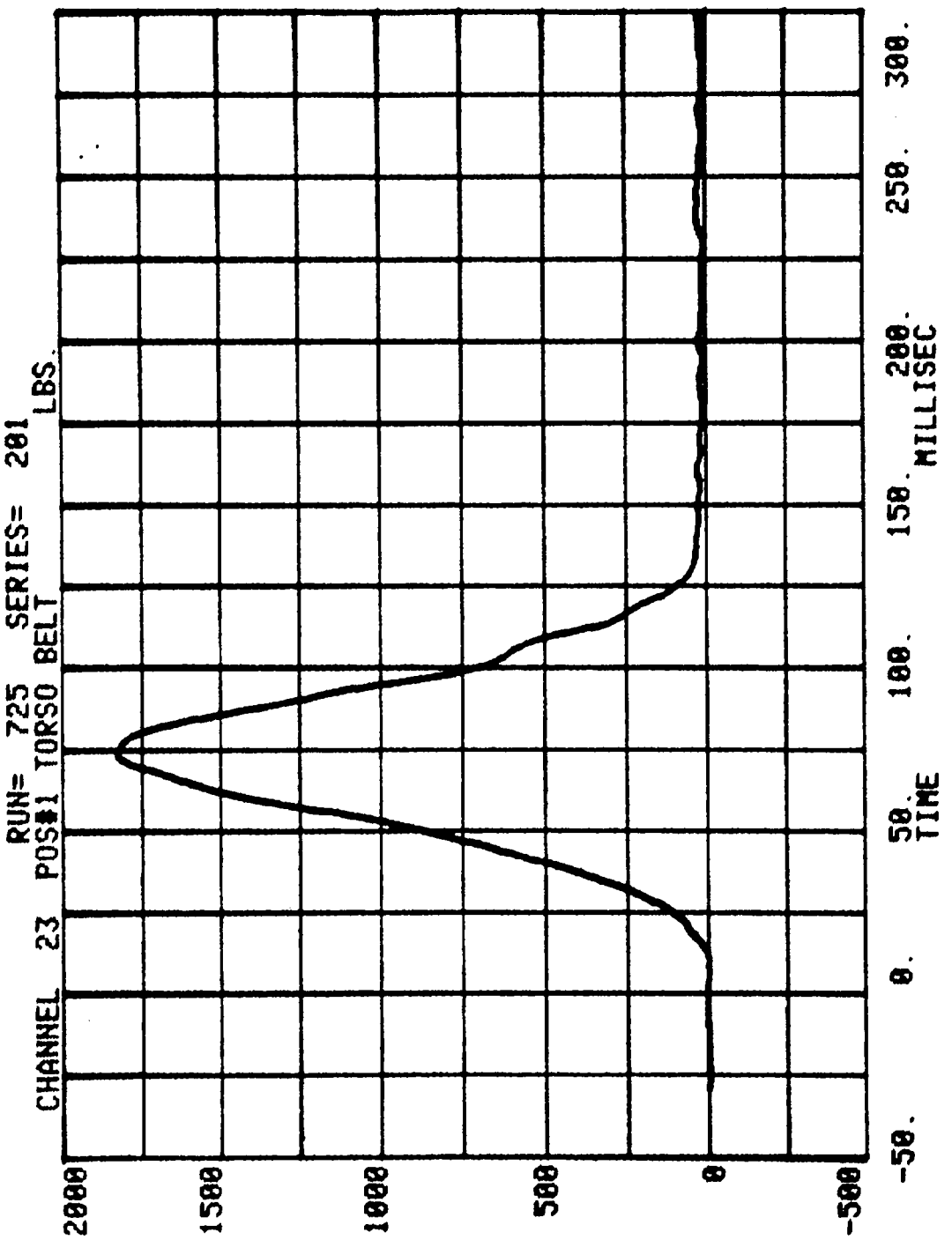
7457-15


CHANNEL 11 POS#1 RIGHT FEMUR
RUN= 725 SERIES= 201
LBS.
1600
1200
800
400
0
-400
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

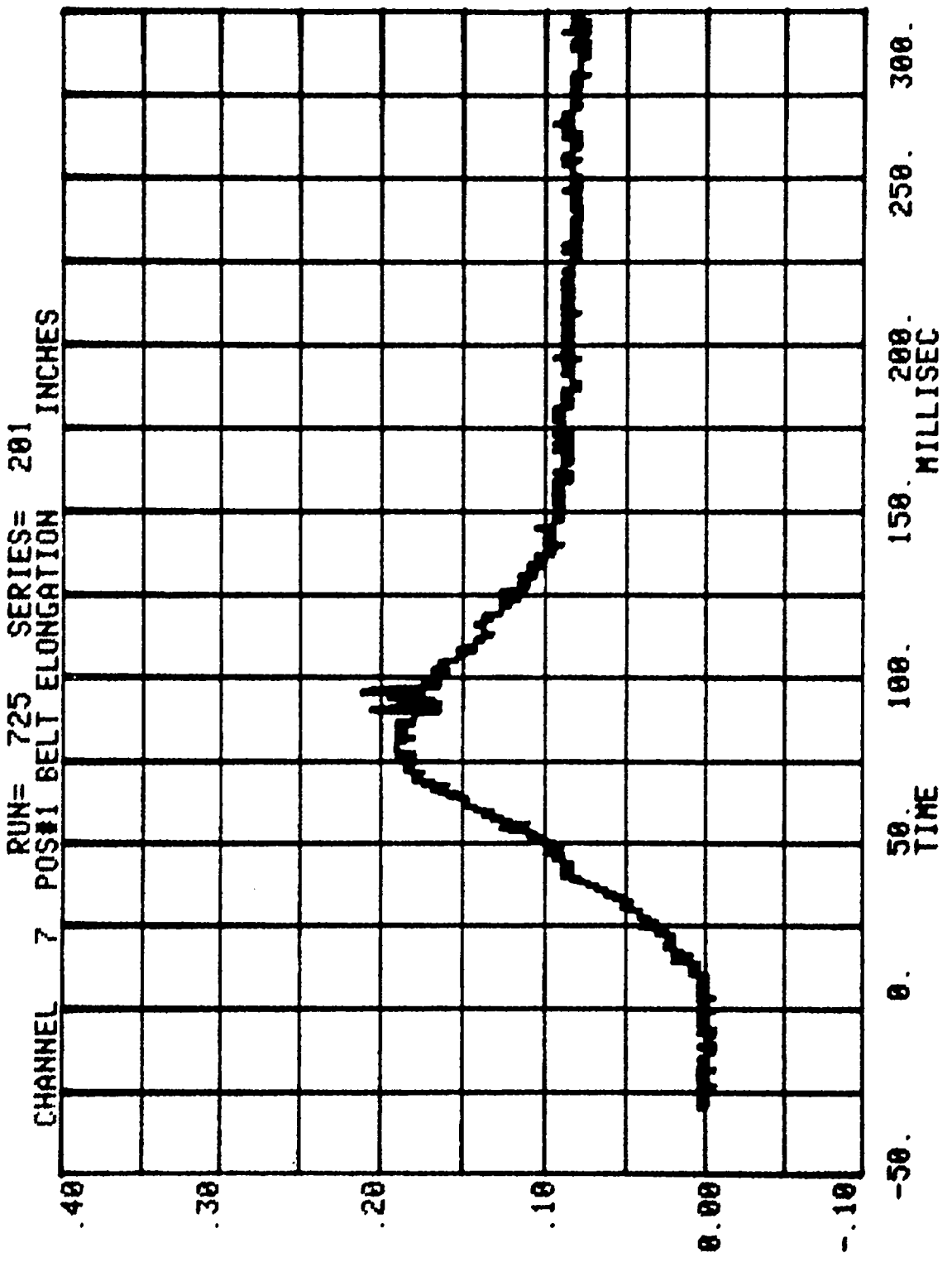
7457-15

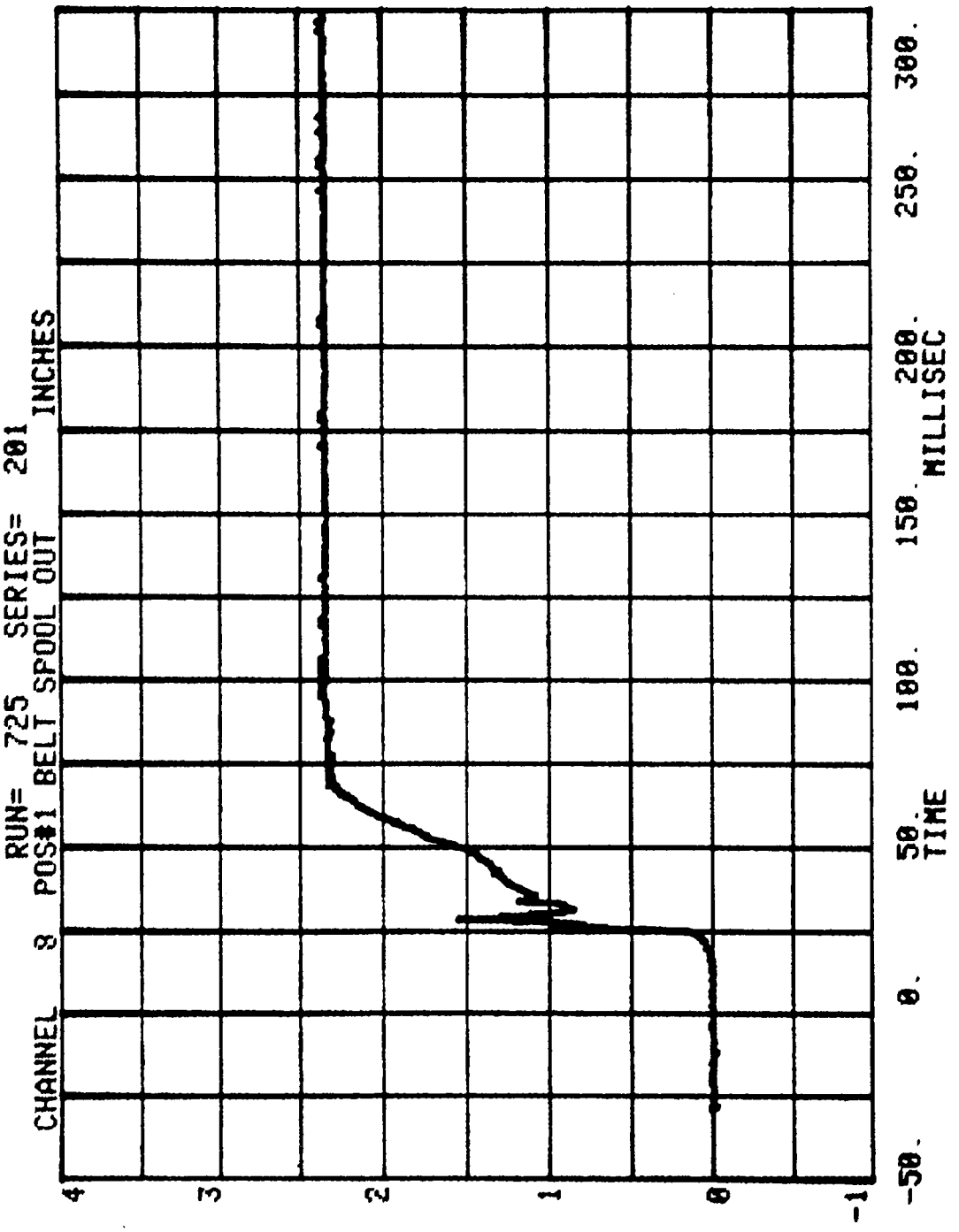

RUN= 725 SERIES= 201
CHANNEL 12 POS#1 LEFT FEMUR LBS.
1600
1200
800
400
0
-400
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 22 POS#1 LEFT BELT
RUN= 725 SERIES= 201
LBS.
2000
1500
1000
500
0
-500
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


RUN= 725 SERIES= 201
CHANNEL 23 POS#1 TORSO BELT
LBS.
2000
1500
1000
500
0
-500
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


CHANNEL 7 RUN= 725 SERIES= 201
POS#1 BELT ELONGATION INCHES
.40
.30
.20
.10
0.00
-.10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME MILLISEC


CHANNEL 8 POS#1 BELT SPOOL OUT
RUN= 725 SERIES= 201
INCHES
4
3
2
1
0
-1
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

HEAD INJURY CRITERION
HEAD SEVERITY INDEX

NEW CAR ASSESSMENT BARRIER TESTS - 1986

RUN= 725

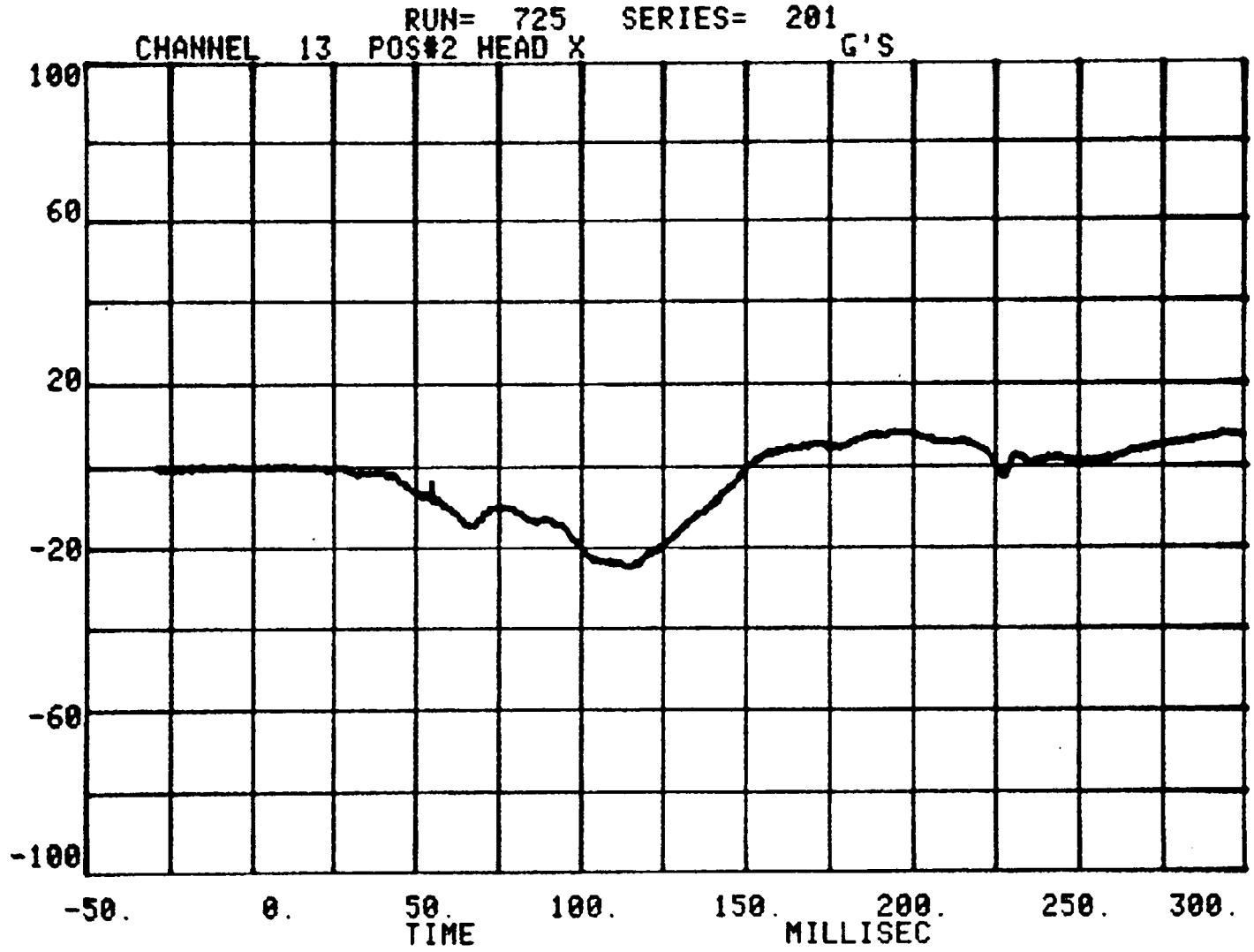
POS#2 HEAD R

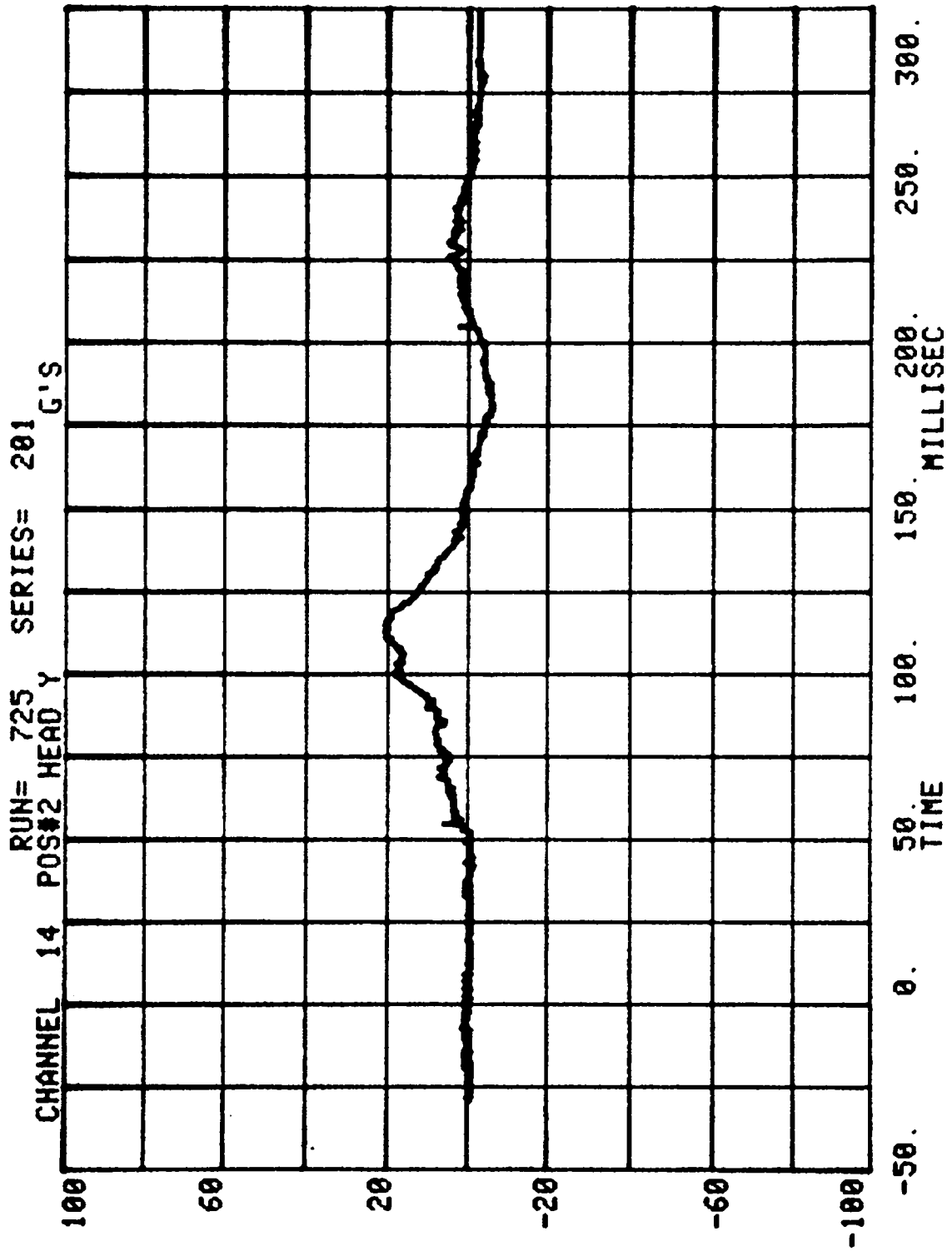
HIC= 694.5 FROM T1= .06202 TO T2= .12750

AVERAGE ACCELERATION BETWEEN T1 AND T2= 40.8G'S

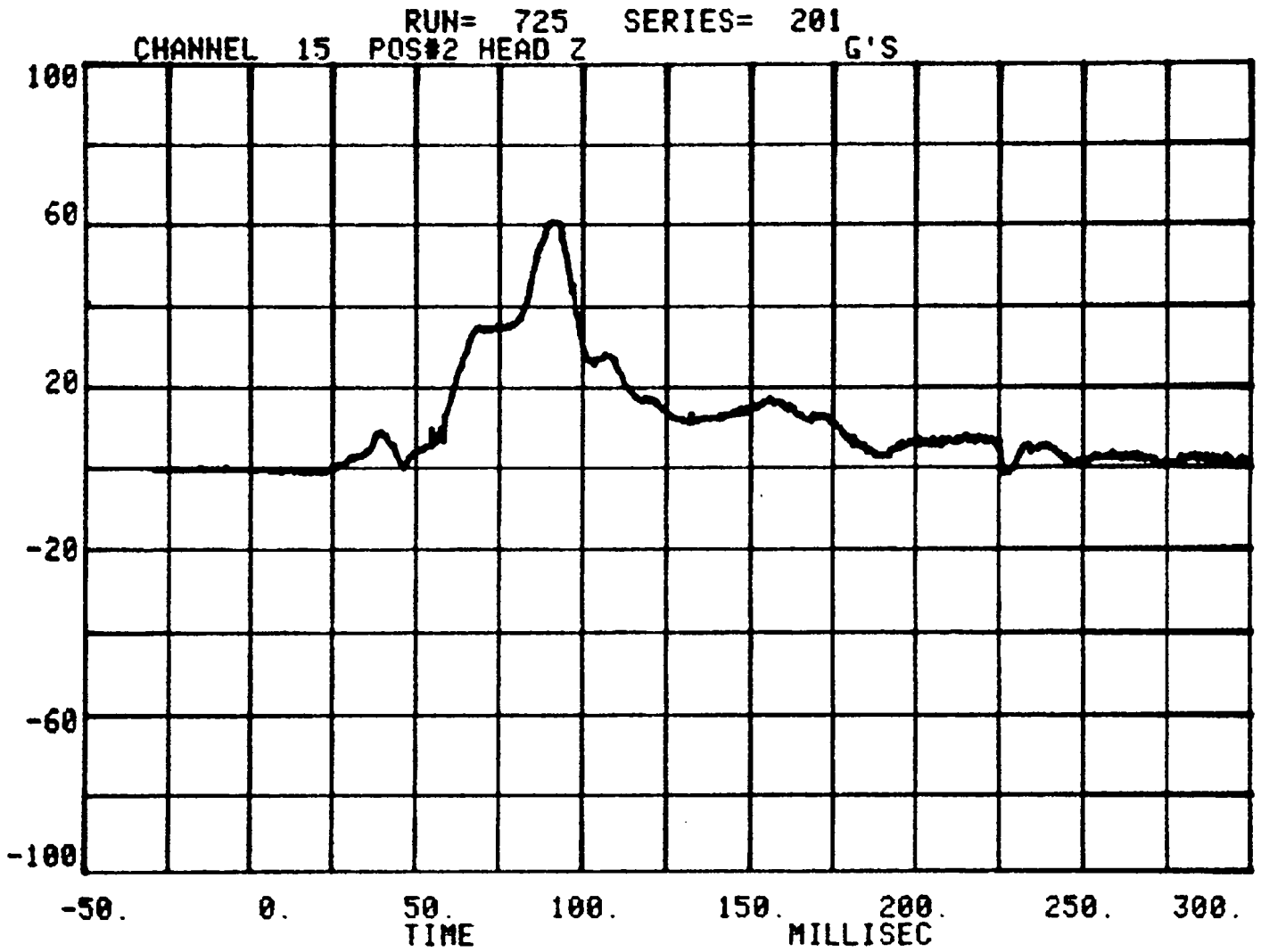
EVENT TIME= 300.0 MSEC

SEVERITY INDEX= 898.0

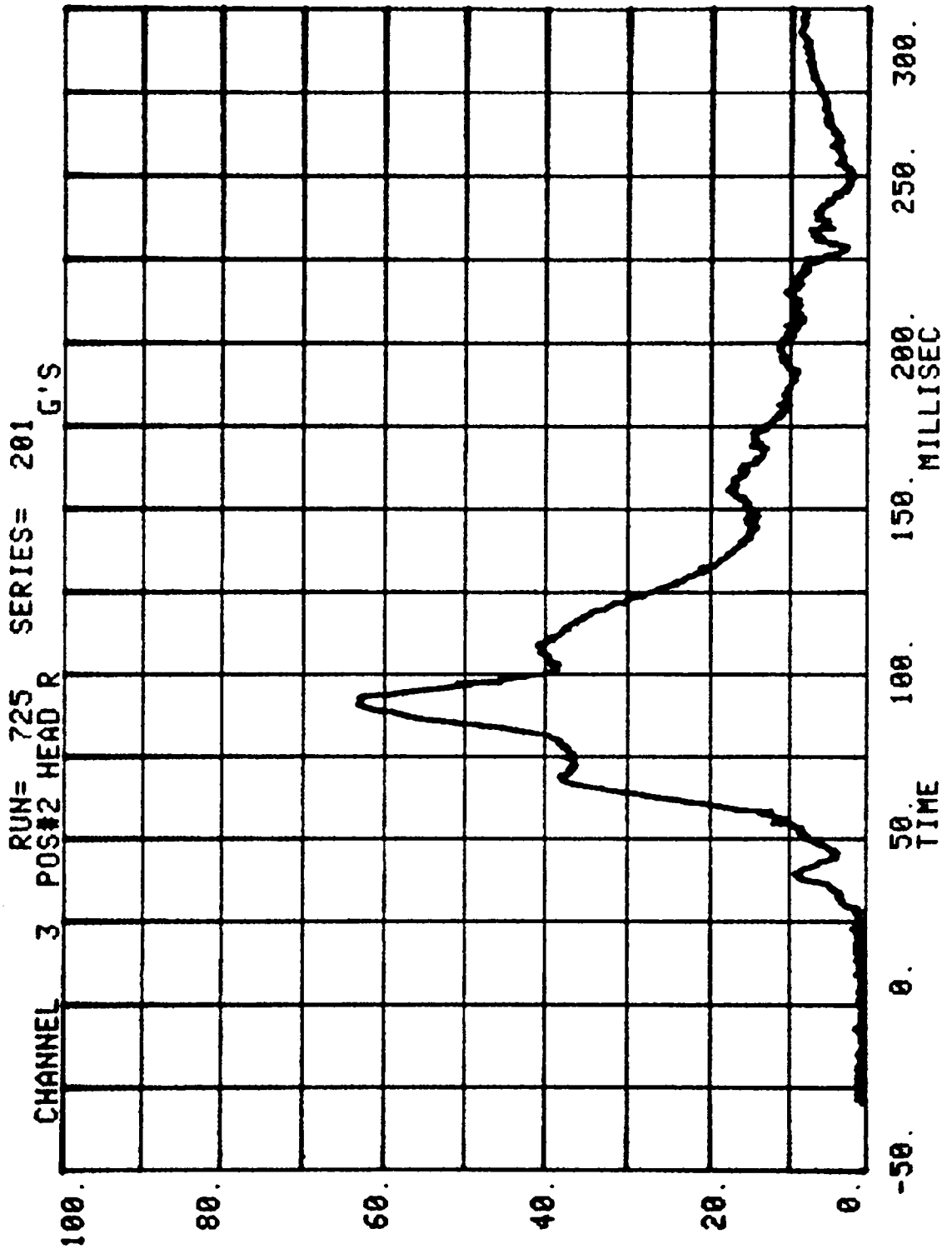

RUN= 725 SERIES= 201
CHANNEL 13 POS#2 HEAD X
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 14 POS#2 HEAD Y
RUN= 725 SERIES= 201
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

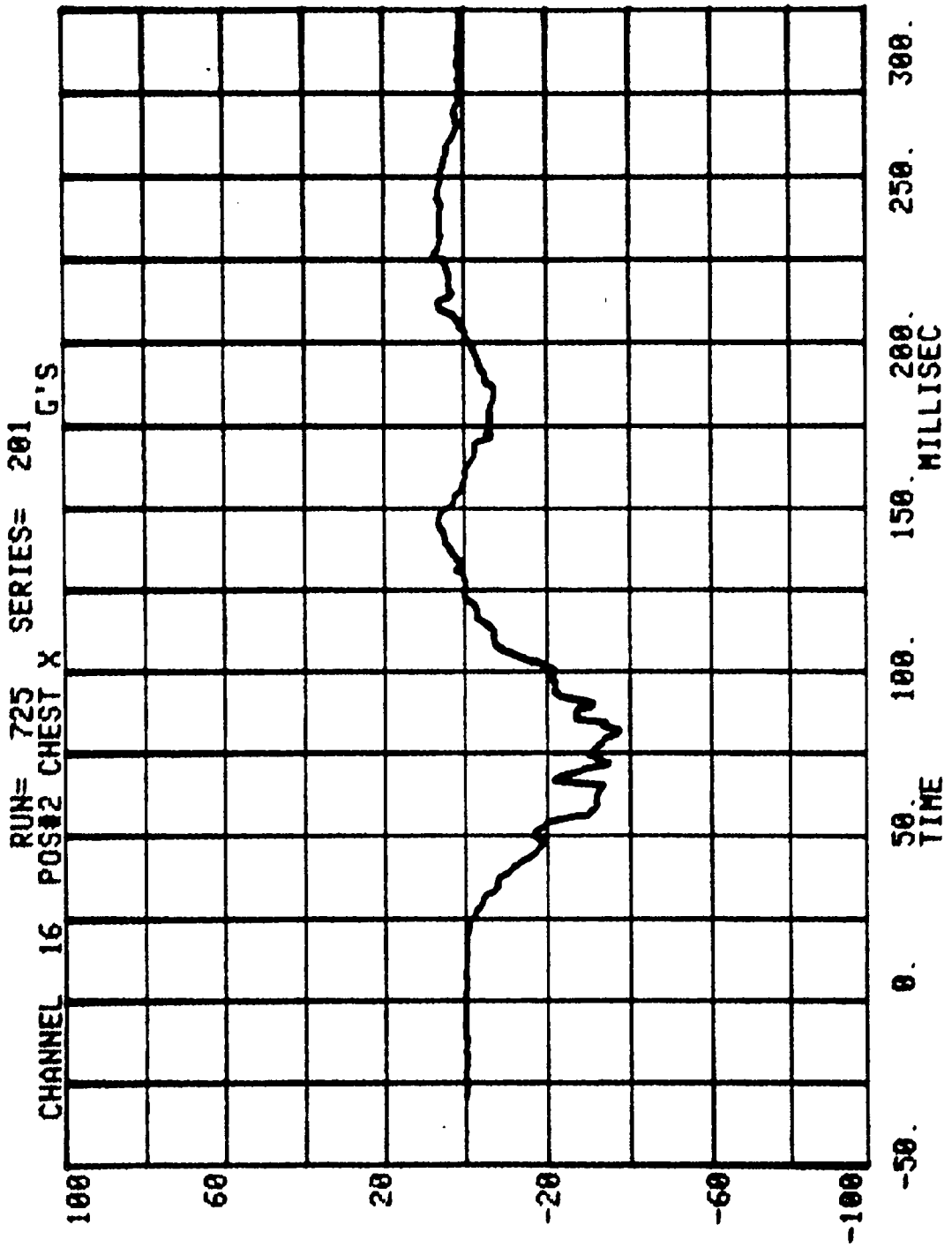
7457-15


RUN= 725 SERIES= 201
CHANNEL 15 POS#2 HEAD Z
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

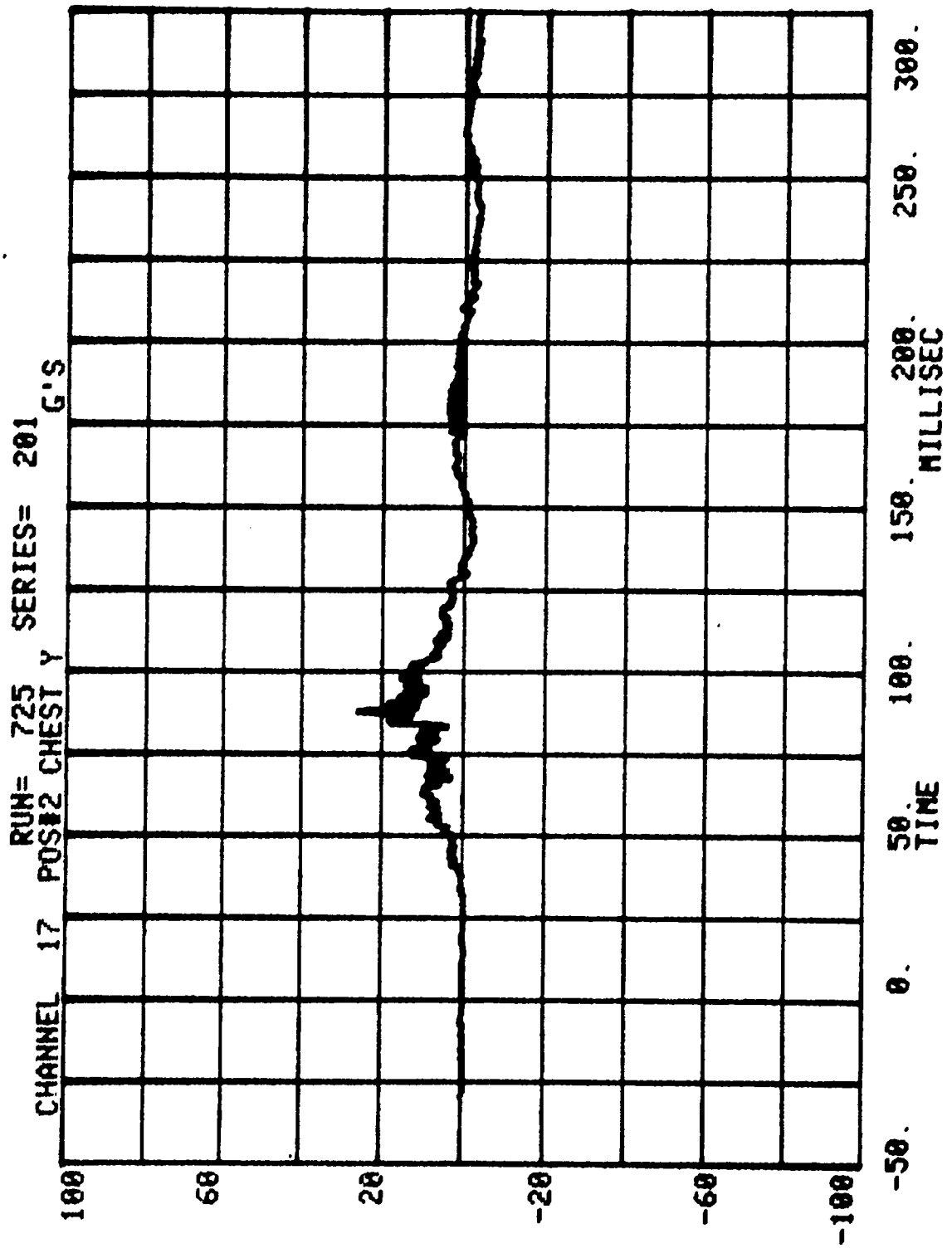
7457-15

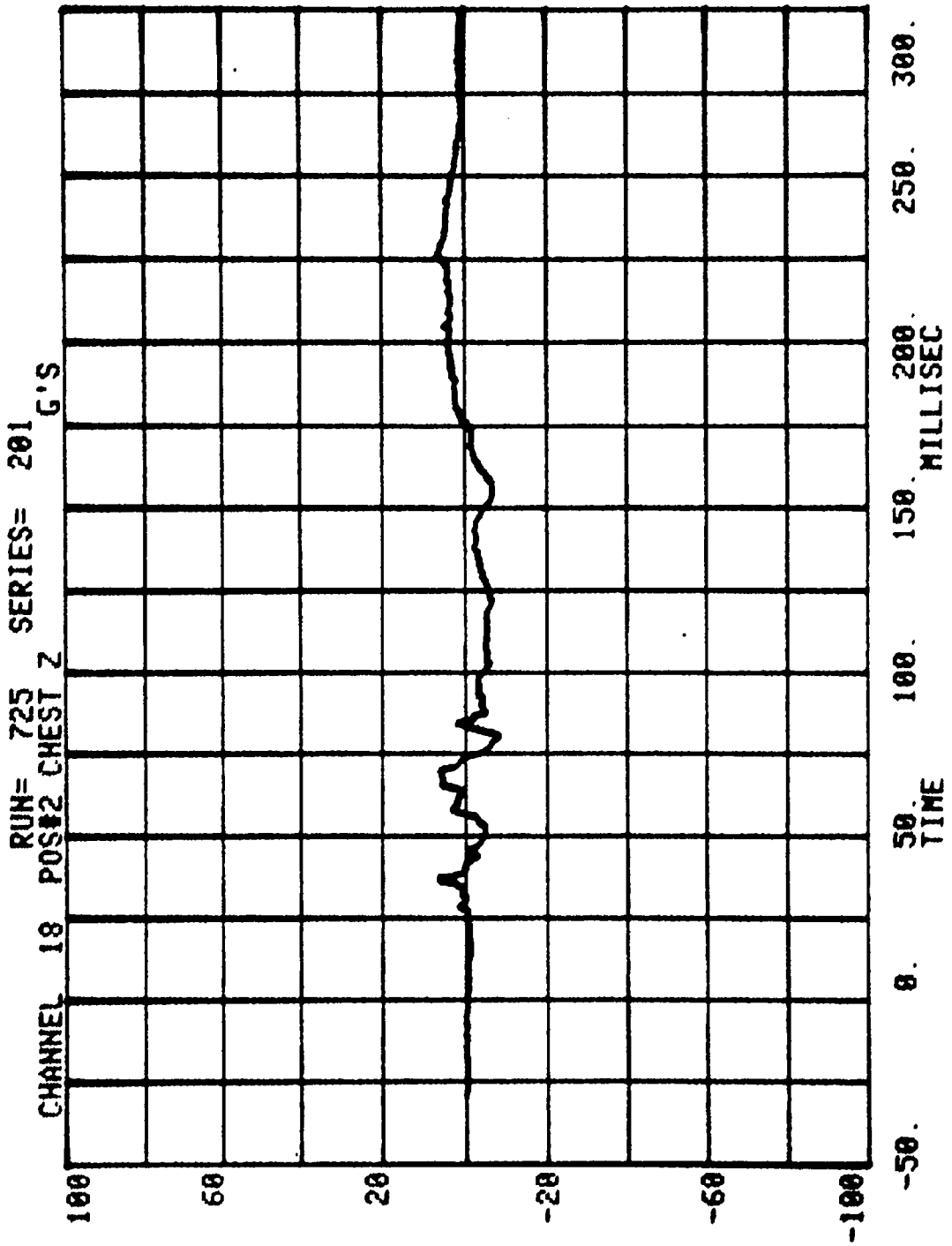

CHANNEL 3 POS#2 HEAD R
RUN= 725 SERIES= 201
G'S
100.
80.
60.
40.
20.
0.
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

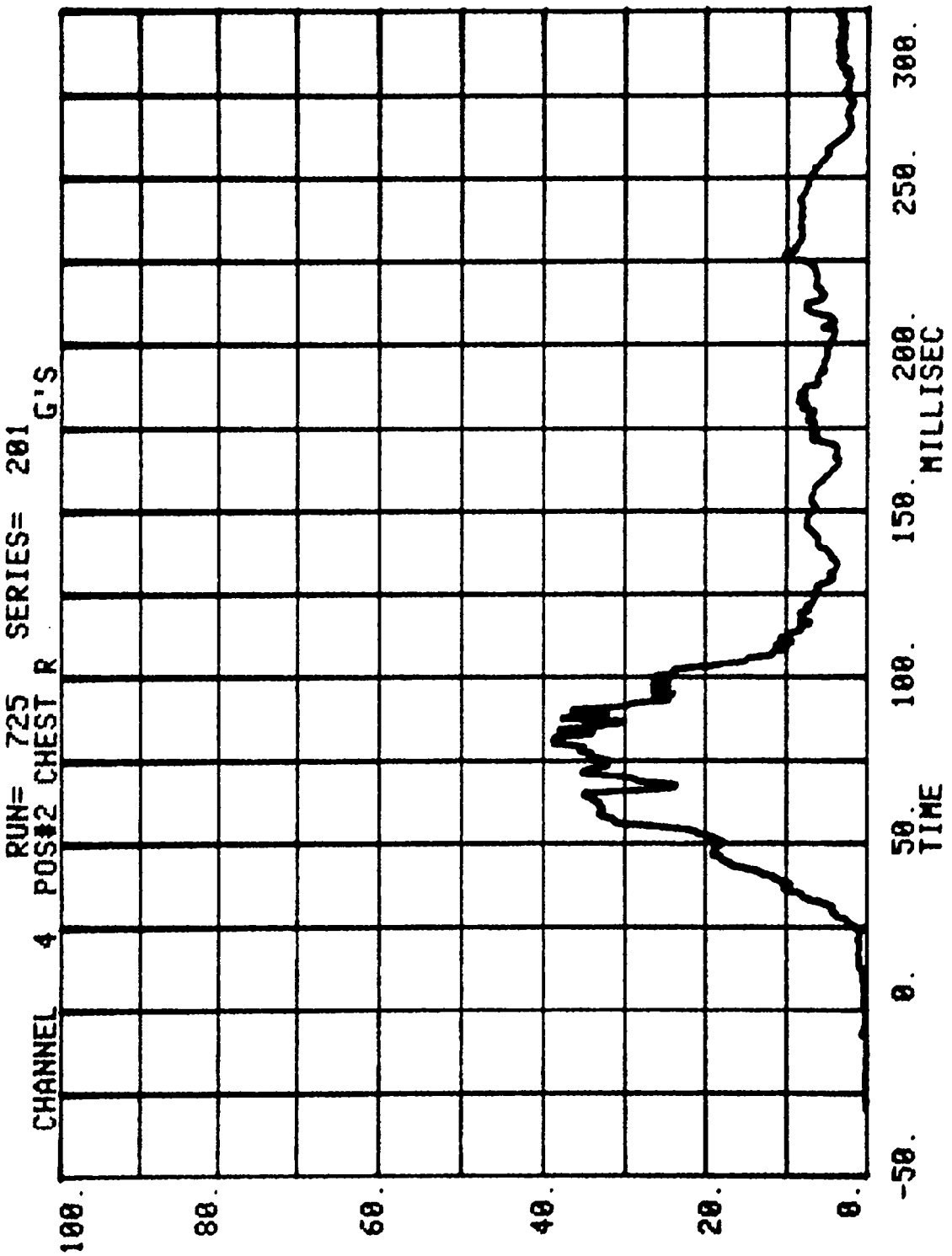
7457-15

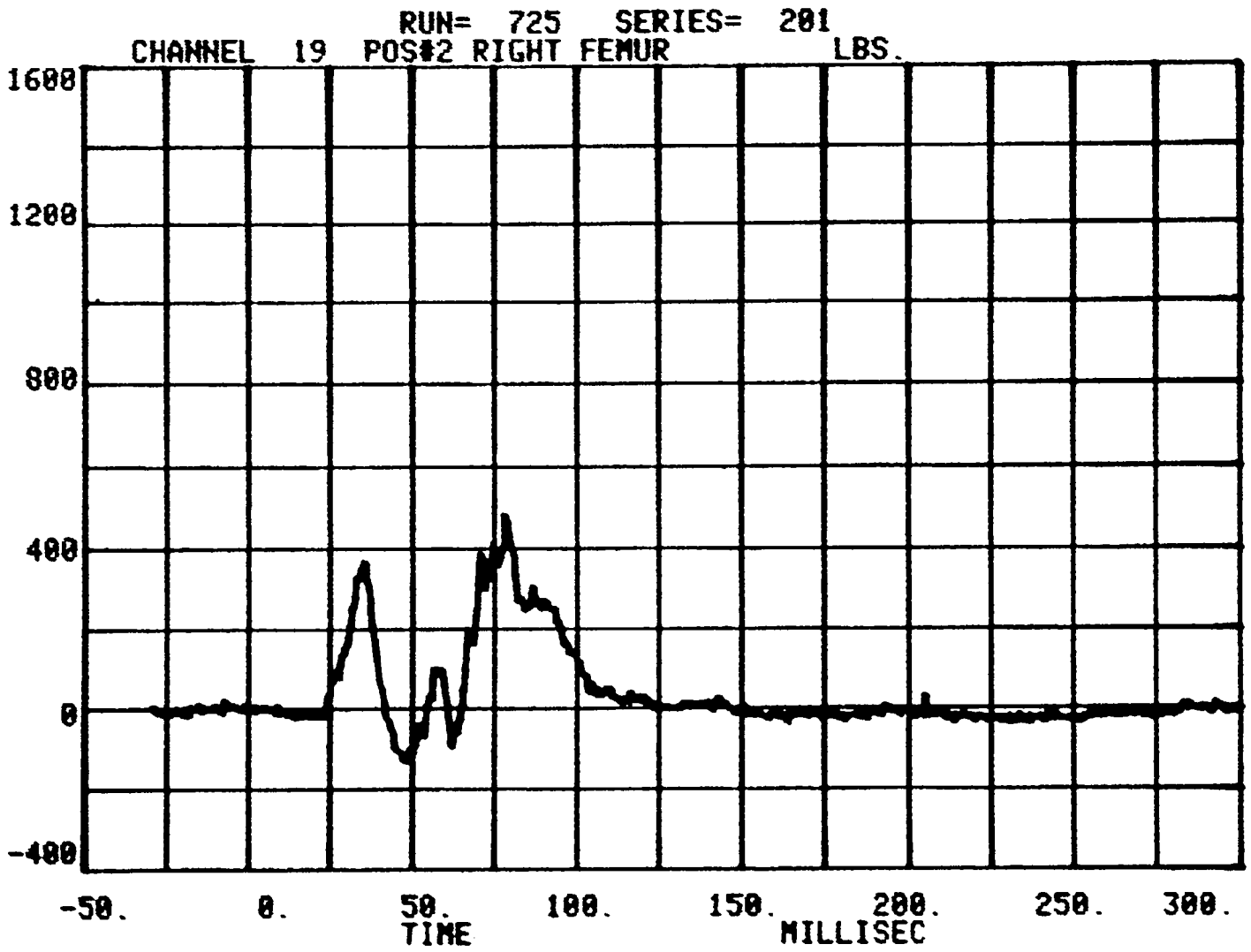

CHANNEL 16 POS#2 CHEST X
RUN= 725 SERIES= 201
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

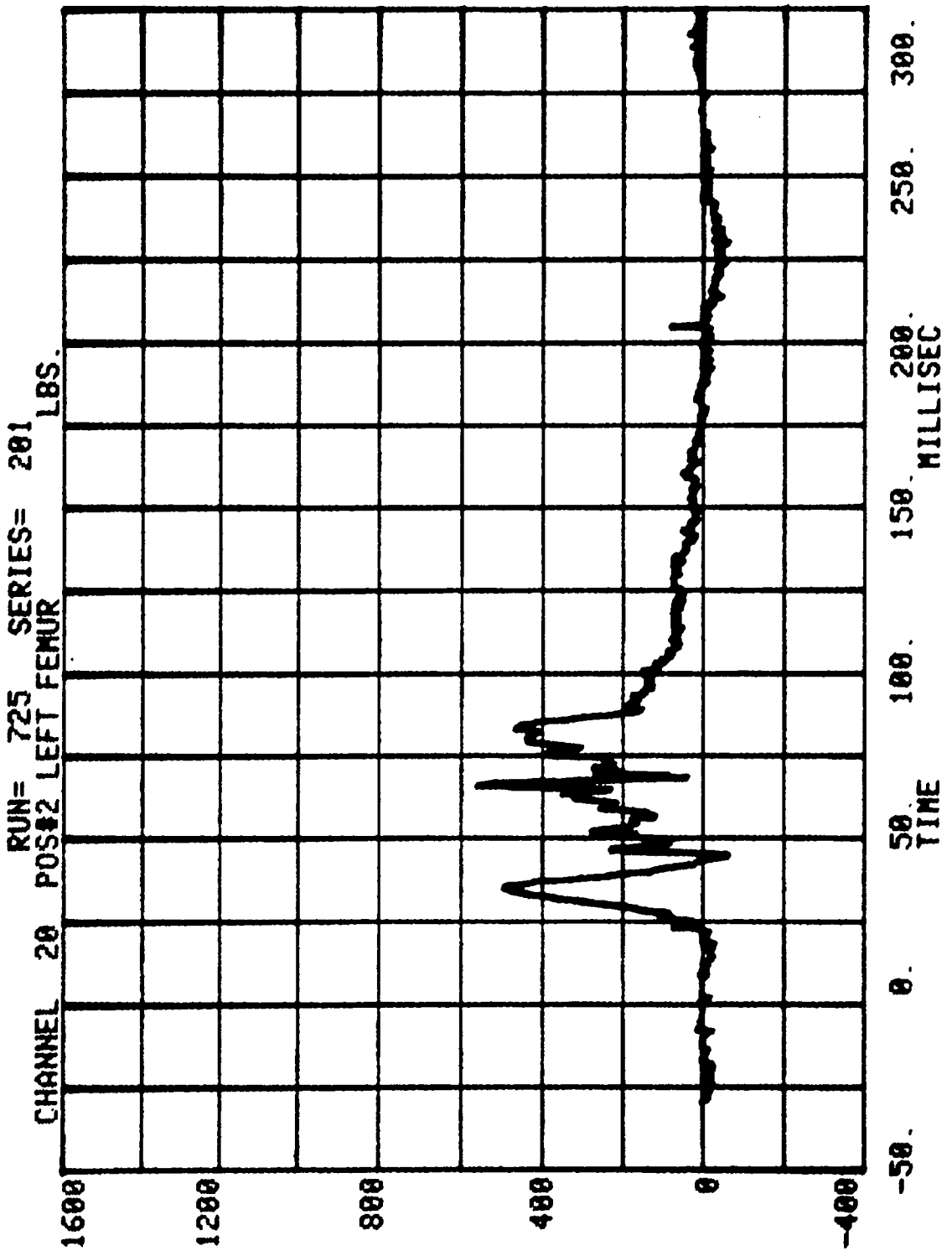
7457-15


CHANNEL 17 RUN= 725 SERIES= 201
POS#2 CHEST Y
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

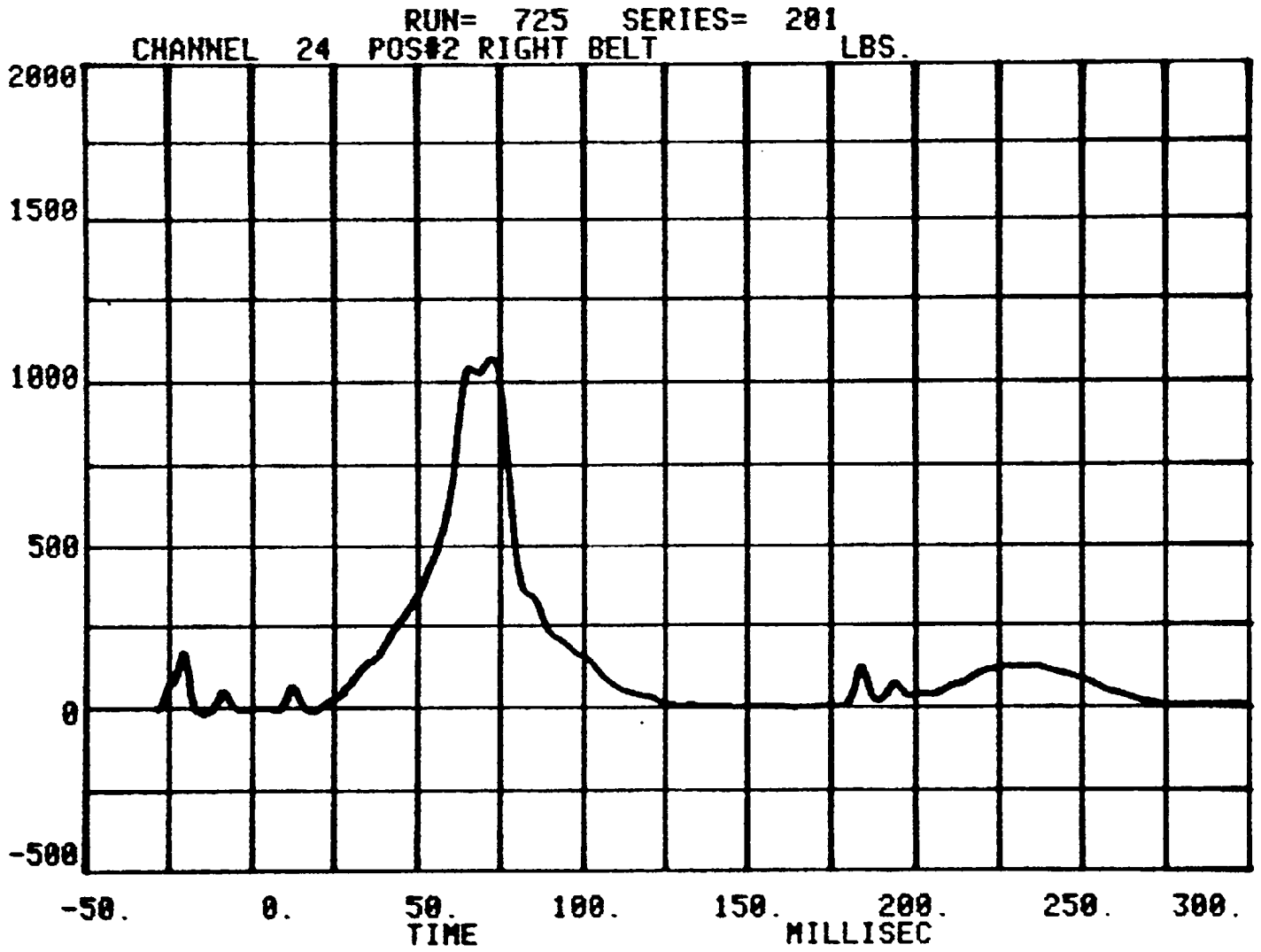

CHANNEL 18 POS#2 CHEST Z
RUN= 725 SERIES= 201
G'S
100
60
20
-20
-60
-100
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 4 POS#2 CHEST R
RUN= 725 SERIES= 201
G'S
100.
80.
60.
40.
20.
0.
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

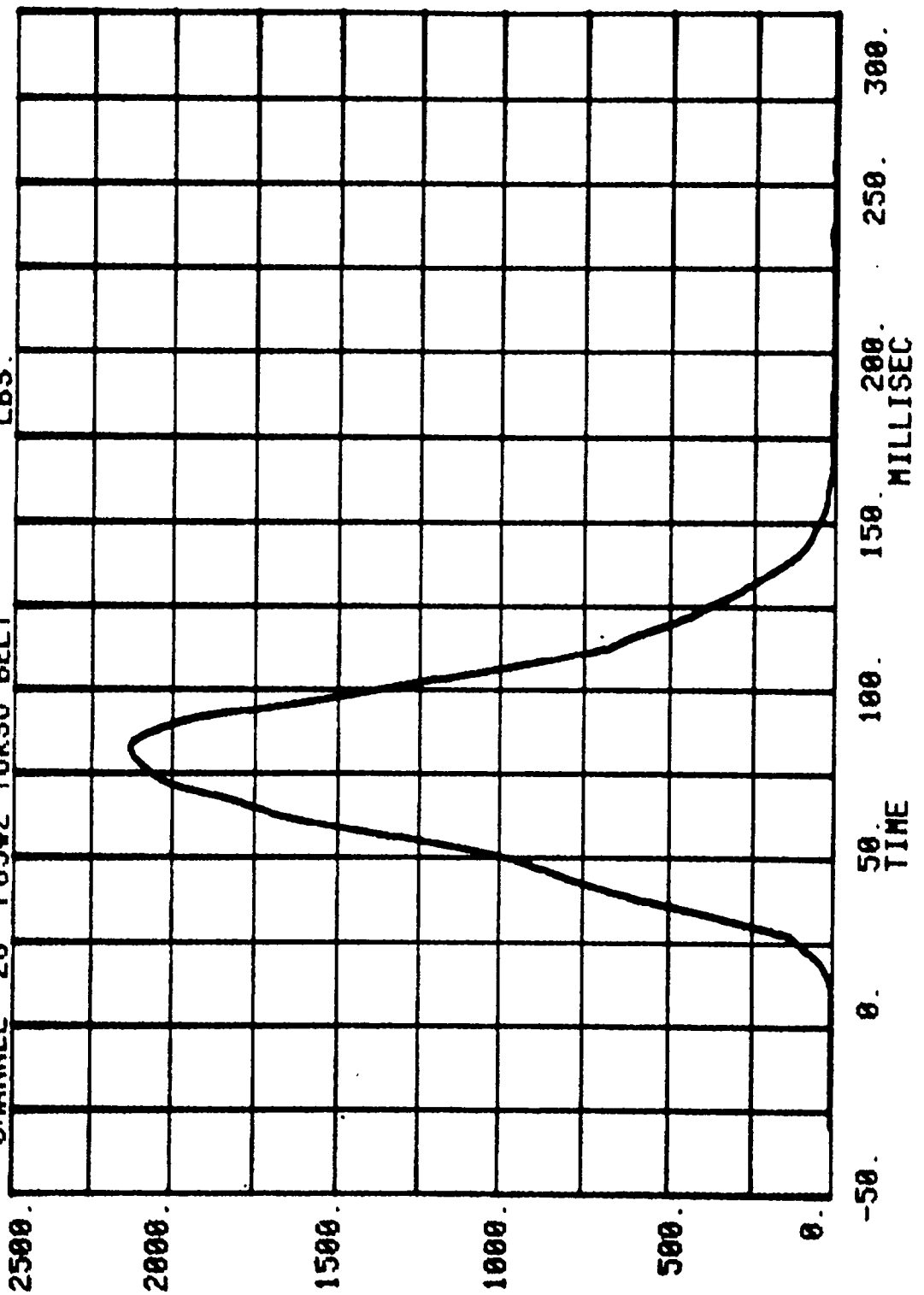

RUN= 725 SERIES= 201
CHANNEL 19 POS#2 RIGHT FEMUR LBS.
1600
1200
800
400
0
-400
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

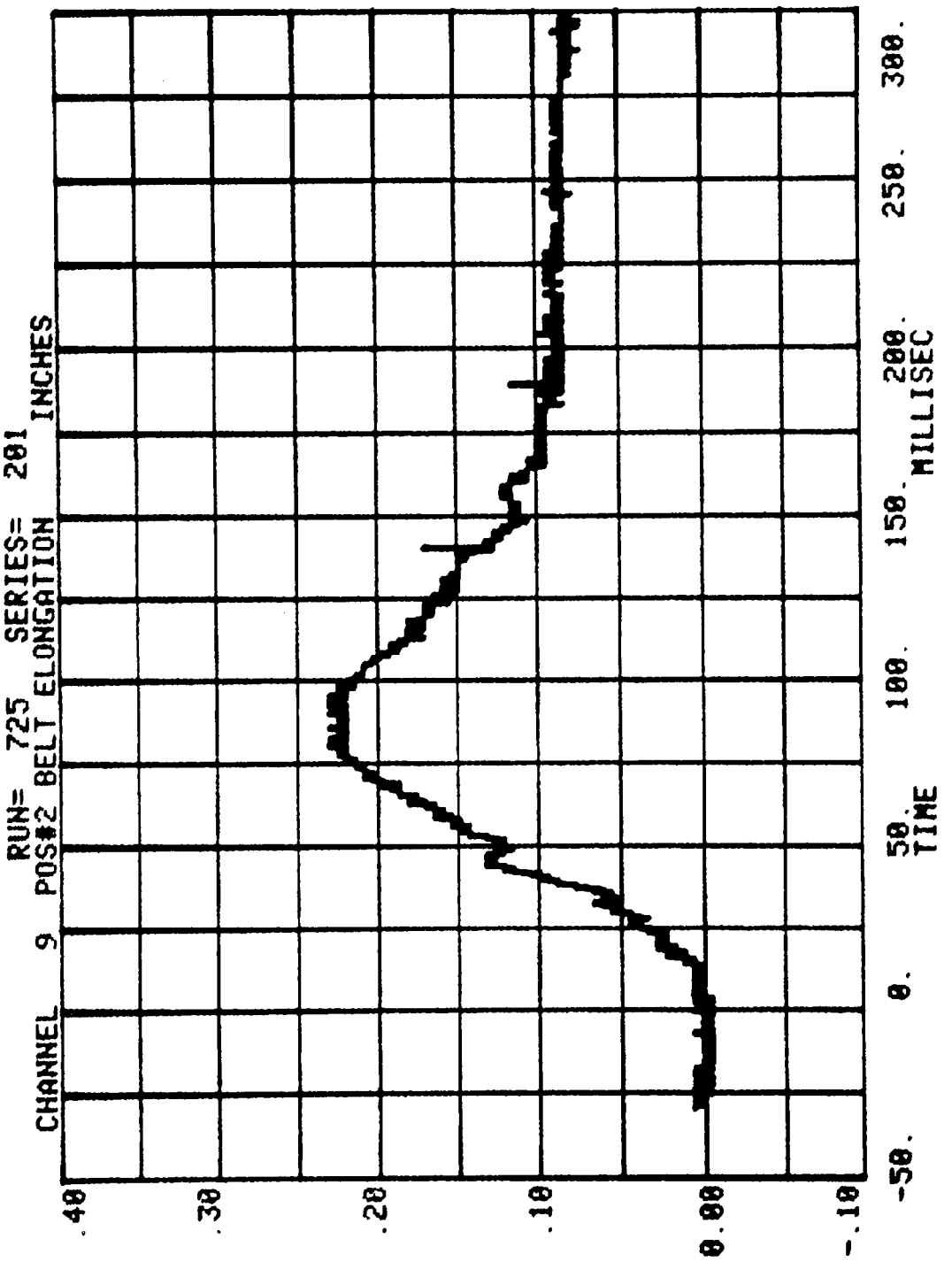

CHANNEL 20 POS#2 LEFT FEMUR
RUN= 725 SERIES= 201
LBS.
1600
1200
800
400
0
-400
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

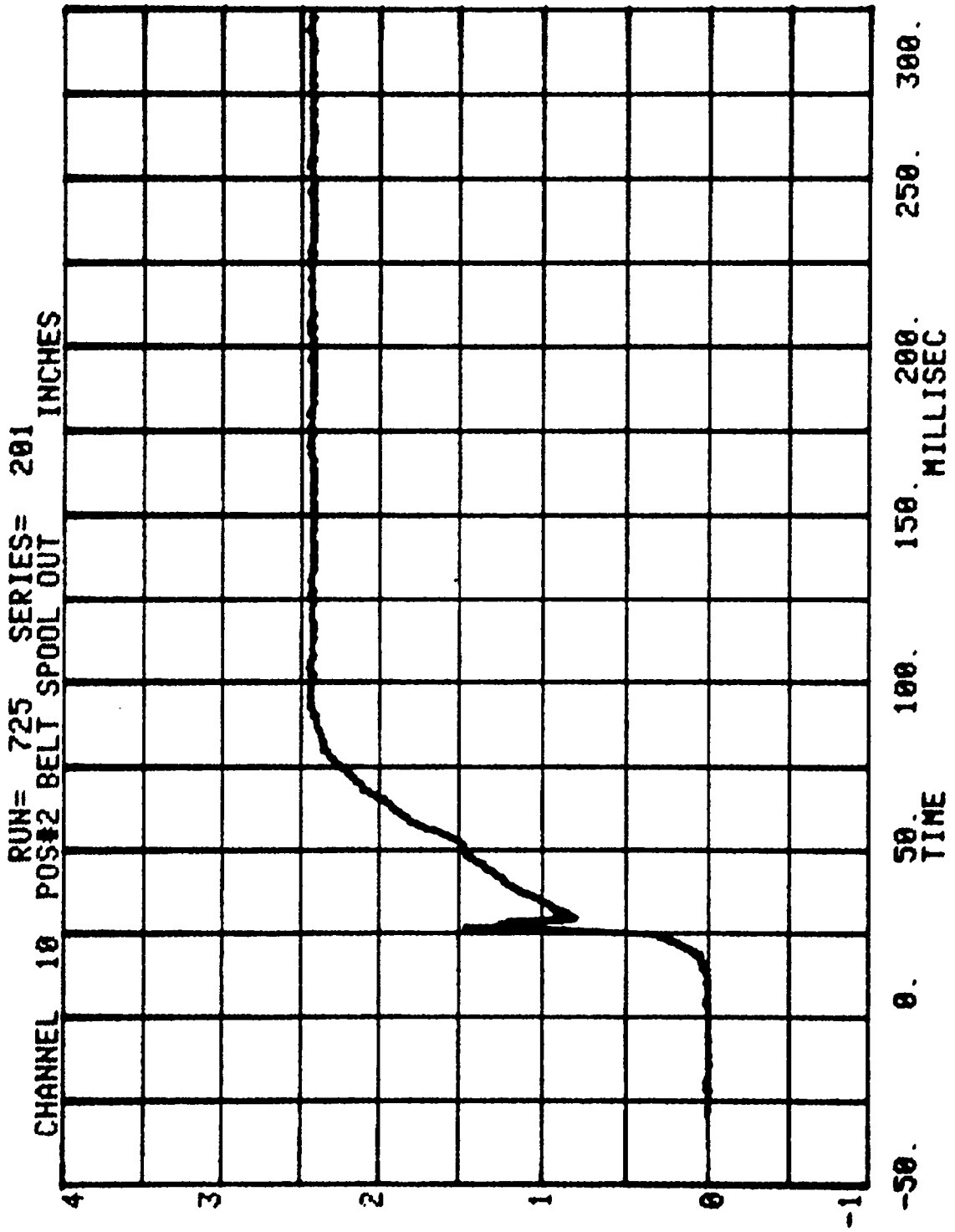
7457-15


RUN= 725 SERIES= 201
CHANNEL 24 POS#2 RIGHT BELT LBS.
2000
1500
1000
500
0
-500
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15


CHANNEL 26 POS#2 TORSO BELT
RUN= 725 SERIES= 201
LBS.
2500.
2000.
1500.
1000.
500.
0.
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 9 POS#2 BELT ELONGATION
RUN= 725 SERIES= 201 INCHES
.40
.30
.20
.10
0.00
-.10
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC


CHANNEL 10 POS#2 BELT SPOOL OUT
RUN= 725 SERIES= 201
INCHES
4
3
2
1
0
-1
-50.
0.
50.
100.
150.
200.
250.
300.
TIME
MILLISEC

7457-15

APPENDIX C

DUMMY CERTIFICATION TESTS

Appendix C contains the results from certification tests performed on the 50th percentile male anthropometric test devices utilized for this crash test. The results indicate that the dummies meet all of the performance requirements of the six standard tests as specified in 49 CFR Part 572, Federal Register, Volume 42, No. 25, dated February 7, 1977.

The tests were conducted at the Dummy Certification Test Facility of Calspan Corporation, Advanced Technology Center. A summary of the test results, Part 572 specifications and instrument calibration information is included in this Appendix.

Dummy serial numbers and certification dates are:

Serial No.	Completion Date
320	4-4-86
1021	4-4-86

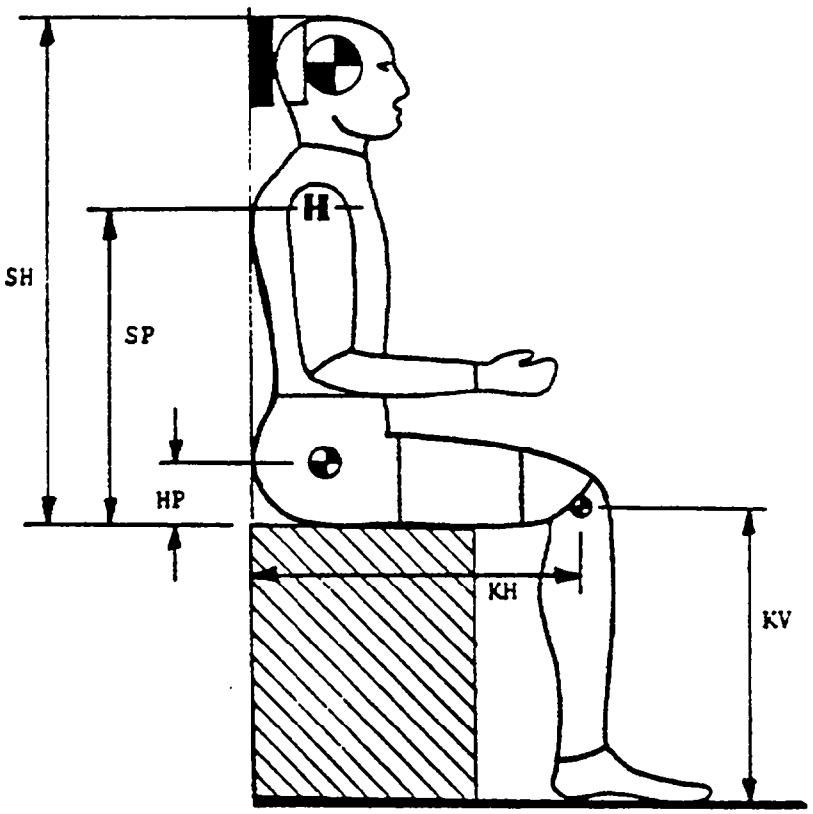
Electronic Test Equipment

The complement of signal conditioning recording and display equipment in conjunction with dummy certification testing can be found in New Car Assessment and Standards Indicant Testing Final Report, Report No. 6525-V-1.

PART 572 DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

NHTSA DUMMY I.D. NO.: 320

I. CONFIGURATION VERIFICATION DATA:



	P.572 SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
DATE OF CONFIGURATION VERIFICATION		4-4-86	
VERIFICATION NUMBER FOR DUMMY*		3	
SH - Seated Height- - - - - - - -	35.6 to 35.8"	35.7"	
SP - Shoulder Pivot Height- - - -	21.8 to 22.4"	21.9"	
HP - Hip Pivot Height - - - - - -	3.9" ref.	3.9"	
KH - Knee Pivot from back line- -	20.1 to 20.7"	20.3"	
KV - Knee Pivot from floor- - - -	19.3 to 19.9"	19.5"	
SW - Shoulder Width - - - - - - -	17.8 to 18.4"	17.9"	
HW - Hip Width- - - - - - - - - -	14.0 to 15.4"	14.2"	

TECHNICIAN'S NAME: DWH

* Sequential number beginning with "1" at the start of each fiscal year's crash test program

DUMMY CONFIG. & PERF. VERIF. DATA....Continued:

II. PERFORMANCE VERIFICATION DATA: NHTSA DUMMY I.D. NO.: 320

TECHNICIAN'S NAME: DWH

		PRE-TEST (if required)	POST-TEST (if required)
DATE OF PERFORMANCE VERIFICATION----------		4-4-86	
SEQUENTIAL VERIFICATION NUMBER FOR DUMMY*------		3	
VERIF. LAB. TEMPERATURE (66 to 78°F Range)-----		69-70 °F.	°F.
VERIF. LAB. HUMIDITY (10 to 70% Range)		22-33 %	%
TEST PARAMETER	SPECIFICATION		
1. HEAD DROP TEST--			
a. Peak Resultant Accel.-	210 to 260G	244g	
b. Peak Lateral Accel.- -	≤ - 10G	7g	
c. Time above 100G- - - -	0.9 to 1.5ms	1.16ms	
2. NECK BENDING TEST--			
a. Pendulum Speed - - - -	21.5 to 25.5 fps	24.0fps	
b. Pend. Avg. Decel. over $t_3 - t_2$	20 to 24G	24g	
c. Peak Resultant Head Acceleration - - - - -	26G max.	24g	
d. Pendulum Decel.(t_2-t_1)	≤ - 3ms	2.0 ms	
e. Pendulum Decel.(t_3-t_2)	25 to 30 ms	27 ms	
f. Pendulum Decel.(t_4-t_3)	≤ - 10ms	7.0 ms	
g. Max. Head Rotation - -	63 to 73°	64°	
h. Chordal Displacement-- Head Rotation Angle-			
0° Time- -	-2 to 2 ms	0 ms	
0° Displ.-	-.5 to .5"	0.0"	
30° Time- -	25.6 to 34.4ms	30.4 ms	
30° Displ.-	2.1 to 3.1"	3.0"	
60° Time- -	40.3 to 51.7ms	48.5 ms	
60° Displ.-	4.3 to 5.3"	5.3"	
Maximum (64 °) Time- -	53.2 to 66.8ms	59.6 ms	
Maximum (64 °) Displ.-	5.0 to 6.0"	5.6"	

*beginning with "1" at the start of each fiscal year's crash test program

II. PERFORMANCE VERIFICATION DATA (Continued) NHTSA DUMMY I.D. NO.: 320

TECHNICIAN'S NAME: DUH

TEST PARAMETER		SPECIFICATION	Pre-Test (if required)	Post-Test (if required)
2. NECK BENDING TEST.... Continued:				
h. Chordal Displacement: Head Rotation Angle--				
60°	Time	67.0 to 83.0 ms	67.0 ms	
	Displ.	4.3 to 5.3 in.	5.3"	
30°	Time	85.4 to 104.6 ms	87 ms	
	Displ.	2.1 to 3.1 in.	2.7"	
0°	Time	101.0 to 123.0 ms	102.5 ms	
	Displ.	-.5 to 0.5 in.	0.0"	
3. ABDOMINAL COMPRESSION TEST: (Preload = 10 pounds)				
a. Force @ .5" - - - - -		23 to 36 lbs.	26#	
b. Force @ .75" - - - - -		36 to 50 lbs.	39.6#	
c. Force @ 1.0" - - - - -		50 to 63 lbs.	56#	
d. Force @ 1.3" - - - - -		73 to 88 lbs.	78.6#	
4. LUMBAR FLEXION TEST:				
a. Force @ 20° - - - - -		22 to 34 lbs.	32.7#	
b. Force @ 30° - - - - -		34 to 46 lbs.	41.5#	
c. Force @ 40° - - - - -		46 to 58 lbs.	54#	
d. Return Angle - - - - -		12° maximum	9.5°	
5. CHEST IMPACT TESTS:				
a. High Speed				
(1) Probe Speed- - -		21.78-22.22 fps	22.20 fps	
(2) Peak Deflection-		1.7" maximum	1.48"	
(3) Peak Resistive Force- - - - - -		2250 lbs. maximum	2236#	
(4) Internal Hysteresis - - -		50 to 70%	59.6%	
b. Low Speed				
(1) Probe Speed- - -		13.86-14.14 fps	13.9 fps	
(2) Peak Deflection-		1.1" maximum	.73"	
(3) Peak Resistive Force- - - - - -		1450 lbs. maximum	1326#	
(4) Internal Hyster.		50 to 70%	60.4%	

DUMMY CONFIG. & PERF. VERIF. DATA....Continued:

II. PERFORMANCE VERIFICATION DATA (Continued) NHTSA DUMMY I.D. NO.: 320

TECHNICIAN'S NAME: DWH

TEST PARAMETER	SPECIFICATION	Pre-Test (if required)	Post-Test (if required)
6. KNEE IMPACT TESTS:			
a. Right Side--			
(1) Probe Speed - - -	6.76 to 7.04 fps	6.97 fps	
(2) Maximum Force - -	1850 to 2500 lbs.	2000#	
(3) Time Above 1000#-	1.7 ms minimum	2.2 ms	
b. Left Side--			
(1) Probe Speed - - -	6.76 to 7.04 fps	7.03 fps	
(2) Maximum Force - -	1850 to 2500 lbs.	2430#	
(3) Time Above 1000#-	1.7 ms minimum	1.96 ms	

REMARKS:

INSTRUMENT CALIBRATION INFORMATION

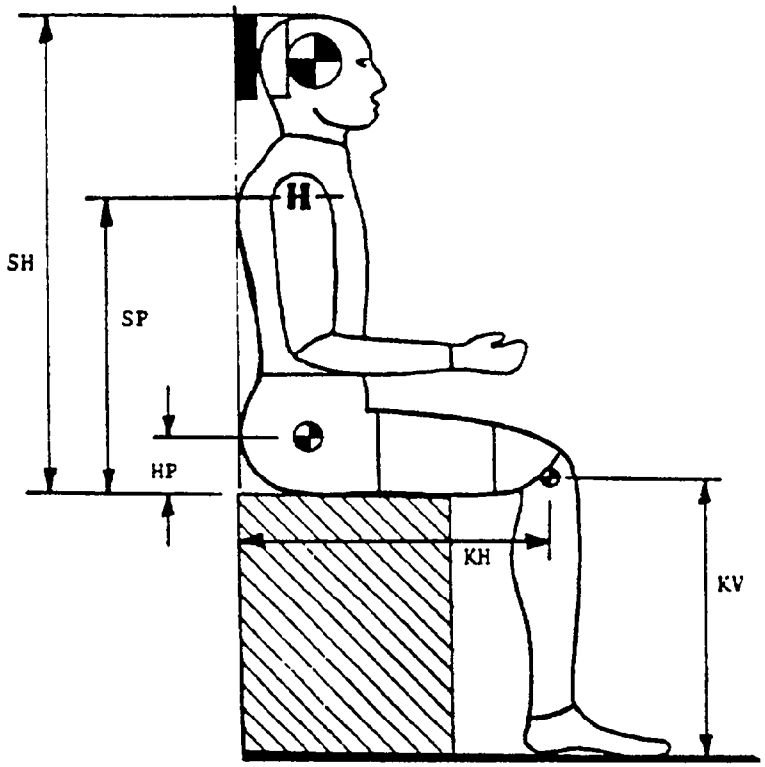
NHTSA DUMMY ID NO. 320 CALIB. SEQ. NOS. FOR DUMMY: 3

	MANUFACTURER	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
A. DUMMY INSTRUMENTS				
1. Head Accelerometers				
a. Triaxial unit	--	--	--	--
b. Uniaxial units				
(1) Longitudinal (A_x)	Endevco	CJ22	4-86	10-86
(2) Lateral (A_y)	Endevco	CS41	4-86	10-86
(3) Vertical (A_z)	Endevco	CH31	4-86	10-86
2. Chest Accelerometers (Vehicle Crash Test Usage)				
a. Triaxial unit	--	--	--	--
b. Uniaxial units				
(1) Longitudinal (A_x)	CEC	22960 A73	4-86	10-86
(2) Lateral (A_y)	Endevco	CE06	4-86	10-86
(3) Vertical (A_z)	CEC	22703 A44	4-86	10-86
3. Chest Potentiometer	Ohmite	7915	4-86	10-86
4. Femur Load Cells				
a. Right Side	GSE	549	4-86	10-86
b. Left Side	GSE	548	4-86	10-86
B. CALIB. LAB. INSTRUMENTS:				
1. Pendulum Accelerometer	CEC	18259 A128	4-86	10-86
2. Test Probe Accelerometer	CEC	17815	4-86	10-86
3. Lumbar Flexion Test Push Force Gauge	Transducer Inc	20051	4-86	10-86
4. Abdominal Compression Test Force Gauge	BLH	72952	4-86	10-86
5. Abdominal Compression Test Displacement Gauge	CIC	567-11	4-86	10-86

PART 572 DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

NHTSA DUMMY I.D. NO.: 1021

I. CONFIGURATION VERIFICATION DATA:



	P.572 SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
DATE OF CONFIGURATION VERIFICATION		4-4-86	
VERIFICATION NUMBER FOR DUMMY*		3	
SH - Seated Height- - - - - - - -	35.6 to 35.8"	35.7"	
SP - Shoulder Pivot Height- - - -	21.8 to 22.4"	22.0"	
HP - Hip Pivot Height - - - - - -	3.9" ref.	3.9"	
KH - Knee Pivot from back line- -	20.1 to 20.7"	20.4"	
KV - Knee Pivot from floor- - - -	19.3 to 19.9"	19.5"	
SW - Shoulder Width - - - - - - -	17.8 to 18.4"	18.1"	
HW - Hip Width- - - - - - - - - -	14.0 to 15.4"	14.8"	

TECHNICIAN'S NAME: DWH

* Sequential number beginning with "1" at the start of each fiscal year's crash test program

DUMMY CONFIG. & PERF. VERIF. DATA....Continued:

II. PERFORMANCE VERIFICATION DATA: NHTSA DUMMY I.D. NO.: 1021

TECHNICIAN'S NAME: DWH

			PRE-TEST (if required)	POST-TEST (if required)
DATE OF PERFORMANCE VERIFICATION----------			4-4-86	
SEQUENTIAL VERIFICATION NUMBER FOR DUMMY*------			3	
VERIF. LAB. TEMPERATURE (66 to 78°F Range)-----			66-72 °F.	°F.
VERIF. LAB. HUMIDITY (10 to 70% Range)			23-34 %	%
TEST PARAMETER		SPECIFICATION		
1. HEAD DROP TEST--				
a. Peak Resultant Accel.-		210 to 260G	235g	
b. Peak Lateral Accel.- -		≤ - 10G	7.5g	
c. Time above 100G- - - -		0.9 to 1.5ms	1.2 ms	
2. NECK BENDING TEST--				
a. Pendulum Speed - - - -		21.5 to 25.5 fps	23.9 fps	
b. Pend. Avg. Decel. over $t_3 - t_2$		20 to 24G	23g	
c. Peak Resultant Head Acceleration - - - - -		26G max.	24g	
d. Pendulum Decel.(t_2-t_1)		≤ - 3ms	2.1 ms	
e. Pendulum Decel.(t_3-t_2)		25 to 30 ms	26.5 ms	
f. Pendulum Decel.(t_4-t_3)		≤ - 10ms	6.6 ms	
g. Max. Head Rotation - -		63 to 73°	65°	
h. Chordal Displacement-- Head Rotation Angle-				
0°	Time- -	-2 to 2 ms	0 ms	
	Displ.-	-.5 to .5"	0.0"	
30°	Time- -	25.6 to 34.4ms	30.6 ms	
	Displ.-	2.1 to 3.1"	3.1"	
60°	Time- -	40.3 to 51.7ms	47.8 ms	
	Displ.-	4.3 to 5.3"	5.3"	
Maximum (65 °)	Time- -	53.2 to 66.8ms	58 ms	
	Displ.-	5.0 to 6.0"	5.6"	

*beginning with "1" at the start of each fiscal year's crash test program

DUMMY CONFIG. & PERF. VERIF. DATA....Continued:

II. PERFORMANCE VERIFICATION DATA (Continued) NHTSA DUMMY I.D. NO.: 1021

TECHNICIAN'S NAME: DWH

TEST PARAMETER		SPECIFICATION	Pre-Test (if required)	Post-Test (if required)
2. NECK BENDING TEST.... Continued:				
h. Chordal Displacement:				
Head Rotation Angle--				
60°	Time	67.0 to 83.0 ms	67.5 ms	
	Displ.	4.3 to 5.3 in.	5.1"	
30°	Time	85.4 to 104.6 ms	86 ms	
	Displ.	2.1 to 3.1 in.	2.6"	
0°	Time	101.0 to 123.0 ms	101.2 ms	
	Displ.	-.5 to 0.5 in.	0.0"	
3. ABDOMINAL COMPRESSION TEST:				
(Preload = 10 pounds)				
a. Force @ .5" - - - - -		23 to 36 lbs.	25.4#	
b. Force @ .75" - - - - -		36 to 50 lbs.	37.1#	
c. Force @ 1.0" - - - - -		50 to 63 lbs.	54.0#	
d. Force @ 1.3" - - - - -		73 to 88 lbs.	76.5#	
4. LUMBAR FLEXION TEST:				
a. Force @ 20° - - - - -		22 to 34 lbs.	33#	
b. Force @ 30° - - - - -		34 to 46 lbs.	42.5#	
c. Force @ 40° - - - - -		46 to 58 lbs.	54#	
d. Return Angle - - - - -		12° maximum	10°	
5. CHEST IMPACT TESTS:				
a. High Speed				
(1) Probe Speed- - -		21.78-22.22 fps	22.1 fps	
(2) Peak Deflection-		1.7" maximum	1.28"	
(3) Peak Resistive Force- - - - - -		2250 lbs. maximum	2244#	
(4) Internal Hysteresis - - -		50 to 70%	70%	
b. Low Speed				
(1) Probe Speed- - -		13.86-14.14 fps	13.91 fps	
(2) Peak Deflection-		1.1" maximum	1.04"	
(3) Peak Resistive Force- - - - - -		1450 lbs. maximum	1352#	
(4) Internal Hyster.		50 to 70%	70%	

DUMMY CONFIG. & PERF. VERIF. DATA....Continued:

II. PERFORMANCE VERIFICATION DATA (Continued) NHTSA DUMMY I.D. NO.: 1021

TECHNICIAN'S NAME: DWH

TEST PARAMETER	SPECIFICATION	Pre-Test (if required)	Post-Test (if required)
6. KNEE IMPACT TESTS:			
a. Right Side--			
(1) Probe Speed - - -	6.76 to 7.04 fps	6.78 fps	
(2) Maximum Force - -	1850 to 2500 lbs.	2050#	
(3) Time Above 1000#-	1.7 ms minimum	2.0 ms	
b. Left Side--			
(1) Probe Speed - - -	6.76 to 7.04 fps	7.04 fps	
(2) Maximum Force - -	1850 to 2500 lbs.	2175#	
(3) Time Above 1000#-	1.7 ms minimum	1.96 ms	

REMARKS:

INSTRUMENT CALIBRATION INFORMATION

NHTSA DUMMY ID NO. 1021 CALIB. SEQ. NOS. FOR DUMMY: 3

	MANUFACTURER	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
A. DUMMY INSTRUMENTS				
1. Head Accelerometers				
a. Triaxial unit	--	--	--	--
b. Uniaxial units				
(1) Longitudinal (A_x)	Endevco	CH83	4-86	10-86
(2) Lateral (A_y)		CU62	4-86	10-86
(3) Vertical (A_z)		CM86	4-86	10-86
2. Chest Accelerometers (Vehicle Crash Test Usage)				
a. Triaxial unit	--	--	--	--
b. Uniaxial units				
(1) Longitudinal (A_x)	CEC	A74 25183	4-86	10-86
(2) Lateral (A_y)	Endevco	CE76	4-86	10-86
(3) Vertical (A_z)	CEC	A72 22958	4-86	10-86
3. Chest Potentiometer			4-86	10-86
4. Femur Load Cells				
a. Right Side	GSE	306	4-86	10-86
b. Left Side	GSE	310	4-86	10-86
B. CALIB. LAB. INSTRUMENTS:				
1. Pendulum Accelerometer	CEC	18259	4-86	10-86
2. Test Probe Accelerometer	CEC	17815	4-86	10-86
3. Lumbar Flexion Test Push Force Gauge	Transducer Inc.	20051	4-86	10-86
4. Abdominal Compression Test Force Gauge	BLH	72952	4-86	10-86
5. Abdominal Compression Test Displacement Gauge	CIC	567-11	4-86	10-86

APPENDIX D

VEHICLE OWNER'S MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

OCCUPANT RESTRAINT SYSTEMS

WARNING — Be sure to LOCK ALL DOORS before driving away. Locking the doors, along with using the safety belts provided, will minimize the risk of injury or ejection in an accident.

Ford Motor Company recommends that you always "buckle up". In a growing number of areas restraint system use is required by law.

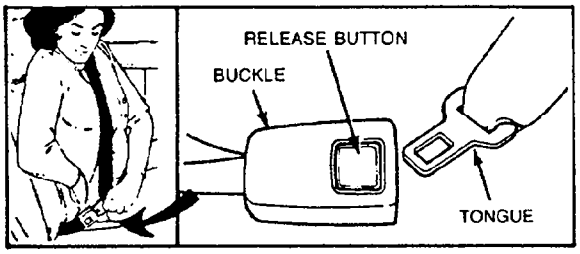
WARNING — Passengers should not be allowed to ride in the cargo area of any vehicle. Persons who are not riding in a seat with a fastened seat belt are much more likely to suffer serious bodily injury in the event of a collision.

For young children, infant and child restraints should be obtained and used in accordance with the instructions provided by the manufacturer of the infant and child restraint. See Infant and Child Restraints in this section.

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.



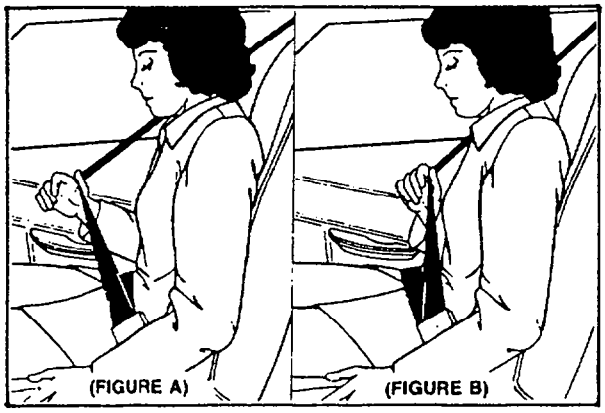
Pull up on the shoulder portion of the belt to tighten the lap portion to a snug fit. Be sure the belt is as low on your hips as possible. If the shoulder belt is uncomfortably tight, a comfort regulator is provided in the shoulder belt retractor to reduce belt pressure against your chest. The shoulder 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 1½ inches (3.8 cm), should be pulled out when using the comfort regulator system.


(FIGURE A) (FIGURE B)

- If the desired setting is not achieved or excess slack develops as you change seat position, repeat the above procedure.

- When the door is opened, the comfort regulator will release automatically, permitting the lap-shoulder belt to retract. After unbuckling the belt it is recommended that you guide the tongue during retraction to prevent it from striking you or the vehicle.

WARNING — Never allow more than 1½ inches (3.8 cm) of slack to be introduced into your seat belt system. Use the shoulder belt on the outside shoulder only. Never wear the shoulder belt under the arm. Never swing it around your neck over the inside shoulder. Never use a single belt for more than one person. Be sure the lap portion of the belt is fitted snugly and as low as possible around the hips, not on the waist. Failure to follow these precautions could increase the chance and/or severity of injury in an accident.

Center Front and Rear Lap Belt

Because the center lap belts do not have retractors, they should be shortened and fastened when not in use. To lengthen the belt, tip the tongue at a right angle to the belt and pull the belt over your lap until the tongue reaches the buckle.

To fasten the belt, insert the tongue into the proper buckle until you hear a snap and feel the latch engage. The belt should be snug and as low as possible across the hips and never across the waist.

NOTE — The center front seat belt buckle has been designed to engage only with the center seat belt tongue. The outboard restraint system buckle and the center restraint system tongue are not compatible and will not engage with one another.

Rear Lap Belts with Retractors

Pull the belt out of the retractor with a steady motion and insert the tongue into the buckle until you hear a snap and feel the latch engage.

WARNING — Be sure the lap belt is fitted snugly and as low as possible around the hips, not around the waist. Failure to do so may increase the chance of injury in the event of a collision.

If you should jam the lap belt retractor by allowing the belt to retract when it is twisted, you can free the webbing with this procedure.

- Pull on the belt with both hands to tighten it on the retractor spool.
- Feed the belt back into the retractor until it is completely retracted. Repeat previous step if necessary.
- Pull 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 retract.
- Extend and retract the belt about five times to make sure the belt retractor operates properly.

TAURUS