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Report No. 204-MS-82-01-TR-AC

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ADD-ON ACCELERATION MEASUREMENTS PASSENGER CARS FMVSS 204

December 1982

FINAL REPORT

Prepared Under Contract No. DTNH22-82-C-07481

For

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
Office of Vehicle Safety Compliance
400 Seventh Street, S.W.
Washington, D.C. 20590

By

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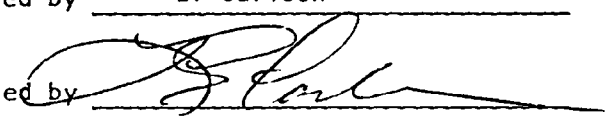
Prepared by L. Carlson

Approved by 

Date 1/4/83

Report Accepted by:

Contract Technical Manager
Office of Vehicle Safety Compliance

Date

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15. SUPPLEMENTARY NOTES	

16. ABSTRACT

Two channels of acceleration measurements were recorded on each of 15 vehicles subject to FMVSS 204 testing. The accelerometers were located on the front and rear floor pan areas of the vehicles.

17. KEY WORDS FMVSS 204 Acceleration Measurement	18. DISTRIBUTION STATEMENT Copies of this report are available from-- Technical Reference Division Nat'l Hwy Traffic Safety Admin. Room 5108, Nassif Building 400 7th St. SW, Wash. D.C. 20590

19. SECURITY CLASSIF. (of this report)	20. SECURITY CLASSIF. (of this page)	21.	22.

TEST DATA REPORT

FMVSS 204

ADD-ON ACCELEROMETER MEASUREMENTS

SECTION 1
INTRODUCTION

A series of 15 FMVSS 204 tests was conducted for NHTSA. As an add-on to these tests, two channels of acceleration data were measured for each test. The vehicles tested are listed in Section 2. All tests were conducted in 1982.

Two channels of data were successfully recorded for each test. All data were of good quality except the data for the Nissan Sentra vehicle, NHTSA No. 820547. The data for this test exhibited large zero offsets that occurred sometime following impact. Corrections were made to achieve meaningful acceleration values. However, the first and second integrals (velocity and displacement) yield questionable values. All other test data required minor (less than 10% amplitude) zero offset corrections to achieve correct velocity and displacement response.

The data for all 15 tests are presented in Section 2. For each vehicle, the vehicle and test descriptive data and the time history data (6 channels, 2 acceleration, 2 velocity and 2 displacement) are presented. The descriptive and time history data were also written to tape in accordance with the NHTSA specified format. The 15 separate data tapes are included as part of this data report.

2.11 TEST DATA FOR FORD E-100 ECONOLINE VAN

NHTSA No.	-	820624
Test Reference No.	-	N02112
Test Date	-	11/11/82

FORD E-100 ECONOLINE VAN

VEHICLE AND DESCRIPTIVE TEST DATA

1.	TEST TITLE	FMVSS204
2.	TEST DATE (MM/DD/YY)	11/11/82
3.	TEST PERFORMER	MSE
4.	CONTRACT NUMBER	DTNH2282D01105
5.	TEST REFERENCE NO.	TEST 11
6.	TEST OBJECTIVES	DETERMINE COMPL. TO FMVSS204
7.	(CONT)	AND MEASURE 2 ACCEL. CH. ON VEHICLE
8.	TEST TYPE	COM
9.	TEST CONFIGURATION	VSB
10.	CLOSING SPEED	29.5
11.	IMPACT ANGLE	0
12.	OFFSET DISTANCE	999.9
13.	SIDE IMPACT POINT (INCHES)	999.9
14.	TEST TRACK SURFACE	ASH
15.	TEST TRACK CONDITION	DRY
16.	AMBIENT TEMPERATURE (F)	62
17.	RECORDER TYPE	FMT
18.	DATA LINK	UMB
19.	TEST ANOMALIES	ENG
20.	DESCRIPTION OF OTHER ANOMALY	
21.	VEHICLE I.D. NUMBER	1
22.	VEHICLE MAKE	2
23.	VEHICLE MODEL	23
24.	VEHICLE YEAR	82
25.	ENGINE TYPE	6-ILF
26.	ENGINE DISPLACEMENT	300 CI
27.	TRANSMISSION TYPE	MR
28.	BODY TYPE	VN
29.	TEST WEIGHT	3841
30.	WHEELBASE (IN.)	124.0
31.	VEHICLE LENGHT (IN.)	186.0
32.	VEHICLE WIDTH (IN.)	75.0
33.	C.G. DIST. BEHIND FRONT AXLE	52.5
34.	STEERING COL. TO DASH	S
35.	STEERING COL. COLLAPSE MECH.	CYL
36.	VEHICLE MODIFICATION INDIC.	P
37.	GEN. DESCR. OF MODIFICATIONS	
38.	(CONT)	
39.	VEHICLE ABSOLUTE SPEED	29.5
40.	TRAVEL ANGLE	0
41.	DIRECTION OF IMPACT FORCE	0
42.	DAMAGE INDEX	12FDEW5
43.	BUMPER ENGAGEMENT	9
44.	SILL ENGAGEMENT	9
45.	PILLAR ENGAGEMENT	9
46.	LENGTH OF CONTACT DAMAGE	75.0
47.	POINT NO. 1	13.0
48.	POINT NO. 2	12.8
49.	POINT NO. 3	12.6
50.	POINT NO. 4	12.4
51.	POINT NO. 5	12.2
52.	POINT NO. 6	12.0
53.	DIST. DAMAGE CENTER TO C.G.	0.0
54.	MAXIMUM CRUSH DISTANCE	13.0
55.	TYPE OF BARRIER	FFB
56.	DIAMETER OF POLE BARRIER	0.0
57.	ANGLE OF BARRIER	0
58.	ABSOLUTE SPEED OF BARRIER	0.0

59.	WEIGHT OF BARRIER IF MOVING	
60.	RIGID OR YIELDING BARRIER	R
61.	ROLLOVER TYPE TEST	9
62.	SPEED OF ROLLOVER CART	0.0
63.	ANGLE OF ROLLOVER CART	0
64.	ORIENTATION ON ROLLOVER CART	0
65.	ADDITIONAL DESCRIPTION	
66.	(CONTINUED)	
67.	VEHICLE OCCUPANT	0
68.	SEATING POSITION	0
69.	SEAT POSITION (FORE-AFT)	
70.	OCCUPANT TYPE	
71.	OCCUPANT AGE	0
72.	OCCUPANT HEIGHT	0
73.	OCCUPANT WEIGHT	0
74.	OCCUPANT SIZE PERCENTILE	0
75.	OCCUPANT SEX	
76.	OCCUPANT SIMULATED AGE	0
77.	MANUFACTURER AND SERIAL NO.	
78.	(CONTINUED)	
79.	HEAD TO WINDSHIELD HEADER	0.0
80.	HEAD TO WINDSHIELD	0.0
81.	HEAD TO SIDE HEADER	0.0
82.	HEAD TO SIDE WINDOW	0.0
83.	CHEST TO DASH	0.0
84.	CHEST TO STEERING WHEEL	0.0
85.	ARM TO DOOR	0.0
86.	HIP TO DOOR	0.0
87.	KNEES TO DASH	0.0
88.	RESTRAINT SYSTEM TYPE	
89.	KNEE RESTRAINT DESCRIPTION	
90.	AIR BAG/BELT DEPLOYMENT	
91.	HEAD CONTACT REGION	
92.	CHEST OR ABDOMEN CONTACT REGION	
93.	LEF CONTACT REGION	
94.	CHANNEL NUMBER	1
95.	SENSOR TYPE	AC
96.	SENSOR LOCATION	01
97.	OCCUPANT	N
98.	SENSOR ATTACHED	RFF
99.	NATURAL FREQUENCY	6000
100.	PREFIL	100
101.	DMPRTO	0.0
102.	NO. OF POINTS	2860
103.	TOPT	360
104.	DELTA T	200
105.	UNITS	G's
106.	AXIS	X
107.	INITIAL VELOCITY	29.5
108.	QUALITY	GOOD ,ZERO OFFSET
109.	CHANNEL NUMBER	2
110.	SENSOR TYPE	AC
111.	SENSOR LOCATION	01
112.	OCCUPANT	N
113.	SENSOR ATTACHED	LRF
114.	NATURAL FREQUENCY	6000
115.	PREFIL	100
116.	DMPRTO	0.0
117.	NO. OF POINTS	2860
118.	TOPT	360
119.	DELTA T	200
120.	UNITS	G's
121.	AXIS	X
122.	INITIAL VELOCITY	29.5
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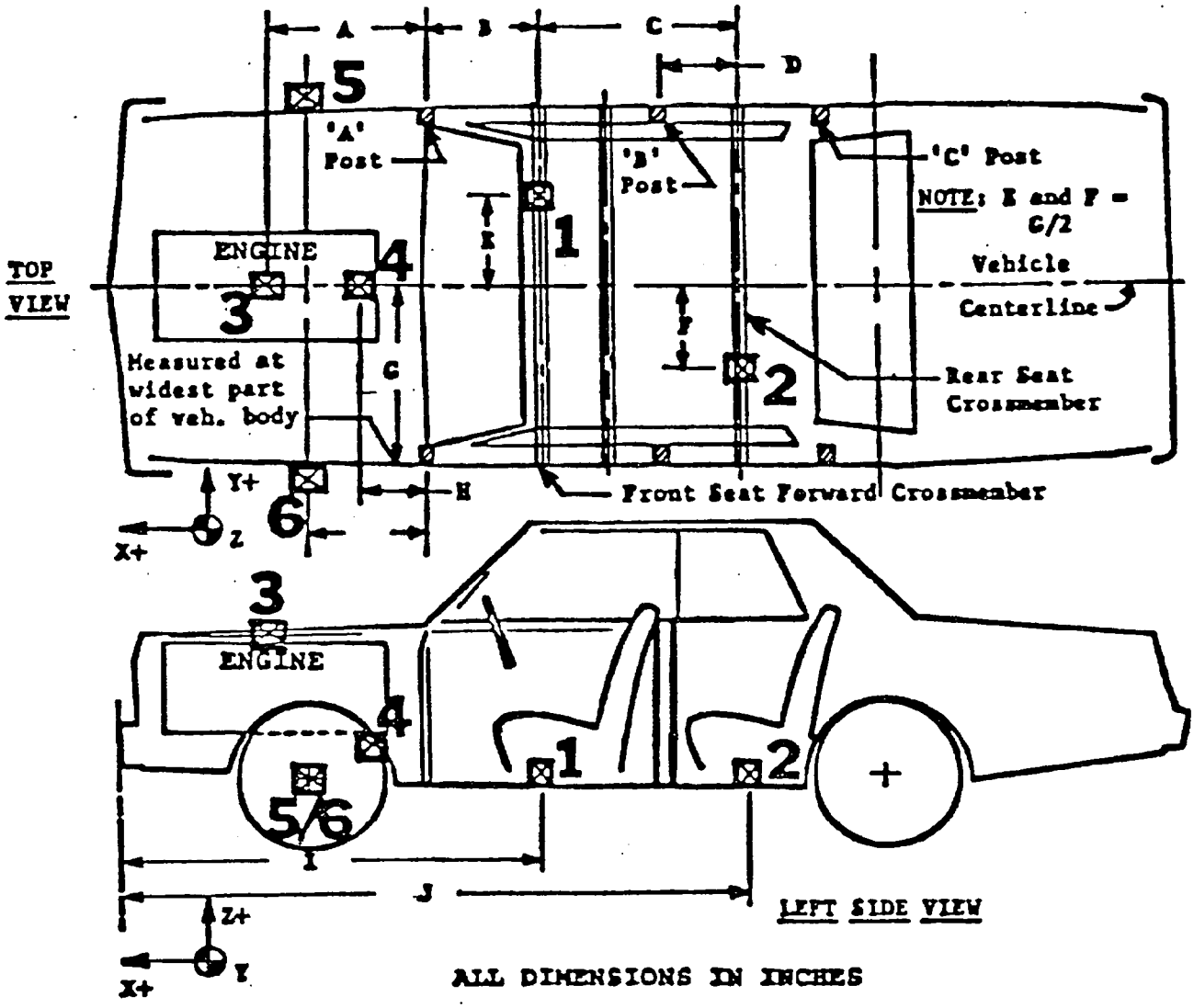


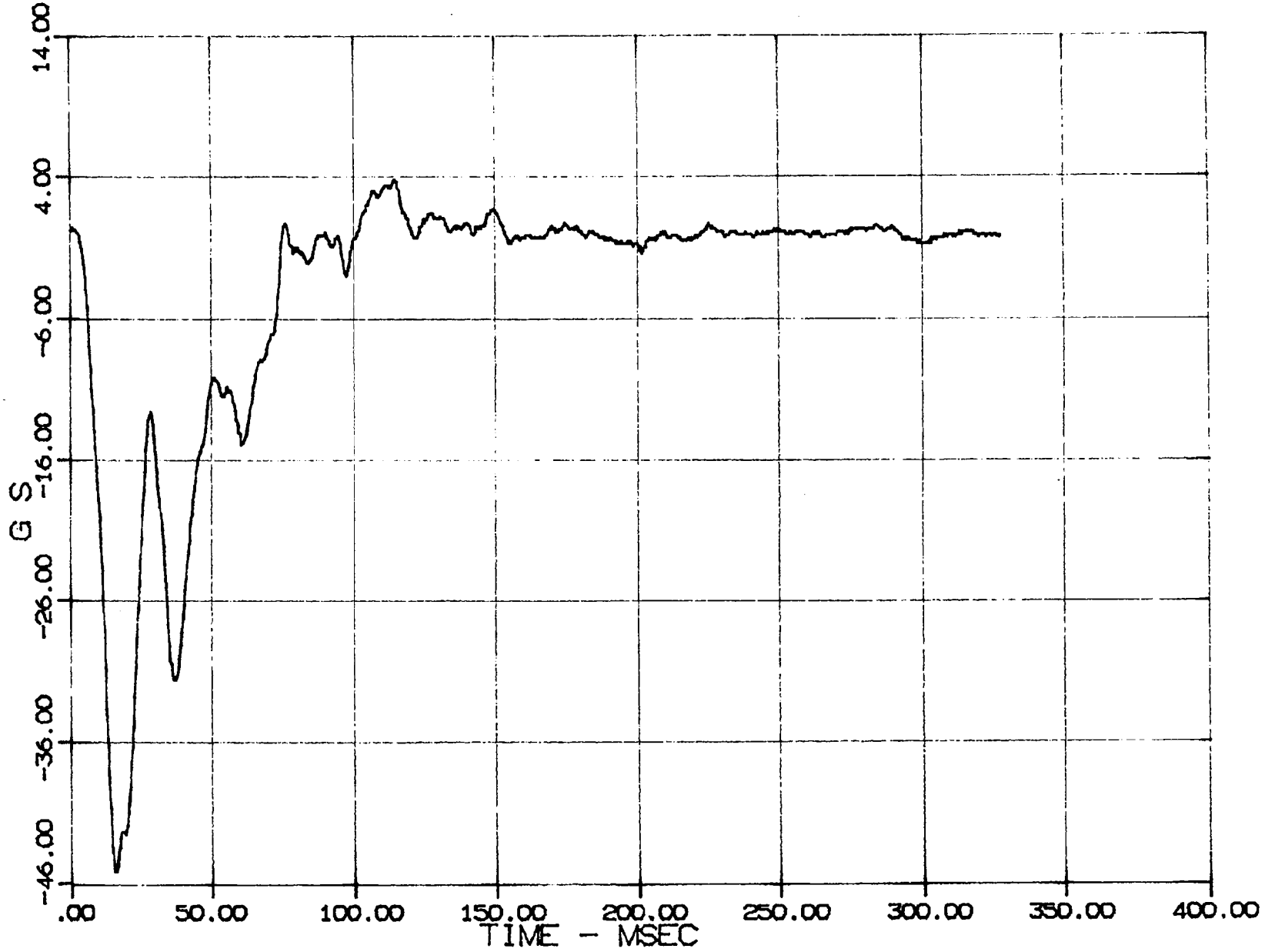
ALL DIMENSIONS IN INCHES

DIMENSION	LENGTH (in.)
E =G/2	24.2 in.
F =G/2	29.4 in.
G	37.5 in.
I	86.0 in.
J	104.5 in.

ACCEL. NO.	LOCATION	DIRECT. X	DIRECT. Y	DIRECT. Z	PEAK G @ ___ msec. X+	X-	Y+	Y-	Z+	Z-
1	Below Front Seat Area	●			+@	-@				
2	Below Rear Seat Area	●			+@	-@				

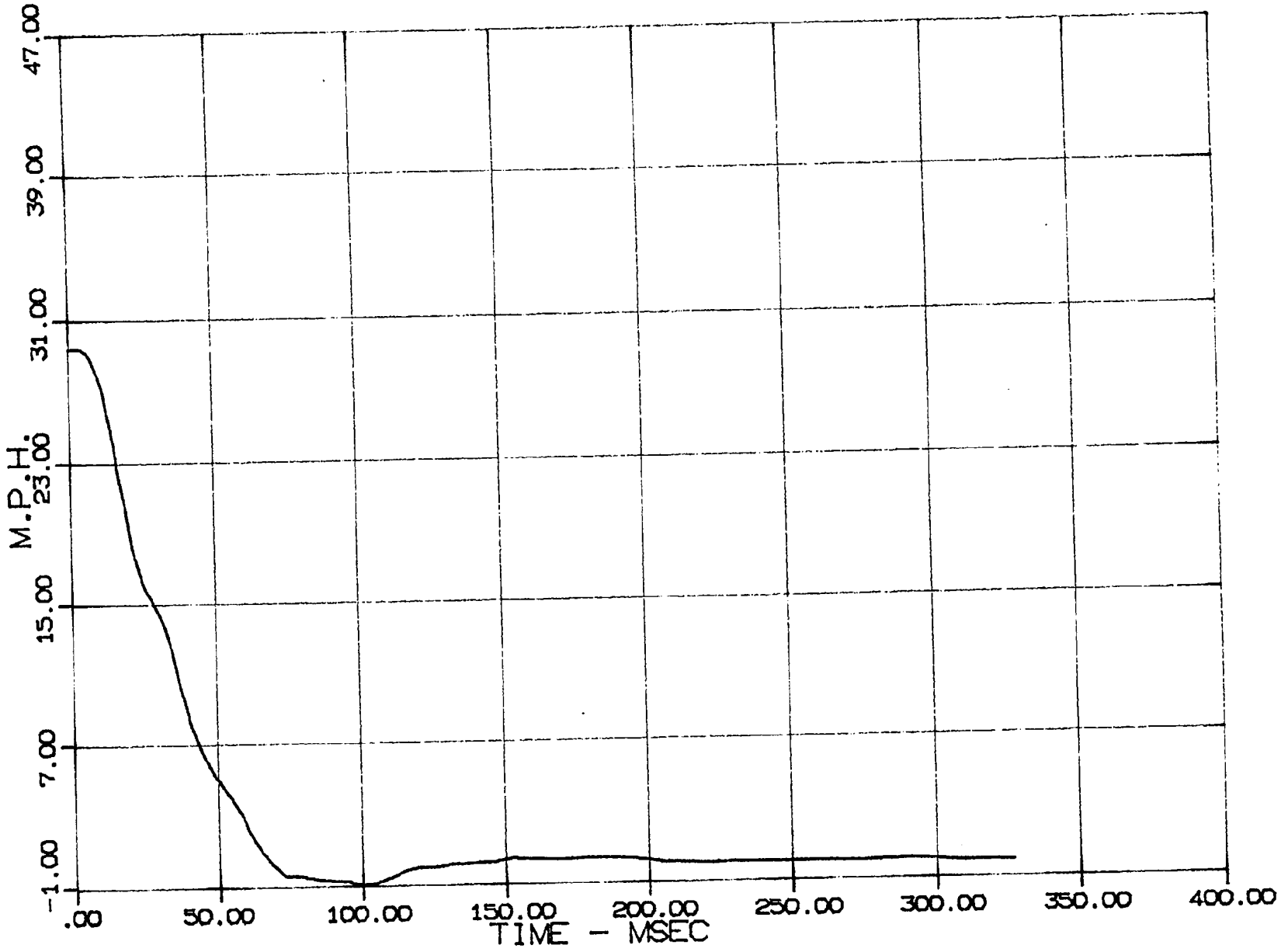
FORD E-100 ECONOLINE VAN

VEHICLE ACCELEROMETER LOCATIONS



03 AC 01 N RFF X

MSE NO2112 1982 FORD E-100 ECONOLINE VAN 11/11/82



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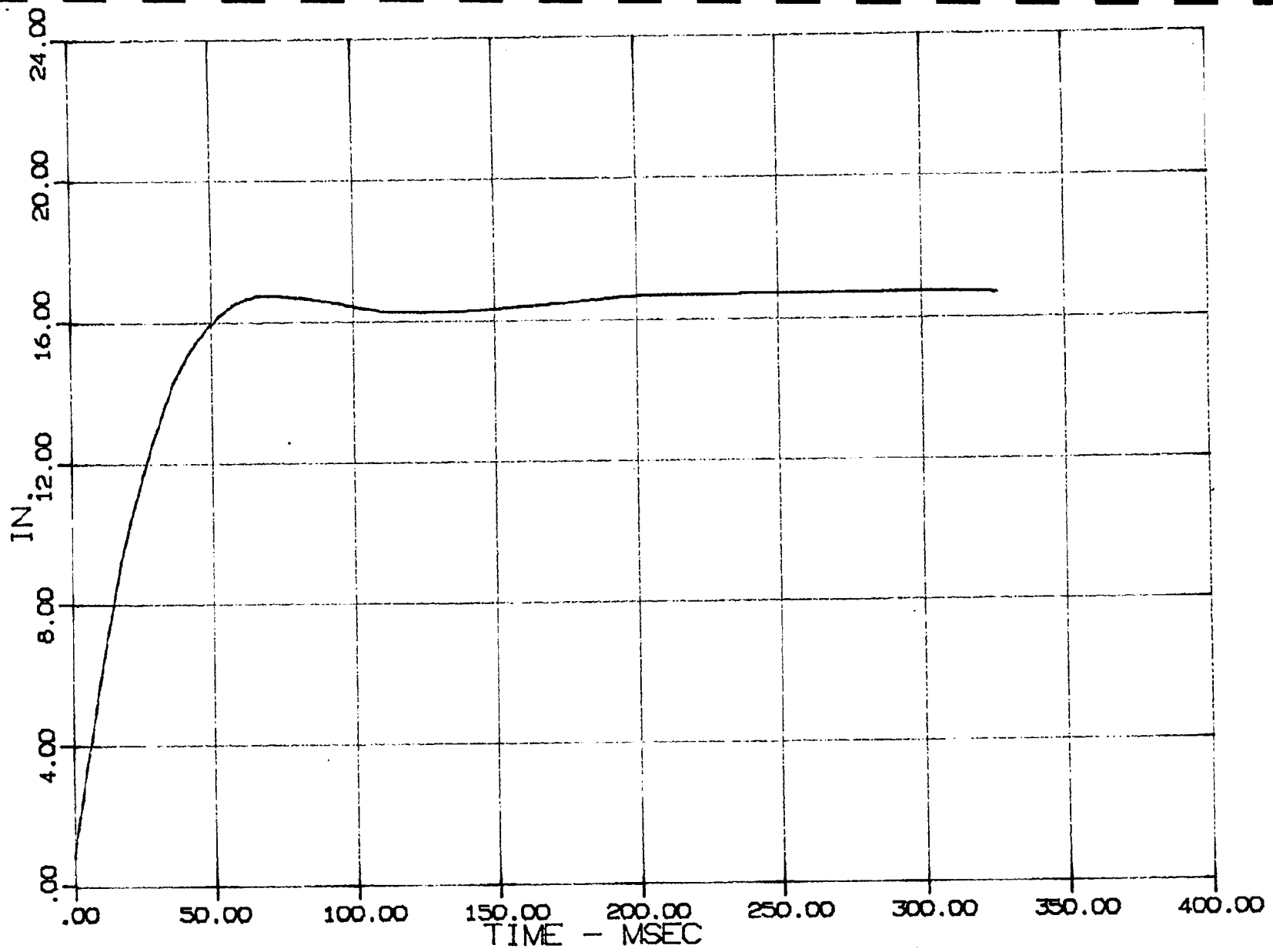

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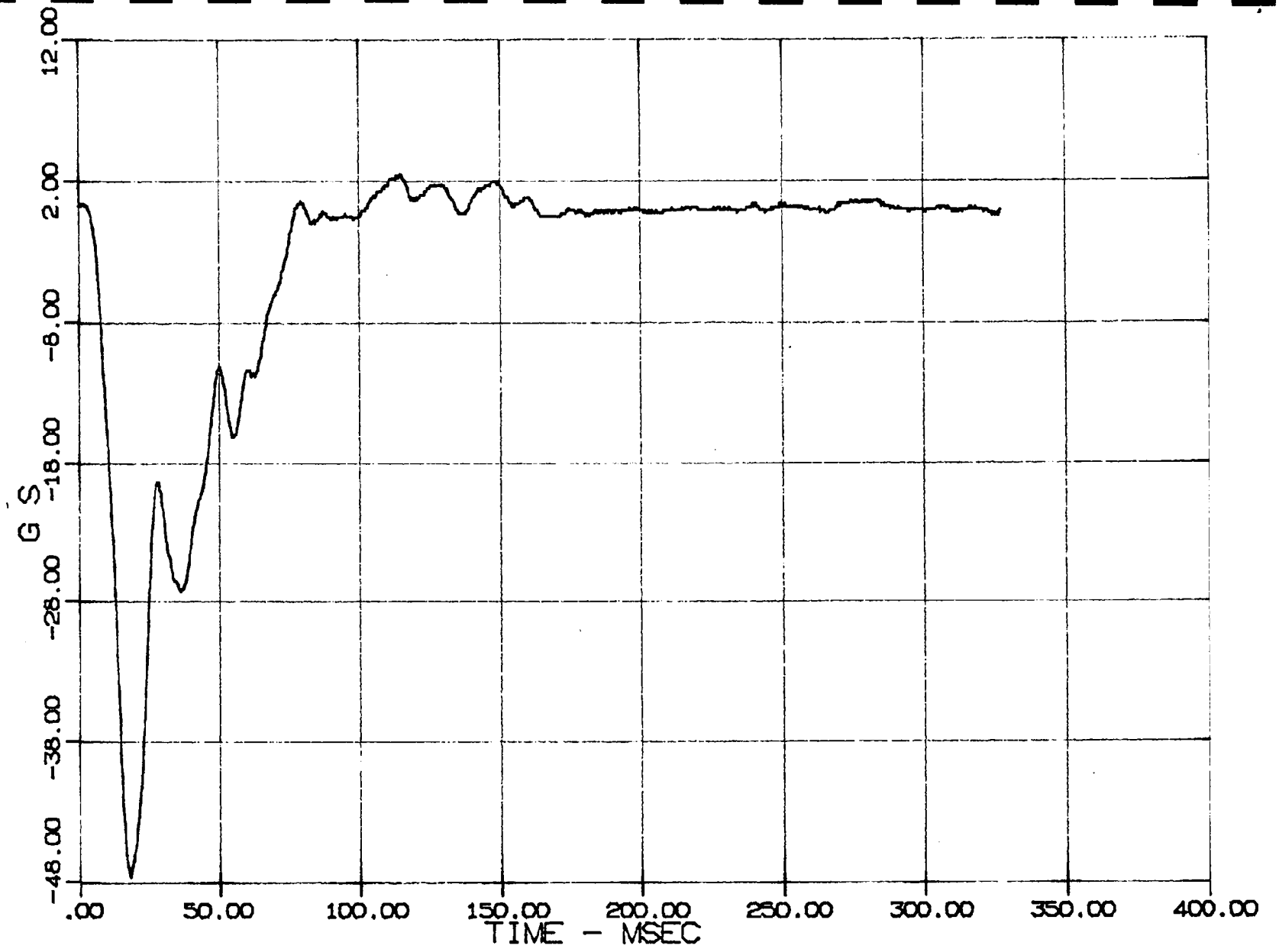

04 RC 01 N LRF X
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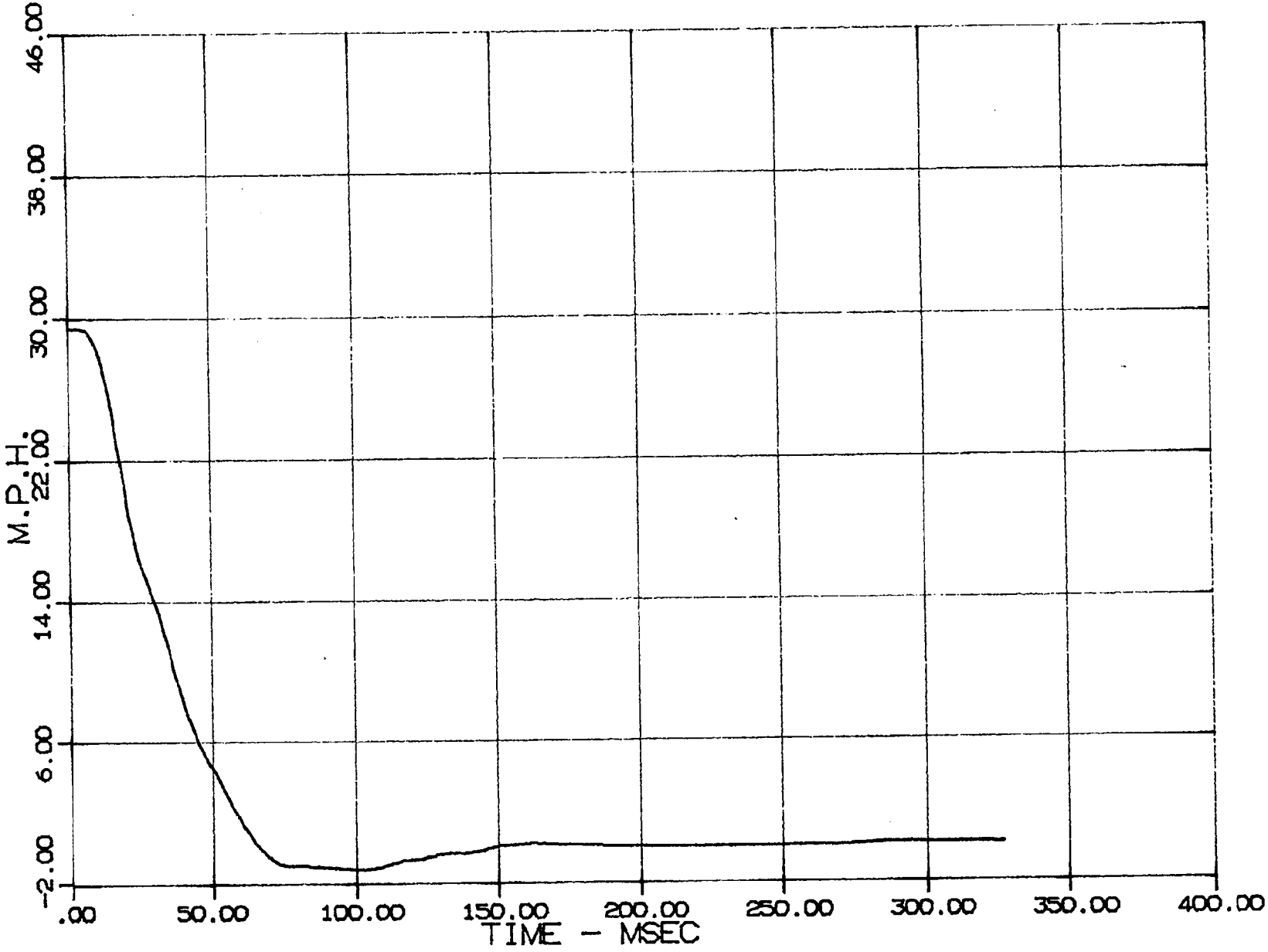

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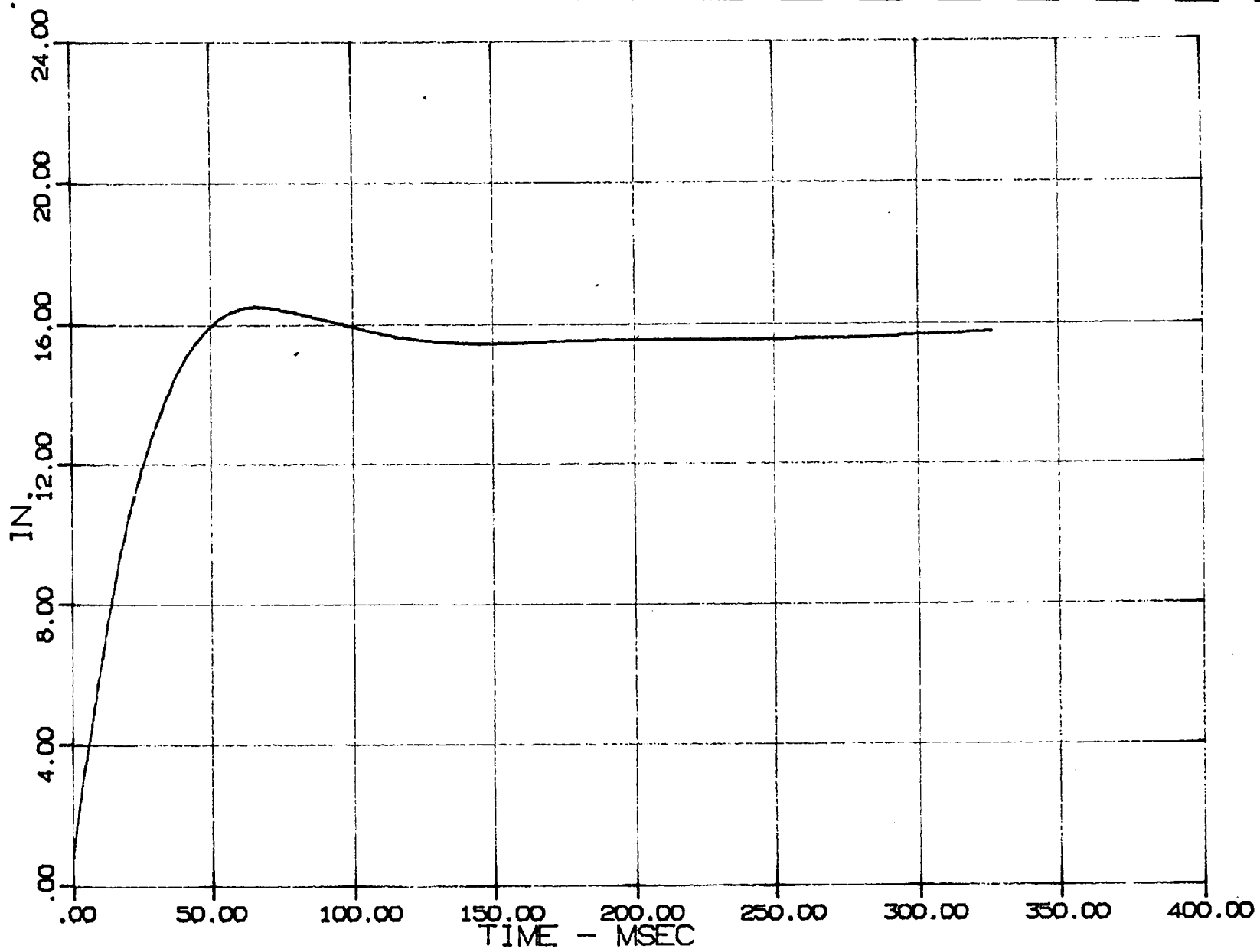

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