

EA03-010

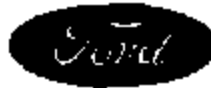
Ford

10/22/03

Attachment F

Continuation

Book 9 of 24



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Schedule No. 7-7-12  
Retain Until 2019

**FINAL TEST REPORT**

**CONFIDENTIAL**

**Global Test Operations  
Advanced Vehicle Technology**

<b>TO:</b>	A. Taub	Test Order No.	T-80654
		Work Task W. O. No.	F08
		Test Date	10/6/98
		Date Reported	1/20/99
		Sheet	1 of 48
<b>SUBJECT:</b>	Crash Test 11221 (90° Front Fixed Pole Barrier Offset to the Left Side Impact at 17.1 ± 0.4 mph, 27.5 ± 0.6 km/h) - 2000 Taurus (D186) 4-Door Sedan		
<b>REQUESTED BY:</b>	Vehicle Safety and CAE Department, Advanced Vehicle Technology - K. Ewing		
<b>OBJECT:</b>	To obtain development data relative to air bag system sensors.		
<b>SUMMARY OF TEST RESULTS:</b>	See Section 1.0 for air bag system sensor data.		

  
R. Oda  
Engineering Data Control Analysis

  
Concur: R. Burns  
Section Supervisor  
Operations Engineering Section

**VEHICLE DATA:**

<b>Make and Model</b>	2000 Taurus (D188) 4-Door Sedan	
<b>ID Numbers</b>	1FALP68U27H100594, 579-W-814, D0000002	
<b>Power Train</b>	3.0L, EFI, Automatic Transaxle	
<b>Fuel Tank(s)</b>	Test Condition: Empty	
<b>Front Seat(s)</b>	Type: Bucket Cover: Cloth Tracks/Position: Manual/Mechanical Mid Seat Backs/Position: Adjustable/27.2° Rear of Vertical Head Restraints/Position: Adjustable/Up	
<b>Restraint System</b>	LF: Steering Wheel Air Bag RF: Instrument Panel Air Bag	
<b>Occupants</b>	LF & RF: 50th Percentile Male, Hybrid II, Uninstrumented	
<b>Test Weight</b>	Front: 2575 lb (1081 kg) Rear: 1558 lb (719 kg) Total: 3359 lb (1760 kg)	
<b>Tires</b>	Front: P215/60R16 Rear: P215/60R16 Spare: Removed	30 psi (207 kPa) 30 psi (207 kPa)
<b>Significant Content or Accessories:</b>	Air Conditioning, Power Brakes, Power Steering, Tilt Steering Wheel	

**GENERAL TEST COMMENTS:**

**1. Test Procedure**

The test was performed according to the following Corporate test procedure(s):

Fixed Barrier Collision, T857-ST-14 dated July 17, 1996.

**1.1 Vehicle Alignment**

The test vehicle impacted an eight inch diameter steel pole structure, rigidly attached to the barrier face. The vertical steel pole was aligned so that the point of vehicle impact was 8.63 inches to the left side of the test vehicle's longitudinal centerline.

**3. Remarks**

Crash movies, pre- and post- crash still images of the test vehicle and copies of this report are available through the Operations Engineering Section, Safety Laboratories Department, GTO. The crash still images are stored and archived on CD ROMs. The file names of the still images are listed under crash number and a three digit sequence number which are 11221001 through 11221049.

**TEST RESULTS:**

**1.0 Sensor Development**

Time histories of the air bag/sensor(s) are included in this report.

Time histories of any requested derived data (i.e. integrations, etc.) were given to the requesting activity and are not included in this report.

**2.0 Vehicle Crush, Film Analysis and/or Instrumentation Data**

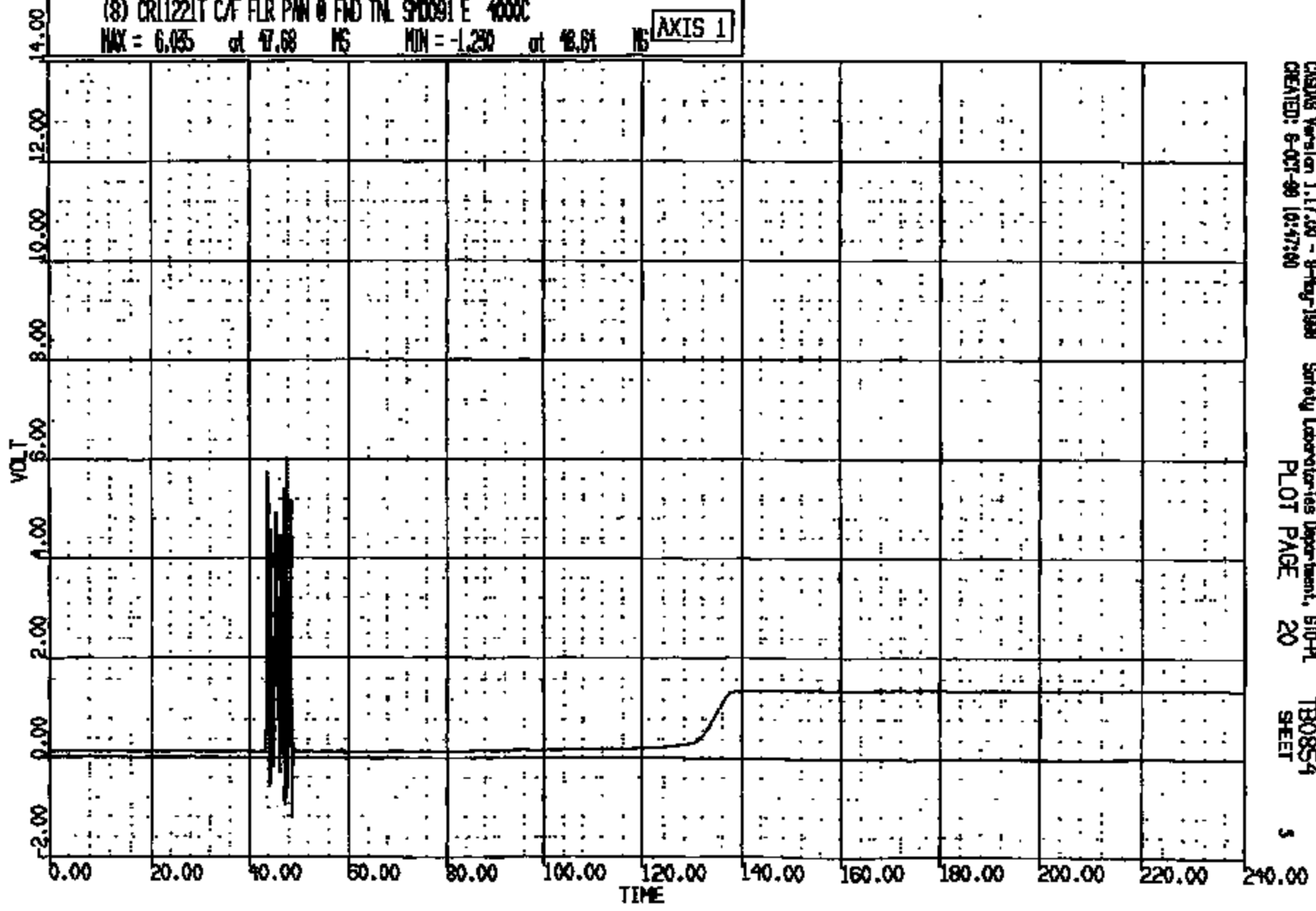
Time histories of the vehicle accelerations and other instrumentation are included in this report.

Time histories of vehicle dynamic displacements obtained from Film Analysis are included in this report.

Time histories of any requested derived data (i.e. integrations, etc.) were given to the requesting activity and are not included in this report.

CR R: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-198

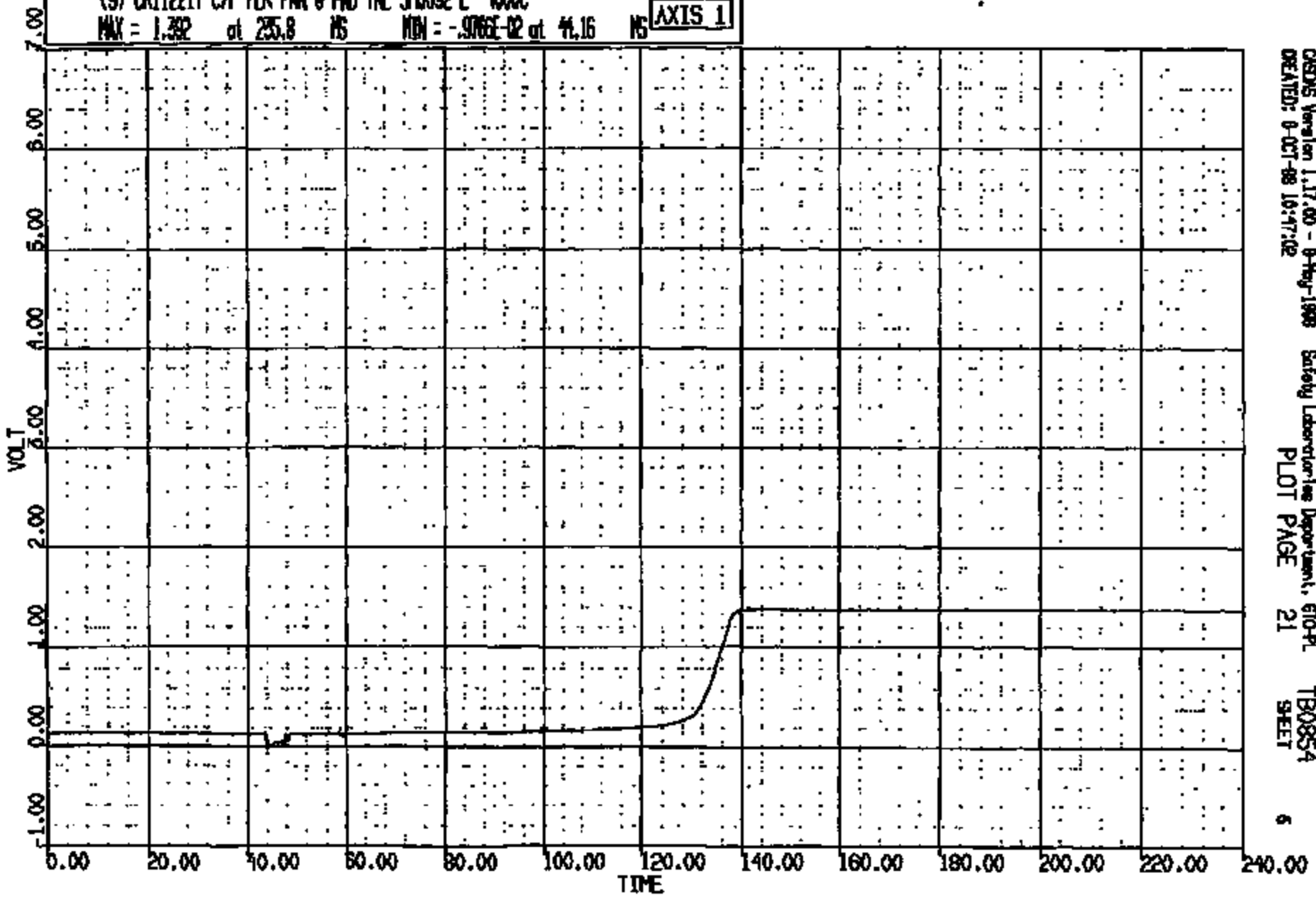
(8) CR11221T C/F FLR PWN @ FND TNL SP0091 E 4000C  
MAX = 6.035 at 47.68 MS MIN = -1.230 at 48.64 MS **AXIS 1**



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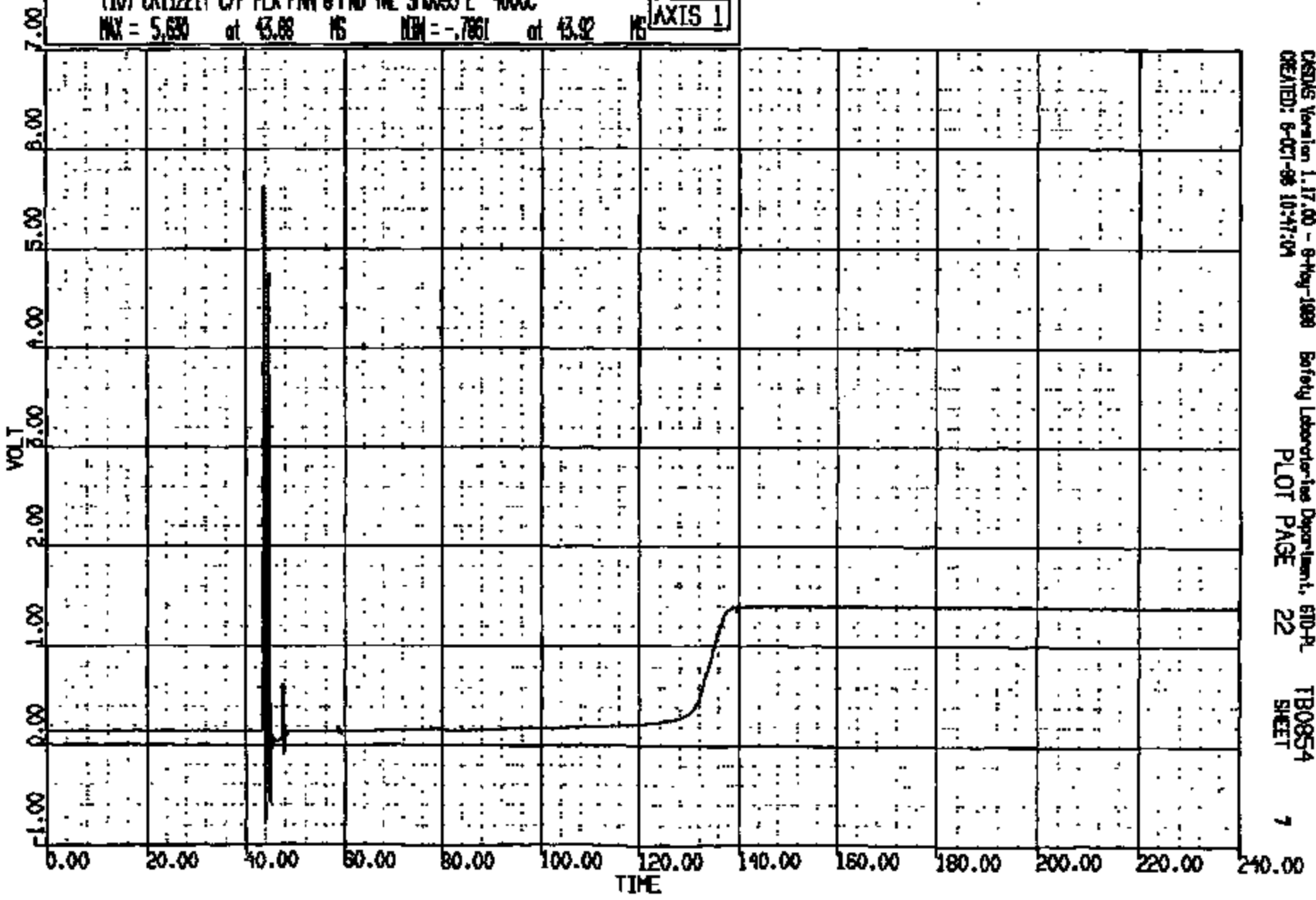
CR R: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-188

(9) CR11221T C/F FLR PAN @ FID TNL SP0092 E 4000C  
MAX = 1.392 at 235.8 NS MIN = -.976E-02 at 41.16 NS **AXIS 1**



CR R: 11221 TO: TB0854 DATE: 881008 10:28:40  
2000 D-188

(10) CR1122LT C/F FLR PNH @ FND TML 540093 E 4000C  
MAX = 5.690 at 43.88 MS MIN = -.7861 at 43.92 MS **AXIS 1**



CRSIS Version 1.17.00 - 8-May-1988 Safety Laboratory Department, BFD-PL  
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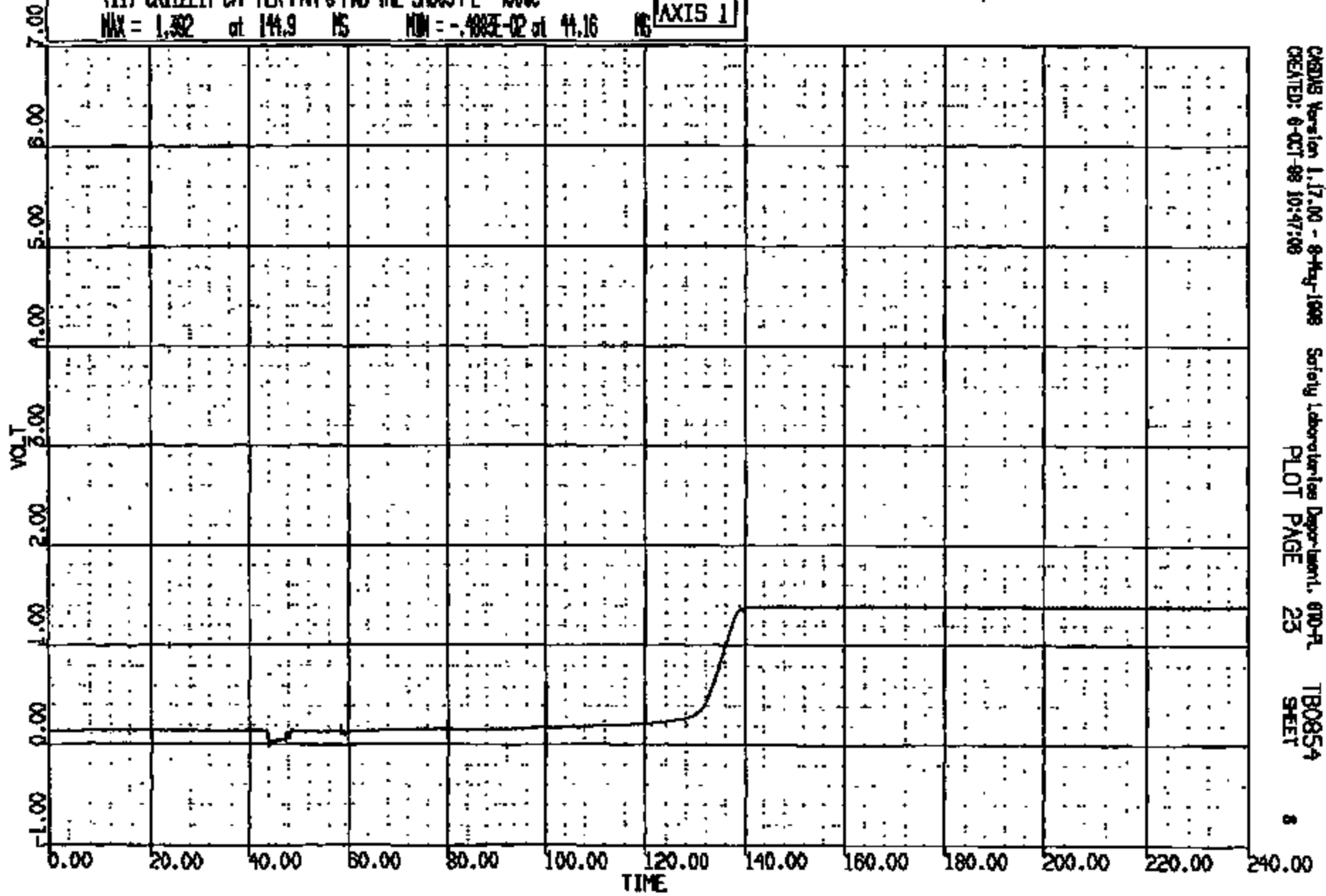
CRIS 0011221



CR R: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-188

(11) CRT22LT C/F FLR PAN @ FWD TNL SMO094 E 4000C  
MAX = 1.32 at 144.9 MS MIN = -.483E-02 at 44.16 MS

AXIS 1

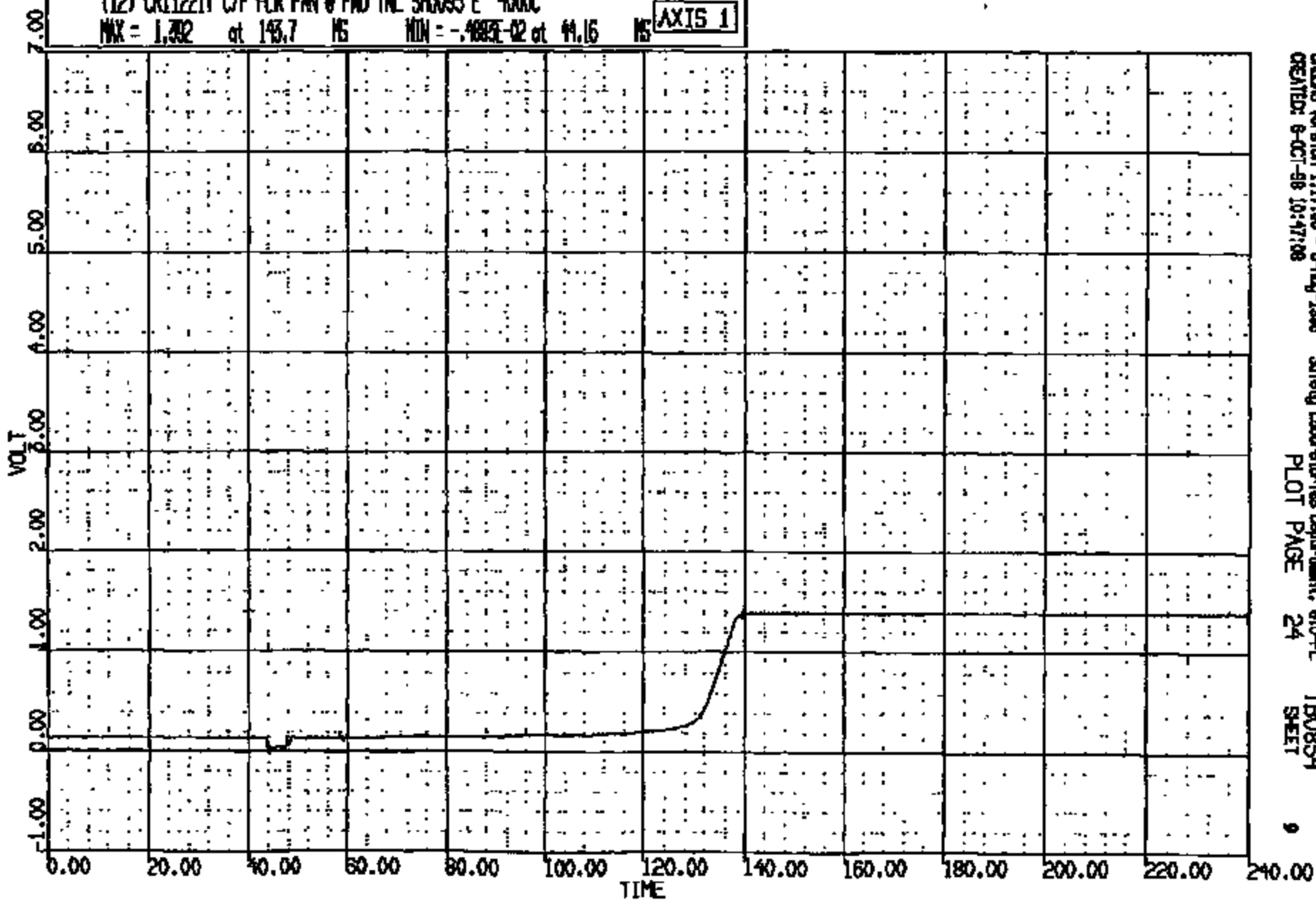


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CRTS 0011221

CR #: 11221 TO: TB0854 DATE: 881008 10:28:40  
2000 D-198

(12) CR11221T C/F FLR PAN @ FWD TNL SW0095 E 4000C  
MAX = 1.392 at 143.7 MS MIN = -.4882-02 at 44.15 MS **AXIS 1**



CRS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL TB0854  
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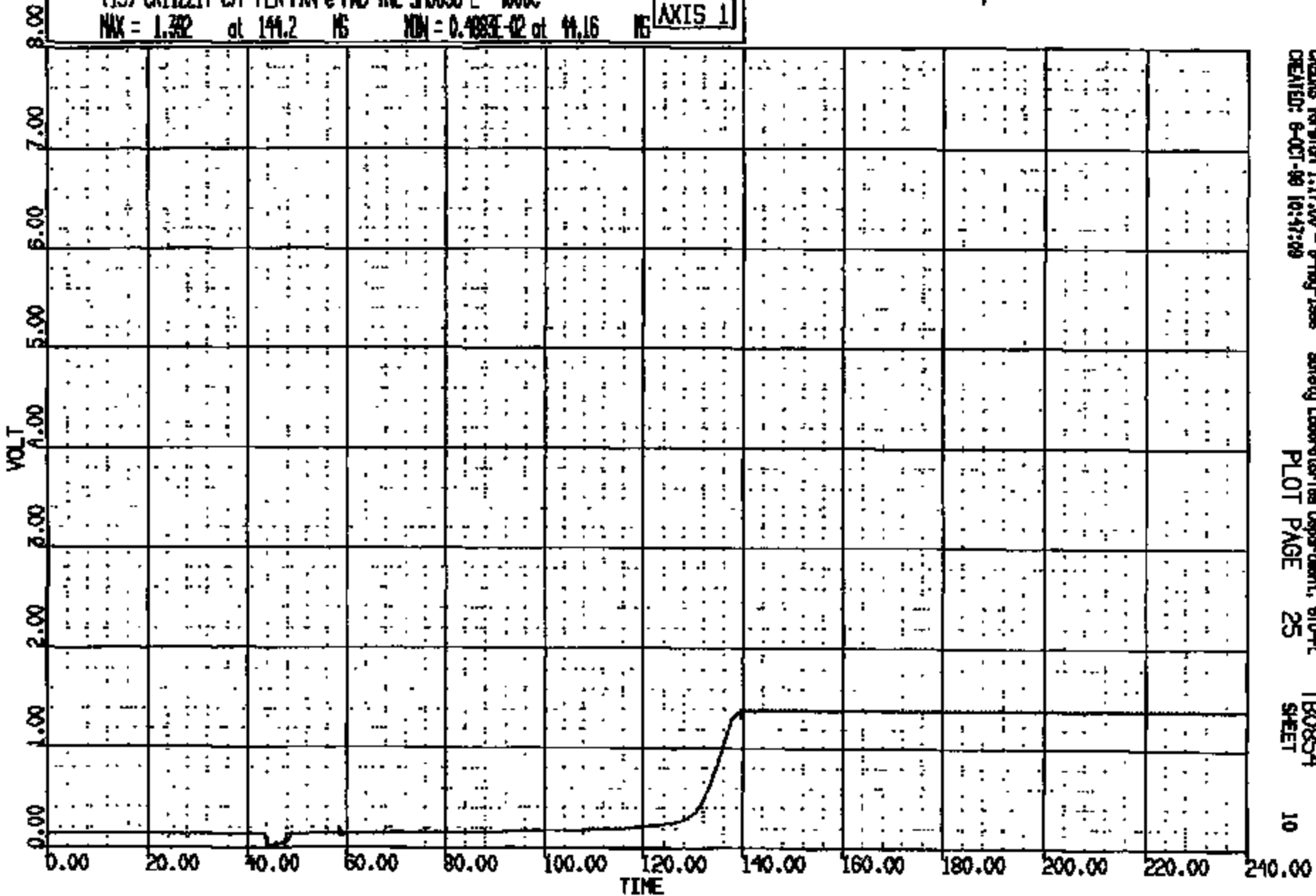
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CR R: 11221 TO: TB0854 DATE: 981008 10:28:40  
8000 D-198

(13) CRT1221T C/F FLR PAN @ FWD TAIL SP0086 E 4000C

MAX = 1.392 at 144.2 MS NOM = 0.488E-02 at 14.16 MS

AXIS 1



CRSNS Version 1.17.00 - 8-May-1998  
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PLOT PAGE 25

TB0854  
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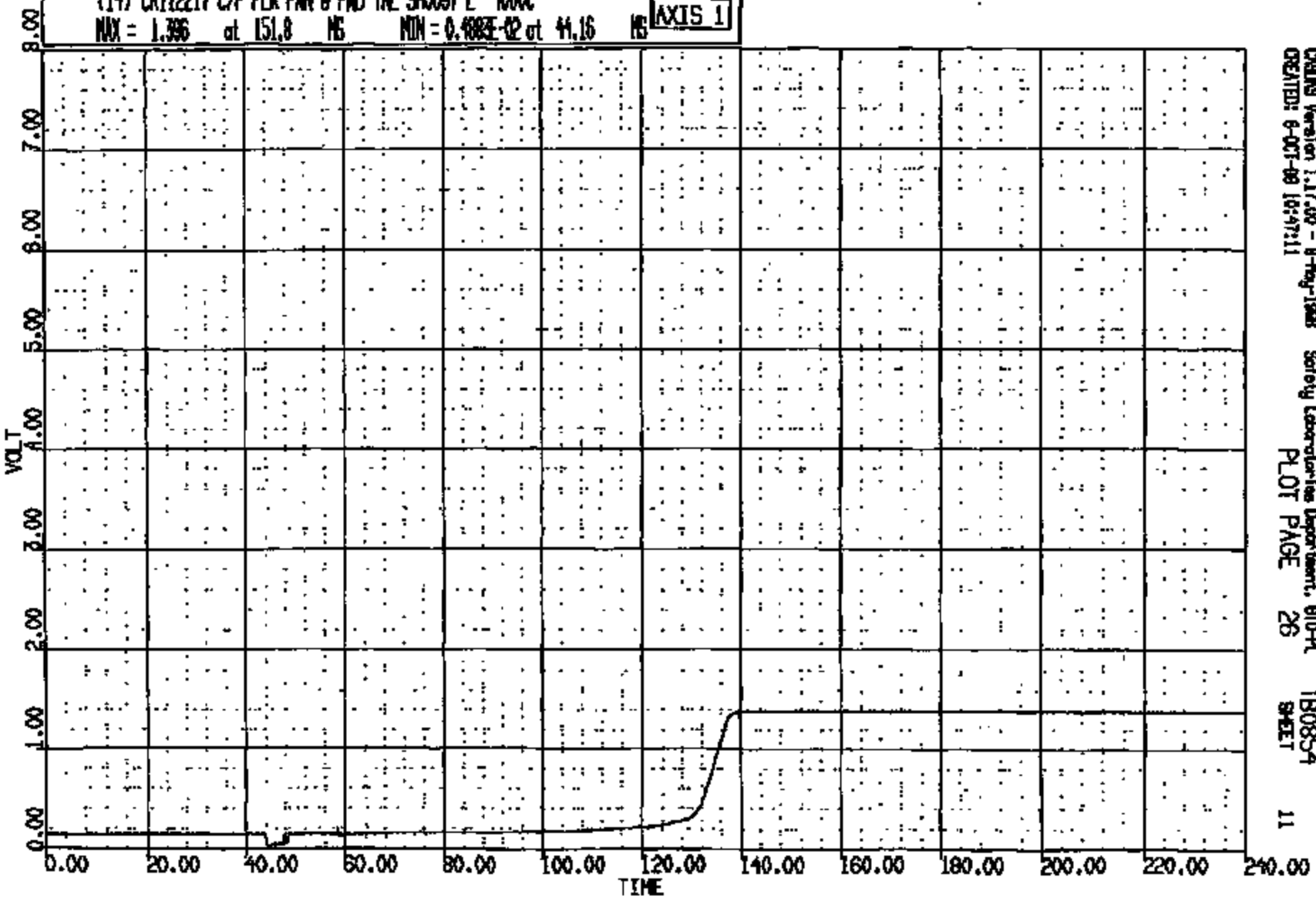
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CRF #: 11221 TC: TB0854 DATE: 991008 10:28:40  
2000 D-188

(14) CR112217 C/F FLR PAN @ FWD TLE SMO097 E 4000C

MAX = 1.396 at 151.8 MS MIN = 0.000E-02 at 44.16 MS

AXIS 1



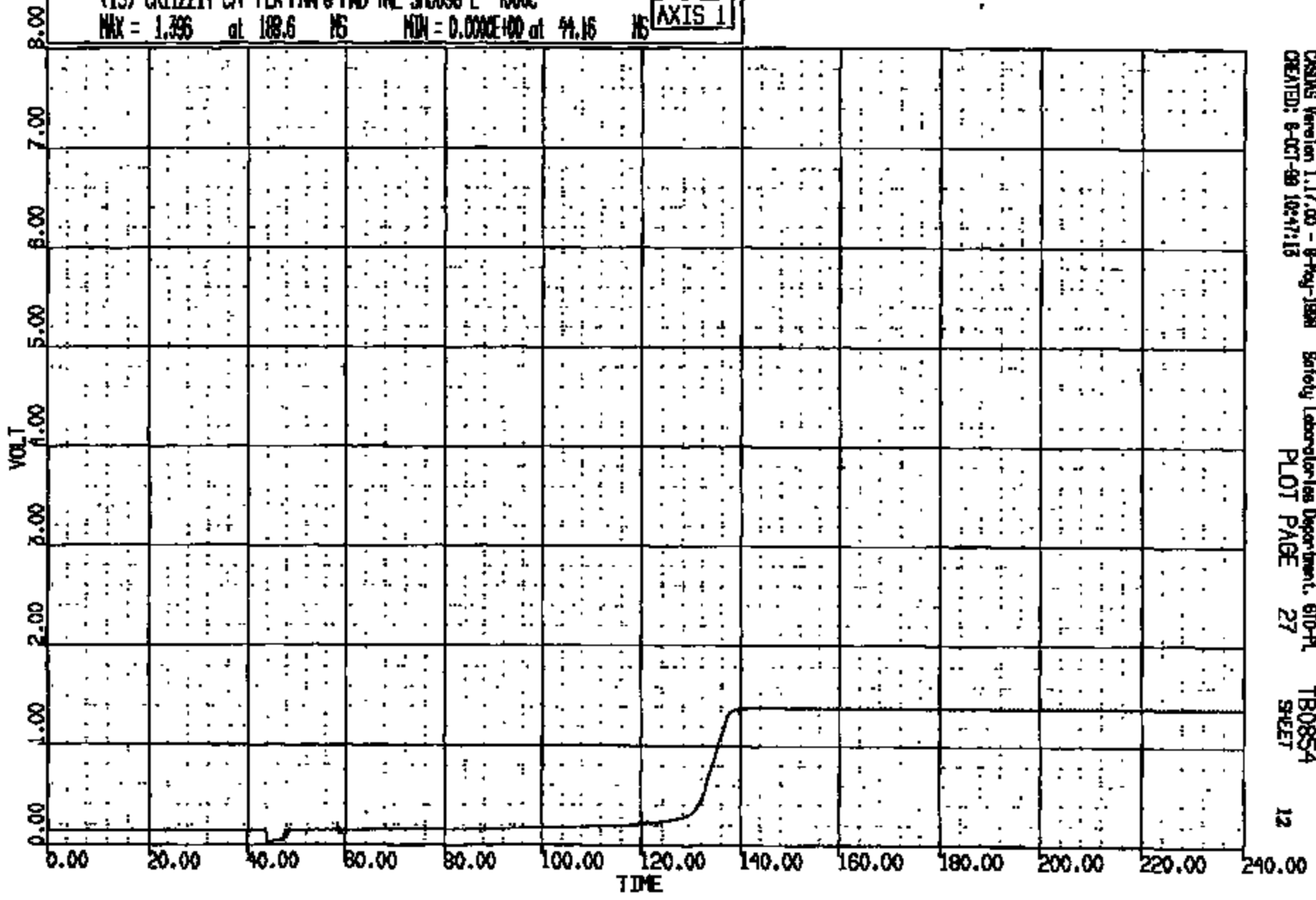
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CRIS 0011221

CR #: 11221 TO: TB0854 DATE: 881008 10:28:40  
2000 D-188

(15) CR1221T C/F FLR PAN @ FWD TNL 50008 E 4000C  
MAX = 1.396 at 108.6 NS MIN = 0.000E+00 at 99.16 NS

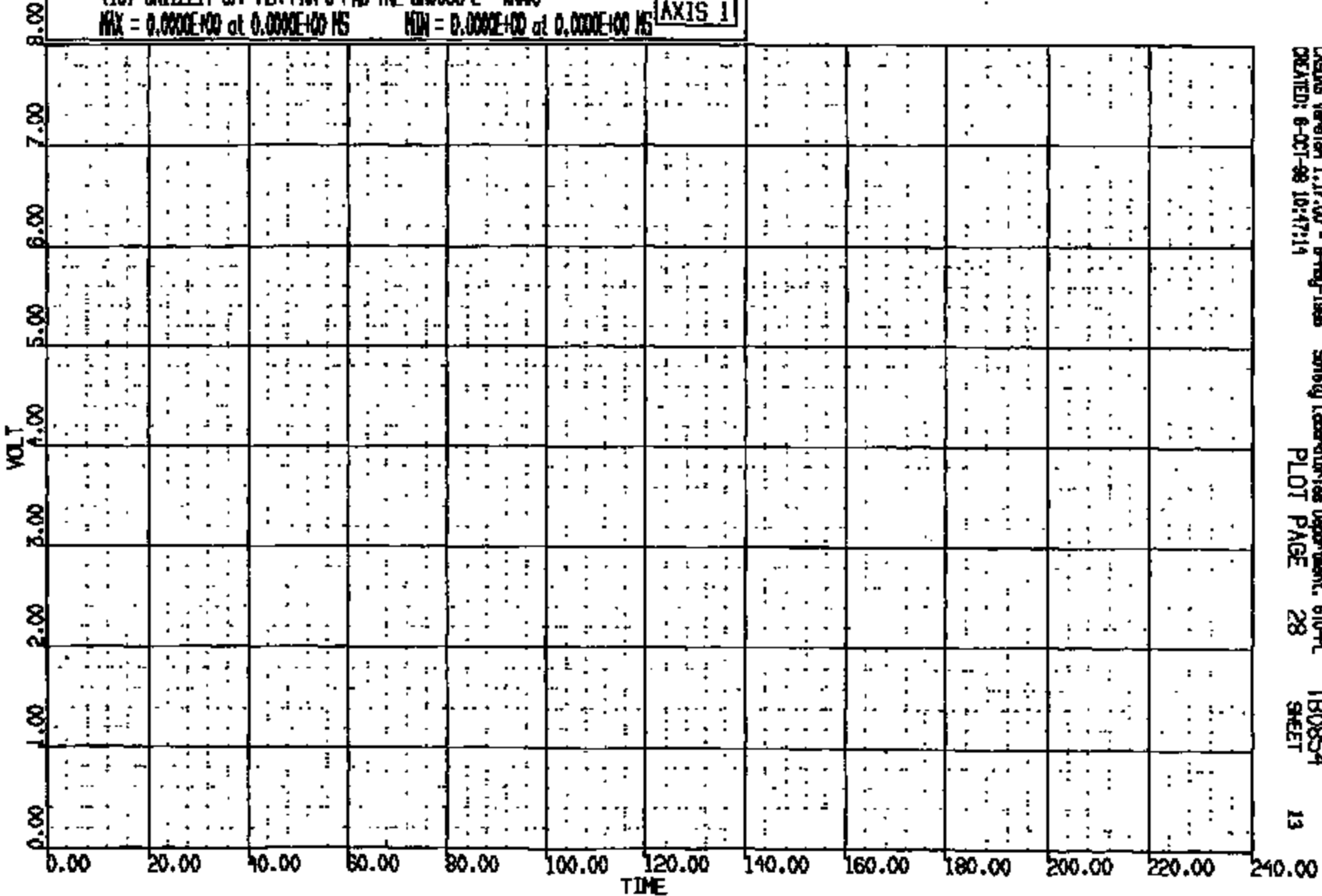
AXIS 1



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2000 D-188

(16) CR1221T C/F FLR PAN @ FWD INL 980399 E 4000C  
MAX = 0.0000E+00 at 0.0000E+00 MS MIN = 0.0000E+00 at 0.0000E+00 MS

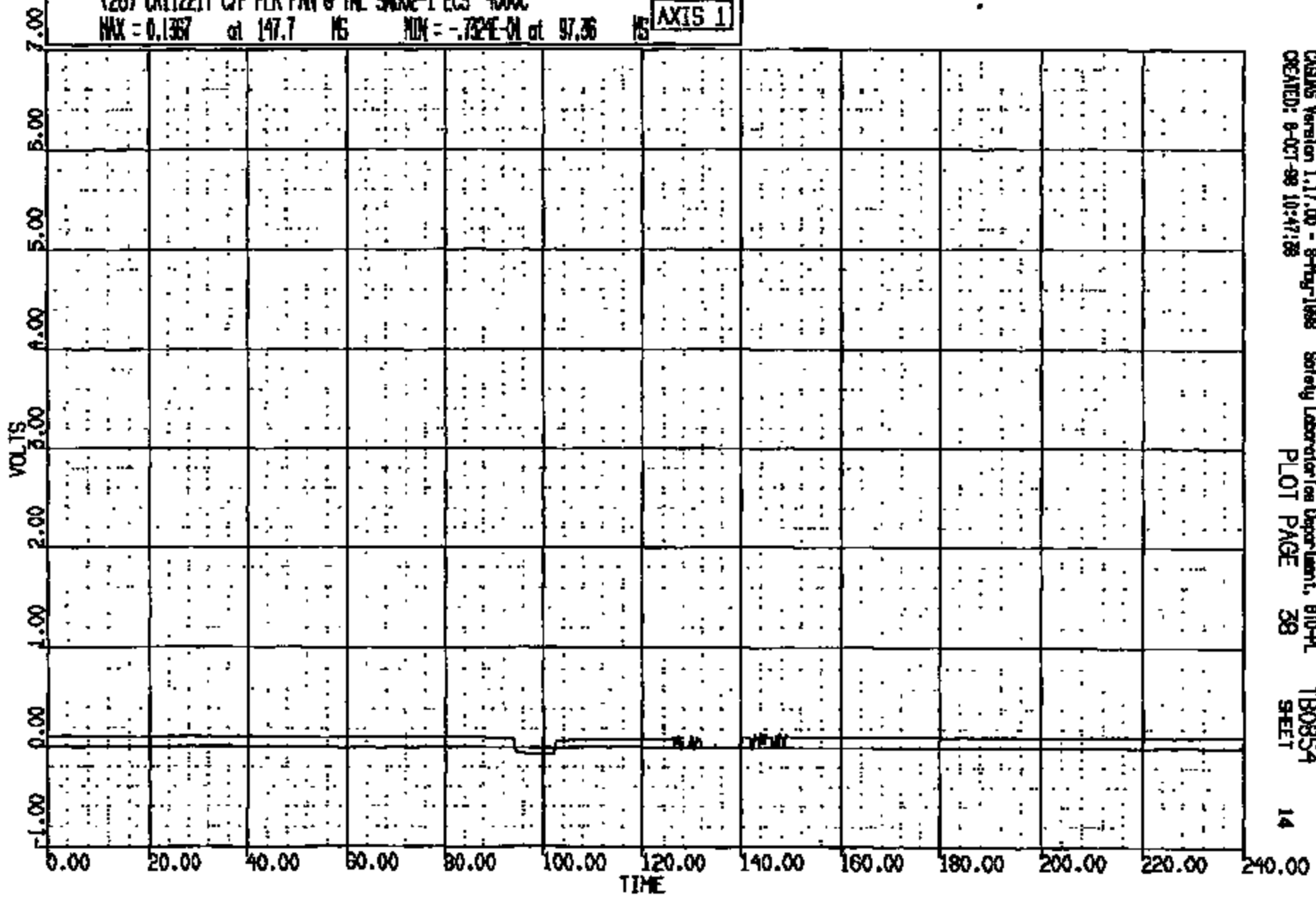
AXIS 1



CR R: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-186

(26) CR11221T C/F FLR PAN @ TML SMO2-1 ECS 4000C  
MAX = 0.1367 at 147.7 MS MIN = -0.7324E-01 at 97.36 MS

AXIS 1

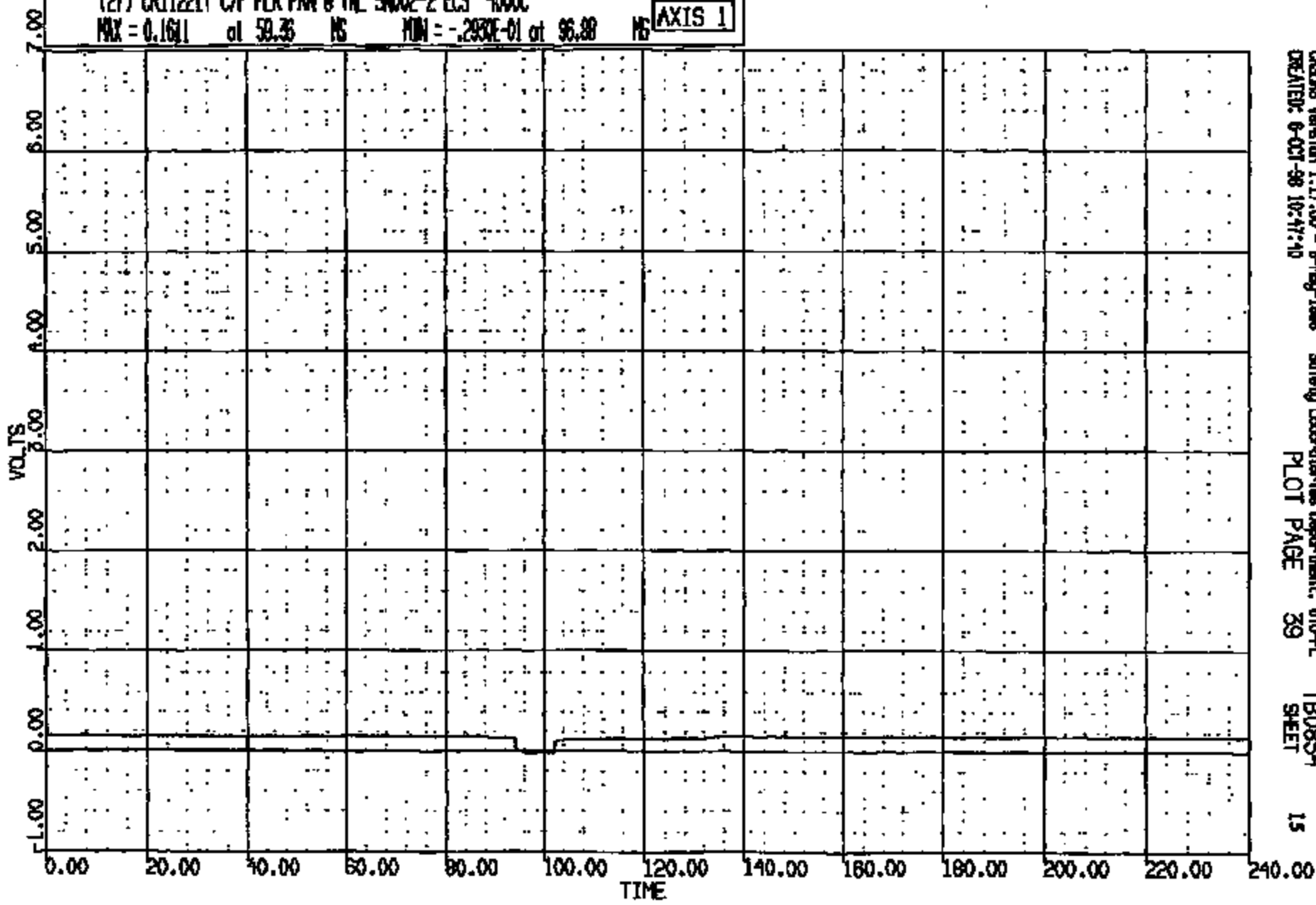


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CREATED: 9-OCT-98 10:47:28 PLOT PAGE 38 SHEET 14

CRIS 0011221

CR R: 11221 TO: TB0854 DATE: 991006 10:28:40  
2000 D-198

(27) CRT12217 C/F FLR PAN @ TML 5002-2 ECS 4000C  
MAX = 0.1611 at 59.35 MS MIN = -.2933E-01 at 96.89 MS **AXIS 1**



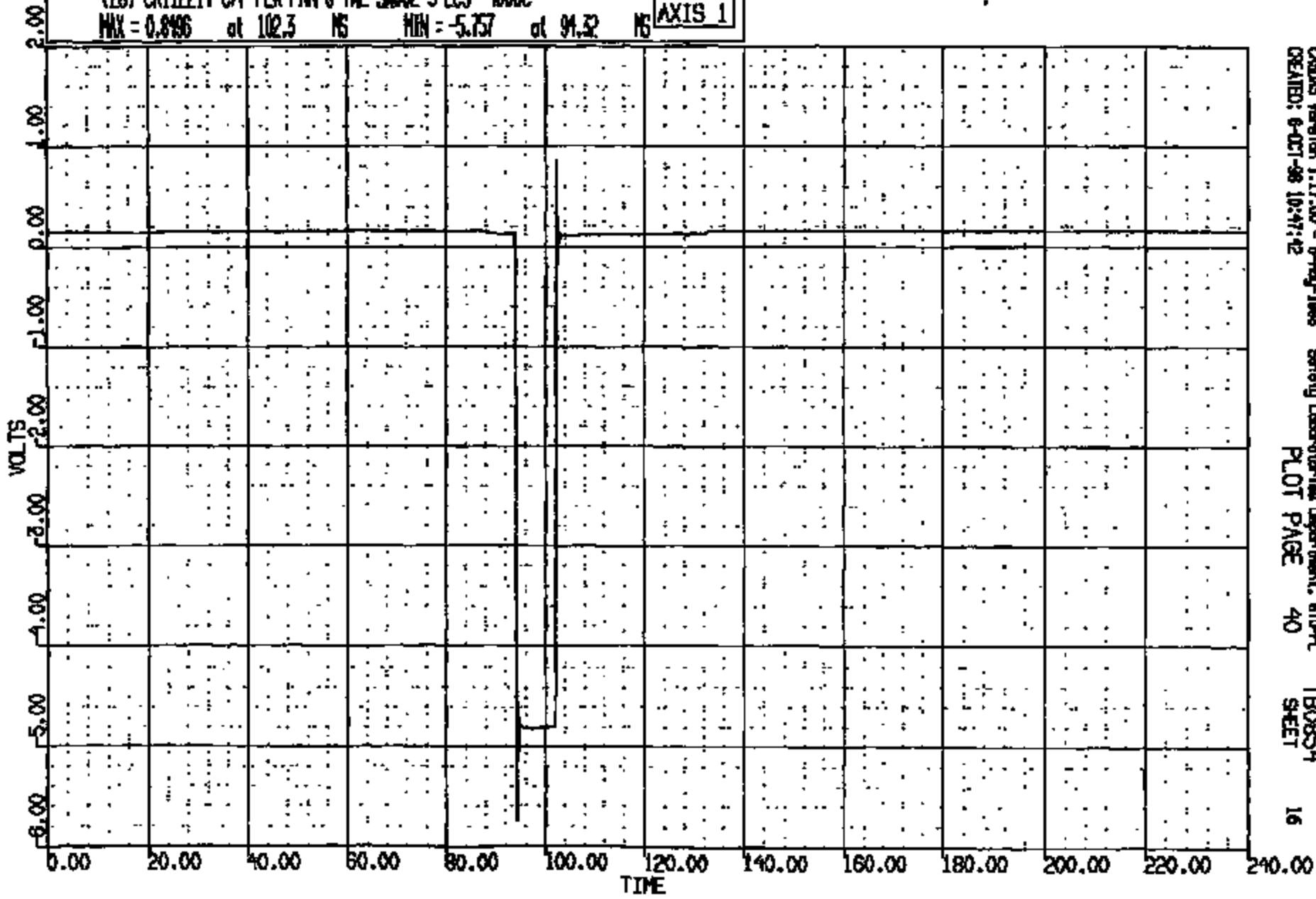
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CRTS 0011221



CR R: 11221 TO: TB0854 DATE: 881008 10:28:40  
2000 D-188

(28) CR11221T C/F FLR PAN @ TML SMO2-3 ECS 400XC  
MAX = 0.8496 at 102.3 NS MIN = -5.757 at 91.32 NS **AXIS 1**



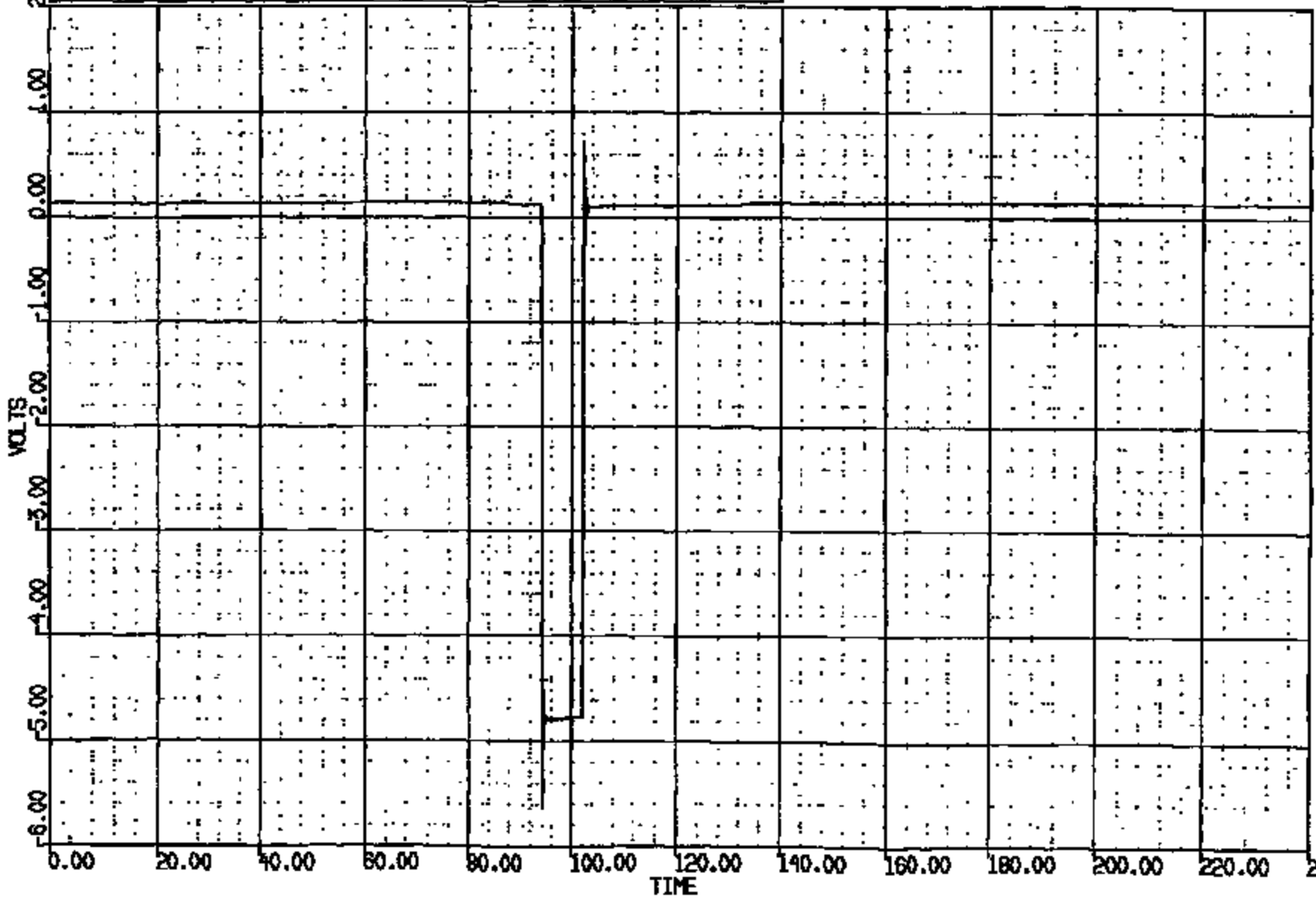
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CRTS 0011221

CR R: 11221 TO: TB0854 DATE: 081008 10:28:40  
2000 D-198

(29) CR11221T C/F FLR PAN @ TML S1002-4 ECS 4000C  
MAX = 0.7227 at 102.3 MS MIN = -5.695 at 91.32 MS

AXIS 1



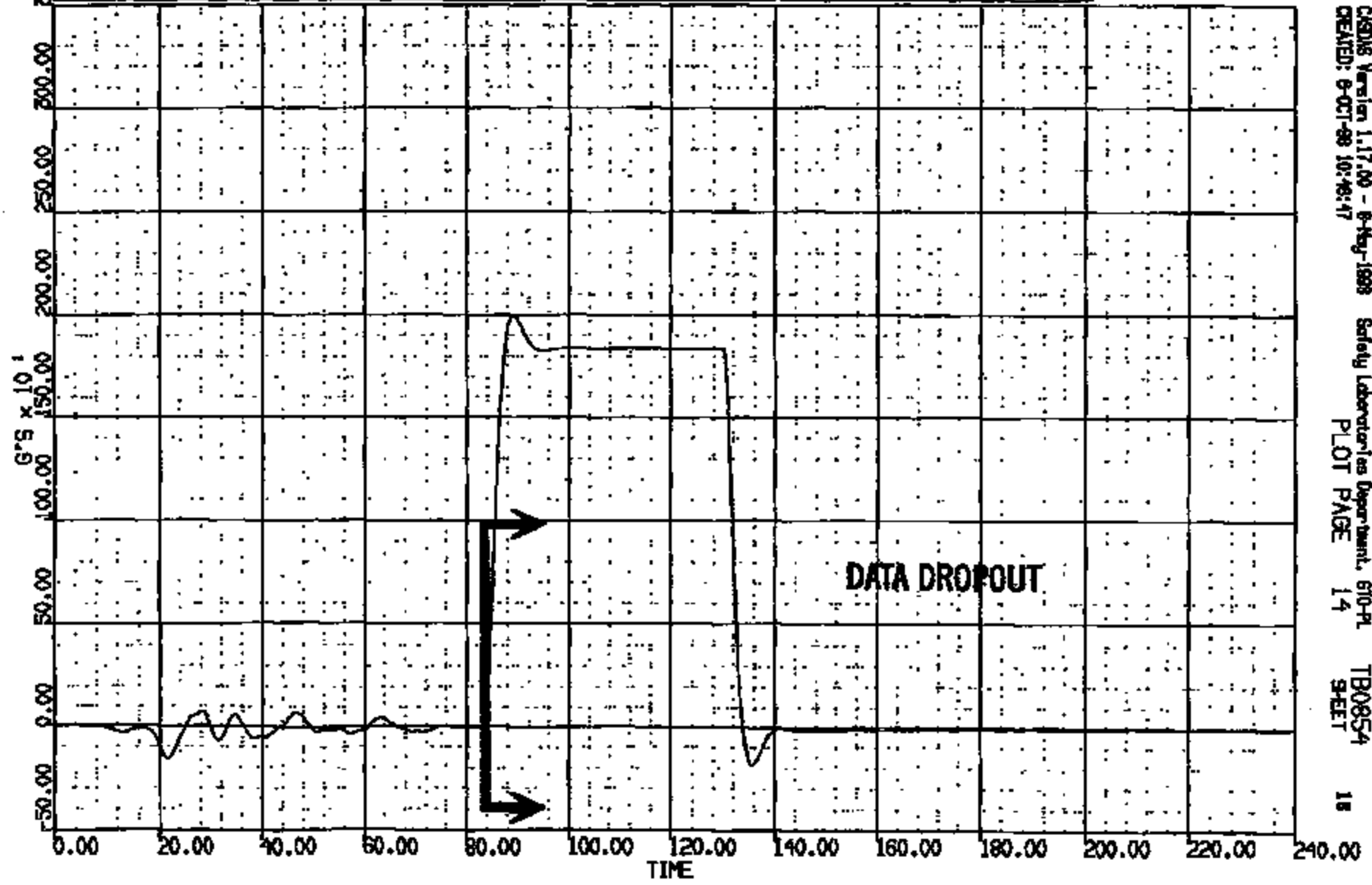
CR R: 11221 TO: TB0854 DATE: 981006 10:28:40  
2000 D-168

# (2) CR11221T C/RAD #5 LONG 60C

MAX = 193.7 at 89.12 HS MIN = -183.9 at 135.5 HS

AXIS 1

ANNOY KEY:  
\* - Midboard data exceeded full scale  
+ - Midboard data >80.0% of full scale  
A - All data < 10.0% of full scale  
E - 25 percent offset of Y-axis



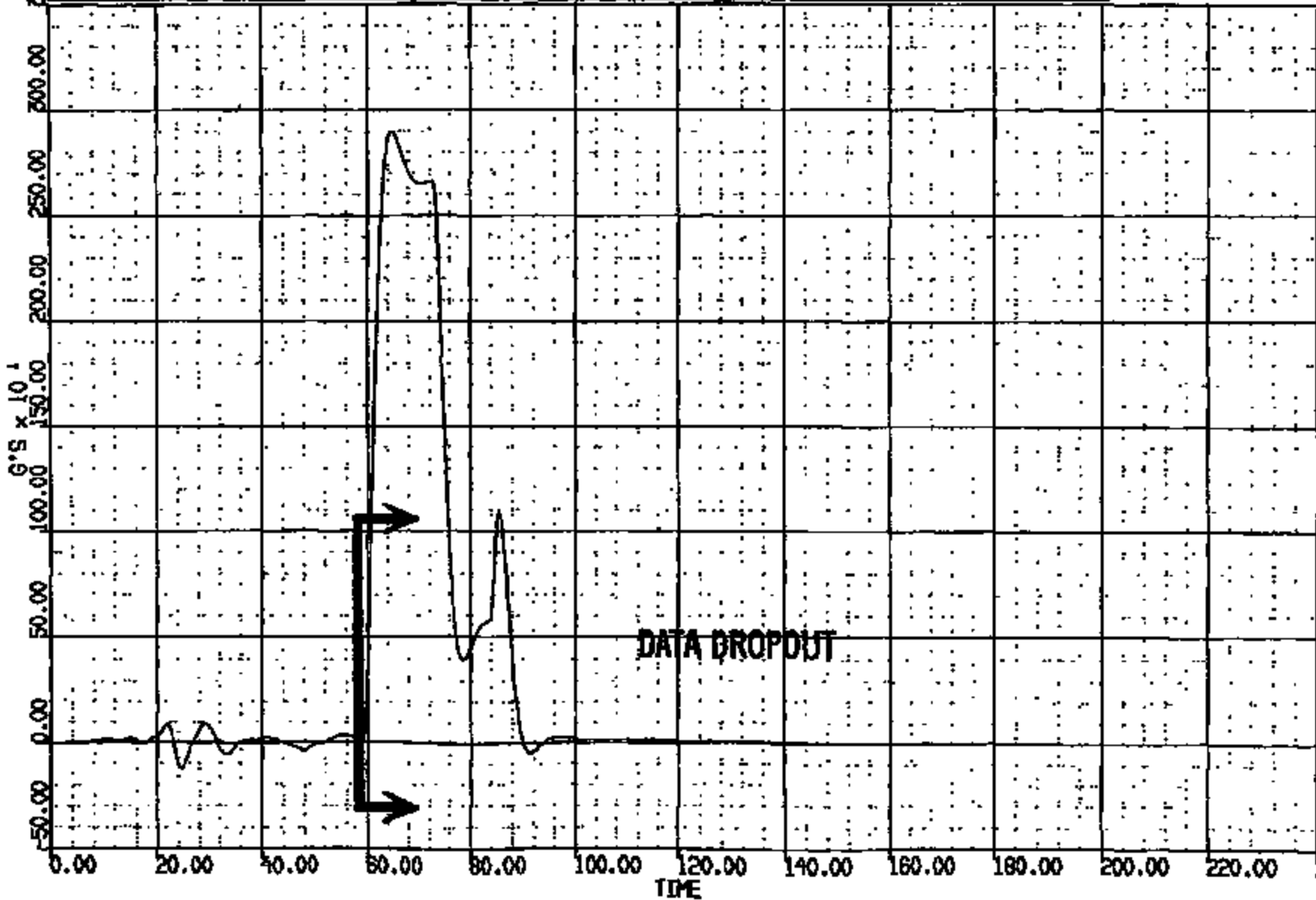
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CREATED: 9-OCT-98 10:48:47 PLOT PAGE 14 TB0854 18  
SHEET

CRIS 0011221

CR R: 11221 TO: TB0854 DATE: 891008 10:28:40  
2000 D-188

# (3) CR11221T C/RAD NS VERT 60C  
MAX = 289.7 at 64.80 NS MIN = -126.2 at 24.56 NS **AXIS 1**

**ANOMALY KEY:**  
\* - Miscellaneous data exceeded full scale  
@ - Miscellaneous data >90.0% of full scale  
E - All data < 10.0% of full scale  
F - >1 percent offset of T-zero



CARDIS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, ETO-PL  
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CRTS 0011221

CR 11221 TO: TB0854 DATE: 081008 10:28:40  
R000 D-198

# (4) CR11221 C/W/D #5 LAT 60C  
MAX = 2600 at 140.1 MS MIN = 2615 at 149.3 MS **AXIS 1**

ANOMALY KEY:  
\* - High-end data exceeded full scale  
+ - High-end data 99.9% of full scale  
- - All data < 1% of full scale  
@ - 2% percent effect at T-zero



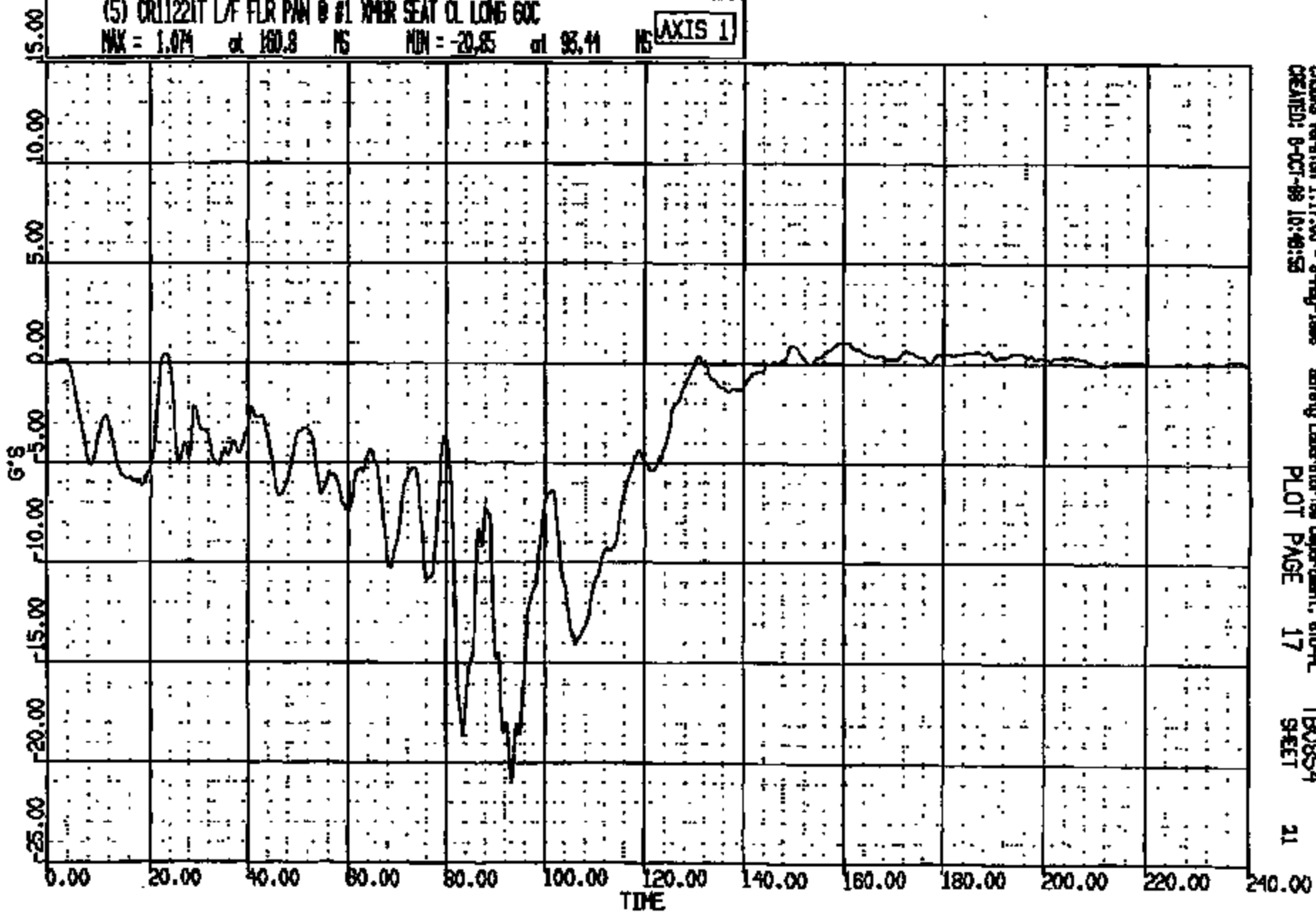
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CRTS 0011221

CR R: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-100

(5) CR11221T L/F FLR PAN @ #1 XPR SEAT CL LONG 60C  
MAX = 1.074 at 160.8 NS MIN = -20.85 at 95.41 NS

AXIS 1

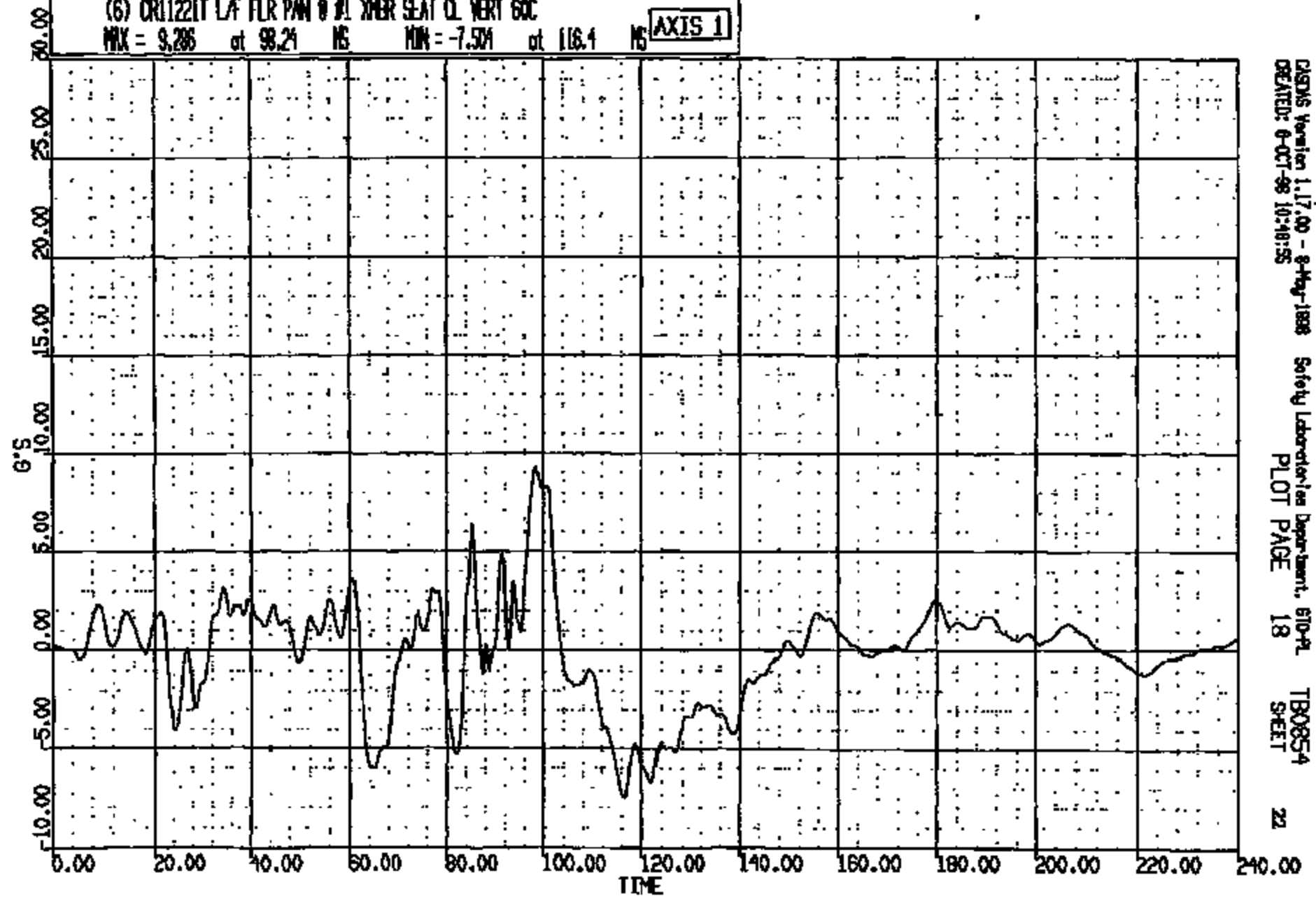


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CREATED: 8-OCT-98 10:48:53 PLOT PAGE 17 SHEET 21

CRTS 0011221

CR R: 11221 TO: TB0854 DATE: 991008 10:28:40  
2000 D-188

(6) CR11221T L/F FLR PAN @ #1 XMR SEAT CL VERT SOC  
MAX = 9.285 at 98.24 MS MIN = -7.504 at 116.4 MS **AXIS 1**

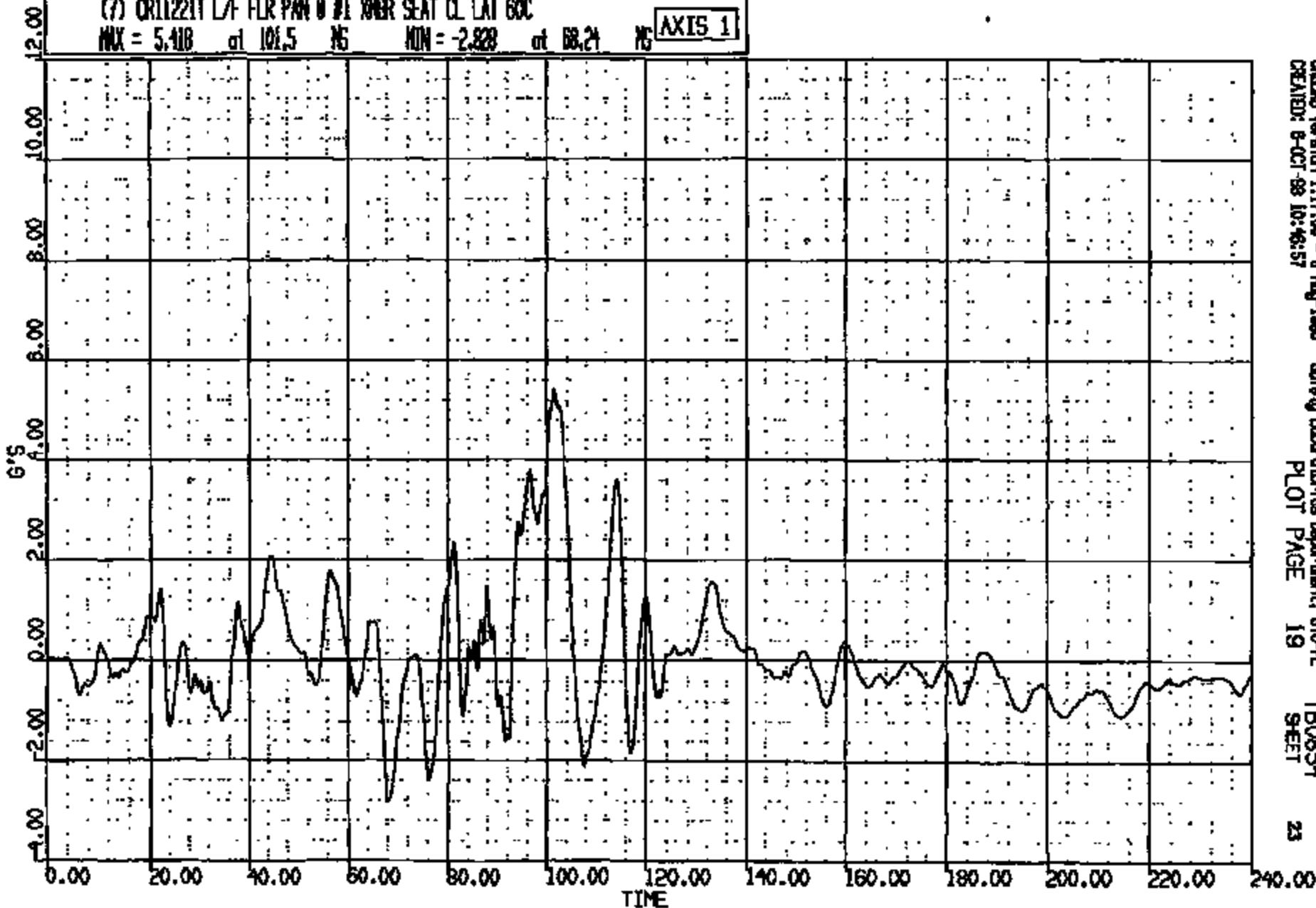


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CRTS 0011221

CR R: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-198

(7) CR11221T L/F FLR PAN 0 #1 LOWER SEAT CL LAT GOC  
MAX = 5.418 at 102.5 MS MIN = -2.828 at 68.24 MS AXIS 1

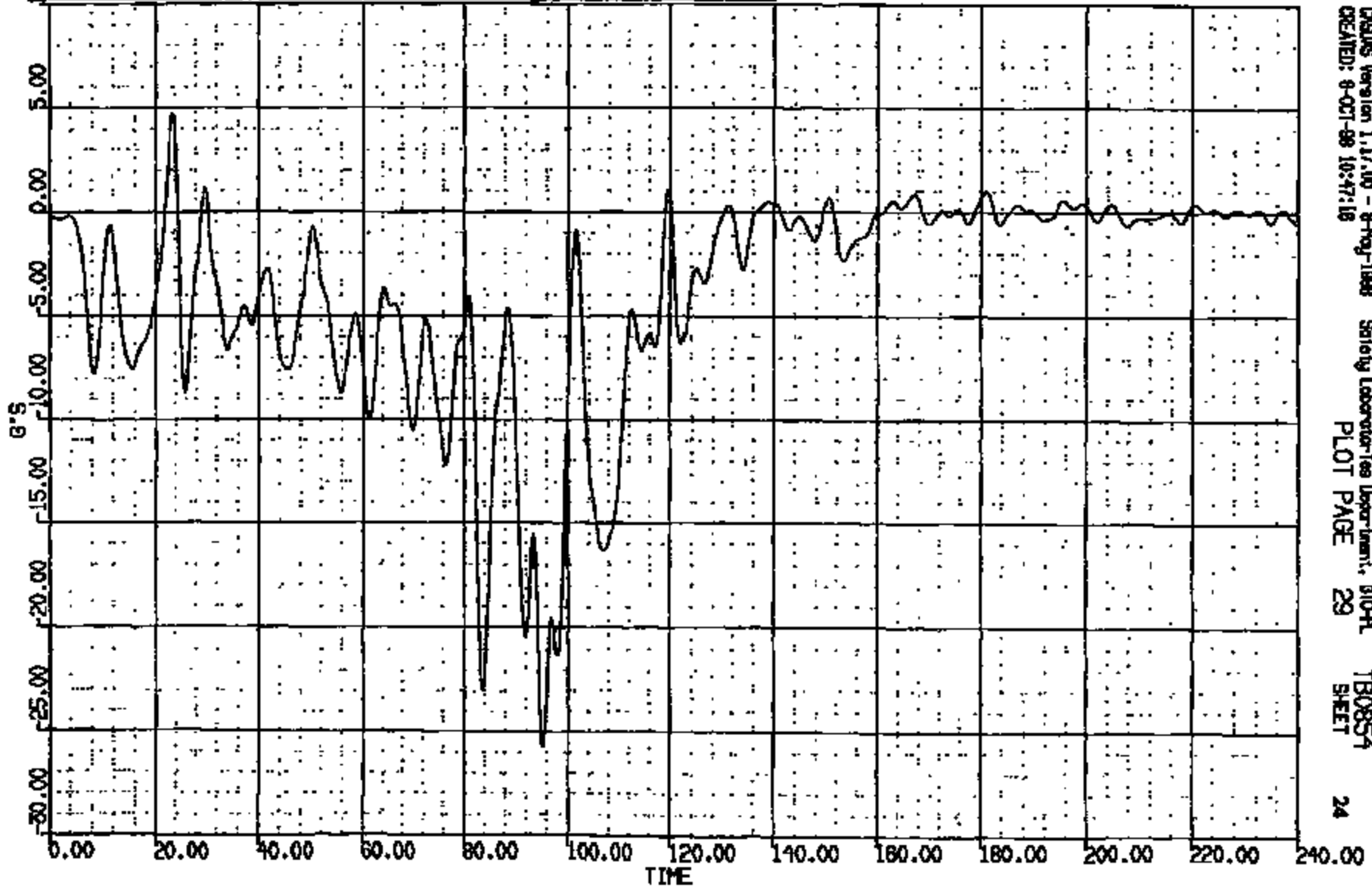




CR R: 11221 TO: TB0854 DATE: 991009 10:28:40  
2000 D-198

(17) CR11221T C/F FLR PAN @ FND TNL #1 LONG 60C  
MAX = 4.752 at 23.52 MS MIN = -25.77 at 95.29 MS

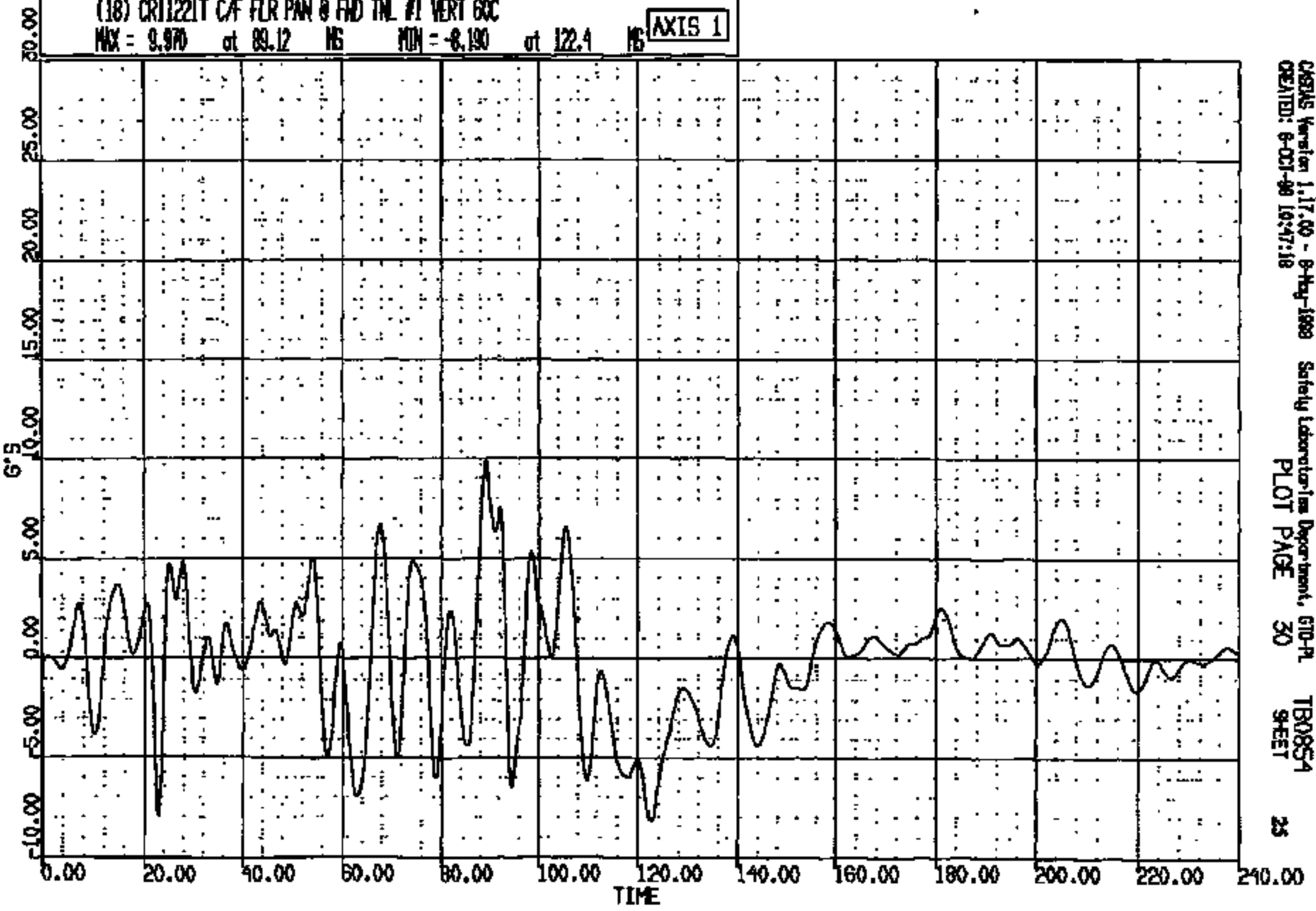
AXIS 1



CR R: 11221 TO: TB0854 DATE: 881008 10:28:40  
2000 D-188

(18) CR11221T C/F FLR PAN @ FWD TML #1 VERT GOC  
MAX = 9.970 at 89.12 MS MIN = -8.190 at 122.4 MS

AXIS 1



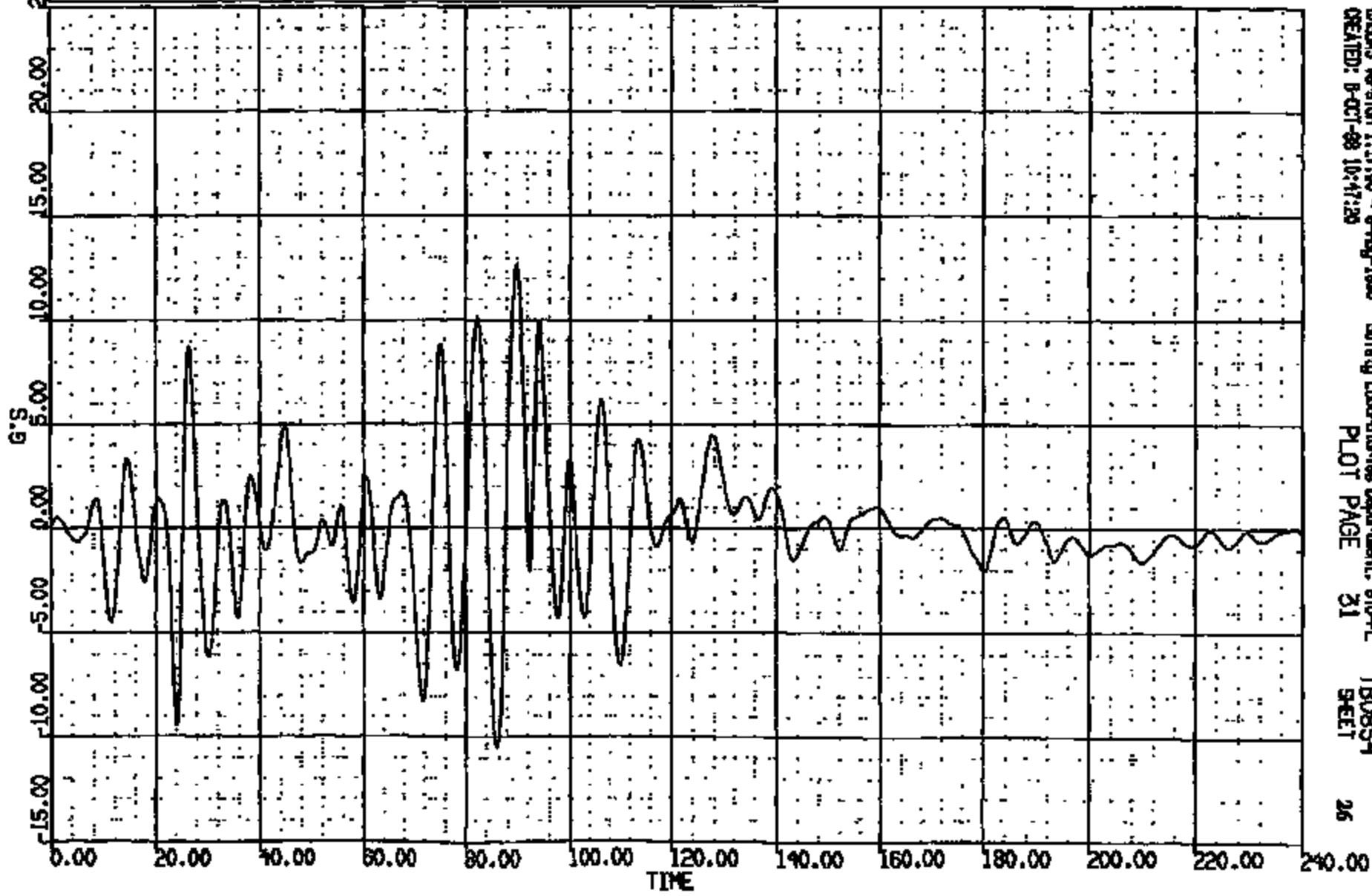
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CRIS 0011221

CR R: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-188

(19) CR11221T C/F FLR PWR @ FWD INL #1 LAT 60C  
MAX = 12.69 at 89.92 NS MIN = -10.52 at 86.00 NS

AXIS 1



CREWS Version 1.17.90 - 8-May-1998  
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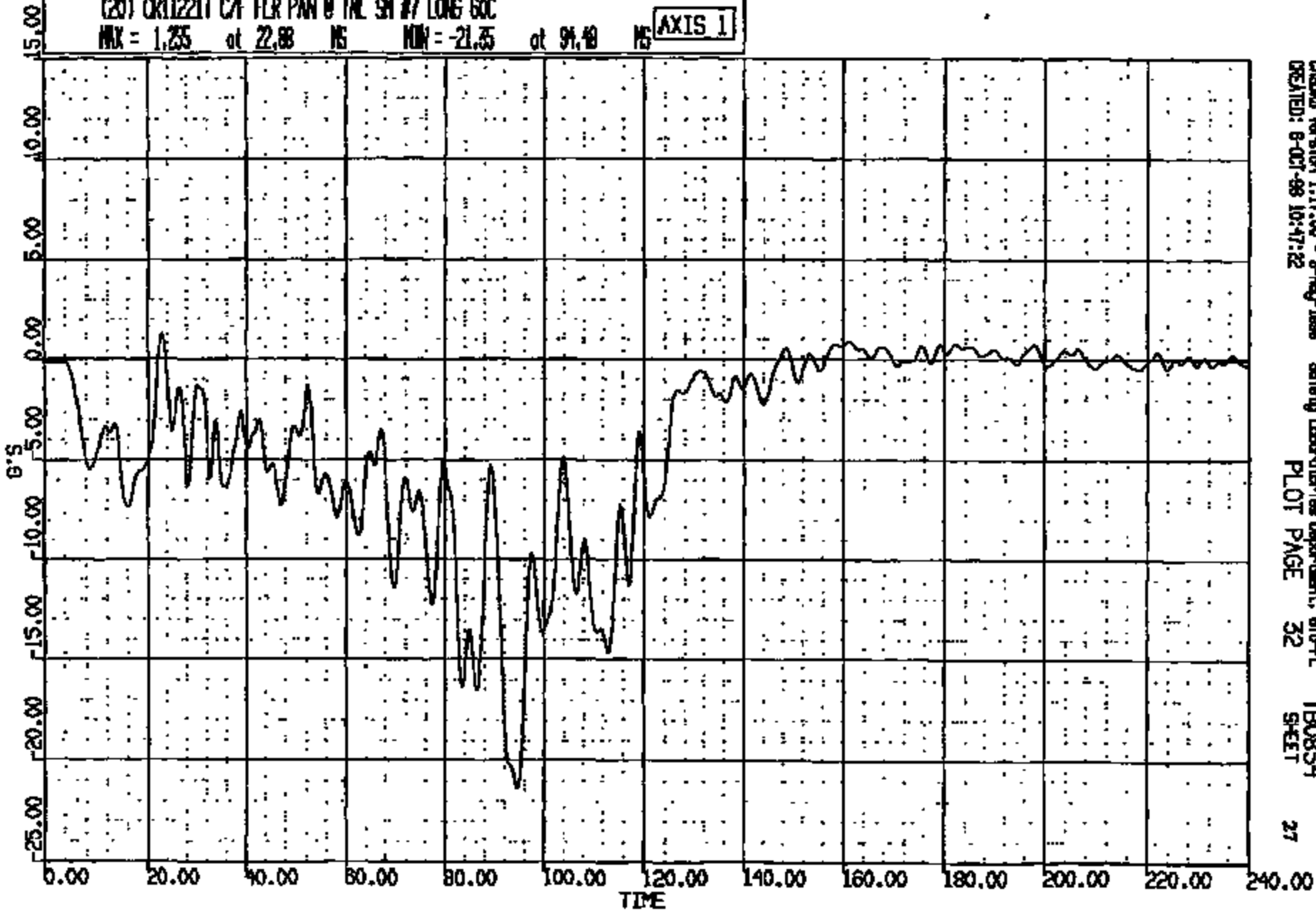
Safety Laboratories Department, 610-PL  
PLOT PAGE 31

TB0854  
SHEET

CR11221

CR R: 11221 TC: TB0854 DATE: 991008 10:28:40  
2000 D-188

(20) CR11221T C/F FLR PAN @ TML SN #7 LONG 60C  
MAX = 1.25 at 22.88 MS MIN = -21.35 at 91.48 MS **AXIS 1**

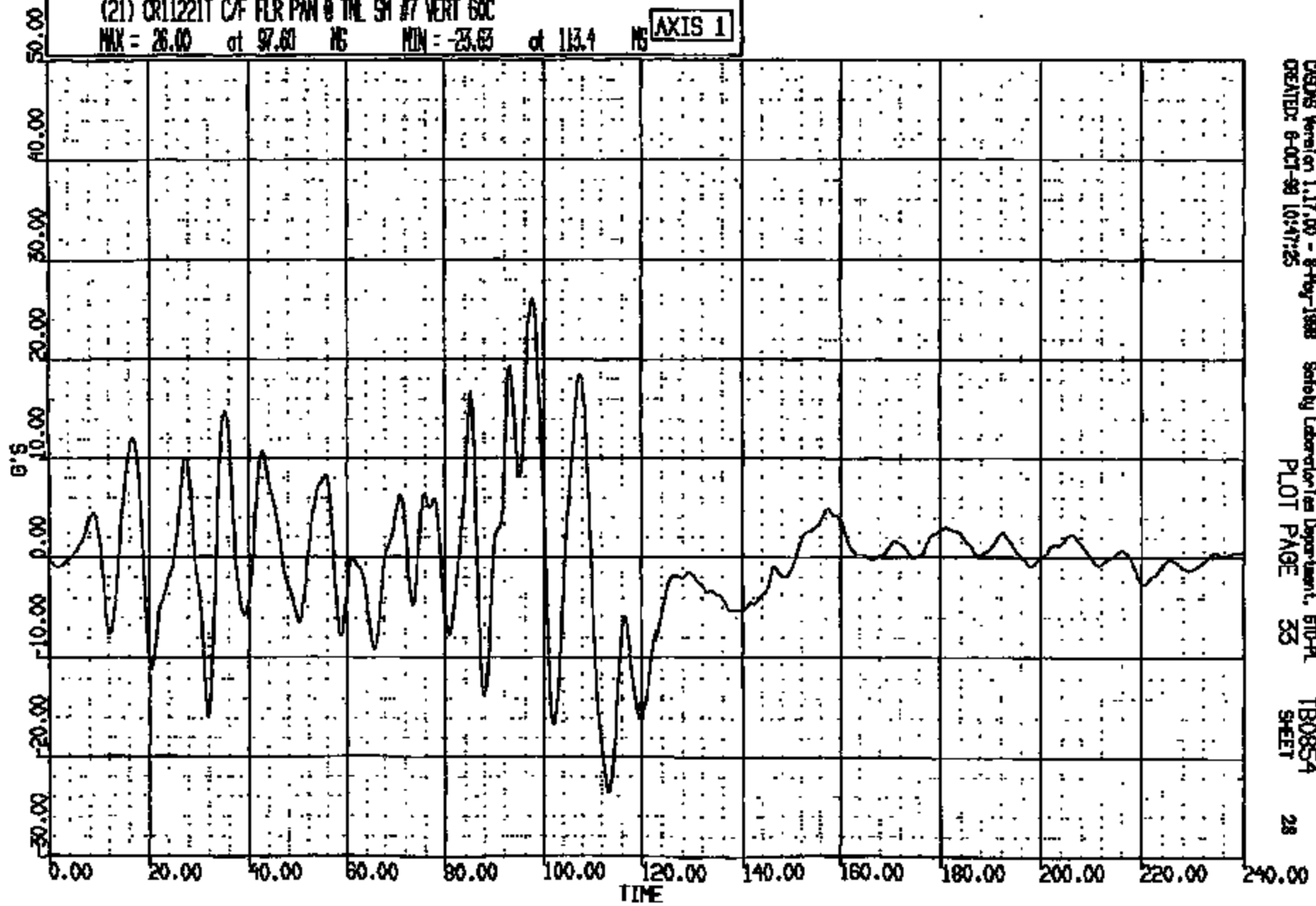


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CREATED: 8-OCT-98 10:47:32 PLOT PAGE 32 SHEET 27

CRIS 0011221

CR R: 11221 TO: TB0854 DATE: 881006 10:28:40  
2000 D-166

(21) CR11221T C/F FLR PAN @ TNL SH #7 VERT 60C  
MAX = 26.00 at 97.60 NS MIN = -23.63 at 113.4 NS **AXIS 1**

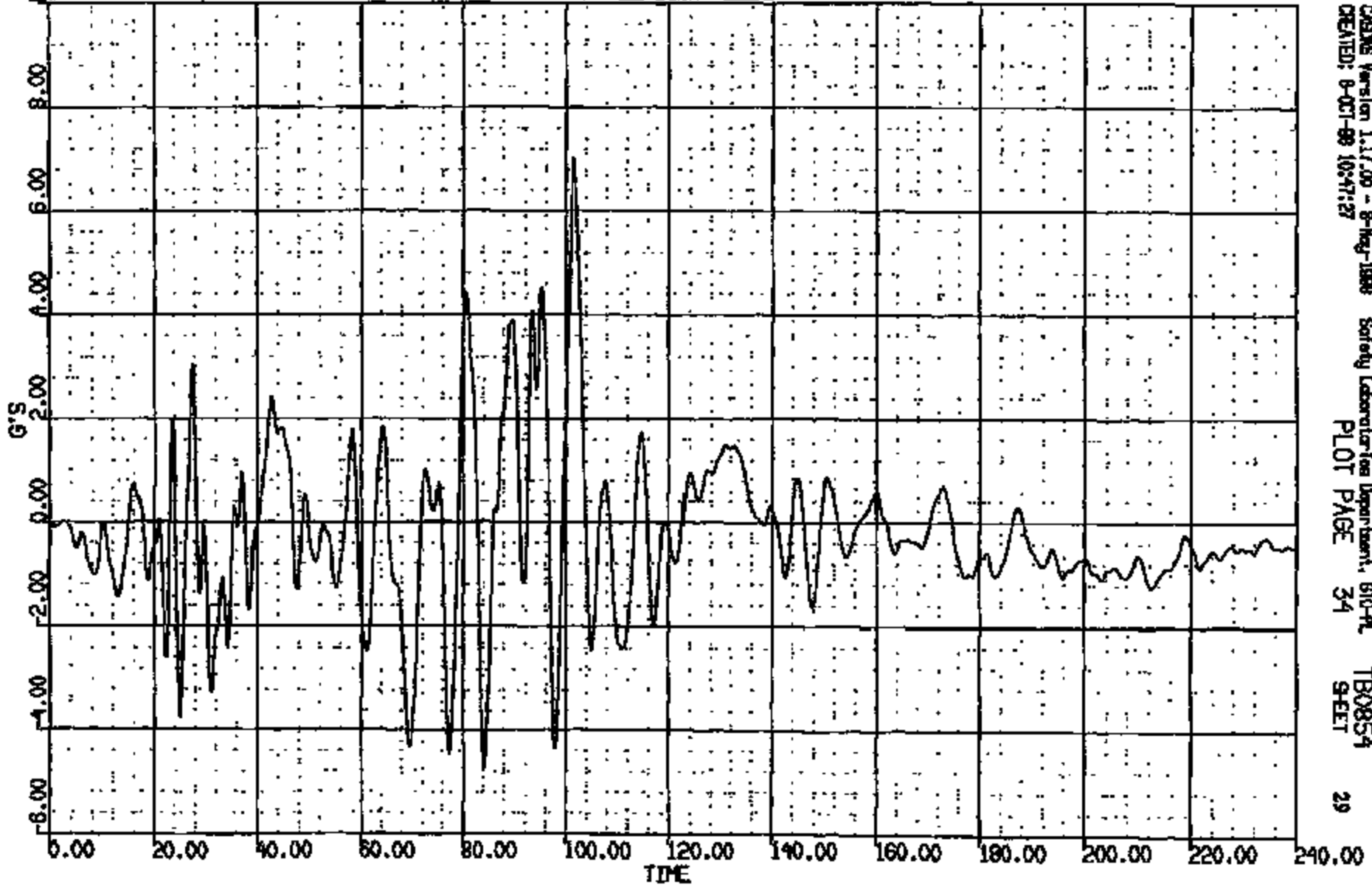


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CRTS 0011221

CR #: 11221 TO: TB0854 DATE: 881008 10:28:40  
2000 D-188

(22) CR11221T C/F FLR PAN @ TNL 5K #7 LAT 60C  
MAX = 7.047 at 101.5 MS MIN = -4.779 at 84.16 MS **AXIS 1**

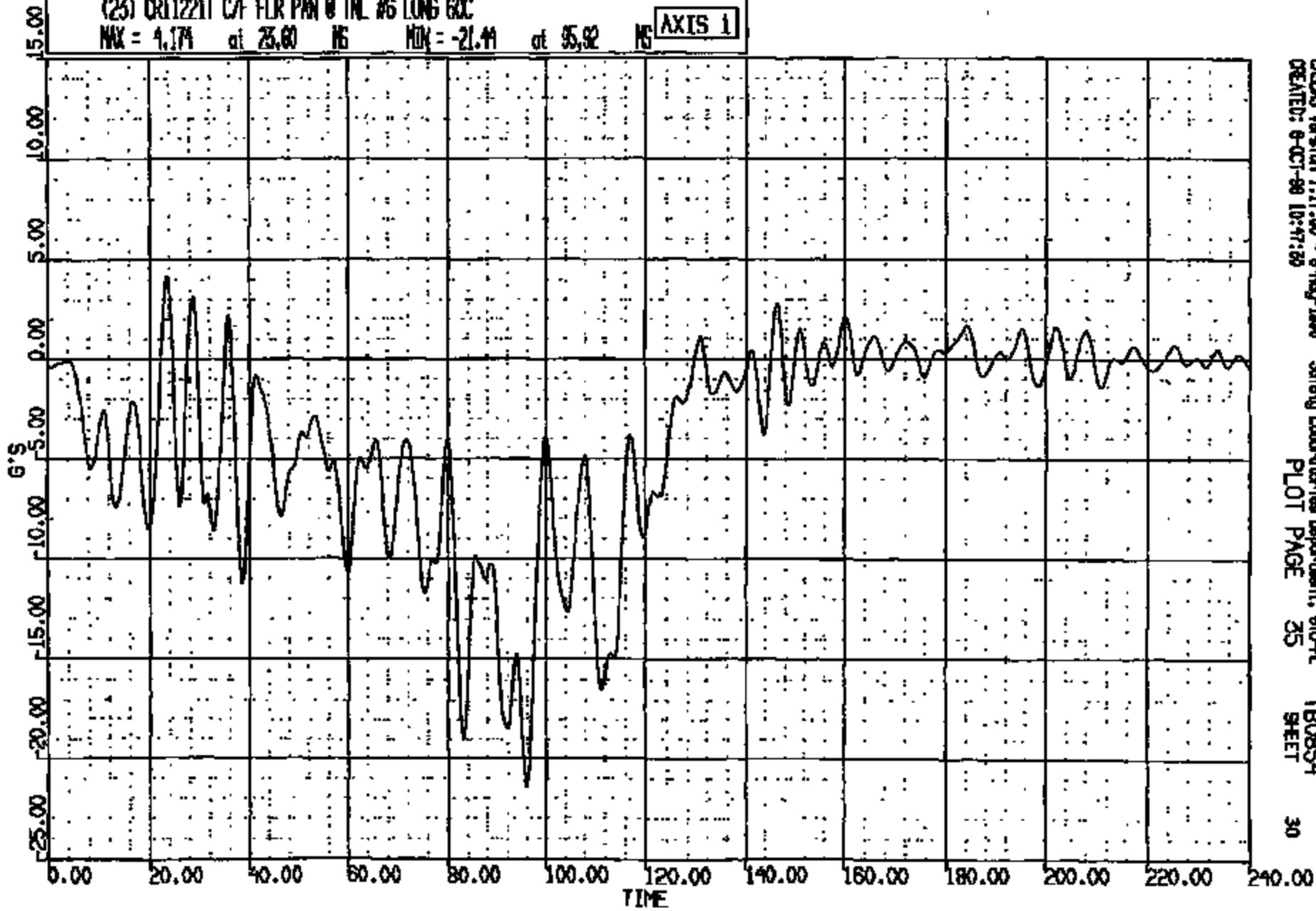


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CREATED: 8-OCT-88 10:47:27 PLOT PAGE 34 SHEET 29

CRTS 0011221

CR R: 11221 TD: TB0854 DATE: 991008 10:28:40  
2000 D-198

(23) CR11221T C/F FLR PAN @ TNL #6 LONG EXC  
MAX = 4.174 at 23.60 MS MIN = -21.44 at 95.92 MS **AXIS 1**



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CRIS 0011221

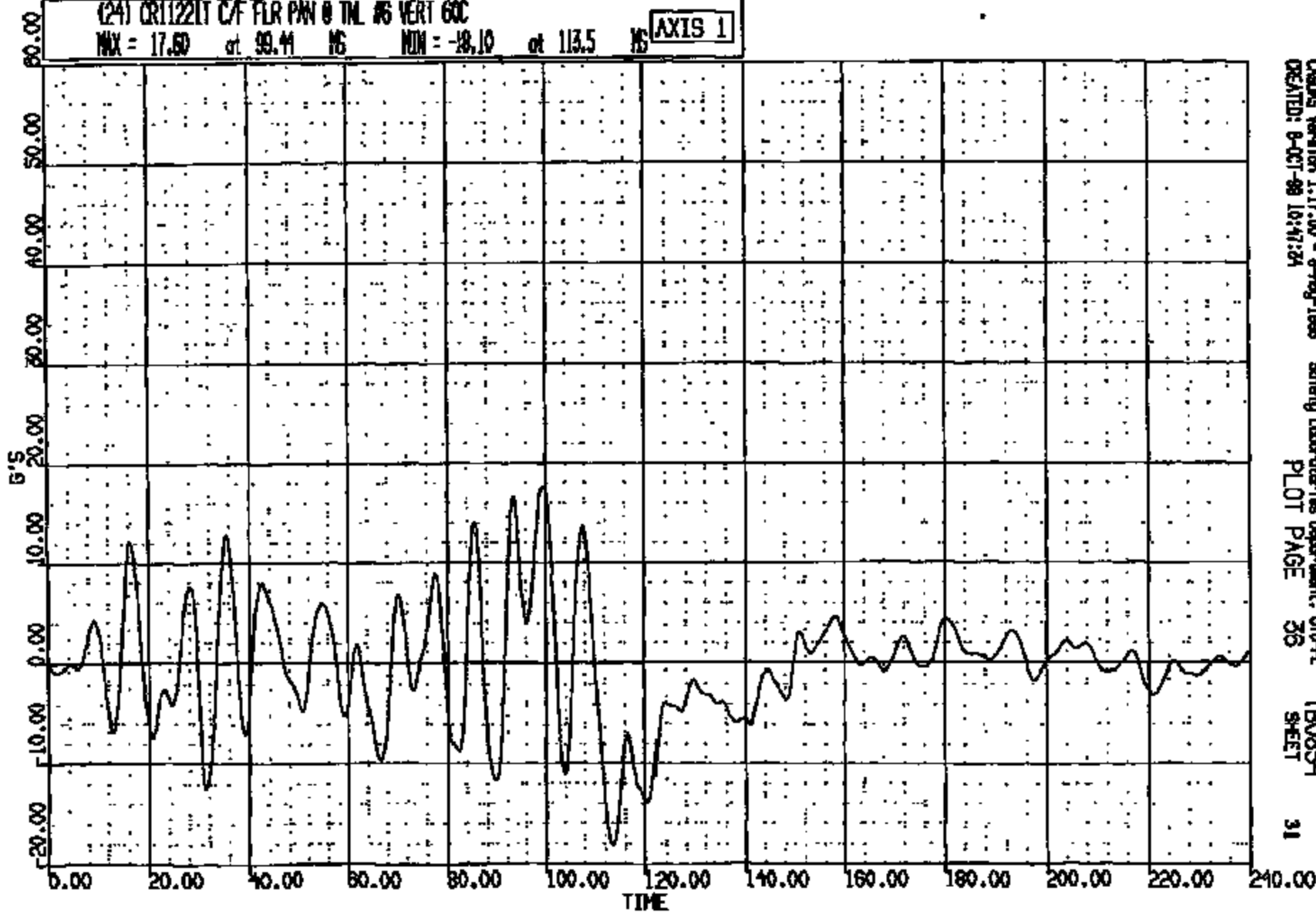
CR R: 11221 TO: TB0854 DATE: 991006 10:28:40

2000 D-186

(24) CR11221T C/F FLR PAN @ TML #6 VERT 60C

MAX = 17.50 at 99.41 MS MIN = -18.10 at 113.5 MS

AXIS 1



CRS05 Version 1.17.00 - 8-May-1998  
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Safety Laboratories Department, 610-PL  
PLOT PAGE 36

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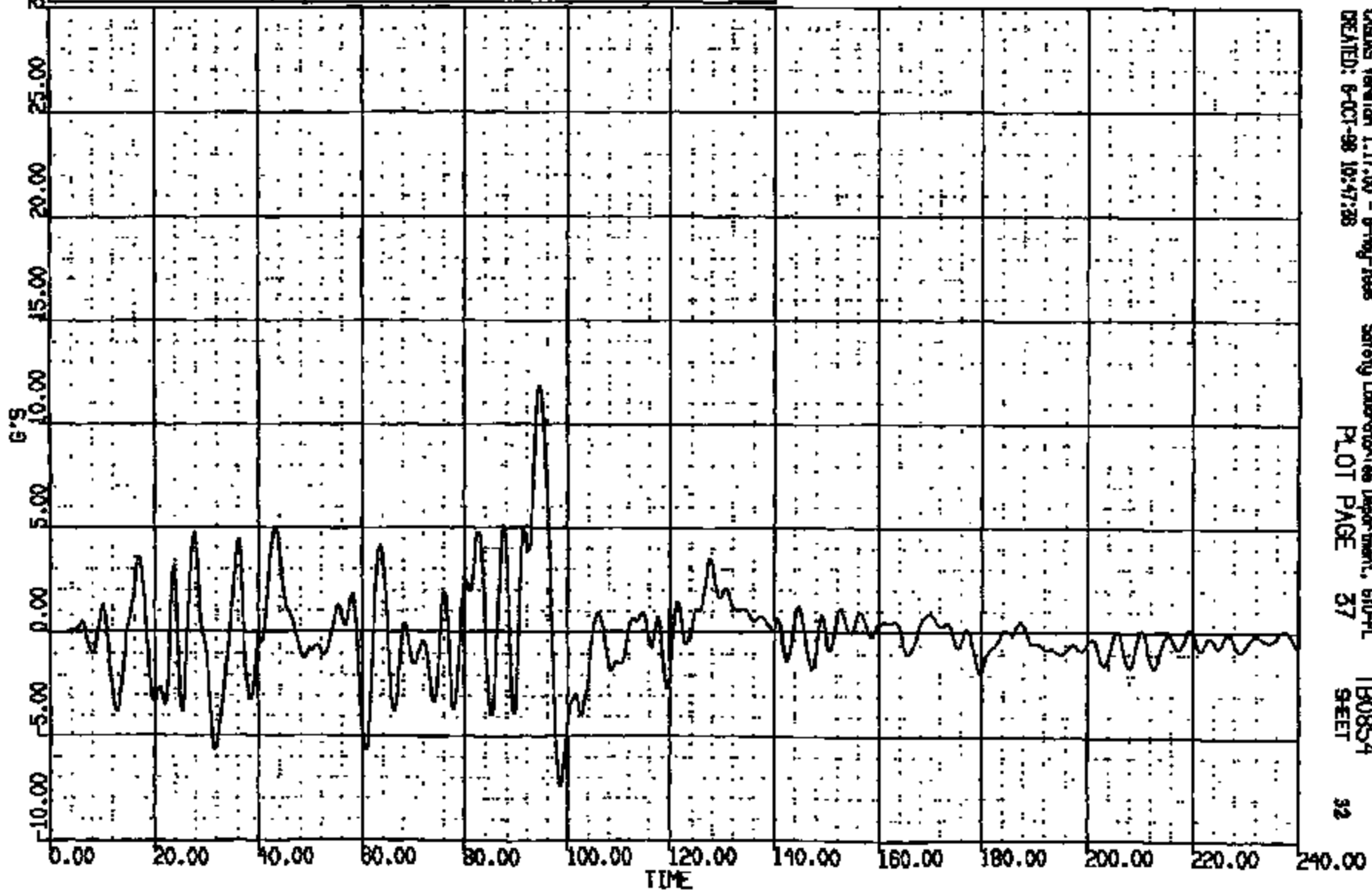
CR11221



CR R: 11221 TO: TB0854 DATE: 981006 10:28:40  
2000 D-188

(25) CR11221T C/F FLR PAN @ TML #6 LAT 60C  
MAX = 11.80 at 91.40 NS MIN = -7.445 at 98.48 NS

AXIS 1

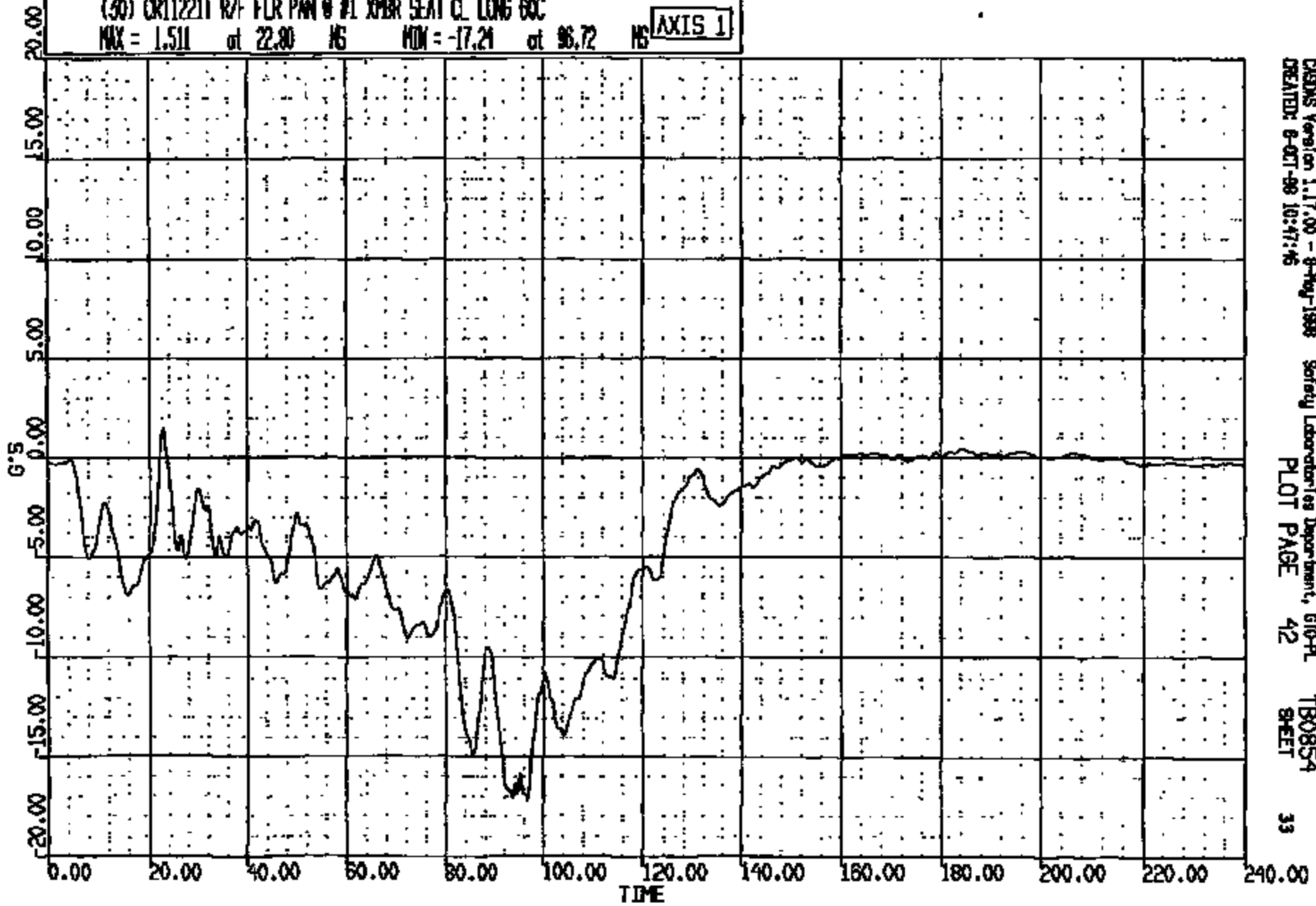


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CRIS 0011221

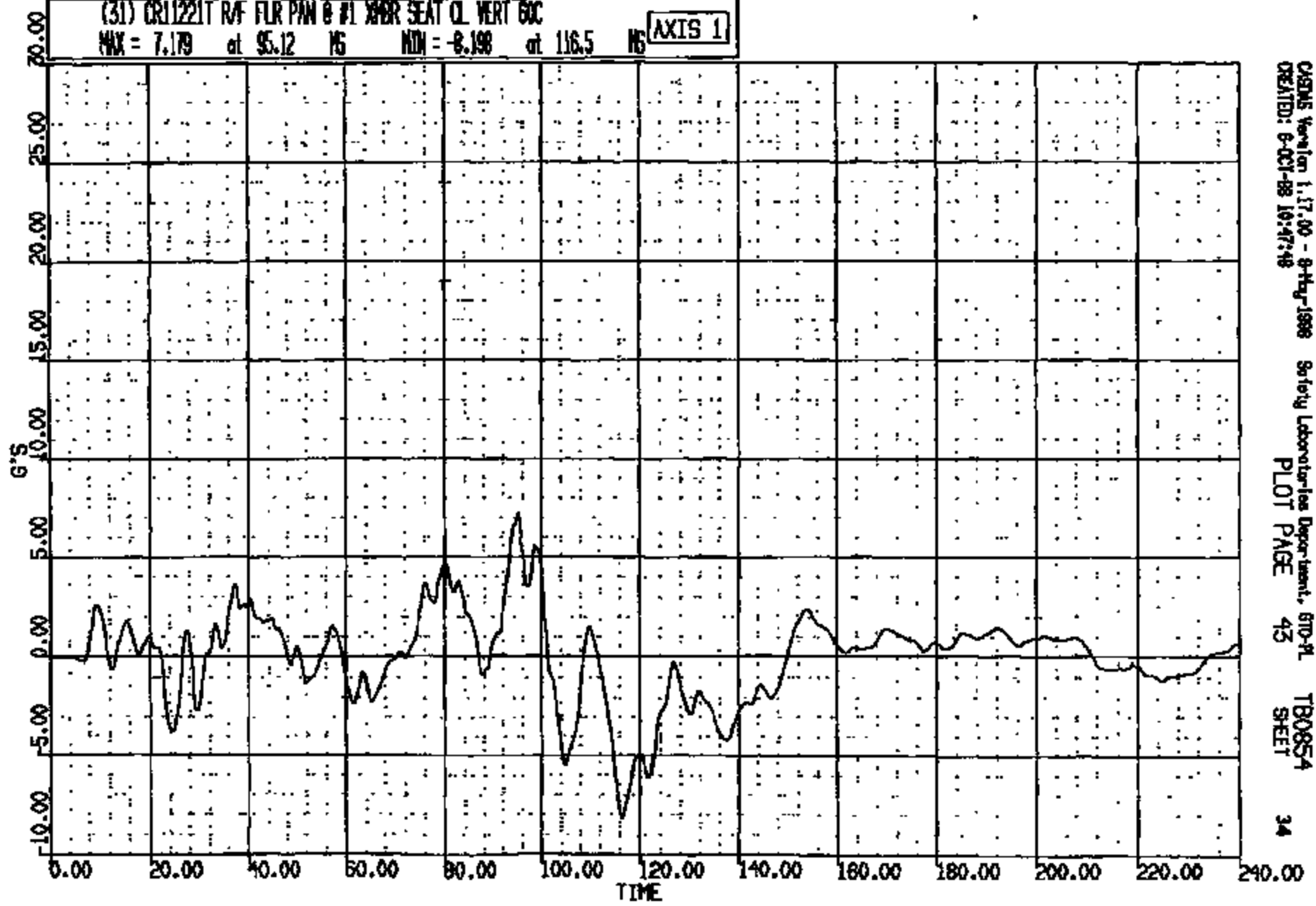
CR R: 11221 TO: TB0854 DATE: 991008 10:28:40  
2000 D-186

(30) CR11221T R/F FLR PAN @ #1 XPR SEAT CL LONG 60C  
MAX = 1.511 at 22.80 MS MIN = -17.21 at 96.72 MS **AXIS 1**



CR R: 11221 TO: TB0854 DATE: 861006 10:28:40  
2000 D-188

(31) CR11221T R/F FLR PAN @ #1 XHR SEAT CL VERT GOC  
MAX = 7.179 at 95.12 MS MIN = -8.198 at 116.5 MS AXIS 1



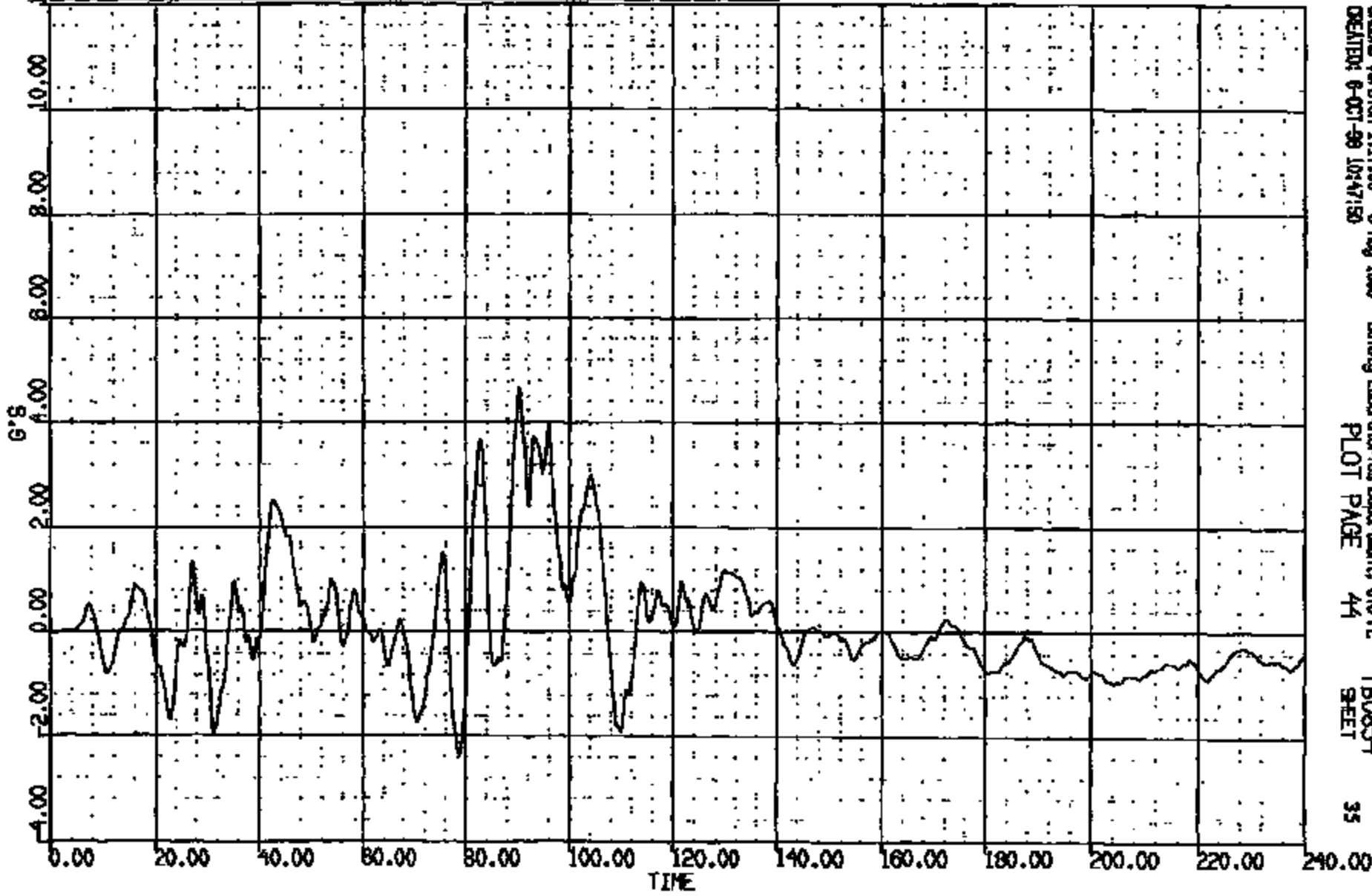
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CRTS 0011221

CR R: 11221 TD: TB0854 DATE: 881008 10:28:40  
2000 D-188

(32) DR11221T R/F FLR PAN 0 #1 XMR SEAT CL LAT 60C  
MAX = 1.667 at 90.21 MS MIN = -2.391 at 78.88 MS

AXIS 1



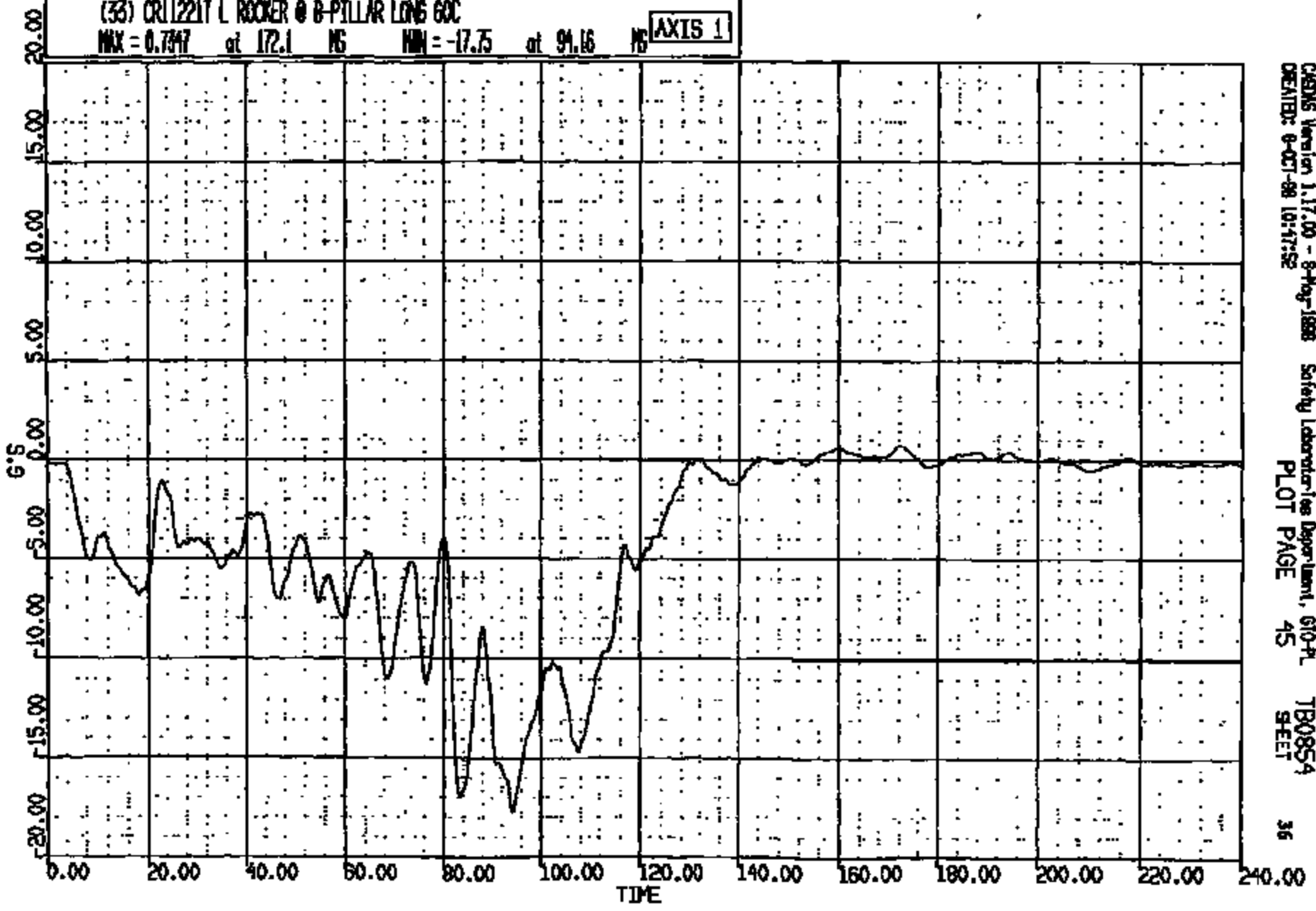
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CRTS 0011221

CR #: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-188

(33) CRT1221T L ROCKER @ B-PILLAR LENS 60C  
MAX = 0.7947 at 172.1 MS MIN = -17.75 at 91.16 MS

AXIS 1



CHENG Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL  
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SHEET 36

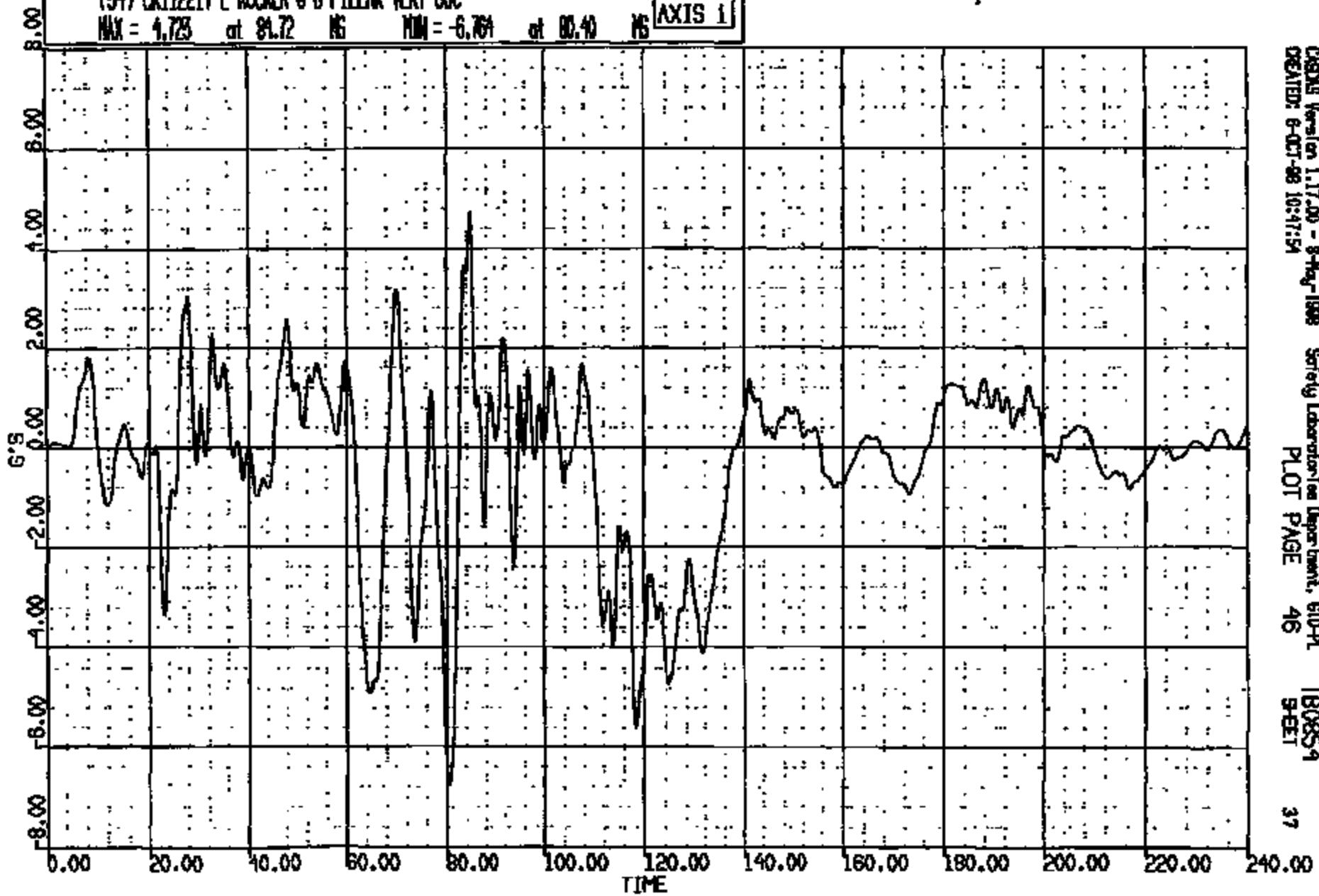
CRTS 0011221

CR R: 11221 TO: TB0854 DATE: 881008 10:28:40  
8000 D-188

(34) CR11221 L ROCKER @ 8-PILLAR VERT GDC

MAX = 4.725 at 81.72 NS MIN = -6.764 at 00.40 NS

AXIS 1



CRSIS Version 1.17.00 - 8-May-1988  
CREATED: 8-OCT-88 10:47:54  
Society Laboratories Department, 610-PL  
PLOT PAGE 46  
TB0854  
9-ET  
37

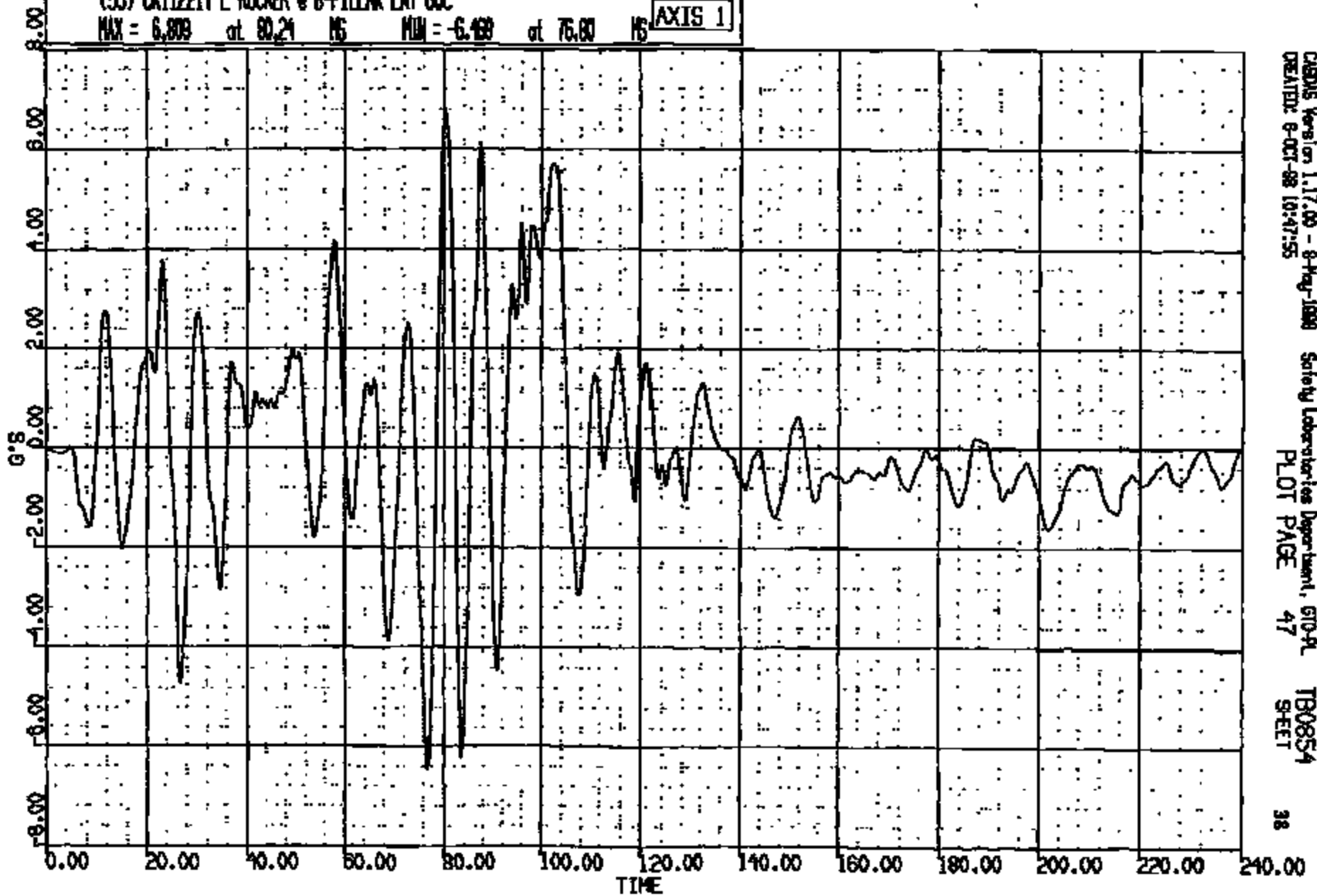
CRIS 0011221

CR #: 11221 TO: TB0854 DATE: 881008 10:28:40  
2000 D-188

(35) CRT1221T L. ROCKER @ B-PILLAR LAT 60C

MAX = 6.809 at 80.24 MS MIN = -6.488 at 76.80 MS

AXIS 1

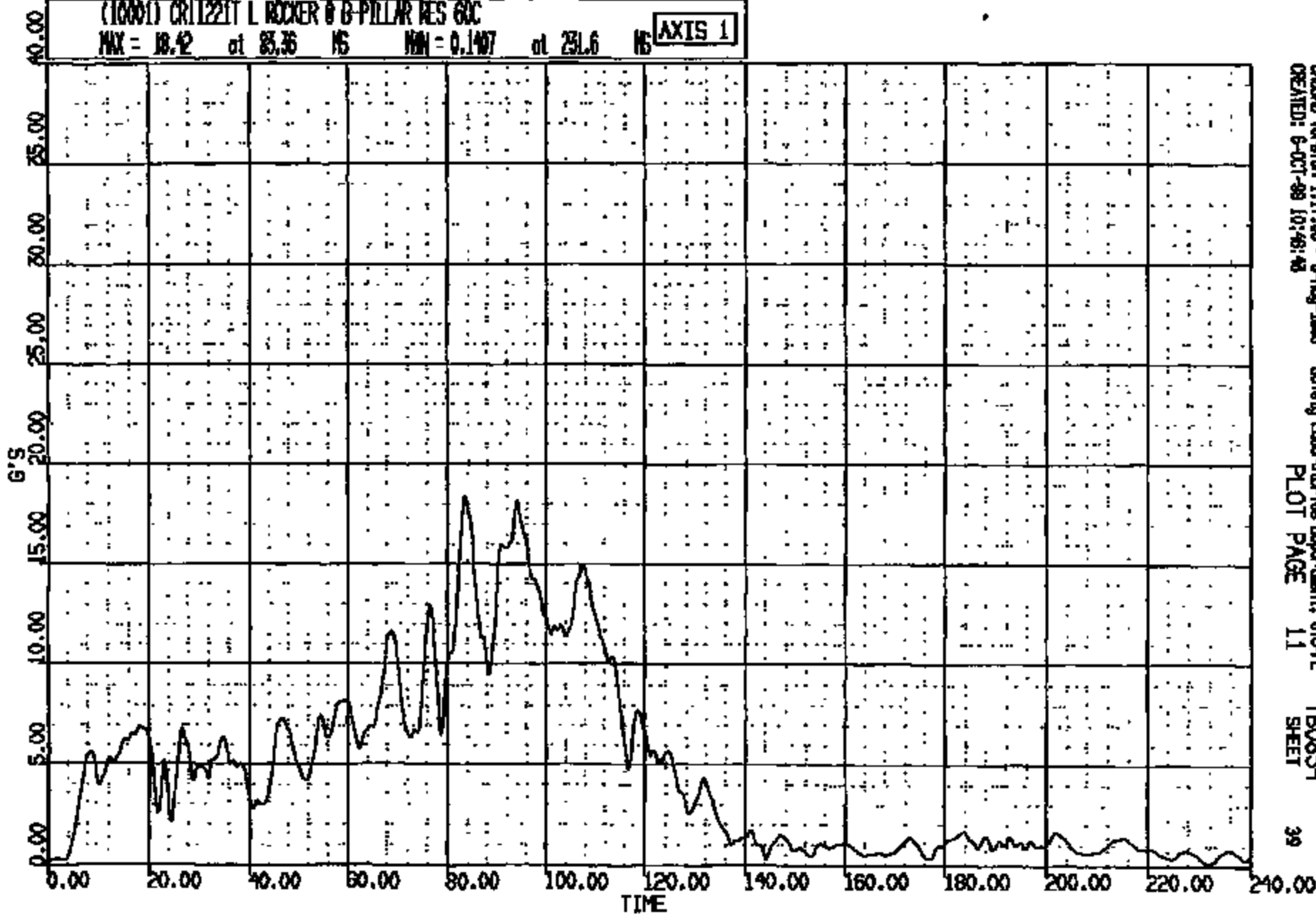


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CREATED: 8-OCT-88 10:47:55 PLOT PAGE 47 TB0854  
SHEET 38

CRTS 0011221

CR R: 11221 TO: TB0854 DATE: 981005 10:28:40  
2000 D-188

(10001) CRT1221T L ROCKER @ B-PILLAR RES 60C  
MAX = 18.42 at 85.35 NS MIN = 0.1407 at 231.6 NS **AXIS 1**



CRS08 Version 1.17.00 - 8-Aug-1999 Seelye Laboratories Department, GTO-PL  
CREATED: 6-OCT-98 10:48:42 PLOT PAGE 11 TB0854 SHEET 39

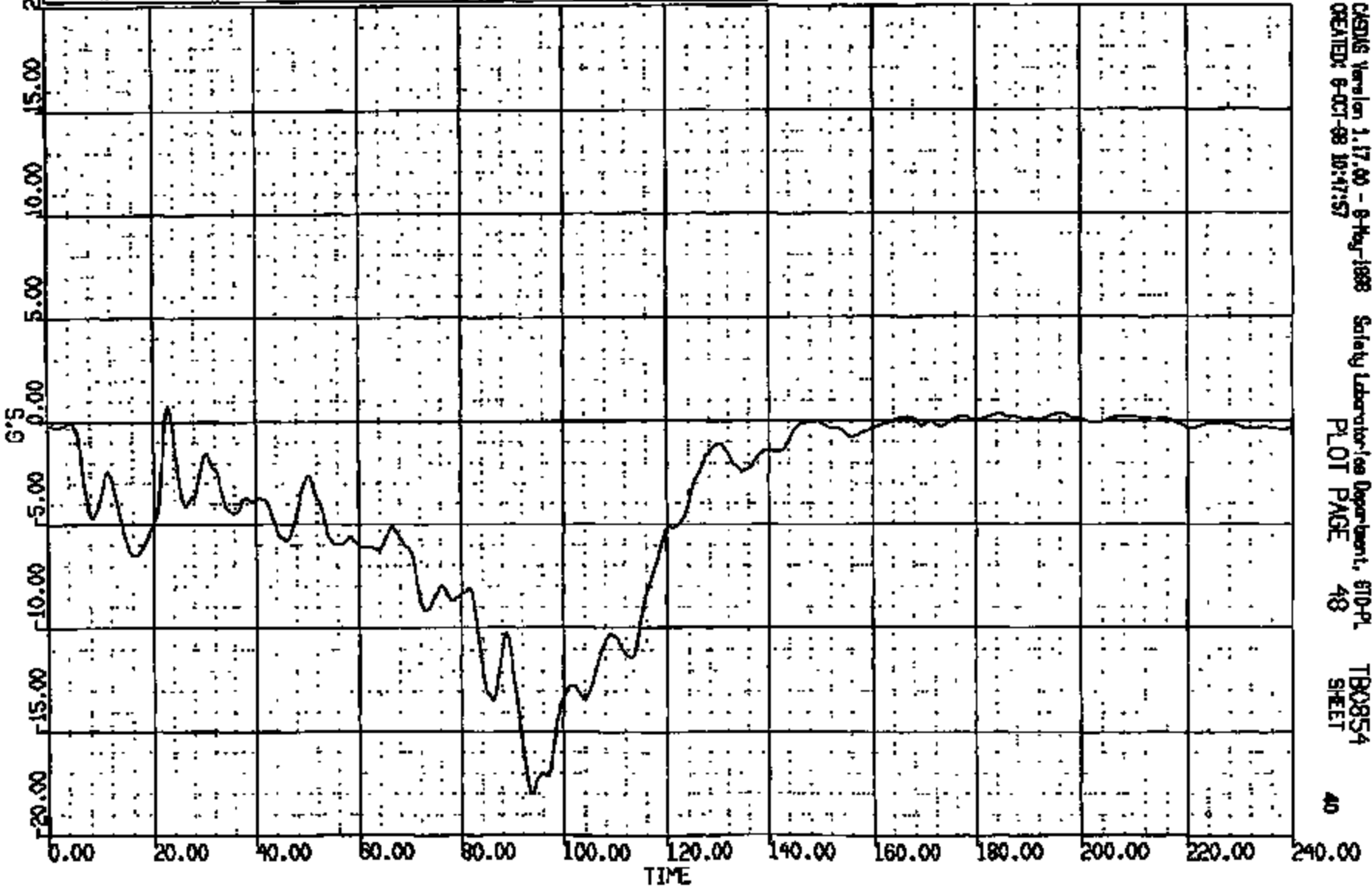
CRTS 0011221



CR R: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-188

(36) CR11221T R RODNER @ B-PILLAR LONG 60C  
MAX = 0.7250 at 22.96 NS MIN = -18.06 at 93.76 NS

AXIS 1



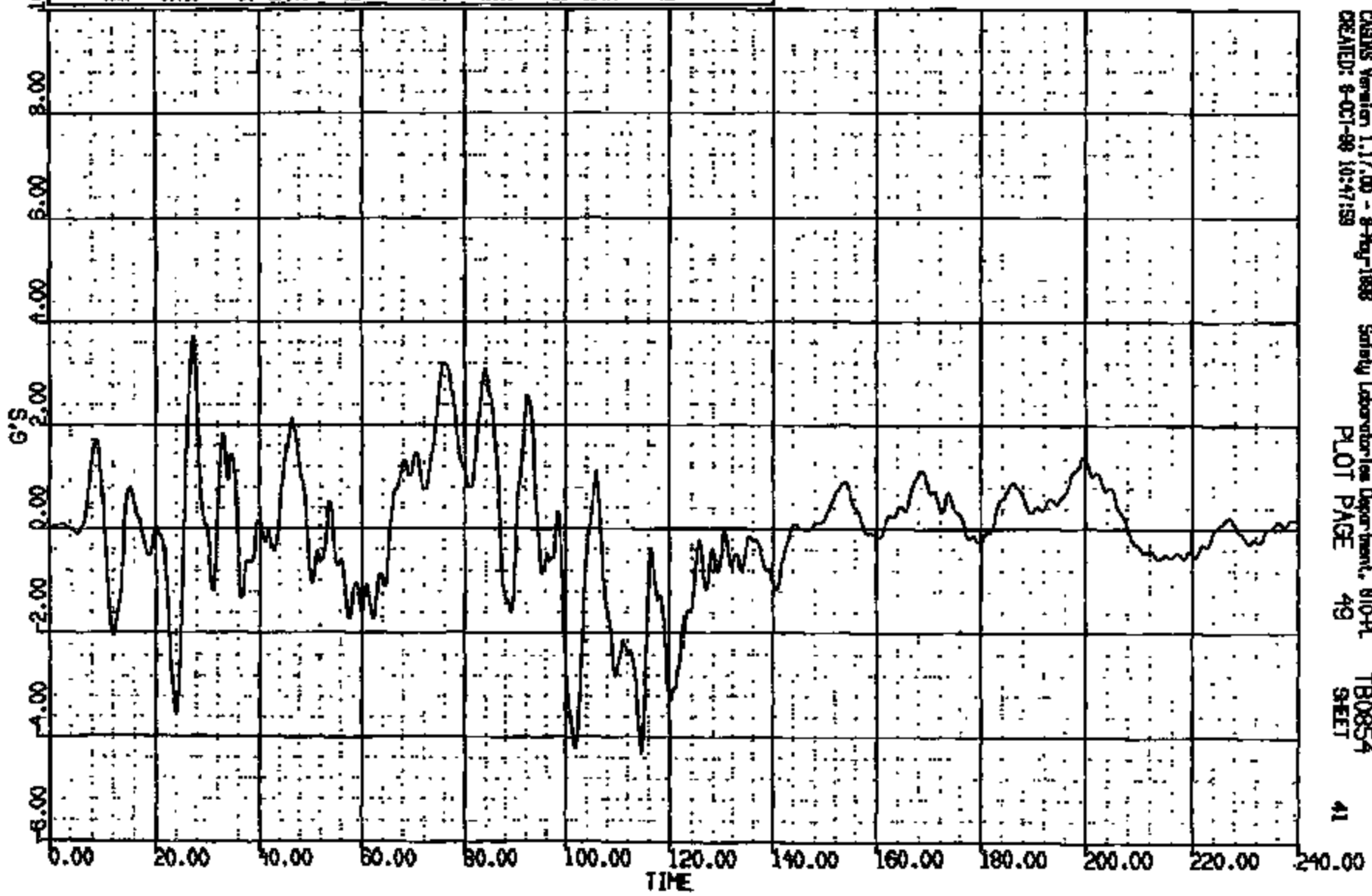
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CREATED: 8-OCT-98 10:17:57 PLOT PAGE 48 SHEET 40

CRTS 0011221

CR R: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-198

(37) CR1221Y R ROCKER @ B-PILLAR WERT GOC  
MAX = 3.710 at 27.44 MS MIN = -4.800 at 114.7 MS

AXIS 1



CASMS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 810-PL TB0854  
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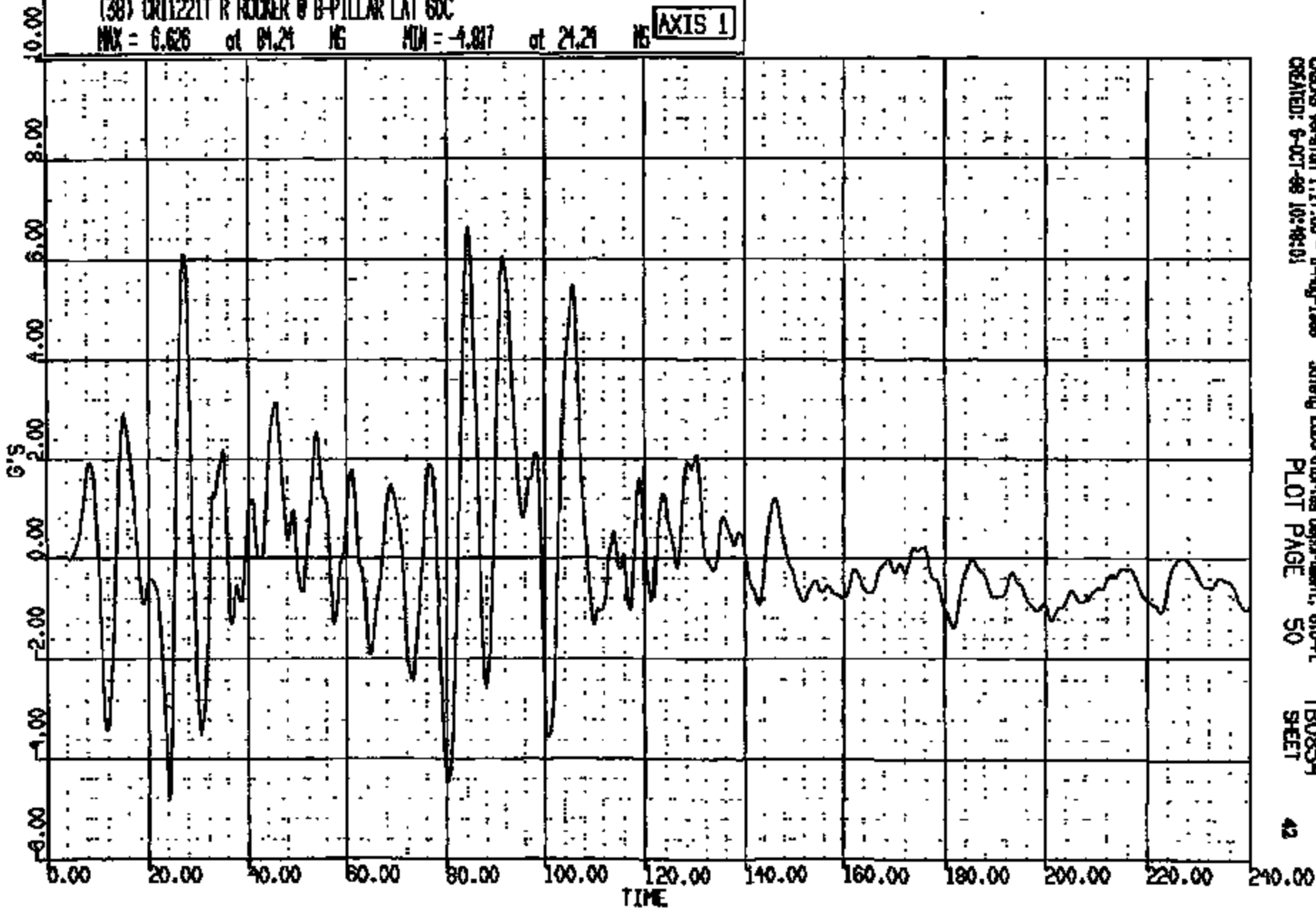
CRTS 0011221

CR R: 11221 TO: TB0854 DATE: 881008 10:28:40  
2000 D-188

(38) CR11221T R ROCKER @ B-PILLAR LAT 60C

PKX = 6.626 at 01.21 NS MIN = -4.817 at 21.21 NS

AXIS 1



CSDAS Version 1.17.00 - 8-Aug-1988  
CREATED: 8-OCT-88 10:48:01

Safety Laboratories Department, 610-PL  
PLOT PAGE 50

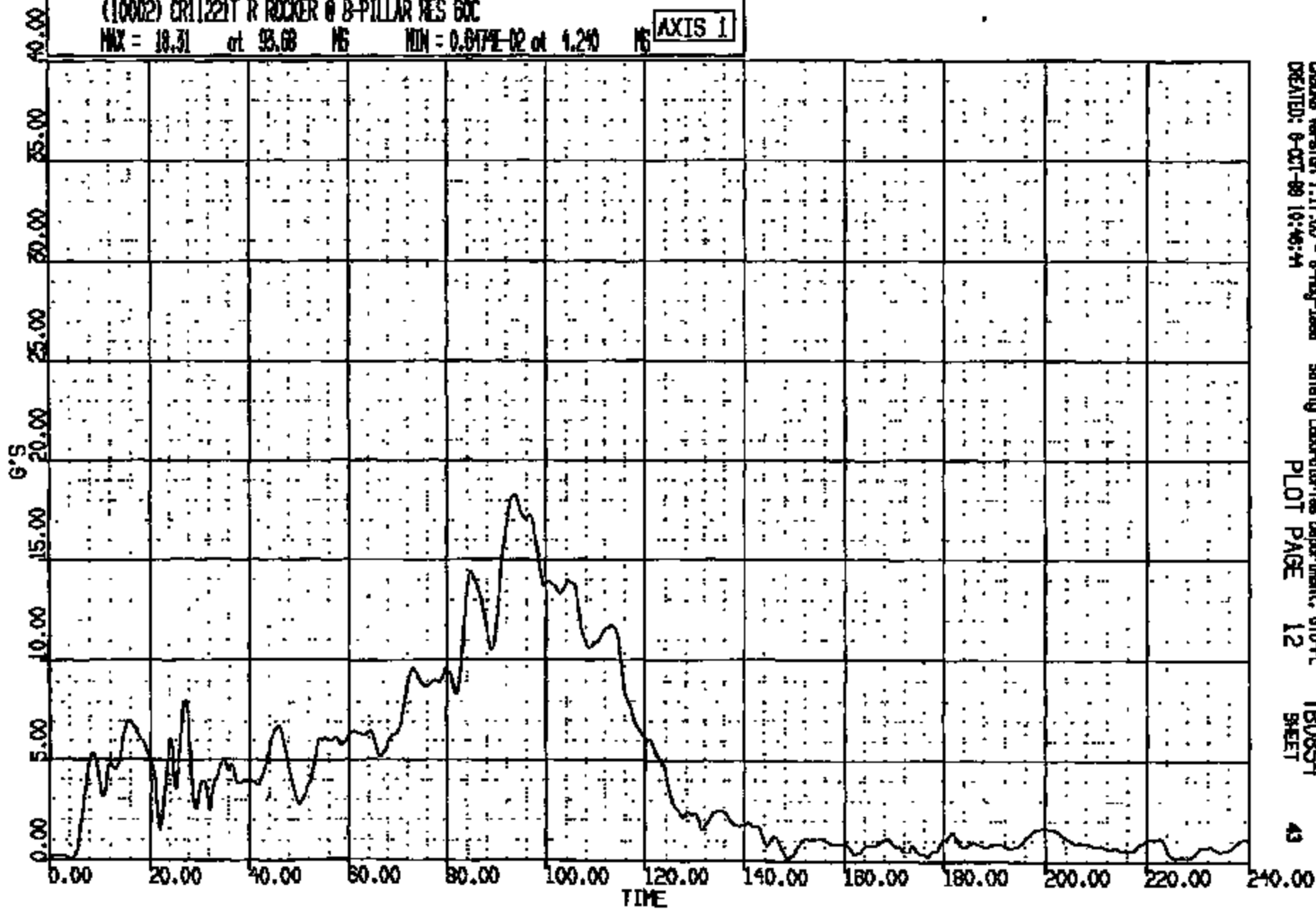
TB0854  
SHEET

42

CR11221

CR R: 11221 TD: TB0854 DATE: 981008 10:28:40  
2000 D-186

(10002) CR11221T R ROCKER @ B-PILLAR NES 60C  
MAX = 18.31 at 93.68 MS MIN = 0.817E-02 at 1.240 MS **AXIS 1**

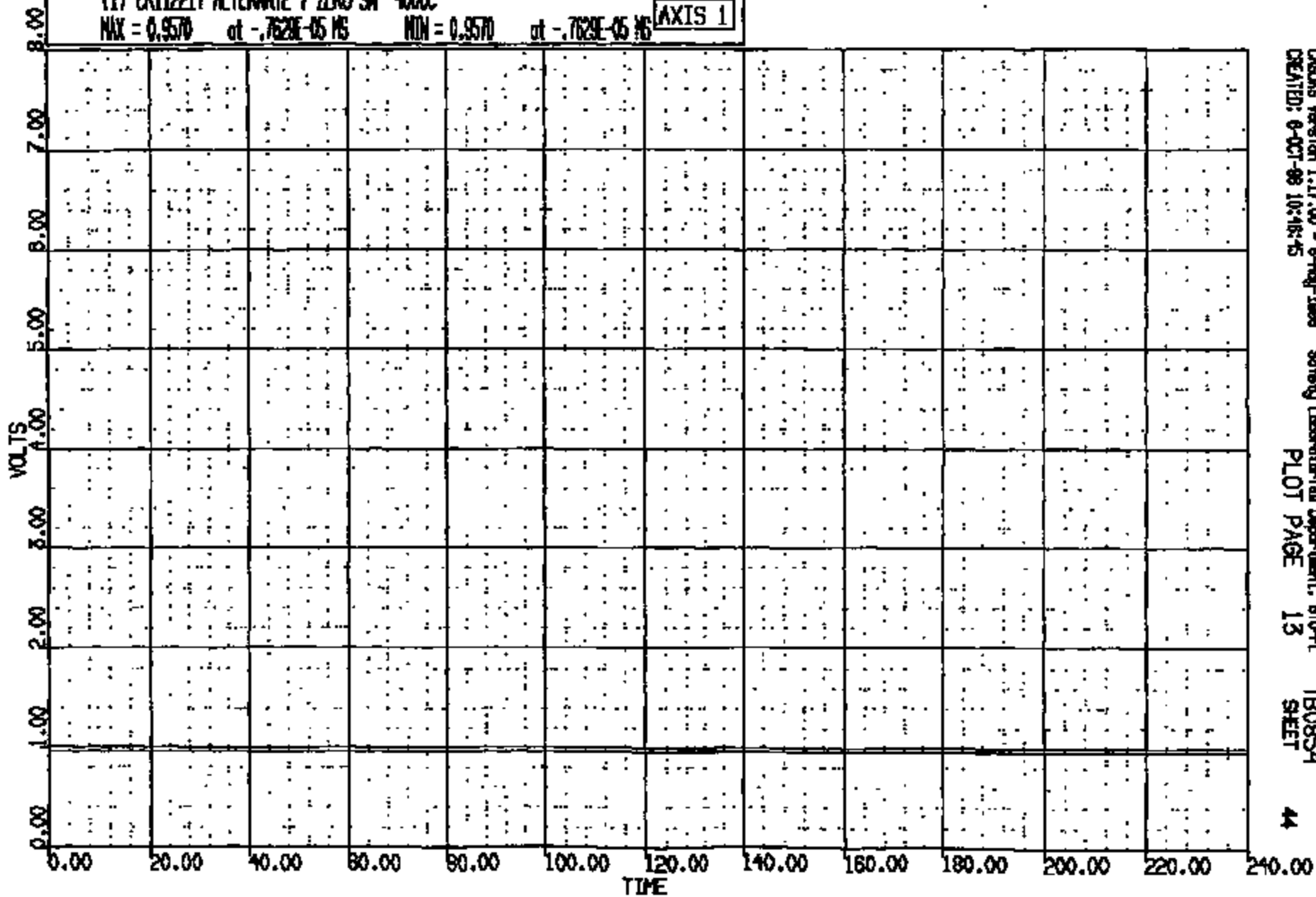


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CREATED: 8-OCT-98 10:46:44 PLOT PAGE 12 SHEET 43

CRTS 0011221

CR R: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-188

(1) CR11221T ALTERNATE T-ZERO SM 400C  
MAX = 0.9570 at -.7629E-05 MS MIN = 0.9570 at -.7629E-05 MS AXIS 1

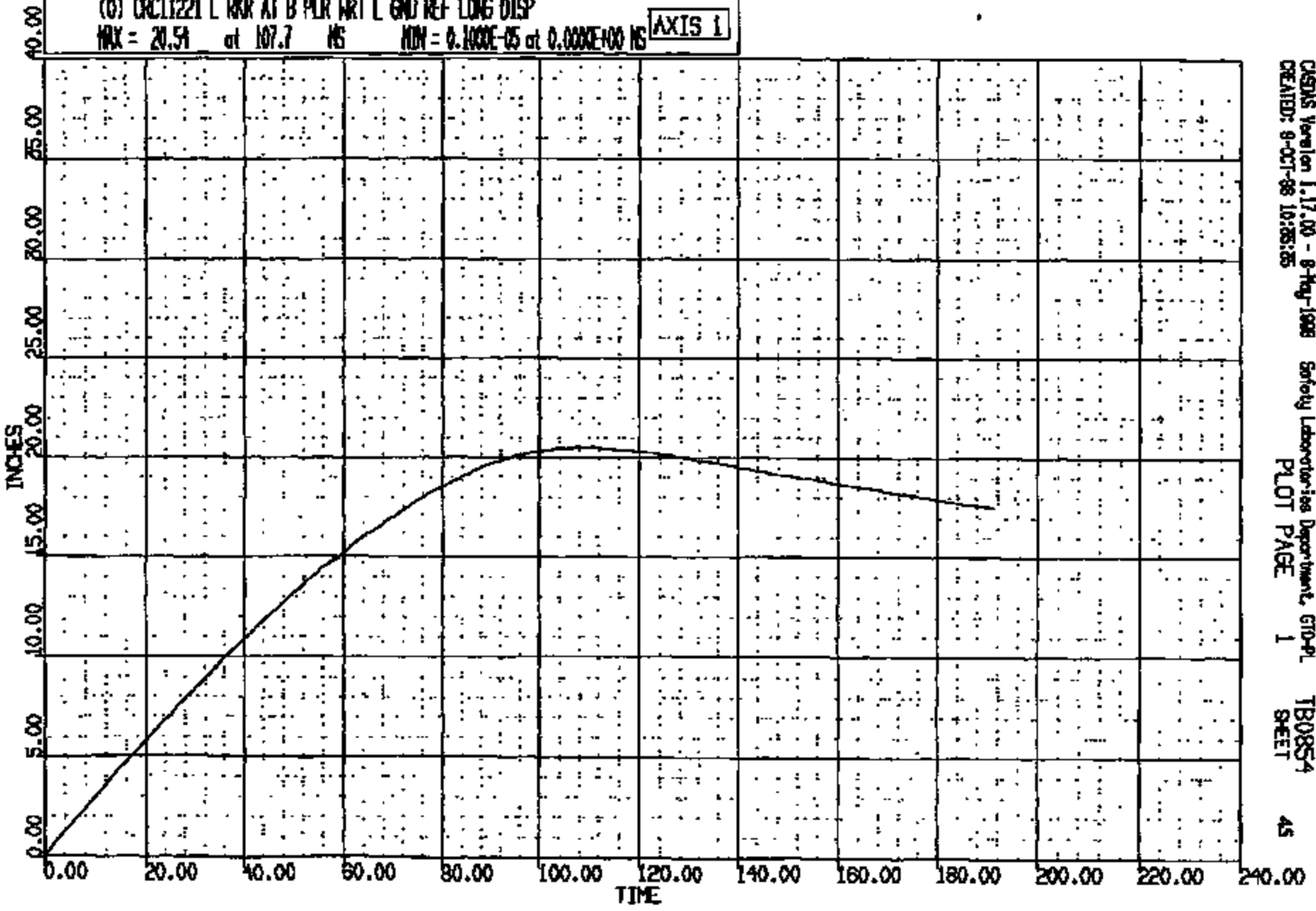


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CREATED: 8-OCT-98 10:48:45 PLOT PAGE 13 SHEET 44

CR11221

CR R: 11221 TO: TB0854 DATE: 881008 10:28:40  
2000 D-188

(0) CRCL1221 L ROR AT B PLR WRT L GND REF LONG DISP  
MAX = 20.51 at 107.7 MS MIN = 0.1000E-05 at 0.0000E+00 MS **AXIS 1**

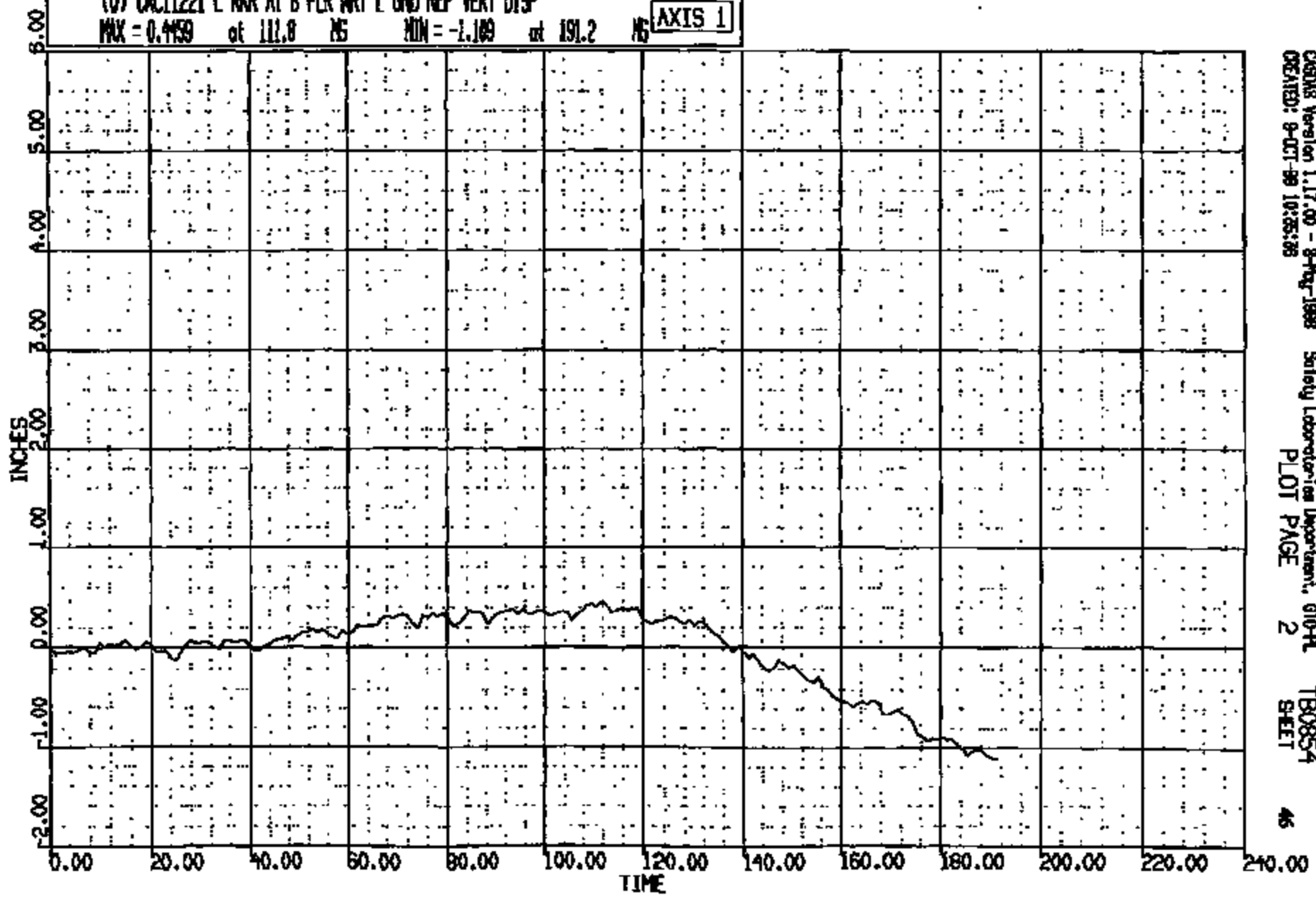


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CREATED: 8-OCT-88 10:28:25 PLOT PAGE 1 TB0854  
SHEET 45

CRIS 0011221

CR #: 11221 TO: TB0854 DATE: 981008 10:28:40  
2000 D-186

(0) CXC11221 L WKR AT B PLR WRT L GND REF VERT DISP  
MAX = 0.4439 at 111.8 MS MIN = -1.109 at 191.2 MS **AXIS 1**

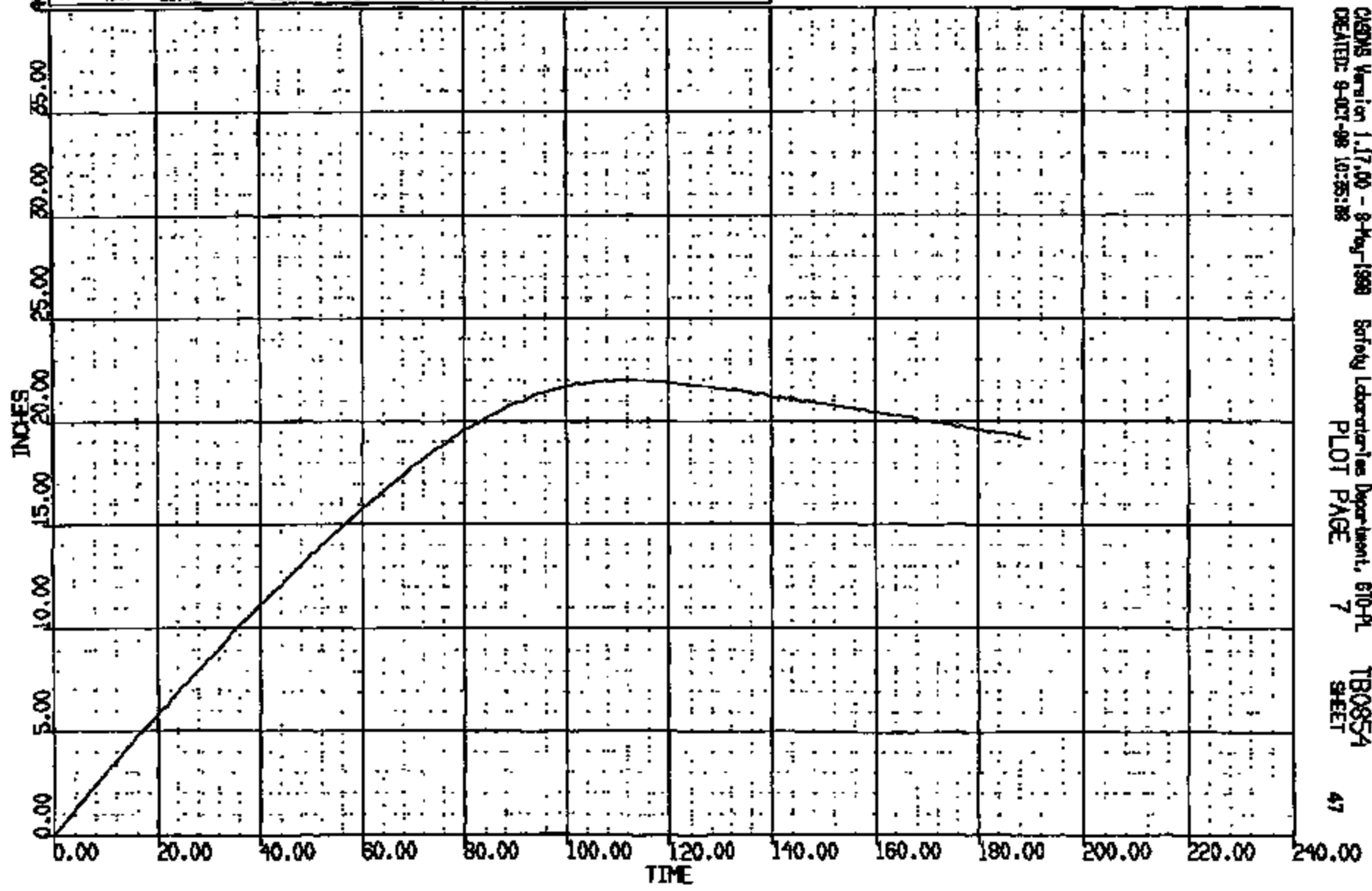


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CREATED: 9-OCT-98 10:28:28 PLOT PAGE 2 SHEET 46

CRTS 0011221

CR R: 11221 TO: TB0854 DATE: 991008 10:28:40  
2000 D-198

(0) CR11221 R RKR AT B FLR WRT R END REF LONG DISP  
MAX = 22.01 at 112.9 MS MIN = 0.000E+00 at 0.000E+00 MS **AXIS 1**



CRMS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL  
CREATED: 9-OCT-98 10:28:08 PLOT PAGE 7 TB0854  
SHEET 47

CRTS 0011221



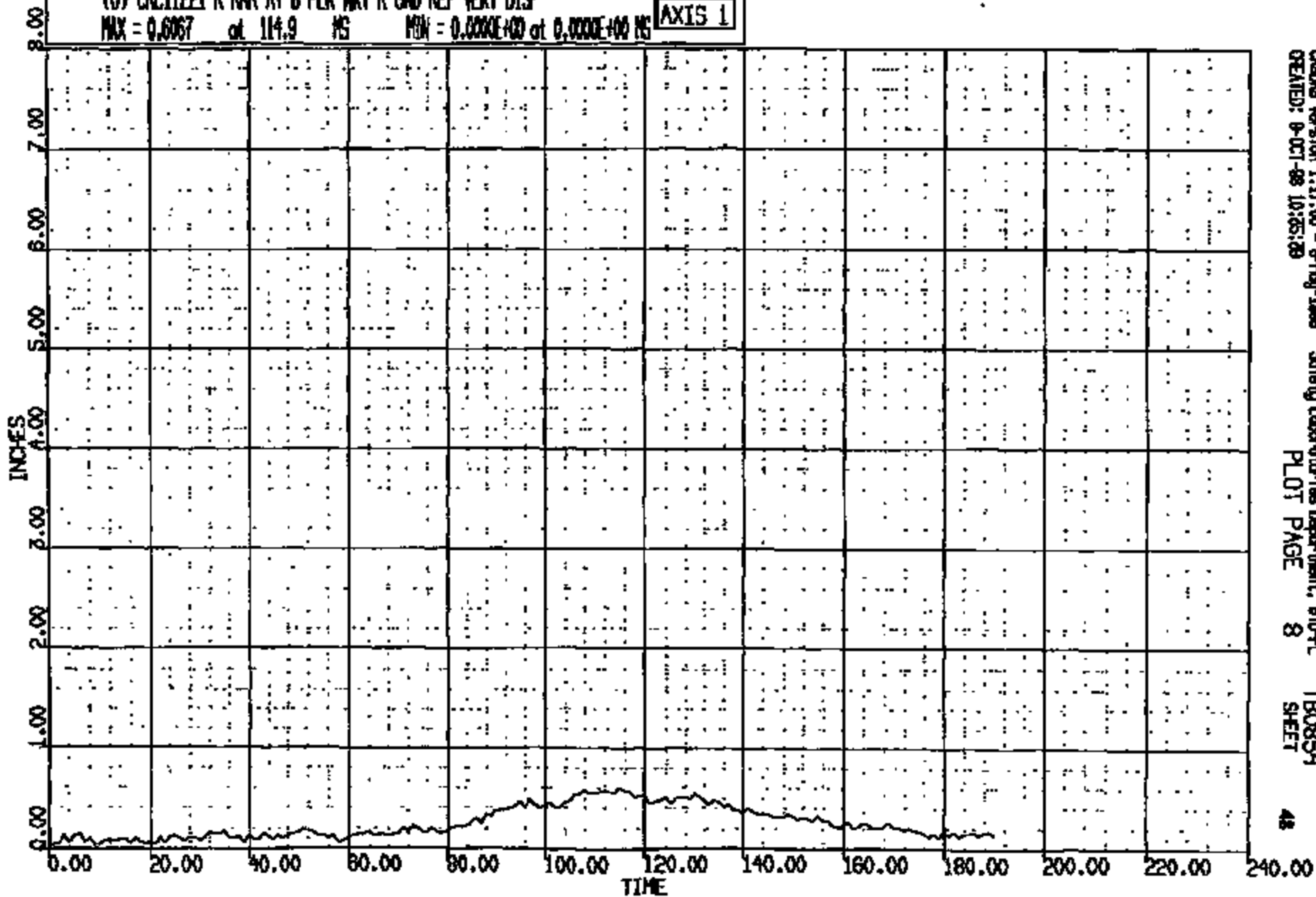
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2000 D-188

(0) CR:11221 R RNR AT B PLR WRT R GND REF VERT DISP

MAX = 0.6067 at 114.9 MS MIN = 0.0000E+00 at 0.0000E+00 MS

AXIS 1



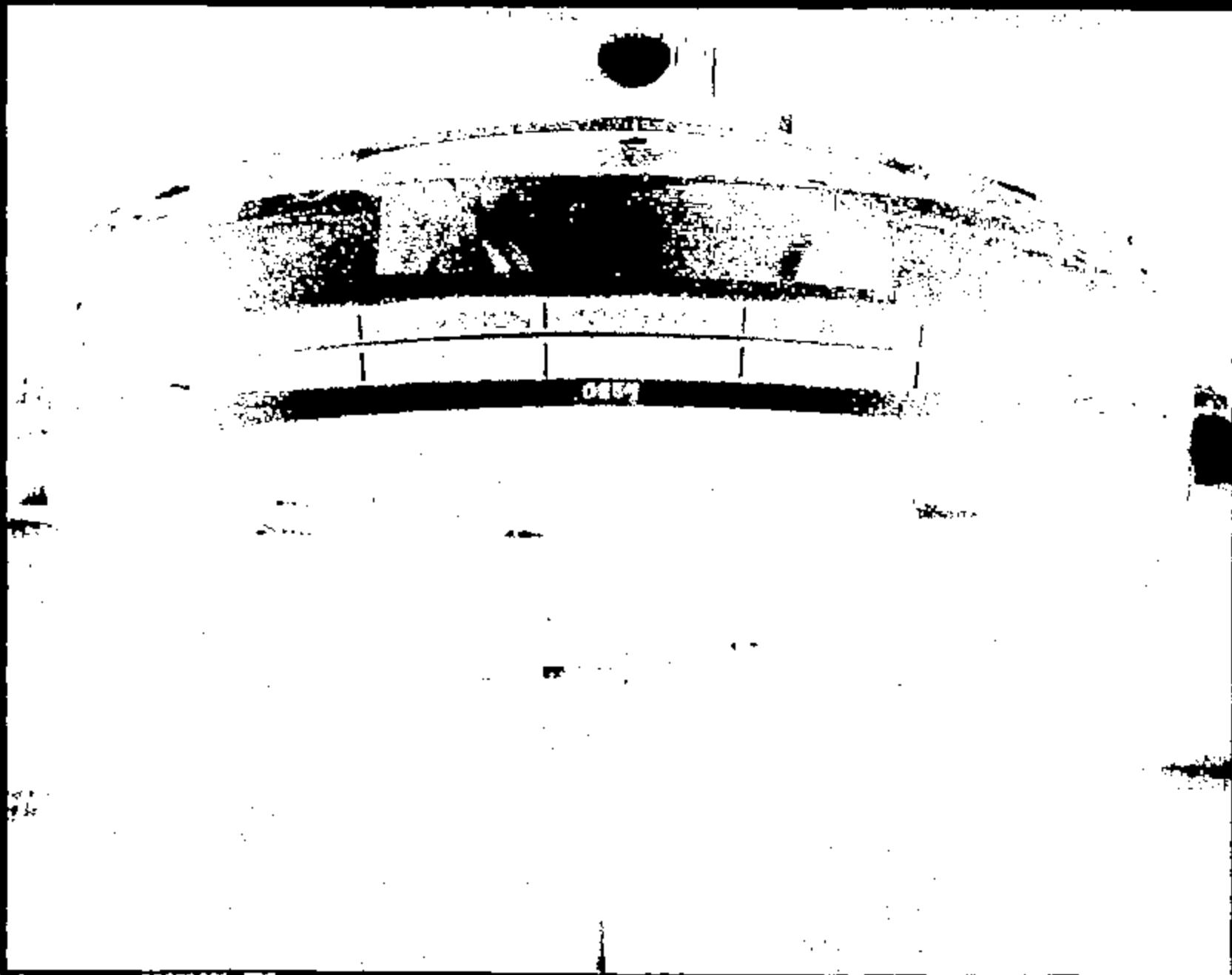
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Safety Laboratories Department, STD-PL  
PLOT PAGE 8

TB0854  
SHEET

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CRTS 0011221



Name :

11221001.JPG

CRIS 0011221



11221002

Photo 7



Name :

11221009.JPG

CRTS 0011221



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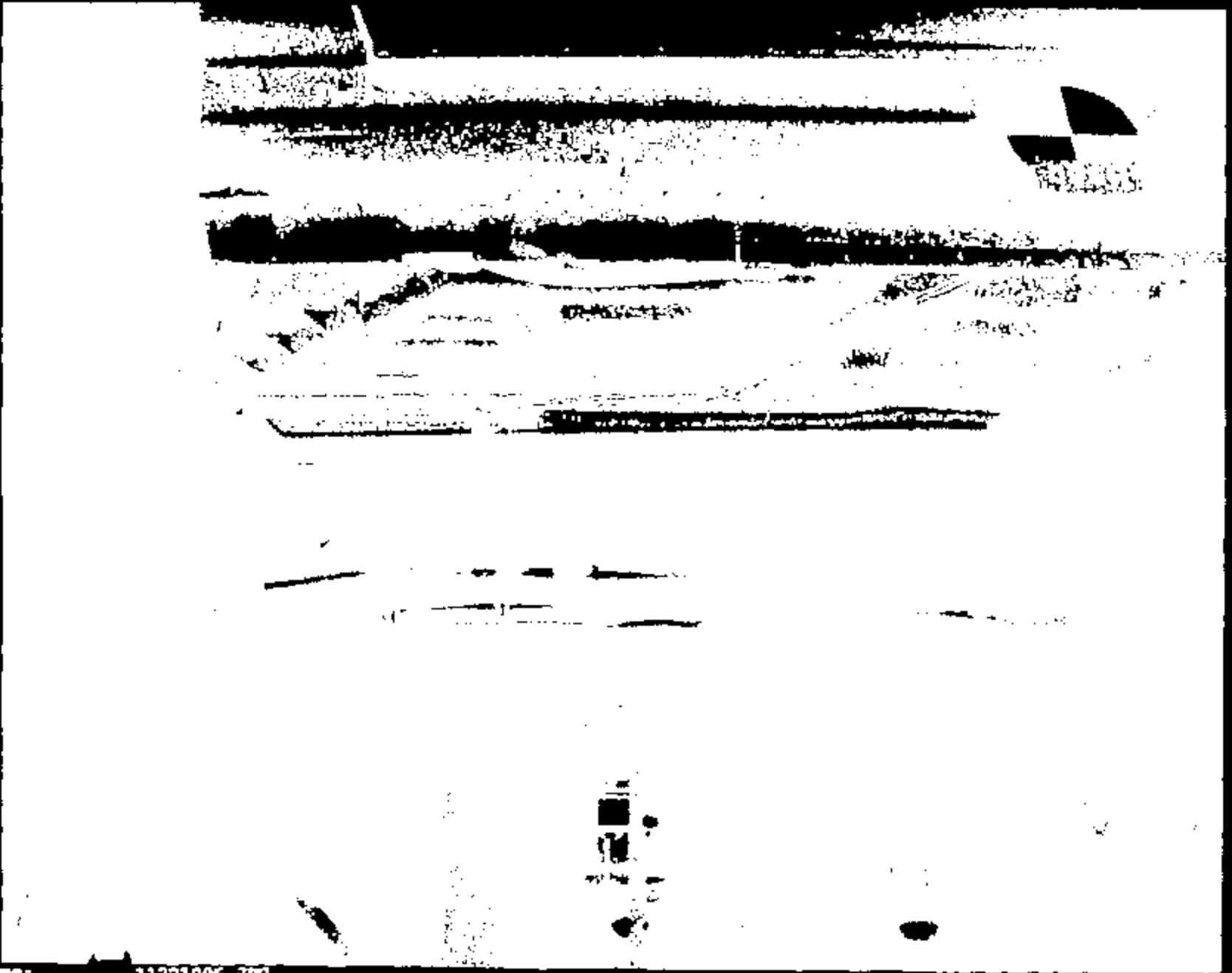
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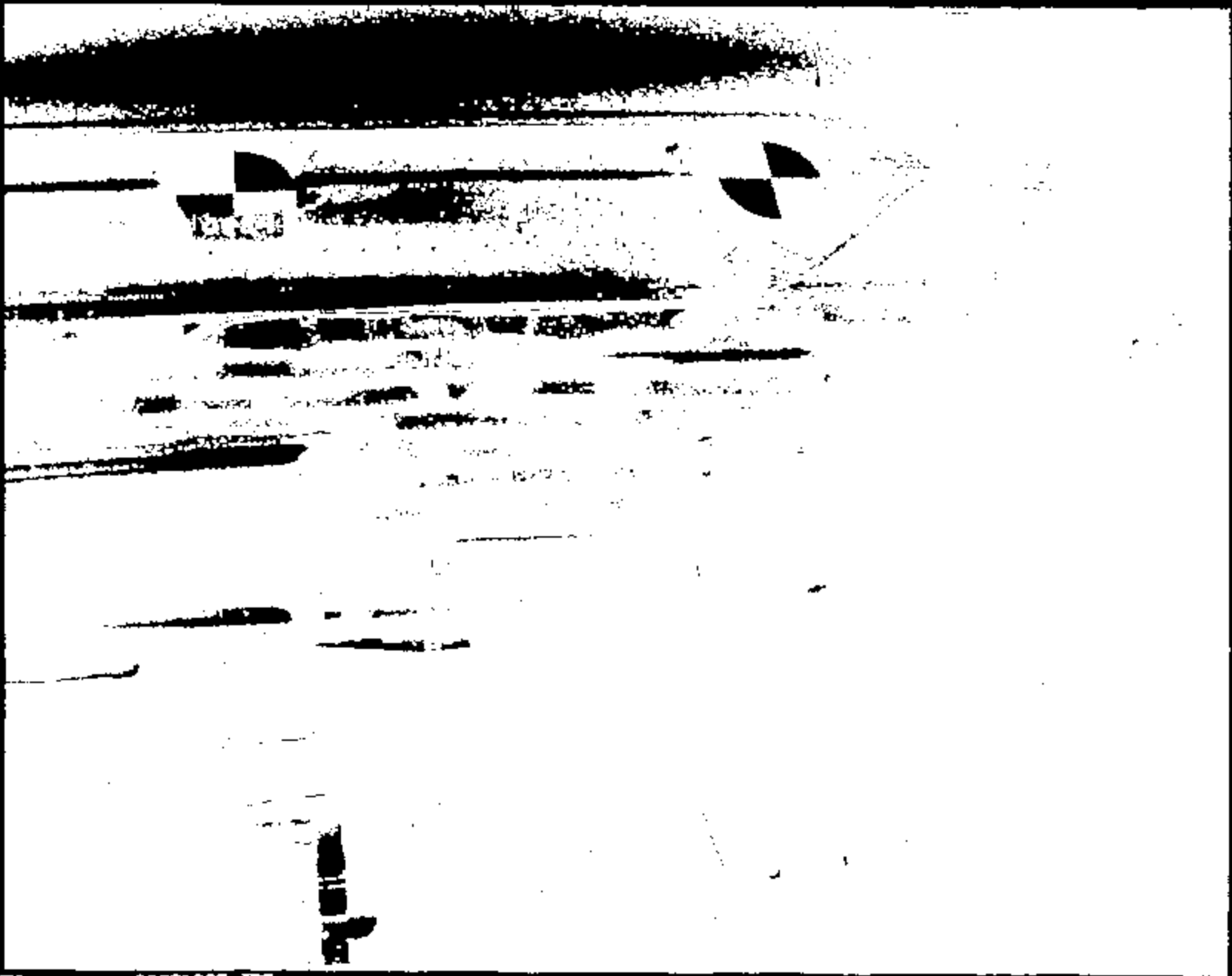
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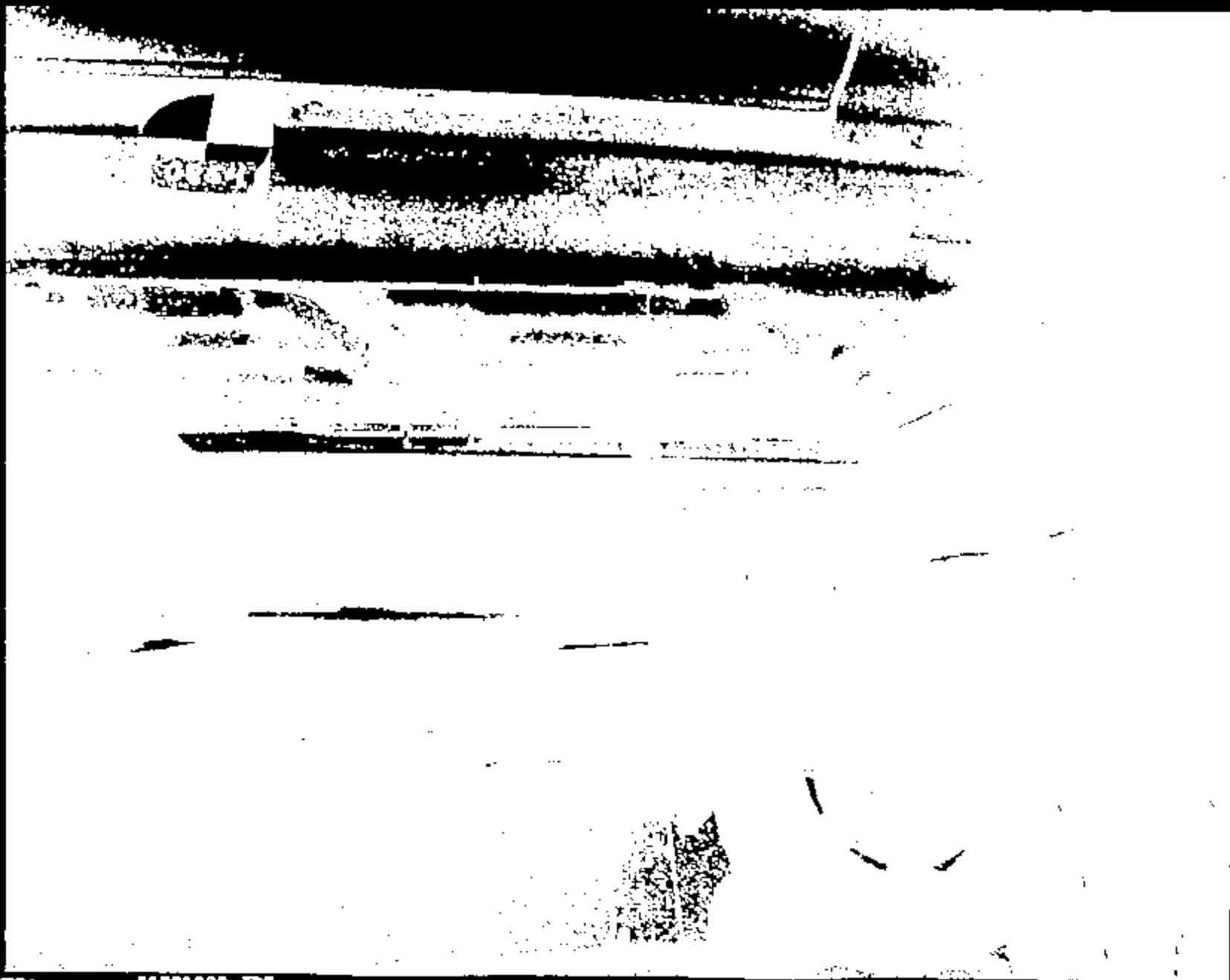


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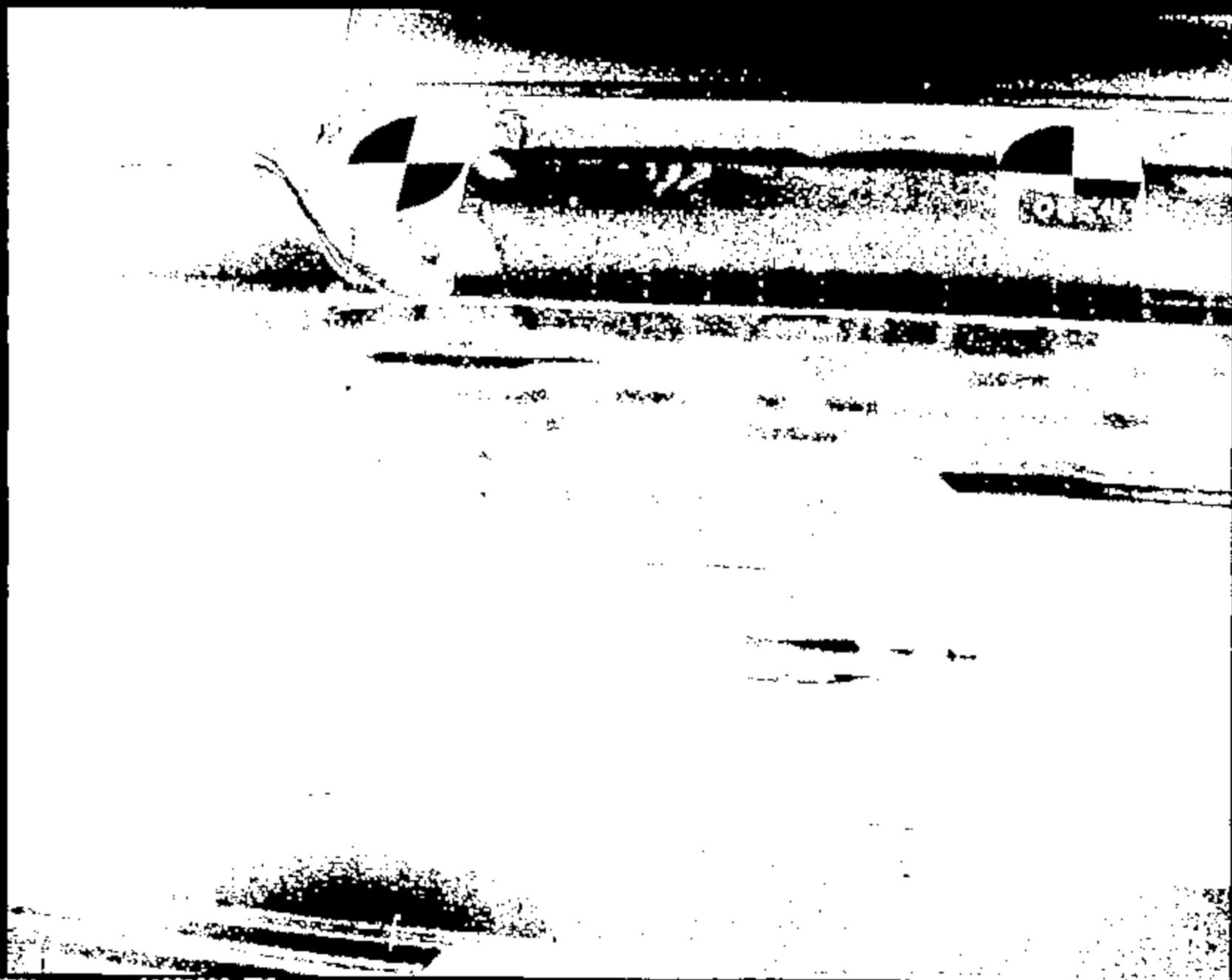
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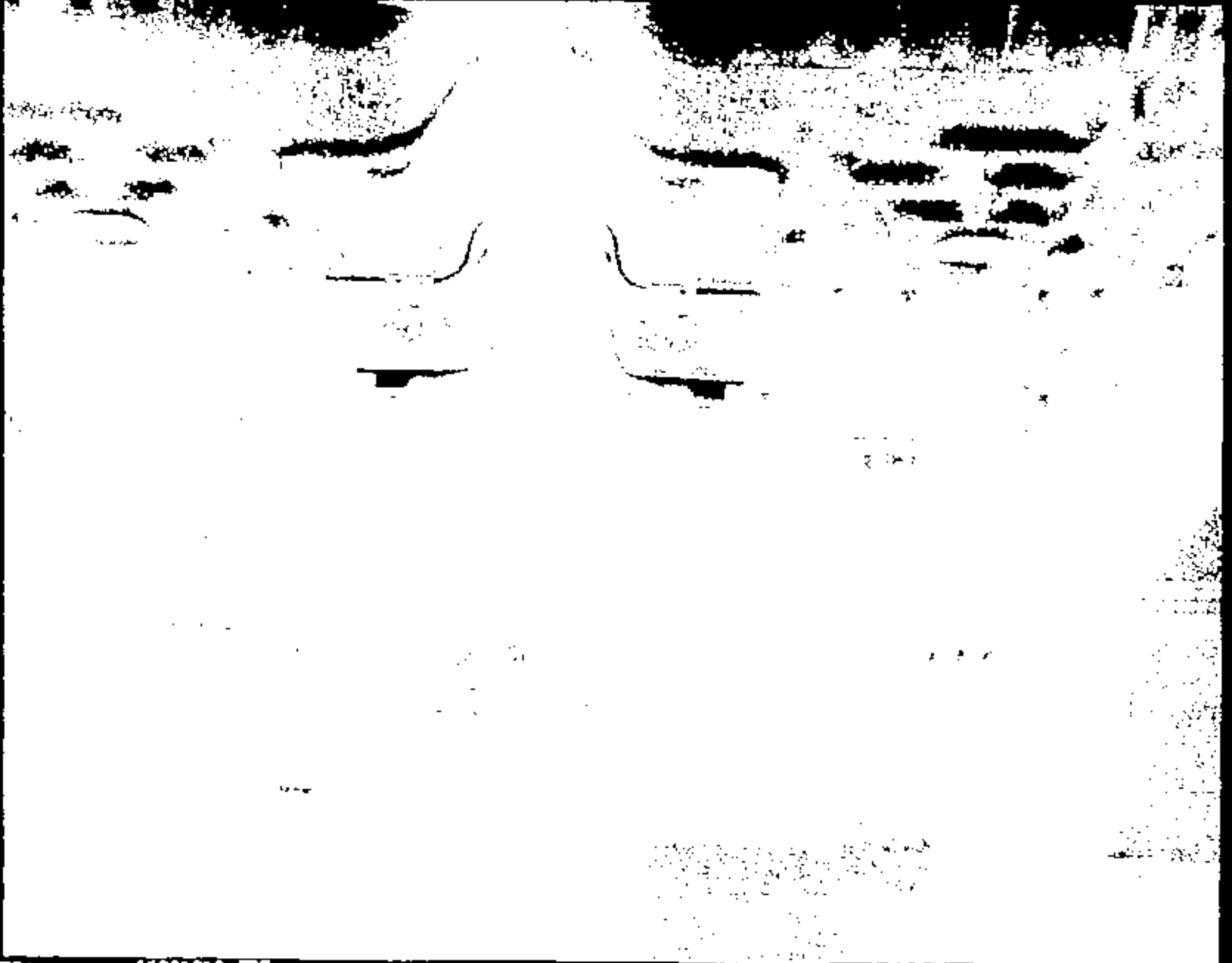


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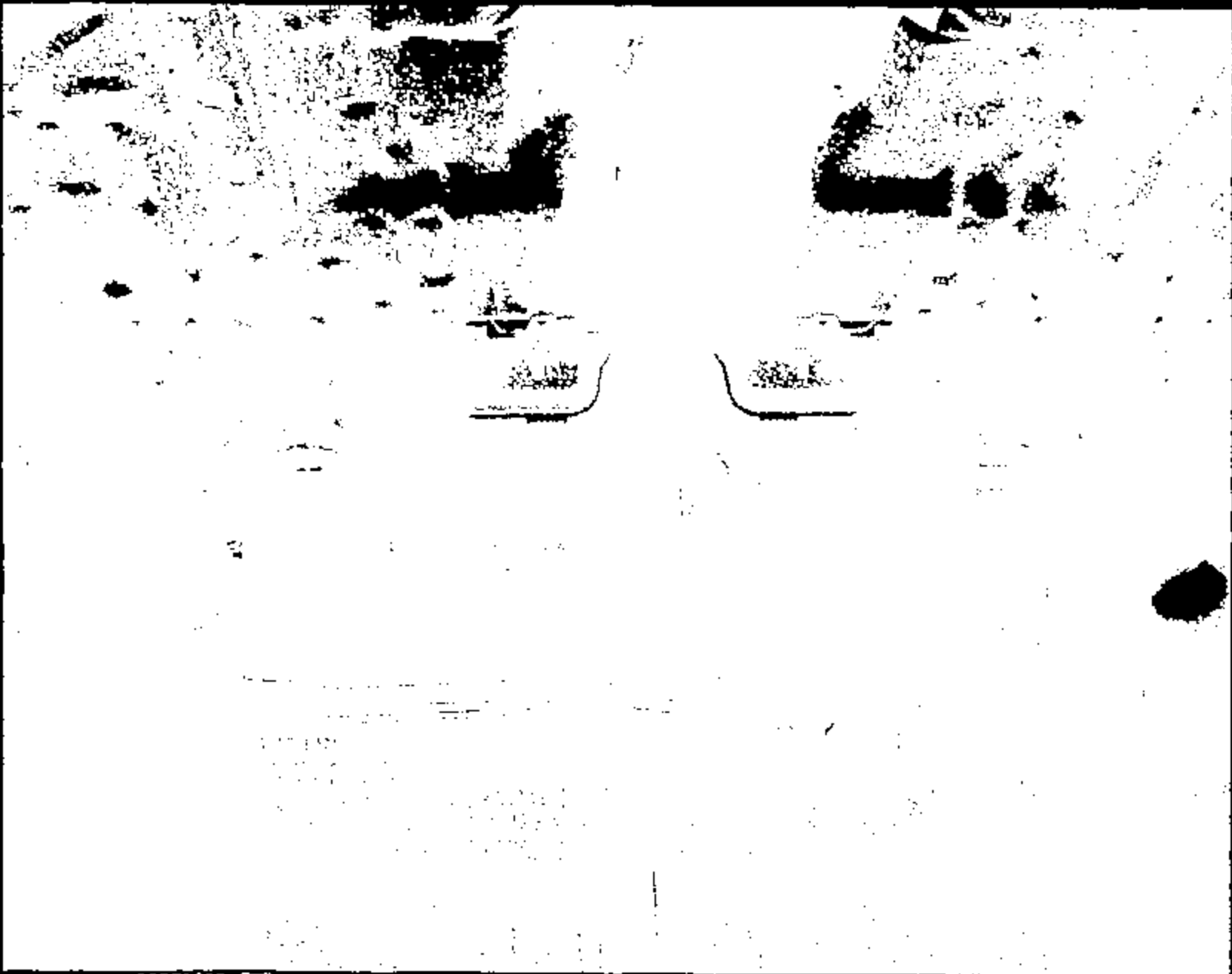


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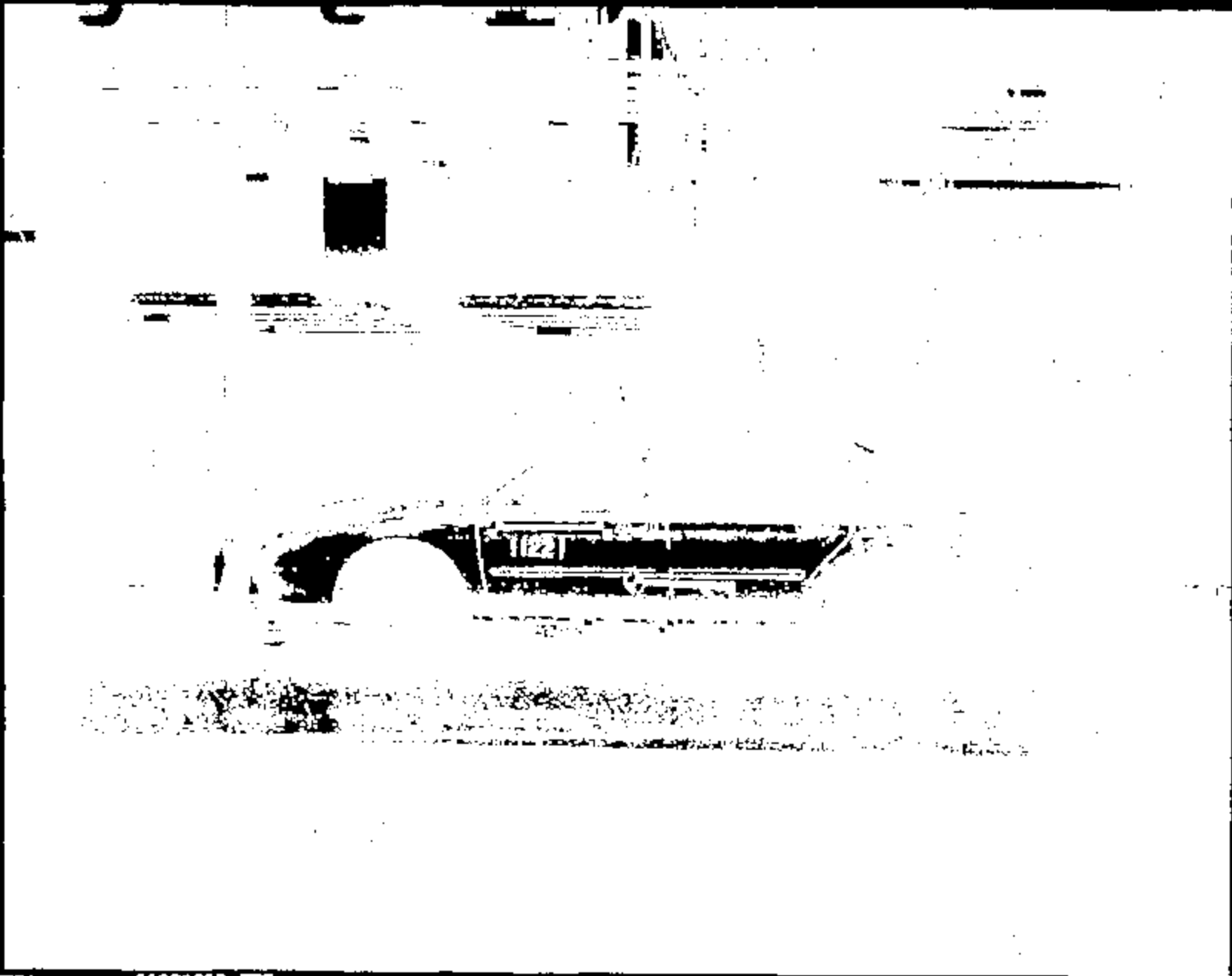
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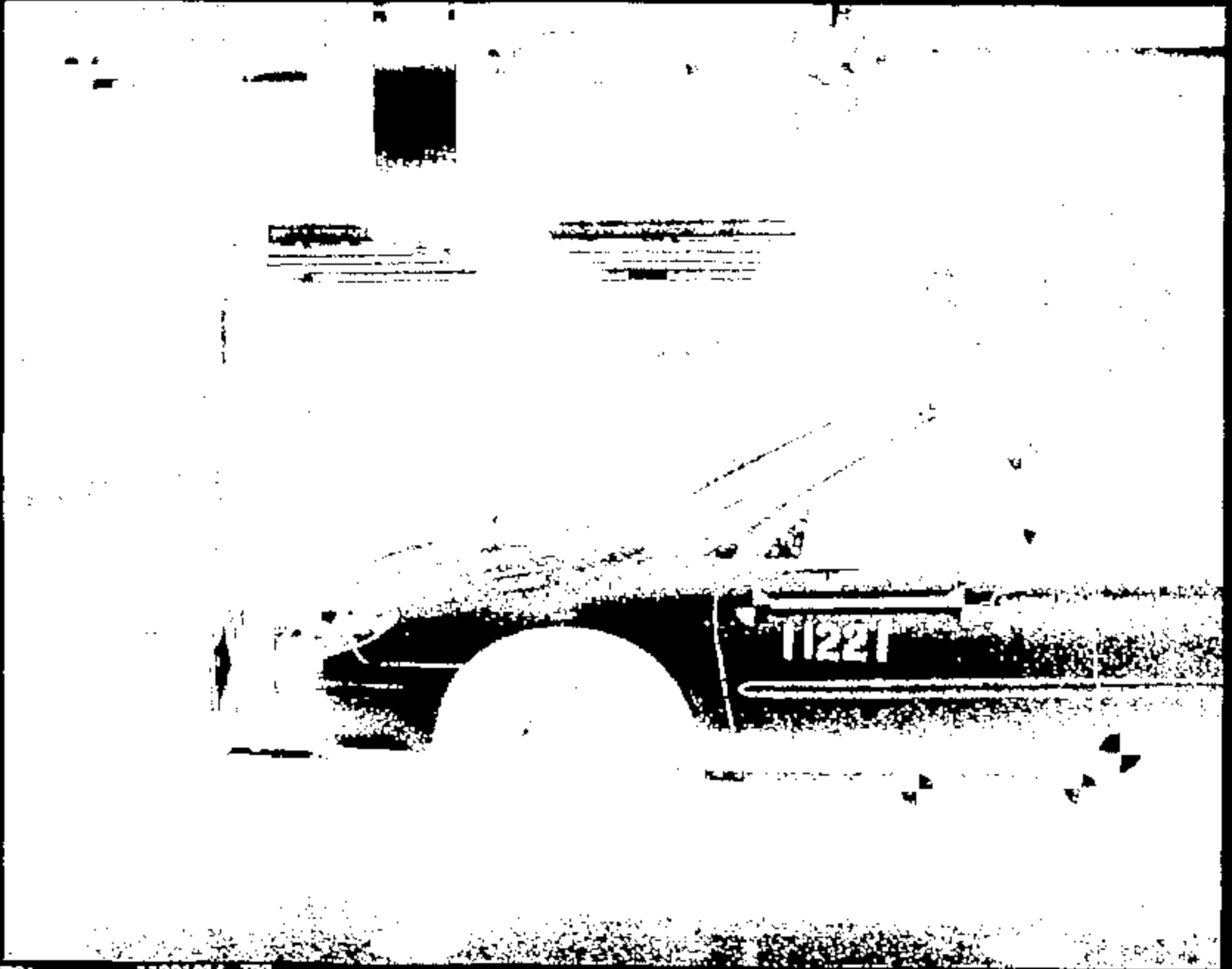
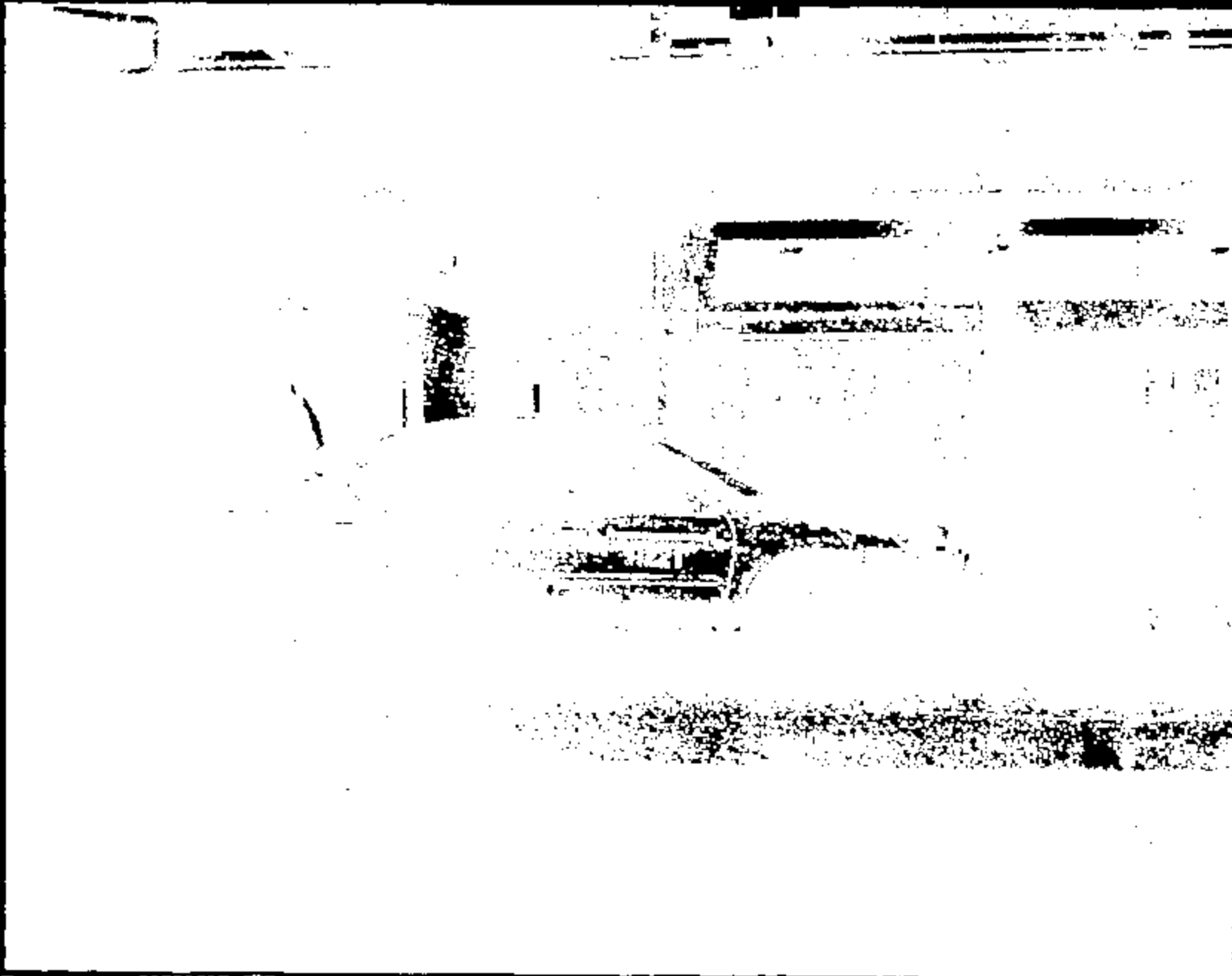


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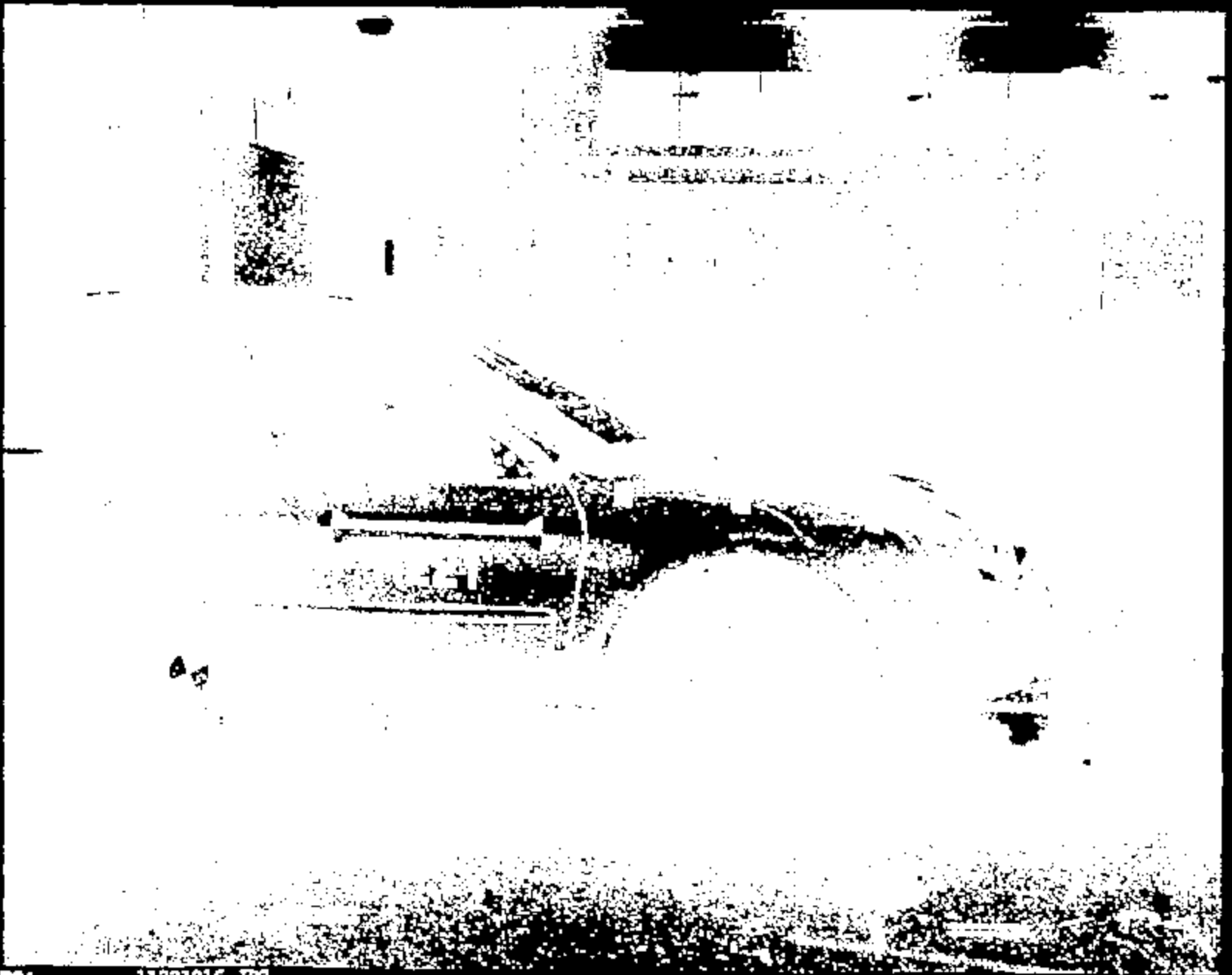


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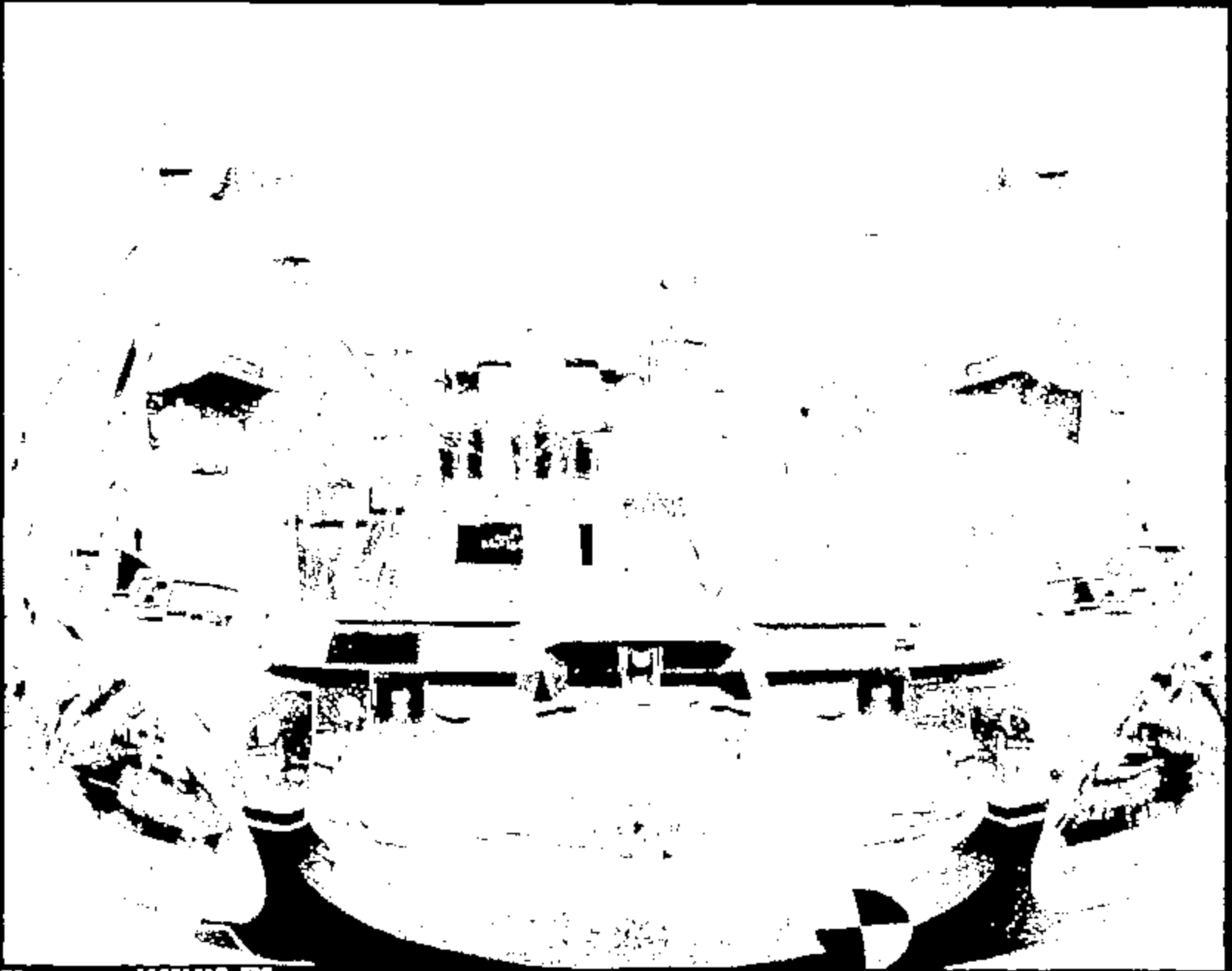
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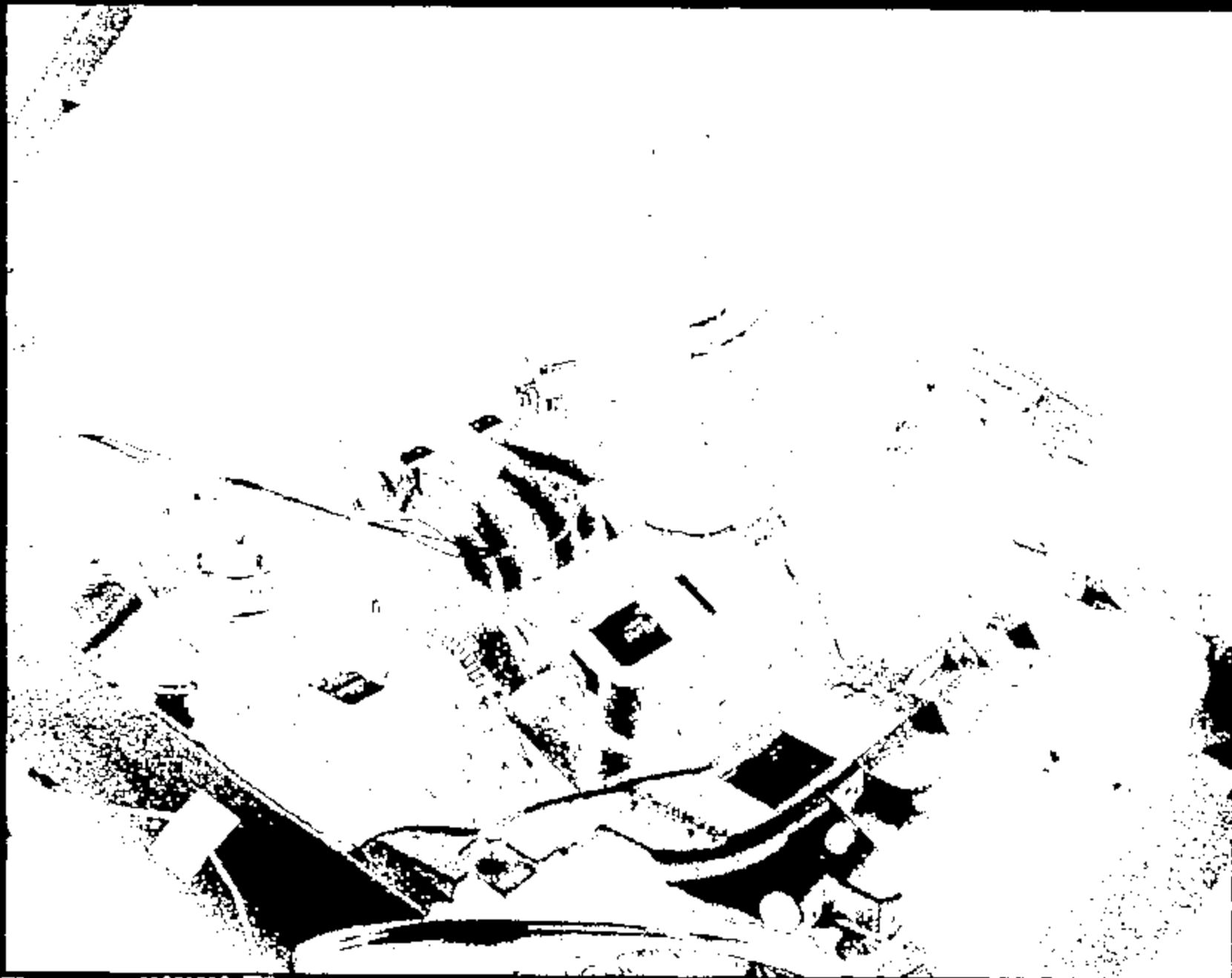


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Name:

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Name:

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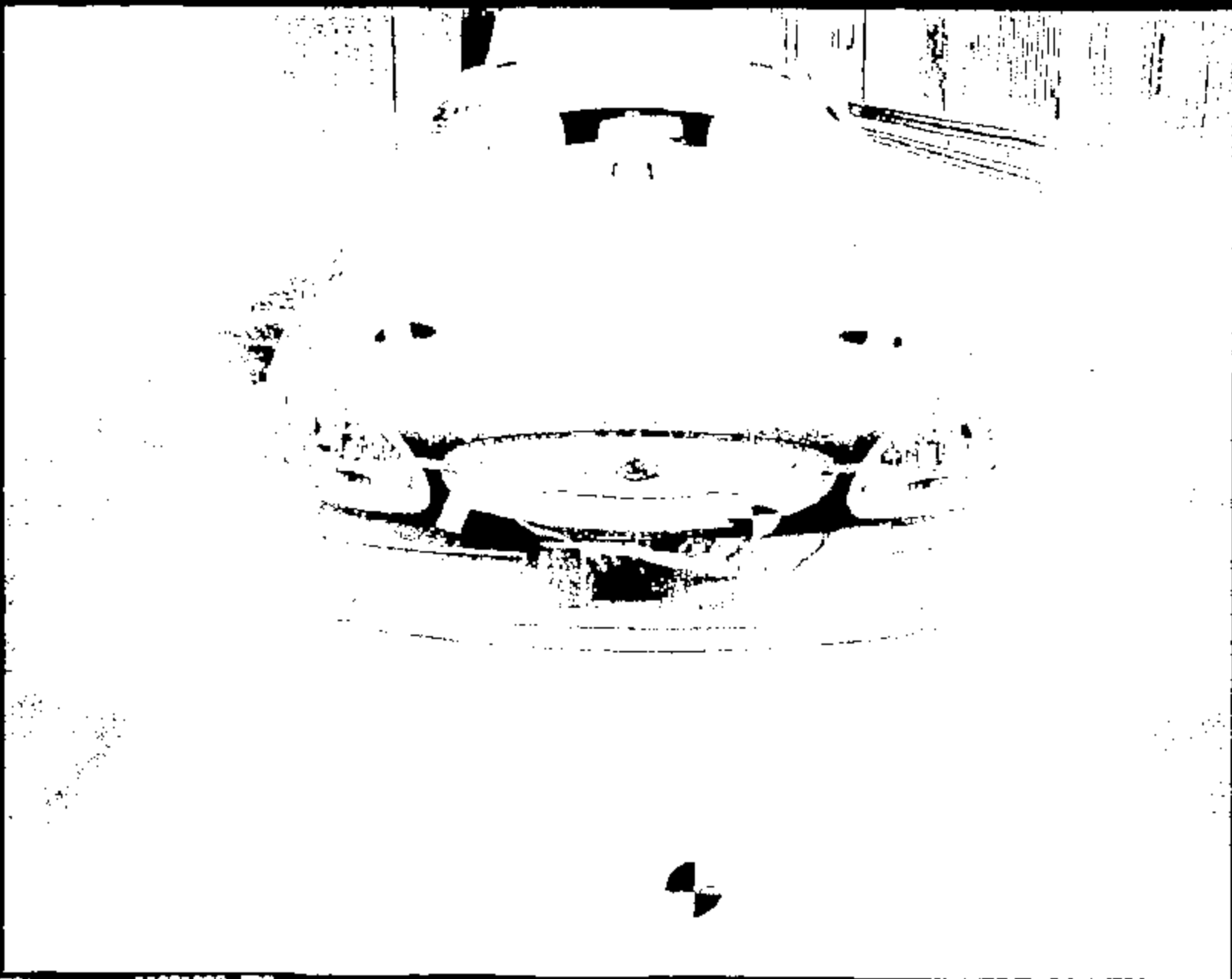
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Name:

11221022.JPG

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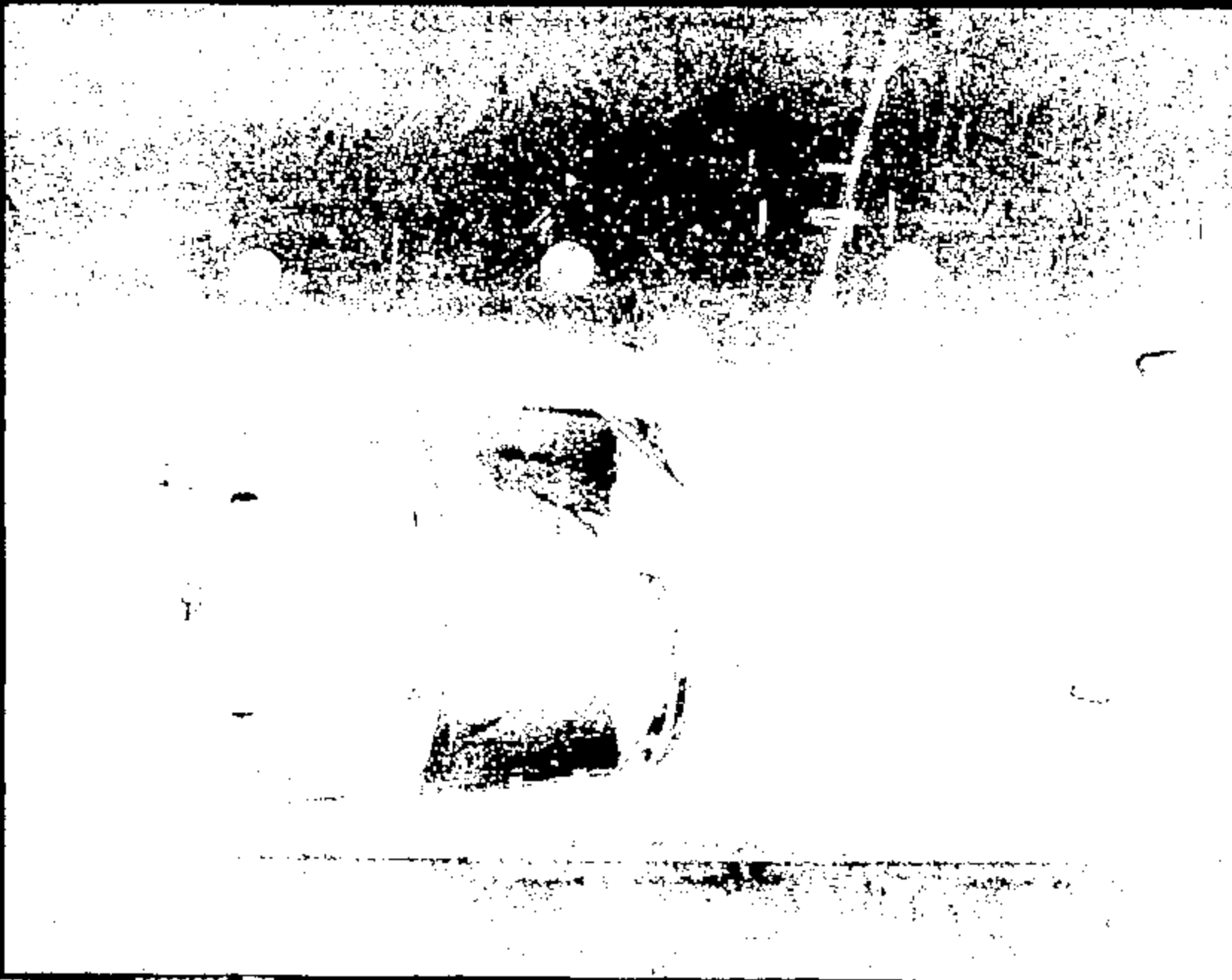
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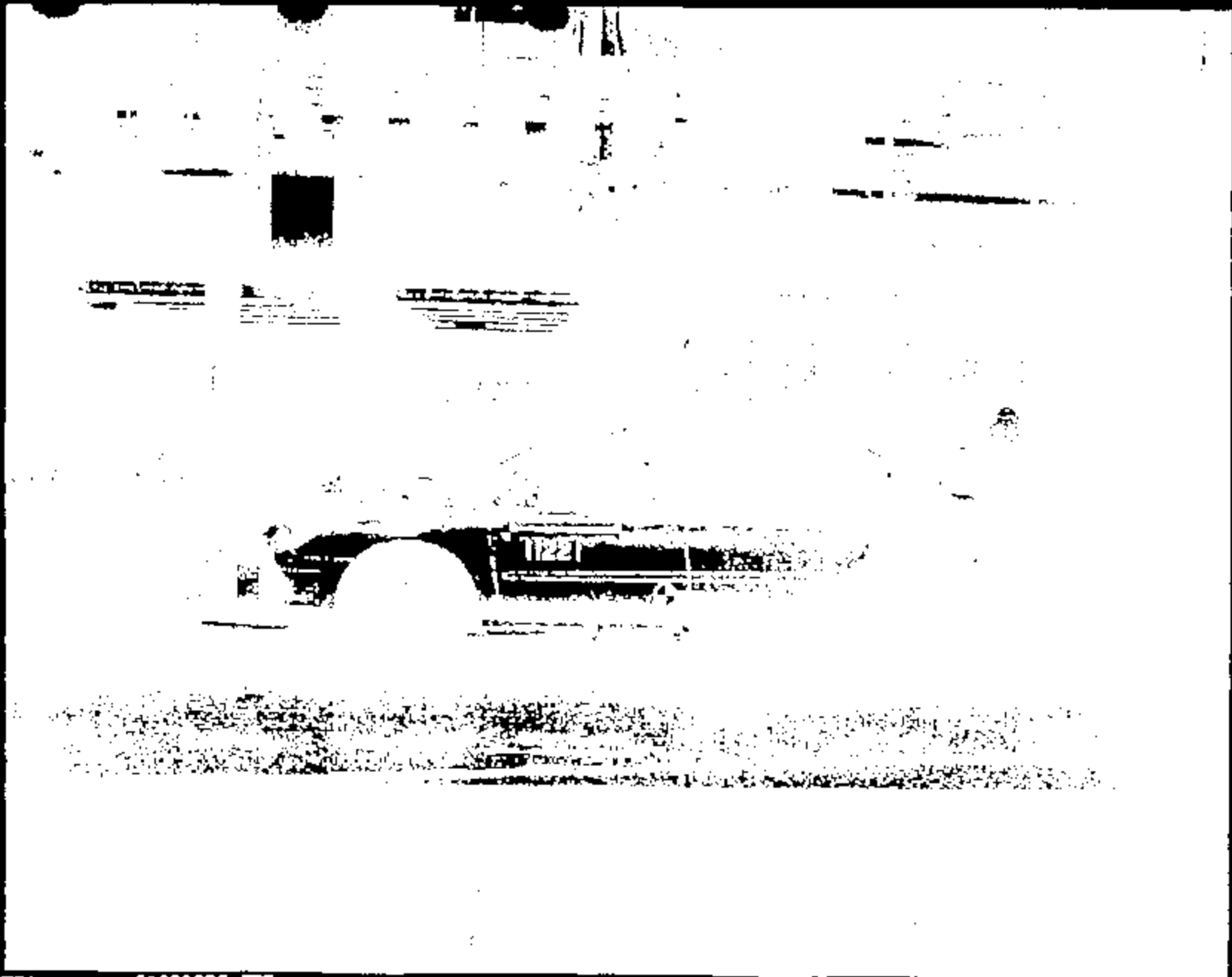


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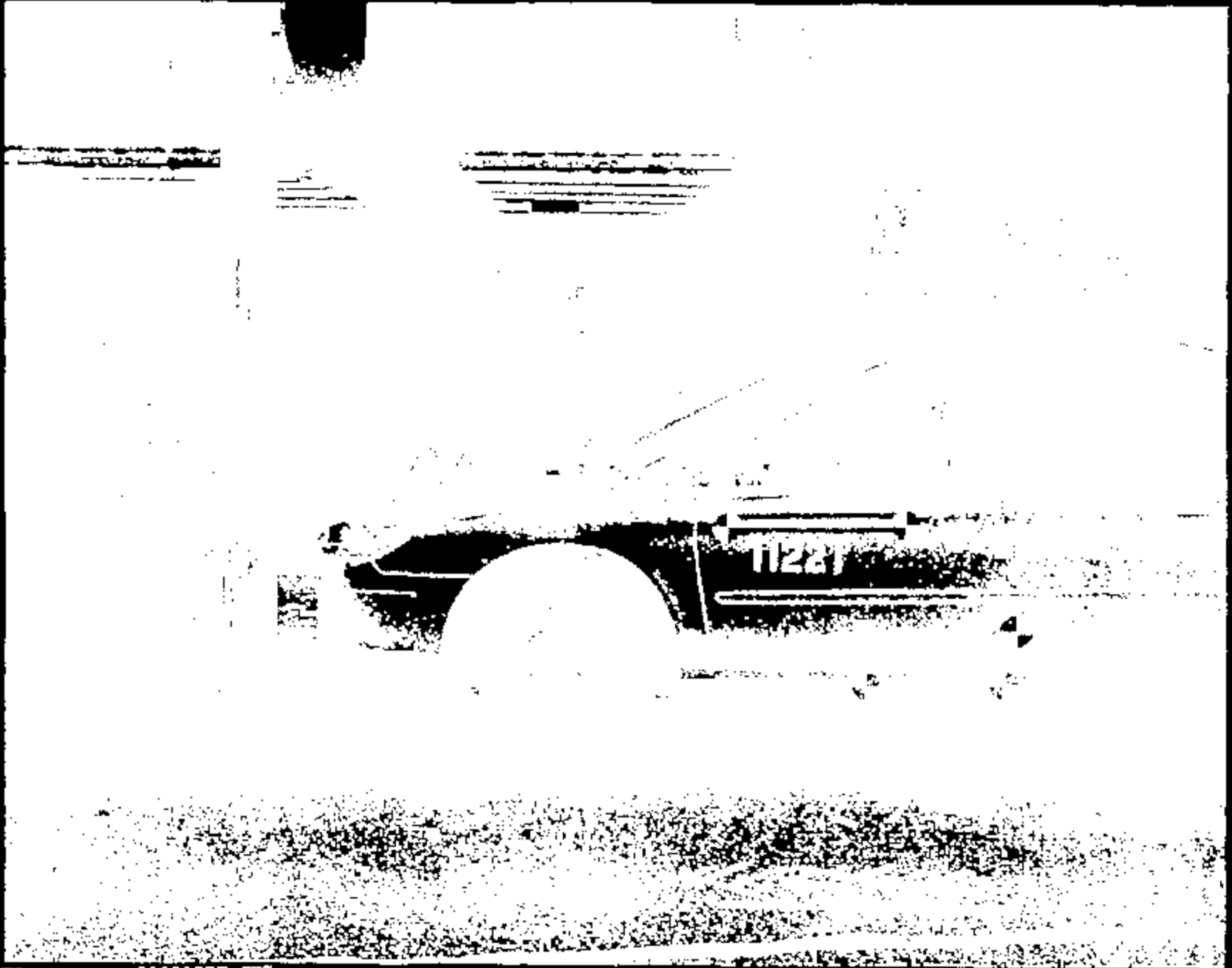


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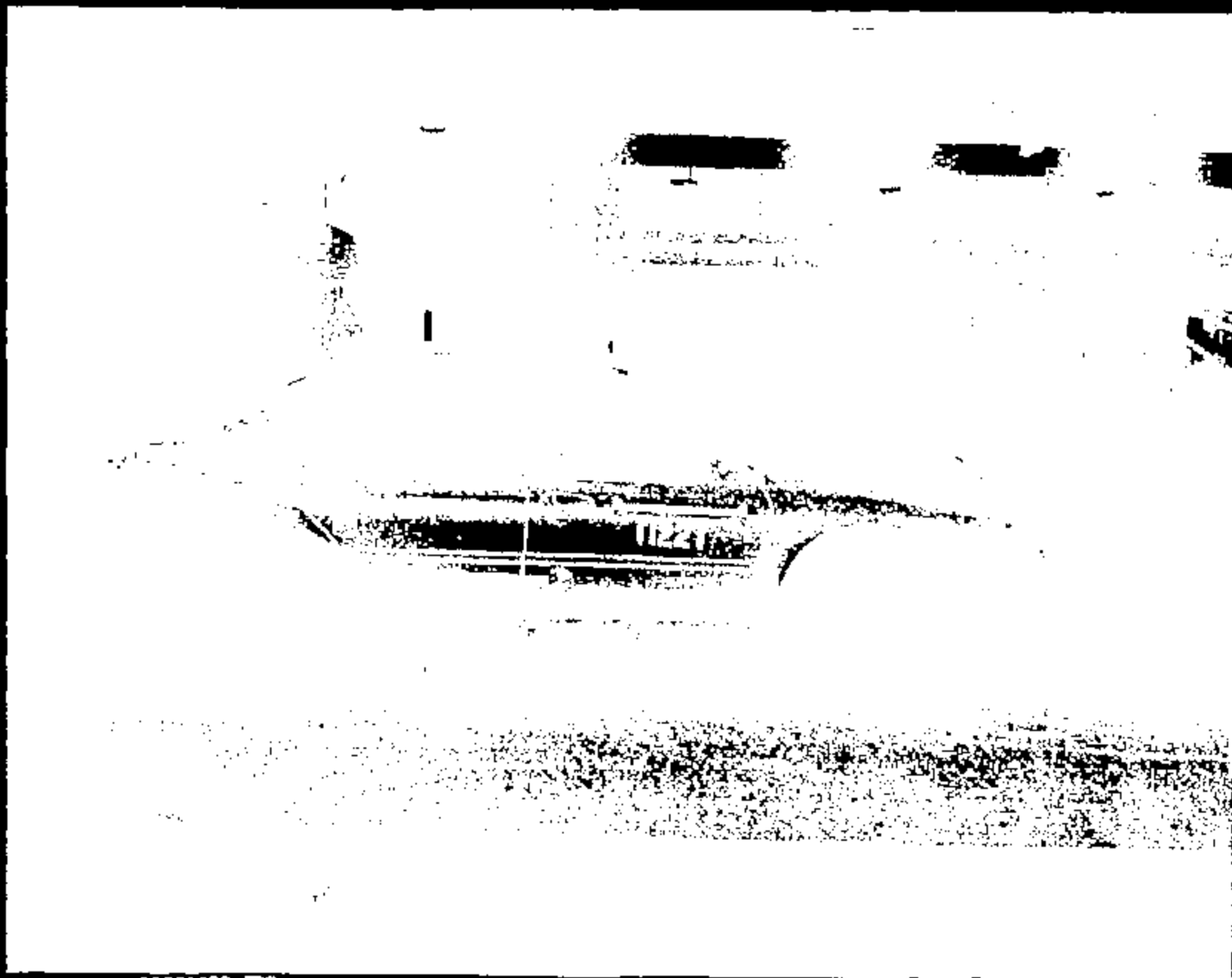
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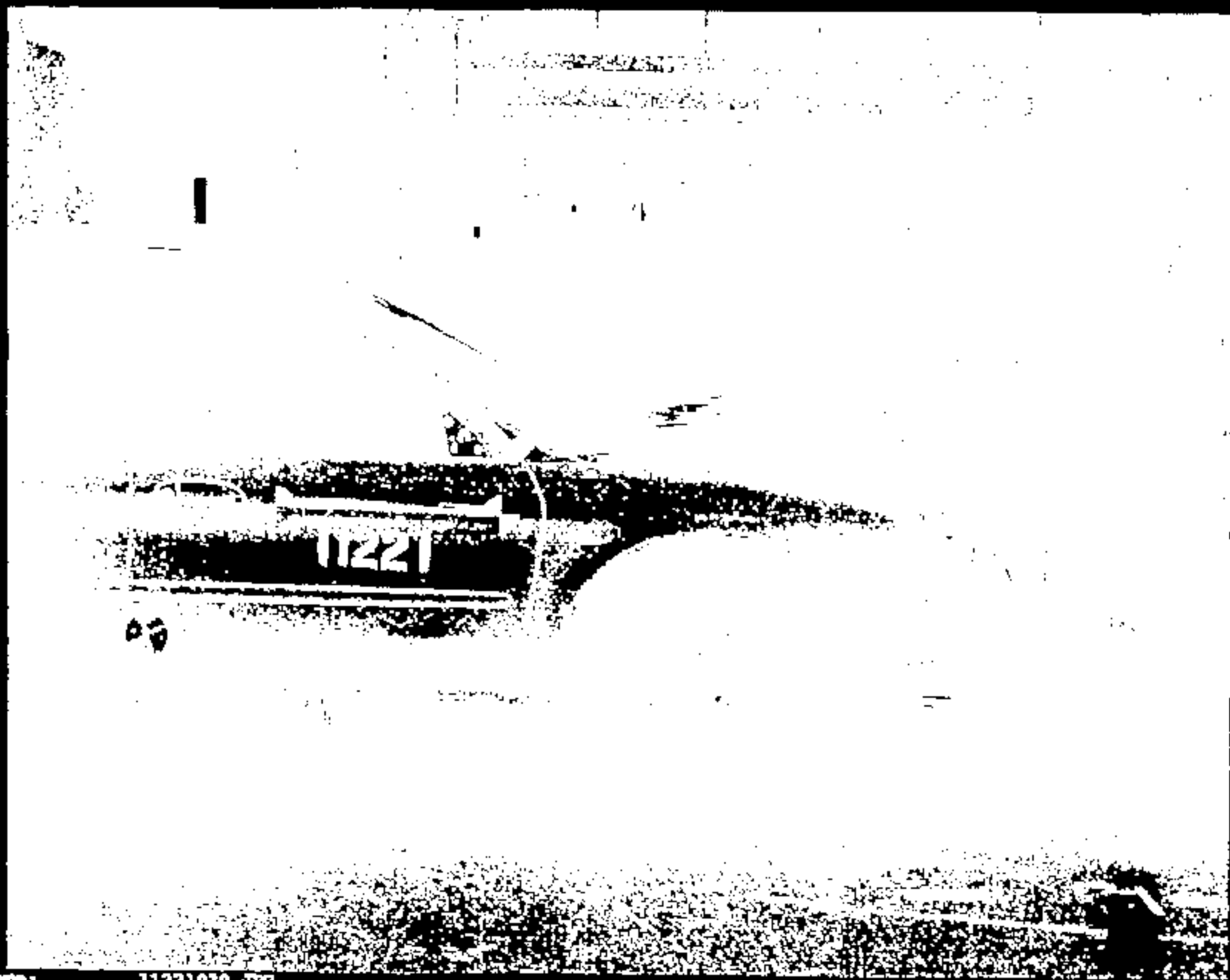
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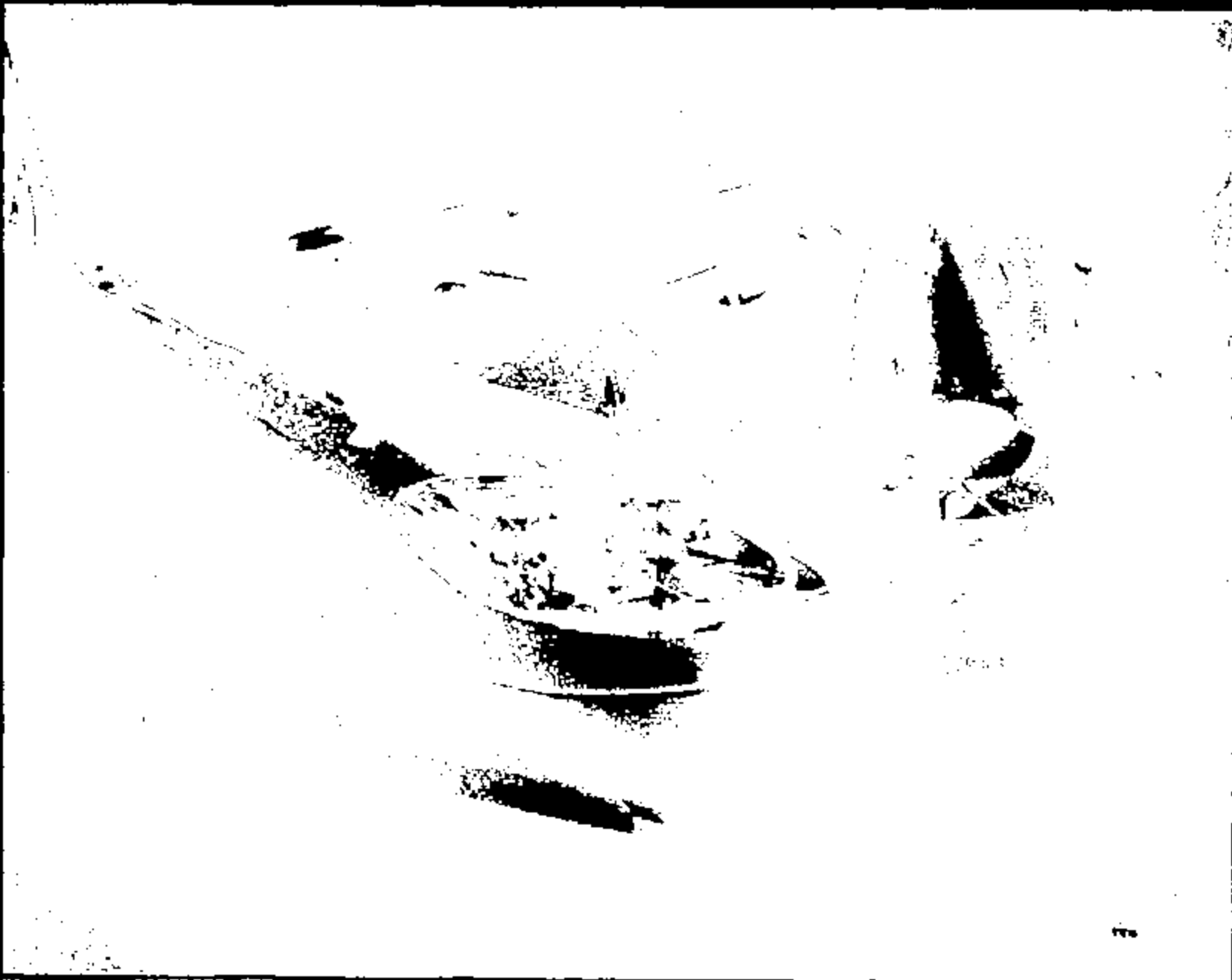
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CRTS 0011221



12

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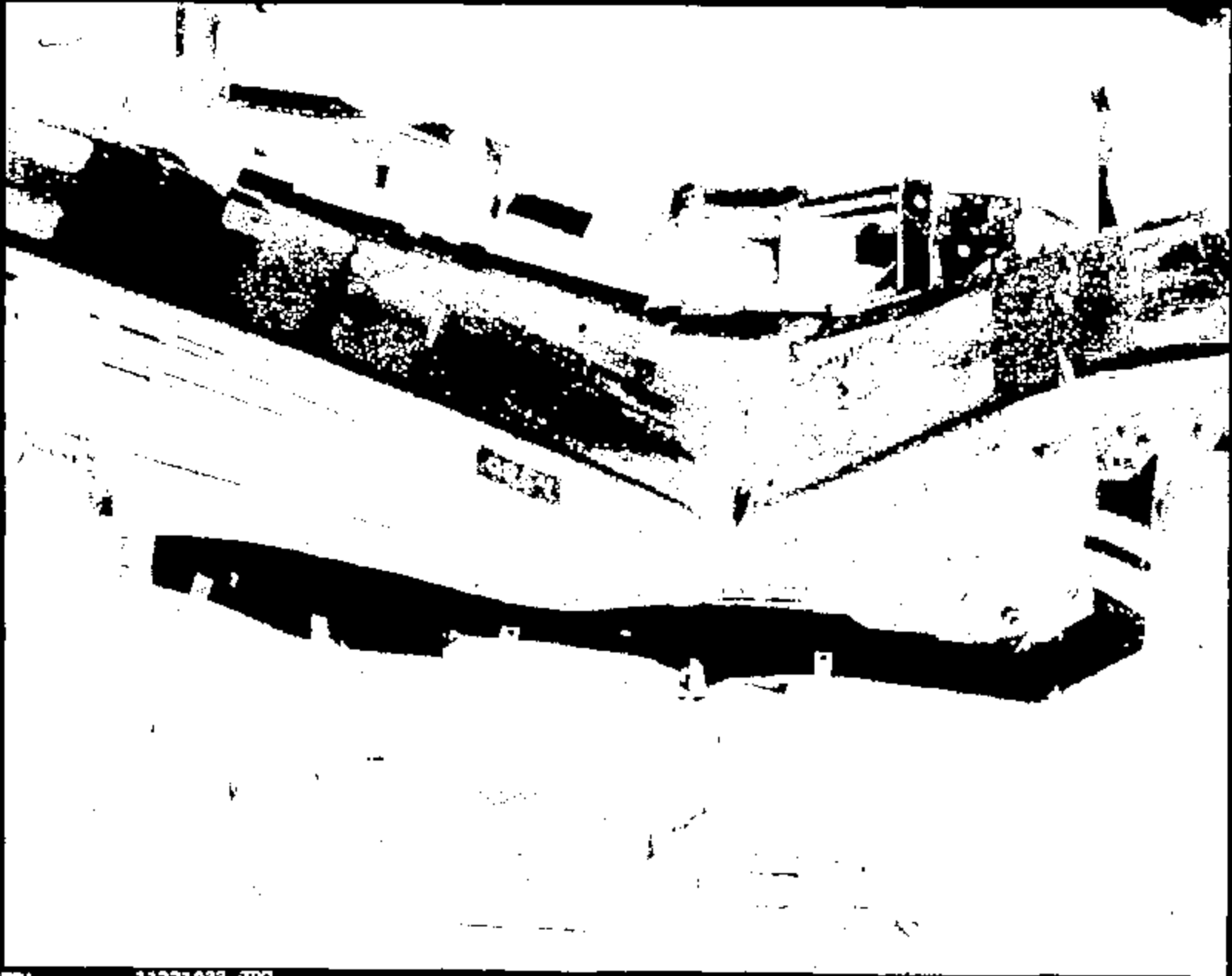
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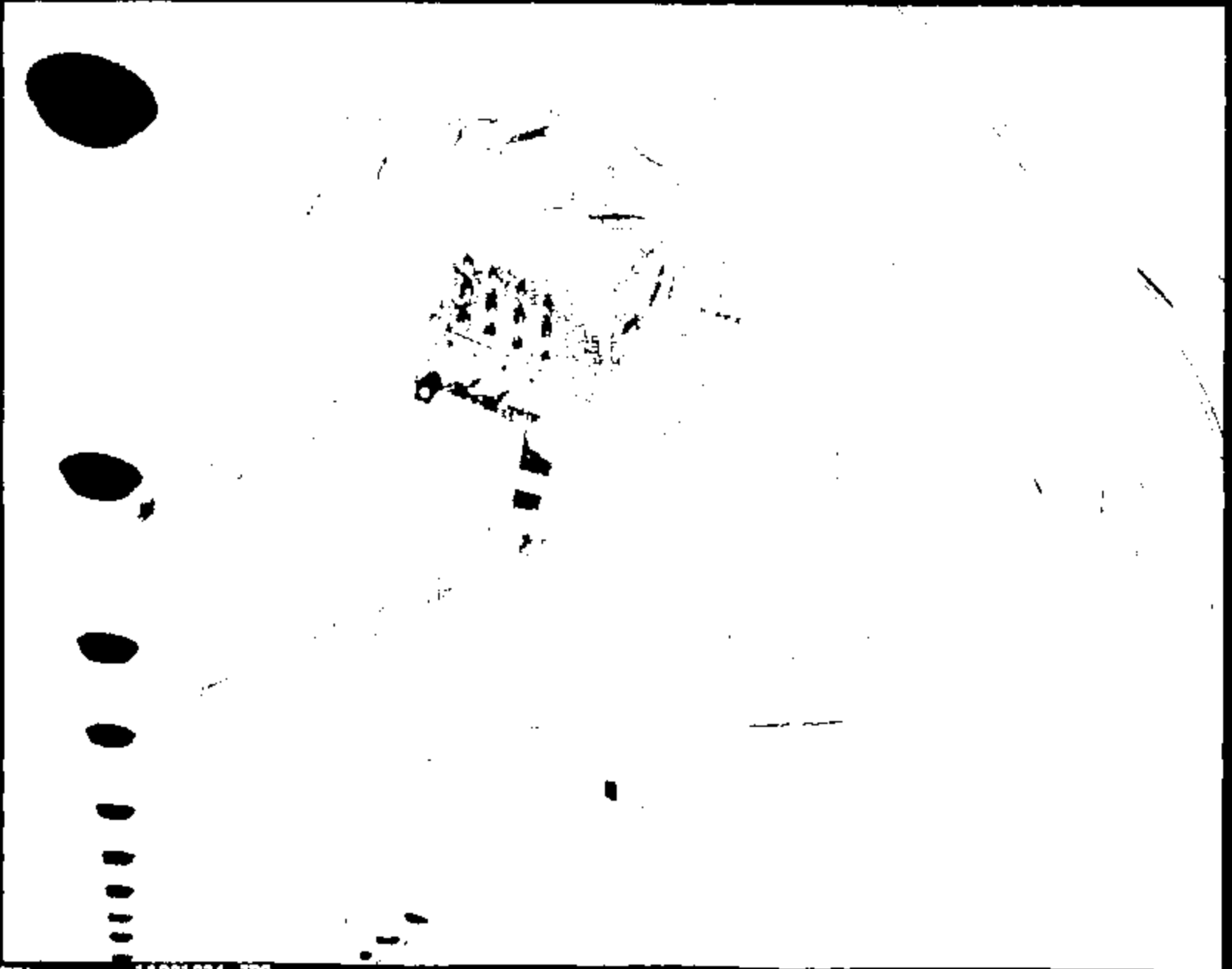
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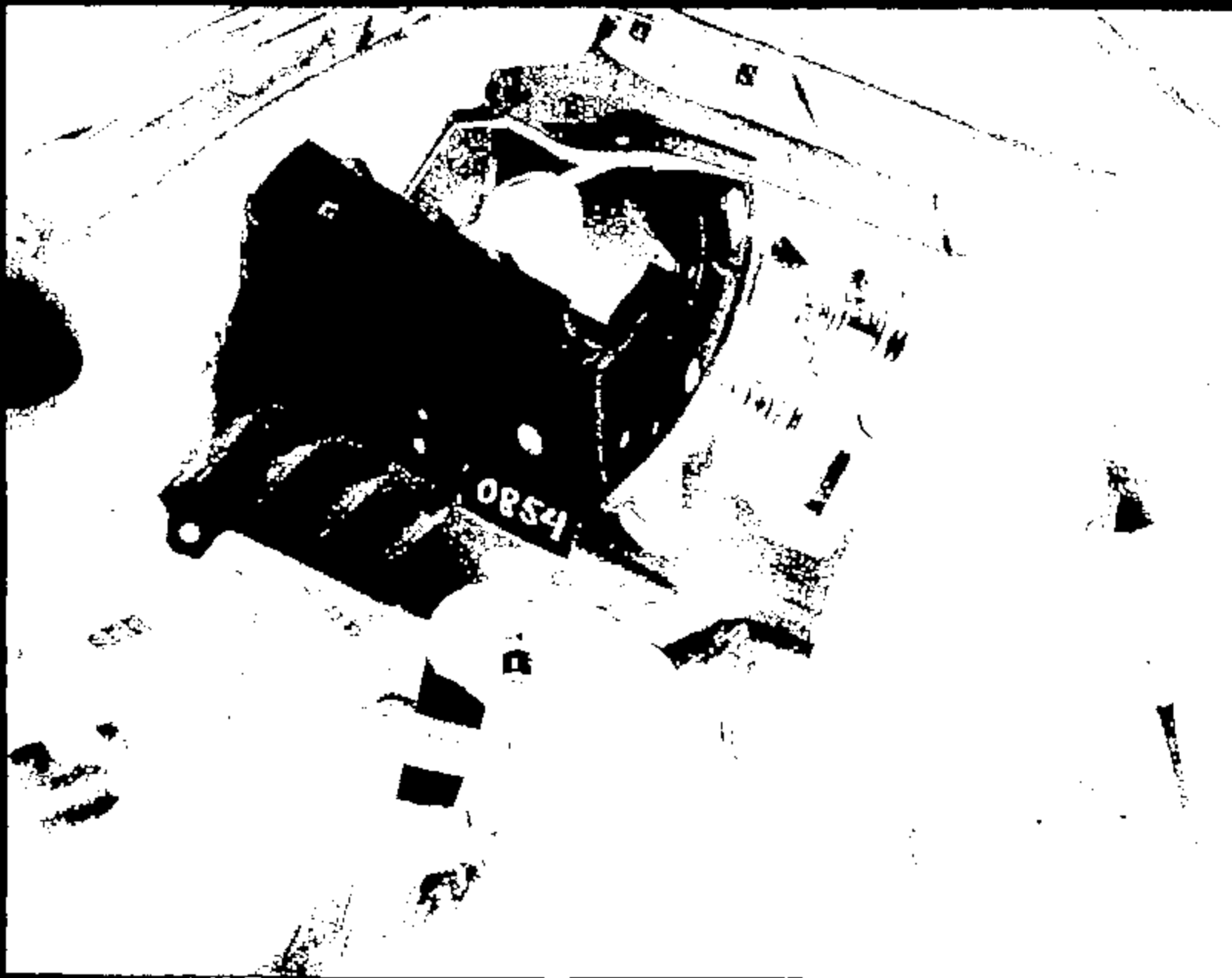
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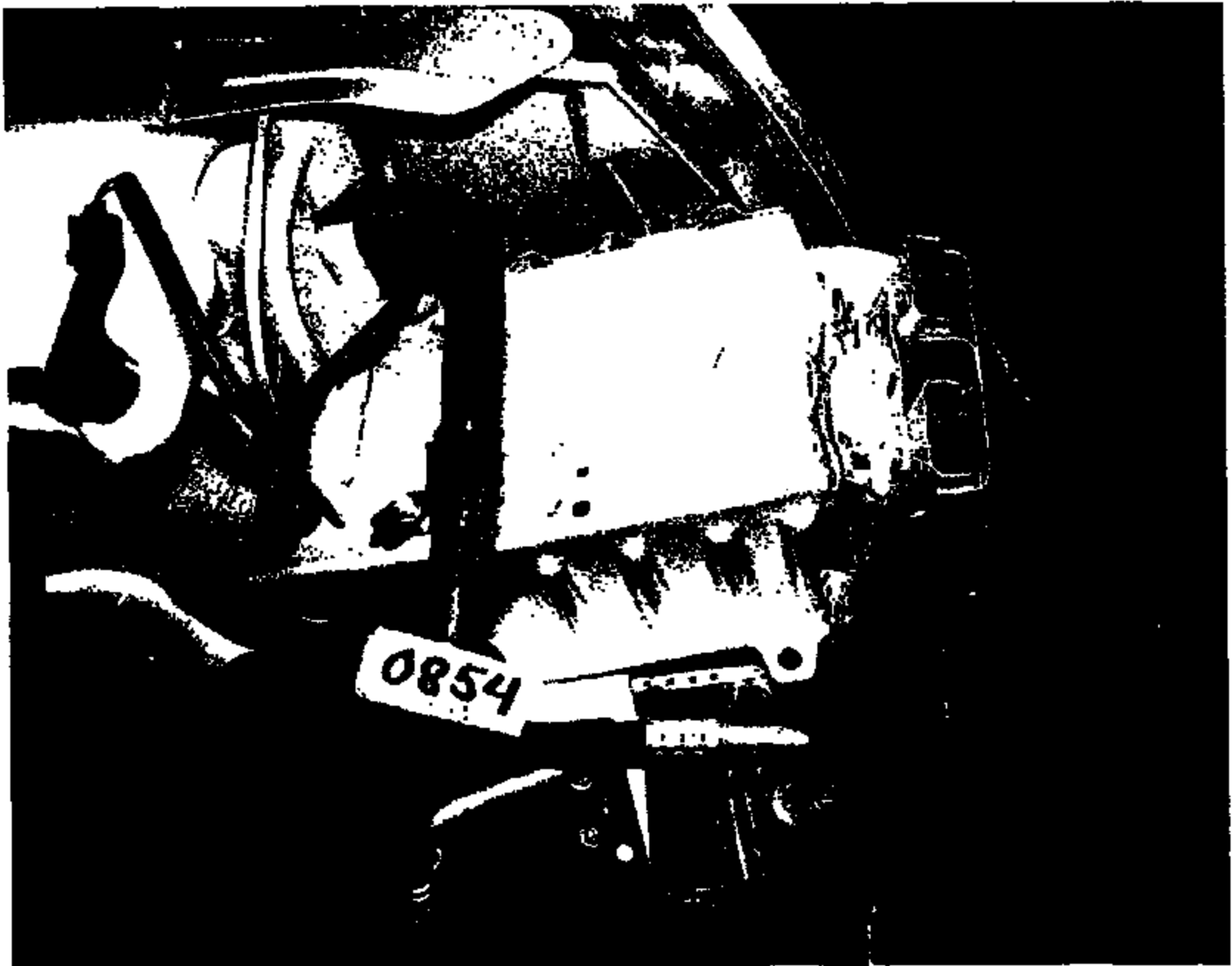
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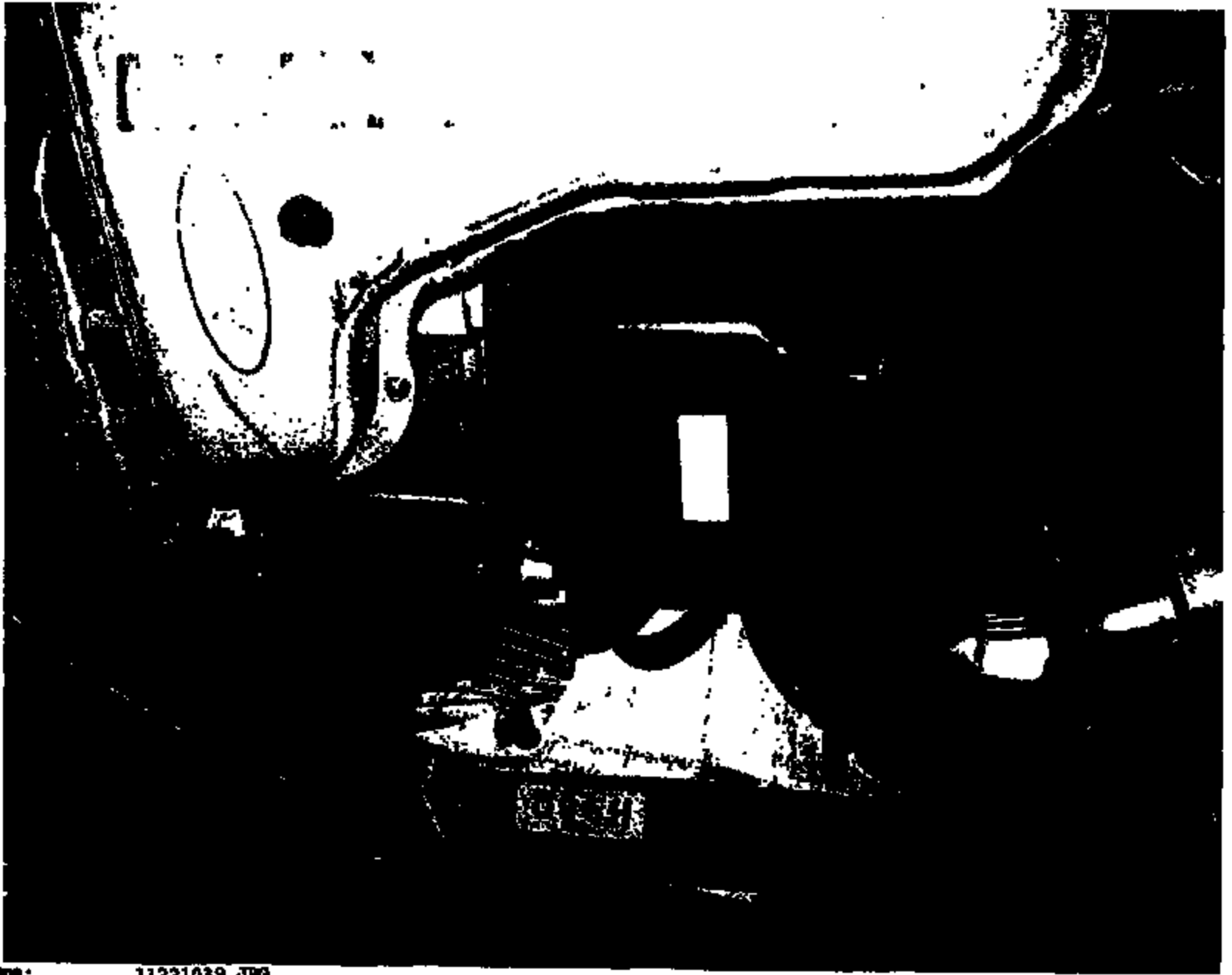
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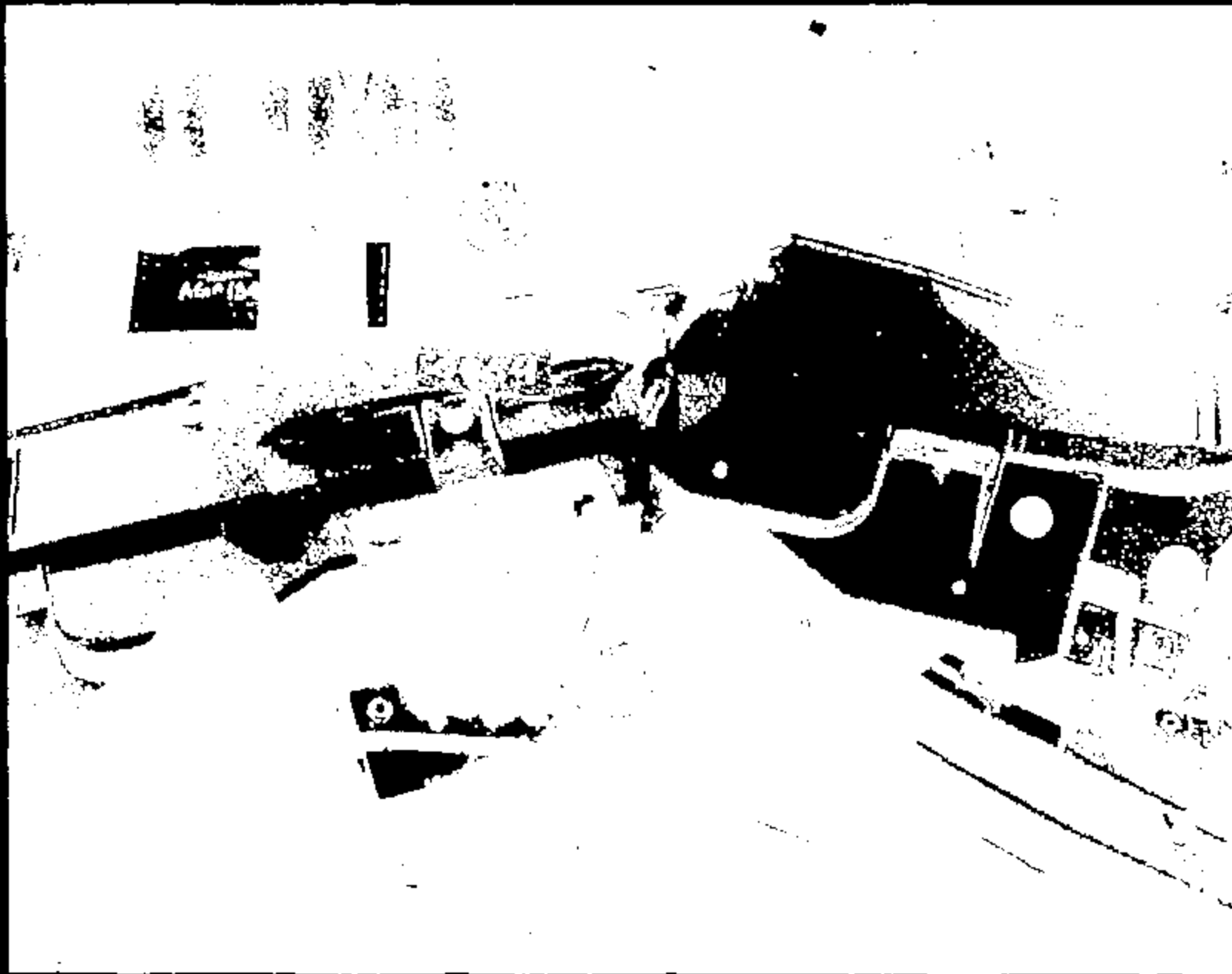




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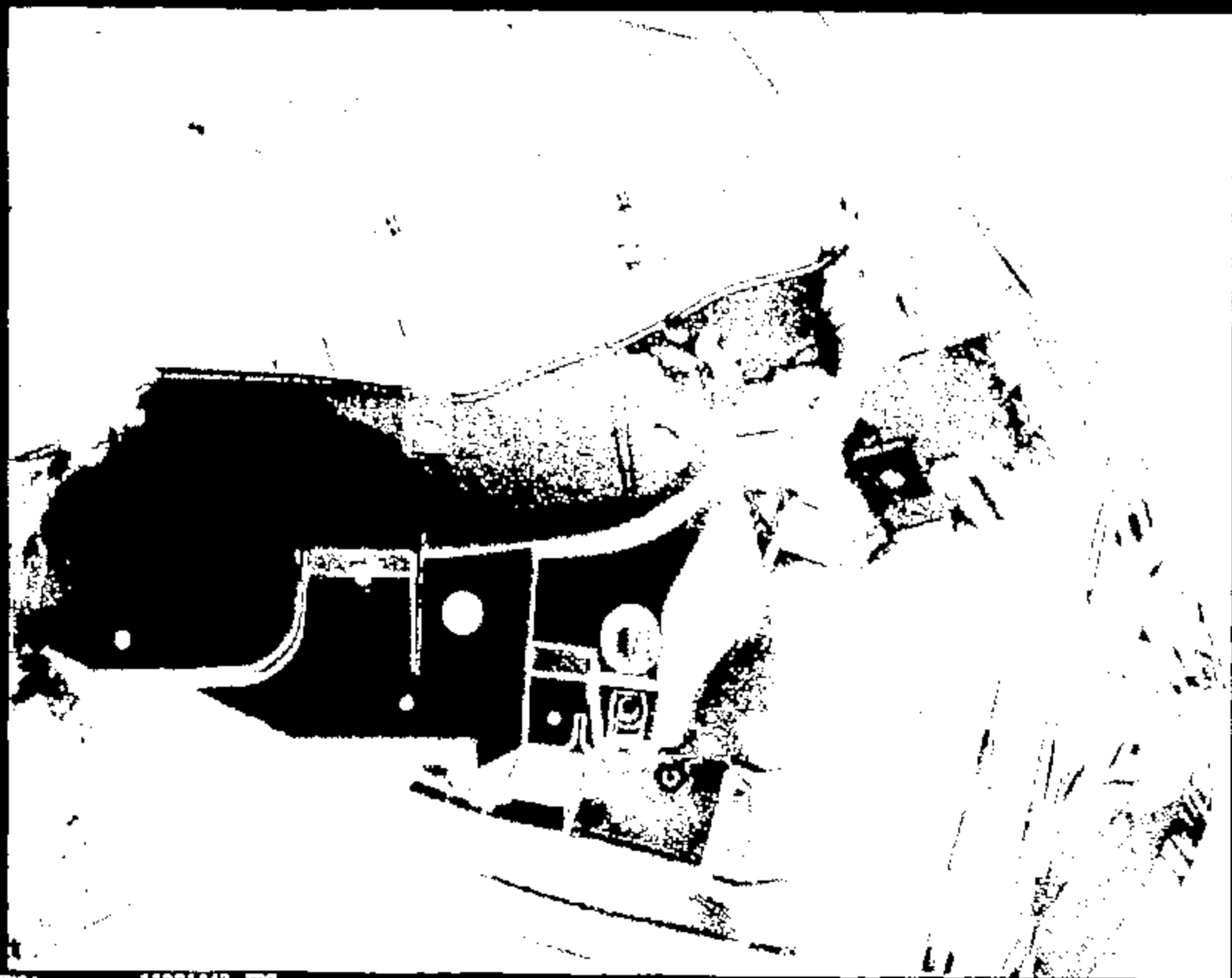
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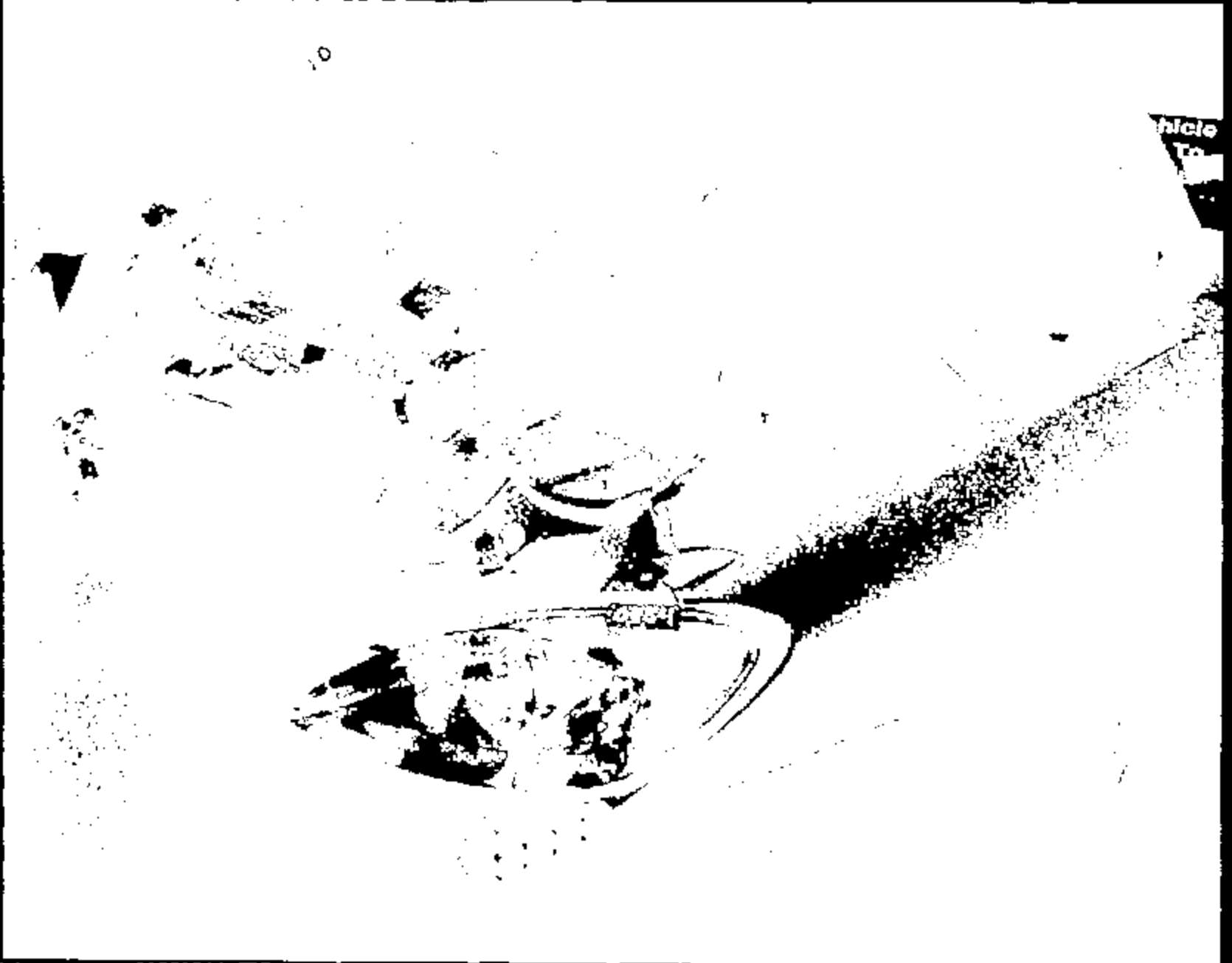
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Frame 1

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CRTS 0011221



Name :

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CRIS 0011221



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CRTS 0011221



Image :

11221046.JPG

CRTS 0011221



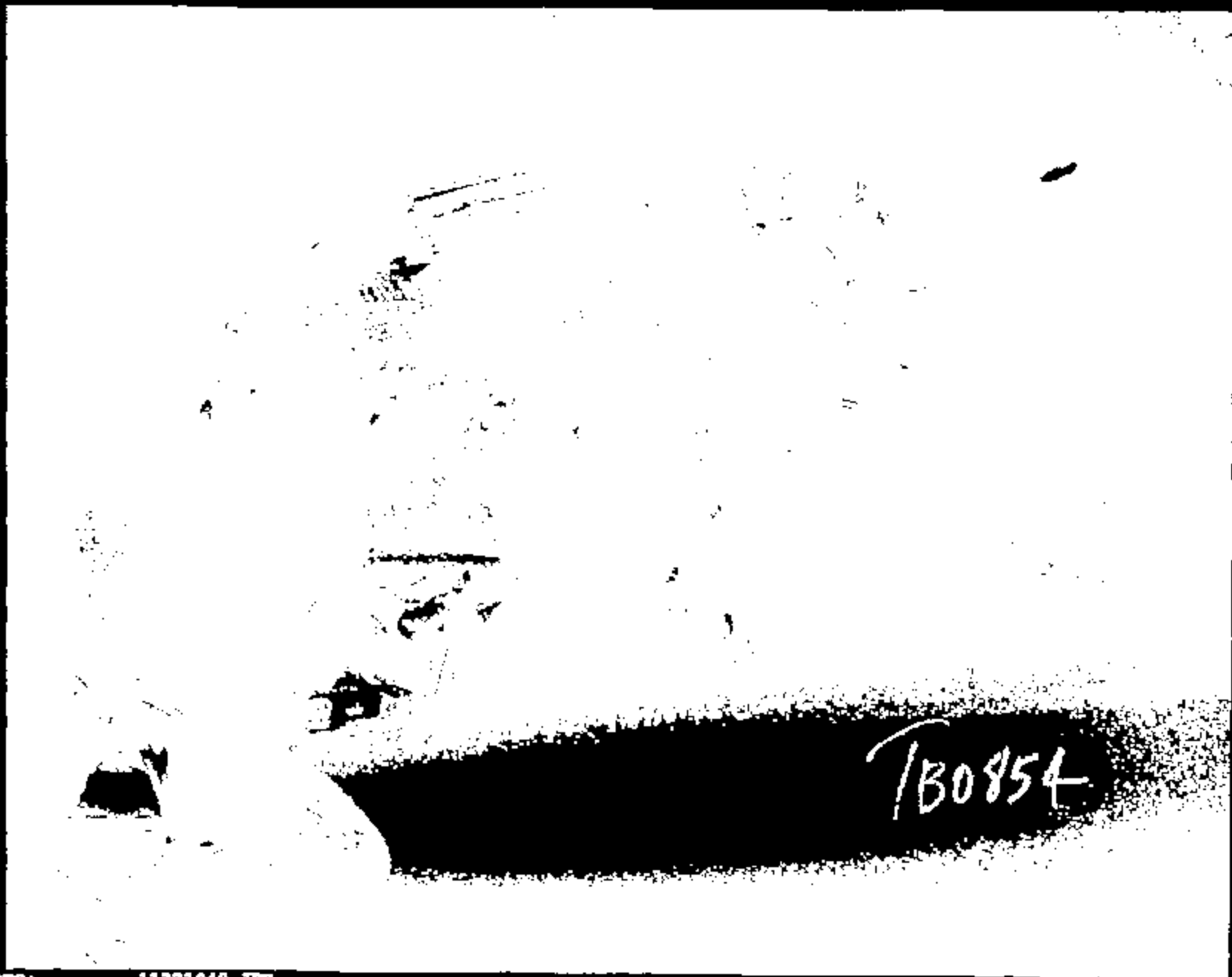
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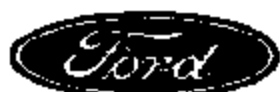
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Name: 11221049.JPG

CRTS 0011221



## GTO Test Request

Requester/Coordinator (PROF# ID):

KEWING

KURT EWING

Testing Activity: Omaha Border Test Lab	Date Submitted: 15-SEP-98	Requested Completion Date: 22-SEP-98	Requestor Reference Number:
--	------------------------------	---	-----------------------------

Test Procedure Number: CRS-00	Test Title and / or Subject of Test: 2000 D185 Front CL Pole LNB Deploy Stage I
----------------------------------	--

Eligible Requestors Dept No.:	Worksheet/Work Order Number:	Test conducted to certify control items compliance with Government Regulations:
T551 AV2216A	FO9	

Eligible Requestors PROF# ID:	Eligible Requestors Name:	Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>
KEWING	KURT EWING		

Complete the following two questions as indicated

## 1 - Rational for not replacing this test by CAE Analysis:

- No CAE Methodology or process available  
 For CAE Completion  
 Insufficient confidence in CAE  
 To obtain basic data for CAE  
 Replacement or improvement of existing Test  
 Testing is Outlier  
 Mandatory or Regulatory  
 Certification  
 Development test for PSS  
 Not applicable

Other:

(Check appropriate boxes)

## 2 - What is the expected Test Outcome:

- Results will meet DVP/AVOR requirements  
 System Component will not meet Test specification  
 Unknown  
 Above is Based on CAE?

Other:

(Check appropriate boxes)

Test Purpose/Test Procedure or Description of Test:

Custom Test Procedure TBE7-220

"RECORD COPY"

Schedule No. 7-2-12Retain Until 2018

Signatures Approvals (As Required for Control Purposes)

Requesting Engineer KURT EWING

Testing Engineer \_\_\_\_\_

Requesting Supervisor/Manager ALAN TAUB

Testing Supervisor \_\_\_\_\_

BARRIER TEST REQUEST

TB0854

TEST OBJECTIVE: VERIFICATION, AIR BAG SENSOR  
 IMPACT SPEED (MPH) = 17  
 TEST PROCEDURE: CRS-00: FRONT POLE IMPACT  
 ALIGN VEHICLE SUCH THAT CL OF POLE IS HALF WAY BETWEEN FCS AND FRAME RAIL  
 ON DRIVER SIDE.

TEST VEHICLE TAG: 579W814  
 TEST VEHICLE VIN: 1FALP62U2Y8100864  
 MODEL: D188  
 MODEL YEAR: 2000  
 TASK NO.: P08  
 BILLABLE DEPT.: T661  
 POL: CDD-0030

FUEL: TYPE= NONE FILL LEVEL (GAL.)= 0

TIRE PRESSURE (PSI): FRONT = 30 REAR = 30 SPARE = NA  
 CURB WEIGHT (LBF.): FRONT = 2131 REAR = 1163 TOTAL = 3294  
 TEST WEIGHT (LBF.): FRONT = 2289 REAR = 1668 TOTAL = 3954  
 +/- = 25

RISE HEIGHTS (IN): FRONT = LEVEL RKR +/- TO GROUND REAR = LEVEL RKR +/- TO GROUND

2273  
 1586  
 -----  
 3859

WEIGH UP INSTRUCTIONS:

MAY REMOVE: DECK/D  
 DO NOT PLACE WEIGHT: UNDERHOOD LOCATIONS OTHER THAN IN ENGINE (SEE BELOW).  
 MAX ADD TO ENGINE: 75 LBF.  
 LOAD TO TEST WEIGHT & LEVEL ROCKERS WRT GROUND.  
 SPRING INSERTS ACCEPTABLE.

OCCUPANT TYPE: LEFT FRONT = 50TH% HYBRID 2  
 RIGHT FRONT = 50TH% HYBRID 2

DUMMY POSITIONING: ST-14 DRIVER FOOT-REST: YES

SEAT POSITIONING:

	LONG	VERT	BACK ANGLE (DEG.)	PKG CHK
LEFT FRONT =	MID	FULL DOWN	27.2 (FRAME)	N
RIGHT FRONT =	MID	FULL DOWN	27.2 (FRAME)	N

RESTRAINTS USAGE:

	BELT	PYRO BELT	FRONT BAG	SIDE BAG
LEFT FRONT =			X	
RIGHT FRONT =			X	

NOTE: PRETENSIONERS ARE @  
 BUCKLE IF SO EQUIPPED

BARRIER TEST REQUEST

T50854

SENSOR SYSTEM: LIVE SYSTEM DEPLOY

DIMENSIONAL ANALYSIS: NONE

STILL PHOTO: STANDARD PRE & POST TEST

HIGH SPEED FILM:

*ADD LEFT DUMMY KINEMATICS  
RIGHT DUMMY KINEMATICS* *10/06/98  
KLE*

OFFBOARD		ONBOARD		NOTES
1	RIGHT OVERALL			
2	LEFT OVERALL			
3	RIGHT A-PILLAR FORWARD			
4	LEFT A-PILLAR FORWARD			
5	OVERHEAD A-PILLAR FORWARD			
TOTAL OFFBOARD =		8	TOTAL ONBOARD =	0

FILM ANALYSIS: LEFT ROCKER DISP. & VELOCITY @ B-PILLAR WRT GROUND  
RIGHT ROCKER DISP. & VELOCITY @ B-PILLAR WRT GROUND

DIGITIZED FILM:

NA			
----	--	--	--

SPECIAL BUILD INSTRUCTIONS:

- 1 UPDATE SENSOR SYSTEM (SEE SENSOR MAP FOR PART DESCRIPTIONS & SERIAL NUMBERS)

CONTACTS:

	NAME	PHONE	PAGER
REQUESTOR:	K. EWING	24-05105	KEW1
BLD. COORD:	B. PAGANO	32-30848	BPAG
SUPERVISOR:	K. ARTHURS	58-05106	KART

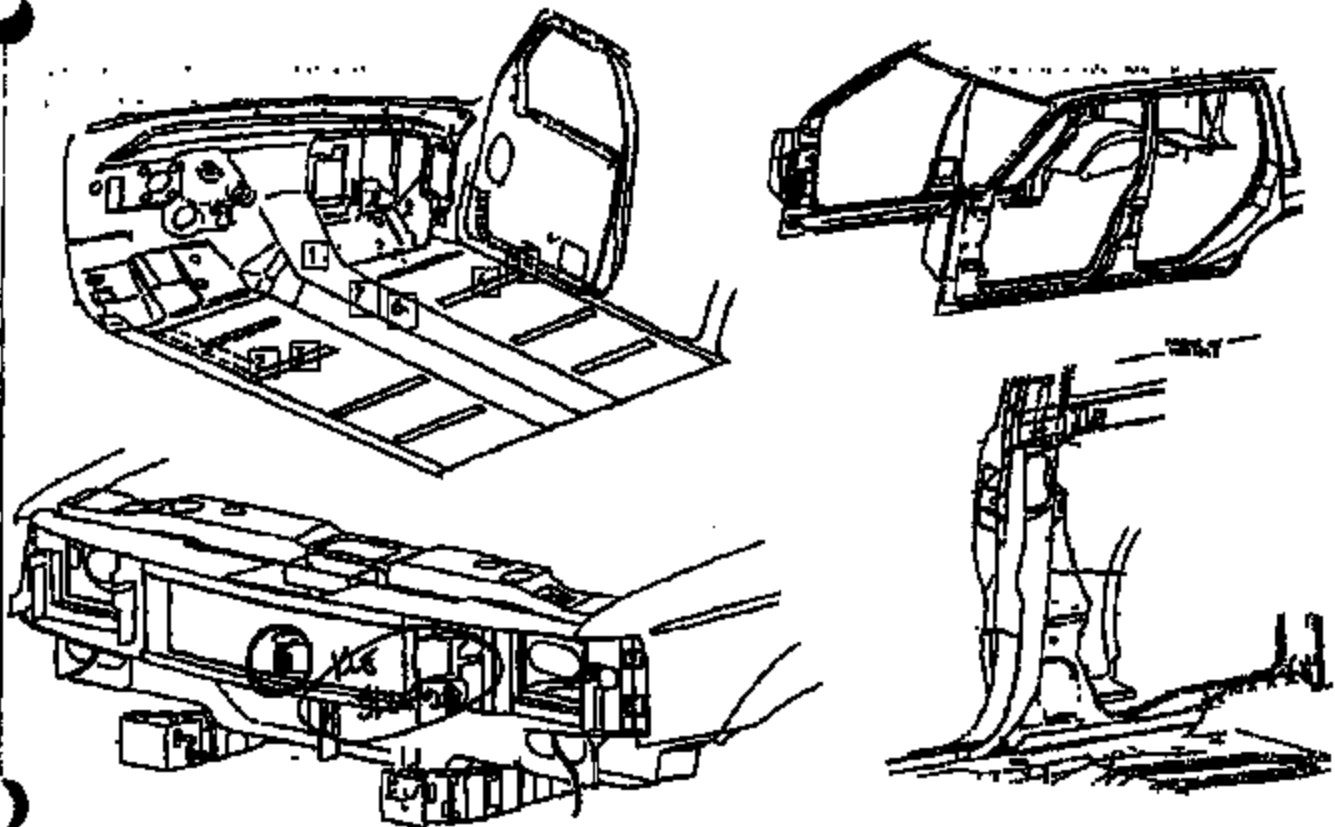
DATE	DESCRIPTION	PAGES AFFECTED	AUTHORIZATION
9/25/98	BT-14 DUMMY POSITIONING ADDED	1	KLE

File: T50854, Tab: REQUEST  
Created: 9/16/98  
Revised: 9/25/98  
Printed: 9/25/98, 8:29 AM

# SENSOR MAP

Vehicle ID: 579W614  
Build level: CP

Program: D180  
Test Mode: 17mph/Front Pole  
TA No.: TB0854



### Sensor Channels only

Location Name	Supplier	Output	Nominal (+/-)	Max/Min	Serial #
1 C/F_FLOOR_PAN_B_PMD_TML (LBD HGRDN Location)	SN009-1	DNB1_OUT	0	10	[REDACTED]
	SN009-2	DAB2_OUT	0	10	
	SN009-3	AB1_OUT	0	10	
	SN009-4	PAB2_OUT	0	10	
	SN009-5	O_PBP_OUT	0	10	
	SN009-6	P_PBP_OUT	0	10	
	SN009-7	B_SAB1_OUT	0	10	
	SN009-8	P_SAB1_OUT	0	10	
	SN009-9	Strain	5	10	
1 C/F_FLOOR_PAN_B_PMD_TML	accel	TRIAK	On ground		NA
2 L/F_FLOOR_B_#1_XMR_OUTBD	VISTEON				NA
3 L/F_FLOOR_B_#1_XMR_SEAT_CL	accel	TRIAK			NA
4 R/F_FLOOR_B_#1_XMR_OUTBD	VISTEON				NA
R/F_FLOOR_B_#1_XMR_SEAT_CL	accel	TRIAK			NA

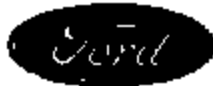
*Strain  
Poles  
10-2-99  
JRG/JS*

Sensor Channels only

Location Name	Supplier	Output	Nominal (+/-)	Max/Min	Serial #
5 C/MD	FCS	VIBTECH	FCS		
5 C/MD	accel	TRIAx	Next to FCS		NA SQU MOM 10-2 XPOH
T zero required; 12 volt nominal source					
Hard wired: SEAT TRACK (G2-8) 330ohm; DVR buckled (G2-8) 330ohm;					
PASS unbuckled (G2-10) 910ohm					
6 FC_FLOOR_PAN_@_TNL	SW001-1	TRW	DAB2	0	10
	SW001-2		PAB2	0	10
	SW001-3		DAB1	0	10
	SW001-4		PAB1	0	10
6 FC_FLOOR_PAN_@_TUNNEL	ACCEL	TRIAx	ON MODULE		
7 FC_FLOOR_PAN_@_TUNNEL_SM	ACCEL	TRIAx	NEXT TO MODULE		

REVISION LOG

DESCRIPTION	DATE	PAGES	AUTH



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**FINAL TEST REPORT**

**CONFIDENTIAL**

**Global Test Operations  
 Advanced Vehicle Technology**

<b>TO:</b>	A. Teub	Test Order No. Work Task W. O. No. Test Date Date Reported Sheet	T-B0868 F08 10/8/98 7/9/99 1 of 133
<b>SUBJECT:</b>	Crash Test 11826 (90° Front 25% Offset Vehicle to Vehicle Impact at 44.6 ± 0.4 mph, 71.8 ± 0.6 km/h) - 2000 Taurus (D186) 4-Door Sedan into a 1998 Sable (DN-101) 4-Door Sedan		
<b>REQUESTED BY:</b>	Vehicle Safety and CAE Department, Advanced Vehicle Technology - K. Ewing		
<b>OBJECT:</b>	To obtain development data relative to occupant protection and air bag system sensors.		
<b>SUMMARY OF TEST RESULTS:</b>	See Section 1.0 for injury criteria data.		

L. Stockton  
 Test Development Engineer

Concur: S. Lesh  
 Section Supervisor  
 Operations Engineering Section



**VEHICLE DATA: (BULLET)**

**Make and Model** 2000 Taurus (D186) 4-Door Sedan

**ID Numbers** 1FALP52SKYS100587, 579-W-854, DC090009

**Power Train** 3.0L, EFI, Automatic Transaxle

**Fuel Tank(s)** Test Condition: Empty

**Front Seat(s)** Type: Bucket  
Cover: Cloth  
Tracks/Position: LF: 6-Way Power/Mechanical Mid and Down  
RF: Manual/Mechanical Mid  
Seat Backs/Position: Adjustable/LF: 27.5° Rear of Vertical,  
RF: 27.5° Rear of Vertical  
Head Restraints/Position: Adjustable/Down

**Restraint System** LF: 3-Point Continuous Loop Active Belt and  
Steering Wheel Air Bag  
RF: 3-Point Continuous Loop Active Belt and  
Instrument Panel Air Bag

**Occupants** LF & RF: 50th Percentile Male, Hybrid III,  
Instrumented

**Test Weight** Front: 2284 lb (1036 kg)  
Rear: 1575 lb (714 kg)  
Total: 3859 lb (1750 kg)

**Tires** Front: P215/60R16 80 psi (207 kPa)  
Rear: P215/60R16 80 psi (207 kPa)  
Spars: Removed

**Significant Content or Accessories:** Air Conditioning, Power Steering, Power Brakes, Tilt Steering Wheel

**VEHICLE DATA: (TARGET)**

<b>Make and Model</b>	1996 Saab (DN-101) 4-Door Sedan	
<b>ID Numbers</b>	1M8ELM60U2TG681120, 593-T-209, DC8107	
<b>Power Train</b>	3.0L, EFI, Automatic Transaxle	
<b>Fuel Tank(s)</b>	Usable Capacity: 16.0 gal. (60.6L) Test Condition: Filled with water for ballast.	
<b>Front Seat(s)</b>	Type: Bucket Cover: Cloth Tracks/Position: LF: 6-Way Power/Mechanical Mid and Down RF: Manual/Mechanical Mid Seat Backs/Position: Adjustable/Not Recorded Head Restraints/Position: Adjustable/Down	
<b>Restraint System</b>	LF & RF: 3-Point Continuous Loop Active Belt	
<b>Occupants</b>	LF & RF: Water-Filled Containers (Simulating 50th Percentile Male, Hybrid II, Uninstrumented Dummies)	
<b>Test Weight</b>	Front: 2097 lb (951 kg) Rear: 1292 lb (586 kg) Total: 3389 lb (1537 kg)	
<b>Tires</b>	Front: P205/65R15 Rear: P205/65R15 Spare: Removed	80 psi (547 kPa) 80 psi (547 kPa)
<b>Significant Content or Accessories:</b>	Air Conditioning, Power Steering, Power Brakes, Tilt Steering Wheel	

**GENERAL TEST COMMENTS:****1. Test Procedure**

The test was performed according to the following Corporate test procedure(s):

- Proposed non-regulator crash test procedure.7, 1996.
- Occupant Crash Protection, T657-ST-25 dated July 17, 1996.

**1.1 Vehicle Alignment**

- The target vehicle structure (frame rail) was aligned to impact the bullet test vehicle's 25% structural offset point on the left (driver) side. Both vehicles were in level attitude as specified by the requester.

**2. Remarks**

Crash movies, pre- and post- crash still images of the test vehicle and copies of this report are available through the Operations Engineering Section, Safety Laboratories Department, GTO. The crash still images are stored and archived on CD ROMs. The file names of the still images are listed under crash number and a three digit sequence number which are 11226001 through 11226047.

**TEST RESULTS:****1.0 Occupant Injury Data (FMVSS 208)**

	<u>L. F. Dummy</u>	<u>R. F. Dummy</u>
<b>Head Injury Criteria (HIC)</b>	116	79
Interval t1	78 ms	92 ms
t2	108 ms	138 ms
<b>Chest resultant acceleration level at 8 ms cumulative duration</b>	25 g	32 g
<b>Chest Deflection (Hybrid III)</b>	0.8 in	1.0 in
<b>Peak axial compression load:</b>		
Left femur	* 181 lb	289 lb
Right femur	** 279 lb	42 lb
<b>Peak axial tension load:</b>		
Left femur	* 188 lb	70 lb
Right femur	** 90 lb	244 lb
<b>Dummy contained within the vehicle during the crash</b>	Yes	Yes

\* The Left Front Dummy Left Femur load was replotted after the removal of an instrumentation data spike that occurred after the maximum peak load value. This was obtained in accordance with ST-25 procedures.

\*\* The Left Front Dummy Right Femur load had unusual instrumentation data spikes which were insignificant and had no impact on the maximum peak load value. This was obtained in accordance with ST-25 procedures.

Time histories of the dummy instrumentation are included in this report.

Time histories of the air bag/sensor(s) are included in this report.

Time histories of any requested derived data (i.e. integrations, etc.) were given to the requesting activity and are not included in this report.

**2.0 Vehicle Crush, Film Analysis and/or Instrumentation Data**

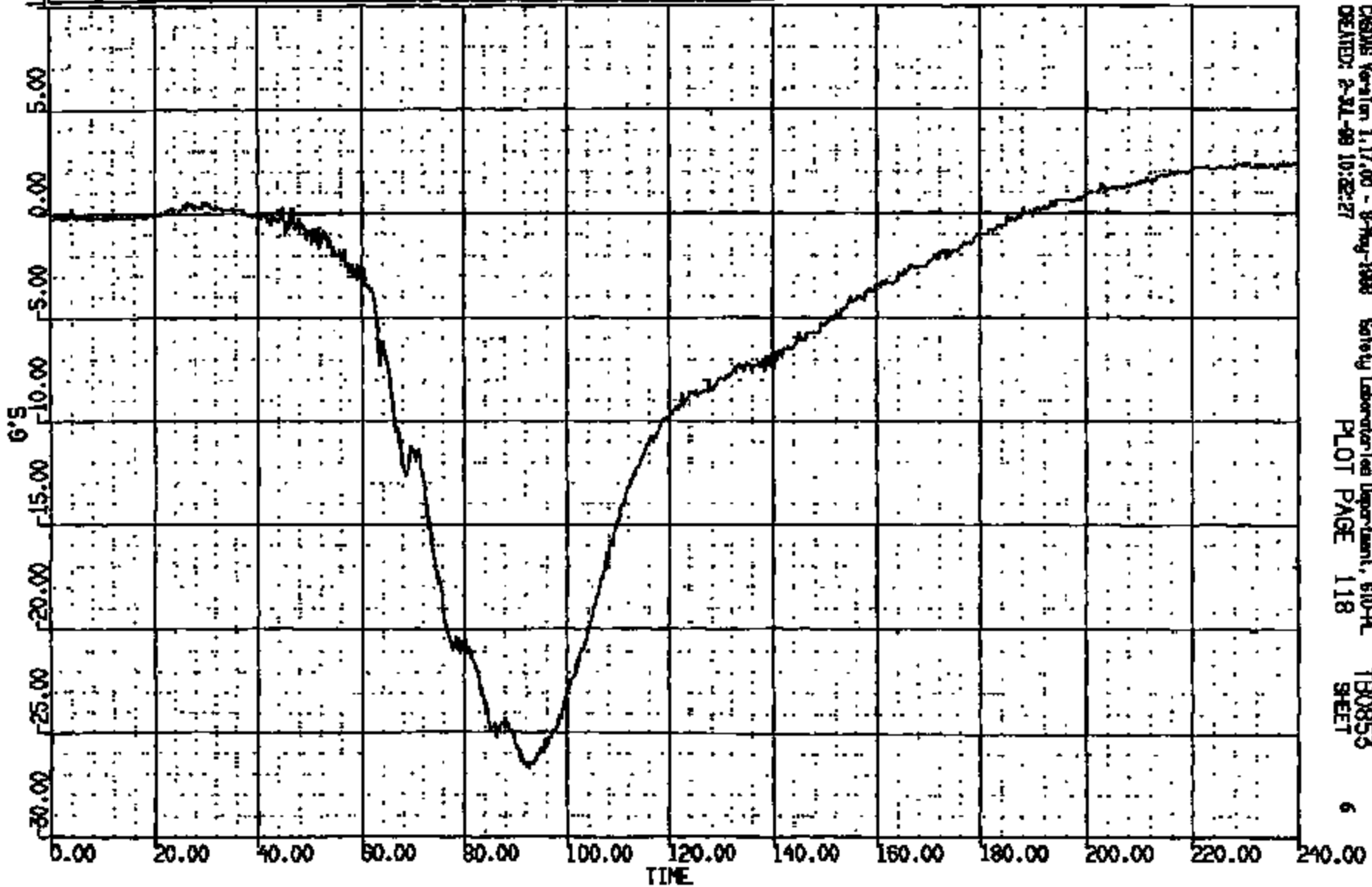
Time histories of the vehicle accelerations and other instrumentation are included in this report.

Time histories of vehicle dynamic displacements obtained from Film Analysis are included in this report.

Time histories of any requested derived data (i.e. integrations, etc.) were given to the requesting activity and are not included in this report.

CR #: 11226 TO: TB0853 DATE: 981009 11:45:28  
R000 D-108 1998 ON-101

(1) CR11226B L/F DUMMY HEAD C.G. LONG 1000C  
MAX = 2.57 at 257.0 MS MIN = -26.71 at 92.72 MS **AXIS 1**

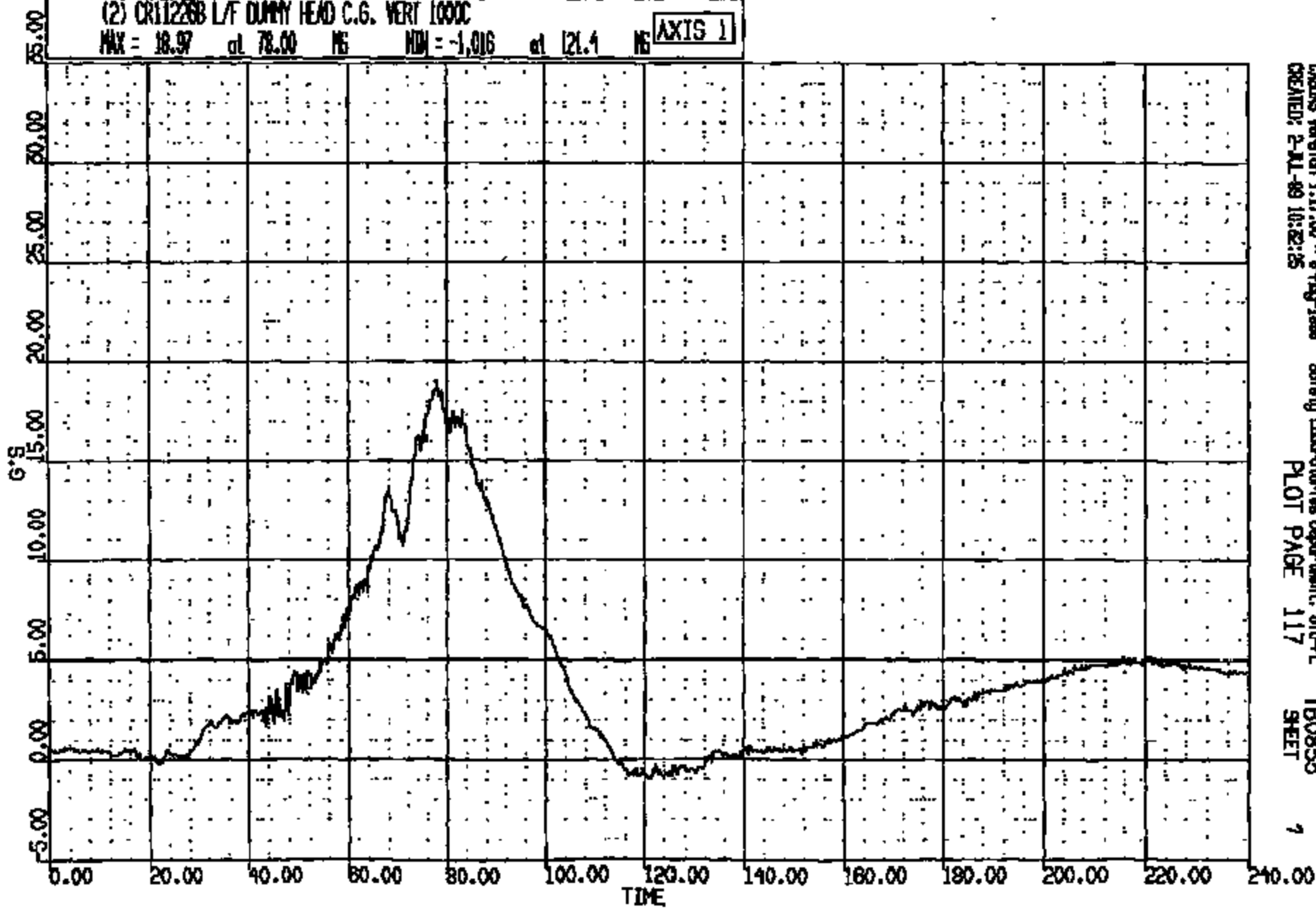


CASDAE Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-A  
CREATED: 2-24-98 10:28:27 PLOT PAGE 118 SHEET 6

CRIS 0011226

CR R: 11226 TO: TB0853 DATE: 881008 11:45:58  
2000 0-188 1988 DN-101

(2) CR11226B L/F DUMMY HEAD C.G. VERT 1000C  
MAX = 18.97 at 78.00 MS MIN = -1.016 at 121.4 MS **AXIS 1**



CADDS Version 1.17.00 -- 8-May-1988 Safety Laboratories Department, 610-PL  
CREATED: 2-JUL-89 10:22:25 PLOT PAGE 117 SHEET 7

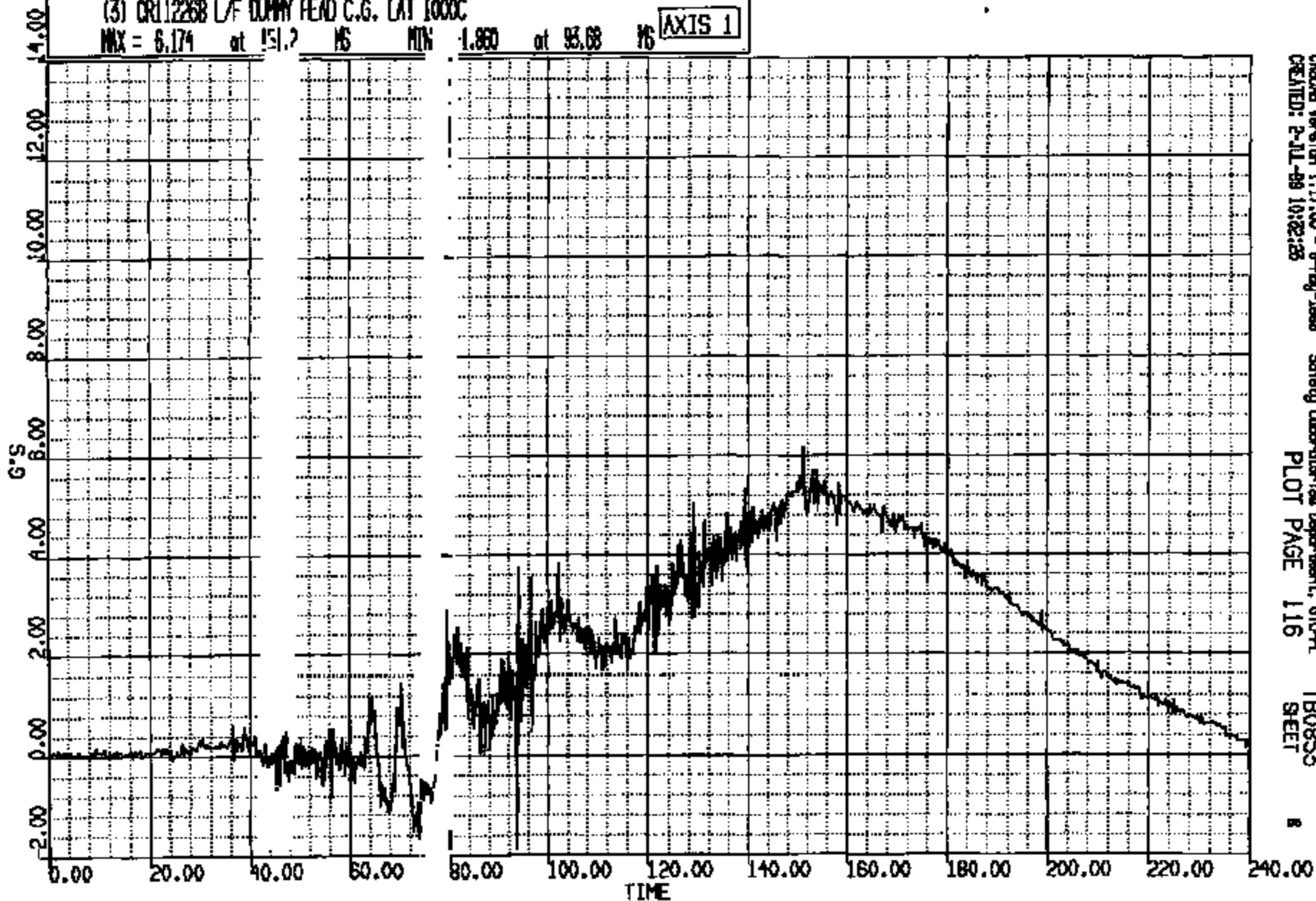
CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 981009 11:45:39  
2000 D-188 1998 DN-101

(3) CR112268 L/F DUMMY HEAD C.G. LAT 1000C

MAX = 6.174 at 151.7 MS MIN = -1.860 at 93.68 MS

AXIS 1



CRTS 0011226

CASPER Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-98 10:22:35

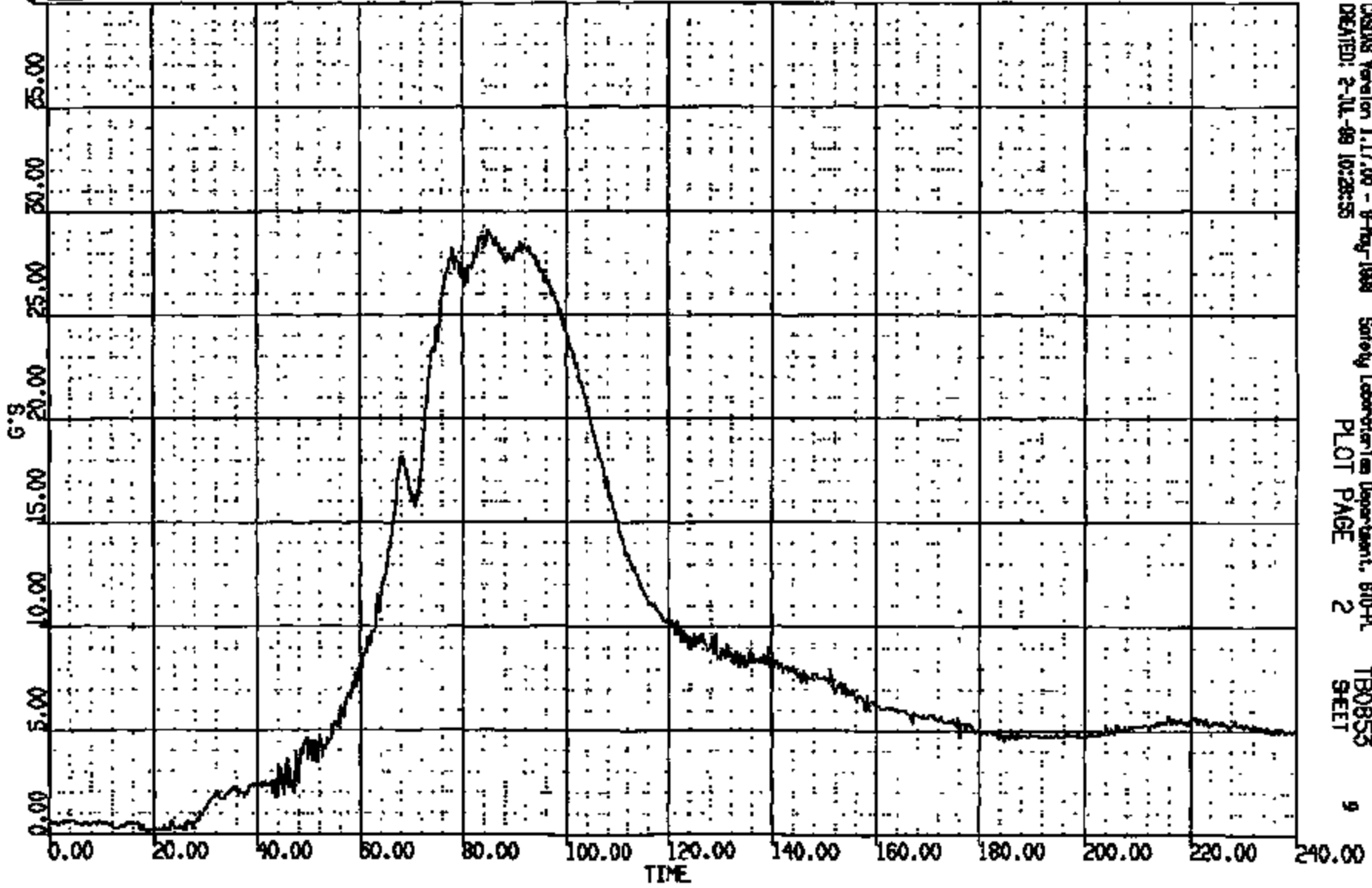
Safety Laboratory Test Department, 610-PL  
PLOT PAGE 116

TB0853  
SHEET

8

ROOM: 11226 TO: TB0853 DATE: 981009 11:45:58  
 D-199 1998 DN-101  
 TIME: 121. DUR: 270.0 T1/T2: 65.8 // 111.  
 TIME: 119. DUR: 280.0 T1/T2: 71.5 // 108.  
 TIME: 82. DUR: 15.0 T1/T2: 60.8 // 96.6

(10005) CRT1226B L/F DUMMY HEAD C.G. RES 1000C  
 MAX = 29.13 at 84.80 MS MIN = 0.5423E-01 at 18.72 MS **AXIS 1**

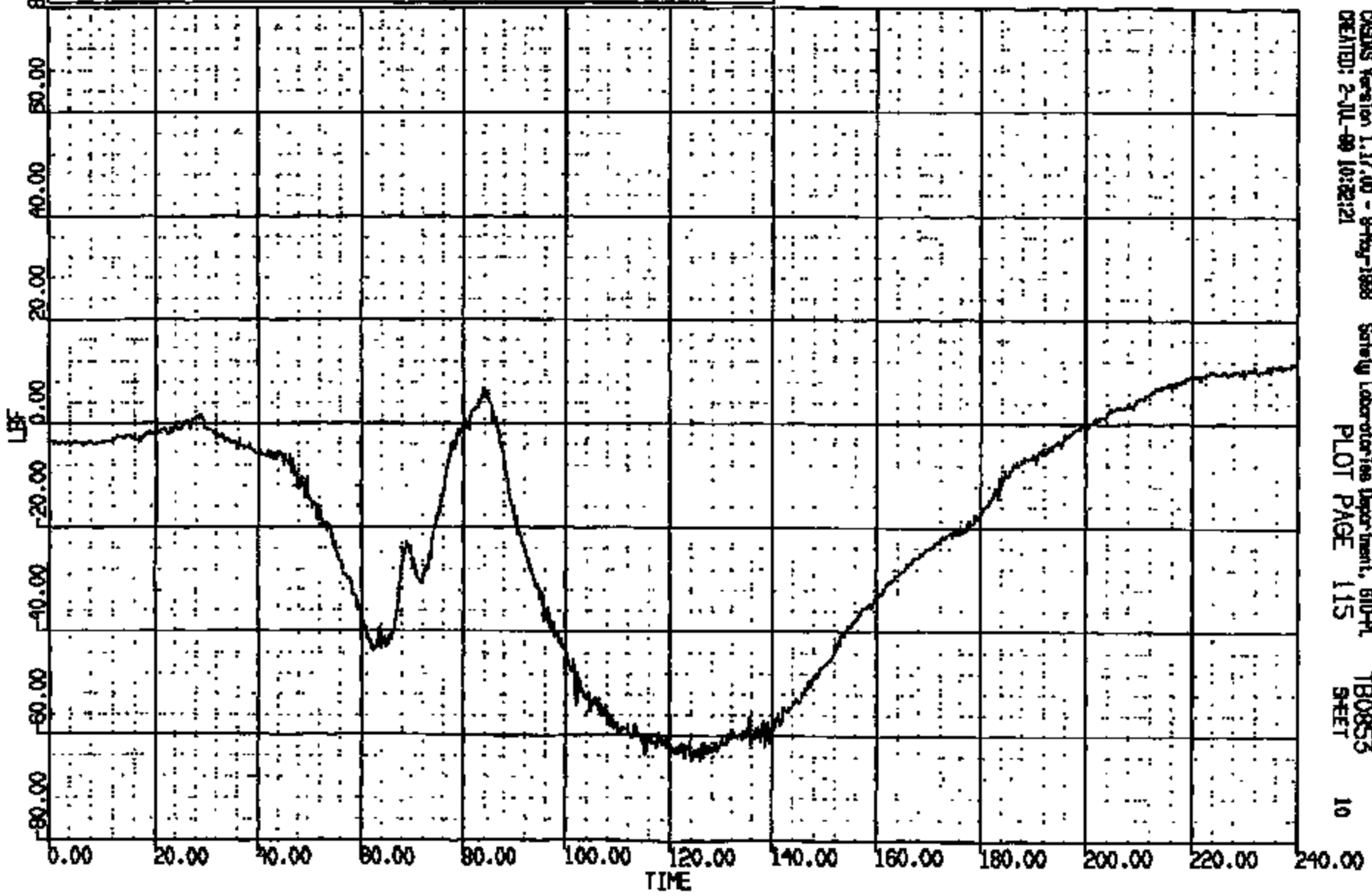




CR R: 11226 TO: TB0855 DATE: 881008 11:45:38  
R000 D-188 1988 DN-101

(4) CR112268 L/F DUMMY NECK UPPER LOAD FX 1000C  
MAX = 11.75 at 28.9 MS MIN = -85.14 at 125.7 MS

AXIS 1

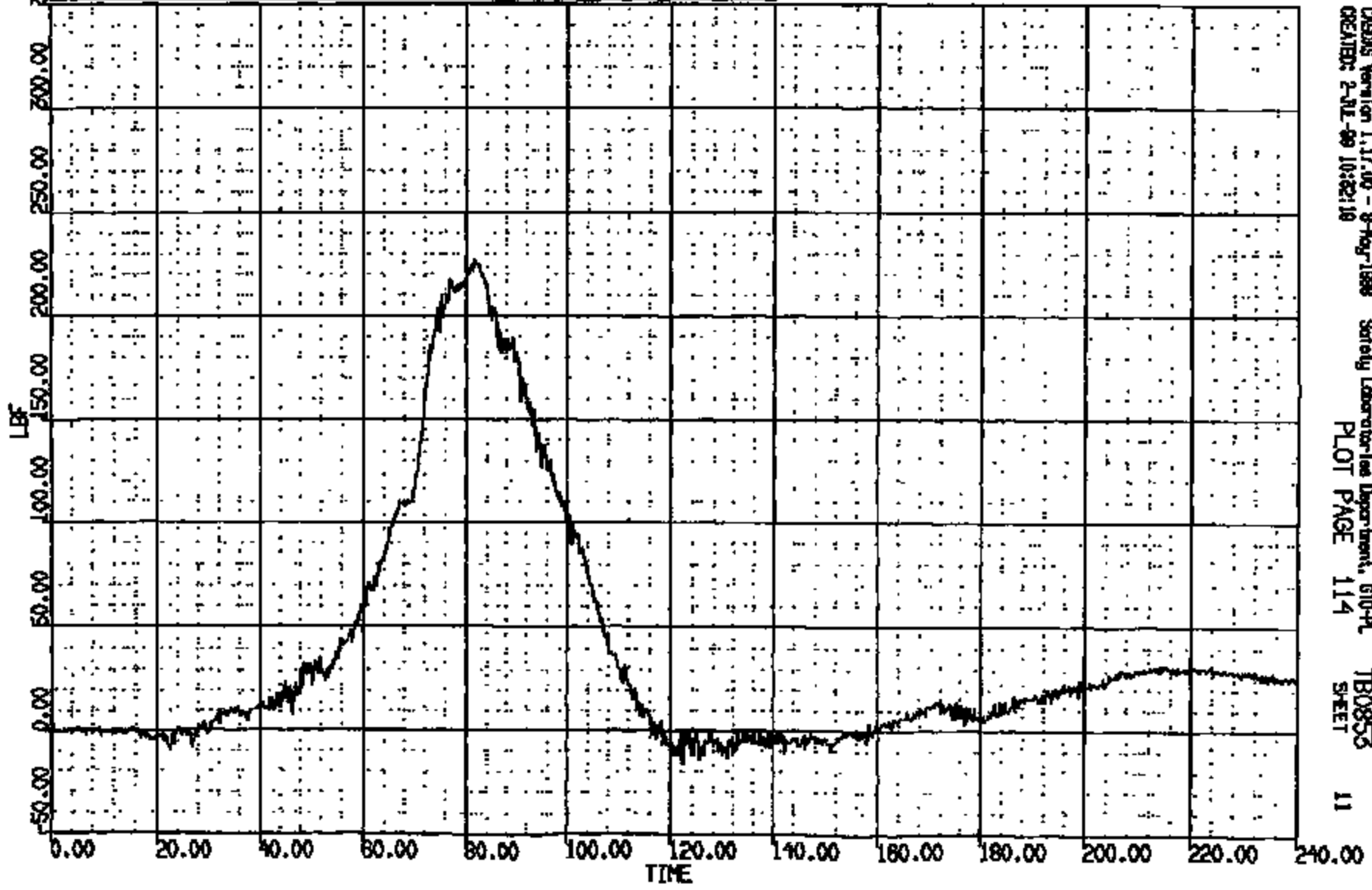


CRSAS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL TB0855  
CREATED: 2-JUL-88 10:28:21 PLOT PAGE 115 SHEET 10

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 881008 11:45:38  
2000 D-188 1988 DN-101

(5) CR11226B L/F DUMMY NECK UPPER LOAD FZ 1000C  
MAX = 227.1 at 81.60 MS MIN = -16.17 at 122.3 MS **AXIS 1**

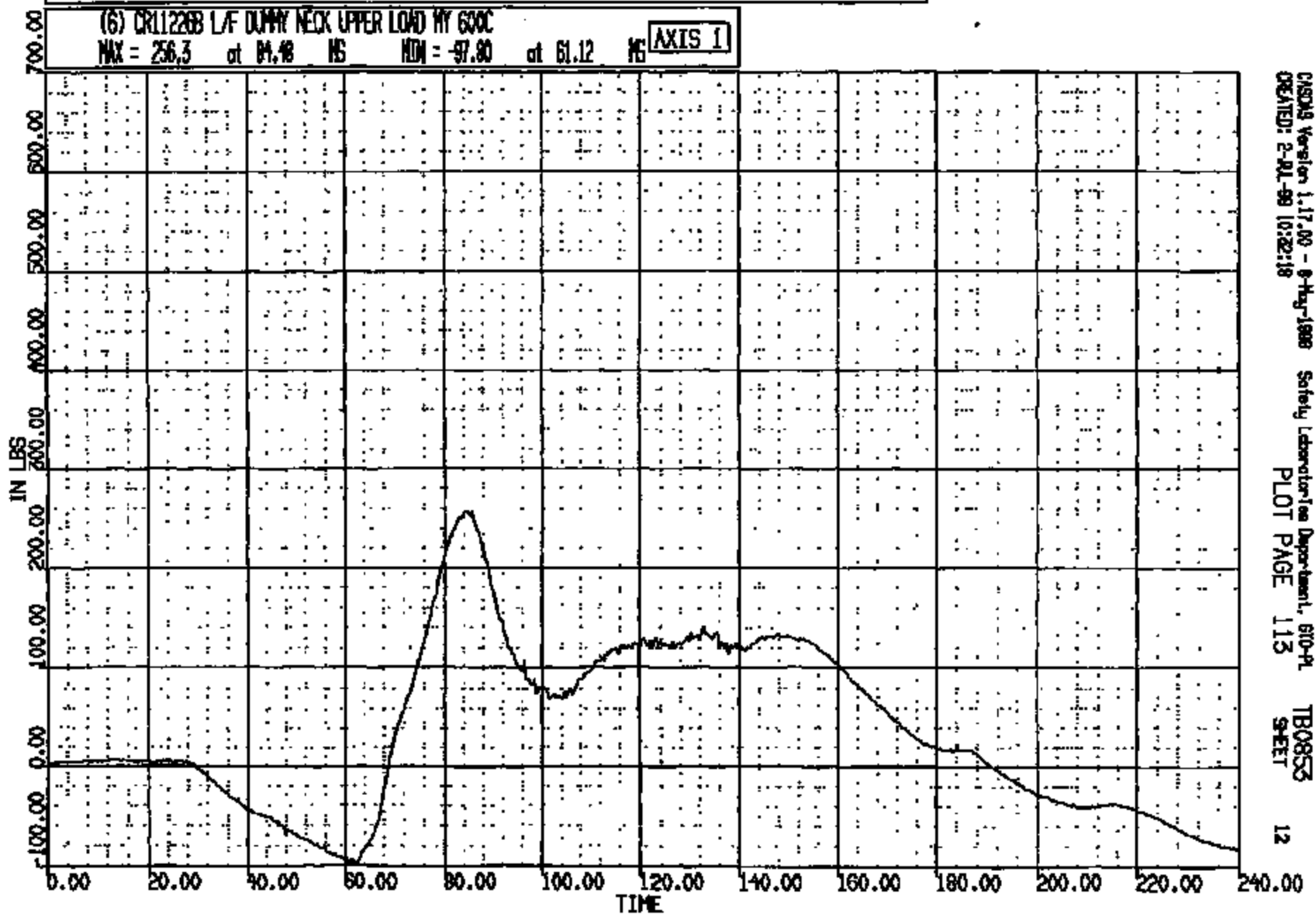


CASAS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-9L TB0853  
CREATED: 2-JUL-88 10:32:18 PLOT PAGE 114 SHEET 11

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 881008 11:45:38  
2000 D-188 1988 DN-101

(6) CR112268 L/F DUMMY NECK UPPER LOAD MY 630C  
MAX = 256.3 at 84.48 MS NDI = -97.80 at 61.12 MS **AXIS 1**



CISDA6 Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL  
CREATED: 2-PL-88 10:22:18 PLOT PAGE 113 TB0853  
SHEET 12

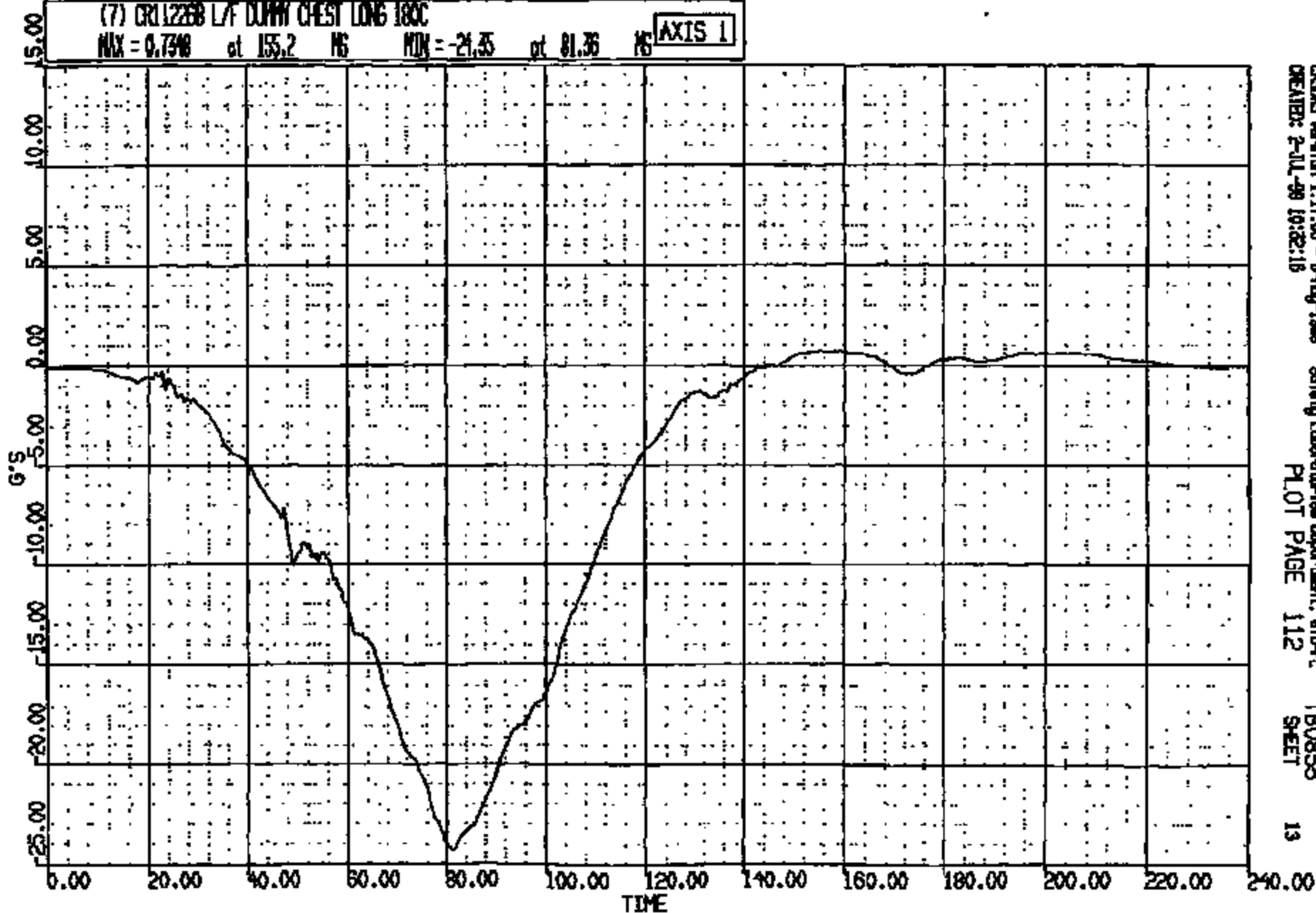
CR11226

CR N: 11226 TO: T80855 DATE: 981008 11:45:38  
2000 D-188 1888 DN-101

(7) CR112268 L/F DUFFY CHEST LONG 180C

MAX = 0.7348 at 155.2 MS MIN = -21.35 at 81.36 MS

AXIS 1



CRSIS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-98 10:32:18

Safety Laboratory Department, SMD-PL

PLOT PAGE 112

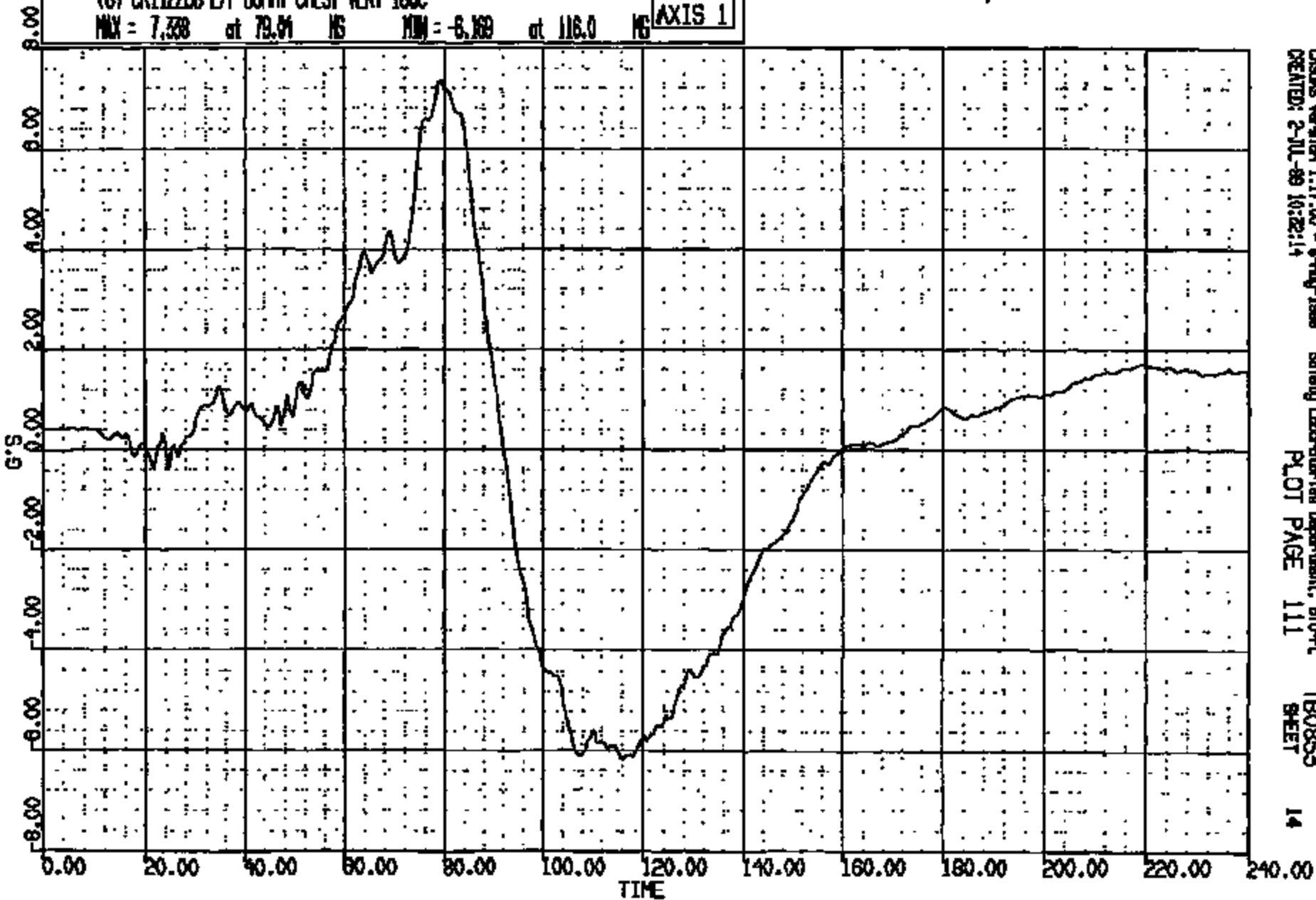
T80855  
SHEET

13

CRIS 0011226

CR R: 11226 TO: TB0853 DATE: 881009 11:45:38  
2000 D-188 1888 DN-101

(8) CR11226B L/F CUMY CHEST VERT 180C  
MAX = 7.338 at 79.01 MS MIN = -8.369 at 116.0 MS **AXIS 1**



CRSIS Version 1.17.00 - 8-May-1988  
CREATED: 2-JUL-88 10:22:14

Safety Laboratories Department, EIU-PL  
PLOT PAGE 111

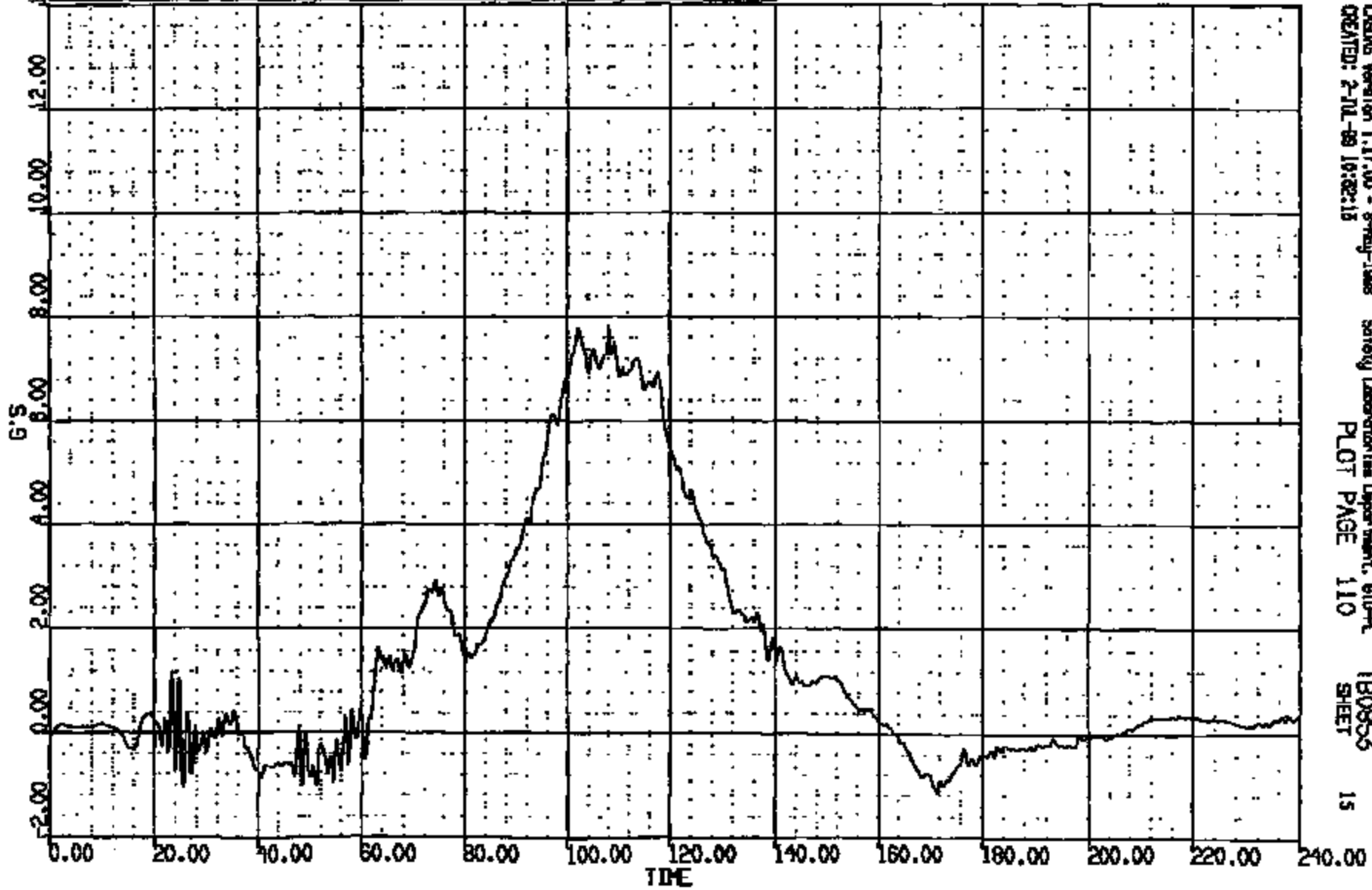
TB0853  
SHEET

14

CRTS 0011226

FOR R: 11226 TO: T80935 DATE: 951009 11:45:58  
2000 D-188 1999 DN-101

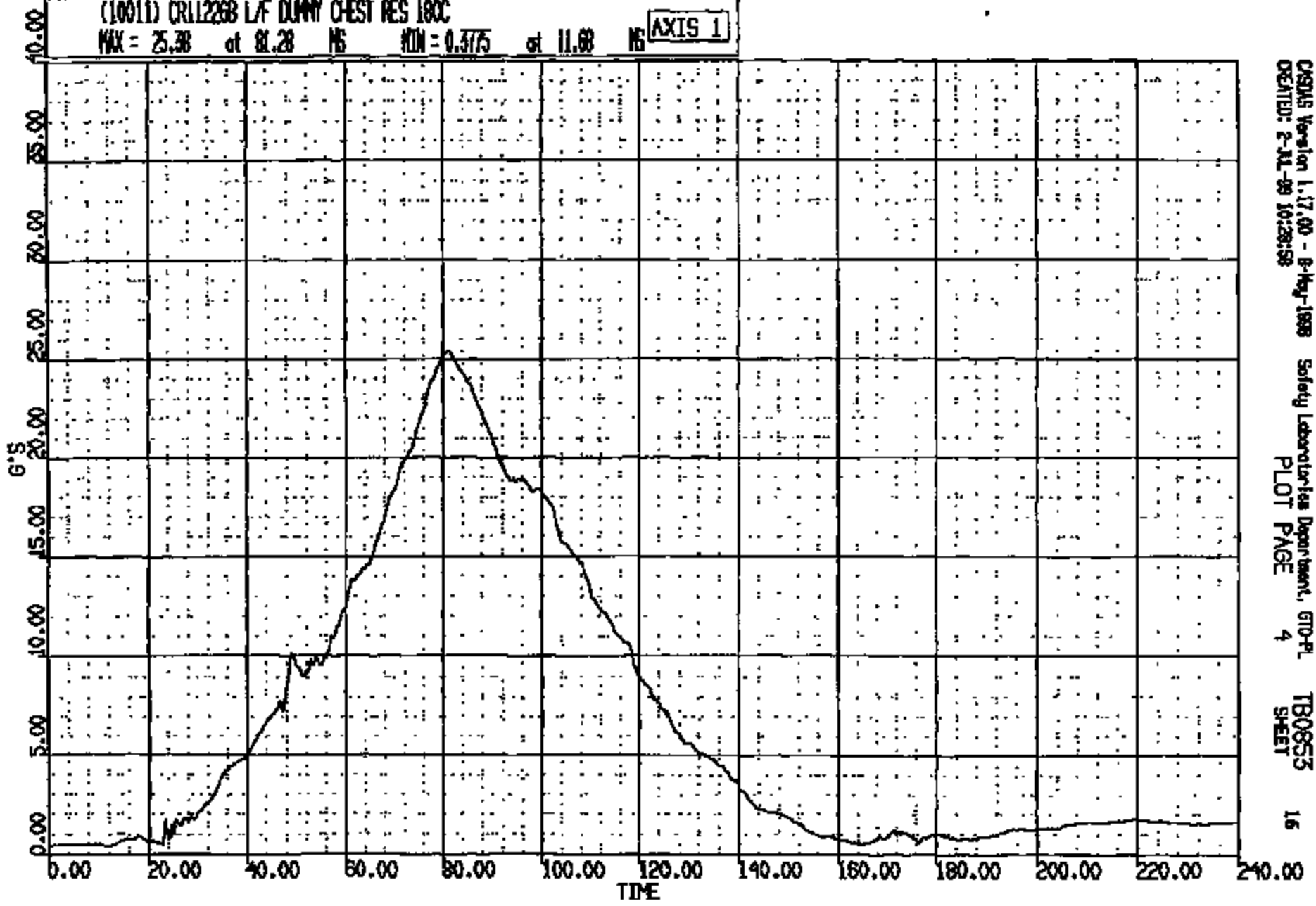
(9) CR12268 L/F DUMMY CHEST LAT 180C  
MAX = 7.815 at 108.2 MS MIN = -1.145 at 171.5 MS AXIS 1



CR R: 11226 TC: TB0855 DATE: 881008 11:45:58  
2000 D-188 1888 DN-101  
CUMDUR = 24.890 Duration time = 2.0000

(10011) CR112268 L/F DUMMY CHEST RES 180C

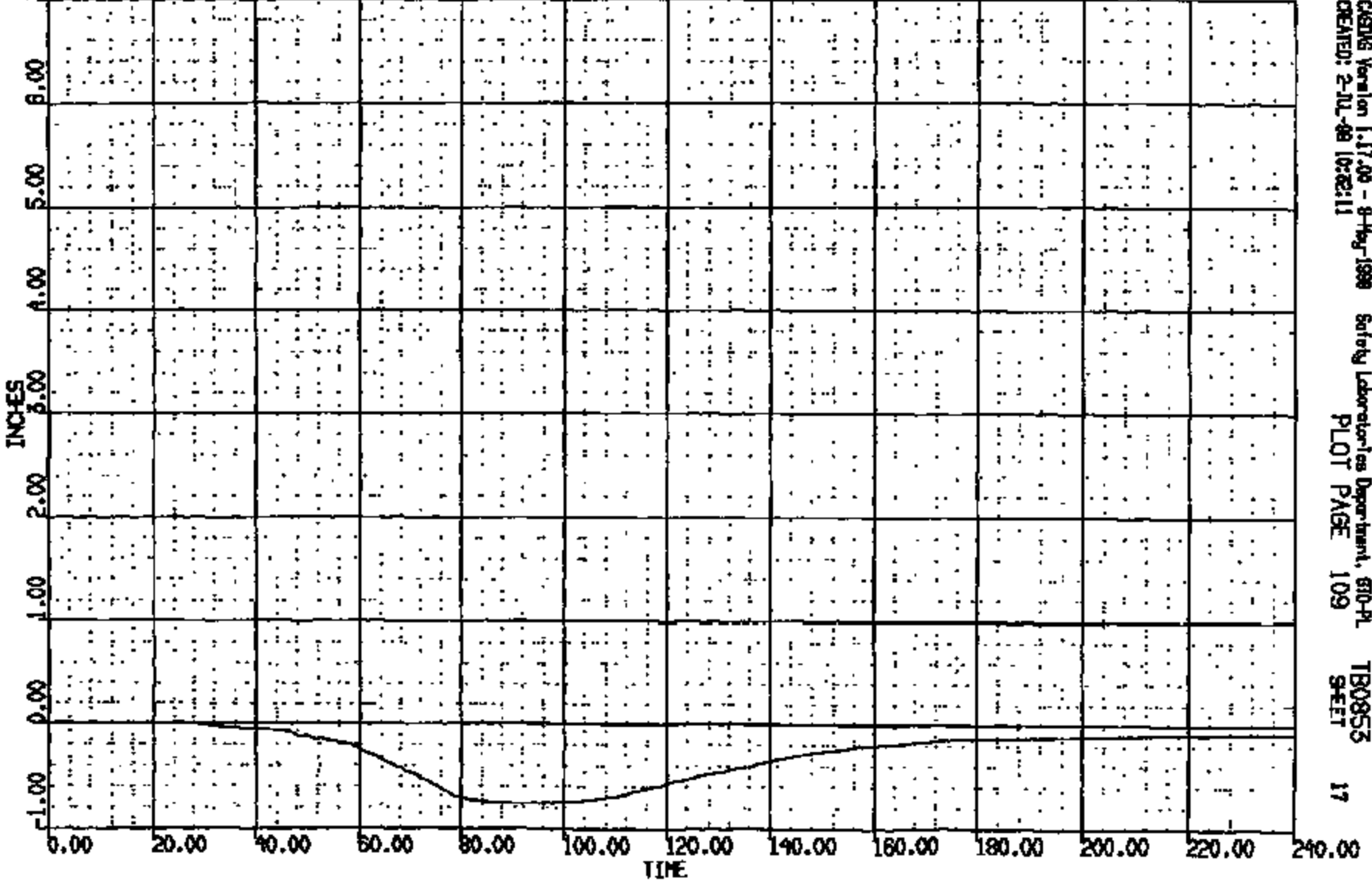
MAX = 25.38 at 81.28 MS MIN = 0.375 at 11.68 MS **AXIS 1**



CRS015 Version 1.17.00 - 8-May-1988 Safety Laboratories Department, GTD-PL  
CREATED: 2-11-88 10:28:58 PLOT PAGE 4 TB0855 SHEET 16

CR 7: 11226 TO: TR0855 DATE: 081000 11:43:58  
R000 0-198 1988 DN-101

(10) CR112268 L/F DUMMY CHEST DEFLECTION 180C  
MAX = 0.2534E-03 at 0.000E+00 MS MIN = -.7540 at 90.32 MS **AXIS 1**



CASIMS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL TR0855  
CREATED: 2-JUL-88 10:52:11 PLOT PAGE 109 SHEET 17

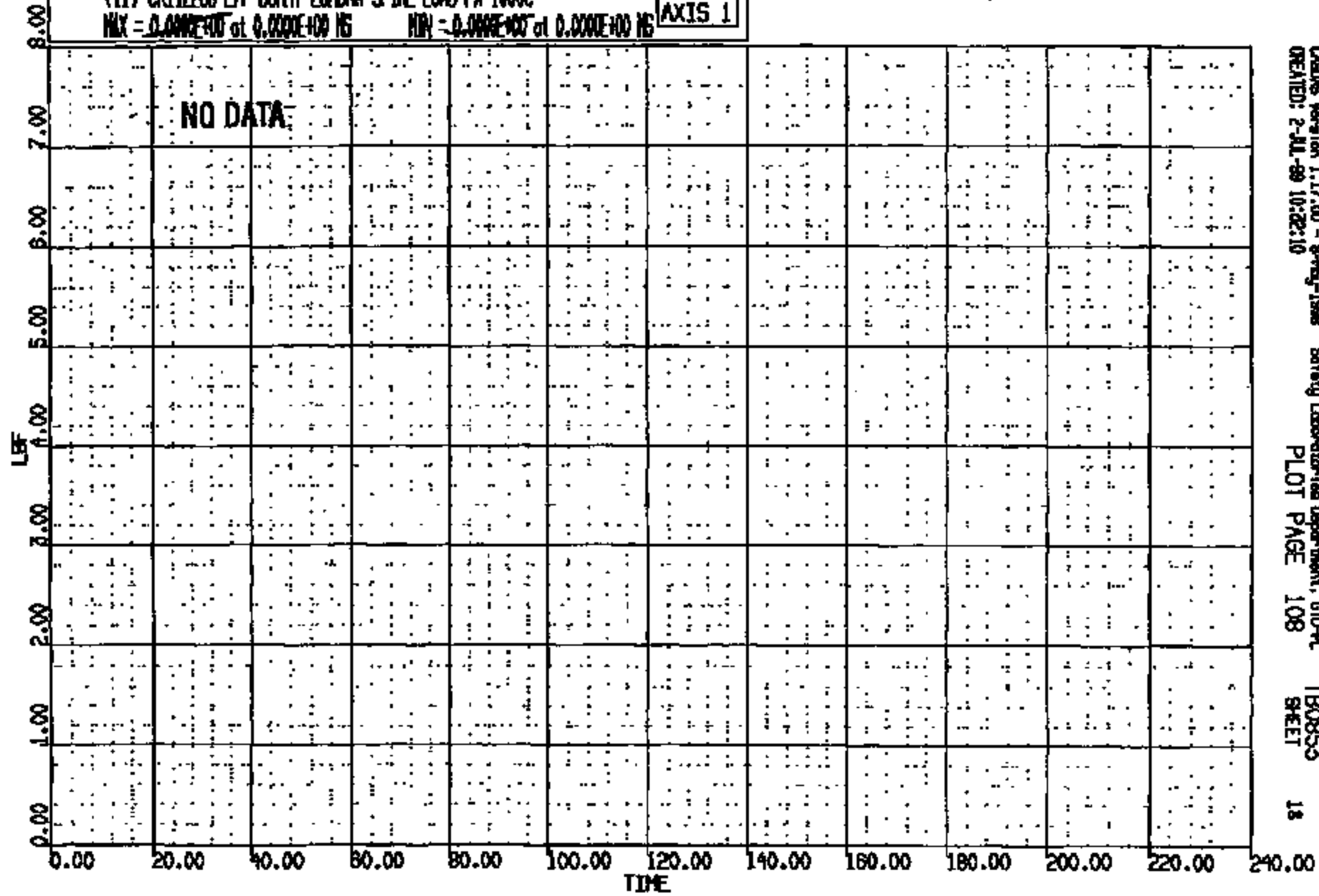
CRTS 0011226



CR R: 11226 TO: TB0853 DATE: 981009 11:45:58  
2000 D-185 1898 DN-101

(11) CR112268 L/F DUFFY LUMBAR SPINE LOAD FX 1000C  
MAX = 0.000E+00 of 0.000E+00 NS MIN = 0.000E+00 of 0.000E+00 NS

AXIS 1



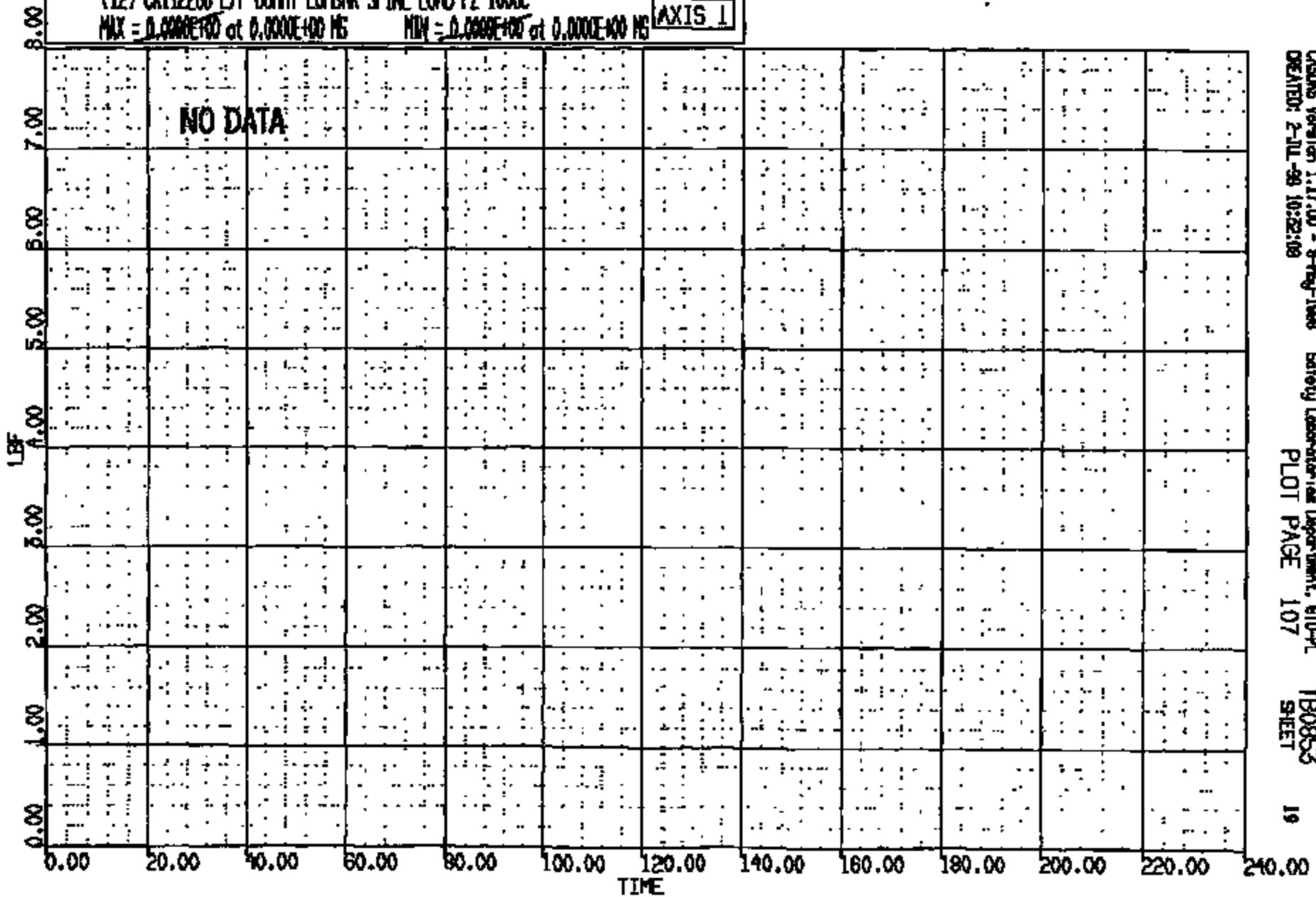
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CREATED: 2-Jul-99 10:22:10 PLOT PAGE 108 SHEET 18

CRIS 0011226

CR R: 11226 TO: TB0853 DATE: 981009 11:48:58  
2000 D-189 1998 DN-101

(12) CRT112268 L/F DUMMY LUMBAR SPINE LOAD FZ 1000C  
MAX = 0.000E+00 at 0.000E+00 MS MIN = 0.000E+00 at 0.000E+00 MS

AXIS 1



CASIMS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-98 10:52:08

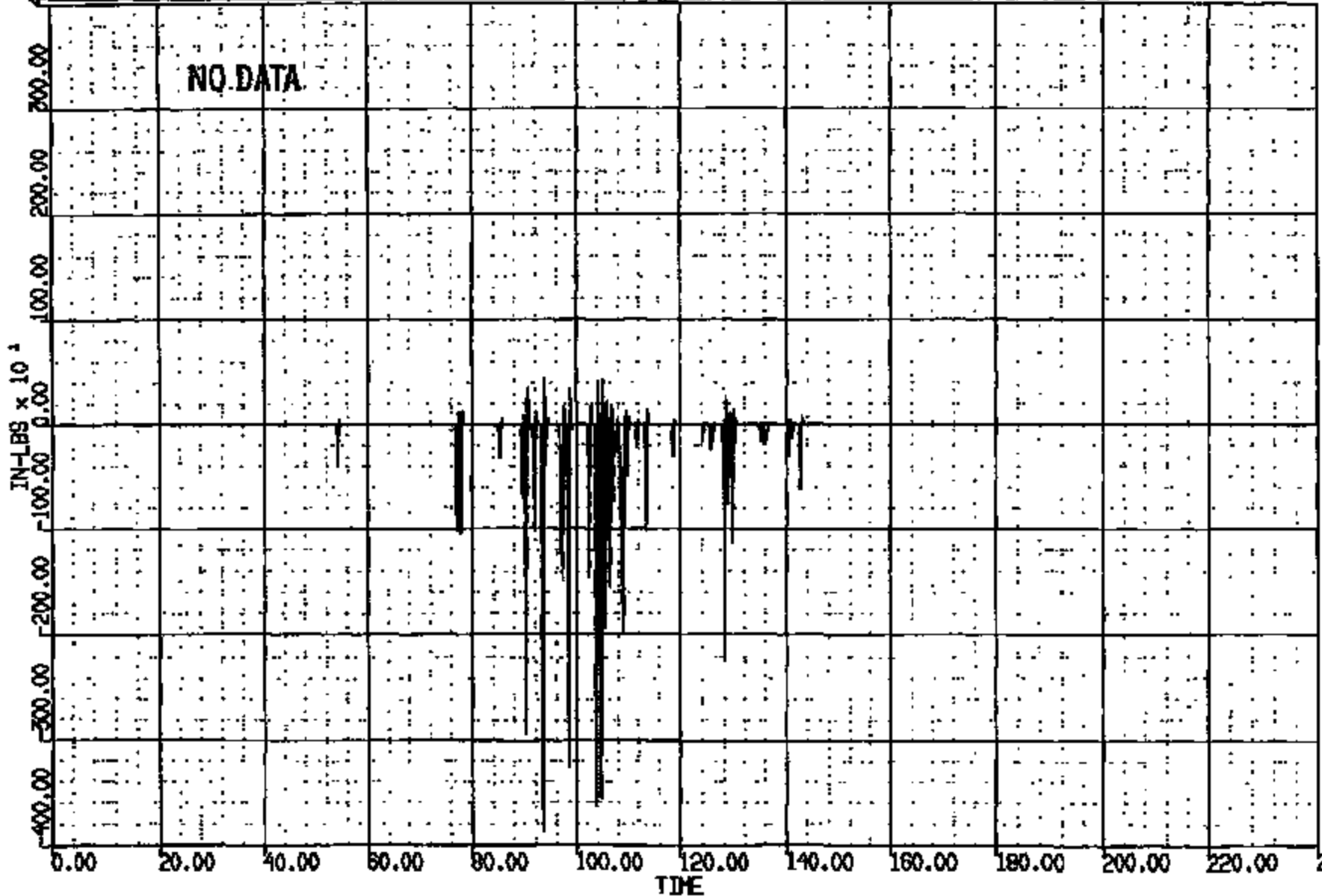
Safety Laboratories Department, 610-PL  
PLOT PAGE 107

TB0853  
SHEET

CR R: 11226 TO: TB0853 DATE: 881008 11:45:38  
2000 D-188 1888 DN-101

# (13) CR112268 L/F DUMMY LUMBAR SPINE LOAD NY 1000C  
MAX = ~~44.5~~ at 93.76 HS MIN = ~~-200~~ at 93.41 HS **AXIS 1**

ANOMALY KEYS  
\* - Statistical data unrounded full scale  
+ - Statistical data 250.0% of full scale  
- - All data < 12.5% of full scale  
# - >1 percent offset of T-zero



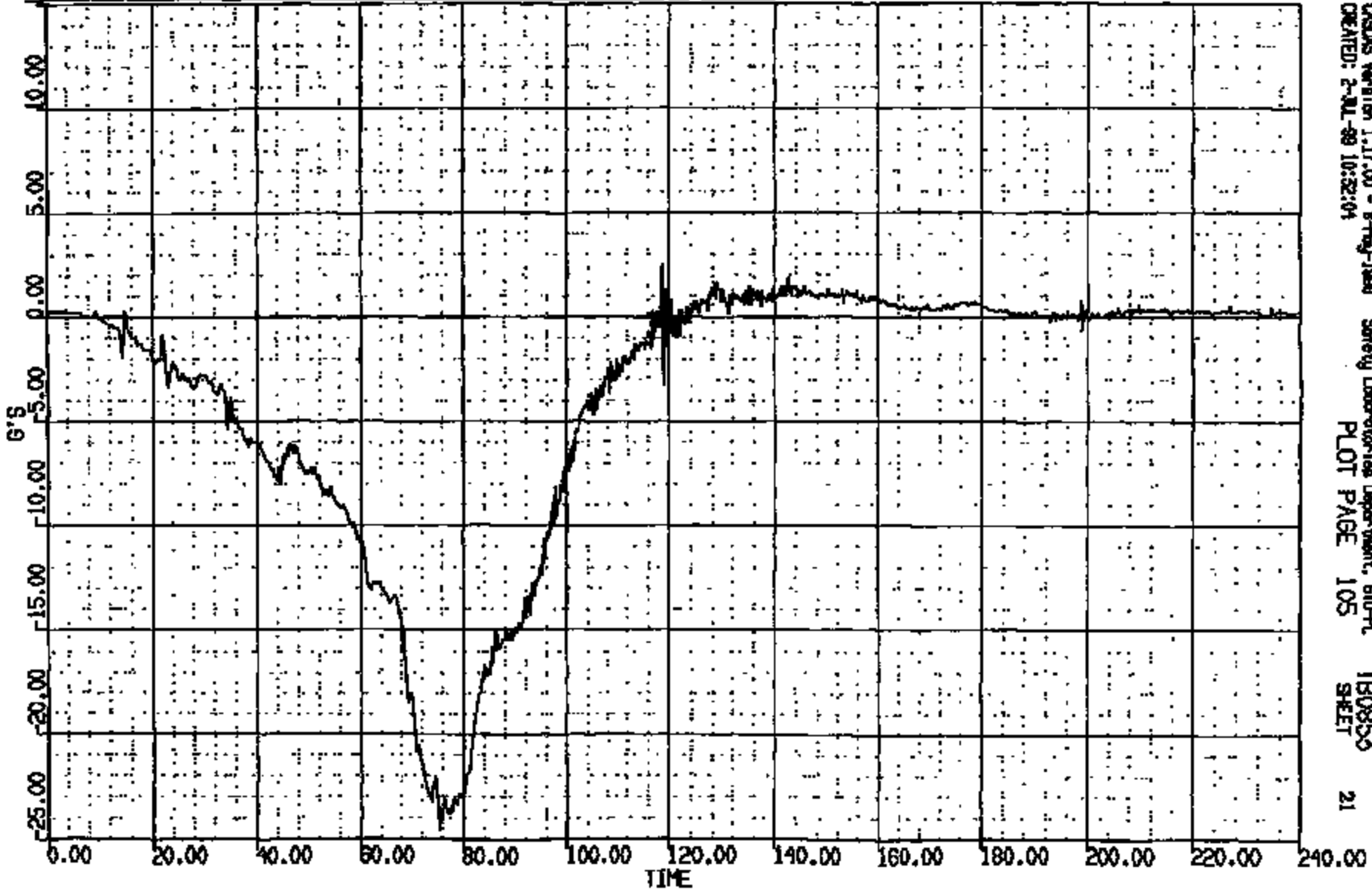
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CREATED: 2-JUL-88 10:32:08

Safety Laboratories Department, 610-PL  
PLOT PAGE 106

TB0853  
SHEET

CR RT: 11226 TO: TB0855 DATE: 981008 11:48:38  
2000 D-188 1888 DN-101

(14) CR112268 L/F DUMMY PELVIS LONG 1000C  
MAX = 2.514 at 118.8 NS MIN = -21.51 at 75.00 NS **AXIS 1**

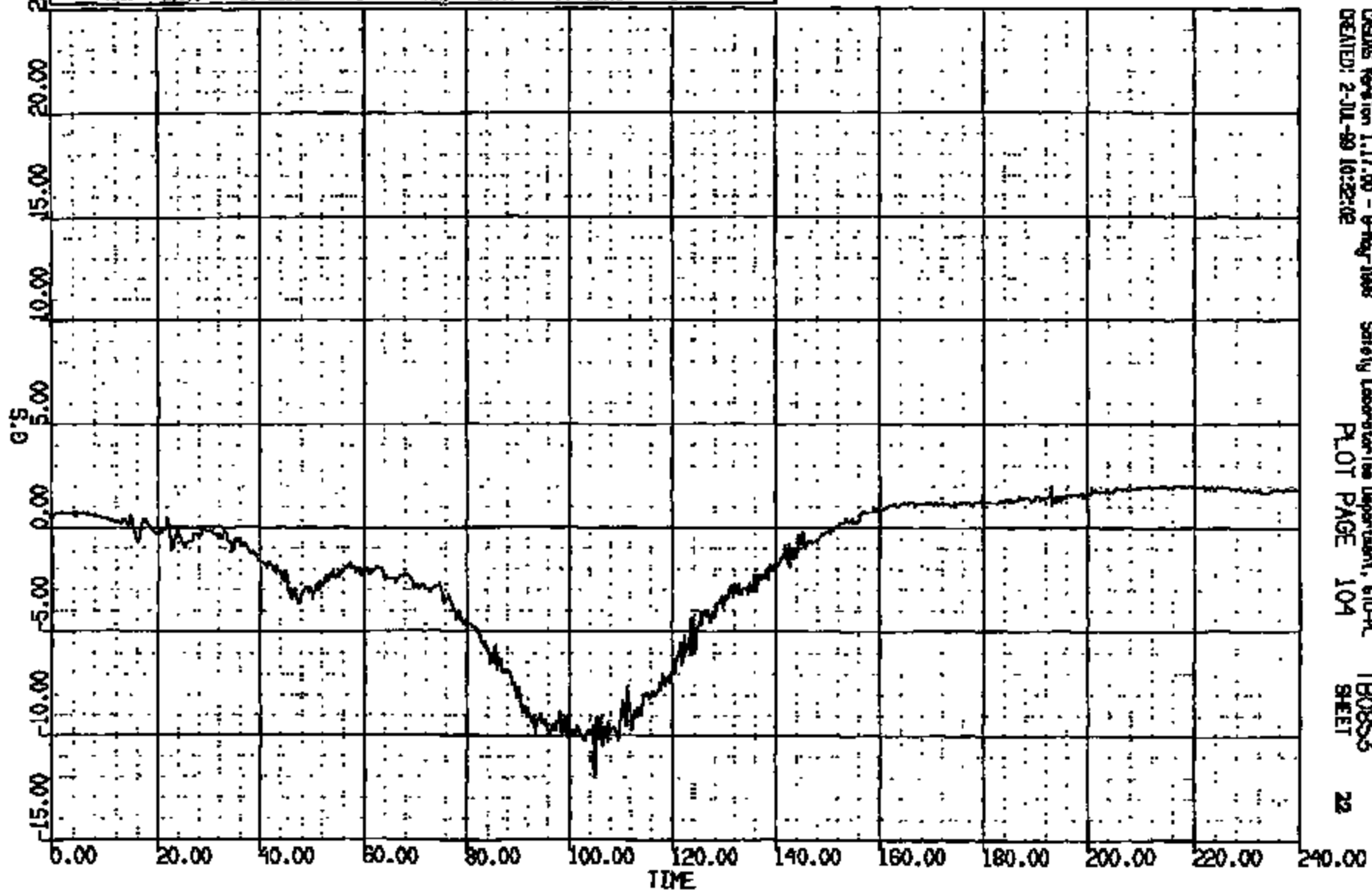


CRYSIS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, B10-PL TB0855  
CREATED: 2-JUL-98 10:52:04 PLOT PAGE 105 SHEET 21

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 081008 11:45:58  
2000 D-188 1888 DN-101

(15) CR112268 L/F DUMMY PELVIS VERT 1000C  
MAX = 2.068 at 219.2 MS MIN = -12.06 at 105.0 MS **AXIS 1**

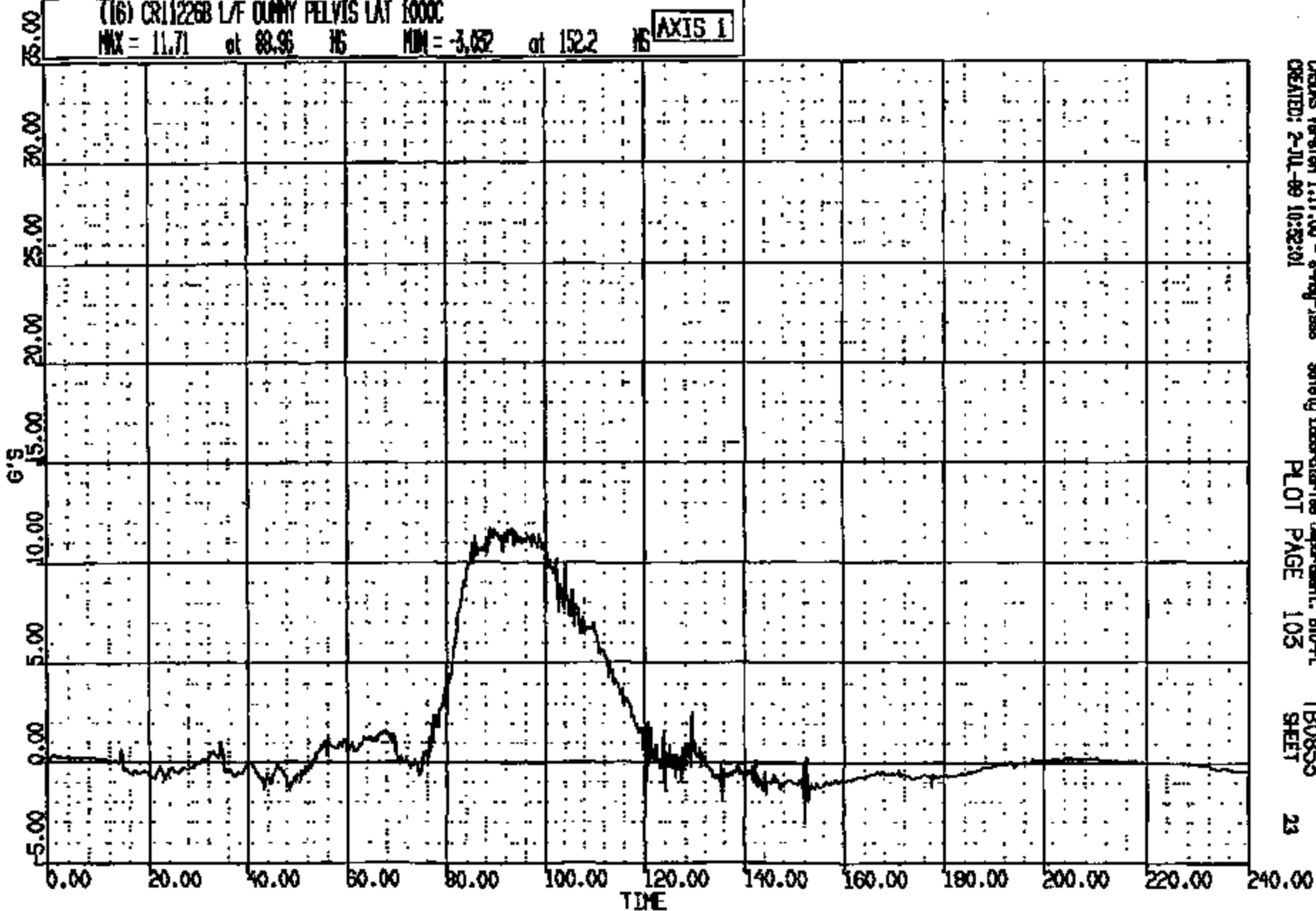


CRS06 Version 1.17.00 - 8-May-1998 Safety Laboratory Department, STD-PL  
CREATED: 2-JUL-99 16:22:02 TB0853  
PLOT PAGE 104 SHEET 22

CRTS 0011226

CR R: 11226 YD: TB0853 DATE: 881008 11:46:58  
2000 D-188 1988 DN-101

(16) CR112268 L/F OUNNY PELVIS LAT 1000C  
MAX = 11.71 at 88.96 HS MIN = -3.052 at 152.2 HS **AXIS 1**

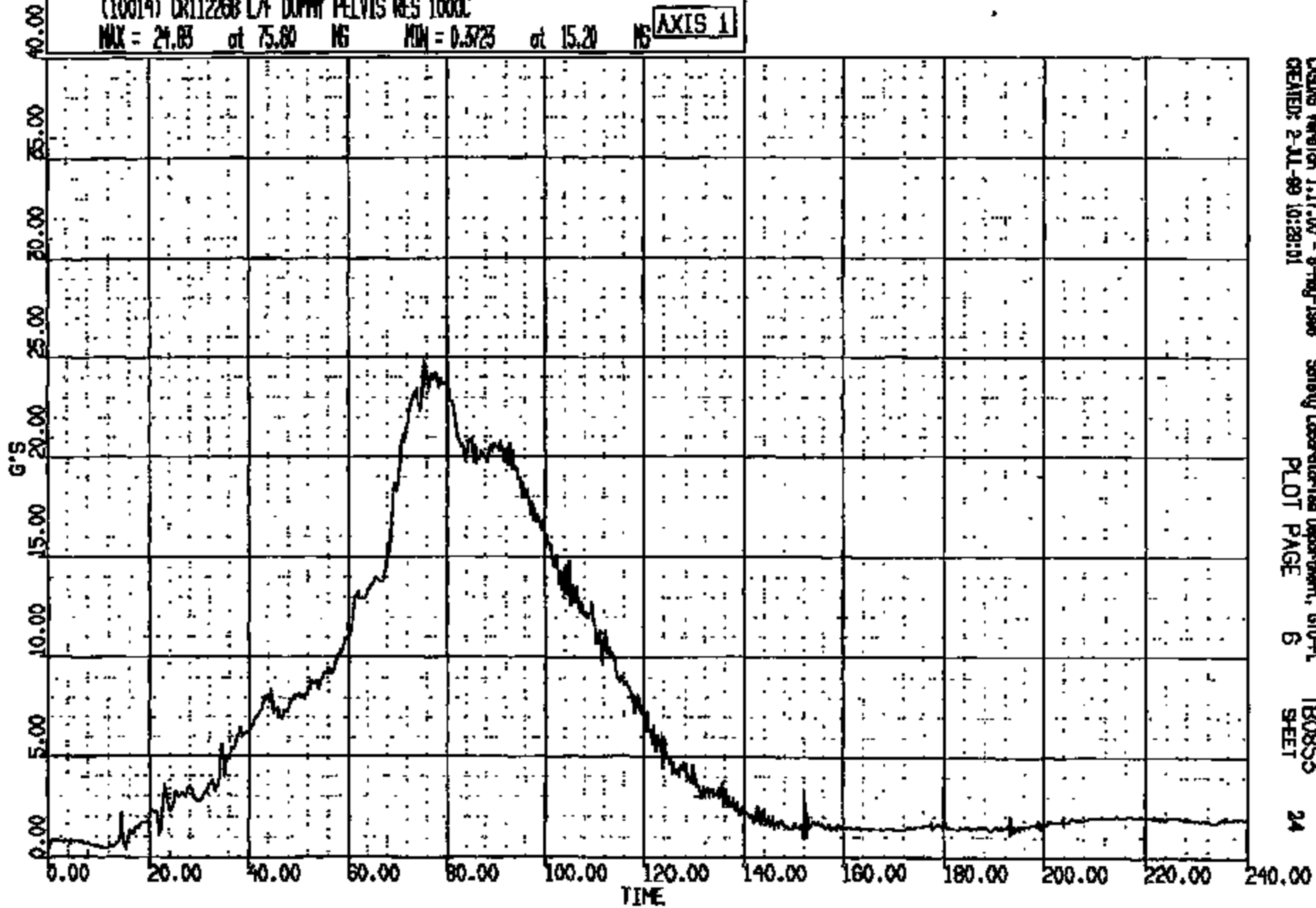


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CREATED: 2-JUL-89 10:25:01 PLOT PAGE 105 SHEET 23

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 081000 11:46:38  
2000 D-188 1988 DN-101

((0014)) CR112263 L/F DUMMY PELVIS RES 1000C  
MAX = 24.85 at 75.80 MS MIN = 0.5723 at 15.20 MS **AXIS 1**



CRS/IS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 670-PL  
CREATED: 2-JUL-88 10:28:01 PLOT PAGE 6 SHEET 24

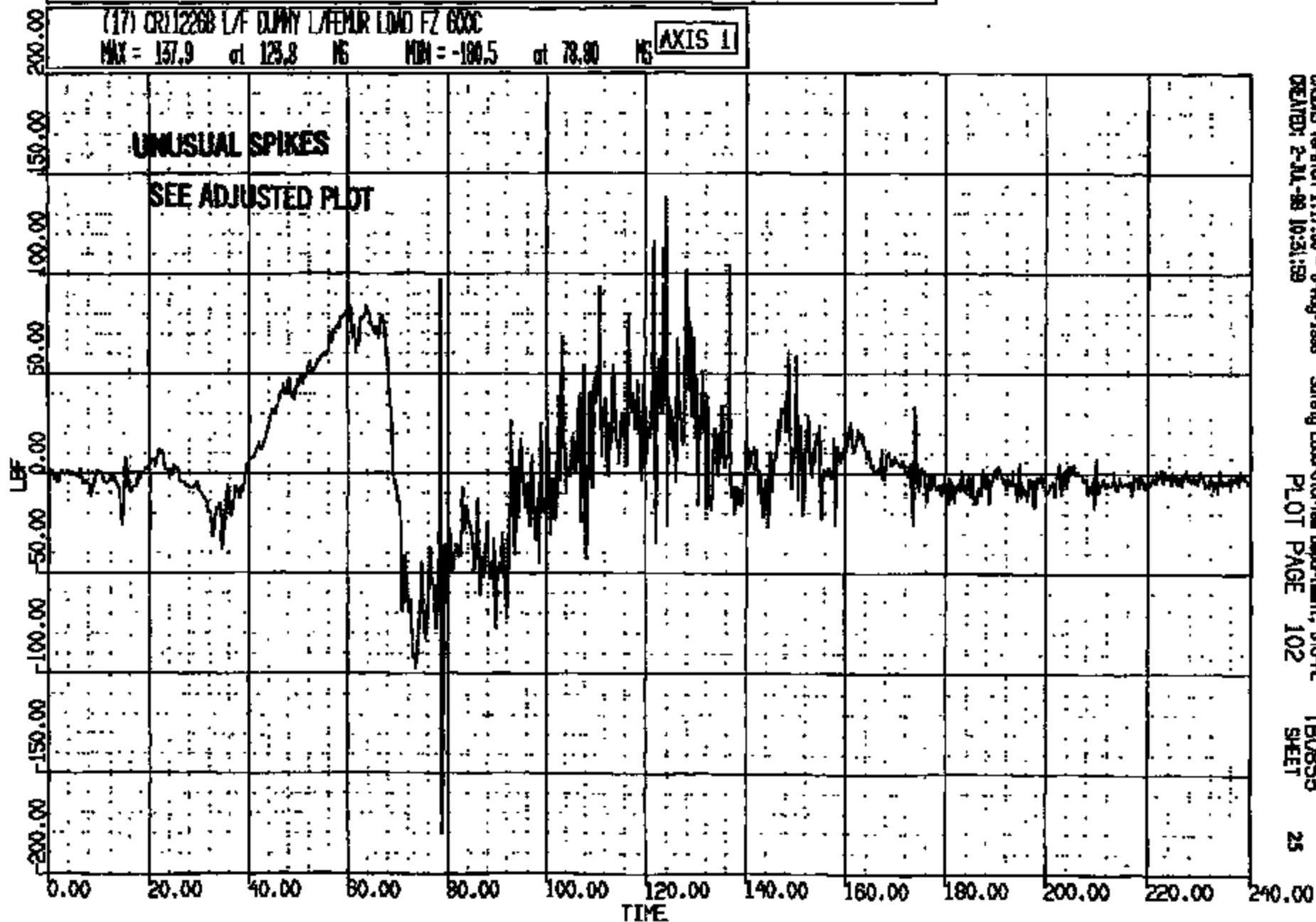
CRIS 0011226

CR R: 11226 TO: TB0853 DATE: 991008 11:45:38  
2000 0-188 1998 DN-101

(17) CR112268 L/F DUMMY LATHEUR LOAD FZ 600C

MAX = 137.9 at 123.8 MS MIN = -180.5 at 78.80 MS

AXIS 1



CAEHS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-98 10:31:59

Safety Laboratory Department, SIO-PL  
PLOT PAGE 102

TB0853  
SHEET

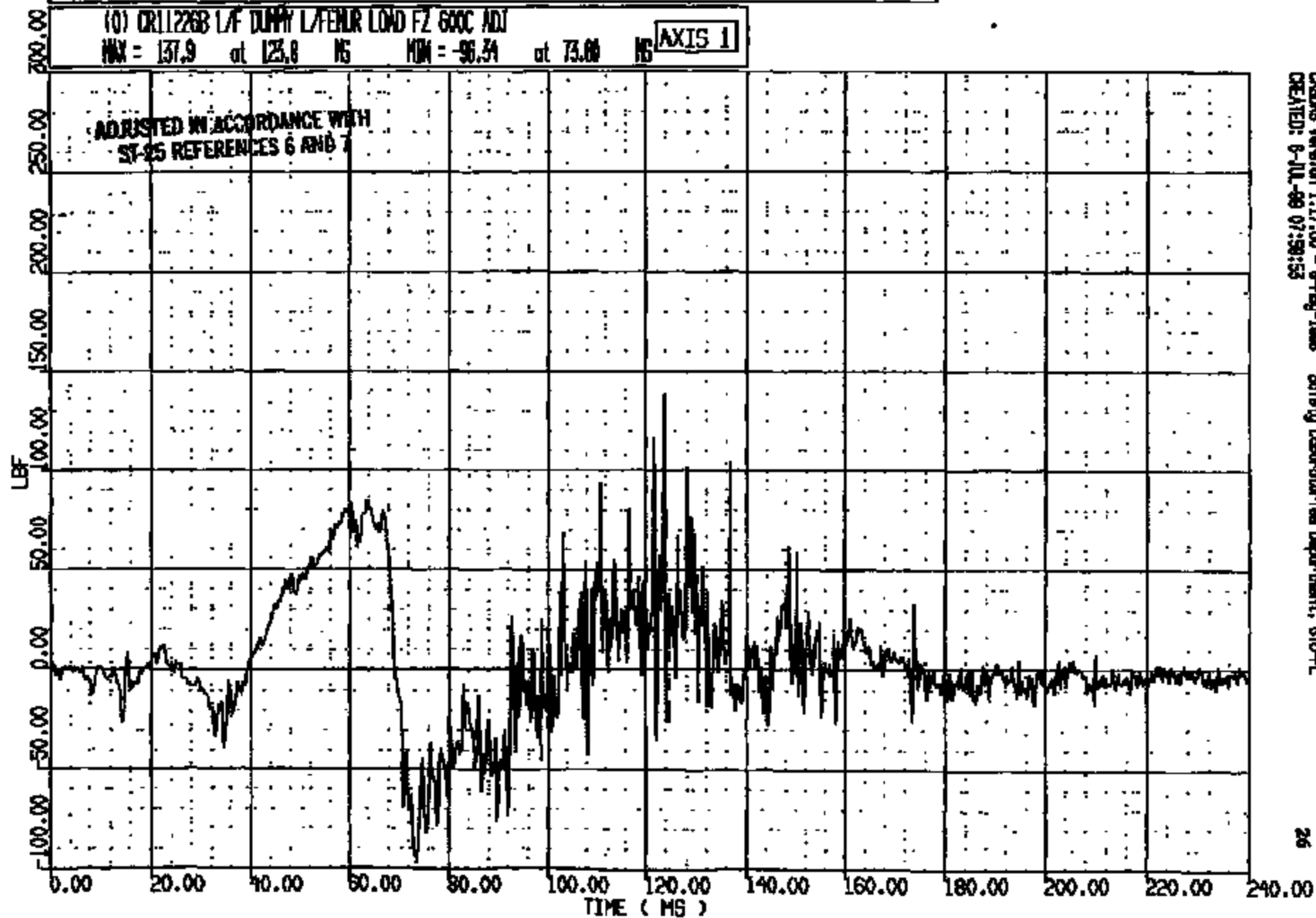
25

CRTS 0011226



QUICK PLOT A DATA ENTITY  
CR112268\_L/F\_DUMMY\_L/FEMUR\_LOAD\_FZ\_600C\_ADJ

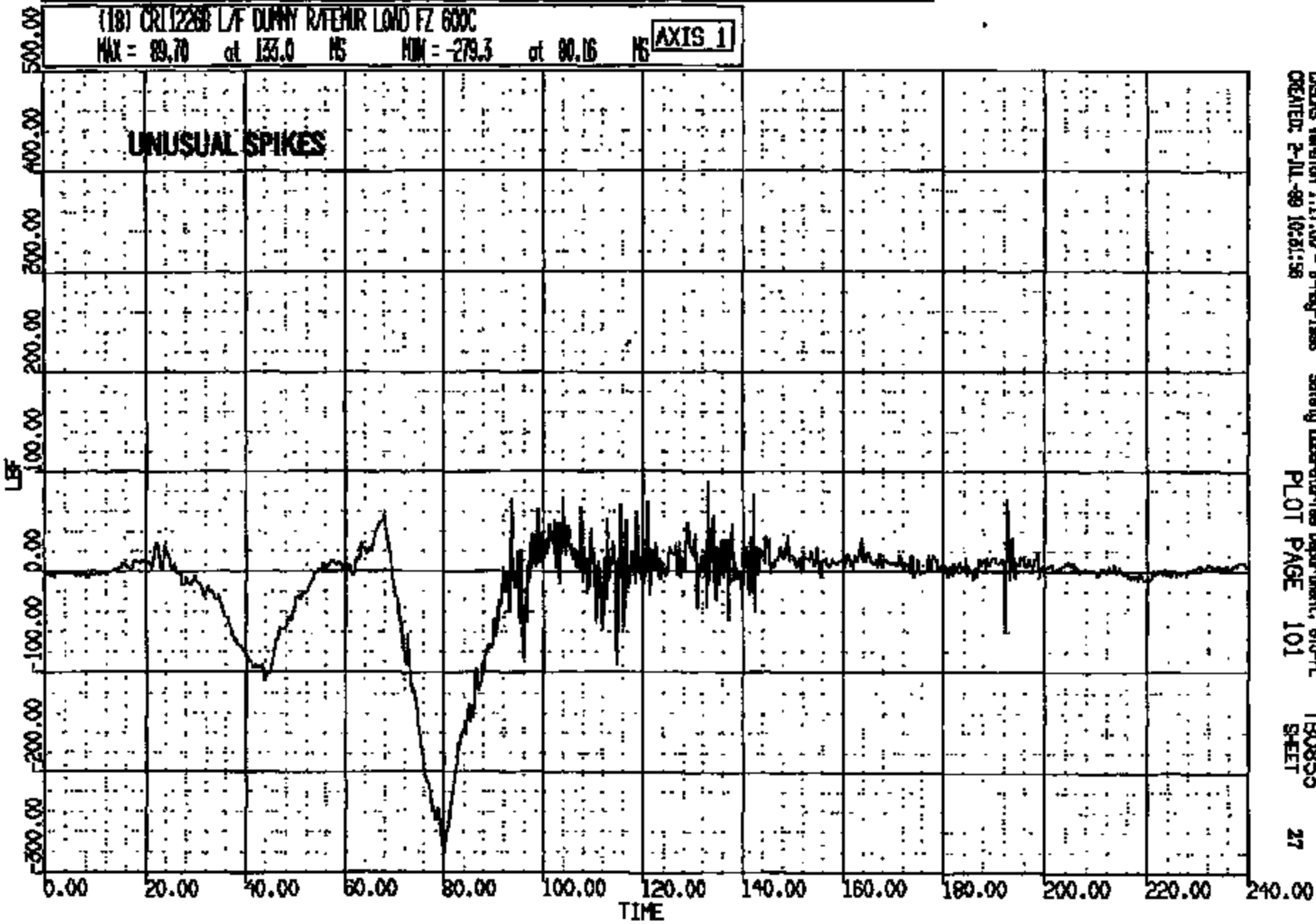
(0) CR112268 L/F DUMMY L/FEMUR LOAD FZ 600C ADJ  
MAX = 137.9 at 123.8 MS MIN = -96.34 at 73.00 MS **AXIS 1**



CRONUS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, SIO-PL  
CREATED: 8-JUL-88 07:59:53

OPR N: 11226 TO: TB0853 DATE: 881008 11:45:38  
R000 D-188 1888 ON-101

(18) CRT12268 L/F DUMMY RATEMR LOAD FZ 600C  
MAX = 89.70 at 133.0 NS MIN = -279.3 at 80.16 NS **AXIS 1**



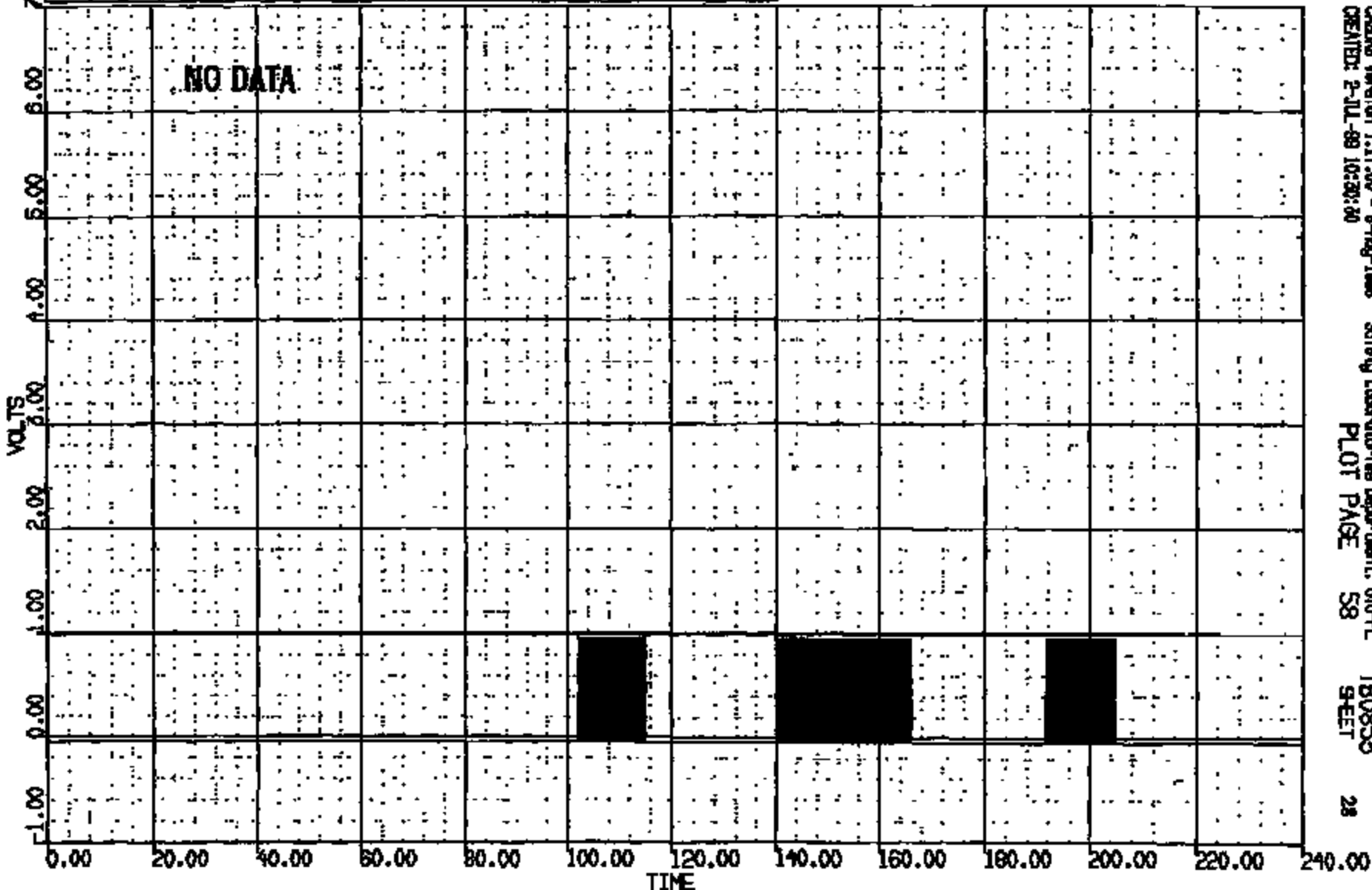
LEADS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL  
CREATED: 2-JUL-99 10:31:58 PLOT PAGE 101 TB0853 SHEET 27

CRTS 0011226

DR #: 11226 TO: TB0853 DATE: 981008 11:45:59  
2000 D-188 1898 DN-101

(61) CRT12268 L/F DMMY L/WEE SA 400C  
MAX = 0.0570 at 102.3 MS MIN = ~~-4.00E-01~~ at ~~-7.62E-05~~ MS

AXIS 1

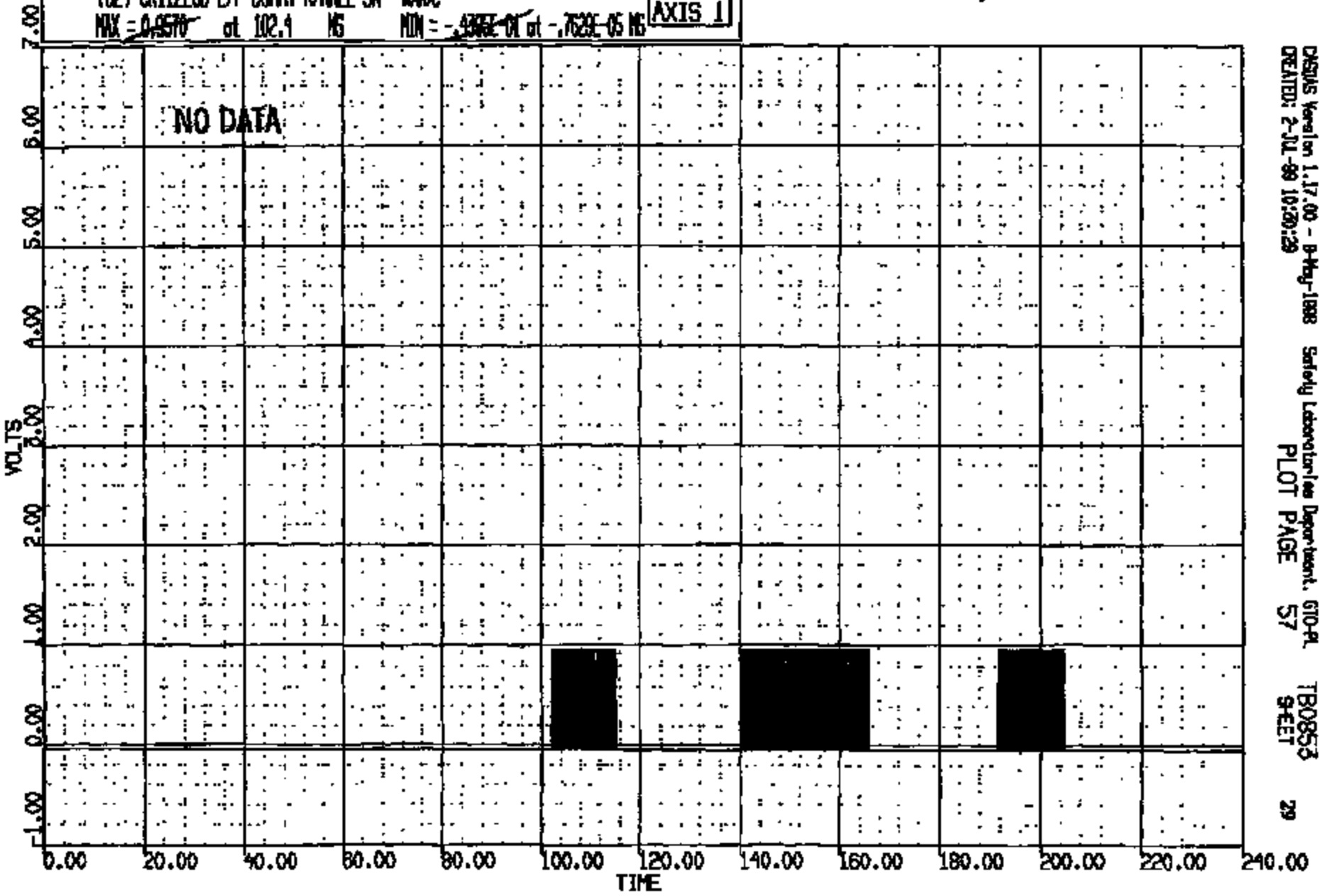


CRIME Version 1.17.00 - 8-May-1998 Safety Laboratories Department, GTO-PL TB0853  
CREATED: 2-JUL-98 10:30:40 PLOT PAGE 58 SHEET 28

CRTS 0011226

CR R: 11226 TO: TBO855 DATE: 981009 11:45:58  
2000 D-188 1888 DN-101

(82) CR112268 L/F CUNNY RANEE SA 4000C  
MAX = 0.9570 at 102.4 MS MIN = -0.3852 at -0.7623E-05 MS **AXIS 1**



DESIGS Version 1.17.00 - 8-May-1988 Safety Laboratory Department, GTO-PL TBO855  
CREATED: 2-JUL-89 10:20:29 PLOT PAGE 57 9-EET 29

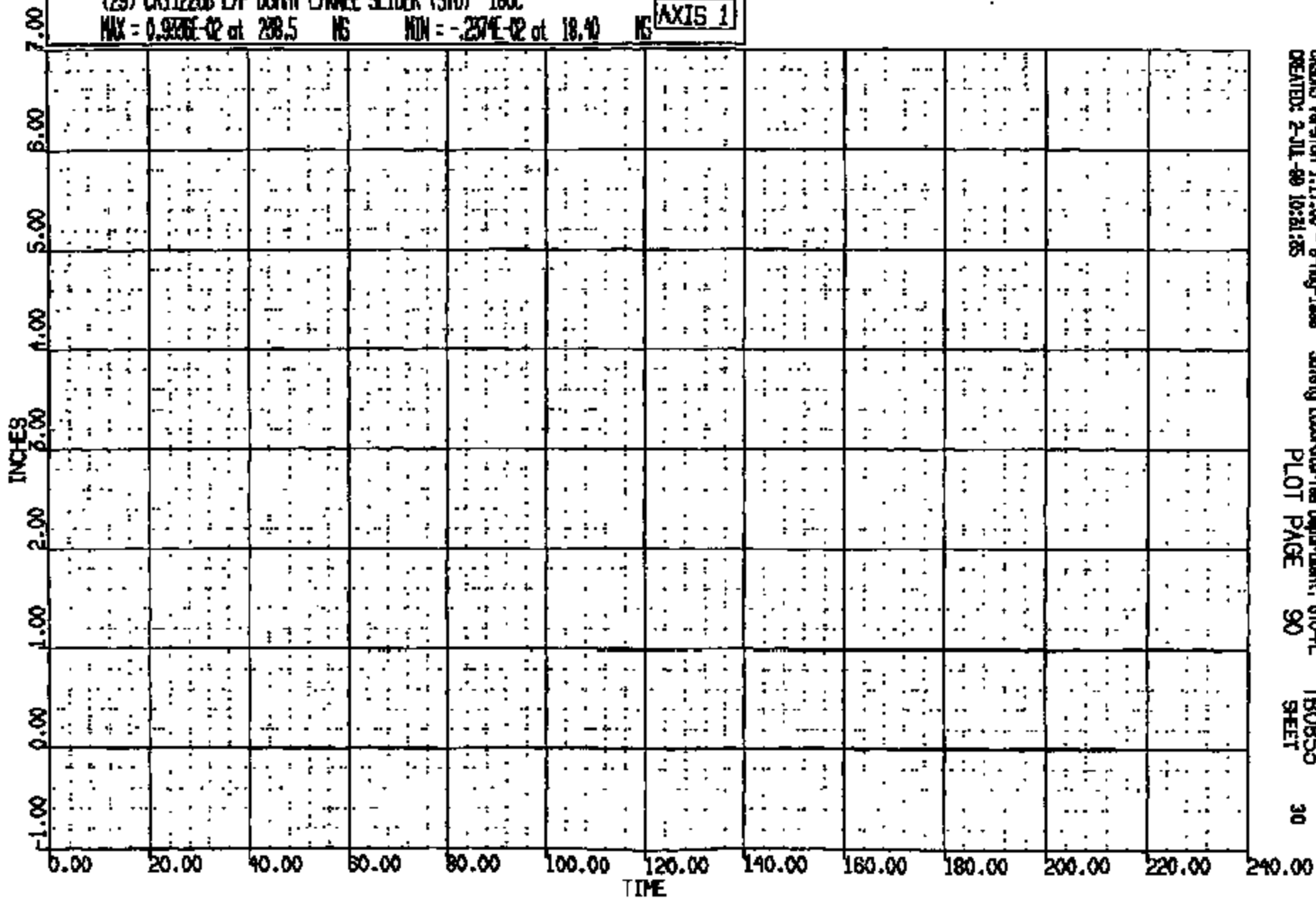
CRIS 0011226

CR R: 11226 TO: TROESS DATE: 981008 11:45:38  
2000 D-188 1998 DN-101

(29) CR11226B L/F DUMMY LAJEE SLIDER (STD) 180C

MAX = 0.9376E-02 at 288.5 NS MIN = -.2374E-02 at 18.40 NS

AXIS 1



CASINS Version 1.17.00 - 8 Aug 1998  
CREATED: 2-JUL-99 10:51:55

Safety Laboratories Department, 610-PL  
PLOT PAGE 90

TR0855  
SHEET

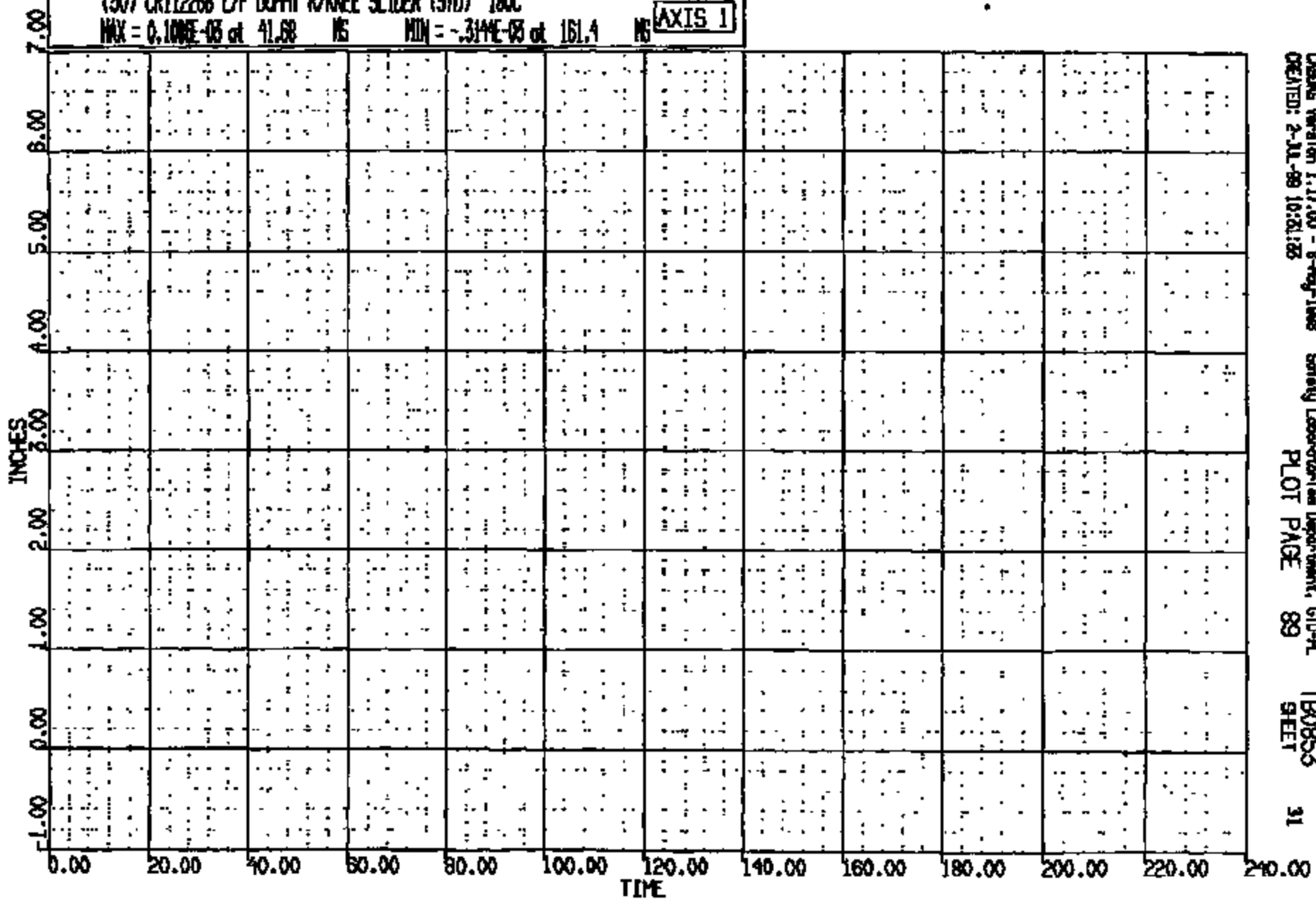
30

CR R: 11226 TO: TB0855 DATE: 981009 11:45:58  
2000 D-188 1998 DN-101

(30) CR112268 L/F DUMMY KNEE SLIDER (STD) 180C

MAX = 0.109E-03 at 41.58 NS MIN = -.314E-03 at 161.4 NS

AXIS 1



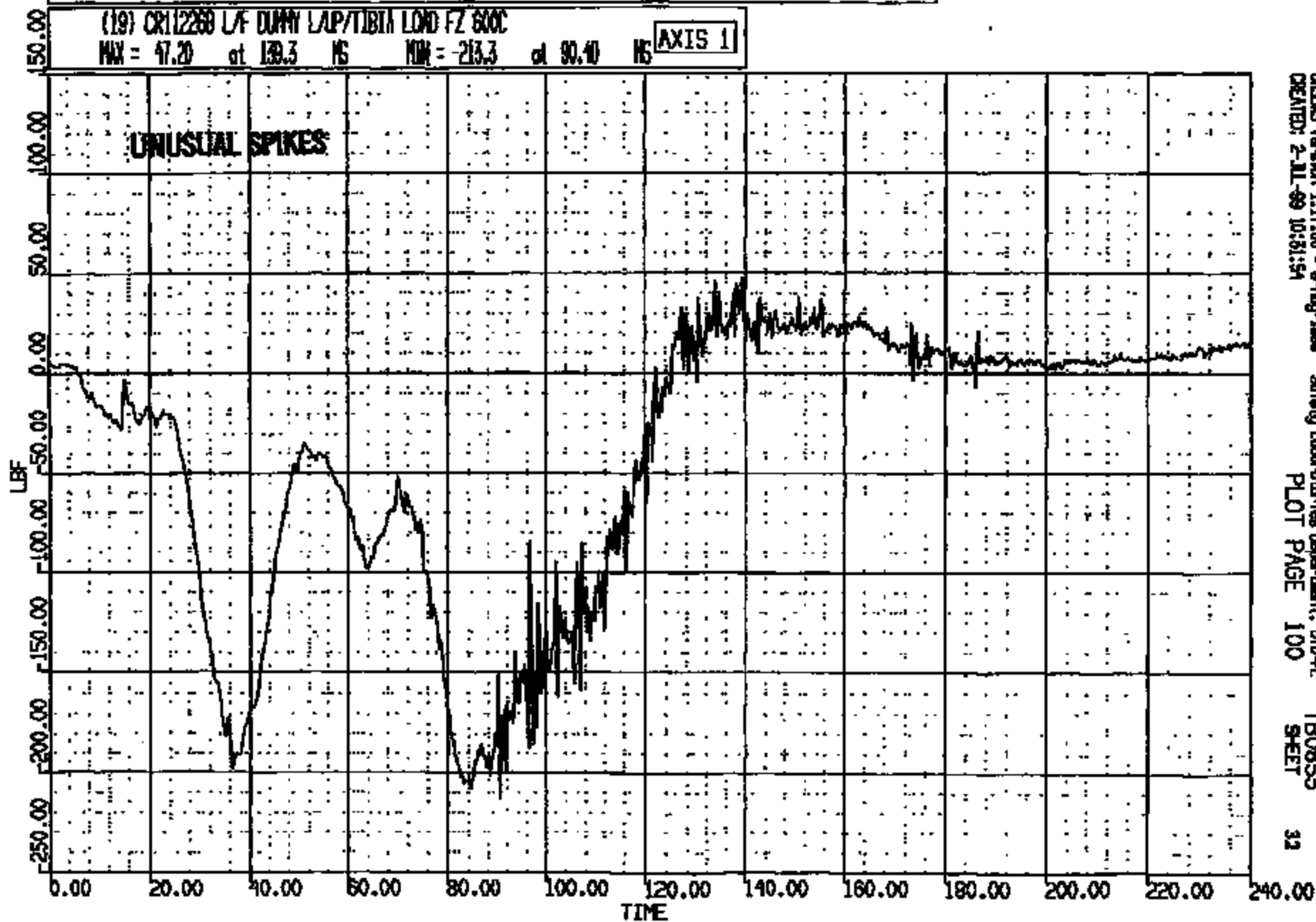
CRSNG Version 1.17.00 - 8-May-1998  
CREATED: 2-11-98 16:21:25

Safety Laboratory Department, GTO-PL  
PLOT PAGE 89

TB0855  
SHEET

CR R: 11226 TO: TB0855 DATE: 021000 11:45:59  
2000 0-188 1898 DN-101

(19) CR112268 L/F DUMM LAP/TIBIA LOAD FZ 600C  
MAX = 47.20 at 139.3 MS MIN = -213.3 at 90.40 MS **AXIS 1**



CRSIS Version 1.17.00 - 9-Aug-1998  
CREATED: 2-JUL-99 10:31:54

Safety Laboratories Department, SID-F  
PLOT PAGE 100

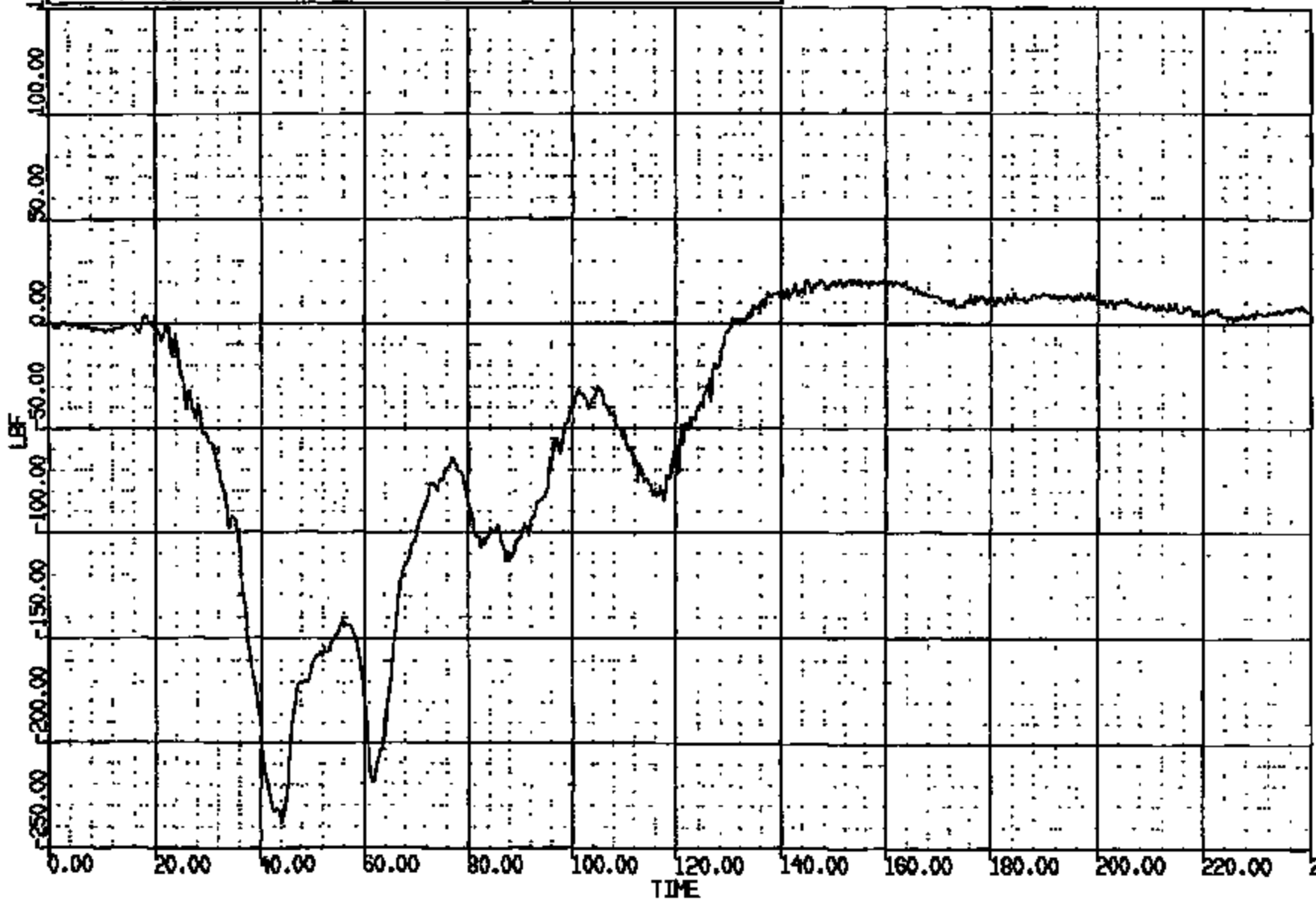
TB0855  
SHEET

32

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 981008 11:48:58  
2000 D-180 1998 DN-101

(22) CR112268 L/F DUMMY R/UP/TIBIA LOAD FZ 600C  
MAX = 21.35 at 141.8 MS MIN = -230.6 at 41.16 MS **AXIS 1**



CADDS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL TB0853  
CREATED: 2-JUL-98 10:21:48 PLOT PAGE 97 SHEET 33

CRTS 0011226

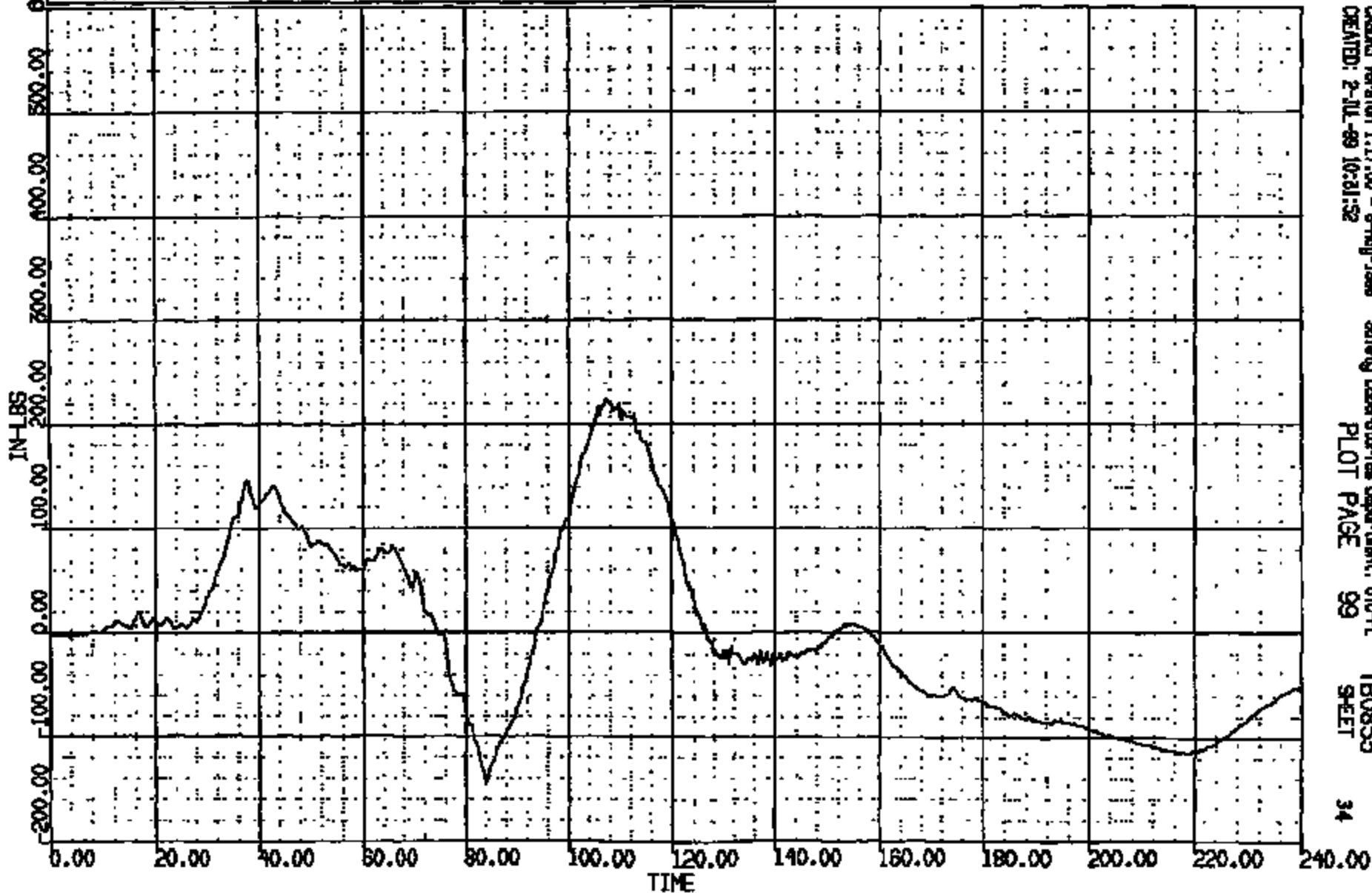


CR N: 11226 TO: TB0855 DATE: 081000 11:45:30  
R000 0-100 1000 ON-101

(20) CRT12268 L/F DUMMY LAP/TIBIA LOAD PK 600C

MAX = 221.9 at 107.4 MS MIN = -143.3 at 81.24 MS

AXIS 1



CASMS Version 1.17.00 - 9-Aug-1999  
CREATED: 2-JUL-99 10:31:52

Safety Laboratory Department, 610-PL  
PLOT PAGE 99

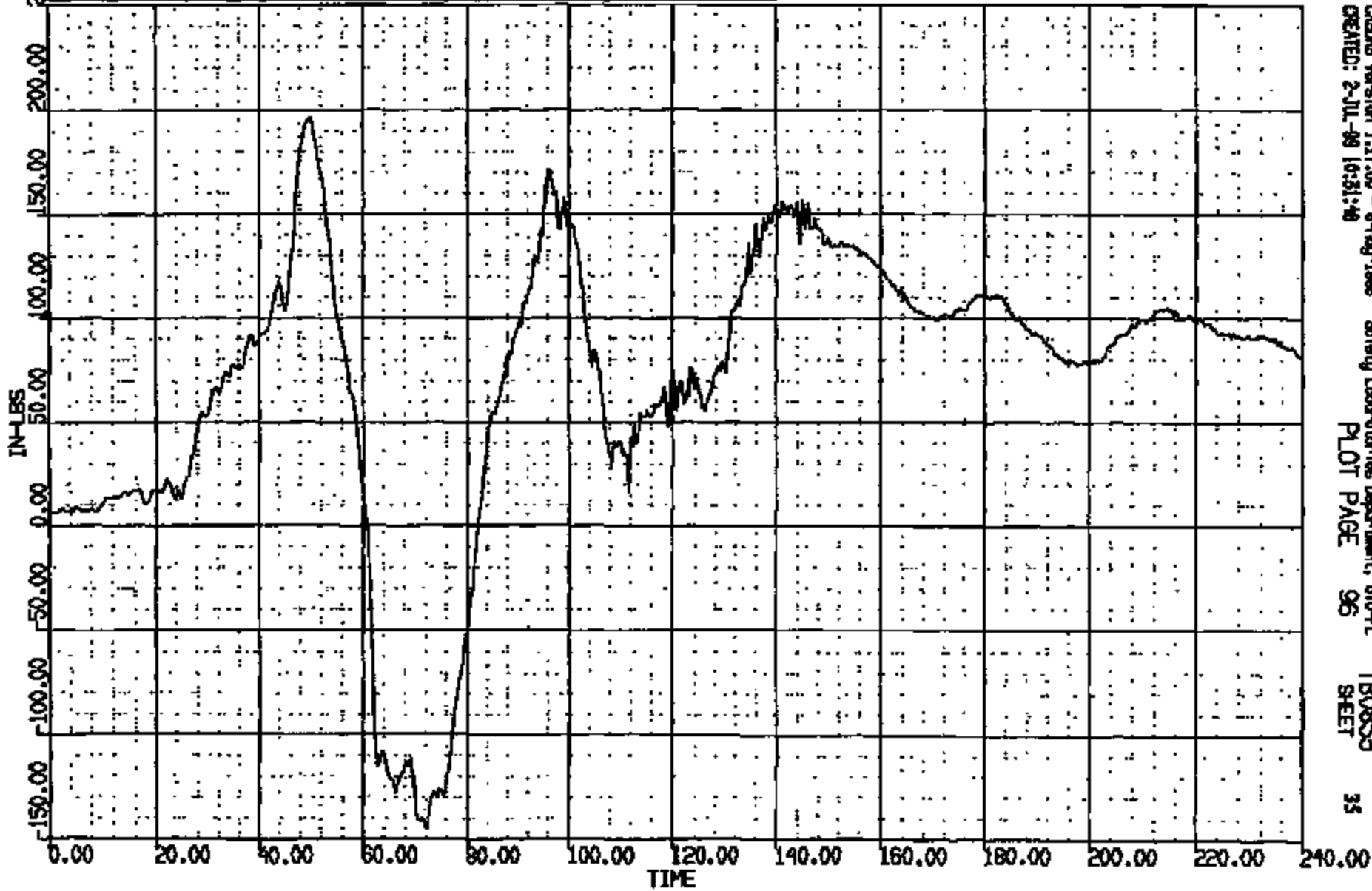
TB0855  
SHEET

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CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 081008 11:45:38  
R000 D-168 1998 DN-101

(23) CR112268 L/F DUMMY R/UP/TIBIA LOAD FX 600C  
MAX = 195.9 at 49.92 MS MIN = -145.4 at 72.16 MS **AXIS 1**



CRSIS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, GPO-PL TB0853  
CREATED: 2-JUL-98 16:51:40 PLOT PAGE 96 SHEET 35

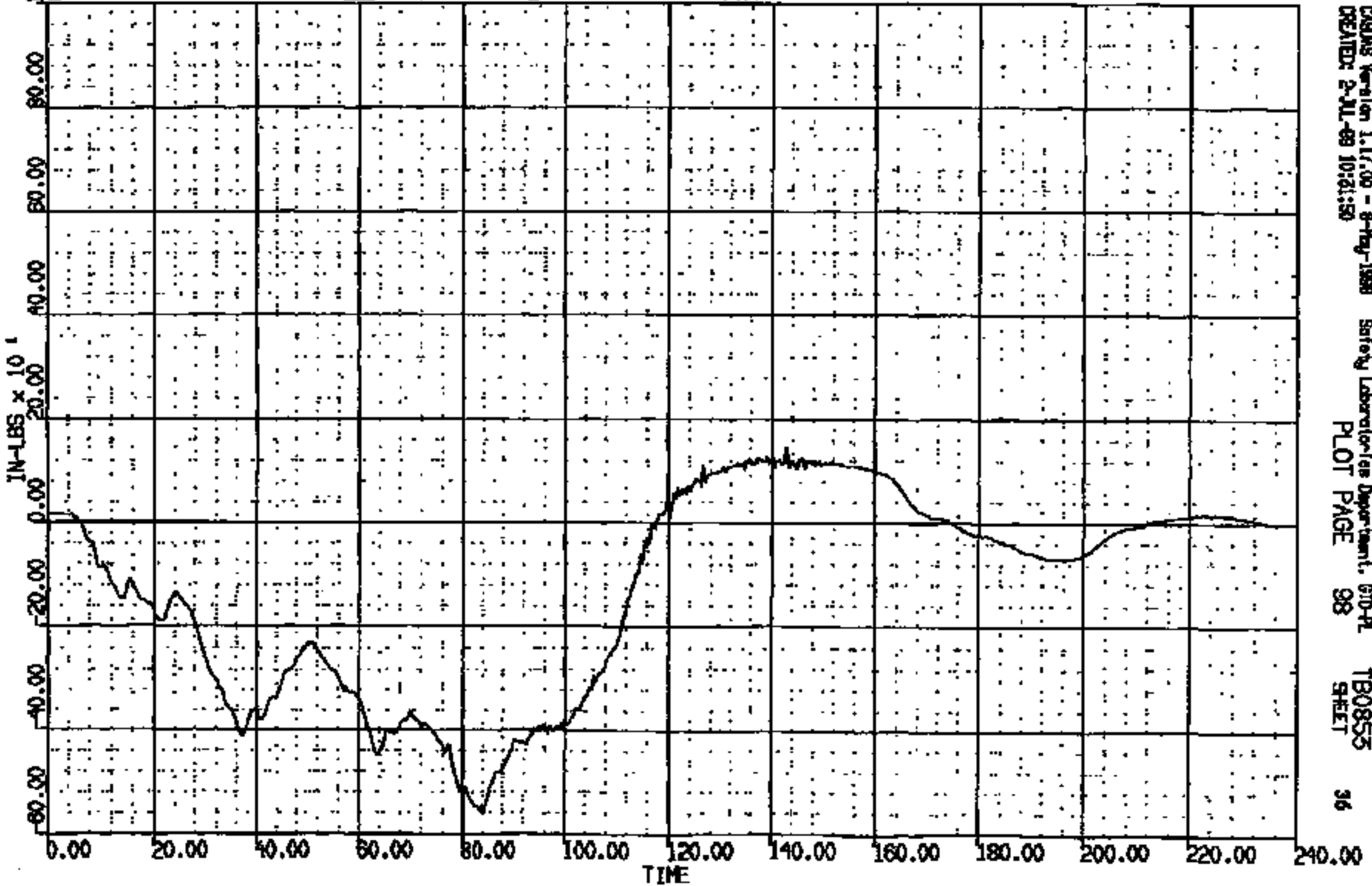
CRTS 0011226

CR: R: 11228 TO: TB0855 DATE: 981009 11:45:38  
NOOO 0-188 1888 ON-101

(21) CRT12268 L/F DUMMY LAP/TIBIA LOAD BY 600C

MAX = 145.8 at 142.8 MS MIN = -563.3 at 89.16 MS

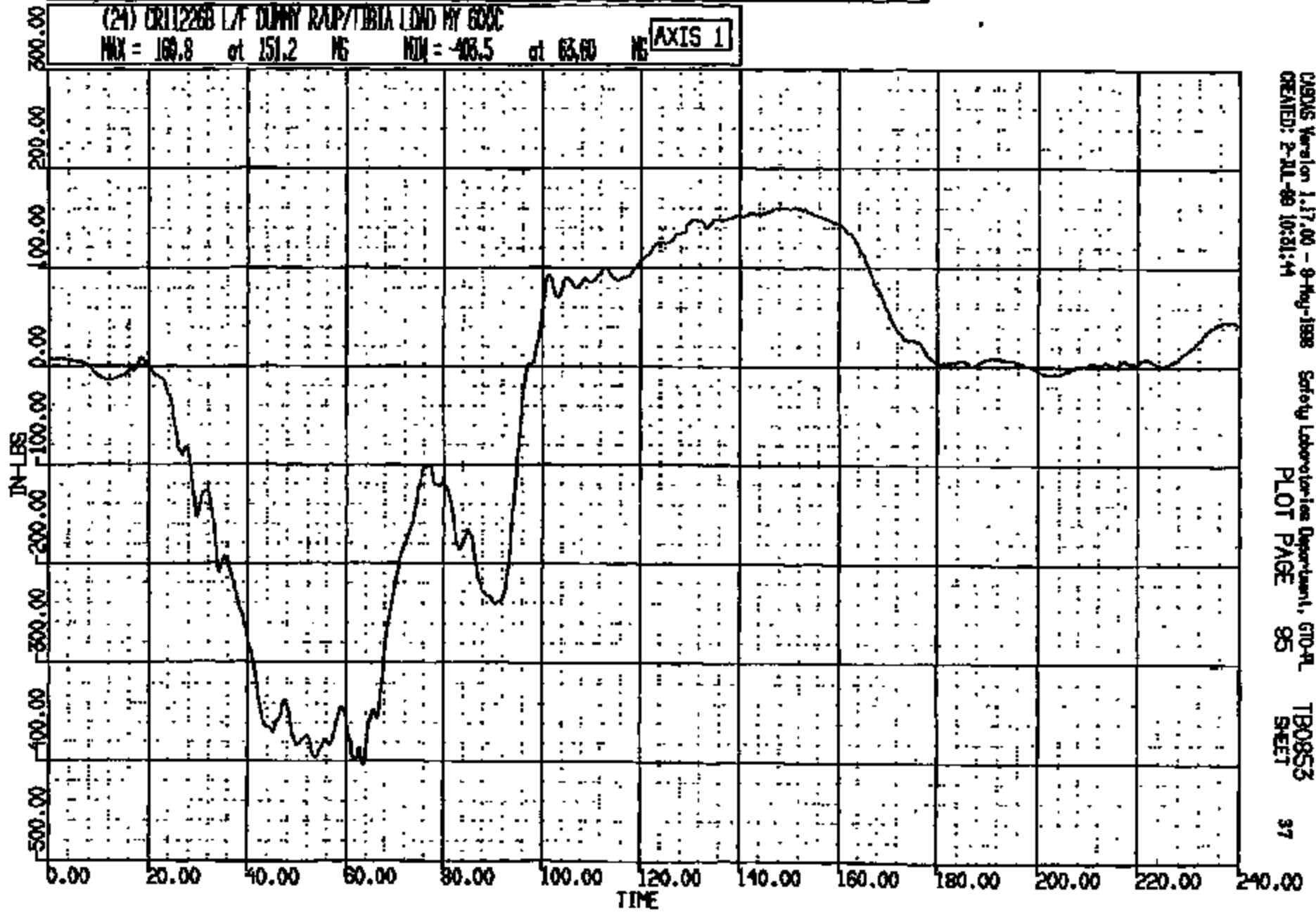
AXIS 1



CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 981009 11:45:28  
2000 D-188 1898 DN-101

(24) CR11226B L/F DUMMY RAMP/TIBIA LOAD BY 600C  
MAX = 168.8 at 151.2 MS MIN = -408.5 at 63.60 MS **AXIS 1**

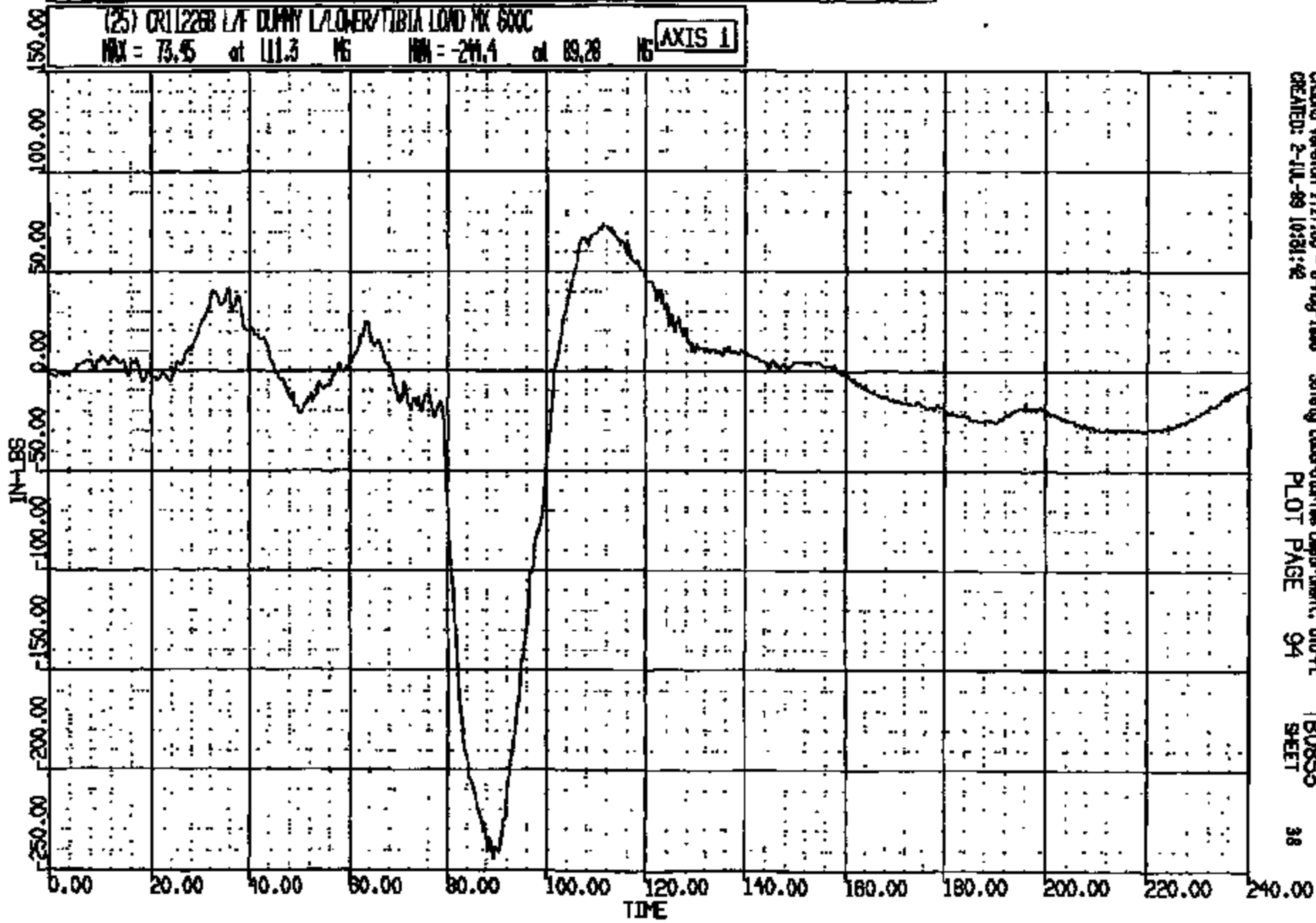


CRS Version 1.17.00 - 9-Aug-1998 Safety Laboratories Department, GTD-FL  
CREATED: 2-11-98 10:21:44 PLOT PAGE 95 TB0853 SHEET 37

CRIS 0011226

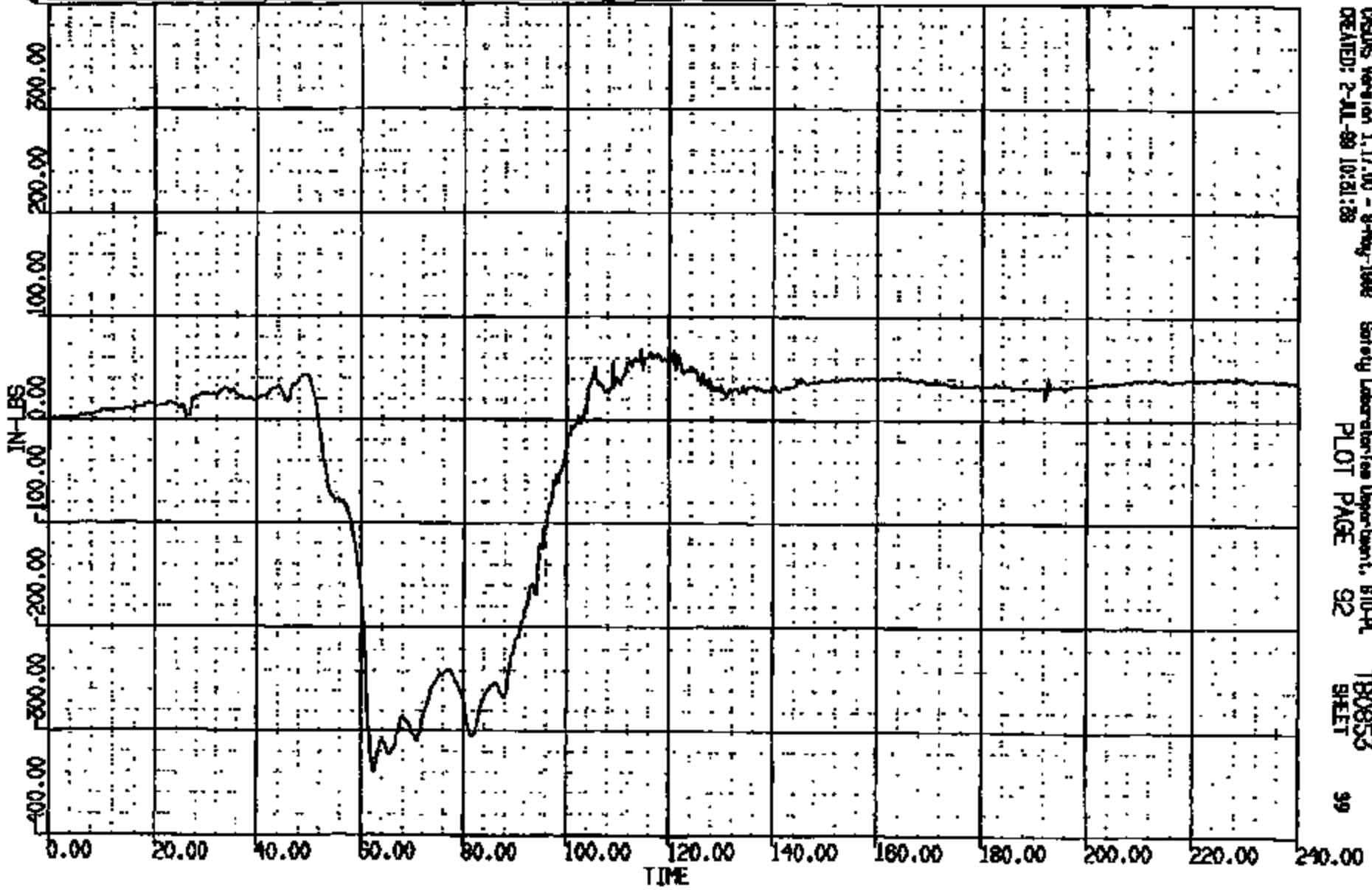
CR R: 11226 TO: TB0855 DATE: 981009 11:45:28  
2000 D-188 1999 DN-101

(25) CR112268 L/F DUMMY L/LOWER/TIBIA LOAD MK 600C  
MAX = 73.5 at 111.3 MS MIN = -211.4 at 89.28 MS **AXIS 1**



CR: R: 11226 TO: TB0855 DATE: 881008 11:45:38  
2000 0-188 1988 DN-101

(27) CR11226B L/F DUMMY R/LOWER/TIBIA LOAD PX 600C  
MAX = 67.51 at 121.0 MS MIN = -340.7 at 62.48 MS AXIS 1



OSGUS Version 1.17.00 - 8-Aug-1988 Safety Laboratories Department, 810-PL  
CREATED: 2-JUL-88 10:21:28 PLOT PAGE 92 TB0855 SHEET 99

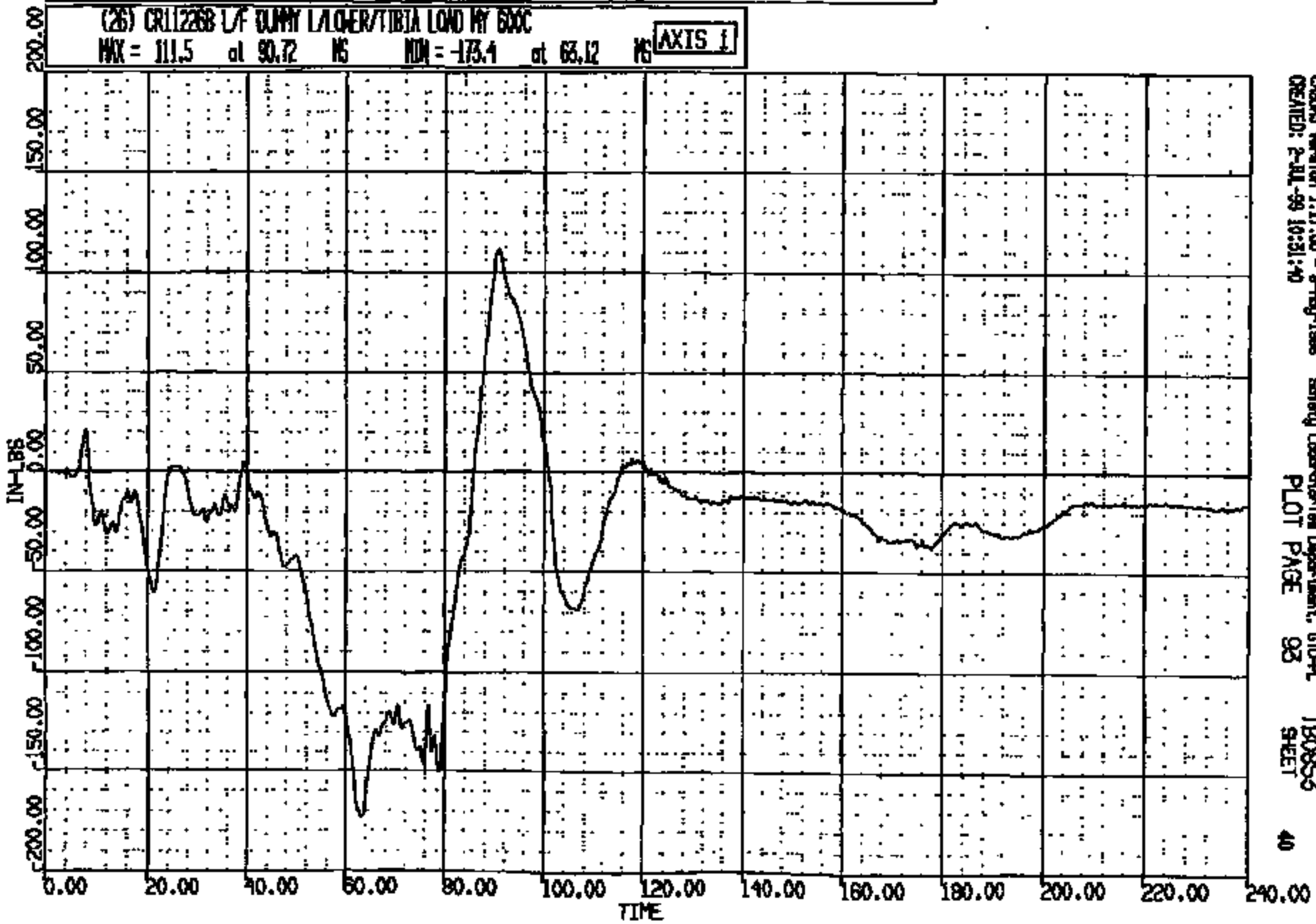
CRTS 0011226

CR # : 11226 TO: T80855 DATE: 881008 11:45:38

2000 D-180 1888 DN-101

(26) CR112268 L/F DUMMY L/LOWER/TIBIA LOAD BY 600C

MAX = 111.5 at 90.72 MS MIN = -173.4 at 68.12 MS AXIS 1



CRAMS Version 1.17.00 - 8-May-1988  
CREATED: 2-Jul-89 10:31:40

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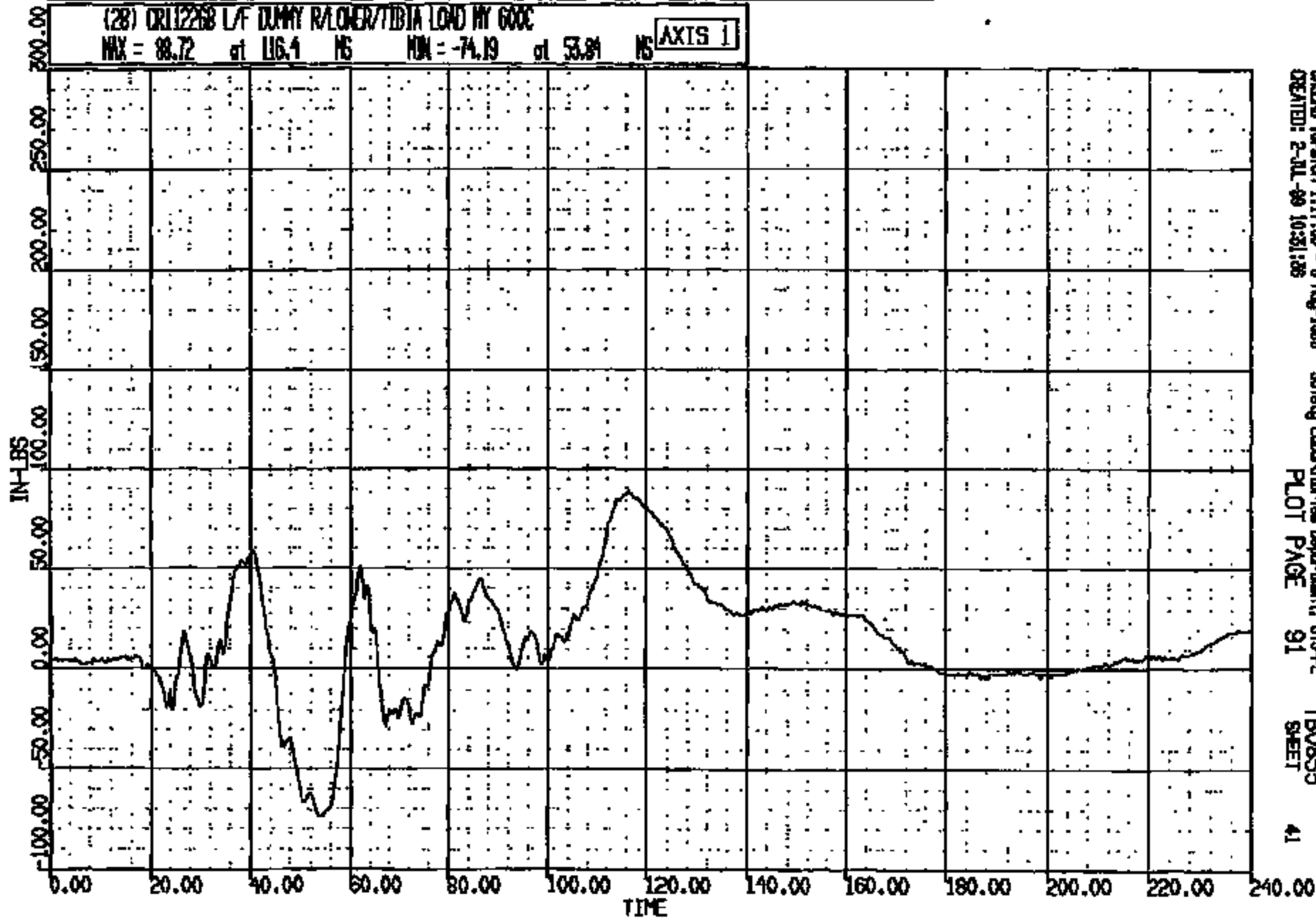
T80855  
SHEET

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CRIS 0011226

CR R# 11226 TO: TB0853 DATE: 081008 11:48:58  
2000 0-108 1088 DN-101

(28) DR11226B L/F DUMMY R/LOWER/TIBIA LOAD BY 600C  
MAX = 88.72 at 116.4 MS MIN = -74.19 at 53.81 MS **AXIS 1**



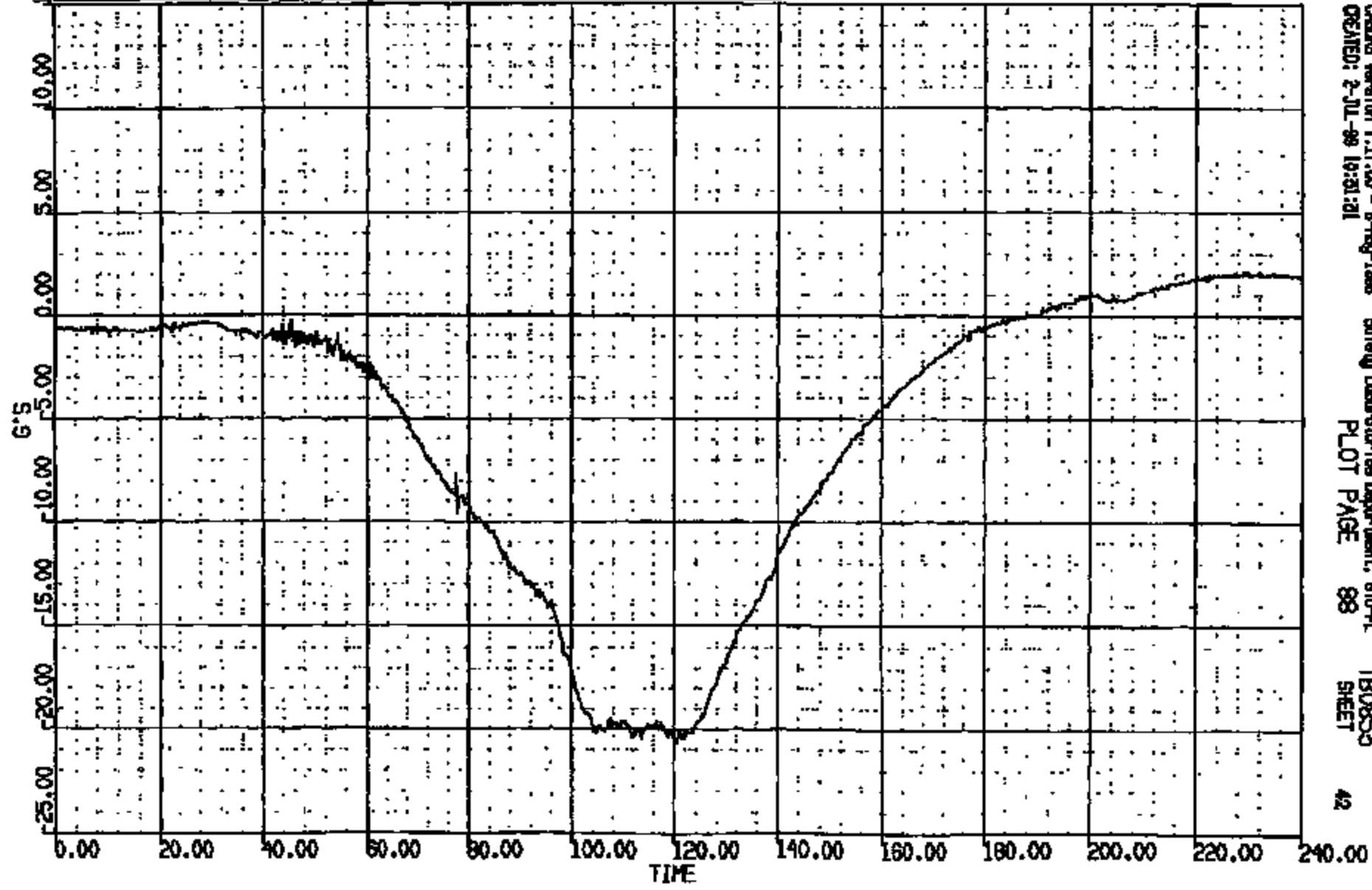
CADDS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, GPO-PL  
CREATED: 2-JUL-89 10:51:08 PLOT PAGE 91 TB0853  
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CRTS 0011226



CR RT: 11226 TO: TB0855 DATE: 991008 11:48:58  
2000 D-188 1998 DN-101

(31) CR11226B R/F DUMMY HEAD C.G. LONG 1000C  
MAX = 2.156 at 229.8 MS MIN = -20.69 at 120.5 MS **AXIS 1**

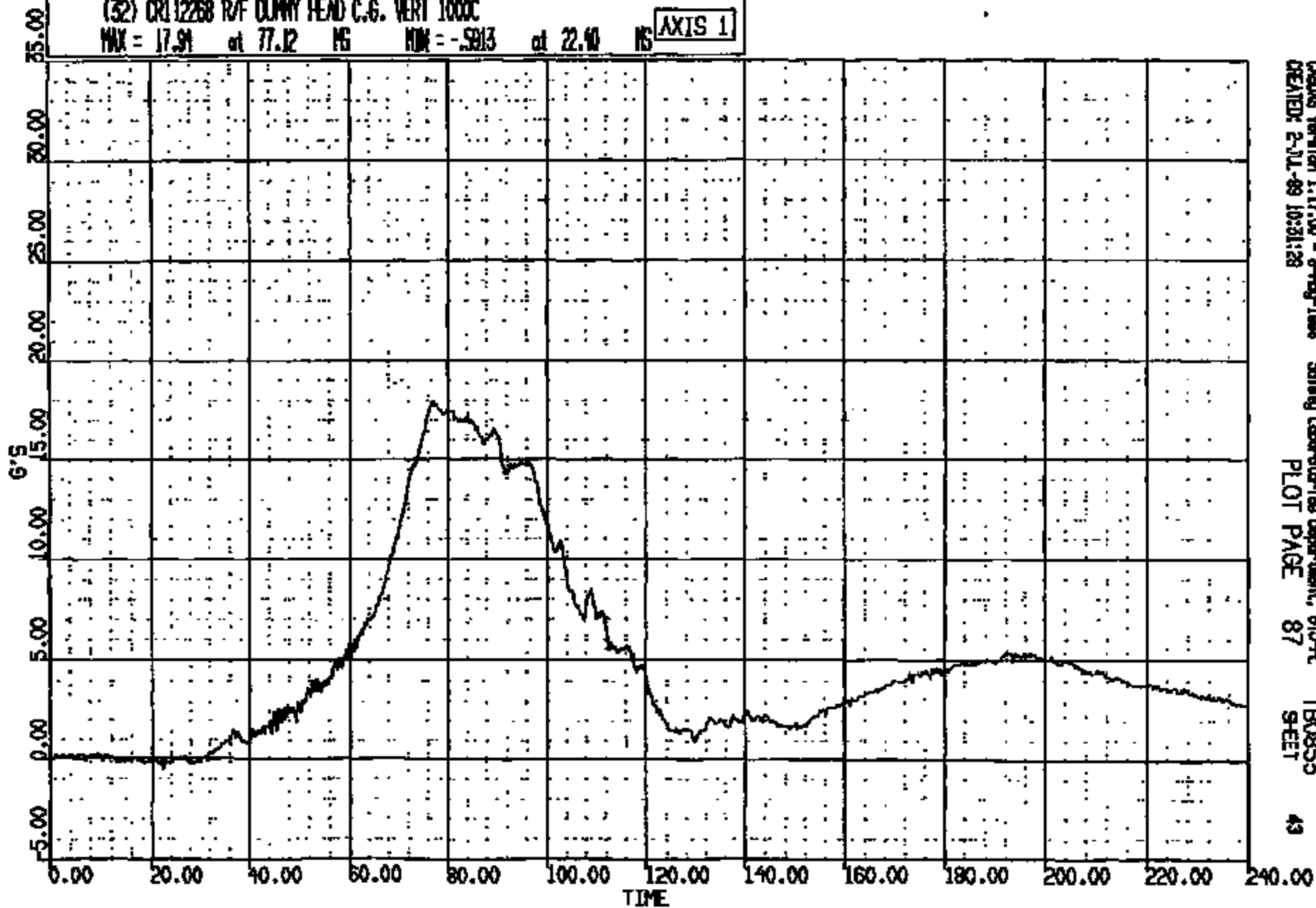


CRSIS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 810-P1 TB0855  
CREATED: 2-JUL-99 19:31:21 PLOT PAGE 98 SHEET 42

CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 981009 11:45:38  
2000 D-188 1999 DN-101

(32) CR112268 R/F DUMMY HEAD C.G. VERT 1000C  
MAX = 17.91 at 77.12 MS MIN = -.5913 at 22.40 MS **AXIS 1**



CRONUS Version 1.17.00 - 8-Aug-1998  
CREATED: 2-JUL-99 10:31:29

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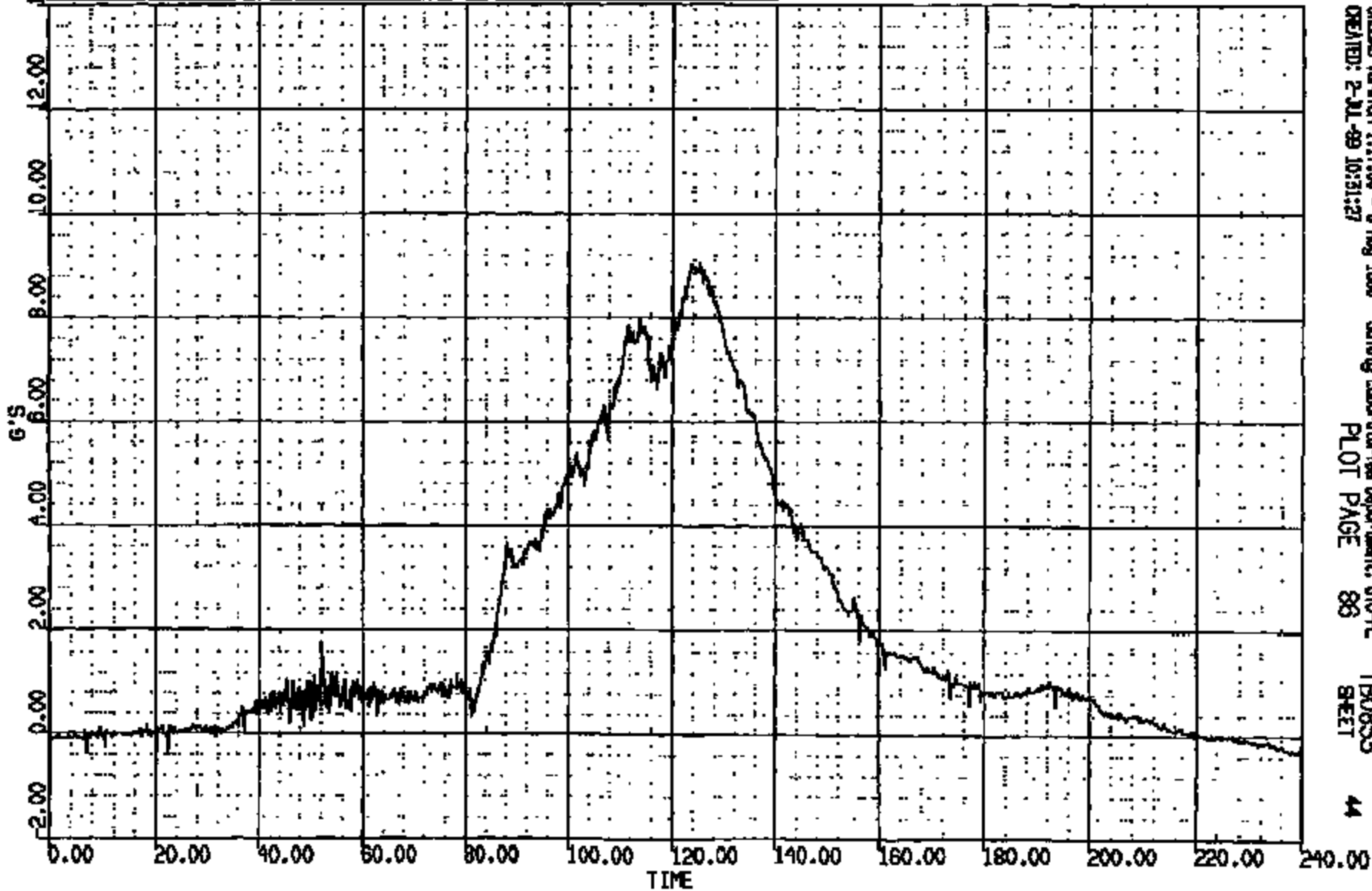
TB0855  
SHEET

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CRTS 0011226

CR R: 11226 TO: TRO853 DATE: 881008 11:45:28  
2000 0-188 1988 DN-101

(33) CR112268 R/F DUMMY HEAD C.G. LAT 1800C  
MAX = 9.022 at 125.0 MS MIN = -.4052 at 22.40 MS AXIS 1

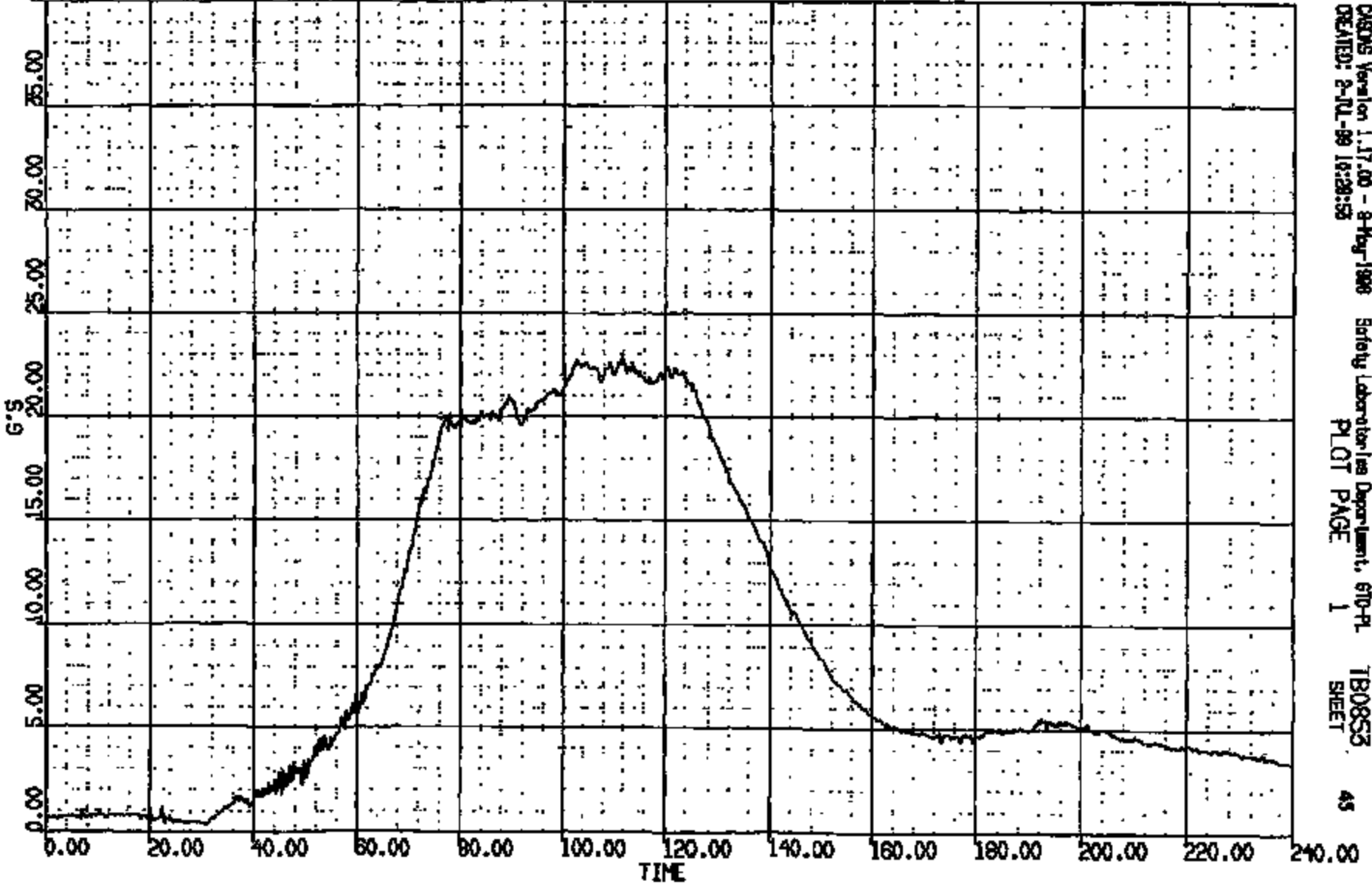


CRS015 Version 1.17.00 - 8-Aug-1988 Safety Laboratory Department, 610-PL TRO853  
CREATED: 2-JUL-89 10:51:27 PLOT PAGE 88 SHEET 41

CRIS 0011226

NO: 11226 TO: T80853 DATE: 881008 11:45:38  
 D: 1998 1998 DT: 101  
 I: 1800. DUR: 80.0 T1/T2: 88.0 // 1.5  
 I: 70. DUR: 80.0 T1/T2: 88.0 // 1.5  
 I: 85. DUR: 18.0 T1/T2: 101. // 1.5

(10001) CR12268 R/F DUMMY HEAD C.G. RES 1000C  
 MAX = 22.04 at 111.8 MS MIN = 0.3857 at 26.32 MS **AXIS 1**

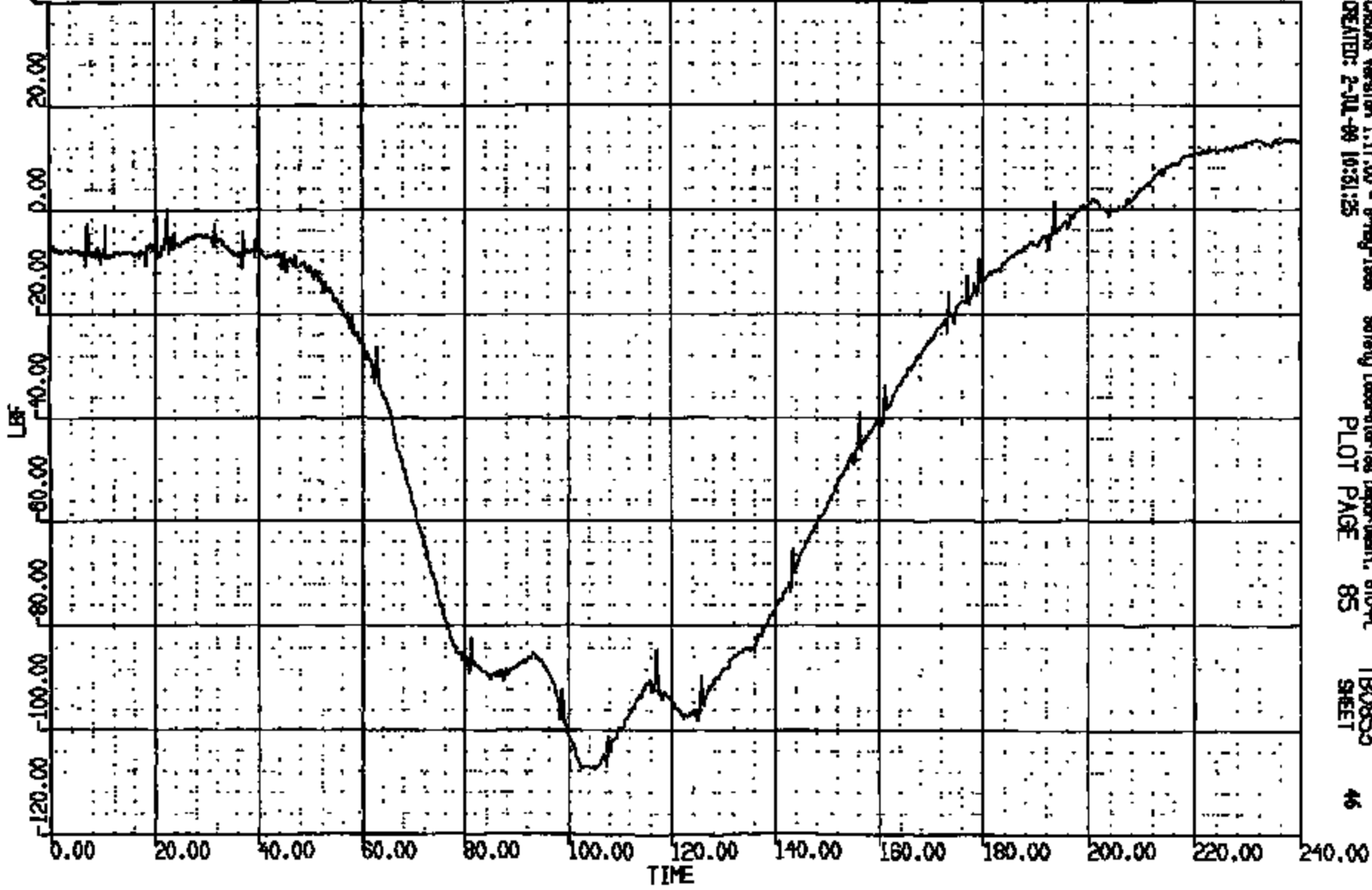


CRAMS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL T80853 45  
 CREATED: 2-JUL-98 16:28:53 PLOT PAGE 1 SHEET

CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 991009 11:45:58  
2000 D-100 1000 DN-101

(34) CR112268 R/F DUMMY NECK UPPER LOAD FX 1000C  
MAX = 13.53 at 257.1 MS MIN = -107.7 at 105.2 MS AXIS 1

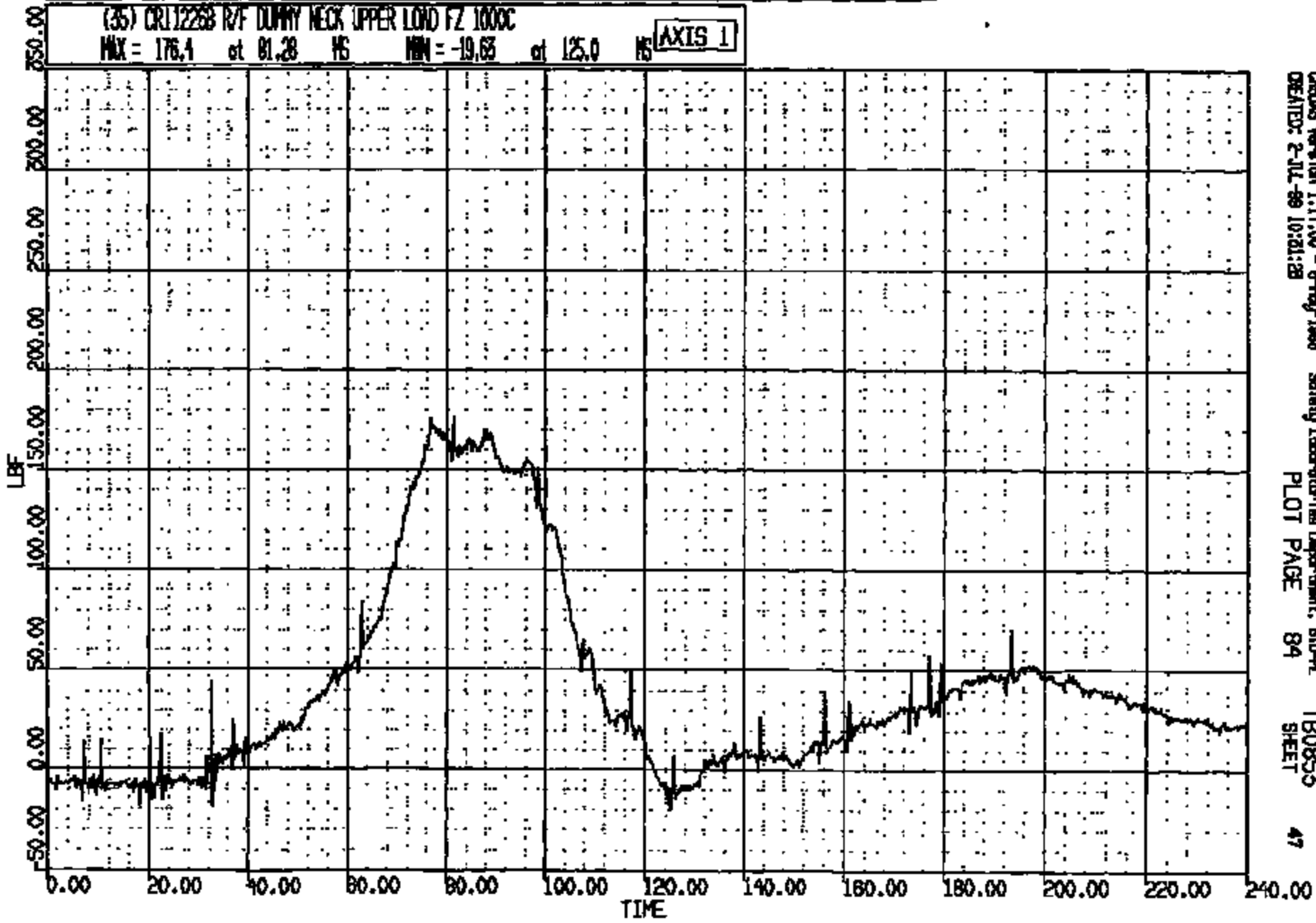


CRS0NS Version 1.17.00 - 9-May-1998 Safety Laboratory Department, 610-PL TB0855  
CREATED: 2-JUL-99 10:51:25 PLOT PAGE 85 SHEET 46

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 881008 11:45:38  
2000 D-198 1988 DN-101

(35) CR112268 R/F DUMMY NECK UPPER LOAD FZ 1000C  
MAX = 176.4 at 81.28 HS MIN = -19.63 at 125.0 HS **AXIS 1**



CASIS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, STD-41 TB0853  
CREATED: 2-JUL-88 10:21:28 PLOT PAGE 84 SHEET 47

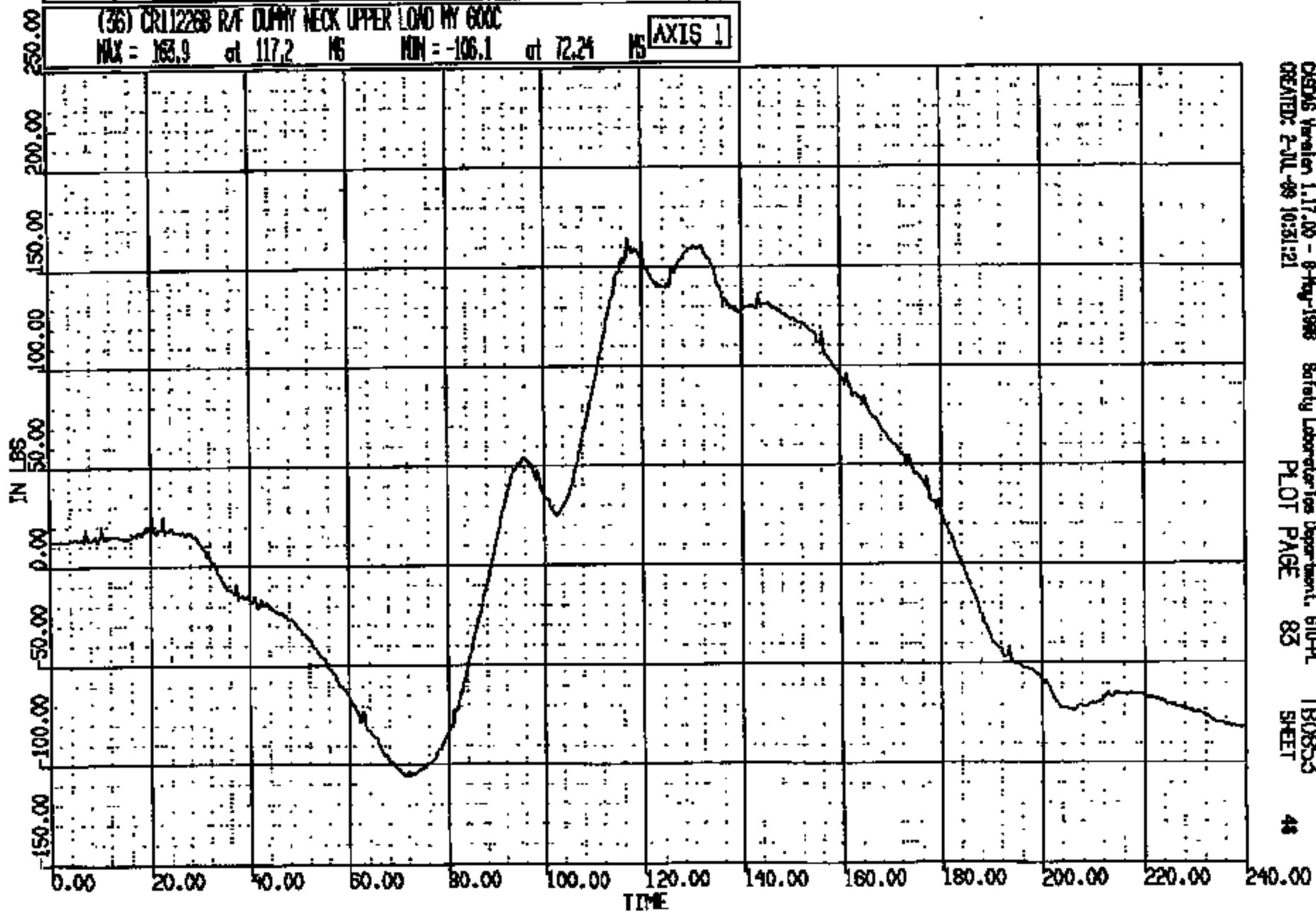
CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 081000 11:45:28  
2000 D-180 1998 DN-101

(36) CR112268 R/F DUMMY NECK UPPER LOAD NY 600C

MAX = 163.9 at 117.2 MS MIN = -106.1 at 72.24 MS

AXIS 1

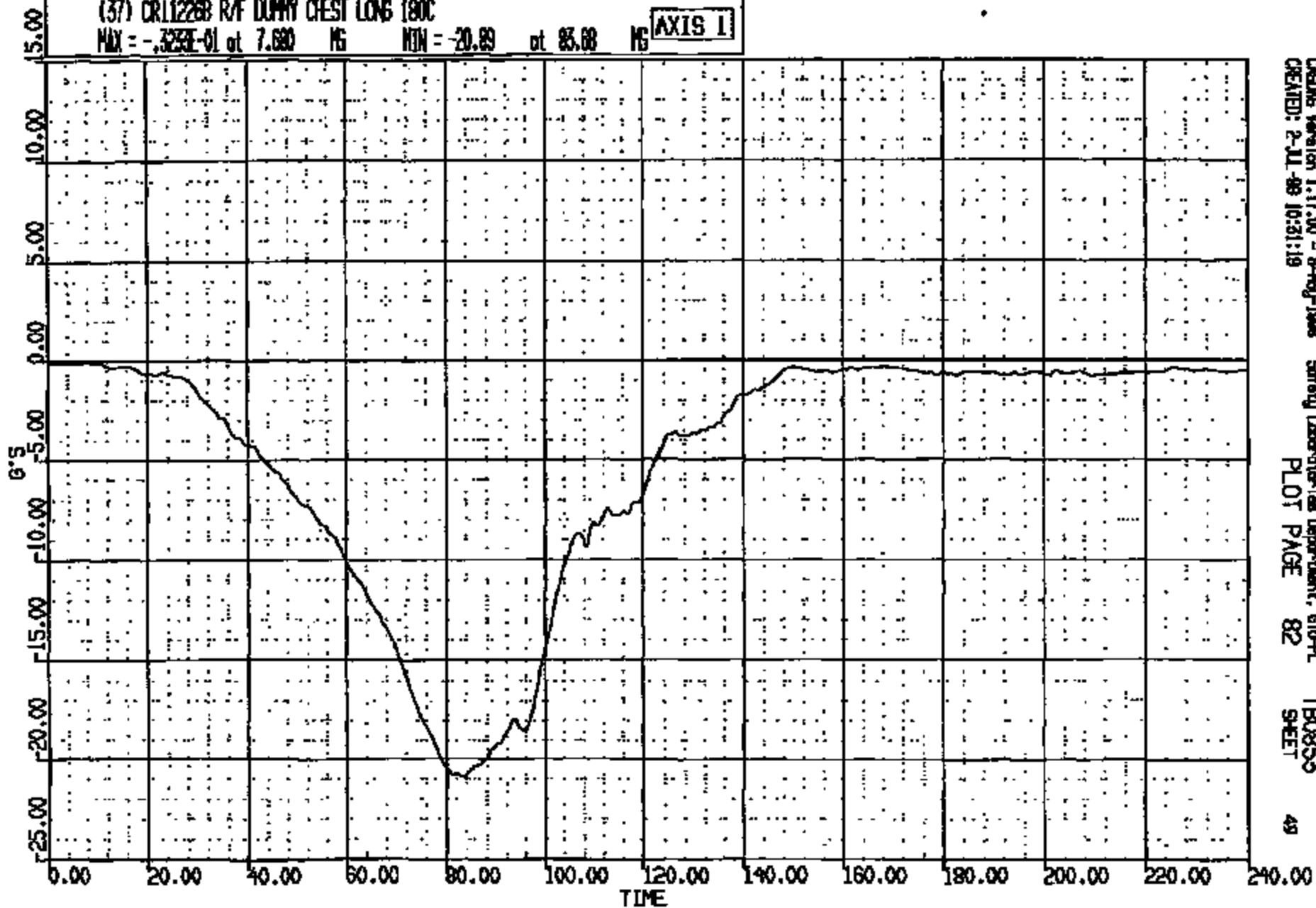


CRSAS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL TB0853  
CREATED: 2-JUL-98 10:51:21 PLOT PAGE 83 SHEET 48

CR1S 0011226

DR R: 11226 TO: TBOSS DATE: 081009 11:45:38  
R000 D-199 1999 DN-101

(37) CR11226B R/F DUMMY CHEST LONG (80C)  
MAX = -3.23E-01 at 7.680 MG MIN = -20.89 at 85.68 MG **AXIS 1**



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CREATED: 2-JUL-98 10:31:19

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CRIS 0011226



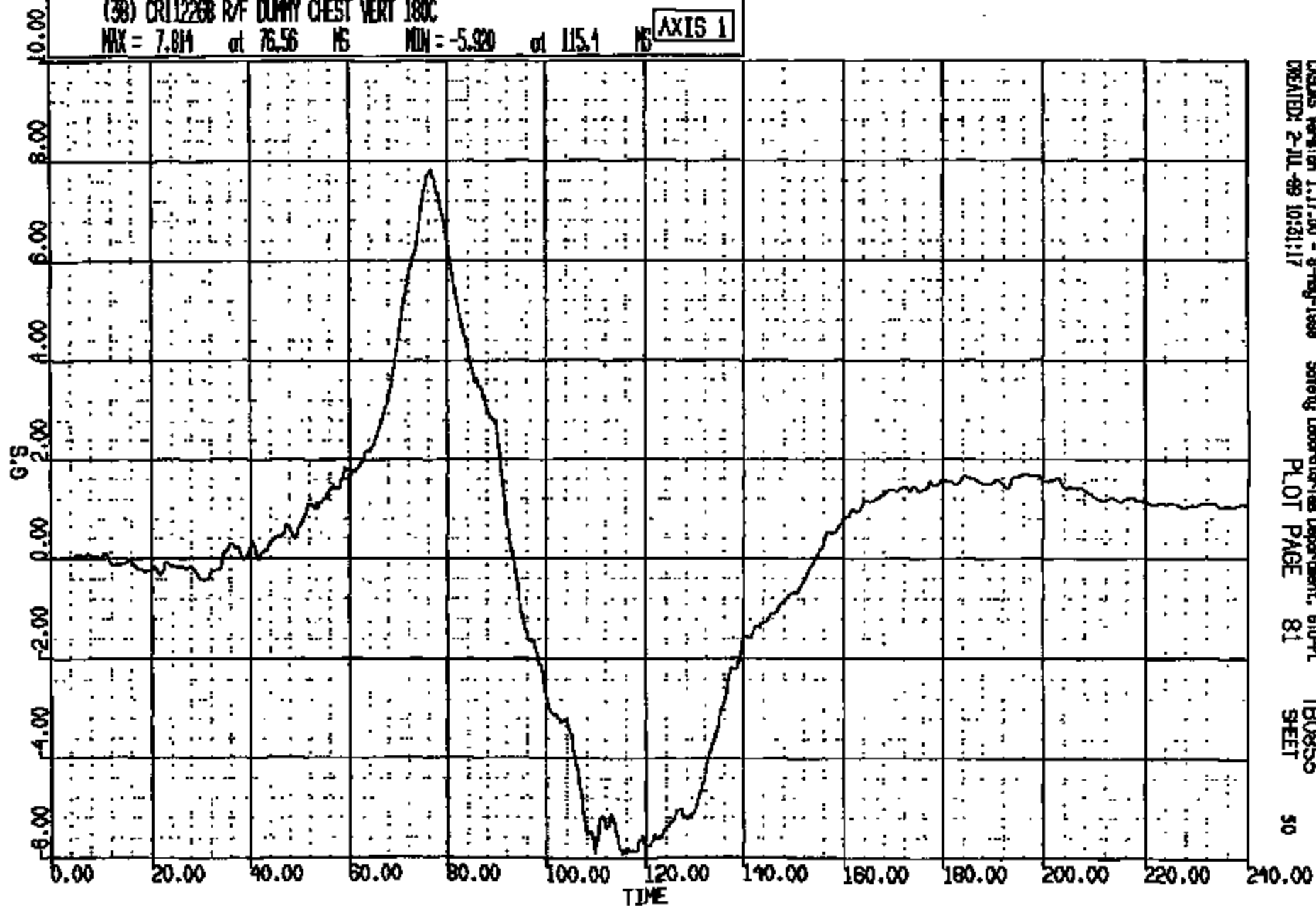
CR R: 11226 TO: TB0855 DATE: 081008 11:45:58

8000 U-150 1998 DN-101

(38) CR11226B R/F DUMMY CHEST VERT 180C

MAX = 7.814 at 76.56 MS MIN = -5.920 at 115.1 MS

AXIS 1



CADDS Version 1.17.00 - 8-May-1999  
CREATED: 2-JUL-99 10:31:17

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PLOT PAGE 81

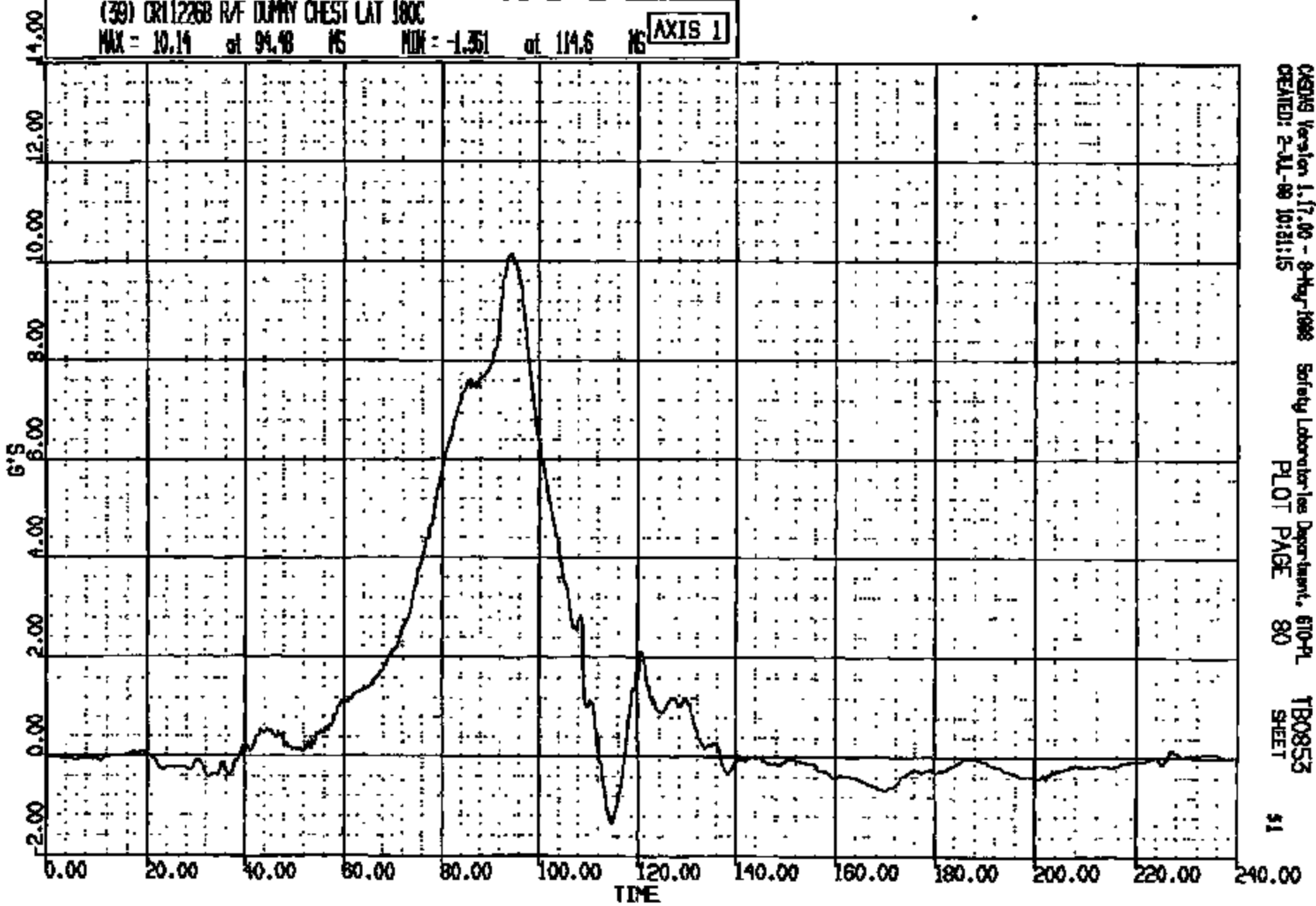
TB0855  
SHEET

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CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 851008 11:45:38  
2000 D-188 1988 DN-101

(39) CR112268 R/F DUMMY CHEST LAT 180C  
MAX = 10.14 at 94.48 NS MIN = -1.351 at 114.6 NS **AXIS 1**

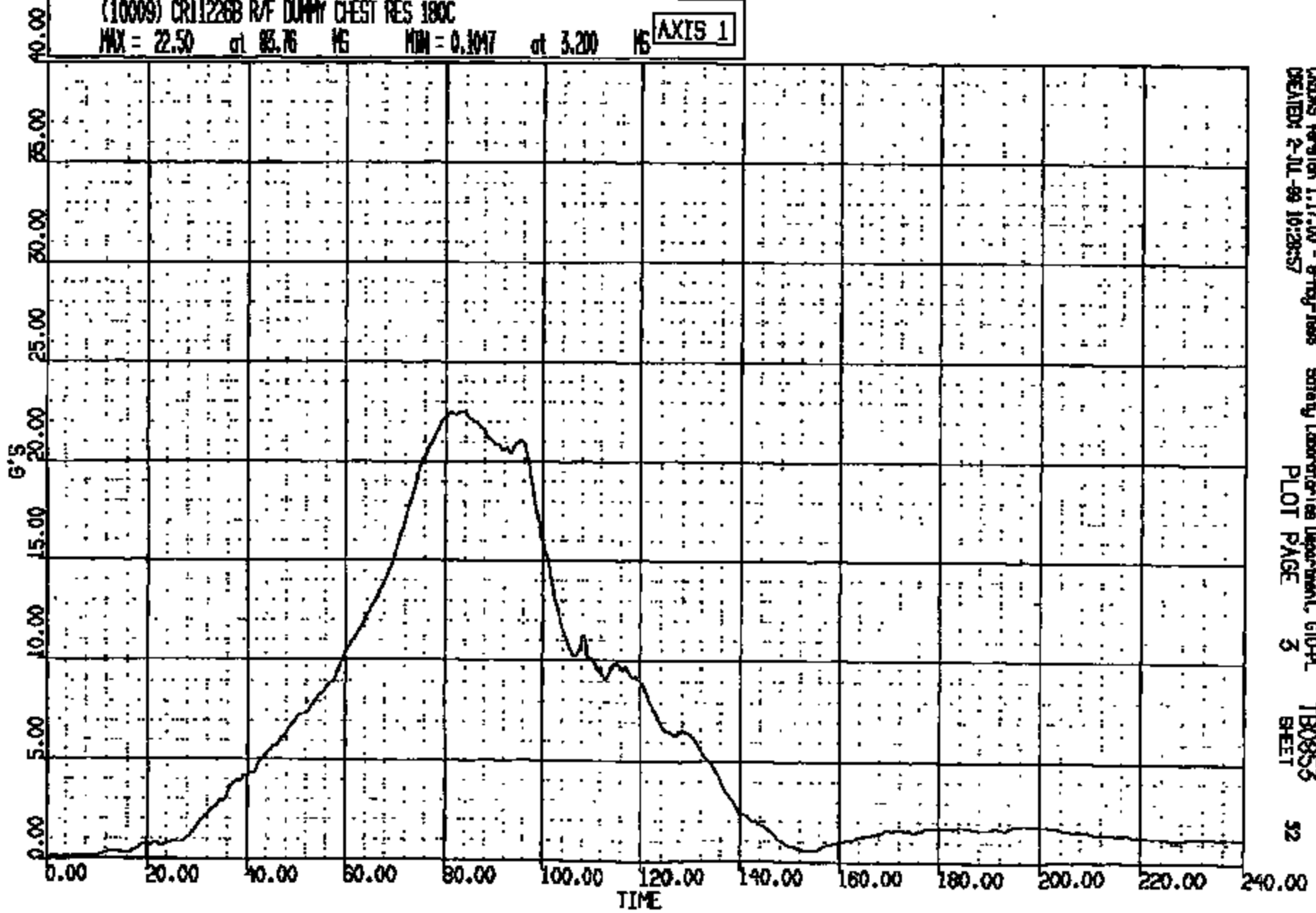


OSGMS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL TB0855  
CREATED: 2-JUL-88 10:21:15 PLOT PAGE 80 SHEET \$1

CRTS 0011226

CR#: 11226 TO: TB0855 DATE: 981009 11:45:58  
2000 D-188 1888 DN-101  
DUMDUR = 22.500 Duration time = 2.0000

(10009) CR112268 R/F DUMMY CHEST RES 180C  
MAX = 22.50 at 83.76 MS MIN = 0.1047 at 3.200 MS **AXIS 1**

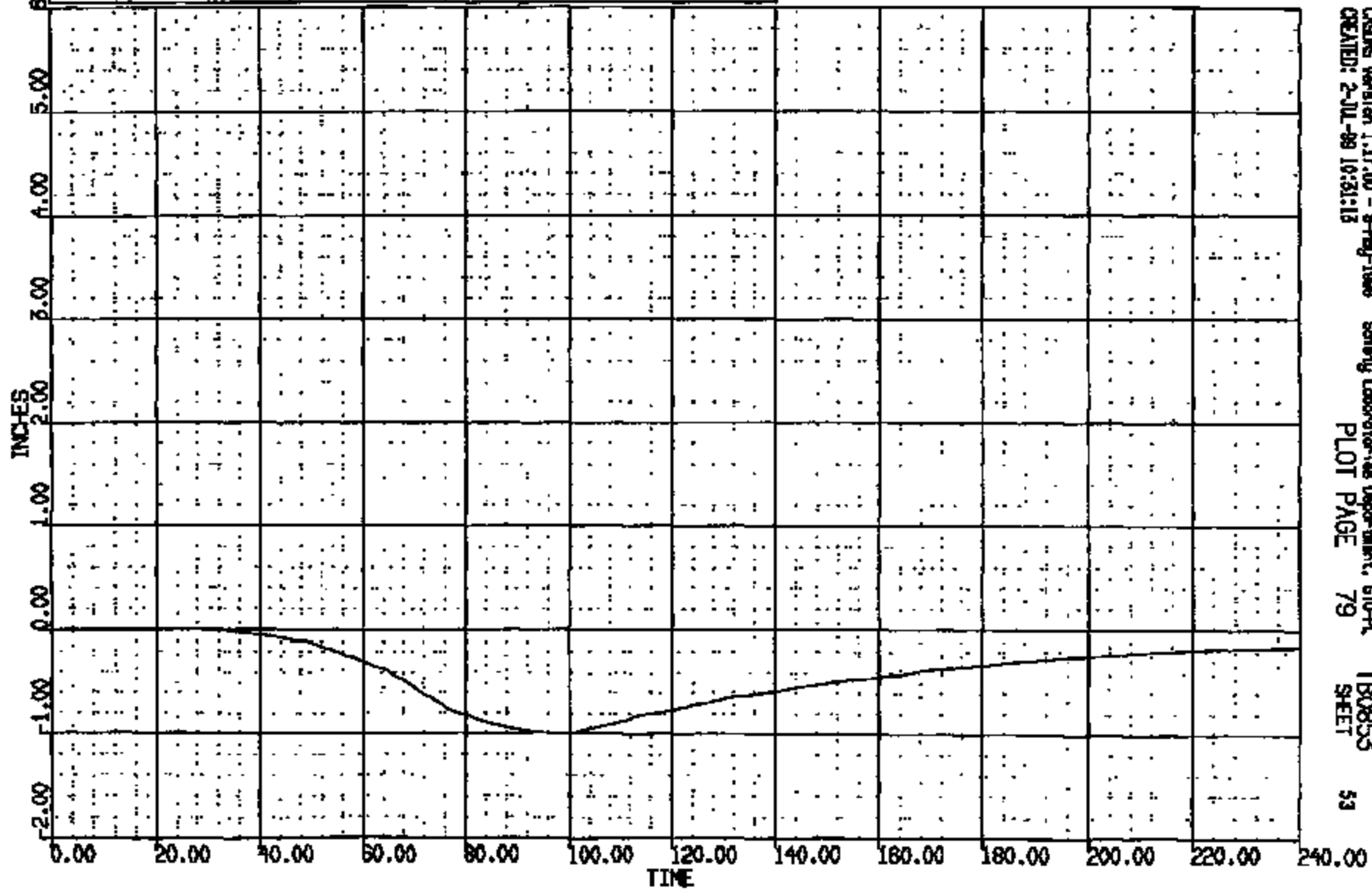


CASMS Version 1.17.00 - 9-Aug-1998 Safety Laboratories Department, G10-PL  
CREATED: 2-JUL-99 10:28:57 PLOT PAGE 3 TB0855 SHEET 52

CRTS 0011226

CR R: 11828 TO: TB0855 DATE: 881008 11:48:58  
2000 D-188 1988 DN-101

(40) CR11226B R/F DUMMY CHEST DEFLECTION 190C  
MAX = 0.250E-02 at 10.56 MS MIN = -1.002 at 97.60 MS **AXIS 1**

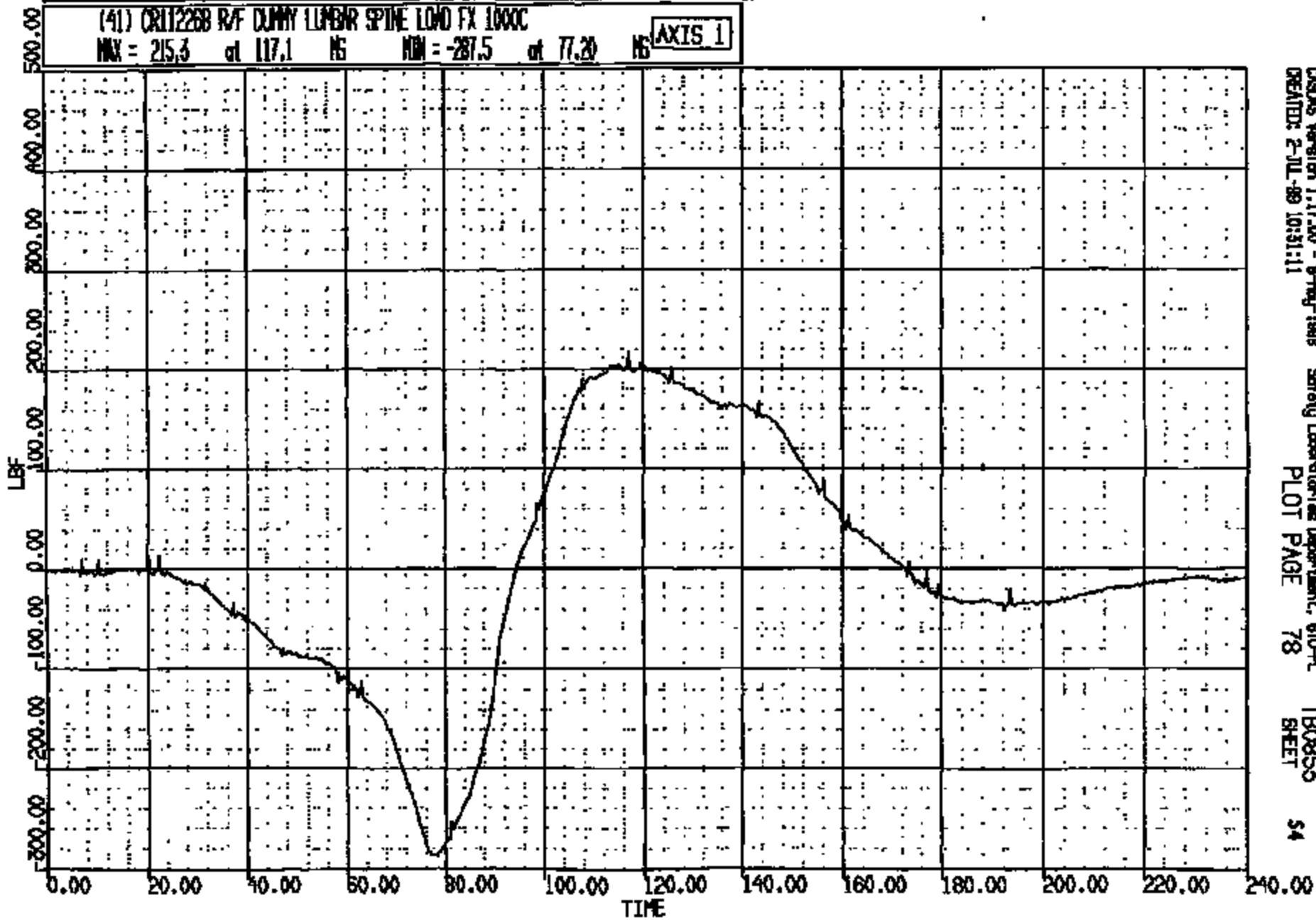


CRAMS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL TB0855  
CREATED: 2-JUL-88 16:31:15 PLOT PAGE 79 SHEET 53

CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 881008 11:45:38  
2000 D-188 1988 DN-101

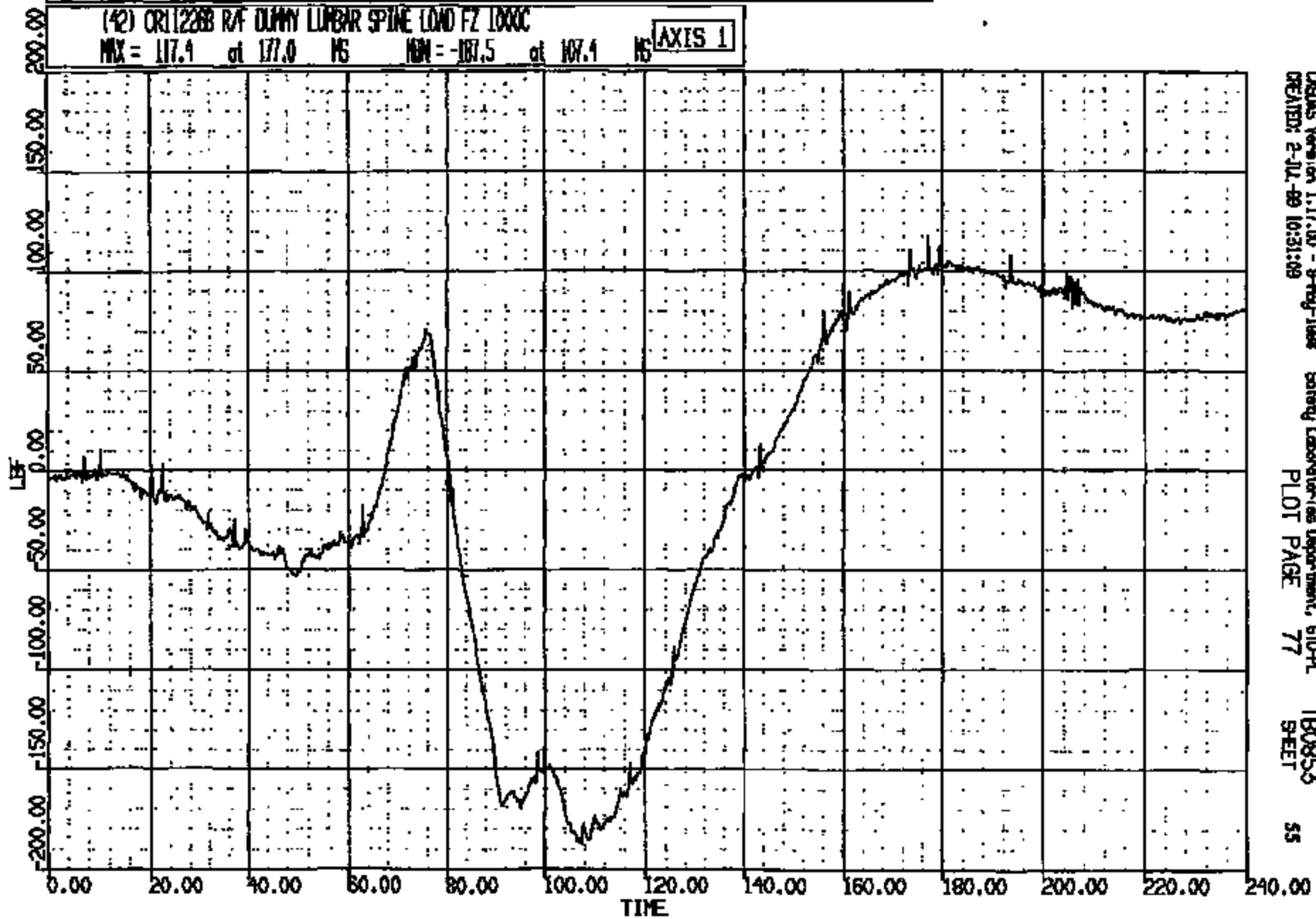
(41) CR112268 R/F DUMMY LUMBAR SPINE LOAD FX 1000C  
MAX = 215.3 at 117.1 MS MIN = -287.5 at 77.20 MS **AXIS 1**



CR R: 11226 TO: TB0855 DATE: 981008 11:45:38  
2000 D-188 1888 ON-101

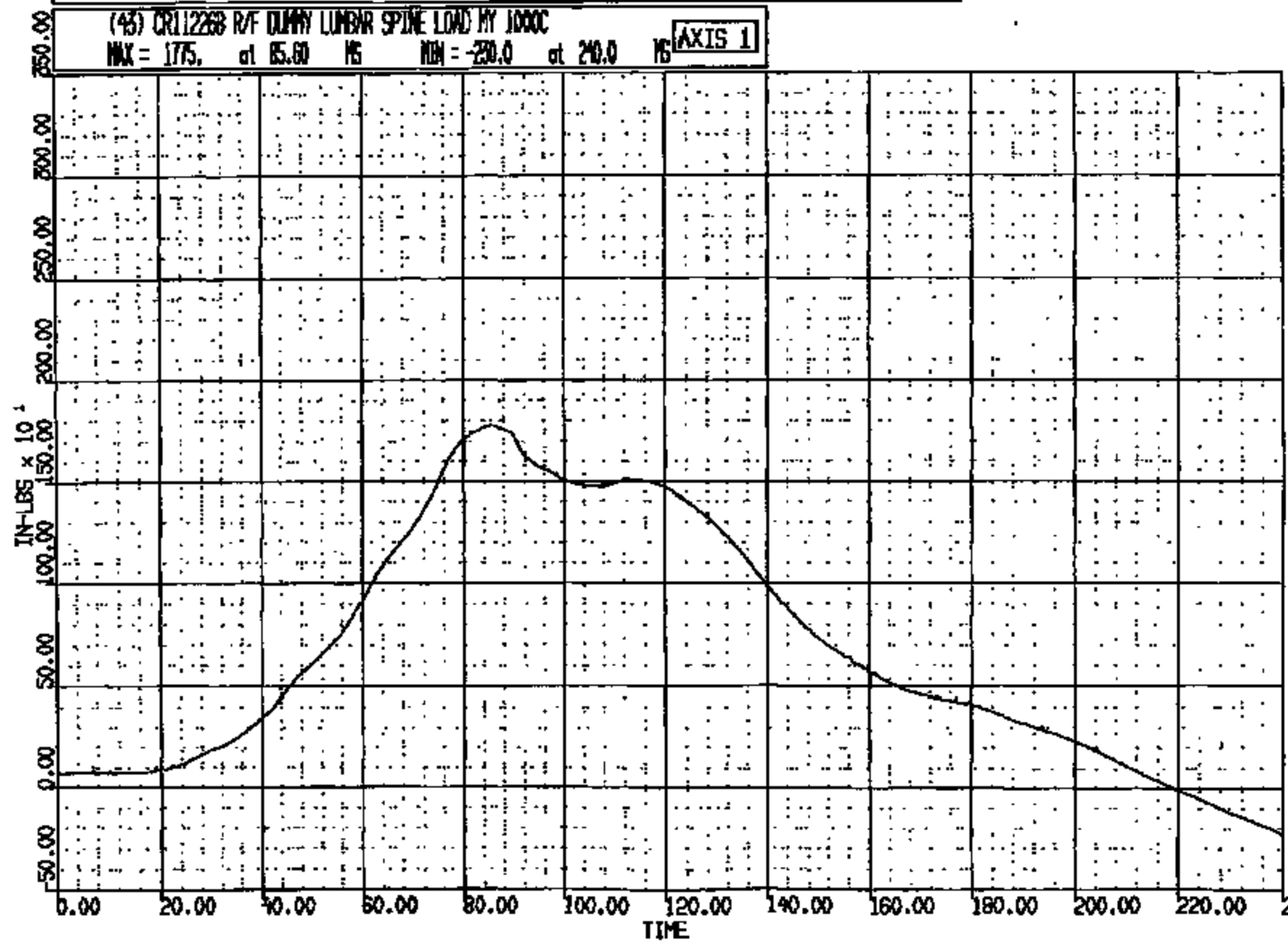
(42) CRT1226B R/F DUMMY LINEAR SPINE LOAD FZ 1000C

MAX = 117.4 at 177.0 MS MIN = -187.5 at 107.4 MS **AXIS 1**



CR R: 11226 TO: TB0855 DATE: 881008 11:45:58  
2000 D-188 1988 DN-101

(45) CR112268 R/F DUMMY LUMBAR SPINE LOAD MY 1000C  
MAX = 175. at 85.00 MS MIN = -20.0 at 240.0 MS **AXIS 1**

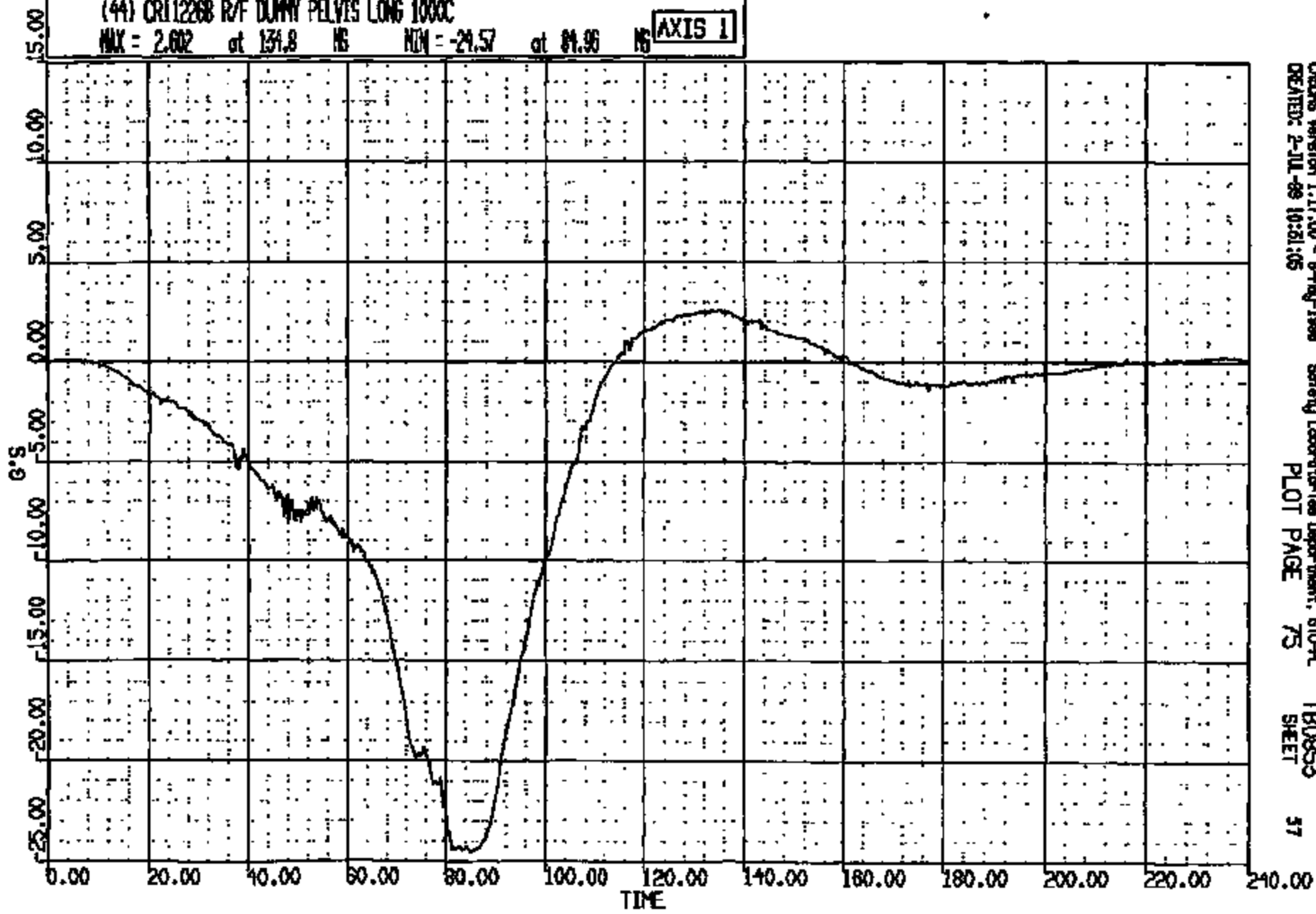


CRSIS Version 1.17.00 - 8-Aug-1988 Safety Laboratories Department, 610-9L TB0855  
CREATED: 2-JUL-88 10:31:07 PLOT PAGE 76 SHEET 56

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 881009 11:48:58  
2000 D-168 1988 DN-101

(44) CR112268 R/F DUMMY PELVIS LONG 1000C  
MAX = 2.002 at 134.8 NS MIN = -21.57 at 81.96 NS **AXIS 1**



CASIMS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL TB0853  
CREATED: 2-JUL-88 10:51:05 PLOT PAGE 75 SHEET 57

CRTS 0011226

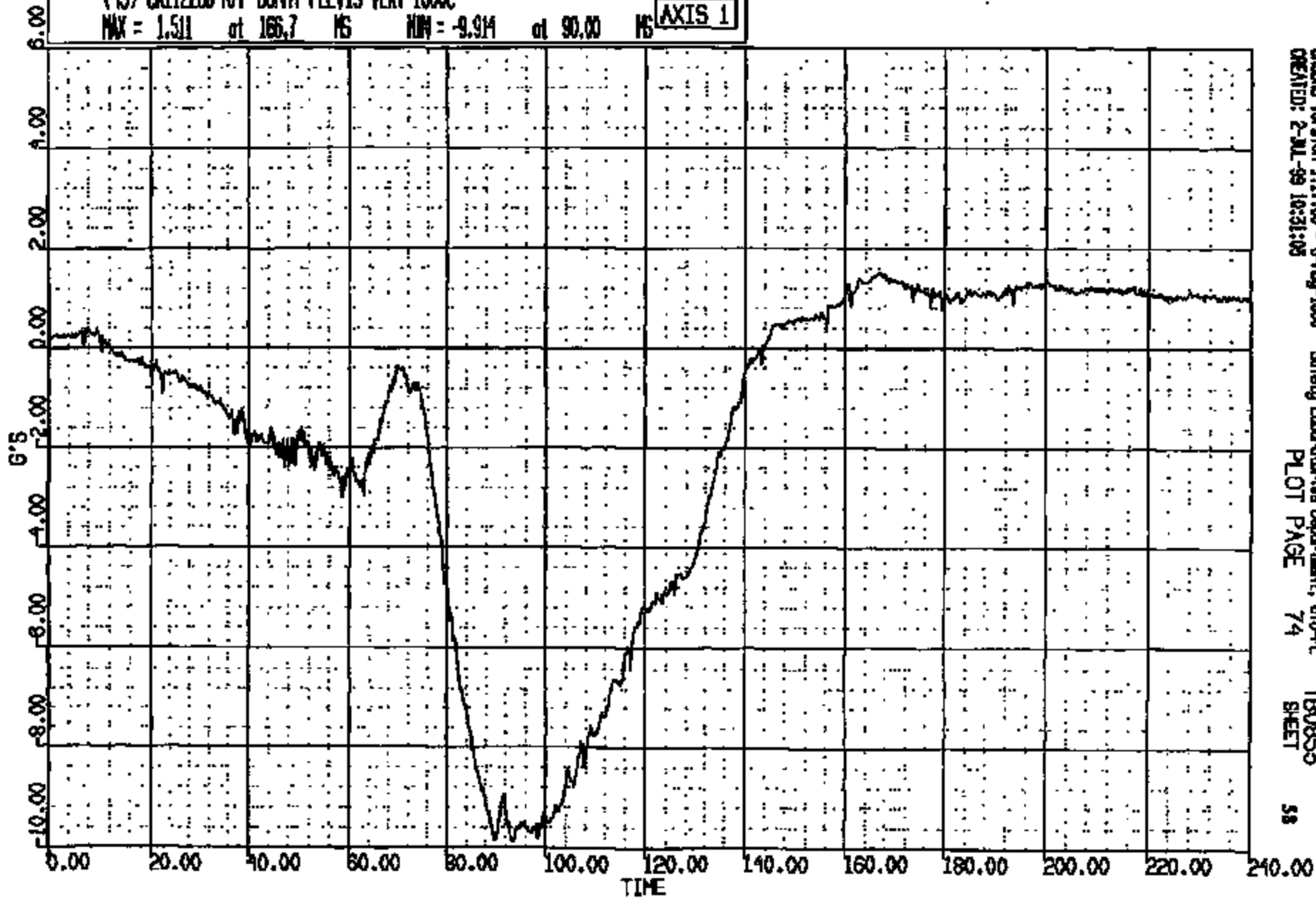


CR R: 11229 TO: TB0853 DATE: 881008 11:43:58  
2000 D-188 1998 DN-101

(45) CRT12288 R/F DUMMY PELVIS VERT 1000C

MAX = 1.511 at 166.7 MS MIN = -9.914 at 90.00 MS

AXIS 1



CASYS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-99 10:31:05

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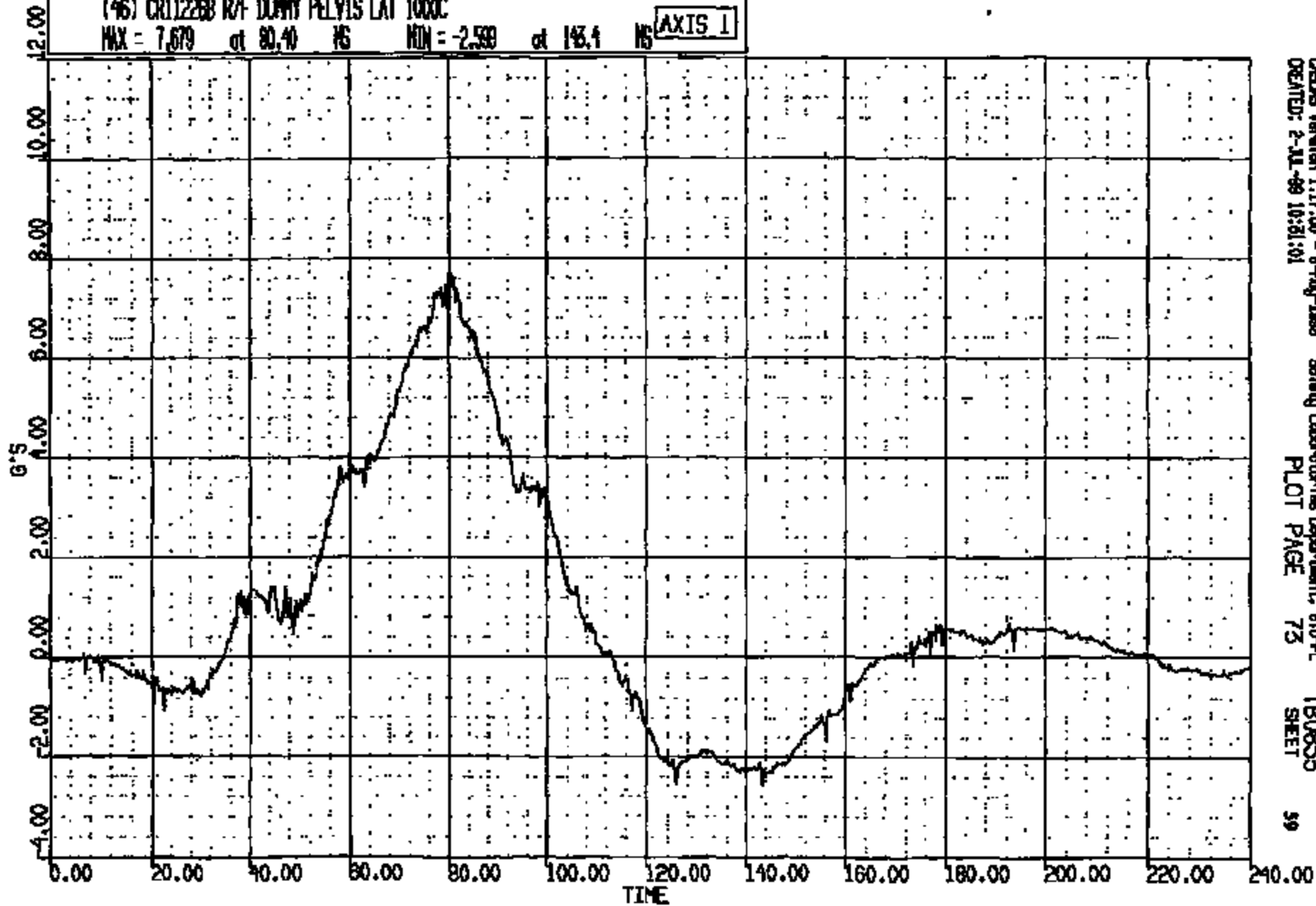
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CRTS 0011226

DR R: 11226 TO: T80855 DATE: 881009 11:48:59  
2000 D-188 1988 DN-101

(46) CR112268 R/F DUMMY PELVIS LAT 100C  
MAX = 7.679 at 80.40 MS MIN = -2.589 at 143.4 MS **AXIS 1**



CRSIS Version 1.17.00 - 8-May-1988  
CREATED: 2-11-89 10:51:01

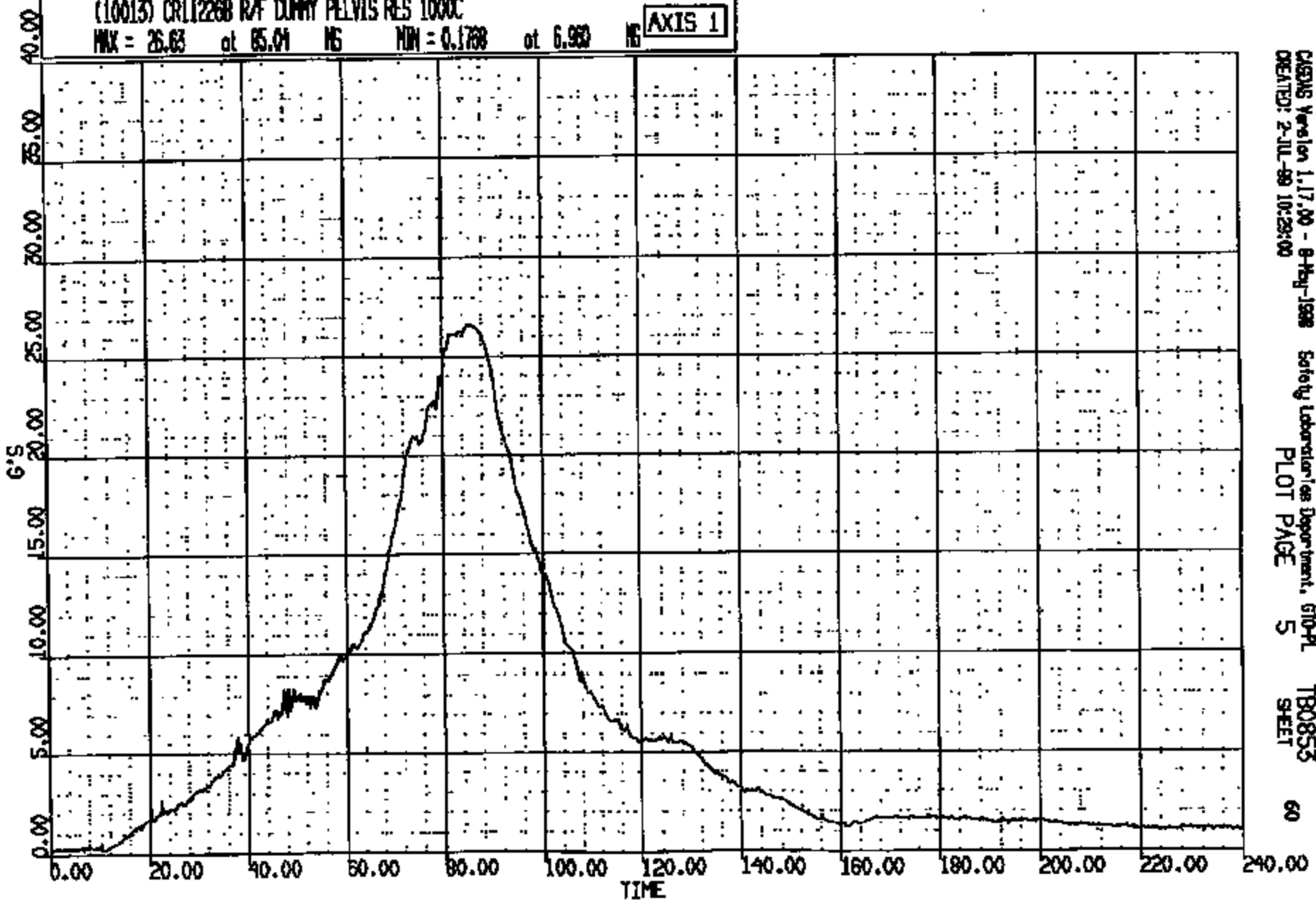
Safety Laboratories Department, BTP-PL  
PLOT PAGE 73

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CR #: 11226 TO: TB0855 DATE: 991009 11:45:38  
R000 D-188 1999 DN-101

(10013) CRL12268 R/F DUMMY PELVIS RES 1000C  
MAX = 26.63 at 65.01 NS MIN = 0.1768 at 6.982 NS **AXIS 1**

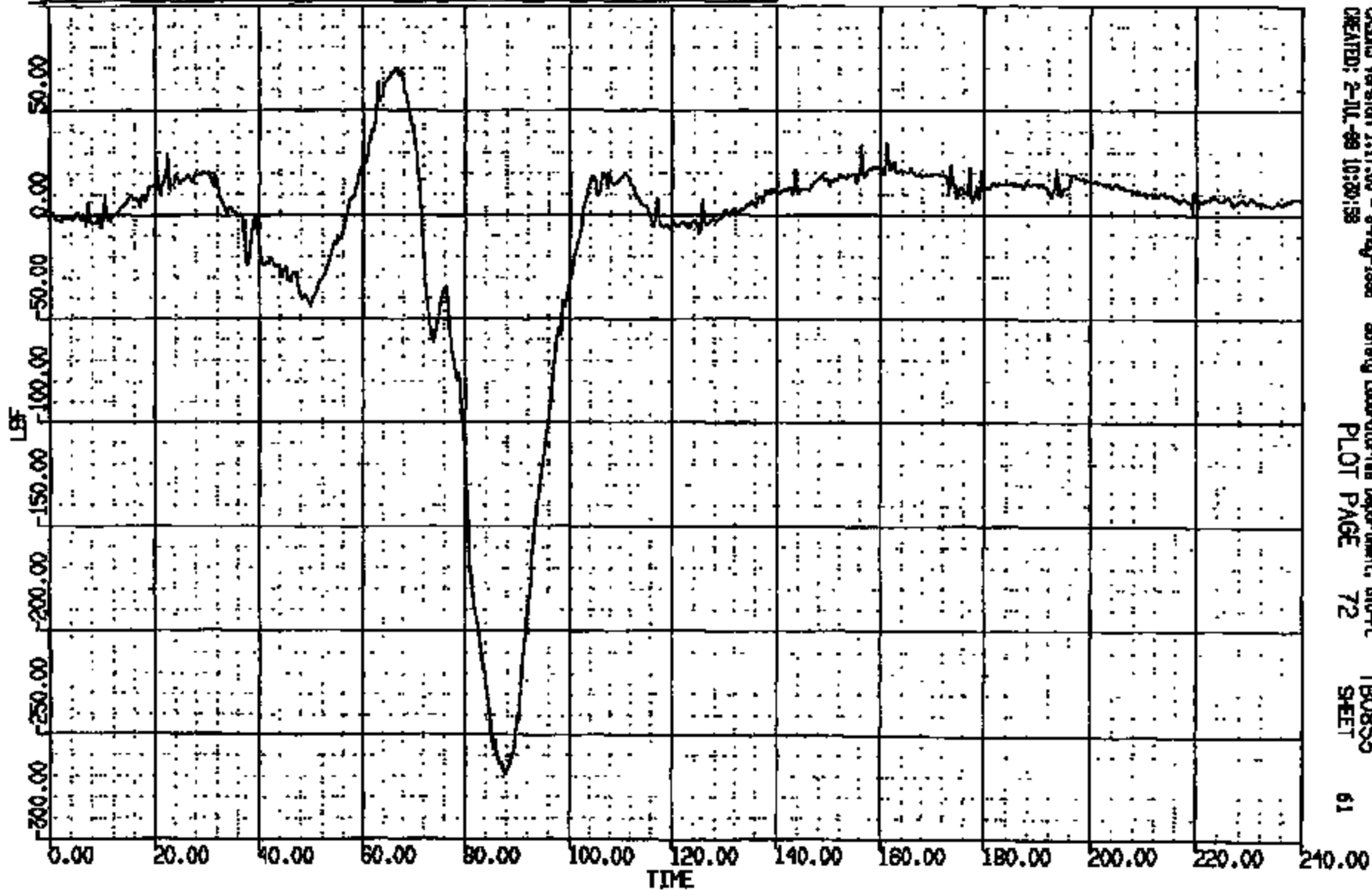


CASUS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL  
CREATED: 2-JUL-99 10:29:00 PLOT PAGE 5 SHEET 60

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 001000 11:45:30  
R000 D-100 1000 ON-101

(47) CR1226B R/F DUMMY L/TEMP LWD FZ 600C  
MAX = 70.18 at 66.72 NS MIN = -268.5 at 87.68 NS **AXIS 1**



CRSIS Version 1.17.00 - 9-May-1998 Safety Laboratories Department, G10-PL  
CREATED: 2-JUL-99 10:30:58 PLOT PAGE 72 TB0853 SHEET 61

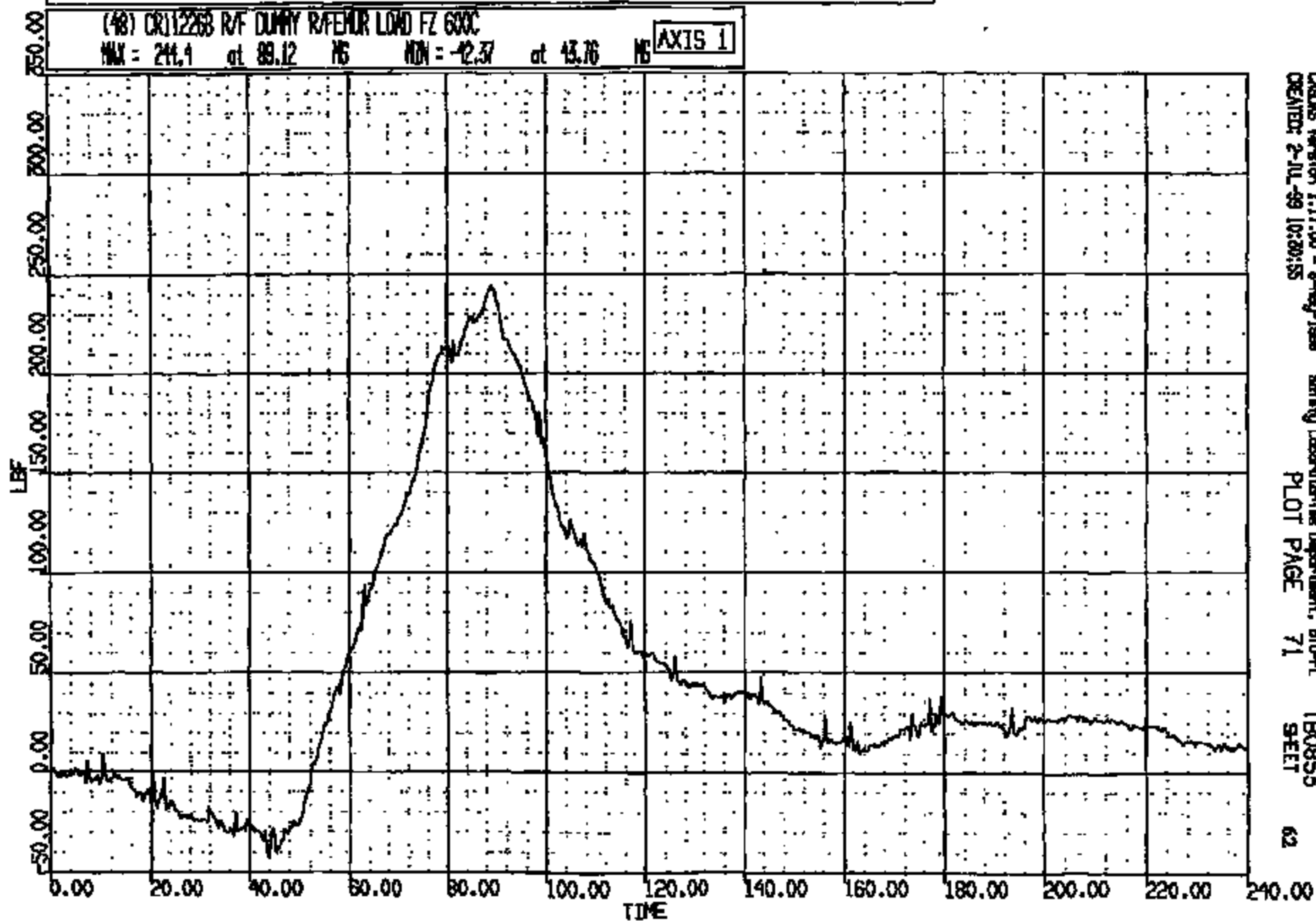
CRIS 0011226

CR R: 11226 TQ: TB0853 DATE: 081008 11:48:38  
2000 0-188 1888 DN-101

(48) CR112263 R/F DUMMY R/FEMUR LOAD FZ 600C

MAX = 244.4 at 89.12 MS MIN = -12.37 at 43.76 MS

AXIS 1



CRONUS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-99 10:30:55

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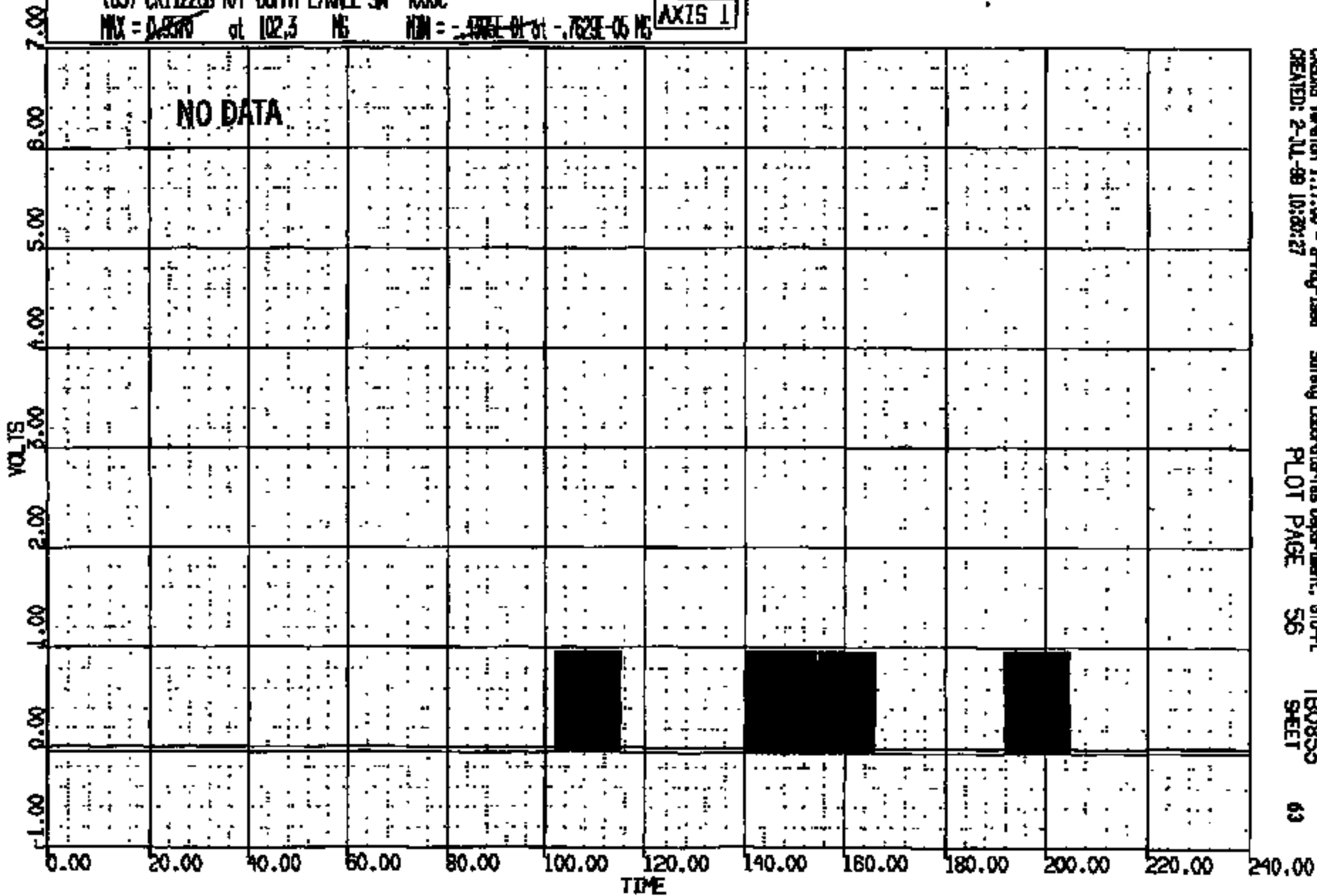
TB0853  
SHEET

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CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 881008 11:45:58  
2000 D-188 1988 DN-101

(83) CRT1226B R/F DUMMY L/WEE SN 4000C  
MAX = 0.000 at 102.5 MS MIN = -0.000 at -762E-05 MS **AXIS 1**



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CREATED: 2-JUL-88 10:30:27

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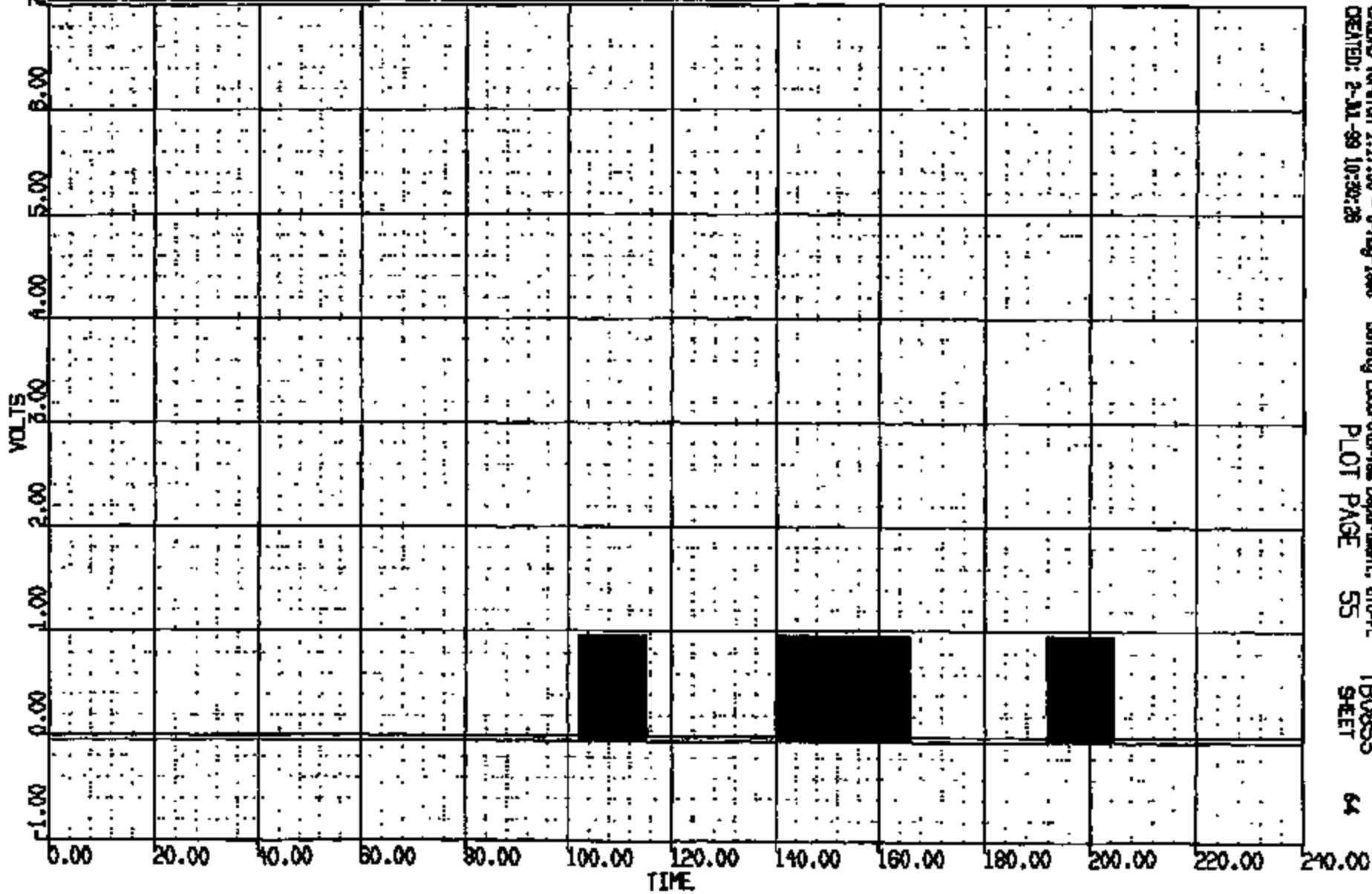
63

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 881008 11:45:28  
2000 D-188 1888 DN-101

(64) CR112268 R/F DUMMY RANGE SW 400C  
MAX = 0.0570 at 102.3 NS MIN = -430E-01 at -762E-05 NS

AXIS 1



CRIMS Version 1.17.00 - 8-May-1988  
CREATED: 2-11-88 10:30:28

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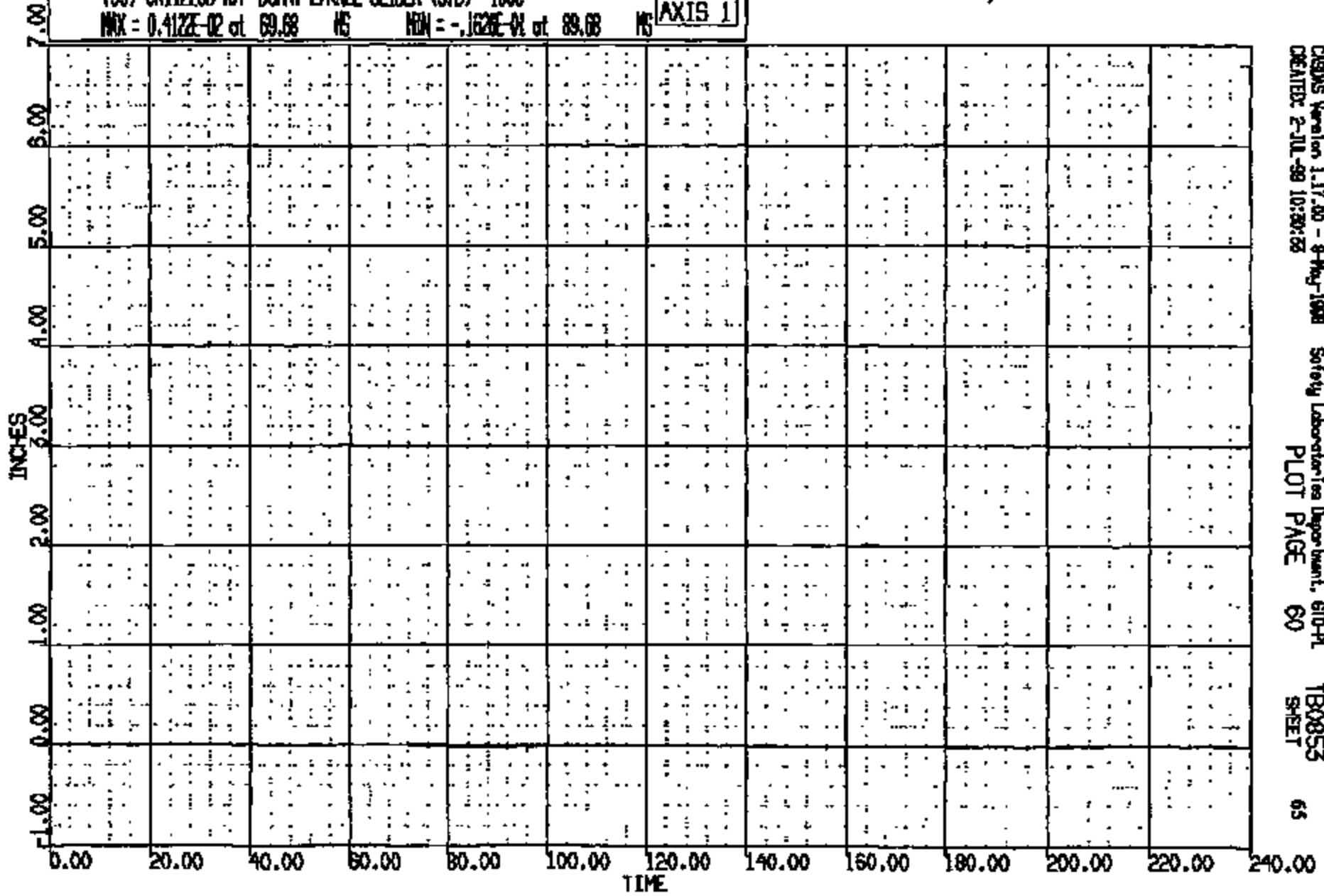
TB0853  
SHEET

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CRIS 0011226

CR R: 11226 TO: TB0853 DATE: 081009 11:45:38  
2000 D-108 1998 DN-101

(59) CR11226B R/F DUMMY L/KNEE SLIDER (STD) 100C  
MAX = 0.4122E-02 at 69.68 NS MIN = -.1628E-01 at 89.68 NS **AXIS 1**



CRONUS Version 1.17.00 - 9-May-1998  
CREATED: 2-JUL-99 10:30:23

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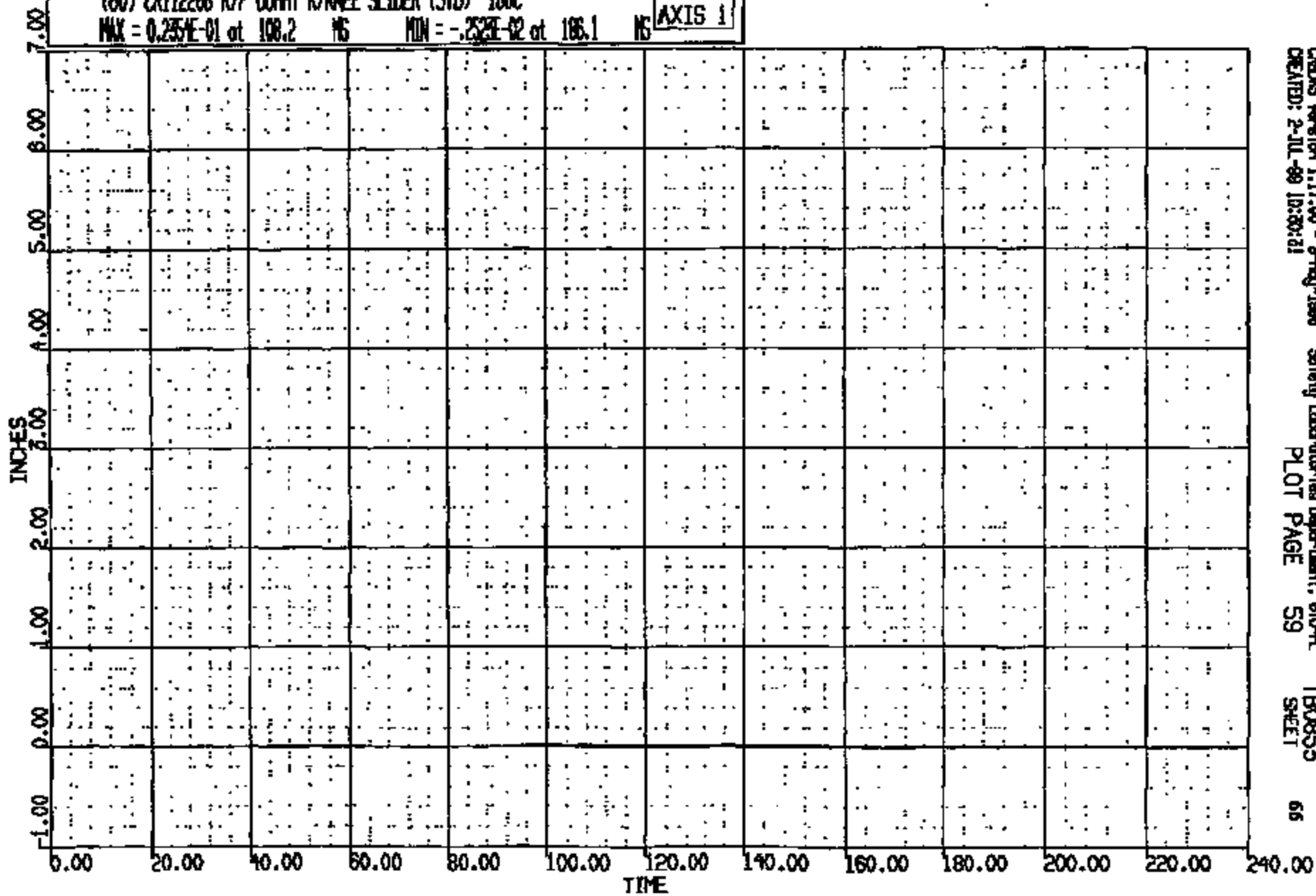
CR11226



CR R: 11226 TO: TB0853 DATE: 081009 11:45:58  
2000 D-168 1998 DN-101

(60) CR112268 R/F DUMMY R/KNEE SLIDER (STD) 180C  
MAX = 0.255E-01 at 108.2 NS MIN = -.252E-02 at 106.1 NS

AXIS 1

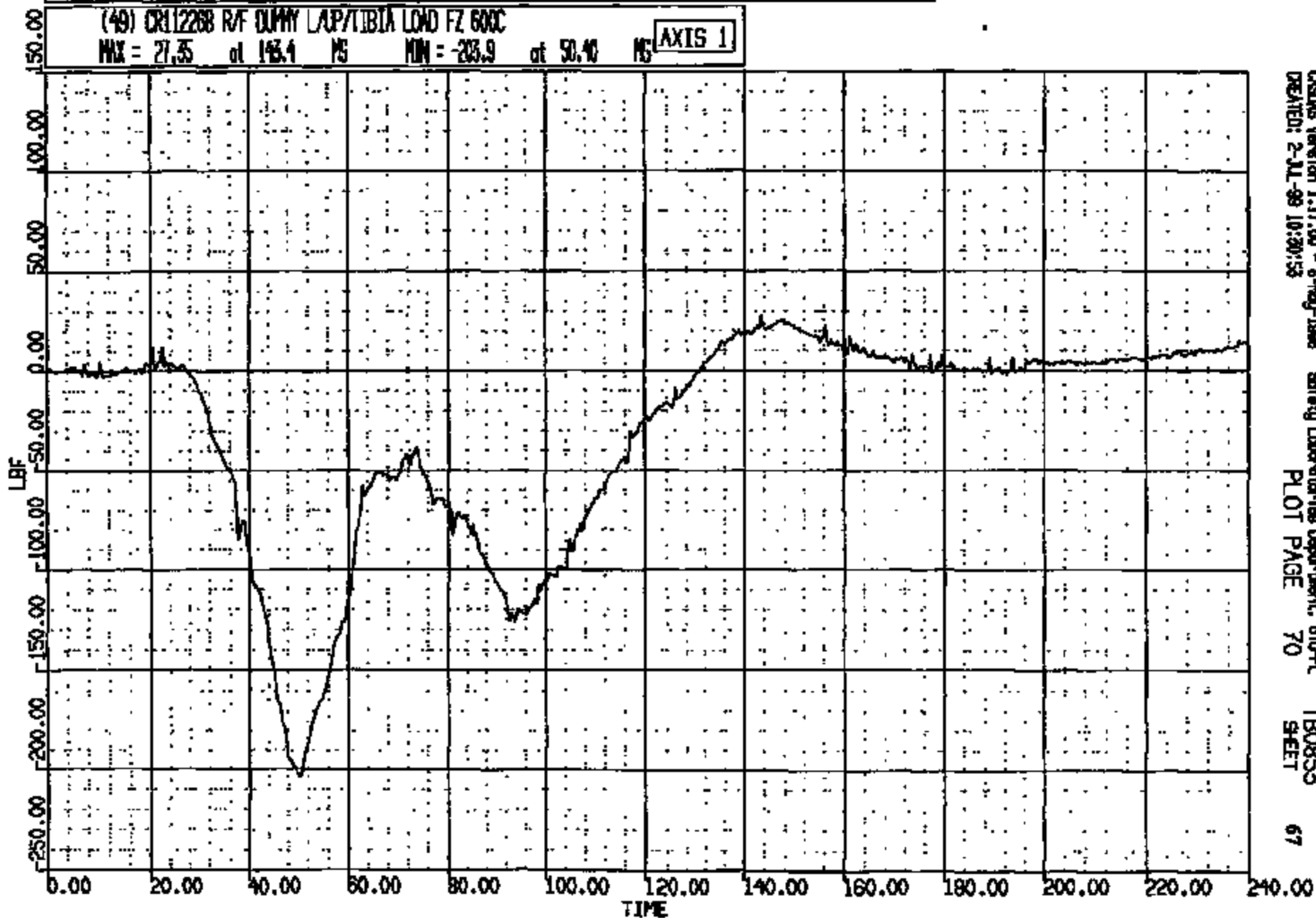


CR R: 11226 TO: TB0853 DATE: 981009 11:45:38  
2000 D-188 1998 DN-101

(49) CR112268 R/F DUMMY LAP/TIBIA LOAD FZ 600C

MAX = 27.35 at 146.4 MS MIN = -203.9 at 50.40 MS

AXIS 1



CRS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-98 10:20:53

Safety Laboratories Department, 610-A  
PLOT PAGE 70

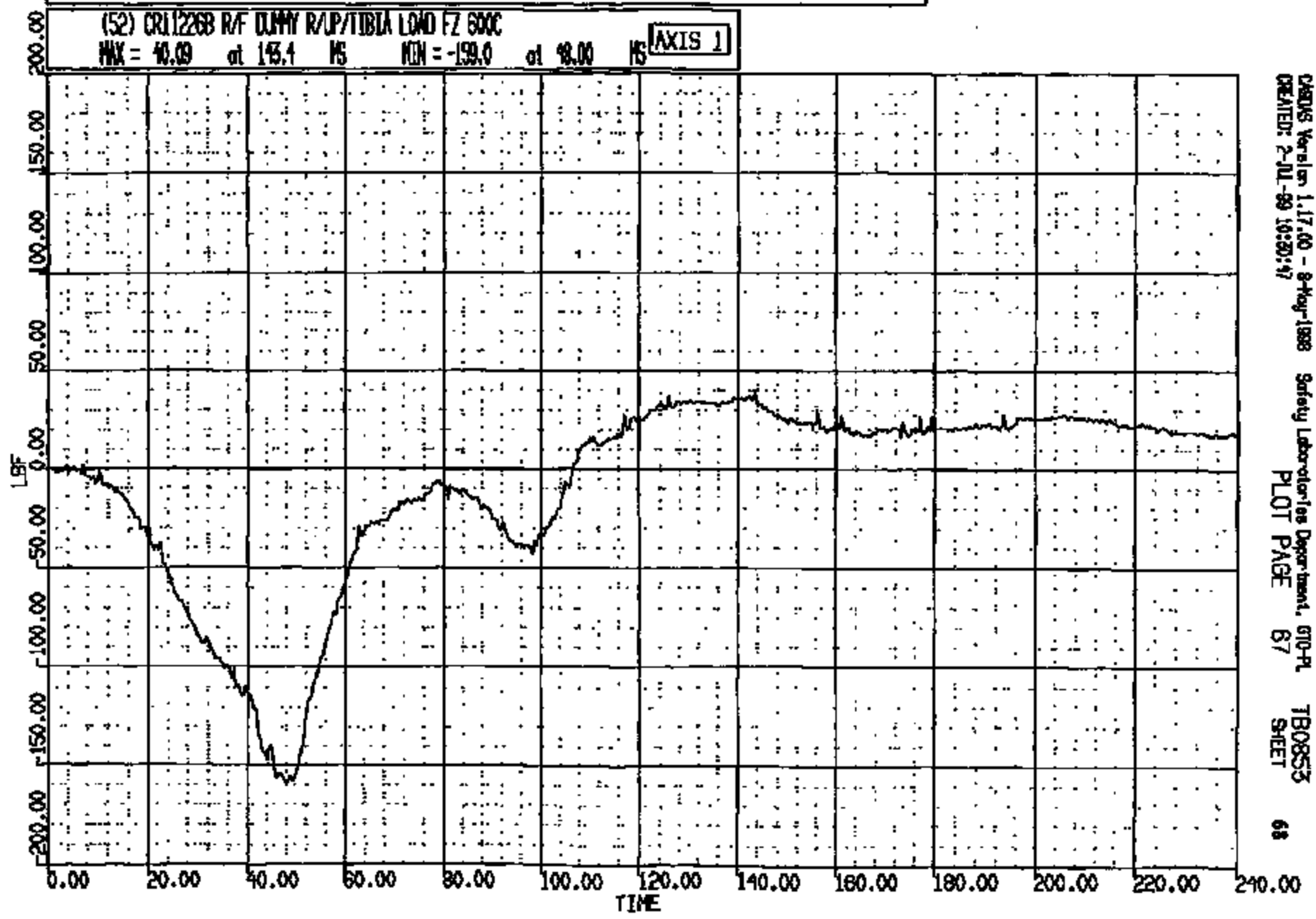
TB0853  
SHEET

67

CRTS 0011226

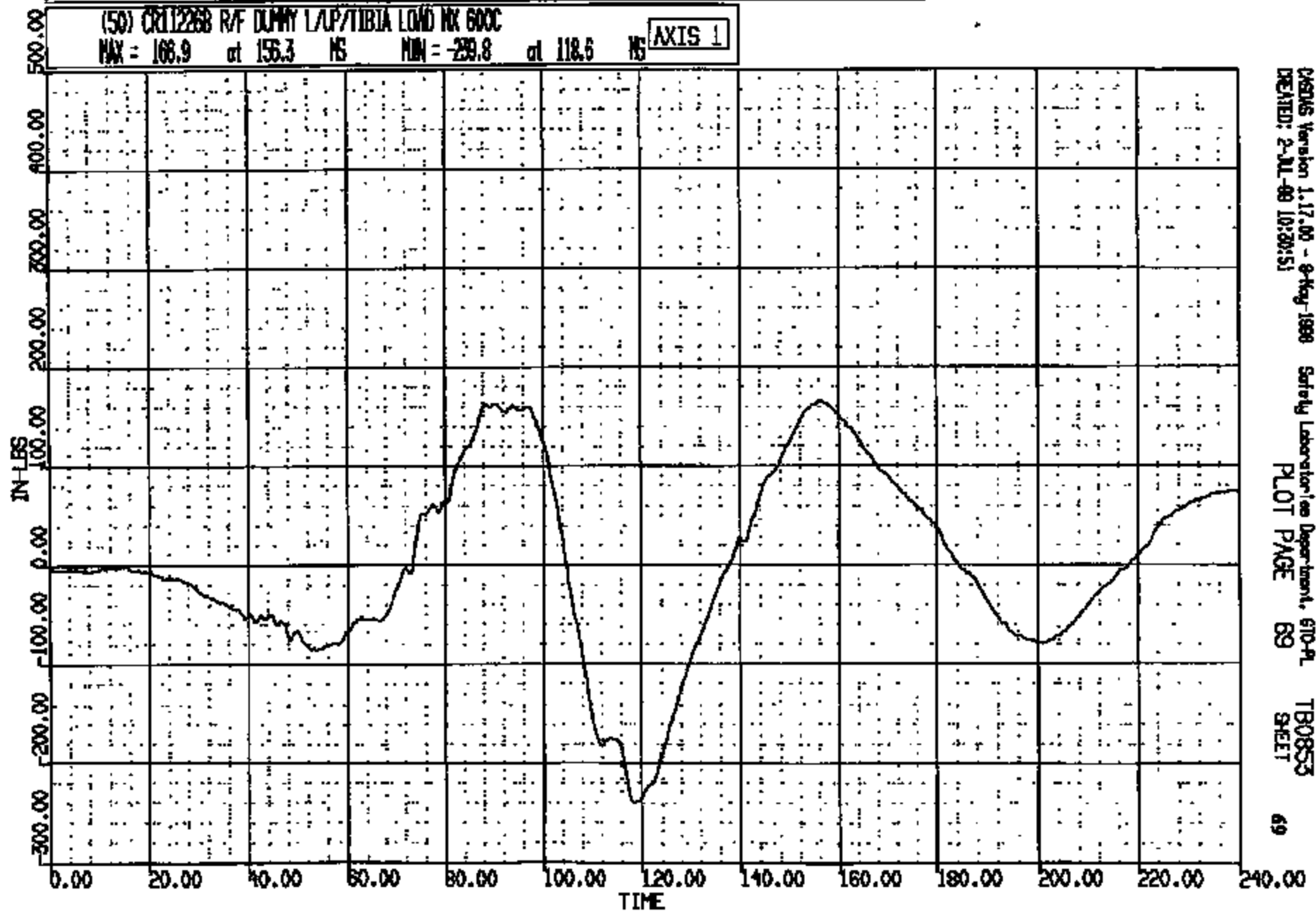
CR R: 11226 TO: T80855 DATE: 981009 11:45:58  
2000 0-198 1998 DN-101

(52) CR112268 R/F DUMMY R/UP/TIBIA LOAD FZ 600C  
MAX = 40.09 at 143.4 MS MIN = -159.0 at 48.00 MS [AXIS 1]



CR R: 11226 TO: TB0853 DATE: 081008 11:45:58  
2000 D-166 1988 DN-101

(50) CRT12268 R/F DUMMY L/P/TIBIA LOAD MK 600C  
MAX = 168.9 at 156.3 MS MIN = -239.8 at 118.6 MS **AXIS 1**

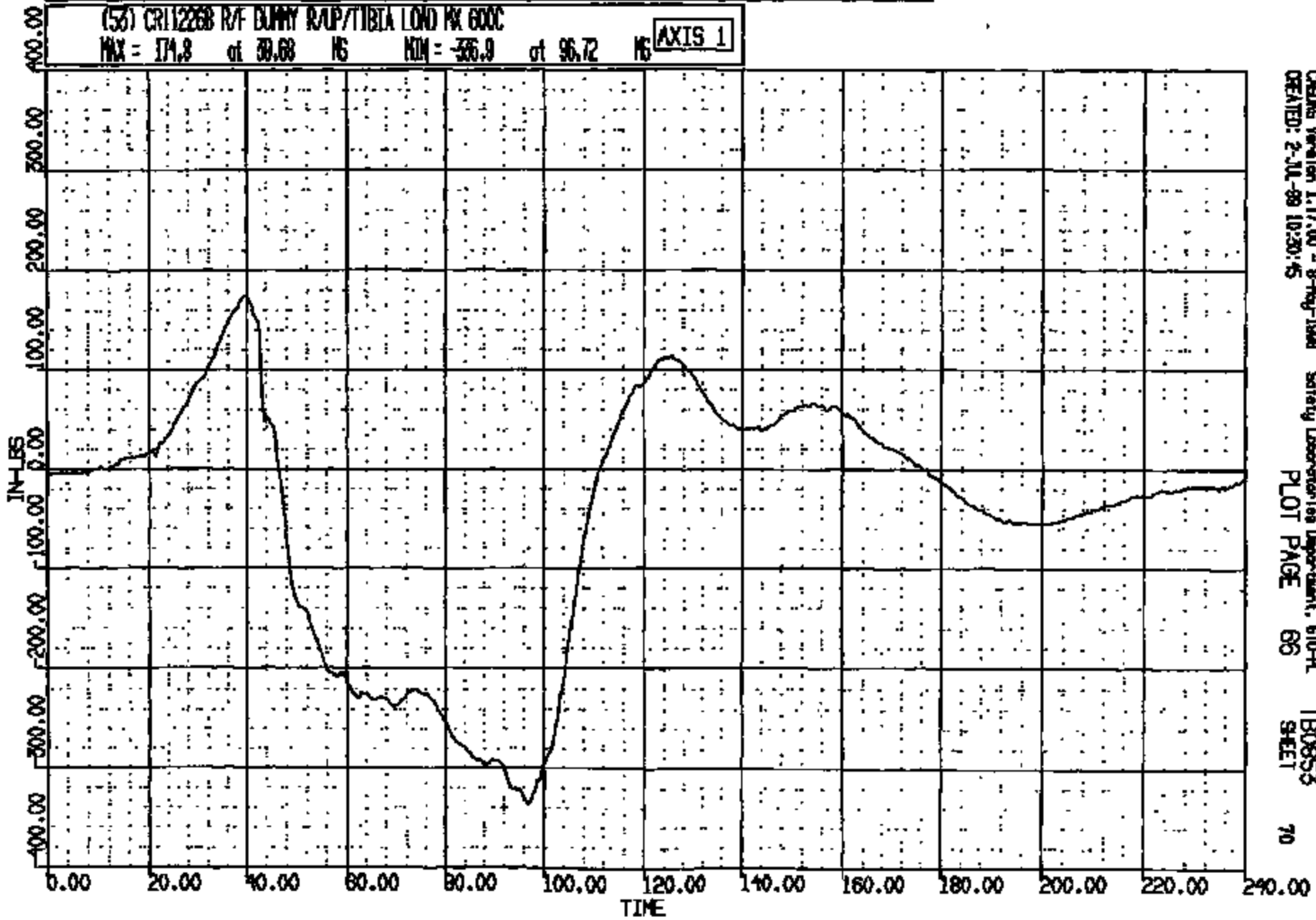


CRSAS Version 1.17.00 - 9-May-1988 Safety Laboratory Department, 610-A  
CREATED: 2-JUL-88 10:20:51 PLOT PAGE 69 TB0853 SHEET 69

CRTS 0011226

CR #: 11226 TO: TBOSSS DATE: 881009 11:46:38  
2000 D-188 1888 DN-101

(56) CR11226B R/F BUNNY RUP/TIBIA LOND PK 600C  
MAX = 174.8 at 38.68 MS MIN = -335.9 at 96.72 MS **AXIS 1**

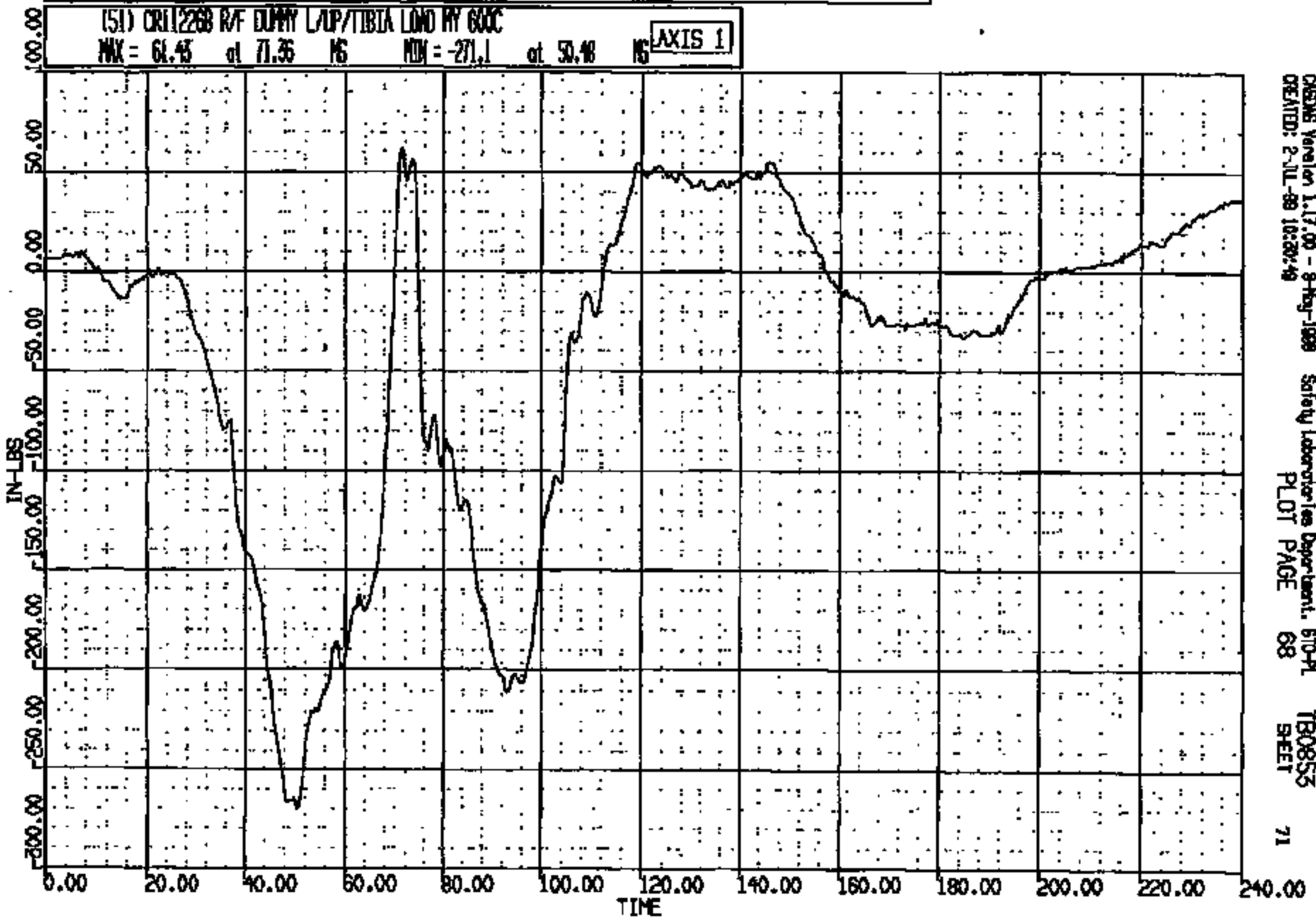


CRSNG Version 1.17.00 - 8-Aug-1988 Safety Laboratories Department, 610-FL TBOSSS  
CREATED: 2-JUL-88 10:30:45 PLOT PAGE 66 SHEET 70

CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 081008 11:45:38  
2000 D-188 1988 DN-101

(51) CR112268 R/F DUMMY LAP/TIBIA LOAD BY 600C  
MAX = 61.45 at 71.35 MS MIN = -271.1 at 50.48 MS **AXIS 1**



CRSMB Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL  
CREATED: 2-JUL-88 10:30:48 PLOT PAGE 68 TB0855 SHEET 71

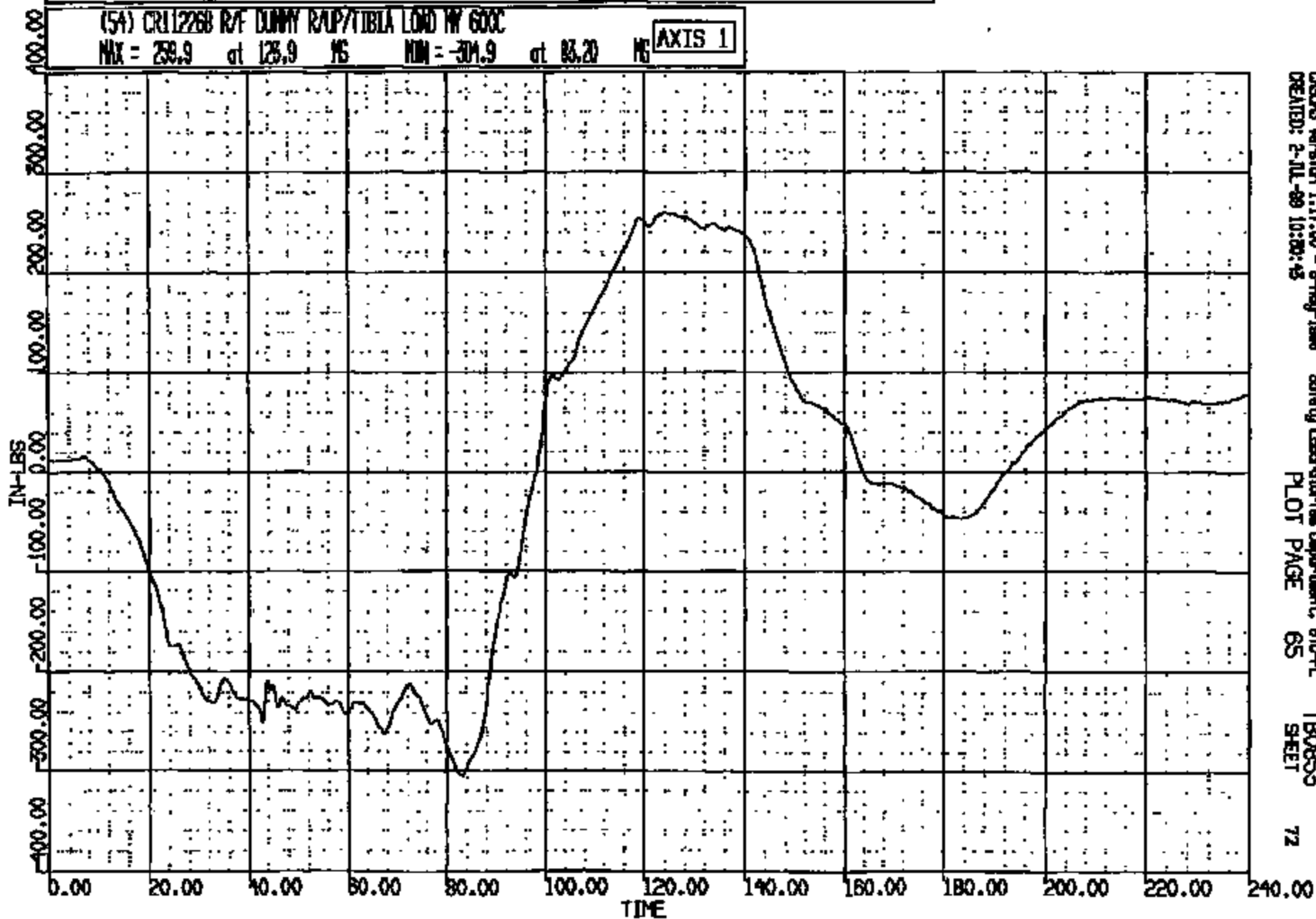
CRTS 0011226

CR R: 11226 TO: TBOSS DATE: 981009 11:45:58  
2000 D-168 1998 DN-101

(5A) CR11226B R/F DUMMY RAP/TIBIA LOAD WY 600C

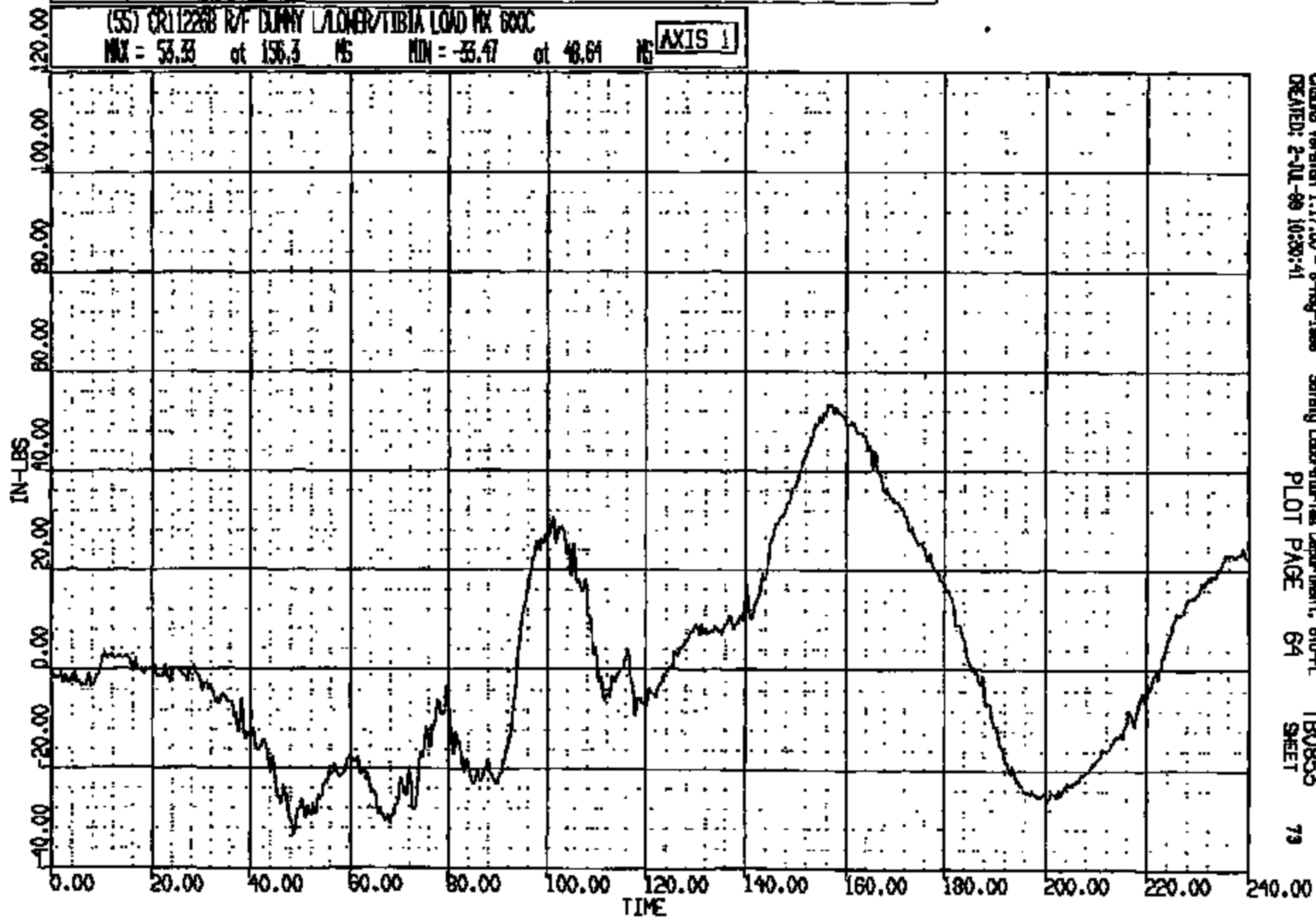
MAX = 289.9 at 125.9 MS MIN = -304.9 at 83.20 MS

AXIS 1



RUN R: 11226 TO: TB0855 DATE: 881008 11:45:38  
R000 0-100 1000 DN-101

(55) CR112268 R/F DUMMY L/LOWER/TIBIA LOAD PK 600C  
MAX = 53.35 at 156.3 MS MIN = -33.47 at 48.64 MS **AXIS 1**



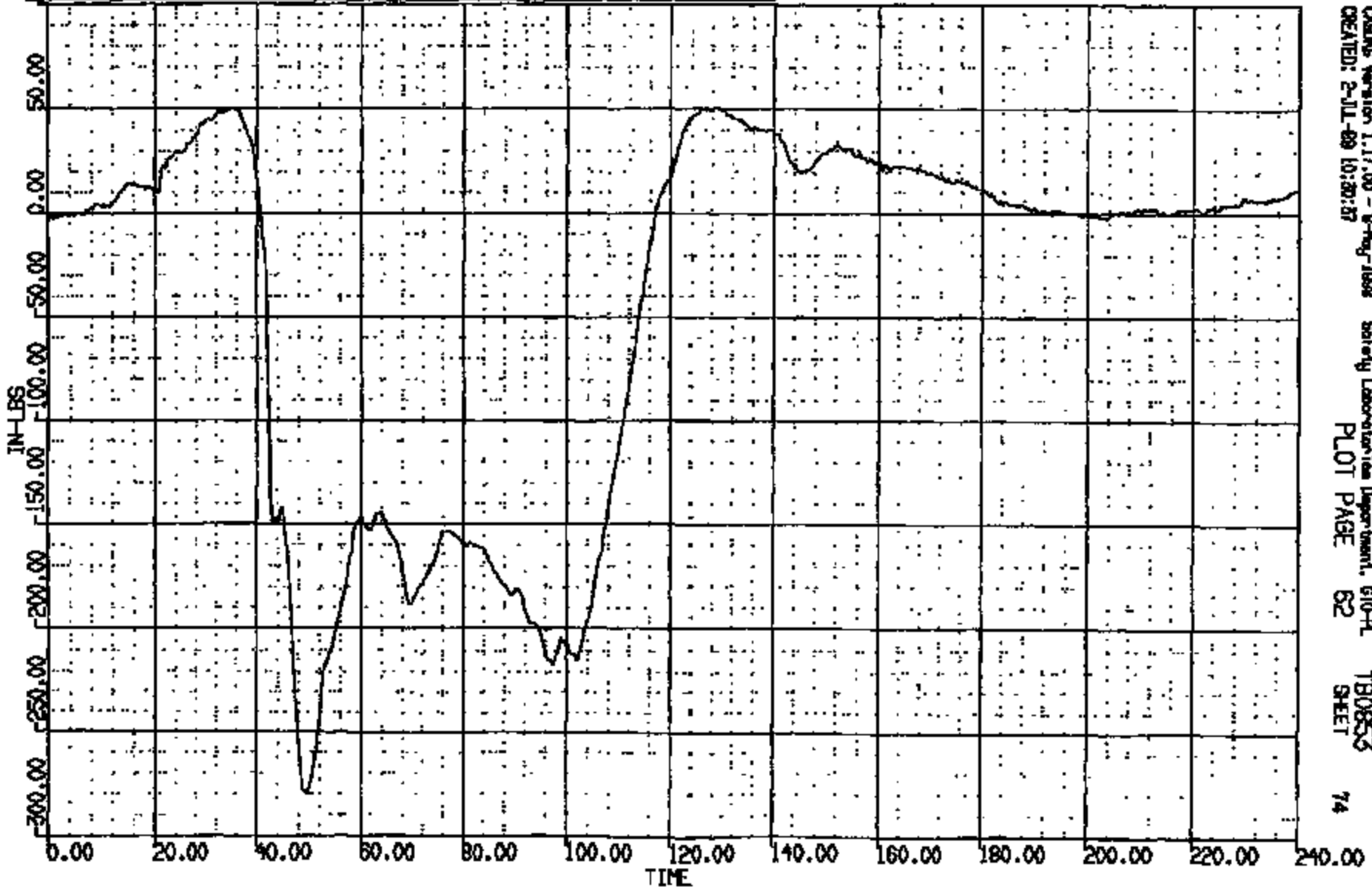
CRONUS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 810-PL TB0855  
CREATED: 2-JUL-89 10:30:41 PLOT PAGE 64 SHEET 79

CRTS 0011226



CR R: 11226 TO: TB0853 DATE: 081008 11:45:58  
2000 D-188 1888 DN-101

(57) CRL12268 R/F DUMMY R/LOWER/TIBIA LOAD MX 600C  
MAX = 50.88 at 129.0 MS MIN = -280.1 at 49.60 MS **AXIS 1**



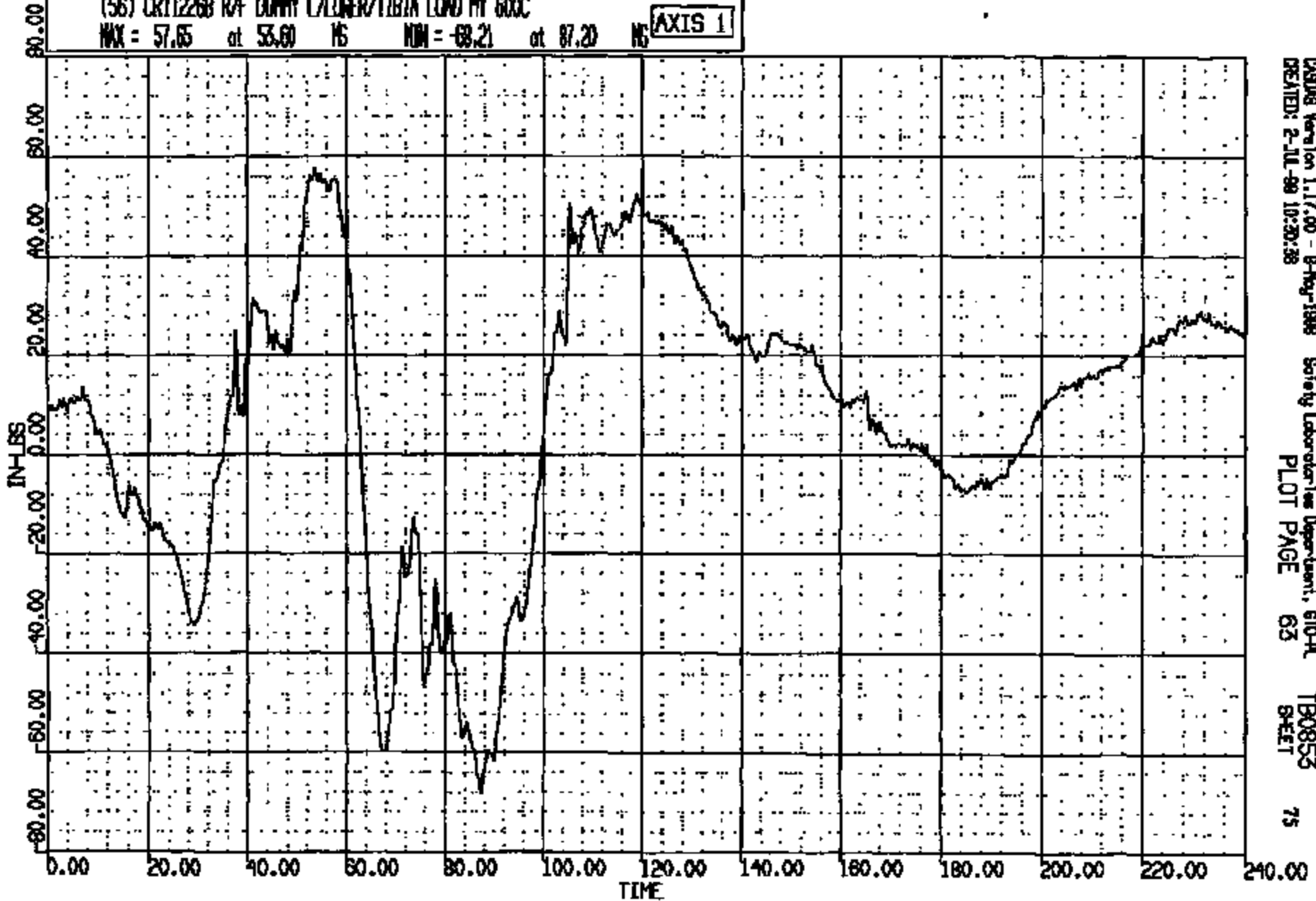
CRS Version 1.17.00 - 8-Aug-1998 Safety Laboratory Department, 610-A  
CREATED: 2-JUL-89 10:30:37 PLOT PAGE 62 SHEET 74

CR R: 11226 TD: TB0853 DATE: 981008 11:45:38  
2000 D-188 1898 DN-101

(56) CR11226B RA DUMMY L/LOWER/TIBIA LOAD MY 600C

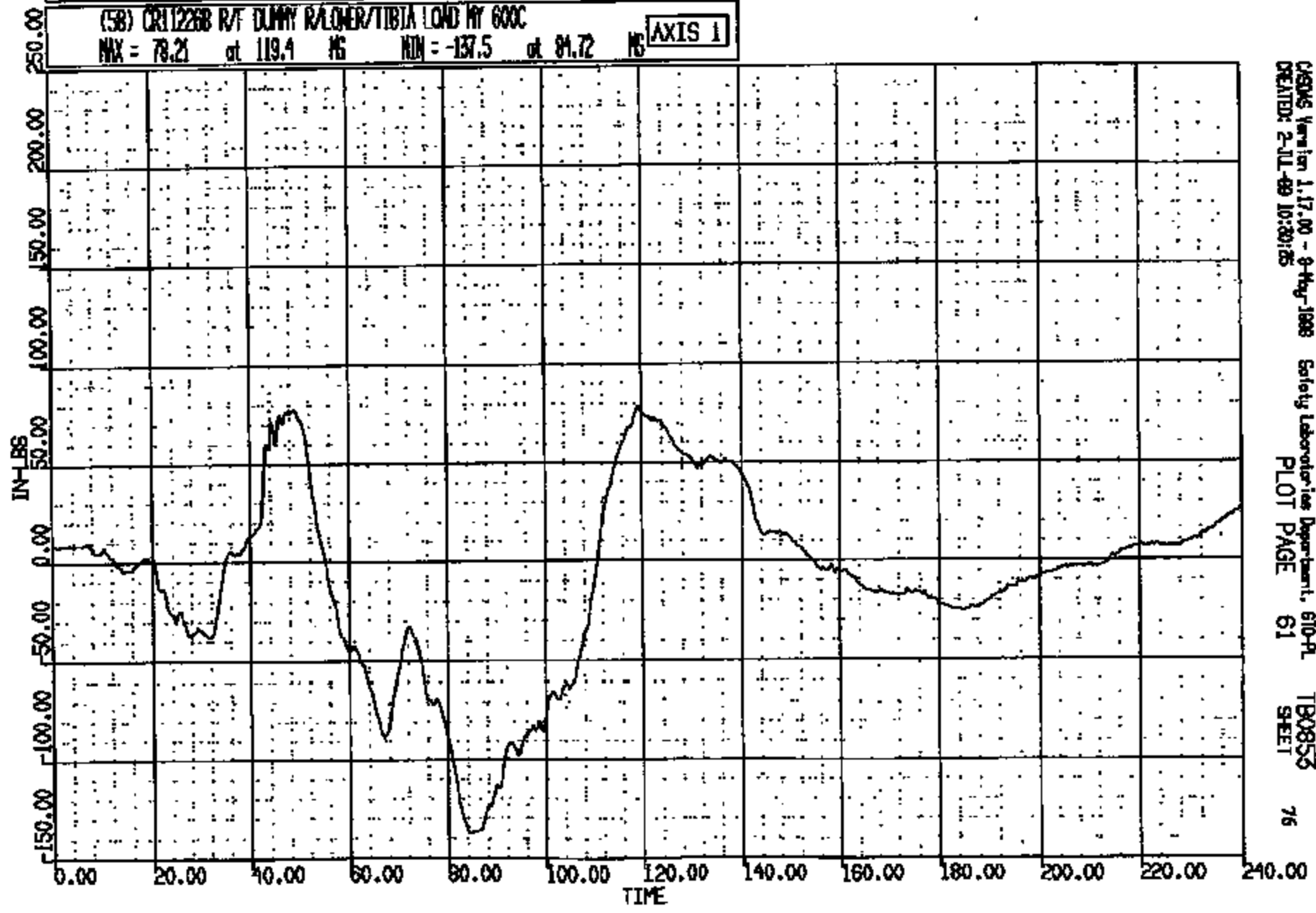
MAX = 57.65 at 53.60 MS MIN = -68.21 at 87.20 MS

AXIS 1



CR N: 11226 TO: TB0855 DATE: 981008 11:45:38  
2000 D-188 1998 DN-101

(58) CR112268 R/T DUMMY PALMER/TIBIA LOAD BY 600C  
MAX = 78.21 at 119.4 MS MIN = -137.5 at 81.72 MS **AXIS 1**



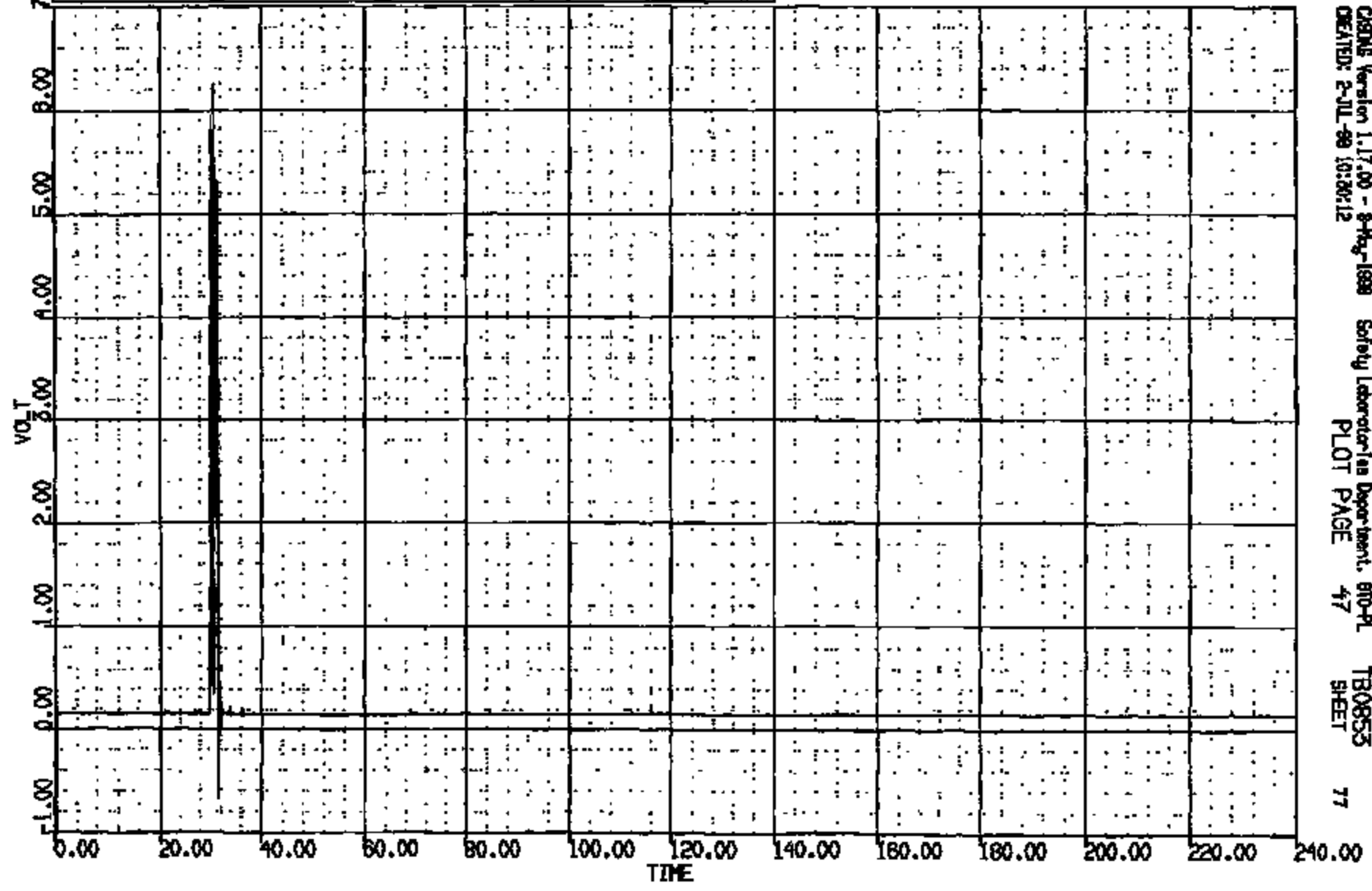
CRSMS Version 1.17.00 - 9-May-1998 Safety Laboratories Department, 610-PL TB0855  
CREATED: 2-JUL-99 10:20:25 PLOT PAGE 61 SHEET 76

CRIS 0011226

CR R: 11226 TO: TB0853 DATE: 981008 11:45:38  
2000 D-188 1899 ON-101

(72) CR12268 C/F FLR PAN @ FND TRL 5000-1 4000C  
MAX = 6.250 at 30.80 MS MIN = -.0836 at 31.68 MS

AXIS 1



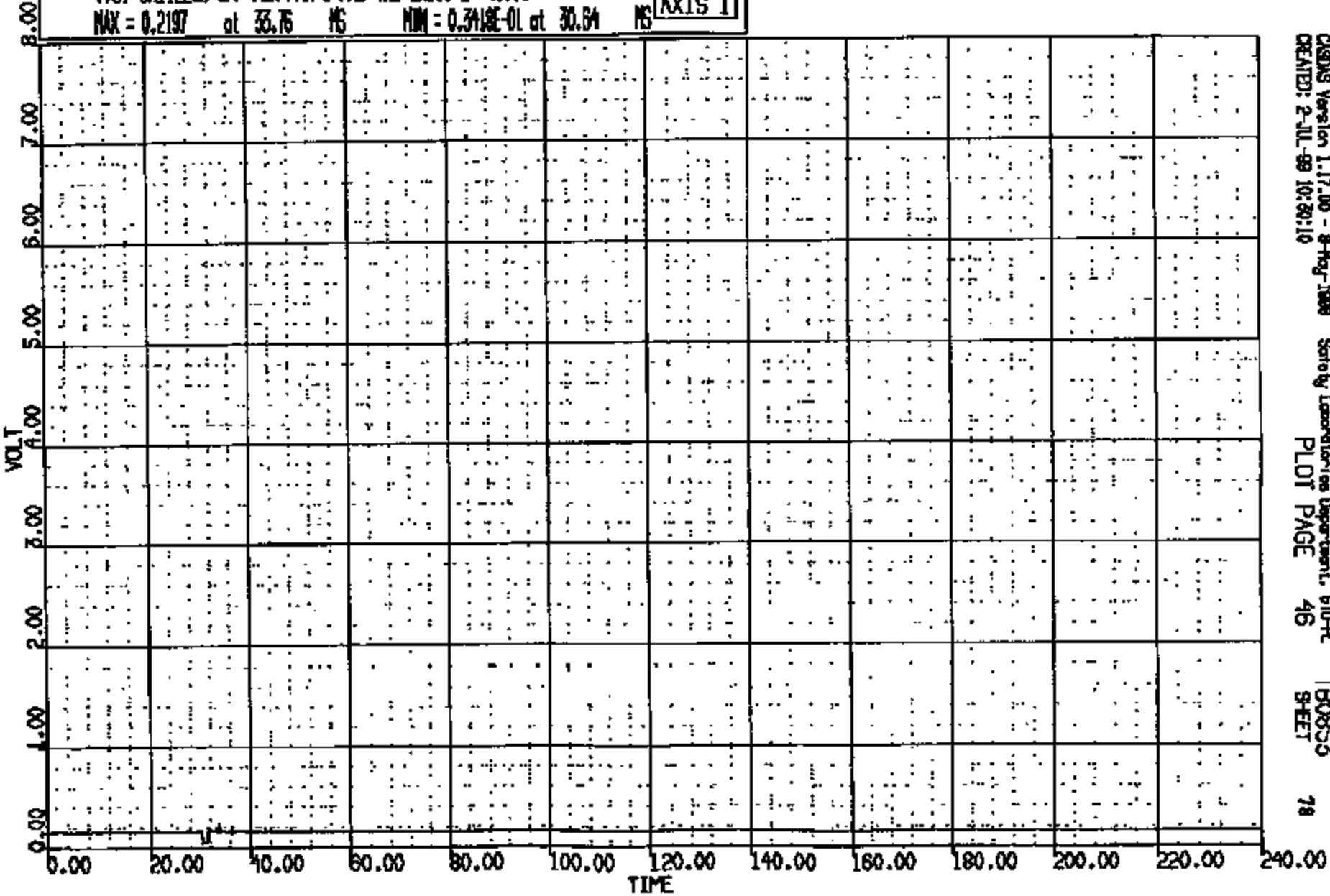
CRIMS Version 1.17.00 - 8-May-1998 Safety Laboratory Department, 810-PL TB0853  
CREATED: 2-JUL-98 10:30:12 PLOT PAGE 47 SHEET 77

CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 981008 11:45:38  
2000 D-198 1888 DN-101

(73) CR11226B C/F FLR PAN @ FWD TML SMOG-2 400XC  
MAX = 0.2197 at 33.75 MS MIN = 0.3418E-01 at 30.64 MS

AXIS 1



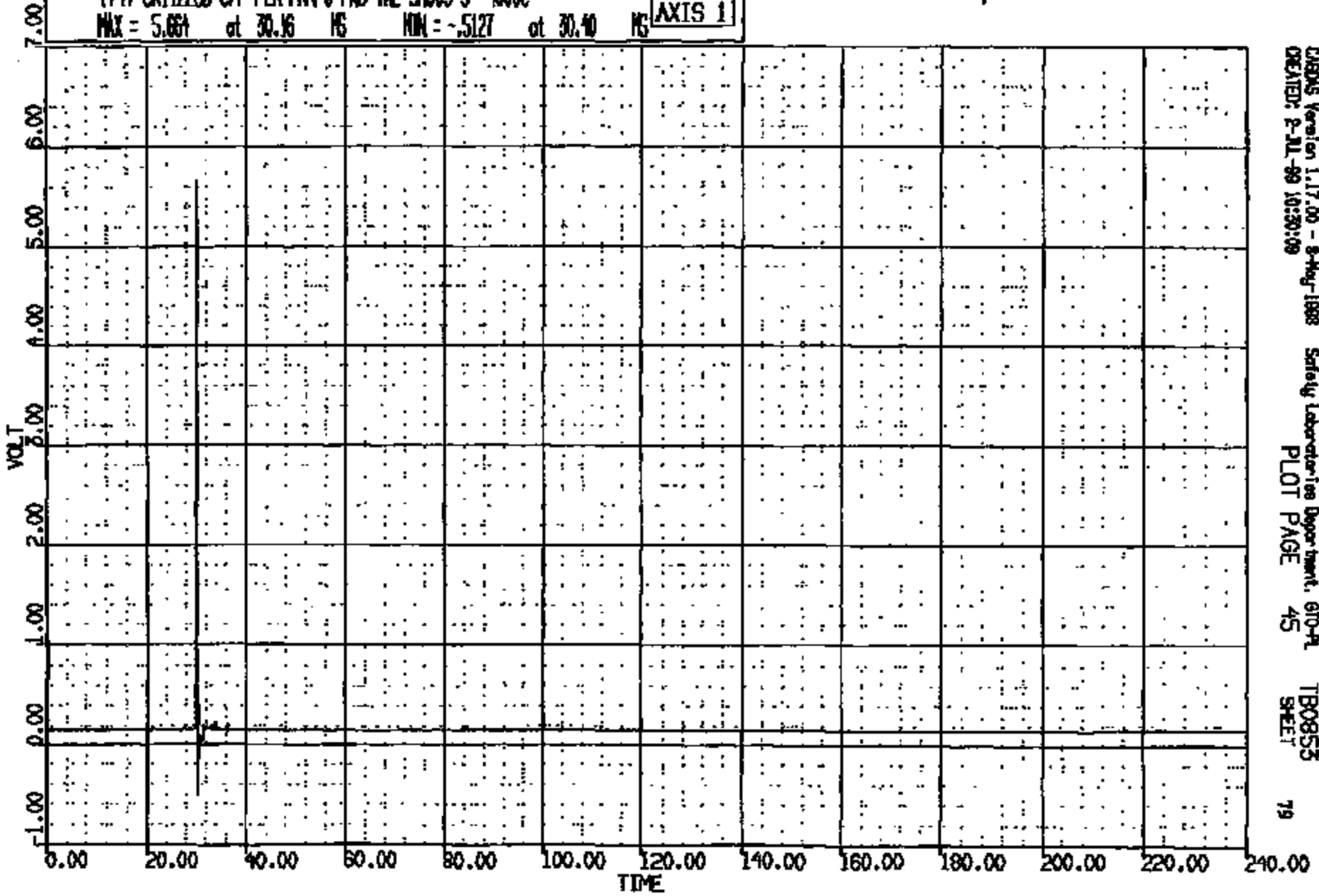
CRSIS Version 1.17.00 - 8-May-1999 Safety Laboratories Department, 610-A  
CREATED: 2-JUL-99 10:20:10 PLOT PAGE 46 TB0855 SHEET 78

CRIS 0011226

CR R: 11228 TO: TB0853 DATE: 081008 11:48:58  
2000 D-188 1998 DN-101

(74) CR112288 C/F FLR PAN @ FWD TML 59009-3 4000C  
MAX = 5.061 at 30.16 MS MIN = -.5127 at 30.40 MS

AXIS 1

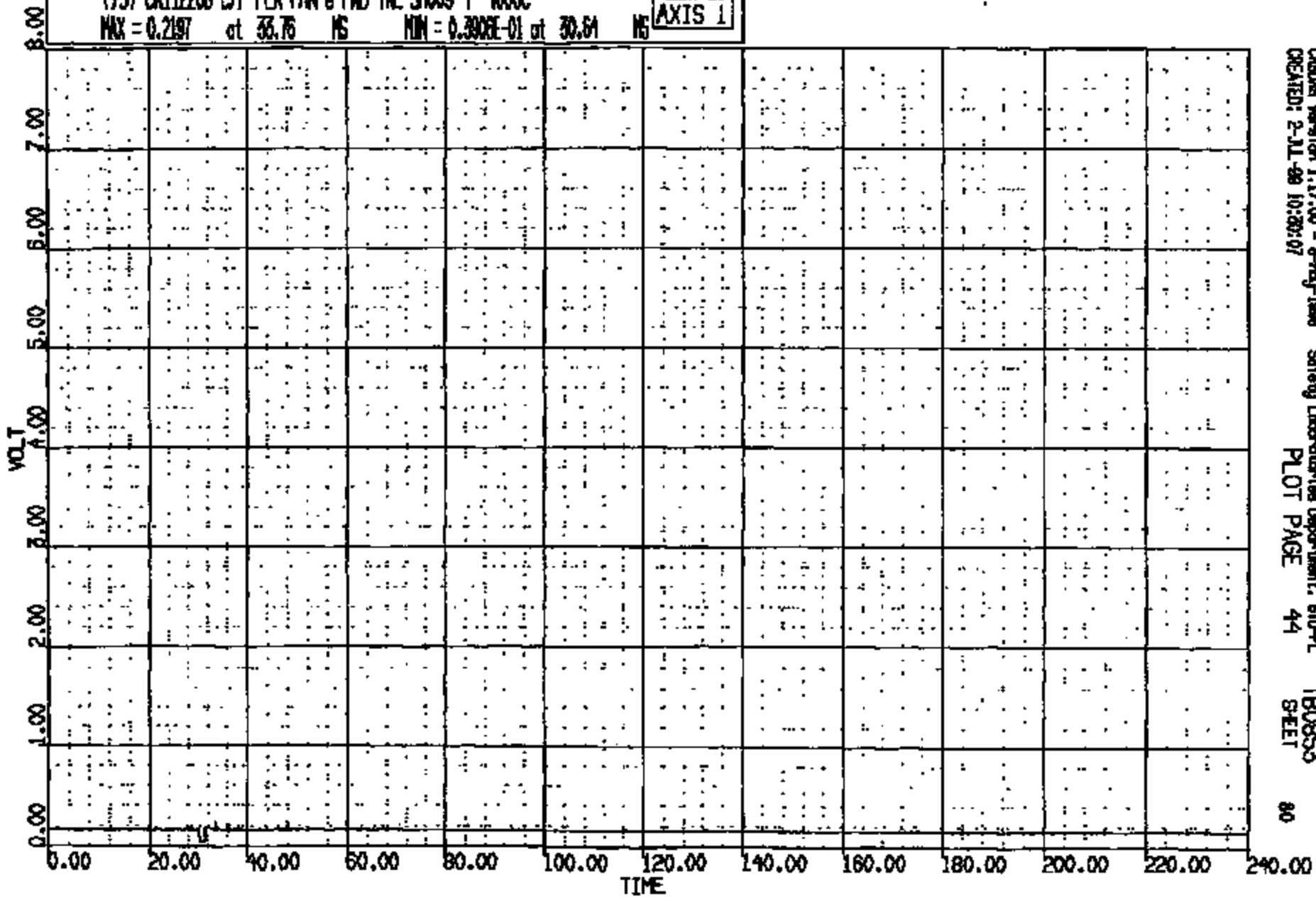


CRS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL  
CREATED: 8-JUL-98 10:30:09 PLOT PAGE 45 TB0853  
SHEET 79

CRTS 0011226

CR N: 11226 TO: TB0858 DATE: 981008 11:45:38  
2000 D-188 1998 DN-101

(75) CR112268 C/F FLR PAN @ FWD TML 50009-4 4000C  
MAX = 0.2197 at 33.75 MS MIN = 0.300E-01 at 30.61 MS **AXIS 1**

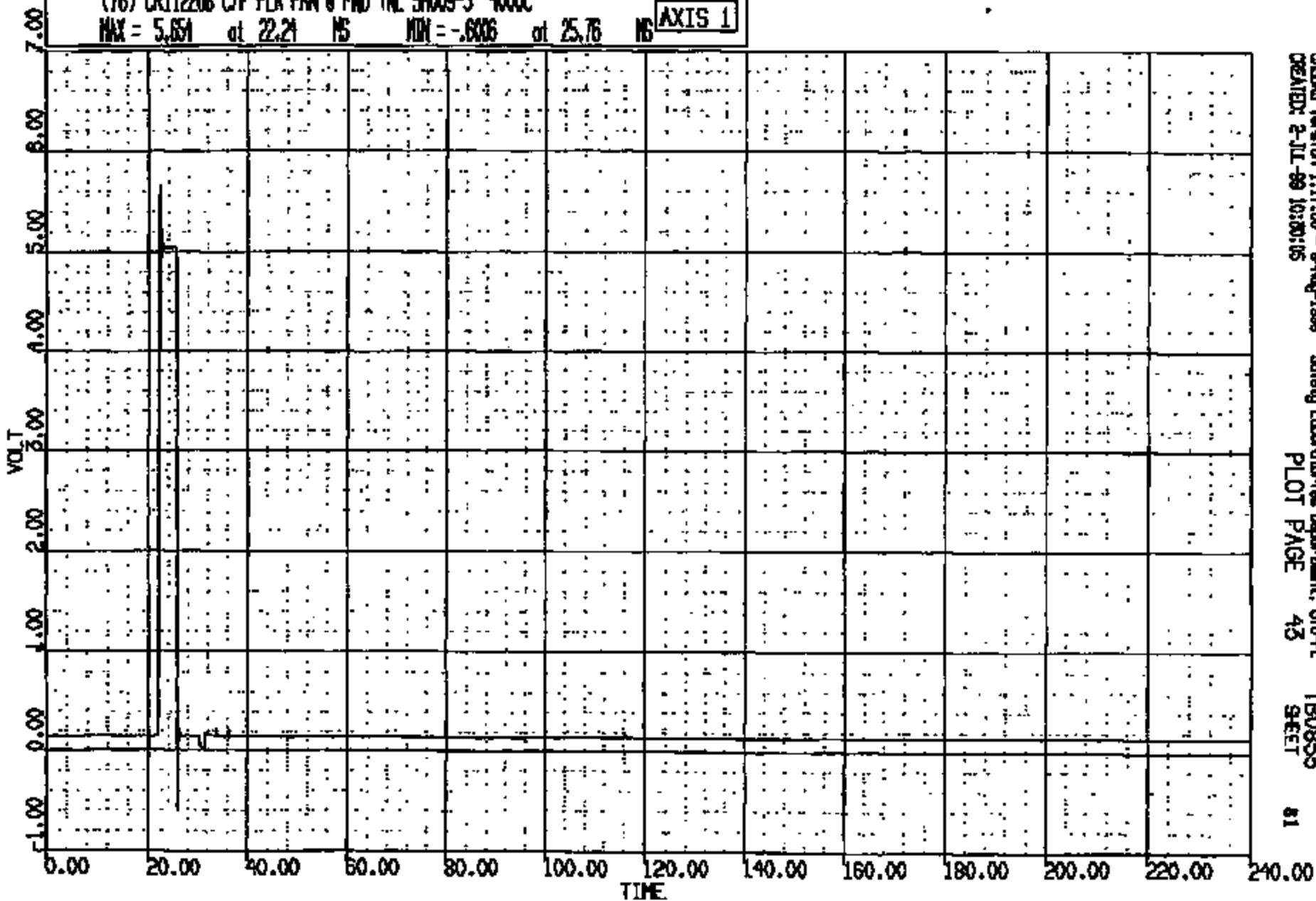


CASPER Version 1.17.00 - 8-May-1998 Safety Laboratories Department, SMD-PL TB0853  
CREATED: 2-JUL-98 10:20:07 PLOT PAGE 44 SHEET 80

CRIS 0011226

CR R: 11226 TC: TB0853 DATE: 081009 11:45:38  
2000 D-188 1998 DN-101

(76) CR11226B C/F FLR PAN @ FND TML SMOX9-5 4000C  
MAX = 5.851 at 22.21 MS MIN = -.6006 at 25.76 MS **AXIS 1**



CRMS Version 1.17.00 - 8-Aug-1998  
CREATED: 2-JUL-99 10:00:05

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PLOT PAGE 43

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SHEET

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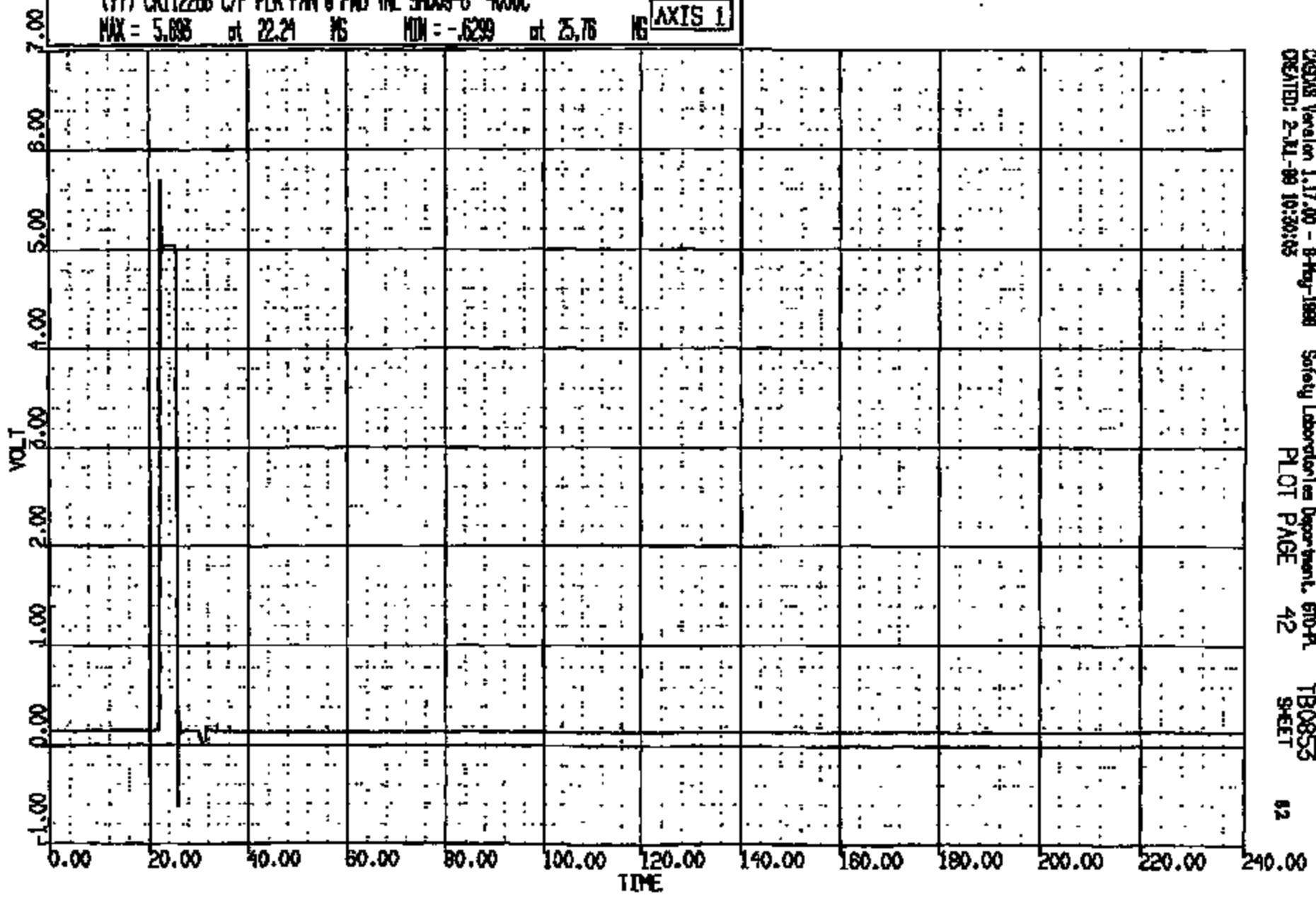
CRTS 0011226



CR R: 11226 TO: TB0853 DATE: 081000 11:45:38  
2000 D-188 1988 DN-101

(77) CR11226B C/F FLR PAN @ FWD TNL 5009-6 400C  
MAX = 5.088 at 22.21 NS MIN = -.6299 at 25.76 NS

AXIS 1

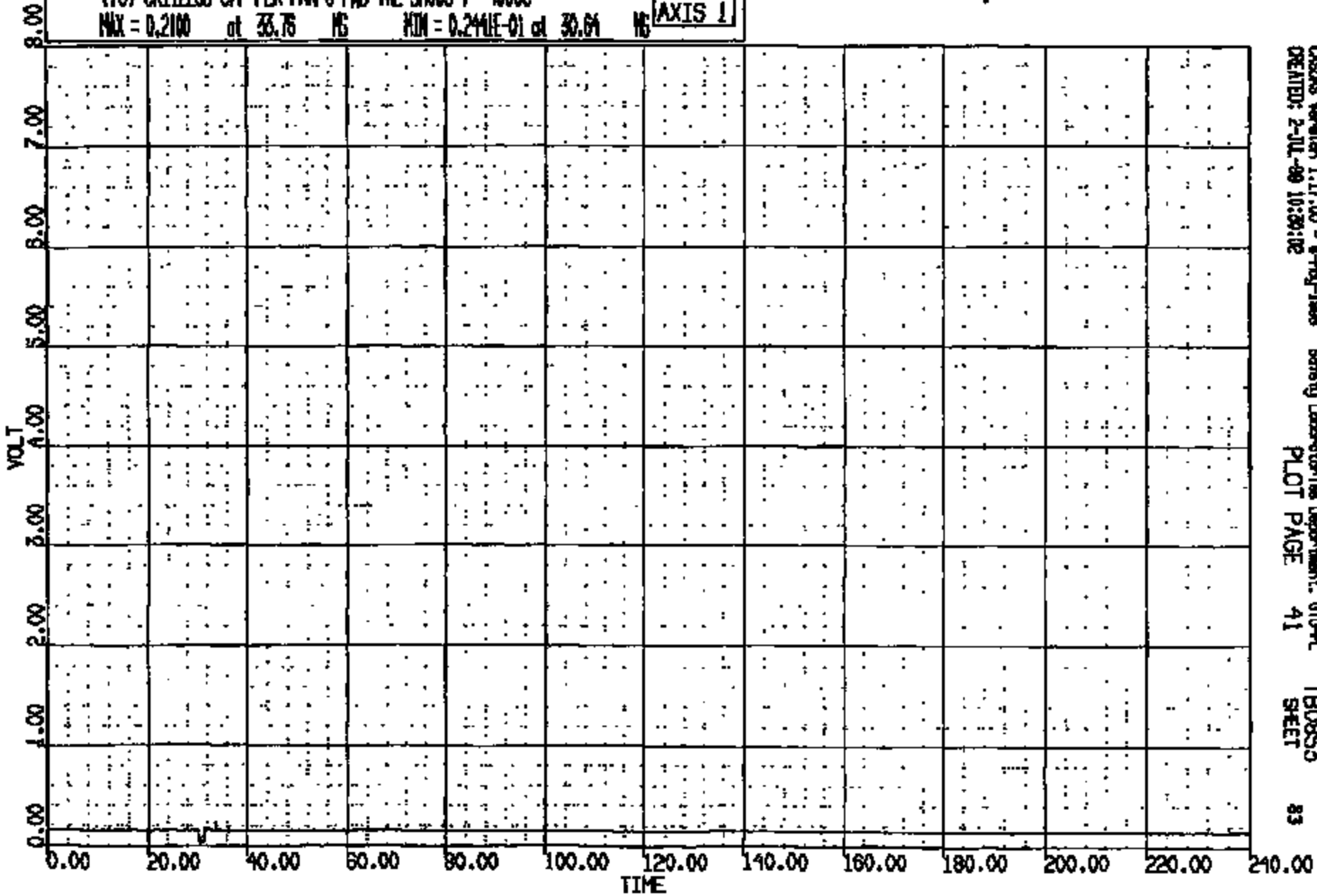


CRSIS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, STD-PL TB0853  
CREATED: 2-RL-88 10:30:05 PLOT PAGE 42 SHEET 02

CRIS 0011226

CR R: 11226 TO: T80853 DATE: 981009 11:45:59  
2000 D-198 1998 DN-101

(78) CR112268 C/F FLR PNM @ FWD TML SMO09-7 4000C  
MAX = 0.2100 at 33.75 MS MIN = 0.2441E-01 at 30.04 MS **AXIS 1**



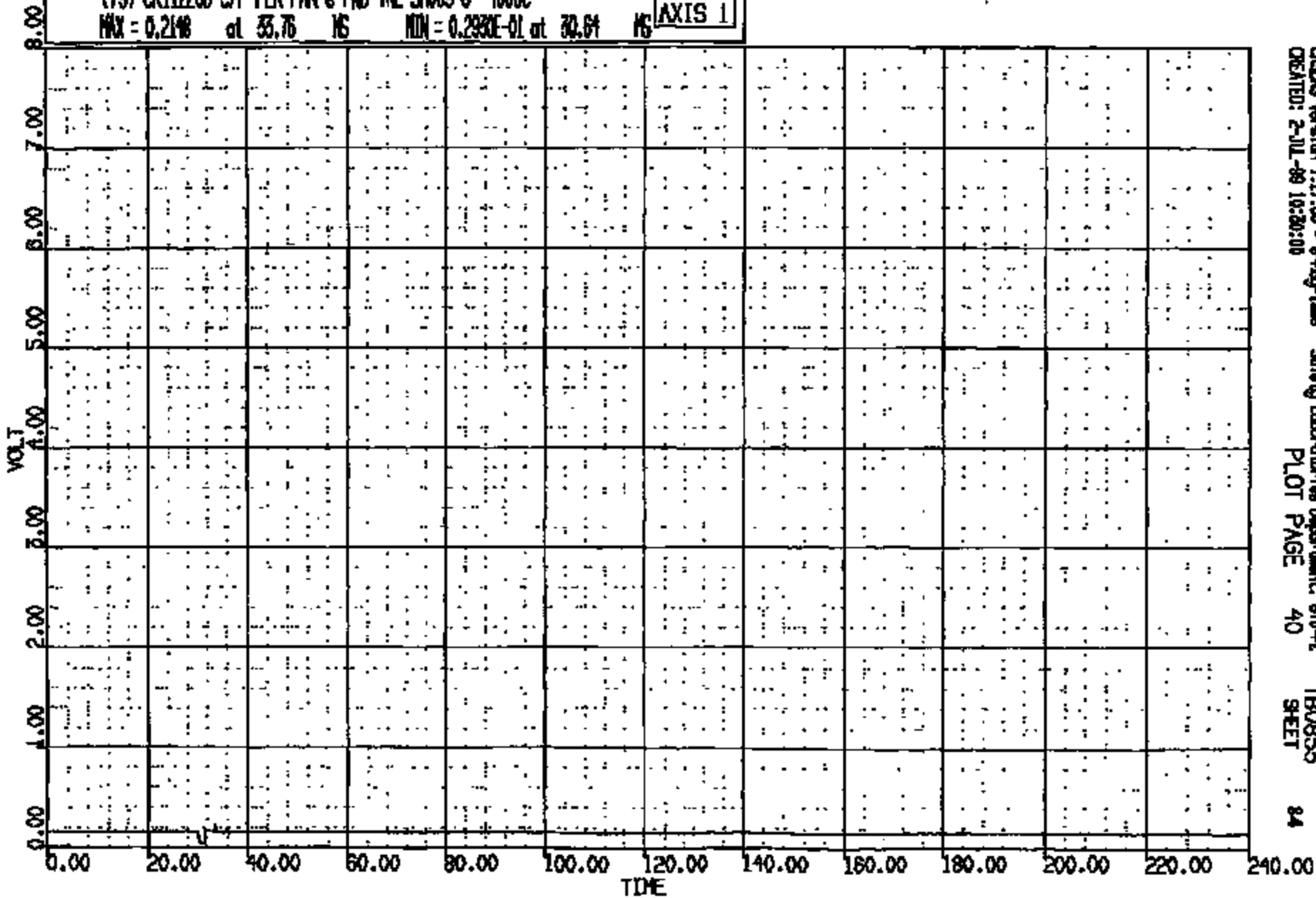
CASIMS Version 1.17.00 - 8-May-1998 Safety Laboratory Inc. Department: OTD-PL  
CREATED: 2-JUL-99 10:39:02 PLOT PAGE 41 T80853  
SHEET 83

DR R: 11226 TO: TB0855 DATE: 821009 11:45:58  
2000 D-198 1989 DN-101

(79) CR112268 C/F FLR PAN @ FND TML 5000-8 4000C

MAX = 0.2148 at 33.76 MS MIN = 0.2930E-01 at 30.64 MS

AXIS 1



CRSAS Version 1.17.00 - 8-May-1989  
CREATED: 2-JUL-89 16:30:00

Safety Laboratories Department, 610-PL  
PLOT PAGE 40

TB0855  
SHEET

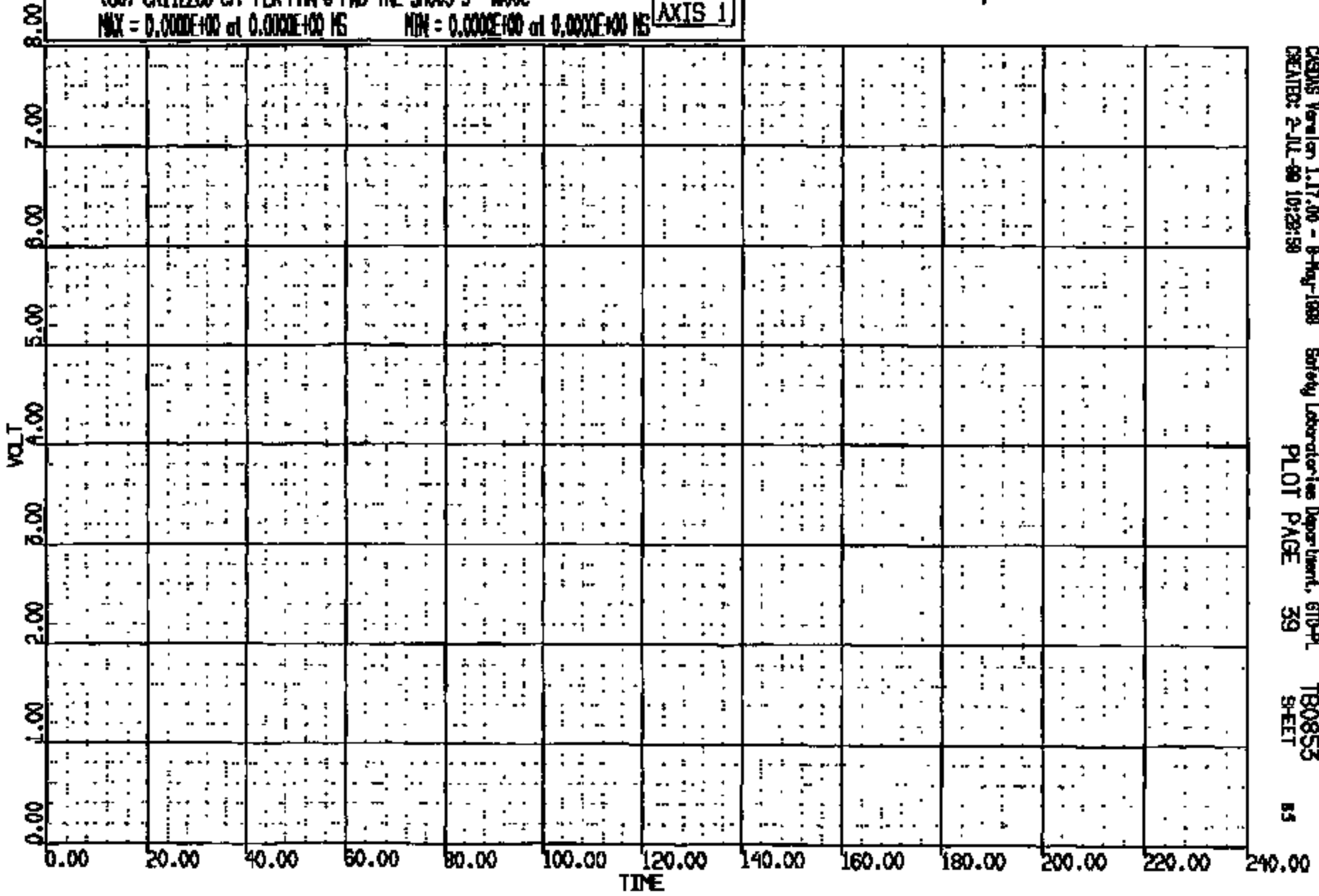
84

CR R: 11226 TO: TB0855 DATE: 961006 11:45:38

MO00 D-188 1998 DN-101

(80) CR112268 C/F FLR PWA @ FWD TNL SH009-9 400C  
MAX = 0.0000E+00 at 0.0000E+00 MS MIN = 0.0000E+00 at 0.0000E+00 MS

AXIS 1

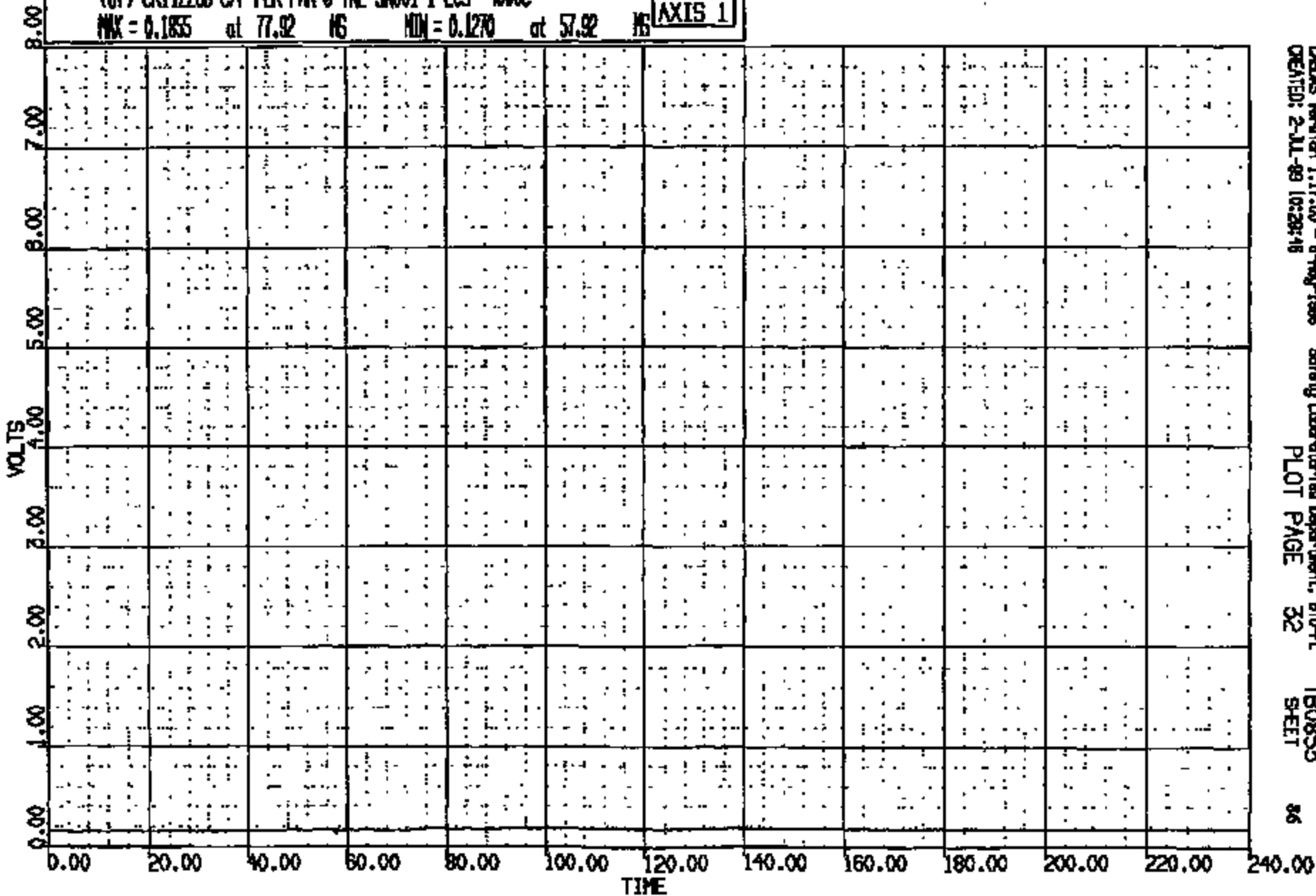


CR R: 11226 TO: TB0853 DATE: 081000 11:45:38  
8000 D-188 1998 DN-101

(87) CR112268 C/F FLR PAN @ TNL 54001-1 ECS 400C

PKX = 0.1855 at 77.92 MS MIN = 0.1270 at 57.92 MS

AXIS 1



DIAGNOS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-98 10:29:16

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PLOT PAGE 32

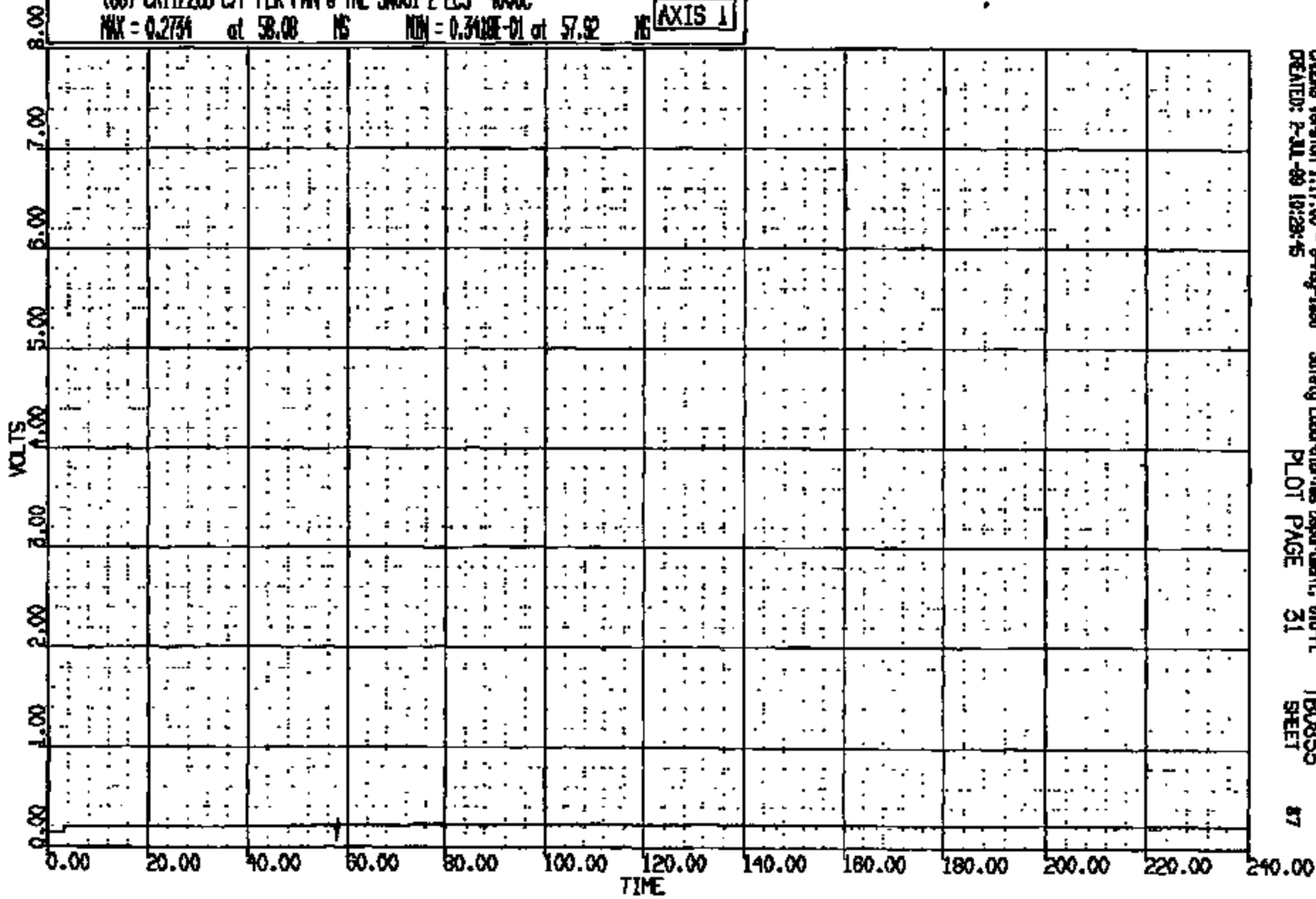
TB0853  
SHEET

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CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 081008 11:45:58  
2000 D-188 1888 DN-101

(88) CR112268 C/F FLR PAN @ TNL SMOO1-2 ECS 4000C  
MAX = 0.2734 at 58.00 MS MIN = 0.3400E-01 at 57.92 MS **AXIS 1**

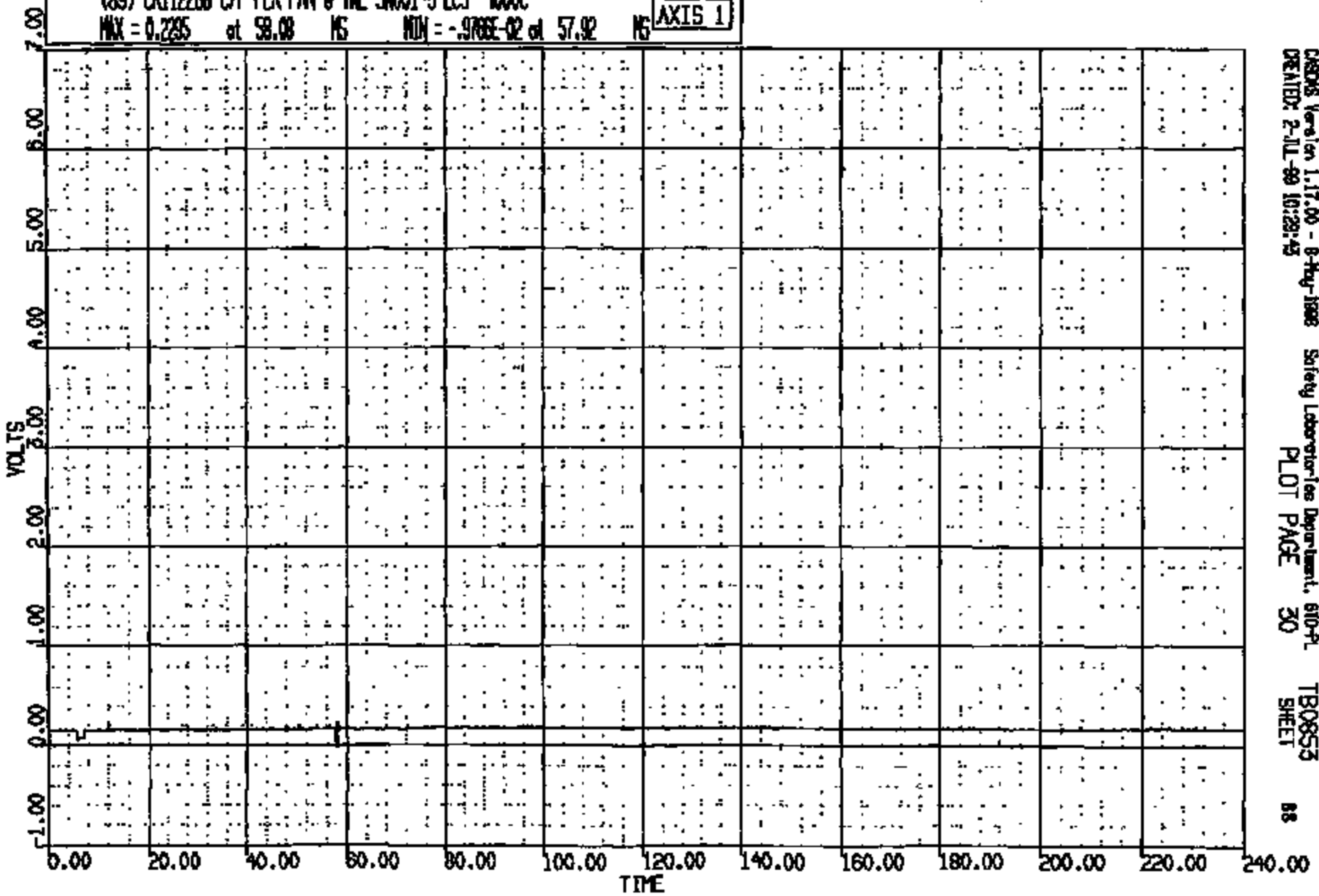


CREMS Version 1.17.00 - 8-May-1989 Safety Laboratories Department, 610-PL TB0855  
CREATED: P-JL-89 10:28:45 PLOT PAGE 31 SHEET 87

CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 981008 11:45:58  
2000 D-188 1888 DN-101

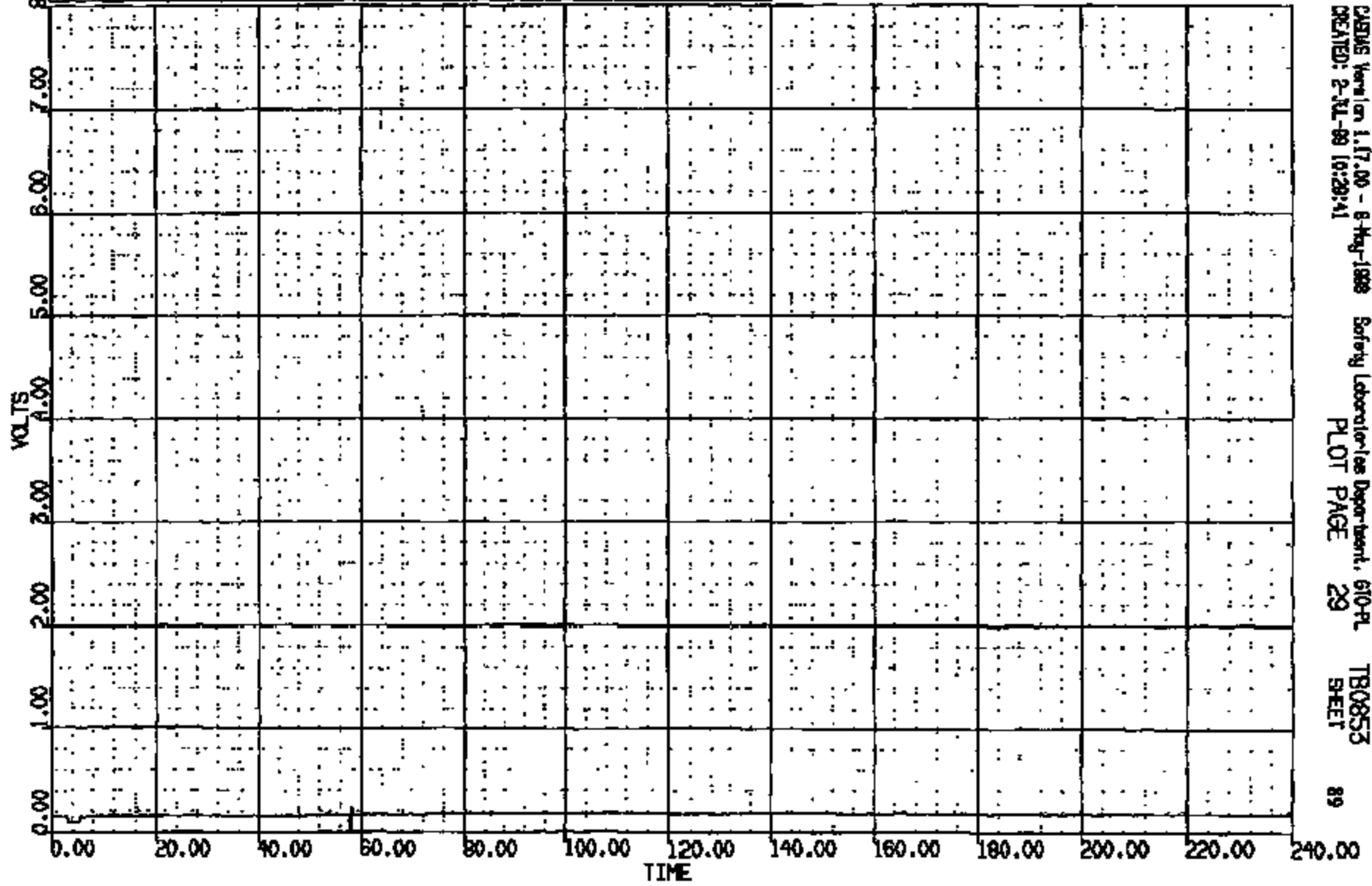
(89) CR112268 C/F FLR PWN @ TML SMO01-3 ECS 4000C  
MAX = 0.2285 at 58.08 MS MIN = -.9788E-02 at 57.92 MS AXIS 1



CR R: 11226 TO: TB0853 DATE: 981009 11:45:38  
R000 D-198 1988 DN-101

(90) CR112268 C/F FLR PAN @ TML SMOO1-4 ECS 400C  
MAX = 0.2246 at 58.08 MS MIN = 0.988E-02 at 57.92 MS

AXIS 1



CRIMS Version 1.17.00 - 8-Aug-1988 Safety Laboratories Department, 610-PL  
CREATED: 2-FEB-89 10:29:41 PLOT PAGE 29 SHEET 89

CRIS 0011226

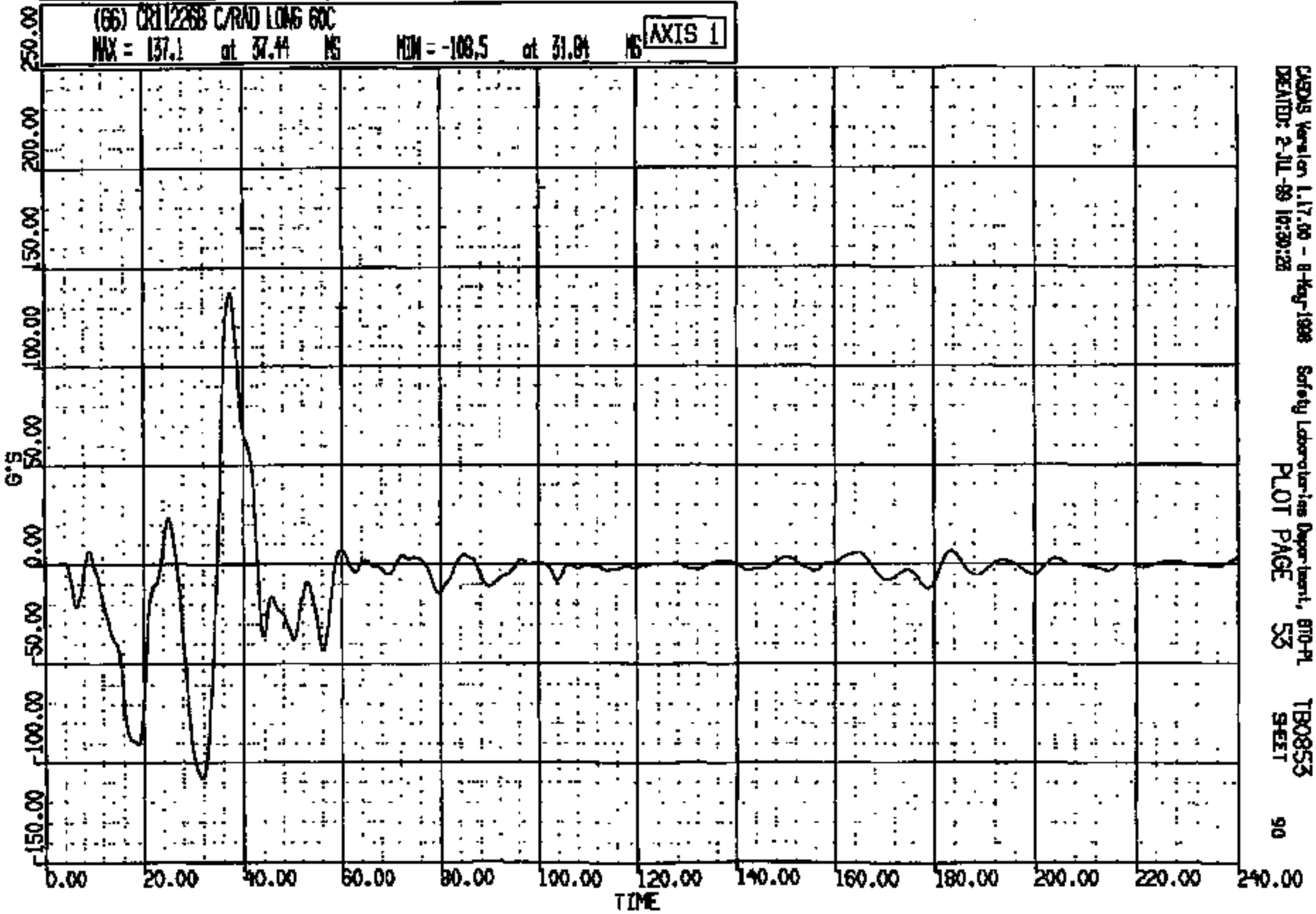


CR R: 11226 TO: TB0855 DATE: 991008 11:45:39  
2000 D-168 1998 DN-101

(66) CR112268 C/RAD LONG 60C

MAX = 137.1 at 37.44 MS MIN = -108.5 at 31.84 MS

AXIS 1



CRS Version 1.17.00 - 8-Aug-1998  
DATE: 2-JUL-99 10:30:28

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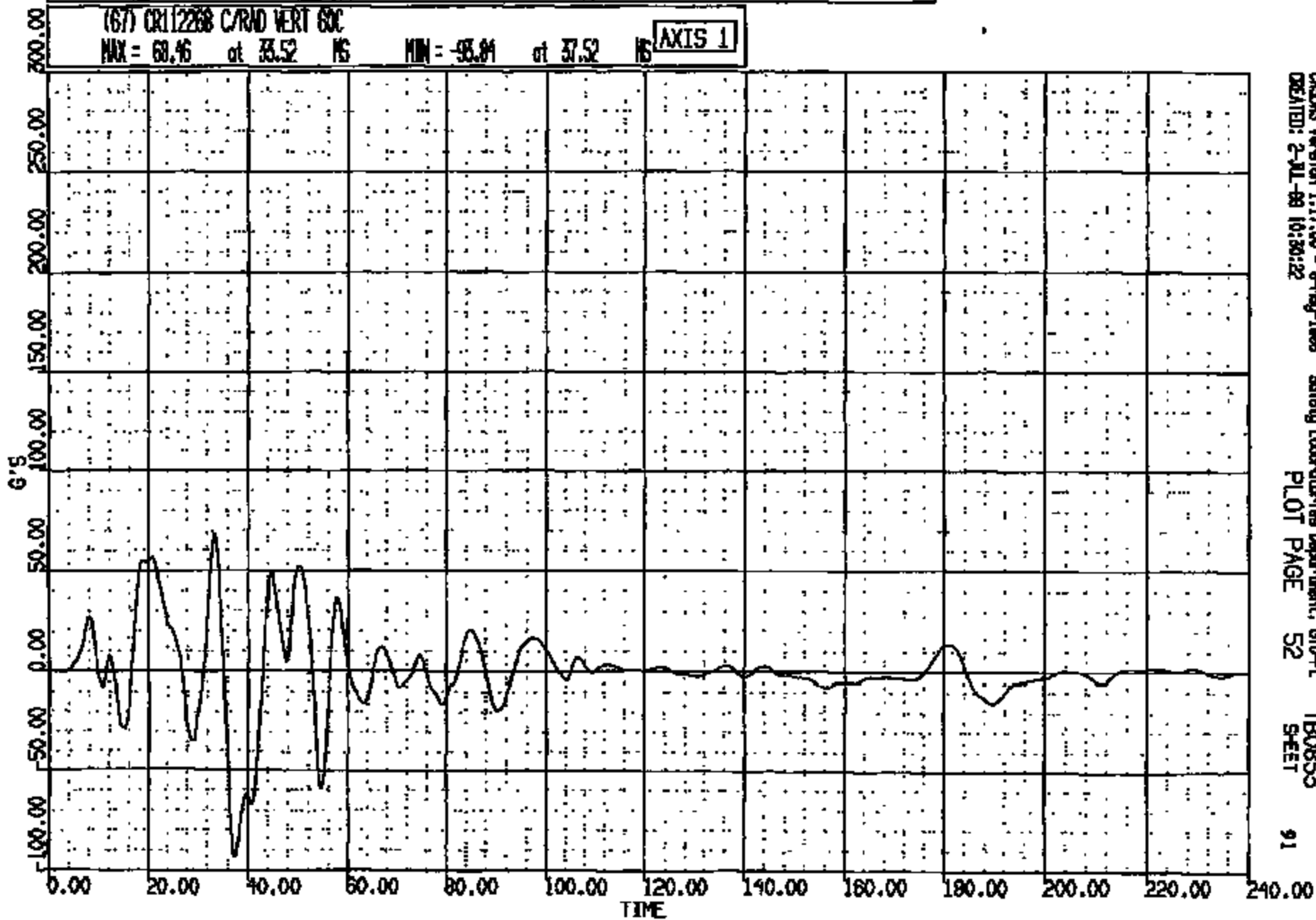
CRTS 0011226

DR R: 11226 TO: TB0855 DATE: 981009 11:45:38  
2000 D-188 1999 DN-101

(67) CRTS 0011226 C/RAD VERT GDC

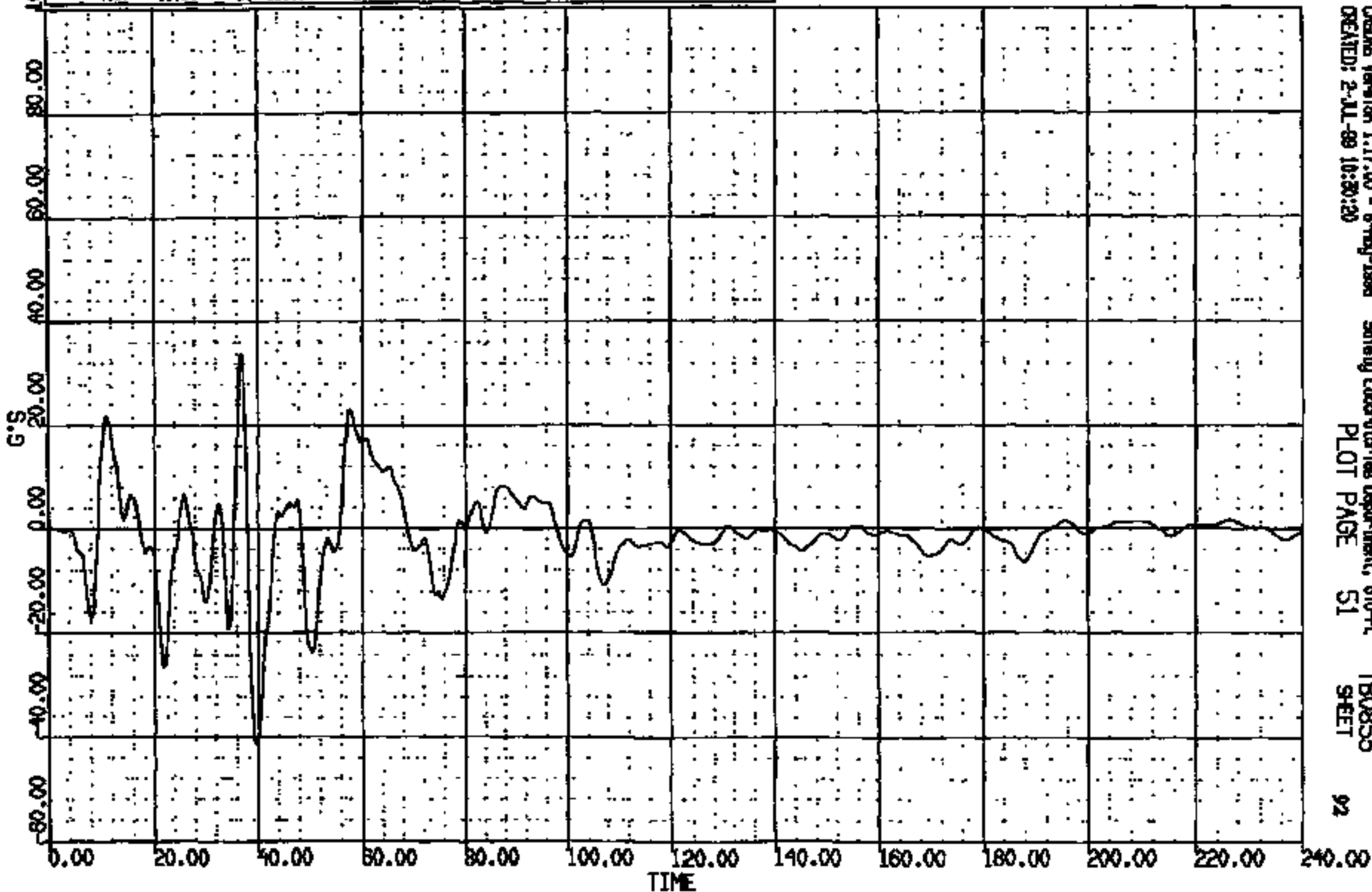
MAX = 68.46 at 33.52 MS MIN = -93.84 at 37.52 MS

AXIS 1



CR R: 11226 TO: TB0855 DATE: 081000 11:45:38  
2000 D-186 1000 DN-101

(68) CR112268 C/RAD LAT 60C  
MAX = 33.64 at 36.88 MS MIN = -41.41 at 39.76 MS **AXIS 1**



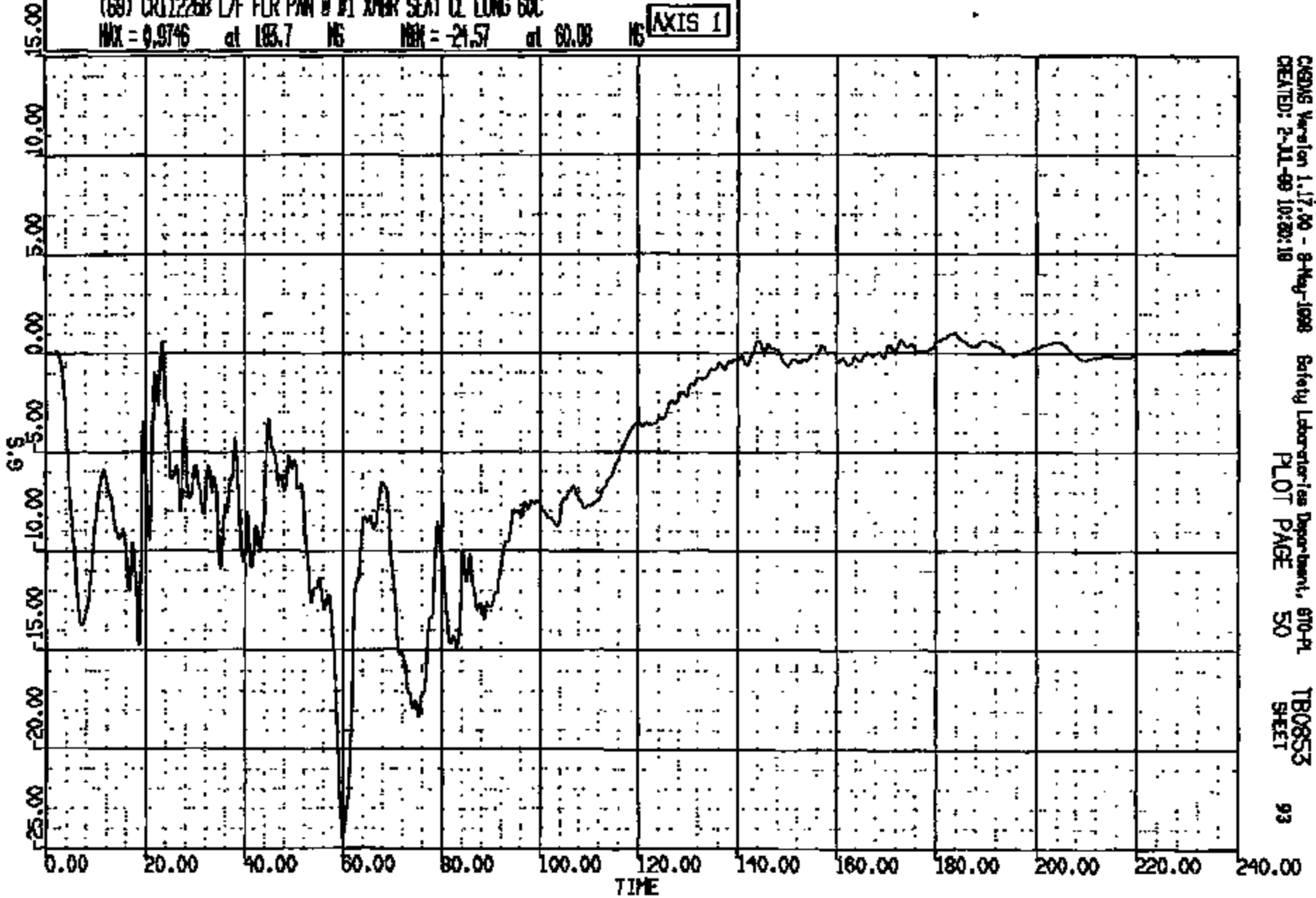
OSGMS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL  
CREATED: 2-JUL-99 10:20:20 PLOT PAGE 51 TB0855 SHEET 92

CRTS 0011226

CR R: 11226 TD: TB0855 DATE: 081008 11:45:38  
2000 D-188 1998 DN-101

(69) CR112263 L/F FLR PAN @ #1 XMR SEAT CL LONG 60C  
MAX = 0.9746 at 193.7 MS MIN = -21.57 at 60.08 MS

AXIS 1



CRS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-99 10:20:18

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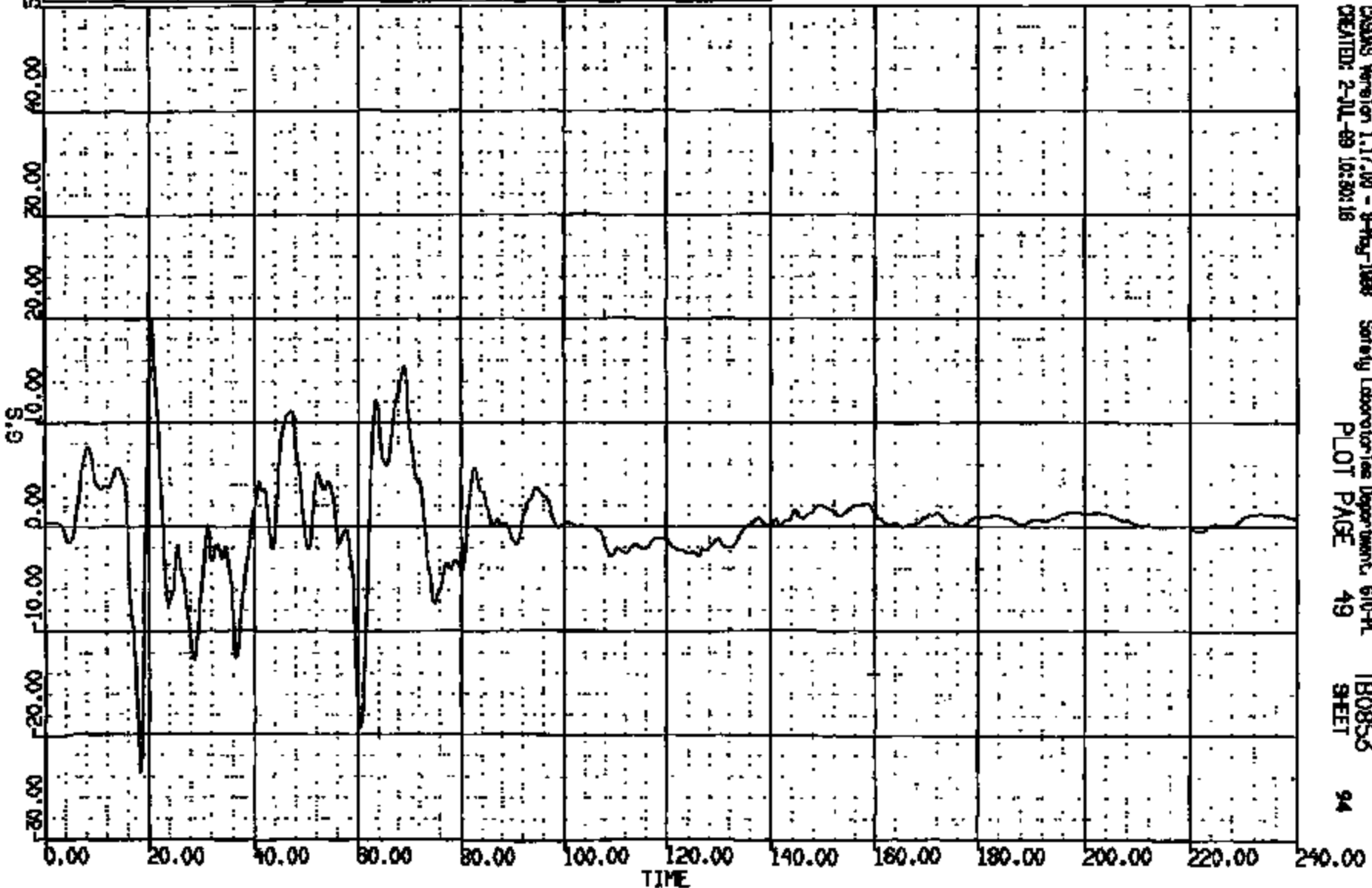
TB0855  
SHEET

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CRIS 0011226

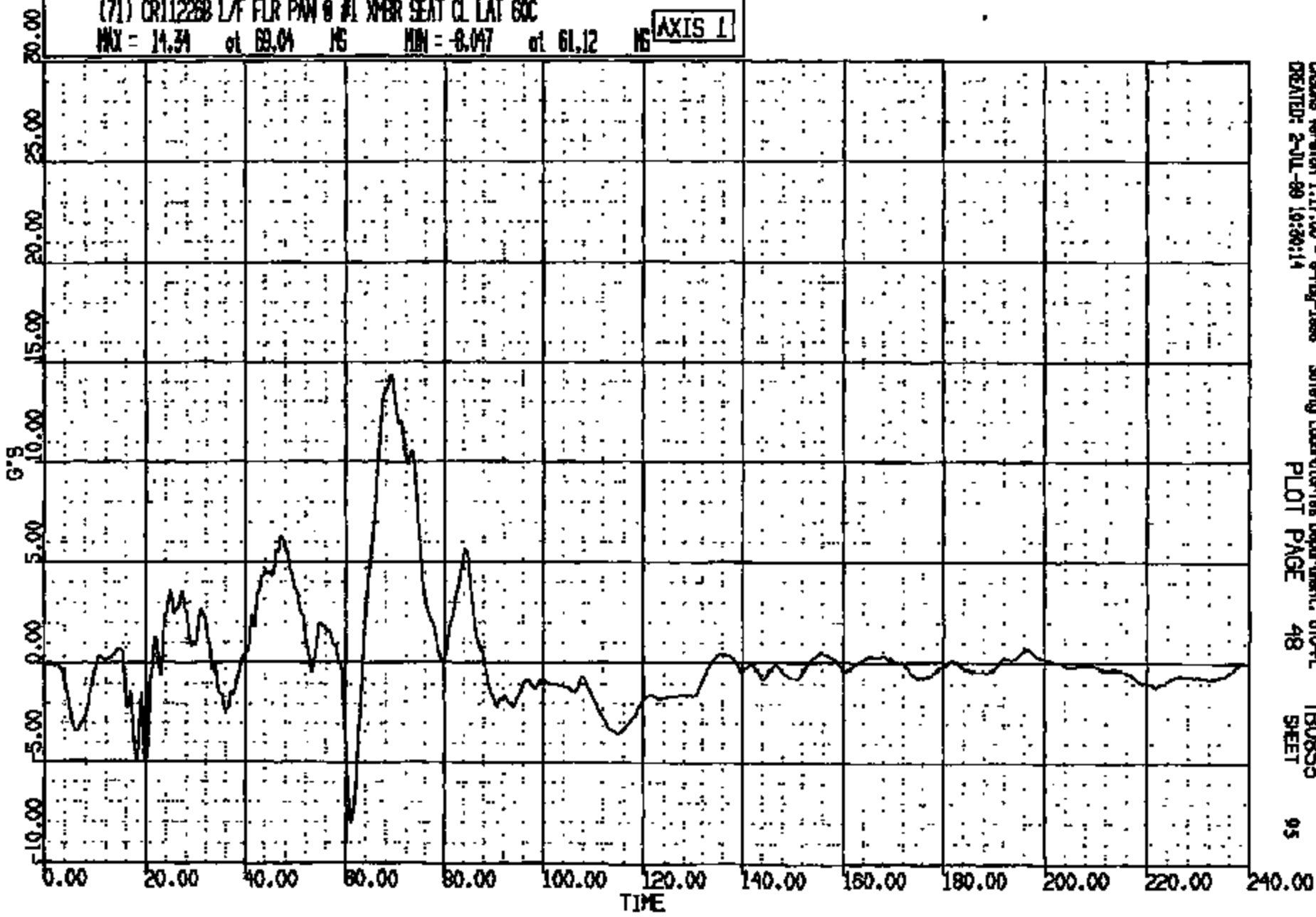
DR R: 11226 TO: TB0855 DATE: 981009 11:46:38  
R000 D-188 1998 DN-101

(70) CR12268 L/F FLR PAN @ #1 XMR SEAT CL VERT GOC  
MAX = 19.88 at 20.56 MS MIN = -23.61 at 18.40 MS **AXIS 1**



DR R: 11226 TO: TB0853 DATE: 891008 11:45:38  
2000 D-186 1988 DN-101

(71) CR112268 L/F FLR PW 0 #1 XPR SEAT CL LAT 60C  
MAX = 14.34 at 69.04 MS MIN = -8.047 at 61.12 MS **AXIS 1**

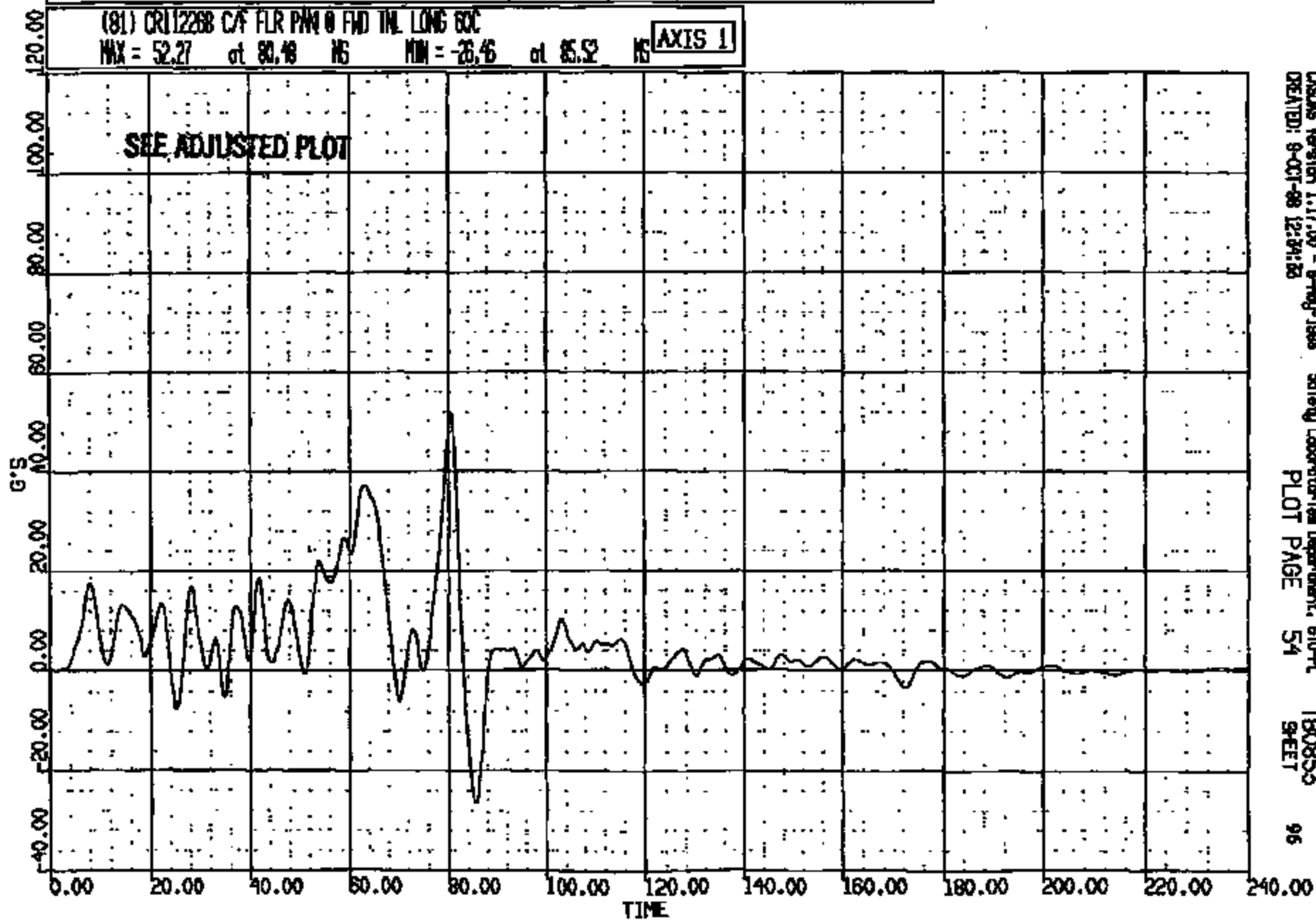


CRSUS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, BTD-PL TB0853  
CREATED: 2-JUL-89 19:30:14 PLOT PAGE 48 SHEET 95

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 981009 11:45:39  
2000 D-188 2000 D-188

(81) CR112268 C/F FLR P/W @ FWD INL LONG 60C  
MAX = 52.27 at 80.48 MS MIN = -26.46 at 85.52 MS **AXIS 1**



CADSYS Version 1.17.00 - 9-May-1998  
CREATED: 9-OCT-98 12:34:53

Safety Laboratories Department, 610-PL  
PLOT PAGE 54

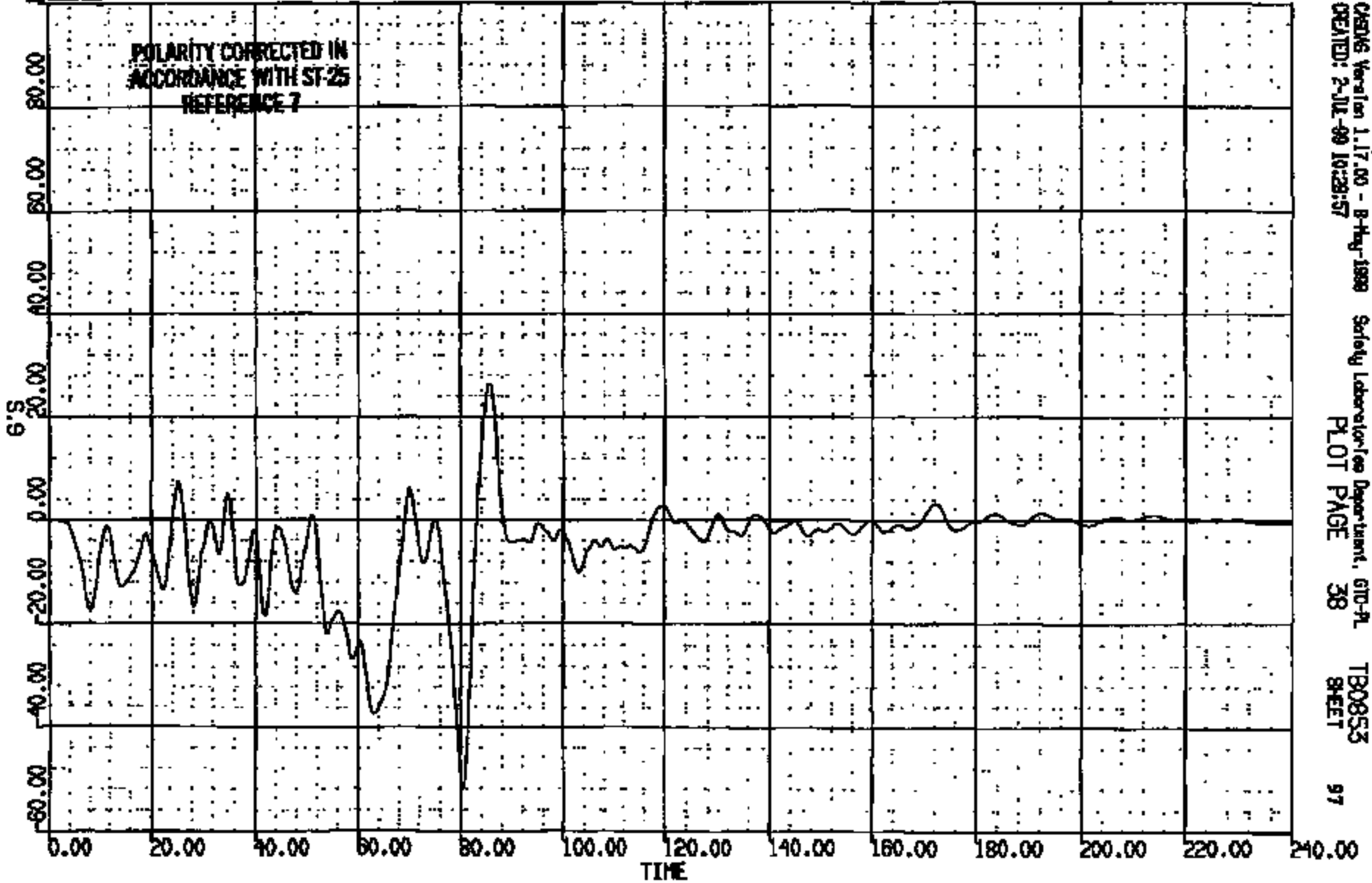
TB0853  
SHEET

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CRTS 0011226

CR R: 11226 TO: T80853 DATE: 881009 11:45:58  
2000 D-188 1988 DN-101

(81) CR112268 C/F FLR PAN @ FWD TML LONG GOC  
MAX = 26.46 at 85.52 NS MIN = -52.27 at 80.48 NS **AXIS 1**



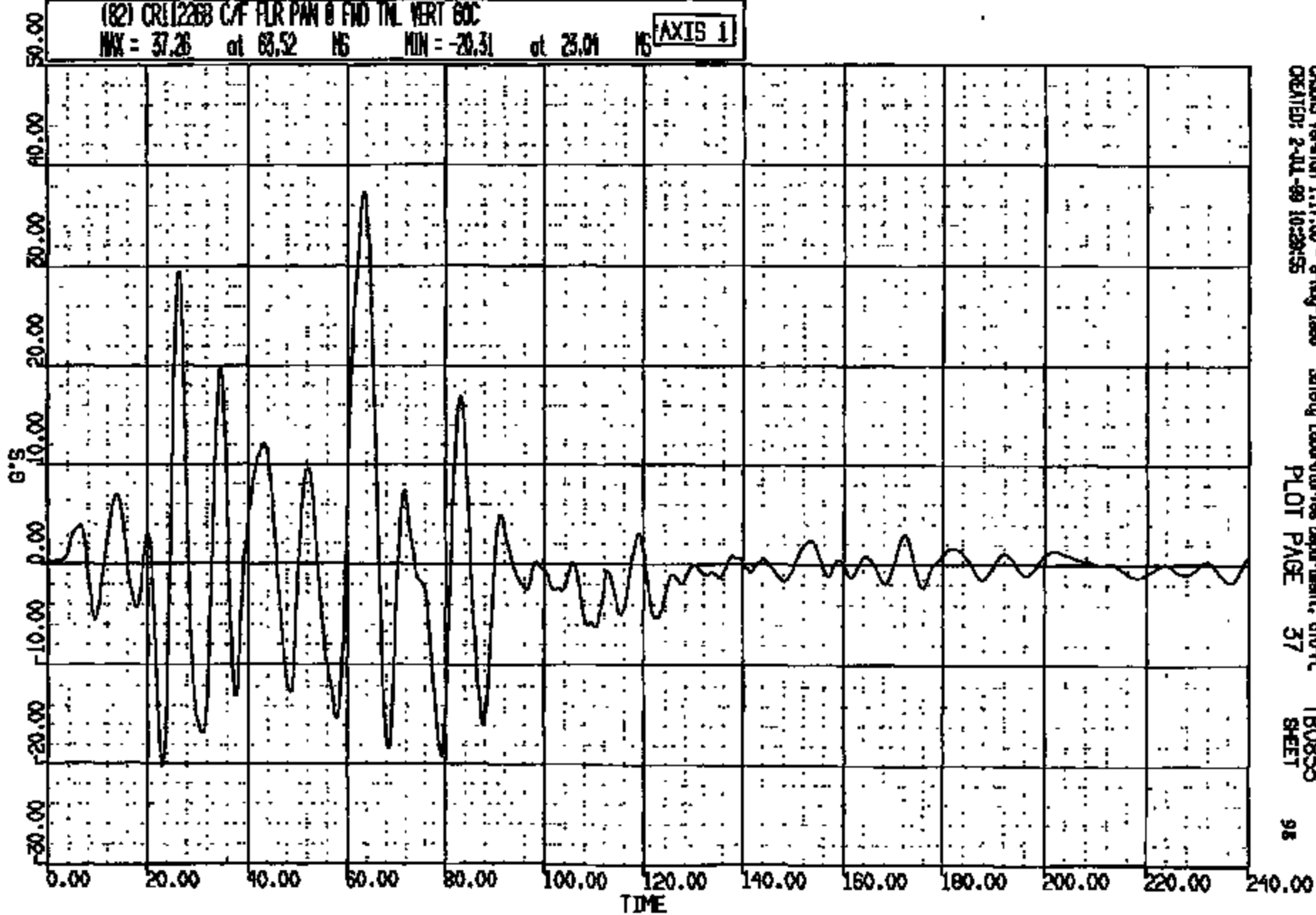
CRSNG Version 1.17.00 - B-Hug-1988 Safety Laboratory Department, GTO-PL T80853  
CREATED: 2-JUL-89 10:28:57 PLOT PAGE 38 SHEET 97

CRIS 0011226



CR R: 11226 TO: TB0853 DATE: 981009 11:45:39  
2000 D-186 1998 DN-101

(82) CR12268 C/F FLR PAN @ FND TML VERT 60C  
MAX = 37.26 at 63.52 MS MIN = -20.31 at 23.01 MS [AXIS 1]



CRSAS Version 1.17.00 - 9-May-1998  
CREATED: 2-JUL-99 10:28:55

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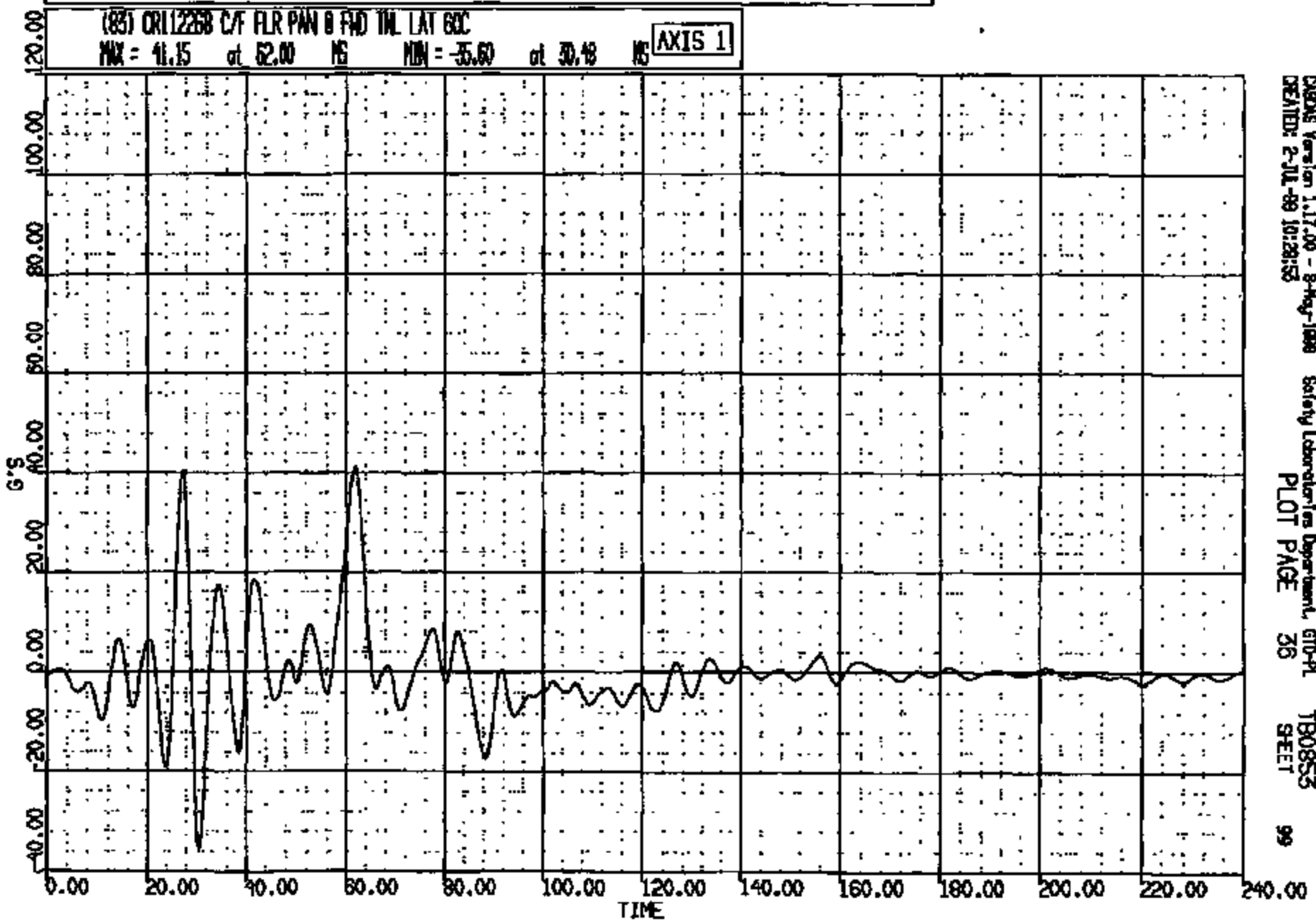
TB0853  
SHEET

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CRTS 0011226

DR R: 11226 TO: TB0855 DATE: 921008 11:46:58  
2000 D-198 1998 DN-101

(83) CR112268 C/F FLR PAN @ FWD TML LAT 60C  
MAX = 41.15 at 62.00 MS MIN = -35.60 at 30.48 MS **AXIS 1**



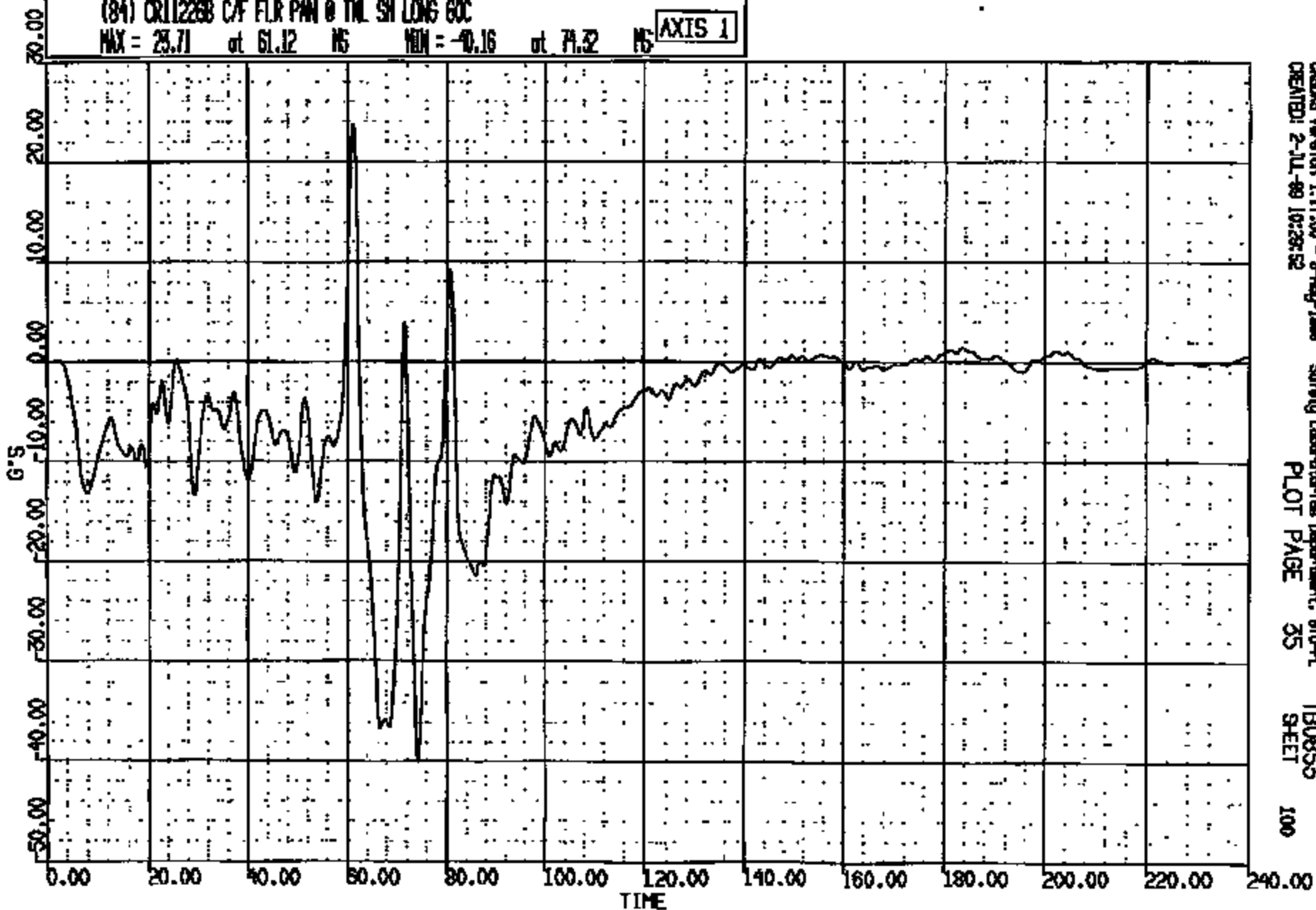
CRS Version 1.17.00 - 9-May-1999 Safety Laboratories Department, GITD-PL  
CREATED: 2-JUL-89 10:28:53 PLOT PAGE 36 TB0855 SHEET 99

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 081008 11:45:38  
2000 D-108 1888 DN-101

(84) CR112268 C/F FLR PAN @ TML SH LONG 60C  
MAX = 23.71 at 61.12 NS MIN = -40.16 at 71.32 NS

AXIS 1

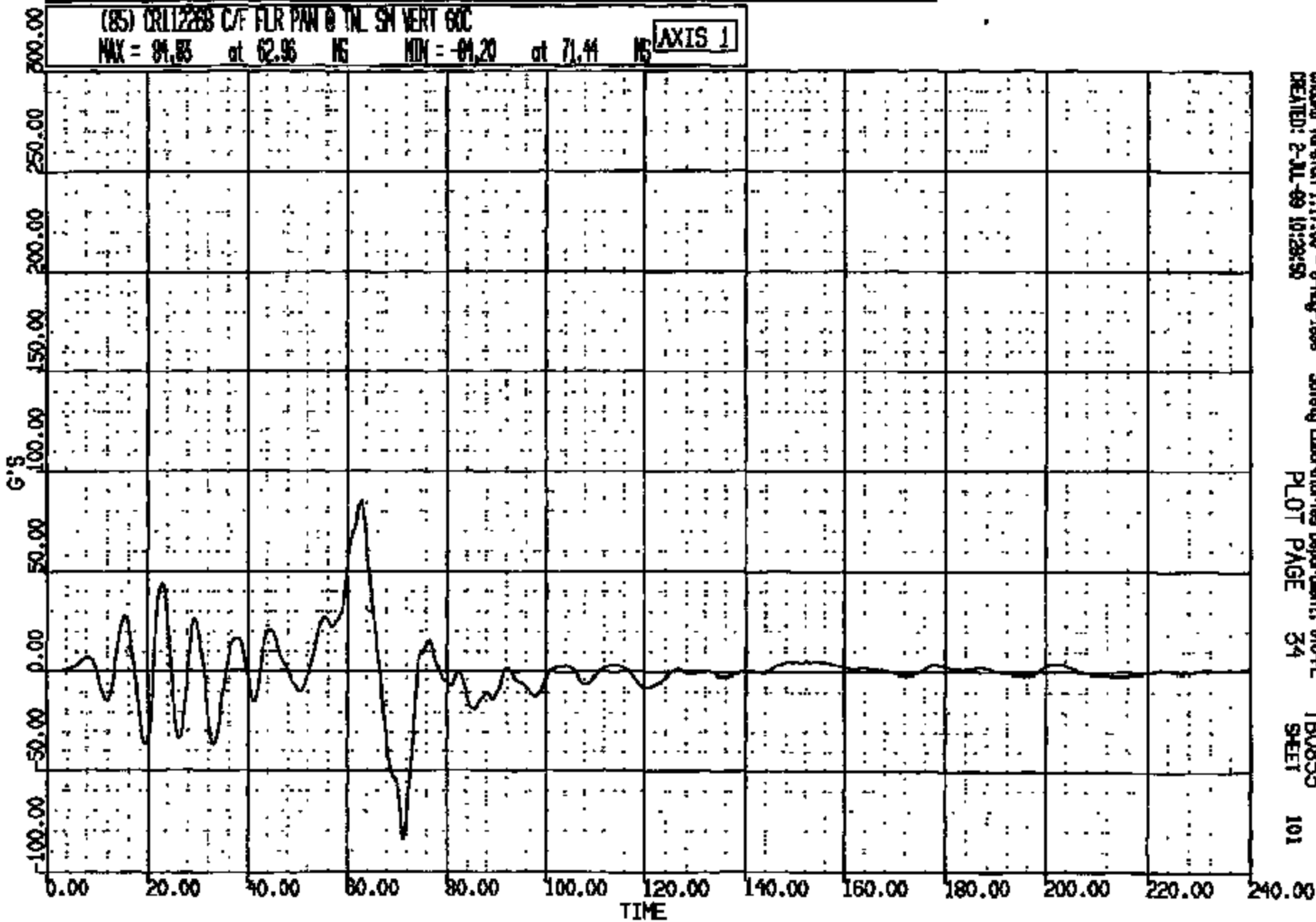


CASYS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL  
CREATED: 2-JUL-89 10:29:52 PLOT PAGE 35 TB0853 SHEET 100

CRTS 0011226

CR #: 11226 TO: TB0855 DATE: 081008 11:45:38  
2000 D-188 1998 DN-101

(85) CR112268 C/F FLR PAV @ TNL SH VERT GOC  
MAX = 84.85 at 62.96 NS MIN = -84.20 at 71.44 NS **AXIS 1**



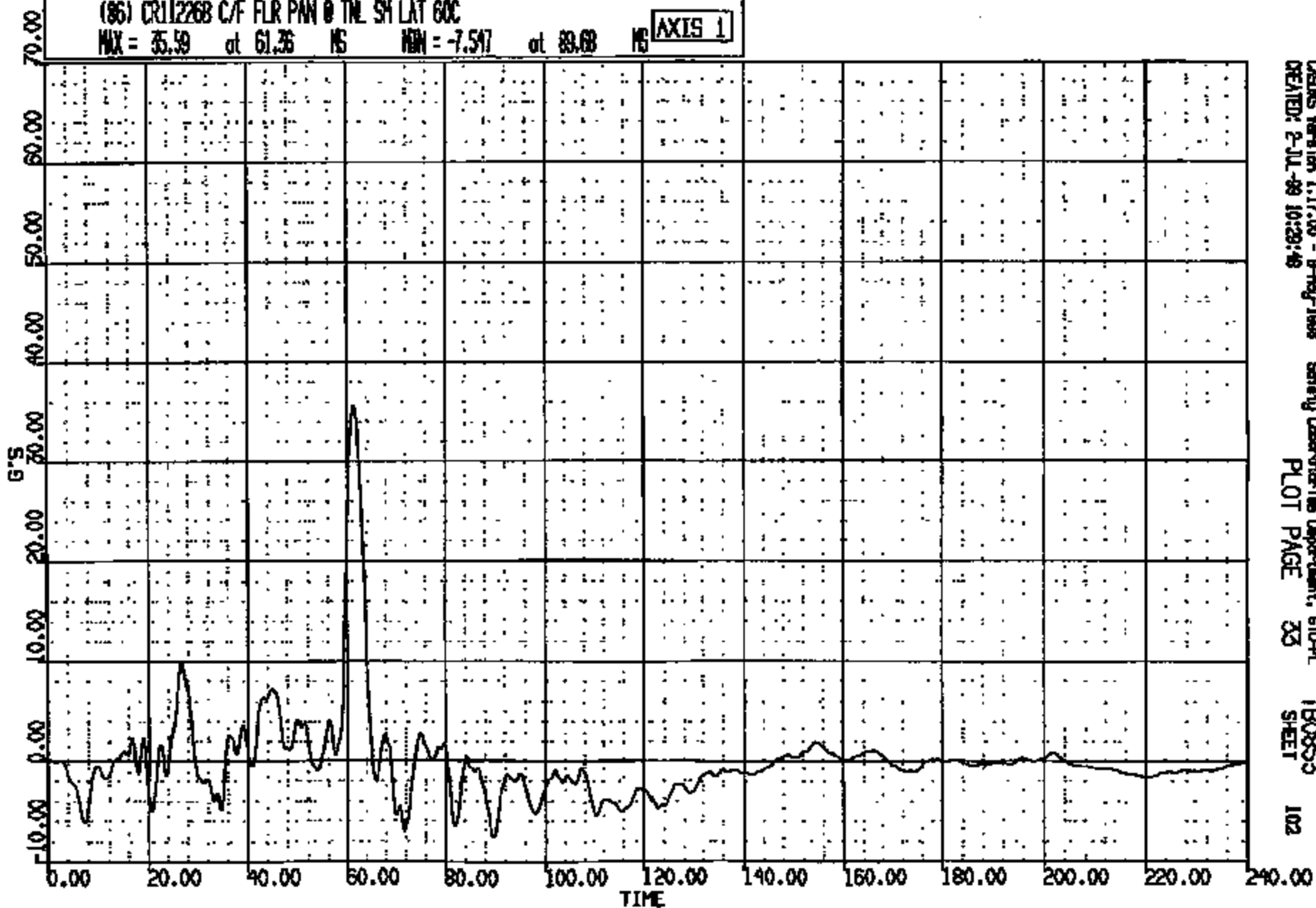
CASBMS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL TB0855  
CREATED: 2-JUL-99 10:28:50 PLOT PAGE 34 SHEET 101

CRTS 0011226

DR R: 11226 TO: TB0855 DATE: 881008 11:48:38  
2000 D-198 1988 DN-101

(86) CR112268 C/F FLR PAN @ TNL SH LAT 60C

MAX = 35.59 at 61.36 MS MIN = -7.517 at 89.68 MS **AXIS 1**



CRS Version 1.17.00 - 8-May-1988  
CREATED: 2-JUL-88 10:29:48

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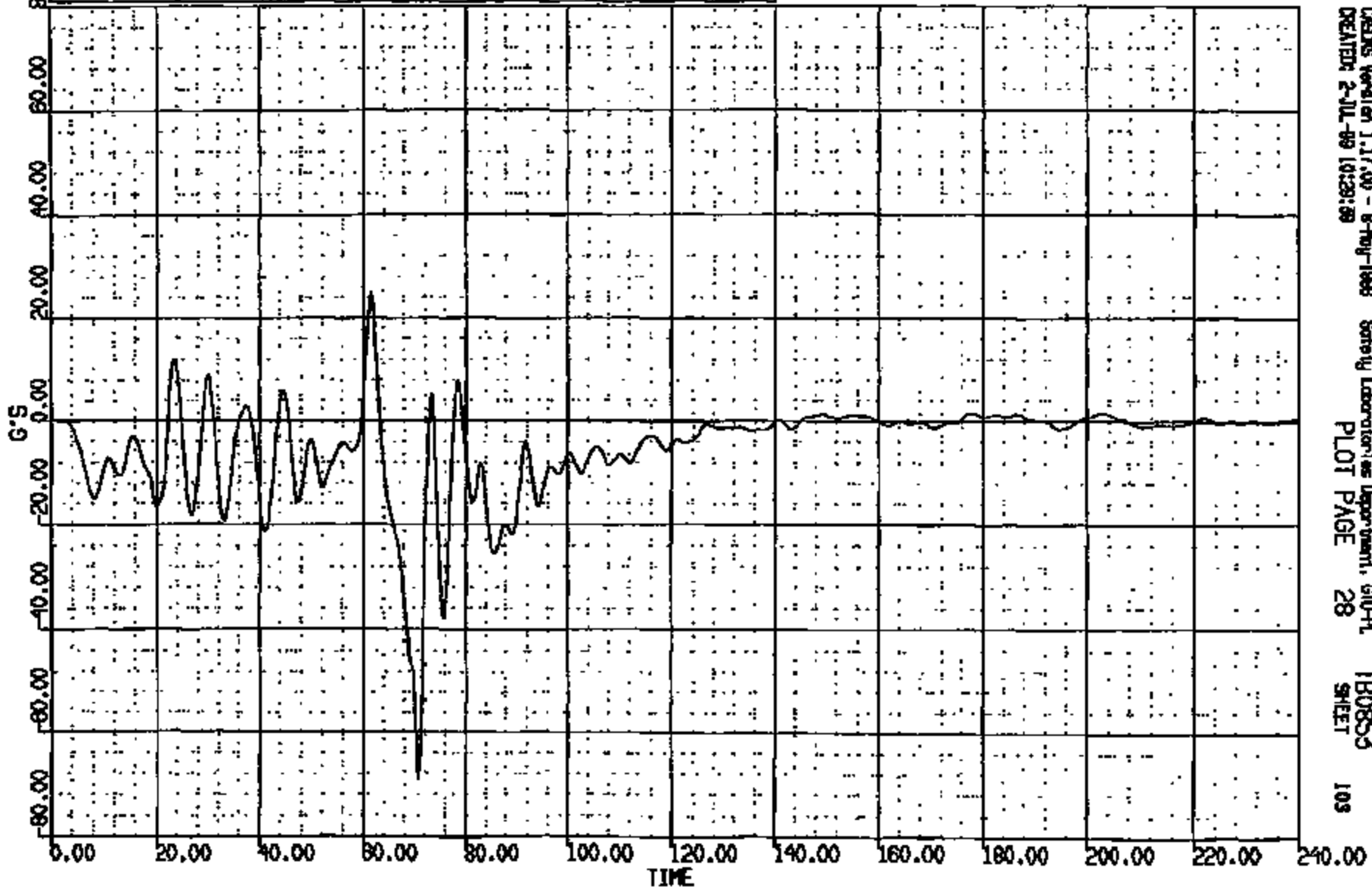
TB0855  
SHEET 102

CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 981009 11:46:58  
R000 D-198 1998 DN-101

(91) CRT12263 C/F FLR PAN @ THE LONG GOC  
MAX = 21.83 at 61.60 MS MIN = -68.94 at 70.84 MS

AXIS 1



CRONS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, GPO-PL TB0855  
CREATED: 2-JUL-99 10:28:59 PLOT PAGE 28 SHEET 109

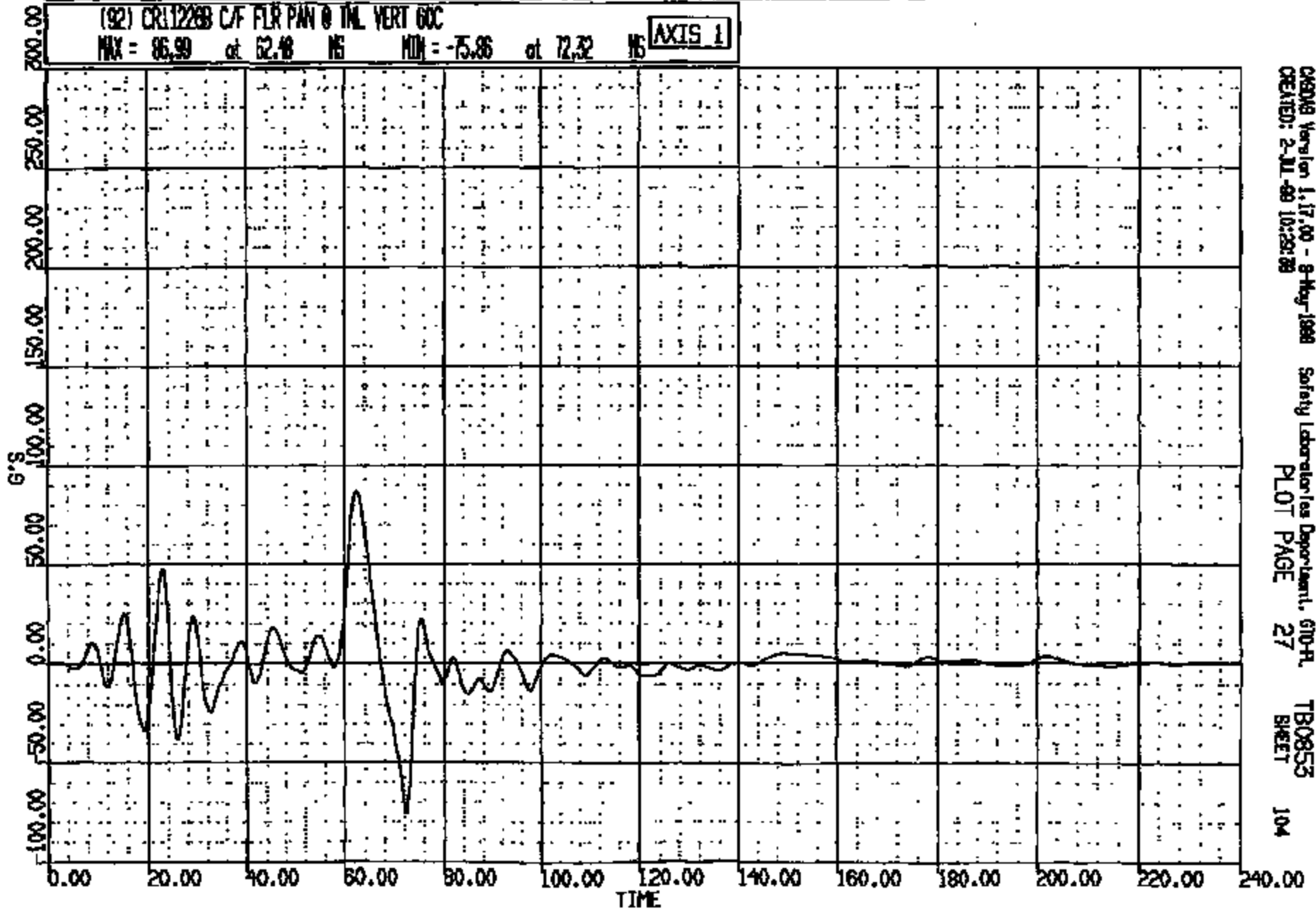
CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 981009 11:46:58  
2000 D-198 1998 DN-101

(92) CR11226B C/F FLR PAN @ TML VERT 60C

MAX = 86.99 at 62.48 MS MIN = -75.86 at 72.32 MS

AXIS 1

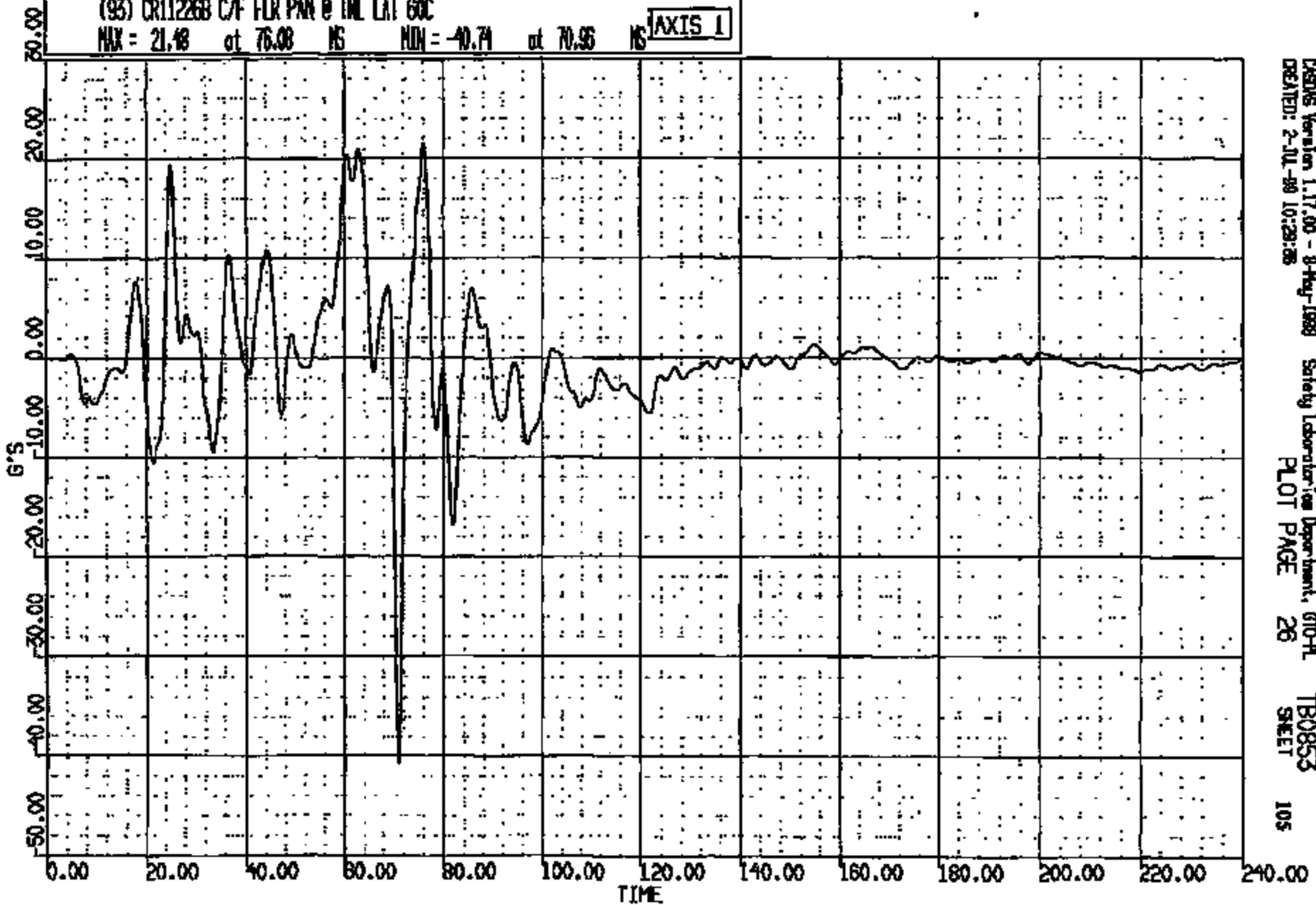


CR R: 11226 TO: TB0853 DATE: 881008 11:45:58  
2000 D-188 1888 DN-101

(93) CR11226B C/F FLR PAN @ TML LAT 60C

MAX = 21.48 at 76.08 NS MIN = -40.74 at 70.96 NS

AXIS 1



CRSING Version 1.17.00 - 8-May-1988 Safety Laboratory Department, GTO-PL TB0853  
CREATED: 2-JUL-88 10:29:28 PLOT PAGE 26 SHEET 105

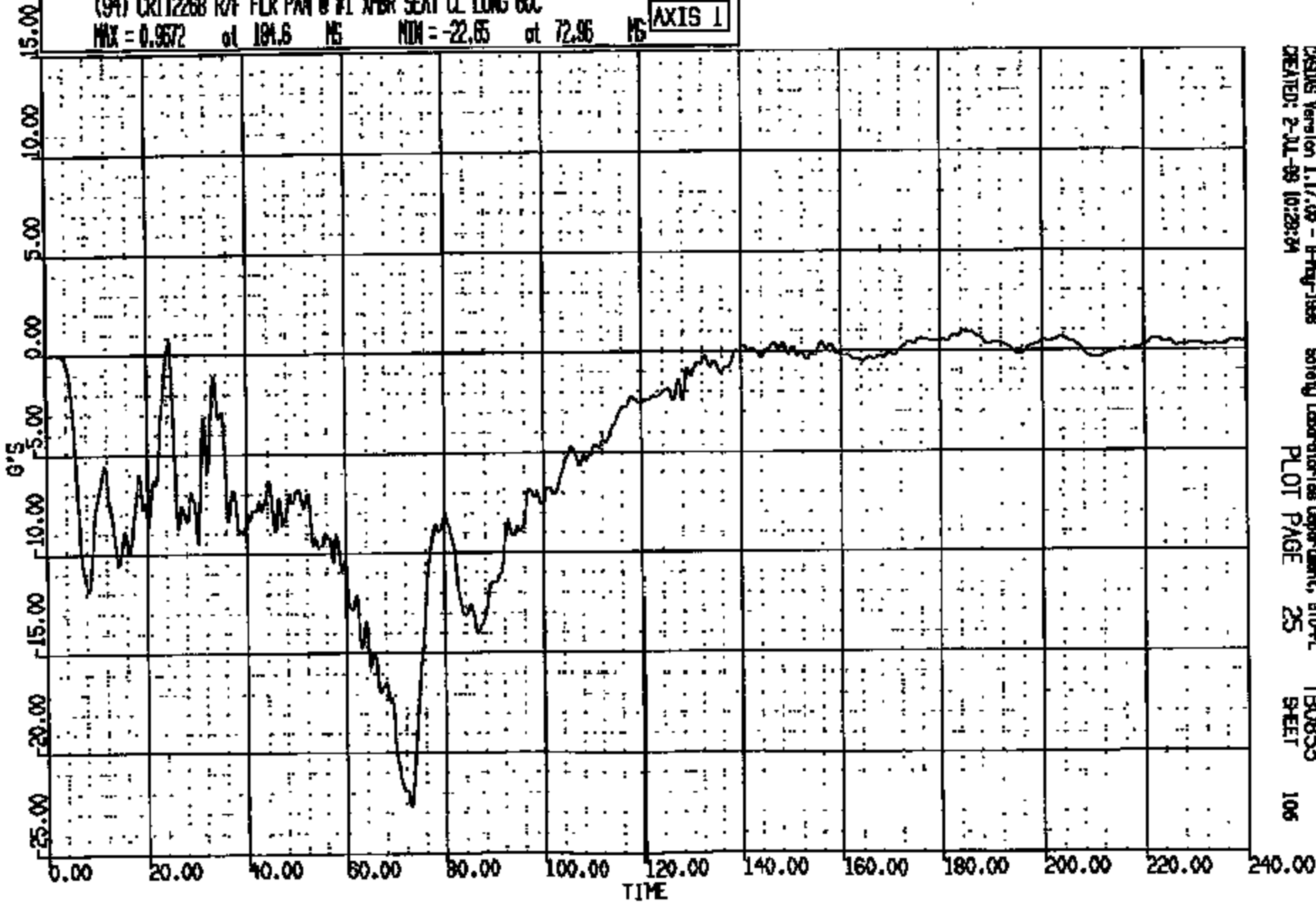
CRTS 0011226



CR R: 11226 TO: TB0855 DATE: 981009 11:45:58  
2000 D-188 1988 DN-101

(94) CR112268 R/F FLR PAN @ #1 XPR SEAT CL LONG GOC  
MAX = 0.9572 at 184.6 MS MIN = -22.85 at 72.95 MS

AXIS 1



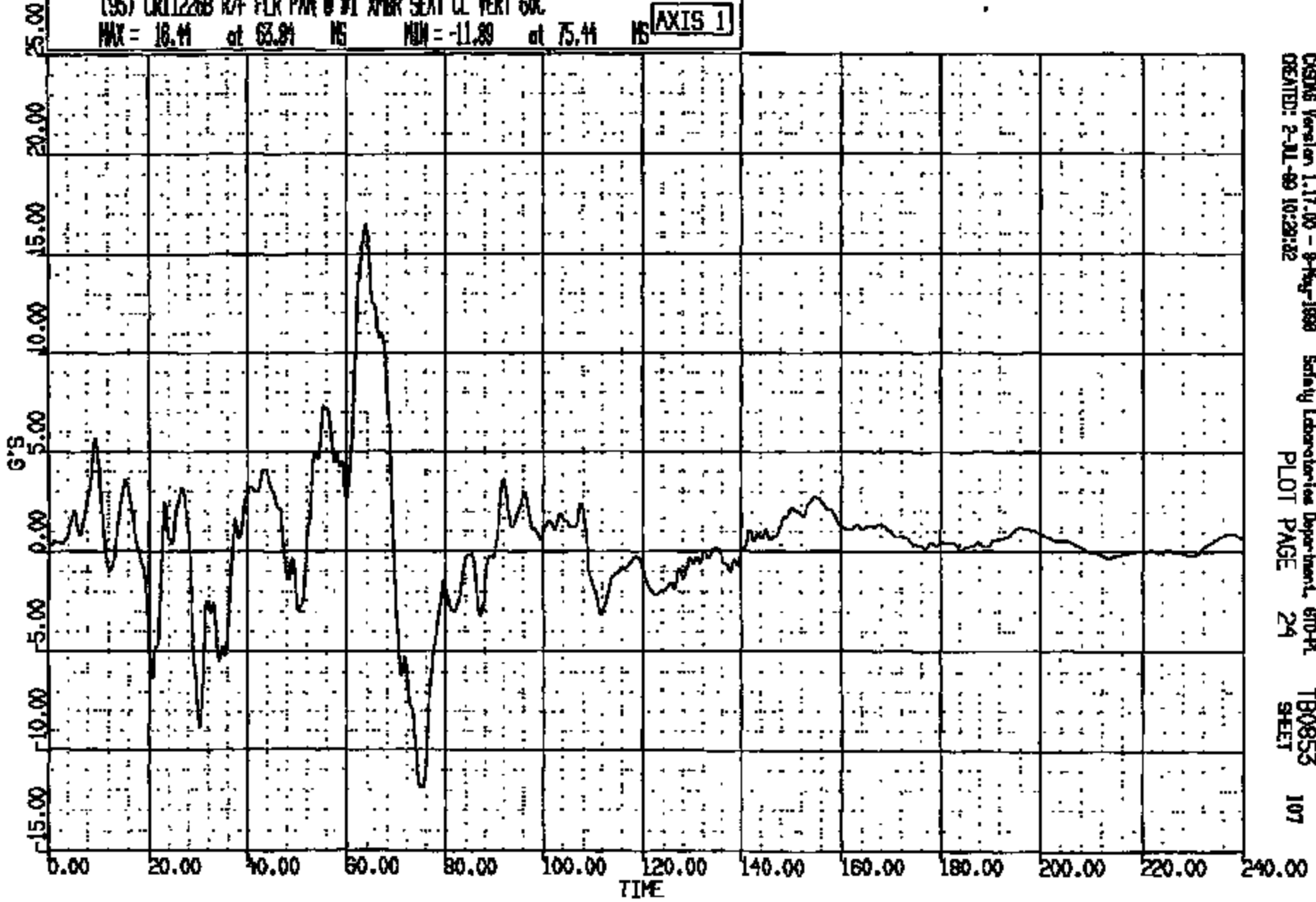
CRSUS Version 1.17.09 - 8-May-1998 Safety Laboratories Department, 610-91  
CREATED: 2-JUL-98 10:28:34 PLOT PAGE 25 SHEET 106

CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 981009 11:45:38  
2000 D-188 1998 DN-101

(95) CRT12268 R/F FLR PAN @ #1 XMR SEAT CL VERT GAC

MAX = 18.44 at 63.94 MS MIN = -11.89 at 75.44 MS **AXIS 1**



CSDMG Version 1.17.00 - 9-May-1998  
CREATED: 2-JUL-99 10:29:32

Safety Laboratories Department, 67D-PL  
PLOT PAGE 24

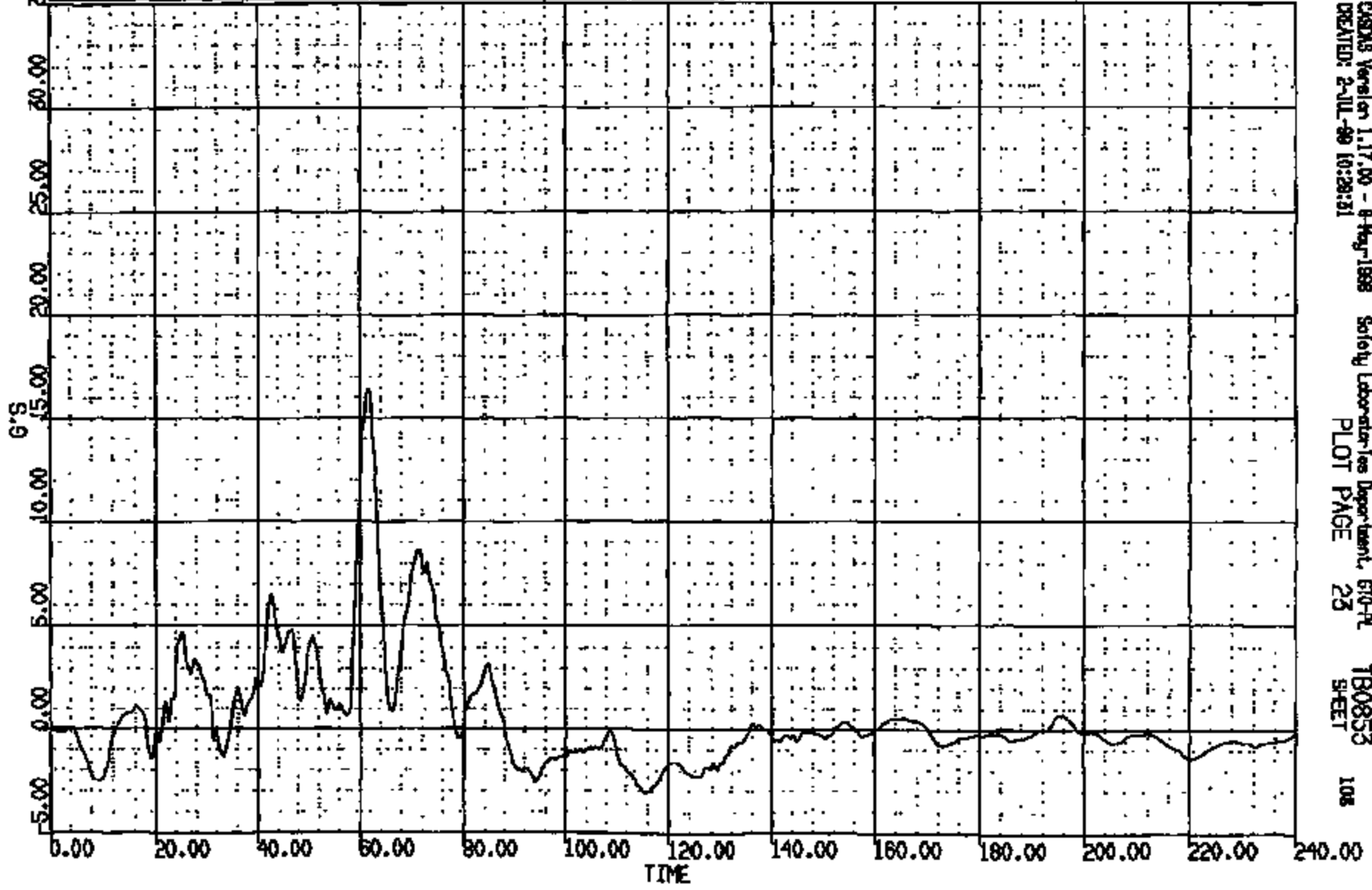
TB0855  
SHEET

107

CRTS 0011226

CR R: 11226 TO: T80853 DATE: 981008 11:45:58  
2000 D-188 1998 DN-101

(96) CR112268 R/F FLR PAN 8 #1 XNER SEAT CL LAT 60C  
MAX = 16.39 at 61.68 MS MIN = -3.072 at 115.5 MS **AXIS 1**



CASAS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 670-PL T80853  
CREATED: 2-JUL-98 10:28:31 PLOT PAGE 23 SHEET 108

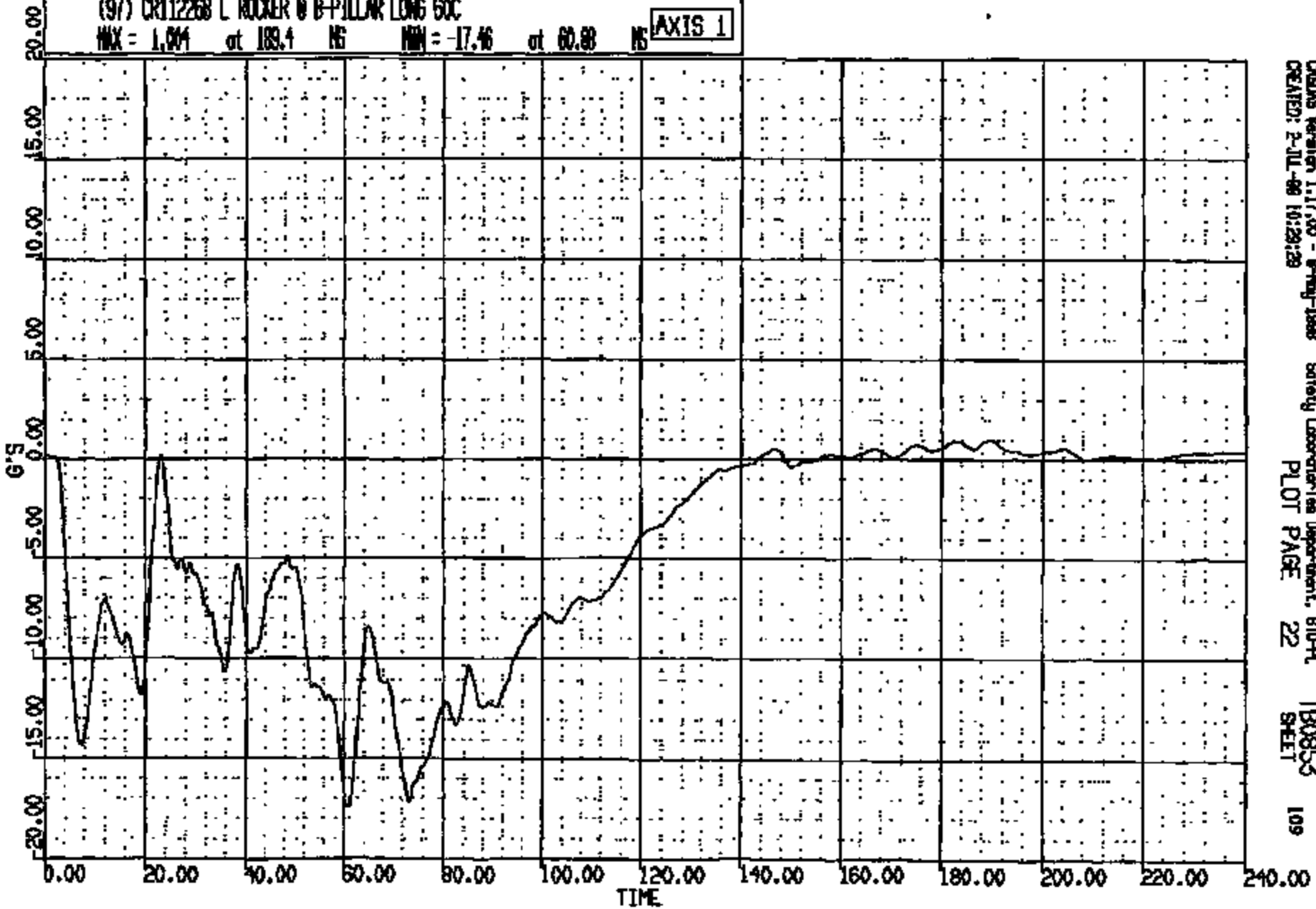
CRTS 0011226

DR # : 11226 TO: TB0853 DATE: 081009 11:46:38

DOCO D-100 1998 DN-101

(97) CR112268 L ROCKER @ B-PILLAR LONG 60C

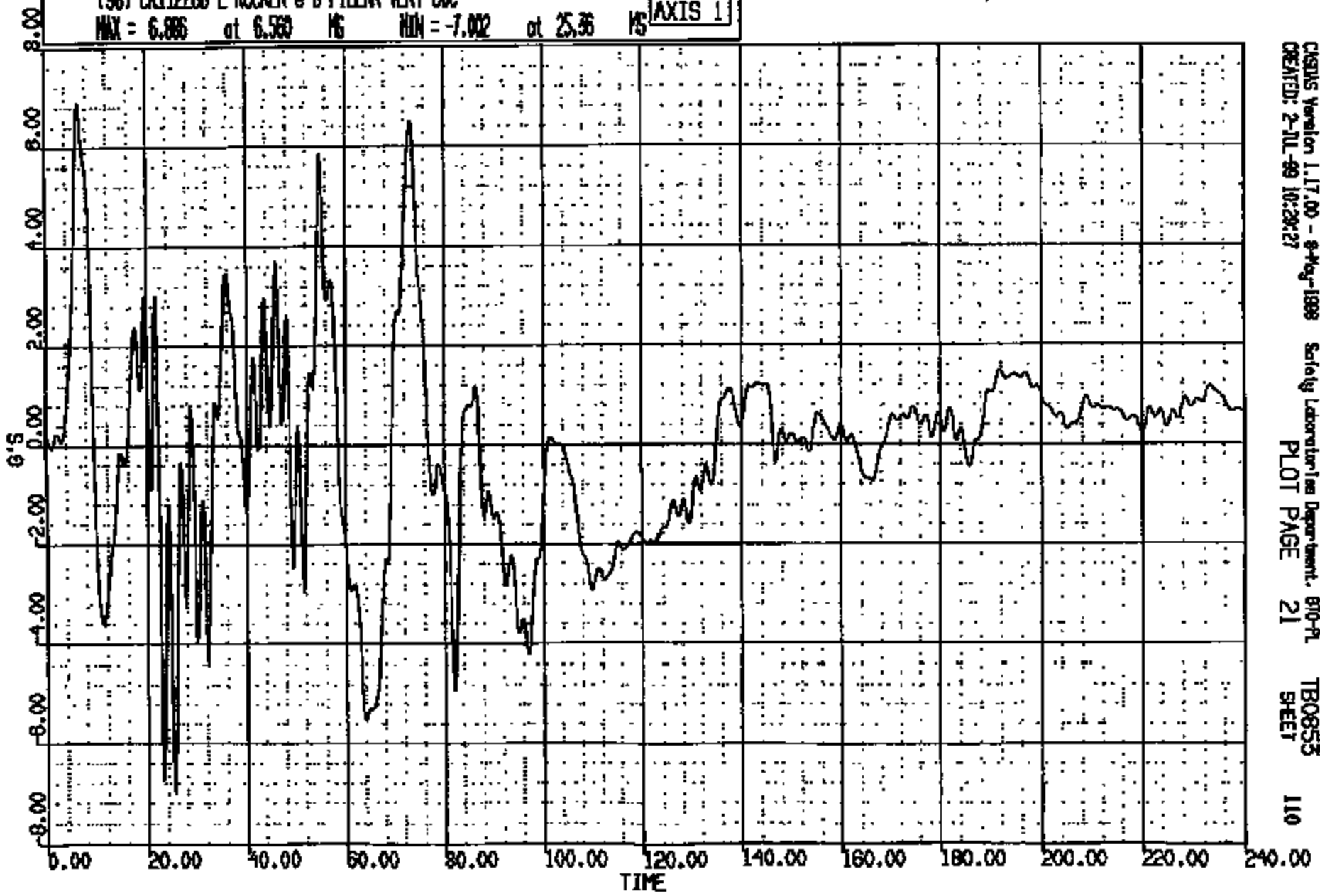
MAX = 1.041 at 189.4 NS MIN = -17.46 at 60.88 NS AXIS 1



CRS011226  
CREATED: 2-JUL-98 10:29:29  
Safety Laboratories Department, 810-PL  
PLOT PAGE 22  
TB0853  
SHEET 109

CR R: 1:226 TO: TB055 DATE: 991009 11:45:58  
2000 D-100 1999 DN-101

(98) CR112268 L ROCKER @ B-PILLAR VERT 60C  
MAX = 6.886 at 6.560 MS MIN = -7.002 at 25.36 MS **AXIS 1**



CRSIS Version 1.17.00 - 9-May-1999 Safety Laboratories Department, 810-PL  
CREATED: 2-JUL-99 10:29:27 PLOT PAGE 21 TB0653  
SHEET 110

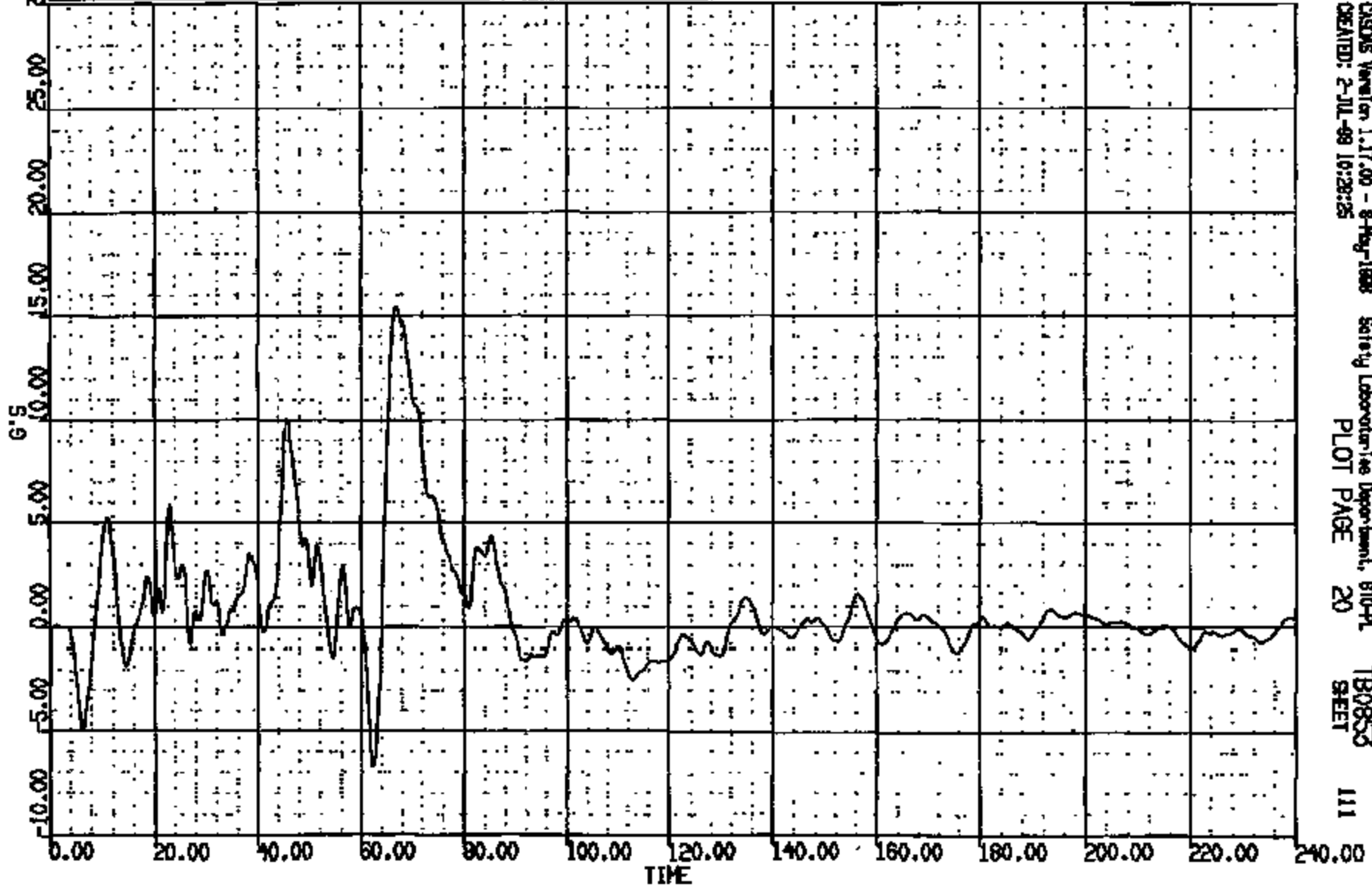
CRIS 0011226

CR R: 11226 TO: TB0853 DATE: 981009 11:45:38  
2000 D-169 1998 DN-101

(99) CR112268 L ROCKER @ B-PILLAR LAT 60C

MAX = 15.41 at 66.00 MS MIN = -6.763 at 62.40 MS

AXIS 1



CISOS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-98 16:28:25

Safety Laboratory Department, 810-PL  
PLOT PAGE 20

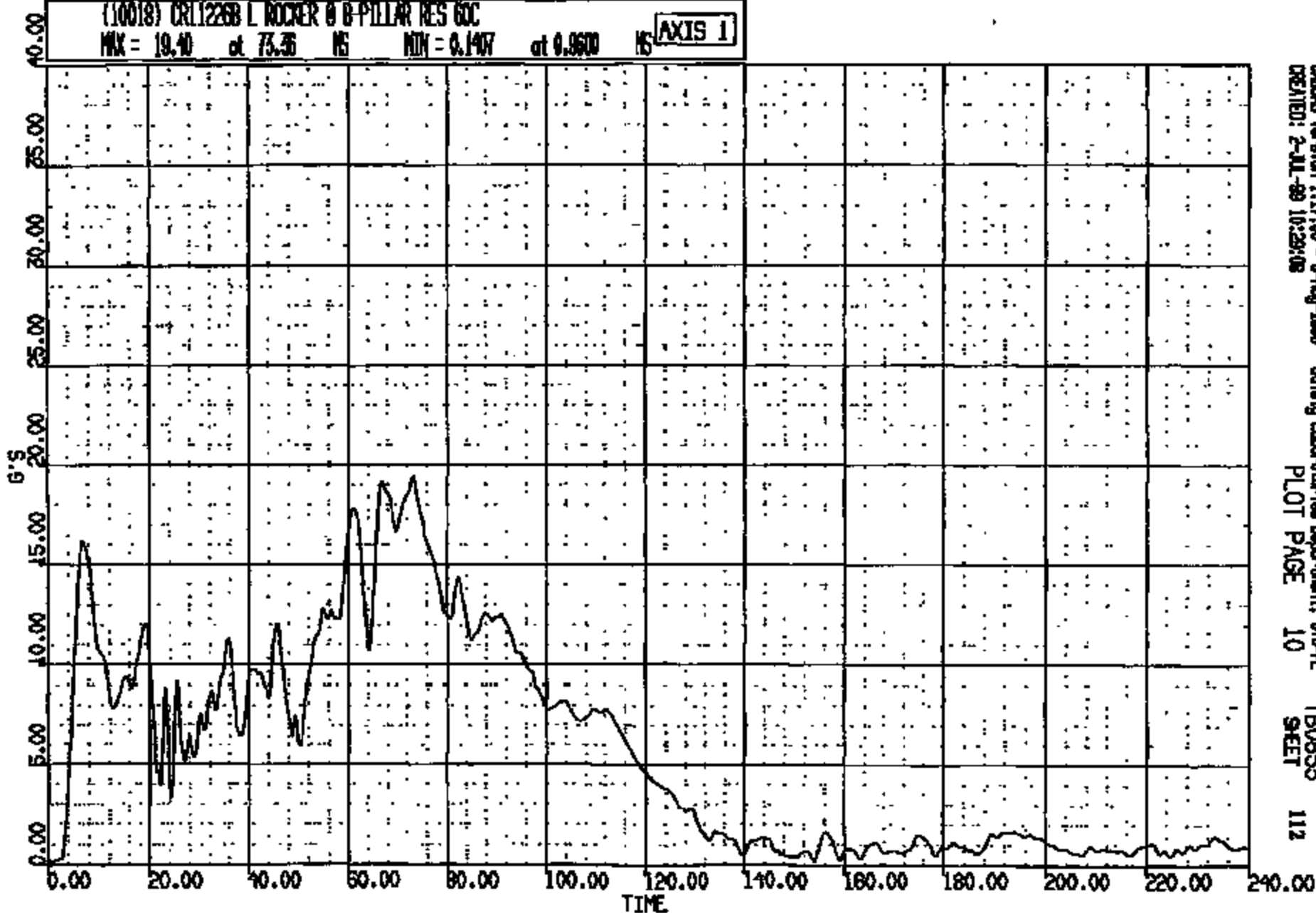
TB0853  
SHEET

111

CRTS 0011226

CR N: 11226 TO: TB0853 DATE: 001009 11:45:38  
2000 0-100 1000 DN-101

(10018) CR11226B L ROCKER @ B-PILLAR RES 60C  
MAX = 19.40 at 73.36 NS MIN = 0.1407 at 0.9600 NS **AXIS 1**



CASUS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-89 10:29:08

Safety Laboratory Department, BFD-PL  
PLOT PAGE 10

TB0853  
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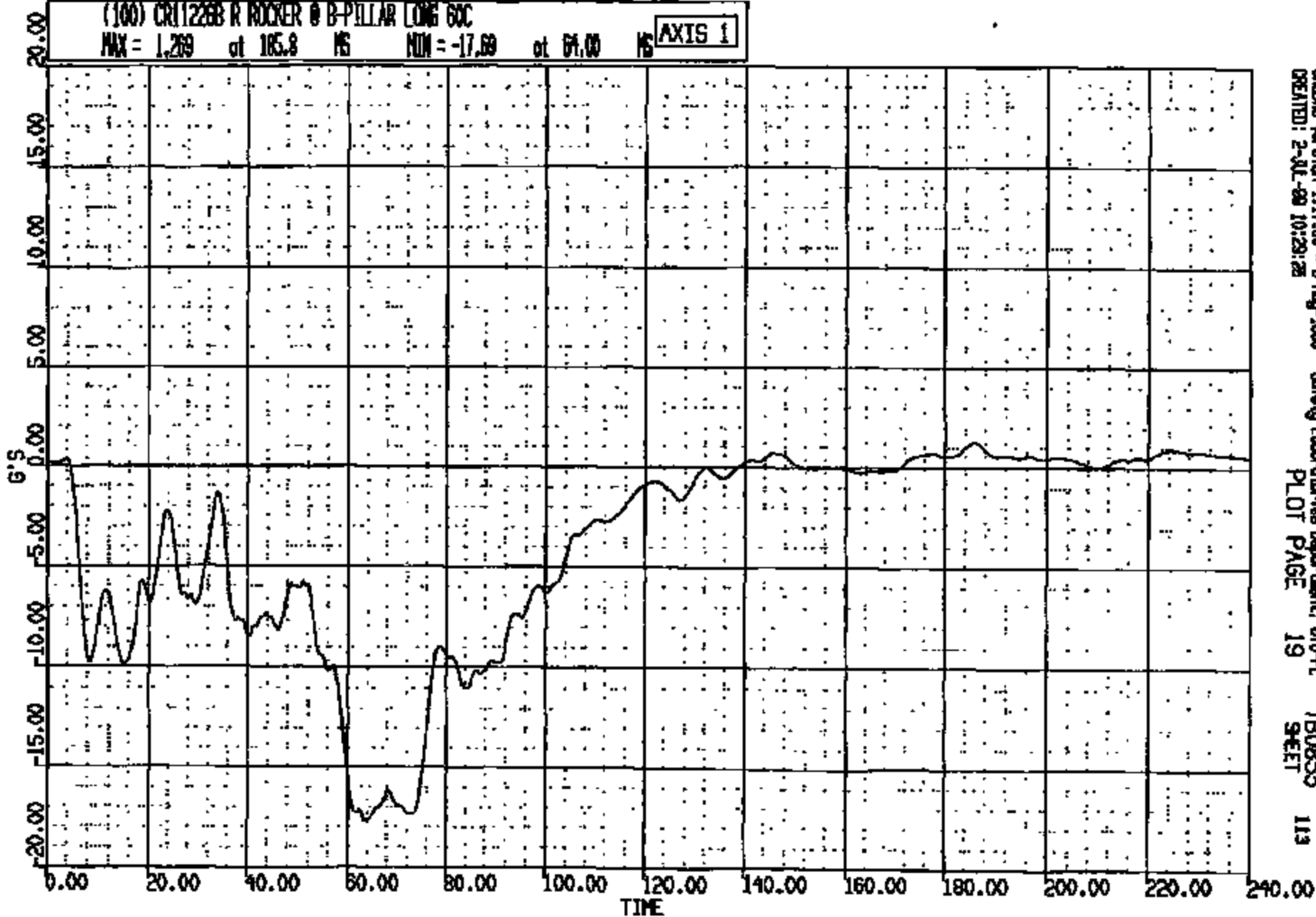
CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 081008 11:45:38  
2000 D-188 1998 DN-101

(100) CR112268 R ROCKER @ B-PILLAR LONG GOC

MAX = 1.269 at 185.8 MS MIN = -17.68 at 64.00 MS

AXIS 1



CASMS Version 1.17.00 - 8-Aug-1998 Safety Laboratories Department, 610-PL  
CREATED: 2-JUL-98 10:29:25 PLOT PAGE 19 TB0853 113  
SHEET

CRTS 0011226

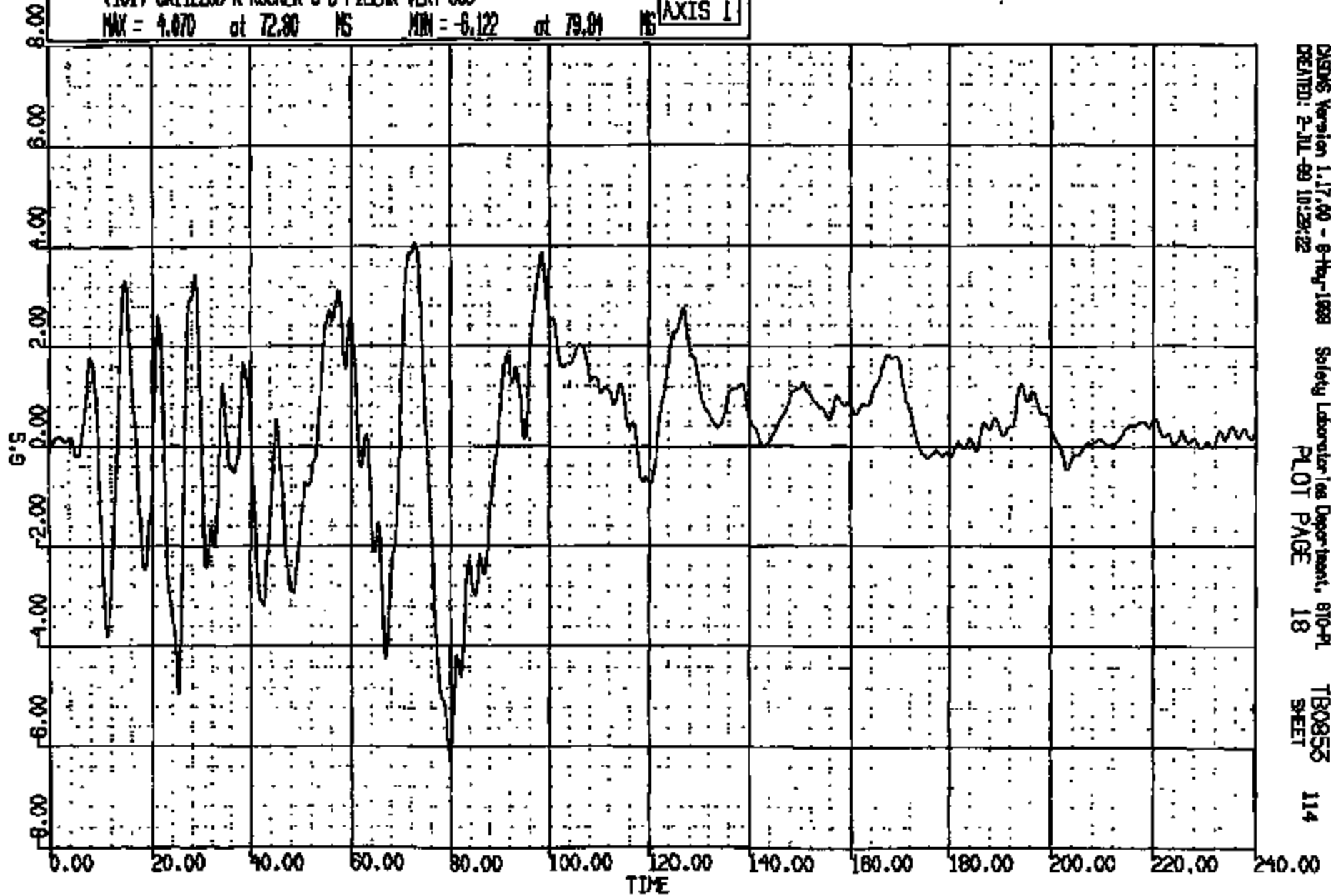


CR R: 11226 TO: TB0855 DATE: 021000 11:45:38  
R000 0-188 1988 DN-101

(101) CRL1226B R ROCKER @ B-PILLAR VERT GOC

MAX = 4.070 at 72.90 MS MIN = -6.122 at 79.04 MS

AXIS 1



DISMS Version 1.17.00 - 8-May-1988  
CREATED: 2-JUL-89 10:29:22

Safety Laboratory Department, 810-PL  
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TB0855 114  
SHEET

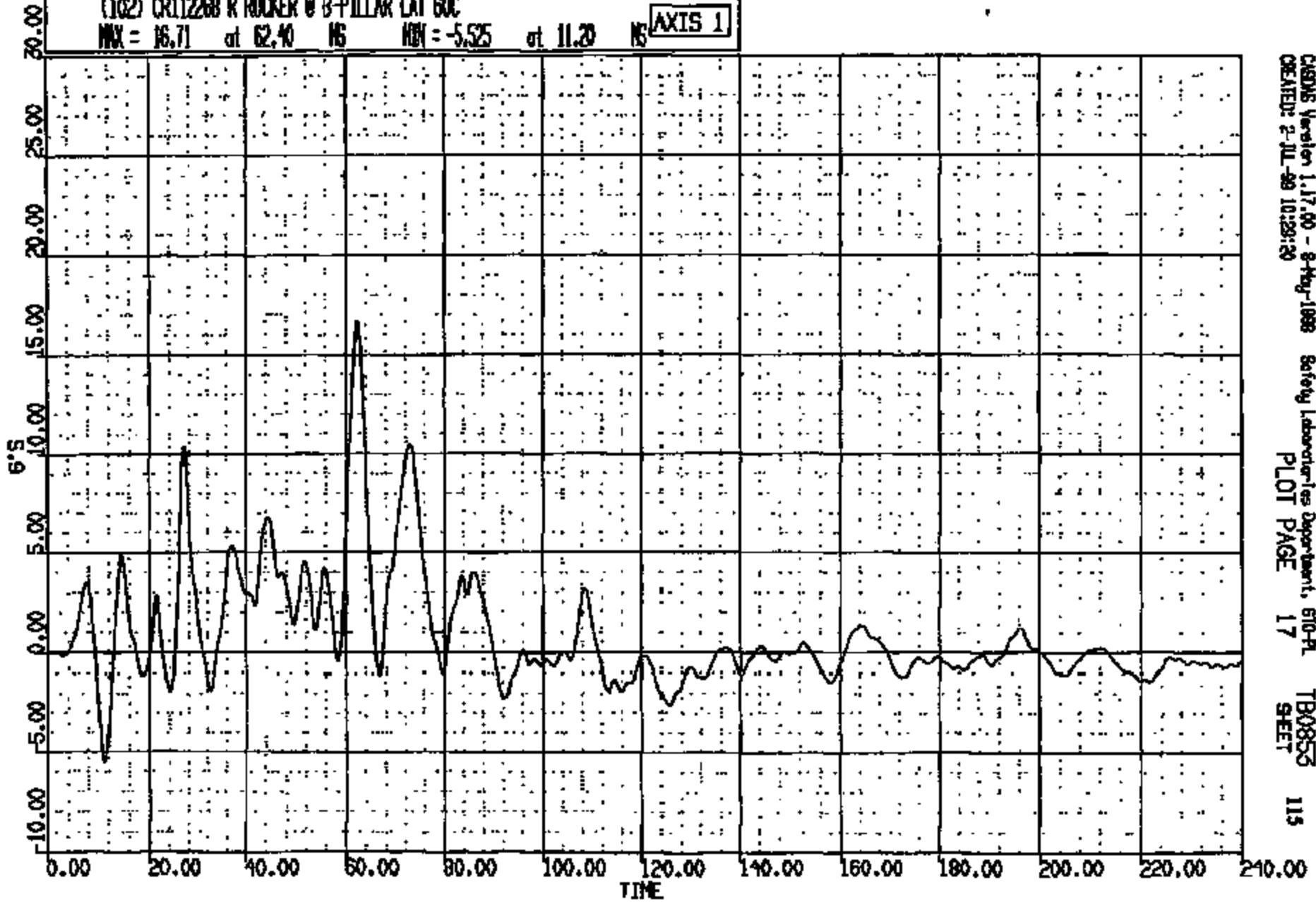
CRTS 0011226

CR R: 11226 TO: TB0855 DATE: 991009 11:45:38  
2000 0-188 1998 DN-101

(102) CR112268 R ROCKER @ B-PILLAR LAT 60C

MAX = 16.71 at 62.40 NS MIN = -5.525 at 11.20 NS

AXIS 1



CADMS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-99 10:28:20

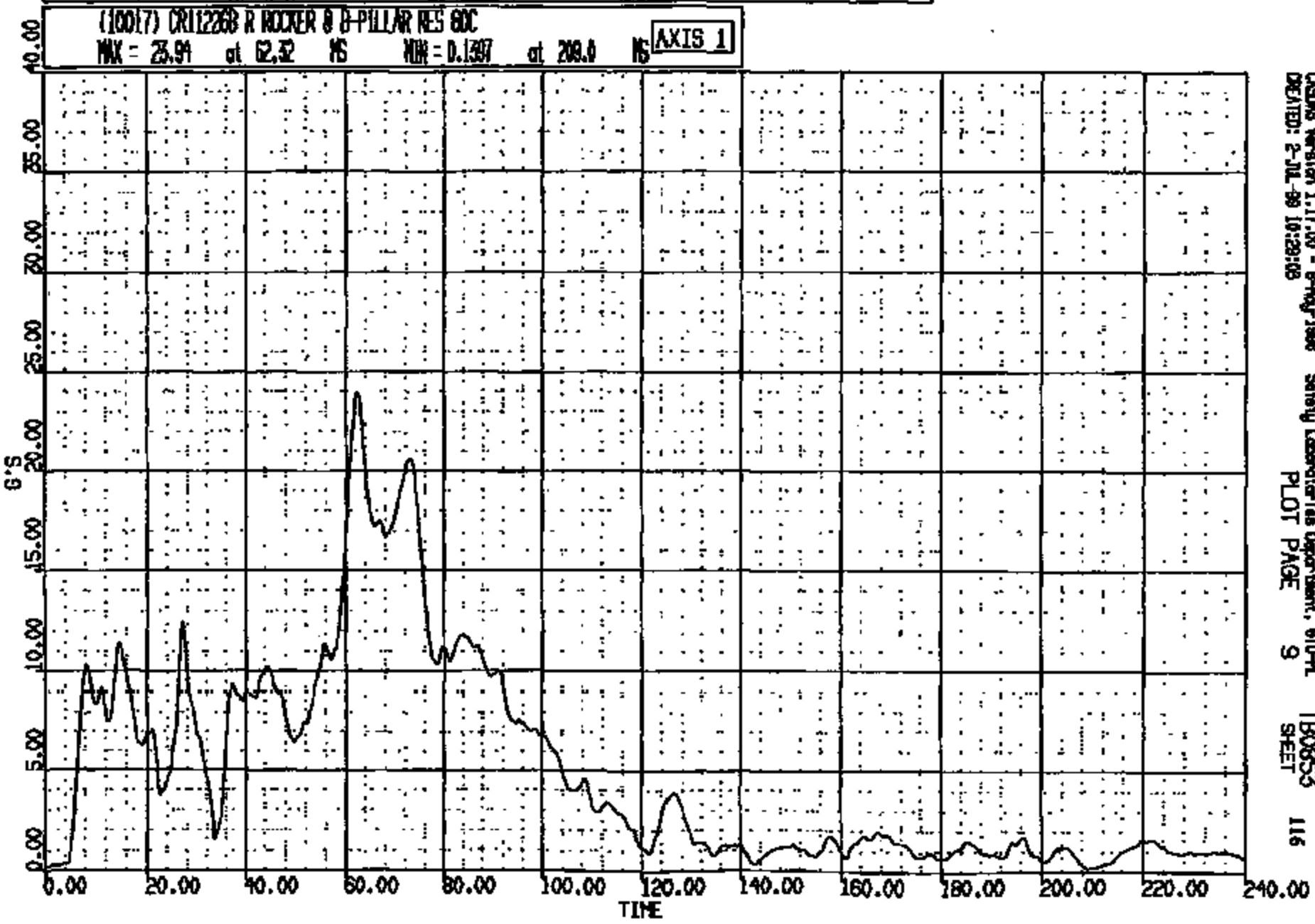
Safety Laboratories Department, 610-PL  
PLOT PAGE 17

TB0855  
SHEET

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CRTS 0011226

CR N: 11226 TO: TB0853 DATE: 981009 11:45:58  
2000 D-188 1998 DN-101

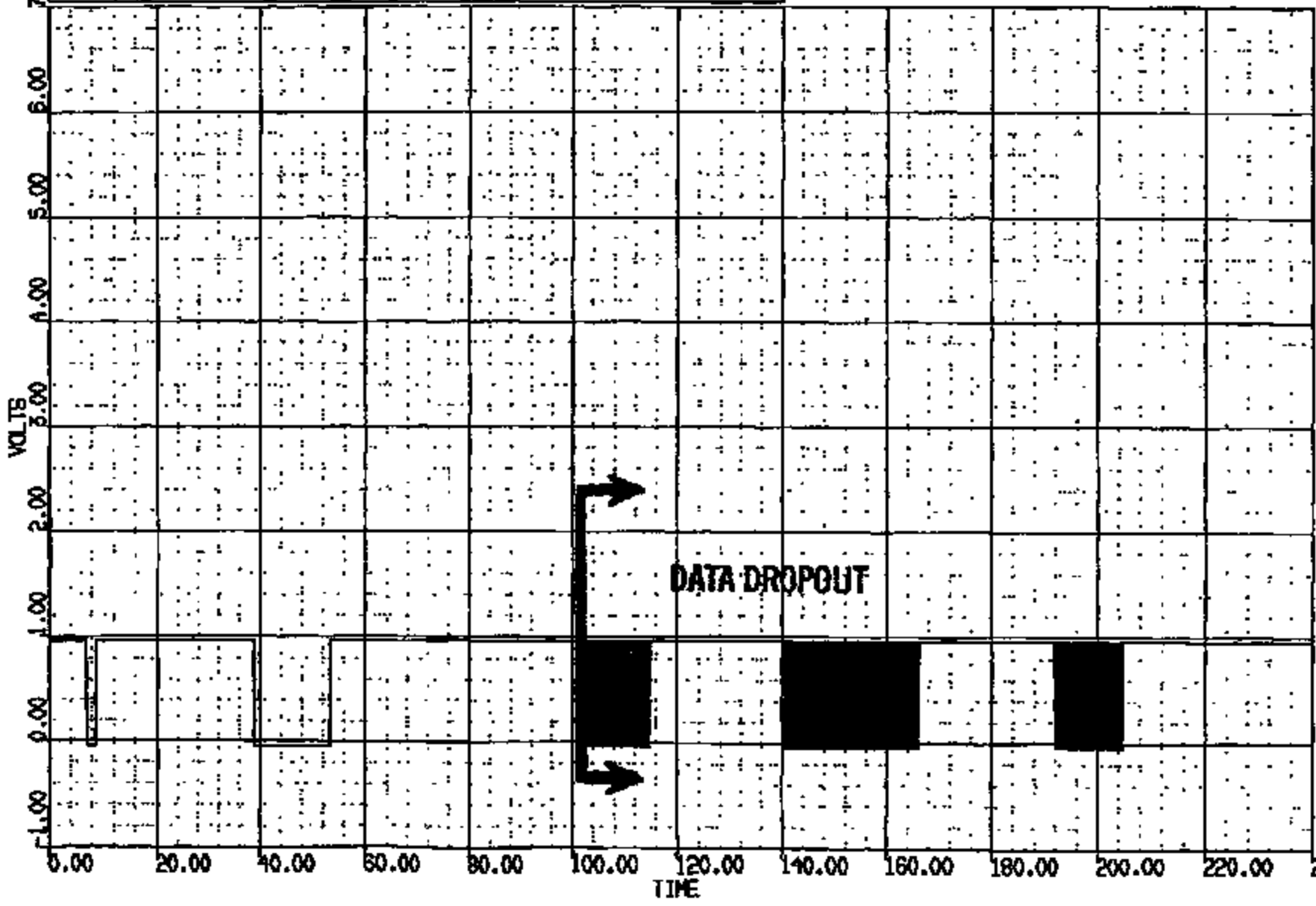


CRS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL TB0853 116  
CREATED: 2-JUL-99 10:29:08 PLOT PAGE 9 SHEET

CRIS 0011226

CR #: 11226 TO: TB0855 DATE: 061009 11:45:38  
8000 D-188 1988 DN-101

(65) CR11226B ALTERNATE T-ZERO SH 4000  
MAX = 0.9570 at -.7529E-05 MS MIN = -.439E-01 at 7.100 MS **AXIS 1**

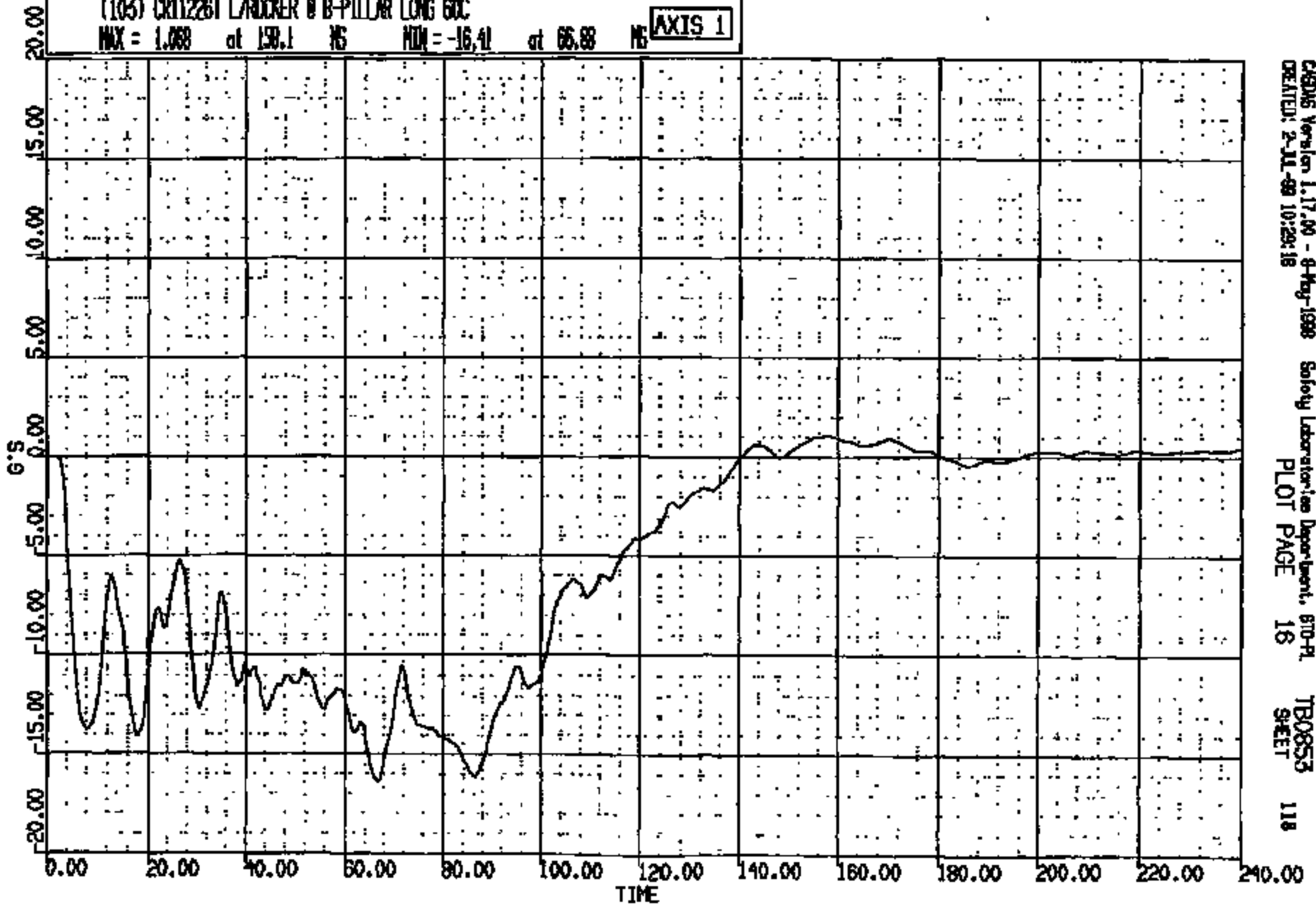


CR R: 11226 TO: TBO853 DATE: 081000 11:45:38  
2000 D-188 1998 DN-101

(103) CR11226T LADDER @ B-PILLAR LONG GOC

MAX = 1.068 at 130.1 MS MIN = -16.41 at 66.88 MS

AXIS 1



CASMS Version 1.17.00 - 8-Aug-1998  
CREATED: 2-JUL-99 10:29:18

Safety Laboratory Department, 610-P1  
PLOT PAGE 18

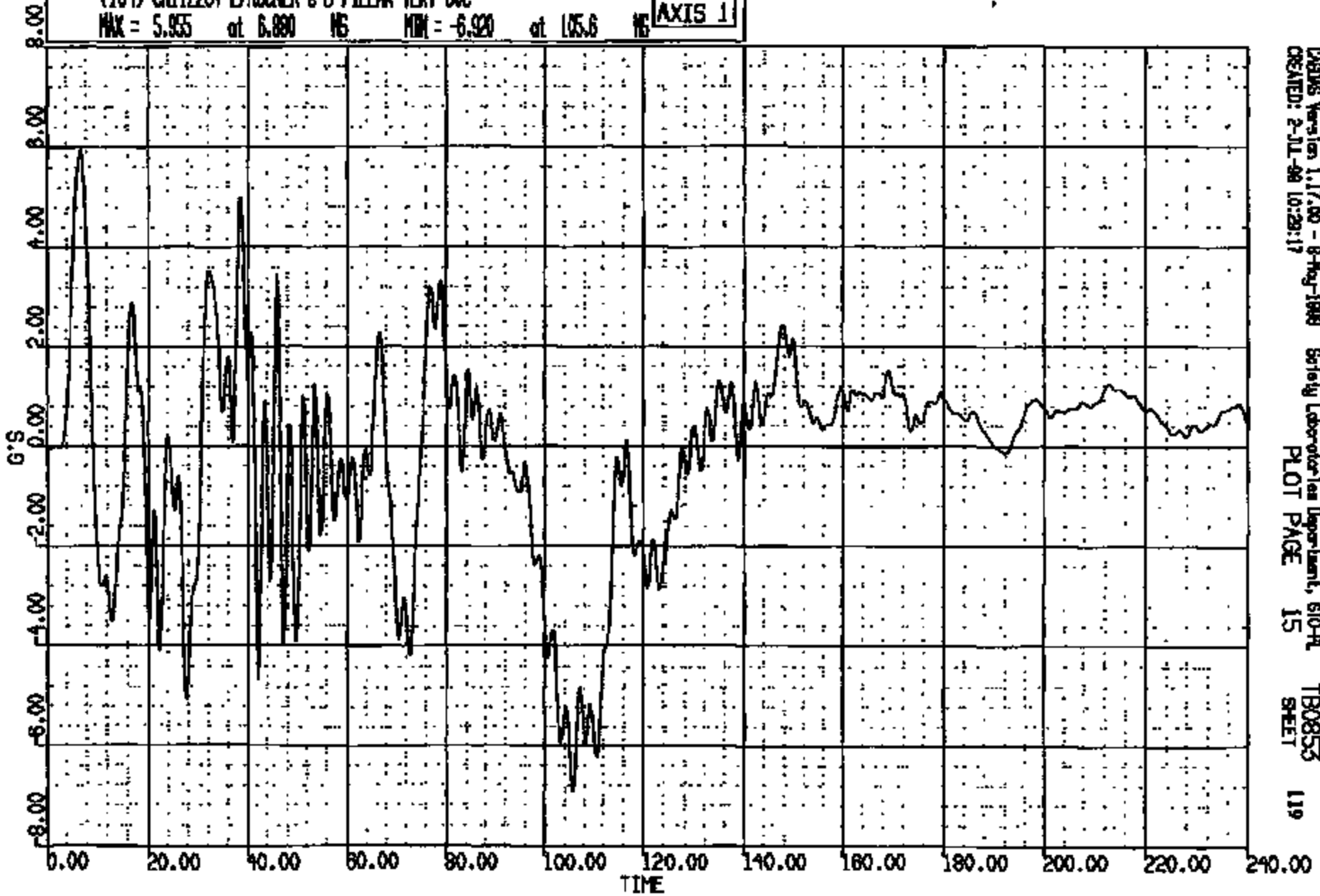
TBO853  
SHEET 118

CRTS 0011226

CR R: 11226 TD: TB0853 DATE: 981009 11:45:58  
2000 D-188 1998 DN-101

(104) CR112261 L/ROCKER @ B-PILLAR VERT SOC  
MAX = 5.935 at 6.890 NS MIN = -6.920 at 105.6 NS

AXIS 1

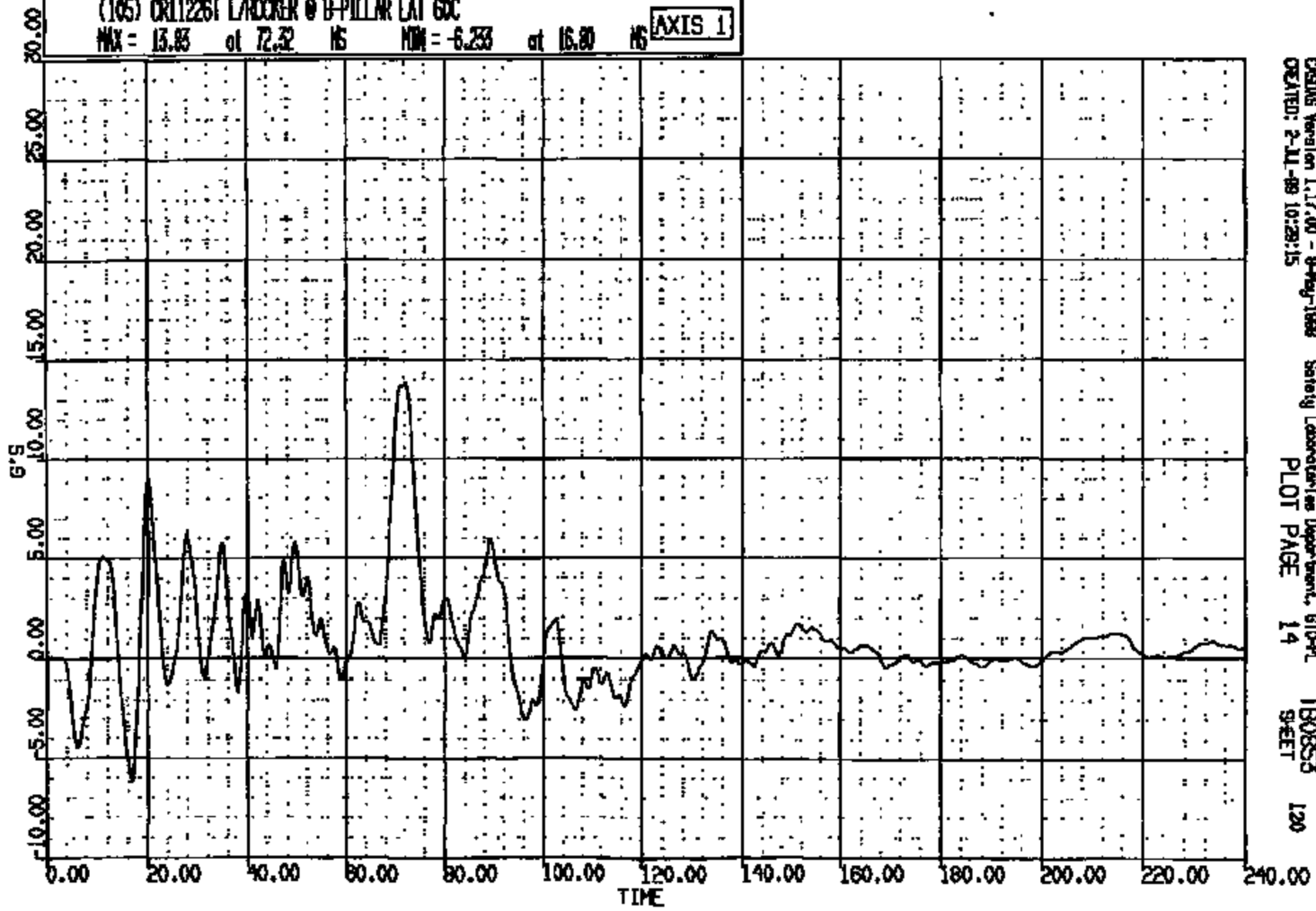


CRAMS Version 1.17.00 - 8-May-1999 Safety Laboratories Department, 610-A  
CREATED: 2-JUL-98 10:29:17 PLOT PAGE 15 SHEET 119

CRTS 0011226

CR R: 11226 TO: T80853 DATE: 981009 11:49:58  
2000 D-189 1998 DN-101

(105) CR112261 L/ROCKER @ B-PILLAR LAT 60C  
MAX = 13.83 at 72.32 NS MIN = -6.233 at 16.80 NS **AXIS 1**



CRSIS Version 1.17.00 - 9-May-1998 Safety Laboratories Department, STD-PL T80853 120  
CREATED: 2-11-98 10:29:15 PLOT PAGE 14 SHEET

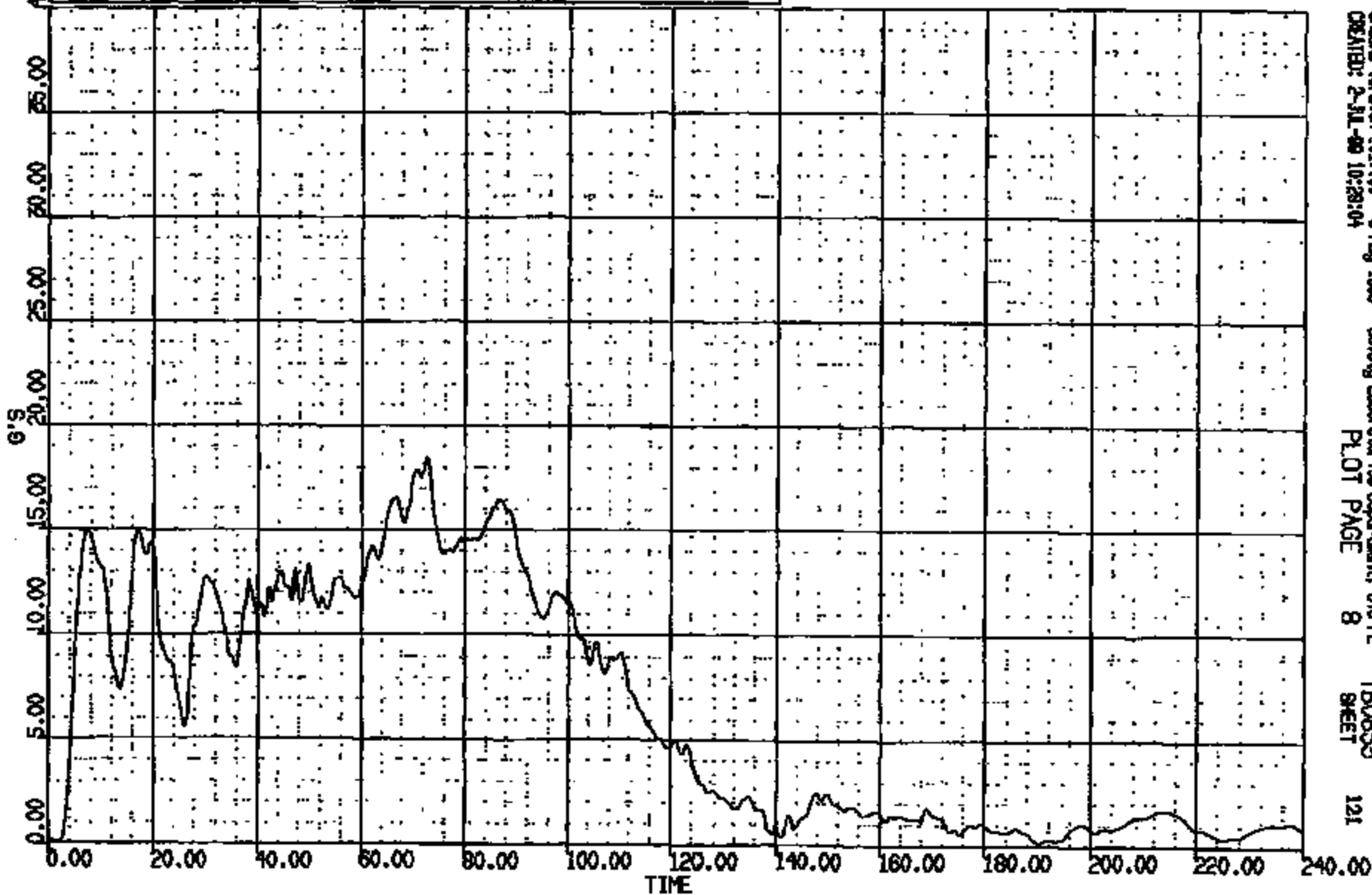
CRSIS 0011226

CR #: 11226 TO: TB0855 DATE: 991009 11:45:39  
MOOD D-198 1998 DN-101

(10016) CR11226T L/ROCKER @ B-PILLAR RES 60C

MAX = 18.48 at 72.72 MS MIN = 0.385E-01 at 1.840 MS

AXIS 1



CASMG Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-99 10:28:04

Safety Laboratory Department, 870-PL  
PLOT PAGE 8

TB0855  
SHEET

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CRTS 0011226

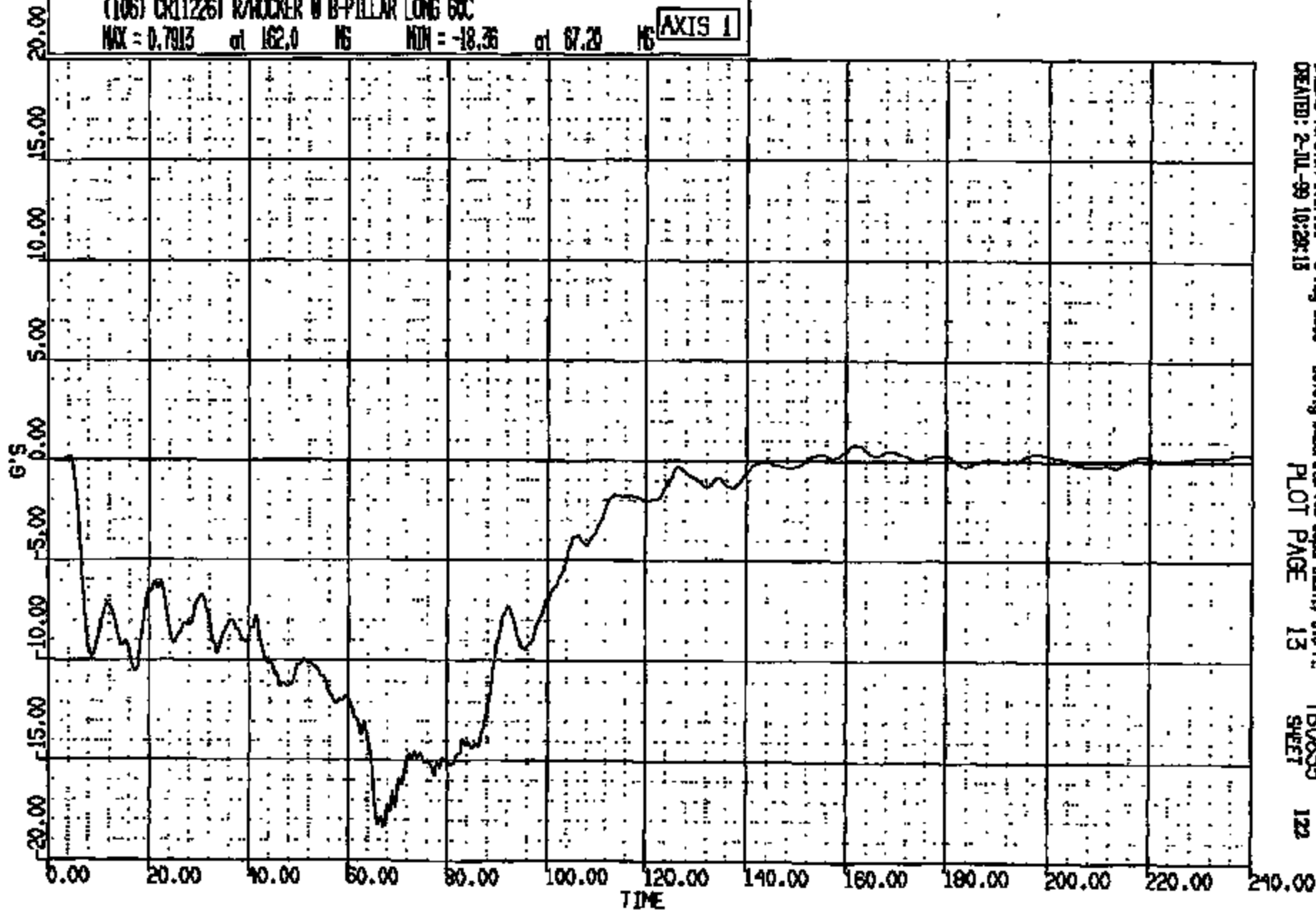


CR R: 11226 TO: TB0853 DATE: 991009 11:45:38  
2000 D-188 1998 DN-101

(106) CR11226T R/ROCKER @ B-PILLAR LONG GC

MAX = 0.7913 at 162.0 MS MIN = -18.36 at 67.28 MS

AXIS 1



CASYS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-99 10:28:15

Safety Laboratories Department, 610-PL  
PLOT PAGE 13

TB0853  
SHEET 122

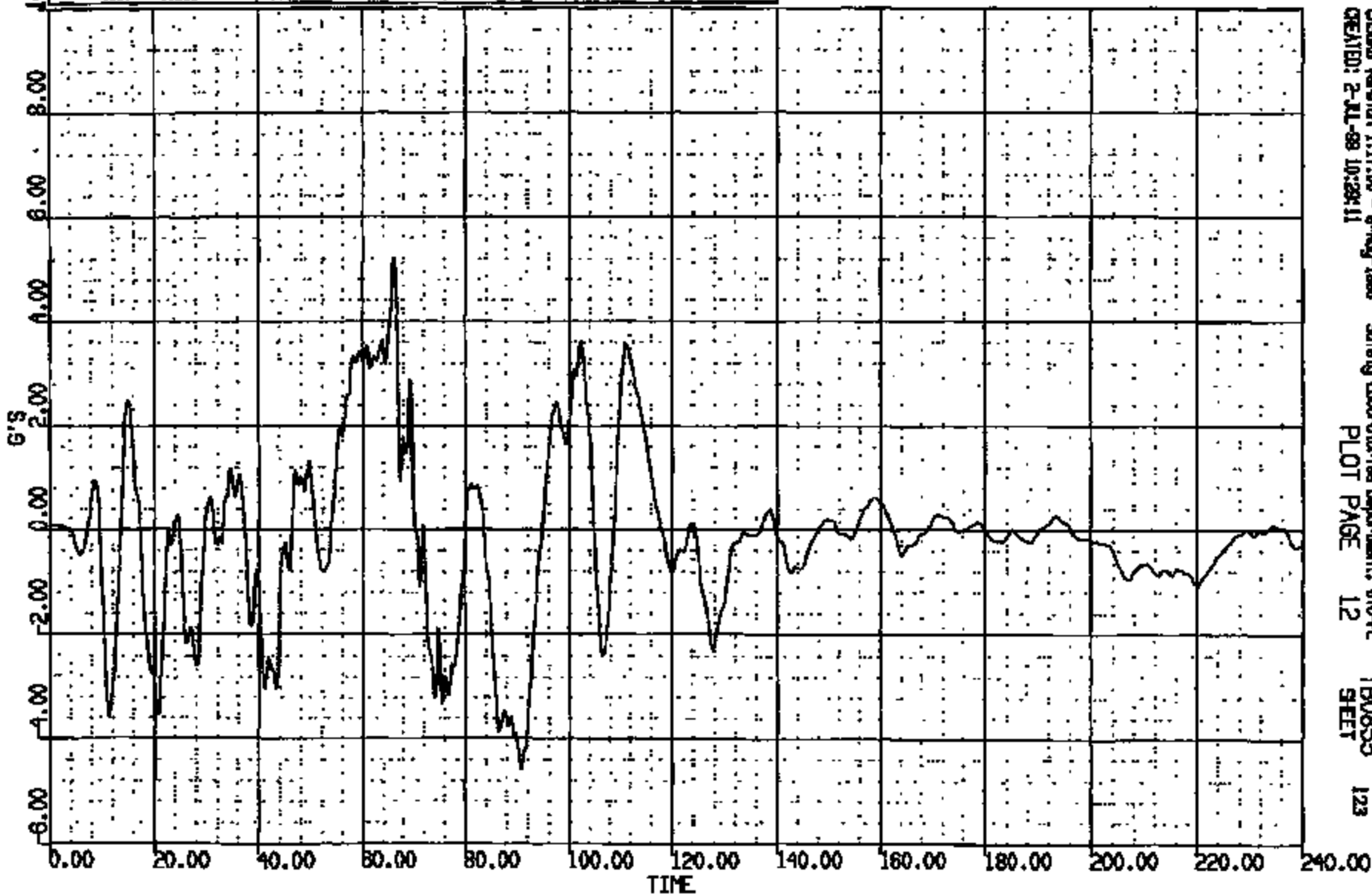
CRTS 0011226

DR R: 11226 TO: TB0853 DATE: 081008 11:45:38  
2000 D-100 1998 DN-101

(107) DR11226T R/ROCKER @ B-PILLAR VERT 60C

MAX = 5.216 at 66.24 MS MIN = -4.592 at 90.80 MS

AXIS 1



CASMS Version 1.17.00 - 8-May-1998  
CREATED: 2-JUL-98 10:28:11

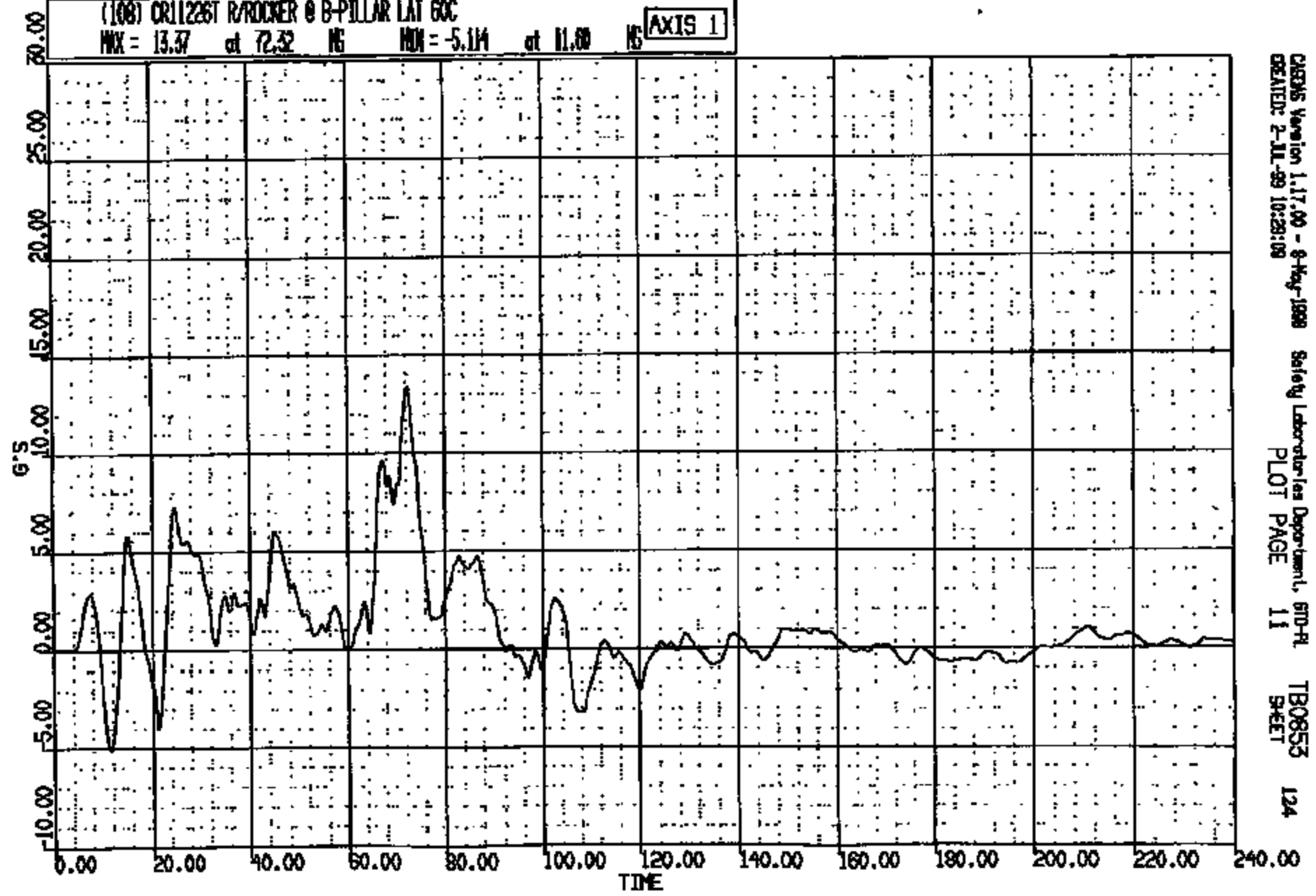
Safety Laboratories Department: 670-PL  
PLOT PAGE 12

TB0853 123  
SHEET

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 881008 11:48:28  
2000 D-108 1988 ON-101

(108) CR11226T R/ROCKER @ B-PILLAR LAT 60C  
MAX = 13.37 at 72.32 NG MIN = -5.14 at 11.00 NG **AXIS 1**

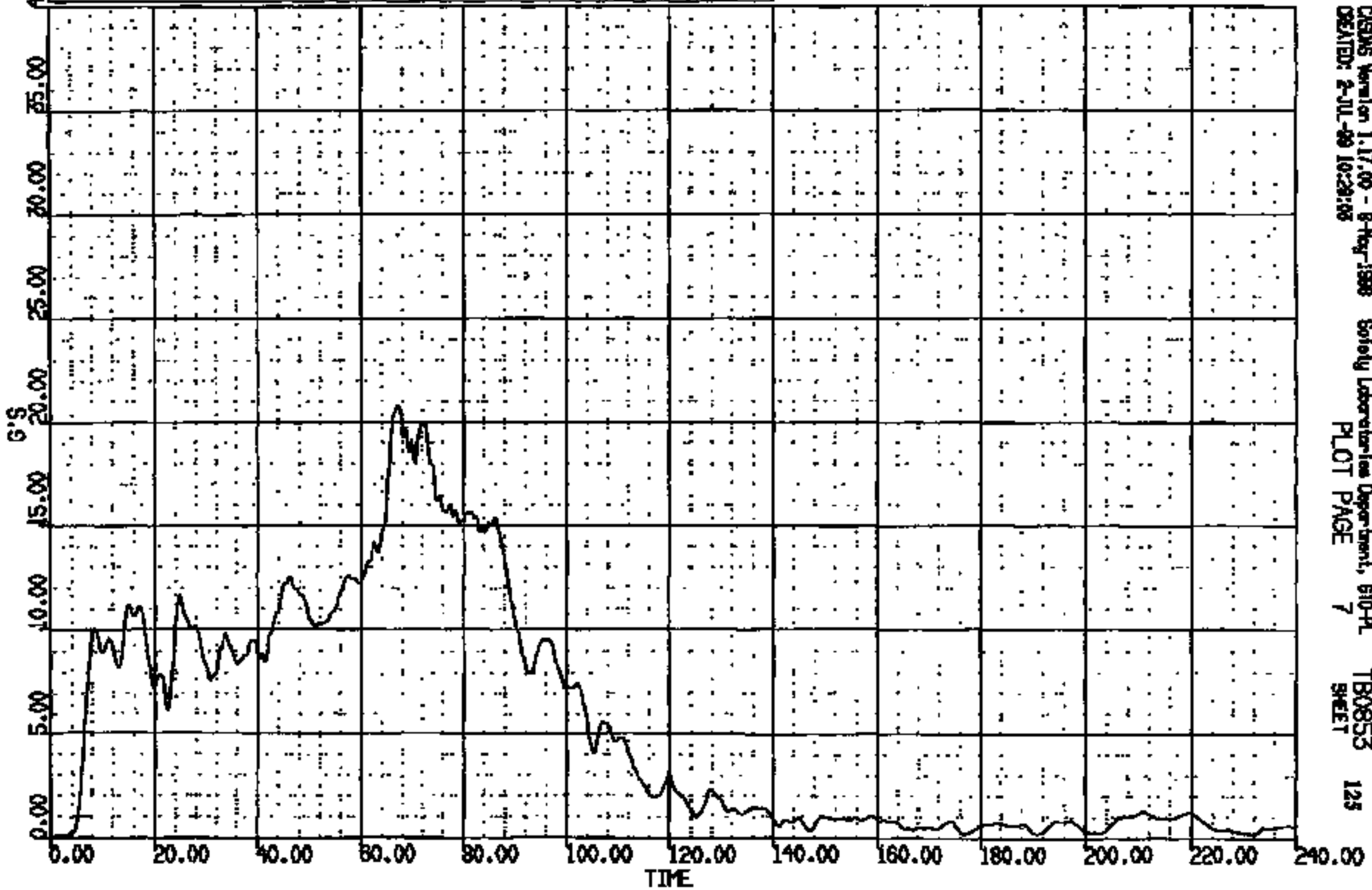


CRTS 0011226

CASMS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, STD-PL TB0853 124  
CREATED: 2-JUL-89 10:28:08 PLOT PAGE 11 SHEET

CR R: 11226 TD: TB0853 DATE: 881008 11:45:28  
2000 D-188 1888 DN-101

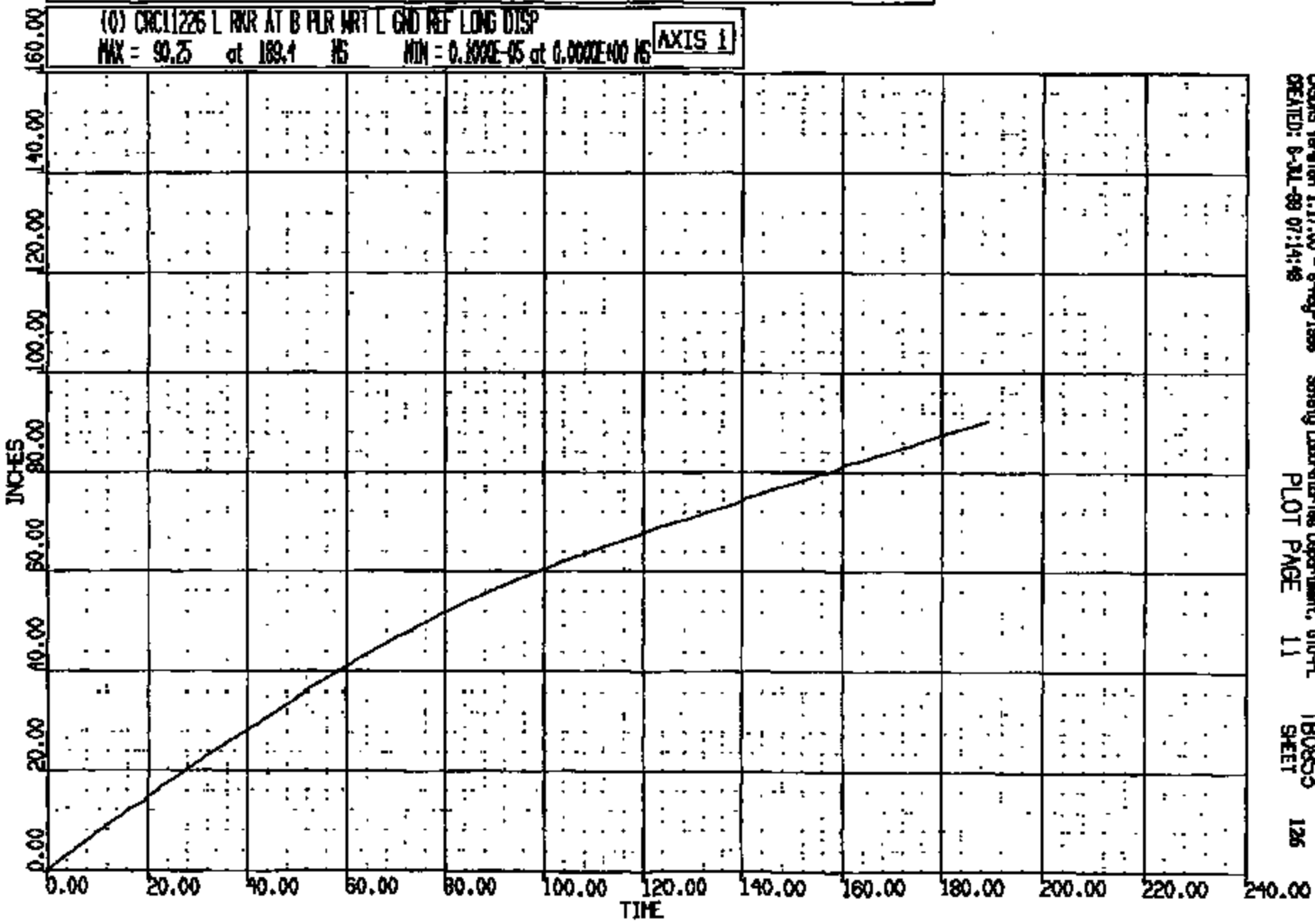
(10015) CR11226T R/ROCKER @ B-PILLAR RES GXC  
MAX = 20.76 at 57.12 MS MIN = 0.7942E-04 at 0.6400 MS **AXIS 1**



CIGMS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL TB0853 125  
CREATED: 2-JUL-88 10:28:05 PLOT PAGE 7 SHEET

CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 981009 11:45:38  
R000 D-198 1998 DN-101

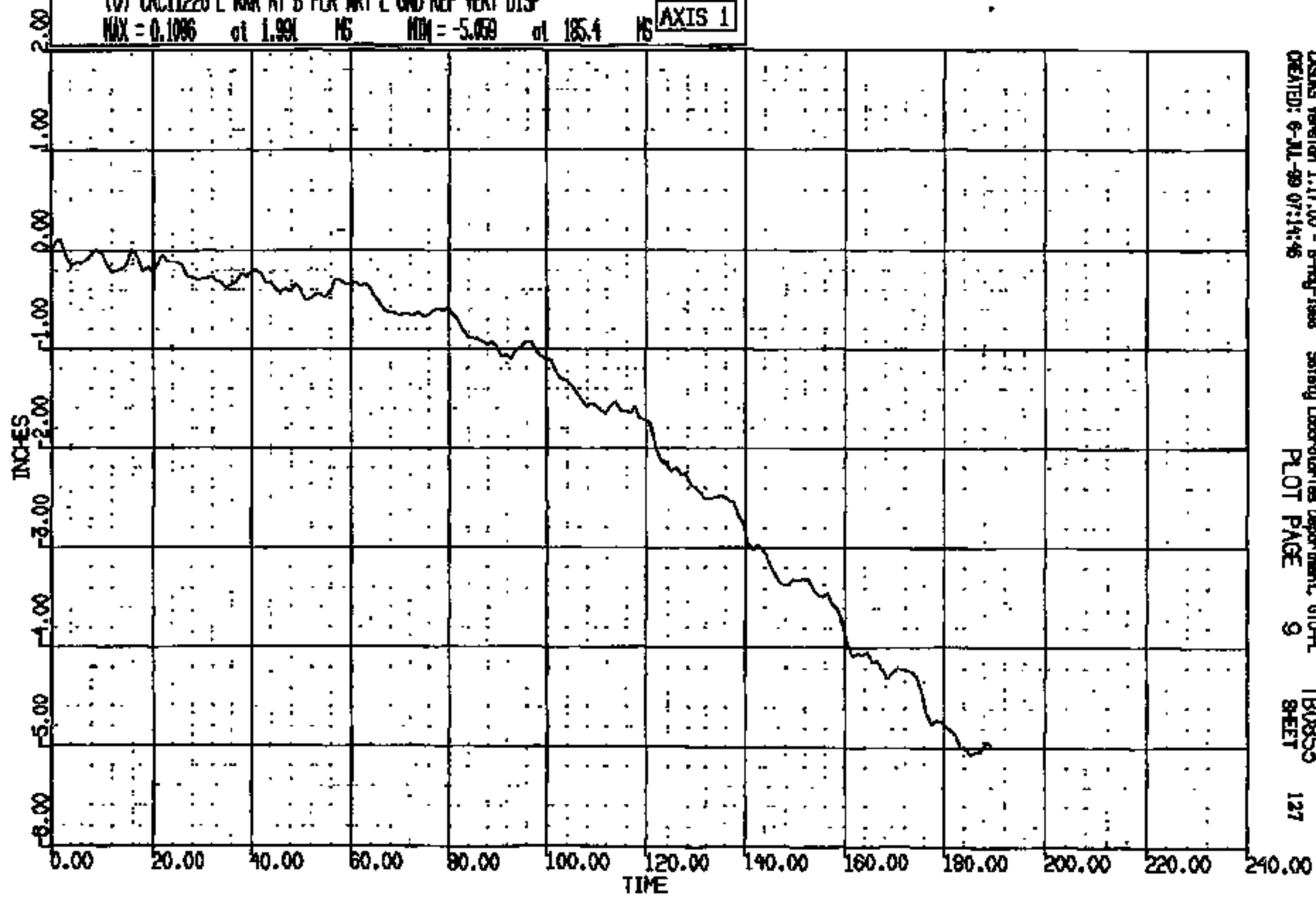


CSGMS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL  
CREATED: 8-31-98 07:14:48  
PLOT PAGE 11  
TB0853  
SHEET 126

CRTS 0011226

DR N: 11226 TO: TB0855 DATE: 881008 11:45:08  
2000 D-188 1888 DN-101

(0) CRC11226 L RGR AT B PLR WRT L CND REF VERT DISP  
MAX = 0.1096 at 1.991 MS MIN = -5.058 at 185.4 MS **AXIS 1**



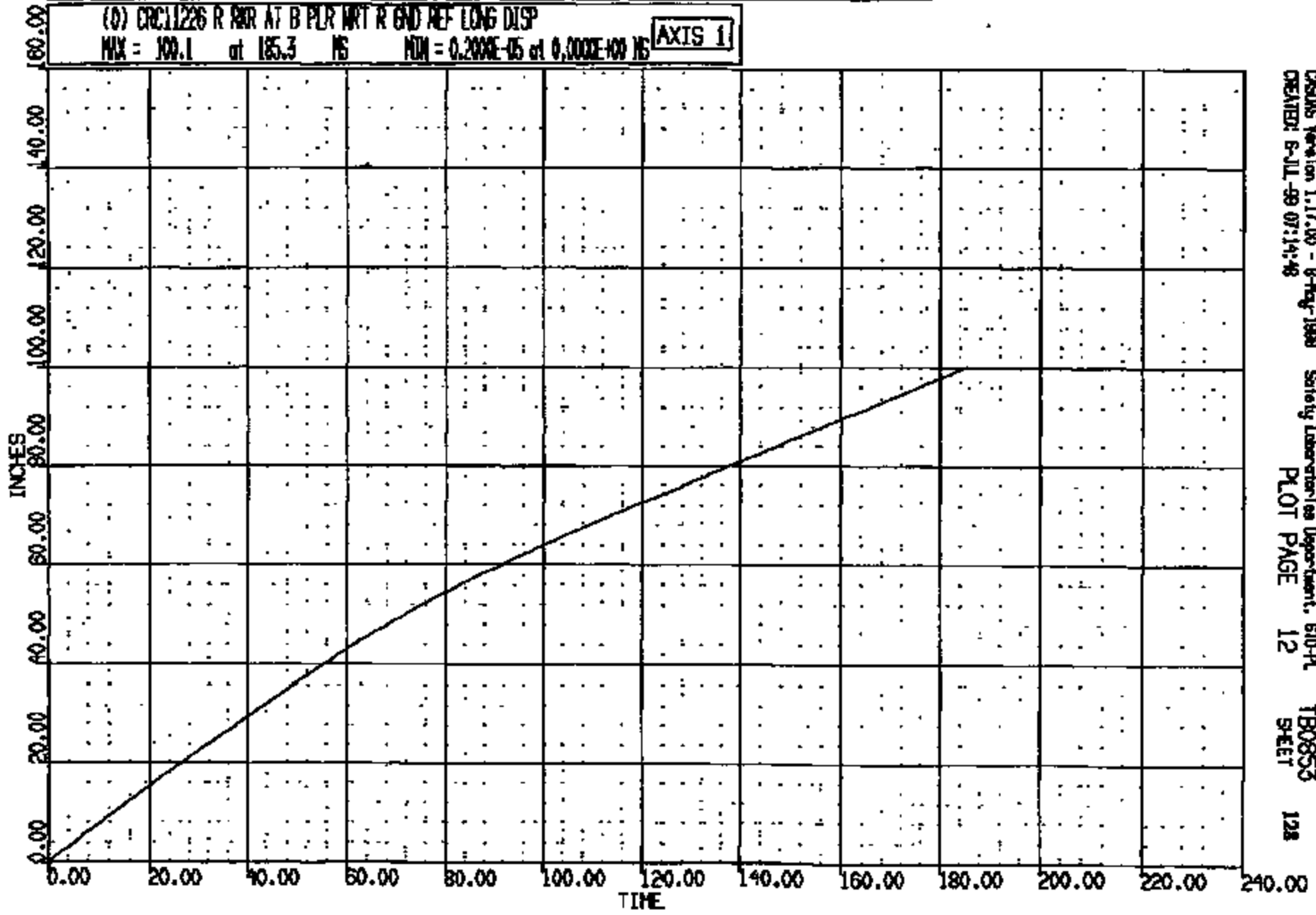
CASING Version 1.17.00 - 8-May-1988 Safety Laboratories Department, GTR-PL TB0855  
CREATED: 6-JUL-89 07:14:46 PLOT PAGE 9 SHEET 127

CRTS 0011226

CR R: 11226 TD: TB0853 DATE: 991009 11:45:39  
2000 D-189 1999 DN-101

(0) CRC11226 R RRR AT B PLR MPT R END REF LONG DISP  
MAX = 100.1 at 185.3 MS MIN = 0.2000E-05 at 0.0000E+00 MS

AXIS 1



CASINS Version 1.17.00 - 8-May-1998 Safety Laboratory Department, 610-PL  
CREATED: 8-JUL-99 07:14:48 PLOT PAGE 12 TB0853  
SHEET 128

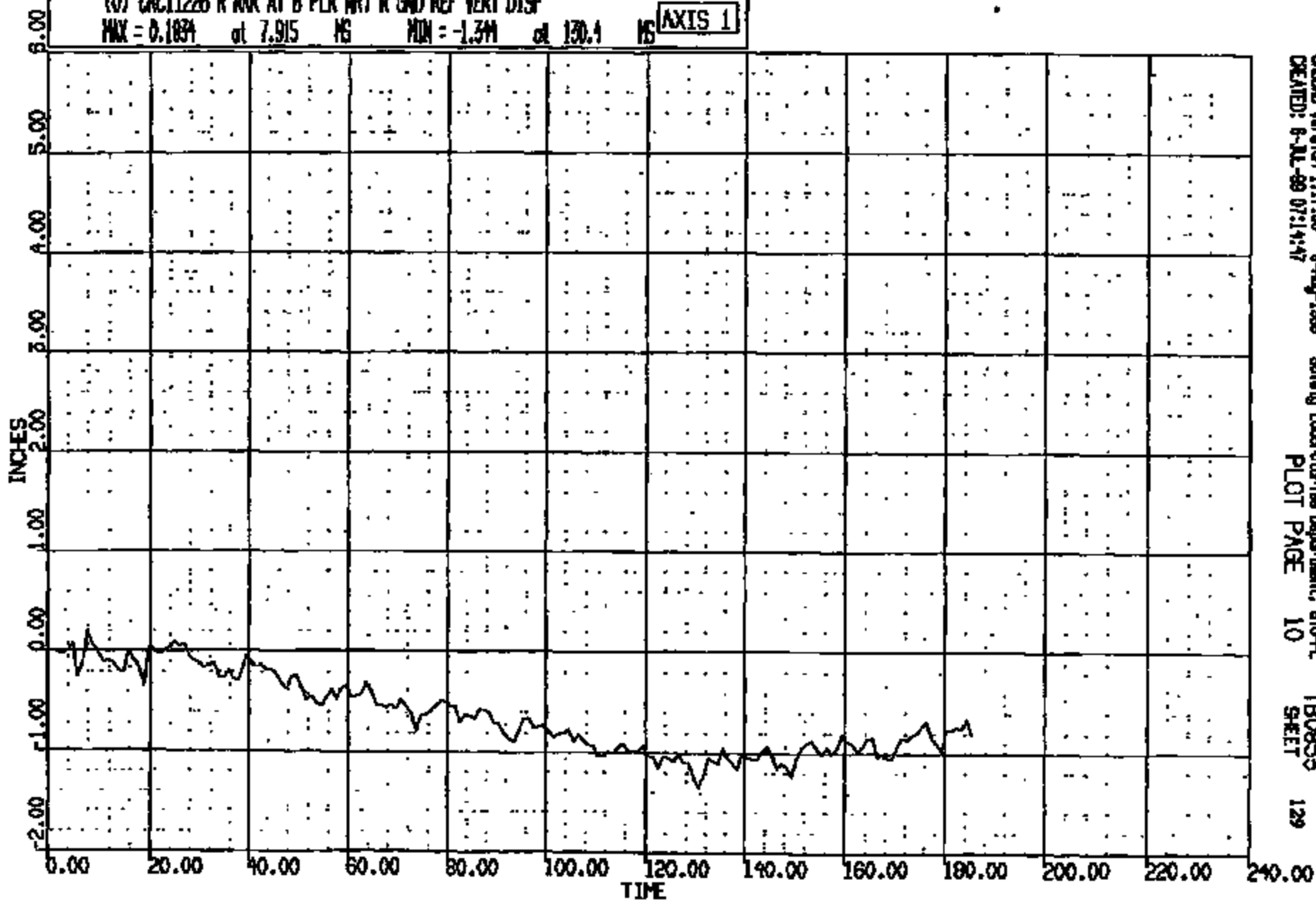
CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 981009 11:45:38  
2000 D-199 1999 DN-101

(0) CRCL1226 R WR AT B PLR WRT R END REF VERT DISP

MAX = 0.1034 at 7.915 MS MIN = -1.374 at 130.4 MS

AXIS 1



CRS05 Version 1.17.00 - 9-May-1999  
CREATED: 8-JUL-99 07:14:47

Safety Laboratory Department, 610-FL  
PLOT PAGE 10

TB0853  
SHEET

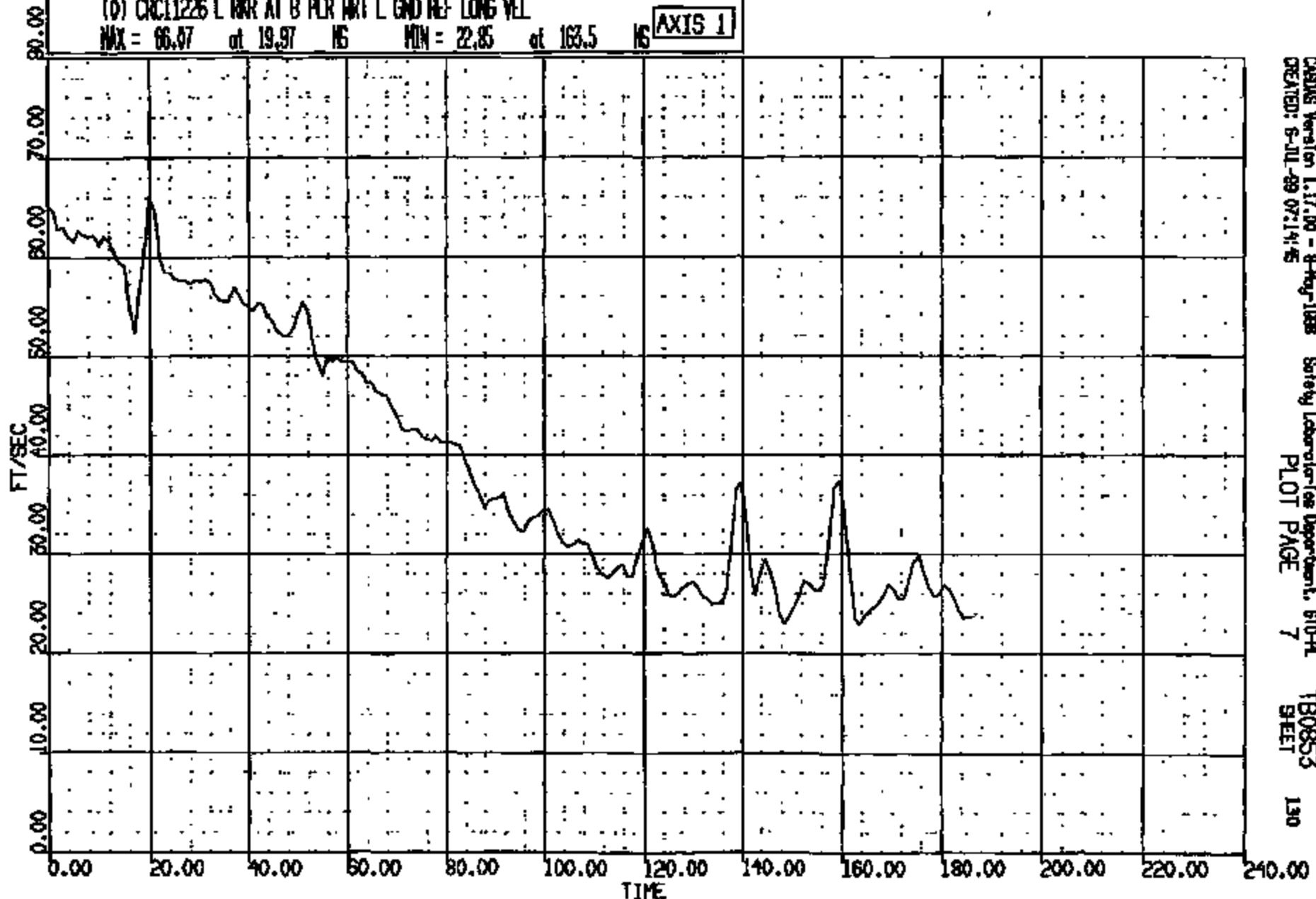
129

CRTS 0011226



CR R: 11226 TO: TB0853 DATE: 081009 11:45:38  
2000 D-108 1998 DN-101

(D) CRCL1226 L RNR AT B PLR WRT L GND REF LONG VEL  
MAX = 66.07 at 19.97 NS MIN = 22.85 at 163.5 NS **AXIS 1**

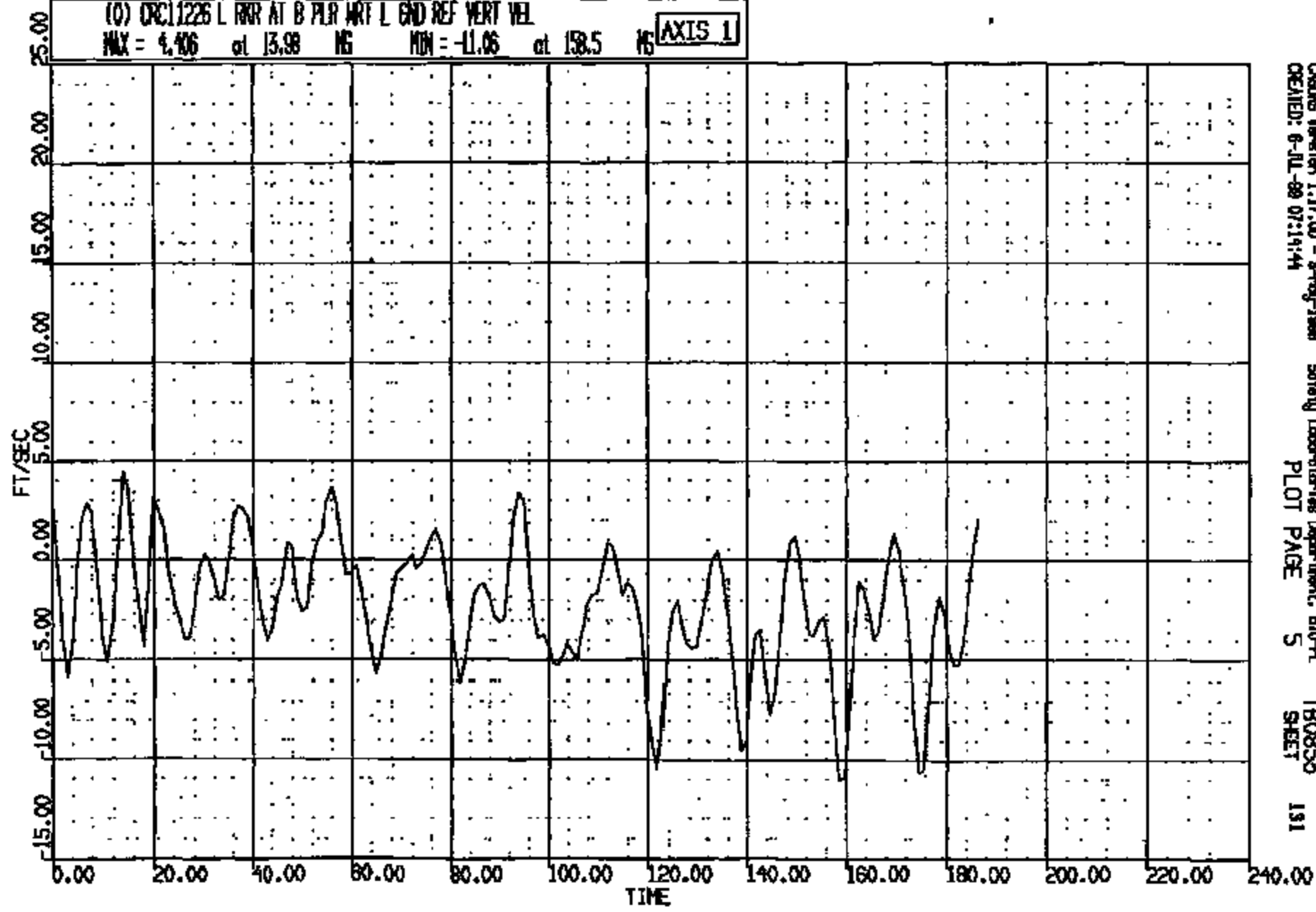


CARDAS Version 1.17.00 - 8-Aug-1998 Safety Laboratories Department, 610-A  
CREATED: 6-JUL-99 07:14:45 PLOT PAGE 7 TB0853 SHEET 130

CRTS 0011226

CR R = 11226 TO: T80853 DATE: 081009 11:45:58  
2000 D-186 1998 DN-101

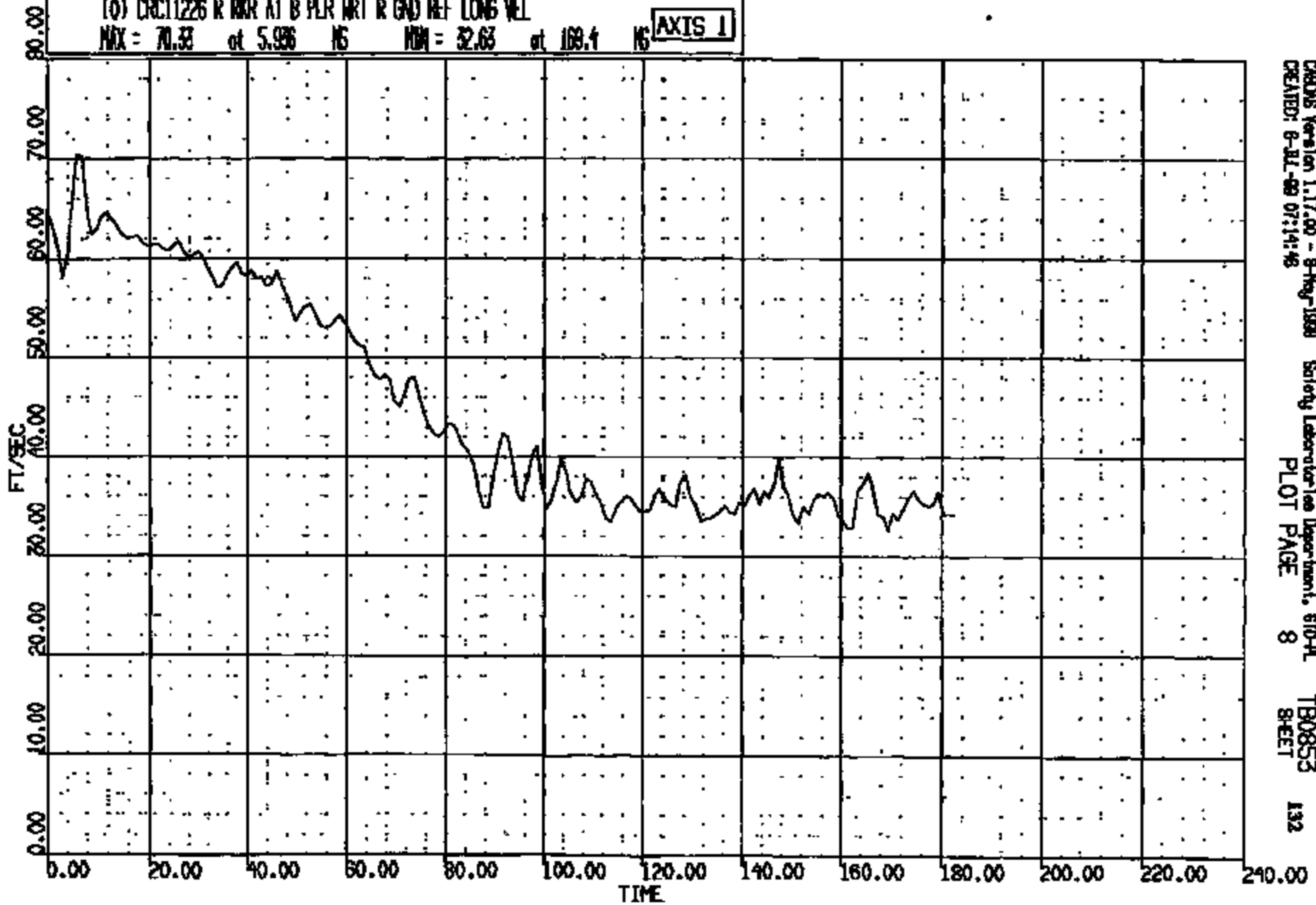
(0) CRC11226 L RFR AT B PLR WRT L END REF VERT VEL  
MAX = 4.06 at 13.98 MS MIN = -11.06 at 158.5 MS **AXIS 1**



CRTS 0011226

CR R: 11226 TO: TB0853 DATE: 981009 11:45:39  
2000 D-188 1988 DN-101

(0) CRCT1226 R RNR AT B PLR WRT R GND REF LONG VEL  
MAX = 70.33 at 5.986 NS MIN = 32.63 at 169.4 NS **AXIS 1**

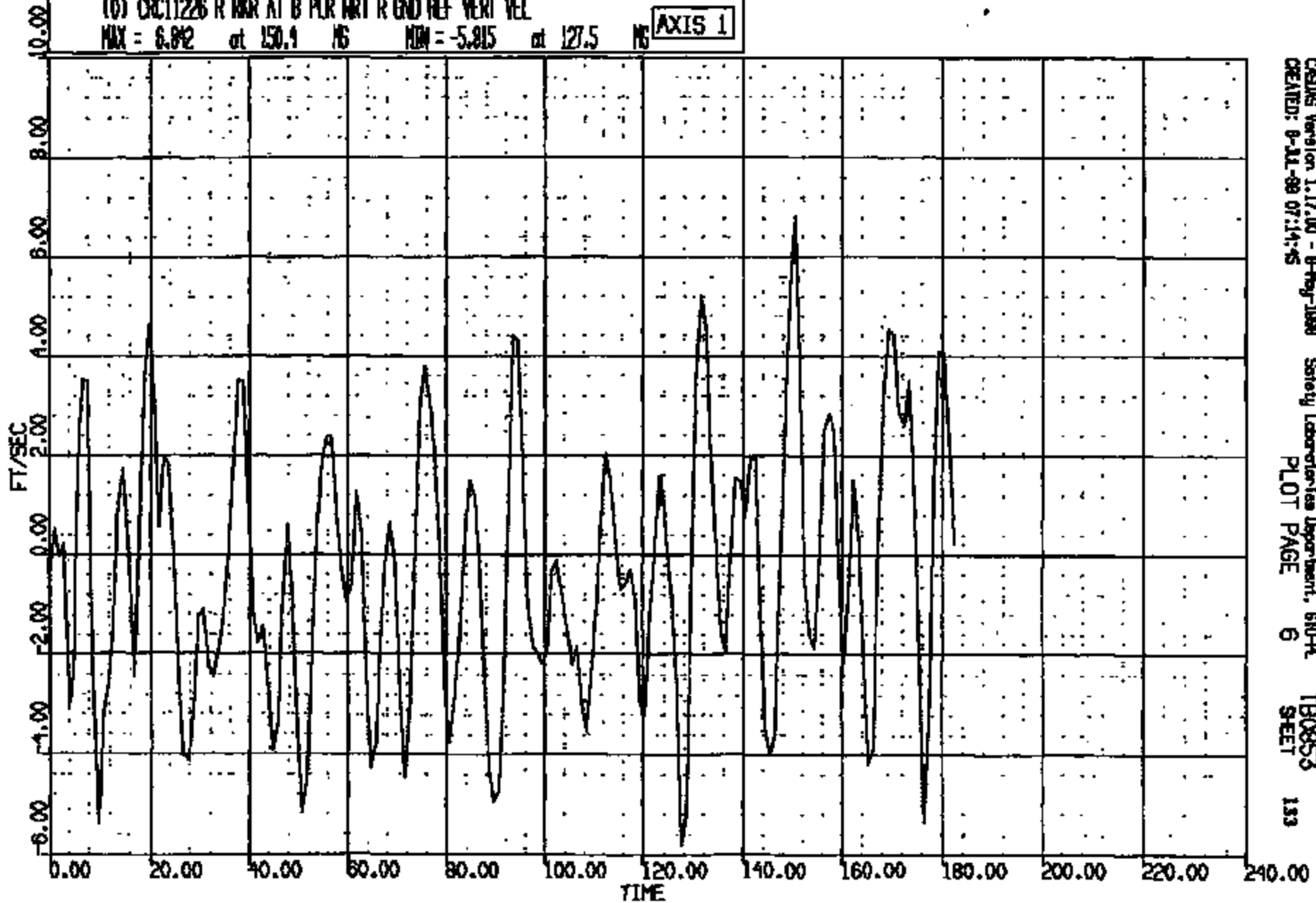


CADDS Version 1.17.00 - 9-May-1988 Safety Laboratory Department, 670-A  
CREATED: 8-SEP-98 07:14:46 PLOT PAGE 8 TB0853 132  
SHEET

CRTS 0011226

CR R: 11226 TO: TBO853 DATE: 081000 11:45:38  
2000 D-188 1988 DN-101

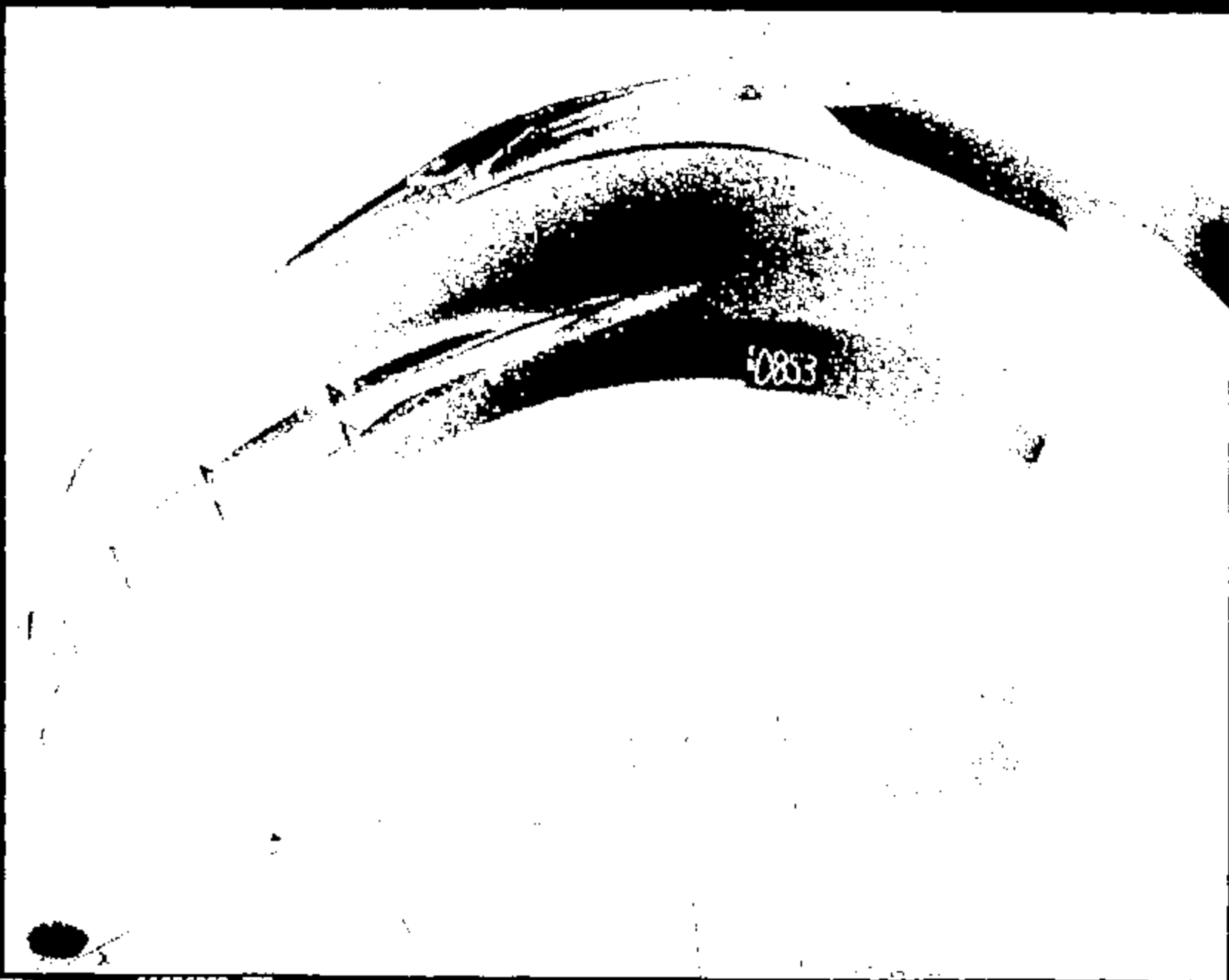
(0) CRCT1226 R NRK AT B PLR NRK R END REF VERT VEL  
MAX = 6.842 at 150.4 MS MIN = -5.815 at 127.5 MS **AXIS 1**



CRTS 0011226



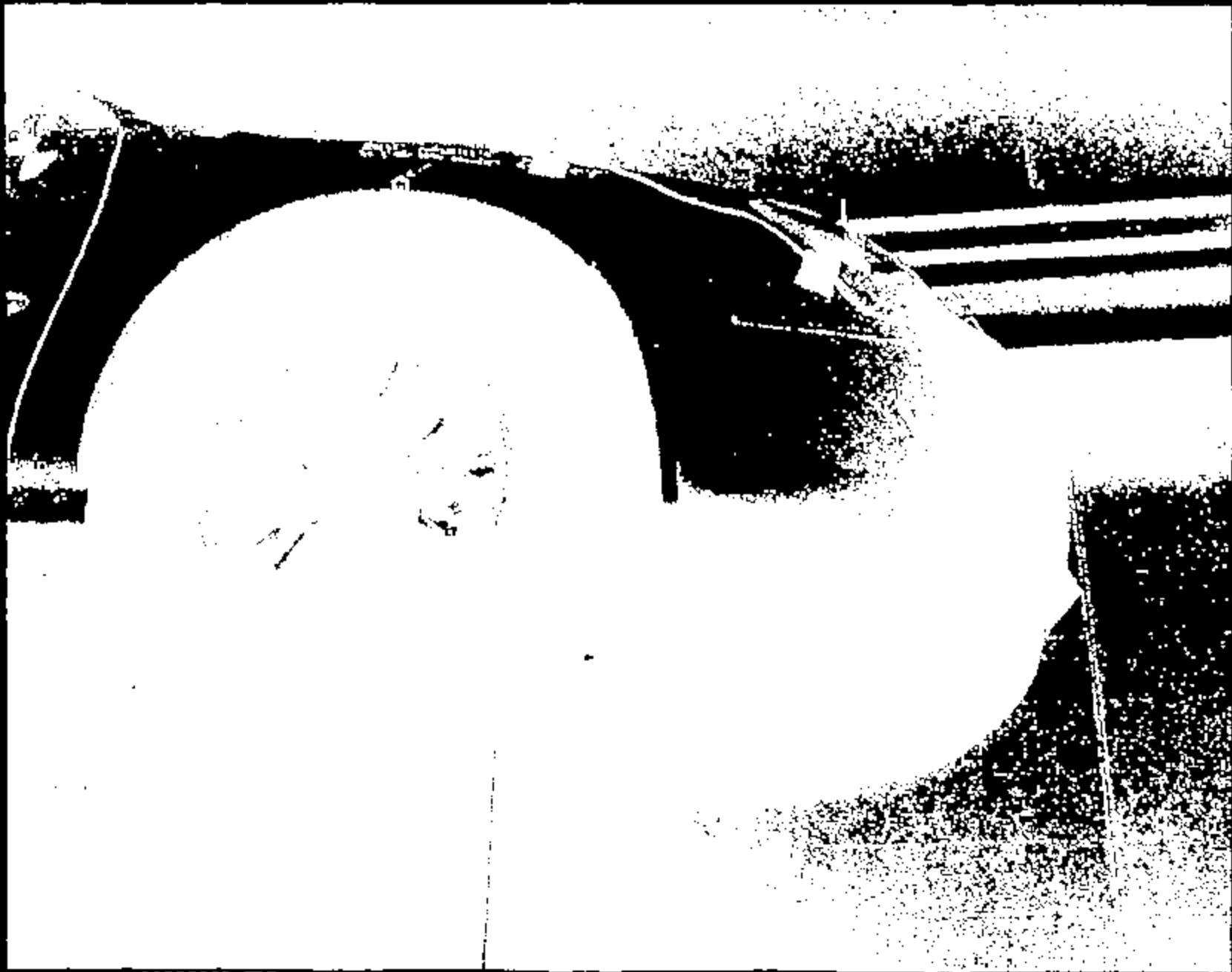
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0853

Name : 11226002.JPG

CRTS 0011226



Name :

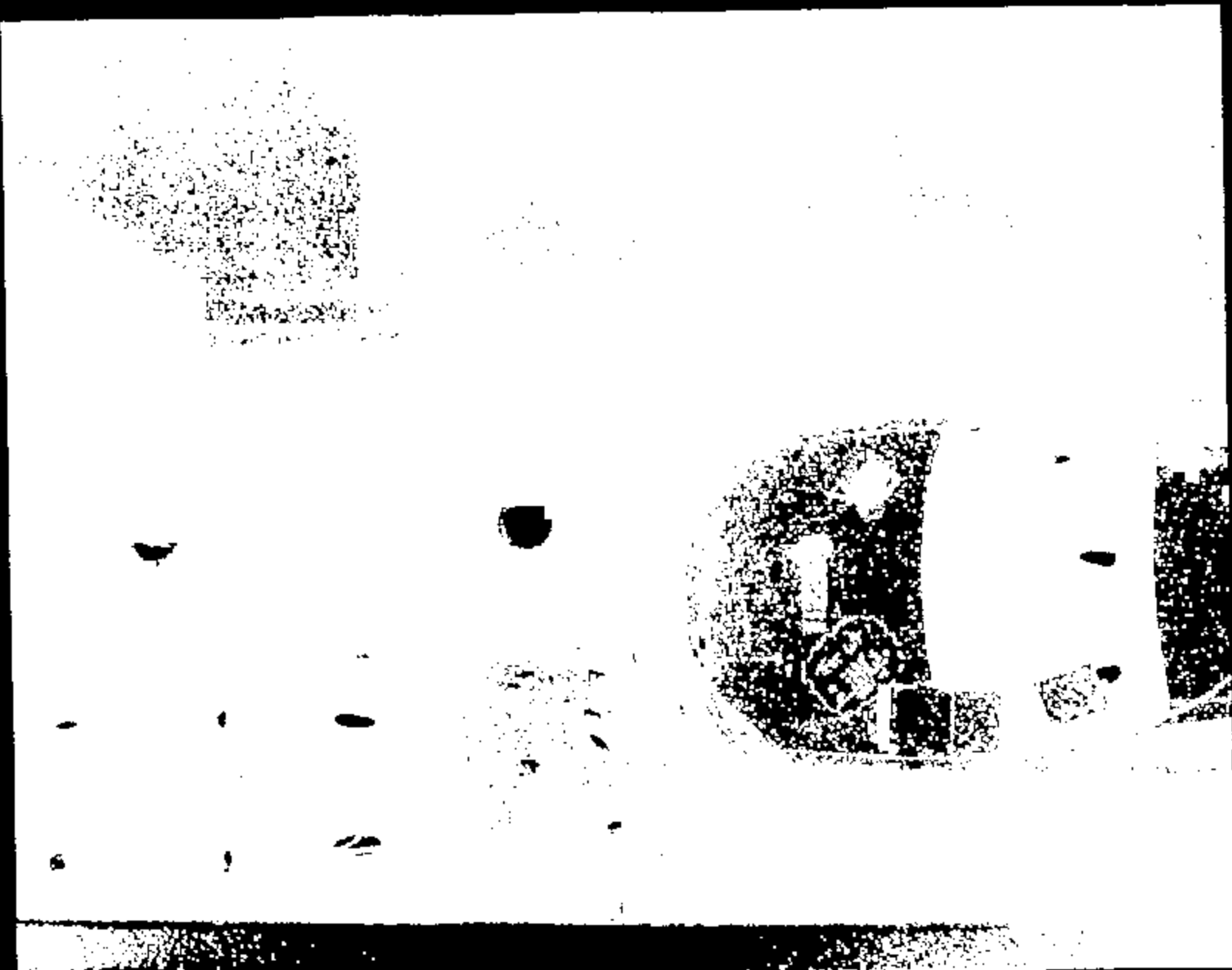
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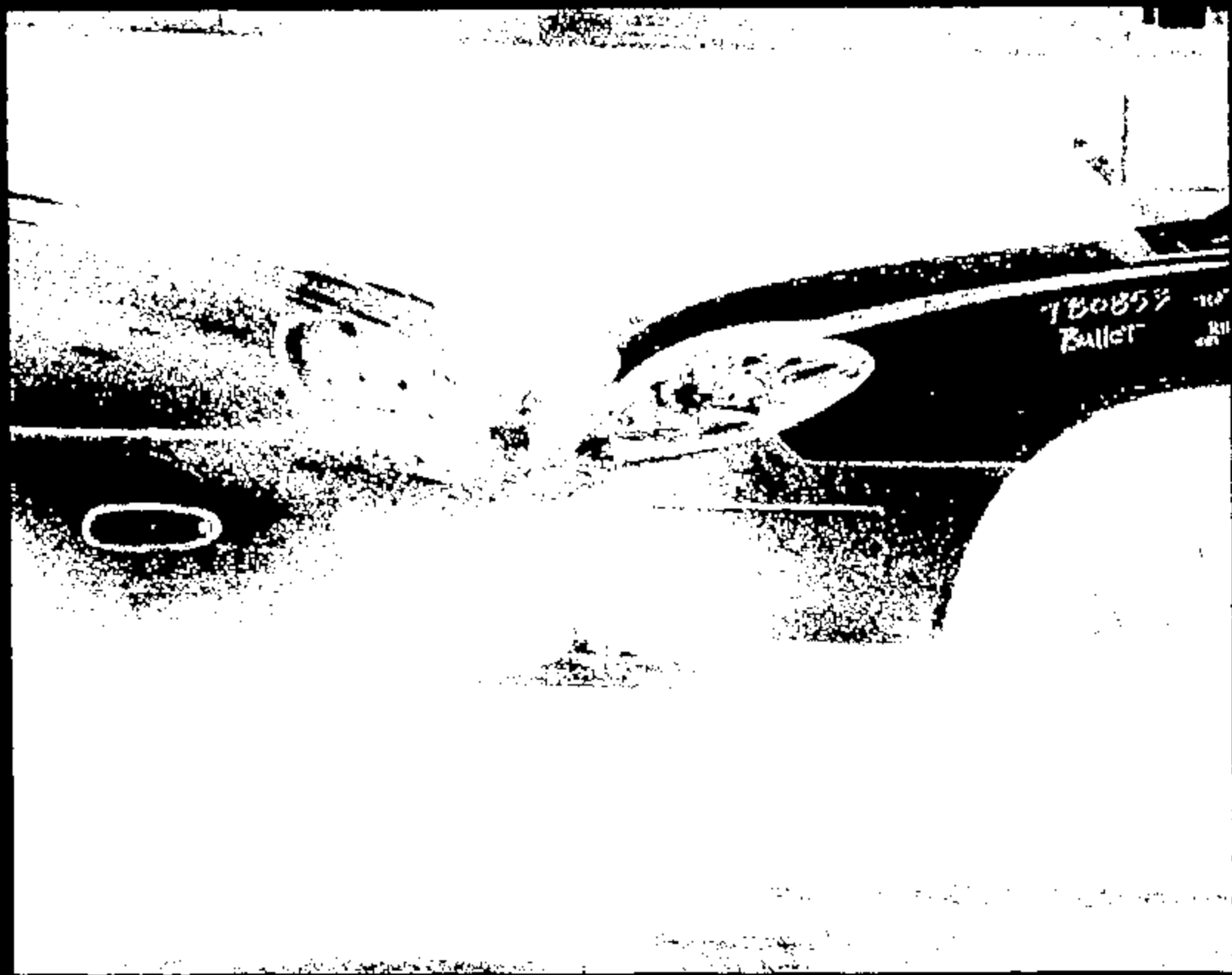




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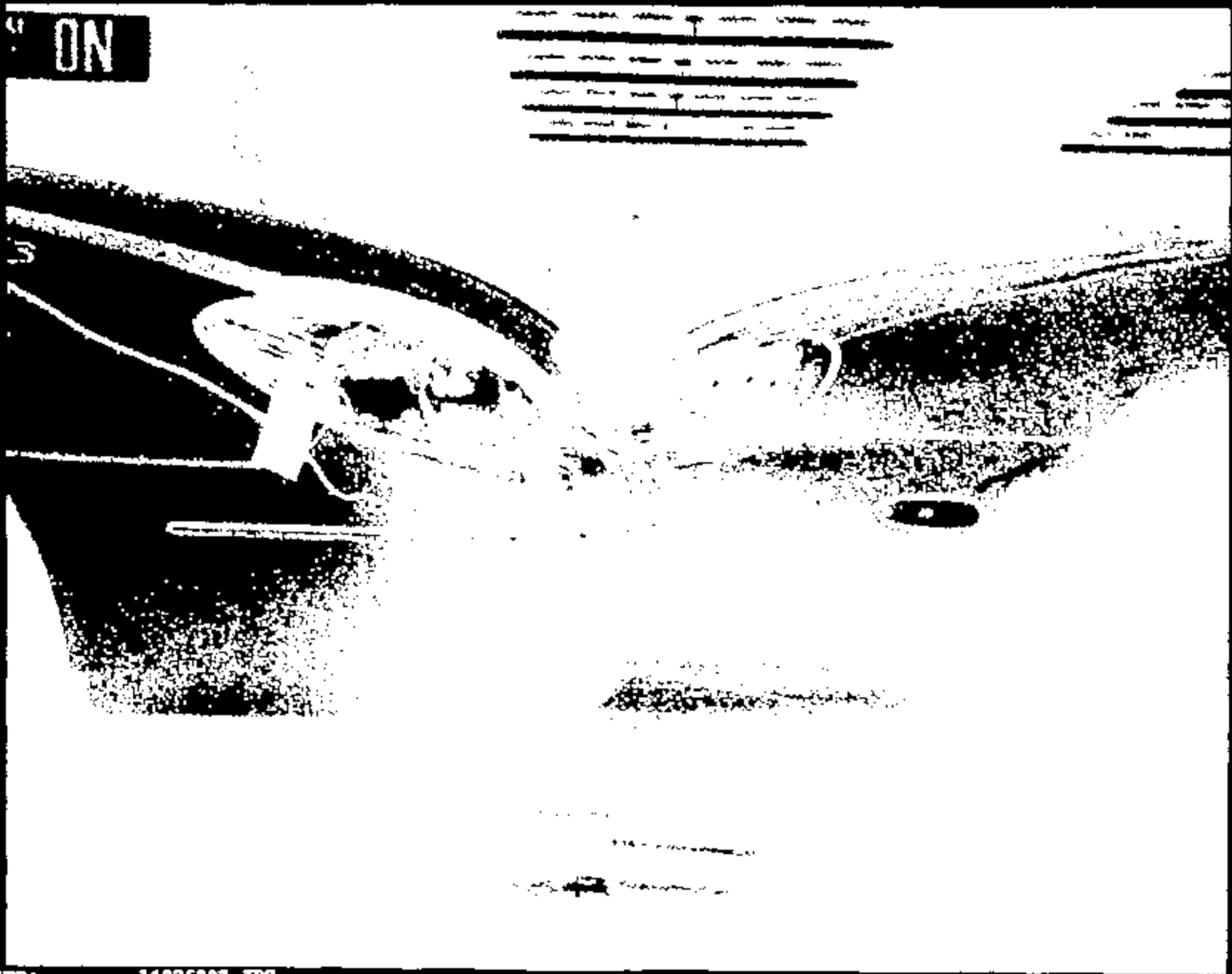
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CRTS 0011226



180857  
Bullet

ON



Name: 11226007.JPG



11226008.JPG

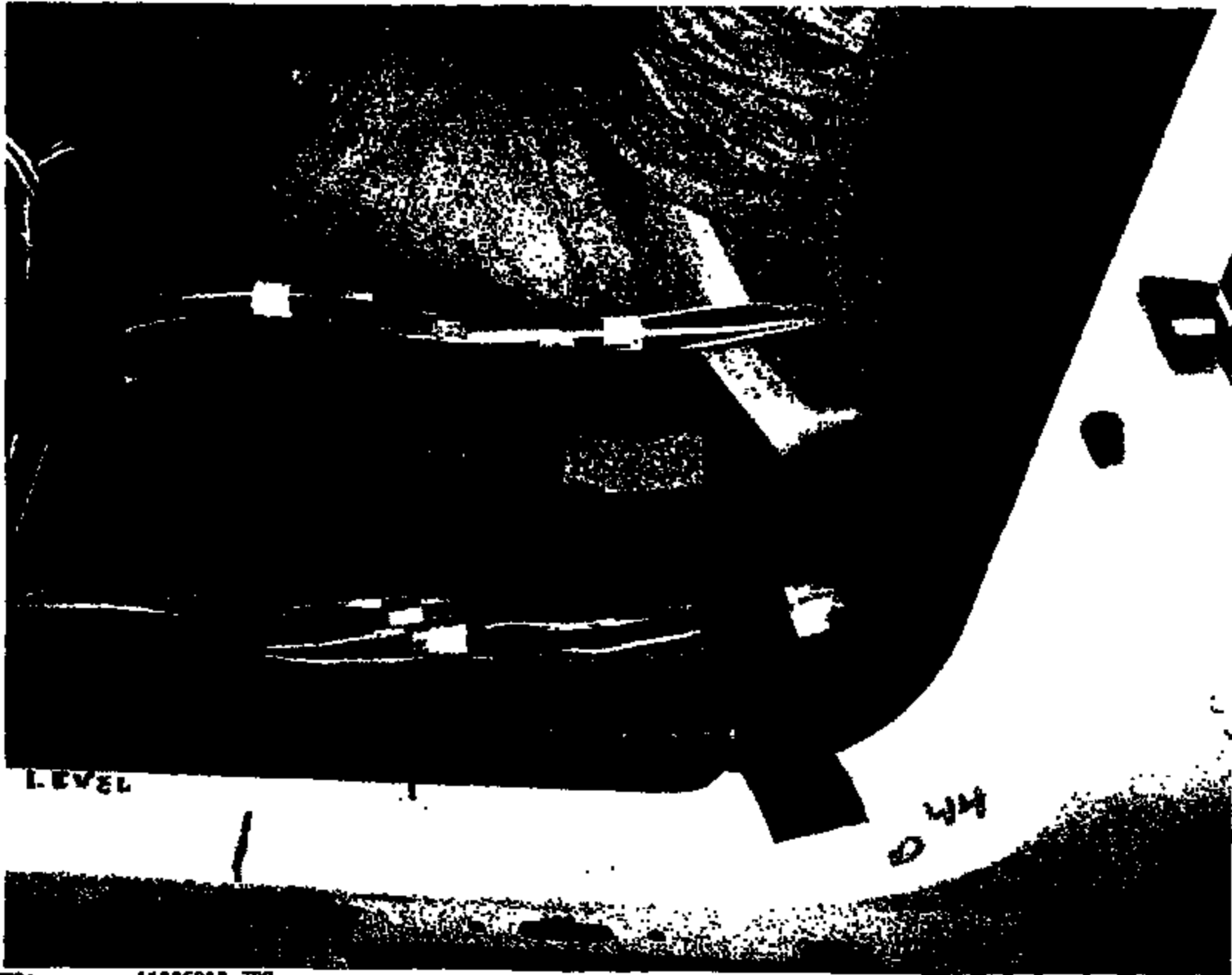


0853

Name :

11226009.JPG

CRIS PM11226



LEVEL

44

11226010.JPG

CRIS 0011226

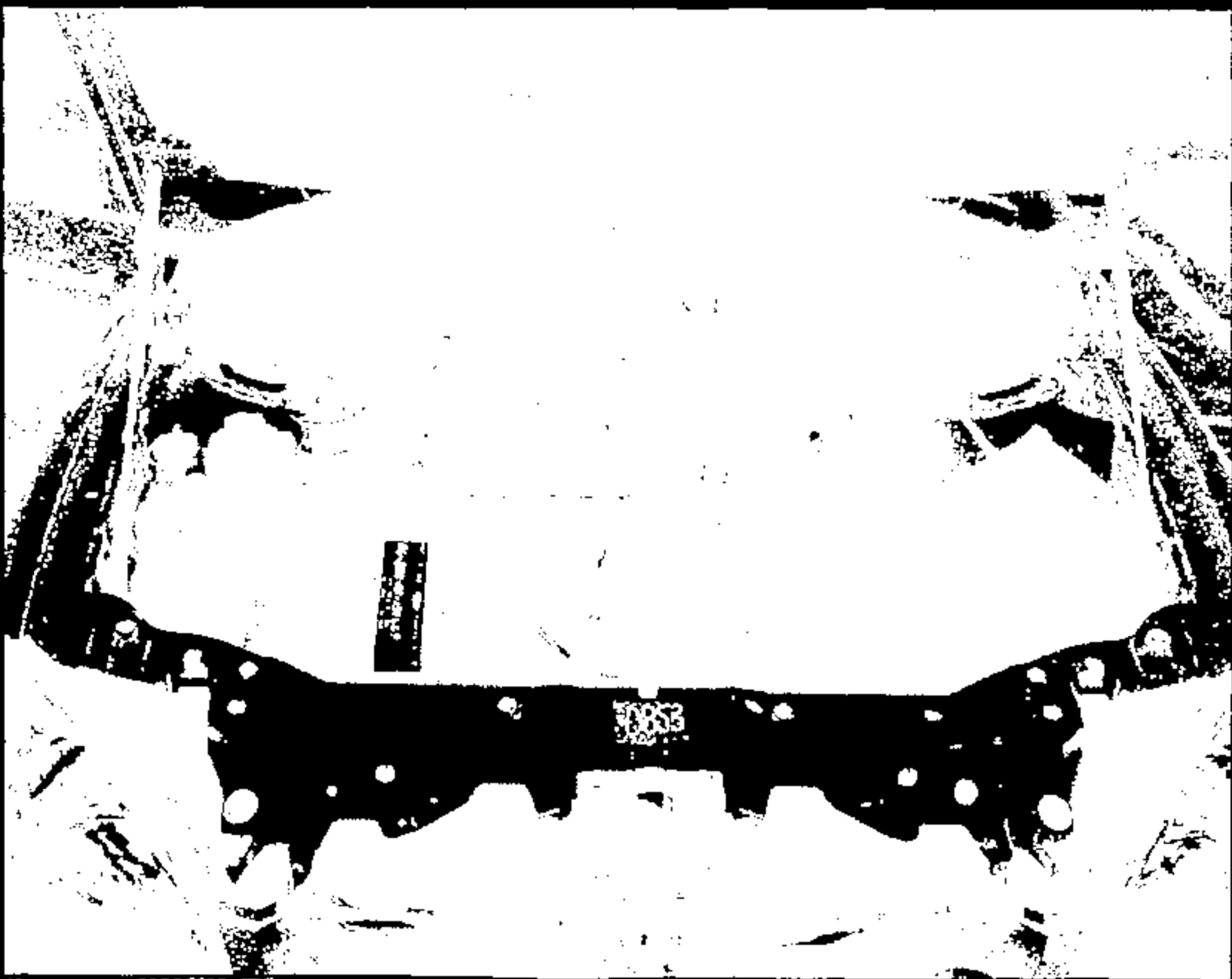


Image :

11226011.JPG

CRTS 0011226



Name: 11226012.JPG

CRTS 0011226





Name: 11226013.JPG

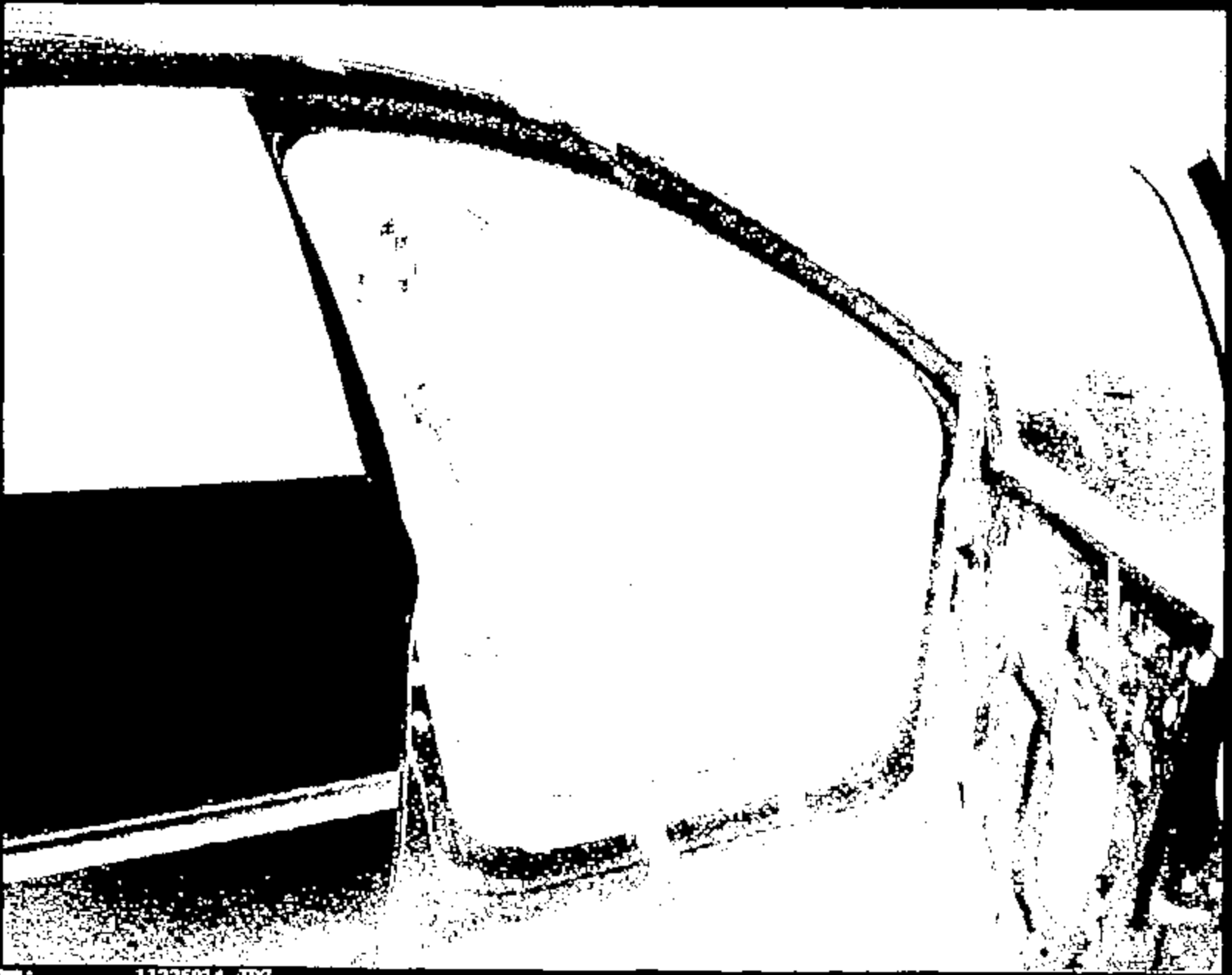


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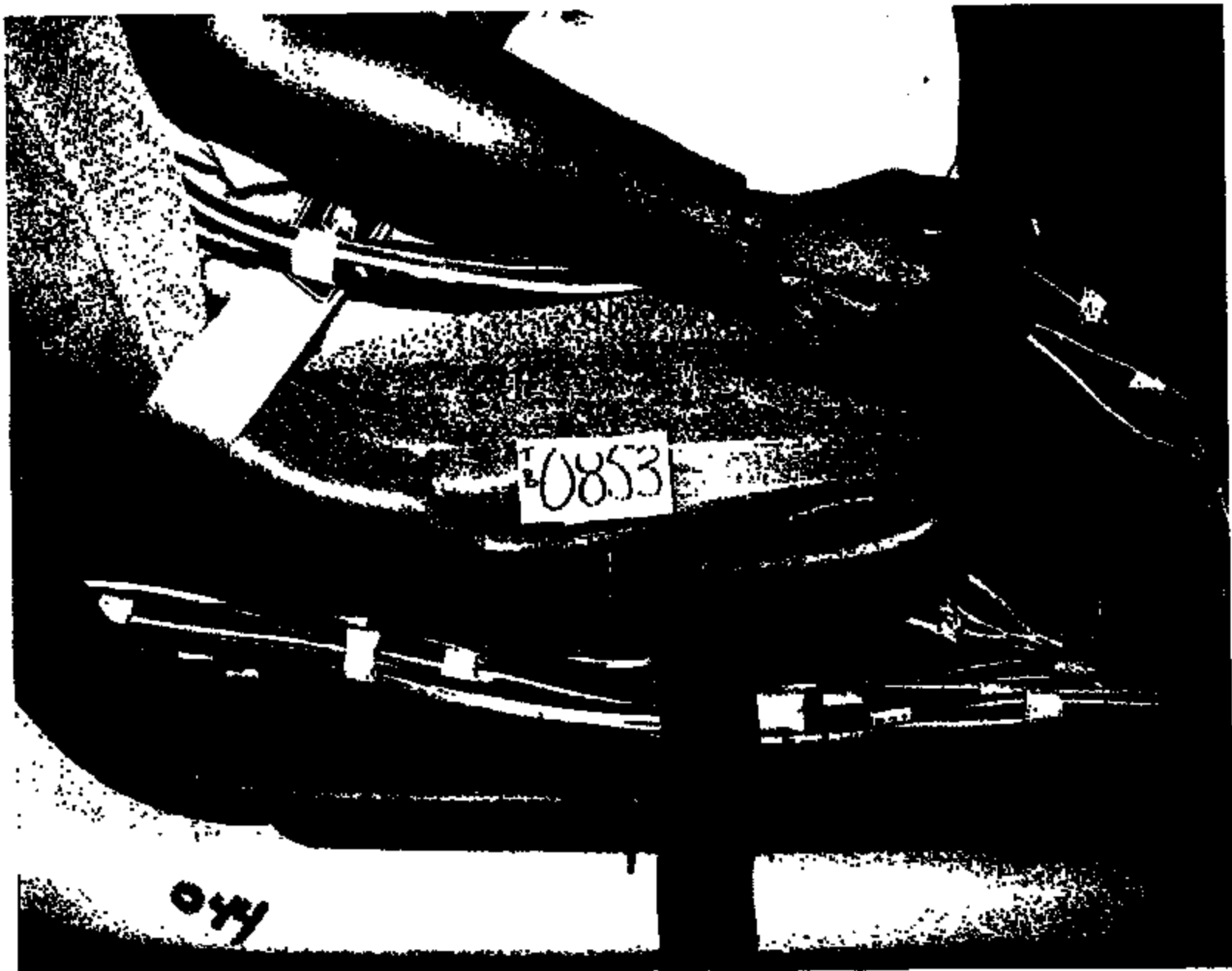
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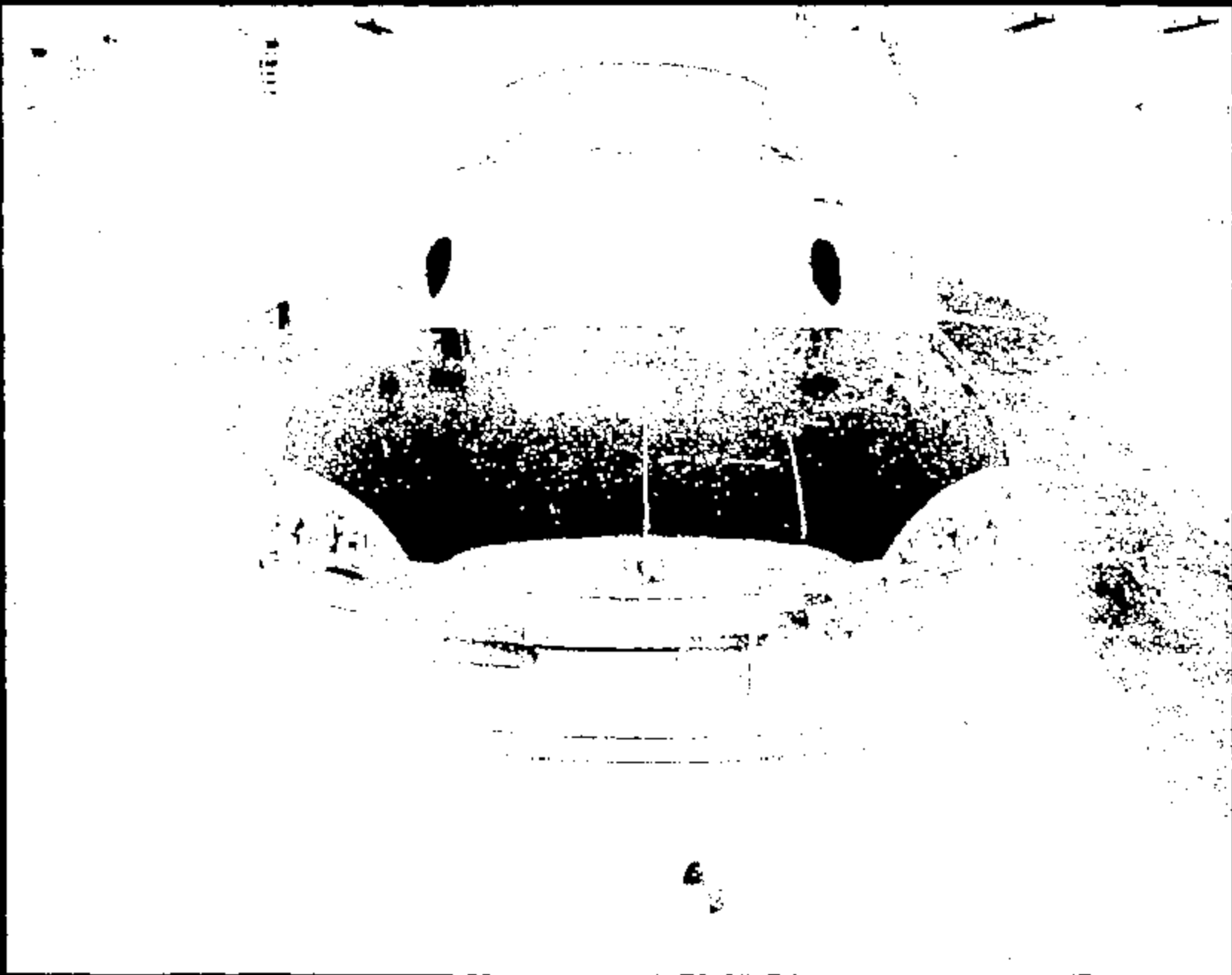
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Pro

Name: 11226016.JPG



Name :

11226017.JPG

CRTS 0011226



Nome :

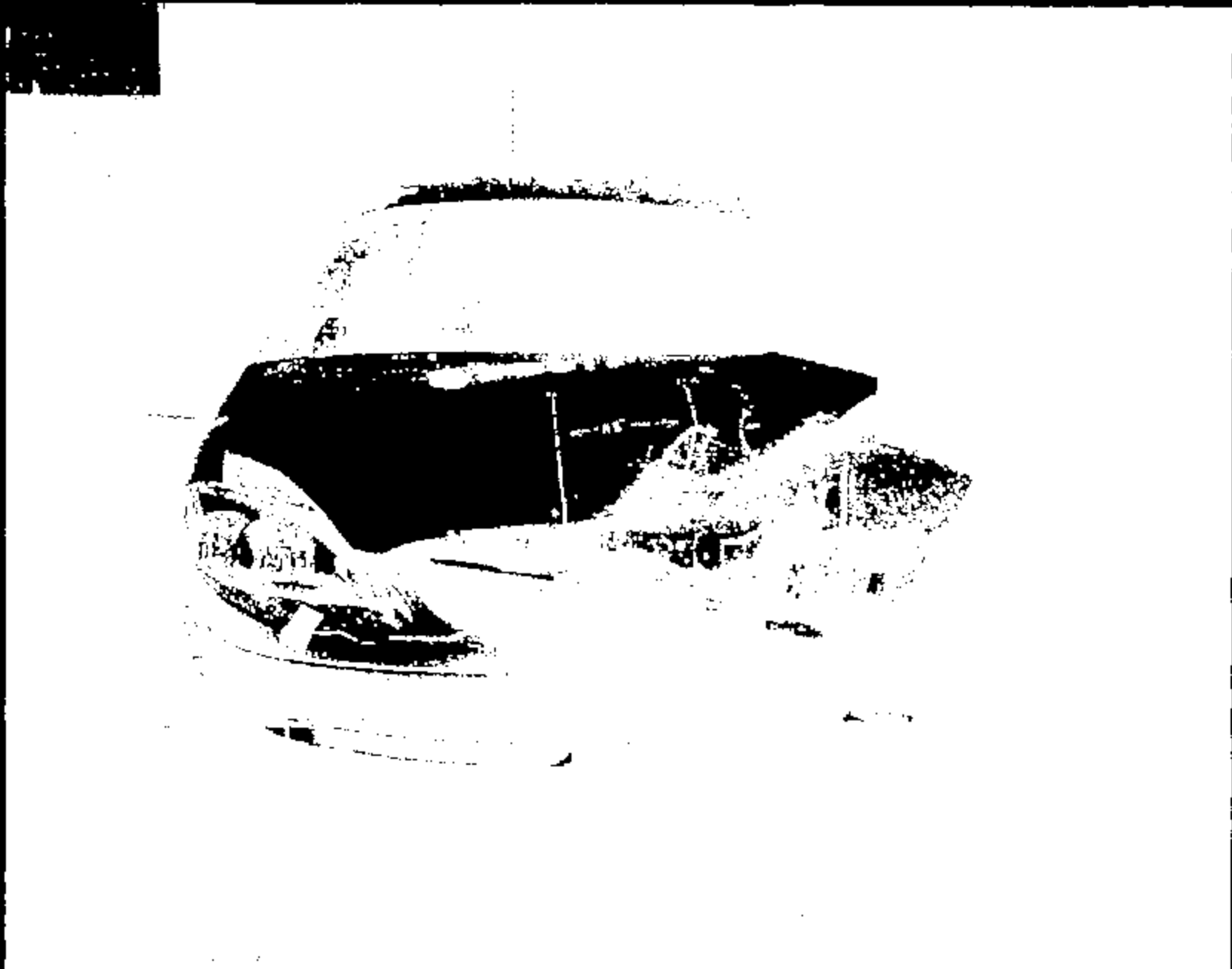
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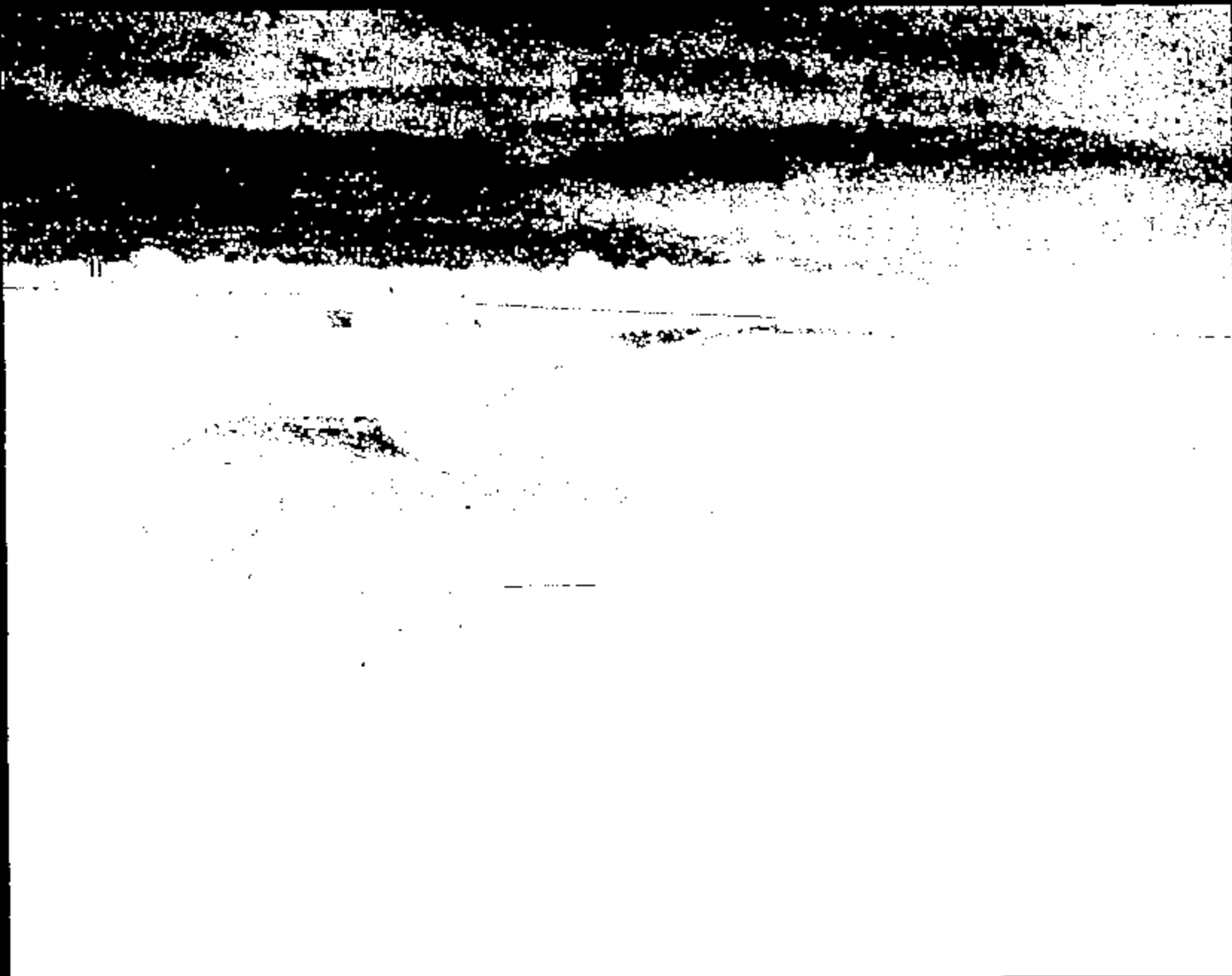


Page 1

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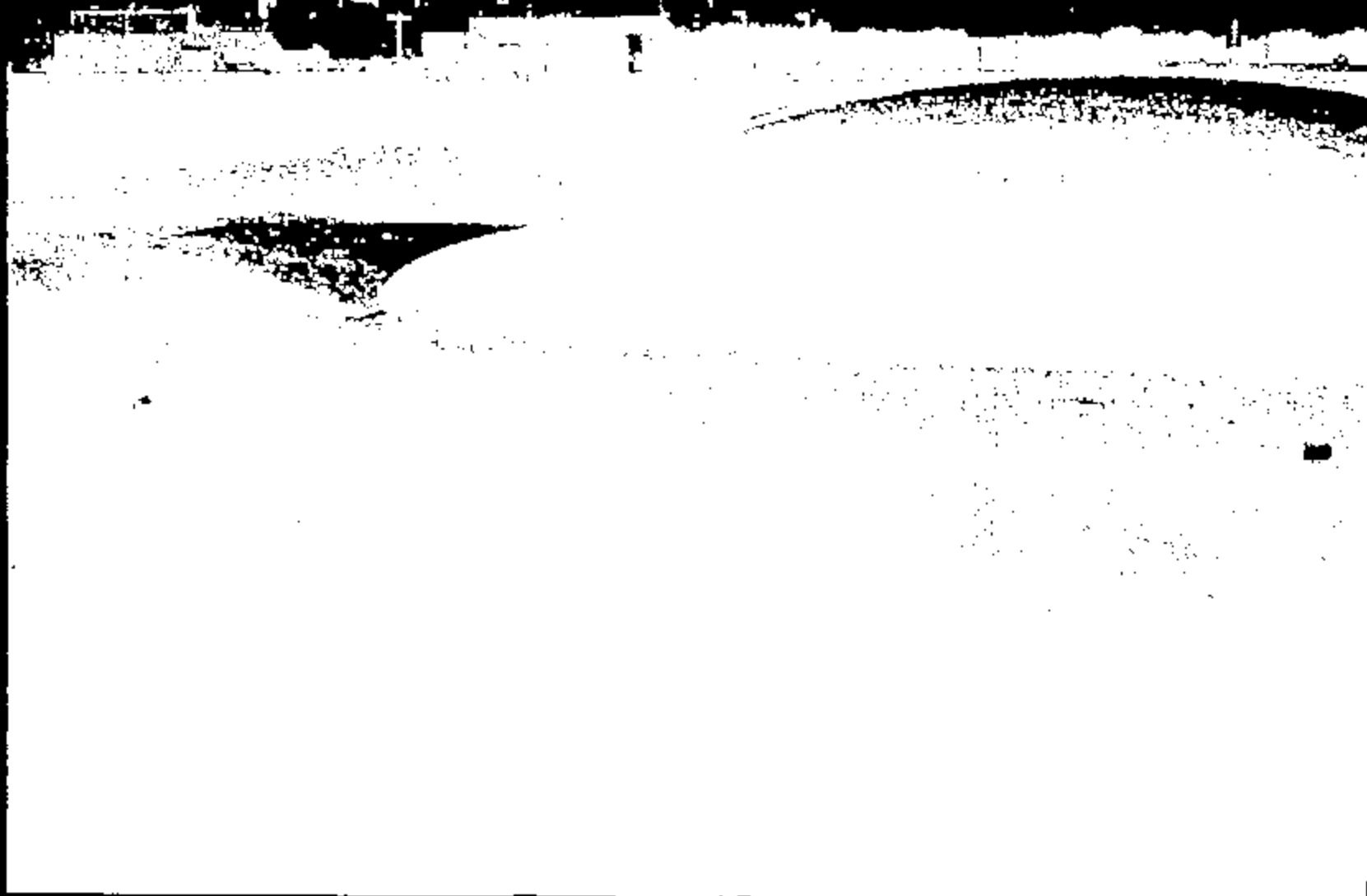




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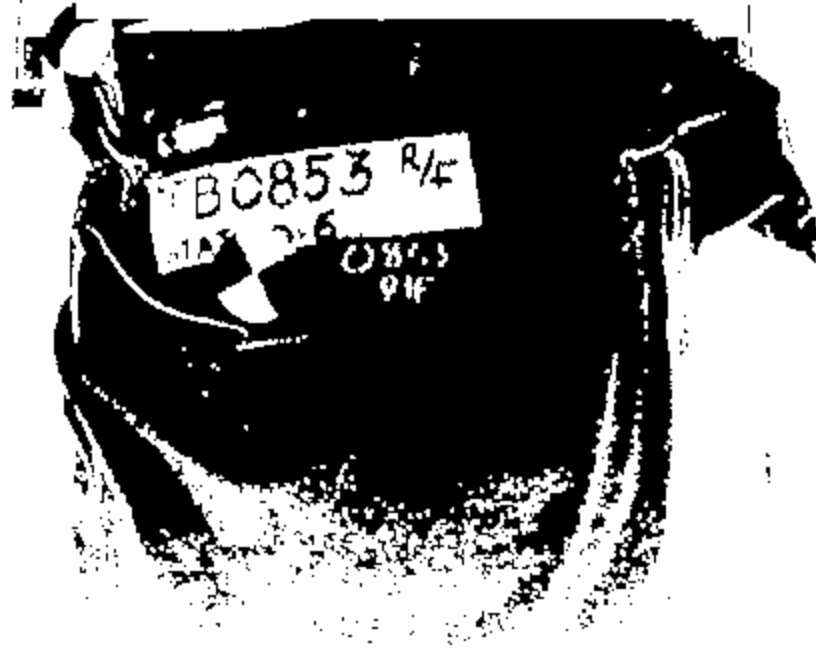
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Image 1

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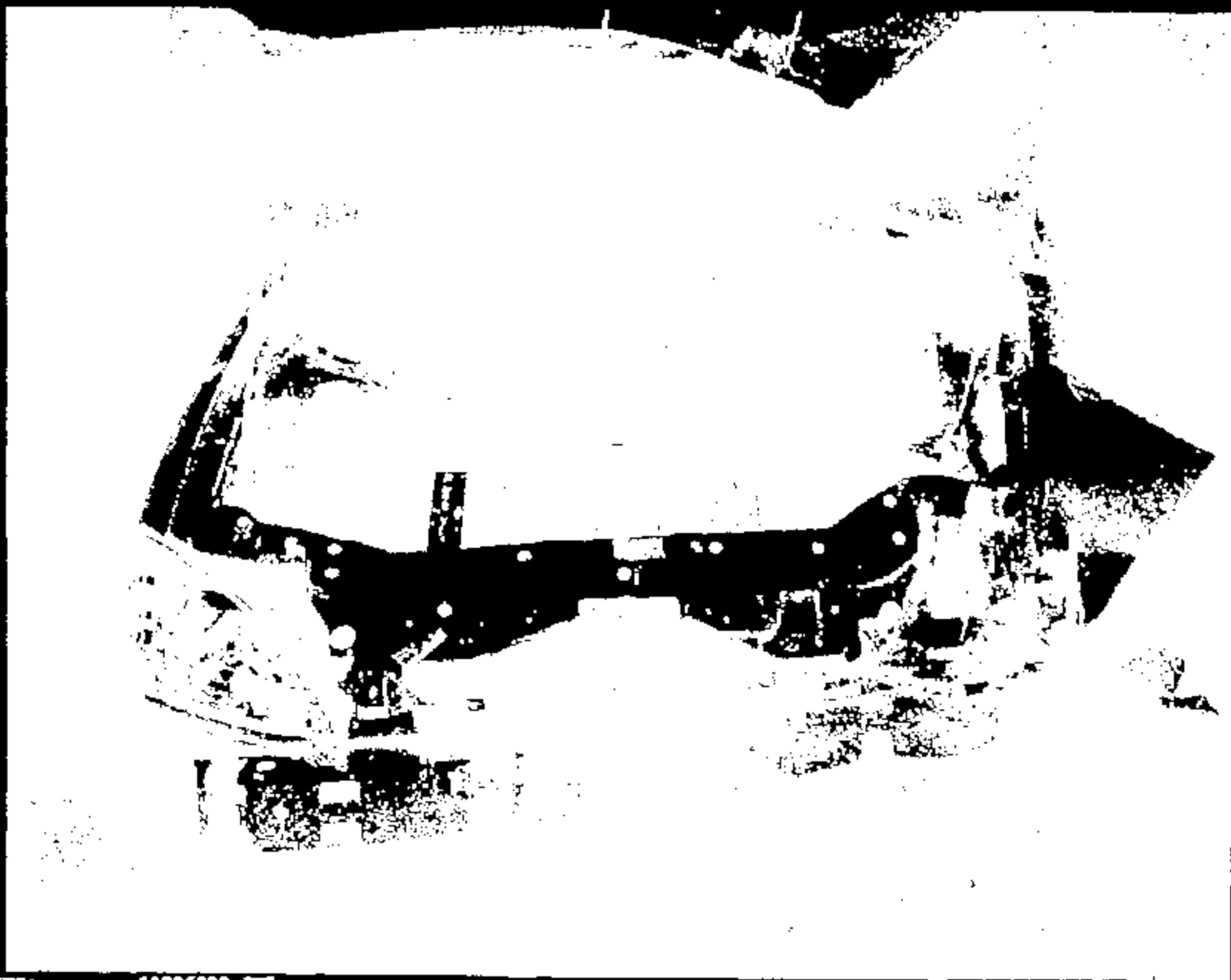
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Images:

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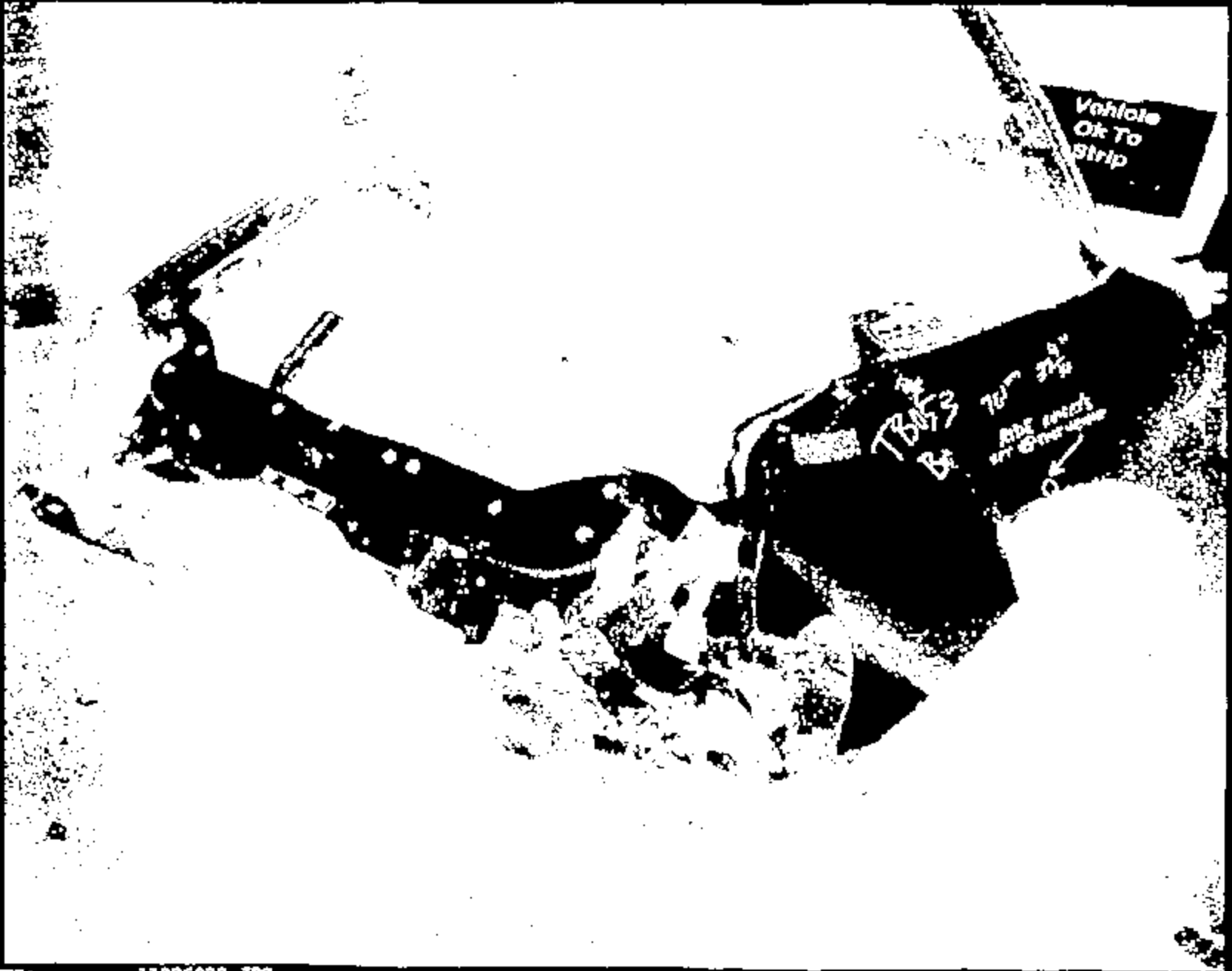


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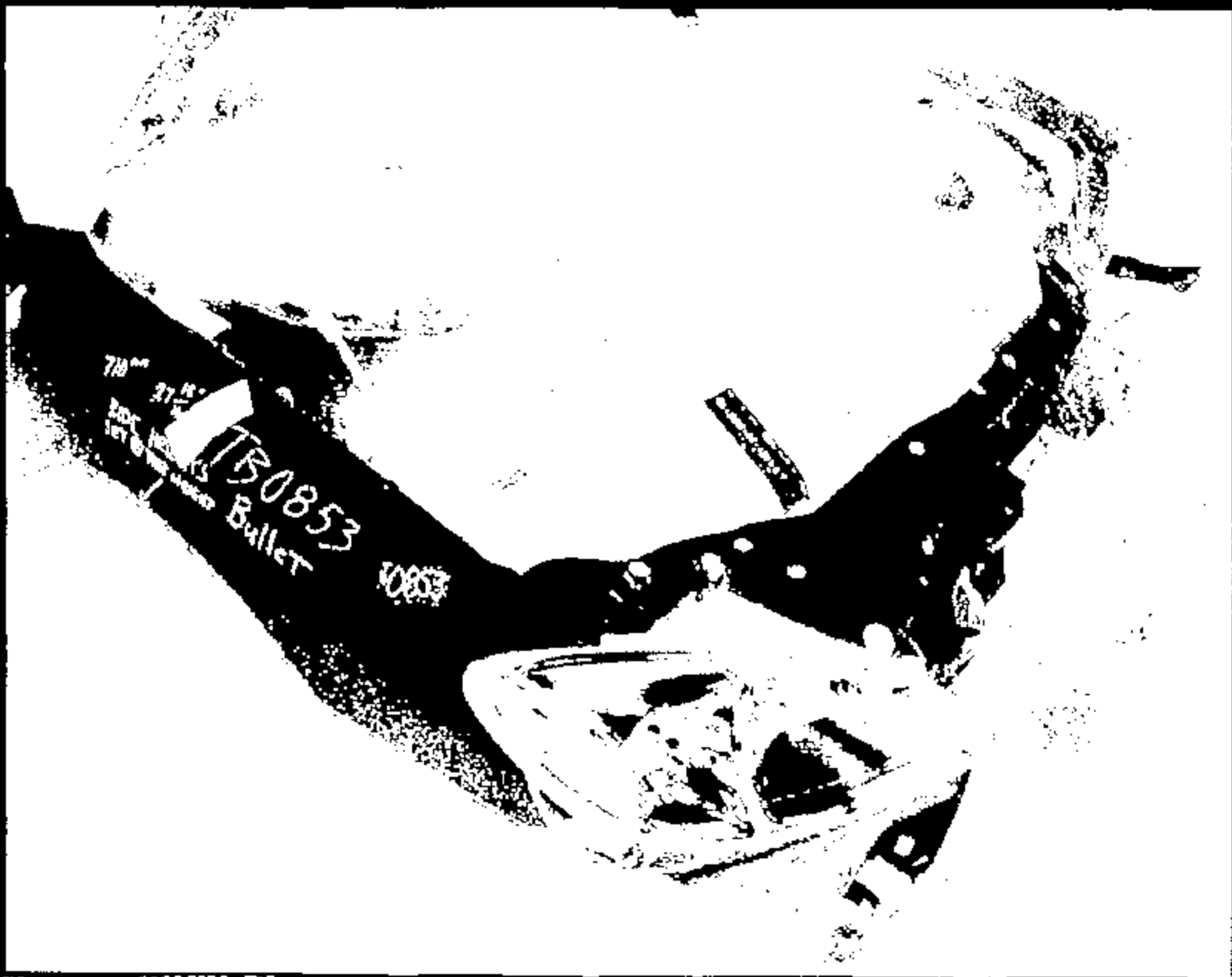
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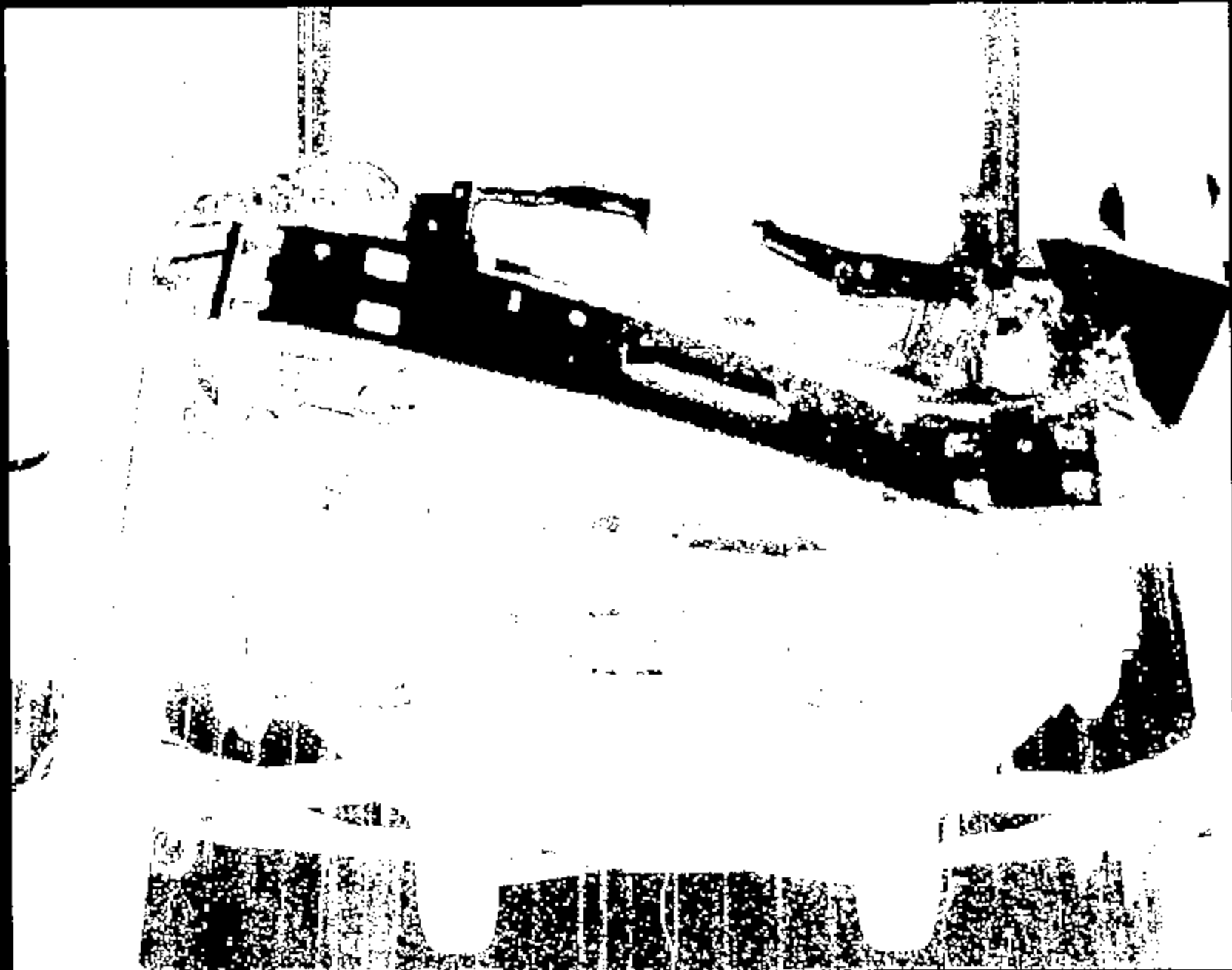
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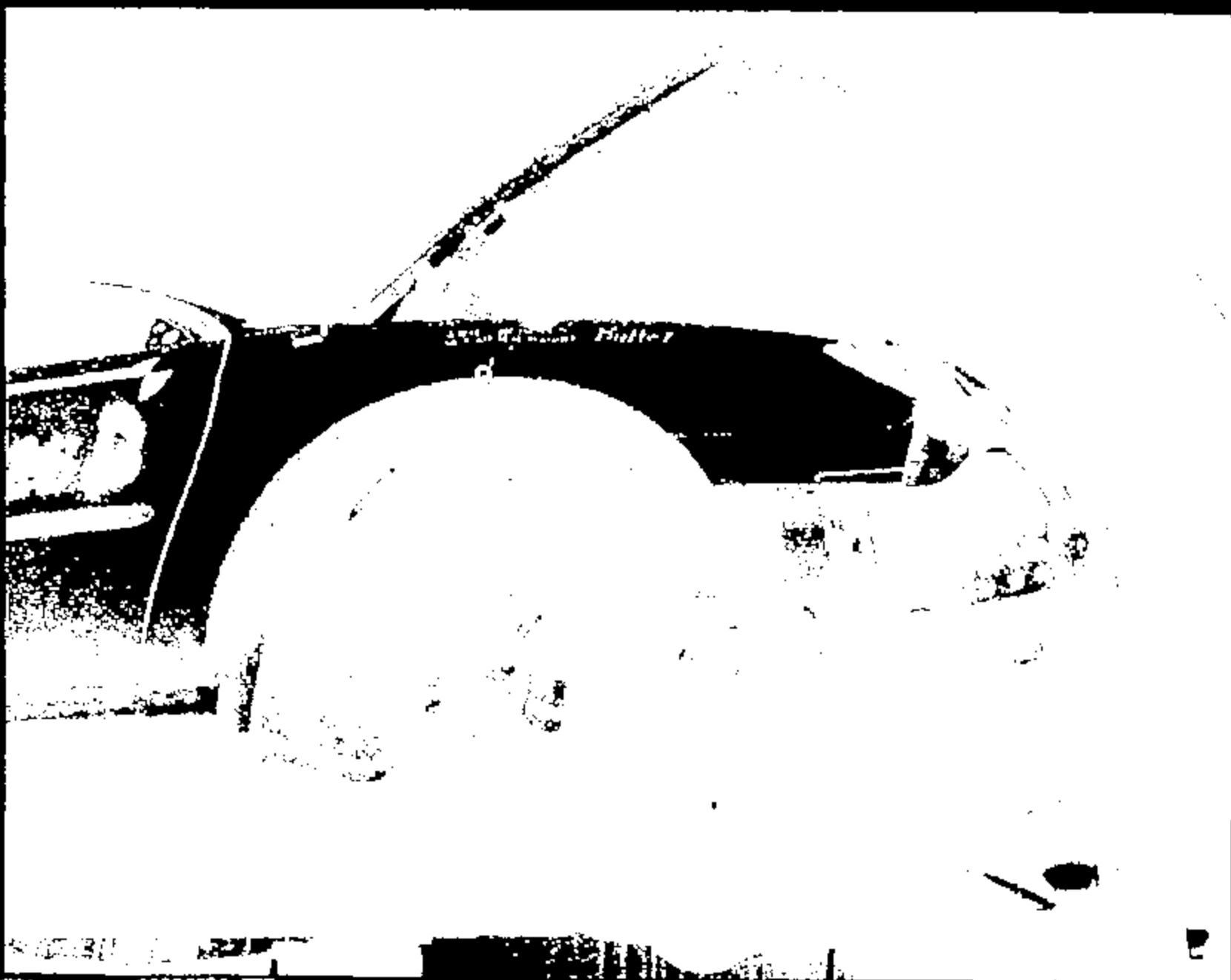


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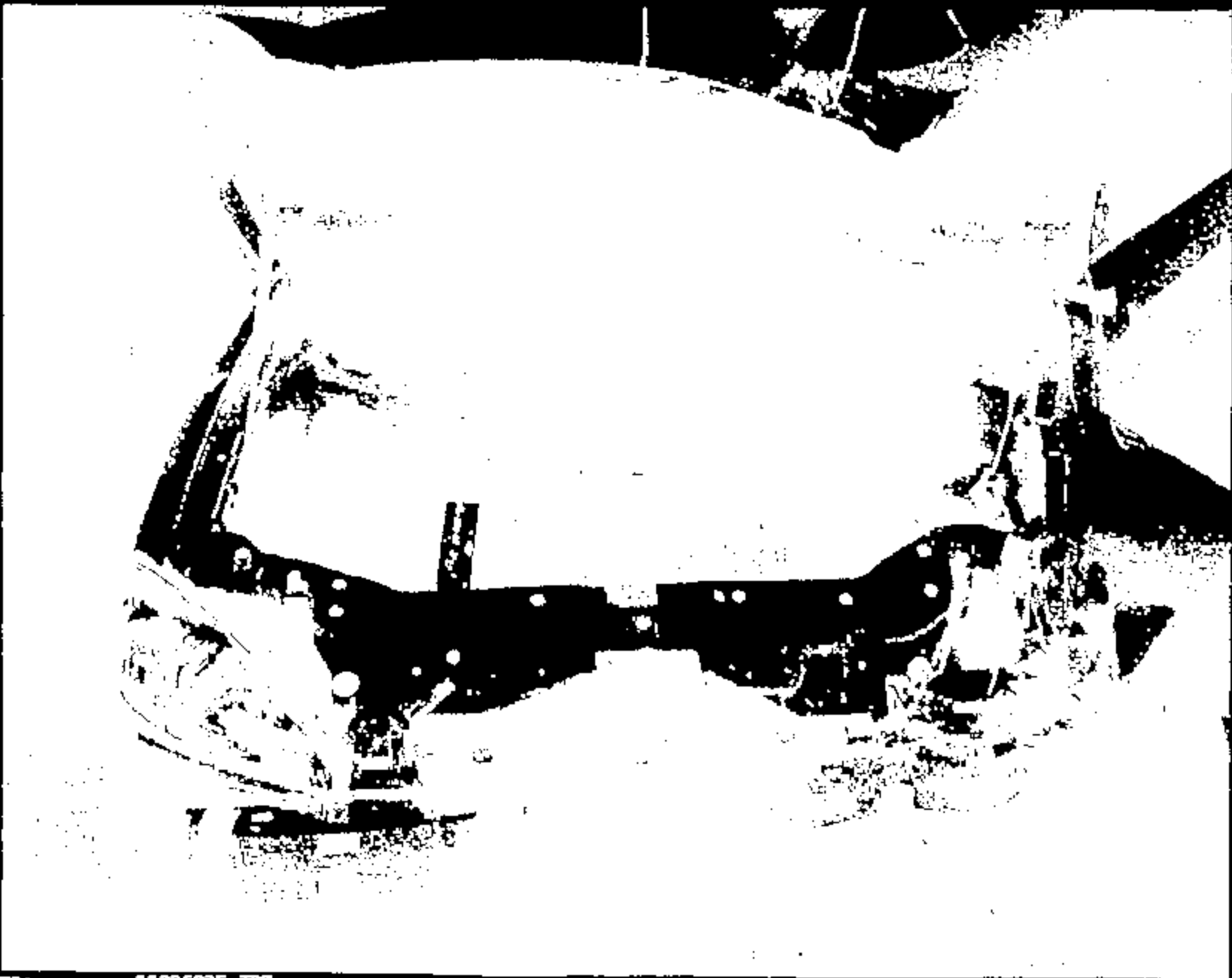


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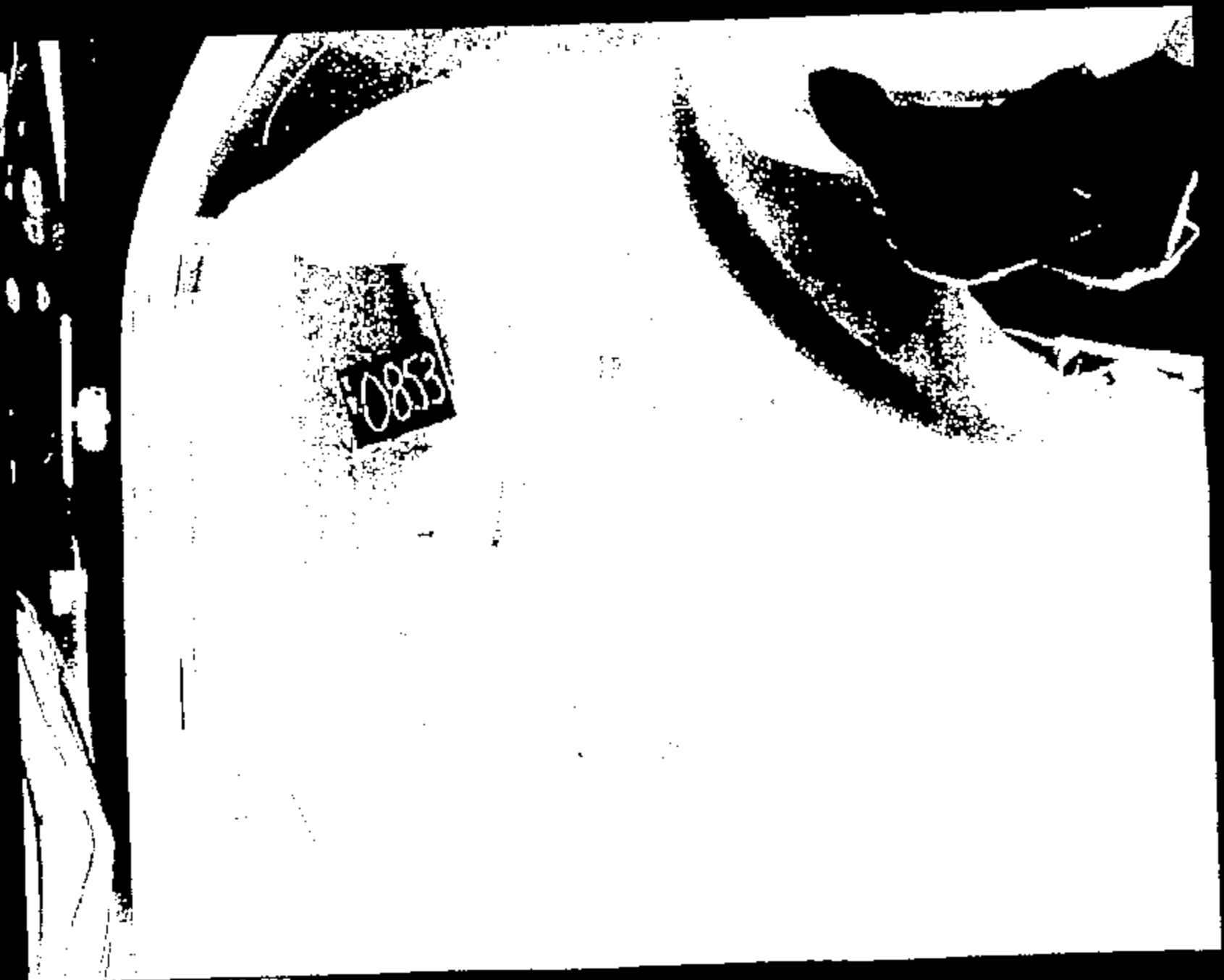
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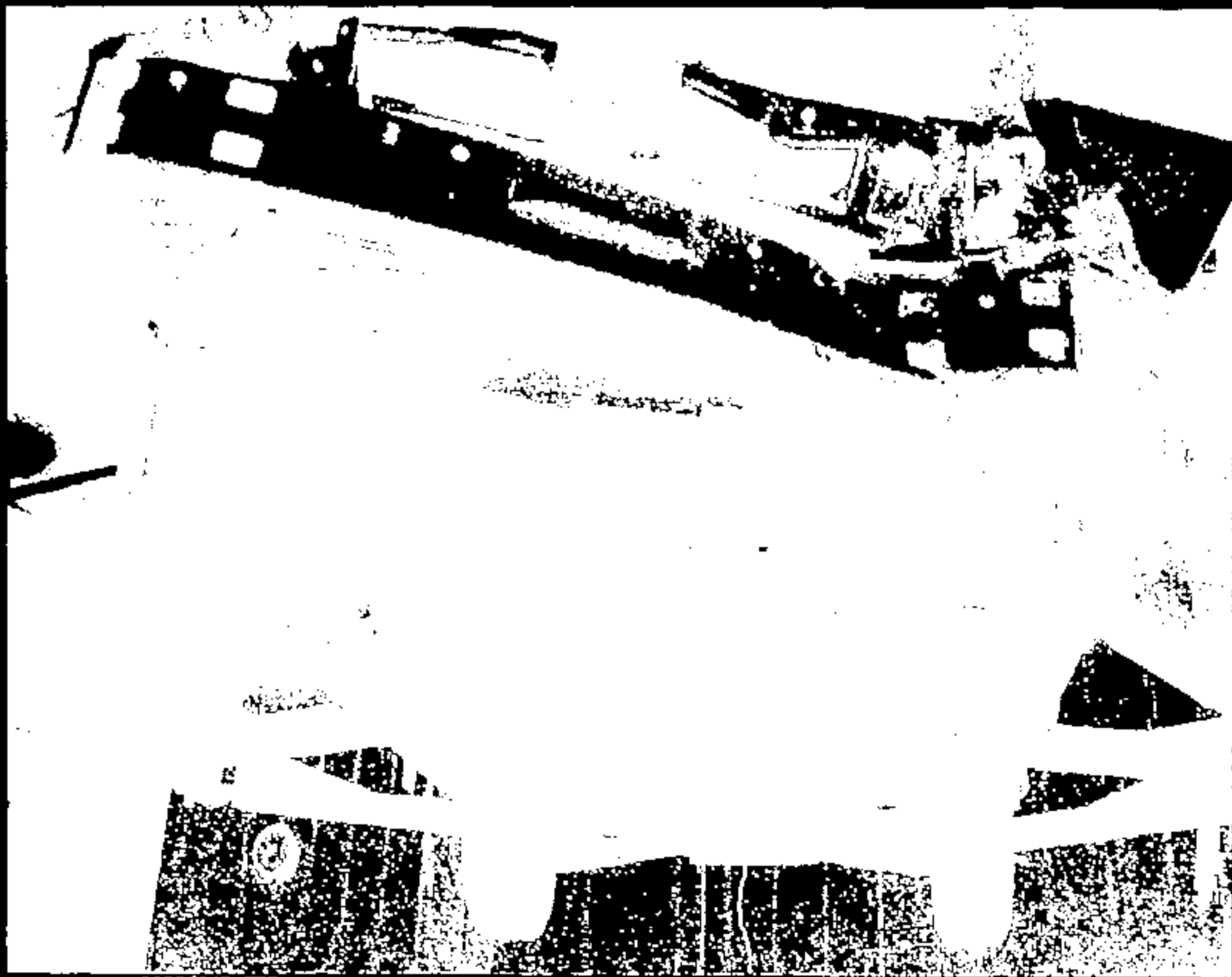
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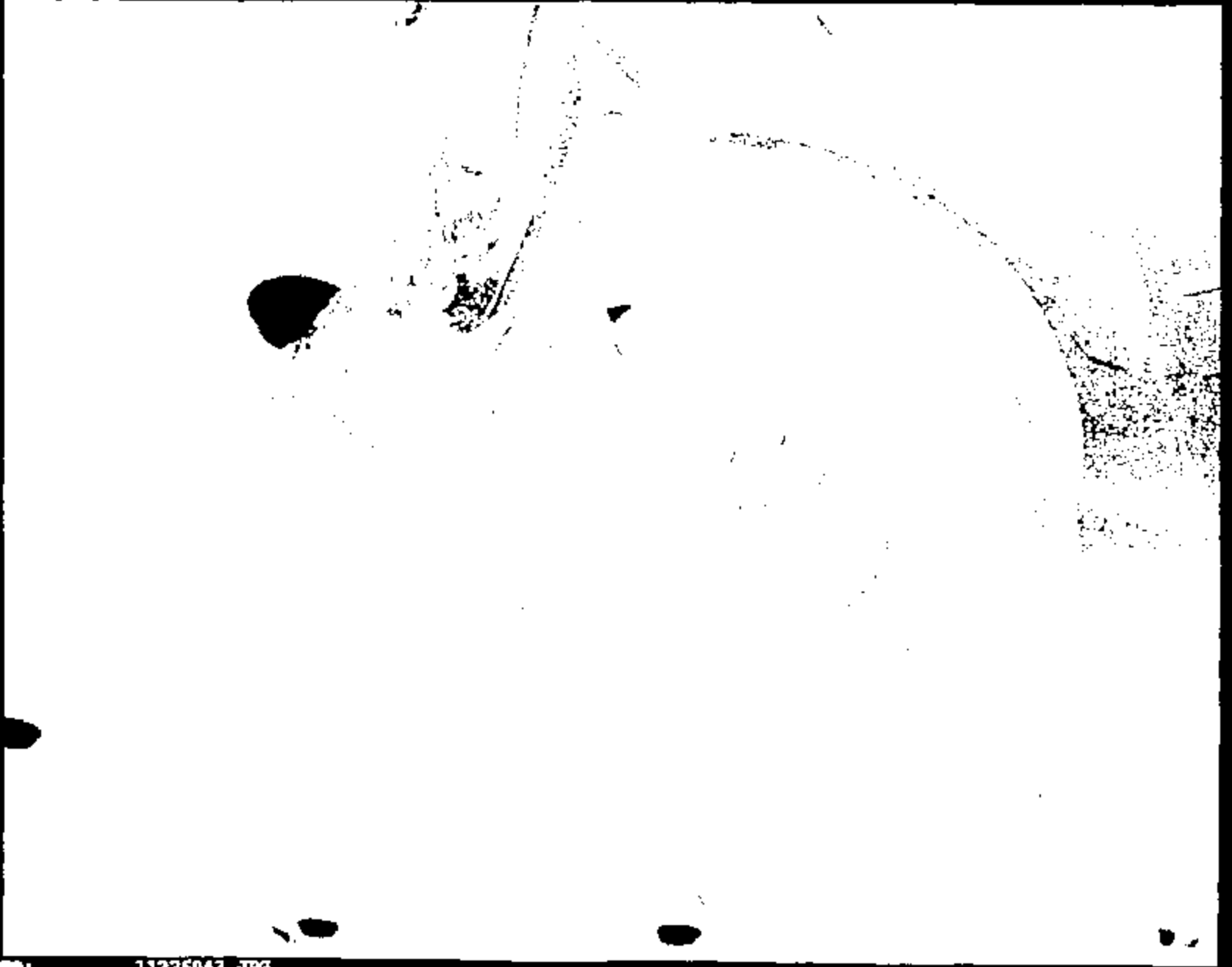
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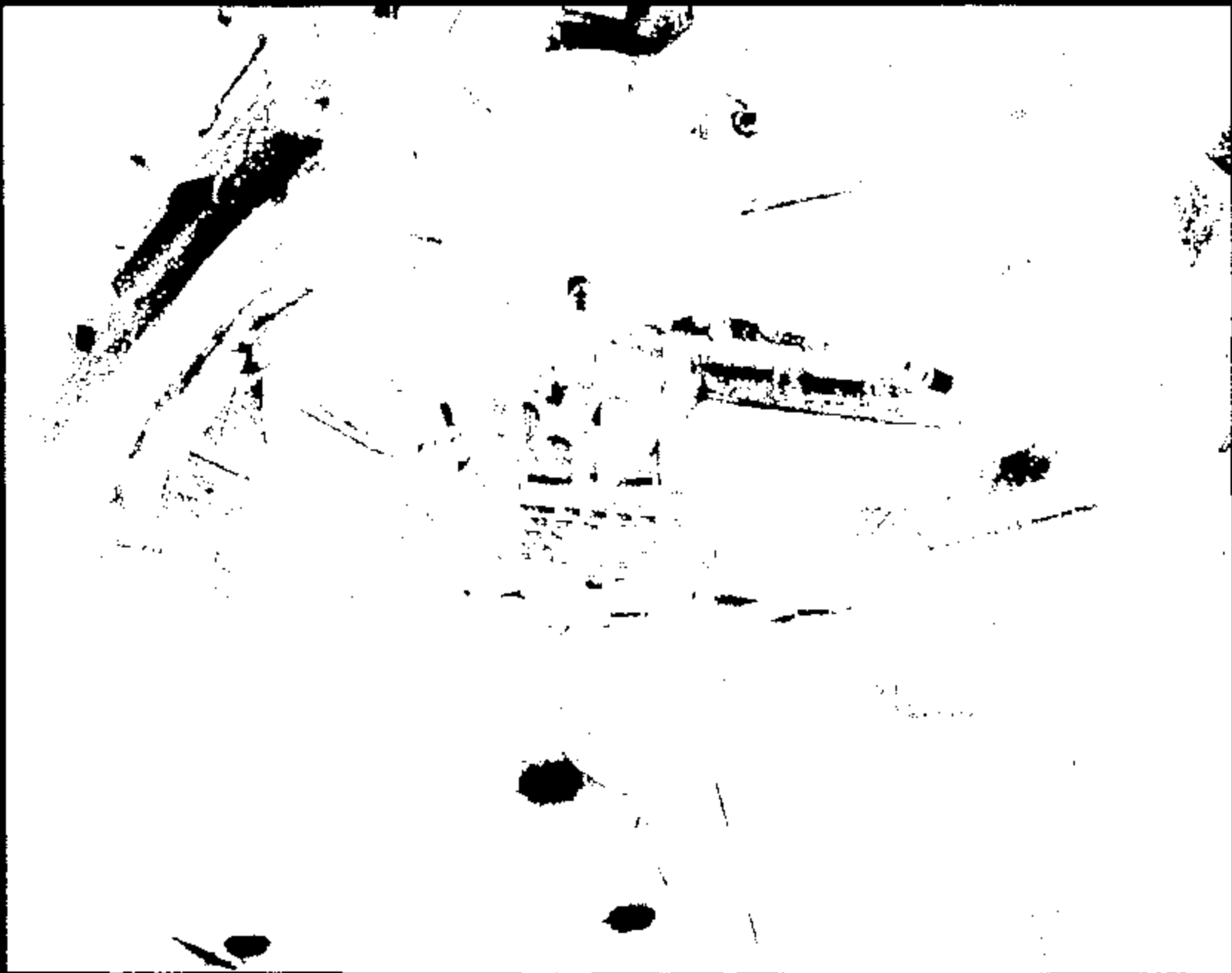
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 <b>GTO Test Request</b>		Requester/Coordinator (PROPS ID):		
		KEWNG		
Testing Act/By: Crash Barrier Test Lab		Date Submitted: 15-SEP-88	Requested Completion Date: 01-OCT-88	
Requestor Reference Number:				
Test Procedure Number: CRS-00	Test Title and / or Subject of Test: 2000 D188 OC/OCtest/SLT/Deploy/Stage I			
Billable Requestors Dept No.: T651      AV2215A	Worksheet/Work Order Number: F09	Test conducted to certify control item compliance with Government Regulations:		
Billable Requestors PROPS LD.: KEWNG	Billable Requestors Name: KURT EWING	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>		
<p>Complete the following two questions as indicated</p> <p>1 - Rational for not replacing this test by CAE Analysis:</p> <p><input type="checkbox"/> No CAE Methodology or process available</p> <p><input type="checkbox"/> For CAE Correlation</p> <p><input type="checkbox"/> Insufficient evidence in CAE</p> <p><input type="checkbox"/> To obtain basic data for CAE</p> <p><input type="checkbox"/> Replacement or Improvement of existing Test</p> <p><input type="checkbox"/> Testing is Quicker</p> <p><input type="checkbox"/> Mandatory or Regulatory</p> <p><input type="checkbox"/> Certification</p> <p><input type="checkbox"/> Development test for FSB</p> <p><input checked="" type="checkbox"/> Not applicable</p> <p>Other:</p> <p>(Check appropriate boxes)</p>				<p>2 - What is the expected Test Outcome:</p> <p><input checked="" type="checkbox"/> Results will meet DV/PWCR requirements</p> <p><input type="checkbox"/> System Component will not meet Test specification</p> <p><input type="checkbox"/> Unknown</p> <p><input type="checkbox"/> Above is Based on CAE?</p> <p>Other:</p> <p>(Check appropriate boxes)</p>
<p>Test Purpose/Test Procedure or Description of Test:</p> <p>Custom Test Procedure T657-221</p>				
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p><b>"RECORD COPY"</b></p> <p>Schedule No. <u>7-7-12</u></p> <p>Retain Until <u>2018</u></p> </div>				
Signature Approvals (As Required for Control Purposes)				
Requesting Engineer <u>KURT EWING</u>		Testing Engineer _____		
Requesting Supervisor/Manager <u>ALAN TAUB</u>		Testing Supervisor _____		

BARRIER TEST REQUEST

TB0863

TEST OBJECTIVE: VERIFICATION, AIR BAG SENSOR, OCCUPANT PROTECTION  
 IMPACT SPEED (MPH) = 40  
 TEST PROCEDURE: CAR-TO-CAR FRONTAL OFFSET NO-DEPLOY  
 ALIGN VEHICLES FRONT TO FRONT AS PER SECTION 1.2.13 OF DRAFT  
 PROCEDURE, "NON-REGULATORY CRASH TESTS PROCEDURE."

TEST VEHICLE

TAG: 679A864  
 VIN: 1FALP628XYB100667  
 MODEL: D100  
 MODEL YEAR: 2000

TASK NO.: P06  
 BILLABLE DEPT.: T551  
 PDL: CDD-0030

SECONDARY VEHICLE

TAG: 086T209  
 VIN: 1M8LM50L2TG631120  
 MODEL: DW101  
 MODEL YEAR: 1999

FUEL: TYPE= NONE FILL LEVEL (GAL.) = 0

TEST VEHICLE

TIRES PRESSURE (PSI): FRONT = 30 REAR = 30 SPARE = NA  
 CURB WEIGHT (LBF.): FRONT = 2131 REAR = 1103 TOTAL = 3234  
 TEST WEIGHT (LBF.): FRONT = 2289 REAR = 1805 TOTAL = 3854  
 +/- = 25

RIDE HEIGHTS (IN.): FRONT = LEVEL RKR +/- TO GROUND REAR = LEVEL RKR +/- TO GROUND

WEIGH UP INSTRUCTIONS:

MAY REMOVE: DECKLED  
 DO NOT PLACE WEIGHT: UNDERHOOD LOCATIONS OTHER THAN IN ENGINE (SEE BELOW).  
 MAX ADD TO ENGINE: 75 LBF.  
 LOAD TO TEST WEIGHT & LEVEL ROCKERS WRT GROUND.  
 SPRING INSERTS ACCEPTABLE.

BARRIER TEST REQUEST

TR0853

**SECONDARY VEHICLE:**

TIRE PRESSURE (PSI):	FRONT = 30	REAR = 30	SPARE = NA
CURB WEIGHT (LBF.):	FRONT = 2181	REAR = 1169	TOTAL = 3350
TEST WEIGHT (LBF.):	FRONT = 2289	REAR = 1886	TOTAL = 4175
			+- = 25

RISE HEIGHTS (IN.):	FRONT = LEVEL RGR	REAR = LEVEL RGR
	+- = TO GROUND	+- = TO GROUND

**WEIGH UP INSTRUCTIONS:**

MAY REMOVE: DECKLID  
 DO NOT PLACE WEIGHT: UNDERHOOD LOCATIONS OTHER THAN IN ENGINE (SEE BELOW).  
 MAX ADD TO ENGINE: 75 LBF.  
 LOAD TO TEST WEIGHT & LEVEL ROCKERS WRT GROUND.  
 SPRING INSERTS ACCEPTABLE.

**TEST VEHICLE:**

OCCUPANT TYPE:	LEFT FRONT = 80TH% HYBRID 3	RIGHT FRONT = 80TH% HYBRID 3
----------------	-----------------------------	------------------------------

DUMMY POSITIONING:	ST-25	DRIVER FOOT-REST:	Y
--------------------	-------	-------------------	---

SEAT POSITIONING:	LONG	VERT	BACK ANGLE (DEG.)	PKG CHK
LEFT FRONT =	MID	PULL DWN	27.2 (FRAME)	Y
RIGHT FRONT =	MID	PULL DWN	27.2 (FRAME)	Y

RESTRAINTS USAGE:	BELT	PYRO BELT	FRT BAG	SIDE BAG
LEFT FRONT =	X		X	
RIGHT FRONT =	X		X	

NOTE: PRETENSIONERS ARE @ BUCKLE IF SO EQUIPPED

**SECONDARY VEHICLE:**

OCCUPANT TYPE:	LEFT FRONT = WATER BOTTLE	RIGHT FRONT = WATER BOTTLE
----------------	---------------------------	----------------------------

DUMMY POSITIONING:	NA	DRIVER FOOT-REST:	NA
--------------------	----	-------------------	----

SEAT POSITIONING:	LONG	VERT	BACK ANGLE (DEG.)	PKG CHK
LEFT FRONT =	MID	PULL DWN	27.2 (FRAME)	N
RIGHT FRONT =	MID	PULL DWN	27.2 (FRAME)	N

RESTRAINTS USAGE:	BELT	PYRO BELT	FRT BAG	SIDE BAG
LEFT FRONT =	X			
RIGHT FRONT =	X			

**BARRIER TEST REQUEST**

TB0853

**SENSOR SYSTEM:** LIVE SYSTEM DEPLOY

**DIMENSIONAL ANALYSIS:** SCRIBE 25% OFFSET LINES ON TEST & SECONDARY VEHICLES AS PER SECTION 1.2.13 OF 8/2388 VERSION OF DRAFT PROCEDURE, "NON-REGULATORY CRASH TESTS PROCEDURE."

**STILL PHOTO:** STANDARD PRE & POST TEST

**HIGH SPEED FILM:**

OFFBOARD		ONBOARD		NOTES
1	RIGHT OVERALL			
2	LEFT OVERALL			
3	RIGHT A-PILLAR FORWARD			
4	LEFT A-PILLAR FORWARD			
5	OVERHEAD A-PILLAR FORWARD			
6	FTT A-PILLAR FORWARD			
TOTAL OFFBOARD = 6		TOTAL ONBOARD = 0		

**FILM ANALYSIS:** LEFT ROCKER DISP. & VELOCITY @ B-PILLAR WRT GROUND  
 RIGHT ROCKER DISP. & VELOCITY @ B-PILLAR WRT GROUND

**DIGITIZED FILM:**

NA			
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**SPECIAL BUILD INSTRUCTIONS:**

- 1 UPDATE SENSOR SYSTEM (SEE SENSOR MAP FOR PART DESCRIPTIONS & SERIAL NUMBERS)

**CONTACTS:**

	NAME	PHONE	PAGER
REQUESTOR:	K. EWING	24-88188	KEWI
B.L.D. COORD:	B. PAGANO	32-30848	BPAG
SUPERVISOR:	K. ARTHURS	88-08188	KART

DATE	DESCRIPTION	PAGES AFFECTED	AUTHORIZATION
8/30/88	SECONDARY VEHICLE INFO. ADDED	1	KLE
8/30/88	HYBRID 3 DUMMIES & POSITIONING ADDED	2	KLE

NOTE: REVISIONS FROM PREVIOUS ISSUE ARE SHOWN IN ITALICS.

File: Tb0853, Tab: REQUEST  
 Created: 8/18/88  
 Revised: 8/30/88  
 Printed: 8/30/88, 8:34 AM

DUMMY MEASUREMENT REPORT  
CRASH BARRIER

RUN NUMBER 11226  
ST ORDER NUMBER TB0853

DUMMY POSITION LEFT  
DUMMY ABBREV 50H3

FRONT

ABSOLUTE MEASUREMENTS (INCH)	MEASUREMENT
-----	-----
LEG (HYB II) / KNEE (HYB III) TO INST PANEL LEFT	3.80
LEG (HYB II) / KNEE (HYB III) TO INST PANEL RIGHT	3.90
ROCKER TARGETS TO GROUND FRONT	7.60
ROCKER TARGETS TO GROUND REAR	8.10
NOSE TO STEERING WHEEL	15.20
NOSE TO INSTRUMENT PANEL	
INSTRUMENT PANEL TO TORSO	
STEERING WHEEL TO TORSO	7.00
STEERING WHEEL TOP LEGS	2.80
KNEE SPREAD OS-OS (HYB II) / CL-CL (HYB III)	9.40
SEAT BACK ANGLE	27.50
PELVIC ANGLE	22.90
HEAD ANGLE	0.10
ROCKER ANGLE	0.30
NECK BRACKET ANGLE	0.00
BUMPER TARGET TO GROUND	

RELATIVE MEASUREMENTS (INCH)	WRT FRT RKR TGT
-----	-----
HEAD LAT	14.30
HEAD VERT	35.80
HEAD LONG	13.00

SHOULDER LAT  
SHOULDER VERT  
SHOULDER LONG

H-POINT LAT	11.30
H-POINT VERT	11.40
H-POINT LONG	8.30

O/S KNEE BOLT LAT	11.30
O/S KNEE BOLT VERT	17.30
O/S KNEE BOLT LONG	-6.70



DUMMY MEASUREMENT REPORT  
CRASH BARRIER

RUN NUMBER 11226  
TEST ORDER NUMBER TB0853

DUMMY POSITION RIGHT  
DUMMY ABBREV 50H3

FRONT

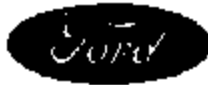
ABSOLUTE MEASUREMENTS (INCH)	MEASUREMENT
LEG (HYB II) / KNEE (HYB III) TO INST PANEL LEFT	3.80
LEG (HYB II) / KNEE (HYB III) TO INST PANEL RIGHT	3.80
ROCKER TARGETS TO GROUND FRONT	7.90
ROCKER TARGETS TO GROUND REAR	8.40
NOSE TO STEERING WHEEL	
NOSE TO INSTRUMENT PANEL	21.20
INSTRUMENT PANEL TO TORSO	17.30
STEERING WHEEL TO TORSO	
STEERING WHEEL TOP LEGS	
KNEE SPREAD OS-OS (HYB II) / CL-CL (HYB III)	7.80
SEAT BACK ANGLE	27.60
PELVIC ANGLE	23.50
HEAD ANGLE	0.40
ROCKER ANGLE	0.90
NECK BRACKET ANGLE	0.00
BUMPER TARGET TO GROUND	

RELATIVE MEASUREMENTS (INCH)	WRT FRT RRR TGT
HEAD LAT	15.80
HEAD VERT	37.90
HEAD LONG	13.50

SHOULDER LAT  
SHOULDER VERT  
SHOULDER LONG

H-POINT LAT	10.50
H-POINT VERT	12.70
H-POINT LONG	8.40

O/S KNEE BOLT LAT	12.40
O/S KNEE BOLT VERT	15.80
O/S KNEE BOLT LONG	-6.90



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 Year Until 2019  
 CONFIDENTIAL

**FINAL TEST REPORT**

**Global Test Operations  
 Advanced Vehicle Technology**

**TO:** D. Perrigo

**Test Order No.** T-B1784  
**Work Task W. O. No.** F09  
**Test Date** 1/13/99  
**Date Reported** 10/25/99  
**Sheet** 1 of 42

**SUBJECT:** Crash Test 11317 (90° Front Fixed Barrier Impact at 34.8 ± 0.4 mph, 56.0 ± 0.6 km/h) - 2000 Taurus (D186) 4-Door Wagon - 2000 Certification Program

**REQUESTED BY:** Vehicle Crash Safety Department, Advanced Vehicle Technology - D. Perrigo

**OBJECT:** To provide fuel system integrity data relative to the barrier crash test requirements of the current FMVSS No. 301 (U.S. CFR Docket No. 96-44, Notice 01, Canadian Gazette SOR/97-421)

**SUMMARY OF TEST RESULTS:**

- See Attachment 1 for fuel spillage data.
- See Attachment 2 for vehicle observations and non-FMVSS data.

The Test Authorization for this crash indicated that the vehicle is representative of a design level suitable for a certification test. To the best of my knowledge, the crash testing was performed on the same vehicle as identified in the Test Authorization; the results reported herein represent the performance of this specific vehicle, and the testing was performed in accordance with the listed procedures. Any procedure deviations significant to the test objectives above are identified in this report.

*M. L. Foster*  
 M. Foster  
 Test Development Engineer

*S. Lash*  
 Concur: S. Lash  
 Section Supervisor  
 Operations Engineering Section

**VEHICLE DATA:**

**Make and Model** 2000 Taurus (D186) 4-Door Wagon

**ID Number** 1FALP57S2YS100S92, 579-W-418, DC090015

**Power Train** 3.0L, HPI, Automatic Transaxle

**Fuel Tank(s)** Usable Capacity: 18.0 gal. (68.1L)  
Test Condition: The "run dry" tank was filled with red-dyed Stoddard solvent to 92% of its rated usable capacity.

**Front Seat(s)** Type: Bucket  
Cover: Cloth  
Tracks/Position: LF: 6-Way Power/Mechanical Mid and Down  
RF: Manual/Mechanical Mid  
Seat Backs/Position: Adjustable/ Not Measured  
Head Restraints/Position: Adjustable/Down

**Restraint System** LF: 3-Point Continuous Loop Active Belt and Steering Wheel Air Bag  
RF: 3-Point Continuous Loop Active Belt

**Occupants** LF & RF: 50th Percentile Male, Hybrid II, Uninstrumented

**Test Weight** Front: 2358 lb (1070 kg)  
Rear: 1875 lb (851 kg)  
Total: 4233 lb (1920 kg)  
The test weight includes:  

- the "as received" unloaded vehicle curb weight
- 100% production options (simulated)
- 2 occupant(s) (described above)
- 200 lb (90.7 kg) luggage (simulated)

**Tires** Front: P215/60R16 30 psi (207 kPa)  
Rear: P215/60R16 30 psi (207 kPa)  
Spare: Removed

**Bumpers** Front: Steel Bearn with Foam Isolator  
Rear: Removed

**Significant Content or Accessories:** Air Conditioning, Power Steering, Power Brakes, Tilt Steering Wheel

**GENERAL TEST COMMENTS:****1. Test Procedures**

The test was performed according to the following Corporate test procedure(s):

- Fixed Barrier Collision, T657-ST-14 dated March 3, 1998.
- RFI Fuel Systems Standard Solvent Fill, ST-11 REF. 4.
- Fuel System Static Rollover, T657-ST-34 dated May 29, 1998.

**2. Significant Deviations from T657-ST-14**

None

3. **Instrumentation:** The instrumentation equipment set up for this test was completed following approved procedures which require engineering sign-off after each major step. The instrumentation equipment and systems used meet the SAE J211 June 80 series of recommended practices (Instrumentation for Impact Tests J211, J211a, or J211b) and were calibrated using secondary standards that are traceable to the National Institute of Standards and Technology (NIST).

**4. Remarks**

Crash movies, pre- and post- crash still images of the test vehicle and copies of this report are available through the Operations Engineering Section, Safety Laboratories Department, GTO. The crash still images are stored and archived on CD ROMs. The file names of the still images are listed under crash number and a three digit sequence number which are 11317001 through 11317064.

Note: Post-test rollover photographs were not taken.

**ATTACHMENT 1**

**Fuel System Integrity (C/EMVSS 301)**

**There was no fuel system spillage during or for thirty minutes following impact or during the post-crash static rollover test.**

**ATTACHMENT 2**

**1.0 Vehicle Crush, Film Analysis and/or Instrumentation Data**

Time histories of the air bag/sensor(s) are included in this report.

Time histories of the vehicle accelerations and other instrumentation are included in this report.

Time histories of vehicle dynamic displacements obtained from Film Analysis are included in this report.

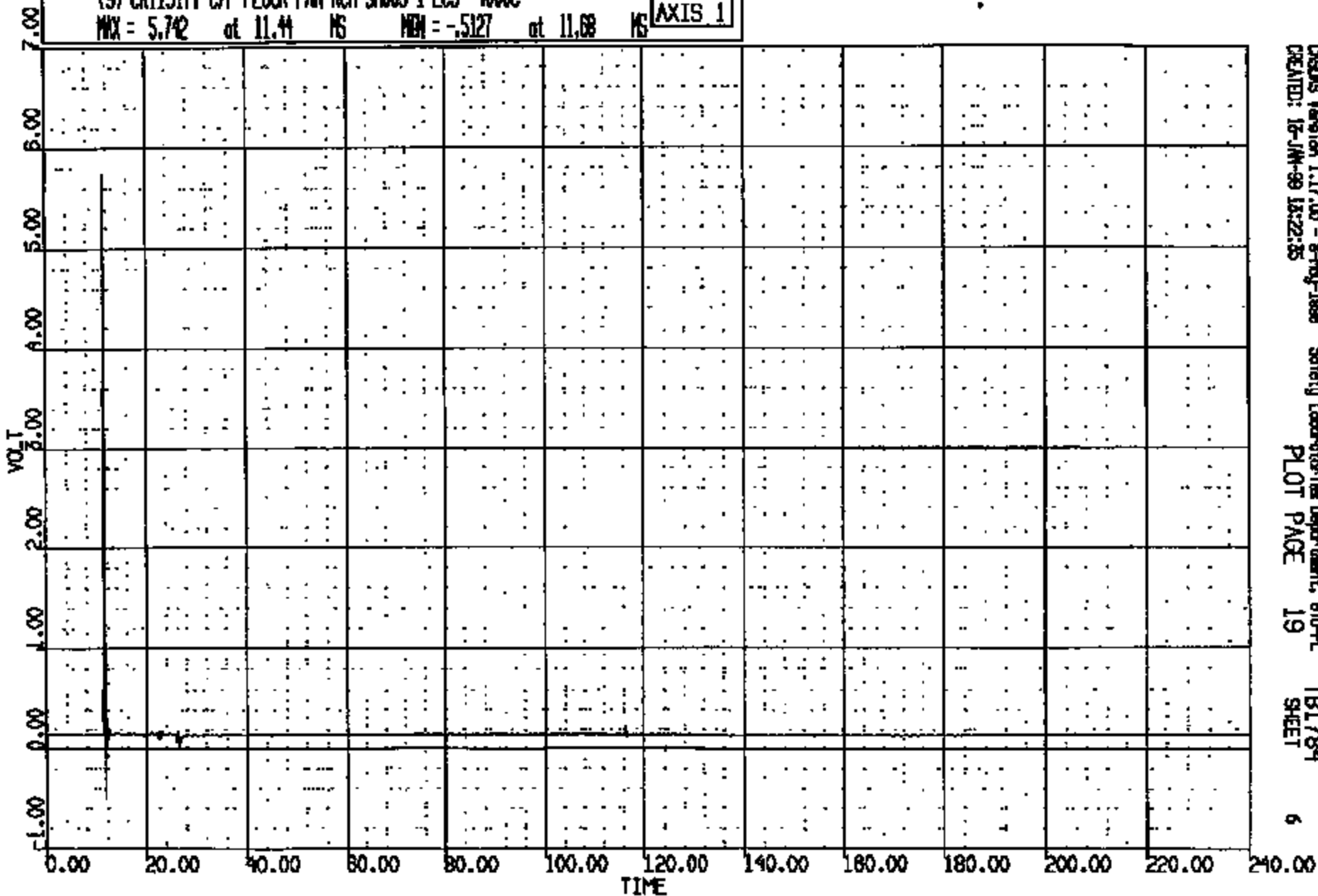
Time histories of any requested derived data (i.e. integrations, etc.) were given to the requesting activity and are not included in this report.

CR R: 11317 TO: TB1784 DATE: 990115 13:07:19  
2000 D-188

(9) CR11317T C/F FLOOR PAN RM S1009-1 ECS 4000C

MAX = 5.742 at 11.44 MS MIN = -.5127 at 11.68 MS

AXIS 1



CR11317

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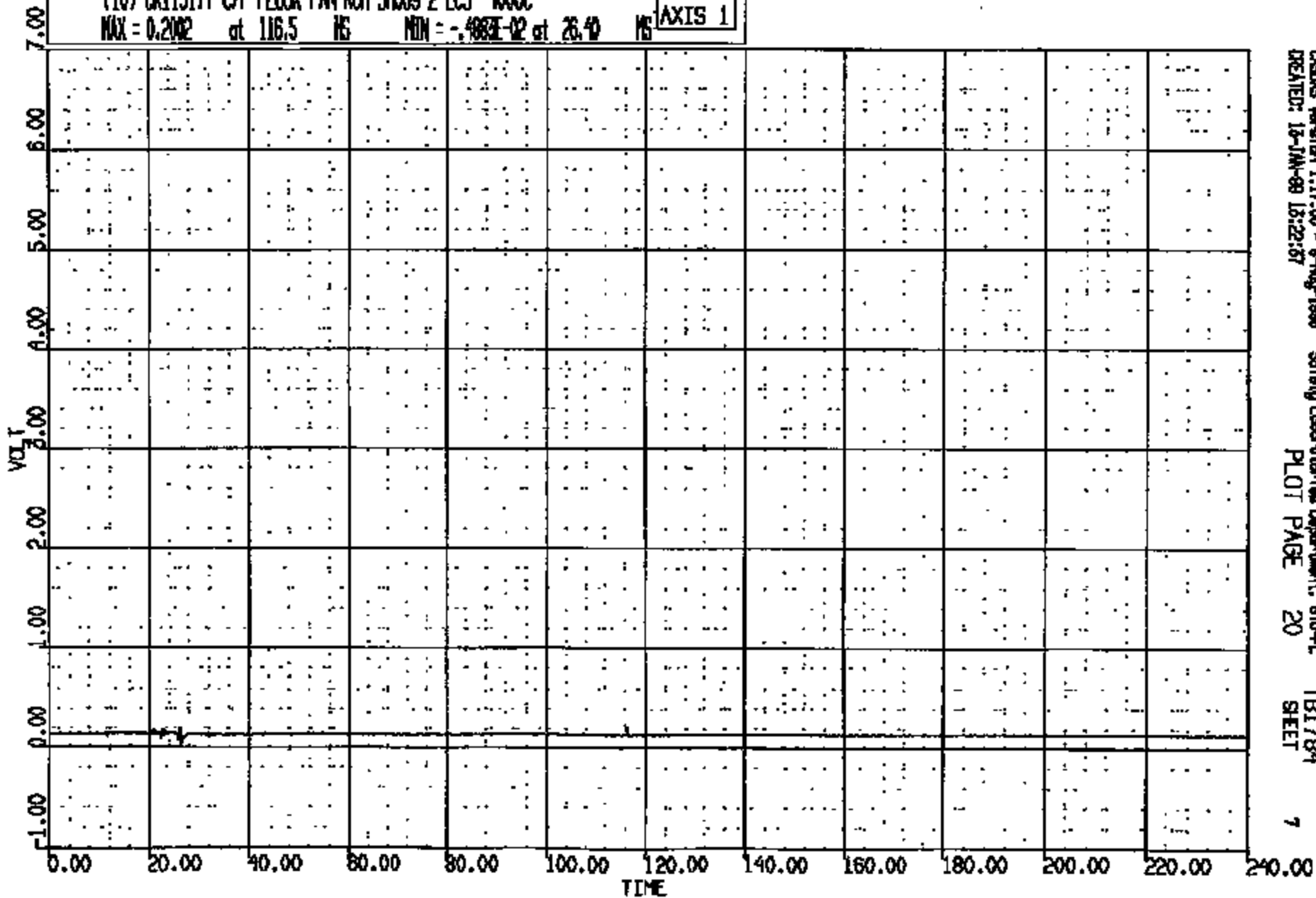
Safety Laboratories Department, 610-PL  
PLOT PAGE 19

TB1784  
SHEET

6

CR R: 11317 TO: TB1784 DATE: 980118 13:07:19  
2000 D-188

(10) CR11317I C/F FLOOR PAN RCH 5N009-2 ECS 4000C  
MAX = 0.2002 at 116.5 MS MIN = -.483E-02 at 26.40 MS AXIS 1



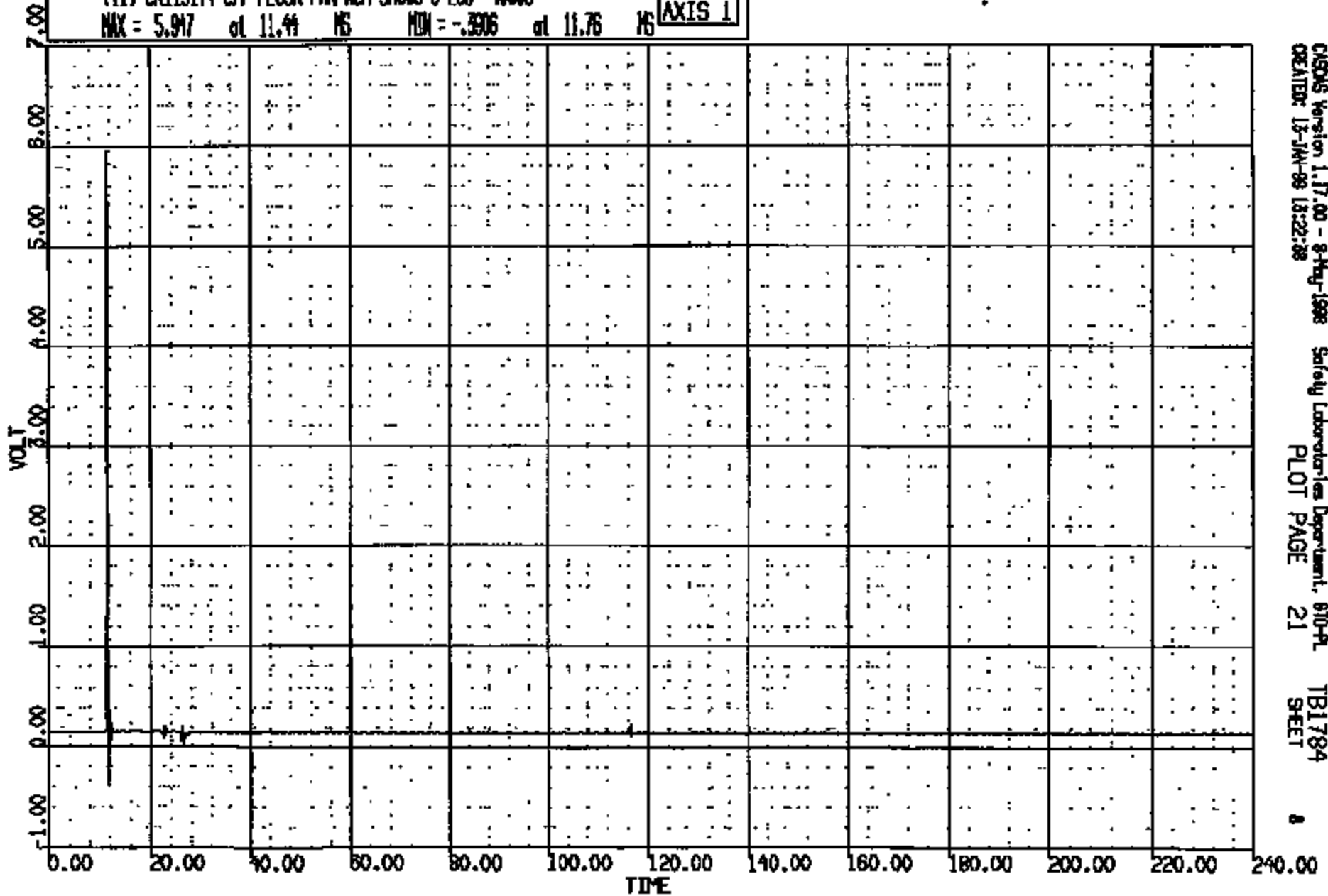
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CR11317



CR R: 11317 TO: TB1784 DATE: 990115 15:07:19  
2000 D-188

(11) CR11317T C/F FLOOR PAN ROM SMOOR-3 ECS 400C  
MAX = 5.917 at 11.44 MS MIN = -.3906 at 11.76 MS **AXIS 1**

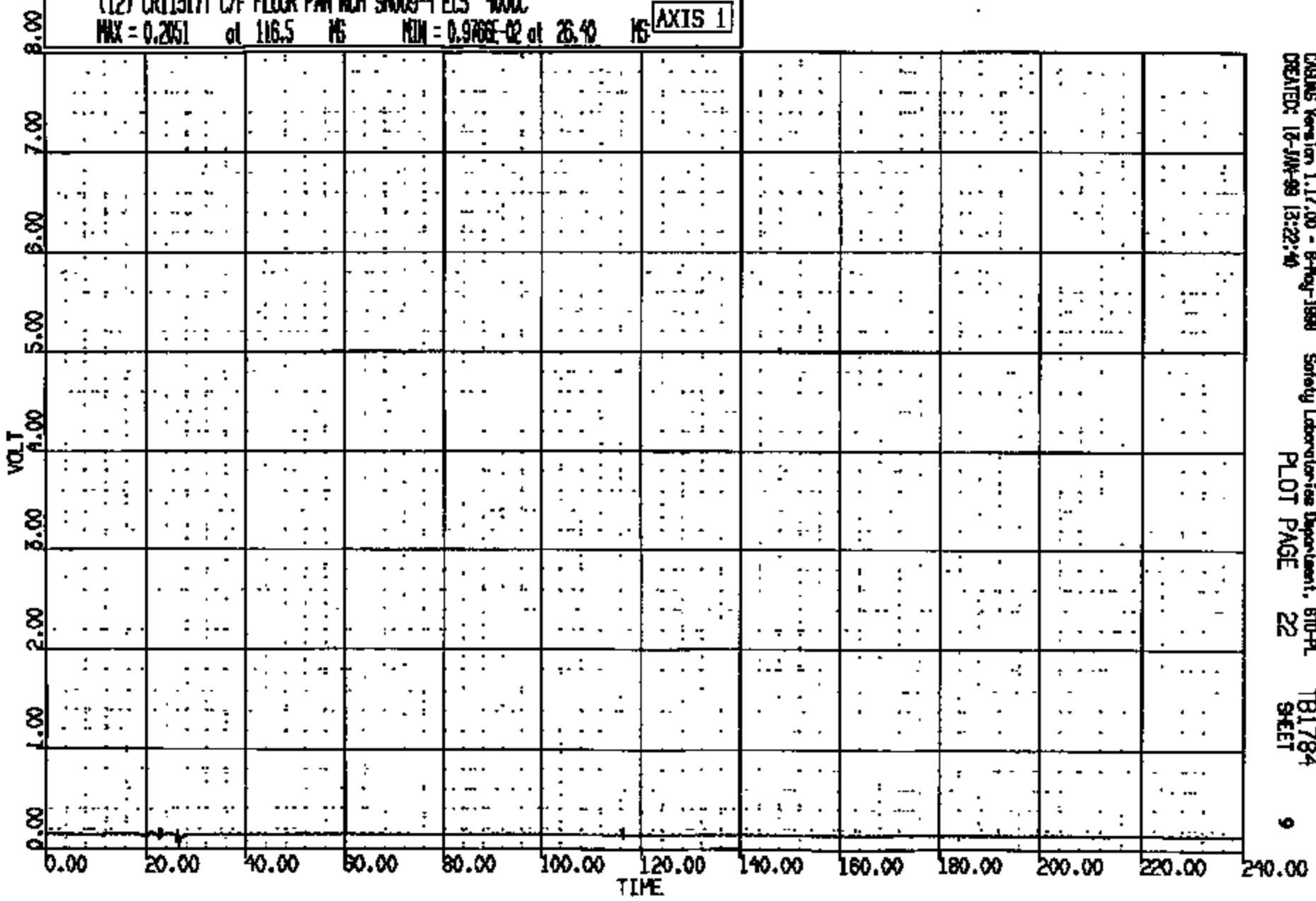


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SHEET 8

CRIS 0011317

CR R: 11317 TO: TB1784 DATE: 890113 13:07:19  
2000 D-188

(12) CR11317T C/F FLOOR PAN RICH SMOOD-4 ELS 400C  
MAX = 0.2051 at 116.5 MS MIN = 0.9766E-02 at 26.49 MS **AXIS 1**

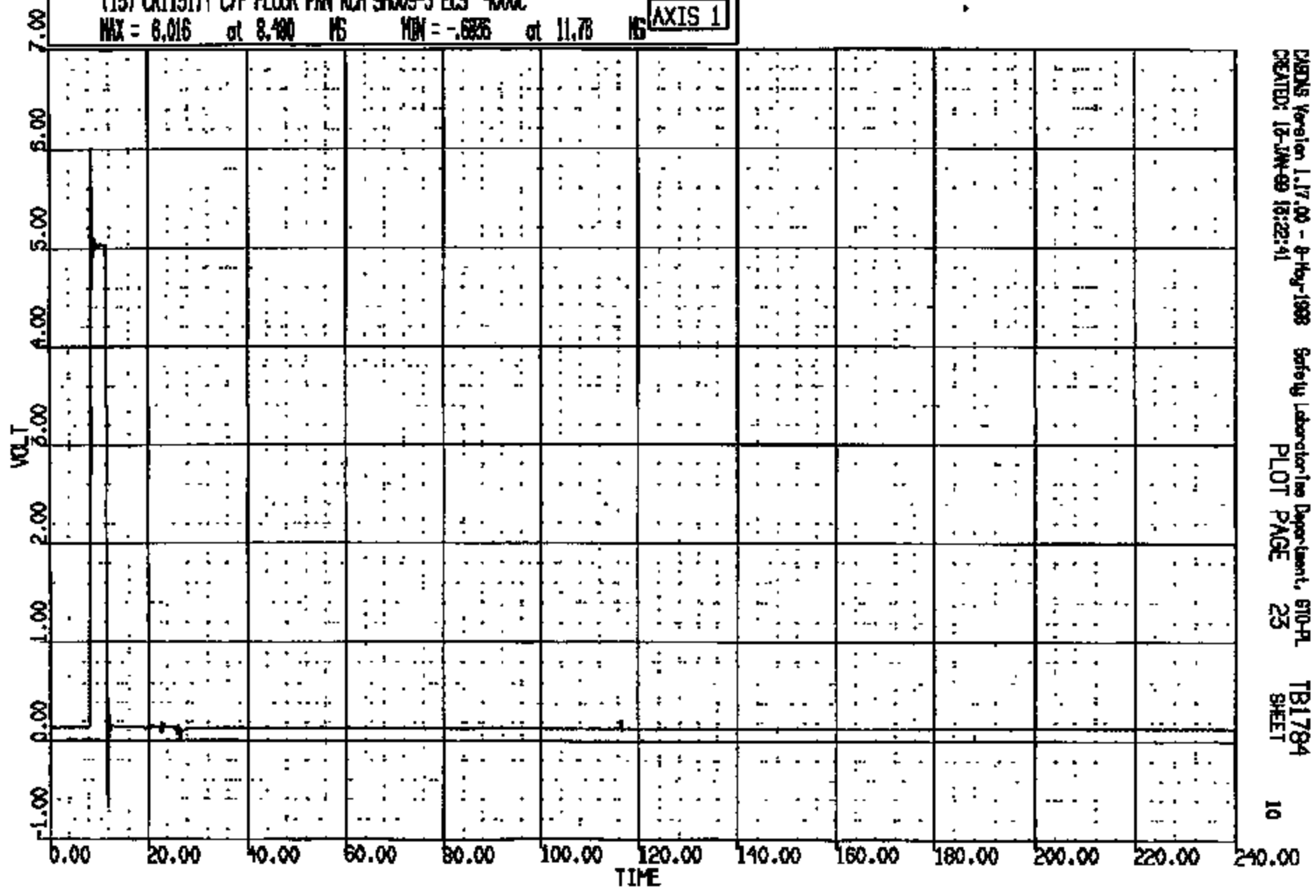


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CR11317

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2000 D-188

(13) CR11317T C/F FLOOR PAN RCH 5H009-5 ECS 4000C  
MAX = 8.016 at 8.490 MS MIN = -.6826 at 11.78 MS **AXIS 1**



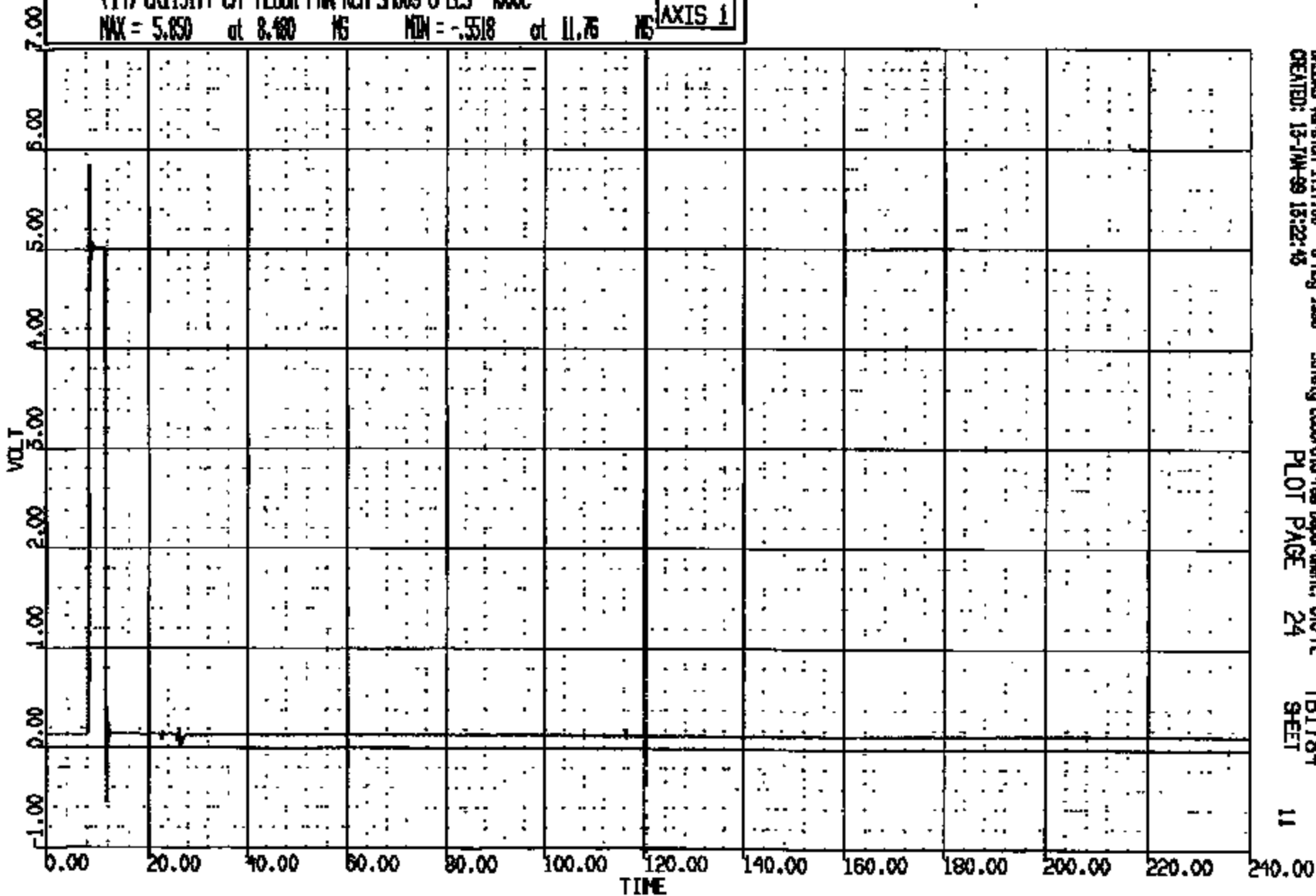
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CRIS 0011317

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2000 0-188

(14) CR11317 C/F FLOOR PAN RM SP009-6 ECS 4000C  
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AXIS 1



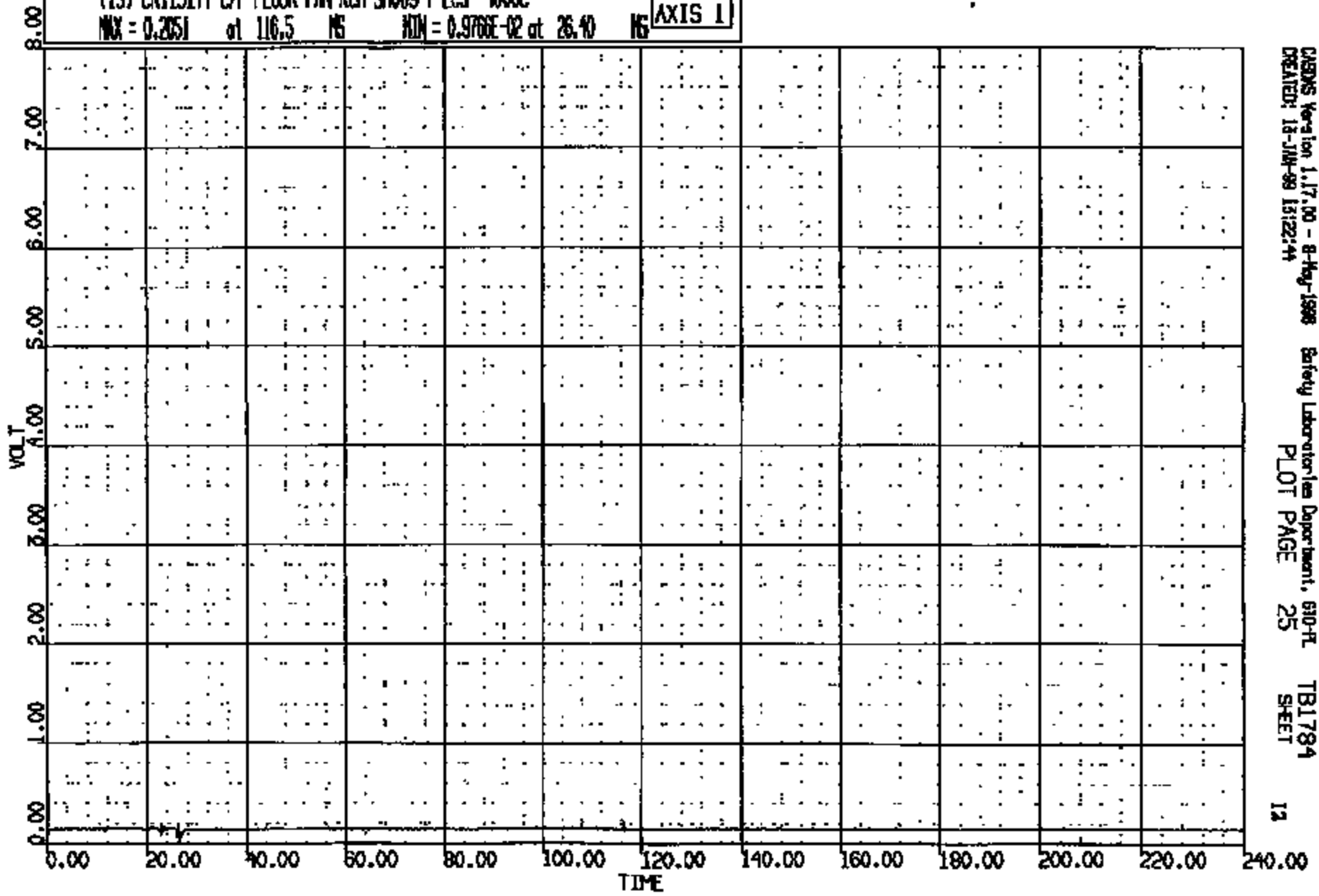
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2000 D-188

(15) CRT1317T C/F FLOOR PAN RM SMOG-7 ECS 4000C  
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AXIS 1

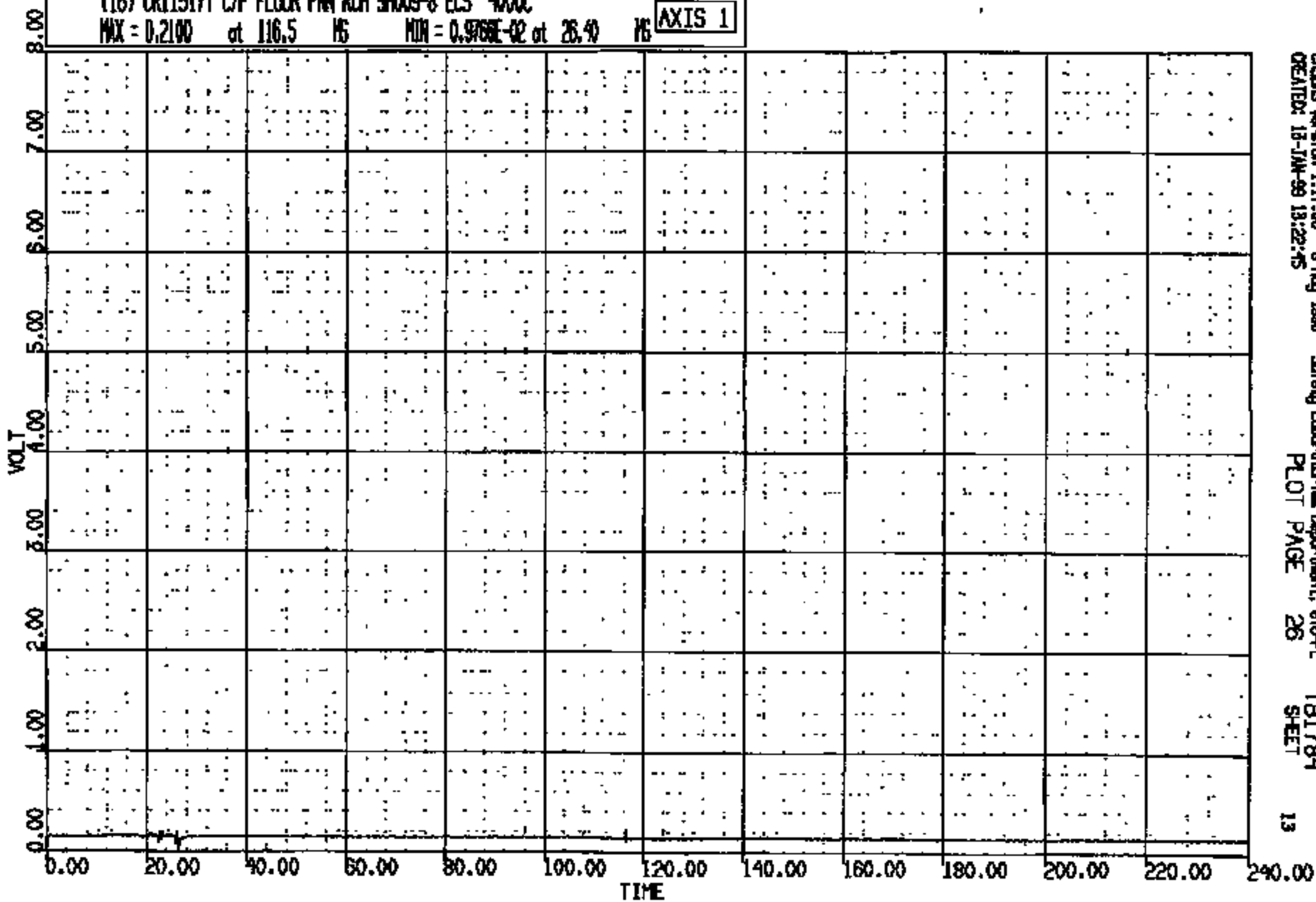


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CRTS 0011317

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2000 D-198

(16) CR11317T C/F FLOOR PAN ROOM 50009-8 ECS 4000C  
MAX = 0.2100 at 116.5 HS MIN = 0.9768E-02 at 28.40 HS **AXIS 1**



CRSIS Version 1.17.00 - 8-May-1998  
CREATED: 13-JAN-99 13:22:45

Safety Laboratory/see Department, 610-PL  
PLOT PAGE 26

TB1784  
SHEET

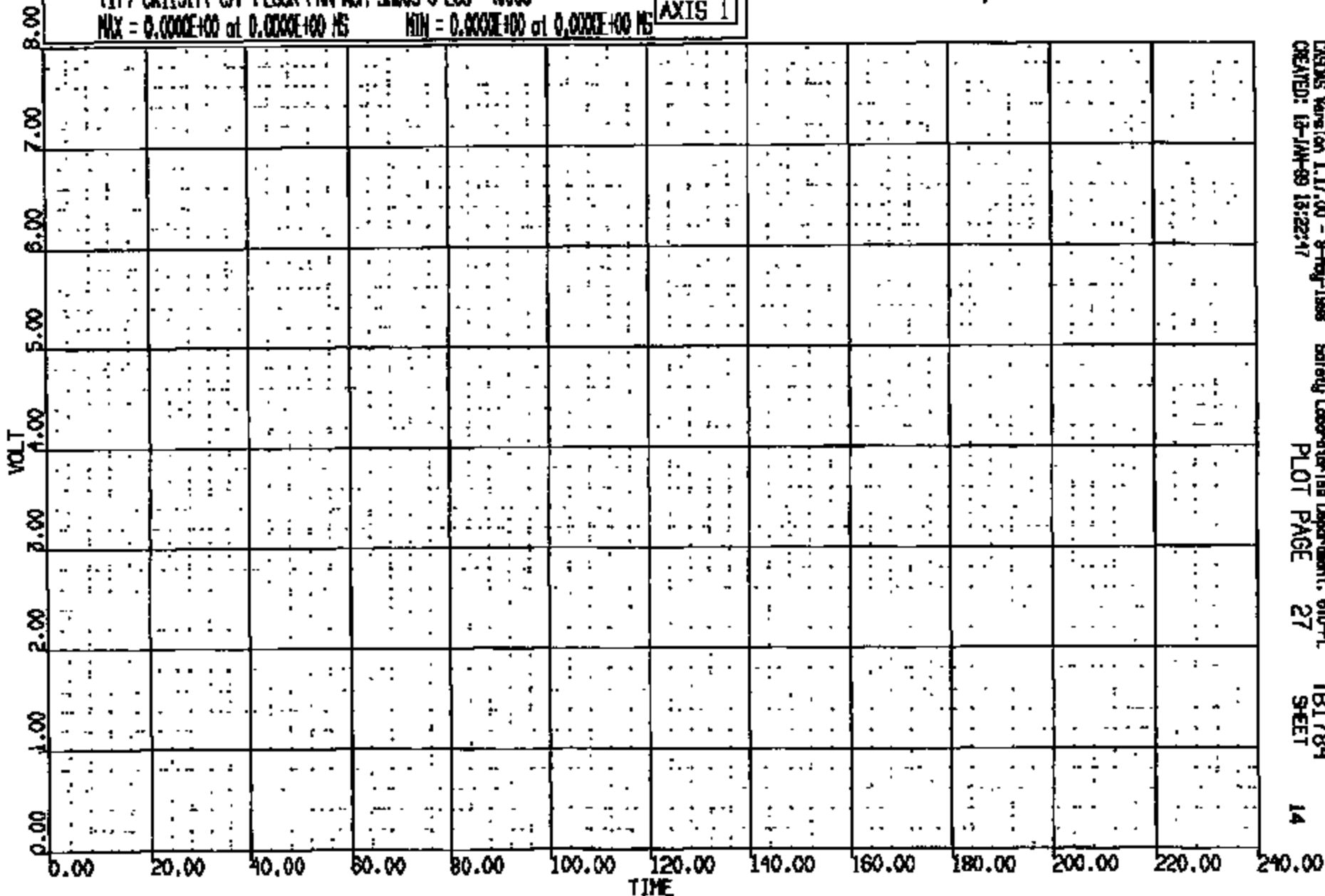
13

CRIS 0011317

DR R: 11317 TO: TB1784 DATE: 890113 13:07:19  
2000 D-189

(17) CRTS 011317 C/F FLOOR PAN RM, SMOOR-9 ECS 4000C  
MAX = 0.0000E+00 at 0.0000E+00 MS MIN = 0.0000E+00 at 0.0000E+00 MS

AXIS 1

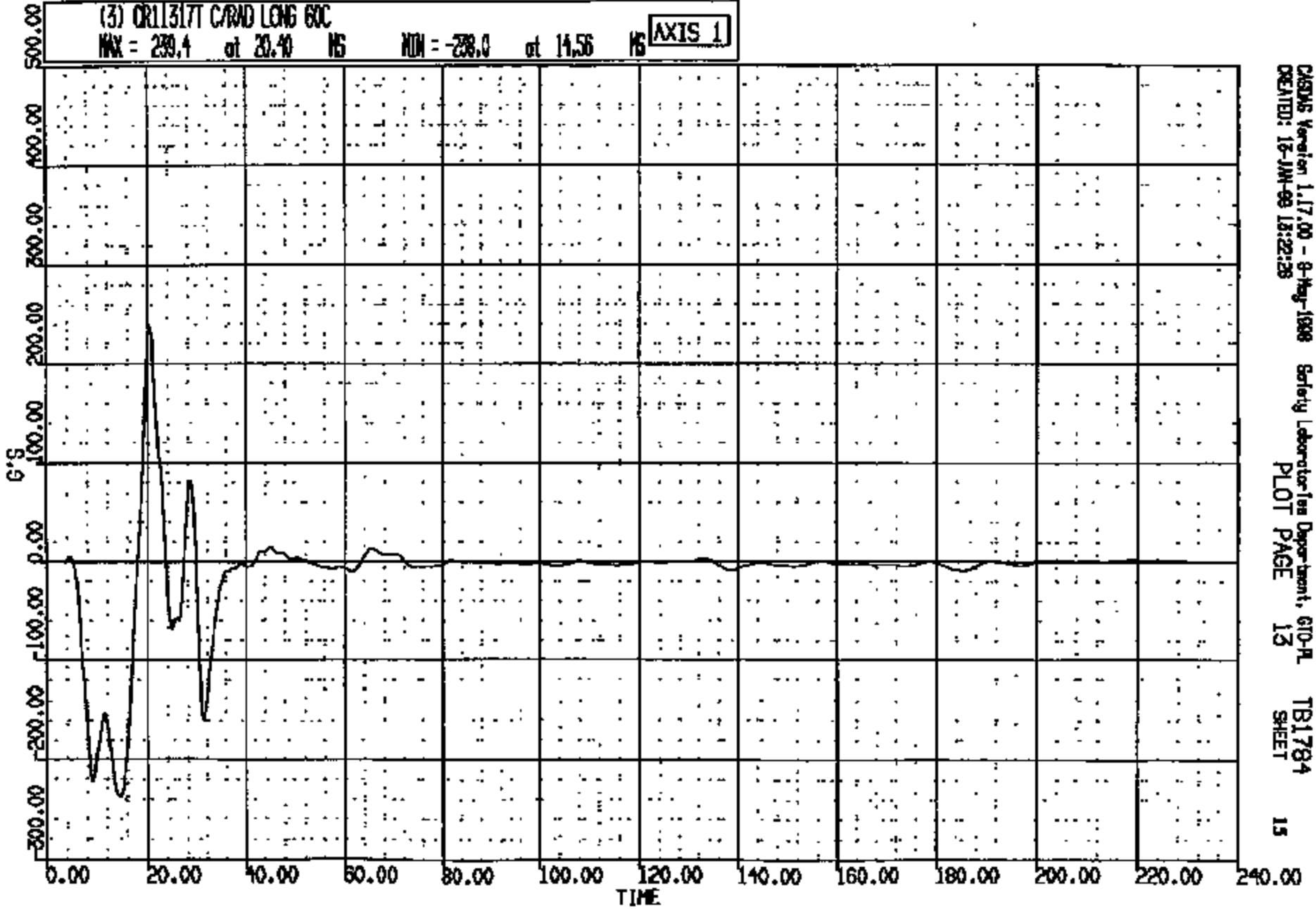


CASONS Version 1.17.00 - 9-May-1988 Safety Laboratories Department, 610-PL  
CREATED: 13-JAN-89 13:22:47 PLOT PAGE 27 SHEET 14

CRTS 0011317

CR R: 11317 TO: TB1784 DATE: 990113 13:07:19  
2000 D-188

(3) CR11317T C/RND LONG 60C  
MAX = 239.4 at 20.40 MS NOM = -238.0 at 14.56 MS **AXIS 1**



CASMS Version 1.17.00 - 8-May-1998  
CREATED: 13-JAN-99 13:22:28

Safety Laboratory Department, G10-PL  
PLOT PAGE 13

TB1784  
SHEET

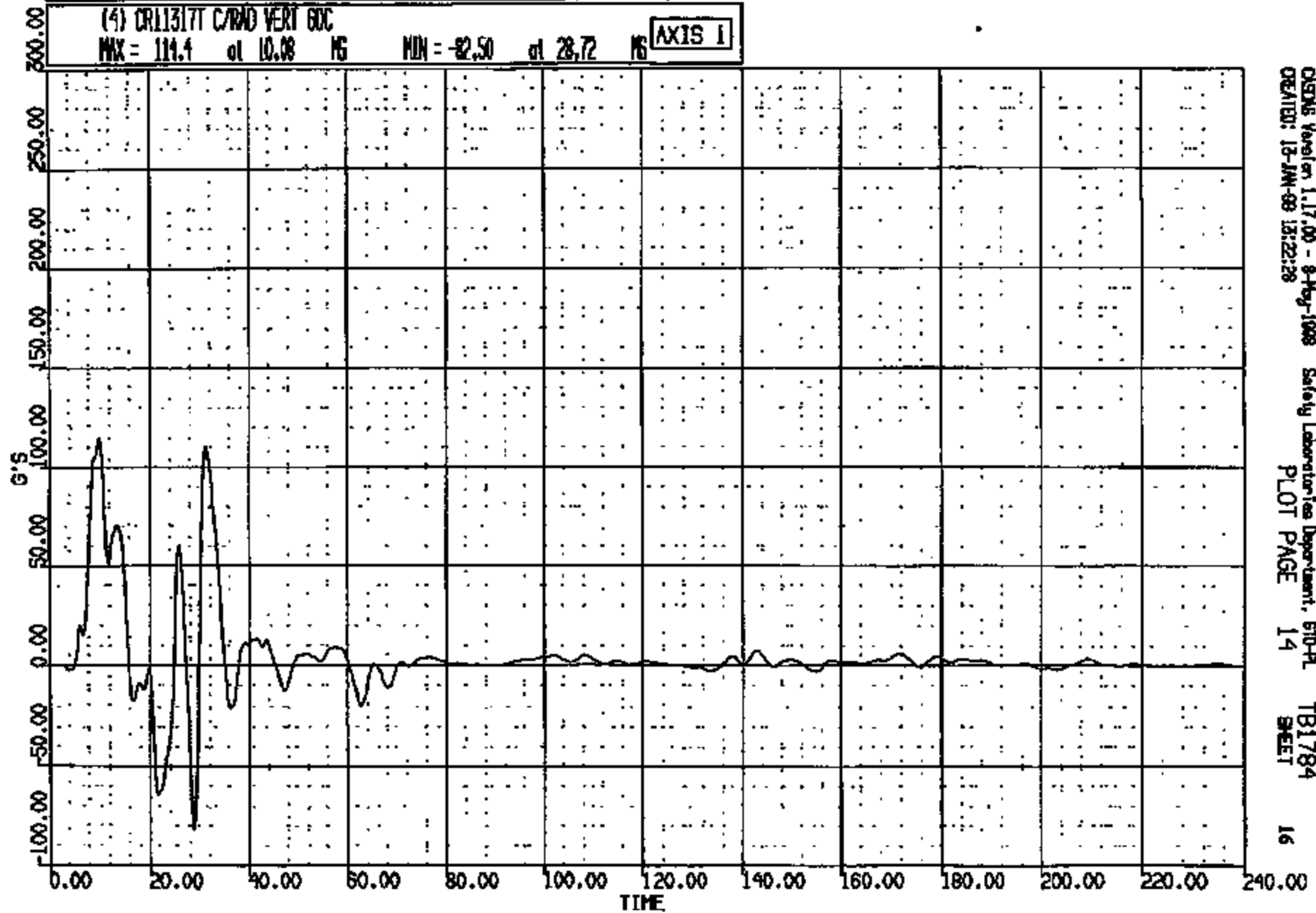
15

CR11317



CR R: 11317 TO: TB1784 DATE: 990115 13:07:19  
2000 D-198

(4) CR11317T C/RAD VERT 60C  
MAX = 114.4 at 10.08 MS MIN = -82.50 at 28.72 MS **AXIS 1**



CRSNG Vanelen 1.17.00 - 8-Feb-1998 Safety Laboratories Department, 610-PL TB1784  
CREATED: 12-JAN-99 13:22:28 PLOT PAGE 14 SHEET 16

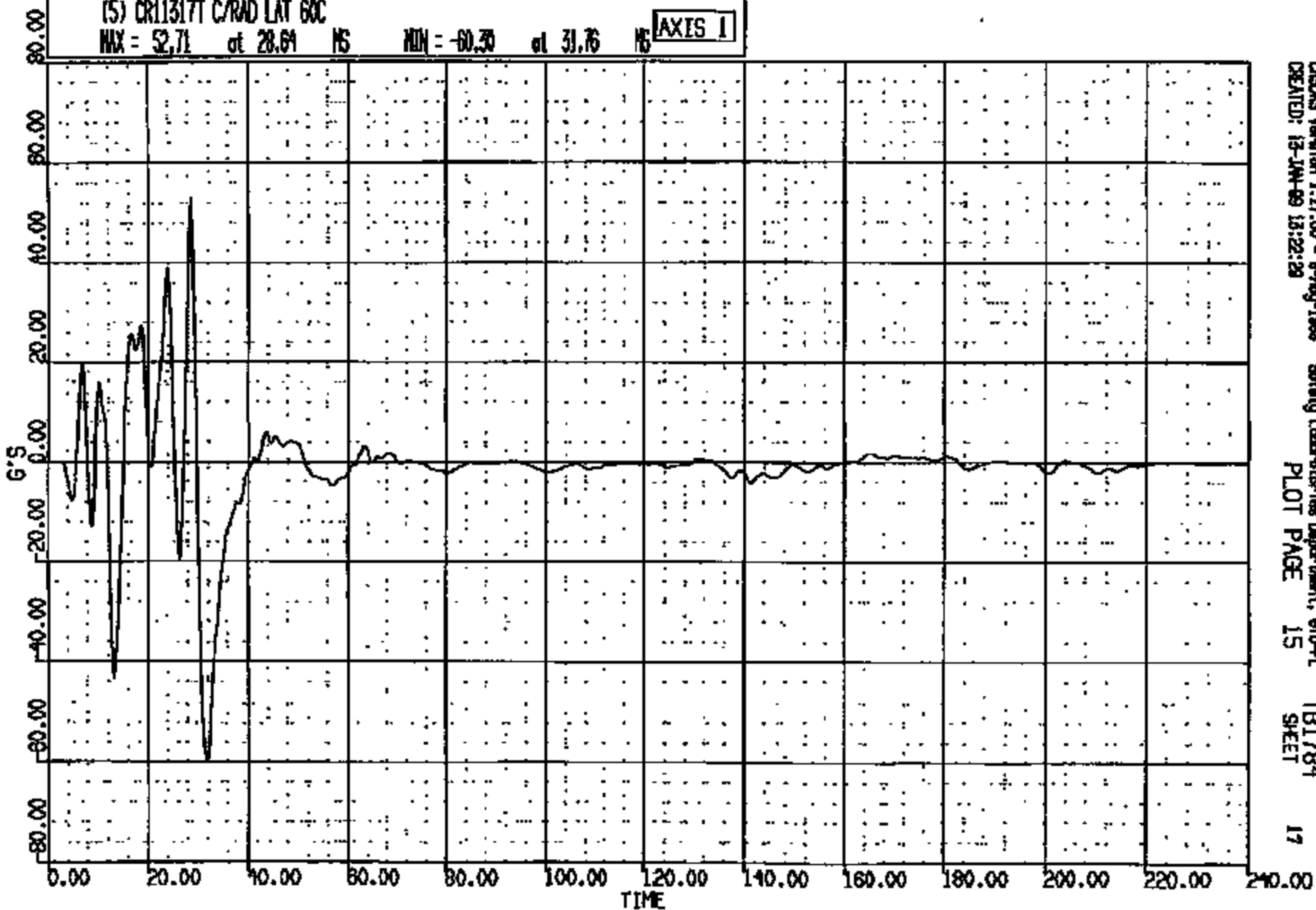
CRIS 0011317

CR R: 11517 TO: TB1784 DATE: 890113 15:07:19  
2000 0-108

(5) CR11317T C/RAD LAT 60C

MAX = 52.71 at 28.64 MS MIN = -60.30 at 31.76 MS

AXIS 1



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PLOT PAGE 15

TB1784  
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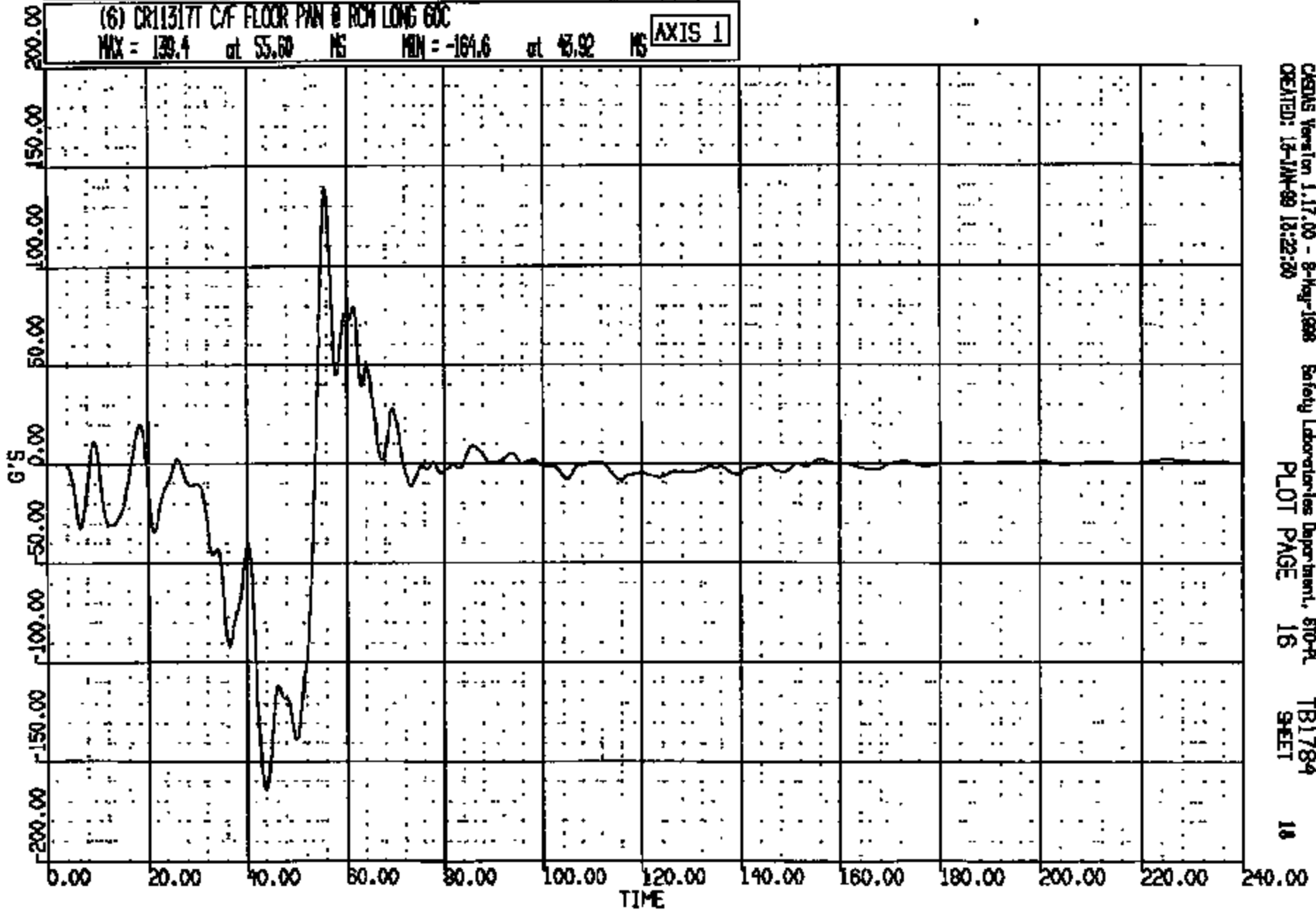
CRTS 0011317

CR R: 11817 TO: TB1784 DATE: 890118 18:07:18  
2000 D-188

(6) CR11317T C/F FLOOR PAN @ ROOM LONG 60C

MAX = 139.4 at 55.60 MS MIN = -164.6 at 43.92 MS

AXIS 1



CRSIS Version 1.17.00 - 8-May-1988  
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PLOT PAGE 16

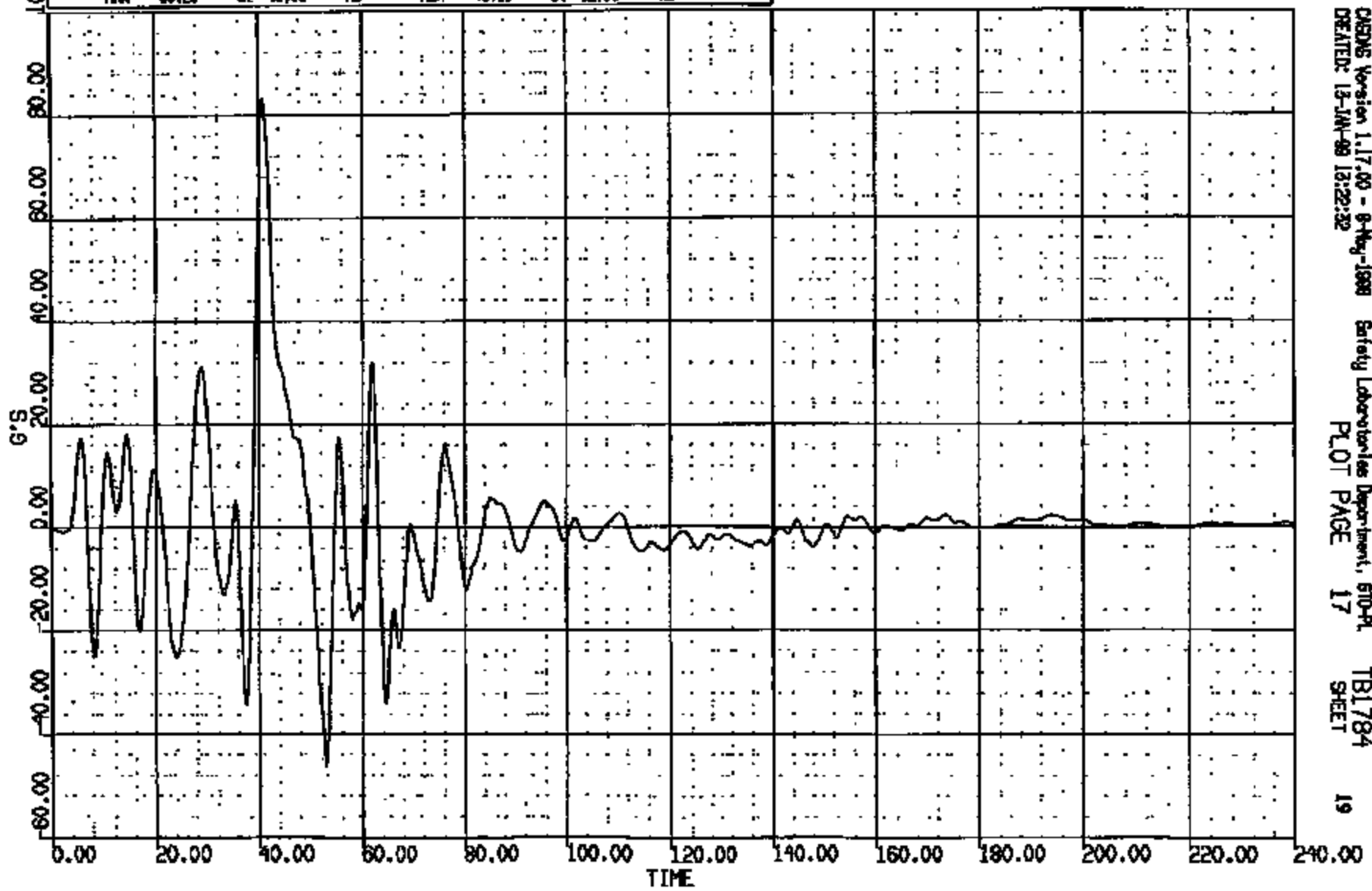
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CRIS 0011317

CR R: 11317 TO: TB1784 DATE: 090113 13:07:19  
0000 D-100

(7) CR11317T C/F FLOOR PMW @ RCH VERT 60C  
MAX = 85.29 at 40.96 MS MIN = -46.13 at 52.88 MS **AXIS 1**

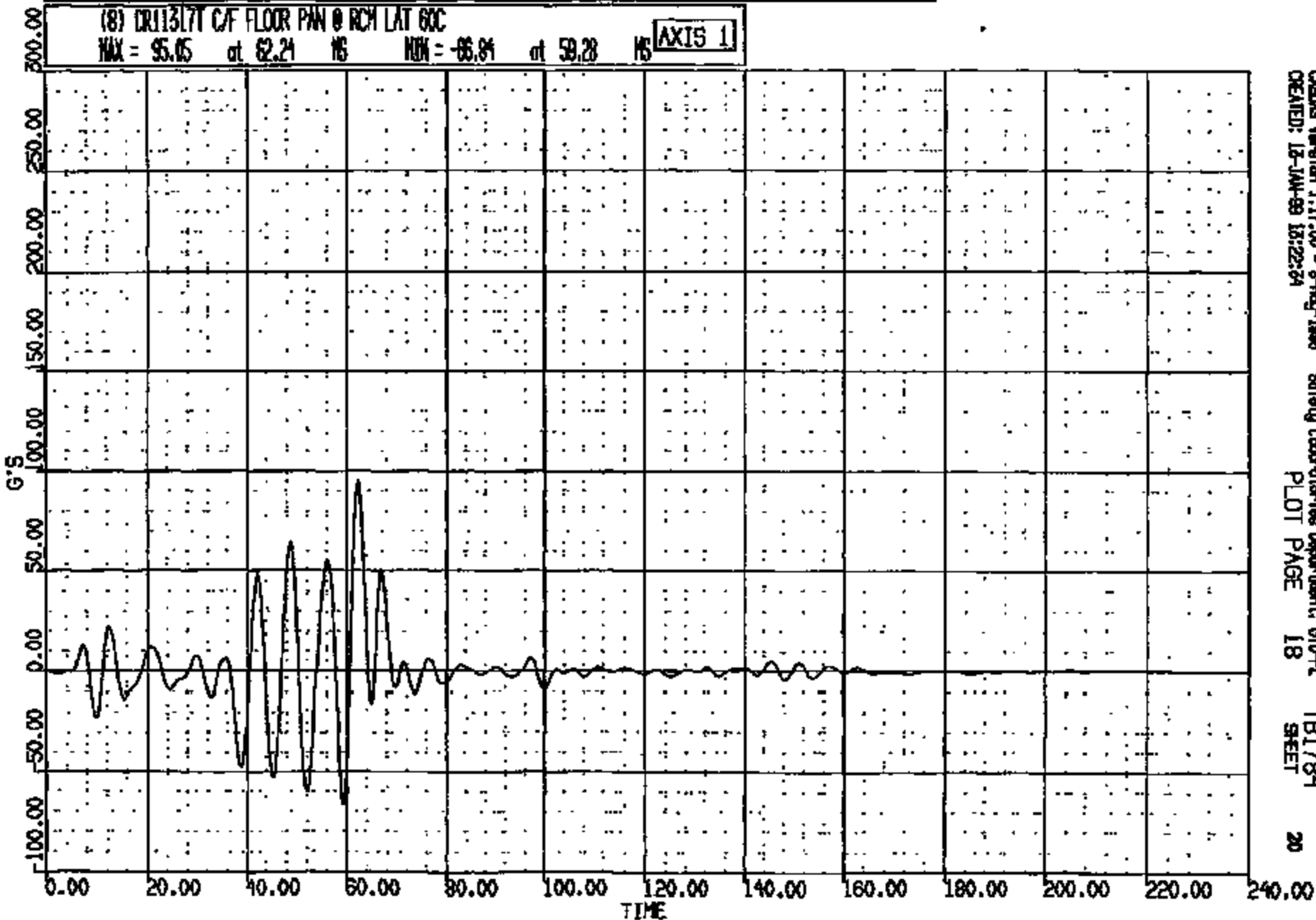


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CREATED: 13-JAN-99 12:22:32 PLOT PAGE 17 TB1784 SHEET 19

CRTS 0011317

CR R: 11317 TO: TB1784 DATE: 990118 13:07:10  
R000 D-188

(8) CR11317T C/F FLOOR PAN @ RCM LAT 60C  
MAX = 95.05 at 62.24 MS MIN = -66.84 at 59.28 MS **AXIS 1**



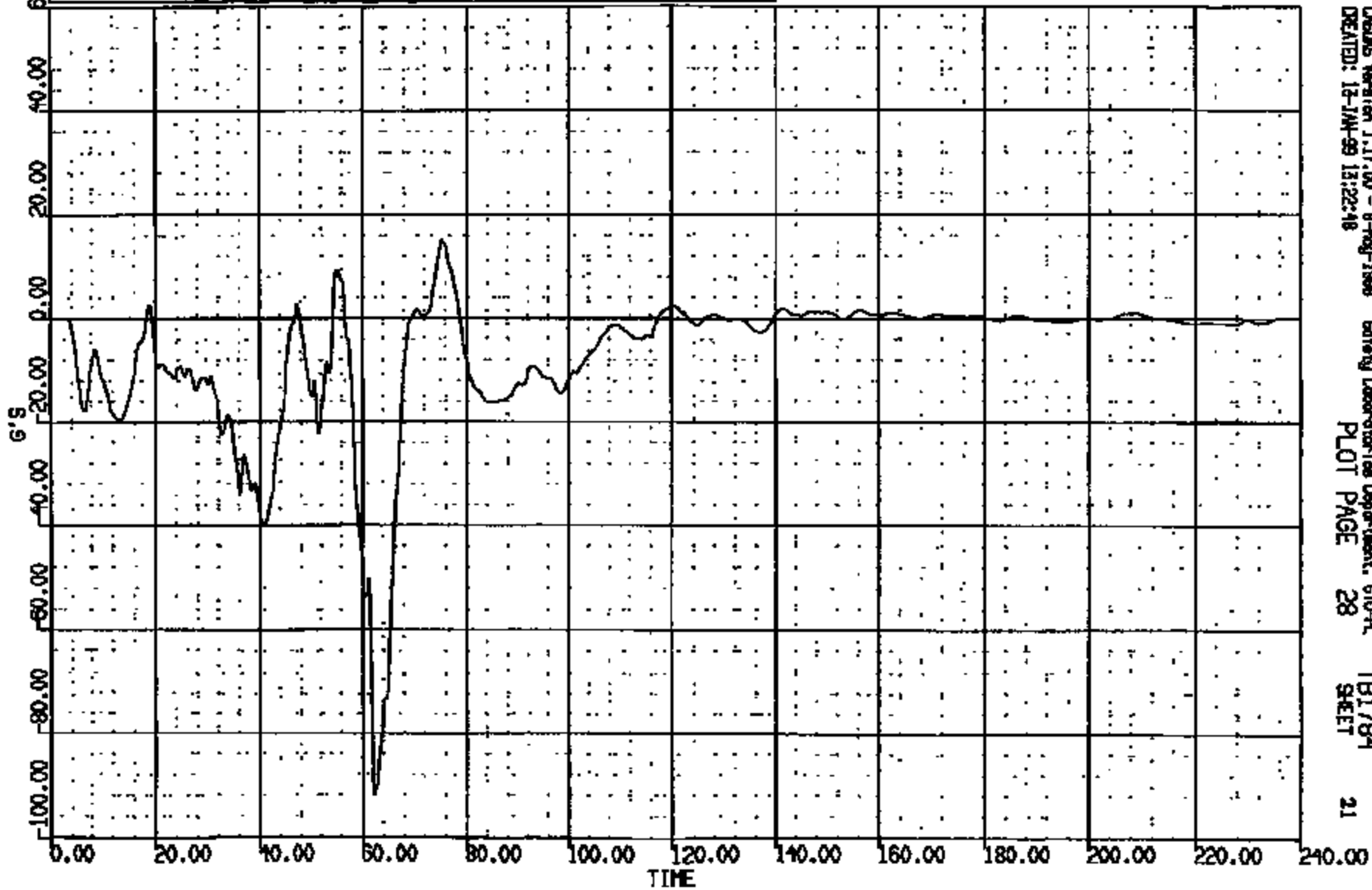
CRSIS Version 1.17.00 - 9-May-1999 Safety Laboratories Department, GTD-PL TB1784  
CREATED: 12-JAN-99 13:22:24 PLOT PAGE 18 SHEET 20

CRIS 0011317

CR R: 11317 TO: TB1784 DATE: 990115 15:07:18  
2000 D-198

(18) CRL1317T L/N FLOOR PAN @1 XNER SEAT CL LONG 60C  
MAX = 15.01 at 75.20 NS MIN = -92.15 at 62.40 NS

AXIS 1



CASIMS Version 1.17.00 - 8-Aug-1998 Safety Laboratories Department, 610-A  
CREATED: 15-JAN-99 15:22:48 PLOT PAGE 28 TB1784 SHEET 21

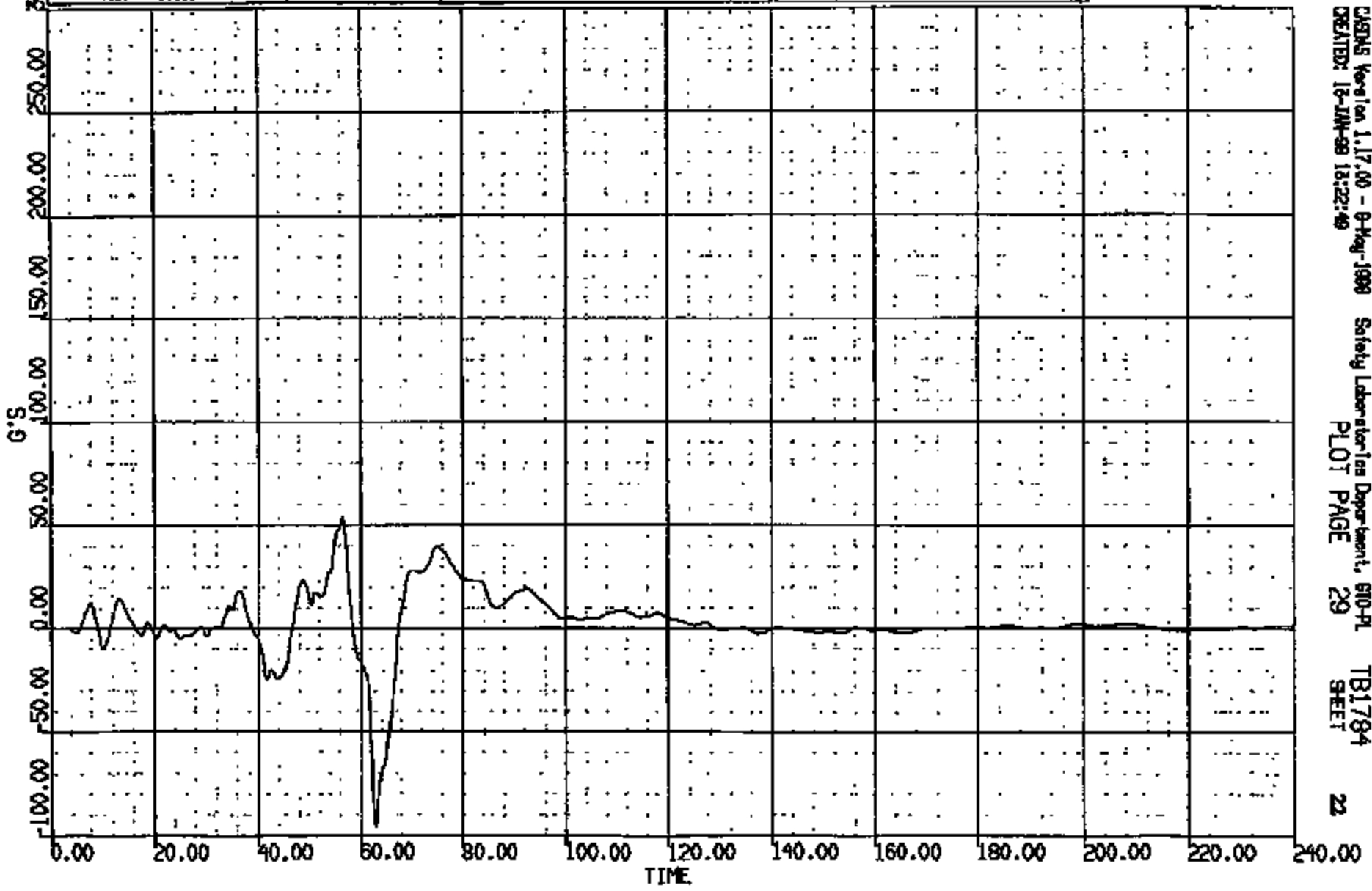
CRIS 001317

CR R: 11317 TD: TB1784 DATE: 890118 13:07:19  
2000 D-188

# (19) CR113171 L/M FLOOR PAN @1 XNR SEAT CL VERT GOC  
MAX = 53.98 at 55.48 MS MIN = -96.29 at 62.88 MS

AXIS 1

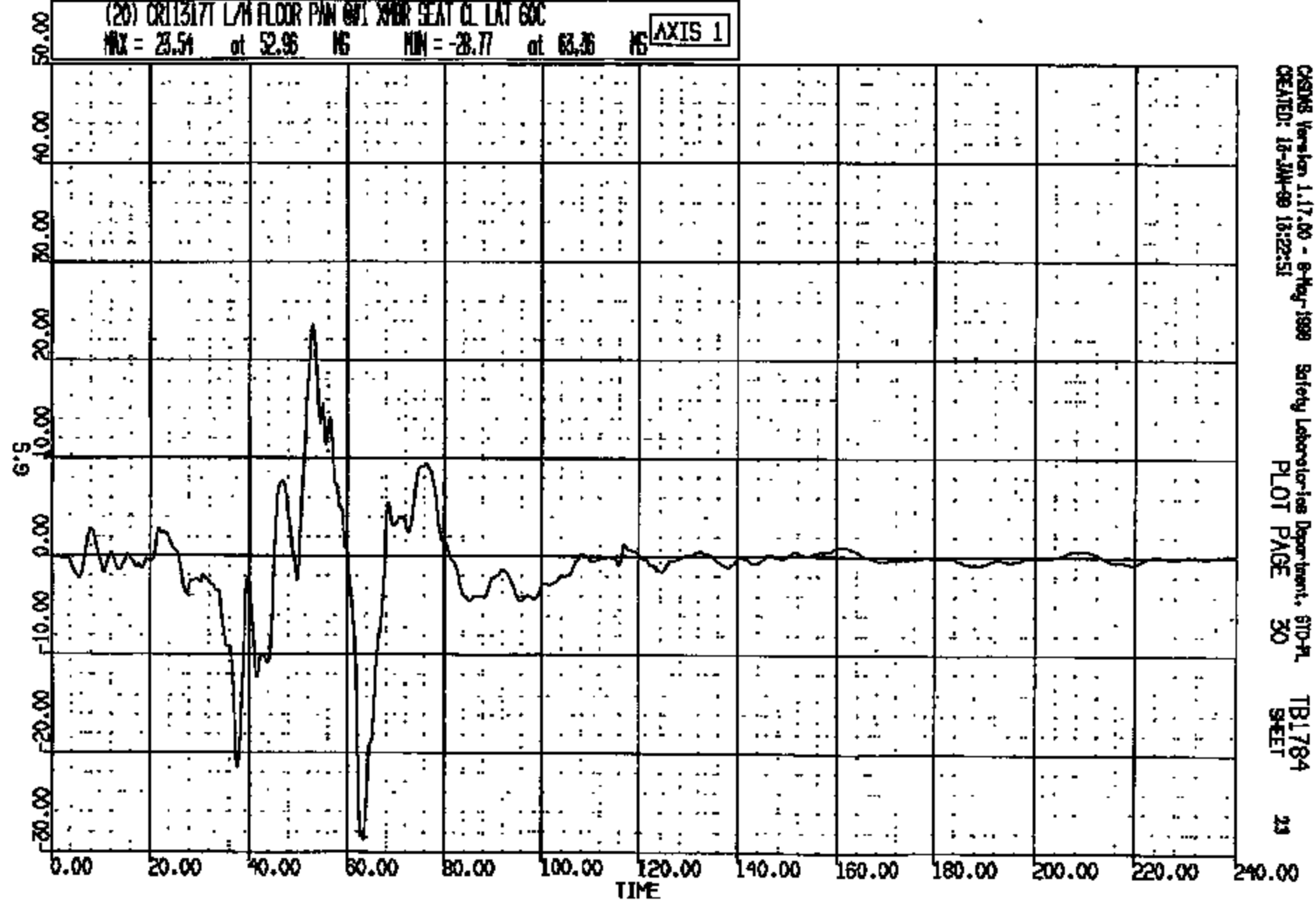
ANALY KEY:  
\* - Missed data exceeded full scale  
# - Missed data >90.0% of full scale  
@ - All data < 10.0% of full scale  
- - 51 percent offset at T-zero



CRS 0011317  
CREATED: 18-JUN-89 13:22:49  
Safety Laboratories Department, 610-PL  
PLOT PAGE 29  
TB1784  
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CR R: 11317 TC: TB1784 DATE: 990118 13:07:18  
2000 D-198

(20) CRT1317T L/A FLOOR PAN @1 X/R SEAT CL LAT 60C  
MAX = 23.54 at 52.95 MS MIN = -28.77 at 63.26 MS **AXIS 1**



CRS08 Version 1.17.00 - 8-May-1999 Safety Laboratories Department, 610-PL  
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SHEET 23

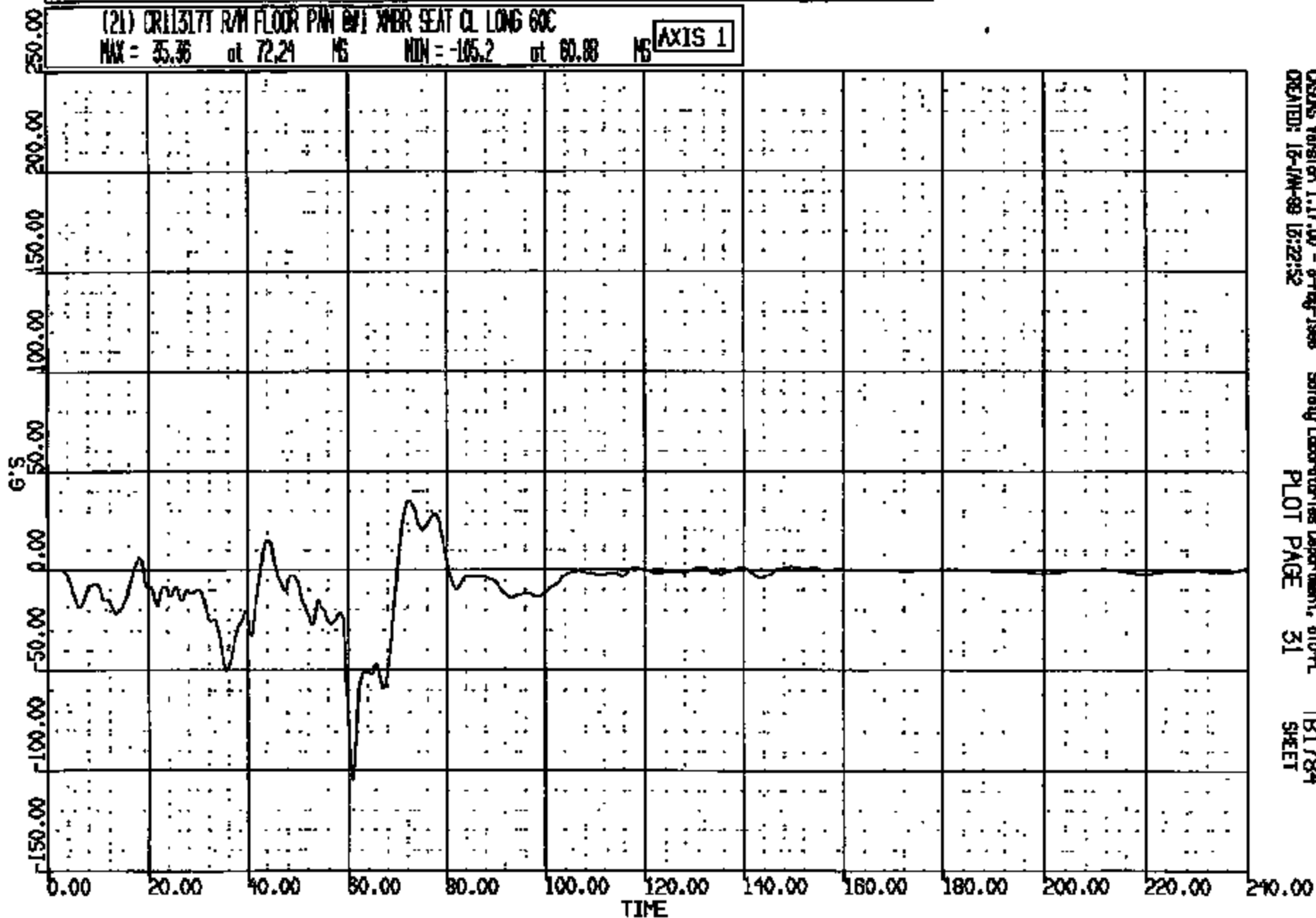
CRTS 0011317



CR R: 11317 TO: TB1784 DATE: 090118 15:07:19  
2000 D-188

(21) CR113177 R/W FLOOR PAN @: XMR SEAT CL LONG 60C

MAX = 35.36 at 72.24 MS MIN = -105.2 at 60.88 MS AXIS 1

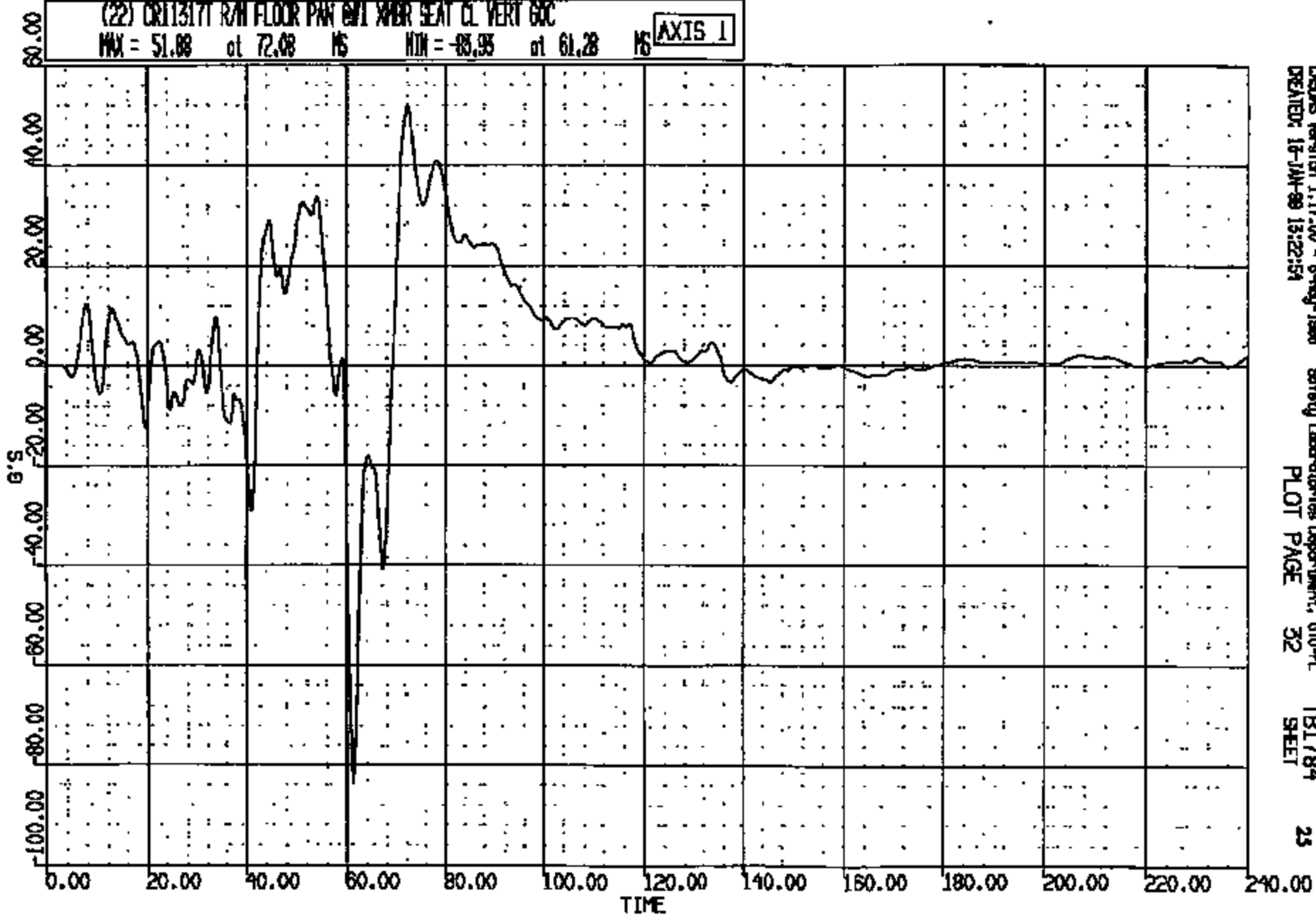


ORNS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, STD-FL  
CREATED: 15-JUN-89 15:22:52 PLOT PAGE 31 TB1784  
SHEET

CR11317

CR R: 11317 TO: T81784 DATE: 990118 13:07:19  
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(22) CRTS 0011317 R/W FLOOR PAN @VI XMR SEAT CL VERT 60C  
MAX = 51.08 at 72.08 MS MIN = -03.95 at 61.28 MS **AXIS 1**



CRS Version 1.17.00 - 8-Aug-1998 Safety Laboratories Department, 610-PL  
CREATED: 18-JAN-99 13:22:54 PLOT PAGE 32 T81784 SHEET 25

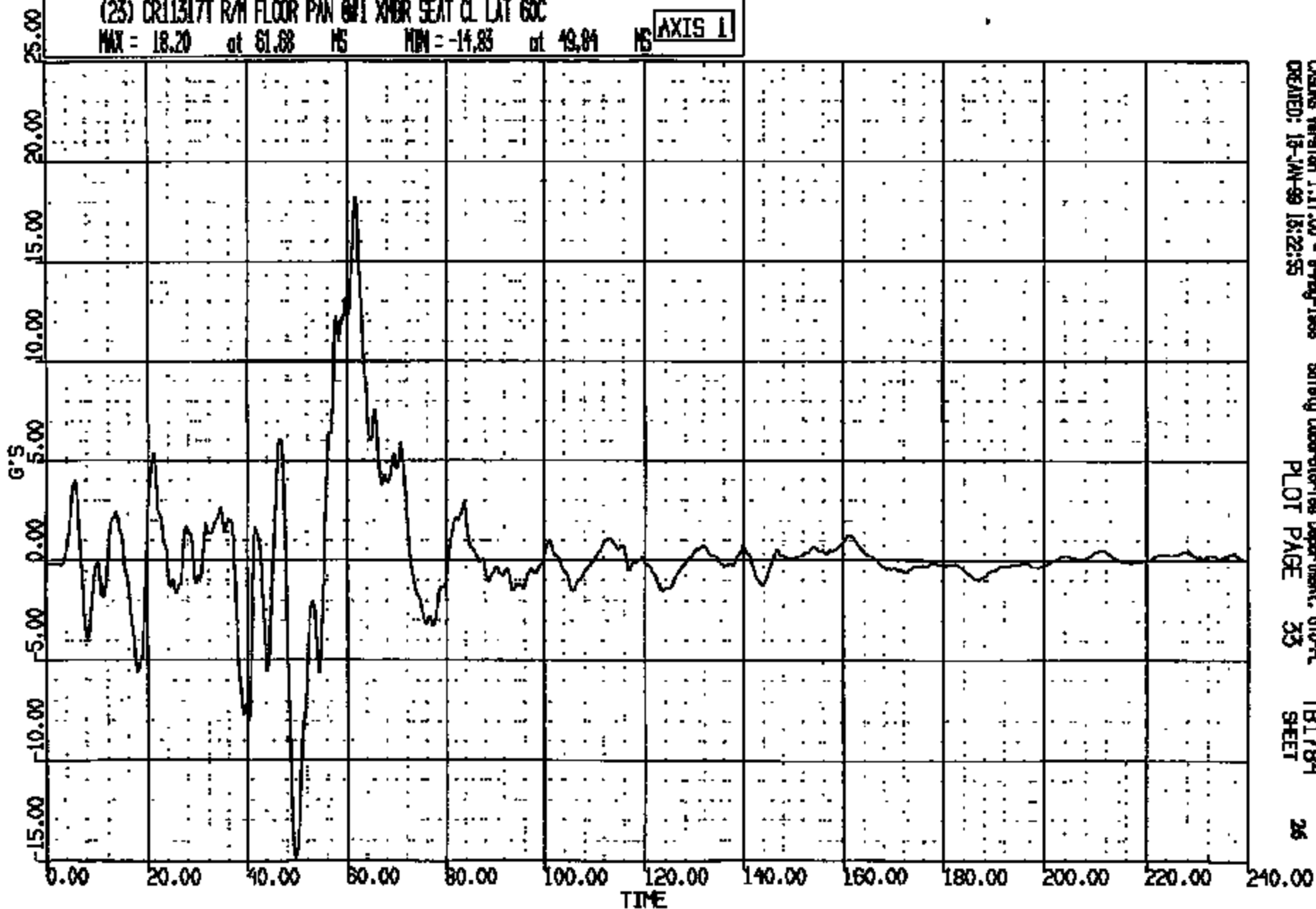
CRTS 0011317

CR R: 11317 TO: TB1784 DATE: 890118 18:07:10  
2000 D-188

(23) CR11317T R/H FLOOR PAN @#1 XMR SEAT CL LAT 60C

MAX = 18.20 at 61.88 MS MIN = -14.83 at 49.84 MS

AXIS 1



CRSNG Version 1.17.00 - 8-May-1998  
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PLOT PAGE 33

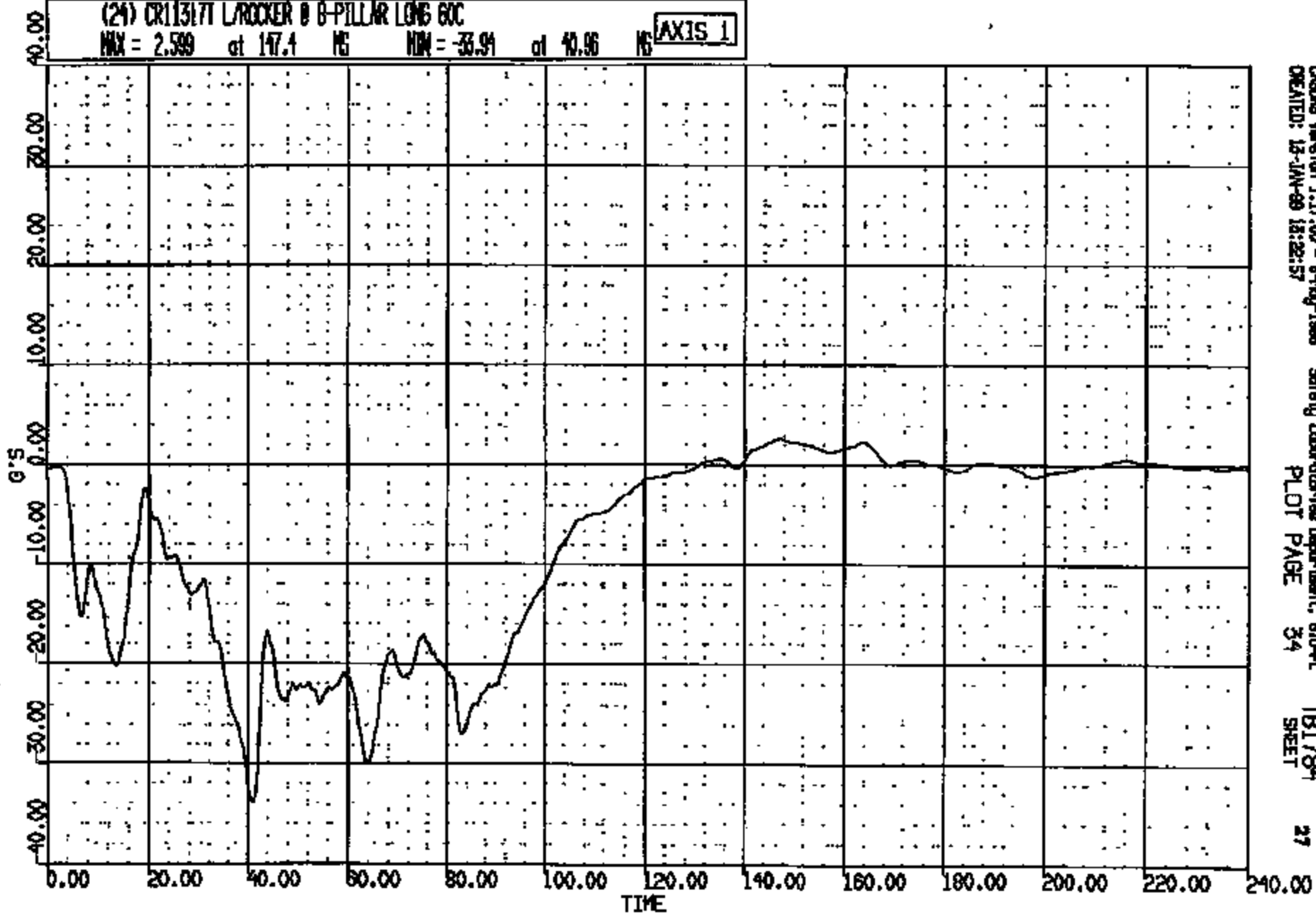
TB1784  
SHEET

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CRTS 0011317

CR R: 11317 TO: TB1794 DATE: 990113 13:07:19  
8000 D-199

(24) CR113171 L/ROCKER @ B-PILLAR LONG 60C  
MAX = 2.589 at 147.4 MG MIN = -33.94 at 40.96 MG **AXIS 1**

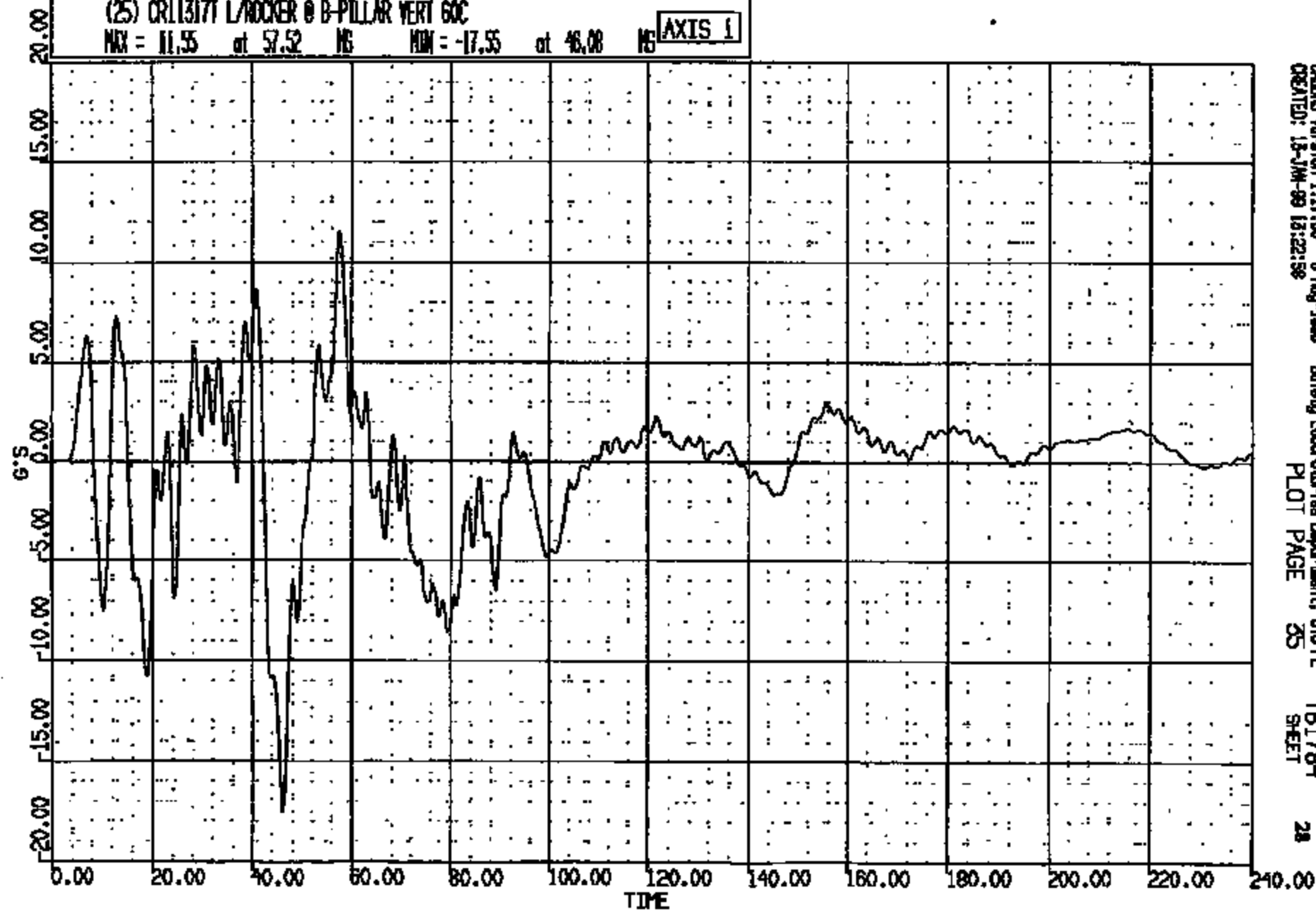


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CREATED: 12-JAN-99 13:22:57 PLOT PAGE 34 SHEET

CRIS 0011317

CR R: 11317 TO: TB1784 DATE: 990118 13:07:19  
2000 0-189

(25) CR11317 L/ROCKER @ B-PILLAR VERT 60C  
MAX = 11.55 at 57.52 MS MIN = -17.55 at 46.08 MS **AXIS 1**



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CREATED: 18-JAN-99 13:22:58 PLOT PAGE 05 SHEET

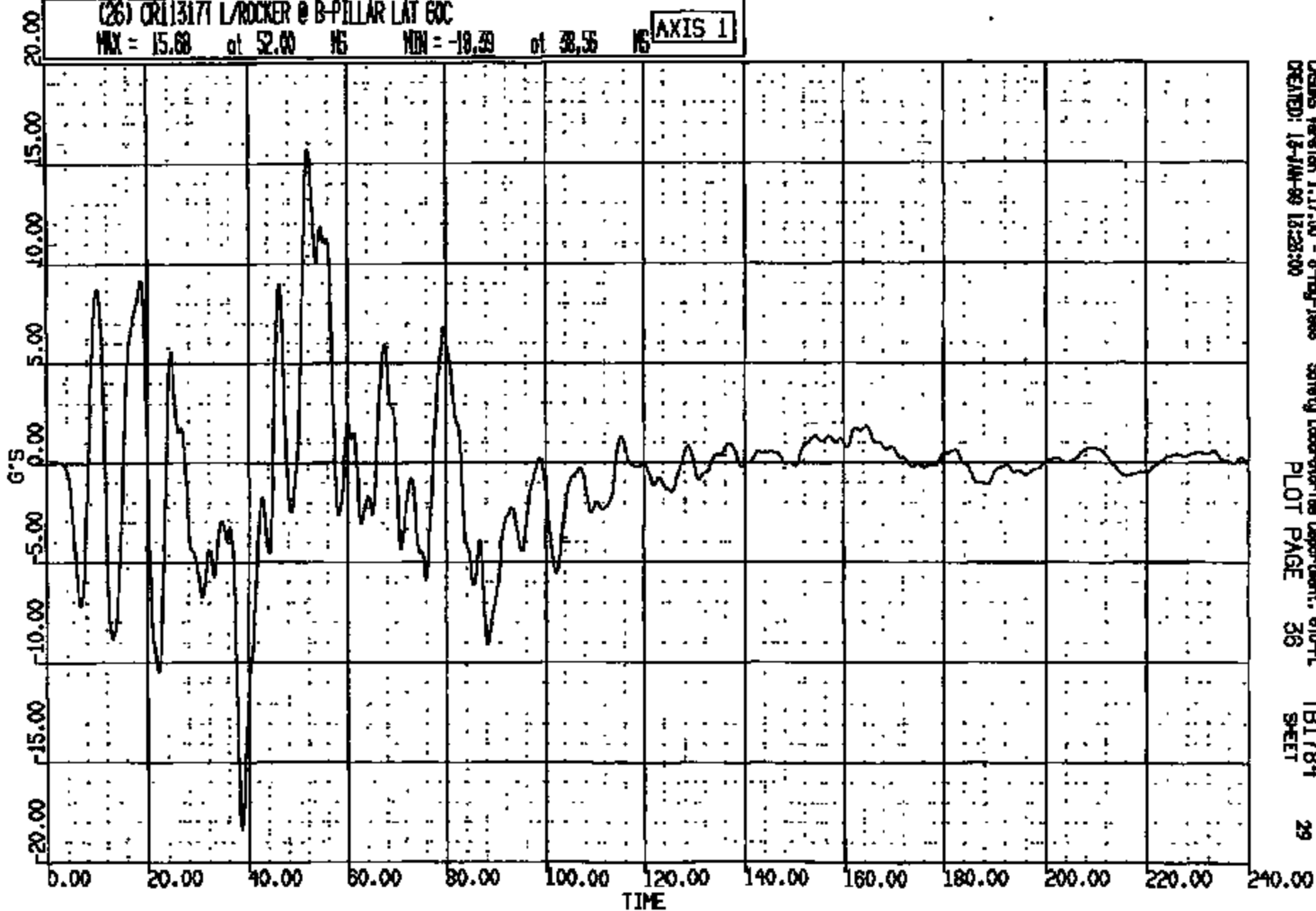
CRIS 0011317

CR #: 11817 TO: TB1784 DATE: 980115 13:07:19  
2000 D-188

(26) CR113171 L/ROCKER @ B-PILLAR LAT 60C

MAX = 15.88 at 52.00 NS MIN = -19.39 at 38.56 NS

AXIS 1



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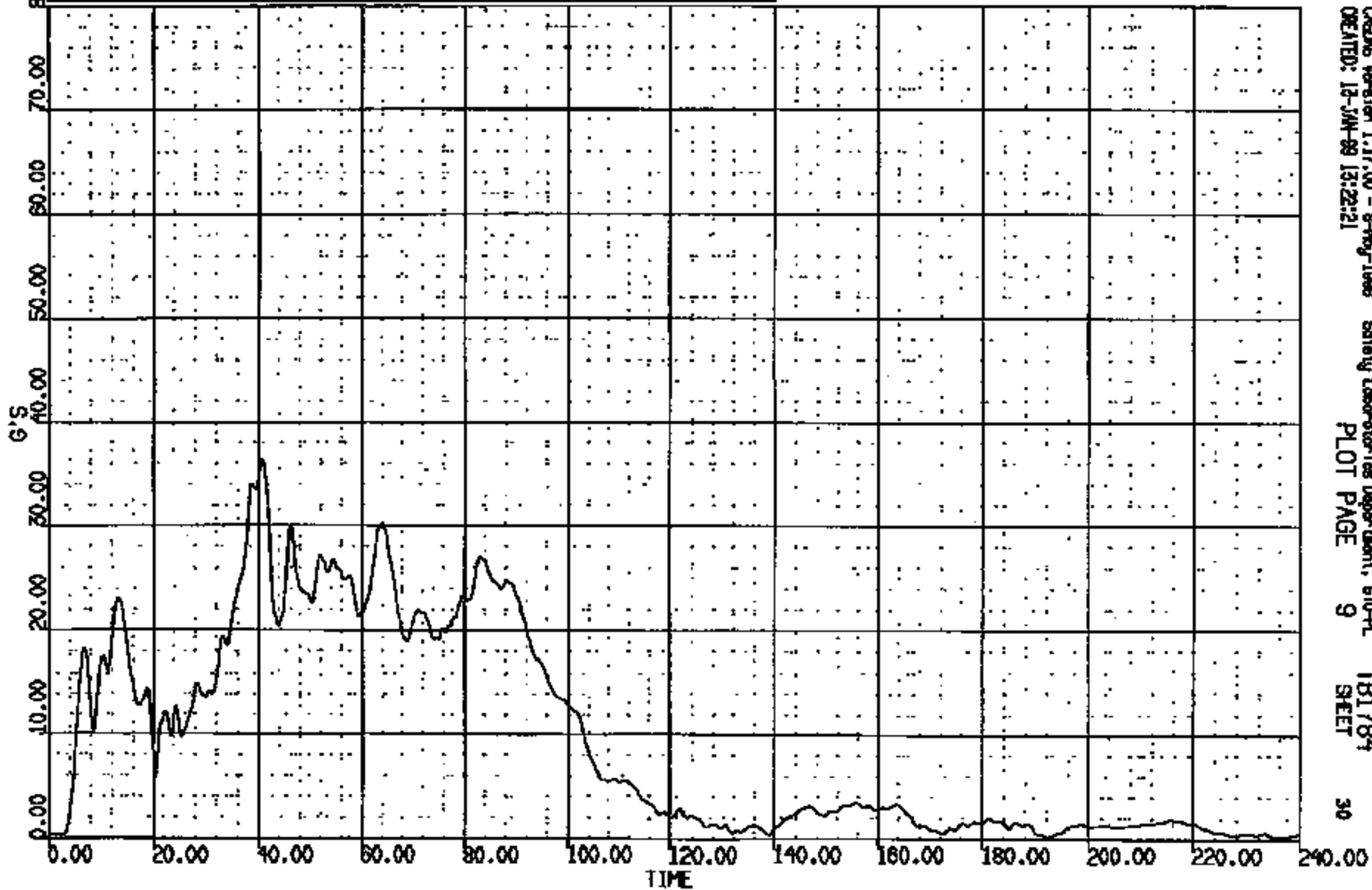
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CRIS 0011317

CR R: 11317 TO: TB1784 DATE: 990115 13:07:19  
2000 D-185

(1000) CR11317 L/ROCKER @ B-PILLAR RES 60C  
MAX = 35.28 at 40.00 MS MIN = 0.1512 at 192.0 MS

AXIS 1

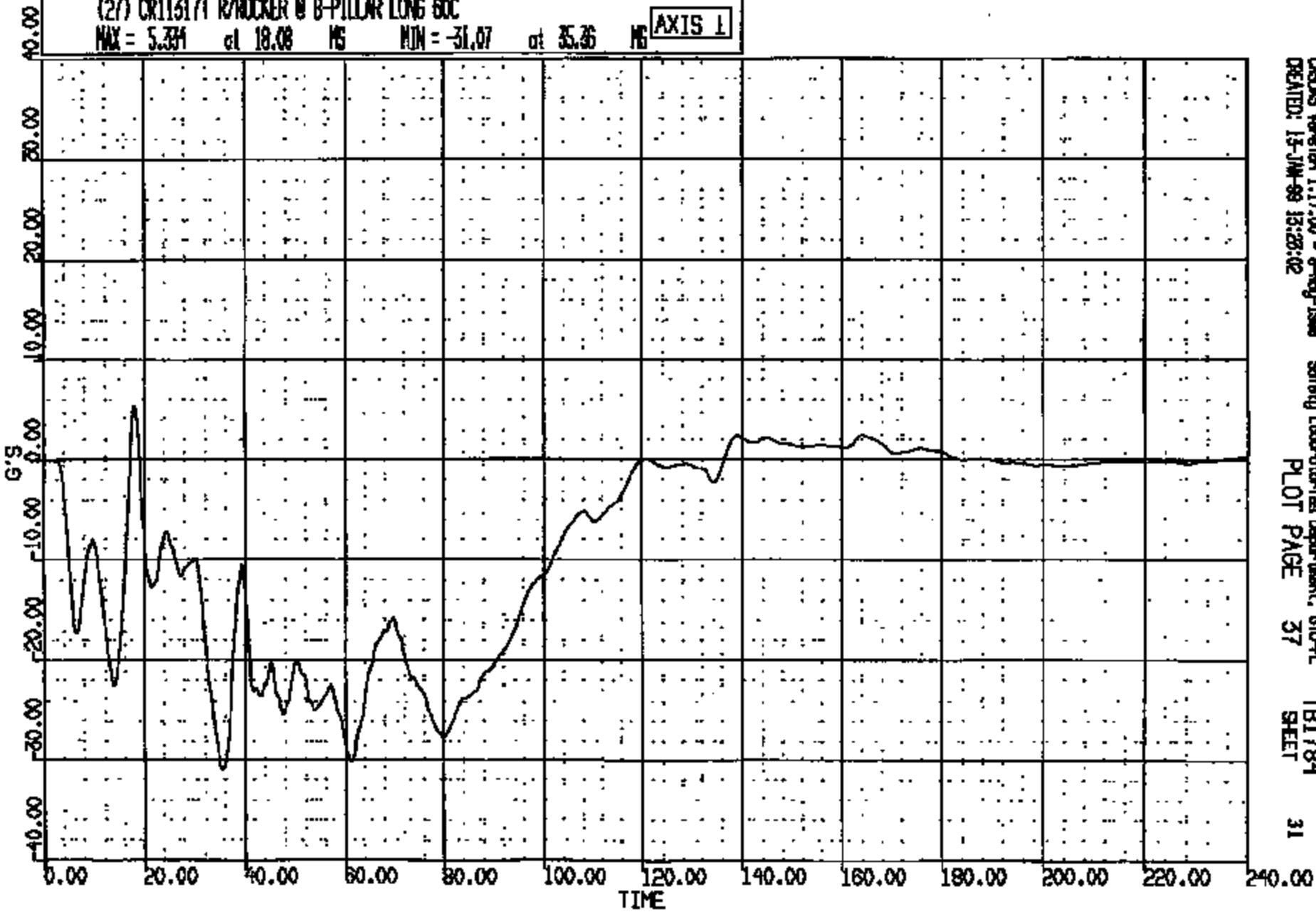


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CREATED: 12-JAN-99 13:22:21 PLOT PAGE 9 TB1784  
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CRTS 0011317

CR R: 11317 TO: TB1784 DATE: 990113 13:07:19  
2000 D-188

(27) CR11317T R/ROCKER @ B-PILLAR LONG 60C  
MAX = 5.384 at 18.08 MS MIN = -31.07 at 35.36 MS **AXIS 1**



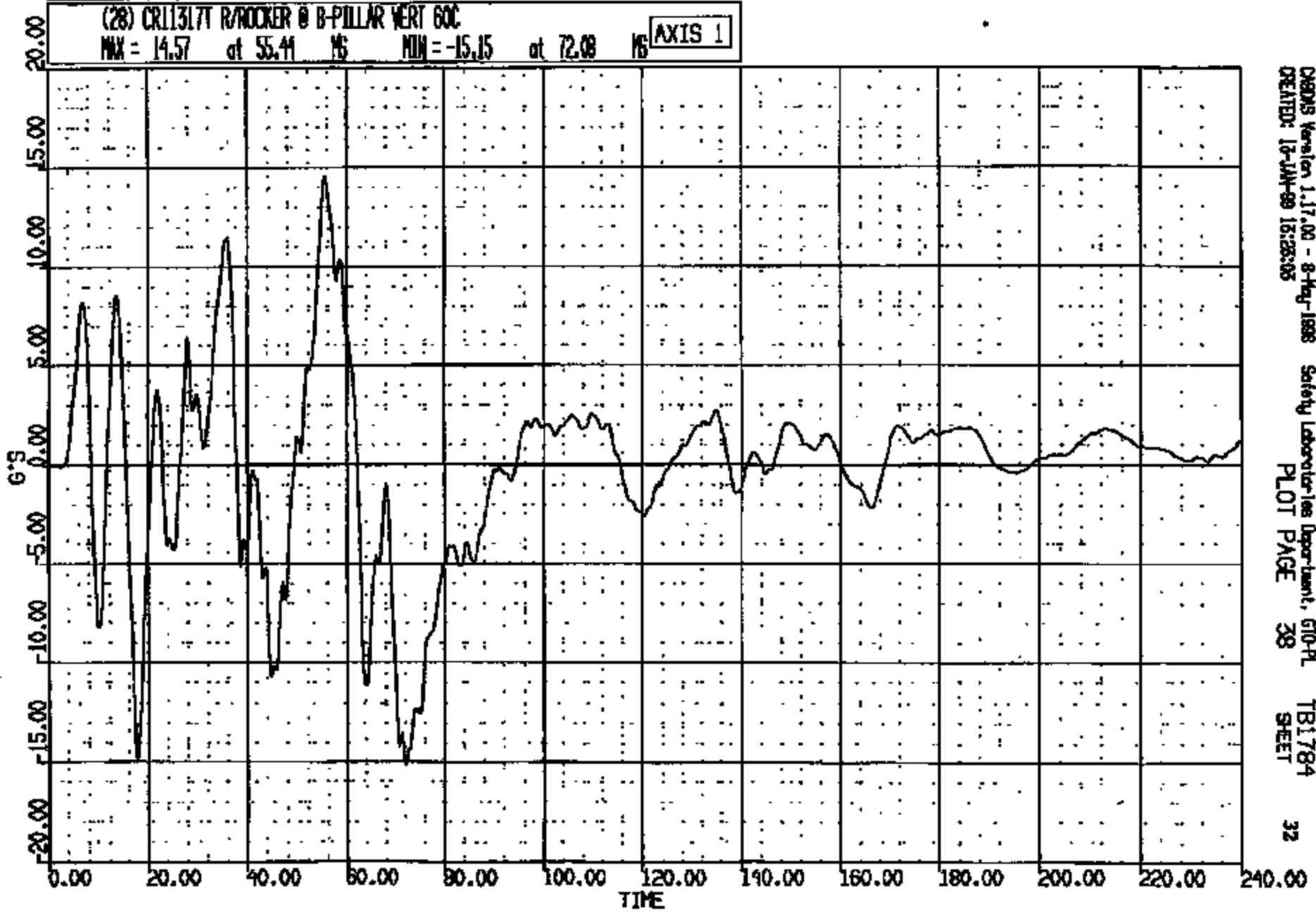
CASDS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, G10-PL  
CREATED: 15-JUN-99 13:23:02 PLOT PAGE 37 TB1784 SHEET 31

CRTS 0011317



CORR: 11517 TO: T81784 DATE: 090118 15:07:19  
R000 D-188

(28) CR11317T R/ROCKER @ B-PILLAR VERT 60C  
MAX = 14.57 at 55.41 MS MIN = -15.15 at 72.08 MS **AXIS 1**



CRTS 0011317

ORION Version 1.17.00 - 8-May-1988 Safety Laboratory Department, G10-PL  
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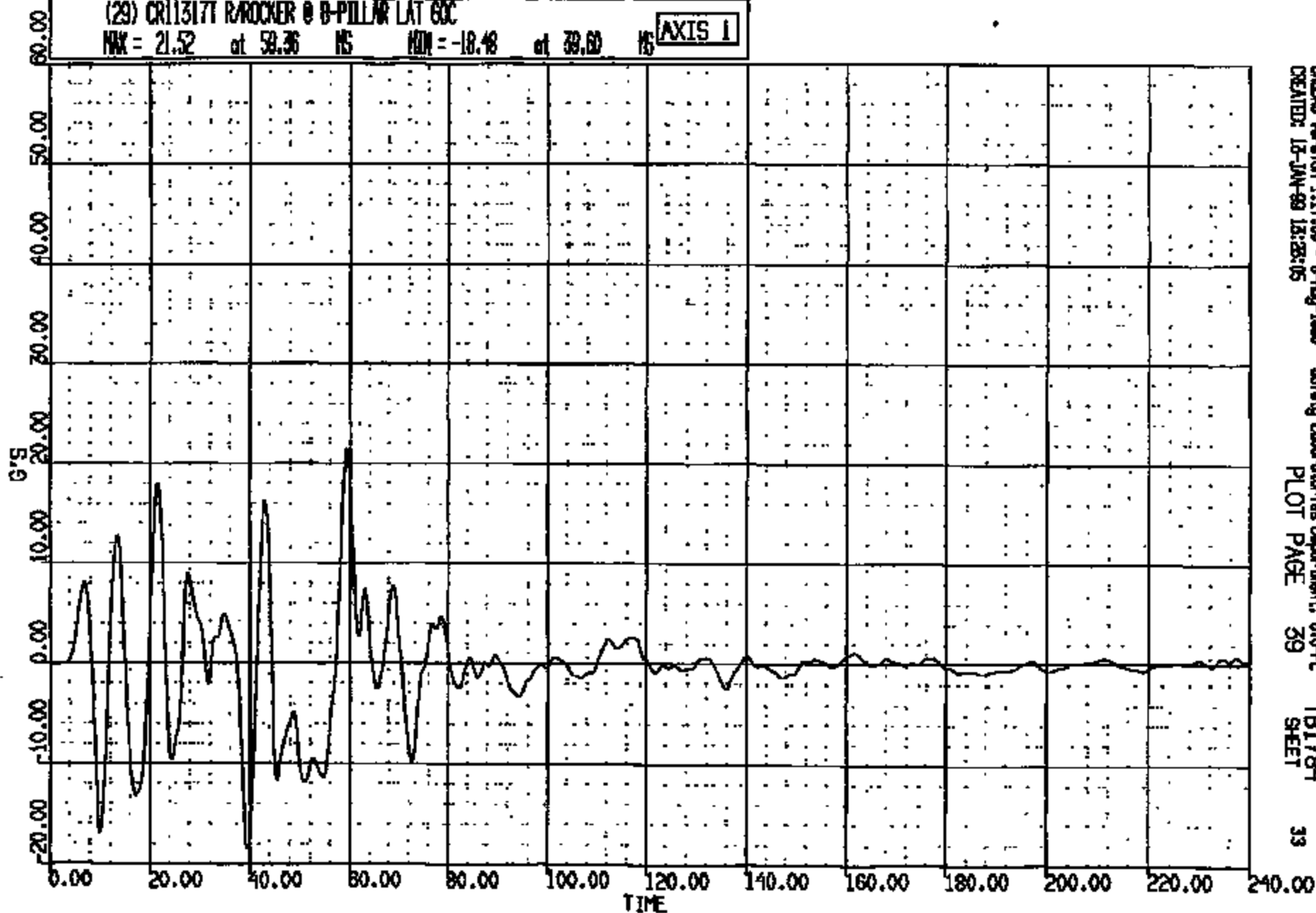
CR R: 11317 TO: TB1784 DATE: 890118 15:07:18

ROOO D-188

(29) CR11317I R/ROCKER @ B-PILLAR LAT 60C

MAX = 21.52 at 59.36 NS MIN = -18.48 at 39.60 NS

AXIS 1



CRSIS Version 1.17-00 - 8-May-1988  
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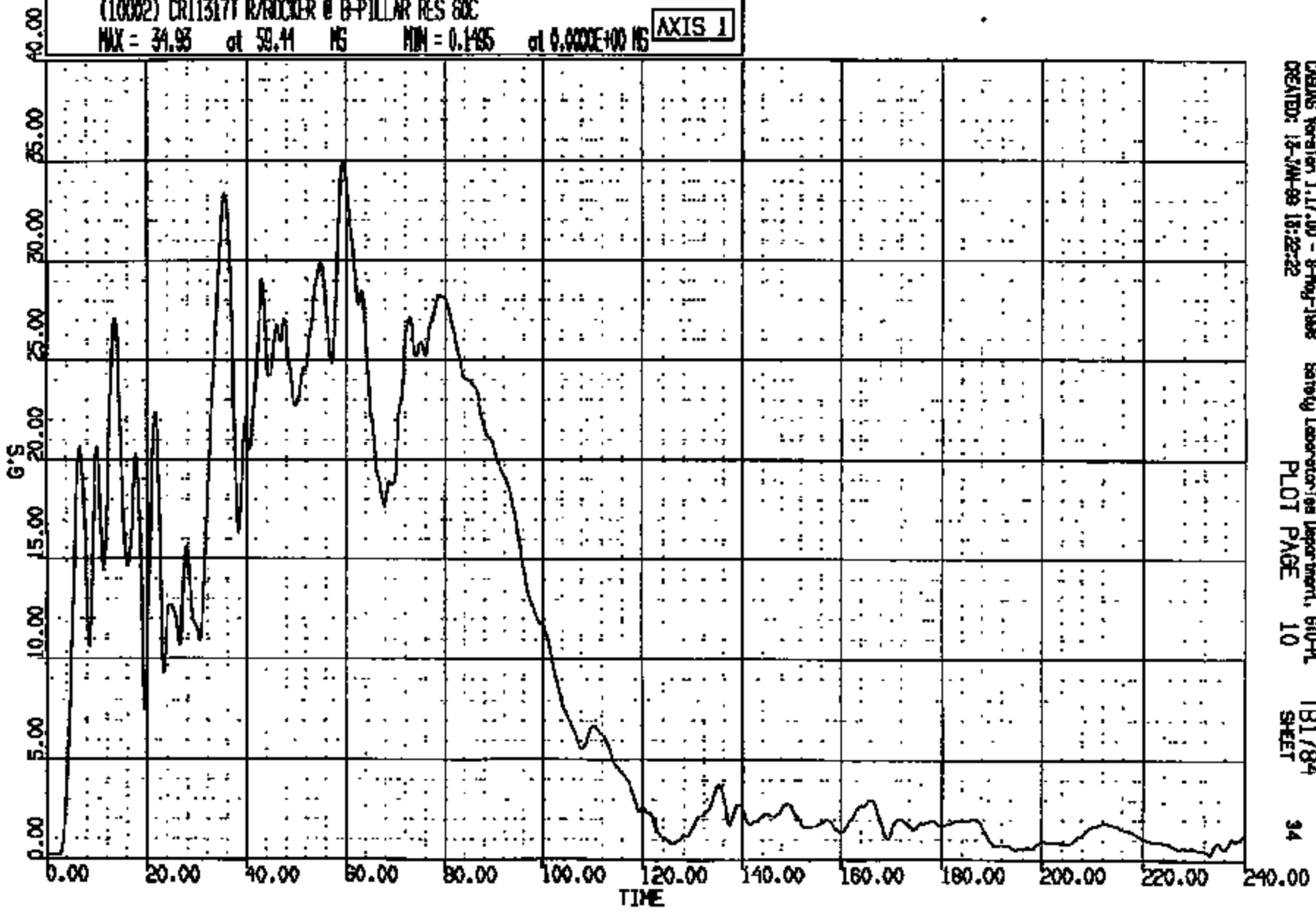
TB1784  
SHEET

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CRIS 0011317

CR R: 11317 TO: TB1784 DATE: 990118 12:07:19  
2000 D-199

(10002) CR113177 R/ROCKER @ B-PILLAR RES SOC  
MAX = 34.93 at 59.41 MS MIN = 0.1495 at 0.000E+00 MS **AXIS 1**



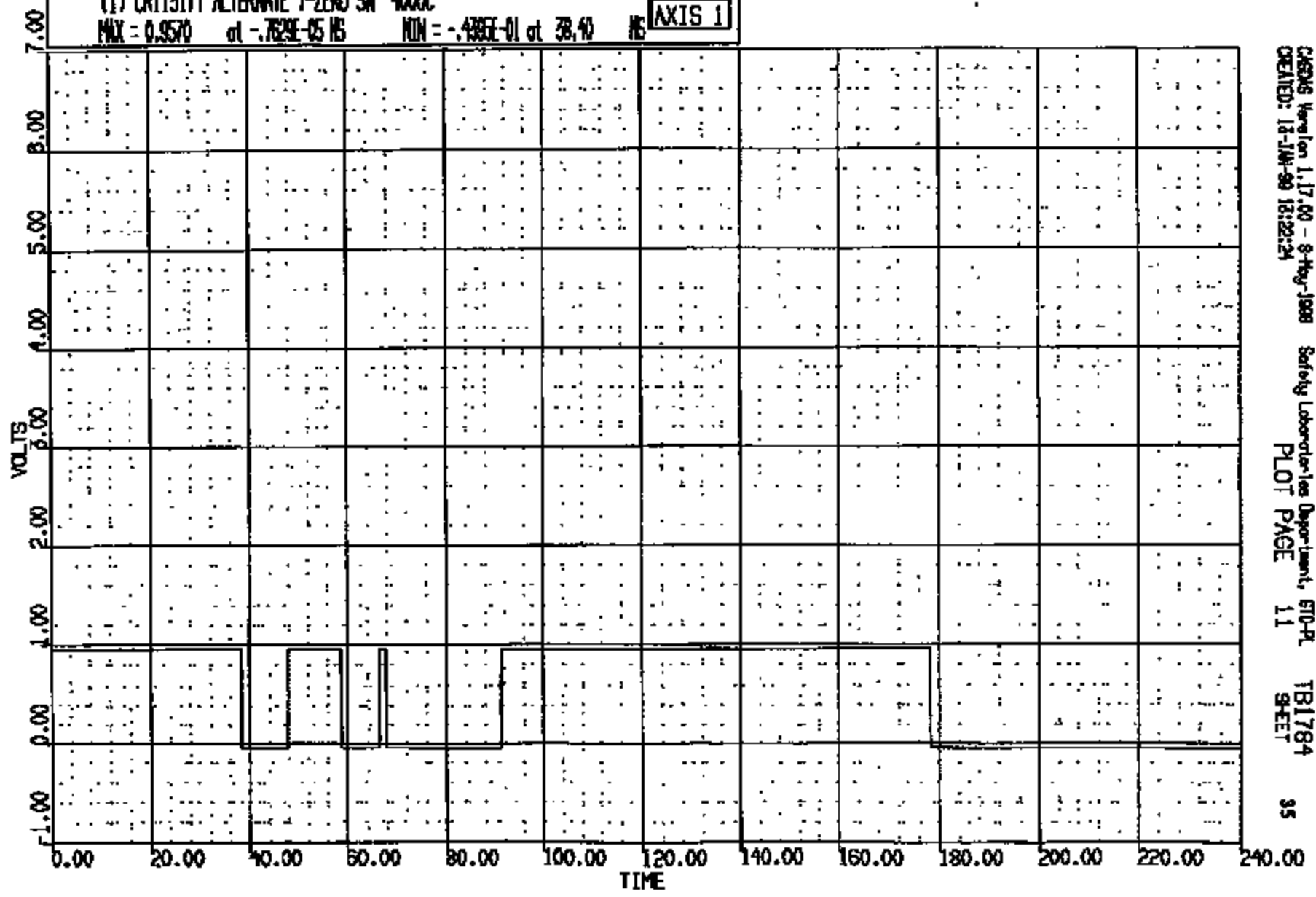
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CREATED: 18-JAN-99 18:25:22 PLOT PAGE 10 TB1784  
SHEET 34

CR11317

CR R: 11317 TO: TB1784 DATE: 990115 13:07:19  
2000 0-188

(1) CR11317T ALTERNATE 1-ZERO SN 4000C  
MAX = 0.9570 at -.7629E-05 HS MIN = -.4393E-01 at 38.41 HS

AXIS 1

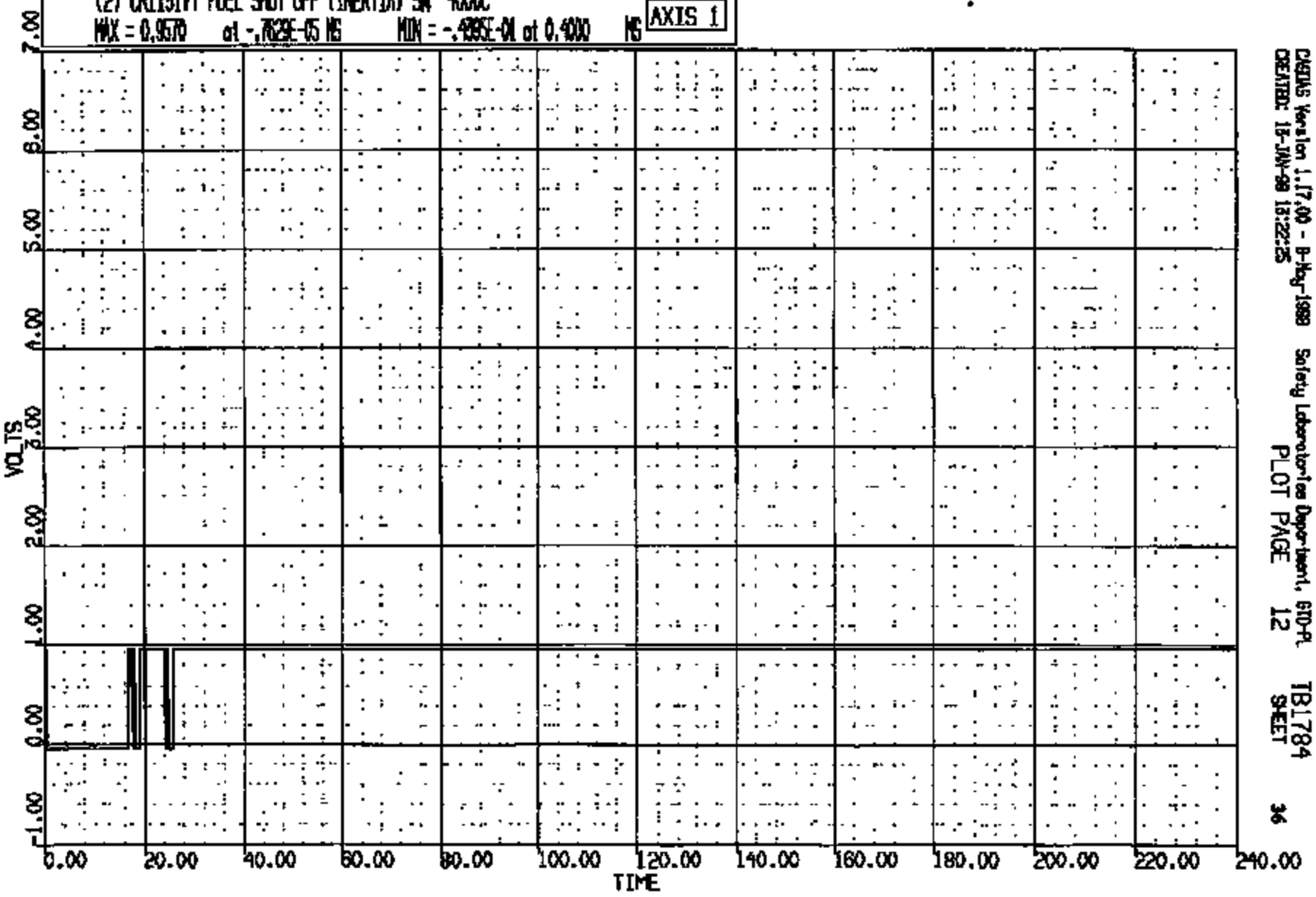


CASMS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, STD-PL TB1784  
CREATED: 13-JAN-99 12:22:24 PLOT PAGE 11 SHEET 95

CRTS 0011317

CORR N: 11317 TO: TB1784 DATE: 890115 15:07:18  
8000 D-188

(2) CR11317 FUEL SHUT OFF (INERTIA) SN 4000  
MAX = 0.9570 at -.7629E-05 NS MIN = -.4995E-01 at 0.4000 NS **AXIS 1**

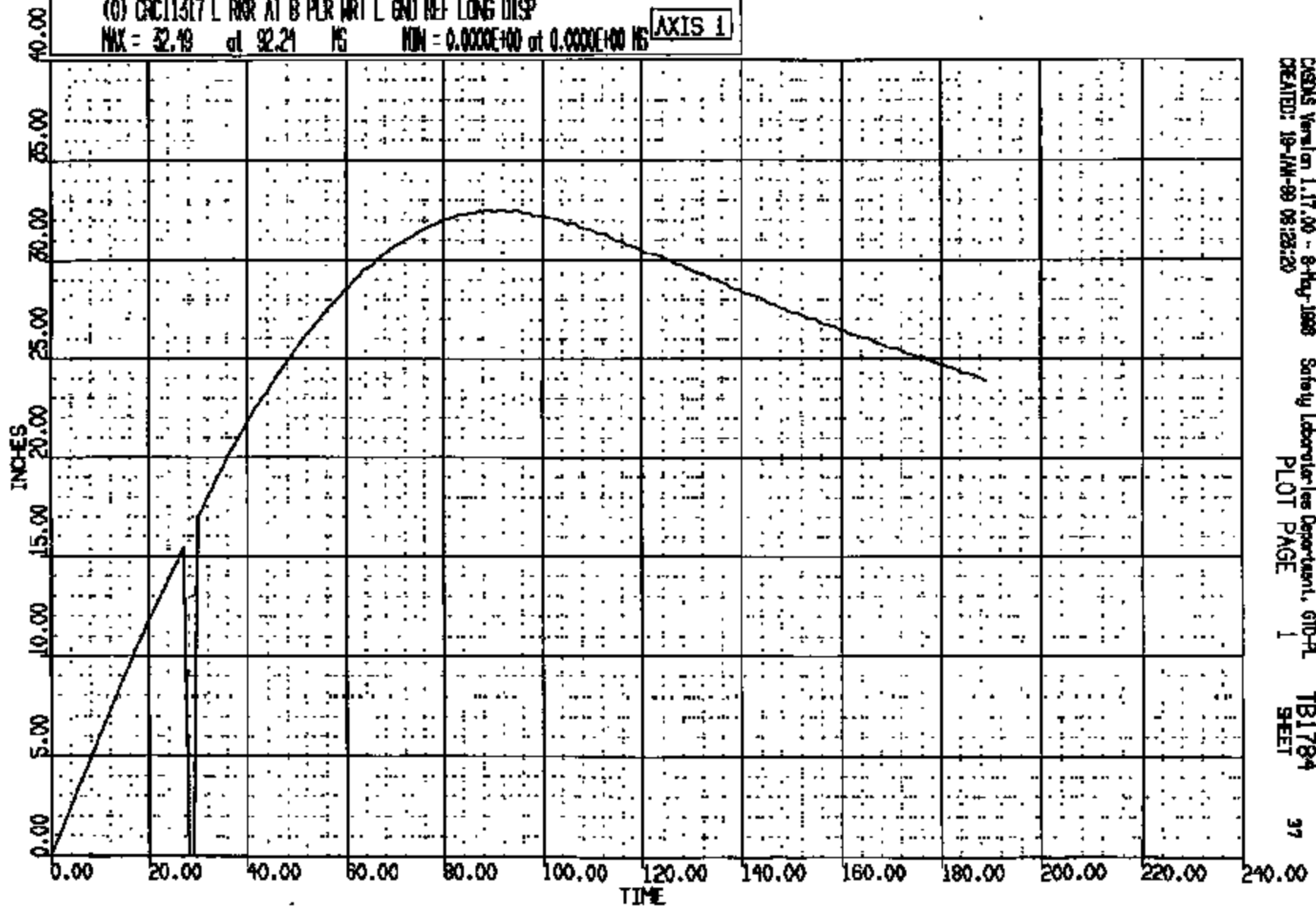


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CENTRE: 15-JAN-89 15:22:25 PLOT PAGE 12 SHEET 36

CRIS 0011317

NO R: 11317 TO: TB1784 DATE: 990113 13:07:19  
0000 D-199

(0) CXC11317 L RGR AT B PLR WRT L END REF LONG DISP  
MAX = 32.49 at 92.21 MS MIN = 0.0000E+00 at 0.0000E+00 MS **AXIS 1**

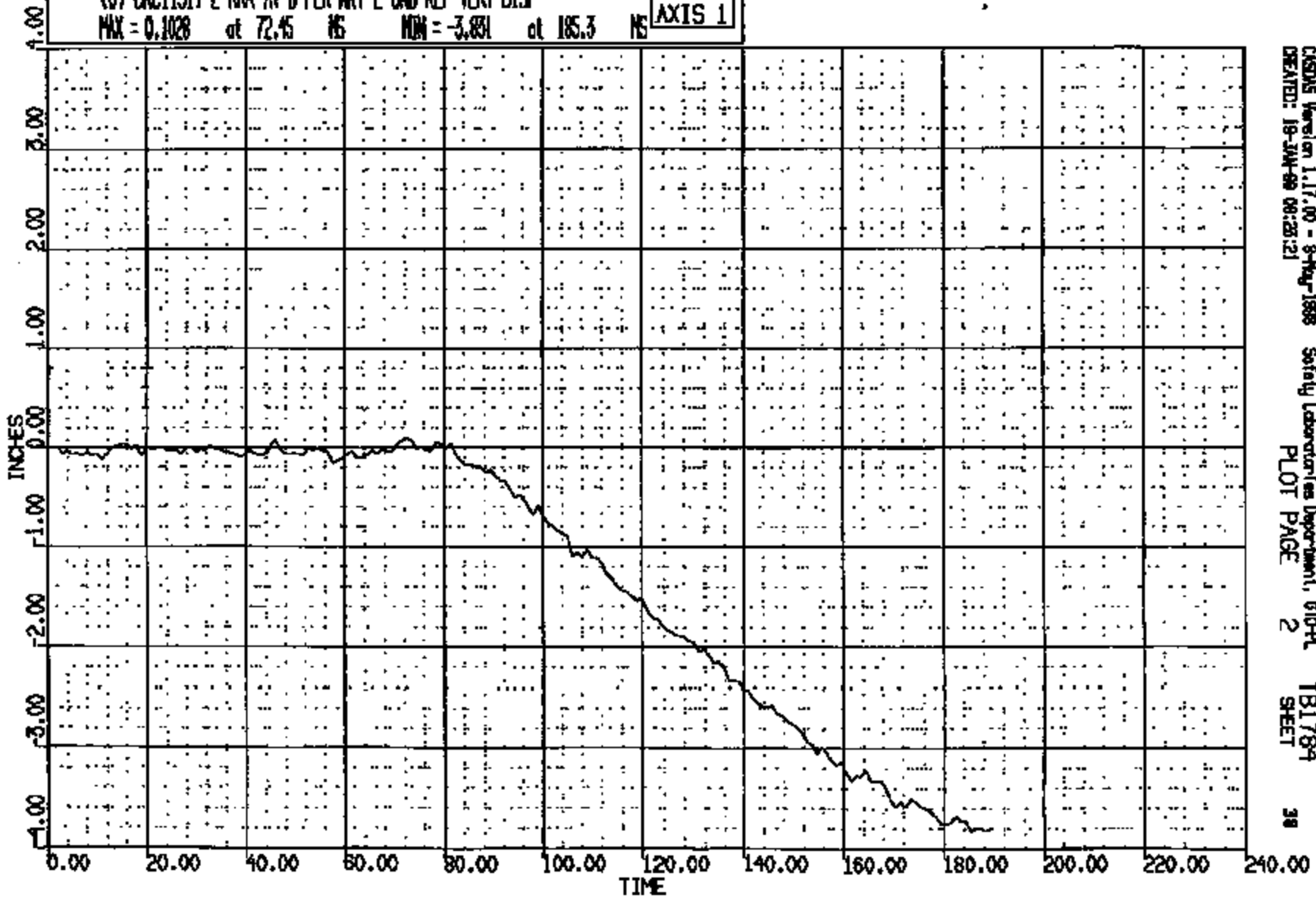


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CREATED: 19-JAN-99 09:12:120 PLOT PAGE 1 SHEET

CRTS 0011317

CR R: 11317 TO: TB1784 DATE: 980118 13:07:19  
8000 D-188

(0) CR011317 L RGR AT B PLR WRT L GND REF VERT DISP  
MAX = 0.1028 at 72.45 NS MIN = -3.881 at 185.3 NS **AXIS 1**



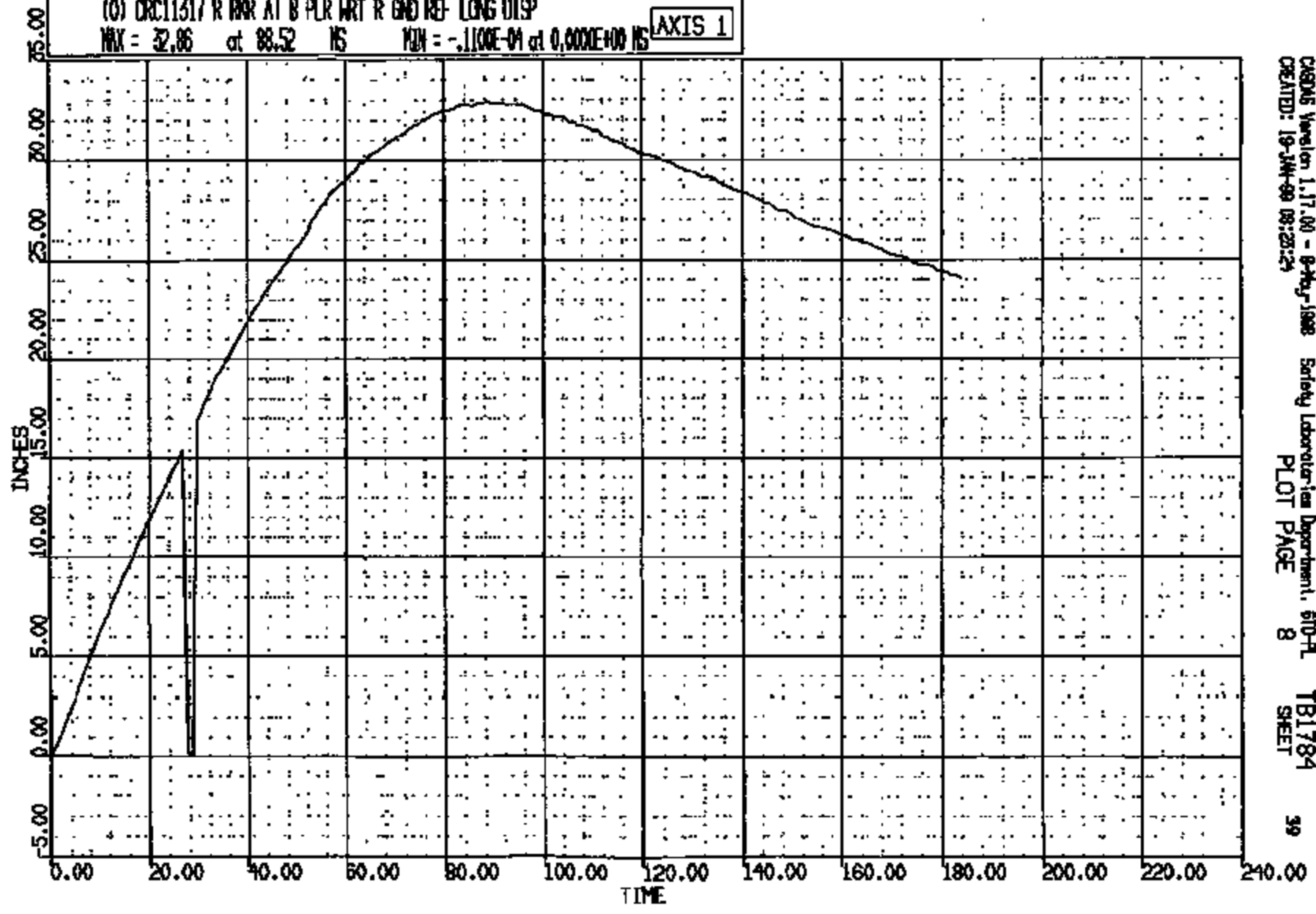
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CREATED: 18-JAN-89 08:23:21 PLOT PAGE 2 SHEET 38

CRTS 0011317

RUN R: 11317 TO: TB1784 DATE: 990115 13:07:18  
R000 D-188

(O) CRC11317 R RNR AT B PLR WRT R END REF LONG DISP  
MAX = 32.86 at 88.52 MS MIN = -.1100E-04 at 0.000E+00 MS

AXIS 1



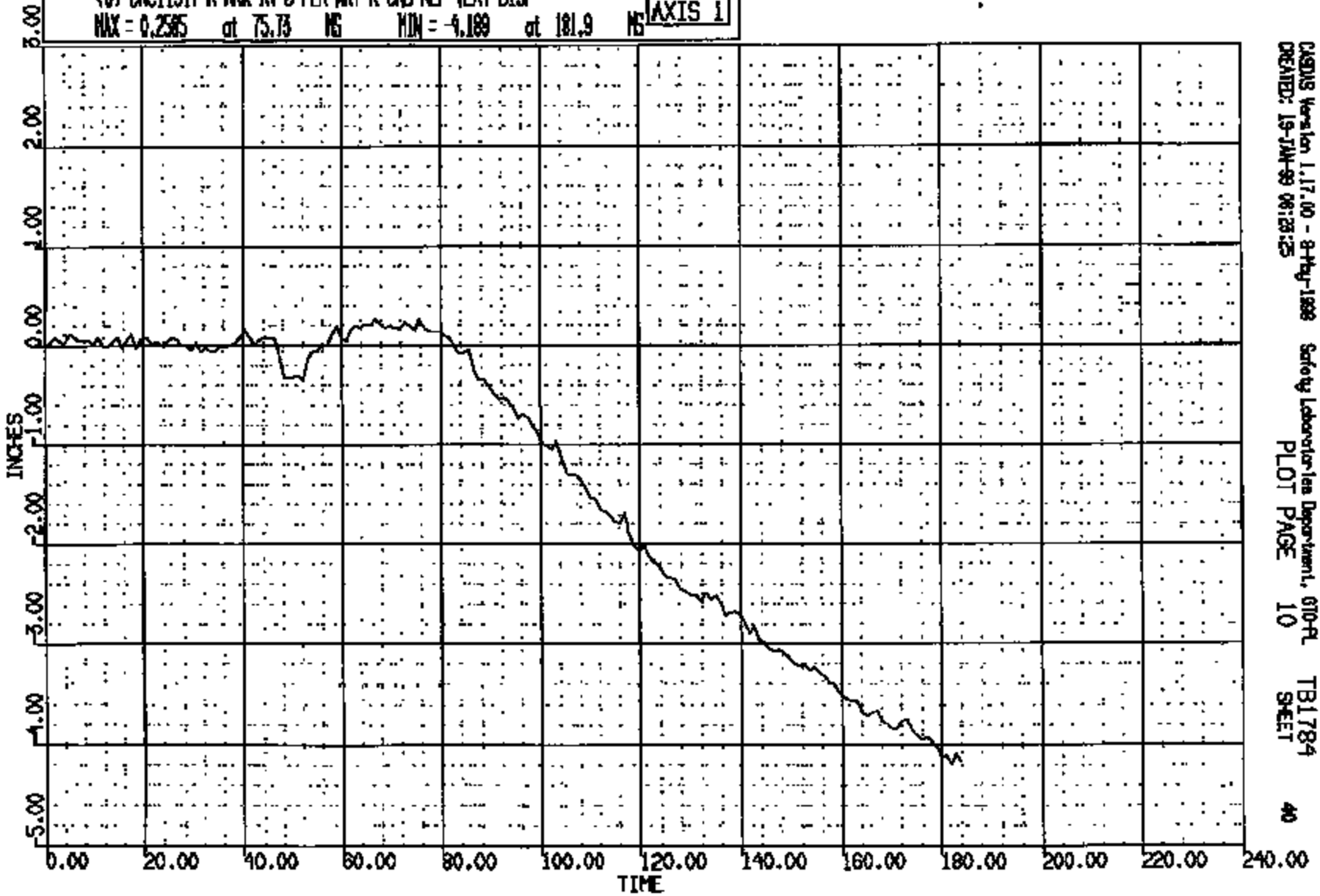
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CREATED: 19-JAN-99 09:25:24 PLOT PAGE 8 SHEET

CRTS 0011317



CR R: 11517 TO: T81784 DATE: 990115 13:07:19  
R000 D-188

(0) CR011317 R ROR AT B PLR WRT R END REF VERT DISP  
MAX = 0.2585 at 75.73 MS MIN = -4.189 at 181.9 MS **AXIS 1**



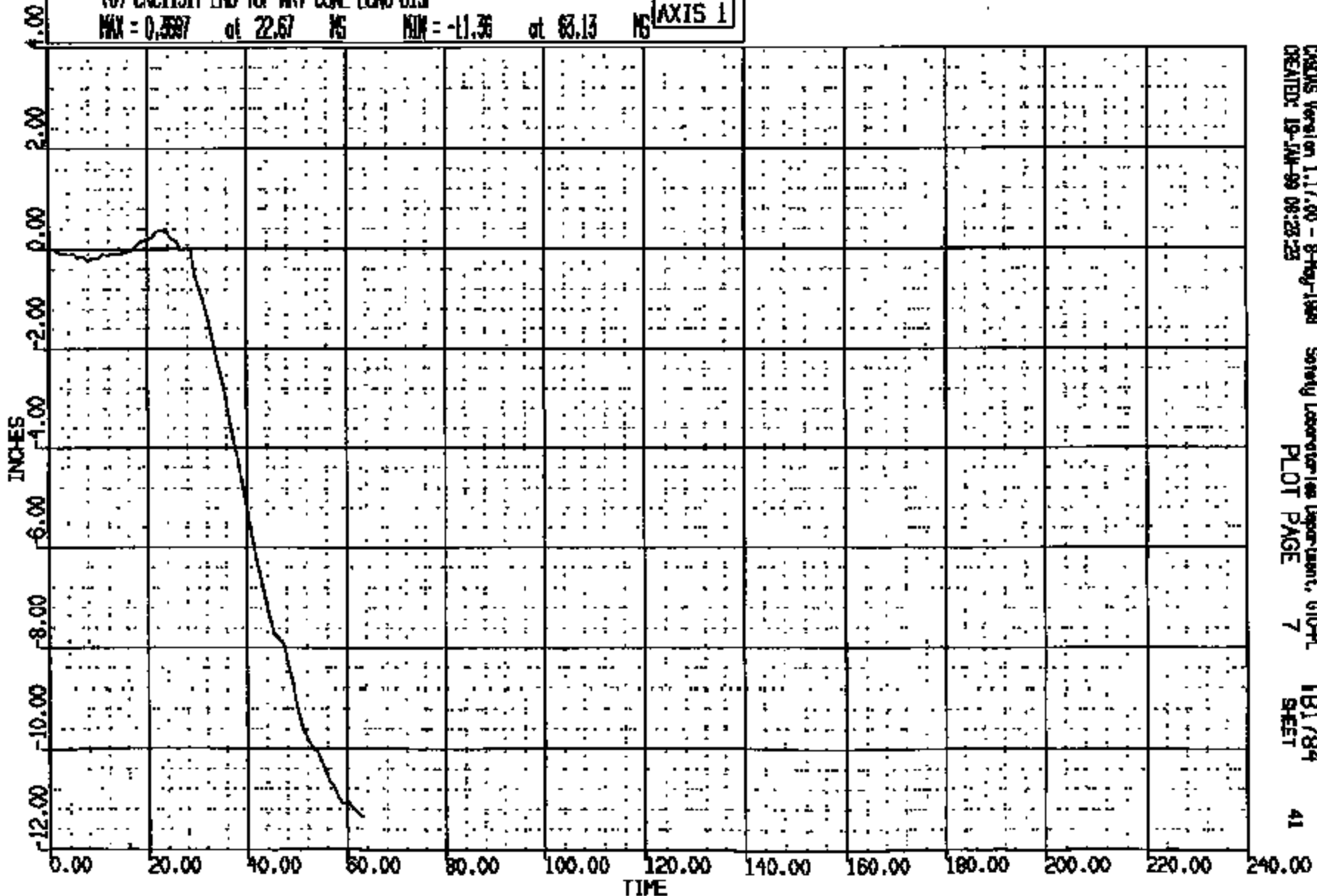
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CREATED: 19-JAN-99 08:28:25 PLOT PAGE 10 SHEET

CR R: 11317 TO: TB1784 DATE: 890118 13:07:19  
2000 D-188

(6) CXC11317 ENG TOP WRT COM LONG DISP

MAX = 0.3687 at 22.67 MS MIN = -11.36 at 83.13 MS

AXIS 1

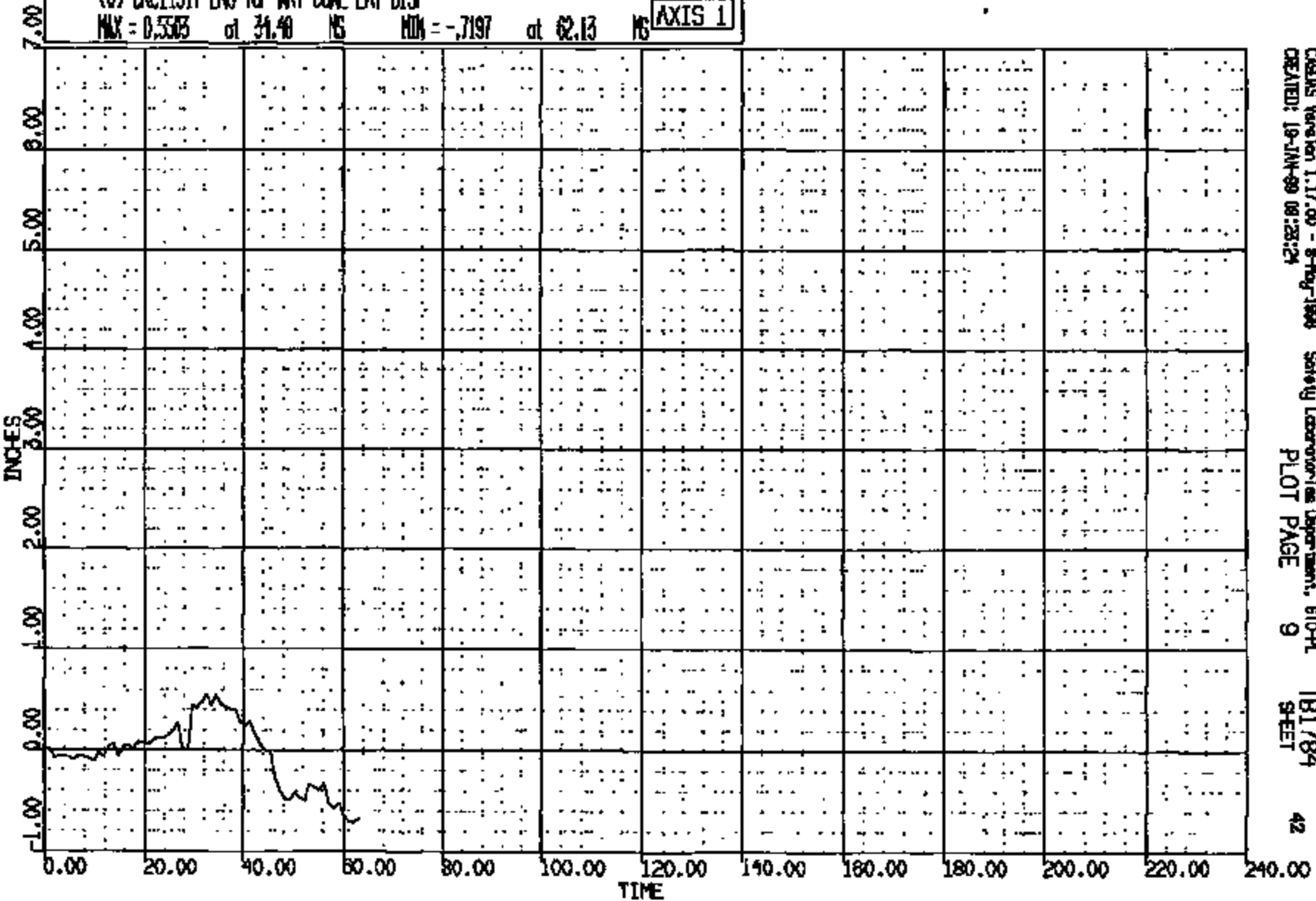


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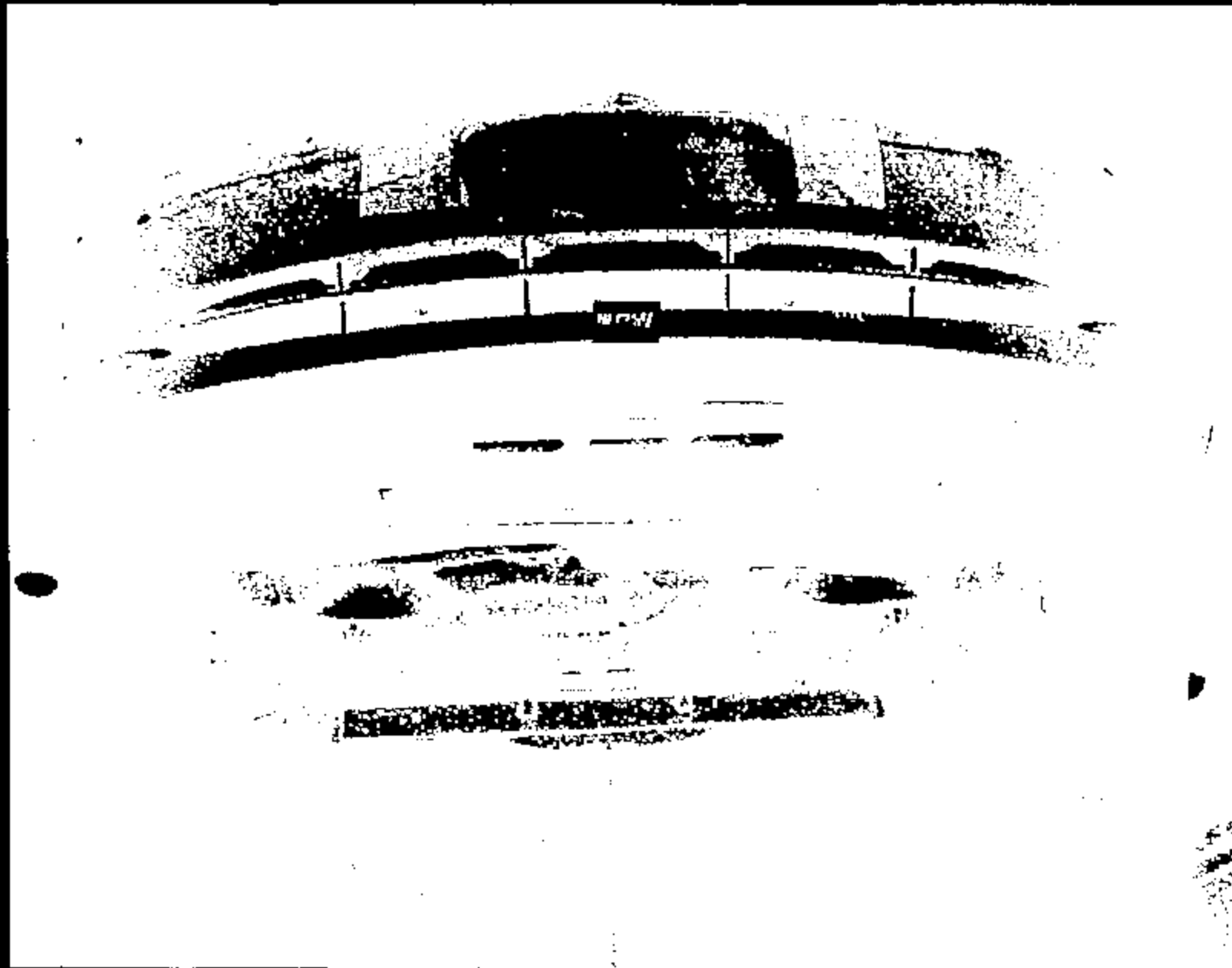
CRTS 0011317

00 R: 11517 TO: T81784 DATE: 990115 15:07:19  
2000 D-198

(0) CRCL1317 ENG TOP WRT COOL LAT DISP  
MAX = 0.5505 at 34.40 MS MIN = -.7197 at 62.13 MS **AXIS 1**



CRIS 0011317



Name:

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CRTS 0011317



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11317002.JPG

CRTS 0011317



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CRTS 0011317



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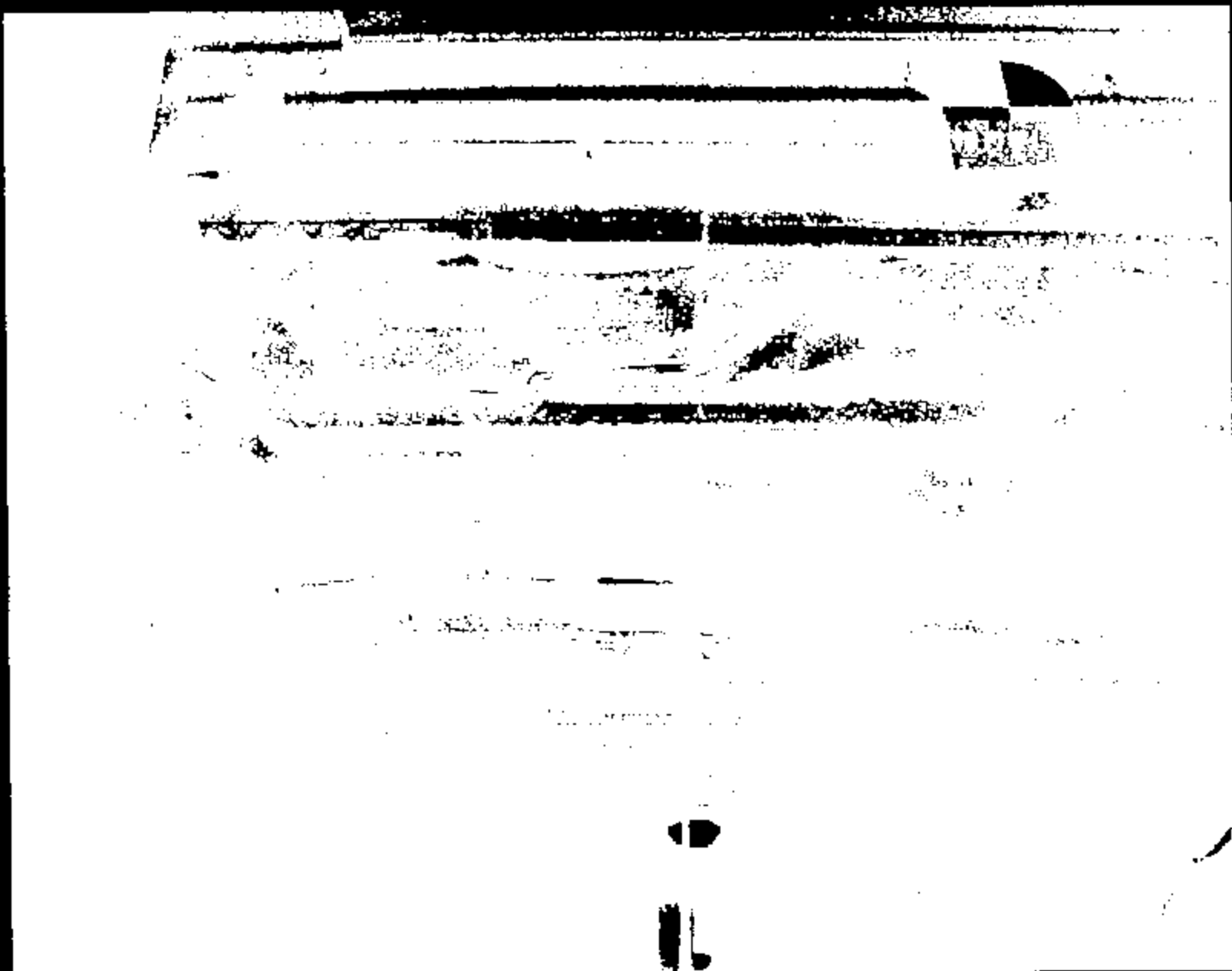


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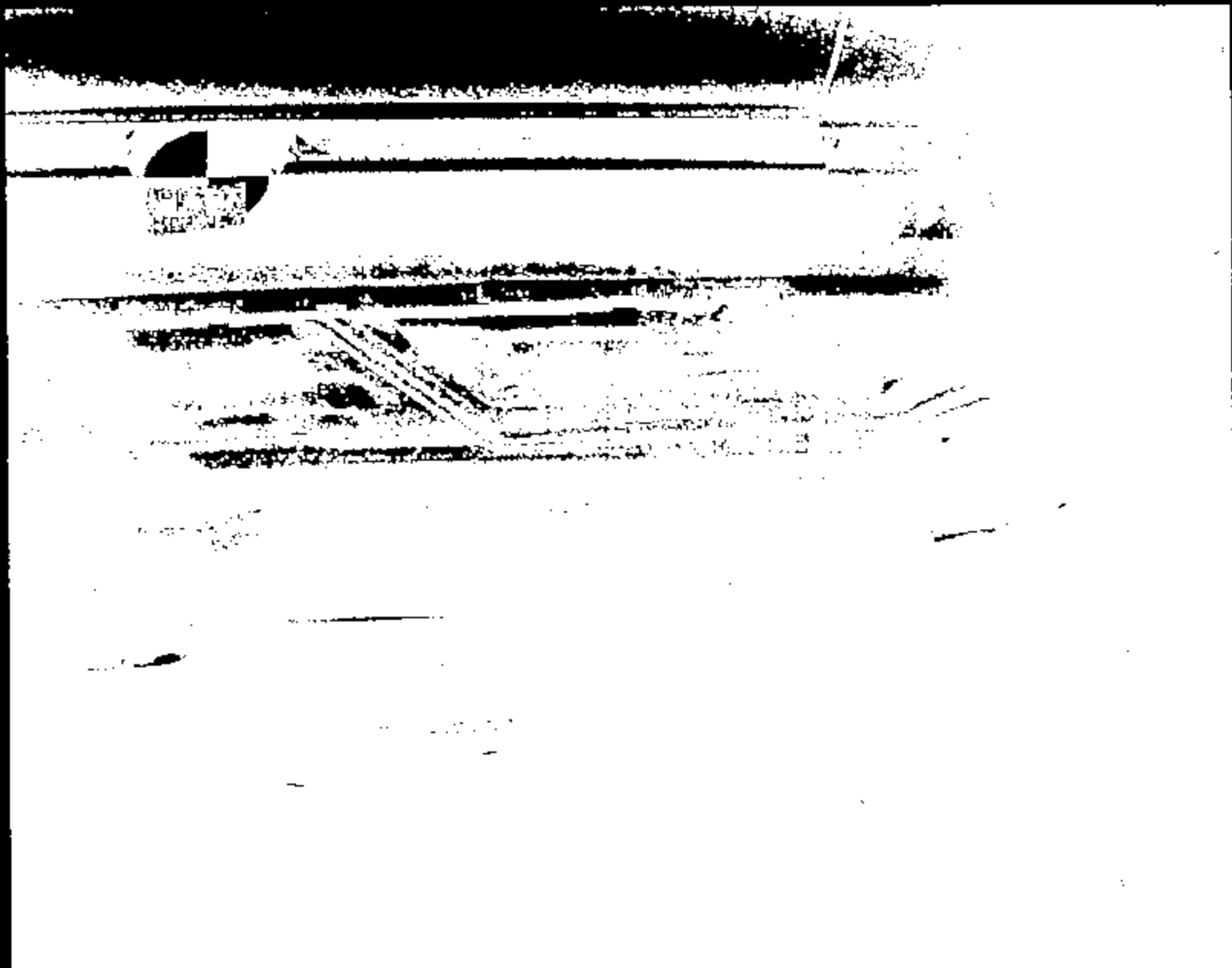
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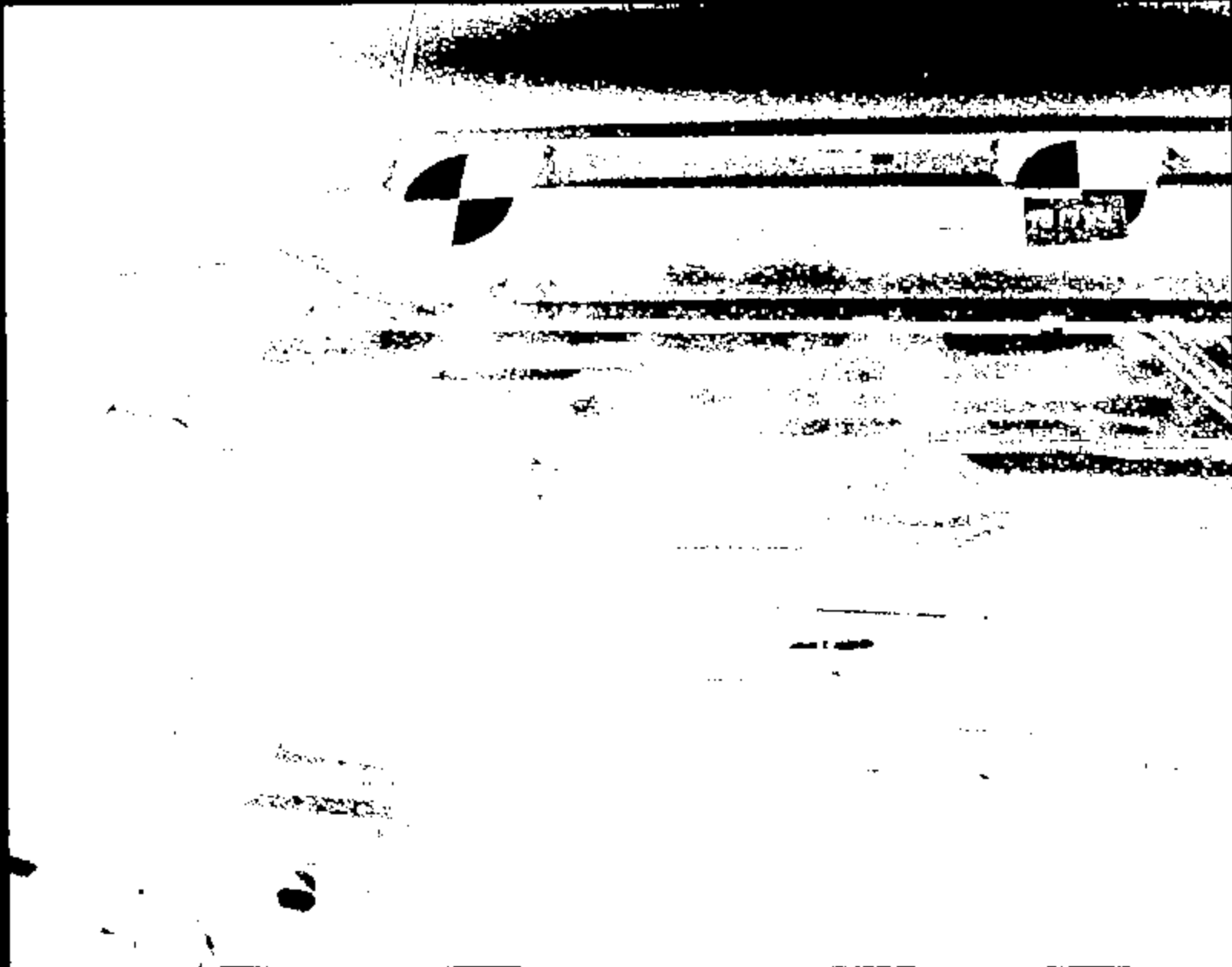
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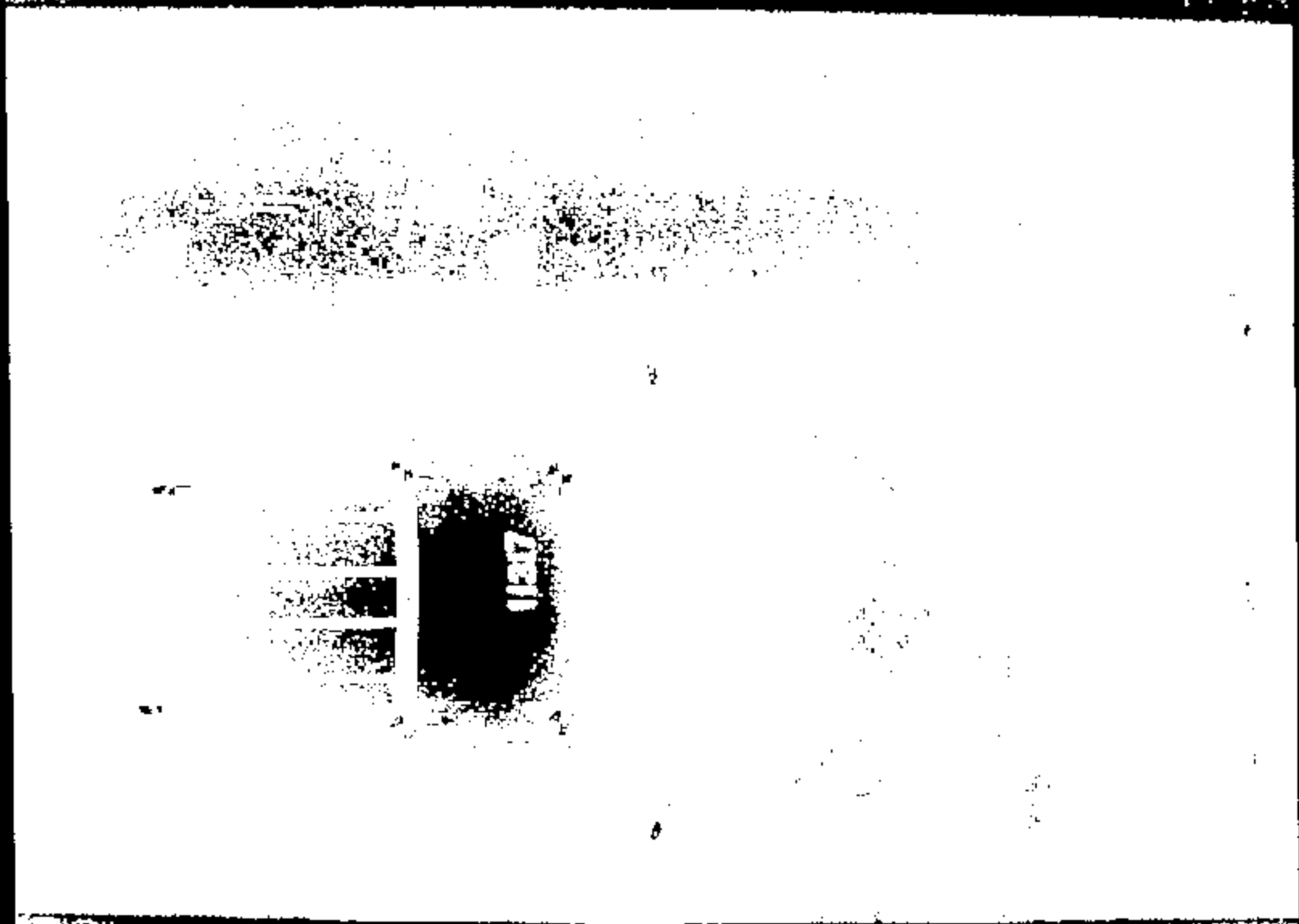
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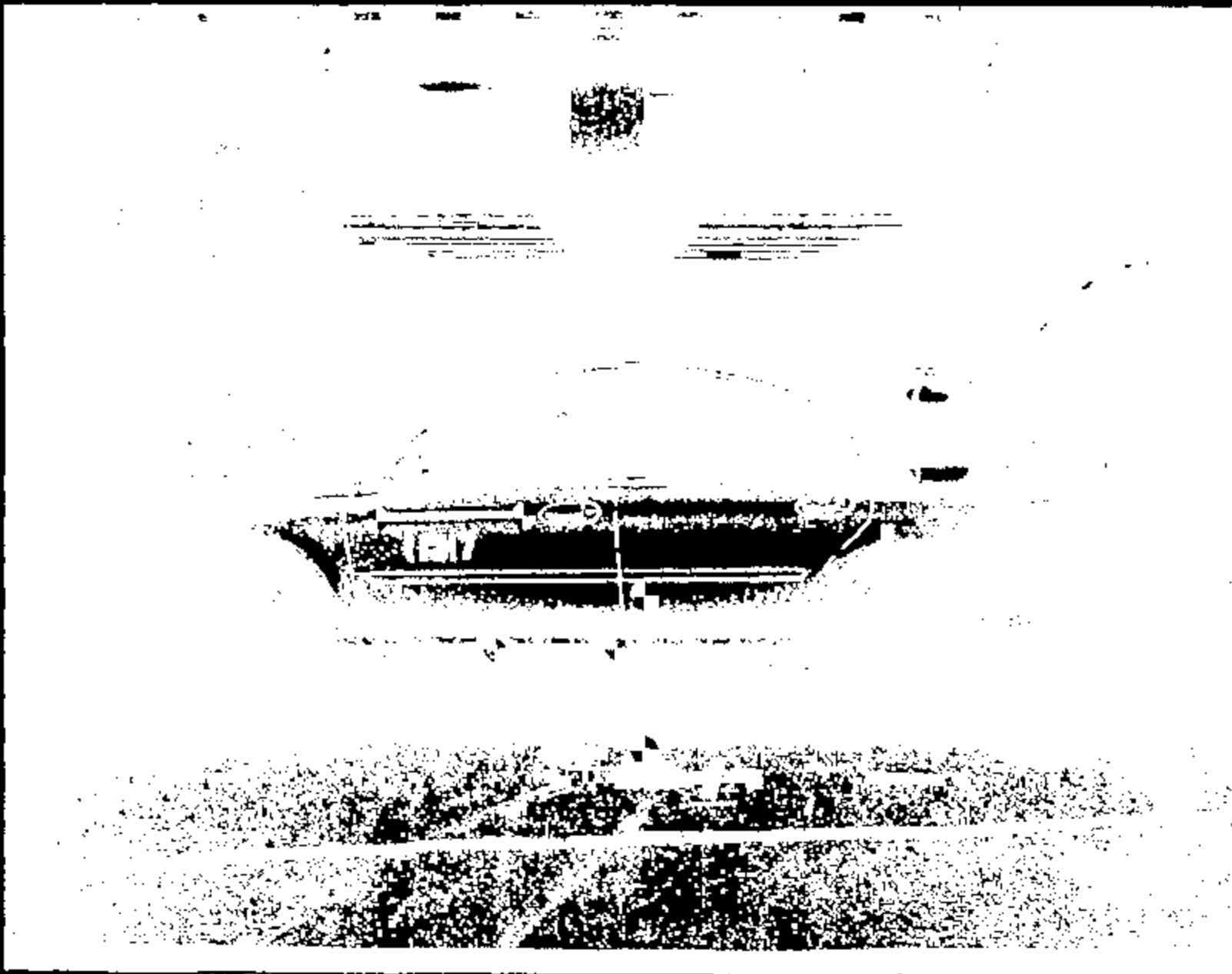


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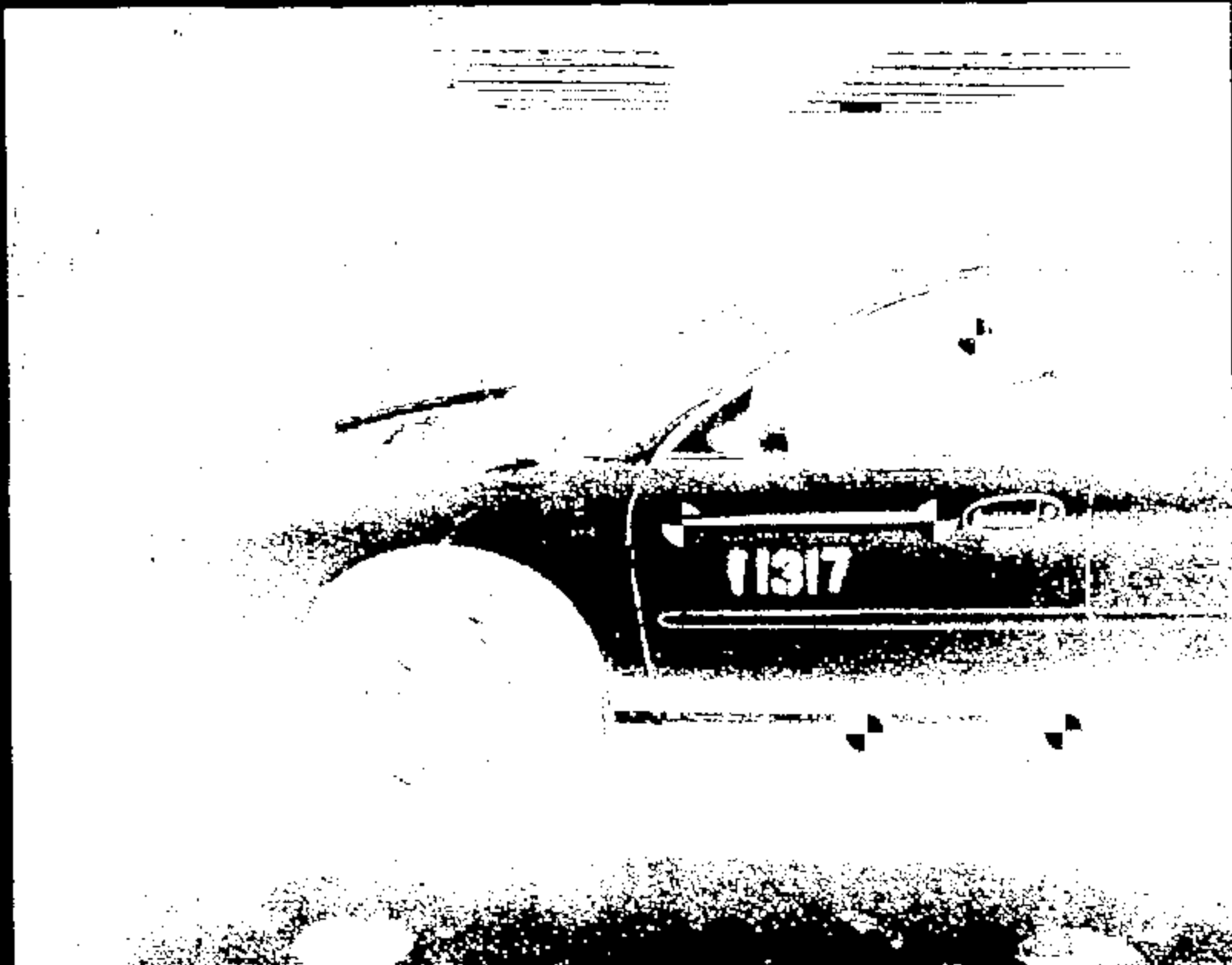




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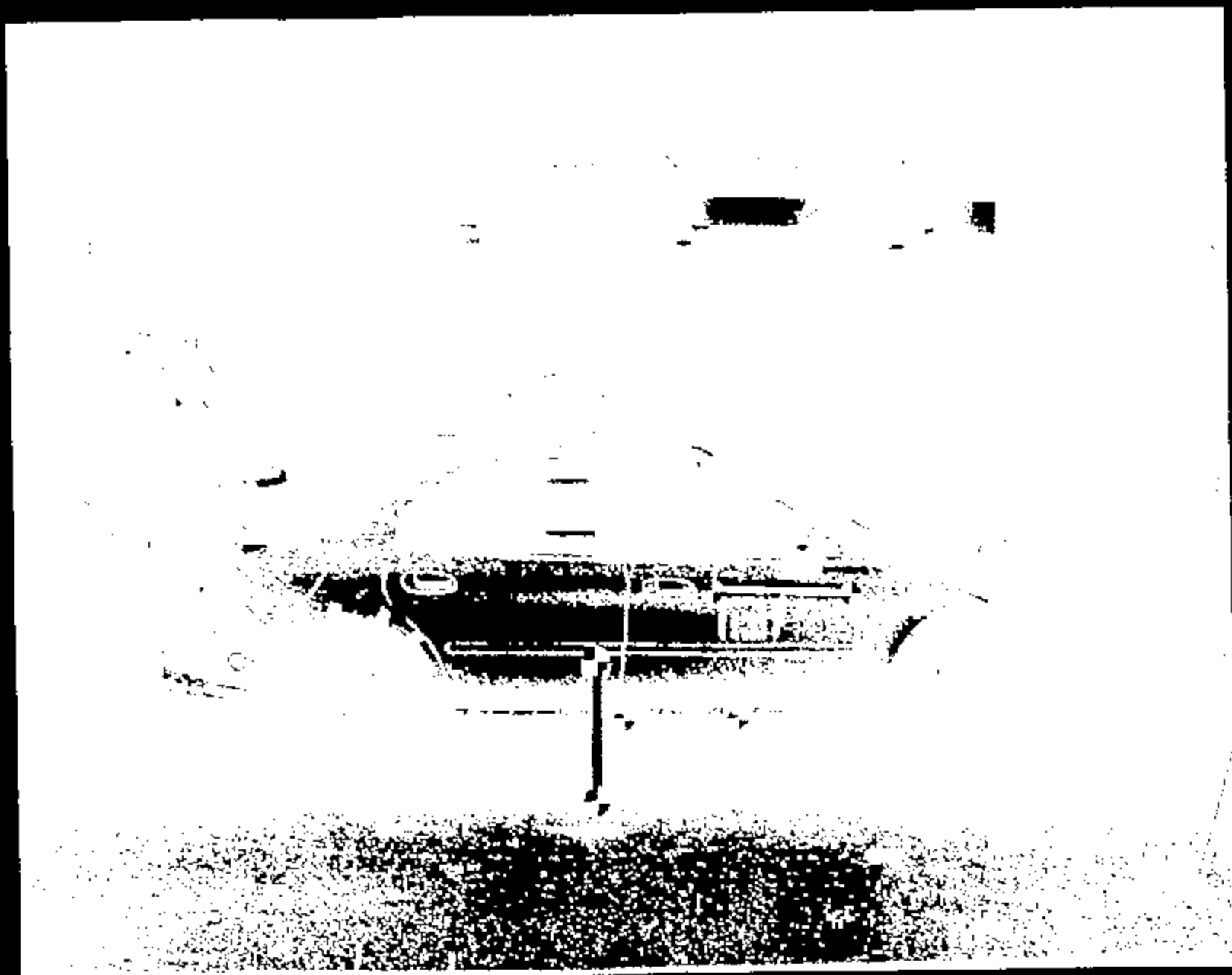
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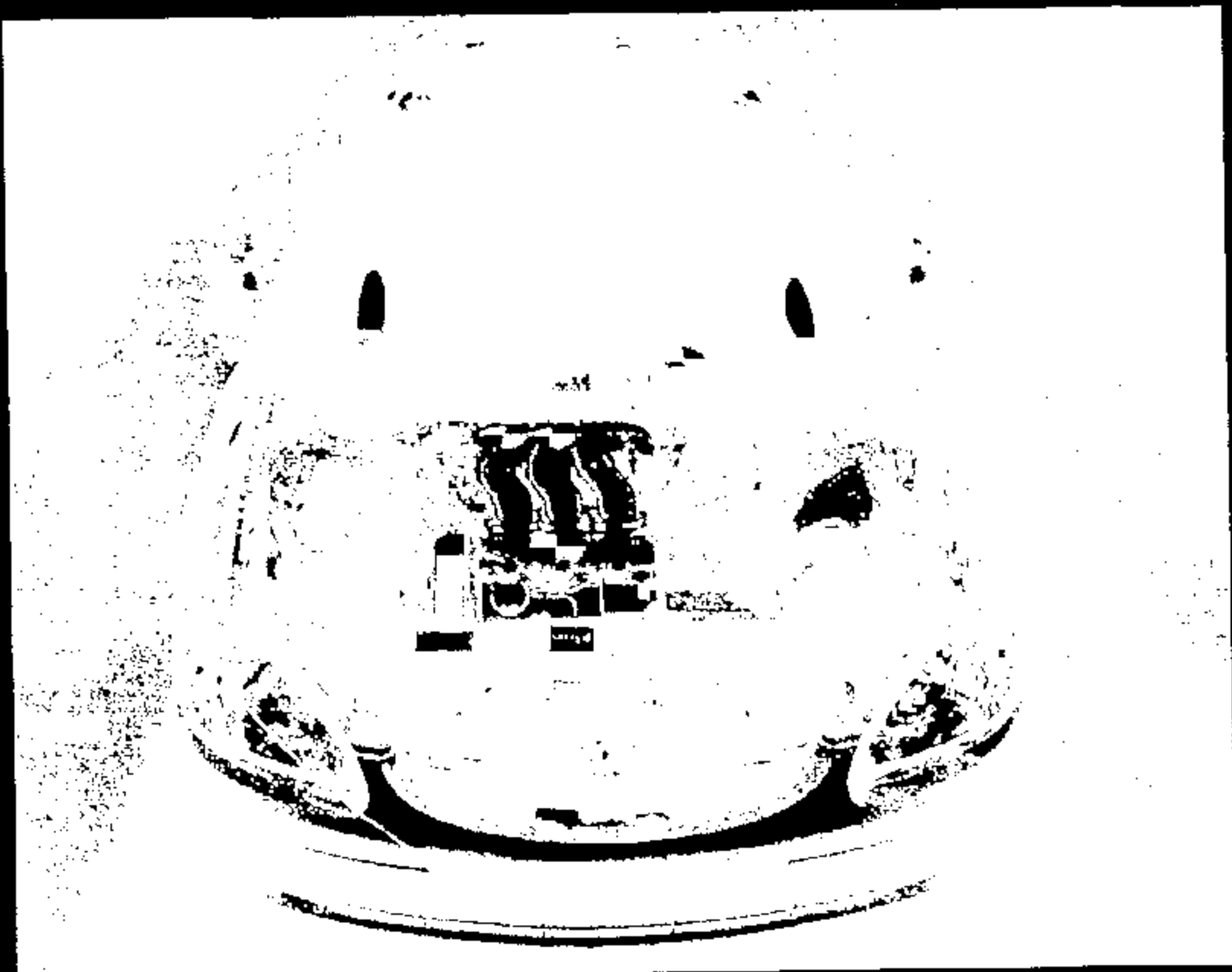
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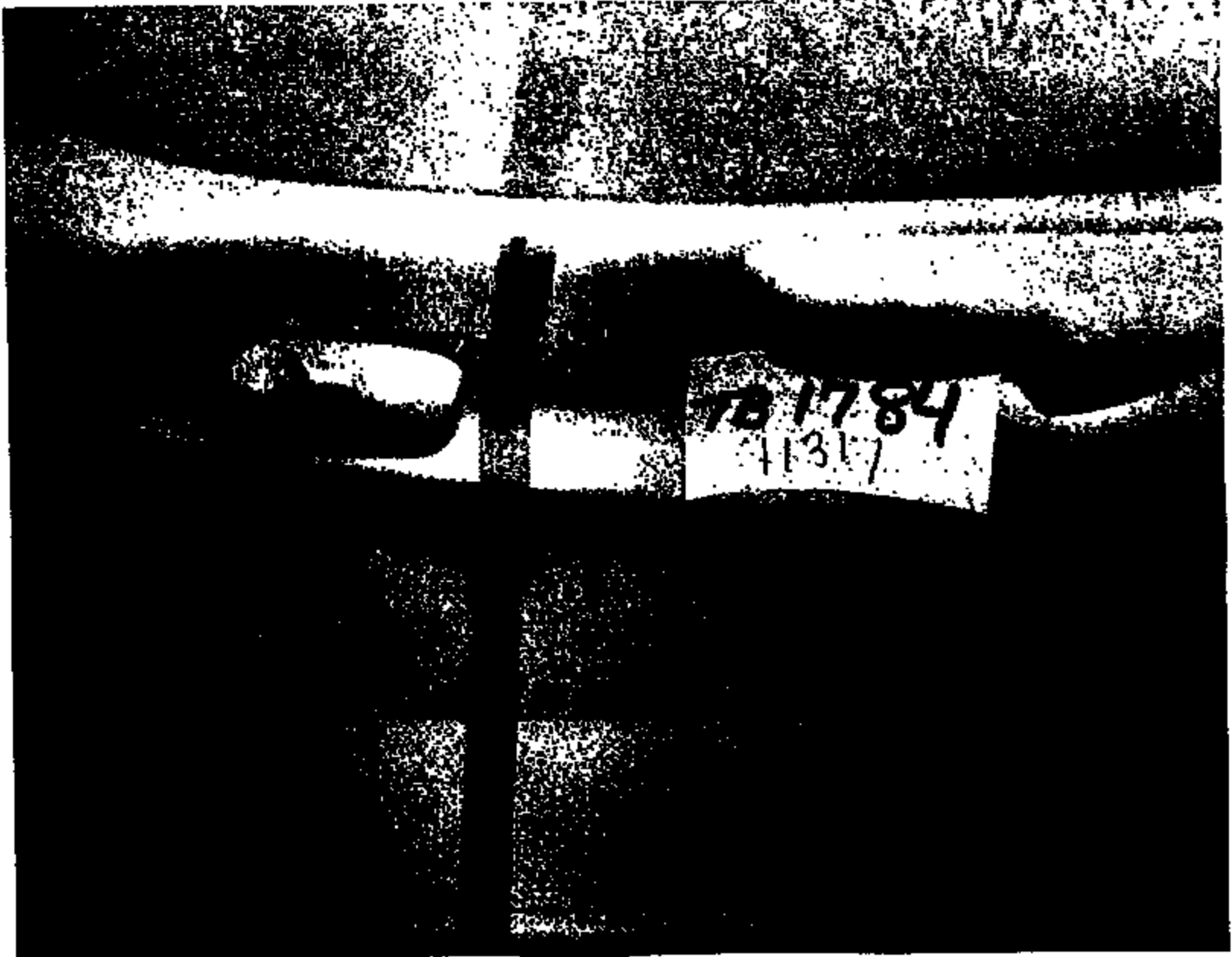




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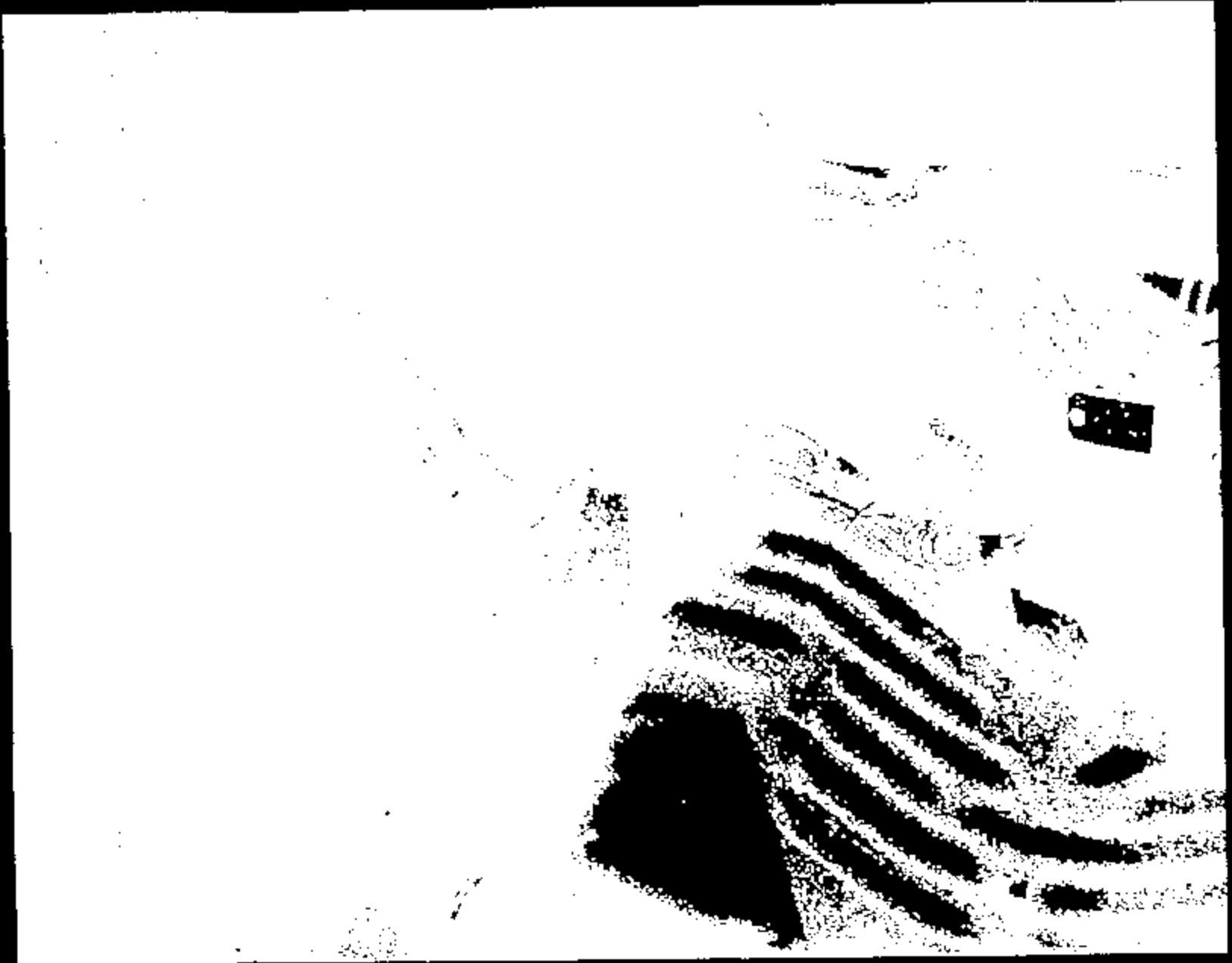
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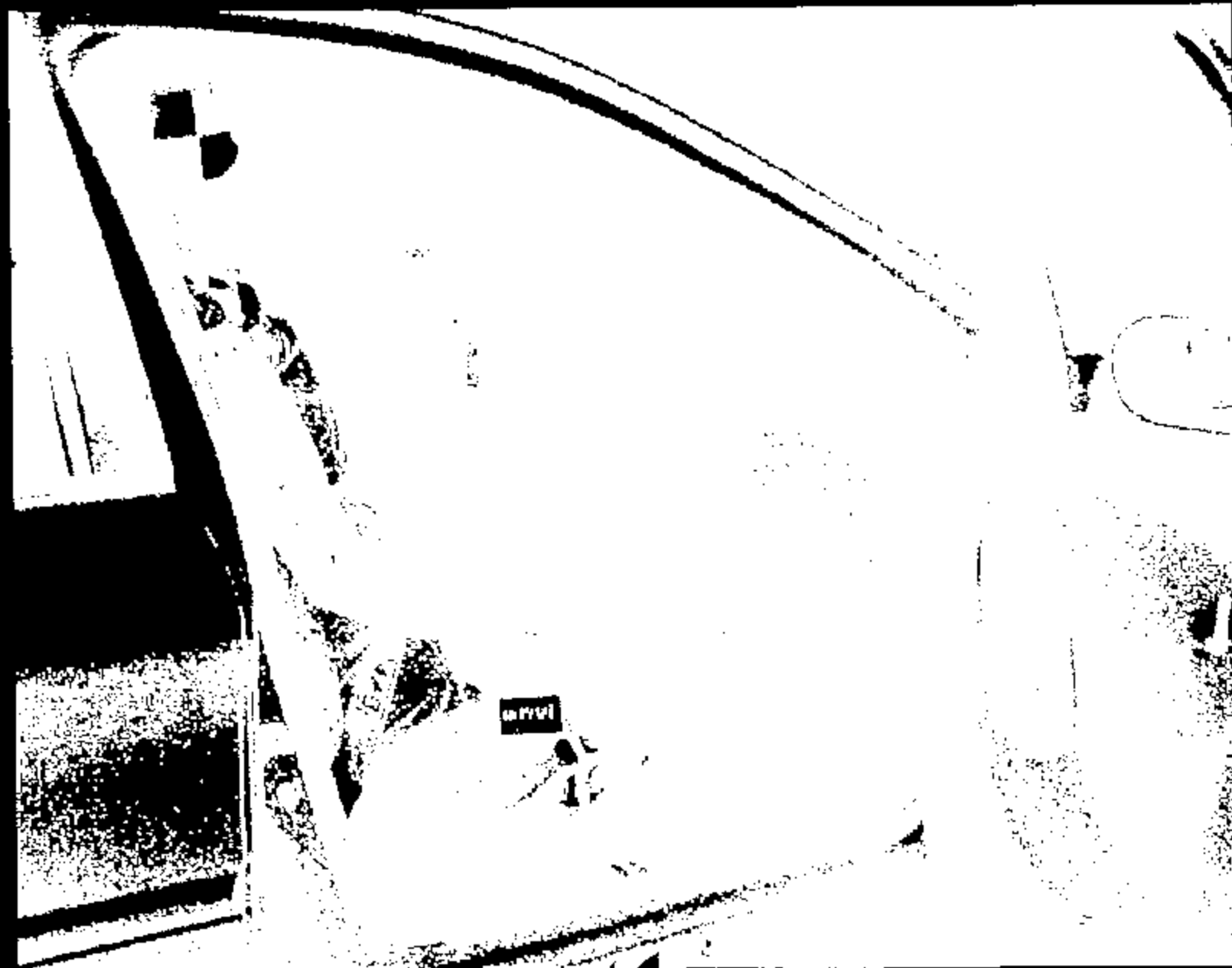
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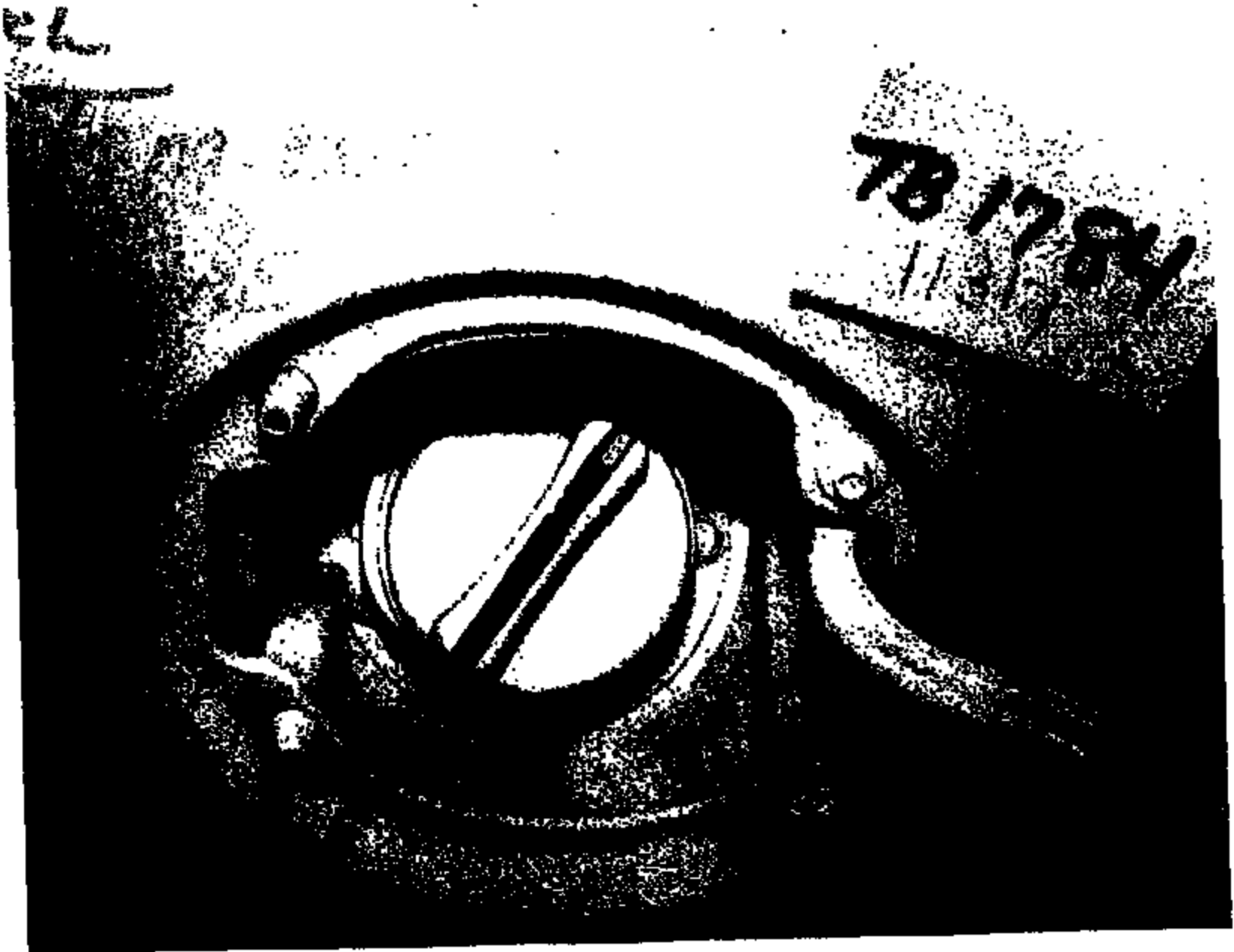
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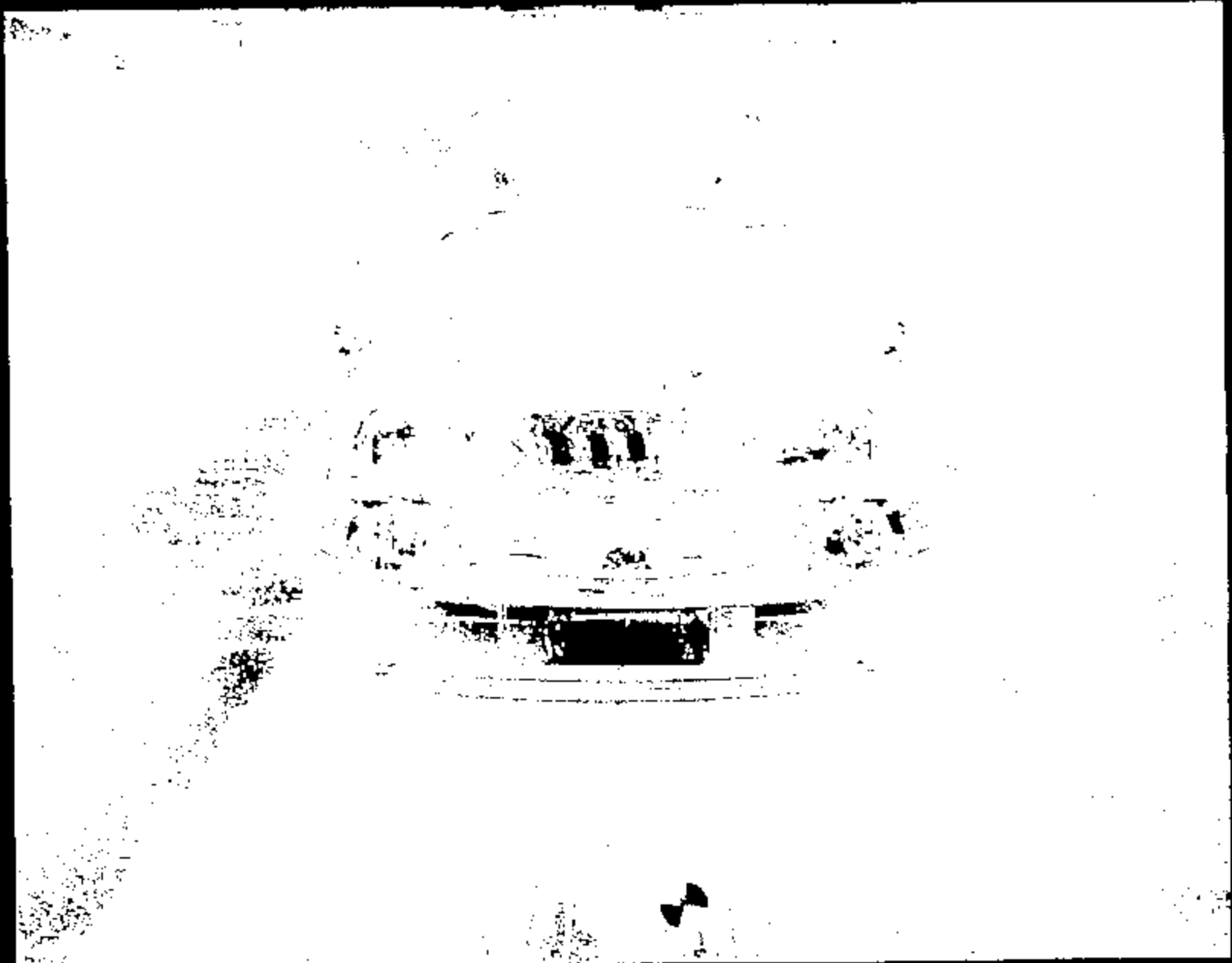


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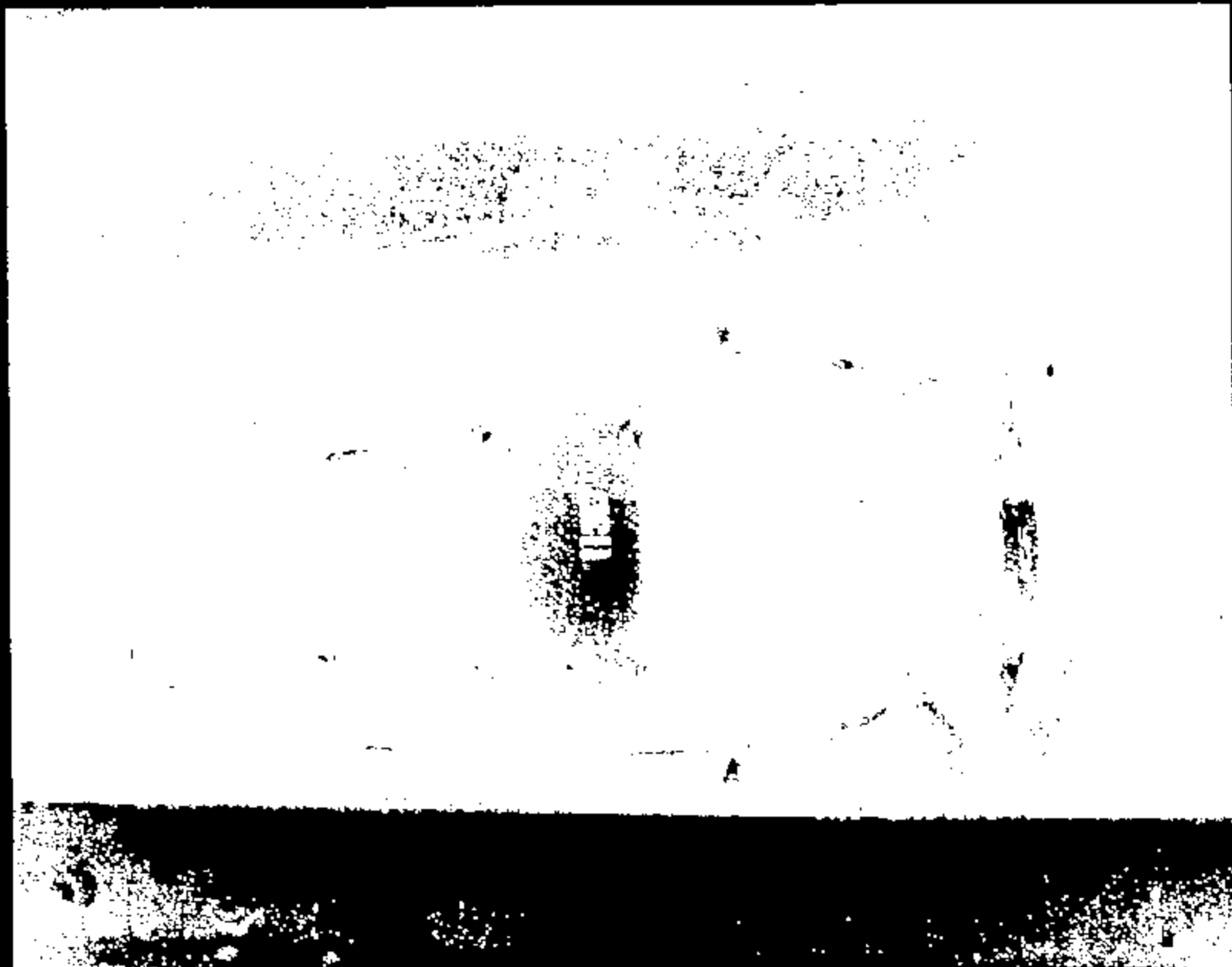




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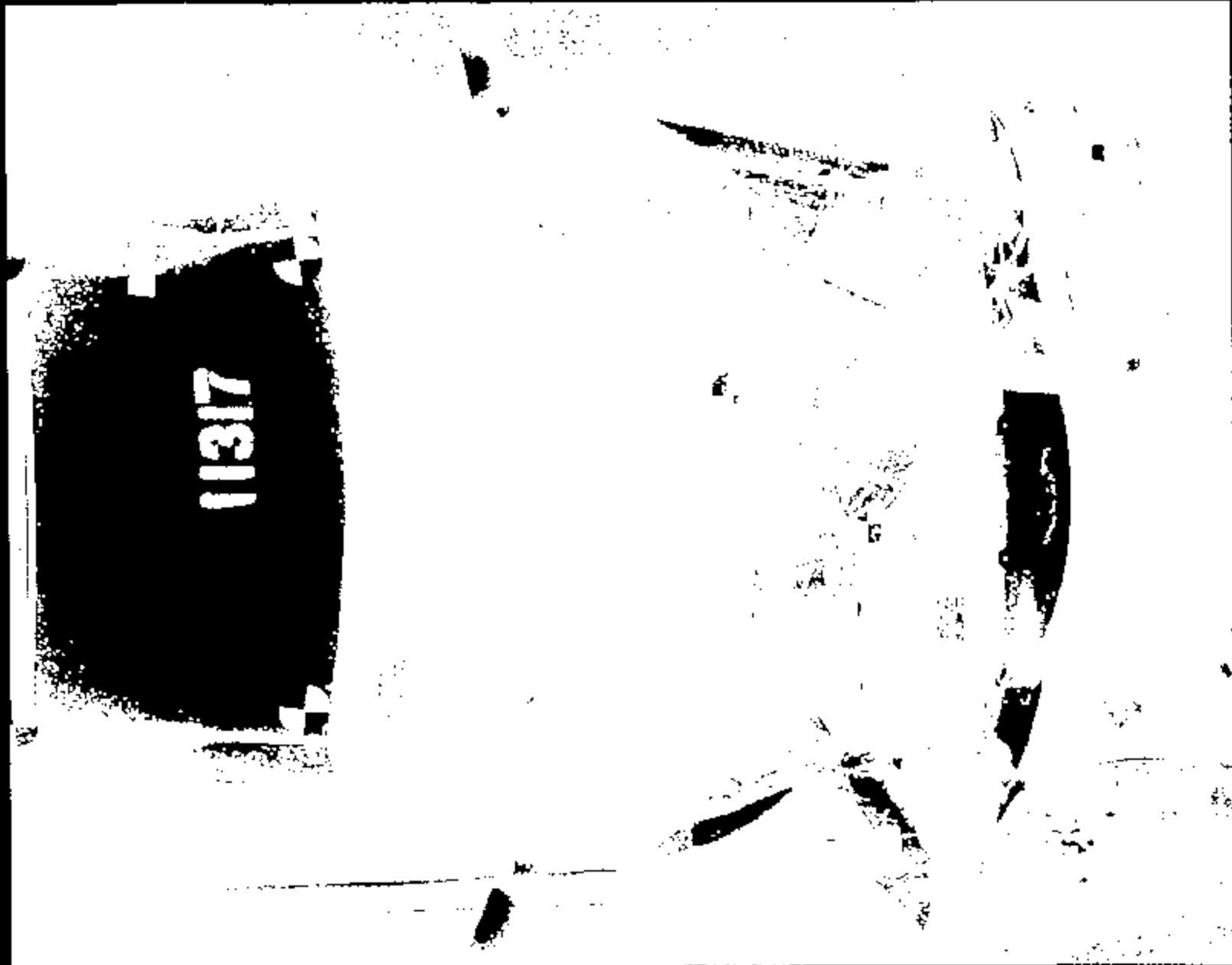
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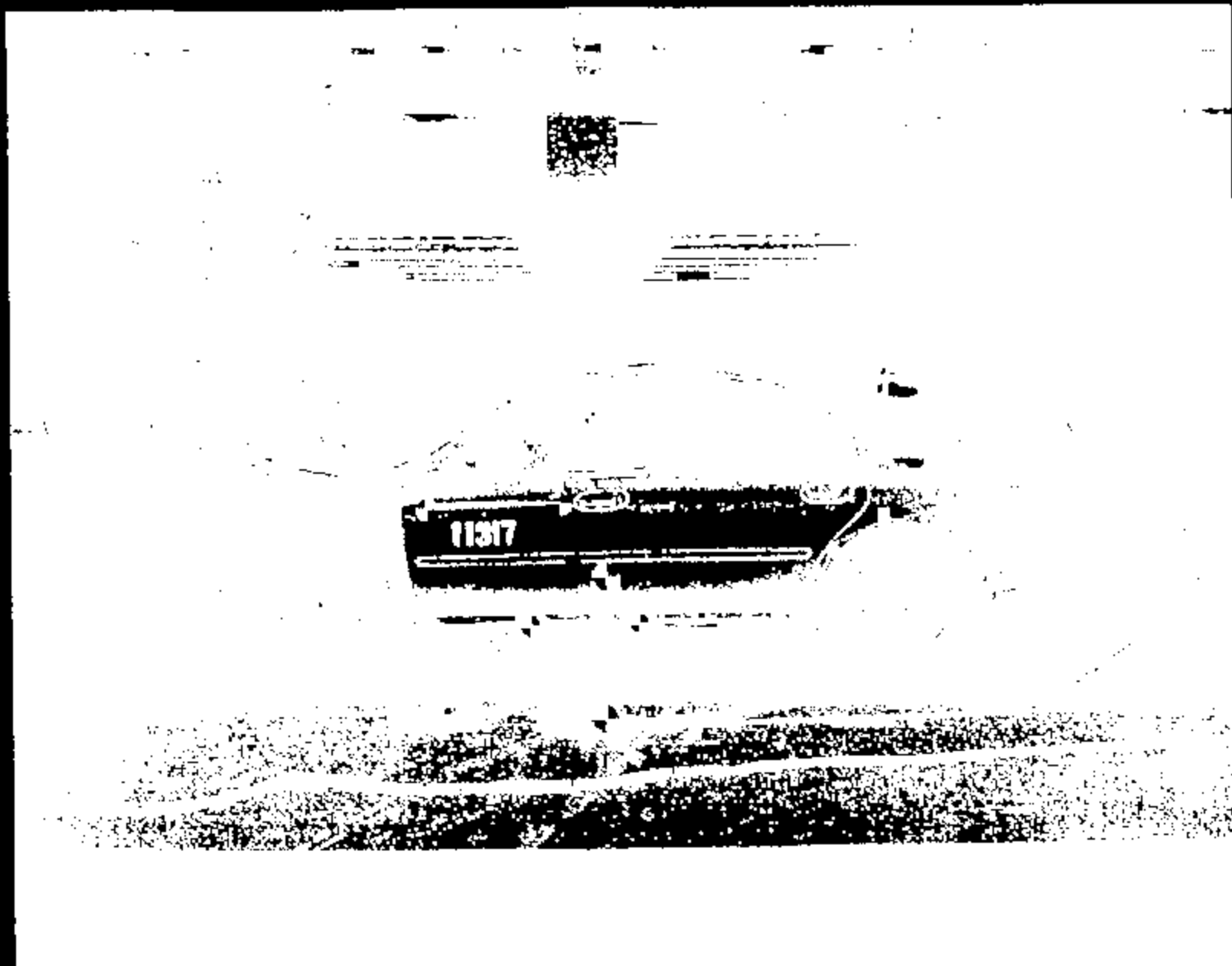
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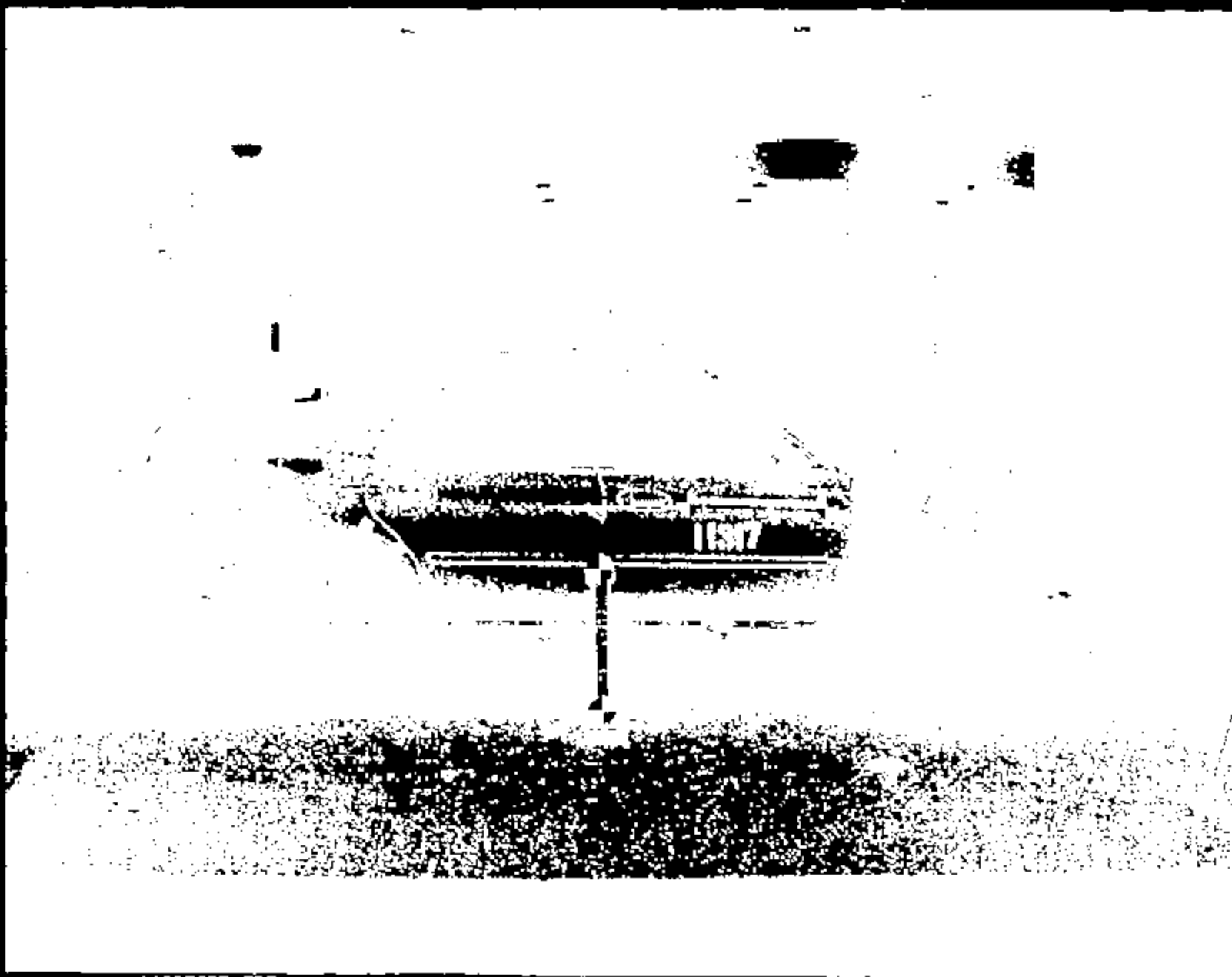
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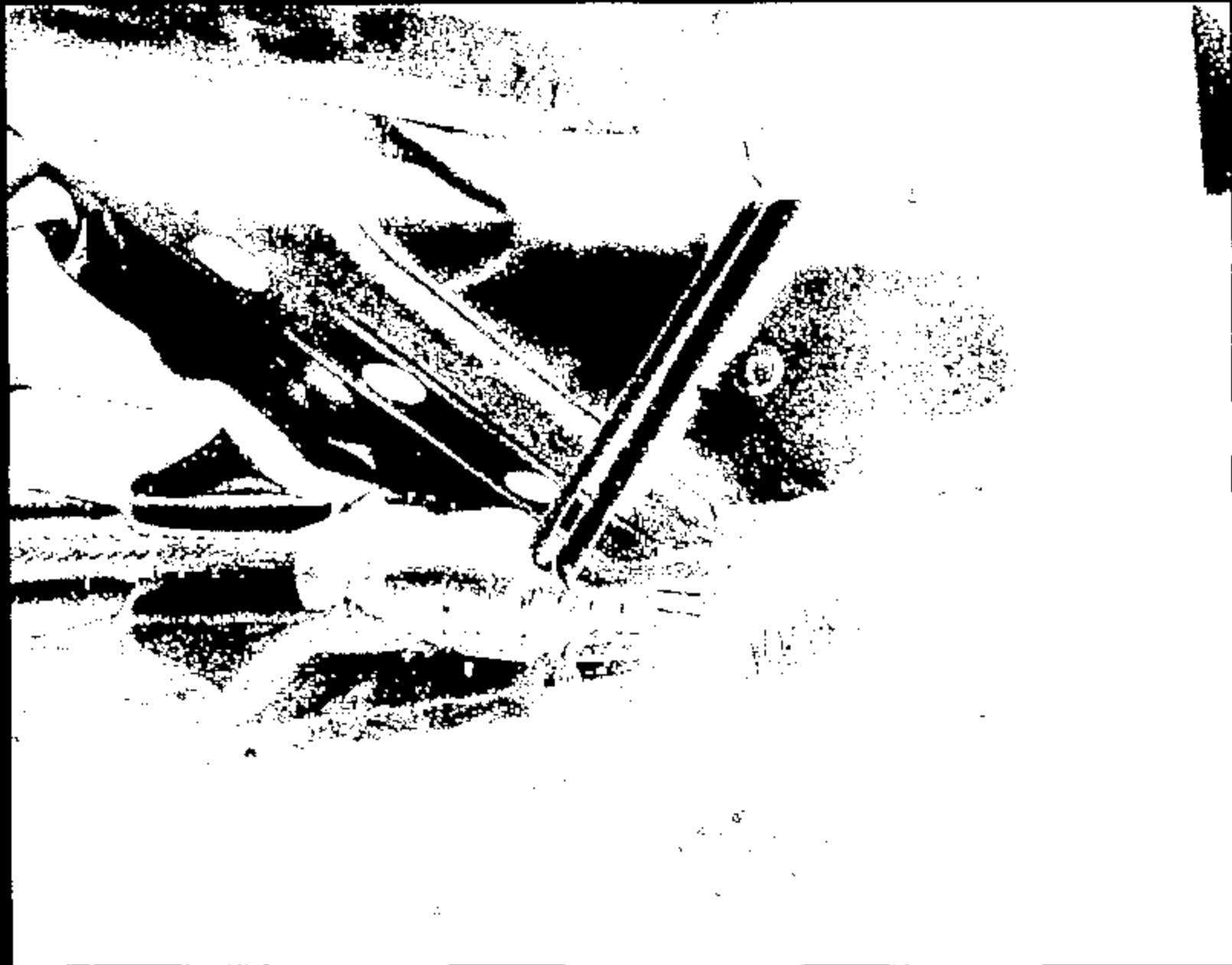




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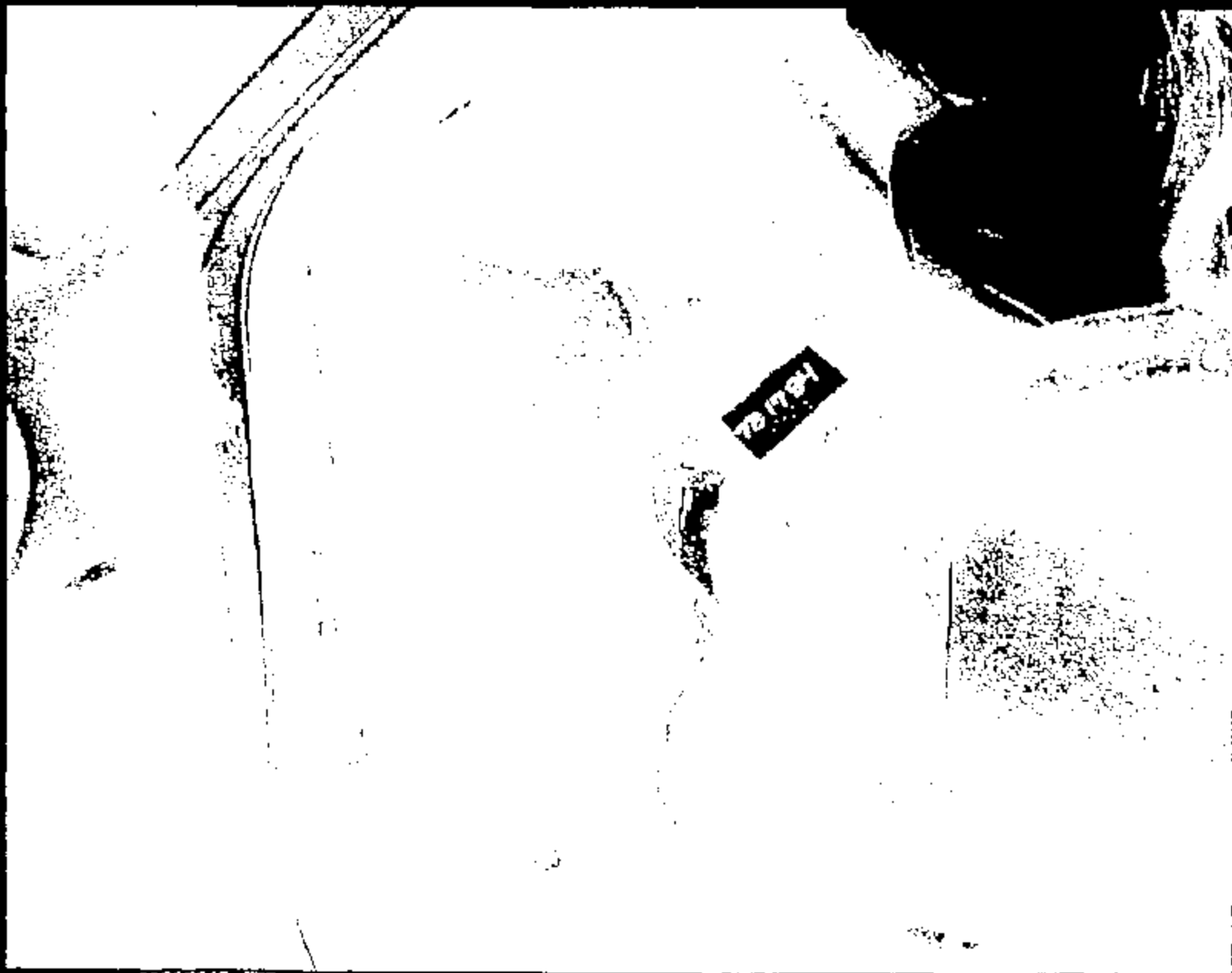
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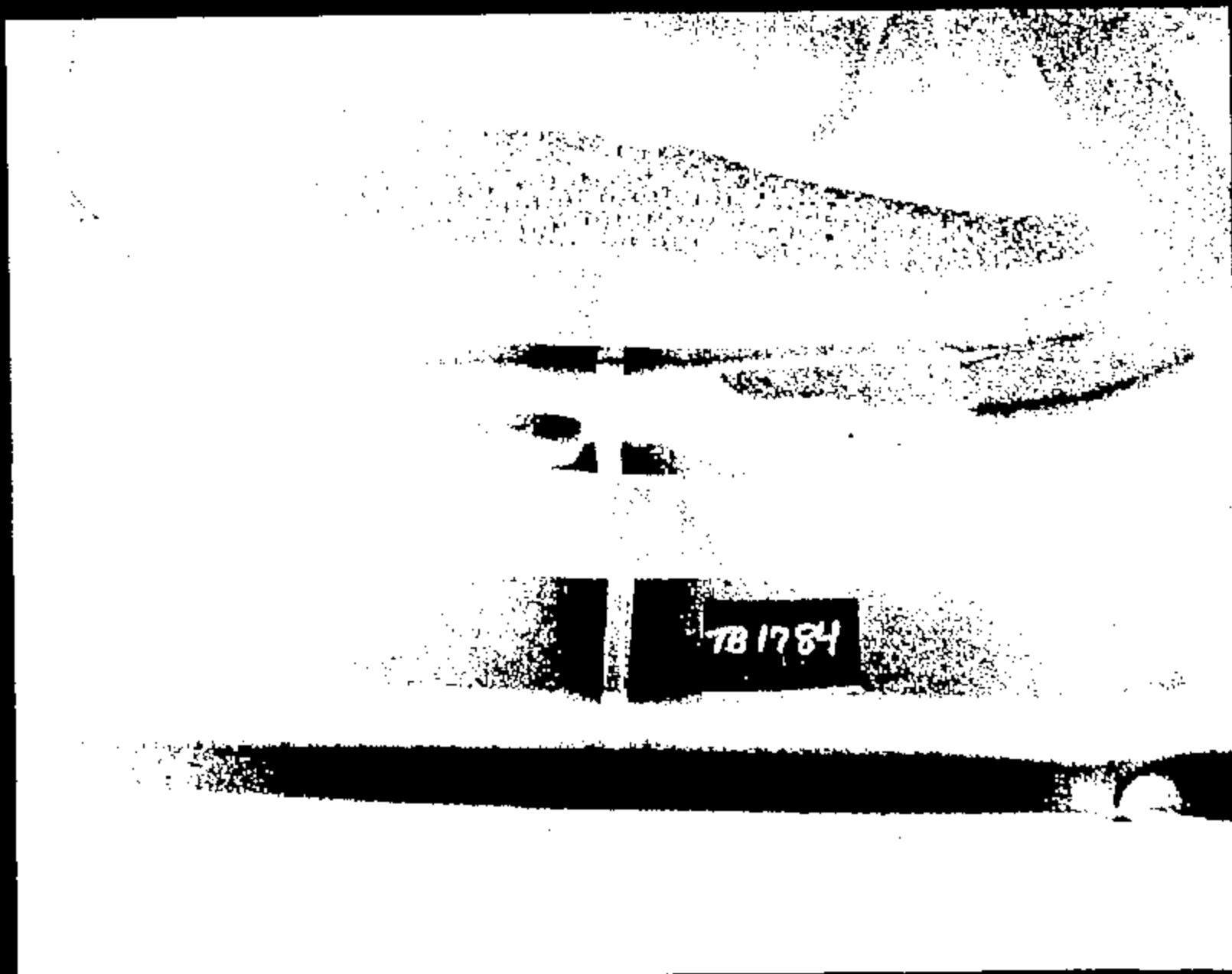
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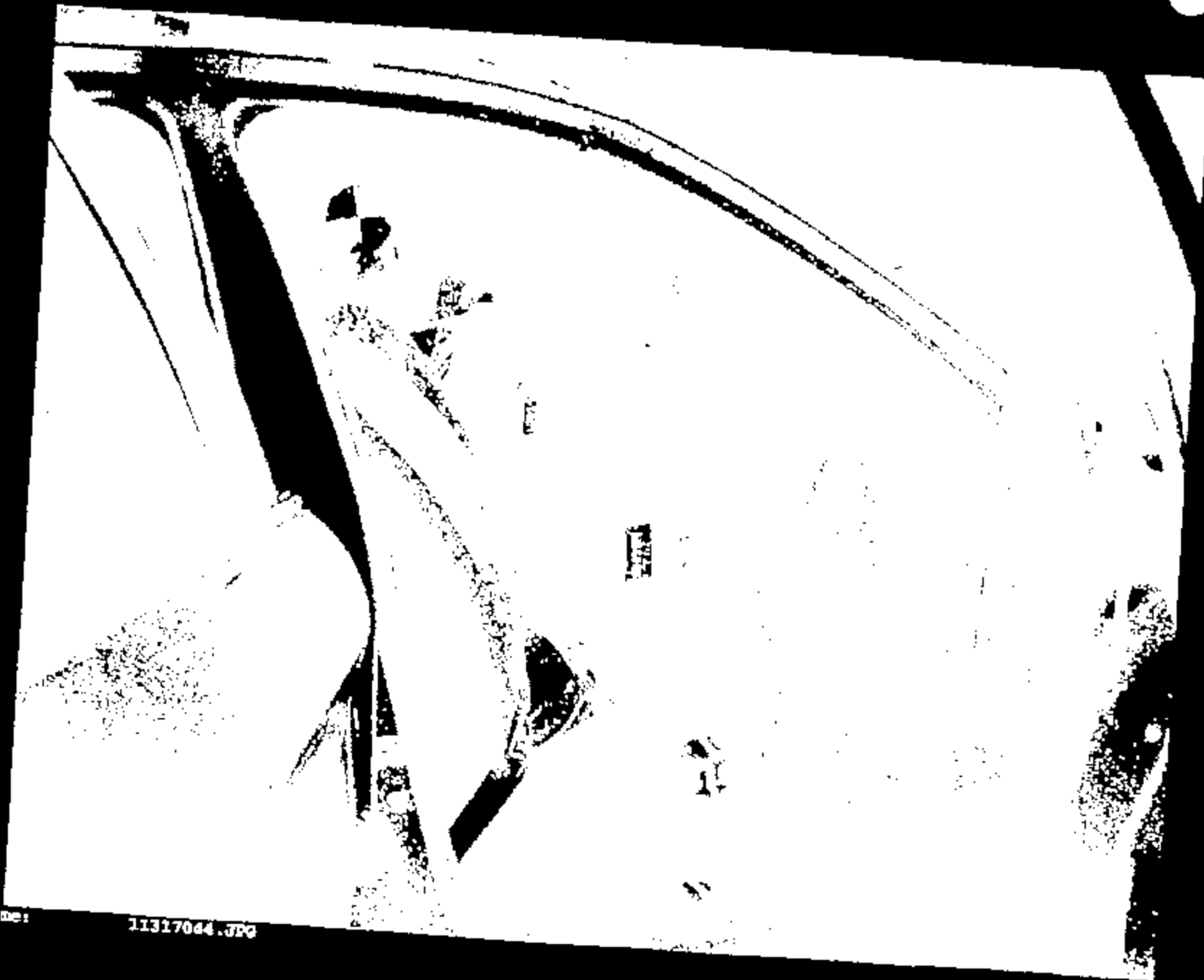
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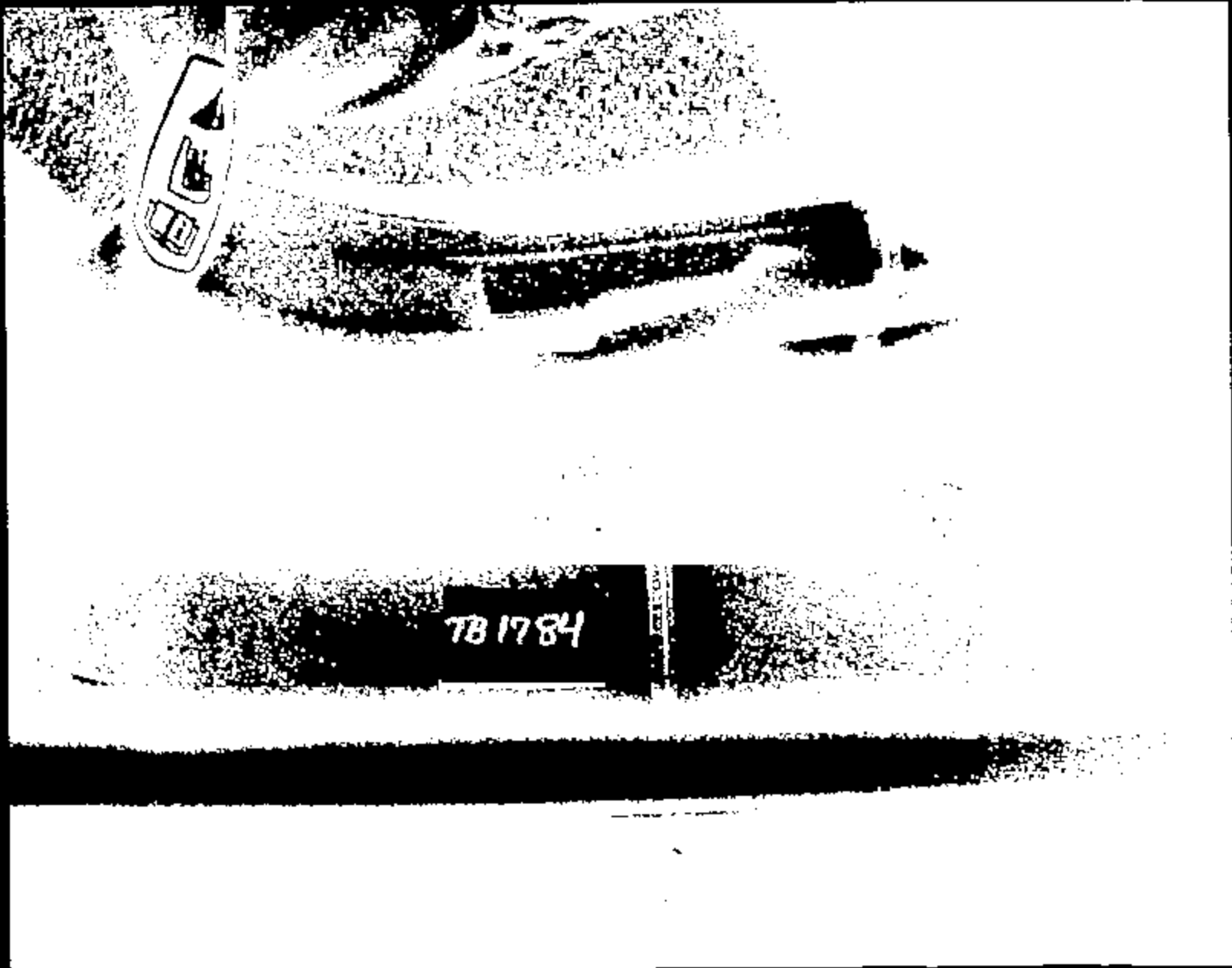


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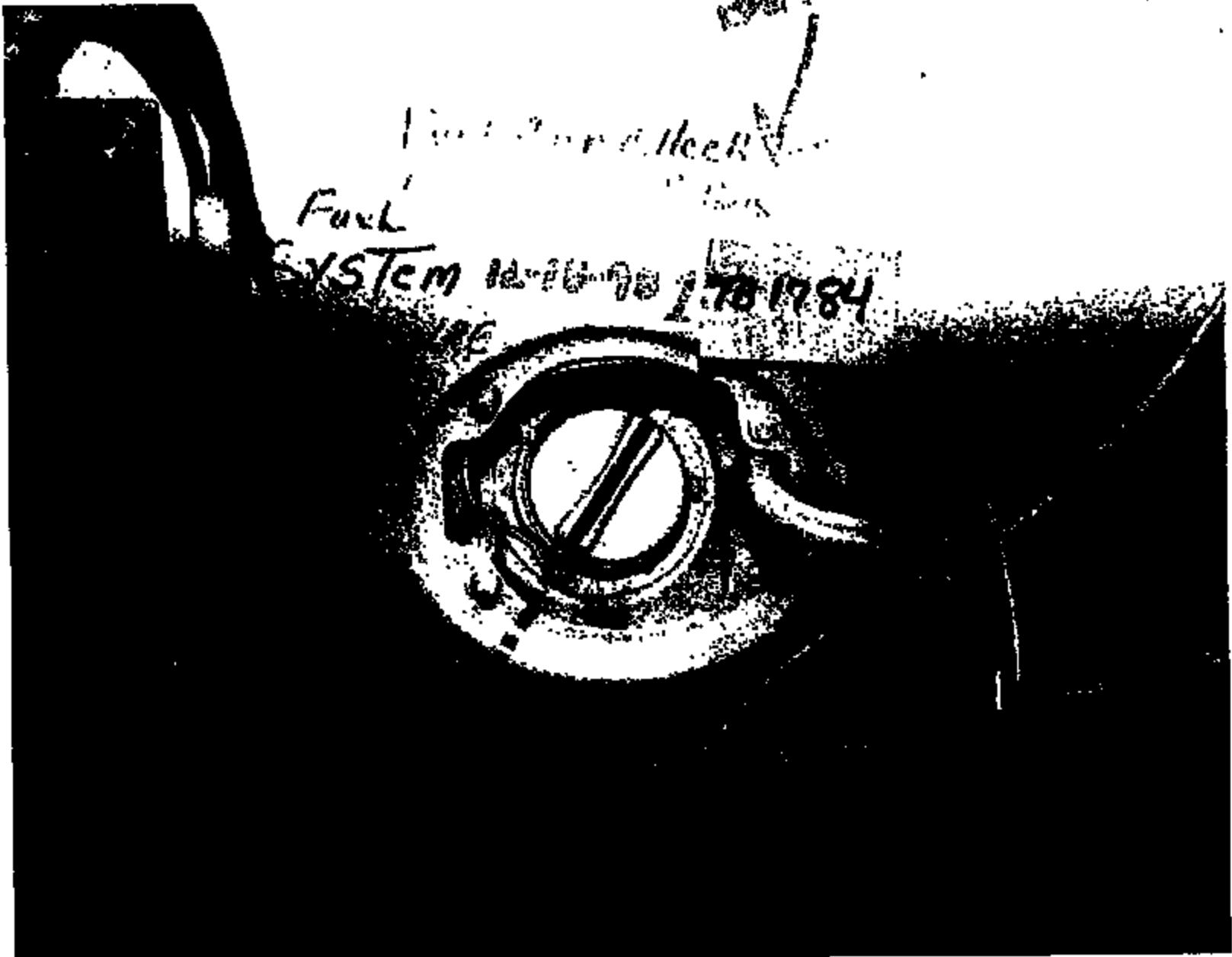




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1974  
Fuel SYSTEM  
1781784

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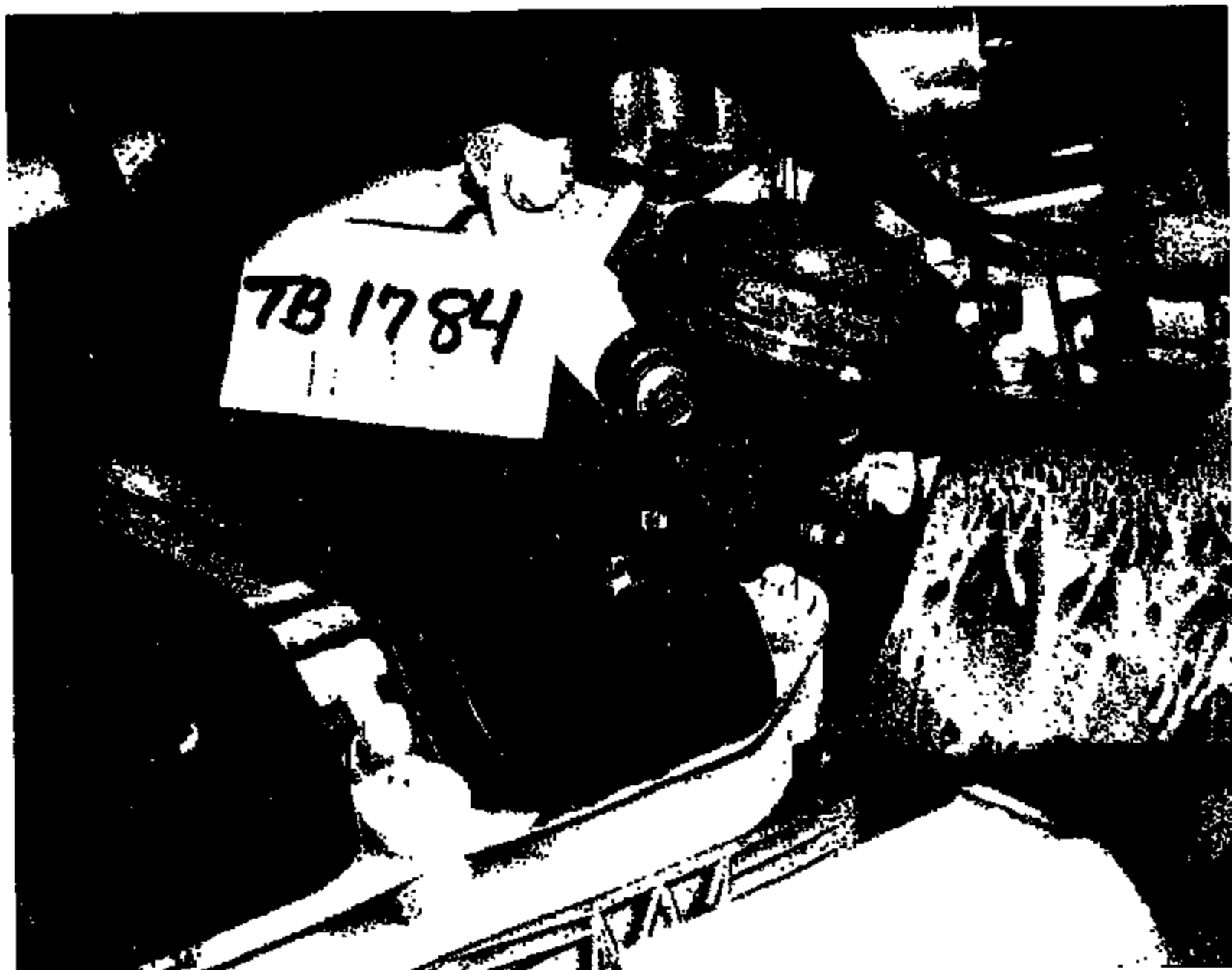
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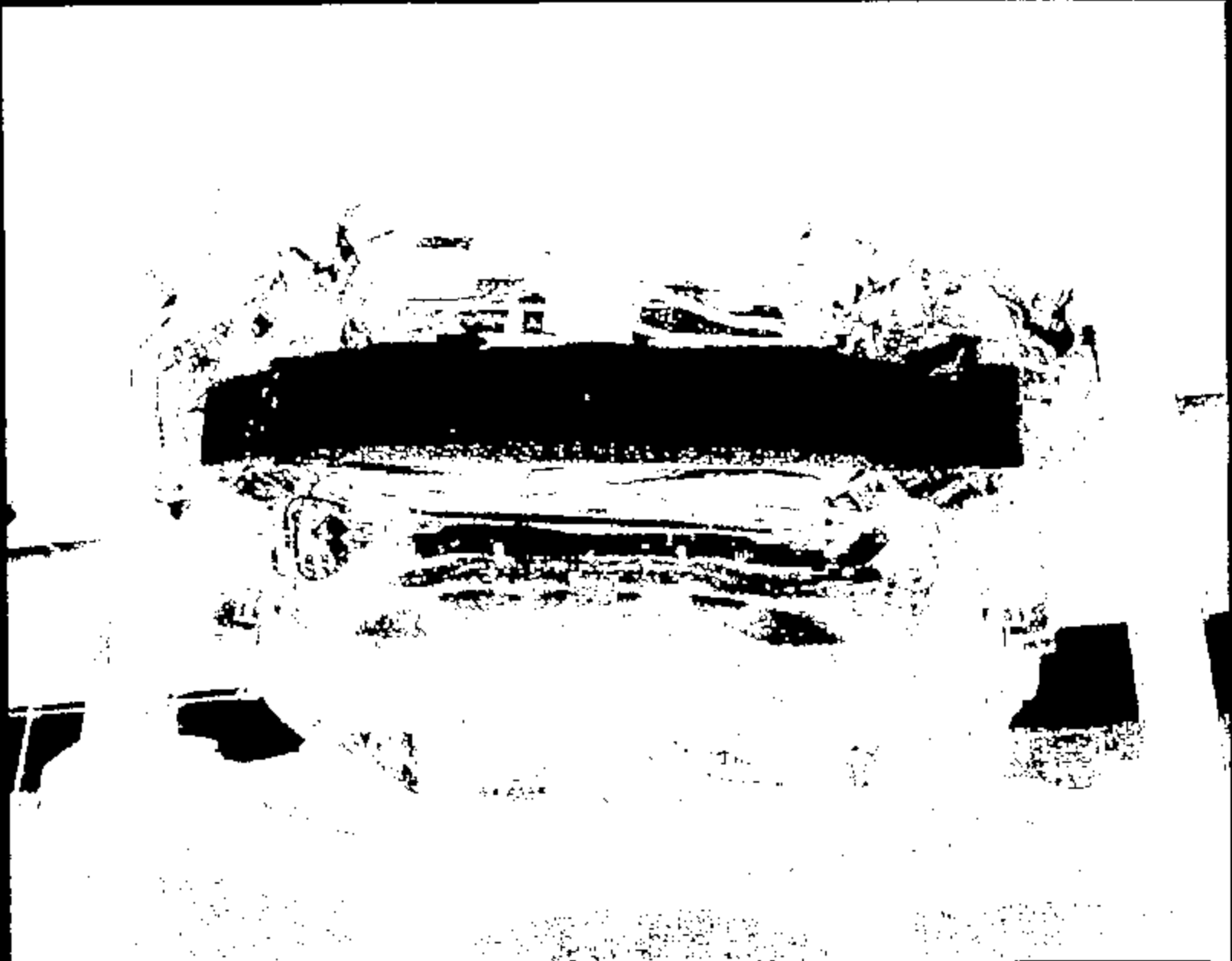
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Photo: 11317053.jpg

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Image 1

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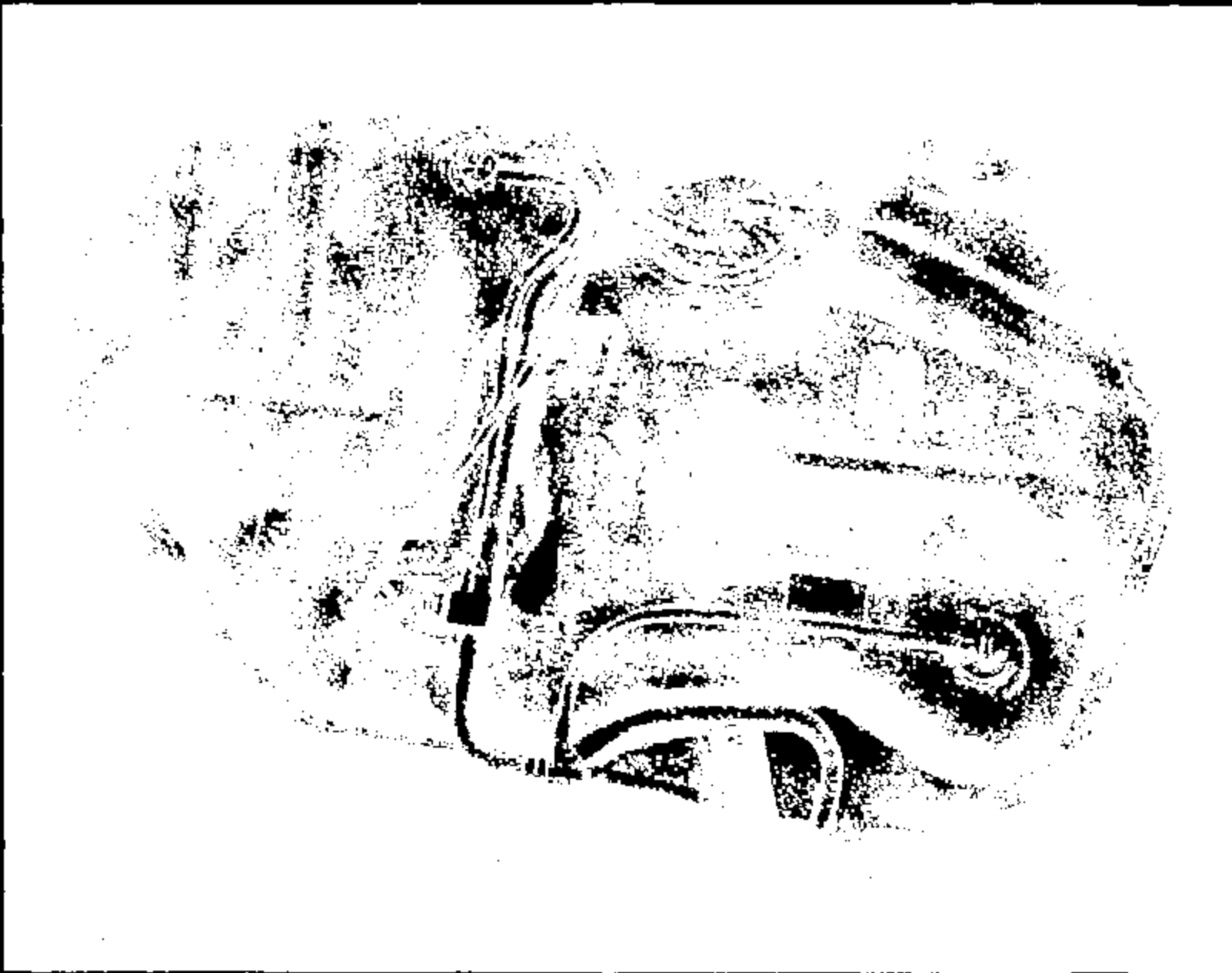
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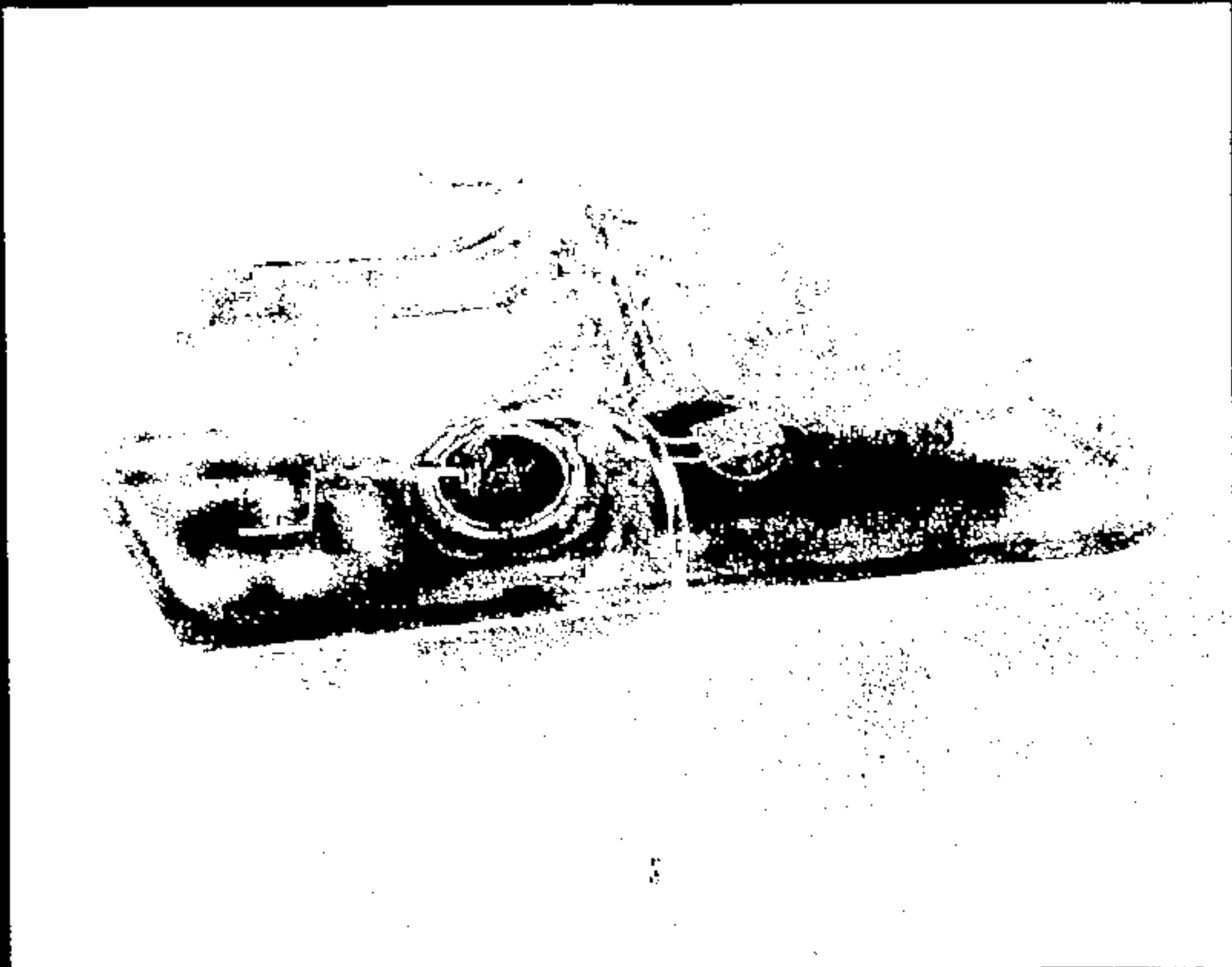
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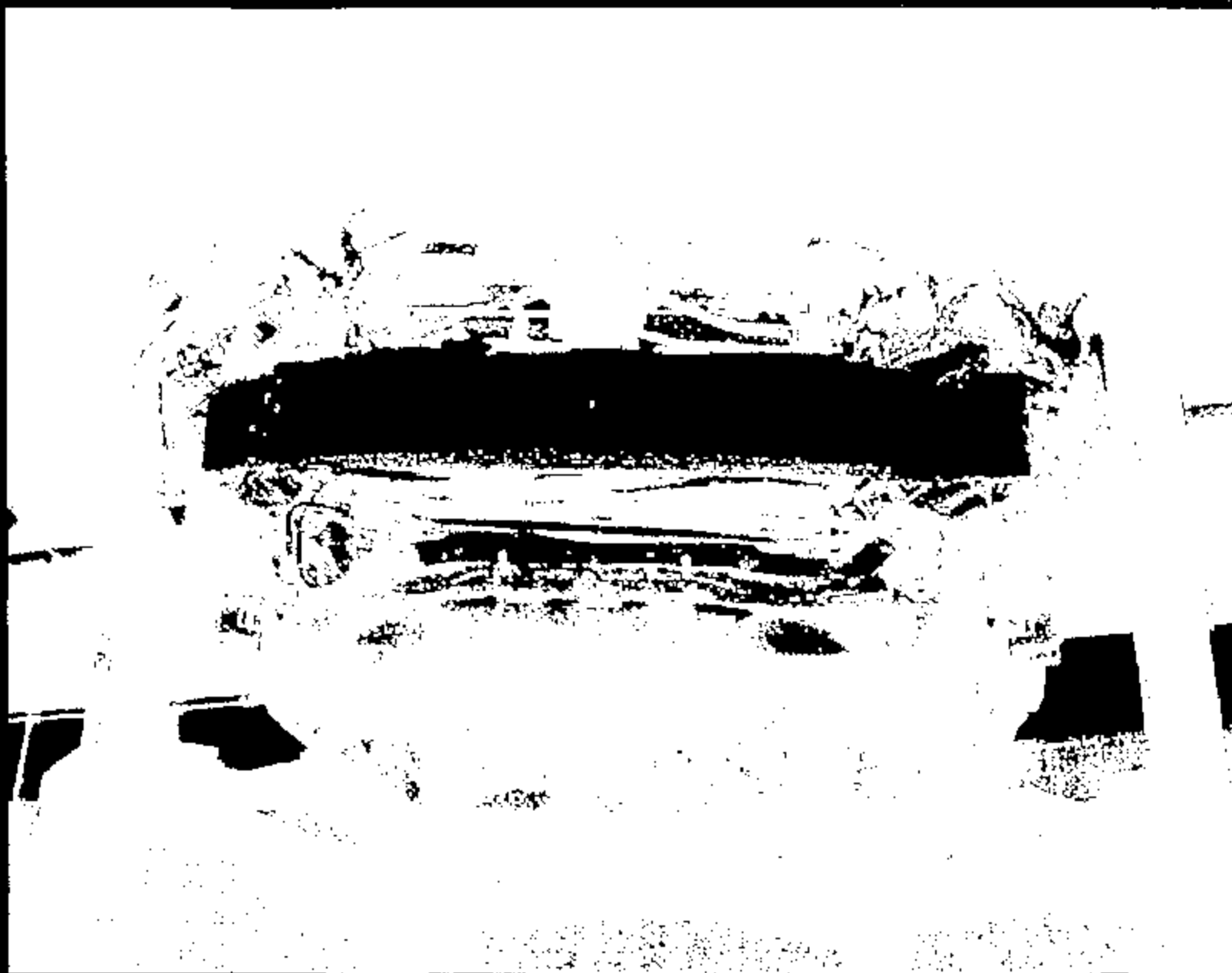
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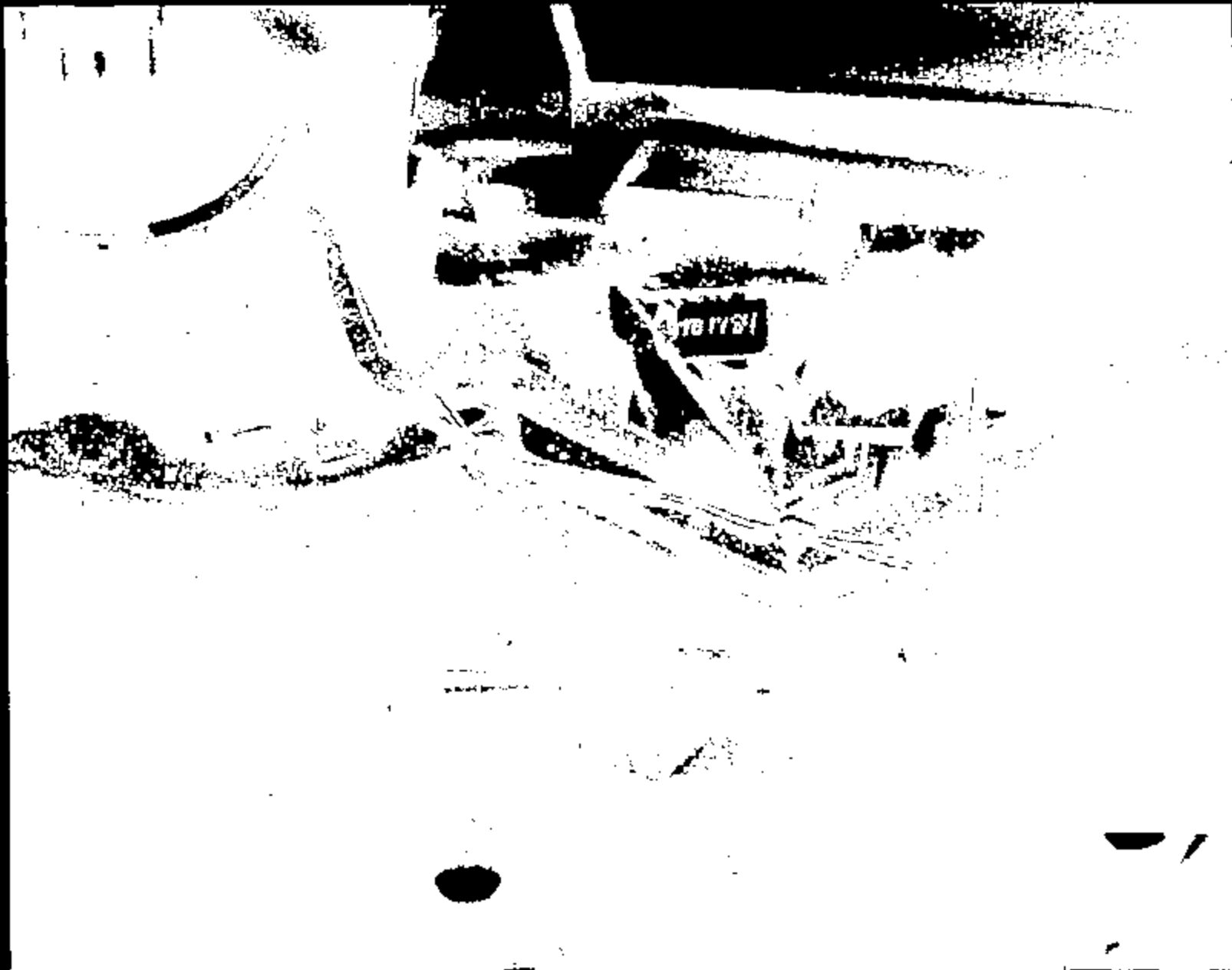


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CRIS 0011317



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11317064.jpg

CRITS 0011317

 <b>GTO Test Request</b>		Requestor/Coordinator (PROP'S ID): DFERRIGO	
		DALE FERRIGO	
Testing Activity: Crash Barrier Test Lab	Date Submitted:	Requested Completion Date: 20-OCT-88	Requestor Reference Number:
Test Procedure Number: BT-14	Test Title and / or Subject of Test: D185 55mph 90Degree frontal impact		
Billable Requestor Dept No.: T851 AV2218A	Workshop/Work Order Number: F08	Test conducted to certify control item compliance with Government Regulations	
Billable Requestor PROP'S LD.: DFERRIGO	Billable Requestor Name: DALE FERRIGO	Yes: <input checked="" type="checkbox"/>	No: <input type="checkbox"/>
Complete the following two questions as indicated <b>1 - Reason for not replacing this test by CAE Analysis:</b> <input type="checkbox"/> No CAE Methodology or process available <input type="checkbox"/> For CAE Correlation <input type="checkbox"/> Insufficient confidence in CAE <input type="checkbox"/> To obtain basis data for CAE <input type="checkbox"/> Replacement or improvement of existing Test <input type="checkbox"/> Testing is Quicker <input checked="" type="checkbox"/> Mandatory or Regulatory <input type="checkbox"/> Certification <input type="checkbox"/> Development test for F88 <input type="checkbox"/> Not applicable Other:		<b>2 - What is the expected Test Outcome:</b> <input type="checkbox"/> Results will meet DVP/PCR requirements <input type="checkbox"/> System Component will not meet Test specification <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Above is Based on CAE? Other:	
(Check appropriate boxes)		(Check appropriate boxes)	
Test Purpose/Test Procedure or Description of Test:  T857-BT-14 Barrier Collision Test - Steer Col., Windshield, Fuel Sys (Inform Prod)			
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <b>"RECORD COPY"</b>            Schedule No. <u>7-7-12</u>            Retain Until <u>2019</u> </div>			
Signatures Approvals (As Required for Control Purposes)			
Requesting Engineer <u>DALE FERRIGO</u>		Testing Engineer _____	
Requesting Supervisor/Manager <u>ALAN TAUB</u>		Testing Supervisor _____	

BARRIER TEST REQUEST

TB1784

TEST OBJECTIVE:  
IMPACT SPEED (MPH) =  
TEST PROCEDURE:

CERTIFICATION, FMVSS 301, BCCR OPENABILITY  
35  
ST-14  
IMPACT TEST VEHICLE FRONTALLY INTO 90 DEGREE RIGID BARRIER.  
CONDUCT POST TEST ROLLOVER.

*DOEYE  
MAY  
1-13-99*

TEST VEHICLE TAG:  
TEST VEHICLE VIN:  
MODEL:  
MODEL YEAR:  
ENGINE/TRANS

57W415
1FALP8782Y8100002
D106
2000
3L4V7AX4H

TASK NO.:   
BILLABLE DEPT.:

FUEL:

TYPE	RATED CAPACITY (GAL.)	80% FILL (GAL.)
STANDARD	18	17.1

*16.5 gallons  
ACTUAL FILL  
OK*

*KE  
1/13/99*

TIRE PRESSURE (PSI):  
CURB WEIGHT (LBF.):  
TEST WEIGHT (LBF.):

FRONT = <input type="text" value="30"/>	REAR = <input type="text" value="30"/>	SPARE = <input type="text" value="NA"/>
FRONT = <input type="text" value="2133"/>	REAR = <input type="text" value="1407"/>	TOTAL = <input type="text" value="3540"/>
FRONT = <input type="text" value="2392"/>	REAR = <input type="text" value="1608"/>	TOTAL = <input type="text" value="4000"/>
		+- = <input type="text" value="20"/>

RISE HEIGHTS (IN.):

FRONT = <input type="text" value="LEVEL RKR"/>	REAR = <input type="text" value="LEVEL RKR"/>
+- = <input type="text" value="TO GROUND"/>	+- = <input type="text" value="TO GROUND"/>

WEIGH UP INSTRUCTIONS:

MAY REMOVE: DECK LID, DOOR GLASS, INTERIOR TRIM.  
DO NOT PLACE WEIGHT: UNDERHOOD (EXCEPT IN ENGINE), DOORS.  
MAX ADD TO ENGINE: 75 LBF.  
LOAD TO TEST WEIGHT & LEVEL ROCKERS WRT GROUND.  
SPRING INSERTS ACCEPTABLE.

OCCUPANT TYPE:

LEFT FRONT =	<input type="text" value="80TH%"/>	<input type="text" value="HYBRID 2"/>
RIGHT FRONT =	<input type="text" value="80TH%"/>	<input type="text" value="HYBRID 2"/>

DUMMY POSITIONING:

DRIVER FOOT-REST:

SEAT POSITIONING:

	LONG	VERT	BACK ANGLE (DEG.)	PIG CHECK
LEFT FRONT =	<input type="text" value="MID"/>	<input type="text" value="FULL DOWN"/>	<input type="text" value="27.3 (FRAME)"/>	<input type="text" value="N"/>
RIGHT FRONT =	<input type="text" value="MID"/>	<input type="text" value="FULL DOWN"/>	<input type="text" value="27.3 (FRAME)"/>	<input type="text" value="N"/>

RESTRAINTS USAGE:

	BELT	PYRO BELT	FRT BAG	SIDE BAG
LEFT FRONT =	<input type="text" value="X"/>		<input type="text" value="X"/>	
RIGHT FRONT =	<input type="text" value="X"/>			

CAUTION: DRIVER BAG IS LIVE.  
PASS BAG INERT.

SENSOR SYSTEM:

LIVE SYSTEM DEPLOY.

File: Tb1784, Tab: REQUEST  
Created: 12/11/98  
Revised: 1/6/99  
Printed: 1/6/99, 10:27 AM

## BARRIER TEST REQUEST

TB1764

DIMENSIONAL ANALYSIS: NONE

STILL PHOTO: STANDARD PRE & POST TEST  
 CLOSE UPS OF FUEL SUPPLY LINE CONNECTION TO FUEL RAIL, PRE & POST TEST..  
 CONTACT REQUESTOR FOR ADDITIONAL INSTRUCTIONS.

HIGH SPEED FILM:

**REQUESTOR MUST BE PRESENT FOR CAMERA SHOOTING.**

OFFBOARD		
1	RIGHT	OVERALL
2	LEFT	OVERALL
3	OVERHEAD	OVERALL
4	OVERHEAD	A-PILLAR FORWARD
5	CENTER	TOP OF BARRIER, ENGINE CLOSEUP
6	RIGHT	TOP OF BARRIER, ROLL RESTRICTOR & FUEL RAIL CLOSEUP
7	LEFT	TOP OF BARRIER, INTAKE MANIFOLD & FUEL RAIL CLOSEUP
8	RIGHT	IN LIGHTS, ENGINE CLOSEUP FROM SIDE.
9	LEFT	IN LIGHTS, ENGINE CLOSEUP FROM SIDE.
10	RIGHT	TRIPOD, ENGINE CLOSEUP FROM SIDE.
11	LEFT	TRIPOD, ENGINE CLOSEUP FROM SIDE.
12	PIT	CLOSEUP, FUEL LINES @ FRONT FLOOR
13	PIT	A-PILLAR FORWARD
TOTAL OFFBOARD =		13

FILM ANALYSIS:

	DESCRIPTION	ACCEL	VEL	DISP	ANGLE
1	LFT RKR LONG @ B-PILLAR WRT GROUND		X	X	
2	LFT RKR VERT @ B-PILLAR WRT GROUND		X	X	
3	RST RKR LONG @ B-PILLAR WRT GROUND		X	X	
4	RST RKR VERT @ B-PILLAR WRT GROUND		X	X	
5	ENGINE LONG WRT COWL TARGET		X	X	

DIGITIZED FILM: NONE

SPECIAL BUILD INSTRUCTIONS:

- 1 REMOVE HOOD, DECKLID
- 2 UPDATE INTAKE MANIFOLD, FUEL RAIL, FUEL INJECTORS, IPS, FUEL SUPPLY LINE.
- 3 UPDATE FUEL TANK, FDM, CARBON CANISTER & VAPOR LINES.
- 4 INSTALL DUMMY RESISTORS FOR FRONT AND SIDE AIR BAGS WHERE APPLICABLE.
- 5 COLOR CONTRAST ENGINE COMPARTMENT & UNDERBODY.
- 6 INSTALL TARGET STICKER ON COWL @ VEHICLE CENTERLINE, BASE OF WINDSHIELD
- 7 INSTALL TARGET STICKERS ON TOP OF ENGINE

FUNCTION	NAME	PHONE	PAGER
REQUESTOR:	K. EWING	24-86186	KEWI
	D. FERRIGO	84-88918	DFER
BLD. COORD:	B. PAGANO	32-30645	BPAG
SUPERVISOR:	K. ARTHURS	89-05186	KART

File: TB1764, Tab: REQUEST  
 Created: 12/11/98  
 Revised: 1/8/99  
 Printed: 1/29/98, 10:27 AM

Page 2 of 3

Created By: K. Ewing, 24-86186

CRTS 0011317

**BARRIER TEST REQUEST**

TB1784

DATE	DESCRIPTION	PAGES	AUTHORIZED
1/8/99	WEIGH UP INSTRUCTIONS MODIFIED: NO WEIGHT IN DOORS.	1	KLE
1/8/99	RESTRAINTS USAGE MODIFIED: LIVE DRIVER AIRBAG	1	KLE
1/8/99	SENSOR SYSTEM MODIFIED: LIVE SYSTEM DEPLOY	1	KLE
1/8/99	HIGH SPEED FILM MODIFIED: OFFBOARD CAMERA TOTAL CORRECTED TO 18.		

File: Tb1784, Tab: REQUEST  
Created: 12/11/98  
Revised: 1/8/99  
Printed: 1/8/99, 10:27 AM

Page 3 of 3

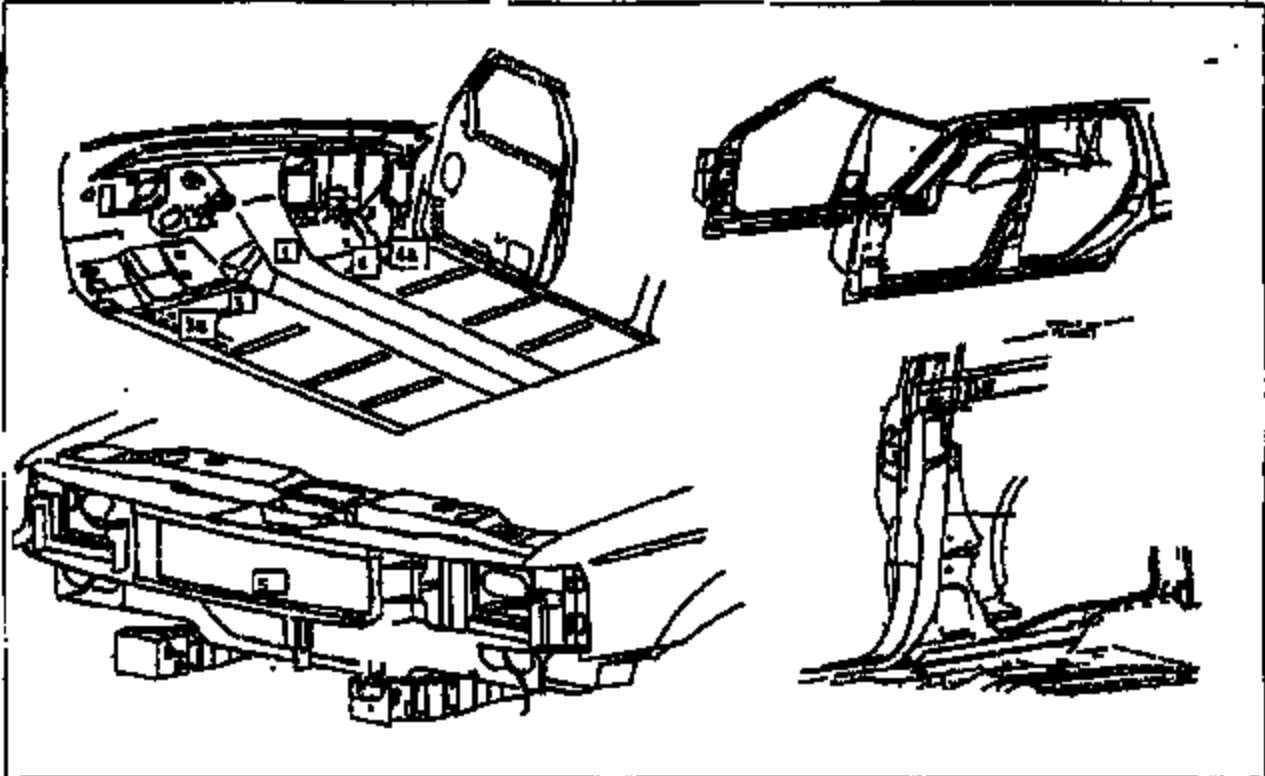
Created By: K. Ewing, 24-88185

CRTS 0011317

### SENSOR MAP

Vehicle ID: 678W418  
Build level: CP

Program: D188  
Test Mode: 35/00 BARBER  
TA No.: T81784



Location Name	Supplier	Output	Nominal (+/-)	Max/Min	Serial #
1 C/F_FLOOR_PAN_PCM (LHD SEAT Location)	20019-1	DRAL_OUT	0	10	[REDACTED]
	20019-2	DRAL_OUT	0	10	
	20019-3	FRAL_OUT	0	10	
	20019-4	FRAL_OUT	0	10	
	20019-5	D_PSL_OUT	0	10	
	20019-6	F_PSL_OUT	0	10	
	20019-7	D_SAL_OUT	0	10	
	20019-8	F_SAL_OUT	0	10	
	20019-9	STRANS	5	10	
1 C/T_FLOOR_PAN_S_PCM	40061	TRXAK	On system		SR
1A L/F_FLOOR_S_01_SENSOR_COVER	VISTEON	SENDR			SRK 24C 1/8/99
1 L/F_FLOOR_S_01_SENSOR_COV	40061	TRXAK			SR
1A R/F_FLOOR_S_01_SENSOR_COVER	VISTEON	SENDR			SRK
1 R/F_FLOOR_S_01_SENSOR_COV	40061	TRXAK			SR
1 C/MAD	PCB	VISTEON	PCB		SR
1 C/RAD	40061	TRXAK	None to PCB		SR

T zero required; Assumed system power from vehicle wiring and battery - use provided harness

#### REVISION LOG

DESCRIPTION	DATE	PAGE AFFECT	ADDT

K. Ewing, 24-00184  
Pac Map, 1784, Tab: Sheet1  
AVT VCB

Created: 11/2/98  
Revised: 11/24/98  
Printed: 12/28/1998, 1:17 PM





**"RECORD COPY"**  
 Schedule No. 7-7-12  
 Retain Until 2019  
 CONFIDENTIAL

**FINAL TEST REPORT**

**Global Test Operations  
 Advanced Vehicle Technology**

**TO:** K. Ewing

Test Order No.	T-B1063
Work Task W. O. No.	F09
Test Date	1/14/99
Date Reported	10/18/99
Sheet	1 of 42

**SUBJECT:** Crash Test 11319 (30° Right Front Fixed Barrier Impact at 30.8 ± 0.4 mph, 49.6 ± 0.6 km/h) - 2000 Taurus (D186) 4-Door Wagon - 2000 Certification Program

**REQUESTED BY:** Vehicle Safety and CAE Department, Advanced Vehicle Technology - K. Ewing

**OBJECT:** To provide fuel system integrity data relative to the barrier crash test requirements of the current FMVSS No. 301 (U.S. CFR Docket No. 96-44, Notice 01, Canadian Gazette SOR/97-421)

**SUMMARY OF TEST RESULTS:**

- See Attachment 1 for fuel spillage data.
- See Attachment 2 for vehicle observations and non-FMVSS data.

The Test Authorization for this crash indicated that the vehicle is representative of a design level suitable for a certification test. To the best of my knowledge, the crash testing was performed on the same vehicle as identified in the Test Authorization; the results reported herein represent the performance of this specific vehicle, and the testing was performed in accordance with the listed procedures. Any procedure deviations significant to the test objectives above are identified in this report.

*R. Oda*  
 R. Oda  
 C. McCreadie  
 Product Test Engineer

*S. Lash*  
 Concur: S. Lash  
 Section Supervisor  
 Operations Engineering Section

**VEHICLE DATA:**

**Make and Model** 2000 Tetras (D186) 4-Door Wagon

**ID Numbers** IFALP5289YS100578, 579-W-755, VCD40001

**Power Train** 3.0L, EFI, Automatic (AX4N) Transcude

**Fuel Tank(s)** Usable Capacity: 18.0 gal. (68.1)  
Test Condition: The "run dry" tank was filled with red-dyed Stoddard solvent to 95% of its rated usable capacity.

**Front Seat(s)** Type: Bucket  
Cover: Cloth  
Tracks/Position: LF: 6-Way Power/Mechanical Mid and Down  
RF: Manual/Mechanical Mid  
Seat Backs/Position: Adjustable/Not Measured  
Head Restraints/Position: Adjustable/Up  
Lumber Support/Position: LF: Power/Deflated

**Restraint System** LF: 3-Point Continuous Loop Active Belt and Steering Wheel Air Bag  
RF: 3-Point Continuous Loop Active Belt

**Occupants** LF & RF: 50th Percentile Male, Hybrid II, Uninstrumented

**Test Weight** Front: 2368 lb (1074 kg)  
Rear: 1907 lb (865 kg)  
Total: 4275 lb (1939 kg)  
The test weight includes:  

- the "as received" unloaded vehicle curb weight
- Maximum production options (simulated)
- 2 occupants(s) (described above)
- 200 lb (90.7 kg) luggage (simulated)

**Tires** Front: P215/60R16 30 psi (207 kPa)  
Rear: P215/60R16 30 psi (207 kPa)  
Spare: Removed

**Bumpers** Front: Steel Beam with Foam Isolator  
Rear: Steel Beam with Foam Isolator

**Significant Content or Accessories:** Air Conditioning, Power Steering, Power Brakes, Tilt Steering Wheel

**GENERAL TEST COMMENTS:****1. Test Procedure**

The test was performed according to the following Corporate test procedure(s):

- Fixed Barrier Collision, T657-ST-14 dated March 3, 1998.
- CFI and EPI Fuel Systems Stoddard Solvent Mill, ST-11 REF. 4.
- Fuel System Static Rollover, T657-ST-34 dated May 29, 1998.

**2. Significant Deviations from T657-ST-14**

None

- 3. Instrumentation:** The instrumentation equipment set up for this test was completed following approved procedures which require engineering sign-off after each major step. The instrumentation equipment and systems used meet the SAE J211 June 80 series of recommended practices (Instrumentation for Impact Tests J211, J211a, or J211b) and were calibrated using secondary standards that are traceable to the National Institute of Standards and Technology (NIST).

**4. Remarks**

Crash movies, pre- and post-crash still images of the test vehicle and copies of this report are available through the Operations Engineering Section, Safety Laboratories Department, GTC. The crash still images are stored and archived on CD ROMs. The file names of the still images are listed under crash number and a three digit sequence number which are 11319001 through 11319061.

ATTACHMENT 1

Fuel System Integrity (CFMVSS 301)

There was no fuel system spillage during or for thirty minutes following impact or during the post-crash static rollover test.

**ATTACHMENT 2**

**1.0 Vehicle Crush, Film Analysis and/or Instrumentation Data**

Time histories of the air bag/sensor(s) are included in this report.

Time histories of the vehicle accelerations and other instrumentation are included in this report.

Time histories of vehicle dynamic displacements obtained from Film Analysis are included in this report.

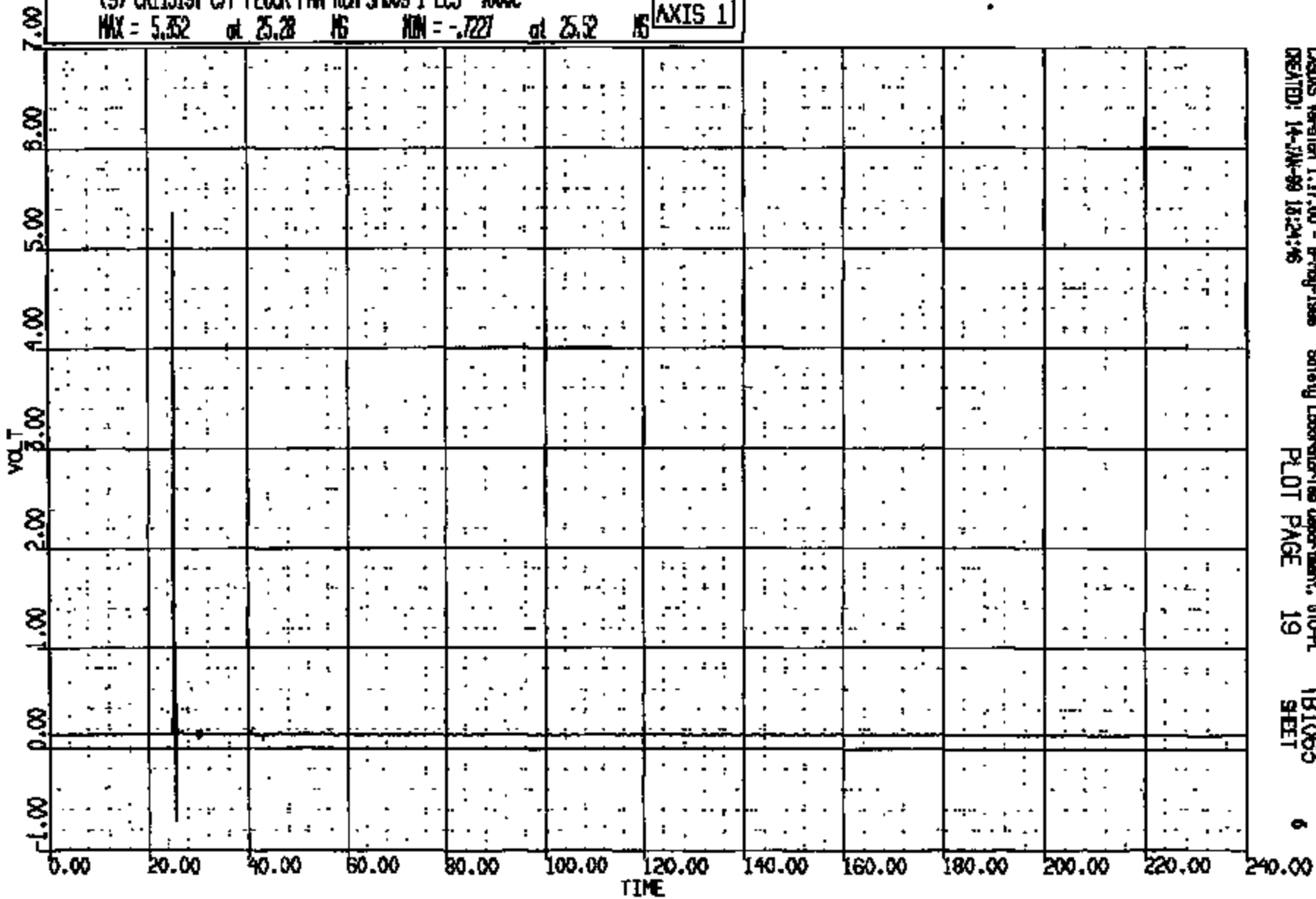
Time histories of any requested derived data (i.e. integrations, etc.) were given to the requesting activity and are not included in this report.

CR N: 11519 TO: TB1065 DATE: 890114 15:08:00  
2000 D-188

(9) CRL1319T C/F FLOOR PAN ROX SMOG-1 ECS 4000C

MAX = 5.352 at 25.28 MS MIN = -.7227 at 25.32 MS

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Safety Laboratory Department, 610-PL  
PLOT PAGE 19

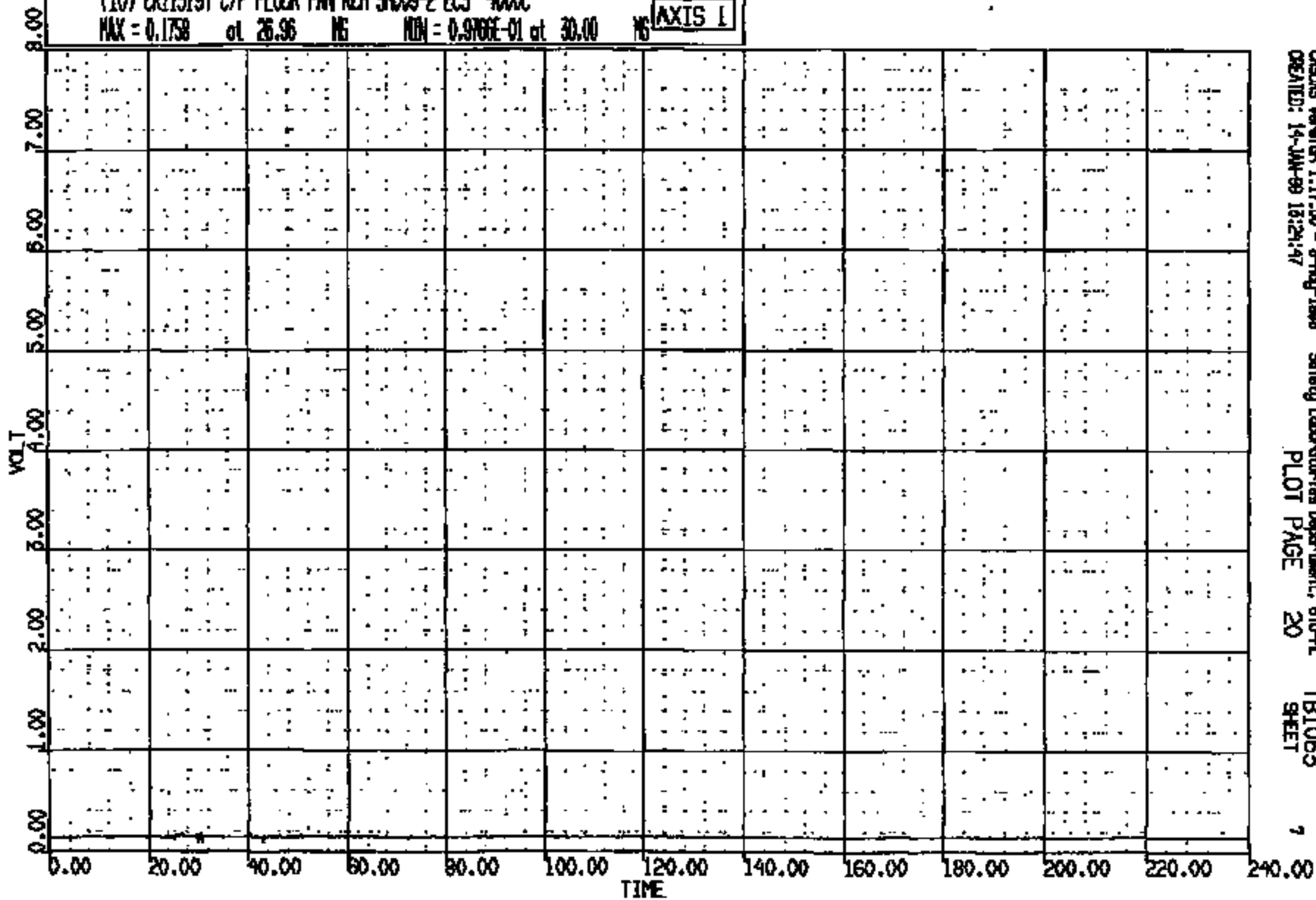
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SHEET

CR R: 11319 TO: TB1063 DATE: 990114 13:08:00  
2000 D-188

(10) CR11319T C/F FLOOR PAN RCM 99009-2 ECS 4000C

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AXIS 1



CRISIS Version 1.17.00 - 8-May-1989  
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Safety Laboratories Department, 610-PL  
PLOT PAGE 20

TB1063  
SHEET

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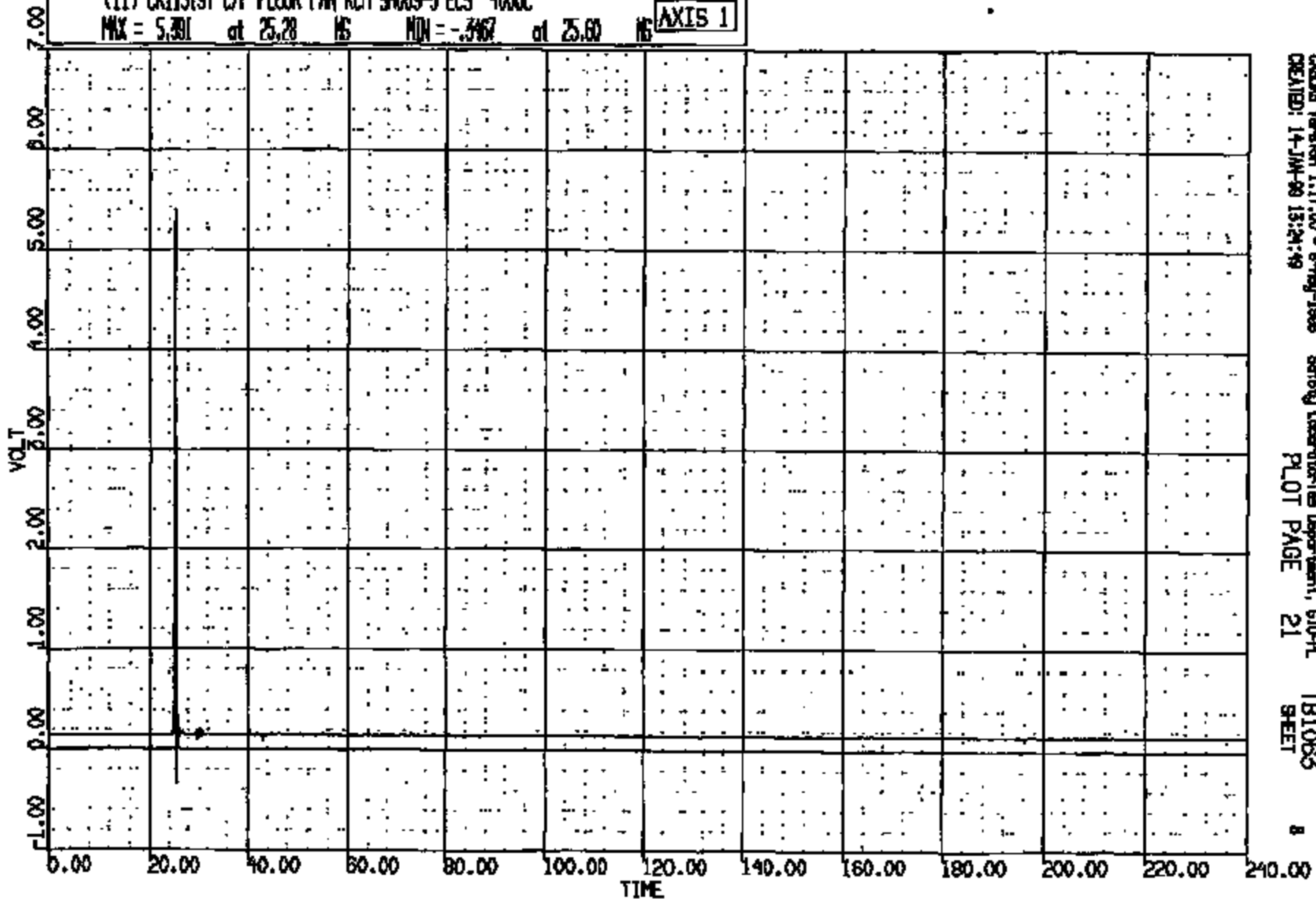
CR11319

CR R: 11319 TO: TB1063 DATE: 890114 13:08:00  
3000 D-188

(11) CR1319T C/F FLOOR PAN RCM 59089-3 ECS 4000C

MAX = 5.301 at 25.28 MS MIN = -.3467 at 25.60 MS

AXIS 1



CRS05 Version 1.17.00 - 8-May-1988  
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PLOT PAGE 21

TB1063  
SHEET

8

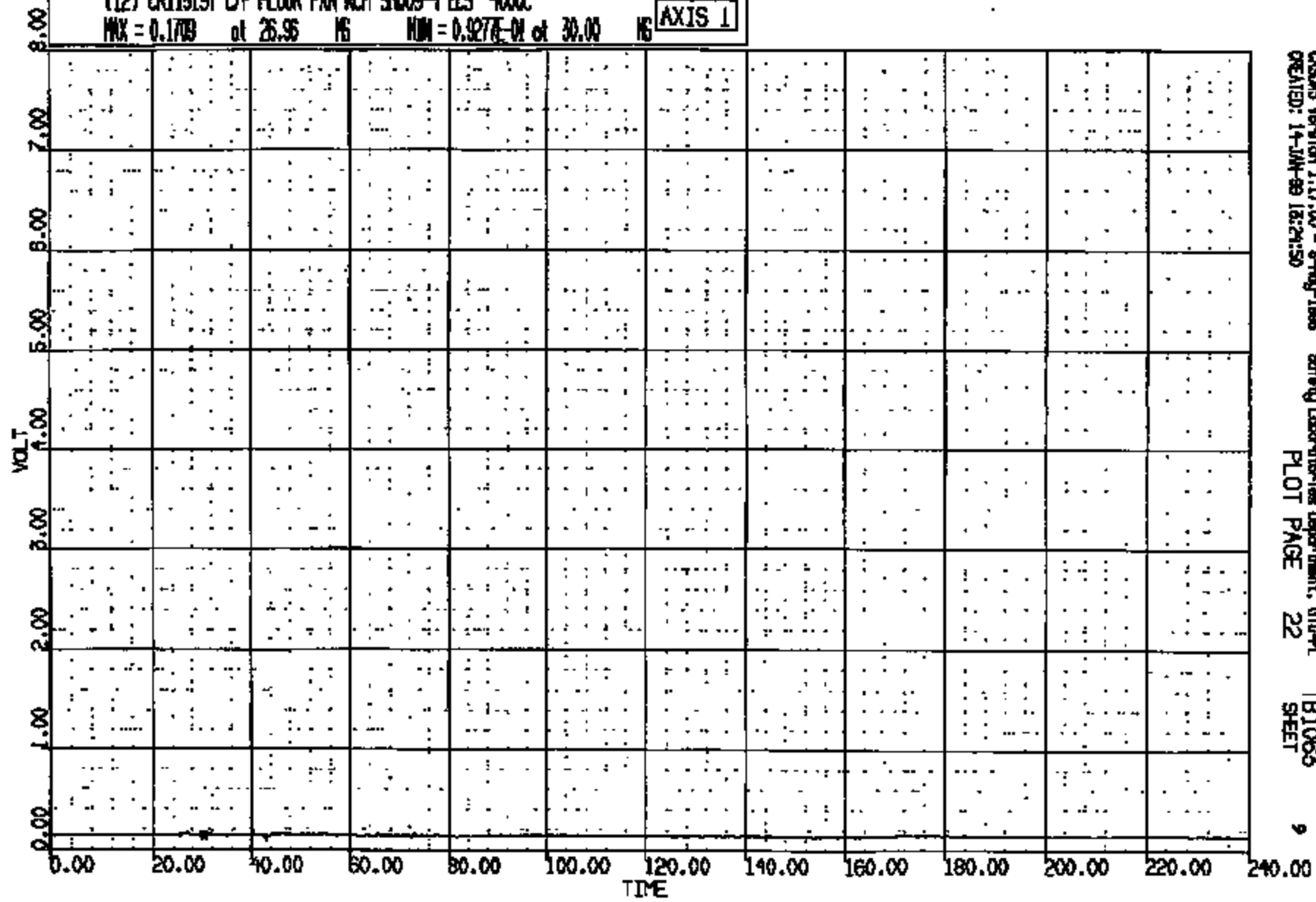
CRIS 0011319



CR: R: 11319 TO: TB1065 DATE: 880114 15:08:00  
NOOO D-188

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AXIS 1

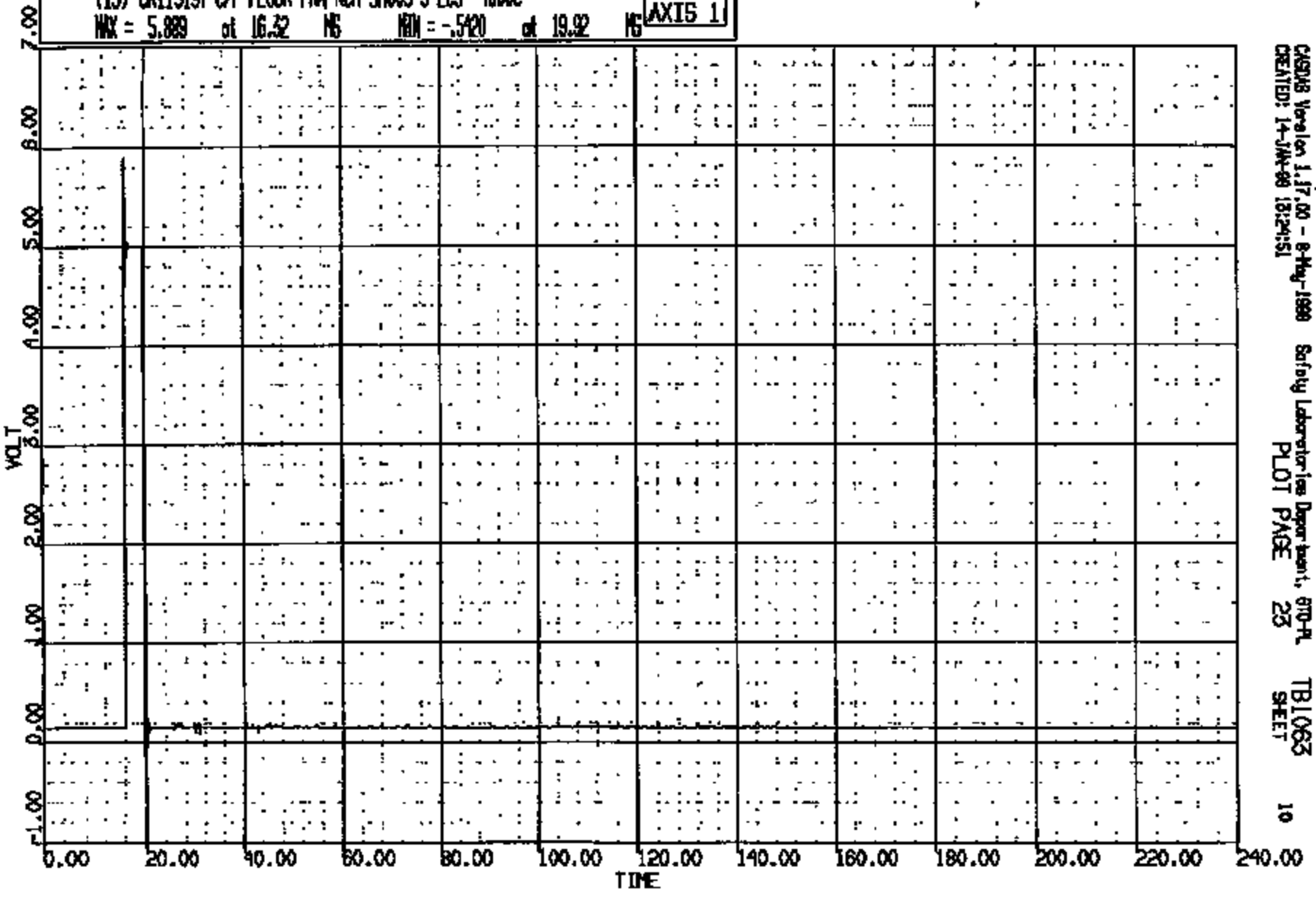


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SHEET

CRTS 0011319

CR R: 11319 TO: TB1065 DATE: 990114 15:08:00  
2000 C-186

(13) CR11319T C/F FLOOR PAN RCH 5N009-5 ECS 4000C  
MAX = 5.889 at 16.32 NS MIN = -.5420 at 19.92 NS **AXIS 1**



CRSMB Version 1.17.00 - 8-May-1999 Safety Laboratories Department, 610-PL TB1065  
CREATED: 14-JAN-99 15:24:51 PLOT PAGE 25 SHEET 10

CRTS 0011319

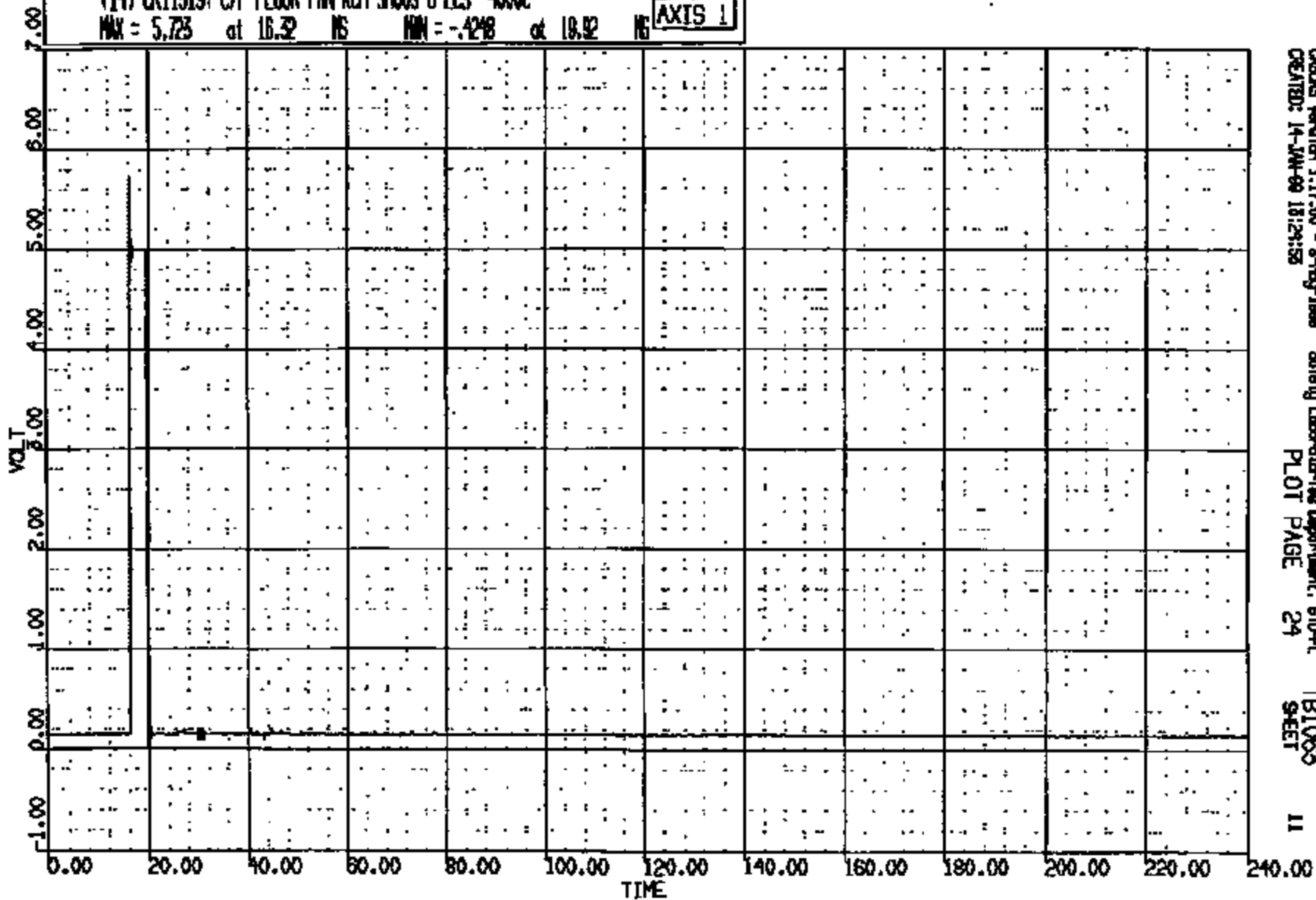
CR R: 11319 TO: TB1063 DATE: 990114 13:08:00

2000 D-186

(14) CR11319T C/F FLOOR PAN ROM 99009-6 ECS 4000C

MAX = 5.73 at 16.32 NS MIN = -.428 at 18.32 NS

AXIS 1



CASYS Version 1.17.00 - 8-May-1999  
CREATED: 14-JAN-99 16:29:58

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PLOT PAGE 24

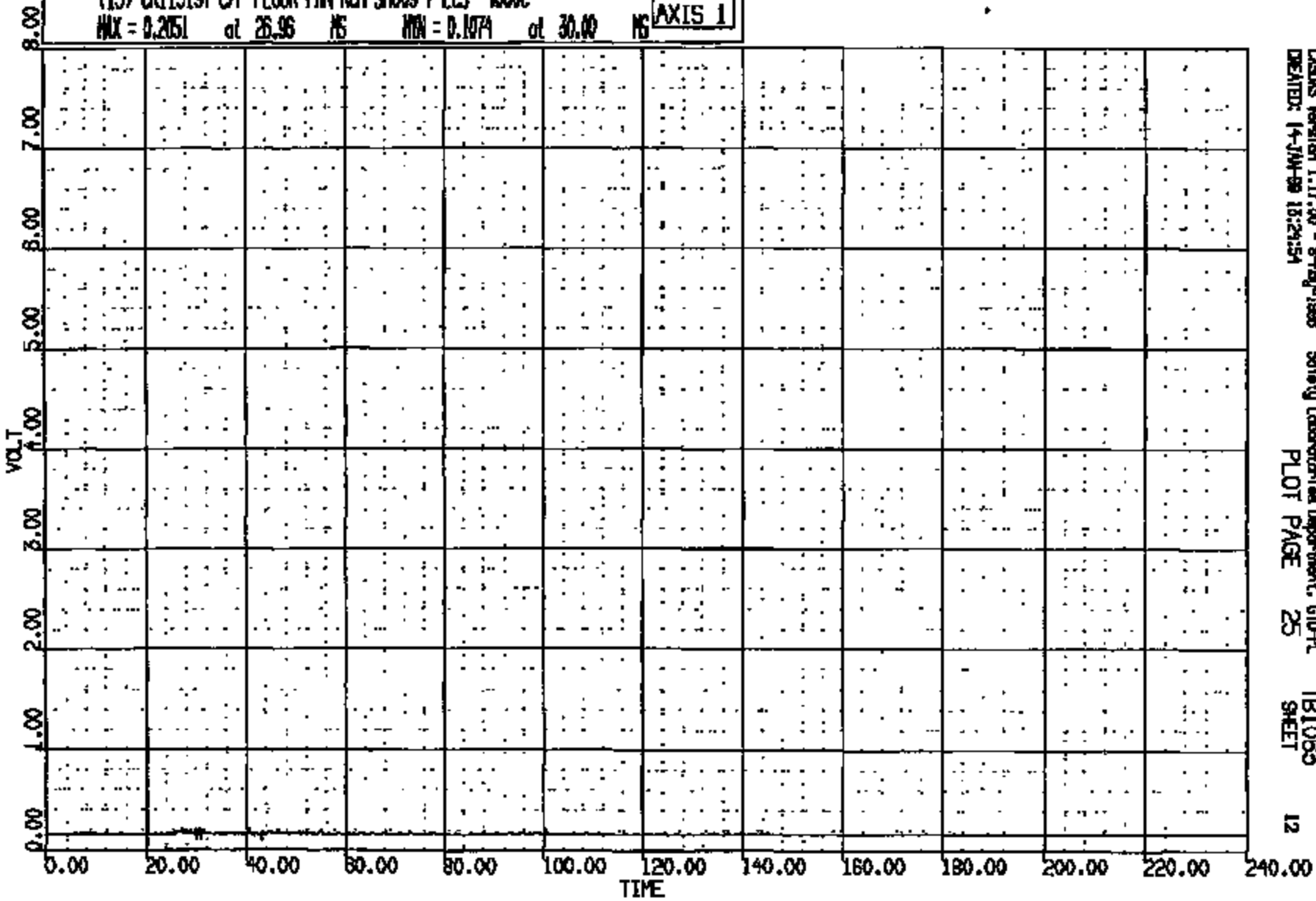
TB1063  
SHEET

11

CRTS 0011319

CR R: 11319 TO: TB1065 DATE: 890114 15:09:00  
2000 D-186

(15) CR1319T C/F FLOOR PAN ROM SMOOR-7 ECS 4000C  
MAX = 0.2051 at 26.96 MS MIN = 0.1074 at 30.00 MS **AXIS 1**



CRSUS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, GPO-PL TB1065  
DATE/TIME: 14-JUN-89 15:24:54 PLOT PAGE 25 SHEET 12

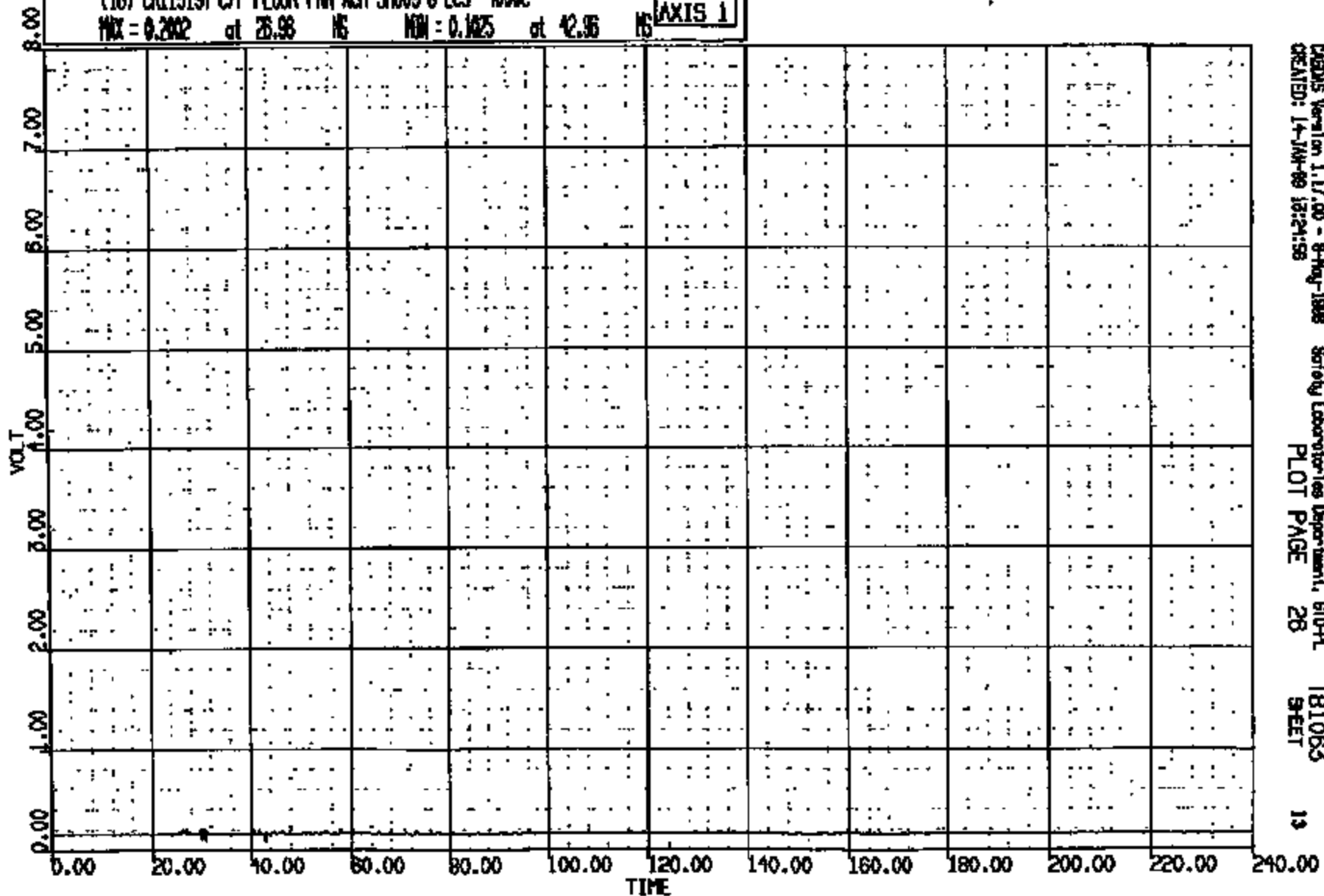
CRIS 0011319

CR R: 11319 TO: TB1065 DATE: 990114 15:08:00  
2000 D-188

(16) CRLL319T C/F FLOOR PAN RCH 59000-8 ECS 4000C

MAX = 0.2002 at 25.96 NS MIN = 0.1025 at 42.95 NS

AXIS 1



CRMS Version 1.17.00 - 8-May-1999  
CREATED: 14-JAN-99 13:24:58

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TB1065  
9/FET

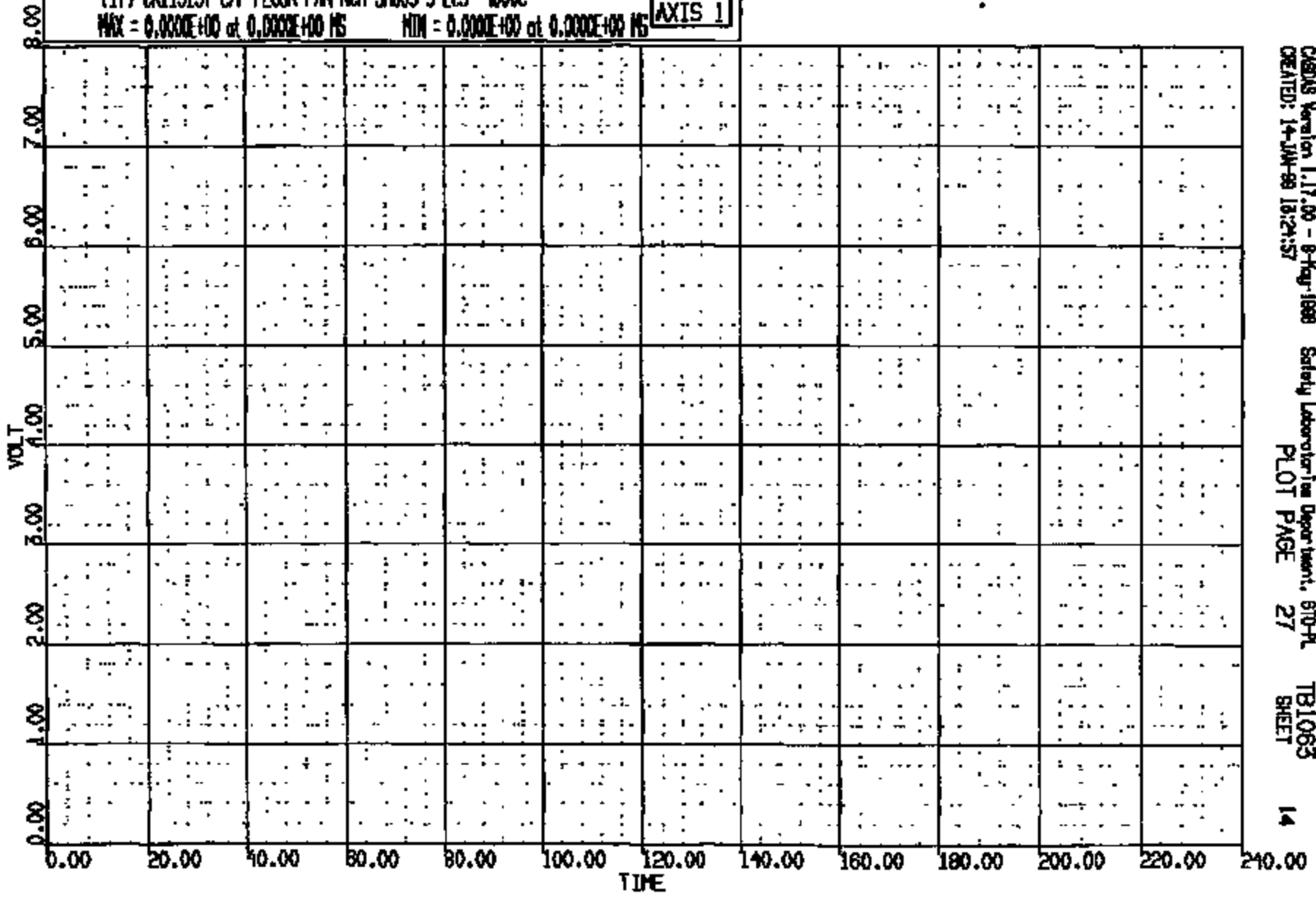
13

CRMS 0011319

CR R: 11319 TO: TB1065 DATE: 990114 13:08:00  
9000 D-188

(17) CR11319T C/F FLOOR PAN RCH 5M009-9 ECS 4000C  
MAX = 0.0000E+00 at 0.0000E+00 MS MIN = 0.0000E+00 at 0.0000E+00 MS

AXIS 1



CRS05 Version 1.17.00 - 8-Aug-1989 Safety Laboratory Department, 610-PL TB1065  
CREATED: 14-JAN-89 18:24:57 PLOT PAGE 27 SHEET 14

CRIS 0011319

CR R: 11519 TO: TB1065 DATE: 890114 15:08:00  
2000 D-188

(3) CR11319T C/RAD LONG GOC

MAX = 98.24 at 30.00 MS MIN = -165.5 at 35.92 MS **AXIS 1**



CASYS Version 1.17.00 - 8-May-1988  
CREATED: 14-JAN-89 15:24:57

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PLOT PAGE 13

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9-LET

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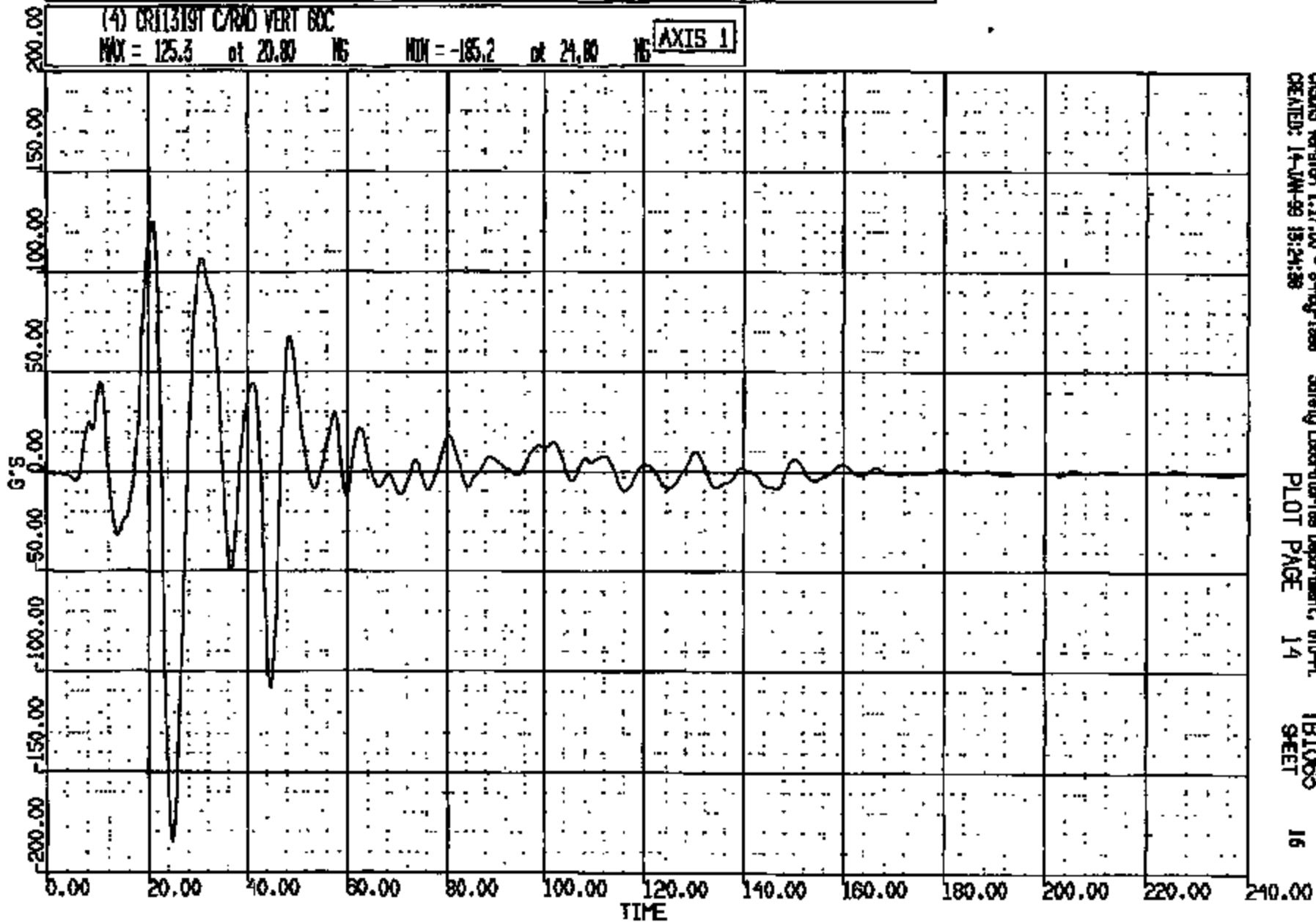
CR11319

CR R: 11319 TO: TB1063 DATE: 990114 13:08:00  
9000 D-188

(4) CR11319 C/RAD VERT 80C

MAX = 125.3 at 20.80 NS MIN = -185.2 at 24.00 NS

AXIS 1



CASINS Version 1.17.00 - 9-May-1999  
CREATED: 14-JUN-99 13:24:38

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CRTS 0011319

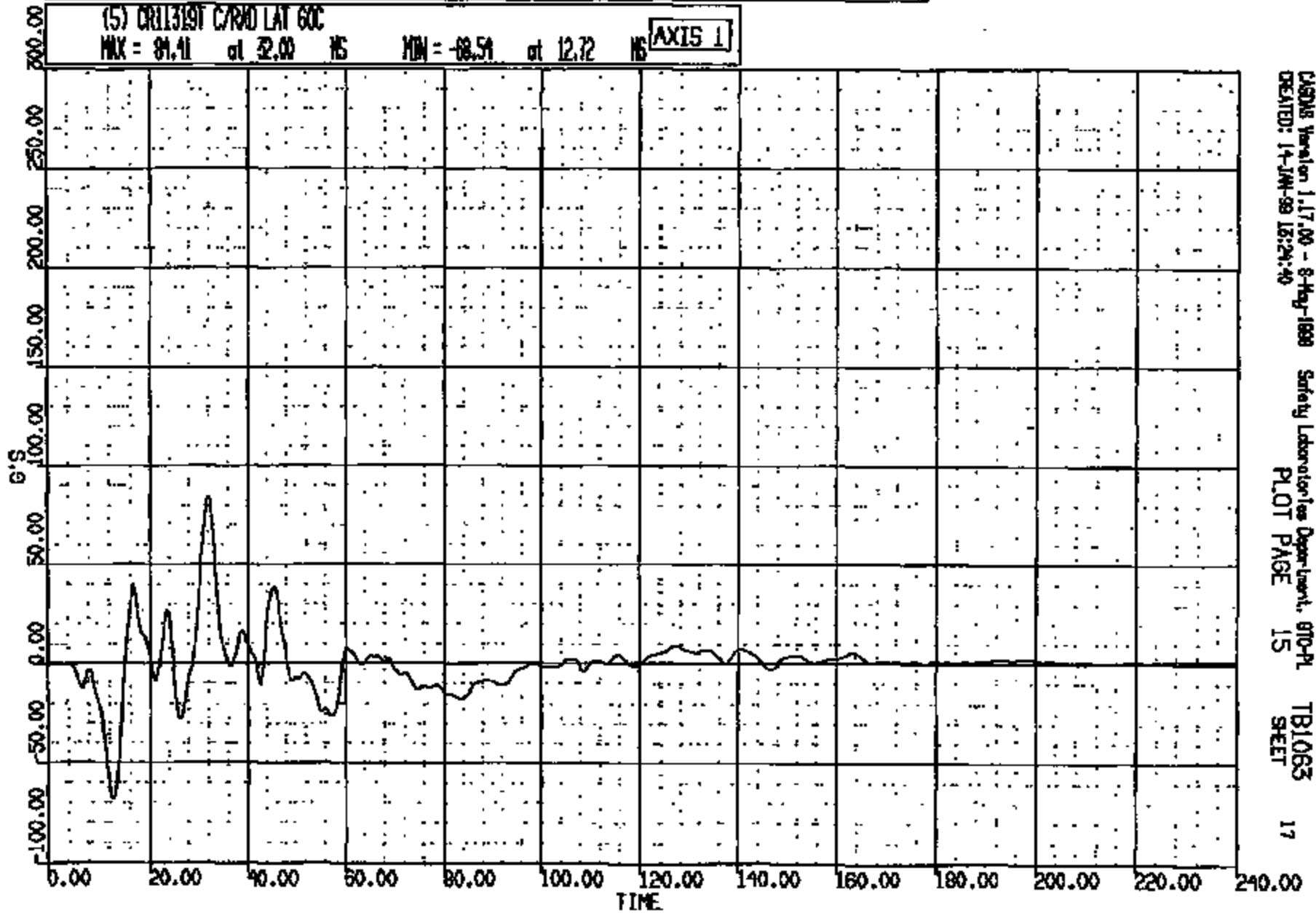


CR R: 11319 TO: TB1063 DATE: 990114 13:08:00  
R000 D-168

(5) CR11319 C/RNO LAT 60C

MAX = 81.41 at 32.00 NS MIN = -88.54 at 12.72 NS

AXIS 1



CASING Version 1.17.00 - 8-Aug-1998  
CREATED: 14-JAN-99 13:24:40

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SECT

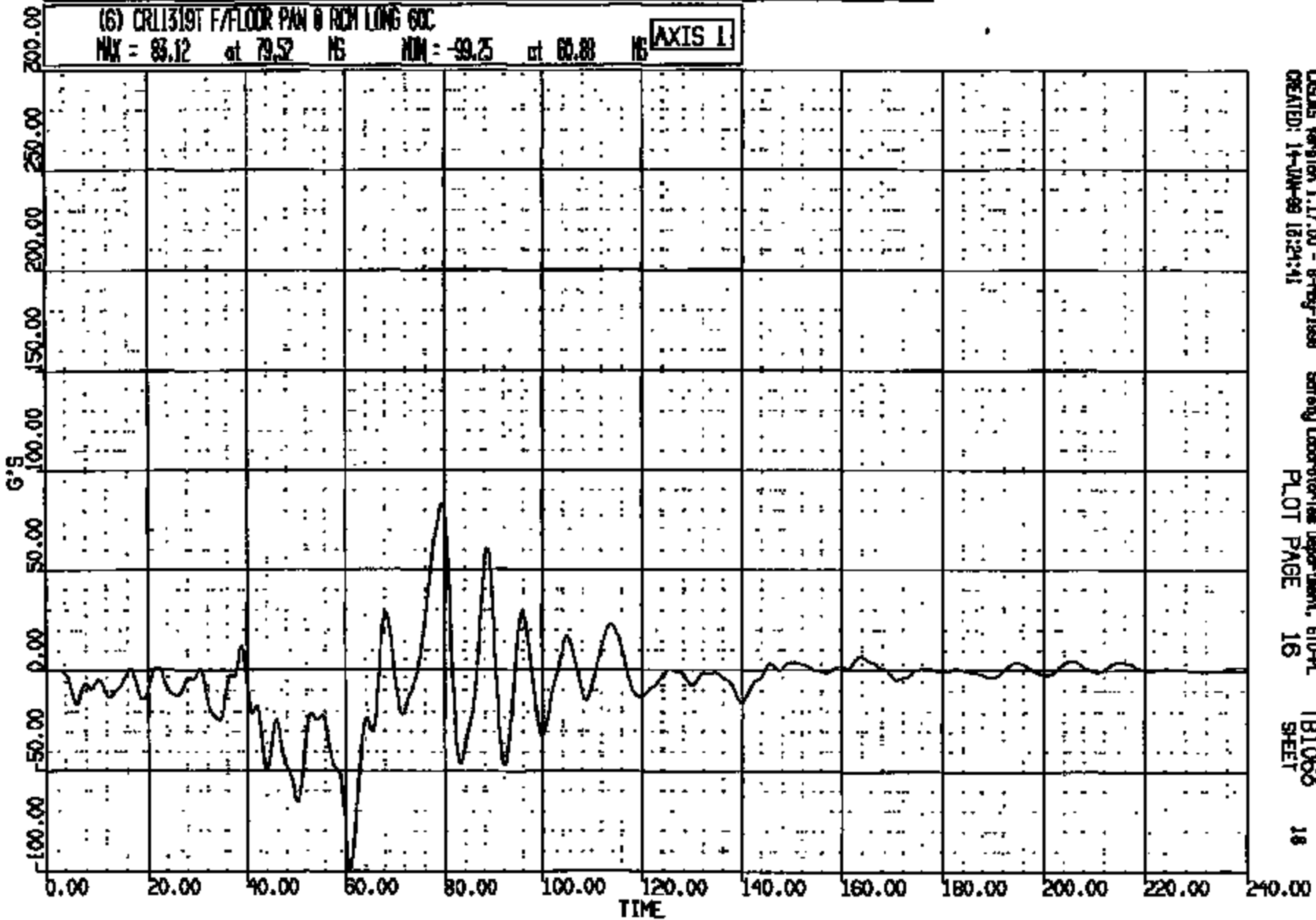
17

CR11319

CR R: 11219 TO: T81065 DATE: 890114 13:08:00  
2000 D-188

(6) CRL1319T F/FLOOR PAN @ RICH LONG GDC

MAX = 86.12 at 79.52 MS MIN = -99.25 at 60.88 MS **AXIS 1**



CRS015 Version 1.17.00 - 8-May-1988  
CREATED: 14-JUN-89 13:24:41

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PLOT PAGE 16

T81065  
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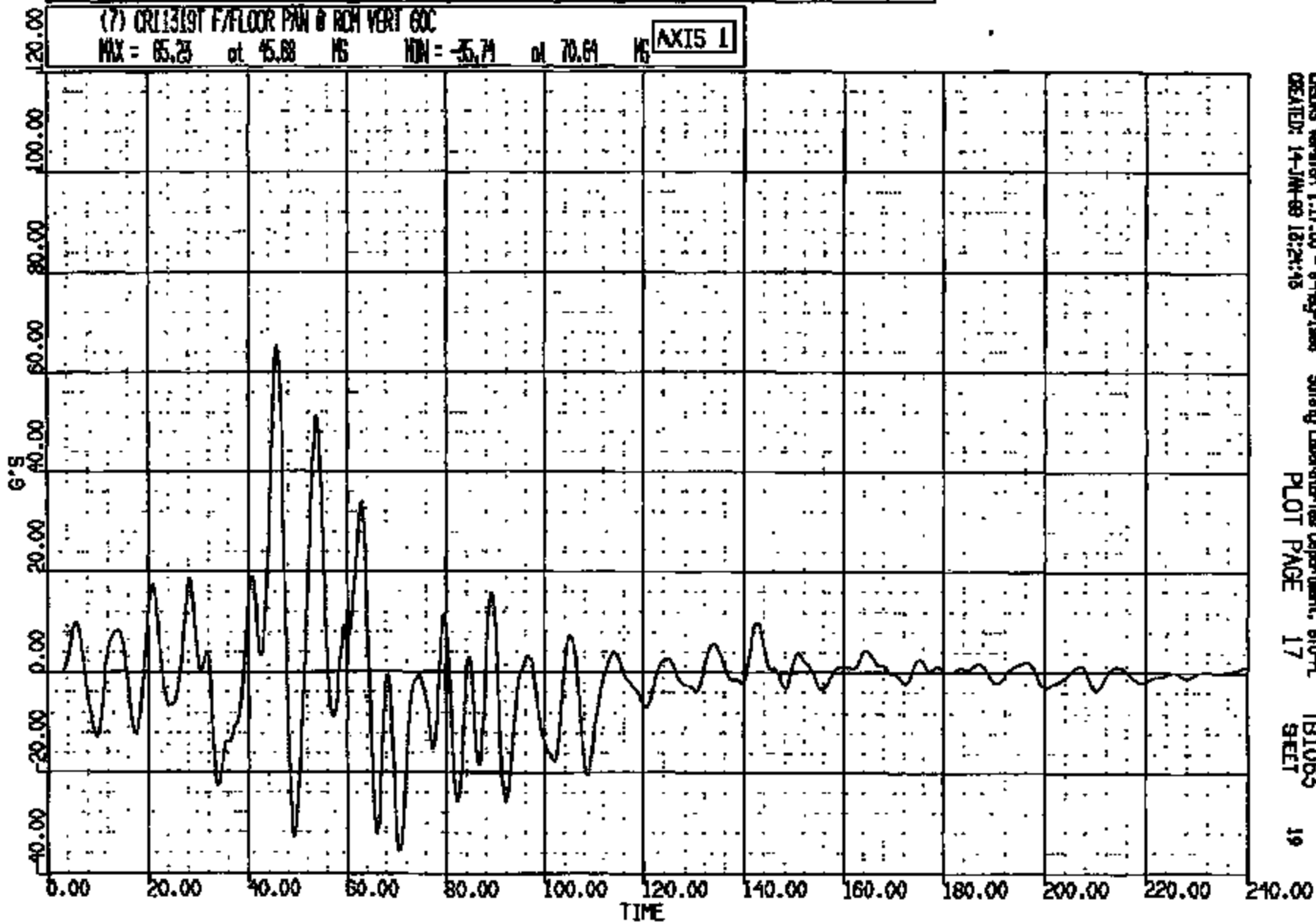
CRTS 0011319

CR R: 1151R TO: TB1063 DATE: 890114 13:08:00  
2000 D-198

(7) CR11319T F/FLOOR PAN @ RCH VERT 60C

MAX = 65.23 at 45.88 MS MIN = -35.71 at 70.61 MS

AXIS 1



CRSIS Version 1.17.00 - 8-May-1988  
CREATED: 14-JAN-89 18:24:15

Safety Laboratories Department, STD-PL  
PLOT PAGE 17

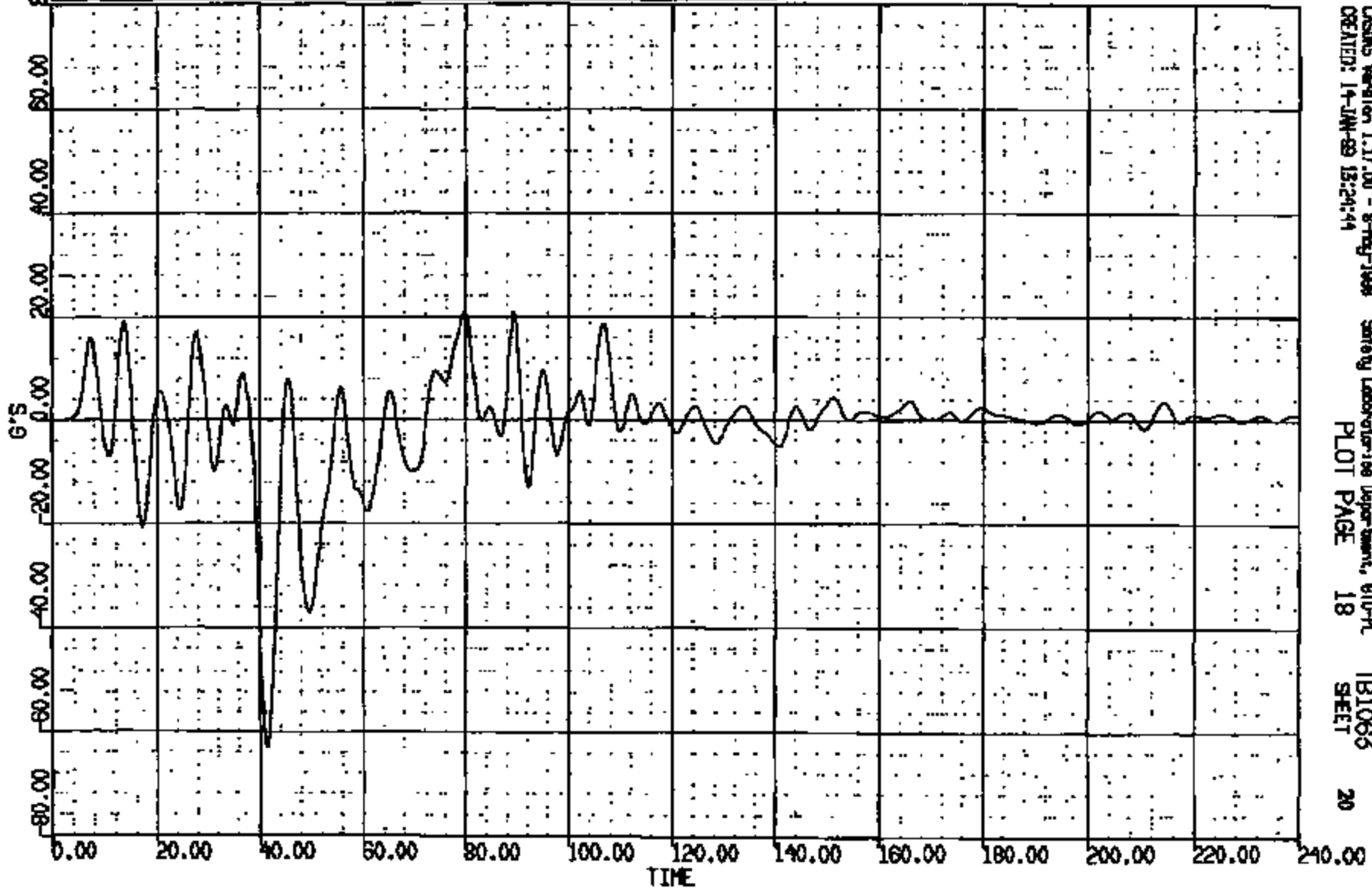
TB1063  
SHEET

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CRIS 0011319

CR R: 11319 TO: TB1063 DATE: 880114 13:08:00  
8000 D-168

(8) CR11319T F/FLOOR PAN @ RCH LAT 60C  
MAX = 20.89 at 80.28 MS MIN = -63.15 at 41.41 MS **AXIS 1**



CASINS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL  
CREATED: 14-JAN-89 13:24:44 PLOT PAGE 18 TB1063  
SHEET 20

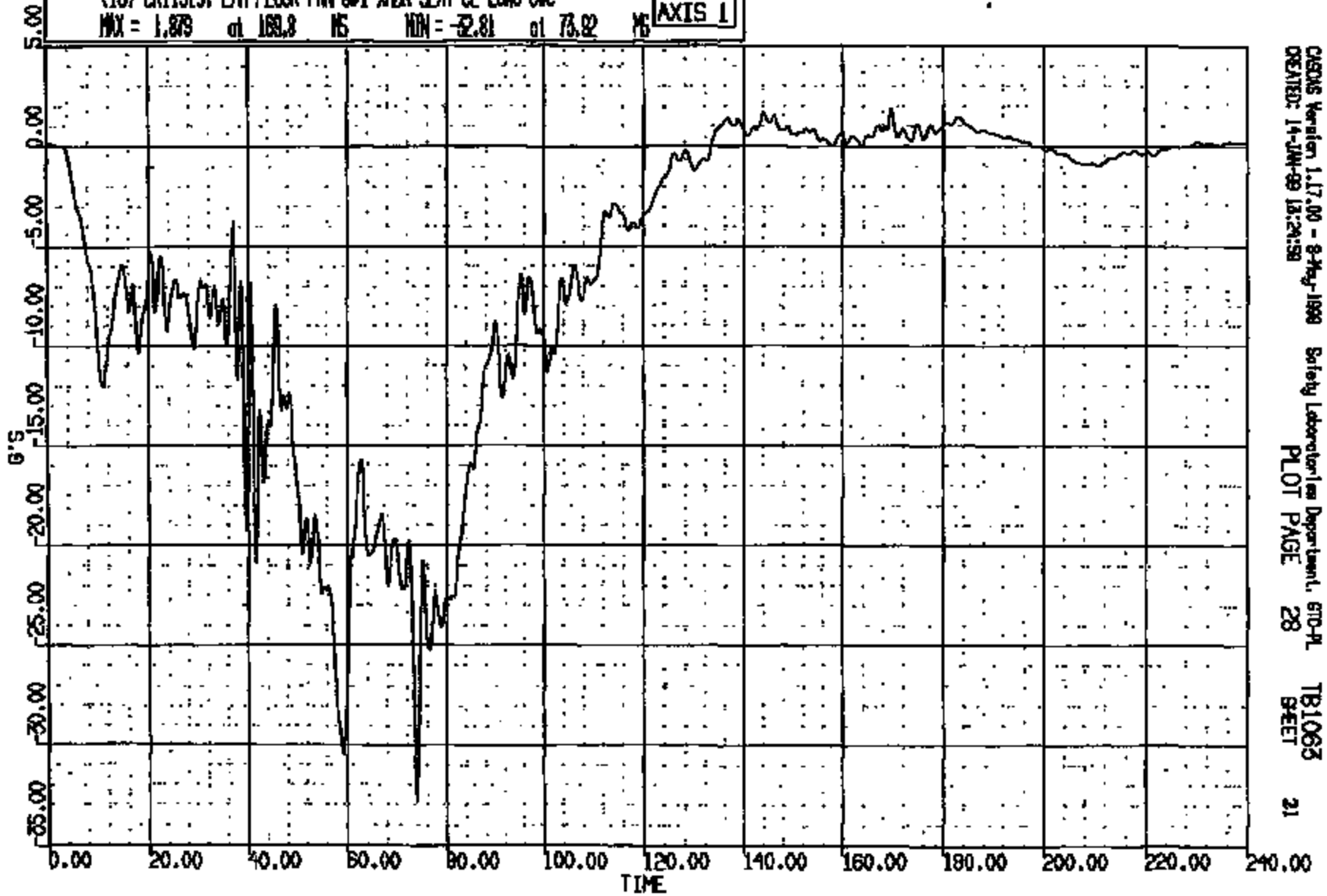
CR11319

CR N: 11319 TO: TB1065 DATE: 090114 13:08:00  
R000 D-188

(18) CR11319T L/H FLOOR PAN 6M1 XBER SEAT CL LONG 60C

MAX = 1.879 at 189.8 MS MIN = -32.81 at 73.82 MS

AXIS 1



CASAS Version 1.17.00 - 8-Aug-1999  
CREATED: 14-JUN-99 13:24:58

Safety Laboratory Department, 610-PL  
PLOT PAGE 28

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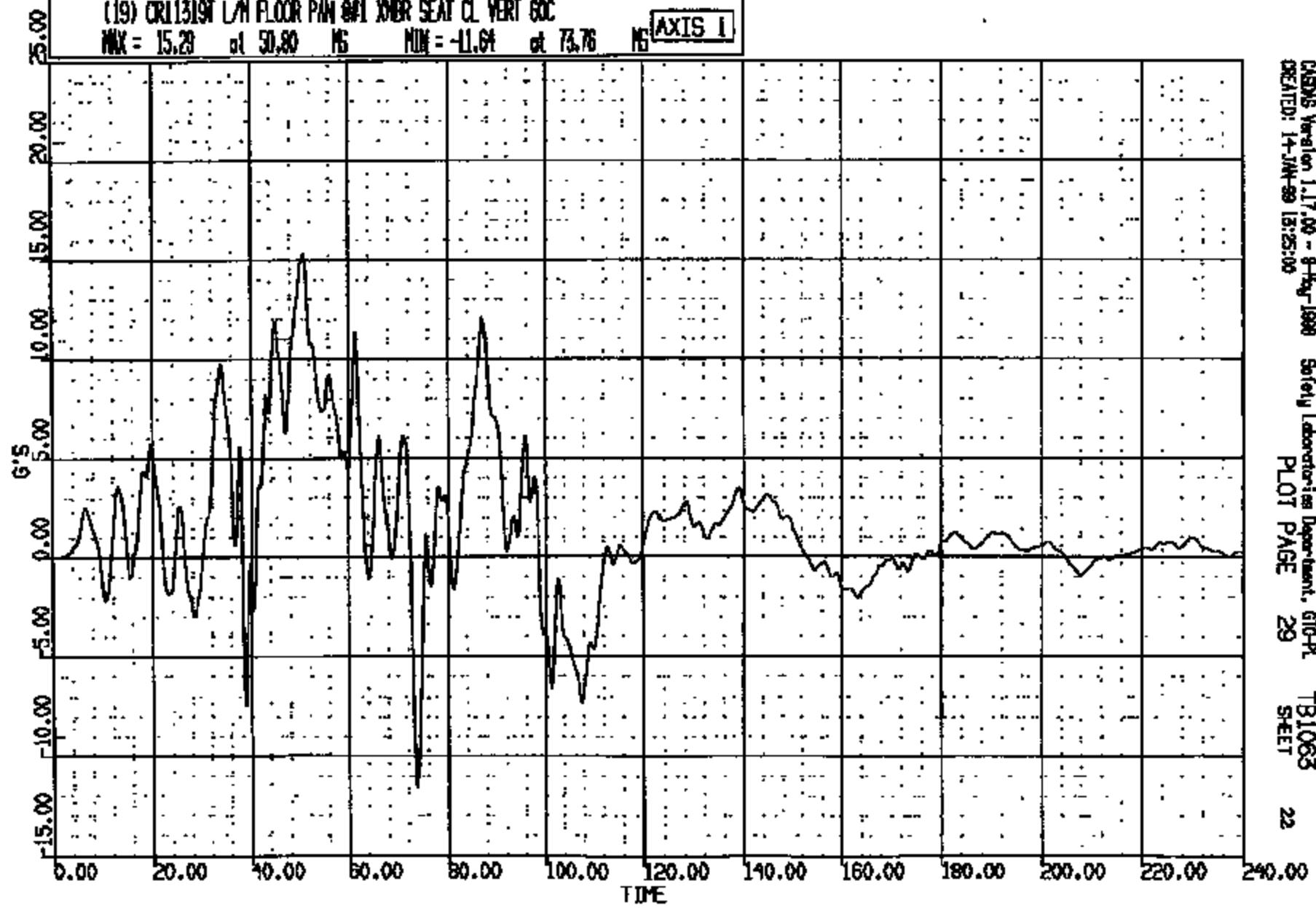
CR11319

CR R: 11319 TO: TB1063 DATE: 990114 13:08:00

2000 D-189

(19) CR11319 L/H FLOOR PAN @1 XNR SEAT CL VERT GOC  
MAX = 15.29 at 50.80 MS MIN = -11.64 at 73.76 MS

AXIS 1

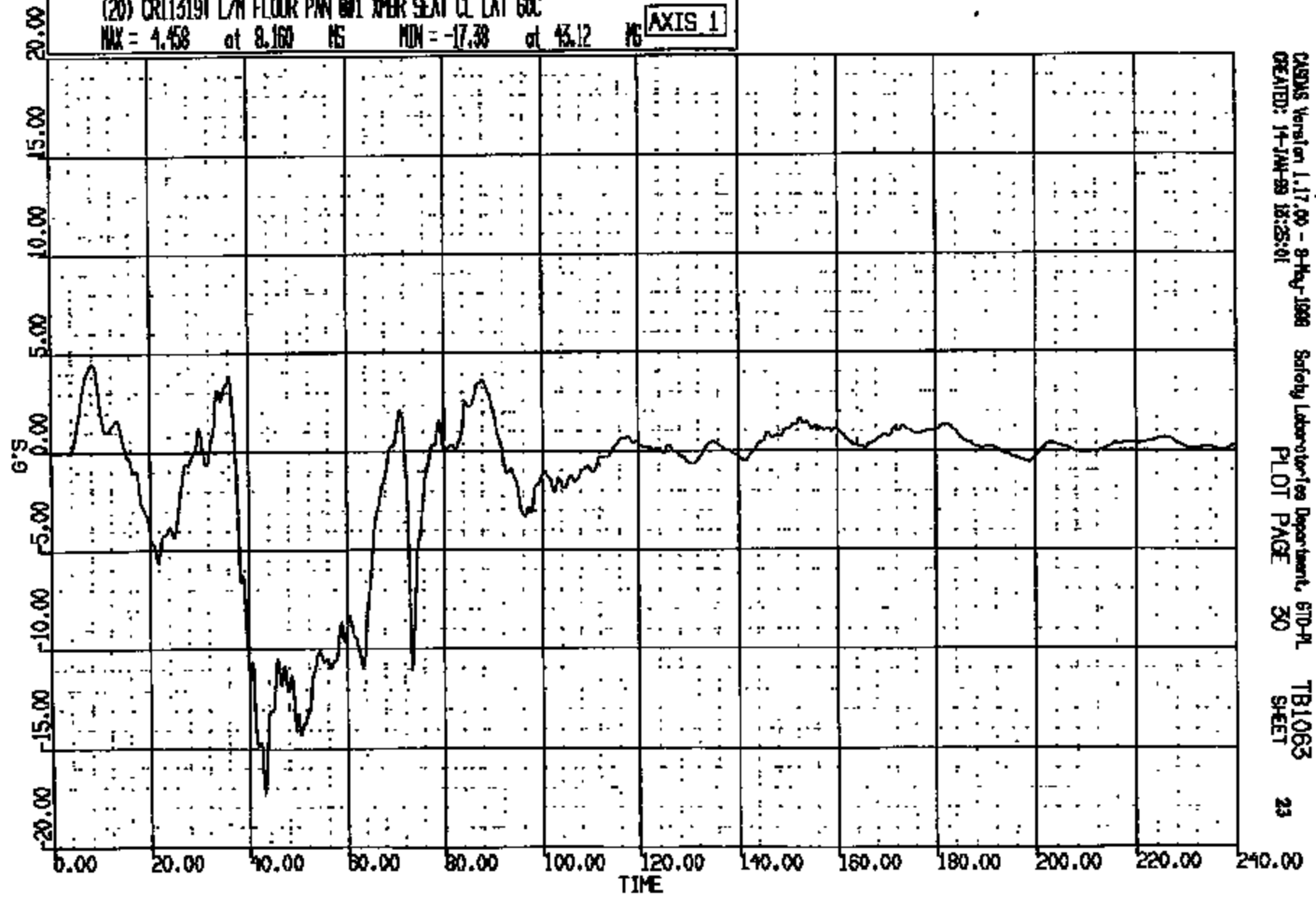


CASINS Version 1.17.00 - 9-May-1990 Safety Laboratories Department, G10-PL  
CREATED: 14-JAN-99 13:25:00 PLOT PAGE 29 TB1063 SHEET 22

CR11319

CR R: 11518 TO: TB1065 DATE: 990114 18:08:00  
8000 D-188

(20) CRT1319T L/N FLOOR PAN 601 XPER SEAT CL LAT 60C  
MAX = 4.458 at 8.160 MS MIN = -17.38 at 43.12 MS **AXIS 1**



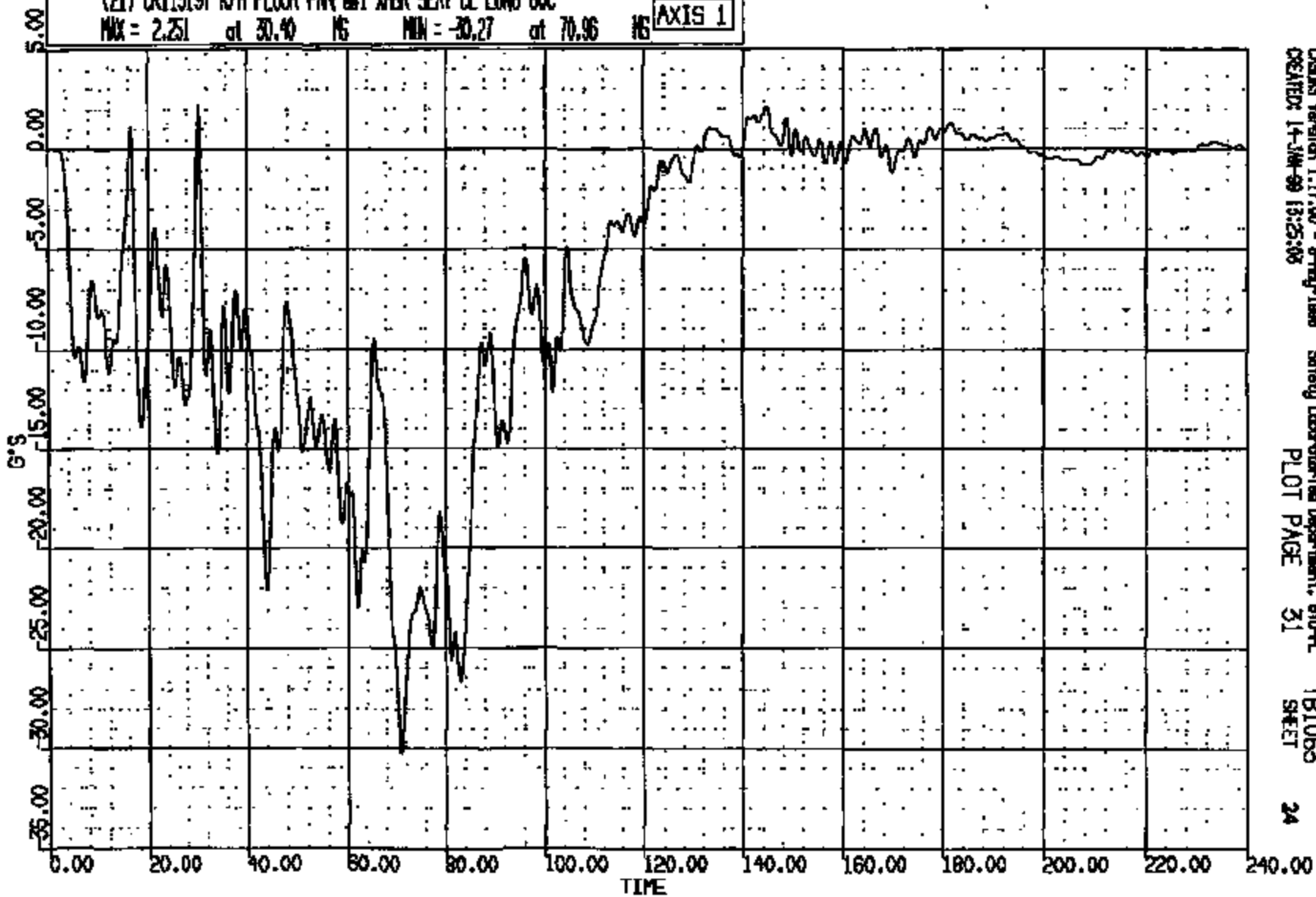
CASINS Version 1.17.00 - 8-May-1999 Safety Laboratories Department, 610-PL TB1063  
CREATED: 14-JAN-99 18:25:01 PLOT PAGE 30 SHEET 23

CRTS 0011319

CR R: 11319 TO: TB1063 DATE: 990114 15:08:00  
9000 D-188

(21) CR1319T R/W FLOOR PIN SWI XPER SEAT CL LONG GOC  
MAX = 2.251 at 30.40 NS MIN = -30.27 at 70.96 NS

AXIS 1



CRSIS Version 1.17.00 - 8-May-1988  
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CRTS 0011319

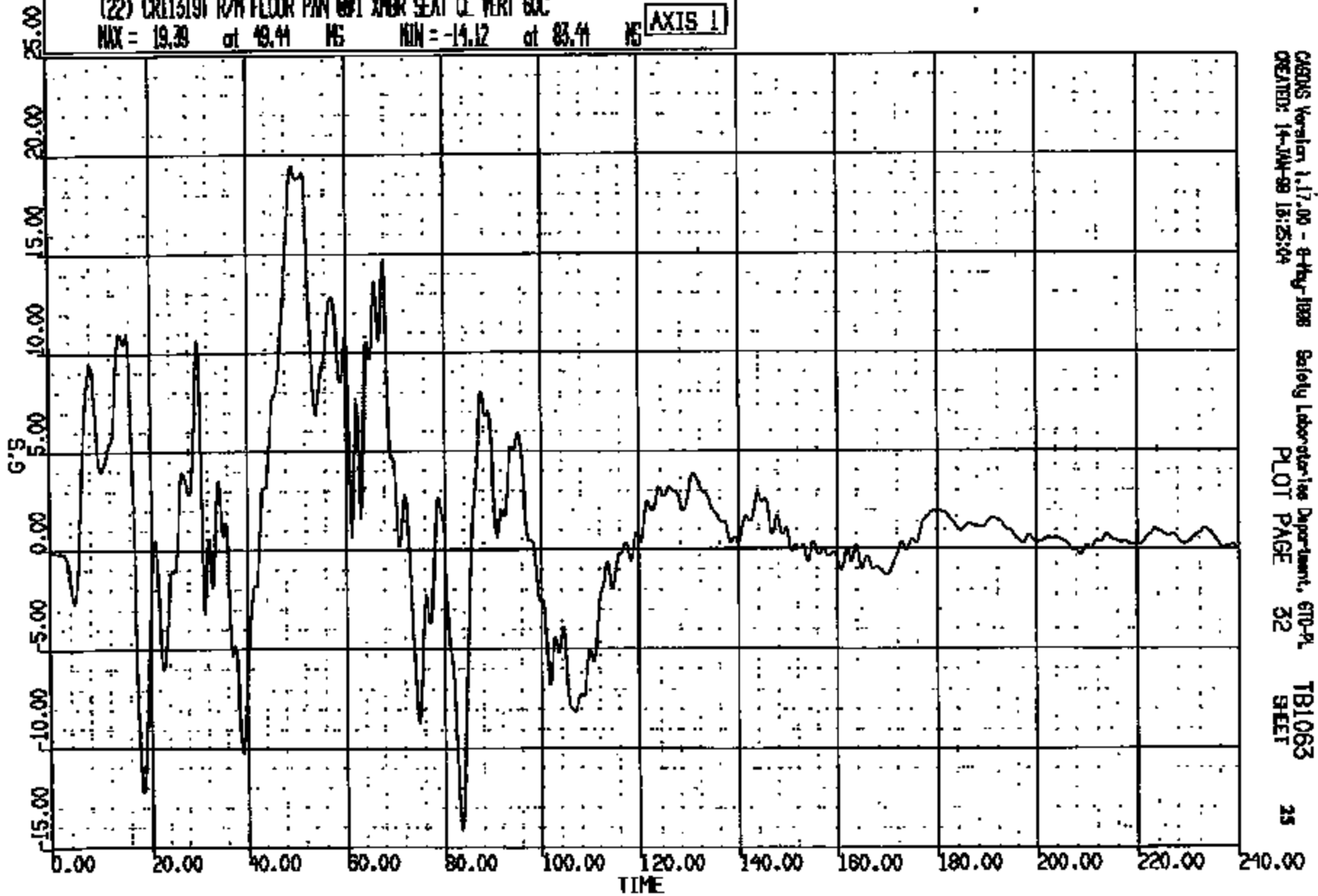


CR R: 11319 TO: TB1063 DATE: 990114 13:08:00  
2000 D-188

(22) CR11319T R/W FLOOR PAN ON XMR SEAT CL VERT GDC

MAX = 19.39 at 49.44 MS MIN = -14.12 at 83.44 MS

AXIS 1

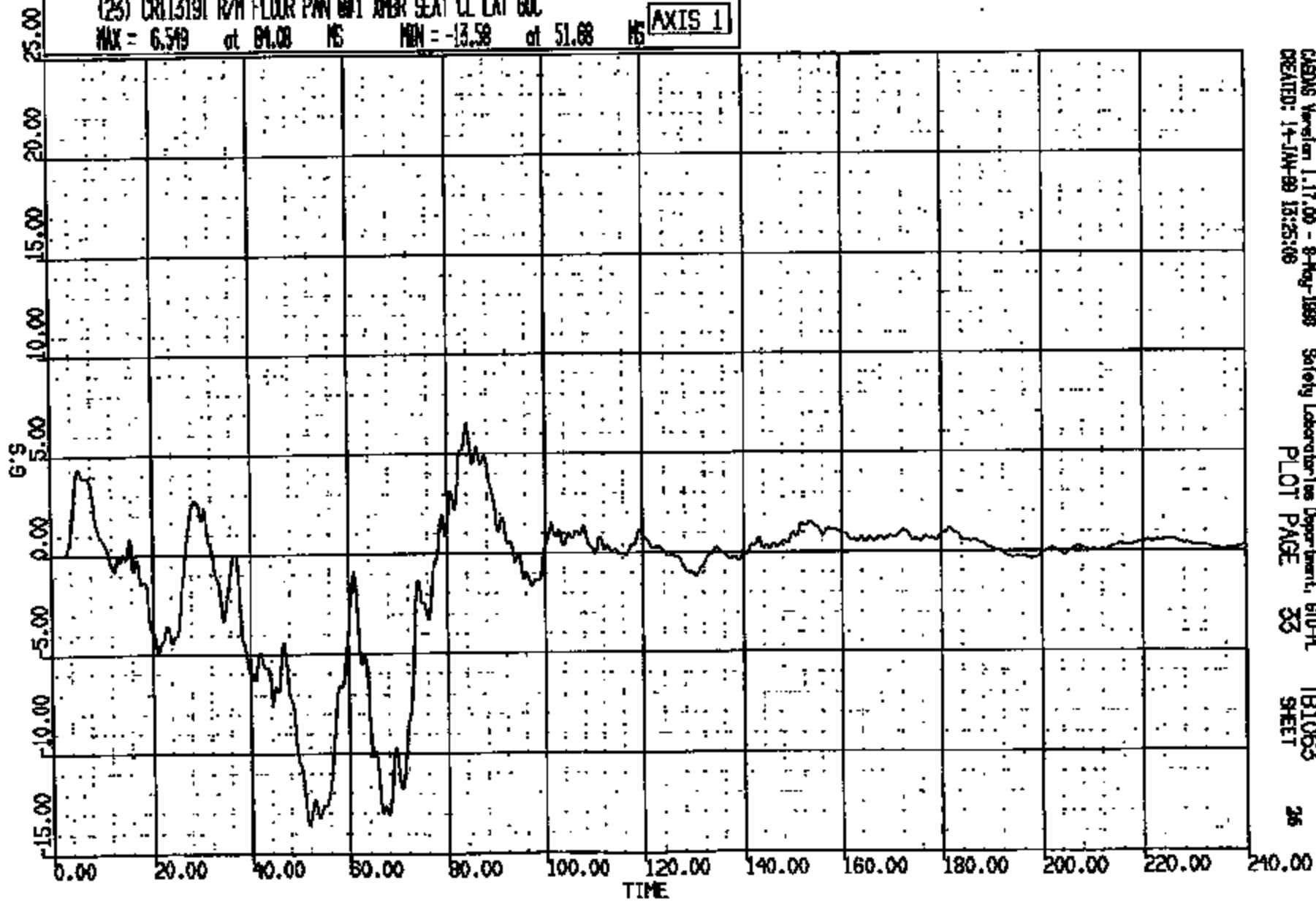


AGENS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL  
CREATED: 14-JAN-99 13:25:04 PLOT PAGE 32 TB1063 SHEET 25

CRIS 0011319

CR R: 11319 TO: TB1063 DATE: 890114 13:08:00  
R000 0-188

(25) CRTS1319T R/W FLOOR PAN 0M1 XMR SEAT CL LAT 60C  
MAX = 6.549 at 04.08 MS MIN = -13.58 at 51.68 MS **AXIS 1**

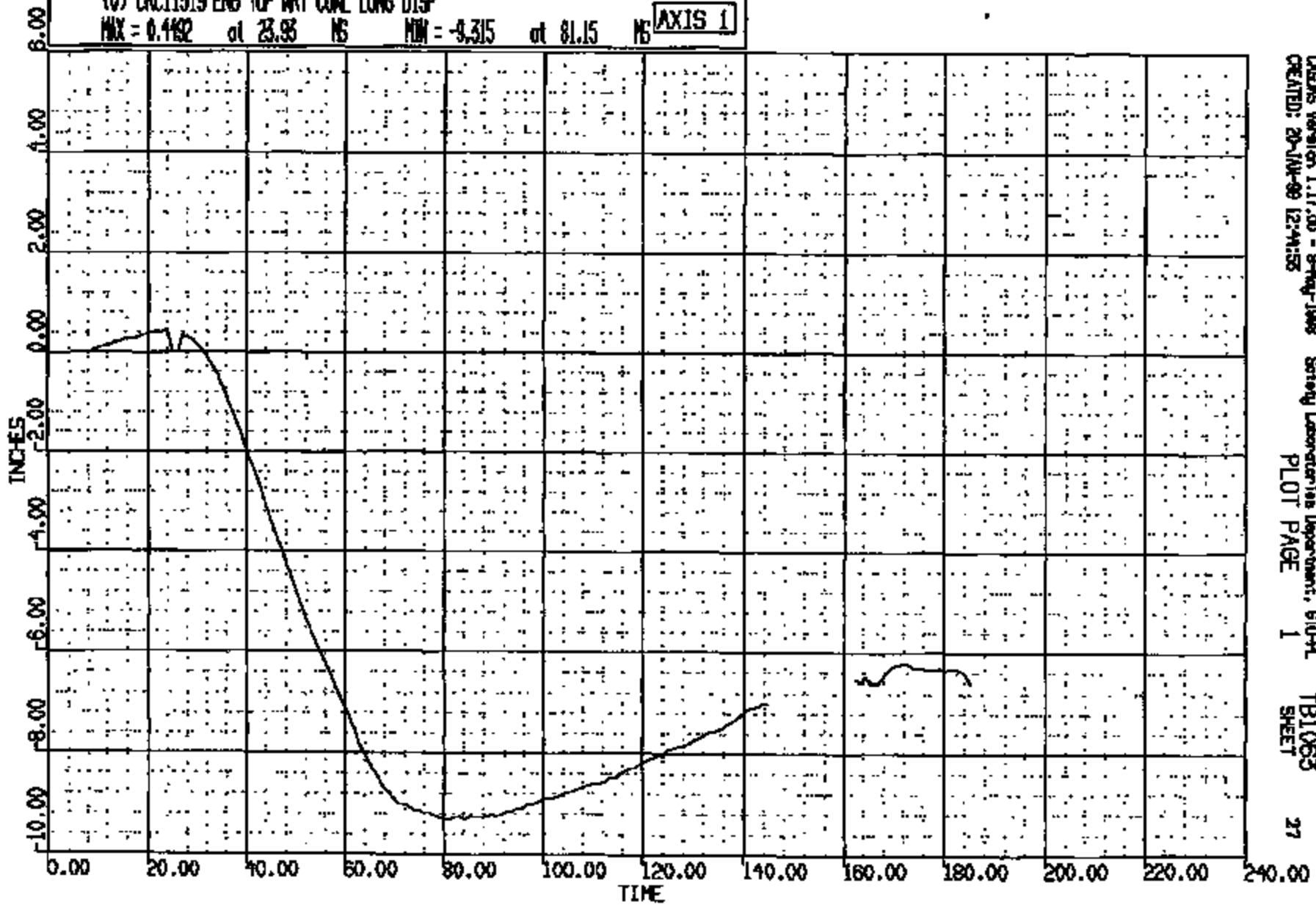


CASINS Worksheet 1.17.00 - 8-Feb-1989 Safety Laboratories Department, 610-A  
CREATED: 14-JAN-89 13:25:08 PLOT PAGE 33 TB1063  
SHEET 26

CRTS 0011319

CR R: 11319 TC: TB1065 DATE: 990114 13:08:00  
2000 D-188

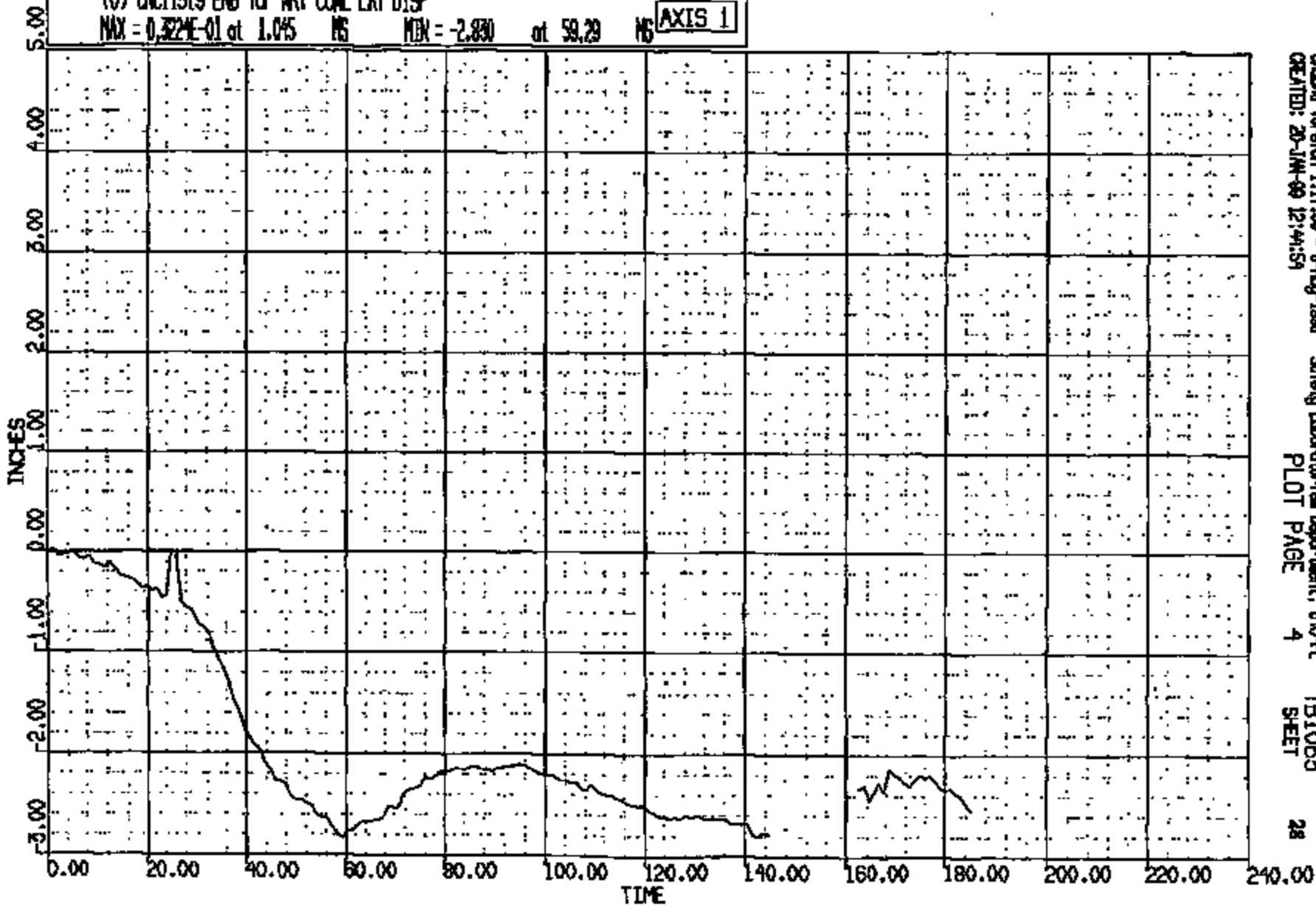
(0) CRC11319 ENG TOP WRT COAL LONG DISP  
MAX = 0.462 at 23.95 NS MIN = -9.315 at 81.15 NS **AXIS 1**



CRTS 0011319

CR R: 11218 TO: TB1063 DATE: 990114 13:08:00  
2000 D-188

(0) CR11319 ENG TOP WRT COM LAT DISP  
MAX = 0.324E-01 at 1.045 MS MIN = -2.830 at 59.29 MS **AXIS 1**



CASMG Version 1.17.00 - 8-Aug-1998  
CREATED: 20-JAN-99 12:44:54

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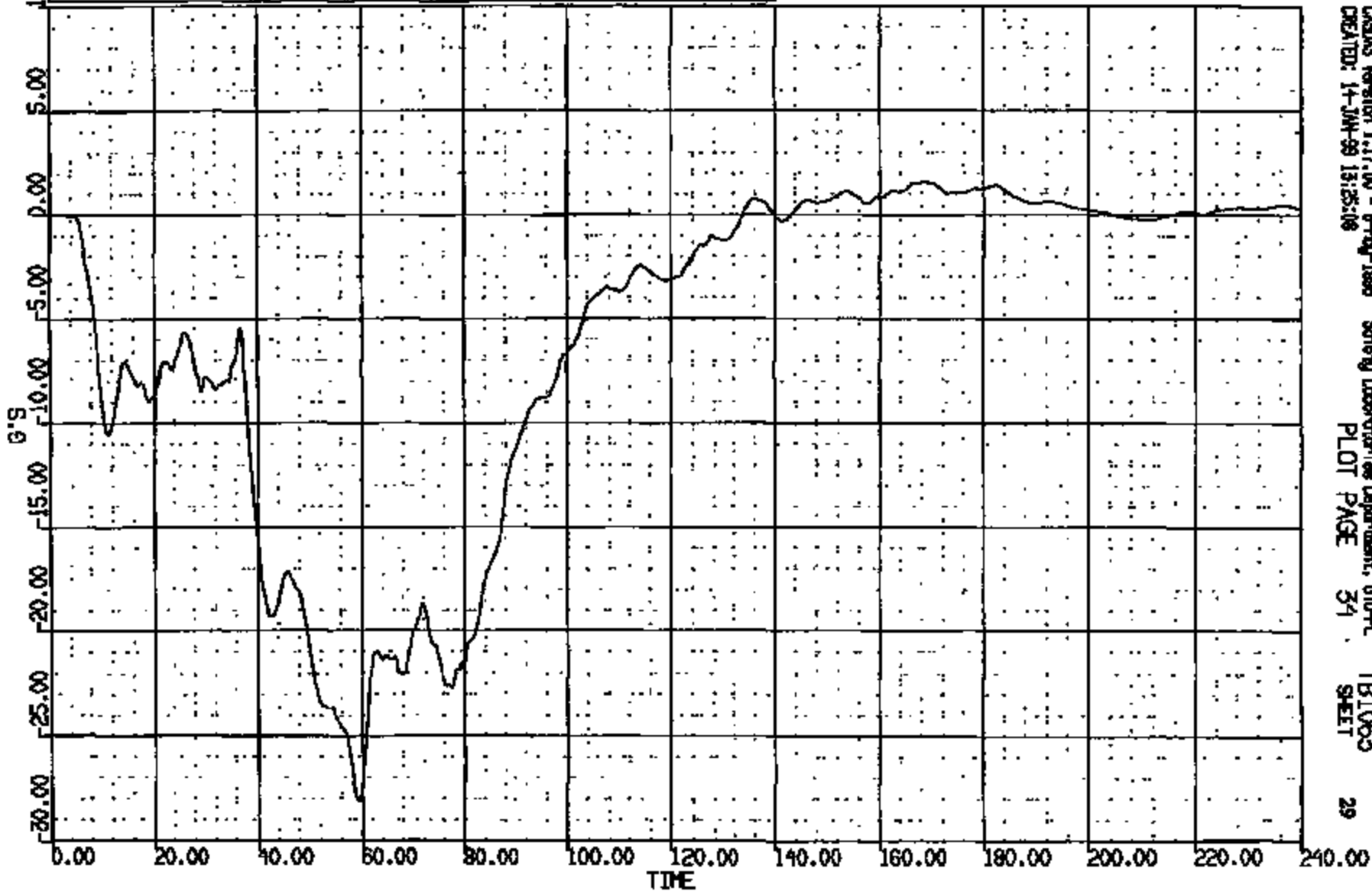
CR11319

NO. 11819 TO: TB1065 DATE: 990114 15:08:00  
R000 D:188

(24) CR11319T L/ROCKER @ B-PILLAR LONG 60C

MAX = 1.604 at 168.5 MS MIN = -28.19 at 59.36 MS

AXIS 1

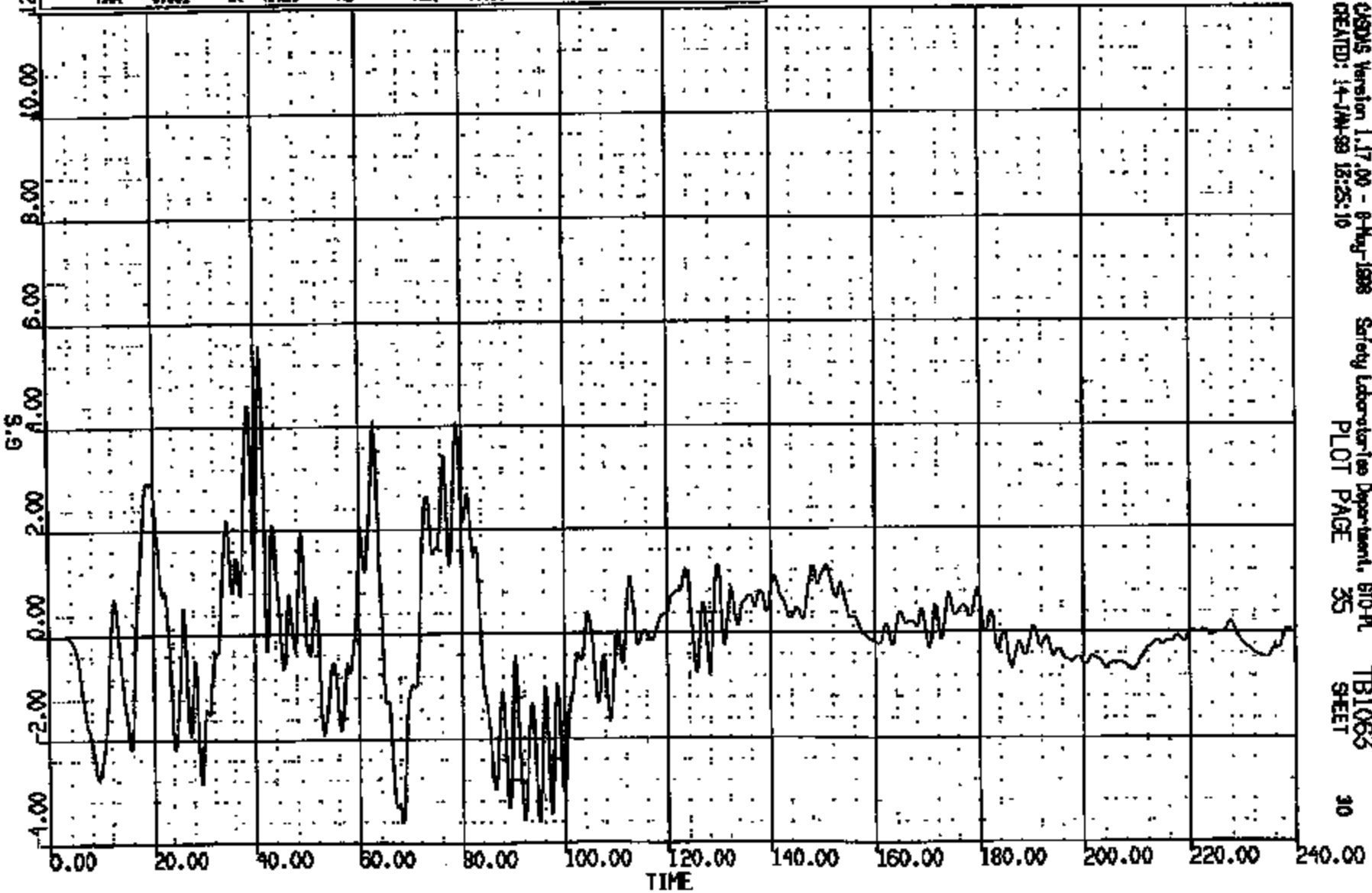


CRS Version 1.17.00 - 8-May-1999 Safety Laboratories Department, G10-PL TB1065  
CREATED: 14-JAN-99 13:25:16 PLOT PAGE 34 SHEET 29

CRTS 0011319

DR R: 11319 TC: TB1063 DATE: 990114 13:08:00  
NOOO D-188

(25) CR11319 L/ROCKER @ B-PILLAR VERT GOC  
MAX = 5.531 at 11.20 MS MIN = -3.616 at 88.40 MS **AXIS 1**



OSGMS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, B10-PL TB1063  
CREATED: 14-JAN-99 13:25:10 PLOT PAGE 35 SHEET 30

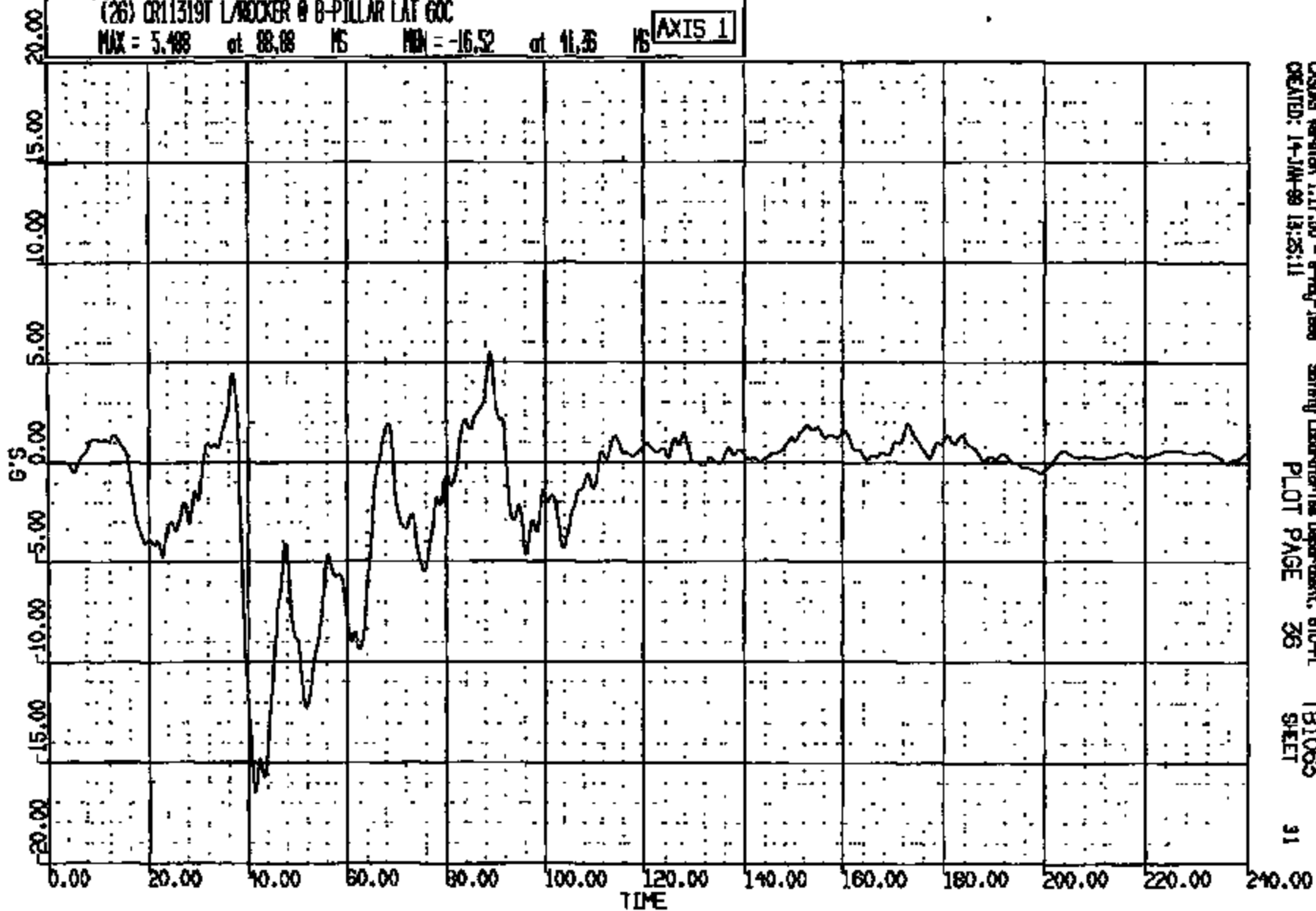
CRIS 0011319

CR R: 11319 TO: TB1063 DATE: 890114 13:08:00  
2000 D-188

(26) CR11319T L/ROCKER @ B-PILLAR LAT 60C

MAX = 5.488 at 88.88 MS MIN = -16.52 at 11.36 MS

AXIS 1



CRS015 Version 1.17.00 - 8-Aug-1988  
CREATED: 14-JAN-89 13:25:11

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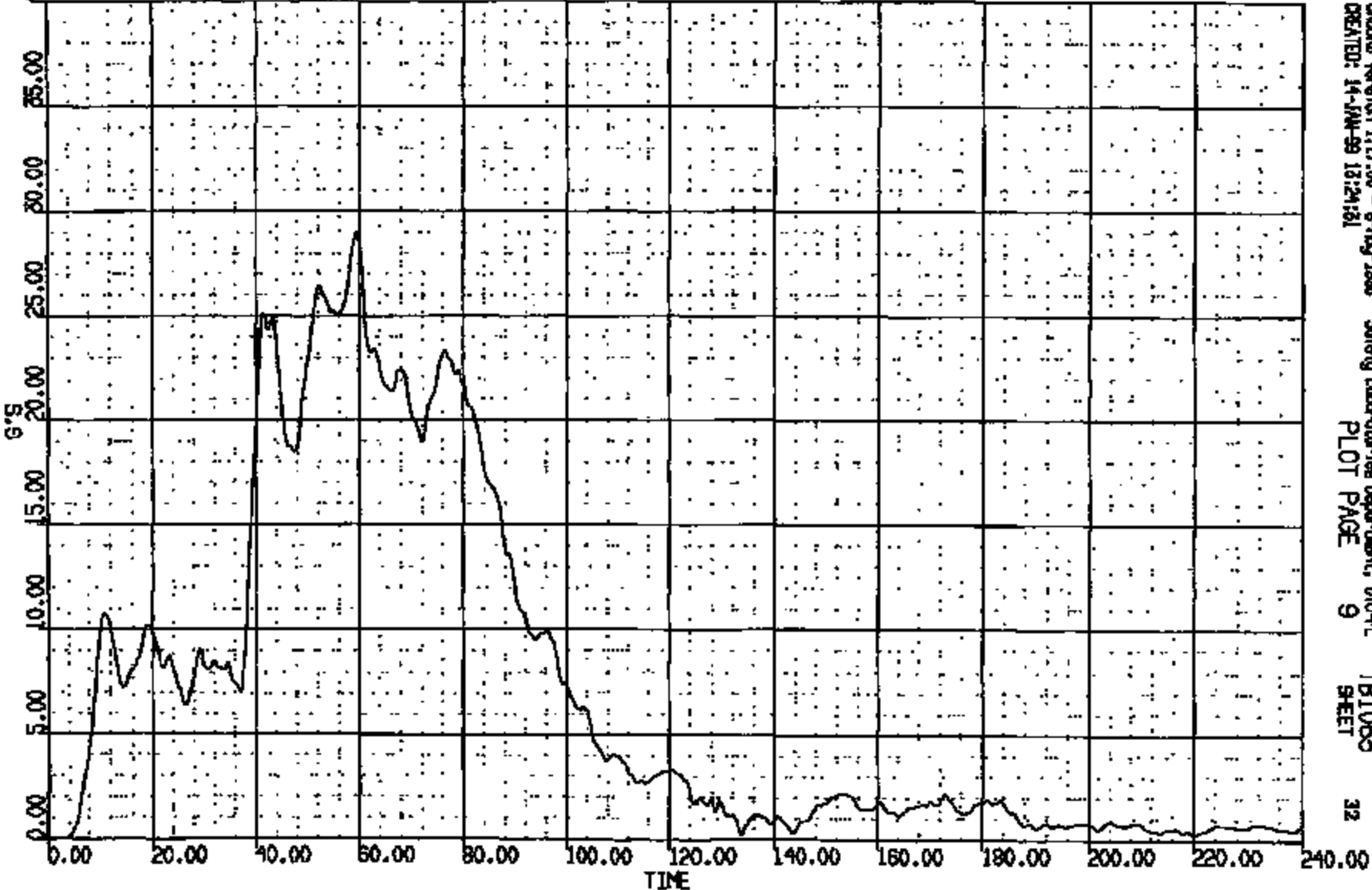
TB1063  
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CRIS 0011319

CR N: 11319 TO: TB1063 DATE: 990114 15:08:00  
2000 D-188

(10001) CR11319T L/ROCKER @ B-PILLAR RES 50C  
MAX = 28.99 at 59.52 NS MIN = 0.4671E-01 at 3.200 NS **AXIS 1**



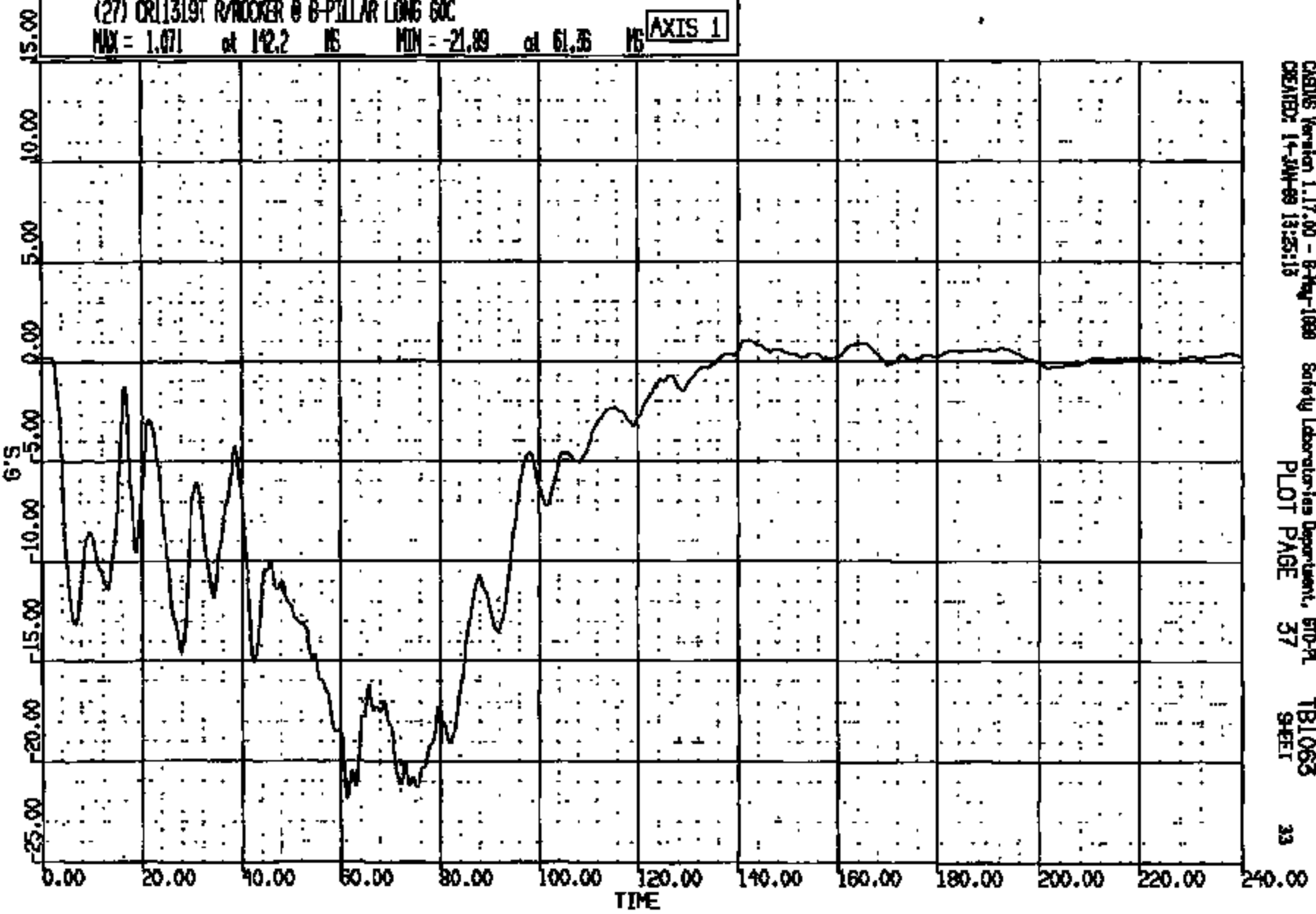
CADMS Version 1.17.00 - 9-May-1998 Safety Laboratories Department, SIO-PL  
CREATED: 14-JAN-99 15:24:51 PLOT PAGE 9 TB1063  
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CRTS 0011319



CR R: 11319 TD: T21063 DATE: 890114 15:08:00  
2000 D-188

(27) CR11319T R/WOCKER @ B-PILLAR LONG GOC  
MAX = 1.071 at 142.2 MS MIN = -21.89 at 61.35 MS **AXIS 1**

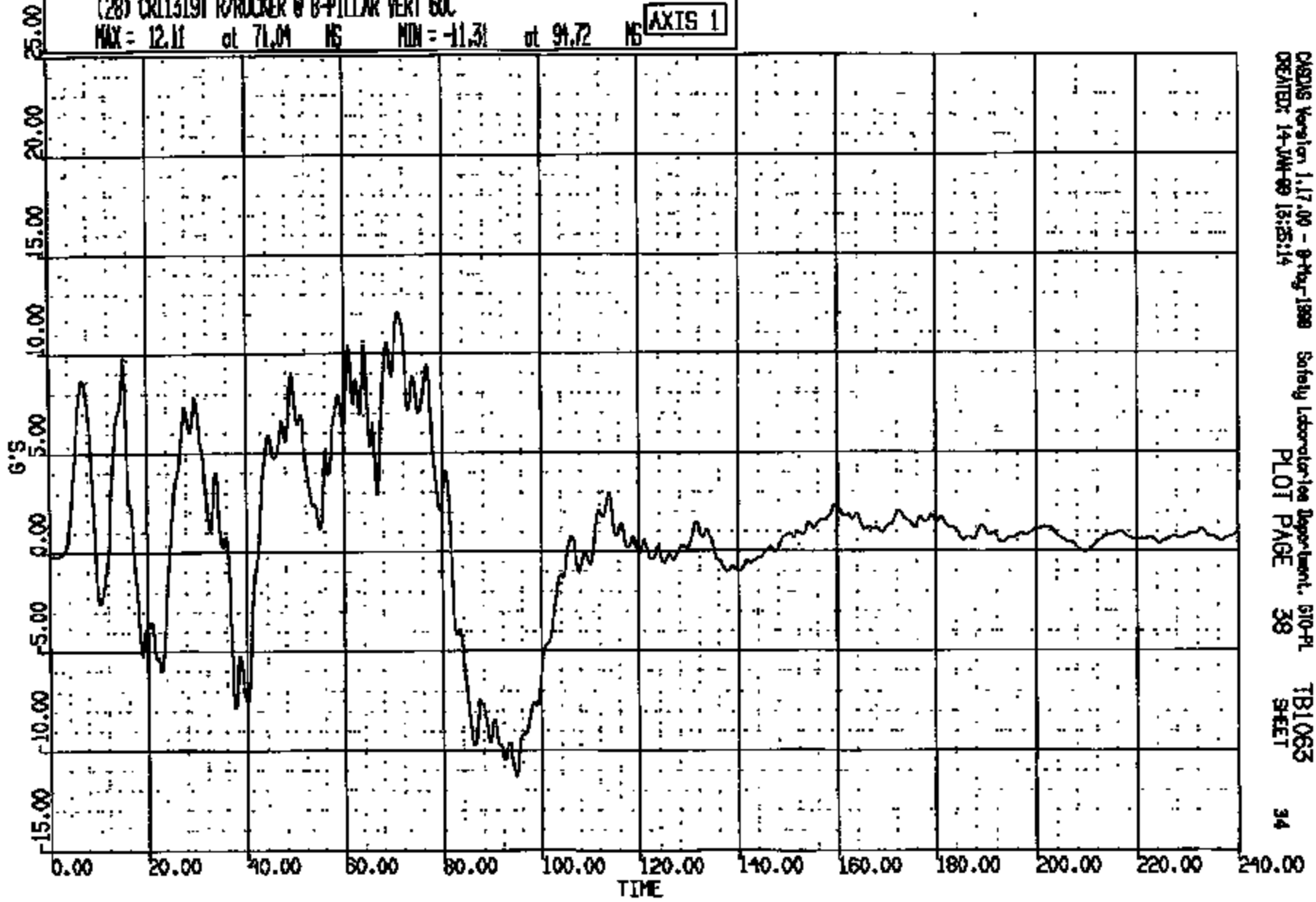


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CRTS 0011319

DR R: 11519 TO: TB1063 DATE: 990114 13:08:00  
NOOO D-199

(28) CR11319T R/ROCKER @ B-PILLAR VERT 60C  
MAX = 12.11 at 71.04 NS MIN = -11.31 at 91.72 NS **AXIS 1**



CADDS Version 1.17.00 - 9-Feb-1999 Safety Laboratories Department, SIO-PL  
CREATED: 14-JAN-99 13:25:14 PLOT PAGE 39 TB1063  
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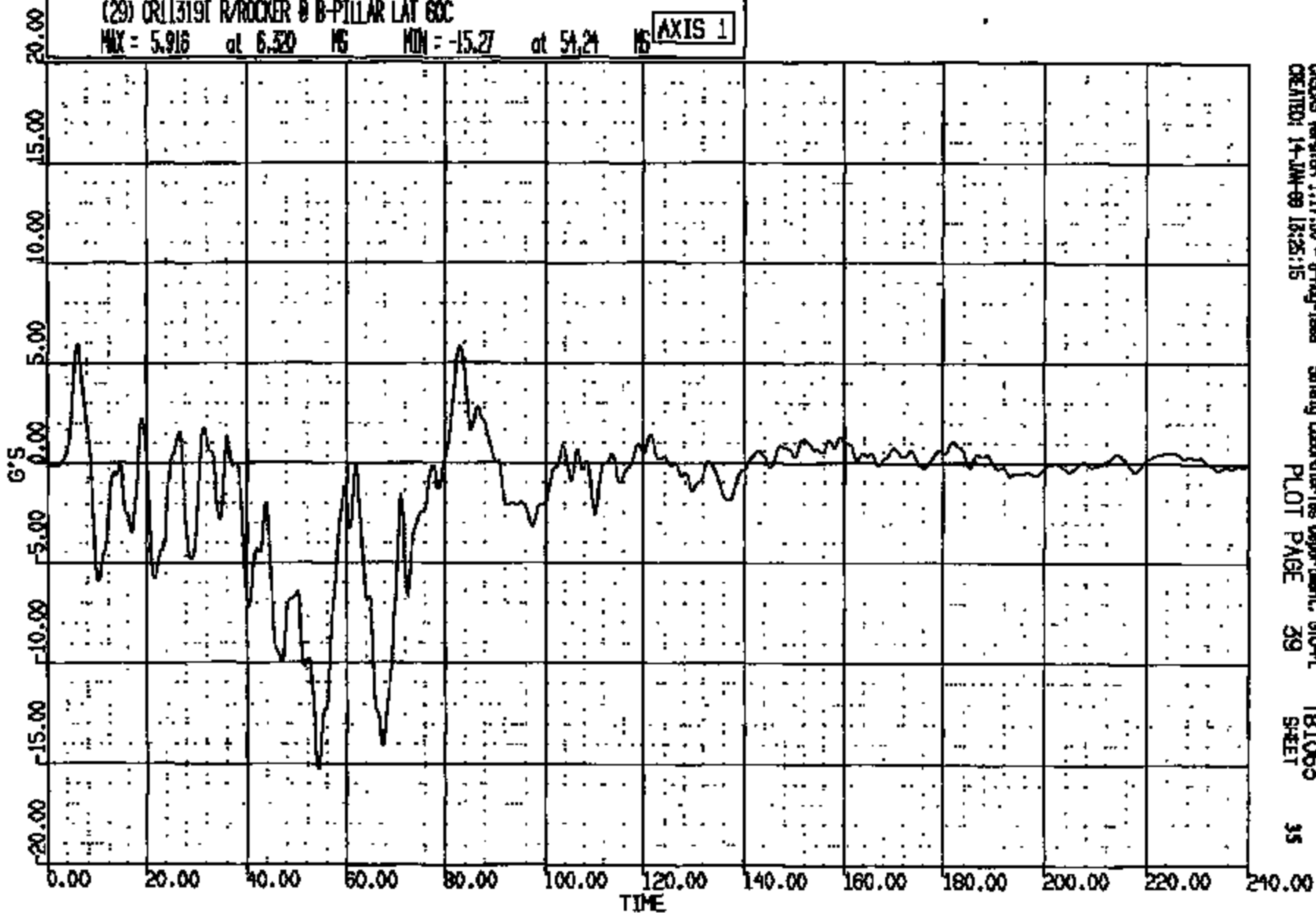
CRIS 0011319

CR R: 11319 TC: TB1065 DATE: 890114 13:08:00  
2000 D-198

(29) CR11319T R/ROCKER @ B-PILLAR LAT 60C

MAX = 5.916 at 6.32 MS MIN = -15.27 at 51.24 MS

AXIS 1



CRSIS Version 1.17.00 - 8-May-1989  
CREATED: 14-JAN-89 13:25:15

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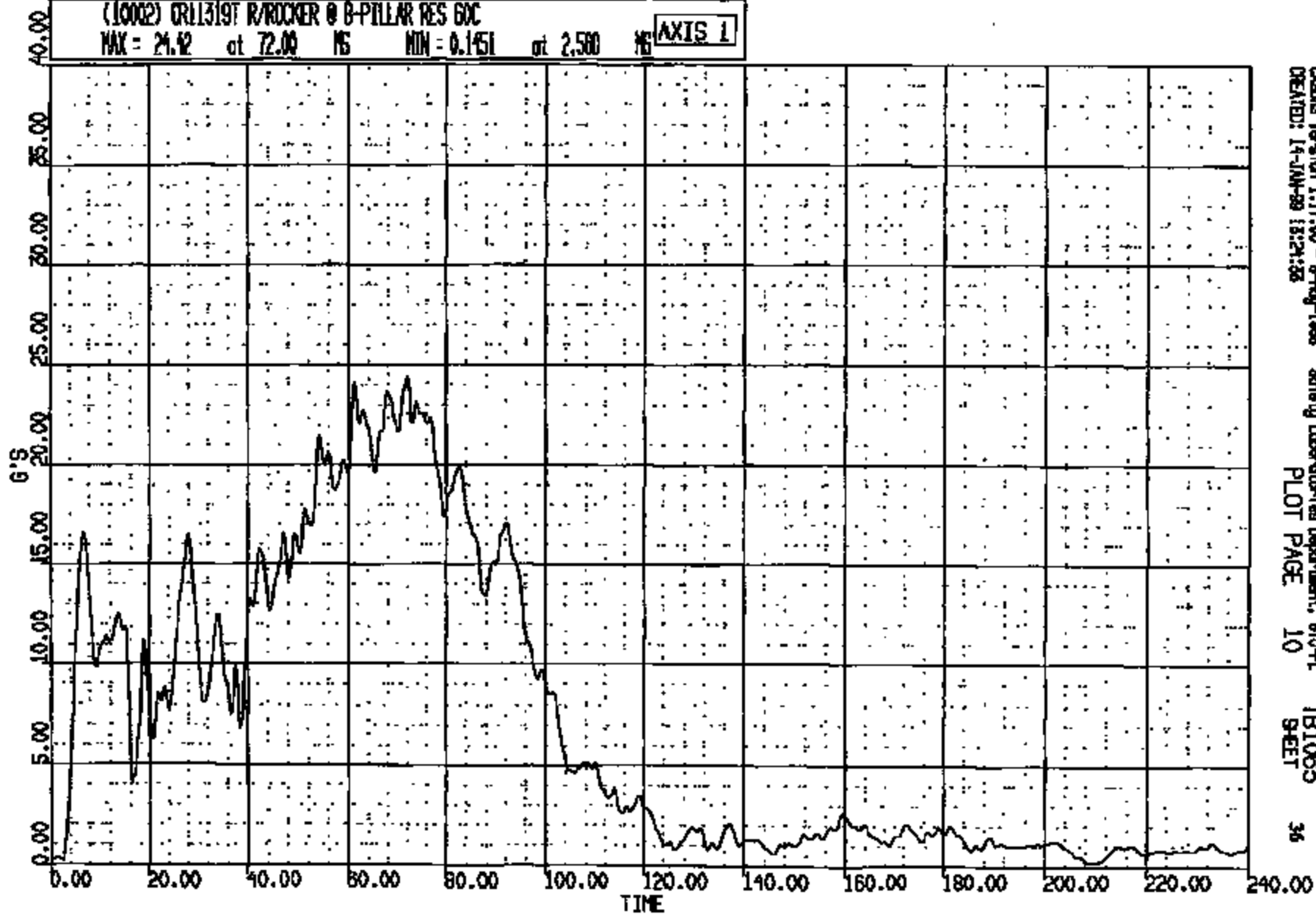
CR R: 11918 TO: TB1065 DATE: 990114 13:08:00

2000 D-188

(10002) CR11319T R/ROCKER @ B-PILLAR RES 60C

MAX = 24.42 at 72.00 MS MIN = 0.1451 at 2.500 MS

AXIS 1



CRTS 0011319

CRSIS Version 1.17.00 - 8-May-1998  
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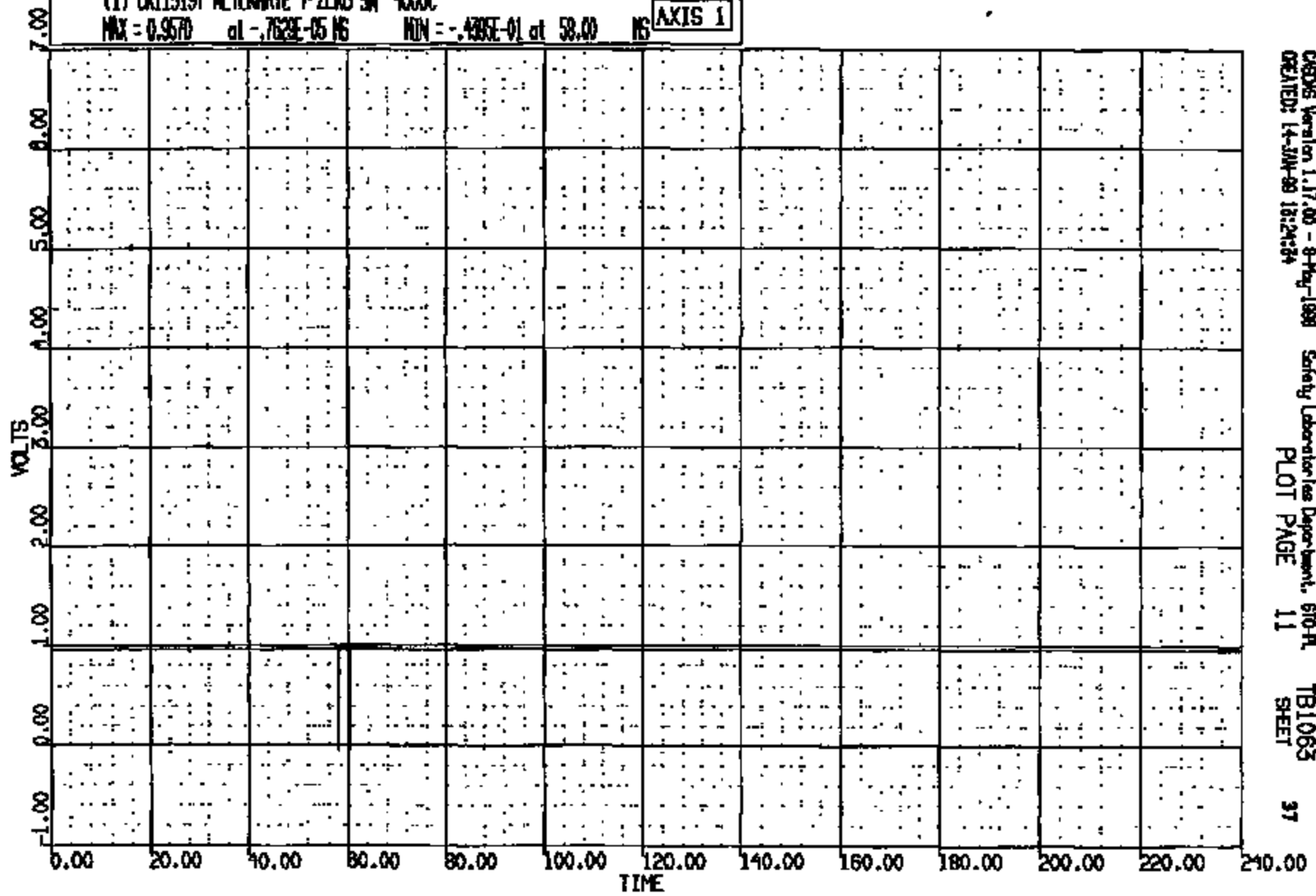
Serials Laboratories Department, 610-PL  
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CR R: 11818 TO: TB1065 DATE: 880114 15:05:00  
2000 D-188

(1) CR11319T ALTERNATE Y-ZERO SN 4000C  
MAX = 0.9570 at -.7523E-05 MS MIN = -.4395E-01 at 58.00 MS **AXIS 1**



CARDIS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL TB1065  
CREATED: 14-JAN-89 18:24:34 PLOT PAGE 11 SHEET 37

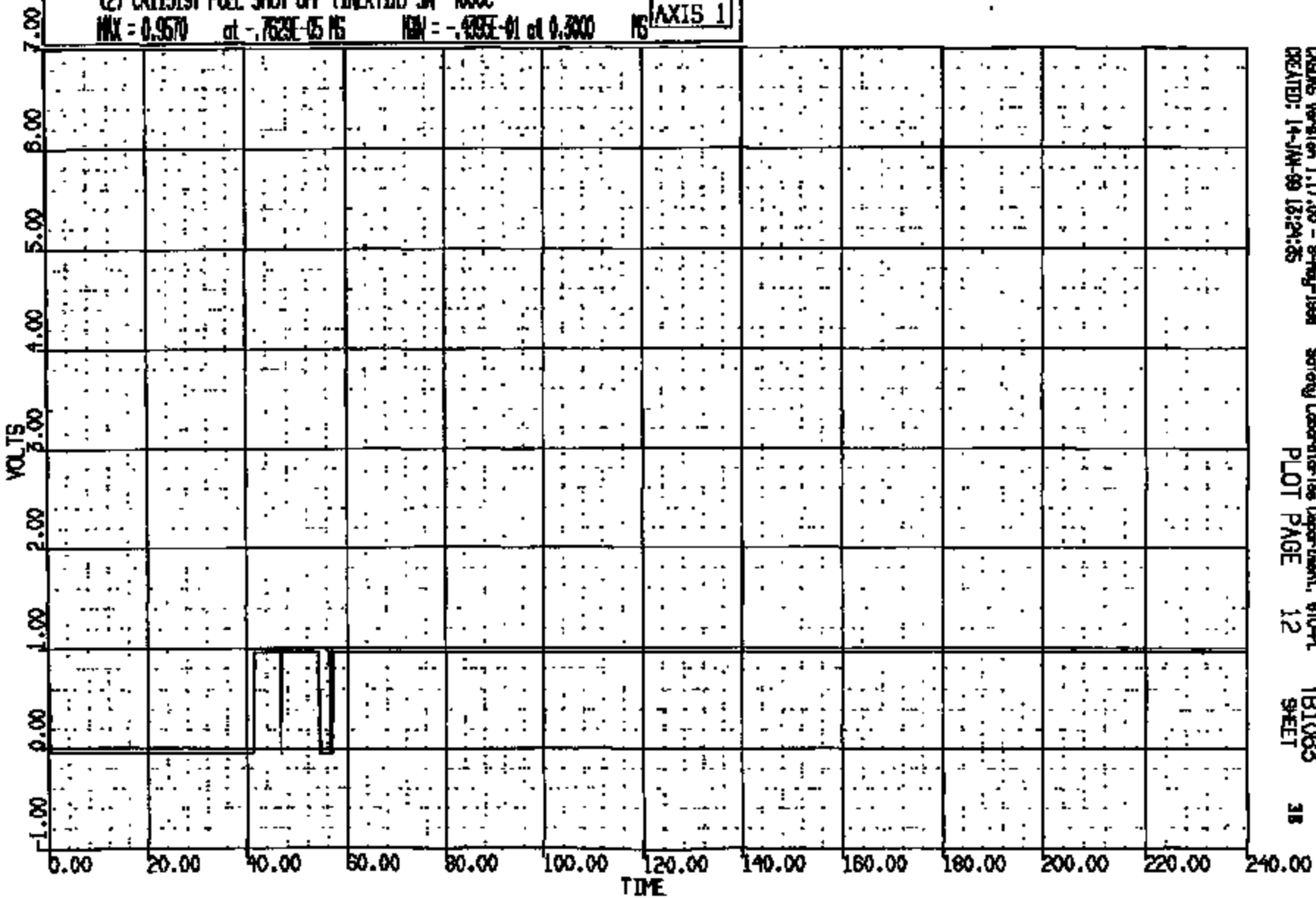
CRTS 0011319

CR R: 11319 TO: TB1063 DATE: 990114 13:08:00  
2000 D-196

(2) CR11319T FUEL SHUT OFF (INERTIA) SW 4000

MAX = 0.9570 at -.7629E-05 MS MIN = -.4935E-01 at 0.3000 MS

AXIS 1



CASIMS Version 1.17.00 - 8-Aug-1998  
CREATED: 14-JAN-99 13:24:25

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PLOT PAGE 12

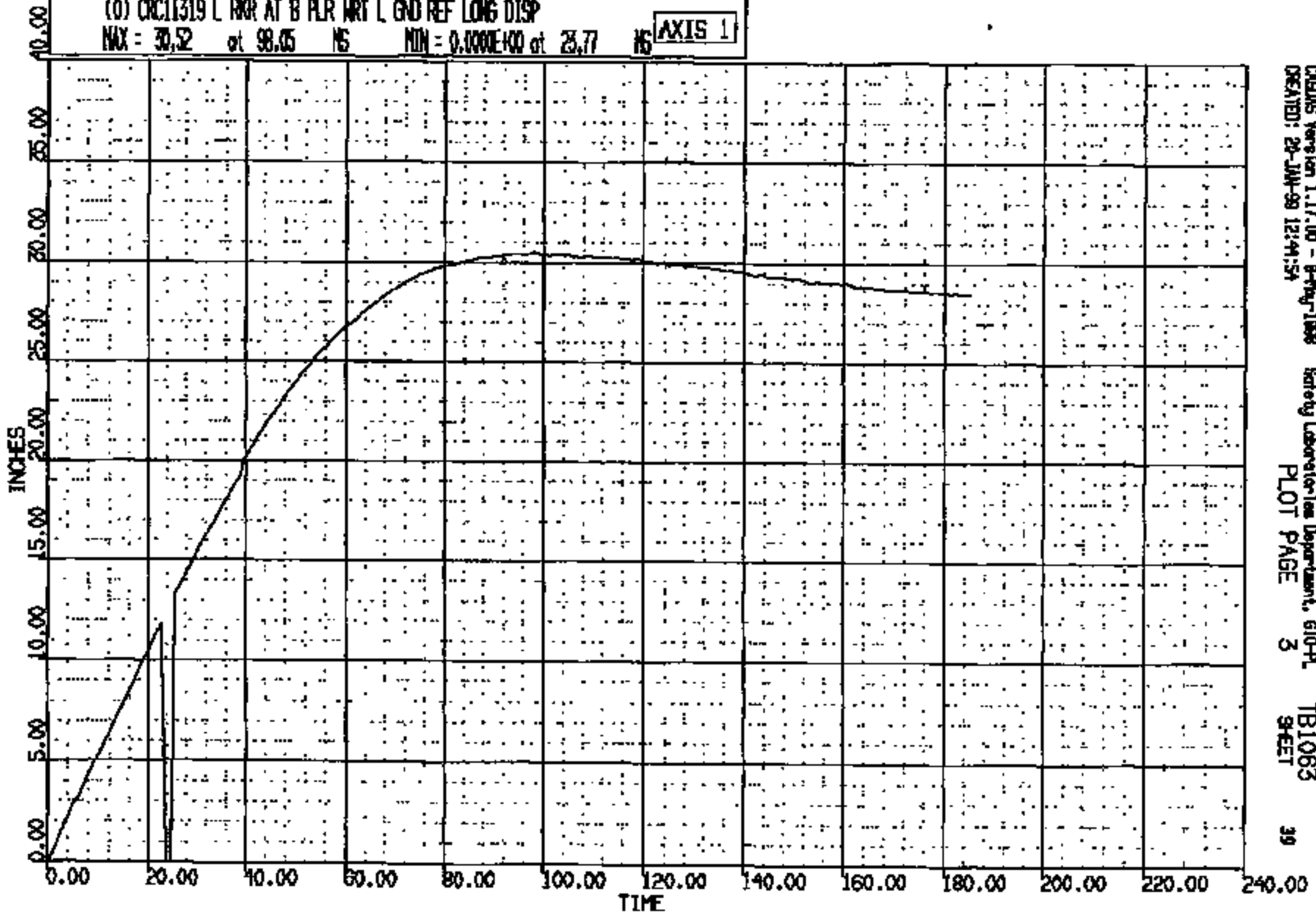
TB1063  
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CRTS 0011319

CR R: 11519 TO: T81065 DATE: 890114 13:08:00  
9000 0-188

(0) CRCL1319 L RGR AT B PLR MRT L GND REF LONG DISP  
MAX = 30.52 at 98.05 NS MIN = 0.000E+00 at 23.77 NS **AXIS 1**



CRTS 0011319

CRSIS Version 1.17.00 - 8-Feb-1988  
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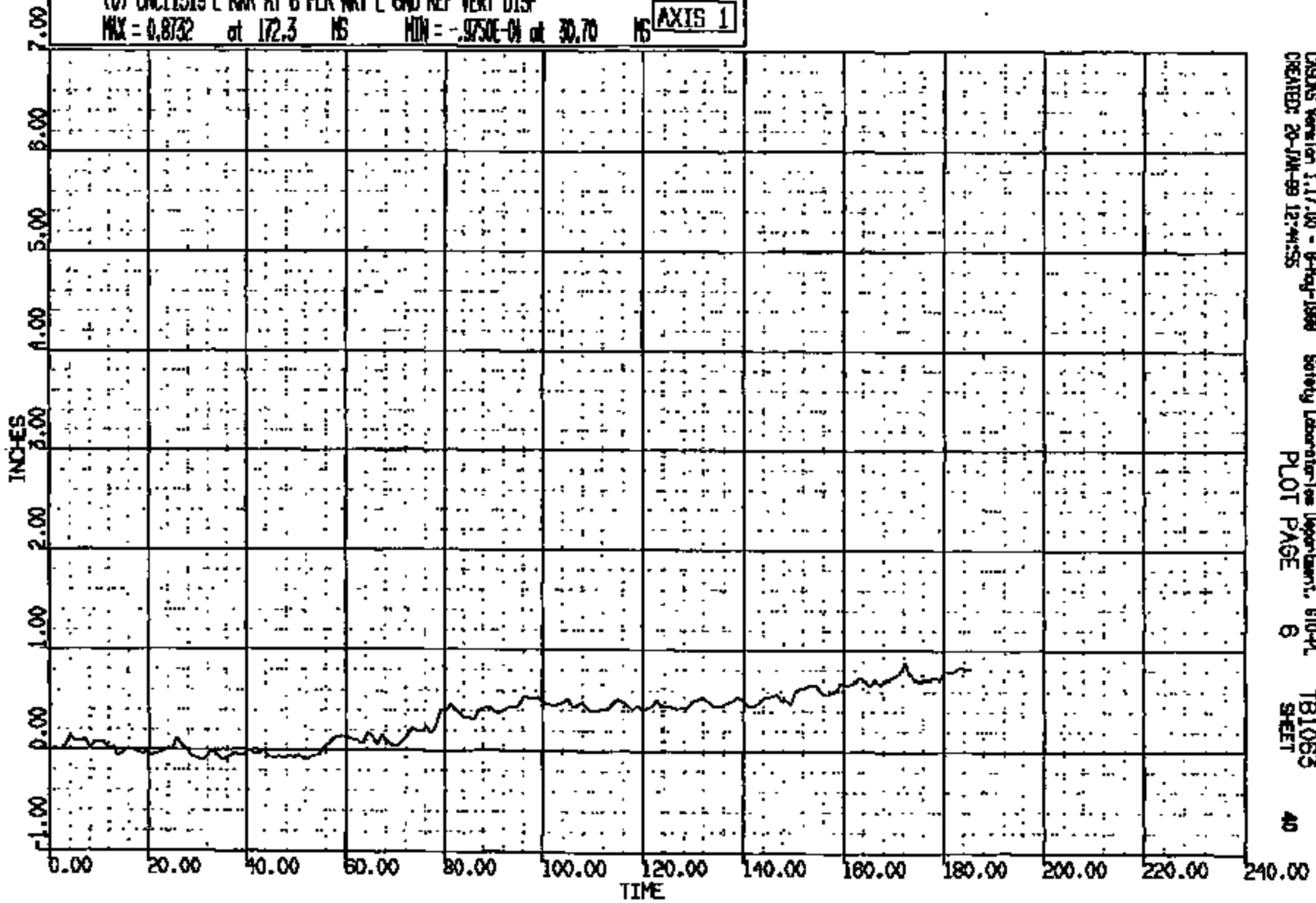
Safety Laboratory Department, 610-PL  
PLOT PAGE 3

T81065  
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CR R: 11519 TD: TB1053 DATE: 990114 13:08:00  
2000 D-188

(0) CRCL1319 L RNR AT B PLR WRT L GND REF VERT DISP  
MAX = 0.8732 at 172.3 MS MIN = -.9750E-04 at 30.70 MS **AXIS 1**



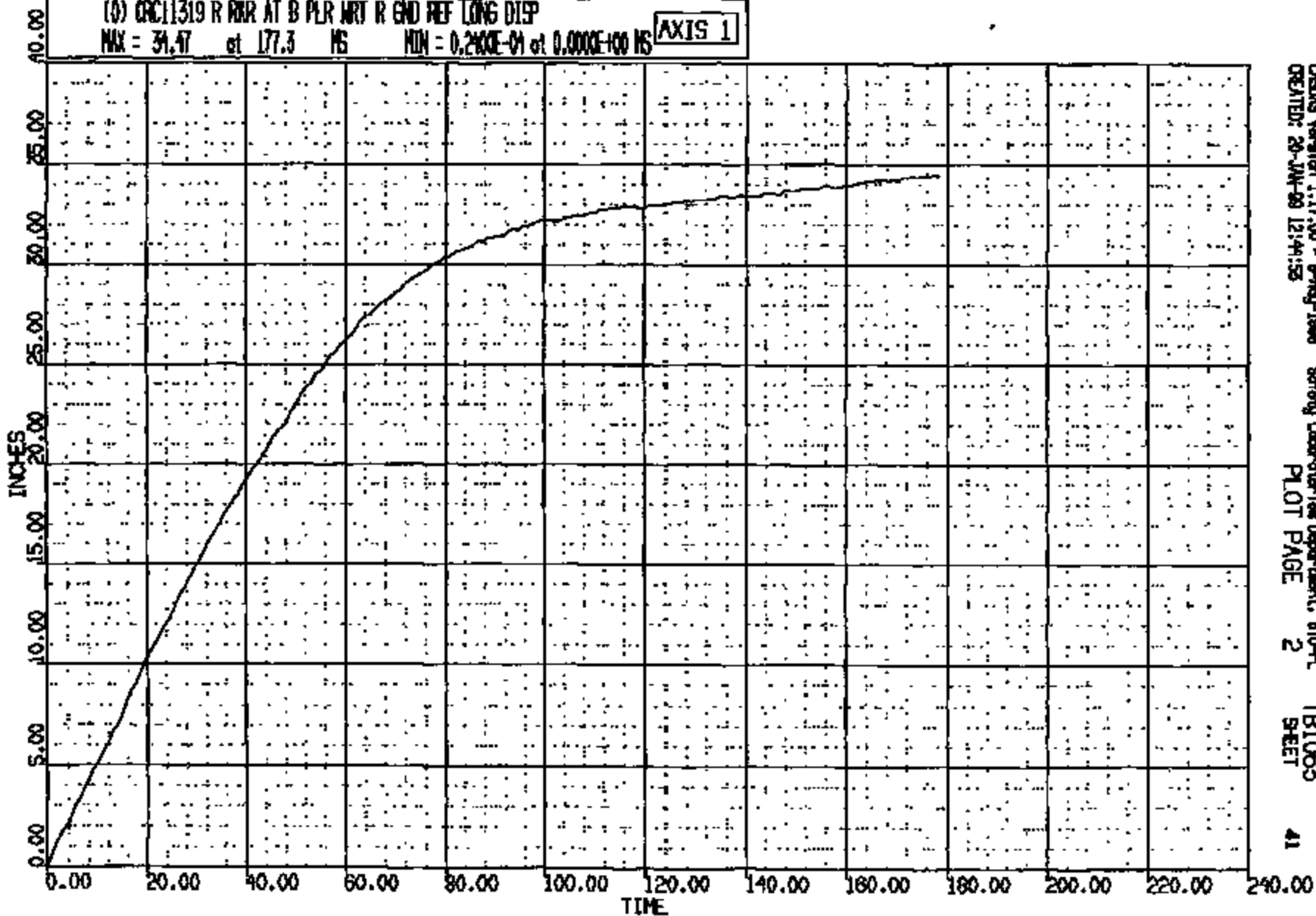
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CRSINS Version 1.17.00 - 8-Aug-1998 Safety Laboratories Department, 670-PL  
CREATED: 20-JAN-99 12:44:55 PLOT PAGE 6 TB1053  
SHEET 40



CR R: 11519 TO: TB1063 DATE: 890114 15:08:00  
2000 D-188

(0) CR011319 R PRR AT B PLR WRT R END REF LONG DISP  
MAX = 31.47 at 177.3 MS MIN = 0.2400E-01 at 0.0000E+00 MS **AXIS 1**

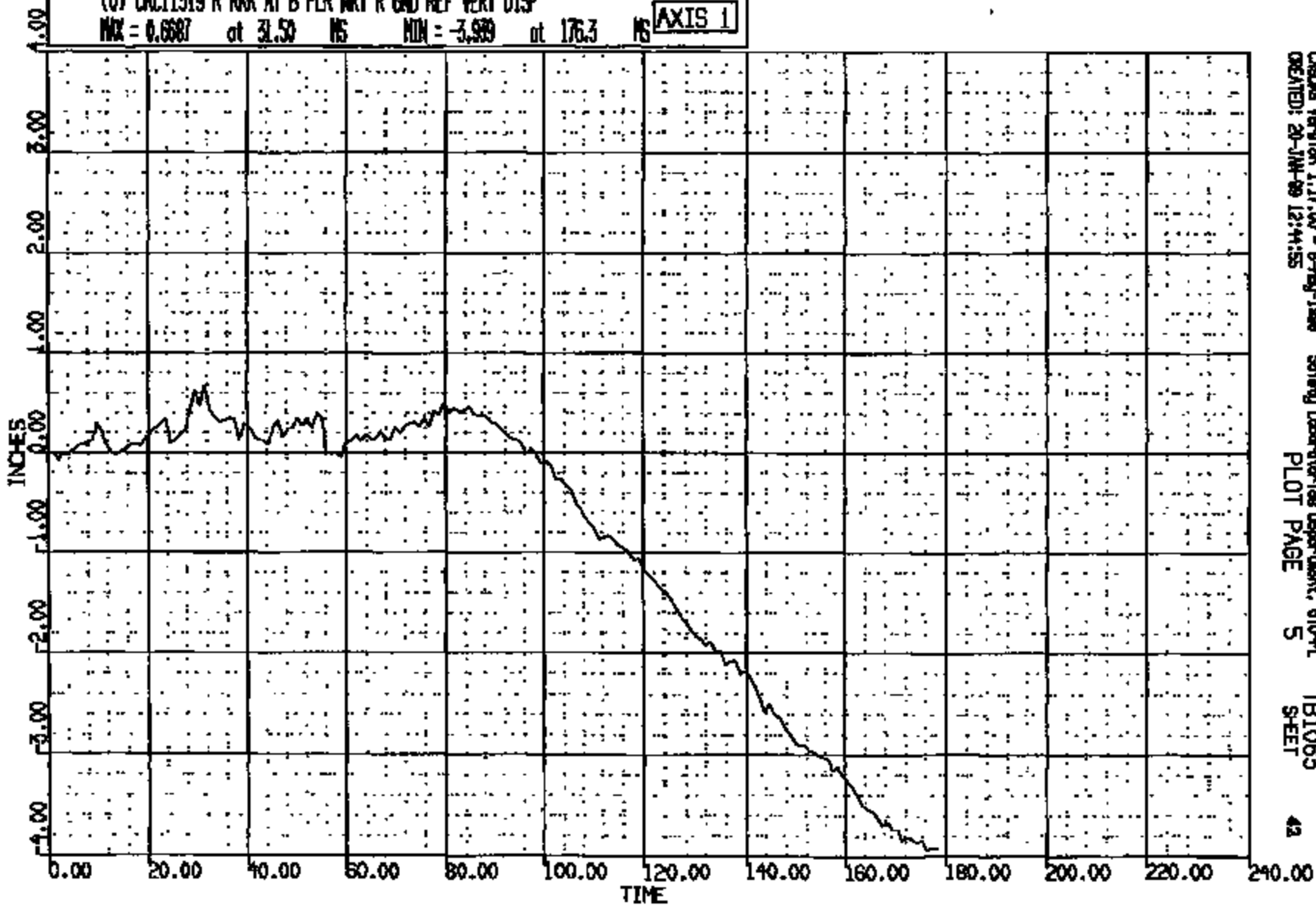


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CRENS Version 1.17.00 - 8-Aug-1988 Safety Laboratories Department, 810-PL  
CREATED: 20-JAN-89 12:41:52 PLOT PAGE 2 TB1063  
41

CR R: 11519 70: TB1065 DATE: 990114 15:08:00  
2000 D-188

(0) CR011319 R RWR AT B PLR WRT R GND REF VERT DISP  
MAX = 0.6687 at 31.50 MS MIN = -3.989 at 176.3 MS **AXIS 1**



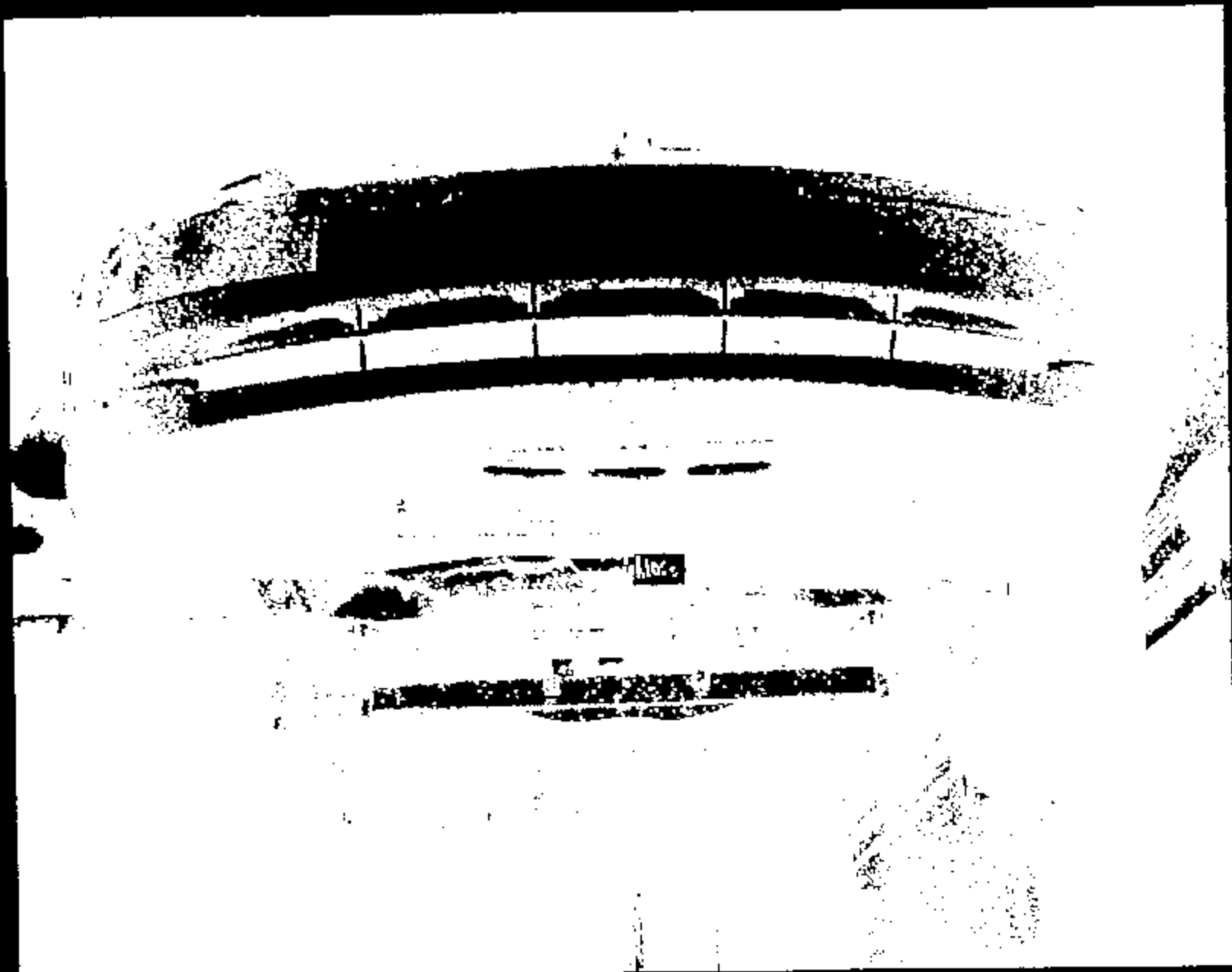
CRIS 0011319

CADDS Version 1.17.00 - 8-May-1999  
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PLOT PAGE 5

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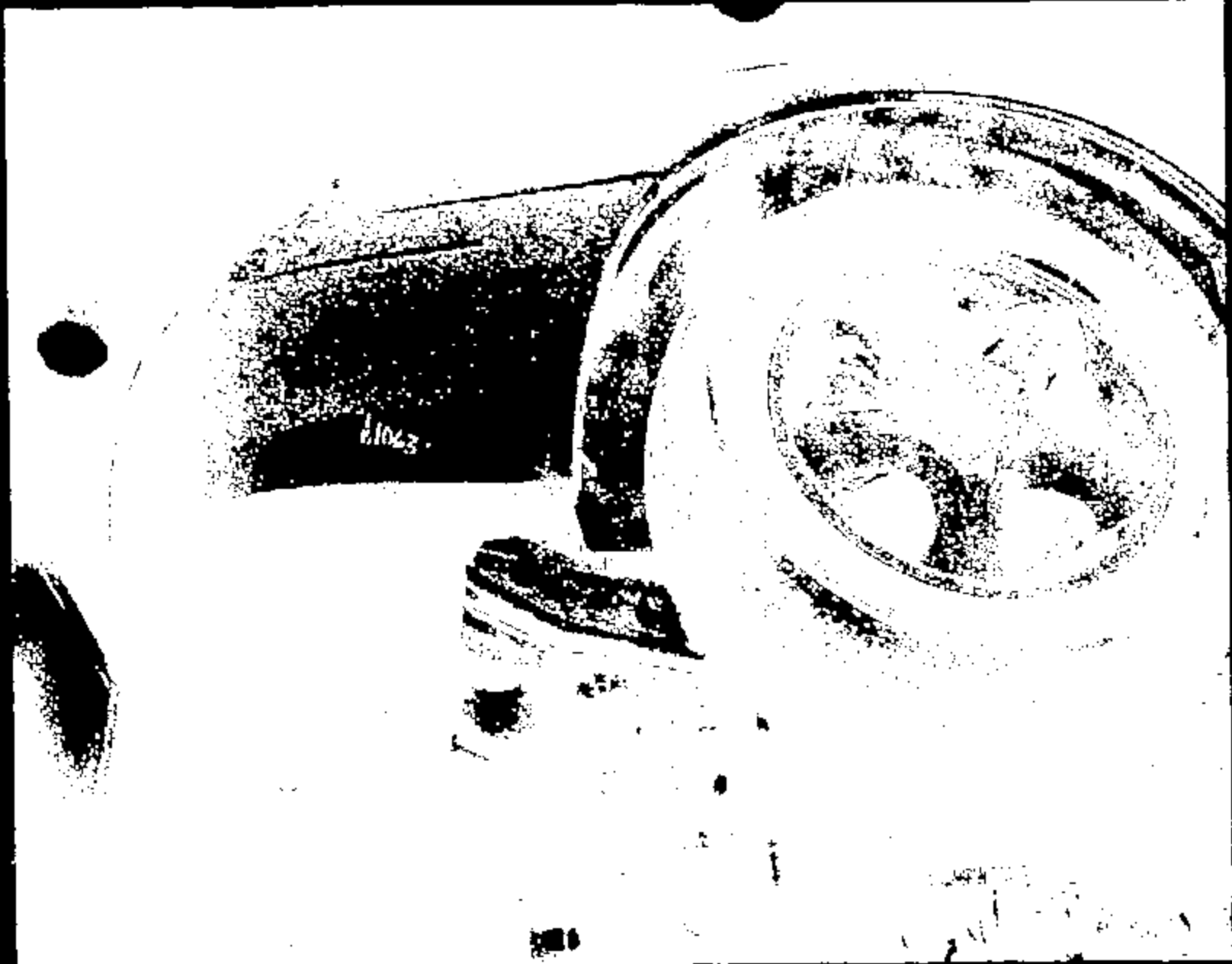
42



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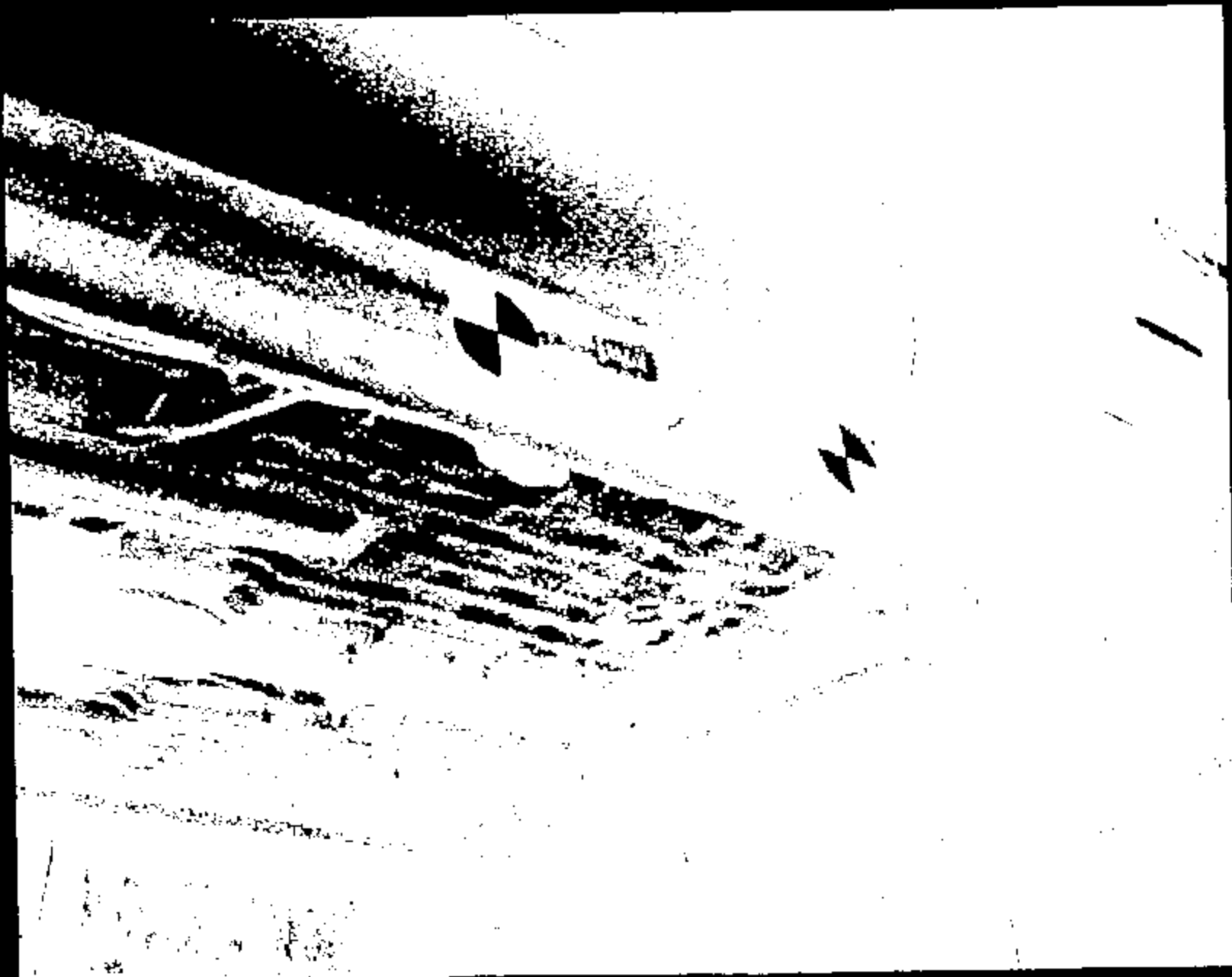
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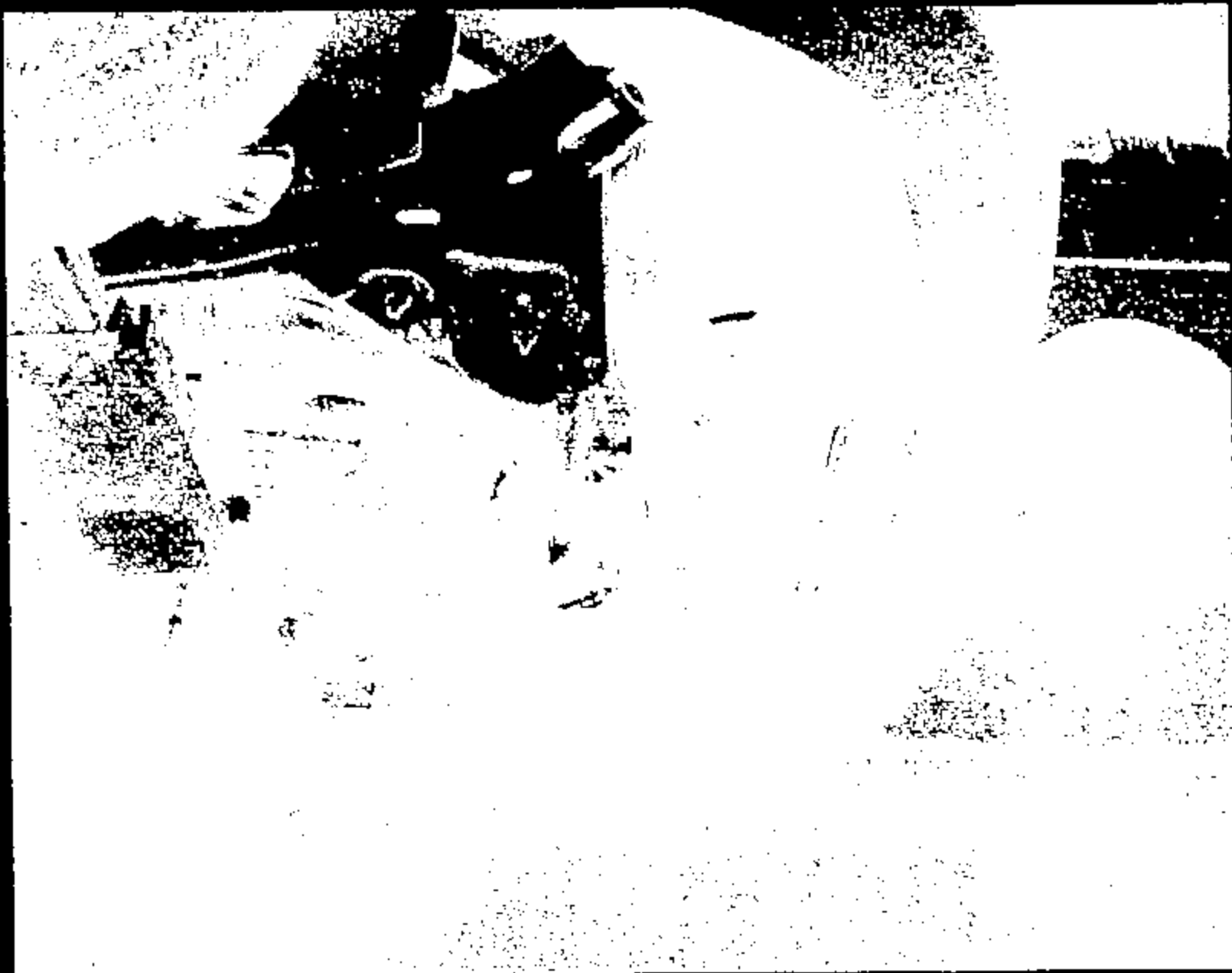
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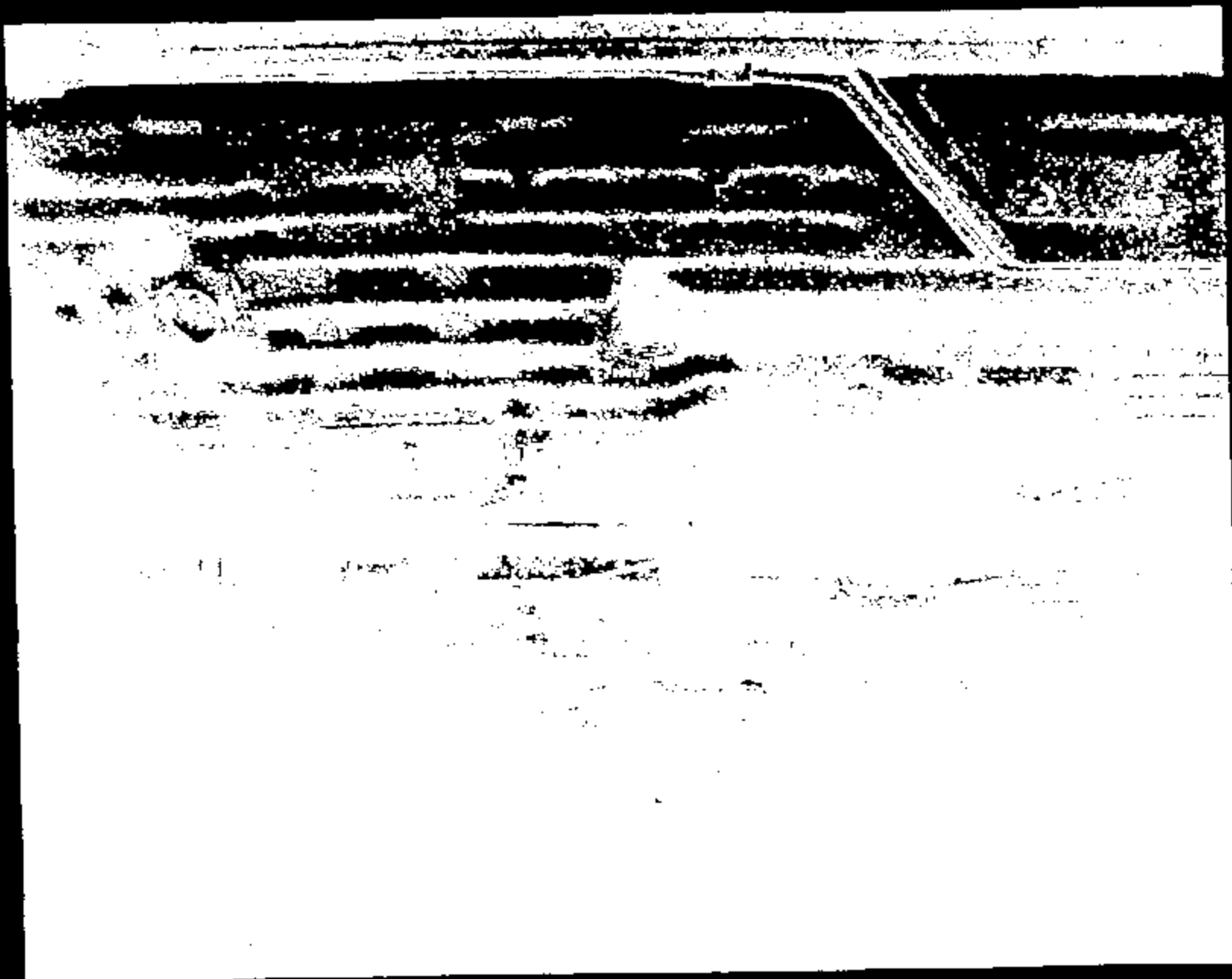
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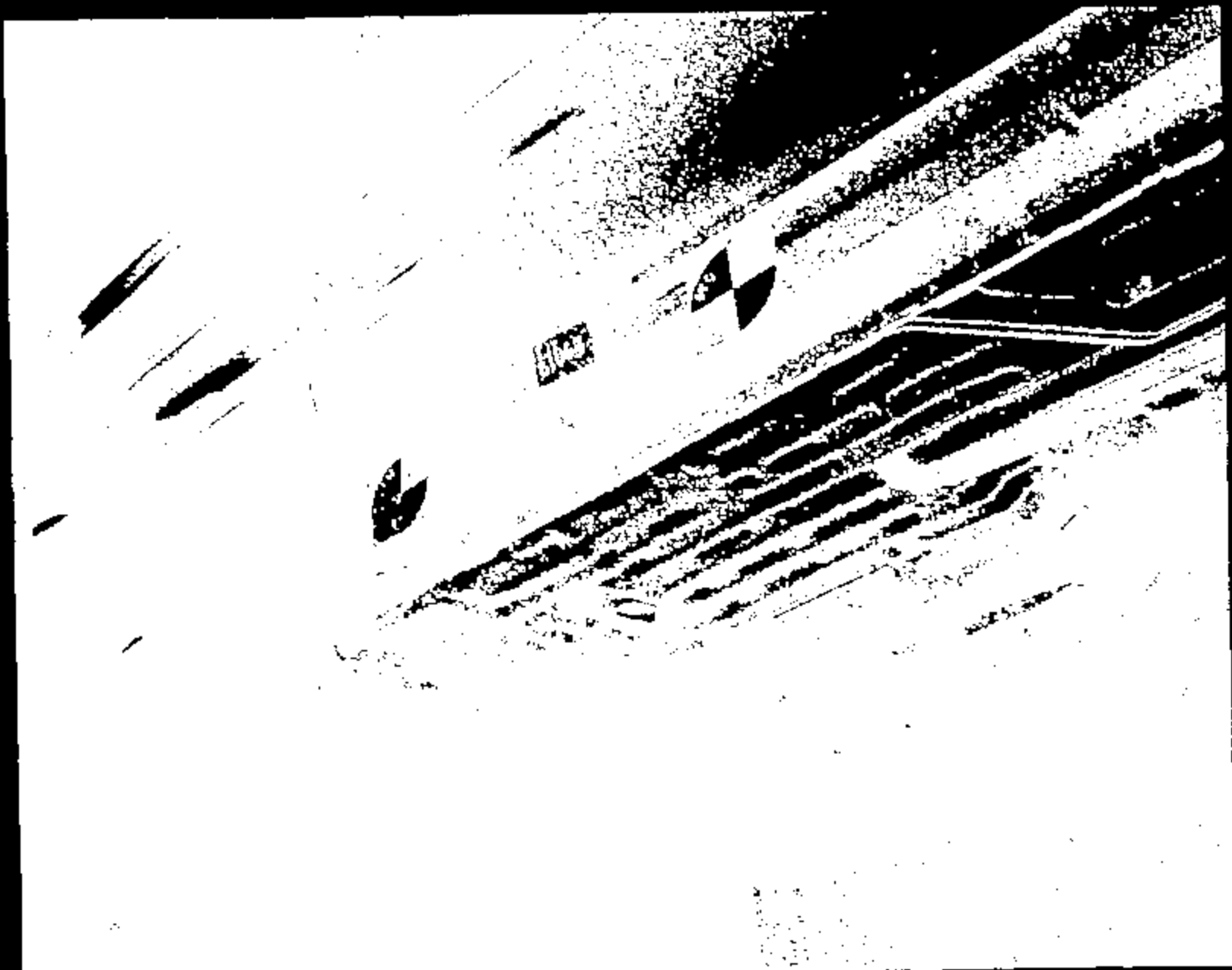
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CRTS 0011319





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11319007.JPG

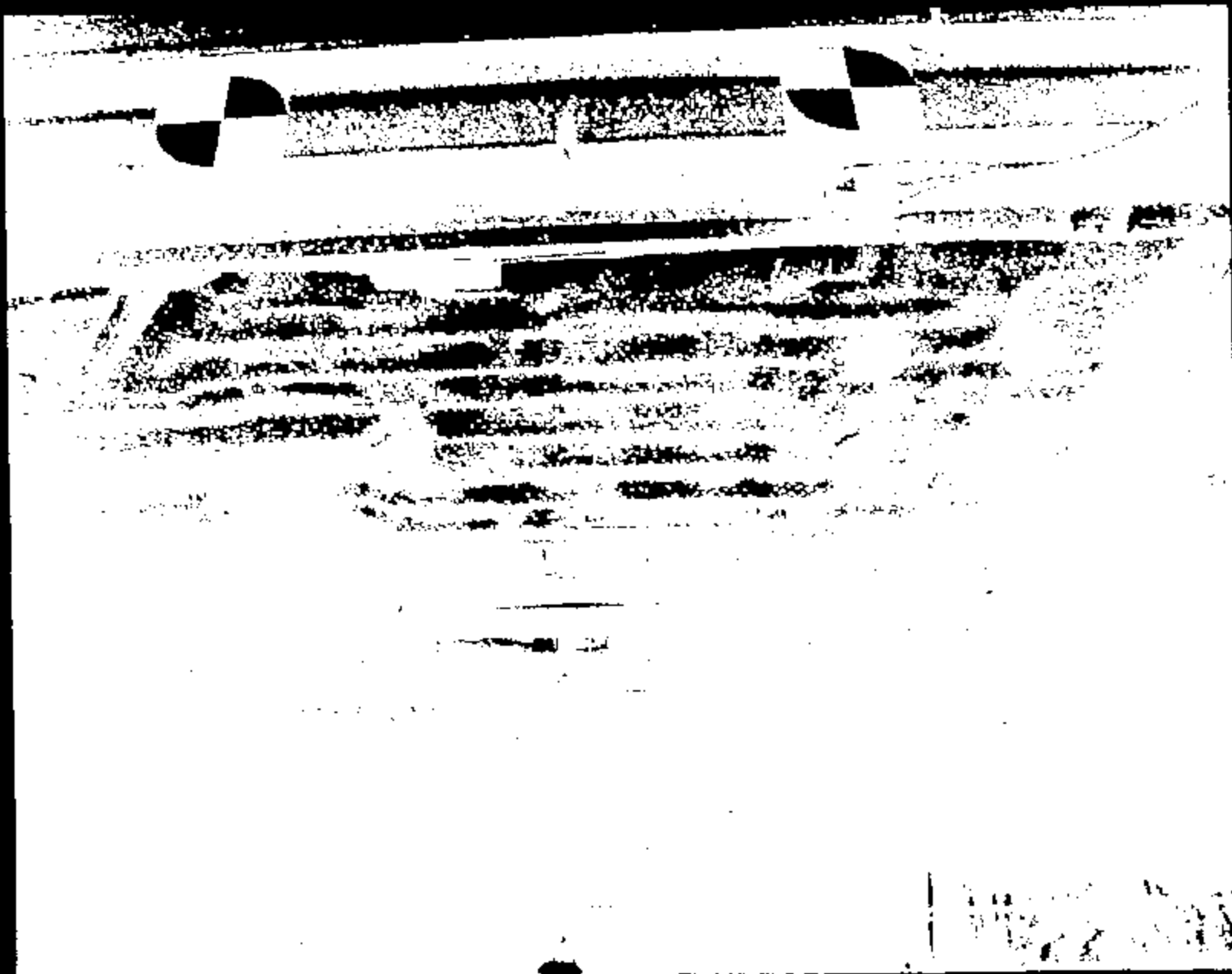
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CRTS 0011319



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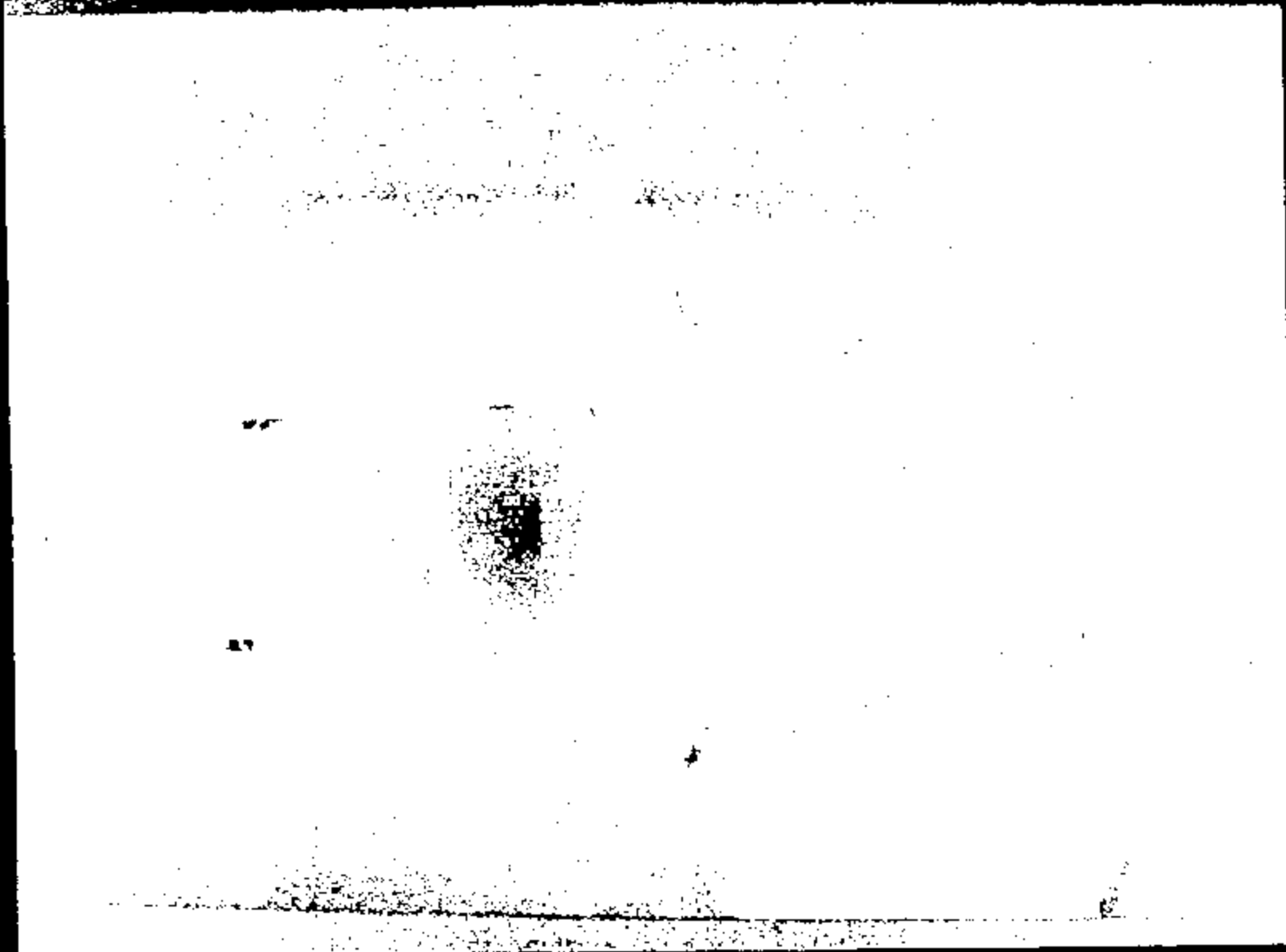
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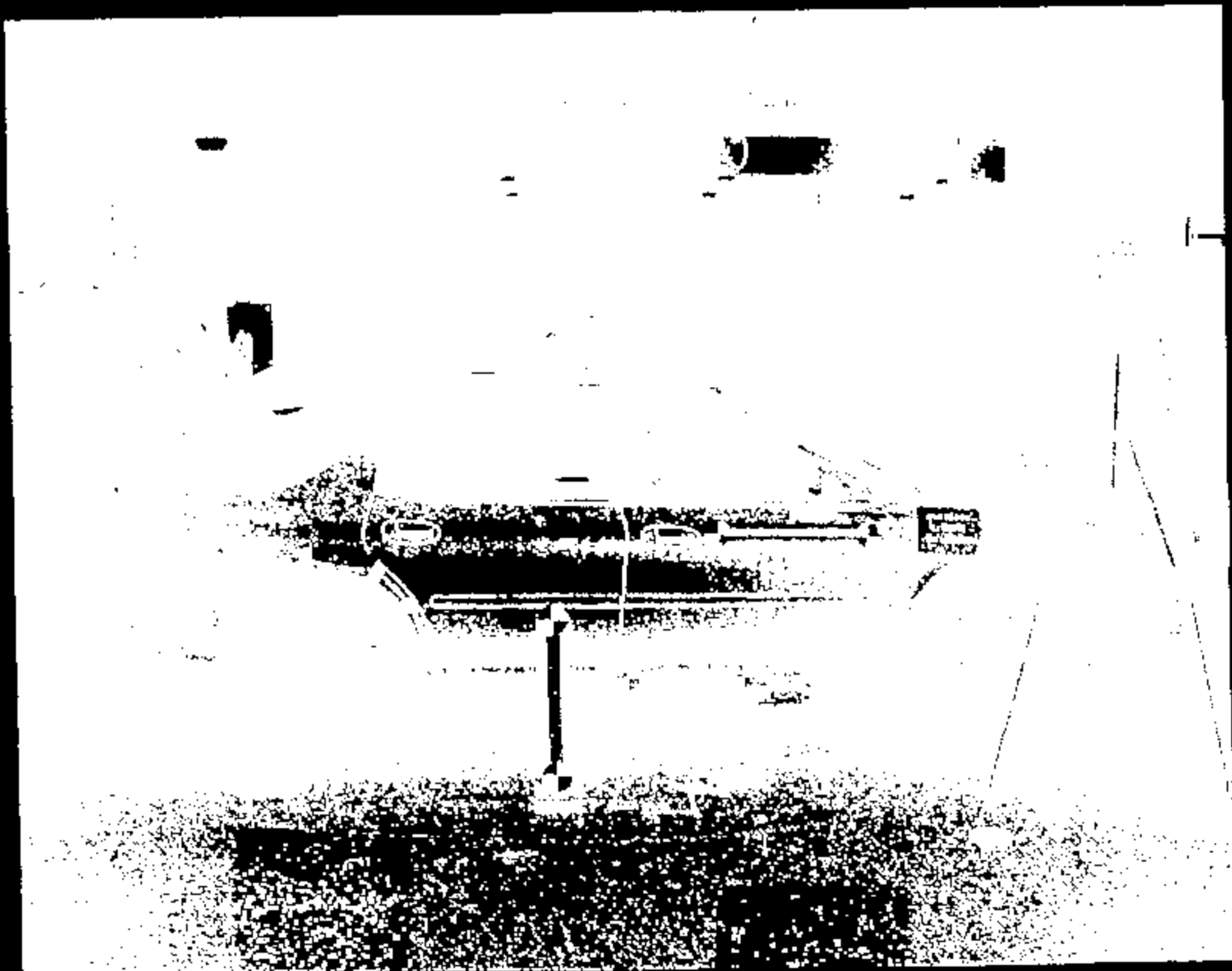
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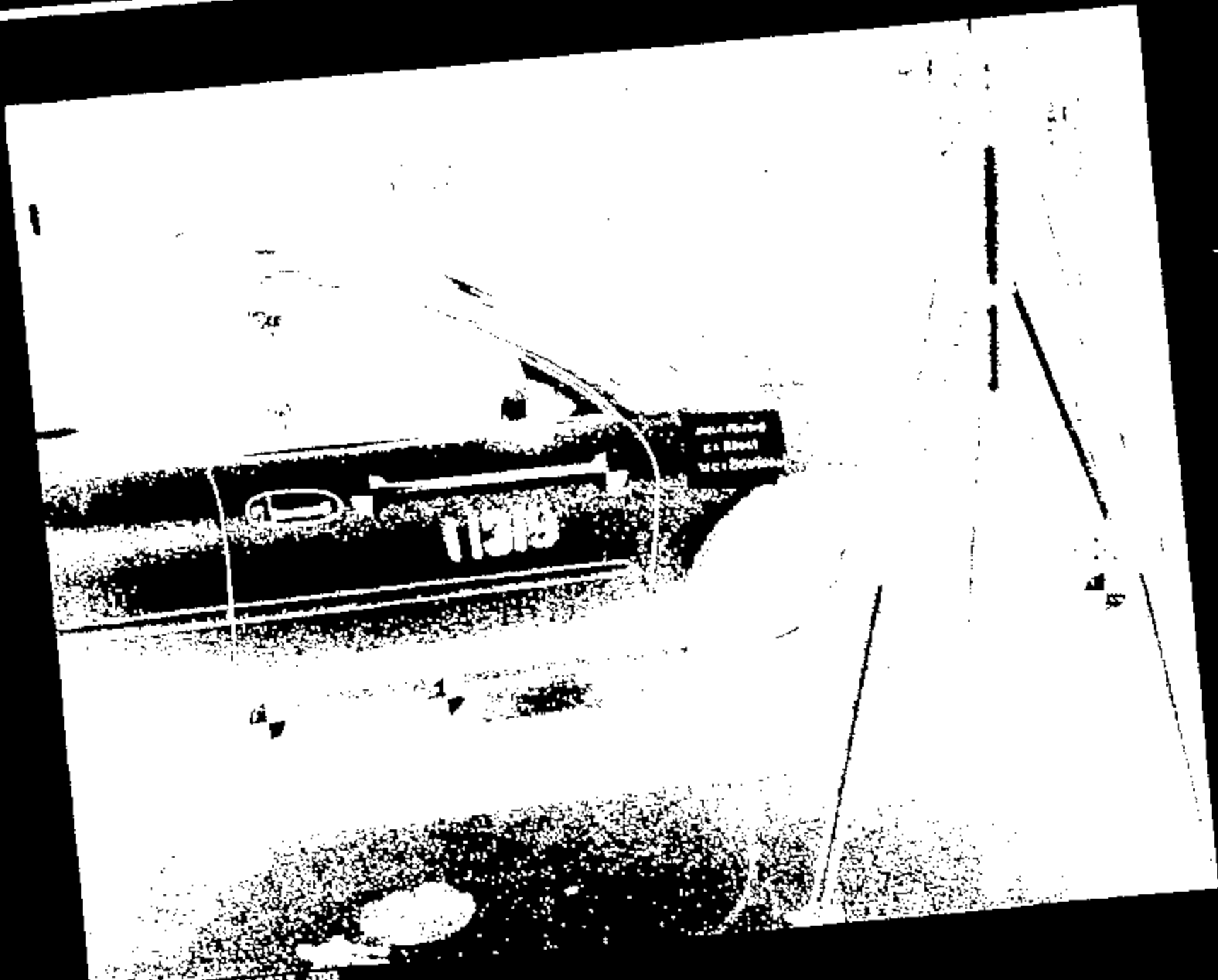


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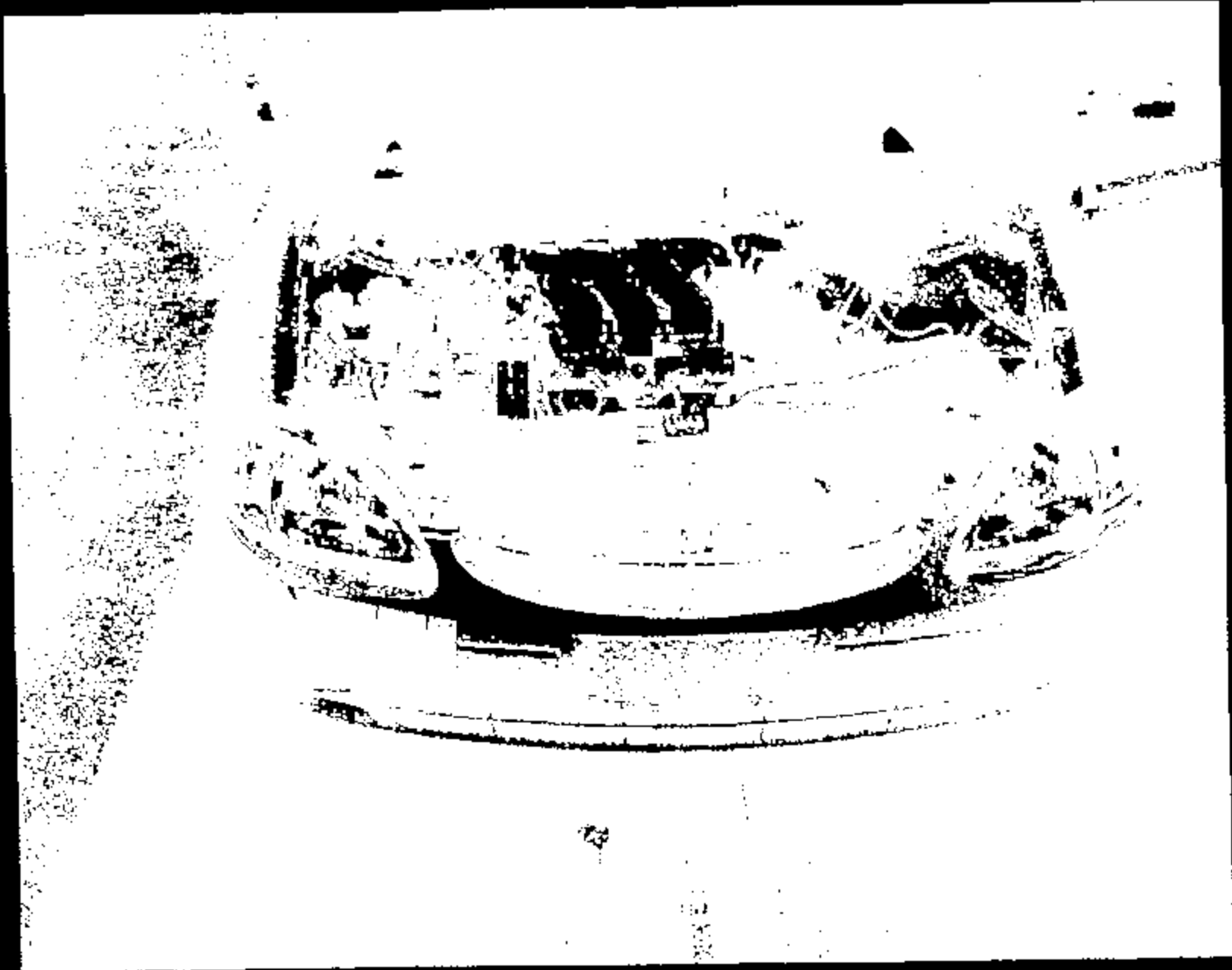
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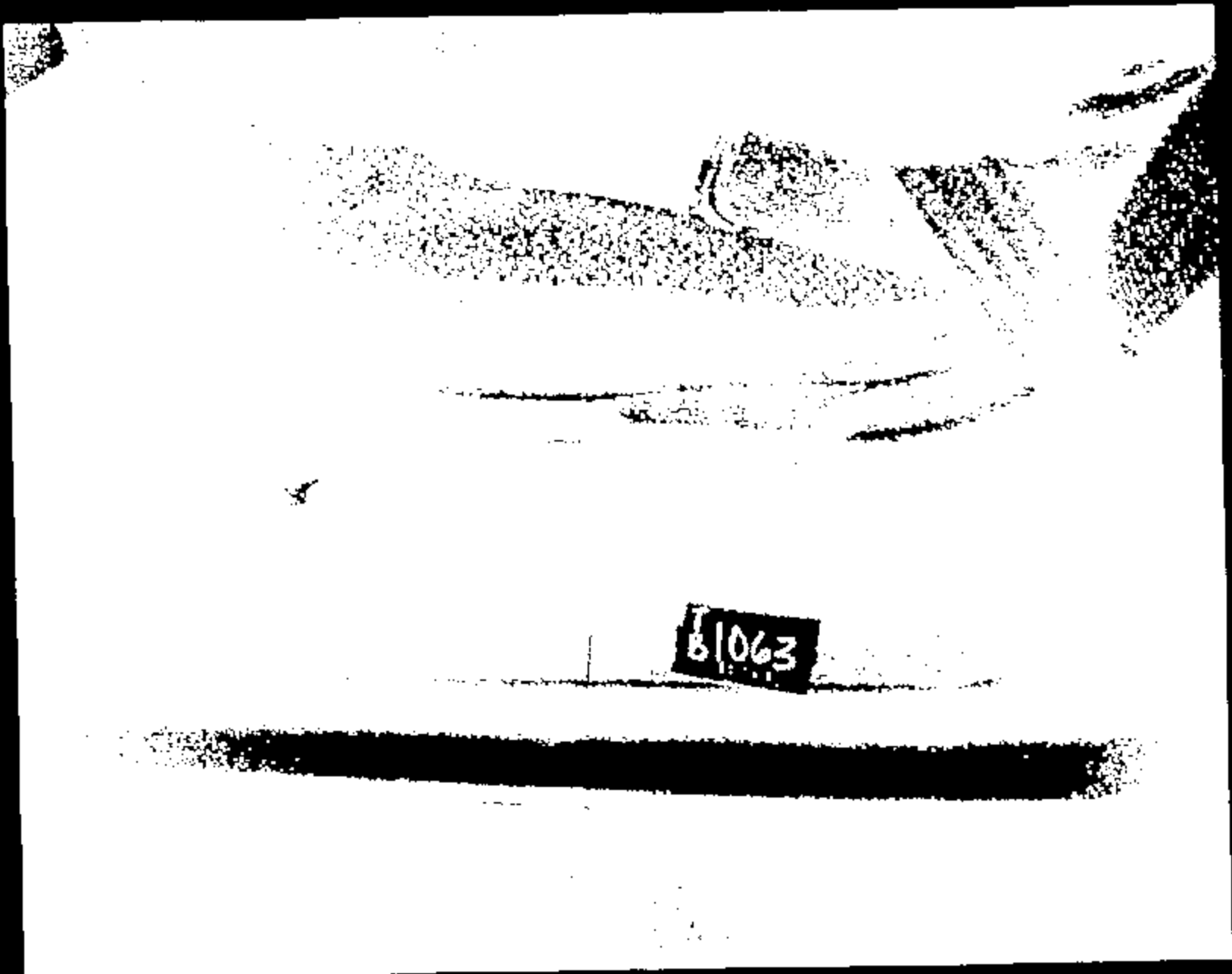
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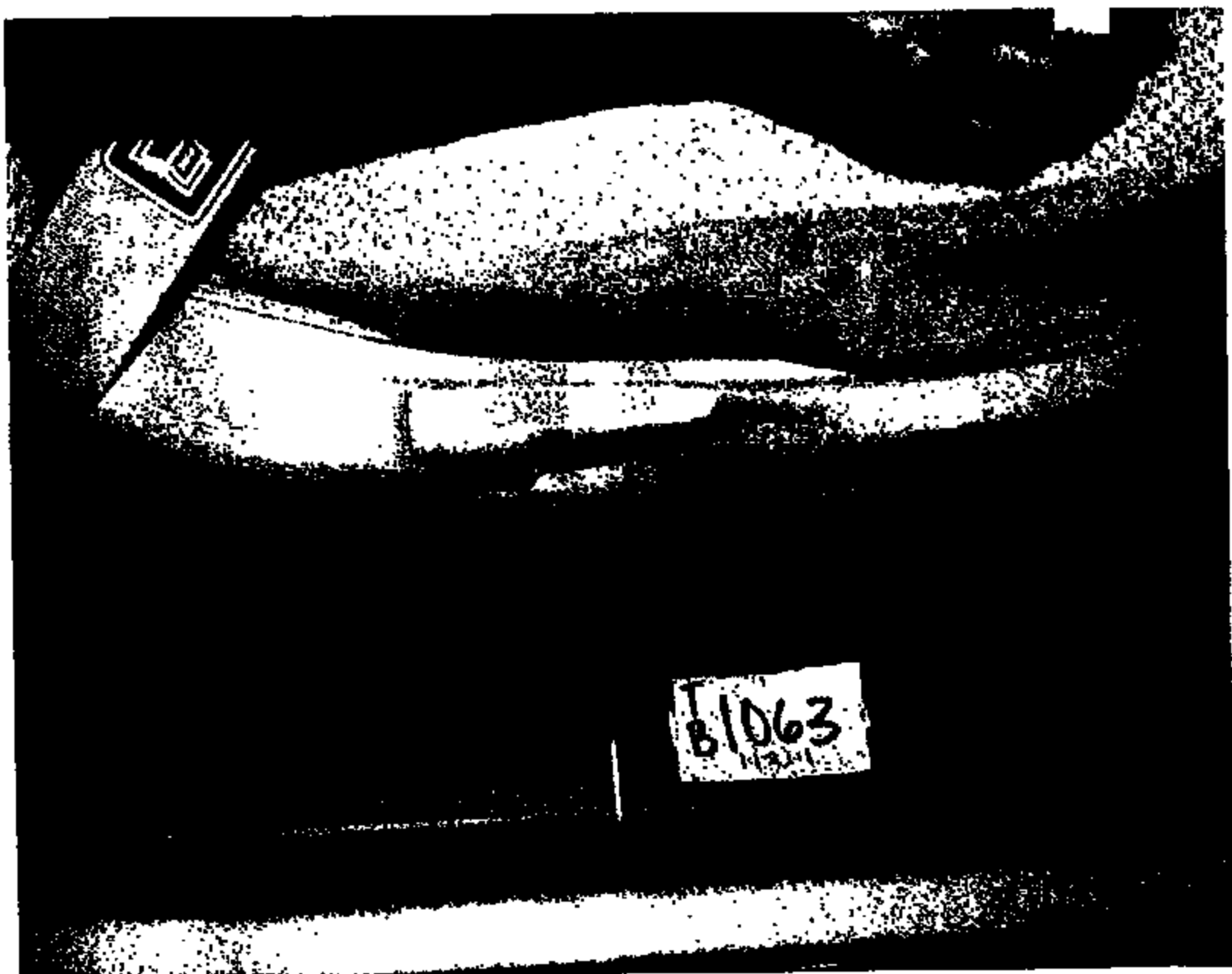
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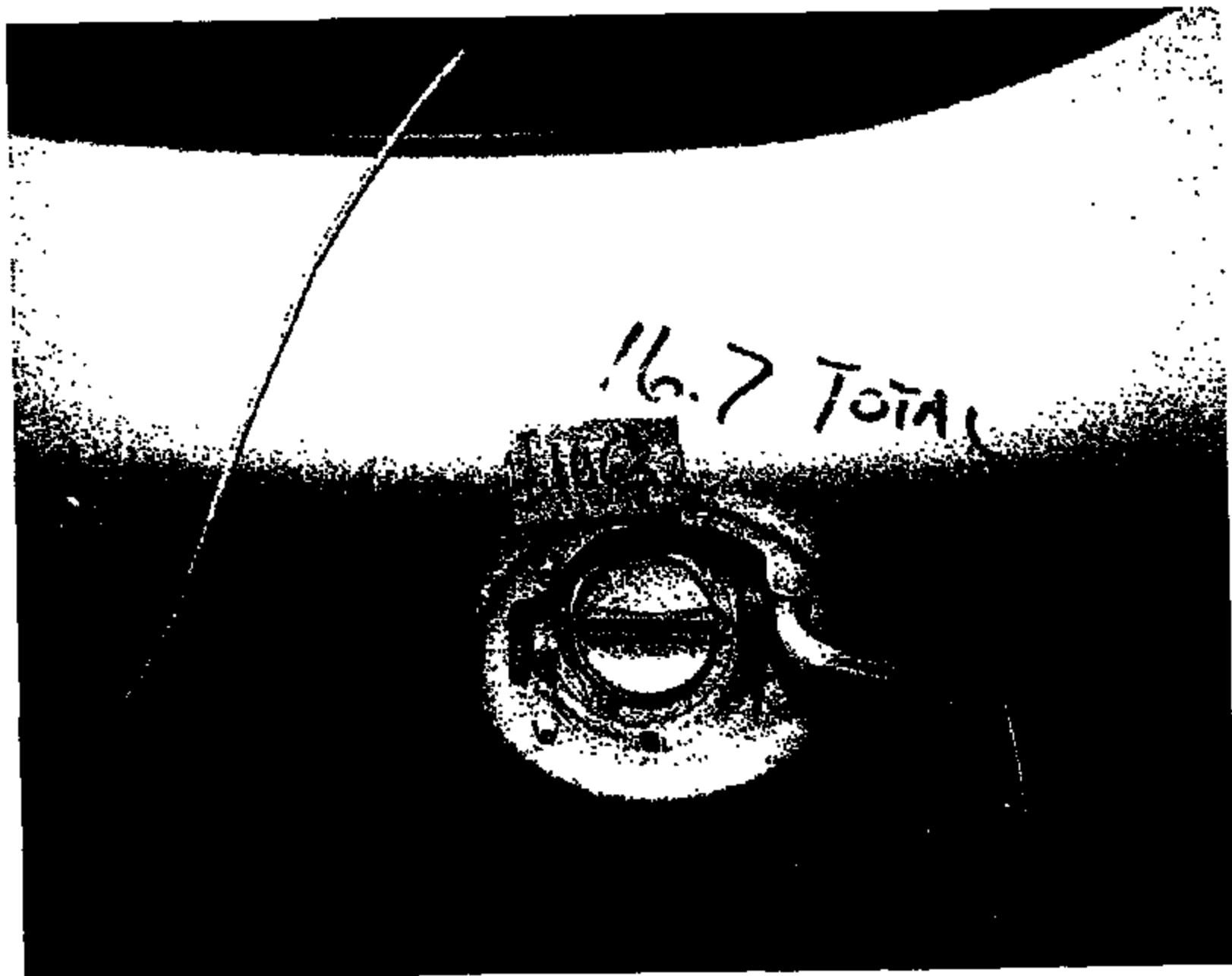
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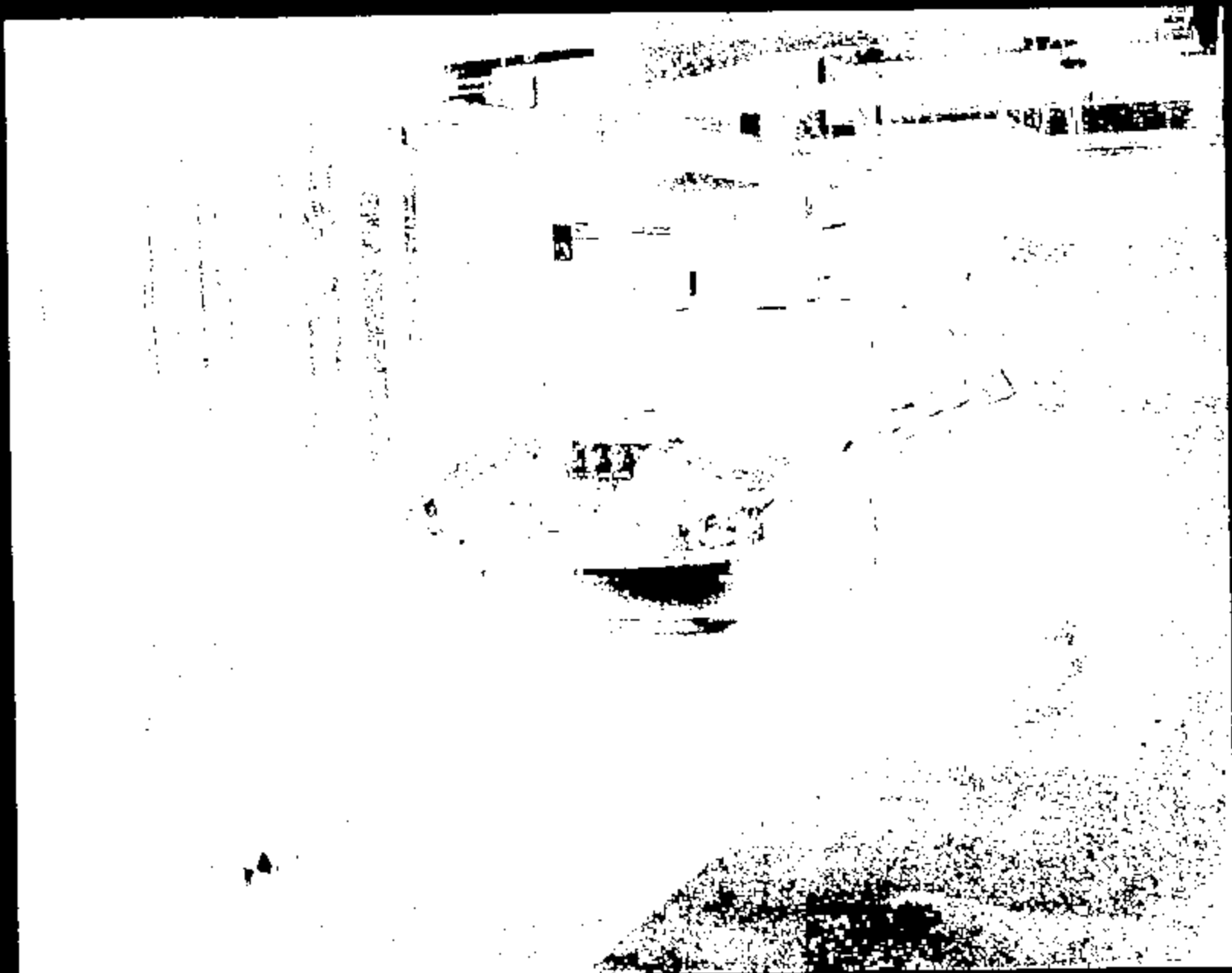
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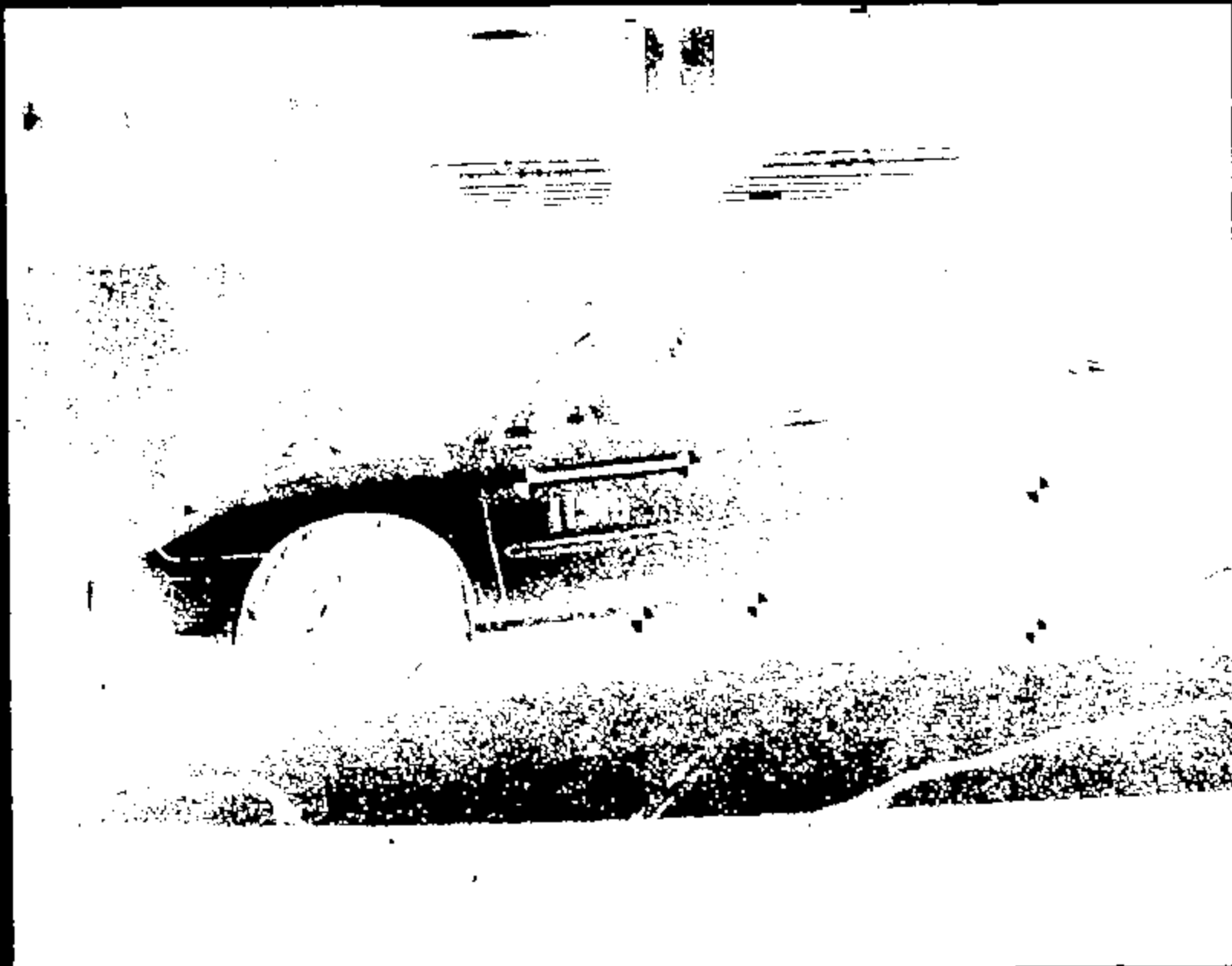
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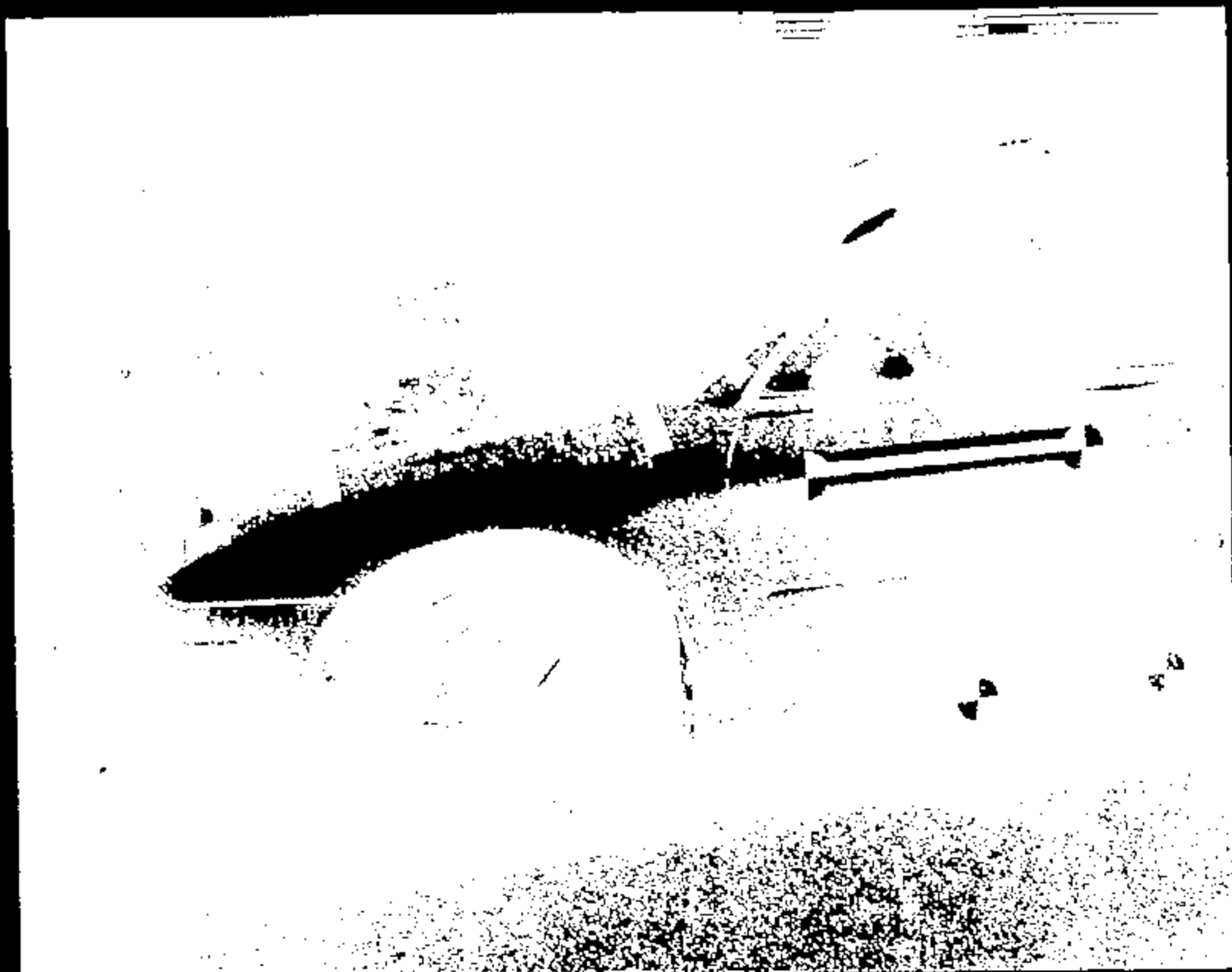
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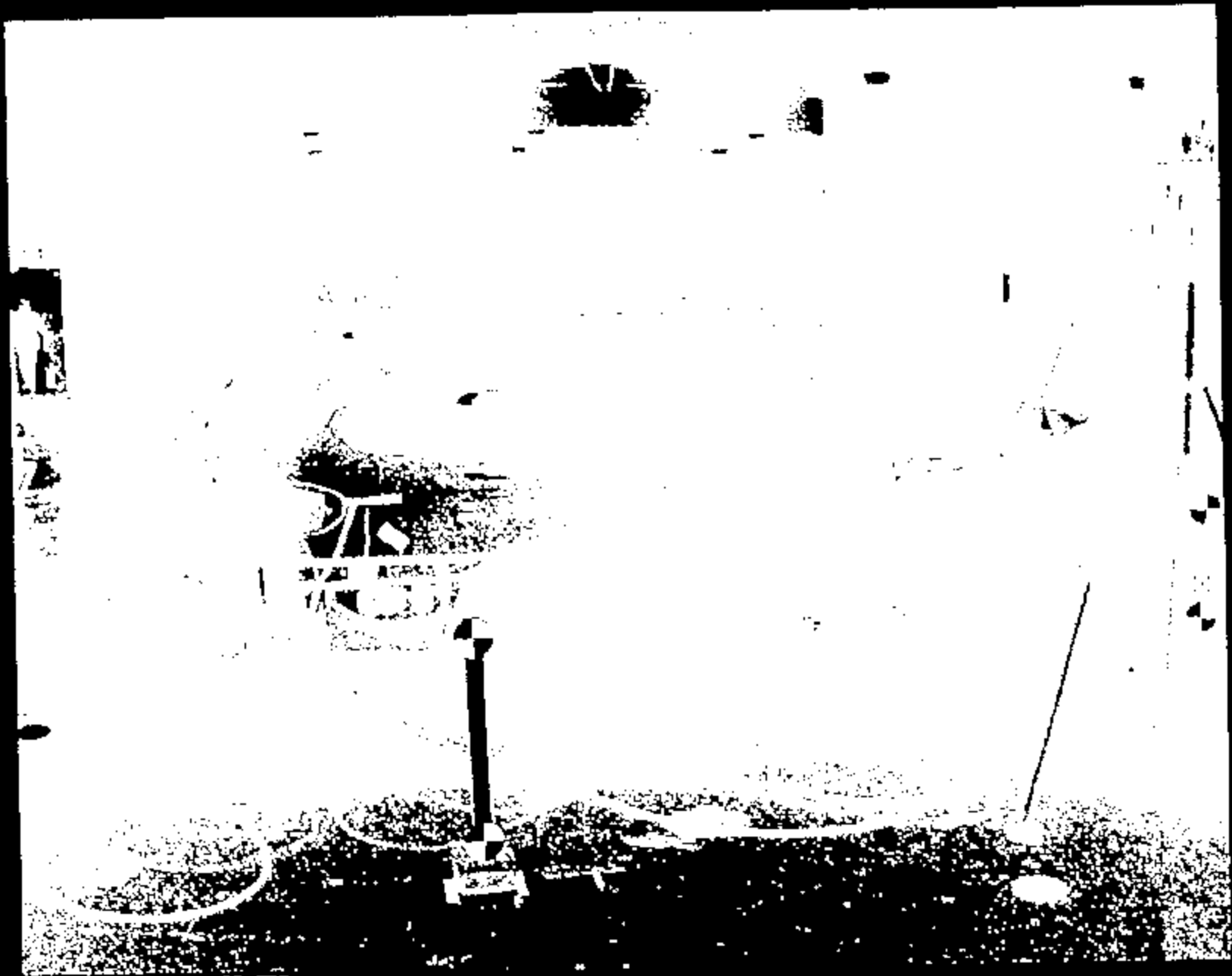
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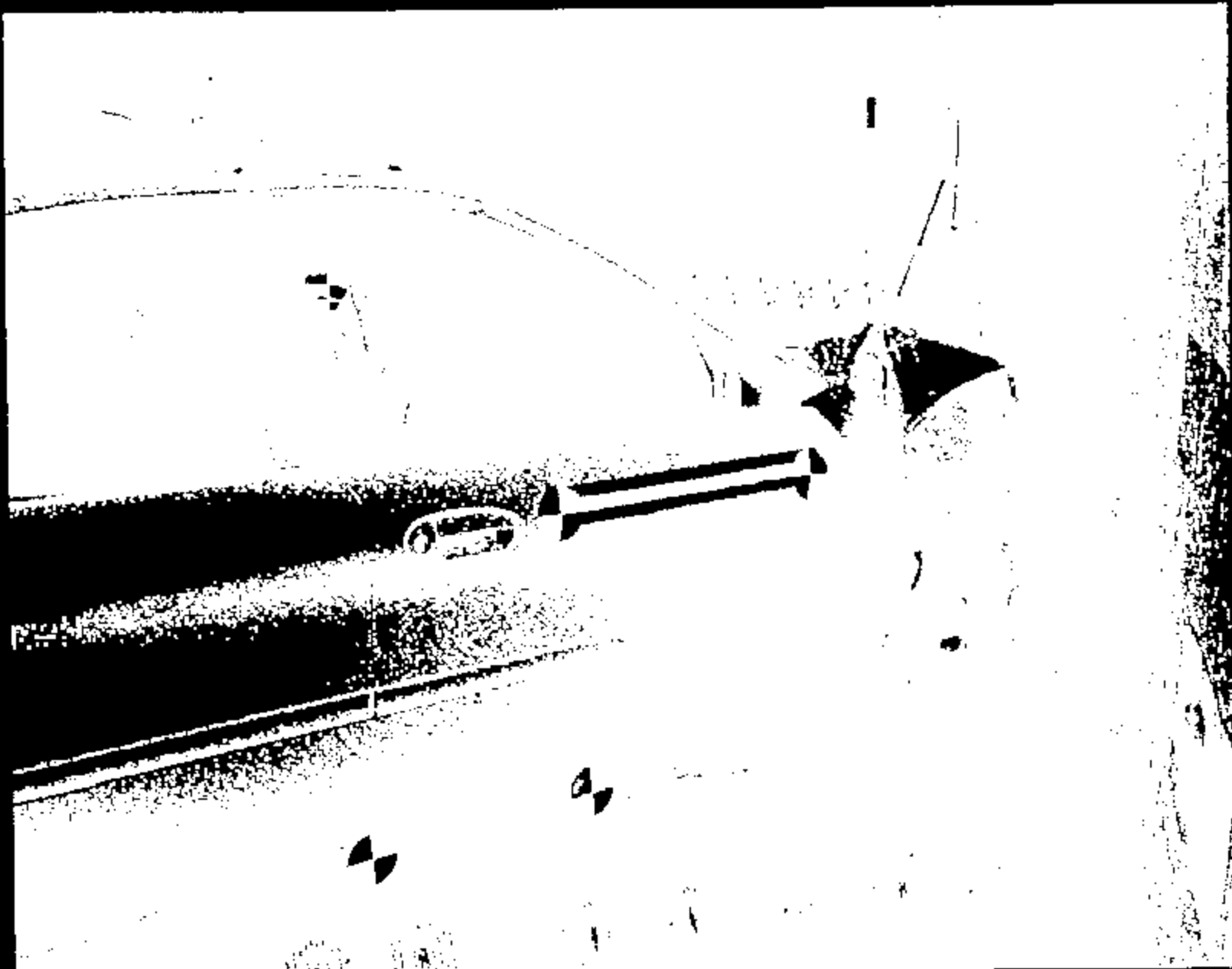
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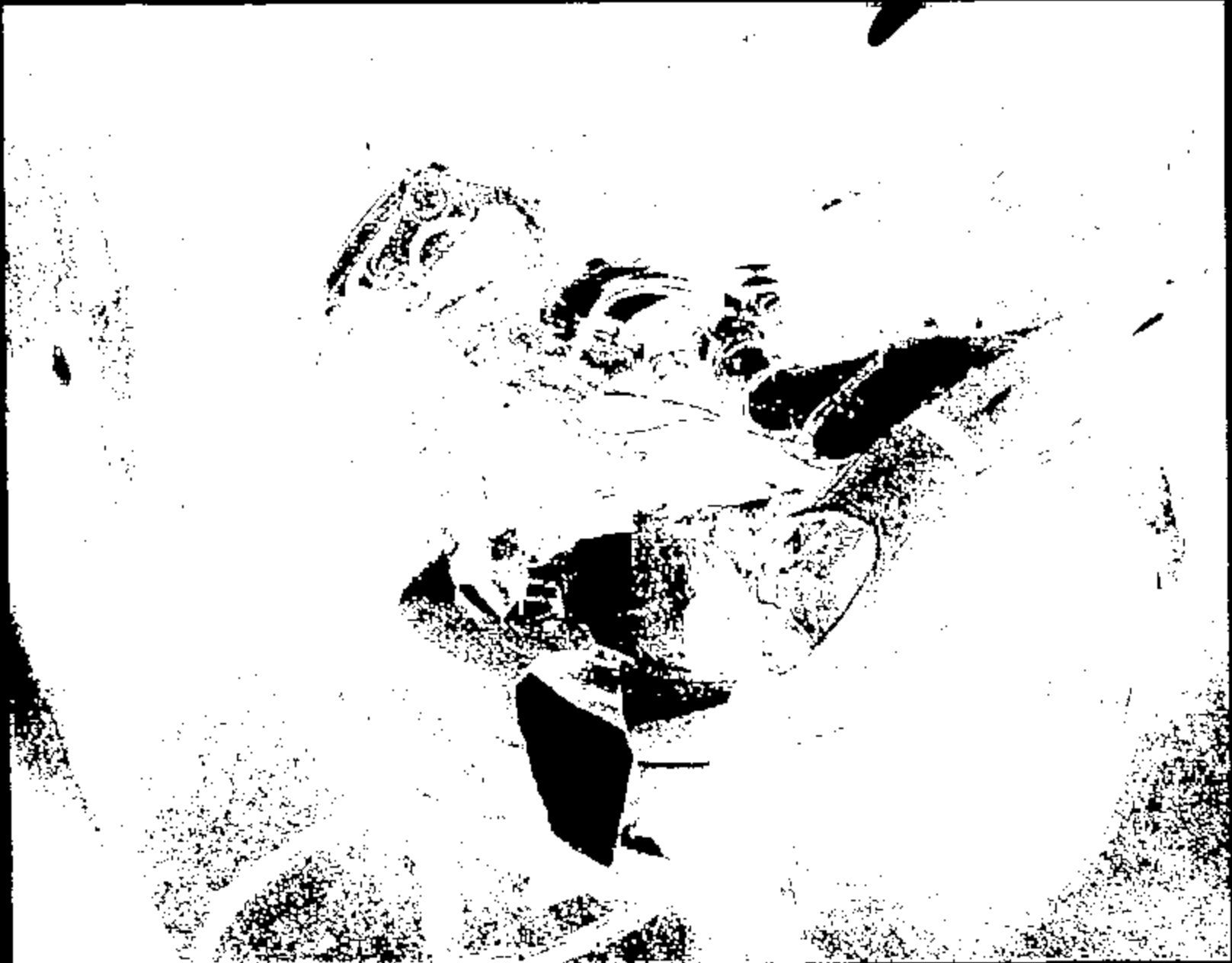
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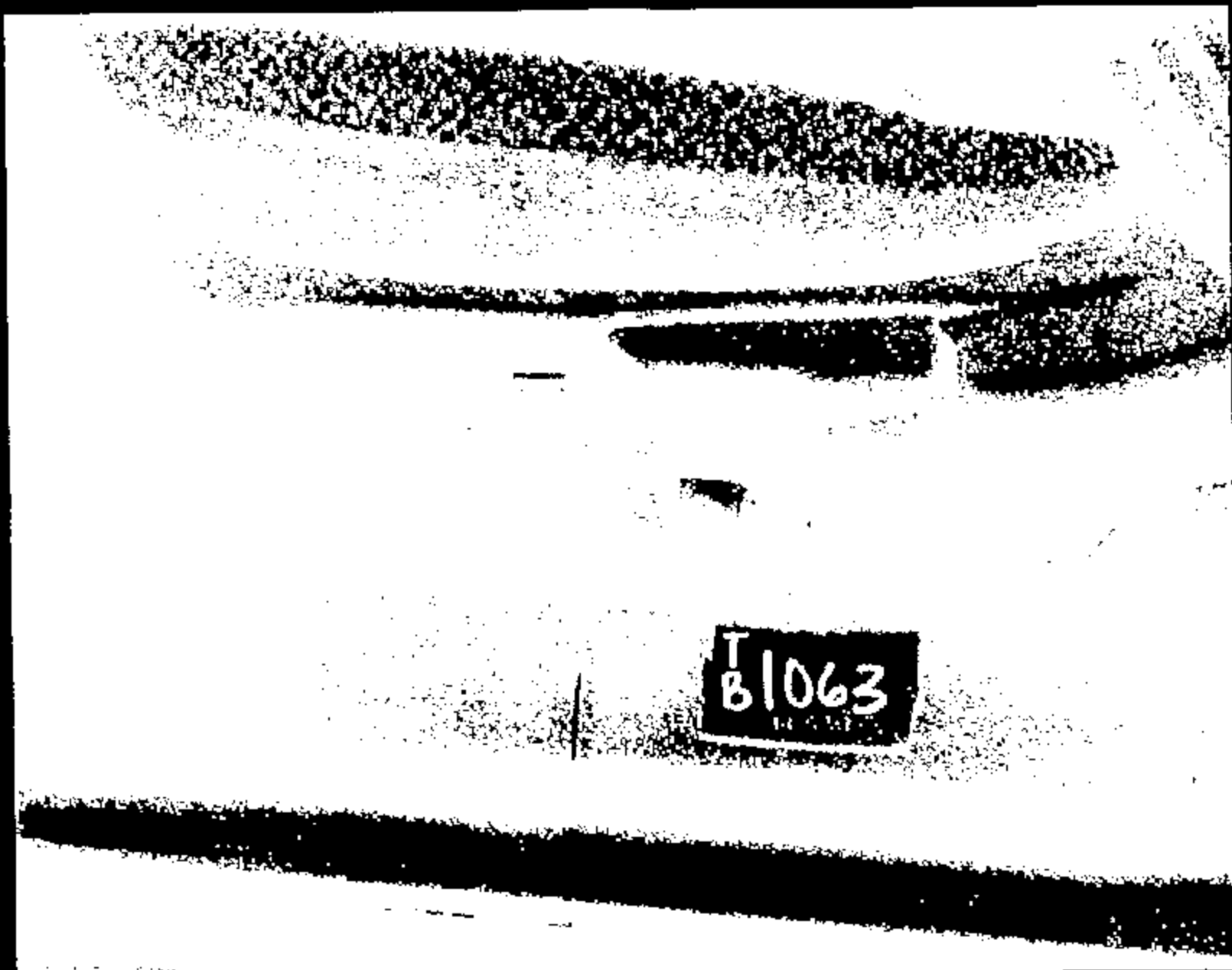




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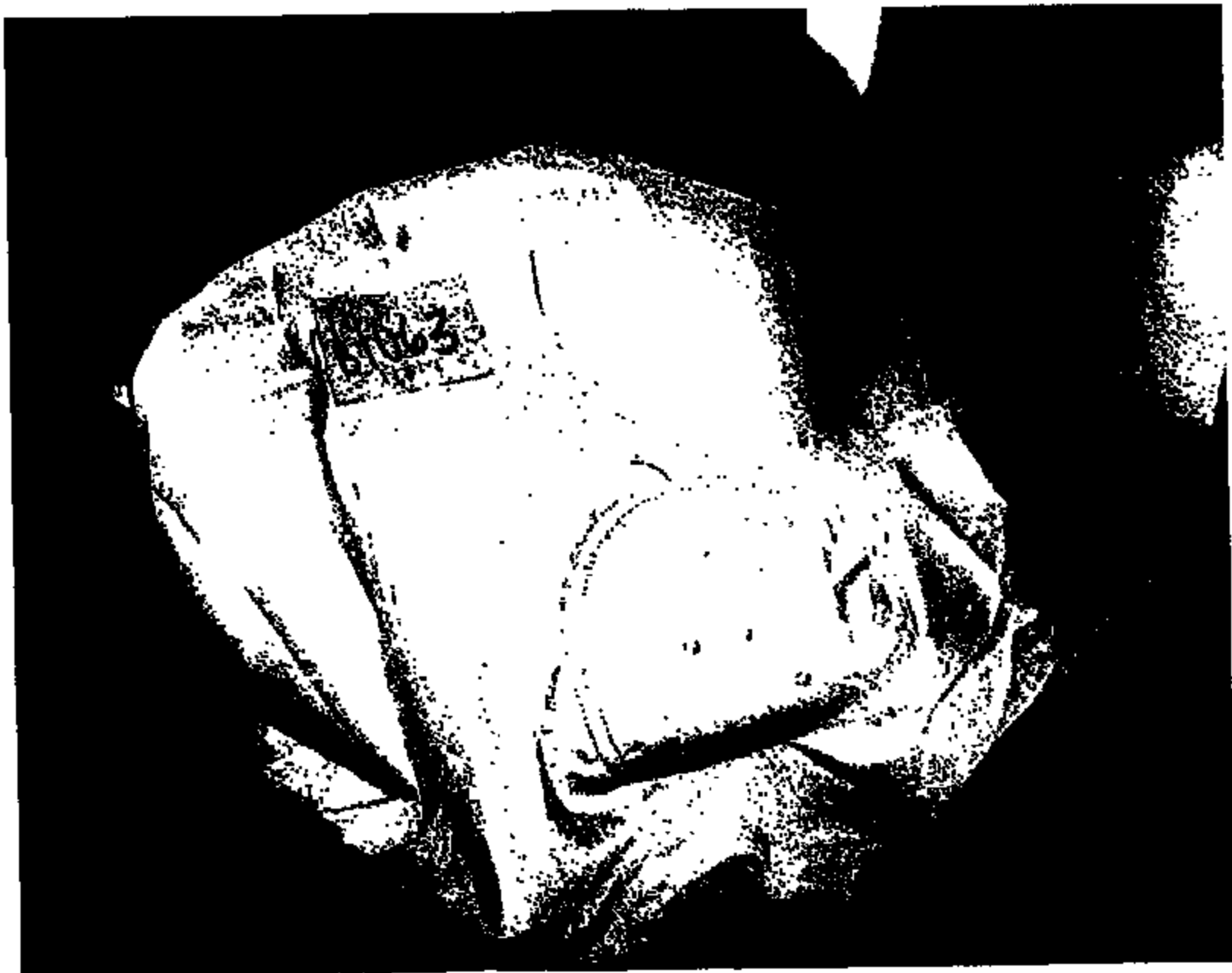
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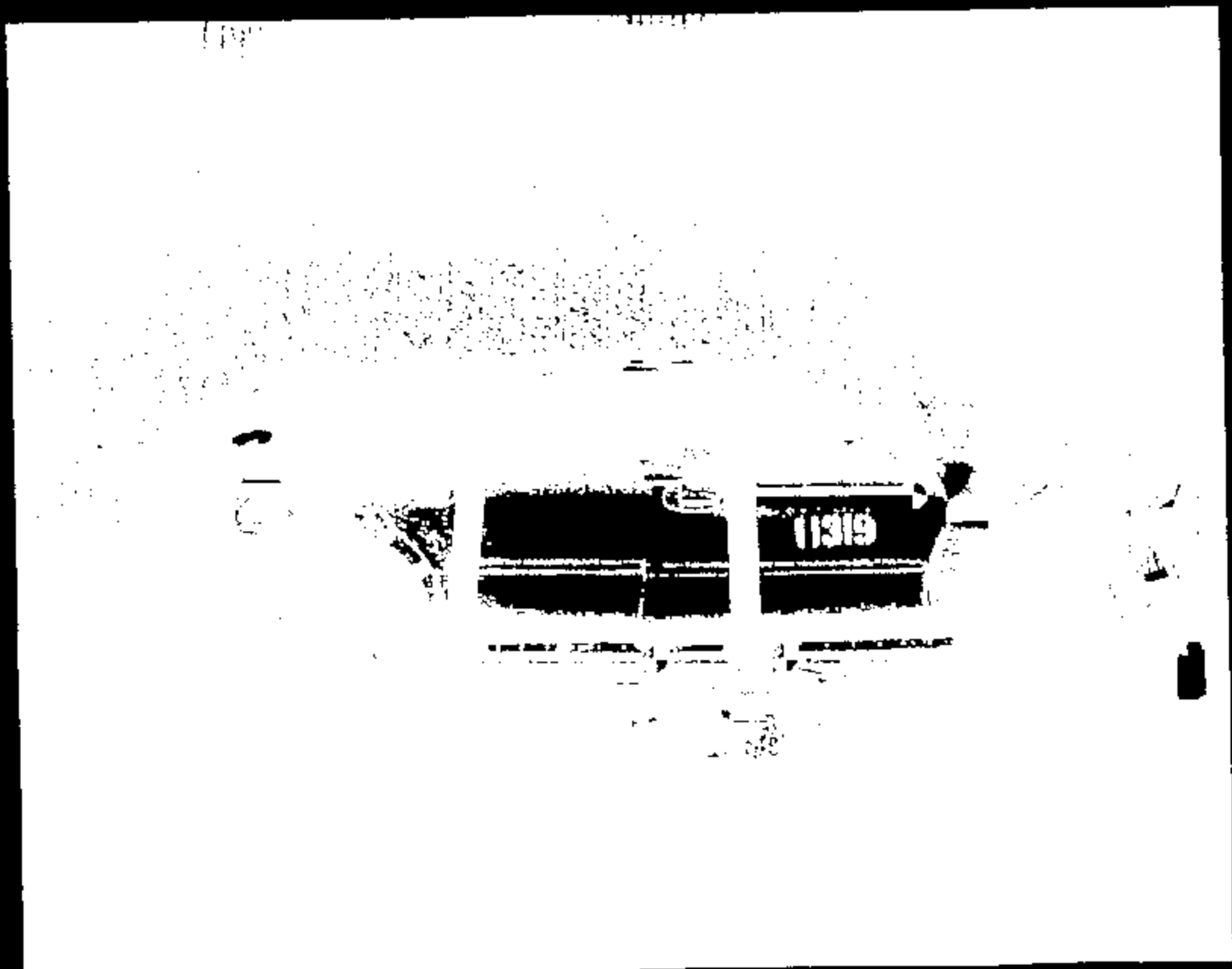
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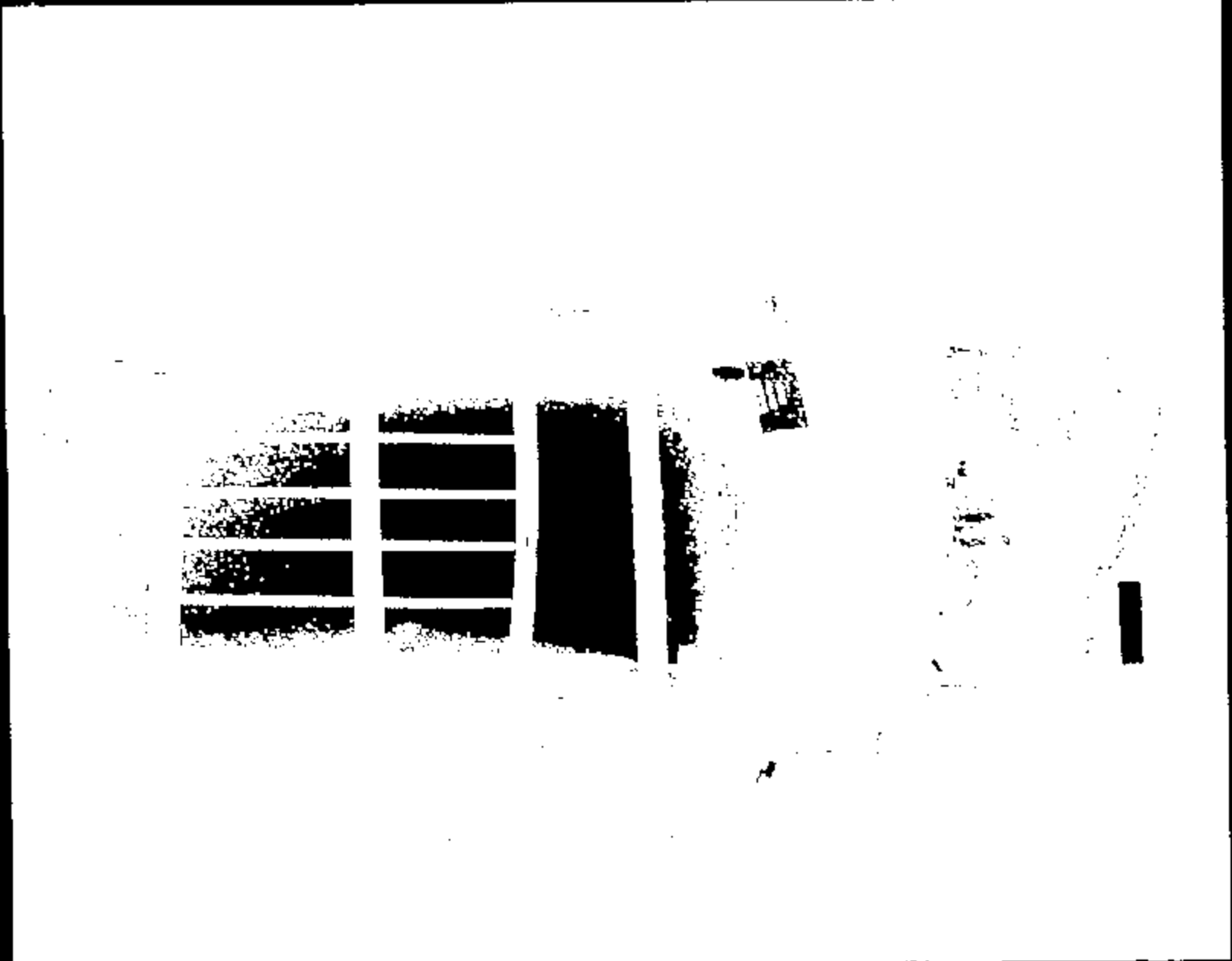


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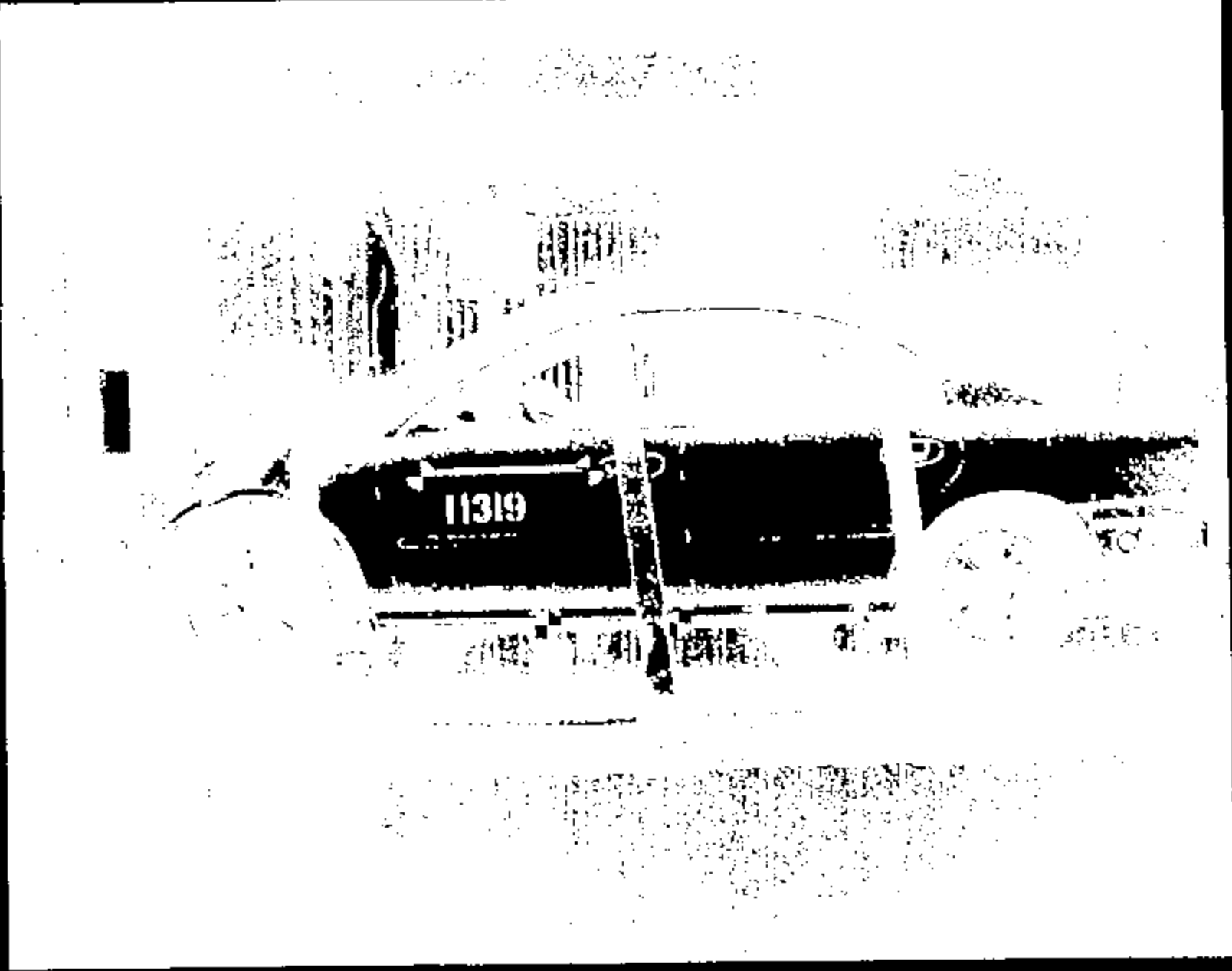
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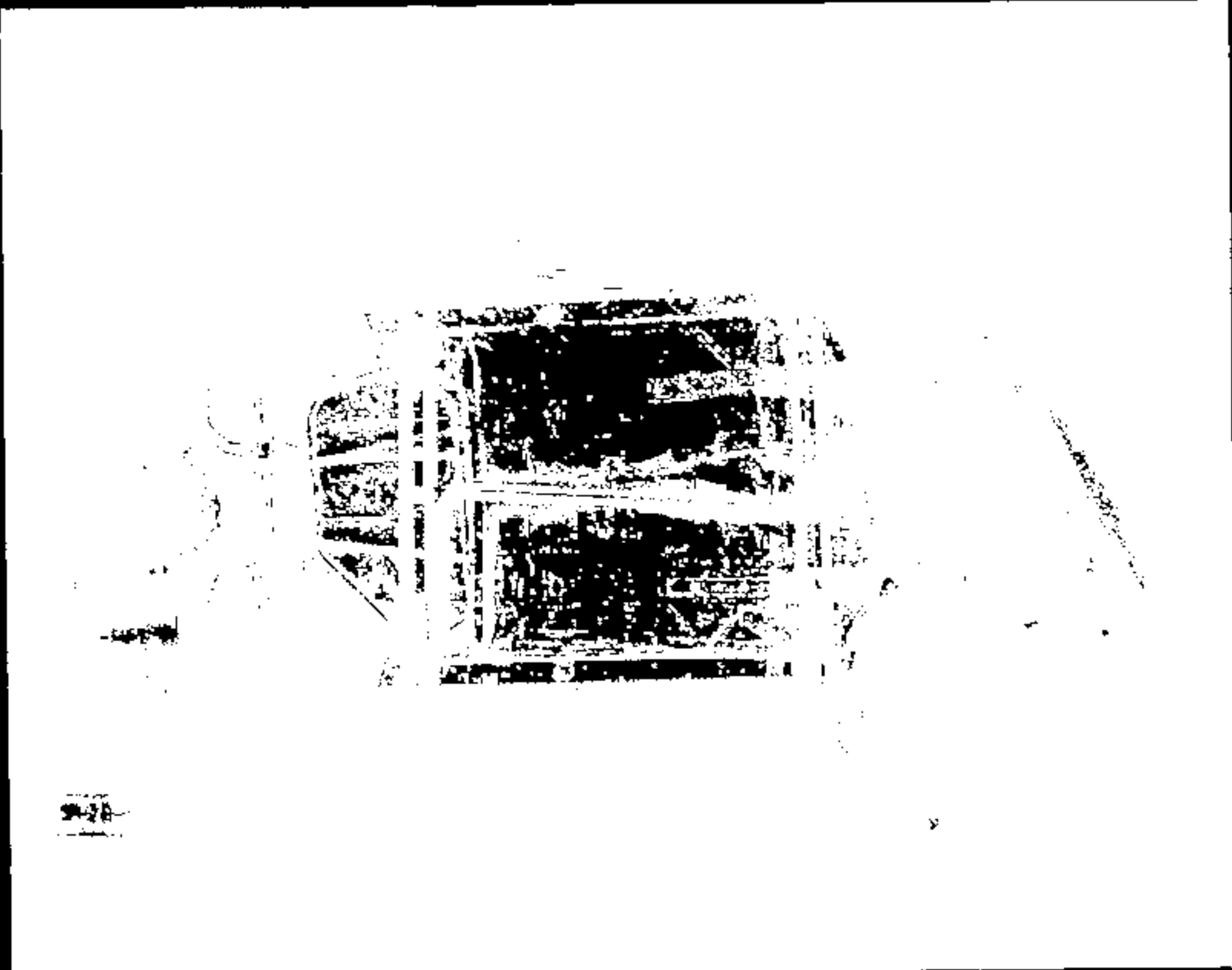
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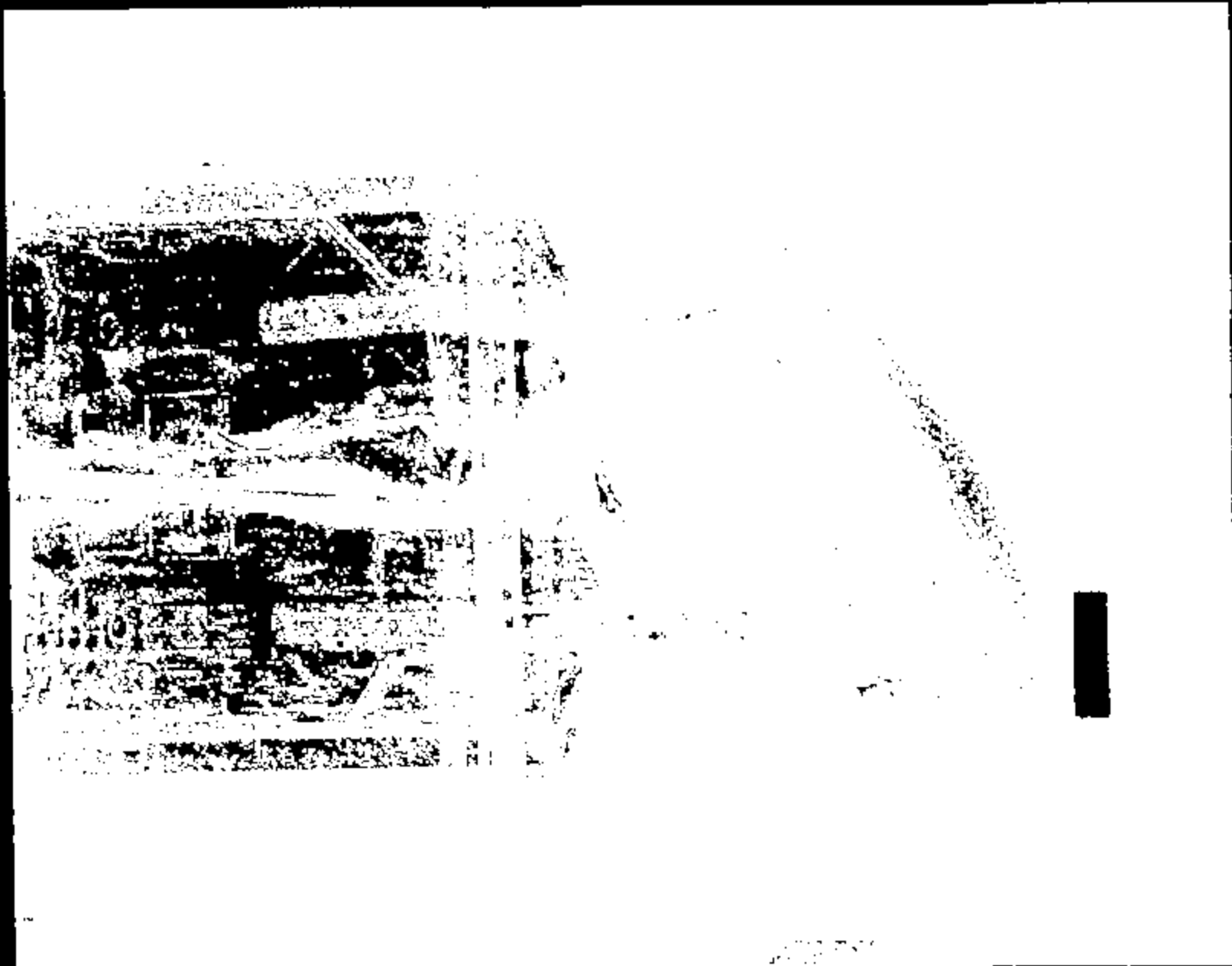




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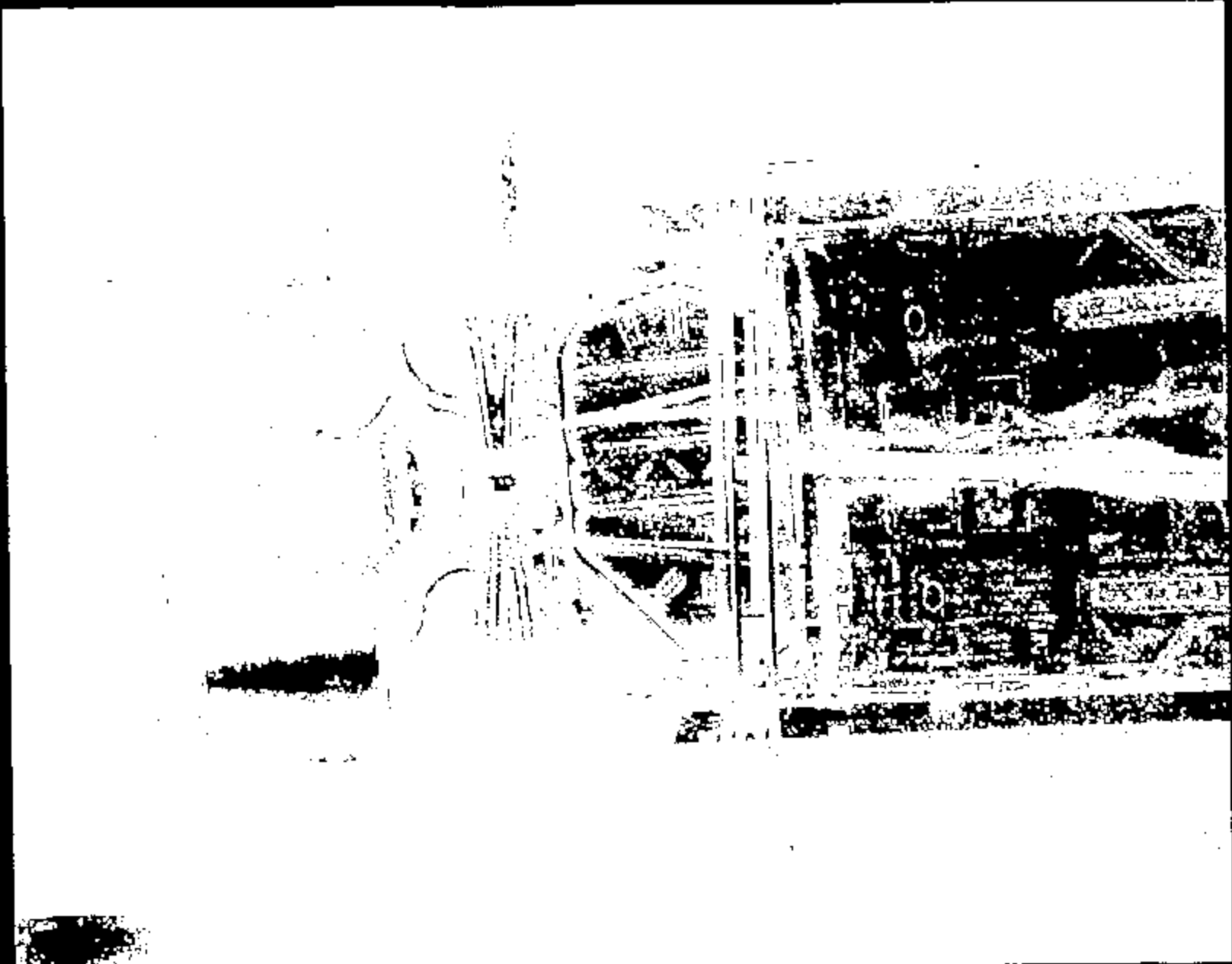
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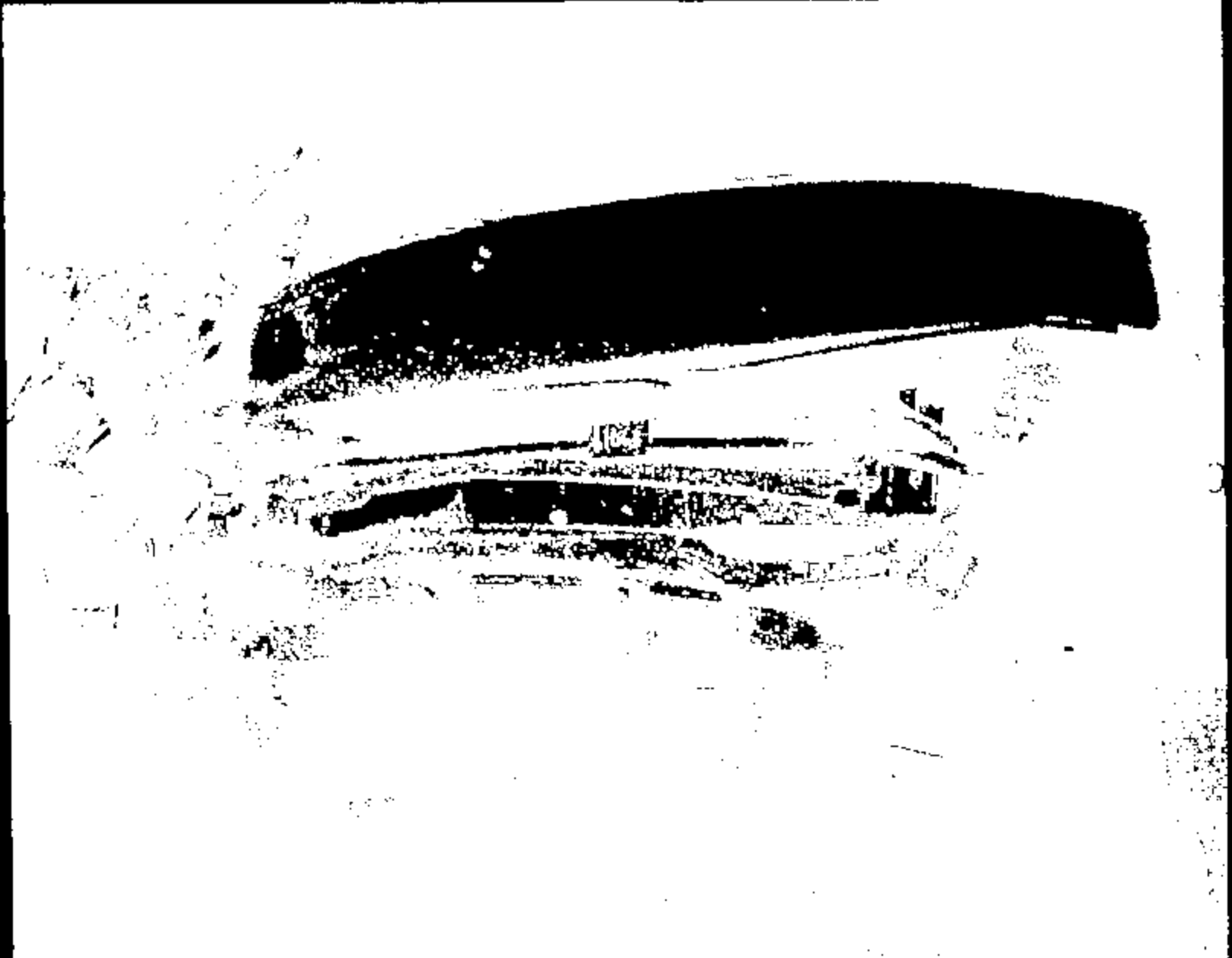
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Image 1

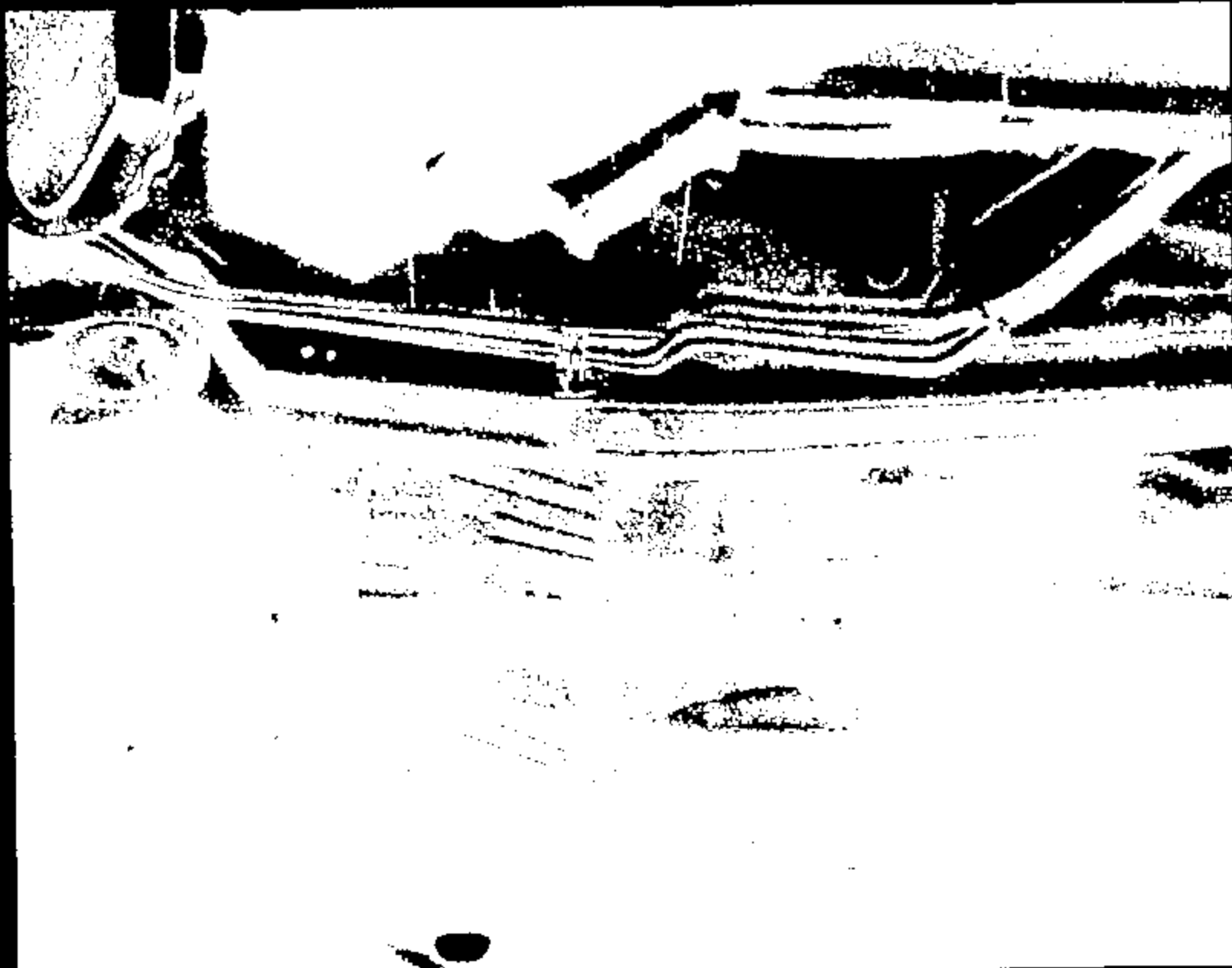
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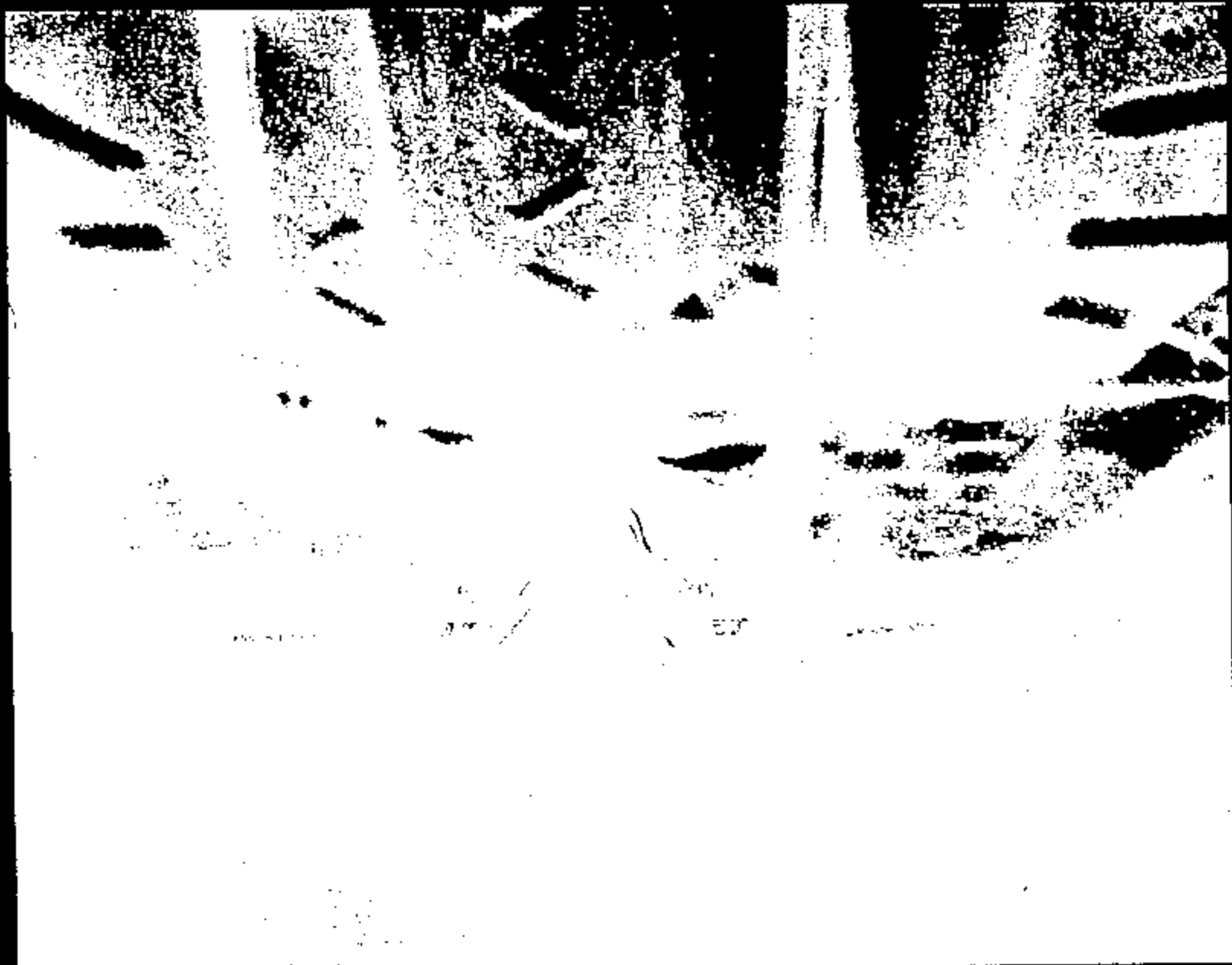
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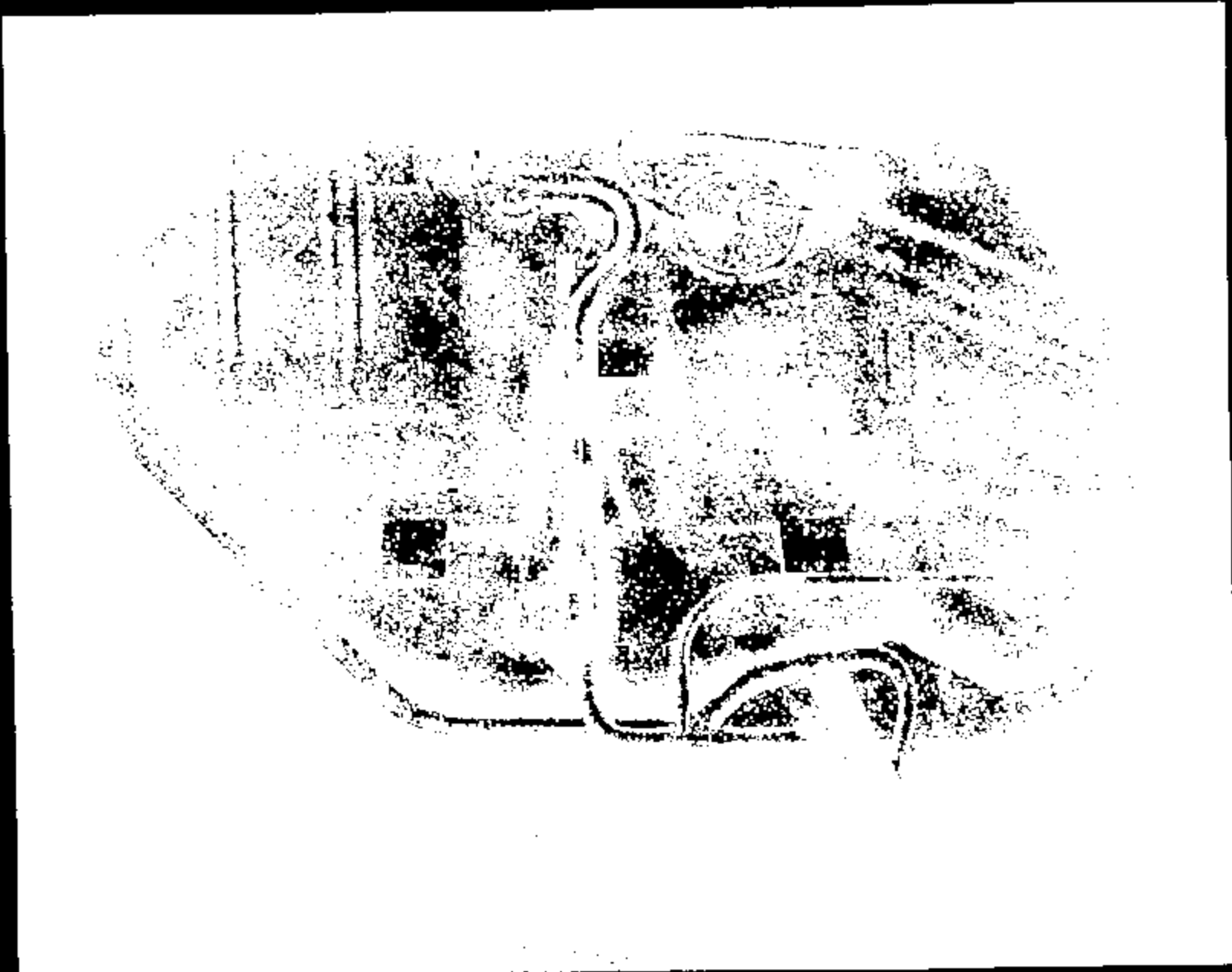
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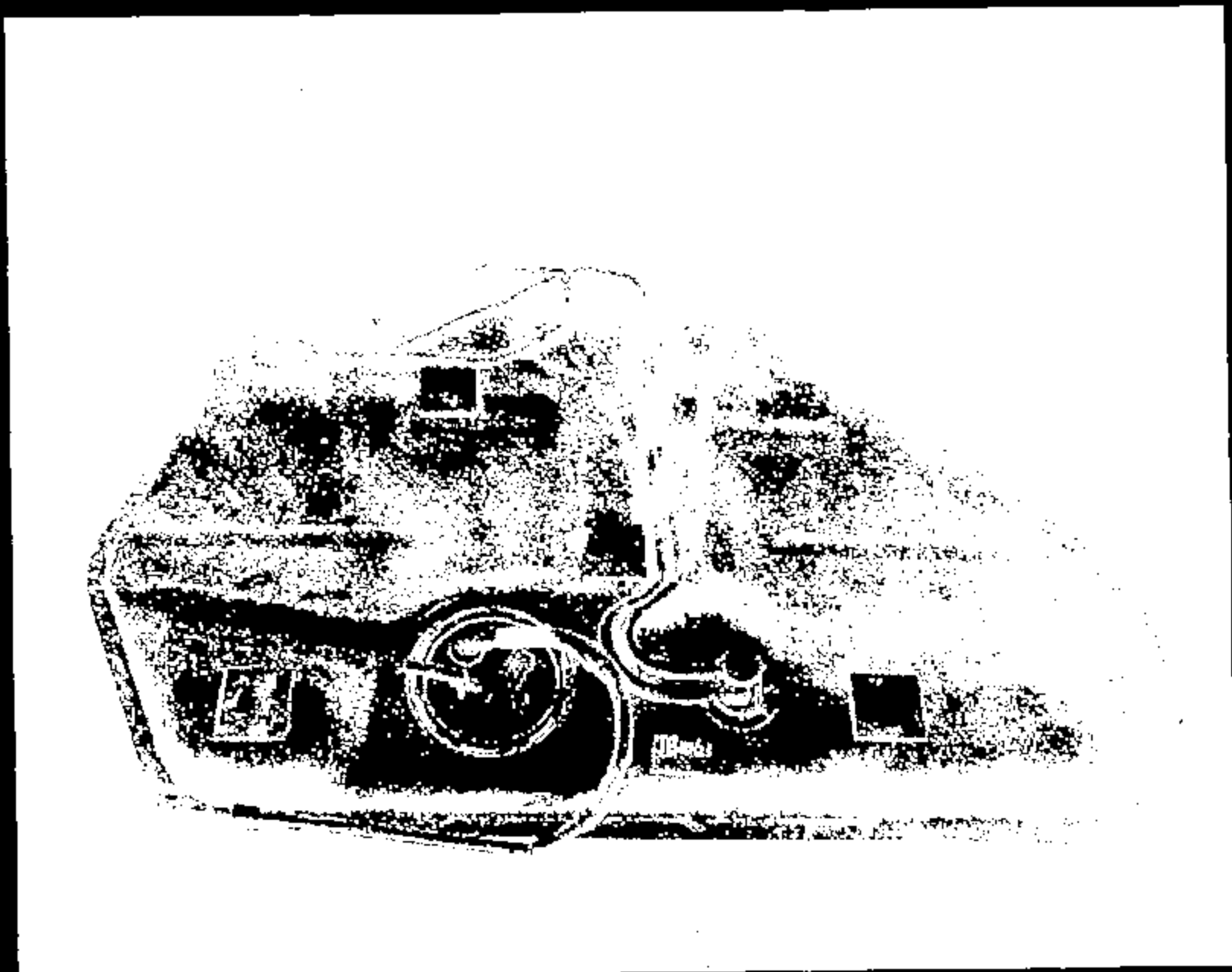
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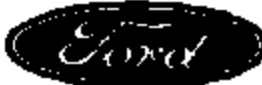
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 <b>GTO Test Request</b>		Requester/Coordinator (PROFB ID):	
		KEWING	
Testing Activity: Crash Barrier Test Lab		Date Submitted: 11-DEC-88	Requested Completion Date: 23-DEC-88
Requester Reference Number:			
Test Procedure Number: BT-14	Test Title and / or Subject of Test: 2000 D188 51mph / BOP / Barrier		
Billable Requester Dept No.: TSS1 A/2215A	Workshop/Work Order Number: F09	Test conducted to certify control item compliance with Government Regulations:	
Billable Requester PROFB ID: KEWING	Billable Requester Name: KURT EWING	Yes: <input checked="" type="checkbox"/>	No: <input type="checkbox"/>
<p>Complete the following two questions as indicated</p> <p>1 - Rational for not replacing this test by CAE Analysis:</p> <p><input type="checkbox"/> No CAE Methodology or process available</p> <p><input type="checkbox"/> For CAE Correlation</p> <p><input type="checkbox"/> Insufficient confidence in CAE</p> <p><input type="checkbox"/> To obtain basic data for CAE</p> <p><input type="checkbox"/> Replacement or improvement of existing Test</p> <p><input type="checkbox"/> Testing is Quicker</p> <p><input type="checkbox"/> Mandatory or Regulatory</p> <p><input checked="" type="checkbox"/> Certification</p> <p><input type="checkbox"/> Development test for F&amp;B</p> <p><input type="checkbox"/> Not applicable</p> <p>Other:</p> <p>(Check appropriate boxes)</p>		<p>2 - What is the expected Test Outcome:</p> <p><input checked="" type="checkbox"/> Results will meet D/P/WCR requirements</p> <p><input type="checkbox"/> System Component will not meet Test specification</p> <p><input type="checkbox"/> Unknown</p> <p><input type="checkbox"/> Above is Based on CAET</p> <p>Other:</p> <p>(Check appropriate boxes)</p>	
<p>Test Purpose/Test Procedure or Description of Test:</p> <p>TSS7-BT-14 Barrier Collision Test - Steer Col., Windshield, Front Bumper (Intram Pict)</p>			
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p><b>"RECORD COPY"</b></p> <p>Schedule No. <u>7-7-12</u></p> <p>Retain Until <u>2018</u></p> </div>			
Signatures Approvals (As Required for Control Purposes)			
Requesting Engineer: <u>KURT EWING</u>		Testing Engineer: _____	
Requesting Supervisor/Manager: <u>ALAN TAUB</u>		Testing Supervisor: _____	



**BARRIER TEST REQUEST**

TB1003

**TEST OBJECTIVE:** 800, FMVSS 801  
**IMPACT SPEED (MPH):** 31  
**TEST PROCEDURE:** ST-14  
 IMPACT TEST VEHICLE FRONTALLY INTO 90 DEGREE RIGHT ANGLED RIGID BARRIER.  
 CONDUCT POST TEST ROLLOVER

**TEST VEHICLE TAG:** 570W755  
**TEST VEHICLE VIN:** 1FALP6885Y6100678  
**MODEL:** D168  
**MODEL YEAR:** 2000  
**ENGINE/TRANS:** 3L 47 / AX4N

**TASK NO.:** F08  
**RECALLABLE DEPT.:** T881

**FUEL:**

FUEL TYPE	RATED CAPACITY (GALS.)	96% FILL (GALS.)
STODDARD	18	17.1

**TIRE PRESSURE (PSI):** FRONT = 30 REAR = 30 SPARE = NA  
**CURB WEIGHT (LBF.):** FRONT = 2159 REAR = 1407 TOTAL = 3566  
**TEST WEIGHT (LBF.):** FRONT = 2682 REAR = 1860 TOTAL = 4542  
 +/- = 26

**RIDE HEIGHTS (IN.):** FRONT = LEVEL RIG TO GROUND REAR = LEVEL RIG TO GROUND  
 +/- = TO GROUND +/- = TO GROUND

**WASH UP INSTRUCTIONS:**

**MAY REMOVE:** EXHAUST, DECK LID, DOOR GLASS, INTERIOR TRIM  
**DO NOT PLACE WEIGHT:** UNDERHOOD EXCEPT IN ENGINE. IN DOORS.  
**MAX ADD TO ENGINE:** 75 LBF.  
 LOAD TO TEST WEIGHT & LEVEL ROCKERS WRT GROUND.  
 SPRING INSERTS ACCEPTABLE.

**OCCUPANT TYPE:** LEFT FRONT = 80TH% HYBRID 2  
 RIGHT FRONT = 80TH% HYBRID 2

**DUMMY POSITIONING:** ST-14 DRIVER FOOT REST: Y

**SEAT POSITIONING:**

	LONG	VERT	BACK ANGLE (DEG.)	PKG OBJECT
LEFT FRONT =	MID	FULL DWN	27.2 (FRAME)	N
RIGHT FRONT =	MID	FULL DWN	27.2 (FRAME)	N

**RESTRAINTS USAGE:**

	BELT	PYRO BELT	FRONT BAG	SIDE BAG
LEFT FRONT =	X		X	
RIGHT FRONT =	X			

DRIVER BAG IS LIVE  
 PASSENGER BAG IS INERT

**SENSOR SYSTEM:** LIVE SYSTEM

## BARRIER TEST REQUEST

TB1063

DIMENSIONAL ANALYSIS: NONE

DRIVER ANALYSIS

STILL PHOTO: STANDARD PRE & POST TEST  
CLOSE UPS OF FUEL SUPPLY LINE CONNECTION TO FUEL RAIL, PRE & POST TEST.  
CONTACT REQUESTOR FOR ADDITIONAL INSTRUCTIONS.

HIGH SPEED FILM:

OFFBOARD		
1	RIGHT	OVERALL
2	LEFT	OVERALL
3	OVERHEAD	OVERALL
4	OVERHEAD	A-PILLAR FORWARD
5	CENTER	TOP OF BARRIER, ENGINE CLOSEUP
6	RIGHT	TOP OF BARRIER, INTAKE MANIFOLD & FUEL RAIL CLOSEUP
7	LEFT	TOP OF BARRIER, INTAKE MANIFOLD & FUEL RAIL CLOSEUP
8	RIGHT	IN LIGHTS, ENGINE CLOSEUP FROM SIDE
9	LEFT	IN LIGHTS, ENGINE CLOSEUP FROM SIDE
10	RIGHT	TRIPOD, ENGINE CLOSEUP FROM SIDE
11	LEFT	TRIPOD, ENGINE CLOSEUP FROM SIDE
12	FTT	CLOSEUP, FUEL LINES @ FRONT FLOOR
13	FTT	A-PILLAR FORWARD
TOTAL OFFBOARD =		13
TOTAL ONBOARD =		0

FILM ANALYSIS:

	DESCRIPTION	ACCEL	VEL	DSP	ANGLE
1	LFT RKR LONG @ B-PILLAR WRT GROUND		X	X	
2	LFT RKR VERT @ B-PILLAR WRT GROUND		X	X	
3	RGT RKR LONG @ B-PILLAR WRT GROUND		X	X	
4	RGT RKR VERT @ B-PILLAR WRT GROUND		X	X	
5	ENGINE LONG WRT COVL TARGET		X	X	

DIGITIZED FILM: NONE

SPECIAL BUILD INSTRUCTIONS:

- REMOVE HOOD, DECKLID
- UPDATE INTAKE MANIFOLD, FUEL RAIL, FUEL INJECTORS, IFS, FUEL SUPPLY LINE.
- COLOR CONTRAST ENGINE COMPARTMENT & UNDERBODY.

FUNCTION	NAME	PHONE	PAGER
REQUESTOR:	D. PERAZZO	55016	OPBR
BLD. COORD:	B. PAGANO	32-30845	BPAG
SUPERVISOR:	K. ARTHUR	50-05195	KAPT

DATE	DESCRIPTION	PAGES	AUTHORIZATION
1/5/99	CHANGED FUEL CAPACITY TO 18 GALLONS	1	DSP
1/5/99	INDICATED THAT EXTRA WEIGHT CANNOT BE ADDED TO DOORS	1	DSP
1/5/99	INDICATED THAT THE DRIVER AIRBAG IS LIVE	1	DSP
1/5/99	CHANGED CAMERA 8 TO ALSO FOCUS ON THE INTAKE MANIFOLD	2	DSP
1/5/99	CHANGED THE TOTAL NUMBER OF OFFBOARD CAMERAS TO 13	2	DSP

File: 01063, Tab: REQUEST  
Revised: 1/5/99  
Printed: 1/5/99, 10:22 AM

Page 2 of 2

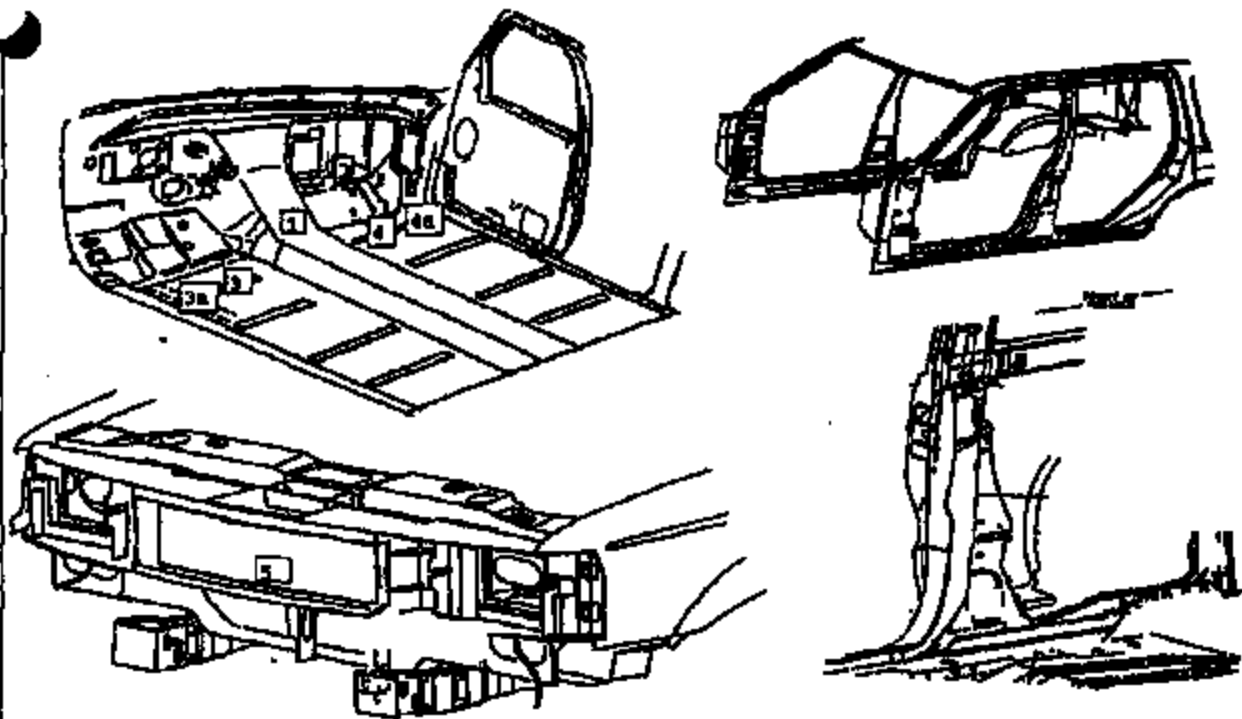
Created By: K. Irving, 24-98185

CRTS 0011319

# SENSOR MAP

Vehicle ID: 579W785  
Build level: CP

Program: D188  
Test Mode: 31/30R BARRIER  
TA No.: TB1063



Location Name	Supplier	Output	Nominal (+/-)	Sensor Channels only		Serial #
				Max/Min		
1 C/F_FLOOR_PRR_RCK (LED BRICK Location)	EM009-1	DATA_OUT	0	10		
	EM009-2	DATA_OUT	0	10		
	EM009-3	PARK_OUT	0	10		
	EM009-4	PARK_OUT	0	10		
	EM009-5	L_PRR_OUT	0	10		
	EM009-6	P_PRR_OUT	0	10		
	EM009-7	D_SAB1_OUT	0	10		
	EM009-8	P_SAB1_OUT	0	10		
	EM009-9	STATUS	5	10		
1 C/F_FLOOR_PRR_S_RCM	scoc1	TRIAK	On degree			NA
2a L/F_FLOOR_S_01_XDRR_COVED	VISTEON	SENSOR				NA
3 L/F_FLOOR_S_01_XDRR_SMLT_CL	scoc1	TRIAK				NA
4a R/F_FLOOR_S_01_XDRR_COVED	VISTEON	SENSOR				NA
4 R/F_FLOOR_S_01_XDRR_SMLT_CL	scoc1	TRIAK				NA
5 C/RAD	FCS	VISTEON	FCS			NA
5 C/RAD	scoc1	TRIAK	Wired to FCS			NA

T zero required; Assumed system power from vehicle wiring and battery - use provided harness

### REVISION LOG

DESCRIPTION	DATE	PAGE AFFECT	ADTE



**"RECORD COPY"**  
 Schedule No. 7-7-12  
 Retain Until 2019  
**CONFIDENTIAL**

**FINAL TEST REPORT**

**Global Test Operations  
 Advanced Vehicle Technology**

**TO:** K. Ewing

Test Order No. T-B2416  
 Work Task W. O. No. F09  
 Test Date 1/20/99  
 Date Reported 10/21/99  
 Sheet 1 of 40

**SUBJECT:** Crash Test 11323 (30° Right Front Fixed Barrier Impact at  $31.0 \pm 0.4$  mph,  $49.9 \pm 0.6$  km/h) - 2000 Taurus (D186) 4-Door Wagon - 2000 Certification Program

**REQUESTED BY:** Vehicle Crash Safety Department, Advanced Vehicle Technology - K. Ewing

**OBJECT:** To provide fuel system integrity data relative to the barrier crash test requirements of the current FMVSS No. 301 (U.S. CFR Docket No. 96-44, Notice 01, Canadian Gazette SOR/97-421)

**SUMMARY OF TEST RESULTS:**

- See Attachment 1 for fuel spillage data.
- See Attachment 2 for vehicle observations and non-FMVSS data.

The Test Authorization for this crash indicated that the vehicle is representative of a design level suitable for a certification test. To the best of my knowledge, the crash testing was performed on the same vehicle as identified in the Test Authorization; the results reported herein represent the performance of this specific vehicle, and the testing was performed in accordance with the listed procedures. Any procedure deviations significant to the test objectives above are identified in this report.

*S. Leish*

Concur: S. Leish  
 Section Supervisor  
 Operations Engineering Section

*R. Oda*

R. Oda  
 Engineering Data Control Analysis

**VEHICLE DATA:**

**Make and Model** 2000 Taurus (DI86) 4-Door Wagon

**ID Numbers** 1FALPS2U9YS100579, 579-W-775, DC040002

**Power Train** 3.0L, IPI, Automatic Transaxle

**Fuel Tank(s)** Usable Capacity: 18.0 gal. (68.1L)  
Test Condition: The "run dry" tank was filled with red-dyed Stoddard solvent to 95% of its rated usable capacity.

**Front Seat(s)** Type: Bucket  
Cover: Cloth  
Tracks/Position: LF: 6-Way Power/Mechanical Mid and Down  
RF: Manual/Mechanical Mid  
Seat Backs/Position: Adjustable/ 27.2° Rear of Vertical  
Head Restraints/Position: Adjustable/Up

**Restraint System** LF: 3-Point Continuous Loop Active Belt with  
Steering Wheel Air Bag and Seat Back Side Air Bag  
RF: 3-Point Continuous Loop Active Belt with  
Instrument Panel Air Bag and Seat Back Side Air Bag

**Occupants** LF & RF: 50th Percentile Male, Hybrid II,  
Uninstrumented

**Test Weight** Front: 2372 lb (1076 kg)  
Rear: 1717 lb (779 kg)  
Total: 4089 lb (1855 kg)  
The test weight includes:  

- the "as received" unloaded vehicle curb weight
- Maximum production options (simulated)
- 2 occupant(s) (described above)
- 200 lb (90.7 kg) luggage (simulated)

**Tires** Front: P215/60R16 30 psi (207 kPa)  
Rear: P215/60R16 30 psi (207 kPa)  
Spars: Removed

**Bumpers** Front: Plastic Fascia/Beam  
Rear: Removed

**Significant Content or Accessories:** Air Conditioning, Power Steering, Power Brakes, Tilt Steering Wheel

**GENERAL TEST COMMENTS:****1. Test Procedure**

The test was performed according to the following Corporate test procedure(s):

- Fixed Barrier Collision, T657-ST-14 dated March 3, 1998.
- EFI Fuel Systems Stoddard Solvent Fill, ST-11 REF. 4.

**2. Significant Deviations from T657-ST-14**

None

- 3. Instrumentation:** The instrumentation equipment set up for this test was completed following approved procedures which require engineering sign-off after each major step. The instrumentation equipment and systems used meet the SAE J211 June 80 series of recommended practices (Instrumentation for Impact Tests J211, J211a, or J211b) and were calibrated using secondary standards that are traceable to the National Institute of Standards and Technology (NIST).

**4. Remarks**

Crash movies, pre- and post-crash still images of the test vehicle and copies of this report are available through the Operations Engineering Section, Safety Laboratories Department, GM. The crash still images are stored and archived on CD ROMs. The file names of the still images are listed under crash number and a three digit sequence number which are 11323001 through 11323060.

**ATTACHMENT 1**

**Fuel System Integrity (CFR/VSS 301)**

- There was fuel system spillage from the pressure relief valve during impact estimated to be 0.06 ounces.
- There was no fuel system spillage during the post-crash static rollover test.

**ATTACHMENT 2**

**1.0 Vehicle Crash Film Analysis and/or Instrumentation Data**

Time histories of the air bag/sensor(s) are included in this report.

Time histories of the vehicle accelerations and other instrumentation are included in this report.

Time histories of vehicle dynamic displacements obtained from Film Analysis are included in this report.

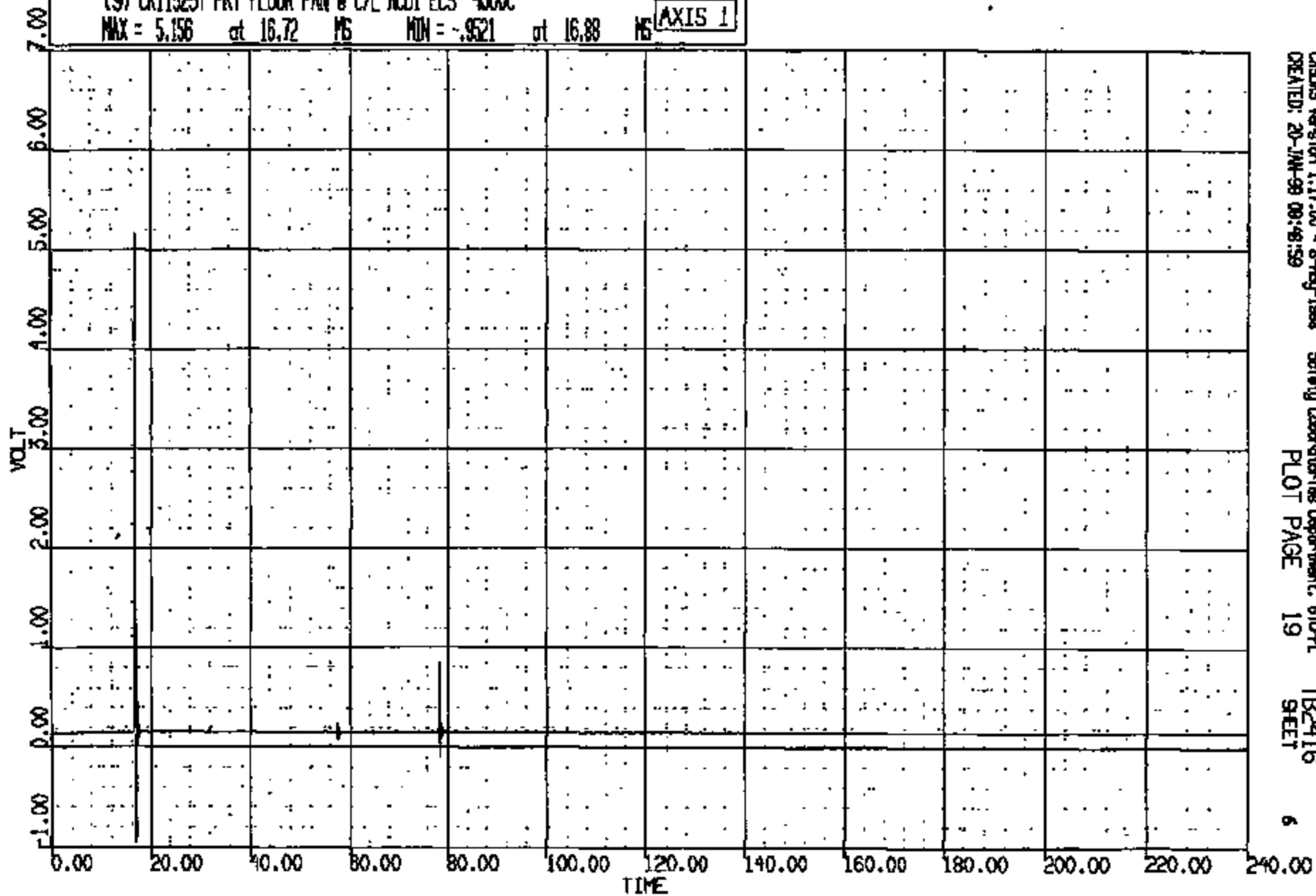
Time histories of any requested derived data (i.e. integrations, etc.) were given to the requesting activity and are not included in this report.



CR R: 11323 TO: TB2416 DATE: 990120 09:33:22  
2000 0-188

(9) CR11323T FRT FLOOR PAN @ C/L ACU1 ECS 4000C

MAX = 5.156 at 16.72 MS MIN = -.9521 at 16.88 MS AXIS 1



CISMS Version 1.17.00 - 8-May-1998  
CREATED: 20-JAN-99 09:48:59

Safety Laboratories Department, 610-PL  
PLOT PAGE 19

TB2416  
SHEET

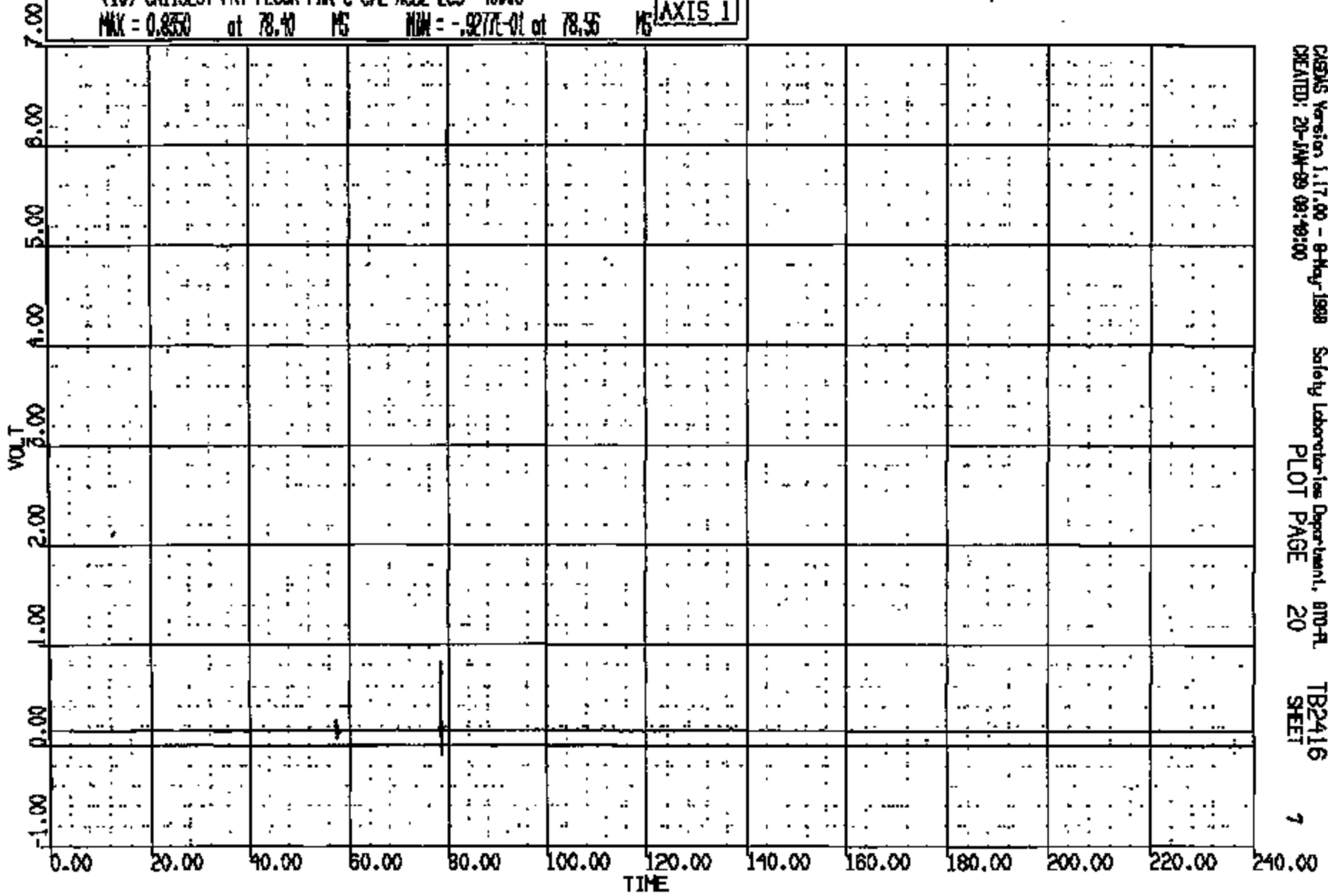
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8000 D-188

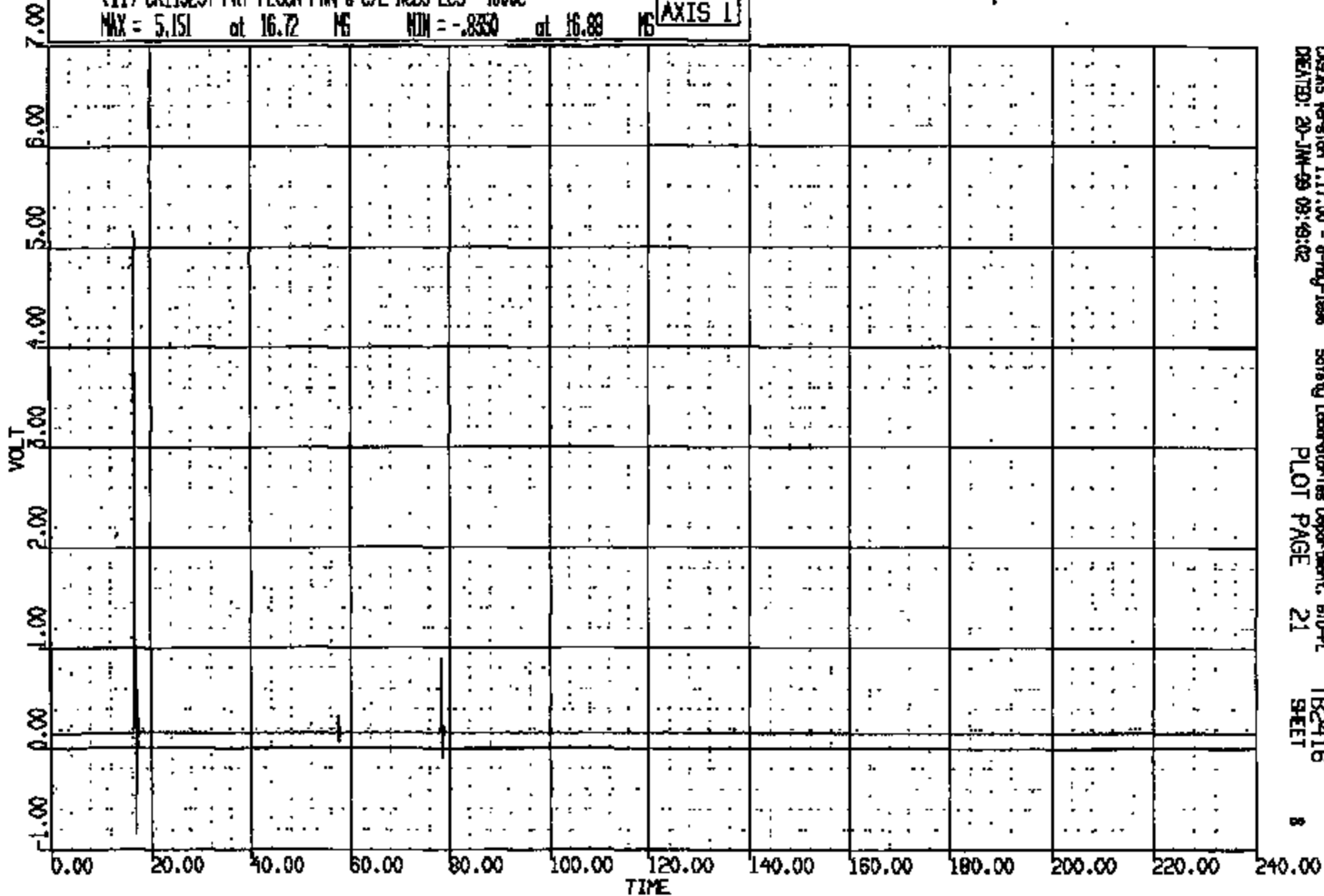
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AXIS 1



CR R: 11323 TO: TB2416 DATE: 890120 09:55:22  
2000 D-188

(11) CR11323T FRT FLOOR PAN @ C/L ACDS ECS 4000C  
MAX = 5.151 at 16.72 MS MIN = -.8350 at 16.89 MS **AXIS 1**



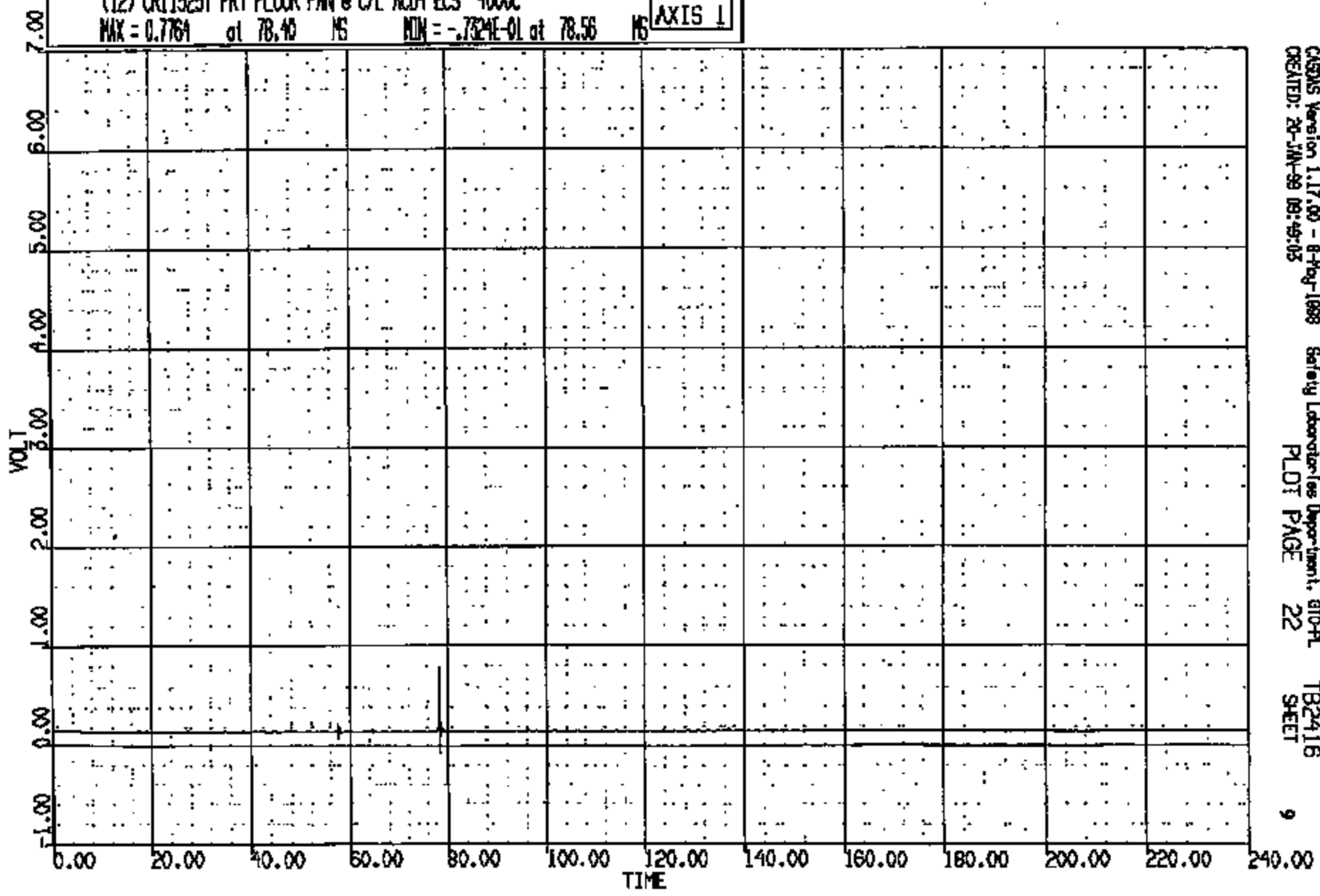
DISKS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610-PL  
CREATED: 20-JUN-89 09:49:02 PLOT PAGE 21 TB2416  
SHEET 8

CRTS 0011323

CR R: 11828 TO: TB2418 DATE: 990120 09:33:22  
R000 D-188

(12) CR1323T FRT FLOOR PAN @ C/L ACDA ECS 4000C  
MAX = 0.776A at 78.40 MS MIN = -.7324E-01 at 78.56 MS

AXIS 1

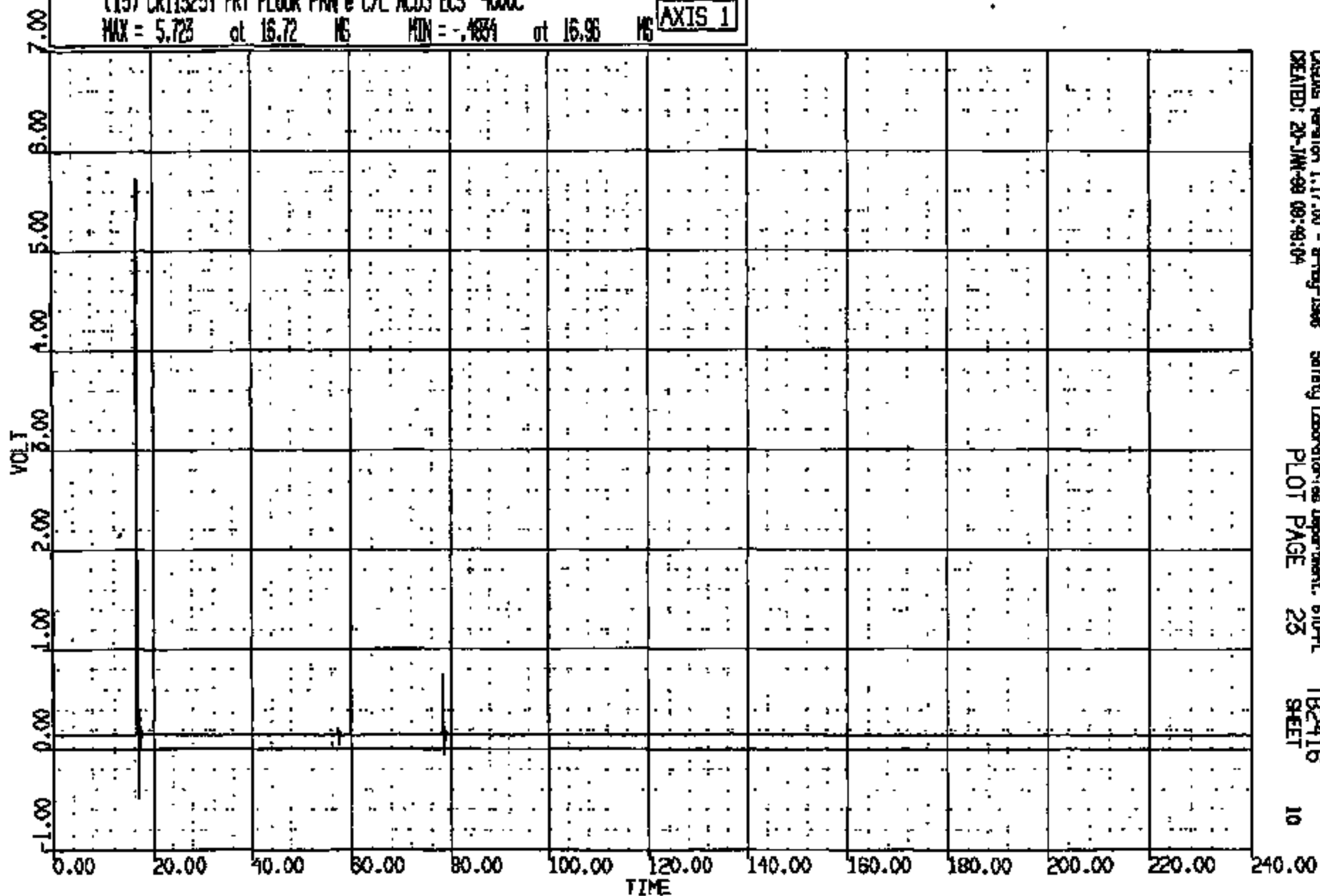


CASYS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, DTIC  
CREATED: 20-JAN-99 09:49:05 PLOT PAGE 22 SHEET 9

CRTS 0011323

DR R: 1182E TO: TB2416 DATE: 990120 09:33:22  
R000 D-189

(13) CR113231 FRT FLOOR PAN @ C/L ACDS ECS 4000C  
MAX = 5.723 at 16.72 NS MIN = -.4834 at 16.96 NS **AXIS 1**

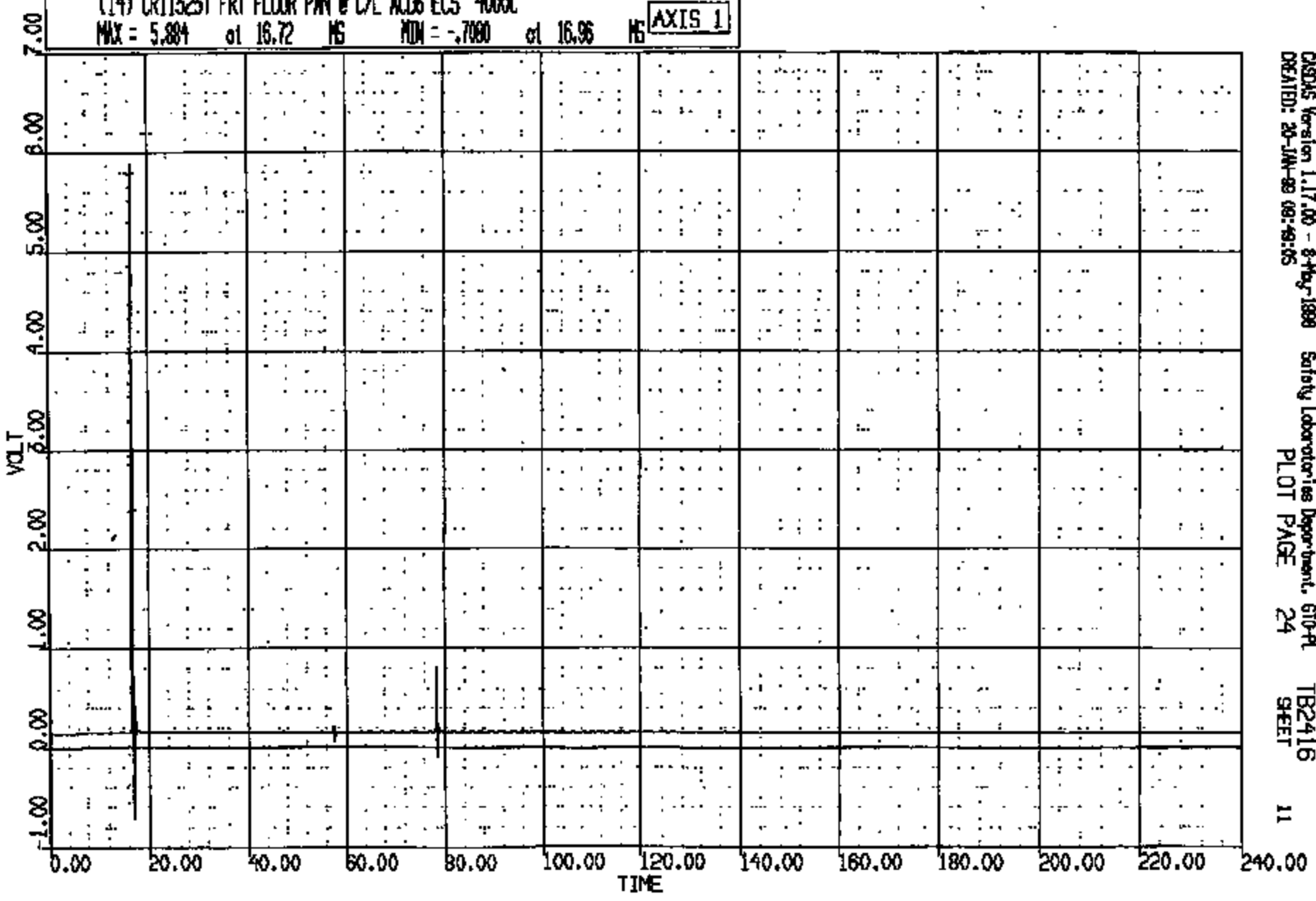


CRS15 Version 1.17.00 - 8-Feb-1998 Safety Laboratories Department, 610-PL  
CREATED: 20-JUN-99 09:49:04 PLOT PAGE 25 TB2416 SHEET 10

CRTS 0011323

CR R: 11323 TO: TB2416 DATE: 890120 09:55:22  
2000 D-189

(14) CR11323T FRT FLOOR PAN @ C/L ACS6 ECS 4000C  
MAX = 5.884 of 16.72 MS MIN = -.7080 of 16.96 MS **AXIS 1**

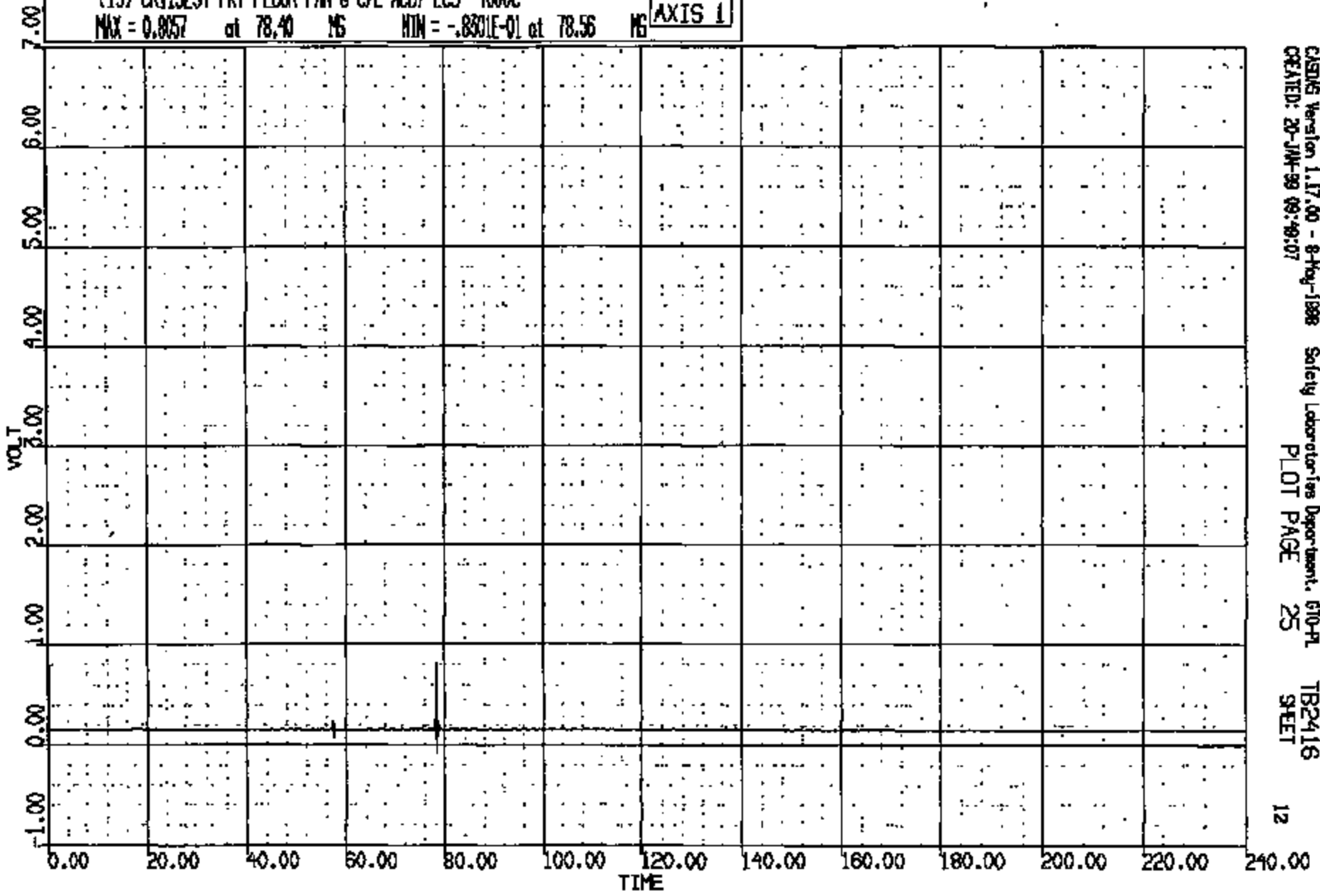


CANDAS Version 1.17.00 - 8-May-1989 Safety Laboratories Department, 610-PL TB2416  
CREATED: 20-JAN-89 09:49:05 PLOT PAGE 24 SHEET 11

CRTS 0011323

CR #: 11323 TO: TB2416 DATE: 990120 08:55:22  
2000 D-188

(15) CR01323T FRT FLOOR PAN @ C/L AC07 ECS 4000C  
MAX = 0.0057 at 78.40 MS MIN = -.8301E-01 at 78.56 MS **AXIS 1**

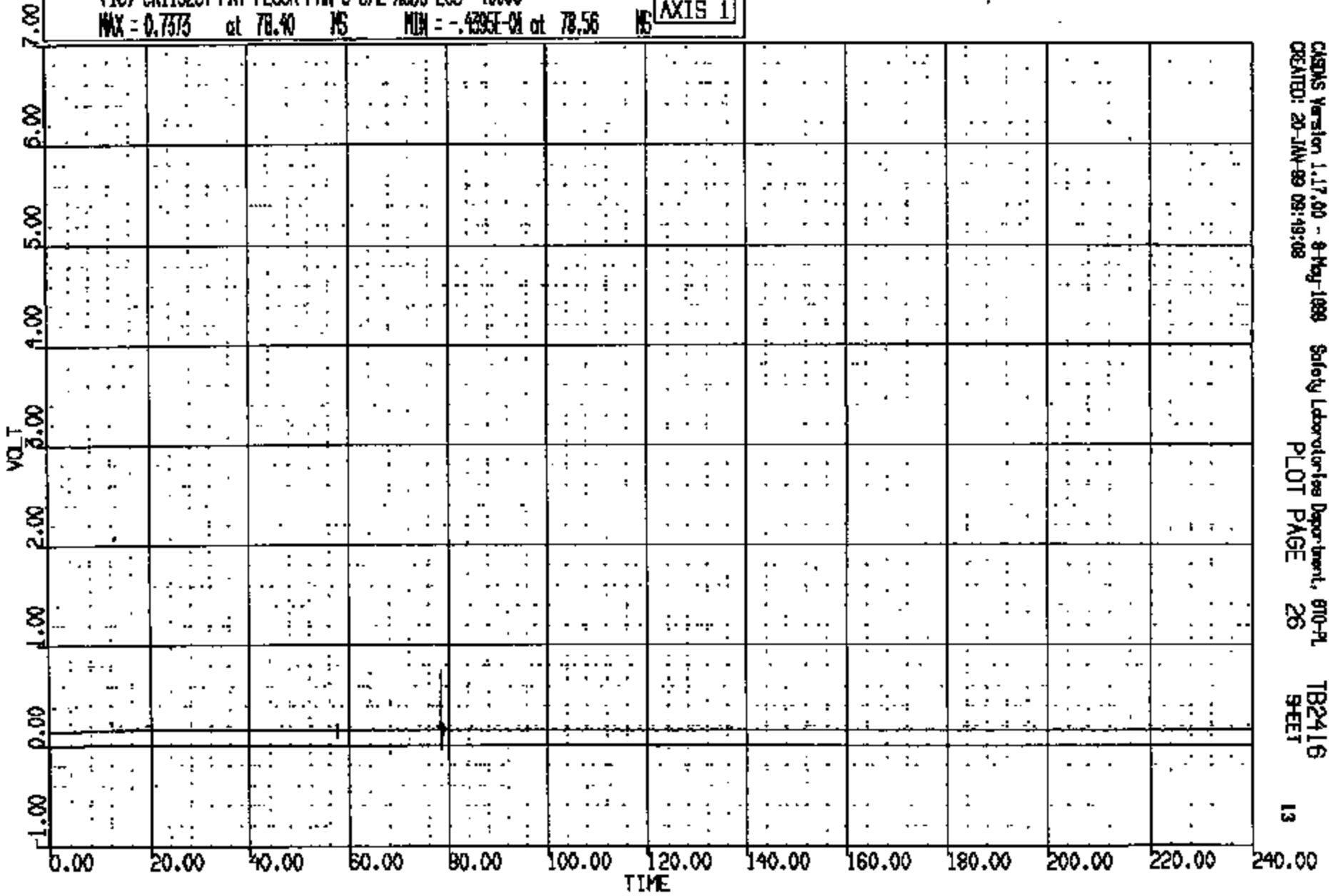


CASIMS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL  
CREATED: 20-JUN-99 09:49:07 PLOT PAGE 25 TB2416  
SHEET

CR R: 11323 TO: TB2416 DATE: 990120 09:55:22  
2000 D-188

(16) CRTS 0011323 FRT FLOOR PAN @ C/L AC08 ECS 4000  
MAX = 0.7373 at 78.40 NS MIN = -.4395E-01 at 78.56 NS

AXIS 1



CHS Version 1.17.00 - 8-May-1999 Safety Laboratories Department, 610-PL TB2416  
CREATED: 20-JAN-99 09:49:08 PLOT PAGE 26 SHEET 13

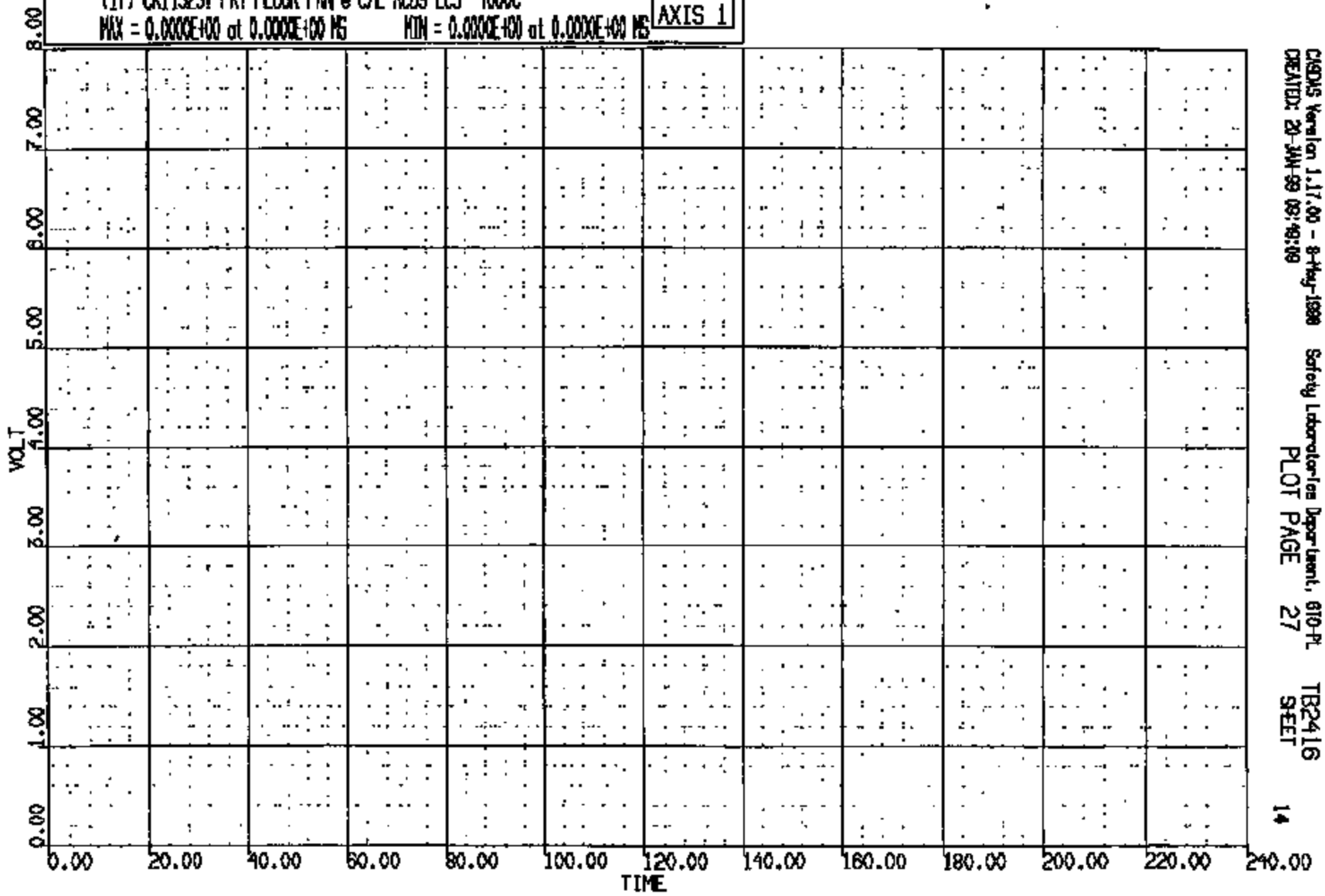
CRTS 0011323



CR R: 11323 TO: TB2416 DATE: 890120 08:33:22  
2000 D-188

(17) CR113231 FRT FLOOR PNH @ C/L ACDB ECS 4000C  
MAX = 0.0000E+00 at 0.0000E+00 MS MIN = 0.0000E+00 at 0.0000E+00 MS

AXIS 1

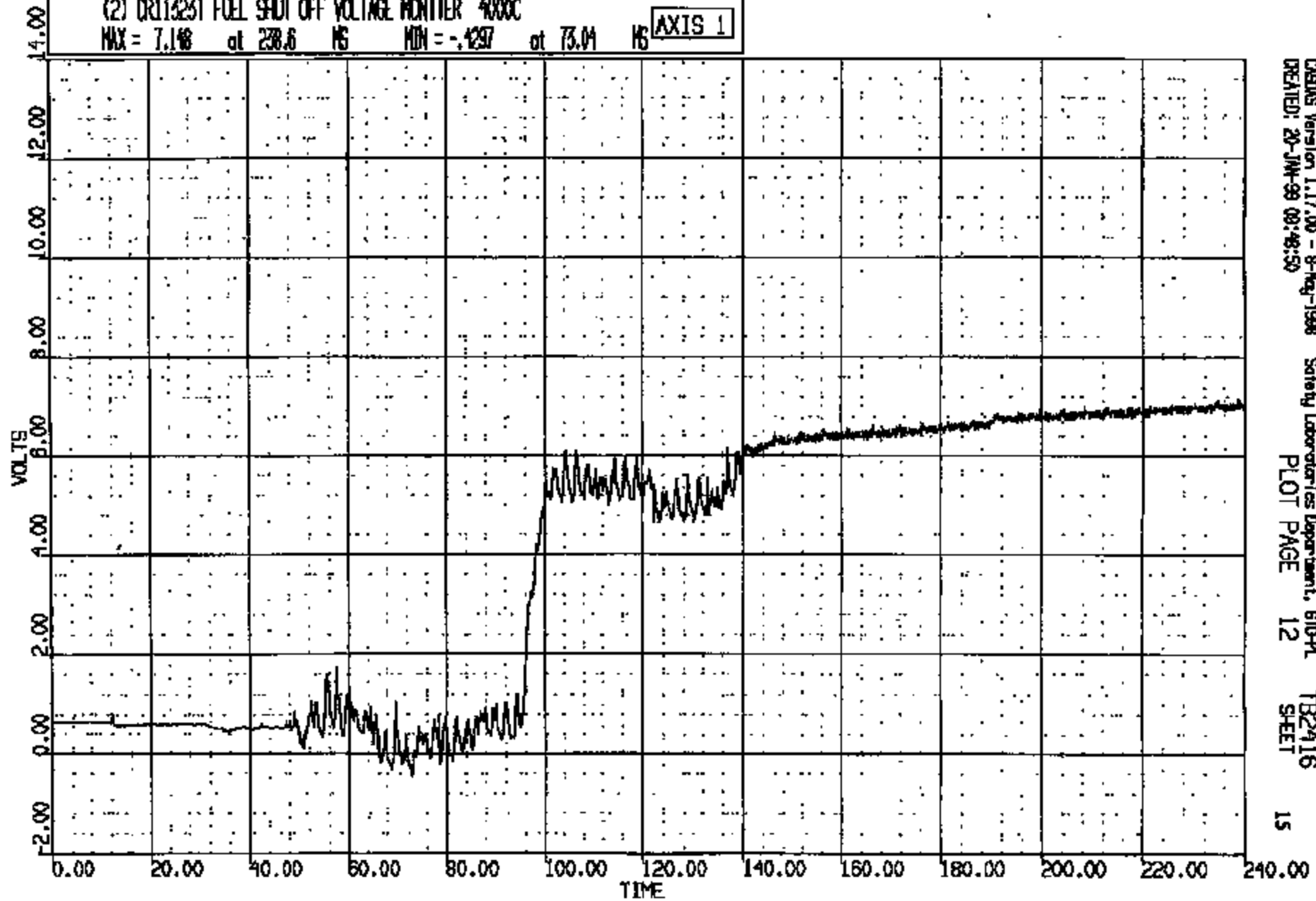


CIGDS Version 1.17.00 - 8-May-1988 Safety Laboratories Department, 610 PL  
CREATED: 20-JAN-89 08:48:09 PLOT PAGE 27 TB2416  
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CRTS 0011323

PCR #: 11823 TO: TB2416 DATE: 990120 09:33:22  
2000 D-180

(2) CR11323T FUEL SHUT OFF VOLTAGE MONITOR 4000C  
MAX = 7.148 at 238.6 MS MIN = -.4297 at 73.04 MS **AXIS 1**

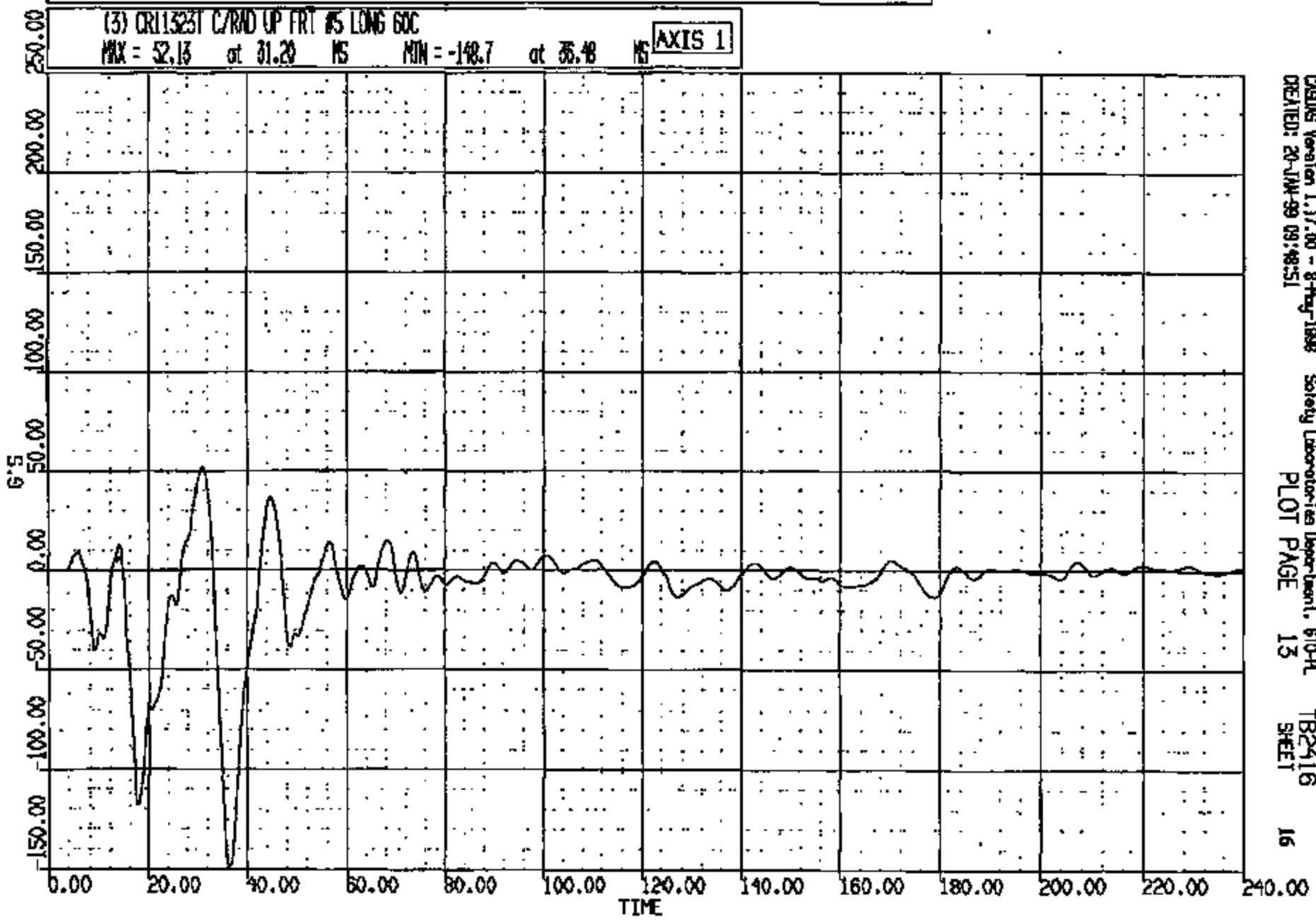


CRTS 0011323

CR R: 11223 TO: TB2416 DATE: 990120 09:55:22  
2000 D-188

(3) CR11323T C/RND UP FRT #5 LONG 60C

MAX = 52.13 at 31.20 MS MIN = -148.7 at 35.48 MS AXIS 1

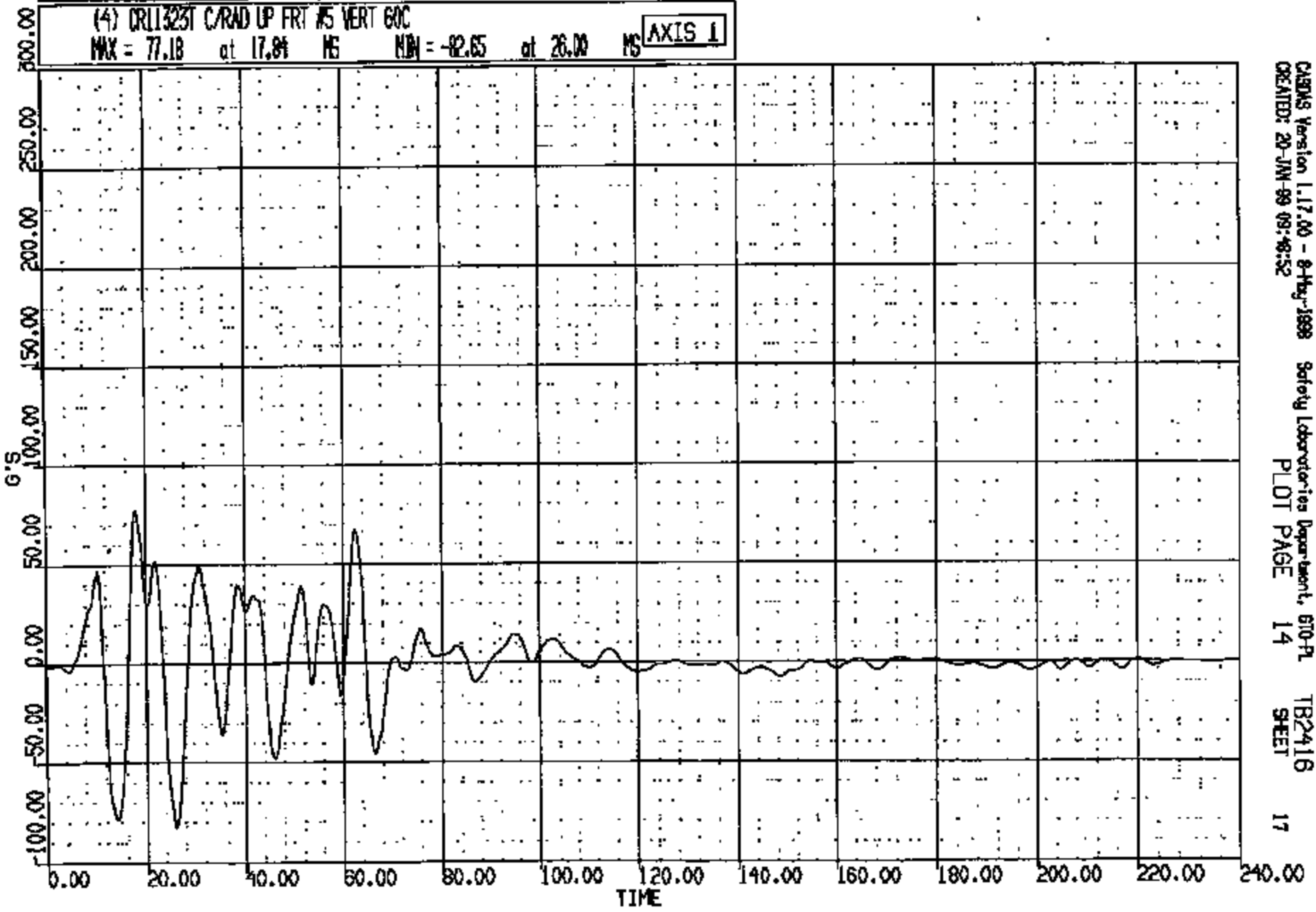


CASIS Version 1.17.00 - 8-Feb-1998 Safety Laboratories Department, 610-A  
CREATED: 20-JAN-99 09:48:51 PLOT PAGE 13 TB2416  
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CRTS 0011323

CR R: 11323 TO: TB2416 DATE: 890120 09:55:22  
2000 D-188

(4) CR11323T C/RAD UP FRT #5 VERT 60C  
MAX = 77.18 at 17.84 MS MIN = -82.65 at 26.00 MS **AXIS 1**

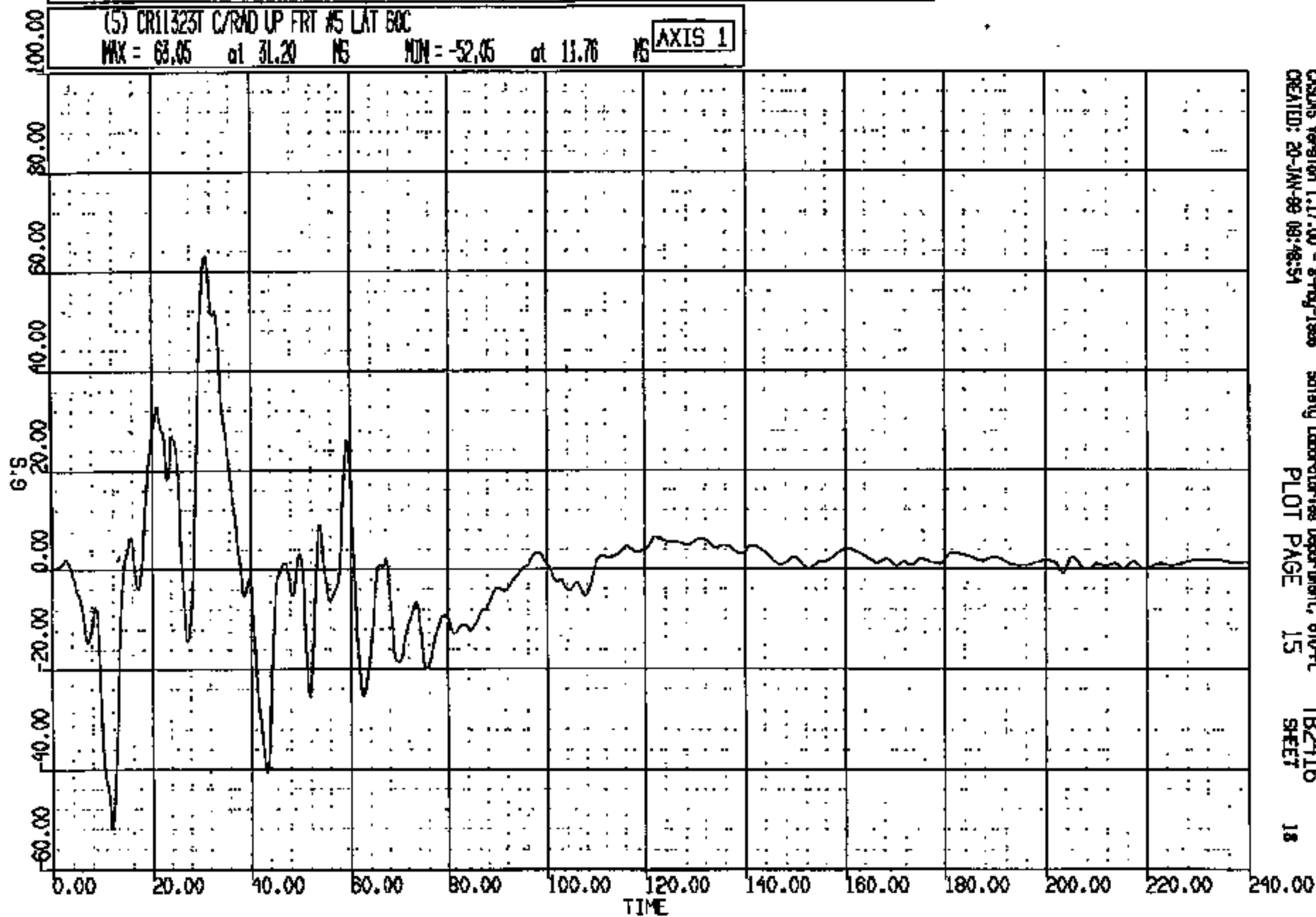


CR11323

CR R: 11323 TO: TB2416 DATE: 990120 09:55:22  
2000 D-188

(5) CR11323T C/RAD UP FRT #5 LAT 60C  
MAX = 63.05 at 31.20 NS MIN = -52.05 at 11.76 NS

AXIS 1

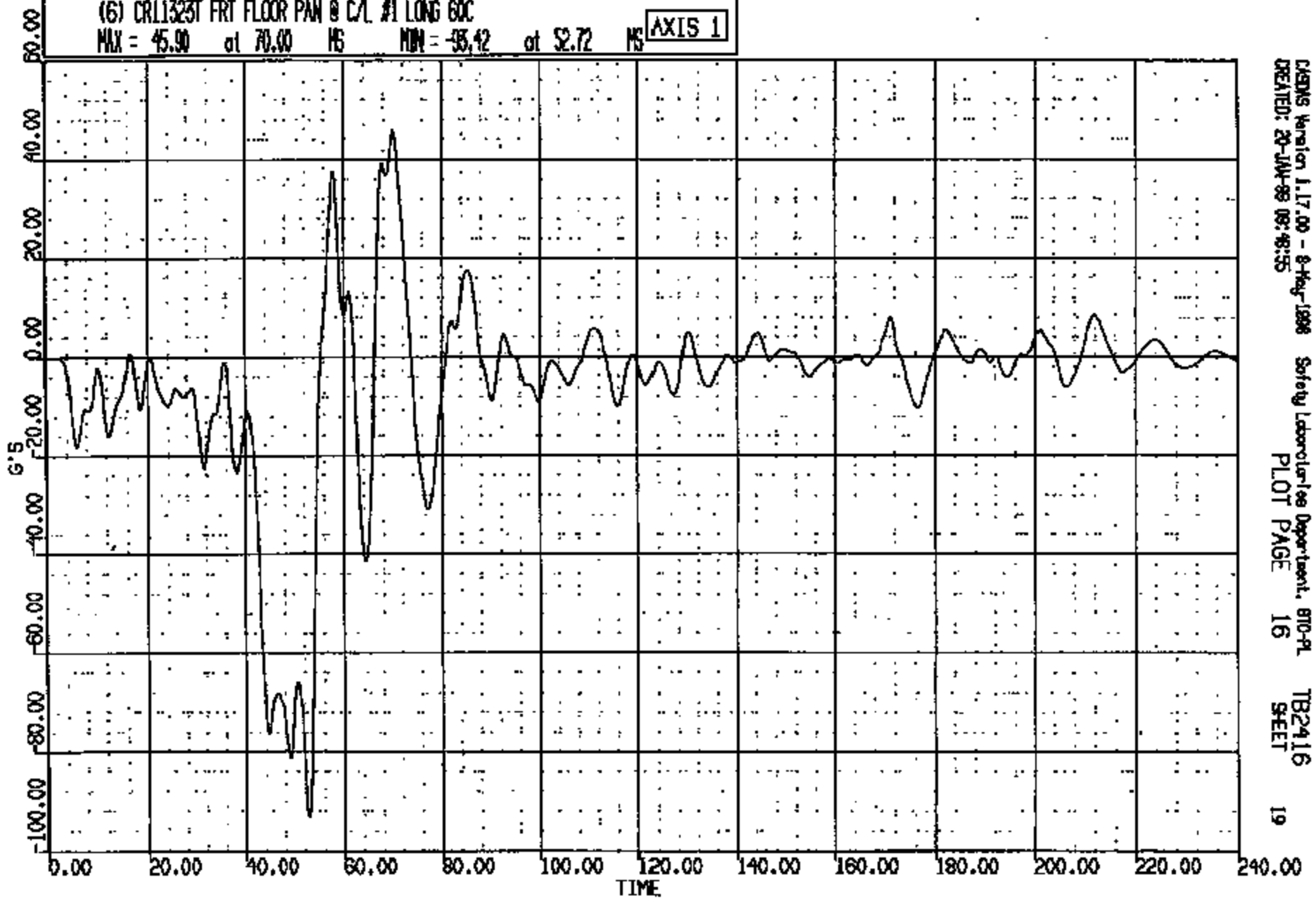


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CREATED: 20-JAN-99 09:48:54 PLOT PAGE 15 TB2416  
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CRTS 0011323

CR R: 11323 TO: TB2416 DATE: 990120 09:33:22  
2000 D-188

(6) CRL13231 FRT FLOOR PAN @ C/L #1 LONG 60C  
MAX = 45.90 at 70.00 MS MIN = -35.42 at 52.72 MS **AXIS 1**

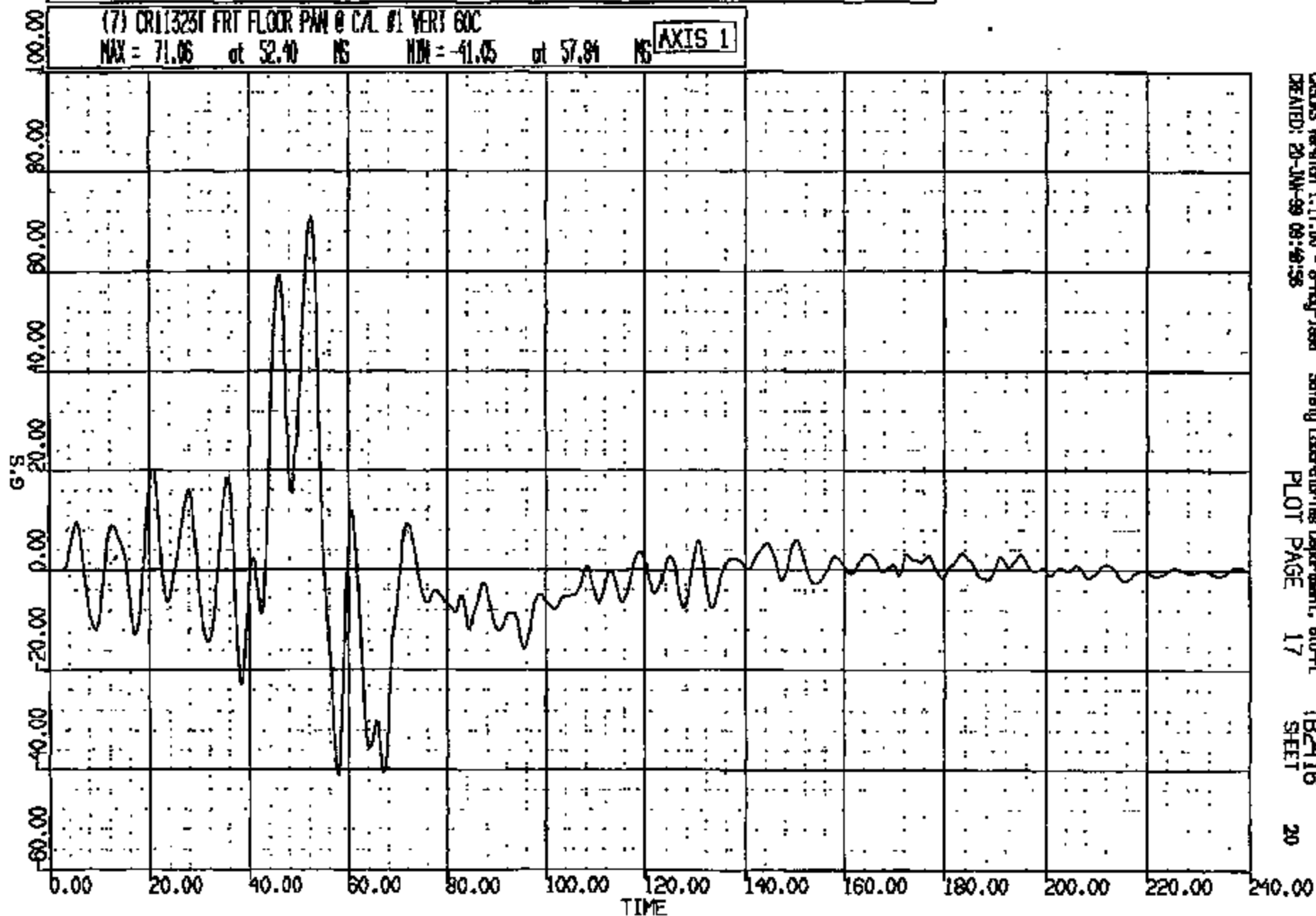


CRS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 810-PL  
CREATED: 20-JAN-99 09:48:55 PLOT PAGE 16 SHEET 19

CRTS 0011323

CR R: 11323 TD: TB2416 DATE: 090120 08:55:22  
2000 D-188

(7) CR11323T FRT FLOOR PAN @ CAL #1 VERT 60C  
MAX = 71.06 at 52.40 MS MIN = -41.05 at 57.84 MS **AXIS 1**

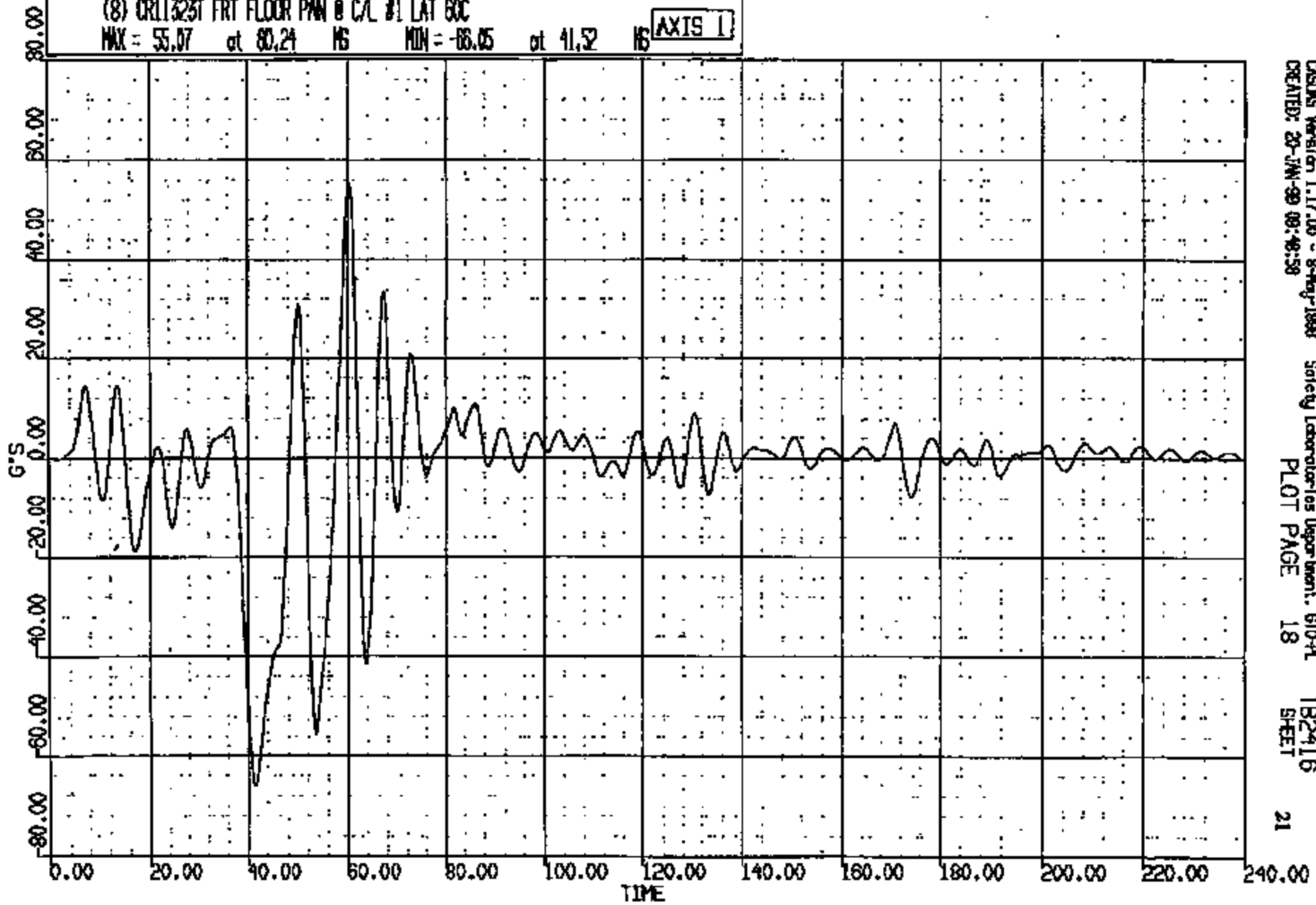


CASDS Version 1.17.00 - 8-Aug-1998 Safety Laboratories Department, 610-PL  
CREATED: 20-JUN-99 08:48:58 PLOT PAGE 17 TB2416 SHEET 20

CRTS 0011323

CR R: 11323 TO: TB2416 DATE: 990120 09:55:22  
2000 D-188

(8) CR113231 FRT FLOOR PWN @ C/L #1 LAT 60C  
MAX = 55.97 at 80.24 MS MIN = -66.05 at 41.32 MS **AXIS 1**



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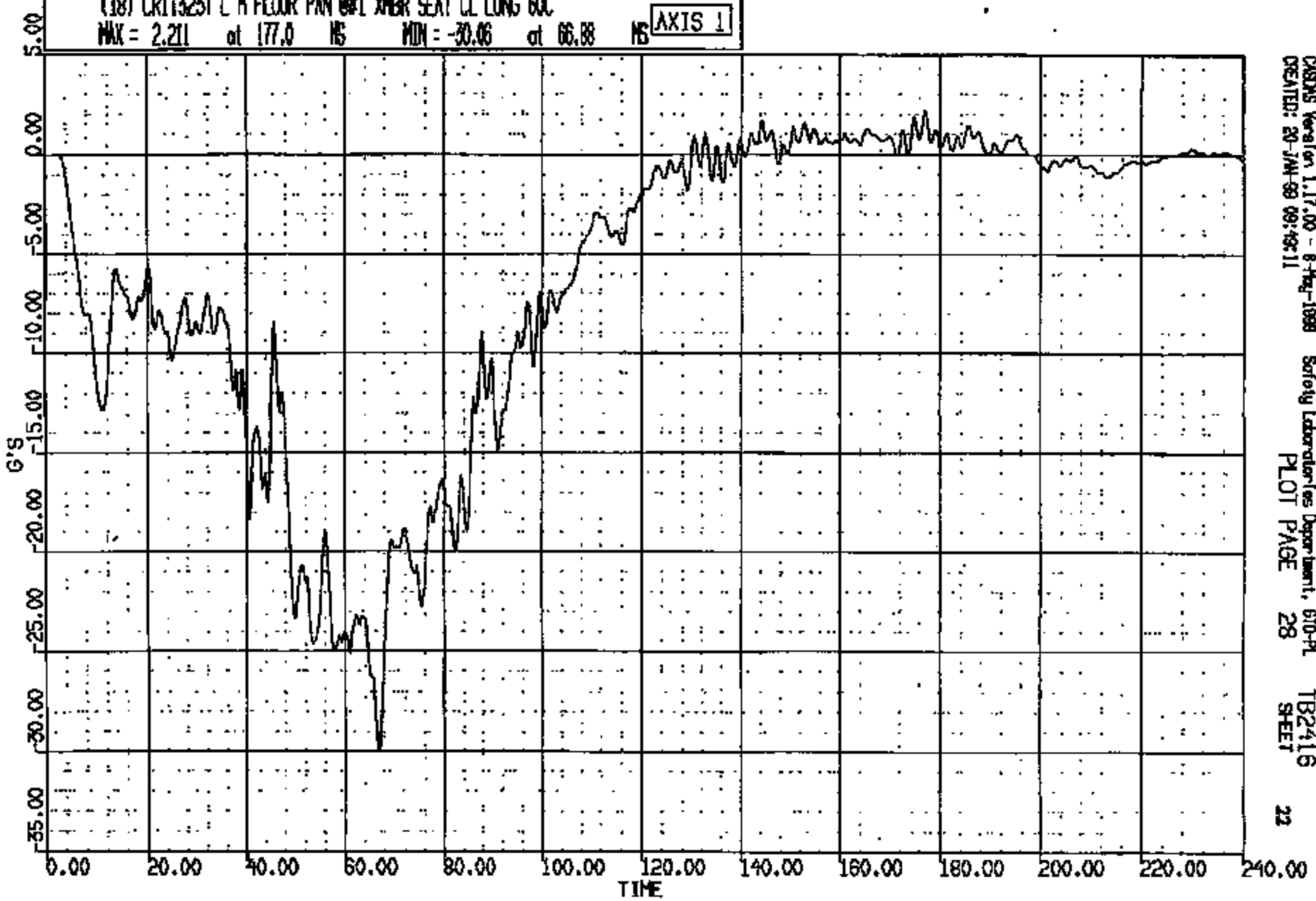
21

CR11323



CR R: 11828 TO: TB2416 DATE: 890120 09:33:22  
2000 D-186

(18) CR11323T L H FLOOR PAN @#1 XMR SEAT CL LONG 60C  
MAX = 2.211 at 177.0 MS MIN = -30.06 at 66.88 MS **AXIS 1**

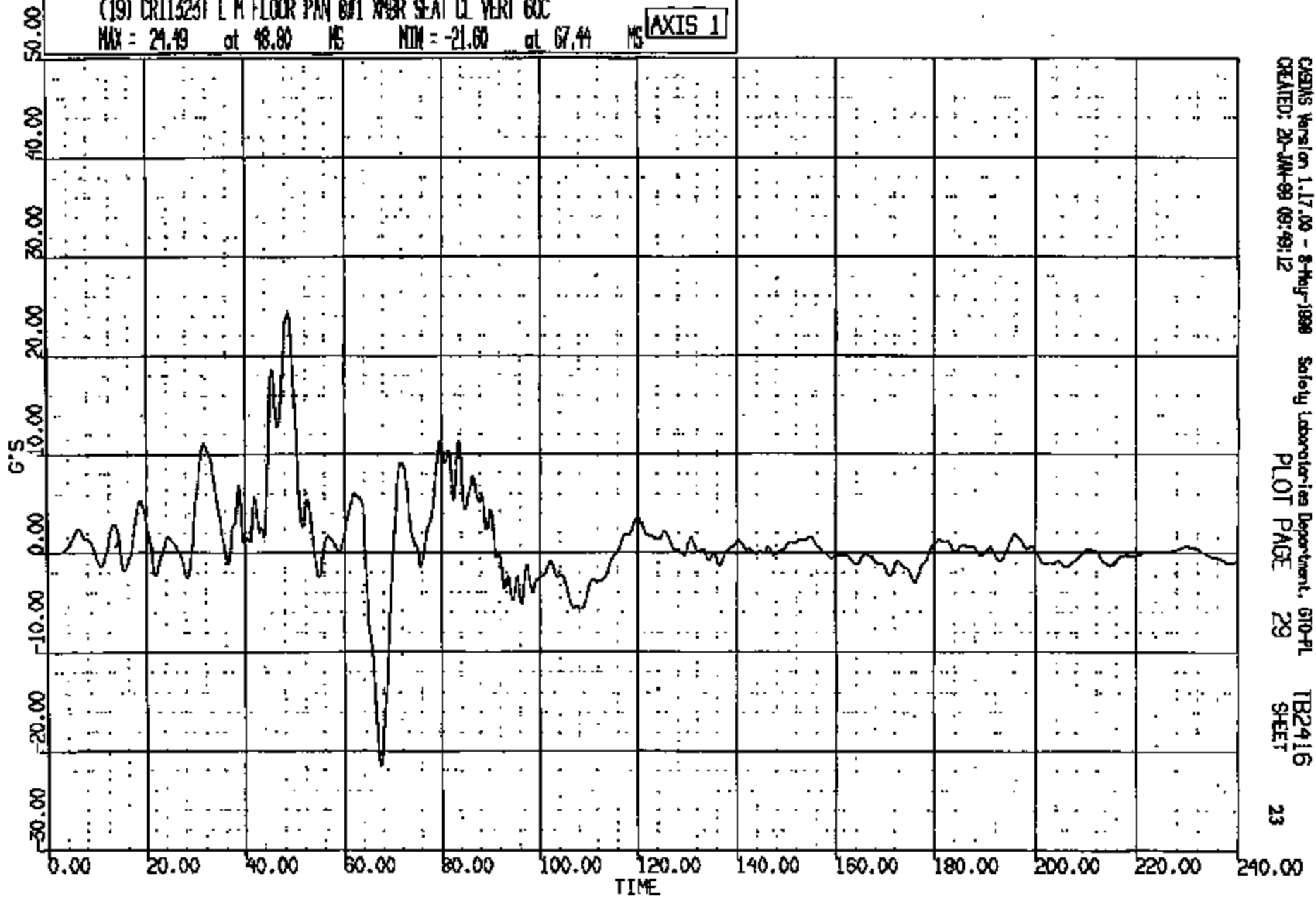


CRS05 Ver 1.17.00 - 8-Feb-1999 Safety Laboratories Department, 610-PL  
CREATED: 20-JAN-99 09:49:11 PLOT PAGE 28 TB2416  
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CRTS 0011323

CR R: 11323 TO: TB2416 DATE: 880120 09:53:22  
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(19) CR11323F L M FLOOR PAN @#1 WBR SEAT CL VERT GOC  
MAX = 21.49 at 48.80 MS MIN = -21.60 at 67.44 MS **AXIS 1**



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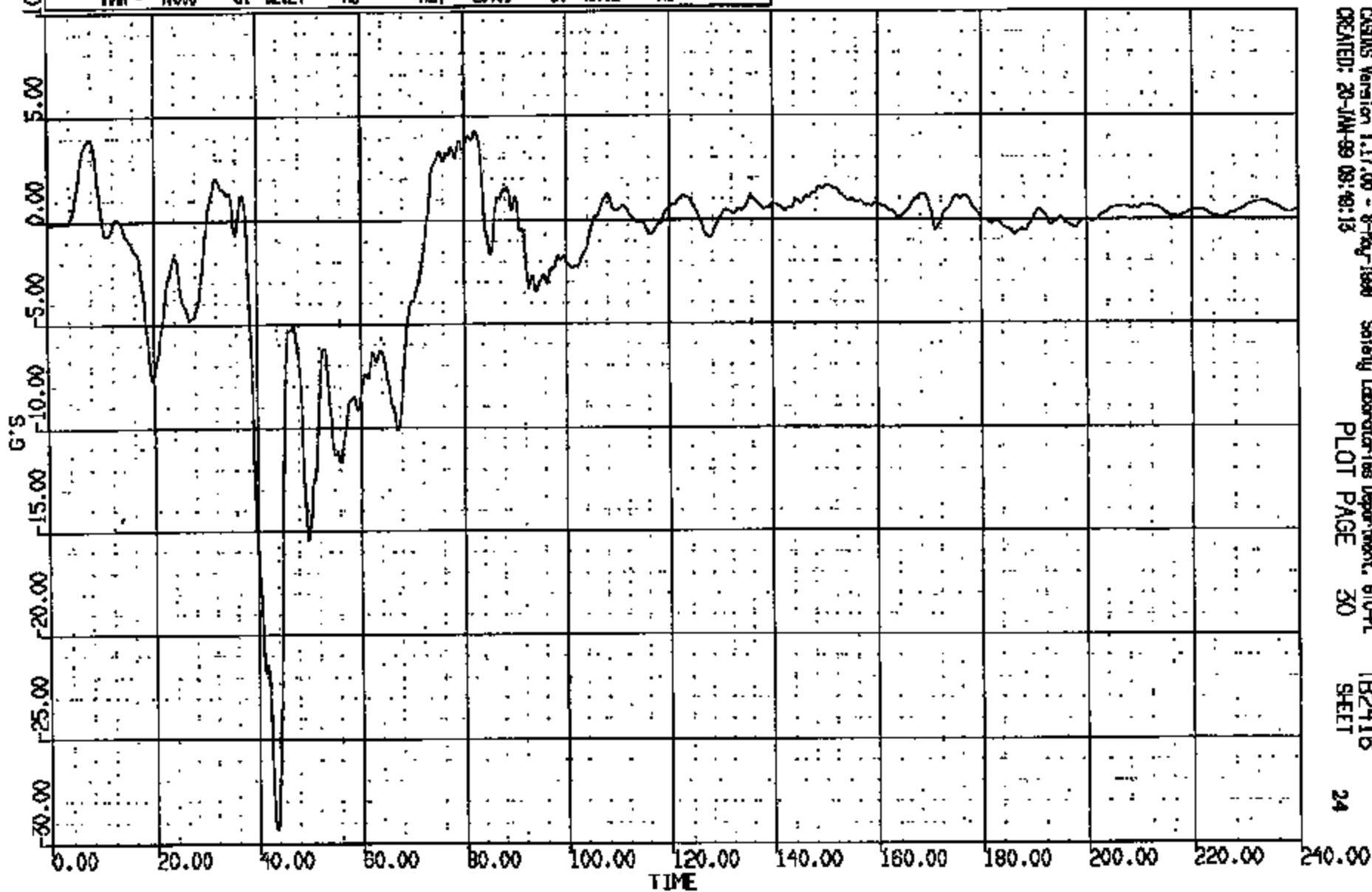
23

CRTS 0011323

CR R: 11325 TO: TB2416 DATE: 990120 09:55:22  
2000 D-198

(20) CR11325T L H FLOOR PAN @#1 XMR SEAT CL LAT 60C

MAX = 4.306 at 82.21 MS MIN = -29.31 at 43.52 MS AXIS 1

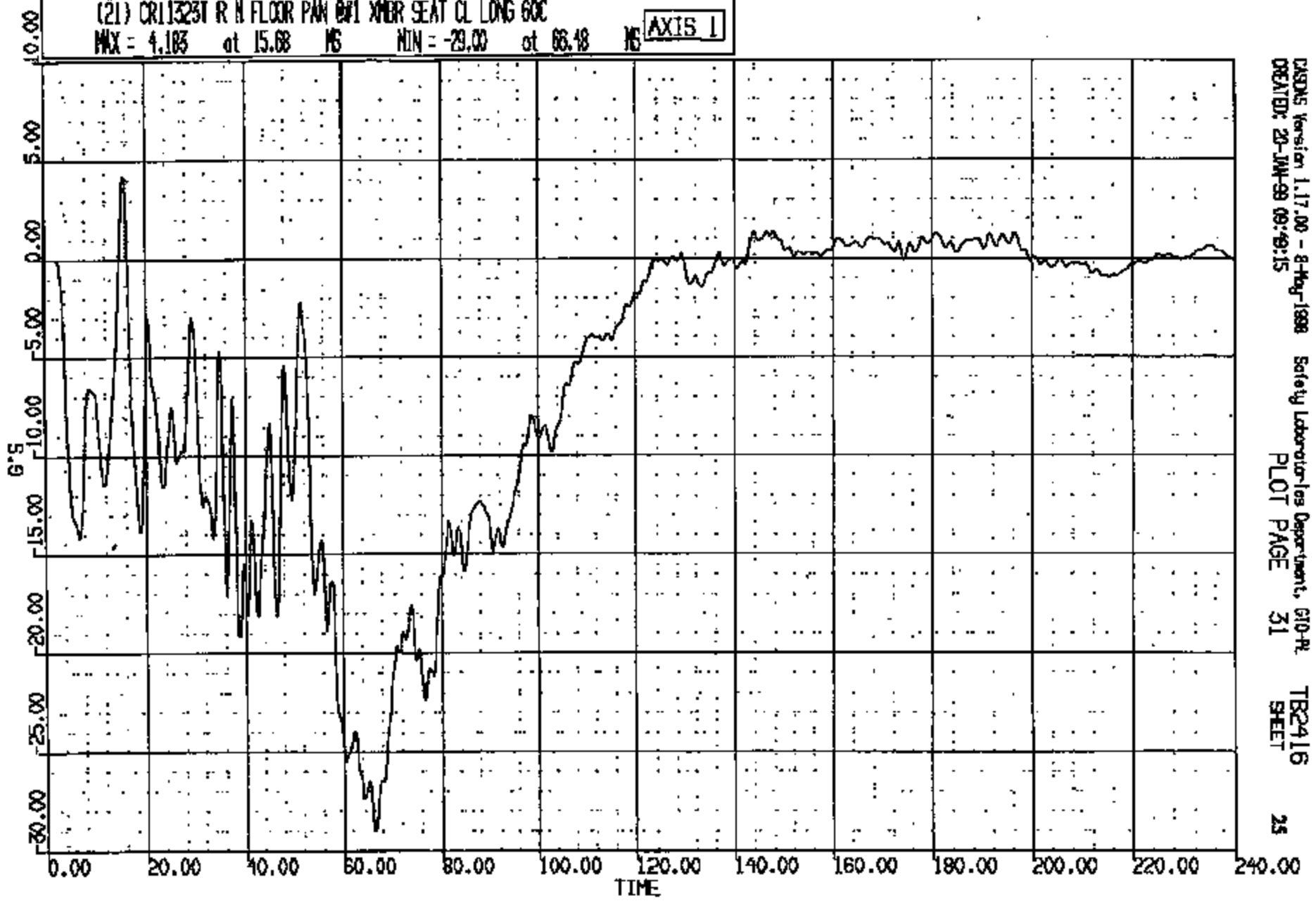


CASINS Version 1.17.00 - 8-May-1999 Safety Laboratories Department, 610-PL TB2416  
CREATED: 20-JAN-99 09:49:13 PLOT PAGE 30 SHEET 24

CRTS 0011323

CR R: 11323 TO: TB2416 DATE: 990120 09:53:22  
2000 D-188

(21) CR11323T R N FLOOR PAN @PI XMR SEAT CL LONG 60C  
MAX = 4.183 at 15.08 MS MIN = -29.00 at 66.18 MS **AXIS 1**

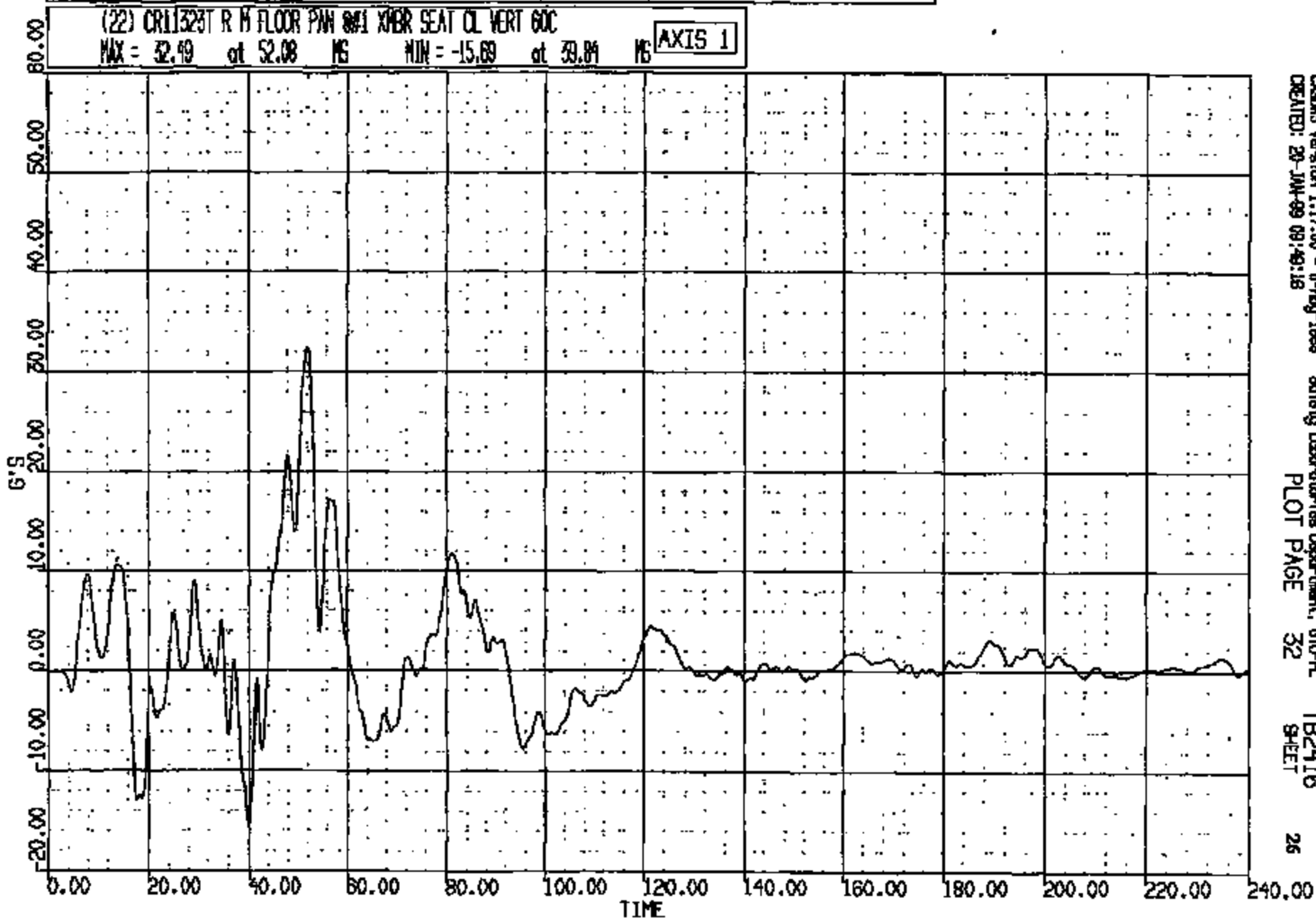


CRTS 0011323

CR R: 11523 TO: TB2416 DATE: 990120 09:33:22  
2000 D-188

(22) CR11323T R H FLOOR P/W #1 XBR SEAT CL VERT 60C

MAX = 52.99 at 52.08 MS MIN = -15.69 at 39.84 MS AXIS 1



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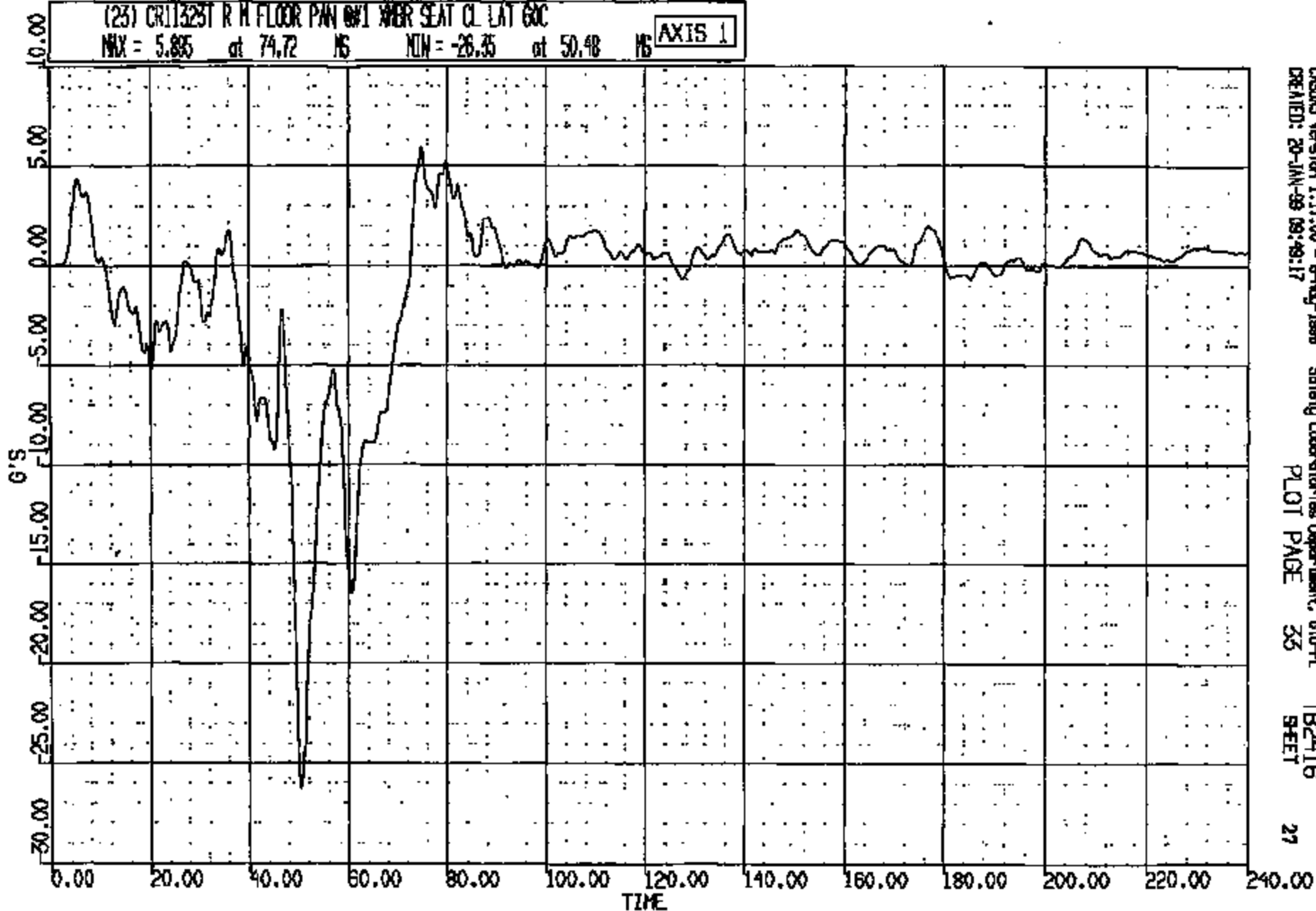
CRIS 0011323

CR R: 11323 TO: TB2416 DATE: 890120 09:58:22  
2000 D-198

(23) CRTS0011323 R H FLOOR PAN @#1 WHER SEAT CL LAT 60C

MAX = 5.835 at 74.72 MS MIN = -26.35 at 50.48 MS

AXIS 1



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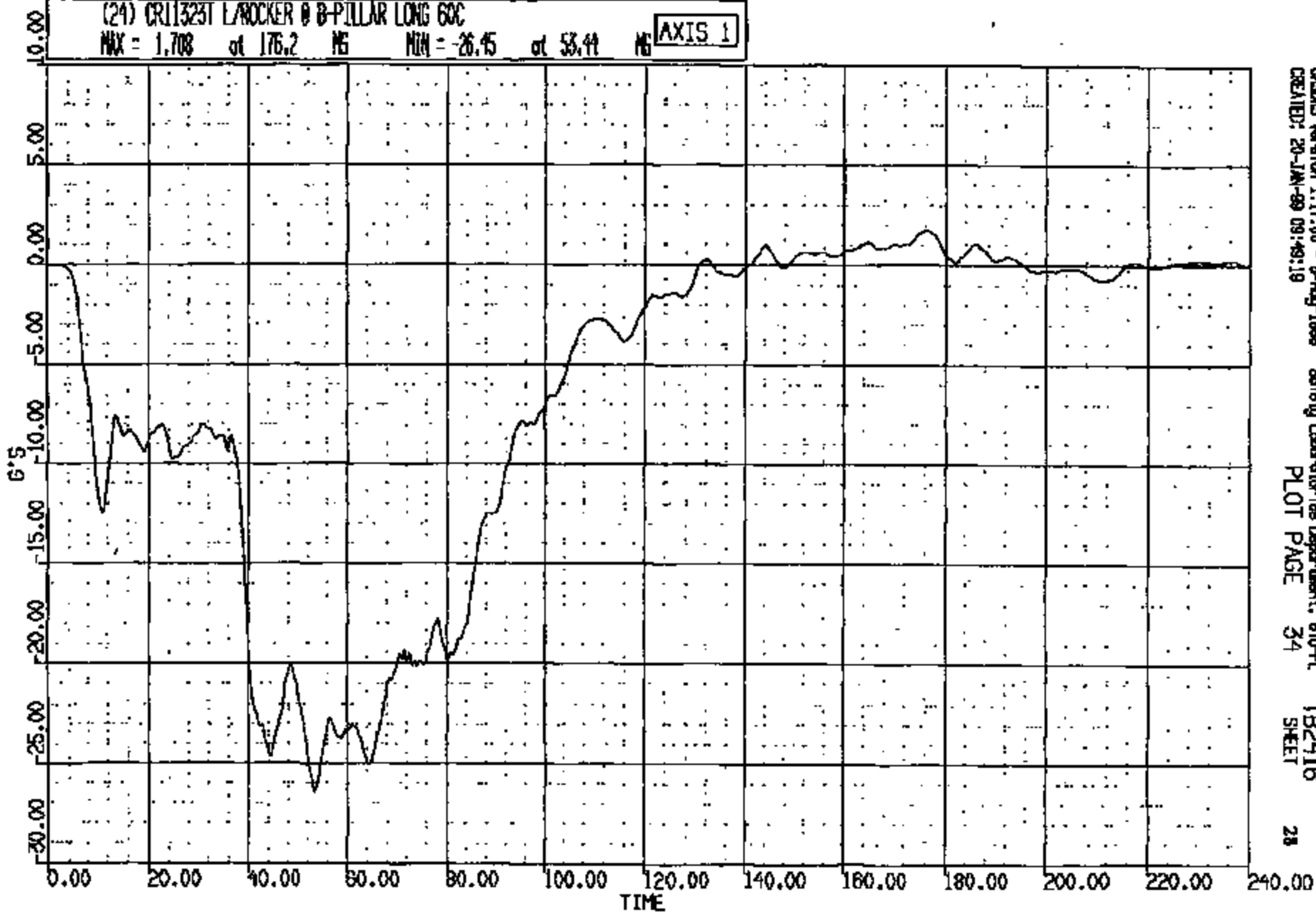
27

CRTS 0011323

CR R: 11525 TO: TB2418 DATE: 990120 09:55:22  
2000 D-188

(24) CR11323T L/ROCKER @ B-PILLAR LONG 60C

MAX = 1.708 at 176.2 MS MIN = -26.45 at 53.44 MS AXIS 1



CASIMS Version 1.17.00 - 9-May-1998  
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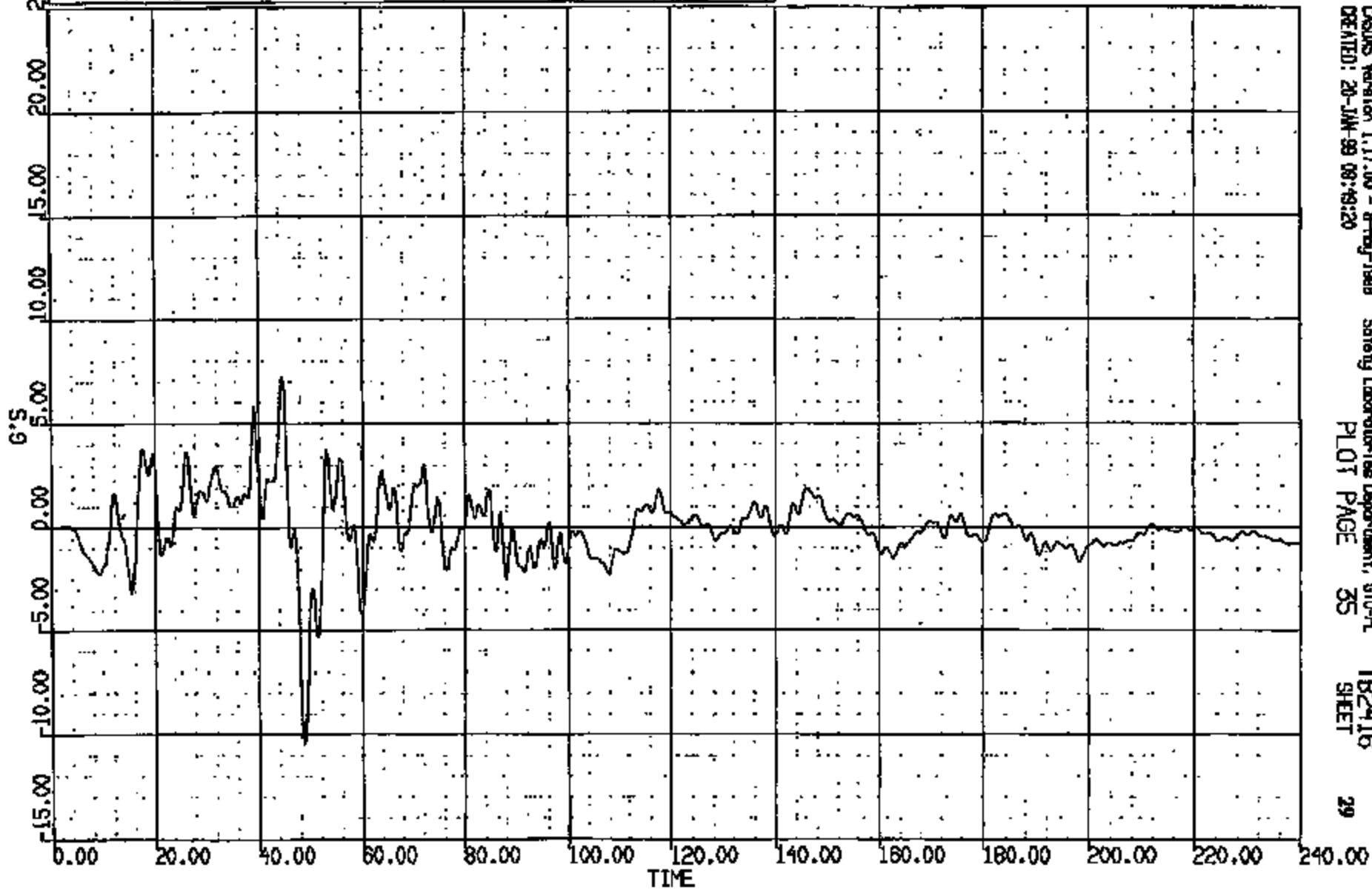
28

CRTS 0011323

CR R: 11323 TO: TB2416 DATE: 890120 09:53:22  
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(25) CR113231 L/ROCKER @ B-PILLAR VERT 60C

MAX = 7.200 at 44.56 MS MIN = -10.47 at 48.64 MS **AXIS 1**



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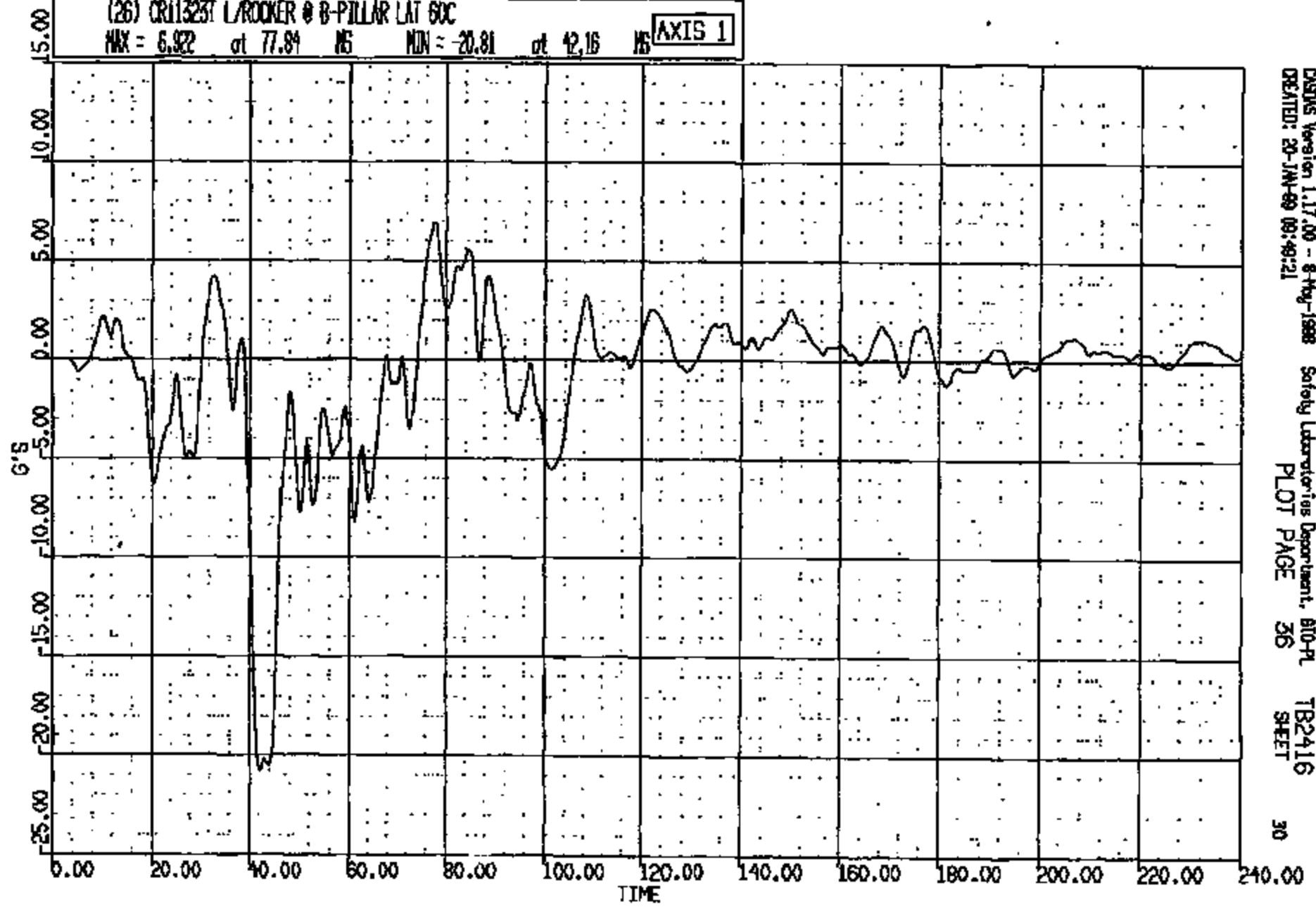
29

CRTS 0011323



CR: 11323 TO: TB2416 DATE: 890120 08:58:22  
8000 D-188

(26) CR113237 L/ROCKER @ B-PILLAR LAT 60C  
MAX = 6.922 at 77.84 NS MIN = -20.81 at 42.16 NS **AXIS 1**



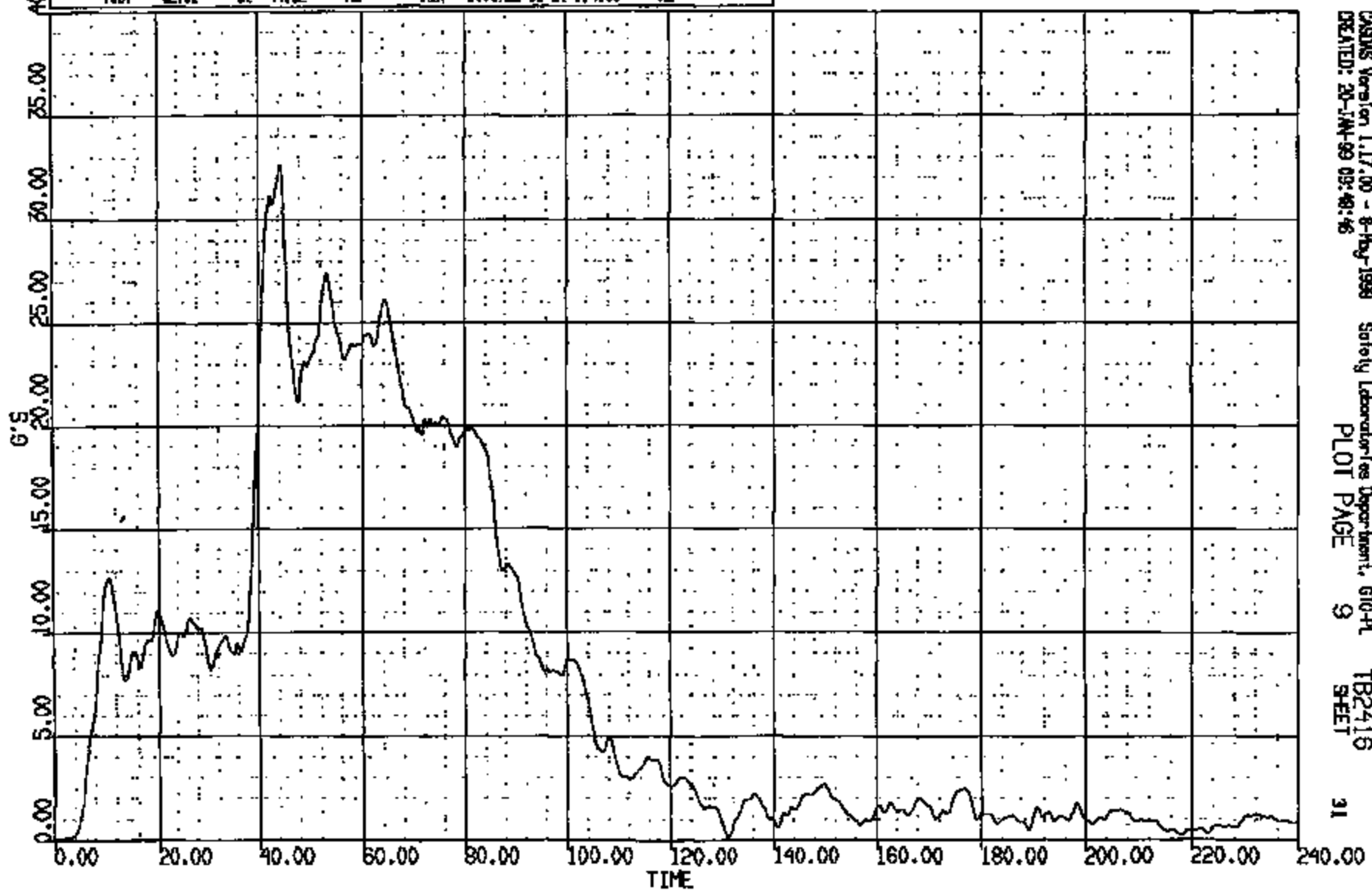
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CREATED: 20-JAN-89 09:49:21  
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CRTS 0011323

CR R: 11323 TO: TB2416 DATE: 990120 09:35:22  
2000 D-186

(10001) CR11323T L/ROCKER @ B-PILLAR RES 60C

MAX = 32.61 at 41.32 MS MIN = 0.707E-01 at 0.4000 MS **AXIS 1**



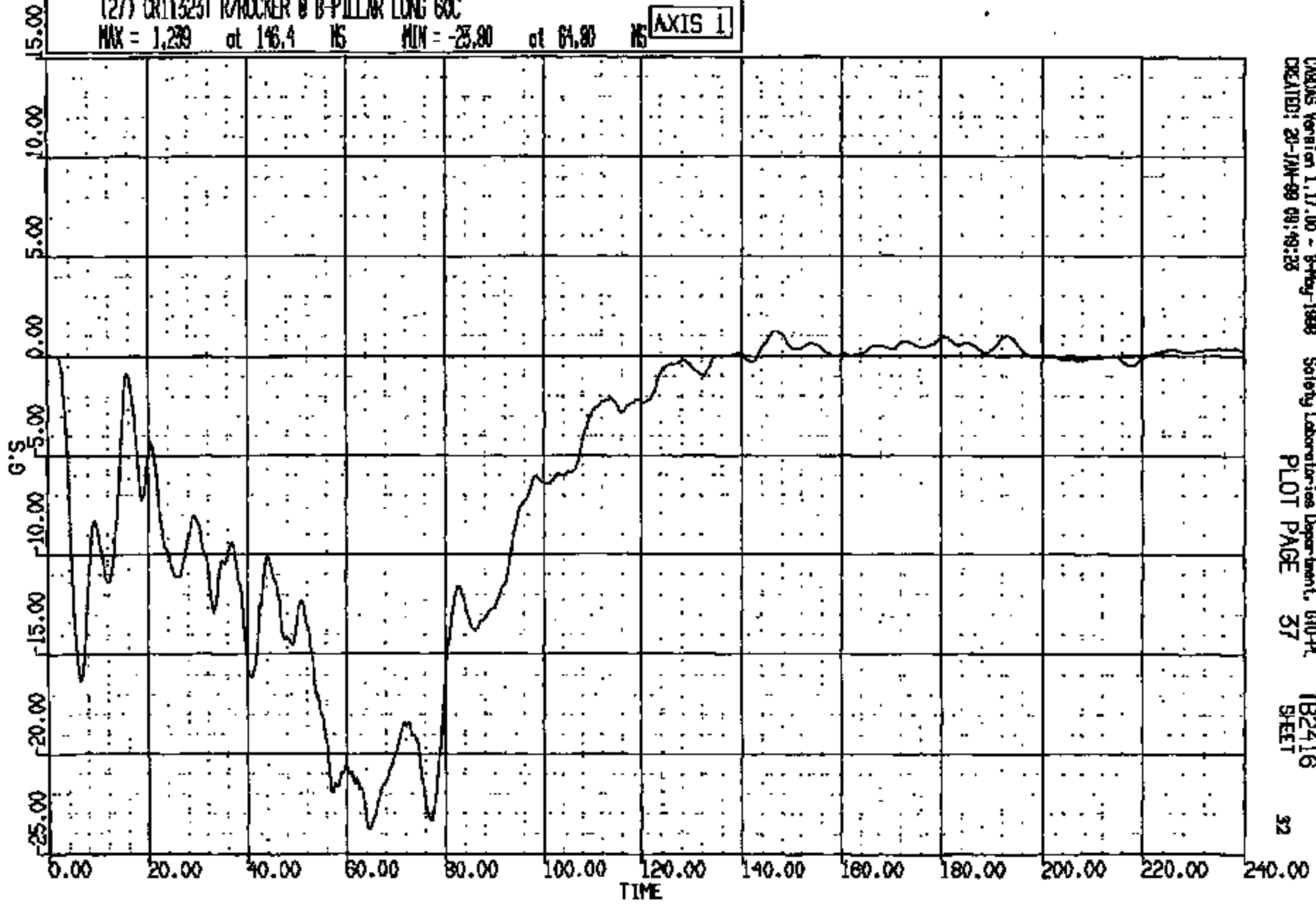
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CREATED: 20-JAN-99 09:40:46 PLOT PAGE 9 TB2416  
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CRTS 0011323

CR R: 11823 TD: TB2416 DATE: 990120 09:33:22  
2000 D-198

(27) CR113231 R/ROCKER @ B-PILLAR LONG 60C  
MAX = 1.239 at 16.4 NS MIN = -23.80 at 64.80 NS

AXIS 1

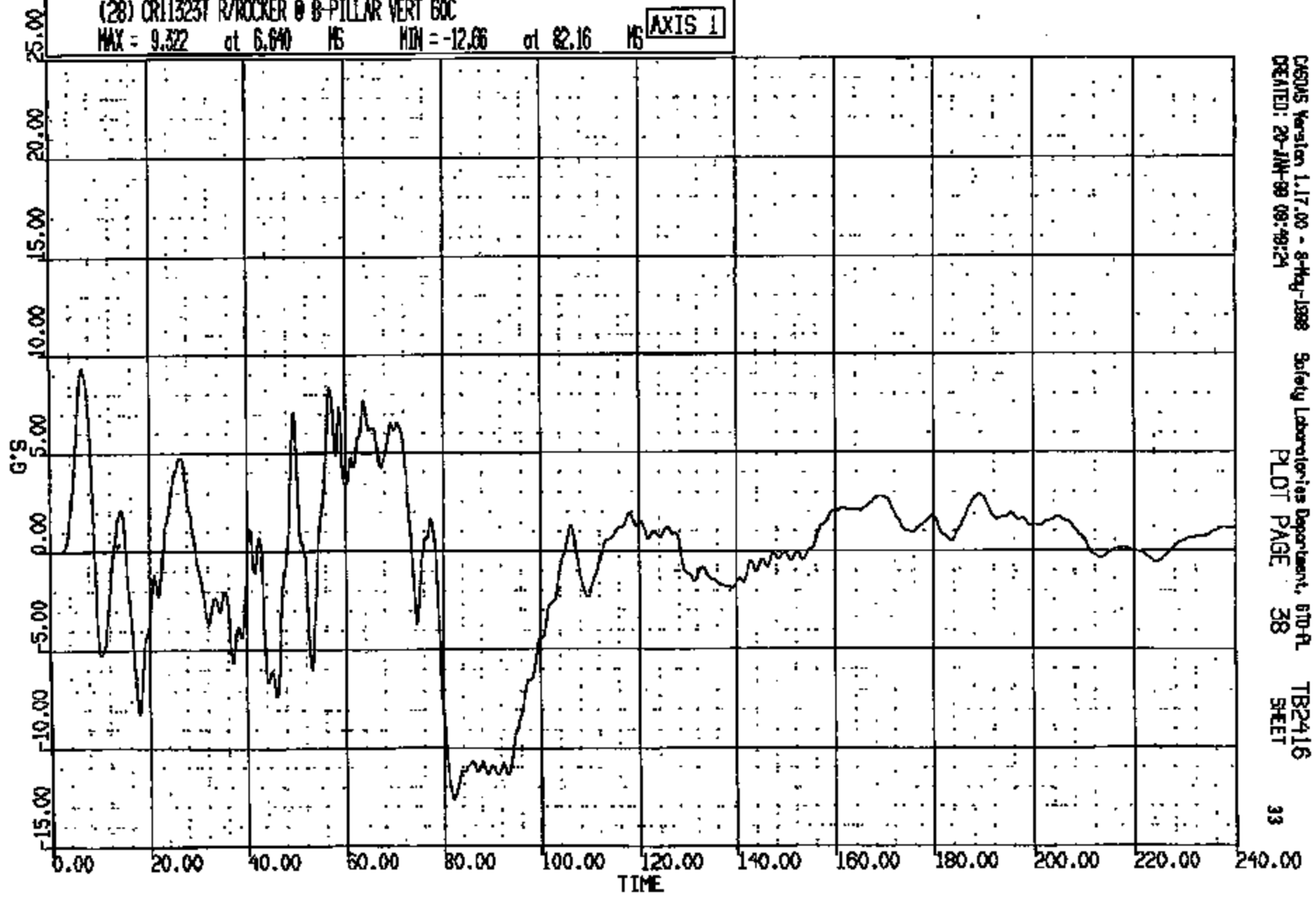


CARDAS Version 1.17.00 - 8-May-1998 Safety Laboratories Department, 610-PL TB2416  
CREATED: 20-JAN-99 09:49:25 PLOT PAGE 37 SHEET 32

CRIS 0011323

CR R: 11525 TO: TB2416 DATE: 990120 08:53:22  
2000 D-186

(28) CR113231 R/ROCKER @ B-PILLAR VERT 60C  
MAX = 9.322 at 6.640 MS MIN = -12.06 at 82.16 MS **AXIS 1**



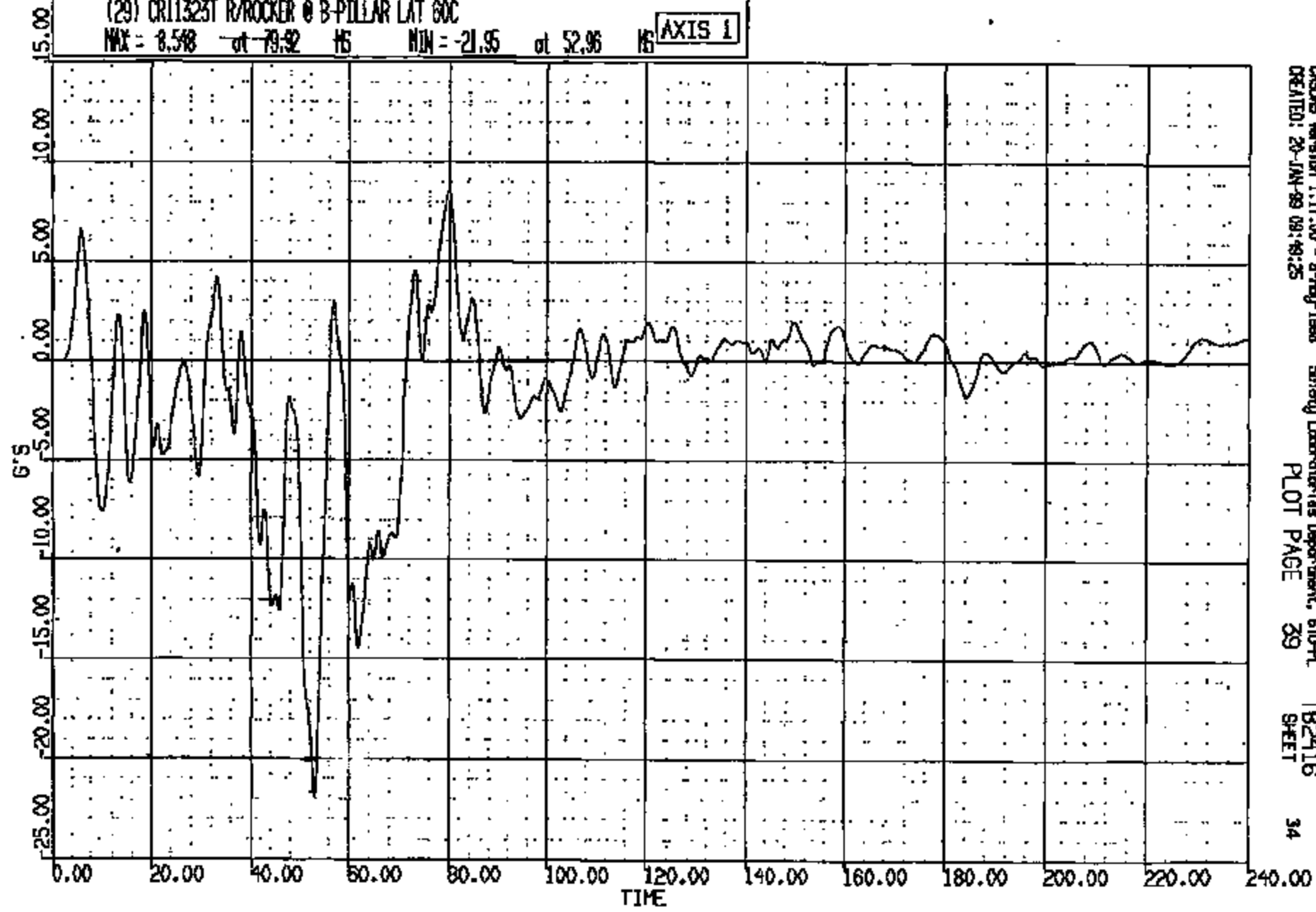
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CR113231

CR R: 11323 TO: T82416 DATE: 890120 09:55:22  
2000 D-188

(29) CR11323T R/ROCKER @ B-PILLAR LAT 60C  
MAX = 8.548 at 79.92 HS MIN = -21.95 at 52.95 HS

AXIS 1

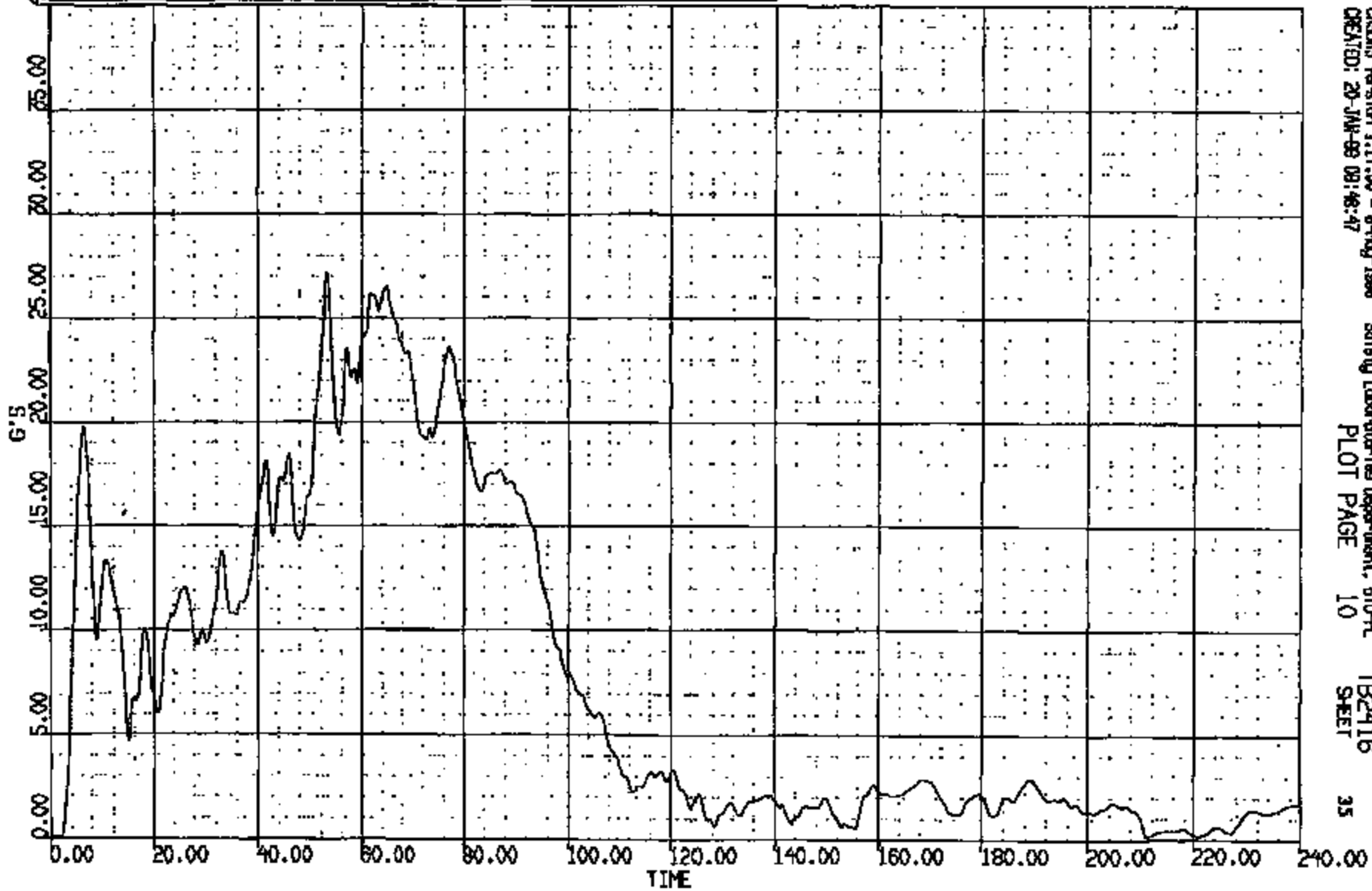


CRS005 Version 1.17.00 - 8-Feb-1988 Seisby Laboratories Department, SIO-PL  
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CRIS 0011323

CR R: 11825 TO: TB2416 DATE: 990120 09:33:22  
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(10002) CR11323T R/ROCKER @ B-PILLAR RES 60C  
MAX = 27.19 at 58.04 MS MIN = 0.4817E-02 at 2.000 MS AXIS 1



CASIMS Version 1.17.00 - 8-May-1999 Safety Laboratories Department, 610-PL  
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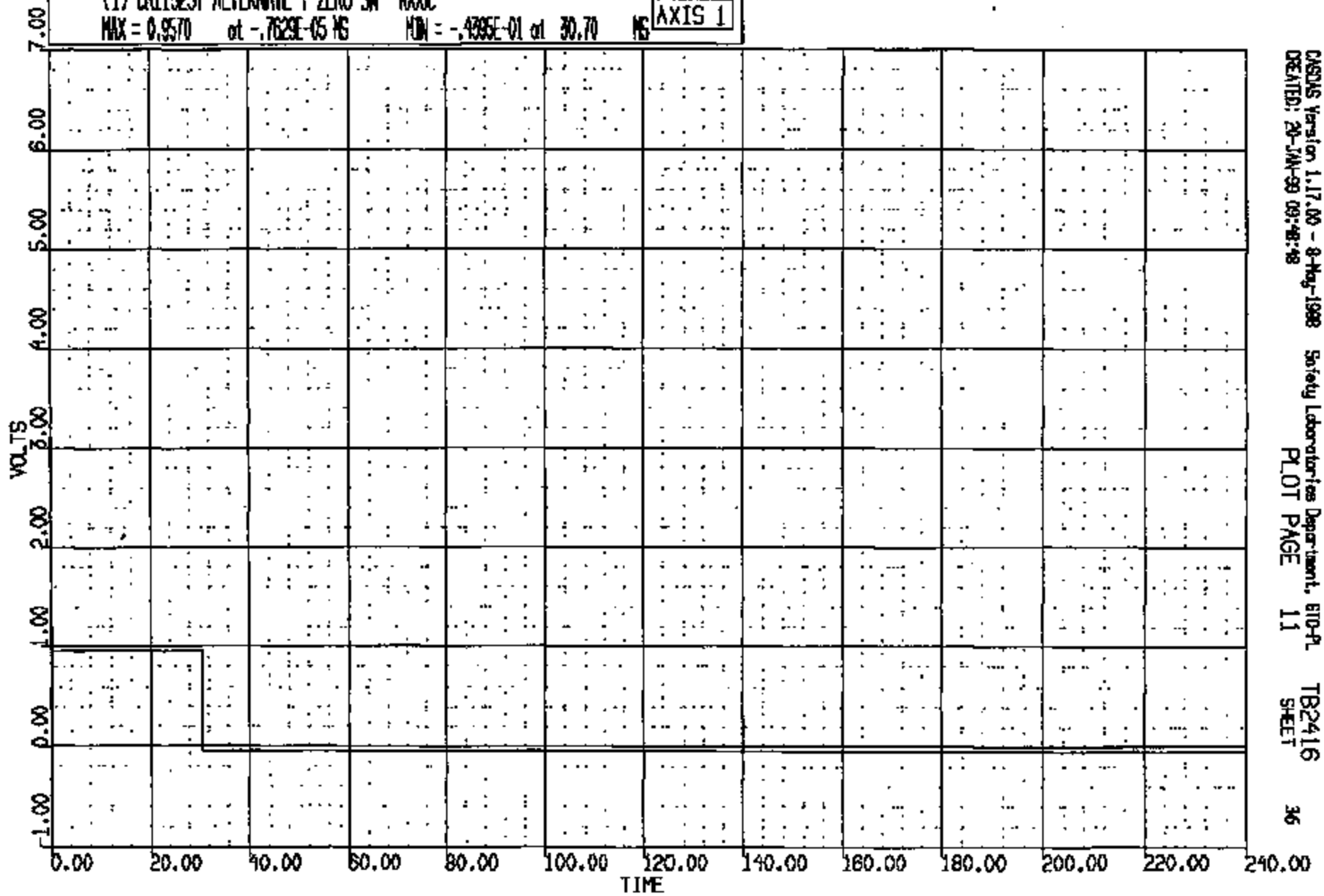
CRTS 0011323

CR R: 11525 TO: TB2416 DATE: 990120 09:55:22  
3000 D-188

(1) CR11323T ALTERNATE T-ZERO SW 4000C

MAX = 0.9570 at -.7629E-05 MS MIN = -.4395E-01 at 30.70 MS

AXIS 1



CASDAS Version 1.17.00 - 8-May-1998  
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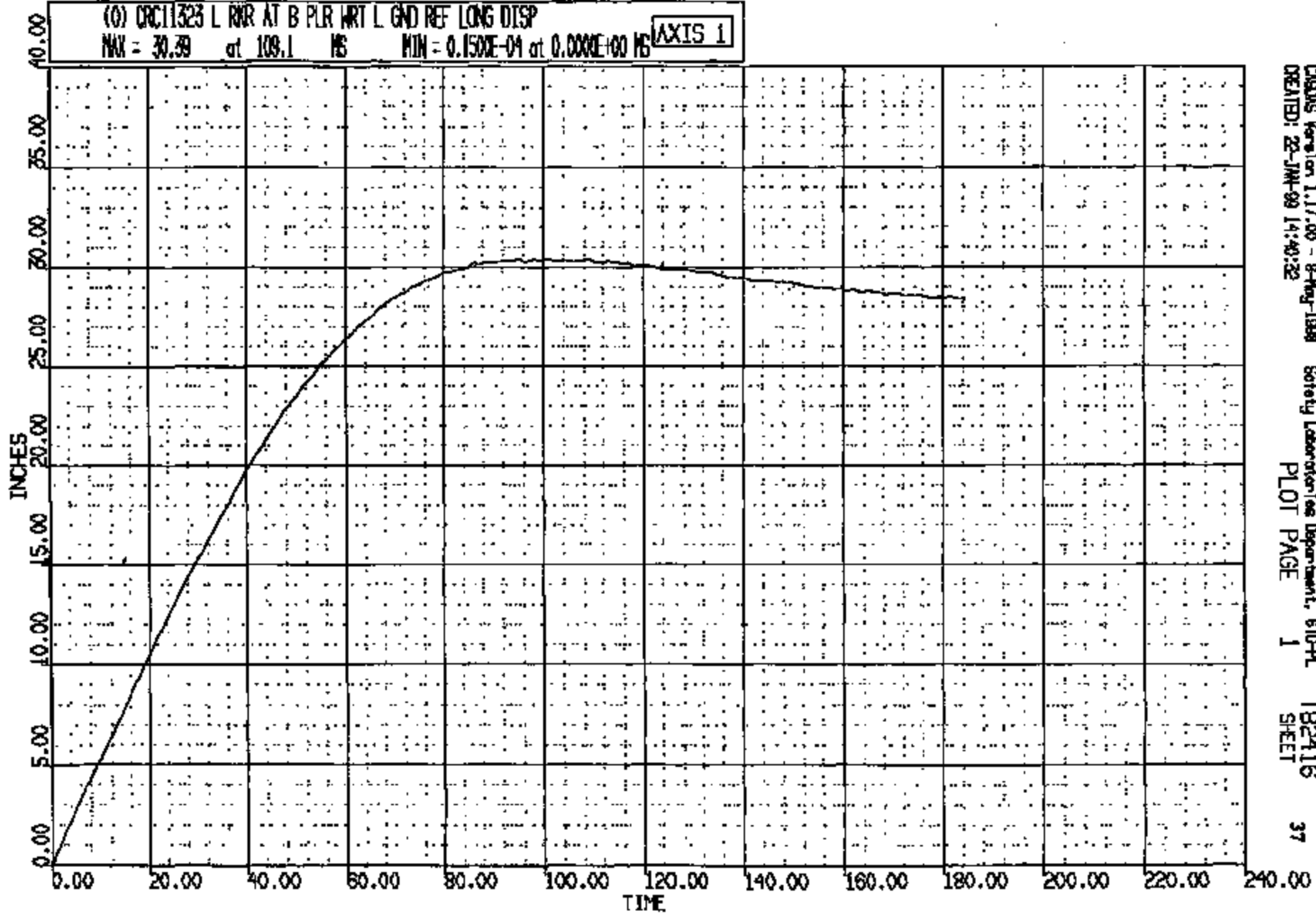
36

CRIS 0011323

CR R: 11323 TO: TB2416 DATE: 890120 09:33:22  
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(0) CR11323 L RWR AT B PLR WRT L GND REF LONG DTSP  
MAX = 30.39 at 109.1 MS MIN = 0.1500E-04 at 0.0000E+00 MS

AXIS 1



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CRIS 0011323

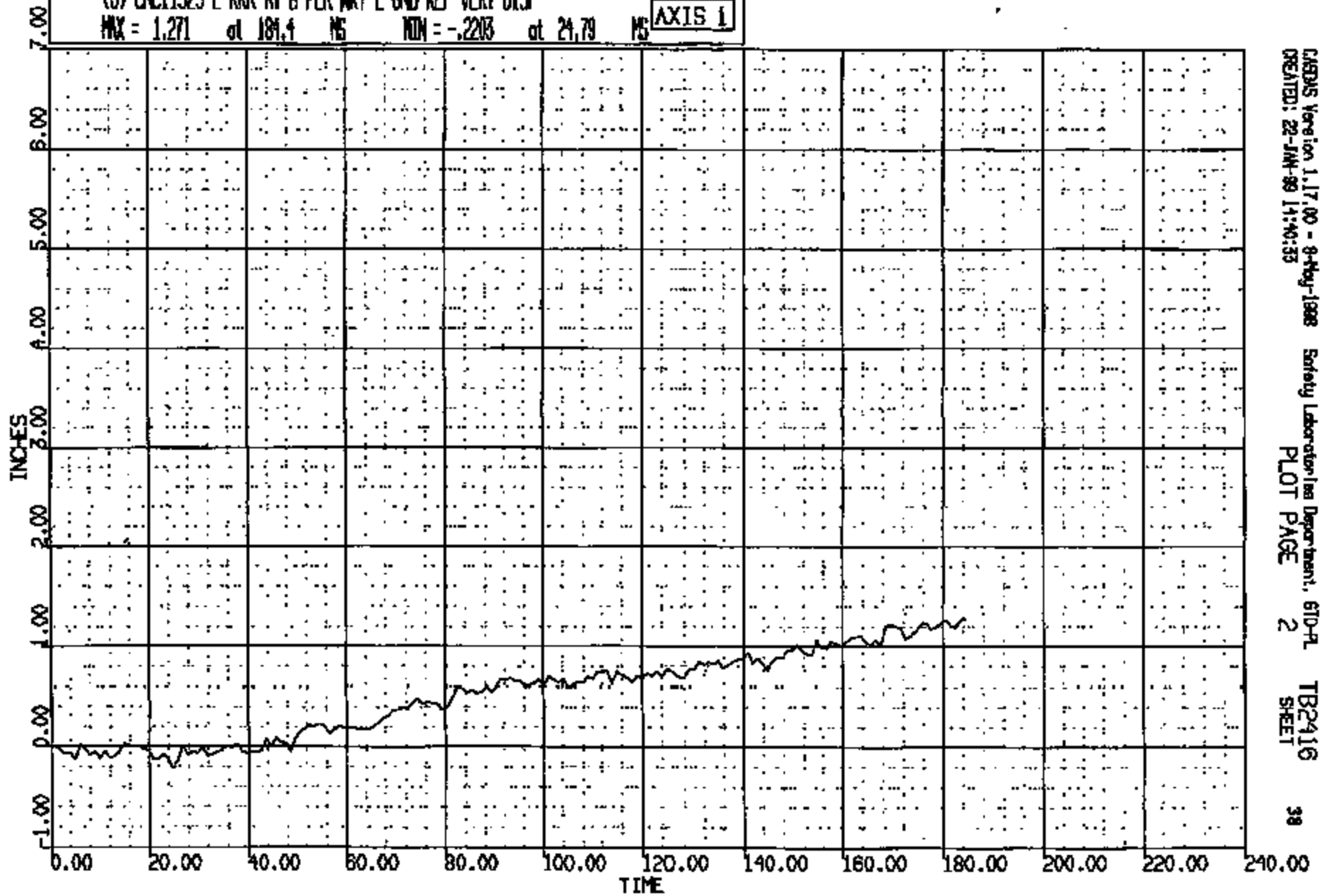


CR R: 11323 TO: TB2416 DATE: 990120 09:33:22  
R000 0-1488

(0) CRCL1323 L ROR AT B PLR WRT L END REF VERT DISP

MAX = 1.271 at 181.4 MS MIN = -.2203 at 21.79 MS

AXIS 1



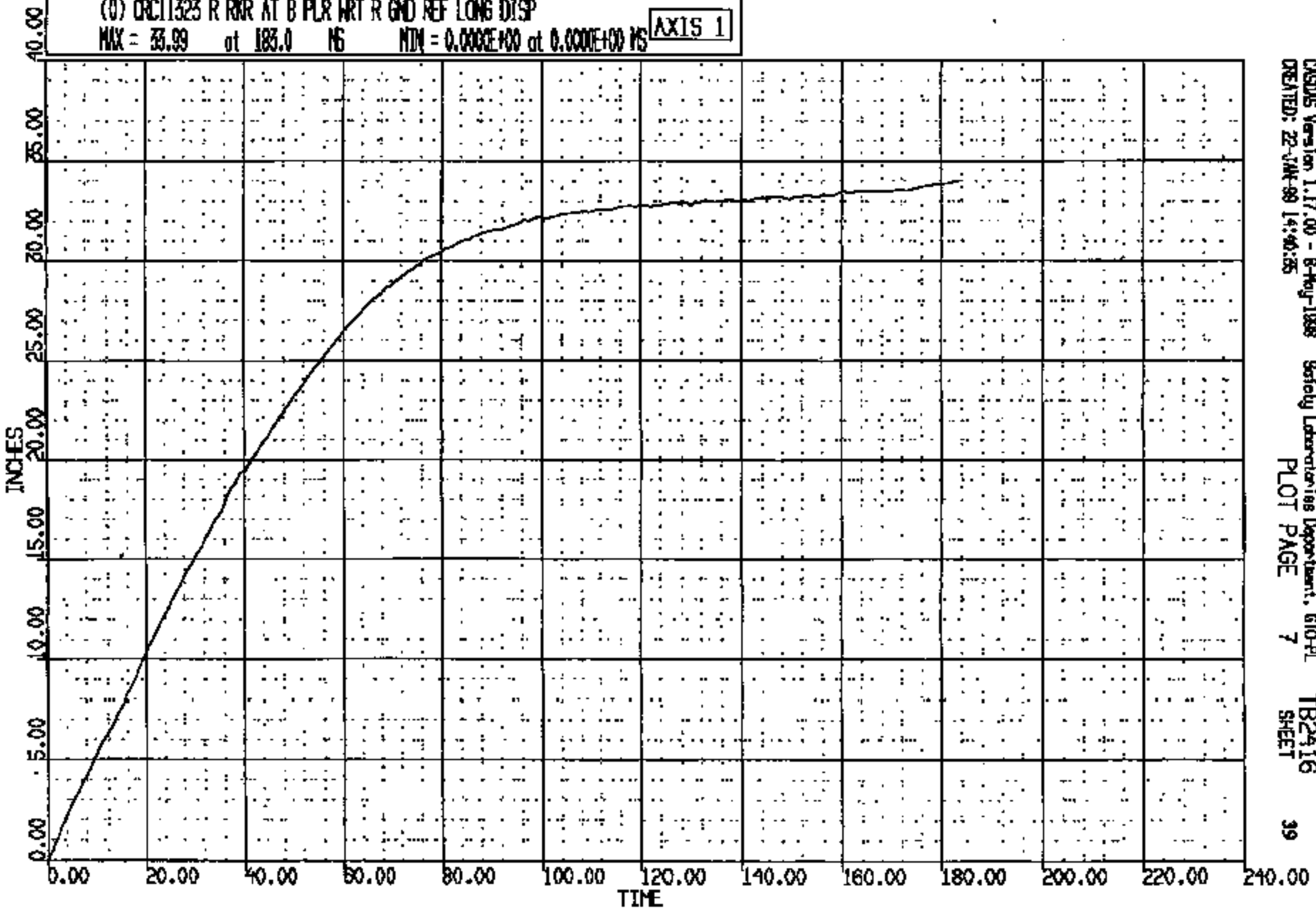
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CREATED: 22-JAN-99 14:40:33 PLOT PAGE 2 SHEET

CRIS 0011323

CR R: 11323 TO: TB2416 DATE: 990120 09:33:22  
2000 D-186

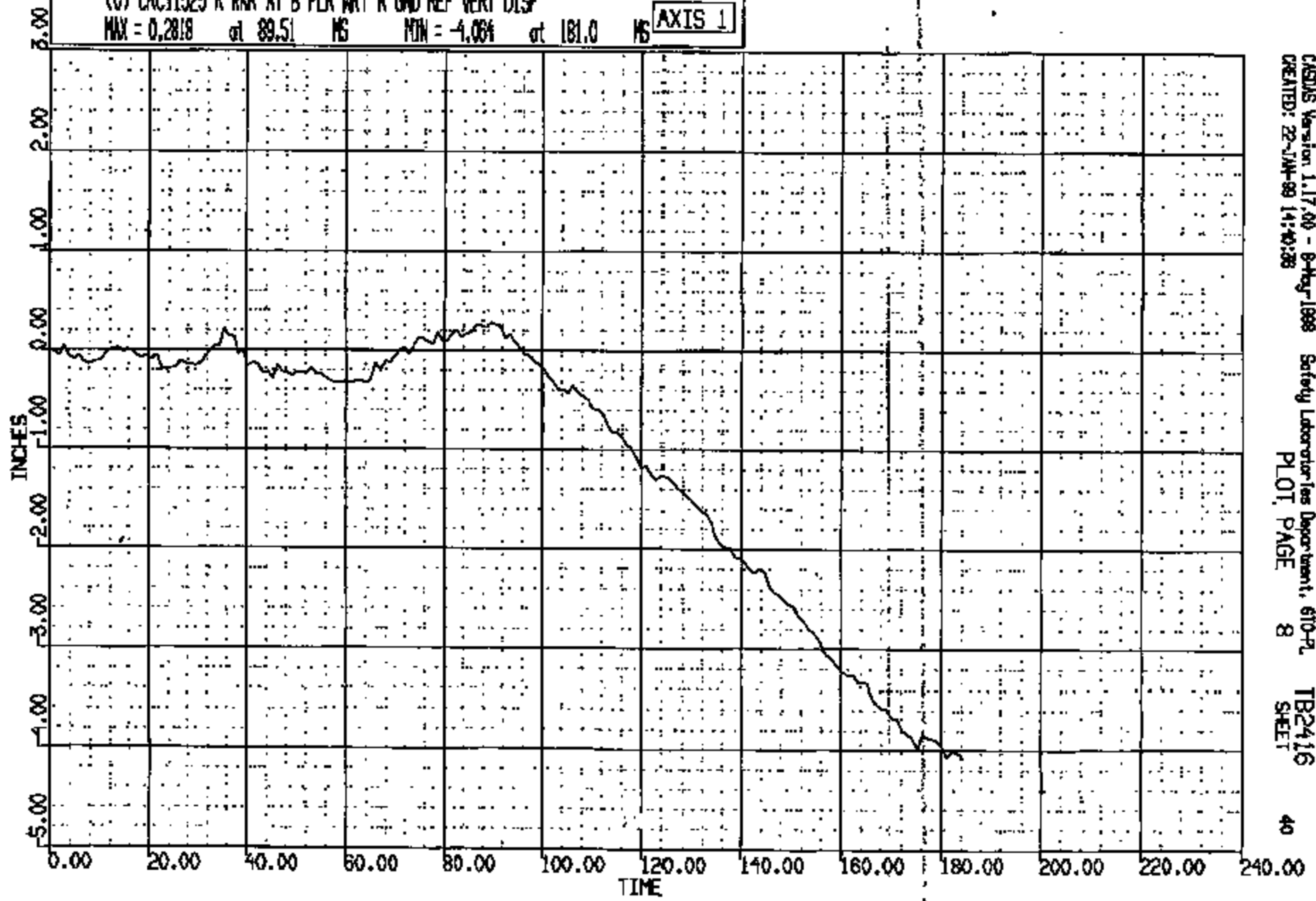
(0) CR011323 R RWR AT B PLR WRT R GND REF LONG DISP  
MAX = 33.99 at 183.0 MS MIN = 0.000E+00 at 0.000E+00 MS

AXIS 1



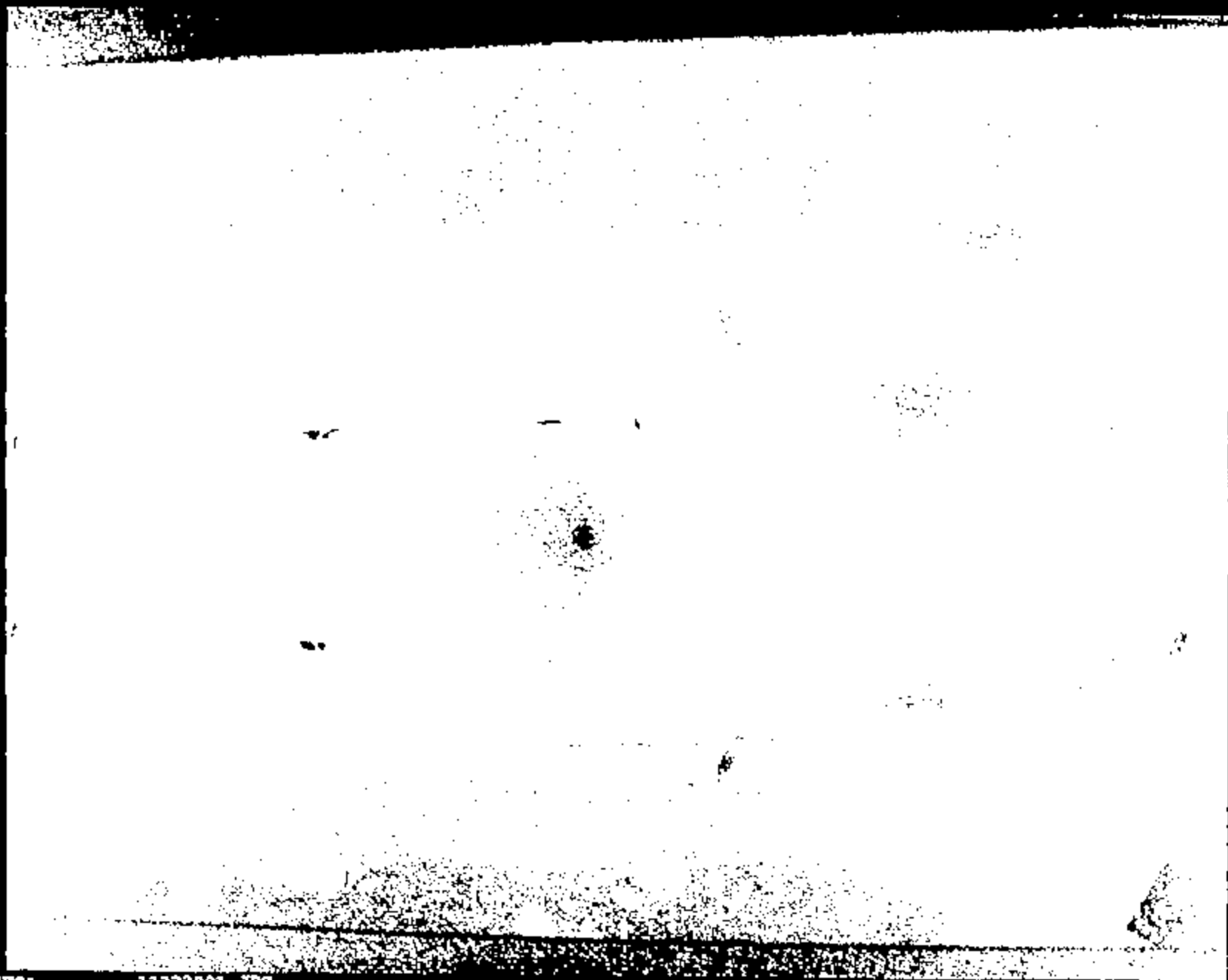
CR R: 11323 TO: TB2416 DATE: 990120 09:55:22  
2000 0-189

(0) CRC11323 R RKR AT B PLR WRT R GND REF VERT DISP  
MAX = 0.2818 at 89.51 MS MIN = -4.064 at 181.0 MS **AXIS 1**



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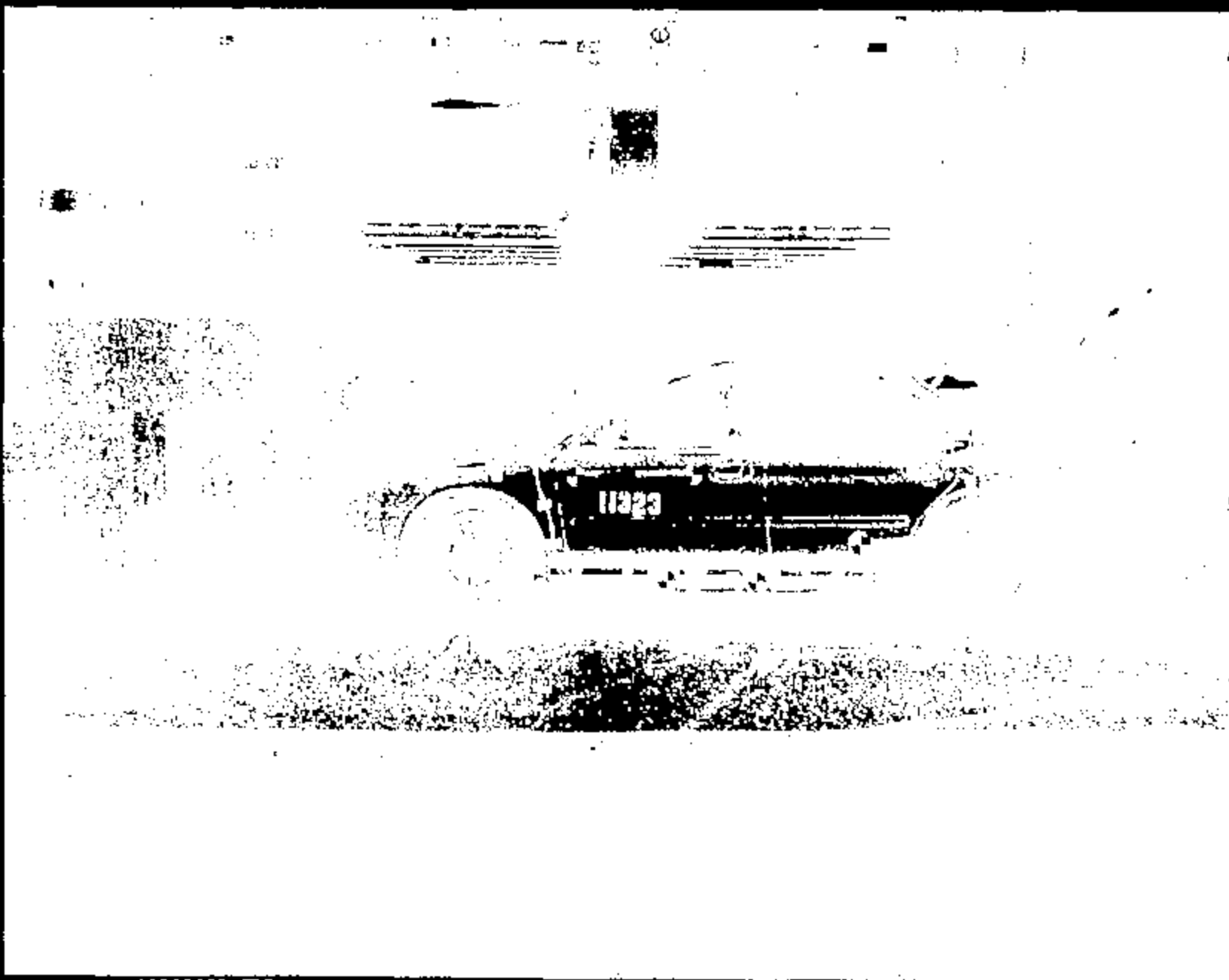
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CRTS 0011323



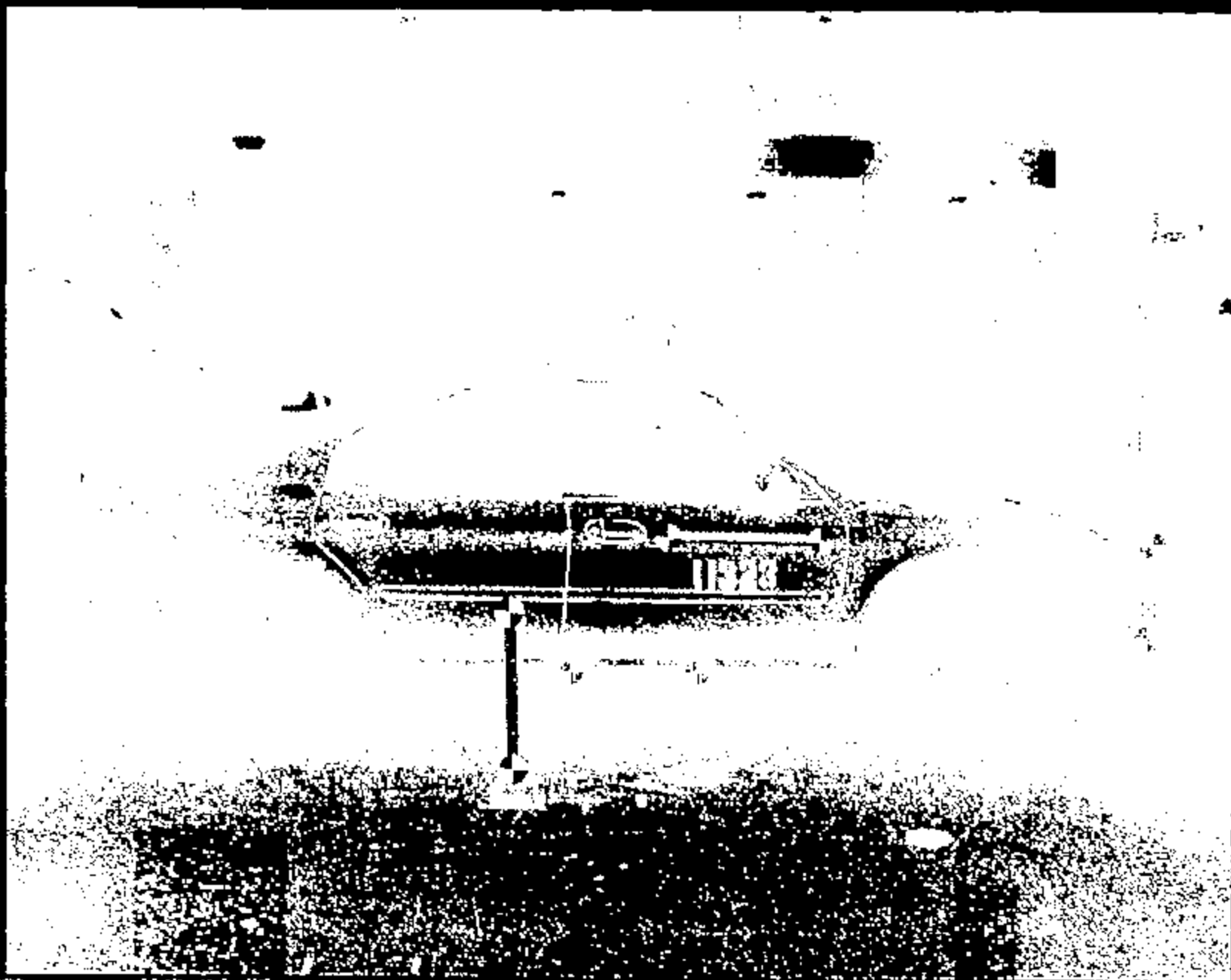
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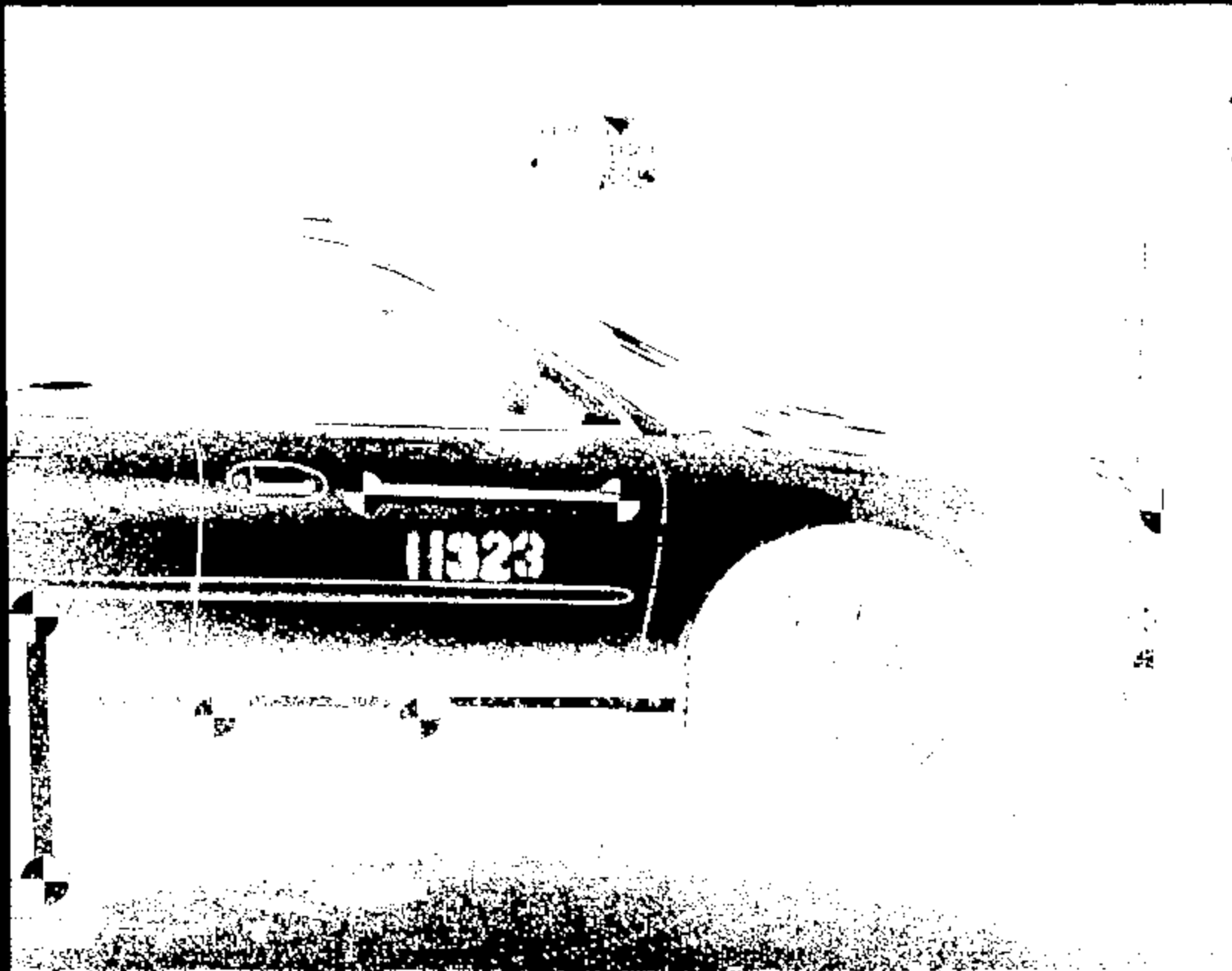
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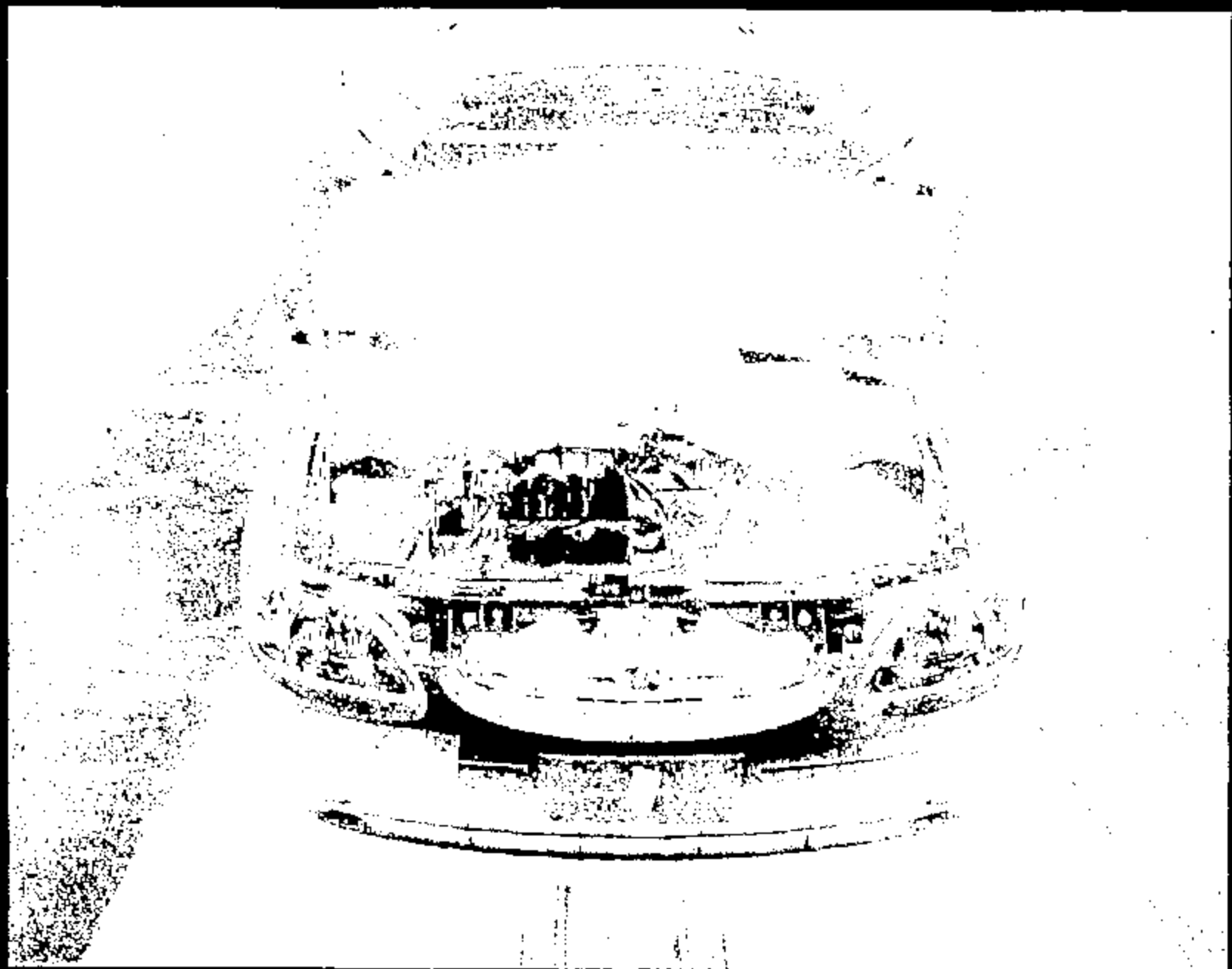
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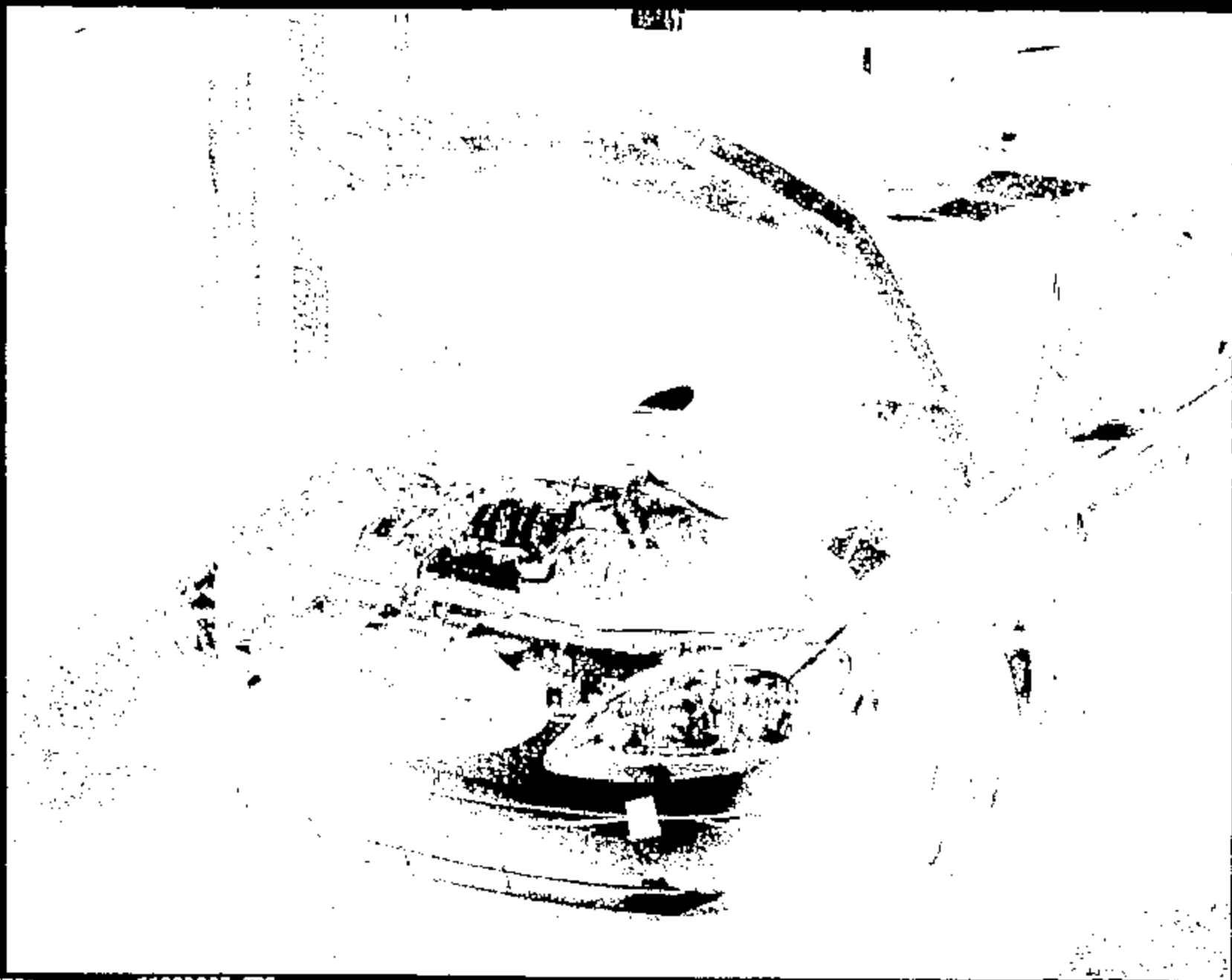




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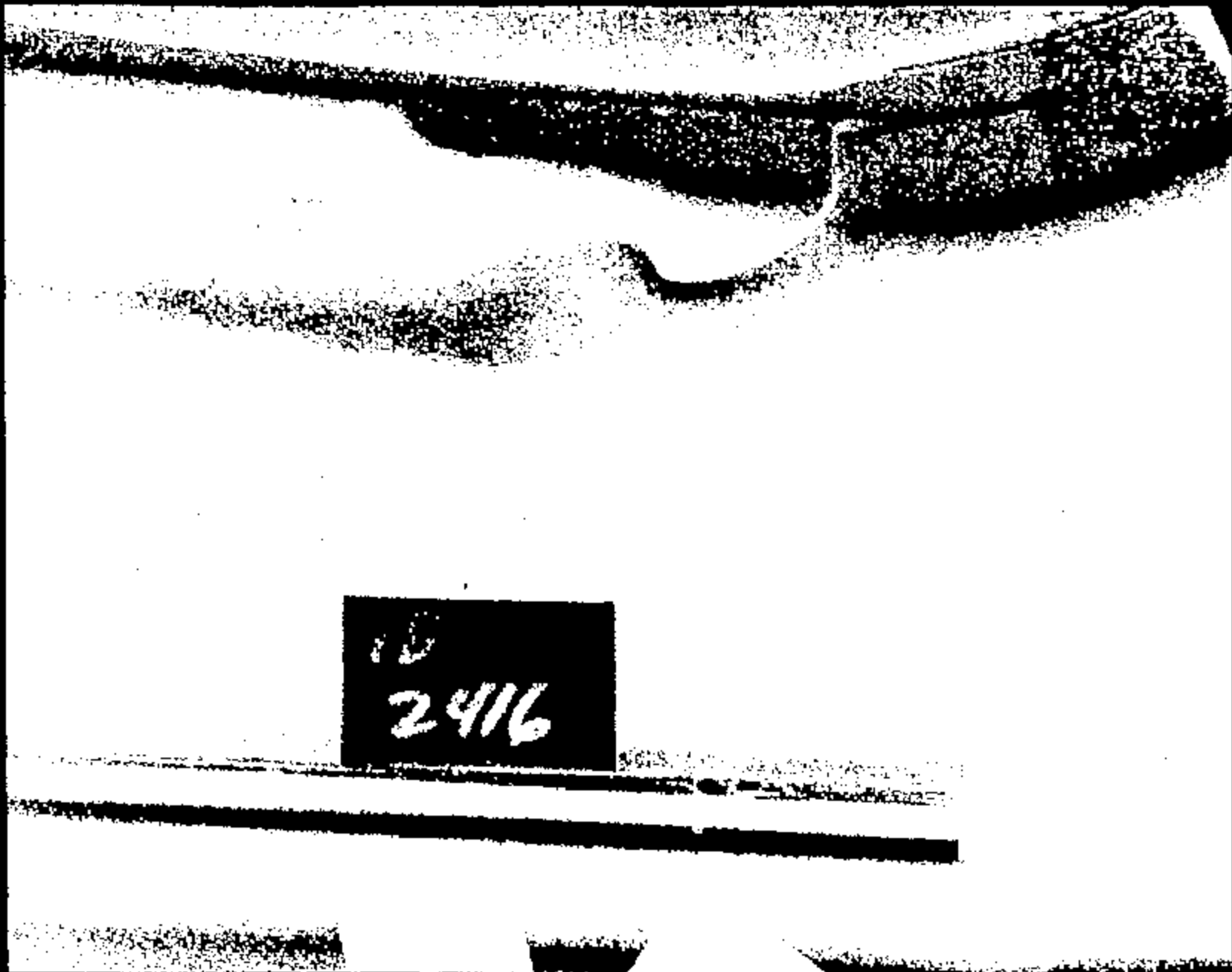
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2416

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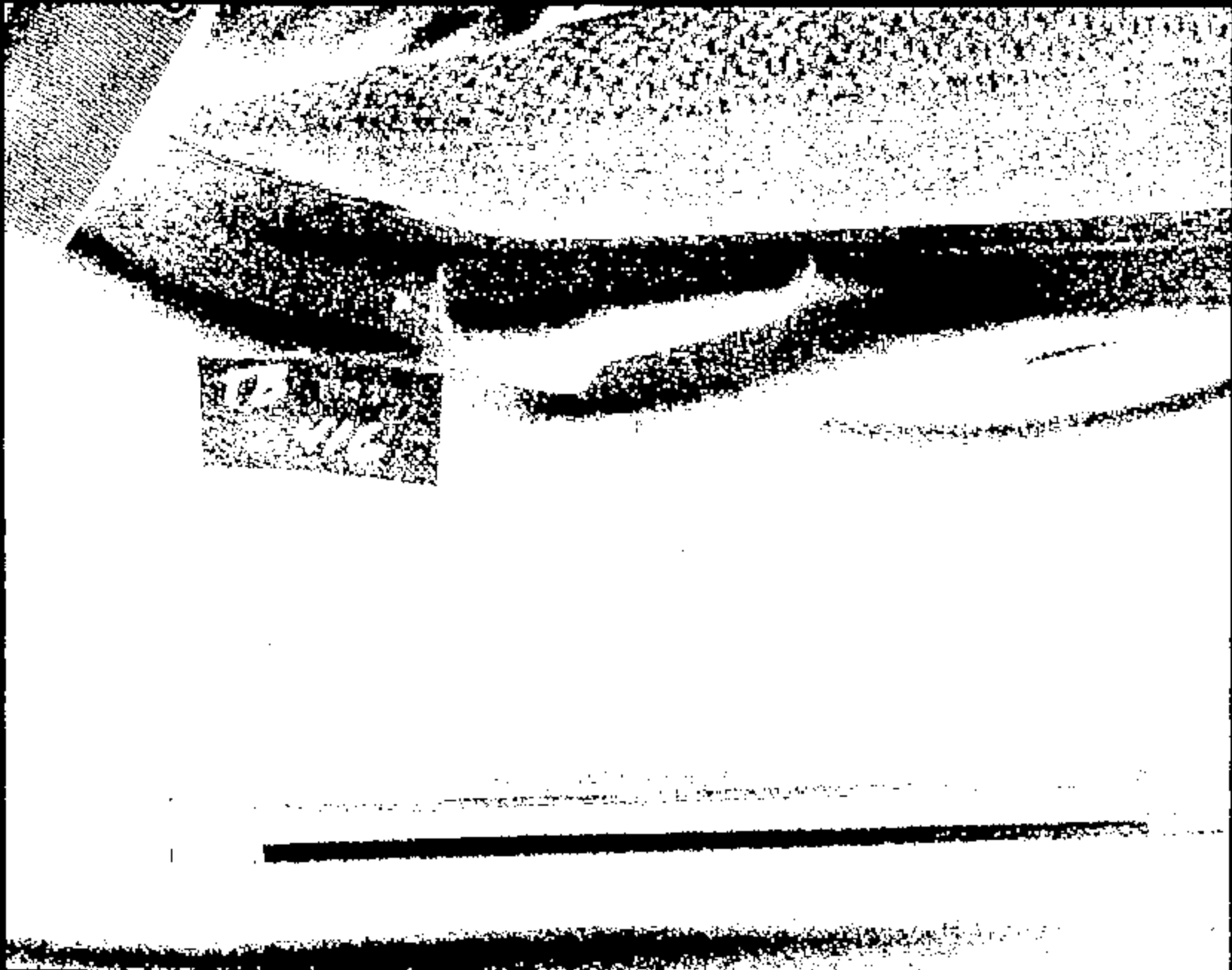






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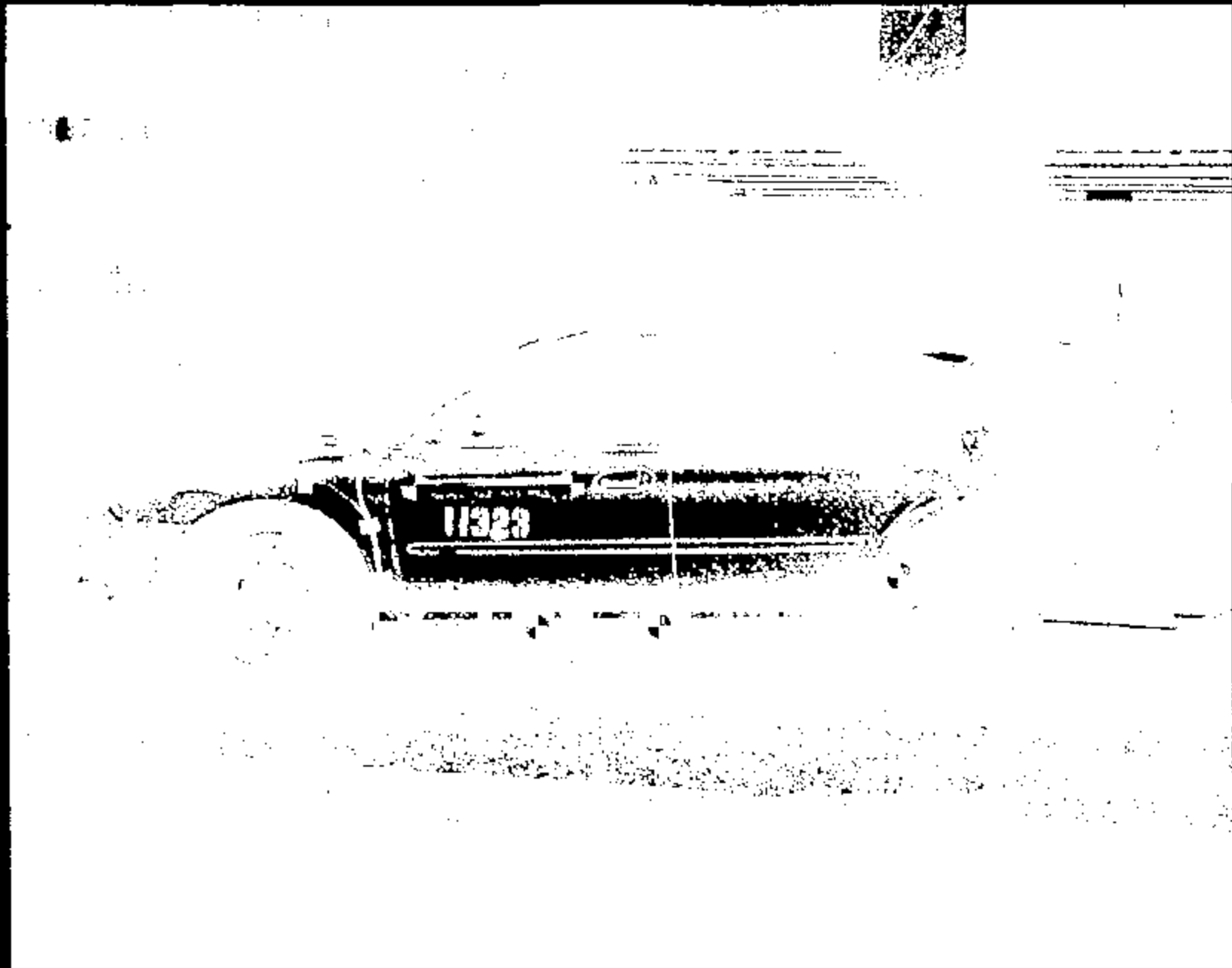
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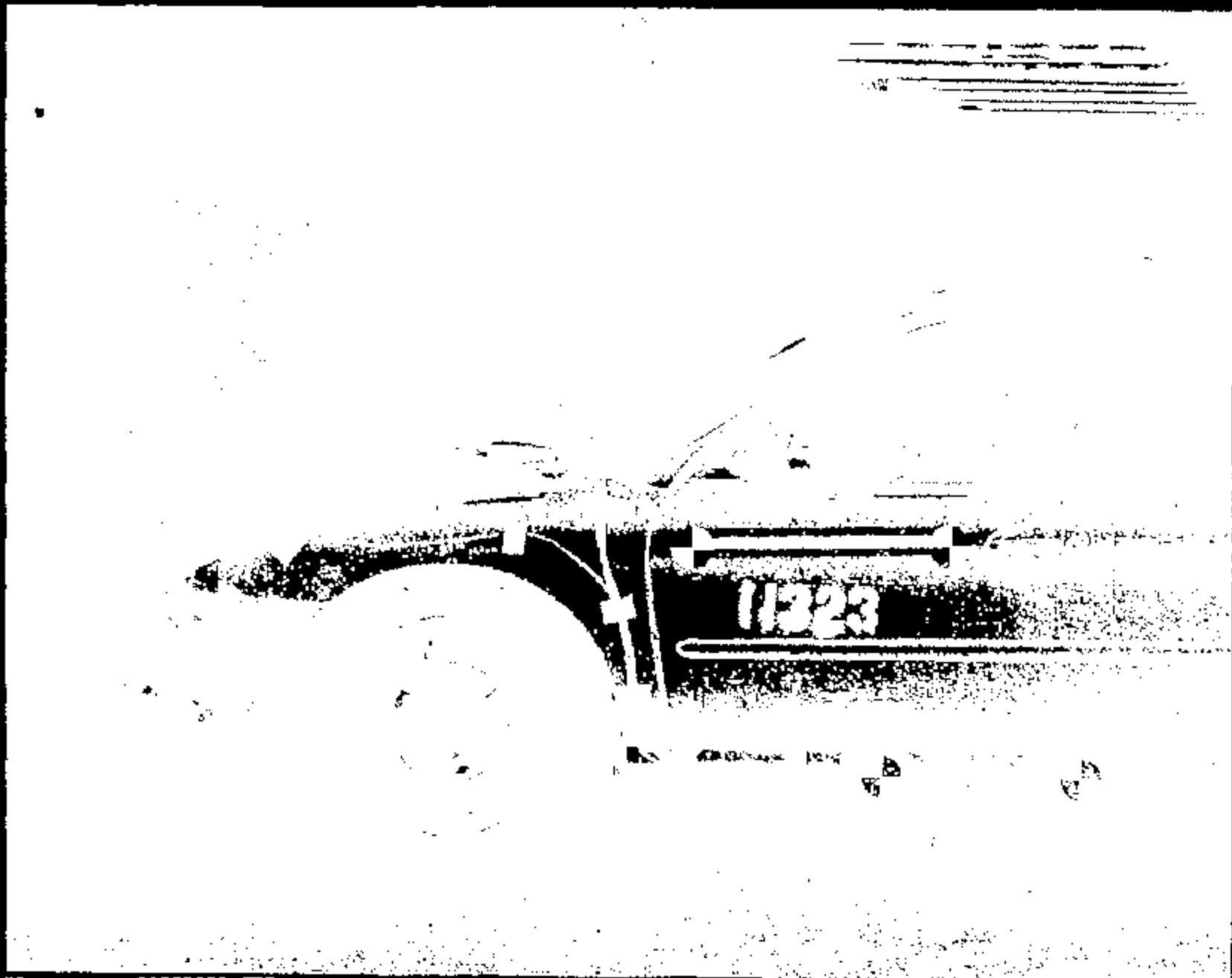
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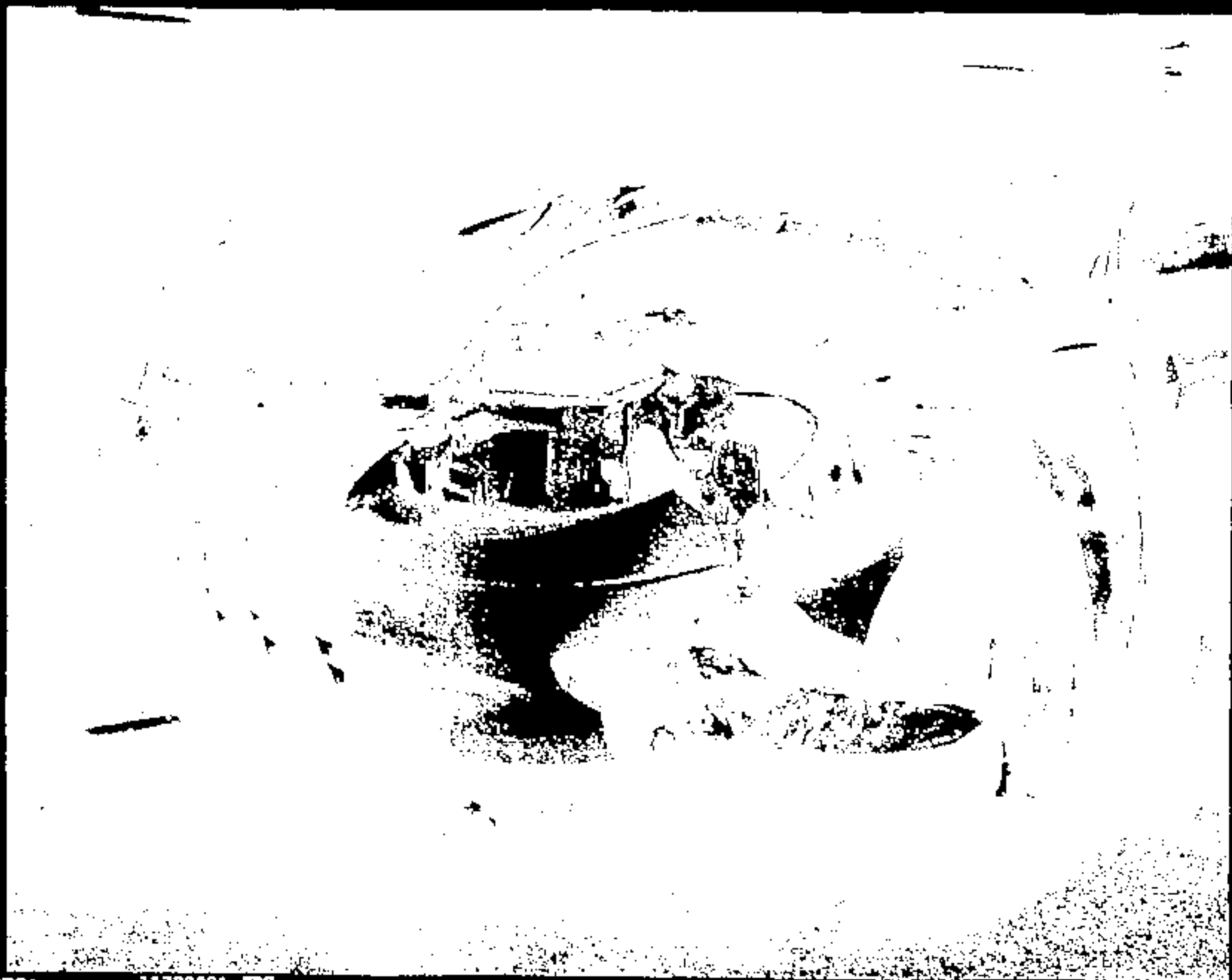


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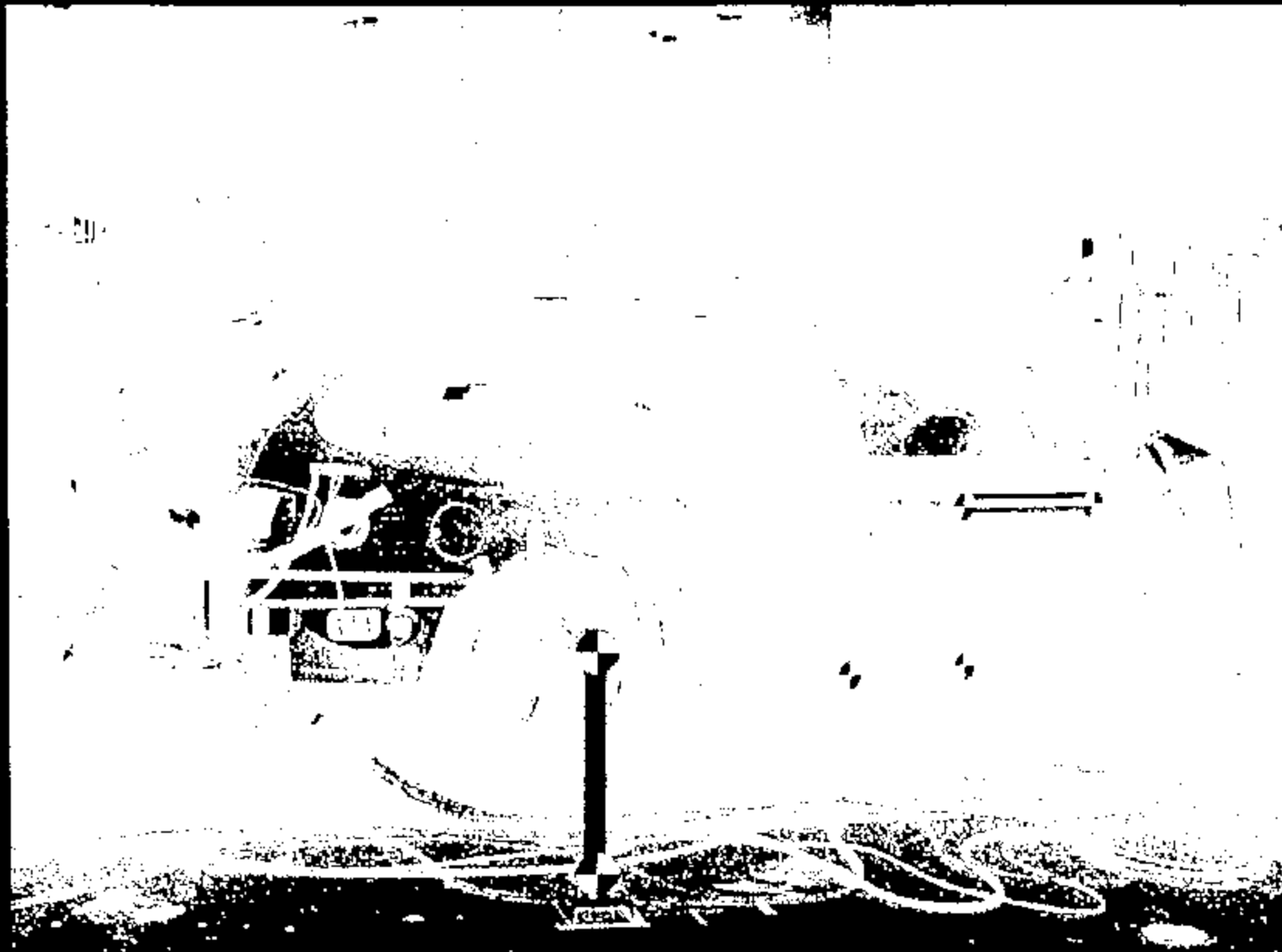
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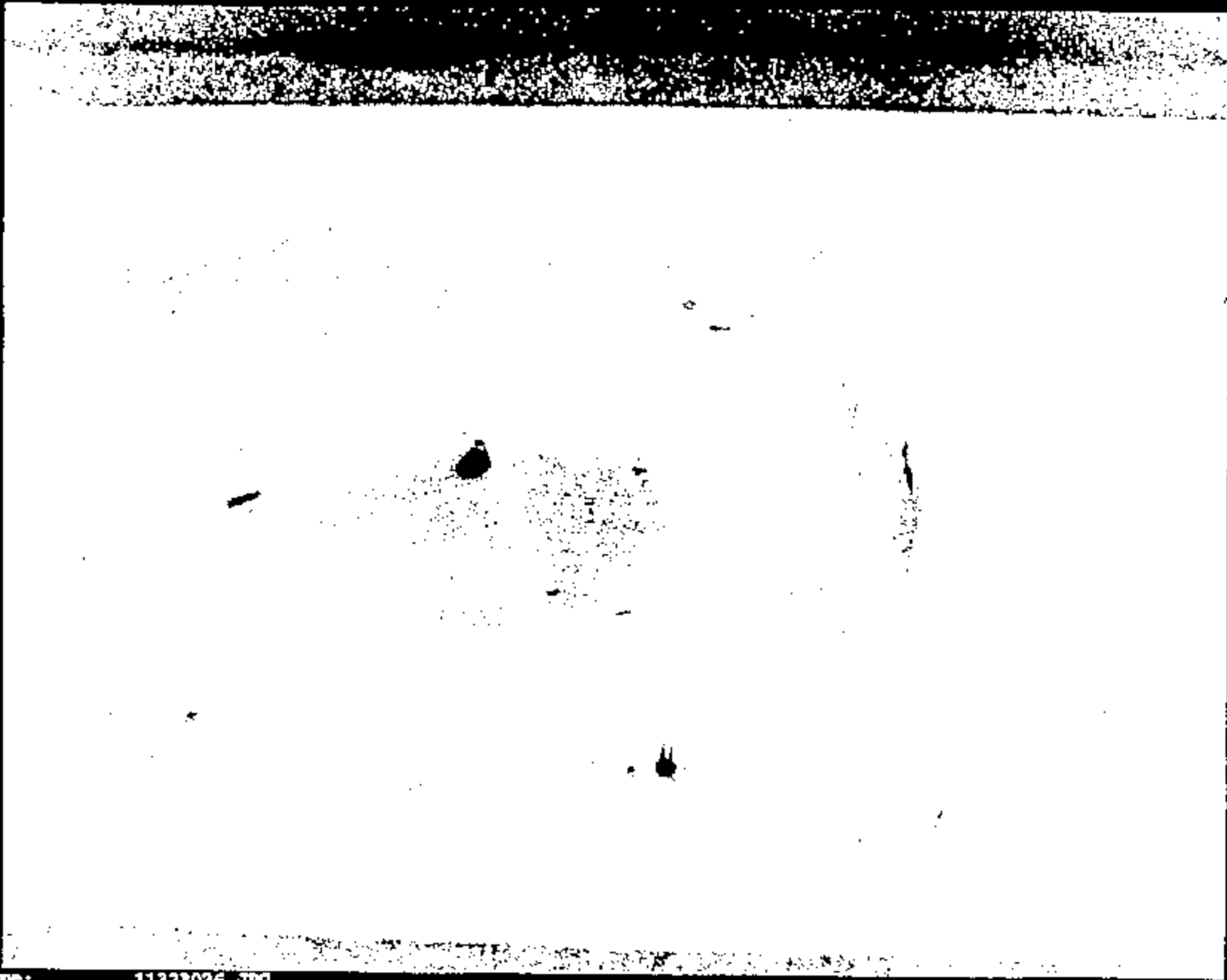
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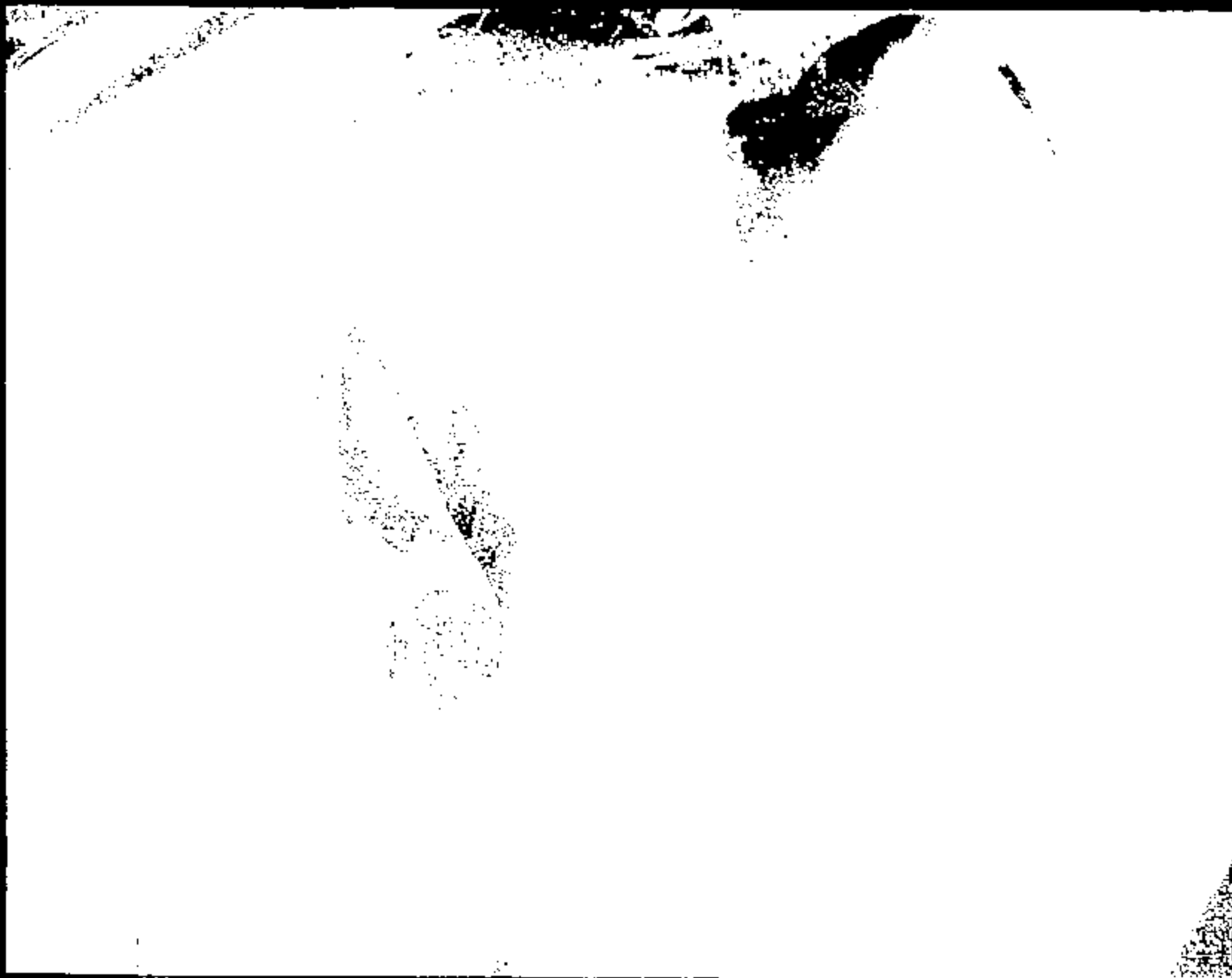
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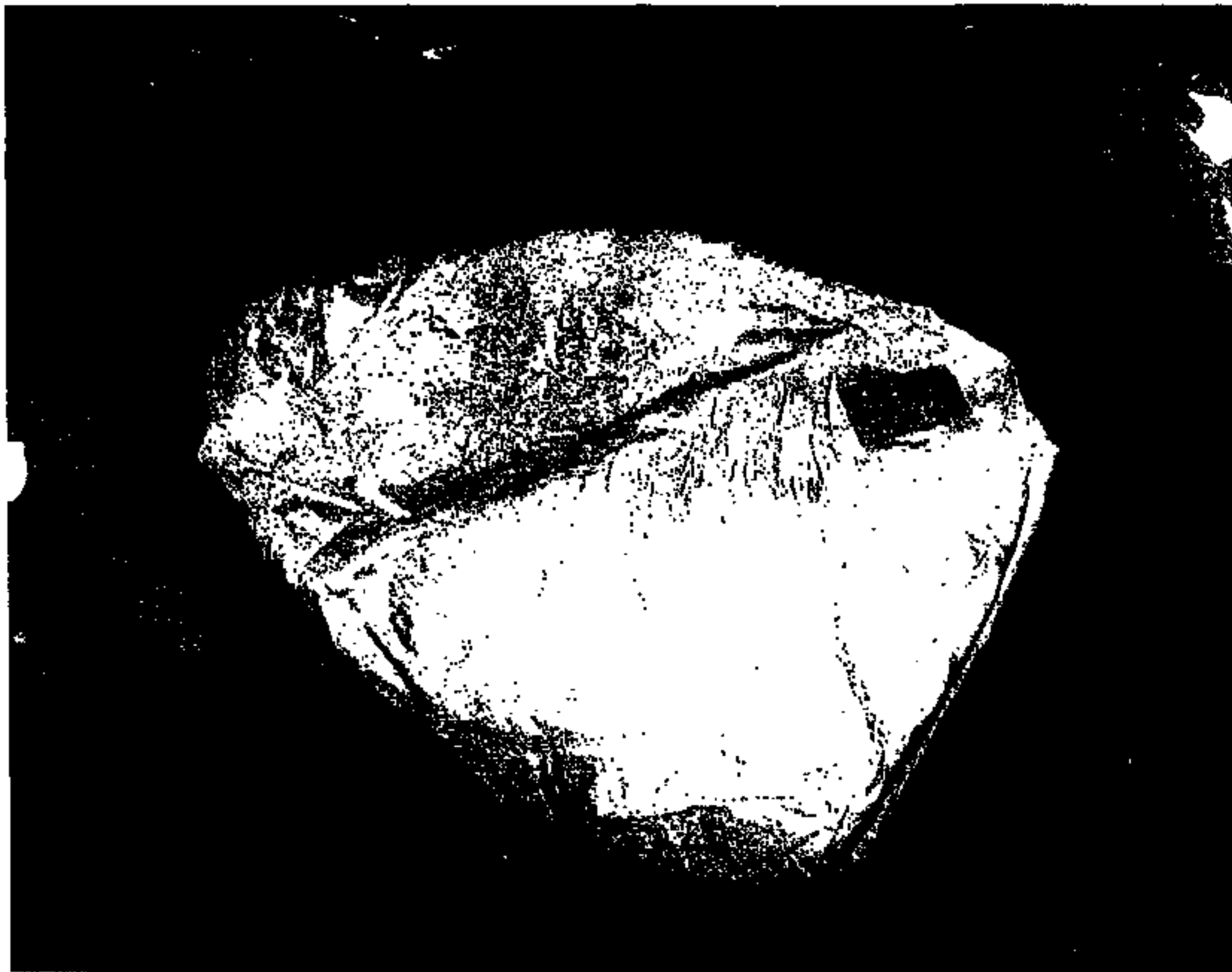




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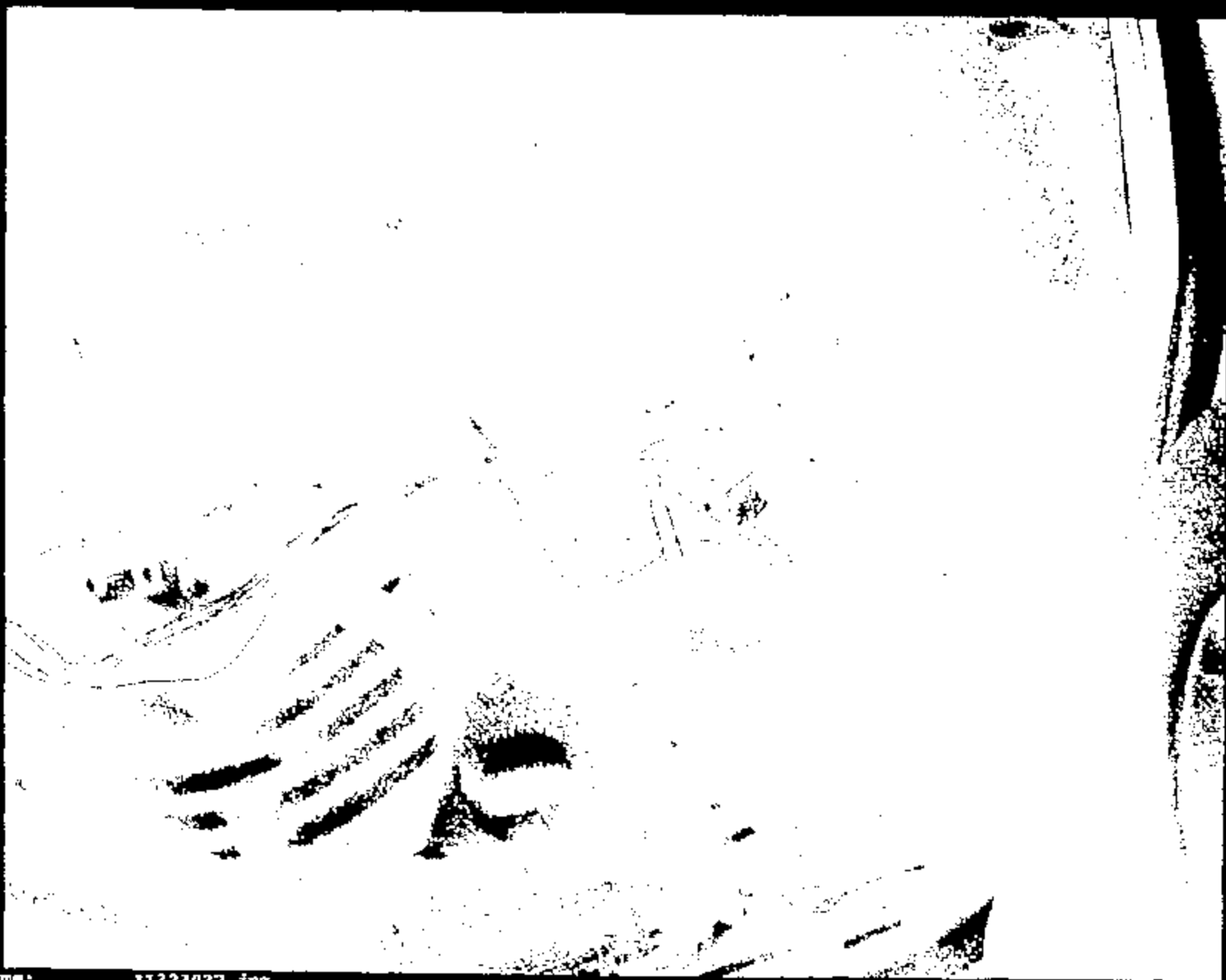
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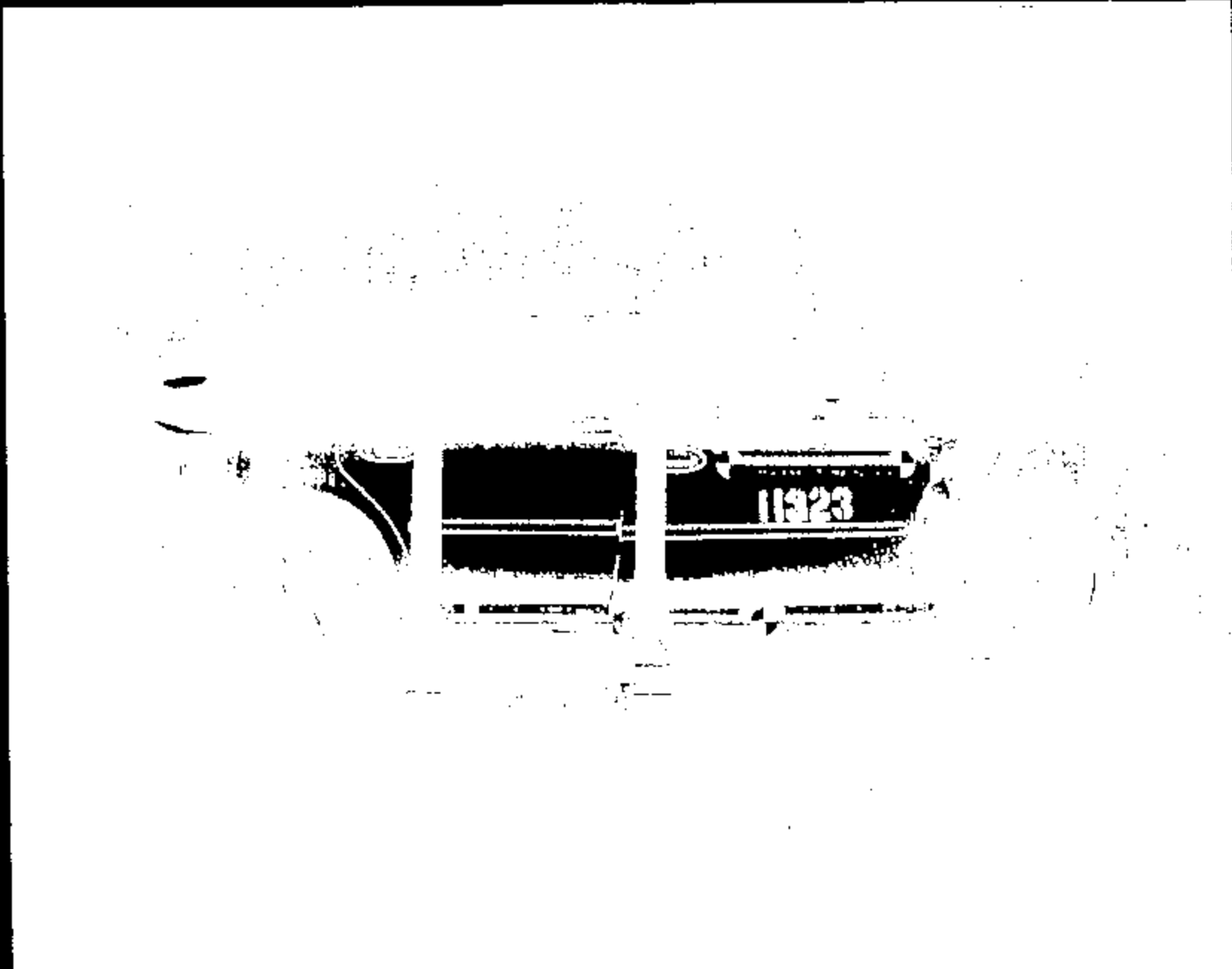
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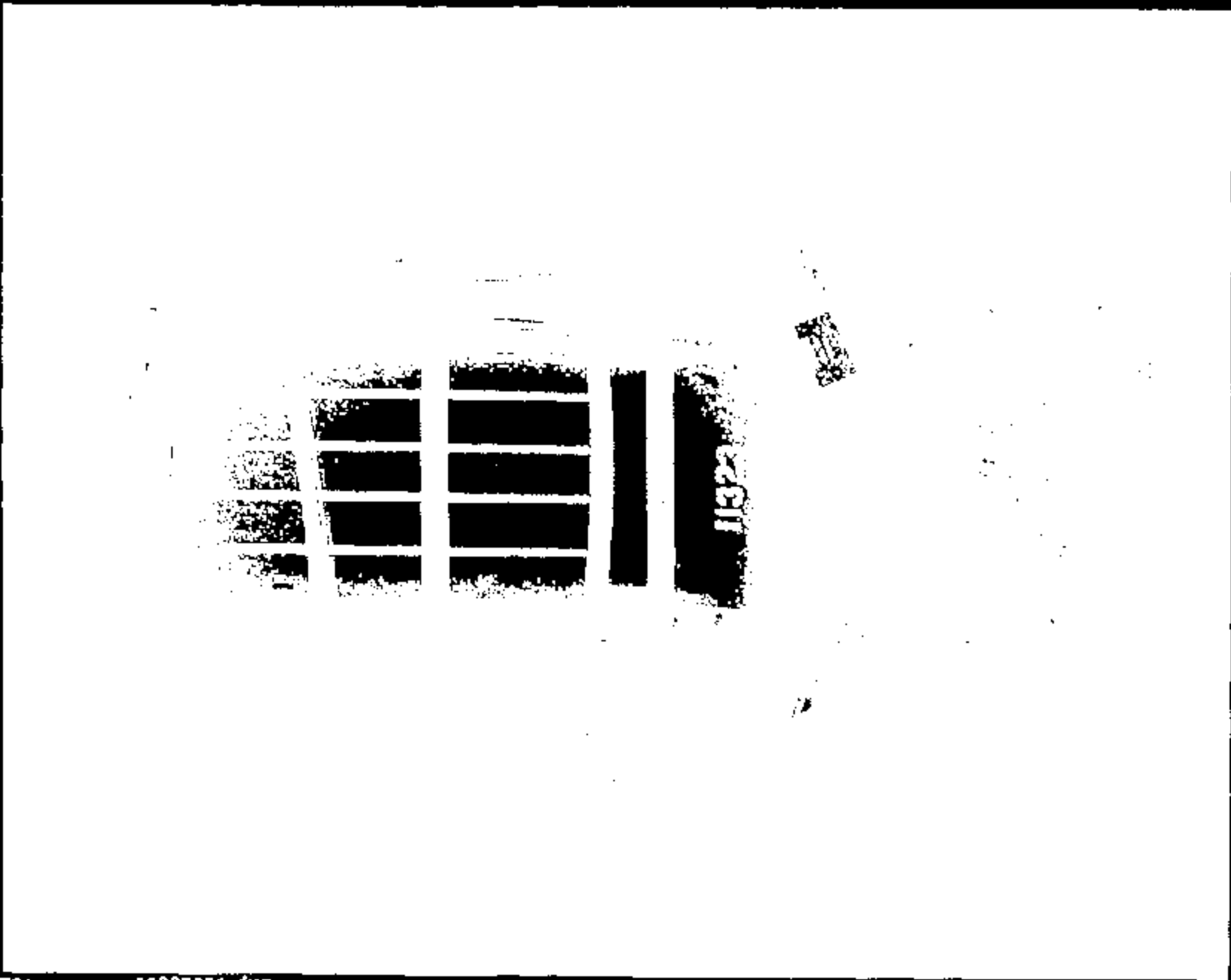
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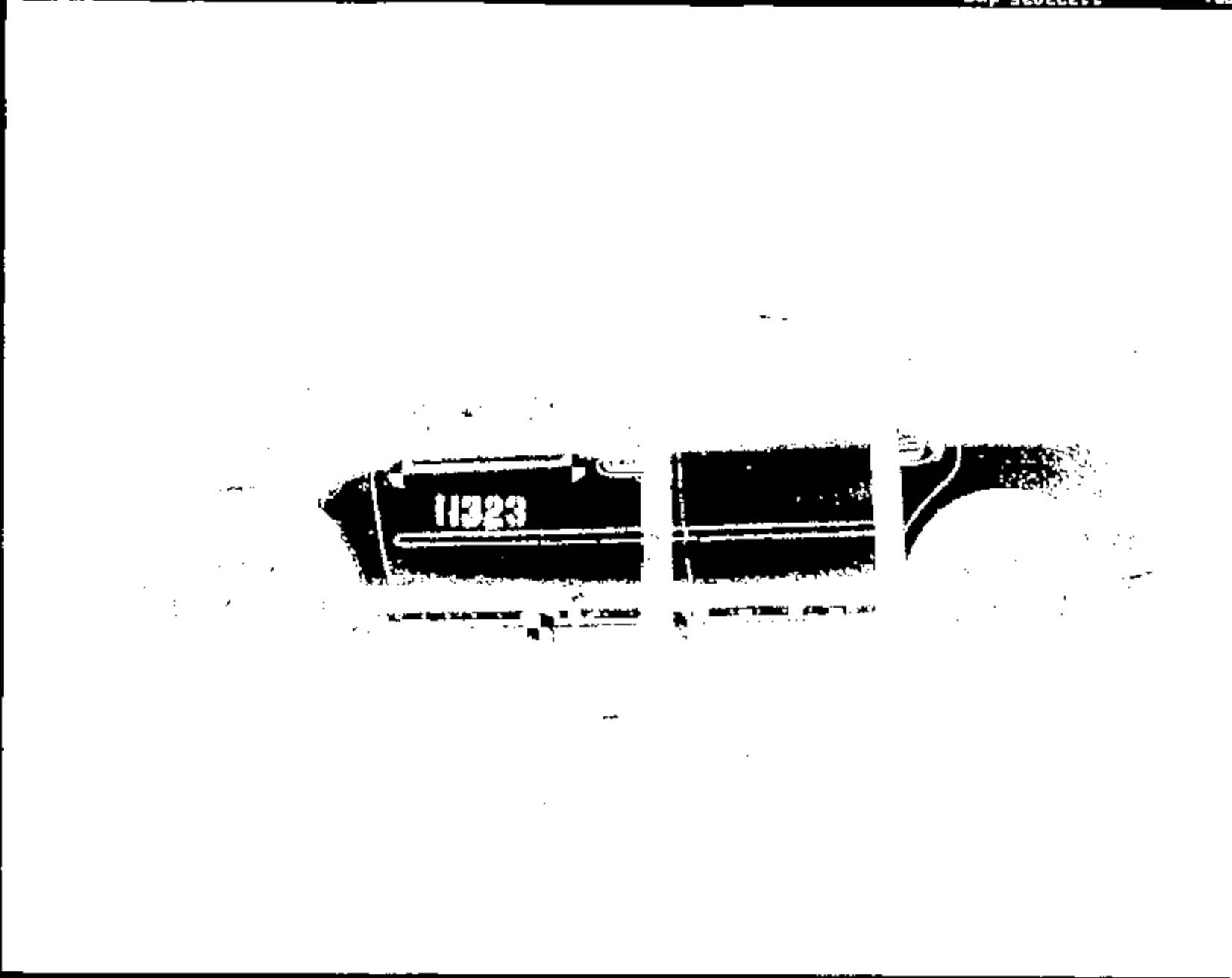
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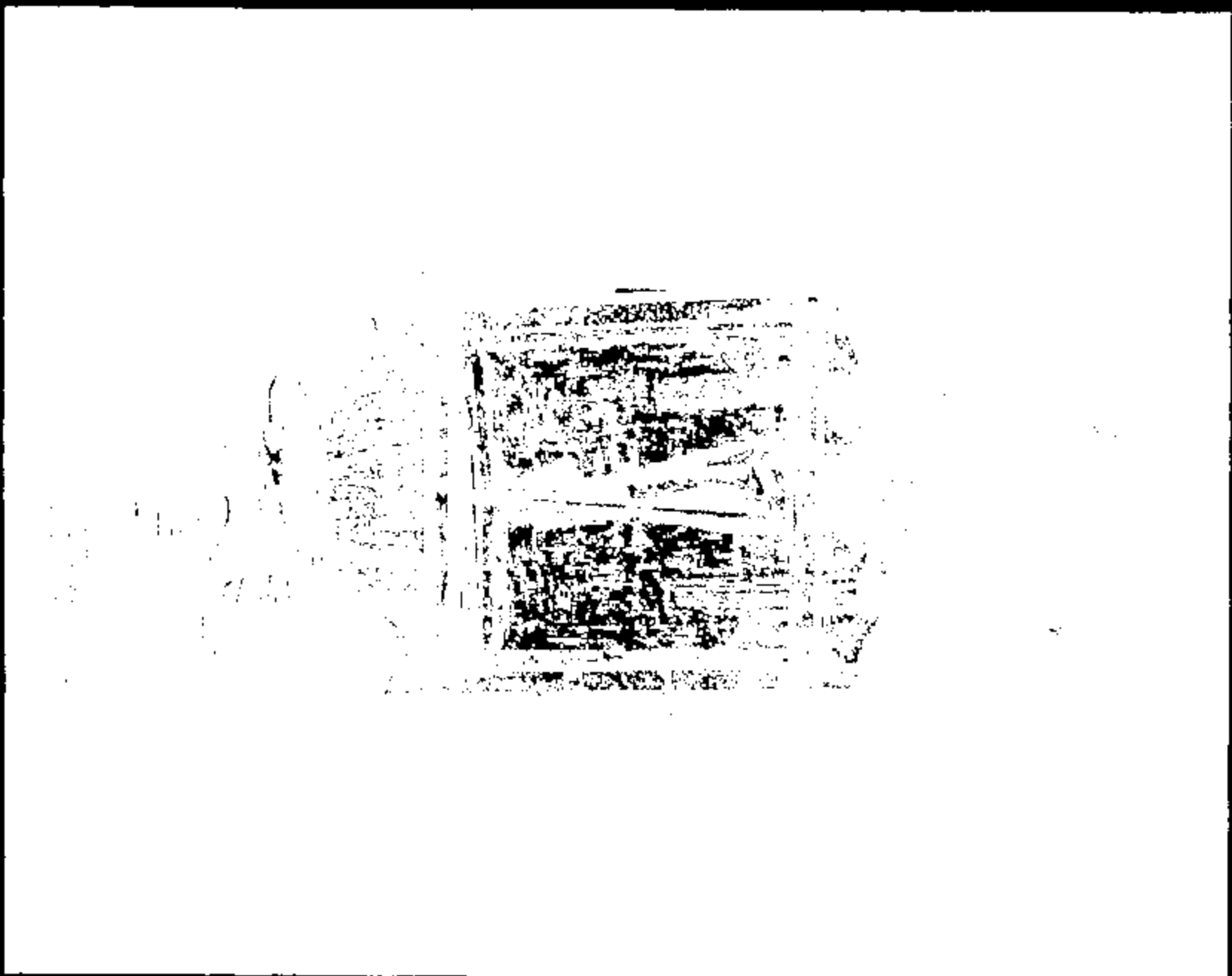
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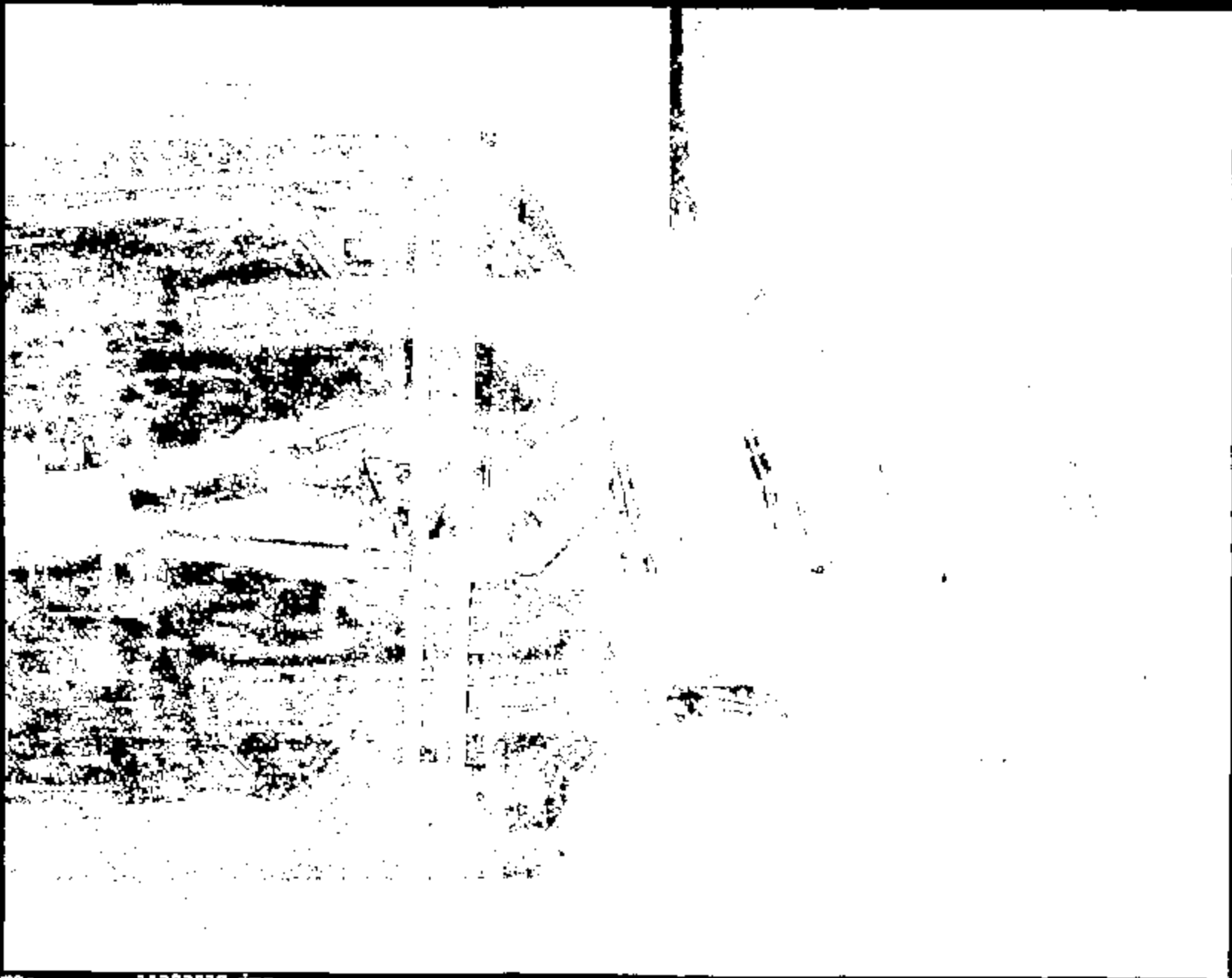
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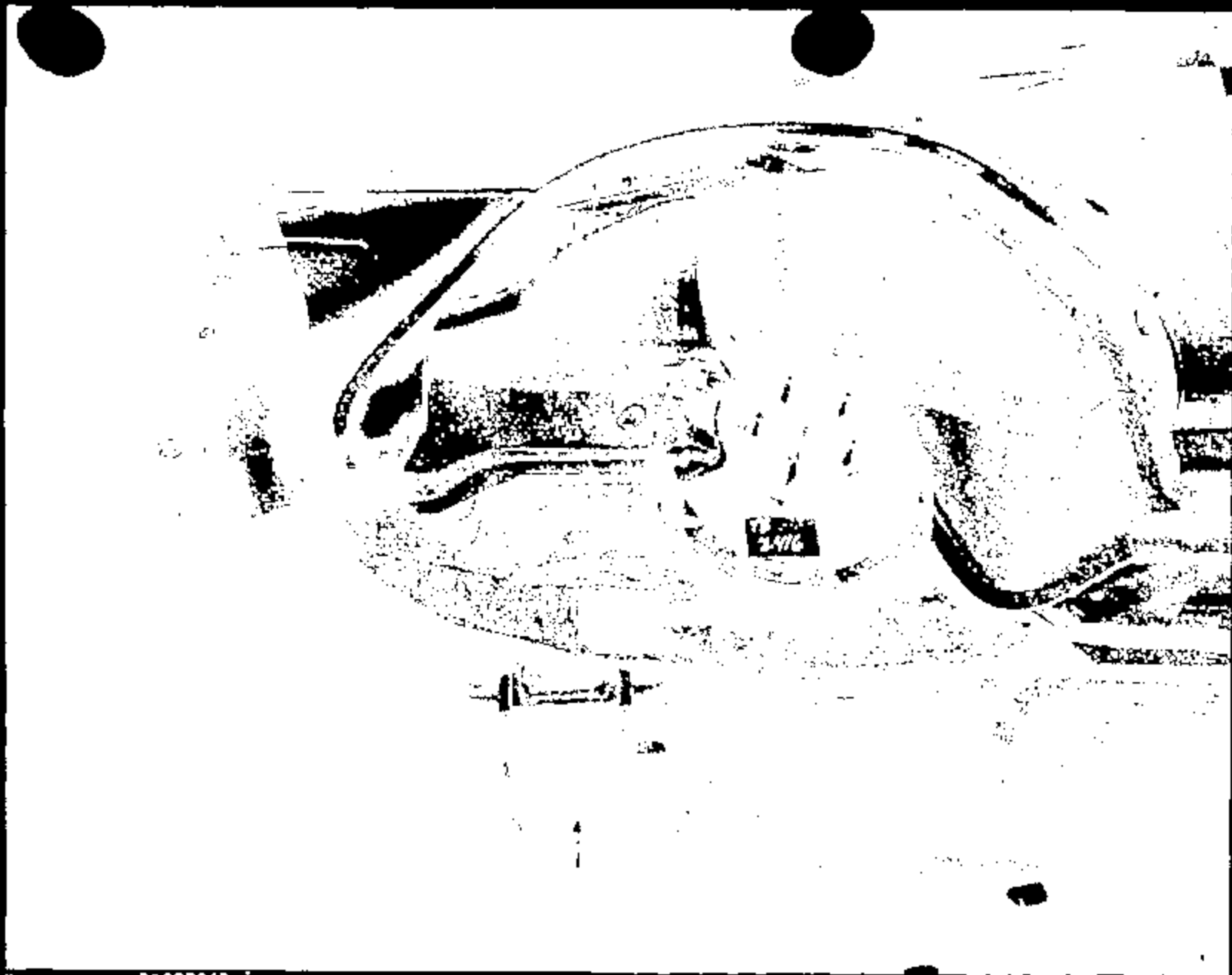
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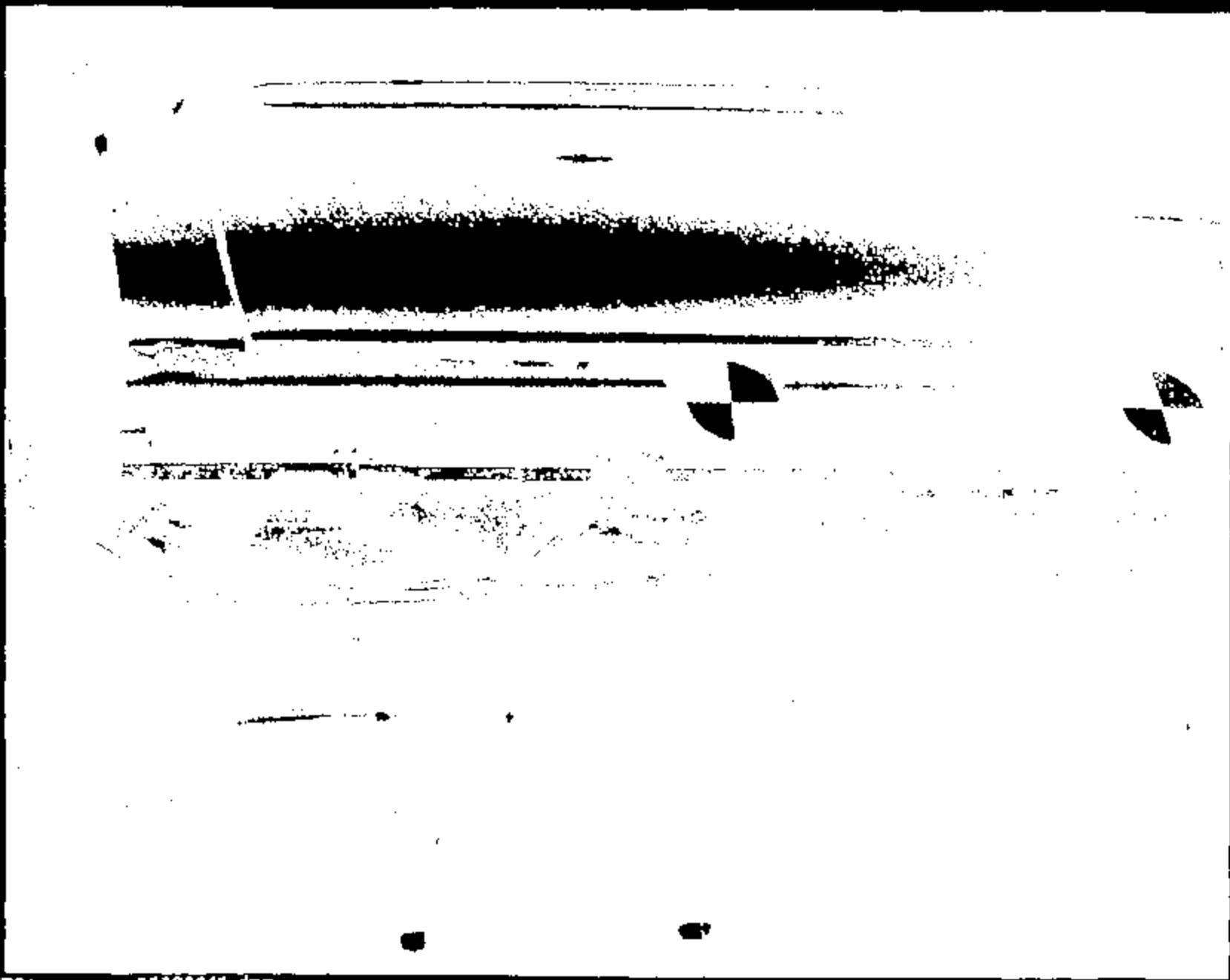
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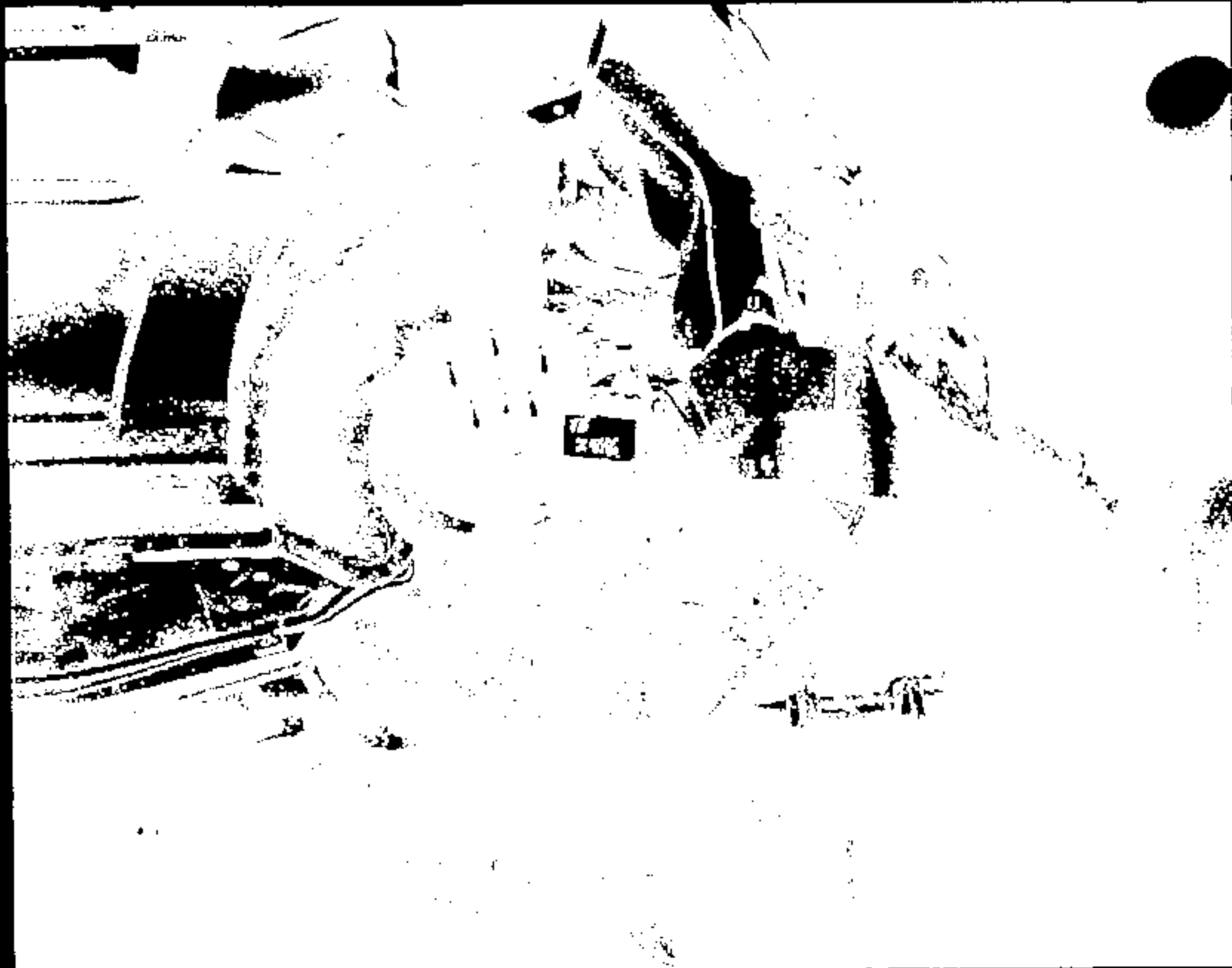
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Frame 1

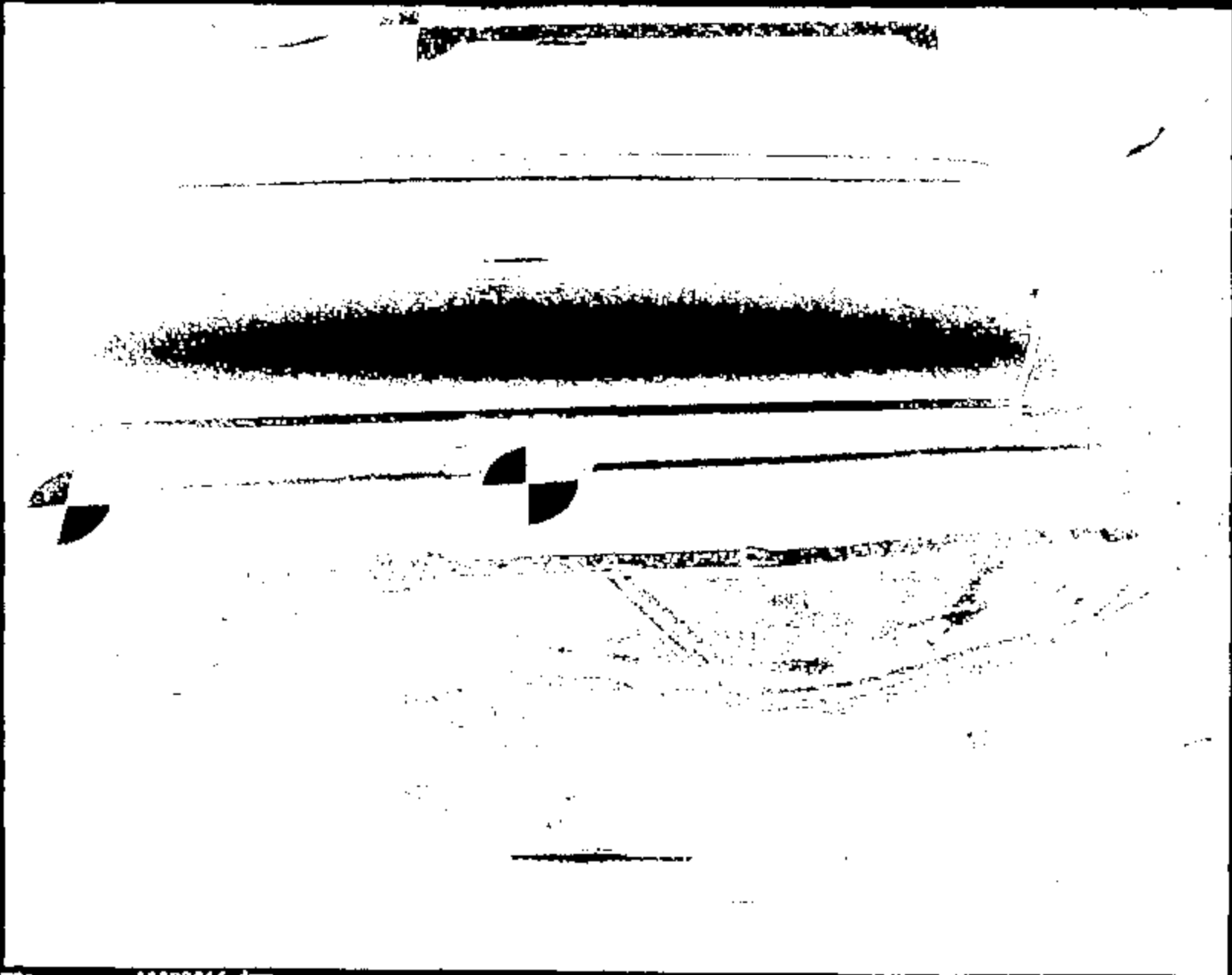
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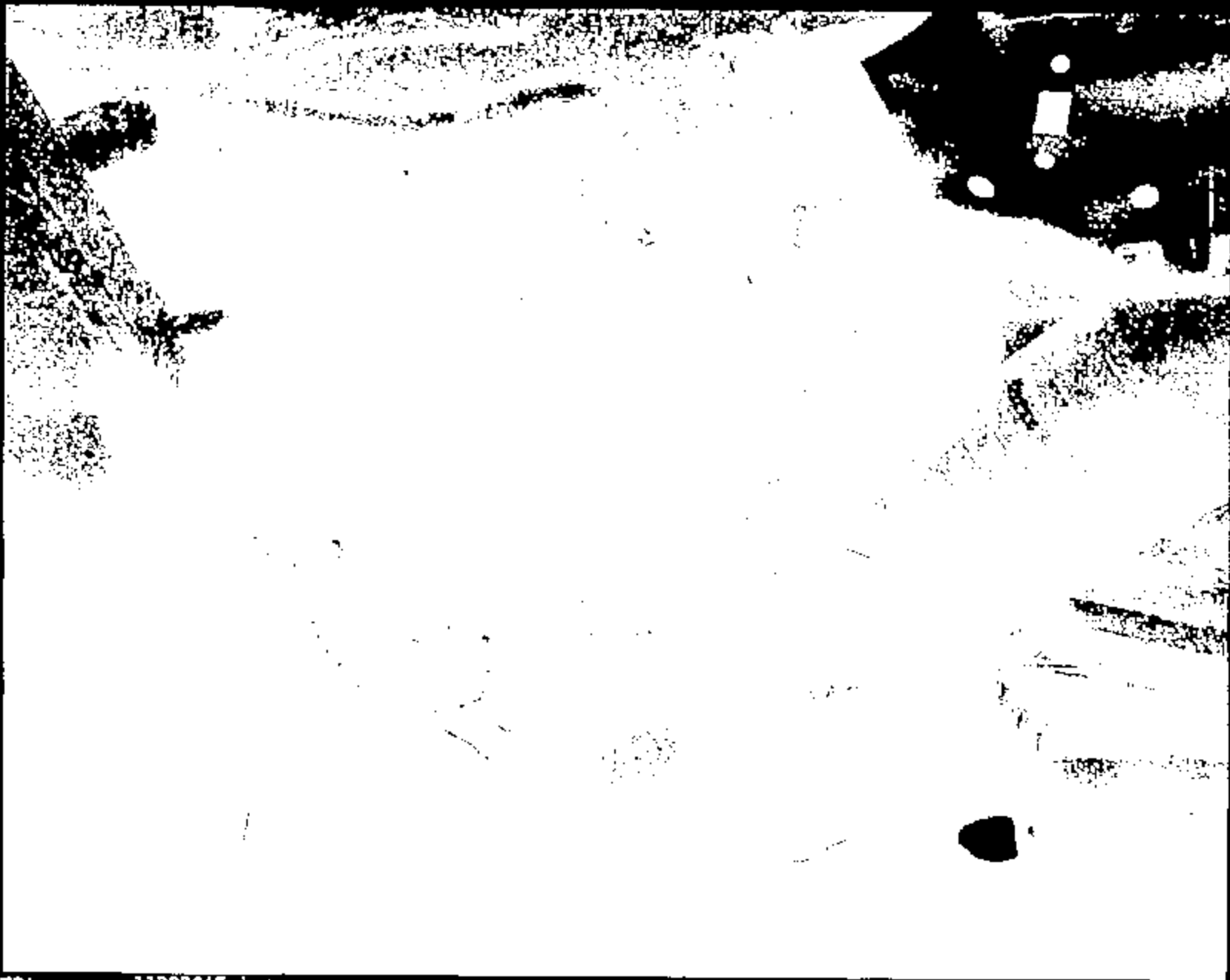
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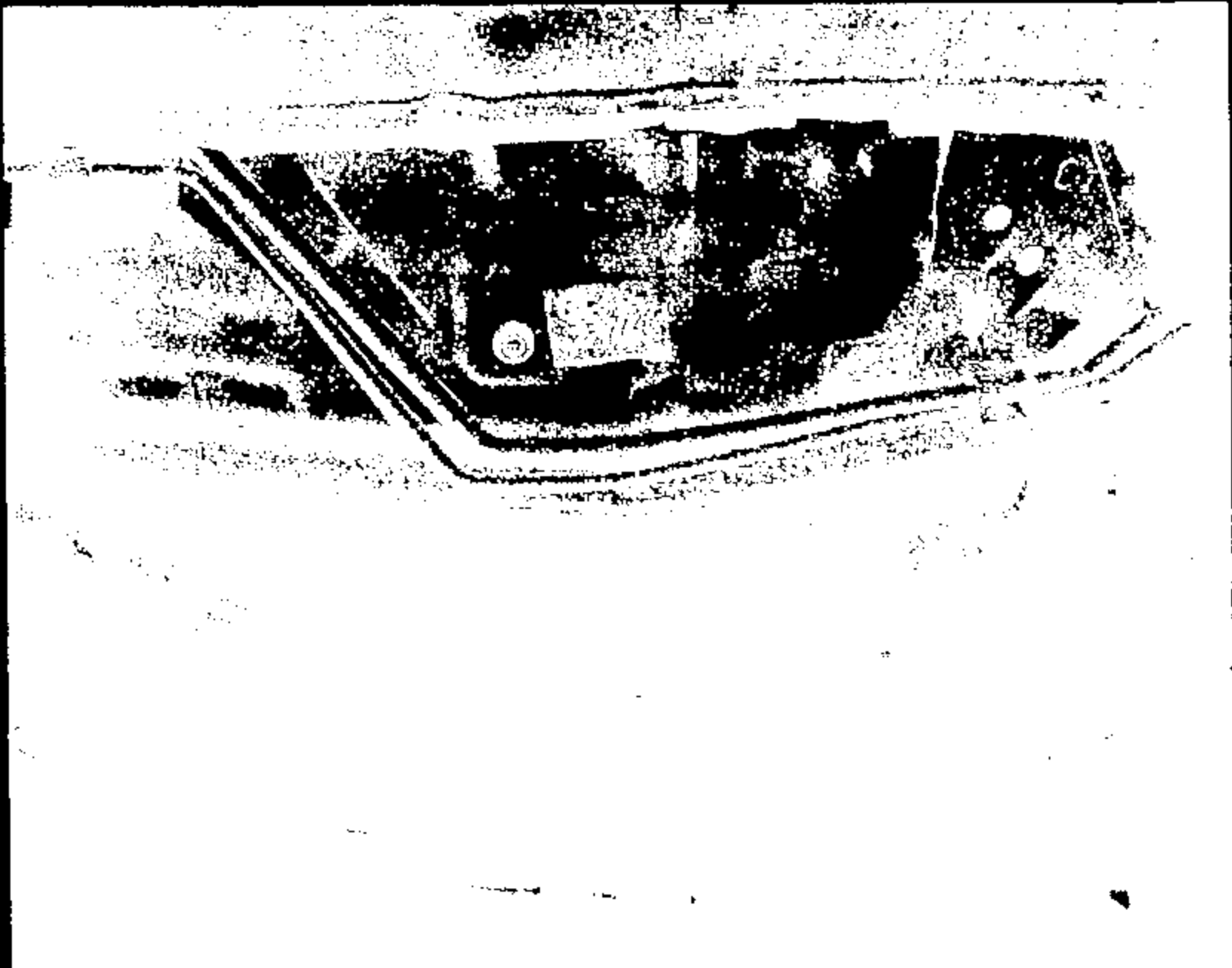


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2416

Name |

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Name:

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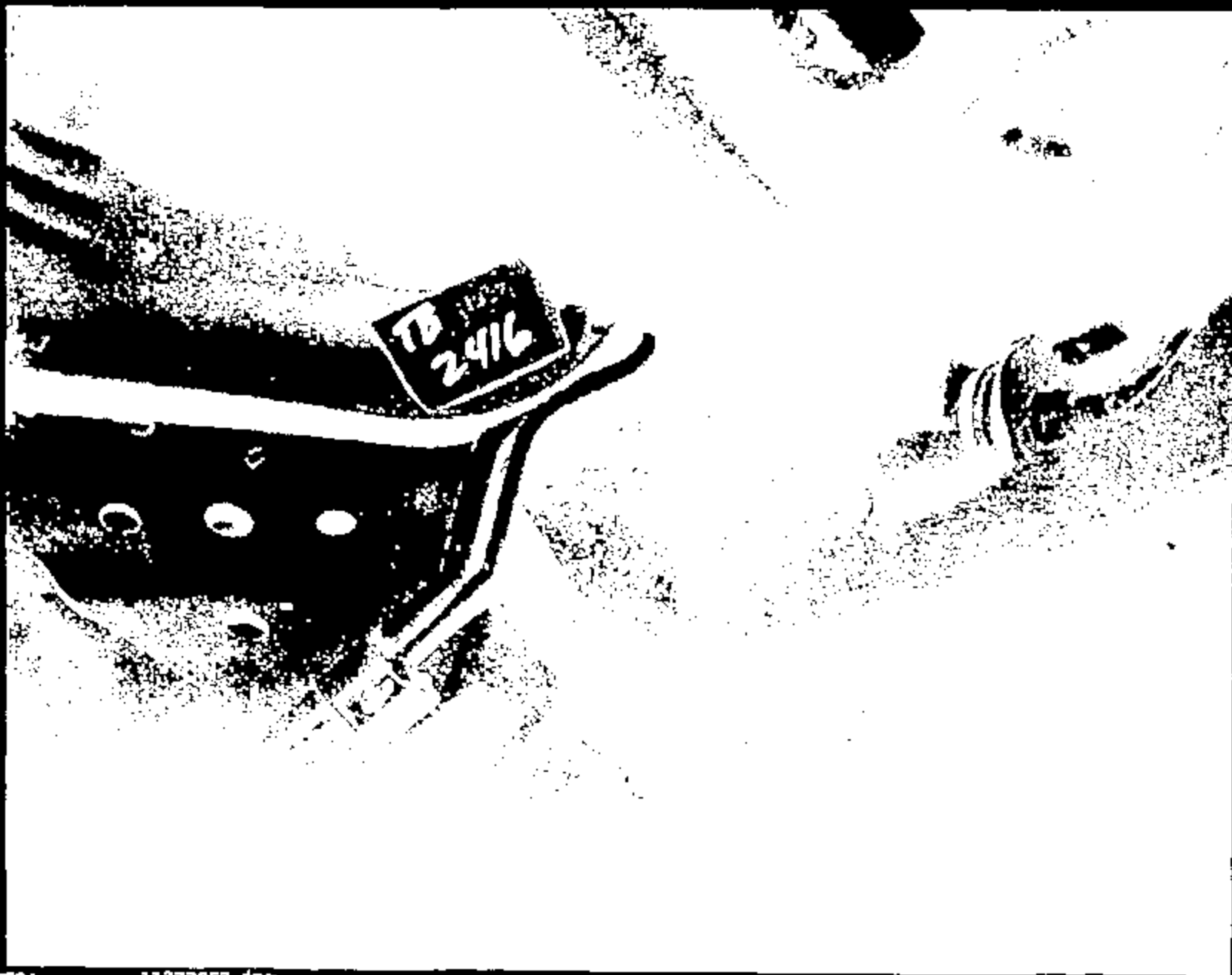
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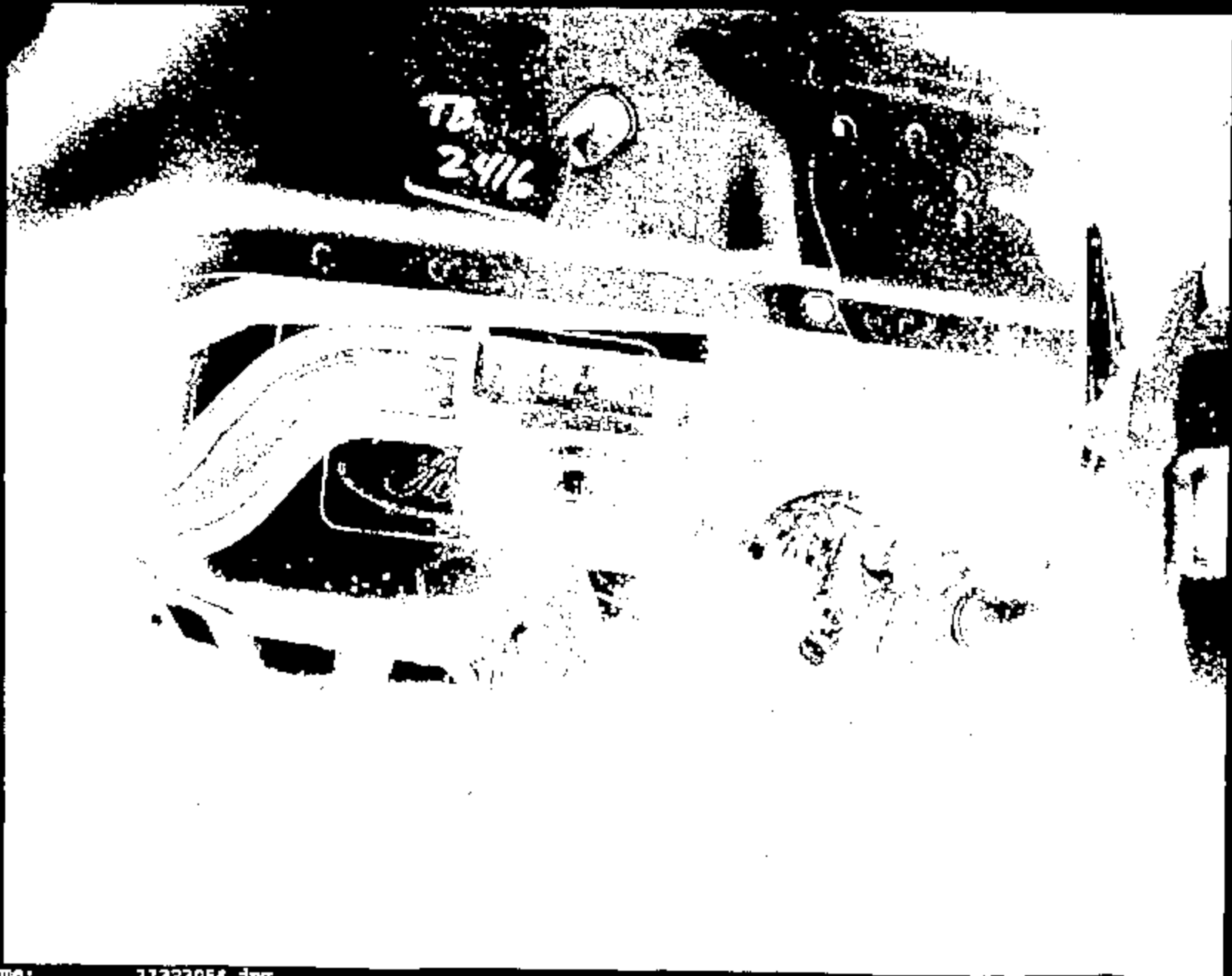
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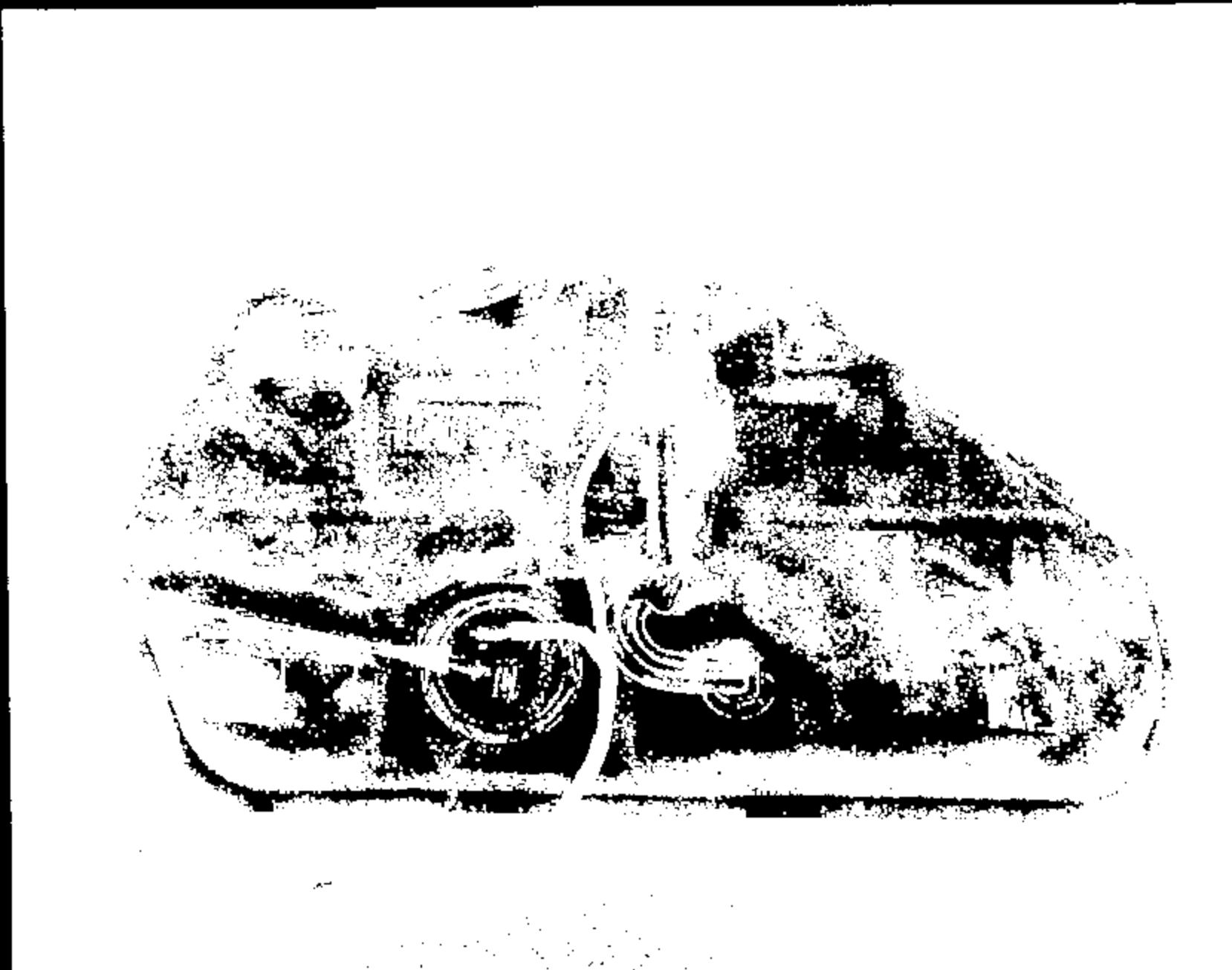
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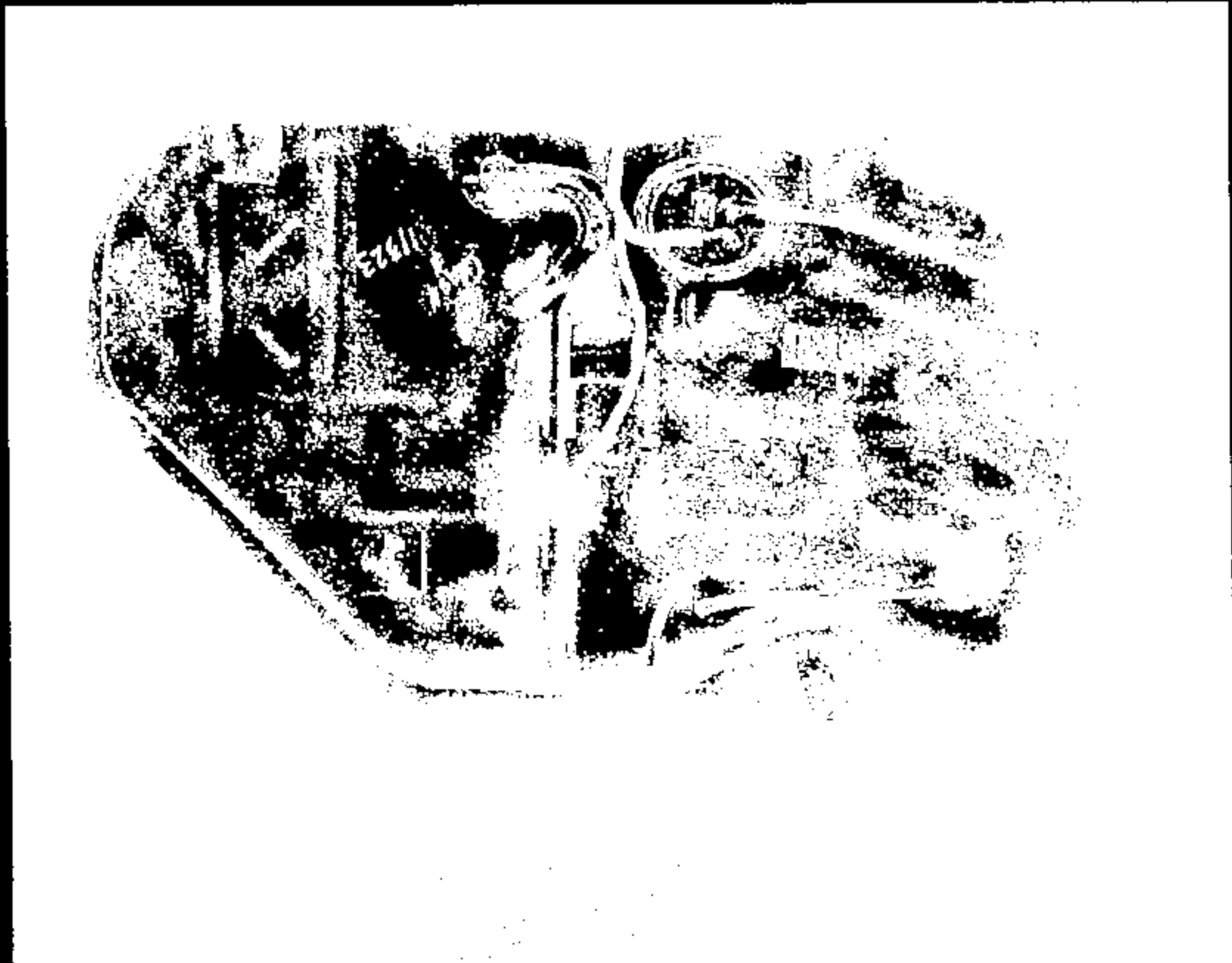
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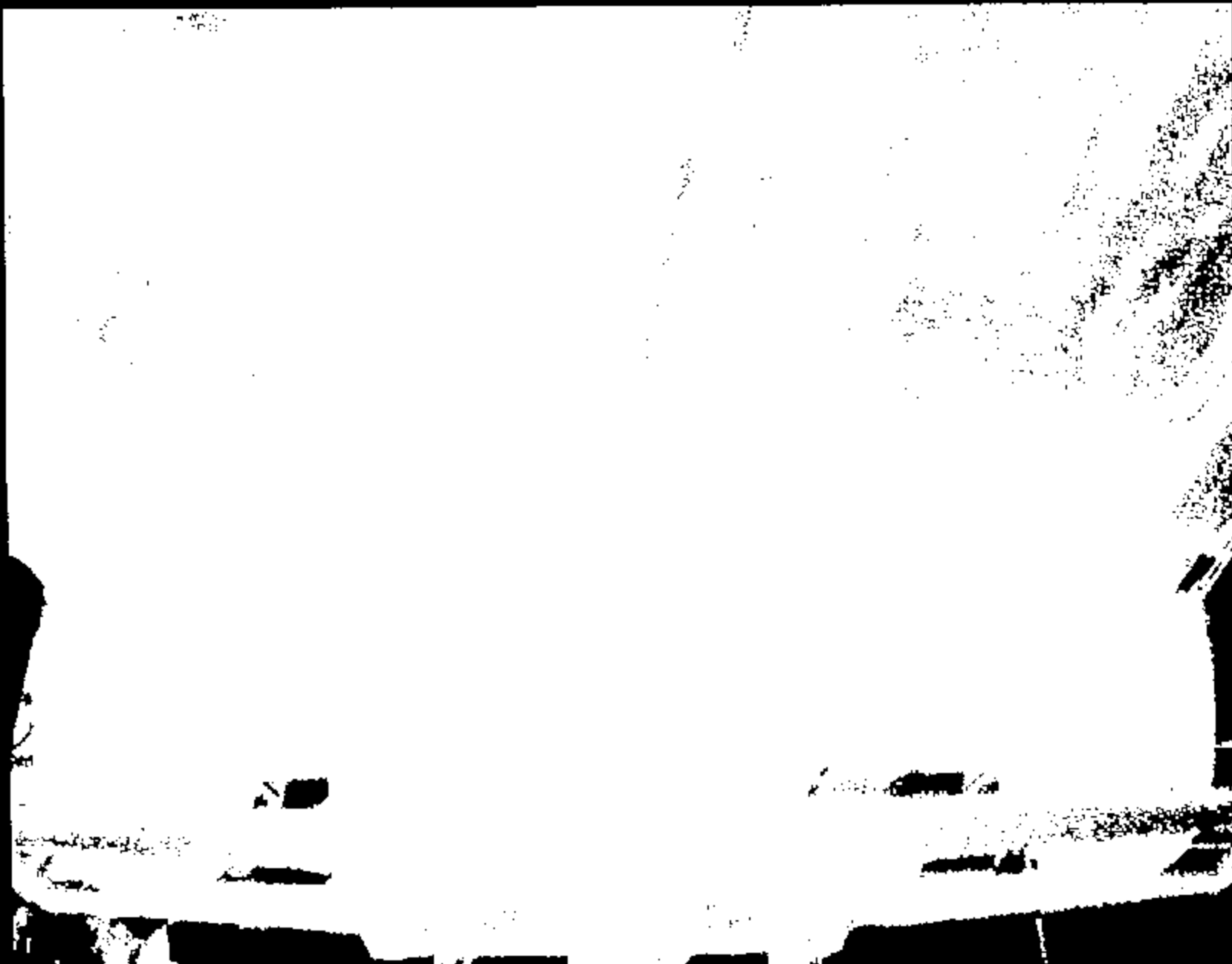
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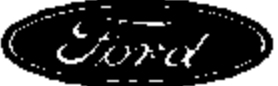
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Name :

11323060.jpg

CRJS 0011323

 <b>GTO Test Request</b>		Requestor/Coordinator (PROFS ID):		
		KEWING		
Testing Activity: Crash Barrier Test Lab		Date Submitted: 04-NOV-08	Requested Completion Date: 28-NOV-08	
Requestor Reference Number:				
Test Procedure Number: ST-14		Test Title and / or Subject of Test: 2000 D168 31mph / 30R / Barrier Impact		
Eligible Requestor Dept No.: T251 AV221BA		Workorder/Work Order Number: P09	Test conducted to verify control item compliance with Government Regulations:  Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	
Eligible Requestor PROF'S I.D.: KEWING		Eligible Requestor Name: KURT EWING		
<p>Complete the following two questions as indicated</p> <p>1 - Rational for not replacing this test by CAE Analysis:</p> <p><input type="checkbox"/> No CAE Methodology or process available</p> <p><input type="checkbox"/> For CAE Correlation</p> <p><input type="checkbox"/> Insufficient confidence in CAE</p> <p><input type="checkbox"/> To obtain basic data for CAE</p> <p><input type="checkbox"/> Replacement or improvement of existing Test</p> <p><input type="checkbox"/> Testing is Quicker</p> <p><input type="checkbox"/> Mandatory or Regulatory</p> <p><input checked="" type="checkbox"/> Certification</p> <p><input type="checkbox"/> Development test for P98</p> <p><input type="checkbox"/> Not applicable</p> <p>Other:</p> <p>(Check appropriate boxes)</p>				<p>2 - What is the expected Test Outcome:</p> <p><input checked="" type="checkbox"/> Results will meet DVP/WCF requirements</p> <p><input type="checkbox"/> System Component will not meet Test specification</p> <p><input type="checkbox"/> Unknown</p> <p><input type="checkbox"/> Above is Based on CAE?</p> <p>Other:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p style="text-align: center; font-weight: bold;">"RECORD COPY"</p> <p>Schedule No. <u>7-7-12</u></p> <p>Retain Until <u>2018</u></p> </div> <p>(Check appropriate boxes)</p>
<p>Test Purpose/Test Procedure or Description of Test:</p> <p>T007-ST-14 Barrier Collision Test - Steer Col., Windstkt, Fuel Eye (Interim Prod)</p> <p style="text-align: center; font-size: 1.2em;"><b>SEE ATTACHMENTS:</b></p> <ul style="list-style-type: none"> <li>• BARRIER TEST REQUEST (2 pp.)</li> <li>• TEST INSTRUMENTATION REQUEST SHEET (1 pp.)</li> </ul>				
<p>Signatures Approvals (As Required for Control Purposes)</p> <p>Requesting Engineer <u>KURT EWING</u> Testing Engineer _____</p> <p>Requesting Supervisor/Manager <u>ALAN TALIB</u> Testing Supervisor _____</p>				



**BARRIER TEST REQUEST**

TB2416

**TEST OBJECTIVE:** FMVSS 301, CERTIFICATION  
**IMPACT SPEED (MPH):** 31  
**TEST PROCEDURE:** ST-14  
 IMPACT TEST VEHICLE FRONTALLY INTO 30 DEGREE RIGHT RIGID BARRIER.  
 CONDUCT POST TEST ROLLOVER

**TEST VEHICLE TAG:** 679W778  
**TEST VEHICLE VIN:** 1FALP82L8Y8100879  
**MODEL:** D188  
**MODEL YEAR:** 2000  
**ENGINE/TRANS:** 3L 2V PPV/AXIS

**TASK NO.:** F09  
**DELLABLE DEPT.:** T881

**FUEL:**

TYPE	RATED CAPACITY (GAL.)	98 % FILL (GAL.)
STODDARD	18	17.1

**TIRE PRESSURE (PSI):** FRONT = 80 REAR = 30 SPARE = NA  
**CURB WEIGHT (LBF.):** FRONT = N/A REAR = N/A  
**TEST WEIGHT (LBF.):** FRONT = 2983 REAR = 1717  
 +- 25

**RIDE HEIGHTS (IN.):** FRONT = LEVEL RFR TO GROUND REAR = LEVEL RFR TO GROUND  
 +- TO GROUND

**WEIGH UP INSTRUCTIONS:**

**MAY REMOVE:** DECK LID  
**DO NOT PLACE WEIGHT:** UNDERHOOD EXCEPT IN ENGINE.  
**MAX ADD TO ENGINE:** 75 LBF.  
 LOAD TO TEST WEIGHT & LEVEL ROCKERS WRT GROUND.  
 SPRING INSERTS ACCEPTABLE

**OCCUPANT TYPE:** LEFT FRONT = 50TH% HYBRID 2  
 RIGHT FRONT = 50TH% HYBRID 2

**DUMMY POSITIONING:** ST-14 DRIVER FOOT-REST: Y

**SEAT POSITIONING:**

	LONG	VERT	BACK ANGLE (DEG.)	PKG CHECK
LEFT FRONT =	MD	FULL DOWN	27.2 (FRAME)	N
RIGHT FRONT =	MD	FULL DOWN	27.2 (FRAME)	N

**RESTRAINTS USAGE:**

	BELT	PYRO BELT	FRT BAG	SIDE BAG
LEFT FRONT =	X		X	X
RIGHT FRONT =	X		X	X

**SENSOR SYSTEM:** LIVE PRODUCTION HARNESS. MONITOR SENSOR OUTPUTS.  
 SEE ATTACHMENT 'SENSOR MAP'.

**DIMENSIONAL ANALYSIS:** NONE

File: TB2416, Title: REQUEST  
 Created: 11/24/98  
 Revised: 11/24/98  
 Printed: 11/24/98, 8:00 AM

**BARRIER TEST REQUEST**

TB2416

**STILL PHOTO:** STANDARD PRE & POST TEST  
 CLOSE UPS OF FUEL SUPPLY LINE CONNECTION TO FUEL RAIL, PRE & POST TEST.  
 CONTACT REQUESTOR FOR ADDITIONAL INSTRUCTIONS.

**HIGH SPEED FILM:**

OFFBOARD		
1	RIGHT	OVERALL
2	RIGHT	A-PILLAR FORWARD
3	LEFT	OVERALL
4	LEFT	A-PILLAR FORWARD
5	RIGHT	DUMMY KINEMATICS VIEW
6	LEFT	DUMMY KINEMATICS VIEW
7	OVERHEAD	OVERALL
8	OVERHEAD	A-PILLAR FORWARD
9	PIT	A-PILLAR FORWARD
TOTAL OFFBOARD =		9
TOTAL ONBOARD =		0

**FILM ANALYSIS:**

	DESCRIPTION	ACCEL	VEL	DISP	ANGLE
1	LFT RKR LONG @ B-PILLAR WRT GROUND		X	X	
2	LFT RKR VERT @ B-PILLAR WRT GROUND		X	X	
3	RGT RKR LONG @ B-PILLAR WRT GROUND		X	X	
4	RGT RKR VERT @ B-PILLAR WRT GROUND		X	X	

**DIGITIZED FILM:** NONE

**SPECIAL BUILD INSTRUCTIONS:**

- 1 UPDATE INTAKE MANIFOLD, FUEL RAIL, FUEL INJECTORS, IPB, FUEL SUPPLY LINE AS REQUIRED.
- 2 UPDATE FUEL TANK, FDM, CARBON CANISTER & VAPOR LINES AS REQUIRED.
- 3 INSTALL FRONT & SIDE AIR BAG DUMMY RESISTORS.

FUNCTION	NAME	PHONE	PAGER
REQUESTOR:	K. EWING	24-88188	KEWI
	E. LOW	84-88874	ELOW
	D. PERRIGO	84-88018	DPER
BLD. COORD:	S. PAGANO	32-00845	SPAG
SUPERVISOR:	K. ARTHURS	88-05158	KART

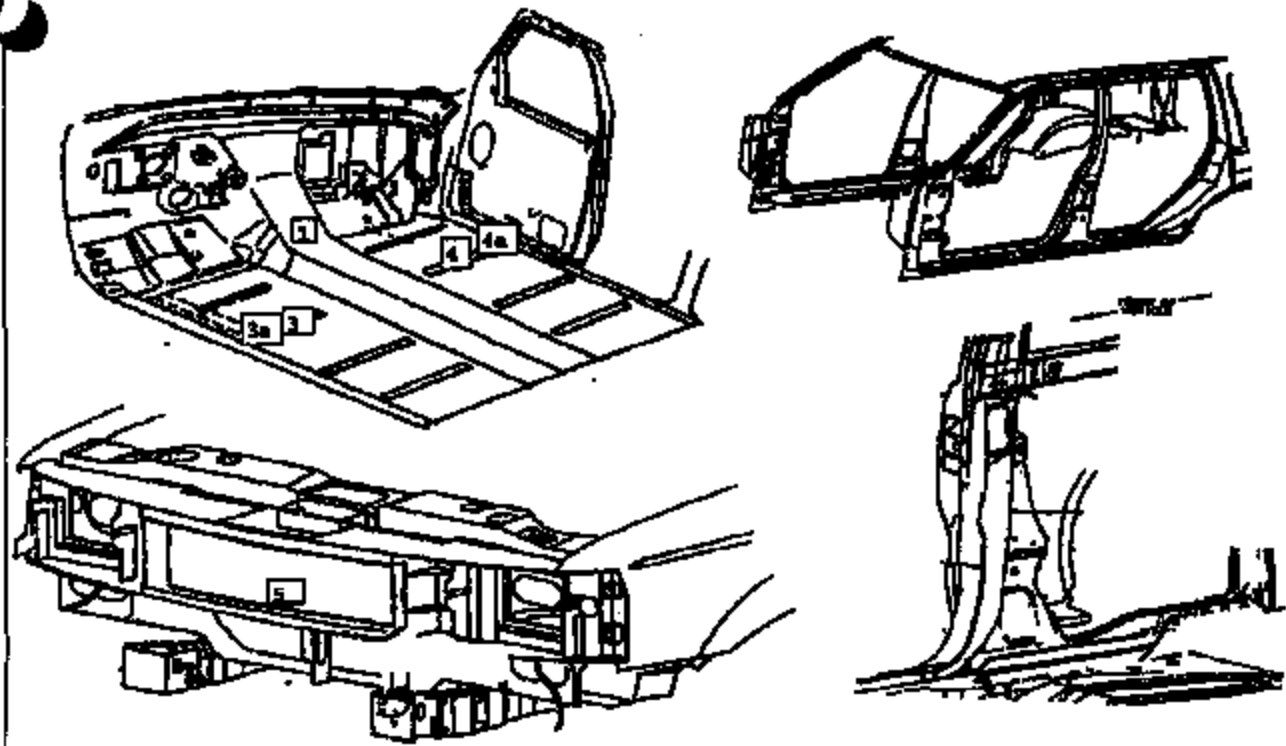
DATE	DESCRIPTION	PAGES AFFECTED	AUTHORIZATION
11/24/98	TAG NUMBER REVISED	1	DBP
11/24/98	CHANGED FUEL CAPACITY TO 18 GALLONS	1	DBP
11/24/98	ADDED TEST WEIGHTS	1	DBP
11/24/98	ADDED FRT AND SIDE AIR BAGS RESTRAINT USAGE	1	DBP
11/24/98	ADDED DUMMY KINEMATICS OFFBOARD CAMERAS	2	DBP

File: Tb2416, Tab: REQUEST  
 Created: 11/24/98  
 Revised: 11/24/98  
 Printed: 11/24/98, 9:00 AM

# SENSOR MAP

Program: D186  
 Test Mode: 31/30R BARRIER  
 TA No.: TB2418

Vehicle ID: 579W775  
 Build level: GP



Location Name		Supplier	Output	Nominal (+/-)	Max/Min	Serial #
1	O/F_FLOOR_PAN_RCM (LHD INBOX Location)	SM009-1	BAR1_OUT	0	10	[REDACTED]
		SM009-2	BAR2_OUT	0	10	
		SM009-3	BAR3_OUT	0	10	
		SM009-4	BAR4_OUT	0	10	
		SM009-5	D_PSP_OUT	0	10	
		SM009-6	F_PSP_OUT	0	10	
		SM009-7	D_BAR1_OUT	0	10	
		SM009-8	F_BAR1_OUT	0	10	
		SM009-9	Stabilis	5	10	
1	C/F_FLOOR_PAN_S_RCM	accol	TRIAK	On system		NA
3a	L/F_FLOOR_S_S1_INER_COVRO	VISTEON	SENSOR			915A
3	L/F_FLOOR_S_S1_INER_SEAT_CL	accol	TRIAK			NA
4a	R/F_FLOOR_S_S1_INER_COVRO	VISTEON	SENSOR			915B
4	R/F_FLOOR_S_S1_INER_SEAT_CL	accol	TRIAK			NA
5	C/RAD	VCS	VCS			4A
5	C/RAD	accol	TRIAK	Next to VCS		NA

T zero required; Assumed system power from vehicle wiring and battery - use provided harness

### REVISION LOG

DESCRIPTION	DATE	PAGE AFFECT	BY/TK
CHANGED ECM TO SM009 vs. SM004 PER FRANK VOLPE	0000000	1	DEP