

# INFORMATION BULLETIN

GENERAL MOTORS VEHICLE MANUFACTURERS ASSOCIATION OF THE UNITED STATES, INC. • 7430 SECOND AVENUE, SUITE 300 • DETROIT, MICHIGAN 48202 • 872-4311 AREA 313

V1481

August 27, 1990

**TO: Side Impact Subcommittee**  
**FROM: Ronald J. Wasko**  
**SUBJECT: MVMA Full Vehicle BioSID Test Report - Test 9B**

Attached for information is a copy of the final report for one of the twelve MVMA Full Vehicle Side Impact Tests. The tests were conducted during February to April, 1990 at the General Motors Proving Grounds, using the BioSID dummy. The calibration procedures and results will be transmitted in a separate bulletin.

**Attachment**

**cc: Engineering Research Subcommittee**  
**Vehicle Safety Development Subcommittee**

**MVMA FULL VEHICLE BIOSID SIDE IMPACT  
TEST SERIES**

**FEBRUARY-APRIL, 1990**

**USING PROPOSED NHTSA FULL VEHICLE SIDE IMPACT TEST PROCEDURE**

**TEST NUMBER 9B\***

**(B= Baseline door interior; P= Padded door interior)**



TEST REPORT

REPORT NO. PG \_\_\_\_\_  
 SRDL TEST NO. C8009 \_\_\_\_\_  
 TEST DATE MAR 20, 1990 \_\_\_\_\_

TYPE IMPACT:

- REAR MOVING BARRIER
- LEFT SIDE MOVING BARRIER
- RIGHT SIDE MOVING BARRIER
- OTHER

BARRIER TYPE:

- FLAT FACE
- CONTOURED
- OTHER

OTHER:

- CRABBED DEFORMABLE BARR AT 27 DEG.

VEHICLE DESCRIPTION

MAKE	YEAR	BODY TYPE	BODY STYLE	DIVISION CAR NO.	BUILD STATUS	
PONTIAC	90	A-BODY	2AF69	MVMA 9B	PRODUCTION	
ENGINE	CONFIGURATION	L4	DISPLACEMENT	2.5 L	PREVIOUS IMPACTS	NONE
	FUEL	GASOLINE			TRAILER HITCH	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> TYPE
	FUEL INDUCTION	ELECTRONIC FUEL INJECTION			SPARE TIRE TYPE	COMPACT
FUEL TANK	USABLE CAPACITY	N/D L	UNUSABLE CAPACITY	N/D L	AC	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
SPECIAL FEATURES:						
VEHICLE TESTED FOR MVMA FOR EVALUATION OF BIOSID DUMMY AND SID DUMMY.						

TEST CONDITIONS

MOVING BARRIER			
VELOCITY AT IMPACT	53.6 km/h	LOCATION	VEHICLE <input type="checkbox"/> DRIVER SRP <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>
TEST MASS	1360 kg	AT IMPACT	

VEHICLE			
TEST MASS	FRONT	920 kg	
LESS DUMMIES <input checked="" type="checkbox"/>	REAR	673 kg	
INCLUDING DUMMIES <input type="checkbox"/>	TOTAL	1593 kg	
FUEL TANK	TEST VOLUME: CONTENTS	WATER	
	N/D / OF USABLE CAPACITY=	64.4 L	
	FUEL LINES AND SYSTEM FILLED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
	VEHICLE SERVICE BRAKES ON @ IMPACT	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
SEAT POSITION	MID		
VEHICLE ATTITUDE			
J= DRIVER SIDE	189 mm	PASSENGER SIDE	187 mm
K= DRIVER SIDE	178 mm	PASSENGER SIDE	163 mm
COMMENTS:			
LEFT SIDE OF MOVING BARRIER FACE WAS POSITIONED			
940MM FORWARD OF VEHICLE WHEELBASE CENTERLINE.			
SEE PAGE 4. FUEL TANK WAS FILLED WITH WATER.			

DUMMIES			
LEFT FRONT	MAKE	BIOSID	NO. 2
	TYPE	50TH %ILE MALE	MASS 77.3 kg
	RESTRAINT	UNBELTED	
LEFT REAR	MAKE	SID	NO. 4
	TYPE	50TH %ILE MALE	MASS 78.5 kg
	RESTRAINT	UNBELTED	

TEST CONFIGURATION:

PHOTOGRAPHIC COVERAGE

OFFBOARD	OVER ALL	<input checked="" type="checkbox"/>	FUEL TANK	
	REAR HALF		OVERHEAD	<input checked="" type="checkbox"/>
	PIT			
OTHER	OFFBD-DR SIDE	<input checked="" type="checkbox"/>	ON MDB - IMPACT	<input checked="" type="checkbox"/>
	ONBD-DRIVER	<input checked="" type="checkbox"/>		
	ONBD - LR OCCUP	<input checked="" type="checkbox"/>		

RECORDED DATA

FLOOR PAN ACCEL.	LONG <input type="checkbox"/>	LAT <input type="checkbox"/>	TRIAX <input type="checkbox"/>
FRAME ACCEL	LONG <input type="checkbox"/>	LAT <input type="checkbox"/>	TRIAX <input type="checkbox"/>
ROCKER PANEL ACCEL.	LONG <input type="checkbox"/>	LAT <input type="checkbox"/>	TRIAX <input type="checkbox"/>
VEHICLE ACCEL	<input checked="" type="checkbox"/>	BIOSID DATA	<input checked="" type="checkbox"/>
VEHICLE DISP.	<input checked="" type="checkbox"/>	SID DATA	<input checked="" type="checkbox"/>
MOVING BARR ACCEL	<input checked="" type="checkbox"/>		

# POST-TEST OBSERVATIONS

		YES	NO	N/A	N/D	FIG.	E
D O O R S	ALL EXTERIOR DOORS REMAINED CLOSED	X					
	ALL EXTERIOR DOORS REMAINED LATCHED	X					
	ALL EXTERIOR DOOR HINGES REMAINED INTACT	X					
		LATCH OPERABLE					
		YES	NO	OTHER	DISTANCE DOOR MAY BE OPENED (1)		
	LEFT FRONT		X		0	mm	(1) DISTANCE MEASURED BETWEEN DOOR OUTER SURFACE AND ADJACENT BODY OUTER SURFACE WHEN 450 N PULL IS APPLIED TO HANDLE.
	RIGHT FRONT	X			FULL	mm	
LEFT REAR		X		0	mm		
RIGHT REAR	X			FULL	mm		
B O D Y		YES	NO	N/A	N/D	FIG.	NOTE
	BODY TO-FRAME OR CRADLE MOUNTS REMAINED ATTACHED	X					
	SPARE TIRE REMAINED IN PLACE	X					
	TRUNK LID OR REAR HATCH REMAINED INTACT	X					
	TRUNK LID OR REAR HATCH REMAINED CLOSED	X					
D R I V E	REAR AXLE INTACT			X			1
	REAR AXLE DEFORMED			X			1
	DRIVESHAFT INTACT			X			1
	DRIVESHAFT DEFORMED			X			1
F U E L	FUEL TANK RETAINED	X					
	FILLER TUBE INTACT	X					

NOTE:  
1. FRONT WHEEL DRIVE.

NOTE: VEHICLE AND BARRIER FACE RESIDUAL CRUSH MEASUREMENTS ON PAGES 5 & 6.

## VEHICLE DATA

REAR IMPACT							
VEHICLE	DRIVER SIDE	_____	mm	FUEL TANK	DRIVER SIDE	_____	mm
RESIDUAL CRUSH	PASSENGER SIDE	_____	mm	RESIDUAL CRUSH	PASSENGER SIDE	_____	mm
VEHICLE	DRIVER SIDE	_____	mm	FUEL TANK	DRIVER SIDE	_____	mm
DYNAMIC CRUSH	PASSENGER SIDE	_____	mm	RESIDUAL DISP	PASSENGER SIDE	_____	mm
SIDE IMPACT							
VEHICLE RESIDUAL CRUSH				FUEL TANK LATERAL RESIDUAL CRUSH			
FRONT	mm			FRONT	N/D	mm	REAR N/D mm
MID	mm			FUEL TANK LATERAL RESIDUAL DISPLACEMENT			
REAR	mm			FRONT	N/D	mm	REAR N/D mm

NOTE: (A) RESIDUAL CRUSH MEASUREMENTS +OR- 25mm. OTHER RESIDUAL MEASUREMENTS +OR- 5mm  
(B) GENERALIZED TOLERANCE CANNOT BE SPECIFIED FOR DYNAMIC MEASUREMENTS BECAUSE OF ACCURACY VARIATIONS DUE TO DIFFERENCES IN ANALYSIS TECHNIQUES.

A TOLERANCE FOR SPECIFIC TEST DATA CAN BE FURNISHED ON REQUEST.

N/A NOT APPLICABLE N/D NOT DETERMINED

DUMMY LOCATION IN VEHICLE

The following values reflect the dummy location in the test vehicle in corporate body coordinates. The location is determined relative to the vehicle front fiducial mark (front outboard seat anchor stud).

BODY COORDINATES (mm)

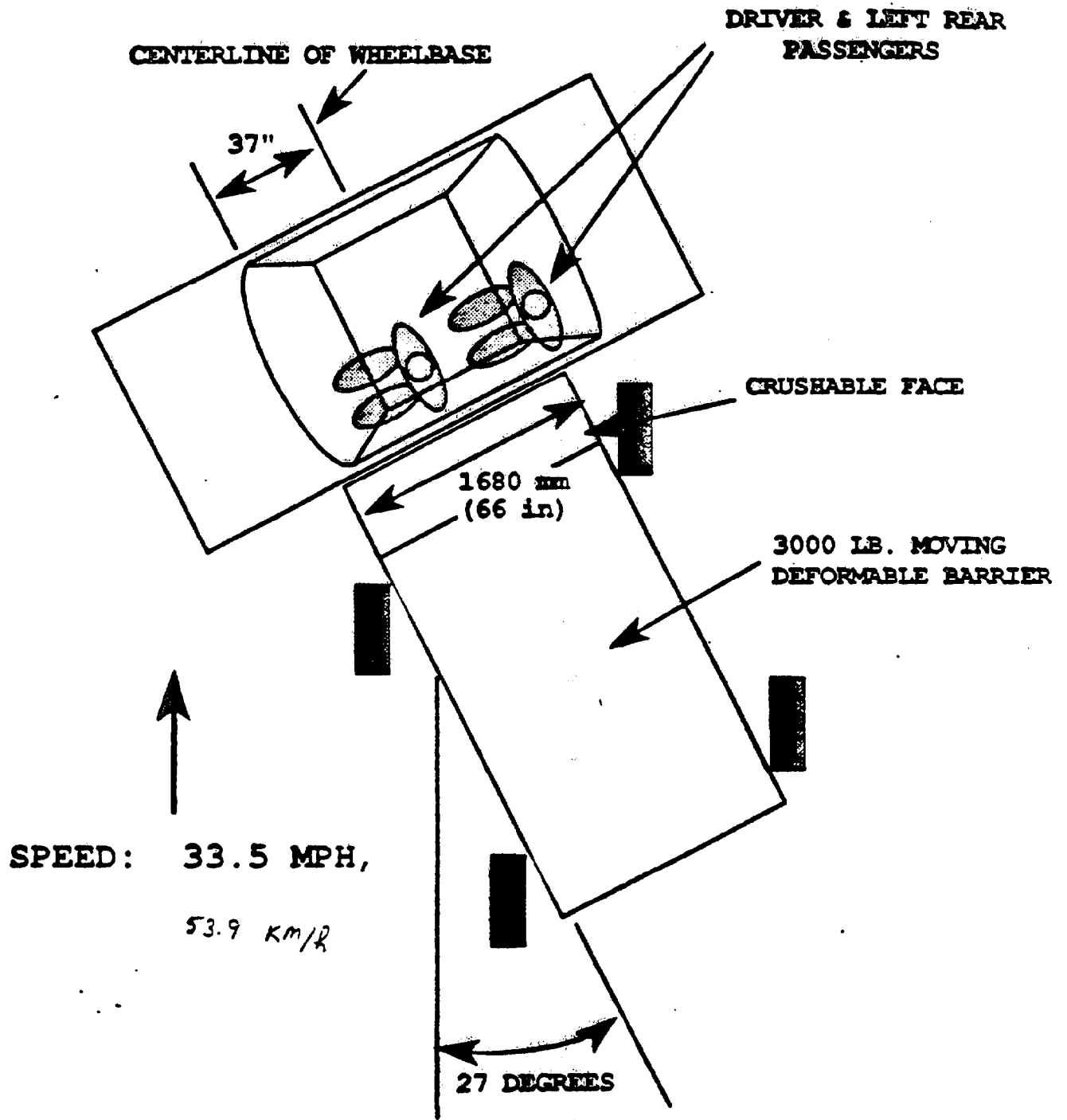
	LONGITUDINAL	VERTICAL
<u>LEFT FRONT PASSENGER</u>		
HEAD	<u>3207</u>	<u>1146</u>
HIP	<u>3061</u>	<u>474</u>
KNEE	<u>2656</u>	<u>552</u>
PELVIC ANGLE	<u>22</u>	SEAT BACK ANGLE <u>24.0</u>

<u>LEFT REAR PASSENGER</u>		
HEAD	<u>4203</u>	<u>1066</u>
HIP	<u>3825</u>	<u>448</u>
KNEE	<u>3510</u>	<u>607</u>
PELVIC ANGLE	<u>17°</u>	SEAT BACK ANGLE <u>N/D</u>

Dummy lateral location: 343 mm relative to VEHICLE C/L

Comments: DUMMY HEAD ANGLE IN DEGREES - DRIVER=-10, LR=-15  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# NHTSA TEST CONFIGURATION



27 DEGREE CRABBED MOVING DEFORMABLE BARRIER TO CAR SIDE IMPACT  
 TEST VEHICLE PRE-TEST, POST-TEST, AND STATIC CRUSH MEASUREMENTS (in mm)

TEST NUMBER: C8009

TEST DATE: 3-20-90

LOCATION			WINDOW TOP			WINDOW BILL			MID DOOR			H - POINT			AXCLE CL		
HEIGHT (in mm)			-			792			-			430			210		
TIME & CRUSH			PRE TEST	POST TEST	RSDL. CRUSH	PRE TEST	POST TEST	RSDL. CRUSH	PRE TEST	POST TEST	RSDL. CRUSH	PRE TEST	POST TEST	RSDL. CRUSH	PRE TEST	POST TEST	RSDL. CRUSH
M	F	610	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E	R	457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A	W	305	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
B	D	152	-	-	-	410	411	1	-	-	-	-	-	-	-	-	
U		0*	-	-	-	404	408	4	-	-	-	353	336	-17	449	441	-8
R		152	-	-	-	402	520	118	-	-	-	355	614	259	452	533	81
E		305	-	-	-	400	576	176	-	-	-	352	679	327	453	560	107
H		457	-	-	-	398	599	201	-	-	-	351	690	339	451	579	128
E		610	-	-	-	396	611	215	-	-	-	349	707	358	451	603	152
H	R	762	-	-	-	395	627	232	-	-	-	347	725	378	448	626	178
T	E	914	-	-	-	394	651	257	-	-	-	347	744	397	449	648	199
	A	1067	-	-	-	392	667	275	-	-	-	346	756	410	446	673	227
L	R	1219	-	-	-	390	690	300	-	-	-	346	758	412	445	716	271
O	W	1372	-	-	-	391	702	311	-	-	-	346	780	434	445	617	172
C	A	1524	-	-	-	390	715	325	-	-	-	346	789	443	440	553	113
A	R	1676	-	-	-	390	726	336	-	-	-	347	788	441	442	501	59
T	D	1829	-	-	-	391	624	233	-	-	-	348	697	349	445	459	14
I		1981	-	-	-	391	503	112	-	-	-	-	-	-	-	-	-
O		2134	-	-	-	394	458	64	-	-	-	-	-	-	-	-	-
H		2286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(in mm)

\* IMPACT POINT- MOVING DEFORMABLE BARRIER LEADING EDGE

**27 DEGREE CRABBED MOVING DEFORMABLE BARRIER TO CAR SIDE IMPACT  
STRIKING VEHICLE PRE-TEST, POST-TEST, AND STATIC CRUSH MEASUREMENTS (in mm)**

TEST NUMBER: C8009  
TEST DATE: MAR. 20, 1990

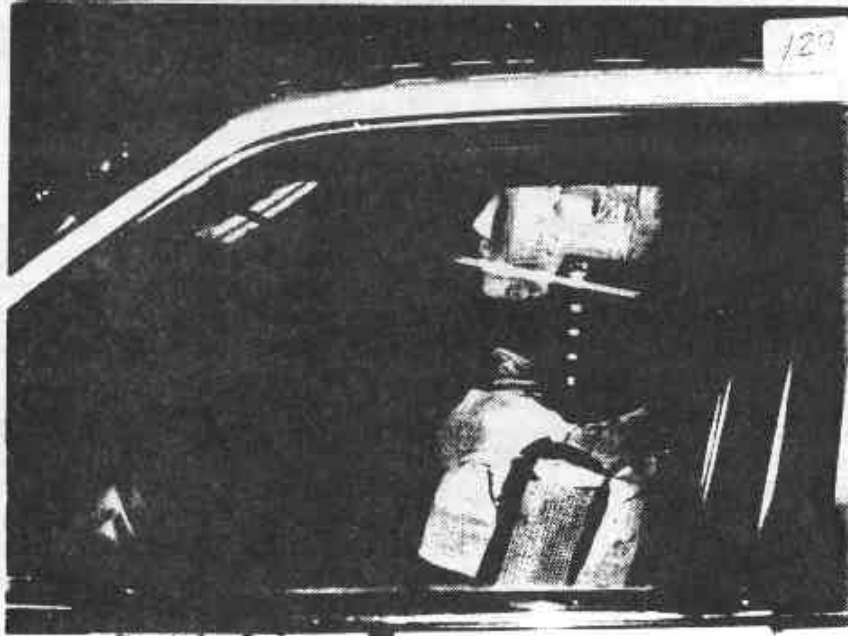
LOCATION	HEIGHT	TIME/CRUSH	MEASUREMENT LOCATION (in mm)																	
			DISTANCE LEFT OF CENTER**									DISTANCE RIGHT OF CENTER**								
			813	711	610	508	406	305	203	102	0	102	203	305	406	508	610	711	813	
TOPOF		POST-TEST	318	279	278	279	280	280	282	284	285	286	287	288	292	300	322	352	394	
STACK LEVEL	813	PRE-TEST	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	
		STATIC CRUSH	42	3	2	3	4	4	6	8	9	10	11	12	16	24	46	76	118	
MID-STACK		POST-TEST	391	275	276	277	278	278	278	278	279	280	281	282	283	285	290	327	388	
LEVEL	686	PRE-TEST	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	
		STATIC CRUSH	115	-1	0	1	2	2	2	2	3	4	5	6	7	9	14	51	112	
BOTTOM OF		POST-TEST	291	284	280	279	279	279	278	277	277	278	279	280	282	282	290	298	331	
STACK LEVEL	559	PRE-TEST	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	
		STATIC CRUSH	15	8	4	3	3	3	2	1	1	2	3	4	6	14	22	55		
BUMPER LEVEL	432	POST-TEST	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	
		PRE-TEST																		
		STATIC CRUSH																		

\* HEIGHTS MEASURED ABOVE GROUND LEVEL  
\*\* LOOKING AT THE FACE OF THE BARRIER.



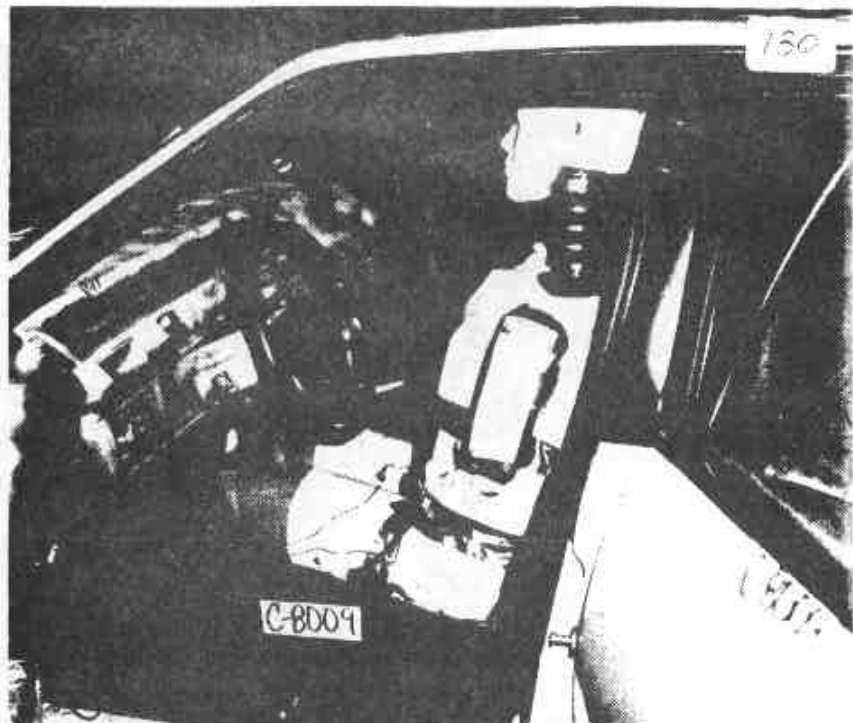


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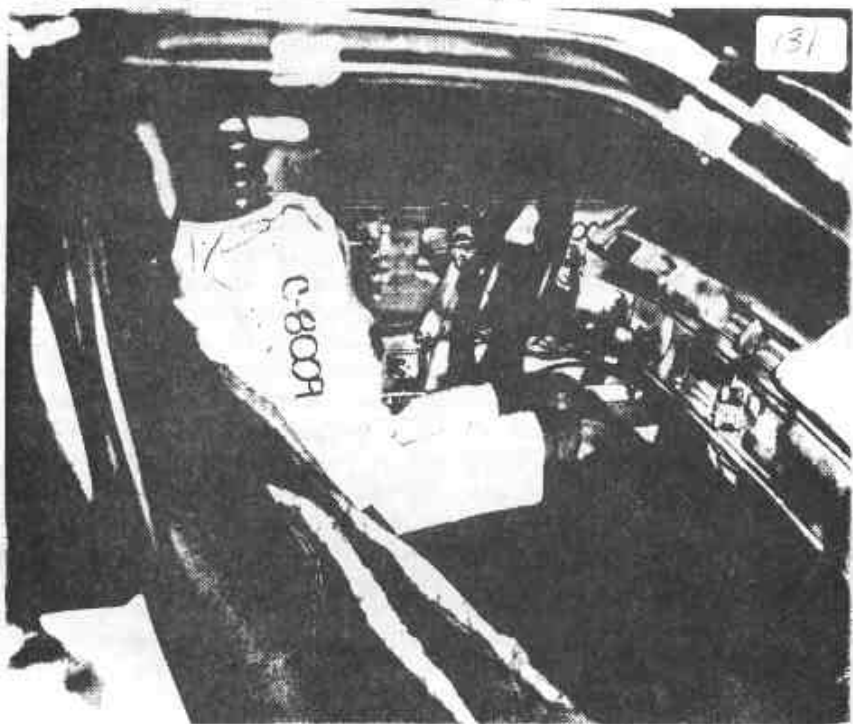


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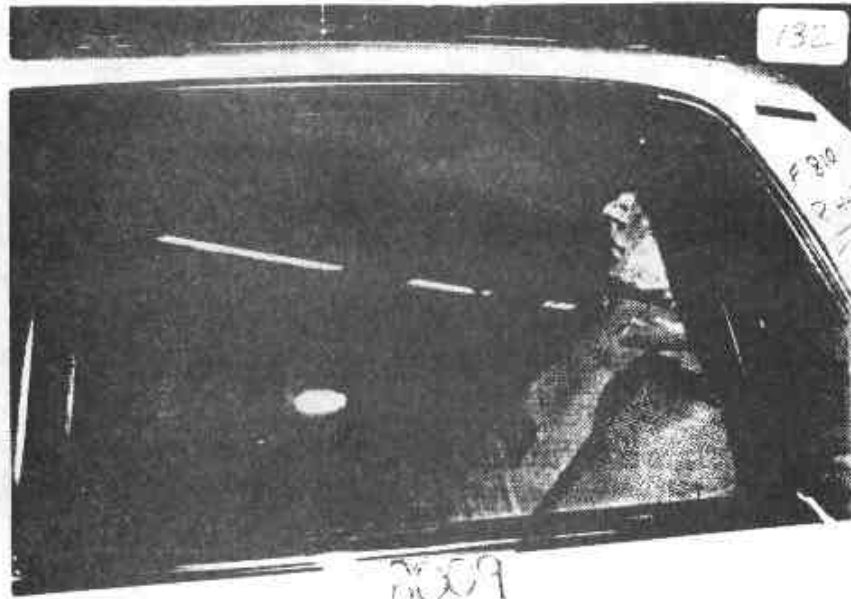
C-8009



Document No.	Fig. No.
55620	130



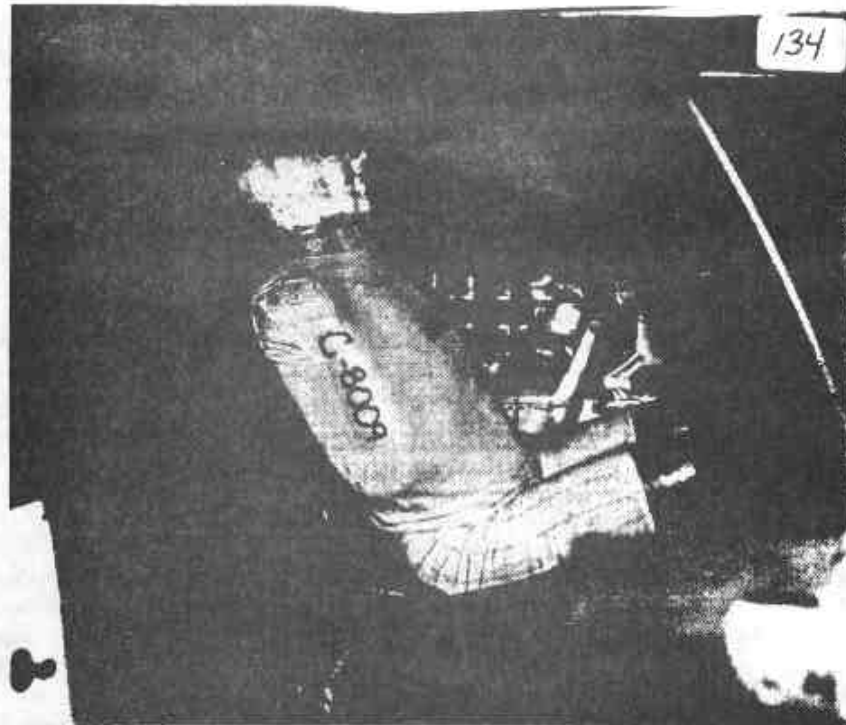
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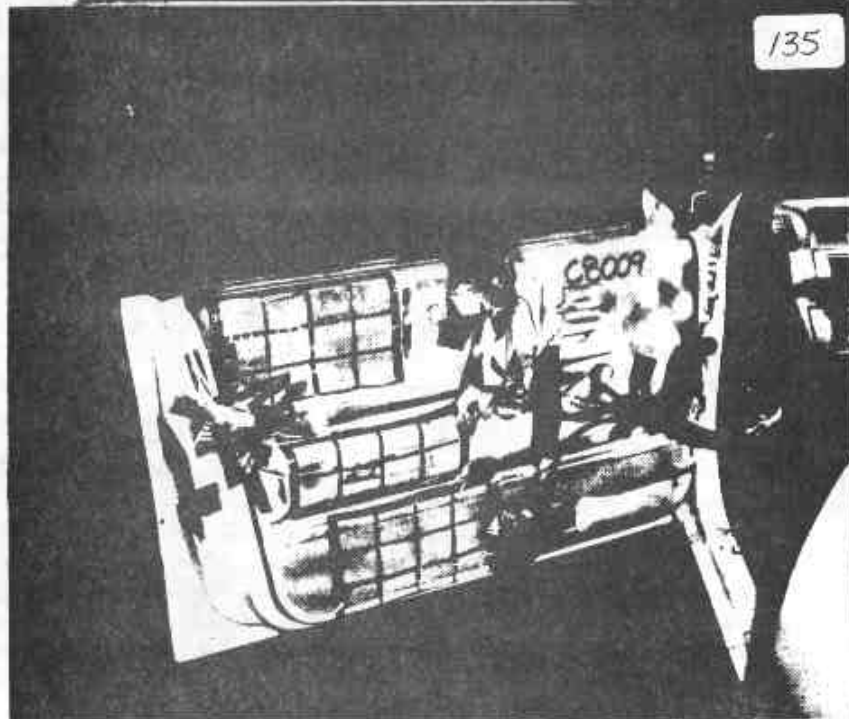
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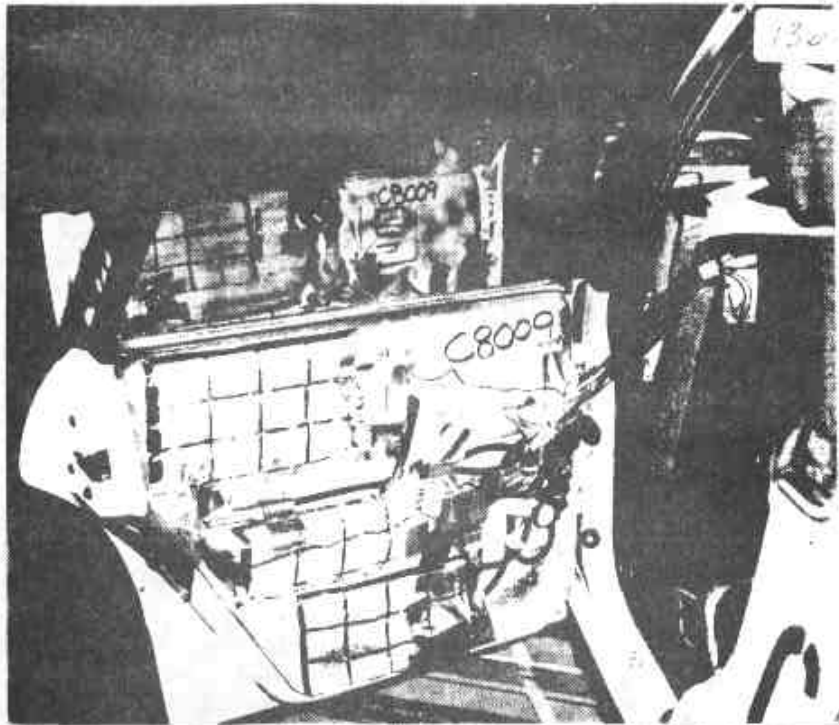


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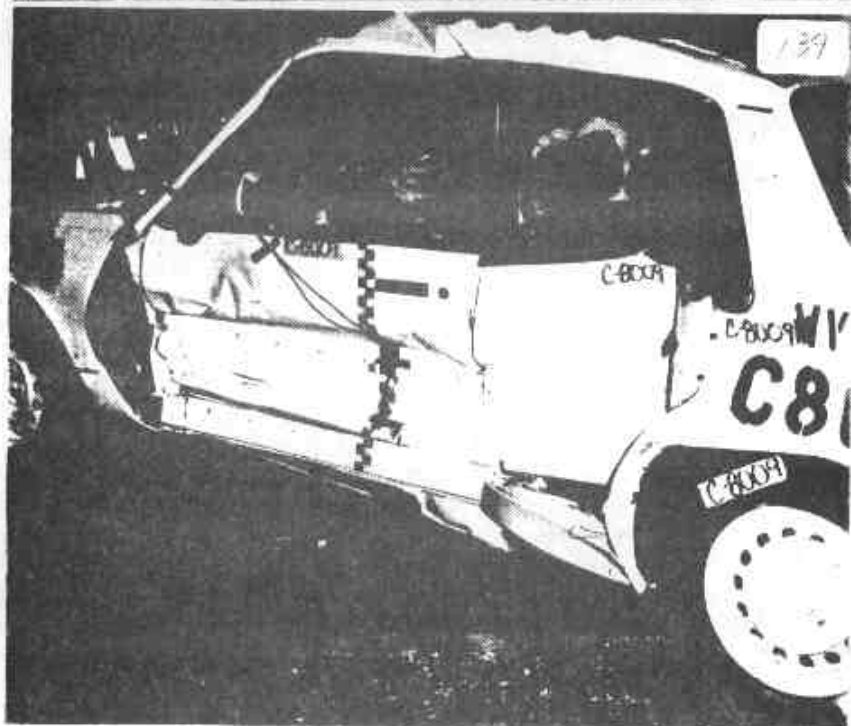


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Document No.	Fig. No.
55620	138



Document No.	Fig. No.
5620	139



Document No.	Fig. No.
55620	140



Document No.	Fig. No.
55620	141



Document No.	Fig. No.
55620	142



Document No.	Fig. No.
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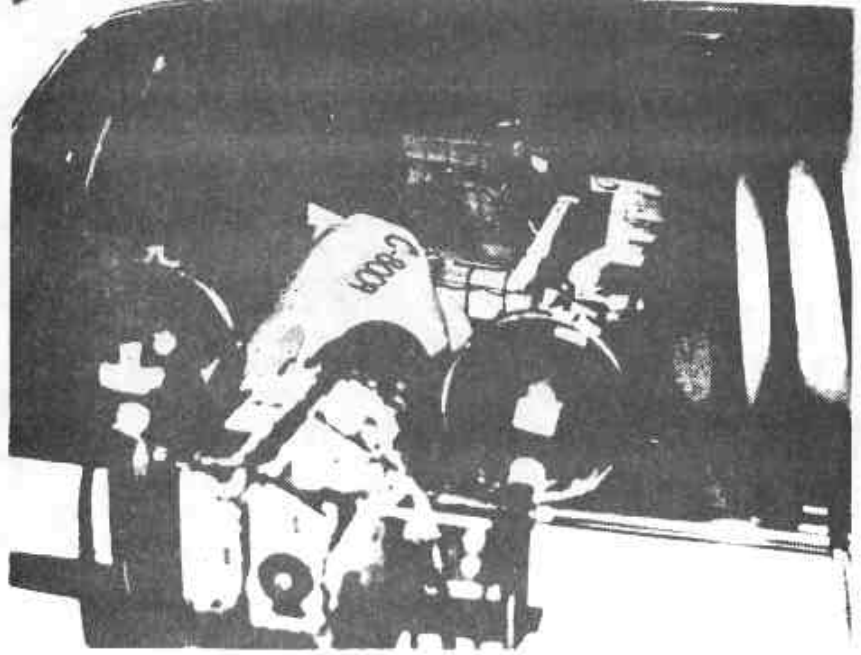
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144



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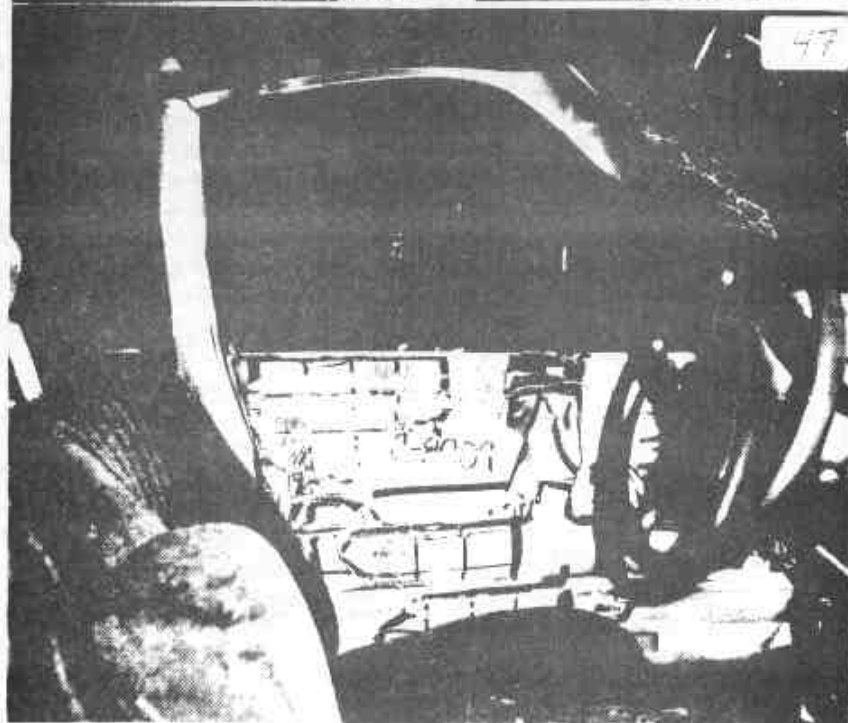


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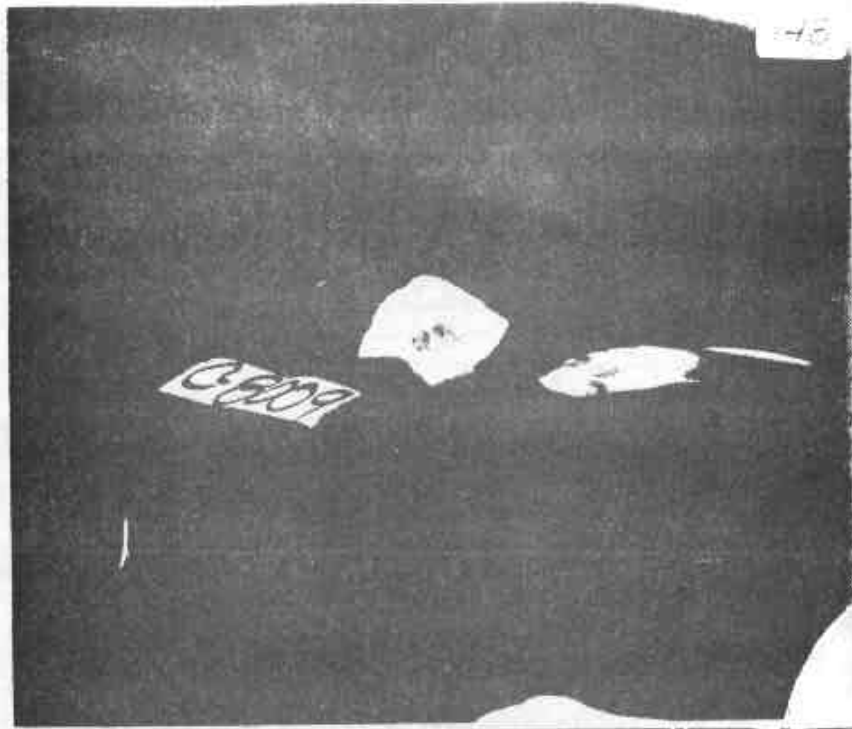
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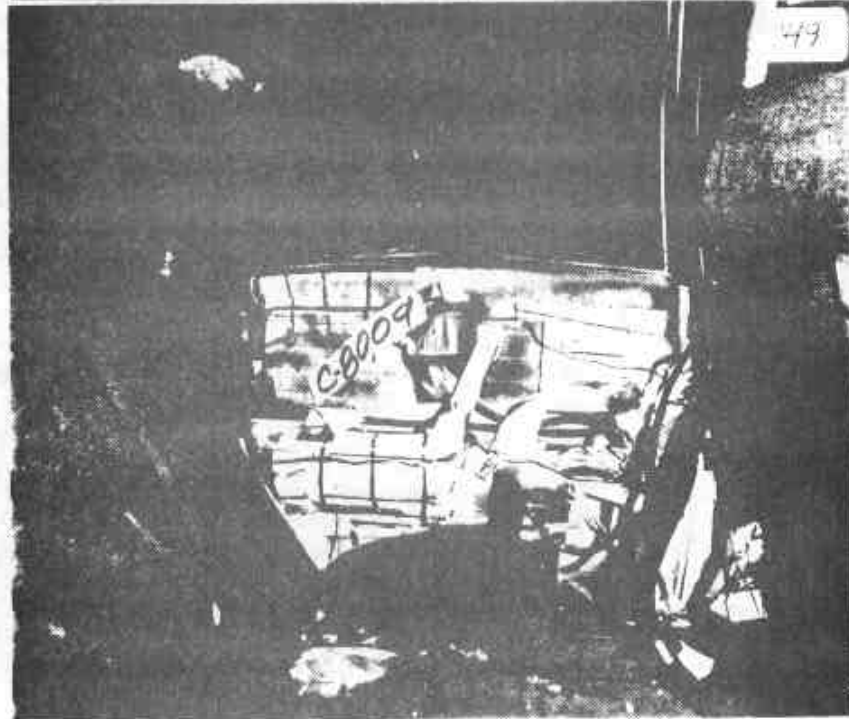


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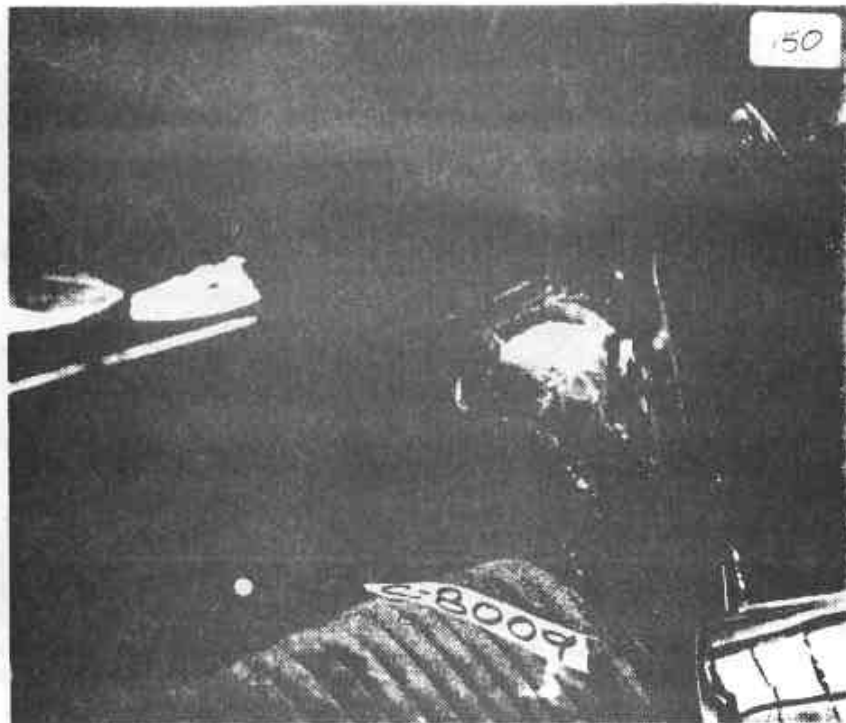


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49



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50

Document No.	Fig. No.
55620	150

Document No.	Fig. No.

M9B6UAG#

C8009PY

05/15/90

06:47:49

# OF PLOTS= 7

XOFF= 9.49999E-01

YOFF= 1.07999E+01

WPEN= 3;

C8009 L.SIDE IMPACT AT 27DEC MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /

3868-905

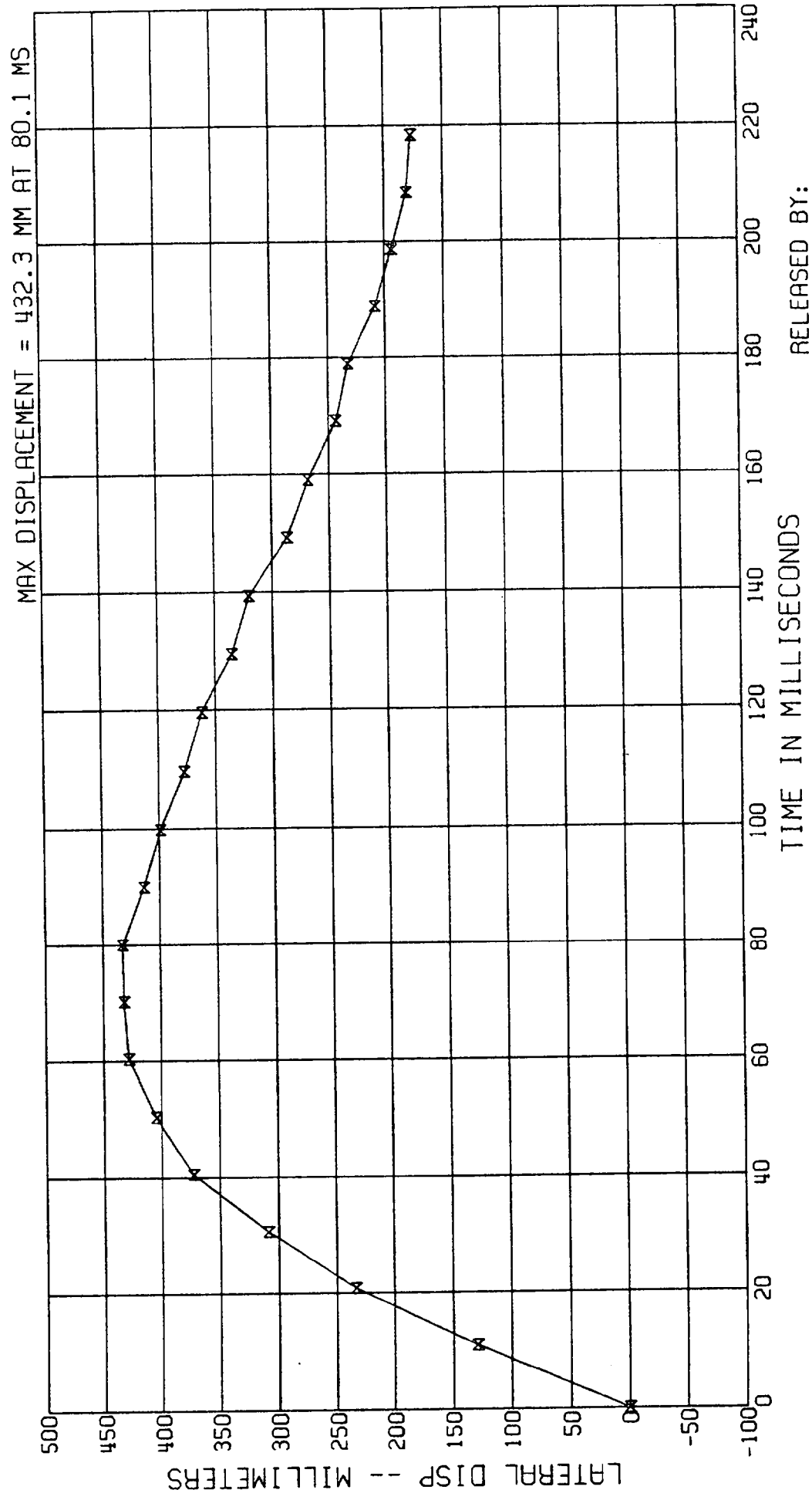
CPE MVMA 9B 2AF69

FILM DATA

OVERHEAD VIEW

TEST DATE: 03-20-90

### STRIKING BARRIER RELATIVE TO STRUCK VEHICLE



RELEASED BY:  
1 PROCESSED 15 MY 90 06:47

FIGURE 2

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H

C8009 L.SIDE IMPACT AT 270EG

3868-905

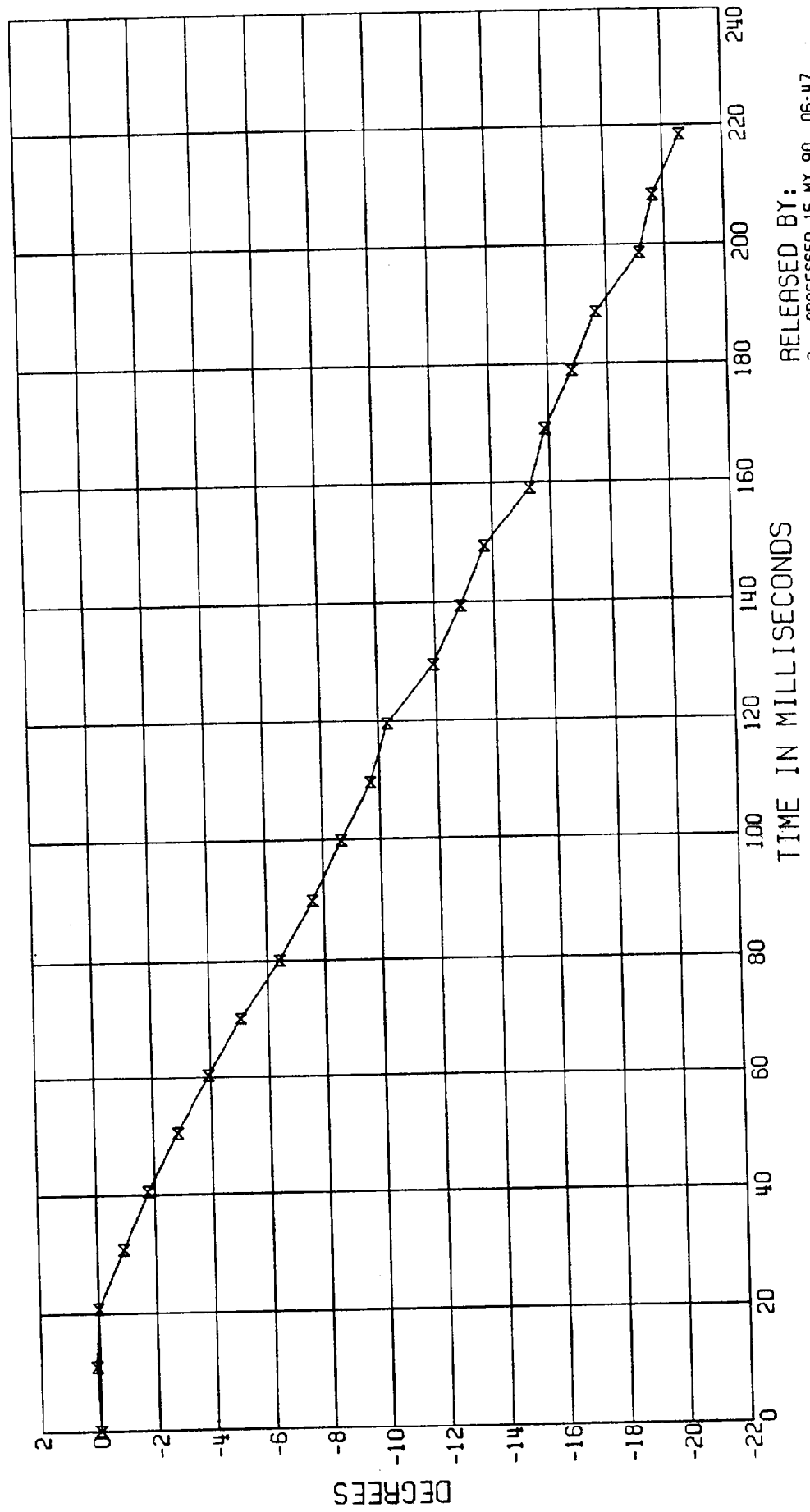
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FILM DATA

OVERHEAD VIEW

TEST DATE:03-20-90

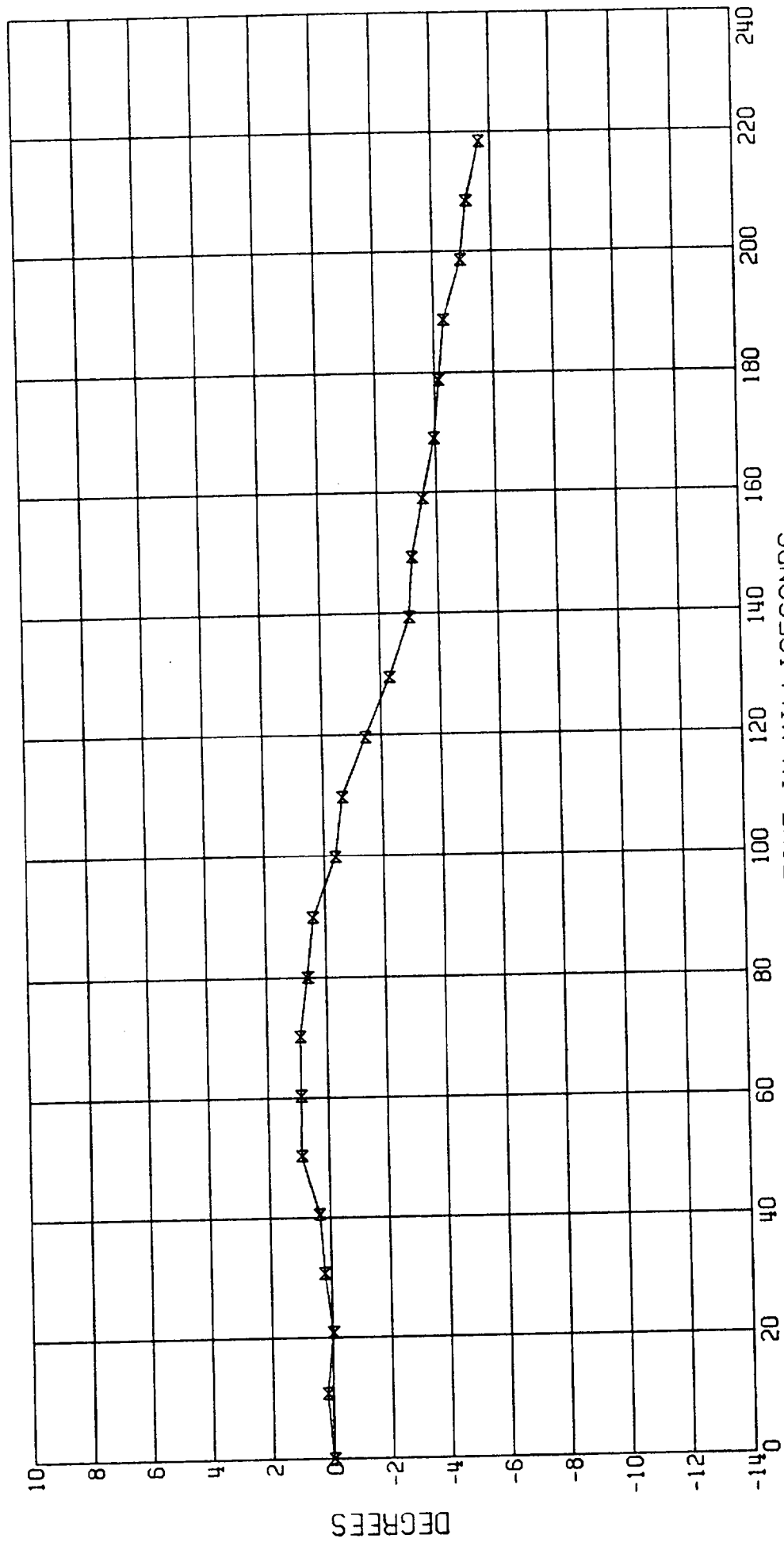
### STRIKING BARRIER YAW RELATIVE TO GROUND REFERENCE



RELEASED BY:  
3 PROCESSED 15 MY 90 06:47

C8009 L.SIDE IMPACT AT 27DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 3  
3868-905  
CPE MVMA 9B 2AF69 OVERHEAD VIEW TEST DATE:03-20-90  
FILM DATA

STRUCK VEHICLE YAW RELATIVE TO GROUND REFERENCE



RELEASED BY:  
4 PROCESSED 15 MY 90 06:47

Copy Data

M9B6UAG#  
C8009A  
05/04/90  
12:05:23  
NUMBER OF PLOTS = 73  
XOFF = 10.10  
YOFF = 0.75

3a.

)

4

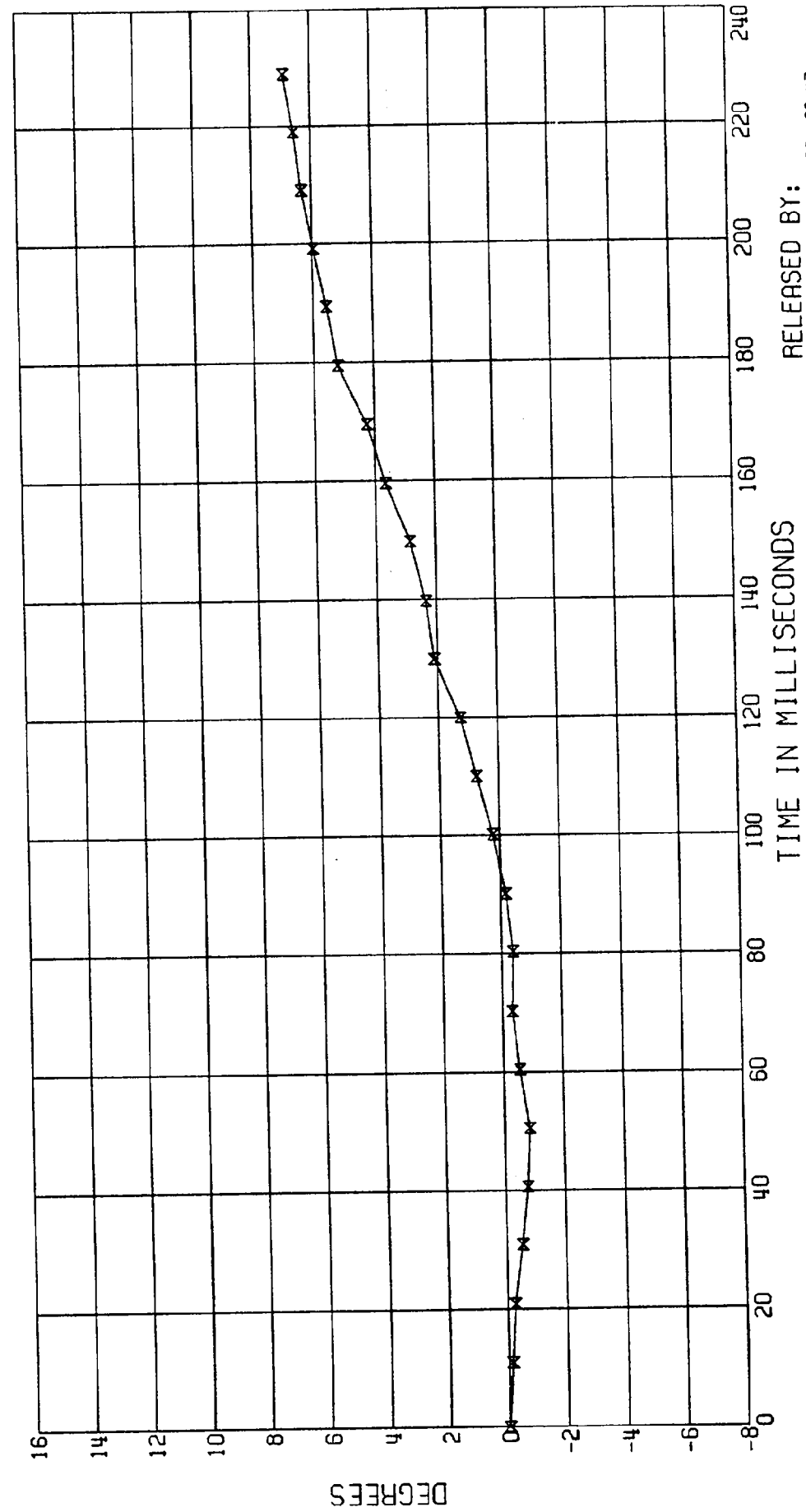
C8009 L. SIDE IMPACT AT 27DEG  
3868-905  
CPE MVMA 9B 2AF69  
FILM DATA

)

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H

REAR VIEW  
TEST DATE: 03-20-90

STRUCK VEHICLE ROLL RELATIVE TO GROUND REFERENCE

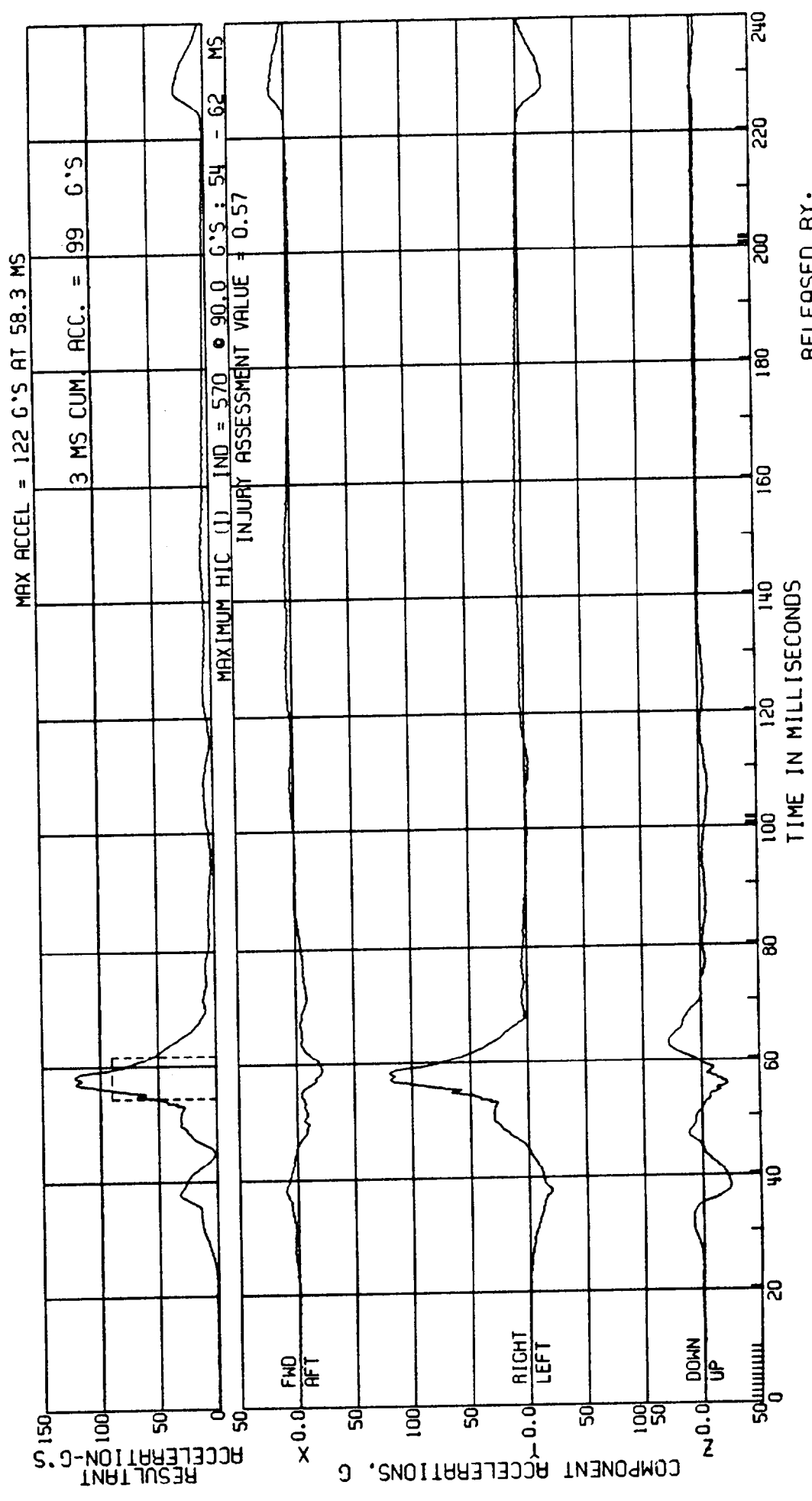


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7 PROCESSED 15 MY 90 06:47

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 5  
 ATD TYPE: SID  
 TEST DATE: 03-20-90

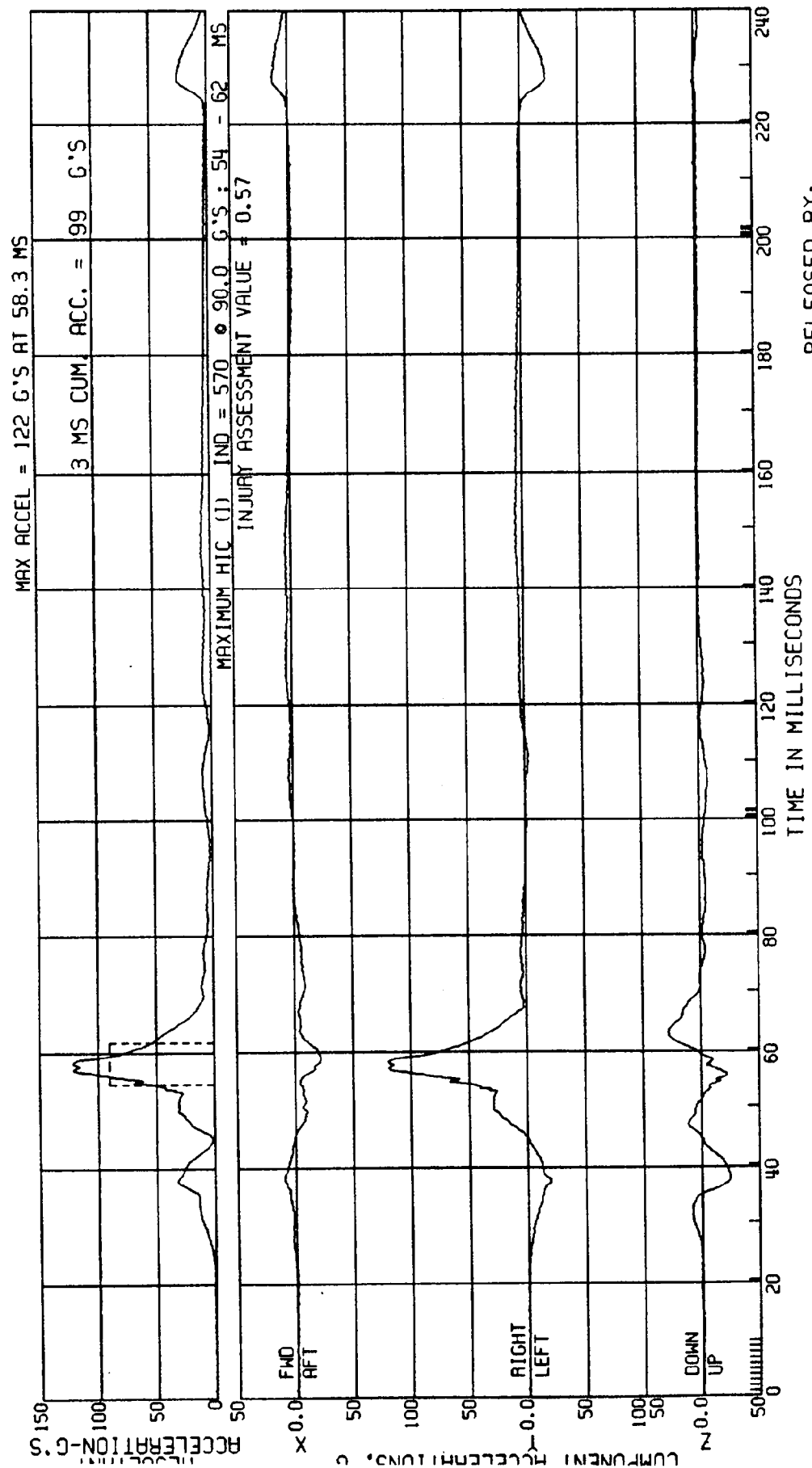
L. REAR HEAD ACCEL.  
 (HIC 1 LIMITED TO 36MS)

3868-905 MVMA 9B 2AF69  
 CPE ELEC DATA, SAE CLASS 1000



RELEASED BY:  
 2 PROCESSED 4 MY 90 12:05

3009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 6  
 368-905 ATD TYPE: SID  
 CPE MVMA 9B 2AF69 L. REAR HEAD ACCEL.  
 TEST DATE: 03-20-90  
 EC DATA, SAE CLASS 1000 (HIC I LIMITED TO 15MS)

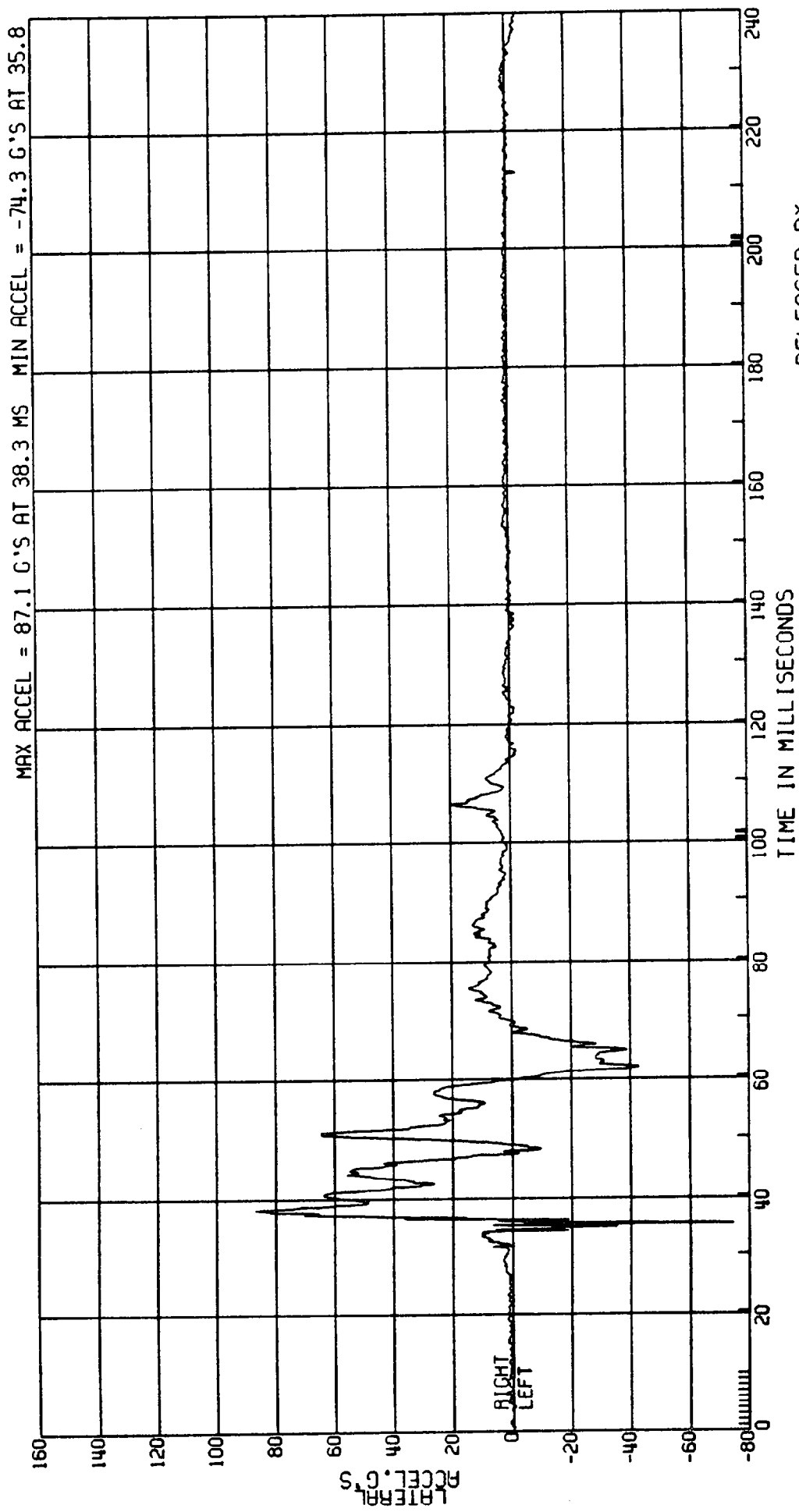


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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 7  
3868-905  
CPE MVMA 9B 2AF69 L. REAR UPPER SPINE ACCEL.

ATD TYPE: SID  
TEST DATE: 03-20-90

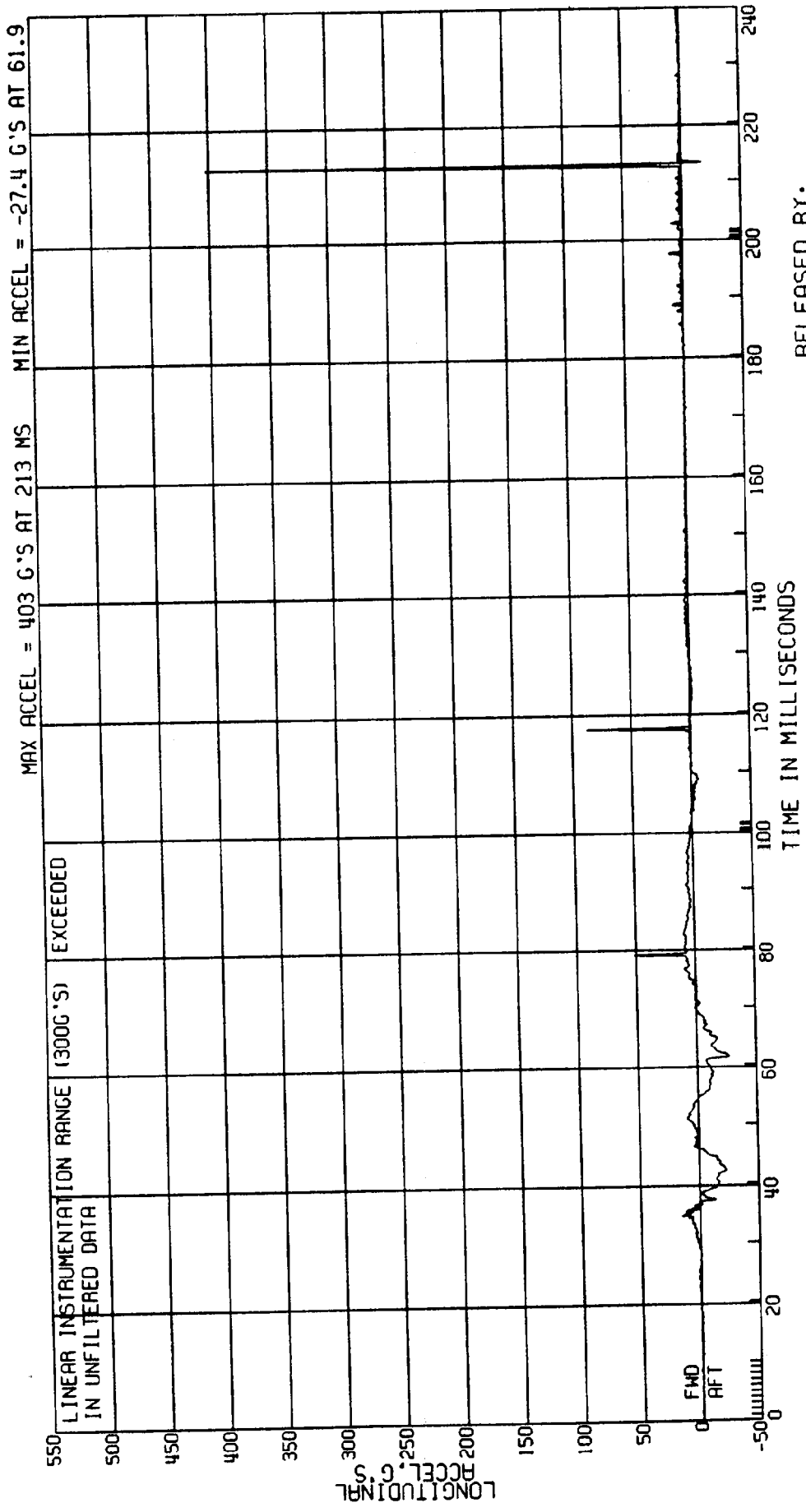
ELEC DATA, SAE CLASS 1000



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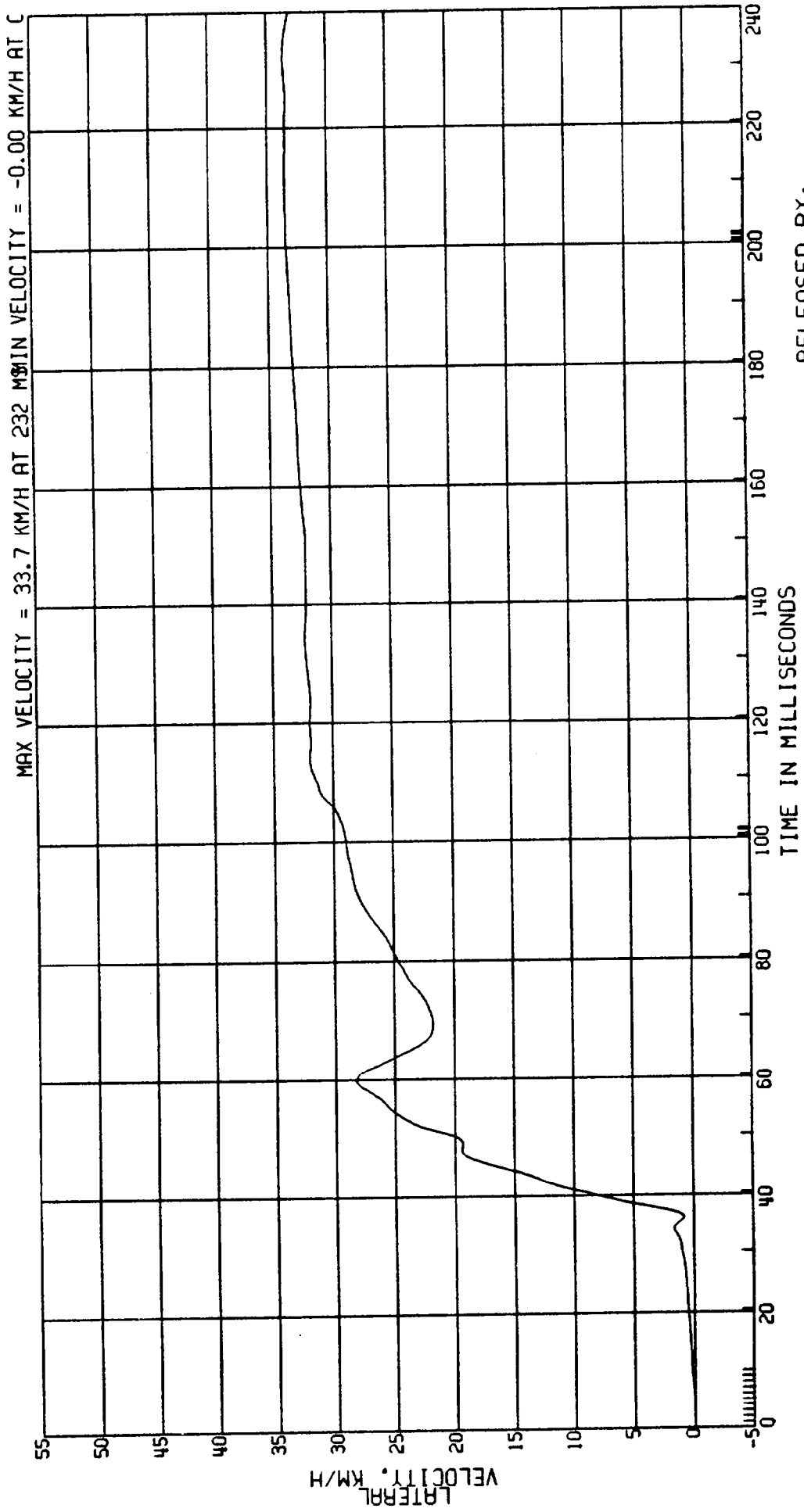
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 8  
 3868-905 ATD TYPE: SID  
 CPE MVMA 9B 2AF69 TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 1000 L. REAR UPPER SPINE ACCEL.



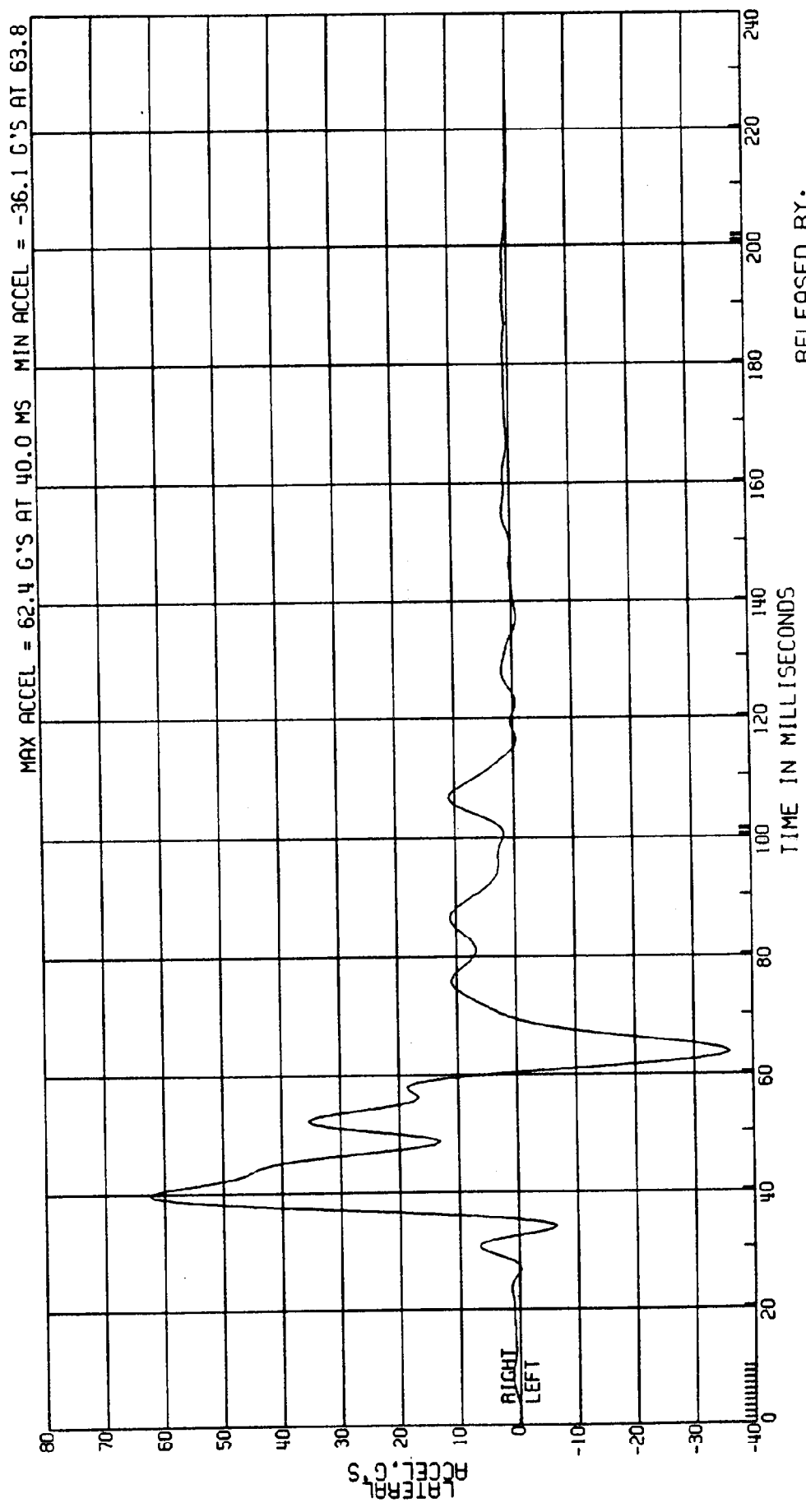
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 9  
 3868-905 ATD TYPE: SID  
 CPE MVMA 9B 2AF69 COMPUTED UPPER SPINE VELOCITY  
 ELEC DATA, SAE CLASS 180 (1ST INT OF L. REAR ACCELERATION) TEST DATE: 03-20-90



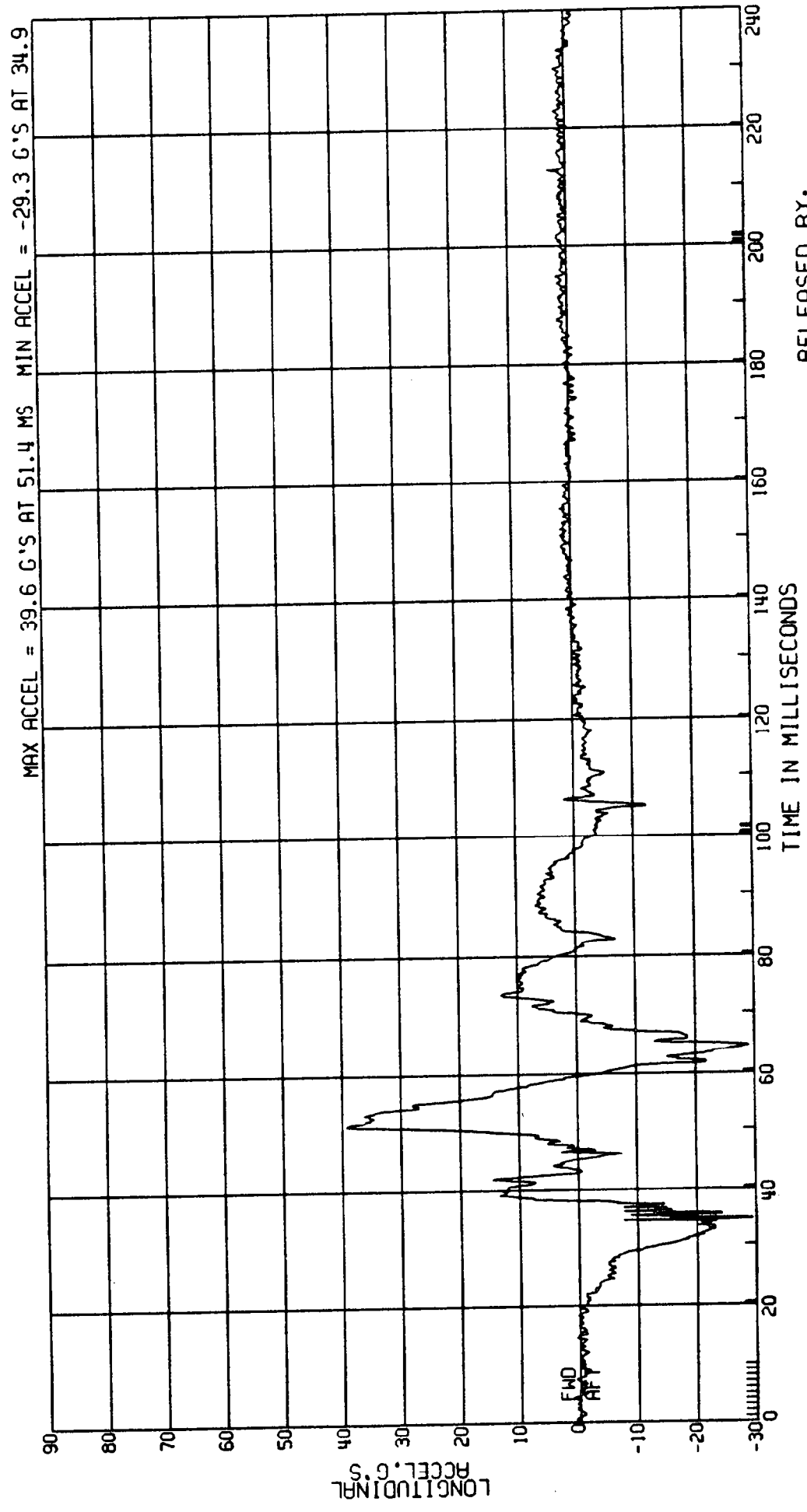
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 35 PROCESSED 4 MY 90 12:06

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /0  
 3868-905 ATD TYPE: SID  
 CPE MVMA 9B 2AF69 TEST DATE:03-20-90  
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH L.REAR UPPER SPINE ACCEL.



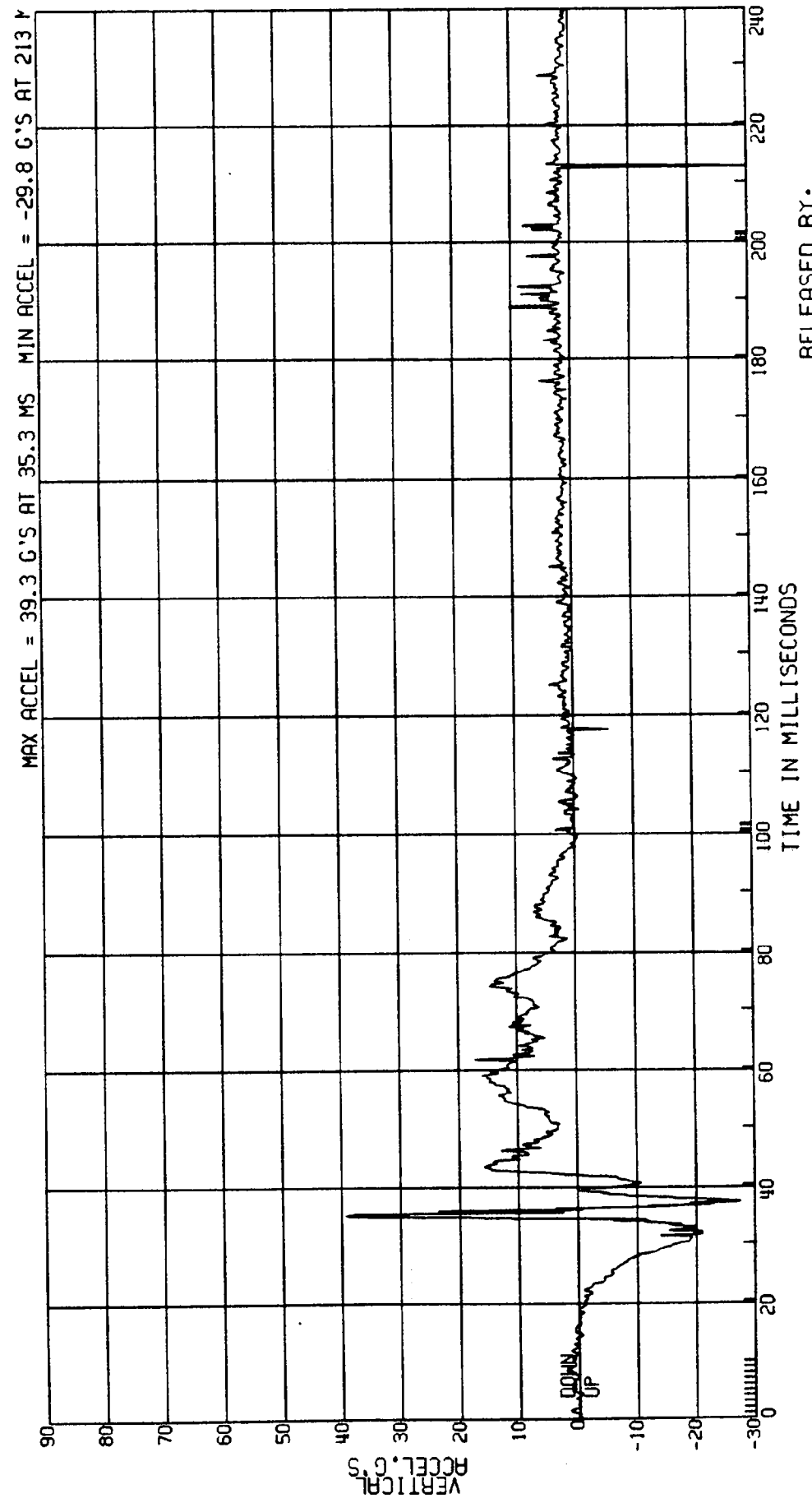
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 3868-905 ATD TYPE: SID  
 CPE MVMA 9B 2AF69 TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 1000 L. REAR LOWER SPINE ACCEL.



RELEASED BY:  
 37 PROCESSED 4 MY 90 12:06

C8009A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 1a  
3868-905 ATD TYPE: SID  
CPE MVMA 98 2AF69 L. REAR UPPER SPINE ACCEL. TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 1000

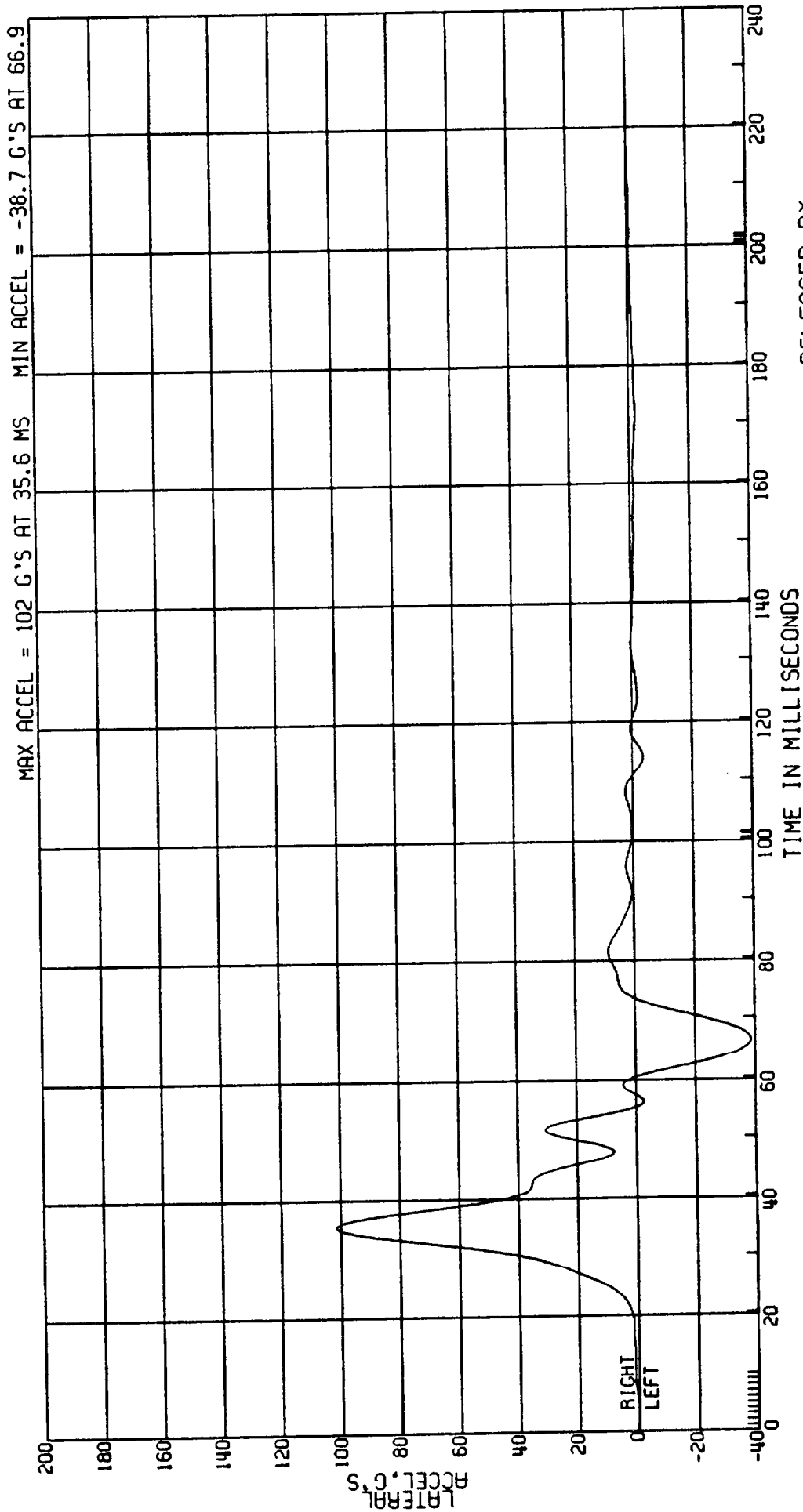


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36 PROCESSED 4 MY 90 12:06

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /3  
3868-905 ATD TYPE: SID  
CPE MVMA 9B 2AF69 TEST DATE:03-20-90

L.REAR LOWER SPINE ACCEL.

ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



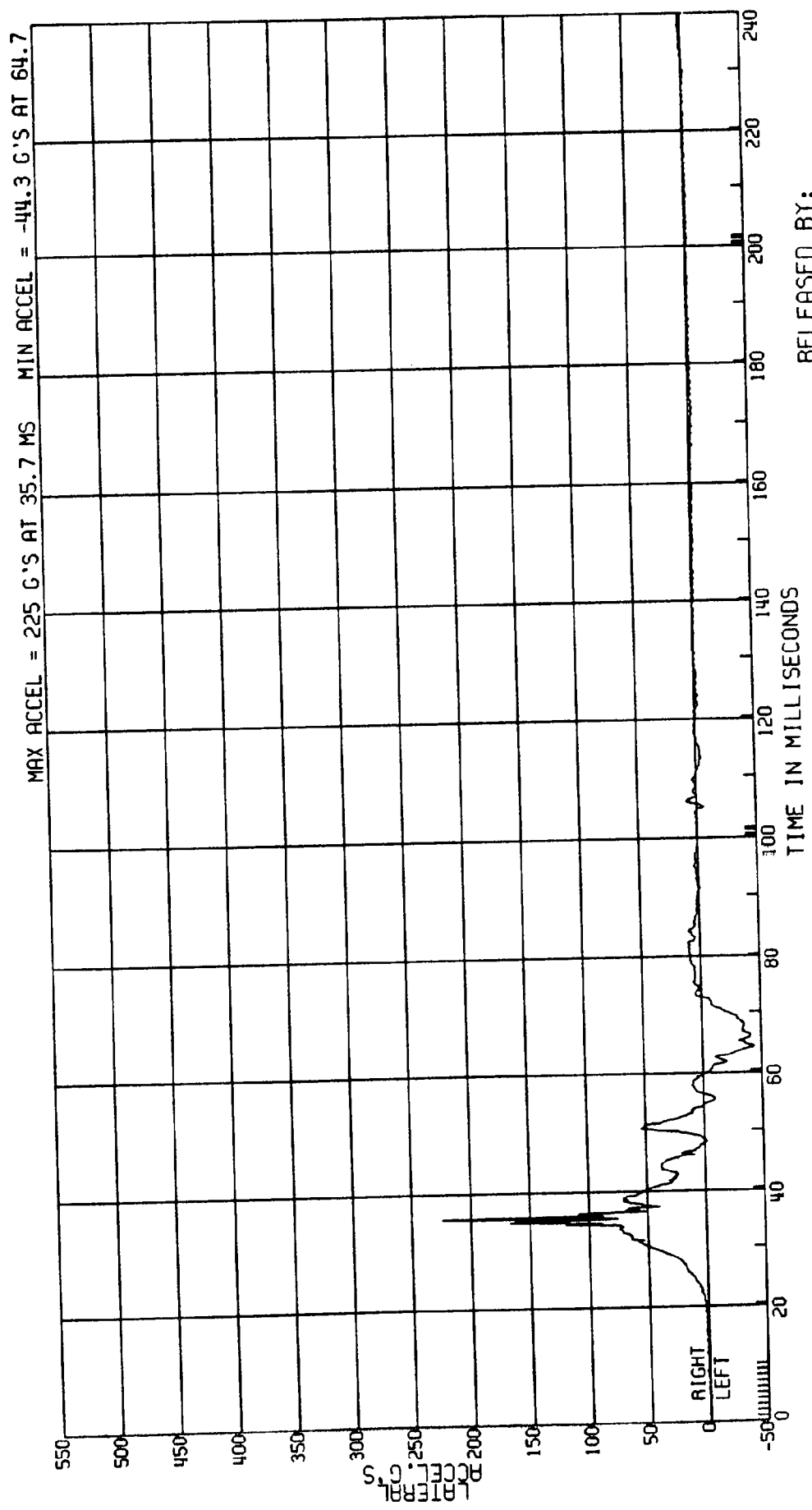
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39 PROCESSED 4 MY 90 12:06

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 14  
ATD TYPE: SID  
TEST DATE: 03-20-90

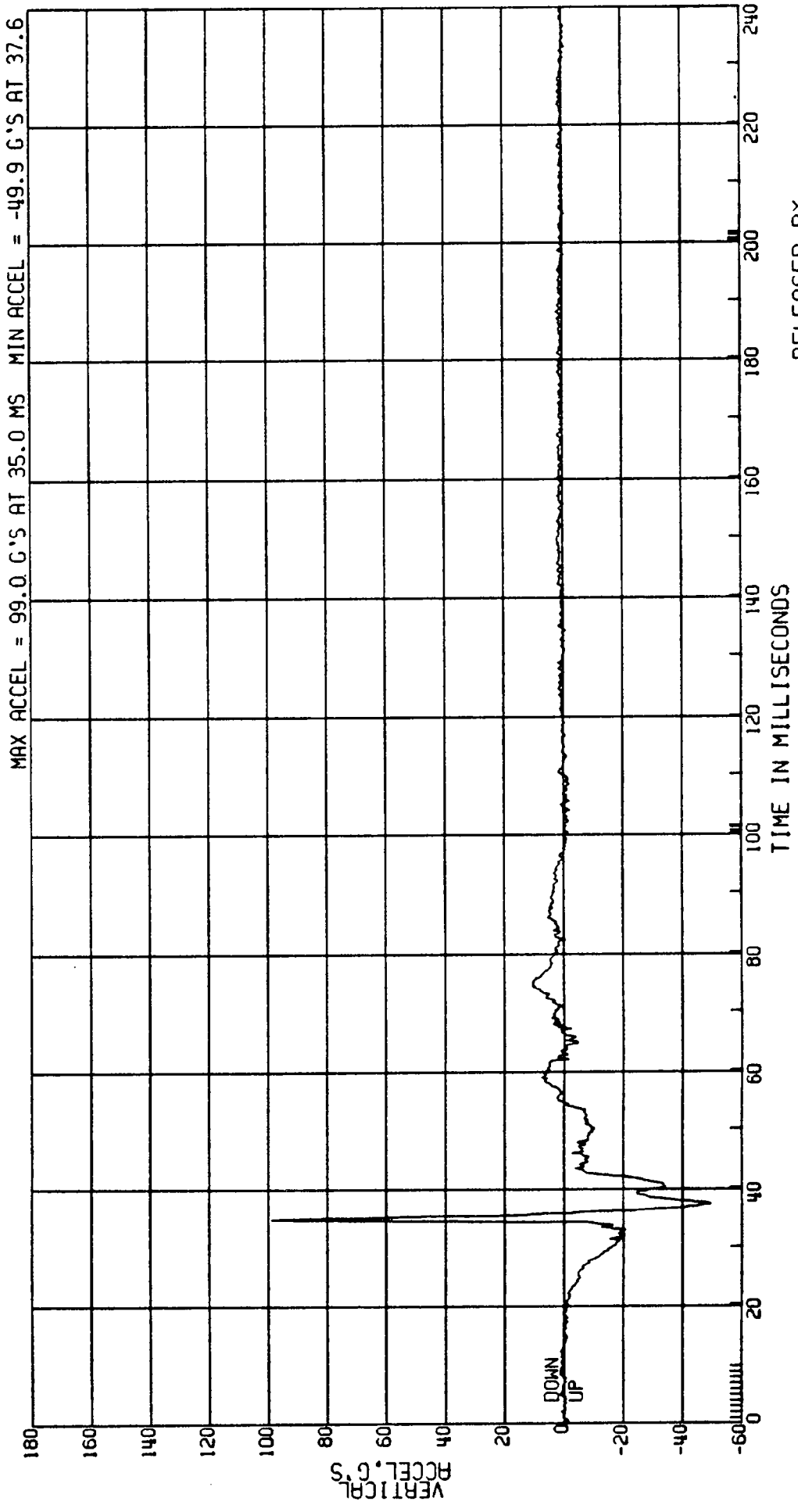
L. REAR LOWER SPINE ACCEL.

C8009A L. SIDE IMPACT- 27 DEG  
3868-905 MVMA 9B 2AF69  
CPE  
ELEC DATA, SAE CLASS 1000



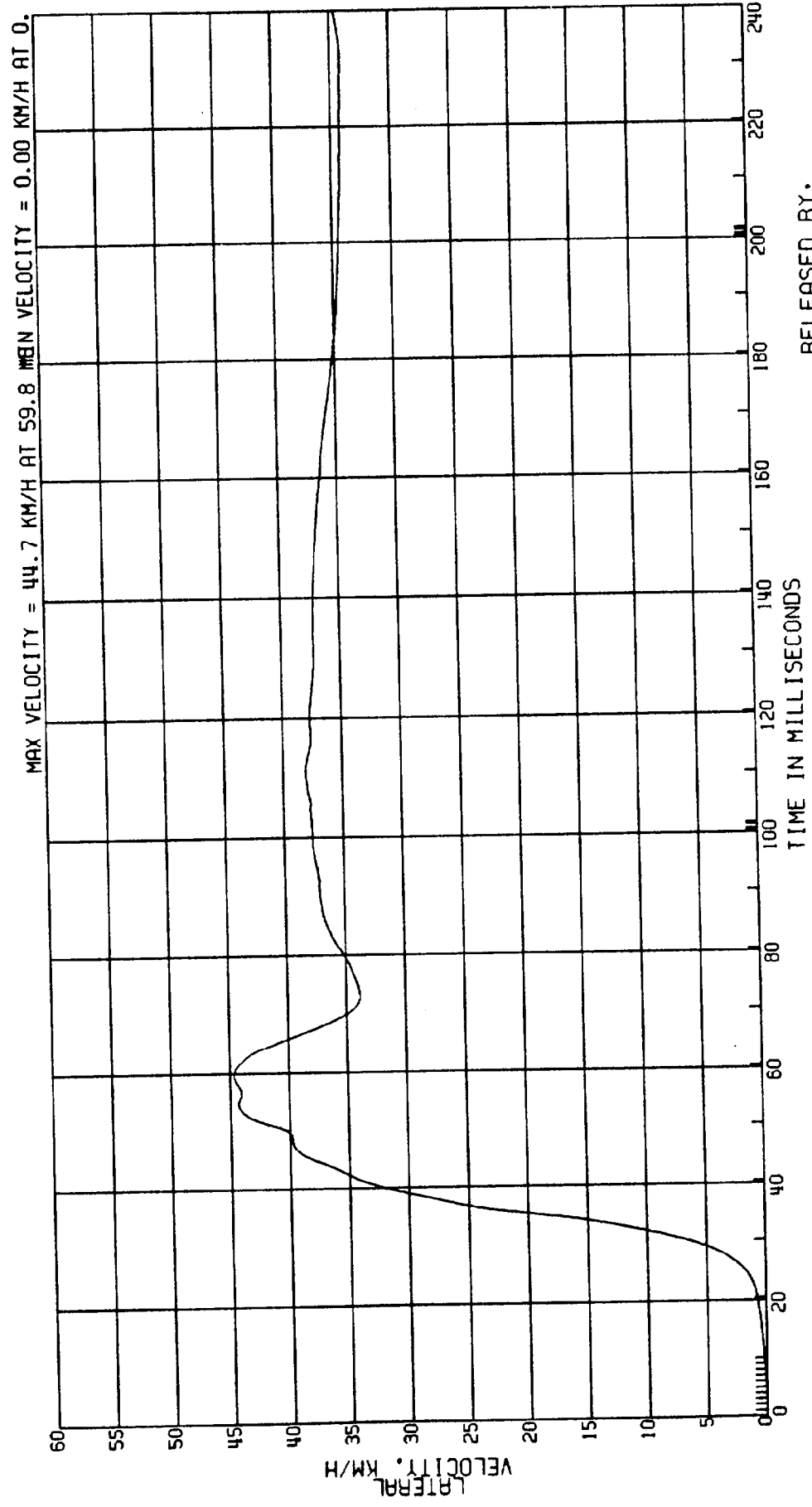
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE / 5  
3868-905 ATD TYPE: SID  
CPE MVMA 9B 2AF69 L. REAR LOWER SPINE ACCEL.  
ELEC DATA, SAE CLASS 1000 TEST DATE:03-20-90



RELEASED BY:  
41 PROCESSED 4 MY 90 12:06

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE /6  
3868-905 MVMA 9B 2AF69 ATD TYPE: SID  
CPE TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INT OF L. REAR ACCELERATION)  
COMPUTED LOWER SPINE VELOCITY

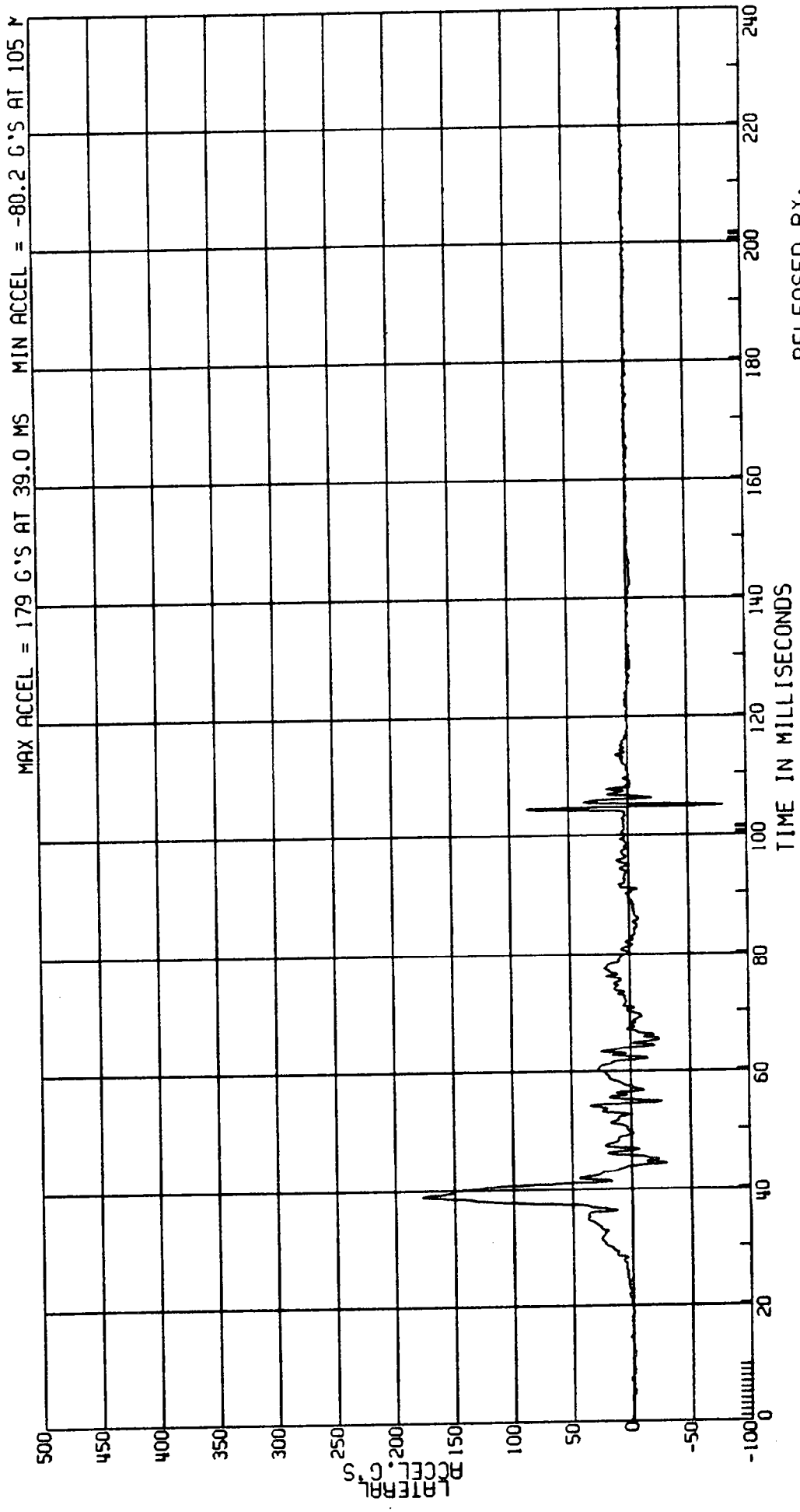


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40 PROCESSED 4 MY 90 12:06

C8009A L. SIDE IMPACT- 27 DEG  
MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 17  
3868-905  
ATD TYPE: SID  
TEST DATE: 03-20-90

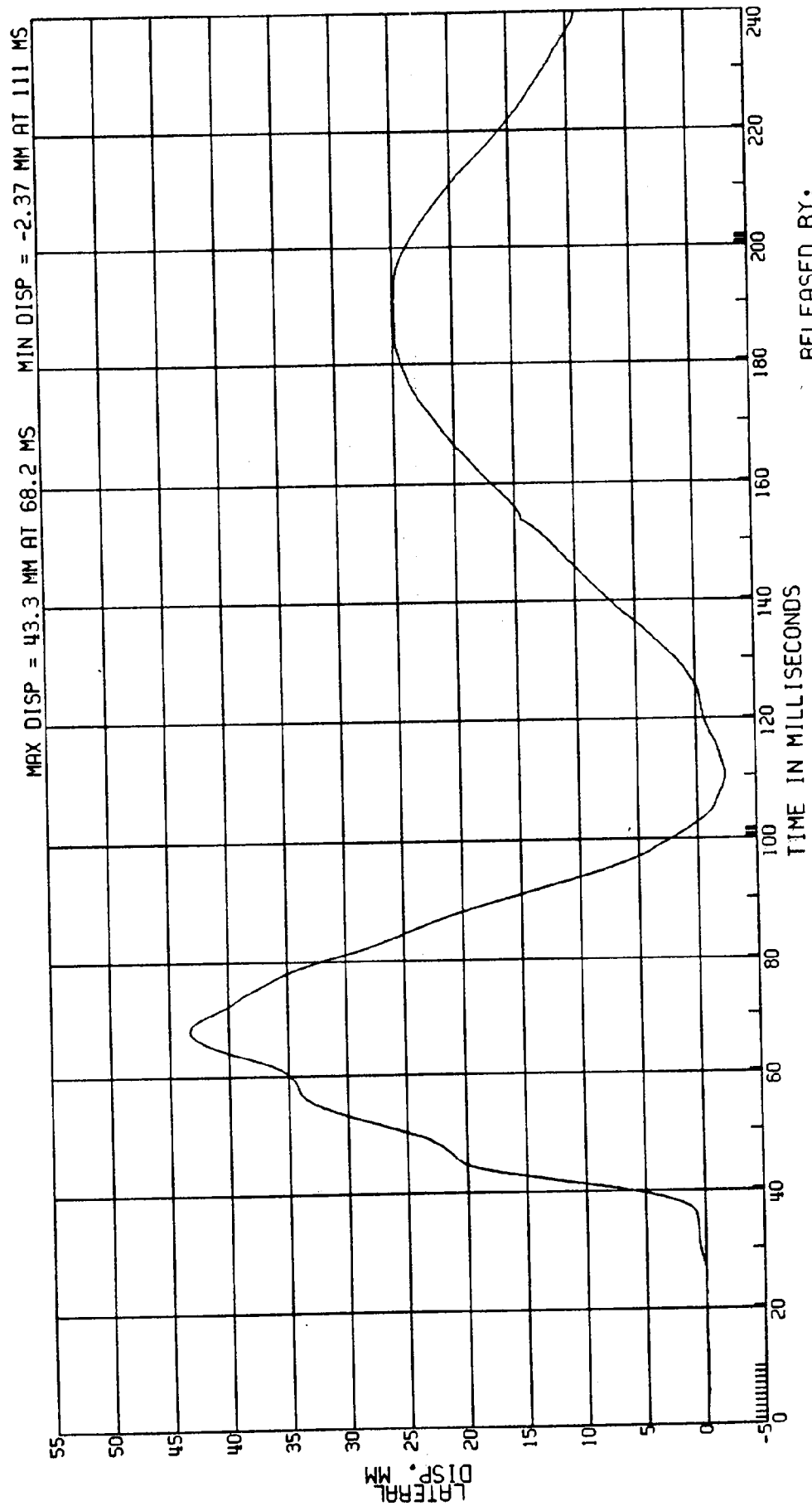
L. REAR LEFT UPPER RIB ACCEL.

MVMA 9B 2AF69  
ELEC DATA, SAE CLASS 1000



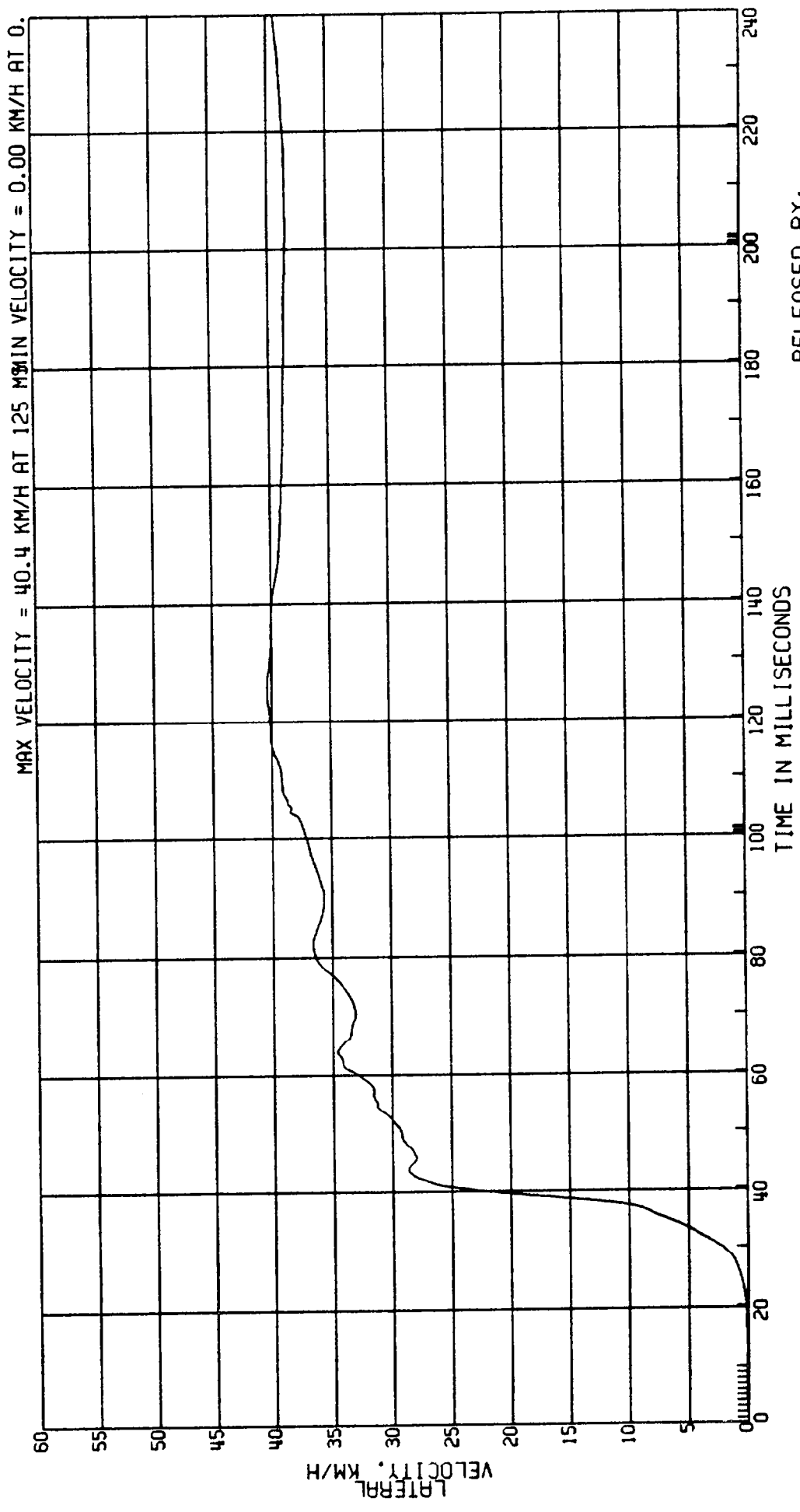
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 18  
3868-905 MVMA 9B 2AF69  
CPE L.REAR THORAX DISP.  
ELEC DATA, SAE CLASS 60  
ATD TYPE: SID  
TEST DATE:03-20-90



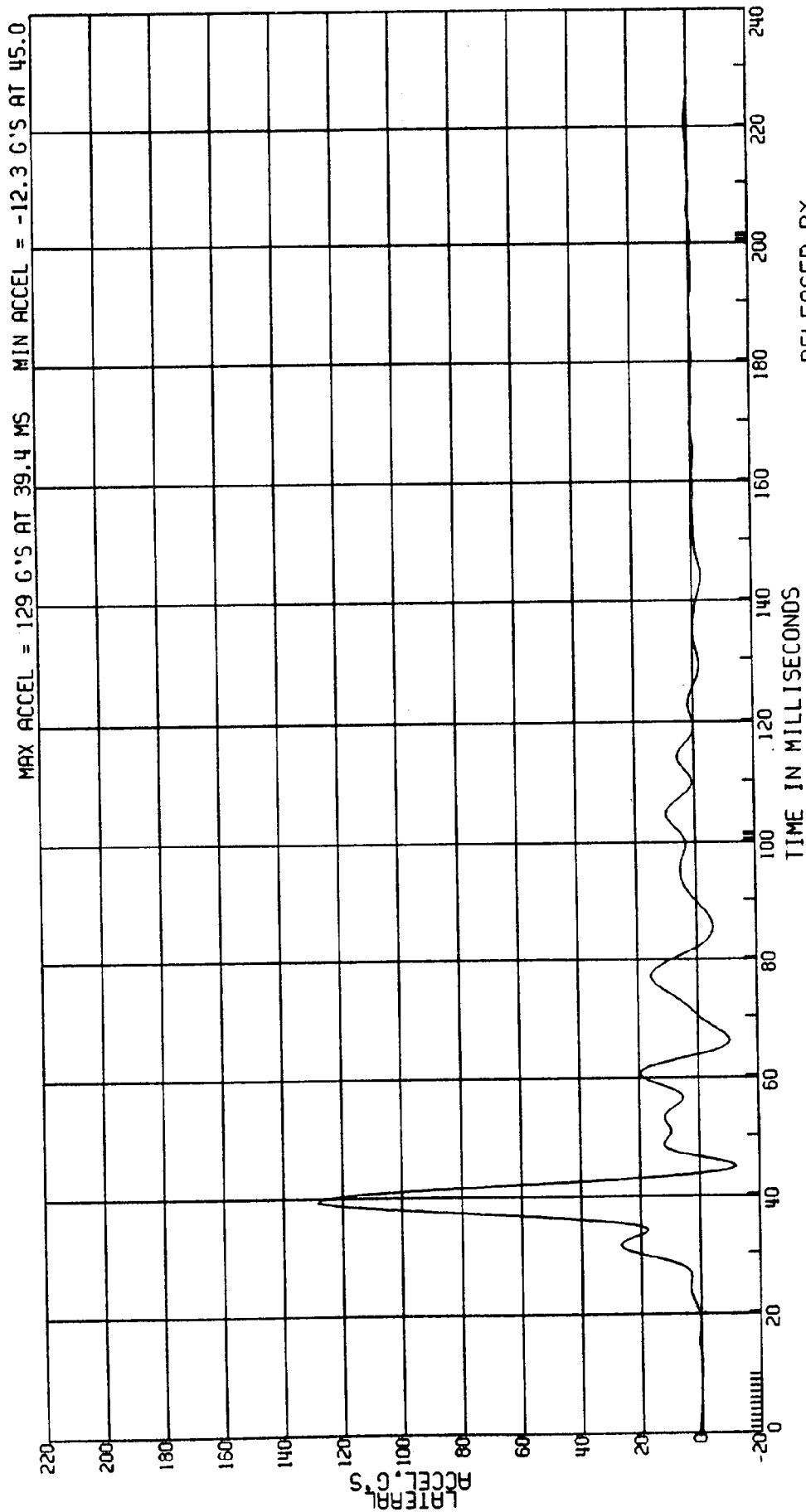
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 3868-905 ATD TYPE: SID  
 CPE MVMA 9B 2AF69 COMPUTED LEFT UPPER RIB VELOCITY  
 ELEC DATA, SAE CLASS 180 (1ST INT OF L. REAR ACCELERATION) TEST DATE: 03-20-90



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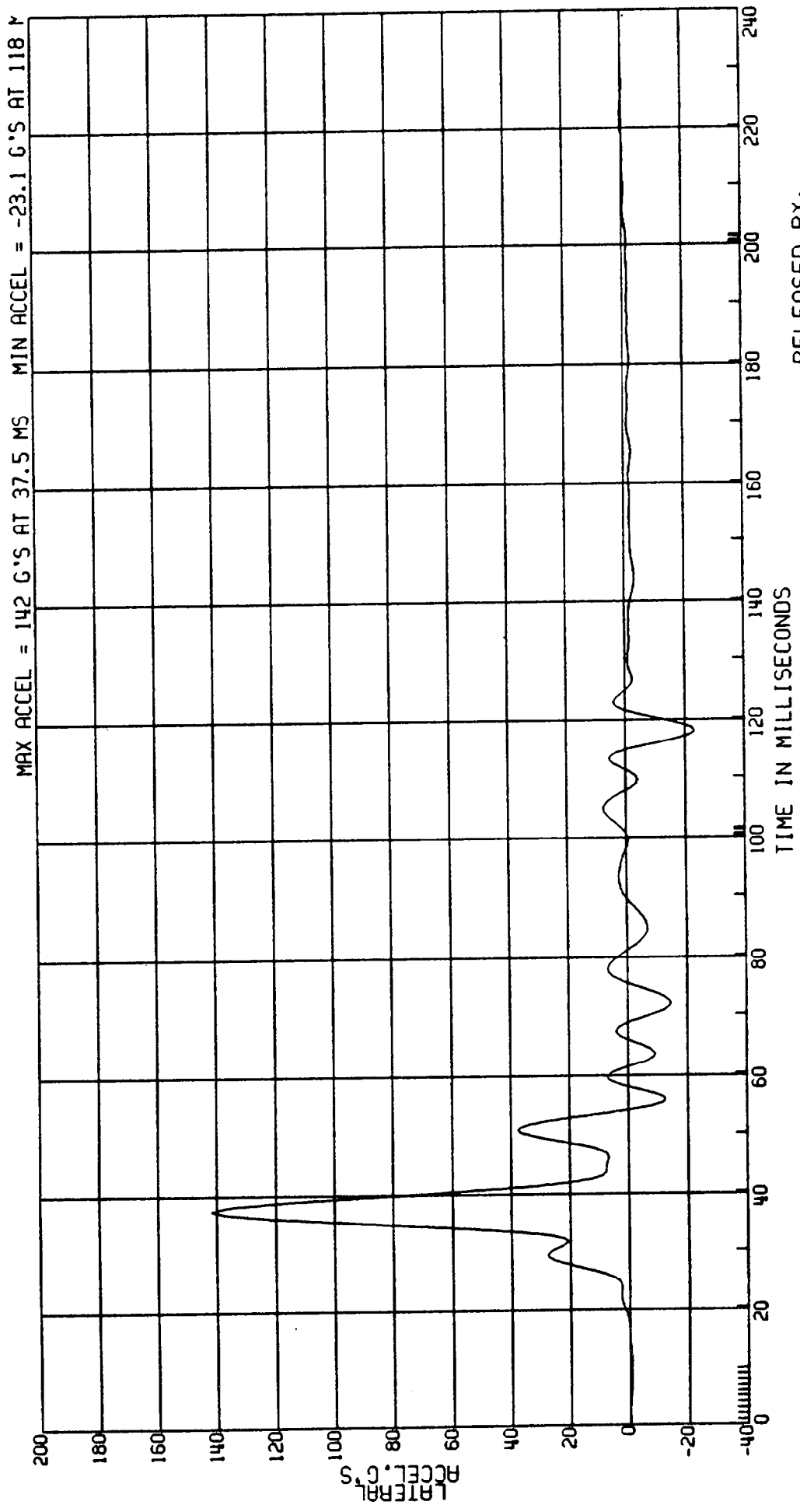
C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 20  
 3868-905 MVMA 9B 2AF69 AID TYPE: SID  
 CPE L. REAR LEFT UPPER RIB ACCEL. TEST DATE: 03-20-90  
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



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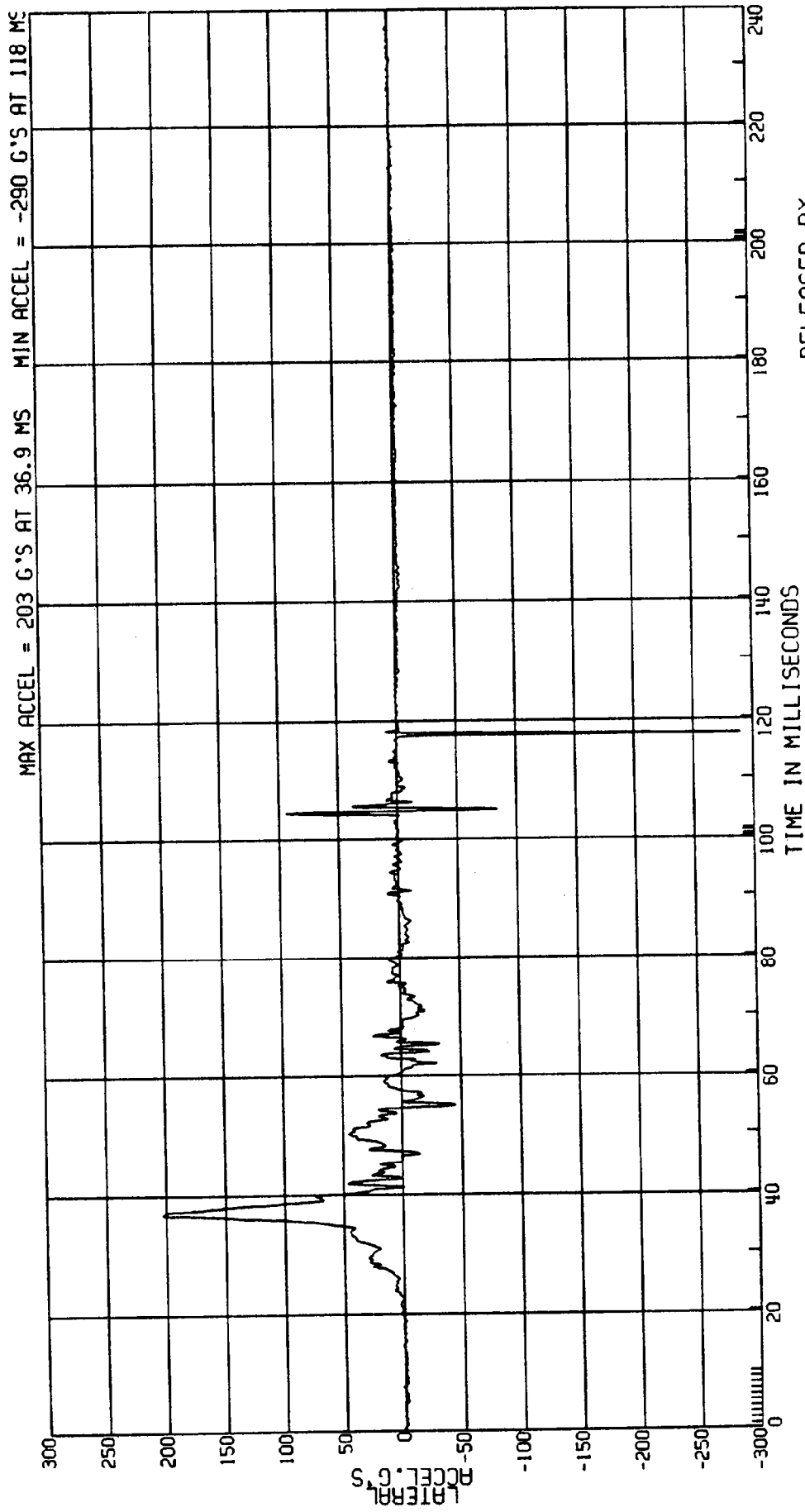
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C8009A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 2/  
3868-905 ATD TYPE: SID  
CPE MVMA 9B 2AF69 TEST DATE: 03-20-90  
ELEC DATA, NHTSA FIR FILTER L. REAR LEFT LOWER RIB ACCEL.  
F.I.R. FILTER, CLASS 300 BUTTERWORTH



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47 PROCESSED 4 MY 90 12:06

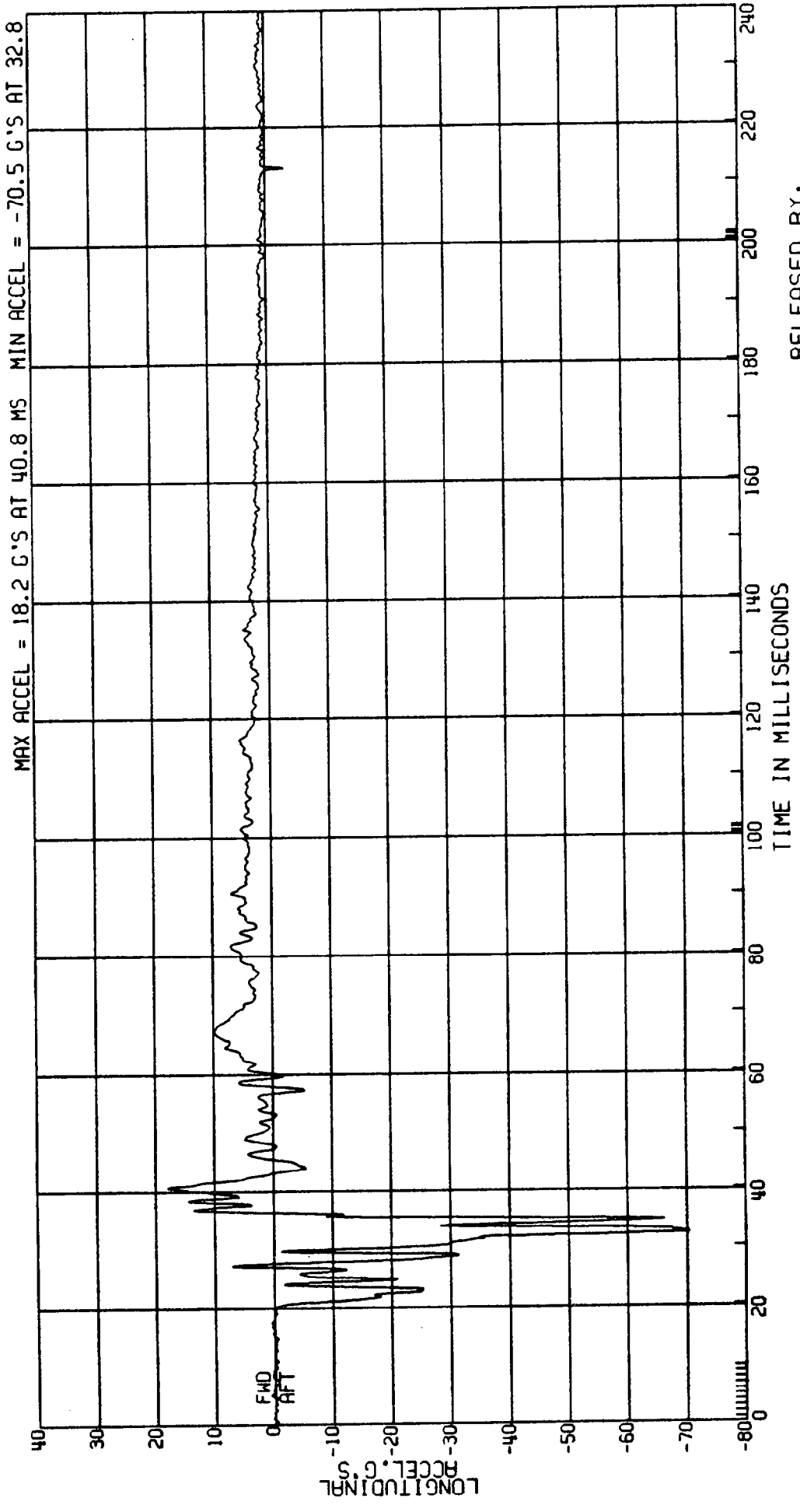
C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 2a  
3868-905 ATD TYPE: SID  
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ELEC DATA, SAE CLASS 1000 L. REAR LEFT LOWER RIB ACCEL.



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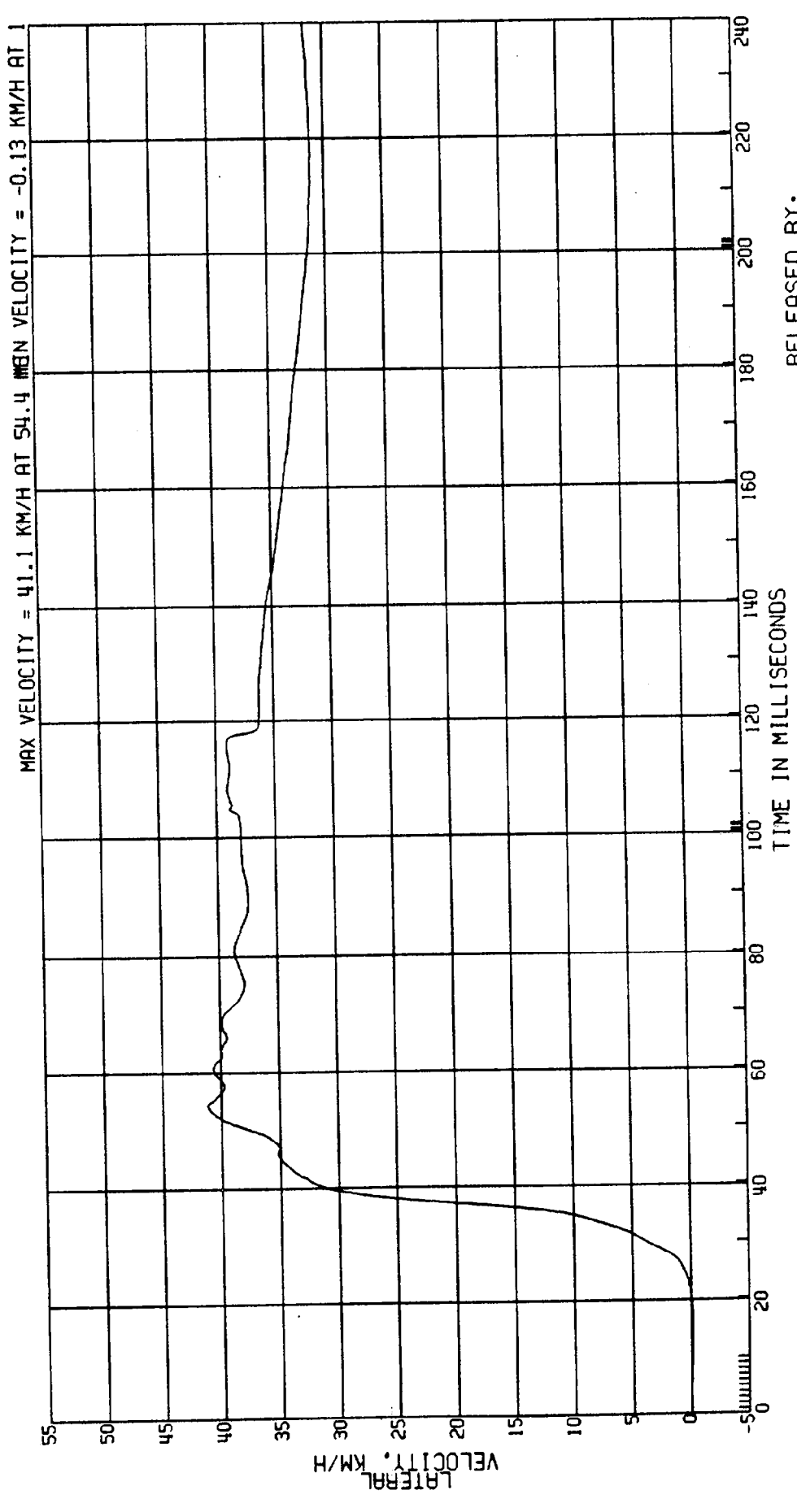
46 PROCESSED 4 MY 90 12:06

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 23  
3868-905 ATD TYPE: SID  
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ELEC DATA, SAE CLASS 600 L. REAR PELVIC ACCEL.



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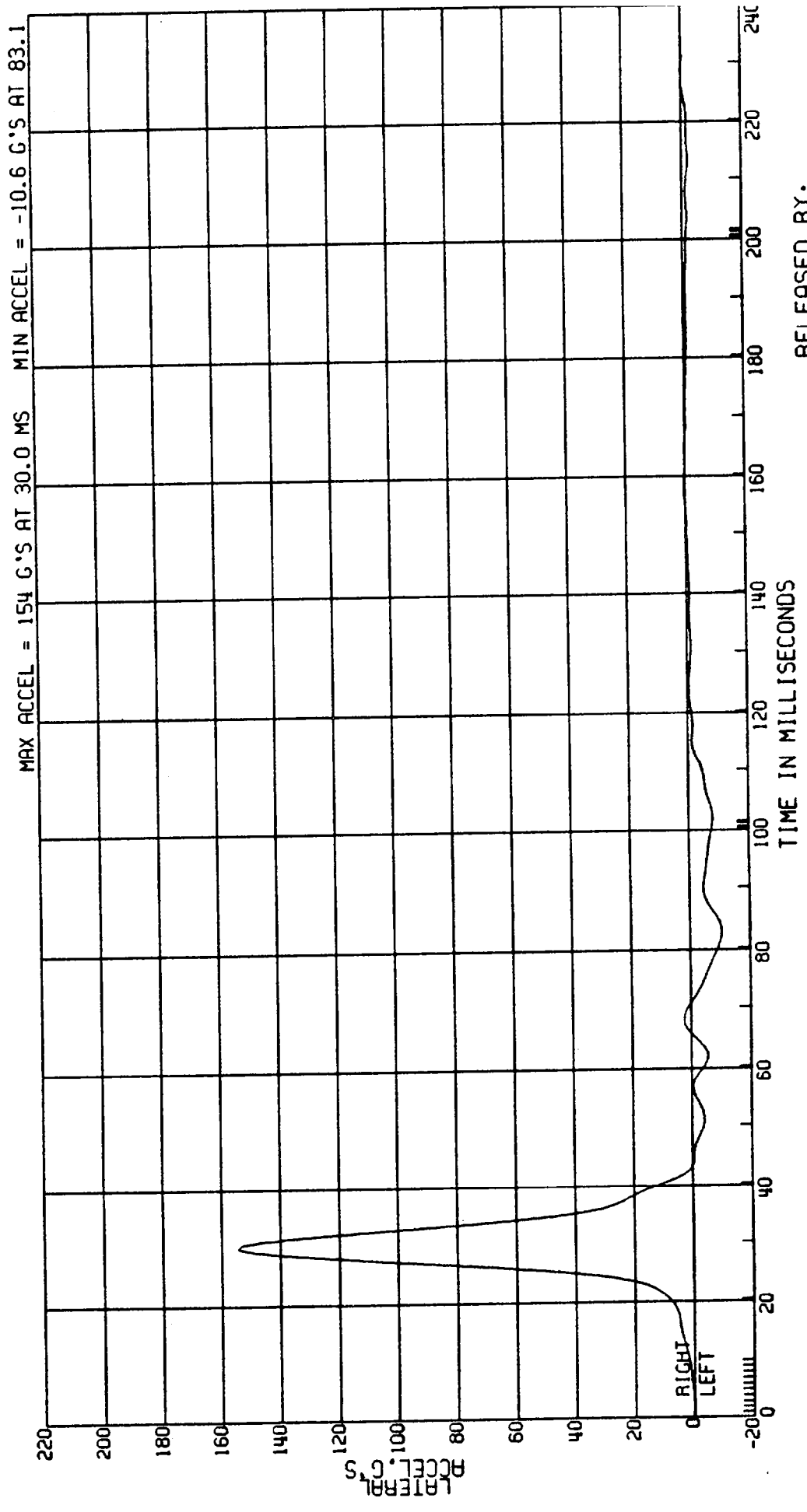
C8009A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 24  
3868-905 ATD TYPE: SID  
CPE MVMA 9B 2AF69 COMPUTED LEFT LOWER RIB VELOCITY  
ELEC DATA, SAE CLASS 180 (1ST INT OF L. REAR ACCELERATION) TEST DATE: 03-20-90



RELEASED BY:  
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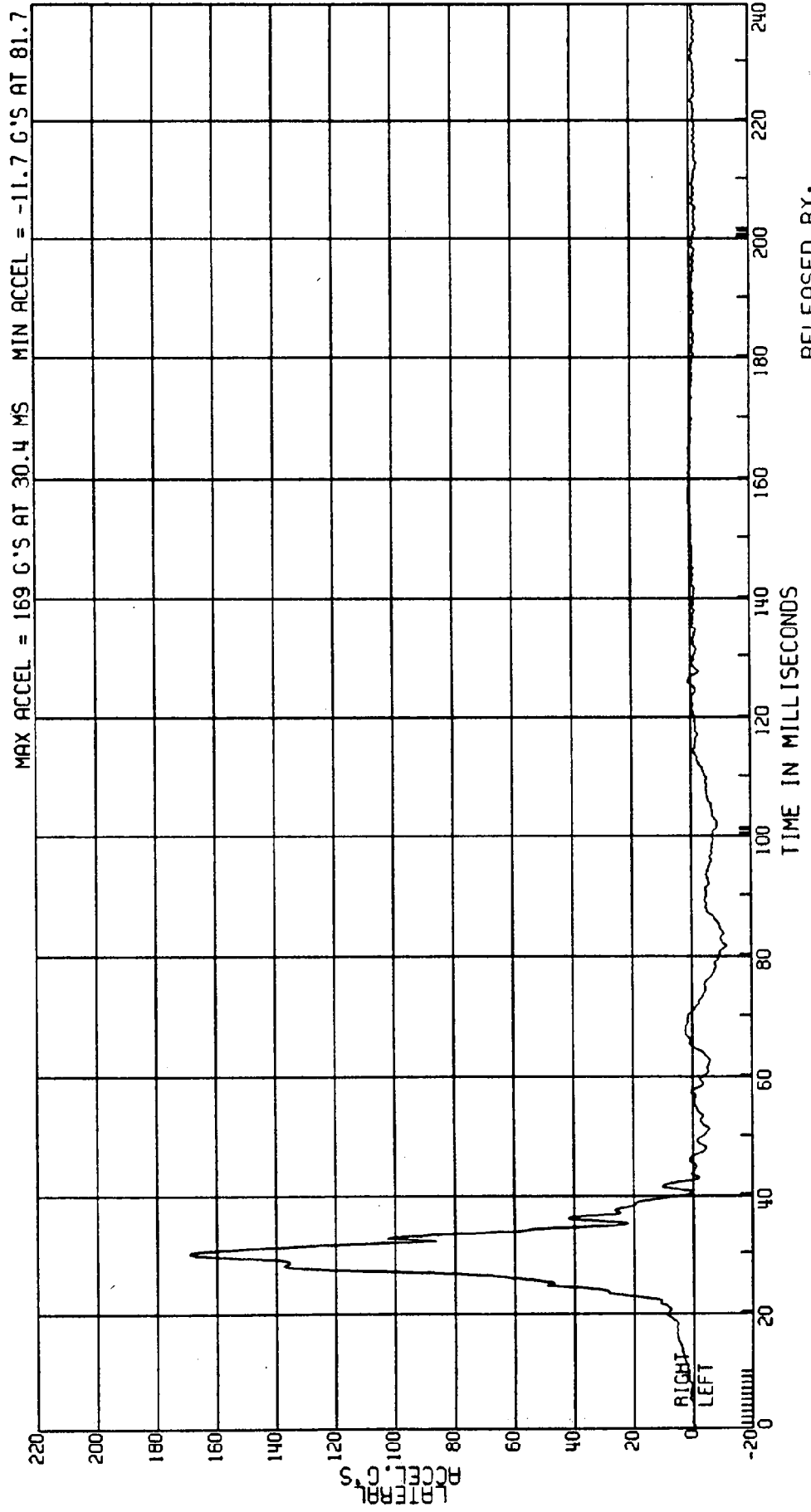
C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 25  
3868-905 ATD TYPE: SID  
CPE MVMA 9B 2AF69 TEST DATE:03-20-90

ELEC DATA, NHTSA FIR FILTER L. REAR PELVIC ACCEL.  
F. I. R. FILTER, CLASS 300 BUTTERWORTH



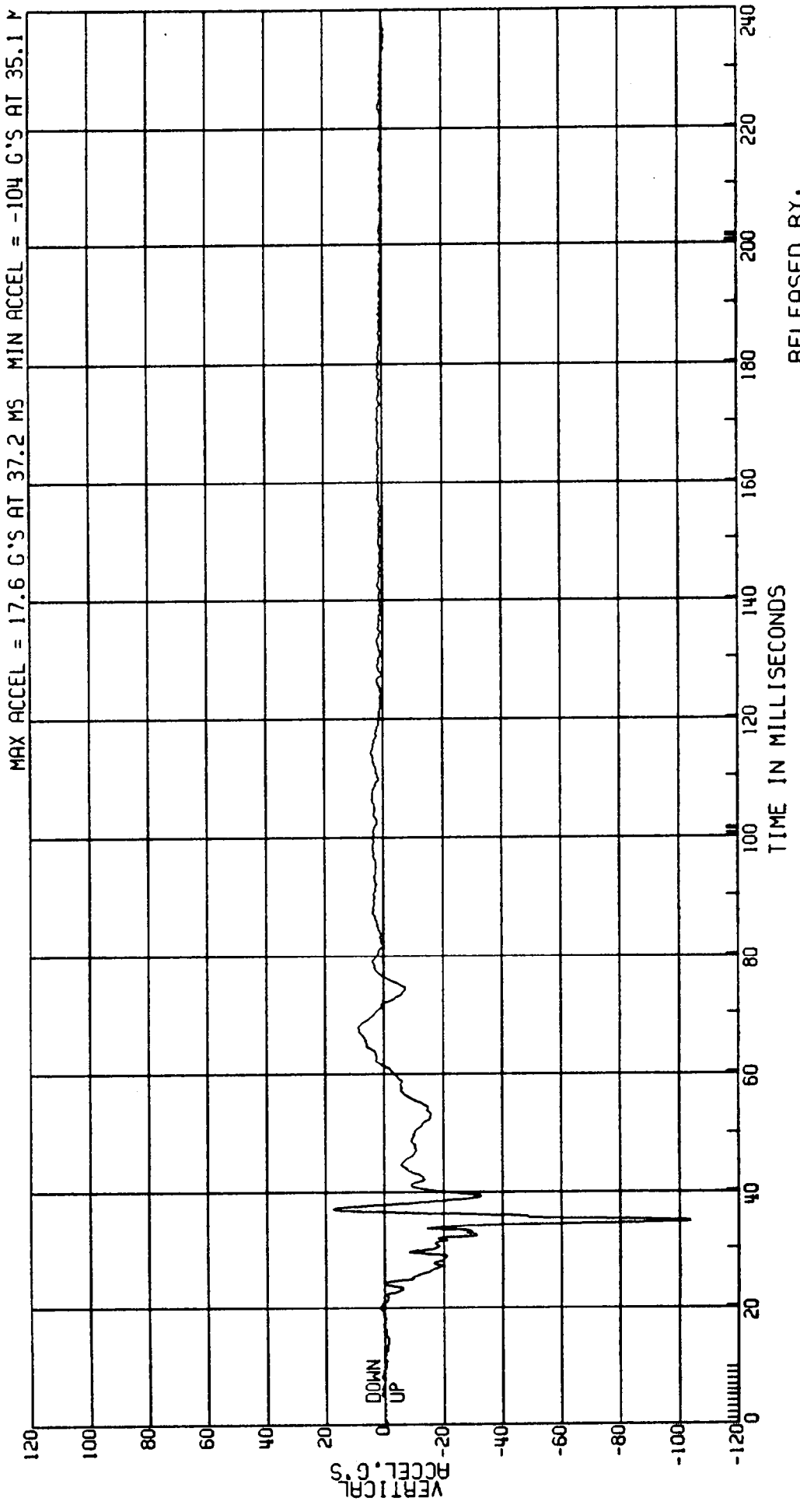
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 26  
 3868-905 MVMA 98 2AF69 ATD TYPE: SID  
 CPE L. REAR PELVIC ACCEL. TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 600



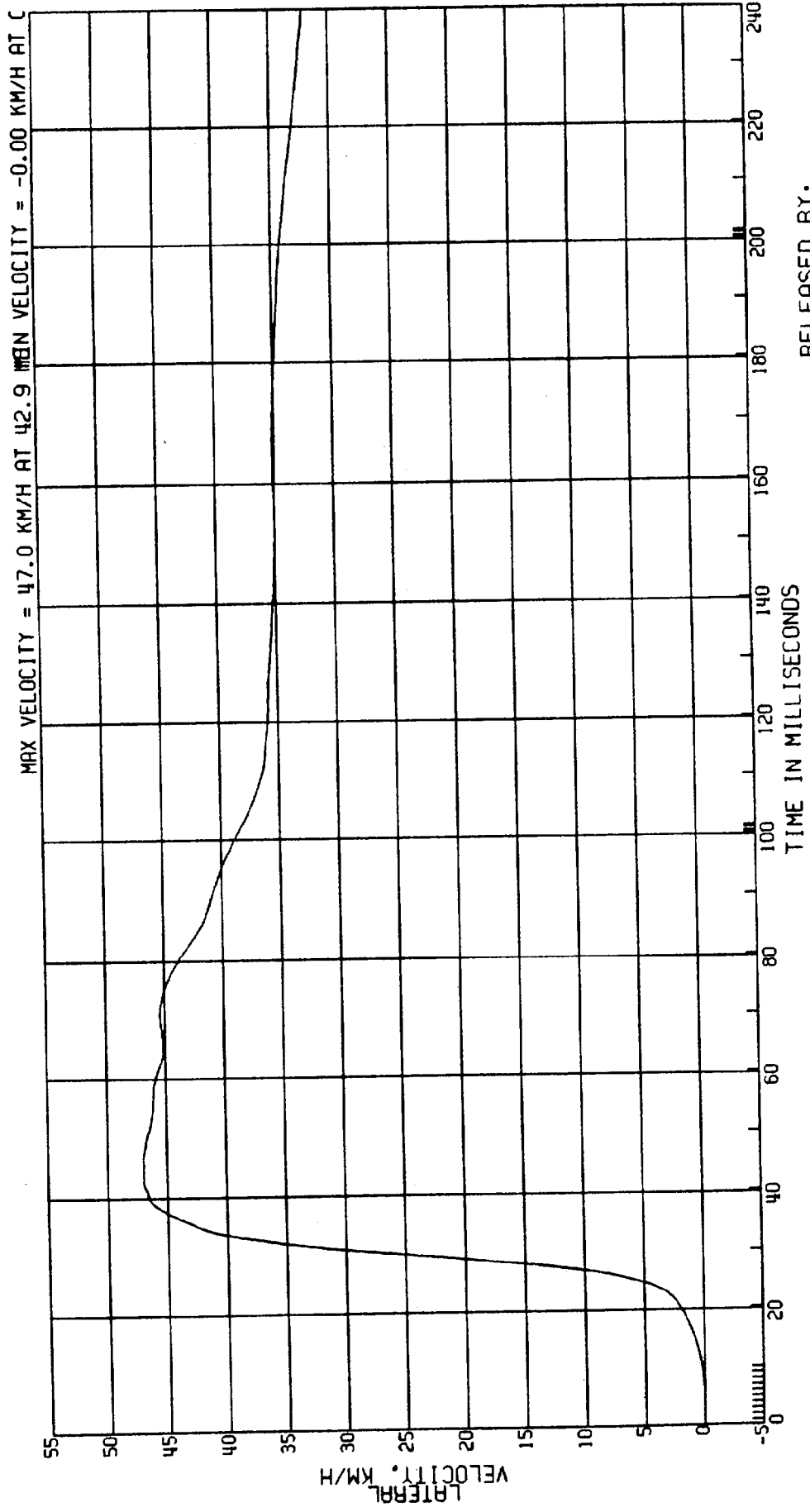
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 27  
3868-905 ATD TYPE: SID  
CPE MVMA 9B 2AF69 L. REAR PELVIC ACCEL. TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 600



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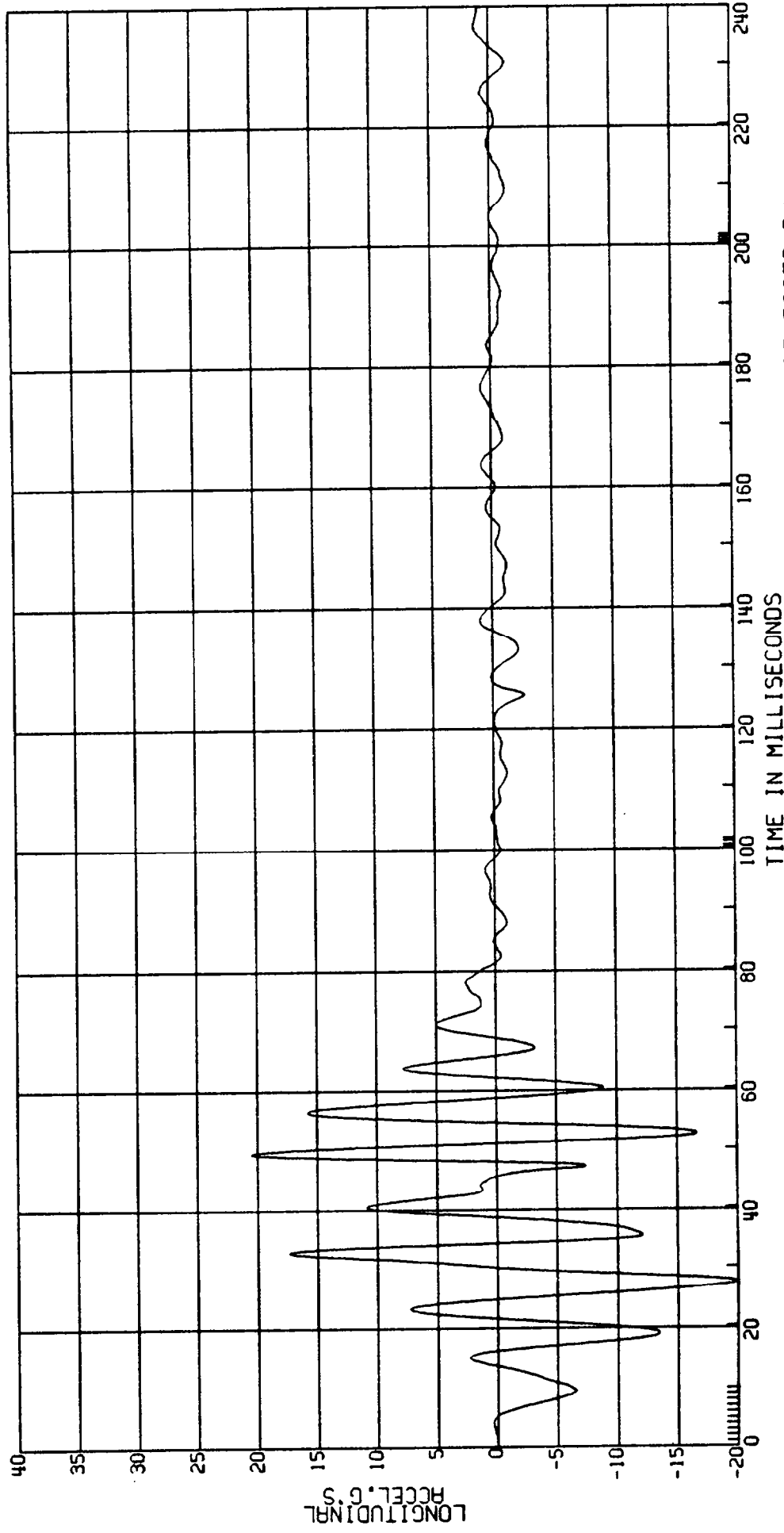
C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 28  
3868-905 ATD TYPE: SID  
CPE MVMA 9B 2AF69 COMPUTED PELVIC VELOCITY TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INT OF L.REAR ACCELERATION)



RELEASED BY:

52 PROCESSED 4-MY 90 12:06

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 29  
3868-905  
CPE MVMA 98 2AF69 PASS-SIDE ROCKER AT CTR OF IMPACT ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60



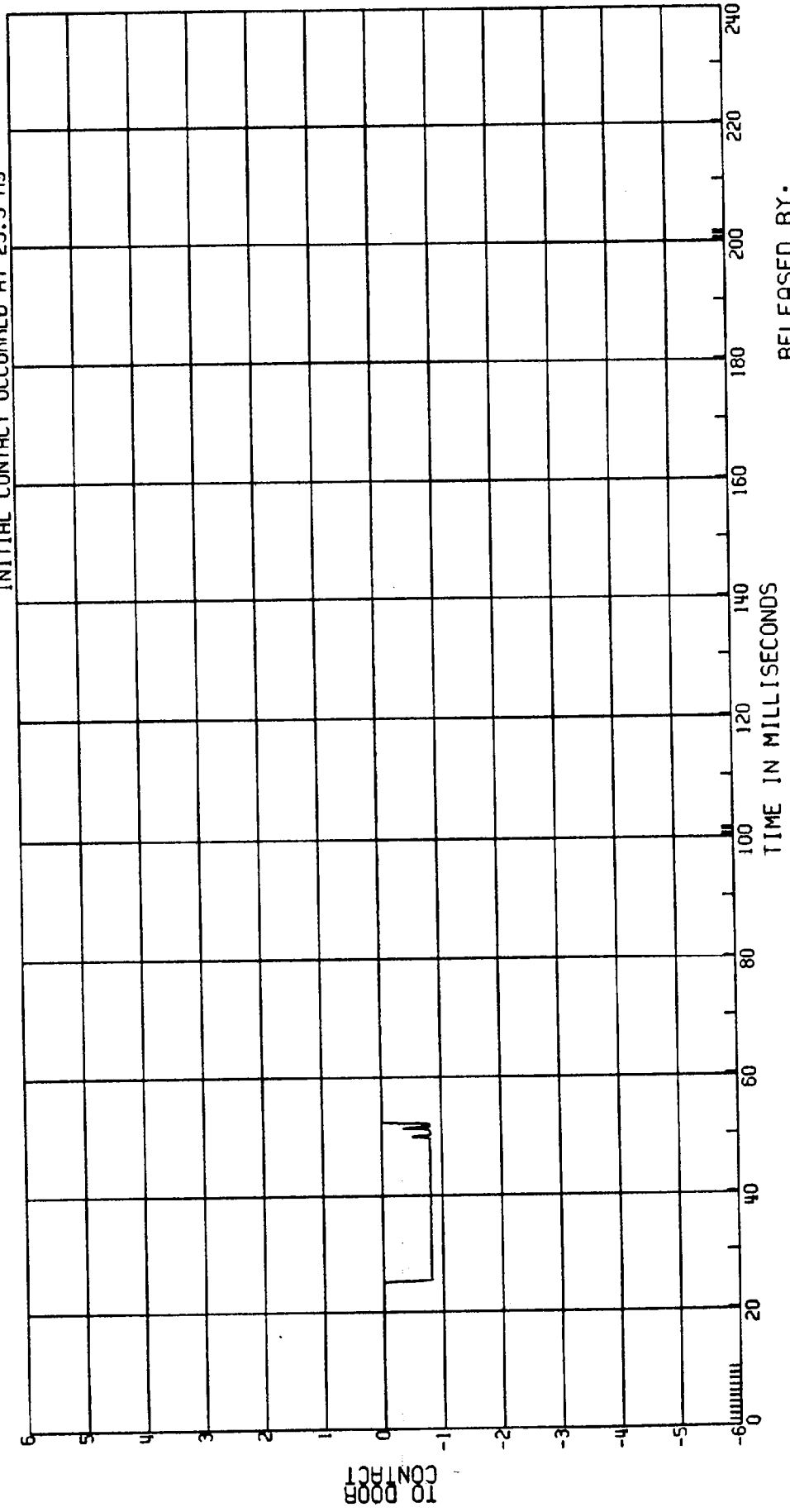
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 30  
3868-905 ATD TYPE: SID  
TEST DATE: 03-20-90

L. REAR PELVIC-LEFT SIDE CONTACT

CPE MVMA 9B 2AF69  
ELEC DATA. SAE CLASS 1000

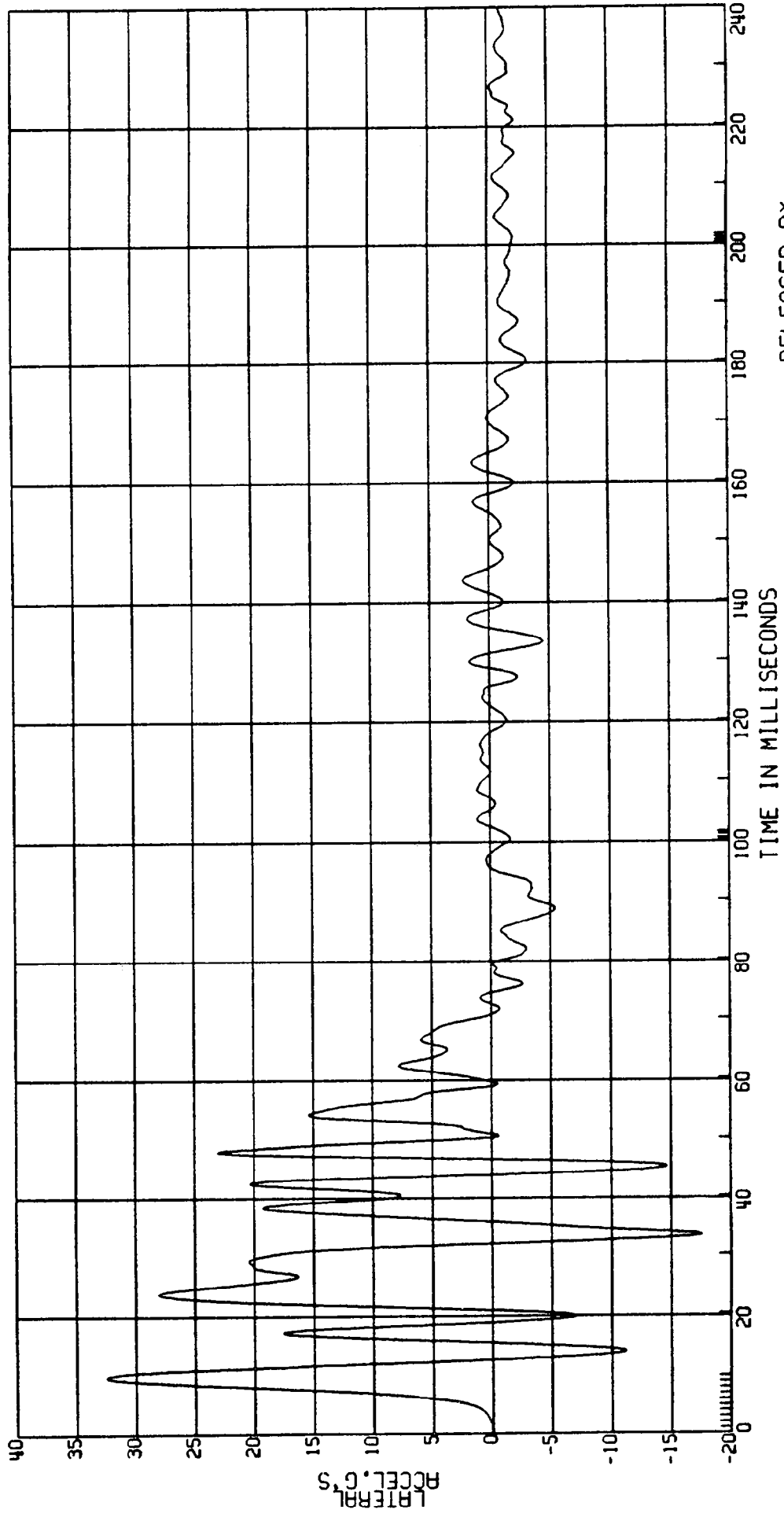
INITIAL CONTACT OCCURRED AT 25.3 MS



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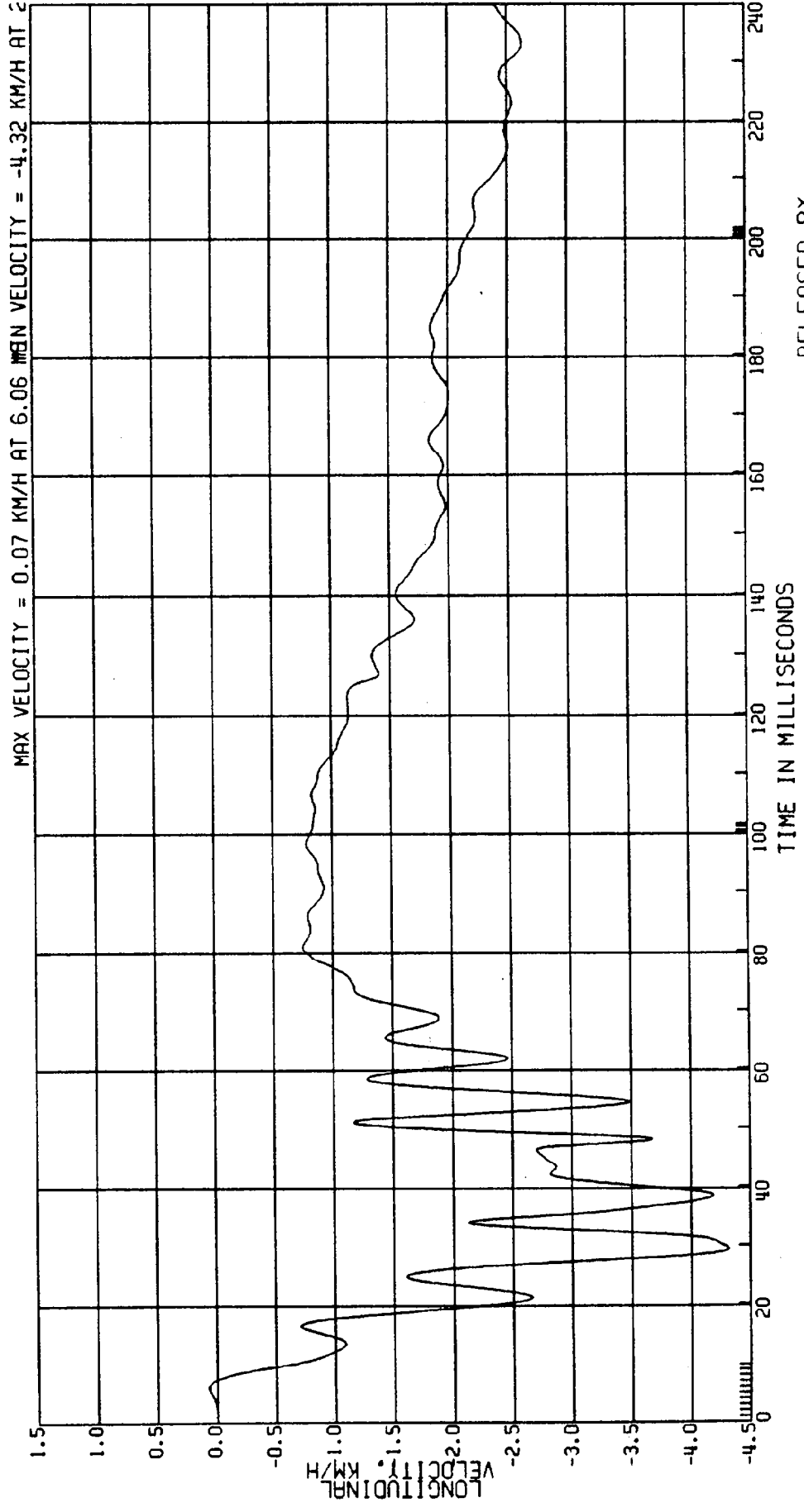
54 PROCESSED 4:11:06 12:06

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 3/  
3868-905  
CPE MVMA 9B 2AF69 PASS-SIDE ROCKER AT CTR OF IMPACT ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60



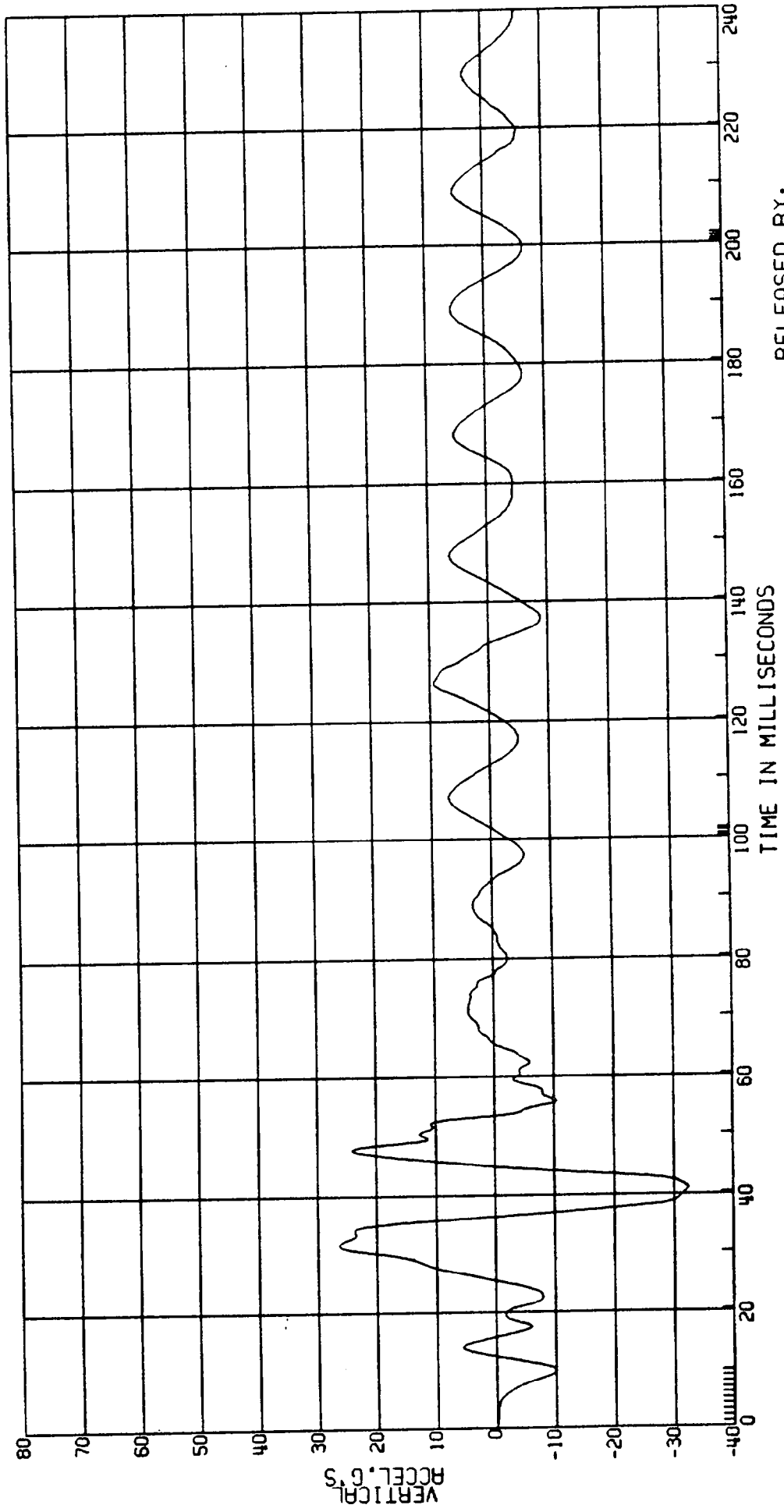
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 3a  
3868-905  
CPE MVMA 9B 2AF69 COMPUTED ROCKER AT CTR OF IMPACT VEL TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF PASS-SIDE ACCELERATION)



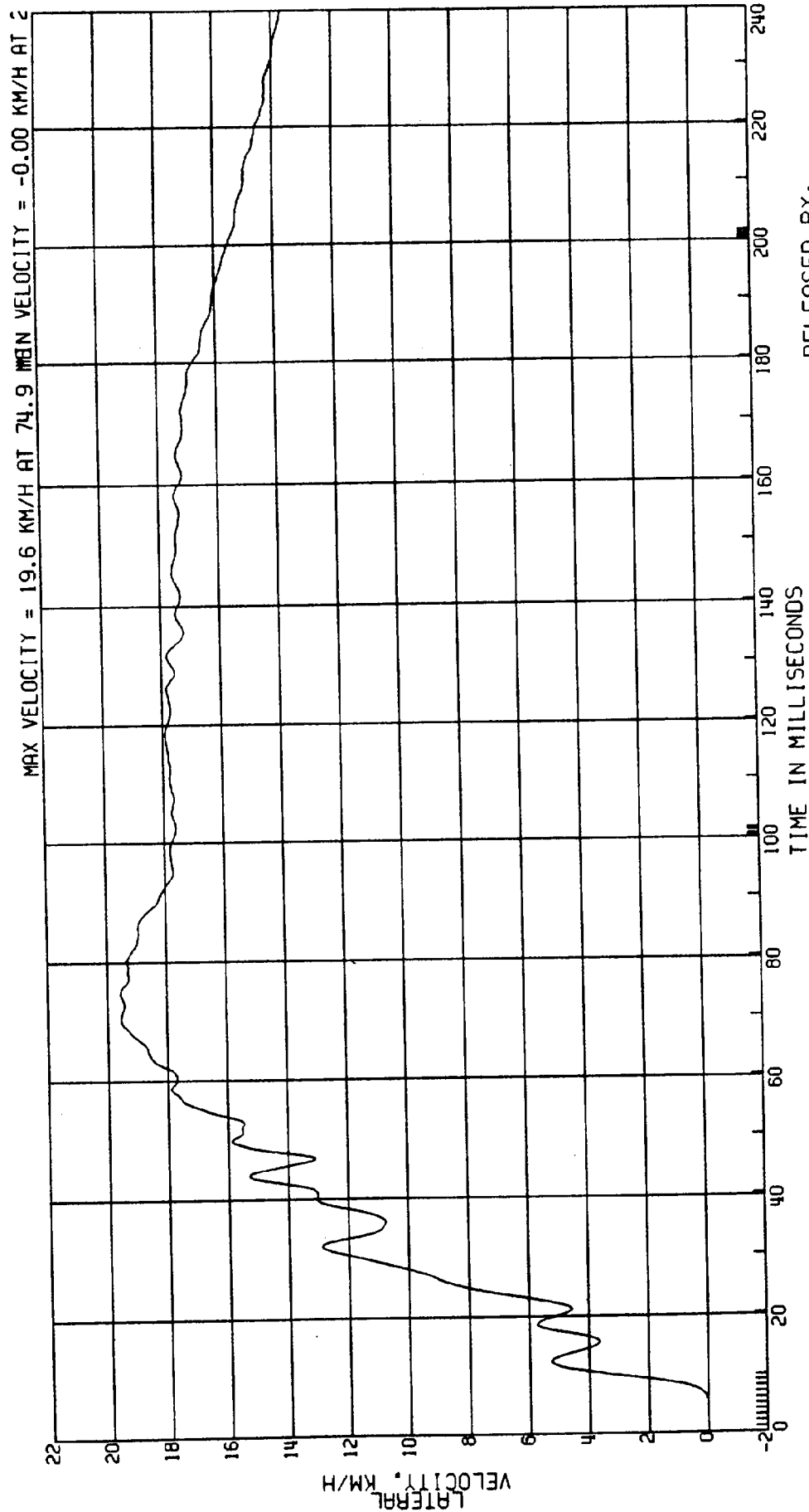
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C8009A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 33  
3868-905  
CPE MVMA 9B 2AF69 PASS-SIDE ROCKER AT CTR OF IMPACT ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60



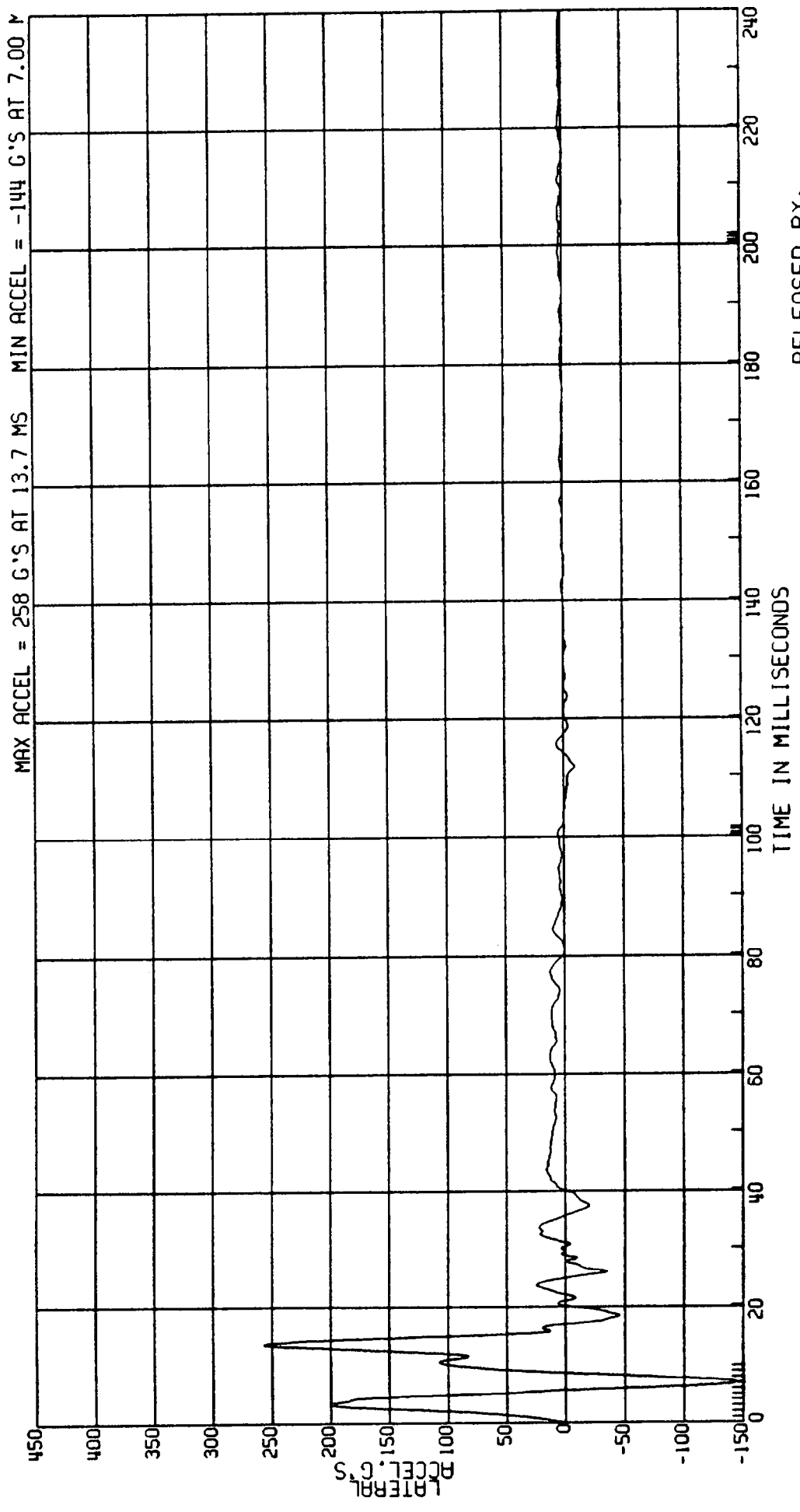
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 34  
 3868-905 MVMA 9B 2AF69 COMPUTED ROCKER AT CTR OF IMPACT VEL TEST DATE:03-20-90  
 CPE ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF PASS-SIDE ACCELERATION)



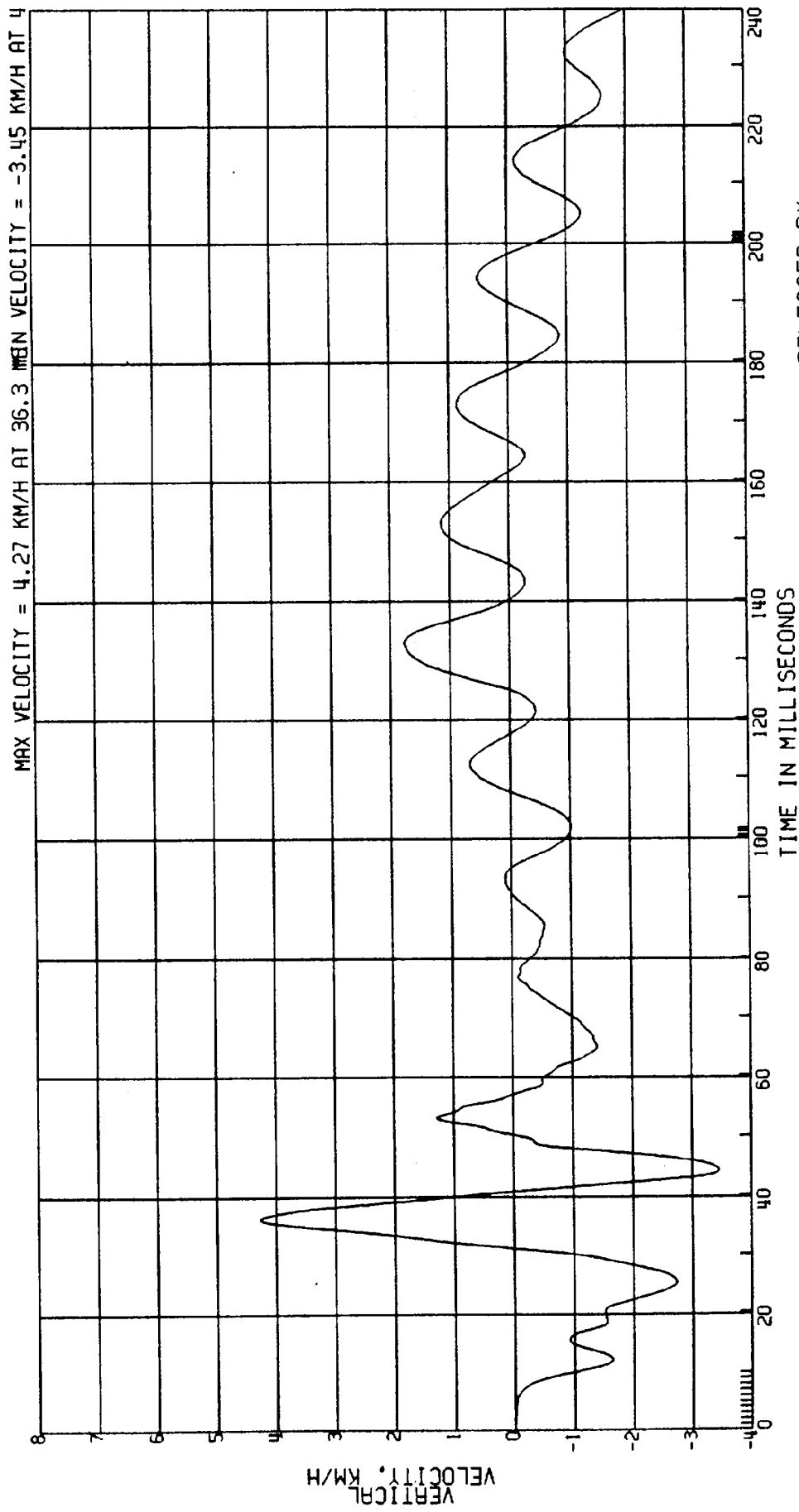
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 35  
3868-905  
CPE MVMA 9B 2AF69 DR-SIDE FRT. DOOR NO. 1 ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60



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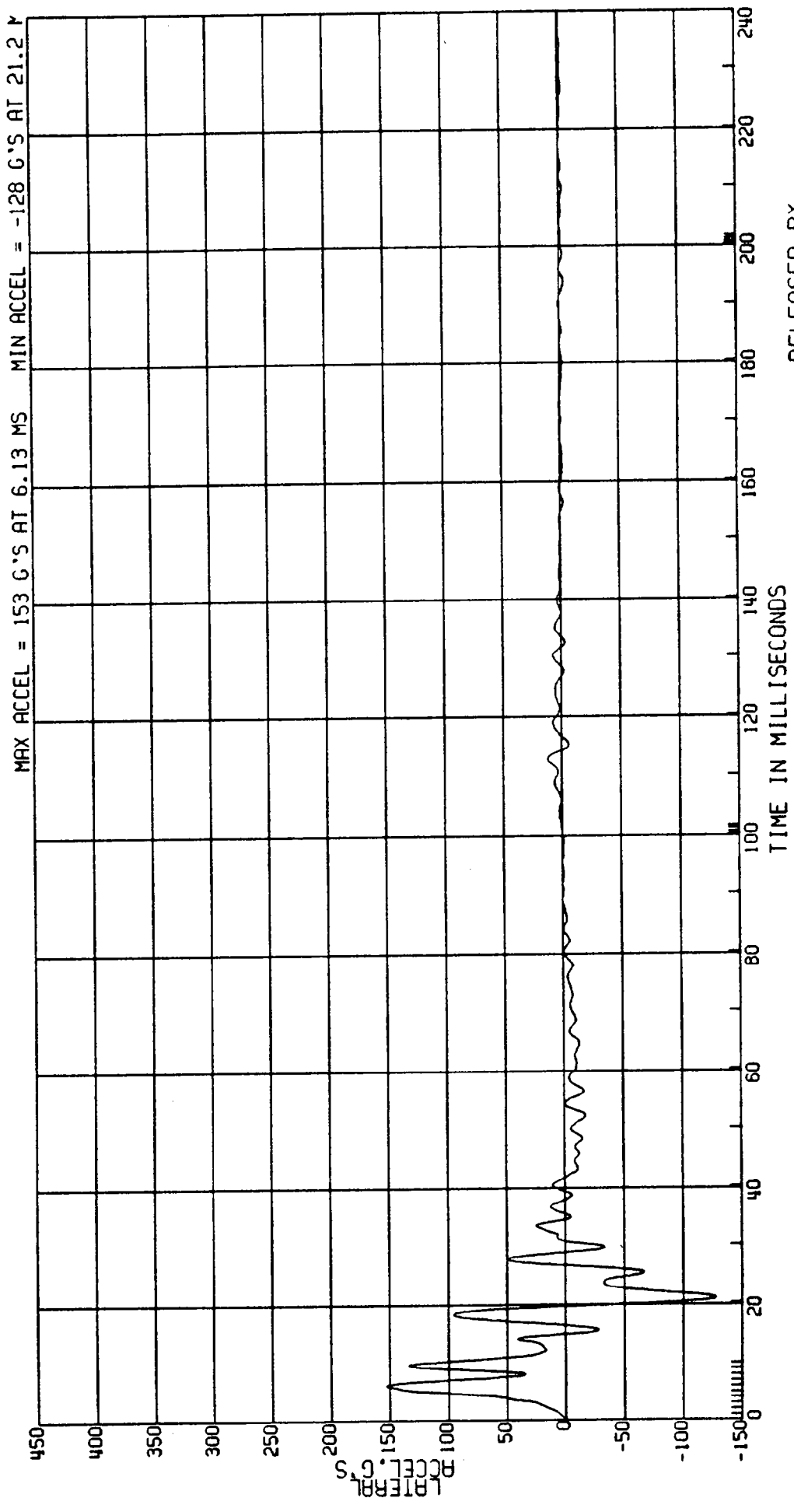
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3868-905  
CPE MVMA 9B 2AF69 COMPUTED ROCKER AT CTR OF IMPACT VEL TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF PASS-SIDE ACCELERATION)



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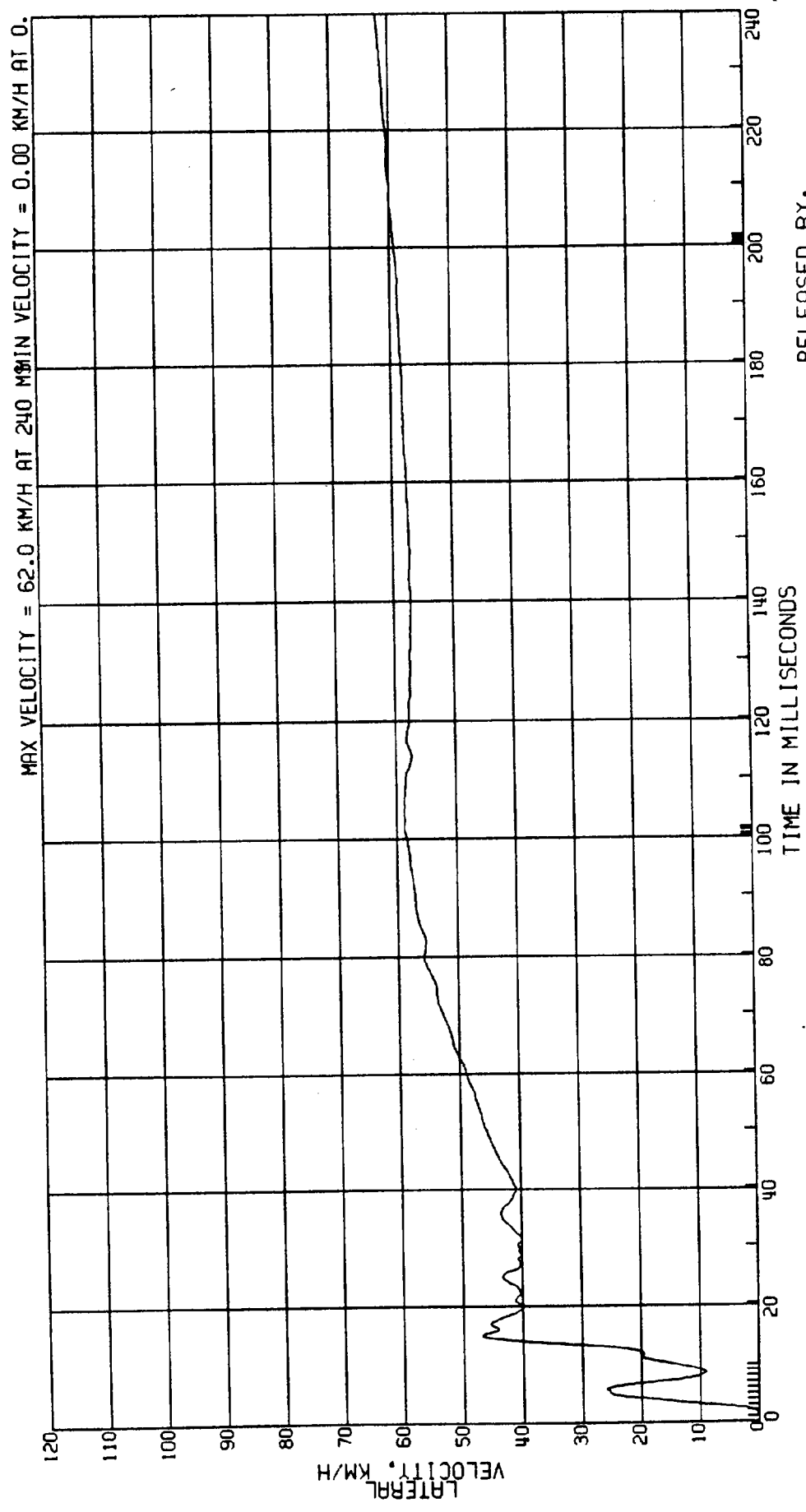
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 37  
3868-905  
CPE MVMA 9B 2AF69 DR-SIDE FRT. DOOR NO. 2 ACCEL. TEST DATE:03-20-90  
ELEC DATA. SAE CLASS 60



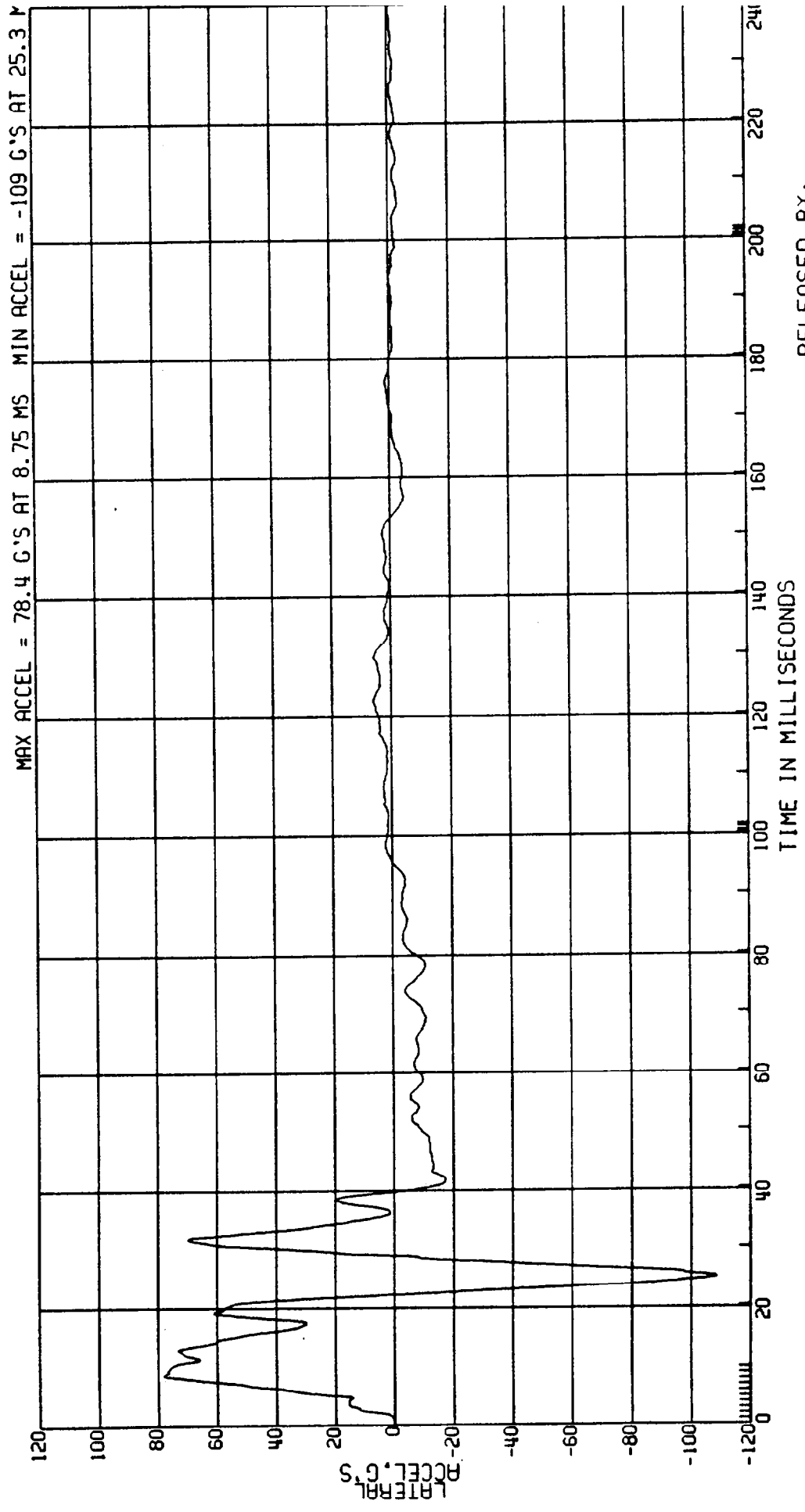
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 38  
3868-905 MVMA 98 2AF69 COMPUTED FRT. DOOR NO. 1 VELOCITY TEST DATE:03-20-90  
CPE ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



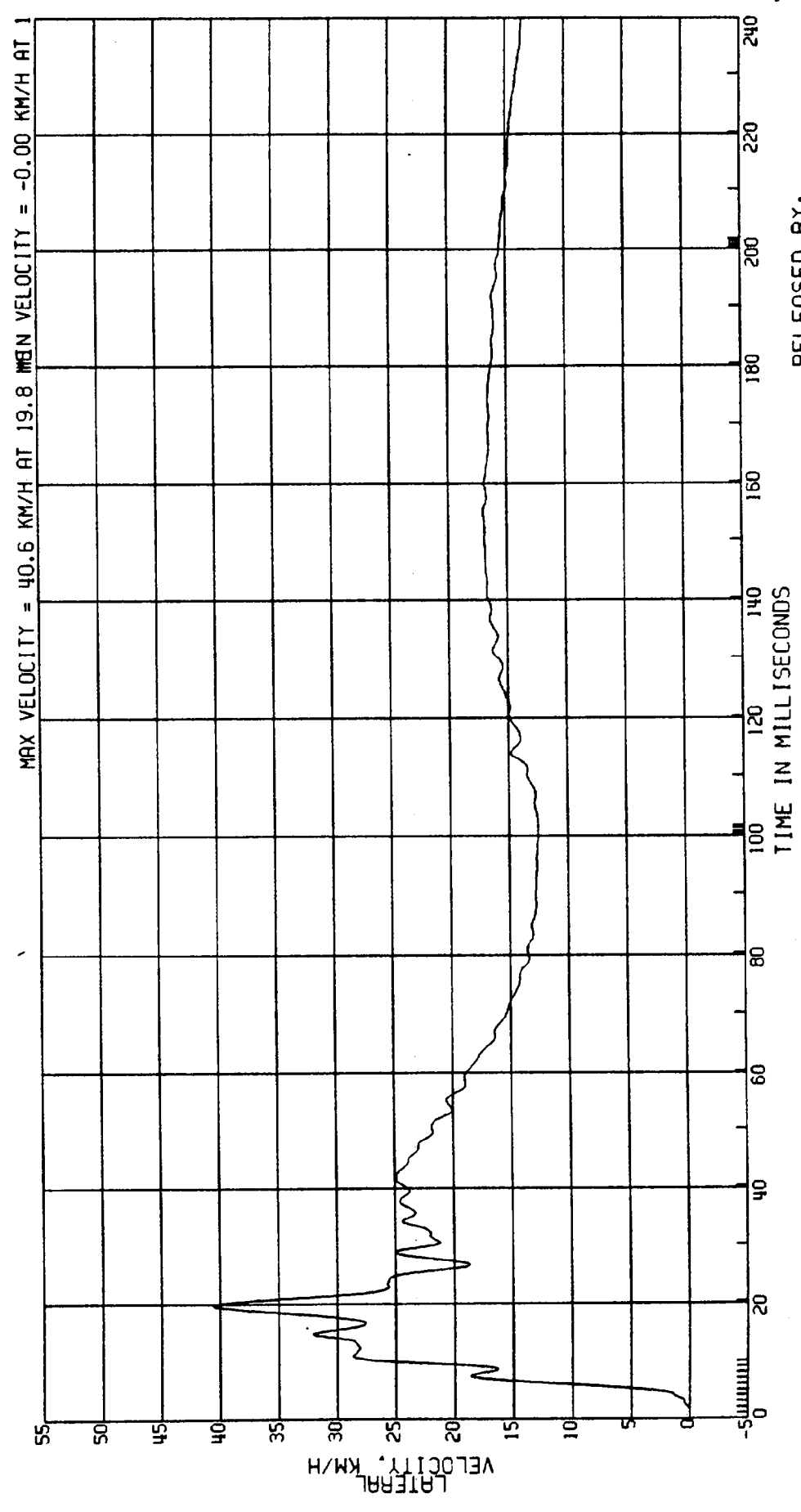
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 39  
3868-905  
CPE MVMA 9B 2AF69 DR-SIDE FRT. DOOR NO. 3 ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60



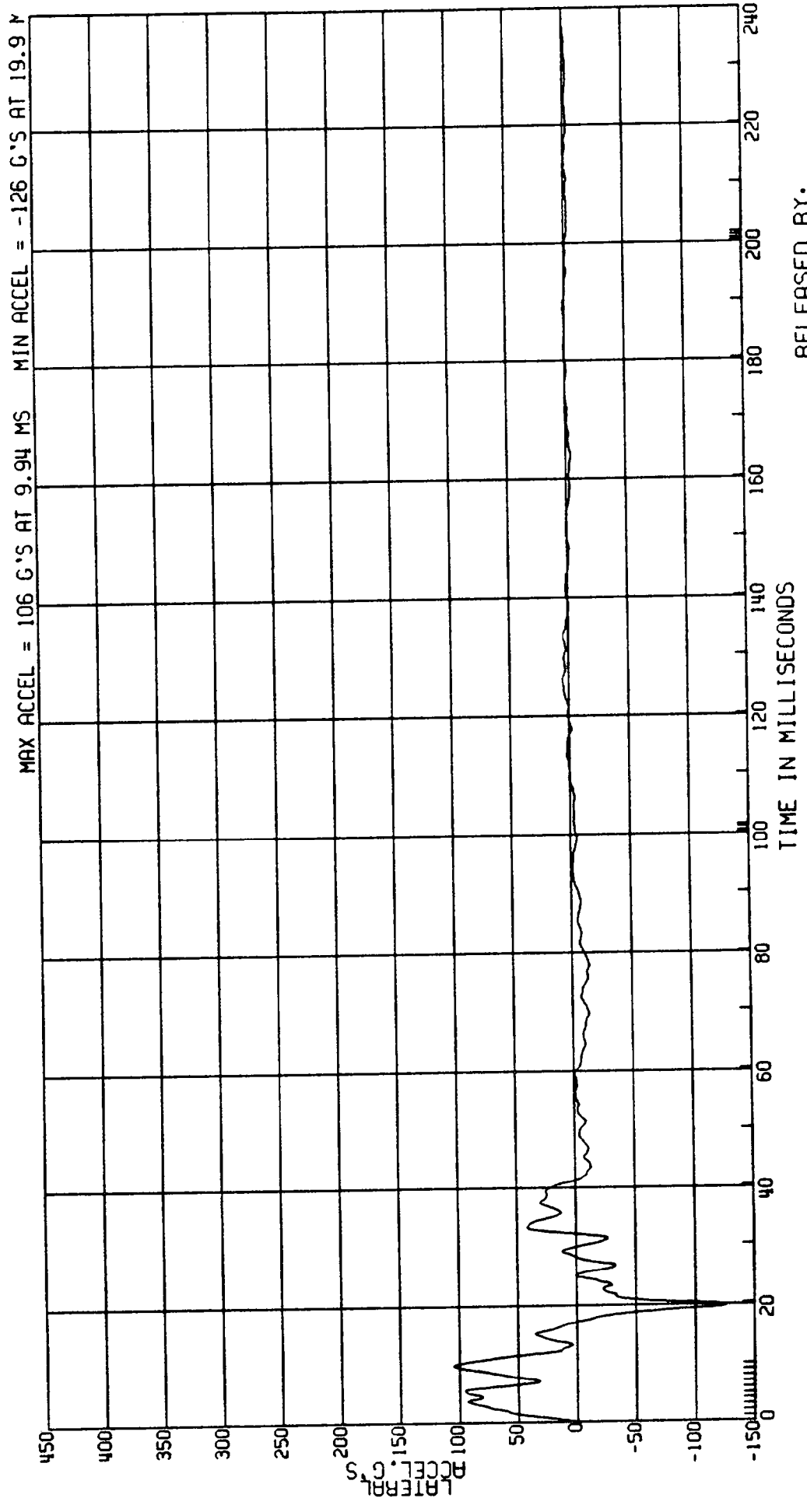
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 40  
3868-905  
CPE MVMA 9B 2AF69 COMPUTED FRT. DOOR NO. 2 VELOCITY TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



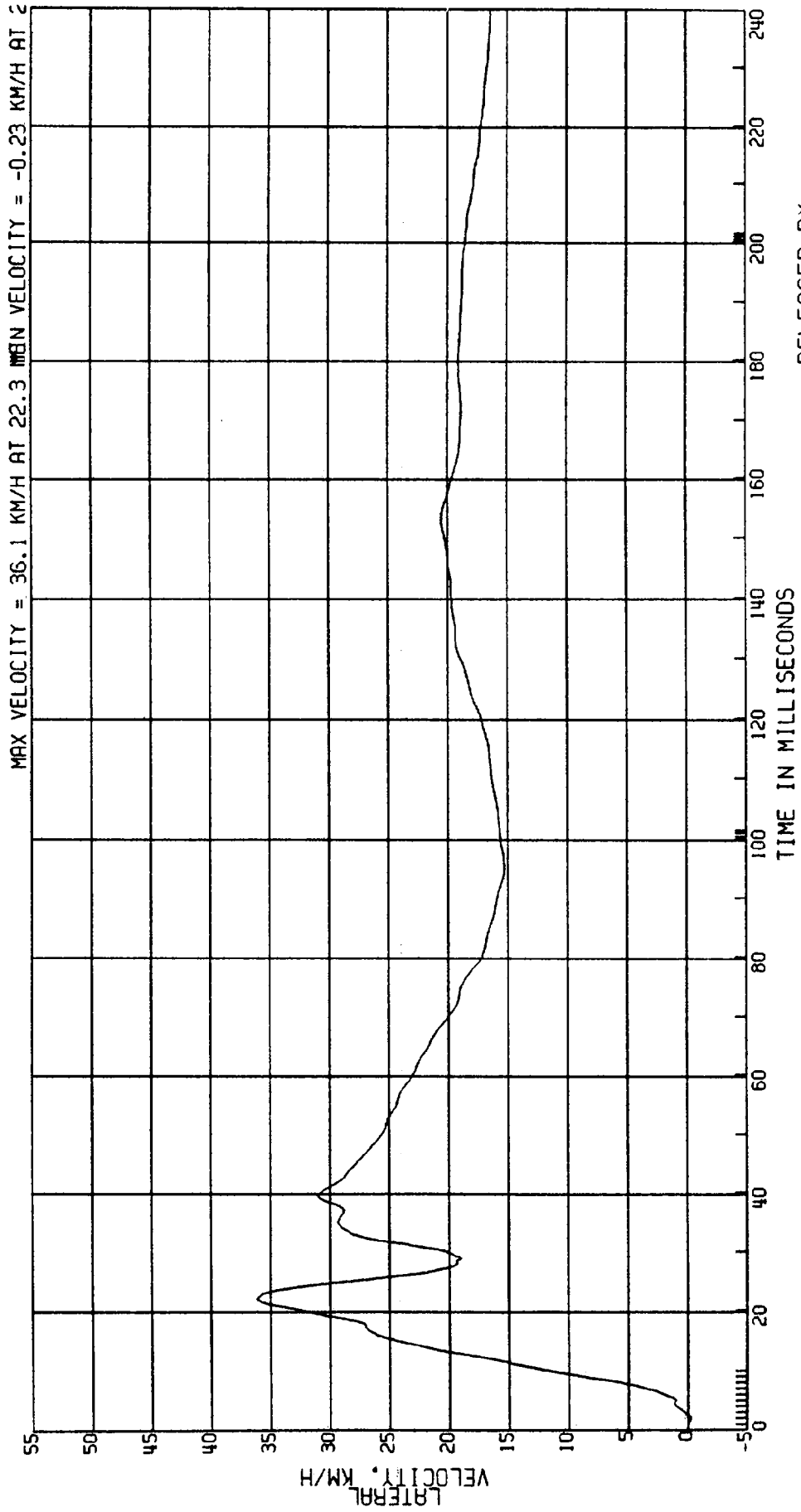
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 4/1  
3868-905 MVMA 9B 2AF69 DR-SIDE FRT. DOOR NO. 4 ACCEL. TEST DATE:03-20-90  
CPE ELEC DATA, SAE CLASS 60



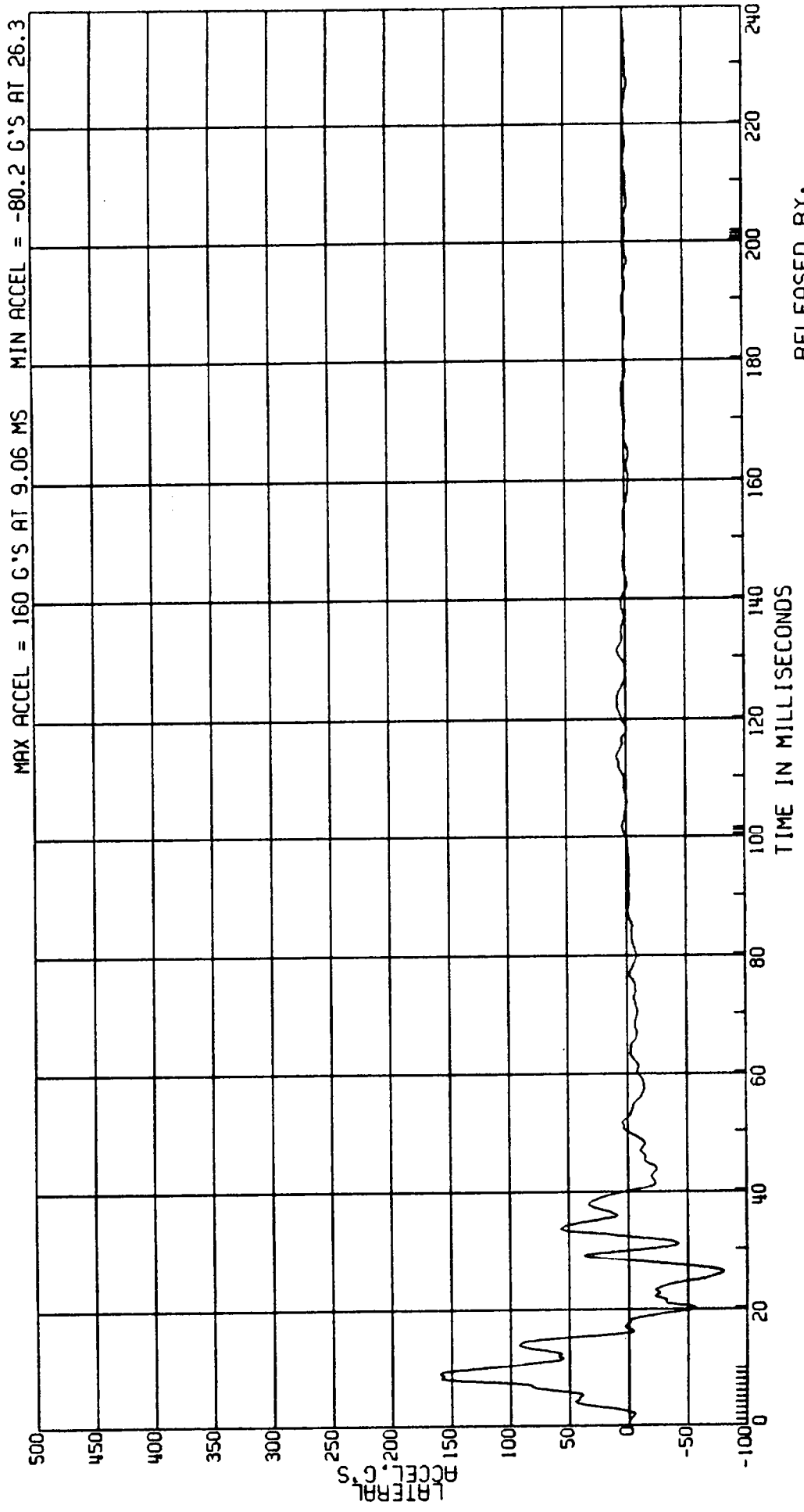
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15 PROCESSED 4 MY 90 12:05

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 4a  
 3868-905  
 CPE MVMA 9B 2AF69 COMPUTED FRT. DOOR NO. 3 VELOCITY TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



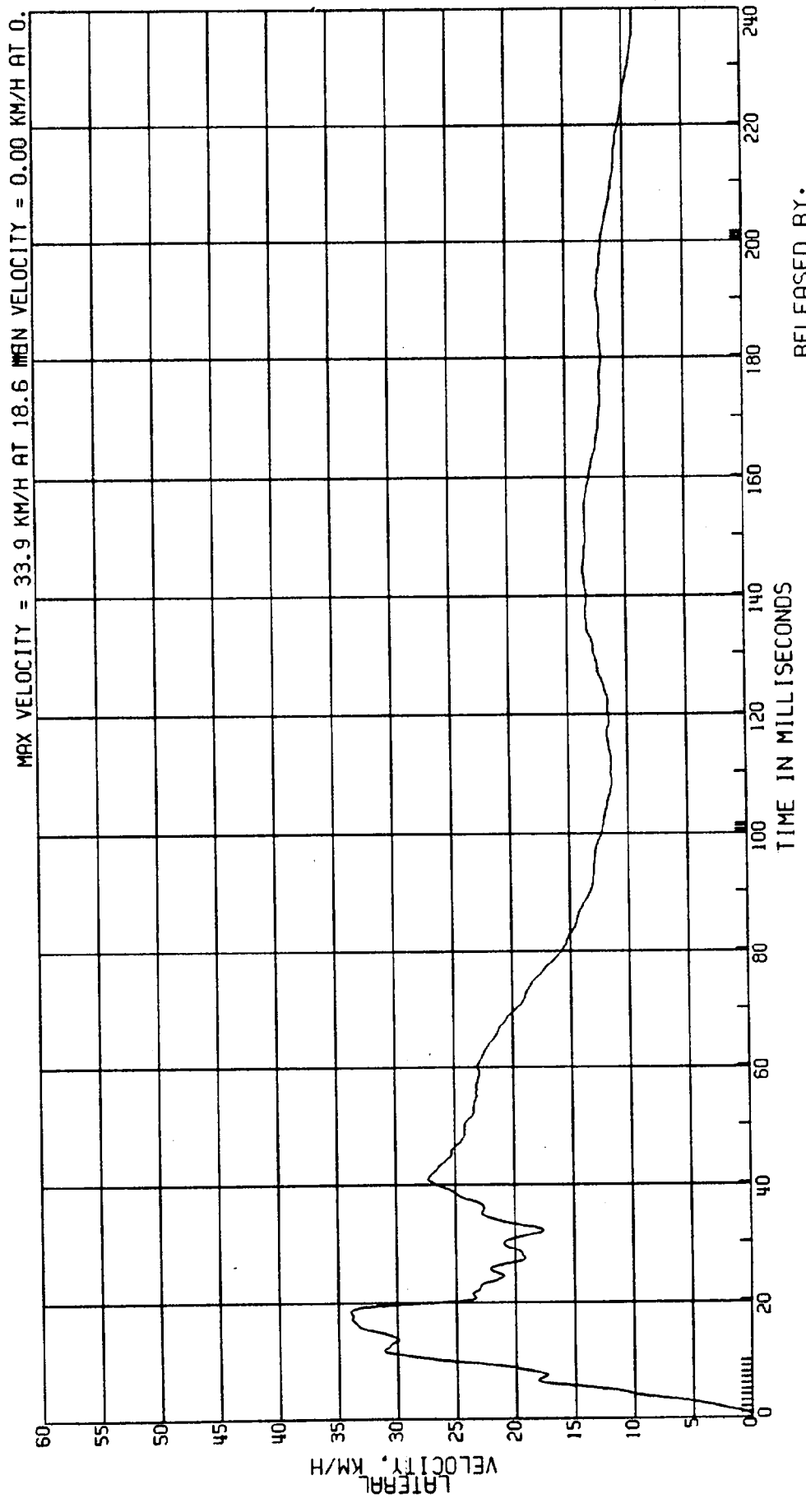
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C8009A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 43  
3868-905  
CPE MVMA 9B 2AF69 DR-SIDE FRT. DOOR NO. 5 ACCEL. TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 60



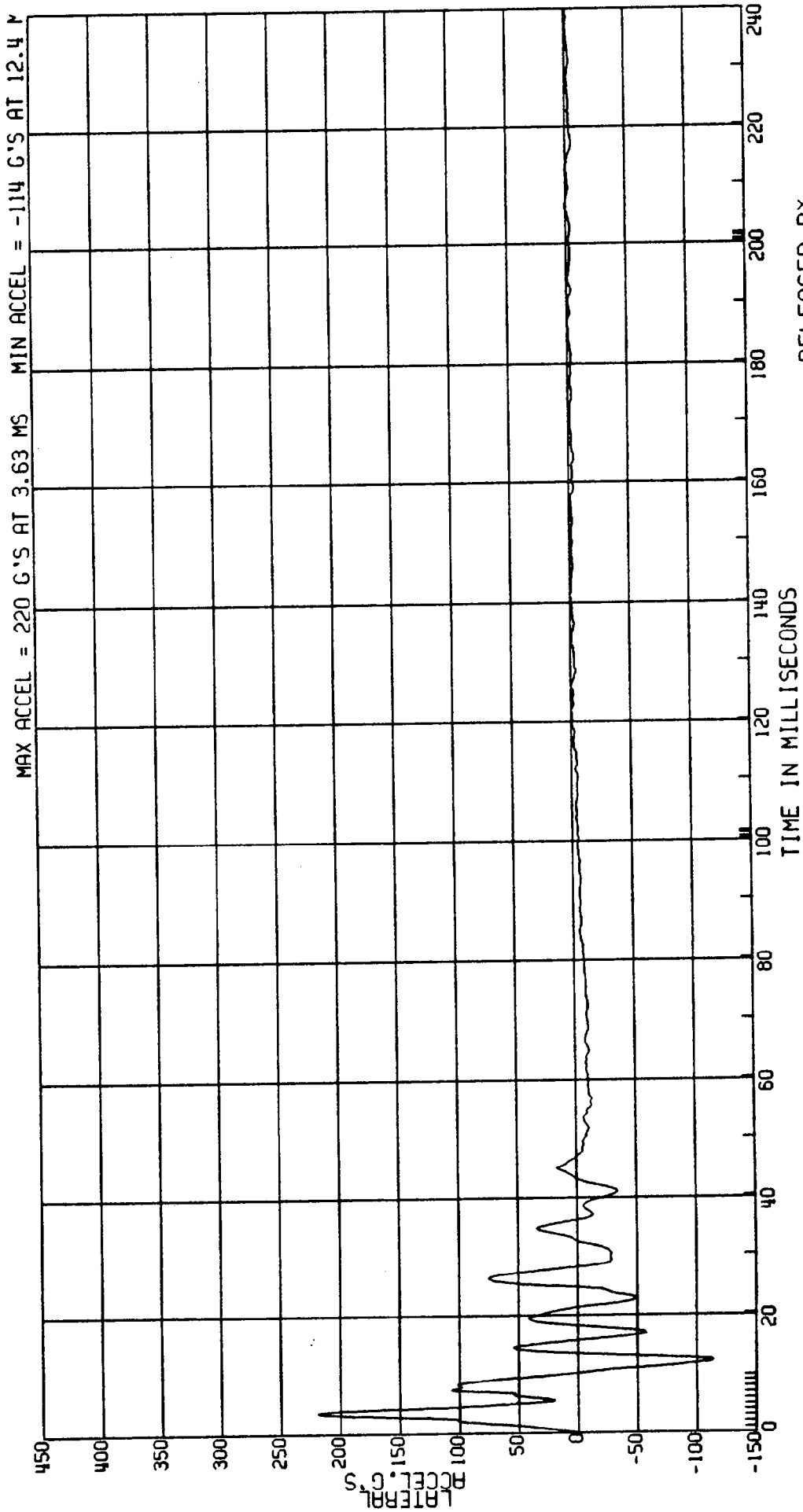
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17 PROCESSED 4 MY 90 12:05

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 44  
3868-905 MVMA 9B 2AF69 COMPUTED FRT. DOOR NO. 4 VELOCITY TEST DATE:03-20-90  
CPE (1ST INTEGRAL OF DR-SIDE ACCELERATION)  
ELEC DATA, SAE CLASS 180



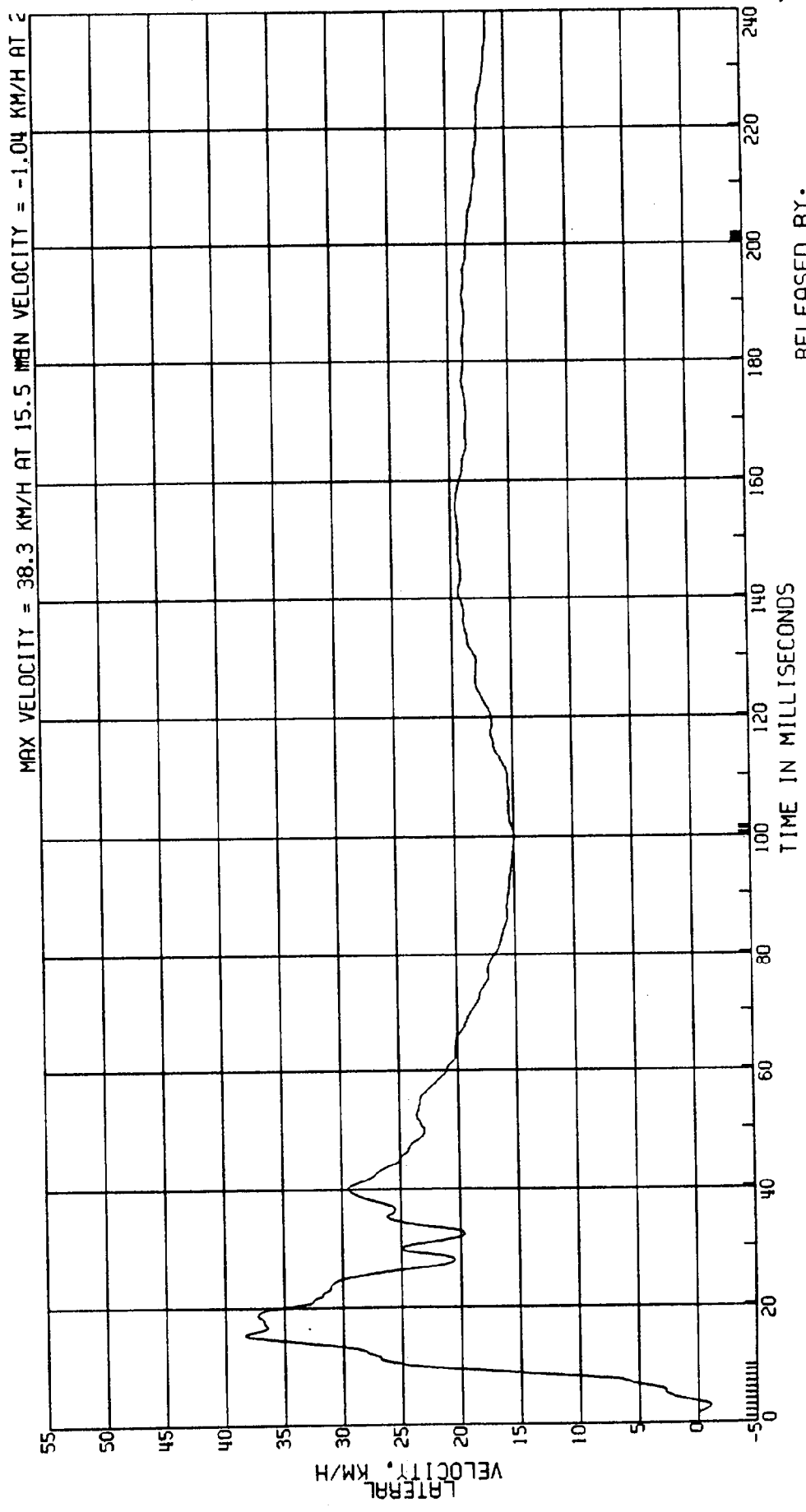
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16 PROCESSED 4 MY 90 12:05

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 45  
3868-905  
CPE MVMA 9B 2AF69 TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60 DR-SIDE REAR DOOR NO. 1 ACCEL.



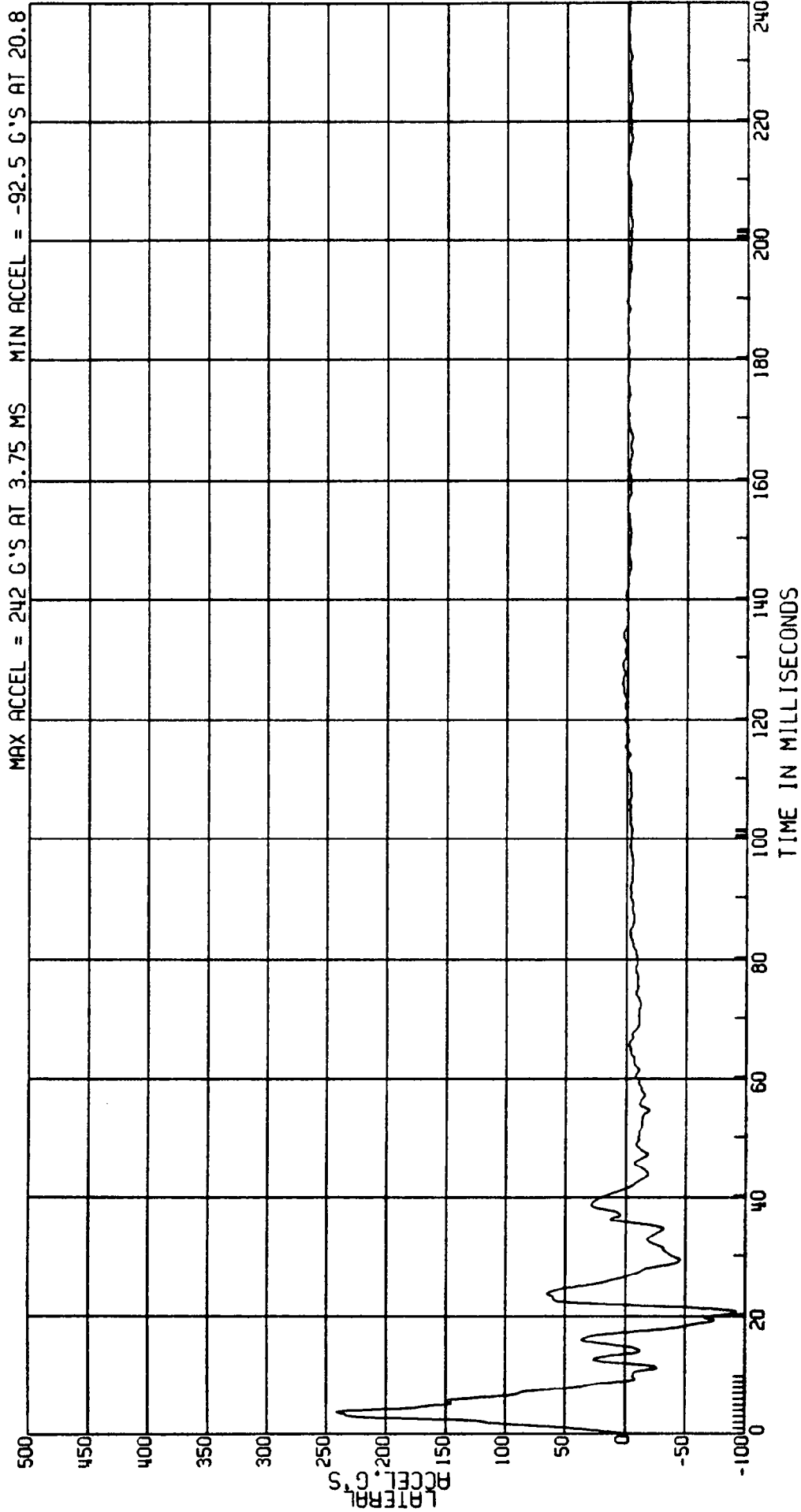
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19 PROCESSED 4 MY 90 12:05

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 46  
 3868-905  
 CPE MVMA 9B 2AF69 COMPUTED FRT. DOOR NO. 5 VELOCITY TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



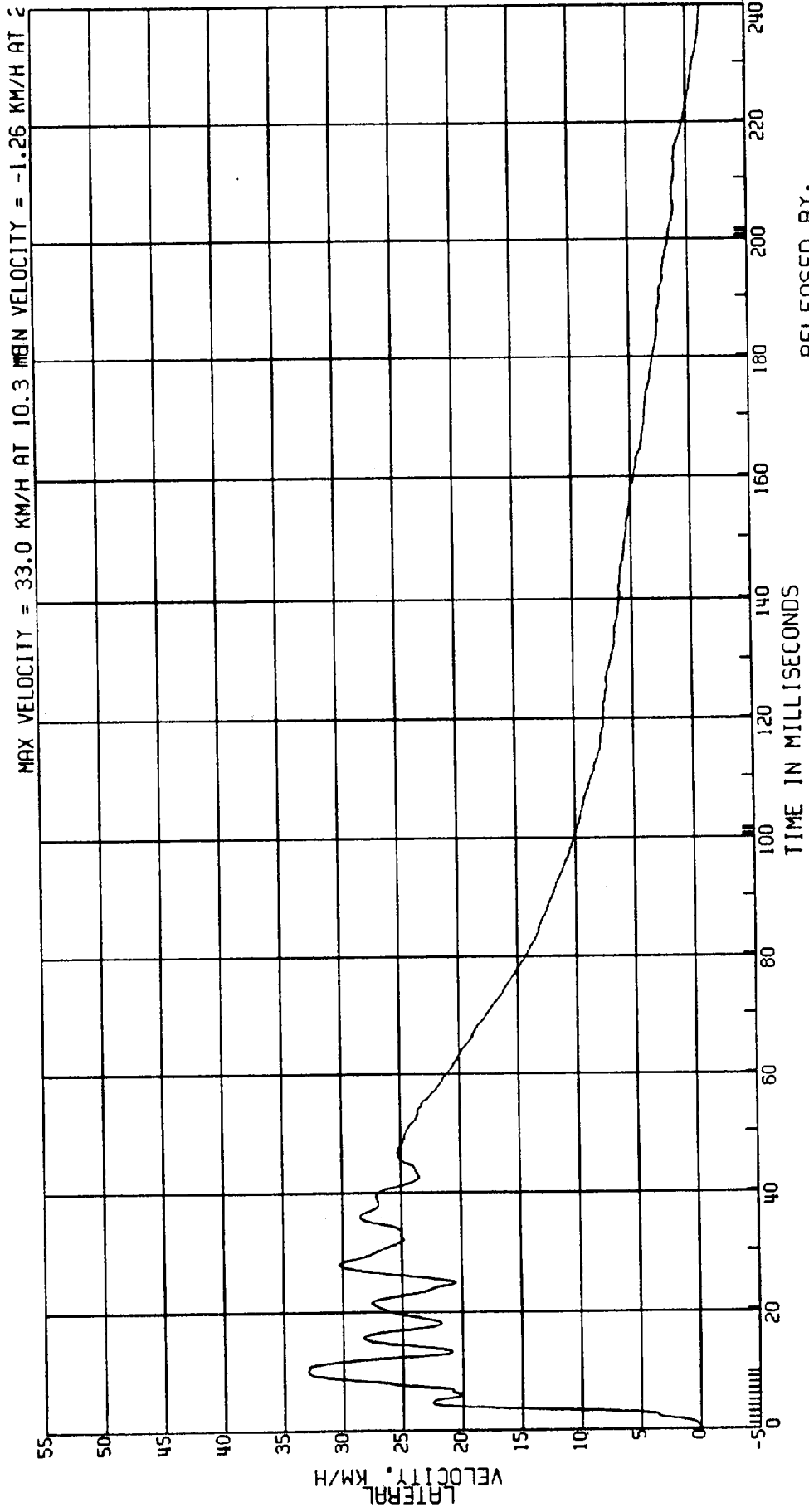
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 18 PROCESSED 4 MY 90 12:05

C8009A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 47  
3868-905  
CPE MVMA 9B 2AF69 DR-SIDE REAR DOOR NO. 2 ACCEL. TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 60



RELEASED BY:  
21 PROCESSED 4 MY 90 12:05

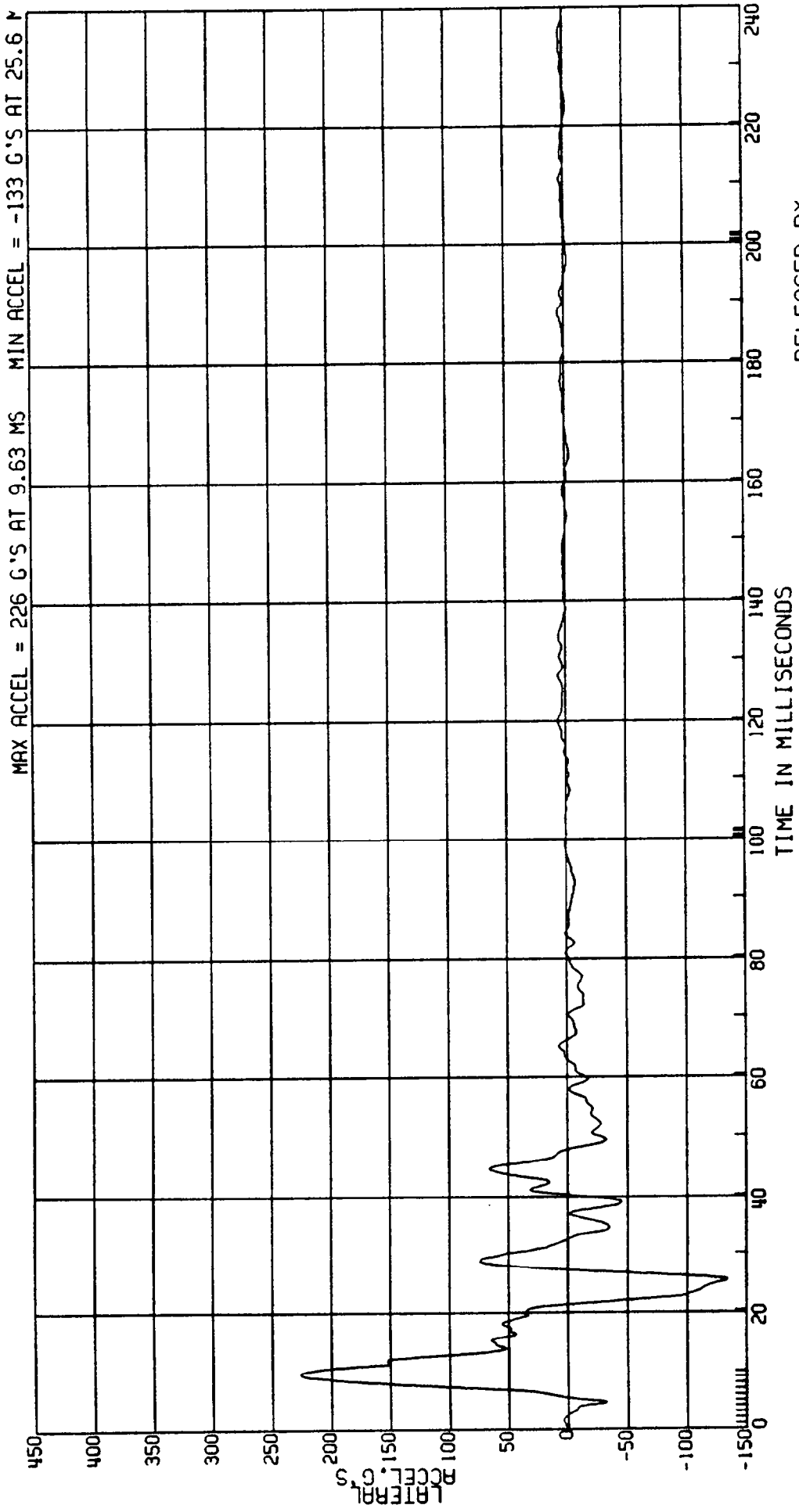
C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 48  
3868-905 MVMA 9B 2AF69 COMPUTED REAR DOOR NO. 1 VELOCITY TEST DATE:03-20-90  
CPE ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



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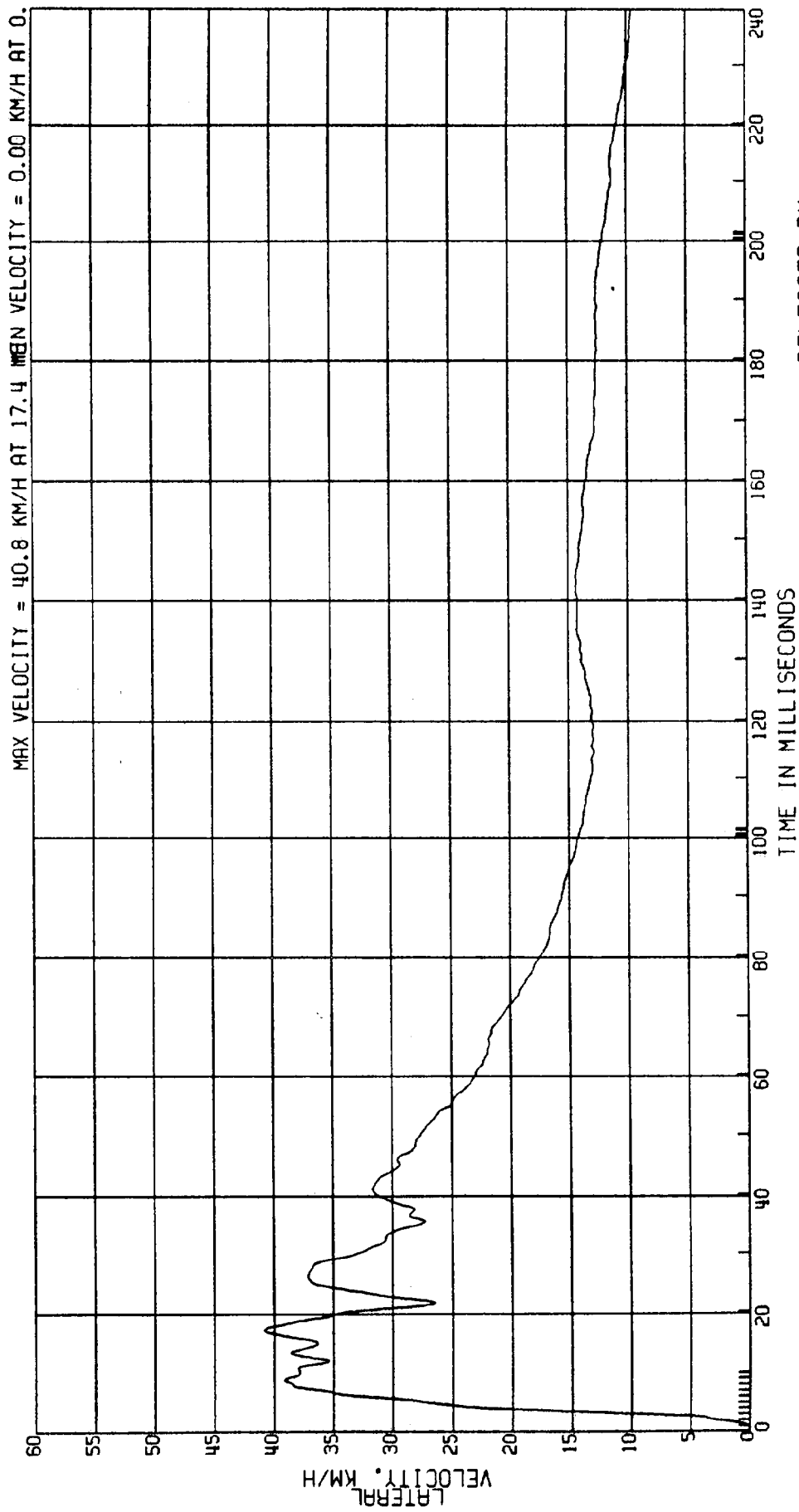
20 PROCESSED 4 MY 90 12:05

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 49  
3868-905  
CPE MVMA 9B 2AF69 DR-SIDE REAR DOOR NO. 3 ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60



RELEASED BY:  
23 PROCESSED 4 MT 90 12:06

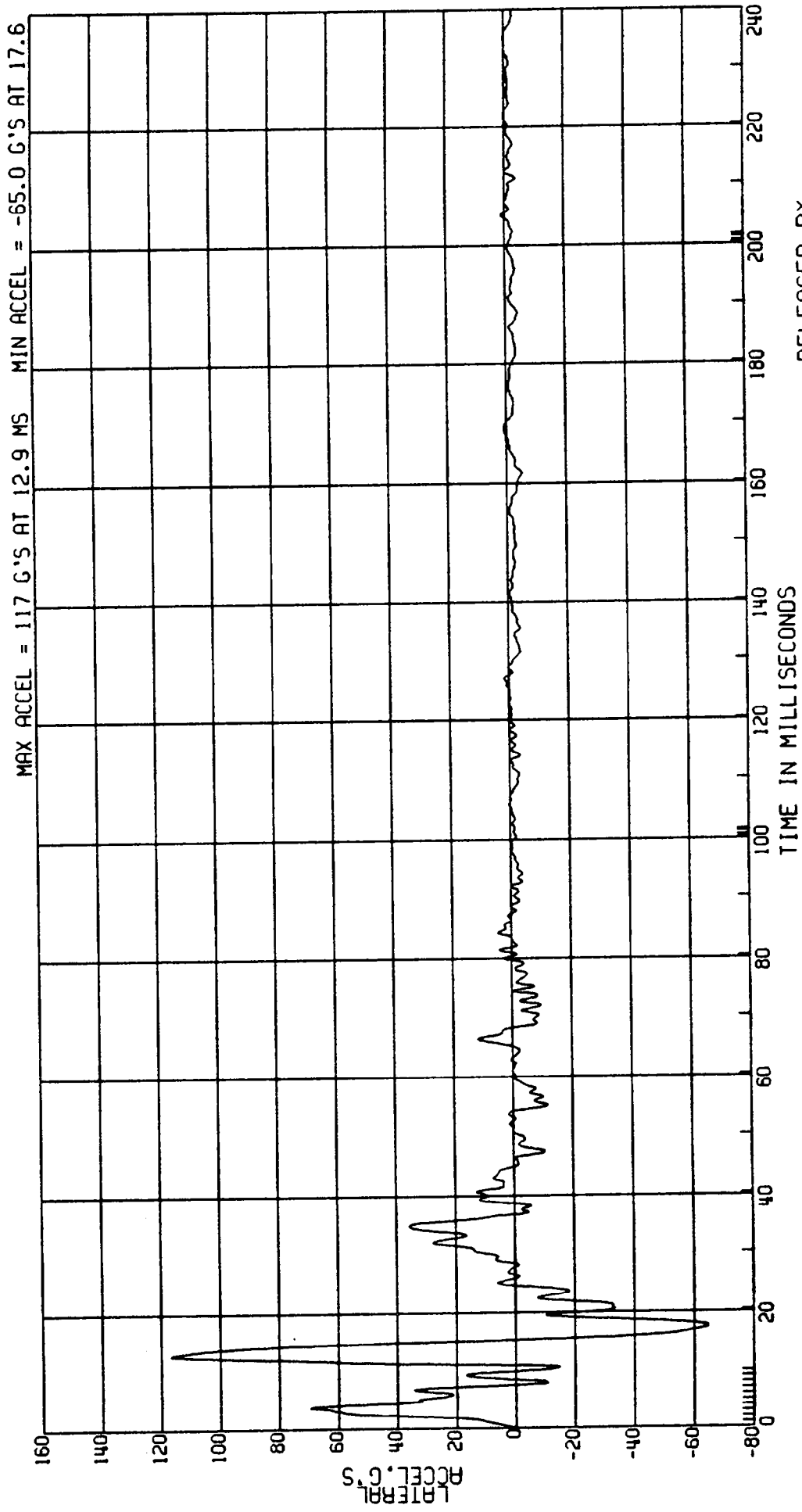
C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 50  
3868-905  
CPE MVMA 9B 2AF69 COMPUTED REAR DOOR NO. 2 VELOCITY TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



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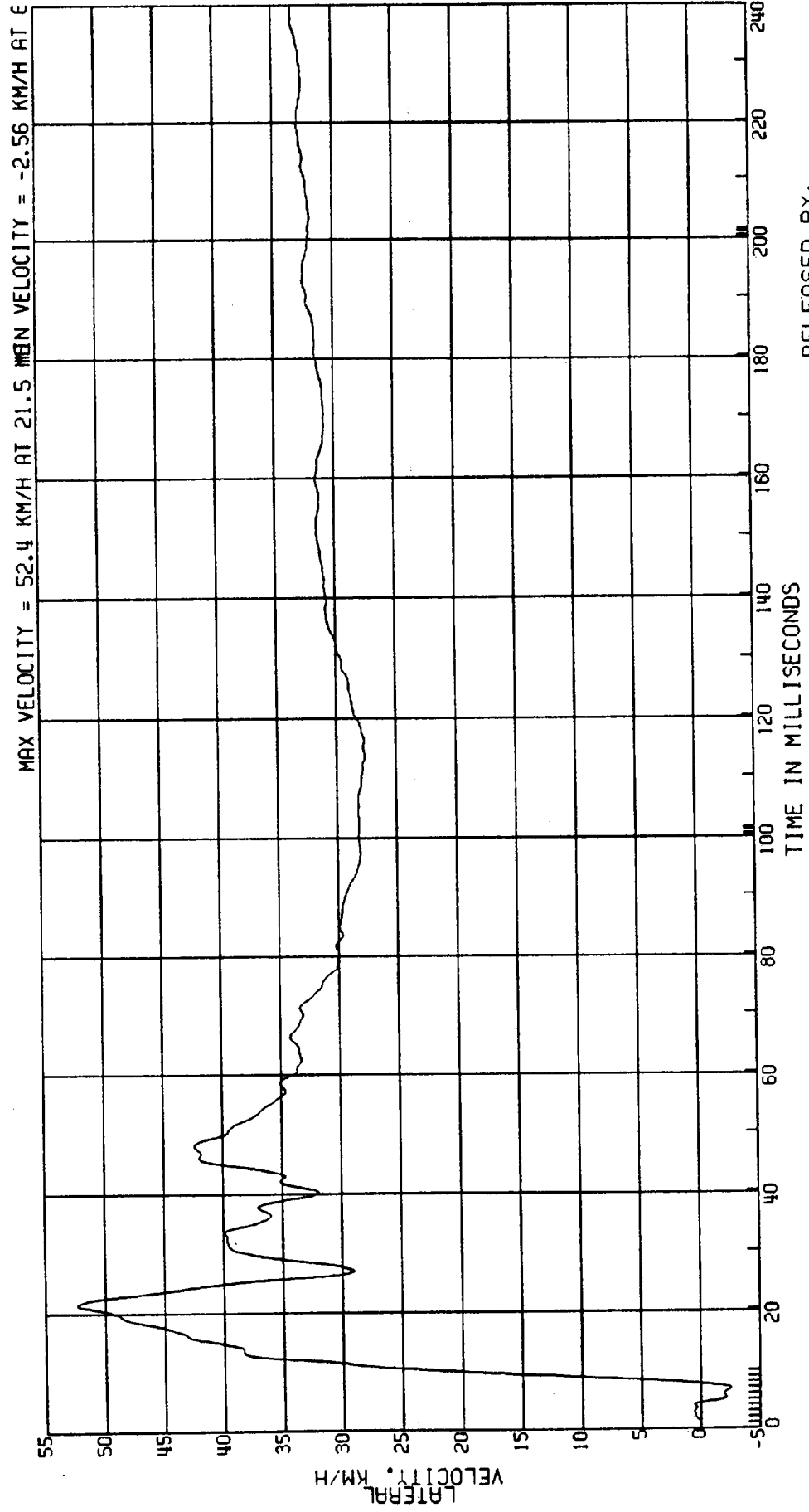
22 PROCESSED 4 MY 90 12:05

C8009A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 5/  
3868-905  
CPE MVMA 9B 2AF69 DR-SIDE REAR DOOR NO. 4 ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60



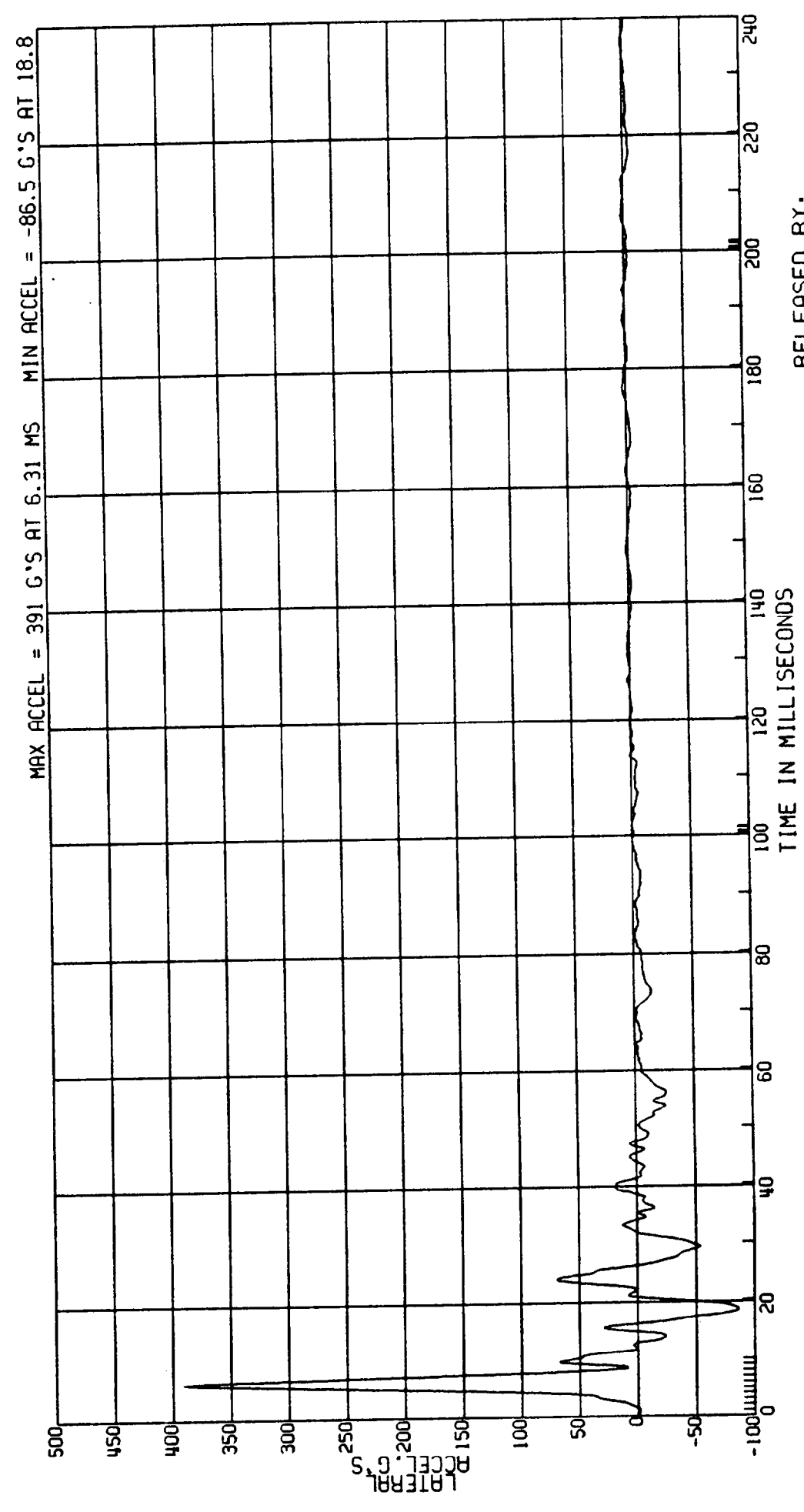
RELEASED BY:  
25 PROCESSED 4 MT 90 12:06

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 5a  
3868-905  
CPE MVMA 9B 2AF69 TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



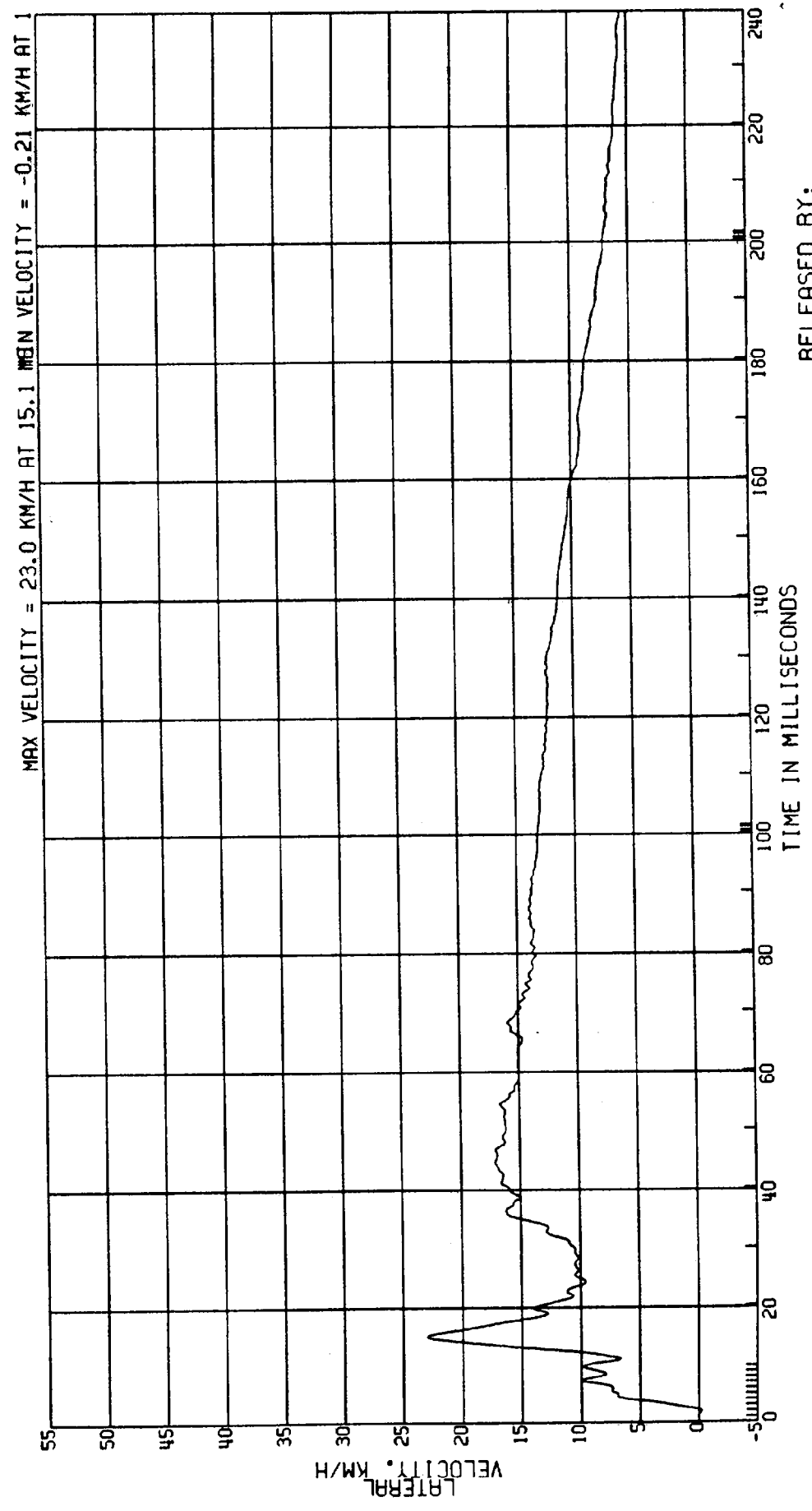
RELEASED BY:  
24 PROCESSED 4 MY 90 12:06

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 53  
3868-905 DR-SIDE REAR DOOR NO. 5 ACCEL. TEST DATE:03-20-90  
CPE MVMA 9B 2AF69  
ELEC DATA, SAE CLASS 60



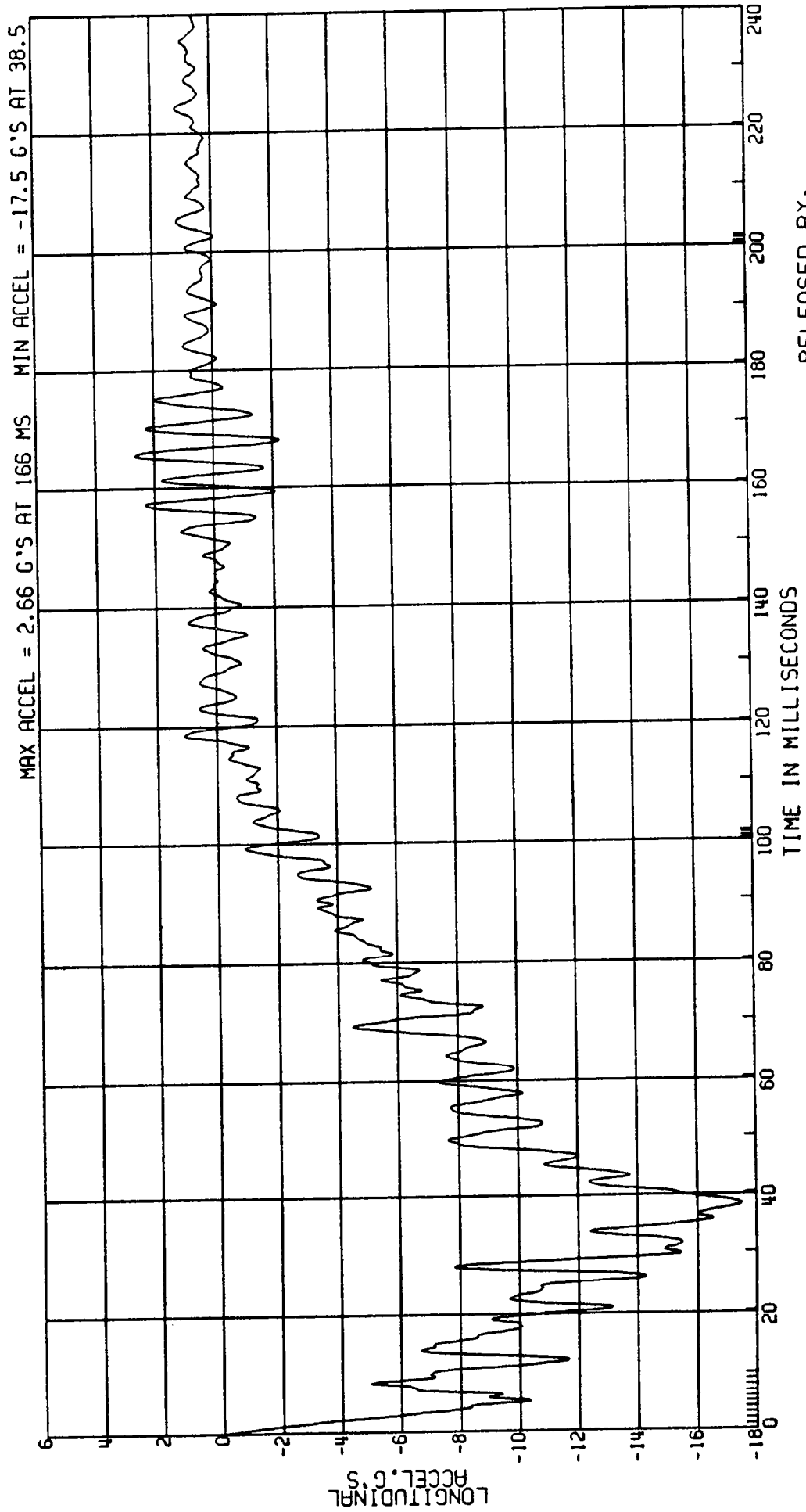
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27 PROCESSED 4 MY 90 12:06

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 54  
3868-905 MVMA 9B 2AF69 COMPUTED REAR DOOR NO. 4 VELOCITY TEST DATE: 03-20-90  
CPE ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



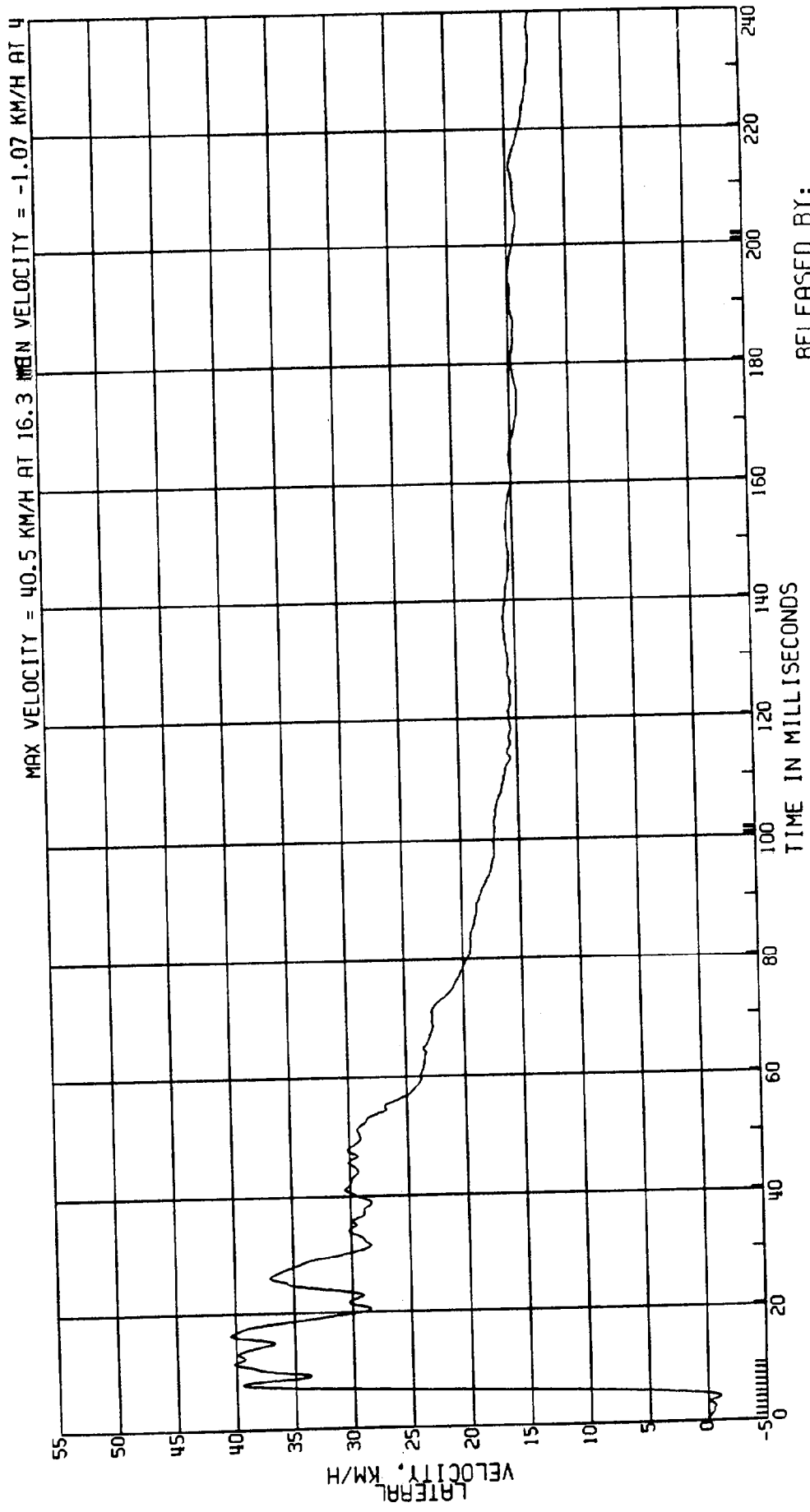
RELEASED BY:  
26 PROCESSED 4 MT 90 12:06

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 55  
3868-905  
CPE MVMA 9B 2AF69 M.D.B. AT C.G. ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60

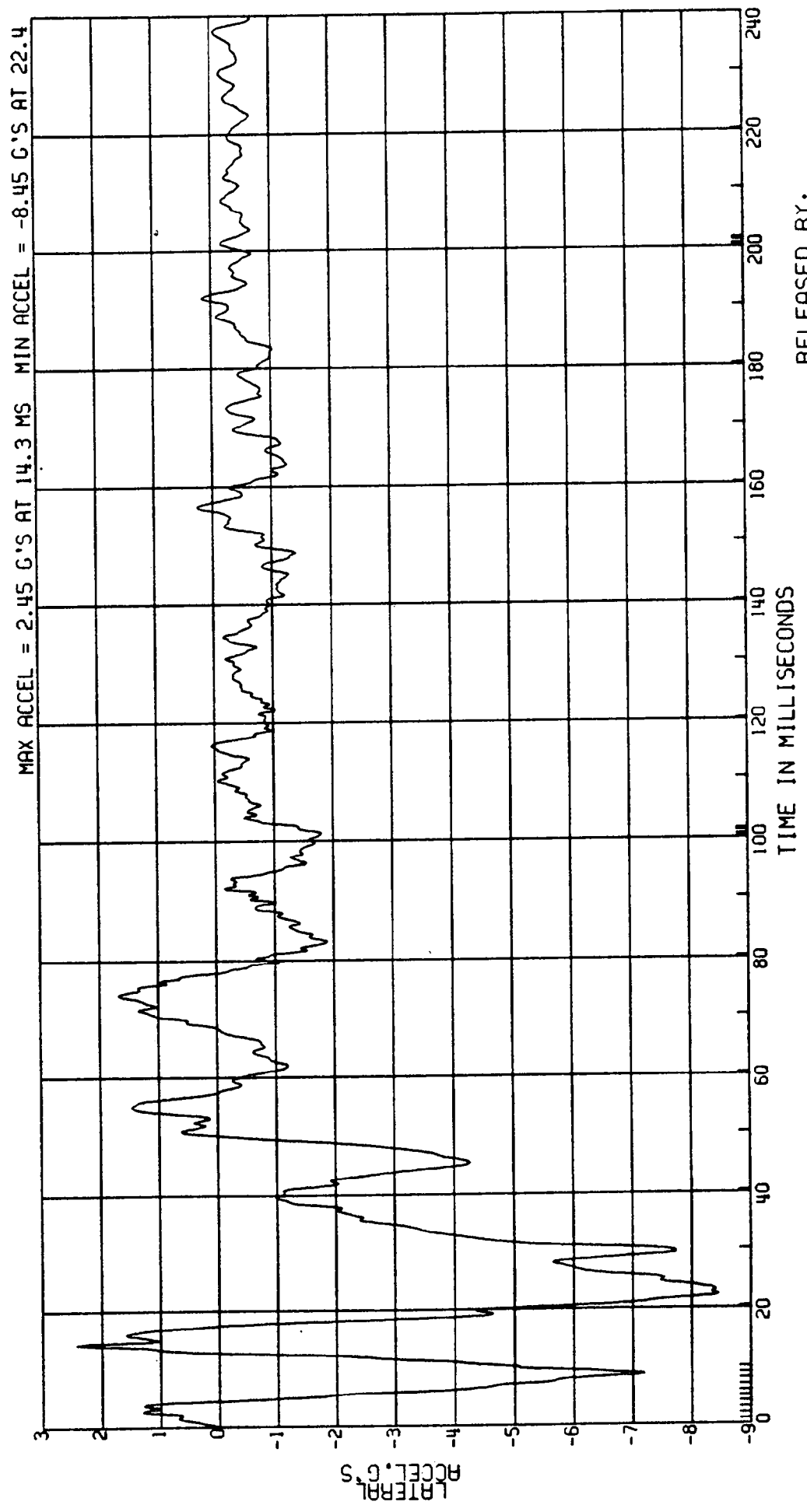


RELEASED BY:  
55 PROCESSED 4 MY 90 12:06

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 56  
3868-905 MVMA 9B 2AF69 TEST DATE:03-20-90  
CPE COMPUTED REAR DOOR NO. 5 VELOCITY  
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)

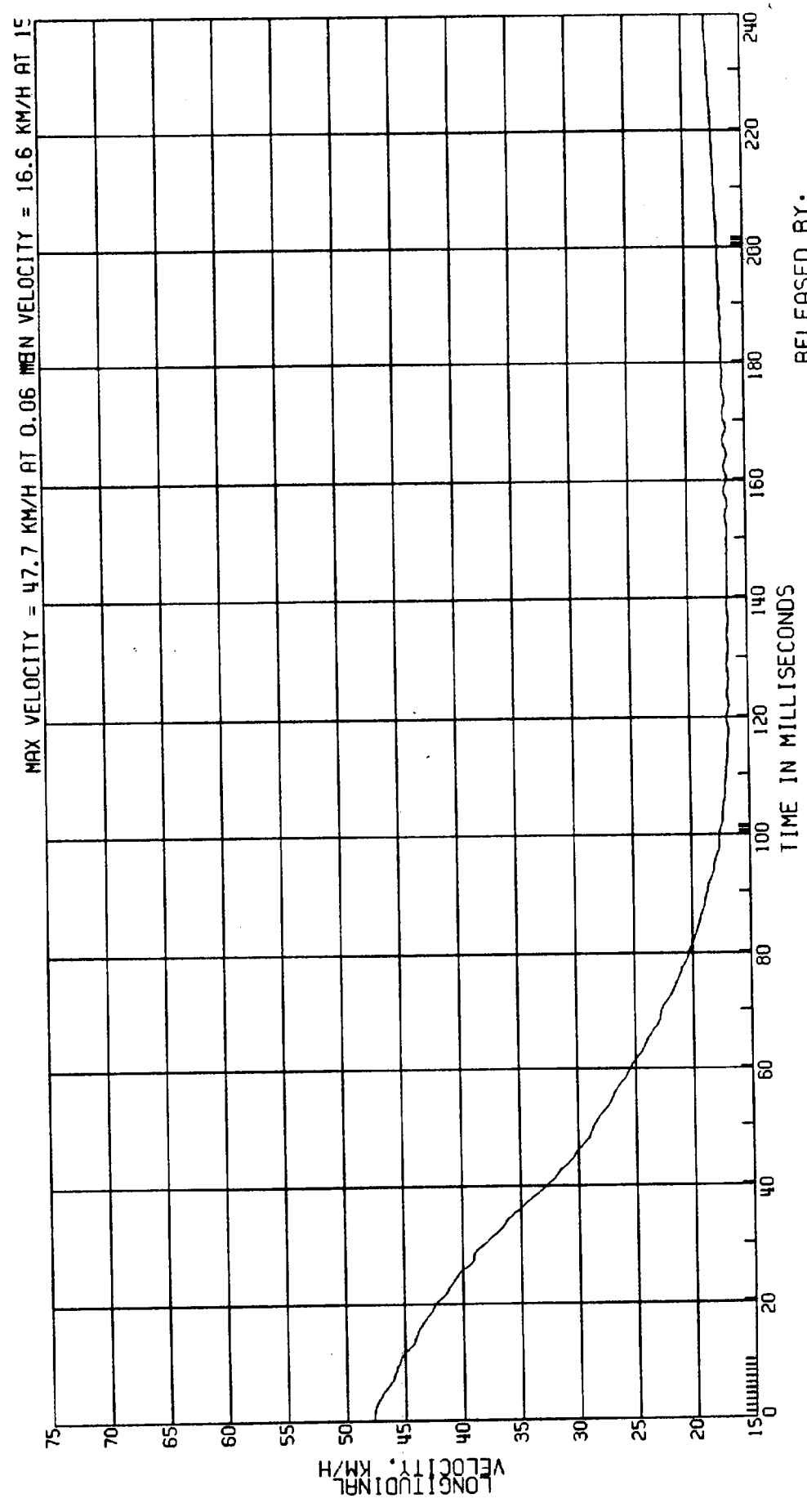


C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 57  
3868-905  
CPE MVMA 9B 2AF69 M.D.B. AT C.G. ACCEL.  
ELEC DATA, SAE CLASS 60 TEST DATE:03-20-90

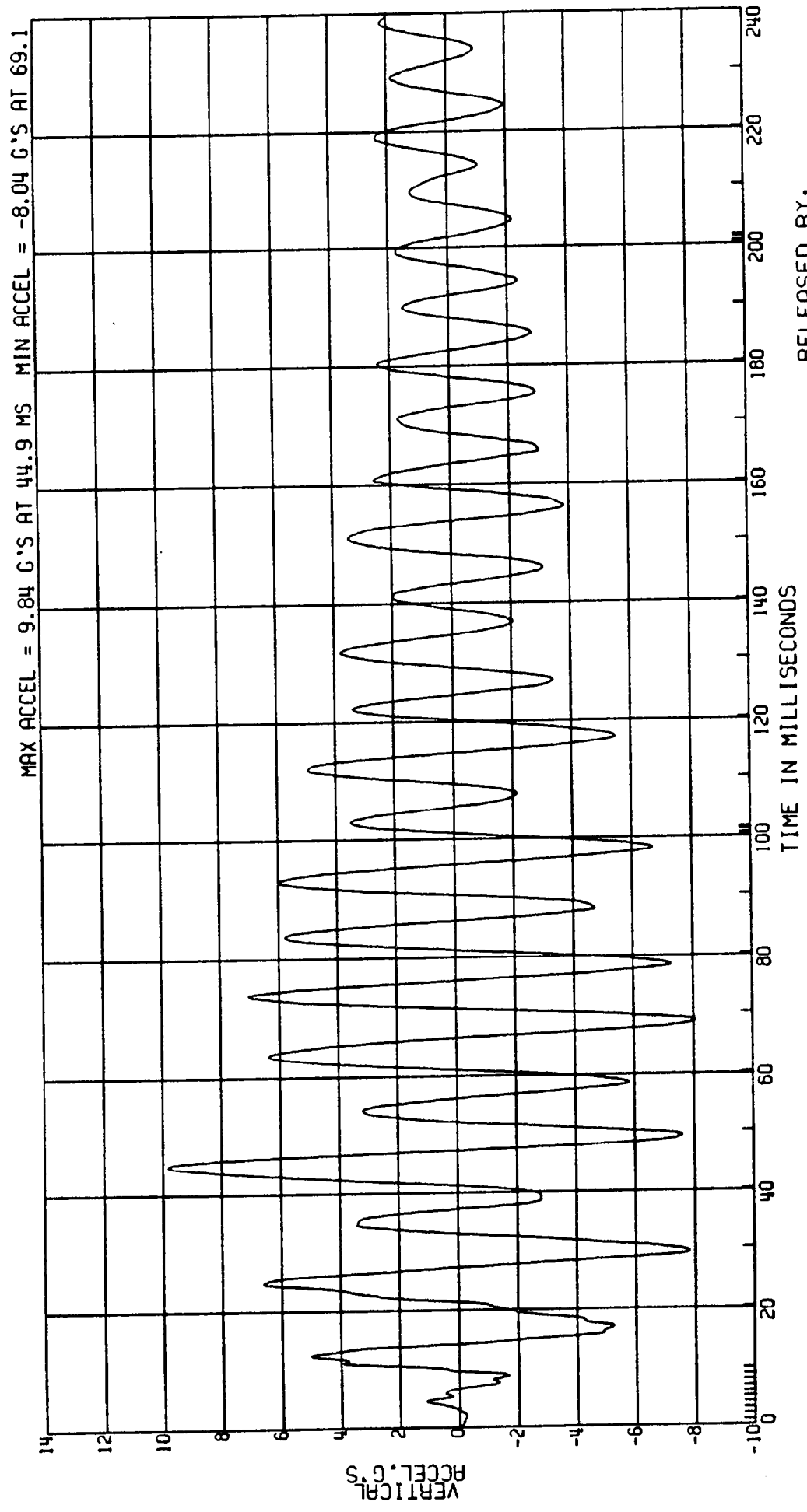


RELEASED BY:  
57 PROCESSED 4 MY 90 12:07

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 58  
 3868-905  
 CPE MVMA 9B 2AF69  
 ELEC DATA, SAE CLASS 180 (1ST INT OF ACCEL 53.6KPH\* $\cos 27$ DEG)  
 COMPUTED M.D.B. AT C.G. VELOCITY  
 TEST DATE: 03-20-90

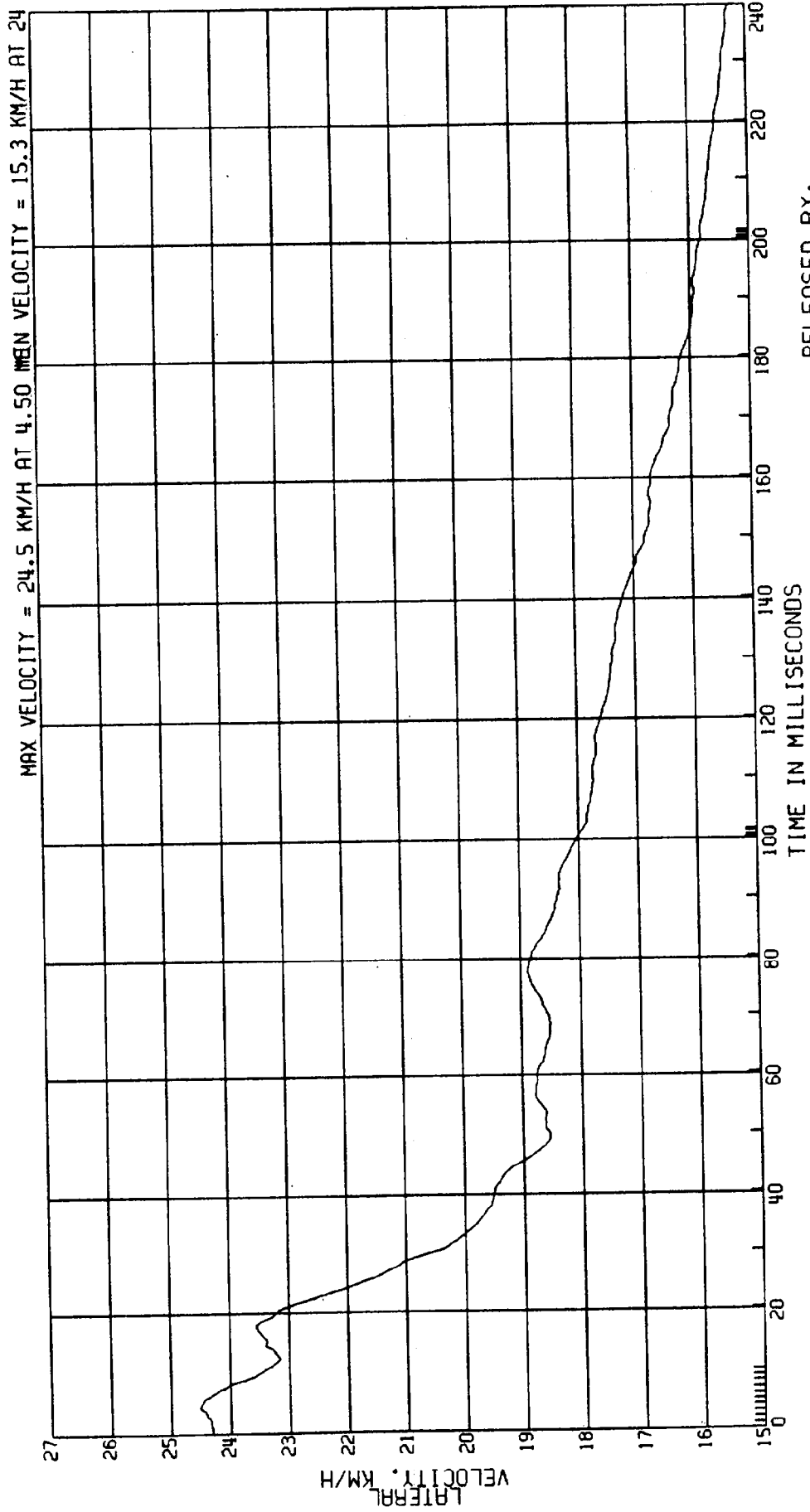


C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 59  
3868-905  
CPE MVMA 9B 2AF69 M.D.B. AT C.G. ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60



RELEASED BY:  
59 PROCESSED 4 MY 90 12:07

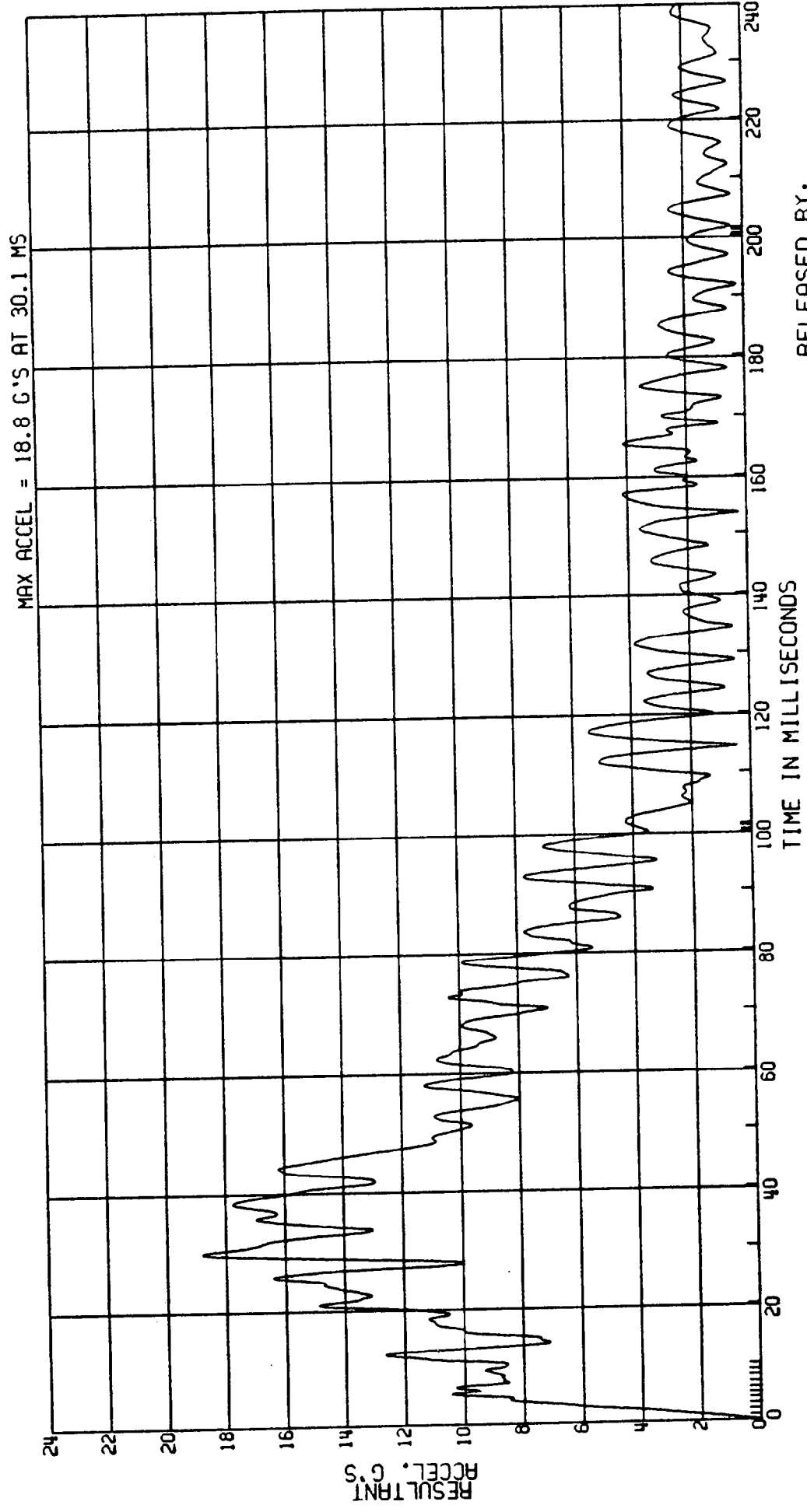
C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 60  
3868-905  
CPE MVMA 9B 2AF69 TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INT OF ACCEL 53.6KPH\*SIN27DEG)  
COMPUTED M.D.B. AT C.G. VELOCITY



RELEASED BY:

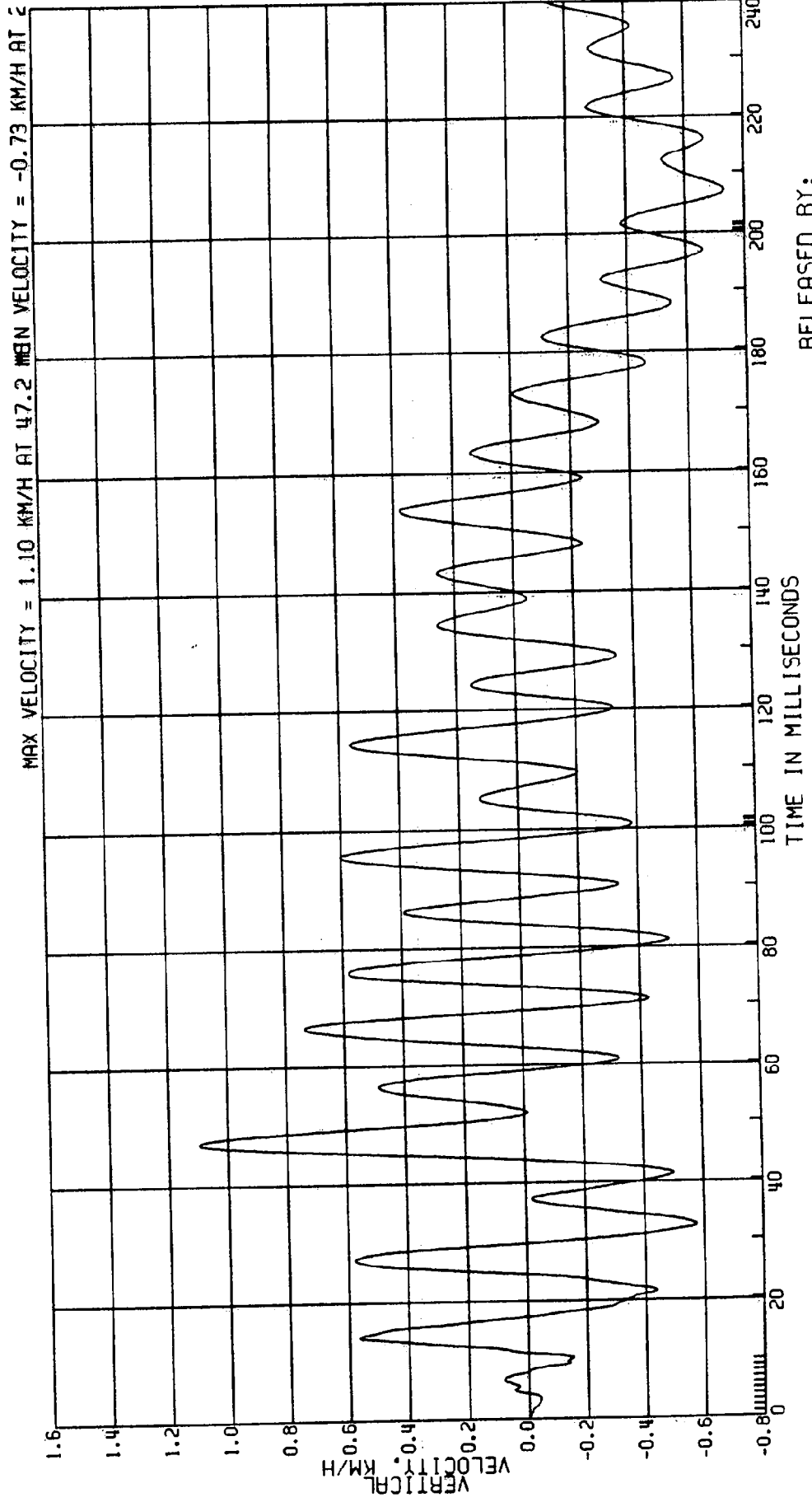
58 PROCESSED 4 MY 90 12:07

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 6 /  
3868-905 M.V.M.A 9B 2AF69 M.D.B. AT C.G. ACCEL.  
CPE MVMA 9B 2AF69 TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60 (VEC SUM OF C.G. ACCELERATIONS)

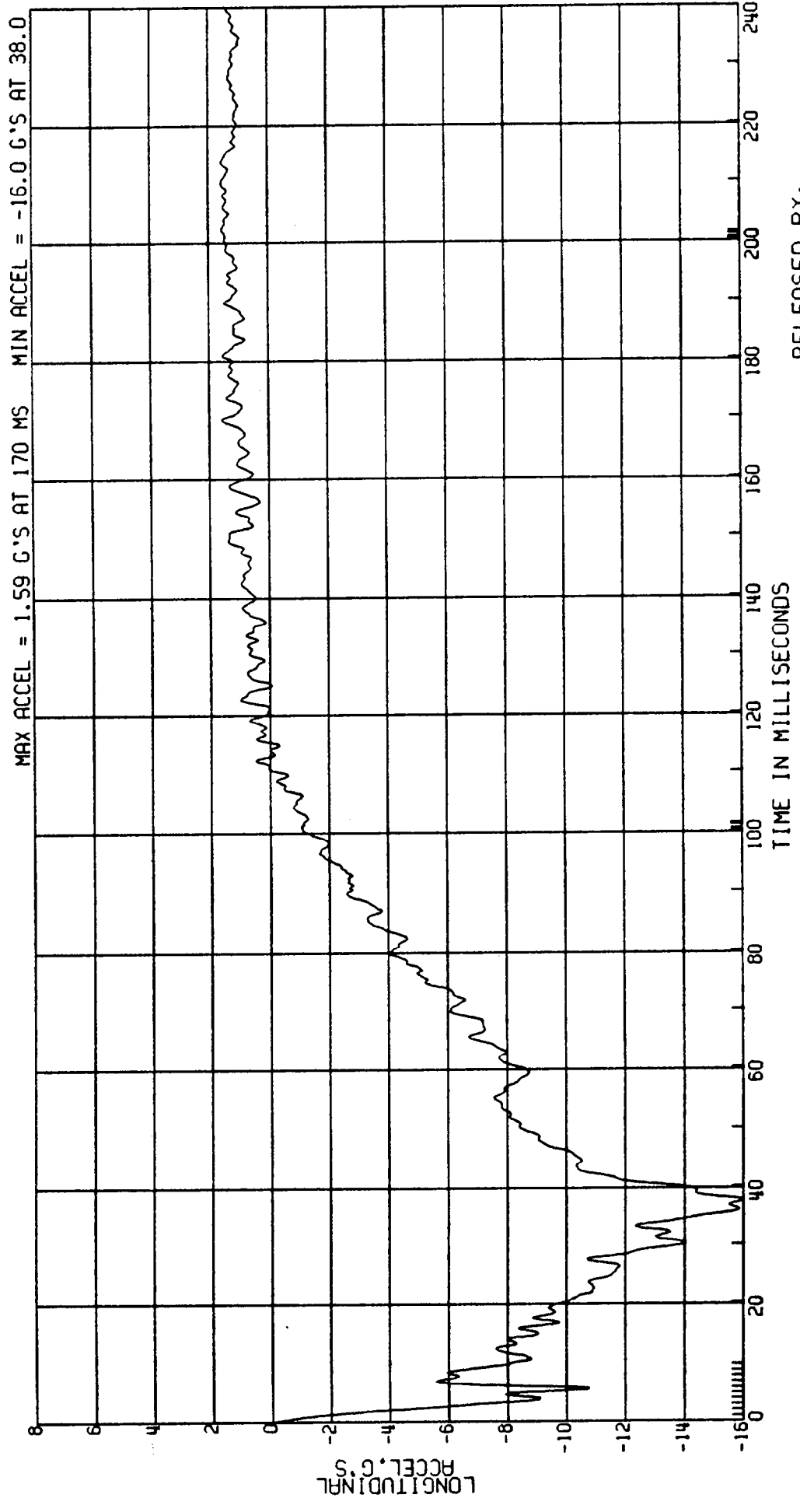


RELEASED BY:  
61 PROCESSED 4 MY 90 12:07

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 62  
3868-905  
CPE MVMA 98 2AF69 TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INT OF ACCELERATION) COMPUTED M.D.B. AT C.G. VELOCITY

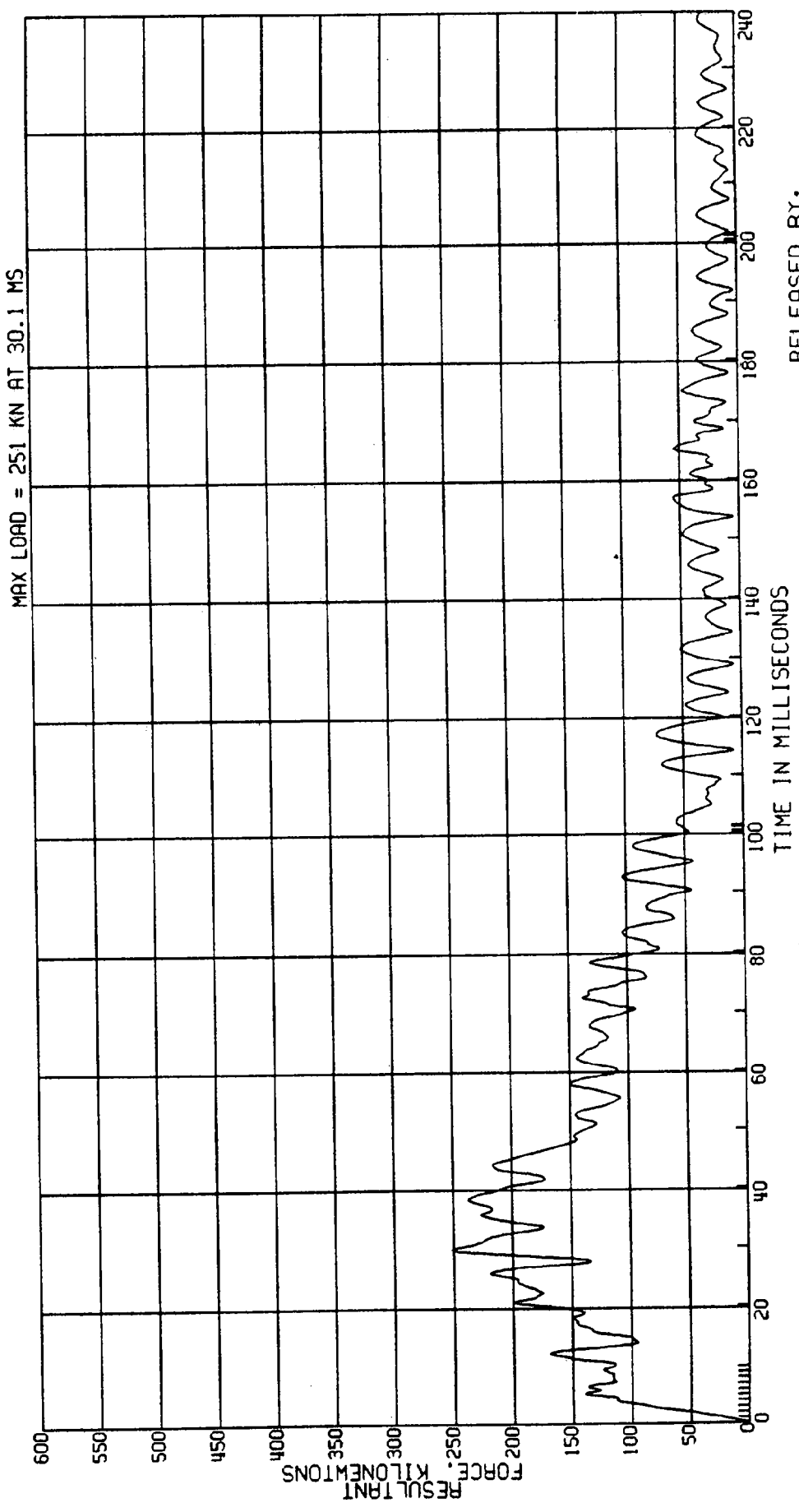


C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 63  
3868-905  
CPE MVMA 9B 2AF69 M.D.B. REAR CROSS MEMBER ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60



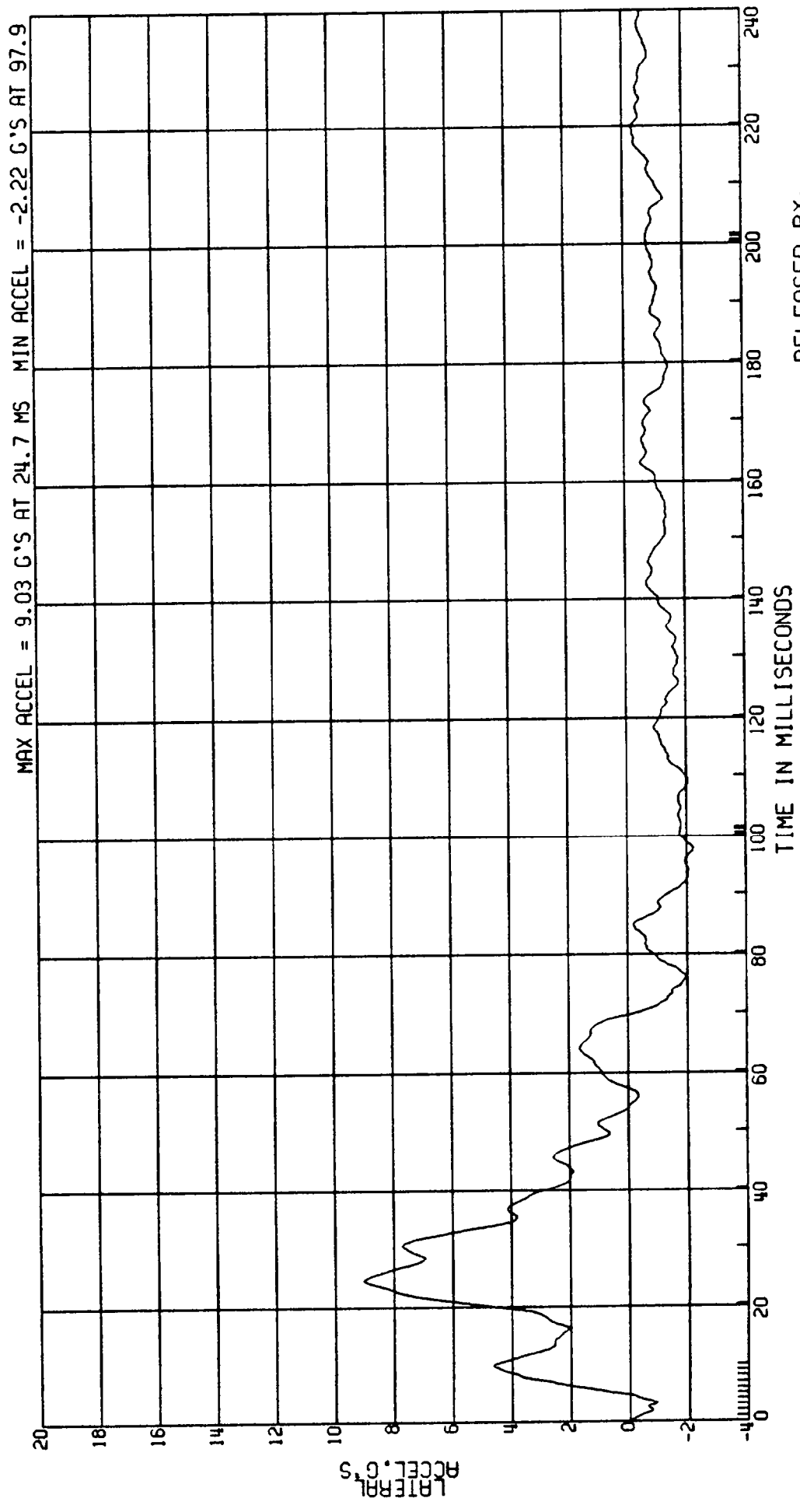
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63 PROCESSED 4 MY 90 12:07

C8009A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 64  
 3868-905  
 CPE MVMA 9B 2AF69 COMPUTED M.D.B. AT C.G. FORCE TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 60 (1359.5KG) (9.807) (RESULTANT ACCEL)



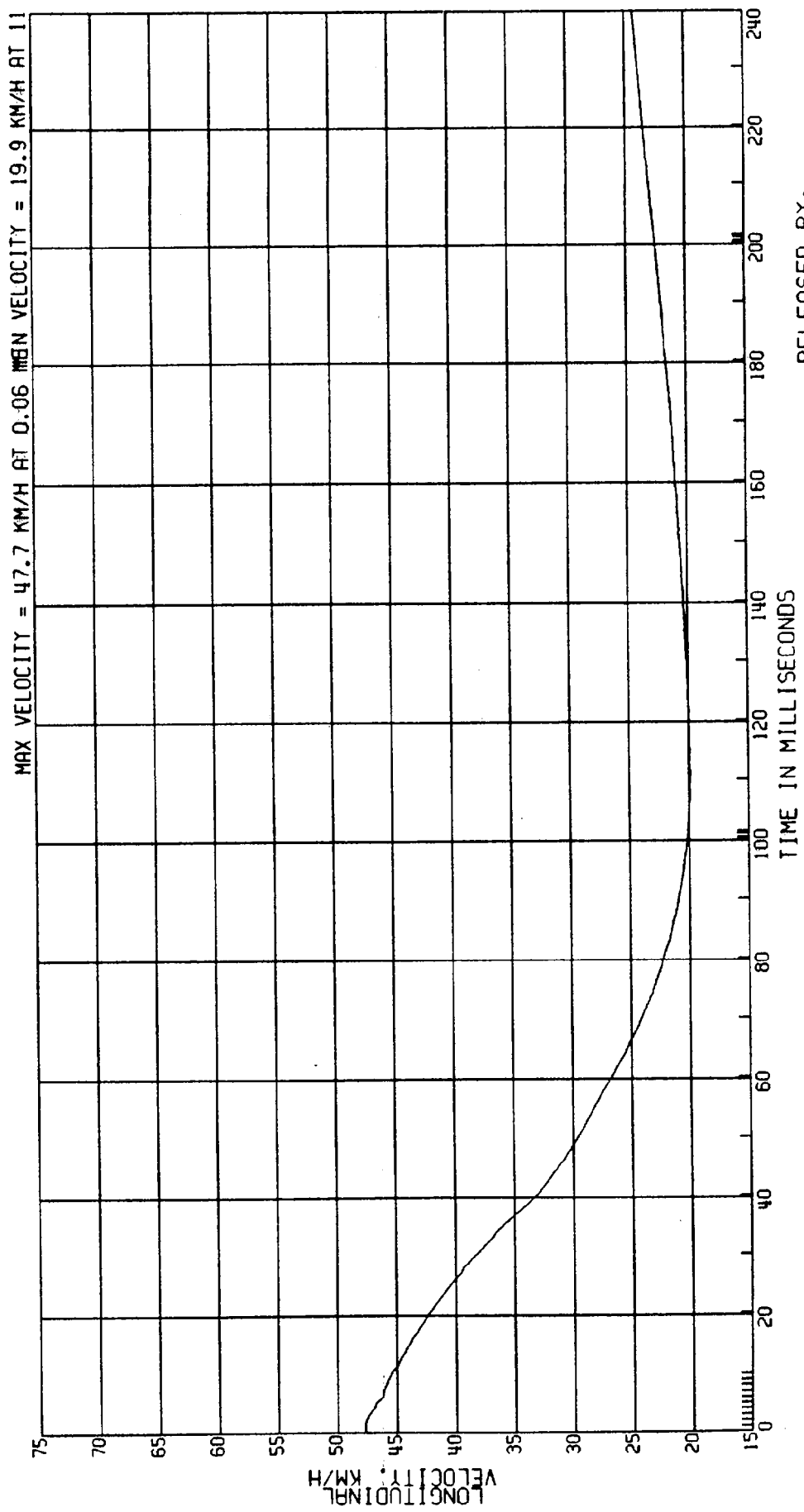
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 62 PROCESSED 4 MT 90 12:07

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 65  
3868-905  
CPE MVMA 9B 2AF69 M.D.B. REAR CROSS MEMBER ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60



RELEASED BY:  
65 PROCESSED 4 MY 90 12:07

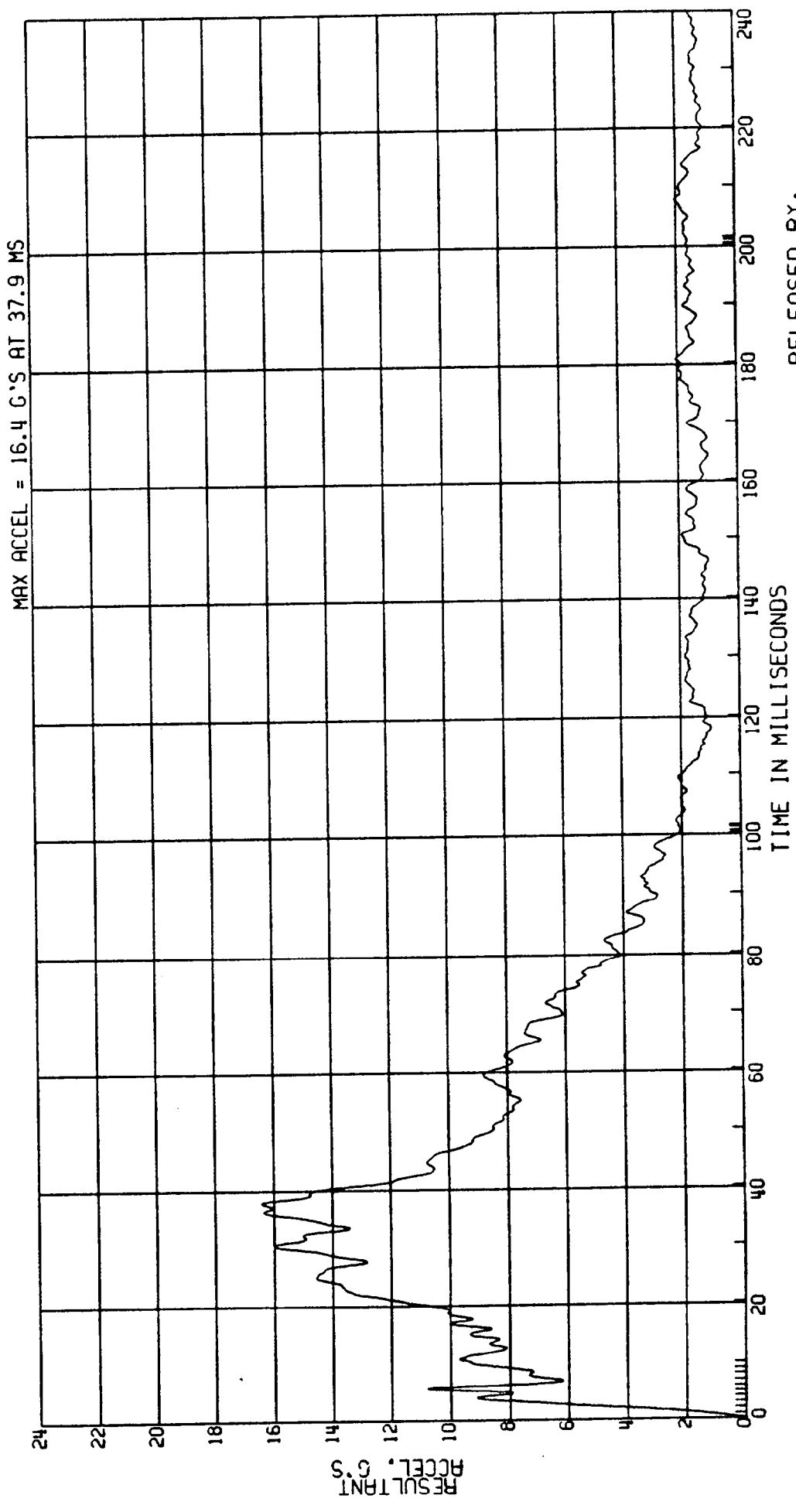
C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 64  
 3868-905 MVMA 9B 2AF69 COMPUTED M.D.B. REAR CROSS MEMBER VEL TEST DATE:03-20-90  
 CPE ELEC DATA, SAE CLASS 180 (1ST INT OF ACCEL 53.6KPH\* $\cos 27$ DEG)



RELEASED BY:  
 64 PROCESSED 4 MY 90 12:07

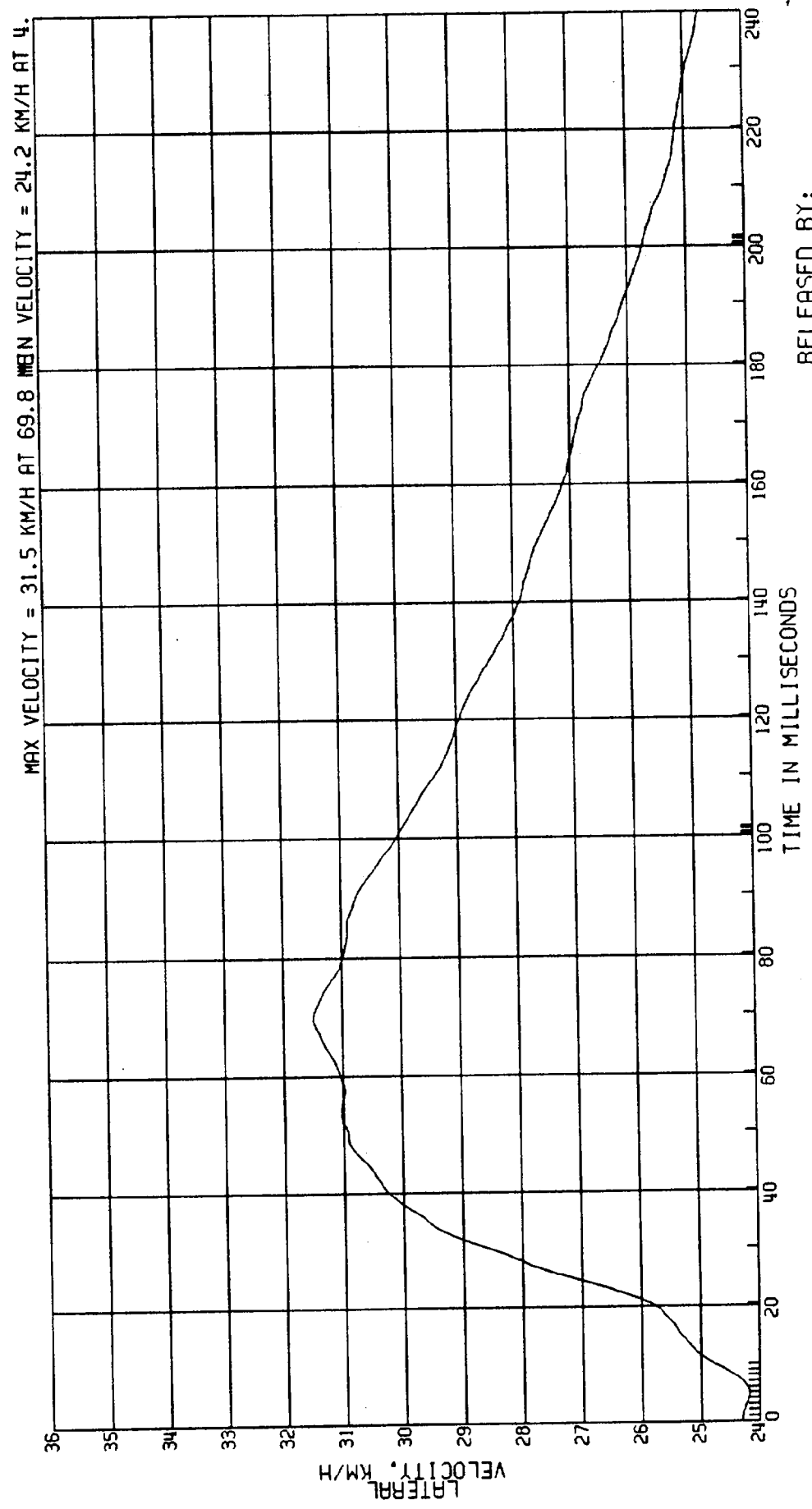
67

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE  
3868-905 M.V.M.A. 9B 2AF69 M.D.B. REAR CROSS MEMBER ACCEL. TEST DATE:03-20-90  
CPE (VEC SUM OF LONG. & LAT X-MEMBER ACCELS)  
ELEC DATA, SAE CLASS 60



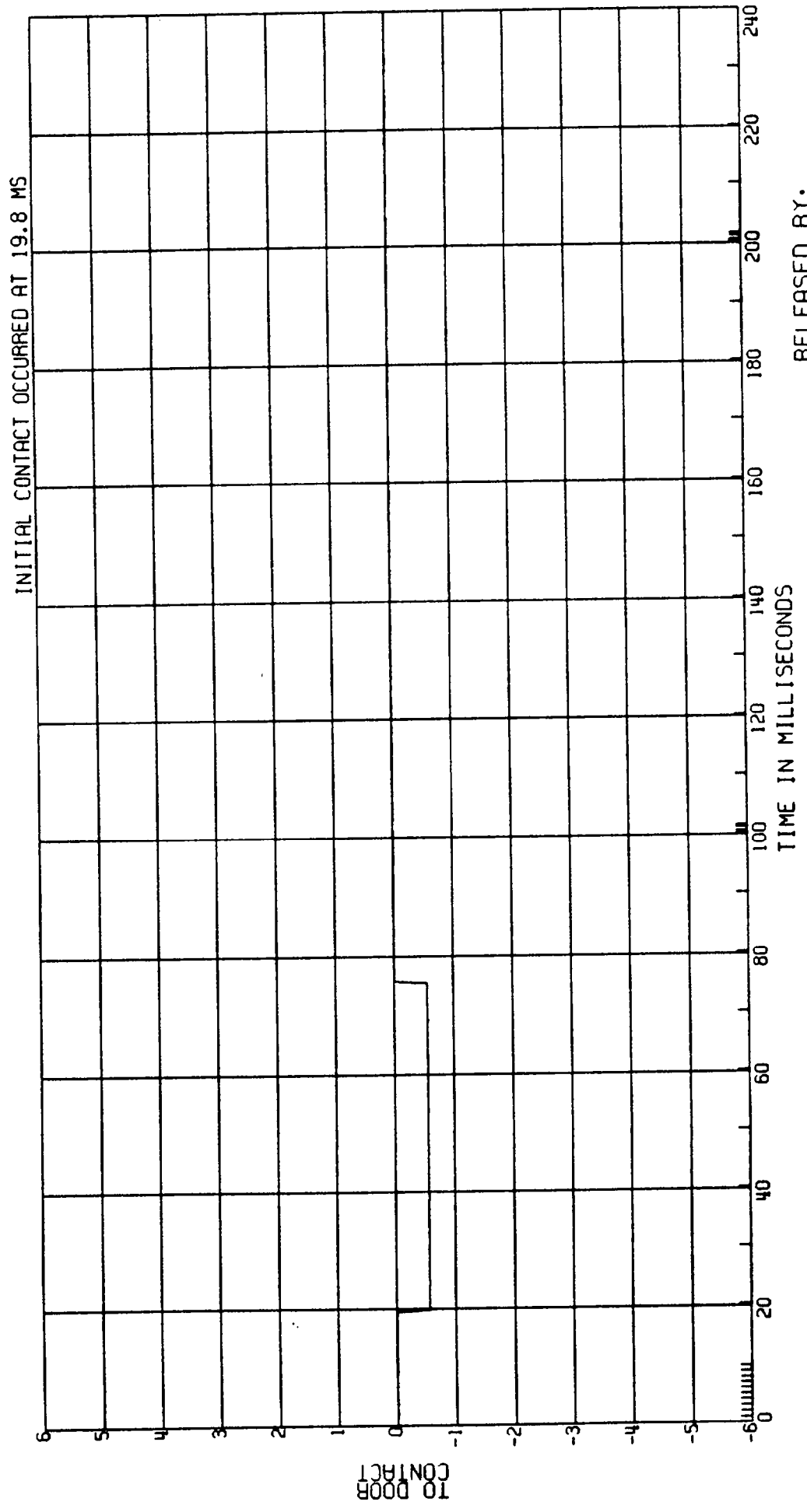
RELEASED BY:  
67 PROCESSED 4 MY 90 12:07

C8009A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 68  
 3868-905  
 CPE MVMA 9B 2AF69 COMPUTED M.D.B. REAR CROSS MEMBER VEL TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 180 (1ST INT OF ACCEL 53.6KPH\*SIN27DEG)



RELEASED BY:  
 66 PROCESSED 4 MY 90 12:07

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 69  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 98 2AF69 DRIVER THORAX-LEFT SIDE CONTACT TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 1000

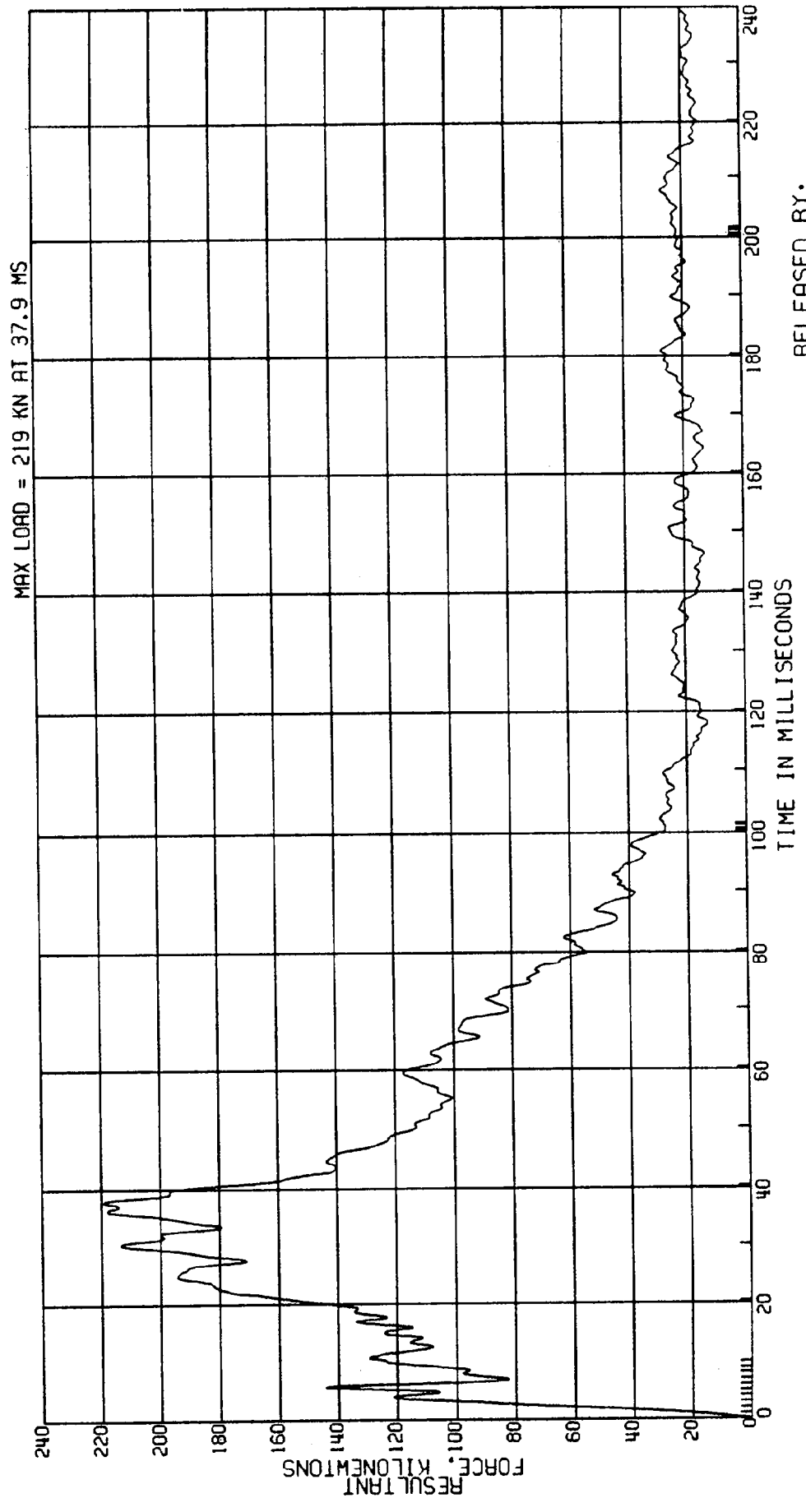


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 69 PROCESSED 4 MY 90 12:07

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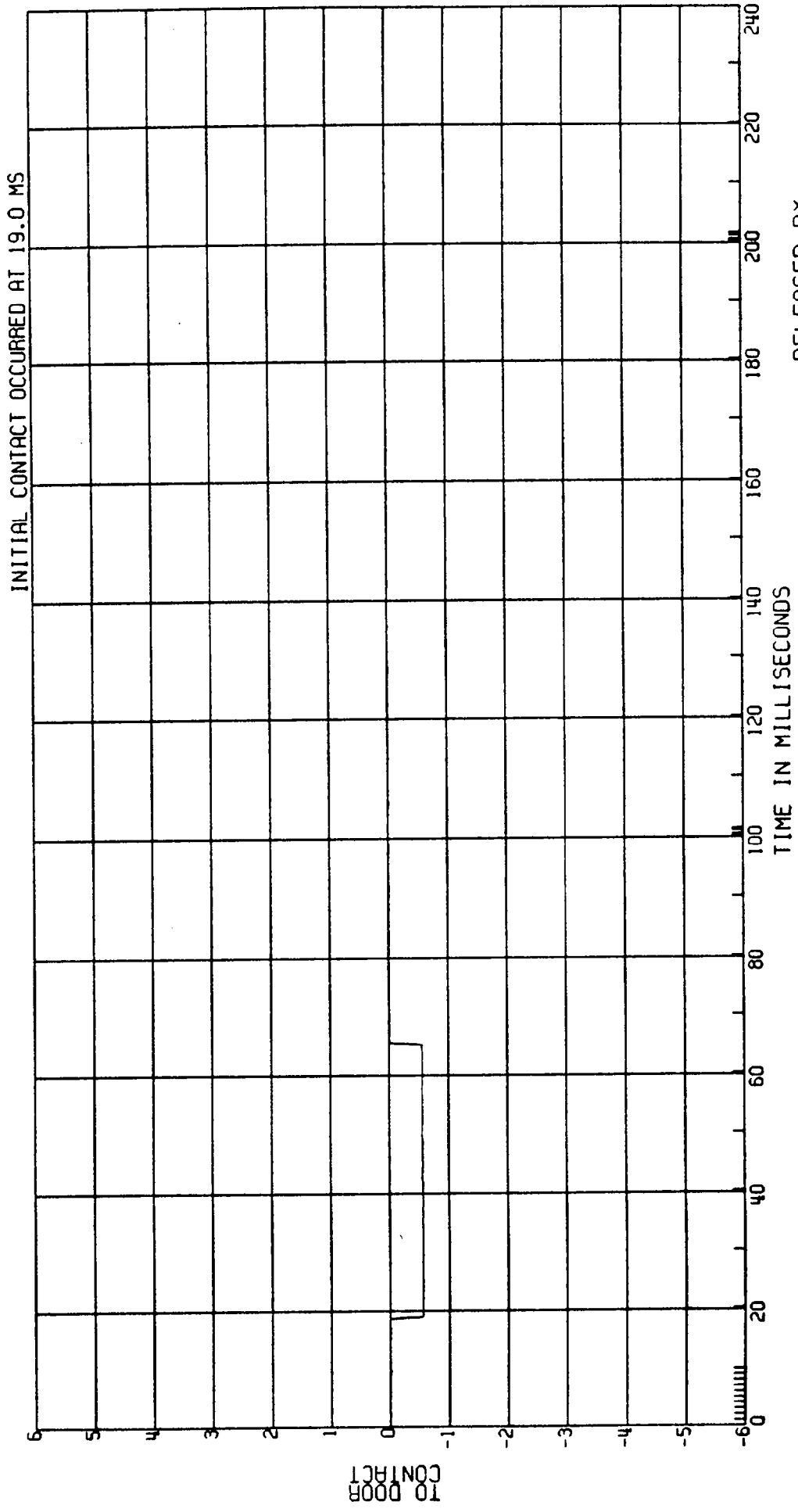
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C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 70  
 3868-905  
 CPE MVMA 9B 2AF69 COMPUTED M.D.B. REAR CROSS MEMBER FORCE TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 60 (1359.5 KG) (9.807) (RESULTANT ACCEL)



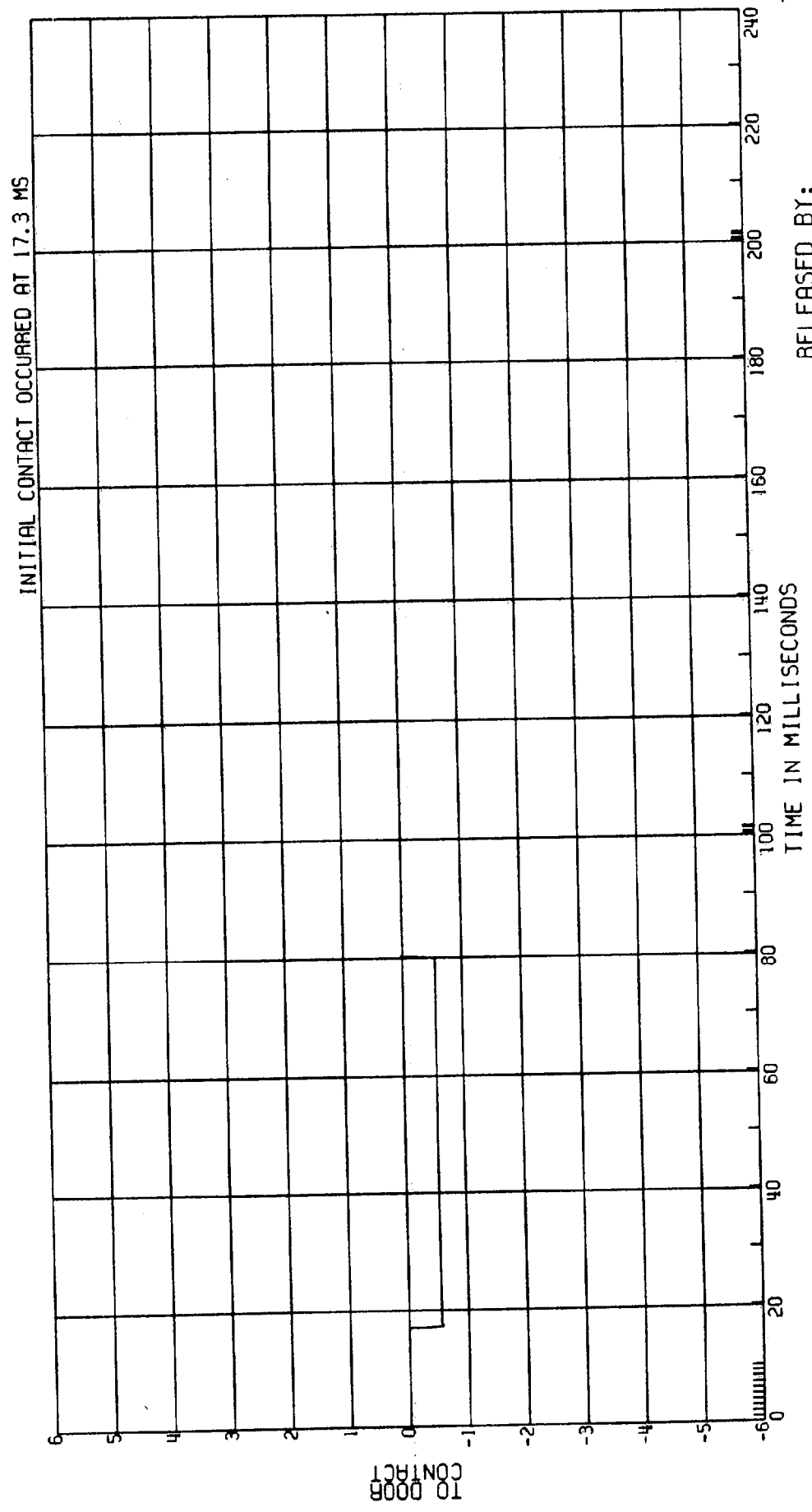
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 68 PROCESSED 4 MY 90 12:07

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 7 /  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER PELVIC-LEFT SIDE CONTACT TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 1000



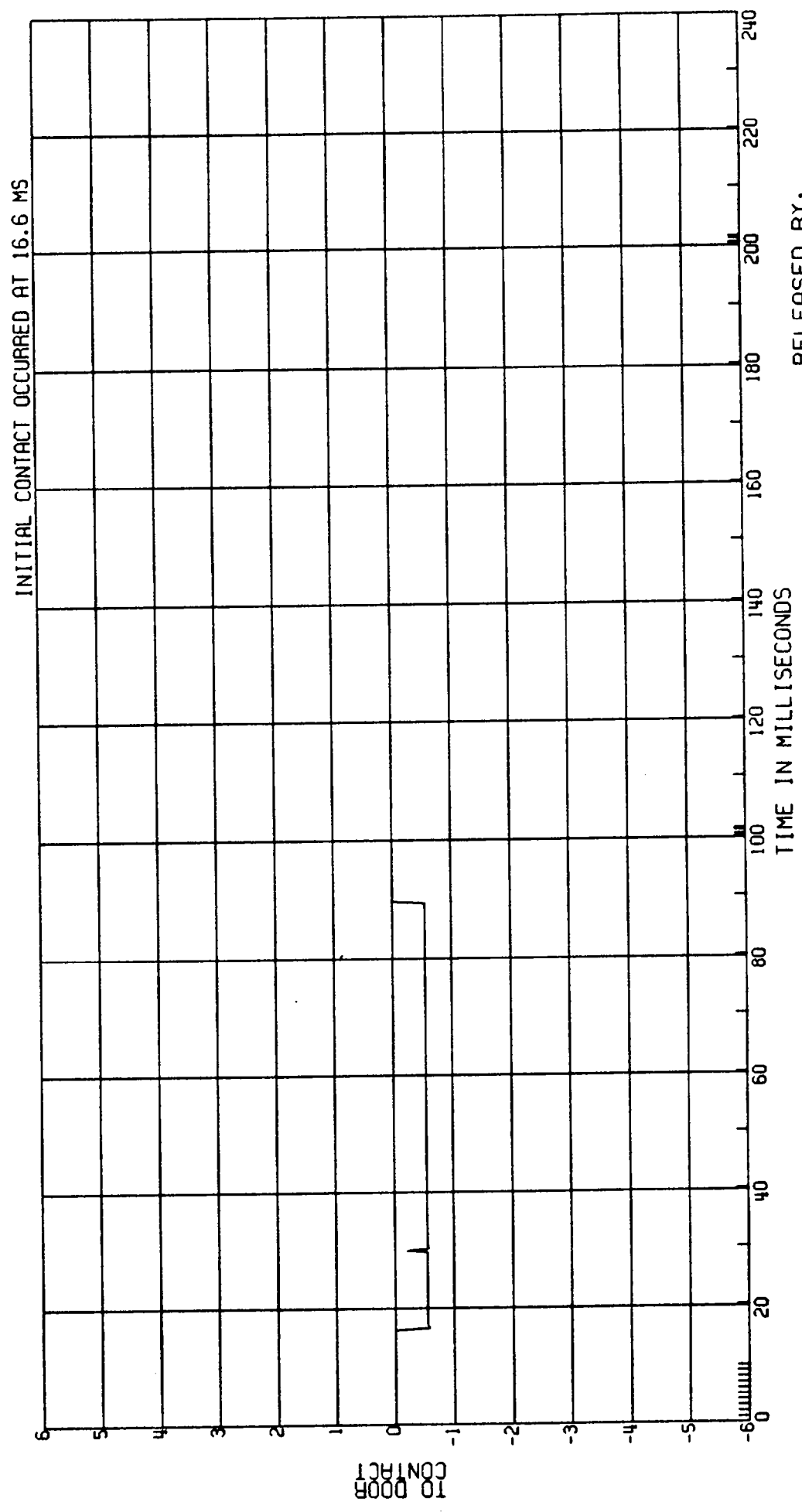
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 71 PROCESSED 4 MT 90 12:07

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 7a  
3868-905 MVMA 9B 2AF69 ATD TYPE: BIOSID  
CPE DRIVER ABDOMEN-LEFT SIDE CONTACT TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 1000



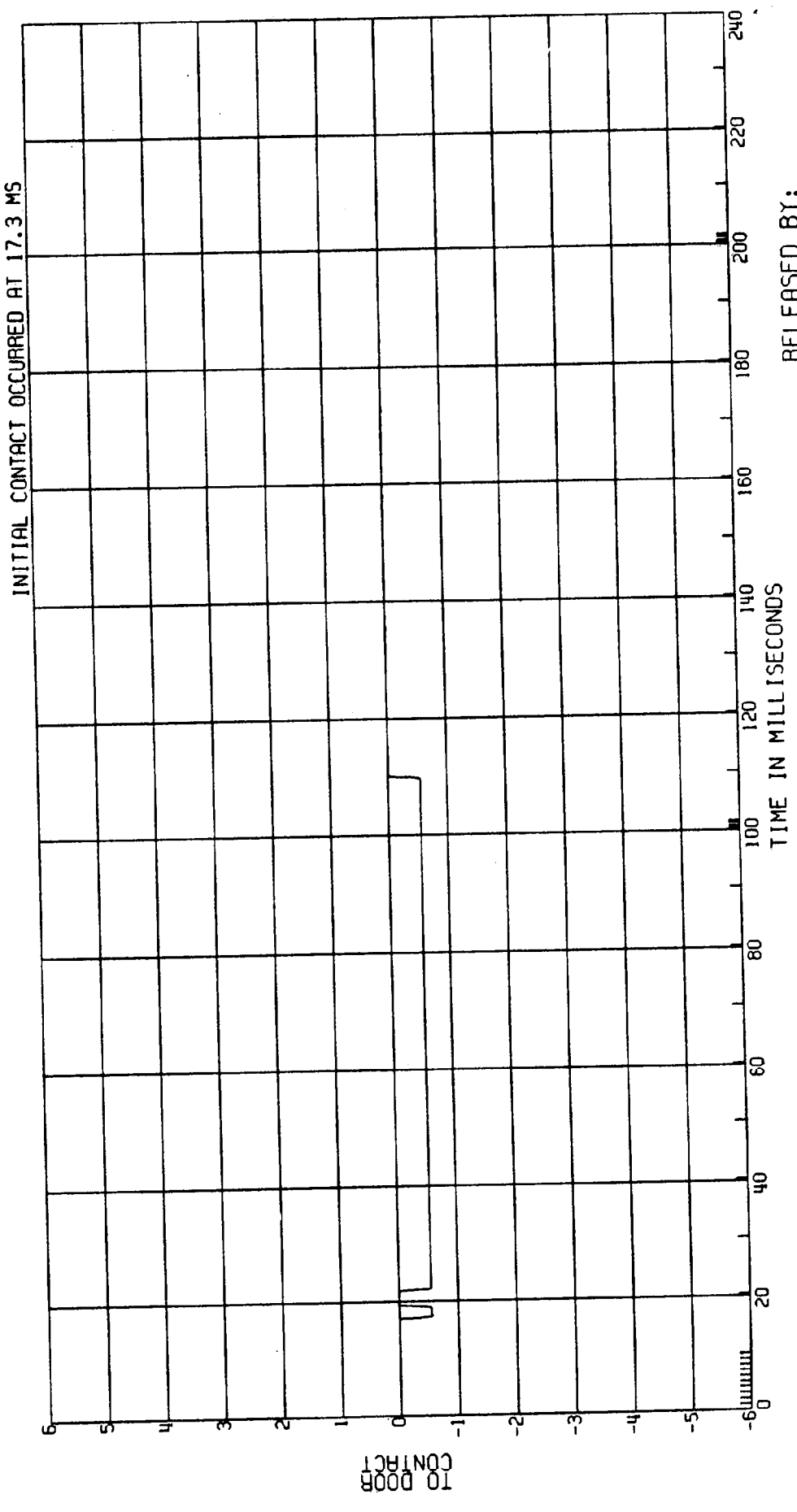
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70 PROCESSED 4 MT 90 12:07

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 73  
3868-905 ATD TYPE: SID  
CPE MVMA 9B 2AF69 L. REAR ABDOMEN-LEFT SIDE CONTACT TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 1000



RELEASED BY:  
73 PROCESSED 4 MY 90 12:07

C8009A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 74  
 3868-905 MVMA 9B 2AF69 ATD TYPE: SID  
 CPE L. REAR THORAX-LEFT SIDE CONTACT TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 1000

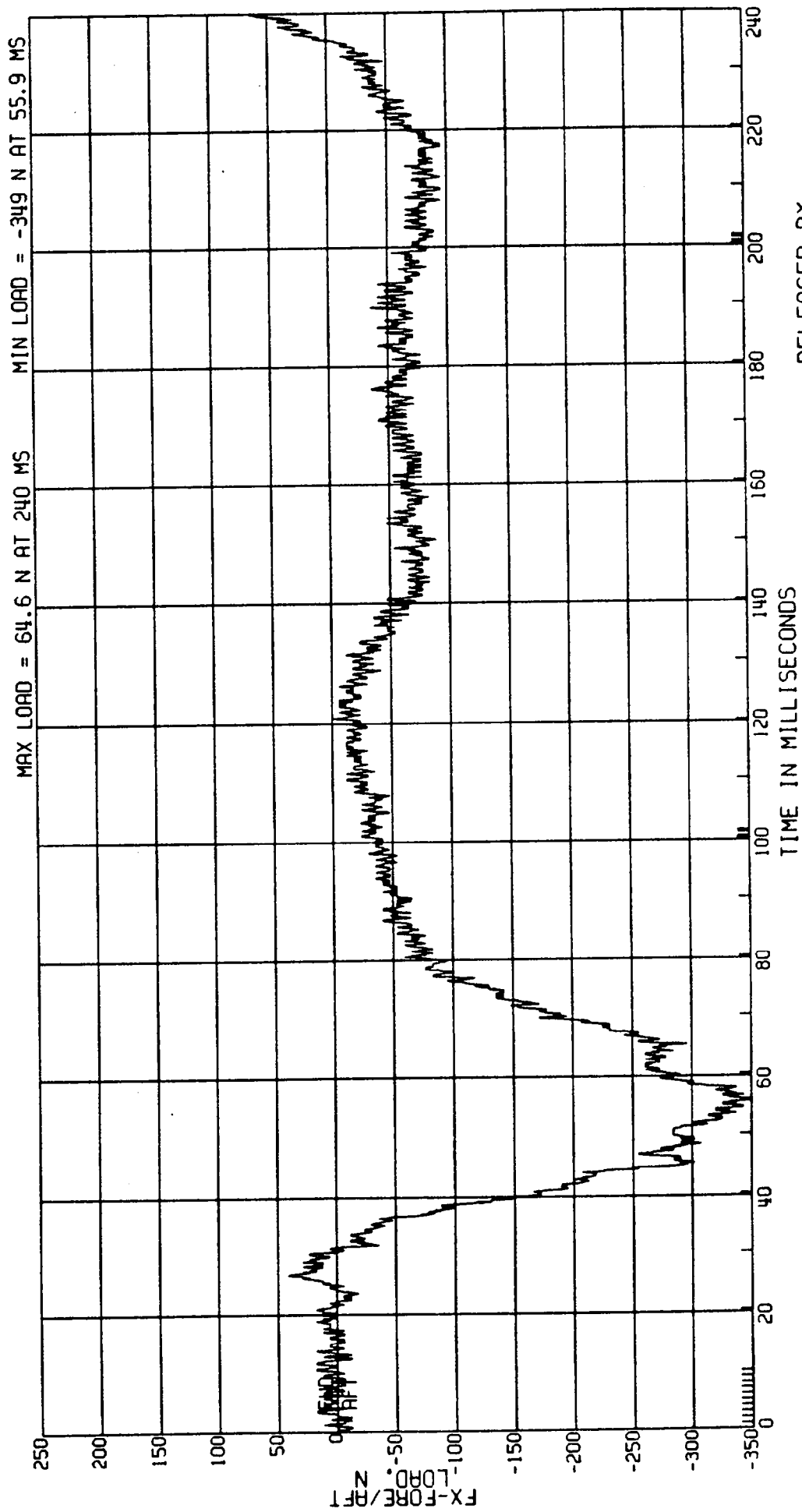


74a.

Good Data

M9B6UAG#  
C8009B  
05/04/90  
12:10:27  
NUMBER OF PLOTS = 77  
XOFF = 10.10  
YOFF = 0.75

C8009B L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 75  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER NECK LOADING ON HEAD, UPPER LOAD TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 1000

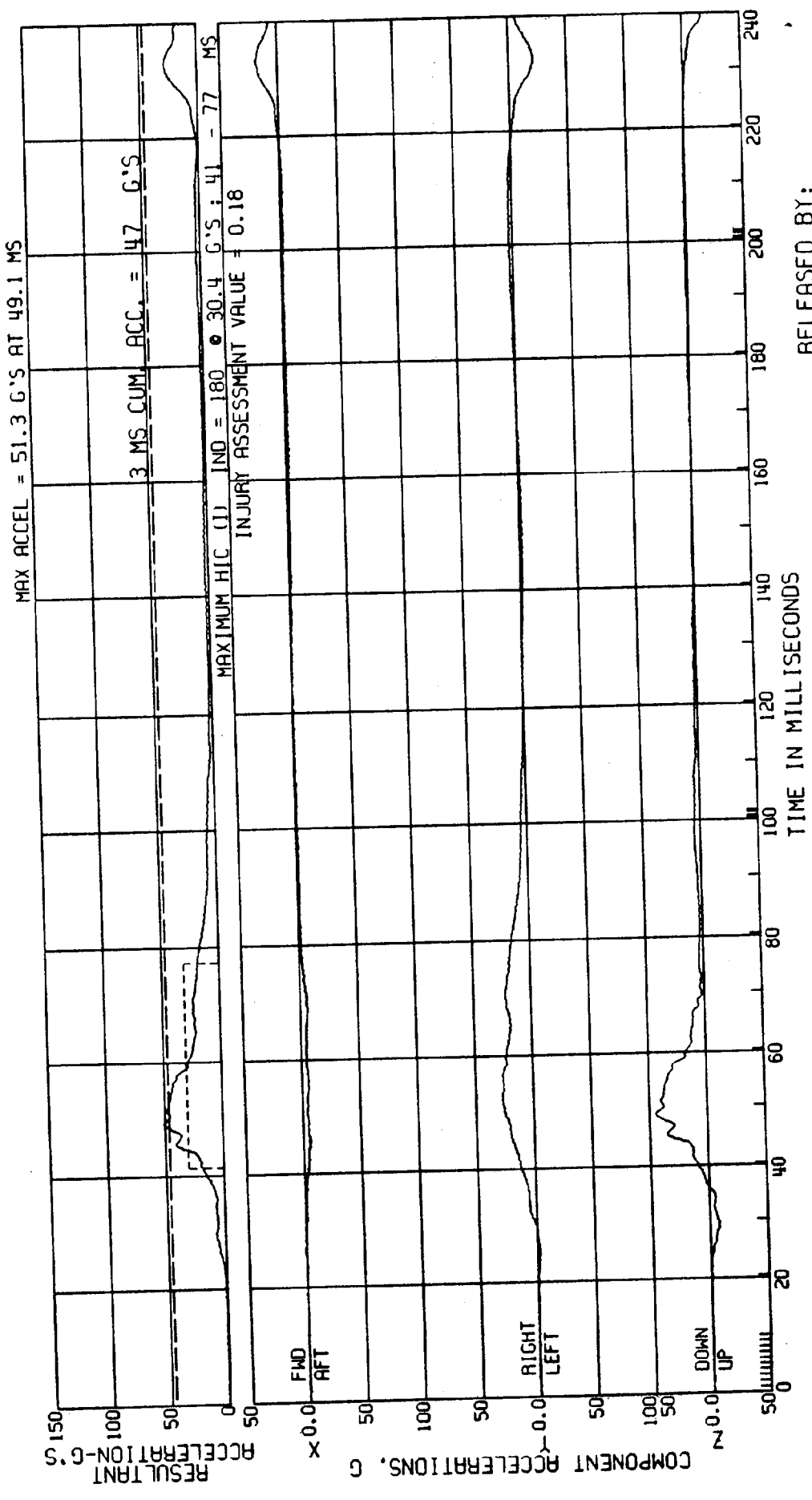


RELEASED BY:  
 3 PROCESSED 4 MT 90 12:10

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 76  
ATD TYPE: BIOSID  
TEST DATE: 03-20-90

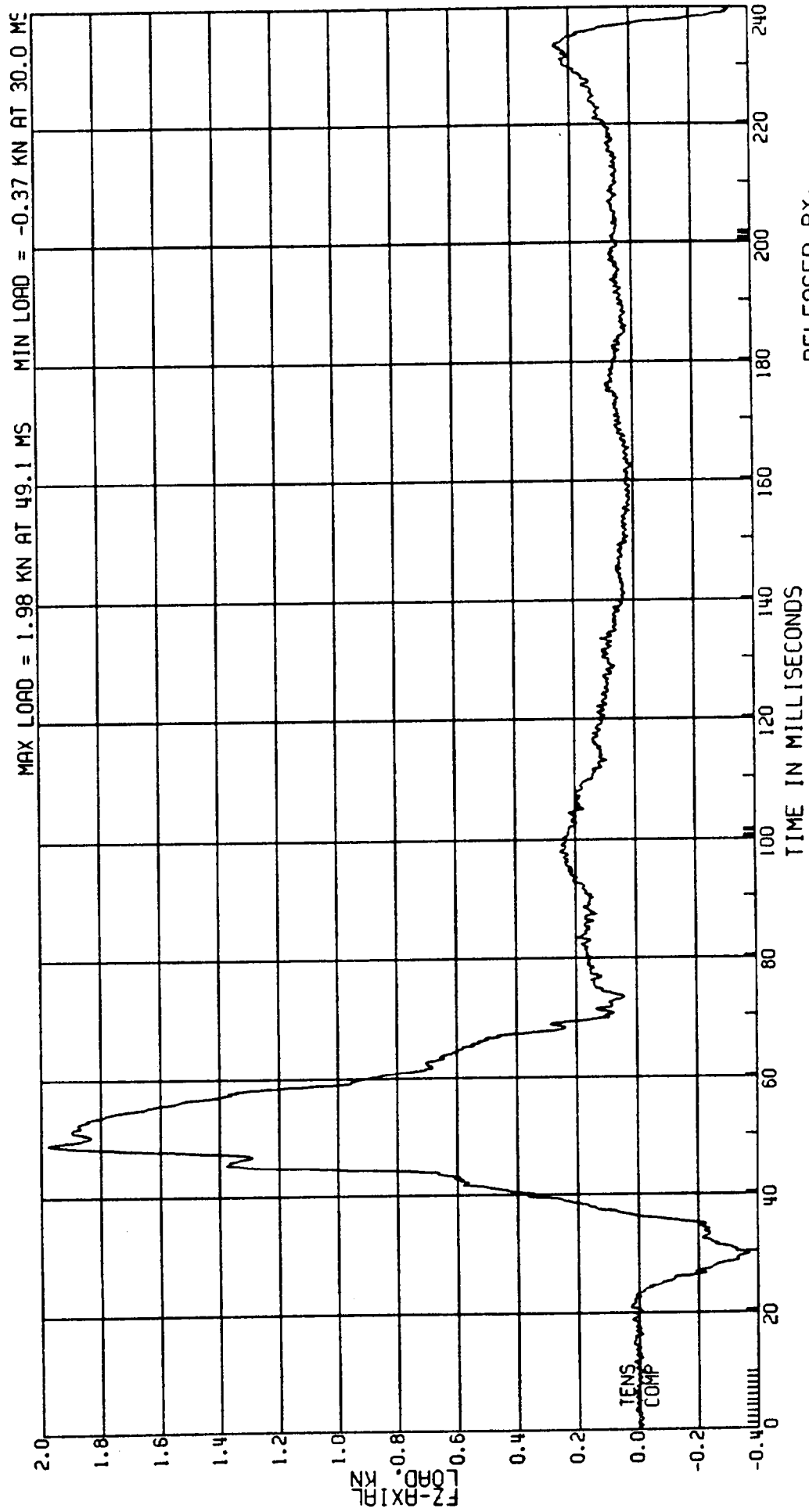
C8009B L. SIDE IMPACT- 27 DEG  
3868-905  
MVMA 9B 2AF69  
CPE  
ELEC DATA, SAE CLASS 1000

DRIVER HEAD ACCEL.  
(HIC 1 LIMITED TO 36MS)



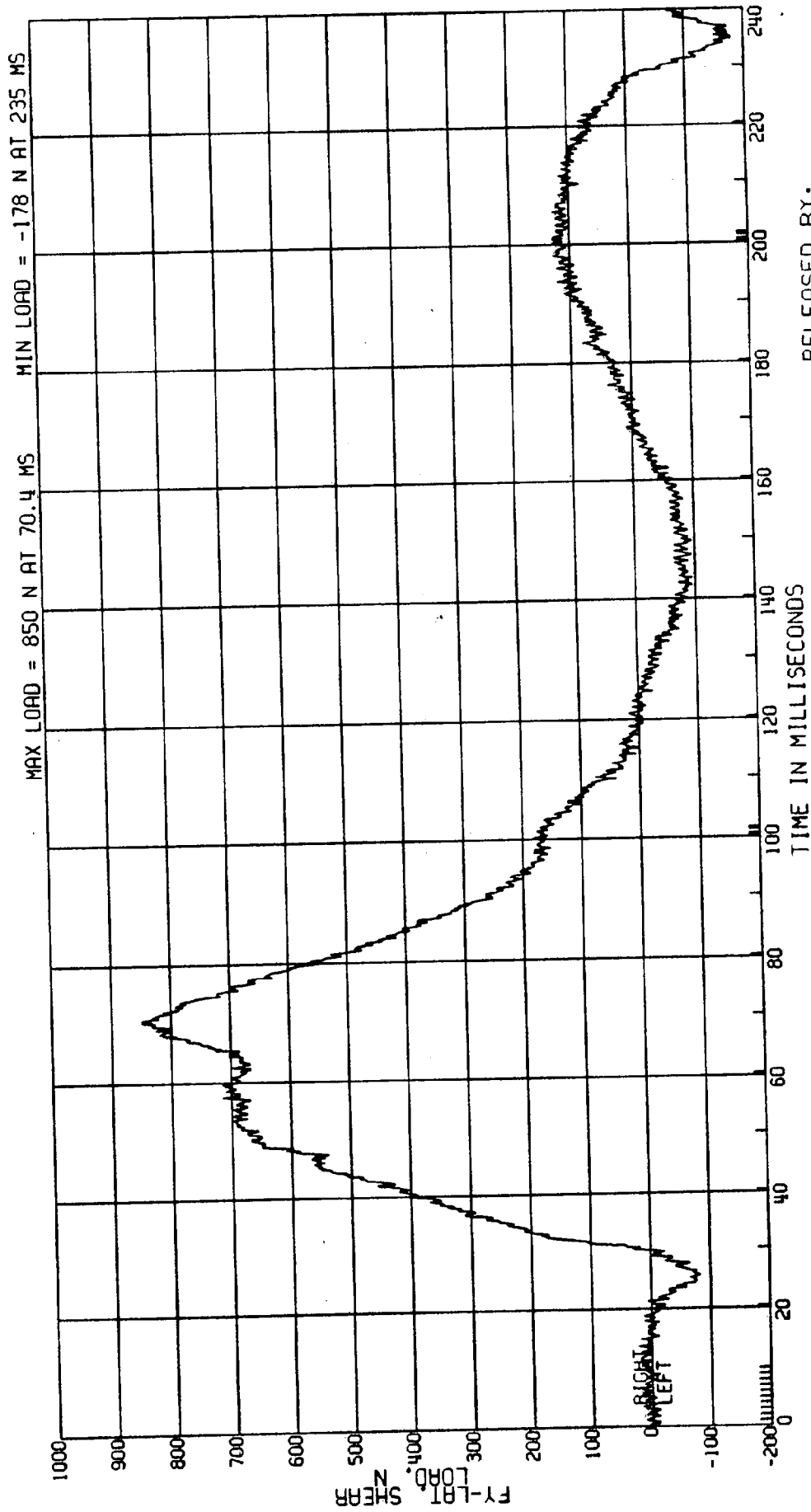
RELEASED BY:  
2 PROCESSED 4 MT 90 12:10

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 77  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER NECK LOADING ON HEAD, UPPER LOAD TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 1000



RELEASED BY:  
 5 PROCESSED 4 MY 90 12:10

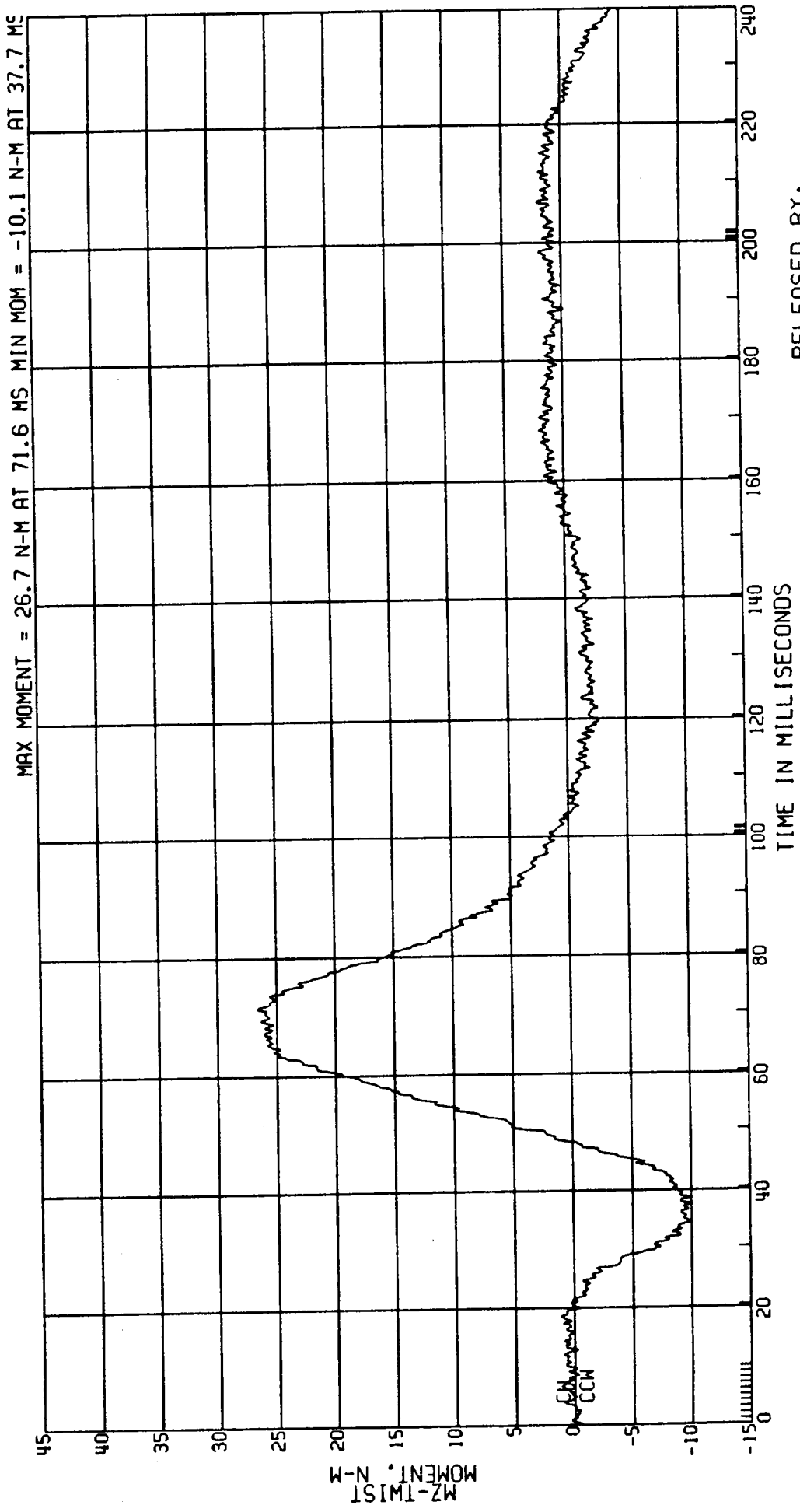
C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 78  
 3868-905 MVMA 9B 2AF69 DRIVER NECK LOADING ON HEAD, UPPER LOAD  
 CPE TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 1000



RELEASED BY:

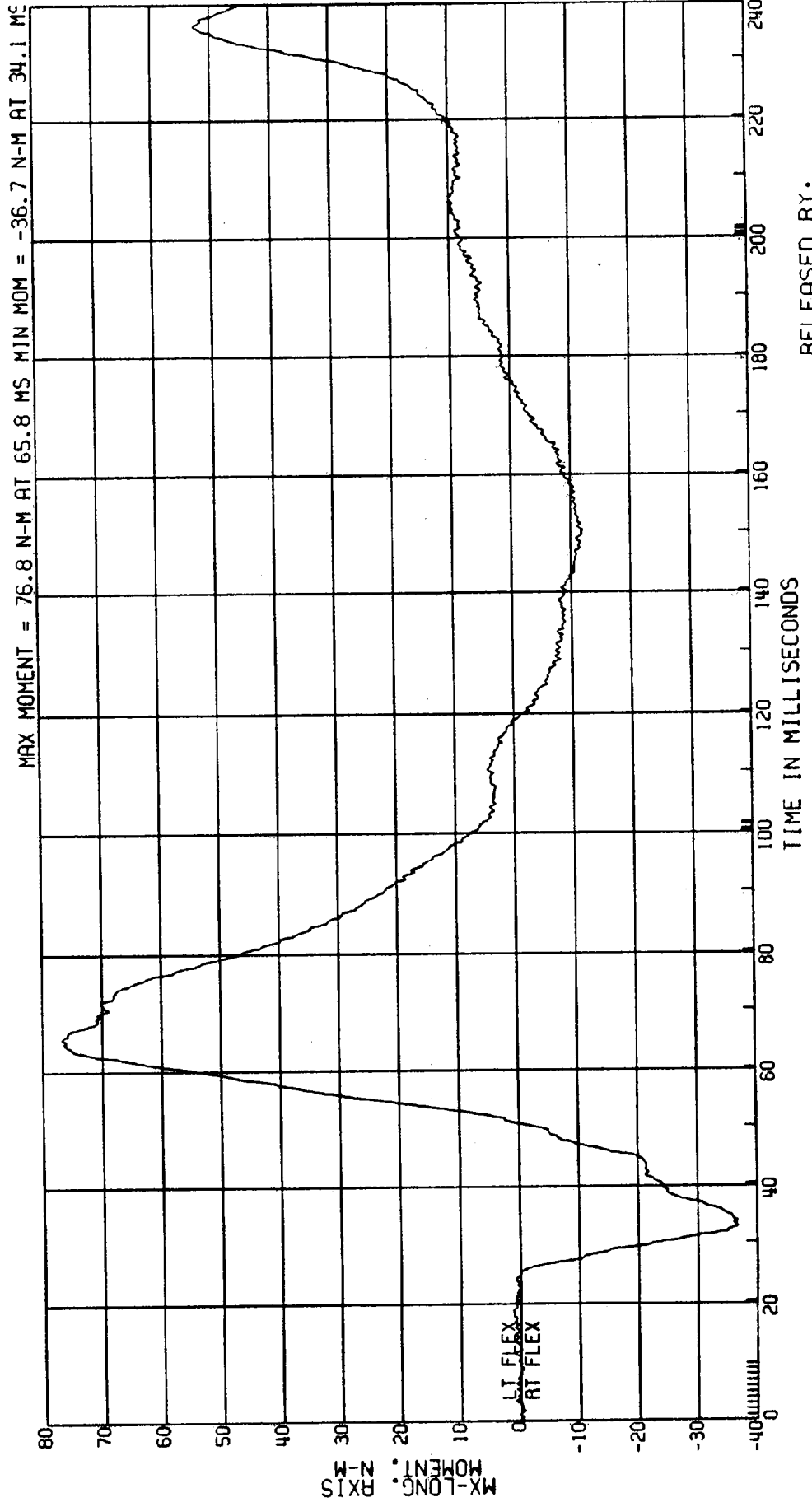
4 PROCESSED 4 MY 90 12:10

C80098 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 79  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER NECK LOADING ON HEAD, UPPER TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 600



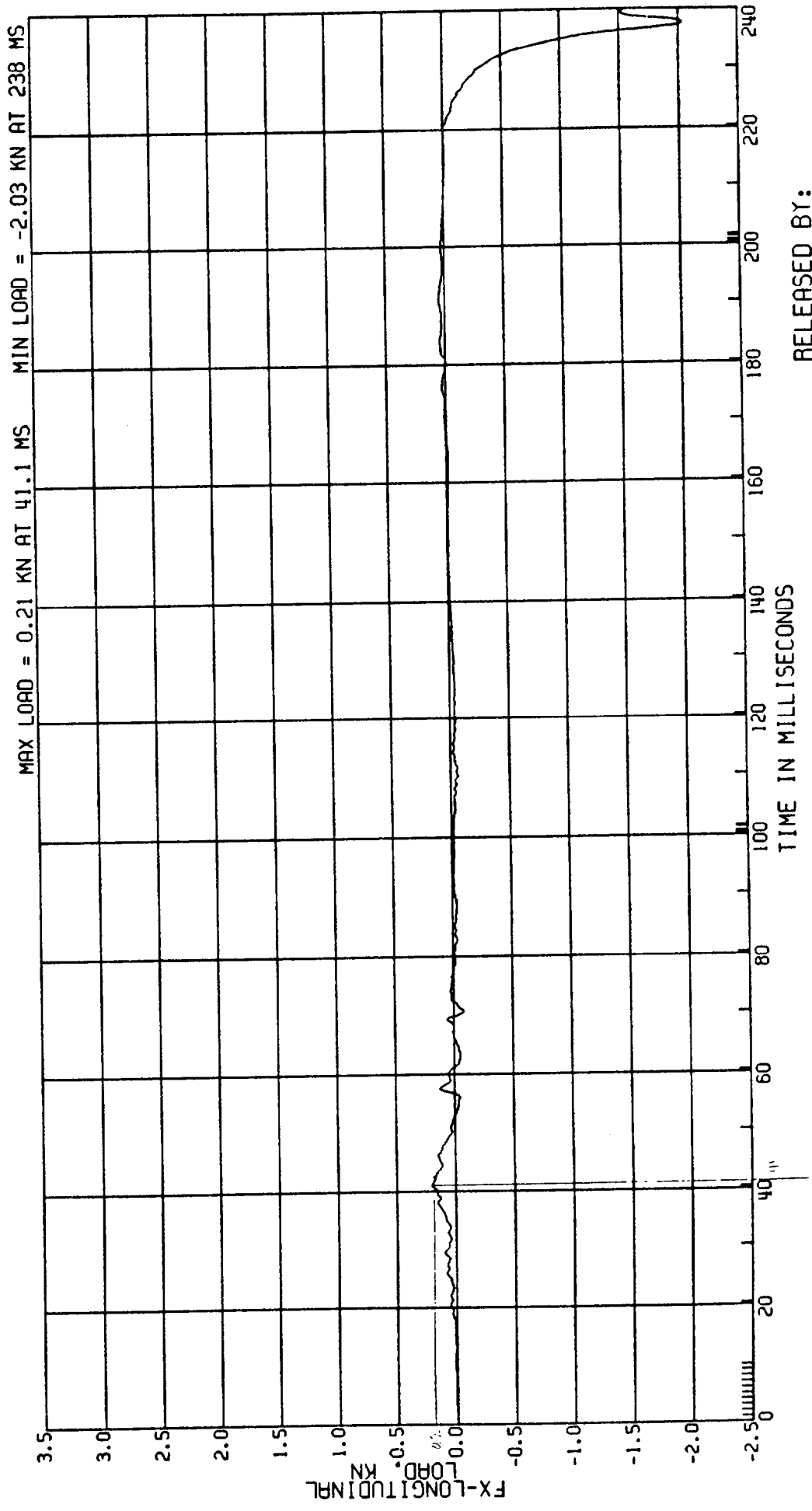
RELEASED BY:  
 7 PROCESSED 4 MT 90 12:10

C80098 L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 8d  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMR 9B 2AF69 DRIVER NECK LOADING ON HEAD, UPPER  
 ELEC DATA, SAE CLASS 600 TEST DATE: 03-20-90



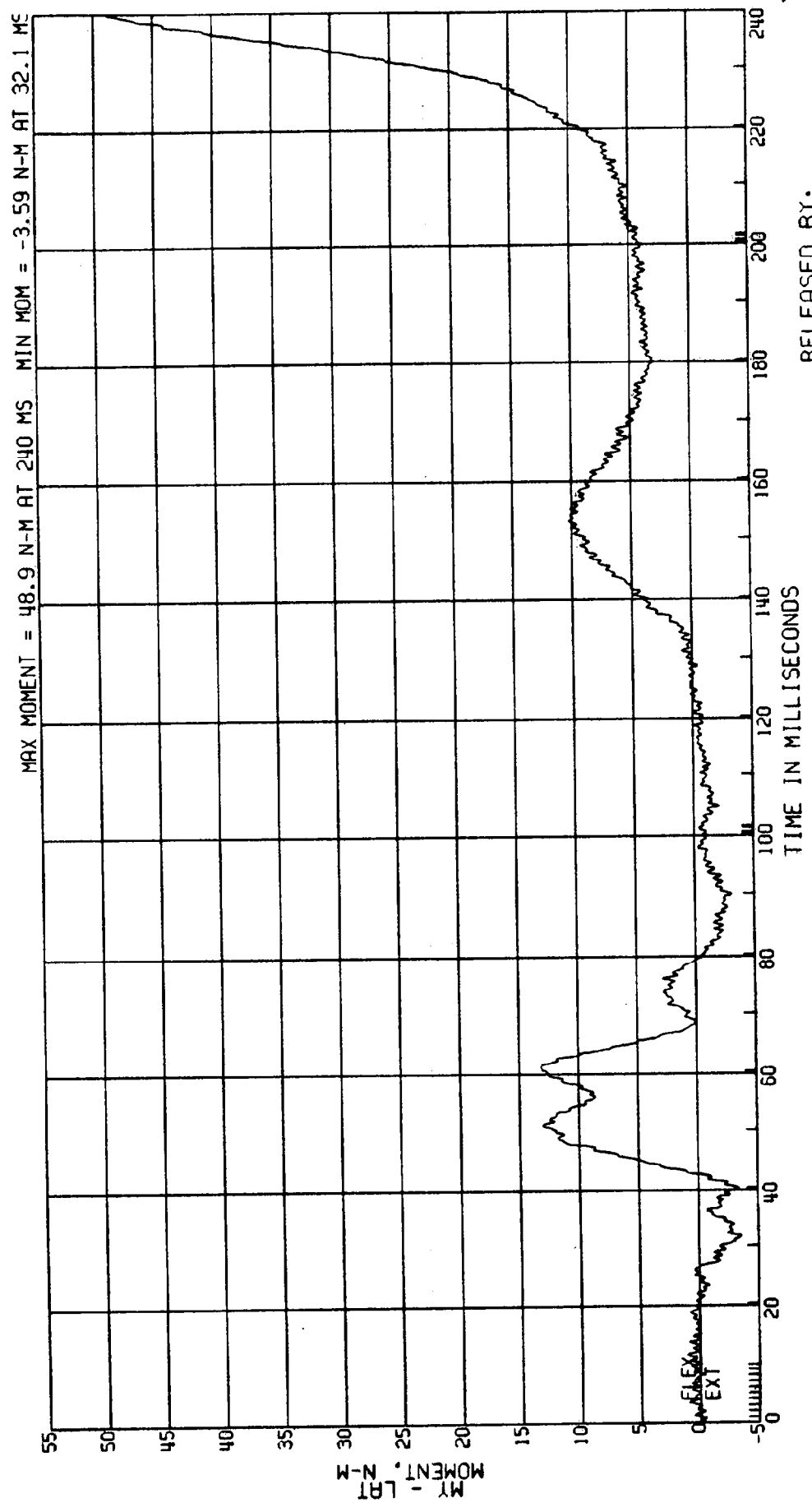
RELEASED BY:  
 6 PROCESSED 4 MY 90 12:10

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 81  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER SHOULDER LOAD TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 180



RELEASED BY:  
 9 PROCESSED 4 MT 90 12:10

C80098 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 82  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 98 2AF69 DRIVER NECK LOADING ON HEAD TEST DATE:03-20-90  
 ELEC DATA. SAE CLASS 600

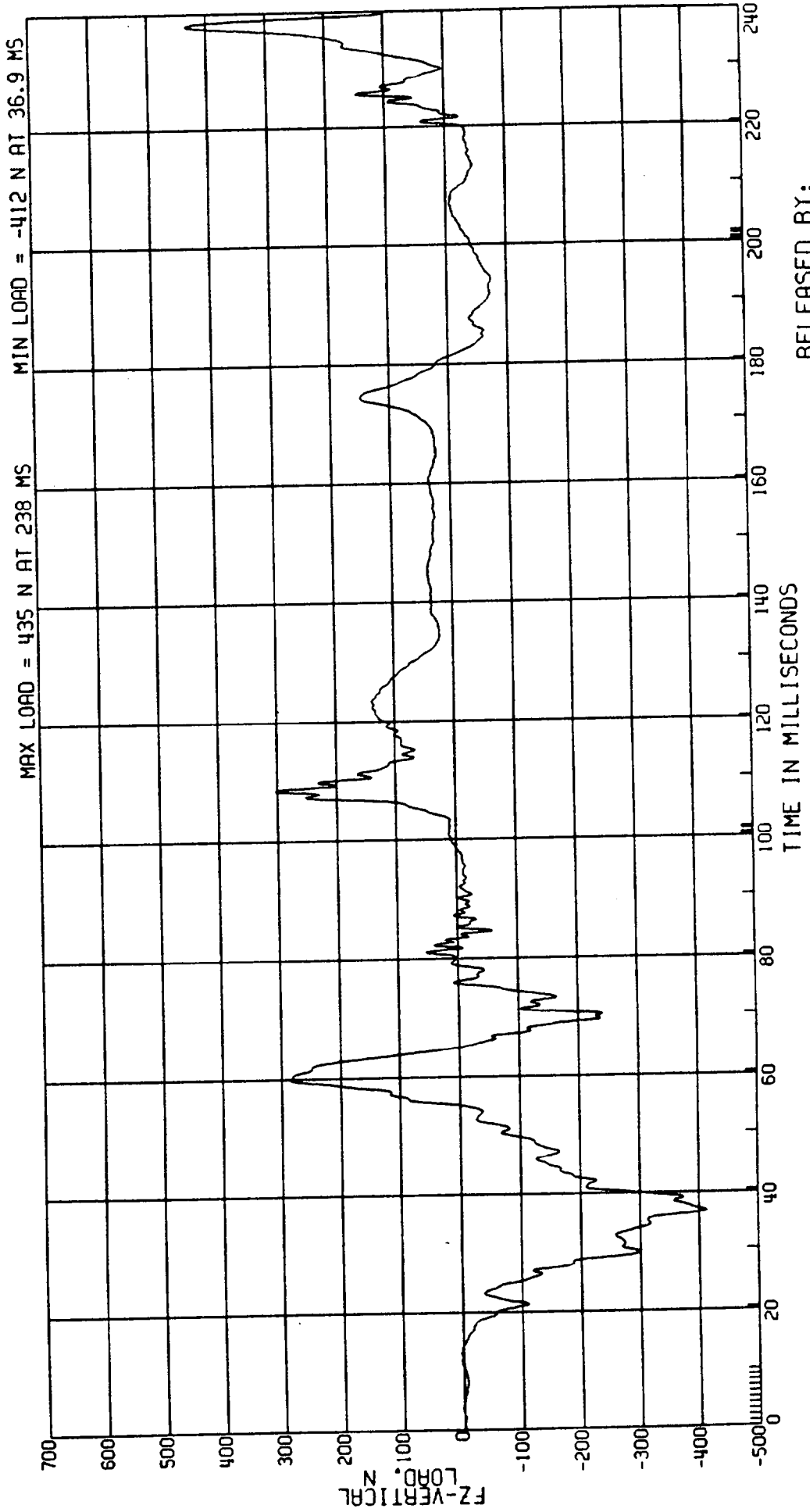


RELEASED BY:  
 8 PROCESSED 4 MAY 90 12:10

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 83  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 TEST DATE:03-20-90

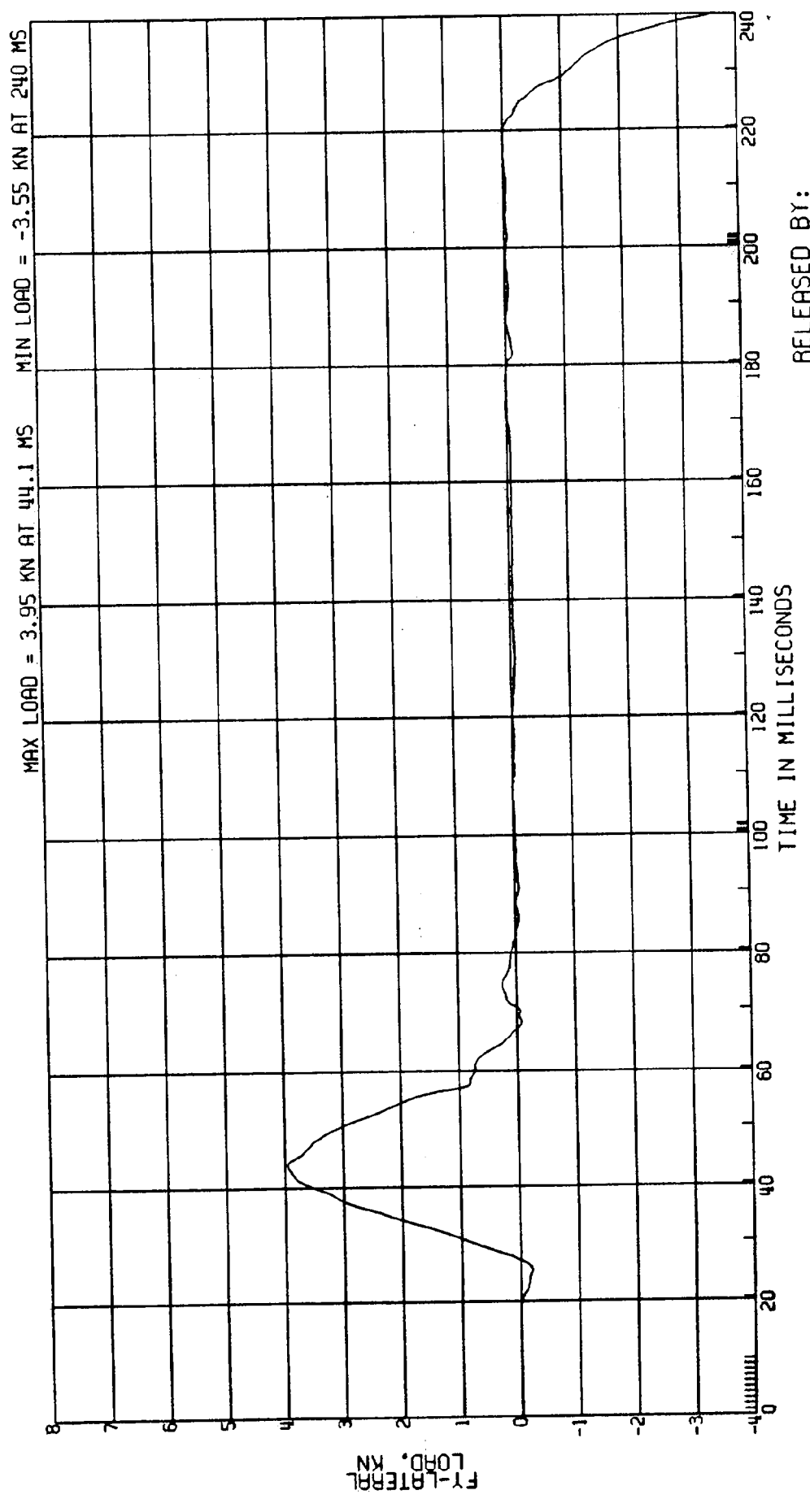
DRIVER SHOULDER LOAD

ELEC DATA, SAE CLASS 180



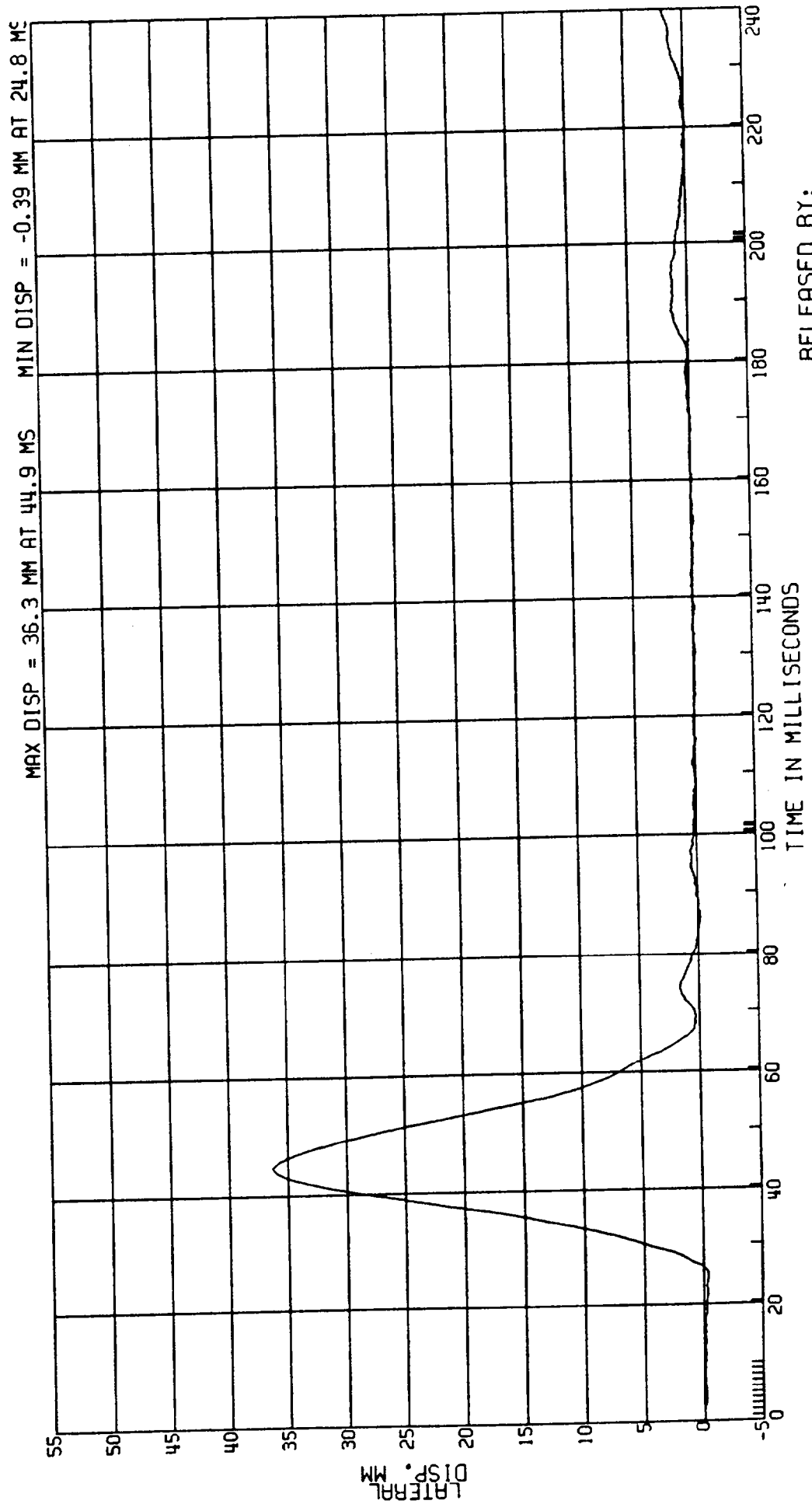
RELEASED BY:  
11 PROCESSED 4 MY 90 12:10

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 84  
3868-905 AID TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER SHOULDER LOAD TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180



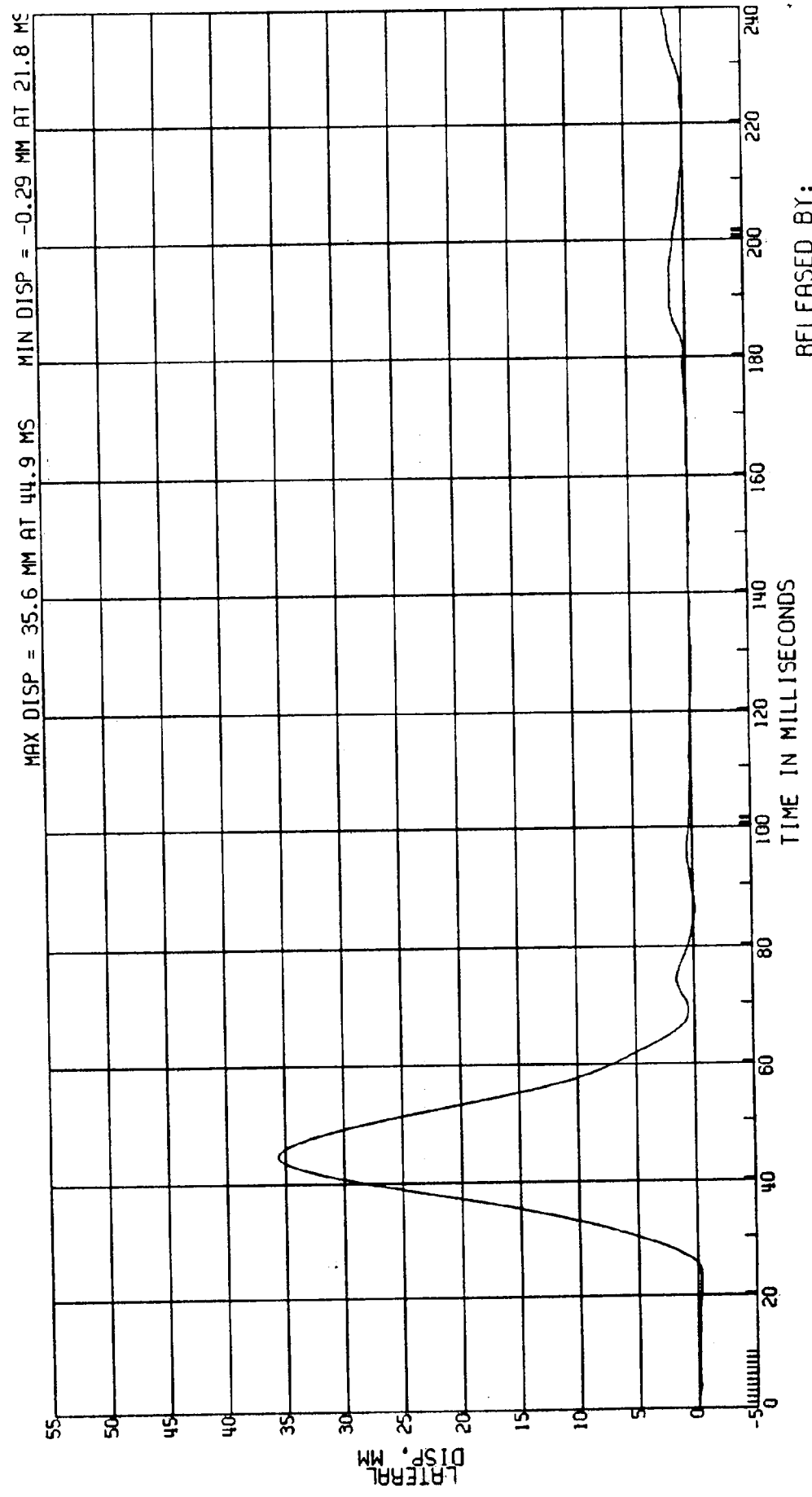
RELEASED BY:  
10 PROCESSED 4 MY 90 12:10

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 85  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER SHOULDER DISP.  
ELEC DATA, SAE CLASS 180 TEST DATE:03-20-90



RELEASED BY:  
13 PROCESSED 4 MY 90 12:10

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 86  
3868-905 MVMA 9B 2AF69 AID TYPE: B10SID  
CPE DRIVER SHOULDER DISP. TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 60

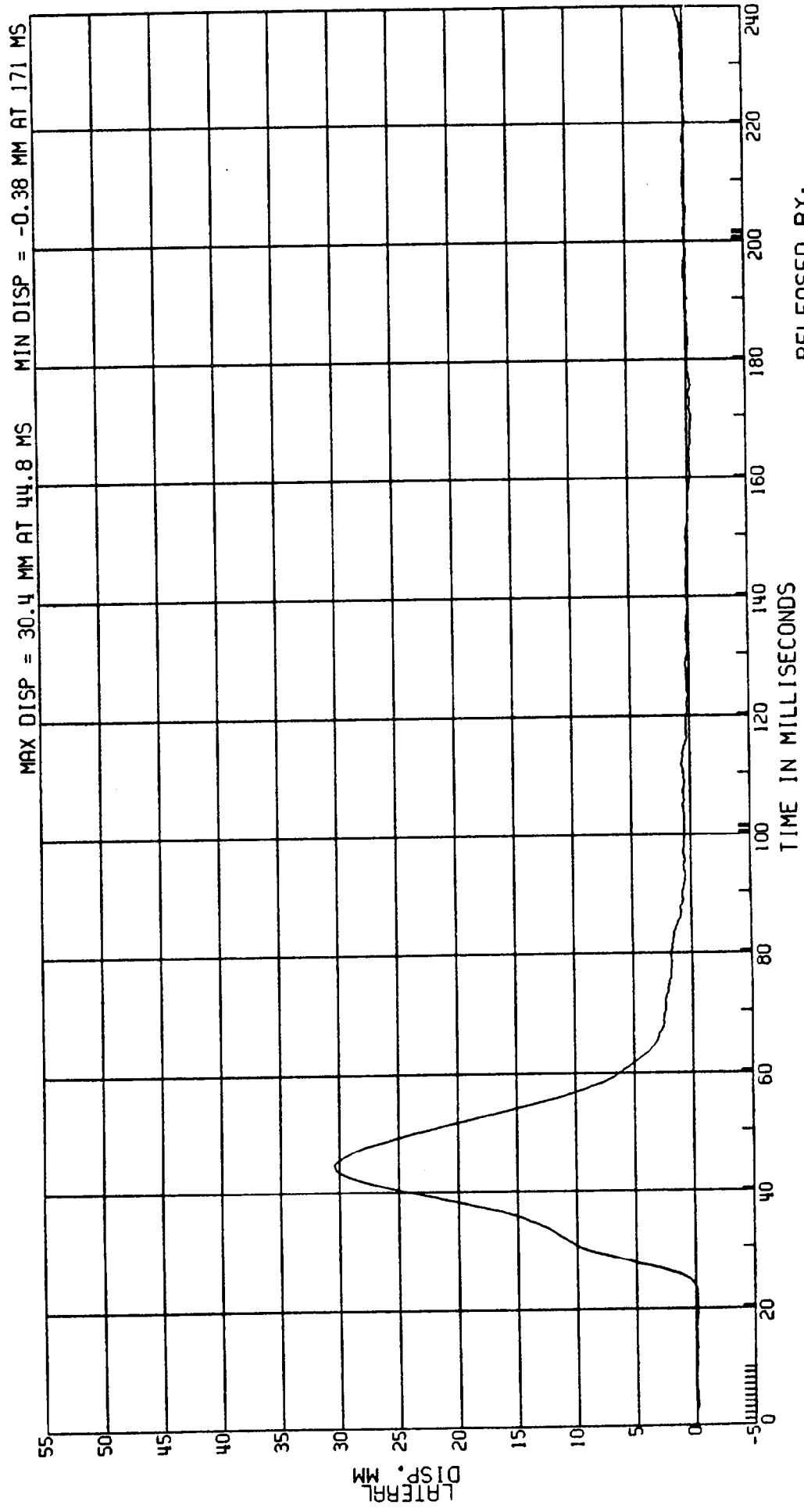


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12 PROCESSED 4 MT 90 12:10

C8009B L. SIDE IMPACT - 27 DEG  
MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 87  
ATD TYPE: BIOSID  
TEST DATE: 03-20-90

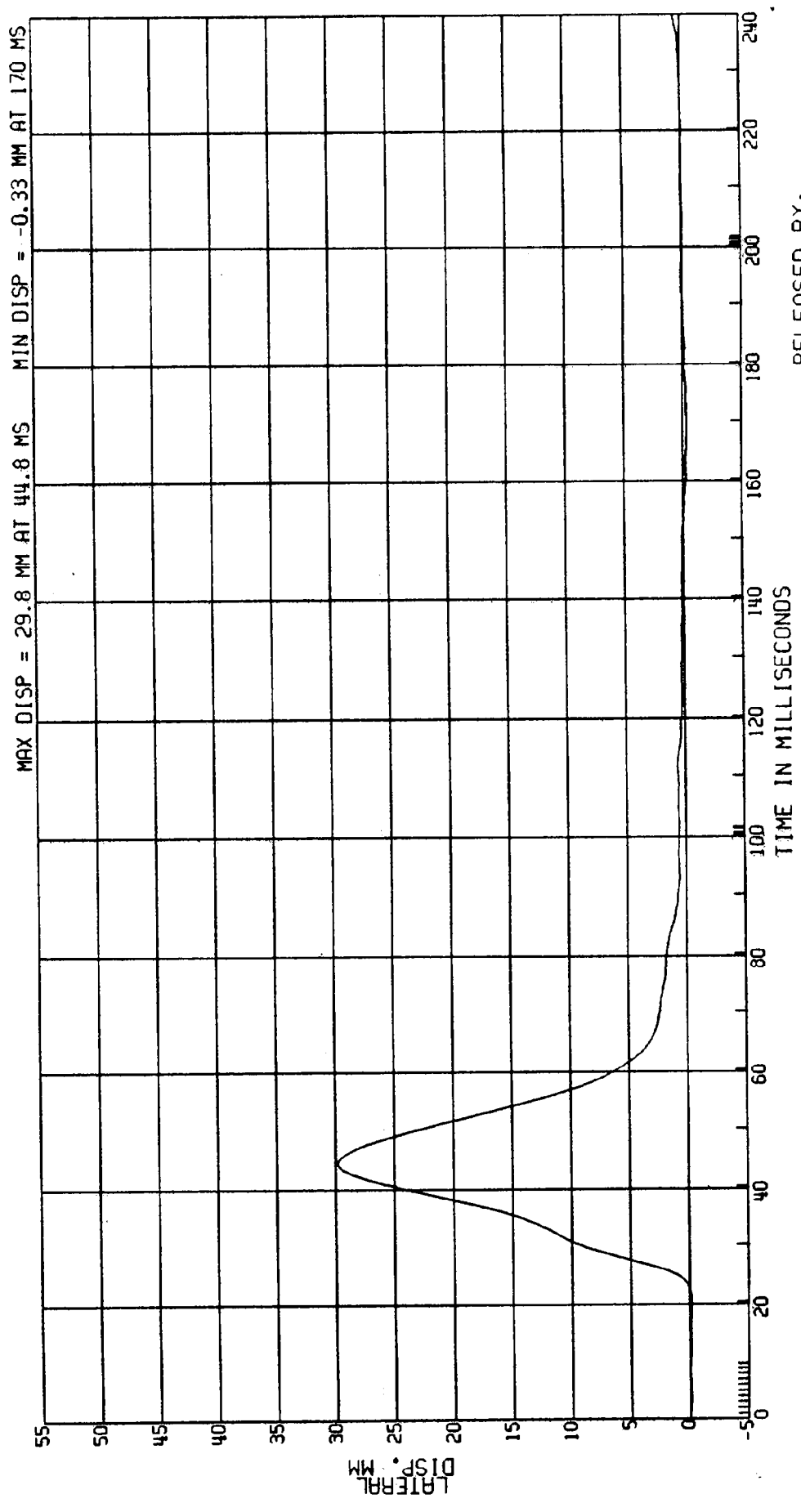
DRIVER FIRST THORACIC RIB DISP.

MVMA 9B 2AF69  
ELEC DATA, SAE CLASS 180



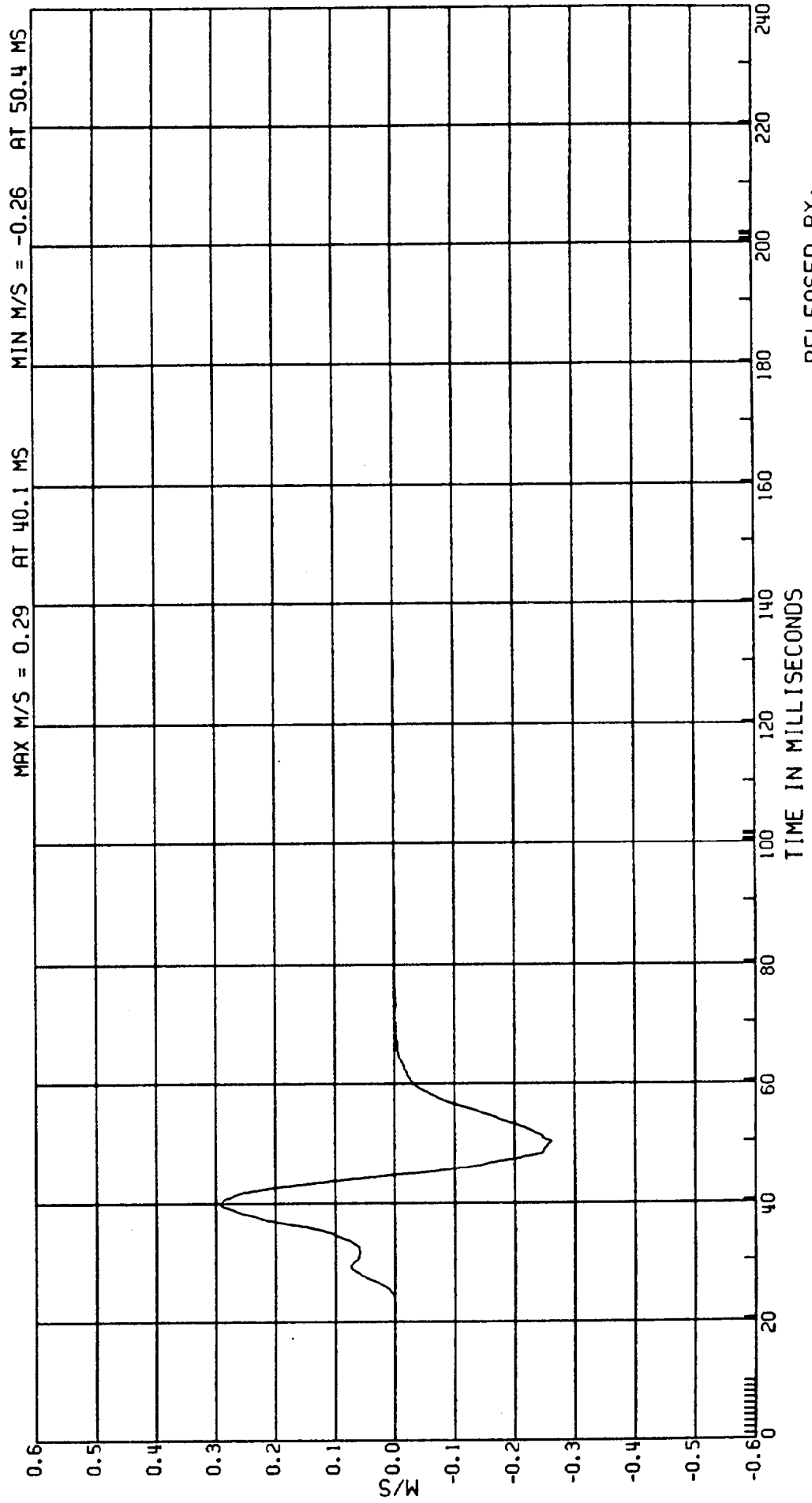
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15 PROCESSED 4 MY 90 12:10

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 88  
3868-905 AID TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER FIRST THORACIC RIB DISP.  
ELEC DATA, SAE CLASS 60 TEST DATE:03-20-90



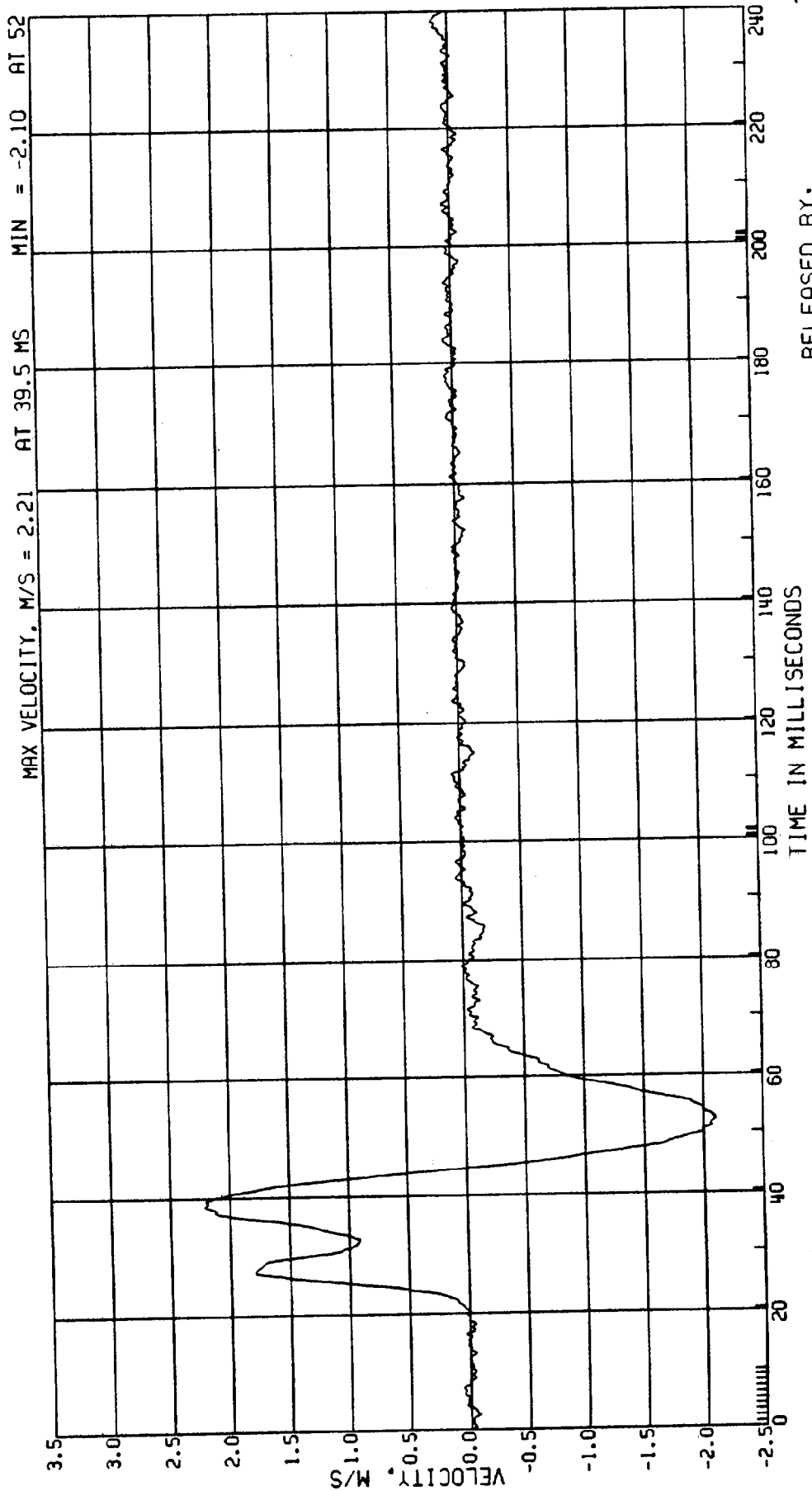
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C8009B L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 89  
 3868-905 RTD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 60 (1ST RIB DISP\*1ST RIB VEL)/175MM



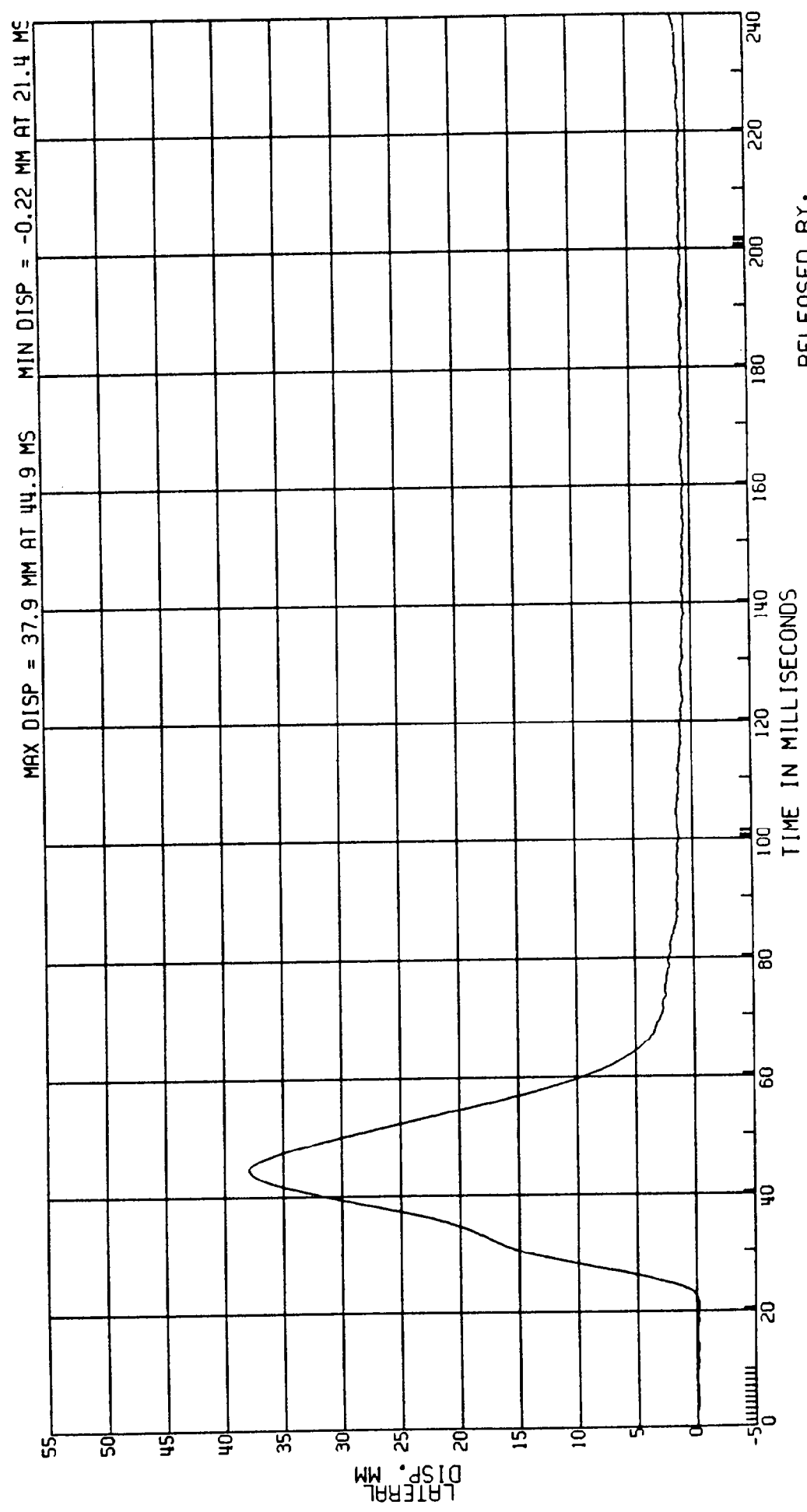
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C80098 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 90  
 3868-905 MVMA 98 2AF69 ATD TYPE: BIOSID  
 CPE DRIVER 1ST THORACIC RIB VELOCITY TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 60 (DIFF OF 1ST RIB DISP)



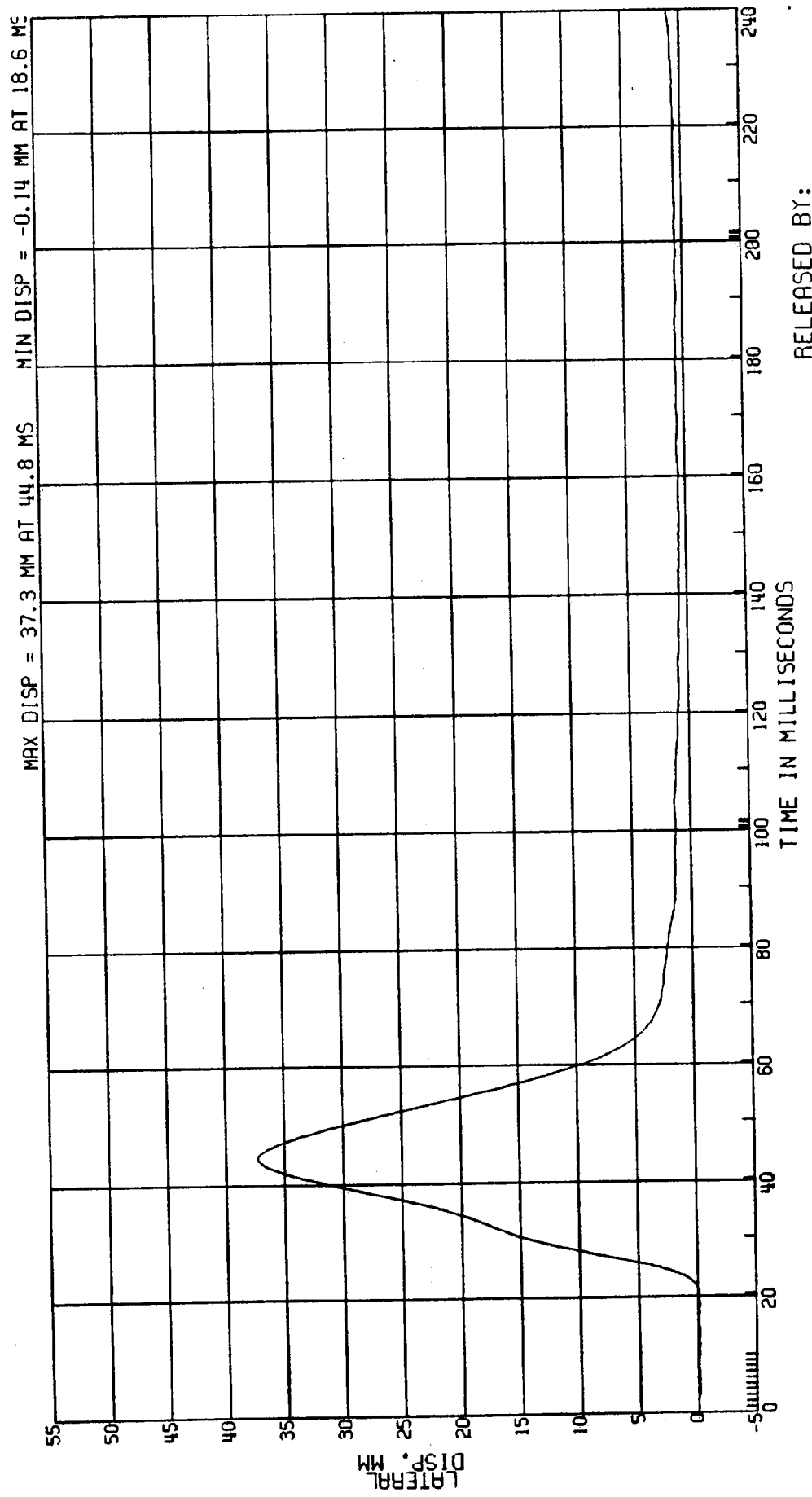
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 9/  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER SECOND THORACIC RIB DISP. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180



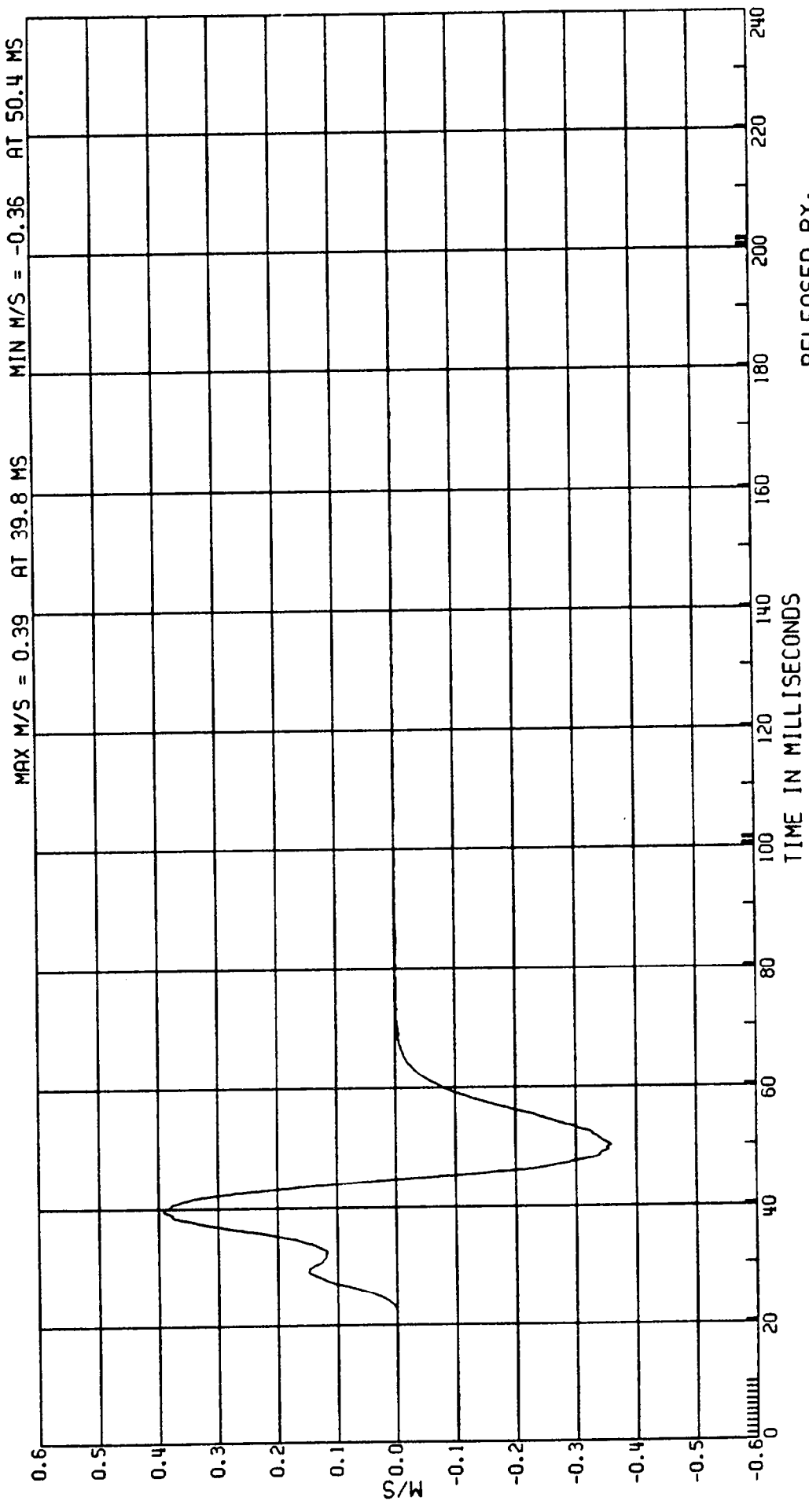
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C8009B L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 92  
3868-905 MVMA 9B 2AF69 AFD TYPE: BIOSID  
CPE DRIVER SECOND THORACIC RIB DISP. TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 60



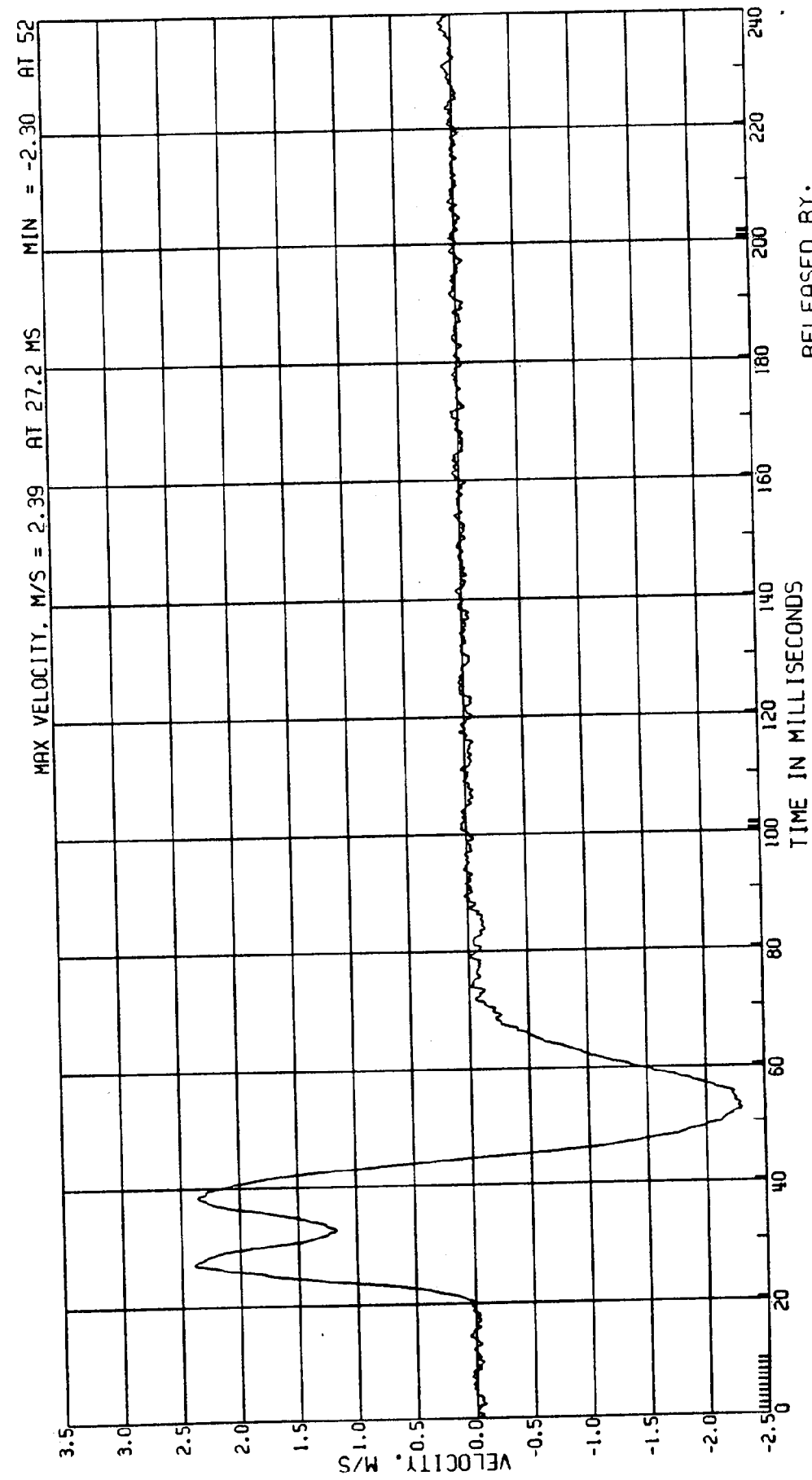
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 93  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 VISCIOUS RESPONSE OF 2ND THORACIC RIB  
 ELEC DATA, SAE CLASS 60 (2ND RIB DISP\*2ND RIB VEL) /175MM TEST DATE:03-20-90



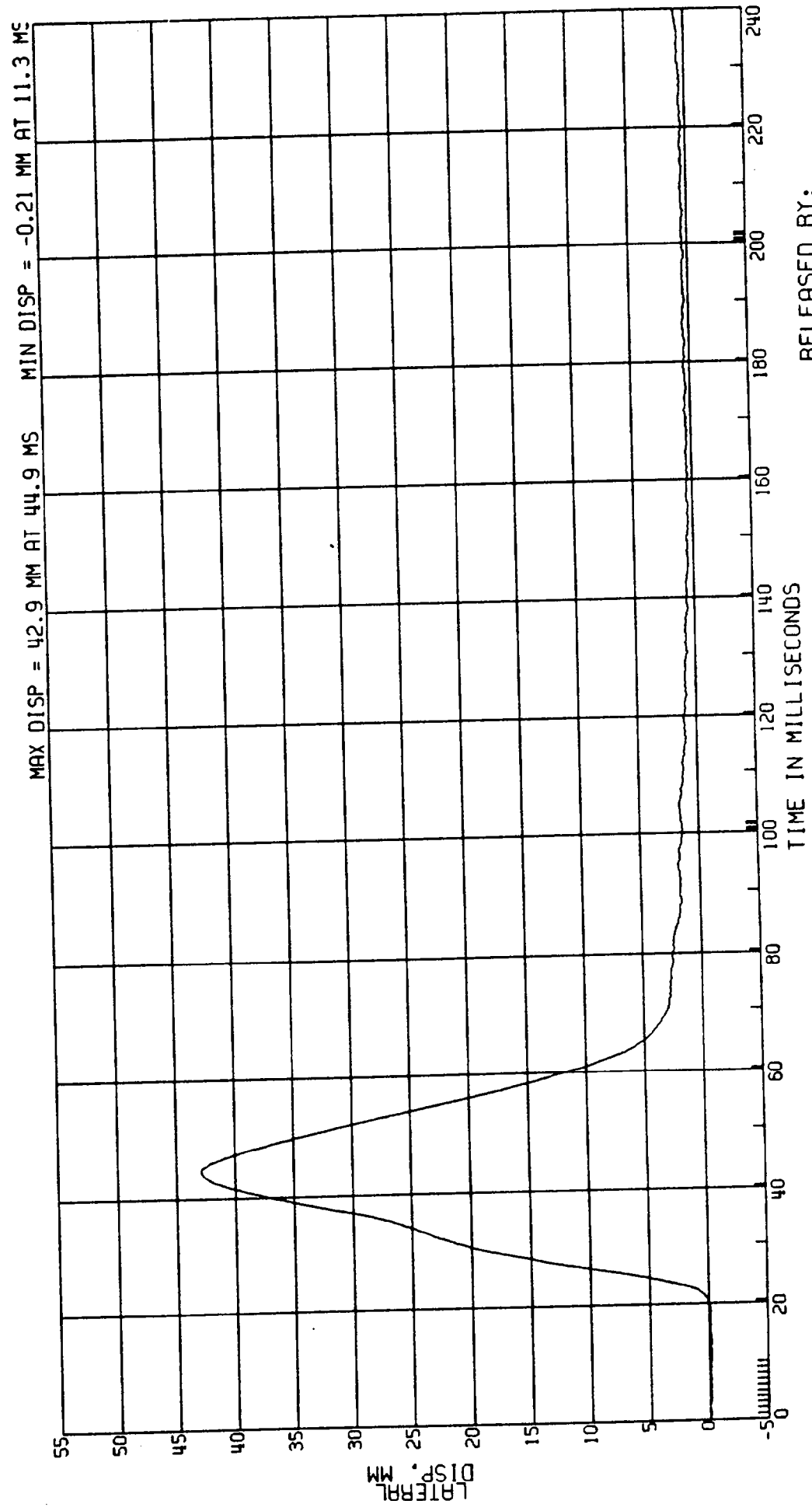
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C80098 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 94  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 60 DRIVER 2ND THORACIC RIB VELOCITY  
(DIFF OF 2ND RIB DISP)



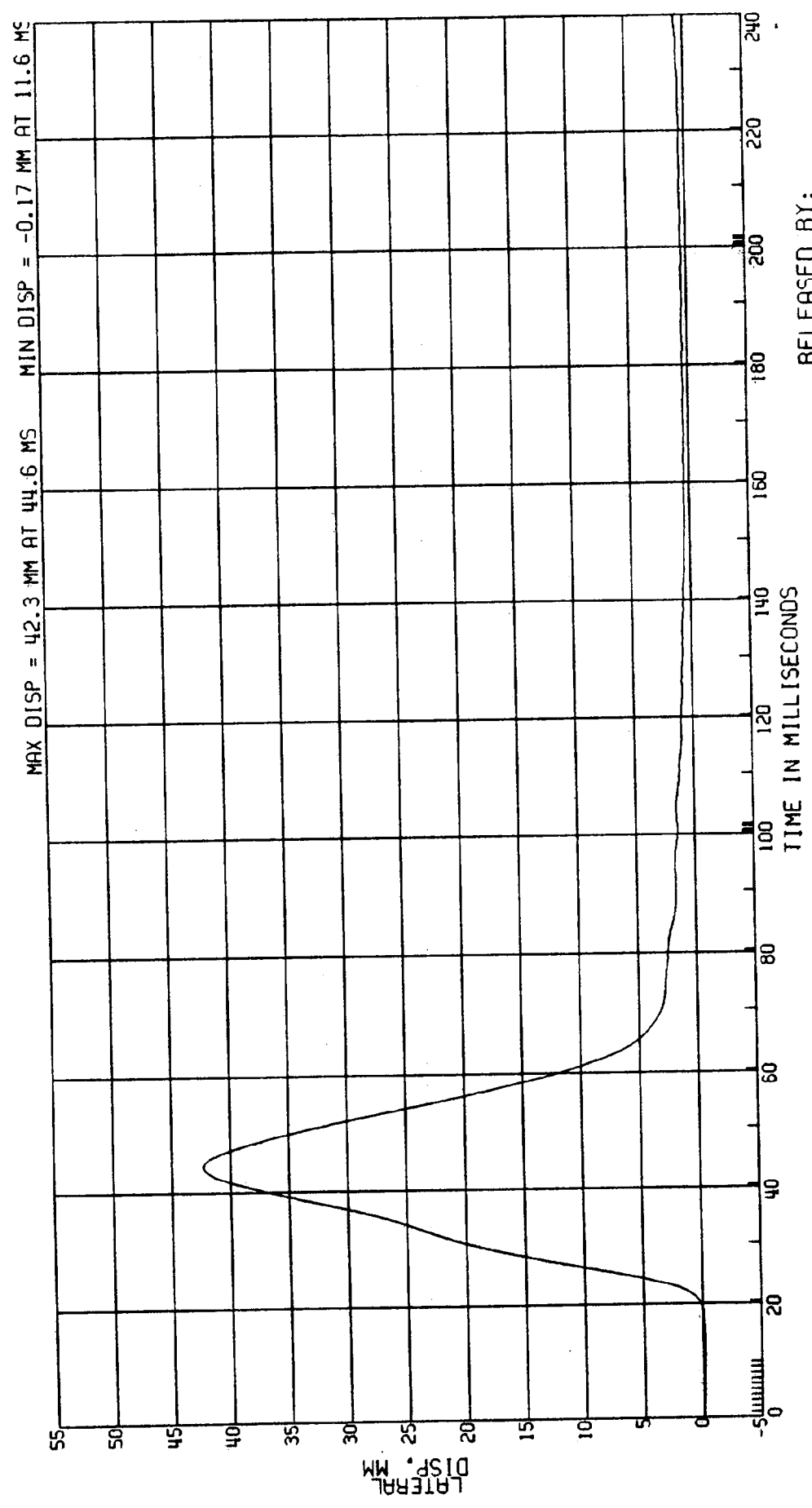
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 95  
3868-905 MVMA 9B 2AF69 ATD TYPE: B10SID  
CPE DRIVER THIRD THORACIC RIB DISP. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180



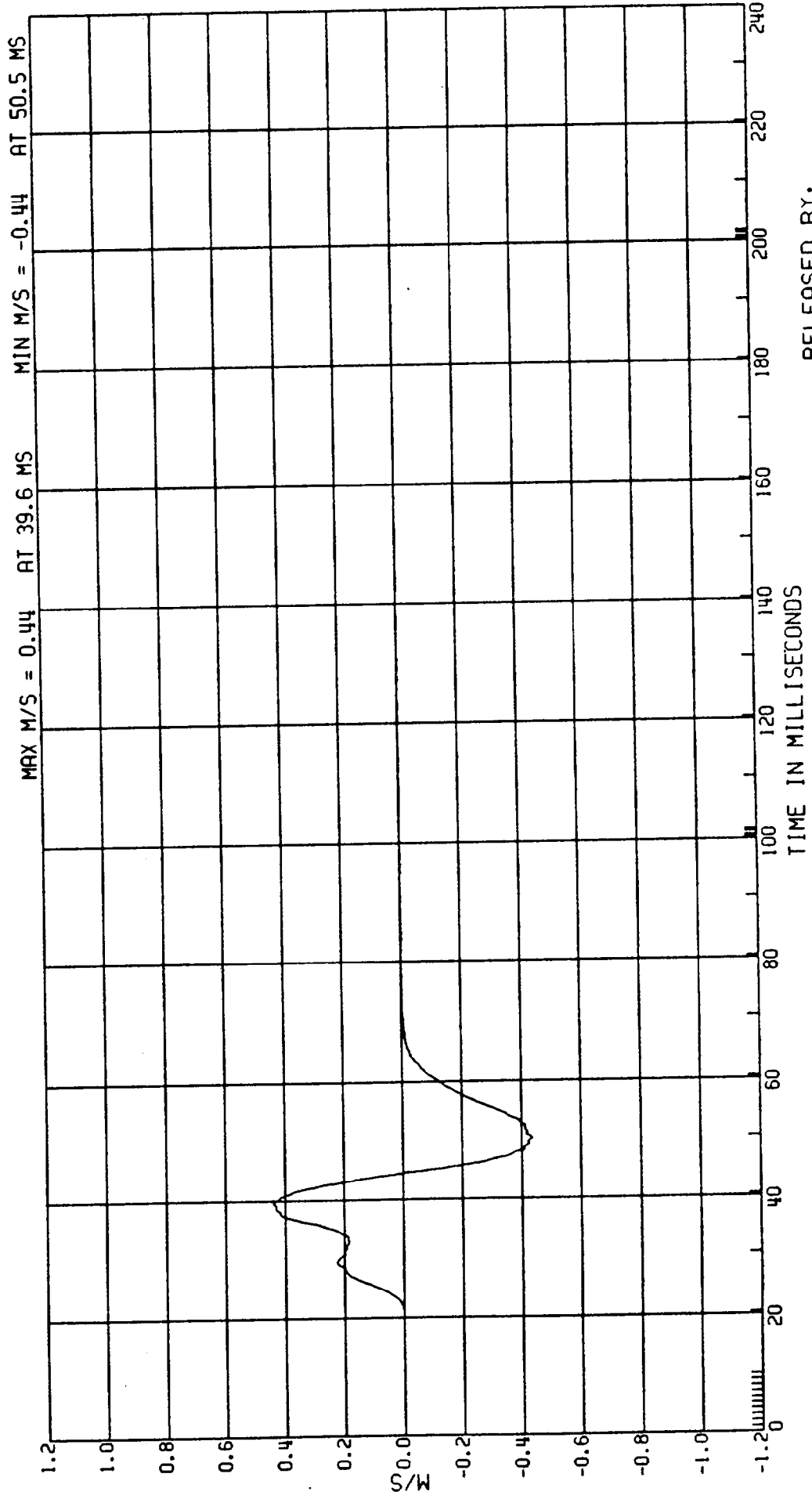
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C80098 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 96  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER THIRD THORACIC RIB DISP.  
 ELEC DATA. SAE CLASS 60 TEST DATE:03-20-90



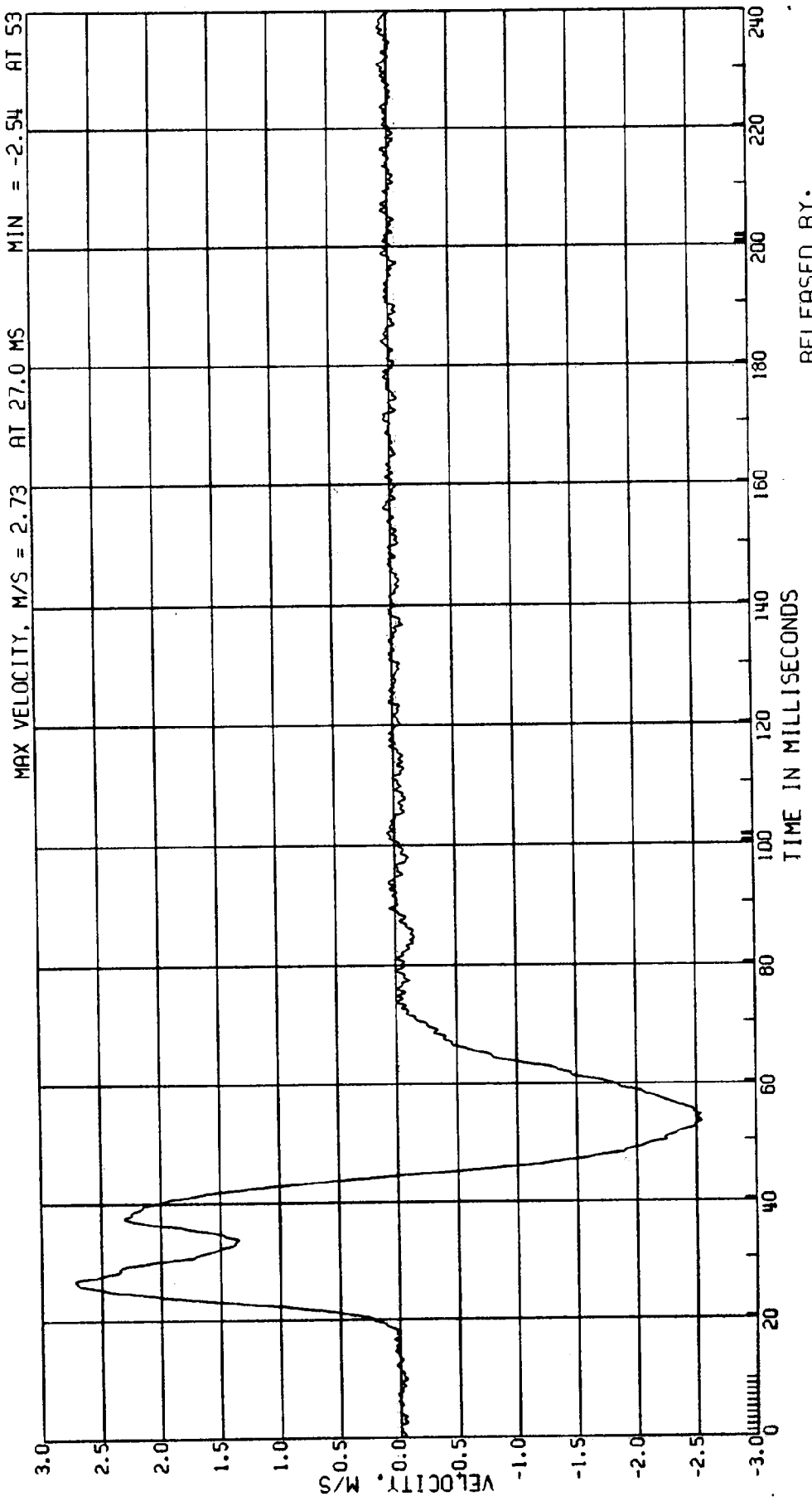
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 97  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60 (3RD RIB DISP\*3RD RIB VEL) /175MM



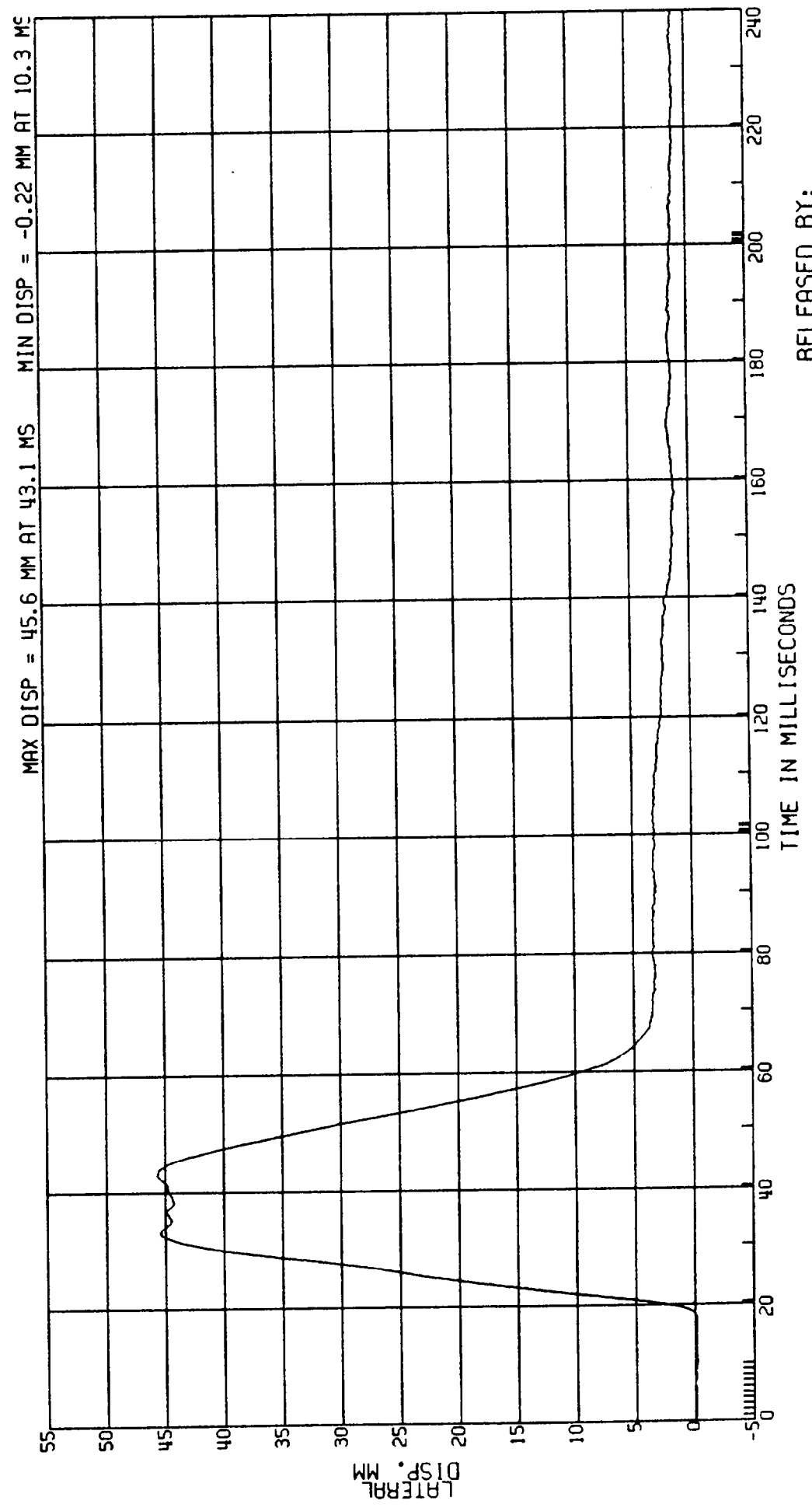
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 98  
 3868-905 MVMA 9B 2AF69 AID TYPE: BIOSID  
 CPE DRIVER 3RD THORACIC RIB VELOCITY TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 60 (DIFF OF 3RD RIB DISP)



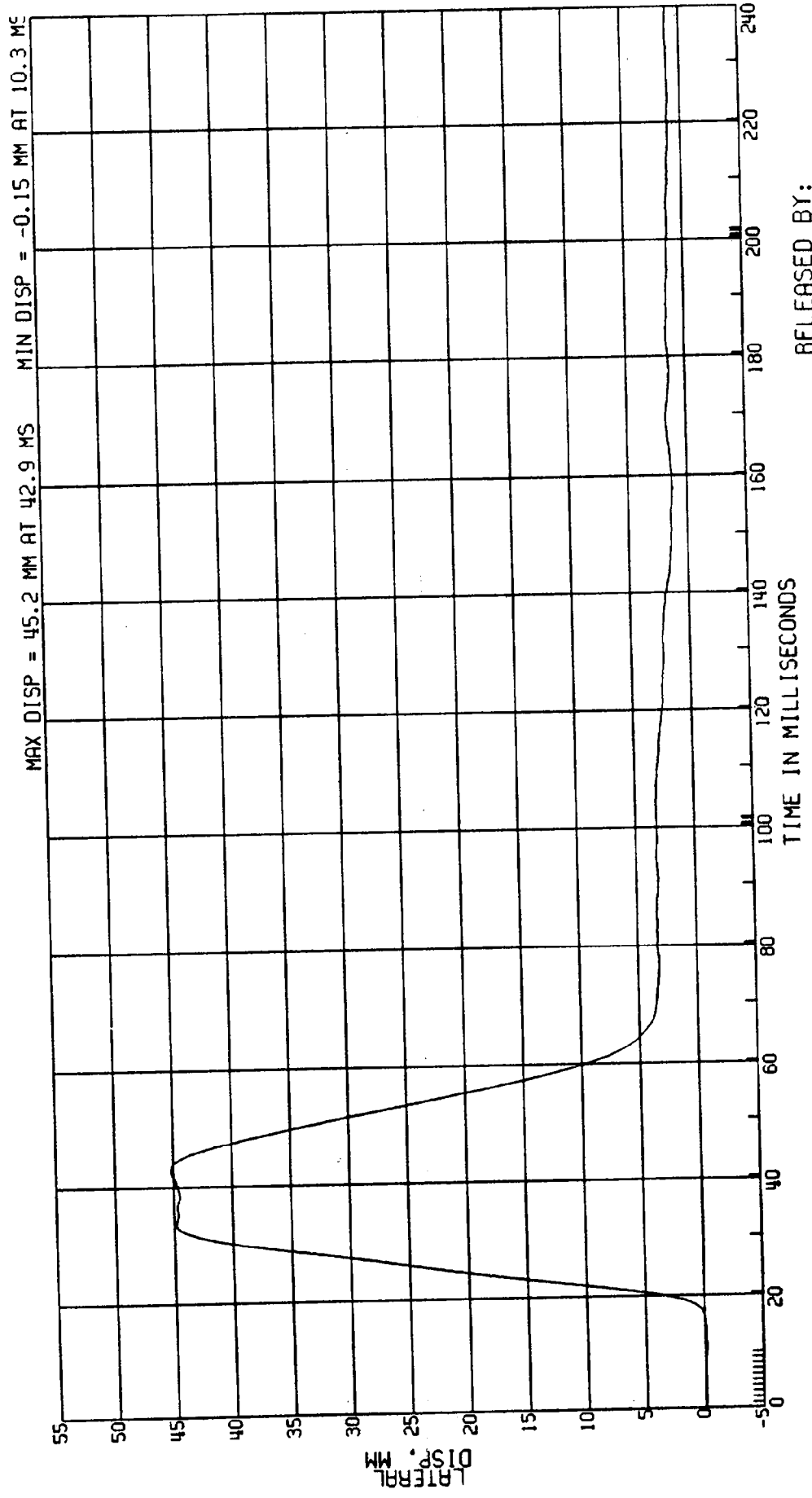
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 99  
3868-905 AID TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER FIRST ABDOMINAL RIB DISP. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180



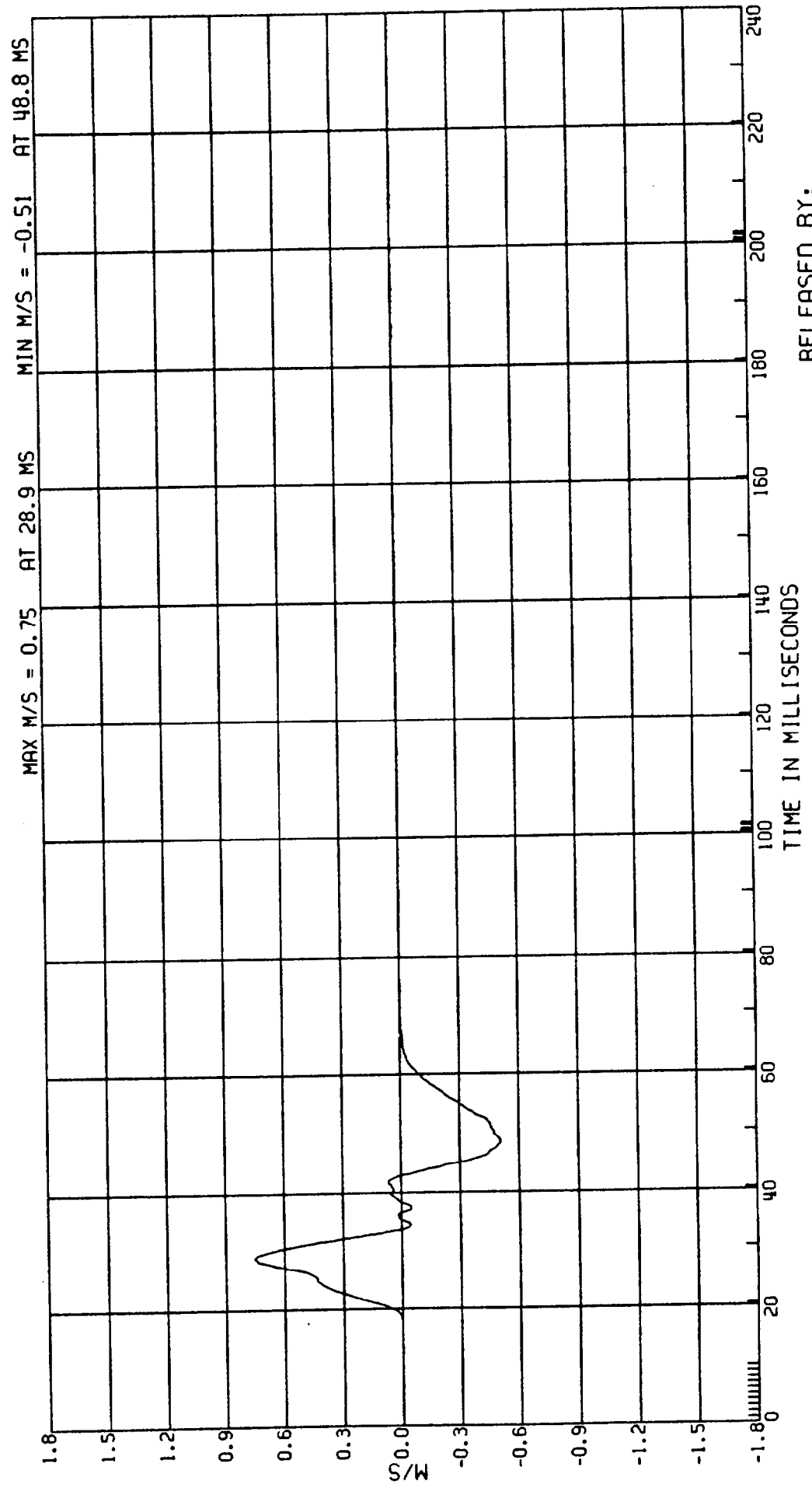
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /00  
3868-905 MVMA 9B 2AF69 ATD TYPE: BIOSID  
CPE DRIVER FIRST ABDOMINAL RIB DISP. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60



RELEASED BY:  
26 PROCESSED 4 MY 90 12:11

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /01  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 VISCIOUS RESPONSE OF 1ST ABDOMINAL RIB TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 60 (1ST RIB DISP\*1ST RIB VEL)/175MM

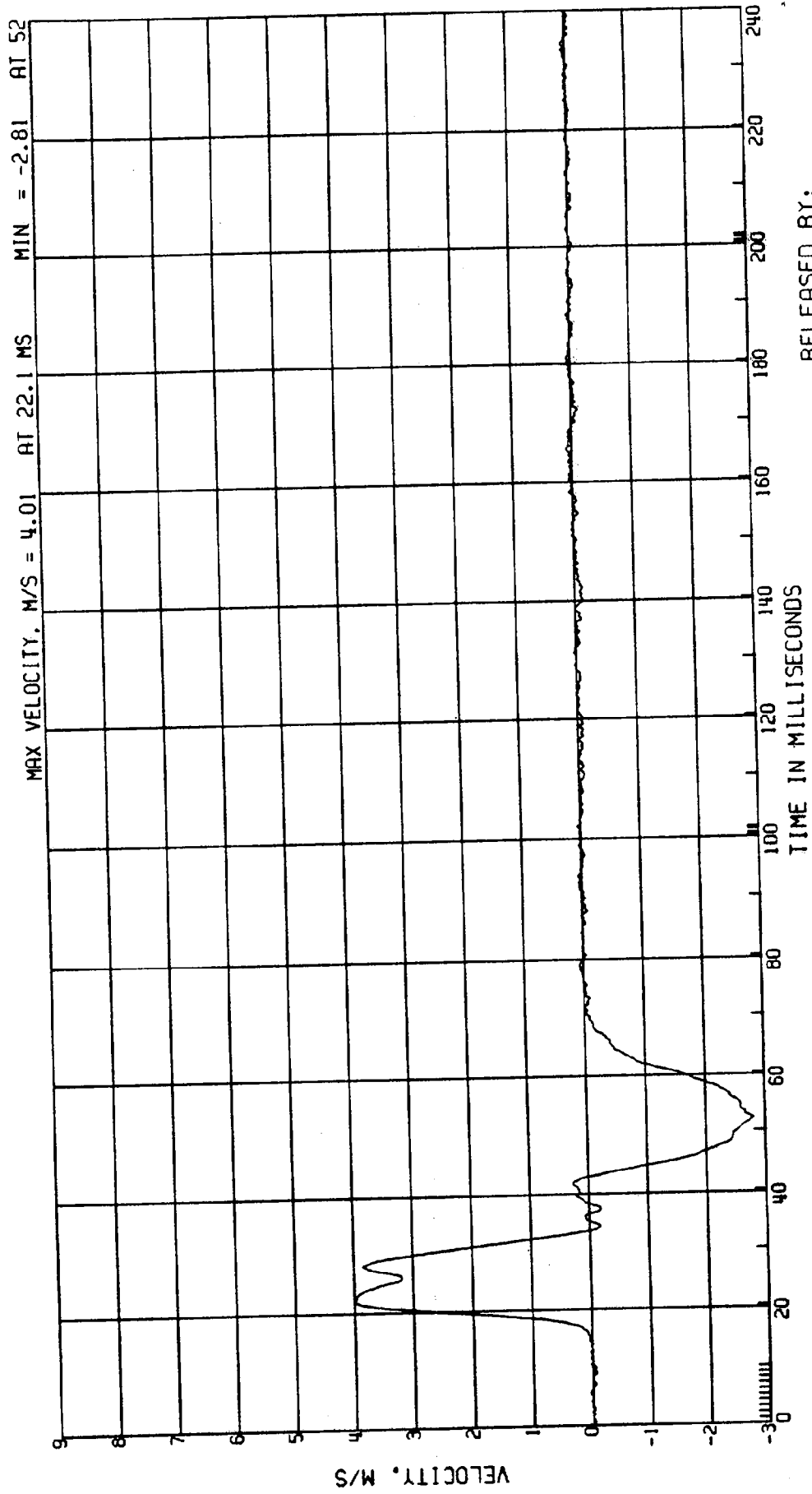


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C8009B L. SIDE IMPACT- 27 DEG  
3868-905 MVMA 9B 2AF69  
CPE ELEC DATA, SAE CLASS 60

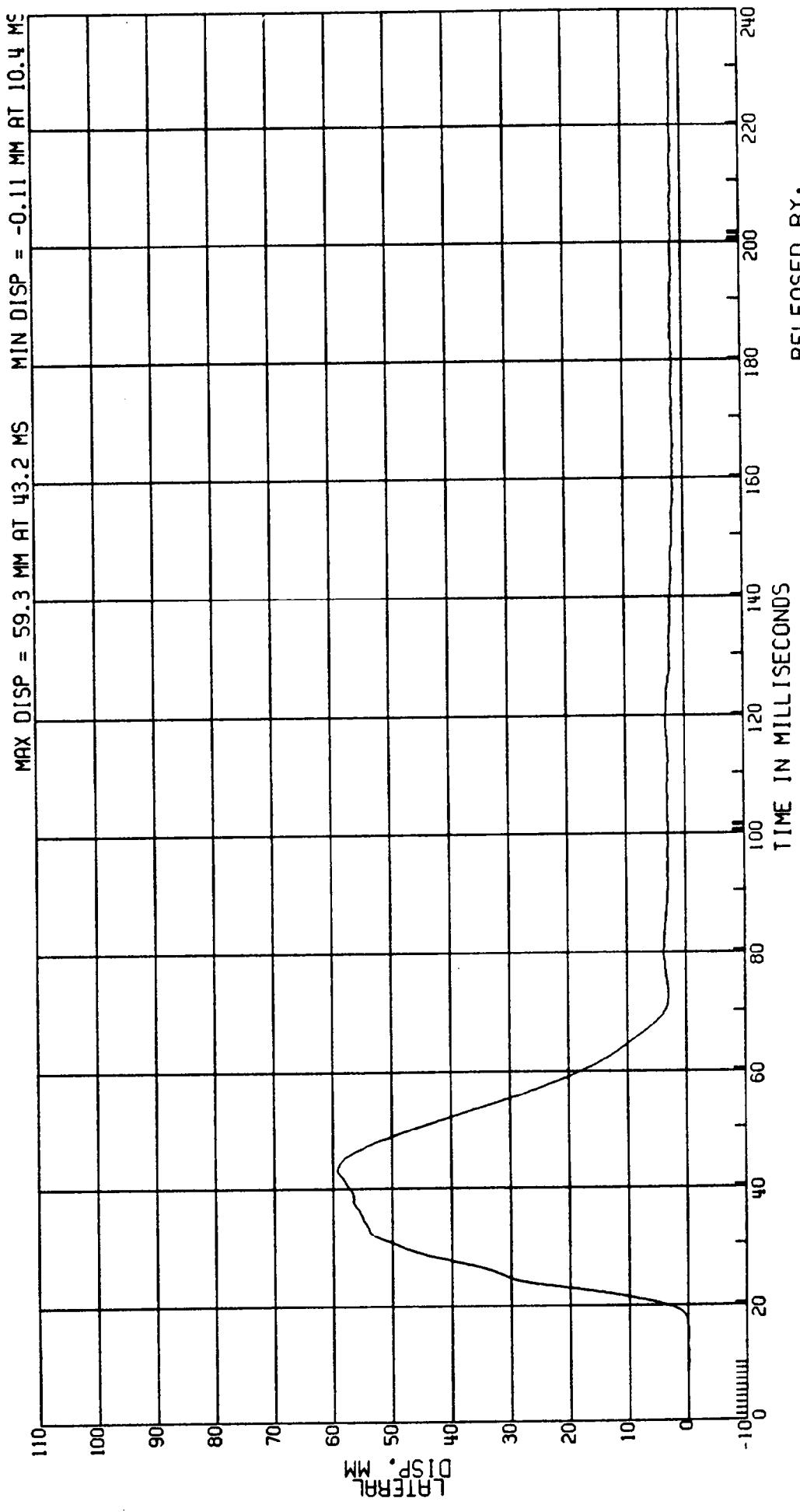
MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 102  
ATD TYPE: BIOSID  
TEST DATE: 03-20-90

DRIVER 1ST ABDOMINAL RIB VELOCITY  
(DIFF OF 1ST RIB DISP)



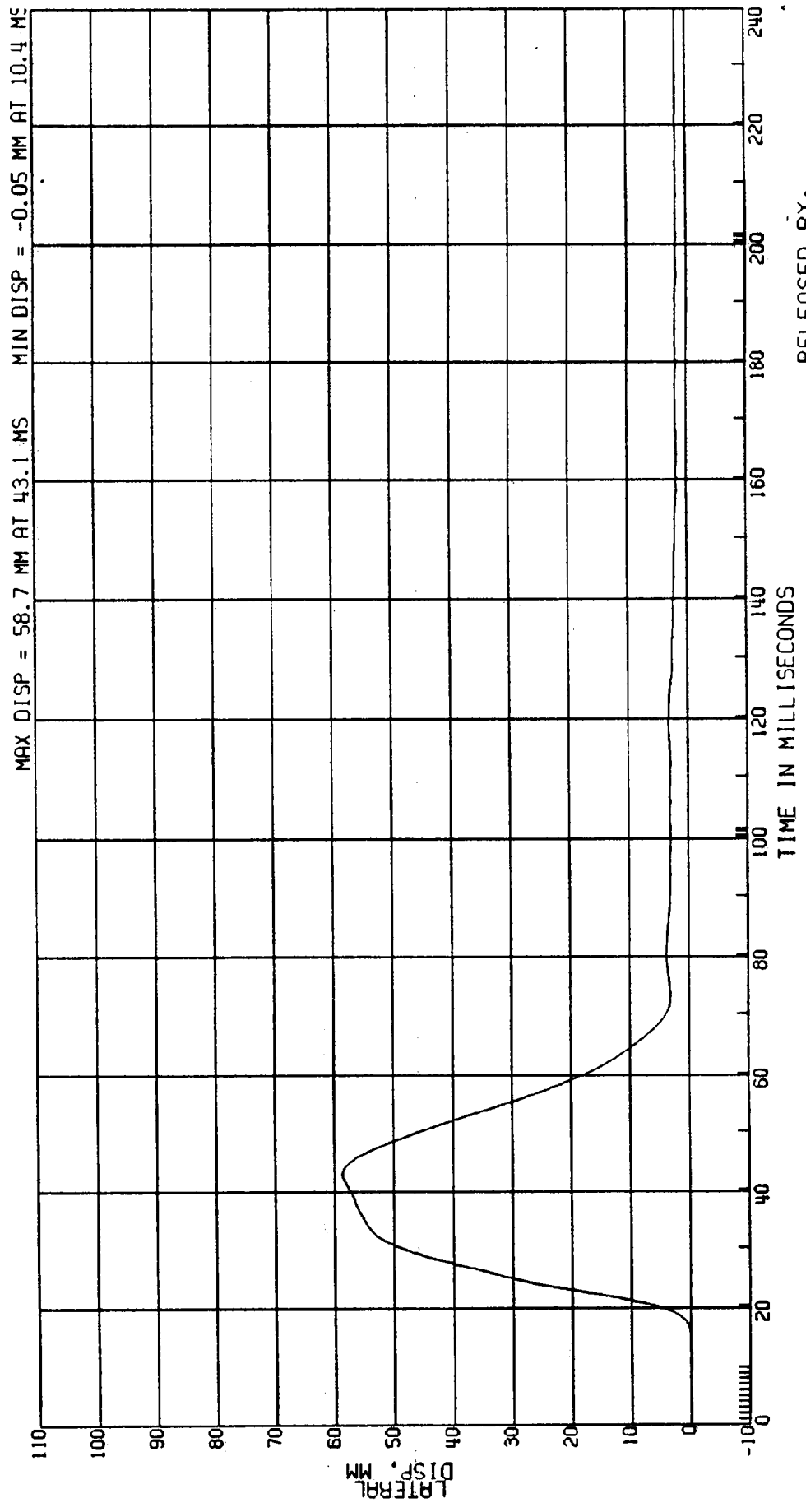
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 103  
3868-905 MVMA 9B 2AF69 ATD TYPE: BIOSID  
CPE DRIVER SECOND ABDOMINAL RIB DISP. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180



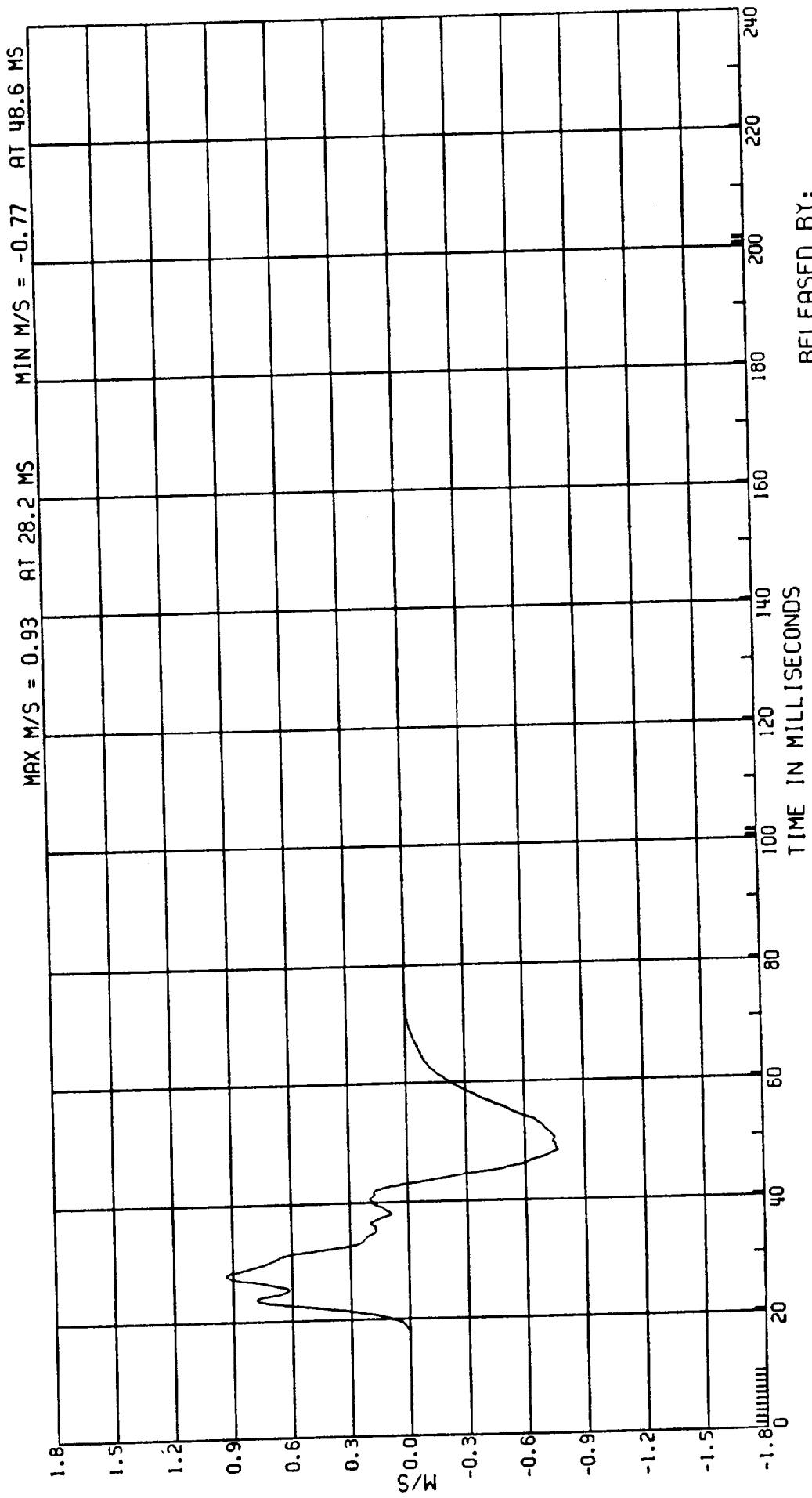
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C80098 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 104  
 3868-905 AID TYPE: BIOSID  
 CPE MVMA 98 2AF69 DRIVER SECOND ABDOMINAL RIB DISP.  
 ELEC DATA, SAE CLASS 60 TEST DATE:03-20-90



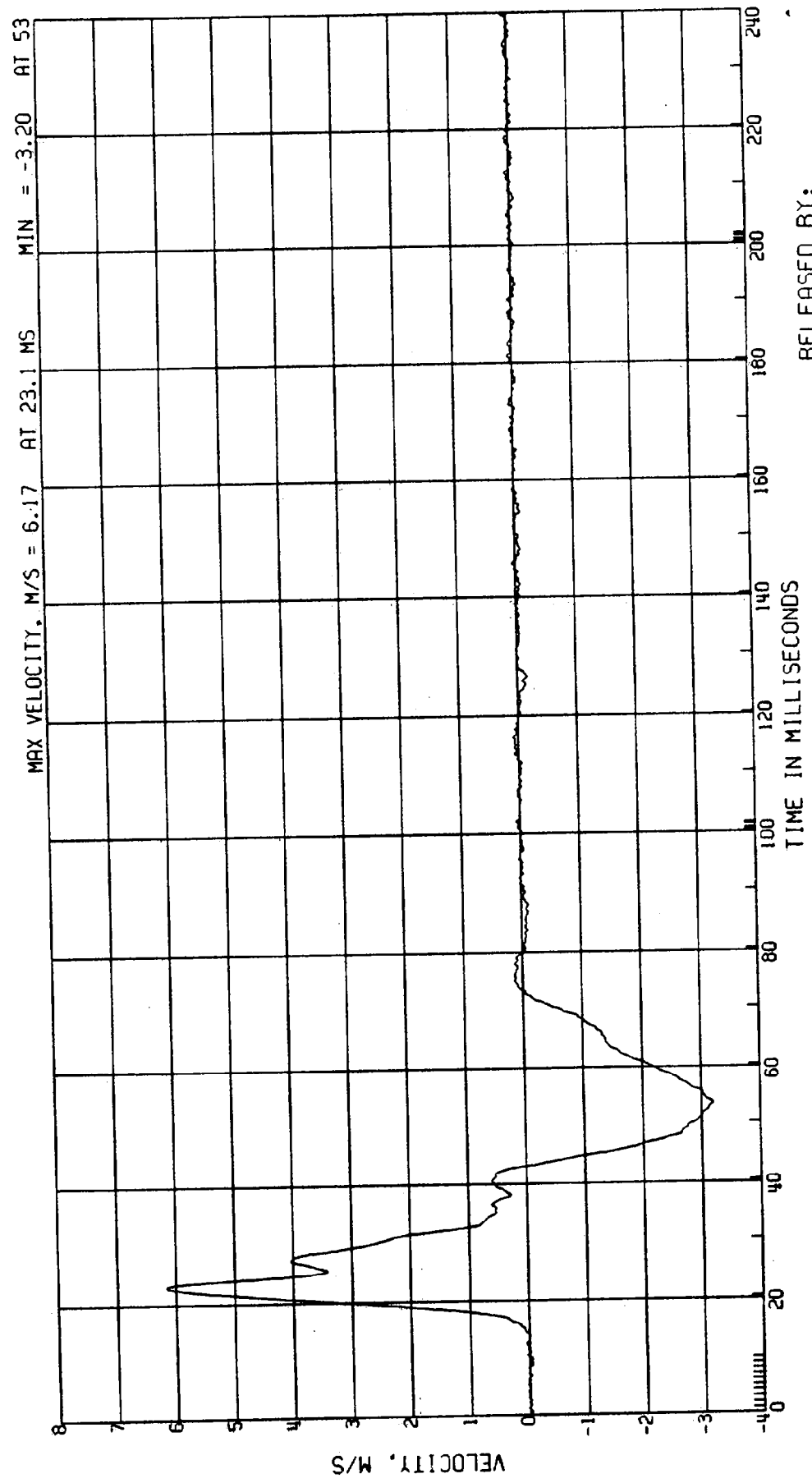
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 105  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 VISCIOUS RESPONSE OF 2ND ABDOMINAL RIB TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 60 (2ND RIB DISP\*2ND RIB VEL)/175MM



RELEASED BY:  
 33 PROCESSED 4 MY 90 12:11

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 106  
3868-905 AID TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER 2ND ABDOMINAL RIB VELOCITY TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 60 (DIFF OF 2ND RIB DISP)



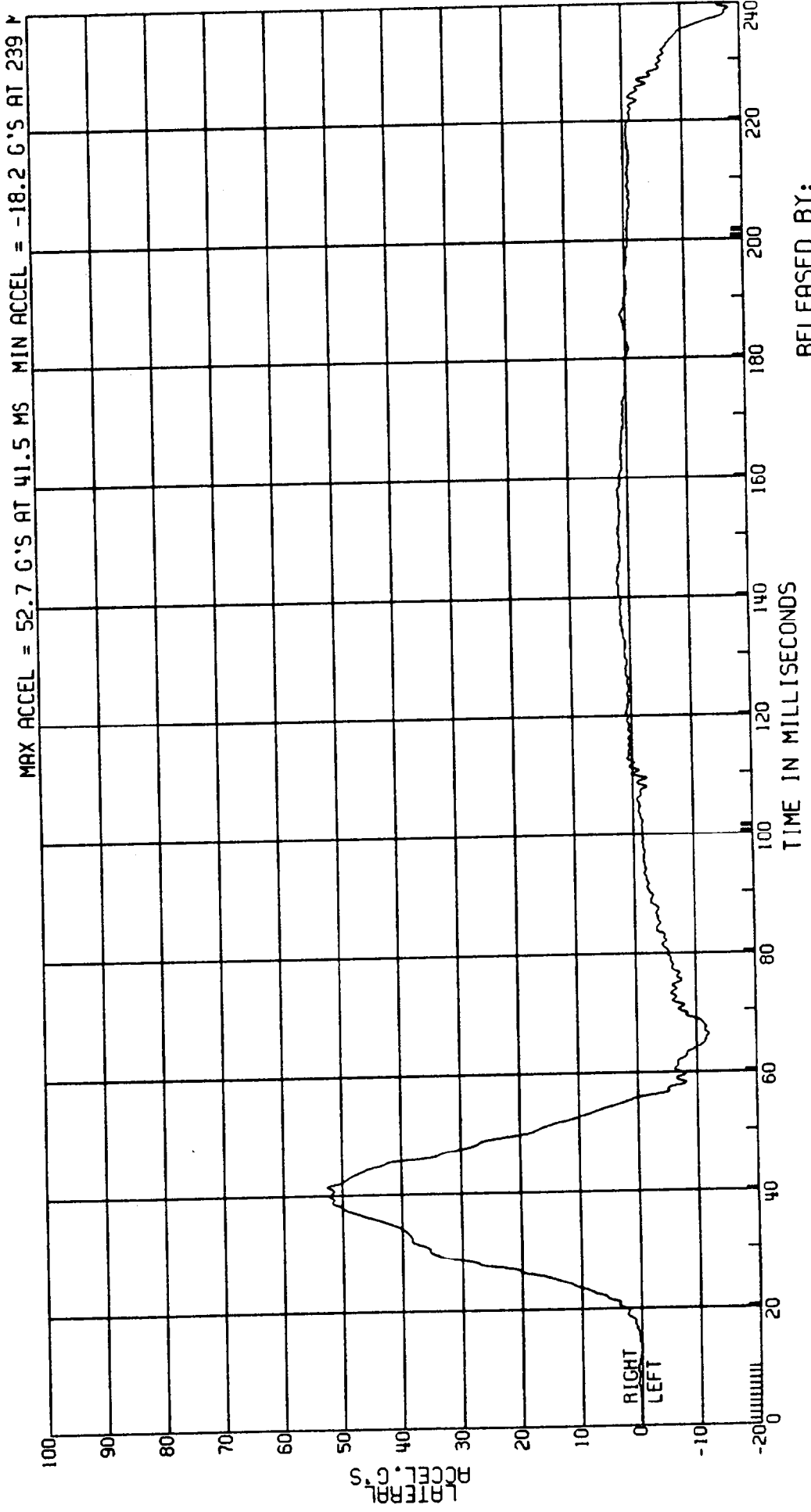
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C8009B L. SIDE IMPACT- 27 DEG  
3868-905  
CPE

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE / 07  
ATD TYPE: BIOSID  
TEST DATE: 03-20-90

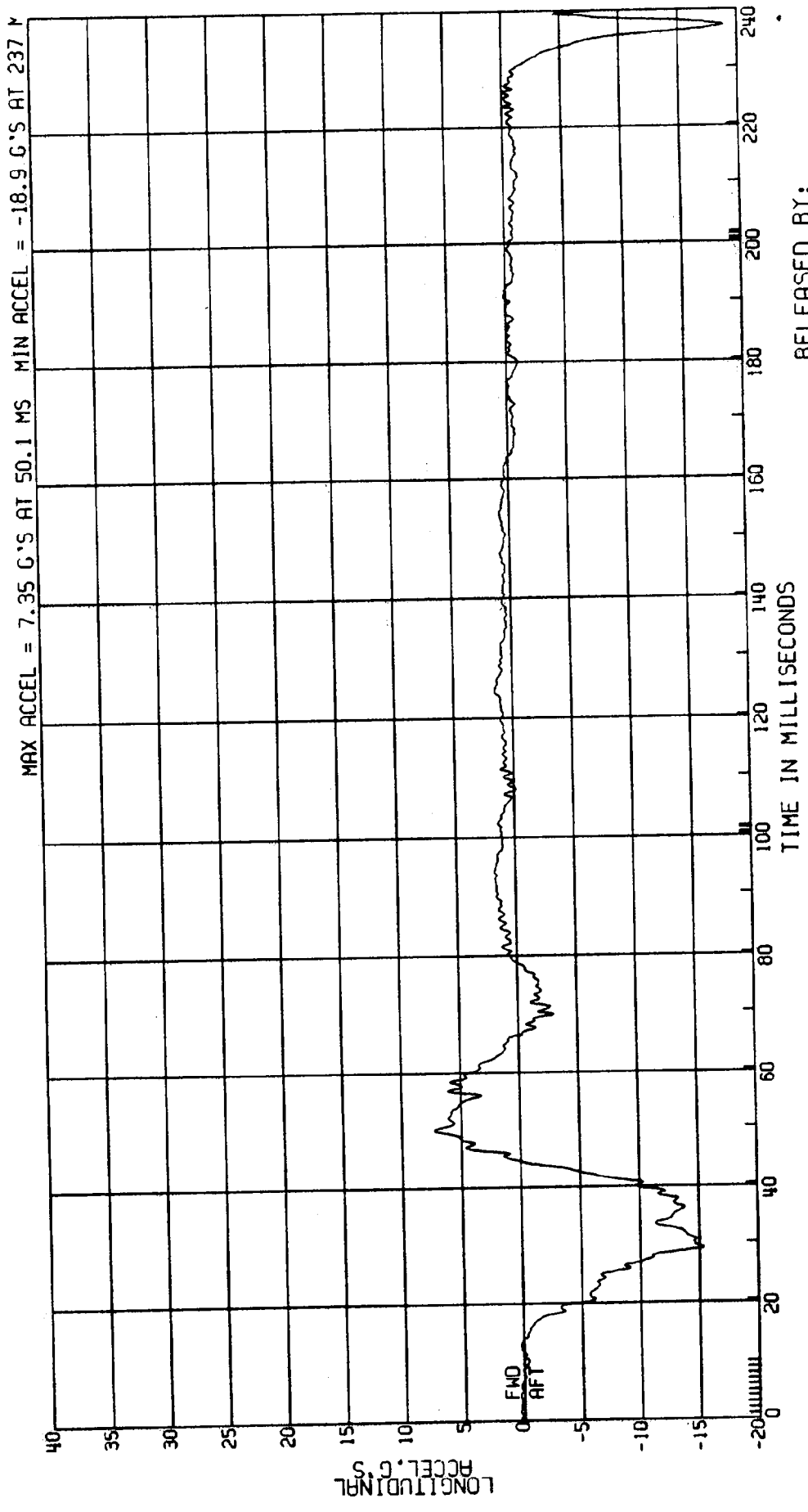
MVMA 9B 2AF69  
ELEC DATA, SAE CLASS 180

DRIVER UPPER SPINE ACCEL.



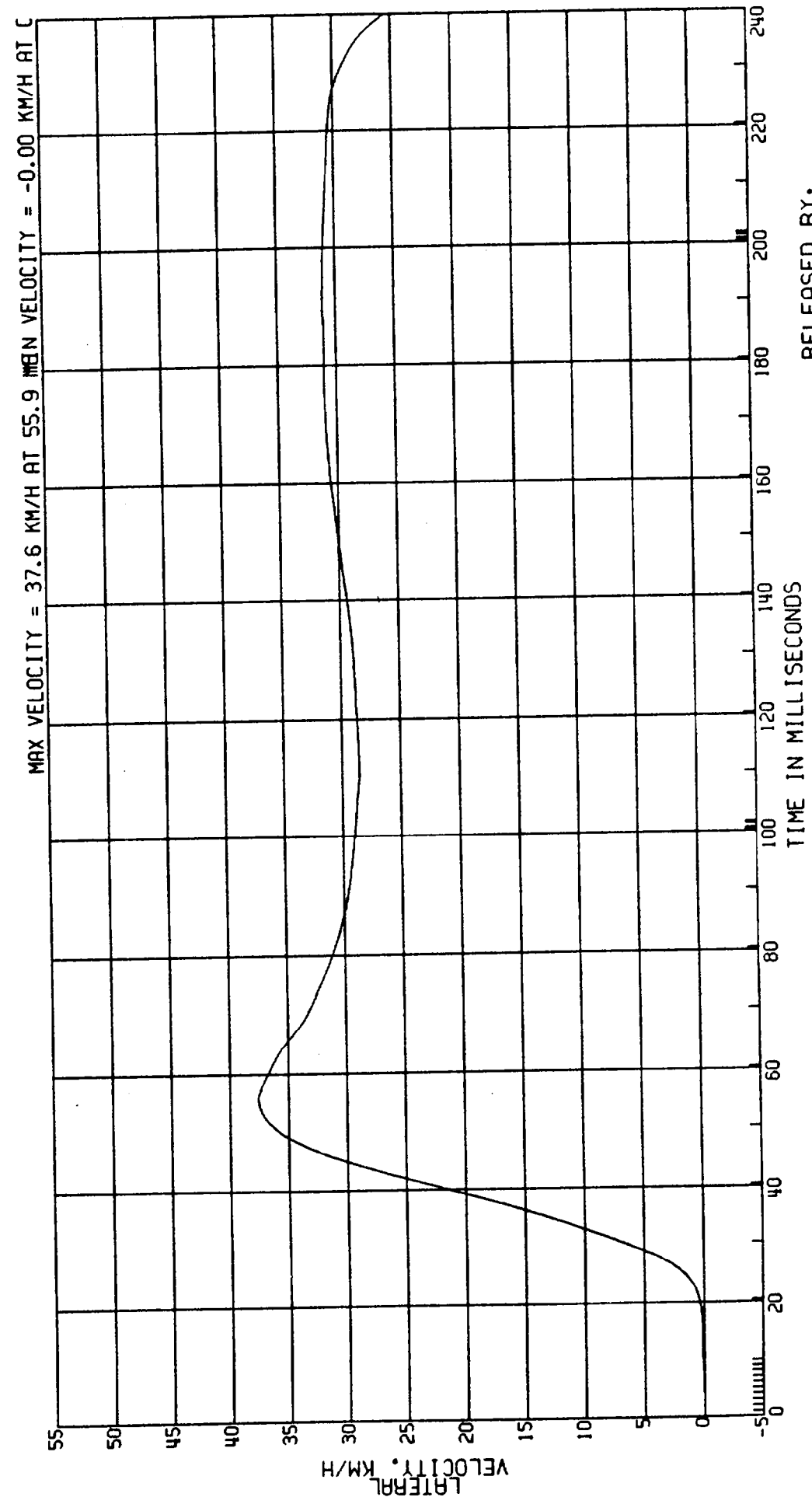
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 108  
 3868-905 MVMA 9B 2AF69 ATD TYPE: BIOSID  
 CPE DRIVER UPPER SPINE ACCEL. TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 180



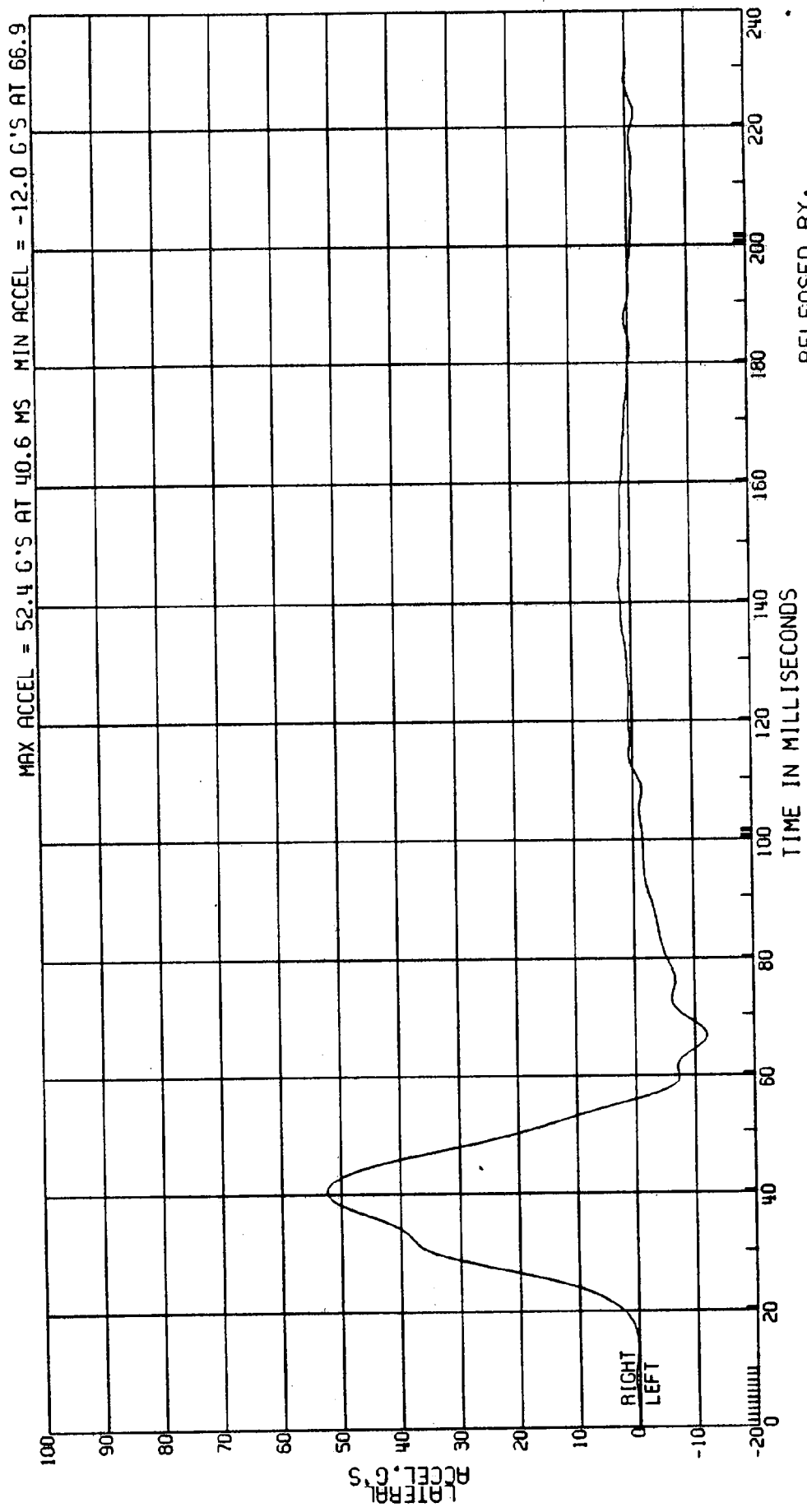
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 109  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION)  
COMPUTED UPPER SPINE VELOCITY



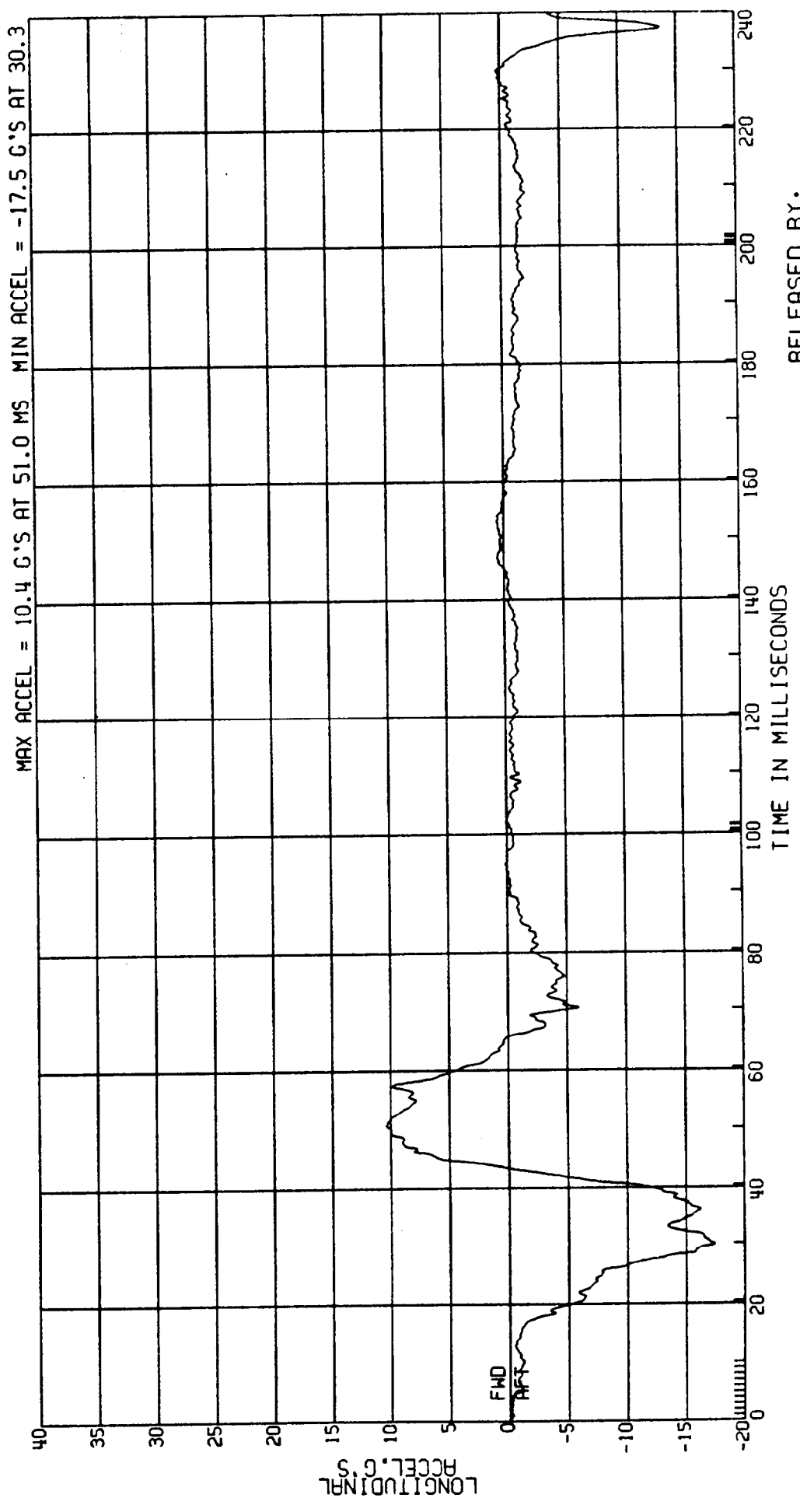
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /10  
 3858-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER UPPER SPINE ACCEL. TEST DATE:03-20-90  
 ELEC DATA. NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



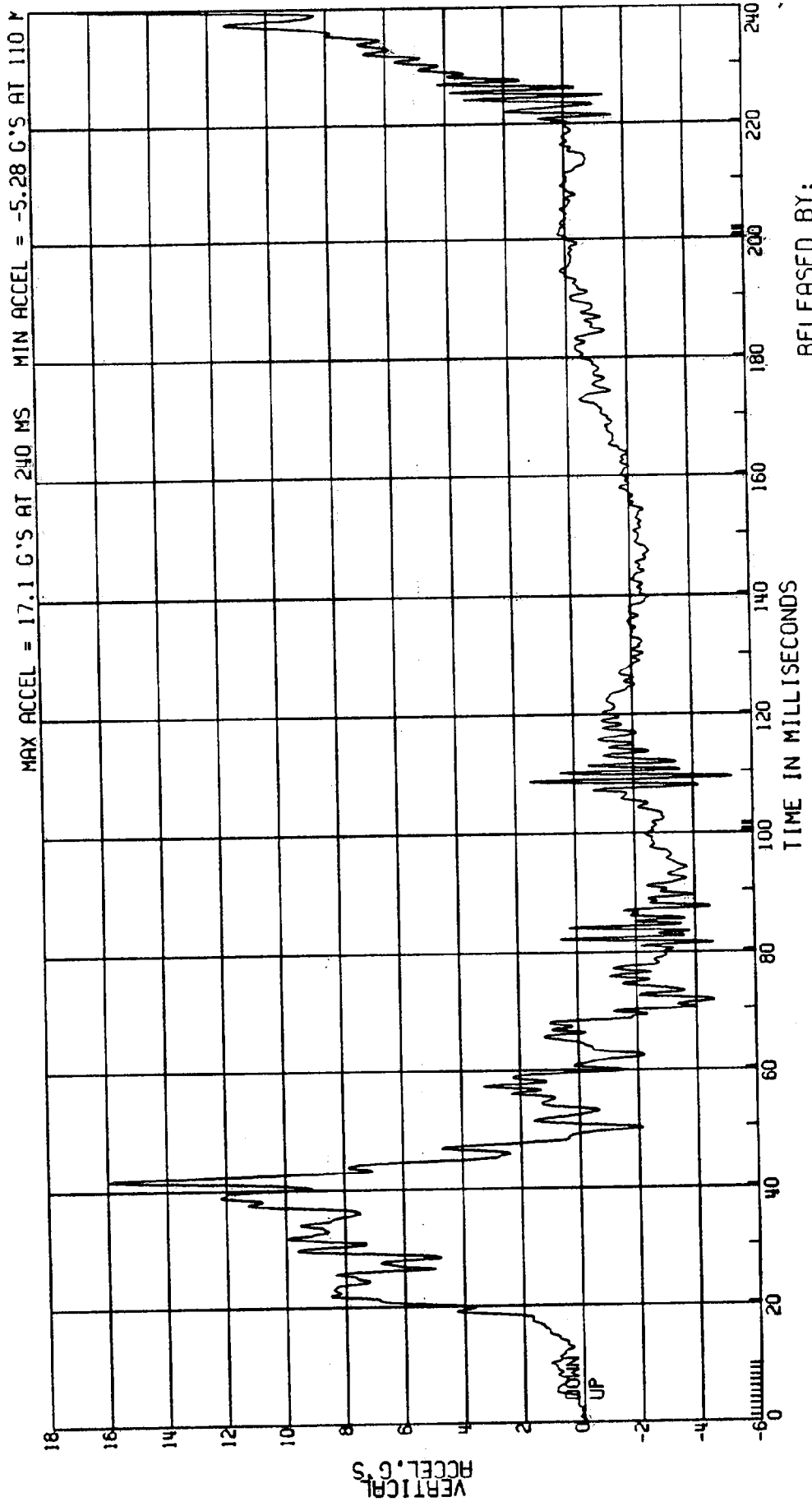
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE ///  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER LOWER SPINE ACCEL.  
ELEC DATA, SAE CLASS 180 TEST DATE:03-20-90



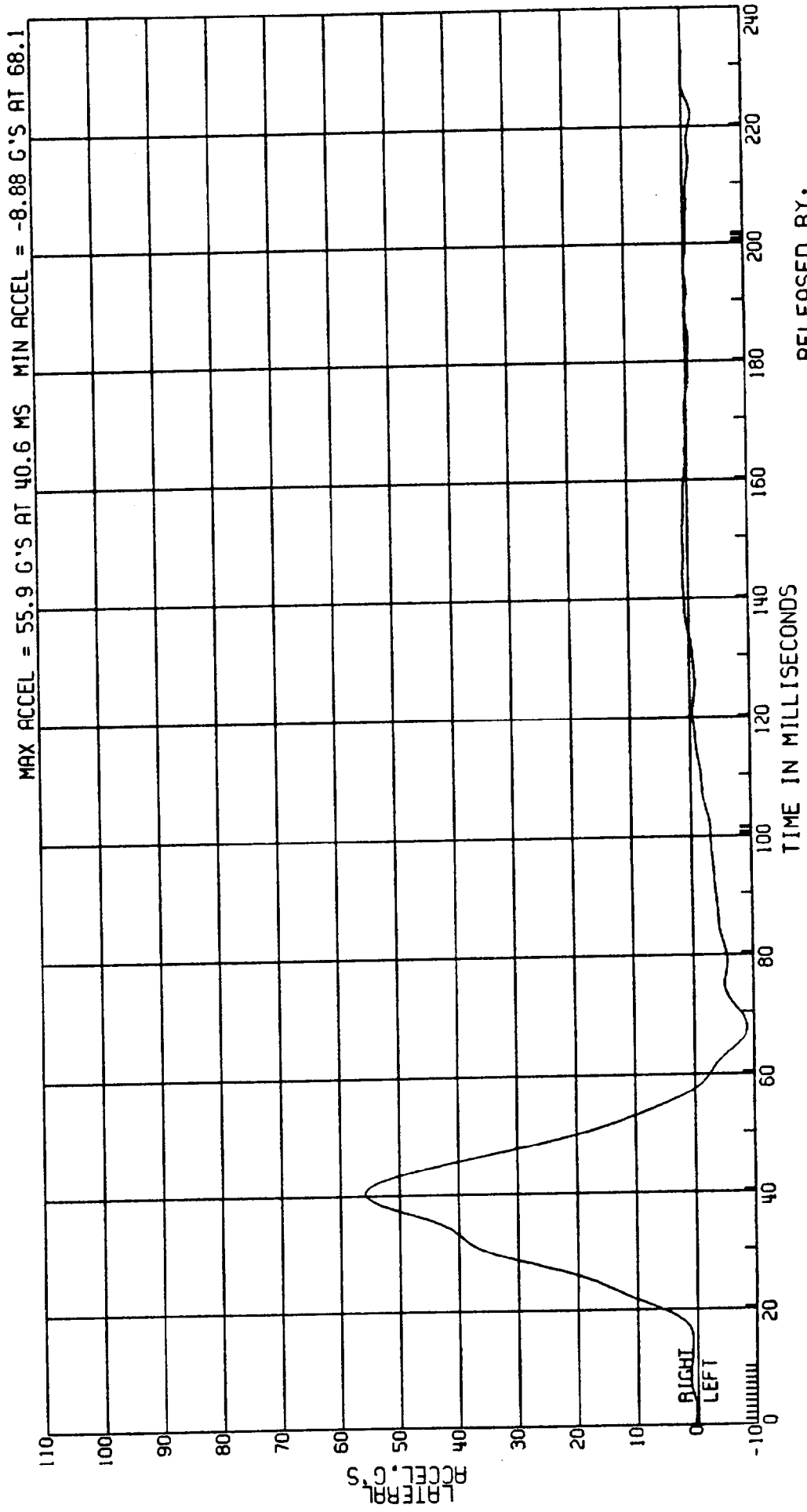
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 112  
 3868-905 MVMA 9B 2AF69  
 CPE DRIVER UPPER SPINE ACCEL.  
 ELEC DATA, SAE CLASS 180  
 ATD TYPE: BIOSID  
 TEST DATE: 03-20-90



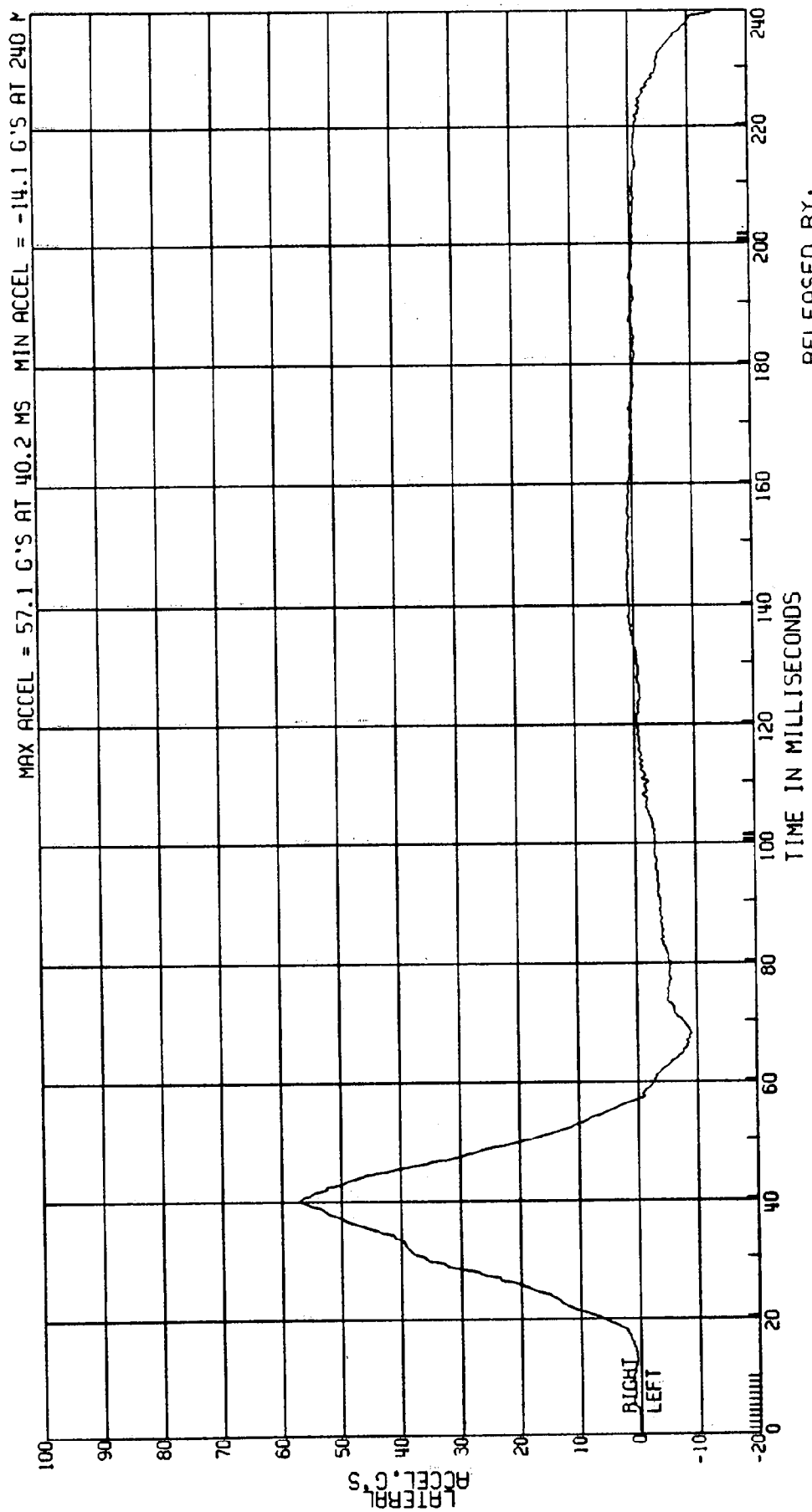
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 38 PROCESSED 4 MT 90 12:11

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 113  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER LOWER SPINE ACCEL.  
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH TEST DATE:03-20-90



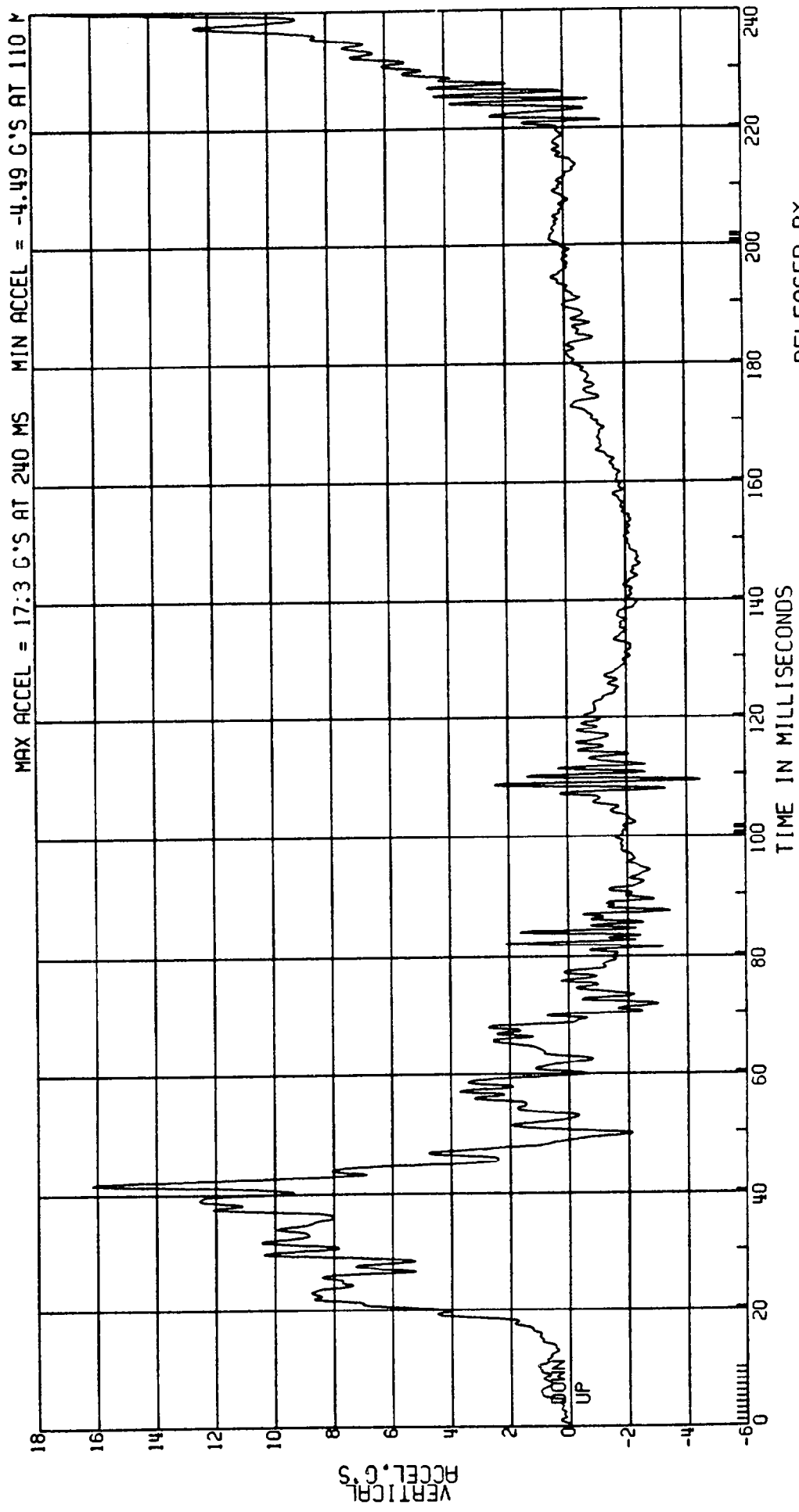
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 114  
3868-905 MVMA 9B 2AF69  
CPE DRIVER LOWER SPINE ACCEL.  
ELEC DATA, SAE CLASS 180  
TEST DATE: 03-20-90



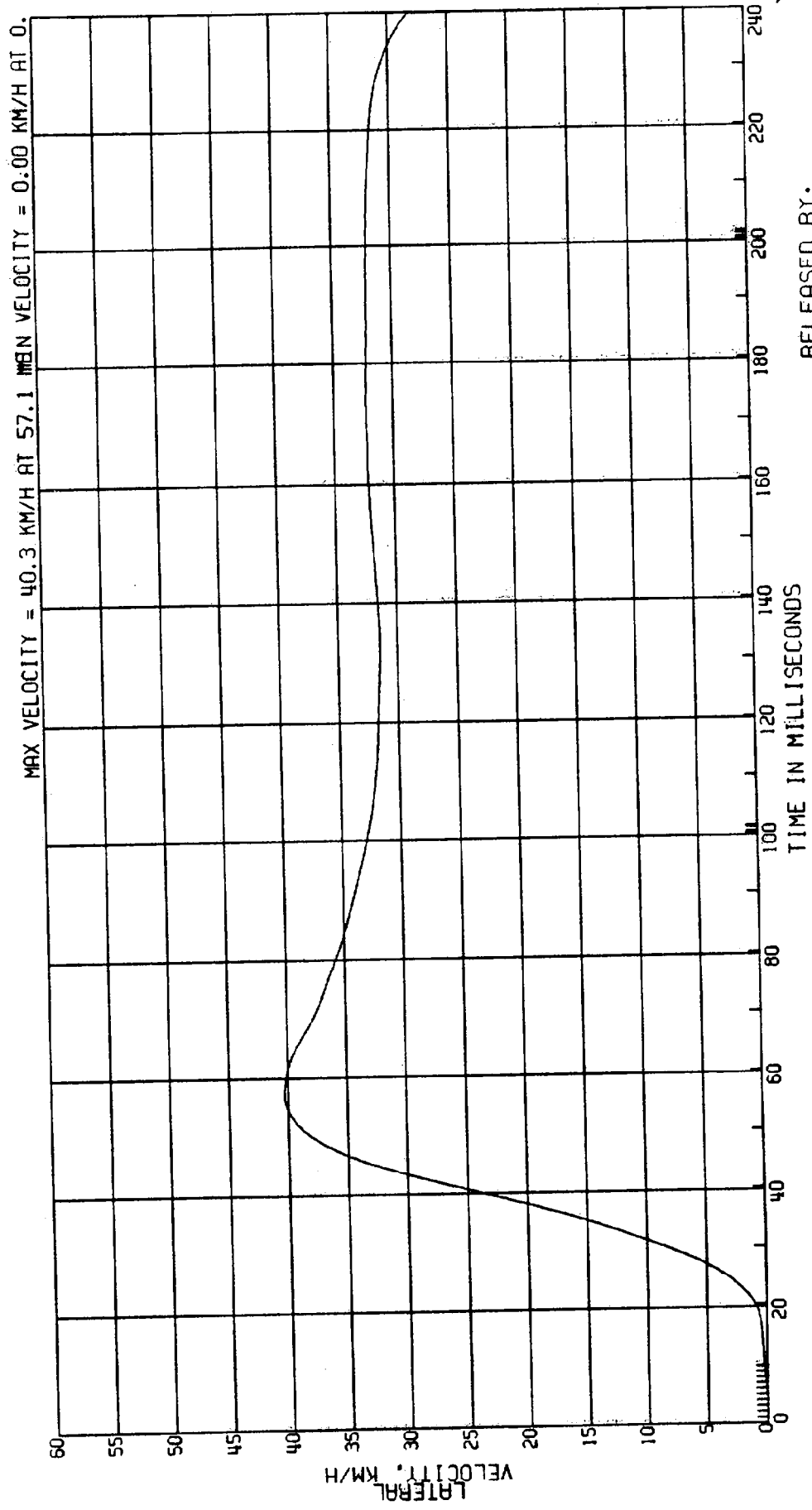
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 115  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER LOWER SPINE ACCEL.  
ELEC DATA, SAE CLASS 180 TEST DATE:03-20-90



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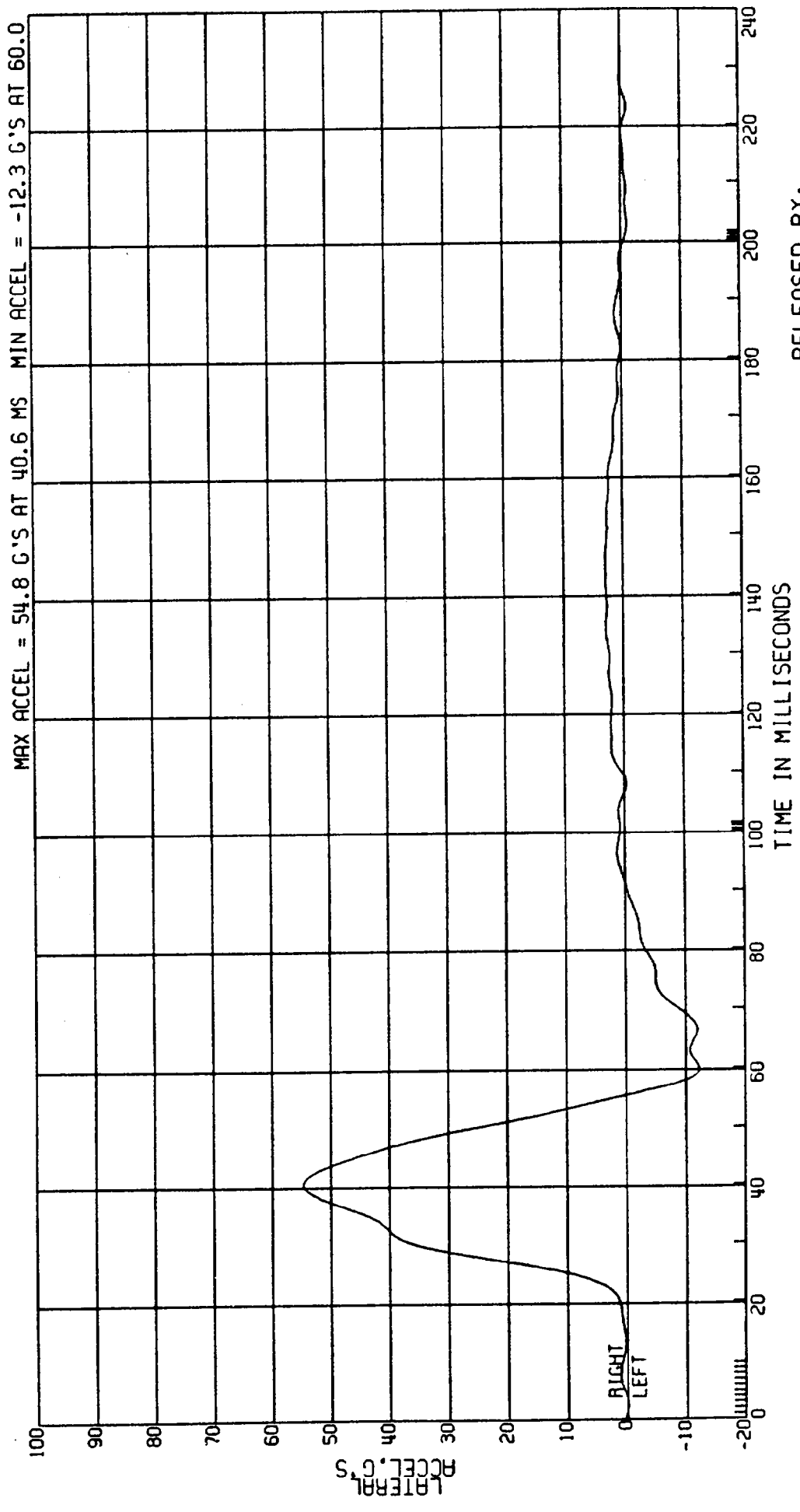
) )  
E80098 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 1/6  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION)



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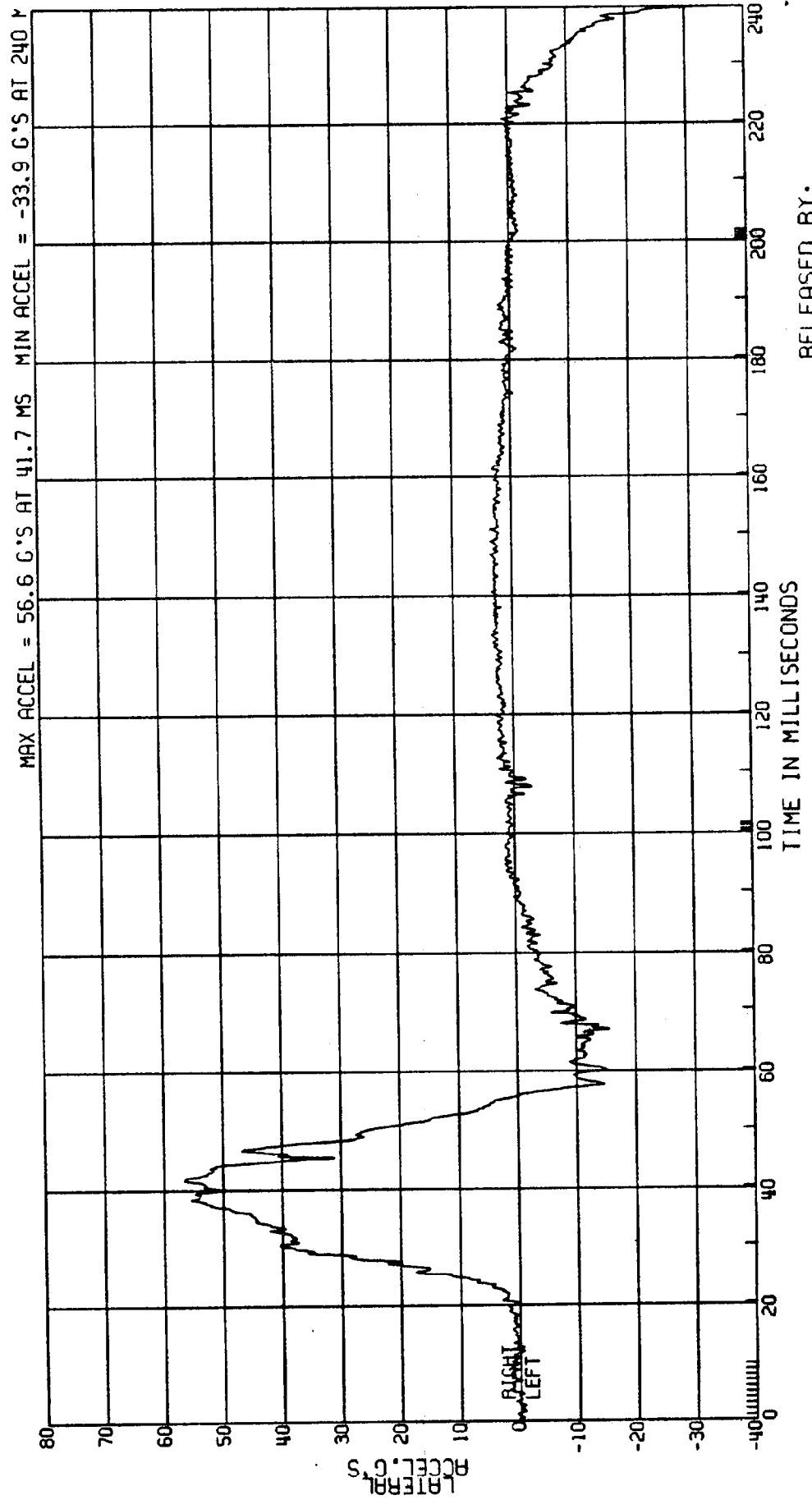
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 117  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER T1 ACCEL.  
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH TEST DATE:03-20-90



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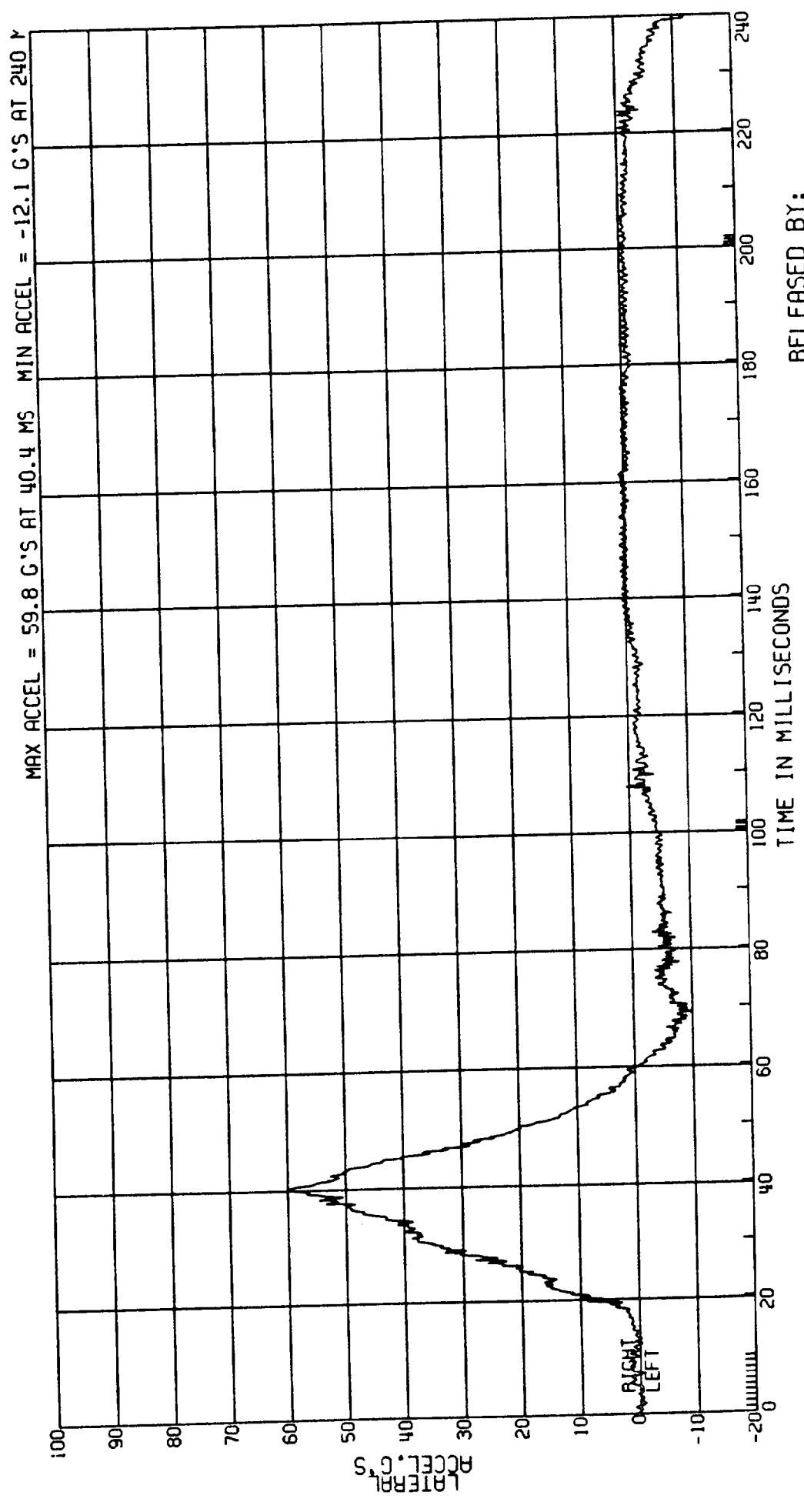
C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 118  
 3868-905 MVMA 9B 2AF69  
 CPE ELEC DATA, SAE CLASS 1000  
 DRIVER T1 ACCEL.  
 ATD TYPE: B10SID  
 TEST DATE: 03-20-90



RELEASED BY:  
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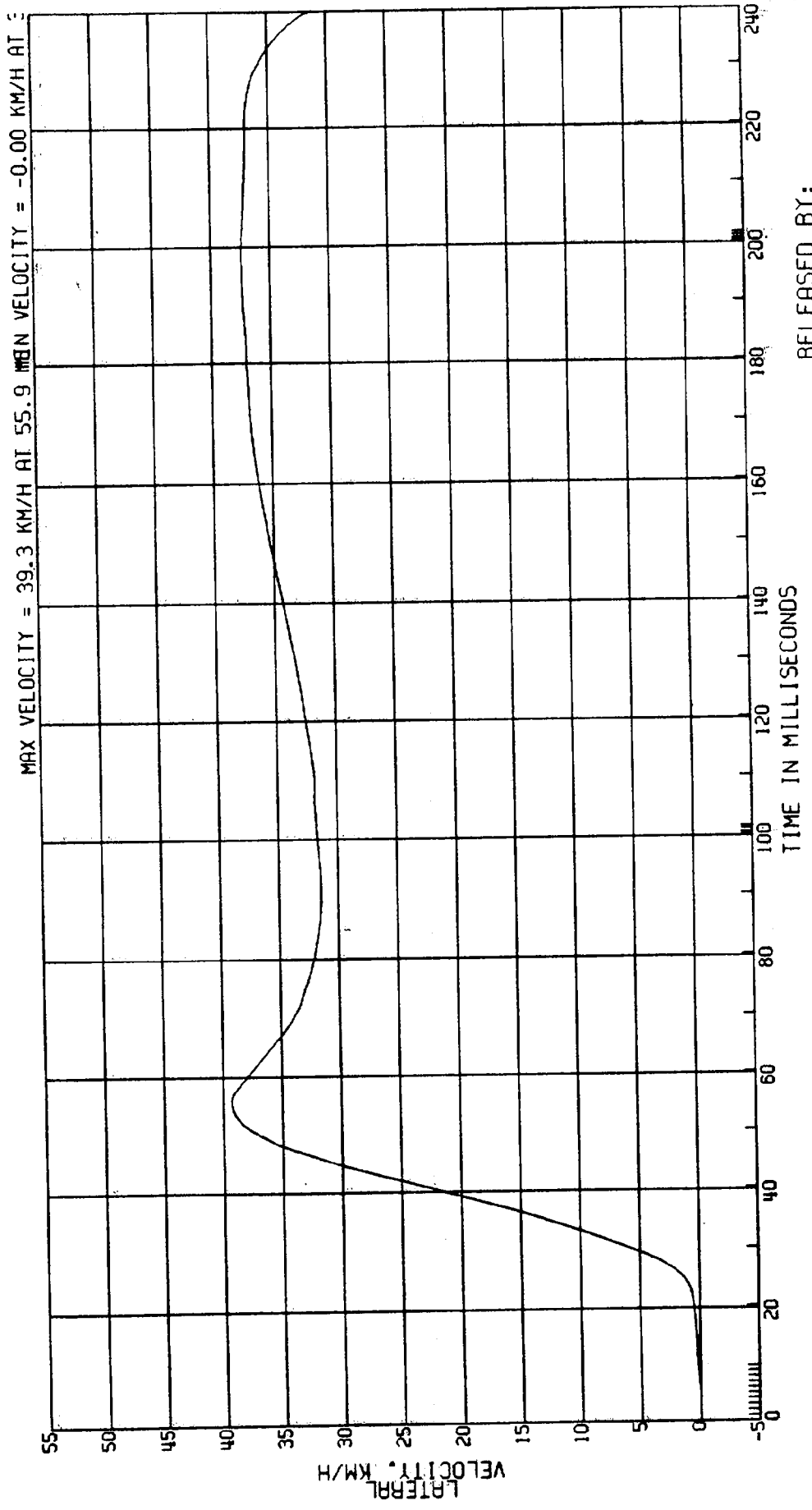
C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 119  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER T12 ACCEL. TEST DATE:03-20-90

ELEC DATA, SAE CLASS 1000



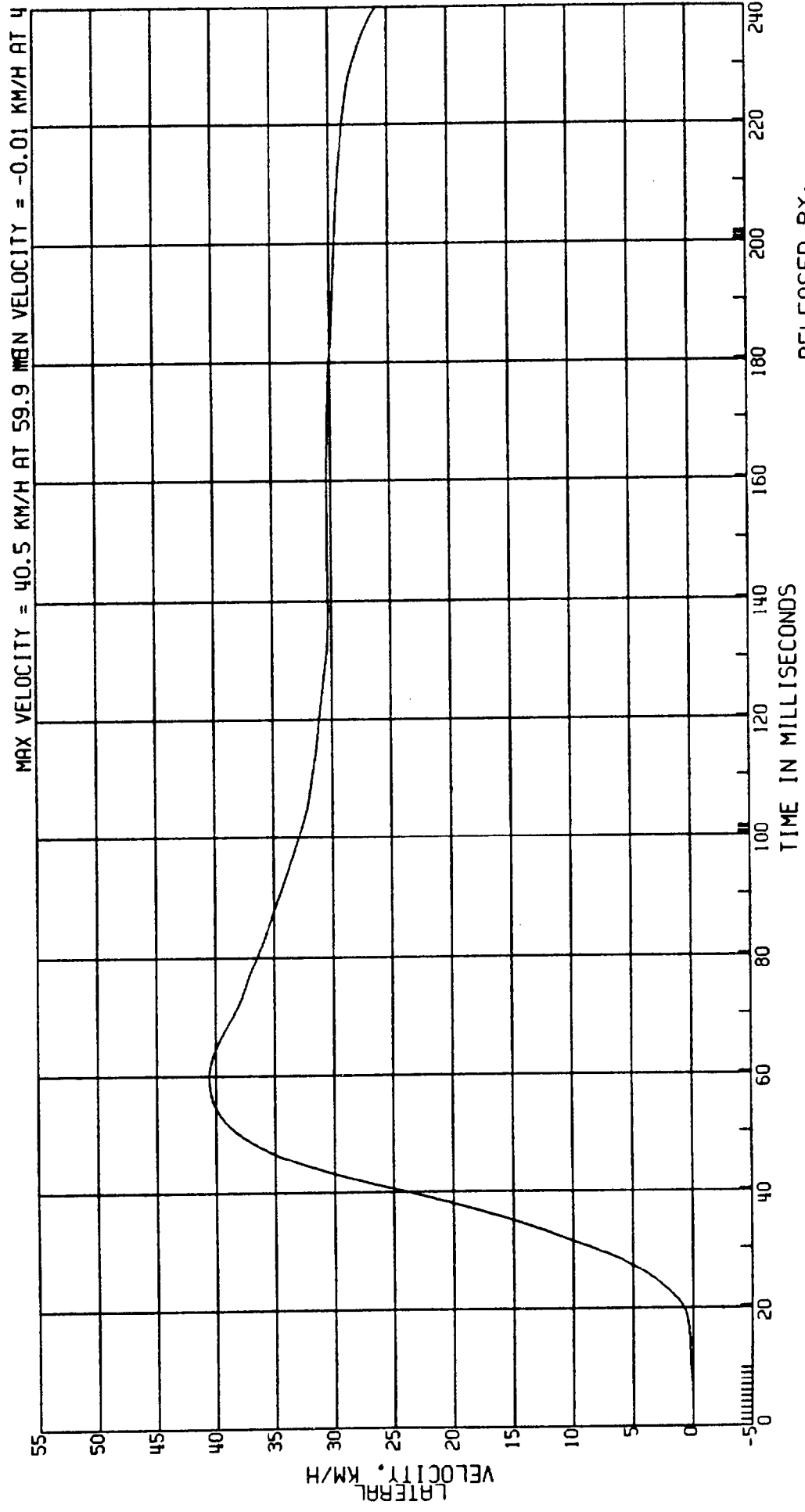
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47 PROCESSED 4 MY 90 12:11

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 1aδ  
3868-905 MVMA 9B 2AF69 AID TYPE: BIOSID  
CPE MVMR 9B 2AF69 TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 180 COMPUTED T1 VELOCITY  
(1ST INTEGRAL DRIVER ACCELERATION)



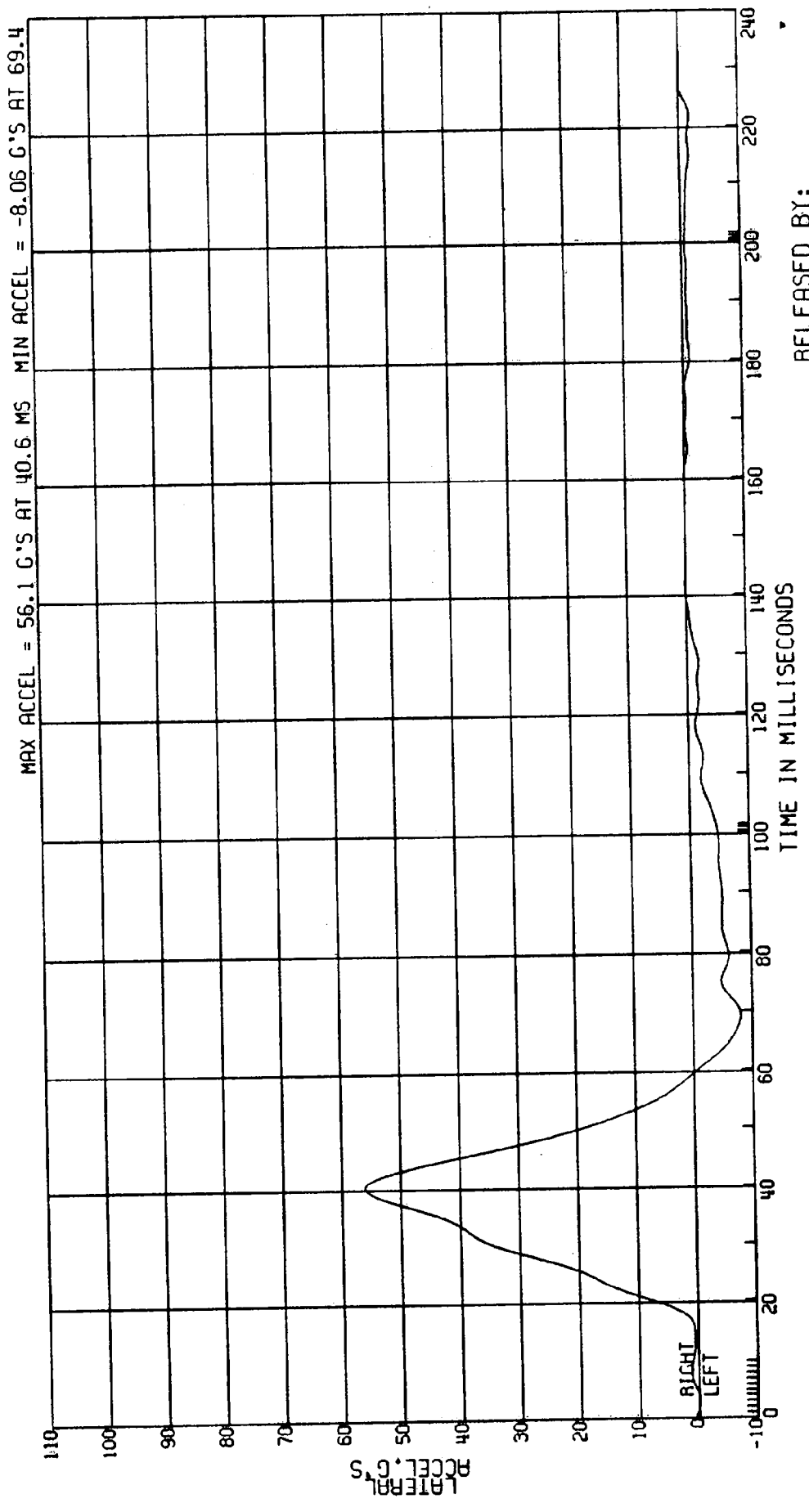
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46 PROCESSED 4 MY 90 12:11

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 12-1  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 180 COMPUTED T12 VELOCITY  
 (1ST INTEGRAL DRIVER ACCELERATION)



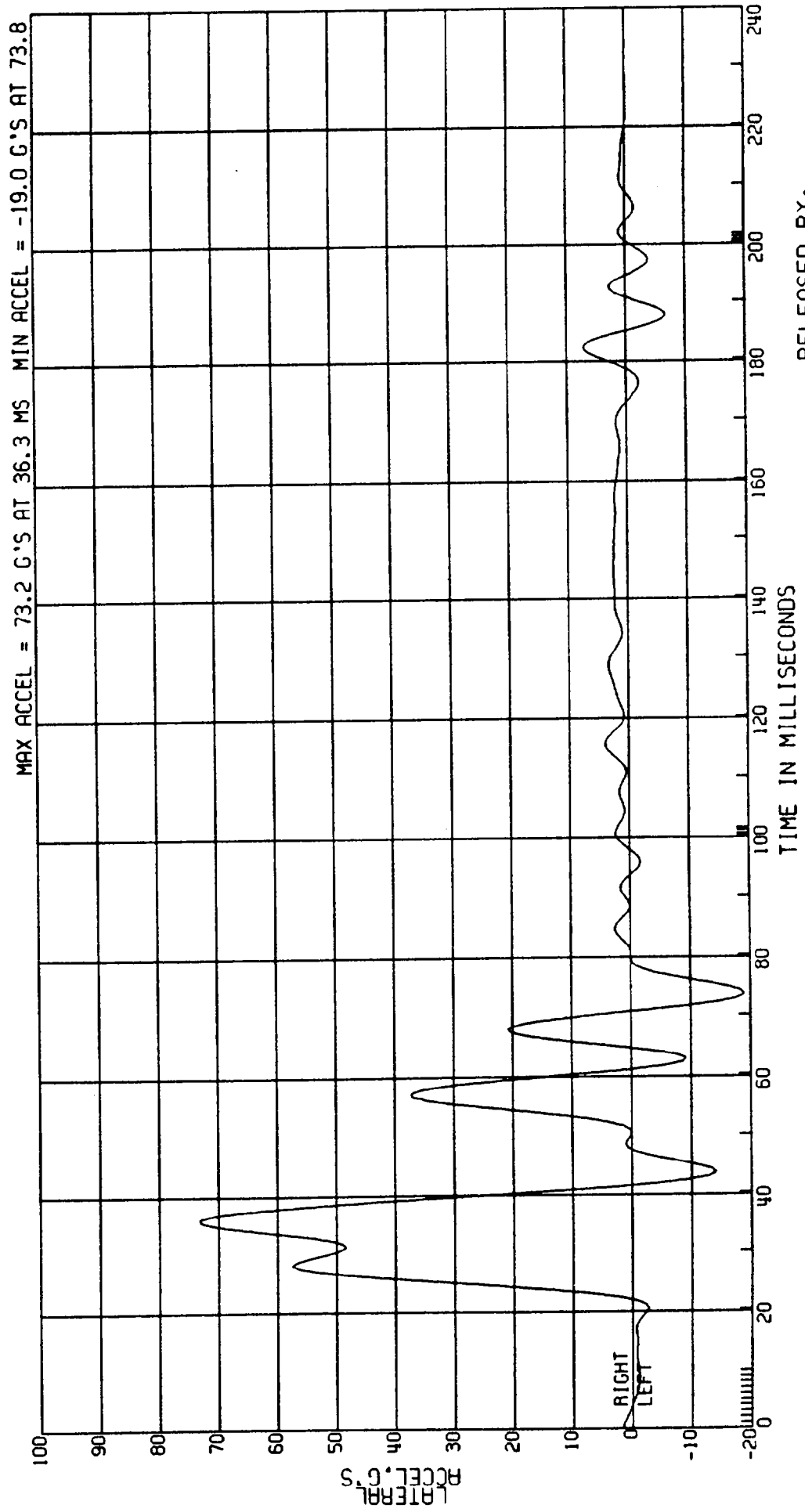
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE (22)  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER T12 ACCEL. TEST DATE:03-20-90  
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



RELEASED BY:  
 48 PROCESSED 4 MT 90 12:11

C80098 L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 123  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER SHOULDER ACCEL.  
ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH TEST DATE: 03-20-90

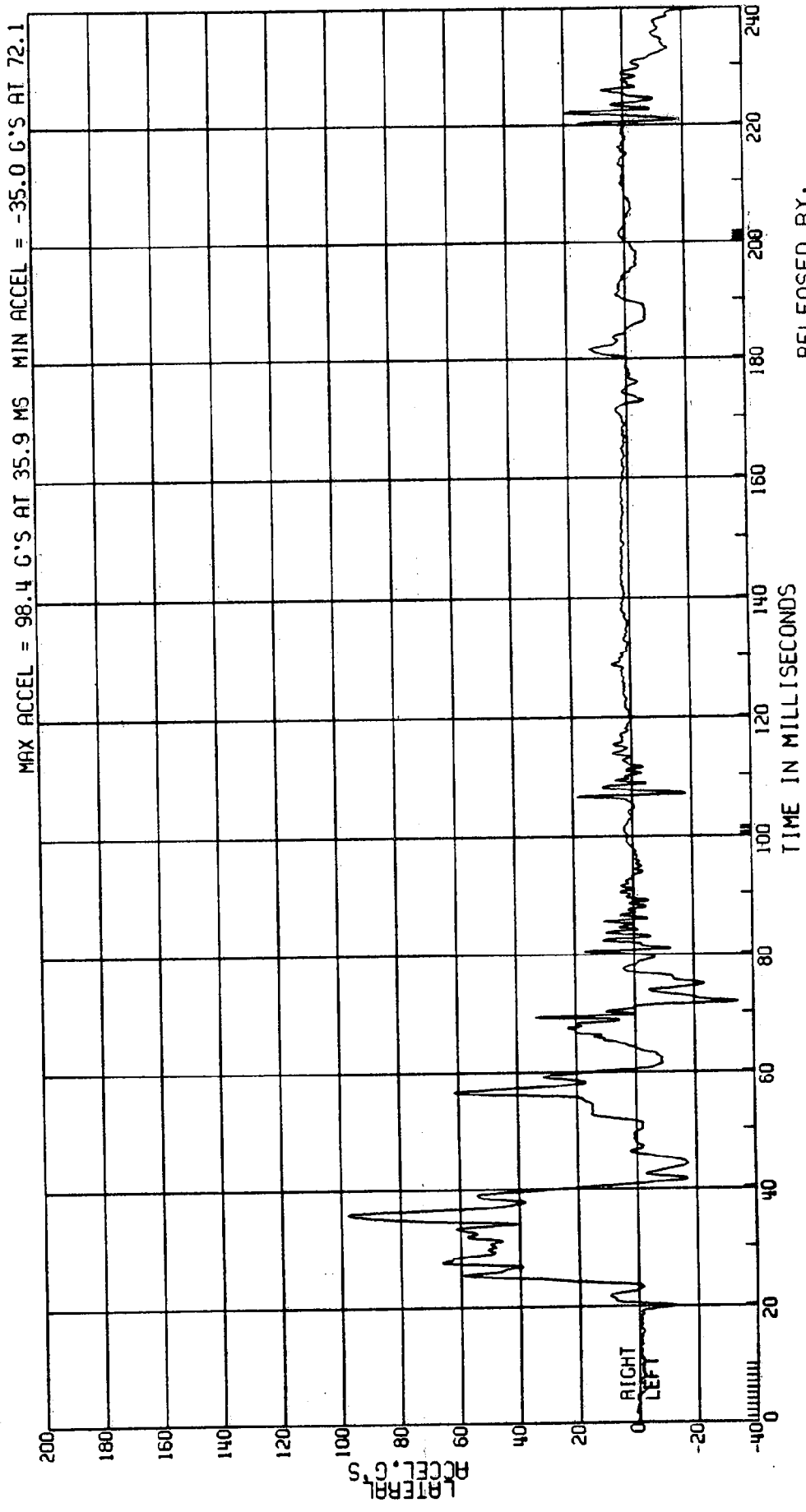


RELEASED BY:  
51 PROCESSED 4 MY 90 12:12

MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 124  
AID TYPE: BIOSID  
TEST DATE: 03-20-90

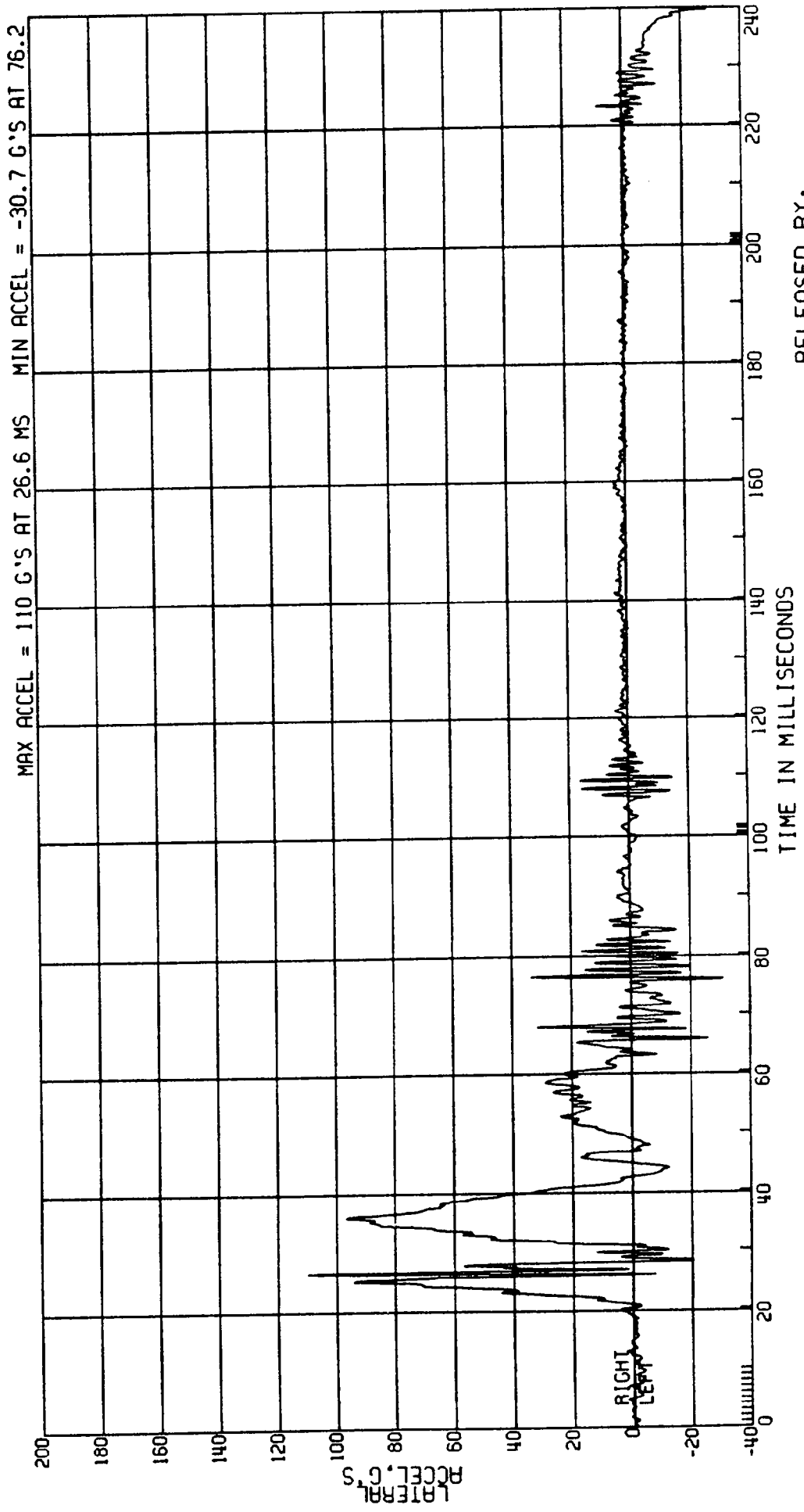
DRIVER SHOULDER ACCEL.

C8009B L. SIDE IMPACT- 27 DEG  
3868-905 MVMA 9B 2AF69  
CPE ELEC DATA, SAE CLASS 600



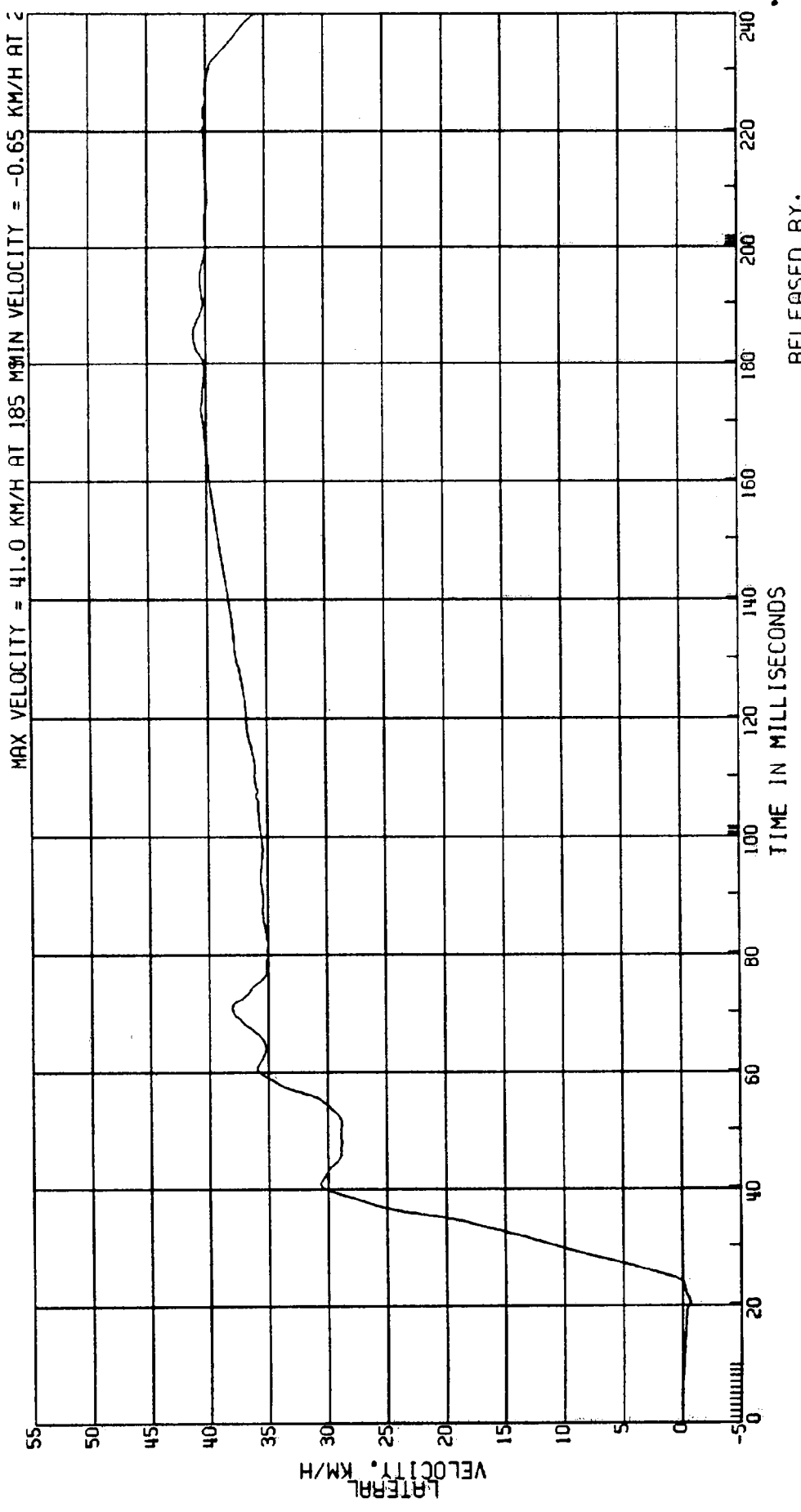
RELEASED BY:  
50 PROCESSED 4 MY 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 125  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER FIRST THORACIC RIB ACCEL. TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 1000



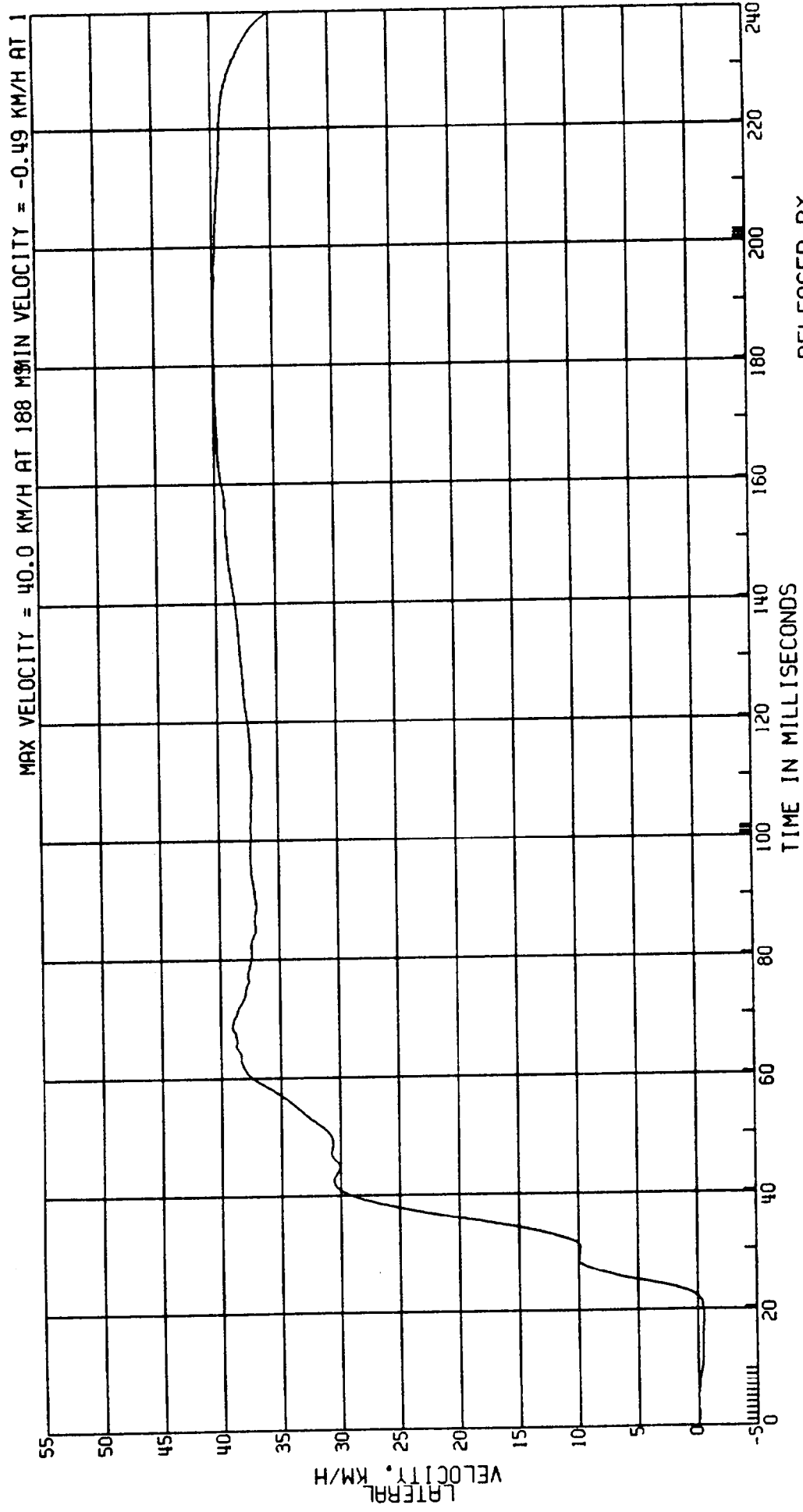
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53 PROCESSED 4 MY 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 1a6  
 3868-905 ATD TYPE: B10SID  
 CPE MVMA 9B 2AF69 TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION)  
 COMPUTED SHOULDER VELOCITY



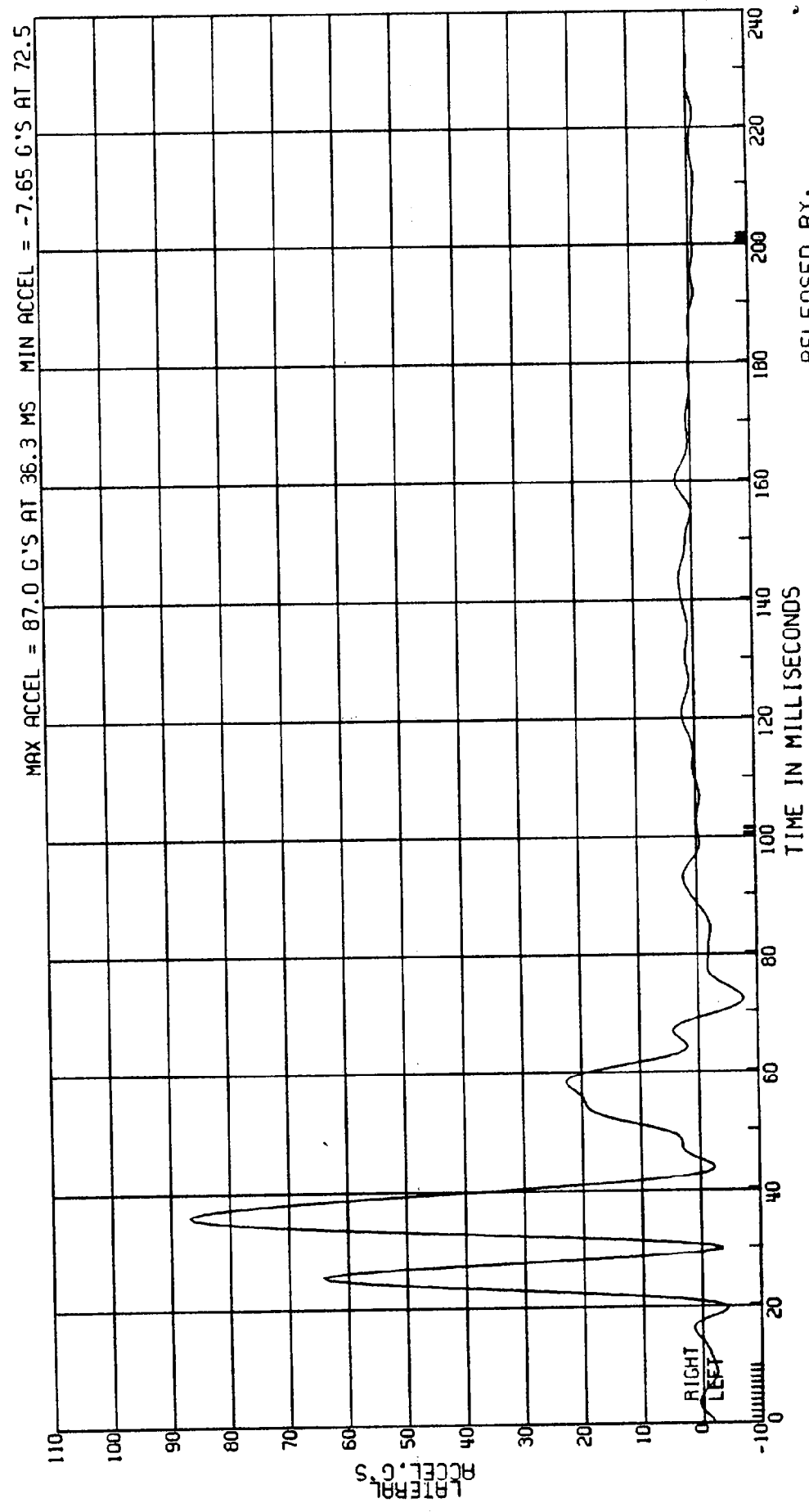
RELEASED BY:  
 52 PROCESSED 4 MT 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 127  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 180 COMPUTED 1ST THORACIC RIB VELOCITY  
 (1ST INTEGRAL DRIVER ACCELERATION)



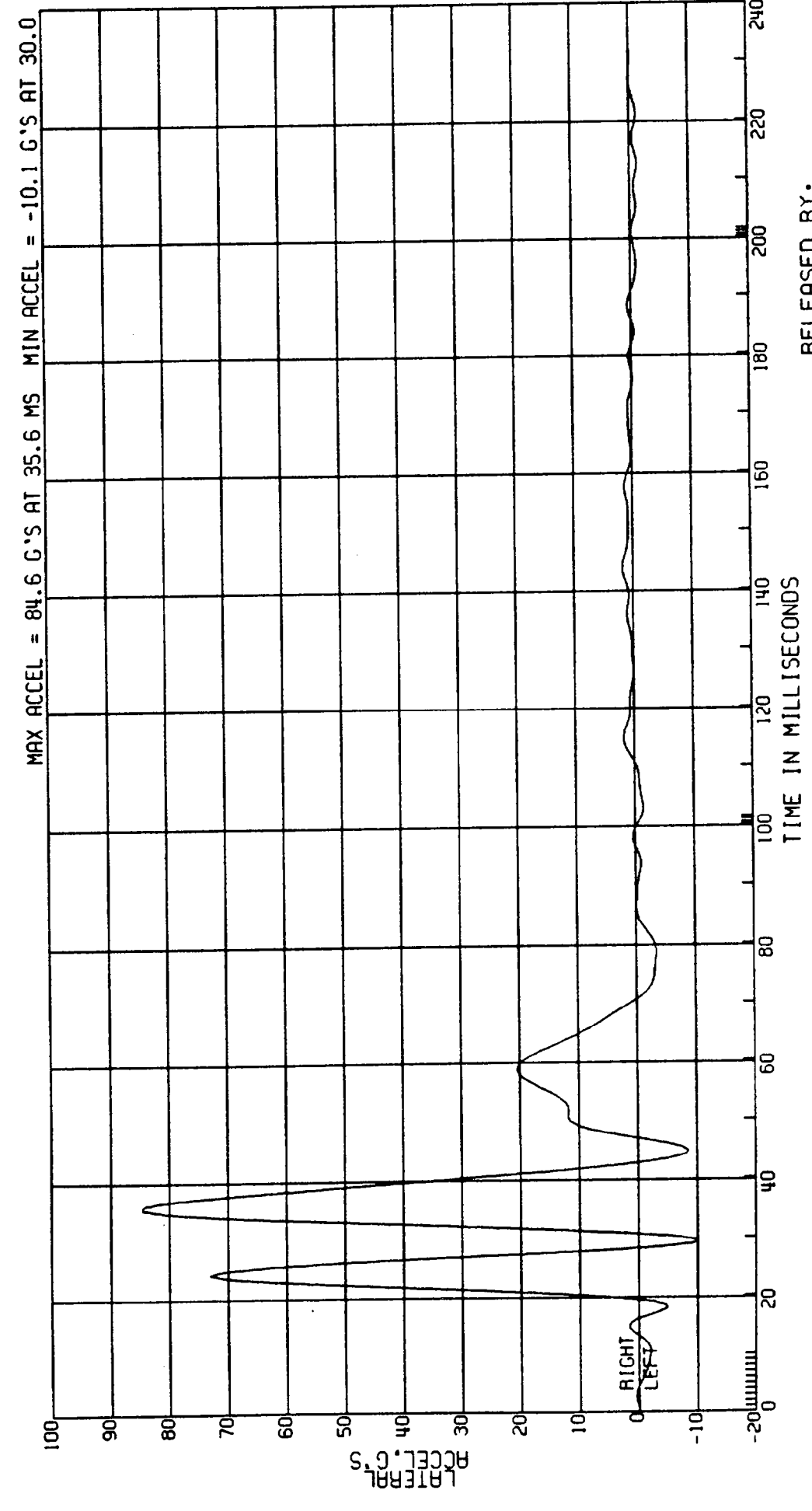
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C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 1a8  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER FIRST THORACIC RIB ACCEL.  
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH TEST DATE:03-20-90



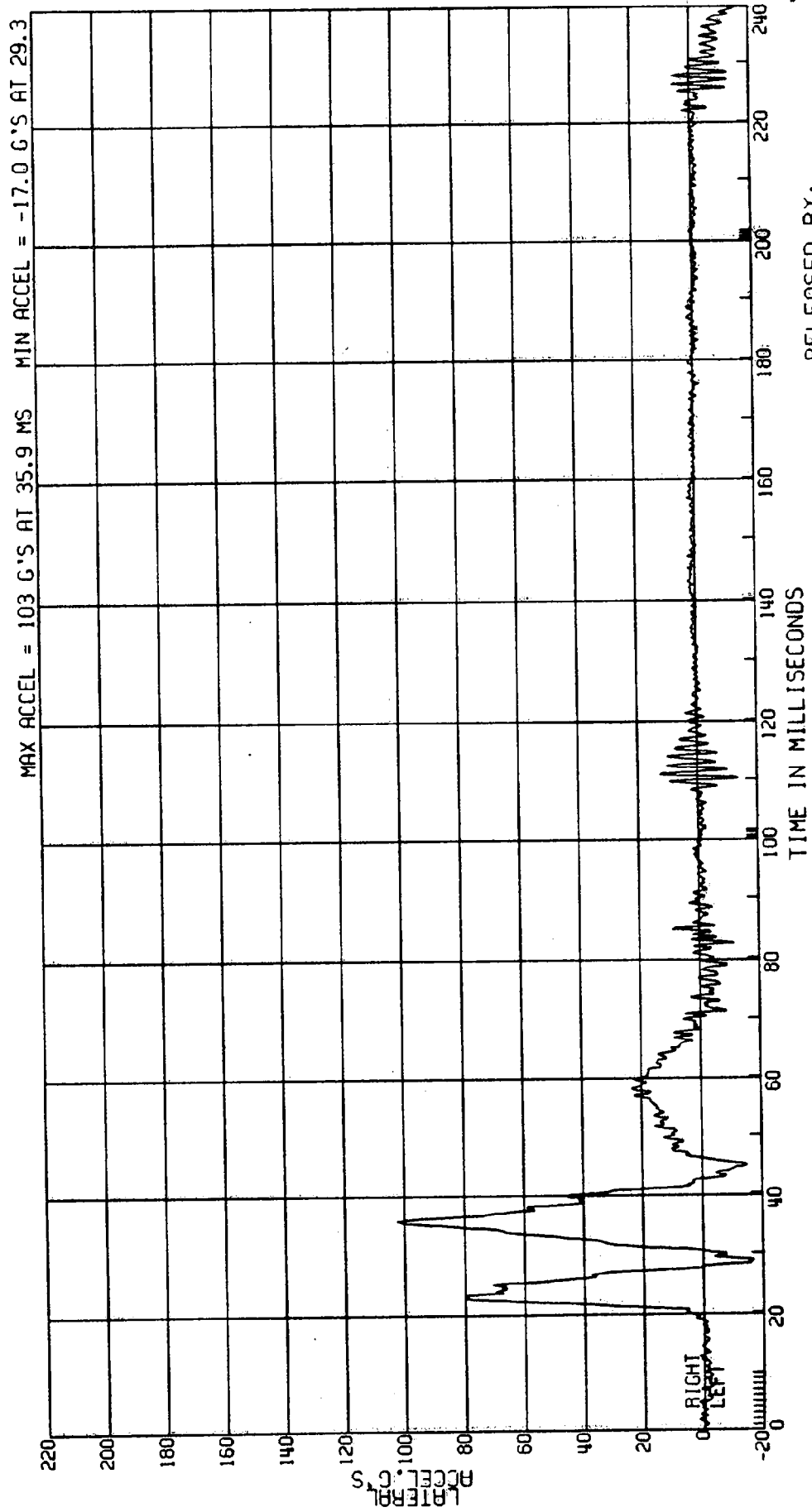
RELEASED BY:  
 54 PROCESSED 4 MT 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 129  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER SECOND THORACIC RIB ACCEL. TEST DATE:03-20-90  
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



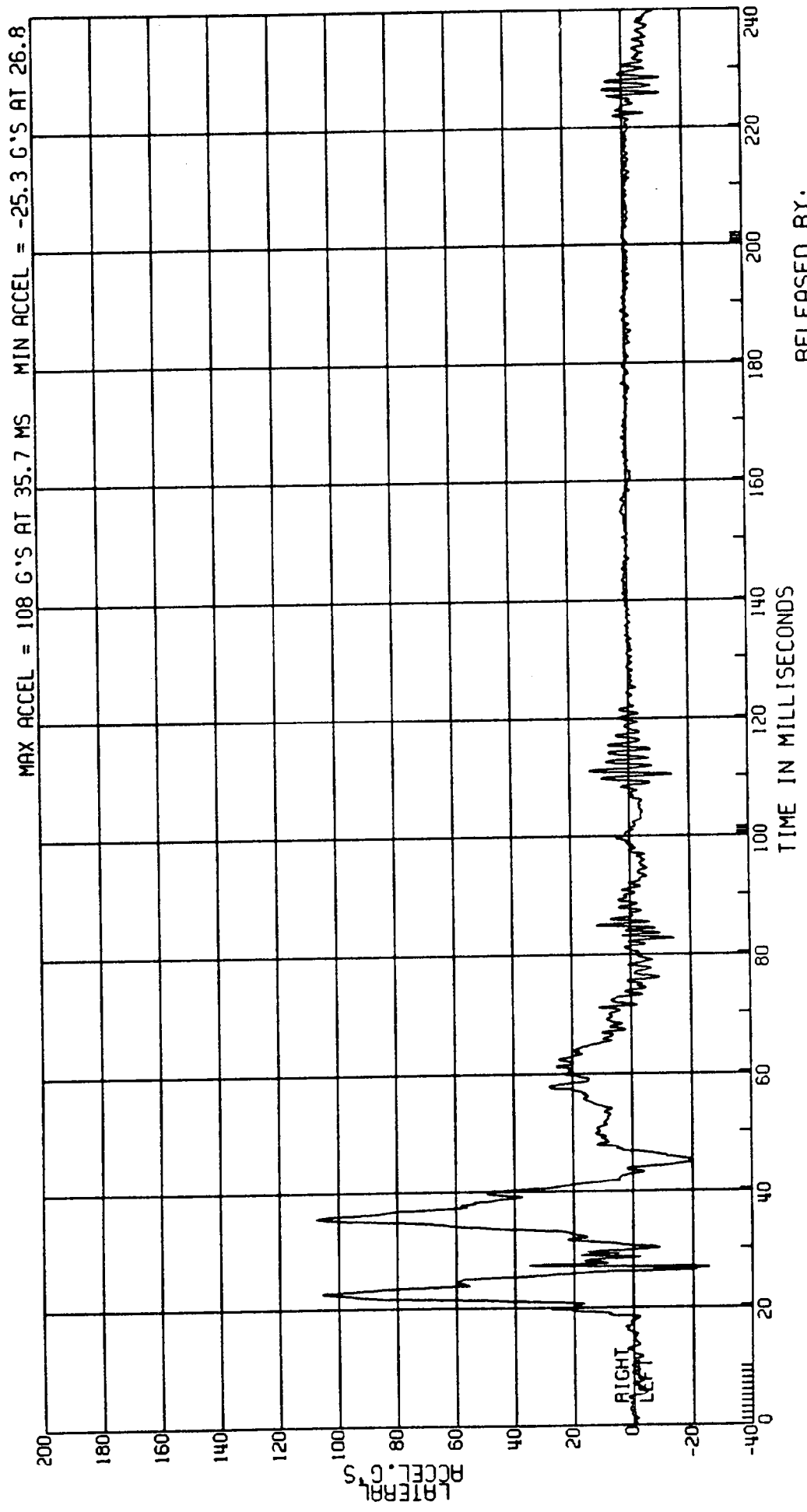
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 57 PROCESSED 4 MY 90 12:12

C80098 L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /30  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 98 2AF69 DRIVER SECOND THORACIC RIB ACCEL. TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 1000



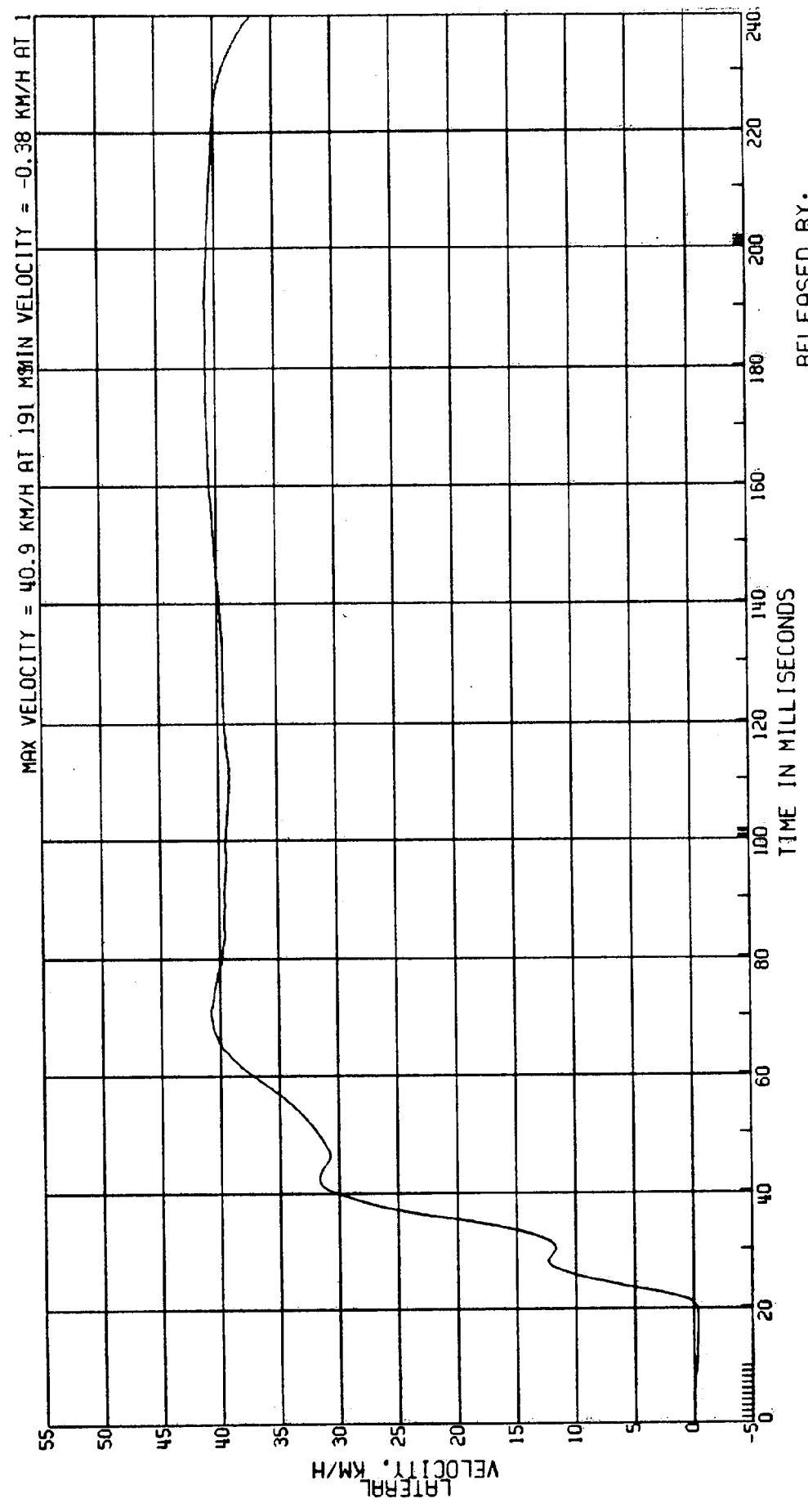
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56 PROCESSED 4 MY 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /3/  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER THIRD THORACIC RIB ACCEL.  
ELEC DATA, SAE CLASS 1000 TEST DATE:03-20-90



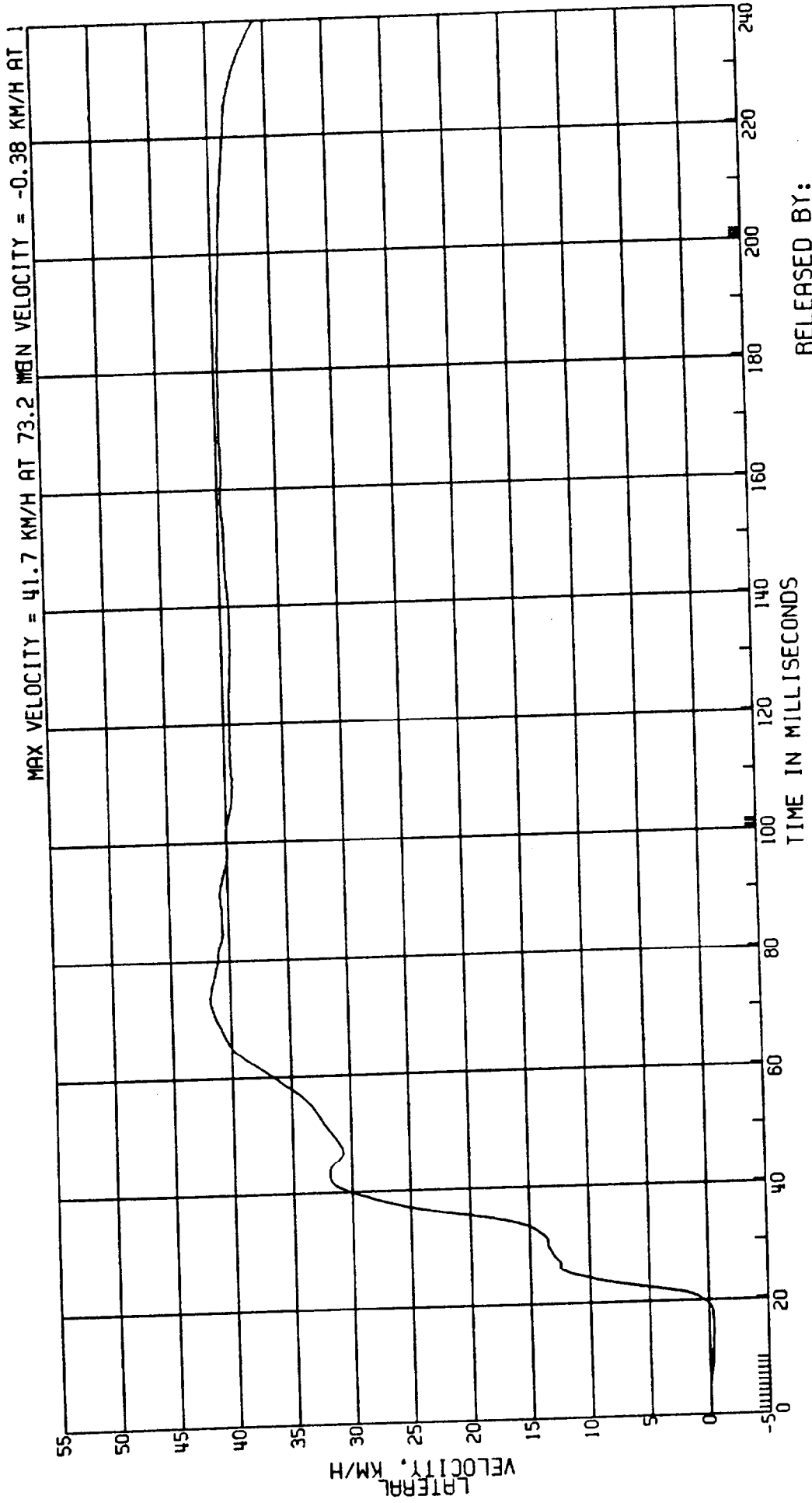
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59 PROCESSED 4 MY 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE /32  
 3868-905 AID TYPE: BIOSID  
 CPE MVMA 9B 2AF69 TEST DATE: 03-20-90  
 ELEC DATA. SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION)  
 COMPUTED 2ND THORACIC RIB VELOCITY



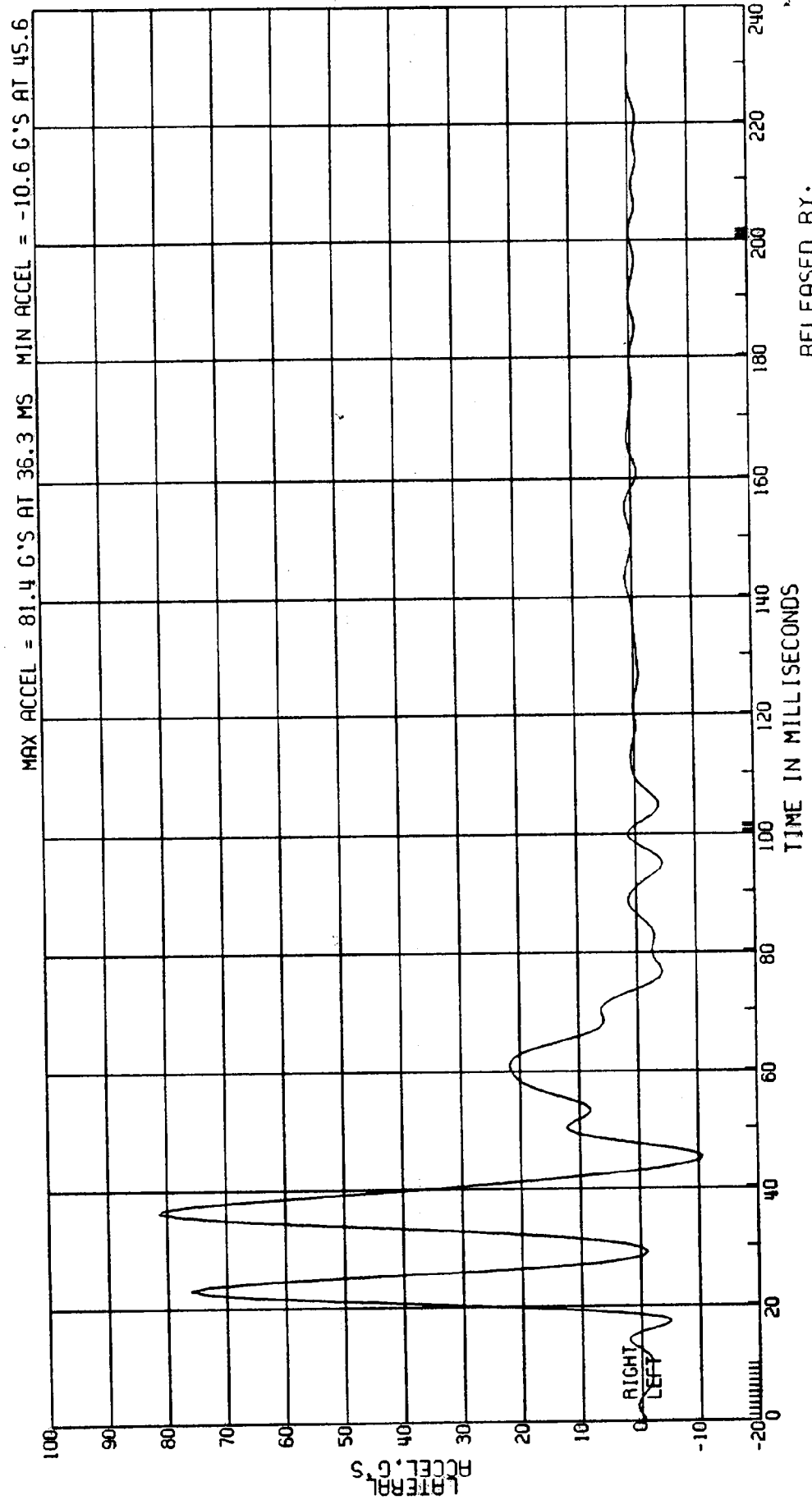
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 58 PROCESSED 4 MY 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 133  
3868-905 CPE MVMA 9B 2AF69 ATD TYPE: BIOSID  
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION) TEST DATE: 03-20-90



RELEASED BY:  
61 PROCESSED 4 MY 90 12:12

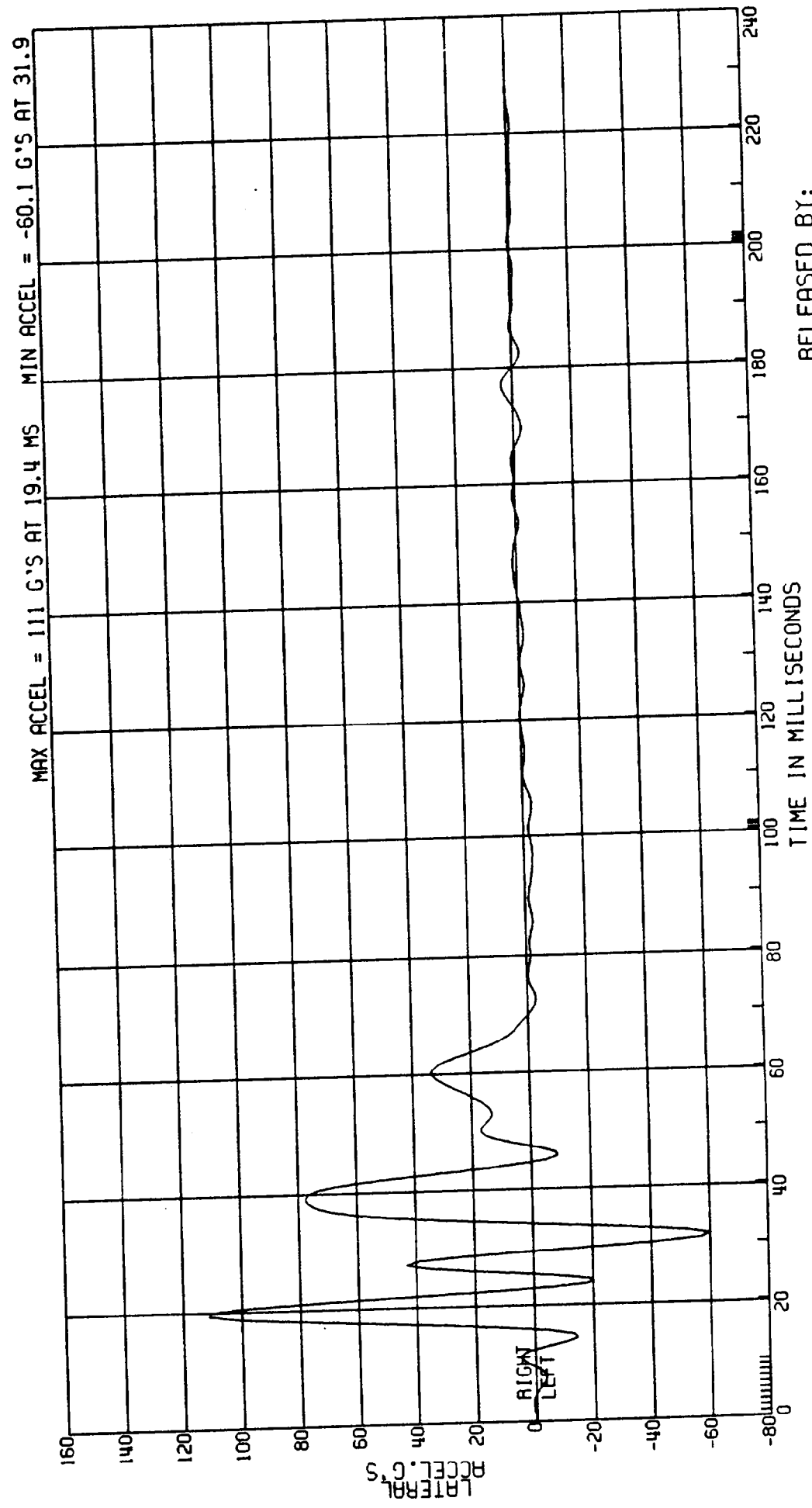
C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 134  
 3868-905 MVMA 9B 2AF69 ATD TYPE: BIOSID  
 CPE DRIVER THIRD THORACIC RIB ACCEL. TEST DATE:03-20-90  
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



RELEASED BY:  
 60 PROCESSED 4 MY 90 12:12

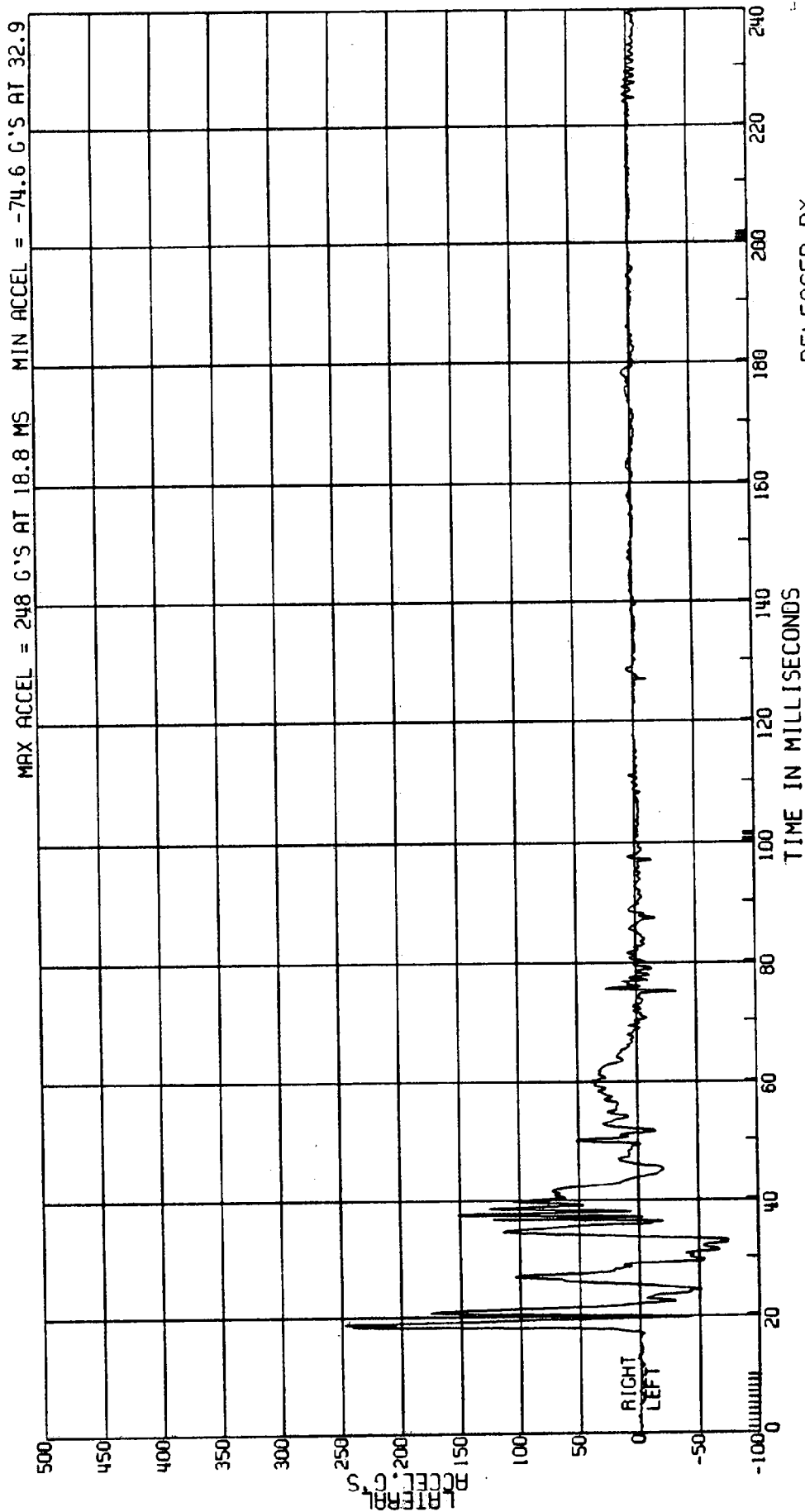
C8009B L. SIDE IMPACT- 27 DEG  
3868-905 MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /35  
CPE MVMA 9B 2AF69 ATO TYPE: BIOSID  
ELEC DATA, NHTSA FIR FILTER DRIVER FIRST ABDOMINAL RIB ACCEL. TEST DATE:03-20-90

F.I.R. FILTER, CLASS 300 BUTTERWORTH



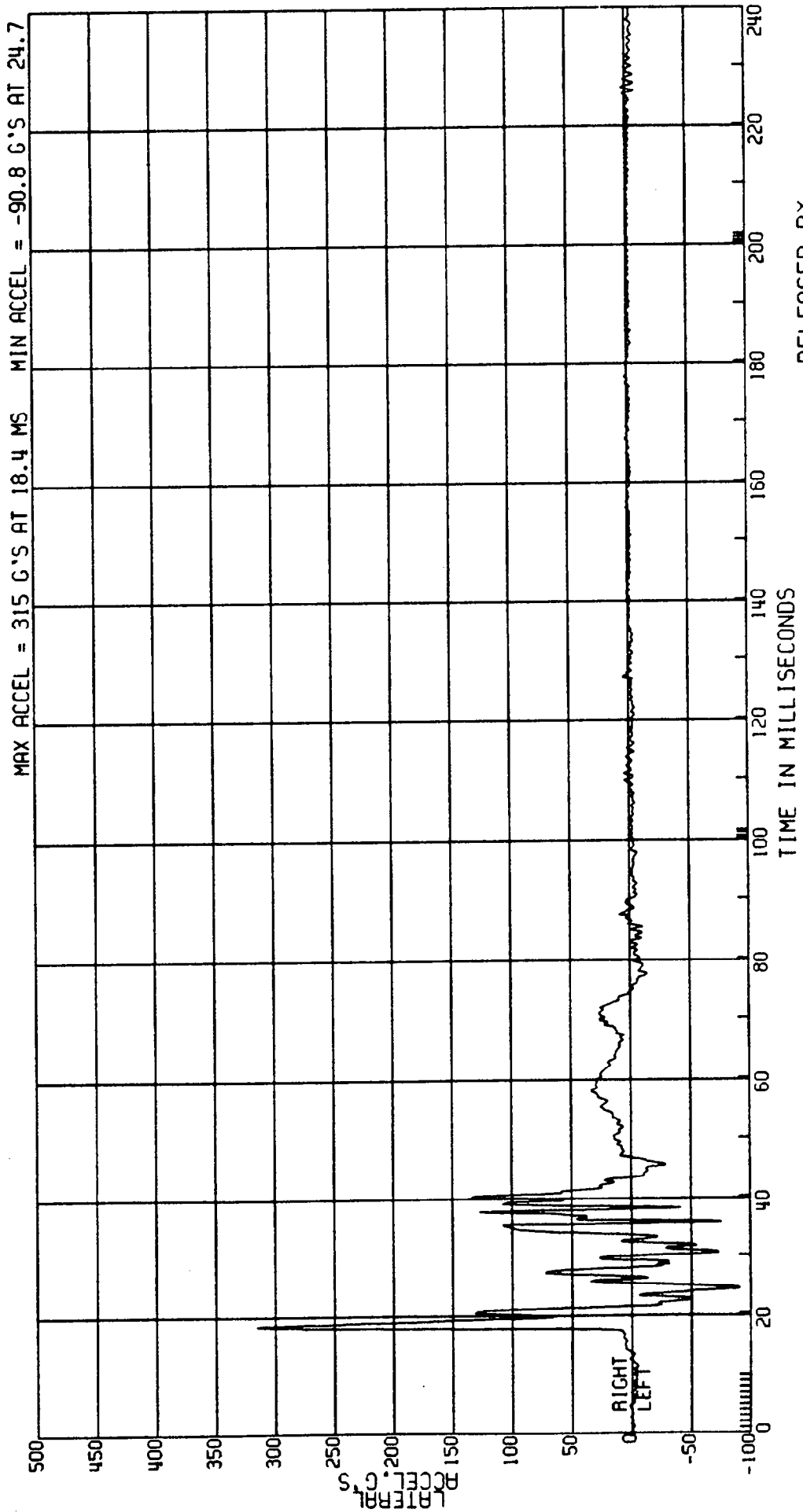
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63 PROCESSED 4 MY 90 12:12

C80098 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE /36  
 3868-905 ATD TYPE: BIOSID  
 EPE MVMA 9B 2AF69 DRIVER FIRST ABDOMINAL RIB ACCEL.  
 ELEC DATA. SAE CLASS 1000 TEST DATE: 03-20-90



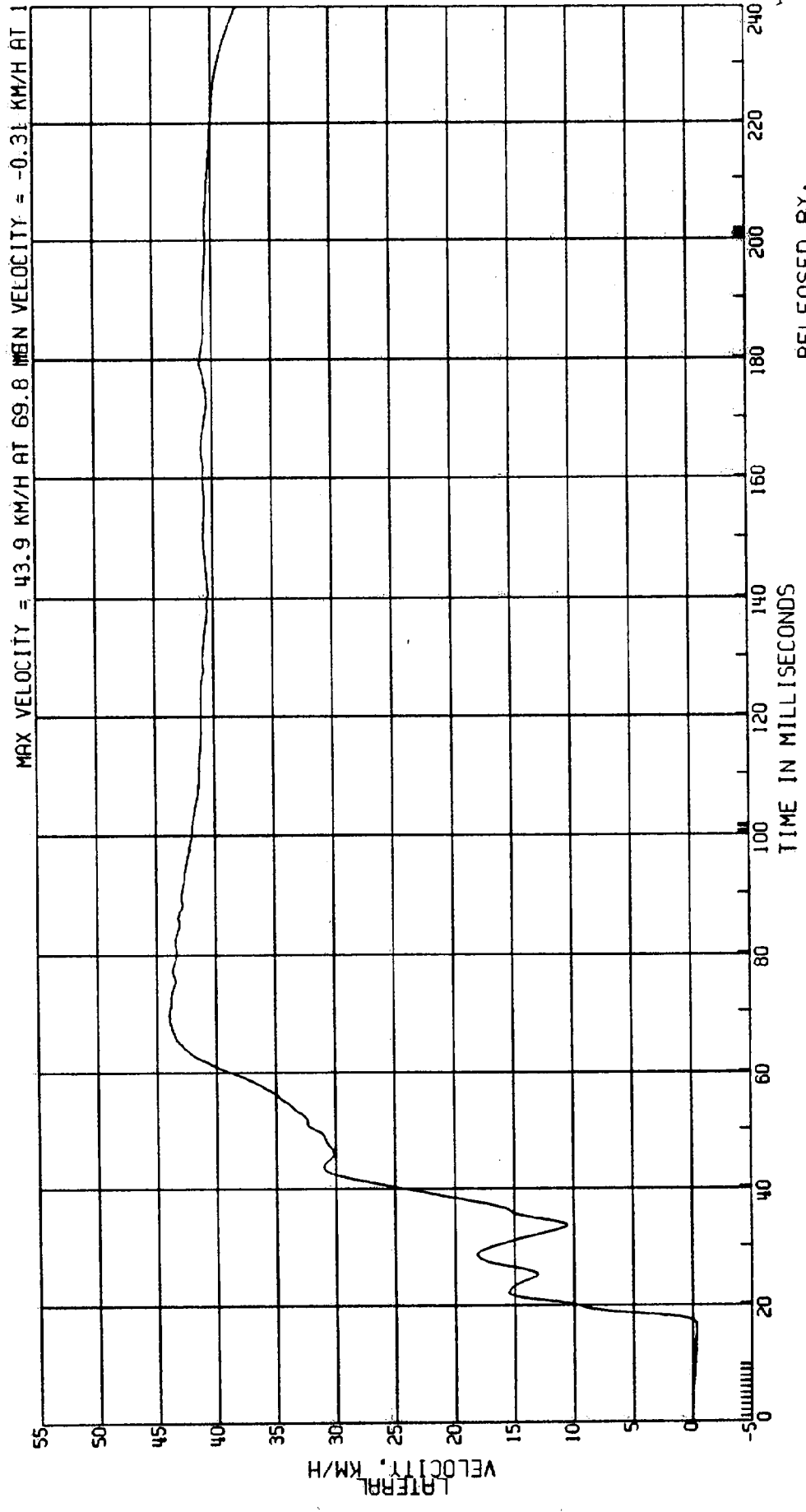
RELEASED BY:  
 62 PROCESSED 4 MY 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 137  
3868-905  
CPE MVMA 9B 2AF69 DRIVER SECOND ABDOMINAL RIB ACCEL.  
ELEC DATA, SAE CLASS 1000 TEST DATE:03-20-90



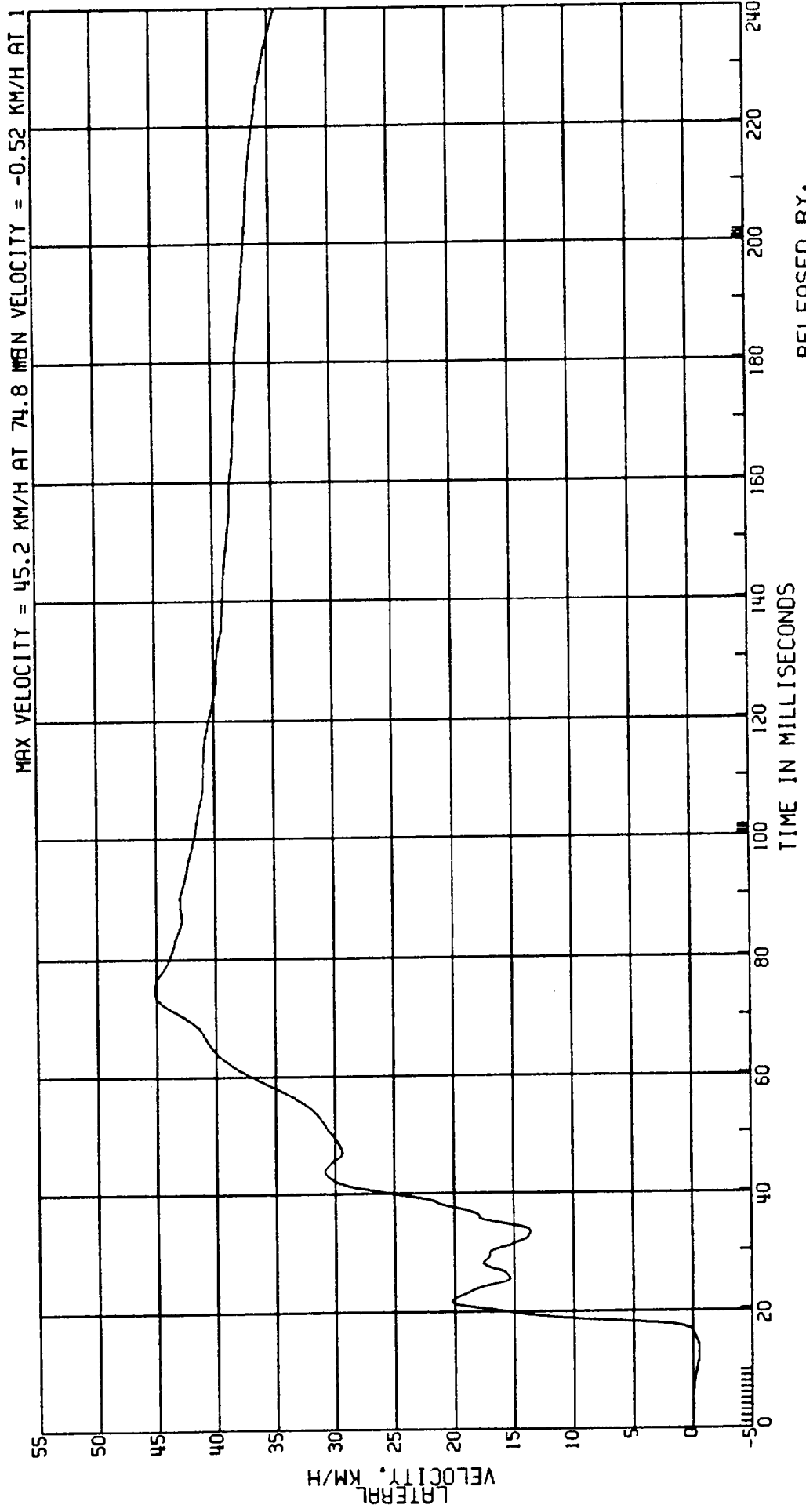
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65 PROCESSED 4 HY 90 12:12

C80098 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 138  
 3868-905 AID TYPE: BIOSID  
 CPE MVMA 9B 2AF69 COMPUTED 1ST ABDOMINAL RIB VELOCITY  
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION) TEST DATE:03-20-90



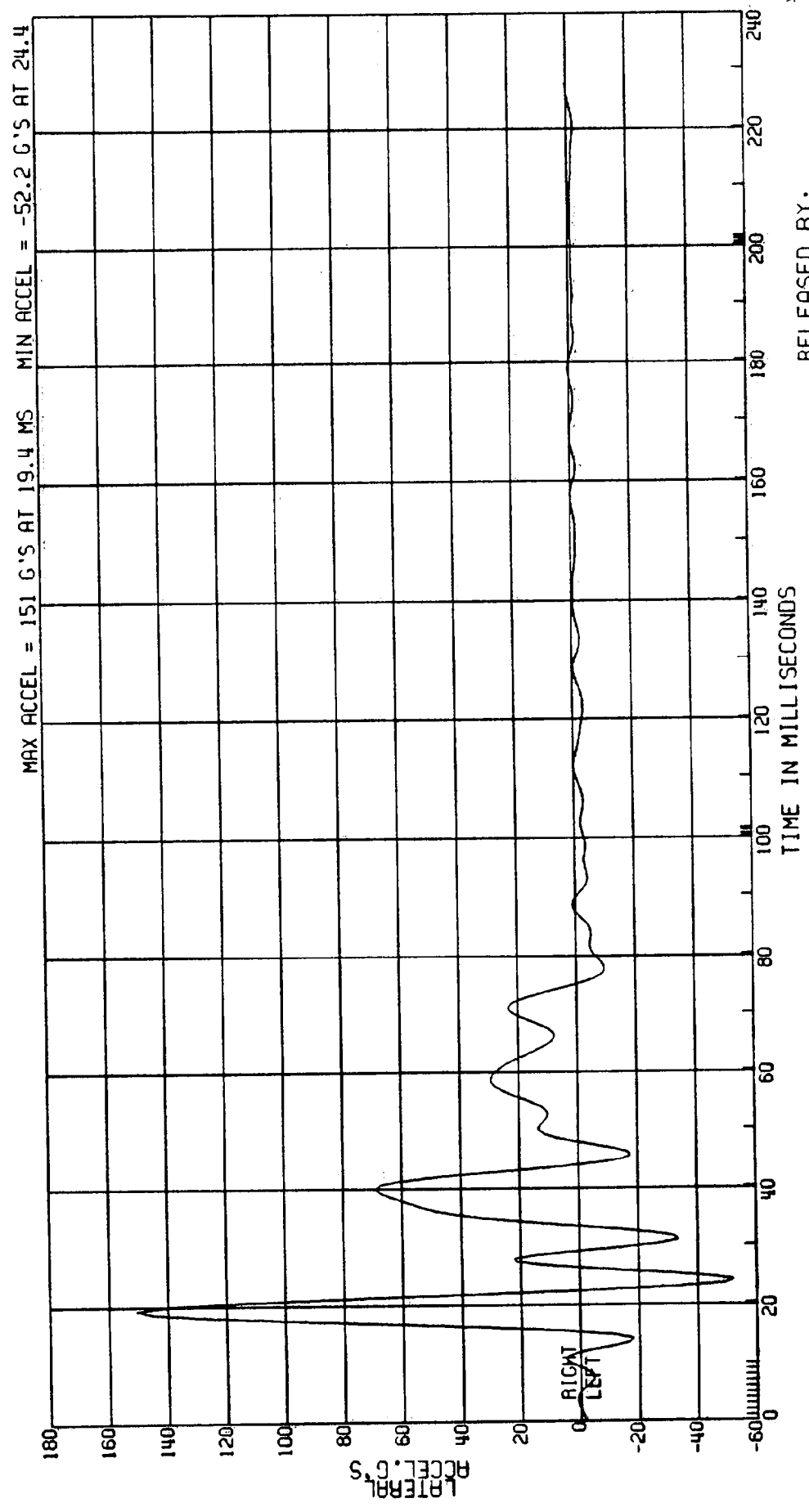
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 64 PROCESSED 4/11/90 12:12

C80098 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /39  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 COMPUTED 2ND ABDOMINAL RIB VELOCITY TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION)



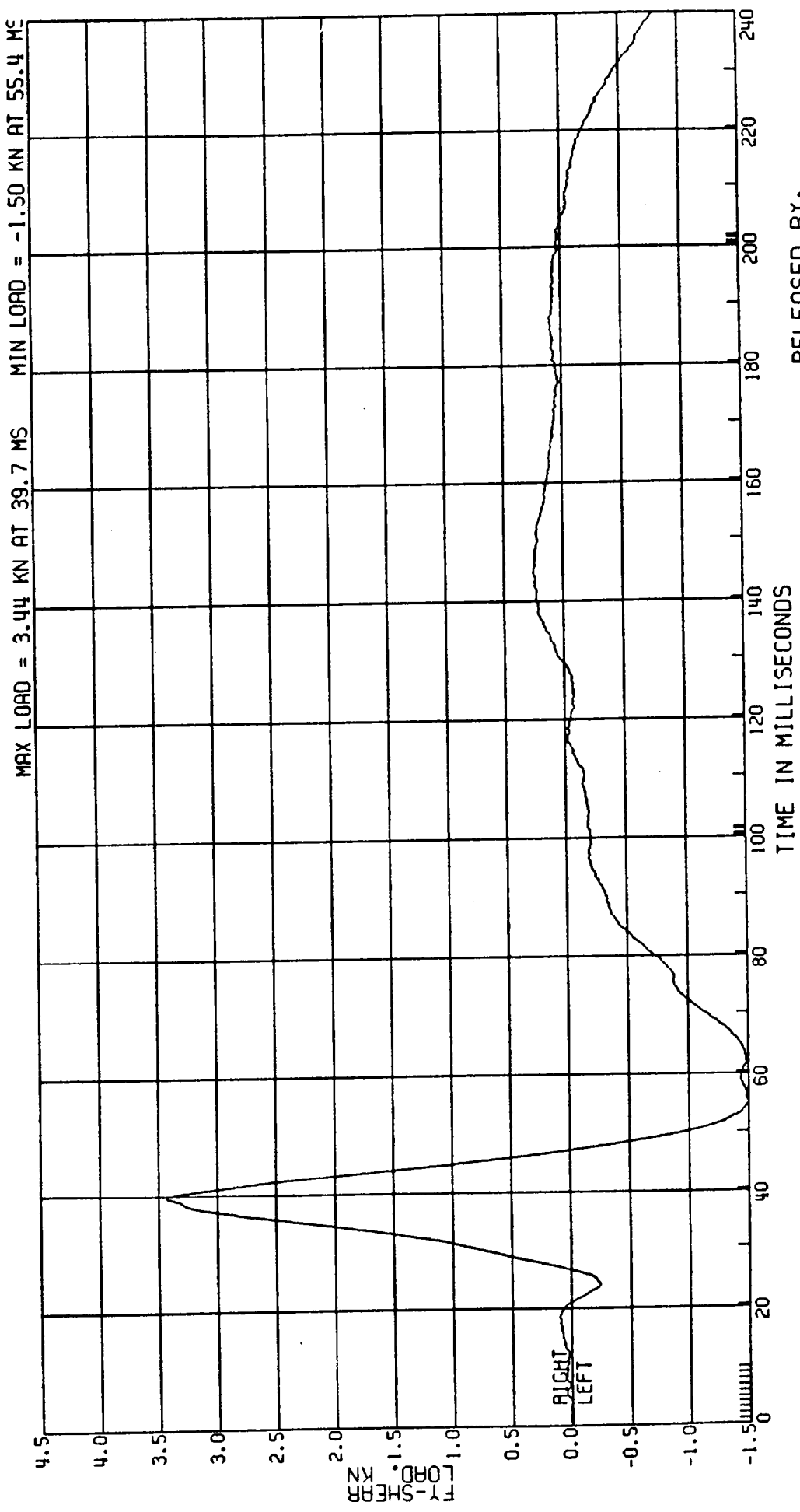
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67 PROCESSED 4 MY 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 140  
 3868-905 MVMA 9B 2AF69 DRIVER SECOND ABDOMINAL RIB ACCEL.  
 CPE ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH  
 TEST DATE:03-20-90



RELEASED BY:  
 66 PROCESSED 4 MT 90 12:12

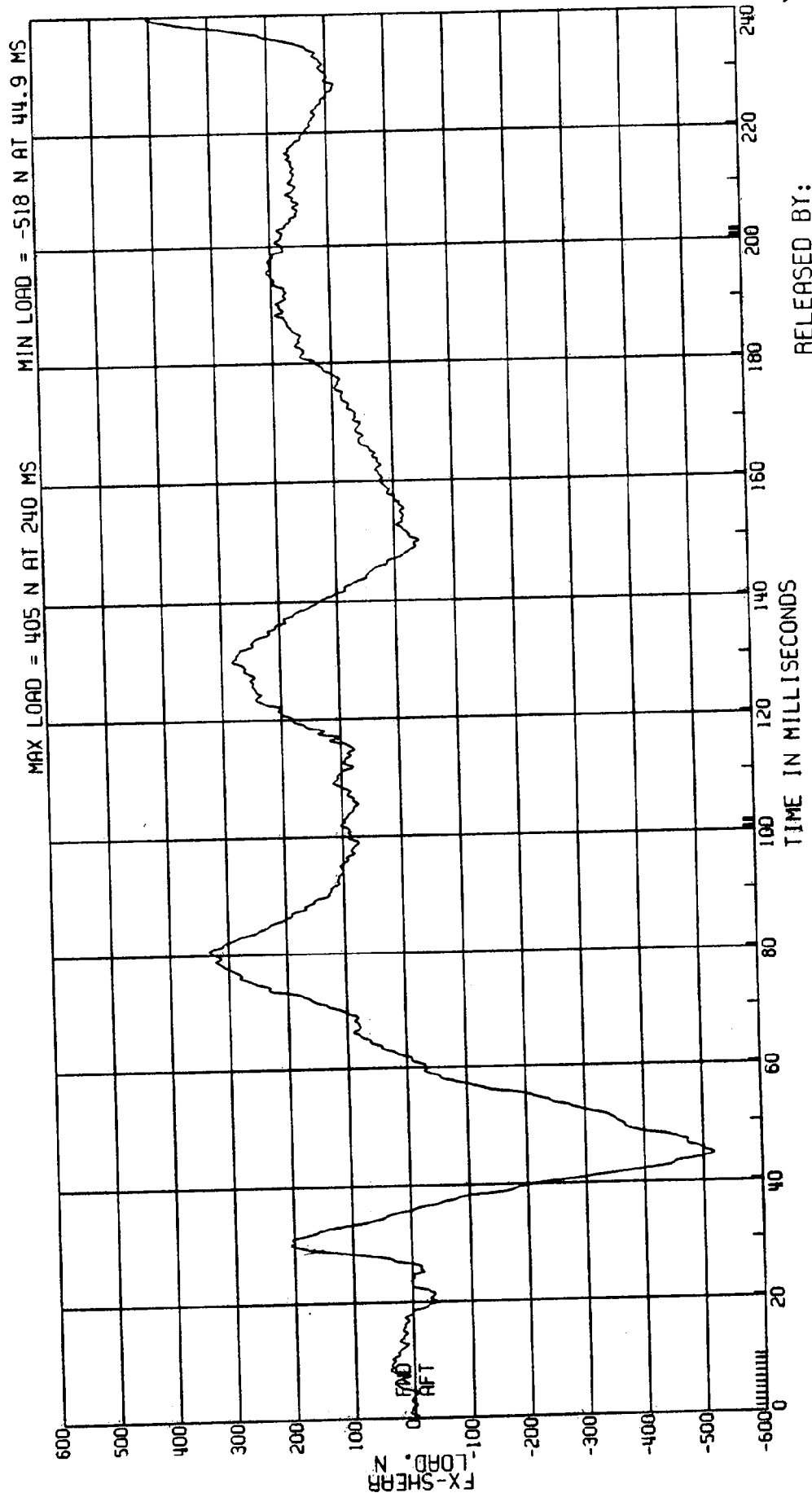
C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 141  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 98 2AF69 DRIVER LOWER LUMBAR LOAD TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 180



RELEASED BY:  
 69 PROCESSED 4 MY 90 12:12

C80098 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 142  
3868-905  
CPÉ MVMA 9B 2AF69  
ELEC DATA. SAE CLASS 180

DRIVER LOWER LUMBAR LOAD

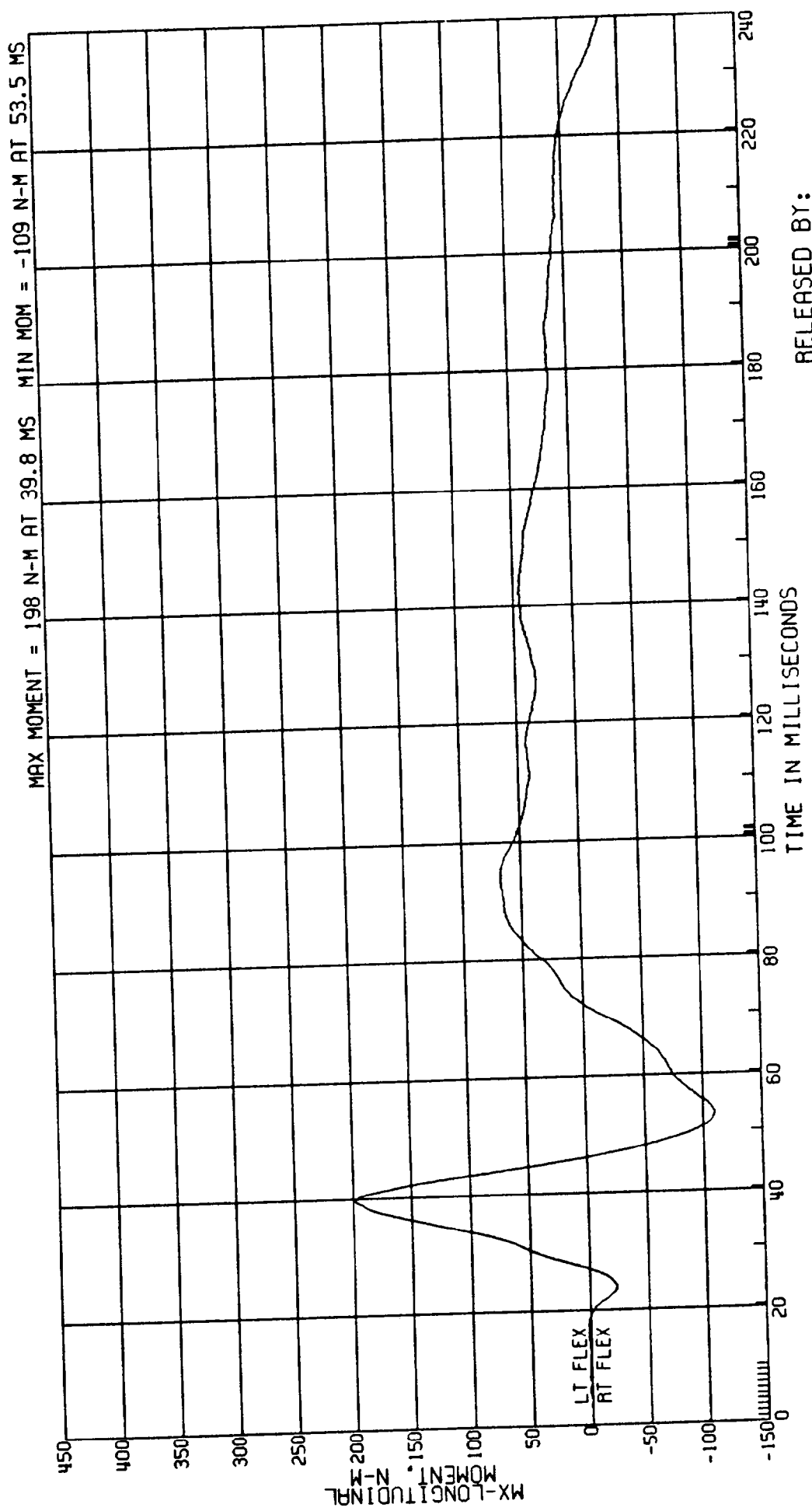


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68 PROCESSED 4 MY 90 12:12

143  
ATD TYPE: BIOSID  
TEST DATE: 03-20-90

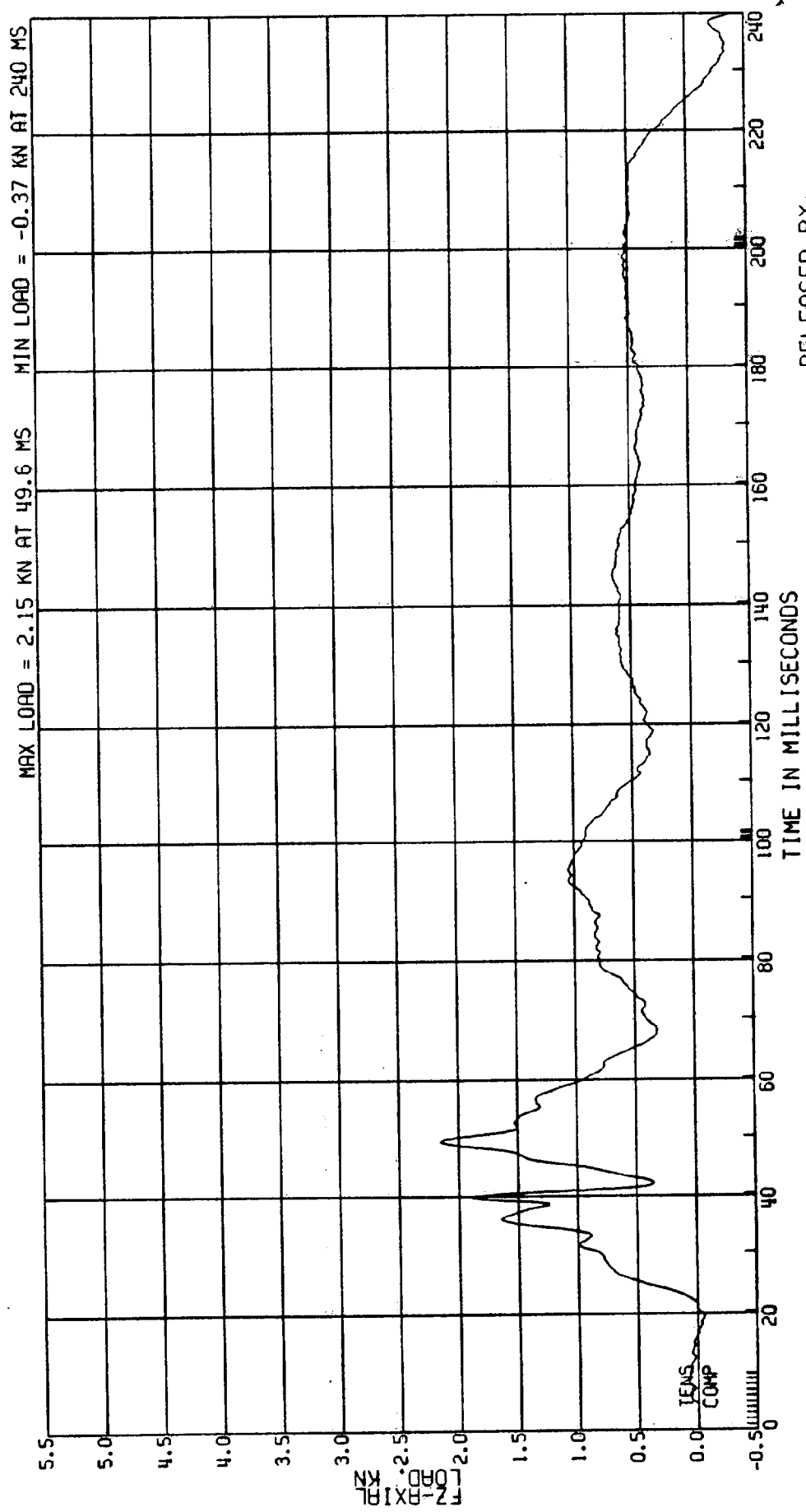
MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE  
DRIVER LOWER LUMBAR MOMENT

28009B L. SIDE IMPACT- 27 DEG  
3868-905  
CPE MVMA 9B 2AF69  
ELEC DATA, SAE CLASS 180



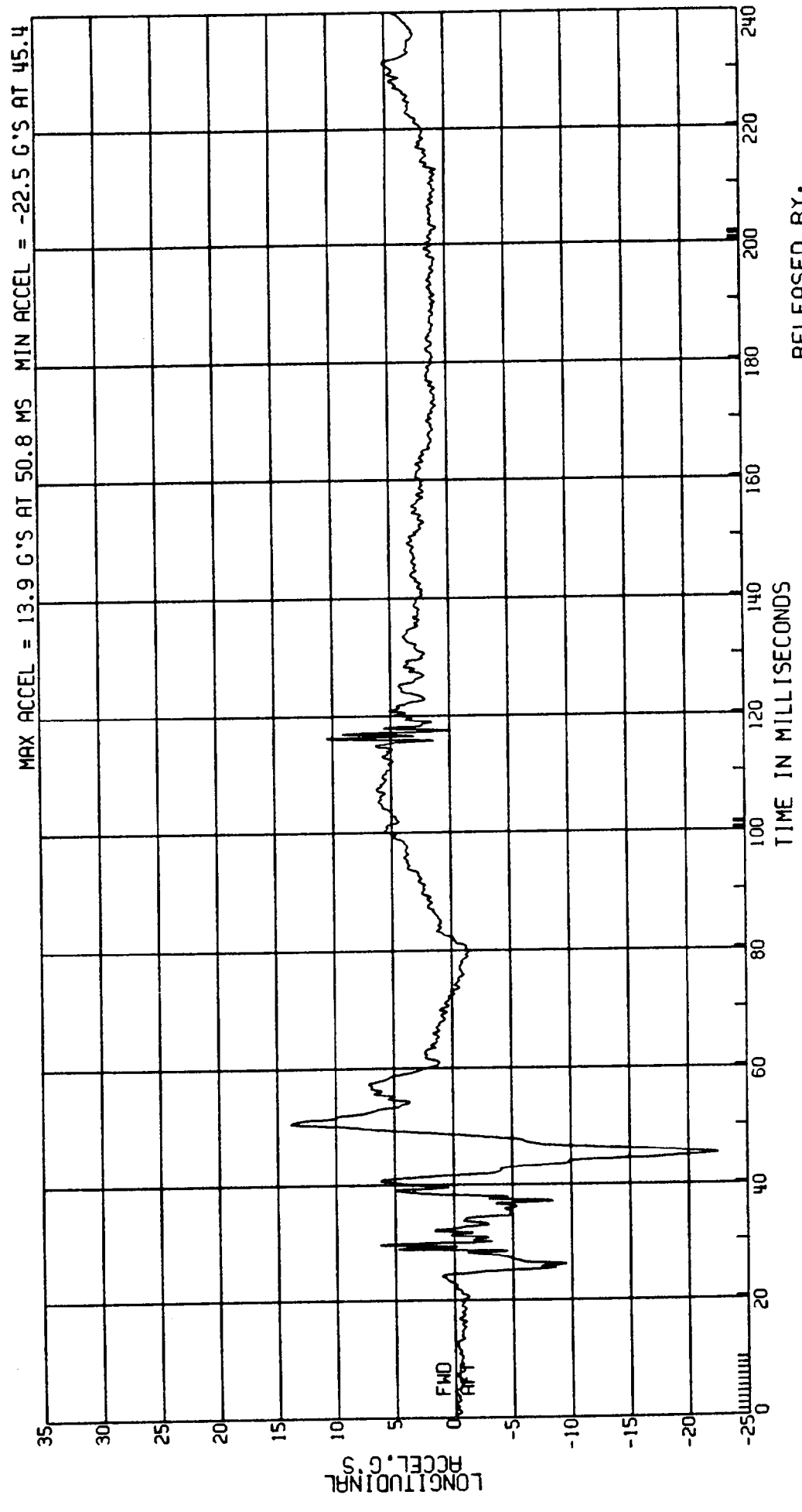
RELEASED BY:  
71 PROCESSED 4 MY 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 144  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER LOWER LUMBAR LOAD TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 180



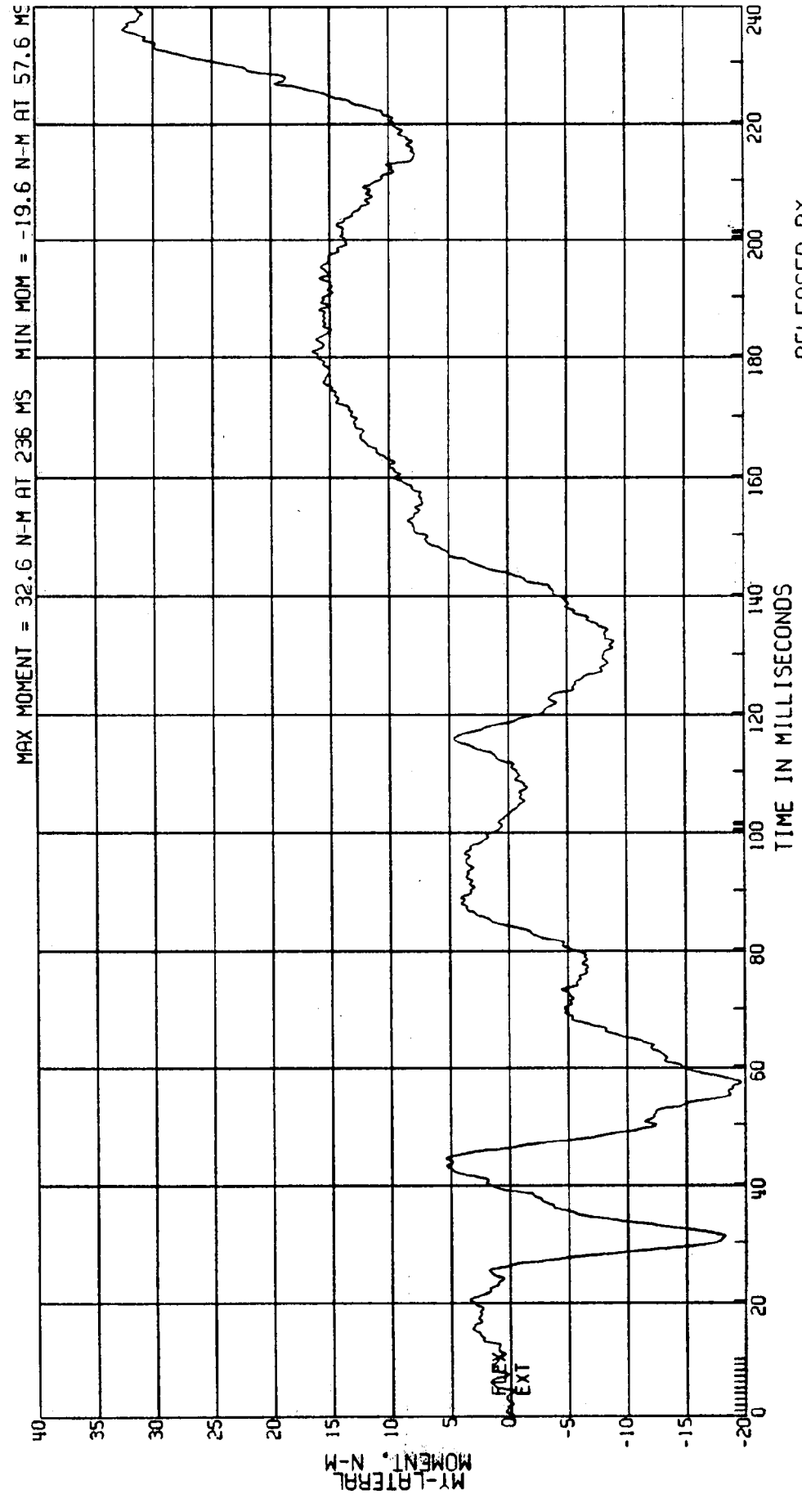
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 70 PROCESSED 4 MY 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 145  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 DRIVER PELVIC ACCEL. TEST DATE:03-20-90  
 ELEC DATA, SAE CLASS 600



RELEASED BY:  
 73 PROCESSED 4 MY 90 12:12

C80098 L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 146  
3868-905 ATD TYPE: B10S10  
CPE MVMA 9B 2AF69 DRIVER LOWER LUMBAR MOMENT TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 180



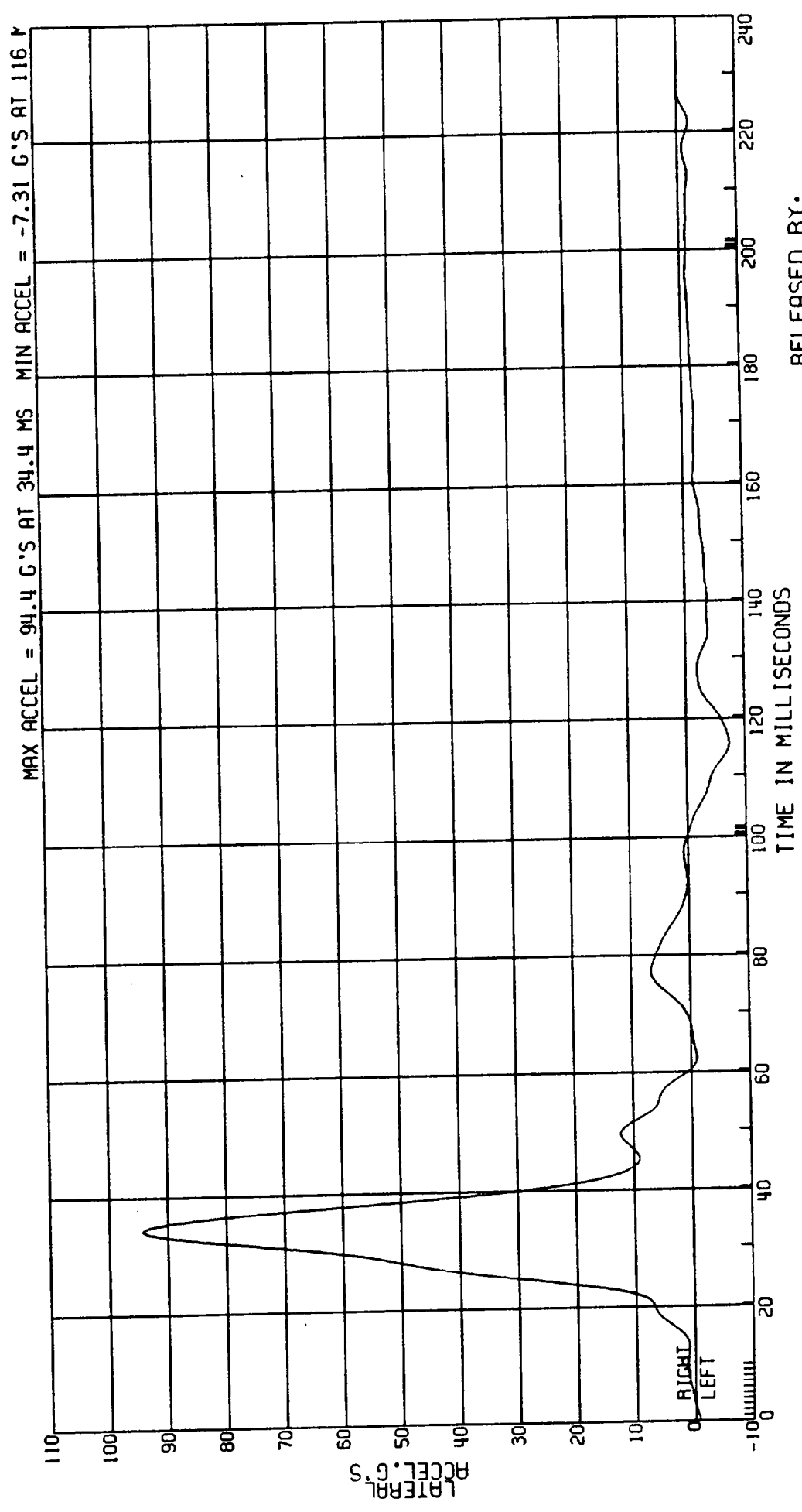
RELEASED BY:  
72 PROCESSED 4 MY 90 12:12

147  
ATD TYPE: BIOSID  
TEST DATE: 03-20-90

MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE  
DRIVER PELVIC ACCEL.

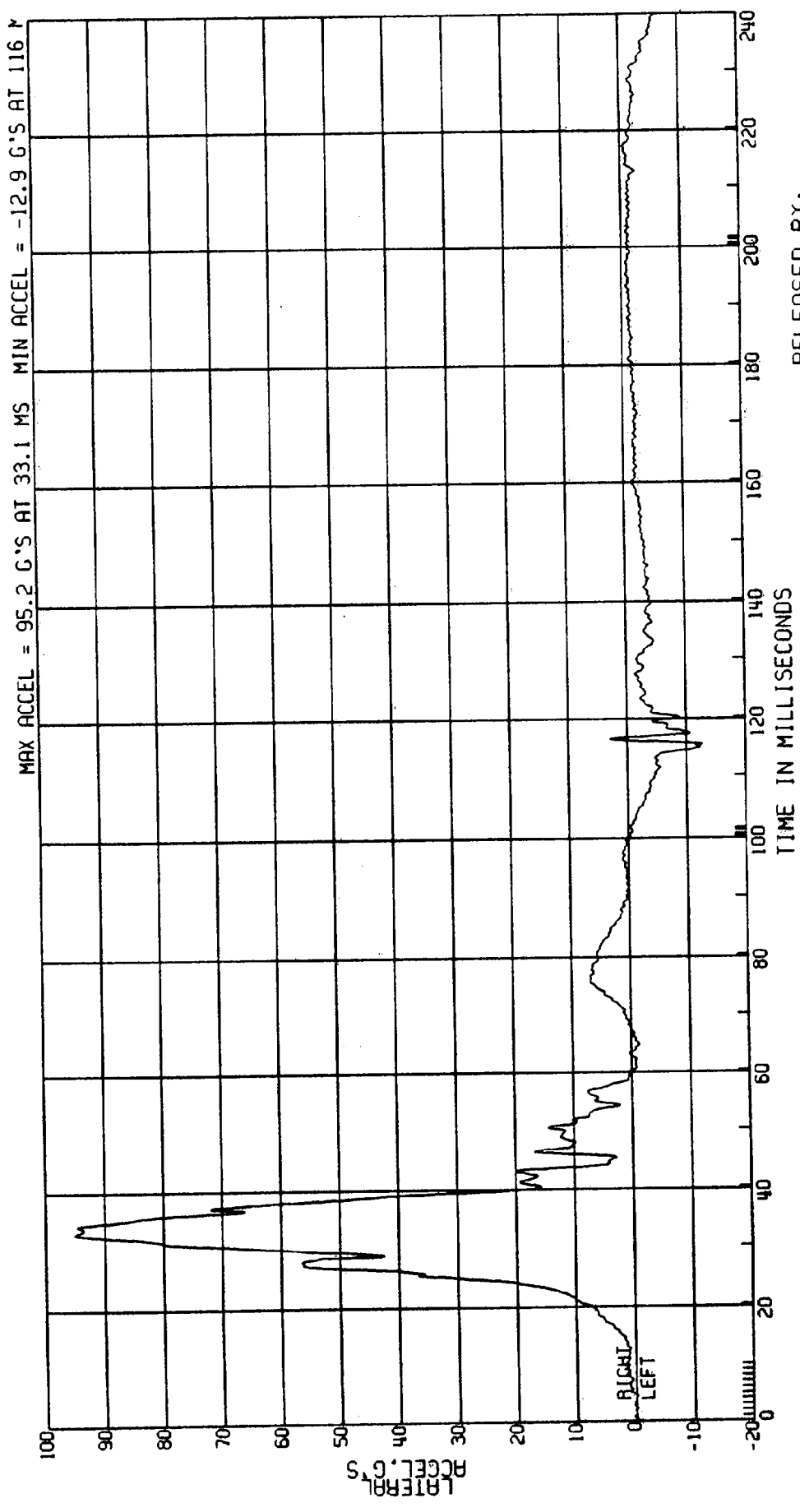
C8009B L. SIDE IMPACT - 27 DEG  
3868-905  
CPE

MVMA 9B 2AF69  
ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



RELEASED BY:  
75 PROCESSED 4 MY 90 12:12

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 148  
3868-905 ATO TYPE: B10SID  
CPE MVMA 9B 2AF69 TEST DATE:03-20-90  
ELEC DATA, SAE CLASS 600 DRIVER PELVIC ACCEL.

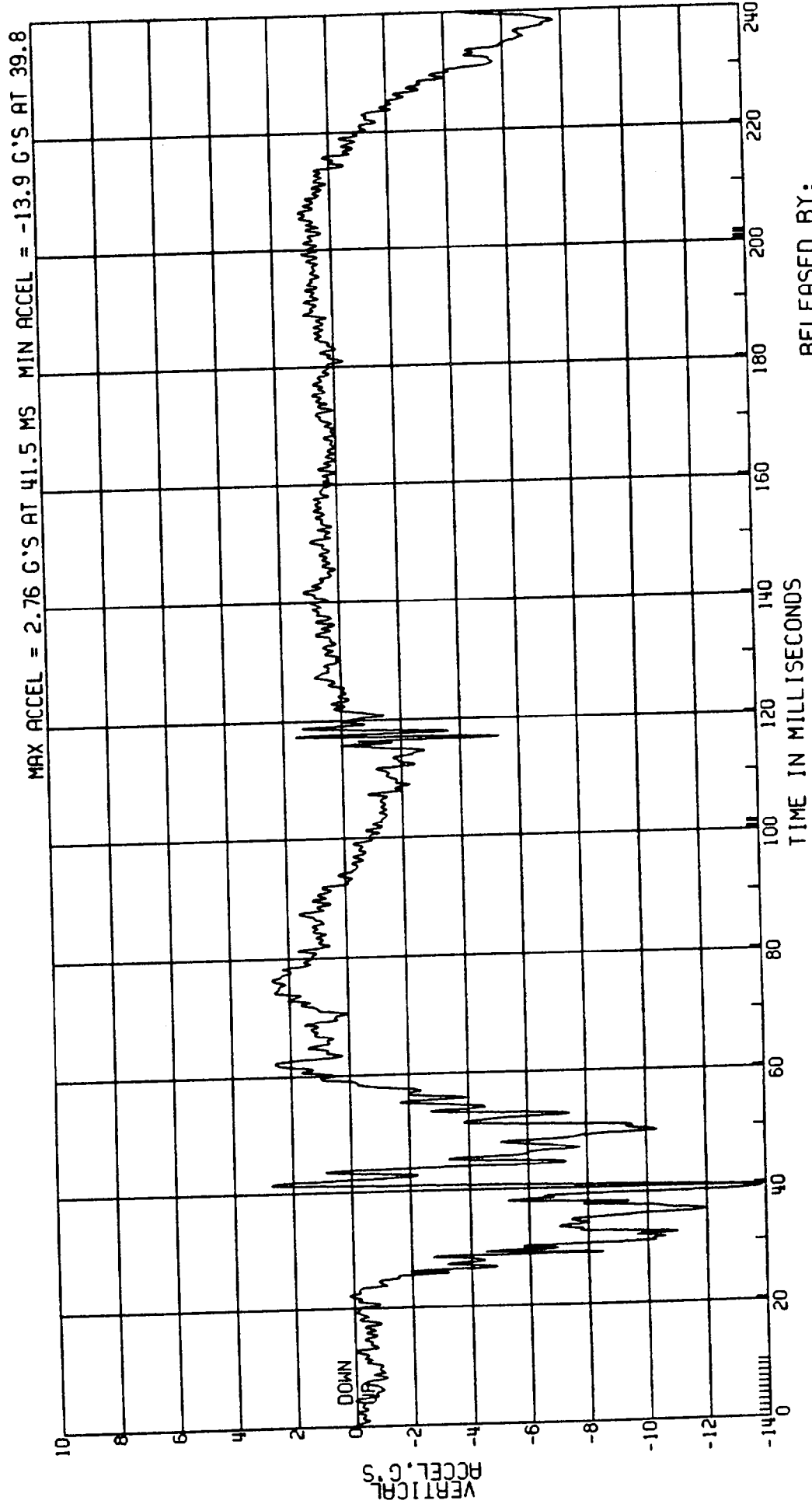


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74 PROCESSED 4 MY 90 12:12

149  
ATD TYPE: BIOSID  
TEST DATE: 03-20-90

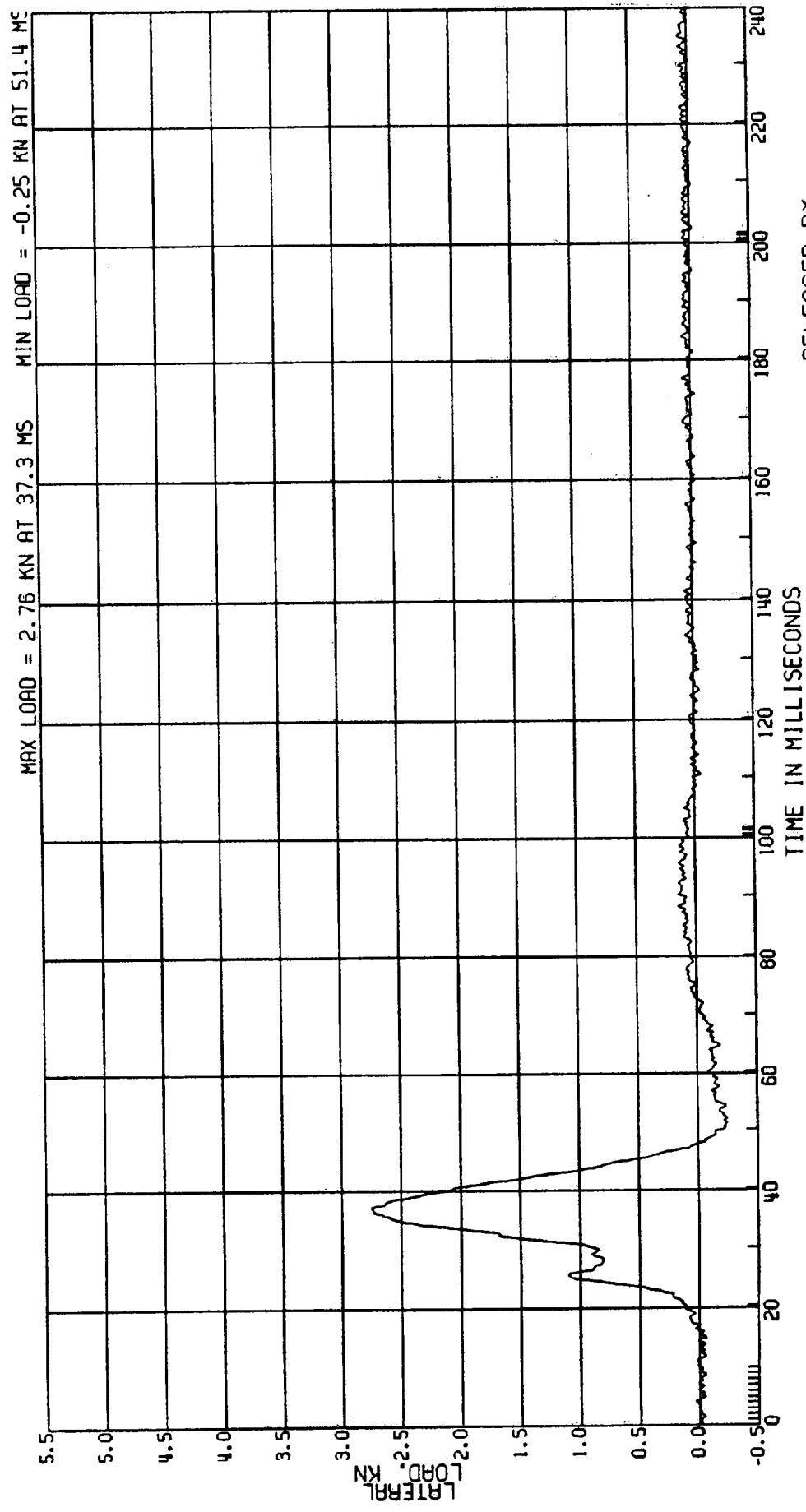
MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H  
DRIVER PELVIC ACCEL.

C8009B L. SIDE IMPACT- 27 DEG  
3868-905  
MVMA 9B 2AF69  
CPE  
ELEC DATA, SAE CLASS 600



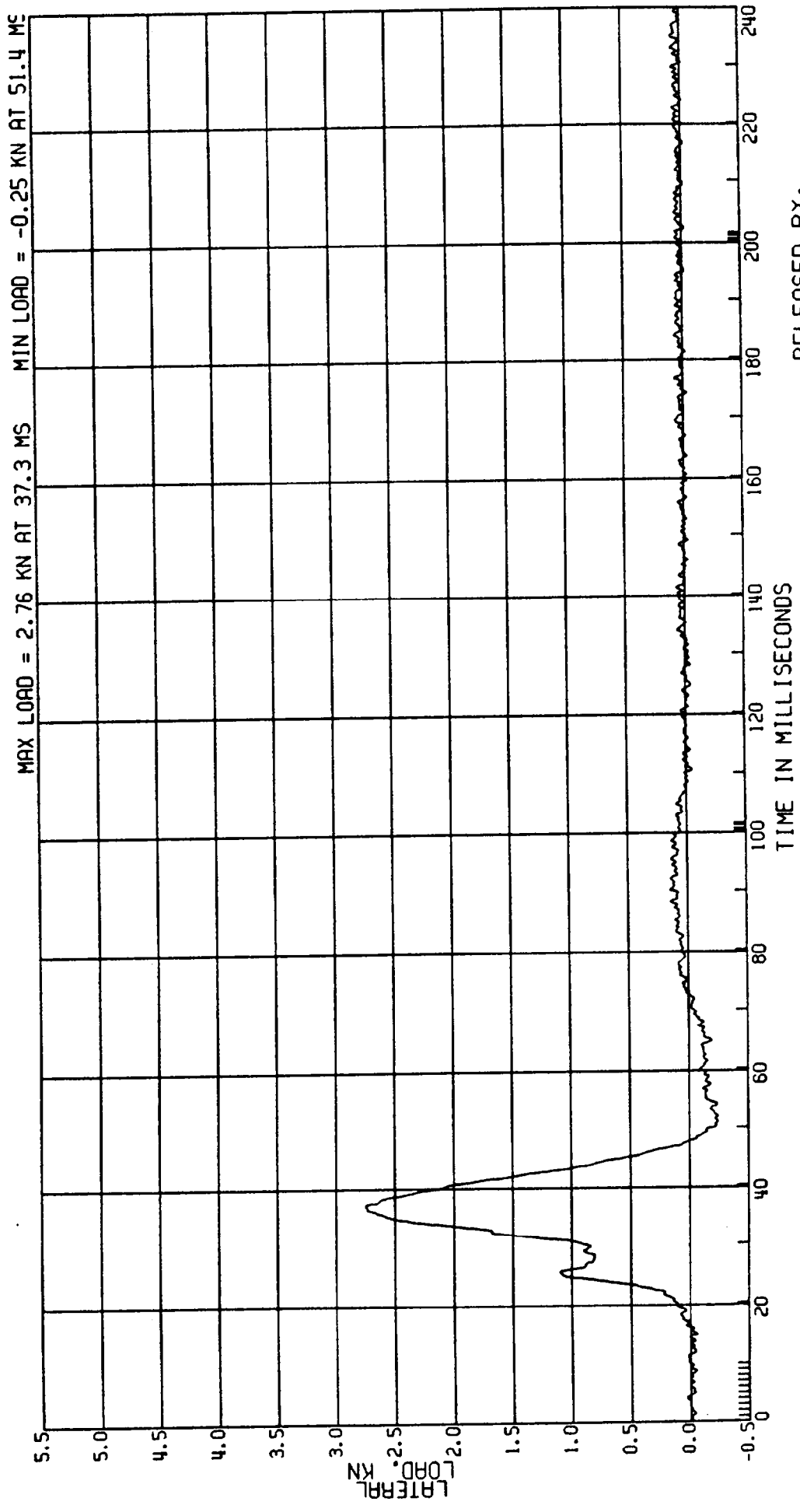
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77 PROCESSED 4 MT 90 12:12

C8009A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 150  
3868-905 ATD TYPE: B10SID  
CPE MVMA 9B 2AF69 TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 600 DRIVER ILIAC LOAD



RELEASED BY:  
30 PROCESSED 4 MY 90 12:06

C8009A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 151  
3868-905 ATD TYPE: BIOSID  
CPE MVMA 9B 2AF69 DRIVER ILIAC LOAD TEST DATE: 03-20-90  
ELEC DATA, SAE CLASS 600

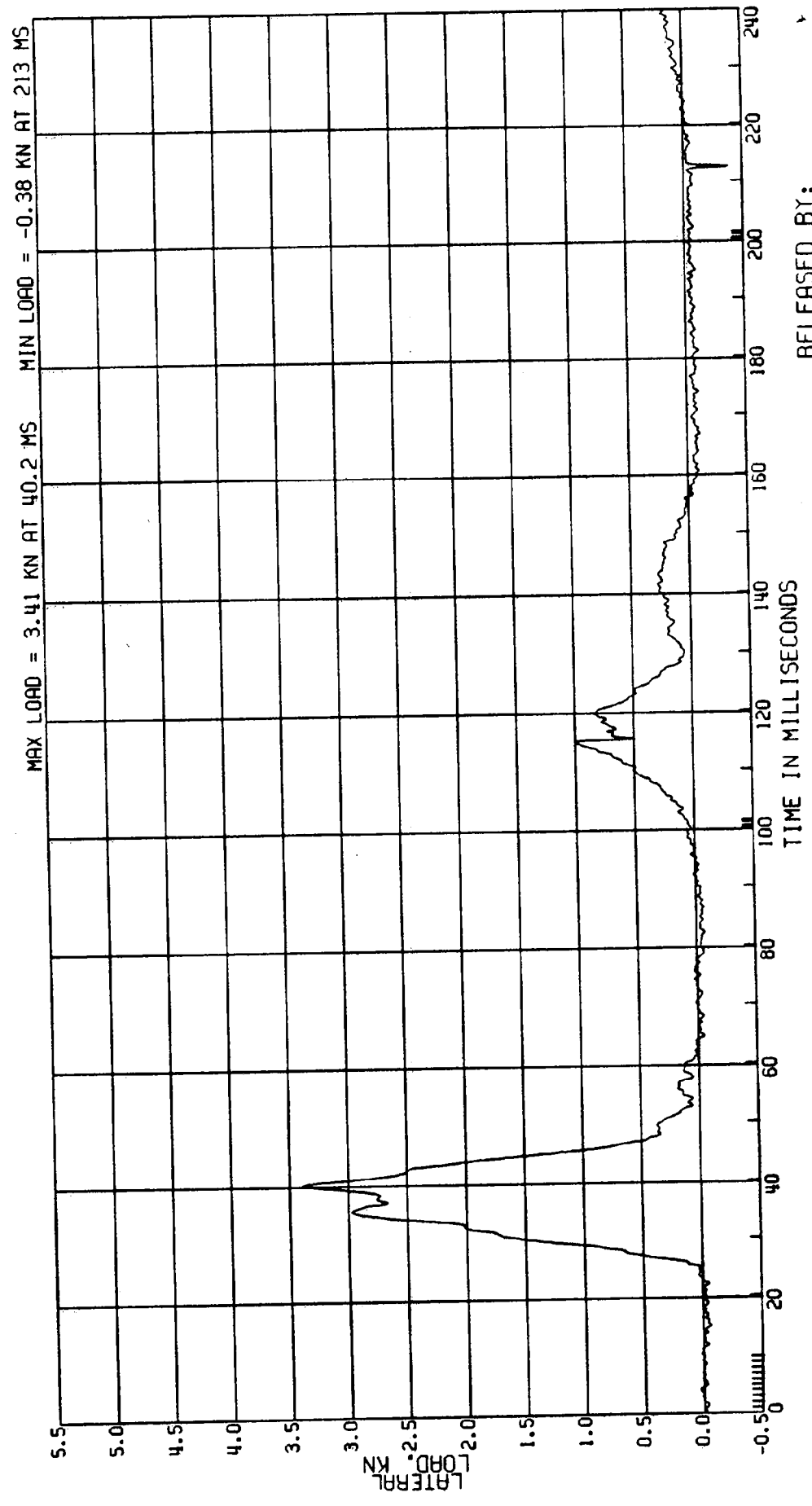


RELEASED BY:  
30 PROCESSED 4 MY 90 12:06

C8009A L. SIDE IMPACT- 27 DEG  
3868-905  
CPE  
ELEC DATA, SAE CLASS 600

MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE / 52-  
ATD TYPE: B10S10  
TEST DATE: 03-20-90

DRIVER PUBIC SYMPHYSIS LOAD  
MVMA 9B 2AF69

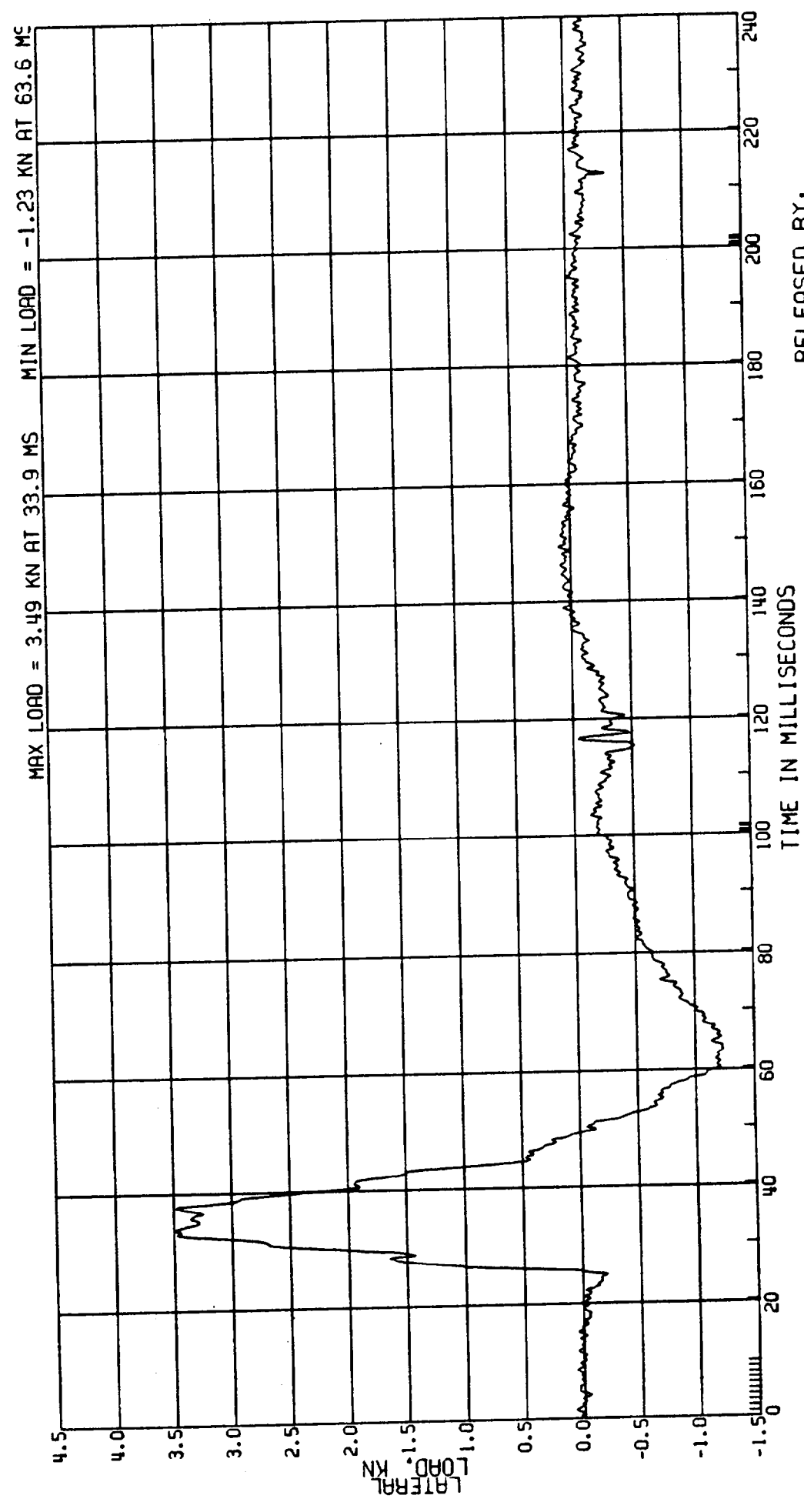


RELEASED BY:  
29 PROCESSED 4 MY 90 12:06

153  
ATD TYPE: BIOSID  
TEST DATE: 03-20-90

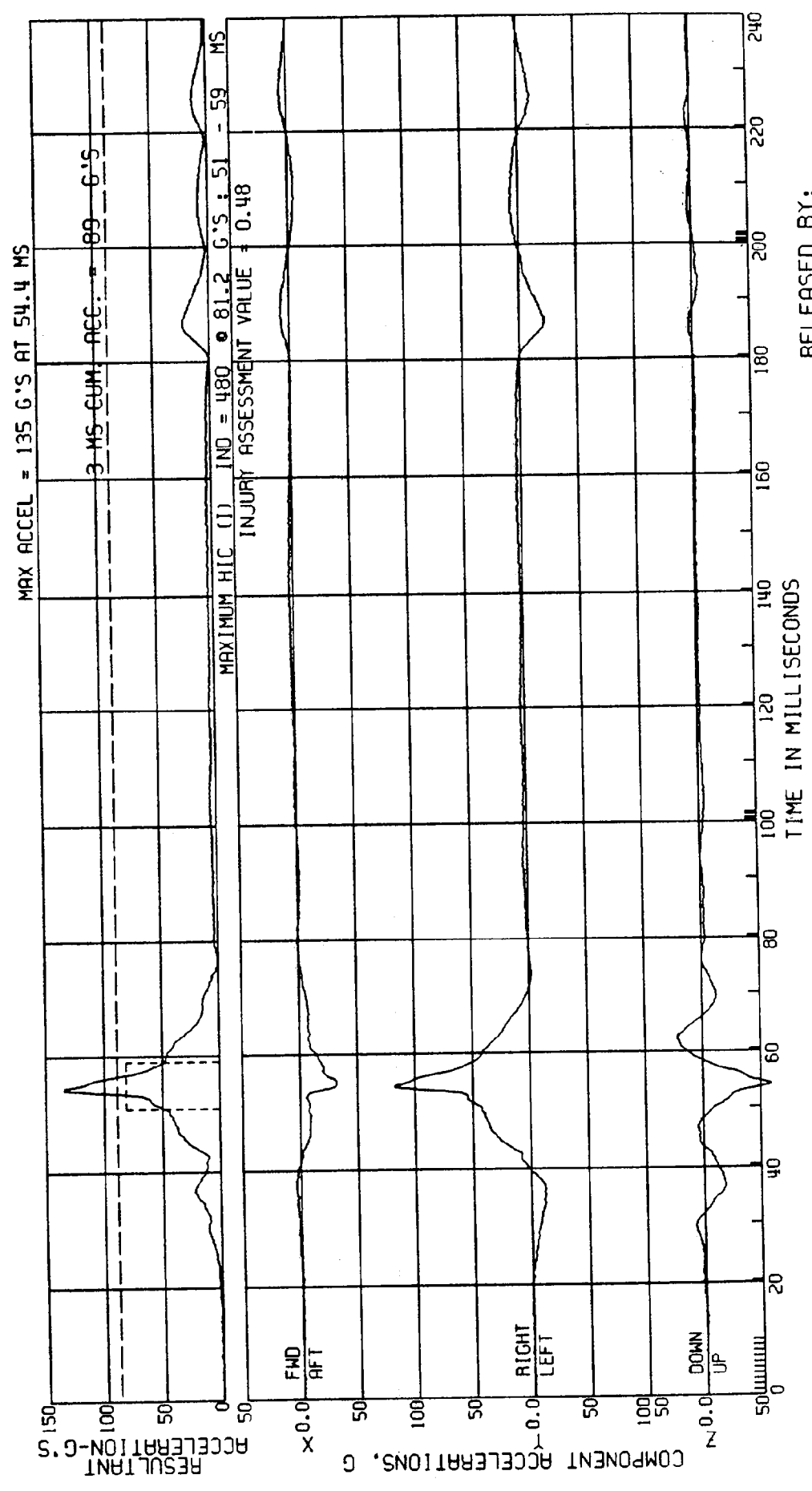
MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE  
DRIVER SACRUM LOAD

C8009A L. SIDE IMPACT- 27 DEG  
3868-905  
MVMA 9B 2AF69  
ELEC DATA, SAE CLASS 600



RELEASED BY:  
31 PROCESSED 4 MY 90 12:06

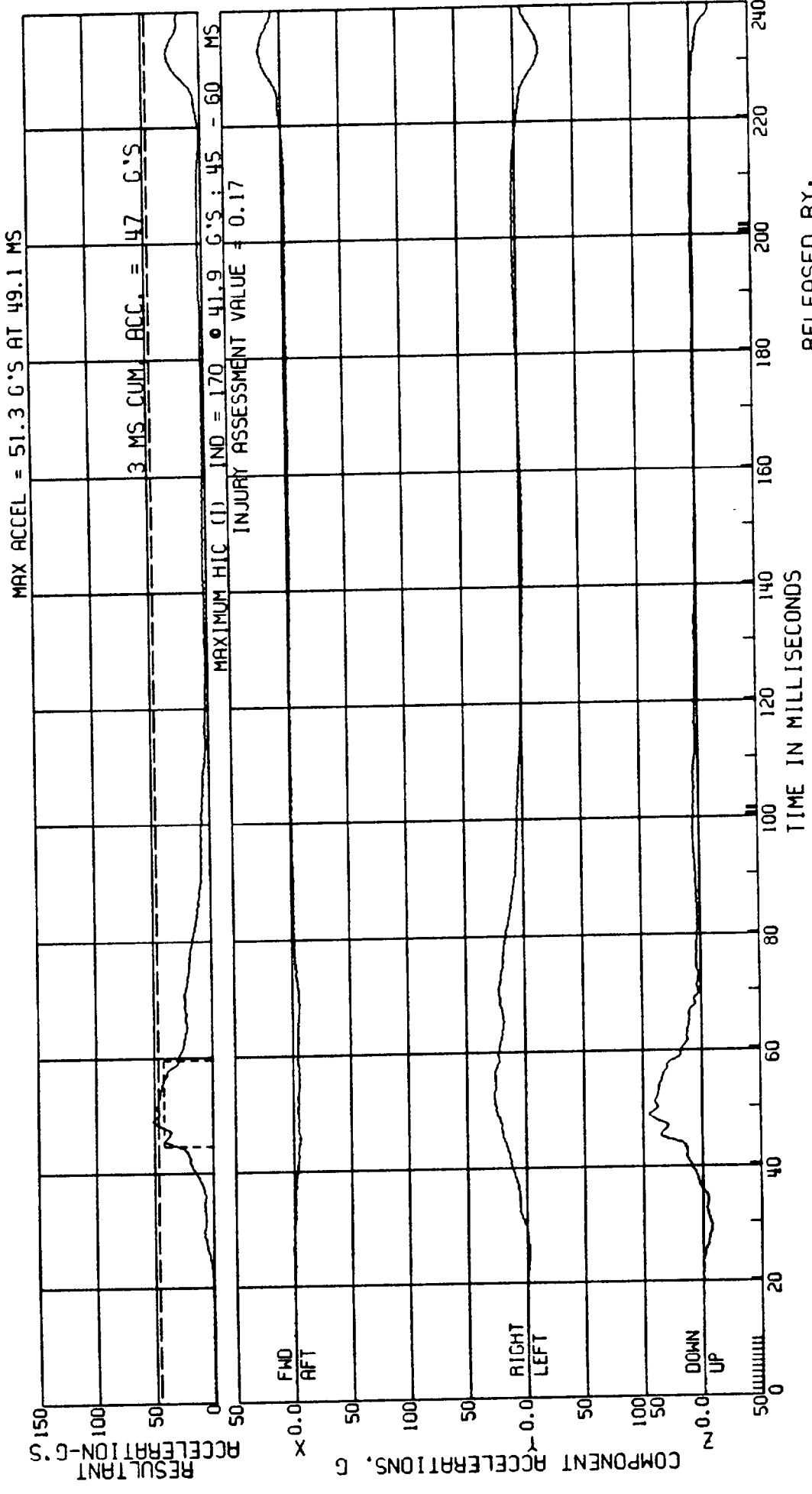
C8008A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 154  
 3868-905 MVMA 8P 2AF69 ATD TYPE: SID  
 CPE L. REAR HEAD ACCEL. TEST DATE: 03-20-90  
 ELEC DATA, SAE CLASS 1000 (HIC I LIMITED TO 36MS)



RELEASED BY:  
 2 PROCESSED 3 MY 90 11:42

C8009B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 155  
 3868-905 ATD TYPE: BIOSID  
 CPE MVMA 9B 2AF69 TEST DATE: 03-20-90

DRIVER HEAD ACCEL.  
 (HIC 1 LIMITED TO 15MS)



RELEASED BY:  
 1 PROCESSED 4 MT 90 12:10