

V1991

48/24 KPH 90° DRIVER'S SIDE IMPACT
(MOVING DEFORMABLE BARRIER)
1993 FORD EXPLORER XLT

PREPARED BY:
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FINAL REPORT
OCTOBER - NOVEMBER 1993

PREPARED FOR:
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16. Abstract This 48/24 kph 90° driver's side impact test was conducted at Transportation Research Center Inc. on October 7, 1993. The test vehicle was a 1993 Ford Explorer XLT. This test was conducted to aid in the development of extending the test procedure for FMVSS No. 214, "Side Impact Protection - Passenger Cars," to include light trucks and vans. The deformable barrier face was raised 235 millimeters above its standard height specified in the FMVSS No. 214 Laboratory Test Procedure and its test weight was 1639 kilograms. The impact velocity of the moving deformable barrier was 54.4 kph. The moving deformable barrier struck the vehicle 978 mm forward of the subject vehicle's wheelbase mid-point. Results for the driver and passenger SIDs are: <table border="1"> <thead> <tr> <th></th> <th><u>Driver SID</u></th> <th><u>Passenger SID</u></th> </tr> </thead> <tbody> <tr> <td>Left upper rib acceleration</td> <td>60.6 g's</td> <td>57.9 g's</td> </tr> <tr> <td>Left lower rib acceleration</td> <td>69.3 g's</td> <td>68.5 g's</td> </tr> <tr> <td>Upper spine acceleration</td> <td>81.7 g's</td> <td>39.9 g's</td> </tr> <tr> <td>Lower spine acceleration</td> <td>80.9 g's</td> <td>44.7 g's</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td>75</td> <td>57</td> </tr> <tr> <td>Pelvic acceleration</td> <td>103.1 g's</td> <td>74.9 g's</td> </tr> </tbody> </table>					<u>Driver SID</u>	<u>Passenger SID</u>	Left upper rib acceleration	60.6 g's	57.9 g's	Left lower rib acceleration	69.3 g's	68.5 g's	Upper spine acceleration	81.7 g's	39.9 g's	Lower spine acceleration	80.9 g's	44.7 g's	Thoracic Trauma Index (TTI)	75	57	Pelvic acceleration	103.1 g's	74.9 g's
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METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

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

* 1 in = 2.54 (exact). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price \$2.25, SD Catalog No. C-13.10286.

Approximate Conversions from Metric Measures

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

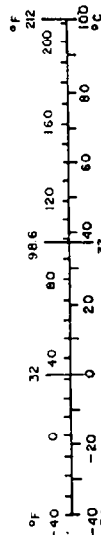


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SECTION 1.0

PURPOSE AND TEST PROCEDURE

PURPOSE

This 48/24 kph 90° driver's side impact test was conducted for Vehicle Research and Test Center by Transportation Research Center Inc. (TRC). The purpose of this test was to aid in the development of extending the test procedure for FMVSS 214, "Side Impact Protection - Passenger Cars," to include the testing of light trucks and vans.

TEST PROCEDURE

This test was conducted using NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure No. TP-214D-02 as a guideline. Data was obtained relative to FMVSS 214, "Side Impact Protection - Passenger Cars," and FMVSS 301, "Fuel System Integrity," performance.

The test vehicle was instrumented with seventeen (17) accelerometers oriented to measure longitudinal, lateral, and vertical axis accelerations. The test vehicle was positioned so that its longitudinal centerline was at an angle of 63° to the tow cable system.

The test vehicle contained two (2) Part 572 F side impact adult male anthropomorphic test devices (dummies). The dummies were positioned in the left front and rear outboard seating positions according to the dummy placement procedure specified as an attachment to the Laboratory Test Procedure. The dummies were instrumented with head, pelvis, upper spine, and lower spine accelerometers oriented to measure longitudinal, lateral, and vertical axis accelerations. Upper rib and lower rib accelerometers were oriented to measure lateral axis accelerations. Each dummy was restrained by a 3-point unbelt.

The moving deformable barrier was instrumented with five (5) accelerometers oriented to measure longitudinal, lateral, and vertical axis accelerations. The moving barrier was crabbed clockwise at a 27° angle to the tow cable system and its deformable barrier face was raised 235 mm above the standard barrier face height specified in the Laboratory Test Procedure. The bottom most edge of the deformable barrier face was 514 mm above the ground level. The moving deformable barrier's weight was 1639 kg and its specified velocity range was 53.1 to 54.7 kph.

The subject vehicle was monitored for fuel leakage immediately after the impact event and during a 360° post-impact static rollover test.

The fifty-eight (58) data channels were multiplexed and recorded on a 14-track tape deck. The data was digitally sampled at 8000 samples per second and processed per Section 12.0 of the Laboratory Test Procedure.

The crash event was recorded by one (1) real-time panning motion picture camera and nine (9) high-speed motion picture cameras operating at approximately 1000 frames per second.

The vehicle and occupant data are summarized in Section 2.0. The FMVSS 214 data are presented in Section 3.0. The FMVSS 301 data are presented in Section 4.0. The vehicle, occupant, and camera measurements are presented in Section 5.0. Appendix A contains the still photographic prints. Appendix B contains the dummy and vehicle data plots. Appendix C contains the dummy calibration data. Appendix D contains miscellaneous test information.

SECTION 2.0

SIDE IMPACT TEST SUMMARY

TEST RESULTS SUMMARY

This 48/24 kph 90° driver's side impact test was conducted at TRC on October 7, 1993.

The test vehicle, a 1993 Ford Explorer XLT 4-door, was equipped with a 4.0-liter, inline engine, automatic transmission, and power brakes. Two Part 572 F dummies were seated in the left front and rear outboard seating positions. The vehicle's test weight was 2070 kilograms. The moving deformable barrier's impact speed was 54.4 kph. The vehicle's maximum static crush was 433 millimeters.

The driver dummy's Thoracic Trauma Index (TTI(d)) and Head Injury Criteria (HIC) were 75 and 195, respectively. Maximum pelvis lateral acceleration was 103.1 g.

The left rear passenger dummy's TTI(d) and HIC were 57 and 728 respectively. Maximum pelvis lateral acceleration was 74.9 g.

The moving barrier's leading edge of contact was 978 mm forward of the subject vehicle's wheelbase mid-point.

The doors on the struck side of the test vehicle did not separate from the vehicle's main body at the hinges or latches. The doors on the opposite side did not open during the crash event.

DATA AQUISITION EXPLANATIONS

The left front door centerline Y-axis acceleration data channel, LFDYG1, exceeded its data channel full scale output at approximately 9 milliseconds.

The left front door upper centerline Y-axis acceleration data channel, LFDYG2, recorded anomalous data spikes after 19 milliseconds.

The rear seat belt buckle bracket Y-axis acceleration data channel, OTHYG1, exceeded its data channel full scale output at approximately 64 milliseconds and did not return to zero after the impact event.

The moving deformable barrier's center of gravity Y-axis acceleration data channel, BCGYG1, did not return to zero after the impact event. This anomaly affected the computations of the moving deformable barrier's center of gravity resultant acceleration.

The moving deformable barrier's left frame rail Y-axis acceleration data channel, BSRYG1, did not return to zero after the impact event.

TABLE 1 CRASH TEST SUMMARY

TEST TYPE: Moving Deformable Barrier Left Side Impact

TEST DATE: 10/07/93 TEST TIME: 1458 AMBIENT TEMP. (°C): 24

VEHICLE: 1993 Ford Explorer XLT

VEHICLE TEST WEIGHT (KG): 2070

MOVING BARRIER TEST WEIGHT (KG): 1639

IMPACT ANGLE¹ (DEG): 270

IMPACT VELOCITY² (KPH): PRIMARY = 54.4 SECONDARY = 54.3

DUMMIES:

DRIVER #903

PASSENGER #906

TYPE:

PART 572 F

PART 572 F

LOCATION:

LEFT FRONT

LEFT REAR

RESTRAINT:

3-POINT UNIBELT

3-POINT UNIBELT

NUMBER OF DATA CHANNELS: 58

NUMBER OF CAMERAS: HIGH-SPEED 9 REAL-TIME 1

¹Measured clockwise from struck vehicle's front longitudinal centerline.

²Speed trap measurement ($\pm$.08 kph accuracy)

TABLE 2 TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Ford Motor Company

MAKE/MODEL/BODY STYLE: Ford/Explorer XLT/4-door Sport Utility

MODEL YEAR: 1993

VIN: 1FMDU32X7PUD82317

COLOR: Black

ENGINE DATA: TYPE: inline CYLINDERS: 6 DISPLACEMENT: 4.0 liters

TRANSMISSION DATA: 4 SPEED, MANUAL, X AUTOMATIC, FWD, X RWD, 4WD

DATE VEHICLE RECEIVED: 09/30/93

ODOMETER READING: 266

DEALER'S NAME AND ADDRESS: NA

ACCESSORIES:

POWER STEERING Yes
POWER BRAKES Yes
POWER SEATS No
POWER WINDOWS Yes
TINTED GLASS Yes
RADIO Yes
CLOCK Yes
OTHER None

AUTOMATIC TRANSMISSION Yes
AUTOMATIC SPEED CONTROL Yes
TILTING STEERING WHEEL Yes
TELESCOPING STEERING WHEEL No
AIR CONDITIONING Yes
ANTI-SKID BRAKE Yes
REAR WINDOW DEFROSTER Yes

REMARKS:

1. IS THE VEHICLE STOCK THROUGHOUT? Yes
2. DOES VEHICLE SHOW EVIDENCE OF PRIOR ACCIDENT HISTORY? No
3. DOES VEHICLE SHOW ANY SIGNIFICANT CORROSION? No
4. CONDITION OF THE FRONT/REAR BUMPER AND FRAME: Good

CERTIFICATION DATA FROM VEHICLE'S LABEL:

VEHICLE MANUFACTURED BY: Ford Motor Company

DATE OF MANUFACTURE: 08/93

VIN: 1FMDU32X7PUD82317

GVWR: 5120 LBS.

GAWR: FRONT: 2400 LBS., REAR: 3000 LBS.

TABLE 2 TEST VEHICLE INFORMATION, CONT'D.

TIRES ON VEHICLE (MFR., LINE, SIZE): Firestone, Radial ATX, P235/75R15

TIRE PRESSURE WITH MAXIMUM CAPACITY VEHICLE LOAD: FRONT: 283 kpa
REAR: 283 kpa

SPARE TIRE (MFR., LINE, SIZE): NA

TYPE OF SEATS: FRONT: Bucket
REAR: Split bench

TYPE OF FRONT SEAT BACKS: Manually adjustable

MAXIMUM WIDTH: 1722 MM

WHEELBASE: 2857 MM

LOCATION OF "RECOMMENDED TIRE PRESSURE" LABEL:

The label was located on the driver's door.

DATA FROM VEHICLE'S "RECOMMENDED TIRE PRESSURE" LABEL:

RECOMMENDED TIRE SIZE: P235/75R15SL

RECOMMENDED COLD TIRE PRESSURE: FRONT: 26 psi; REAR: 36 psi

DESIGNATED SEATING CAPACITY: NA FRONT NA REAR NA TOTAL

VEHICLE CAPACITY WEIGHT: NA KG

TEST VEHICLE ATTITUDE (ALL MEASUREMENTS ARE IN MILLIMETERS):

DELIVERED ATTITUDE: LF 813; RF 823; LR 829; RR 835

PRE-TEST ATTITUDE: LF 789; RF 794; LR 797; RR 809

POST-TEST ATTITUDE: LF 825 RF 822 LR 805 RR 802

TABLE 2 TEST VEHICLE INFORMATION, CONT'D.

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

RIGHT FRONT	457 KG	RIGHT REAR	416 KG
LEFT FRONT	493 KG	LEFT REAR	420 KG
TOTAL FRONT WEIGHT	950 KG	(53.2% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	836 KG	(46.8% OF TOTAL VEHICLE WEIGHT)	

TOTAL DELIVERED WEIGHT 1786 KG

TARGET TEST WEIGHT¹ = 2073 KG

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 126 KG OF CARGO WEIGHT:

RIGHT FRONT	496 KG	RIGHT REAR	522 KG
LEFT FRONT	533 KG	LEFT REAR	519 KG
TOTAL FRONT WEIGHT	1029 KG	(49.7% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	1041 KG	(50.3% OF TOTAL VEHICLE WEIGHT)	
TOTAL TEST WEIGHT	2070 KG	(0.1% UNDER TARGET TEST WEIGHT)	

WEIGHT OF BALLAST SECURED IN VEHICLE CARGO AREA: 0 KG

COMPONENTS REMOVED TO MEET TARGET TEST WEIGHT: Alternator, radiator, and battery.

CG = 1437 MM REARWARD OF FRONT WHEEL CENTERLINE

¹Provided by VRTC to match test performed on September 28, 1993.

TABLE 3 POST-IMPACT DATA

TEST NUMBER: 931007

TEST DATE: 10/07/93

TEST TIME: 1458

TEST TYPE: Moving Deformable Barrier Left Side Impact

IMPACT ANGLE¹ (DEG): 270

AMBIENT TEMPERATURE AT IMPACT AREA: 24° C

TEMPERATURE IN OCCUPANT COMPARTMENT: 26° C

IMPACT VELOCITY: PRIMARY = 54.4 KPH
SECONDARY = 54.3 KPH
(SPECIFIED RANGE = 53.1 TO 54.7 KPH)

DISTANCE FROM VEHICLE TO BARRIER: ENTERING VELOCITY TRAP = 356 MM

EXITING VELOCITY TRAP = 51 MM

¹Measured clockwise from struck vehicle's front longitudinal centerline.

TABLE 4 TEST CONDITIONS

TEST NUMBER: 931007
DATE OF TEST: 10/07/93
TIME OF TEST: 1458
WIND VELOCITY: NA
HUMIDITY: NA
AMBIENT TEMPERATURE AT IMPACT AREA: 24° C
TEMPERATURE IN OCCUPANT COMPARTMENT: 26° C

VEHICLE DATA

	<u>ACTUAL</u>	<u>INTENDED</u>
SUBJECT VEHICLE TEST WEIGHT (KG):	2070	2073
MOVING DEFORMABLE BARRIER TEST WEIGHT (KG):	1639	1633
MOVING DEFORMABLE BARRIER VELOCITY (KPH) ¹ :	54.4	53.9
IMPACT POINT (MM) ² :	978	940

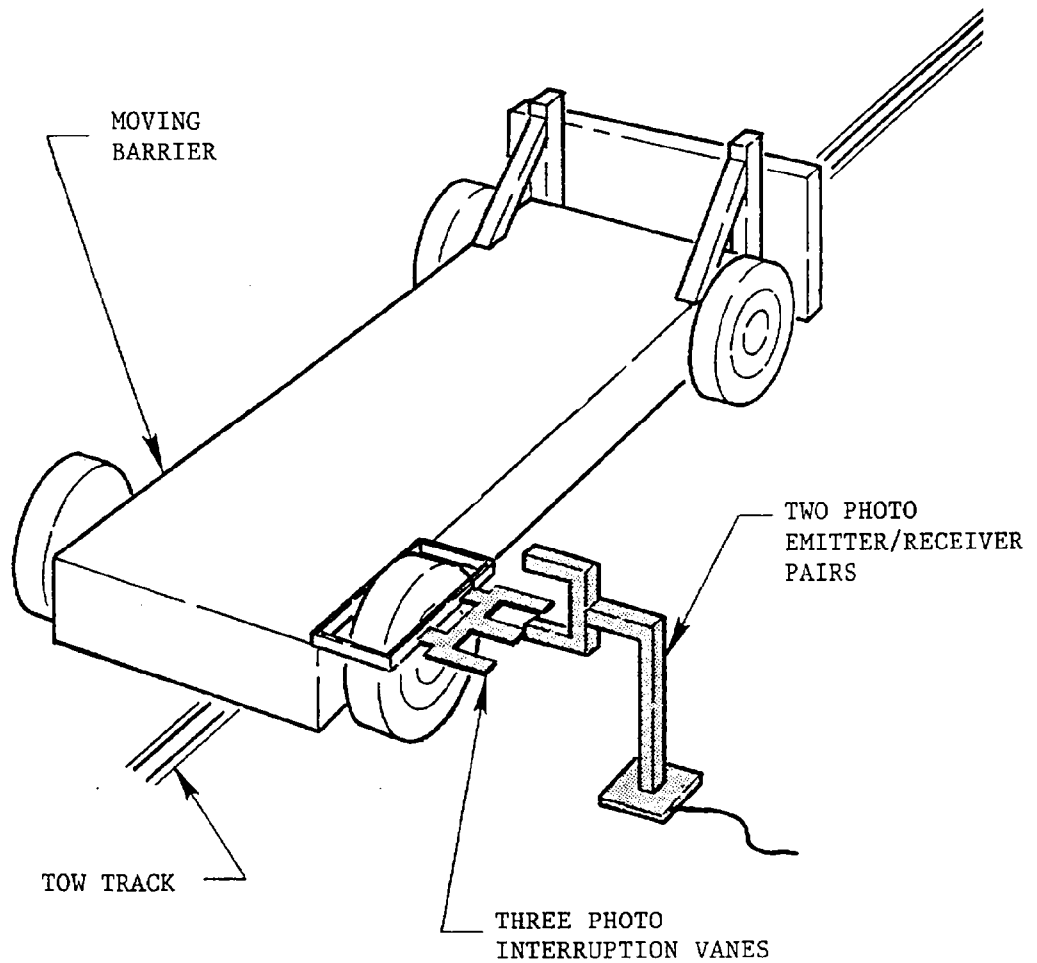
DUMMY INFORMATION

	<u>DRIVER</u>	<u>LEFT REAR PASSENGER</u>
TYPE:	SID	SID
SERIAL NO.:	903	906
INSTRUMENTATION:		
HEAD ACCELEROMETERS:	3	3
UPPER SPINE ACCELEROMETERS:	4	4
UPPER RIB ACCELEROMETERS:	2	2
LOWER RIB ACCELEROMETERS:	2	2
LOWER SPINE ACCELEROMETERS:	4	4
PELVIS ACCELEROMETERS:	3	3
RESTRAINT SYSTEM:	3-POINT UNIBELT	3-POINT UNIBELT

¹As measured over final 305 mm of travel.

²As measured forward of the subject vehicle's wheelbase mid-point.

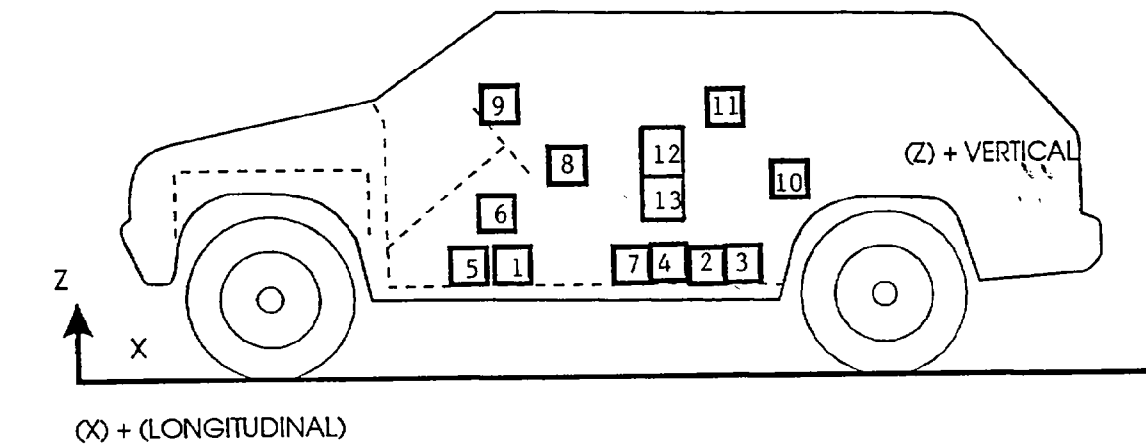
FIGURE 1 IMPACT VELOCITY MEASUREMENT SYSTEM



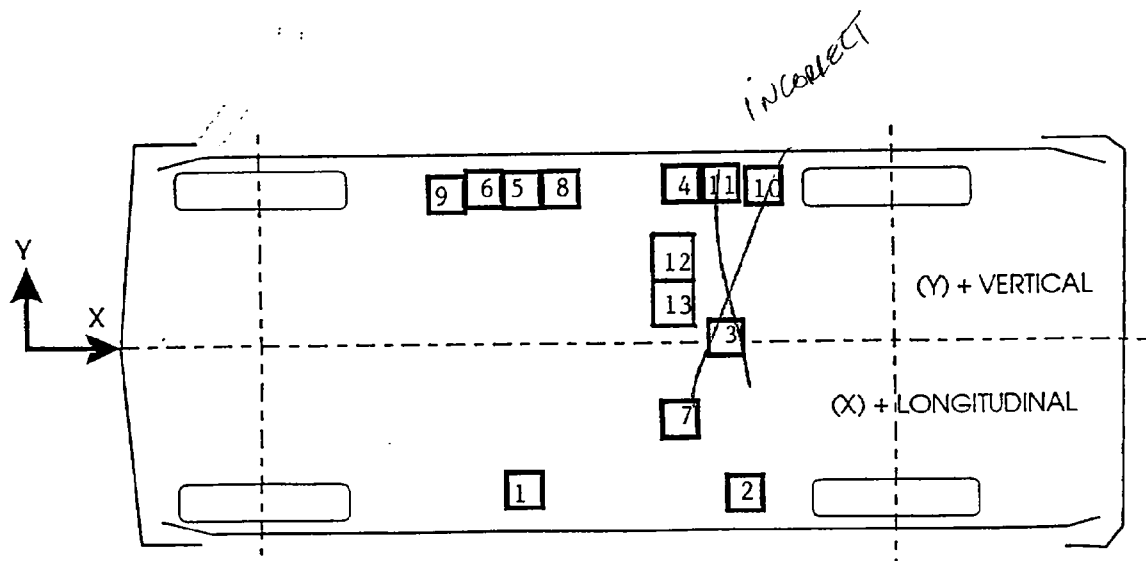
The final vane clears the final emitter/receiver pair 51 millimeters before impact.

The vanes have 305-millimeter spacing.

FIGURE 2 VEHICLE ACCELEROMETER PLACEMENT



SIDE VIEW



BOTTOM VIEW

TABLE 5

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 931007

No. LOCATION	X*	Y*	Z*	POSITIVE		NEGATIVE	
				DIRECTION		DIRECTION	
				MAX	G MSEC	MAX	G MSEC
1 RIGHT FRONT SILL	2727	-649	450				
LONGITUDINAL				24.5	52.3	9.4	24.6
LATERAL				2.7	176.5	18.4	24.1
VERTICAL				19.8	50.8	5.4	20.4
RESULTANT				30.1	51.5		
2 RIGHT REAR SILL	1805	-652	451				
LONGITUDINAL				6.2	53.1	9.7	24.4
LATERAL				20.9	39.4	22.6	25.0
VERTICAL				4.7	30.6	11.4	46.9
RESULTANT				24.7	25.0		
3 REAR FLOORPAN OVER AXLE	981	0	715				
LONGITUDINAL				3.8	46.3	5.5	33.8
LATERAL				2.2	218.6	17.0	25.5
VERTICAL				10.3	76.4	8.6	40.8
RESULTANT				17.2	25.3		

TABLE 5

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY CONTINUED

TEST NUMBER 931007

No. LOCATION	X*	Y*	Z*	POSITIVE		NEGATIVE	
				DIRECTION		DIRECTION	
				MAX G MSEC		MAX G MSEC	
4 LEFT REAR SILL LATERAL	1790	652	475	11.9	16.3	43.6	23.1
5 LEFT FRONT SILL LATERAL	2682	649	470	13.0	30.1	38.6	6.0
6 LEFT FRONT DOOR CENTERLINE LATERAL ¹	2872	711	805	113.6	17.3	260.3	9.5
7 RIGHT REAR SEAT LATERAL	1570	-345	495	2.4	220.0	26.0	23.8
8 LEFT FRONT DOOR MID-REAR LATERAL	2461	728	705	75.2	13.1	131.8	8.4
9 LEFT FRONT DOOR UPPER CENTERLINE LATERAL ¹	2840	730	962	---	---	123.8	10.5

TABLE 5

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY CONTINUED

TEST NUMBER 931007

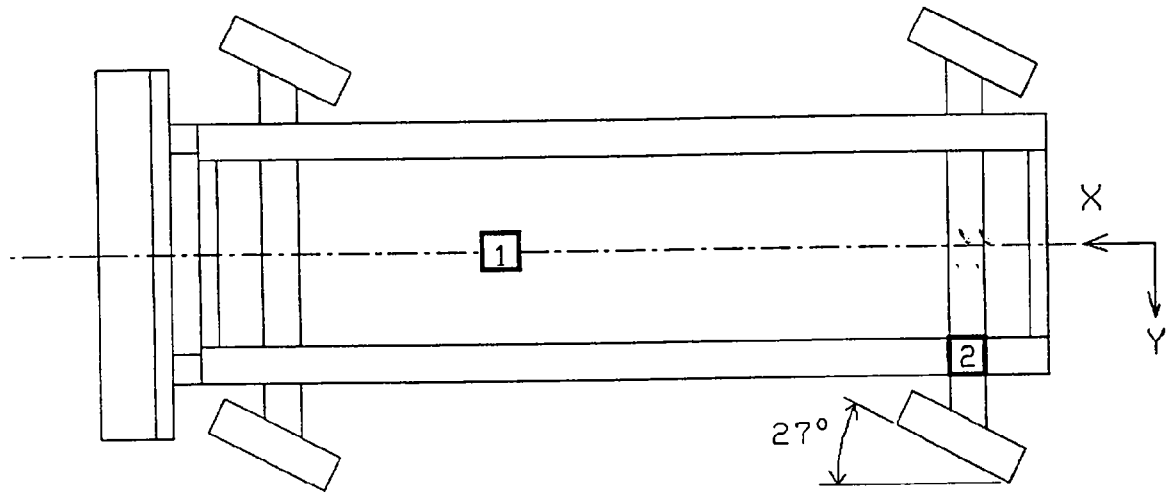
No. LOCATION	X*	Y*	Z*	POSITIVE DIRECTION MAX G MSEC	NEGATIVE DIRECTION MAX G MSEC
10 LEFT REAR DOOR MID-REAR LATERAL	1520	729	910	47.2 43.8	129.0 8.1
11 LEFT REAR DOOR UPPER CENTERLINE LATERAL	1861	731	1057	16.0 43.1	103.2 11.9
12 REAR SEAT BELT BUCKLE LATERAL	1795	238	655	61.7 66.9	62.0 43.8
13 REAR SEAT BUCKLE BRACKET LATERAL ¹	1795	238	670	8.6 34.4	16.9 40.0

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN MILLIMETERS.

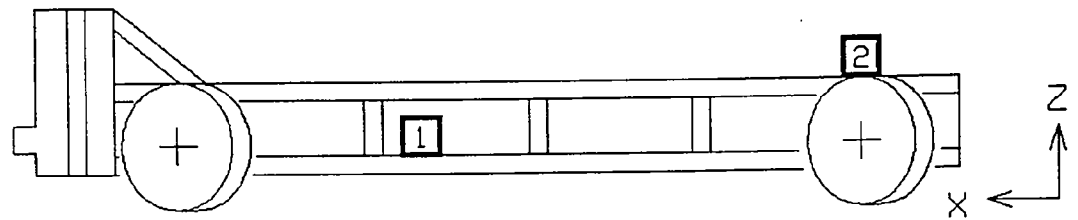
REFERENCE: X: + FORWARD FROM REAR BUMPER
 Y: + LEFTWARD FROM VEHICLE CENTERLINE
 Z: + UPWARD FROM GROUND LEVEL

¹ See DATA ACQUISITION EXPLANATIONS

FIGURE 3 MOVING DEFORMABLE BARRIER ACCELEROMETER PLACEMENT



TOP VIEW



SIDE VIEW

TABLE 6

MOVING DEFORMABLE BARRIER ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 931007

No. LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
				MAX G	MSEC	MAX G	MSEC
1 CENTER OF GRAVITY	1900	0	320	1.5	169.1	13.2	36.8
LONGITUDINAL				4.6	14.5	---	---
LATERAL ¹				5.7	182.9	4.4	61.1
VERTICAL				---	---	---	---
RESULTANT ¹				---	---	---	---
2 LEFT FRAME RAIL	385	633	620				
OVER REAR AXLE				2.9	123.3	18.4	38.0
LONGITUDINAL				1.9	82.6	5.6	32.4
LATERAL ¹							

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN MILLIMETERS.

REFERENCE: X: + FORWARD FROM REAR POINT OF FRAME

Y: + LEFTWARD FROM BARRIER CENTERLINE

Z: + UPWARD FROM GROUND LEVEL

¹See DATA ACQUISITION EXPLANATIONS

TABLE 7 VEHICLE EXTERIOR PROFILES AND STATIC CRUSH
ZERO DISTANCE AT PROJECTED IMPACT POINT¹

LOCATION	HEIGHT (DELIVERED)	HEIGHT (PRE-TEST)	-152	0	152 ¹⁵³	152 ¹⁵³	305 ¹⁵²	457 ¹⁵³	610 ¹⁵²	762 ¹⁵²	914 ¹⁵³	1067 ¹⁵³	1219	1372	1524	1676	1829
PRE-TEST PROFILE (DISTANCE IN MILLIMETERS FROM REFERENCE PLANE ²)																	
Axle height	343	322	X	429	427	431	425	422	425	425	425	427	425	425	430	428	424
H-point	787	771	378	387	380	380	367	365	366	366	364	364	364	362	364	364	361
Mid-door	737	732	378	387	382	382	370	365	365	365	365	365	367	361	365	366	361
Window sill	1067	1045	416	414	410	410	395	393	392	392	390	392	389	382	380	385	380
Window top	1629	1612	X	X	X	X	X	X	X	590	587	587	588	584	580	586	579

POST-TEST PROFILE (DISTANCE IN MILLIMETERS FROM REFERENCE PLANE²)

Axle height	343	322	X	425	396	420	435	443	457	476	494	501	530	500	480	410
H-point	787	771	426	482	686	720	736	744	755	771	771	780	795	795	769	670
Mid-door	737	732	425	500	690	696	715	725	721	752	756	772	761	755	735	641
Window sill	1067	1045	434	477	585	626	656	663	676	691	709	784	777	760	705	675
Window top	1629	1612	X	X	X	X	X	X	592	611	625	644	672	647	605	855

STATIC CRUSH (MM)

	X	-4	-31	-11	10	21	32	51	67	76	105	70	52	-14
Axle height	343	322	X											
H-point	787	771	48	95	340	369	379	389	407	416	433	431	405	309
Mid-door	737	732	47	113	308	314	345	356	387	391	400	390	369	280
Window sill	1067	1045	18	63	175	216	261	270	284	317	395	380	320	295
Window top	1629	1612	X	X	X	X	X	2	24	38	56	67	19	276

Projected impact point is 940 mm forward of the driver's side wheelbase mid-point.

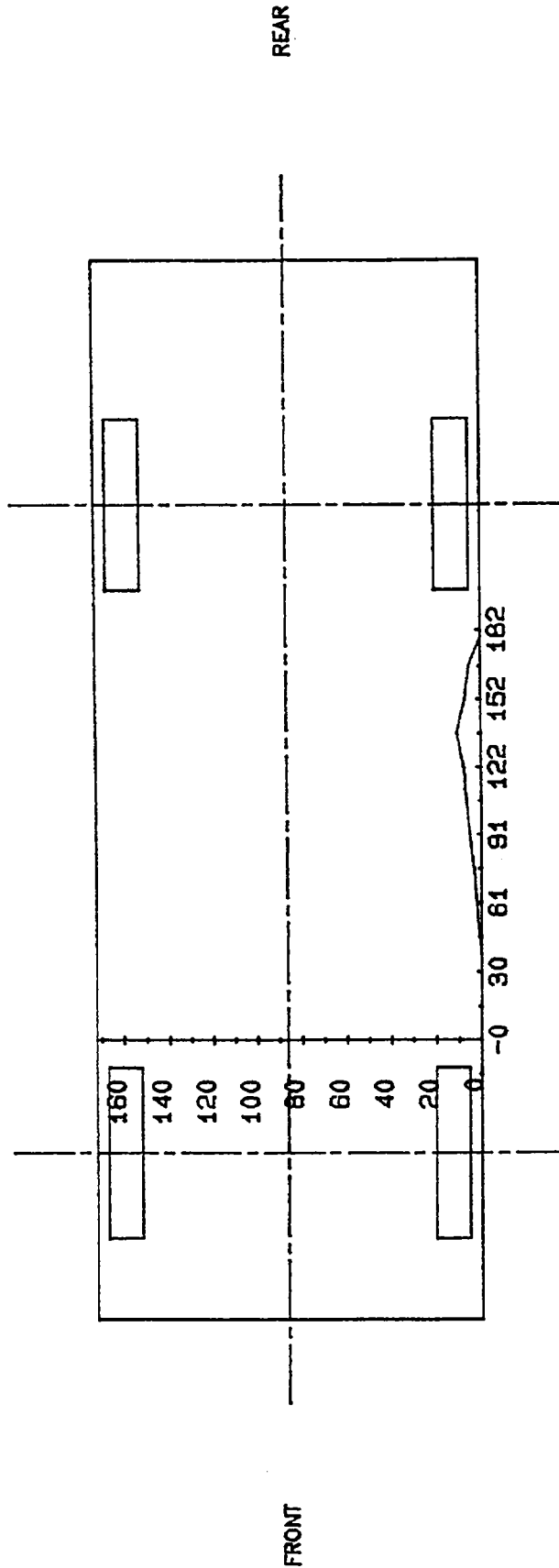
²Reference plane is parallel to and 1219mm from vehicle's longitudinal centerline.

Column readings are front to rear from left to right.

All measurements are in millimeters.

FIGURE 4

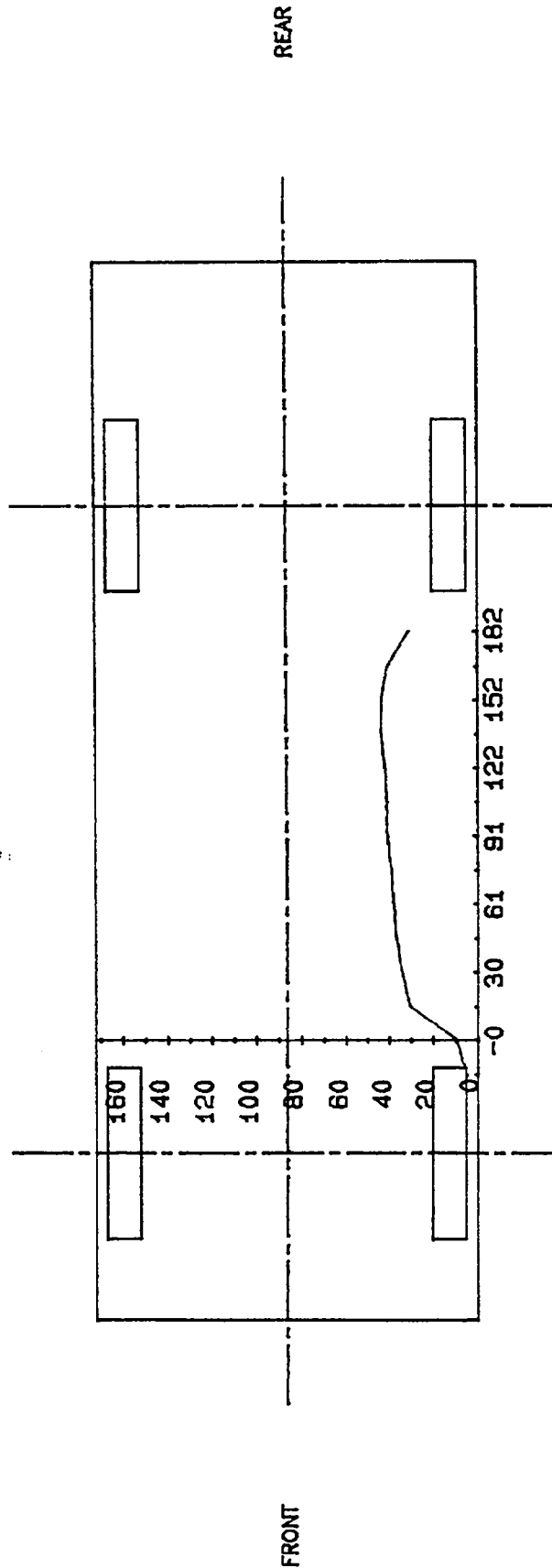
VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS AXLE HEIGHT WHICH IS 34.3 CM. ABOVE GROUND LEVEL
(0,0) EQUALS PROJECTED IMPACT POINT

FIGURE 4, CONT'D.

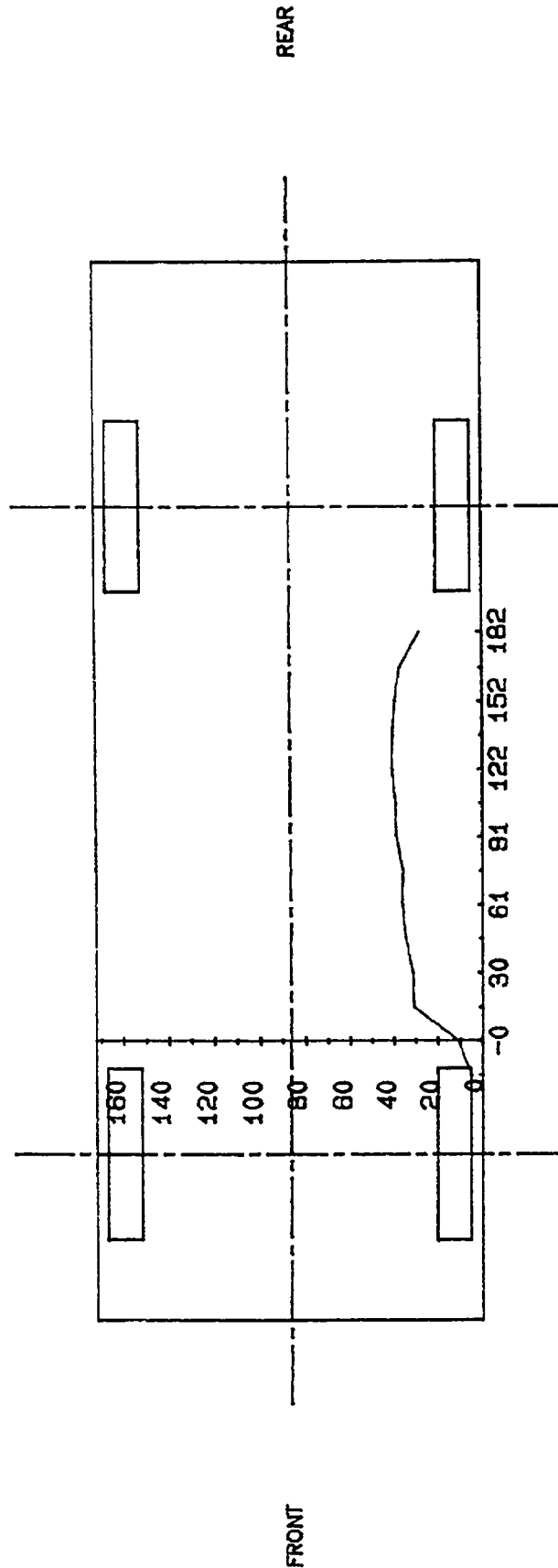
VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS H-POINT HEIGHT WHICH IS 78.7 CM. ABOVE GROUND LEVEL
(0,0) EQUALS PROJECTED IMPACT POINT

FIGURE 4, CONT'D.

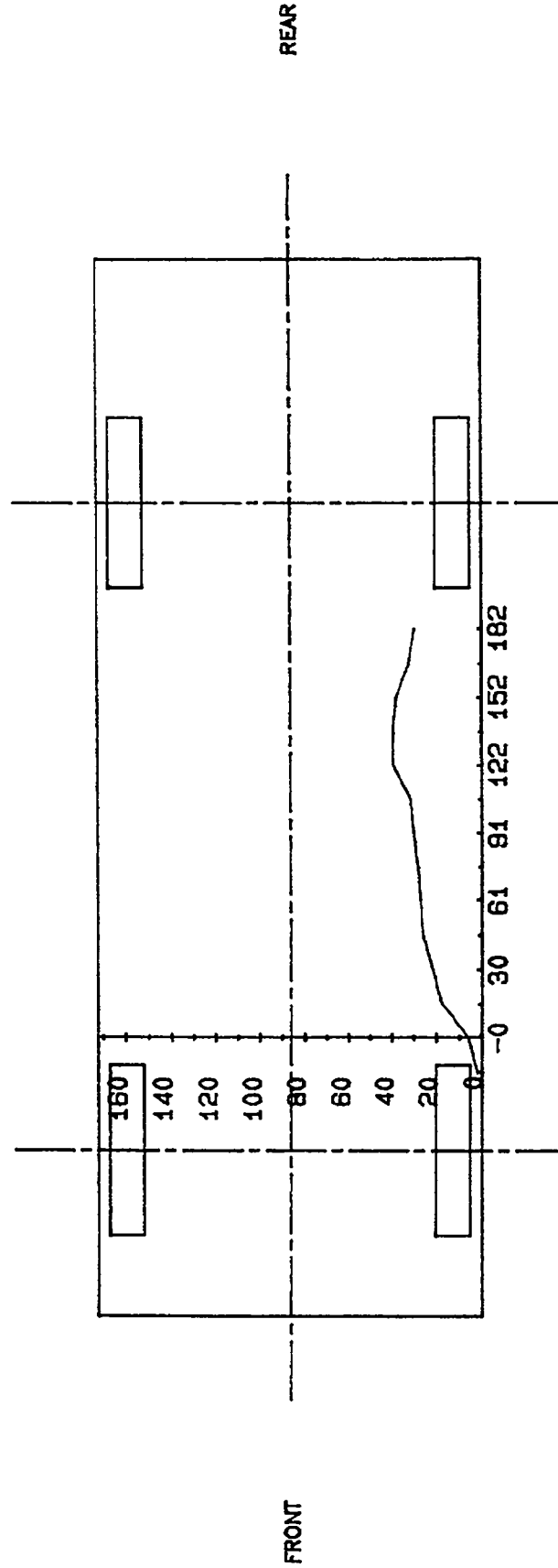
VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS MID DOOR HEIGHT WHICH IS 73.7 CM. ABOVE GROUND LEVEL
(0.0) EQUALS PROJECTED IMPACT POINT

FIGURE 4, CONT'D.

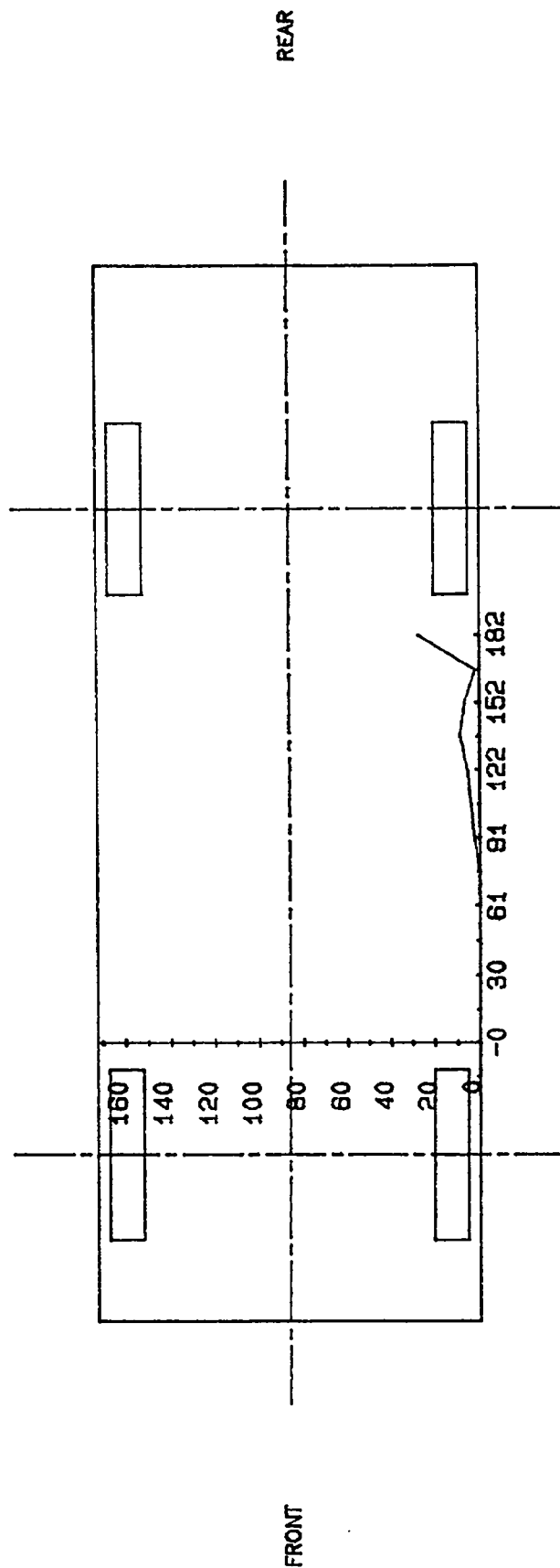
VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS WINDOW SILL HEIGHT WHICH IS 106.7 CM. ABOVE GROUND LEVEL
(0,0) EQUALS PROJECTED IMPACT POINT

FIGURE 4, CONT'D.

VEHICLE EXTERIOR STATIC CRUSH PROFILE



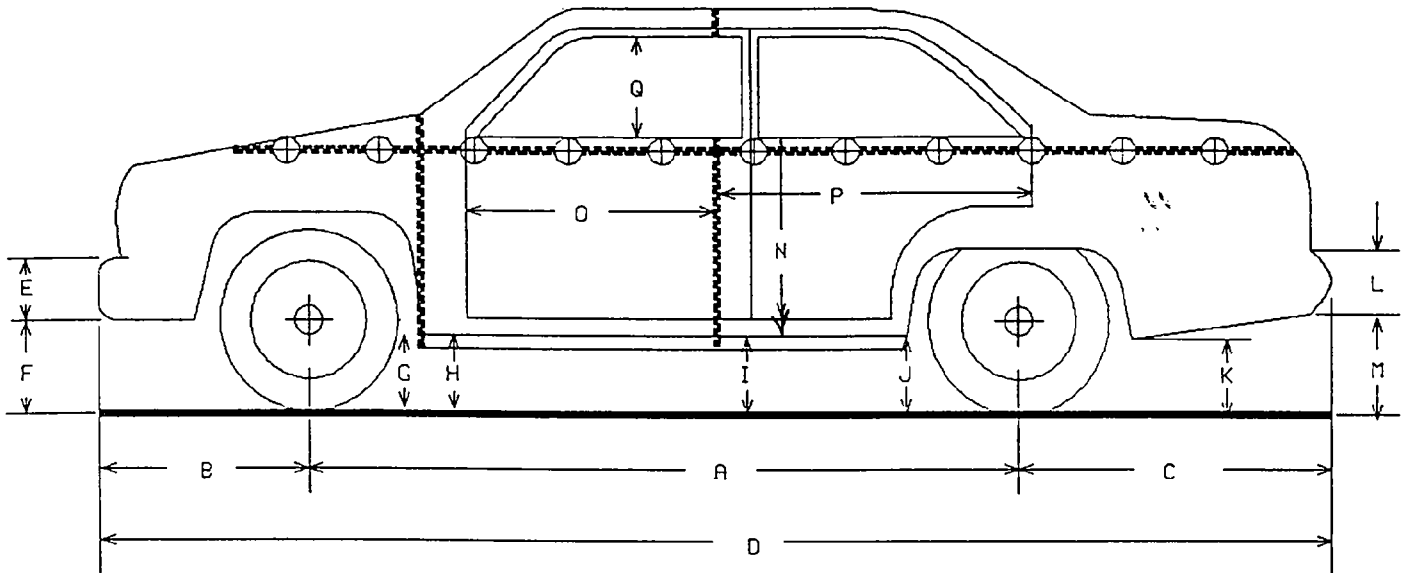
PROFILE LEVEL EQUALS WINDOW TOP HEIGHT WHICH IS 162.9 CM. ABOVE GROUND LEVEL
(0,0) EQUALS PROJECTED IMPACT POINT

FIGURE 5 PRE-TEST AND POST-TEST MEASUREMENTS

VEHICLE: 1993 Ford Explorer XLT 4-Door

VIN: 1FMDU32X7PUD82317

TEST DATE: 10/07/93



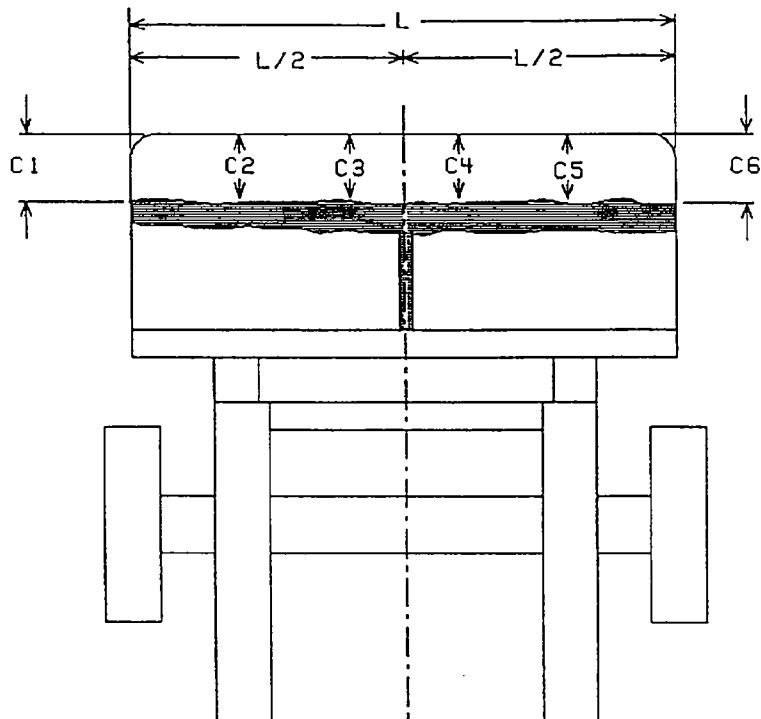
LEFT SIDE VIEW

	PRE-TEST	POST-TEST	CHANGE		PRE-TEST	POST-TEST	CHANGE
A	2855	2845	10	J	345	NA ¹	NA ¹
B	744	750	-6	K	458	477	-19
C	1086	1087	-1	L	160	160	0
D	4710	4708	2	M	486	585	-99
E	190	190	0	N	740	698	42
F	466	490	-24	O	730	730	0
G	340	346	-6	P	1276	1170	106
H	310	313	-3	Q	482	471	11
I	333	NA ¹	NA ¹				

¹The door sill trim piece broke loose from the vehicle during the impact event.

All distance measurements are in millimeters.

FIGURE 6 MOVING DEFORMABLE BARRIER FACE CRUSH



NOTES: L is pre-test length of contact surface.
C1 through C6 are spaced equally apart.
CL is vehicle centerline.
All measurements are in millimeters.

	PRE-TEST		POST-TEST		CRUSH
L	<u>1624</u> 1676				
C1	<u>78</u>	C1	<u>142</u>	C1	<u>64</u>
C2	<u>65</u>	C2	<u>95</u>	C2	<u>30</u>
C3	<u>68</u>	C3	<u>100</u>	C3	<u>32</u>
C4	<u>71</u>	C4	<u>104</u>	C4	<u>33</u>
C5	<u>68</u>	C5	<u>111</u>	C5	<u>43</u>
C6	<u>84</u>	C6	<u>128</u>	C6	<u>44</u>
CL	<u>65</u>	CL	<u>100</u>	CL	<u>35</u>

TABLE 8 MOVING DEFORMABLE BARRIER FACE STATIC CRUSH
ZERO DISTANCE AT BARRIER CENTERLINE¹

LOCATION	HEIGHT	PRE-TEST PROFILE (DISTANCE IN MILLIMETERS FROM REFERENCE PLANE ²)																
		813	711	610	508	406	305	203	102	0	102	203	305	406	508	610	711	813
Top of face	1041	171	171	171	173	175	175	169	170	170	170	169	166	165	167	168	170	165
Mid-face	787	170	170	169	170	171	172	170	168	164	170	170	166	165	167	168	169	168
Bumper	660	84	69	67	68	71	74	71	66	65	69	68	65	65	65	65	68	78

POST-TEST PROFILE (DISTANCE IN MILLIMETERS FROM REFERENCE PLANE²)

Top of face	1041	233	190	165	152	156	160	163	170	169	169	171	174	175	178	193	230	255
Mid-face	787	205	201	194	186	182	176	175	174	171	170	174	171	172	171	171	181	191
Bumper	660	128	120	121	111	120	113	104	102	100	91	100	101	97	95	101	120	142

STATIC CRUSH (MM)

Top of face	1041	62	19	-6	-21	-19	-15	-6	0	-1	-1	2	8	10	11	25	60	90
Mid-face	787	35	31	25	16	11	4	5	6	7	0	4	5	7	4	3	12	23
Bumper	660	44	51	54	43	49	39	33	36	35	22	32	36	32	30	36	52	64

¹Column readings are left to right across barrier face from left to right.

²Reference plane is 610mm forward of the rear surface of the deformable barrier face.

All measurements are in millimeters.

SECTION 3.0

FMVSS 214 DATA

TABLE 9

DUMMY DATA SUMMARY

TEST NUMBER 931007

	DRIVER DUMMY				PASSENGER DUMMY			
	SN: 903		SN: 906		SN: 906		SN: 906	
	POSITIVE DIRECTION MAX	NEGATIVE DIRECTION MSEC	POSITIVE DIRECTION MAX	NEGATIVE DIRECTION MSEC	POSITIVE DIRECTION MAX	NEGATIVE DIRECTION MSEC	POSITIVE DIRECTION MAX	NEGATIVE DIRECTION MSEC
HEAD								
LONGITUDINAL	15.1	177.9	20.9	96.1	26.7	130.6	14.1	109.4
LATERAL	7.7	176.5	61.3	43.0	11.7	42.9	131.4	62.0
VERTICAL	7.8	26.8	32.3	131.5	39.0	62.4	31.6	85.1
RESULTANT	64.5	43.0			135.8	62.1		
HIC	195 FROM 35.8 TO 71.8		728 FROM 60.4 TO 67.5					
UPPER SPINE								
LONGITUDINAL	13.4	83.1	23.2	66.3	14.7	82.5	22.9	73.1
LATERAL (P)	21.1	66.3	81.7	38.1	8.4	106.2	39.9	55.6
LATERAL (R)	30.1	65.6	80.5	38.1	8.2	106.2	38.9	55.6
VERTICAL	15.2	27.5	12.5	43.1	11.7	38.8	16.2	67.5
RESULTANT (P)	81.9	38.1			41.5	55.6		
RESULTANT (R)	80.7	38.1			40.5	55.6		

TABLE 9

DUMMY DATA SUMMARY CONTINUED

TEST NUMBER 931007

	DRIVER DUMMY SN: 903				PASSENGER DUMMY SN: 906			
	POSITIVE DIRECTION MAX	MSEC	NEGATIVE DIRECTION MAX	MSEC	POSITIVE DIRECTION MAX	MSEC	NEGATIVE DIRECTION MAX	MSEC
LOWER SPINE								
LONGITUDINAL	21.0	32.5	27.0	37.5	18.9	88.1	25.3	72.5
LATERAL (P)	22.4	86.3	80.9	37.5	30.5	71.9	44.7	47.5
LATERAL (R)	23.1	86.9	80.2	37.5	30.6	71.9	44.0	47.5
VERTICAL	11.7	27.5	4.3	43.8	10.7	39.4	8.2	68.8
RESULTANT (P)	85.8	37.5			45.3	47.5		
RESULTANT (R)	85.2	37.5			44.6	47.5		
LEFT UPPER THORAX RIB								
LATERAL (P)	20.9	71.9	60.6	26.3	13.0	115.6	57.9	44.4
LATERAL (R)	20.7	71.9	61.6	26.3	13.2	115.6	55.5	44.4
LEFT LOWER THORAX RIB								
LATERAL (P)	19.7	90.0	69.3	23.1	18.8	78.1	68.5	42.5
LATERAL (R)	19.9	90.0	73.2	23.8	17.2	78.1	68.2	43.1
	TTI(d) (P) 75				TTI(d) (P) 57			
	TTI(d) (R) 77				TTI(d) (R) 56			

TABLE 9

DUMMY DATA SUMMARY CONTINUED

TEST NUMBER 931007

DRIVER DUMMY				PASSENGER DUMMY			
SN: 903				SN: 906			
POSITIVE	NEGATIVE			POSITIVE	NEGATIVE		
DIRECTION	DIRECTION			DIRECTION	DIRECTION		
MAX	MAX	MSEC	MSEC	MAX	MAX	MSEC	MSEC
8.7	24.5	90.0	39.4	11.1	58.1	46.2	38.1
20.7	103.1	82.5	31.3	22.9	71.9	74.9	37.5
11.5	5.1	34.4	199.4	20.8	41.2	13.5	73.8
103.4		31.3		88.9	38.1		

PELVIS

POSITIVE DIRECTION				NEGATIVE DIRECTION			
LONGITUDINAL: FORWARD				LONGITUDINAL: REARWARD			
LATERAL: LEFTWARD				LATERAL: RIGHTWARD			
VERTICAL: UPWARD				VERTICAL: DOWNWARD			

NOTES:

- (P) Primary Sensor
- (R) Redundant Sensor

TABLE 10 POST-IMPACT DUMMY/VEHICLE DATA

VISIBLE DUMMY CONTACT POINTS:

	DRIVER #903	PASSENGER #906
HEAD	<u>None</u>	<u>C-Pillar</u>
CHEST	<u>None</u>	<u>None</u>
ABDOMEN	<u>Door panel</u>	<u>Door panel</u>
LEFT KNEE	<u>Door panel</u>	<u>Door panel</u>
RIGHT KNEE	<u>Left knee</u>	<u>Left knee</u>

DOOR OPENING:

	LEFT	RIGHT
FRONT	<u>Tools required</u>	<u>Easy</u>
REAR	<u>Tools required</u>	<u>Easy</u>

SEAT MOVEMENT:

	SEAT BACK FAILURE	SEAT SHIFT
FRONT	<u>None</u>	<u>None</u>
REAR	<u>None</u>	<u>None</u>

GLAZING DAMAGE:

The driver's door glass was broken out.

The left half of the windshield cracked.

The left rear door glass was broken out.

OTHER NOTABLE IMPACT EFFECTS:

None

DUMMY KINEMATIC SUMMARY

Upon impact, the driver dummy translated toward the left and impacted the door panel. The driver dummy's head rotated and tilted toward the left as the dummy rebounded toward the right. The dummy's head and upper body rotated toward the right. The dummy was restrained by the three-point unbelt. The dummy came to rest sitting in the driver's seat, facing forward, leaning to the right, and restrained by the three-point unbelt.

Upon impact, the passenger dummy translated toward the left and impacted the door panel. The dummy's upper body and head rotated toward the left and the head contacted the C-pillar. The dummy rebounded and translated toward the right before being restrained by the three-point unbelt. The dummy rotated rearward into the seatback, then rotated forward and came to rest sitting upright in the left rear passenger seat, facing forward, and restrained by the three-point unbelt.

SECTION 4.0

FMVSS 301 DATA

TABLE 11 FUEL SYSTEM DATA

MAKE/MODEL:	Ford/Explorer/XLT
USABLE CAPACITY:	78.7 LITERS (FURNISHED BY COTR)
TEST VOLUME RANGE:	72.4 LITERS TO 74.0 LITERS (92-94% OF USABLE)
ACTUAL TEST VOLUME:	73.2 LITERS (WITH ENTIRE FUEL SYSTEM FILLED)
TEST FLUID TYPE:	STODDARD SOLVENT
SPECIFIC GRAVITY:	0.764
KINEMATIC VISCOSITY:	0.99 CENTISTOKES
TEST FLUID COLOR:	PURPLE
ELECTRIC FUEL PUMP:	Yes
FUEL INJECTION:	Yes
DOES ELECTRIC FUEL PUMP OPERATE WITH IGNITION SWITCH "ON" AND THE ENGINE NOT OPERATING? No	

TABLE 12 FMVSS 301 POST-IMPACT TEST DATA

TEST DATE: 10/07/93

VEHICLE MAKE/MODEL/BODY STYLE: Ford/Explorer XLT/4-Door Sport Utility

TEST REQUIREMENTS:

Test vehicle fuel tank filled to 92 to 94% of manufacturer's usable capacity and with electric fuel pump operating (if it will operate without engine operation). Part 572 test dummies located at each front designated seating position.

TEST VEHICLE IMPACT TYPE:

- ☐ FRONTAL (____ KPH)
☐ OBLIQUE (48 KPH) WITH ____° BARRIER FACE
FIRST CONTACTING ____ (DRIVER/PASS.) SIDE.
☐ REAR MOVING BARRIER (48 KPH)
☐ LATERAL MOVING BARRIER (32 KPH)
☒ OTHER - 214 48/24 KPH LEFT SIDE IMPACT

FUEL SYSTEM FLUID SPILLAGE MEASUREMENTS:

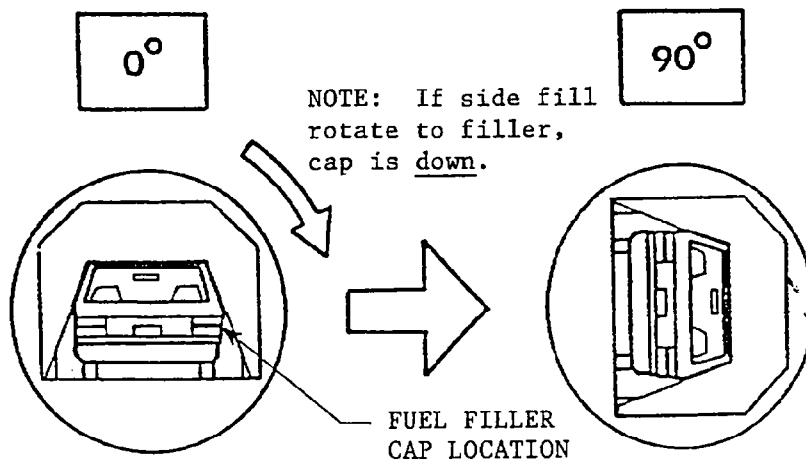
	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FROM IMPACT UNTIL VEHICLE MOTION CEASES - - -	0 G	28 G
2. 5 MINUTE PERIOD AFTER VEHICLE MOTION CEASES -	0 G	142 G
3. NEXT 25 MINUTES AFTER 5 MINUTE PERIOD - - - -	0 G	28 G/MN

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

FIGURE 7 FMVSS 301 STATIC ROLLOVER TEST DATA

TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

TIME REQ. FOR MACHINE TO ROTATE 90° = 2 minutes, 00 seconds

FMVSS 301 POSITION HOLD TIME = 5 minutes, 00 seconds

TOTAL - - - - - = 7 minutes, 00 seconds

NEXT WHOLE MINUTE INTERVAL - - - - - = 7 minutes

FUEL SYSTEM FLUID SPILLAGE MEASUREMENTS:

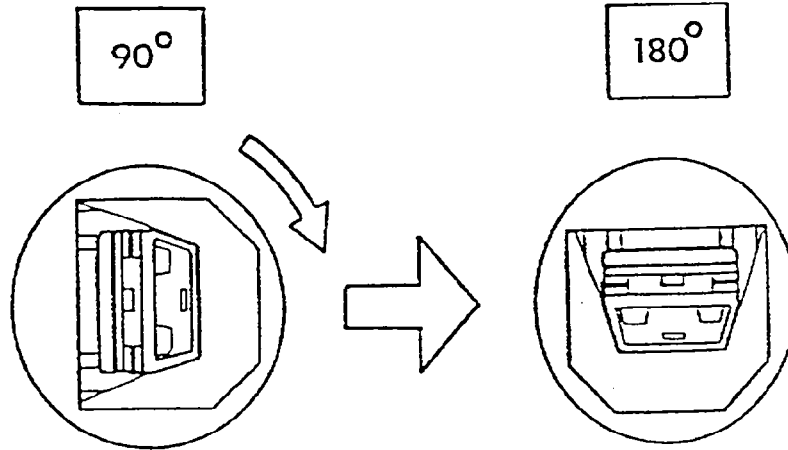
<u>0° TO 90° ROTATION (FUEL FILLER CAP DOWN)</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 G	142 G
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 G	28 G
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 G	28 G

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

FIGURE 7 FMVSS 301 STATIC ROLLOVER TEST DATA, CONT'D.

TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

TIME REQ. FOR MACHINE TO ROTATE 90° = 2 minutes, 00 seconds

FMVSS 301 POSITION HOLD TIME = 5 minutes, 00 seconds

TOTAL - - - - - = 7 minutes, 00 seconds

NEXT WHOLE MINUTE INTERVAL - - - - = 14 minutes

FUEL SYSTEM FLUID SPILLAGE MEASUREMENTS:

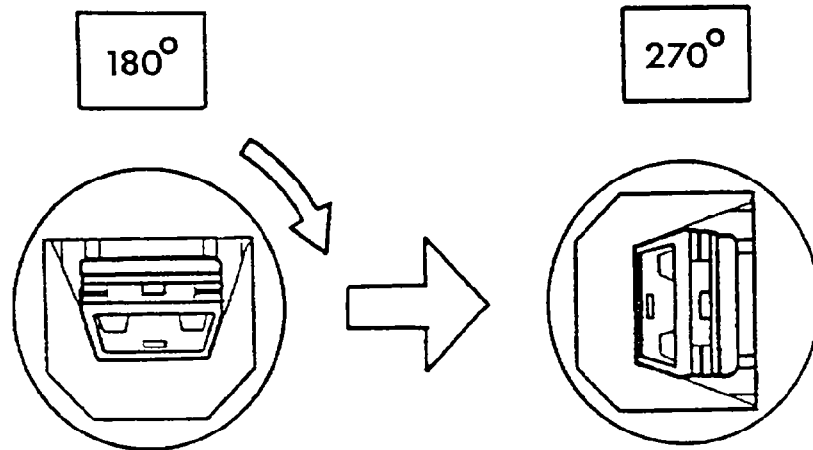
<u>90° TO 180° ROTATION</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 G	142 G
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 G	28 G
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 G	28 G

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

FIGURE 7 FMVSS 301 STATIC ROLLOVER TEST DATA, CONT'D.

TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

TIME REQ. FOR MACHINE TO ROTATE 90° = 2 minutes, 00 seconds

FMVSS 301 POSITION HOLD TIME = 5 minutes, 00 seconds

TOTAL - - - - - = 7 minutes, 00 seconds

NEXT WHOLE MINUTE INTERVAL - - - - - = 21 minutes

FUEL SYSTEM FLUID SPILLAGE MEASUREMENTS:

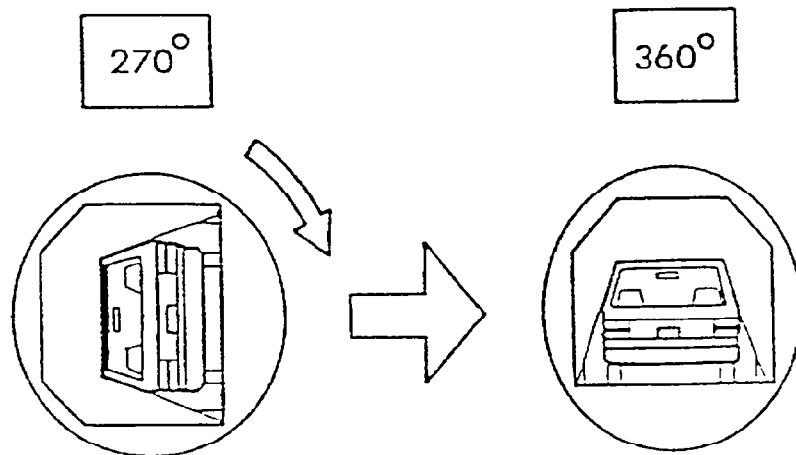
<u>180° TO 270° ROTATION</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 G	142 G
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 G	28 G
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 G	28 G

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

FIGURE 7 FMVSS 301 STATIC ROLLOVER TEST DATA, CONT'D.

TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

TIME REQ. FOR MACHINE TO ROTATE 90° = 2 minutes, 00 seconds

FMVSS 301 POSITION HOLD TIME = 5 minutes, 00 seconds

TOTAL - - - - - = 7 minutes, 00 seconds

NEXT WHOLE MINUTE INTERVAL - - - - = 28 minutes

FUEL SYSTEM FLUID SPILLAGE MEASUREMENTS:

<u>270° TO 360° ROTATION</u>	<u>TEST RESULTS</u>	<u>MAXIMUM ALLOWABLE</u>
1. FIRST 5 MINUTES FROM ONSET OF ROTATION - - - - -	0 G	142 G
2. 6TH MINUTE FROM ONSET OF ROTATION - - - - -	0 G	28 G
3. 7TH MINUTE FROM ONSET OF ROTATION - - - - -	0 G	28 G

FUEL SYSTEM FLUID SPILLAGE LOCATION(S):

None

SECTION 5.0

VEHICLE, OCCUPANT, AND CAMERA MEASUREMENTS

FIGURE 8 DUMMY AND SEAT POSITIONING DATA

MAKE/MODEL/BODY STYLE: Ford/Explorer XLT/4-door sport utility

SEAT TYPE: Bench ADJUSTER TYPE: X Manual-Front
X Bucket-Front Power
X Split bench-Rear X Non-adjustable-rear

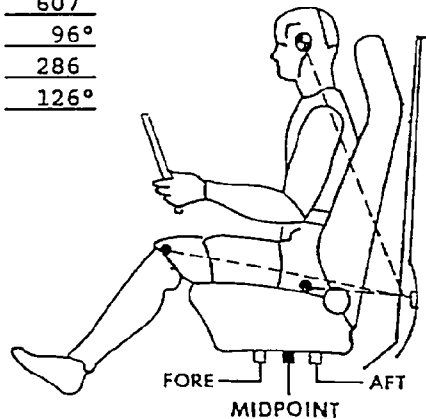
SEAT BACK TYPE: X Non-adjustable-Rear
X Adjustable reclining-Front

TECHNICIANS:
 1. K. Watkins
 2. R. Benavides
 3. J. Taylor

POSITIONING DATE: 10/07/93
 TIME: 1010 TEMPERATURE: 26° C

DRIVER DUMMY¹ # 903 TYPE: SID

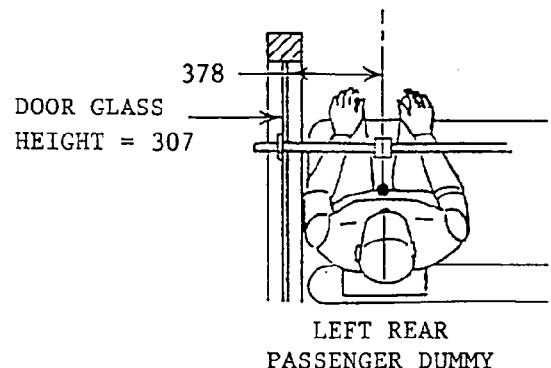
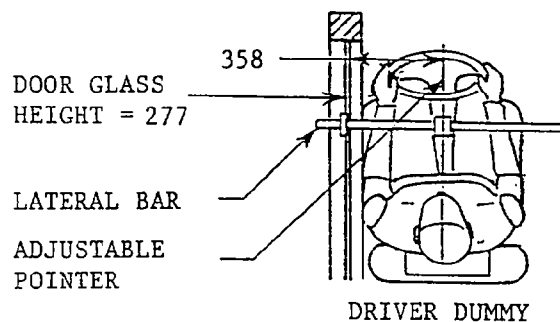
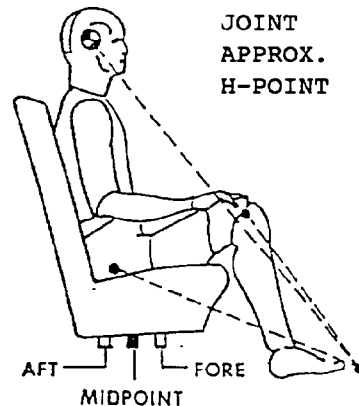
HEAD 481
 TARGET -5°
 KNEE 607
 JOINT 96°
 APPROX. 286
 H-POINT 126°



LEFT REAR

PASSENGER DUMMY² # 906 TYPE: SID

HEAD 514
 TARGET 3°
 KNEE 655
 JOINT 93°
 APPROX. 313
 H-POINT 122°



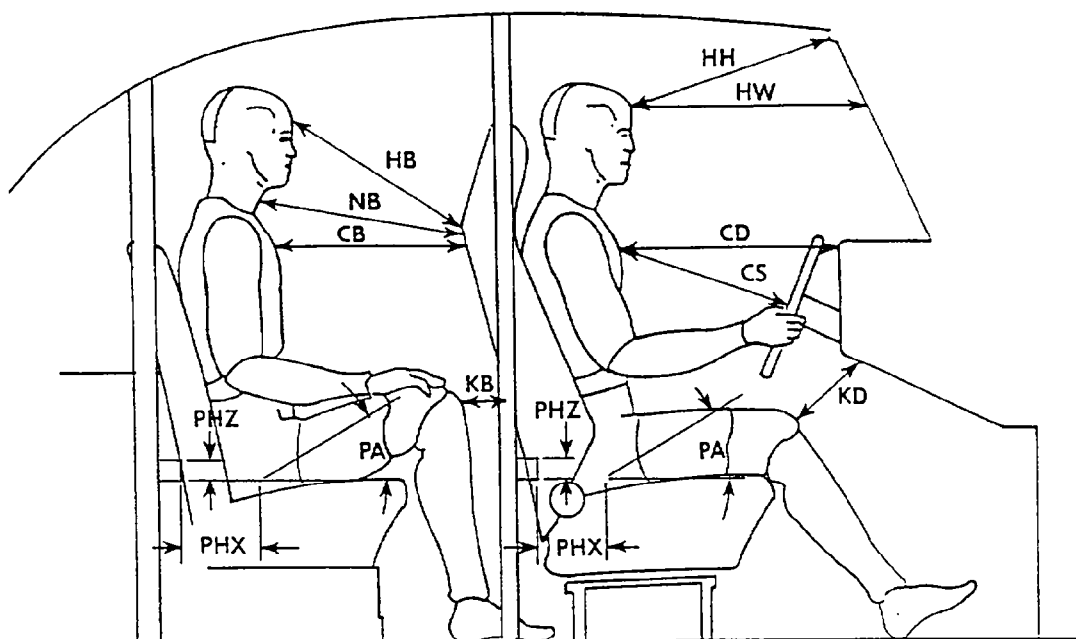
¹Driver dummy measurements are referenced to top of front door striker for 4-door vehicles.

²Passenger dummy measurements are referenced to top of rear door striker for 4-door vehicles. Passenger dummy measurements are referenced to front seat back latch bolt with front seat in mid-position for 2-door vehicles.

All angles are referenced to vertical.

All distance measurements are in millimeters.

FIGURE 9 DUMMY LONGITUDINAL CLEARANCE MEASUREMENTS



	DRIVER	LEFT REAR PASSENGER
HH	540	NA
HW	691	NA
CD	625	NA
CS	384	NA
KDL ¹	192	NA
KDR ¹	194	NA
PA	25	24
PHX	194	226
PHZ	126	128
HB	NA	723
NB	NA	693
CB	NA	588
KBL	NA	143
KBR	NA	147

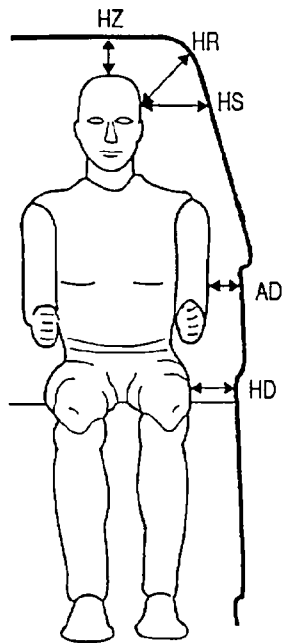
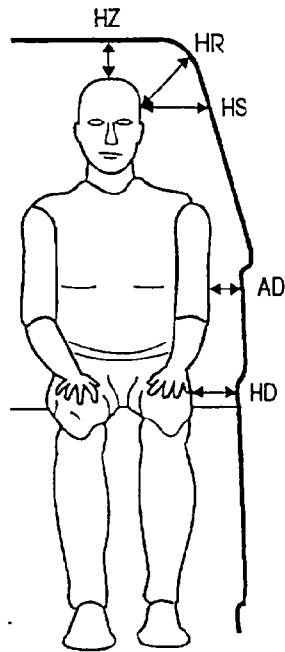
¹Knee measurements taken parallel to the vehicle's longitudinal centerline.

All distance measurements are in millimeters.

All angle measurements are in degrees.

NOTE: For 2-door vehicles, the rear passenger's PHX and PHZ measurements are referenced to the front door stiker.

FIGURE 10 DUMMY LATERAL CLEARANCE MEASUREMENTS



	DRIVER	LEFT REAR PASSENGER
HR	233	199
HS	265	193
AD	109	114
HD	141	133
HZ	167	134

All distance measurements are in millimeters.

FIGURE 11 CAMERA POSITIONS

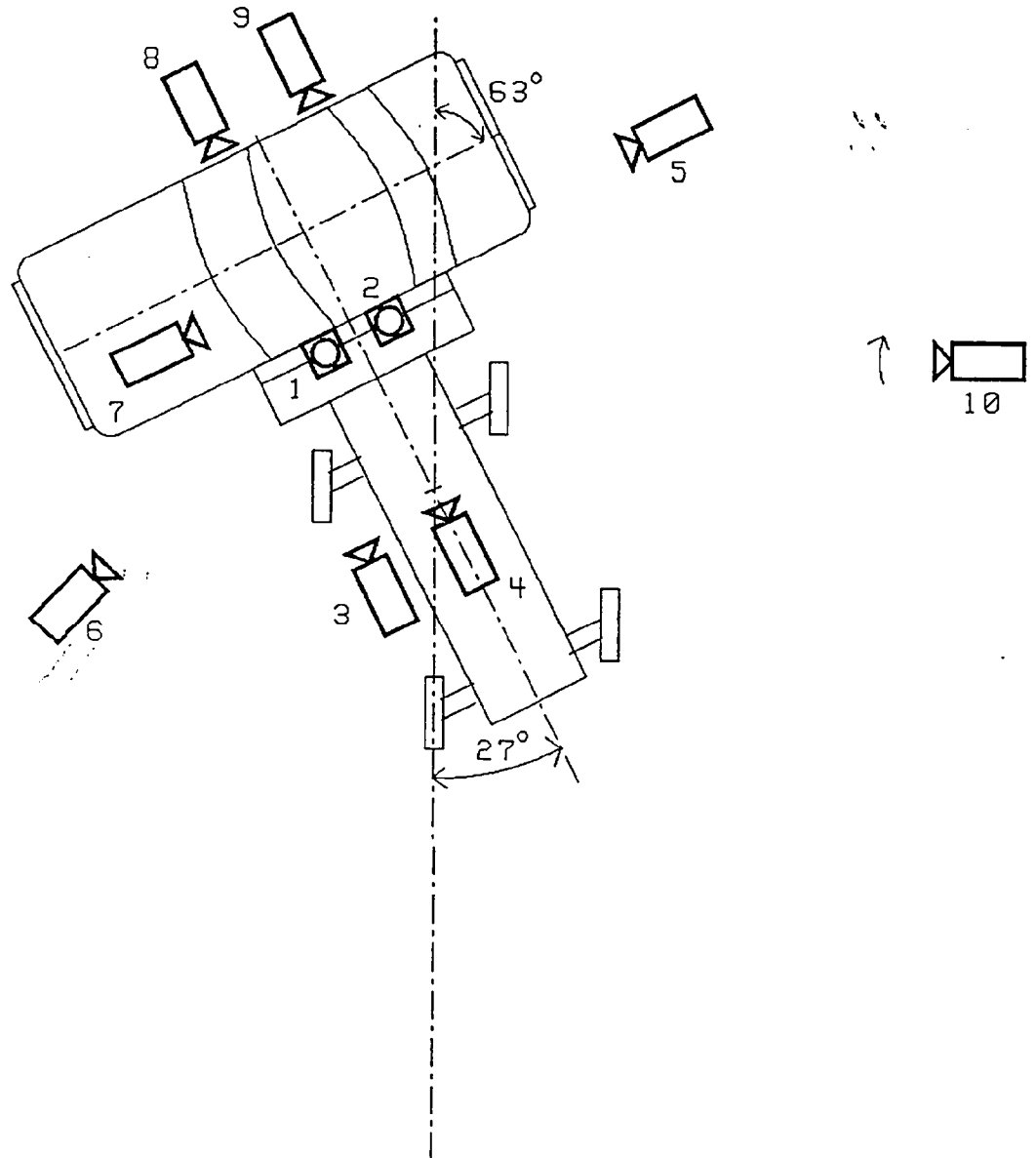


TABLE 13 CAMERA INFORMATION

TEST NO. 931007

VEHICLE: 1993 Ford Explorer XLT

CAMERA NO.	VIEW	CAMERA POSITIONS (CM) ¹	ANGLE ² (DEG)	LENS (MM)	FILM SPEED (FPS)
		X Y Z			
1	Overhead overall	0 0 1100	-90	8.5	748
2	Overhead close-up	-46 0 1100	-90	25	1000
3	Onboard barrier side	NA NA NA	NA	25	1000
4	Onboard barrier center	NA NA NA	NA	13	998
5	Right side	493 -950 89	0	13	1000
6	Left side	-465 307 97	0	25	998
7	Onboard vehicle front	NA NA NA	NA	8	1012
8	Onboard vehicle side-front	NA NA NA	NA	8	998
9	Onboard vehicle side-rear	NA NA NA	NA	8	995
10	Real-time panning	NA NA NA	NA	16	24

¹ +X = Film plane forward of impact point on target vehicle's struck side

+Y = Film plane leftward of impact point on target vehicle's struck side

+Z = Film plane above ground level

² +Angle = Film plane angled upward from horizontal plane.

APPENDIX A

PHOTOGRAPHS

LIST OF PHOTOGRAPHS

<u>Title</u>	<u>Figure</u>
POST-TEST VEHICLE IMPACTOR FACE - LEFT SIDE VIEW 2	A-33
POST-TEST VEHICLE IMPACTOR FACE - TOP VIEW	A-34
POST-TEST VEHICLE ON STATIC ROLLOVER DEVICE	A-35



Figure A-1 PRE-TEST FRONT - VIEW 1



Figure A-2 POST-TEST FRONT - VIEW 1

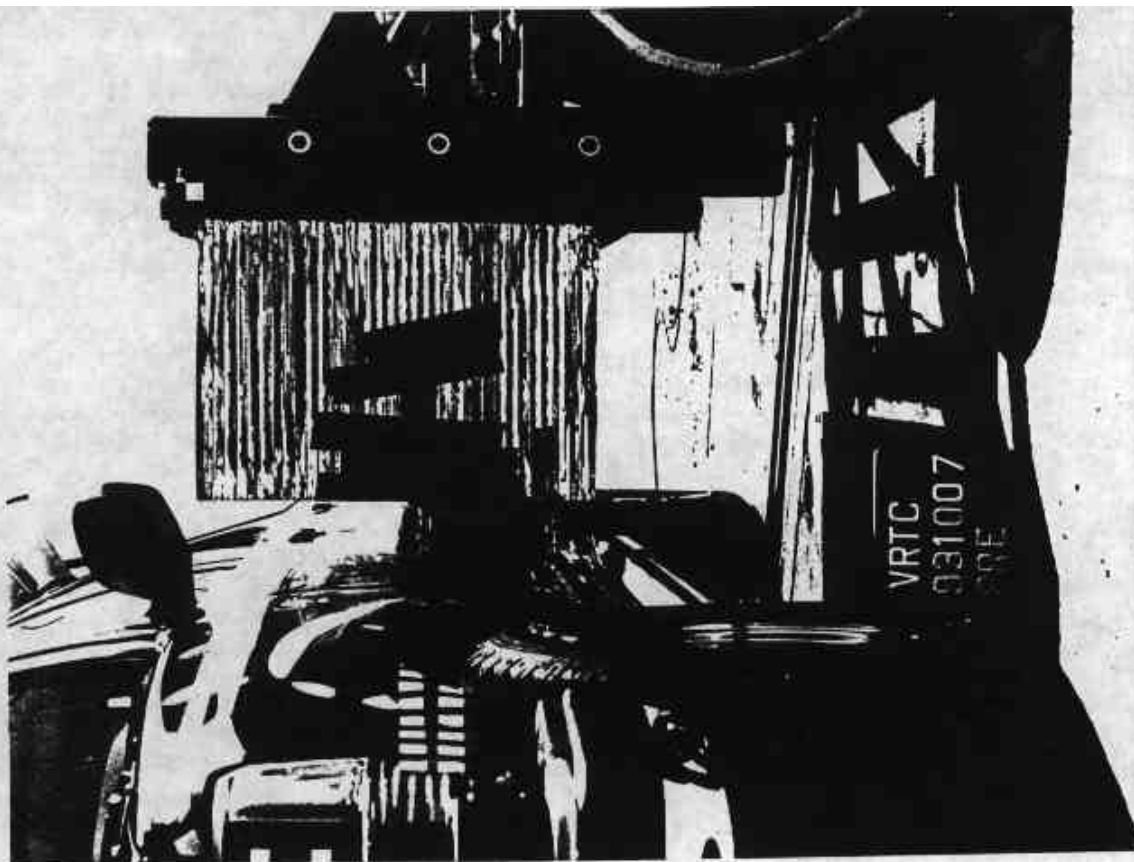


Figure A-3 PRE-TEST FRONT - VIEW 2

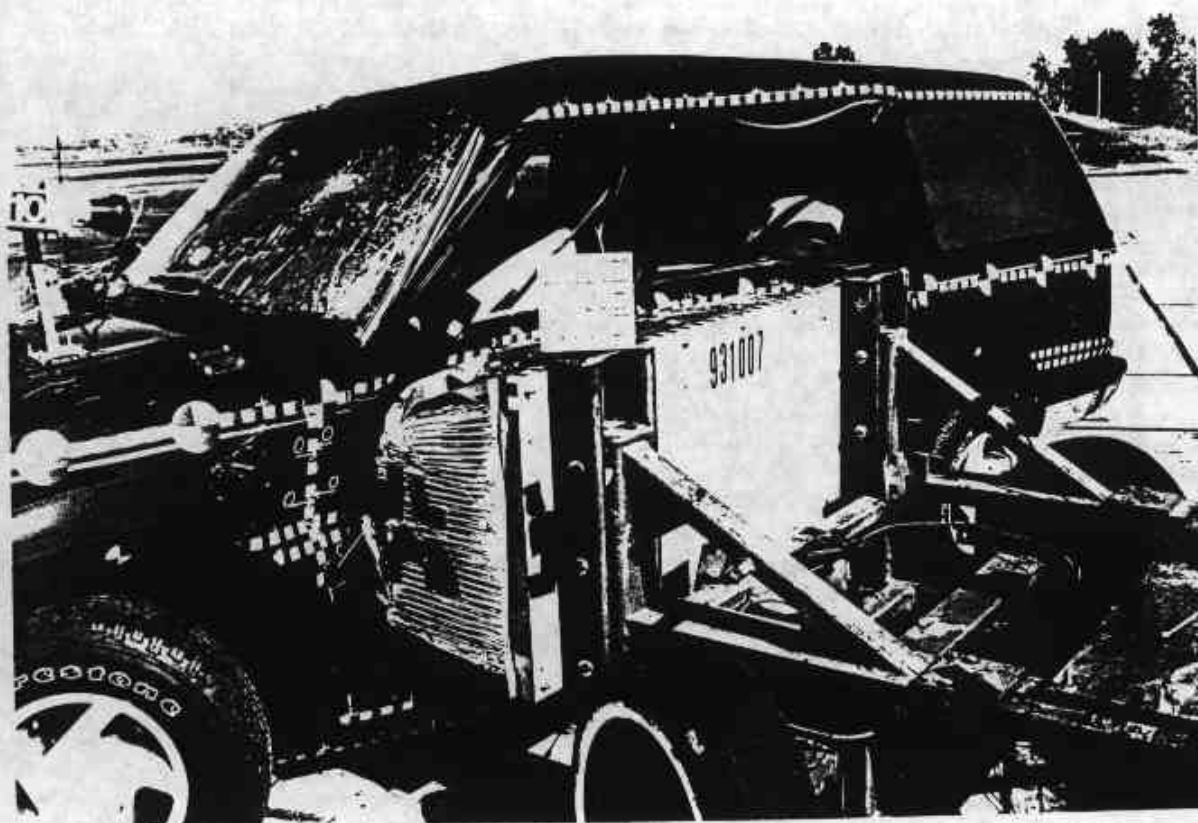


Figure A-4 POST-TEST LEFT FRONT VIEW



Figure A-5 PRE-TEST LEFT SIDE VIEW

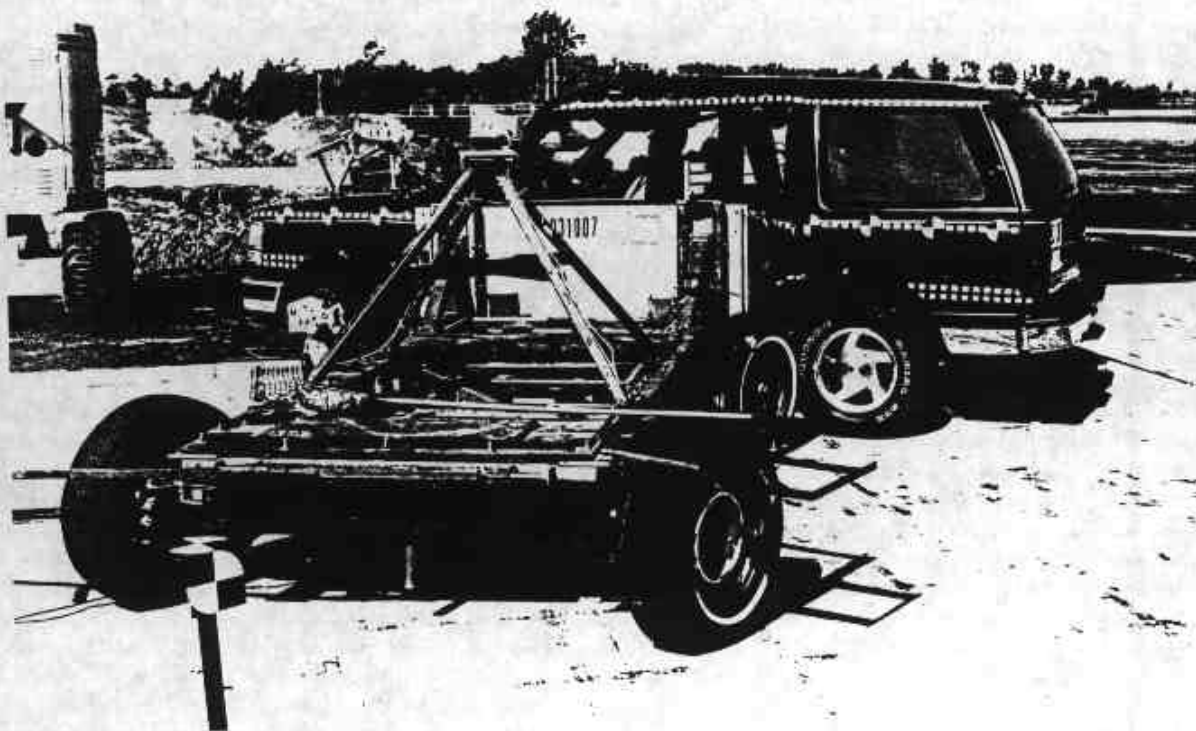


Figure A-6 POST-TEST LEFT SIDE VIEW



Figure A-7 POST-TEST LEFT REAR VIEW



Figure A-8 PRE-TEST REAR - VIEW 1



Figure A-9 POST-TEST REAR VIEW 1

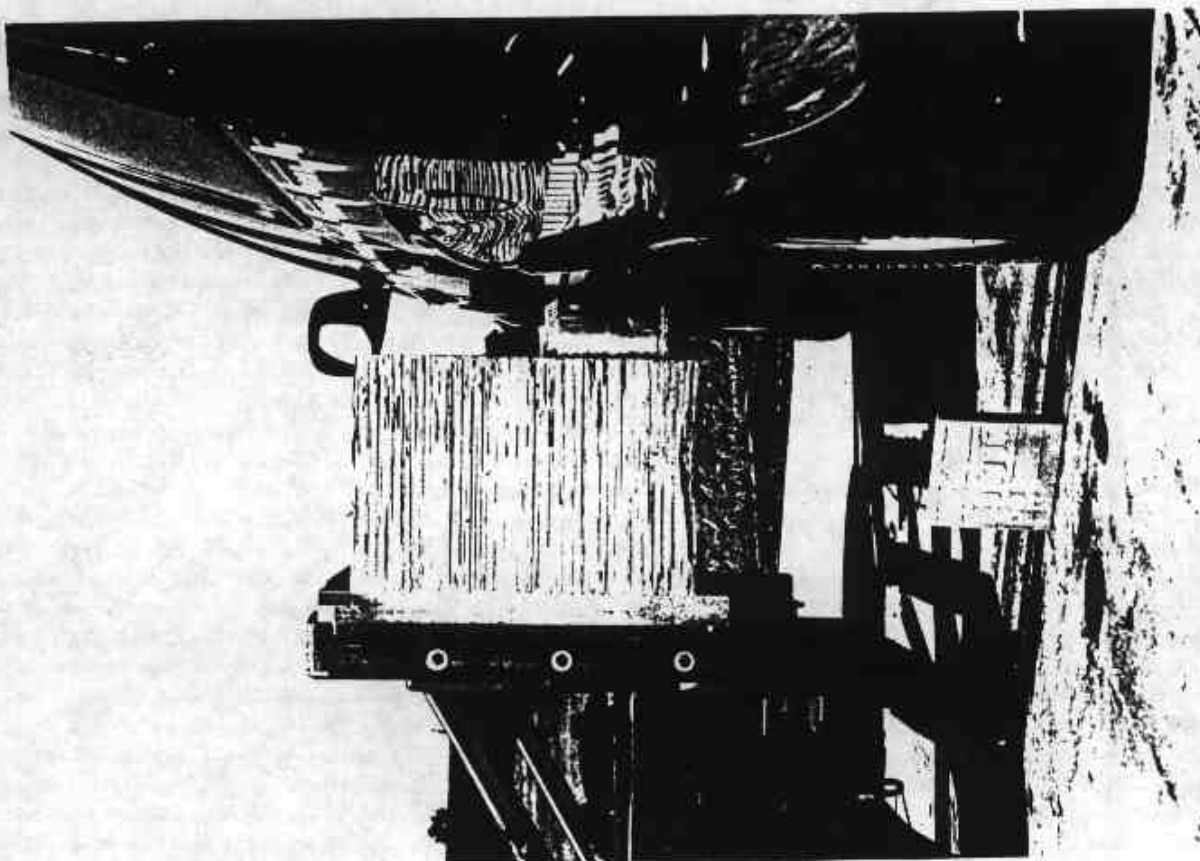


Figure A-10 PRE-TEST REAR - VIEW 2

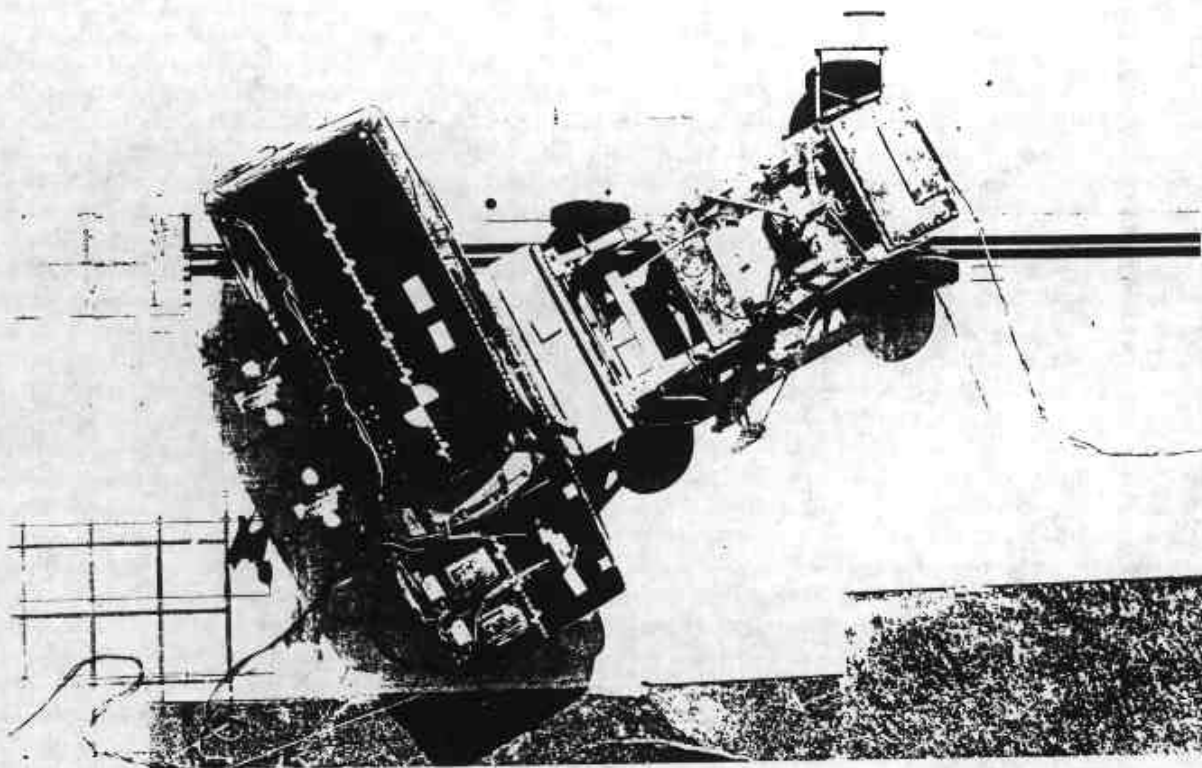


Figure A-11 PRE-TEST OVERHEAD VIEW

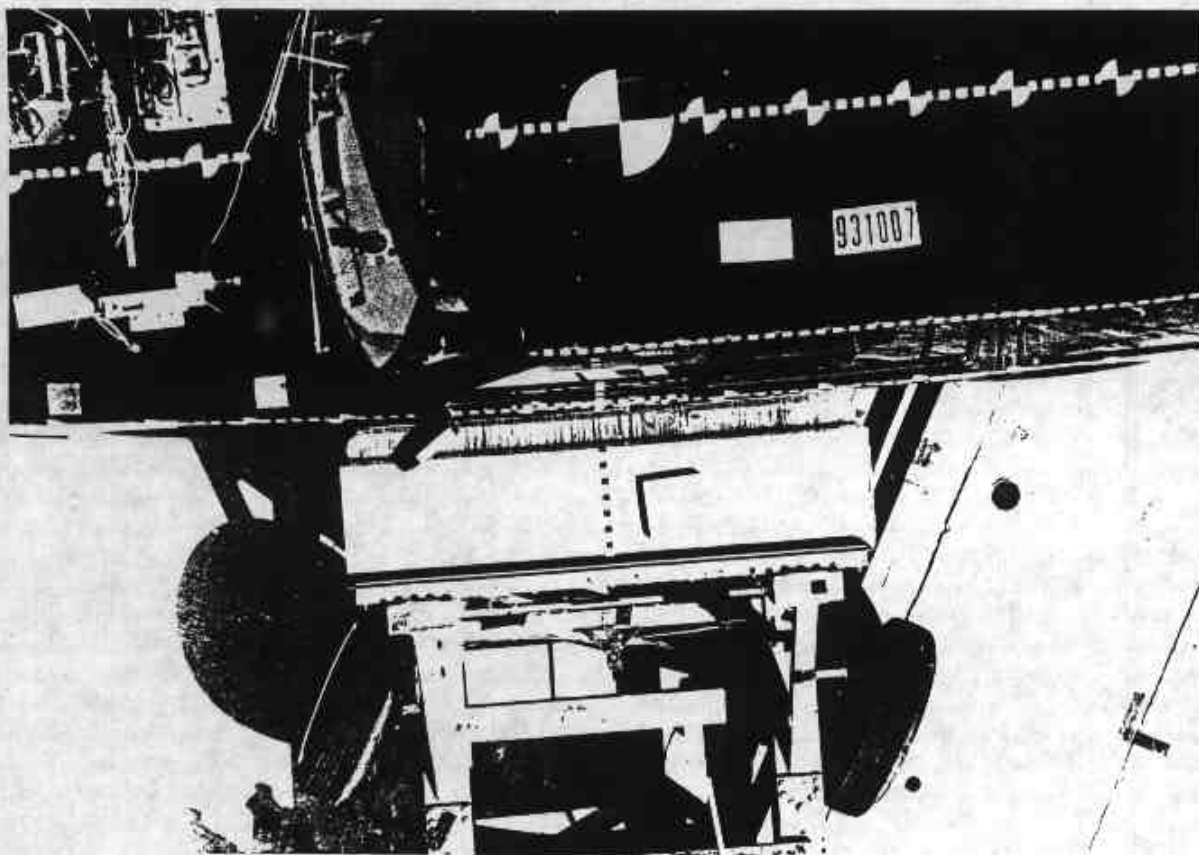


Figure A-12 PRE-TEST OVERHEAD CLOSE-UP VIEW

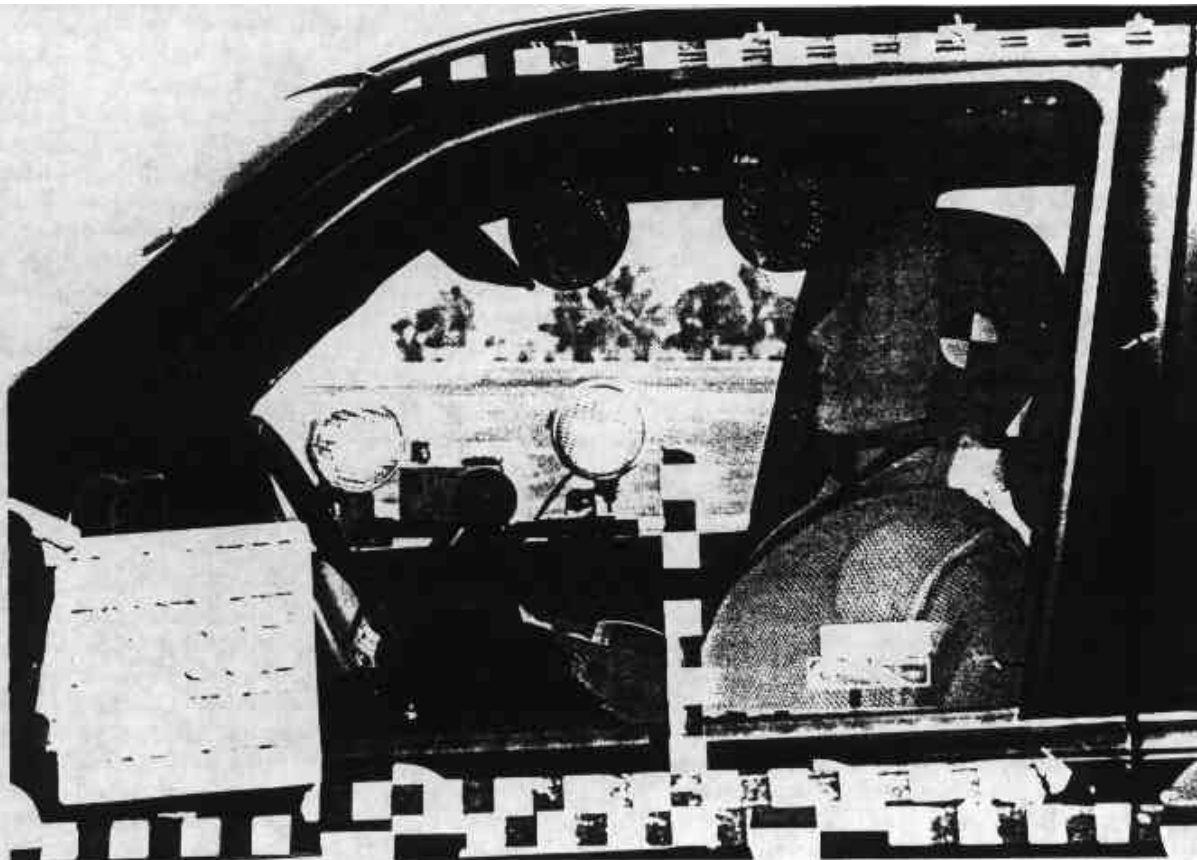


Figure A-13 PRE-TEST DRIVER DUMMY POSITION VIEW



Figure A-14 POST-TEST DRIVER DUMMY POSITION VIEW

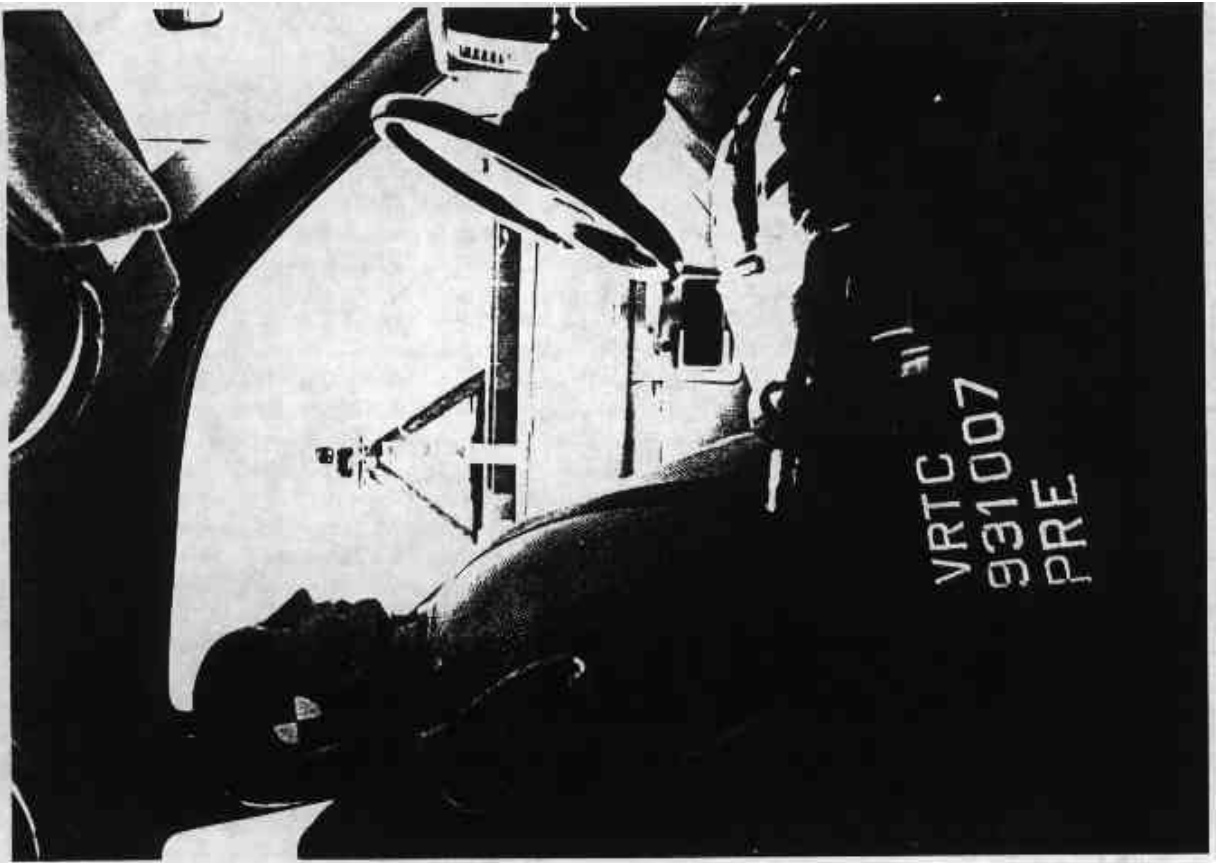


Figure A-15 PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1

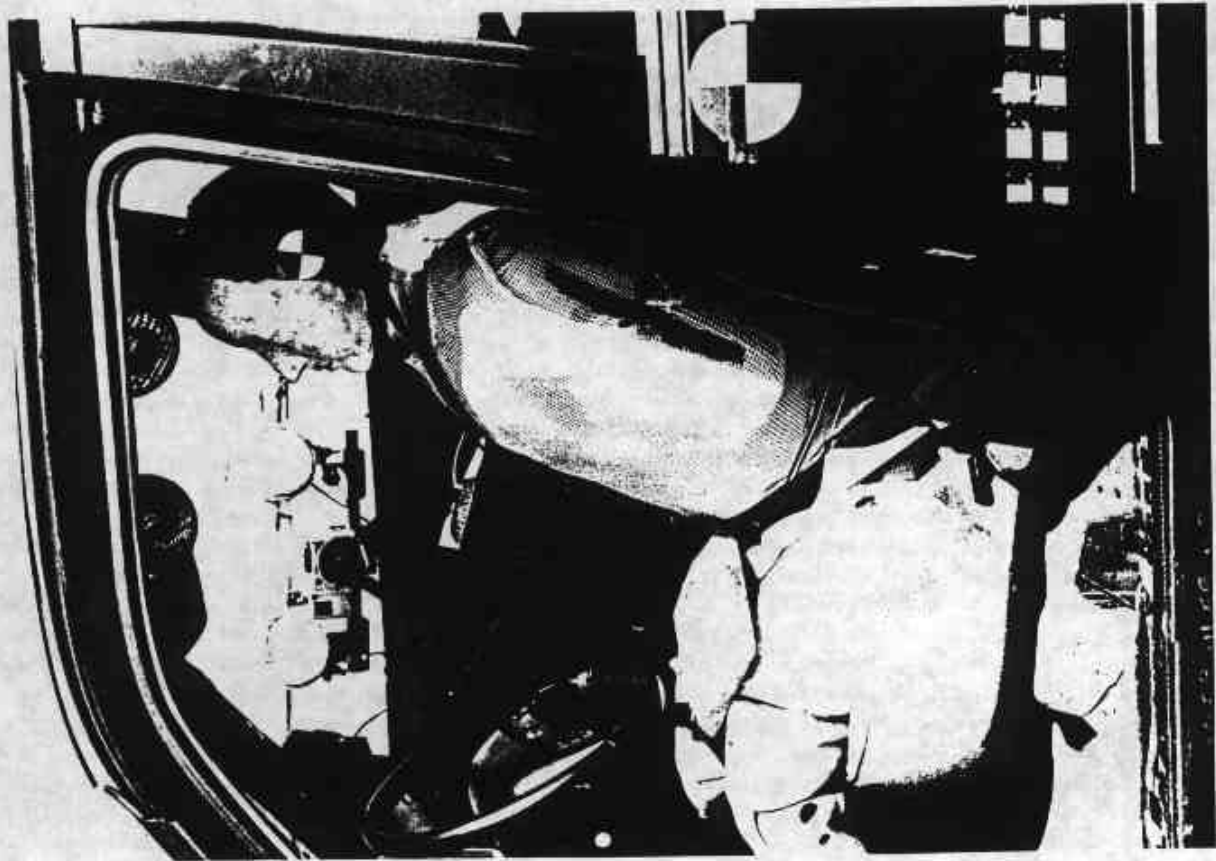


Figure A-16 PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2

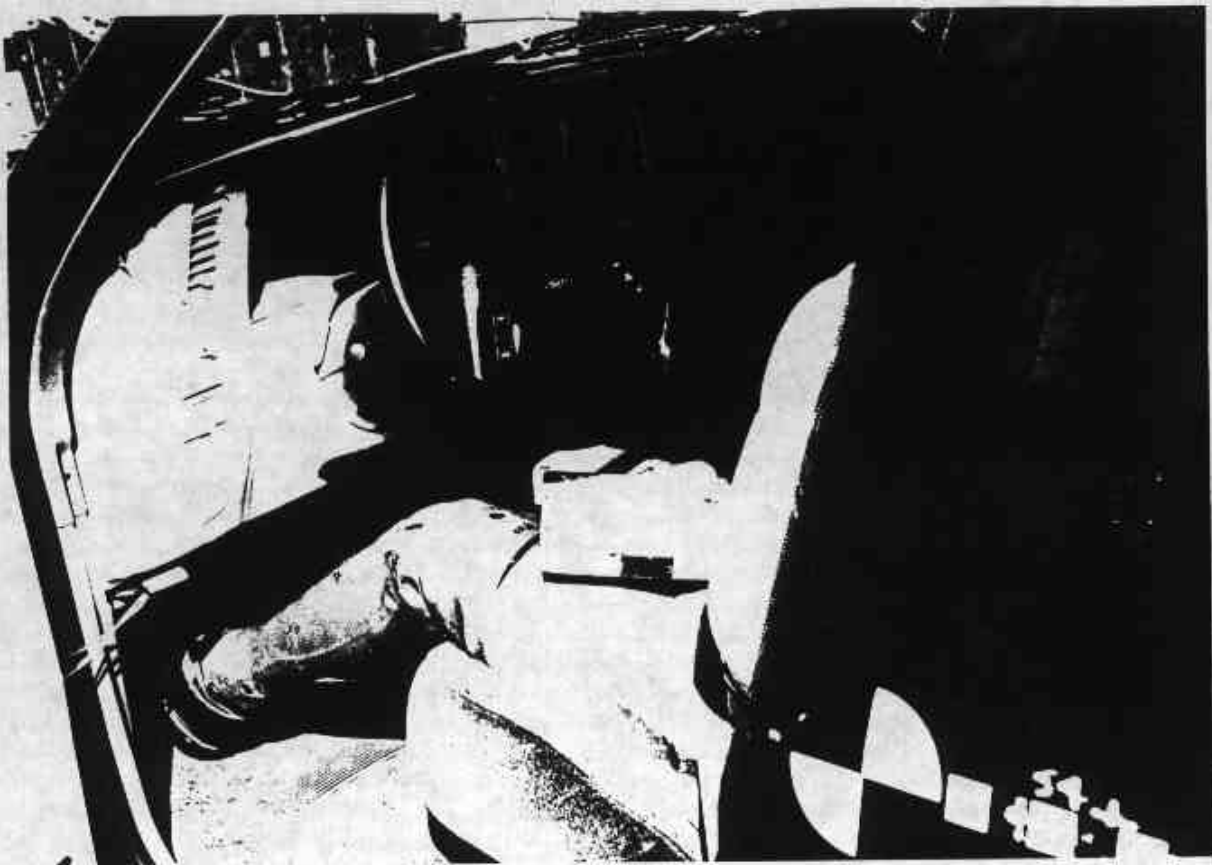


Figure A-17 PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 3

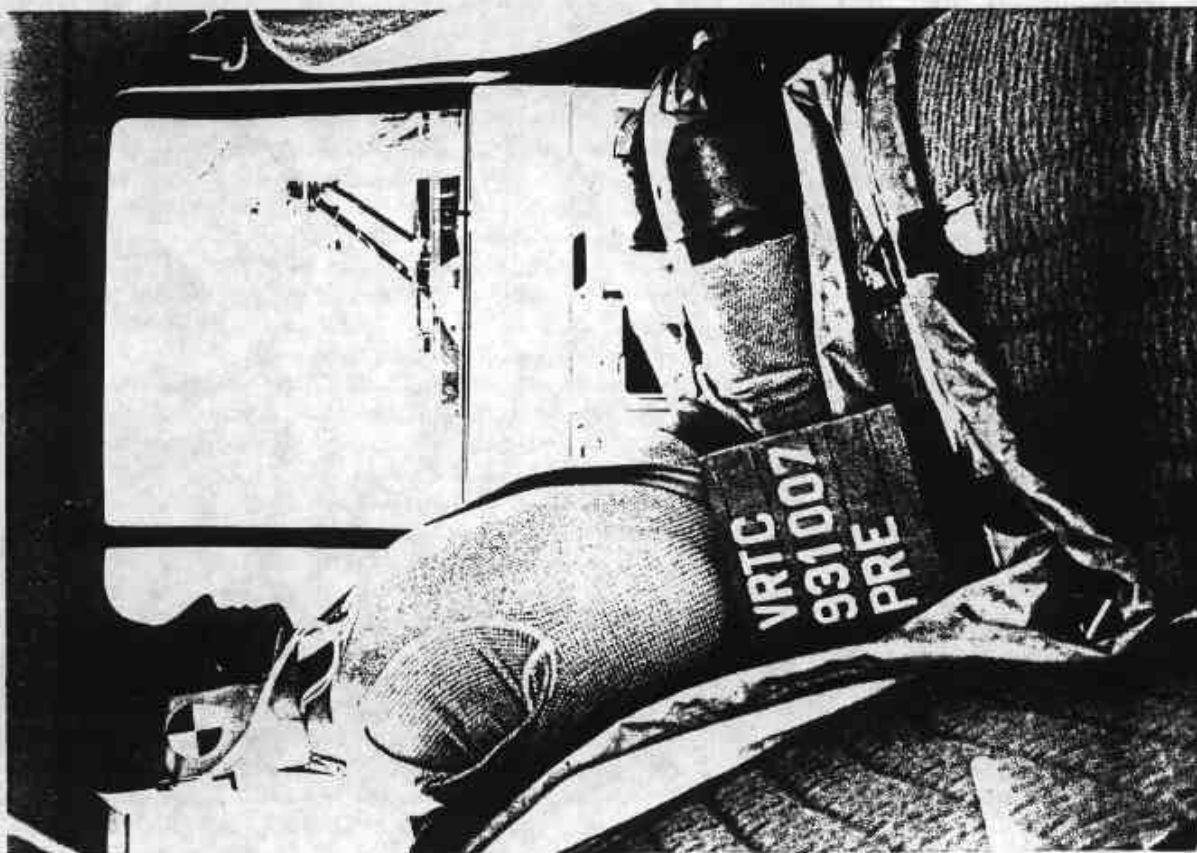


Figure A-18 PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 1

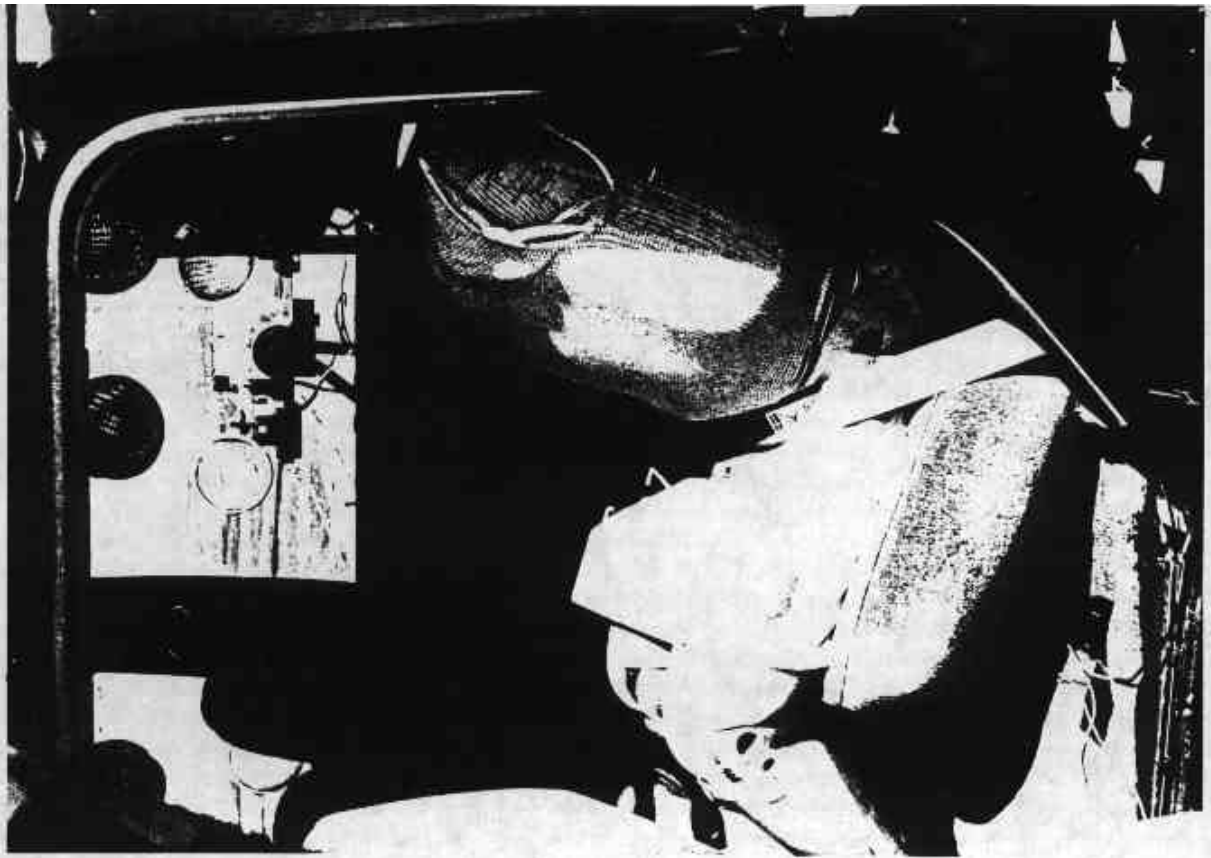


Figure A-19 PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2

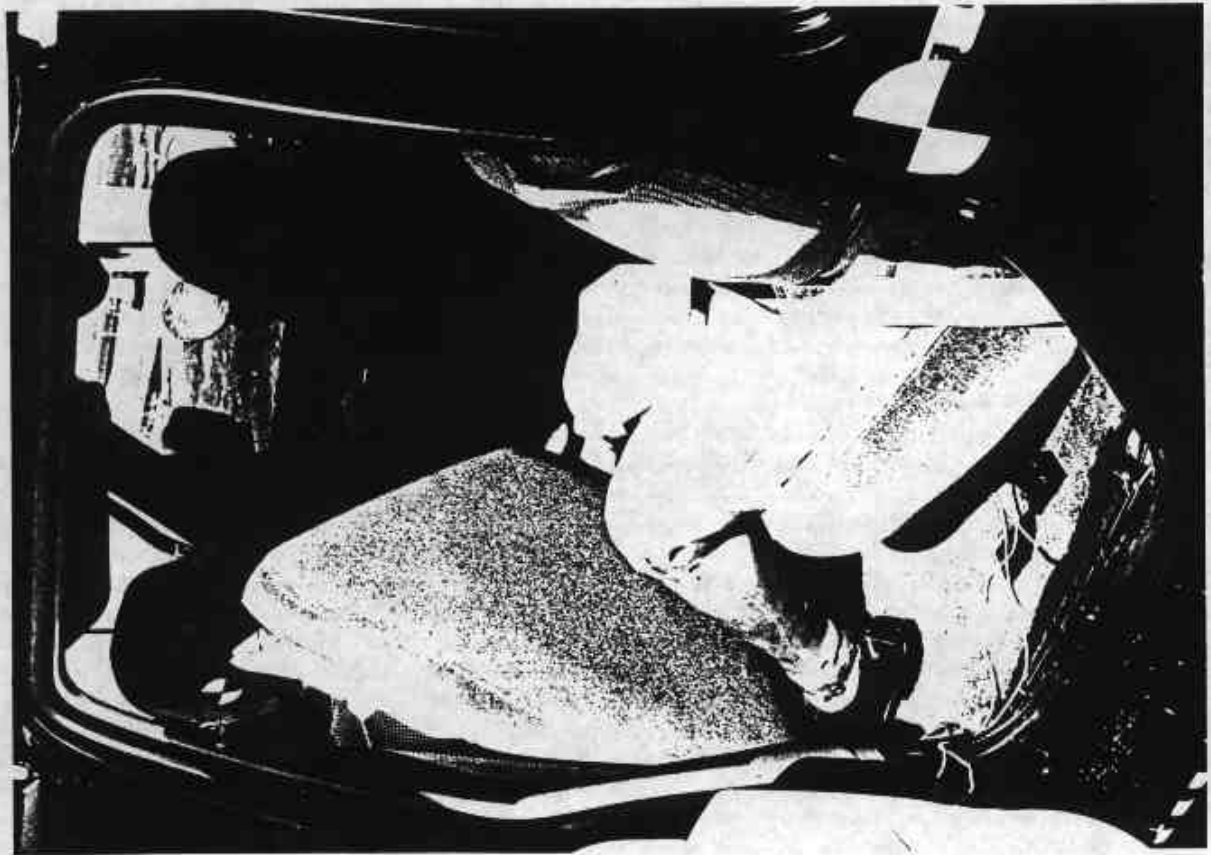


Figure A-20 PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 3

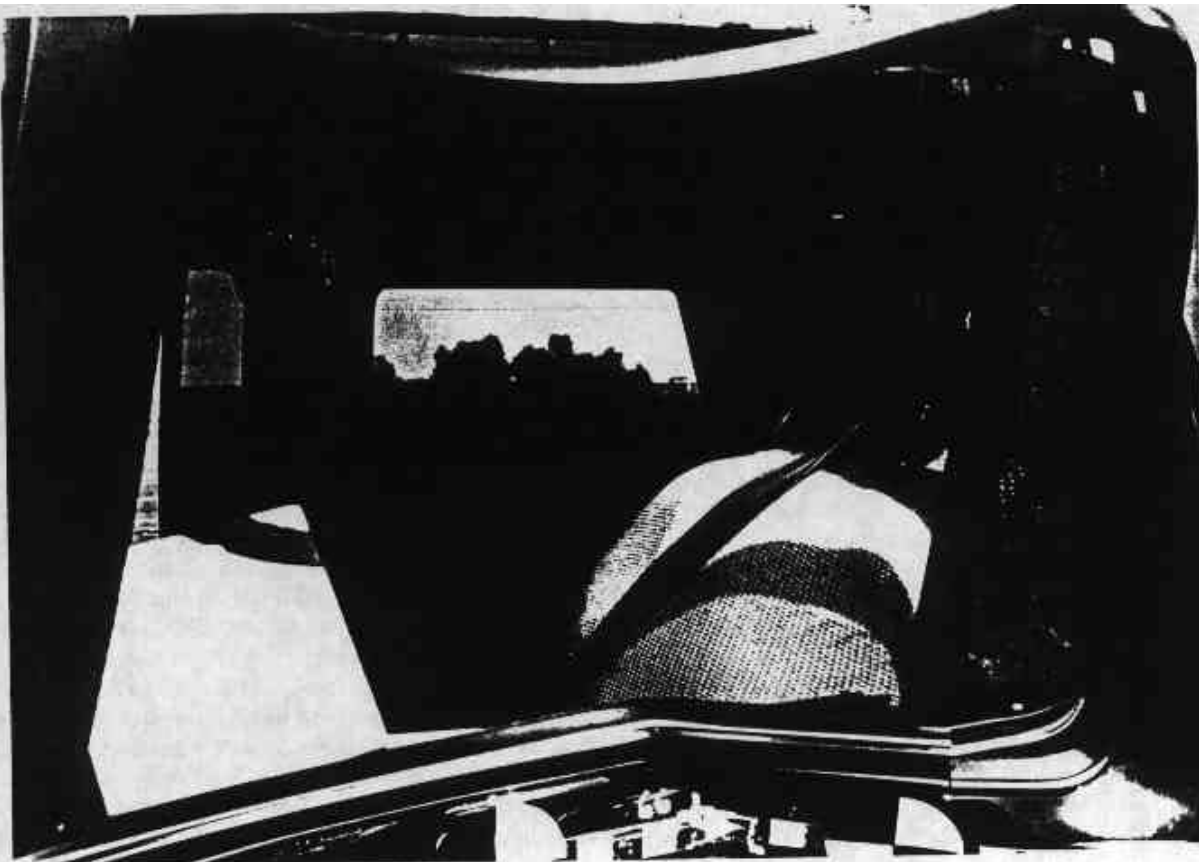


Figure A-21 POST-TEST PASSENGER DUMMY POSITION VIEW

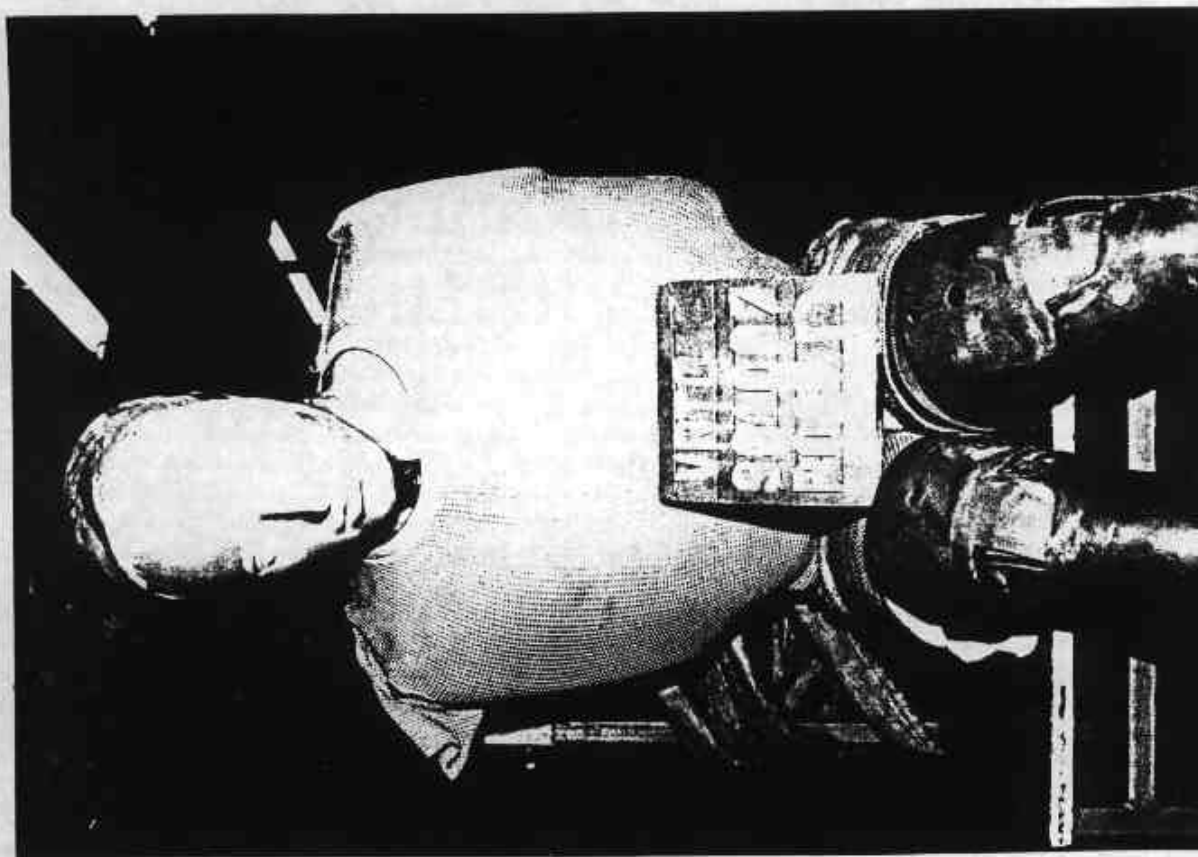


Figure A-22 POST-TEST DRIVER DUMMY CONTACT - VIEW 1



Figure A-23 POST-TEST DRIVER DUMMY CONTACT - VIEW 2

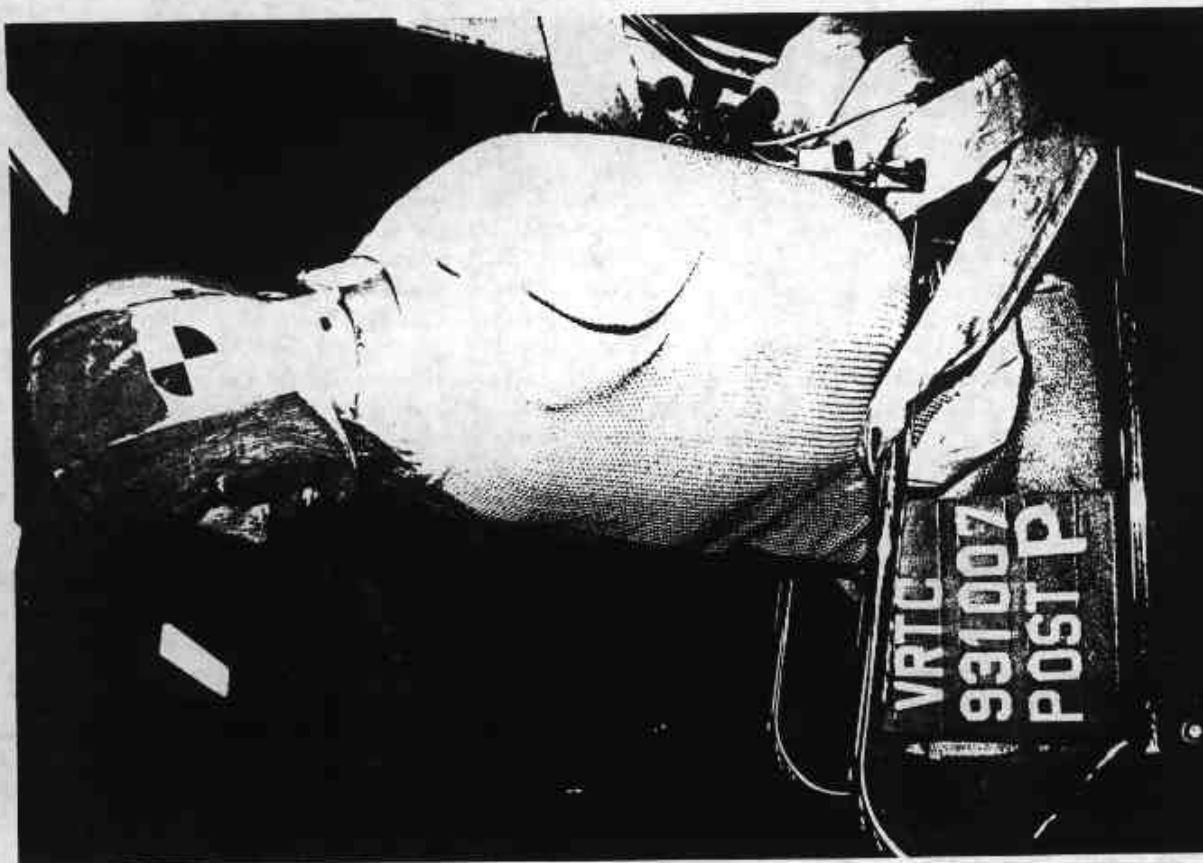


Figure A-24 POST-TEST PASSENGER DUMMY CONTACT VIEW



Figure A-25 POST-TEST PASSENGER DUMMY KNEE CONTACT VIEW

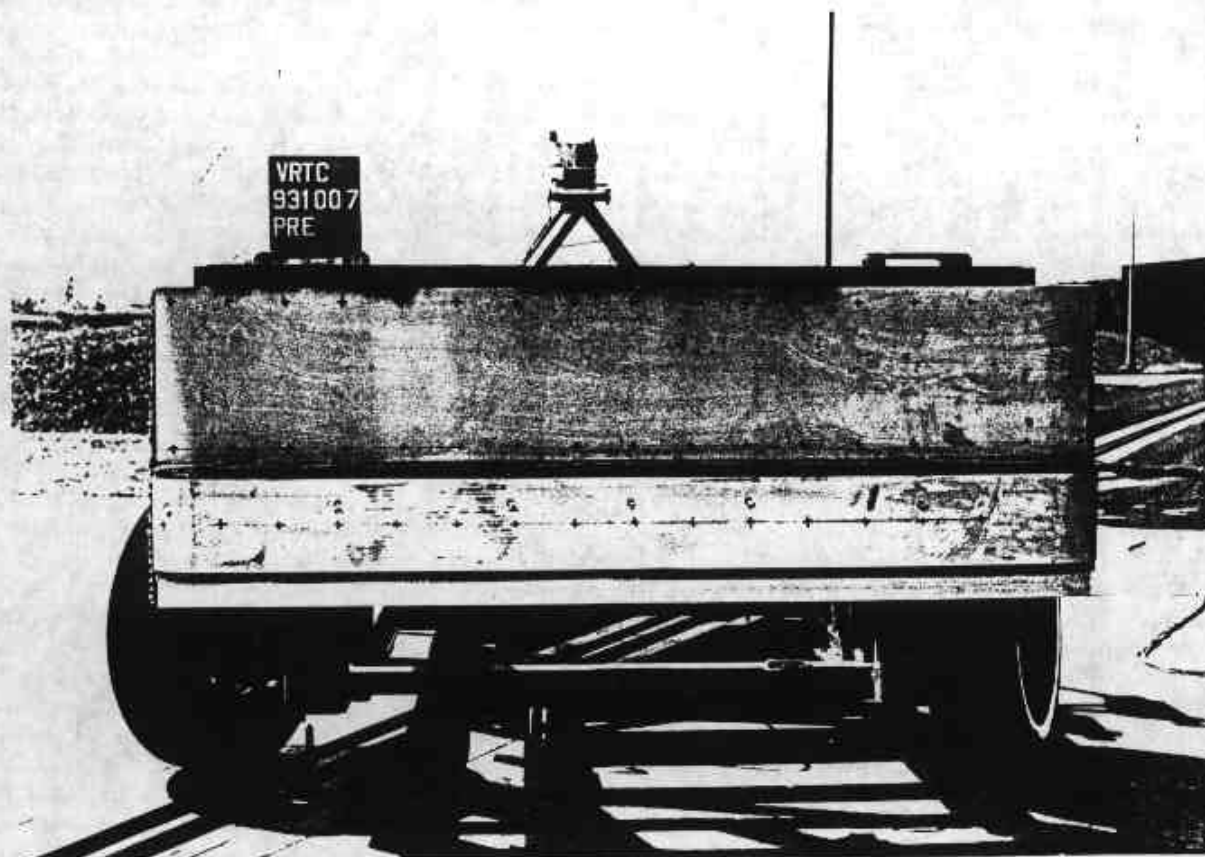


Figure A-26 PRE-TEST VEHICLE IMPACTOR FACE - FRONT VIEW

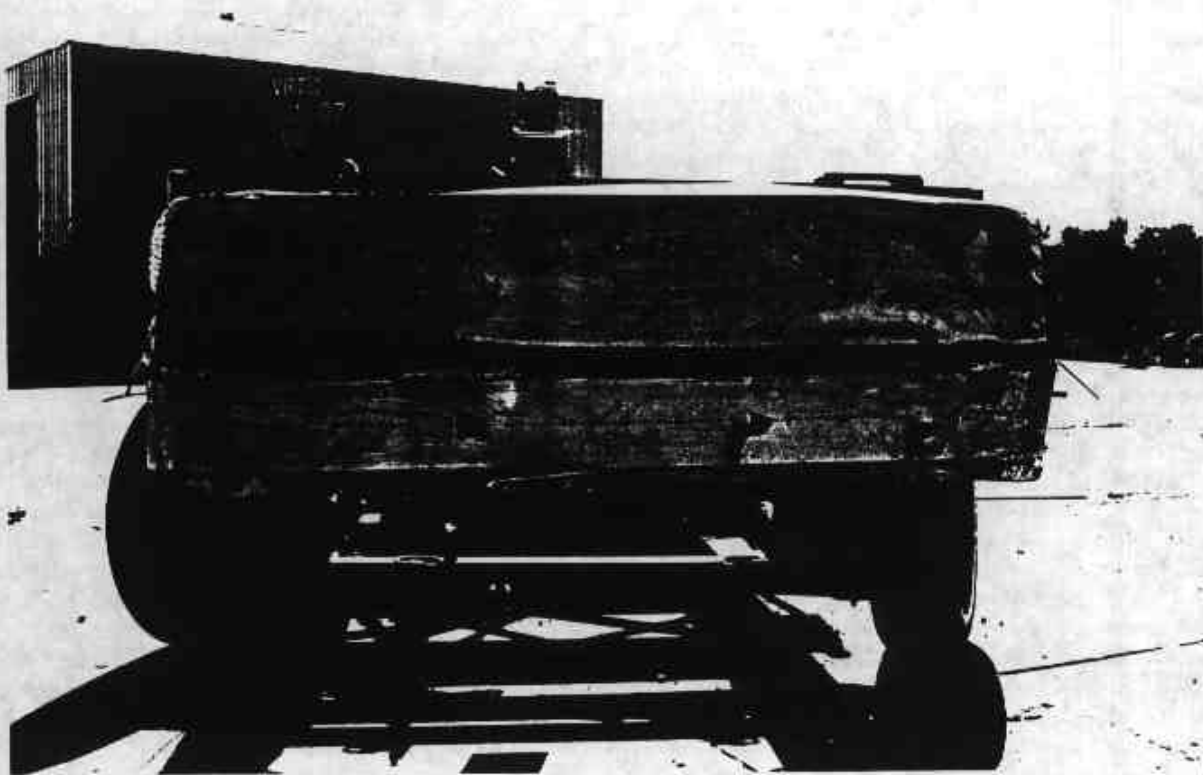


Figure A-27 POST-TEST VEHICLE IMPACTOR FACE - FRONT VIEW

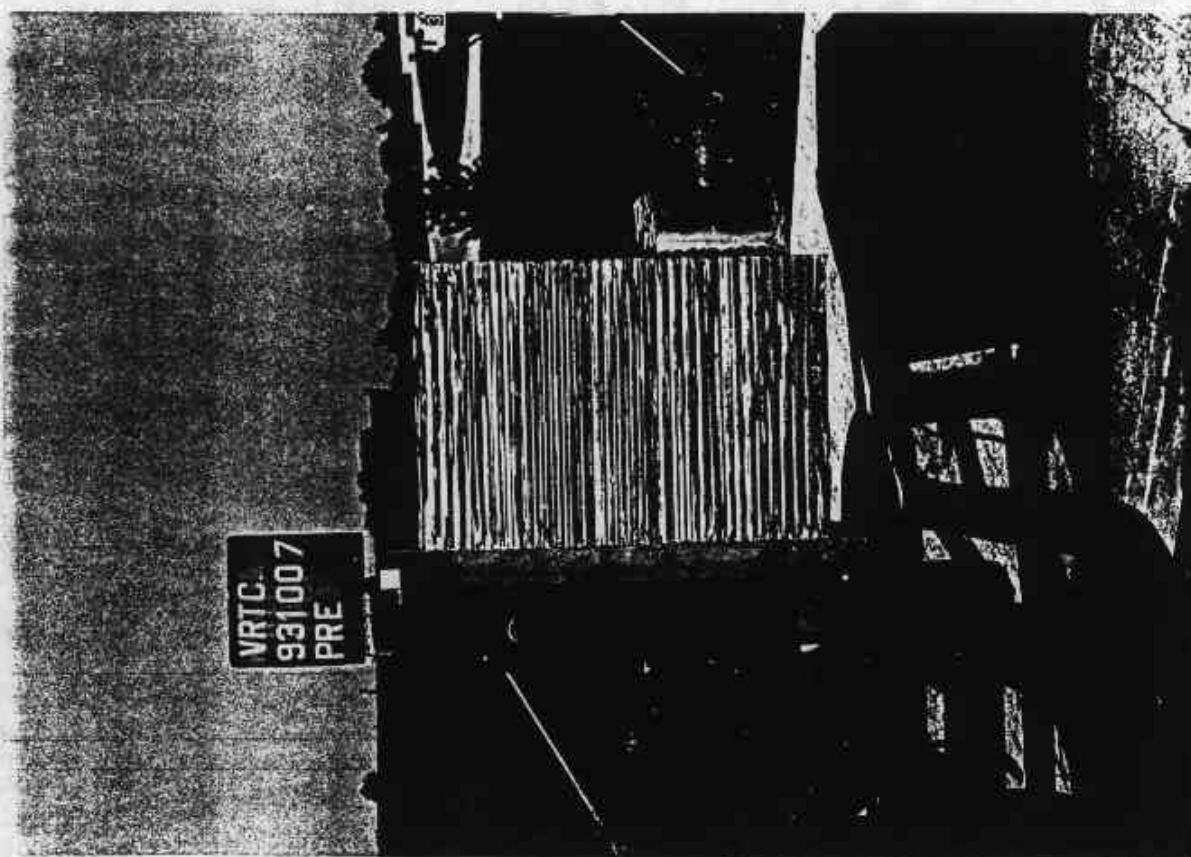


Figure A-28 PRE-TEST VEHICLE IMPACTOR FACE - RIGHT SIDE VIEW

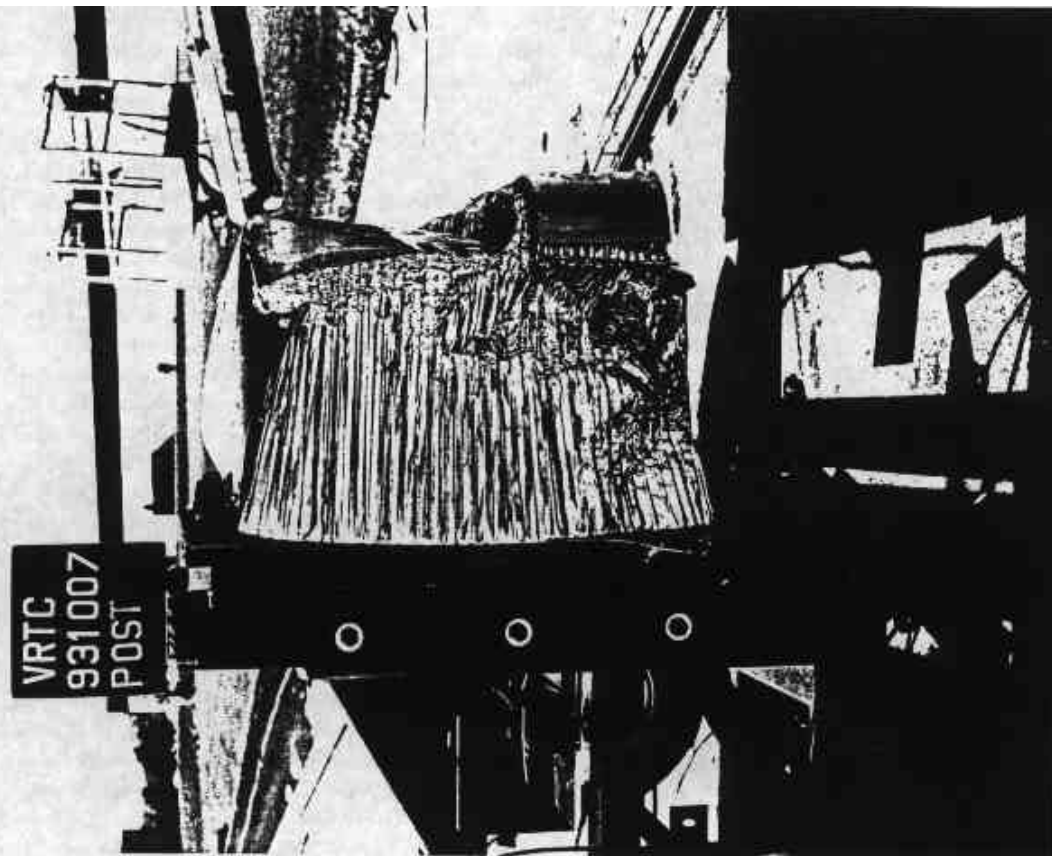


Figure A-29 POST-TEST VEHICLE IMPACTOR FACE - RIGHT SIDE VIEW 1

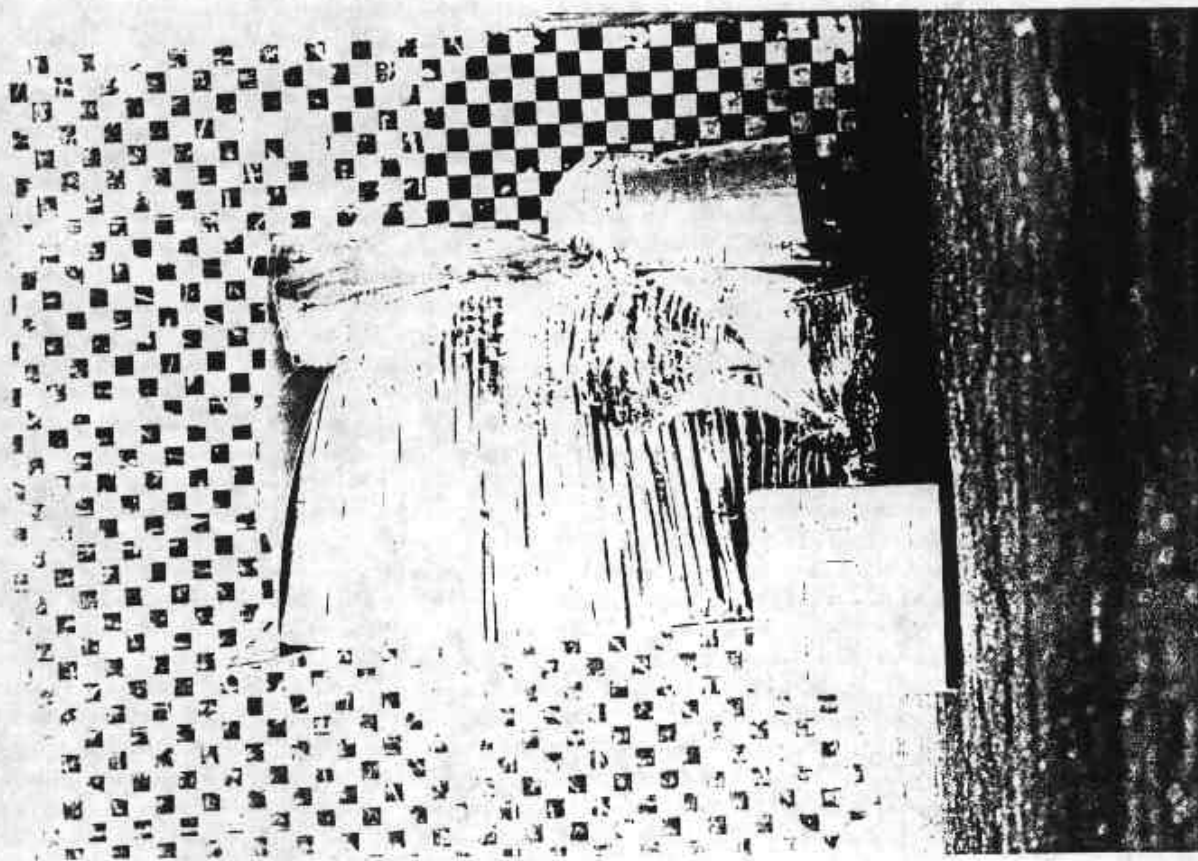


Figure A-30 POST-TEST VEHICLE IMPACTOR FACE - RIGHT SIDE VIEW 2

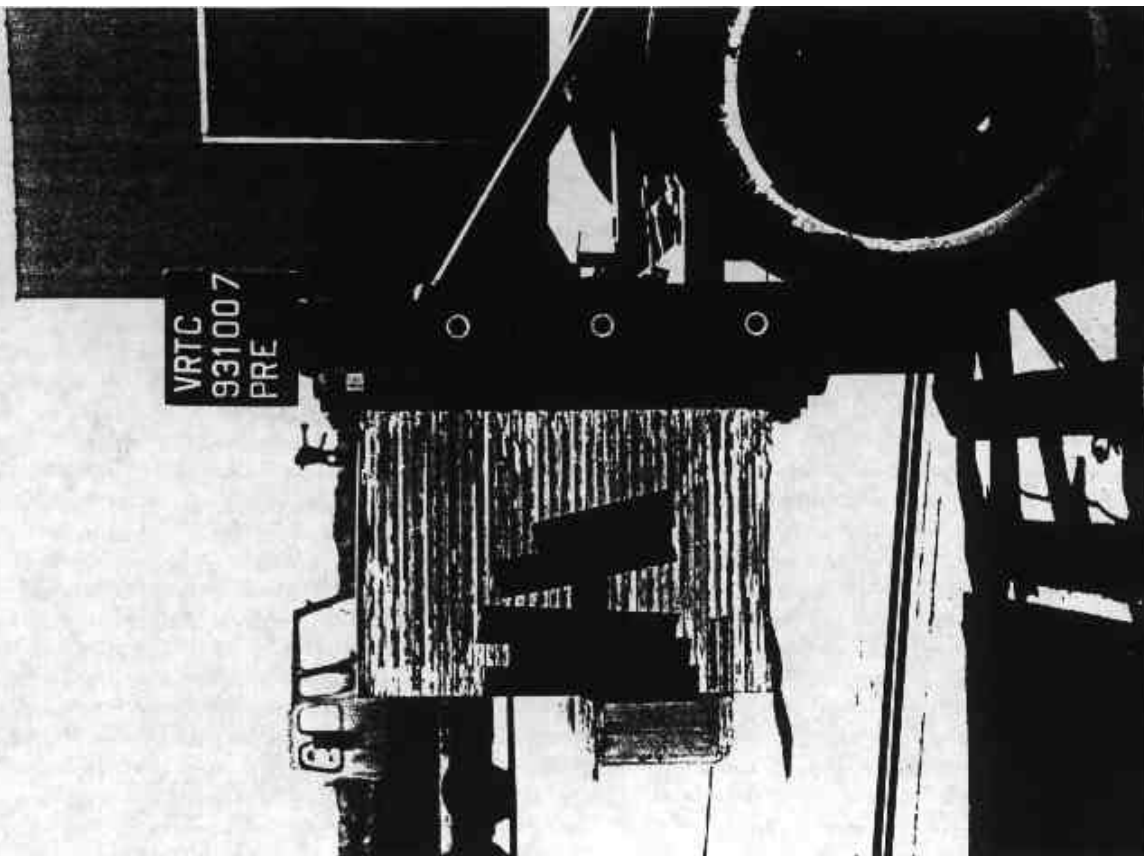


Figure A-31 PRE-TEST VEHICLE IMPACTOR FACE - LEFT SIDE VIEW

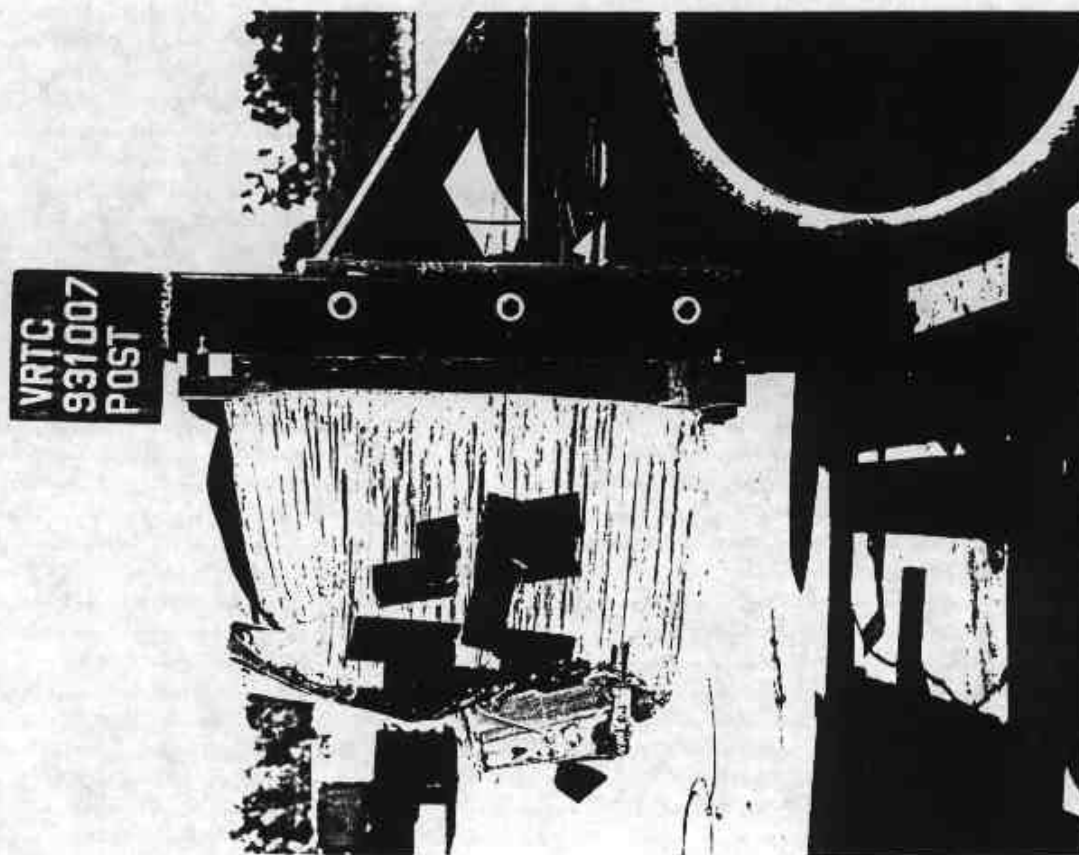


Figure A-32 POST-TEST VEHICLE IMPACTOR FACE - LEFT SIDE VIEW 1

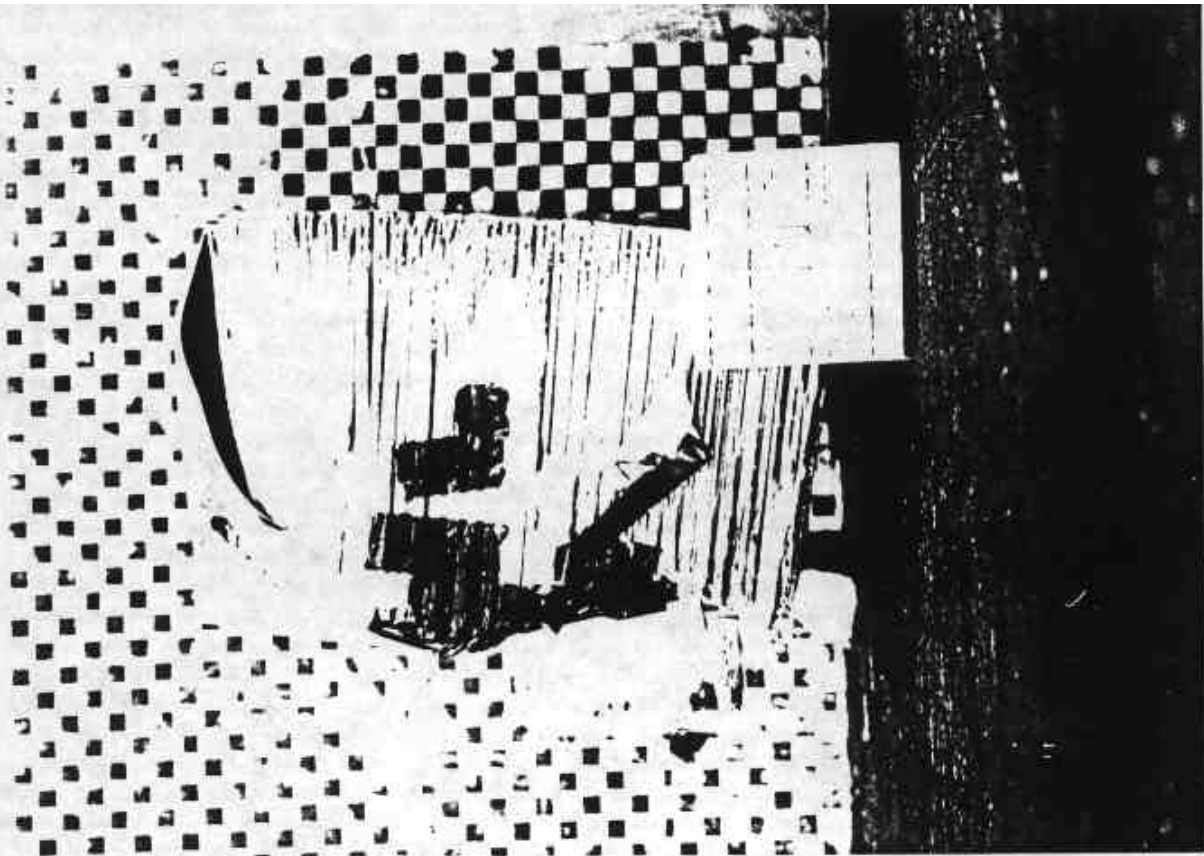


Figure A-33 POST-TEST VEHICLE IMPACTOR FACE - LEFT SIDE VIEW 2

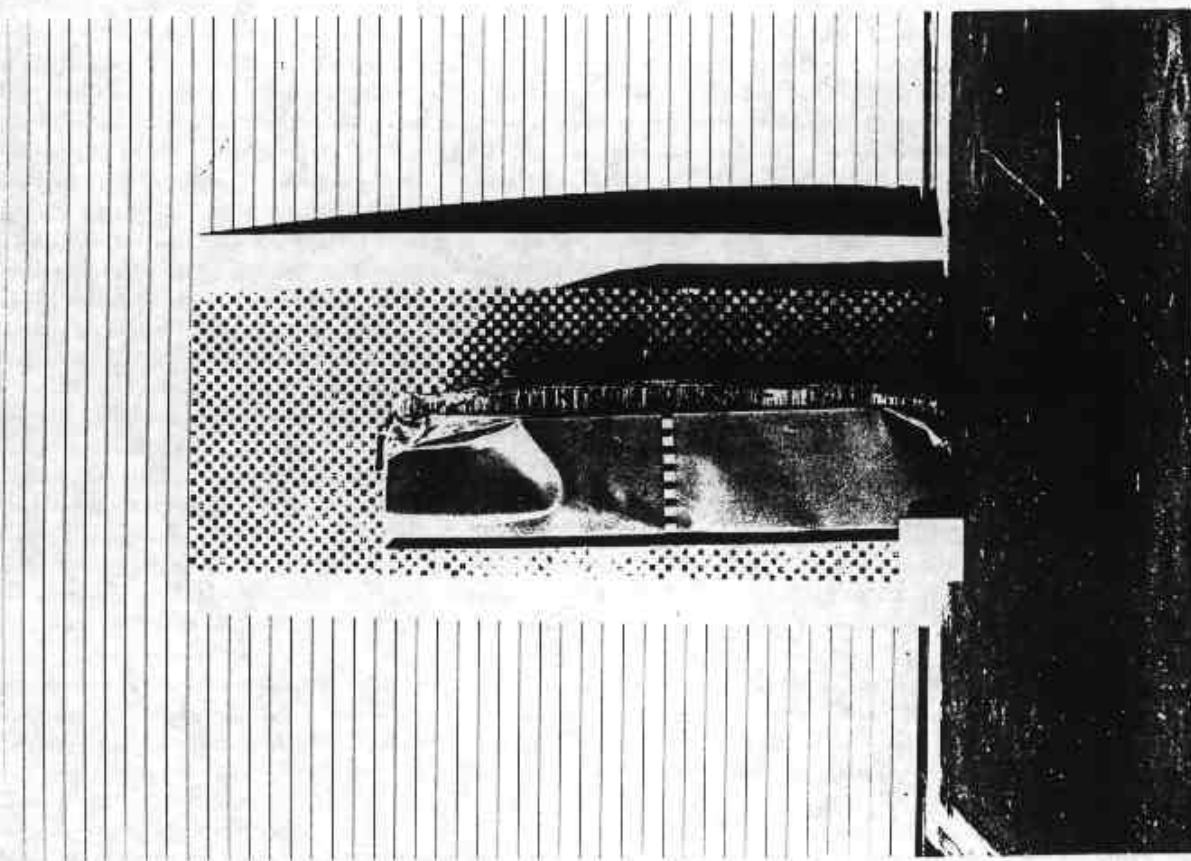


Figure A-34 POST-TEST VEHICLE IMPACTOR FACE - TOP VIEW

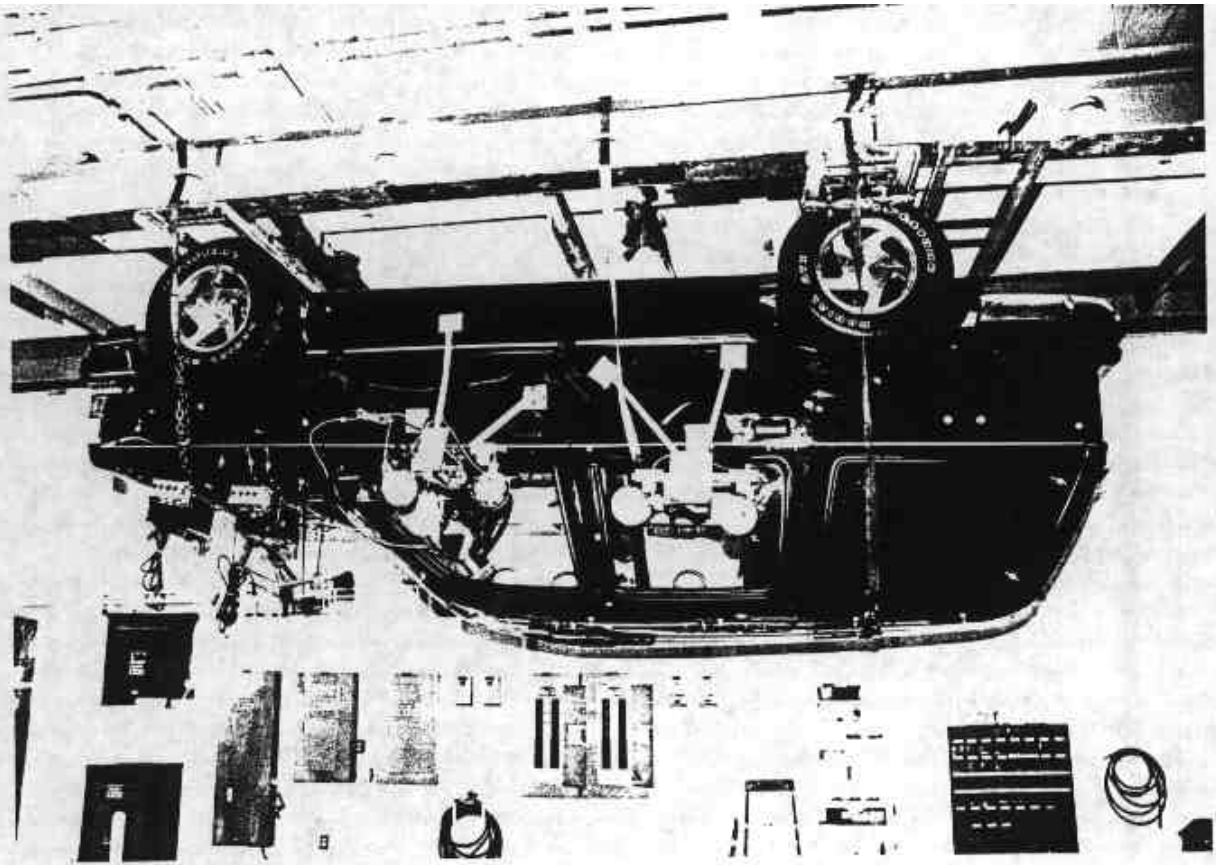


Figure A-35 POST-TEST VEHICLE ON STATIC ROLLOVER DEVICE

APPENDIX B

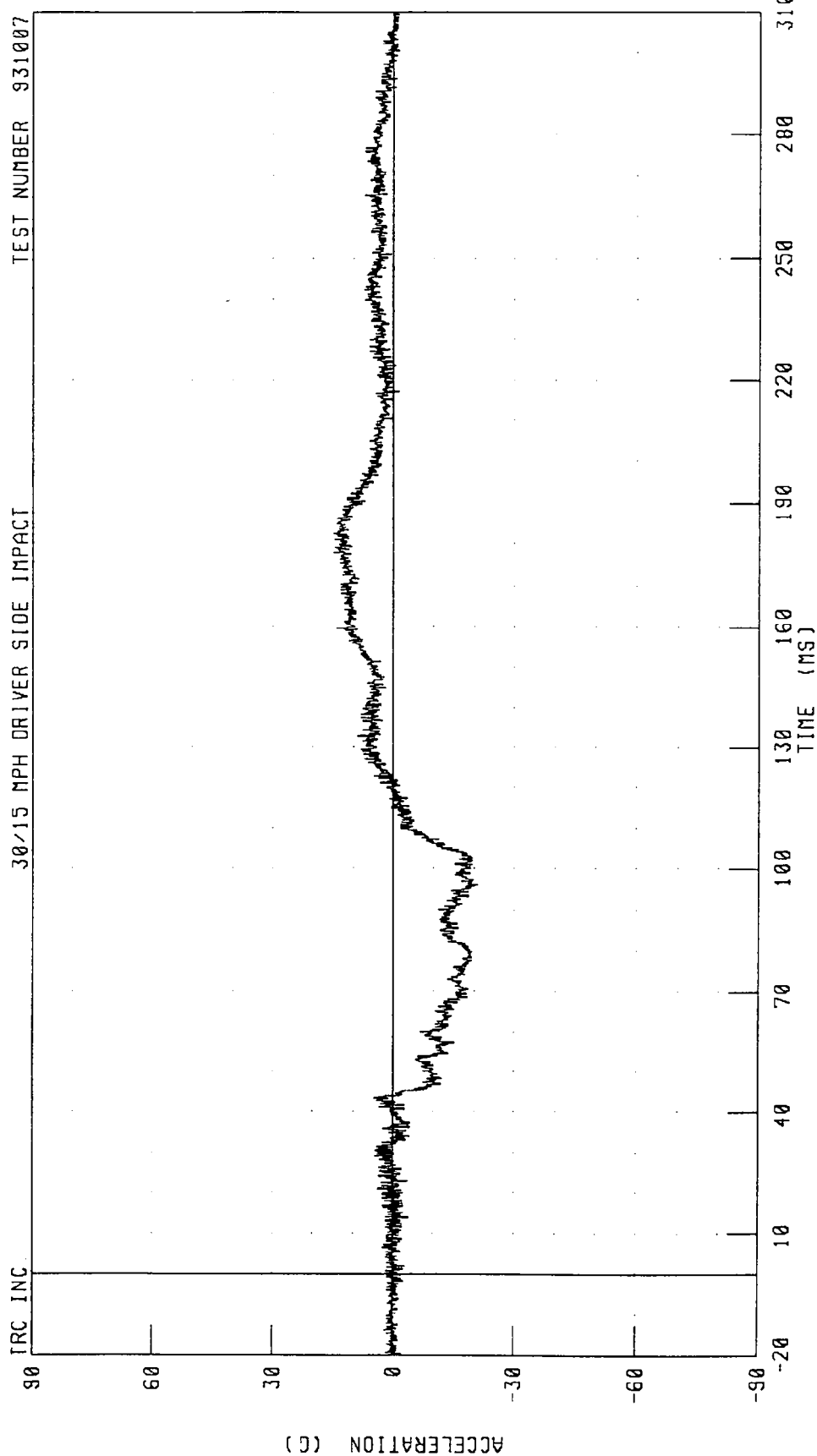
DATA PLOTS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT

DRIVER HEAD X-AXIS ACCELERATION

30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

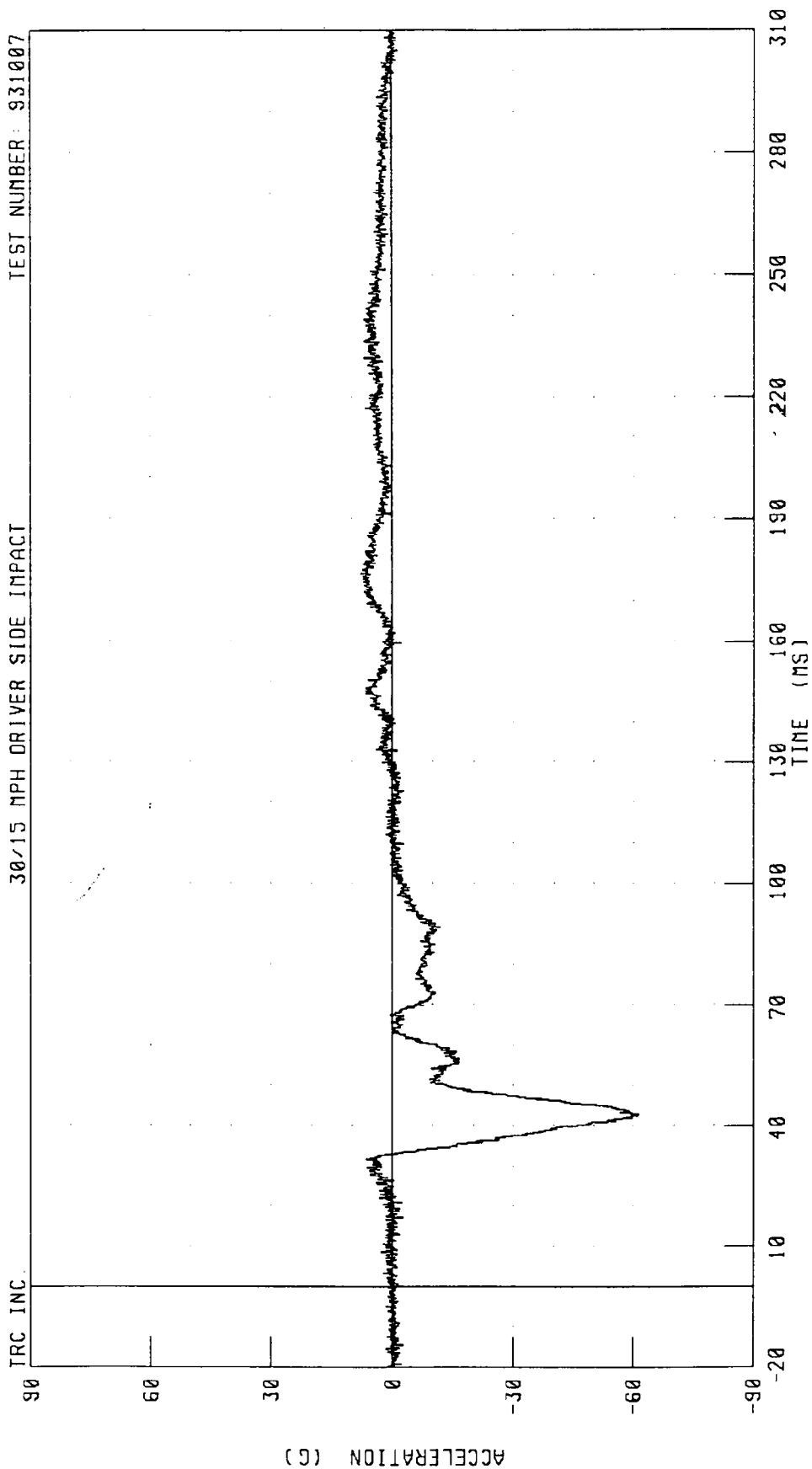


CHANNEL: HEDXG1 FILTER: CH. CLASS 1000

PEAK DATA: 15 07 G @ 177 88 MS, -20 88 G @ 96 13 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER HEAD Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

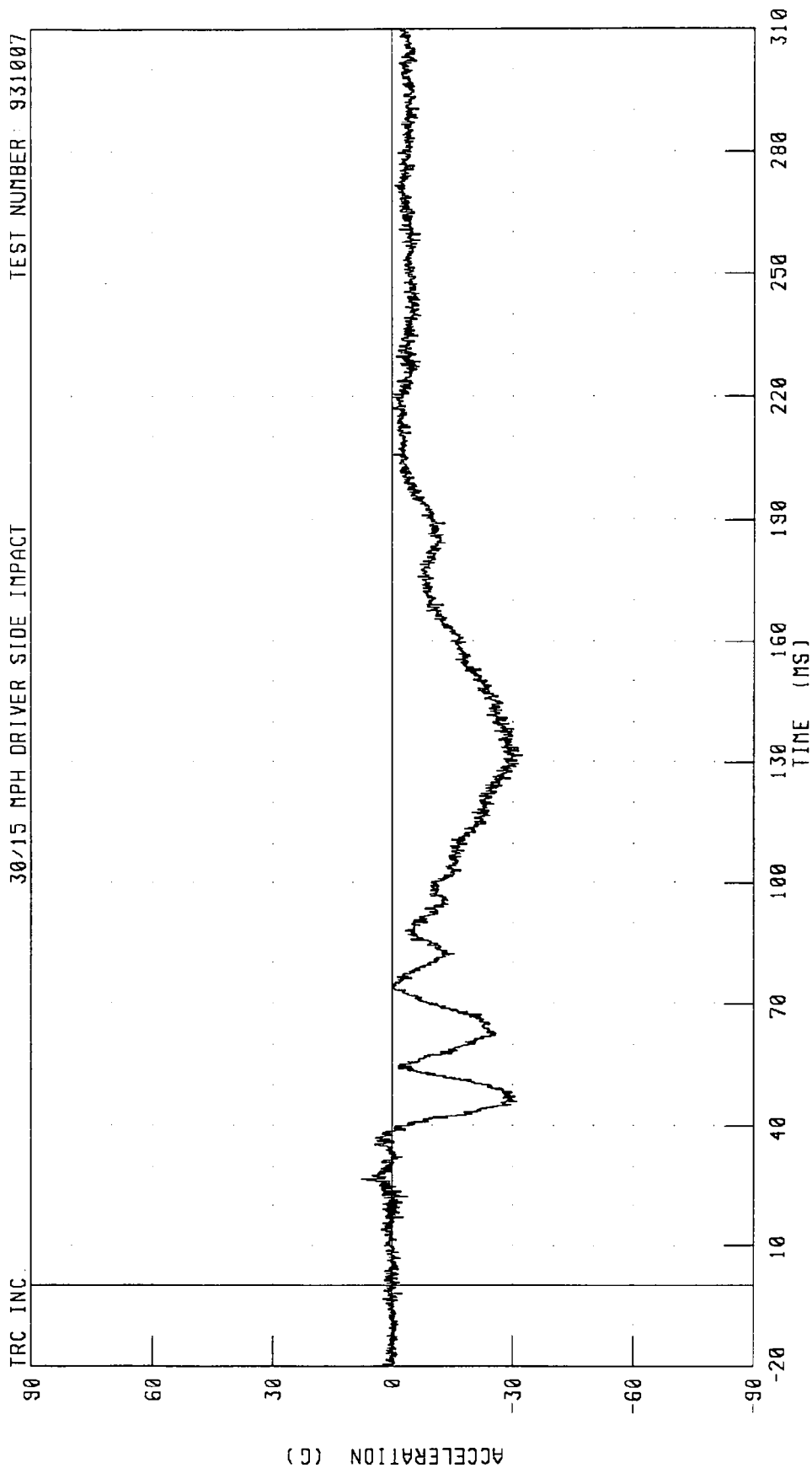


CHANNEL: HEDY01 FILTER: CH. CLASS 1000

PEAK DATA: 7.68 G @ 176.50 MS, -61.33 G @ 43.00 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
 DRIVER HEAD Z-AXIS ACCELERATION
 30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

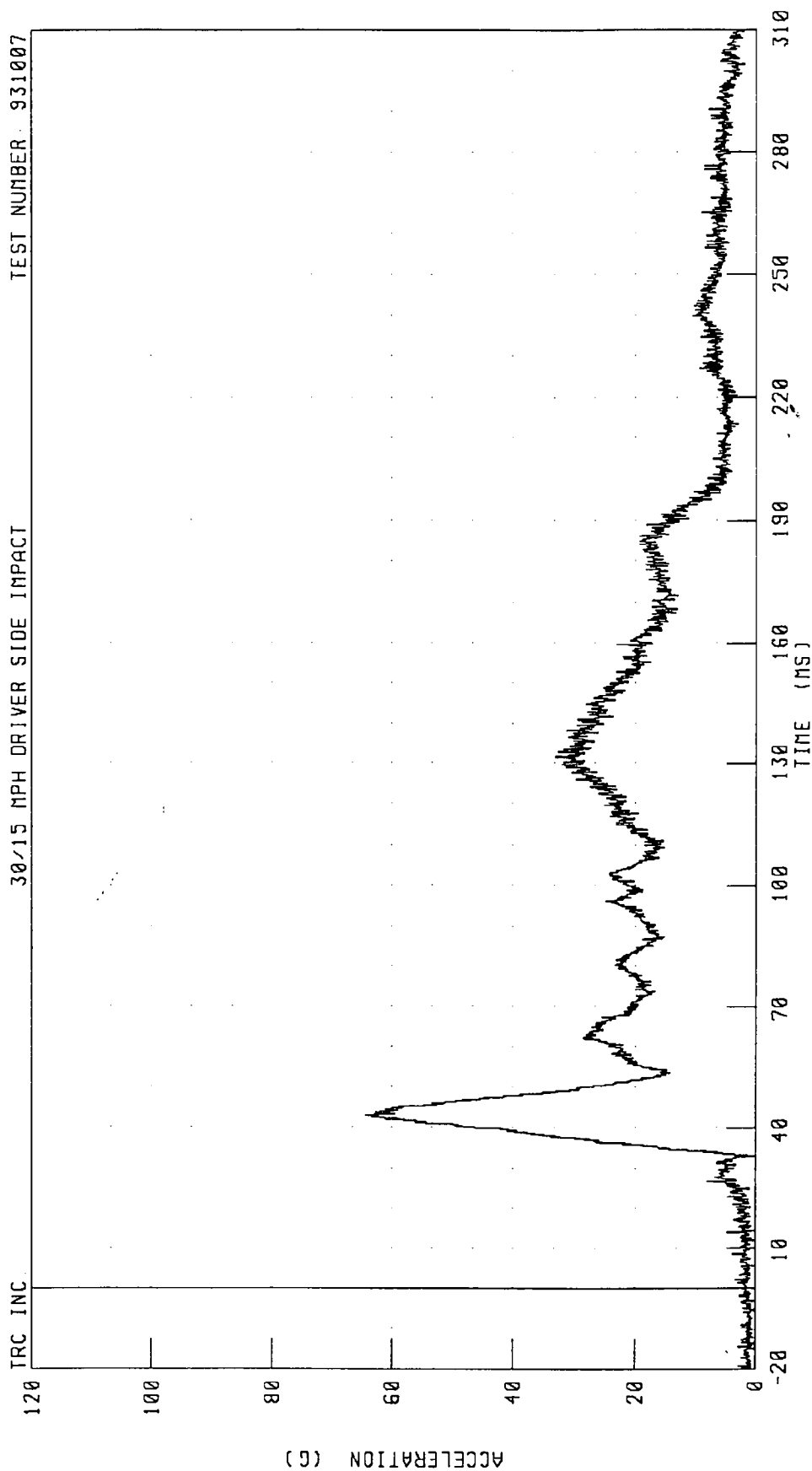


PEAK DATA: 7.79 G @ 26.75 MS, -32.27 G @ 131.50 MS

CHANNEL: HEDZG1 FILTER: CH CLASS 1000

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER HEAD RESULTANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

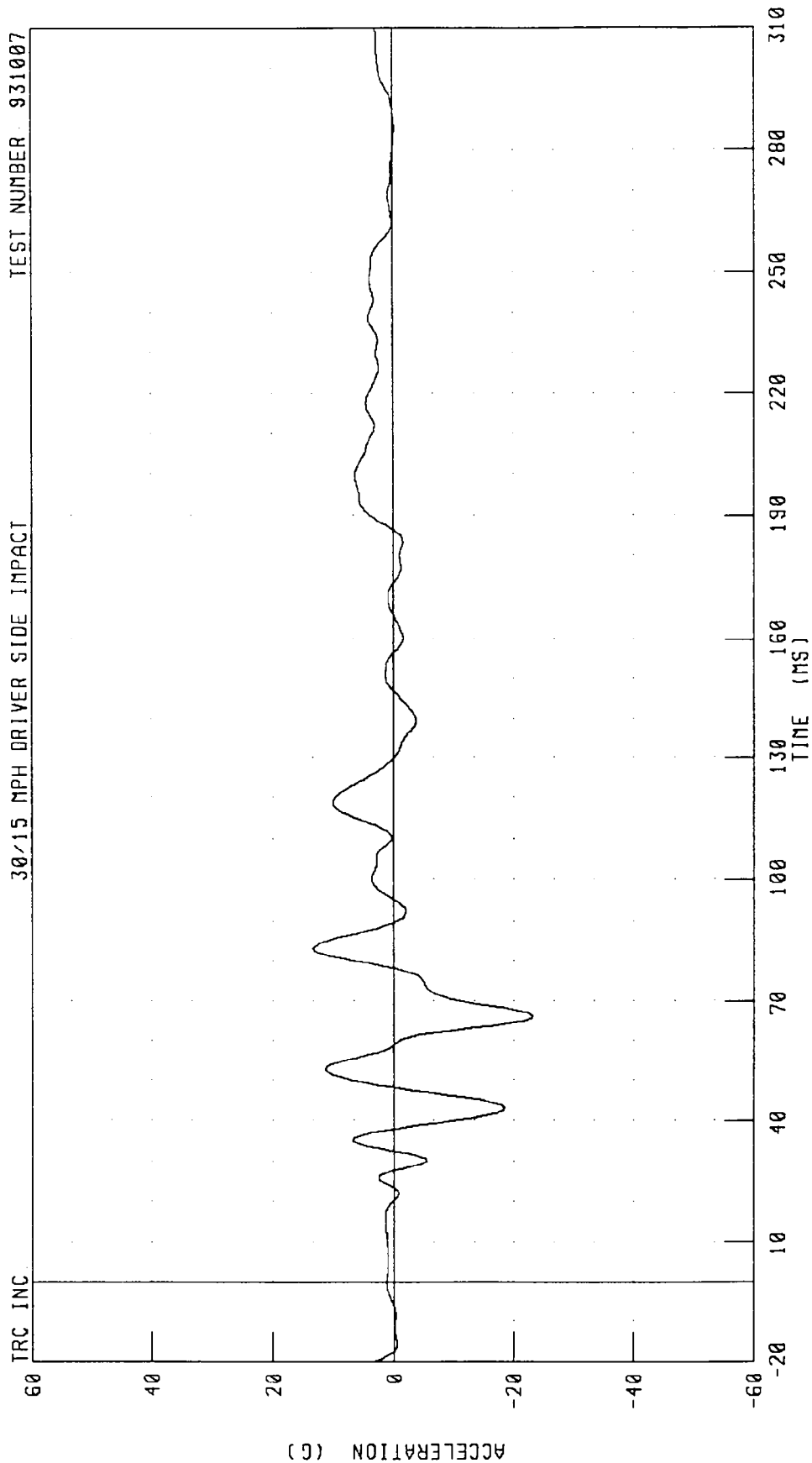


CHANNEL: HEDRG1 FILTER: CH. CLASS 1000

PEAK DATA: 64.47 G @ 43.00 MS, 0.27 G @ -13.75 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER UPPER SPINE X-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

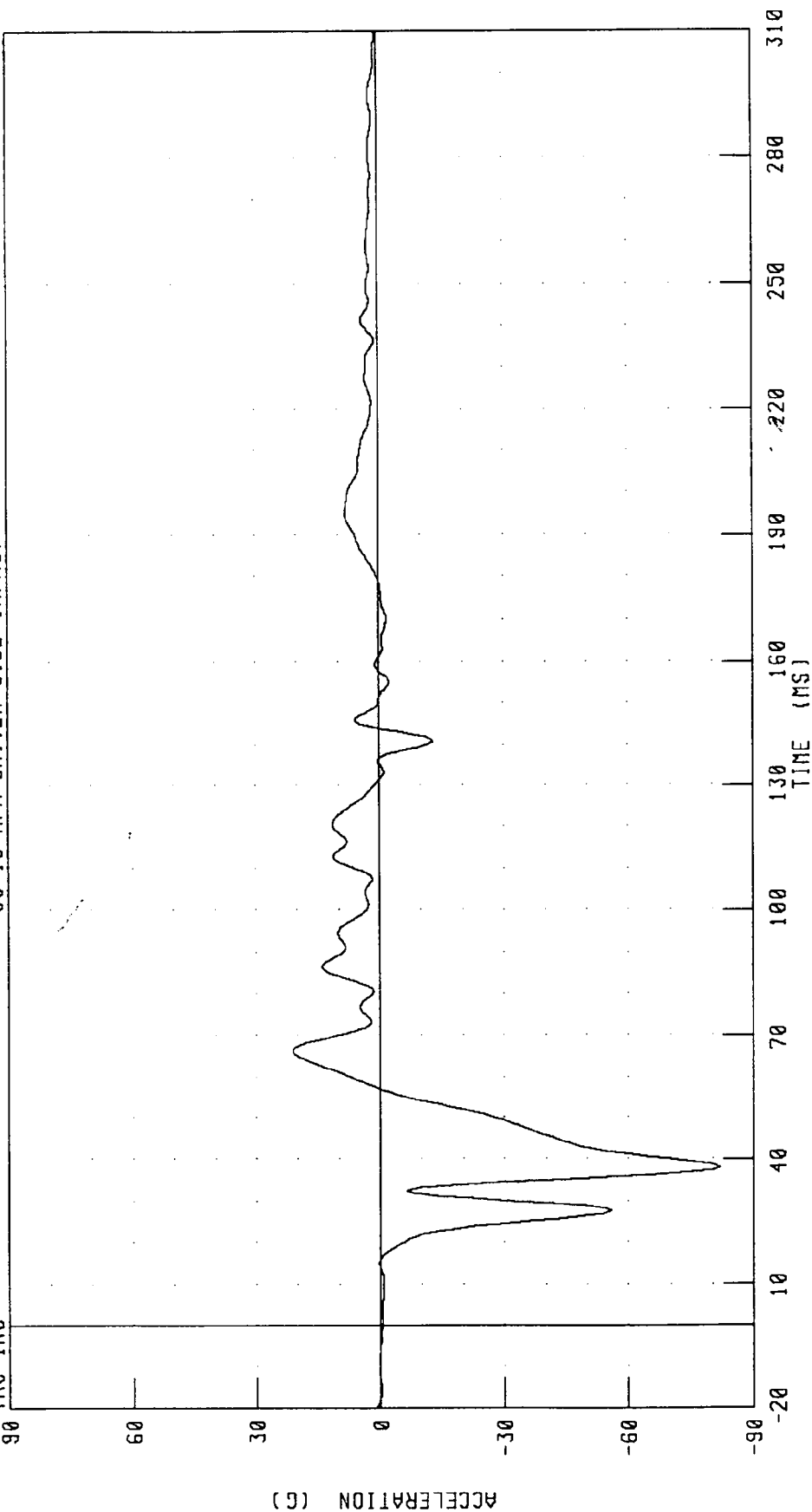


CHANNEL: T01XG1 FILTER: FIR 100 PEAK DATA: 13.36 G @ 83.12 MS, -23.21 G @ 66.25 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER UPPER SPINE Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC

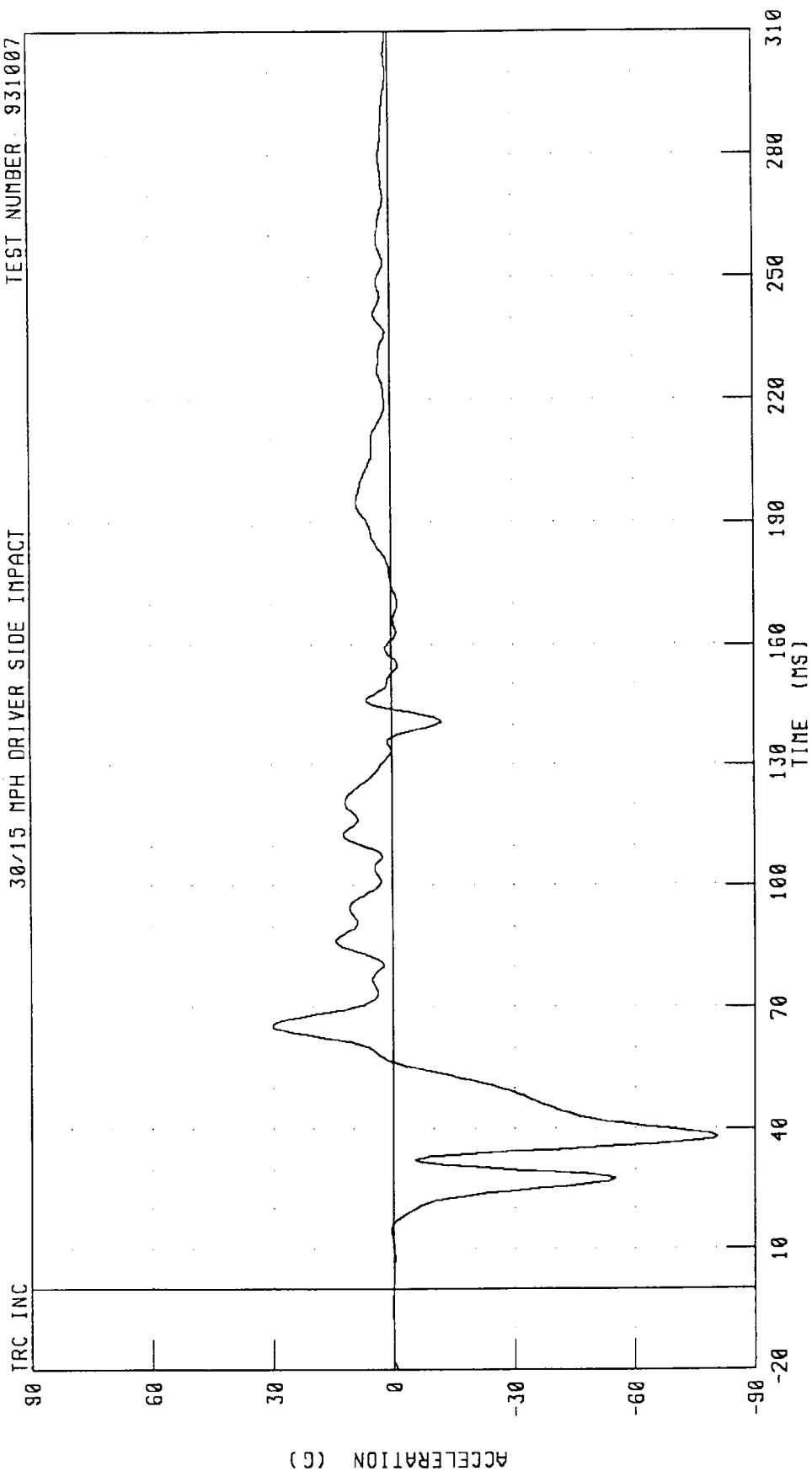


PEAK DATA: 21.09 G @ 66.25 MS, -81.72 G @ 38.13 MS

CHANNEL: T01YG1 FILTER: FIR 100

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
 DRIVER UPPER SPINE Y-AXIS REDUNDANT ACCELERATION
 30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007



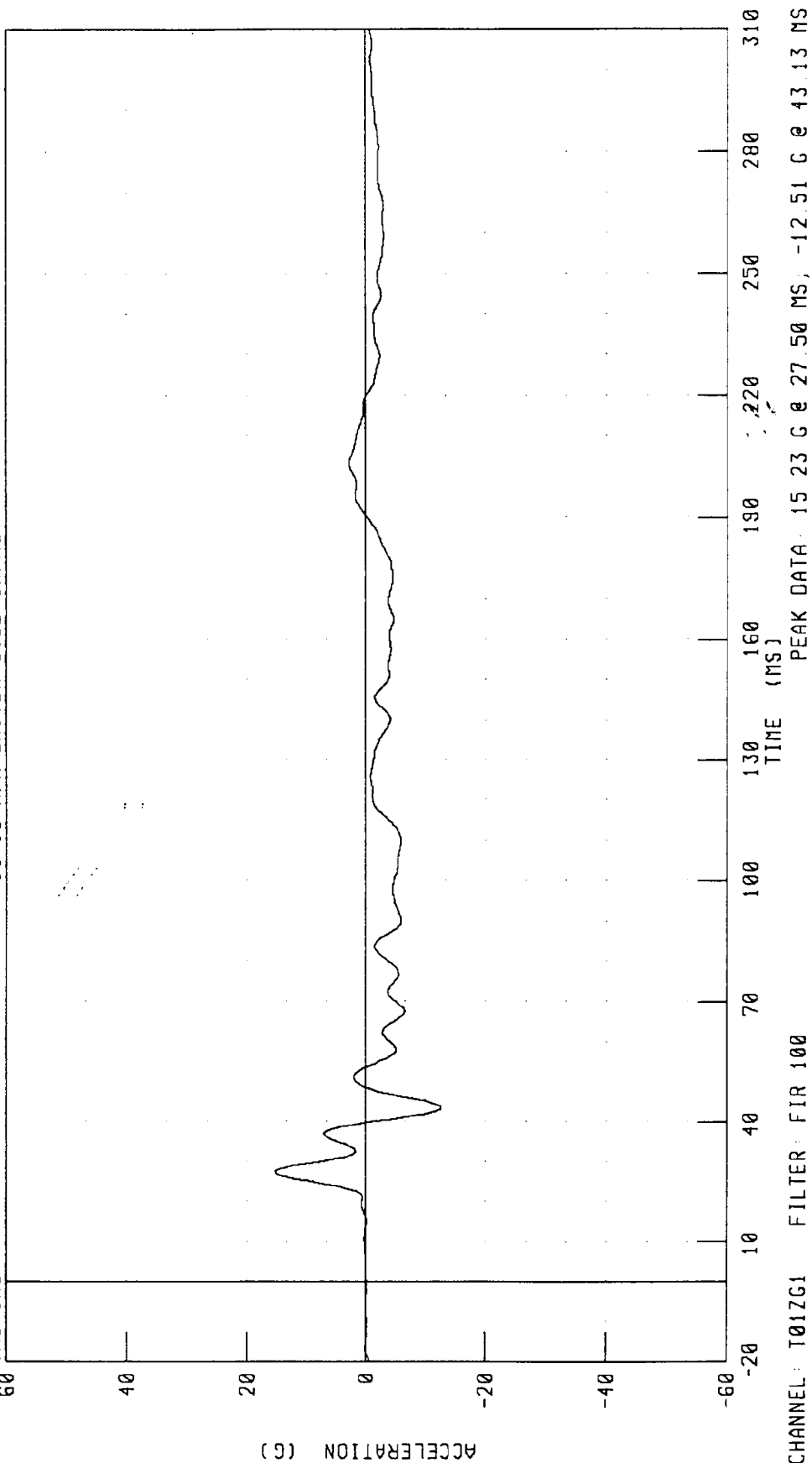
PEAK DATA: 30.11 G @ 65.63 MS, -80.51 G @ 38.13 MS

CHANNEL: T01YGA FILTER: FIR 100

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER UPPER SPINE Z-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC

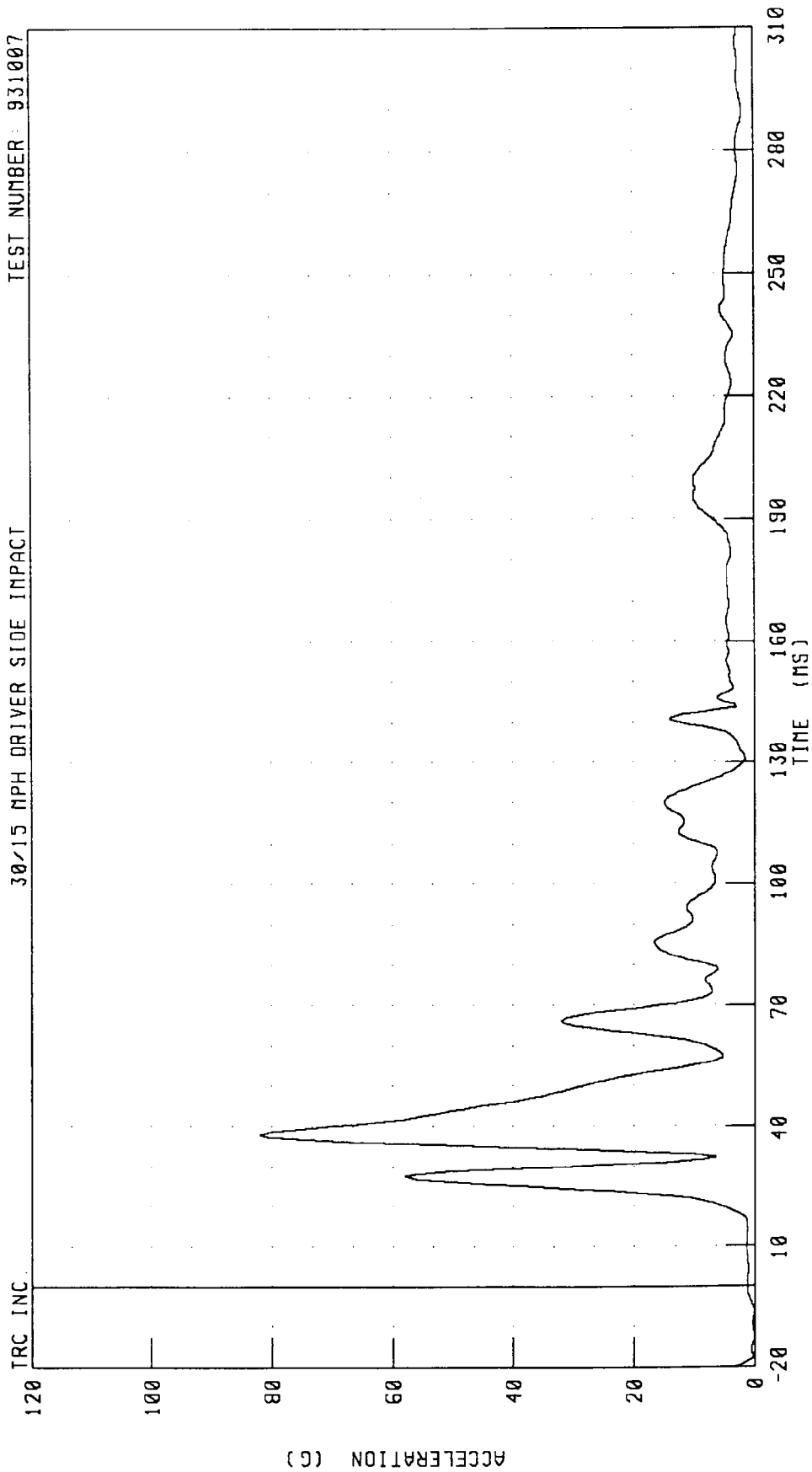


CHANNEL: T01ZG1 FILTER: FIR 100

PEAK DATA: 15.23 G @ 27.50 MS, -12.51 G @ 43.13 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER UPPER SPINE RESULTANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

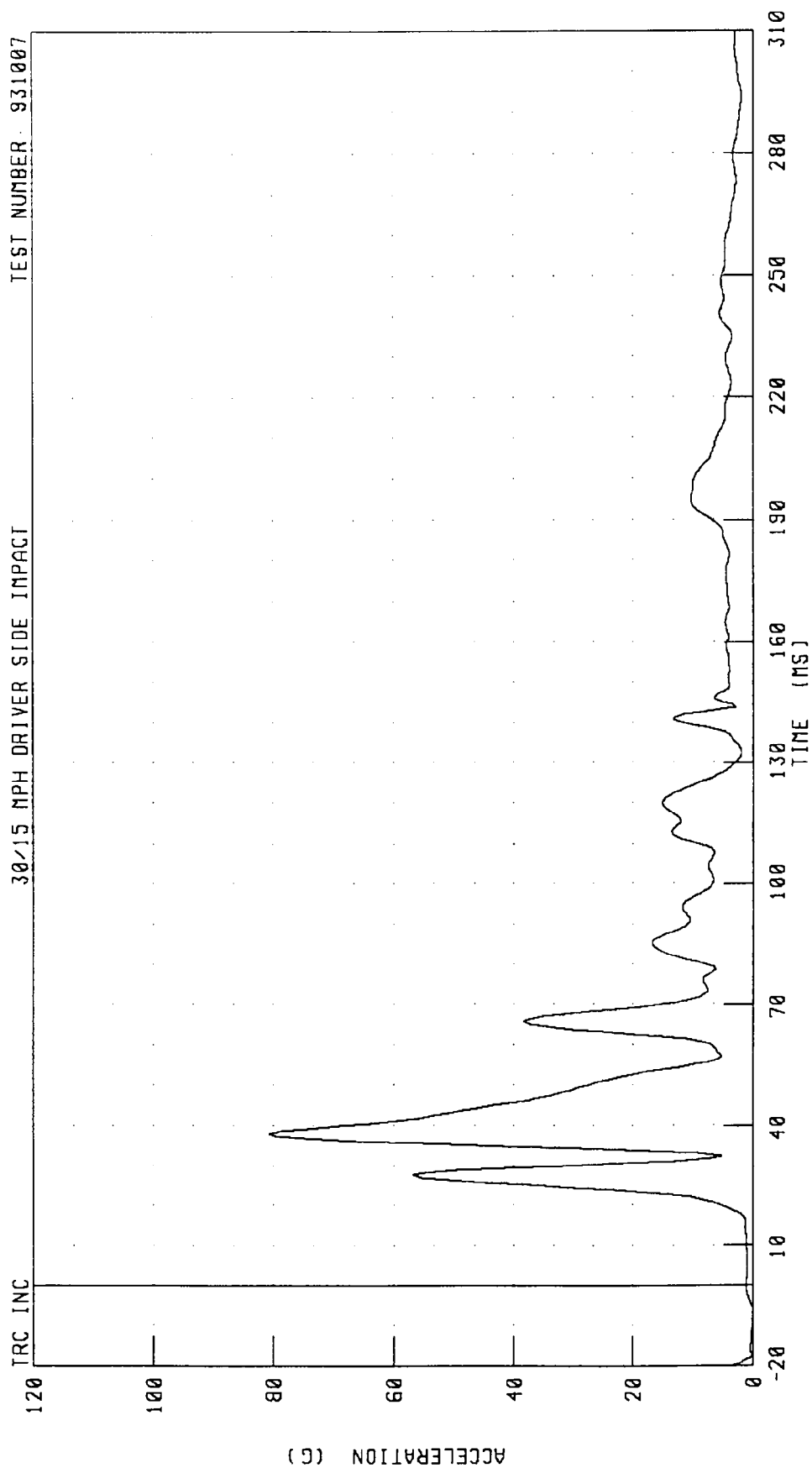


PEAK DATA: 81.94 G @ 38.13 MS, 0.06 G @ -6.25 MS

CHANNEL: T01RG1 FILTER: FIR 100

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER UPPER SPINE RESULTANT REDUNDANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

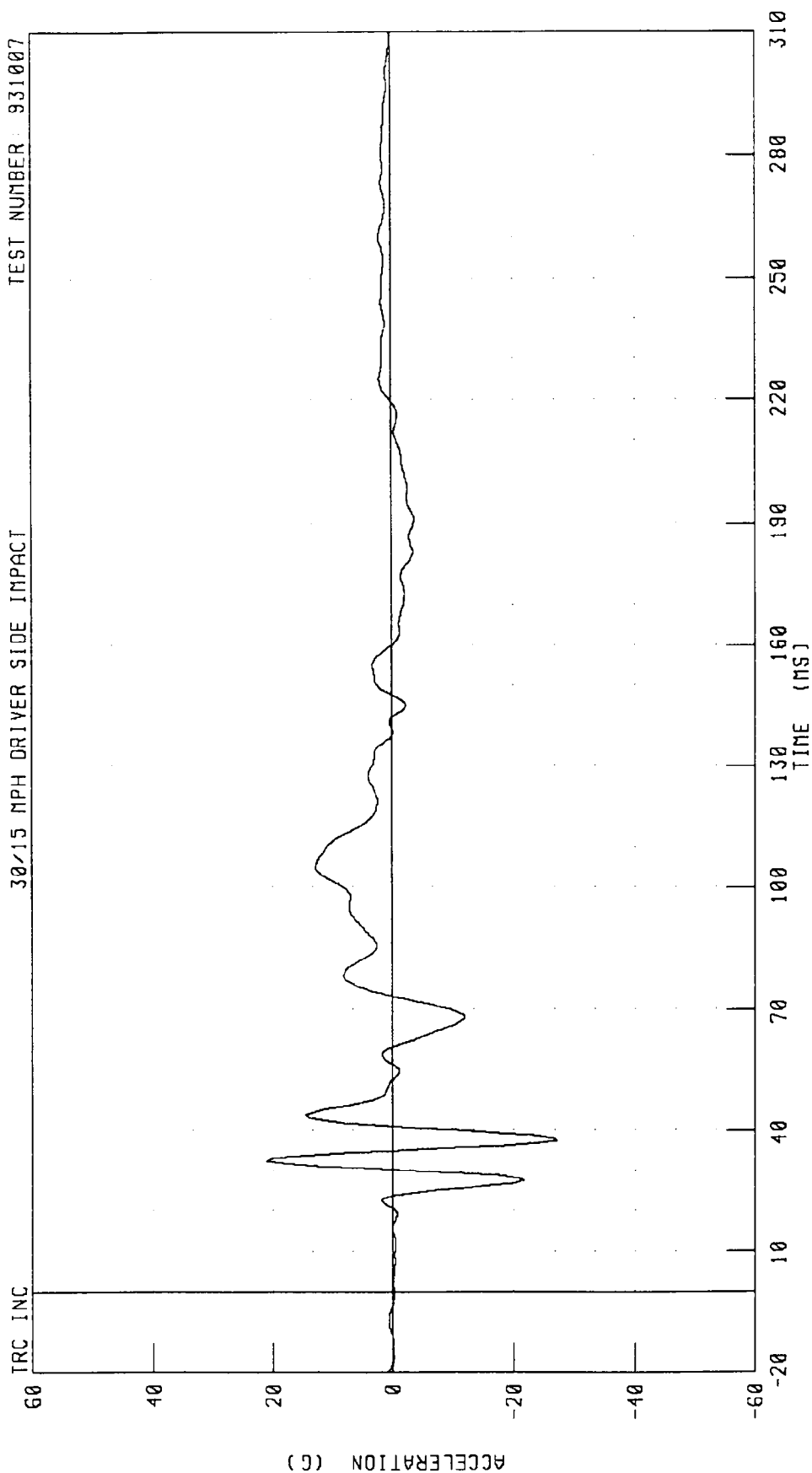
TEST NUMBER 931007



CHANNEL: T01RCA FILTER: FIR 100 PEAK DATA: 80.74 G @ 38.13 MS, 0.04 G @ -17.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER LOWER SPINE X-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

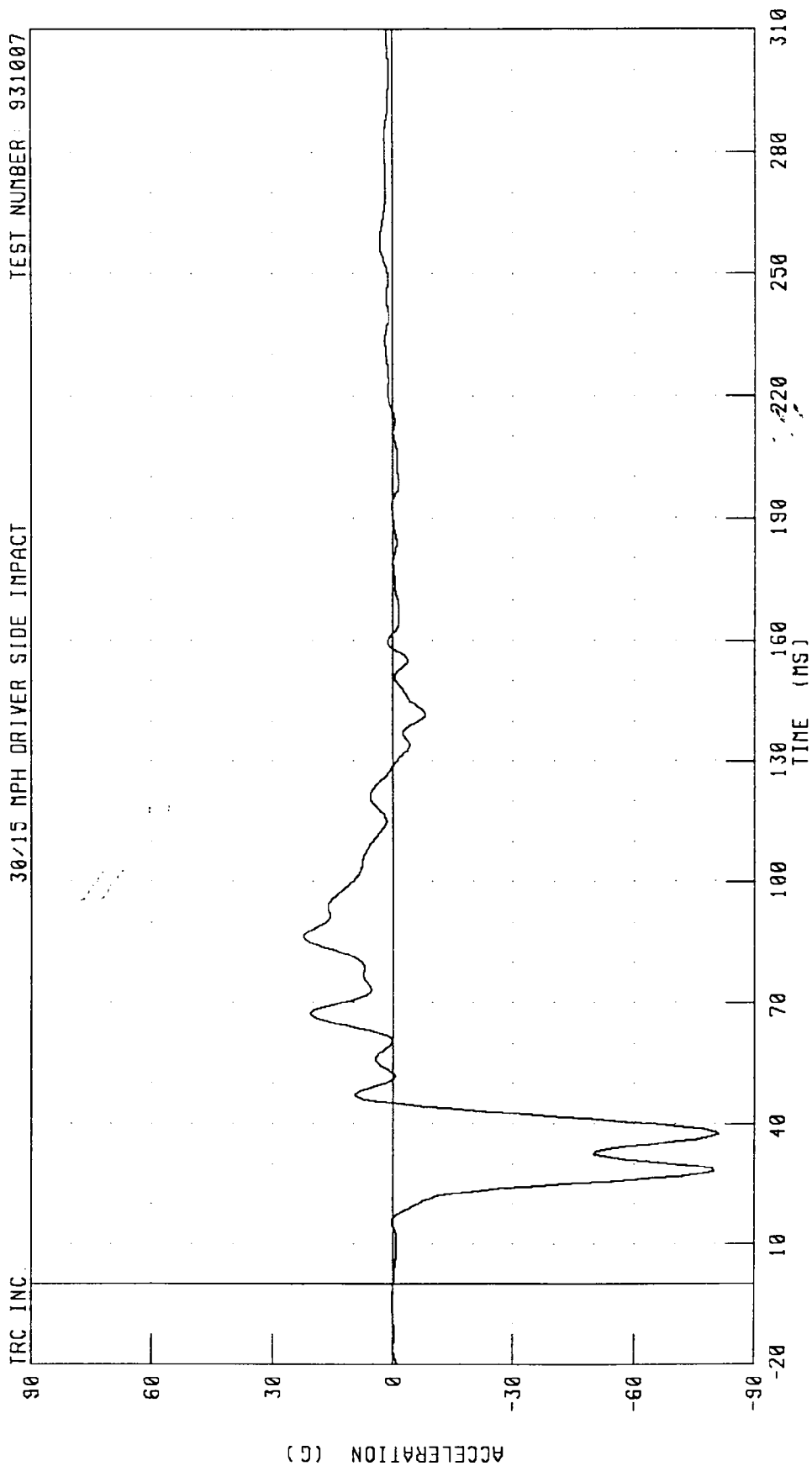


CHANNEL: T12XG1 FILTER: FIR 100

PEAK DATA: 20.99 G @ 32.50 MS, -27.05 G @ 37.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER LOWER SPINE Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

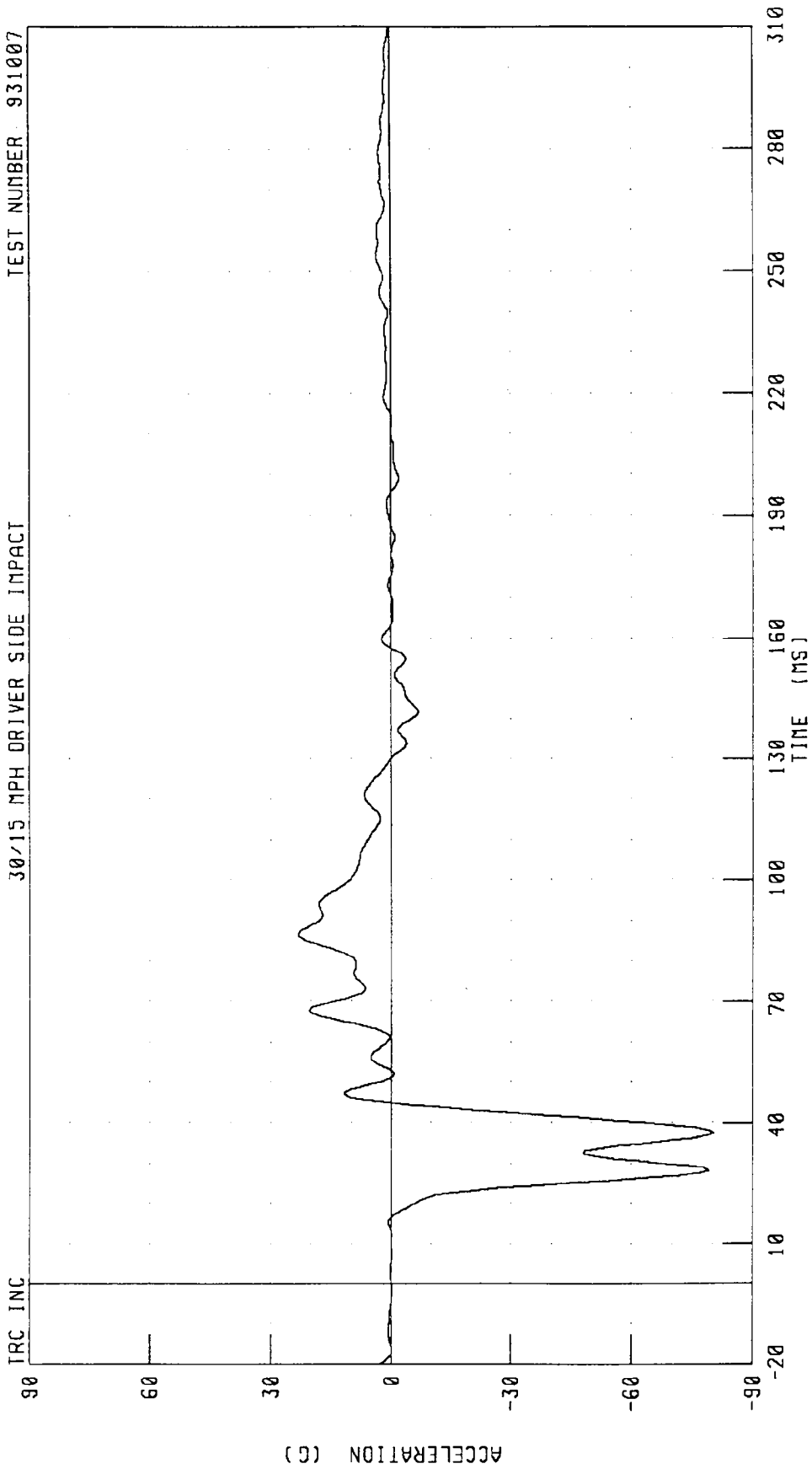


CHANNEL: T12YG1 FILTER: FIR 100

PEAK DATA: 22.45 G @ 86.25 MS; -80.94 G @ 37.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

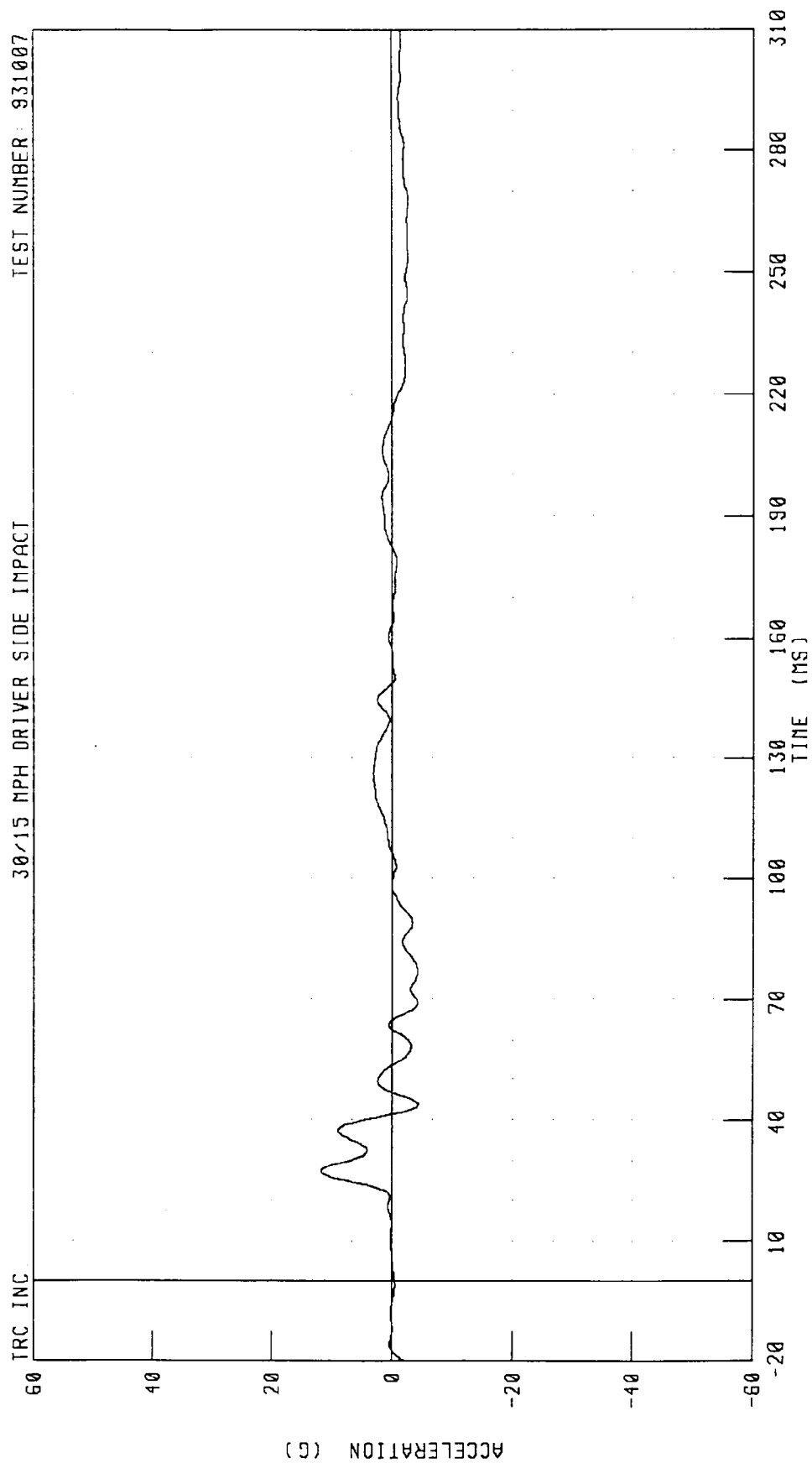
TEST NUMBER 931007



CHANNEL: T12YGA FILTER: FIR 100 PEAK DATA: 23.14 G @ 86.88 MS, -80.25 G @ 37.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER LOWER SPINE Z-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

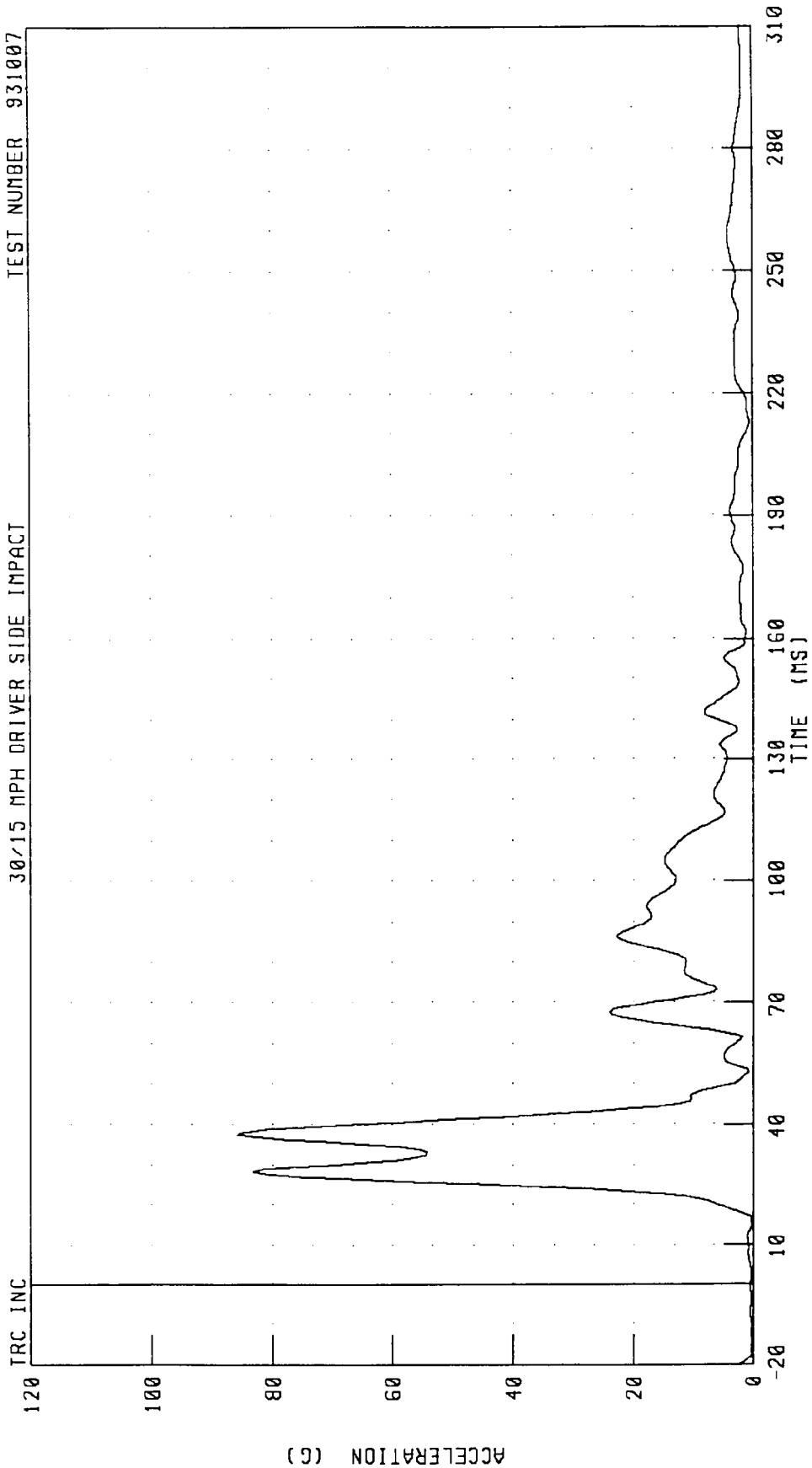


CHANNEL: T12ZG1 FILTER: FIR 100

PEAK DATA: 11.72 G @ 27.50 MS, -4.32 G @ 43.75 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER LOWER SPINE RESULTANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

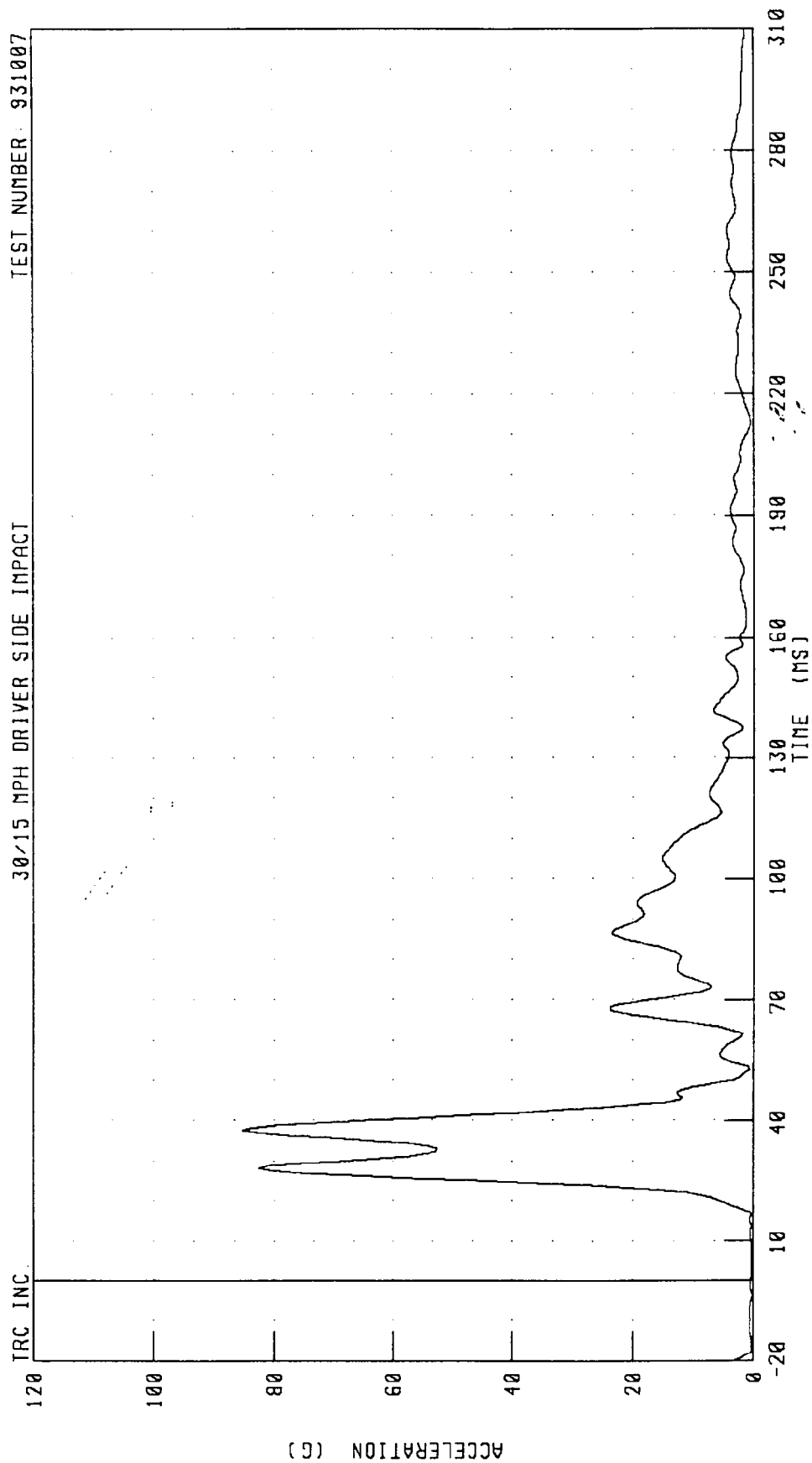


PEAK DATA: 85.81 G @ 37.50 MS, 0.17 G @ 14.37 MS

CHANNEL: T12RG1 FILTER: FIR 100

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER LOWER SPINE RESULTANT REDUNDANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

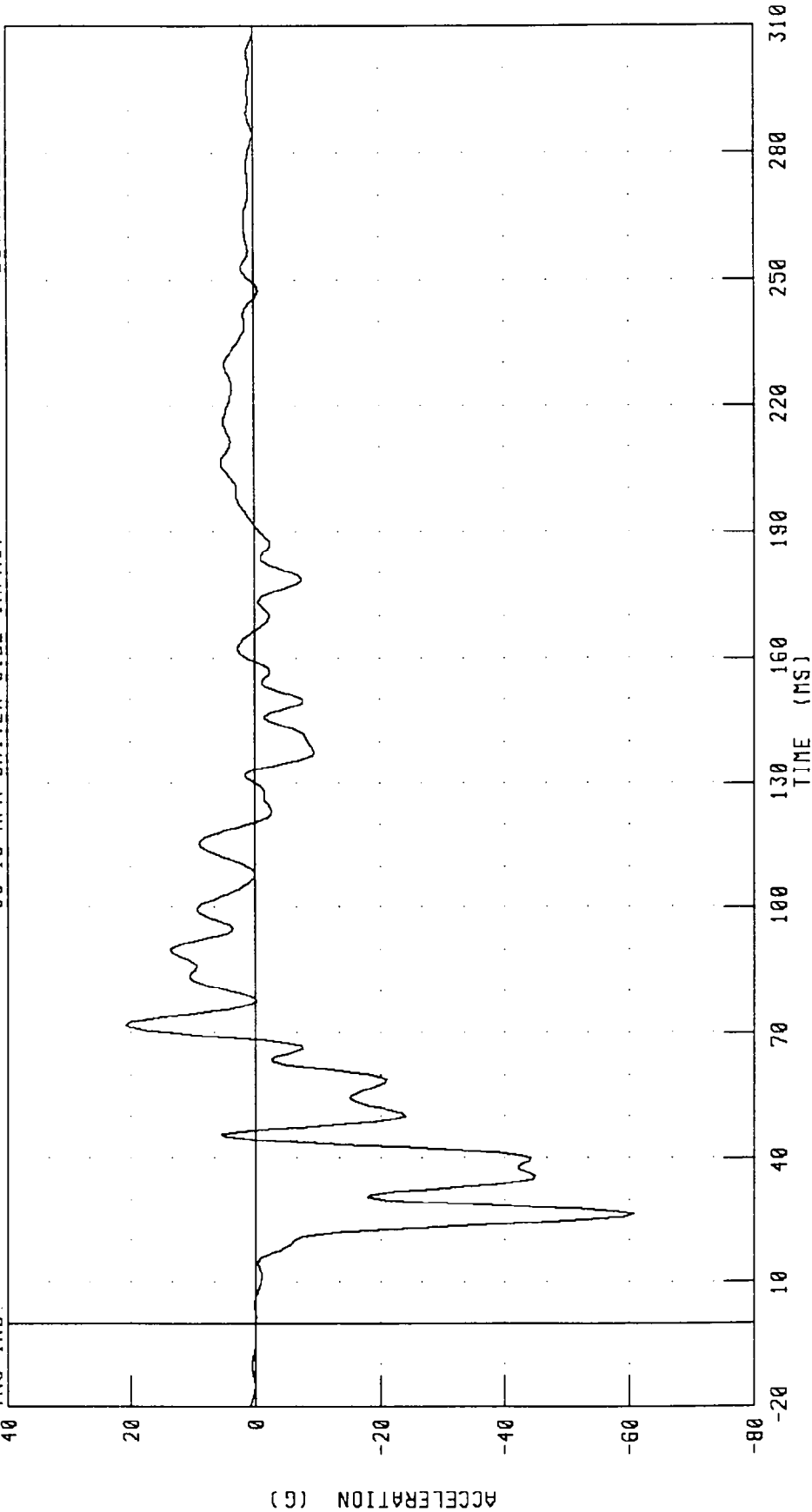


CHANNEL: T12RGA FILTER: FIR 100 PEAK DATA: 85.16 G @ 37.50 MS; 23 G @ 175.00 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER LEFT UPPER THORAX RIB Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

TRC INC.



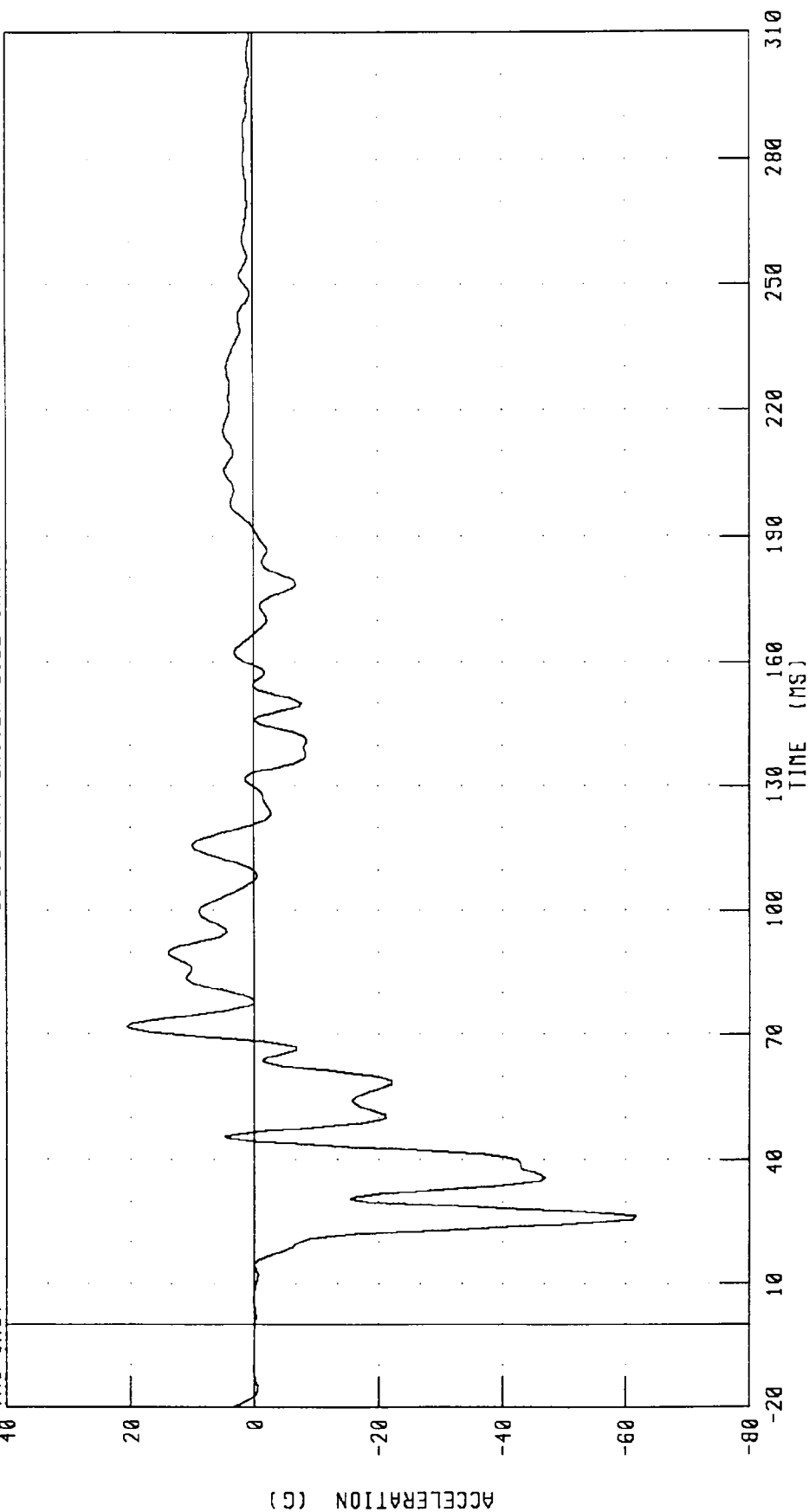
CHANNEL: LURYG1 FILTER: FIR 100 PEAK DATA: 20.88 G @ 71.88 MS, -60.63 G @ 26.25 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER LEFT UPPER THORAX RIB Y-AXIS REDUNDANT ACCELERATION

TEST NUMBER: 931007

30/15 MPH DRIVER SIDE IMPACT

TRC INC.

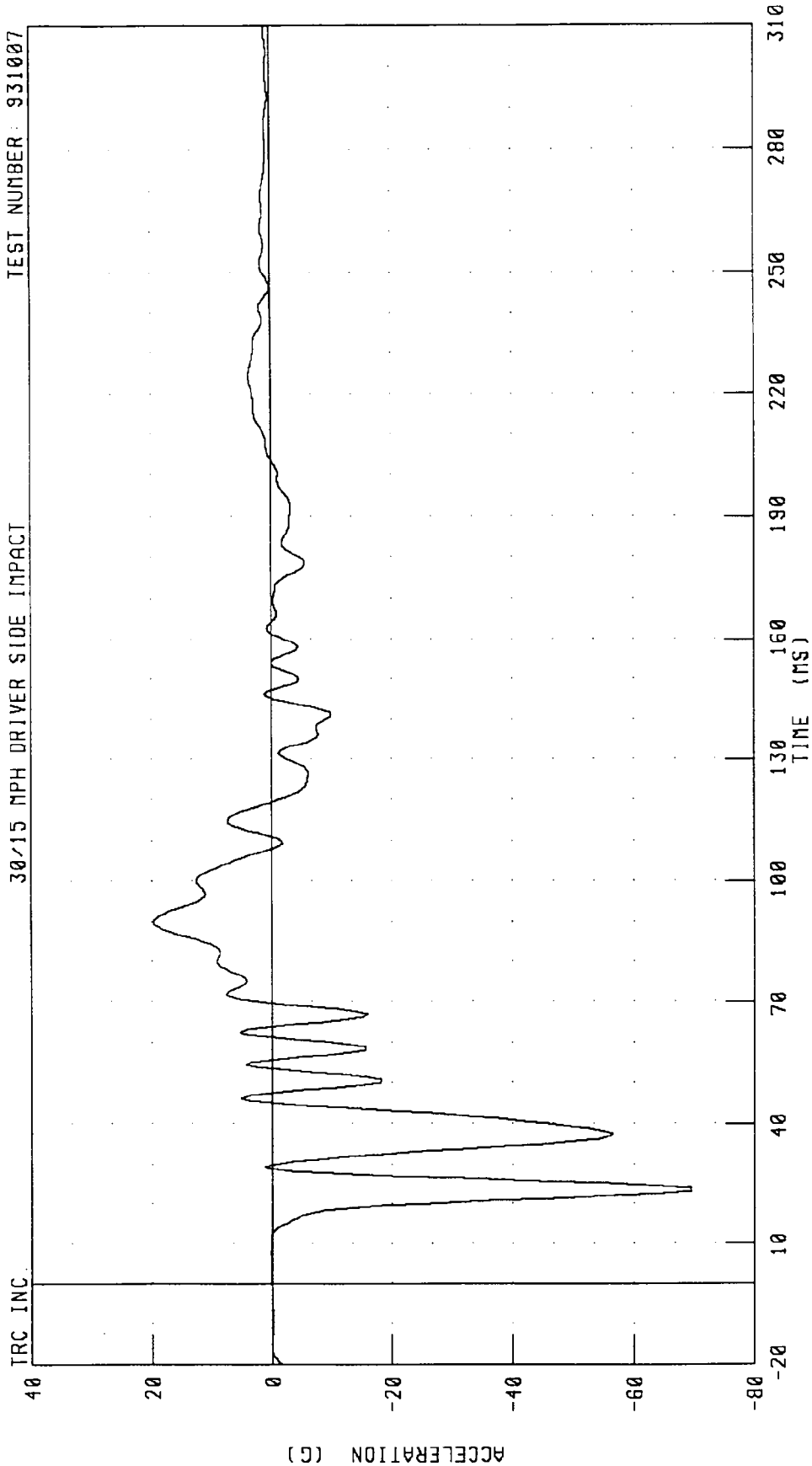


PEAK DATA: 20.68 G @ 71.88 MS, -61.61 G @ 26.25 MS

CHANNEL: LURYGA FILTER: FIR 100

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER LEFT LOWER THORAX RIB Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007



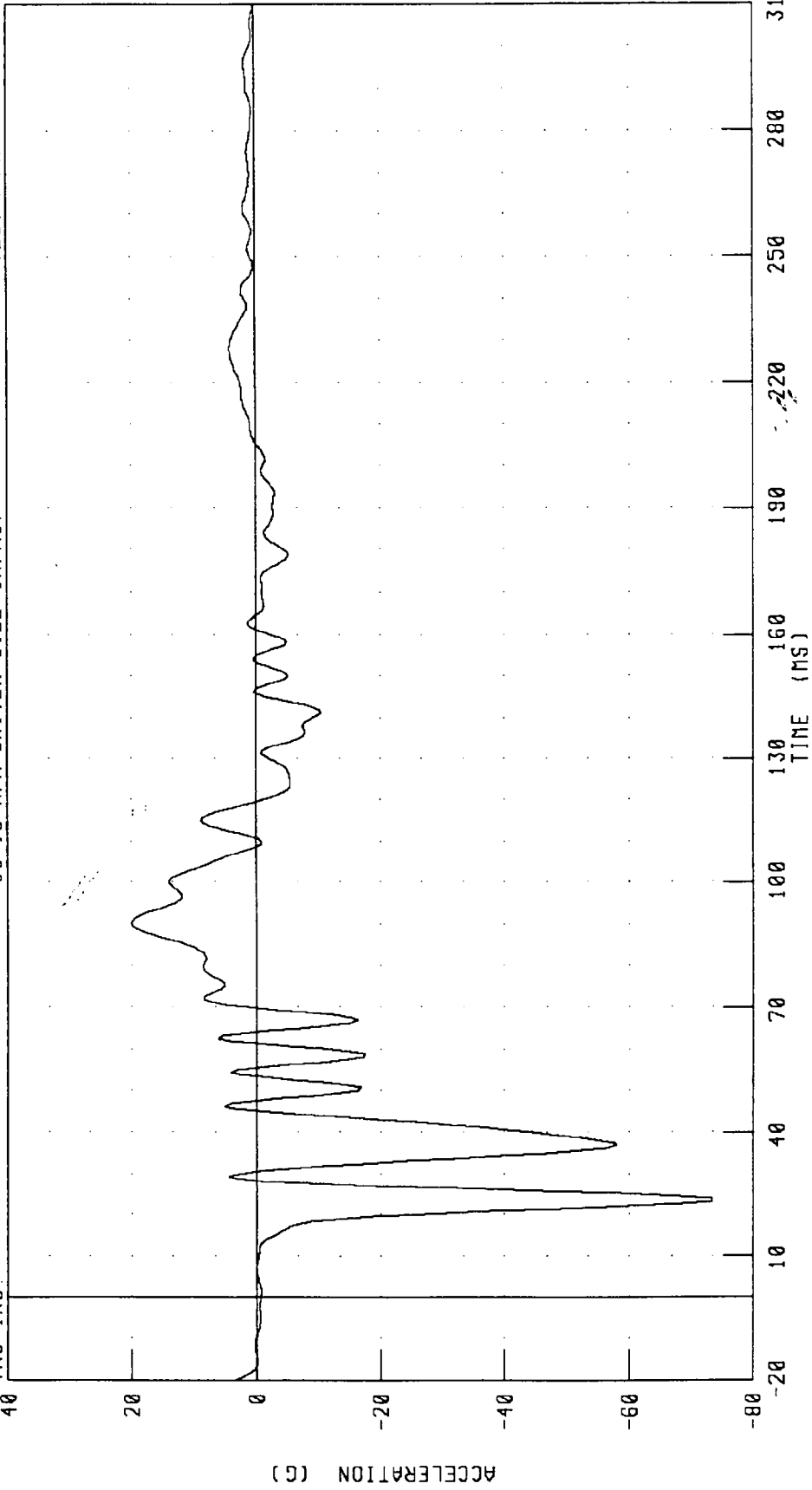
CHANNEL: LLRYG1 FILTER: FIR 100

PEAK DATA: 19.68 G @ 90.00 MS, -69.31 G @ 23.13 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER LEFT LOWER THORAX RIB Y-AXIS REDUNDANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC.

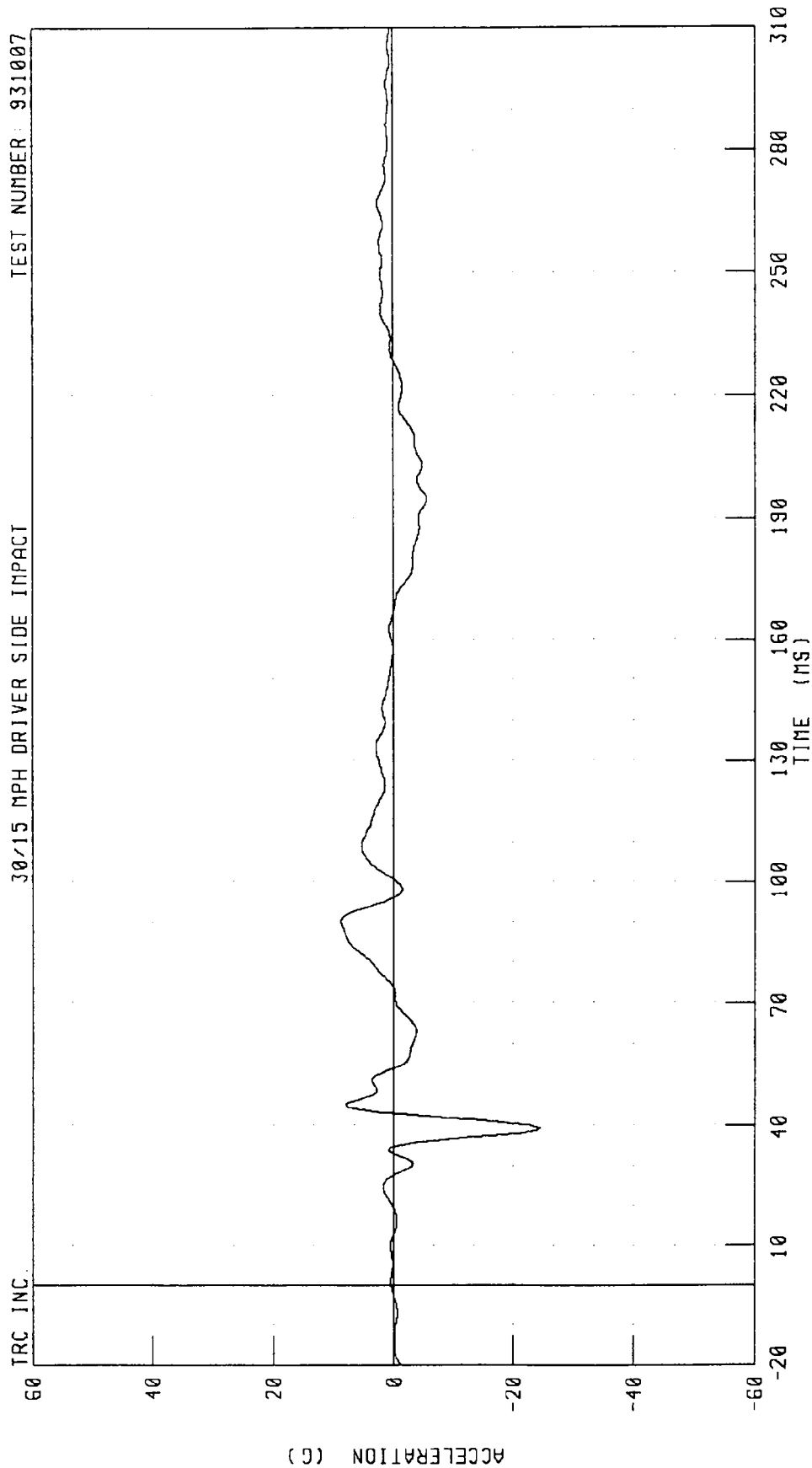


CHANNEL: LLRYGA FILTER: FIR 100

PEAK DATA: 19.95 G @ 90.00 MS, -73.20 G @ 23.75 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER PELVIS X-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007



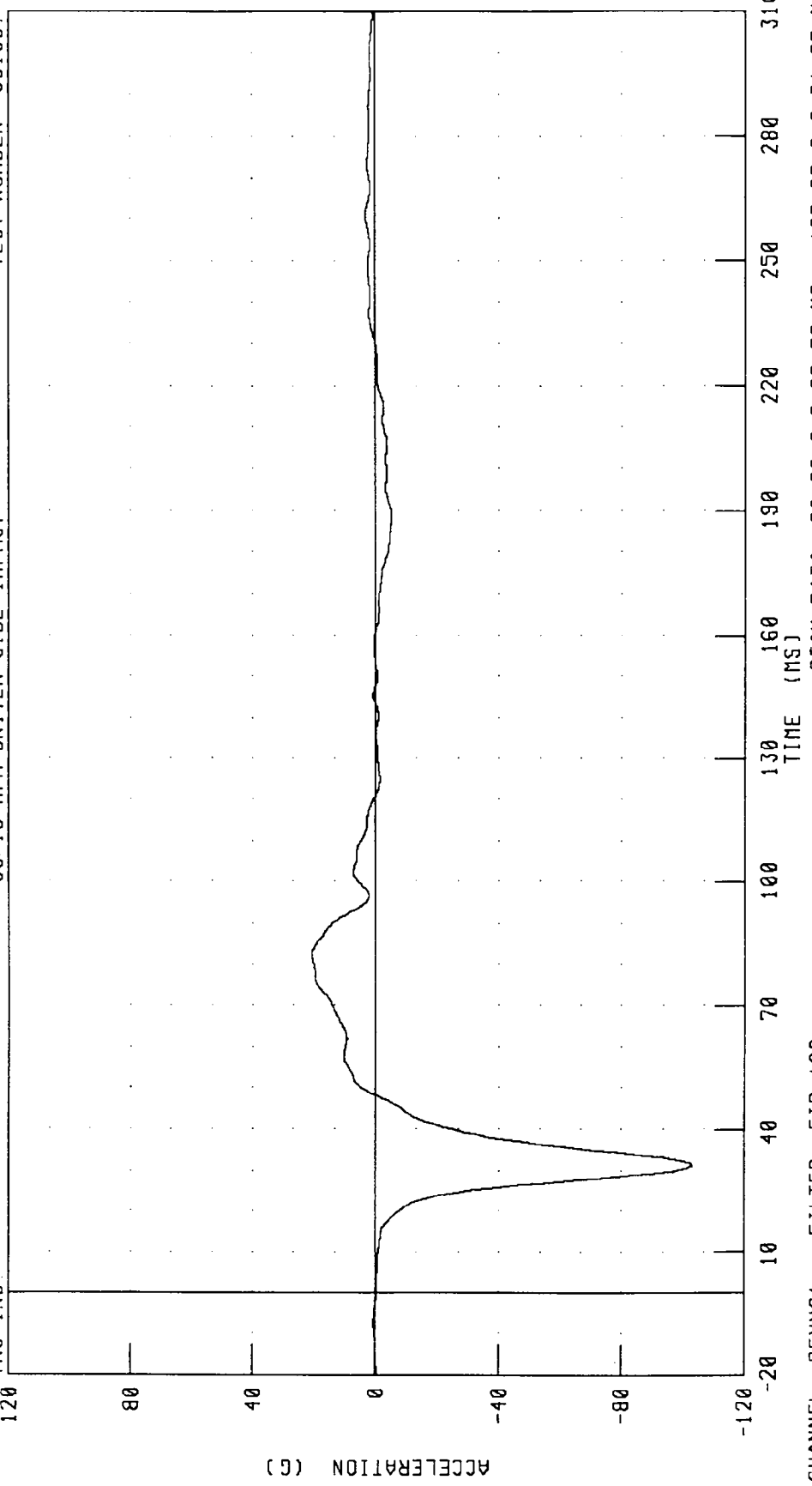
CHANNEL: PEVXG1 FILTER: FIR 100

PEAK DATA: 8.73 G @ 90.00 MS, -24.52 G @ 39.38 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER PELVIS Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

TRC INC.



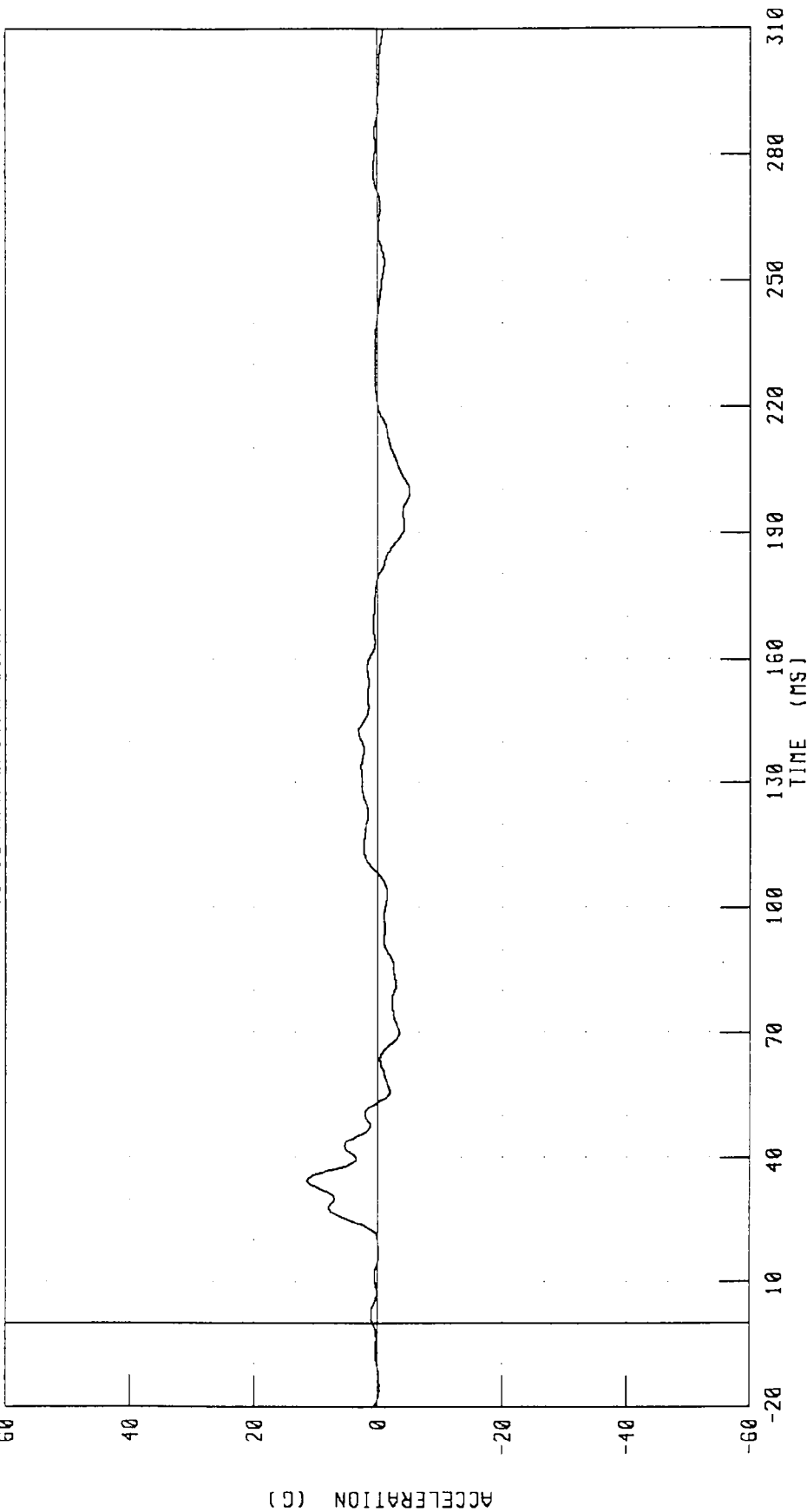
PEAK DATA: 20.66 G @ 82.50 MS, -103.08 G @ 31.25 MS

CHANNEL: PEVYG1 FILTER: FIR 100

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER PELVIS Z-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC.

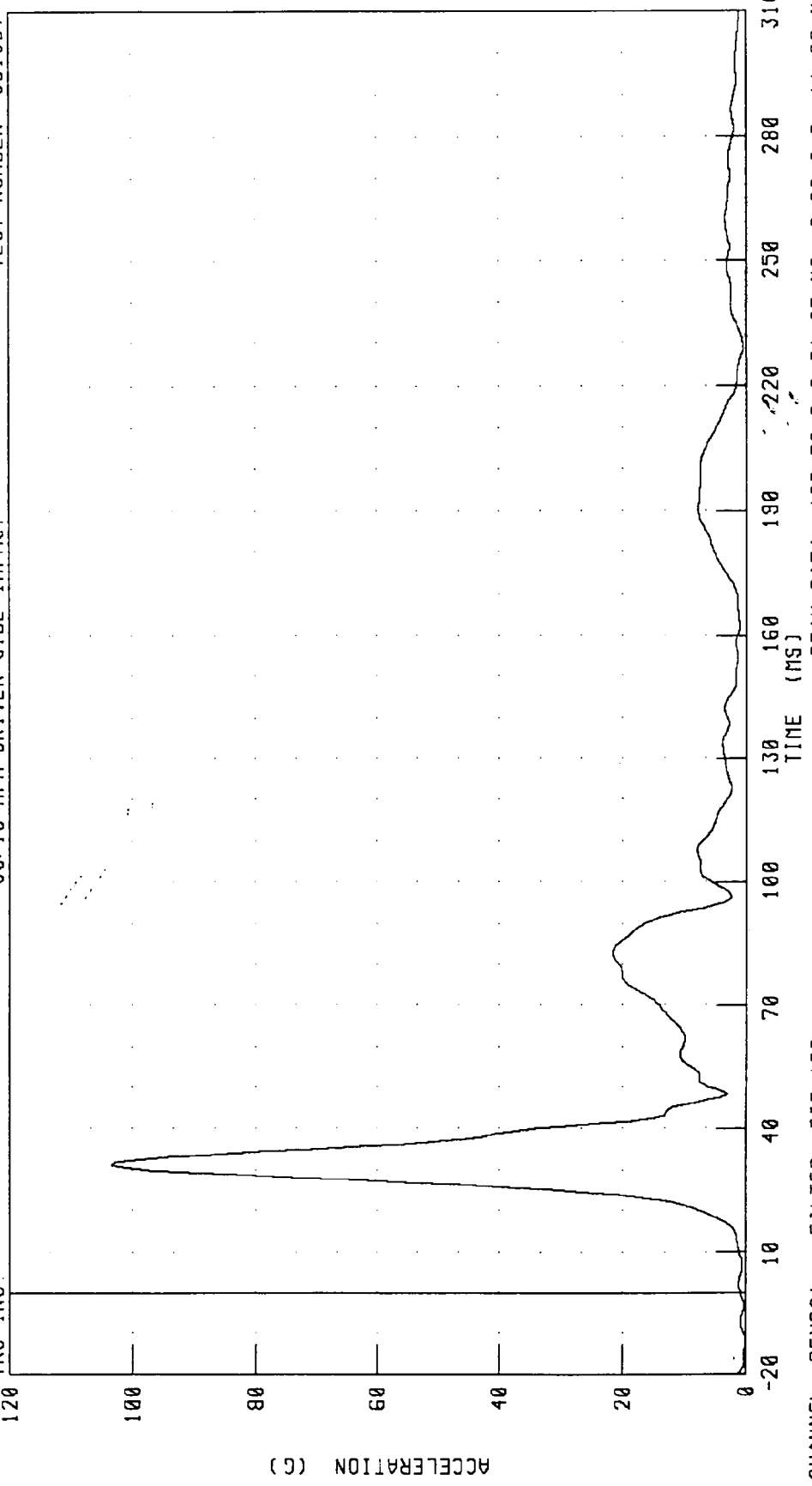


CHANNEL: PEVZG1 FILTER: FIR 100 PEAK DATA: 11.49 G @ 34.38 MS, -5.13 G @ 199.37 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
DRIVER PELVIS RESULTANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

TRC INC.

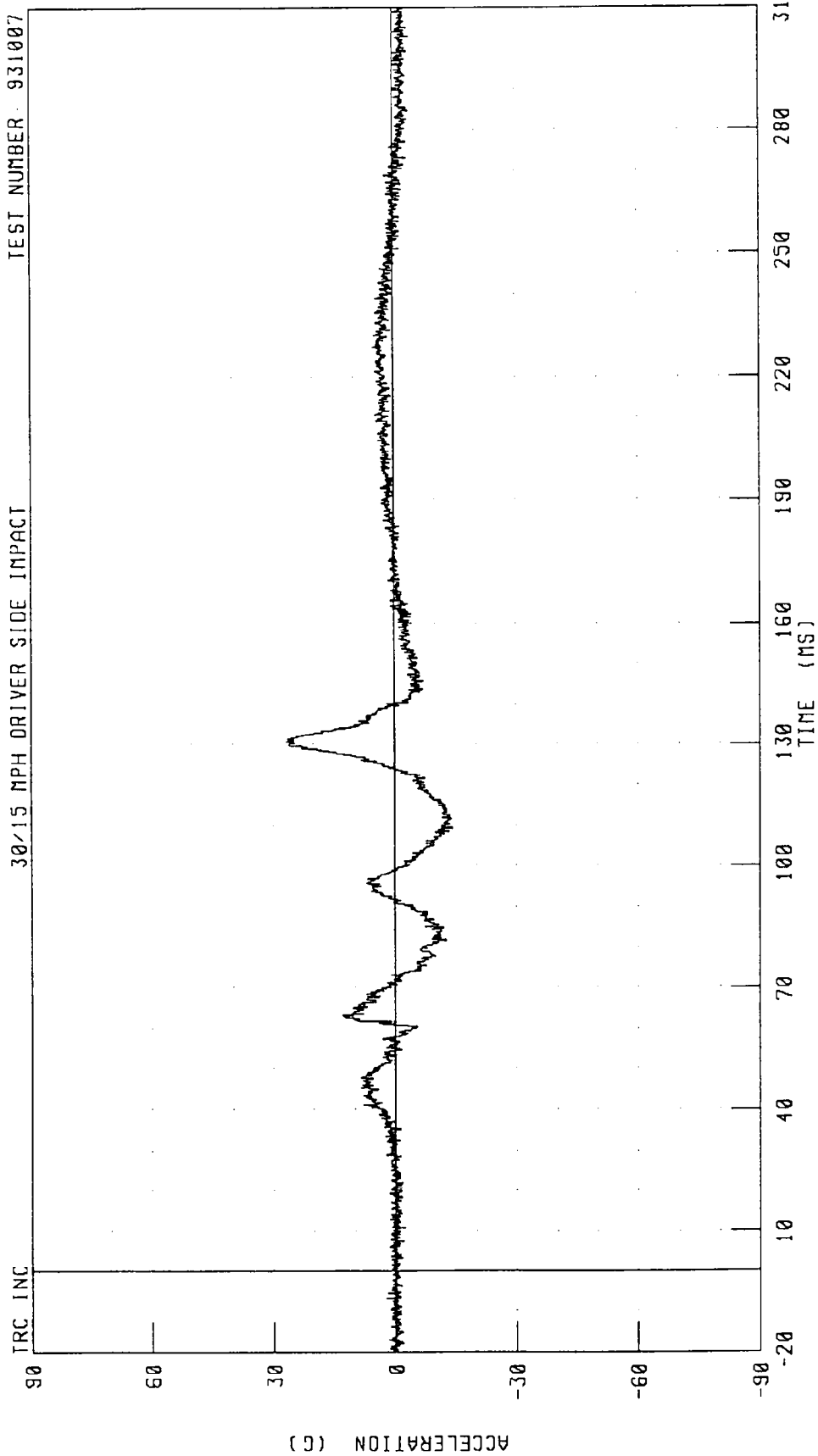


CHANNEL: PEVRG1 FILTER: FIR 100 PEAK DATA: 103.39 G @ 31.25 MS, 0.20 G @ -11.88 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER HEAD X-AXIS ACCELERATION

30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007



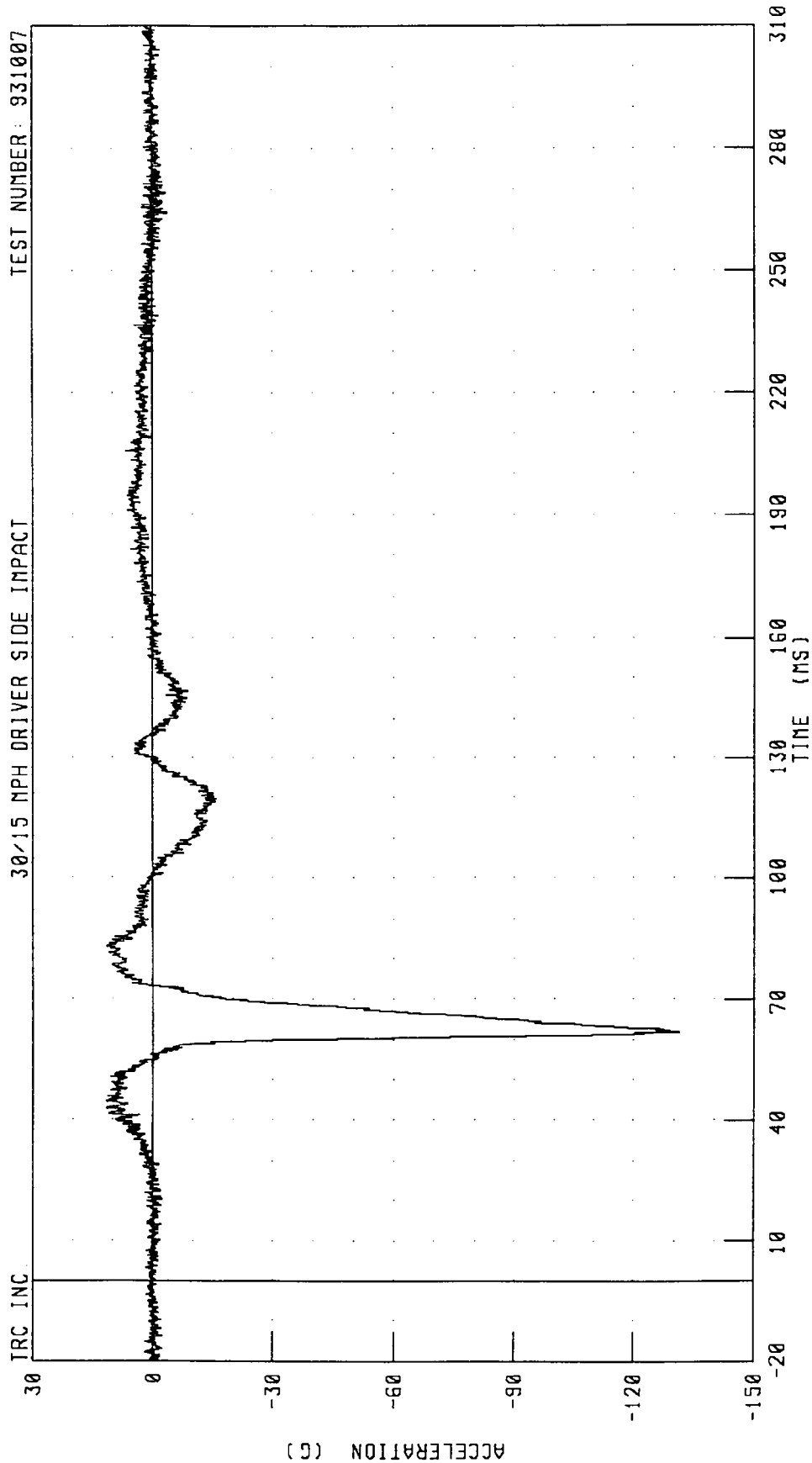
CHANNEL: HEDXG4 FILTER: CH. CLASS 1000

PEAK DATA 26.68 G @ 130.63 MS, -14.15 G @ 109.38 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER HEAD Y-AXIS ACCELERATION

30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007



CHANNEL: HEDYG4 FILTER: CH CLASS 1000

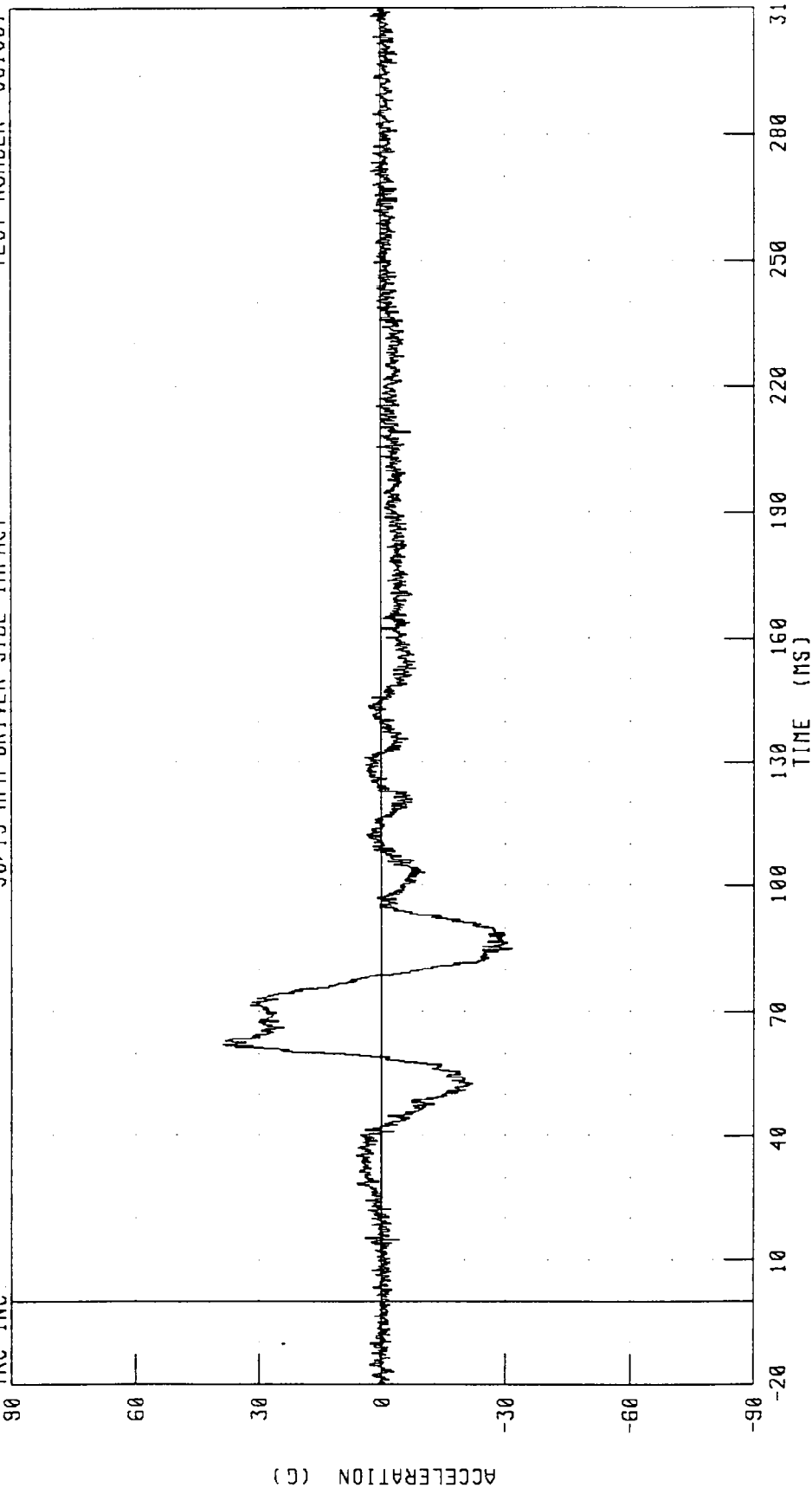
PEAK DATA: 11.69 G @ 42.88 MS, -131.43 G @ 62.00 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER HEAD Z-AXIS ACCELERATION

30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC



CHANNEL: HEDZG4 FILTER: CH. CLASS 1000

PEAK DATA: 38.96 G @ 62.38 MS, -31.61 G @ 85.13 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION

TEST NUMBER: 931007

30/15 MPH DRIVER SIDE IMPACT

TRC INC.

180

150

120

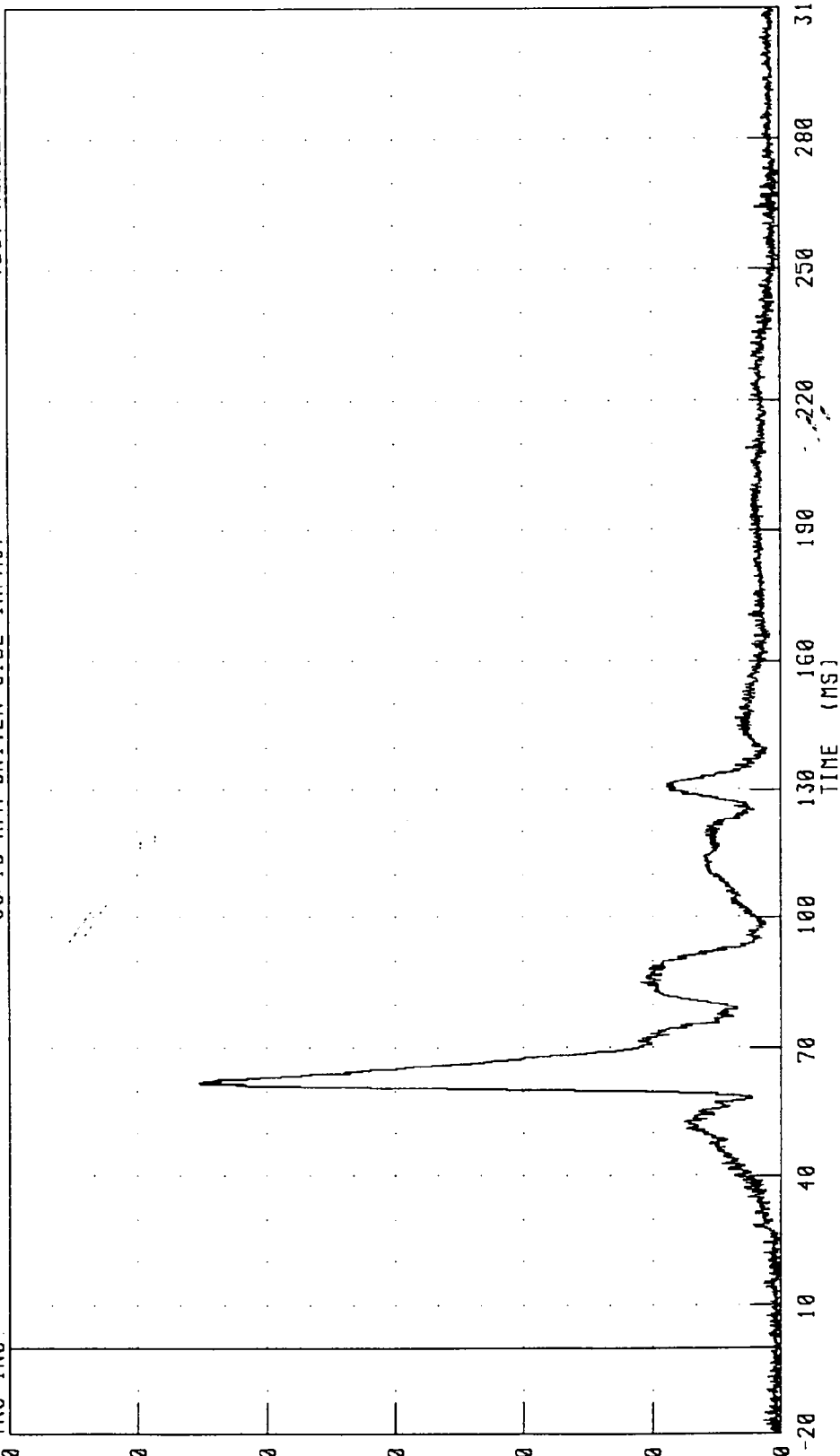
90

60

30

0

ACCELERATION (G)



TIME (MS)

310

280

250

220

190

160

130

100

70

40

10

-20

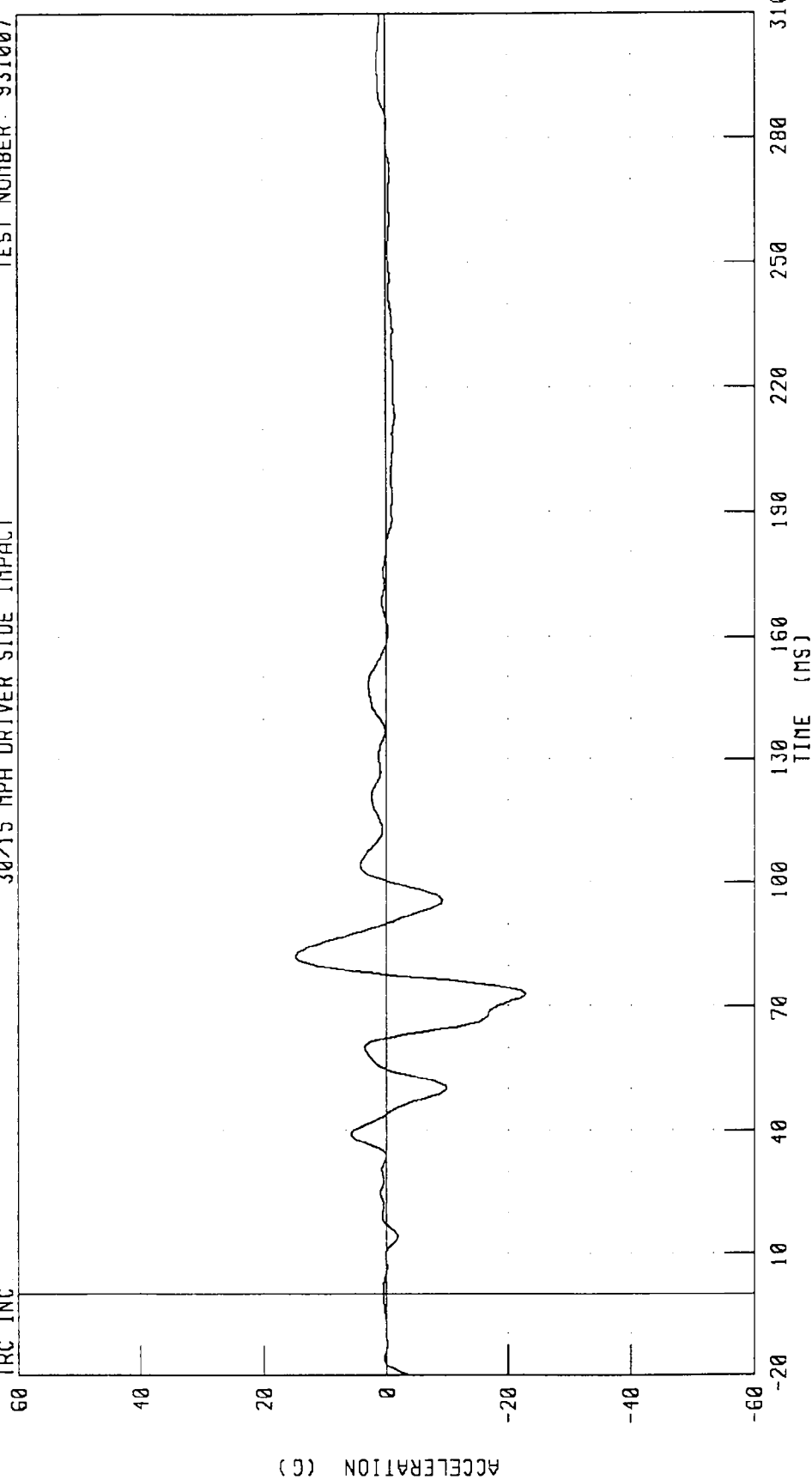
CHANNEL: HEDRG4 FILTER: CH CLASS 1000

PEAK DATA: 135.80 G @ 62.13 MS, 0.07 G @ 266.75 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER UPPER SPINE X-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC

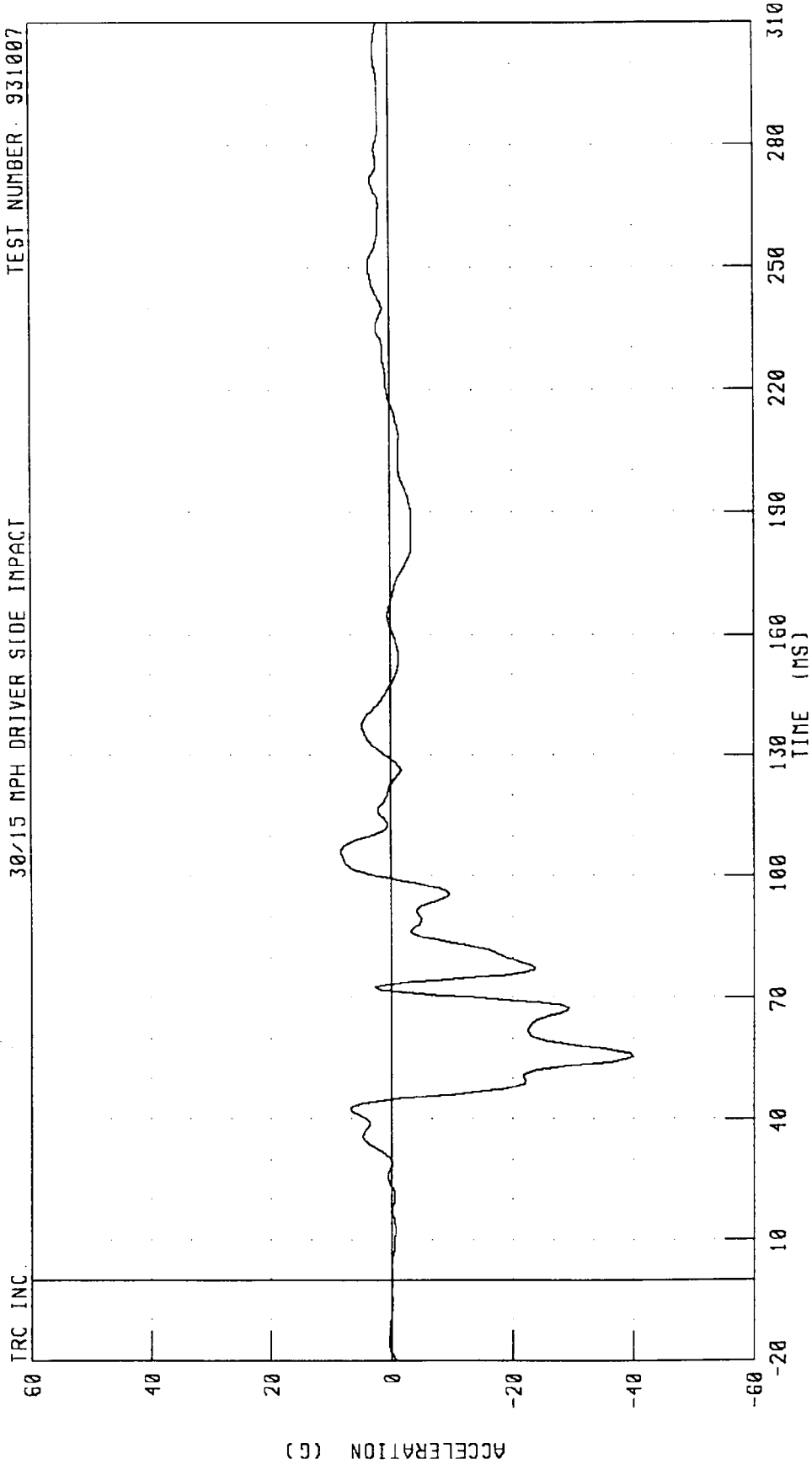


CHANNEL T01XG4 FILTER FIR 100

PEAK DATA: 14.74 G @ 82.50 MS, -22.85 G @ 73.13 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER UPPER SPINE Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007



CHANNEL: T01YG4 FILTER: FIR 100

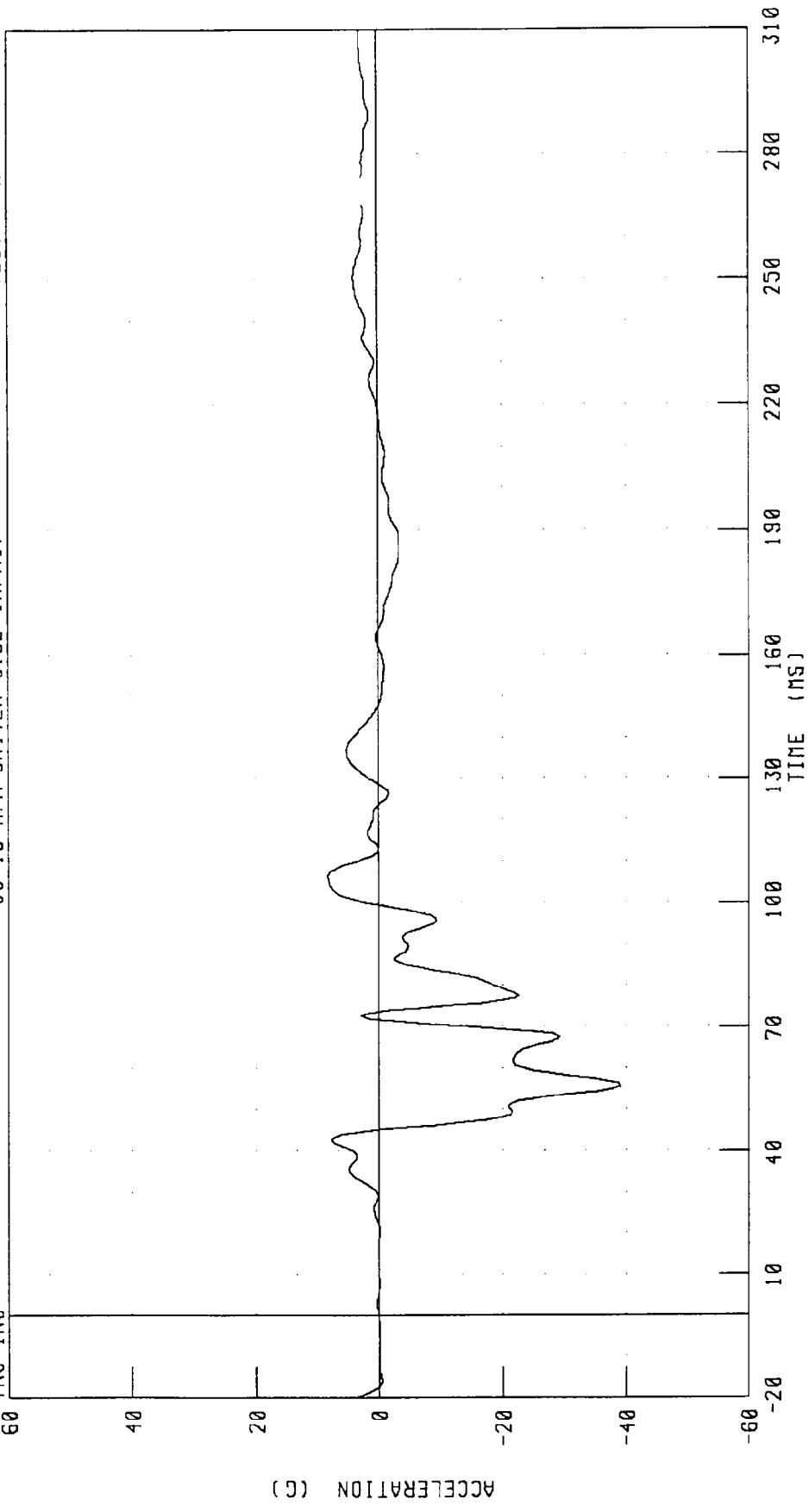
PEAK DATA: 8.35 G @ 106.25 MS, -39.93 G @ 55.63 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER UPPER SPINE Y-AXIS REDUNDANT ACCELERATION

TEST NUMBER 931007

30/15 MPH DRIVER SIDE IMPACT

TRC INC



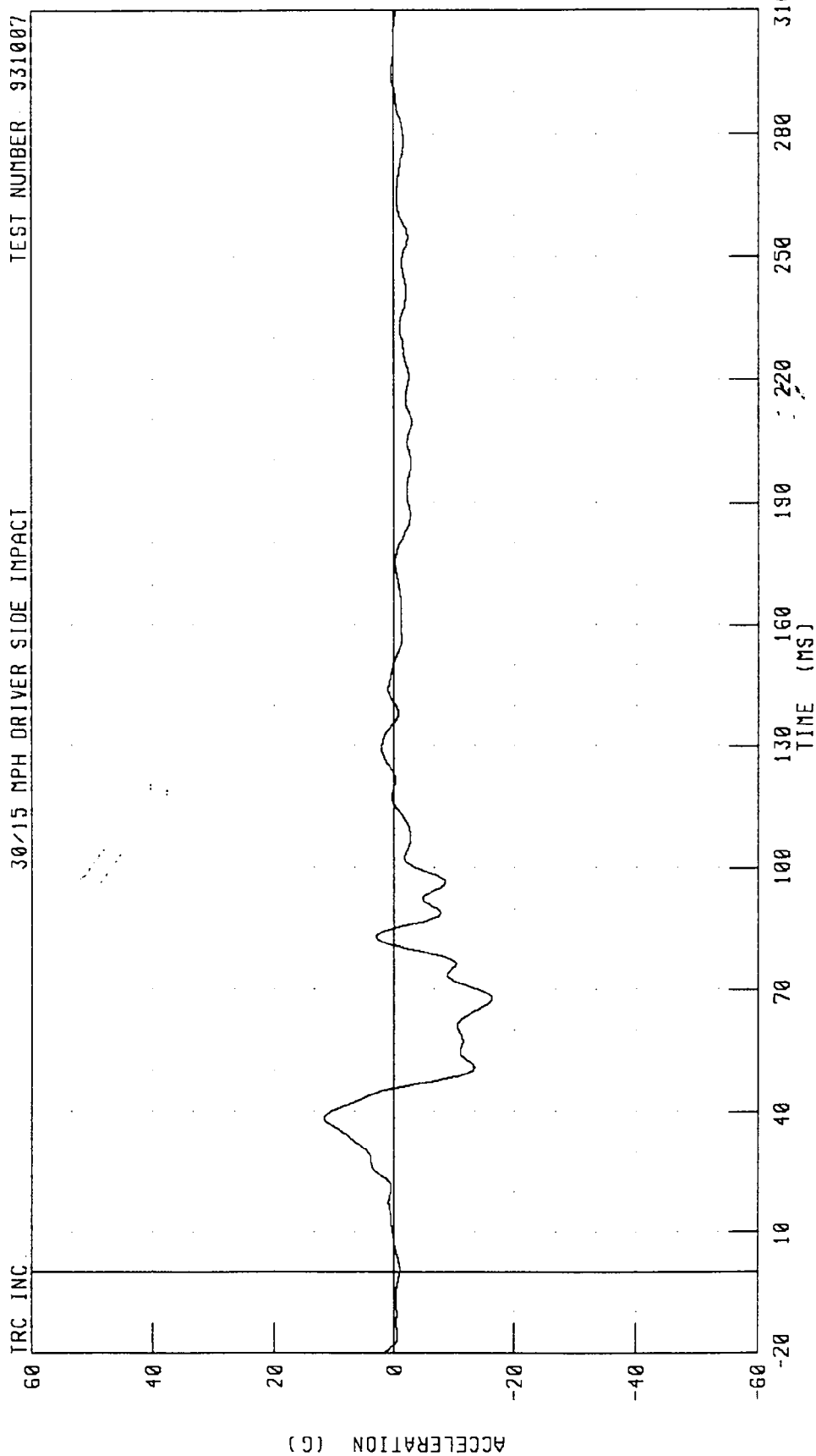
CHANNEL: T01YCD FILTER: FIR 100

PEAK DATA: 8.24 G @ 106.25 MS, -38.93 G @ 55.63 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER UPPER SPINE Z-AXIS ACCELERATION

30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007



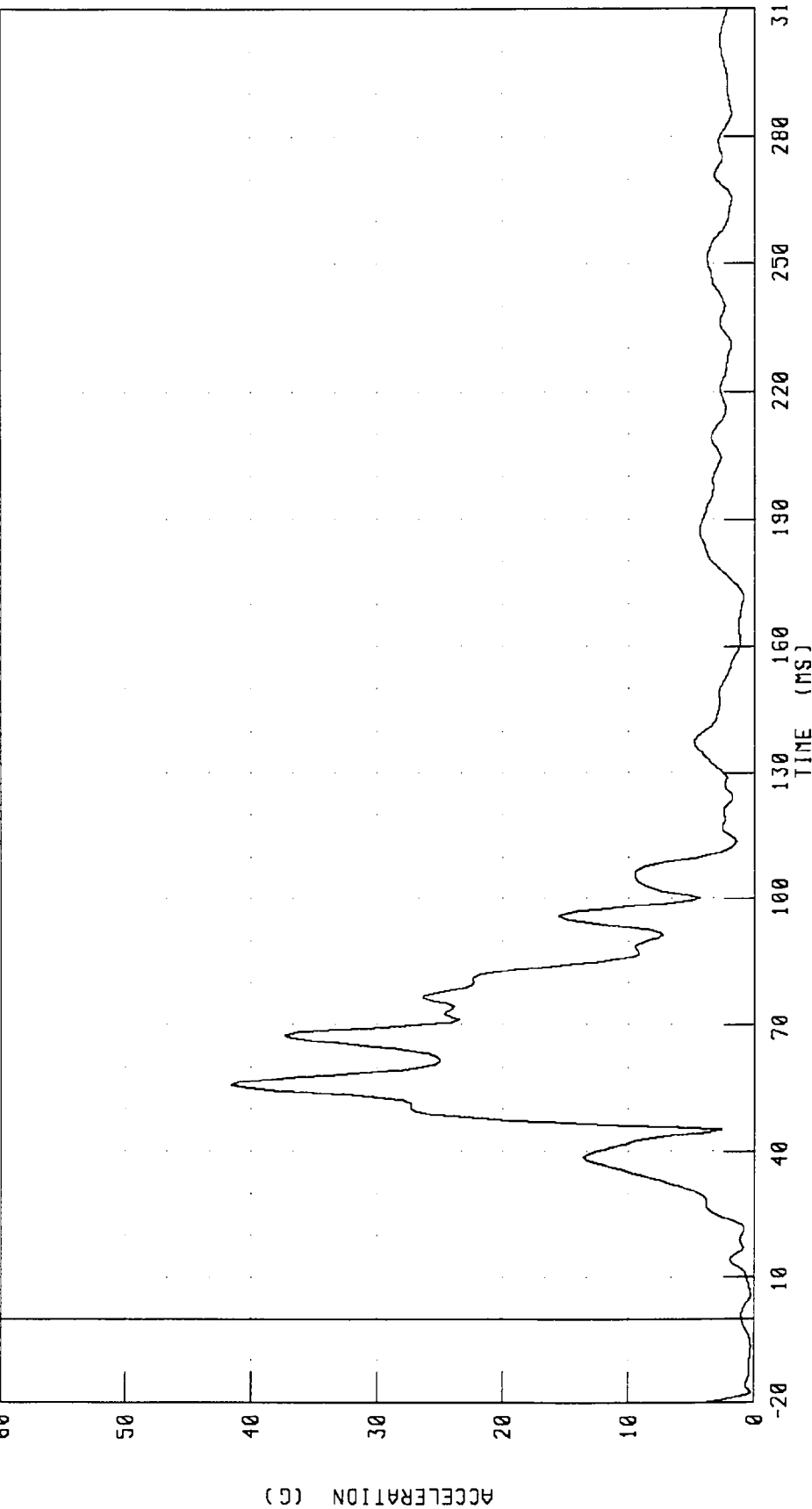
CHANNEL T01ZG4 FILTER FIR 100

PEAK DATA: 11.73 G @ 38.75 MS, -16.25 G @ 67.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER UPPER SPINE RESULTANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC



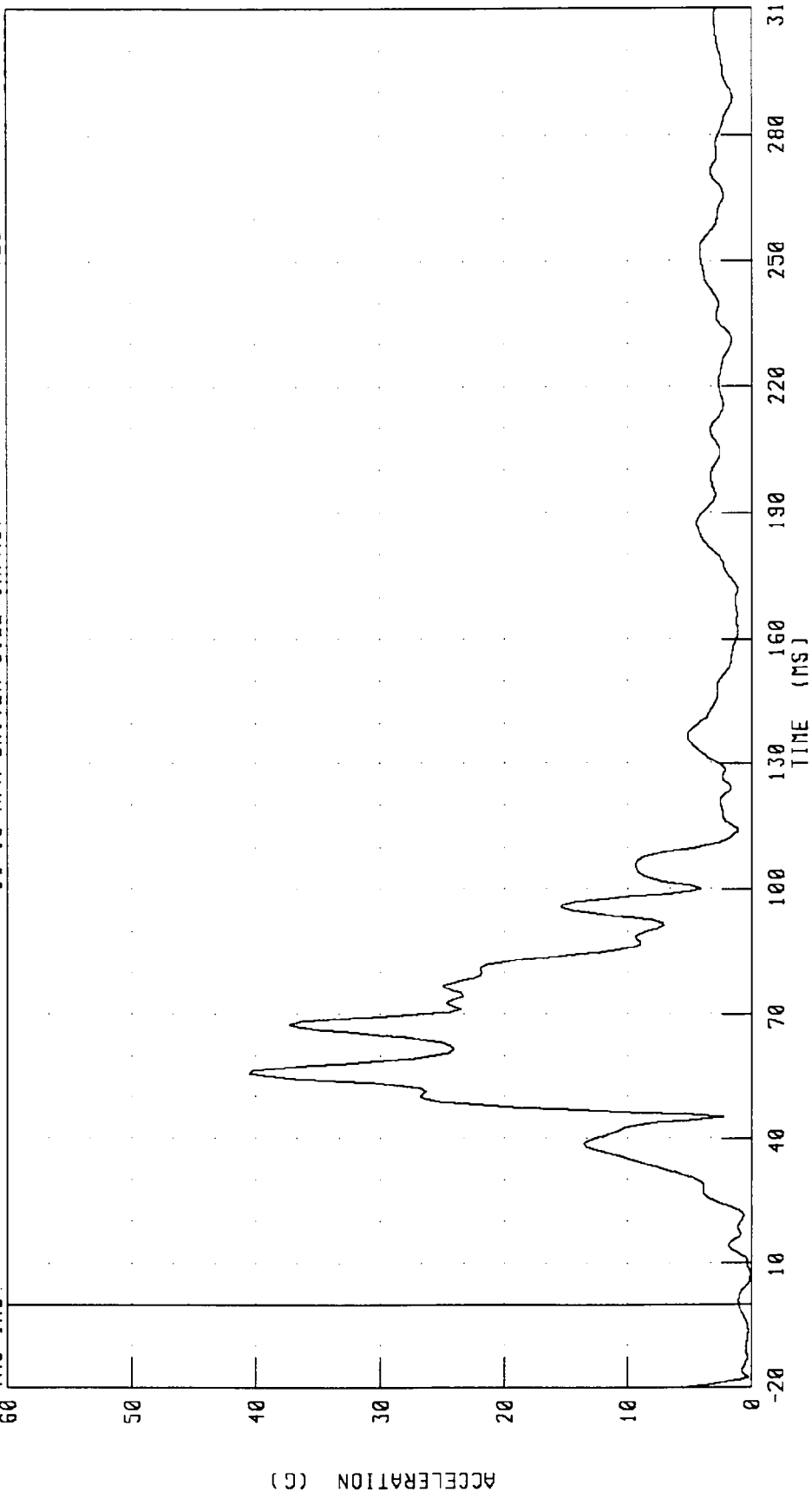
CHANNEL: T01RG4 FILTER: FIR 100

PEAK DATA: 41.48 G @ 55.63 MS, 0.30 G @ -17.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER UPPER SPINE RESULTANT REDUNDANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC

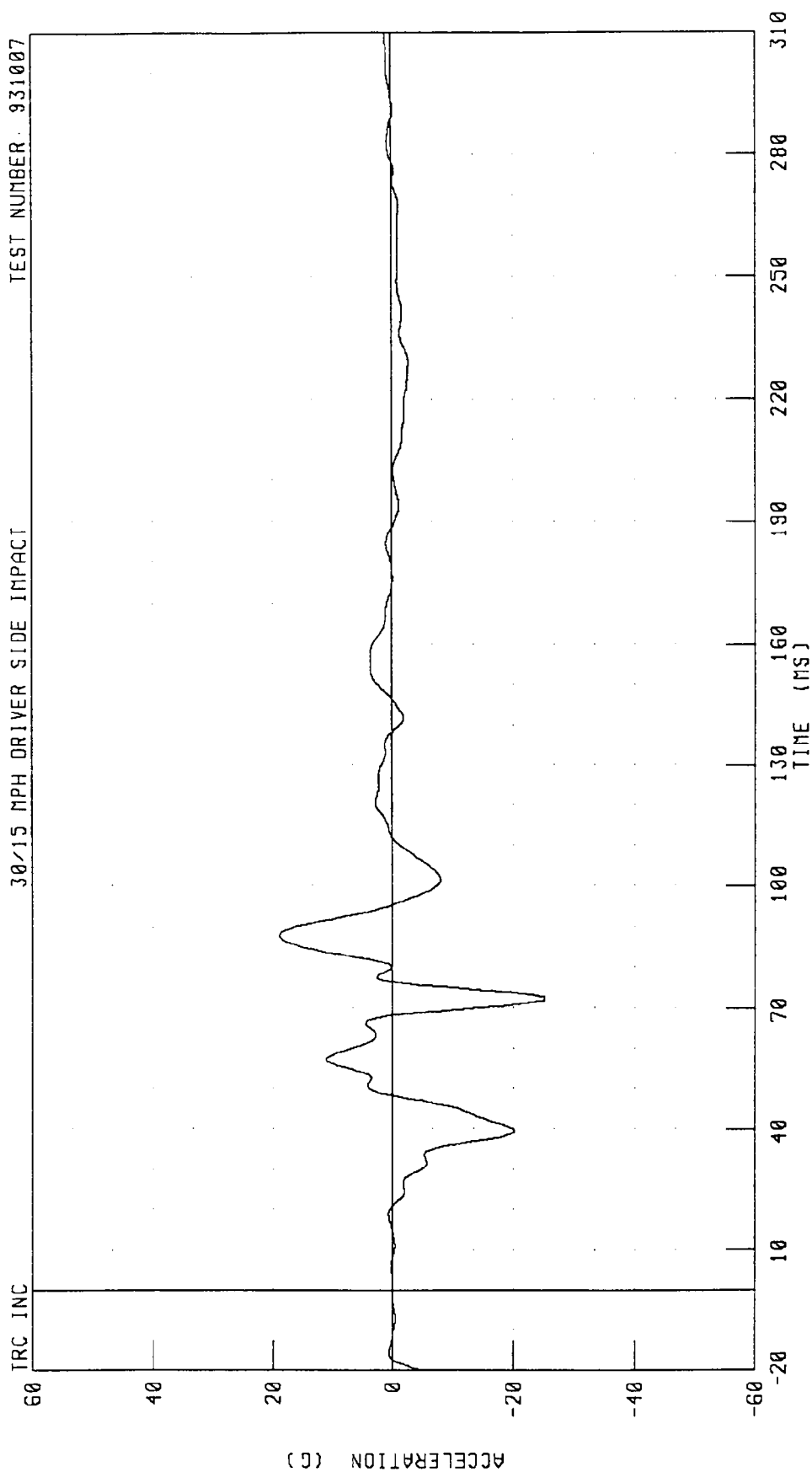


CHANNEL: T01RGD FILTER: FIR 100

PEAK DATA: 40.52 G @ 55.63 MS, 0.15 G @ 7.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER LOWER SPINE X-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

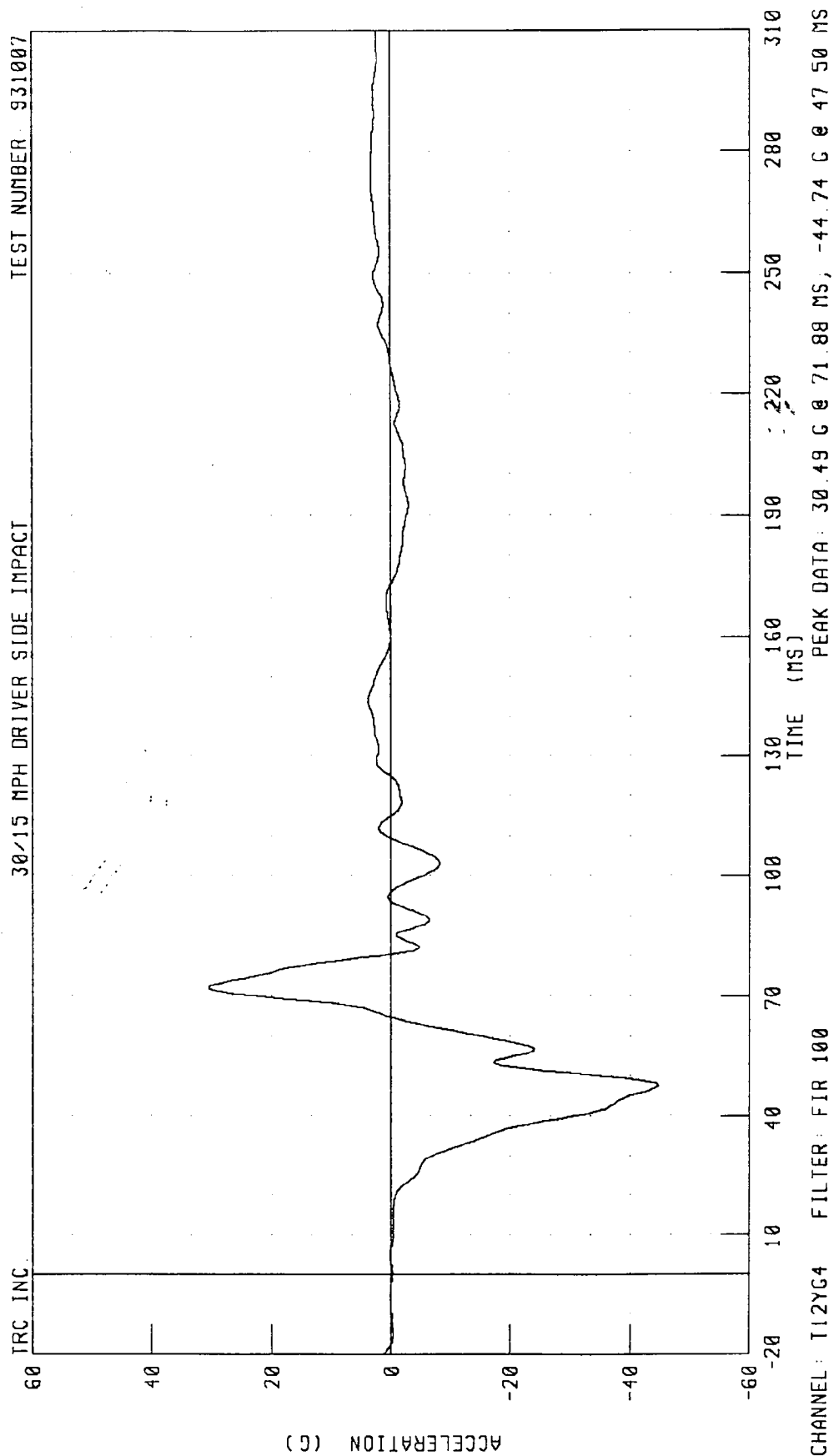


CHANNEL: T12XG4 FILTER: FIR 100

PEAK DATA: 18.87 G @ 88.13 MS, -25.28 G @ 72.50 MS

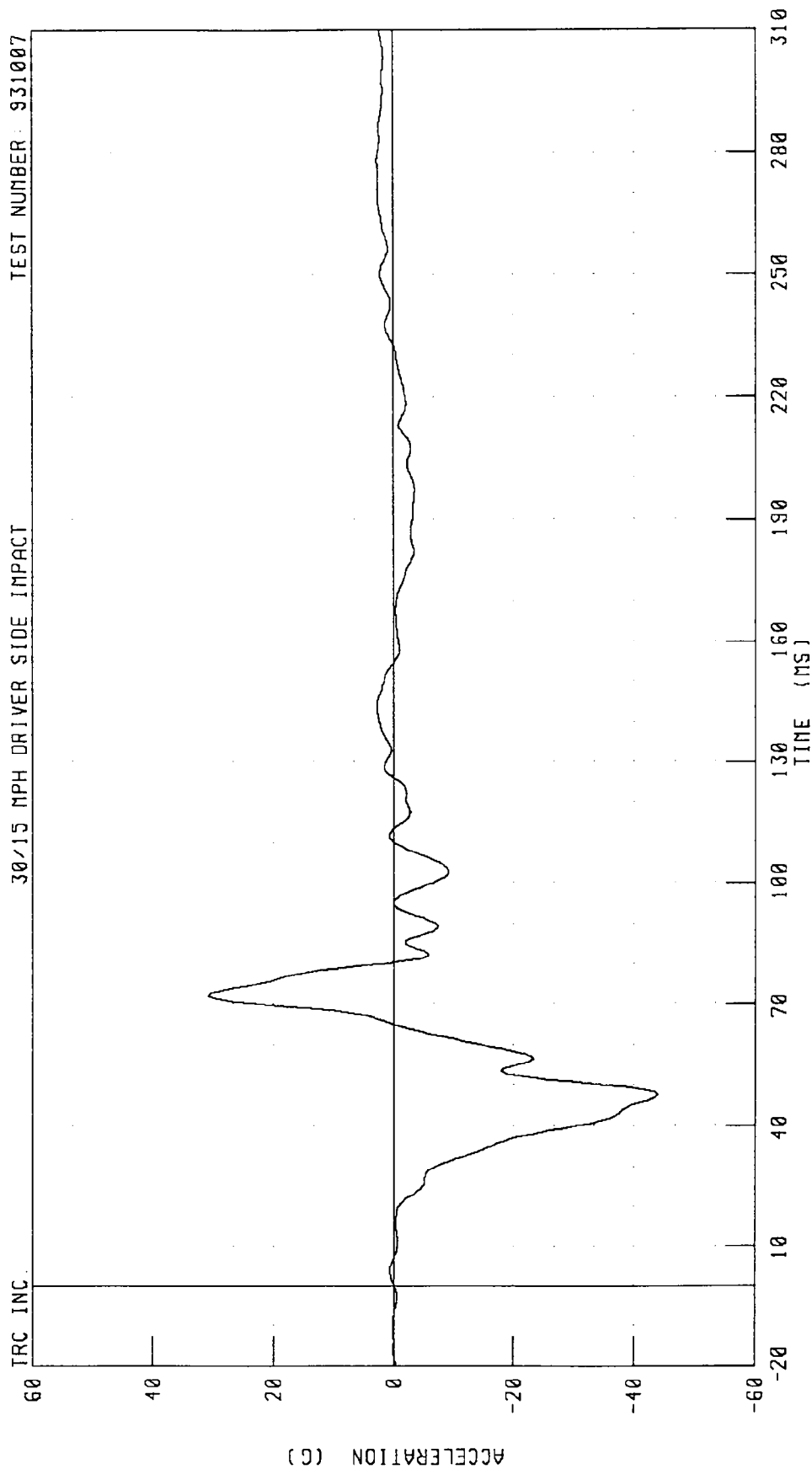
MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007



MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
 LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION
 30/15 MPH DRIVER SIDE IMPACT

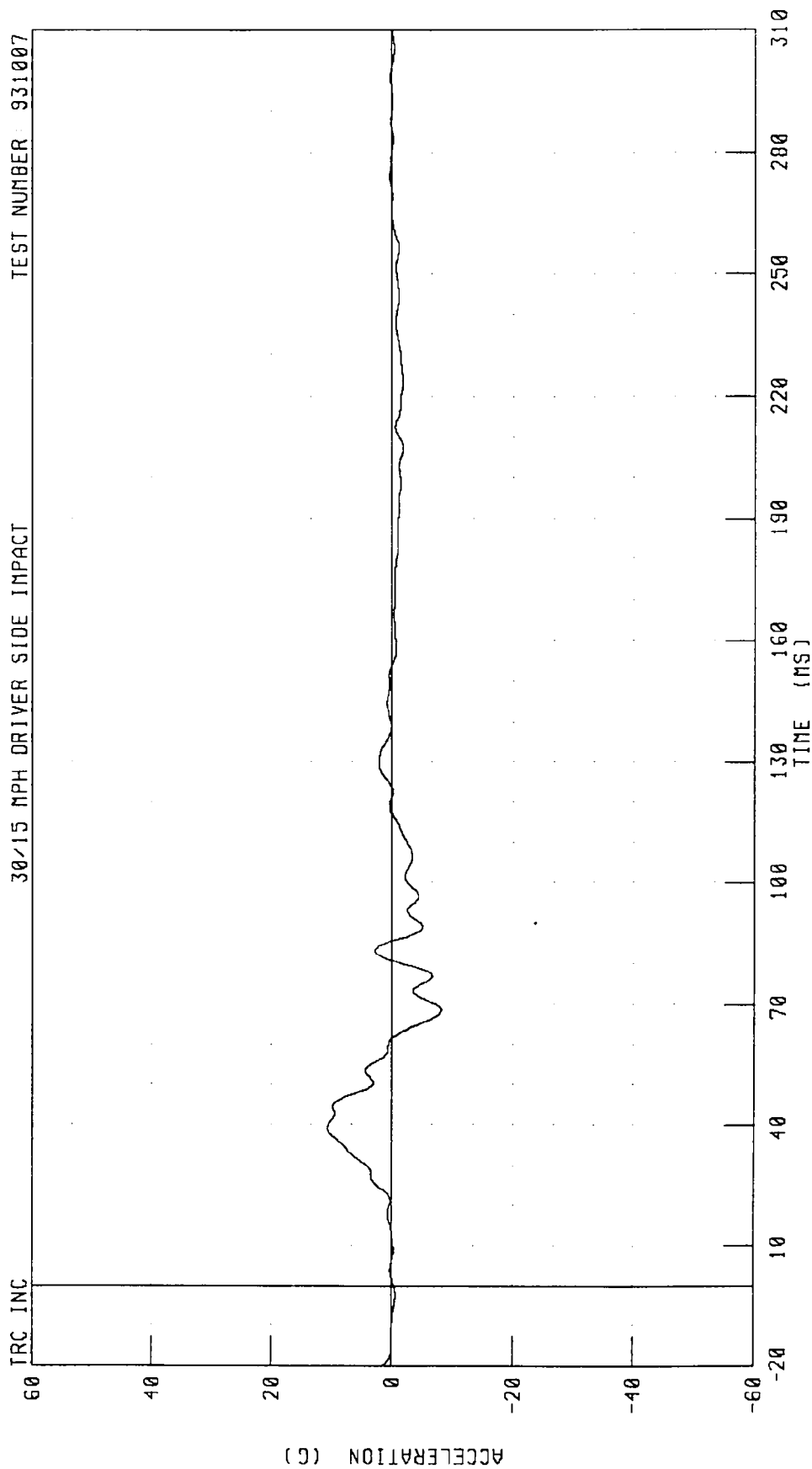
TEST NUMBER 931007



CHANNEL T12YGD FILTER FIR 100 PEAK DATA 30.60 G @ 71.88 MS, -44.01 G @ 75.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER LOWER SPINE Z-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

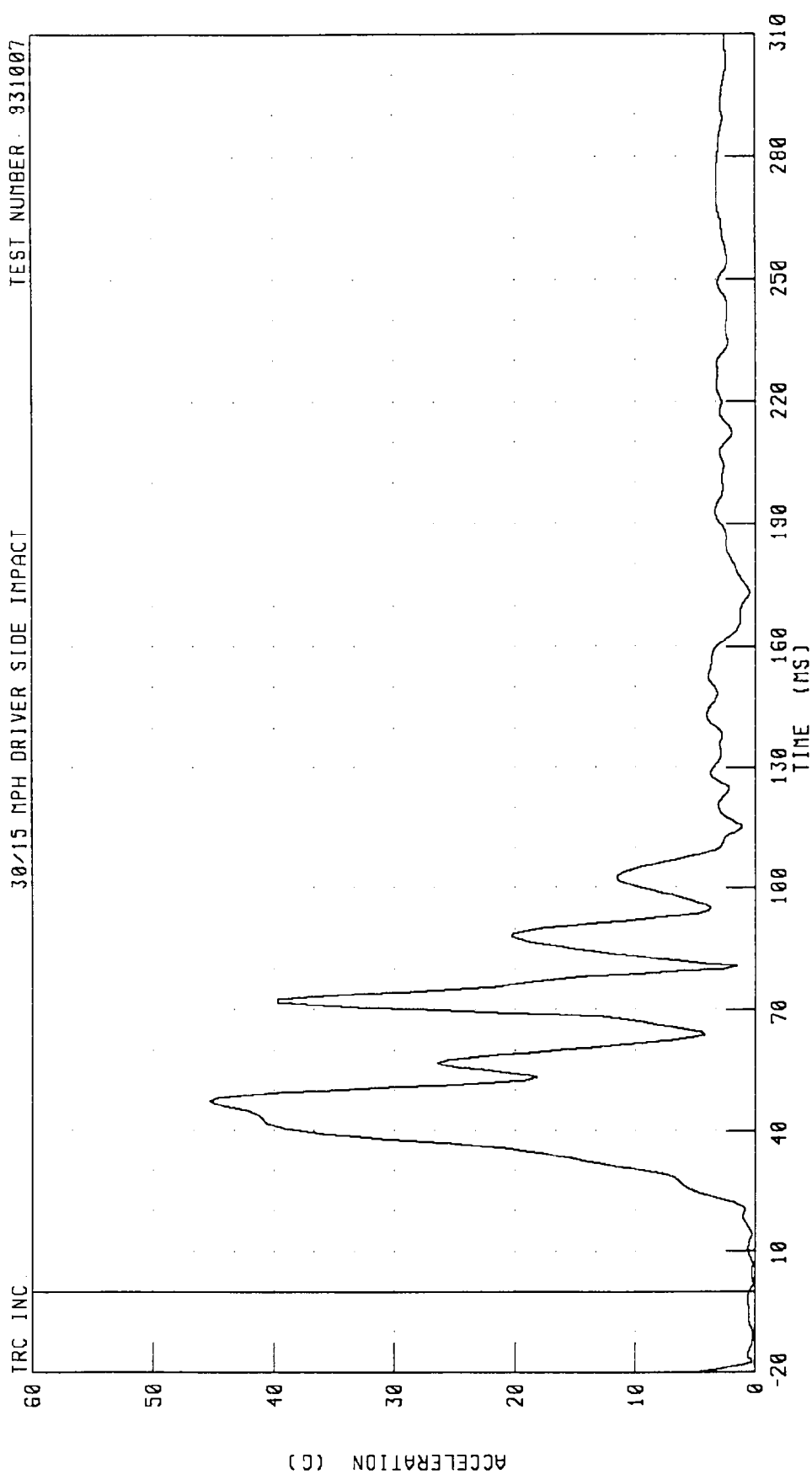


CHANNEL: T12ZG4 FILTER: FIR 100

PEAK DATA: 10 71 G @ 39 38 MS, -8.24 G @ 68 75 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER LOWER SPINE RESULTANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007



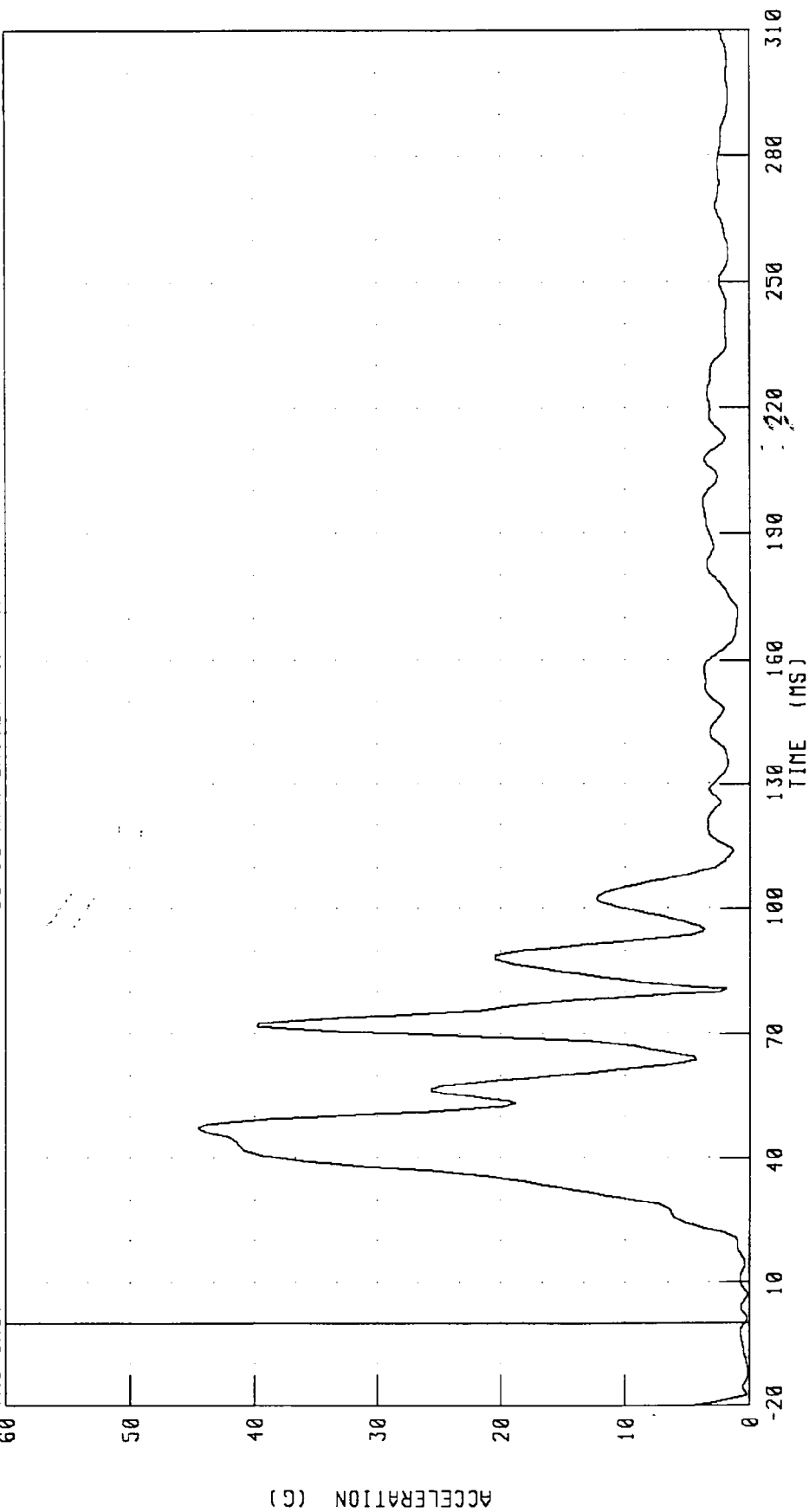
CHANNEL: T12RG4 FILTER: FIR 100

PEAK DATA: 45.29 G @ 47.50 MS, 0.15 G @ 1.88 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER LOWER SPINE RESULTANT REDUNDANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

IRC INC.



PEAK DATA 44.57 G @ 47.50 MS; 0.18 G @ -12.50 MS

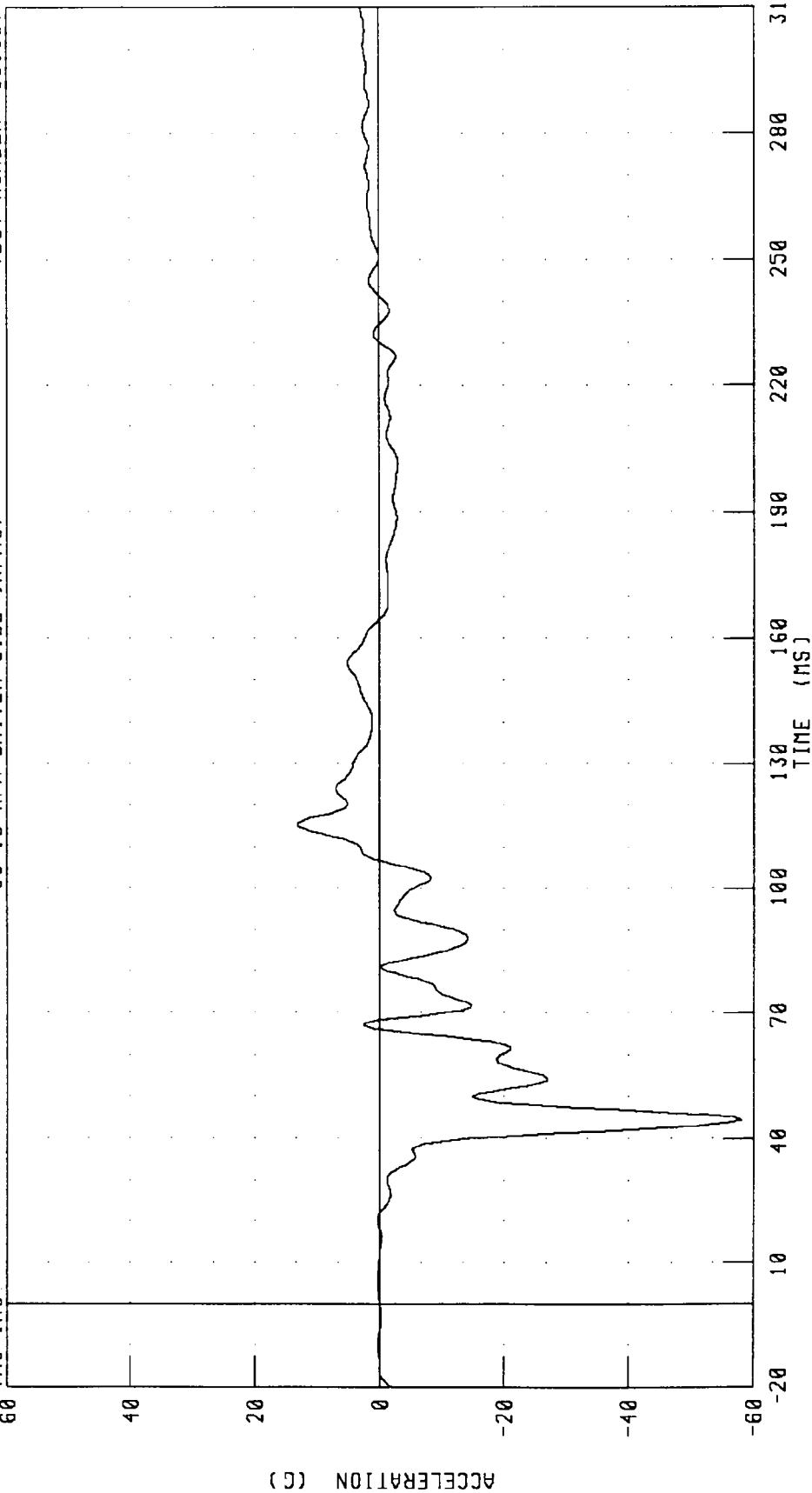
CHANNEL T12RCD FILTER FIR 100

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER LEFT UPPER THORAX RIB Y-AXIS ACCELERATION

TEST NUMBER 931007

30/15 MPH DRIVER SIDE IMPACT

IRC INC



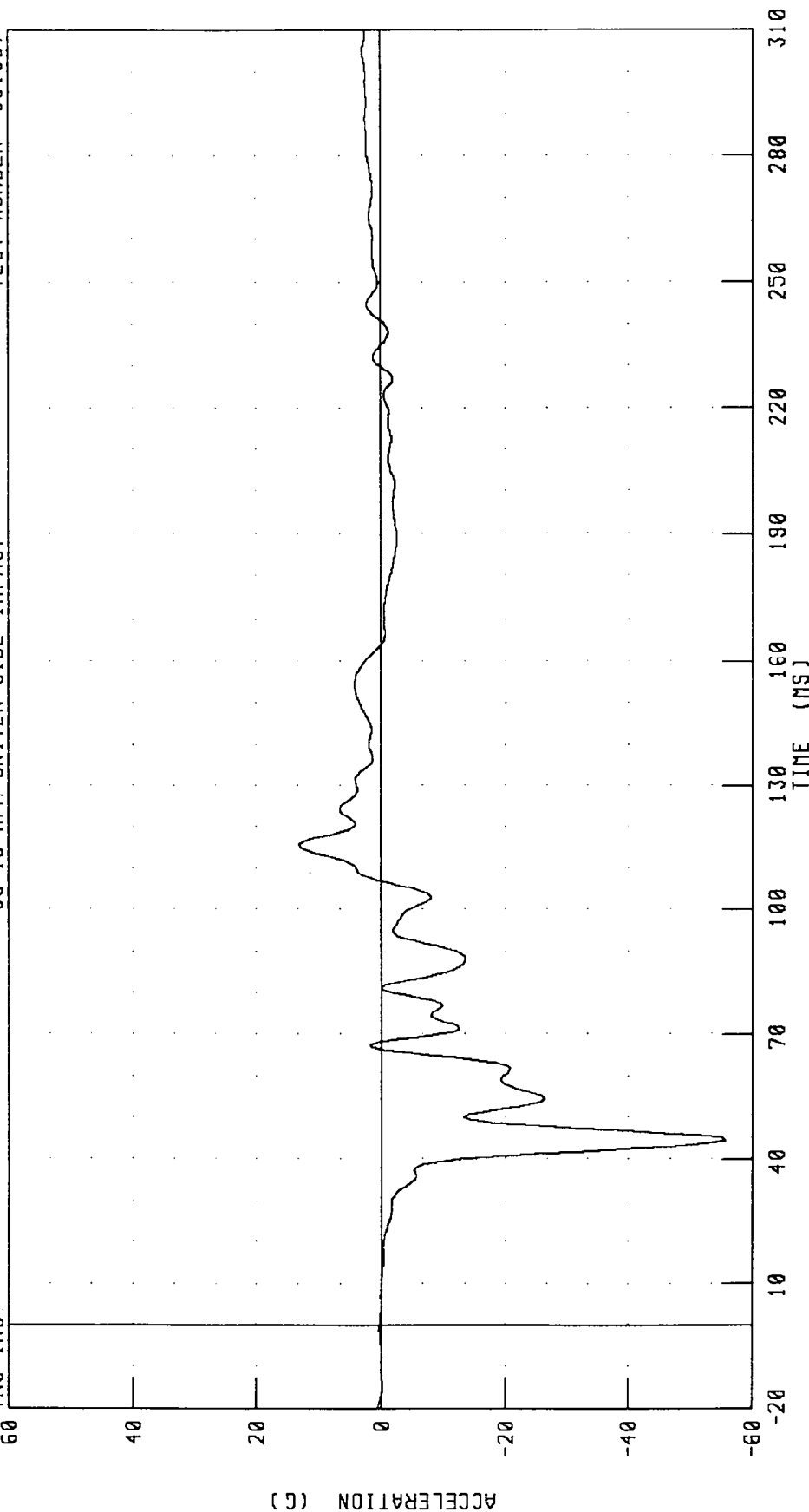
CHANNEL: LURYG4 FILTER: FIR 100

PEAK DATA: 13.05 G @ 115.62 MS; -57.86 G @ 44.38 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER LEFT UPPER THORAX RIB Y-AXIS REDUNDANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC

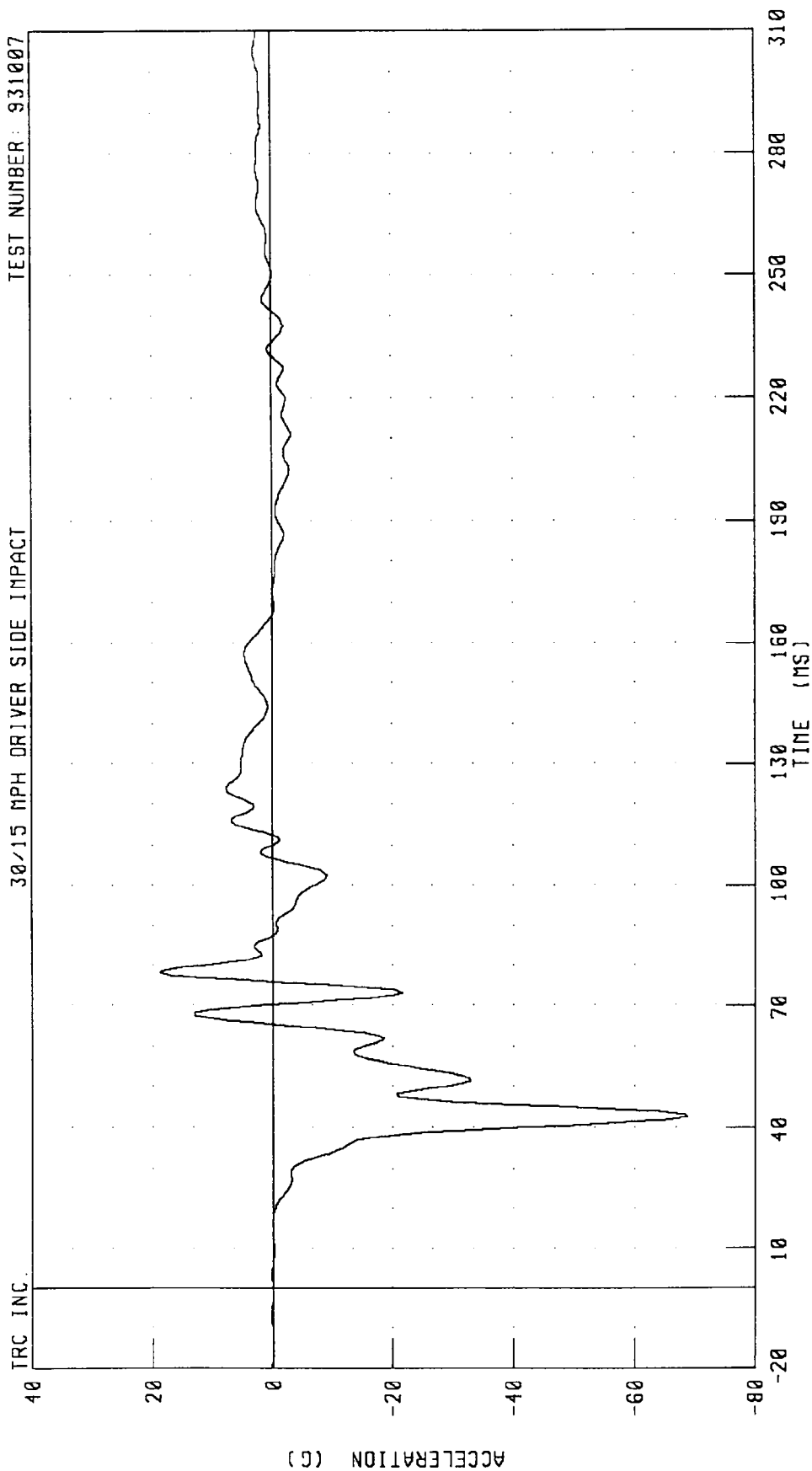


CHANNEL: LURYGD FILTER: FIR 100

PEAK DATA: 13.16 G @ 115.62 MS, -55.49 G @ 44.38 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER LEFT LOWER THORAX RIB Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007



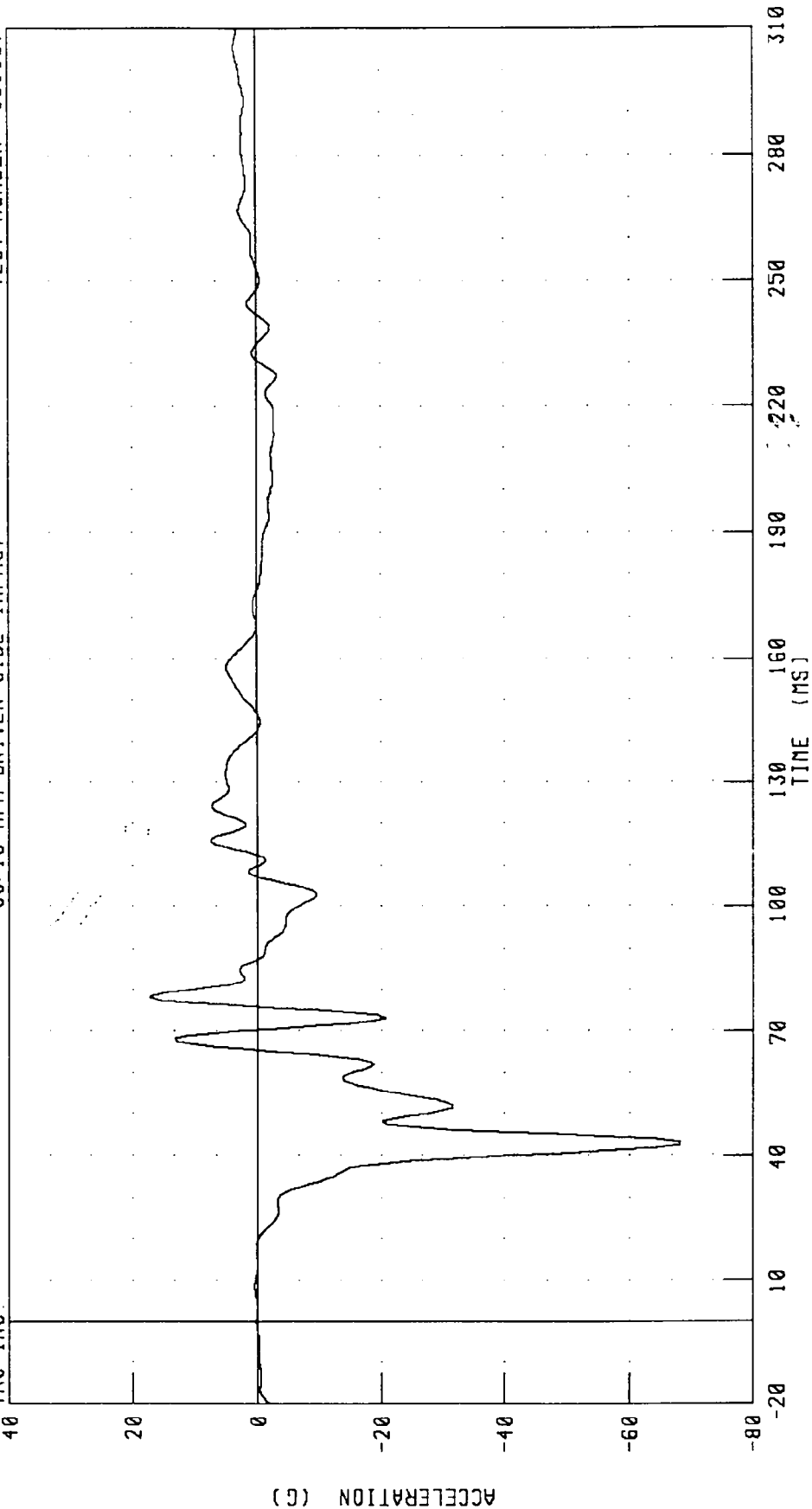
CHANNEL: LLRYG4 FILTER: FIR 100

PEAK DATA: 18.79 G @ 78.13 MS, -68.54 G @ 42.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER LEFT LOWER THORAX RIB Y-AXIS REDUNDANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

TRC INC.



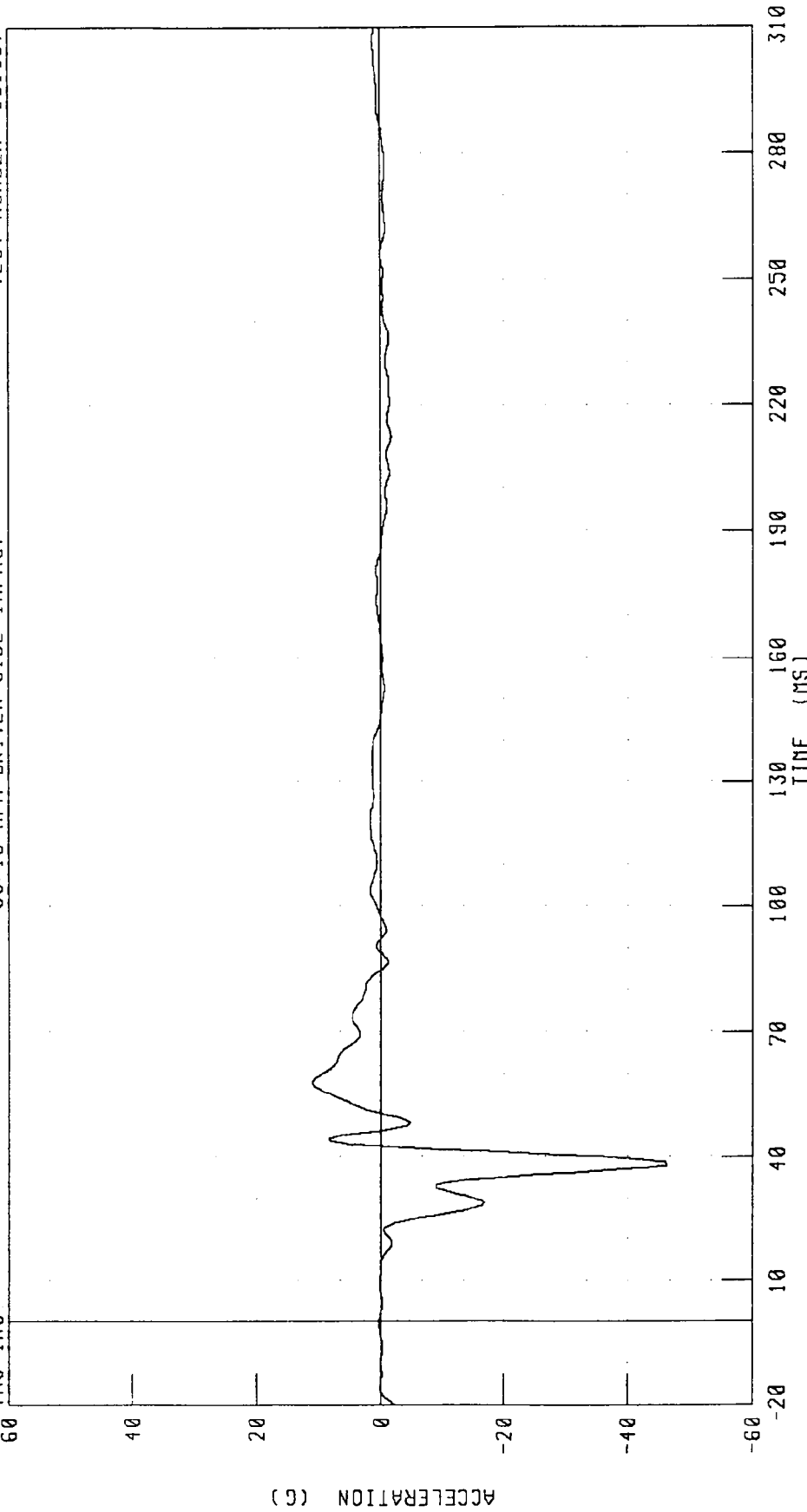
CHANNEL: LLRYGD FILTER: FIR 100

PEAK DATA: 17.20 G @ 78.13 MS, -68.15 G @ 43.13 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER PELVIS X-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC

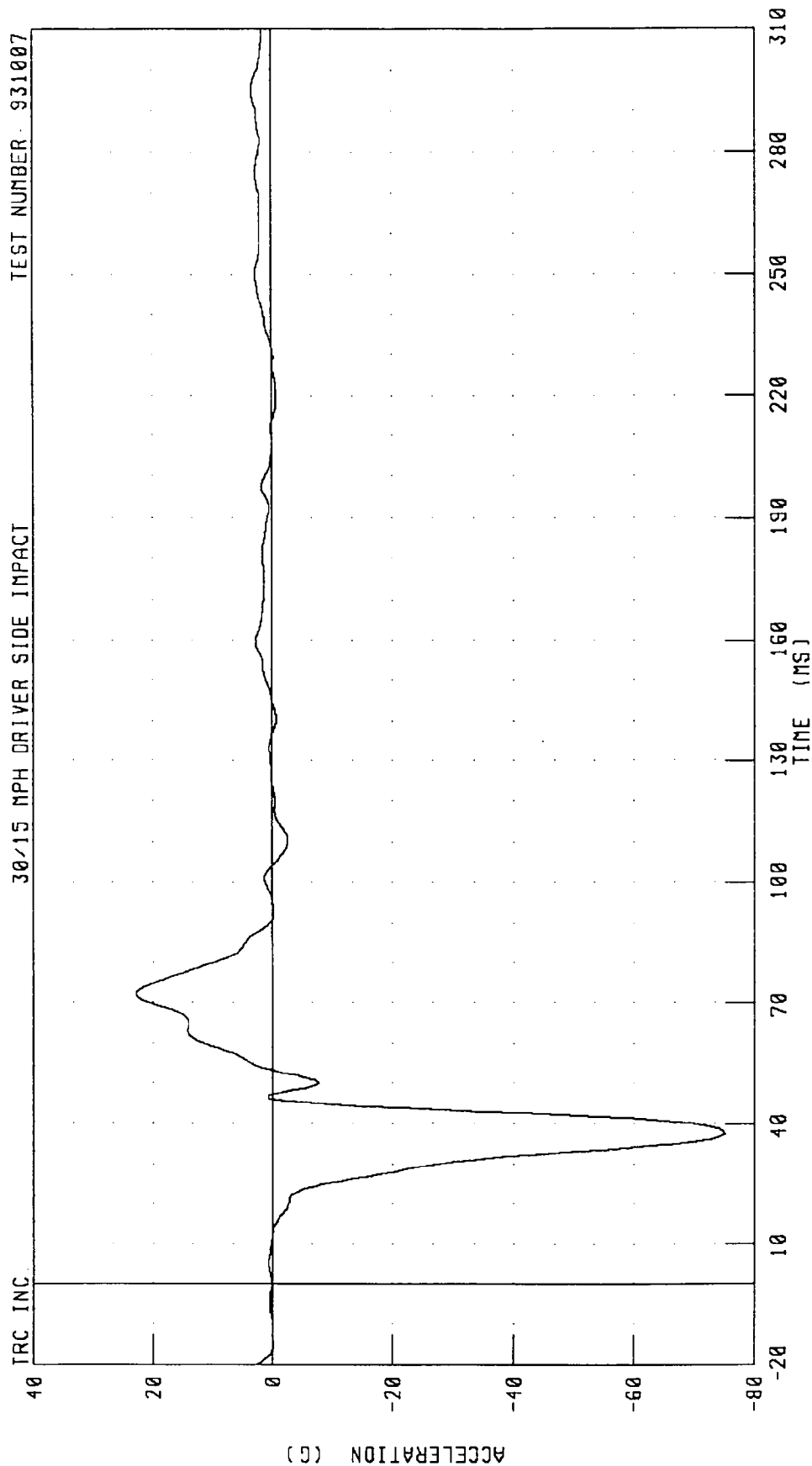


CHANNEL PEVXG4 FILTER FIR 100

PEAK DATA 11.05 G @ 58.13 MS, -46.23 G @ 38.13 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

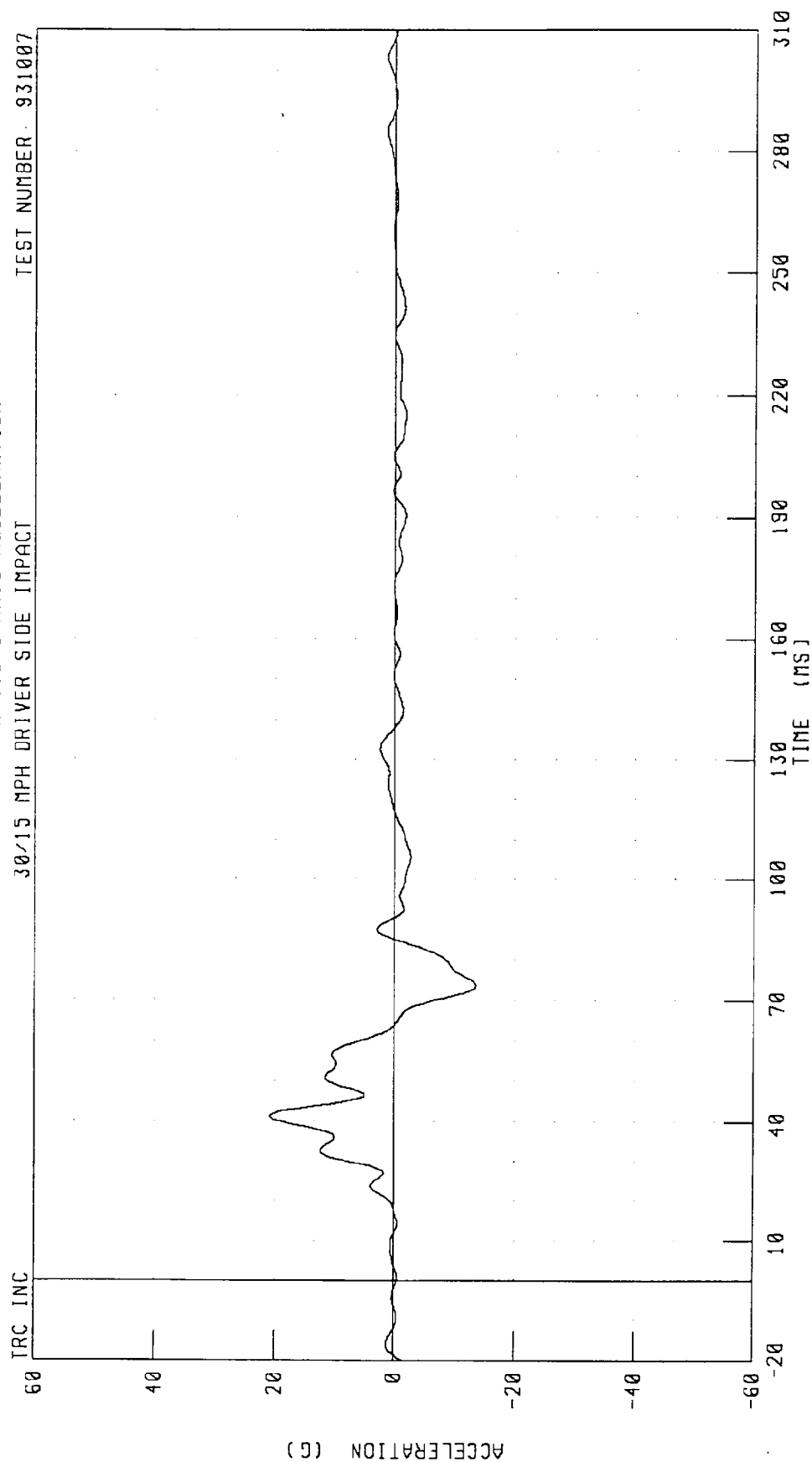


CHANNEL: PEVYG4 FILTER: FIR 100

PEAK DATA: 22.91 G @ 71.88 MS, -74.94 G @ 37.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER PELVIS Z-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

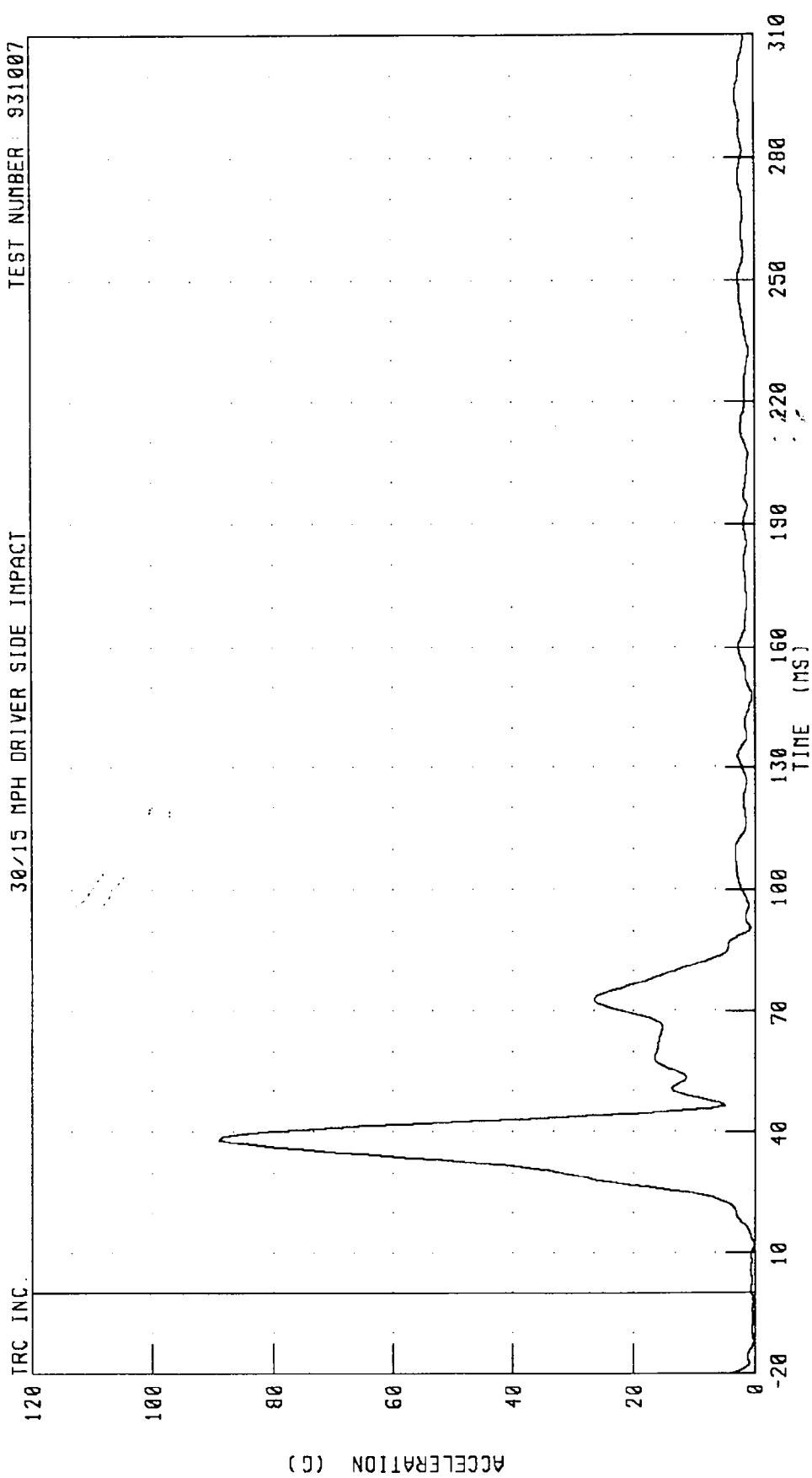


CHANNEL: PEVZG4 FILTER: FIR 100

PEAK DATA: 20.85 G @ 41.25 MS, -13.53 G @ 73.75 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR PASSENGER PELVIS RESULTANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007



PEAK DATA: 88.93 G @ 38.13 MS; 0.07 G @ 11.88 MS

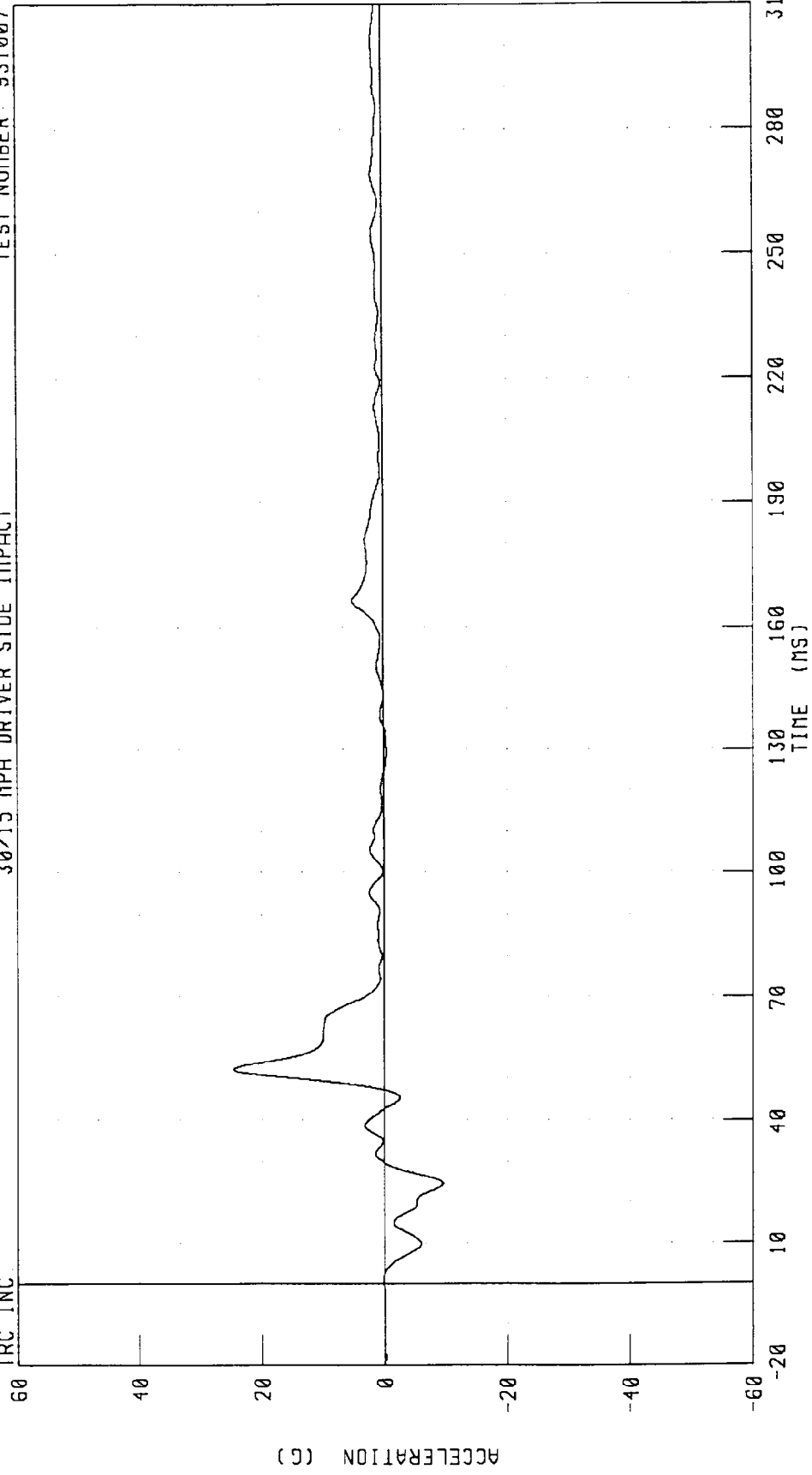
CHANNEL: PEVRG4 FILTER: FIR 100

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
VEHICLE RIGHT FRONT SILL X-AXIS ACCELERATION

30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC



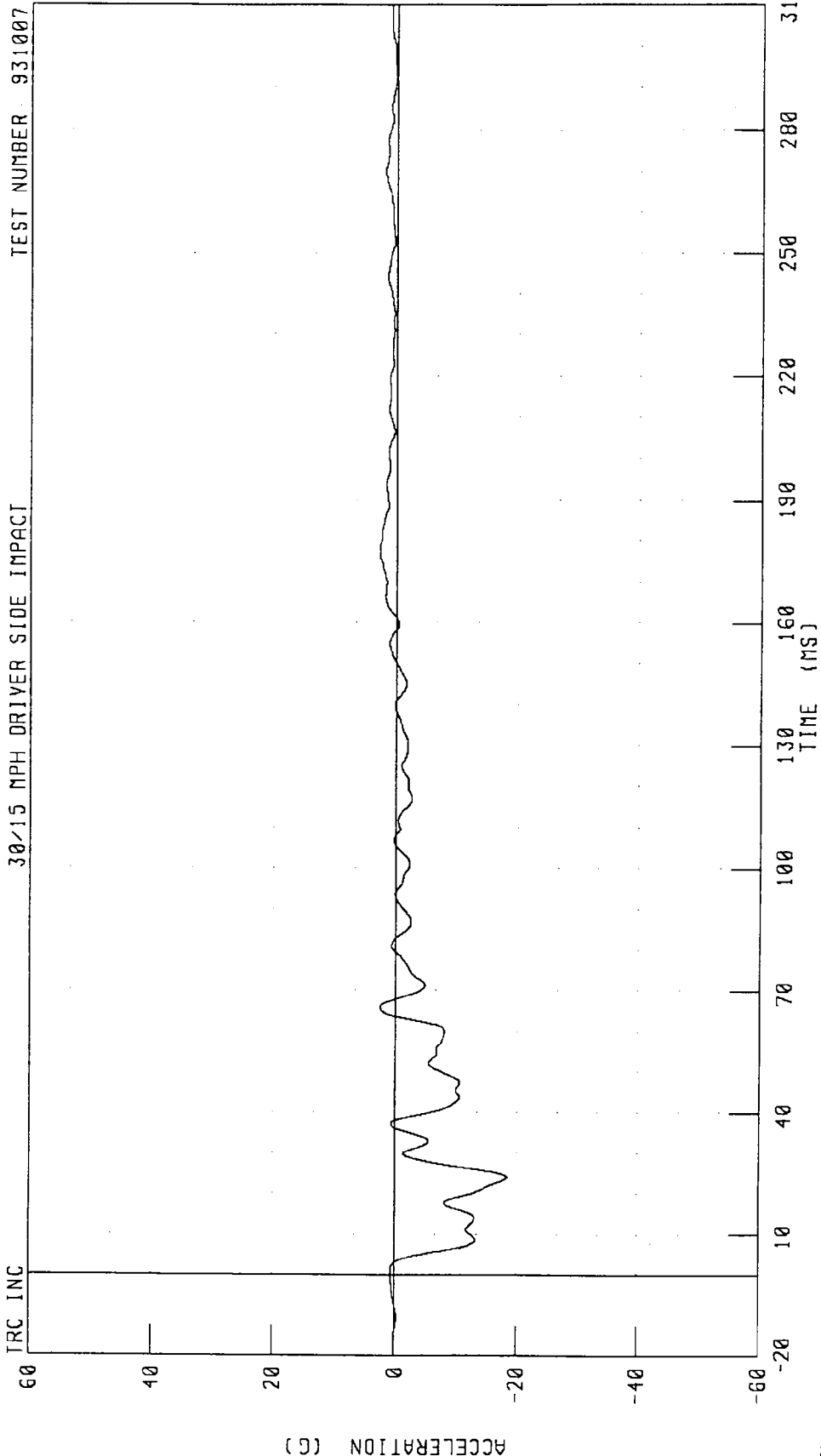
CHANNEL RFSXG1 FILTER CH CLASS 60

PEAK DATA: 24.50 G @ 52.25 MS, -9.39 G @ 24.63 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
VEHICLE RIGHT FRONT SILL Y-AXIS ACCELERATION

TEST NUMBER 931007

30/15 MPH DRIVER SIDE IMPACT

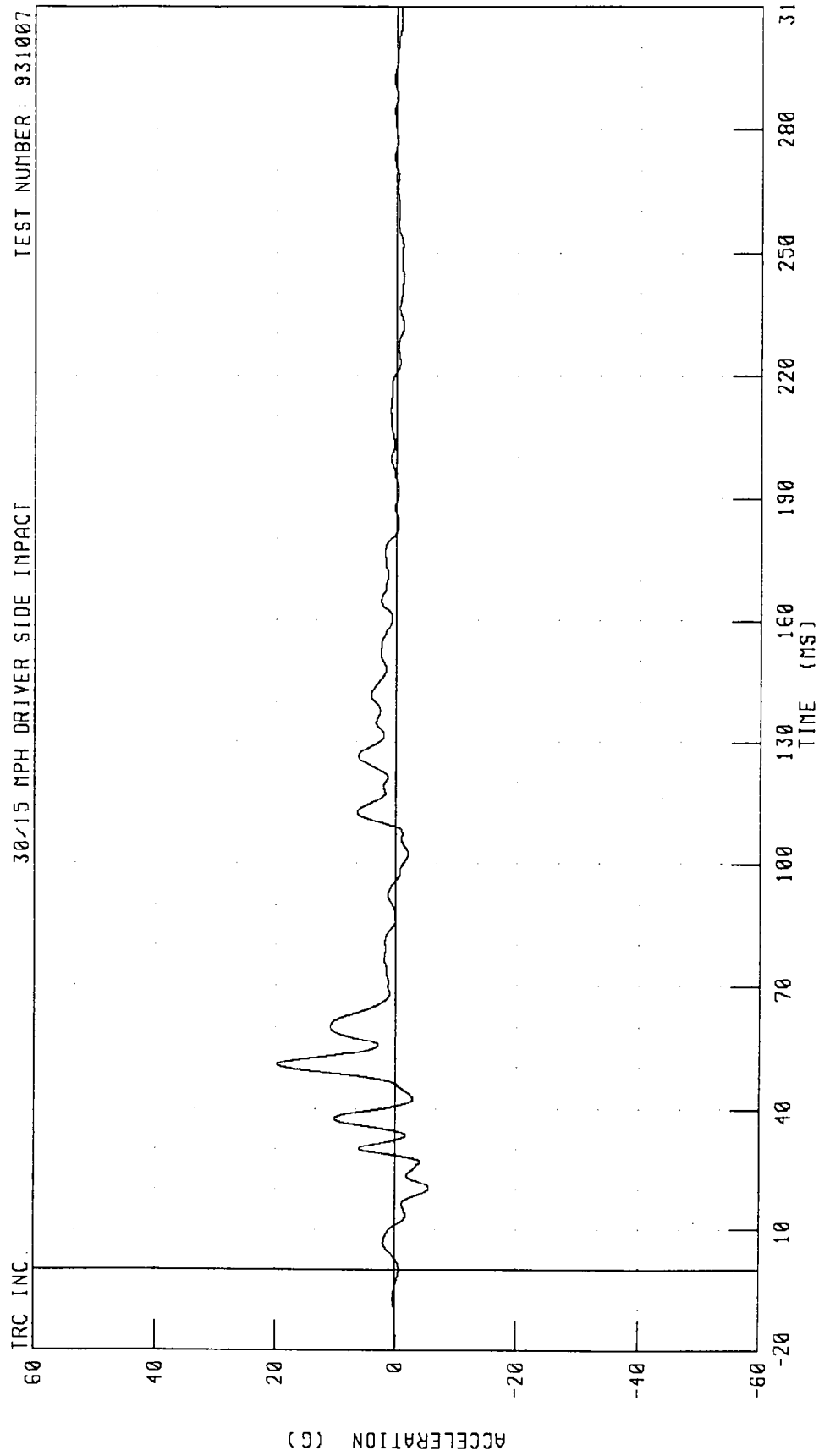


CHANNEL: RFSYG1 FILTER: CH CLASS 60

PEAK DATA: 2.73 G @ 176.50 MS, -18.36 G @ 24.13 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
VEHICLE RIGHT FRONT SILL Z-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007



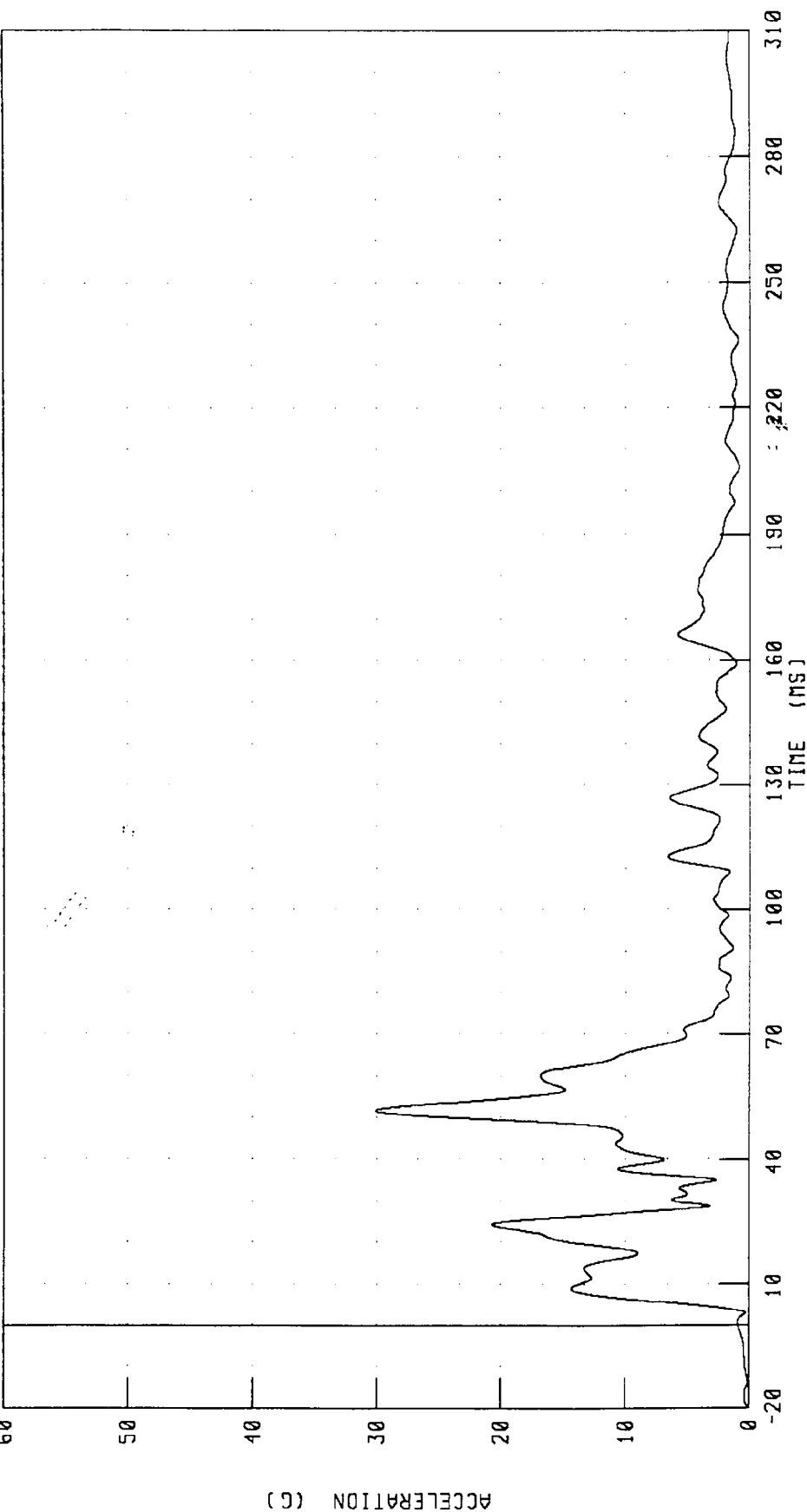
CHANNEL: RFSZG1 FILTER: CH. CLASS 60

PEAK DATA: 19.85 G @ 50.75 MS, -5.44 G @ 20.38 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
VEHICLE RIGHT FRONT SILL RESULTANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

TRC INC



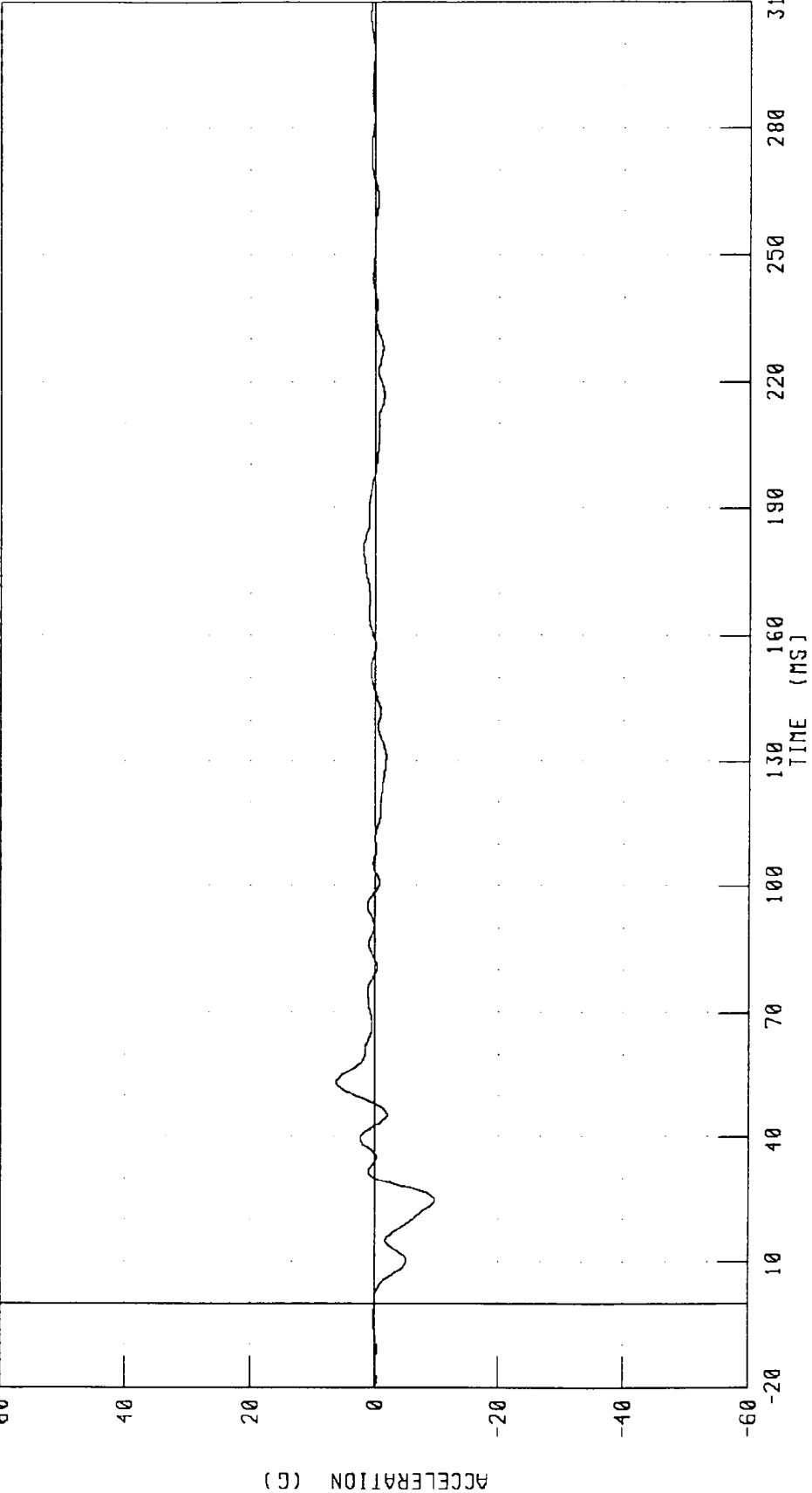
CHANNEL: RFSRG1 FILTER: CH. CLASS 60

PEAK DATA: 30.10 G @ 51.50 MS; 0.13 G @ -19.88 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
RIGHT REAR SILL X-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

IRC INC.

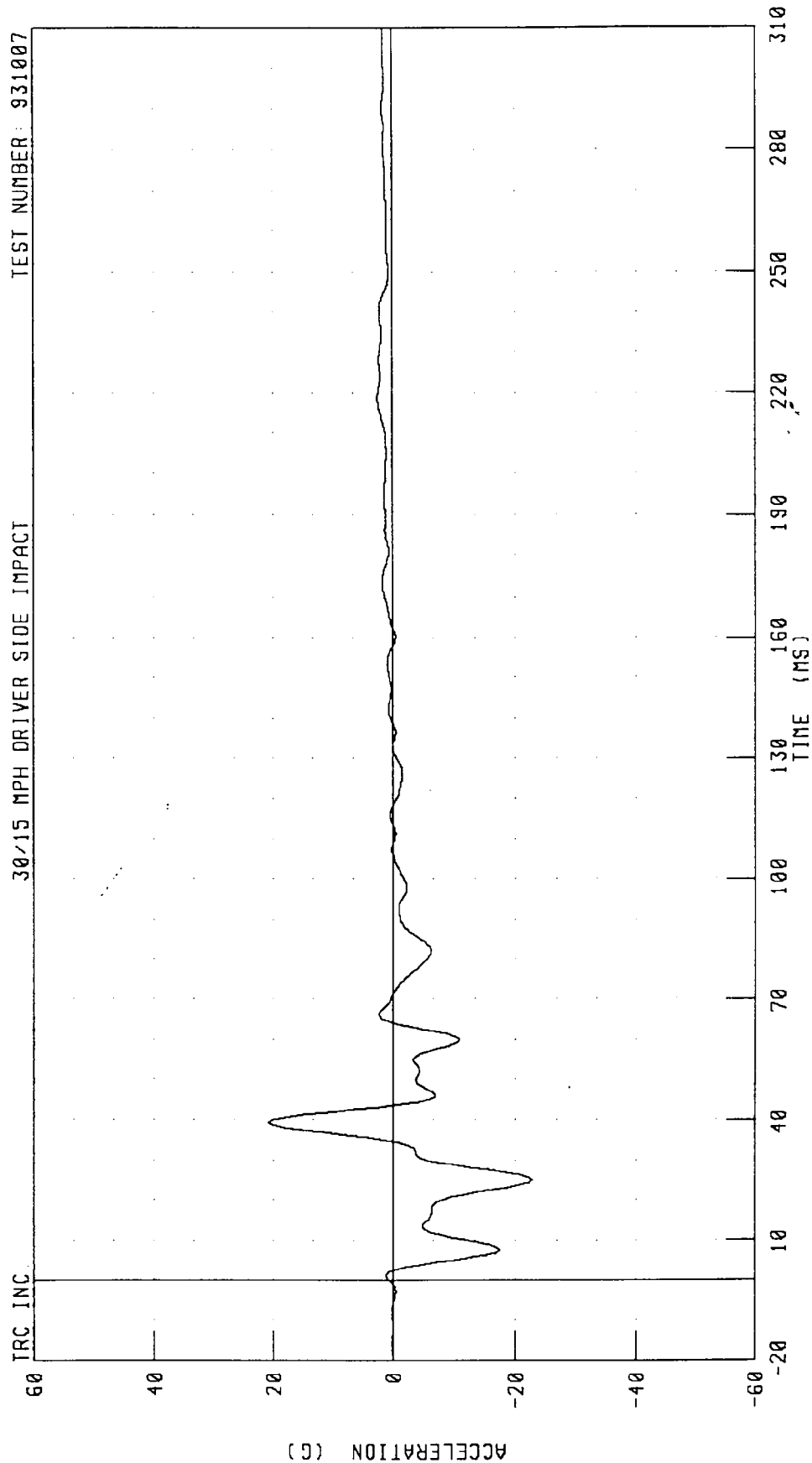


CHANNEL: RRSXG1 FILTER: CH. CLASS 60

PEAK DATA: 6.25 G @ 53.12 MS, -9.66 G @ 24.38 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
RIGHT REAR SILL Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

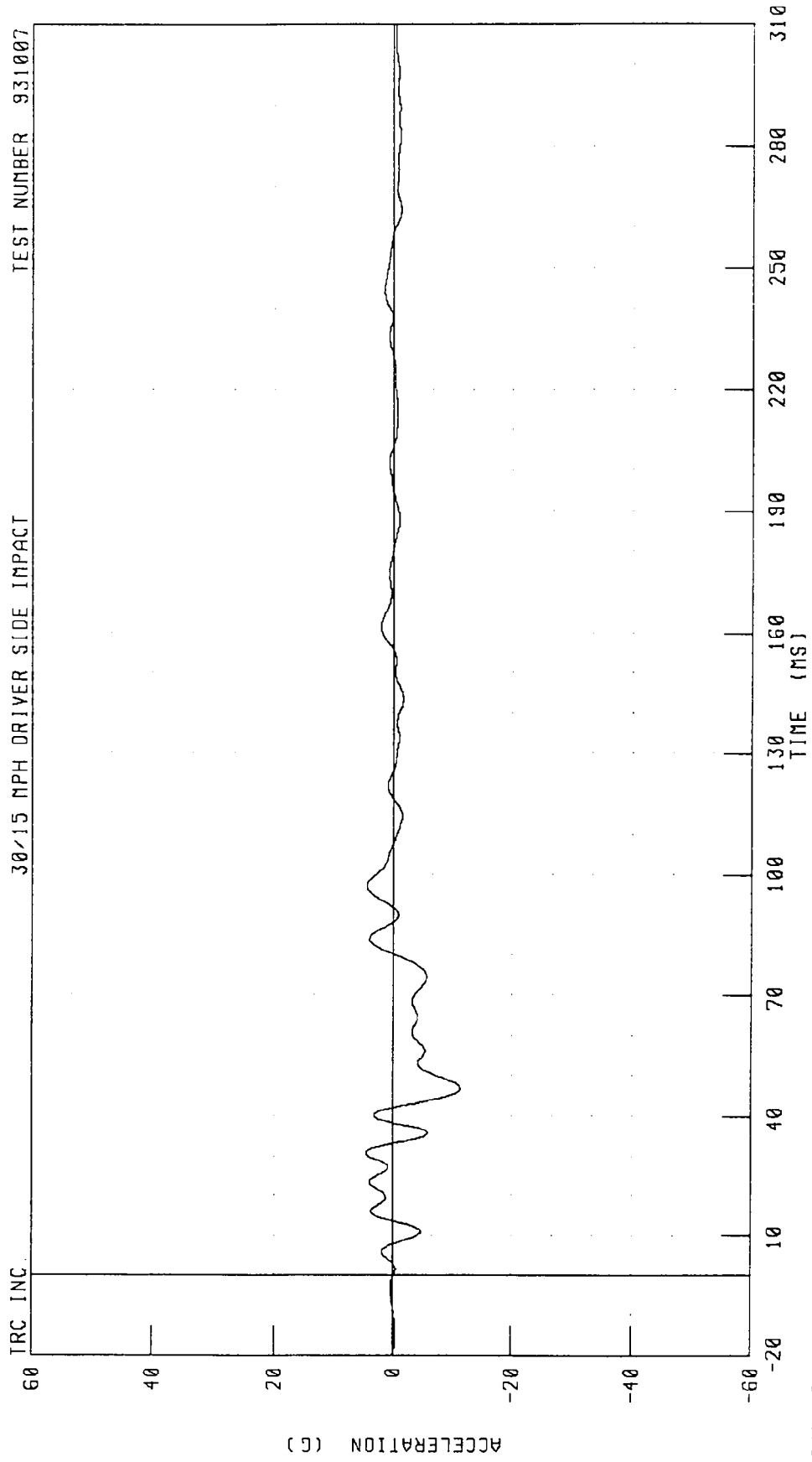


CHANNEL: RRSYG1 FILTER: CH. CLASS 60

PEAK DATA: 20 87 G @ 39.38 MS; -22.61 G @ 25 00 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
RIGHT REAR SILL Z-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

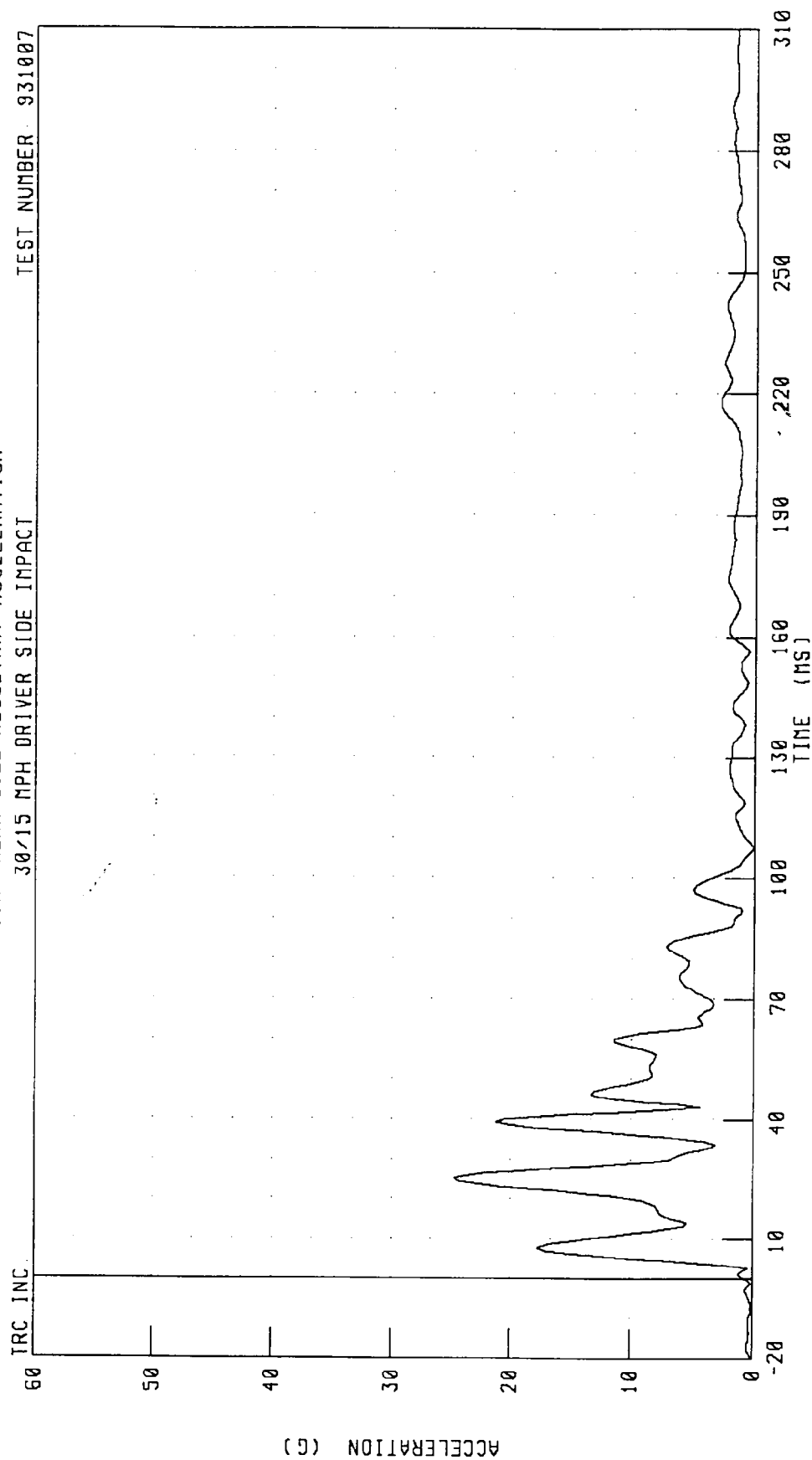


CHANNEL RRSZG1 FILTER CH CLASS 60

PEAK DATA: 4 67 G @ 30.62 MS, -11.37 G @ 46.88 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
RIGHT REAR SILL RESULTANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

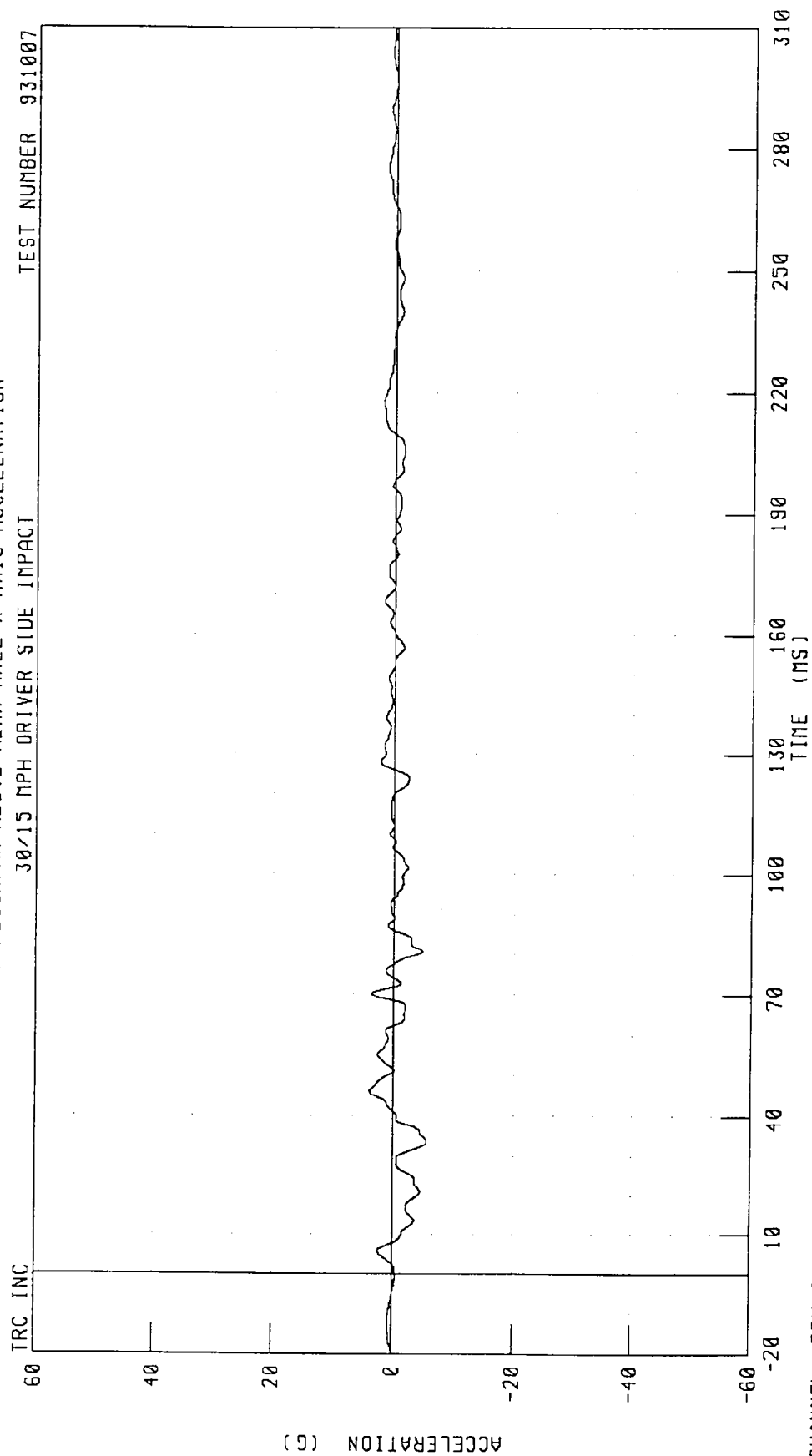


CHANNEL: RRSRG1 FILTER: CH CLASS 60

PEAK DATA: 24.73 G @ 25.00 MS, 0.08 G @ -20.00 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
REAR FLOORPAN ABOVE REAR AXLE X-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

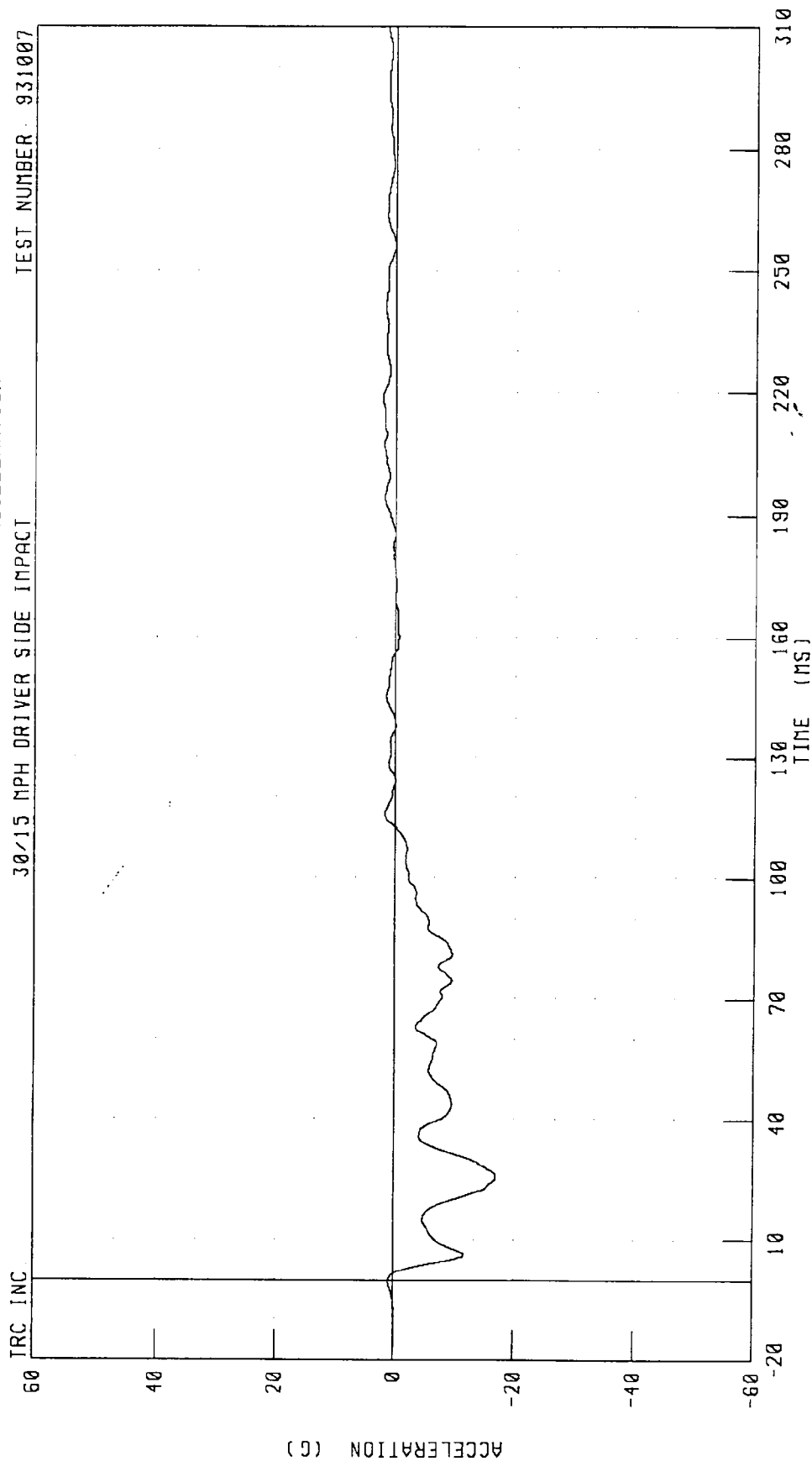


CHANNEL RDKXC1 FILTER CH CLASS 60

PEAK DATA: 3.84 G @ 46.25 MS, -5.48 G @ 33.75 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
REAR FLOORPAN ABOVE REAR AXLE Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

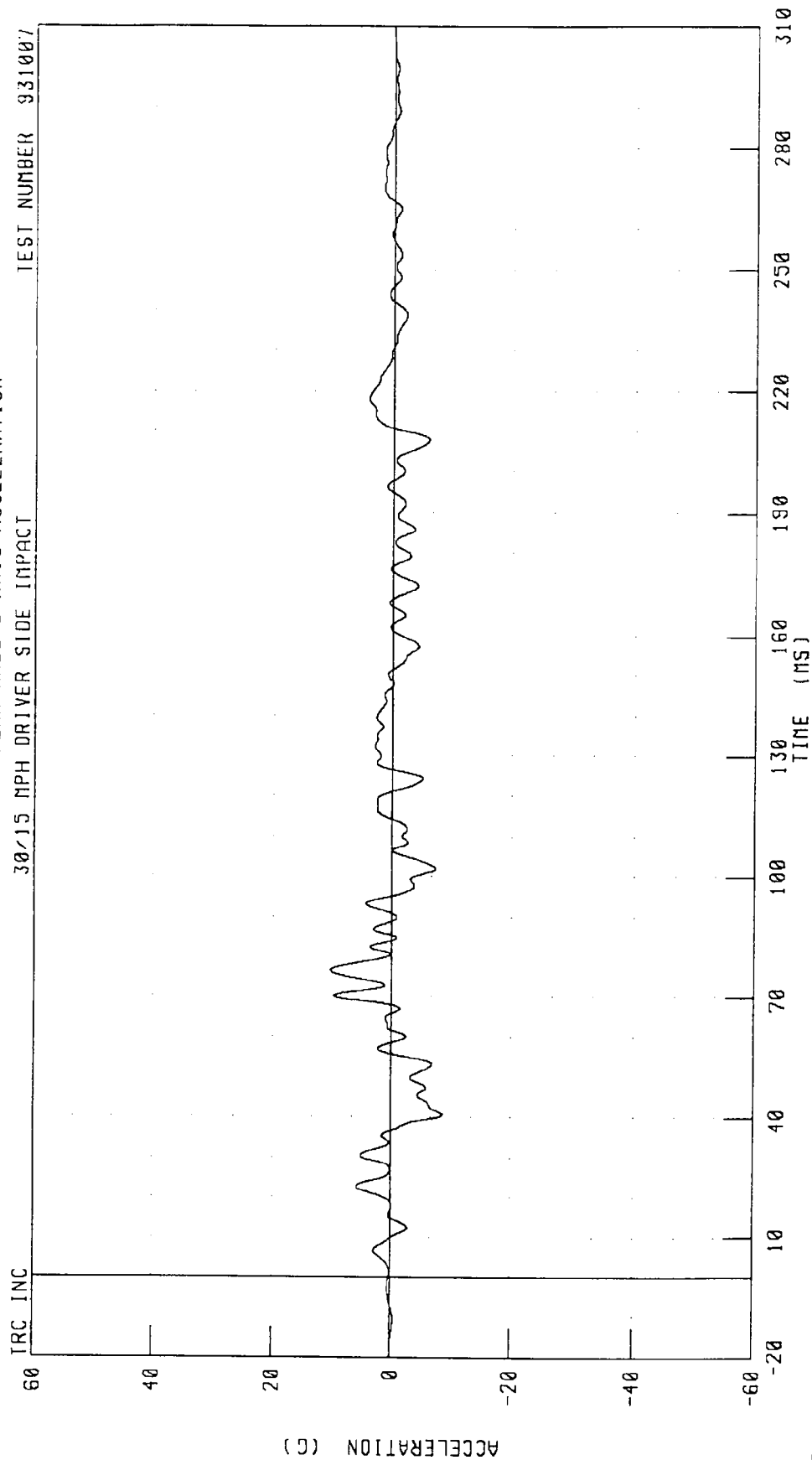


CHANNEL RDKY01 FILTER CH. CLASS 60

PEAK DATA 2 21 G @ 218 63 MS, -16 97 G @ 25 50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
REAR FLOORPAN ABOVE REAR AXLE Z-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007



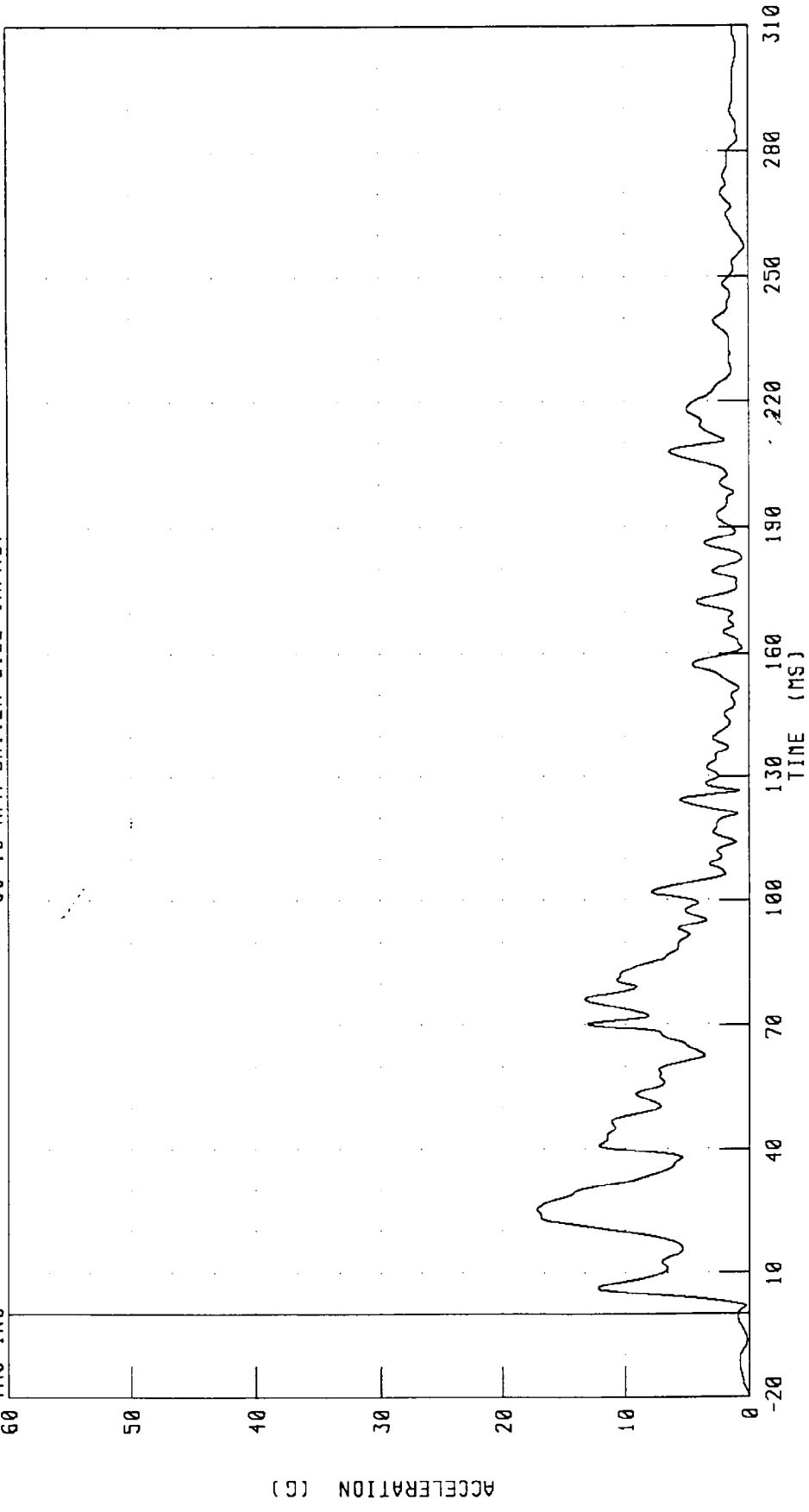
CHANNEL: RDKZG1 FILTER: CH CLASS 60

PEAK DATA: 10.33 G @ 76.38 MS; -8.57 G @ 40.75 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
REAR FLOORPAN ABOVE REAR AXLE RESULTANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

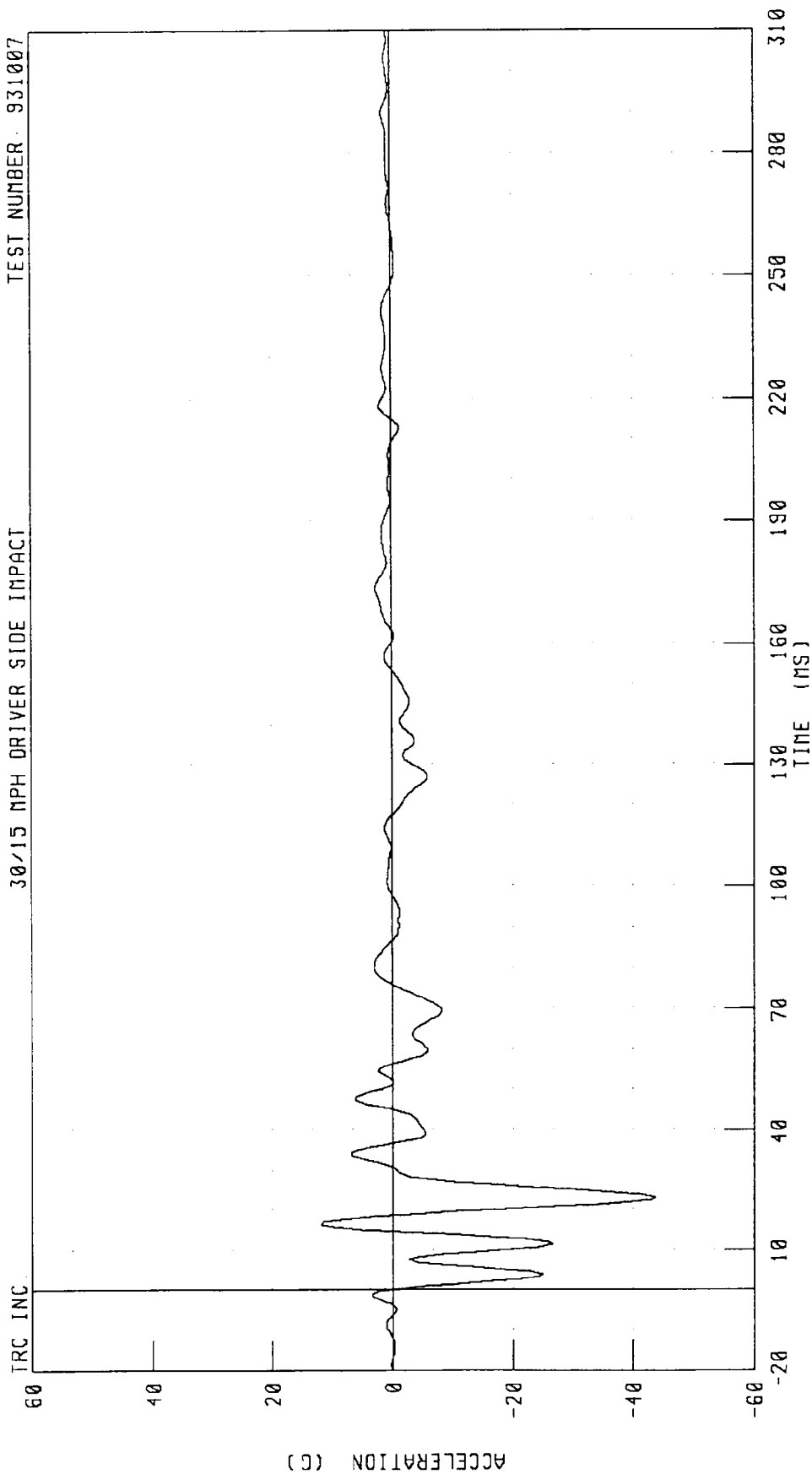
TRC INC



CHANNEL: RDKRG1 FILTER: CH CLASS 60 PEAK DATA: 17.21 G @ 25.25 MS; 0.10 G @ -19.88 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR SILL Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

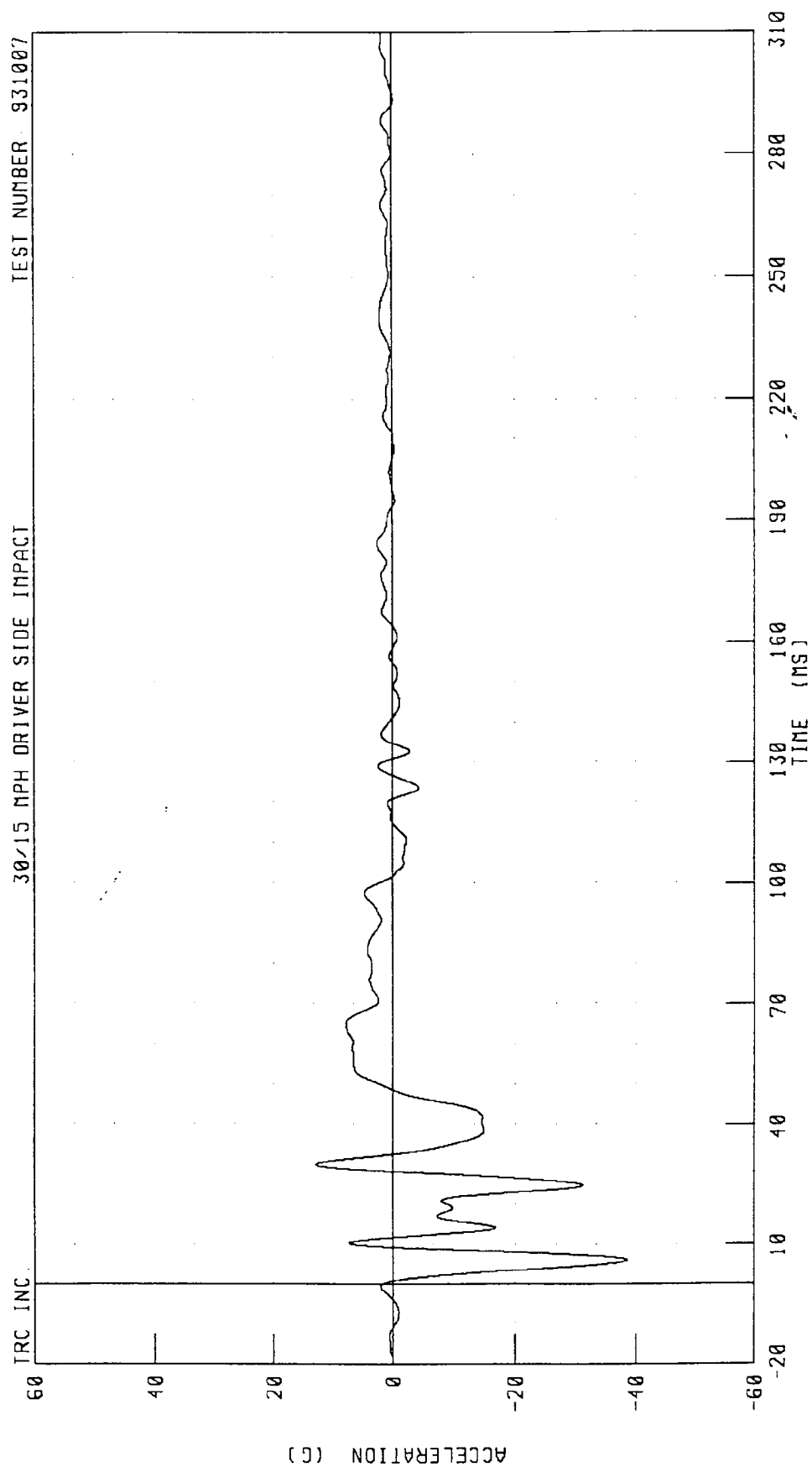


CHANNEL: LRSYG1 FILTER: CH. CLASS 60

PEAK DATA 11.90 G @ 16.25 MS, -43.62 G @ 23.13 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT FRONT SILL Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

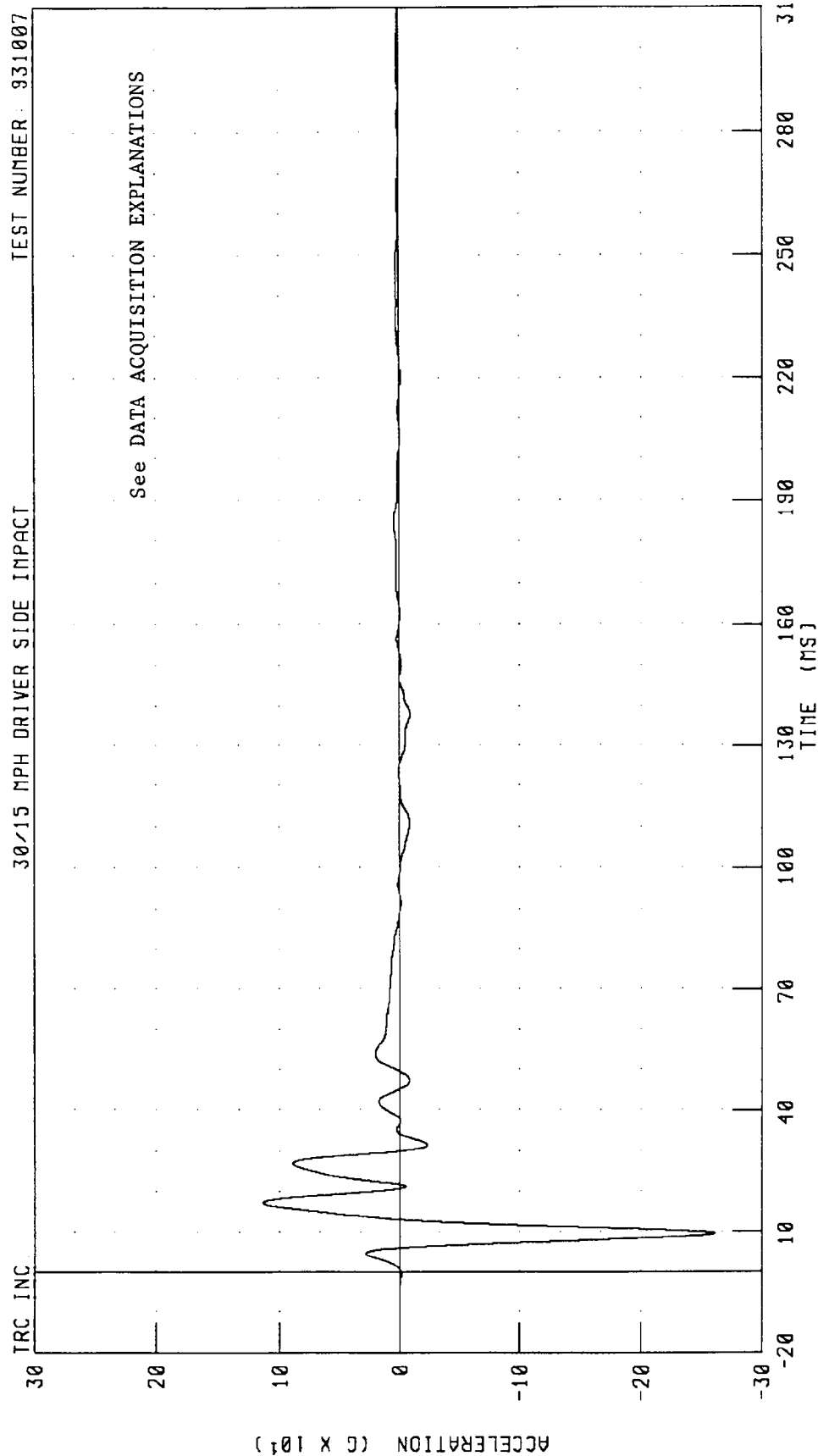


CHANNEL: LFSYG1 FILTER: CH. CLASS 60

PEAK DATA: 12.97 G @ 30.13 MS, -38.64 G @ 6.00 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT FRONT DOOR CENTERLINE Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007



CHANNEL: LFOYG1 FILTER: CH. CLASS 60

PEAK DATA: 113.58 G @ 17.25 MS, -260.32 G @ 9.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT FRONT DOOR MID-REAR Y-AXIS ACCELERATION

30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

IRC INC.

150

100

50

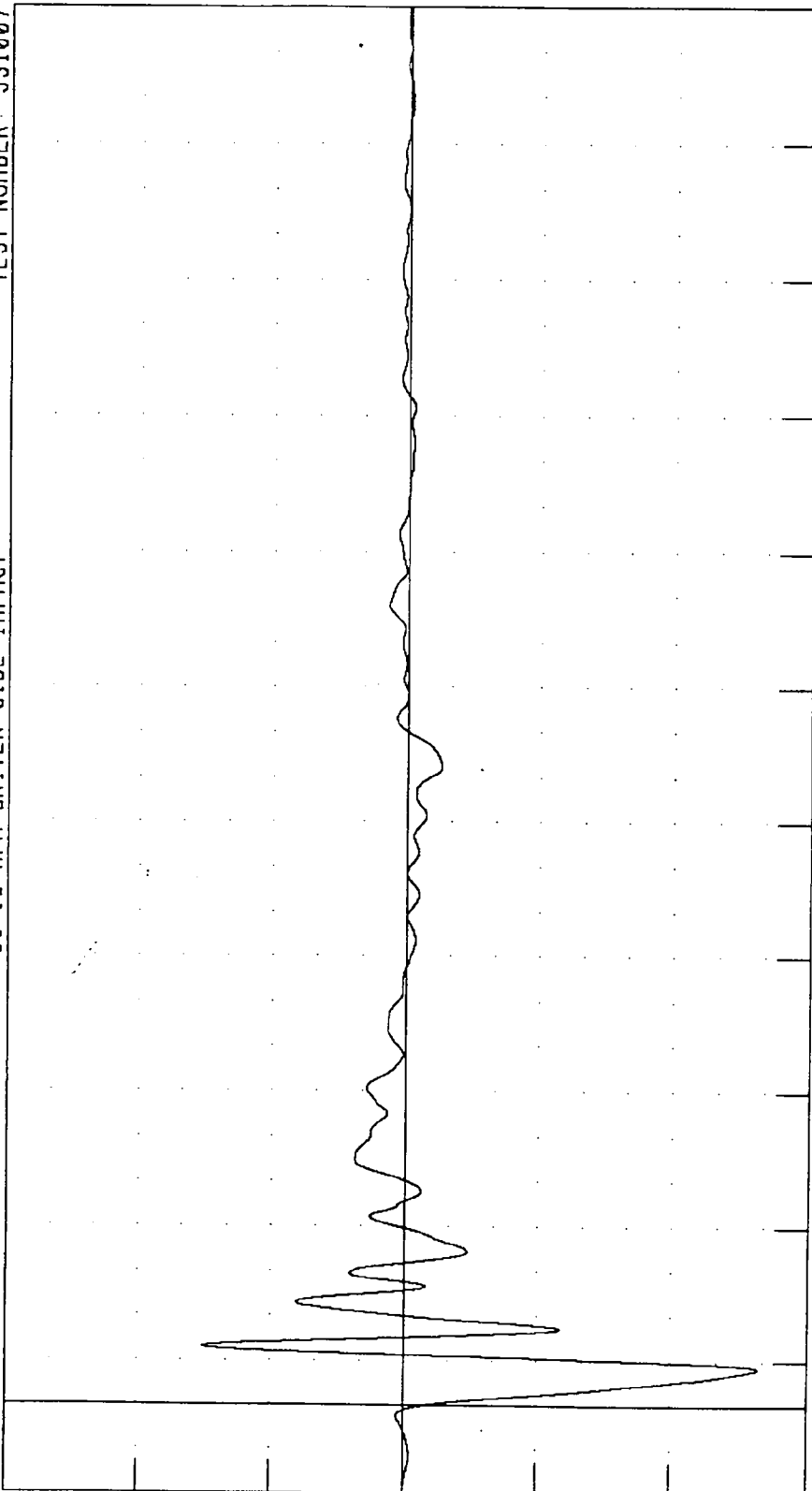
0

-50

-100

-150

ACCELERATION (G)



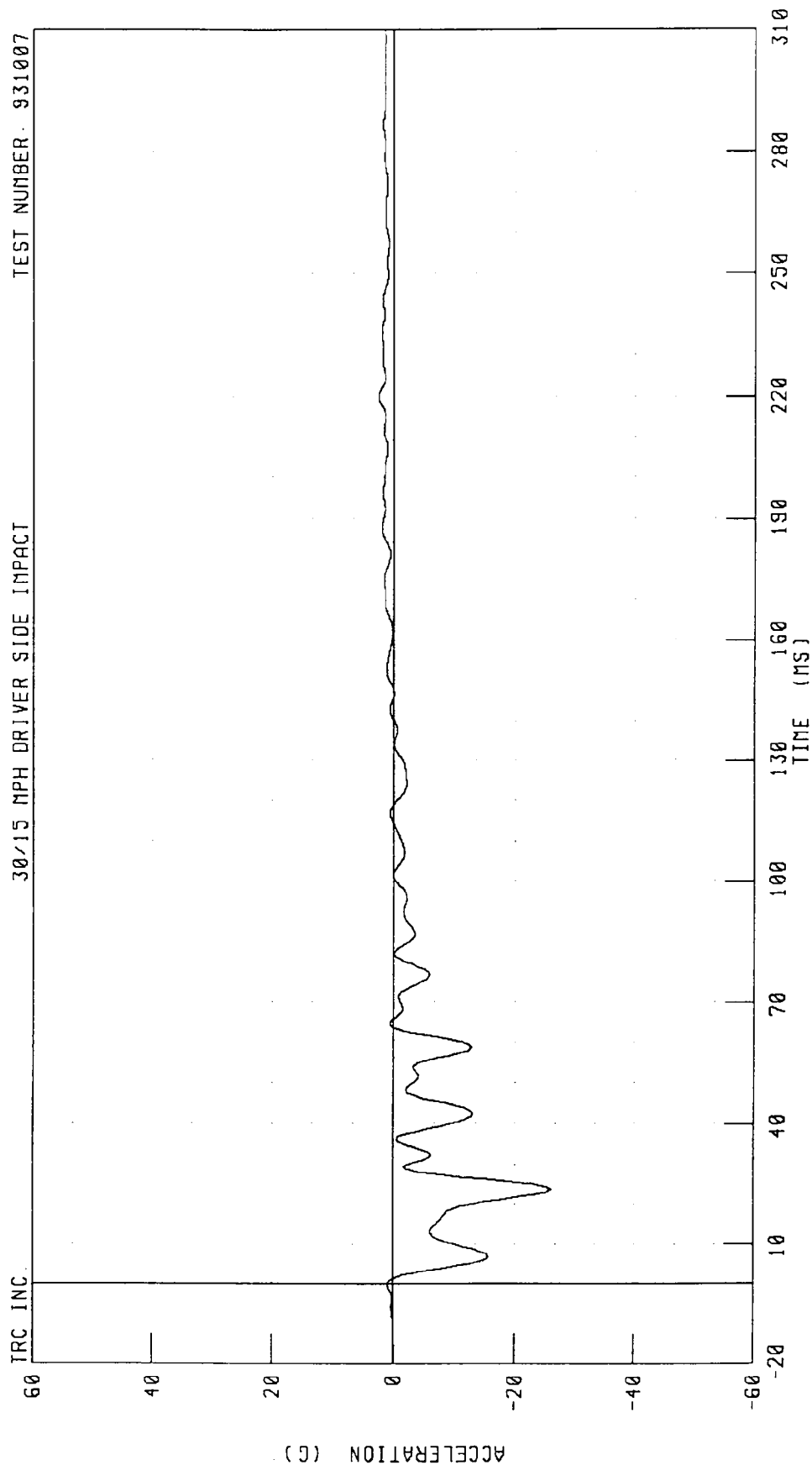
130 160 190 220 250 280 310
TIME (MS)

CHANNEL: LFDY63 FILTER: CH. CLASS 60

PEAK DATA: 75 20 G @ 13.13 MS, -131.80 G @ 8.38 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
RIGHT REAR SEAT Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

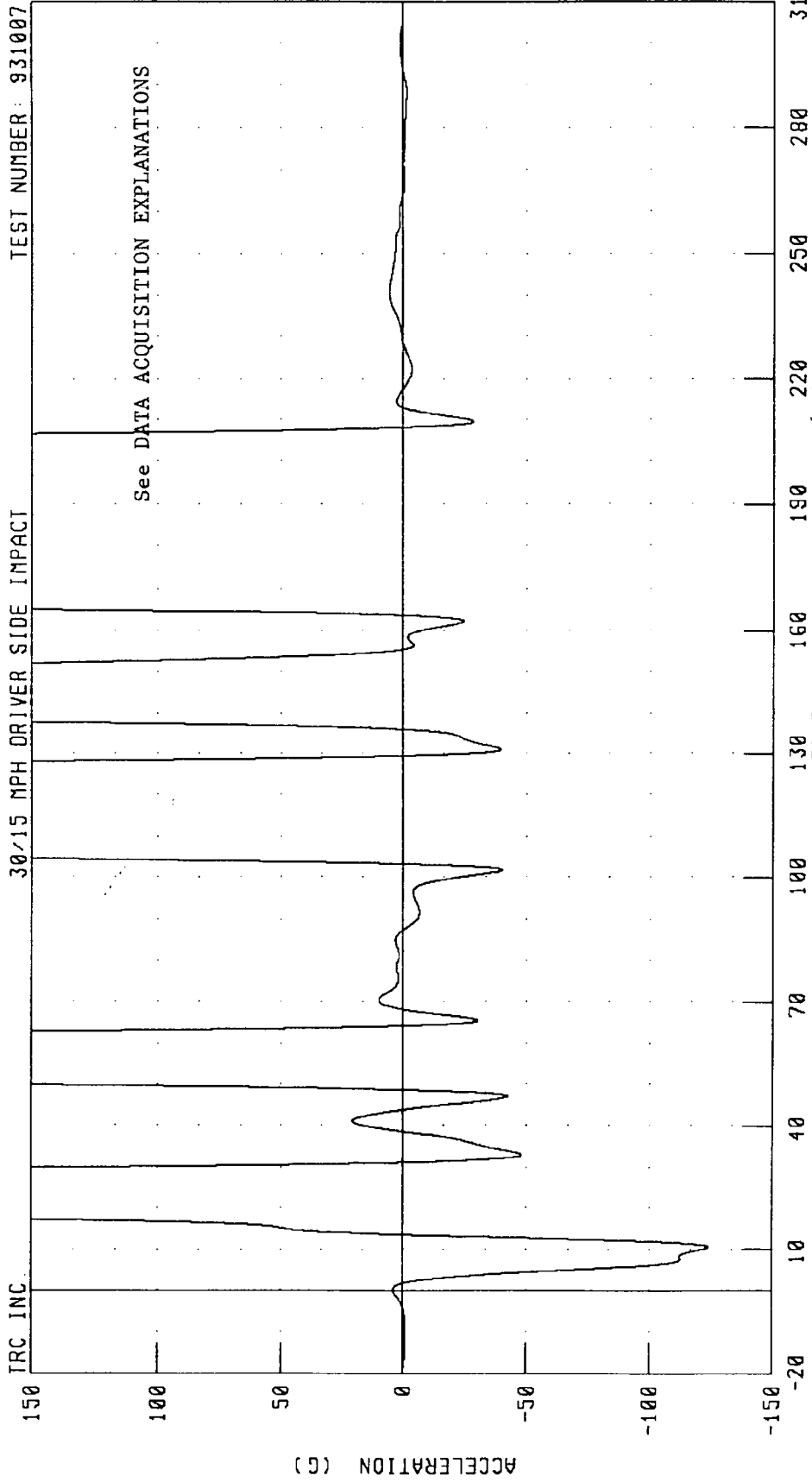
TEST NUMBER: 931007



CHANNEL: TTRYG1 FILTER: CH. CLASS 60

PEAK DATA: 2.41 G @ 220.00 MS; -26.04 G @ 23.75 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT FRONT DOOR UPPER CENTERLINE Y-AXIS ACCELERATION



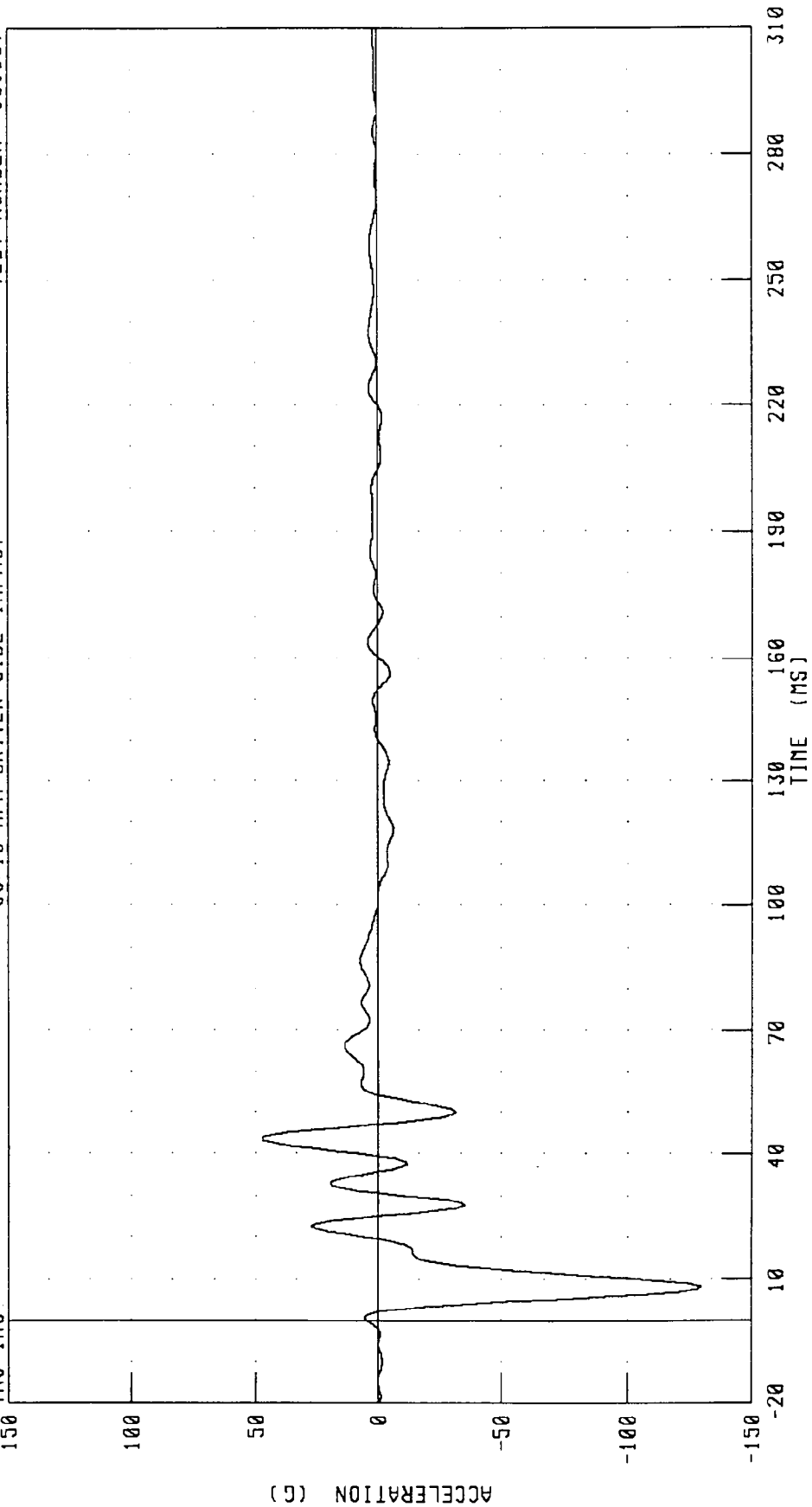
CHANNEL: LFDY62 FILTER: CH. CLASS 60

PEAK DATA: 1179.85 G @ 23.63 MS, -123.80 G @ 10.50 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR DOOR MID-REAR Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC

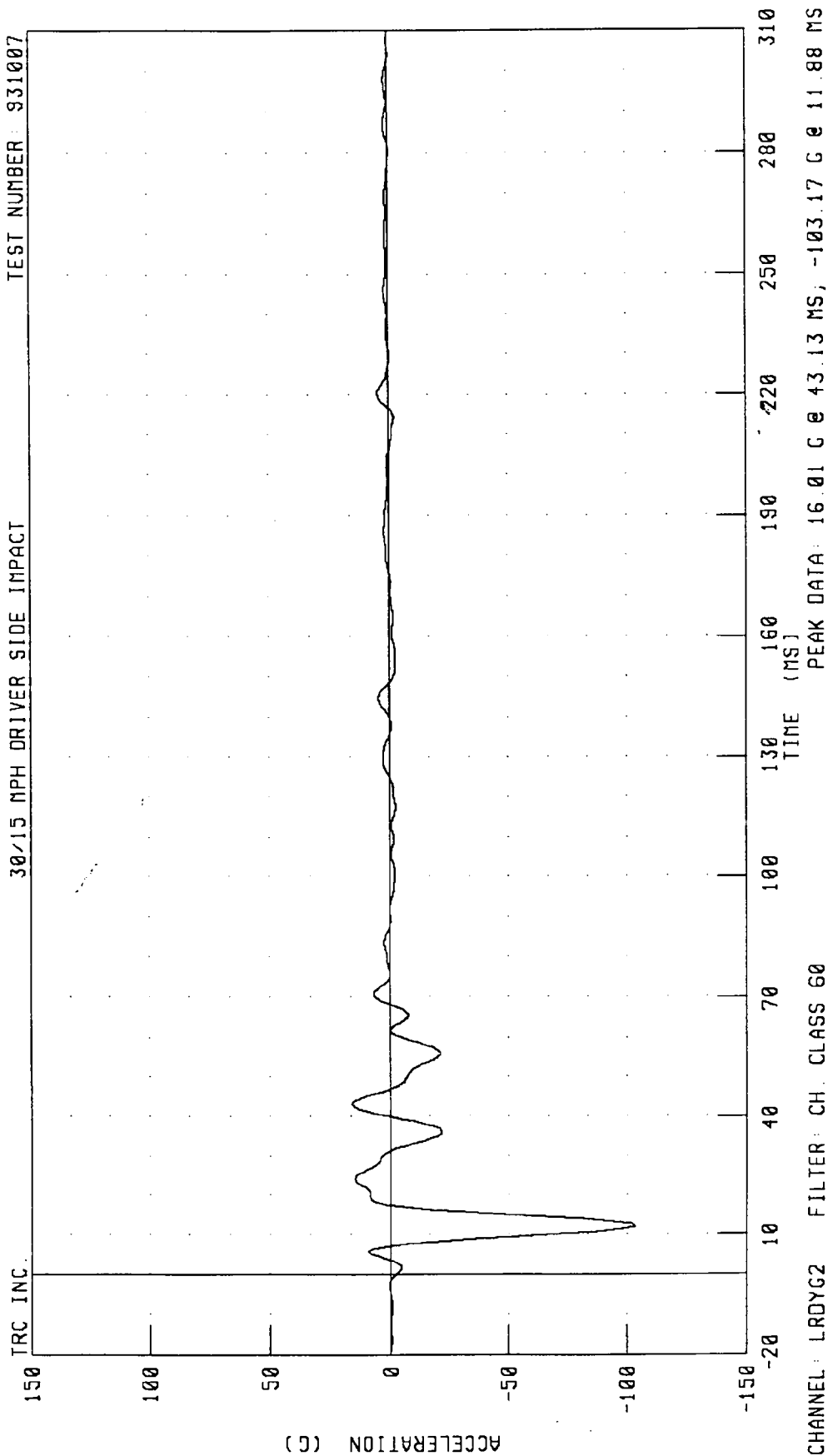


CHANNEL: LRDY01 FILTER: CH. CLASS 60

PEAK DATA: 47.20 G @ 43.75 MS, -129.03 G @ 8.13 MS

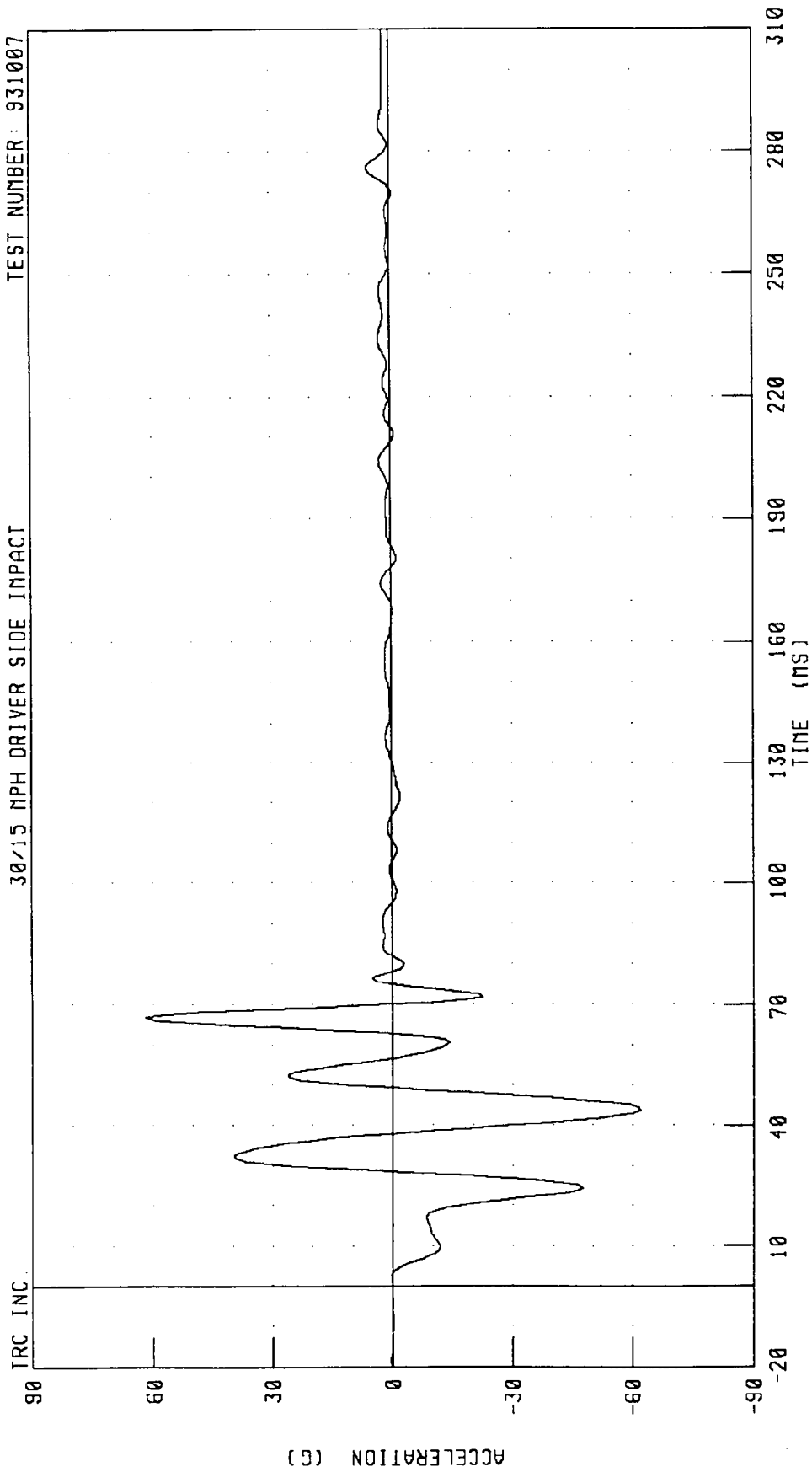
MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
LEFT REAR DOOR UPPER CENTERLINE Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007



MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
REAR SEAT BUCKLE Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

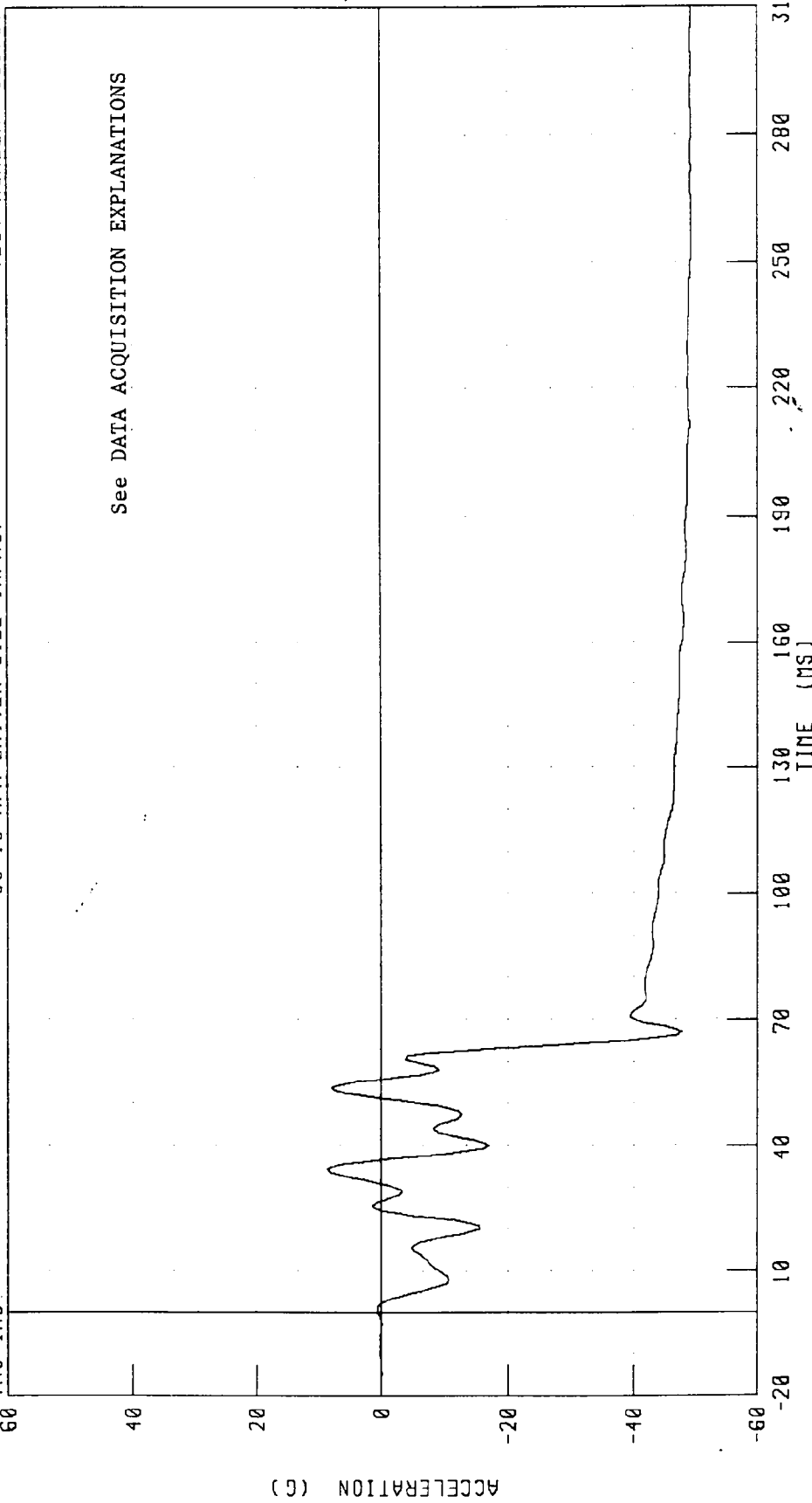


CHANNEL: 0THYG1 FILTER: CH. CLASS 60

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
REAR SEAT BUCKLE BRACKET Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

TRC INC.



CHANNEL: 0THYG2 FILTER: CH. CLASS 60

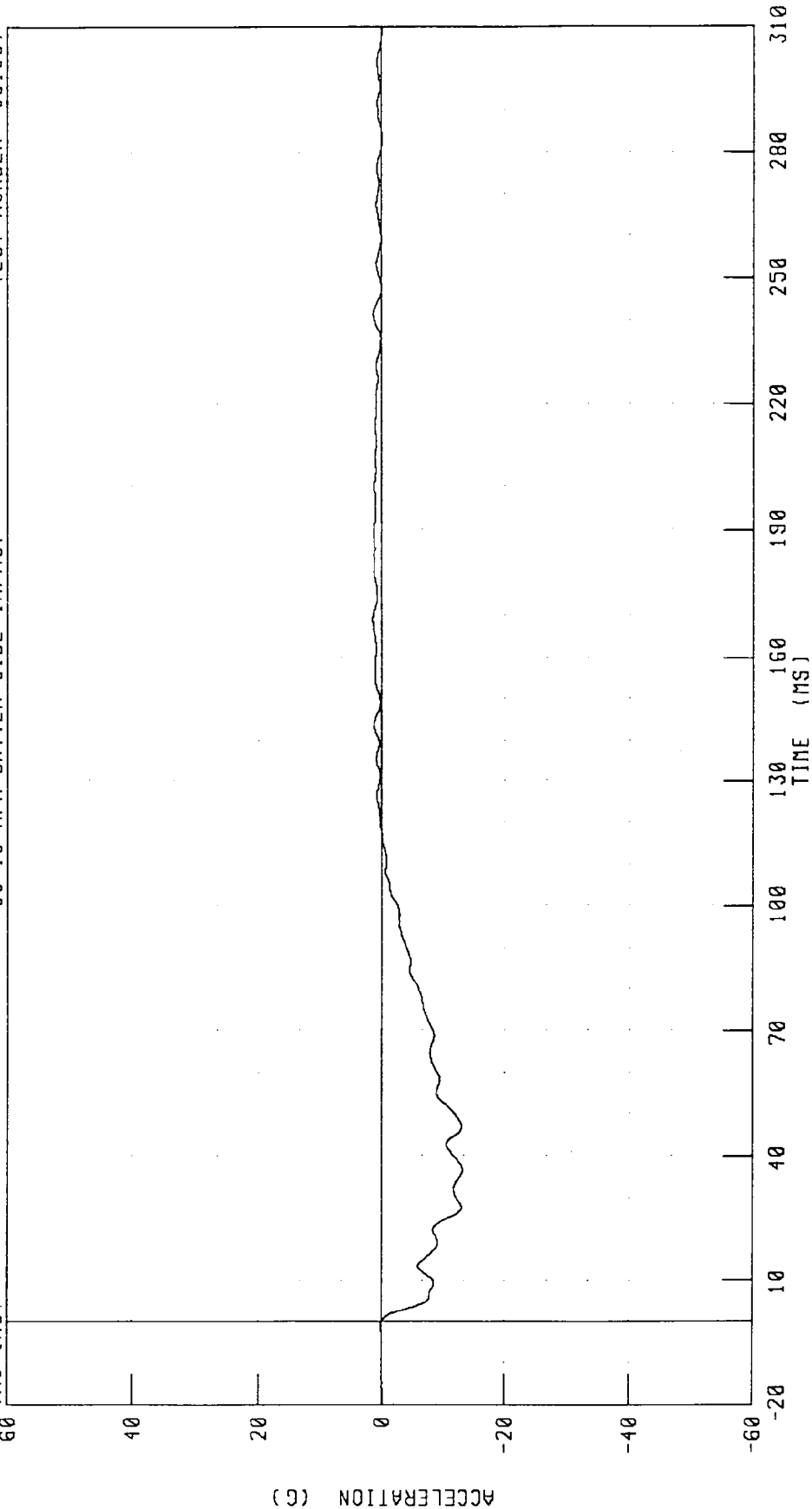
PEAK DATA: 8.59 G @ 34.38 MS, -49.34 G @ 256.88 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
BARRIER CENTER OF GRAVITY X-AXIS ACCELERATION

TEST NUMBER 931007

30/15 MPH DRIVER SIDE IMPACT

TRC INC.



CHANNEL: BCGXG FILTER: CH. CLASS 60

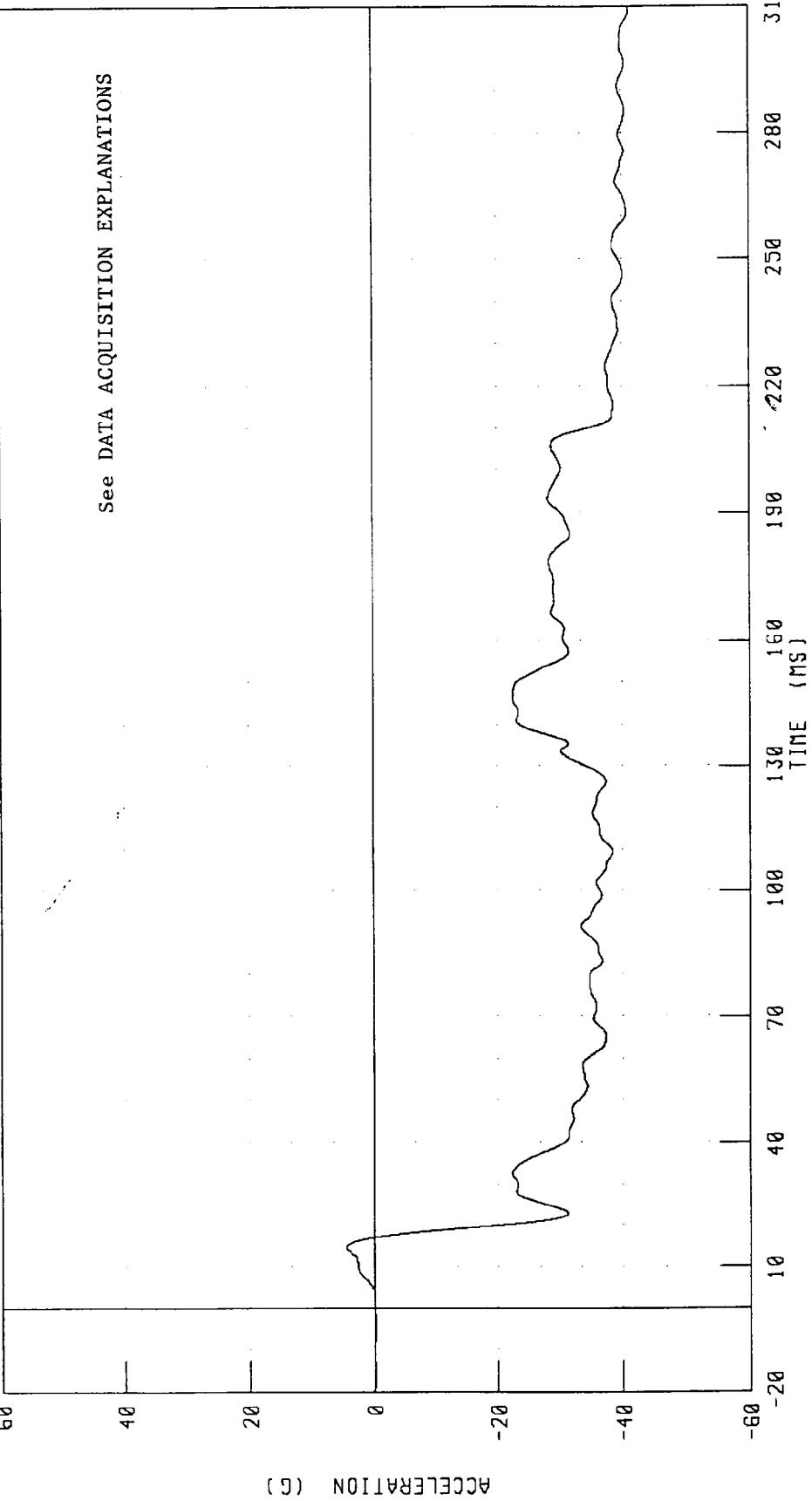
PEAK DATA: 1.48 G @ 169 13 MS, -13.19 G @ 36 75 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
BARRIER CENTER OF GRAVITY Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC.

See DATA ACQUISITION EXPLANATIONS



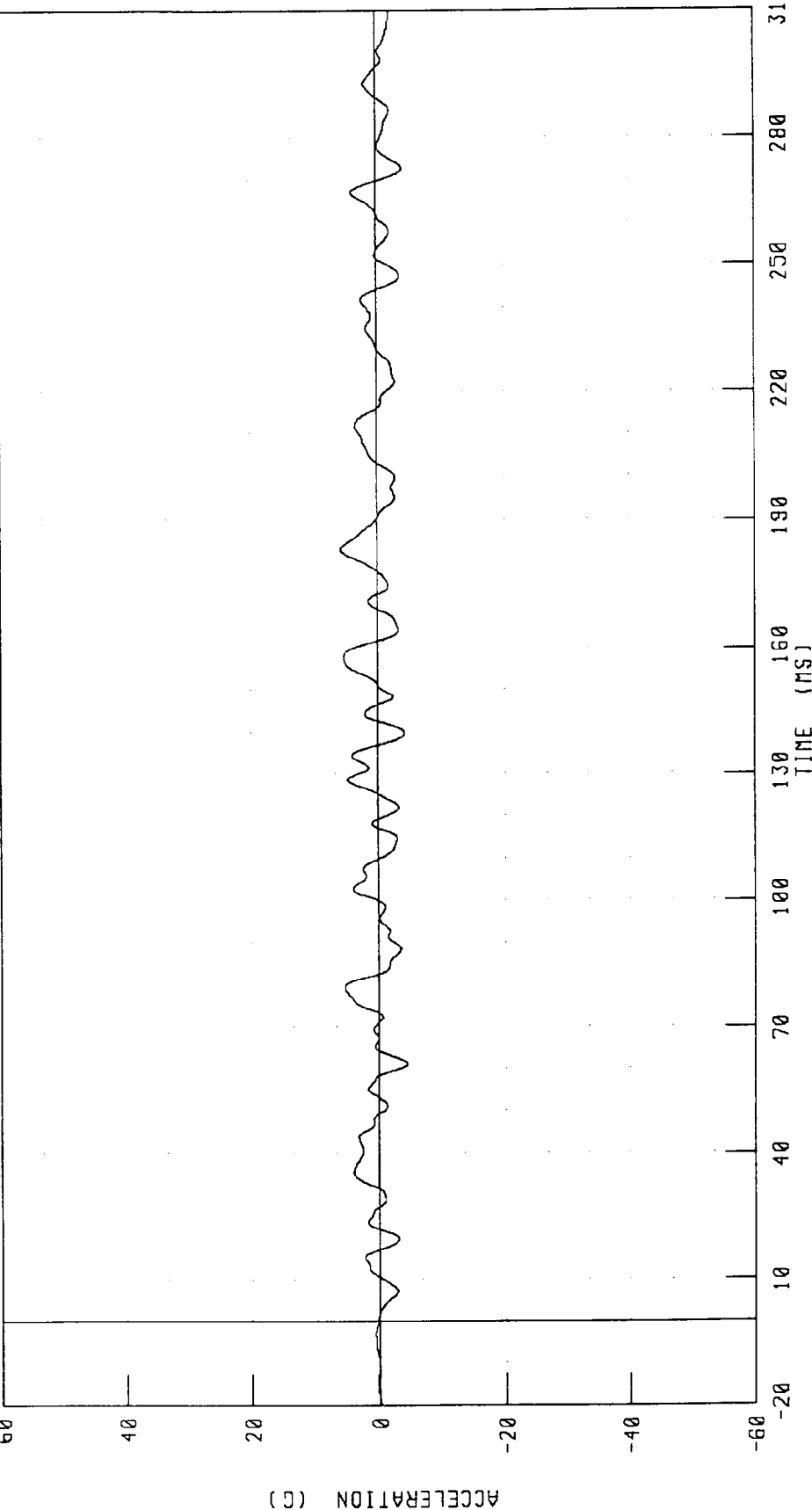
CHANNEL BCCYG FILTER: CH. CLASS 60

PEAK DATA: 4 62 G @ 14 50 MS, -41 15 G @ 309 13 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
BARRIER CENTER OF GRAVITY Z-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

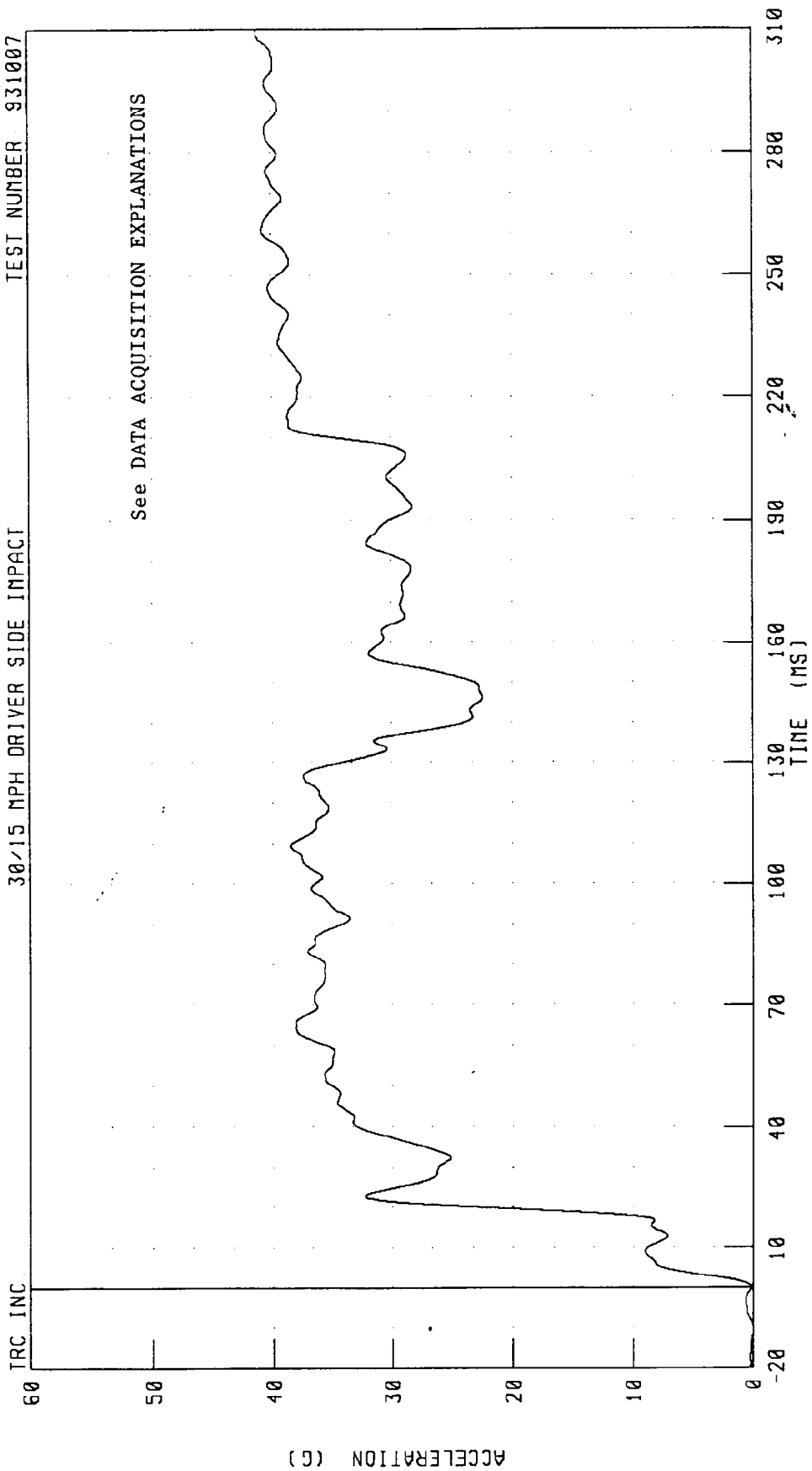
TRC INC.



CHANNEL: BCGZG FILTER: CH. CLASS 60 PEAK DATA: 5.73 G @ 182.88 MS, -4.35 G @ 61.13 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
BARRIER CENTER OF GRAVITY RESULTANT ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007



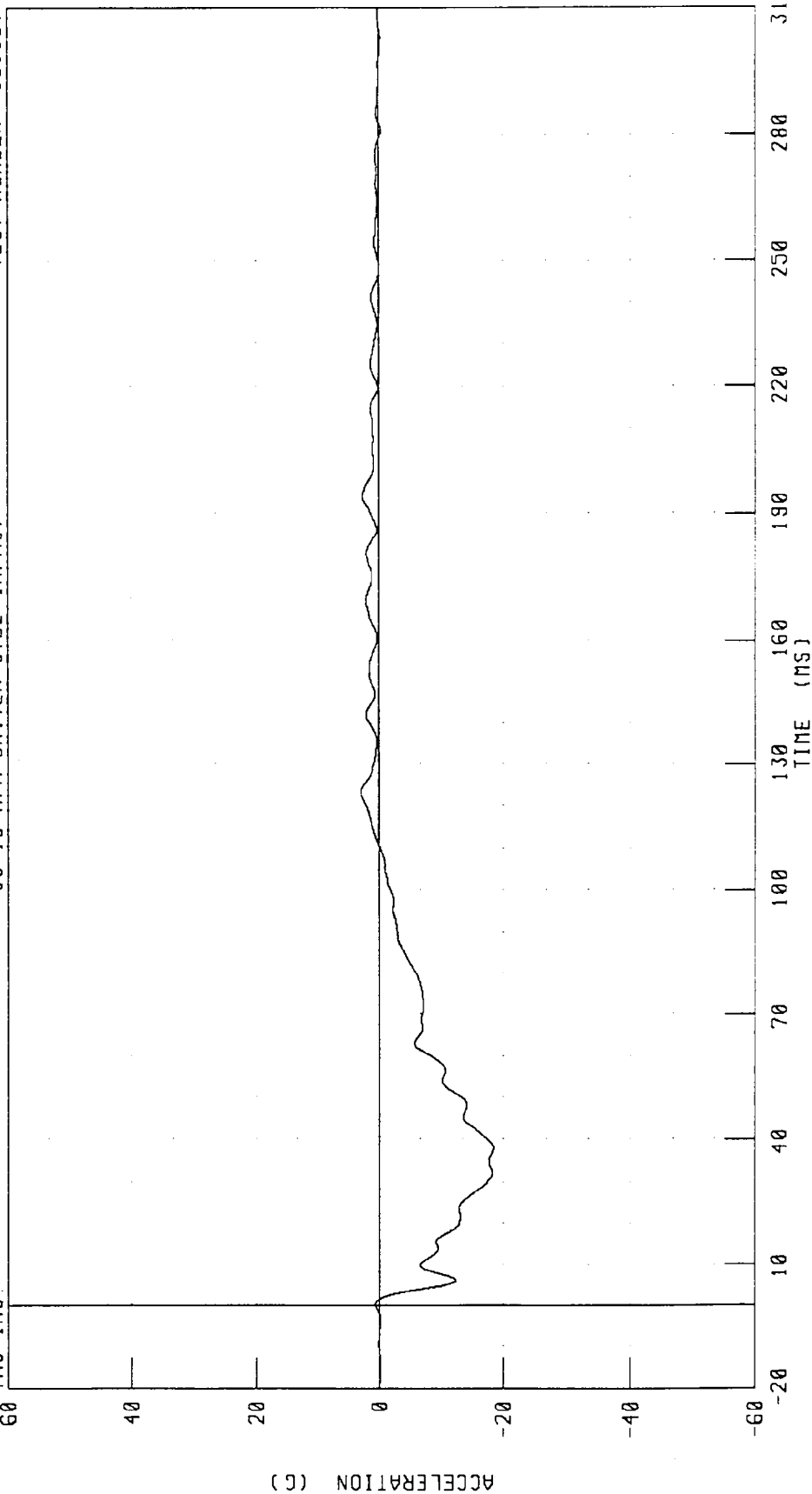
CHANNEL: BCGRC FILTER: CH. CLASS 60

PEAK DATA: 41.21 G @ 309.13 MS; 0.06 G @ -9.75 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
BARRIER LEFT FRAME RAIL X-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER 931007

TRC INC.

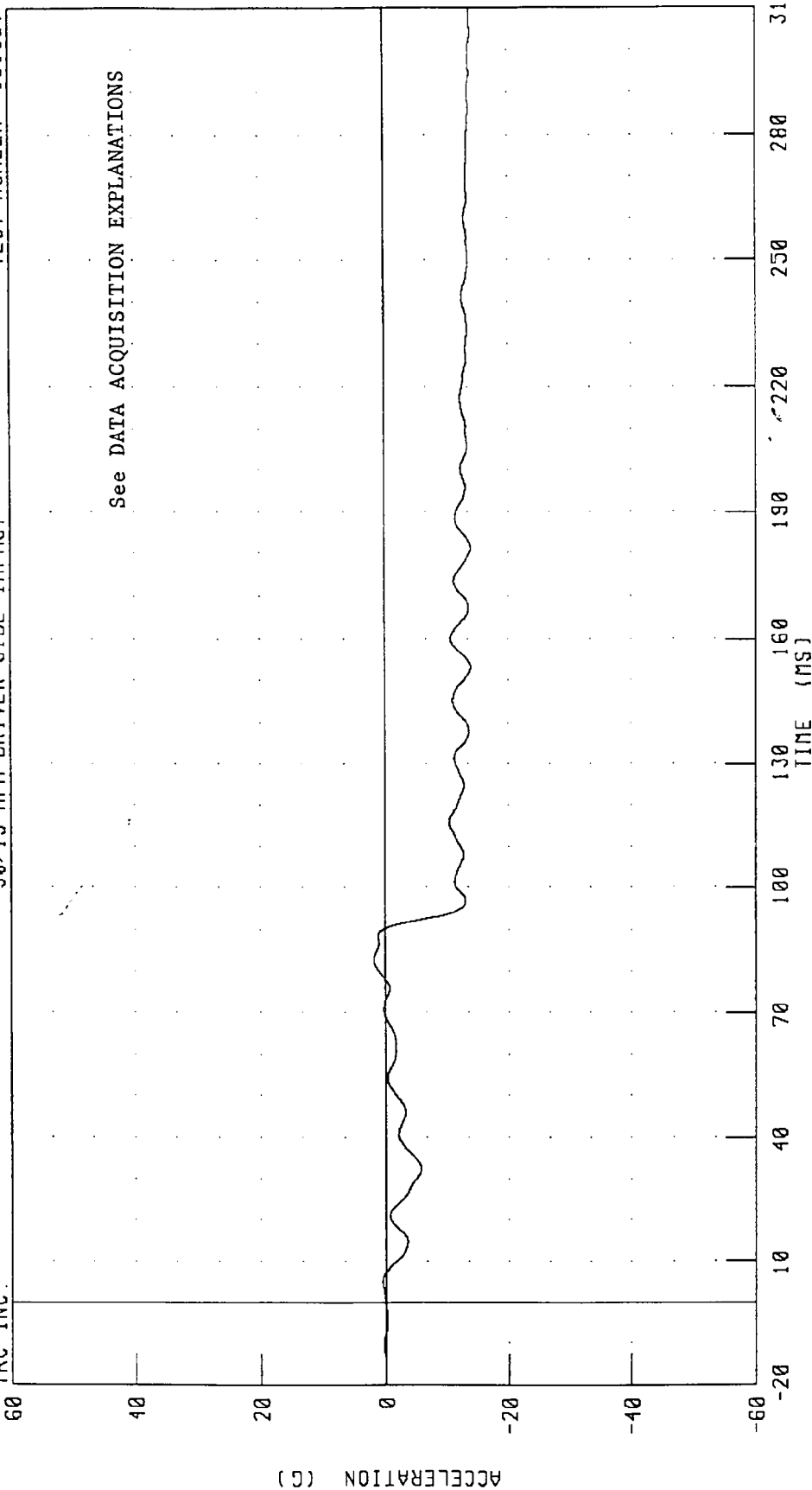


CHANNEL BSRXG FILTER: CH. CLASS 60 PEAK DATA: 2.92 G @ 123.25 MS, -18.40 G @ 38.00 MS

MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 1993 FORD EXPLORER XLT
BARRIER LEFT FRAME RAIL Y-AXIS ACCELERATION
30/15 MPH DRIVER SIDE IMPACT

TEST NUMBER: 931007

TRC INC.



See DATA ACQUISITION EXPLANATIONS

CHANNEL: BSRYC FILTER: CH. CLASS 60

PEAK DATA: 1.91 G @ 82.63 MS, -14.05 G @ 304.13 MS

APPENDIX C

DUMMY CALIBRATION INFORMATION

PRE-TEST CALIBRATION

DRIVER DUMMY S/N 903

TRANSPORTATION RESEARCH CENTER INC.
SIDE IMPACT DUMMY
EXTERNAL DIMENSIONS
LEFT SIDE CONFIGURATION

23-SEP-93

SN 903 FIRST TECH

TRC

ED90315

572F SN903 EXT. DIMENSION CAL15

=====			
DIMENSIONS WITH CHEST JACKET INSTALLED			
SYMB	DESCRIPTION	SPECIFICATION	TEST RESULTS
=====			
	TEMPERATURE		21.1 DEG. C
	RELATIVE HUMIDITY		52.0 %
SH	SEATED HEIGHT	889 - 909 MM	894.1 MM
HP	HIP PIVOT HEIGHT	99 MM REF.	99.1 MM
KH	KNEE PIVOT FROM BACKLINE	511 - 526 MM	523.2 MM
KV	KNEE PIVOT FROM FLOOR	490 - 506 MM	490.2 MM
HW	HIP WIDTH	356 - 391 MM	378.5 MM
=====			
DIMENSIONS WITH CHEST JACKET REMOVED			
SYMB	DESCRIPTION	SPECIFICATION	TEST RESULTS
=====			
RH	RIB HEIGHT	501 - 520 MM	513.1 MM
RD	RIB FROM BACKLINE	229 - 241 MM	236.2 MM
RW-1	TOP RIB WIDTH FROM C/L	165. - 180 MM	167.6 MM
RW-2	BOTTOM RIB WIDTH FROM C/L	165 - 180 MM	167.6 MM
	DIFFERENCE BETWEEN TOP & BOTTOM RIB WIDTH FROM C/L	≤ 2.5 MM	0.0 MM
=====			

DUMMY MEETS SPECIFICATIONS

TECHNICIAN John Ford

TRANSPORTATION RESEARCH CENTER INC.

NECK PENDULUM TEST

PART 572B

03-SEP-93

TRC

HN90312

572B SN 903 HEAD/NECK CAL 12

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	59 %
PENDULUM VELOCITY	6.55 TO 7.77 M/SEC	7.17 M/SEC
PENDULUM DECELERATION:		
T1 - T2 TIME (5 - 20 G)	3 MS MAX	2.59 MS
T2 - T3 TIME (20 - 20 G)	25 - 30 MS	27.57 MS
T3 - T4 TIME (20 - 5 G)	10 MS MAX	5.59 MS
AVG. G LEVEL T2 - T3	20 - 24 G	22.67 G
MAXIMUM ROTATION ANGLE	63 - 73 DEG	63.66 DEG
PEAK HEAD RESULTANT ACCEL	26 G MAX	26.33 G **

TEST PARAMETER	SPECIFICATION	TEST RESULTS
ROTATION ANGLE (DEGREES)	TIME (MS)	CHORDAL DISP. (MM)
0	-2.0 - +2.0	-12.7 - +12.7
30	25.6 - 34.4	53.3 - 78.7
60	40.3 - 51.7	109.2 - 134.6
MAX	53.2 - 66.8	127.0 - 152.4
60	67.0 - 83.0	109.2 - 134.6
30	85.4 - 104.6	53.3 - 78.7
0	101.0 - 123.0	-12.7 - +12.7

SND: 151.13 MM

* DUMMY DOES NOT MEET SPECIFICATIONS

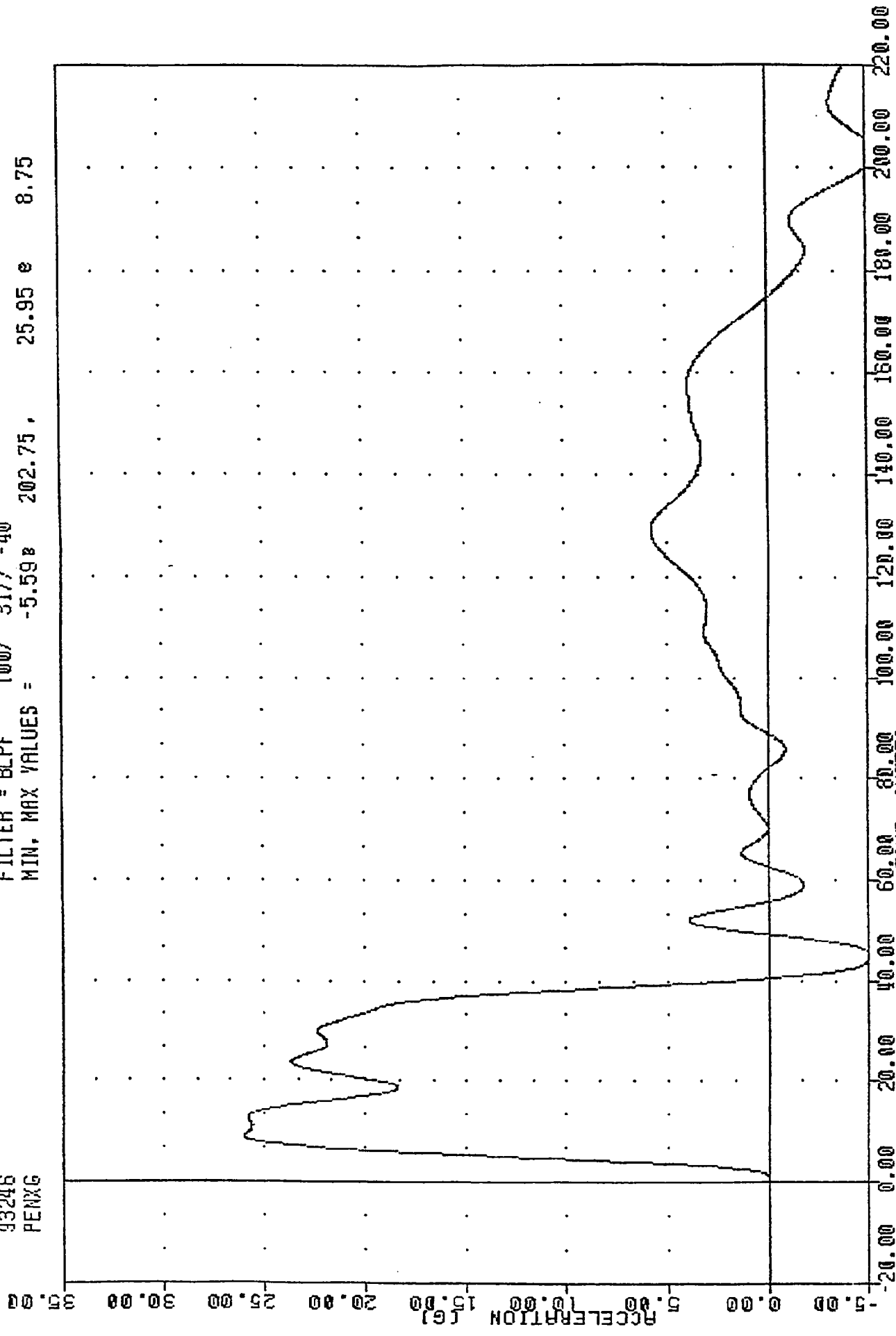
TECHNICIAN

Pete Ford

TRC , HN90312
572B SN 903 HEAD/NECK CAL 12

93246
PENXG

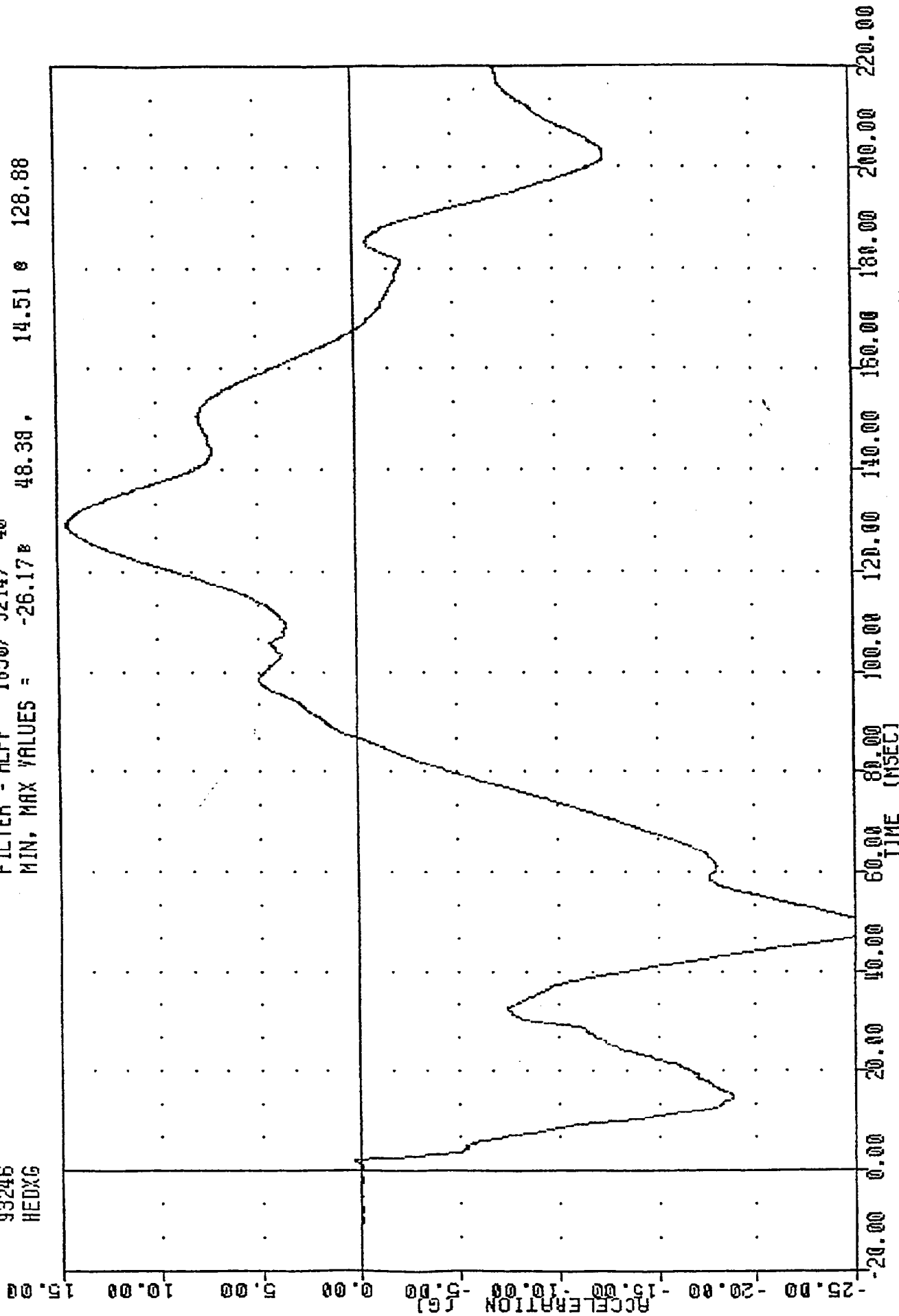
FILTER = BLPF 100/ 317/ -40
MIN. MAX VALUES = -5.59e 202.75 , 25.95 e 8.75



PART 572-R HYBRID IT HEAD/NECK CALIBRATION

TRC , HN90312
572B SN 903 HEAD/NECK CAL 12
93246
HEDXG

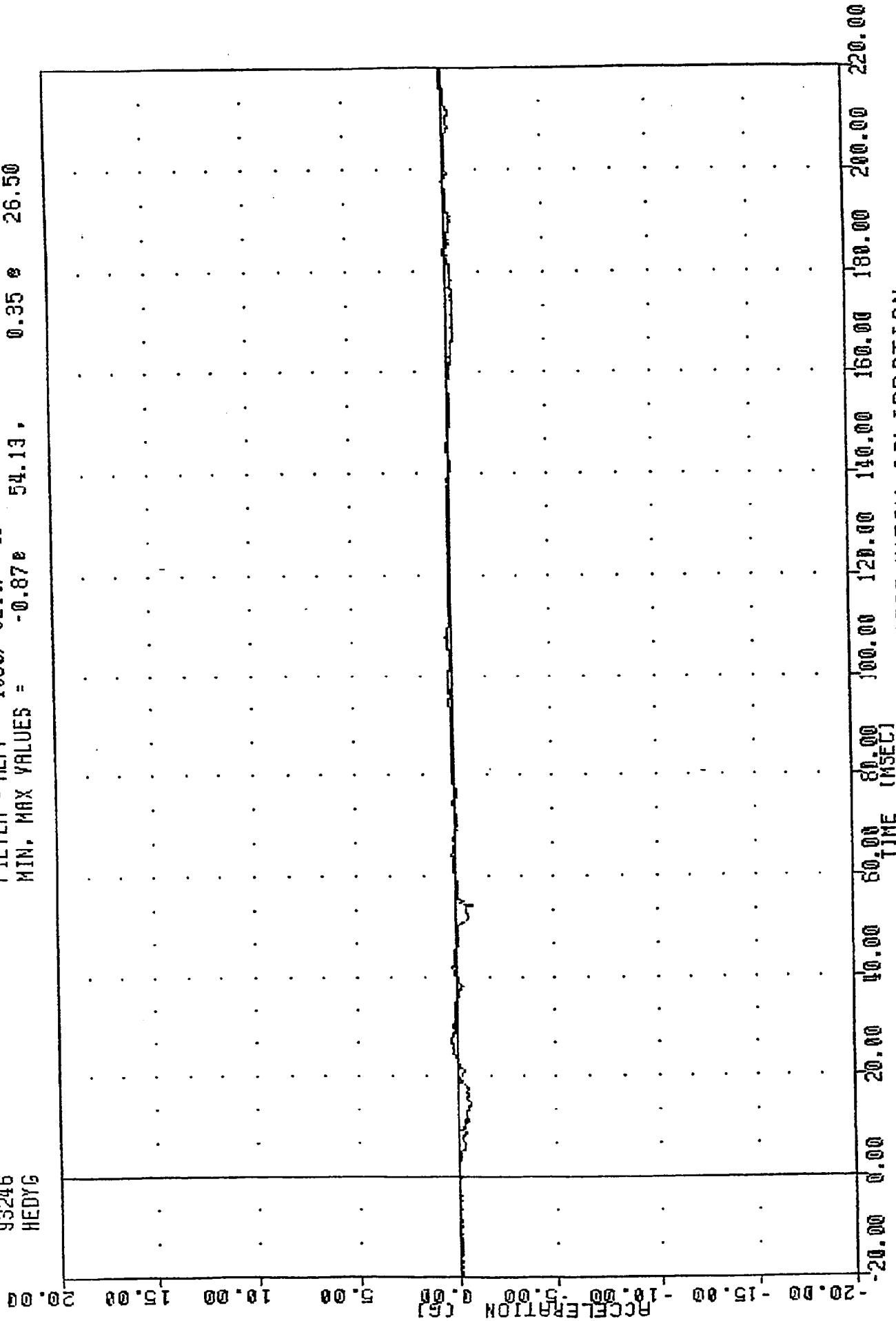
FILTER = ALPF 1650/ 5214/ -40
MIN, MAX VALUES = -26.17 48.38, 14.51 128.88



PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC , HN90312
 572B SN 903 HEAD/NECK CRL 12
 93246
 HEDYG

FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = -0.87e 54.13, 0.35 e 26.50

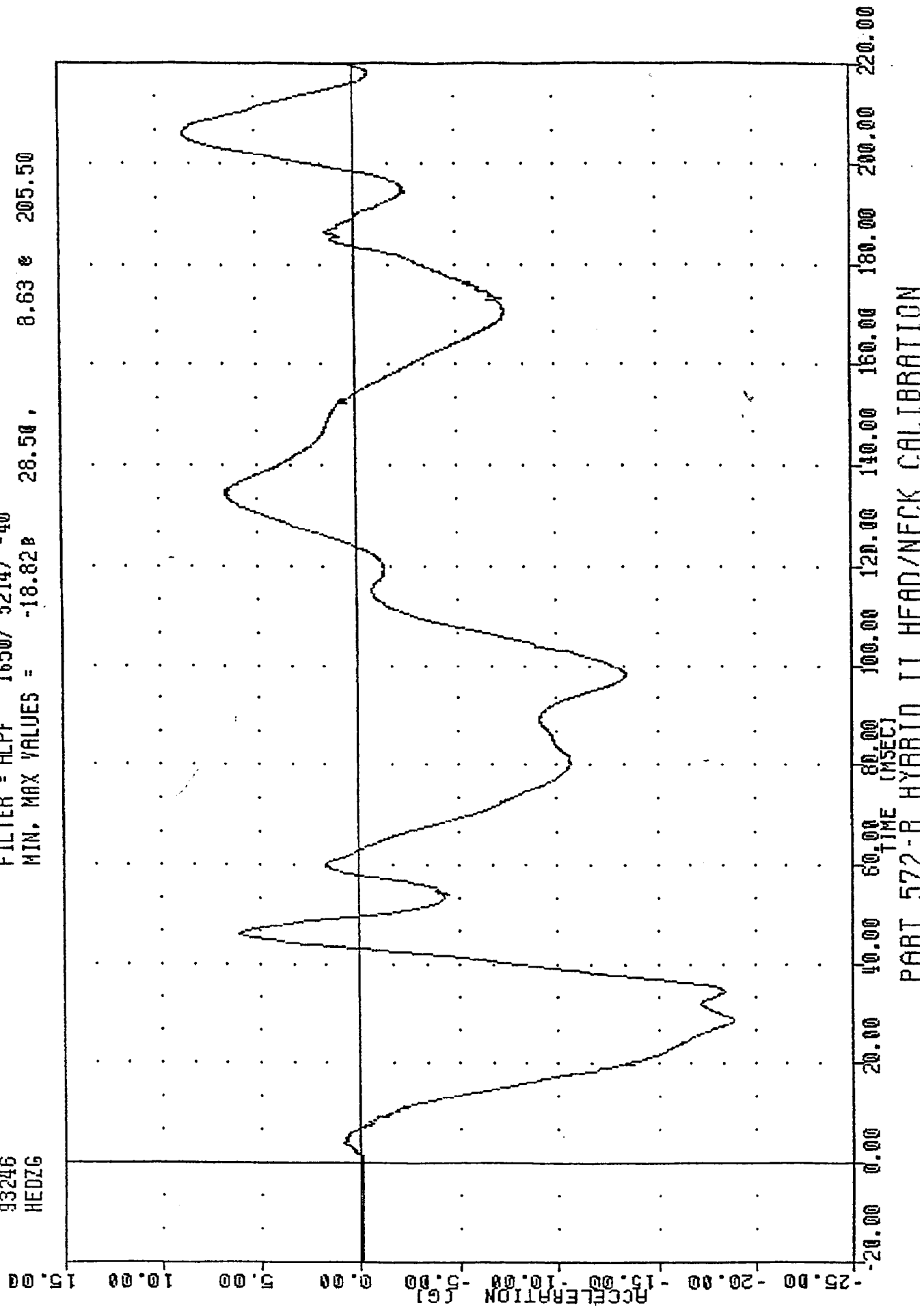


TRC , HN90312
572B SN 903 HEAD/NECK CAL 12

93246
HEDZG

FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -18.82B 28.50 ,

8.63 @ 205.50



PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC
 5728 SN 903 HEAD/NECK CAL 12
 93246
 HEDRG

, HK90312

FILTER = ALPF 1650/ 5214/ -40

MIN, MAX VALUES = 0.048

-6.50, 26.33 @ 48.38

35.00

30.00

25.00

20.00

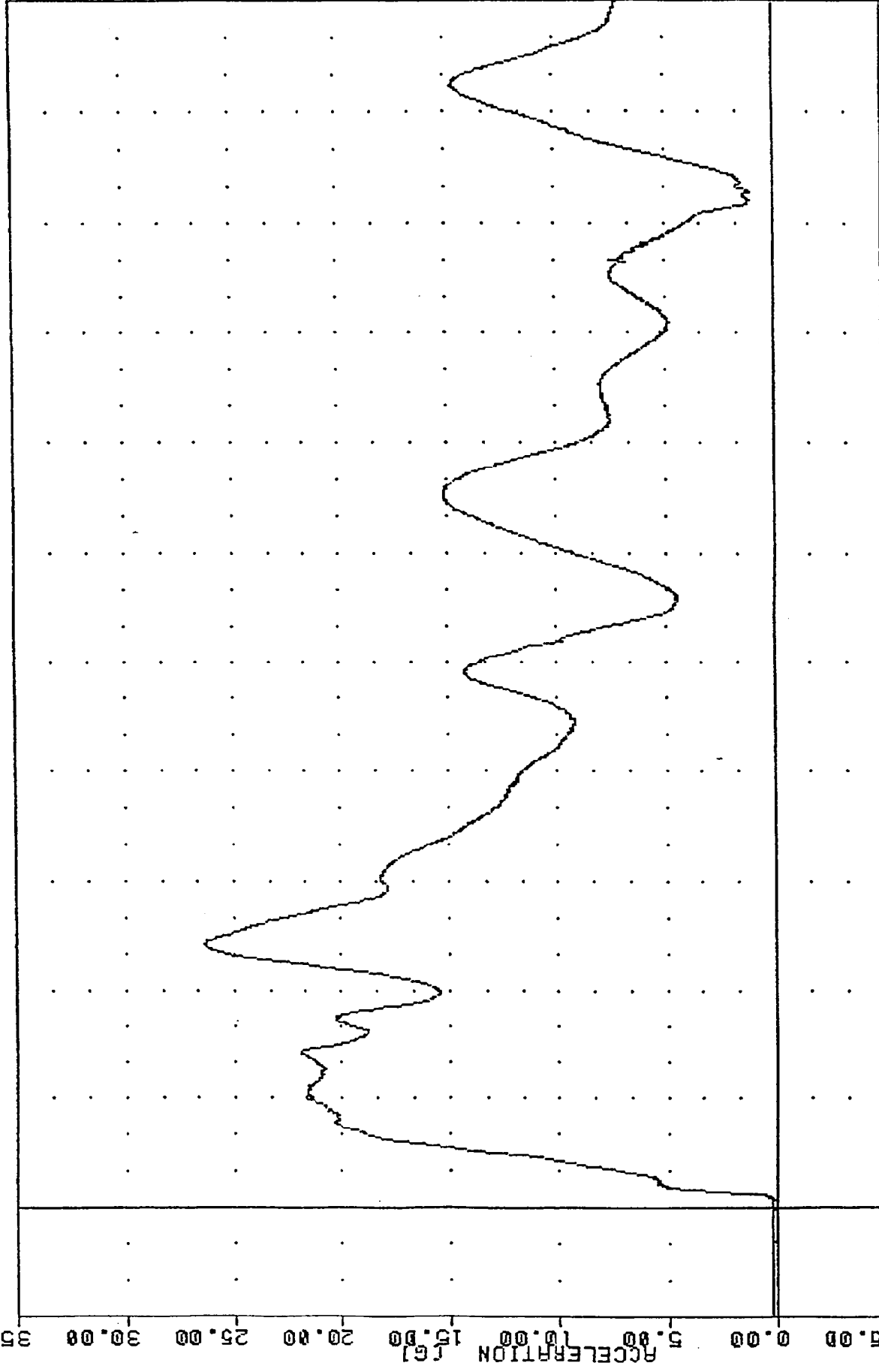
15.00

10.00

5.00

0.00

-5.00

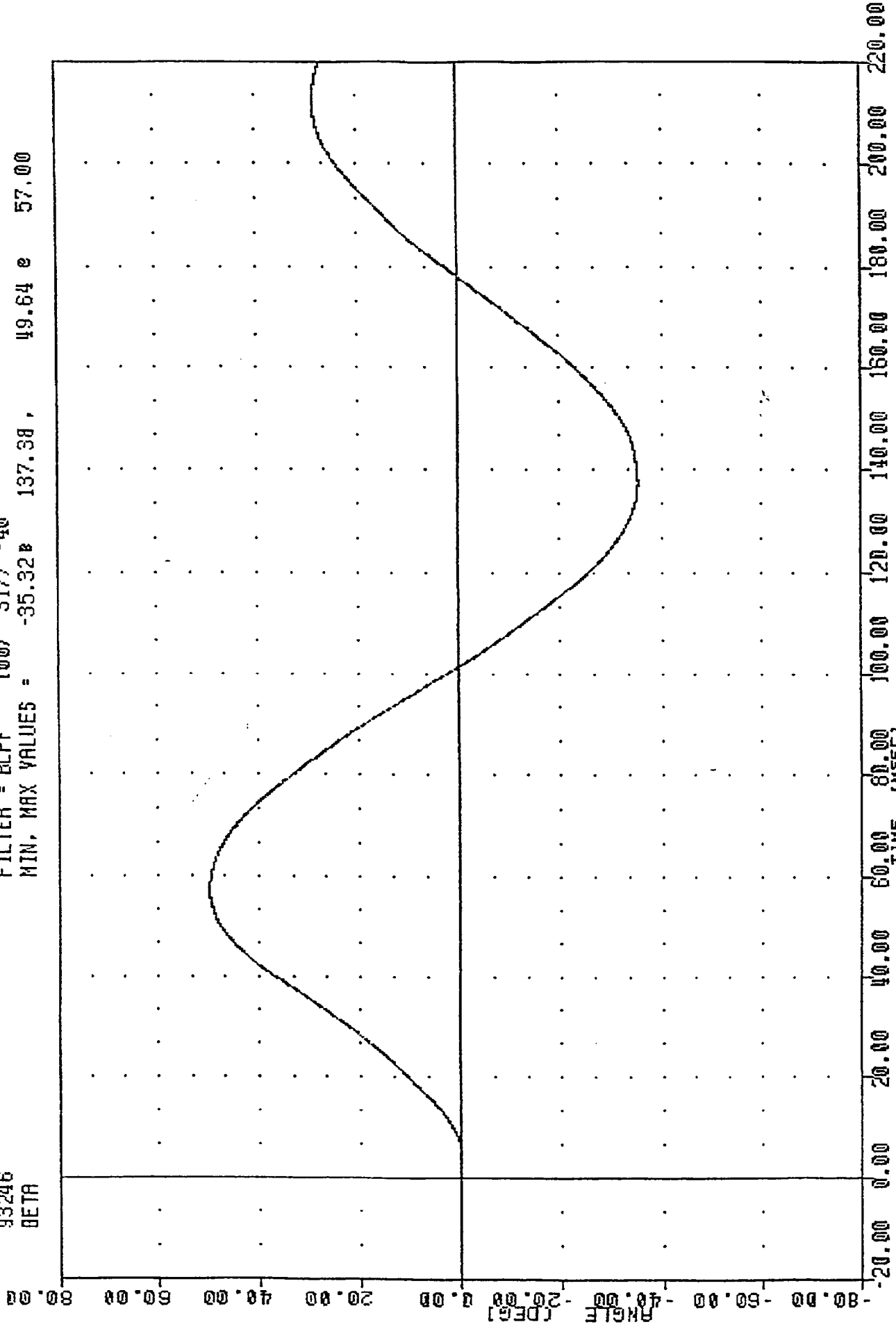


-20.00 0.00 20.00 40.00 60.00 80.00 100.00 120.00 140.00 160.00 180.00 200.00 220.00

PART 572-R HYBRID II HEAD/NECK CALIBRATION

TRC , HN90312
 572B SN 903 HEAD/NECK CRL 12
 93246
 BETA

FILTER = BLPF 100/ 317/ -40
 MIN, MAX VALUES = -35.32 137.38 , 49.64 e 57.00

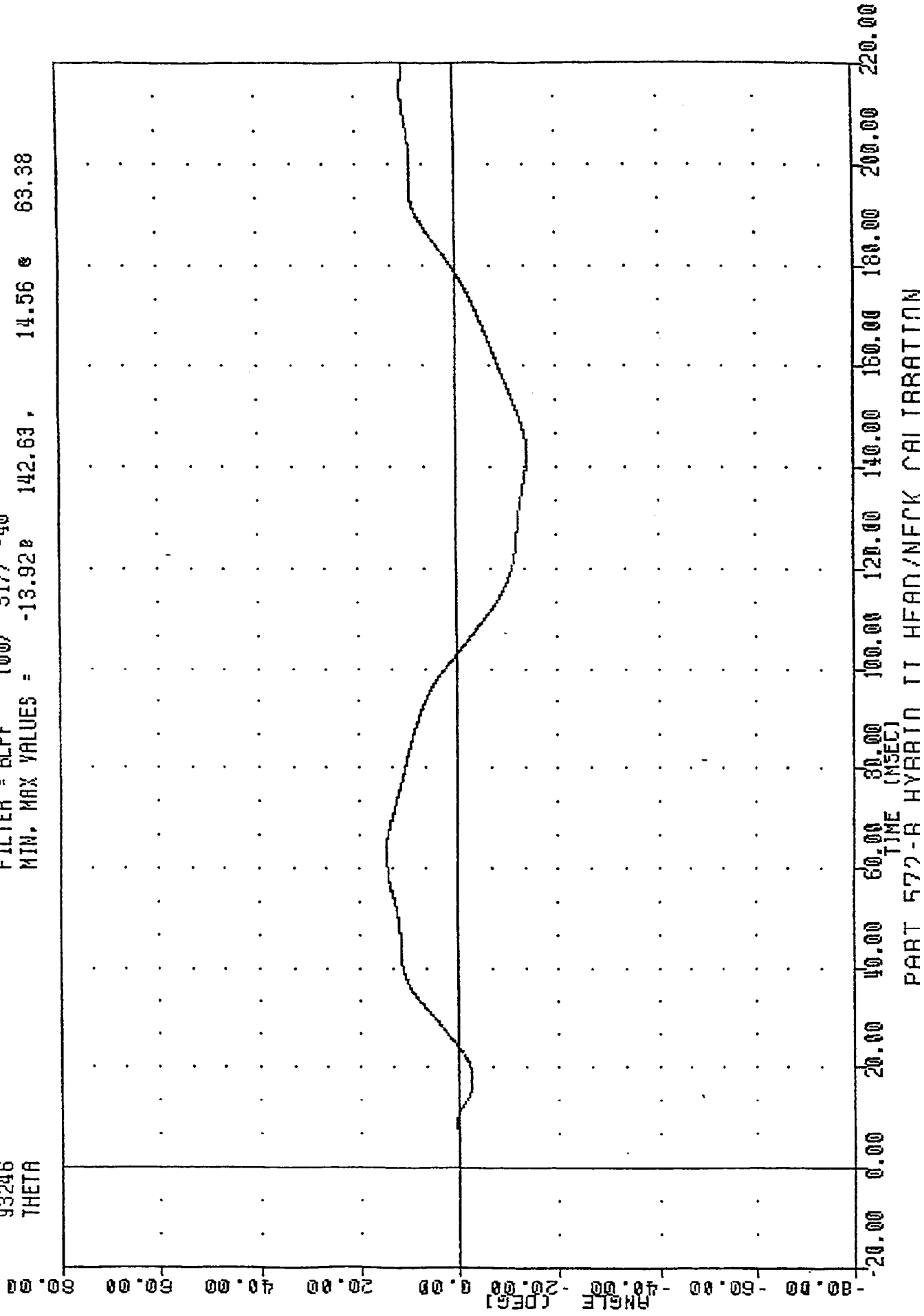


PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC
 572B 3N 903 HEAD/NECK CAL 12
 93246
 THETA

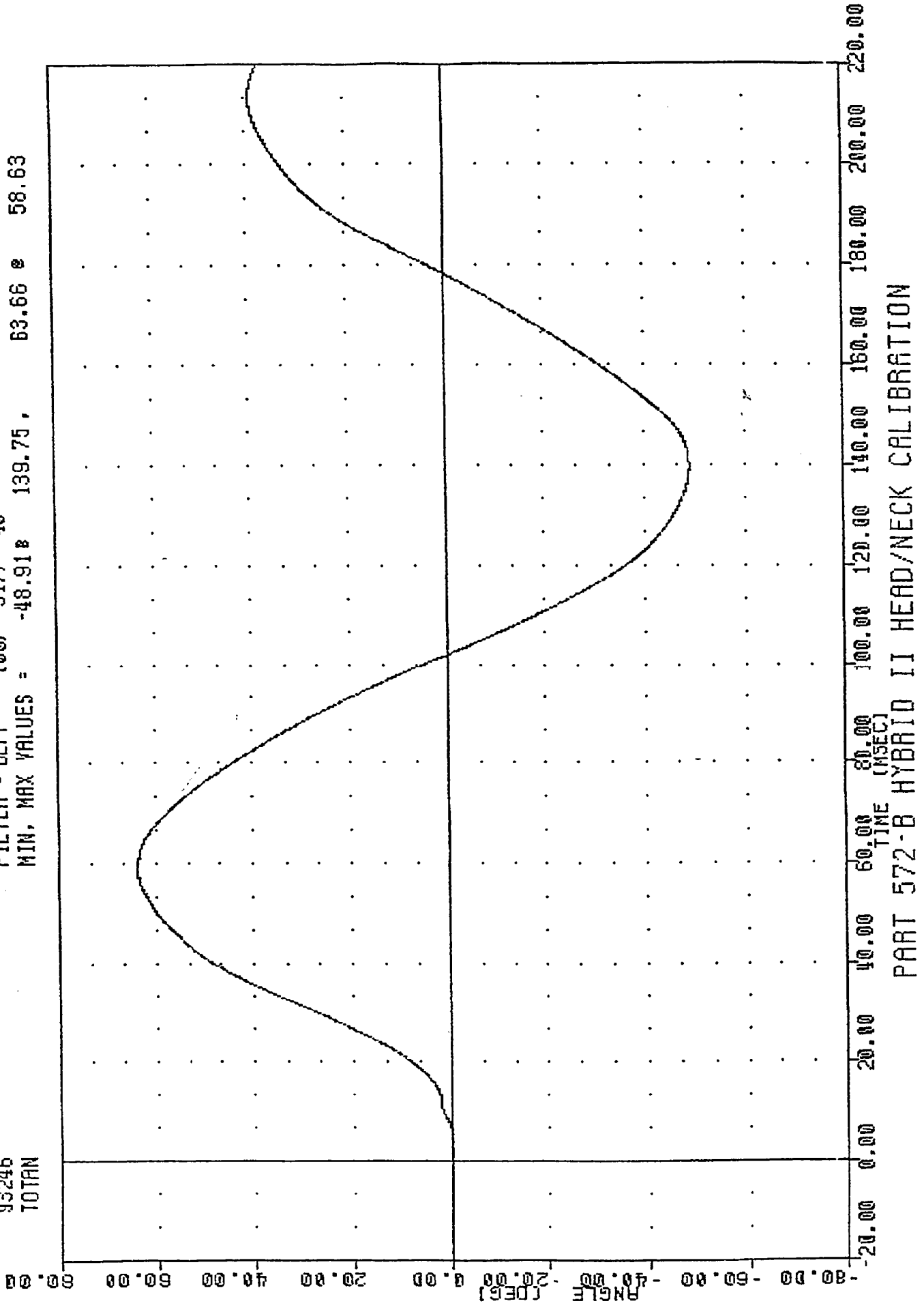
, HN90312

FILTER = BLPF 100/ 317/ -40
 MIN. MAX VALUES = -13.928 142.63, 14.56 63.38



TRC
 572B SN 903 HEAD/NECK CAL 12
 93246
 TOTAN

FILTER = BLPF 100/ 317/ -40
 MIN, MAX VALUES = -48.91 139.75, 53.66 58.63

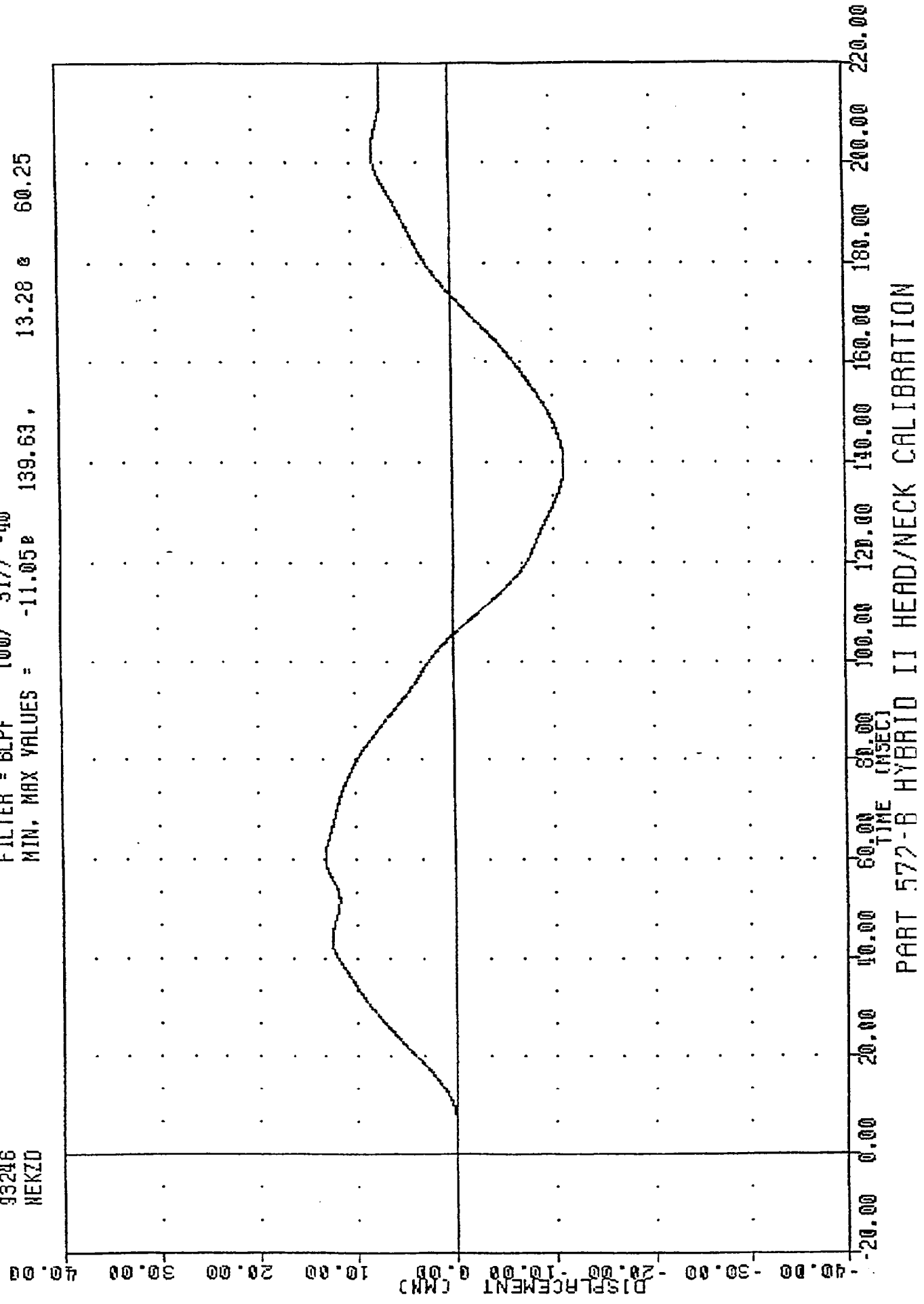


PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC
572B 3N 903 HEAD/NECK CAL 12
93246
HEKZD

, HK90312

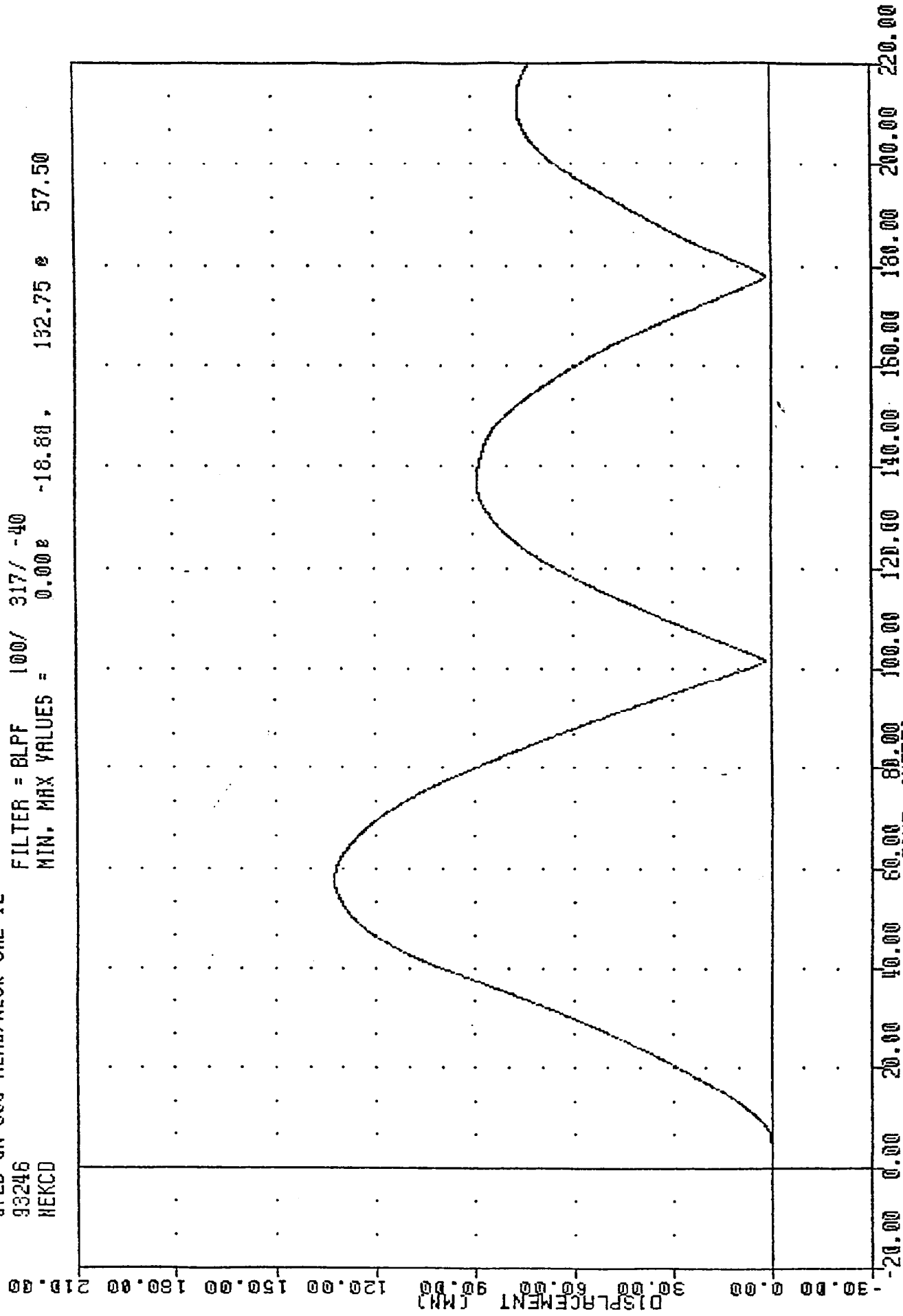
FILTER = 6LPF 100/ 317/ -40
MIN. MAX VALUES = -11.05e 139.63, 13.28 e 60.25



PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC , HN90312
 572B 9N 903 HEAD/NECK CAL 12
 93246
 HEKCD

FILTER = BLPF 100/ 317/ -40
 MIN. MAX VALUES = 0.00e -18.88, 132.75 e 57.50



PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRANSPORTATION RESEARCH CENTER INC.

THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

23-Sep-93

TRC

572F SN903 DAMPER TEST CAL15

TEST NOS. DP90315A, DP90315B, DP90315C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	61.0 %
VELOCITY	FORCE	856 - 1146 N	906 N
3.07 M/S	DISPLACEMENT	31.2 - 35.2 MM	31.5 MM
VELOCITY	FORCE	1733 - 2100 N	1856 N
4.28 M/S	DISPLACEMENT	32.7 - 37.2 MM	34.4 MM
VELOCITY	FORCE	3743 - 4448 N	4433 N
6.10 M/S	DISPLACEMENT	34.4 - 39.5 MM	36.4 MM

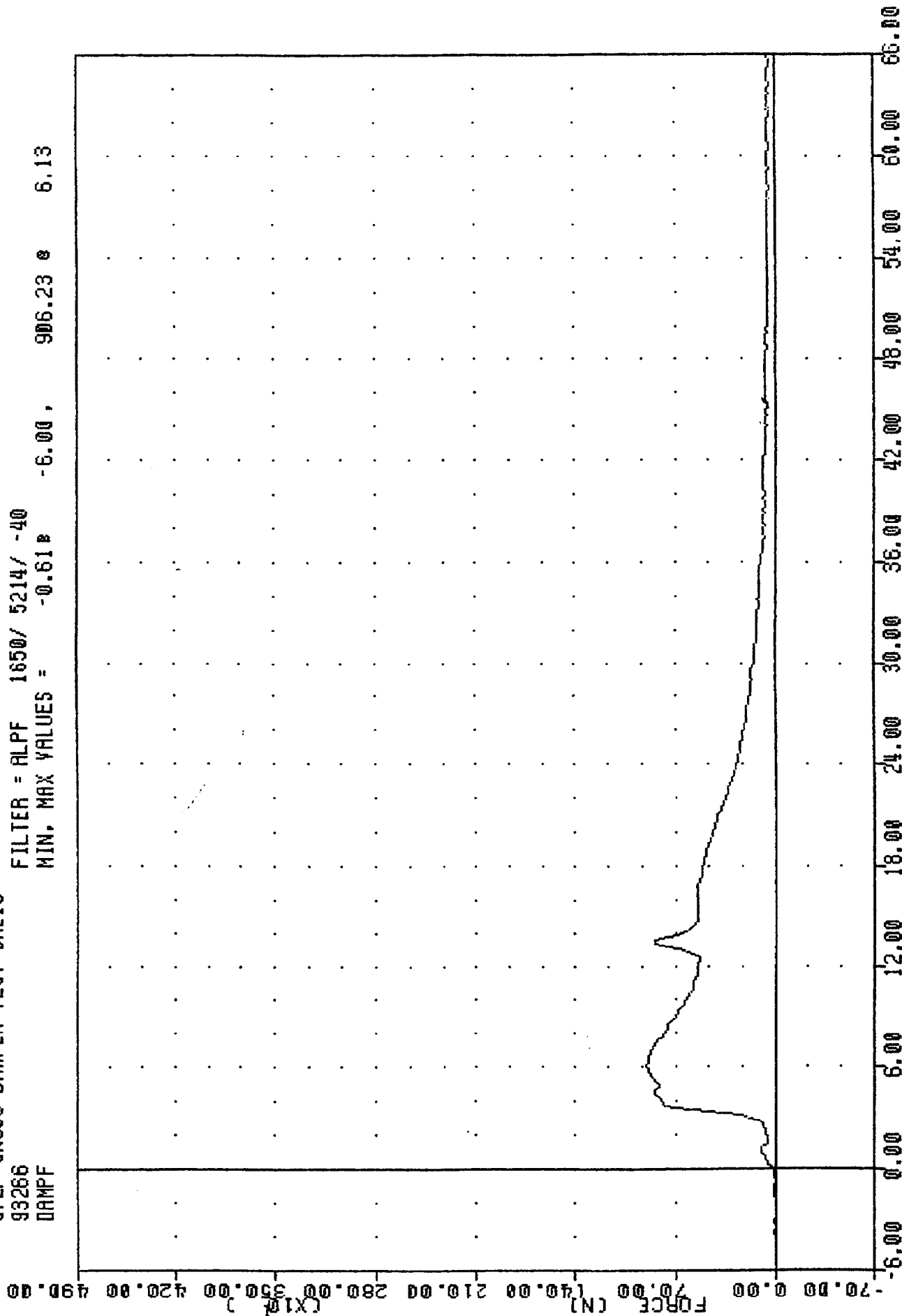
DAMPER SETTING = 5.5

TEST MEETS SPECIFICATIONS

TECHNICIAN Pete Font

TRC
 572F SN503 DAMPER TEST CAL15
 93266
 DAMPF

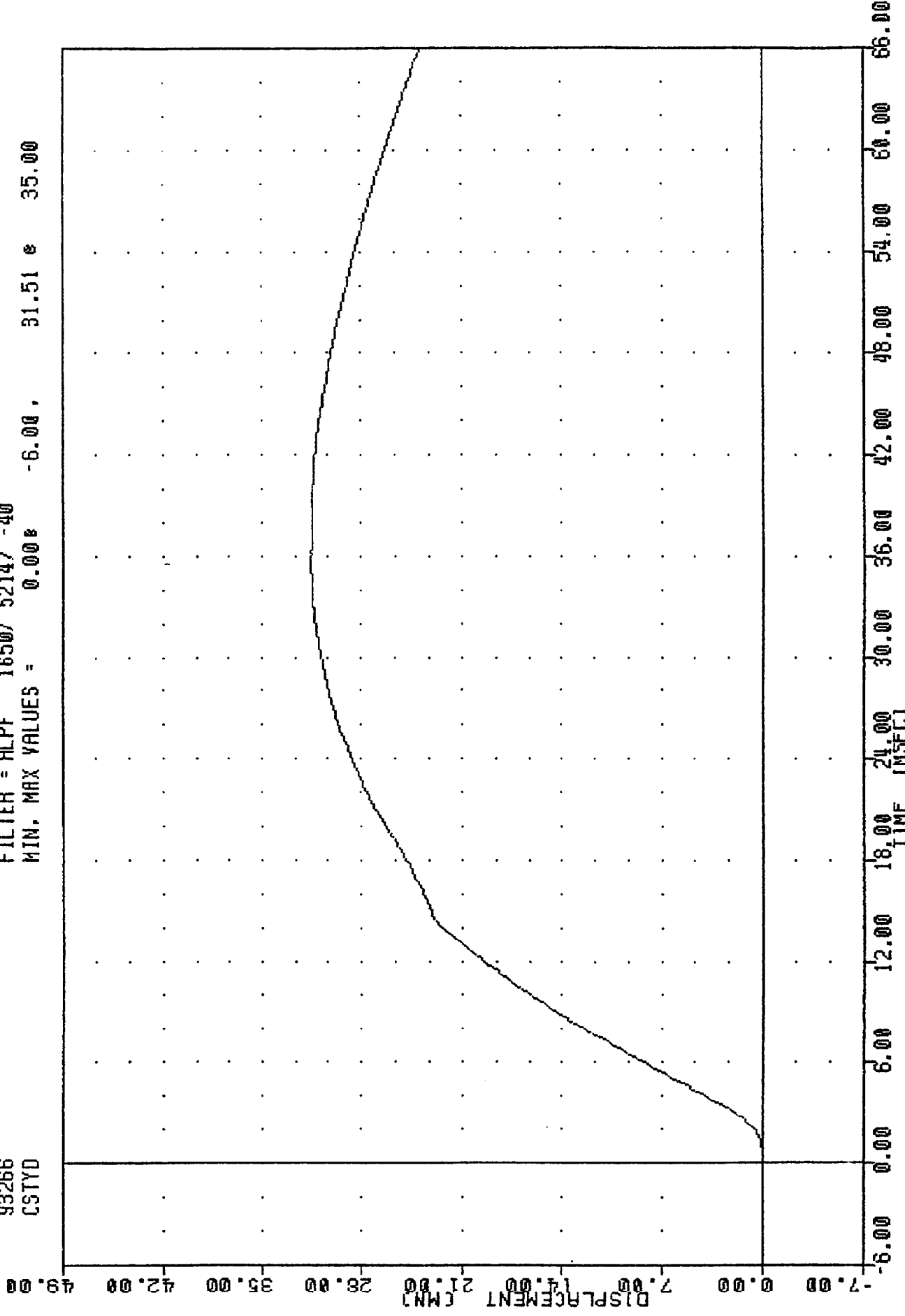
FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = -0.618 -6.00, 906.23 6.13



PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 3.0 M/SEC

TRC , DP90315A
 572F SN903 DAMPER TEST CAL15
 93266
 CSTYD

FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = 0.00e -6.00, 31.51 e 35.00

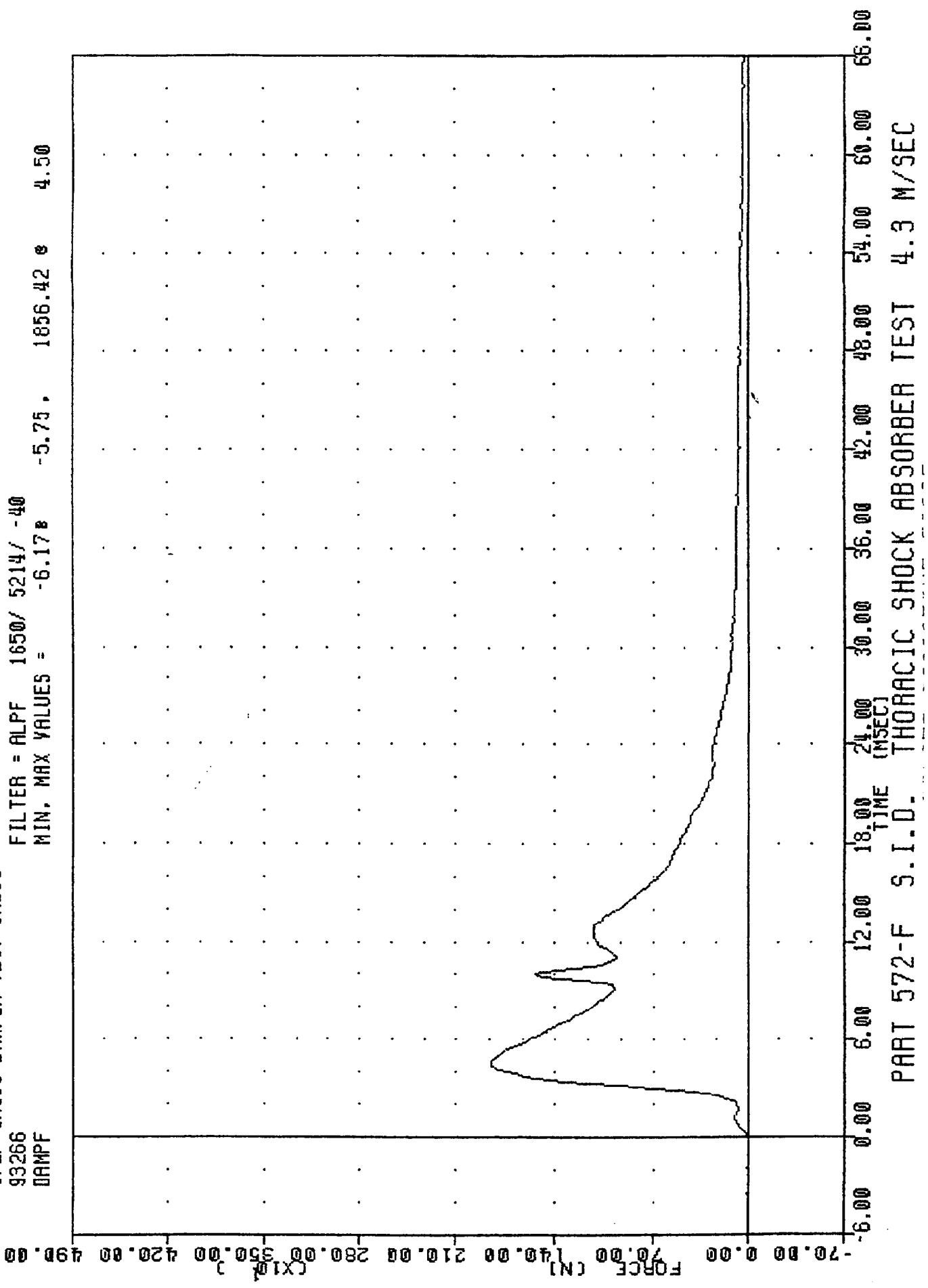


PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 3.0 M/SEC

TRC
 572F SN903 DAMPER TEST CAL15
 93266
 DAMPF

. DP90315B

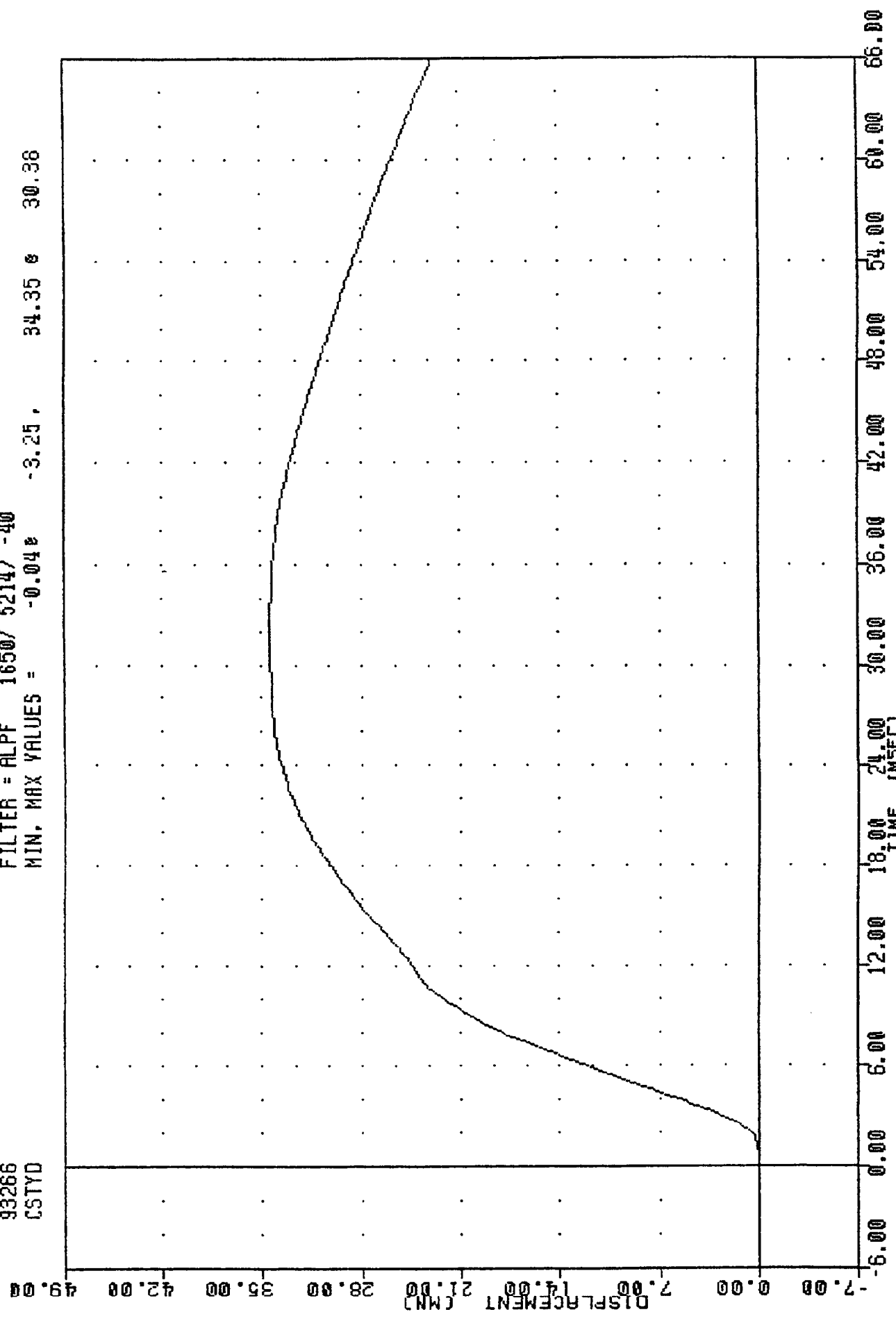
FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = -6.17 1856.42 4.50



PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 4.3 M/SEC

TRC , DP903158
 572F SN903 DAMPER TEST CAL15
 93266
 CSTYD

FILTER = ALPF 1650/ 5214/ -40
 MIN, MAX VALUES = -0.048 -3.25, 34.35 & 30.36

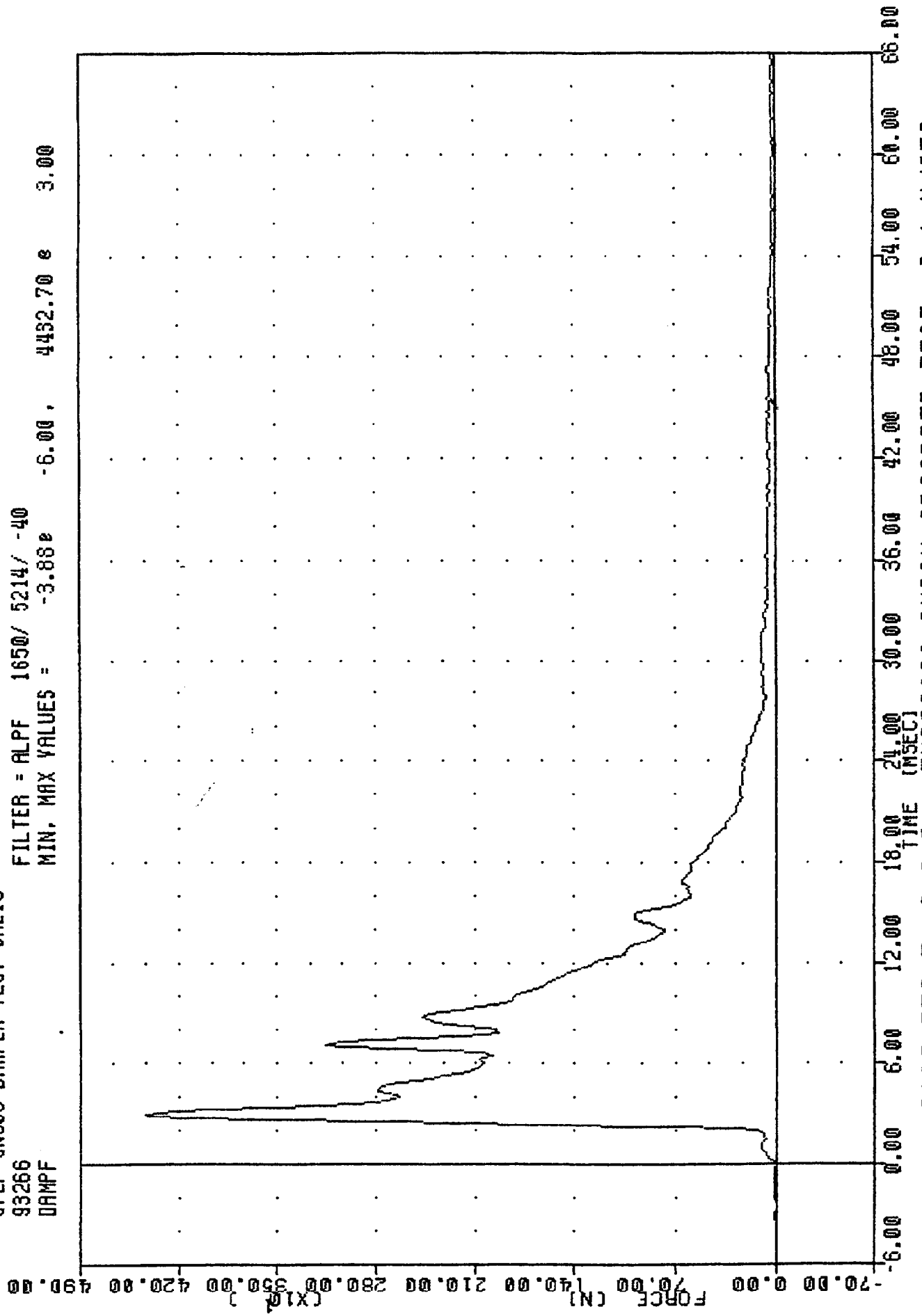


PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 4.3 M/SEC

TRC , DP90315C
 572F SN903 DAMPER TEST CAL15
 93266
 DAMPF

FILTER = ALPF 1650/ 5214/ -40
 MIN, MAX VALUES = -3.88e

-6.00, 4432.70 e 3.00



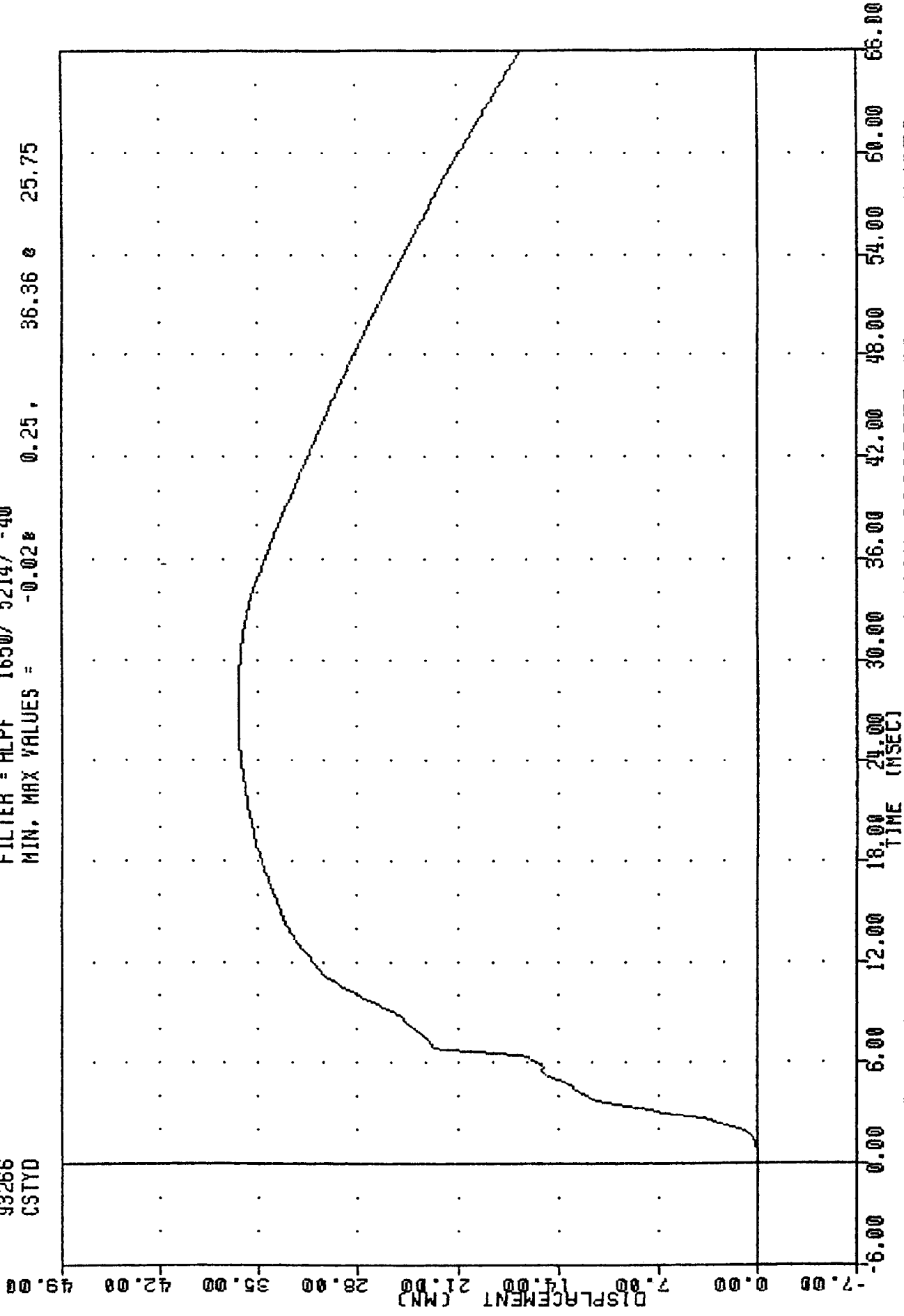
PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 6.1 M/SEC

TRC .DP90315C
572F SN903 DAMPER TEST CAL15

93266
CSTYD

FILTER = ALPF 1650/ 5214/ -40
MIN, MAX VALUES = -0.028

0.25, 36.36 25.75



PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 6.1 M/SEC

TRANSPORTATION RESEARCH CENTER INC.

ABDOMEN COMPRESSION TEST

PART 572B

02-SEP-93

TRC

AB90312

572B SN 903 ABDOM COMPR CAL 12

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	59 %
FORCE AT 0.00 MM DISP.	44.48 N	44.48 N
FORCE AT 12.7 MM DISP.	102.30 - 160.13 N	133.57 N
FORCE AT 19.1 MM DISP.	160.13 - 222.40 N	190.24 N
FORCE AT 25.4 MM DISP.	222.40 - 280.22 N	259.42 N
FORCE AT 33.0 MM DISP.	324.70 - 391.42 N	369.65 N

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Pete Ford

TBC
ABXD
ABXF

AB90312
FILTER = ALPF
FILTER = ALPF

572B SN 903 ABDOM COMP CAL 12 93245
1650/ 5214/ -40 MIN, MAX =
1650/ 5214/ -40 MIN, MAX =

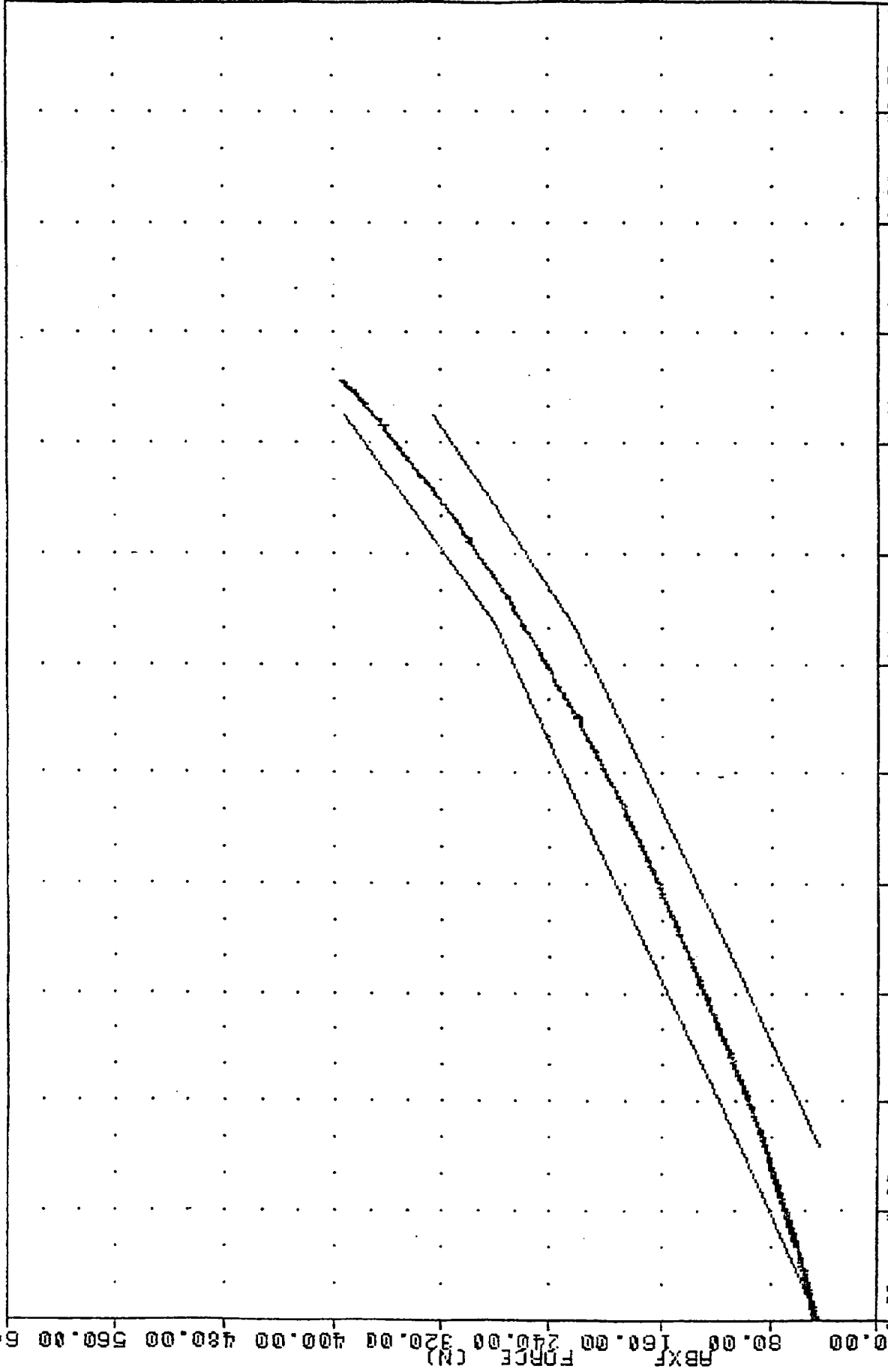
0.00
0.00
43.67

34.29
394.27

394.07
34.28

0.00 4.00 8.00 12.00 16.00 20.00 24.00 28.00 32.00 36.00 40.00 44.00 48.00

0.00 80.00 160.00 240.00 320.00 400.00 480.00 560.00 640.00



ABXD
ABXF
PART 572-B HYBRID II ABDOMEN CALIBRATION

TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

PART 572B

03-SEP-93

TRC

LF90312

572F SN903 LUMBAR FLEX CAL12

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	59 %
FORCE AT 0 DEG FLEXION	-26.69 - +26.69 N	0.00 N
FORCE AT 20 DEG FLEXION	97.86 - 151.24 N	142.34 N
FORCE AT 30 DEG FLEXION	151.24 - 204.62 N	195.71 N
FORCE AT 40 DEG FLEXION	204.62 - 258.00 N	240.19 N
NET RETURN ANGLE	< 12 DEG	7.94 DEG

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Pete Font

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

24-Sep-93

LEFT SIDE CONFIGURATION

TRC

ST90315

572F SN903 THORAX IMPACT CAL15

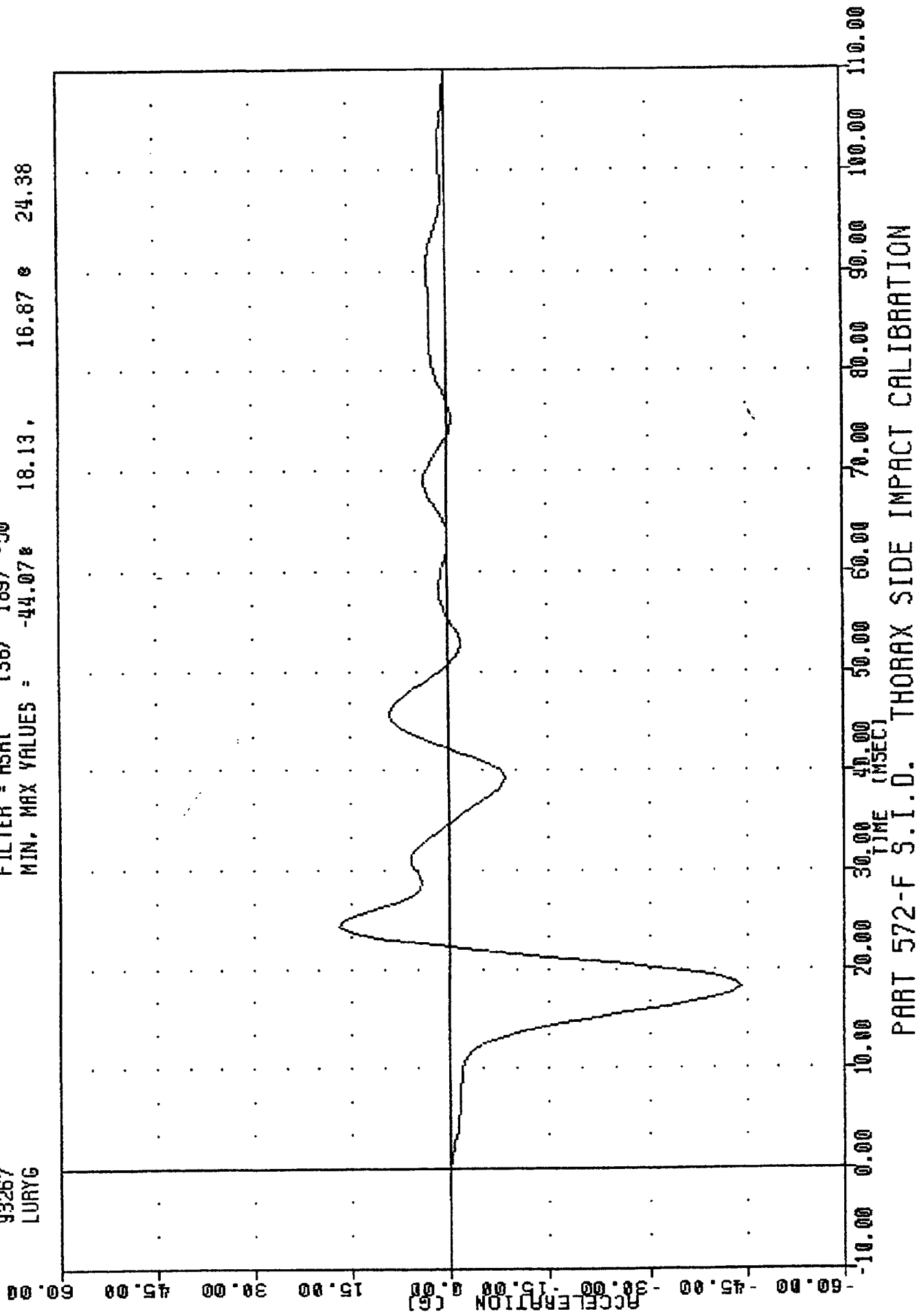
TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.6 DEG. C
RELATIVE HUMIDITY	10 - 70 %	52.0 %
PISTON VELOCITY	4.21 - 4.32 M/SEC	4.22 M/SEC
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	-44.1 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	-42.5 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	-18.7 G

TEST MEETS SPECIFICATIONS

TECHNICIAN Pete Ford

TRC , S190315
572F SN503 THORAX IMPACT CAL15
93267
LURYC

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -44.07 18.13, 16.87 24.38

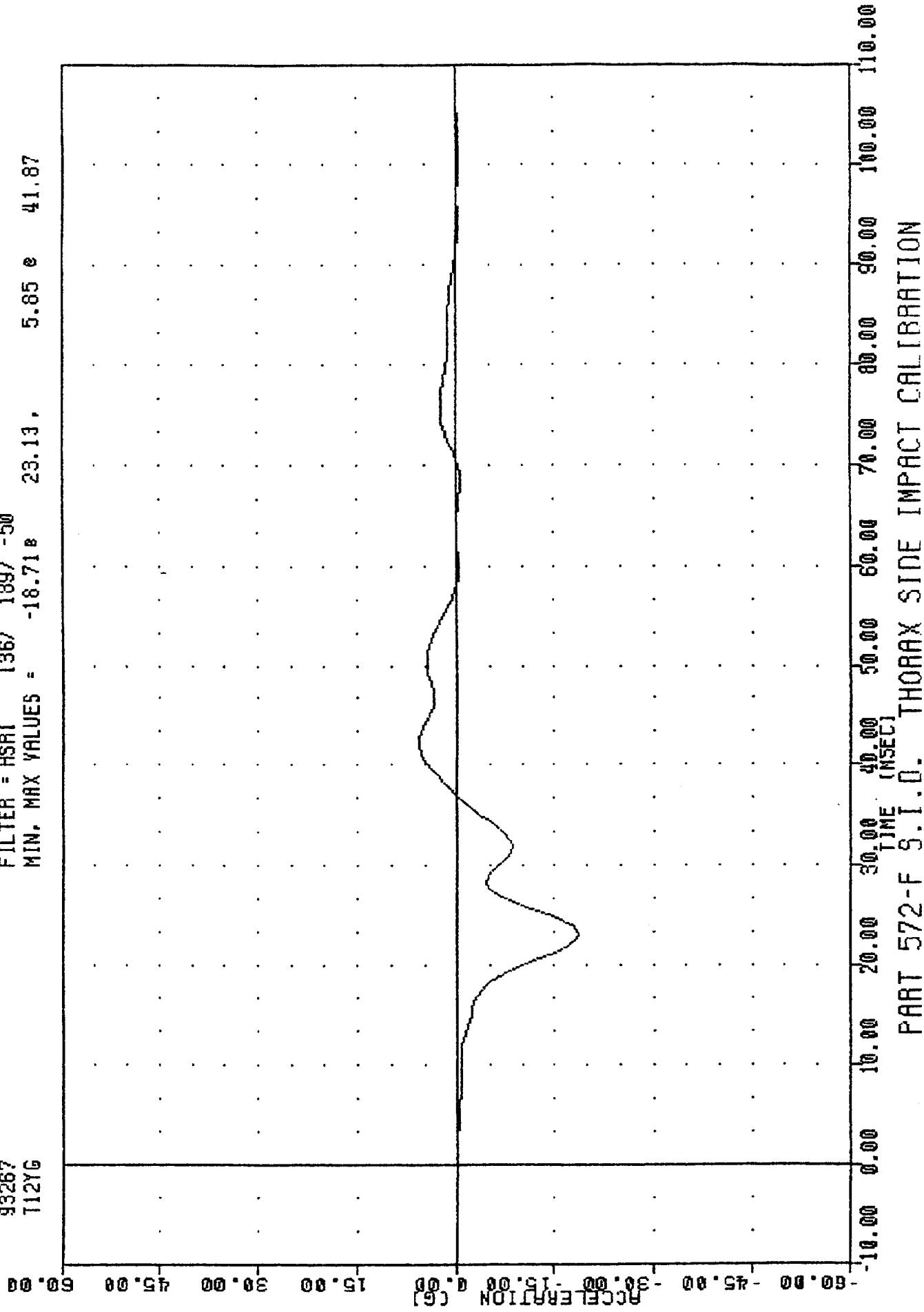


TRC , S190315
572F SN903 THORAX IMPACT CAL15

93267 FILTER = HSRI 136/ 189/ -50

T12YG

MIN. MAX VALUES = -18.71e 23.13, 5.85 e 41.87



TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

24-Sep-93

LEFT SIDE CONFIGURATION

TRC

SP90315

572F SN903 PELVIS IMPACT CAL15

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.6 DEG. C
RELATIVE HUMIDITY	10 - 70 %	52.0 %
PISTON VELOCITY	4.21 - 4.32 M/SEC	4.29 M/SEC
PEAK PELVIC ACCELERATION	40 - 60 G	-47.9 G
TIME ABOVE 20 G LEVEL	3 - 7 MSEC	5.6 MSEC
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

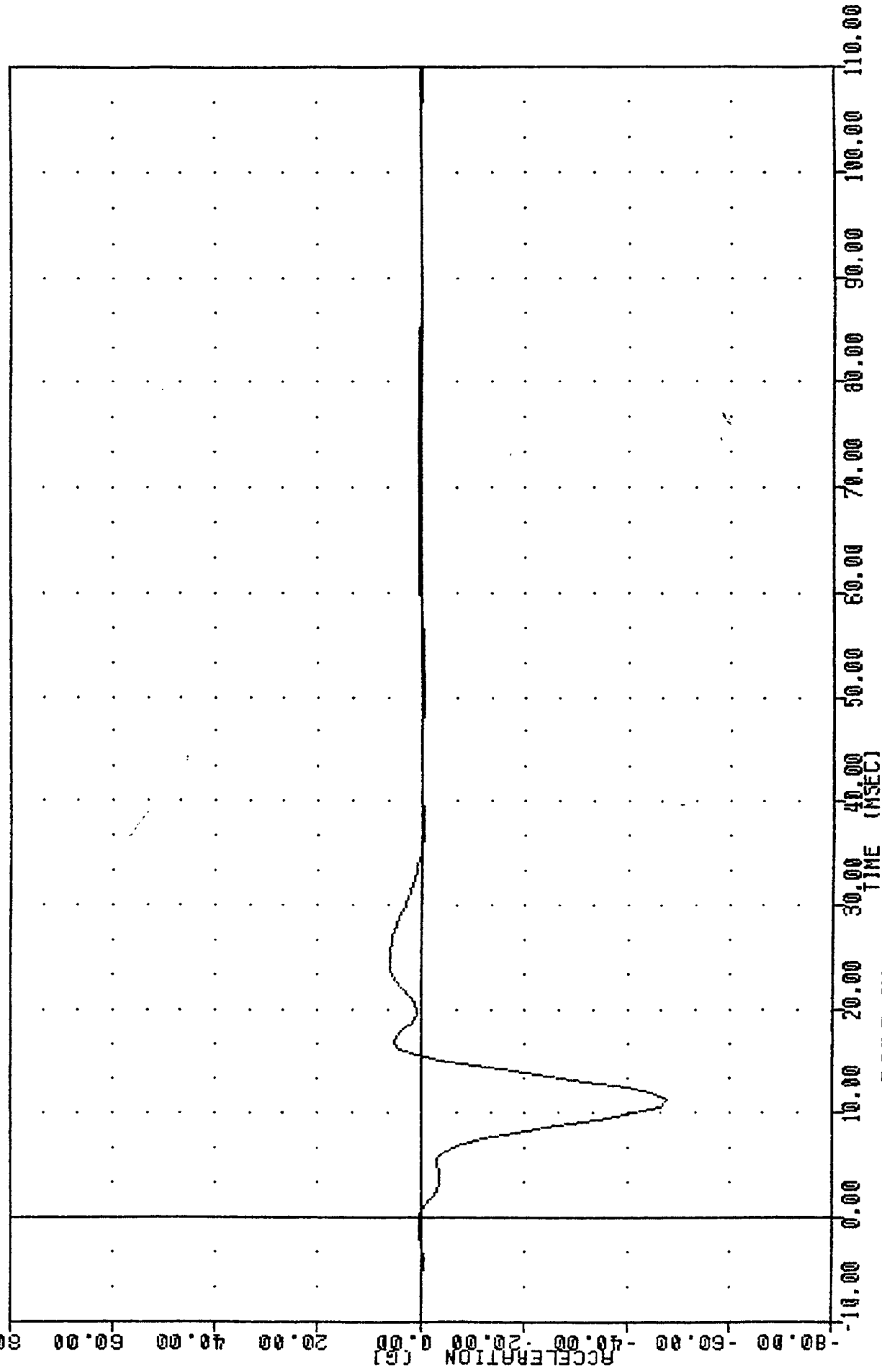
TECHNICIAN Pete Font

TRC
572F SN503 PELVIS IMPACT CAL15

93267
PEVYG

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -47.95 11.25

6.15 24.38



PART 572-F S.I.D. PELVIS SIDE IMPACT CALIBRATION

PRE-TEST CALIBRATION

PASSENGER DUMMY S/N 906

TRANSPORTATION RESEARCH CENTER INC.
SIDE IMPACT DUMMY
EXTERNAL DIMENSIONS
LEFT SIDE CONFIGURATION

23-SEP-93

SN 906 FIRST TECH

TRC

ED90603

572F SN906 EXT.DIMENSION CAL03

=====			
DIMENSIONS WITH CHEST JACKET INSTALLED			
SYMB	DESCRIPTION	SPECIFICATION	TEST RESULTS
=====			
	TEMPERATURE		21.1 DEG. C

	RELATIVE HUMIDITY		52.0 %

SH	SEATED HEIGHT	889 - 909 MM	894.1 MM

HP	HIP PIVOT HEIGHT	99 MM REF.	94.0 MM

KH	KNEE PIVOT FROM BACKLINE	511 - 526 MM	525.8 MM

KV	KNEE PIVOT FROM FLOOR	490 - 506 MM	490.2 MM

HW	HIP WIDTH	356 - 391 MM	370.8 MM

=====			
DIMENSIONS WITH CHEST JACKET REMOVED			
SYMB	DESCRIPTION	SPECIFICATION	TEST RESULTS
=====			
RH	RIB HEIGHT	501 - 520 MM	508.0 MM

RD	RIB FROM BACKLINE	229 - 241 MM	236.2 MM

IRW-1	TOP RIB WIDTH FROM C/L	165. - 180 MM	168.9 MM

IRW-2	BOTTOM RIB WIDTH FROM C/L	165 - 180 MM	168.9 MM

	DIFFERENCE BETWEEN TOP & BOTTOM RIB WIDTH FROM C/L	≤ 2.5 MM	0.0 MM

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Lita Foust

TRANSPORTATION RESEARCH CENTER INC.

NECK PENDULUM TEST

PART 572B

10-SEP-93

TRC HN90602B 572B SN 906 HEAD/NECK CAL 02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	50 %
PENDULUM VELOCITY	6.55 TO 7.77 M/SEC	7.17 M/SEC
PENDULUM DECELERATION:		
T1 - T2 TIME (5 - 20 G)	3 MS MAX	2.62 MS
T2 - T3 TIME (20 - 20 G)	25 - 30 MS	27.05 MS
T3 - T4 TIME (20 - 5 G)	10 MS MAX	7.64 MS
AVG. G LEVEL T2 - T3	20 - 24 G	21.27 G
MAXIMUM ROTATION ANGLE	63 - 73 DEG	62.52 DEG **
PEAK HEAD RESULTANT ACCEL	26 G MAX	25.98 G

TEST PARAMETER	SPECIFICATION	TEST RESULTS
ROTATION ANGLE	TIME	CHORDAL DISP.
(DEGREES)	(MS)	(MM)
0	-2.0 - +2.0	-12.7 - +12.7
30	25.6 - 34.4	53.3 - 78.7
60	40.3 - 51.7	109.2 - 134.6
MAX	53.2 - 66.8	127.0 - 152.4
60	67.0 - 83.0	109.2 - 134.6
30	85.4 - 104.6	53.3 - 78.7
0	101.0 - 123.0	-12.7 - +12.7

SND: 151.13 MM

* DUMMY DOES NOT MEET SPECIFICATIONS

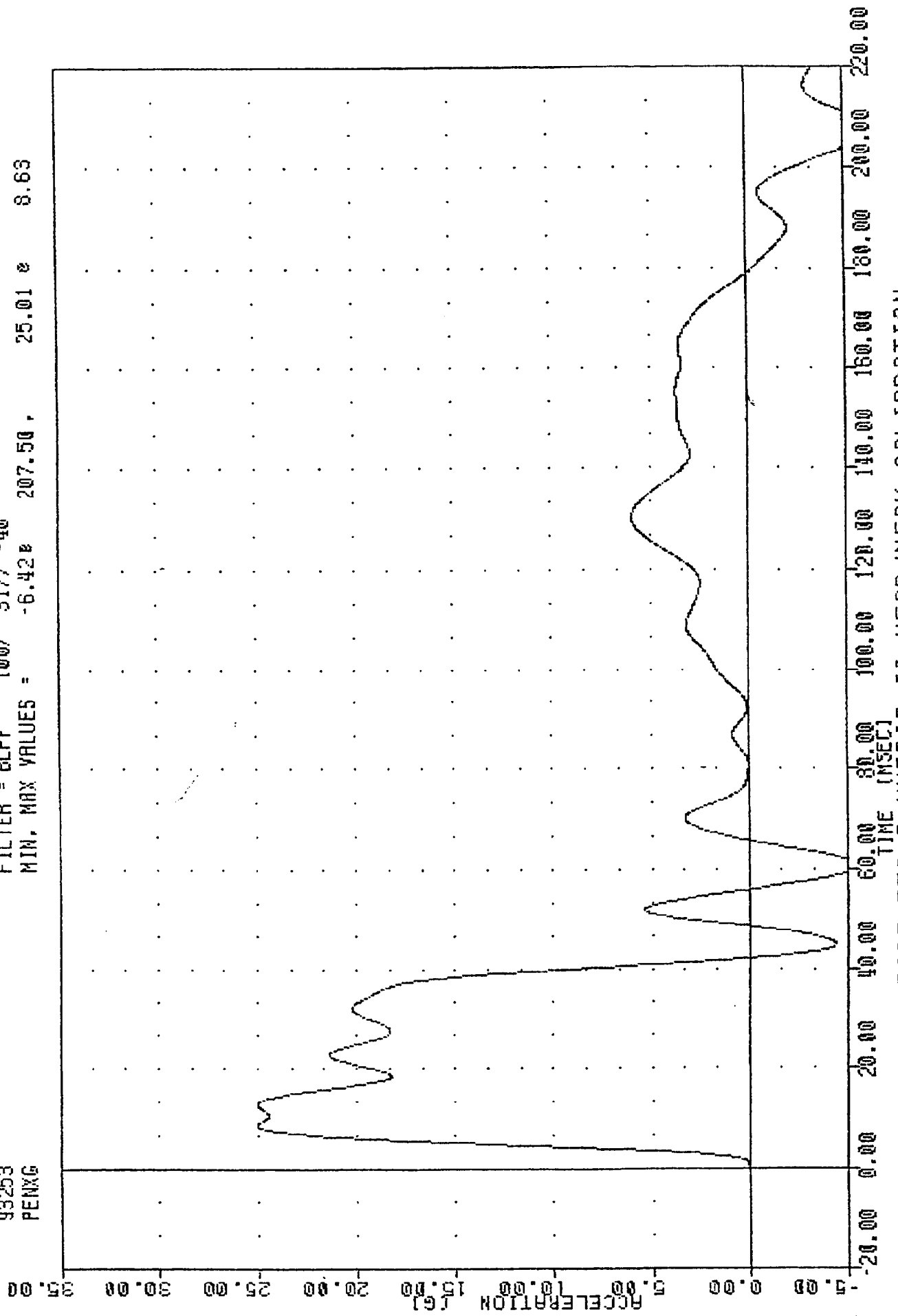
TECHNICIAN

Pete Ford

TRC
572B SN 906 HEAD/NECK CAL 02
93253
PENXG

, HW90602B

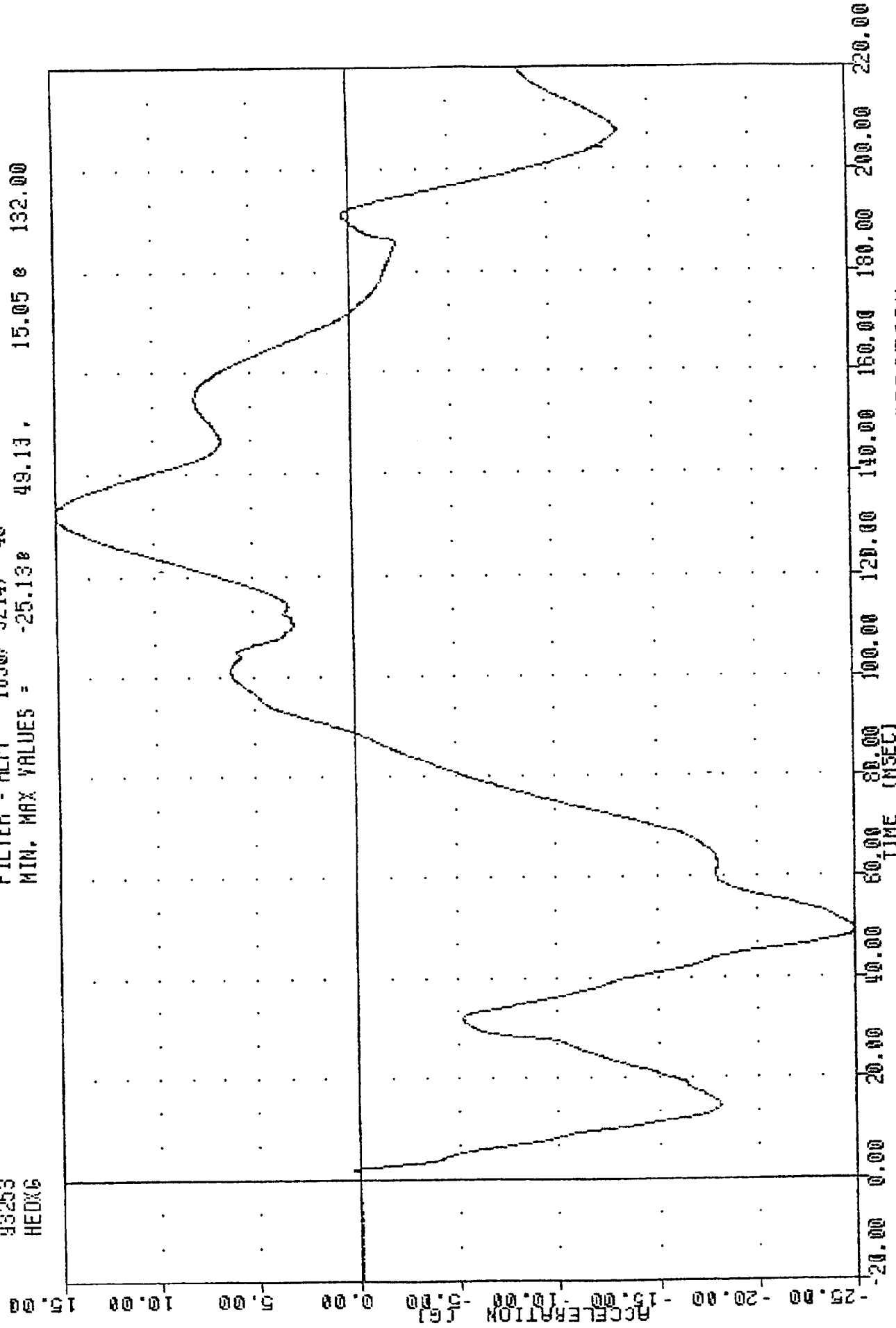
FILTER = BLPF 100/ 317/ -40
MIN. MAX VALUES = -6.42e 207.50 , 25.01 e 8.63



PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC
572B SN 906 HEAD/NECK CRL 02
93253
HEDXG

FILTER = ALPF 1650/ 5214/ -40
MIN. MAX VALUES = -25.13 49.13, 15.05 132.00

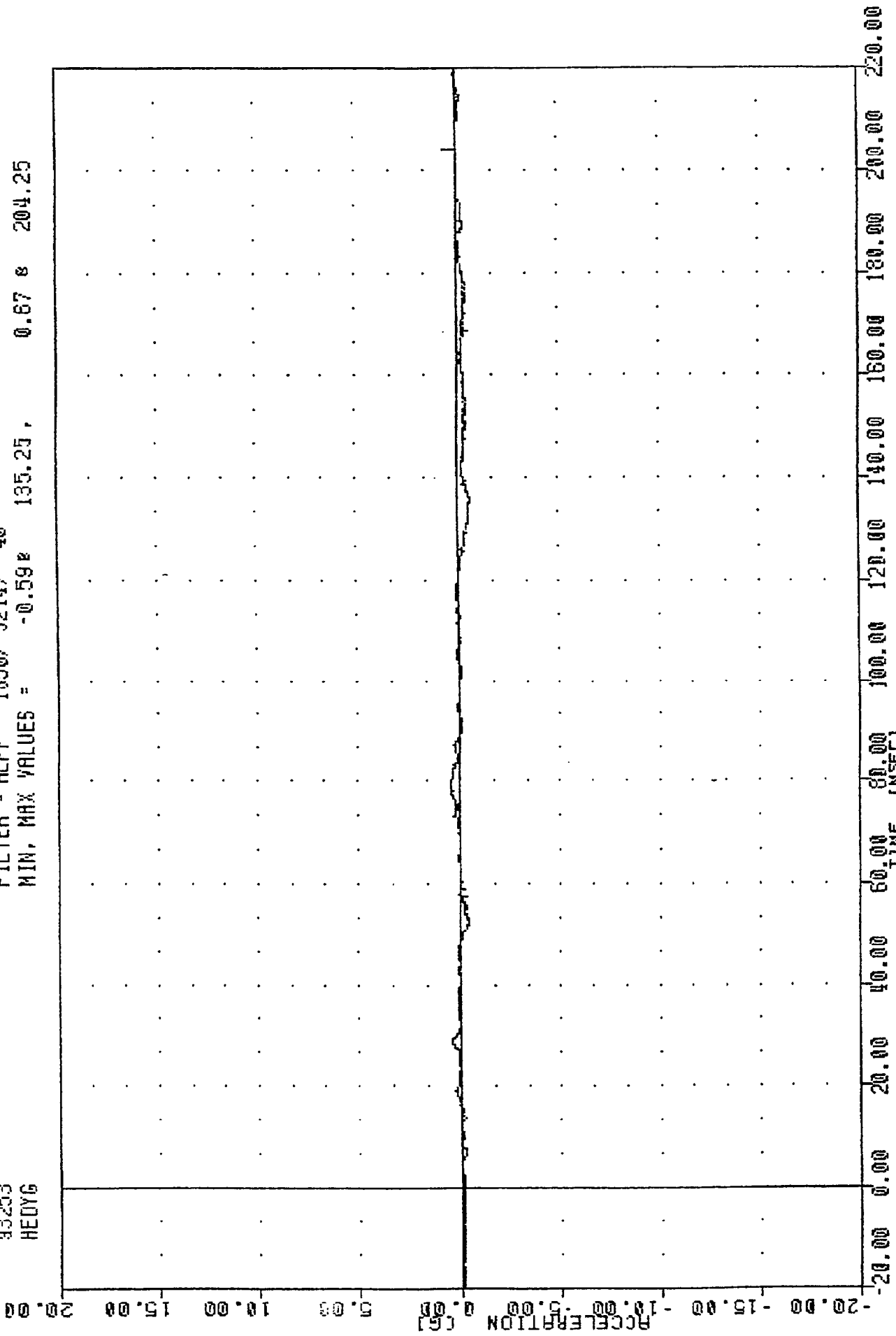


PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC
572B SN 906 HEAD/NECK CRL 02
93253
HEDYG

, HN30602B

FILTER = ALPF 1650/ 5214/ -40
MIN, MAX VALUES = -0.59% 135.25, 0.67 % 204.25



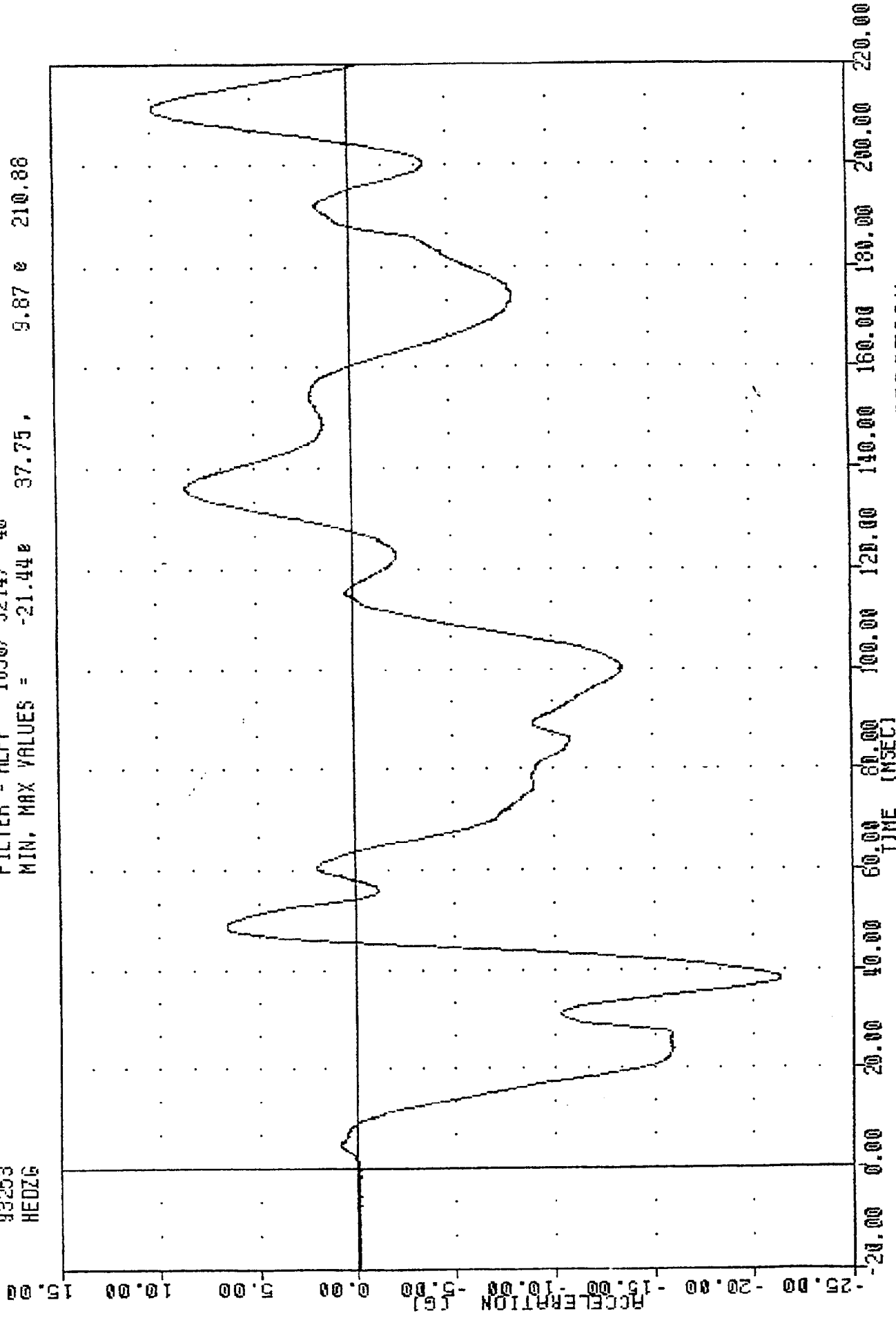
PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC
572B SN 906 HEAD/NECK CAL 02
93253
HEADG

, HN90602B

FILTER = ALPF 1650/ 5214/ -40

MIN, MAX VALUES = -21.44e 37.75, 9.87 e 210.88



PART 572-B HYBRID II HEAD/NECK CALIBRATION

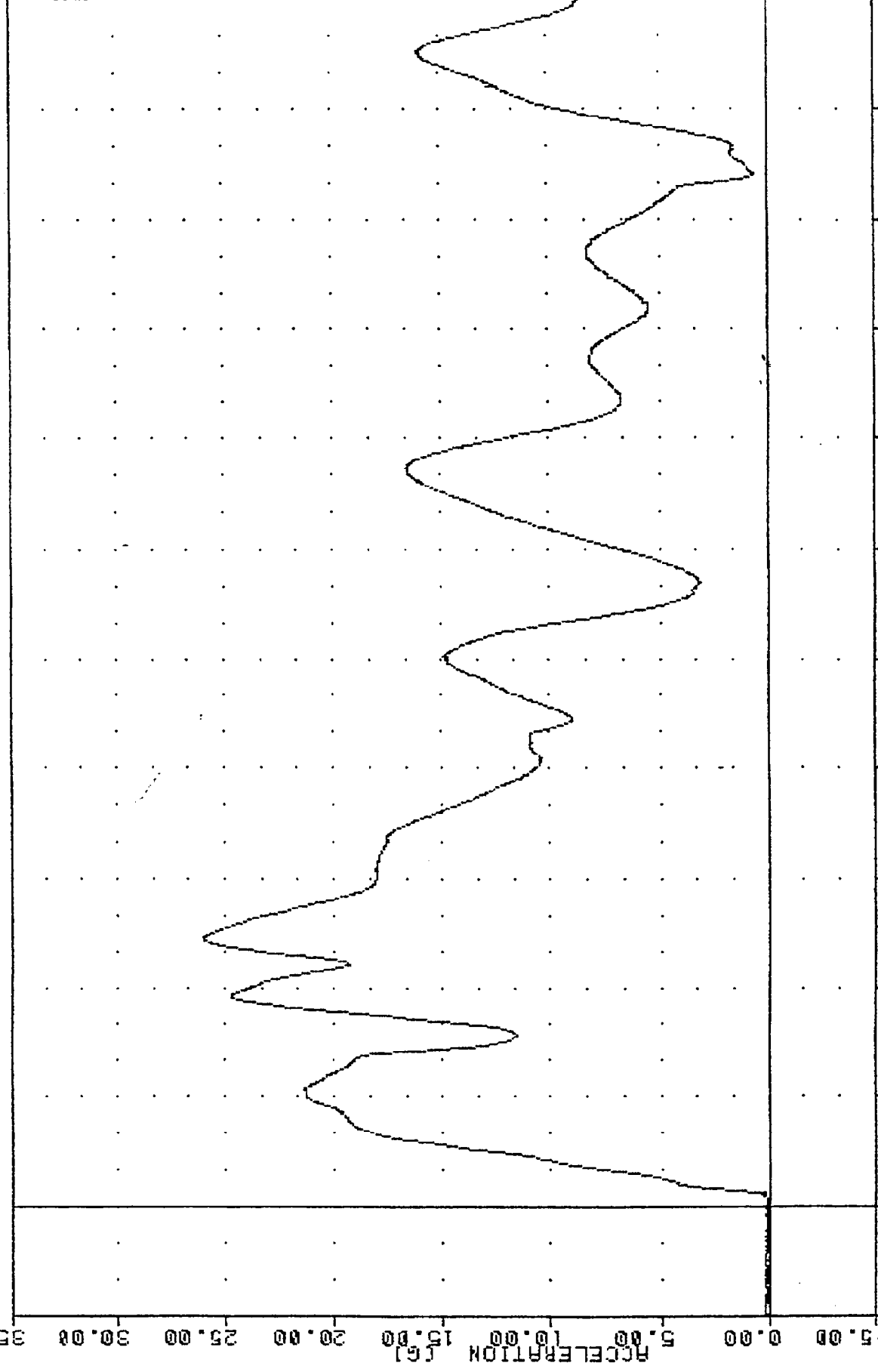
TRC
572B SN 906 HEAD/NECK CAL 02
93253
HEADRG

HK90602B

FILTER = ALPF 1650/ 5214/ -40
MIN, MAX VALUES = 0.08e

1.50, 25.98 e 49.13

35.00

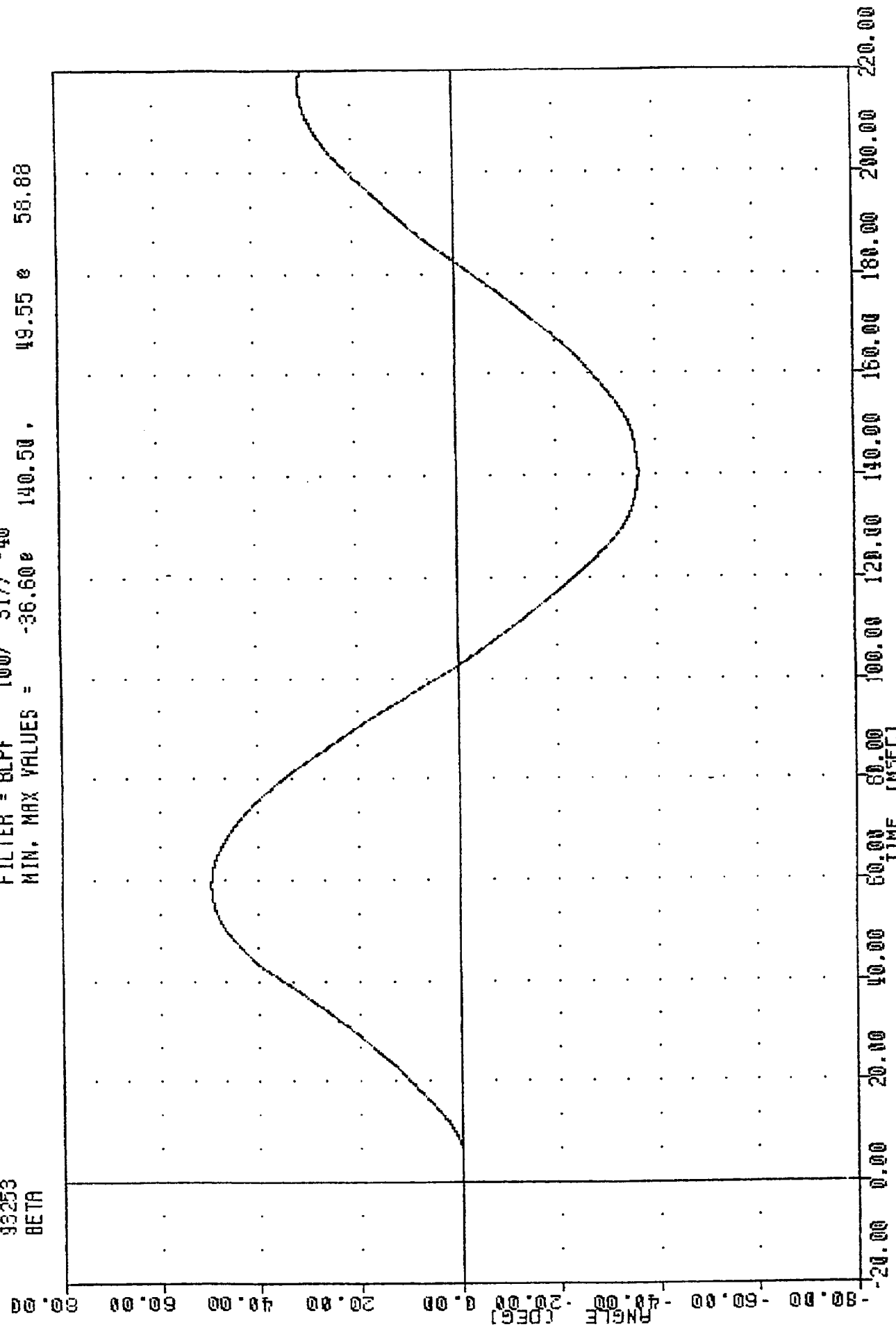


-5.00 0.00 5.00 10.00 15.00 20.00 25.00 30.00 35.00

PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC , HN90602B
 572B SN 906 HEAD/NECK CAL 02
 93253
 BETA

FILTER = BLPF 100/ 317/ -40
 MIN. MAX VALUES = -36.60e 140.50 , 49.55 e 58.88



PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC , HH90602B

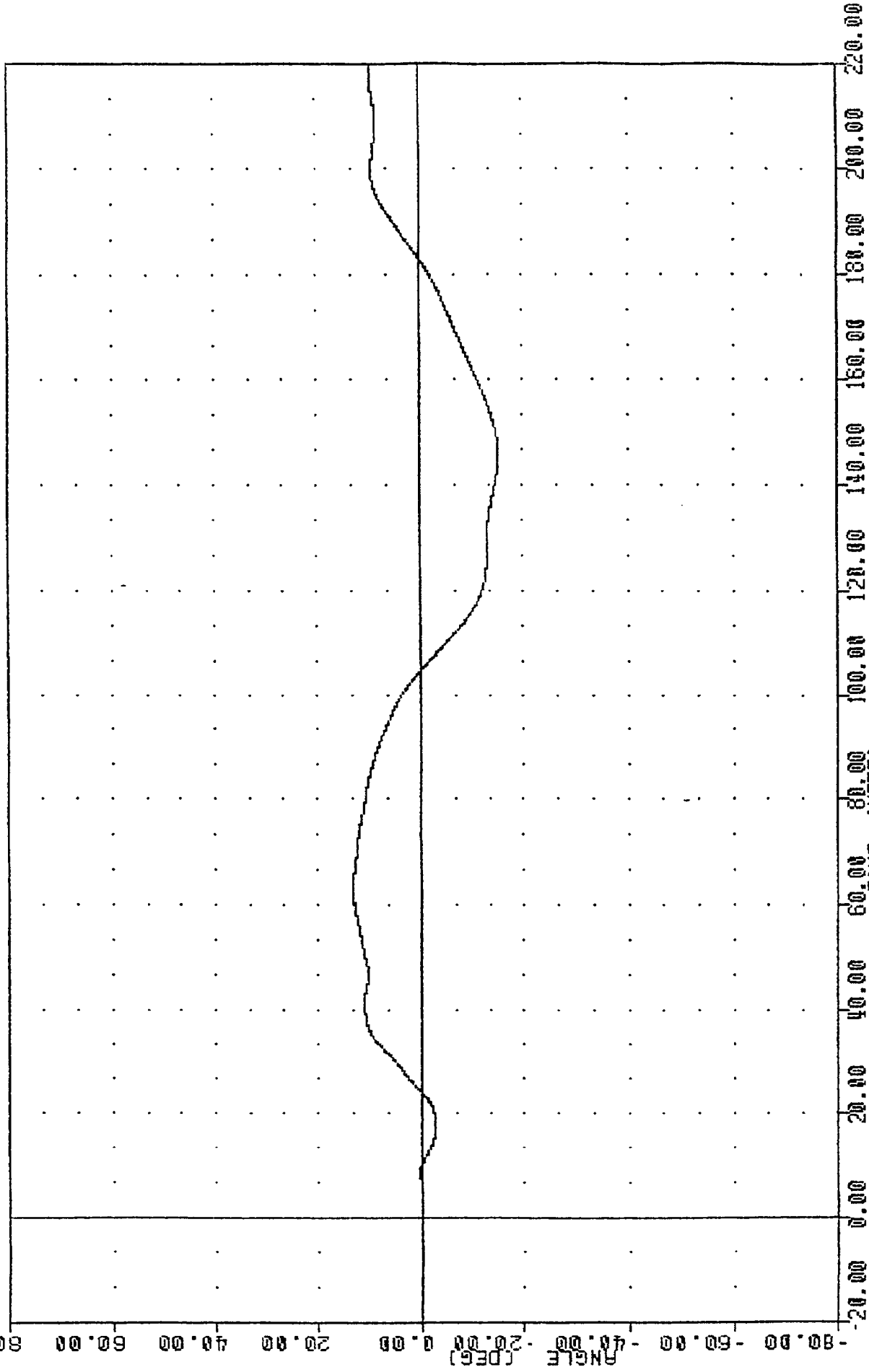
5720 SN 906 HEAD/NECK CAL Q2

93253

THETA

FILTER = BLPF 100/ 317/ -40

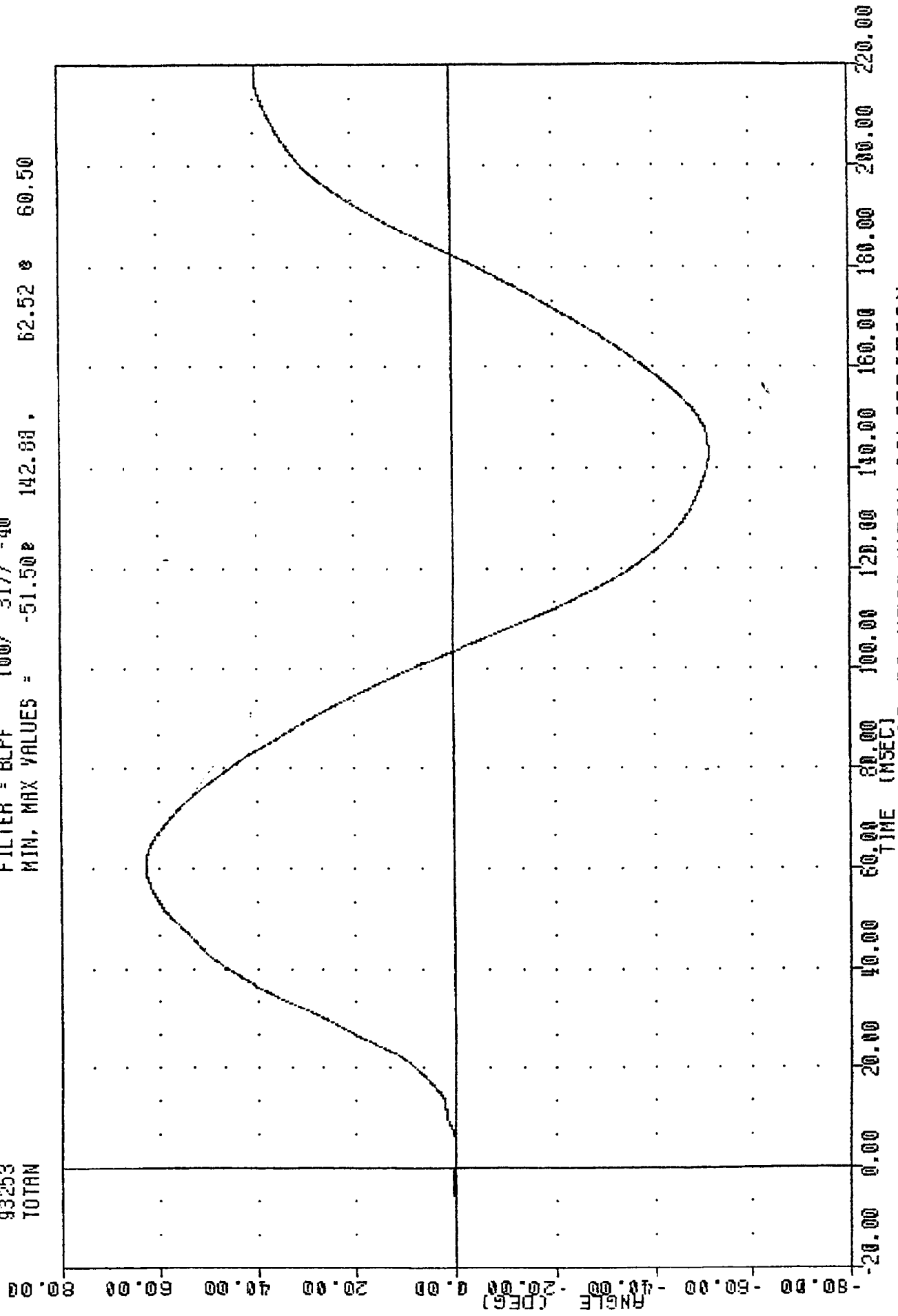
MIN, MAX VALUES = -15.37° 145.75, 13.23 & 63.00



PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC , HM90602B
 572B SN 906 HEAD/NECK CAL 02
 93253
 TOTAL

FILTER = BLPF 100/ 317/ -40
 MIN, MAX VALUES = -51.50e 142.88 , 62.52 e 60.50

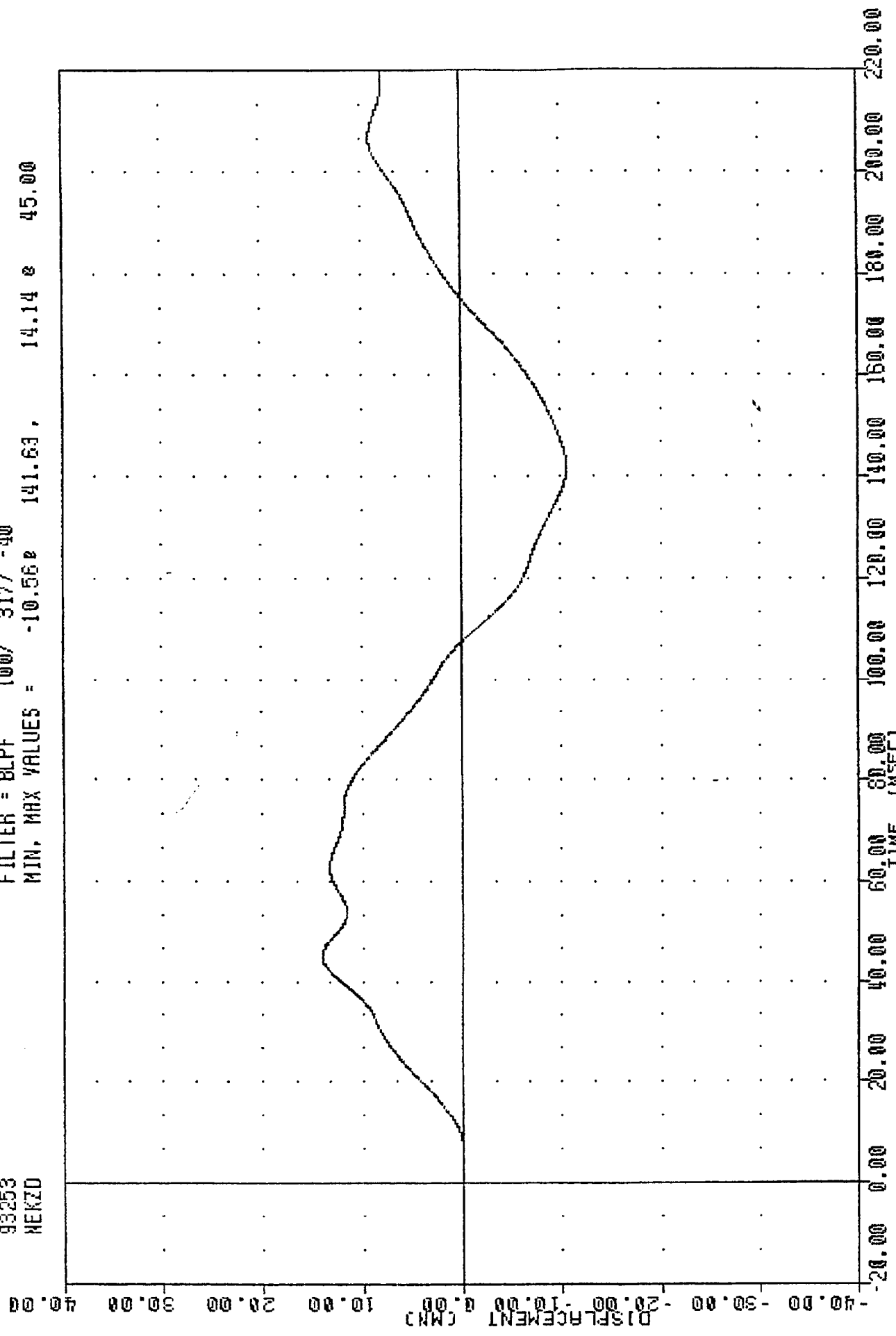


PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC
 572B SN 906 HEAD/NECK CAL 02
 93253
 NEKZD

, HM90602B

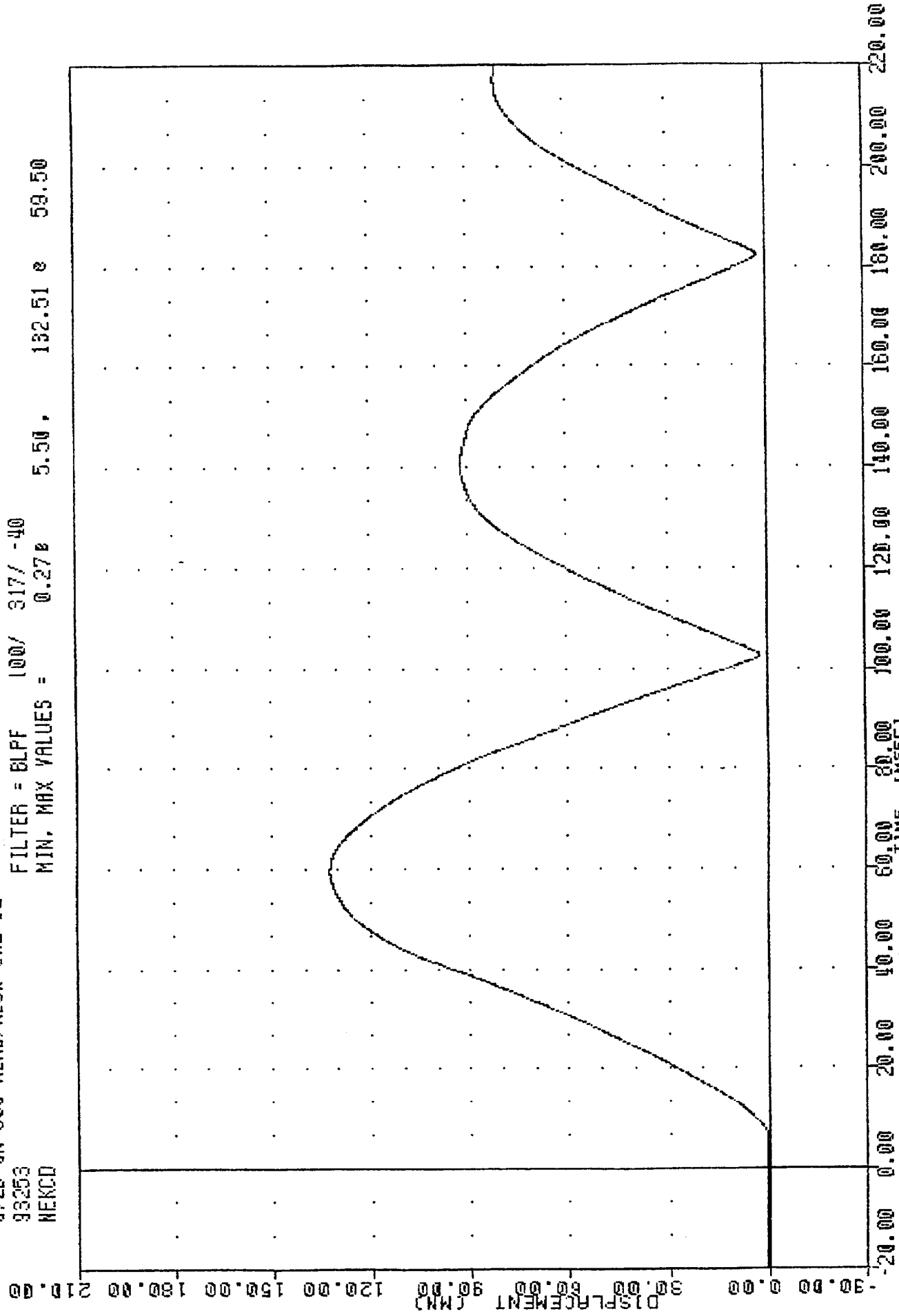
FILTER = BLPF 100/ 317/ -40
 MIN, MAX VALUES = -10.562 141.63, 14.14 e 45.00



PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRC , HN305026
 572B SN 906 HEAD/NECK CAL 02
 93253
 NEKCD

FILTER = BLPF 100/ 317/ -40
 MIN, MAX VALUES = 5.50 , 132.51 e 59.50



PART 572-B HYBRID II HEAD/NECK CALIBRATION

TRANSPORTATION RESEARCH CENTER INC.

THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

24-Sep-93

TRC

572F SN906 DAMPER TEST CAL03

TEST NOS. DP90603A,DP90603B,DP90603C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	64.0 %
VELOCITY	FORCE	856 - 1146 N	986 N
3.08 M/S	DISPLACEMENT	31.2 - 35.2 MM	33.4 MM
VELOCITY	FORCE	1759 - 2131 N	1878 N
4.30 M/S	DISPLACEMENT	32.8 - 37.3 MM	35.8 MM
VELOCITY	FORCE	3824 - 4542 N	4375 N
6.15 M/S	DISPLACEMENT	34.5 - 39.6 MM	37.6 MM

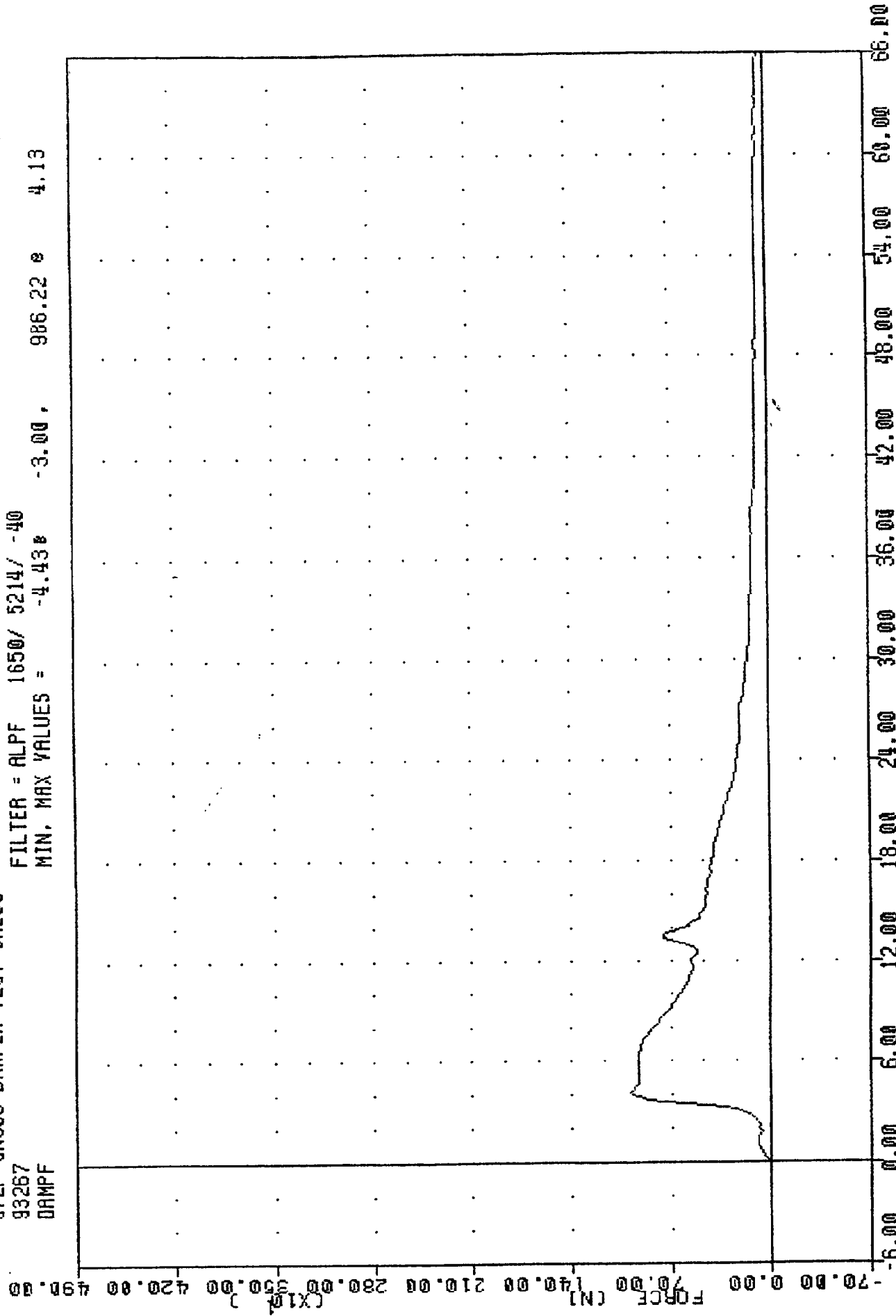
DAMPER SETTING = 9.0

TEST MEETS SPECIFICATIONS

TECHNICIAN Pete Foster

TRC , DP90603A
 572F SN906 DAMPER TEST CAL03
 93267
 DAMPF

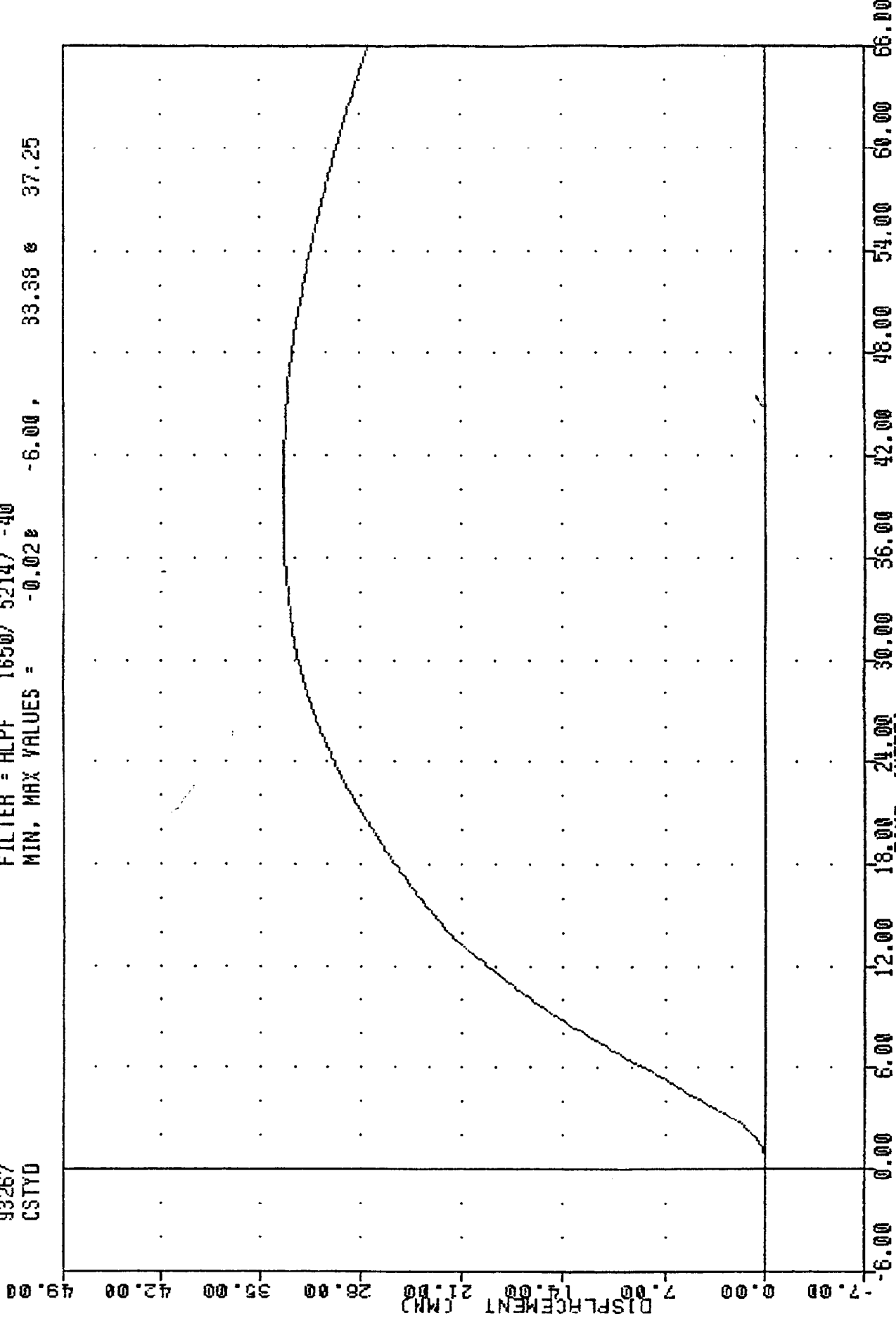
FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = -4.43e -3.00, 986.22 e 4.13



PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 3.0 M/SEC

TRC
 572F 3N506 DAMPER TEST CAL03
 93267
 CSTYD

FILTER = ALPF 1650/ 5214/ -40
 MIN, MAX VALUES = -0.02e -6.00, 33.38 e 37.25

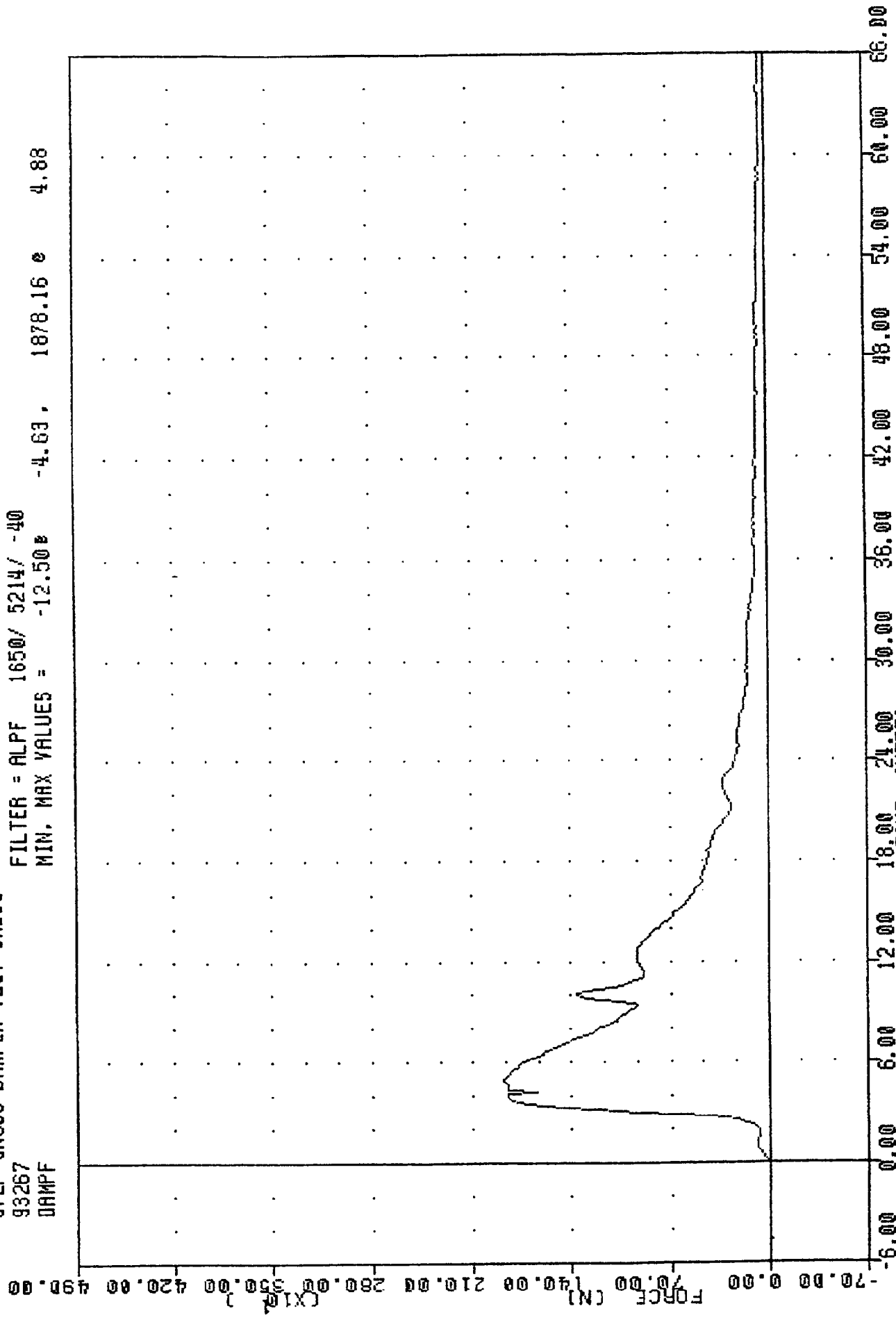


PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 3.0 M/SEC

TRC , DP90503B
 572F SN906 DAMPER TEST CAL03
 93267
 DAMPF

FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = -12.50 4.88

-4.63, 1878.16 4.88

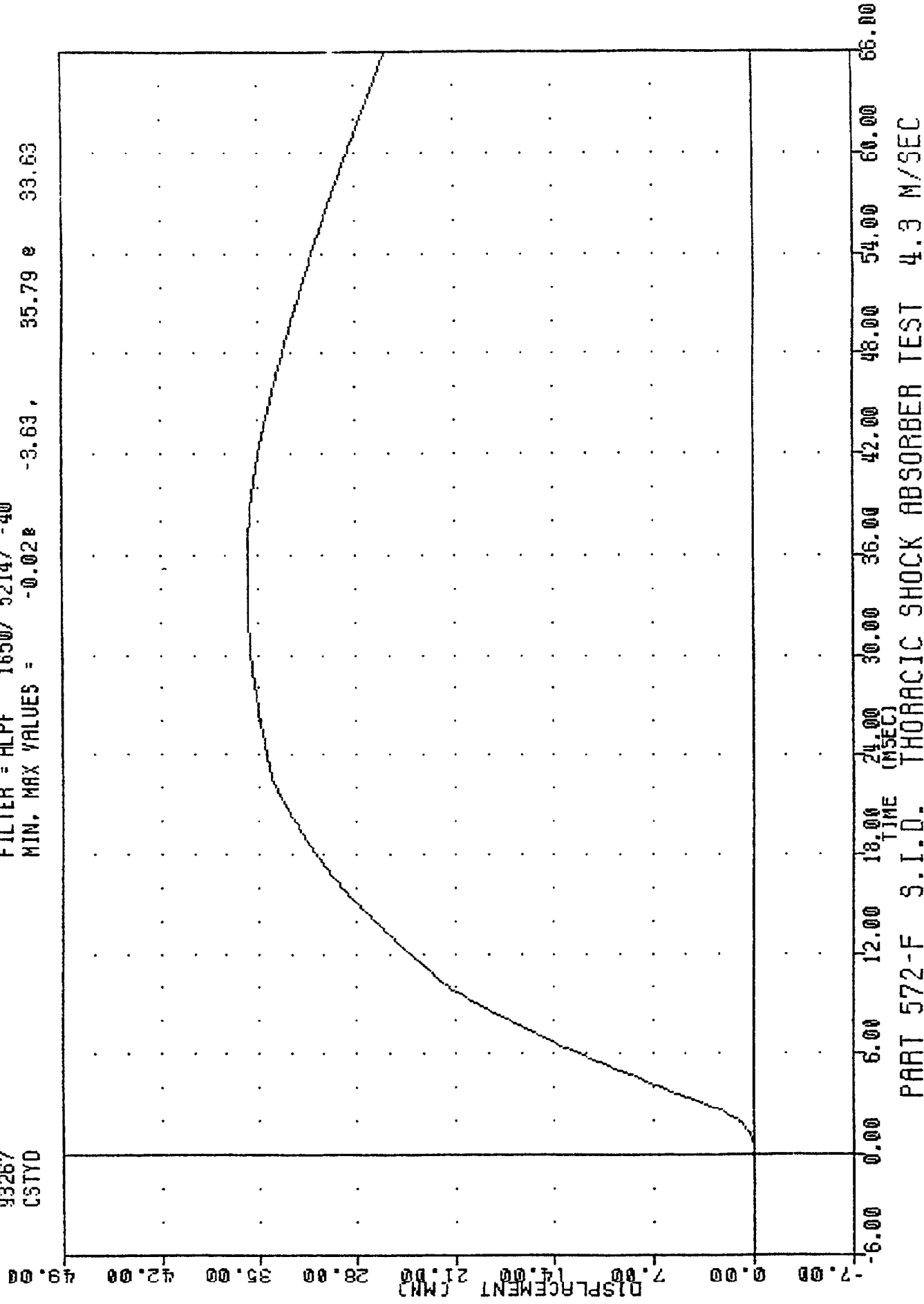


PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 4.3 M/SEC

TRC , DP906038
 572F SNG06 DAMPER TEST CAL03
 93267
 CSTYD

FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = -0.02e

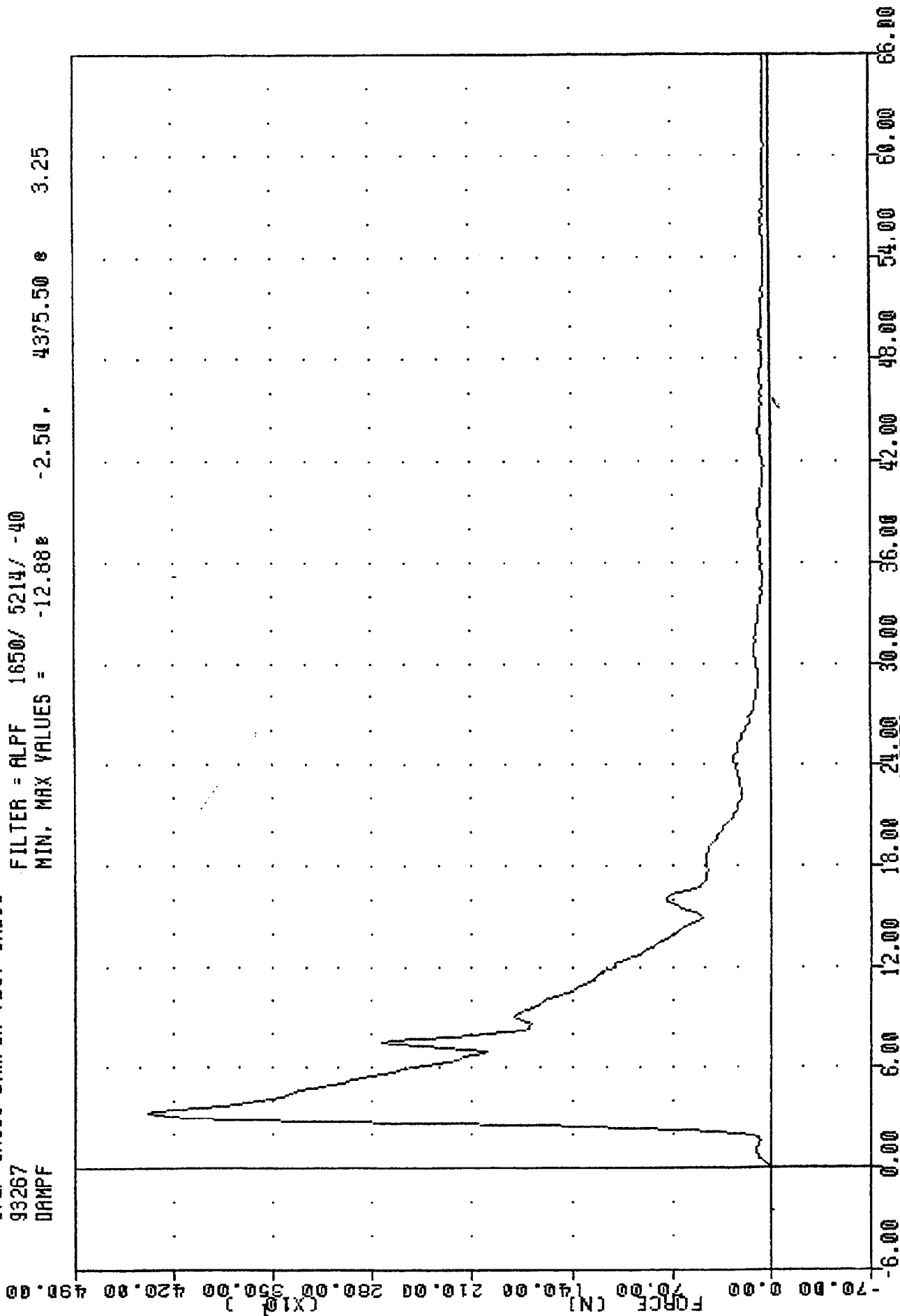
-3.63, 35.79 e 33.63



PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 4.3 M/SEC

TRC , DP90603C
 572F SN906 DAMPER TEST CAL03
 93267
 DAMPF

FILTER = ALPF 1650/ 5214/ -40
 MIN. MAX VALUES = -12.88e -2.50 , 4375.50 e 3.25

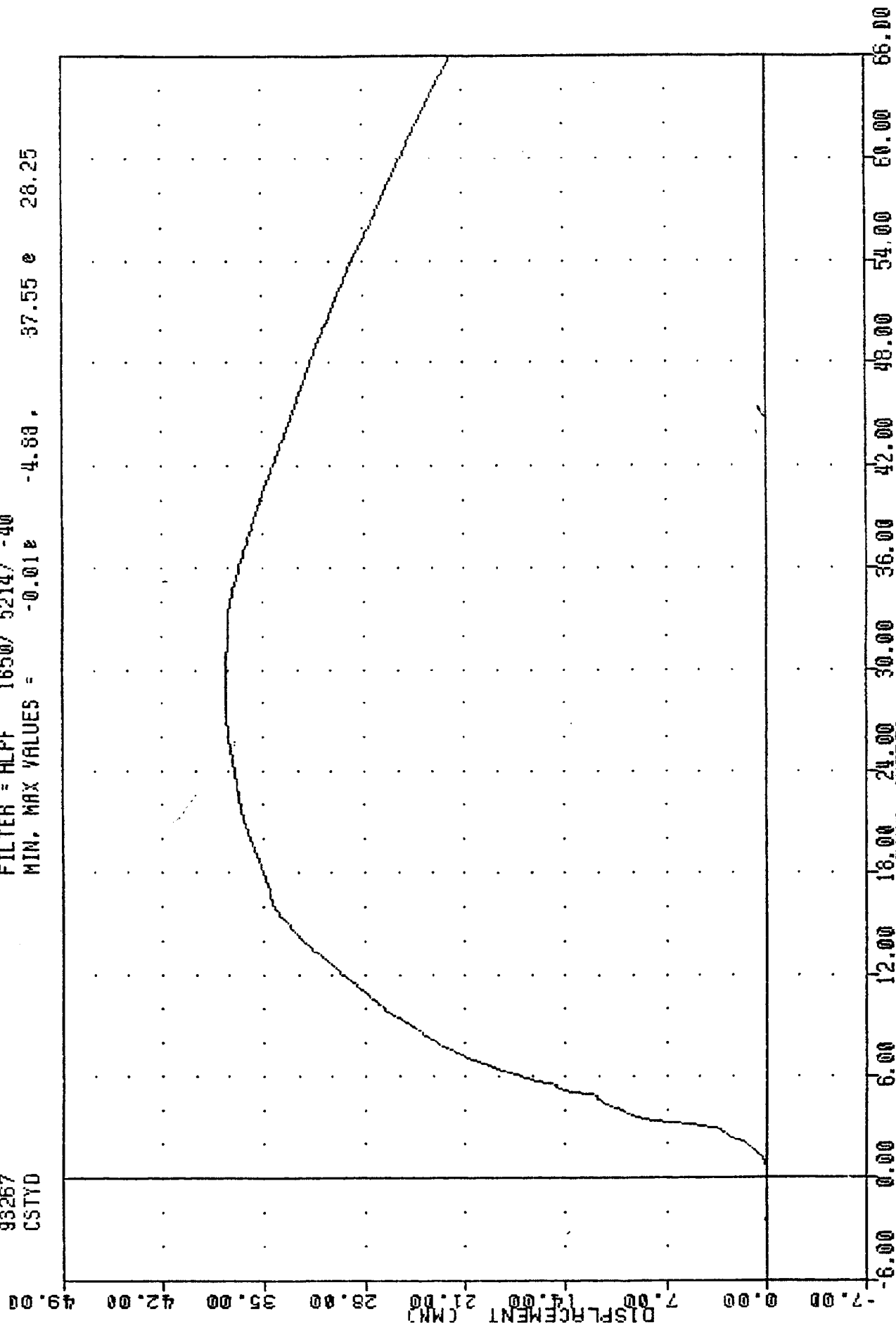


PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 6.1 M/SEC

TRC , DP90503C
 572F SN506 DAMPER TEST CAL03
 93267
 CSTYD

FILTER = ALPF 1650/ 5214/ -40
 MIN, MAX VALUES = -0.01e

-4.88 , 37.55 e 28.25



PART 572-F S.I.D. THORACIC SHOCK ABSORBER TEST 6.1 M/SEC

TRANSPORTATION RESEARCH CENTER INC.

ABDOMEN COMPRESSION TEST

PART 572B

08-SEP-93

TRC

AB90602

572B SN 906 ABDOM COMPR CAL 02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	50 %
FORCE AT 0.00 MM DISP.	44.48 N	44.48 N
FORCE AT 12.7 MM DISP.	102.30 - 160.13 N	136.03 N
FORCE AT 19.1 MM DISP.	160.13 - 222.40 N	198.93 N
FORCE AT 25.4 MM DISP.	222.40 - 280.22 N	262.82 N
FORCE AT 33.0 MM DISP.	324.70 - 391.42 N	341.36 N

DUMMY MEETS SPECIFICATIONS

TECHNICIAN

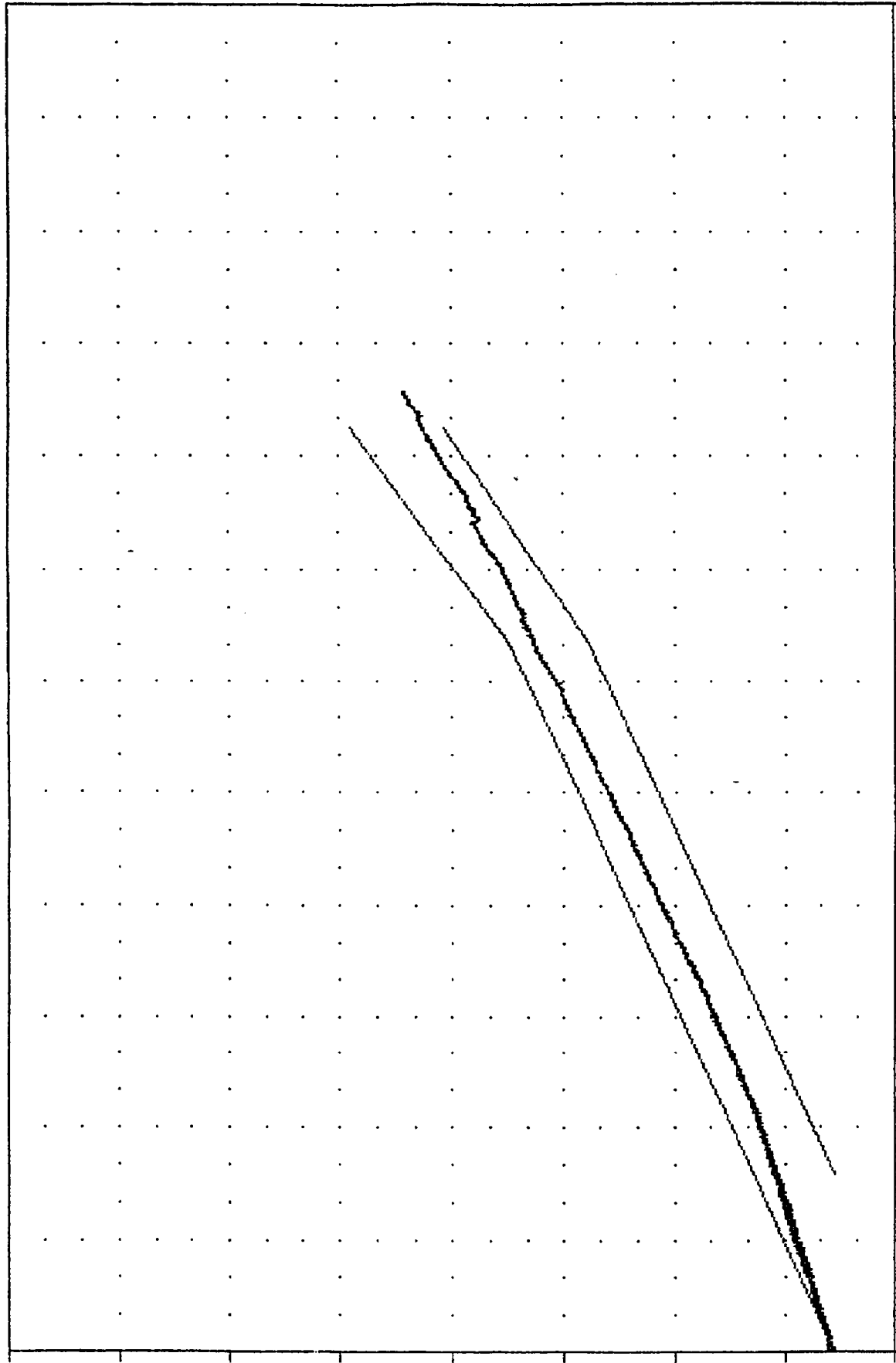
Pete Ford

TBC
ABXD
ABXF

572B SN 906 ABDOM COMP CAL 02 93251
1650/ 5214/ -40 MIN. MAX =
1650/ 5214/ -40 MIN. MAX =

34.30 6
355.04 6
0.00,
0.00,
354.45
34.27

ABXF
FORCE (N)
0.00 80.00 160.00 240.00 320.00 400.00 480.00 560.00 640.00



0.00 4.00 8.00 12.00 16.00 20.00 24.00 28.00 32.00 36.00 40.00 44.00 48.00

ABXD DISPLACEMENT (MM)
PART 572-B HYBRID II ABDOMEN CALIBRATION

TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

PART 572B

09-SEP-93

TRC

LF90602

572F SN906 LUMBAR FLEX CAL02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	48 %
FORCE AT 0 DEG FLEXION	-26.69 - +26.69 N	0.00 N
FORCE AT 20 DEG FLEXION	97.86 - 151.24 N	137.89 N
FORCE AT 30 DEG FLEXION	151.24 - 204.62 N	160.13 N
FORCE AT 40 DEG FLEXION	204.62 - 258.00 N	209.06 N
NET RETURN ANGLE	< 12 DEG	5.19 DEG

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Pete Font

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

27-Sep-93

LEFT SIDE CONFIGURATION

TRC

ST90603A

572F SN906 THORAX IMPACT CAL03

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	52.0 %
PISTON VELOCITY	4.21 - 4.32 M/SEC	4.22 M/SEC
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	-40.0 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	-39.2 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	-17.6 G

TEST MEETS SPECIFICATIONS

TECHNICIAN

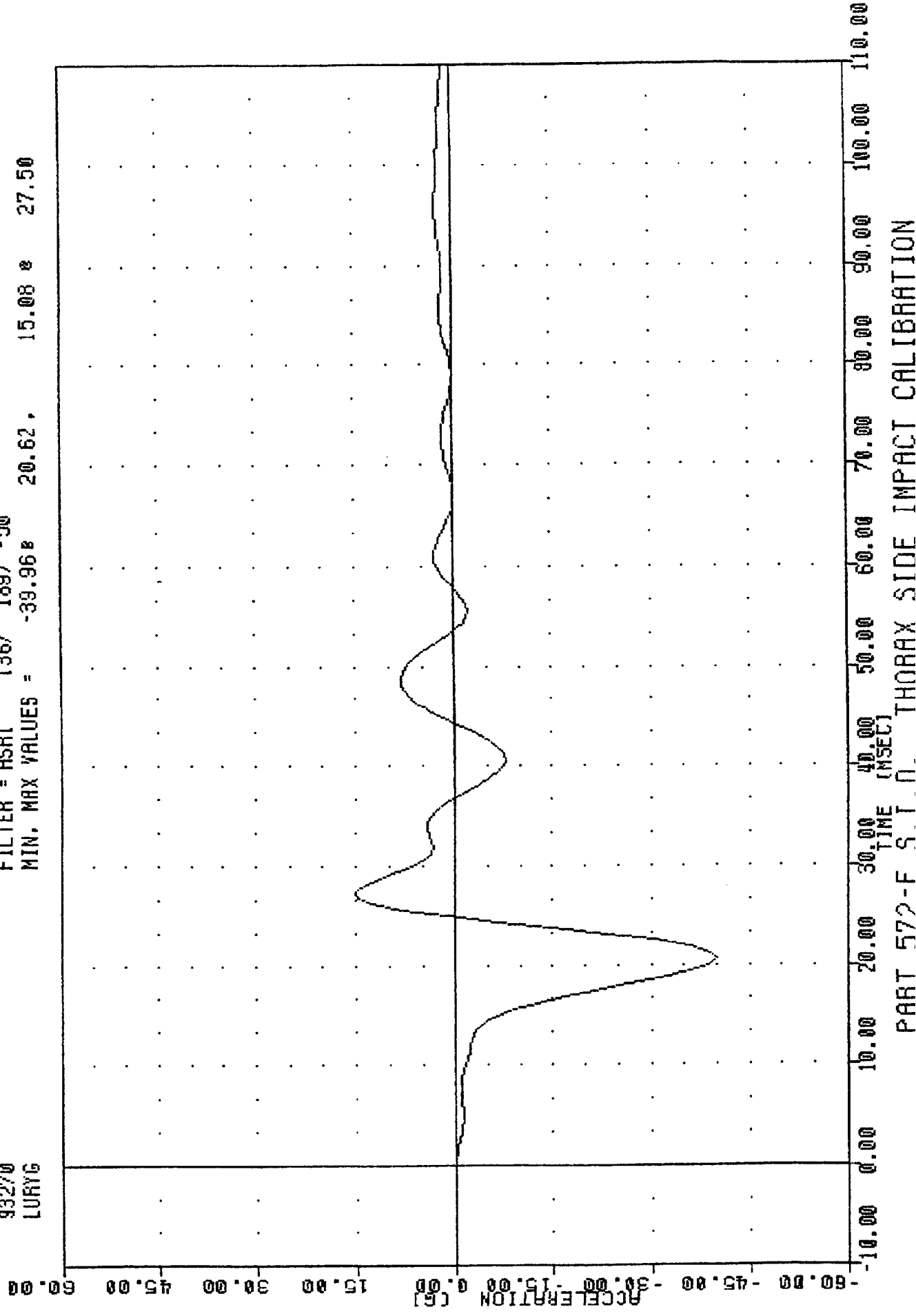
Rita F. A.

TRC , ST90603A
572F SN906 THORAX IMPACT CAL03

FILTER = HSRI 136/ 189/ -50

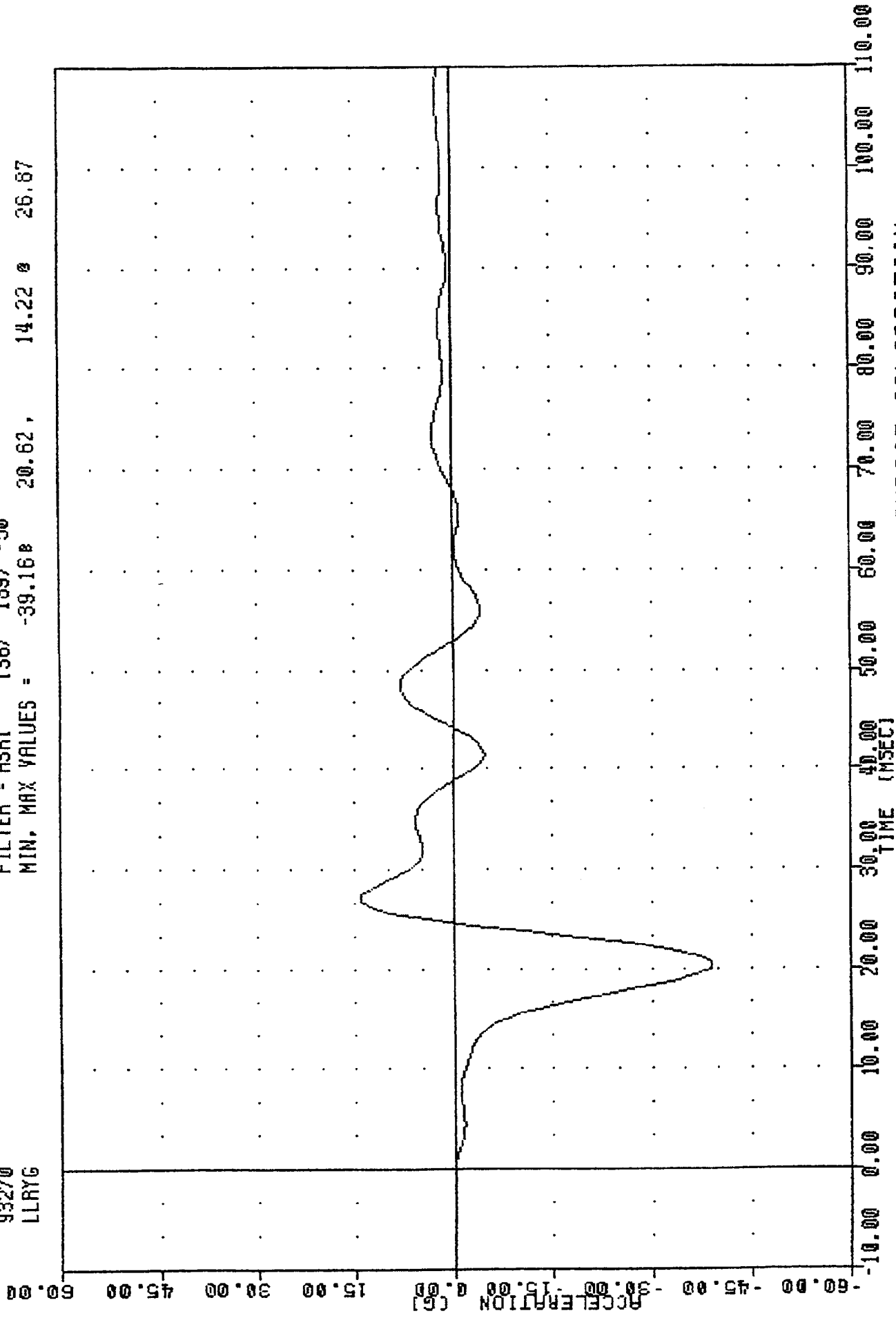
93270

MIN. MAX VALUES = -39.96 20.62 15.08 27.50



TRC , ST90603A
572F SN906 THORAX IMPACT CALD3
93270
LLRYG

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -39.168 20.62, 14.22 26.87

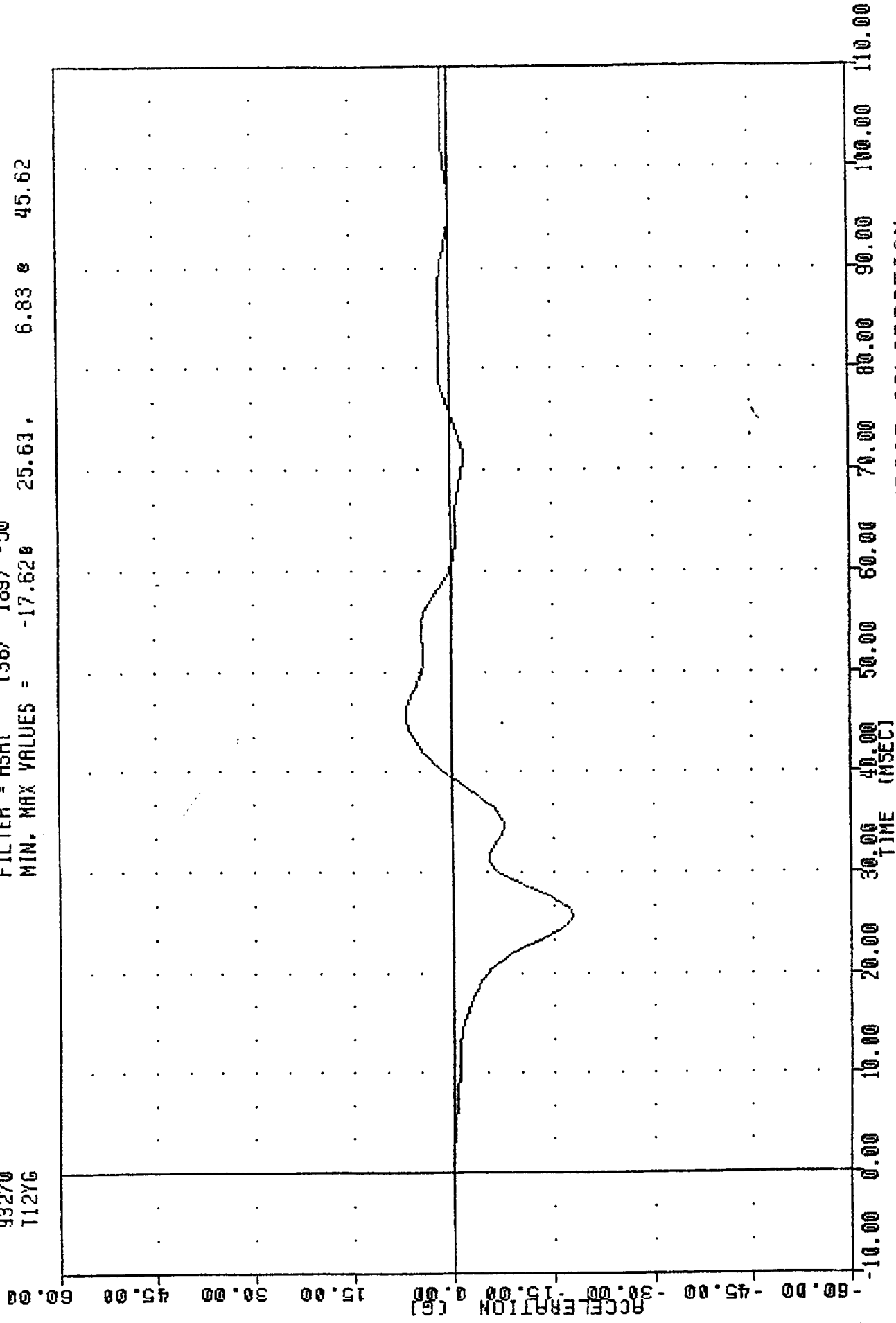


PART 572-F S.I.D. THORAX SIDE IMPACT CALIBRATION

TRC , ST90603A
572F SN906 THORAX IMPACT CAL03

93270 FILTER = HSRI 136/ 189/ -50

T12YG MIN. MAX VALUES = -17.62 25.63, 6.83 45.62



PART 572-F S.I.D. THORAX SIDE IMPACT CALIBRATION

TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

23-Sep-93

LEFT SIDE CONFIGURATION

TRC

SP90603

572F SN906 PELVIS IMPACT CAL03

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	61.0 %
PISTON VELOCITY	4.21 - 4.32 M/SEC	4.31 M/SEC
PEAK PELVIC ACCELERATION	40 - 60 G	-51.0 G
TIME ABOVE 20 G LEVEL	3 - 7 MSEC	5.7 MSEC
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN Pete Smith

TRC
572F SN906 PELVIS IMPACT CALD3

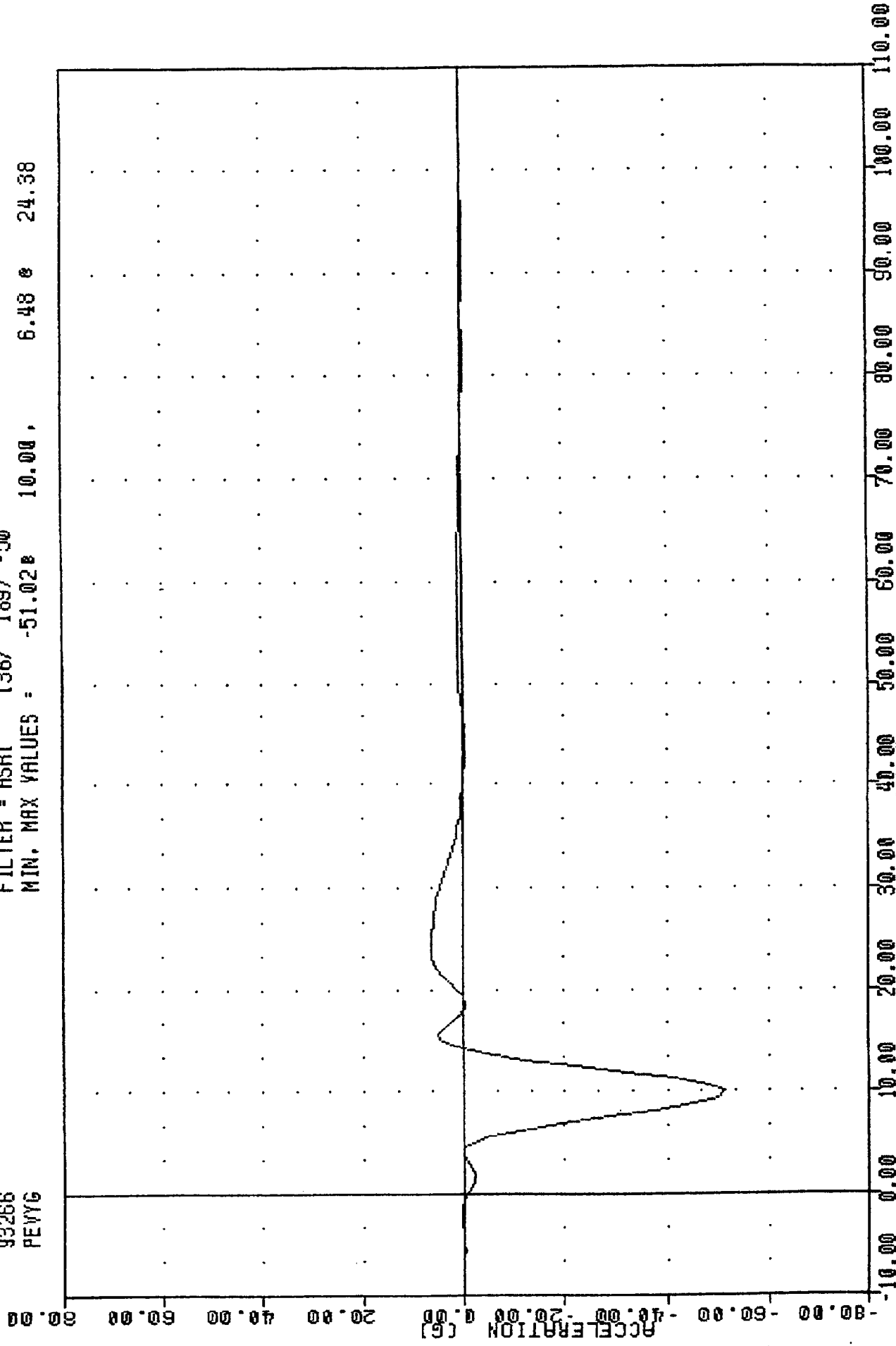
93266
PEWYG

, SP90603

FILTER = HSRI 136/ 189/ -50

MIN. MAX VALUES = -51.028 10.00 ,

6.48 @ 24.38



APPENDIX D

MISCELLANEOUS TEST INFORMATION

DUMMY INSTRUMENTATION PLACEMENT

DUMMY MANUFACTURER & S/N: NHTSA/903

SEATING POSITION: DRIVER

MNEMONIC	LOCATION	AXIS	MFR.	MODEL	S/N	ORIENTATION (+ SENSING)
HEDXG1	HEAD	X	ENDEVCO	7264	DC72J	REAR
HEDYG1	HEAD	Y	ENDEVCO	7264	BF42J	LEFT
HEDZG1	HEAD	Z	ENDEVCO	7264	EH75J	UP
T01XG1	UPPER SPINE	X	ENDEVCO	7264	DE99J	REAR
T01YG1	UPPER SPINE	Y	ENDEVCO	7264	FG43J	LEFT
T01YGA	UPPER SPINE REDUNDANT	Y	ENDEVCO	7264	EJ62J	LEFT
T01ZG1	UPPER SPINE	Z	ENDEVCO	7264	BE02J	UP
T12XG1	LOWER SPINE	X	ENDEVCO	7264	BF65J	FORWARD
T12YG1	LOWER SPINE	Y	ENDEVCO	7264	EJ59J	LEFT
T12YGA	LOWER SPINE REDUNDANT	Y	ENDEVCO	7264	BE24J	LEFT
T12ZG1	LOWER SPINE	Z	ENDEVCO	7264	BH31J	UP
LURYG1	LEFT UPPER RIB	Y	ENDEVCO	7264	EY99J	RIGHT
LURYGA	LEFT UPPER RIB REDUNDANT	Y	ENDEVCO	7264	DC54J	RIGHT
LLRYG1	LEFT LOWER RIB	Y	ENDEVCO	7264	FJ66J	RIGHT
LLRYGA	LEFT LOWER RIB REDUNDANT	Y	ENDEVCO	7264	FC60J	RIGHT
PEVXG1	PELVIS	X	ENDEVCO	7264	FB67J	REAR
PEVYG1	PELVIS	Y	ENDEVCO	7264	DF92J	LEFT
PEVZG1	PELVIS	Z	ENDEVCO	7264	BE50J	UP

DUMMY INSTRUMENTATION PLACEMENT

DUMMY MANUFACTURER & S/N: NHTSA/906

SEATING POSITION: LEFT REAR PASSENGER

MNEMONIC	LOCATION	AXIS	MFR.	MODEL	S/N	ORIENTATION (+ SENSING)
HEDXG4	HEAD	X	ENDEVCO	7264	BH72J	REAR
HEDYG4	HEAD	Y	ENDEVCO	7264	AAMB4	LEFT
HEDZG4	HEAD	Z	ENDEVCO	7264	EH65J	UP
T01XG4	UPPER SPINE	X	ENDEVCO	7264	BE39J	REAR
T01YG4	UPPER SPINE	Y	ENDEVCO	7264	BE68J	LEFT
T01YGD	UPPER SPINE REDUNDANT	Y	ENDEVCO	7264	EJ94J	LEFT
T01ZG4	UPPER SPINE	Z	ENDEVCO	7264	BE56J	UP
T12XG4	LOWER SPINE	X	ENDEVCO	7264	BD91J	FORWARD
T12YG4	LOWER SPINE	Y	ENDEVCO	7264	ET59J	LEFT
T12YGD	LOWER SPINE REDUNDANT	Y	ENDEVCO	7264	CB70H	LEFT
T12ZG4	LOWER SPINE	Z	ENDEVCO	7264	DC20J	UP
LURYG4	LEFT UPPER RIB	Y	ENDEVCO	7264	CR39H	RIGHT
LURYGD	LEFT UPPER RIB REDUNDANT	Y	ENDEVCO	7264	DD92J	RIGHT
LLRYG4	LEFT LOWER RIB	Y	ENDEVCO	7264	BT29J	RIGHT
LLRYGD	LEFT LOWER RIB REDUNDANT	Y	ENDEVCO	7264	FG97J	RIGHT
PEVXG4	PELVIS	X	ENDEVCO	7264	BH95J	REAR
PEVYG4	PELVIS	Y	ENDEVCO	7264	DM66J	LEFT
PEVZG4	PELVIS	Z	ENDEVCO	7264	EH85J	UP

VEHICLE INSTRUMENTATION PLACEMENT

MNEMONIC	LOCATION	AXIS	MFR.	MODEL	S/N	ORIENTATION (+ SENSING)
RFSXG1	RIGHT FRONT SILL	X	ENDEVCO	2264	AT38	REAR
RFSYG1	RIGHT FRONT SILL	Y	ENDEVCO	2264	AG24	LEFT
RFSZG1	RIGHT FRONT SILL	Z	ENDEVCO	2264	AU31	UP
LFSYG1	LEFT FRONT SILL	Y	ENDEVCO	7264	BE47J	RIGHT
LFDYG1	LEFT FRONT DOOR CENTERLINE	Y	ENDEVCO	7264	BF14J	LEFT
LFDYG3	LEFT FRONT DOOR MID-REAR	Y	ENDEVCO	7264	AD97	LEFT
LFDYG2	LEFT FRONT DOOR UPPER CENTERLINE	Y	ENDEVCO	7264	AL08	LEFT
RDKXG1	REAR FLOORPAN OVER AXLE	X	ENDEVCO	2264	AU09	REAR
RDKYG1	REAR FLOORPAN OVER AXLE	Y	ENDEVCO	2264	AS95	LEFT
RDKZG1	REAR FLOORPAN OVER AXLE	Z	ENDEVCO	2264	BA46	UP
RRSXG1	RIGHT REAR SILL	X	ENDEVCO	7264	BP68J	FRONT
RRSYG1	RIGHT REAR SILL	Y	ENDEVCO	2264	AA05	LEFT
RRSZG1	RIGHT REAR SILL	Z	ENDEVCO	7264	BK12J	UP
LRSYG1	LEFT REAR SILL	Y	ENDEVCO	7264	BE53J	RIGHT
TRRYG1	RIGHT REAR SEAT	Y	ENDEVCO	7264	BP85J	LEFT
LRDYG1	LEFT REAR DOOR MID-REAR	Y	ENDEVCO	7264	AK87H	LEFT
LRDYG2	LEFT REAR DOOR UPPER CENTERLINE	Y	ENDEVCO	2264	AP45	LEFT
OTHYG1	REAR SEAT BELT BUCKLE	Y	ENDEVCO	7264	CK32H	LEFT
OTHYG2	REAR SEAT BELT BUCKLE BRACKET	Y	ENDEVCO	7264	CM07H	RIGHT

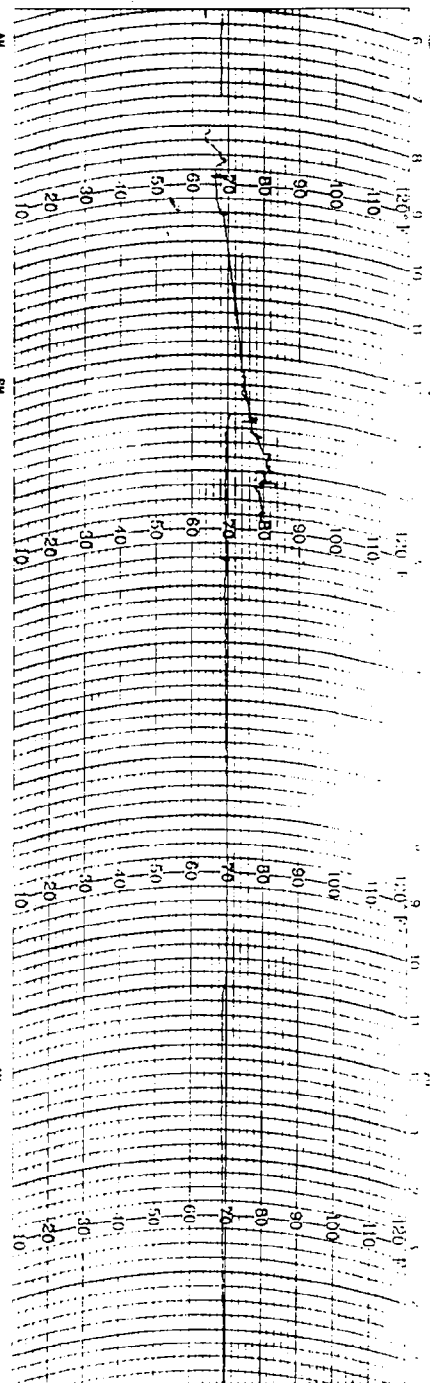
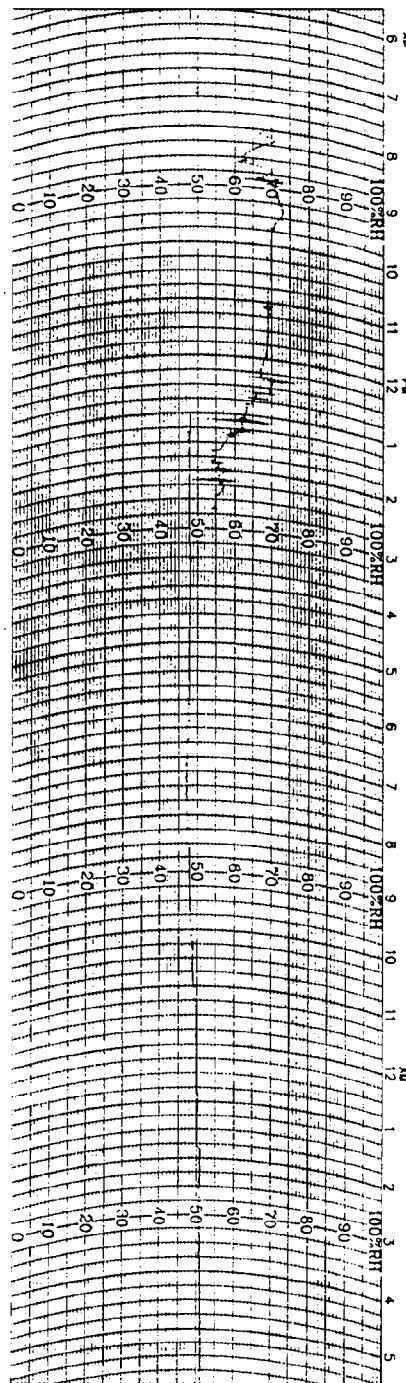
MOVING DEFORMABLE BARRIER INSTRUMENTATION PLACEMENT

MNEMONIC	LOCATION	AXIS	MFR.	MODEL	S/N	ORIENTATION (+ SENSING)
BCGXG	CENTER OF GRAVITY	X	ENDEVCO	2264	AK21	REAR
BCGYG	CENTER OF GRAVITY	Y	ENDEVCO	2264	AY66	RIGHT
BCGZG	CENTER OF GRAVITY	Z	ENDEVCO	2264	AZ67	UP
BSRXG	LEFT FRAME RAIL OVER REAR AXLE	X	ENDEVCO	2264	AY89	REAR
BSRYG	LEFT FRAME RAIL	Y	ENDEVCO	7264	AL42	RIGHT

FREQUENCY RESPONSE CLASSES
NHTSA LABORATORY PROCEDURE TP-214D-01

<u>TYPICAL TEST MEASUREMENTS</u>	<u>CHANNEL CLASS</u>
Vehicle structural acceleration for use in:	
Total vehicle comparison	60
Collision simulation input	60
Component analysis	600
Integration for velocity or displacement	180
Anthropomorphic test device	
Head accelerations (linear and angular)	1000
Thorax	
Spine acceleration	180*
Rib accelerations	180*
Deflections	180
Pelvis	
Accelerations	180*

*The Channel Class 180 data is further processed by subsampling to a 1600 Hz sample rate, removing bias, and filtering with the Finite Impulse Response (FIR100) filter program.



Weather Measure
 WEATHERtronics
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 SACRAMENTO, CA 95841
 PHONE: (916) 923-0355

PSYCHROMETRIC
 DAY

CHART NO. M659123
 CS111-B-4F
 ECN 2717
 6-9-87

STATION 931007 DATE ON _____ DATE OFF _____
 OCCUPANT COMPARTMENT THERMOGRAPH