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U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**



DOT HS 808 398

June 1995

Final Report

Final Report of a Non-Deformable Impactor into a 1990 Honda Civic 3-Door Hatchback in Support of CRASH3 Damage Algorithm Reformulation

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16. Abstract These tests were conducted for research and development in support of the CRASH III damage algorithm reformulation. The tests were conducted on a 1990 Honda Civic 3-door hatchback, VIN 2HGED6343LH574704, at Transportation Research Center Inc. on May 18, 1995.																				
<table border="1"> <thead> <tr> <th>Test Number</th> <th>Impact Speed</th> <th>Maximum Cumulative Crush</th> </tr> </thead> <tbody> <tr> <td>950518-1</td> <td>32.5 kph</td> <td>242 mm</td> </tr> <tr> <td>950518-2</td> <td>32.7 kph</td> <td>360 mm</td> </tr> <tr> <td>950518-3</td> <td>32.2 kph</td> <td>457 mm</td> </tr> <tr> <td>950518-4</td> <td>56.5 kph</td> <td>732 mm</td> </tr> </tbody> </table>						Test Number	Impact Speed	Maximum Cumulative Crush	950518-1	32.5 kph	242 mm	950518-2	32.7 kph	360 mm	950518-3	32.2 kph	457 mm	950518-4	56.5 kph	732 mm
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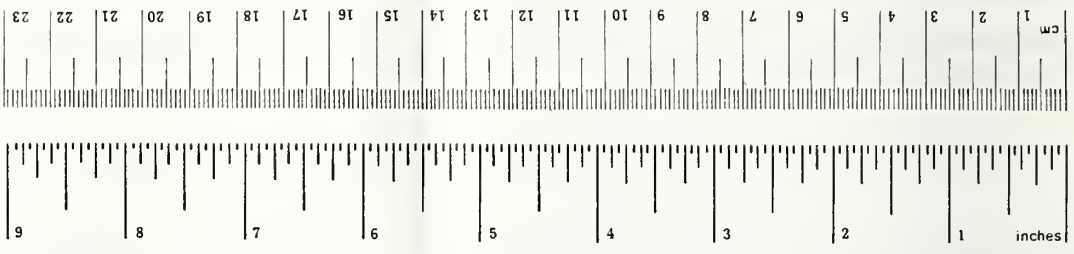
METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
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 meters	m ²
mi ²	square miles	2.6	square kilometers	km ²
	acres	0.4	hectares	ha
MASS (weight)				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons	0.9	tonnes	t
	(2000 lb)			
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

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



*1 m = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price \$2.25, SD Catalog No. C13.1028b.

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Section 1.0

Purpose and Test Procedure

Purpose and Test Procedure

The purpose of the four (4) non-deformable impactor left side impact tests was for research and development in support of the CRASH3 damage algorithm reformulation.

The subject vehicle, a 1990 Honda Civic, was equipped with a 1.5-liter, 4-cylinder, transverse, gasoline engine with a 5-speed manual transmission. The test weight of the vehicle was 989 kilograms and the vehicle was instrumented with eleven (11) accelerometers oriented to measure X-, Y-, and Z-axis accelerations.

The vehicle was impacted by an FMVSS 214 type impactor with a non-deformable contoured face and straight wheels. The impactor was instrumented with three (3) accelerometers to measure X-, Y-, and Z-axis accelerations and its test weight was 1198 kg.

Each crash test event was recorded by three (3) high-speed motion picture cameras operating at approximately 500 frames per second.

The left edge of the impactor's face was aligned with the point 363 mm behind the subject vehicle's front wheel centerline.

Section 2.0

Vehicle and Test Data

Table 1 Test Vehicle Information

Vehicle Manufacturer: Honda of Canada Mfg., Inc. Model Year: 1990
Make/Model: Honda/Civic VIN: 2HGED6343LH574704
Body Style: 3-door hatchback Color: Blue
Engine Data: Type: transverse Cylinders: 4 Displacement: 1.5-liter
Transmission Data: 4 Speed, X Manual, Automatic, X Fwd, Rwd, 4wd
Date Vehicle Received: NA Odometer Reading: 95,686
Dealer's Name And Address: NA

Accessories:

Power Steering	Yes	Automatic Transmission	No
Power Brakes	Yes	Automatic Speed Control	No
Power Seats	No	Tilting Steering Wheel	No
Power Windows	No	Telescoping Steering Wheel	No
Tinted Glass	No	Air Conditioning	Yes
Radio	No	Anti-Skid Brake	No
Clock	No	Rear Window Defroster	Yes
Other	None		

Remarks:

1. Is the vehicle stock throughout? Yes
2. Does vehicle show evidence of prior accident history?
 Passenger rear window latch was broken
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: Honda of Canada Mfg., Inc.
Date of Manufacture: 08/90 VIN: 2HGED6343LH574704
GVWR: 3055 lbs.
GAWR: Front: 1600 lbs., Rear: 1500 lbs.

Table 1 Test Vehicle Information, Cont'd.

Tire Size: P165/70R13

Tire Pressure With Maximum Capacity Vehicle Load: Front: 300 kPa
Rear: 300 kPa

Spare Tire (Mfr., Line, Size): Goodyear, Temp, T105/80D13

Type of Seats: Front: Bucket
Rear: Bench

Type of Front Seat Backs: Manually adjustable

Maximum Width: 1695 mm

Wheelbase: 2500 mm

Location of Label Stating Tire Data:

The label was located in the glove box.

Tire & Capacity Data From Vehicle's Label:

Recommended Tire Size: P165/70R13

Recommended Cold Tire Pressure: Front: 35 psi; Rear: 32 psi

Designated Seating Capacity: Front: 2
Rear: 3
Total: 5

Vehicle Capacity Weight: 850 lbs.

Table 1 Test Vehicle Information, Cont'd.

Weight of Test Vehicle as Received with Maximum Fluids:

Right Front	300	kg	Right Rear	163	kg
Left Front	306	kg	Left Rear	180	kg
Total Front Weight	606	kg	(63.9% of Total Vehicle Weight)		
Total Rear Weight	343	kg	(36.1% of Total Vehicle Weight)		
Total Test Weight	949	kg			

Weight of Test Vehicle:

Right Front	323	kg	Right Rear	171	kg
Left Front	327	kg	Left Rear	168	kg
Total Front Weight	650	kg	(65.7% of Total Vehicle Weight)		
Total Rear Weight	339	kg	(34.3% of Total Vehicle Weight)		
Total Test Weight	989	kg			

Weight of ballast secured in vehicle cargo area: 0 kg

Components removed to meet target test weight: None

CG = 858 mm rearward of front wheel centerline

Vehicle Attitudes:

Delivered:	LF	612;	RF	624;	LR	600;	RR	670
Pre-test:	LF	605;	RF	612;	LR	665;	RR	669

Table 2 Impactor Information

Impactor Type: FMVSS 214
Crabbed Angle: 0°
Impactor Face Type: Contoured non-deformable

Weight of Impactor:

Right Front:	292 kg	Right Rear:	313 kg
Left Front:	593 kg	Left Rear:	0 kg
Total Front Weight	885 kg		
Total Rear Weight	313 kg		
Total Test Weight	1198 kg		

TABLE 3 CRUSH MEASUREMENTS AT VEHICLE SIDE SILL HEIGHT 250 MM

LOCATION	24	25	26	27	28	29	30	31
	X	Y	X	Y	X	Y	X	Y
PRE-TEST	2205	430	2355	431	2508	431	2582	433
POST-TEST 1	2197	528	2345	522	2503	526	2575	526
POST-TEST 2	2230	637	2380	643	2530	641	2605	648
POST-TEST 3	2212	738	2363	725	2514	724	2589	712
POST-TEST 4	2259	1028	2422	1023	2553	1007	2623	996

LOCATION	32	33	34	35	36	37	38	39
	X	Y	X	Y	X	Y	X	Y
PRE-TEST	2810	435	2962	436	3111	440	3111	NA
POST-TEST 1	2805	515	2946	500	3085	435	3085	NA
POST-TEST 2	2752	626	2850	596	2948	474	2948	NA
POST-TEST 3	2798	690	2937	761	3076	510	3076	NA
POST-TEST 4	2859	956	3017	925	3015	760	3015	NA

LOCATION	40	41	42	43	44	45	46	47
	X	Y	X	Y	X	Y	X	Y
PRE-TEST	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 1	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 2	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 3	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 4	NA	NA	NA	NA	NA	NA	NA	NA

All measurements are in millimeters. Column readings are 75 millimeters apart starting from the front of the vehicle.

All X-axis measurements taken from a reference plane 4205 millimeters from and parallel to the rear bumper.

All Y-axis measurements taken from a reference plane 1200 millimeters from and parallel to the vehicle's longitudinal centerline

TABLE 4 CRUSH MEASUREMENTS AT VEHICLE MAXIMUM CRUSH HEIGHT 442 MM

LOCATION	0		1		2		3		4		5		6		7	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
PRE-TEST	209	1227	210	1150	215	1076	222	1000	227	925	233	849	250	774	260	698
POST-TEST 1	210	1218	214	1140	218	1066	227	990	234	918	242	844	252	768	270	695
POST-TEST 2	226	1195	232	1118	238	1042	244	966	246	892	256	819	276	740	297	669
POST-TEST 3	215	1165	222	1083	229	1014	236	939	243	865	250	790	273	715	296	641
POST-TEST 4	280	1096	283	1019	292	945	303	869	315	795	398	720	344	645	364	572

LOCATION	8		9		10		11		12		13		14		15	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
PRE-TEST	272	622	292	550	336	480	415	448	483	427	555	413	635	405	713	396
POST-TEST 1	277	622	300	550	335	482	403	448	471	430	545	418	621	407	693	399
POST-TEST 2	317	596	338	527	358	438	431	419	504	407	577	396	650	389	723	380
POST-TEST 3	320	557	343	493	366	371	438	338	510	325	581	375	653	371	725	365
POST-TEST 4	387	502	415	432	460	365	522	335	598	322	672	317	747	314	821	310

LOCATION	16		17		18		19		20		21		22		23	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
PRE-TEST	1373	397	1450	390	1524	390	1600	390	1677	388	1755	390	1830	390	1905	390
POST-TEST 1	1374	610	1441	604	1526	594	1601	614	1675	616	1754	617	1826	620	1904	625
POST-TEST 2	1374	713	1454	716	1534	720	1614	735	1694	741	1774	744	1854	745	1931	740
POST-TEST 3	1330	813	1410	804	1490	811	1570	831	1651	845	1731	829	1811	832	1888	832
POST-TEST 4	1471	1094	1528	1090	1647	1090	1685	1115	1744	1115	1801	1115	1917	1116	1974	1120

All measurements are in millimeters. Column readings are 75 millimeters apart starting from the front of the vehicle.

All X-axis measurements taken from a reference plane 4205 millimeters from and parallel to the rear bumper.

All Y-axis measurements taken from a reference plane 1200 millimeters from and parallel to the vehicle's longitudinal centerline

TABLE 4 CRUSH MEASUREMENTS AT VEHICLE MAXIMUM CRUSH HEIGHT 442 MM

LOCATION	24		25		26		27		28		29		30		31	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
PRE-TEST	1980	390	2060	388	2133	394	2212	390	2284	390	2360	393	2436	388	2510	392
POST-TEST 1	1979	623	2043	626	2118	630	2205	632	2273	631	2352	630	2432	630	2501	525
POST-TEST 2	2007	744	2084	746	2160	748	2237	750	2311	750	2386	747	2460	748	2535	740
POST-TEST 3	1966	820	2043	825	2121	829	2198	828	2273	828	2348	816	2423	815	2498	811
POST-TEST 4	2051	1120	2123	1120	2194	1117	2271	1115	2324	1112	2425	1101	2493	1100	2553	1095

LOCATION	32		33		34		35		36		37		38		39	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
PRE-TEST	2588	396	2660	394	2735	394	2810	400	2885	398	2958	400	3035	402	3112	400
POST-TEST 1	2577	616	2650	610	2726	610	2828	618	2897	603	2955	562	3010	505	3067	448
POST-TEST 2	2609	736	2681	730	2752	729	2824	741	2895	698	2967	638	3039	580	3110	518
POST-TEST 3	2573	799	2645	791	2717	793	2790	799	2862	767	2934	695	3006	643	3078	565
POST-TEST 4	2628	1089	2722	1075	2787	1075	2863	1105	2949	1020	2972	955	3015	877	3073	809

LOCATION	40		41		42		43		44		45		46		47	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
PRE-TEST	3188	400	3867	402	3942	411	4033	420	4106	438	4146	500	4168	572	4168	645
POST-TEST 1	3128	410	3834	392	3903	390	3999	395	4073	411	4110	471	4133	545	4146	616
POST-TEST 2	3182	463	3848	393	3923	405	3998	403	4073	420	4092	470	4111	546	4130	621
POST-TEST 3	3151	504	3823	380	3898	380	3973	383	4048	396	4069	448	4090	522	4110	593
POST-TEST 4	3100	756	3800	348	3900	345	3975	351	4055	361	4038	419	4058	489	4078	562

All measurements are in millimeters. Column readings are 75 millimeters apart starting from the front of the vehicle.

All X-axis measurements taken from a reference plane 4205 millimeters from and parallel to the rear bumper.

All Y-axis measurements taken from a reference plane 1200 millimeters from and parallel to the vehicle's longitudinal centerline

TABLE 4 CRUSH MEASUREMENTS AT VEHICLE MAXIMUM CRUSH HEIGHT 442 MM

LOCATION	48	49	50	51	52	53	54	55
	X	Y	X	Y	X	Y	X	Y
PRE-TEST	242	721	234	794	225	871	4204	944
POST-TEST 1	274	692	262	767	258	840	4174	915
POST-TEST 2	279	695	260	771	269	847	4170	920
POST-TEST 3	297	668	276	743	278	818	4162	895
POST-TEST 4	342	632	328	709	322	783	4113	857

LOCATION	56	57	58	59	60	61	62	63
	X	Y	X	Y	X	Y	X	Y
PRE-TEST	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 1	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 2	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 3	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 4	NA	NA	NA	NA	NA	NA	NA	NA

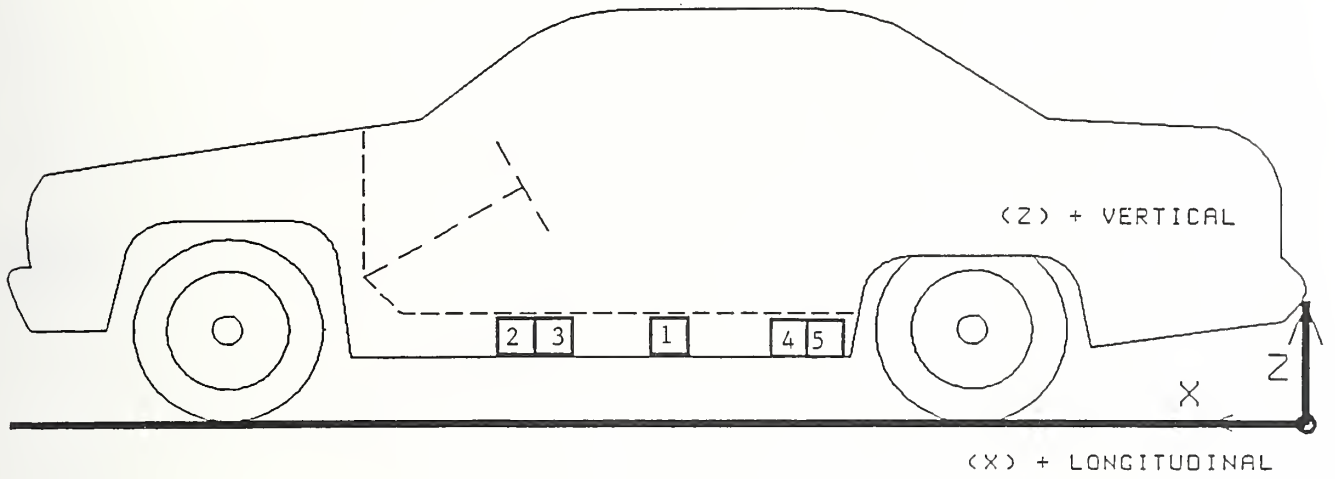
LOCATION	64	65	66	67	68	69	70	71
	X	Y	X	Y	X	Y	X	Y
PRE-TEST	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 1	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 2	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 3	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 4	NA	NA	NA	NA	NA	NA	NA	NA

All measurements are in millimeters. Column readings are 75 millimeters apart starting from the front of the vehicle.

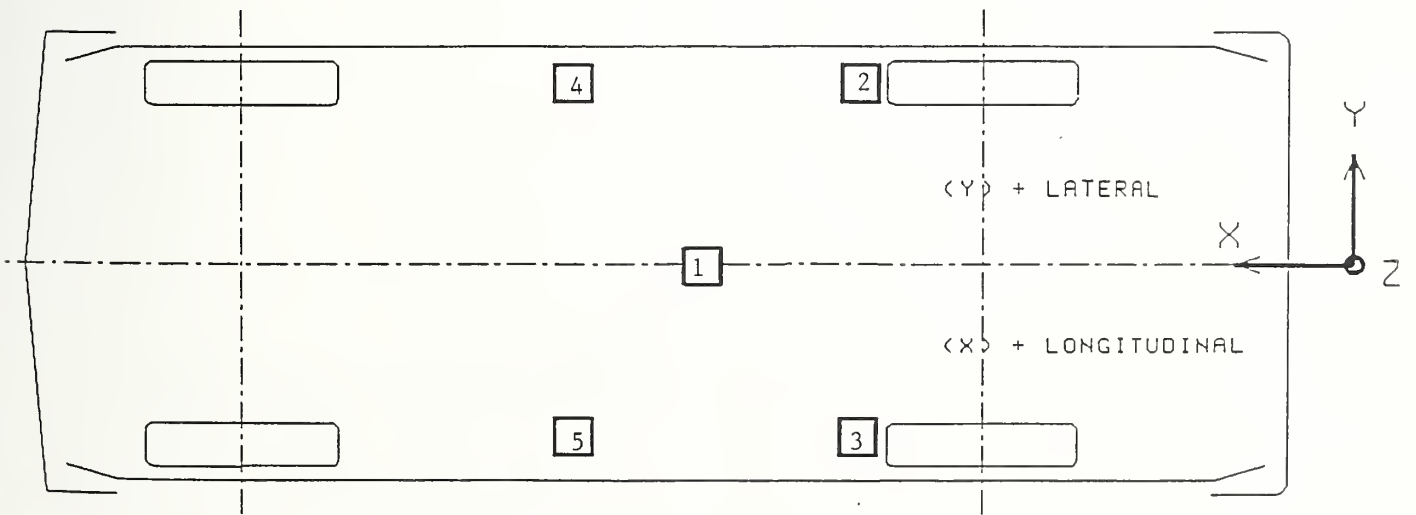
All X-axis measurements taken from a reference plane 4205 millimeters from and parallel to the rear bumper.

All Y-axis measurements taken from a reference plane 1200 millimeters from and parallel to the vehicle's longitudinal centerline

Figure 1 Vehicle Accelerometer Placement

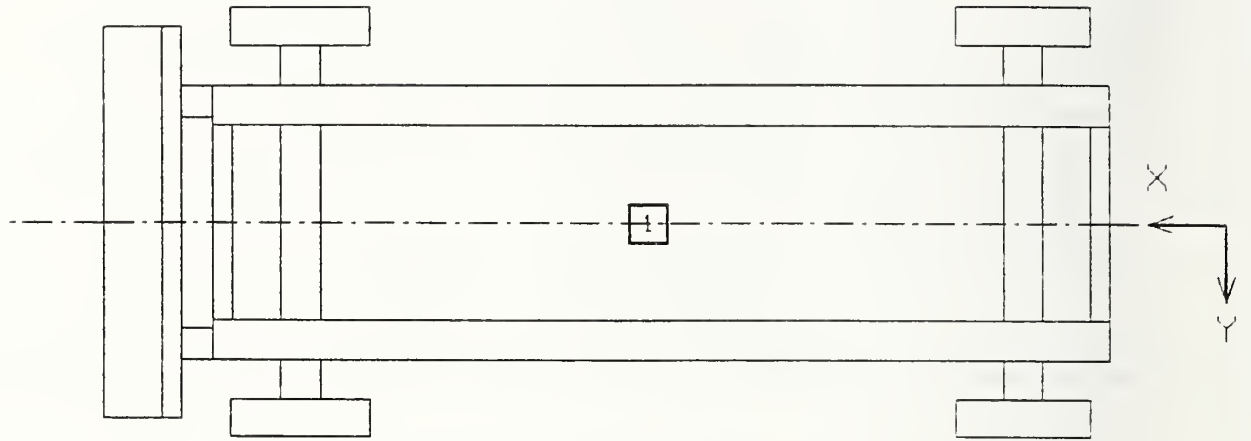


SIDE VIEW

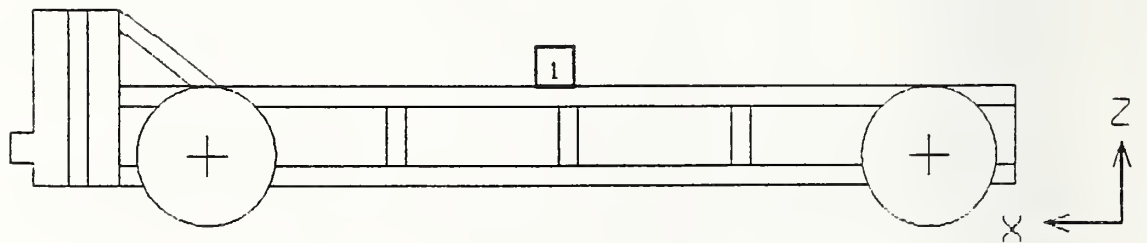


BOTTOM VIEW

Figure 2 Impactor Accelerometer Placement

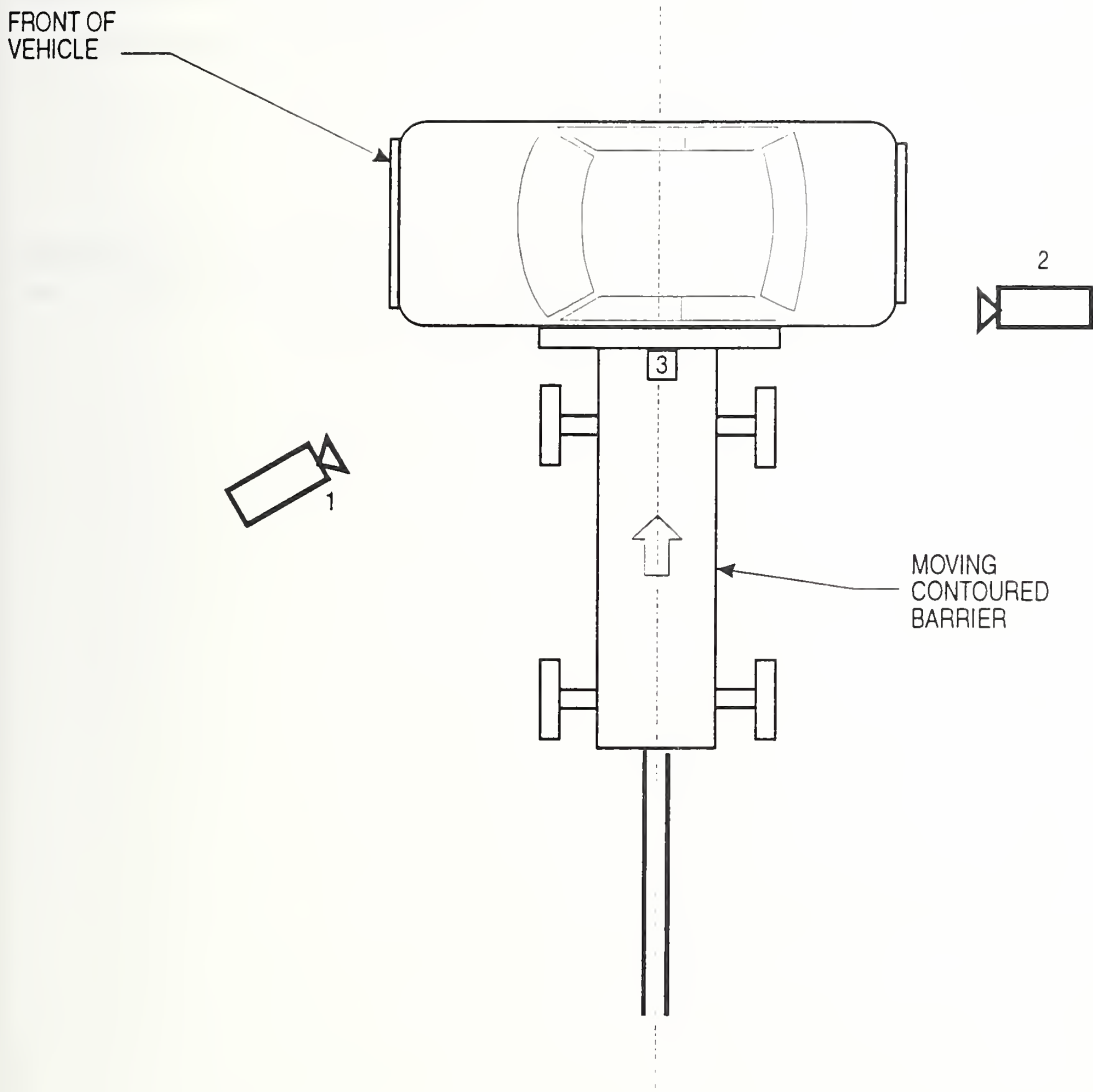


TOP VIEW



SIDE VIEW

Figure 3 Camera Positions



Data Acquisition Explanations

Subject vehicle data was not obtained for Test No. 950518-4 because of potential damage that could have been incurred by the data acquisition box.

Test No. 950518-3

The subject vehicle's center of gravity Y-axis acceleration data channel recorded questionable data during the impact event. This anomaly affected the computations of the vehicle's center of gravity resultant acceleration, Y-axis and resultant velocity, and Y-axis and resultant displacement.

Test Nos. 950518-2, -3, and -4

The impactor's center of gravity X-axis acceleration data channel recorded harmonic ringing during the impact event. The harmonic ringing affected the computations of the vehicle's center of gravity resultant acceleration, velocity, and displacement.

Section 3.0

Test 950518-1 Summary

Table 5 Test Conditions

Test No. 950518-1

Date of test: 05/18/95

Time of test: 1205

Ambient temperature at impact area: 11° C

Intended impact velocity: 32.2 kph

Actual impact velocity: Primary = NA¹
Secondary = 32.5 kph

Subject Vehicle Data

Length of direct contact damage: 1445 mm

Maximum cumulative crush at
vehicle side sill height: 113 mm

Maximum cumulative crush at
maximum crush height: 242 mm

Vehicle Attitudes:

Post-Test: LF: 579; RF: 590; LR: 660; RR: 653

¹ Primary light trap failed.

All distance measurements are in millimeters.

Table 6 Vehicle Crush at Maximum Crush Height

Test No. 950518-1

FL	=	3393
C1	=	3
C2	=	213
C3	=	237
C4	=	216
C5	=	2
C6	=	-27

NOTE: FL is the post-test length of the damaged surface.

Measurements C1 - C6 were spaced equally apart over the post-impact length of the damaged surface. This distance is defined as length "FL" on the vehicle crush profile plot.

All measurements are in millimeters.

Figure 4
Vehicle Profile At Side Sill Height
Test No. 950518-1

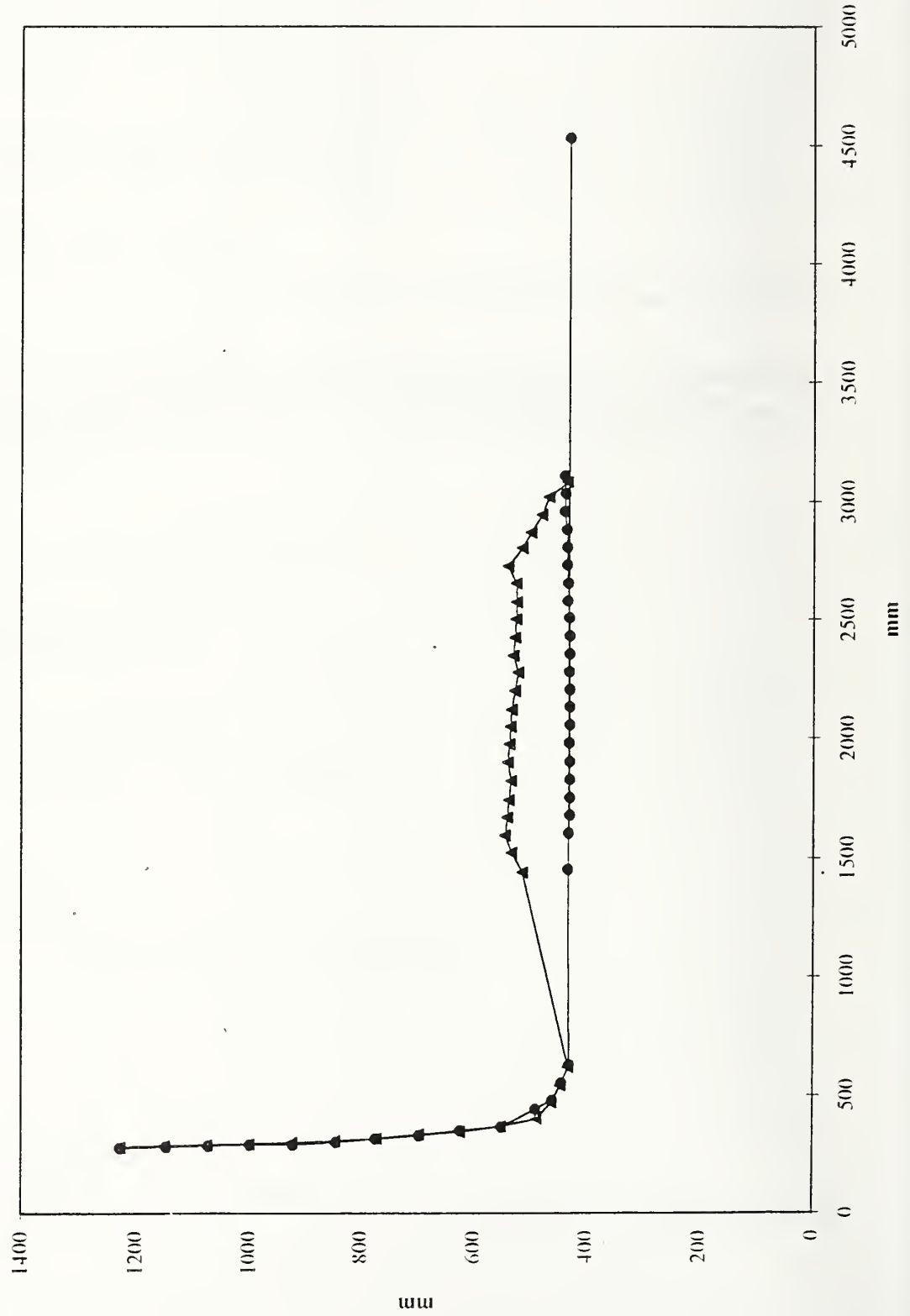


Figure 5

Vehicle Profile At Maximum Crush Height
Test No.950518-1

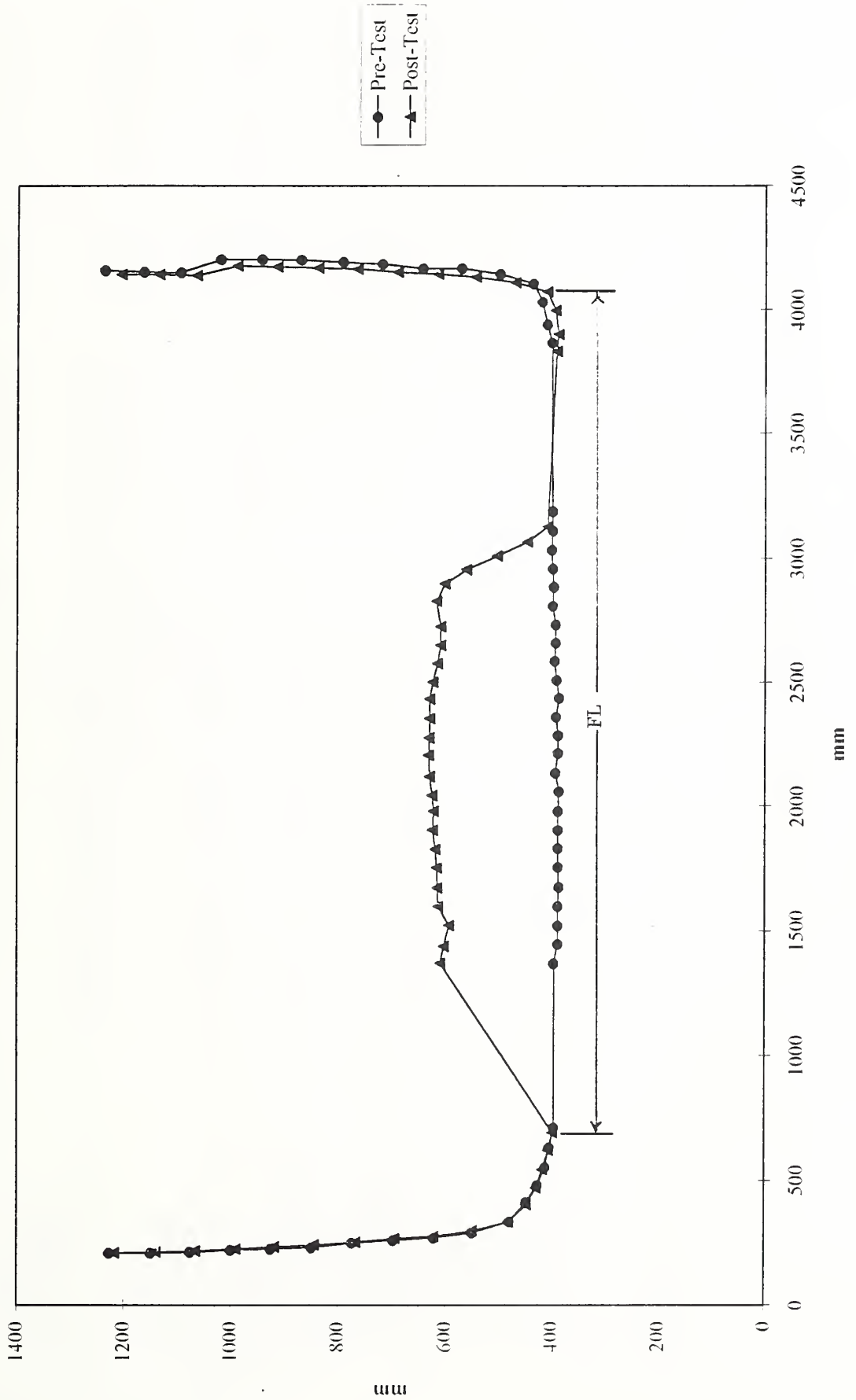


Table 7 Vehicle Accelerometer Locations and Data Summary

Test No. 950518-1

TEST NUMBER: 950518-1 No. LOCATION	X	Y	Z	POSITIVE DIRECTION	NEGATIVE DIRECTION
1 VEHICLE CENTER OF GRAVITY	2197 mm	0 mm	323 mm		
LONGITUDINAL			5.1 g	@ 63.1 ms	@ 19.3 ms
LATERAL			2.2 g	@ 123.3 ms	@ 20.6 ms
VERTICAL			11.0 g	@ 62.0 ms	@ 18.2 ms
RESULTANT			18.3 g	@ 19.7 ms	
2 LEFT FRONT SILL	2559 mm	671 mm	388 mm		
LONGITUDINAL			2.9 g	@ 40.7 ms	@ 8.6 ms
LATERAL			9.1 g	@ 26.5 ms	@ 12.7 ms
3 RIGHT FRONT SILL	2543 mm	-667 mm	228 mm		
LONGITUDINAL			4.0 g	@ 39.4 ms	@ 87.4 ms
LATERAL			2.6 g	@ 124.0 ms	@ 21.8 ms
4 LEFT REAR SEAT CROSSMEMBER	1407 mm	549 mm	318 mm		
LONGITUDINAL			8.4 g	@ 13.3 ms	@ 7.7 ms
LATERAL			2.0 g	@ 124.9 ms	@ 21.7 ms
5 RIGHT REAR SEAT CROSSMEMBER	1409 mm	-571 mm	245 mm		
LONGITUDINAL			2.7 g	@ 39.6 ms	@ 20.1 ms
LATERAL			2.0 g	@ 124.6 ms	@ 23.3 ms

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

Table 8 Impactor Accelerometer Locations and Data Summary

Test No. 950518-1

TEST NUMBER: 950518-1

No. LOCATION

X

Y

Z

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

1	IMPACTOR CENTER OF GRAVITY	1740 mm	0 mm	325 mm		
	LONGITUDINAL				0.3 g	@ 123.3 ms
	LATERAL				1.5 g	@ 58.2 ms
	VERTICAL				1.4 g	@ 92.0 ms
	RESULTANT				11.1 g	@ 47.0 ms
					10.6 g	@ 47.2 ms
					3.3 g	@ 44.9 ms
					1.9 g	@ 64.6 ms

REFERENCE: X: + FORWARD FROM IMPACTOR'S REAR SURFACE
 Y: + LEFTWARD FROM IMPACTOR'S LONGITUDINAL CENTERLINE
 Z: + UPWARD FROM GROUND LEVEL

Table 9 Camera Information

Test No. 950518-1

<u>Camera Number</u>	<u>Location</u>	<u>Type</u>	<u>Lens (mm)</u>	<u>Speed (fps)</u>	<u>Purpose of Camera Data</u>
1	Left front	Photosonic	25	498	Impact overall
2	Left rear	Photosonic	25	NA ¹	Impact overall
3	Overhead	Photosonic	25	498	Impact overall

¹ Camera malfunctioned and broke film.

Section 4.0

Test 950518-2 Summary

Table 10 Test Conditions

Test No. 950518-2

Date of test: 05/18/95

Time of test: 1438

Ambient temperature at impact area: 11° C

Intended impact velocity: 32.2 kph

Actual impact velocity: Primary = 32.7 kph
Secondary = 32.7 kph

Subject Vehicle Data

Length of direct contact damage: 1450 mm

Maximum cumulative crush at
vehicle side sill height: 218 mm

Maximum cumulative crush at
maximum crush height: 371 mm

Vehicle Attitudes:

Post-test: LF: 564; RF: 598; LR: 654; RR: 660

All distance measurements are in millimeters.

Table 11 Vehicle Crush at Maximum Crush Height

Test No. 950518-2

FL	=	3490
C1	=	-42
C2	=	154
C3	=	371
C4	=	359
C5	=	87
C6	=	-33

NOTE: FL is the post-test length of the damaged surface.

Measurements C1 - C6 were spaced equally apart over the post-impact length of the damaged surface. This distance is defined as length "FL" on the vehicle crush profile plot.

All measurements are in millimeters.

Figure 6

Vehicle Profile At Side Sill Height
Test No. 950518-2

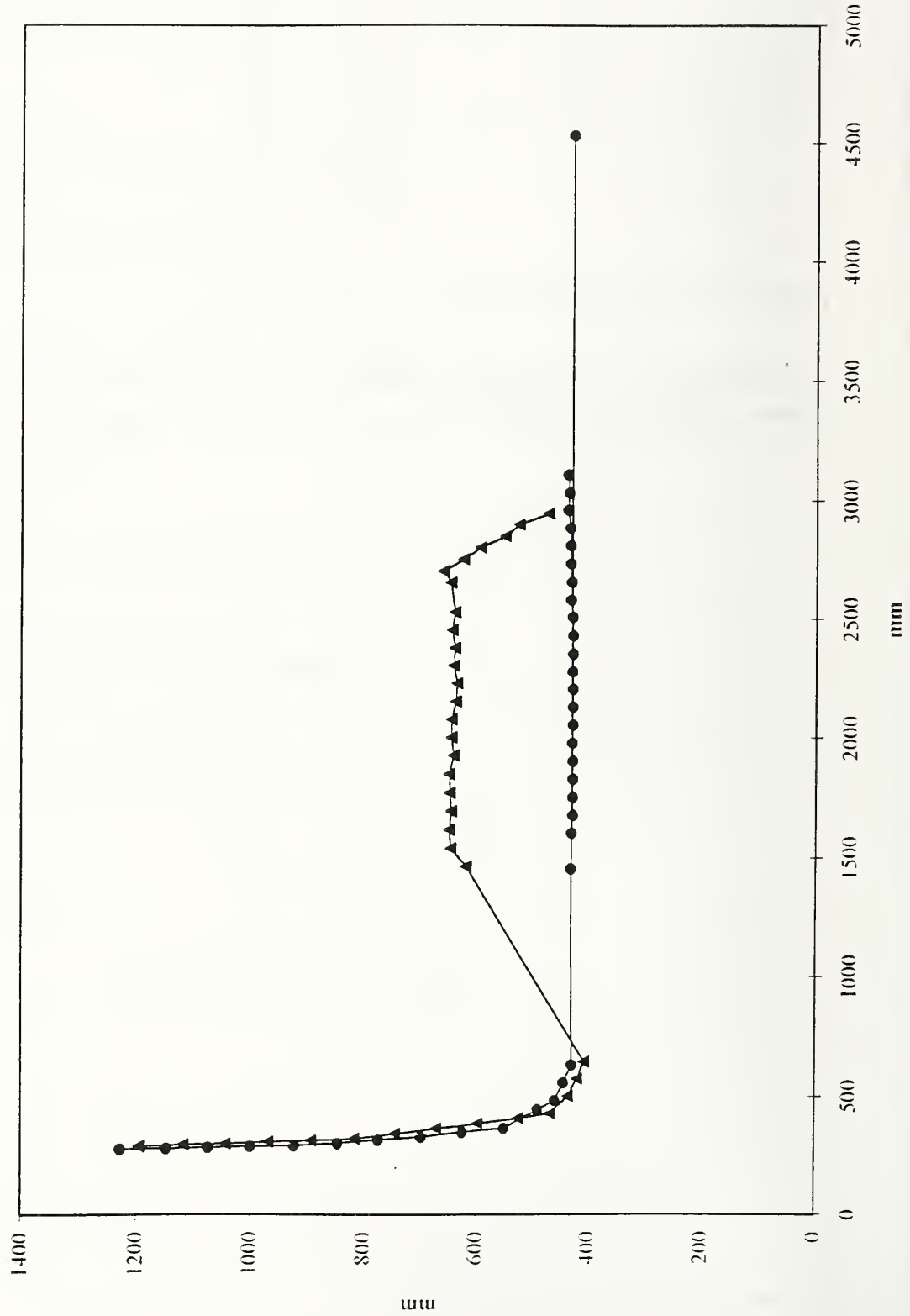


Figure 7

Vehicle Profile At Maximum Crush Height

Test No. 950518-2

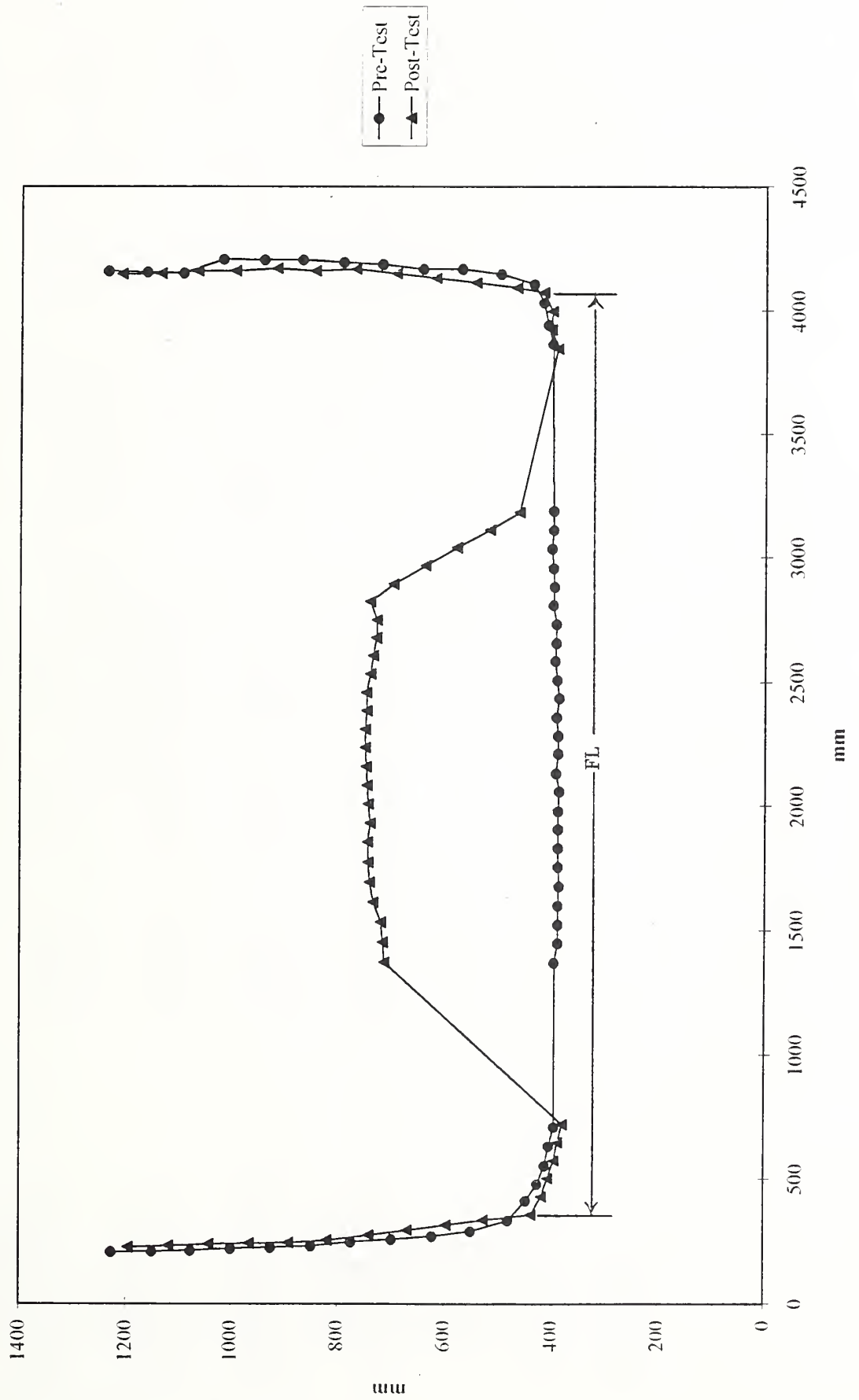


Table 12 Vehicle Accelerometer Locations and Data Summary

Test No. 950518-2

TEST NUMBER: 950518-2	X	Y	Z	POSITIVE DIRECTION	NEGATIVE DIRECTION
No. LOCATION					
1 VEHICLE CENTER OF GRAVITY	2197 mm	0 mm	323 mm		
LONGITUDINAL			4.2 g	@ 38.3 ms	@ 17.3 ms
LATERAL			3.8 g	@ 115.4 ms	@ 16.0 ms
VERTICAL			15.6 g	@ 42.8 ms	@ 13.9 ms
RESULTANT			39.6 g	@ 15.6 ms	
2 LEFT FRONT SILL	2559 mm	671 mm	388 mm		
LONGITUDINAL			11.5 g	@ 10.8 ms	@ 15.8 ms
LATERAL			3.0 g	@ 91.9 ms	@ 14.8 ms
3 RIGHT FRONT SILL	2543 mm	-667 mm	228 mm		
LONGITUDINAL			7.7 g	@ 27.6 ms	@ 14.6 ms
LATERAL			4.3 g	@ 59.4 ms	@ 14.1 ms
4 LEFT REAR SEAT CROSSMEMBER	1407 mm	549 mm	318 mm		
LONGITUDINAL			21.0 g	@ 11.4 ms	@ 22.2 ms
LATERAL			13.6 g	@ 31.6 ms	@ 16.1 ms
5 RIGHT REAR SEAT CROSSMEMBER	1409 mm	-571 mm	245 mm		
LONGITUDINAL			6.4 g	@ 27.4 ms	@ 15.1 ms
LATERAL			2.3 g	@ 59.1 ms	@ 11.6 ms

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

Table 13 Impactor Accelerometer Locations and Data Summary

Test No. 950518-2

TEST NUMBER: 950518-2

No. LOCATION

X Y Z POSITIVE DIRECTION NEGATIVE DIRECTION

1	IMPACTOR CENTER OF GRAVITY	1740 mm	0 mm	325 mm		
	LONGITUDINAL				1.1 g	@ 265.7 ms
	LATERAL				2.1 g	@ 13.1 ms
	VERTICAL				4.6 g	@ 38.1 ms
	RESULTANT				15.2 g	@ 11.5 ms
					15.0 g	@ 11.4 ms
					3.7 g	@ 22.2 ms
					7.4 g	@ 30.6 ms

REFERENCE: X: + FORWARD FROM IMPACTOR'S REAR SURFACE
 Y: + LEFTWARD FROM IMPACTOR'S LONGITUDINAL CENTERLINE
 Z: + UPWARD FROM GROUND LEVEL

Table 14 Camera Information

Test No. 950518-2

<u>Camera Number</u>	<u>Location</u>	<u>Type</u>	<u>Lens (mm)</u>	<u>Speed (fps)</u>	<u>Purpose of Camera Data</u>
1	Left front	Photosonic	25	500	Impact overall
2	Left rear	Photosonic	25	NA ¹	Impact overall
3	Overhead	Photosonic	8.5	500	Impact overall

¹ Camera malfunctioned and broke film.

Section 5.0

Test 950518-3 Summary

Table 15 Test Conditions

Test No. 950518-3

Date of test: 05/18/95

Time of test: 1549

Ambient temperature at impact area: 11° C

Intended impact velocity: 32.2 kph

Actual impact velocity: Primary = NA¹
Secondary = 32.2 kph

Subject Vehicle Data

Length of direct contact damage: 1460 mm

Maximum cumulative crush at
vehicle side sill height: 341 mm

Maximum cumulative crush at
maximum crush height: 457 mm

Vehicle Attitudes:

Post-test: LF: 558; RF: 595; LR: 651; RR: 567

¹ Primary light trap failed.

All distance measurements are in millimeters.

Table 16 Vehicle Crush at Maximum Crush Height

Test No. 950518-3

FL	=	3705
C1	=	-57
C2	=	234
C3	=	442
C4	=	404
C5	=	75
C6	=	-42

NOTE: FL is post-test length of damaged surface.

Measurements C1 - C6 were spaced equally apart over the post-impact length of the damaged surface. This distance is defined as length "FL" on the vehicle crush profile plot.

All measurements are in millimeters.

Figure 8

Vehicle Profile At Side Sill Height
Test No. 950518-3

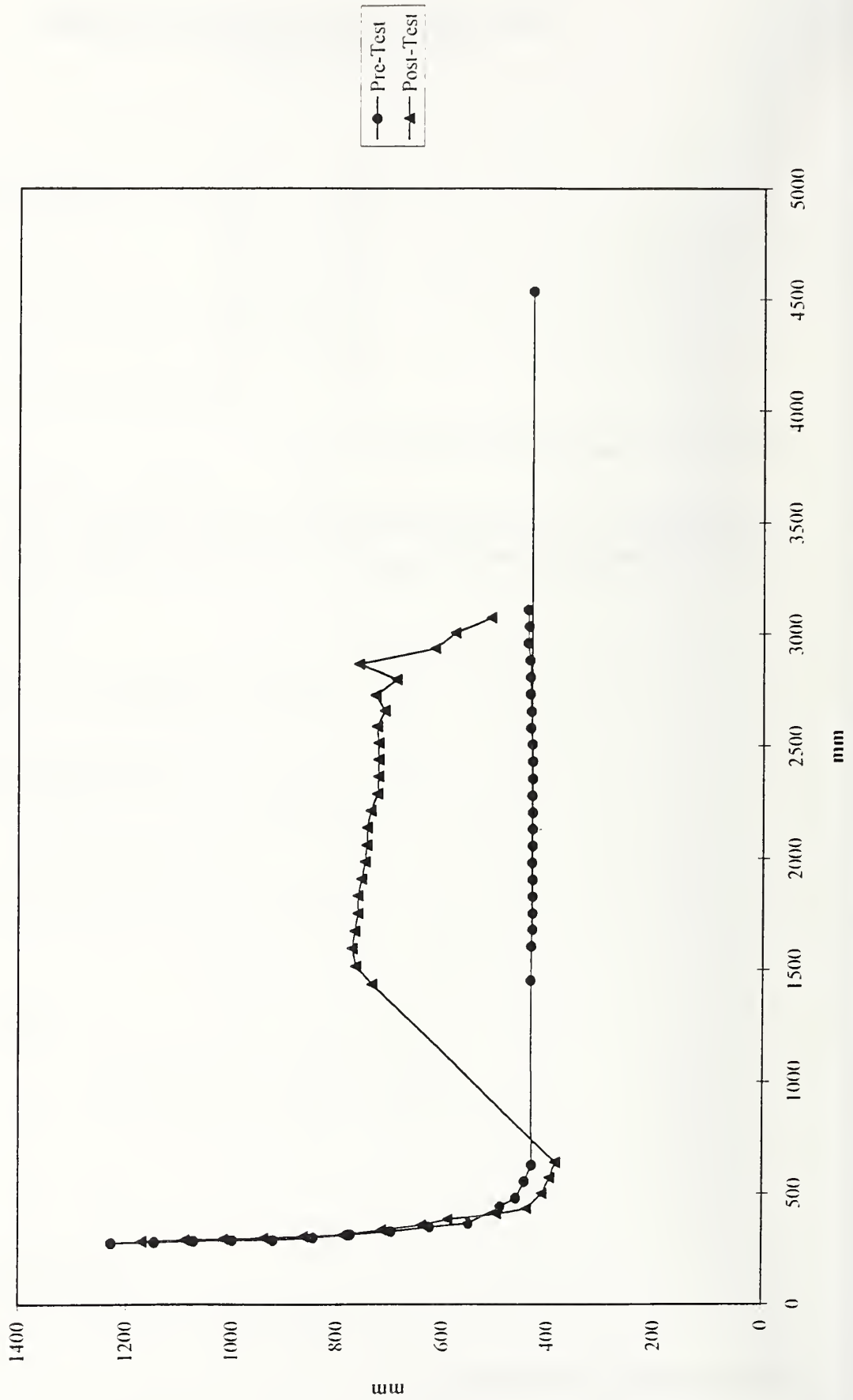


Figure 9

Vehicle Profile At Maximum Crush Height
Test No. 950518-3

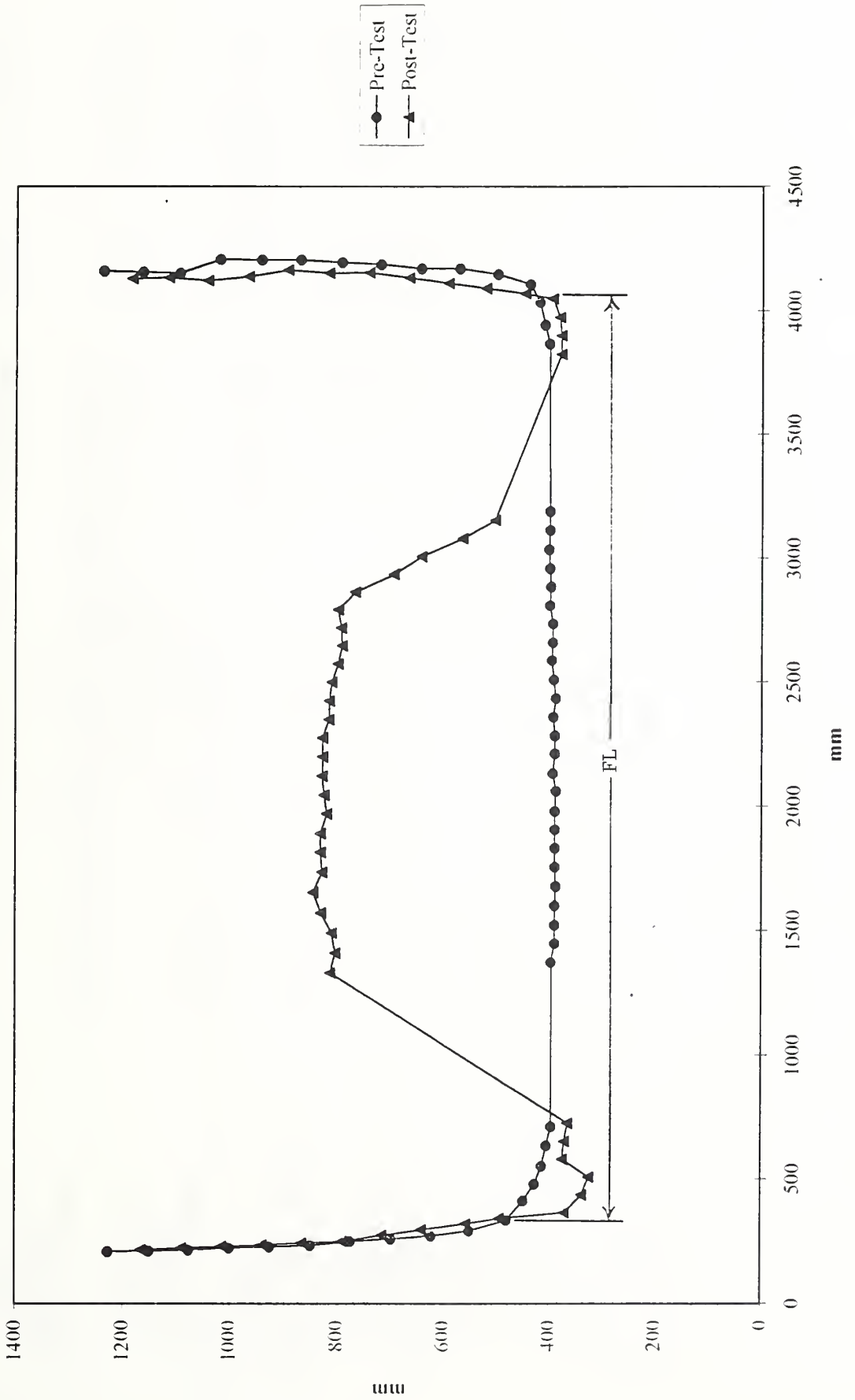


Table 17 Vehicle Accelerometer Locations and Data Summary

Test No. 950518-3

TEST NUMBER: No. LOCATION	X	Y	Z	POSITIVE DIRECTION	NEGATIVE DIRECTION
1 VEHICLE CENTER OF GRAVITY	2197 mm	0 mm	323 mm		
LONGITUDINAL			12.8 g	@ 41.1 ms	@ 27.0 ms
LATERAL ¹			1.1 g	@ 136.4 ms	@ 35.4 ms
VERTICAL			12.7 g	@ 50.1 ms	@ 18.6 ms
RESULTANT ¹			82.6 g	@ 35.4 ms	
2 LEFT FRONT SILL	2559 mm	671 mm	388 mm		
LONGITUDINAL			16.9 g	@ 18.2 ms	@ 10.8 ms
LATERAL			14.6 g	@ 16.9 ms	@ 7.1 ms
3 RIGHT FRONT SILL	2543 mm	-667 mm	228 mm		
LONGITUDINAL			8.5 g	@ 38.5 ms	@ 53.5 ms
LATERAL			2.7 g	@ 278.9 ms	@ 23.4 ms
4 LEFT REAR SEAT CROSSMEMBER	1407 mm	549 mm	318 mm		
LONGITUDINAL			14.8 g	@ 23.6 ms	@ 15.9 ms
LATERAL			22.3 g	@ 31.4 ms	@ 22.0 ms
5 RIGHT REAR SEAT CROSSMEMBER	1409 mm	-571 mm	245 mm		
LONGITUDINAL			7.2 g	@ 38.8 ms	@ 24.8 ms
LATERAL			2.3 g	@ 150.6 ms	@ 26.5 ms

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

¹ See DATA ACQUISITION EXPLANATIONS

Table 18. Impactor Accelerometer Locations and Data Summary

Test No. 950518-3

TEST NUMBER: 950518-3 No. LOCATION	X	Y	Z	POSITIVE DIRECTION	NEGATIVE DIRECTION
1 IMPACTOR CENTER OF GRAVITY	1740 mm	0 mm	325 mm		
LONGITUDINAL				0.6 g @ 136.6 ms	15.6 g @ 21.6 ms
LATERAL				3.1 g @ 20.2 ms	3.7 g @ 42.6 ms
VERTICAL				3.8 g @ 18.6 ms	7.4 g @ 35.5 ms
RESULTANT				15.7 g @ 21.4 ms	

REFERENCE: X: + FORWARD FROM IMPACTOR'S REAR SURFACE
 Y: + LEFTWARD FROM IMPACTOR'S LONGITUDINAL CENTERLINE
 Z: + UPWARD FROM GROUND LEVEL

Table 19 Camera Information
Test No. 950518-3

<u>Camera Number</u>	<u>Location</u>	<u>Type</u>	<u>Lens (mm)</u>	<u>Speed (fps)</u>	<u>Purpose of Camera Data</u>
1	Left front	Photosonic	25	500	Impact overall
2	Left rear	Photosonic	25	998	Impact overall
3	Overhead	Photosonic	8.5	498	Impact overall

Section 6.0

Test 950518-4 Summary

Table 20 Test Conditions

Test No. 950518-4,

Date of test: 05/18/95

Time of test: 1654

Ambient temperature at impact area: 11° C

Intended impact velocity: 56.3 kph

Actual impact velocity: Primary = 56.5 kph
Secondary = 56.5 kph

Subject Vehicle Data

Length of direct contact damage: 1460 mm

Maximum cumulative crush at
vehicle side sill height: 632 mm

Maximum cumulative crush at
maximum crush height: 732 mm

Vehicle Attitudes:

Post-test: LF: 551; RF: 591; LR: 650; RR: 559

All distance measurements are in millimeters.

Table 21 Vehicle Crush at Maximum Crush Height

Test No. 950518-4

FL	=	3640
C1	=	-118
C2	=	302
C3	=	726
C4	=	697
C5	=	223
C6	=	-77

NOTE: FL is post-test length of damaged surface.

Measurements C1 - C6 were spaced equally apart over the post-impact length of the damaged surface. This distance is defined as length "FL" on the vehicle crush profile plot.

All measurements are in millimeters.

Figure 10

Vehicle Profile At Side Sill Height
Test No. 950518-4

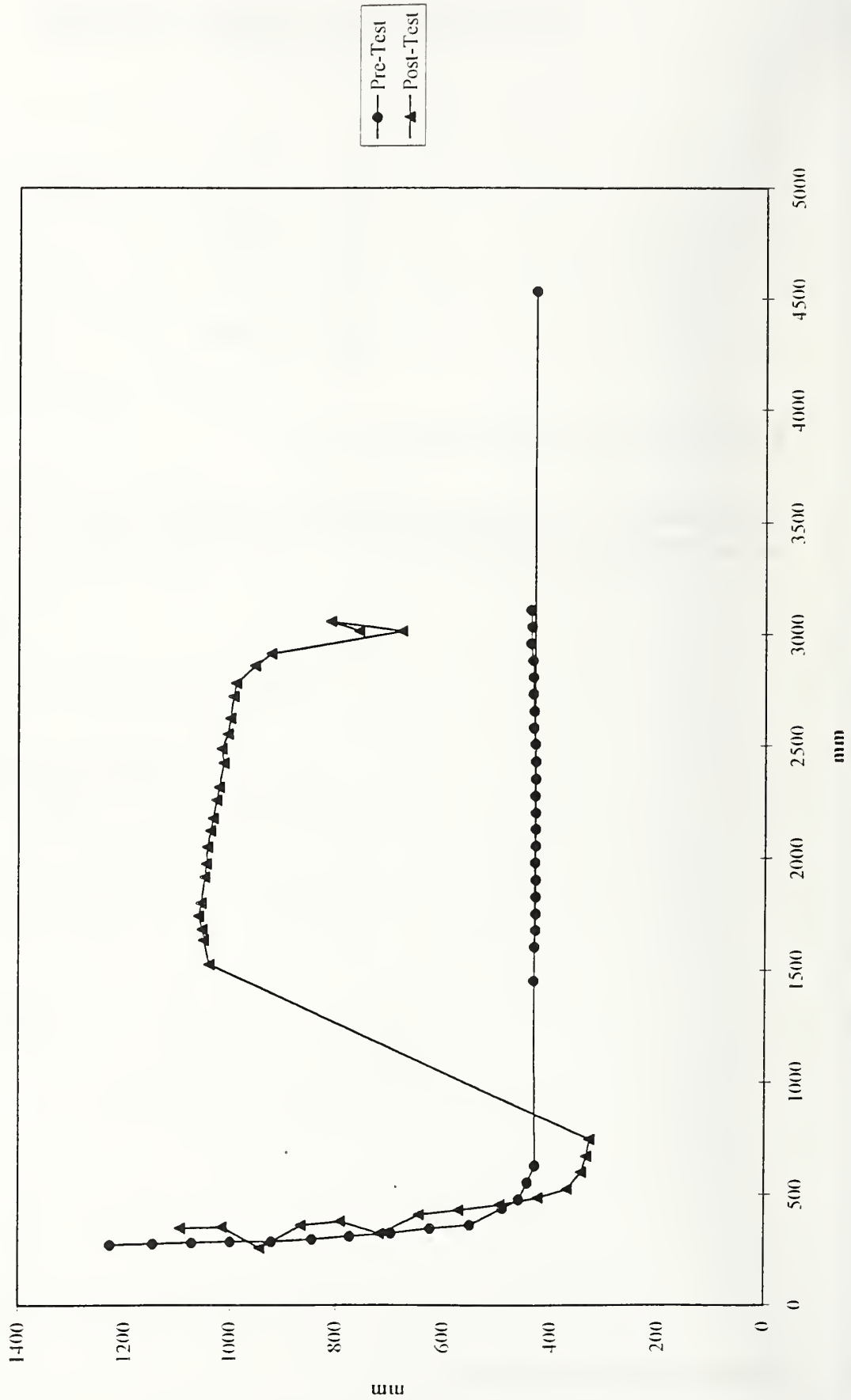


Figure 11

Vehicle Profile At Maximum Crush Height
Test No. 950518-4

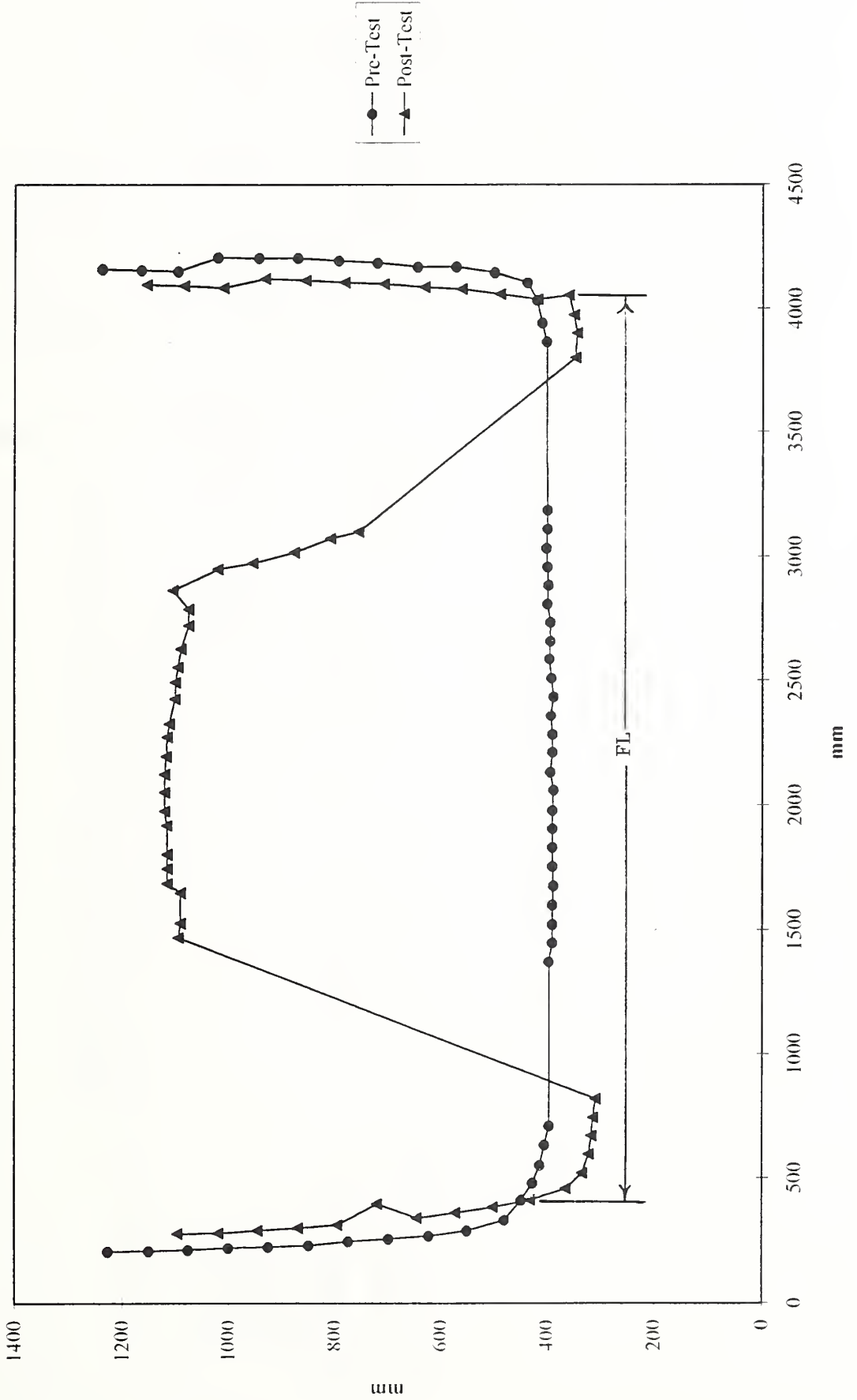


Table 22 Impactor Accelerometer Locations and Data Summary

Test No. 950518-4

TEST NUMBER: 950518-4 No. LOCATION	X	Y	Z	POSITIVE DIRECTION	NEGATIVE DIRECTION
1 IMPACTOR CENTER OF GRAVITY	1740 mm	0 mm	325 mm		
LONGITUDINAL				1.0 g @ 138.7 ms	32.6 g @ 14.3 ms
LATERAL				6.8 g @ 15.2 ms	9.2 g @ 24.9 ms
VERTICAL				12.0 g @ 19.6 ms	7.0 g @ 33.5 ms
RESULTANT				33.1 g @ 14.3 ms	

REFERENCE: X: + FORWARD FROM IMPACTOR'S REAR SURFACE
 Y: + LEFTWARD FROM IMPACTOR'S LONGITUDINAL CENTERLINE
 Z: + UPWARD FROM GROUND LEVEL

Table 23 Camera Information

Test No. 950518-4

<u>Camera Number</u>	<u>Location</u>	<u>Type</u>	<u>Lens (mm)</u>	<u>Speed (fps)</u>	<u>Purpose of Camera Data</u>
1	Left front	Photosonic	25	NA ¹	Impact overall
2	Left rear	Photosonic	25	998	Impact overall
3	Overhead	Photosonic	25	498	Impact overall

¹ Camera malfunctioned and broke film.

Appendix A

Photographs

List of Photographs

Test No. 950518-1

- A-1. Pre-Test Front View
- A-2. Post-Test Front View
- A-3. Pre-Test Left Front Three-Quarter View
- A-4. Post-Test Left Front Three-Quarter View
- A-5. Pre-Test Left Side View 1
- A-6. Pre-Test Left Side View 2
- A-7. Pre-Test Left Rear Three-Quarter View
- A-8. Post-Test Left Rear Three-Quarter View
- A-9. Pre-Test Rear View
- A-10. Post-Test Rear View



Figure A-1. Pre-Test Front View



Figure A-2. Post-Test Front View

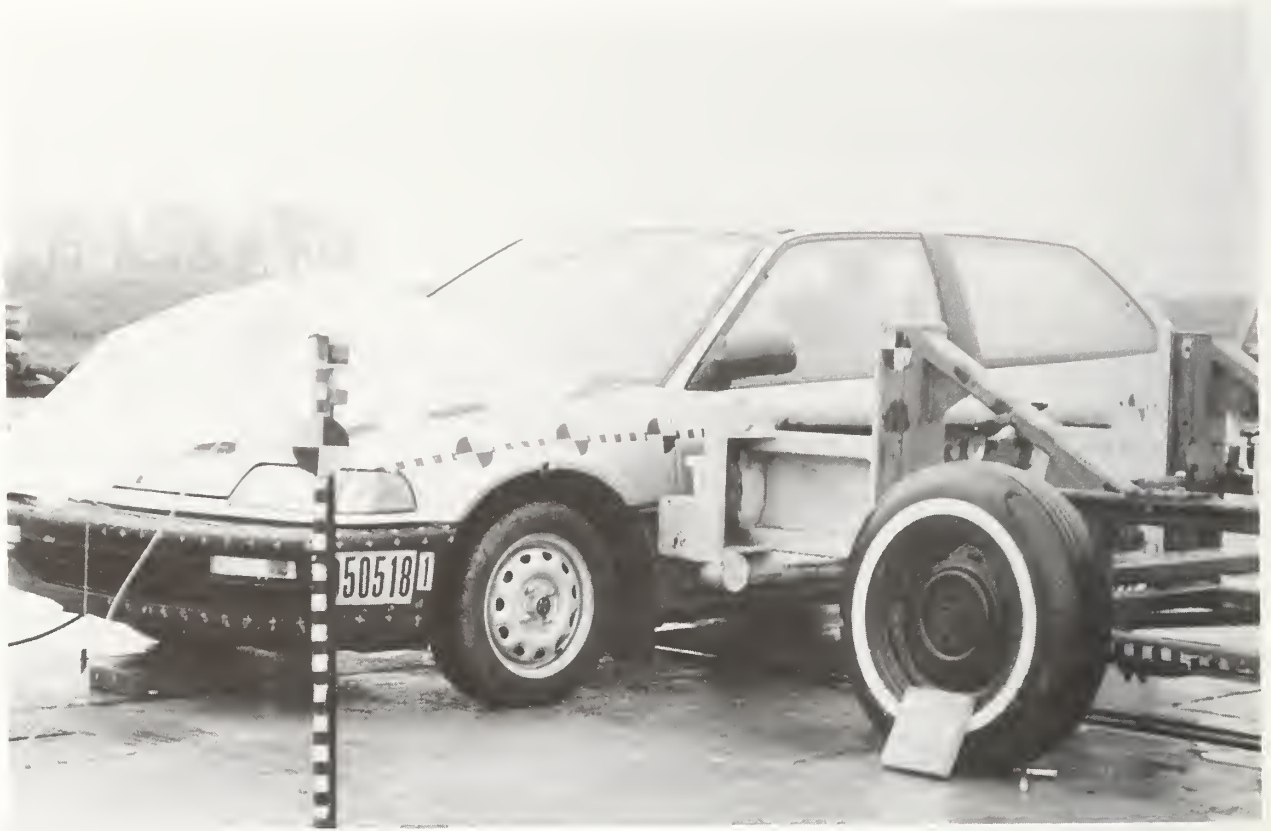


Figure A-3. Pre-Test Left Front Three-Quarter View

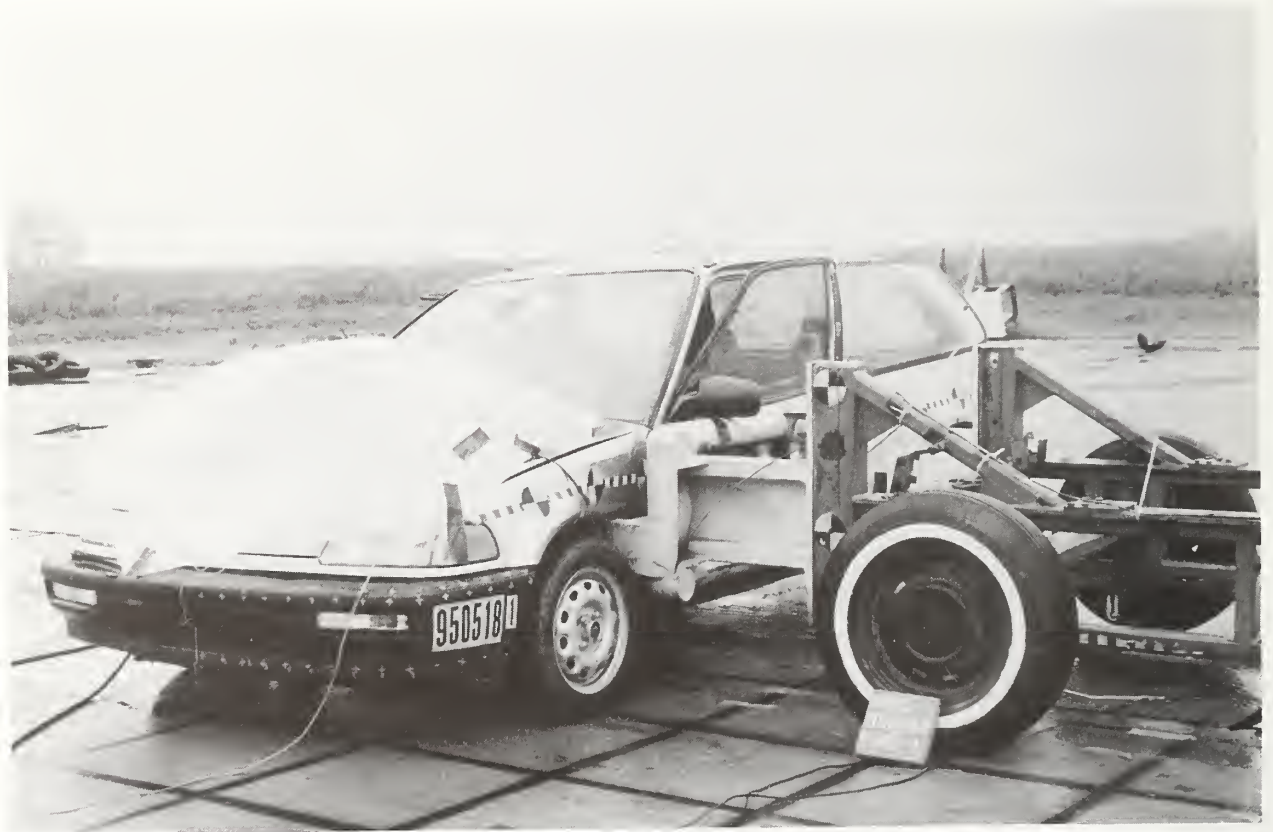


Figure A-4. Post-Test Left Front Three-Quarter View



Figure A-5. Pre-Test Left Side View 1



Figure A-6. Pre-Test Left Side View 2



Figure A-7. Pre-Test Left Rear Three-Quarter View



Figure A-8. Post-Test Left Rear Three-Quarter View



Figure A-9. Pre-Test Rear View

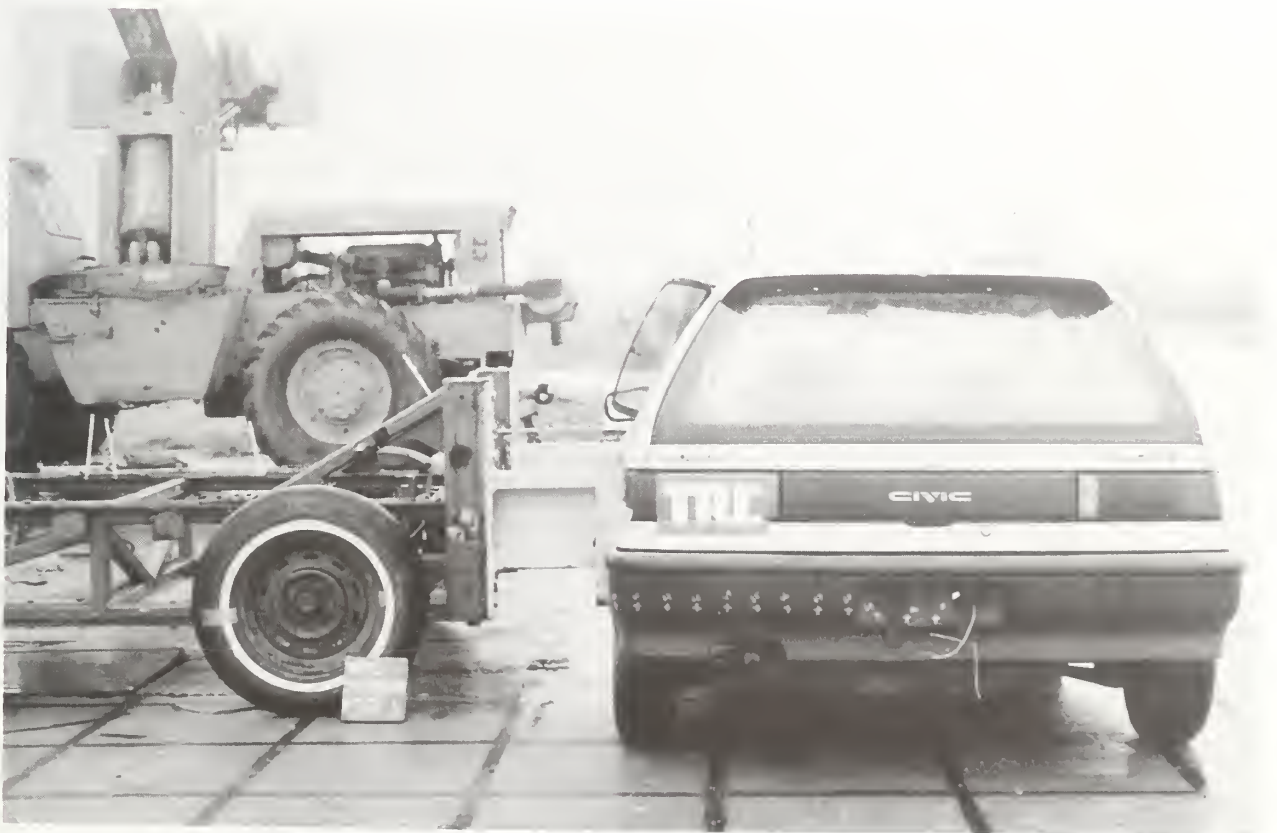


Figure A-10. Post-Test Rear View

List of Photographs

Test No. 950518-2

- A-11. Post-Test Front View
- A-12. Post-Test Left Front Three-Quarter View
- A-13. Post-Test Left Side View
- A-14. Post-Test Left Rear Three-Quarter View
- A-15. Post-Test Rear View





Figure A-11. Post-Test Front View



Figure A-12. Post-Test Left Front Three-Quarter View



Figure A-13. Post-Test Left Side View



Figure A-14. Post-Test Left Rear Three-Quarter View

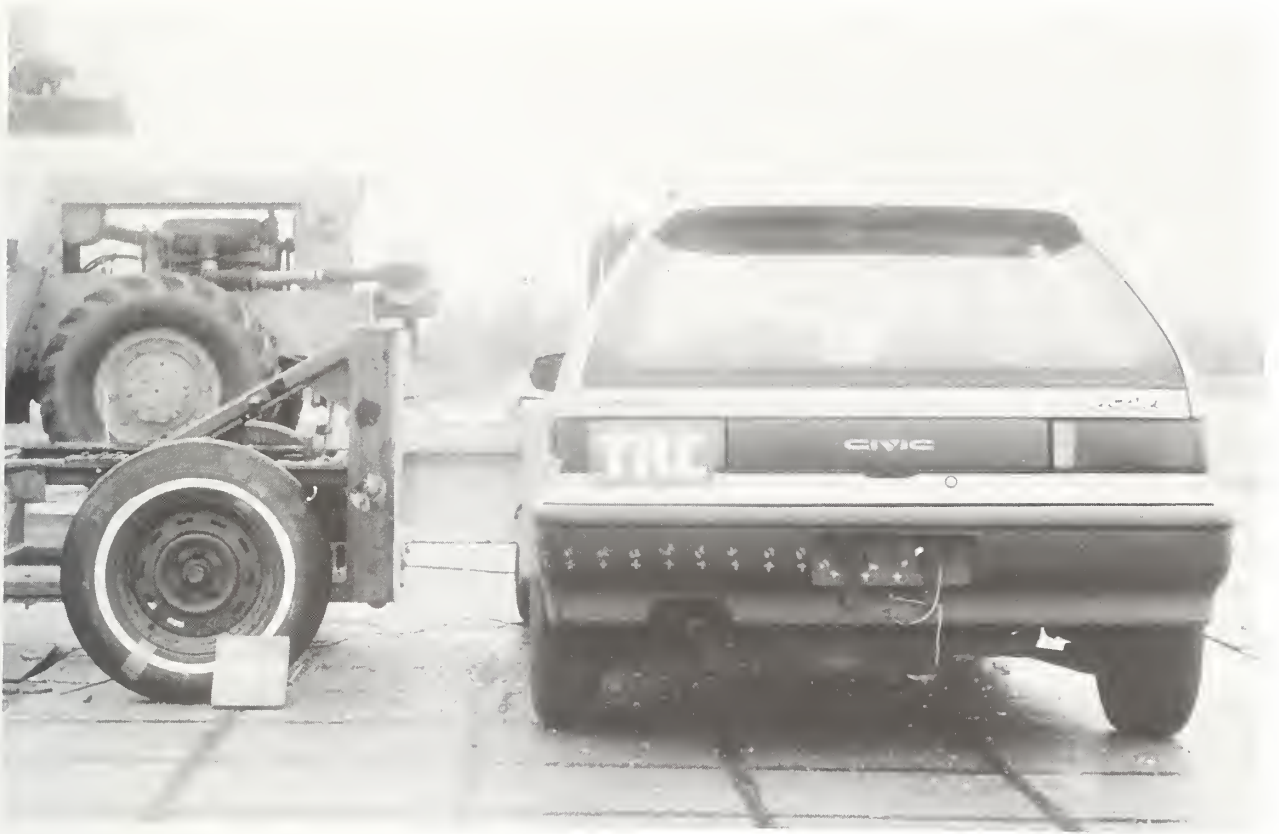


Figure A-15. Post-Test Rear View

List of Photographs

Test No. 950518-3

- A-16. Post-Test Front View
- A-17. Post-Test Left Front Three-Quarter View
- A-18. Post-Test Left Side View
- A-19. Post-Test Left Rear Three-Quarter View
- A-20. Post-Test Rear View



Figure A-16. Post-Test Front View



Figure A-17. Post-Test Left Front Three-Quarter View



Figure A-18. Post-Test Left Side View



Figure A-19. Post-Test Left Rear Three-Quarter View

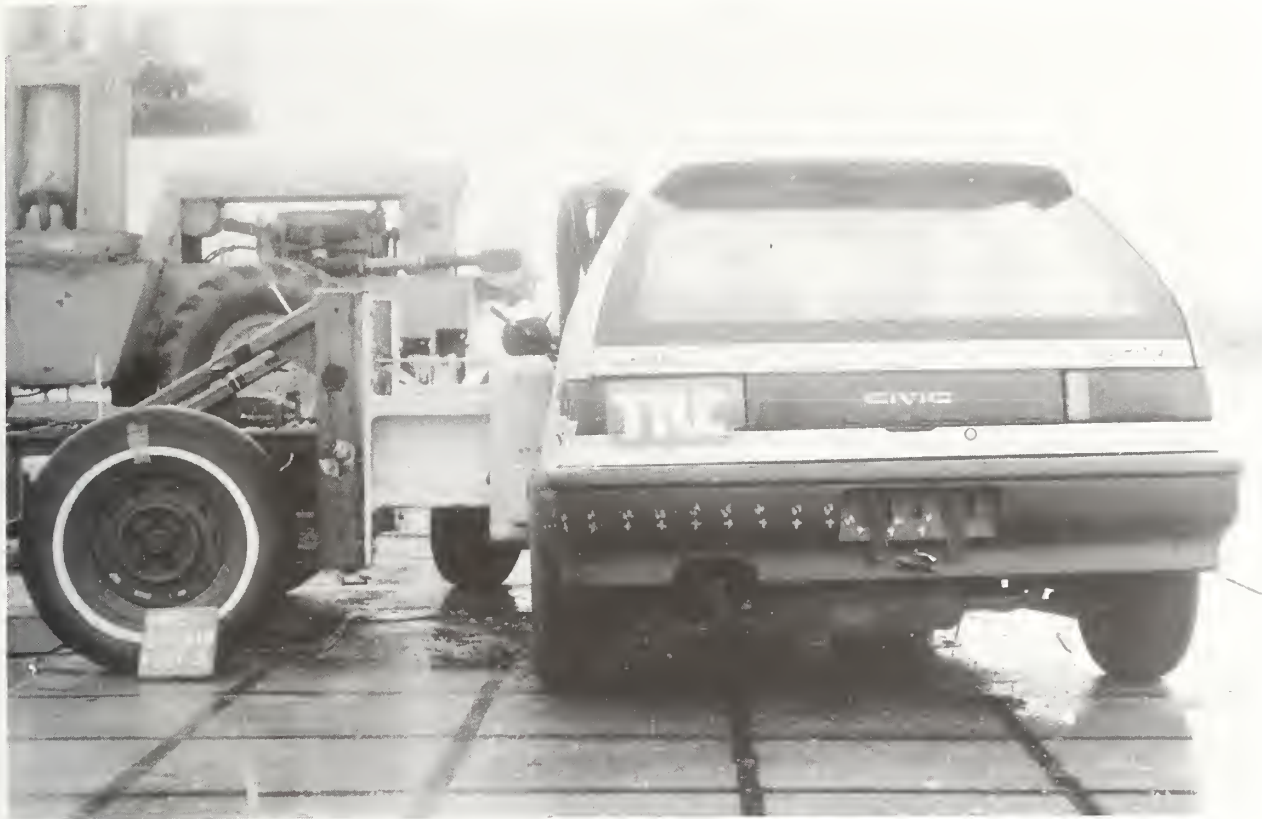


Figure A-20. Post-Test Rear View

List of Photographs

Test No. 950518-4

- A-21. Post-Test Front View
- A-22. Post-Test Left Front Three-Quarter View
- A-23. Post-Test Left Side View
- A-24. Post-Test Left Rear Three-Quarter View
- A-25. Post-Test Rear View

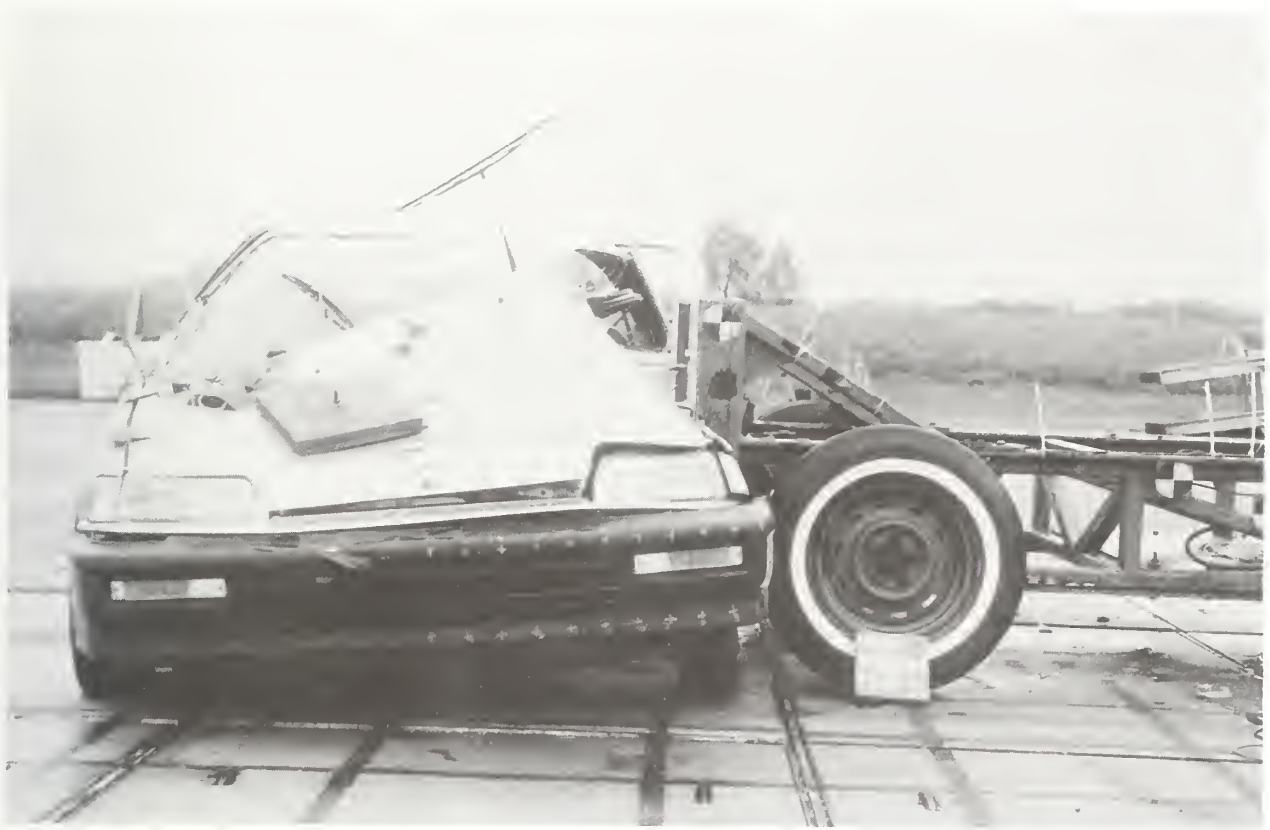


Figure A-21. Post-Test Front View

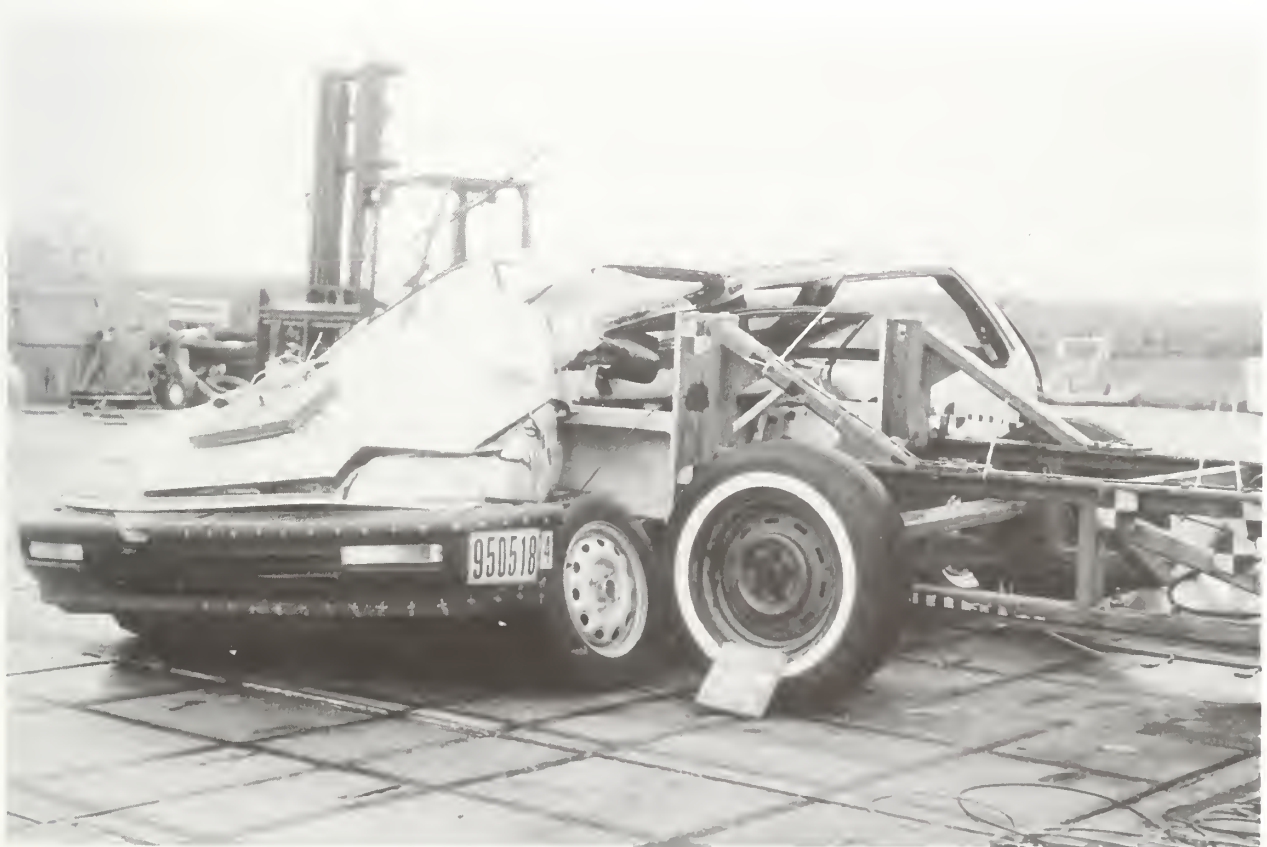


Figure A-22. Post-Test Left Front Three-Quarter View

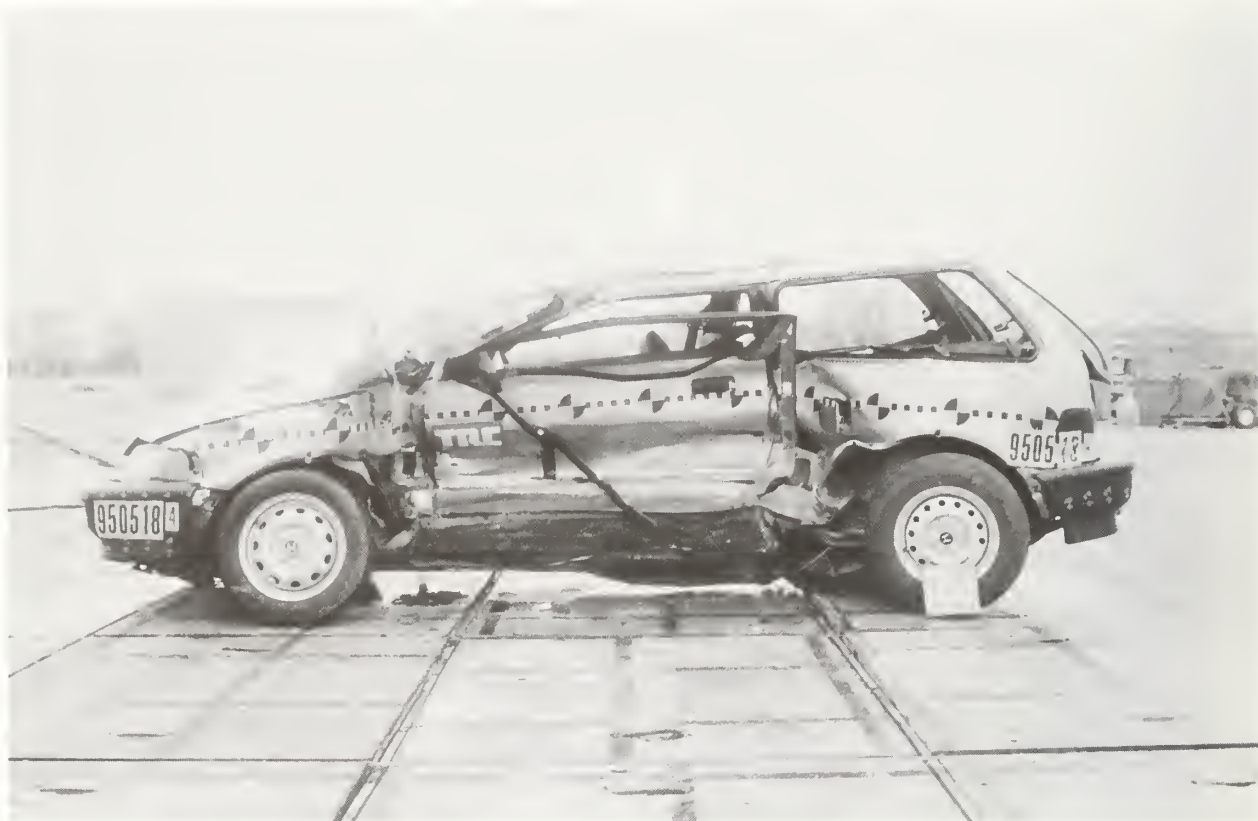


Figure A-23. Post-Test Left Side View

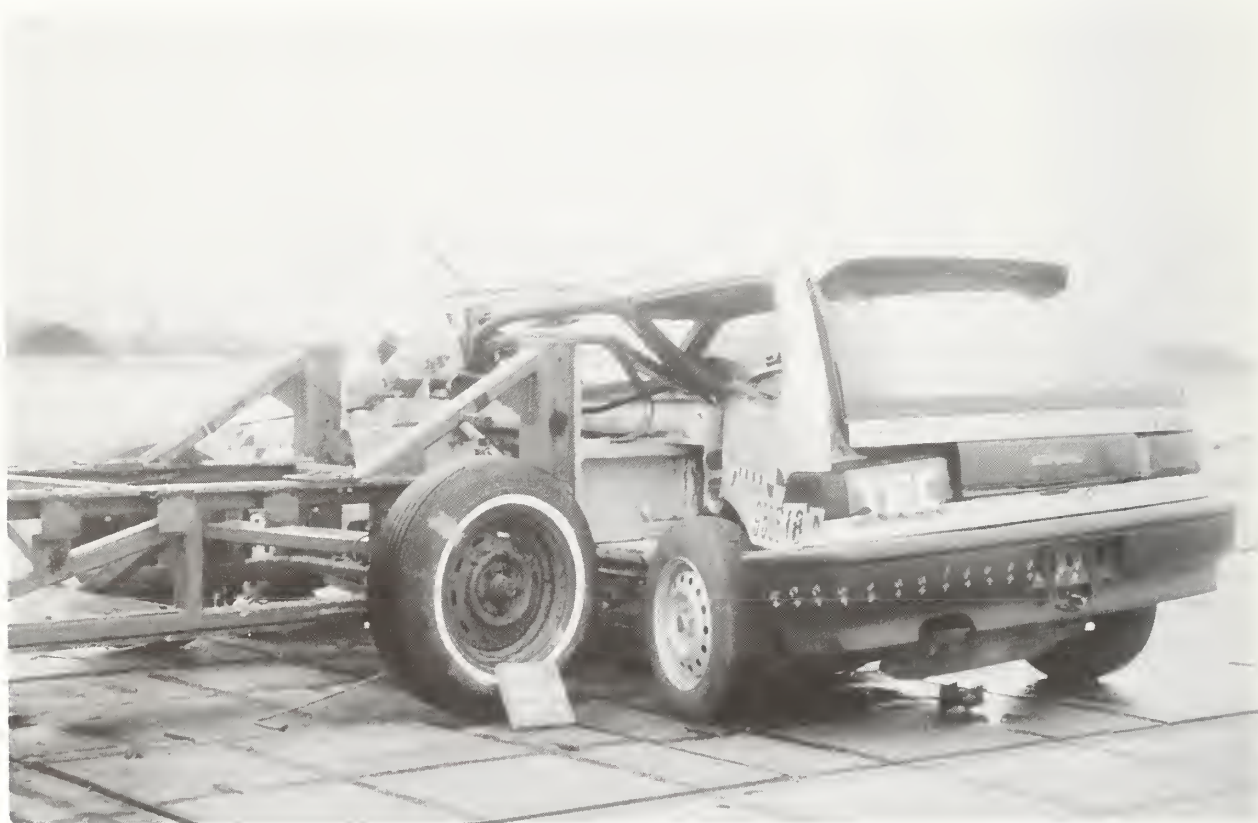


Figure A-24. Post-Test Left Rear Three-Quarter View



Figure A-25. Post-Test Rear View



Figure A-1. Pre-Test Front View



Figure A-2. Post-Test Front View

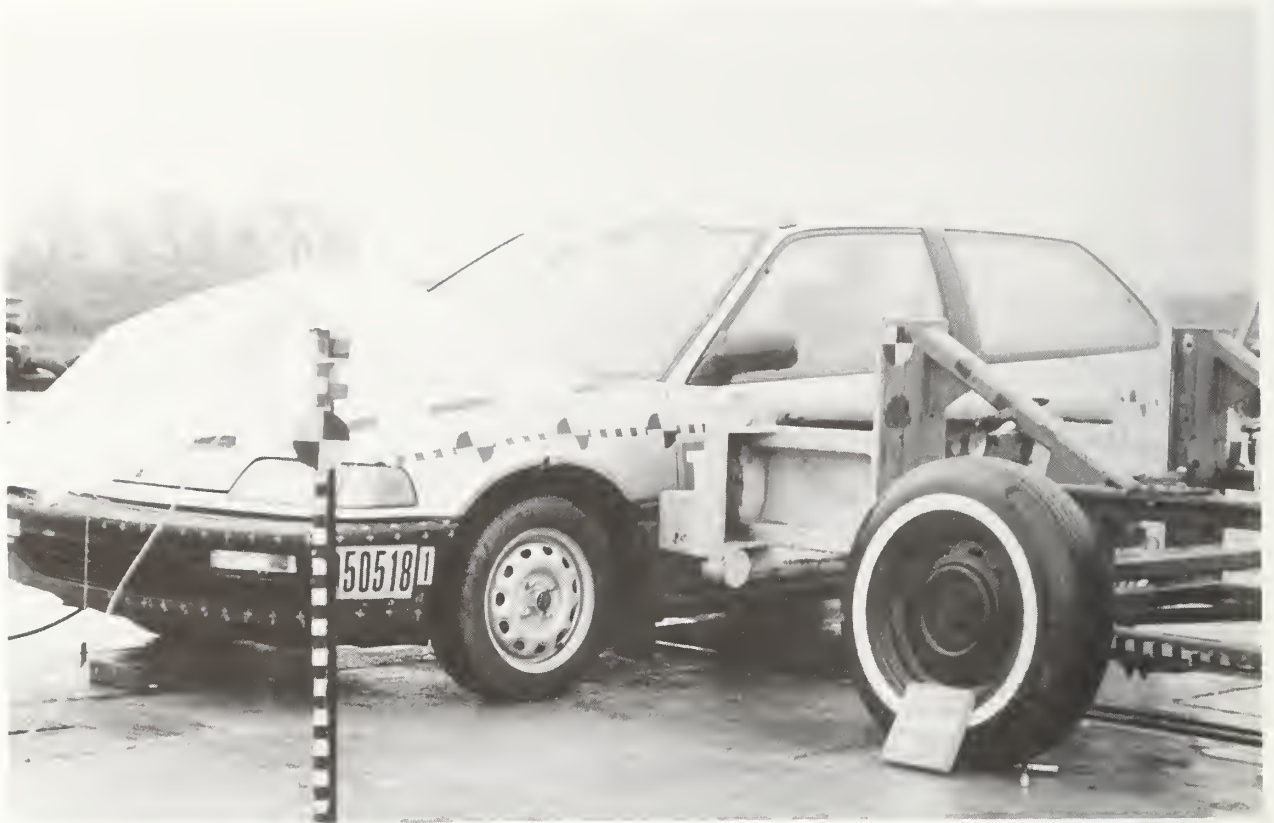


Figure A-3. Pre-Test Left Front Three-Quarter View

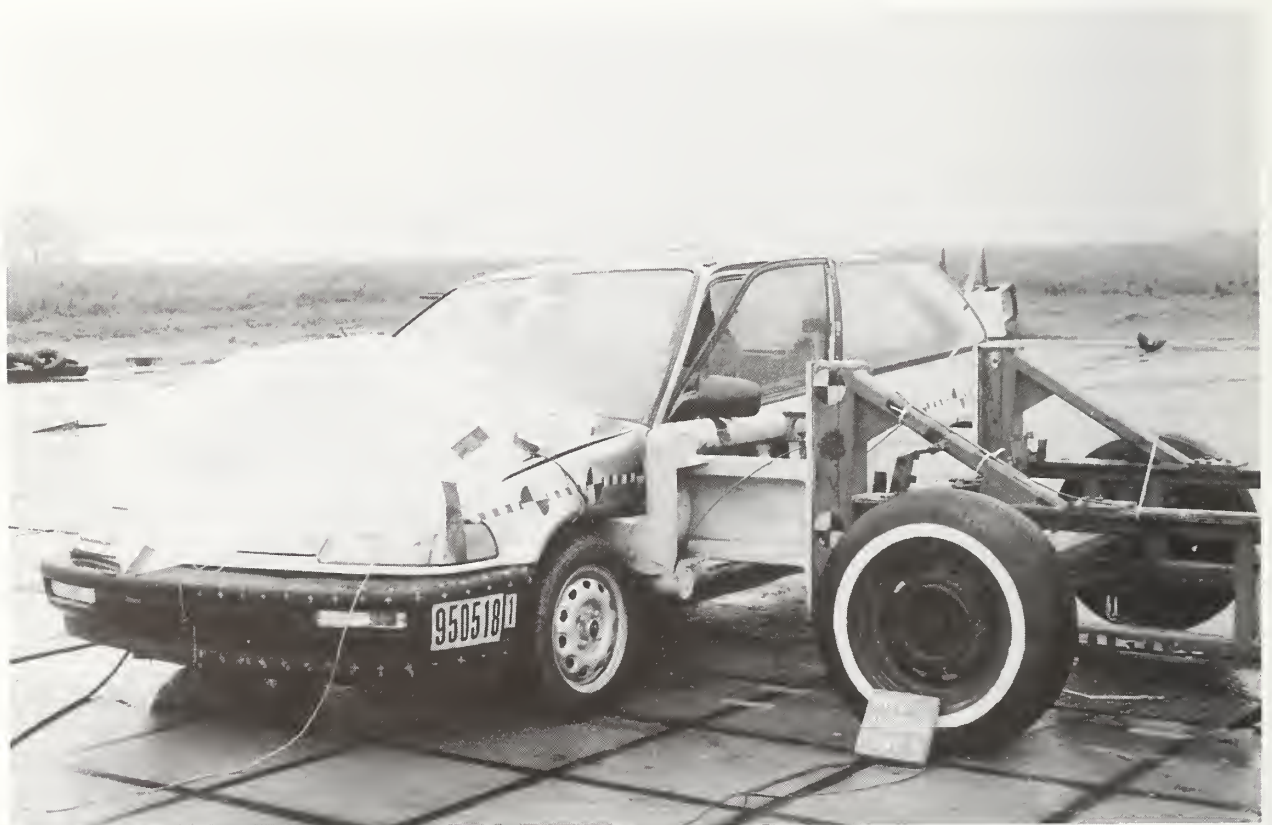


Figure A-4. Post-Test Left Front Three-Quarter View



Figure A-5. Pre-Test Left Side View 1



Figure A-6. Pre-Test Left Side View 2



Figure A-7. Pre-Test Left Rear Three-Quarter View



Figure A-8. Post-Test Left Rear Three-Quarter View



Figure A-9. Pre-Test Rear View



Figure A-10. Post-Test Rear View

List of Photographs

Test No. 950518-2

- A-11. Post-Test Front View
- A-12. Post-Test Left Front Three-Quarter View
- A-13. Post-Test Left Side View
- A-14. Post-Test Left Rear Three-Quarter View
- A-15. Post-Test Rear View



Figure A-11. Post-Test Front View



Figure A-12. Post-Test Left Front Three-Quarter View



Figure A-13. Post-Test Left Side View



Figure A-14. Post-Test Left Rear Three-Quarter View

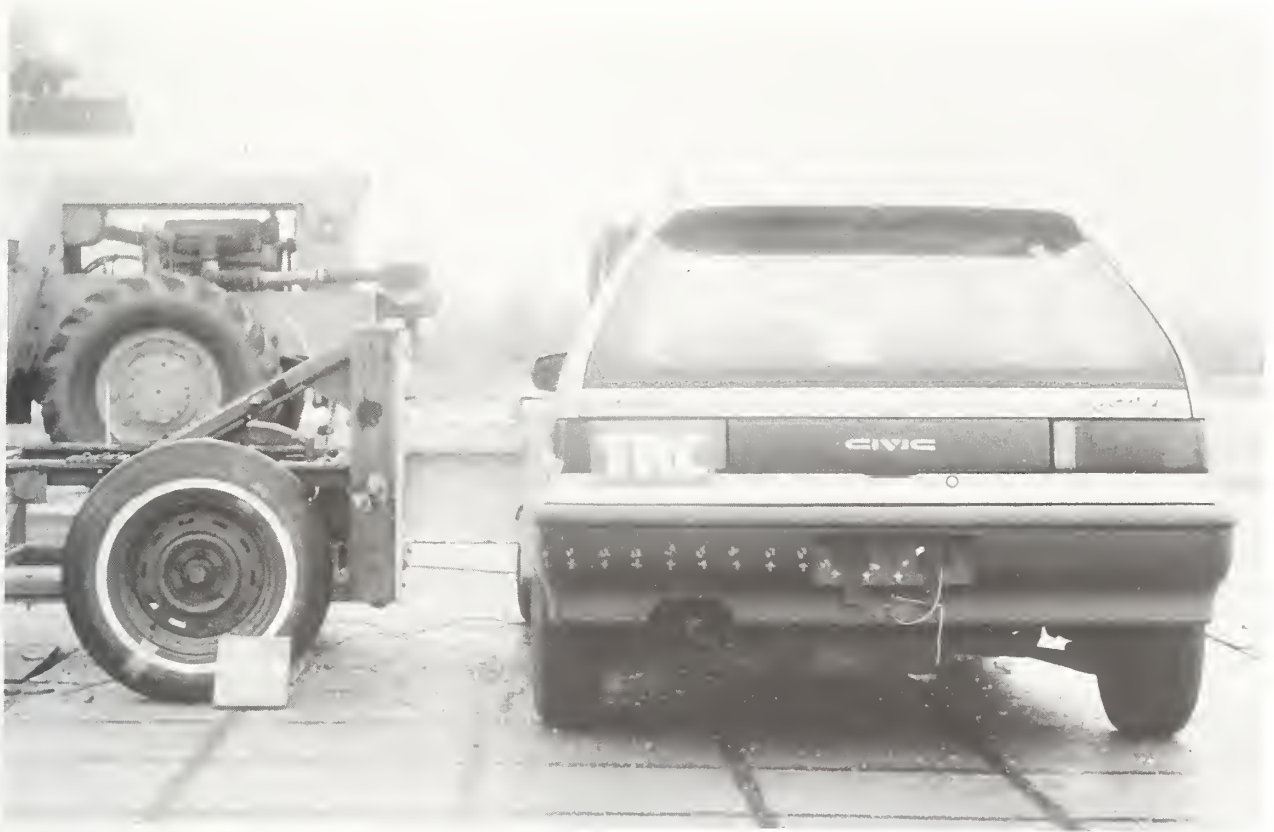


Figure A-15. Post-Test Rear View

List of Photographs

Test No. 950518-3

- A-16. Post-Test Front View
- A-17. Post-Test Left Front Three-Quarter View
- A-18. Post-Test Left Side View
- A-19. Post-Test Left Rear Three-Quarter View
- A-20. Post-Test Rear View



Figure A-16. Post-Test Front View



Figure A-17. Post-Test Left Front Three-Quarter View



Figure A-18. Post-Test Left Side View



Figure A-19. Post-Test Left Rear Three-Quarter View



Figure A-20. Post-Test Rear View

List of Photographs

Test No. 950518-4

- A-21. Post-Test Front View
- A-22. Post-Test Left Front Three-Quarter View
- A-23. Post-Test Left Side View
- A-24. Post-Test Left Rear Three-Quarter View
- A-25. Post-Test Rear View

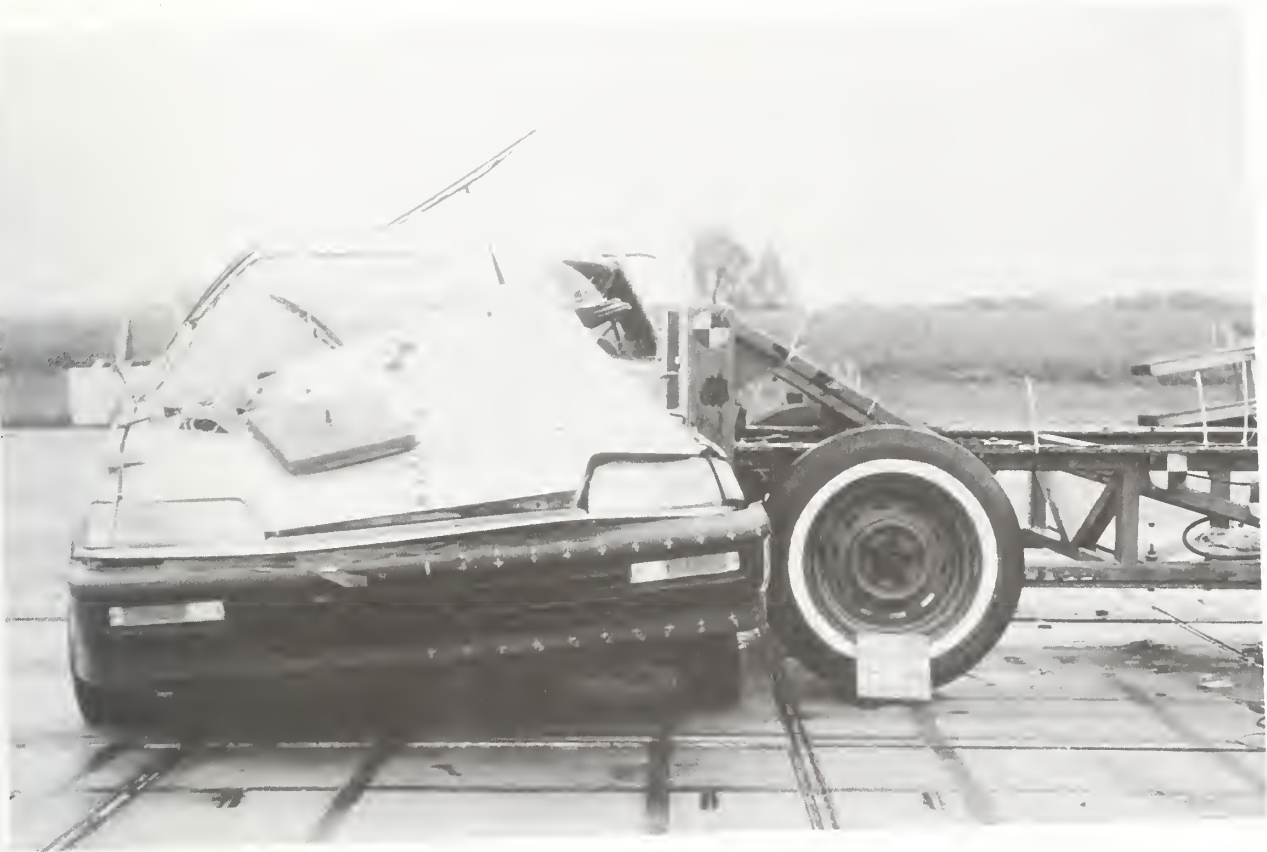


Figure A-21. Post-Test Front View

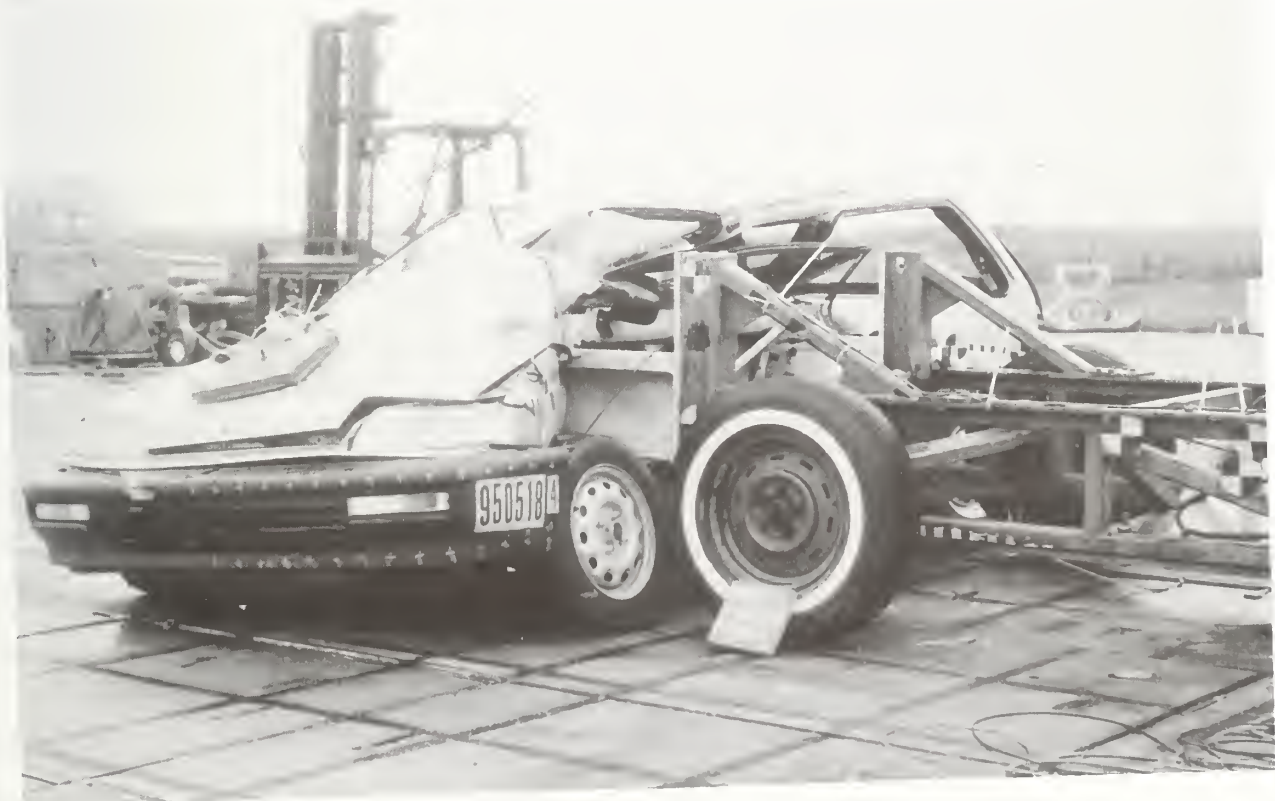


Figure A-22. Post-Test Left Front Three-Quarter View



Figure A-23. Post-Test Left Side View

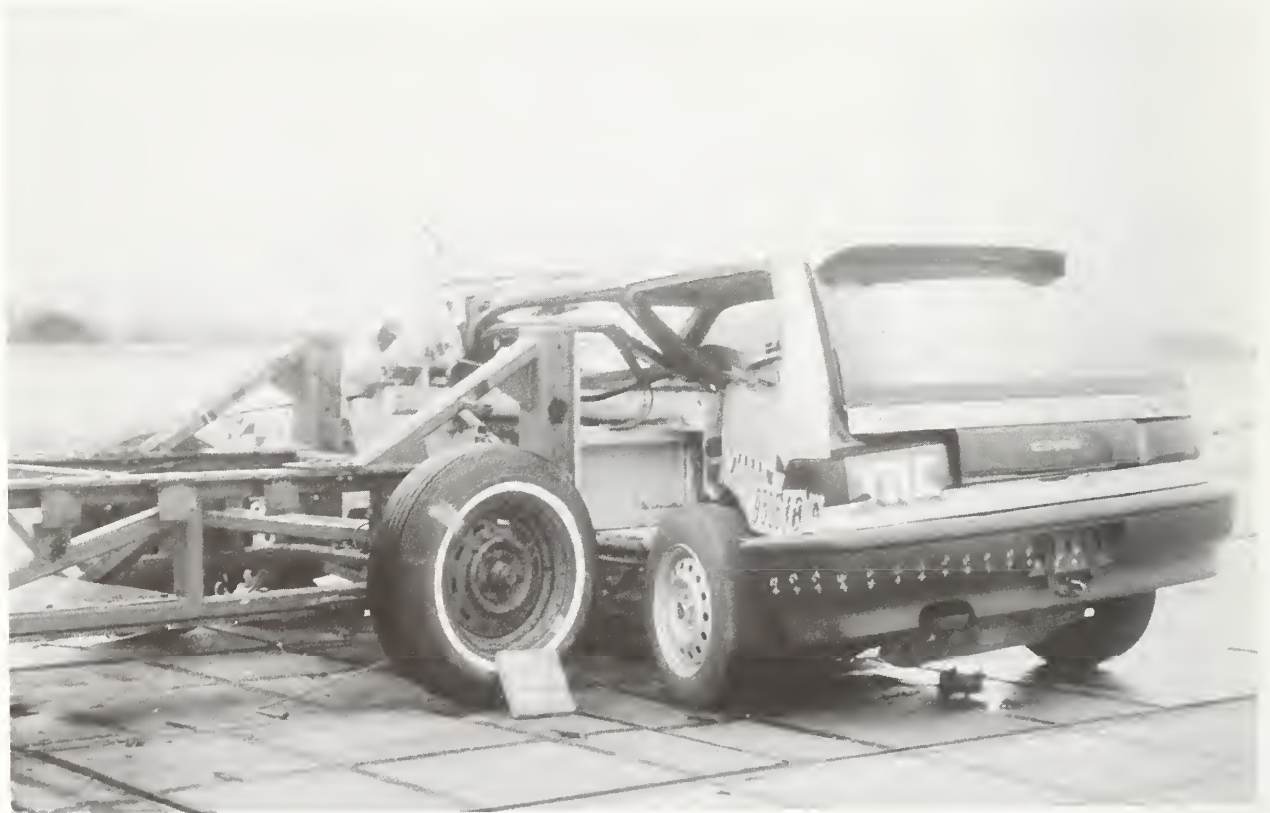


Figure A-24. Post-Test Left Rear Three-Quarter View



Figure A-25. Post-Test Rear View

Appendix B

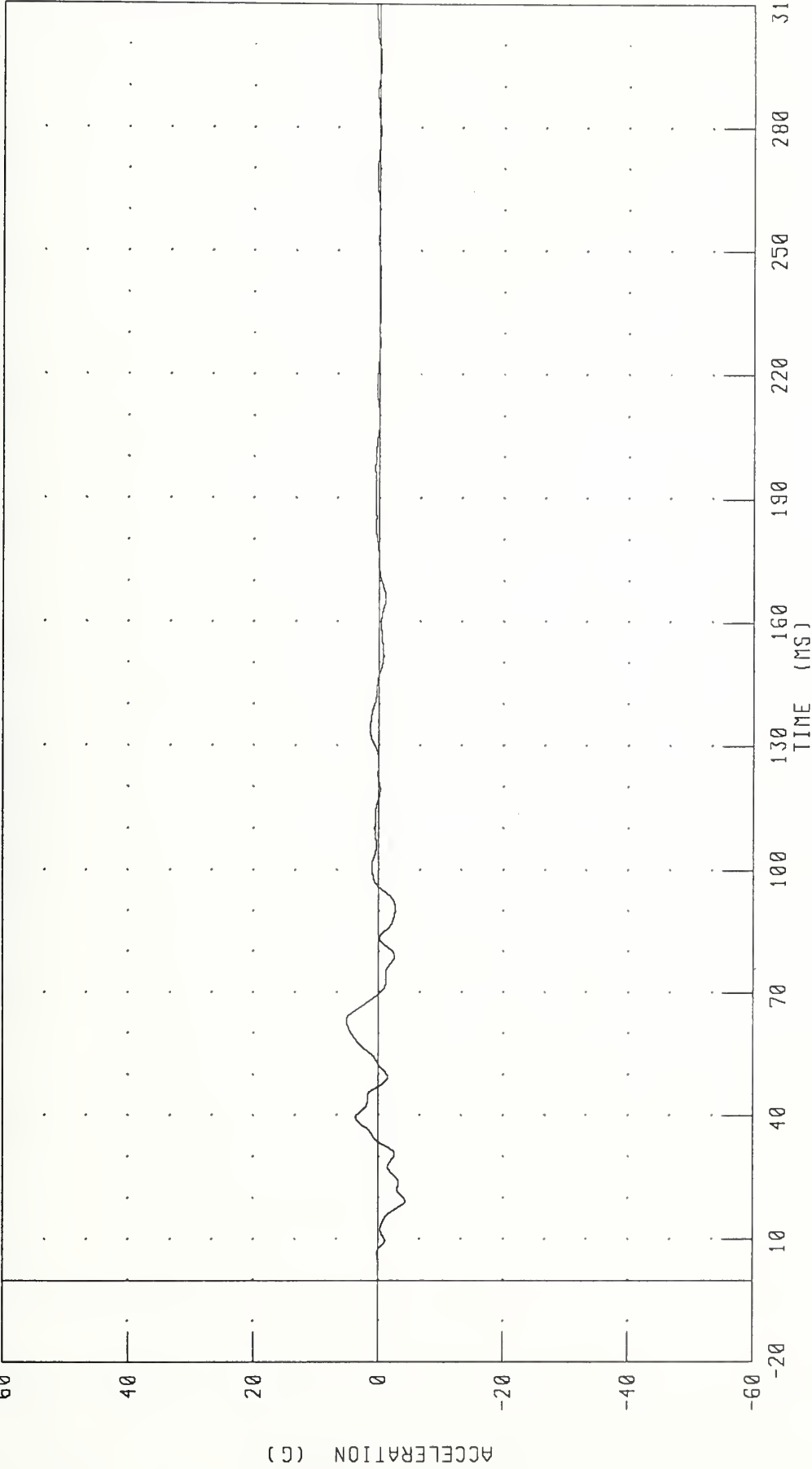
Data Plots

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG X-AXIS ACCELERATION

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

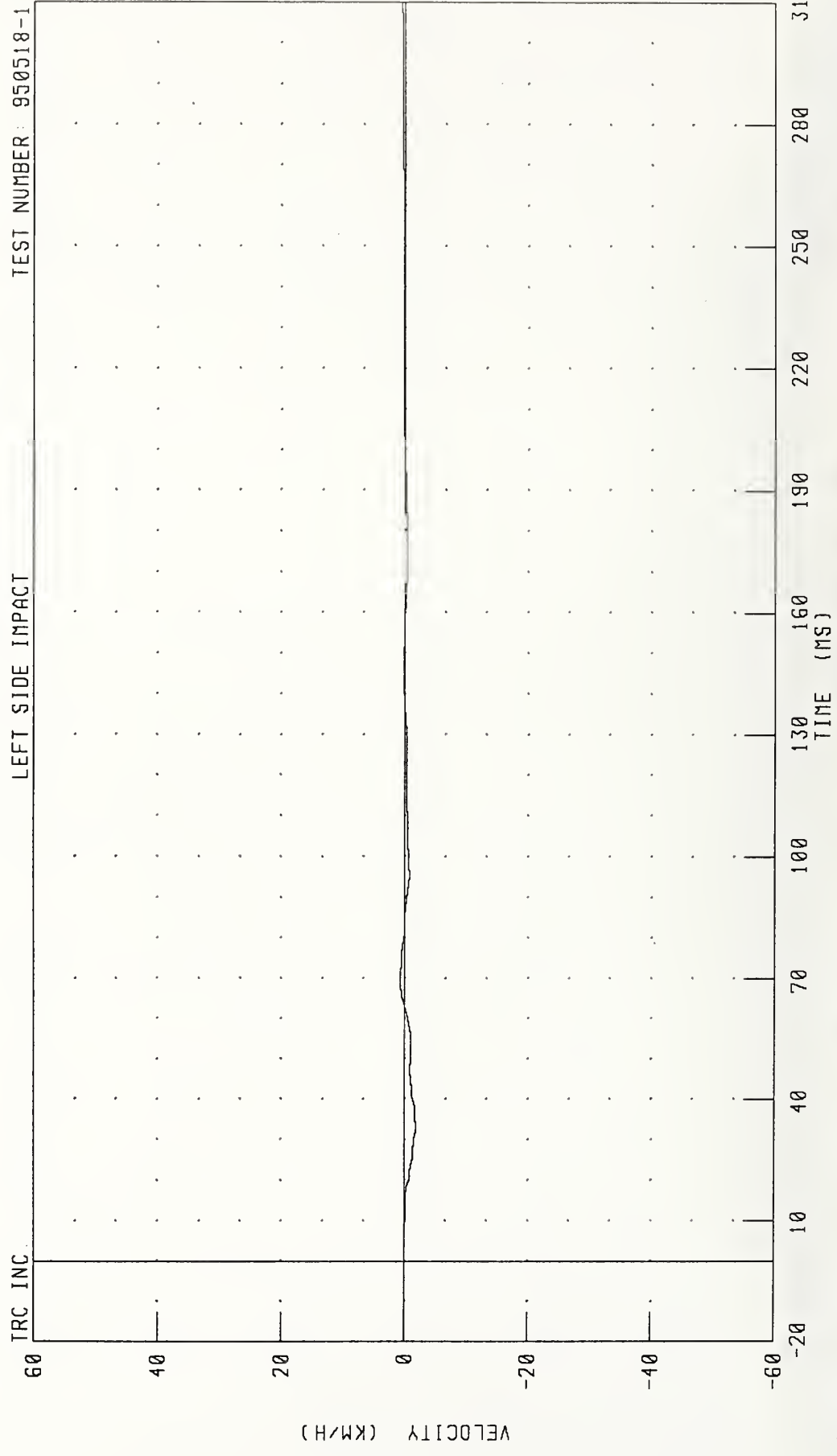
TRC INC



CHANNEL VCGXG1 FILTER CH. CLASS 60

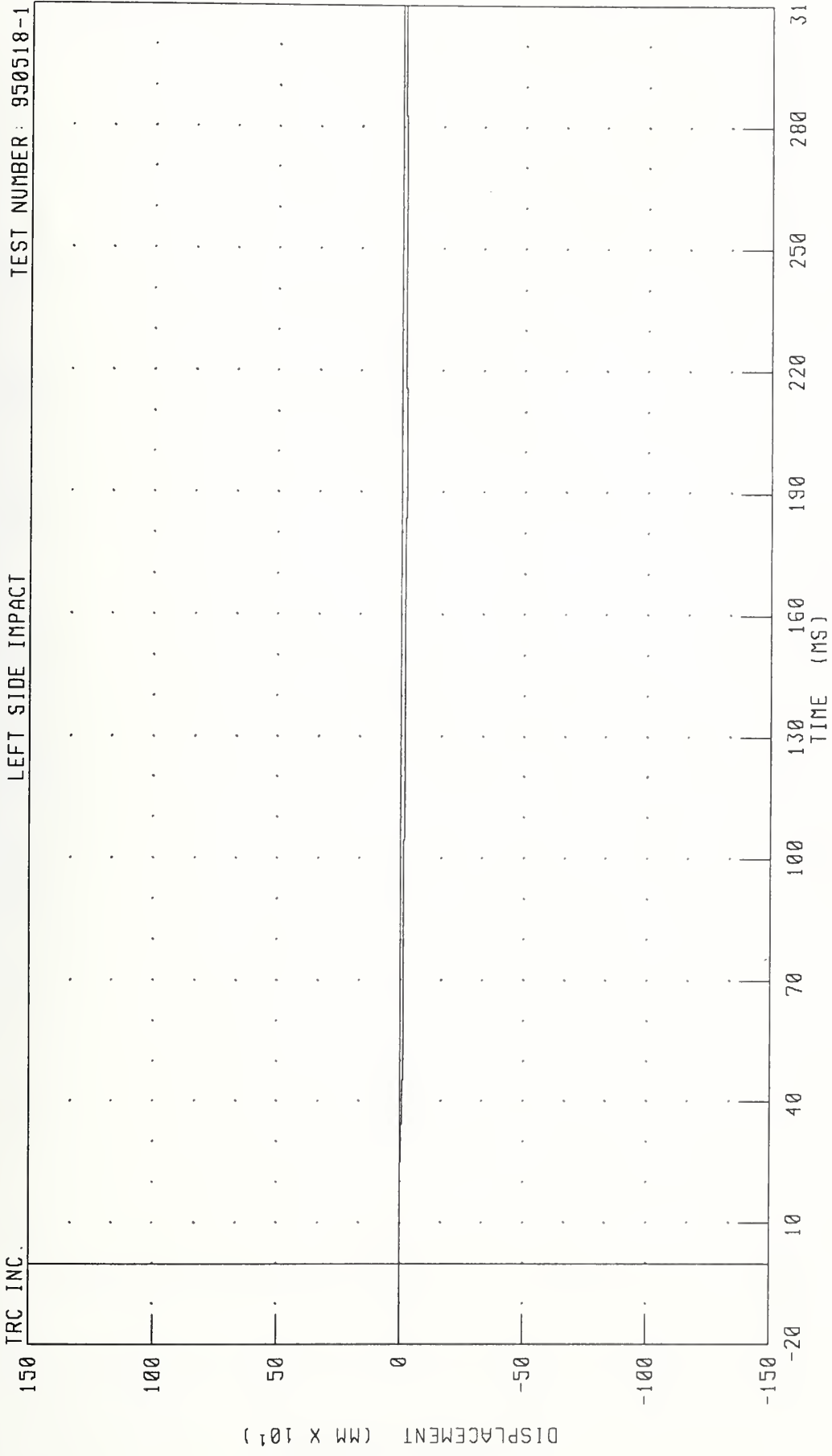
PEAK DATA: 5 14 G @ 63 12 MS, -4 34 G @ 19 28 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CC X-AXIS VELOCITY



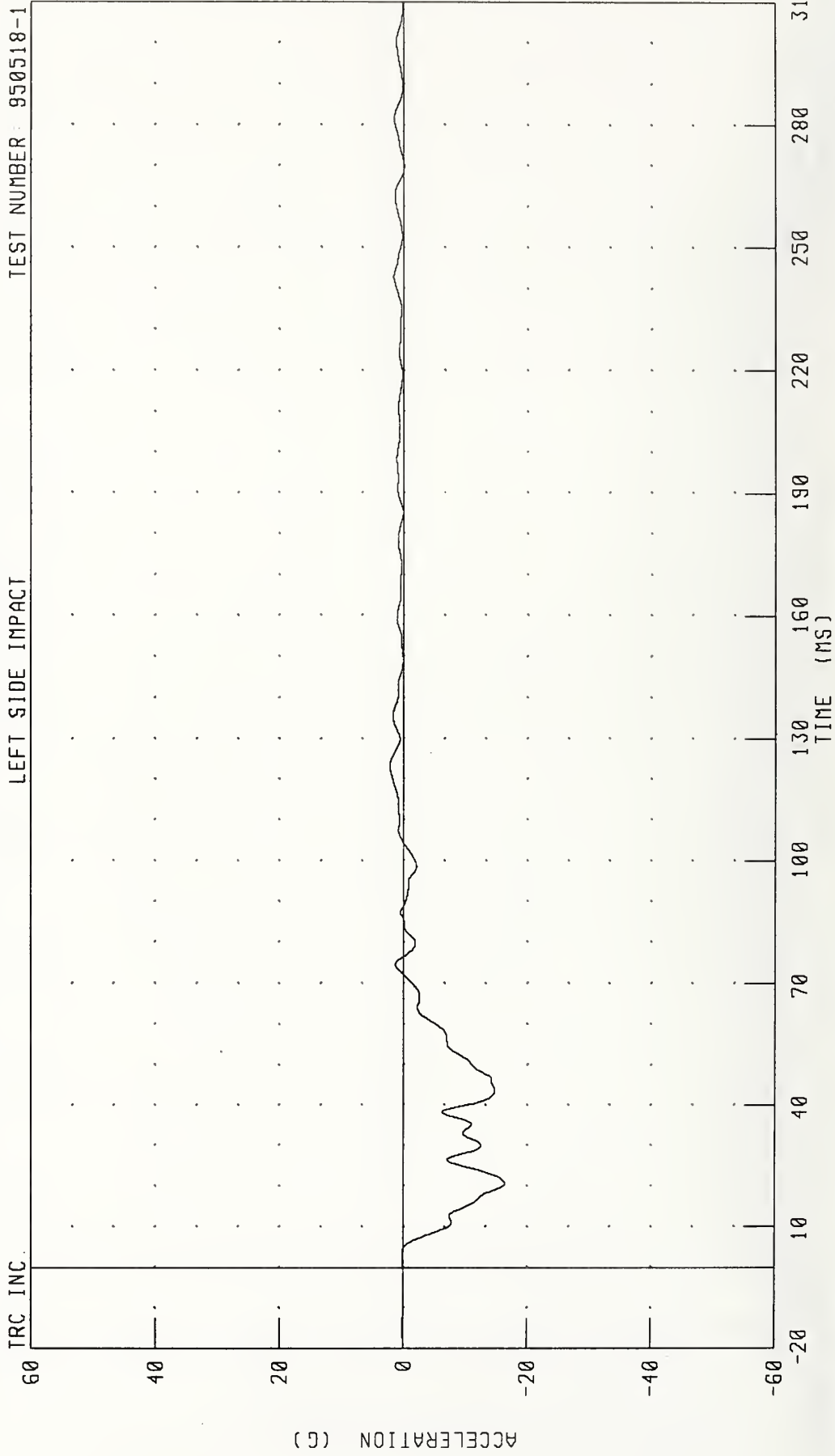
CHANNEL: VCGXV1 FILTER: CH. CLASS 180 PEAK DATA 0.72 KM/H @ 69.44 MS, -1.86 KM/H @ 33.12 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 VEHICLE CG X-AXIS DISPLACEMENT



CHANNEL VCGXD1 FILTER CH. CLASS 180 PEAK DATA: 0 03 MM @ 9.36 MS, -19.32 MM @ 197.84 MS

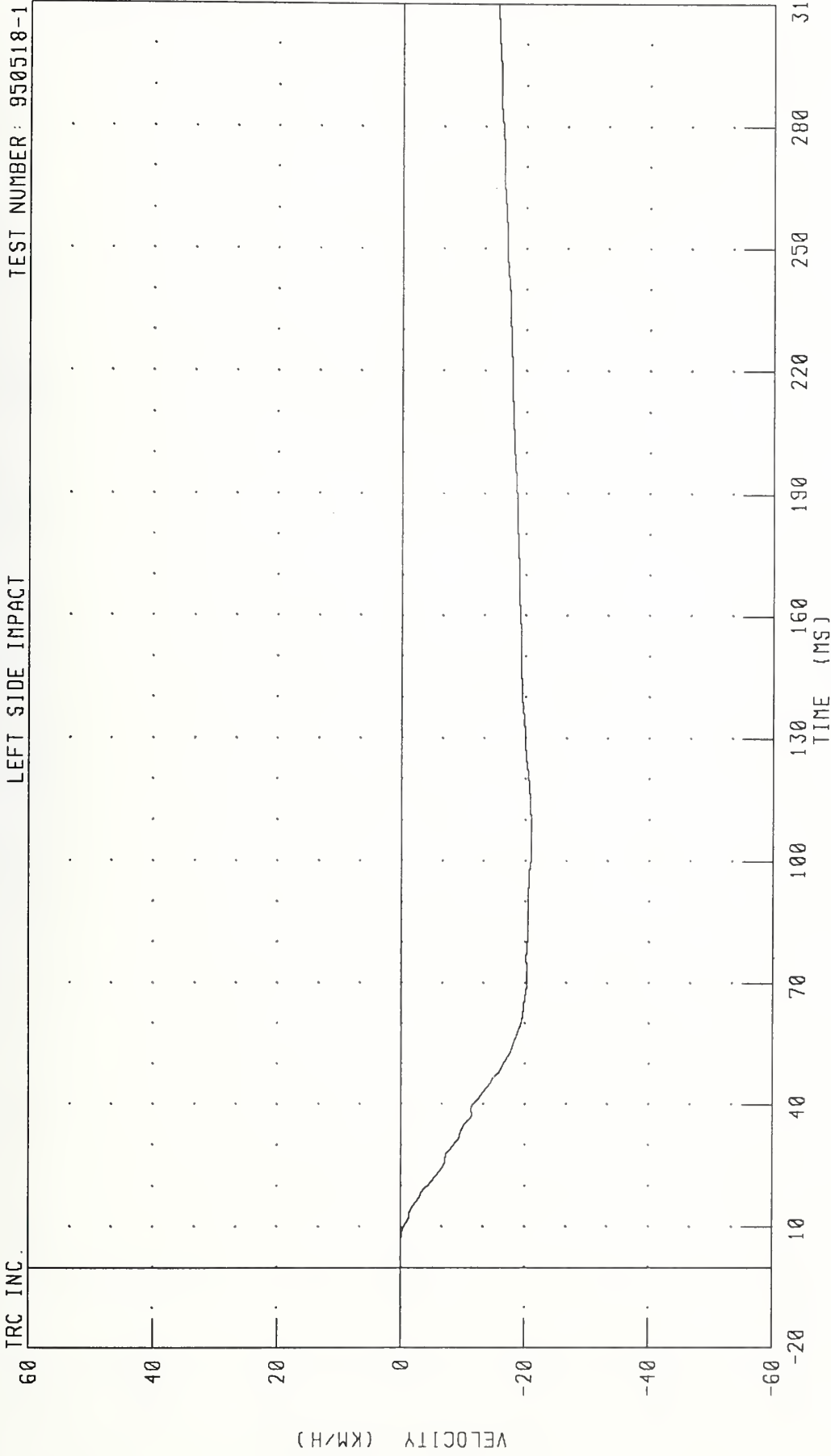
NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Y-AXIS ACCELERATION
LEFT SIDE IMPACT



CHANNEL: VCGYG1 FILTER: CH. CLASS 60 PEAK DATA: 2.22 G @ 123.28 MS, -16.39 G @ 20.56 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Y-AXIS VELOCITY

TRC INC. LEFT SIDE IMPACT TEST NUMBER: 950518-1



CHANNEL VCGYV1 FILTER: CH. CLASS 180

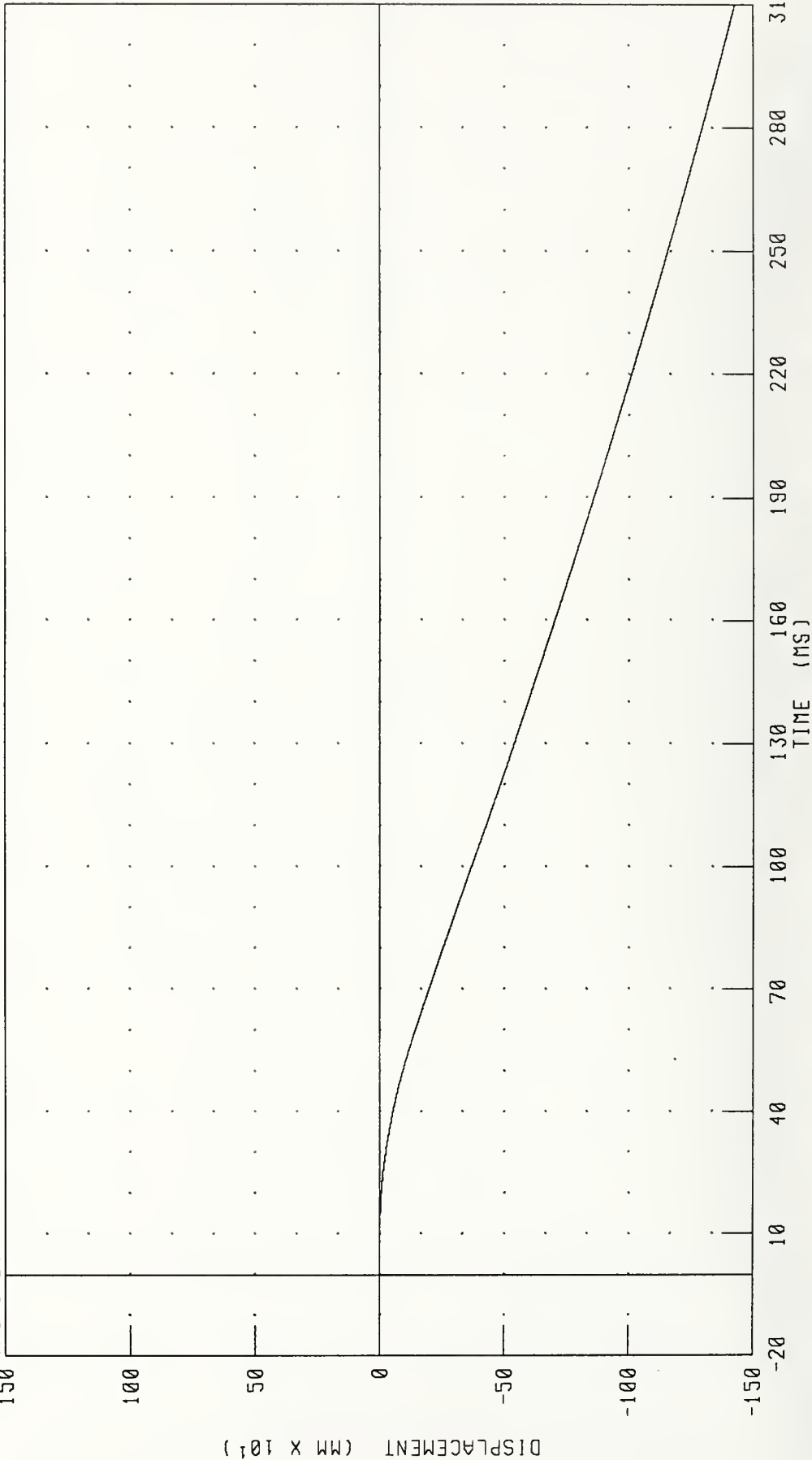
PEAK DATA: 0 02 KM/H @ 6.08 MS; -21 05 KM/H @ 104 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.



CHANNEL: VCGYD1 FILTER: CH CLASS 180

PEAK DATA: 0.02 MM @ 6.80 MS; -1425 08 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Z-AXIS ACCELERATION

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.

60

40

20

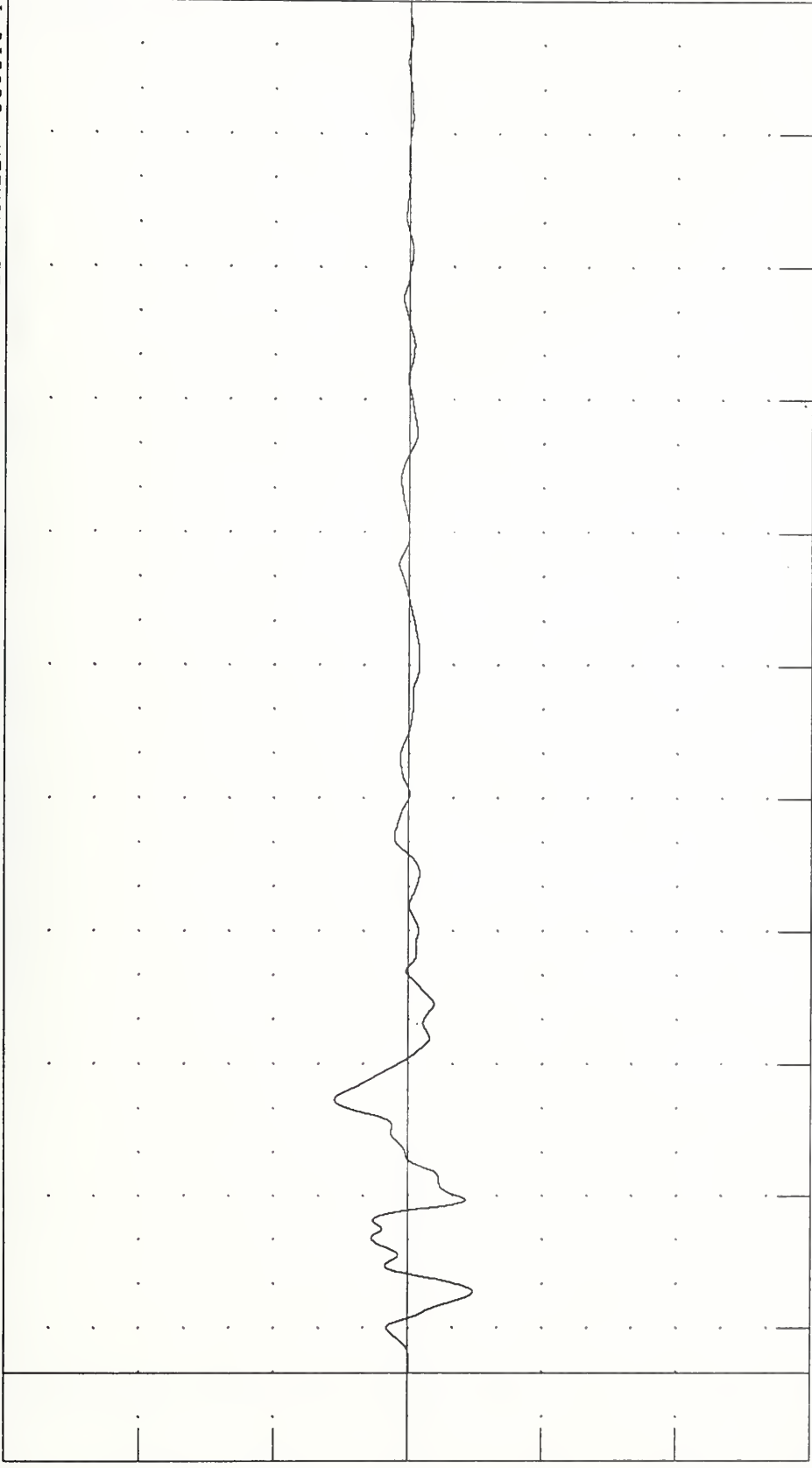
0

-20

-40

-60

ACCELERATION (G)



310

280

250

220

190

160

130

100

70

40

10

-20

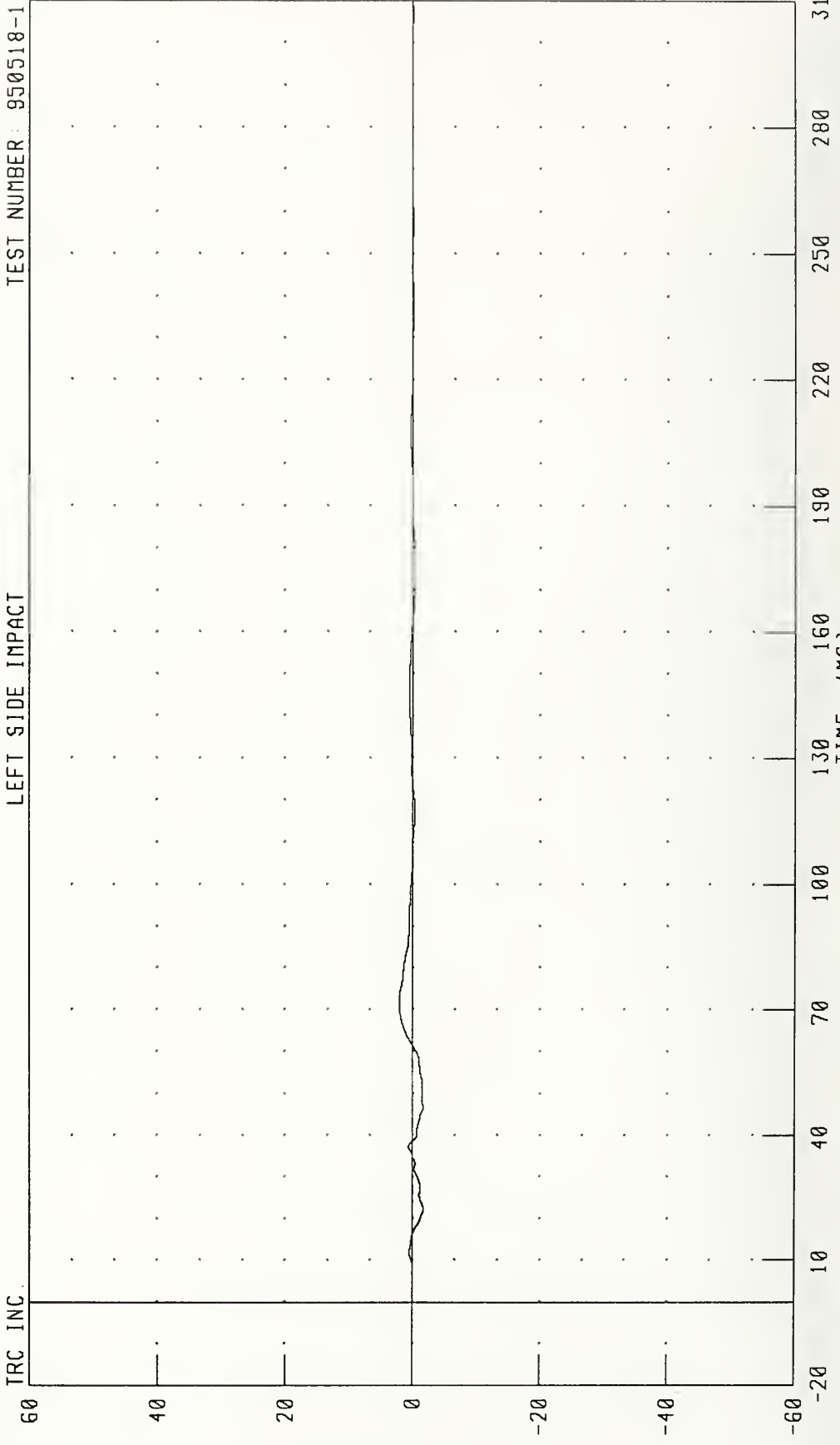
TIME (MS)

CHANNEL VCGZG1 FILTER CH CLASS 60

PEAK DATA 10 95 G @ 62 00 MS; -9 72 G @ 18 16 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Z-AXIS VELOCITY

TEST NUMBER: 950518-1



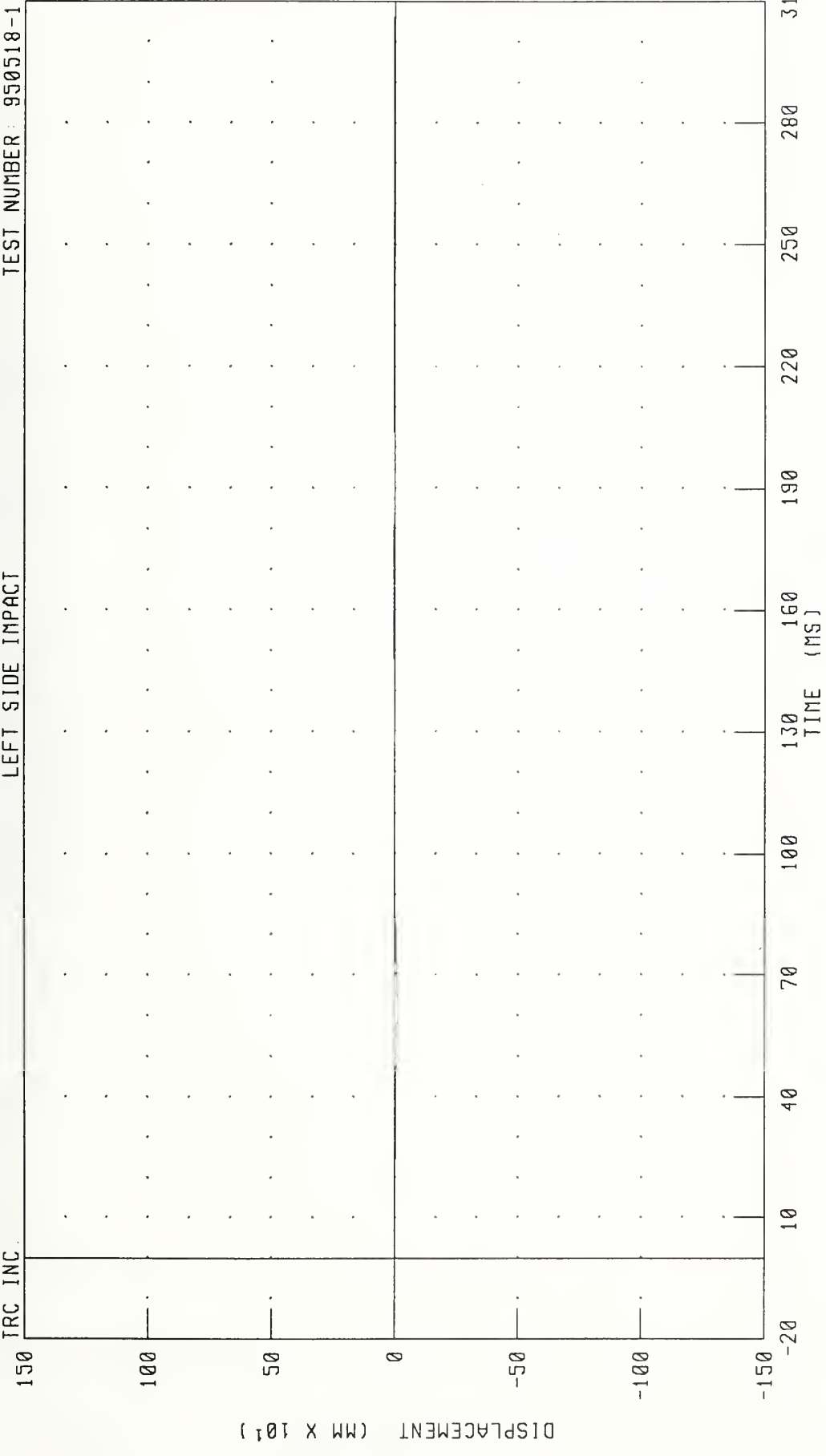
CHANNEL: VCGZV1 FILTER: CH CLASS 180 PEAK DATA: 2 08 KM/H @ 71 20 MS; -1 68 KM/H @ 22 24 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 VEHICLE CG Z-AXIS DISPLACEMENT

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

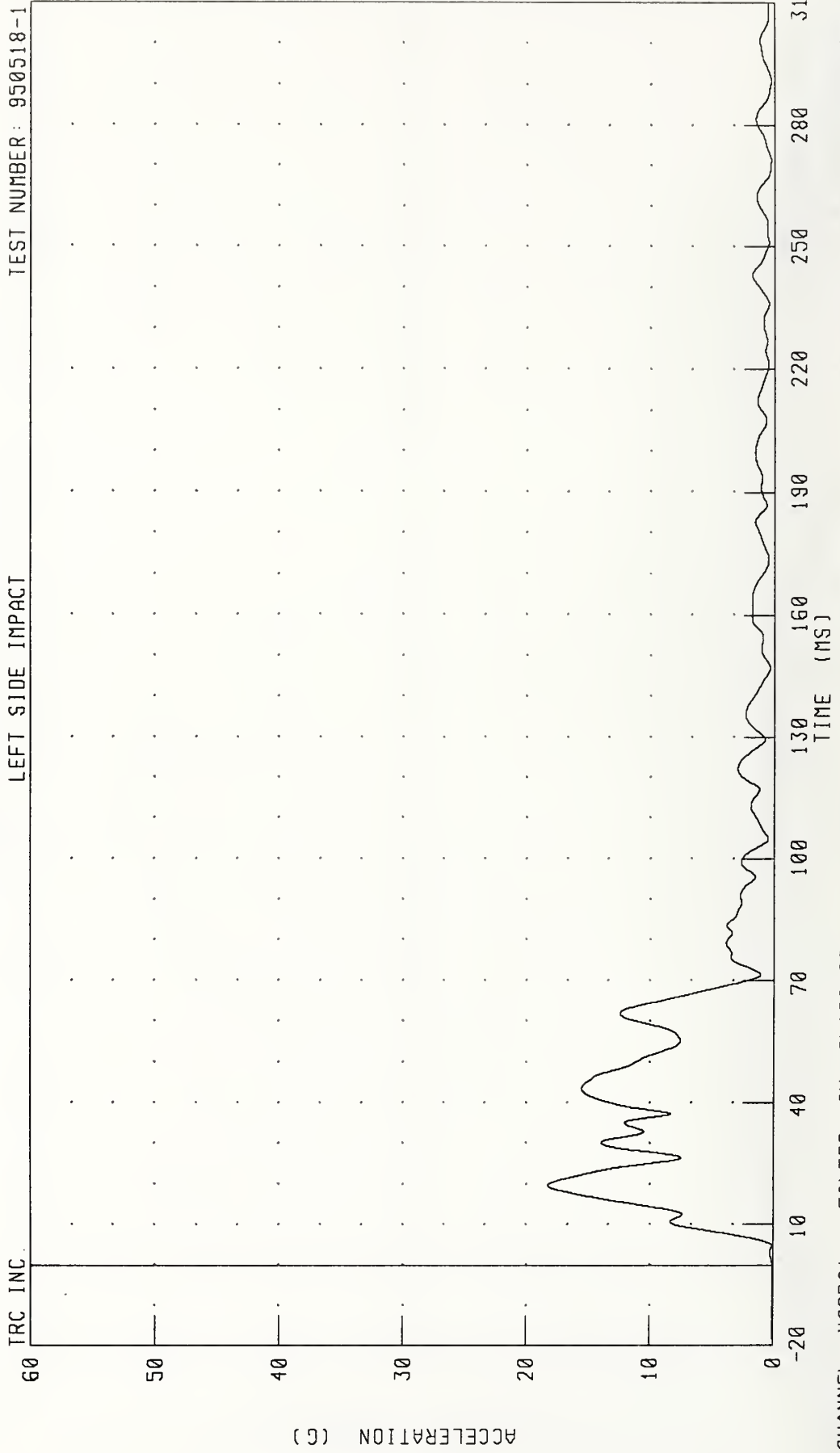
TRC INC



CHANNEL: VCGZ01 FILTER: CH CLASS 180

PEAK DATA: 3.77 MM @ 163.20 MS, -10.82 MM @ 61.52 MS

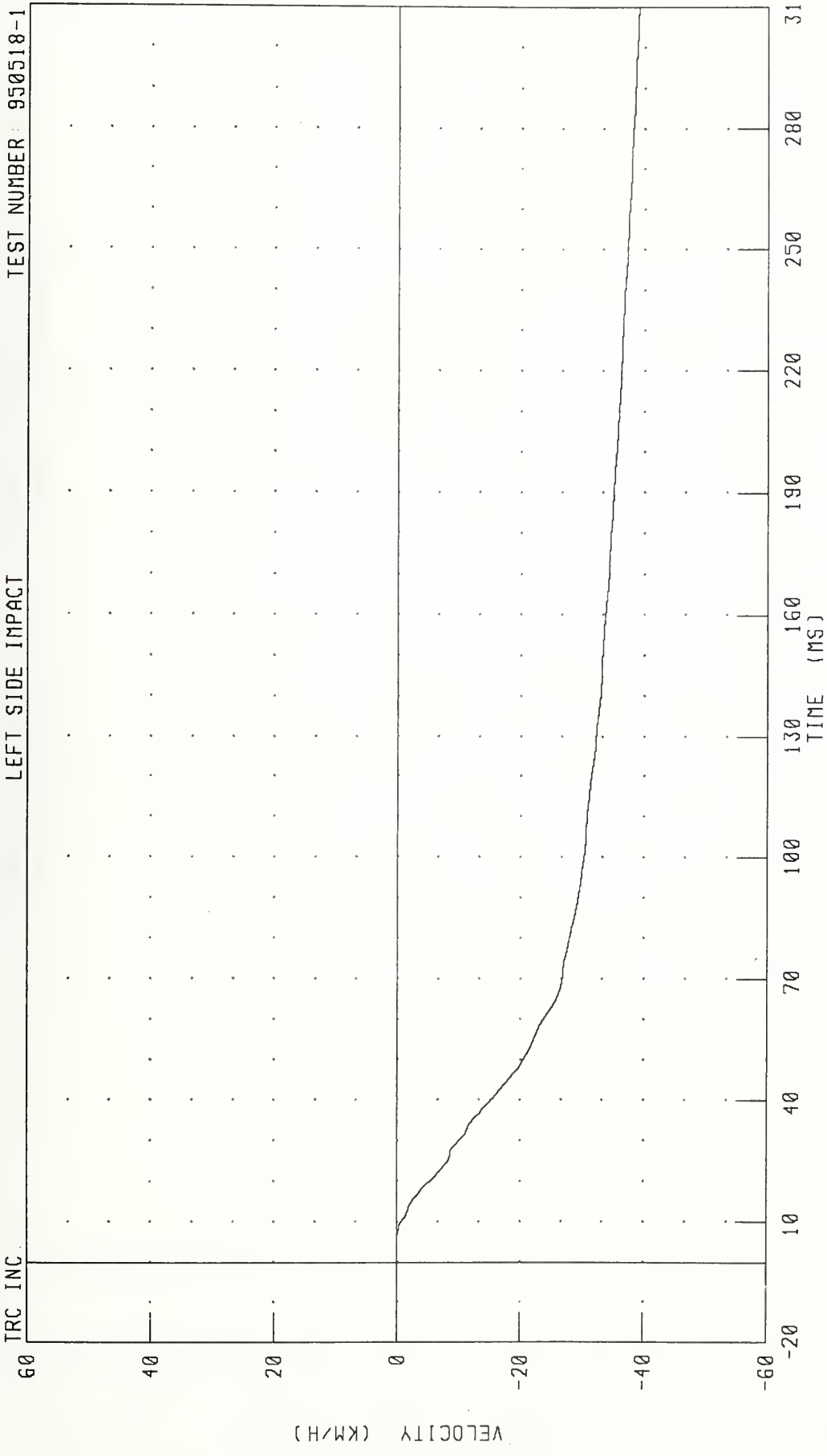
NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG RESULTANT ACCELERATION



CHANNEL: VCGRG1 FILTER: CH CLASS 60

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CC RESULTANT VELOCITY

TRC INC LEFT SIDE IMPACT TEST NUMBER: 950518-1



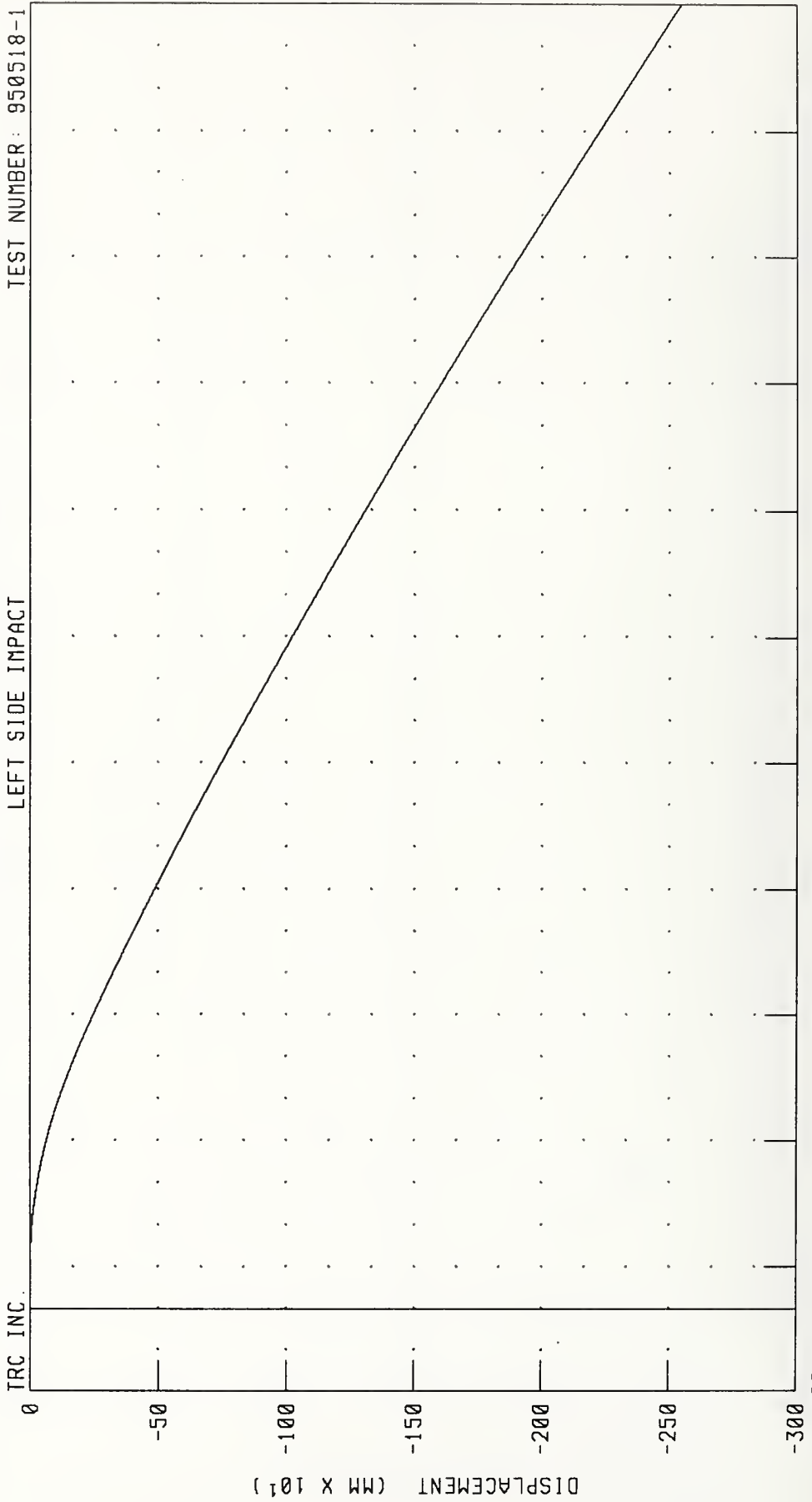
CHANNEL VCGRV1 FILTER CH CLASS 180

PEAK DATA: 0 00 KM/H @ 0 00 MS; -39 05 KM/H @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG RESULTANT DISPLACEMENT

TEST NUMBER: 950518-1

LEFT SIDE IMPACT



CHANNEL: YCGRD1 FILTER: CH. CLASS 180

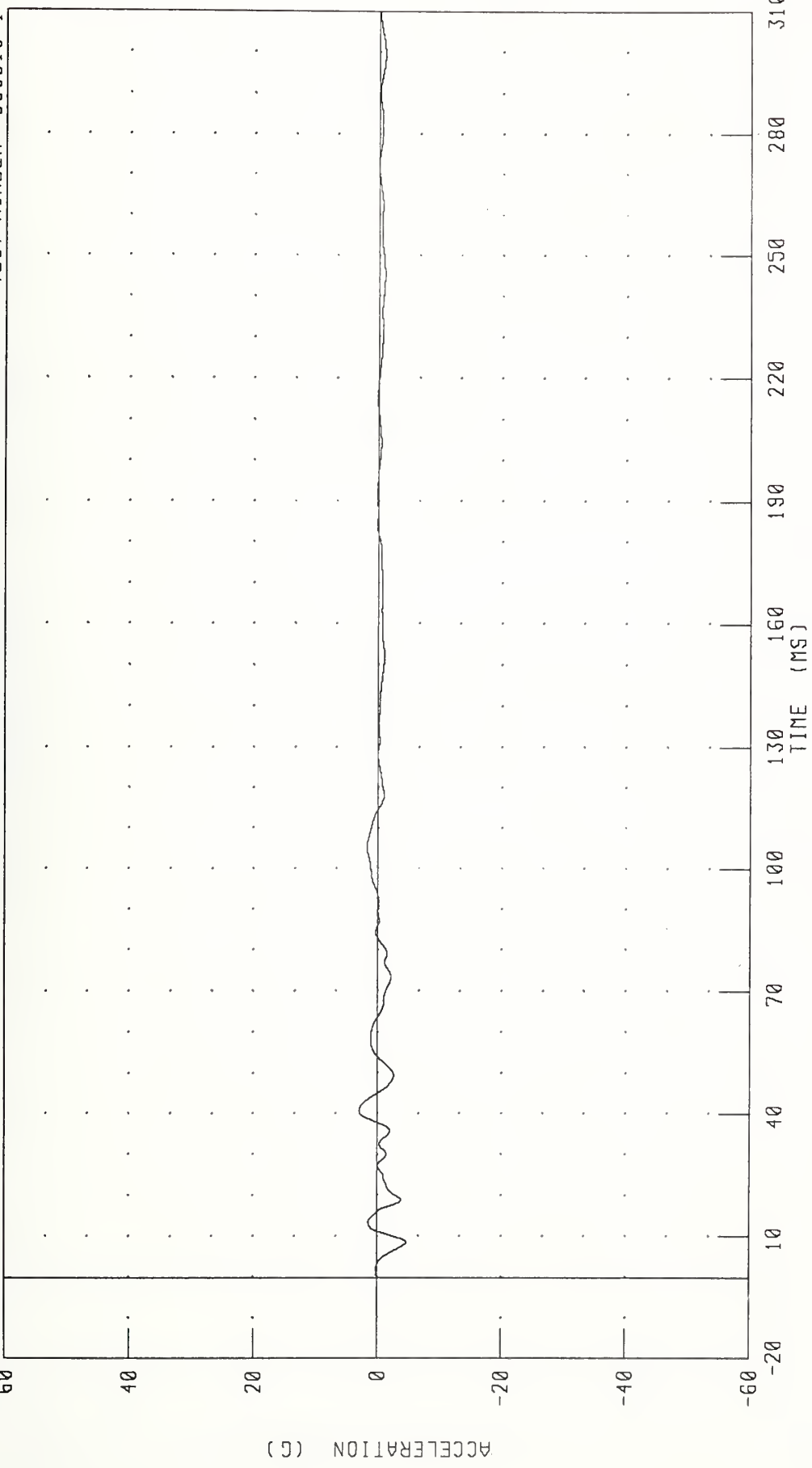
PEAK DATA: 0.00 MM @ 0.00 MS, -2547.56 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL X-AXIS ACCELERATION

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.

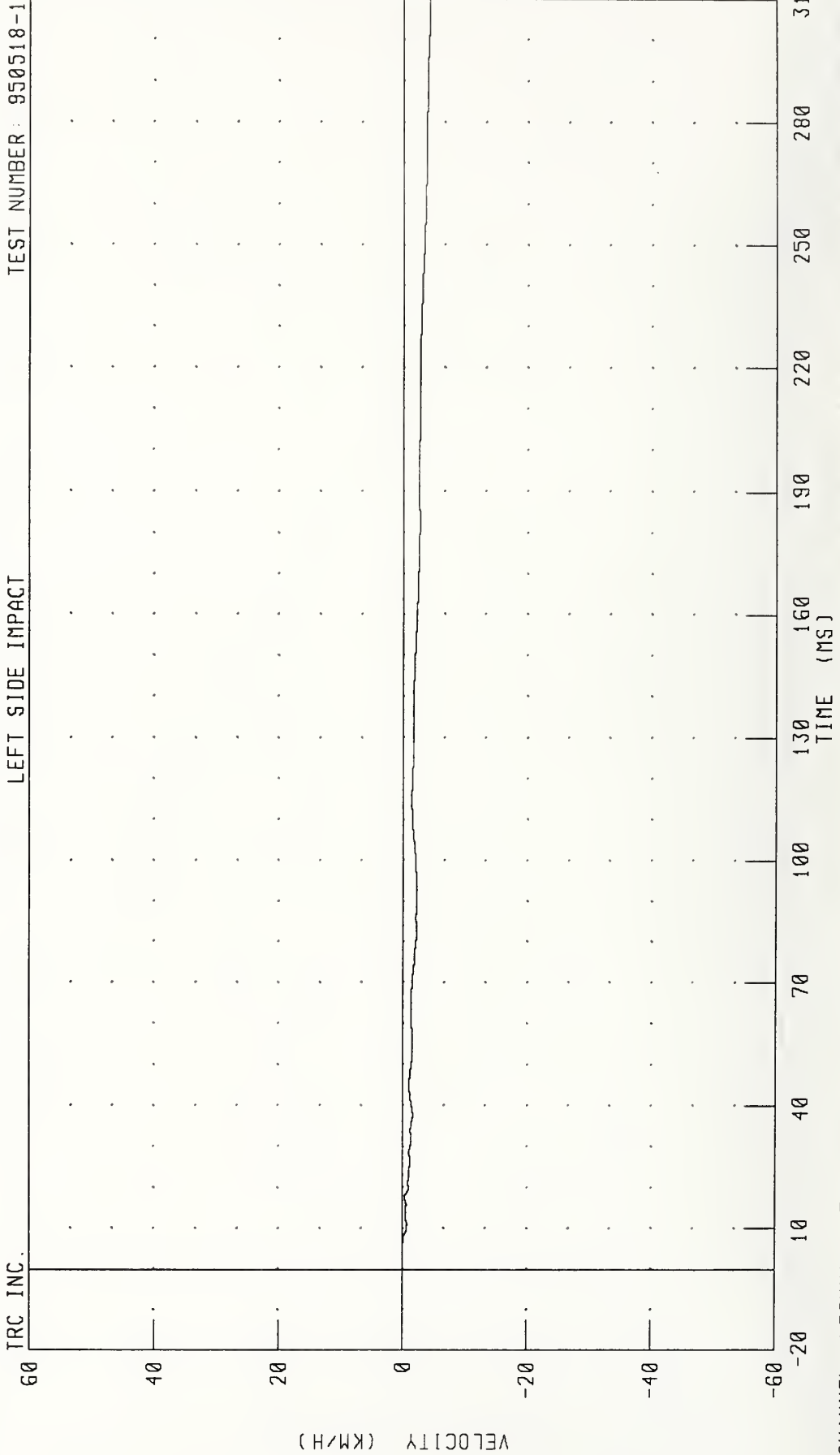


CHANNEL: LFSXG1 FILTER: CH CLASS 60

PEAK DATA 2 94 G @ 40.72 MS, -4 68 G @ 8 56 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL X-AXIS VELOCITY

TRC INC. LEFT SIDE IMPACT TEST NUMBER: 950518-1



CHANNEL: LFSXV1 FILTER: CH CLASS 180

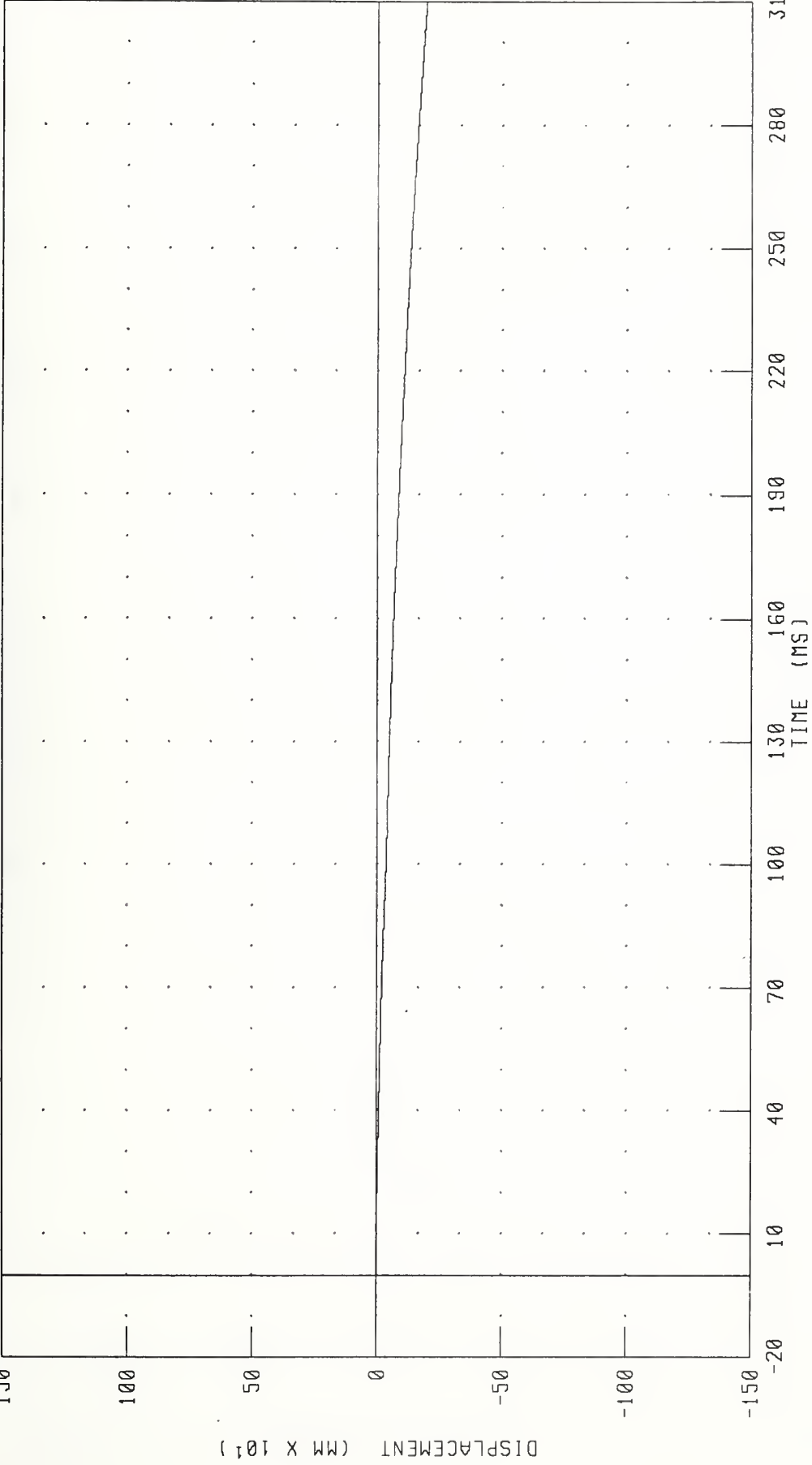
PEAK DATA: 0 00 KM/H @ 4.64 MS; -4 28 KM/H @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL X-AXIS DISPLACEMENT

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.

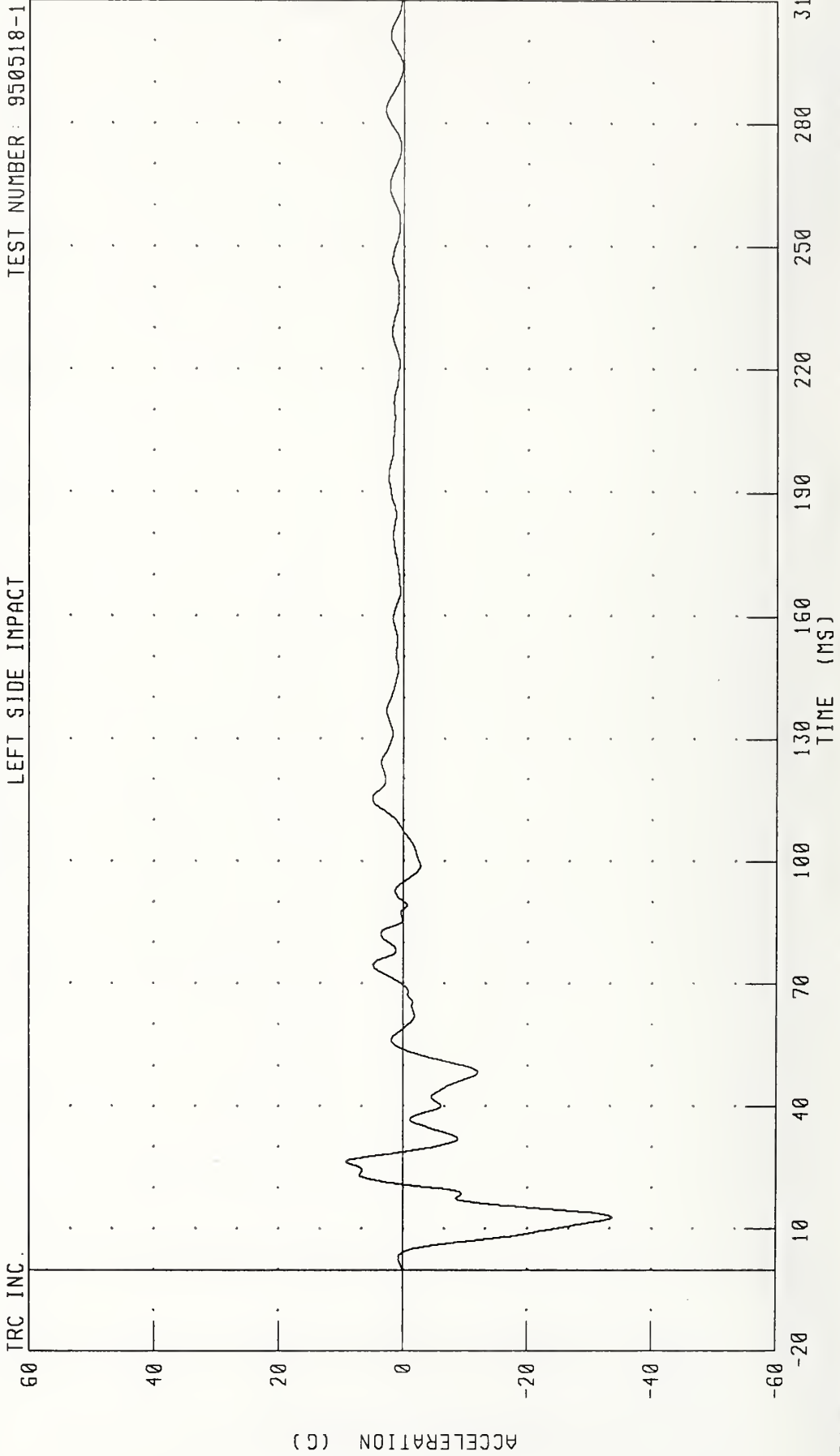


CHANNEL: LFSXD1 FILTER: CH. CLASS 180

PEAK DATA 0 00 MM @ 5 20 MS, -196 26 MM @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL Y-AXIS ACCELERATION

LEFT SIDE IMPACT TEST NUMBER: 950518-1



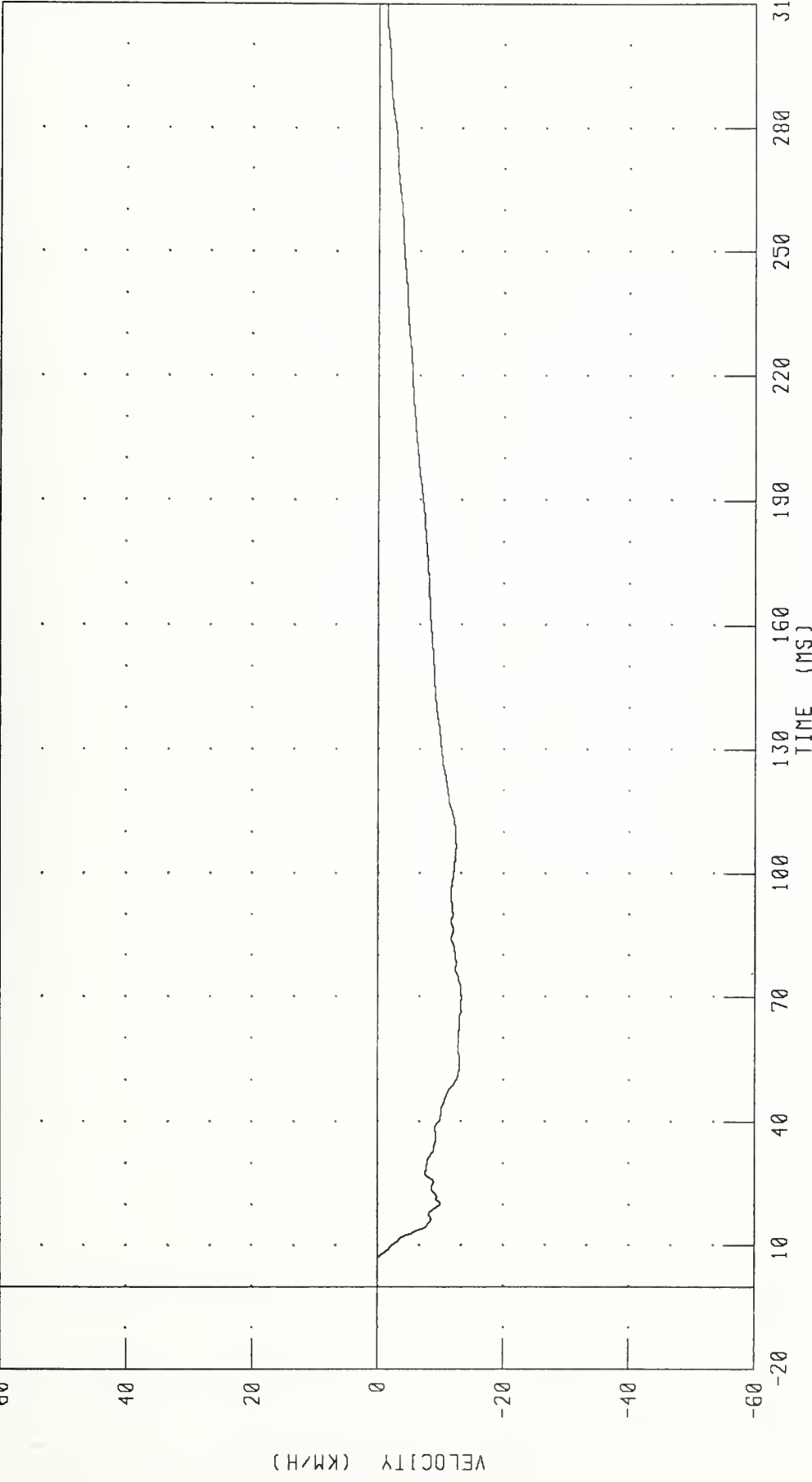
TRC INC. CHANNEL: LFSYG1 FILTER: CH CLASS 60
PEAK DATA: 9.13 G @ 26.48 MS, -33.66 G @ 12.72 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL Y-AXIS VELOCITY

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.



CHANNEL LFSYV1 FILTER: CH CLASS 180

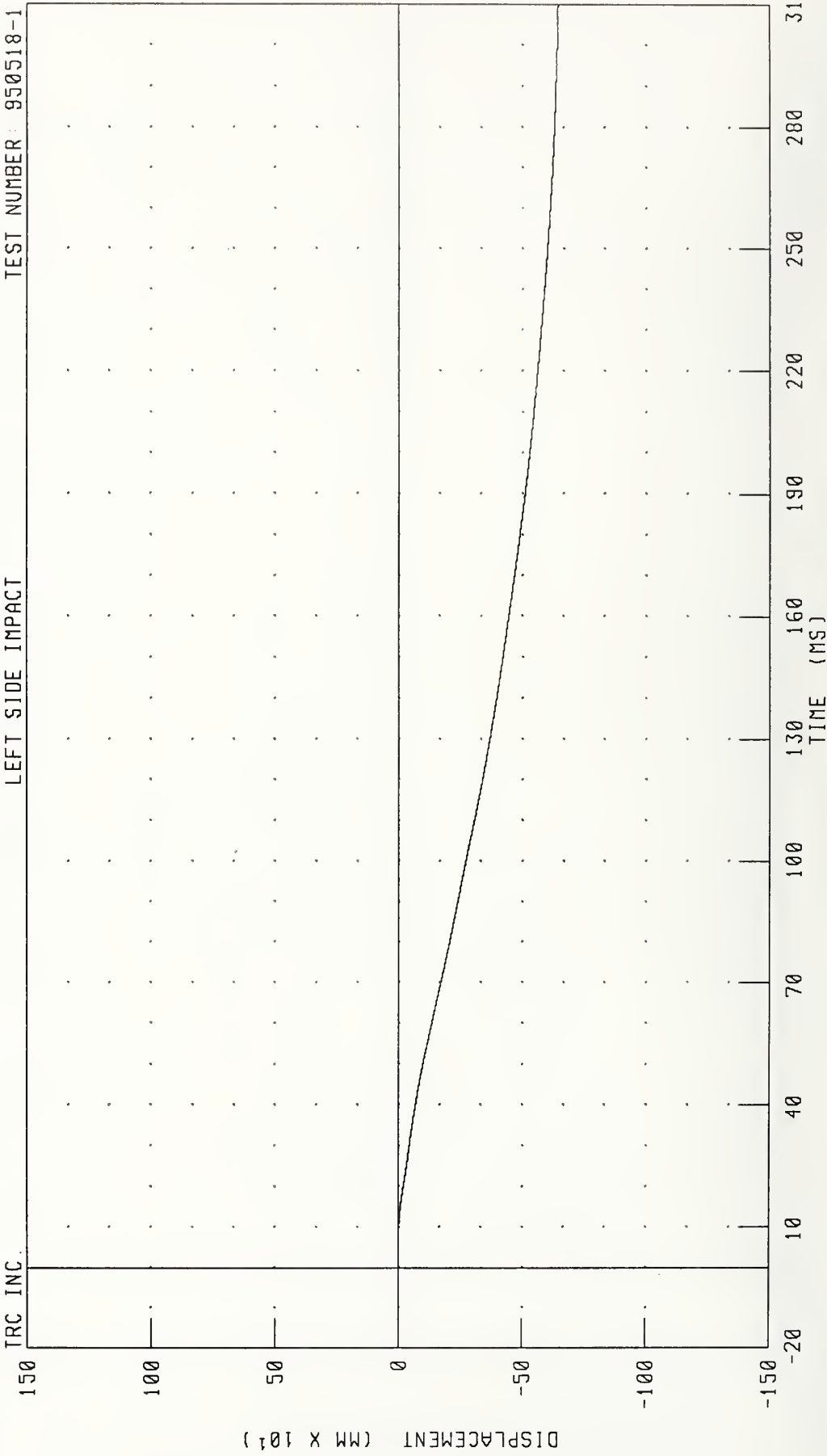
PEAK DATA: 0 04 KM/H @ 6 16 MS; -13.31 KM/H @ 69 76 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.



CHANNEL: LFSYD1 FILTER: CH CLASS 180

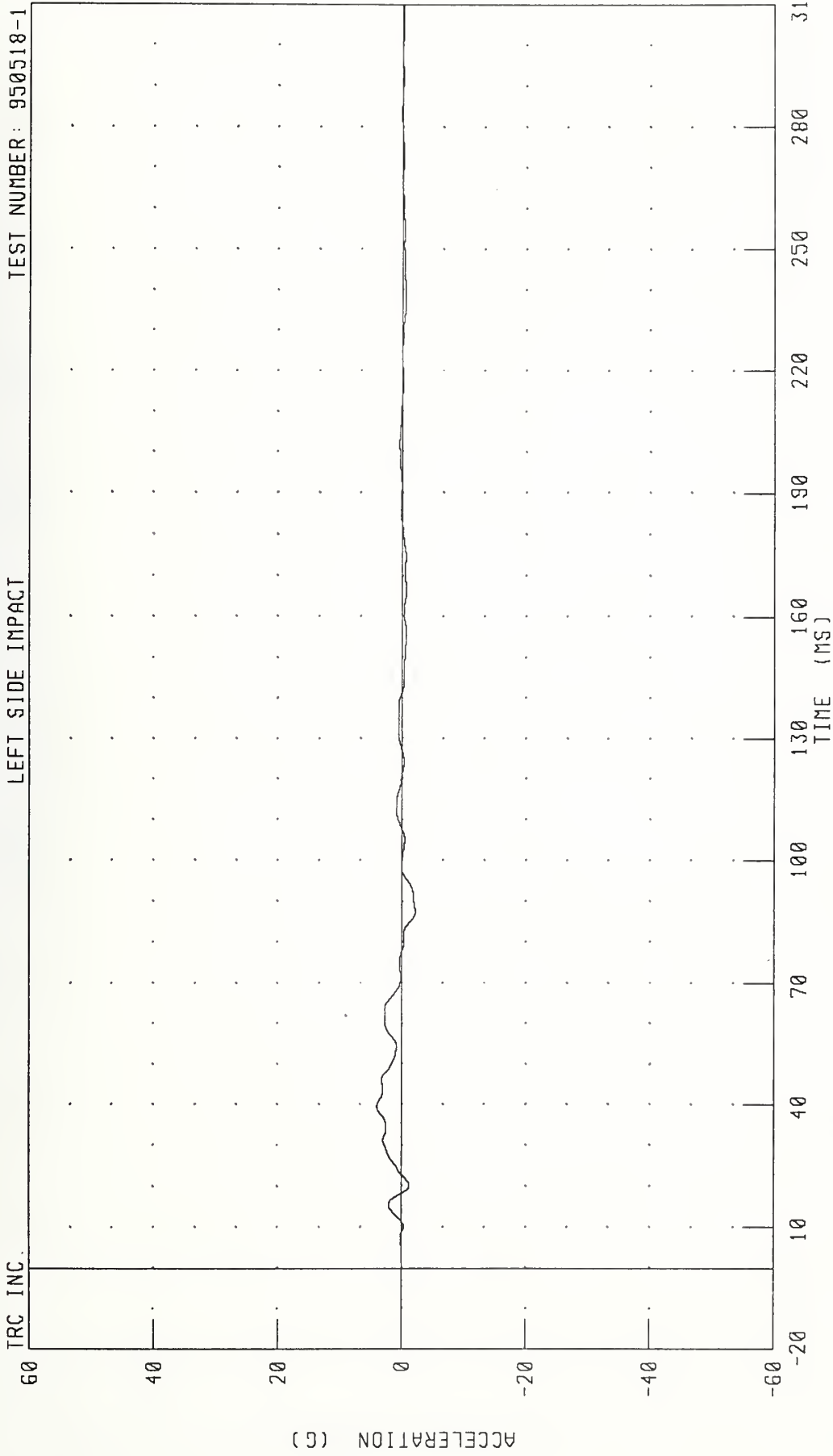
PEAK DATA: 0.01 MM @ 6.64 MS, -645.47 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL X-AXIS ACCELERATION

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.



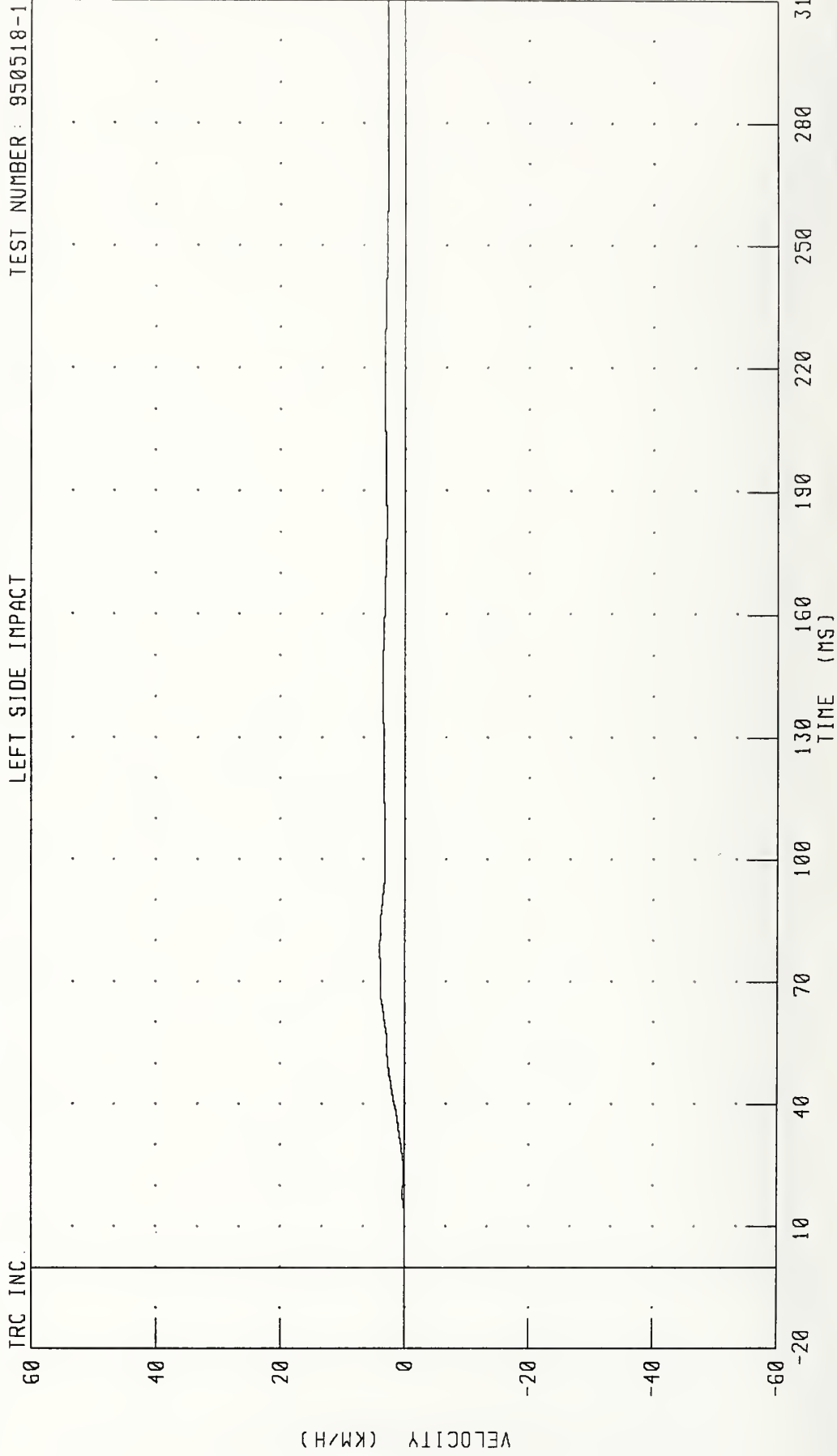
CHANNEL: RFSXG1 FILTER: CH. CLASS 60

PEAK DATA: 4 01 G @ 39 44 MS; -2 16 G @ 87 44 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL X-AXIS VELOCITY

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

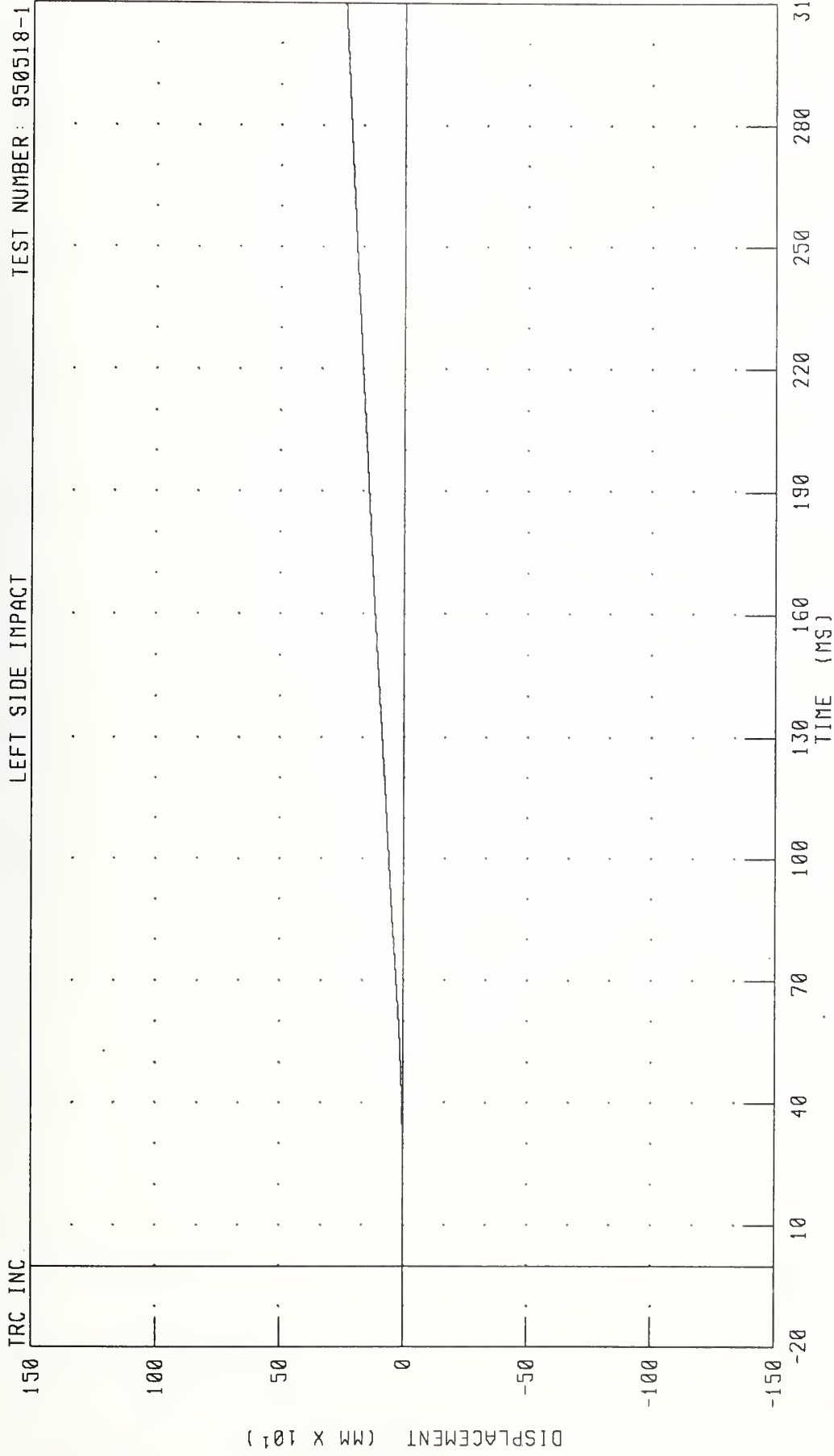


CHANNEL: RFSXV1 FILTER: CH CLASS 180

PEAK DATA: 4.03 KM/H @ 78.08 MS, -0.03 KM/H @ 11.04 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL X-AXIS DISPLACEMENT

TEST NUMBER: 950518-1



CHANNEL: RFSXD1 FILTER: CH. CLASS 180

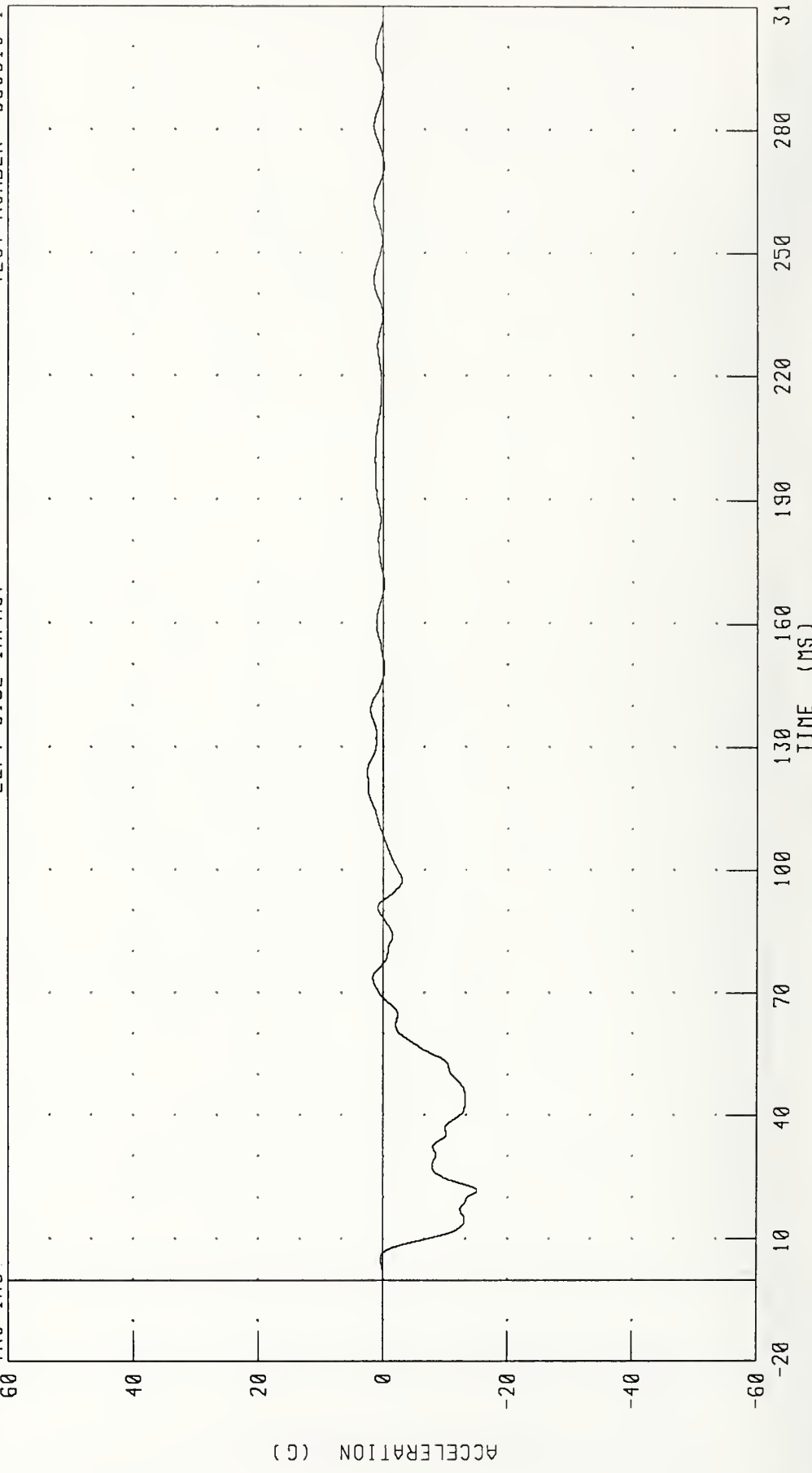
PEAK DATA: 239 92 MM @ 310 00 MS, 0.00 MM @ 7 60 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL Y-AXIS ACCELERATION

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.



CHANNEL: RFSYGI FILTER: CH CLASS 60

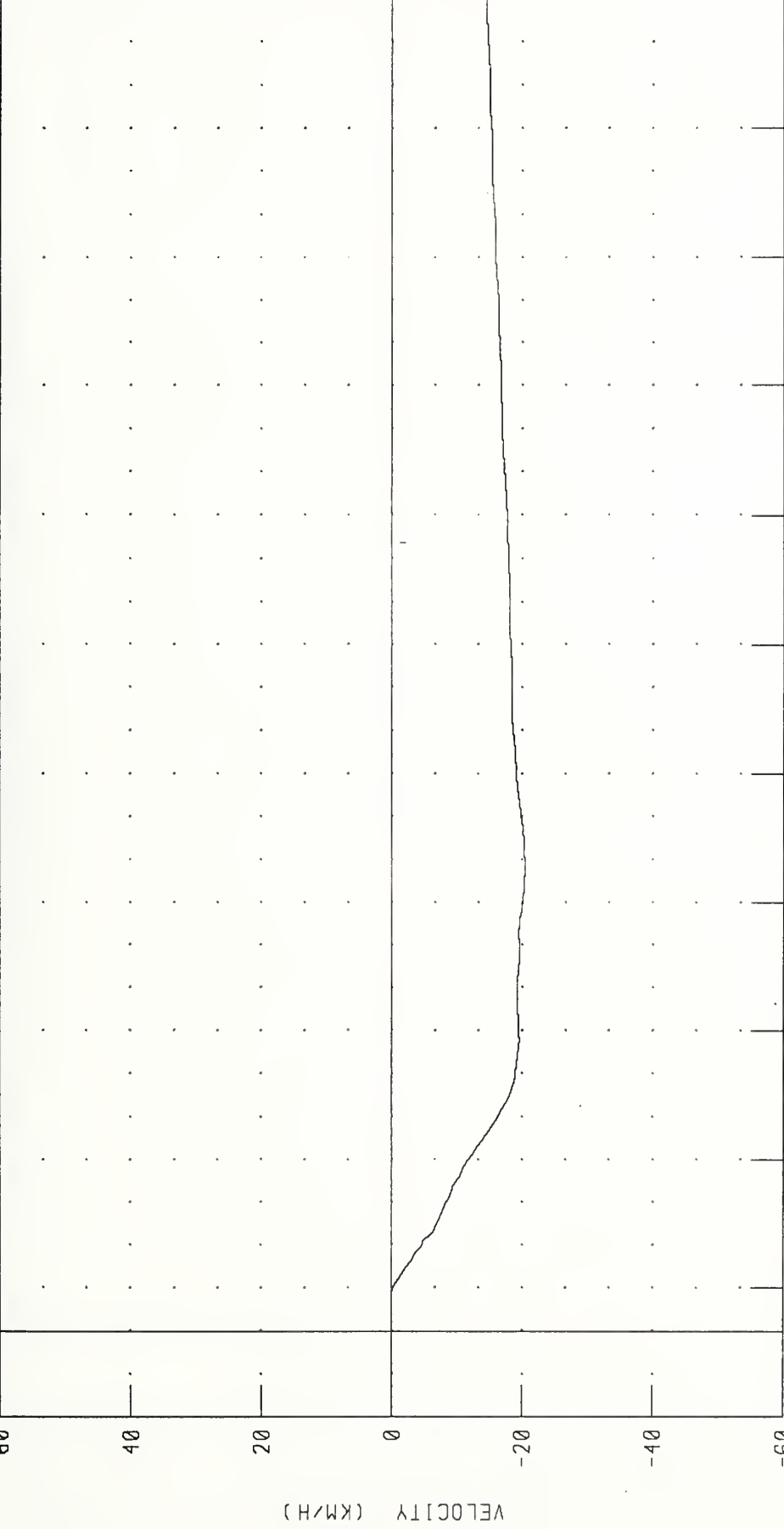
PEAK DATA: 2 55 G @ 124 00 MS, -15.14 G @ 21.76 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL Y-AXIS VELOCITY

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.



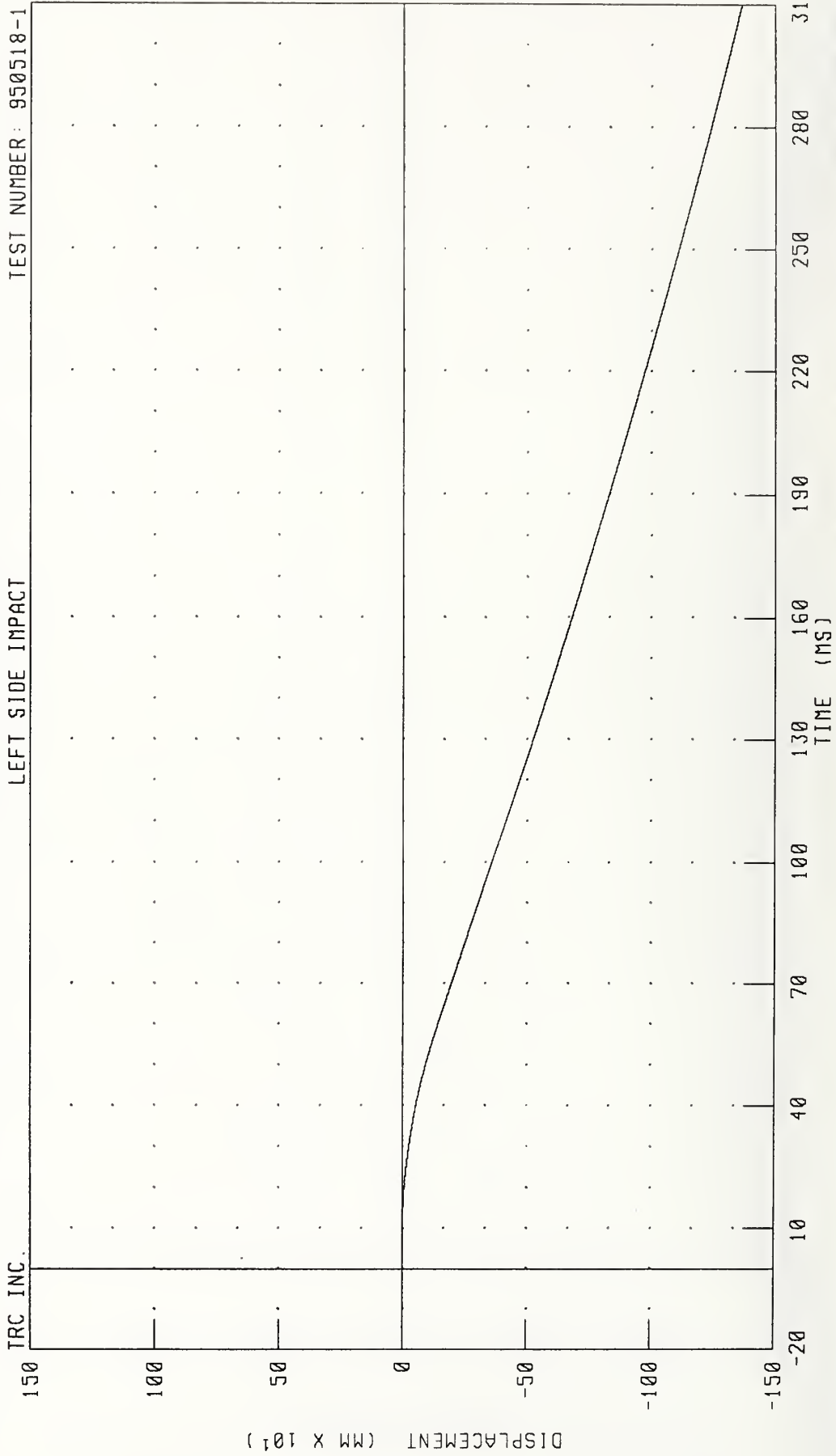
CHANNEL: RFSYV1 FILTER: CH. CLASS 180
PEAK DATA 0 02 KM/H @ 8.00 MS, -20.41 KM/H @ 109.52 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 RIGHT FRONT SILL Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.



CHANNEL: RFSY01 FILTER: CH. CLASS 180

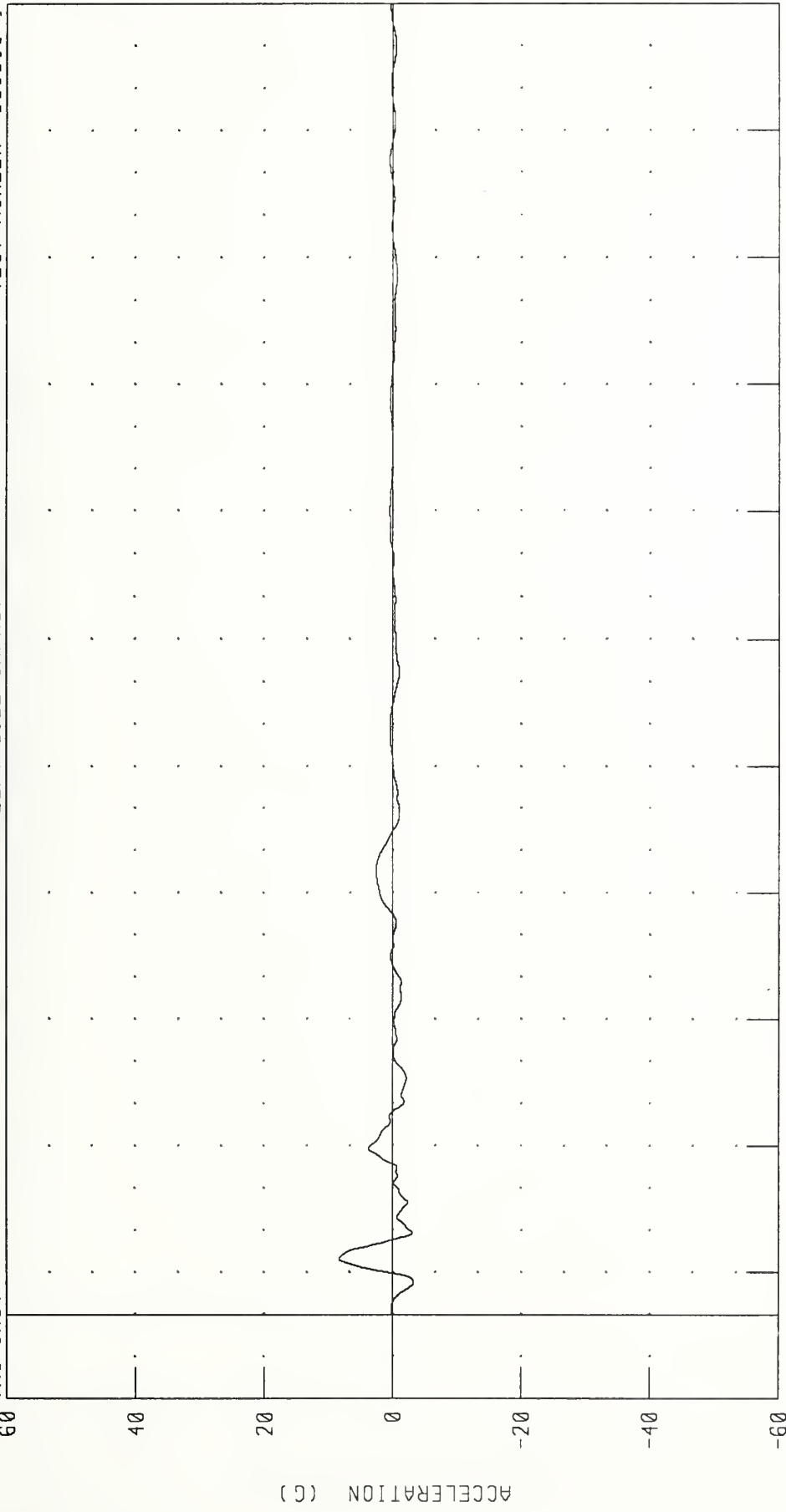
PEAK DATA: 0 00 MM @ 0 00 MS; -1364 12 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT X-AXIS ACCELERATION

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

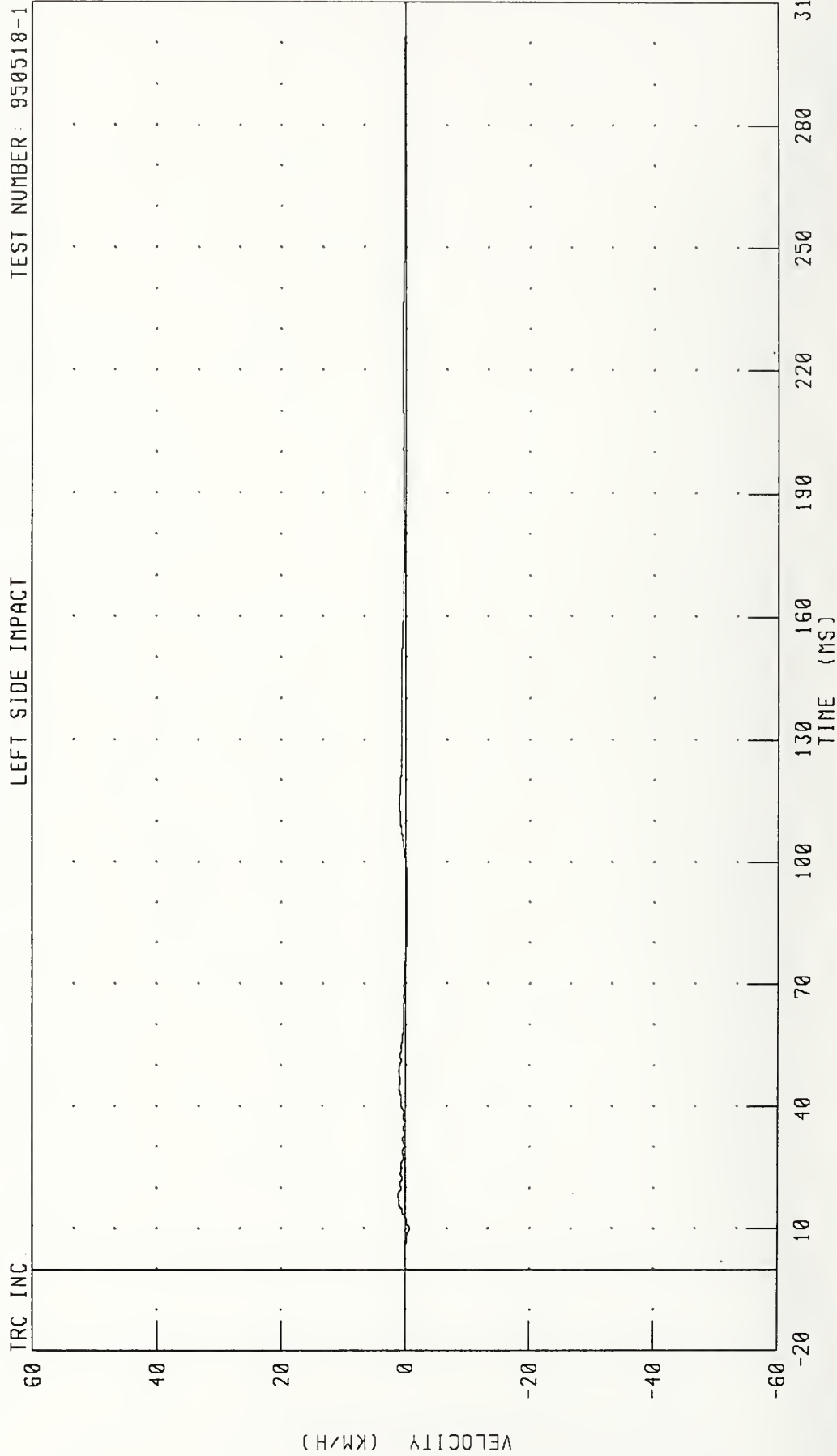
TRC INC.



CHANNEL: TLRXG1 FILTER CH. CLASS 60

PEAK DATA: 8.35 G @ 13.28 MS, -3.28 G @ 7.68 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT X-AXIS VELOCITY



CHANNEL: TLRXV1 FILTER: CH CLASS 180

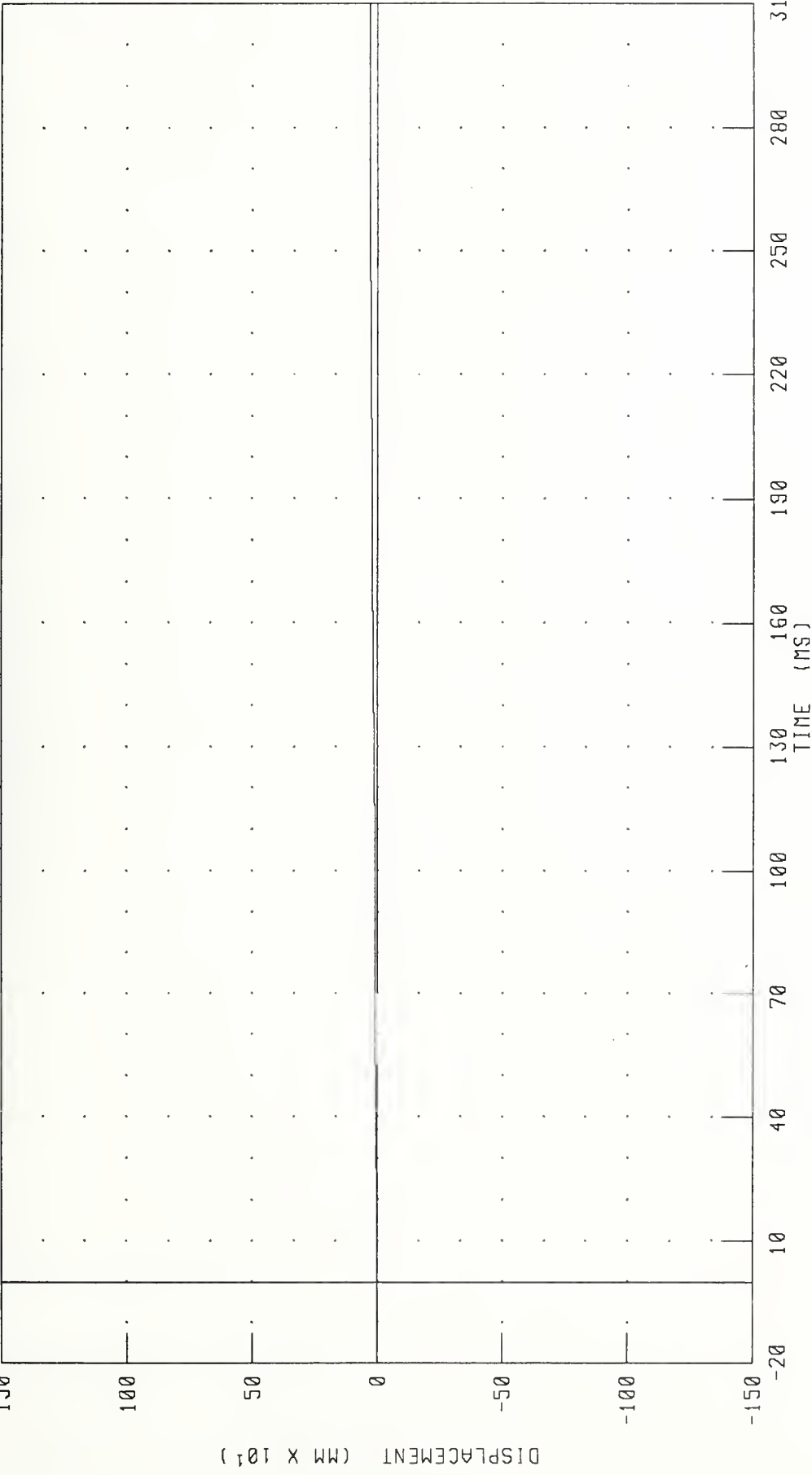
PEAK DATA 1 25 KM/H @ 18 24 MS; -0 71 KM/H @ 9.92 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT X-AXIS DISPLACEMENT

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC

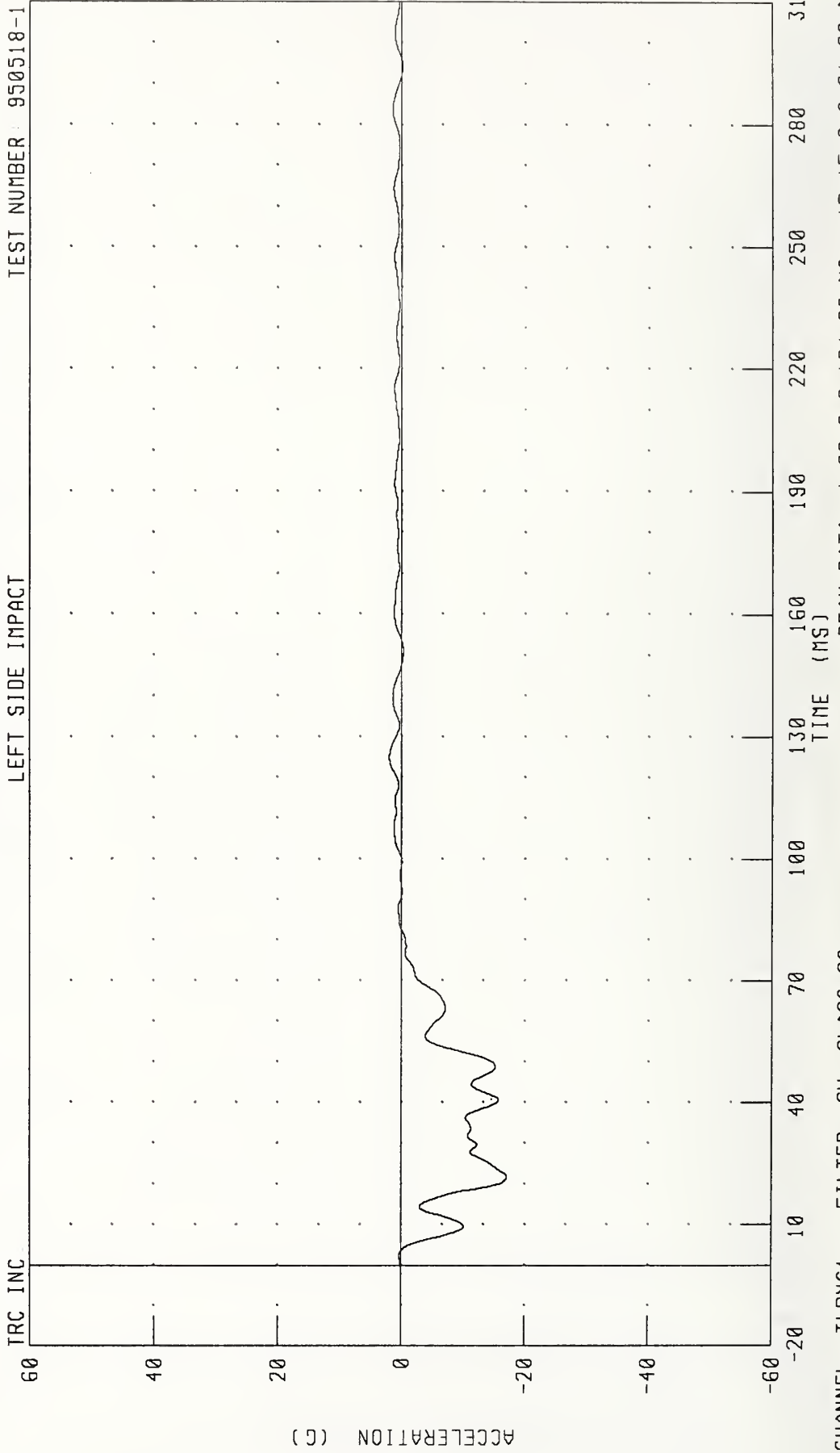


CHANNEL: TLRXD1 FILTER: CH CLASS 180

PEAK DATA: 30 99 MM @ 310 00 MS; -0.54 MM @ 12 80 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT Y-AXIS ACCELERATION

LEFT SIDE IMPACT TEST NUMBER: 950518-1



CHANNEL: TLRYG1 FILTER: CH. CLASS 60

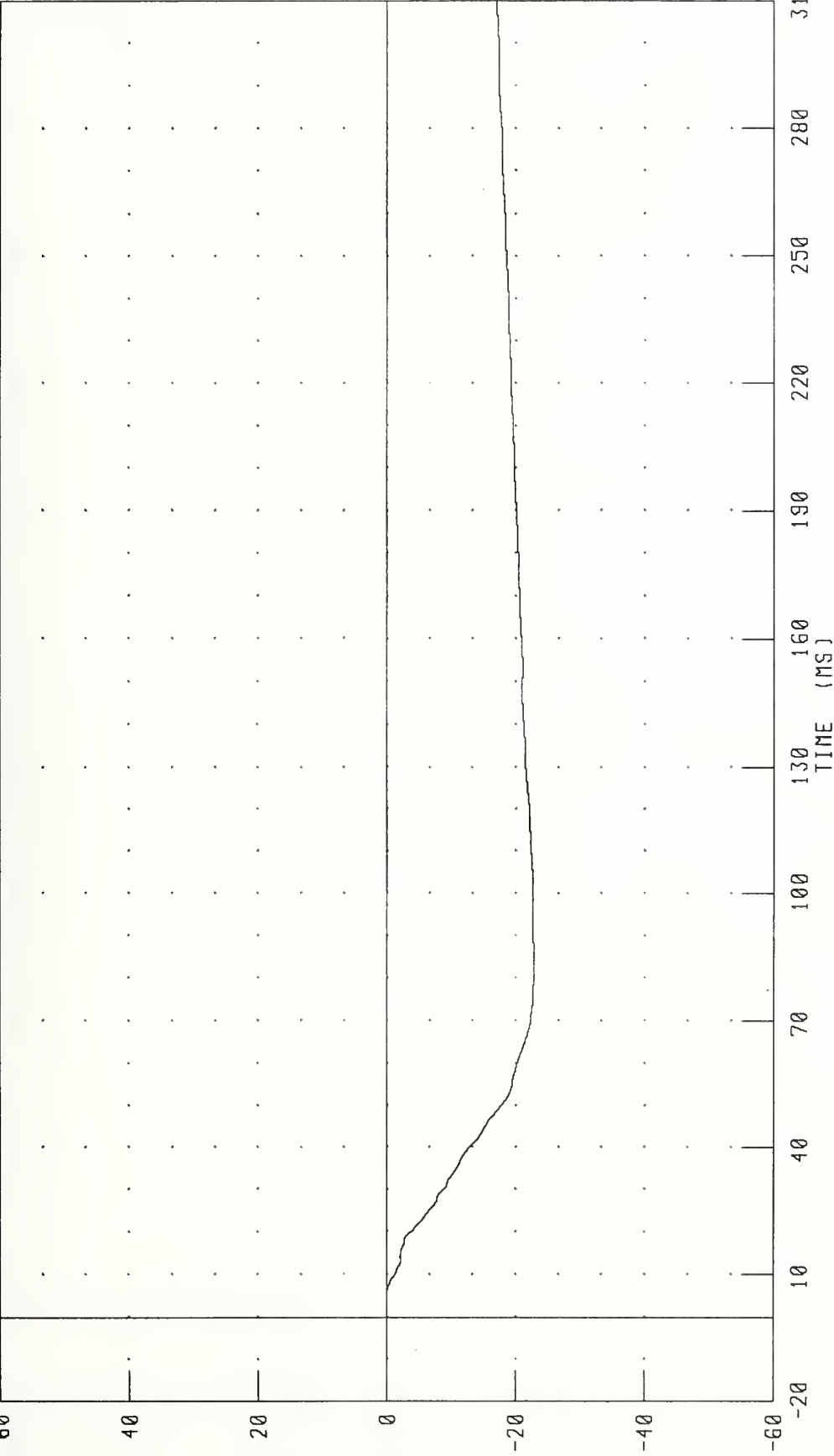
PEAK DATA: 1.98 G @ 124.88 MS, -17.15 G @ 21.68 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT Y-AXIS VELOCITY

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC



CHANNEL: TLRYV1 FILTER: CH. CLASS 180

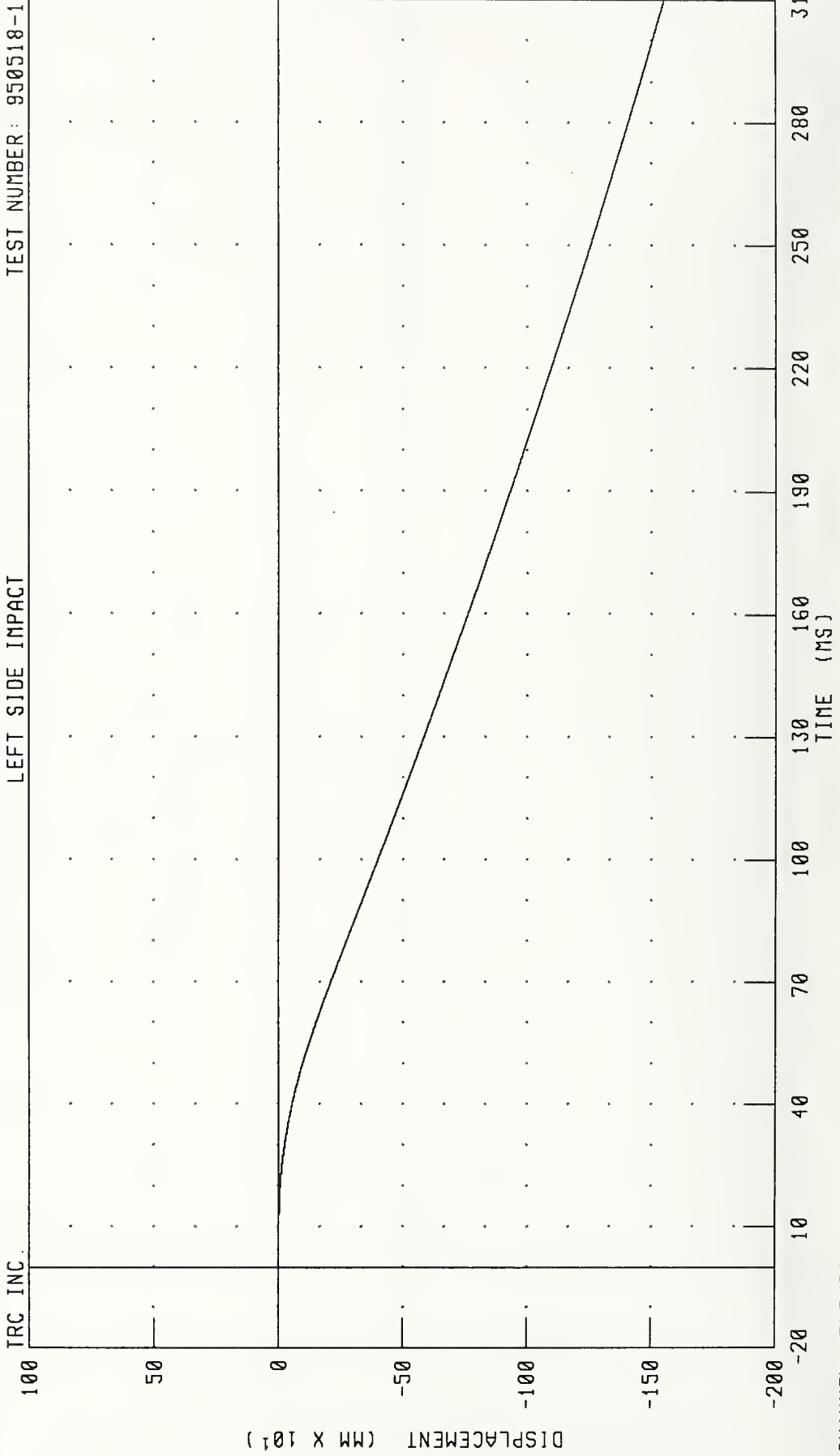
PEAK DATA: 0 01 KM/H @ 5 36 MS, -22 85 KM/H @ 82 80 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.



CHANNEL: TLRYD1 FILTER: CH. CLASS 180

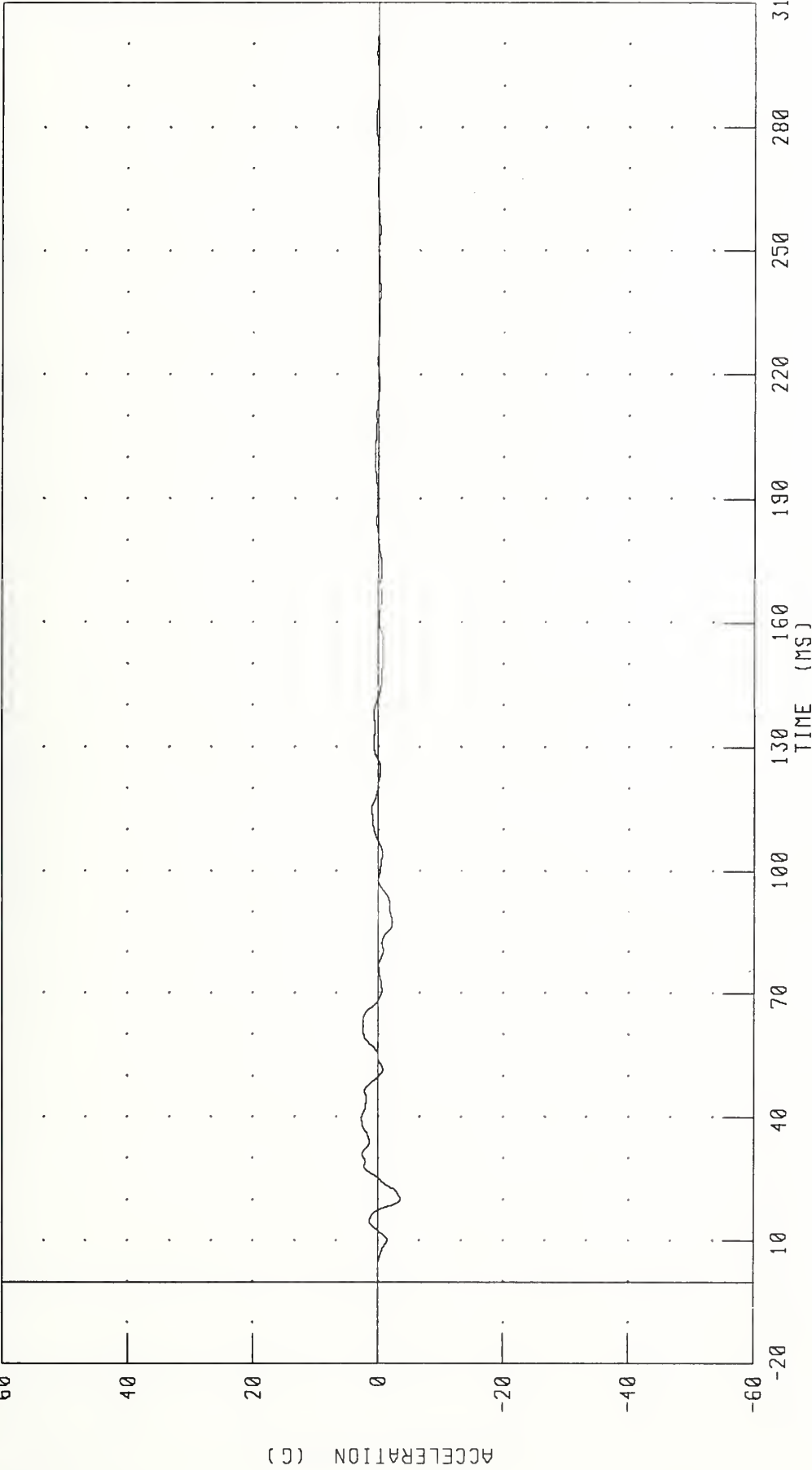
PEAK DATA: 0.00 MM @ 5.84 MS; -1551 81 MM @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT X-AXIS ACCELERATION

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.



CHANNEL: TRRXG1 FILTER: CH CLASS 60

PEAK DATA: 2 67 G @ 39 60 MS, -3 60 G @ 20 08 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT X-AXIS VELOCITY

TEST NUMBER: 950518-1

LEFT SIDE IMPACT



CHANNEL: TRRXV1 FILTER CH CLASS 180

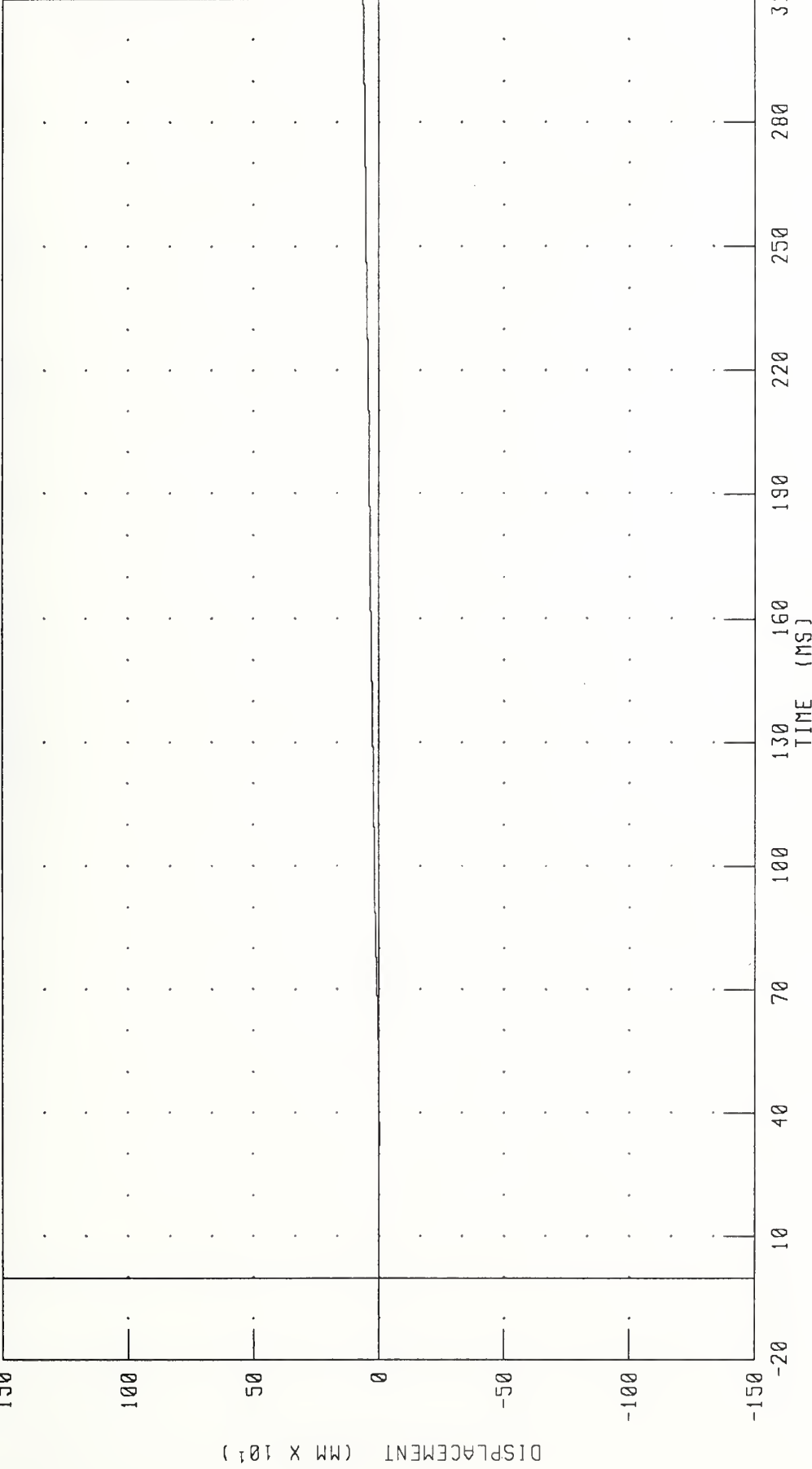
PEAK DATA: 1.71 KM/H @ 67.12 MS, -0.68 KM/H @ 26.32 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT X-AXIS DISPLACEMENT

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

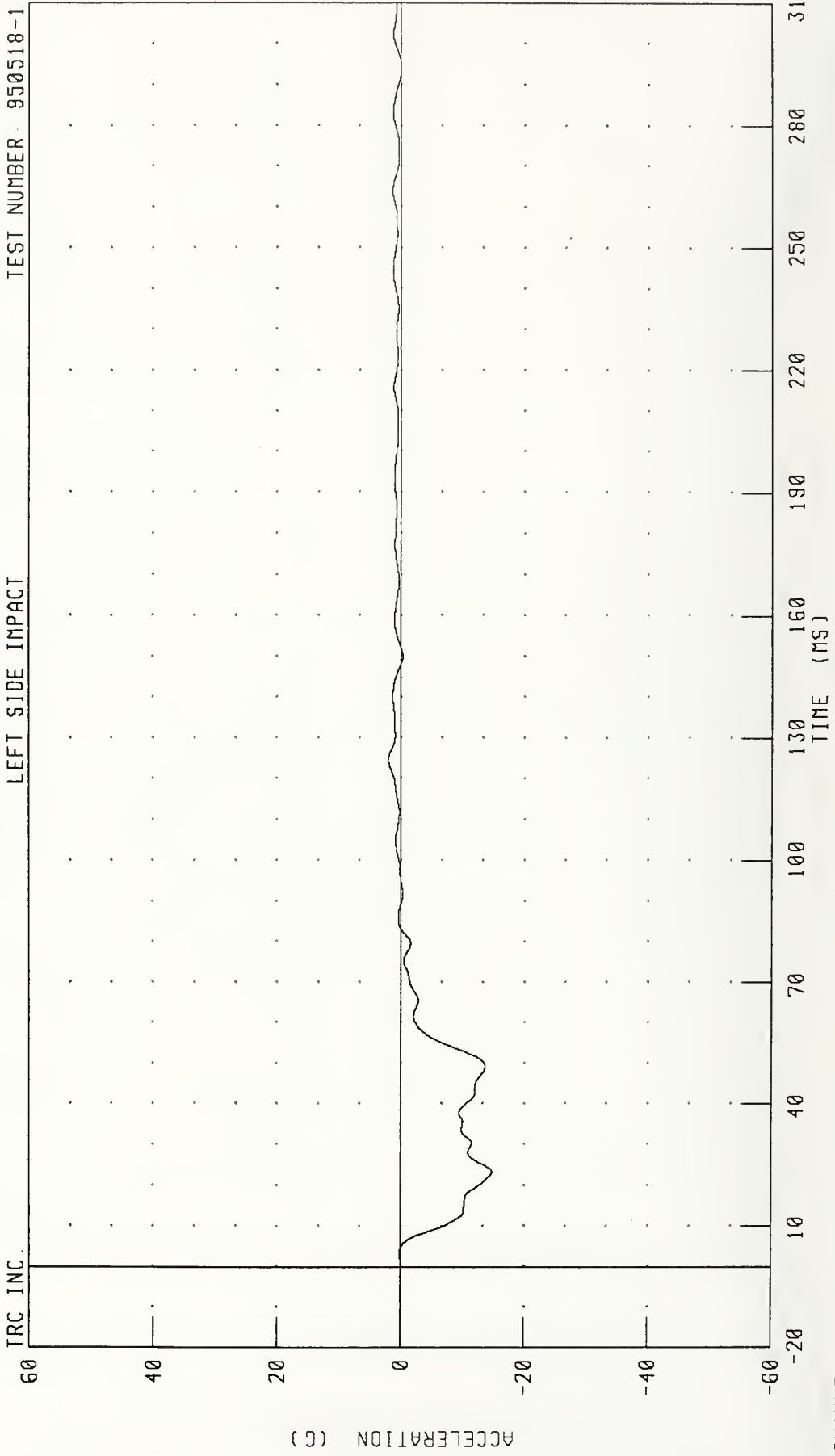
TRC INC.



CHANNEL: TRRXD1 FILTER: CH. CLASS 180

PEAK DATA: 62.13 MM @ 310.00 MS; -1 98 MM @ 35 12 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT Y-AXIS ACCELERATION



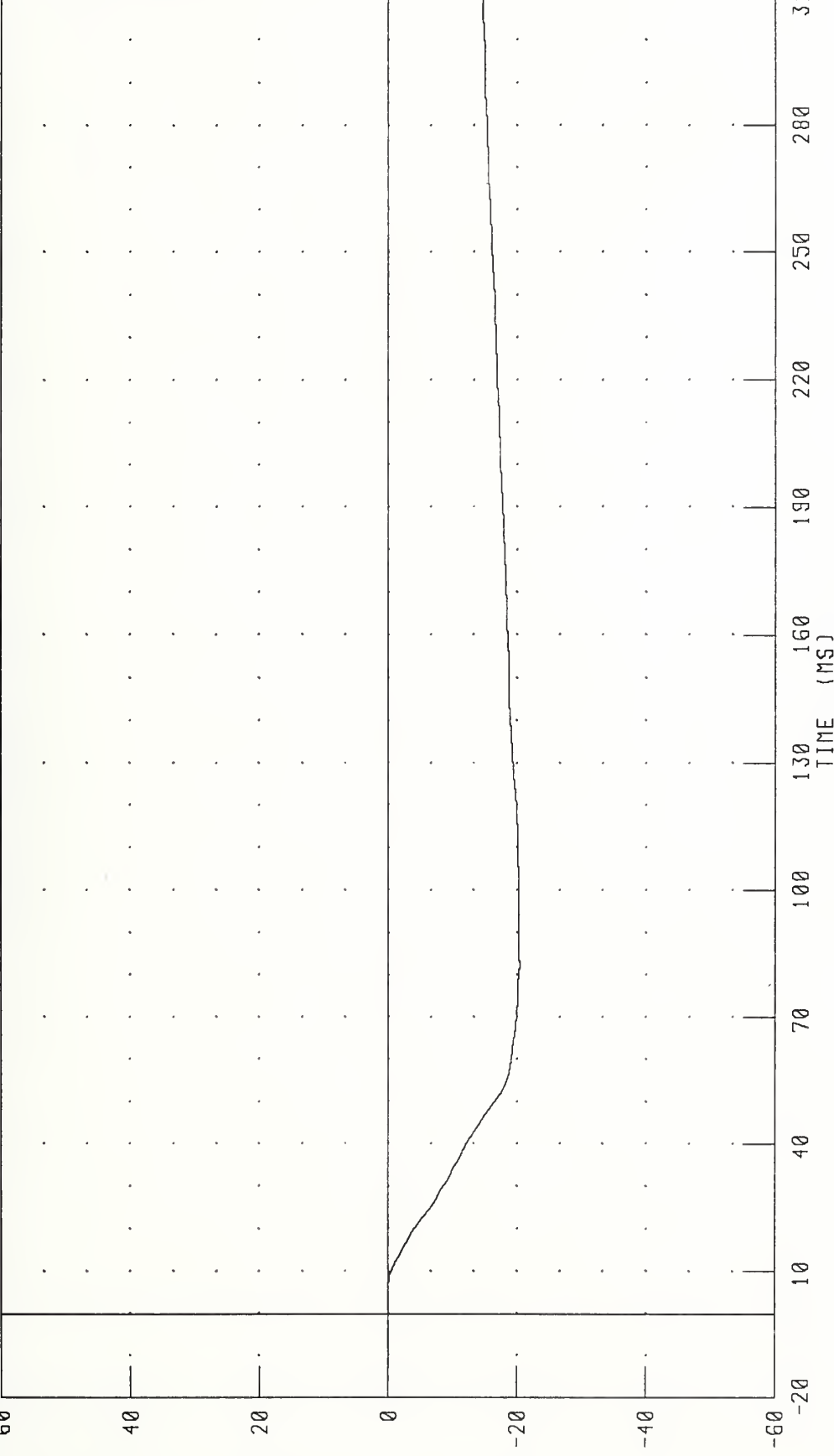
CHANNEL: TRRYG1 FILTER: CH CLASS 60 PEAK DATA: 2 01 G @ 124.56 MS; -14 82 G @ 23.28 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT Y-AXIS VELOCITY

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

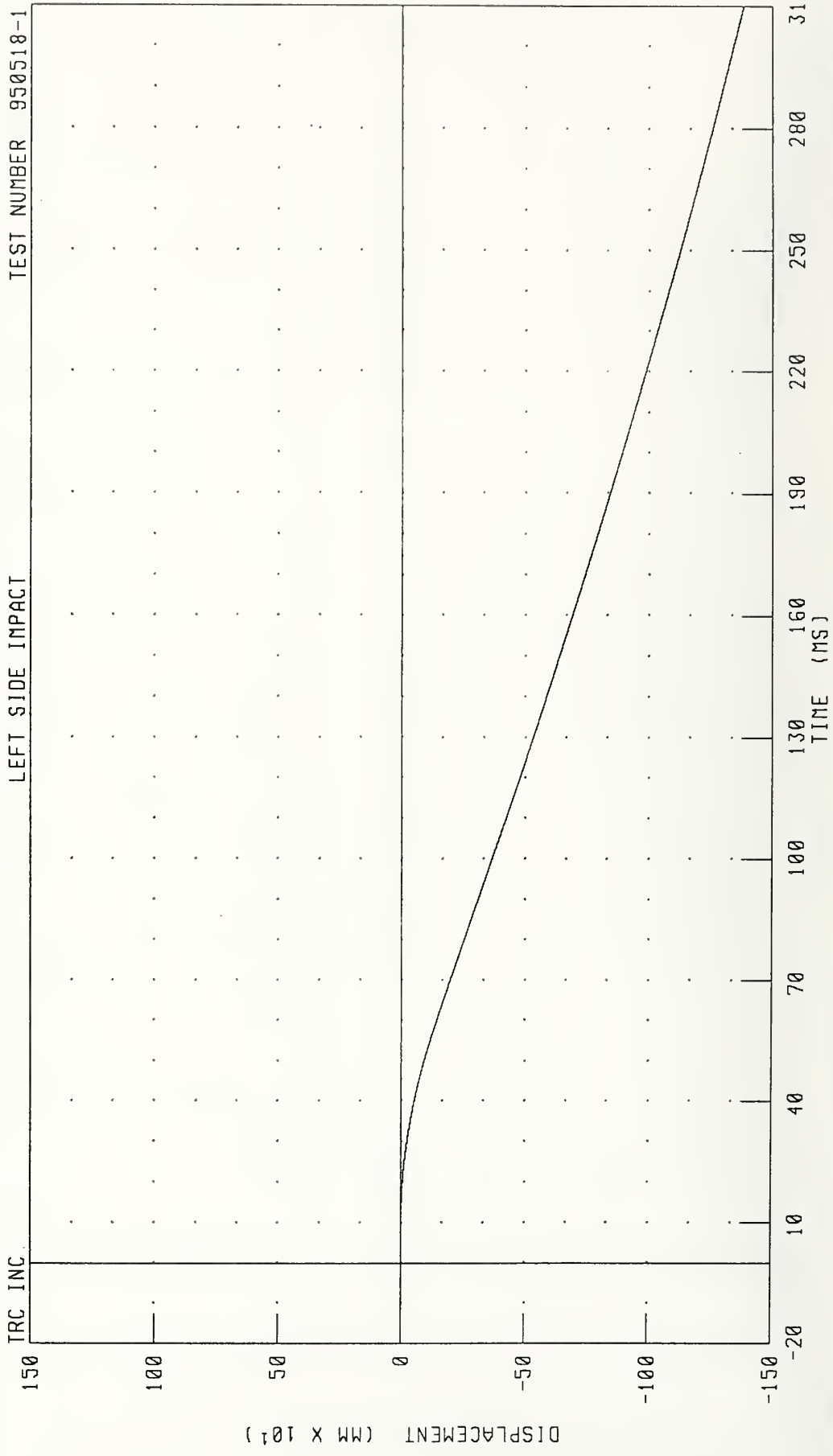
TRC INC



CHANNEL: TRRYV1 FILTER: CH CLASS 180

PEAK DATA: 0 00 KM/H @ 5.20 MS; -20 41 KM/H @ 82 32 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT Y-AXIS DISPLACEMENT



CHANNEL: TRRYD1 FILTER: CH CLASS 180

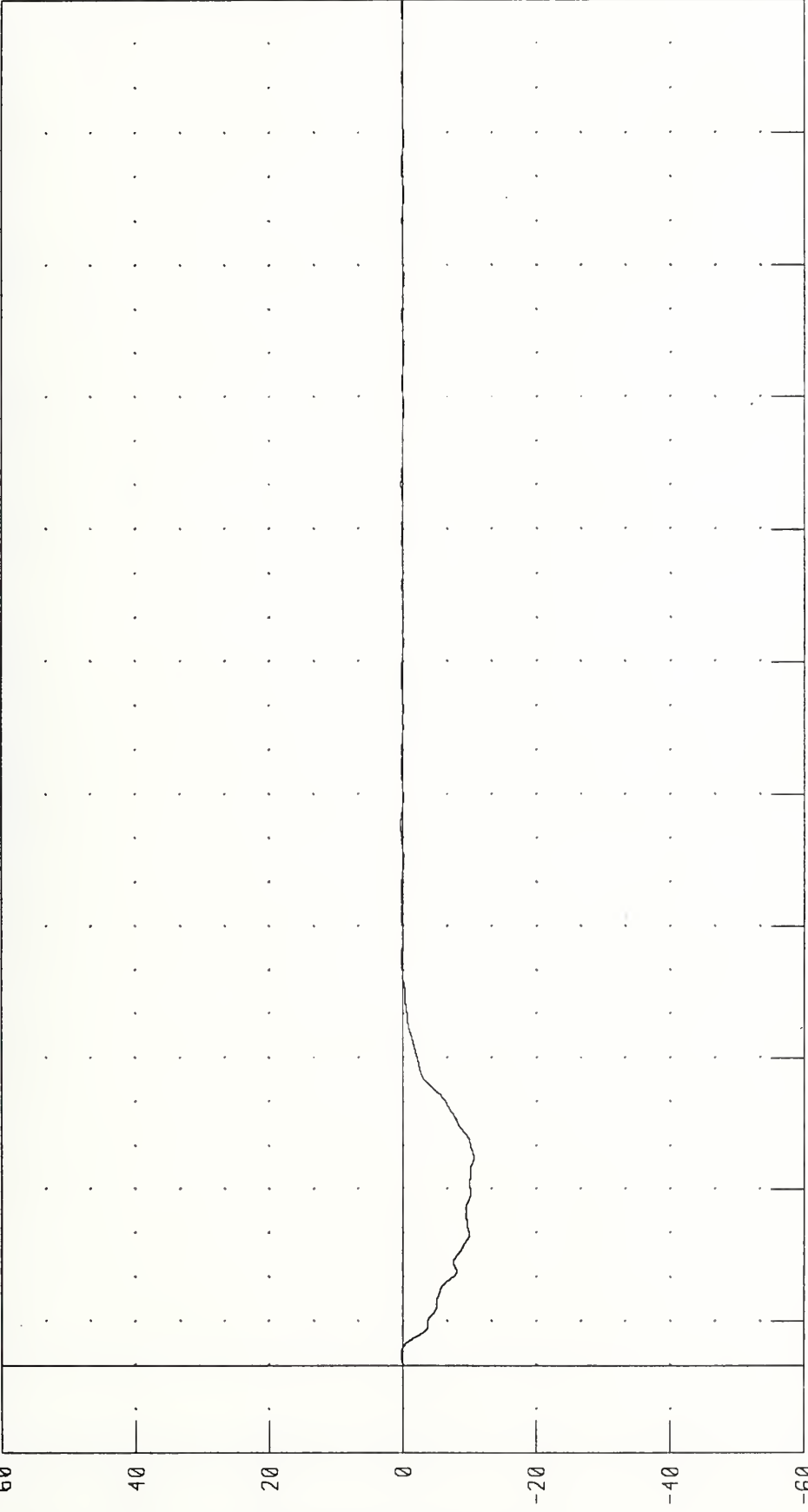
PEAK DATA: 0 00 MM @ 1 28 MS, -1381.75 MM @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY X-AXIS ACCELERATION

TEST NUMBER 950518-1

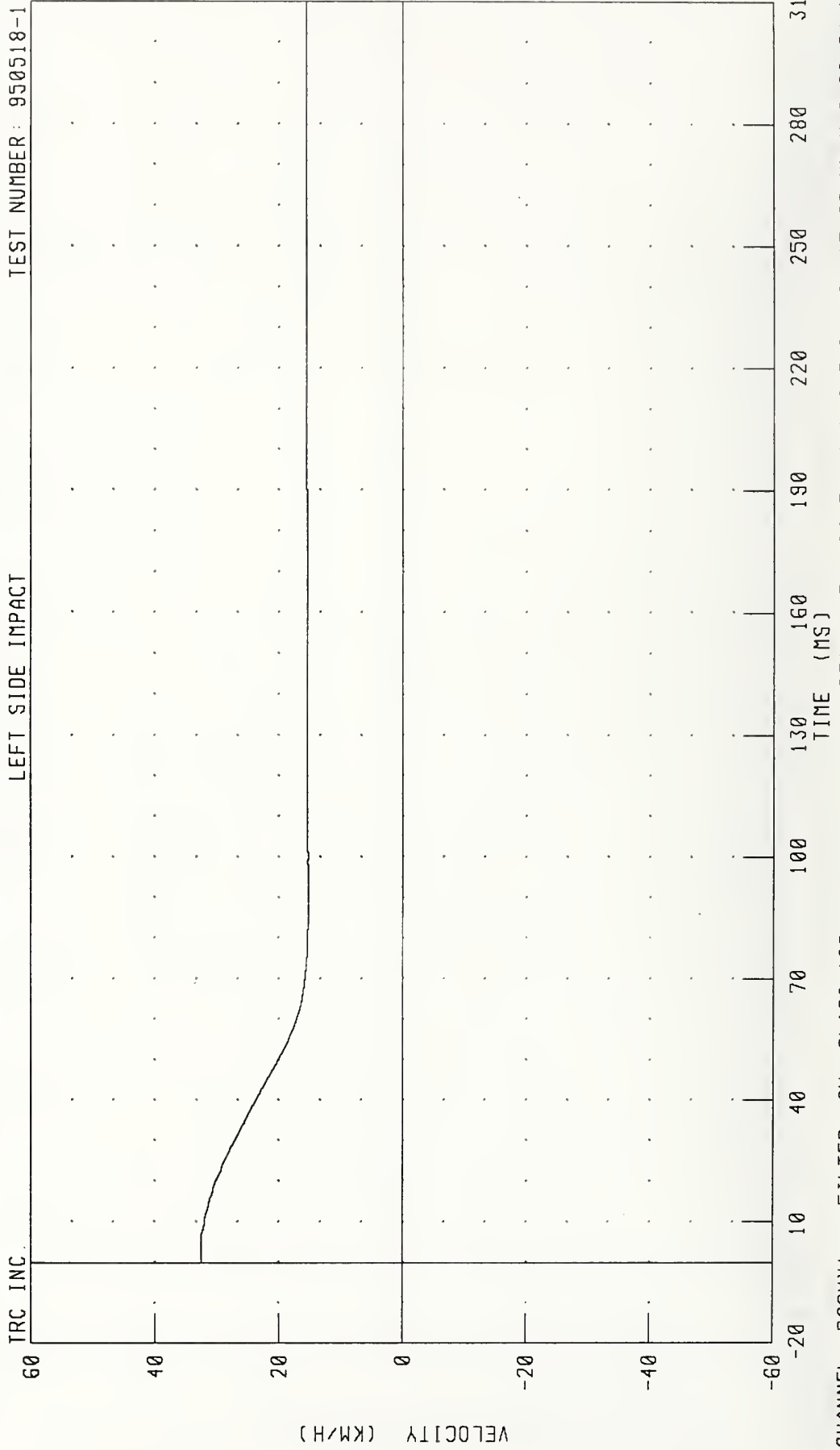
LEFT SIDE IMPACT

TRC INC.



CHANNEL BCGXG1 FILTER CH CLASS 60
PEAK DATA 0.31 G @ 123 28 MS; -10 62 G @ 47 20 MS
TIME (MS) 10 40 70 100 130 160 190 220 250 280 310

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY X-AXIS VELOCITY



CHANNEL: BCGXV1 FILTER: CH CLASS 180

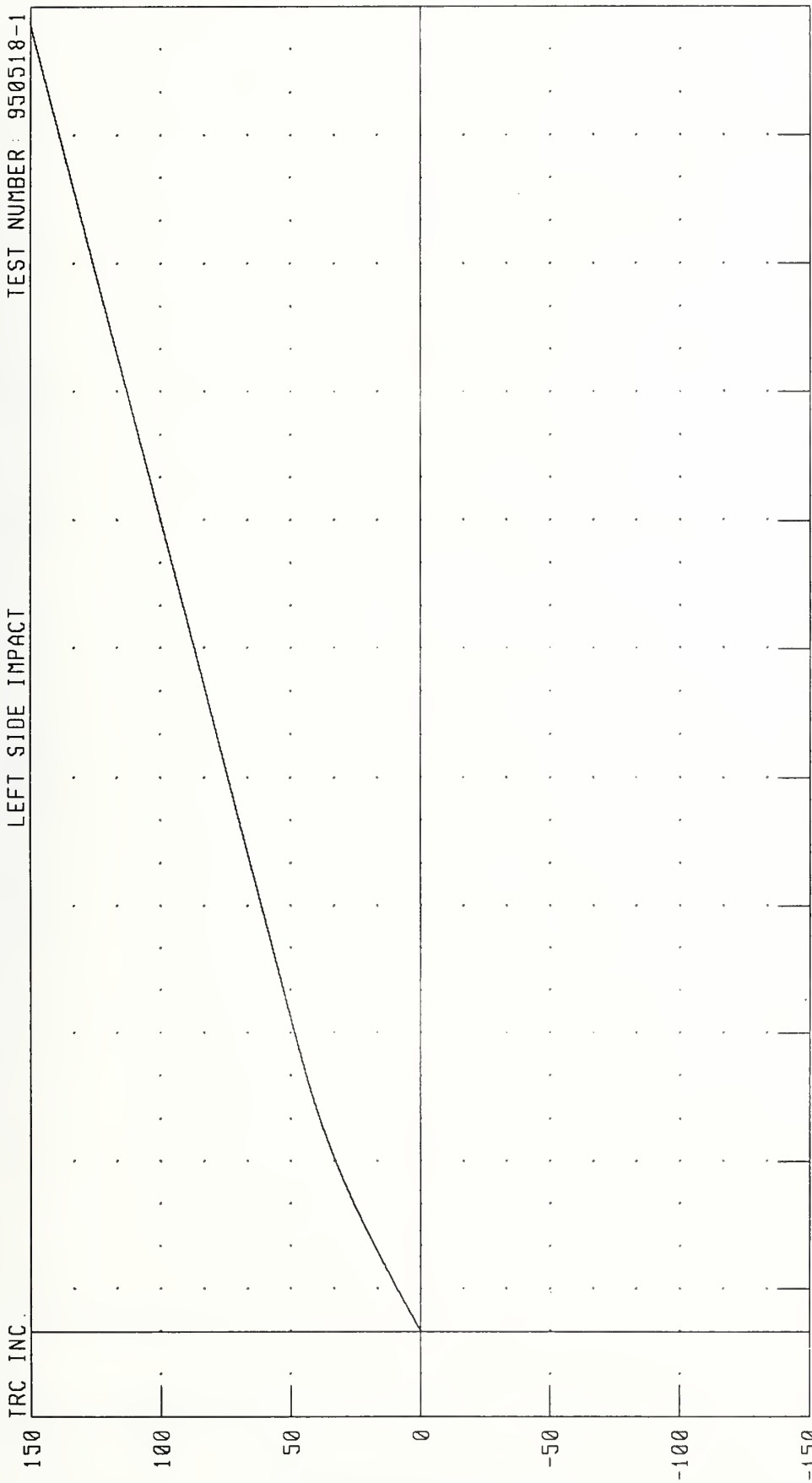
PEAK DATA: 32.51 KM/H @ 5.36 MS, 15.28 KM/H @ 86.24 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY X-AXIS DISPLACEMENT

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.

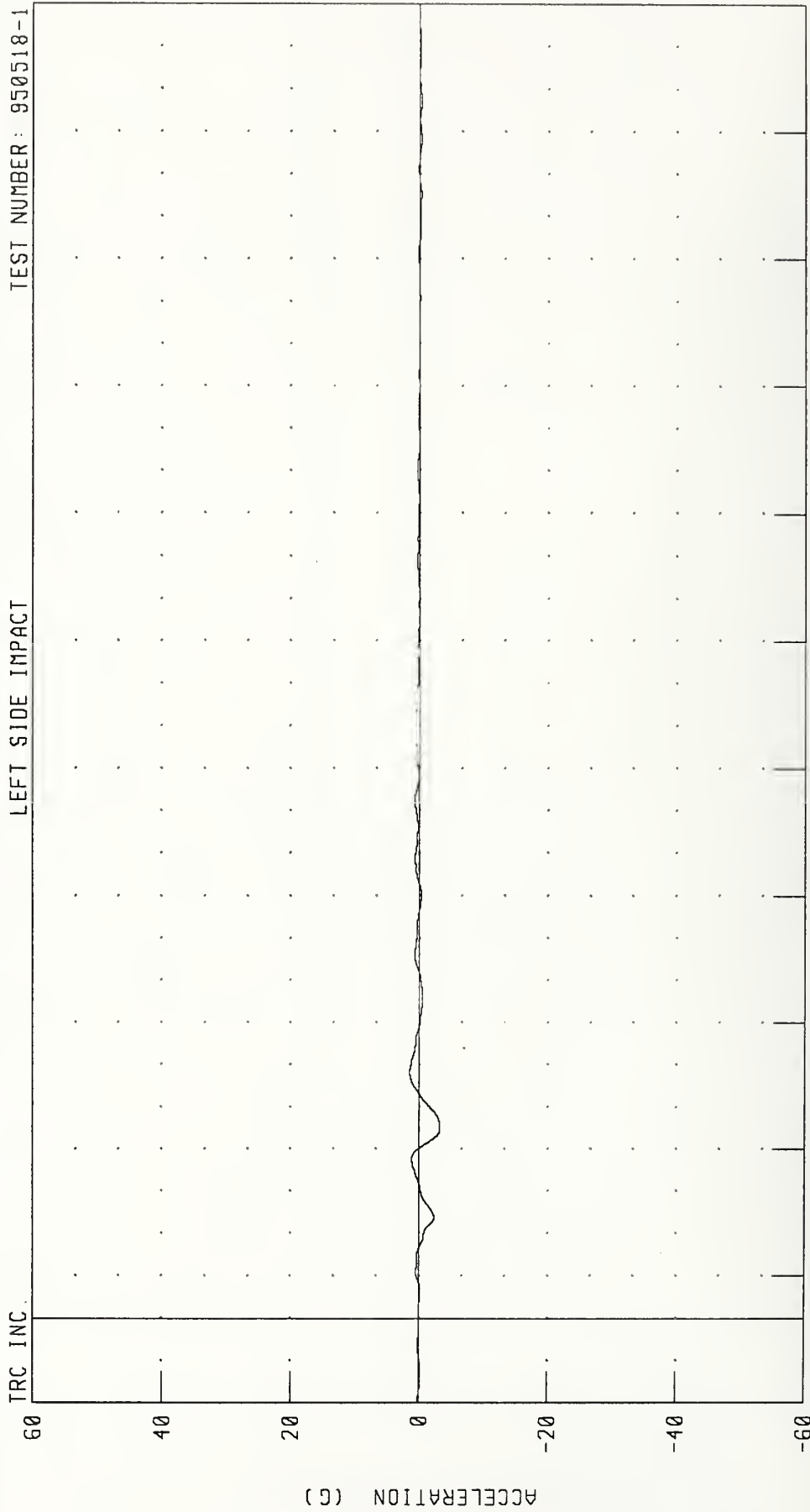


CHANNEL: BCCXD1 FILTER: CH. CLASS 180
PEAK DATA: 1518 15 MM @ 310 00 MS, 0 00 MM @ 0 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Y-AXIS ACCELERATION

TEST NUMBER: 950518-1

LEFT SIDE IMPACT



CHANNEL: BCGYG1 FILTER: CH CLASS 60

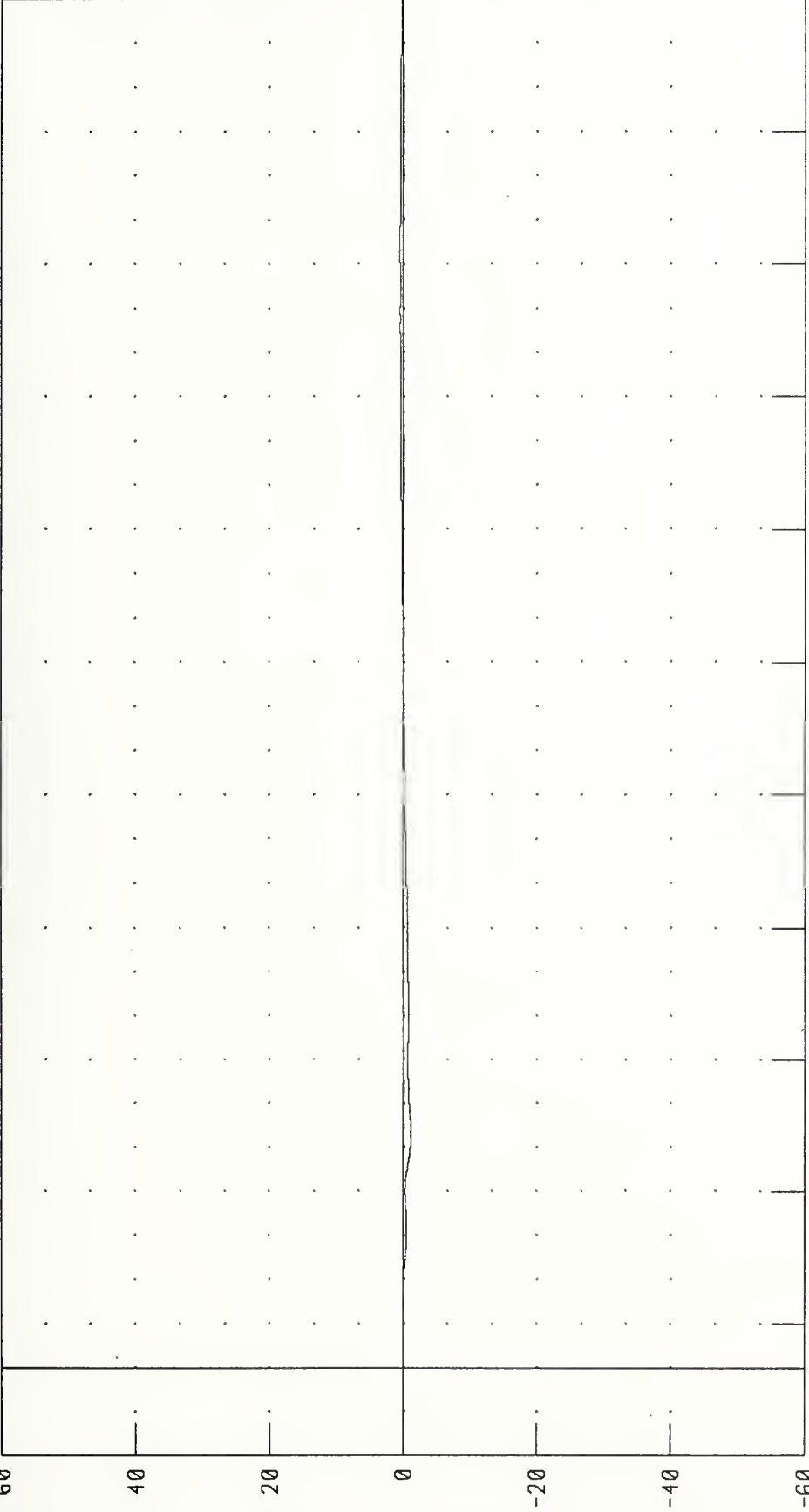
PEAK DATA: 1.48 G @ 58.24 MS, -3.28 G @ 44.88 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Y-AXIS VELOCITY

TEST NUMBER: 950518-1

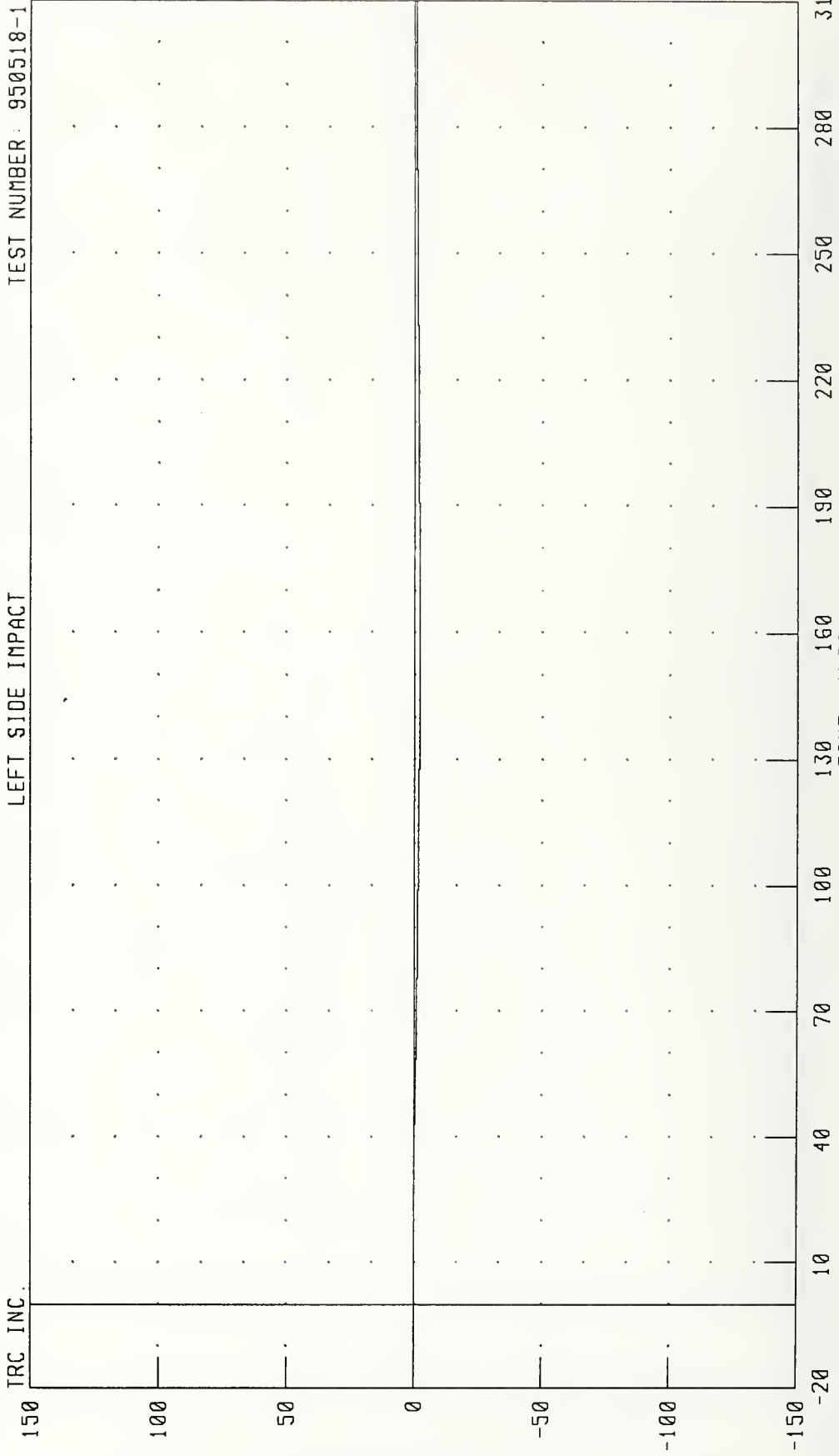
LEFT SIDE IMPACT

TRC INC



CHANNEL BCGYV1 FILTER CH CLASS 180
TIME (MS) PEAK DATA 0 46 KM/H @ 254 00 MS; -1 17 KM/H @ 53 28 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY Y-AXIS DISPLACEMENT



CHANNEL: BCGYD1 FILTER: CH CLASS 180

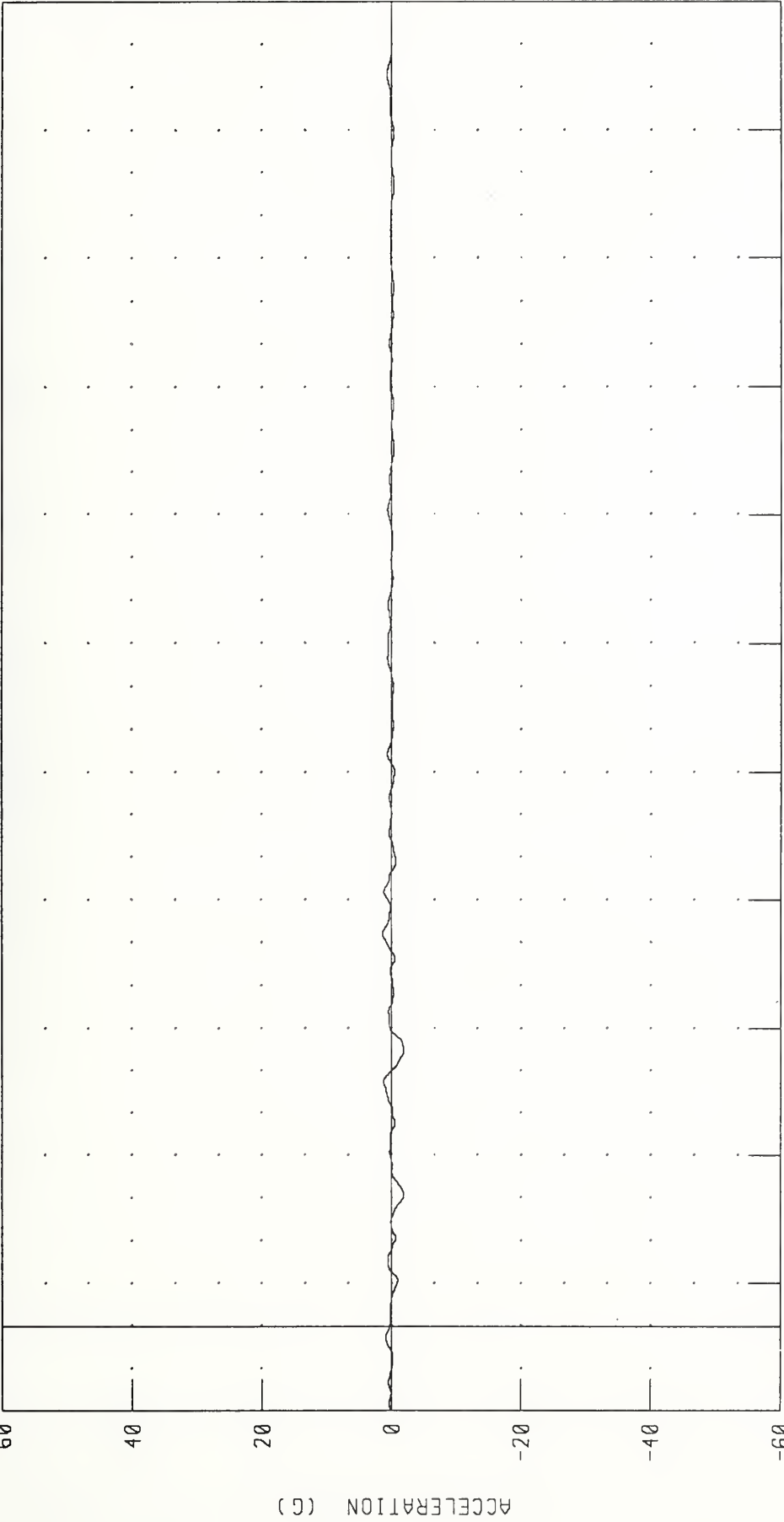
PEAK DATA: 0 13 MM @ 21.92 MS, -19.94 MM @ 153.92 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Z-AXIS ACCELERATION

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC.
60

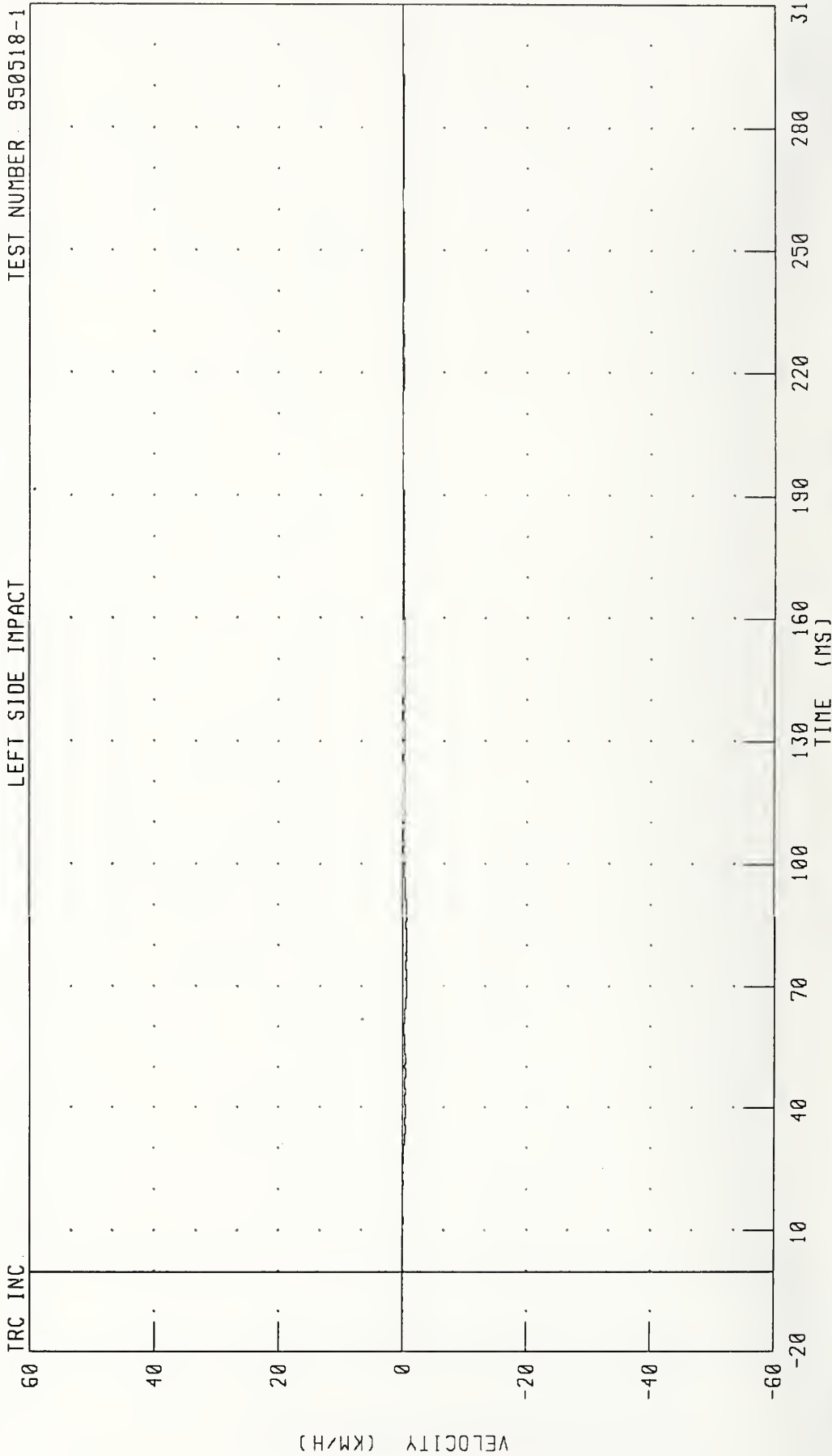


310 280 250 220 190 160 130 100 70 40 10 -20 -40 -60
TIME (MS)

CHANNEL BCGZG1 FILTER CH CLASS 60

PEAK DATA: 1.38 G @ 92.00 MS, -1 87 G @ 64 64 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY Z-AXIS VELOCITY



CHANNEL BCGZV1 FILTER CH CLASS 180

PEAK DATA: 0.05 KM/H @ 6.00 MS, -0.69 KM/H @ 87.52 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY Z-AXIS DISPLACEMENT

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

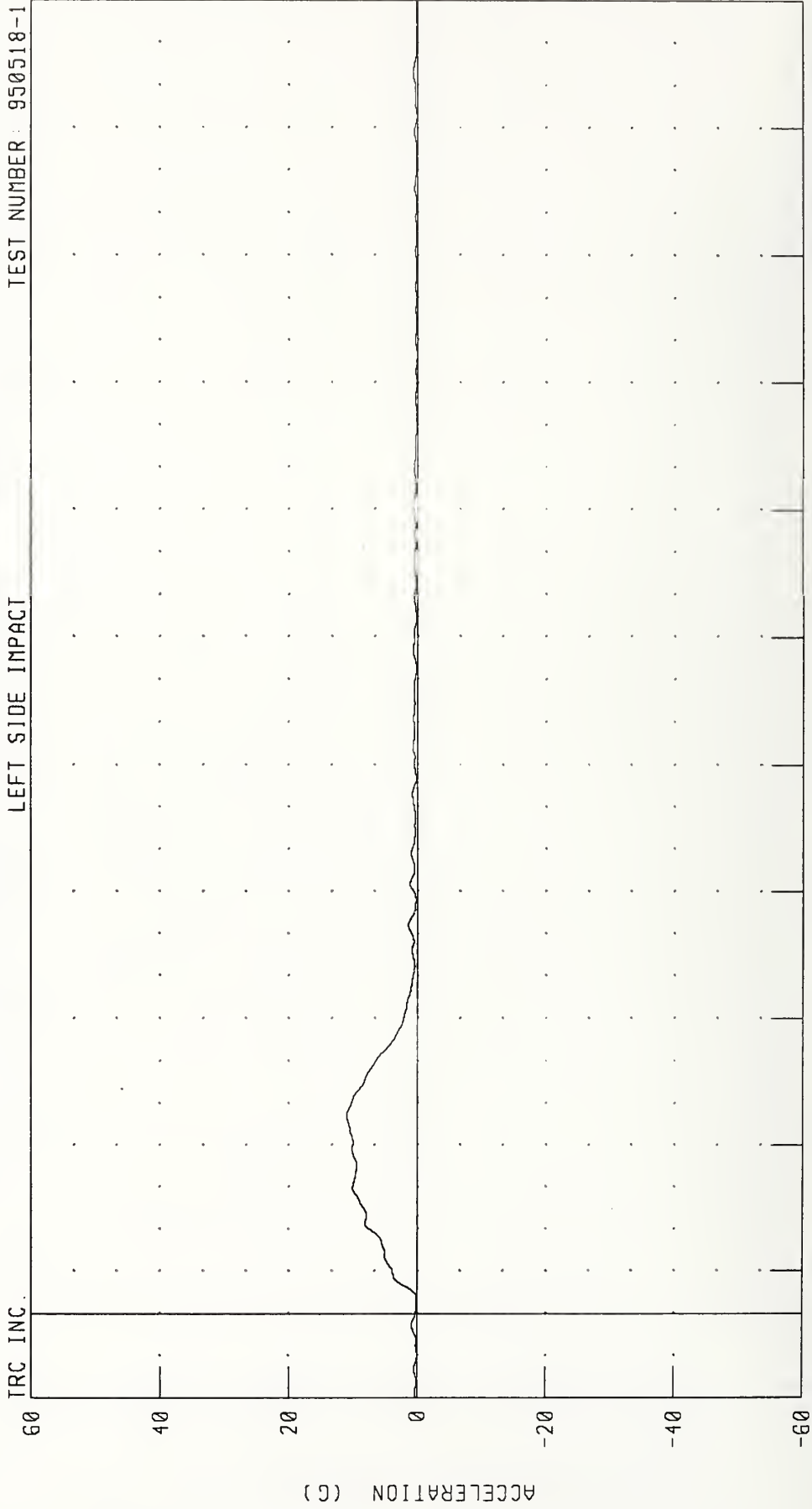
TRC INC.



CHANNEL: BCGZD1 FILTER: CH CLASS 180

PEAK DATA: 0 09 MM @ 10 48 MS; -17 85 MM @ 306 40 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY RESULTANT ACCELERATION



CHANNEL: BCCRG1 FILTER: CH CLASS 60

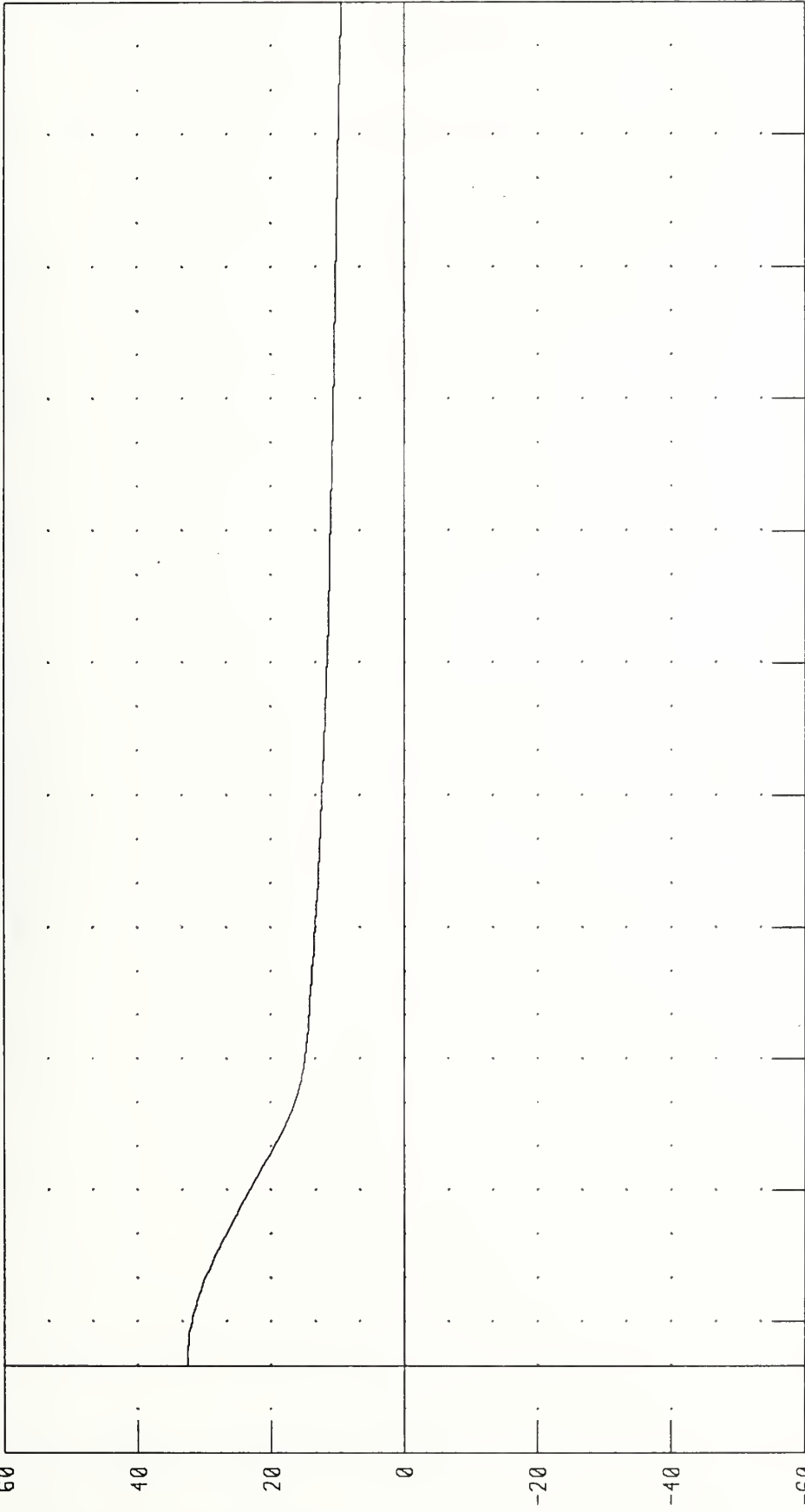
PEAK DATA: 11 06 G @ 46.96 MS, 0 03 G @ -9.92 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY RESULTANT VELOCITY

TEST NUMBER: 950518-1

LEFT SIDE IMPACT

TRC INC



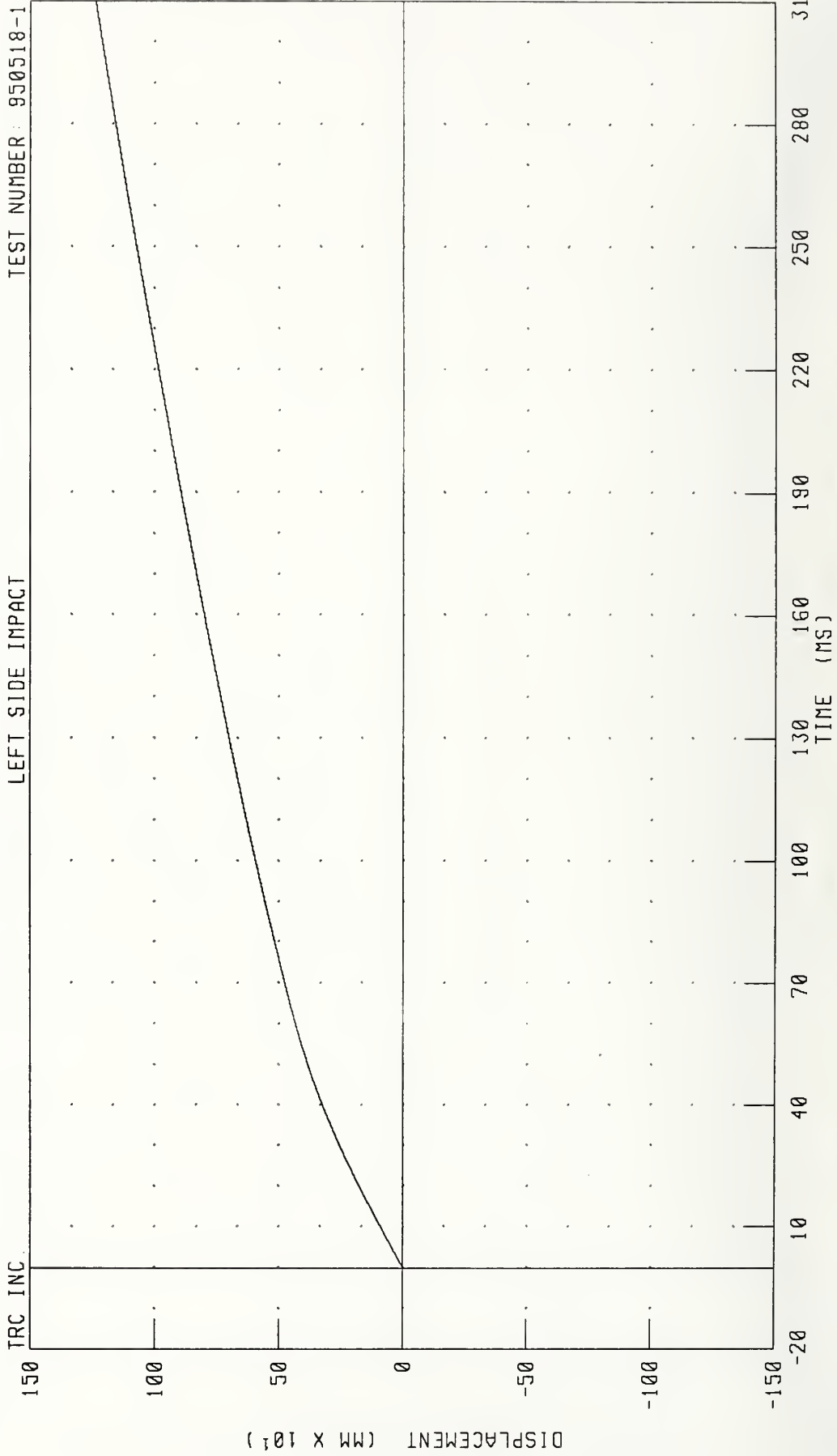
60
40
20
0
-20
-40
-60

10 40 70 100 130 160 190 220 250 280 310

TIME (MS)

CHANNEL BCGRV1 FILTER CH CLASS 180 PEAK DATA 32.50 KM/H @ 0.00 MS; 9.51 KM/H @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY RESULTANT DISPLACEMENT



Data Plots

Test No. 950518-2

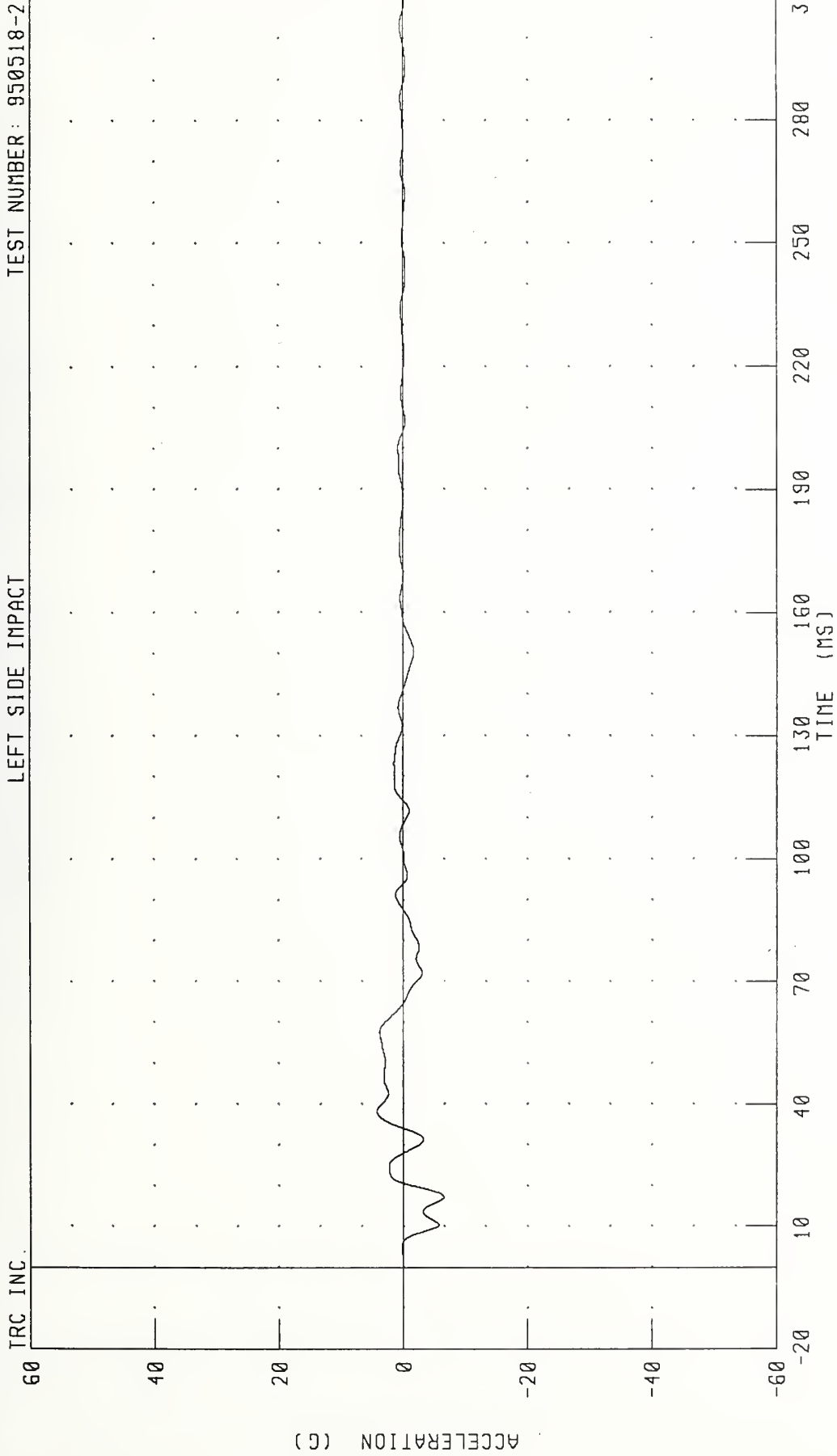


NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG X-AXIS ACCELERATION

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



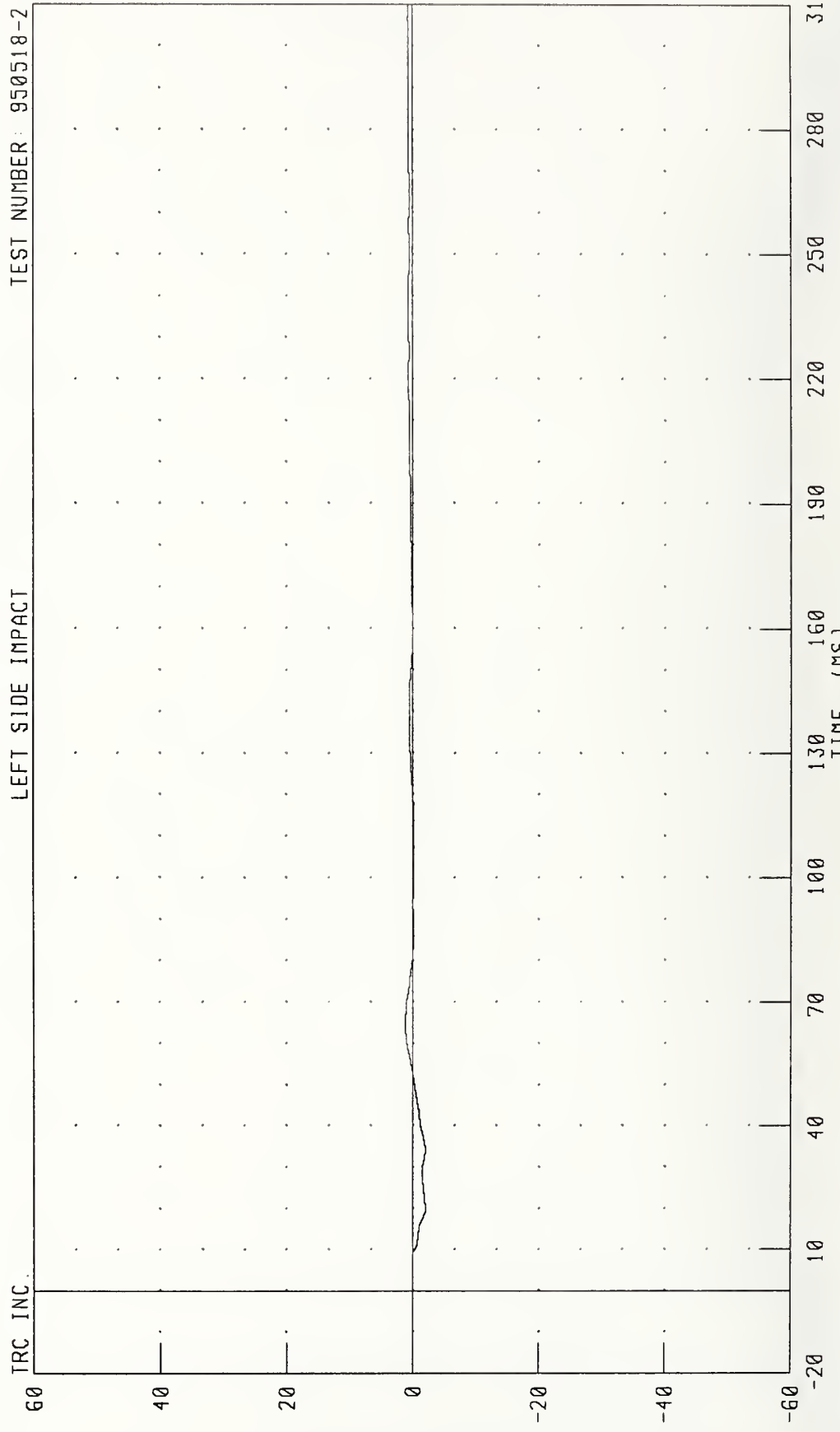
CHANNEL: VCGXG1 FILTER: CH CLASS 60

PEAK DATA 4 23 G @ 38.32 MS, -6.55 G @ 17.28 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 VEHICLE CG X-AXIS VELOCITY

TEST NUMBER: 950518-2

LEFT SIDE IMPACT



CHANNEL: VCGXV1 FILTER: CH CLASS 180

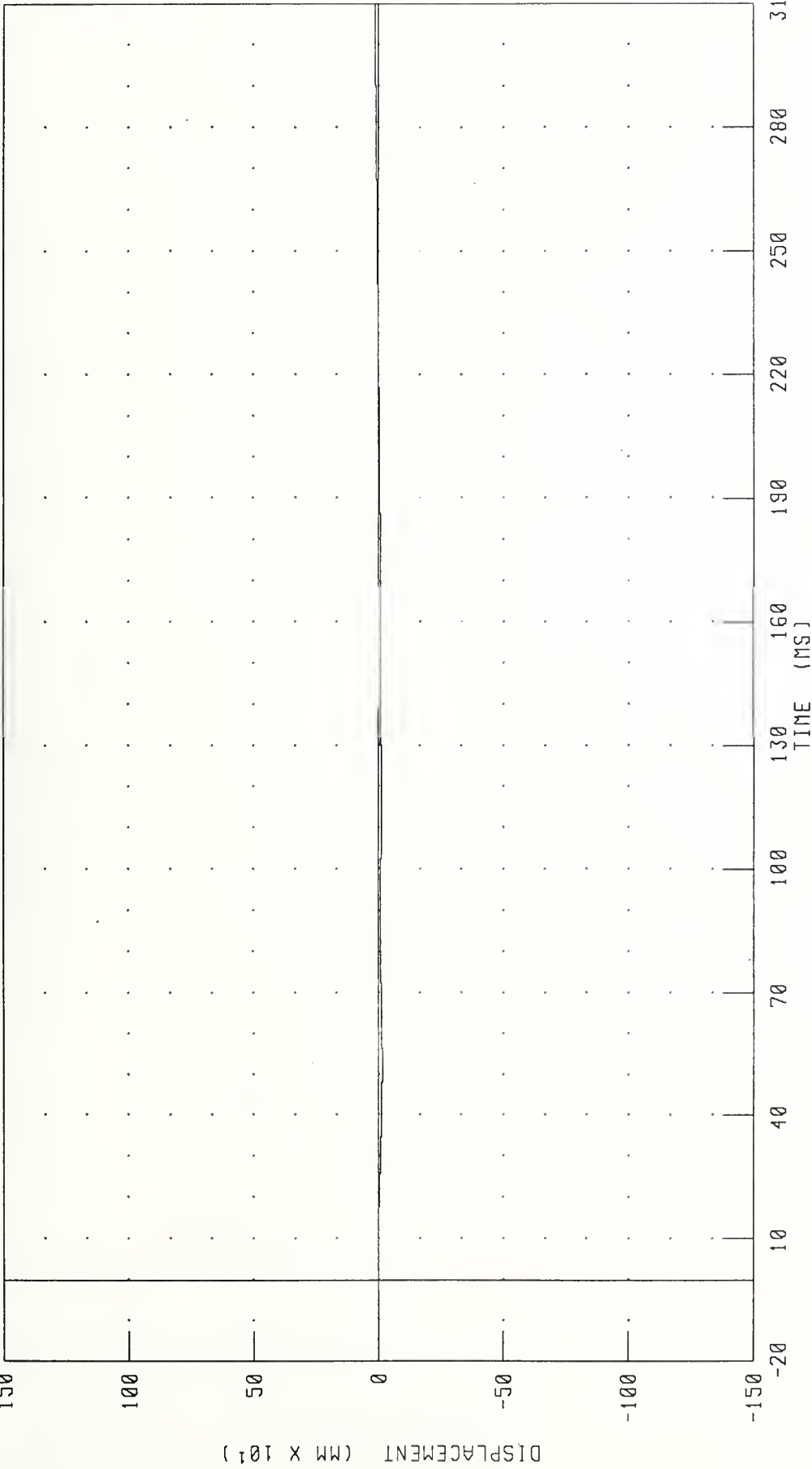
PEAK DATA: 1 16 KM/H @ 63.92 MS; -2.02 KM/H @ 19 92 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG X-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.

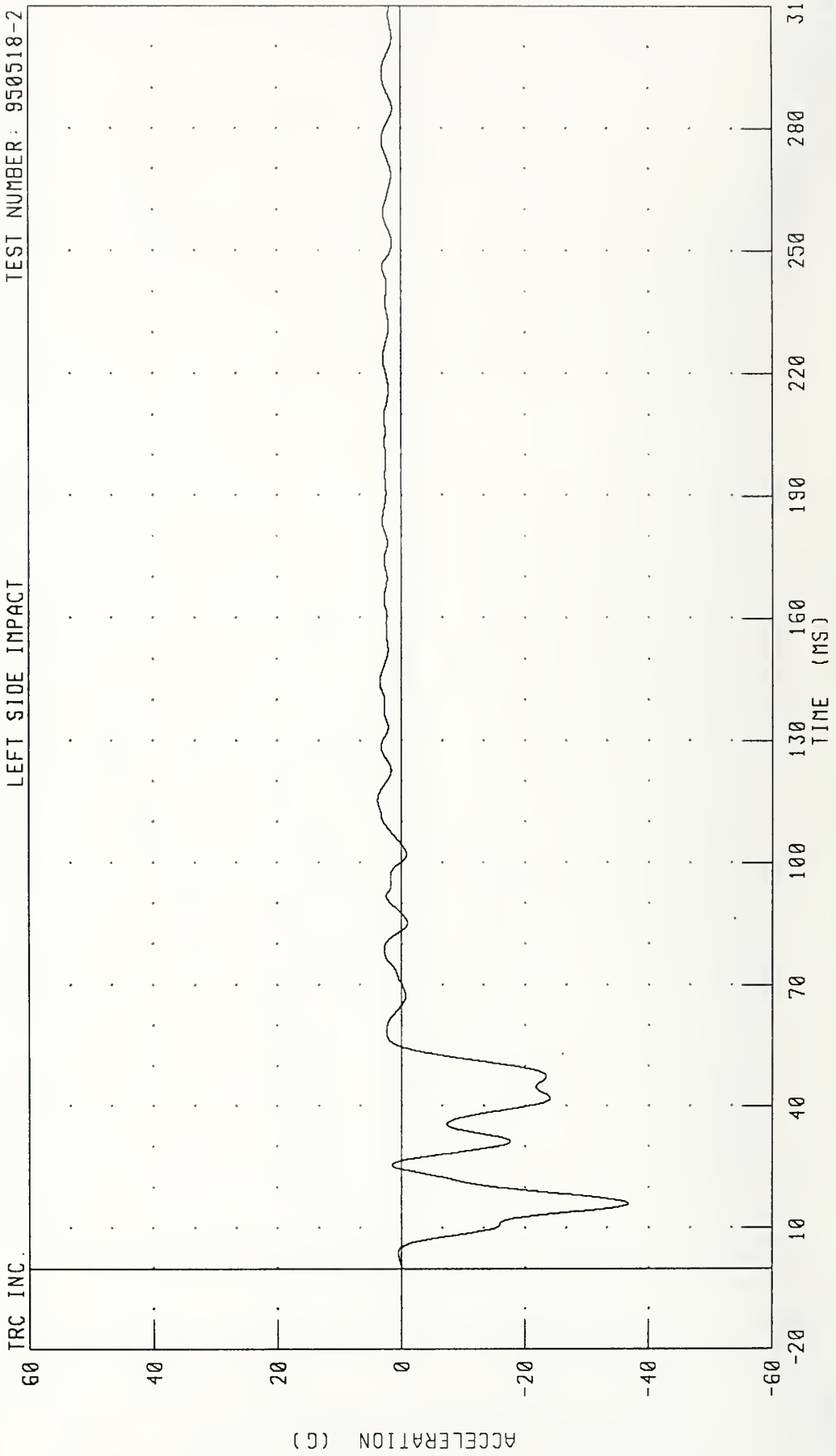


CHANNEL: VCGXD1 FILTER: CH CLASS 180

PEAK DATA 14.70 MM @ 310 00 MS, -14.89 MM @ 52.56 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Y-AXIS ACCELERATION
LEFT SIDE IMPACT

TEST NUMBER: 950518-2



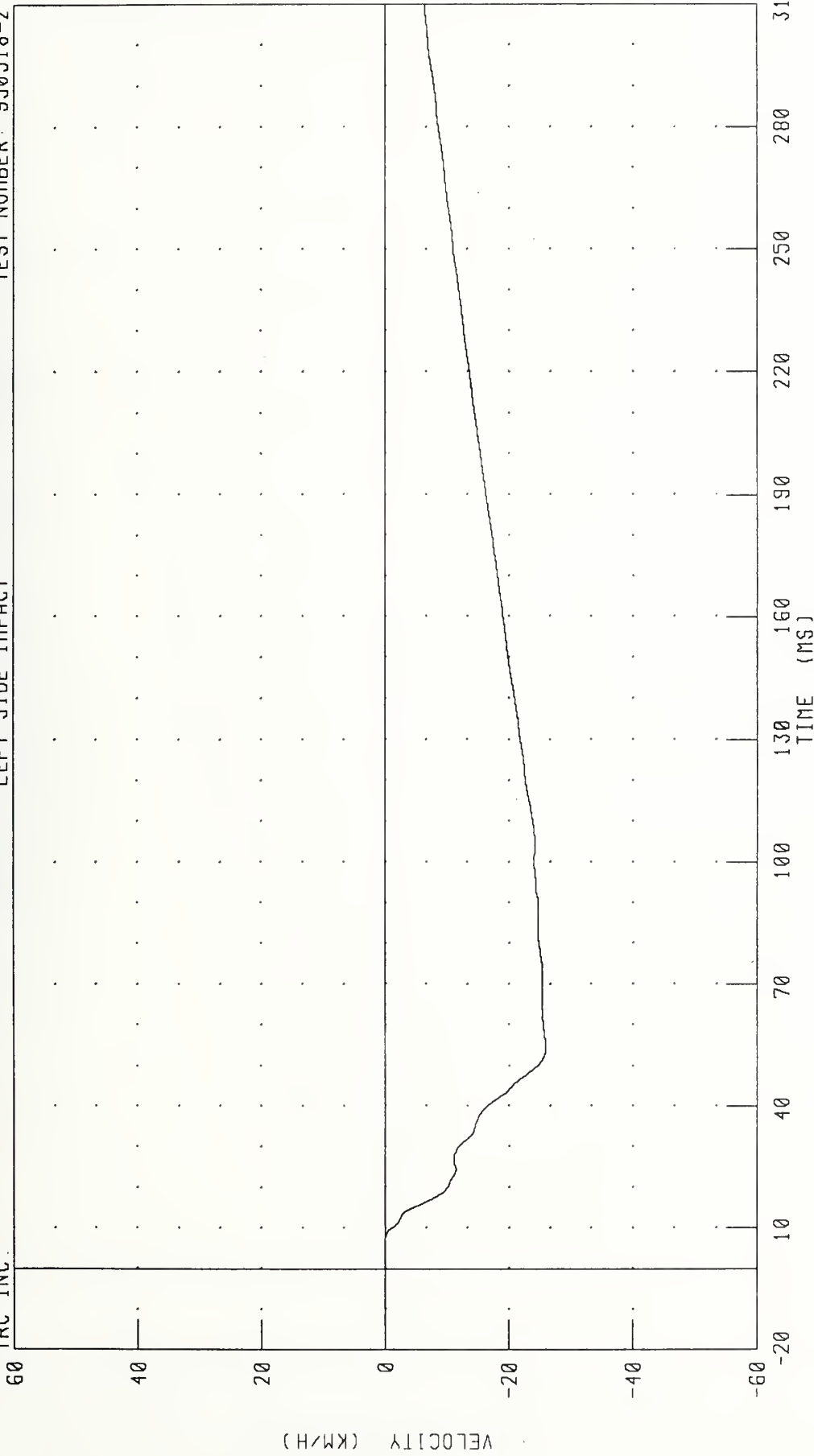
CHANNEL: VCGYG1 FILTER: CH CLASS 60 PEAK DATA: 3.83 G @ 115.44 MS; -36.66 G @ 16.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Y-AXIS VELOCITY

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



CHANNEL: VCGYV1 FILTER: CH CLASS 180

PEAK DATA: 0 01 KM/H @ 6 64 MS, -25 91 KM/H @ 54 40 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.

150

100

50

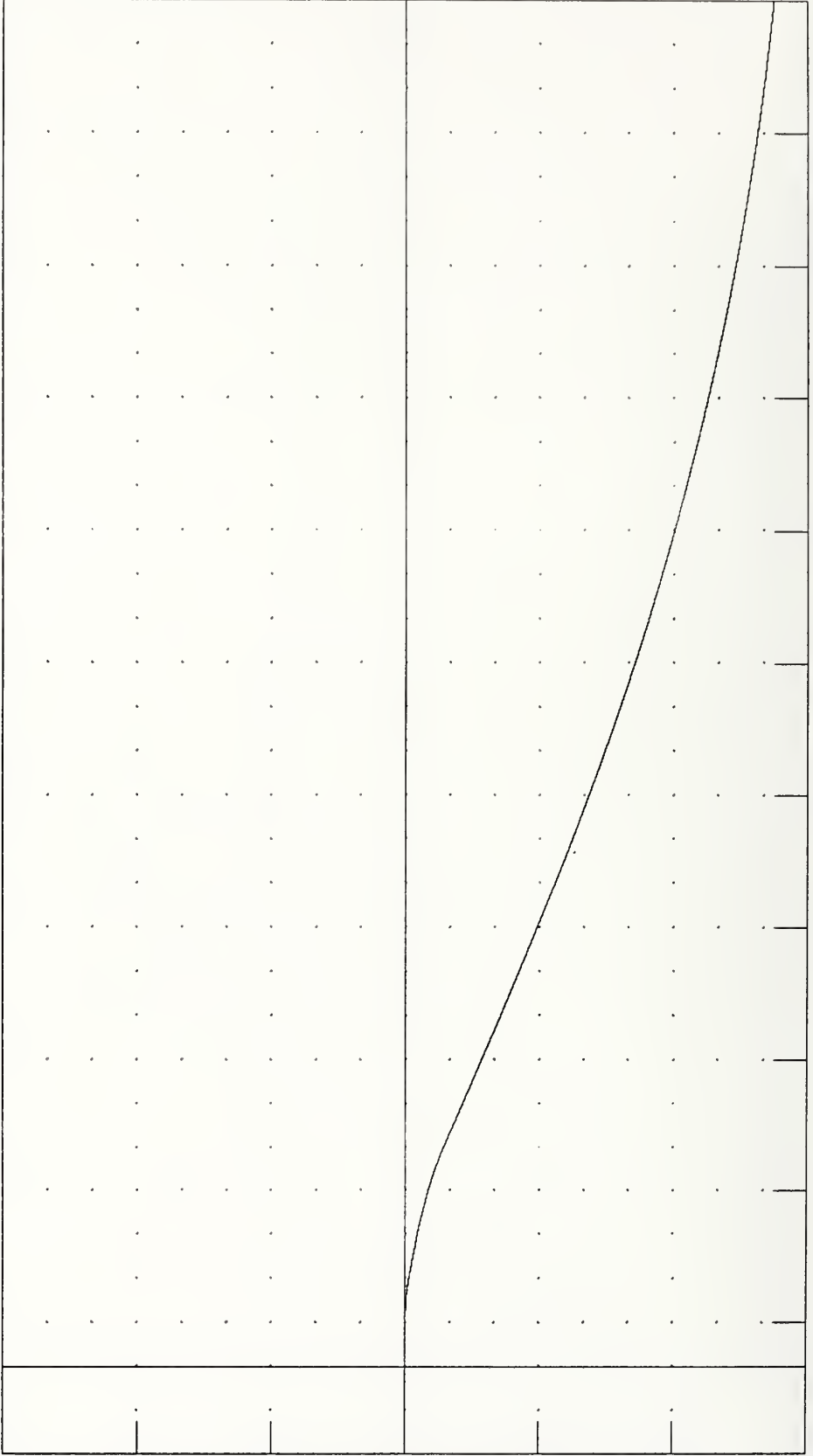
0

-50

-100

-150

DISPLACEMENT (MM X 10¹)



TIME (MS)

310

280

250

220

190

160

130

100

70

40

10

-20

CHANNEL: VCCYD1 FILTER: CH CLASS 180

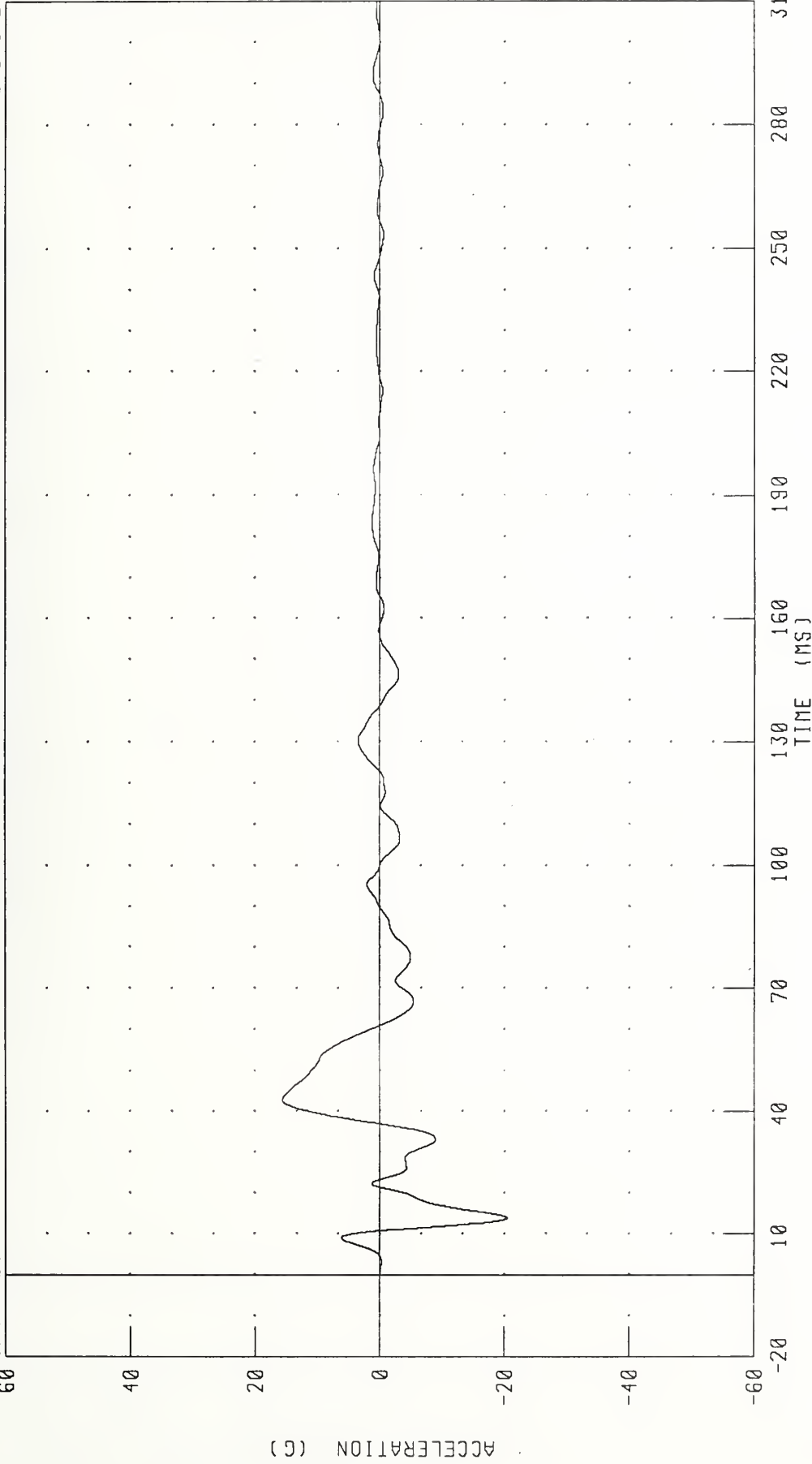
PEAK DATA: 0 00 MM @ 7.20 MS; -1373 62 MM @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Z-AXIS ACCELERATION

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

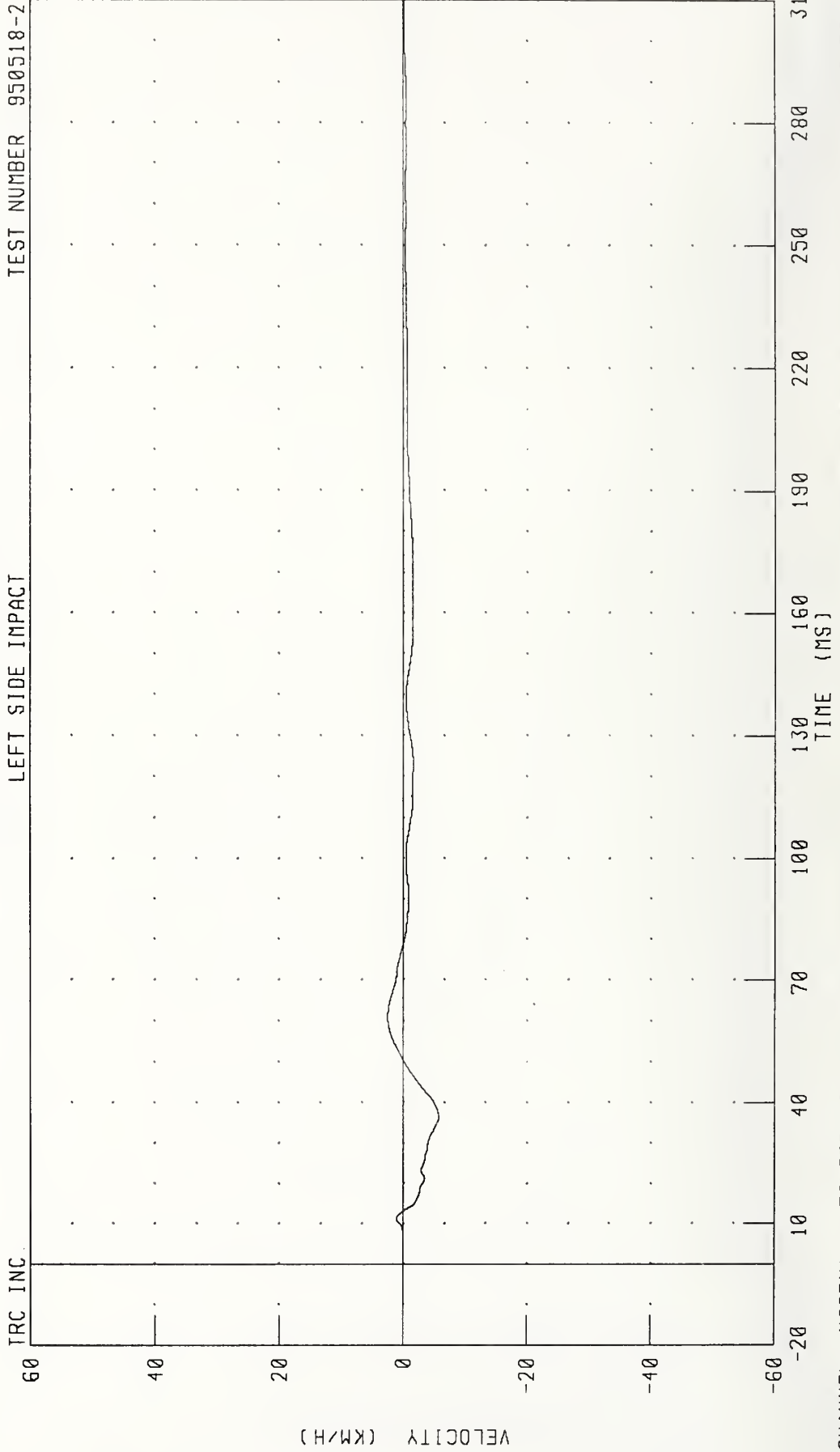
TRC INC.



CHANNEL VCGZG1 FILTER CH CLASS 60

PEAK DATA 15 64 G @ 42 80 MS, -20 53 G @ 13 92 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 VEHICLE CG Z-AXIS VELOCITY
 LEFT SIDE IMPACT

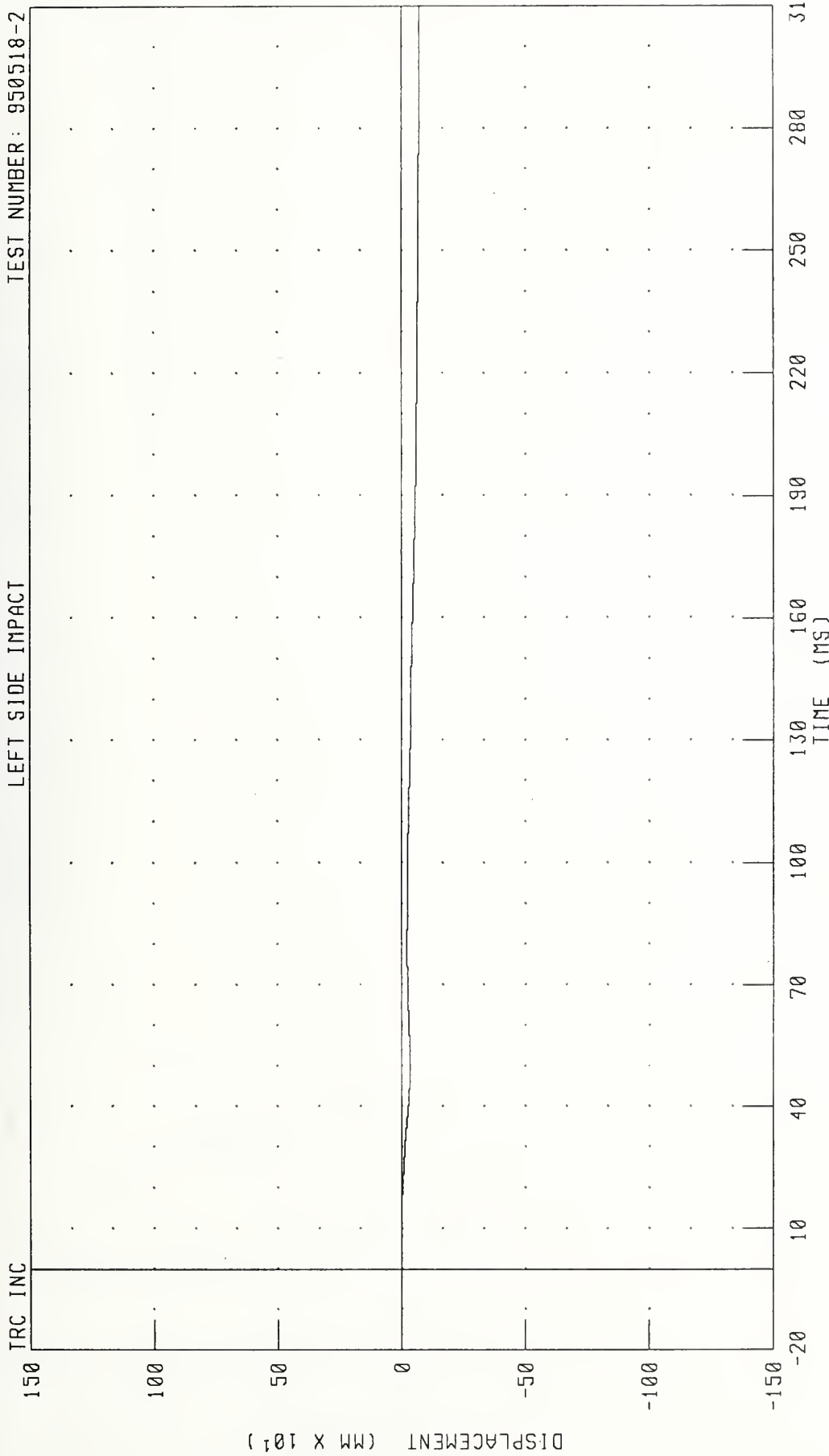


NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 VEHICLE CG Z-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC

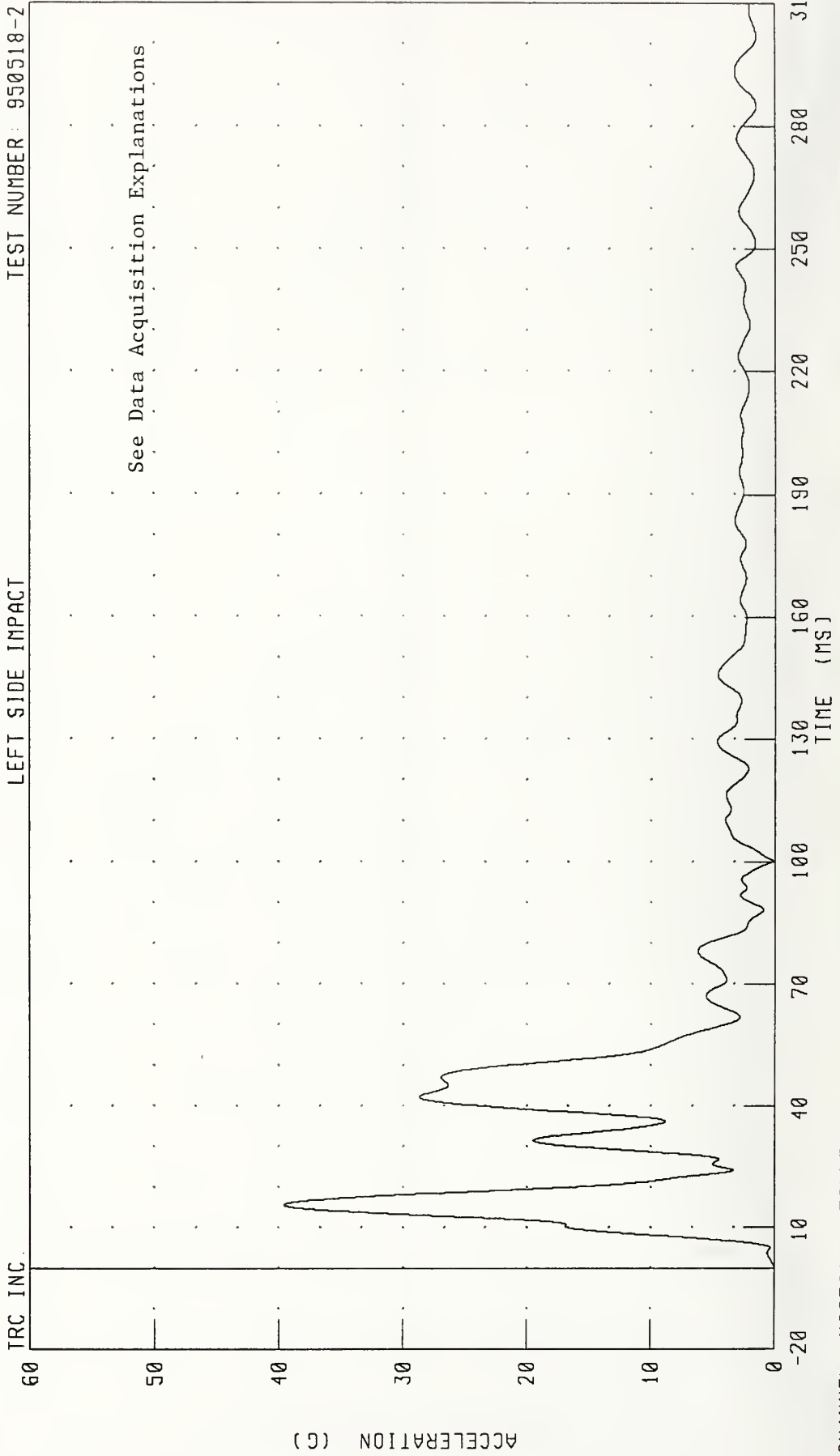


CHANNEL VCGZD1 FILTER CH CLASS 180

PEAK DATA 0.78 MM @ 13.12 MS, -73.02 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG RESULTANT ACCELERATION
LEFT SIDE IMPACT

TEST NUMBER: 950518-2



CHANNEL: VCGRG1 FILTER: CH CLASS 60

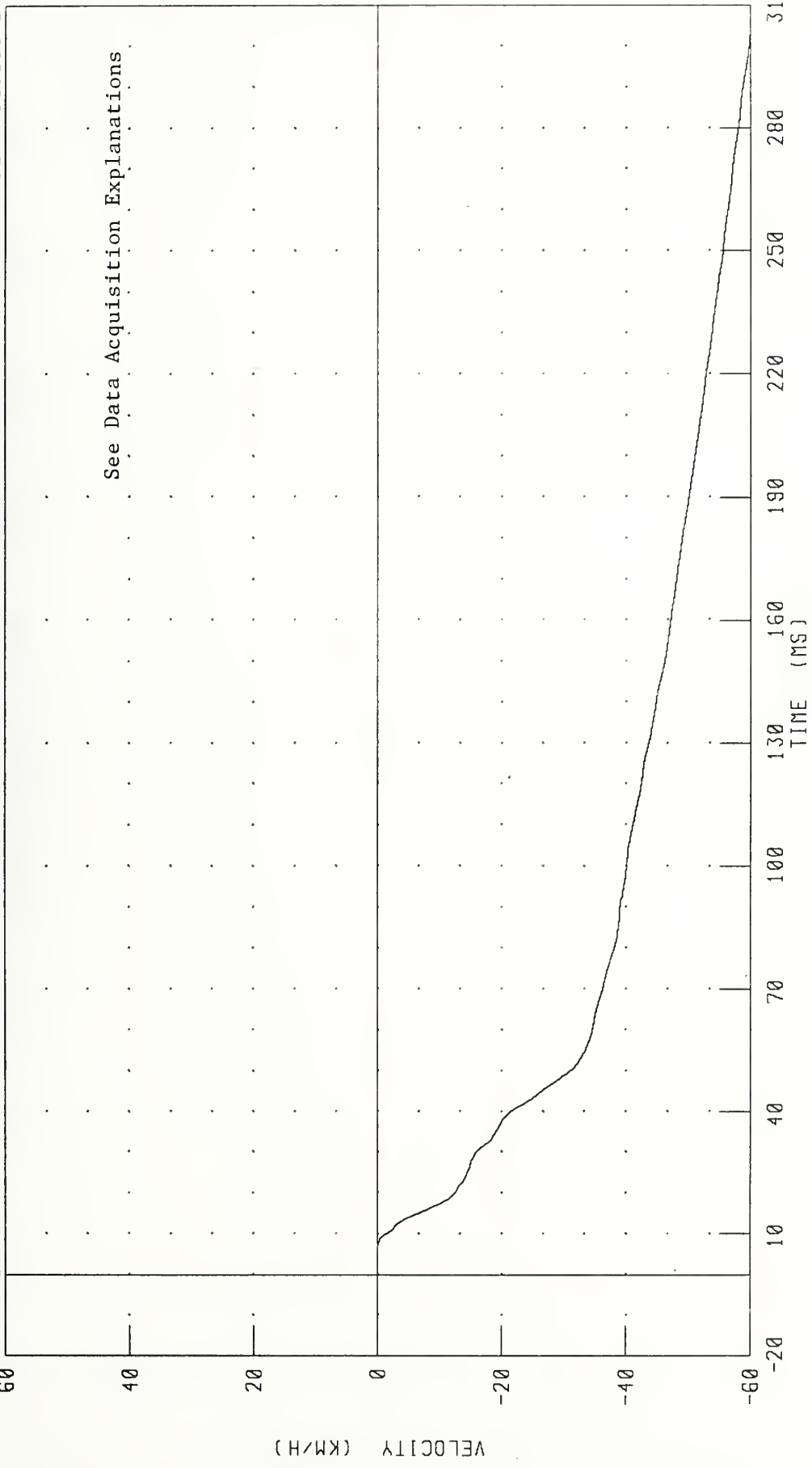
PEAK DATA 39.59 G @ 15.60 MS; 0.00 G @ -19.68 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG RESULTANT VELOCITY

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC



See Data Acquisition Explanations

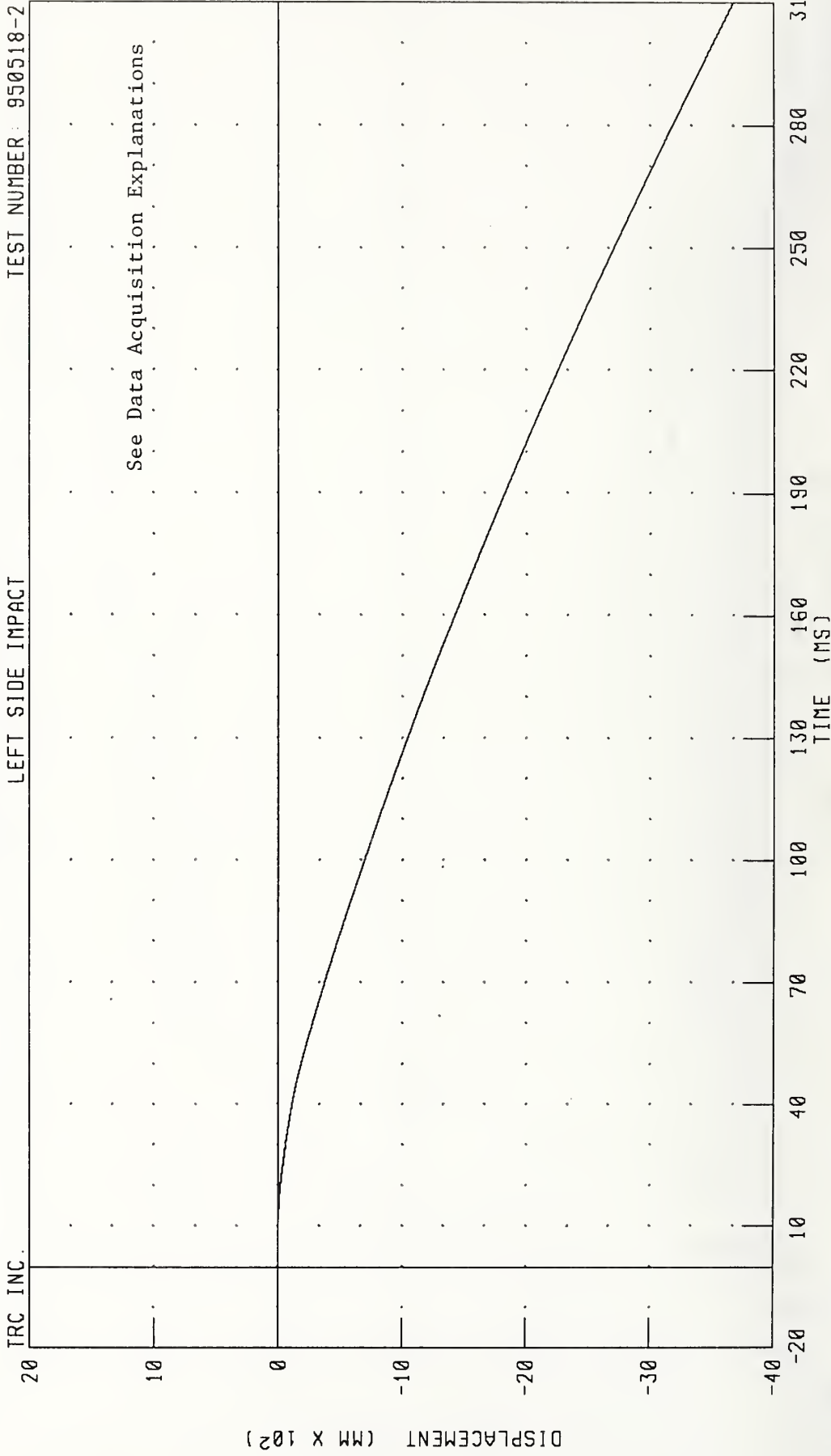
CHANNEL: VCGRV1 FILTER: CH. CLASS 180

PEAK DATA 0 00 KM/H @ 0 00 MS, -60.34 KM/H @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG RESULTANT DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT



CHANNEL: VCGRD1 FILTER: CH CLASS 180

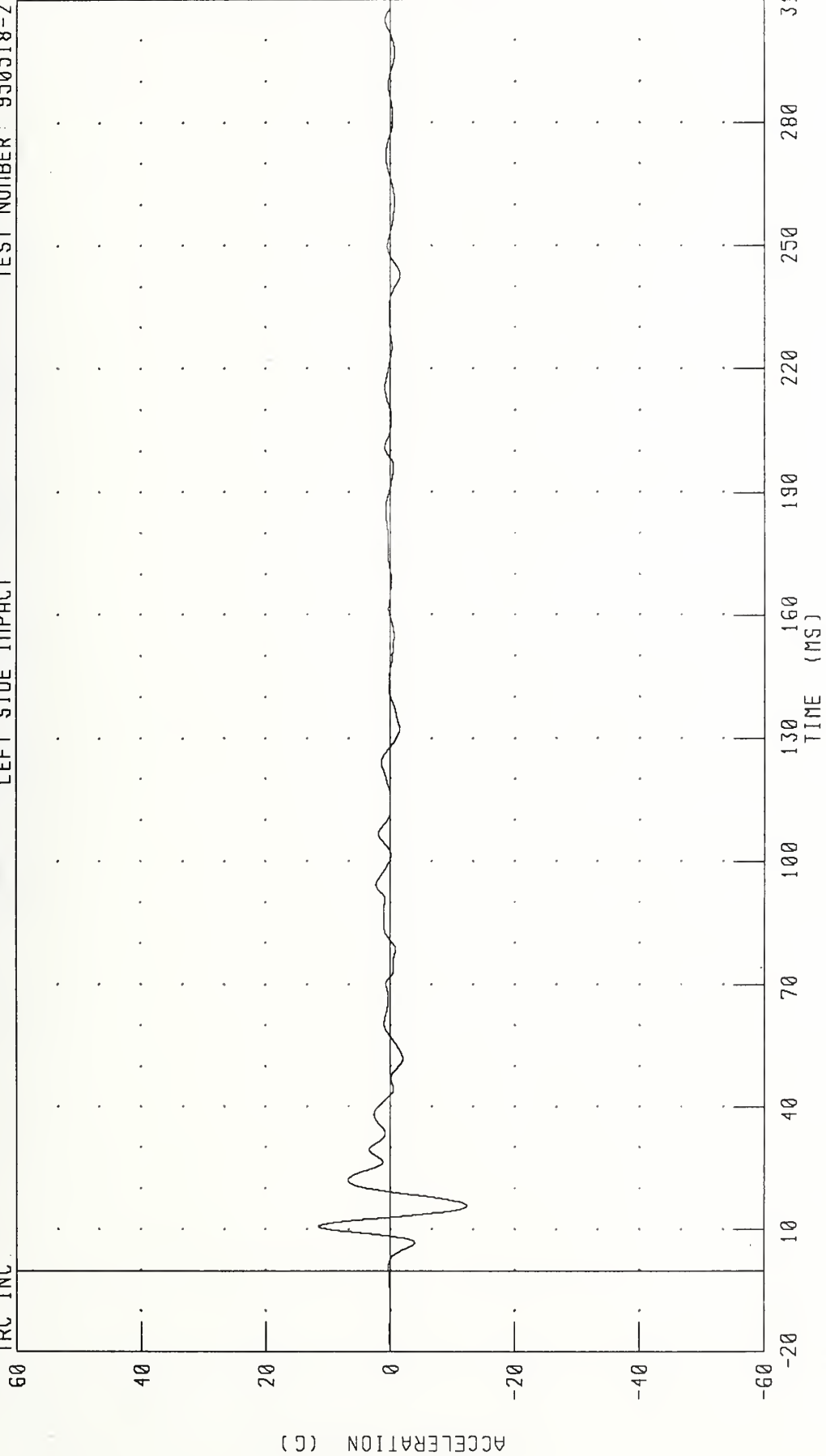
PEAK DATA: 0 00 MM @ 0 00 MS, -3672 59 MM @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL X-AXIS ACCELERATION

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

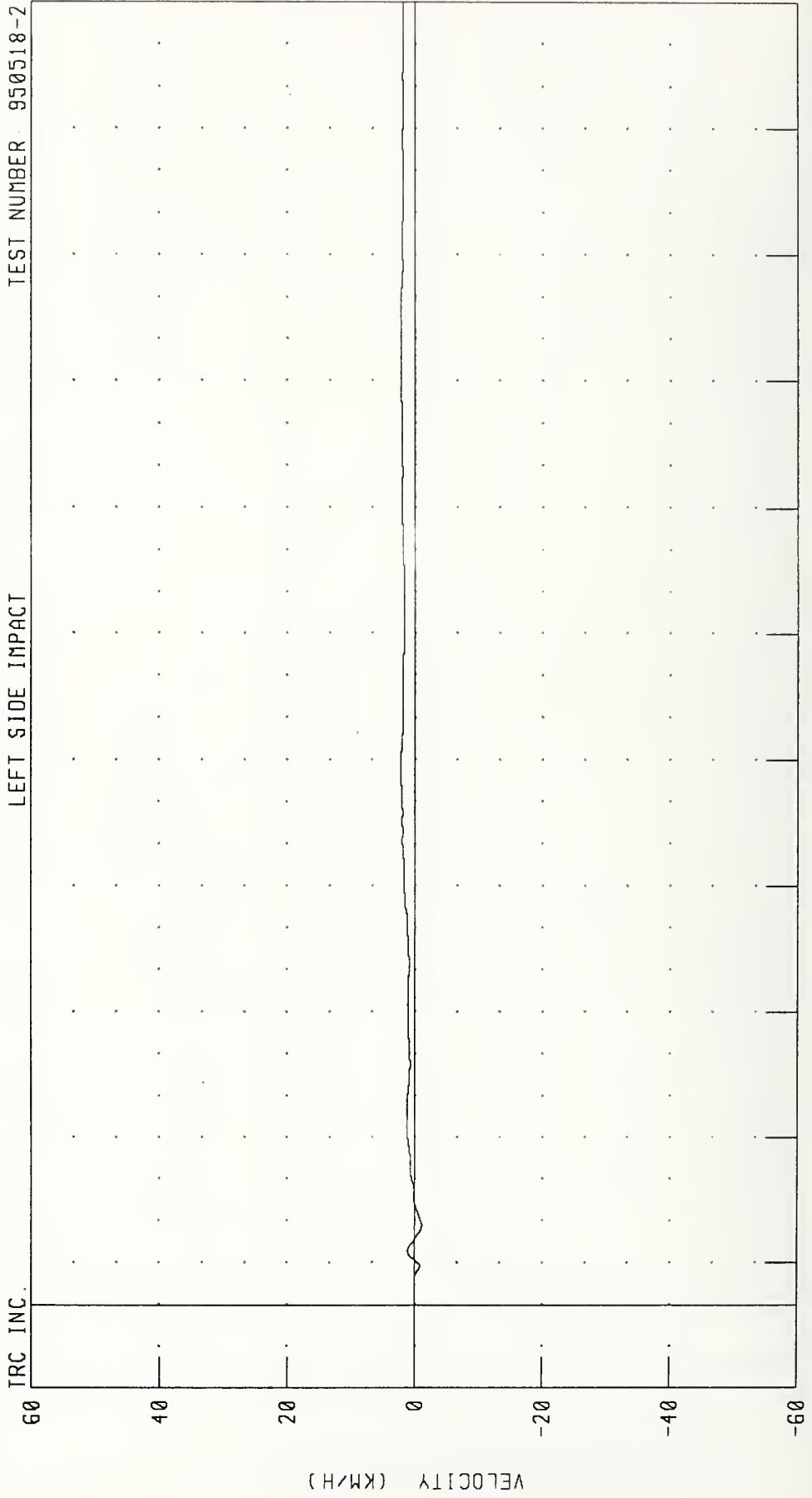
TRC INC.



CHANNEL LFSXG1 FILTER CH CLASS 60

PEAK DATA 11.52 G @ 10.80 MS, -12.35 G @ 15.76 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL X-AXIS VELOCITY



NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL X-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.

150

100

50

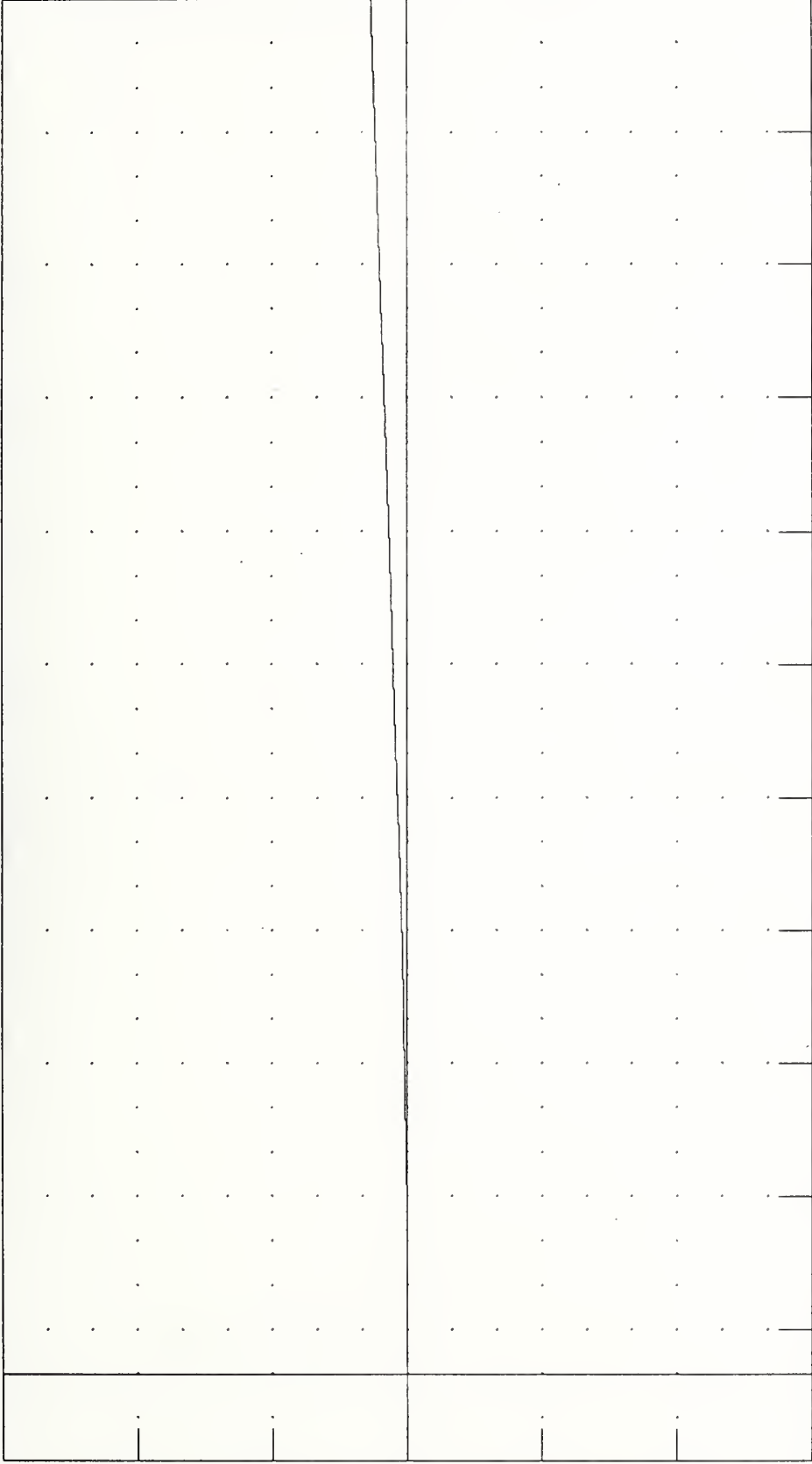
0

-50

-100

-150

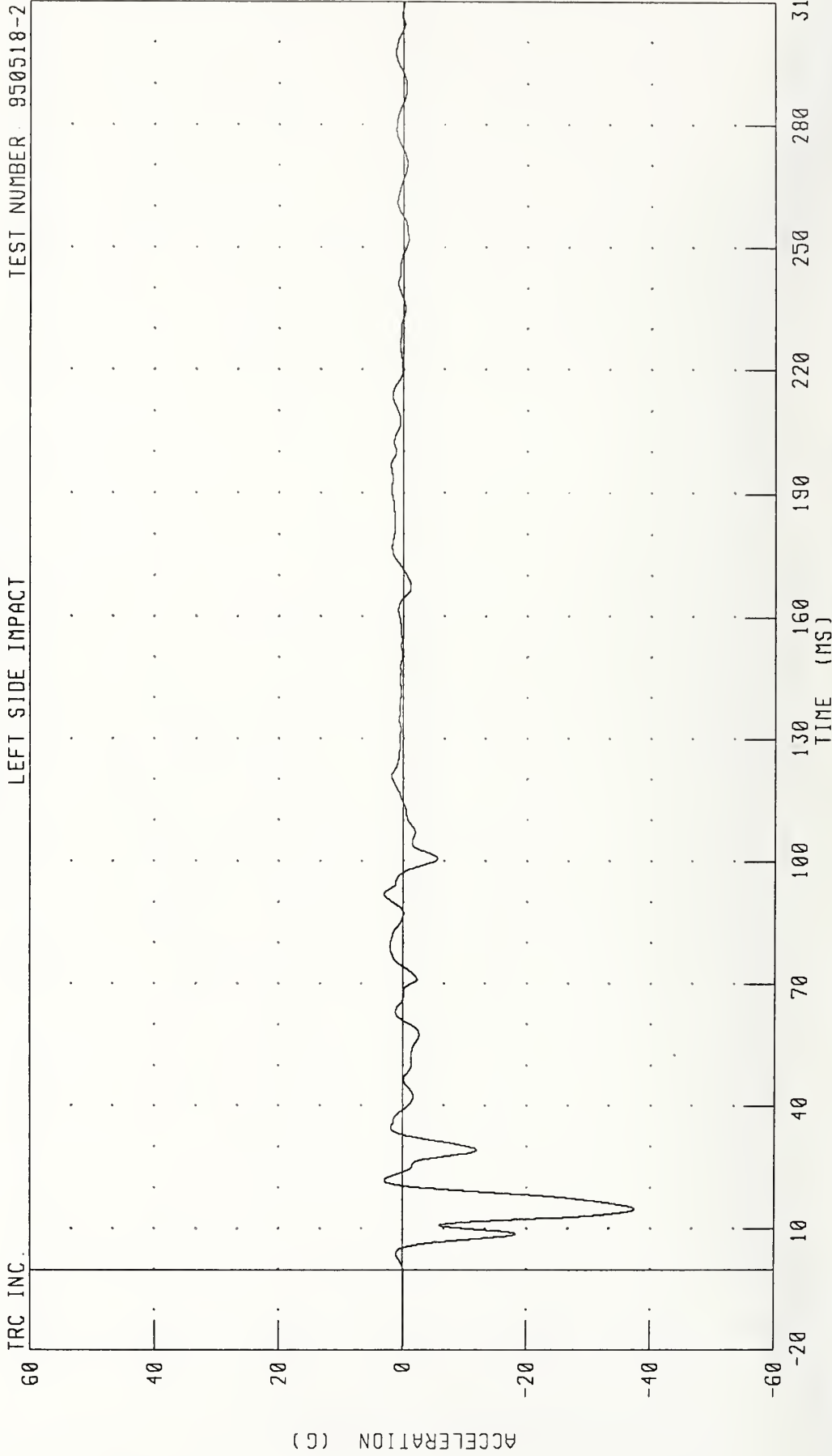
DISPLACEMENT (MM X 10¹)



310 280 250 220 190 160 130 TIME (MS)

CHANNEL: LFSXD1 FILTER: CH. CLASS 180 PEAK DATA 133.72 MM @ 310.00 MS, -0.97 MM @ 23.92 MS

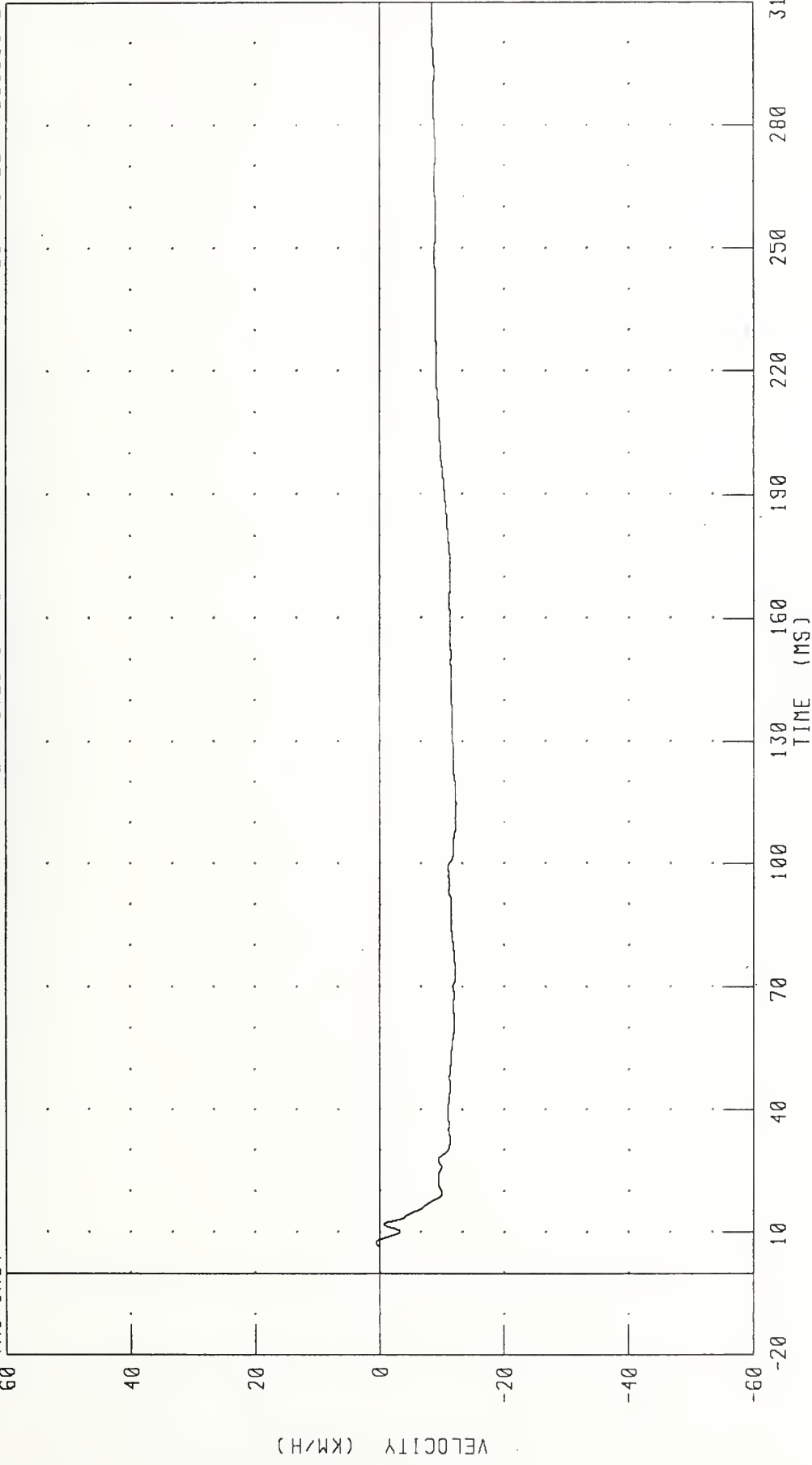
NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL: Y-AXIS ACCELERATION



CHANNEL: LFSYG1 FILTER: CH, CLASS 60

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL Y-AXIS VELOCITY

TRC INC. LEFT SIDE IMPACT TEST NUMBER 950518-2



CHANNEL: LFSYV1 FILTER: CH. CLASS 180

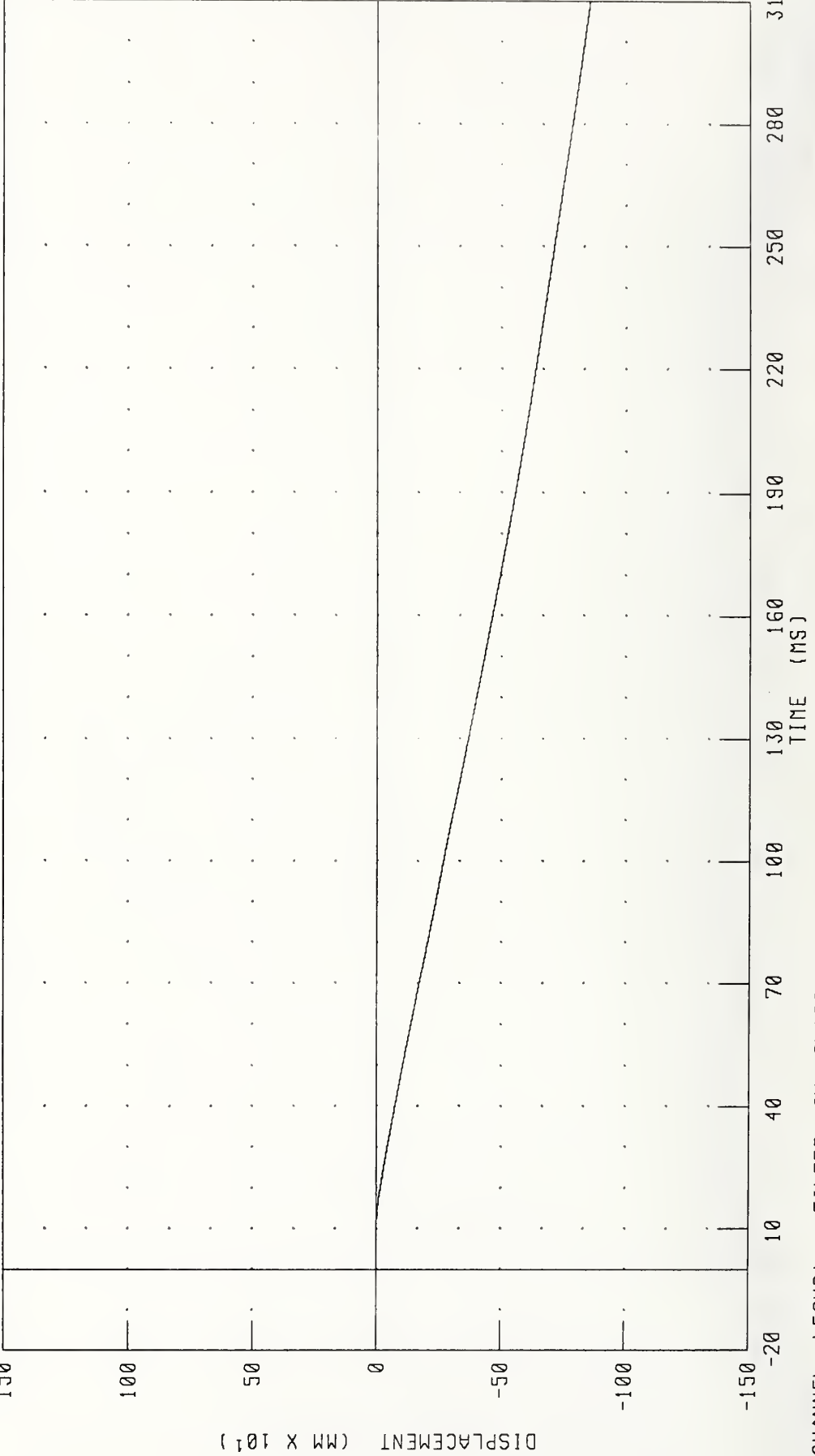
PEAK DATA: 0 58 KM/H @ 7 52 MS, -12 27 KM/H @ 114 64 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



CHANNEL: LFSYD1 FILTER: CH CLASS 180

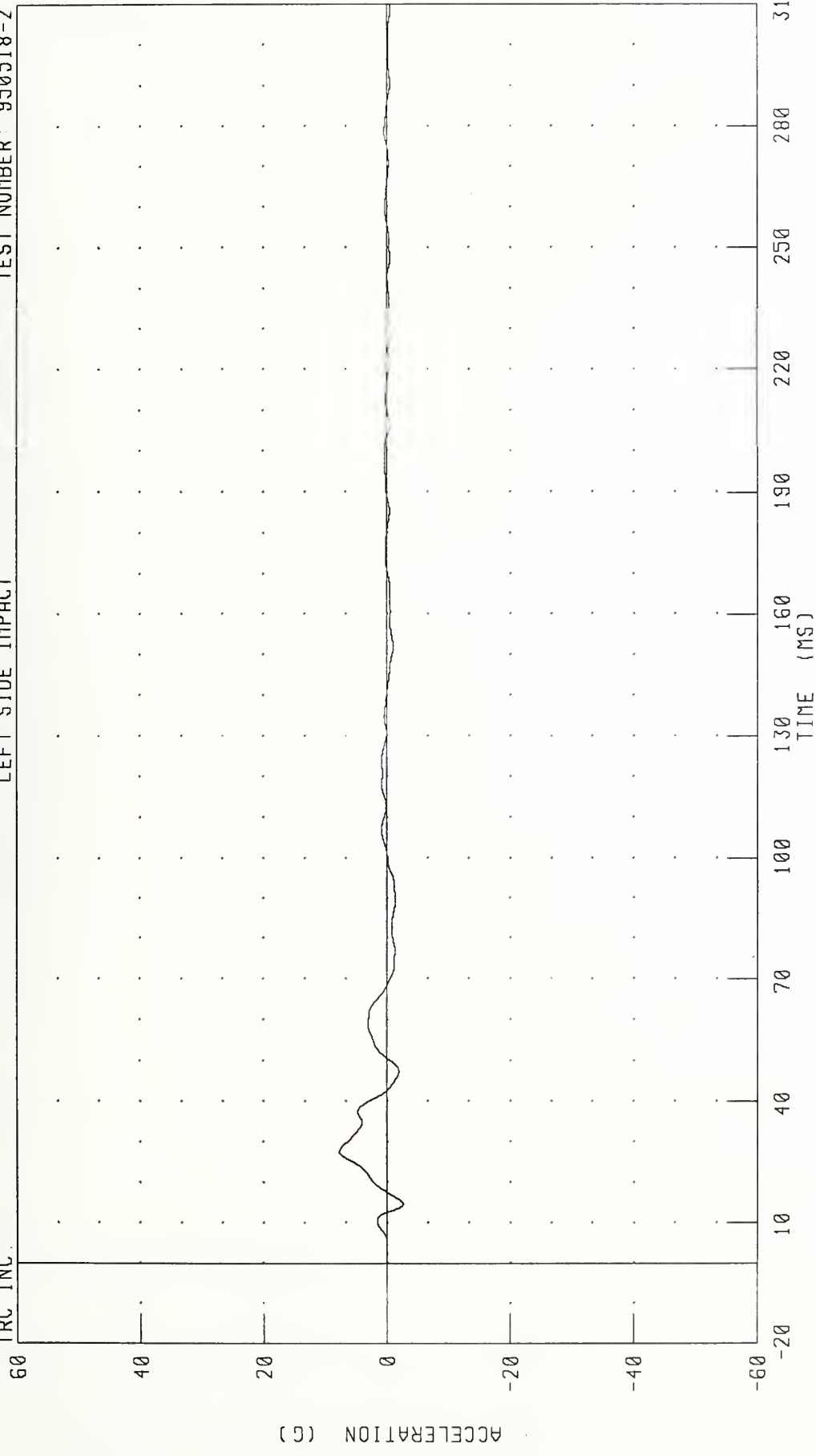
PEAK DATA: 0 16 MM @ 8 24 MS; -857 46 MM @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL X-AXIS ACCELERATION

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



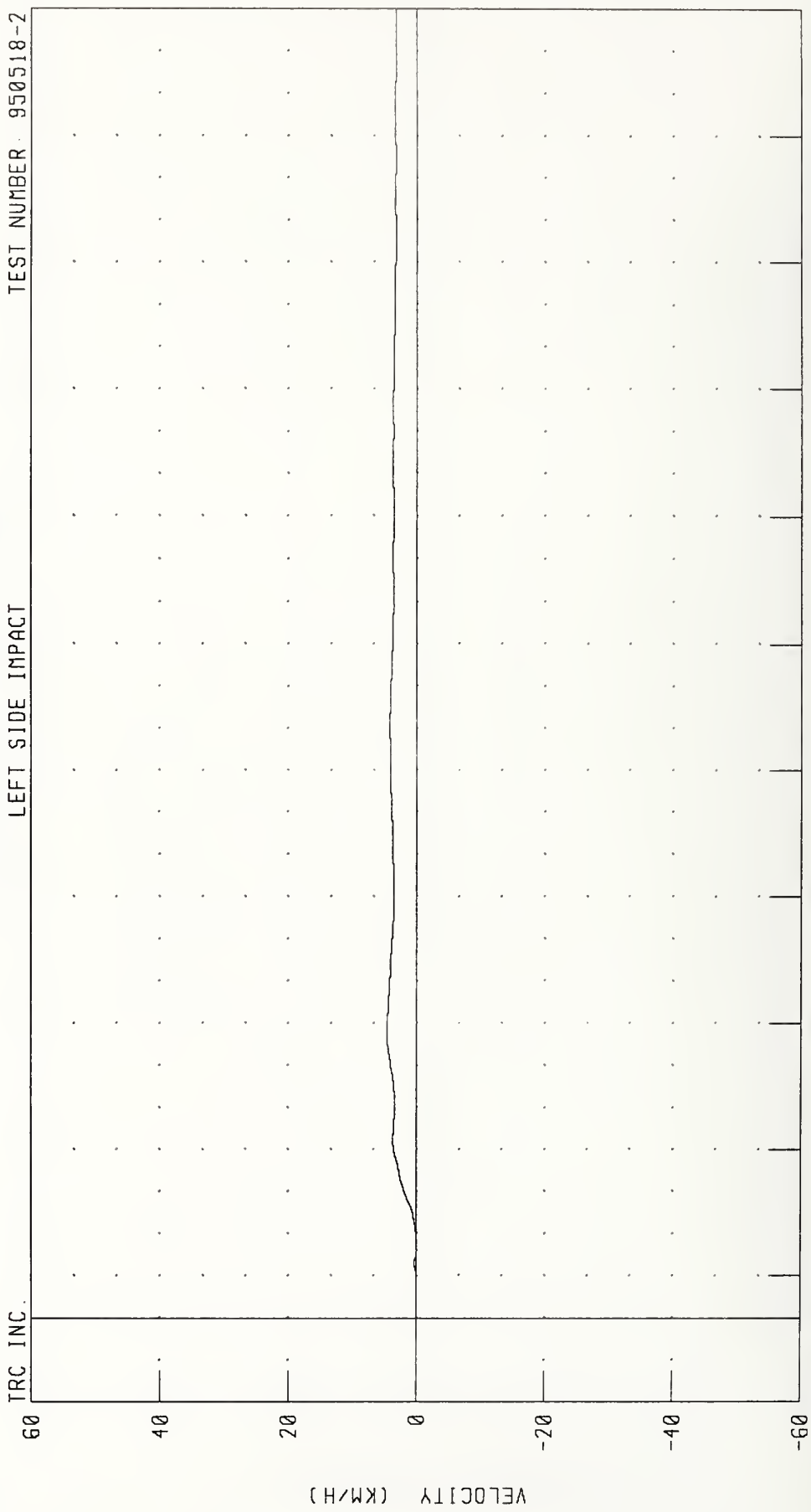
CHANNEL RFSXG1 FILTER CH CLASS 60

PEAK DATA: 7 73 G @ 27.60 MS, -2 63 G @ 14 64 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 RIGHT FRONT SILL X-AXIS VELOCITY

TEST NUMBER: 950518-2

LEFT SIDE IMPACT



CHANNEL: RFSXV1 FILTER: CH CLASS 180

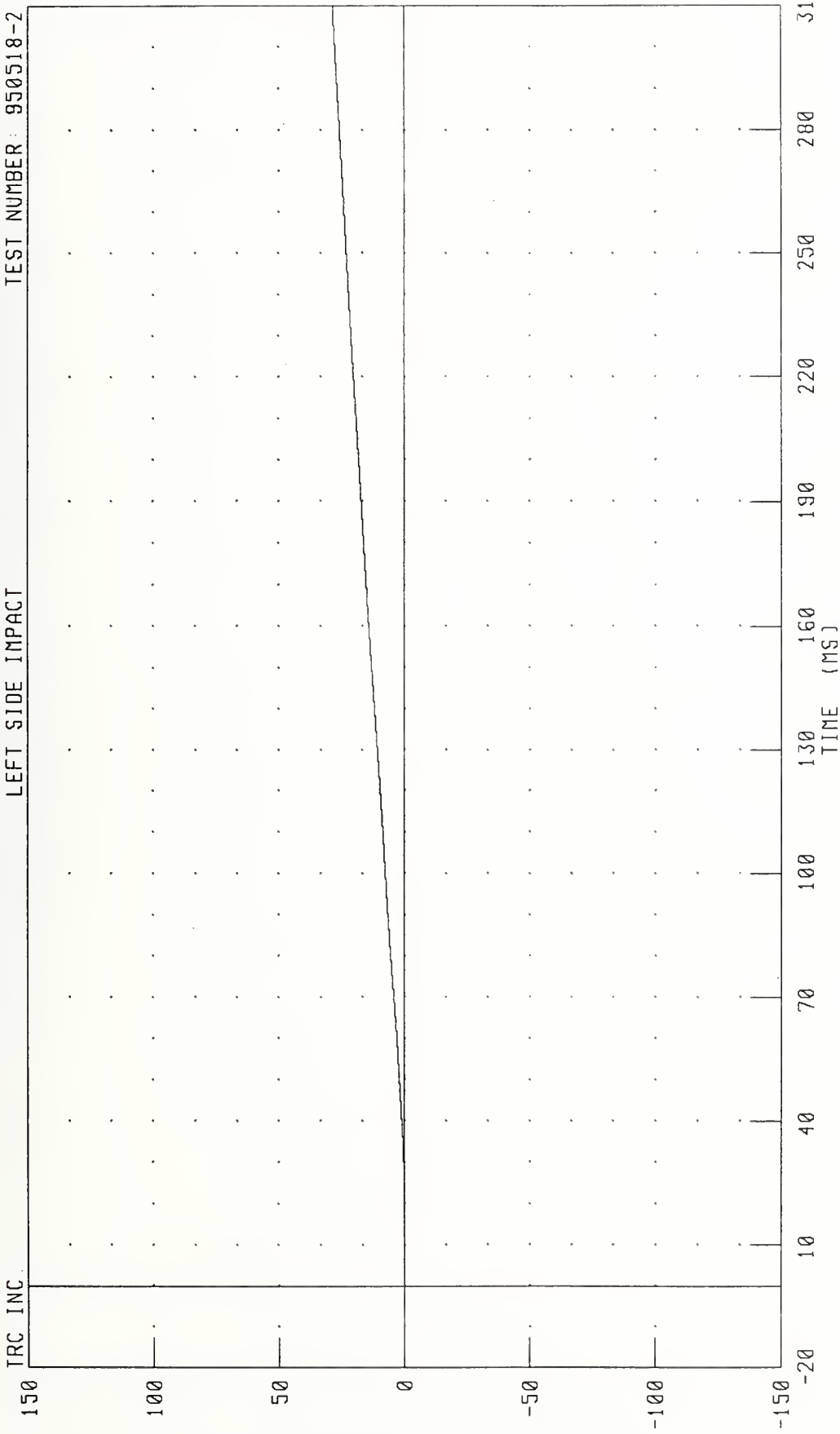
PEAK DATA: 4 59 KM/H @ 70 00 MS, -0 08 KM/H @ 16 16 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL X-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

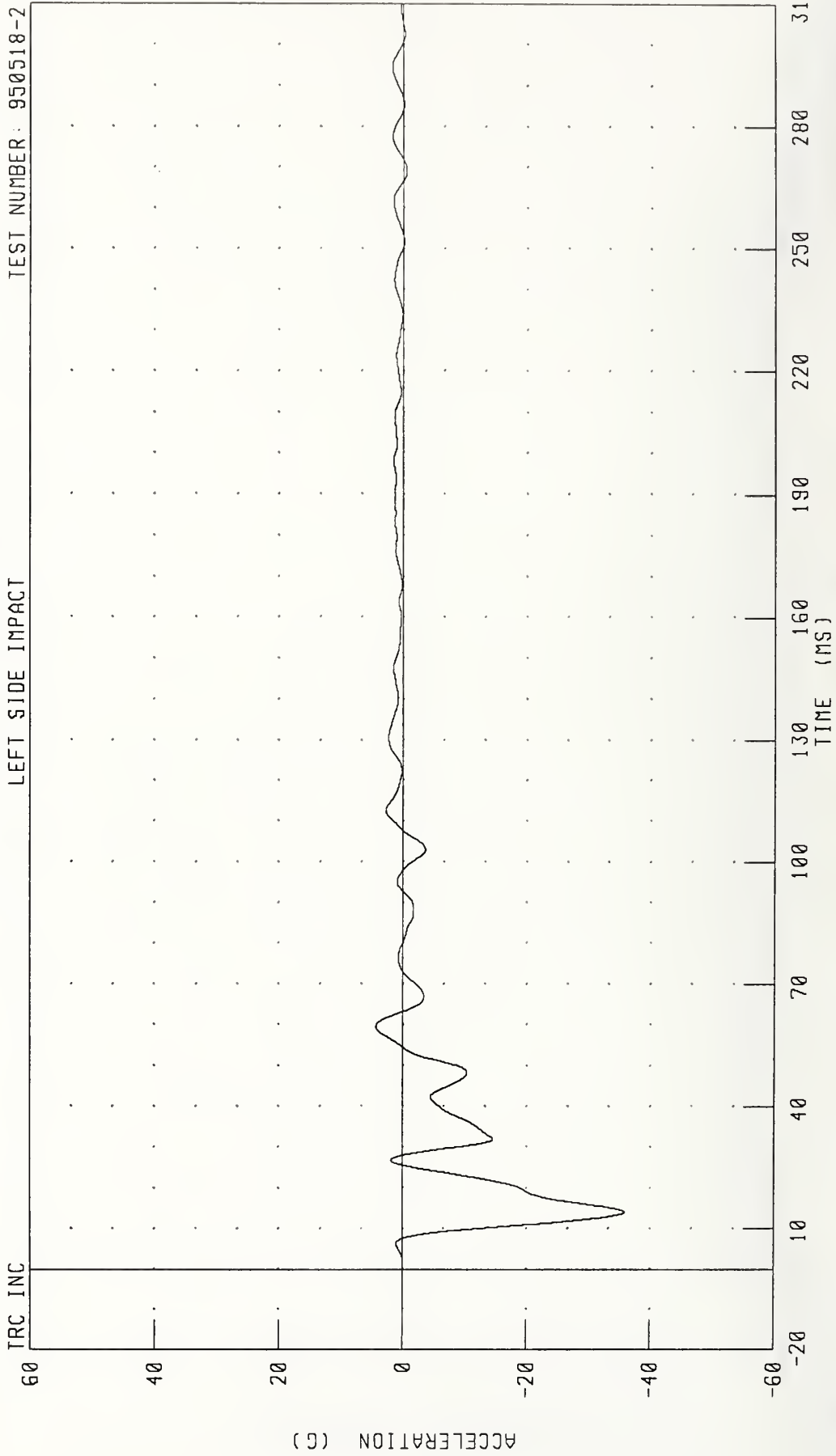
TRC INC



CHANNEL: RFSXD1 FILTER: CH CLASS 180

PEAK DATA: 286.09 MM @ 310.00 MS, 0.00 MM @ 8.24 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL Y-AXIS ACCELERATION



CHANNEL: RFSYGI FILTER: CH. CLASS 60

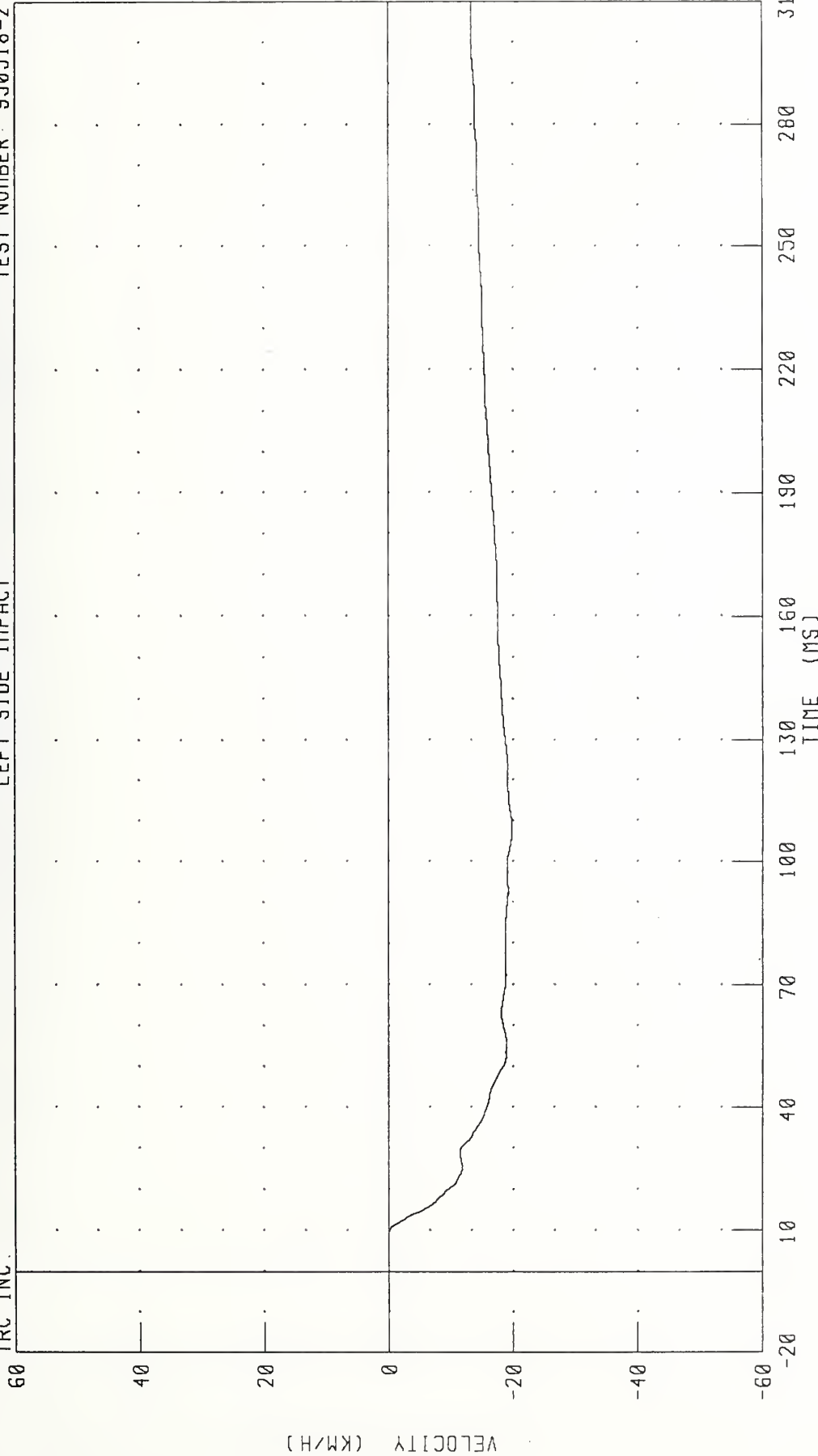
PEAK DATA: 4 34 G @ 59.44 MS; -35.91 G @ 14 08 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL Y-AXIS VELOCITY

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



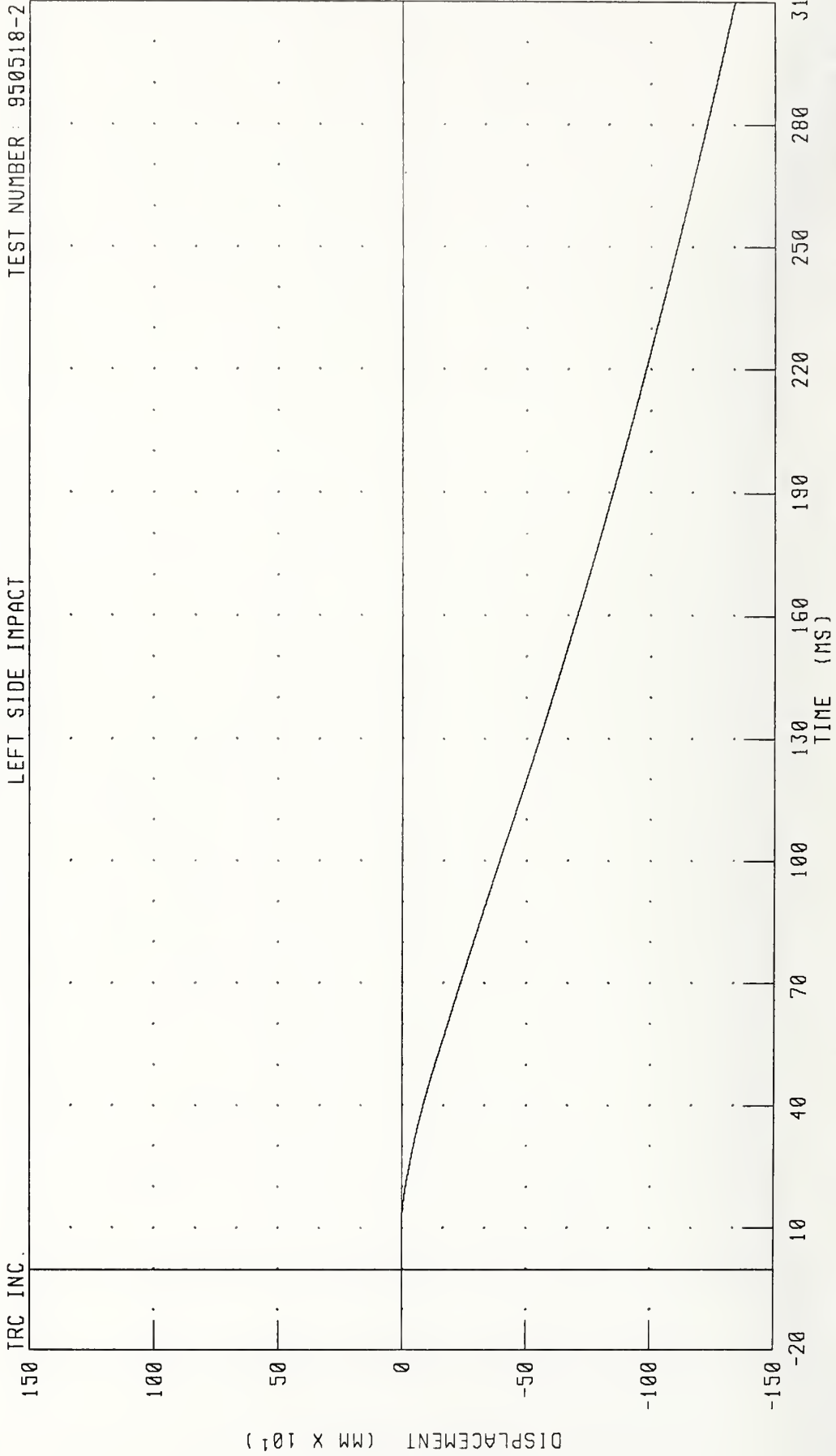
CHANNEL RFSYV1 FILTER CH CLASS 180

PEAK DATA: 0 01 KM/H @ 8 56 MS, -19 79 KM/H @ 106 24 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT



CHANNEL: RFSYD1 FILTER: CH CLASS 180

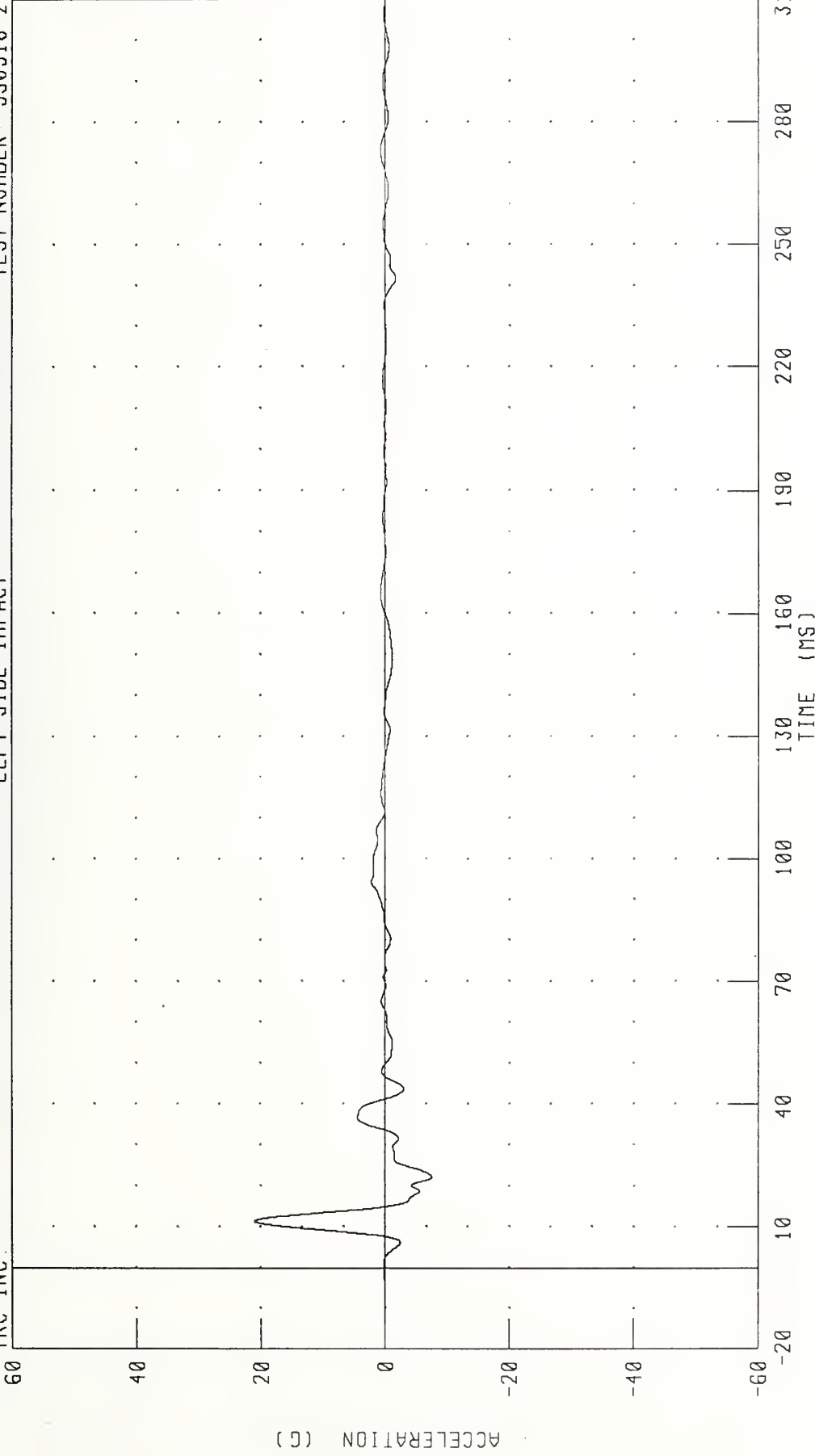
PEAK DATA: 0 00 MM @ 1 84 MS, -1337 79 MM @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT X-AXIS ACCELERATION

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



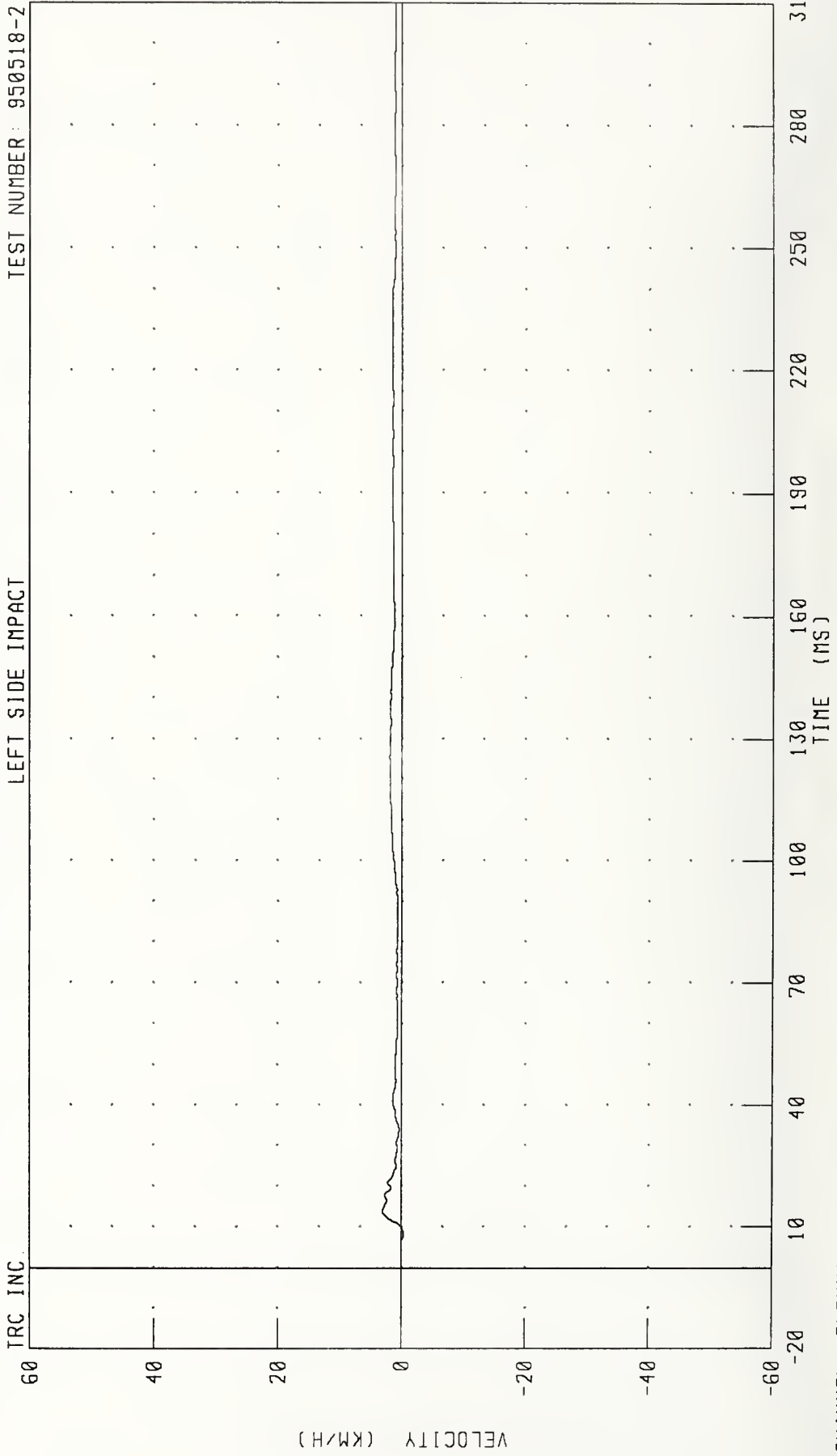
CHANNEL: TLRXG1 FILTER: CH CLASS: 60

PEAK DATA: 20.98 G @ 11.36 MS, -7.54 G @ 22.16 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT X-AXIS VELOCITY

TEST NUMBER: 950518-2

LEFT SIDE IMPACT



CHANNEL: TLRXV1 FILTER: CH CLASS 180

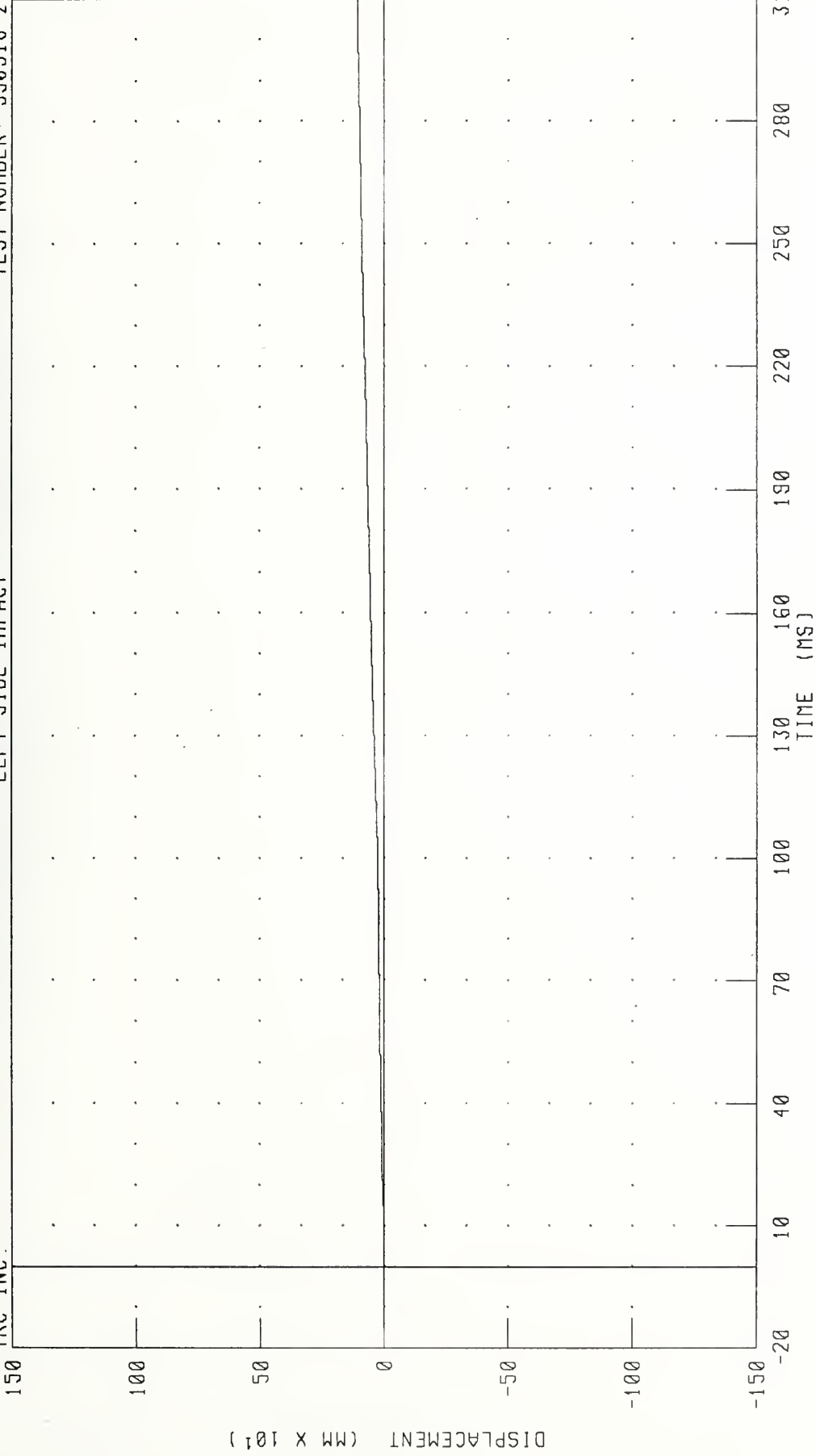
PEAK DATA: 3 07 KM/H @ 13 84 MS; -0 39 KM/H @ 8 32 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 LEFT REAR SEAT X-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

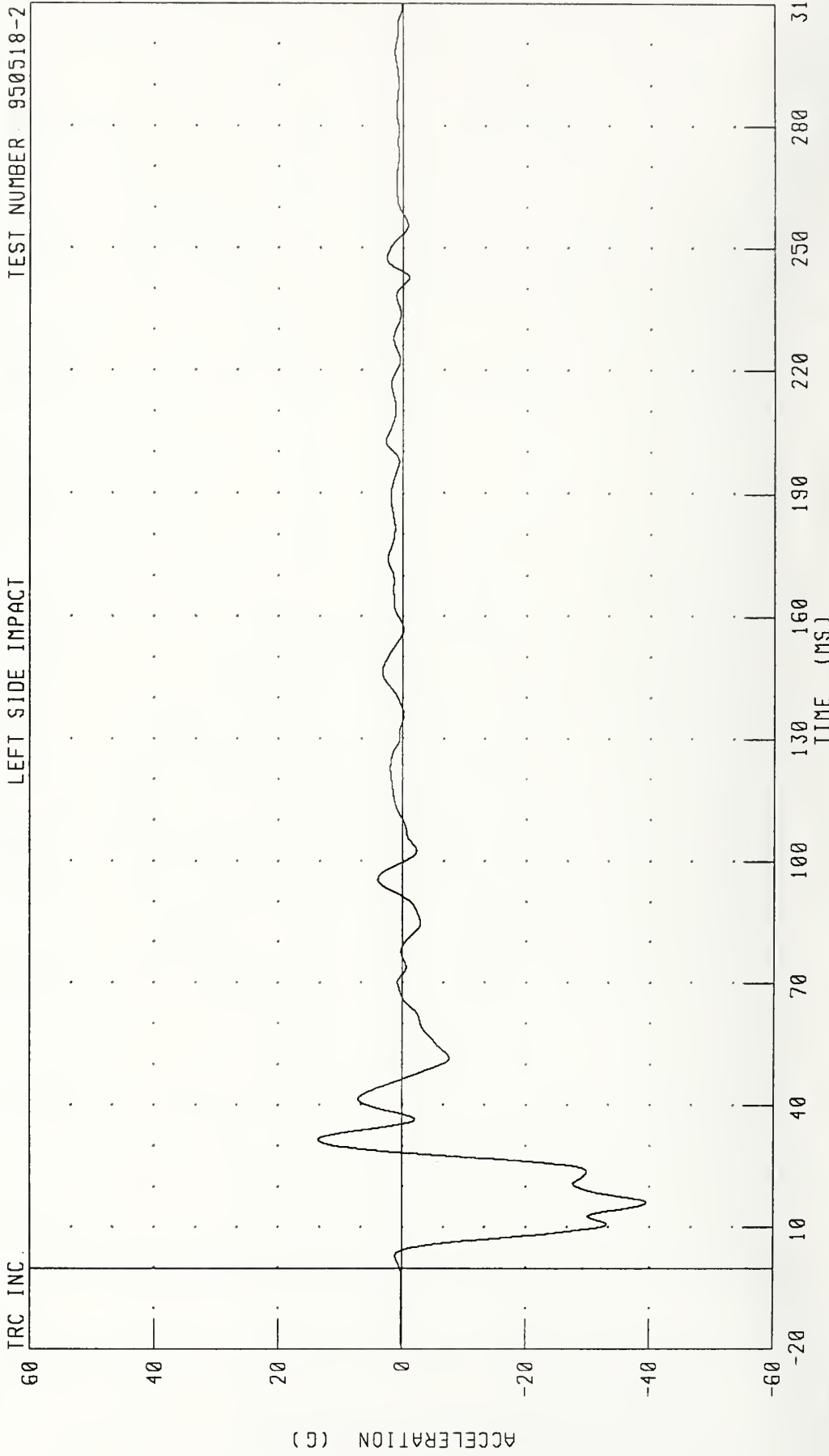
TRC INC.



CHANNEL TLRXD1 FILTER CH CLASS 180

PEAK DATA 107 92 MM @ 310 00 MS, -0 18 MM @ 9 84 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT Y-AXIS ACCELERATION



CHANNEL: TLRYG1 FILTER: CH CLASS 60

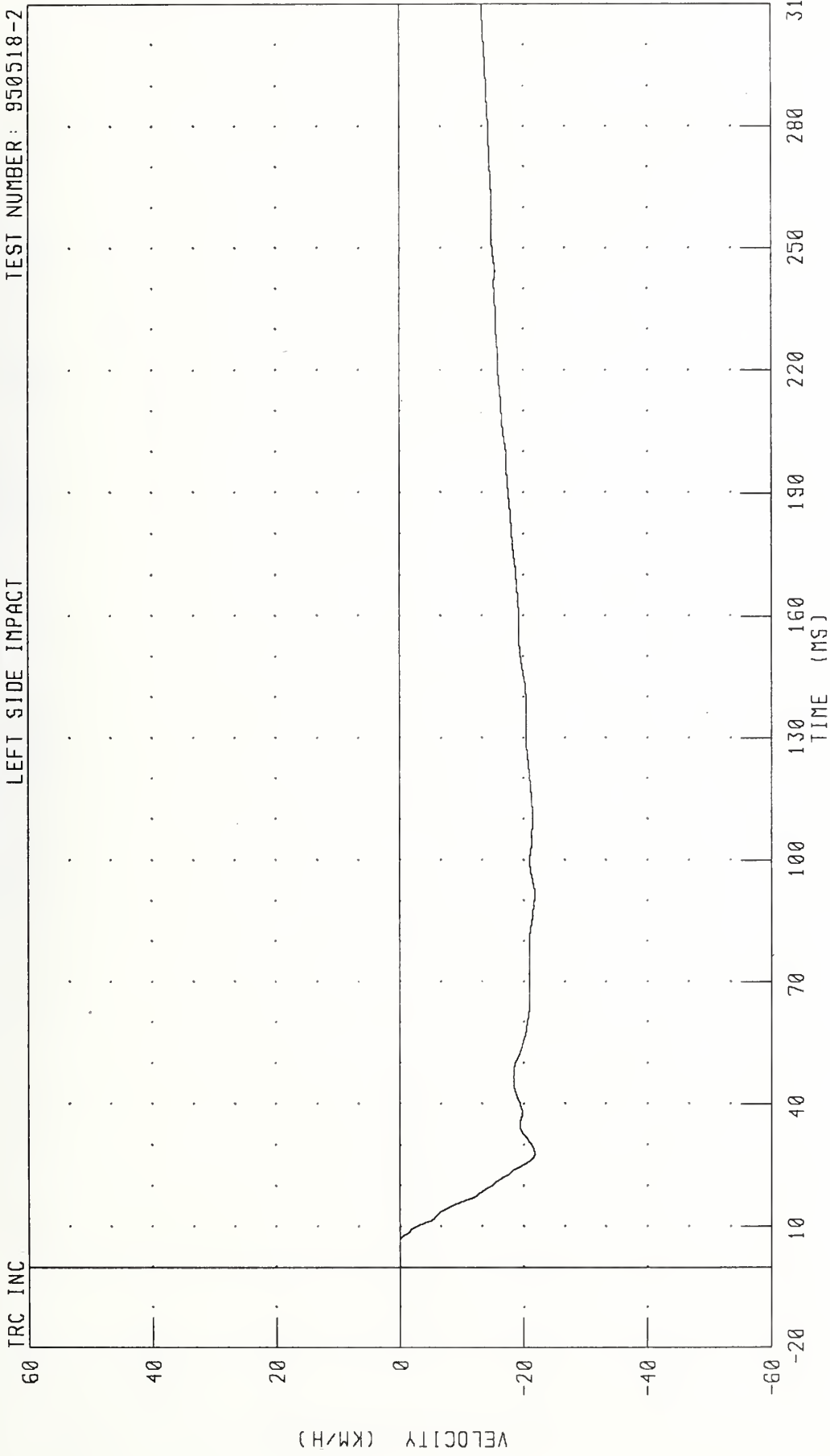
PEAK DATA: 13.60 G @ 31.60 MS, -39.51 G @ 16.08 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT Y-AXIS VELOCITY

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC



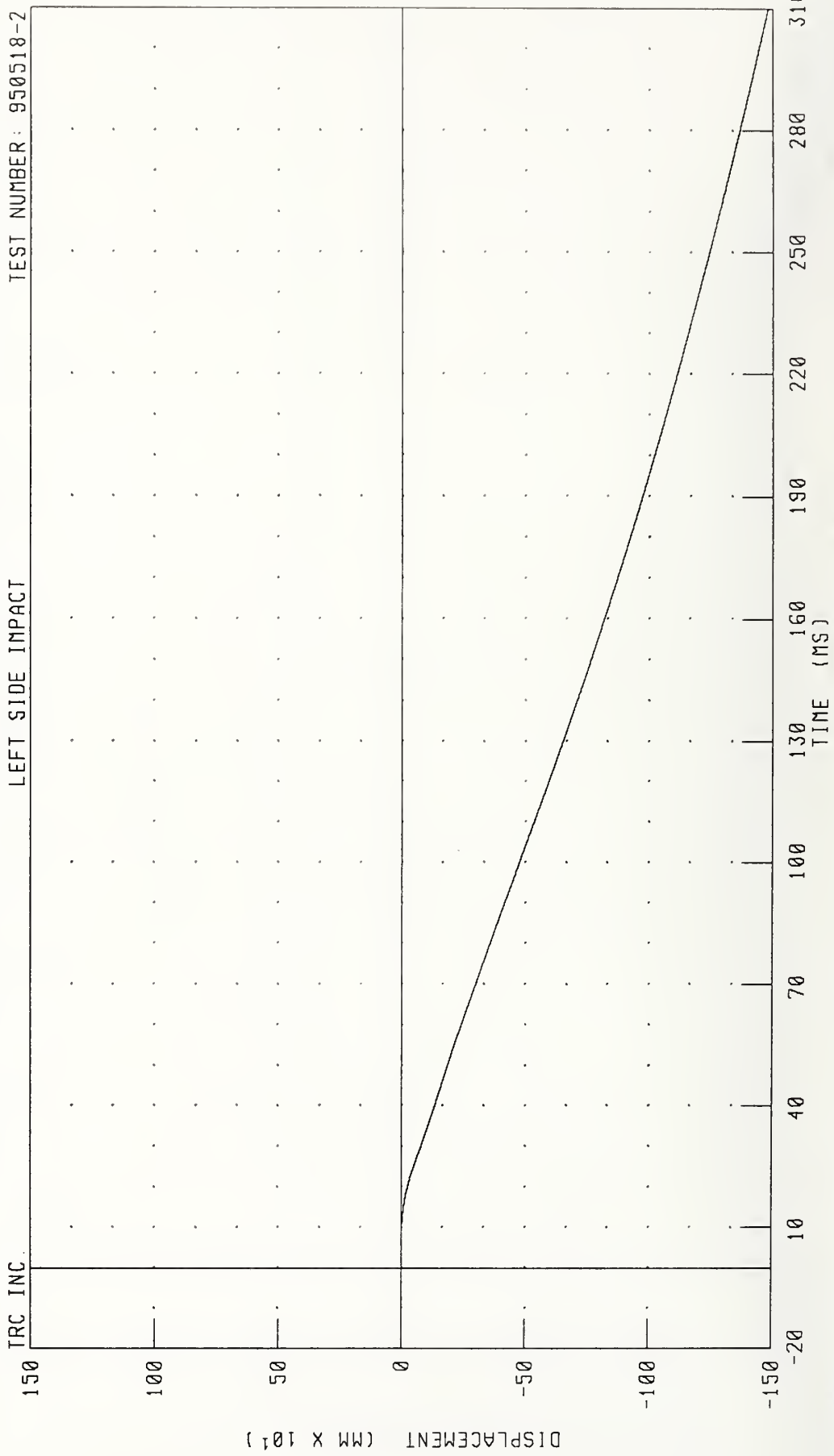
CHANNEL TLRYV1 FILTER CH CLASS 180

PEAK DATA 0 09 KM/H @ 6 24 MS, -21 78 KM/H @ 28 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT



CHANNEL: TLRYD1 FILTER: CH. CLASS 180

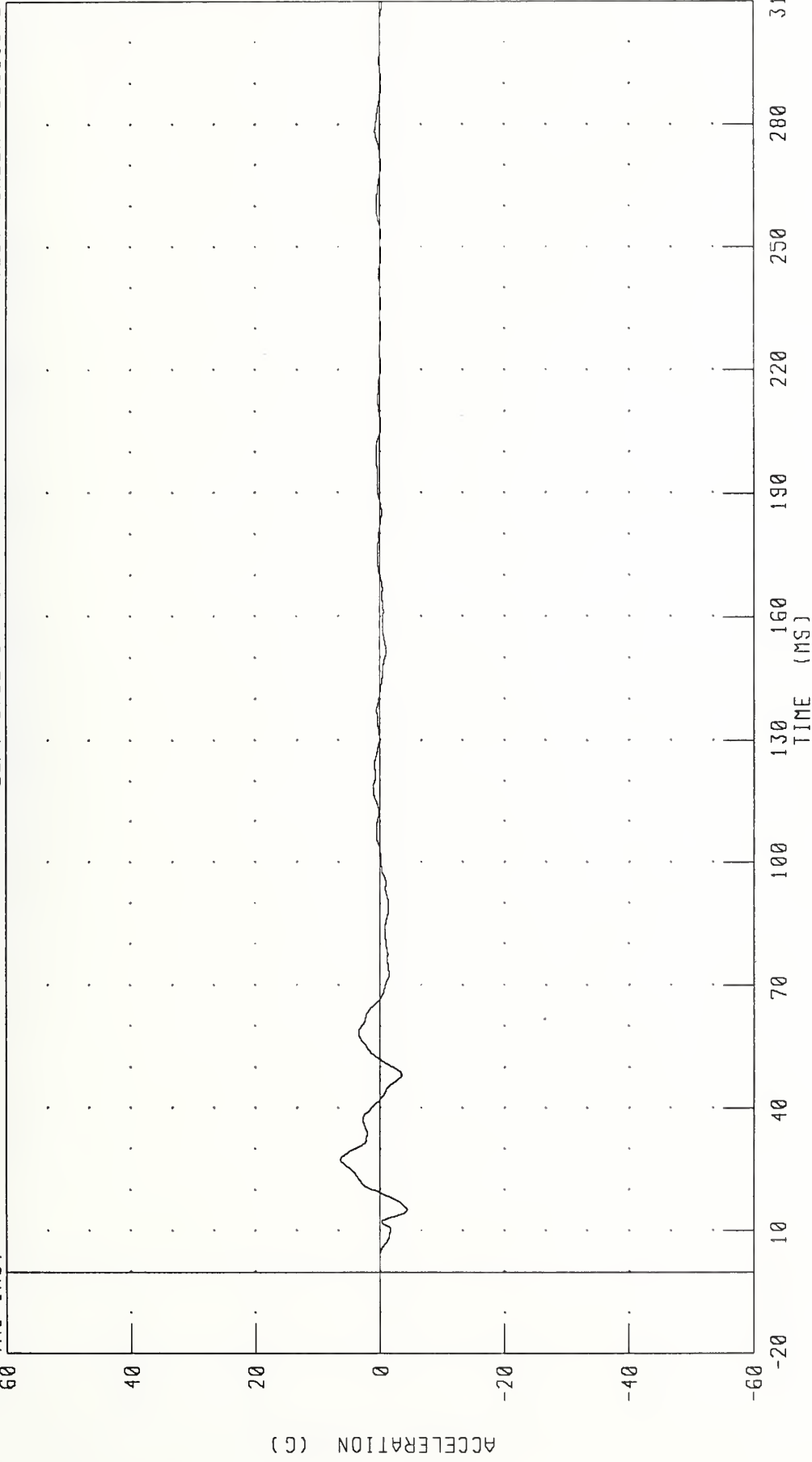
PEAK DATA: 0 05 MM @ 6 80 MS; -1479 83 MM @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT X-AXIS ACCELERATION

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

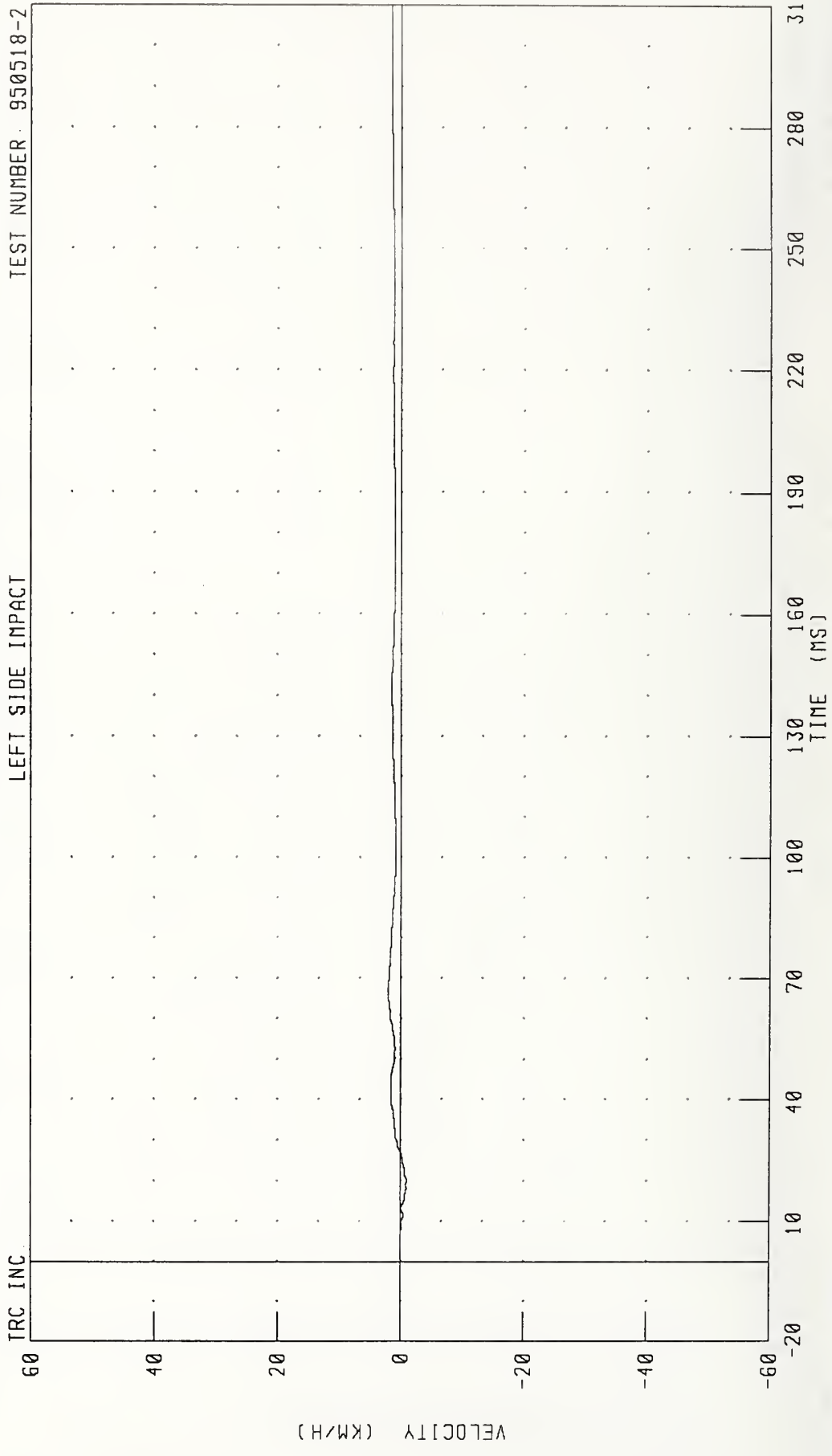
TRC INC.



CHANNEL TRRXG1 FILTER CH. CLASS 60

PEAK DATA: 6.38 G @ 27 44 MS, -4 35 G @ 15 12 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT X-AXIS VELOCITY



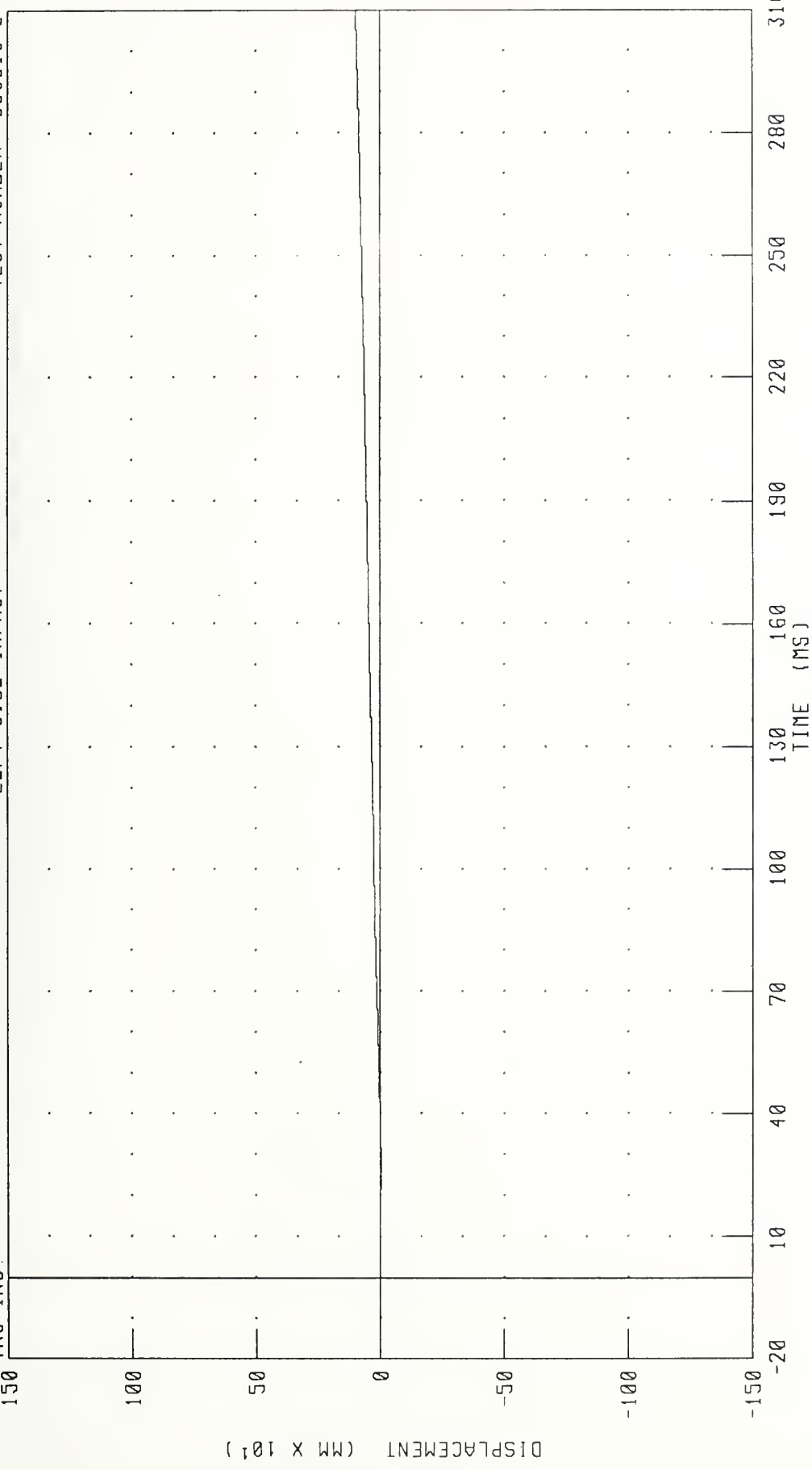
CHANNEL: TRRXV1 FILTER: CH CLASS 180 PEAK DATA: 2 07 KM/H @ 65 52 MS, -0 98 KM/H @ 20 08 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 RIGHT REAR SEAT X-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



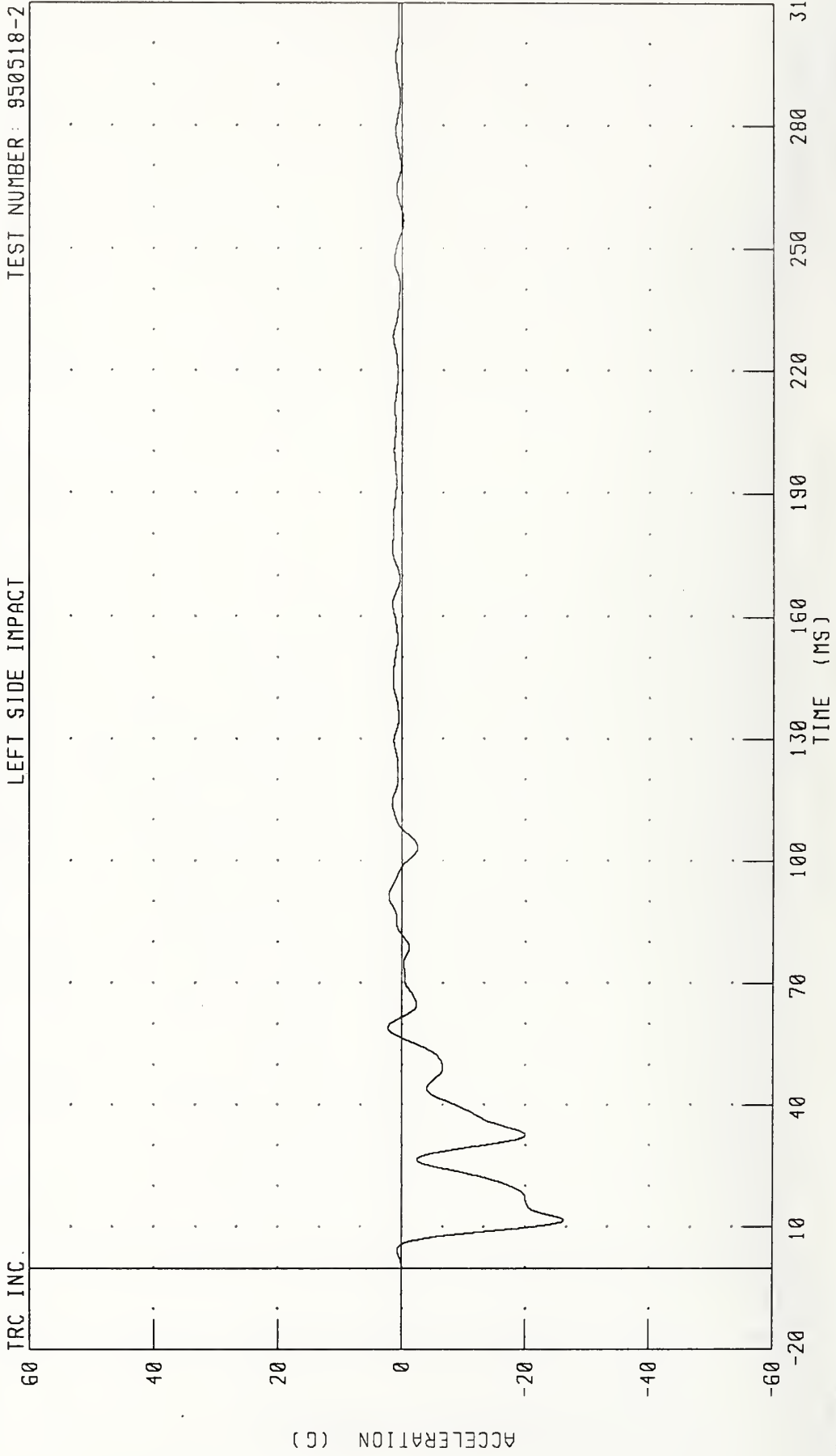
CHANNEL TRRXD1 FILTER CH. CLASS 180

PEAK DATA 97 53 MM @ 310 00 MS; -2 61 MM @ 27 04 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT Y-AXIS ACCELERATION

TEST NUMBER: 950518-2

LEFT SIDE IMPACT



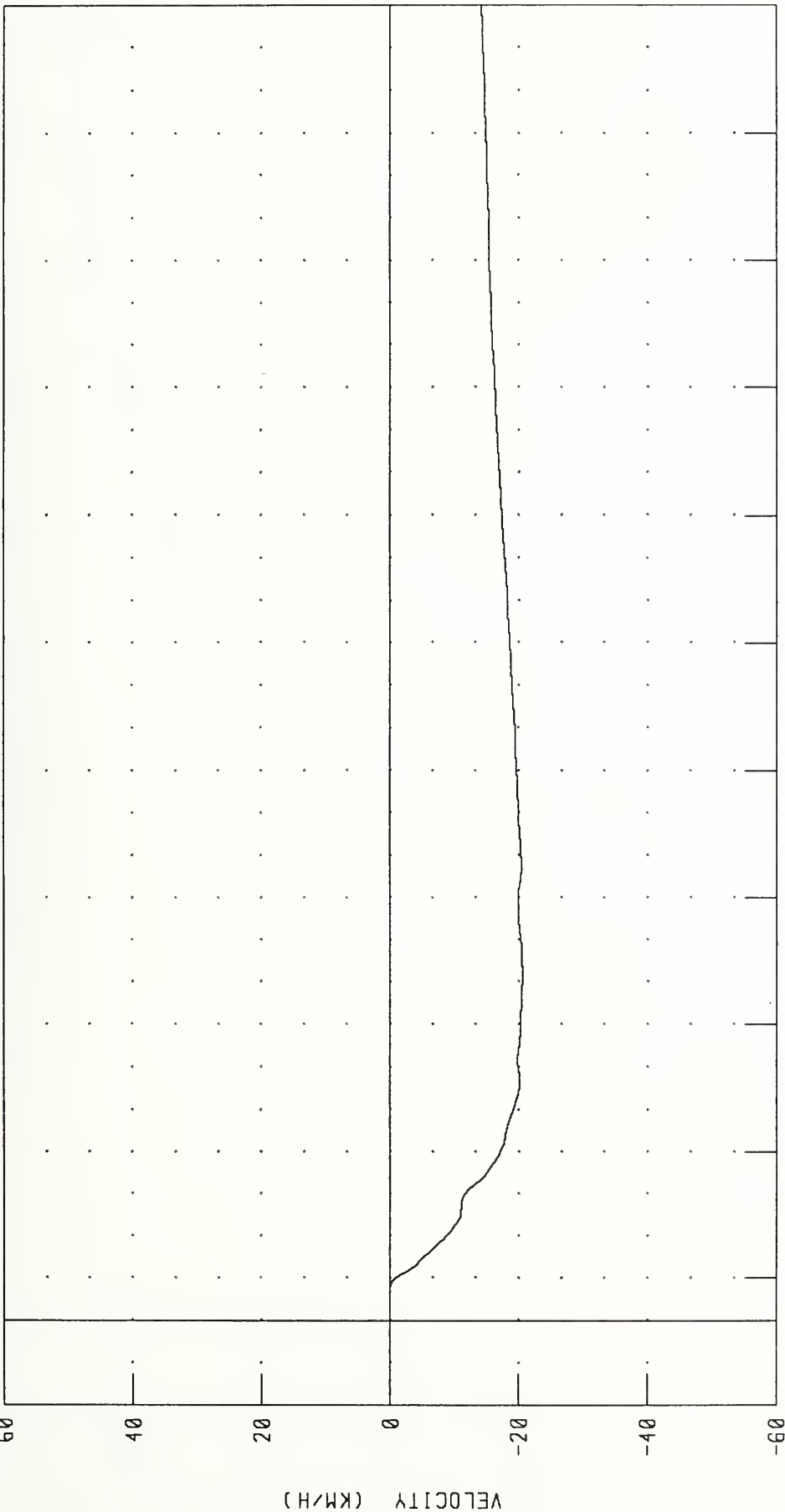
TRC INC. CHANNEL: TRRYG1 FILTER: CH CLASS 60 PEAK DATA: 2 27 G @ 59 12 MS, -26 18 G @ 11 60 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT Y-AXIS VELOCITY

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



PEAK DATA: 0 00 KM/H @ 0 00 MS; -20 61 KM/H @ 81 68 MS

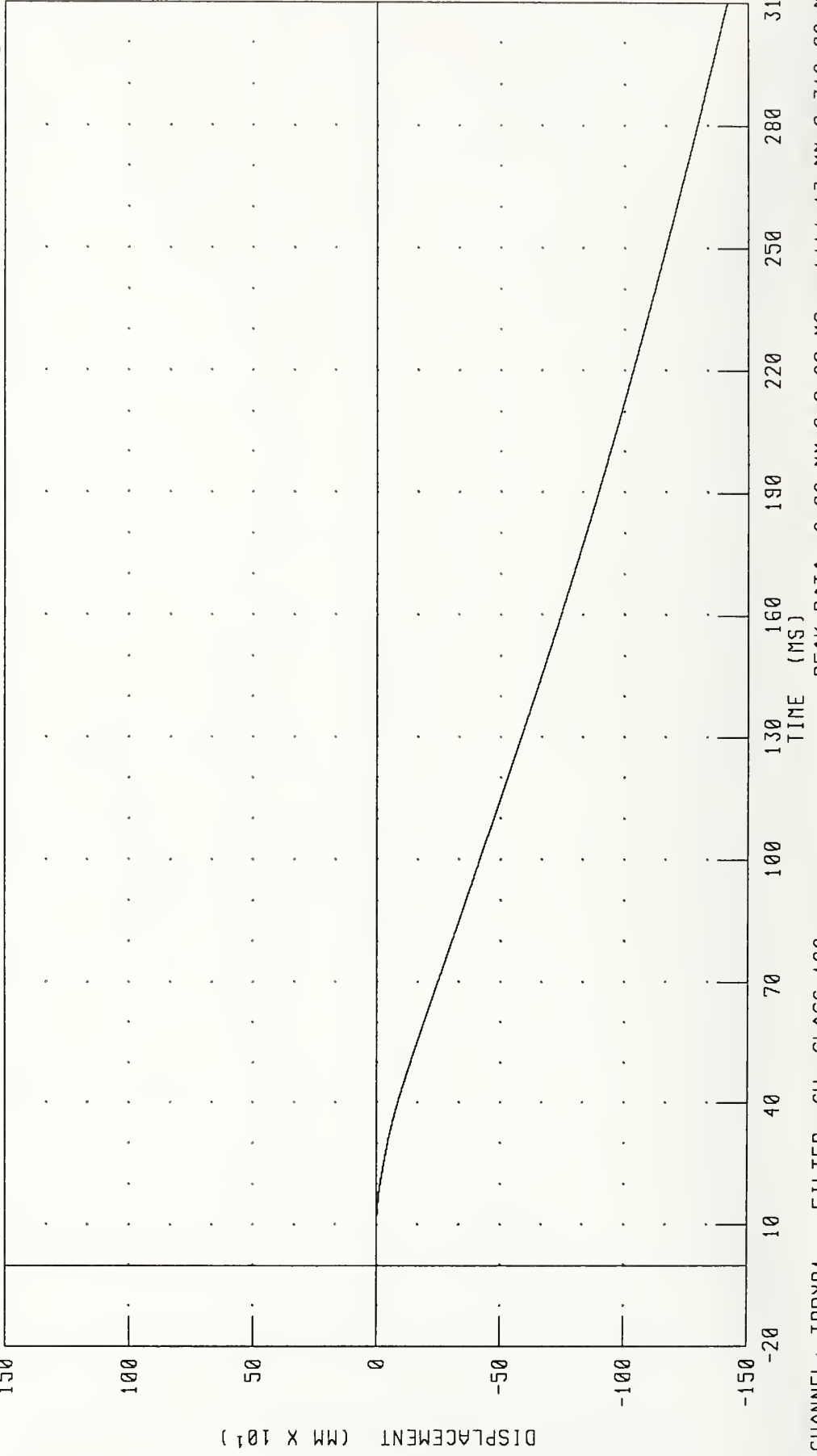
CHANNEL TRRYV1 FILTER CH CLASS 180

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



CHANNEL: TRRYD1 FILTER: CH CLASS 180

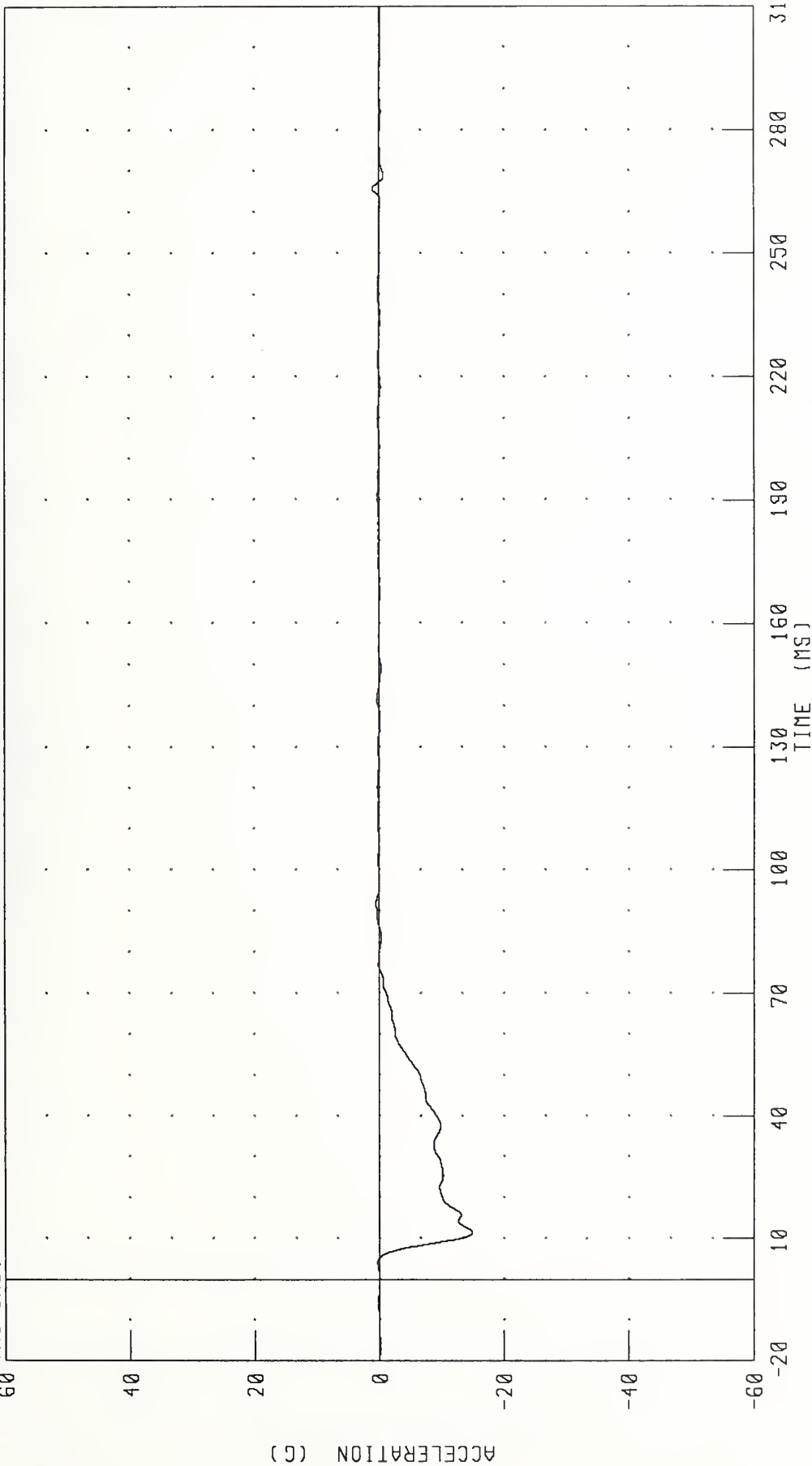
PEAK DATA: 0.00 MM @ 0.00 MS; -1414 13 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY X-AXIS ACCELERATION

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.

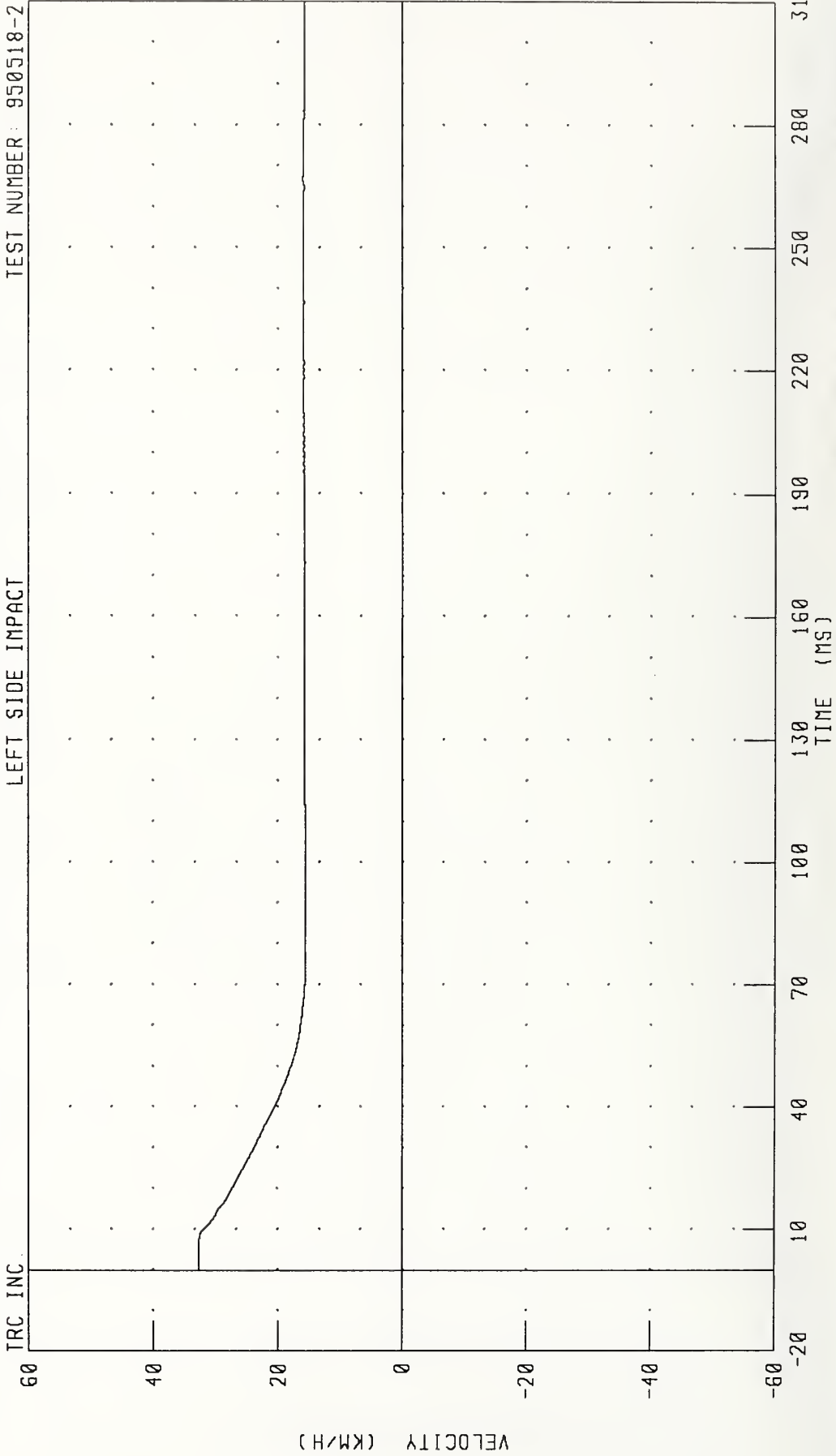


CHANNEL: BCGXG1 FILTER: CH. CLASS 60

PEAK DATA: 1.10 G @ 265 68 MS; -14 96 G @ 11 36 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY X-AXIS VELOCITY

TRC INC. LEFT SIDE IMPACT TEST NUMBER: 950518-2



CHANNEL: BCGXV1 FILTER: CH. CLASS 180

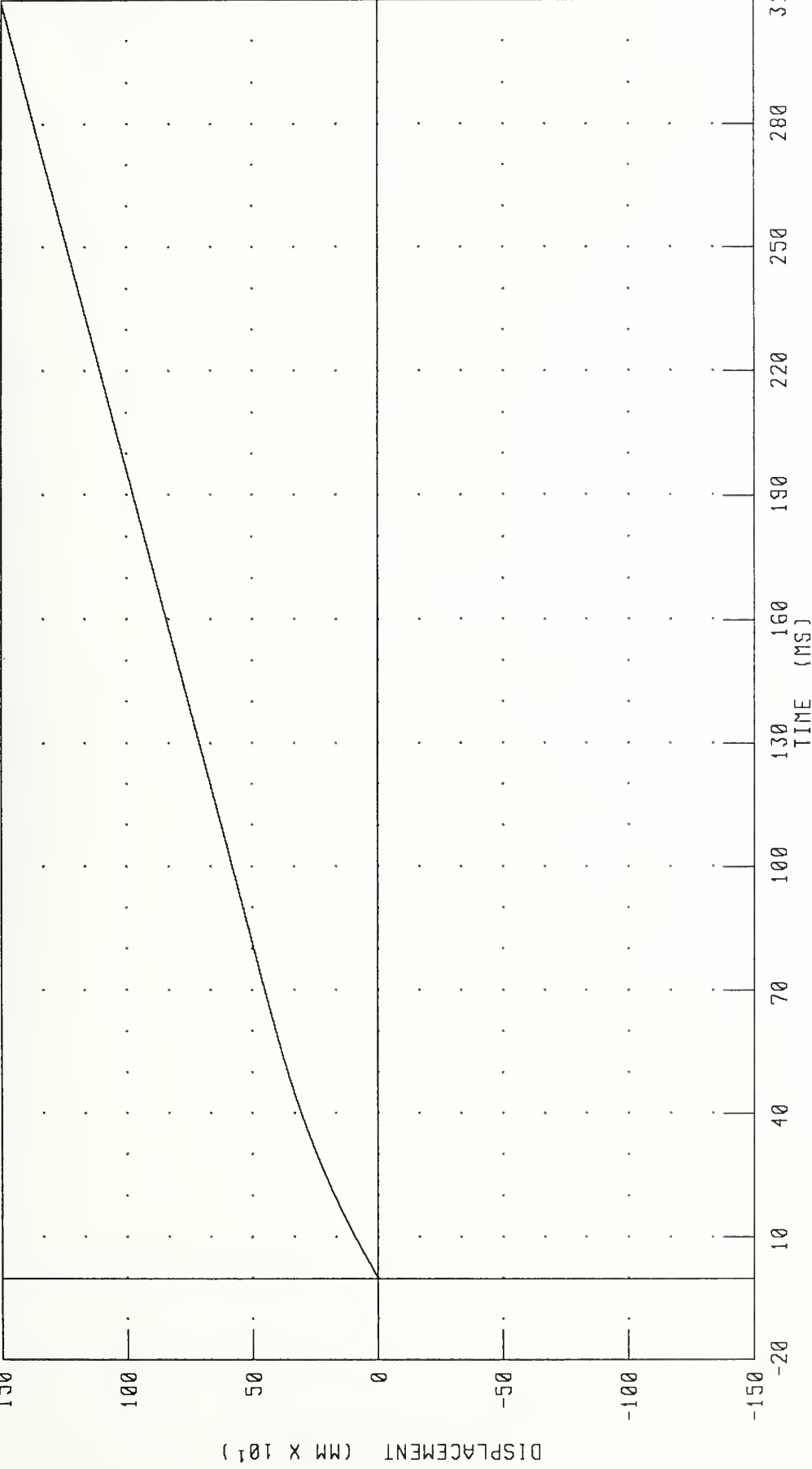
PEAK DATA: 32.70 KM/H @ 0.00 MS, 15.52 KM/H @ 86.32 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY X-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC_INC.

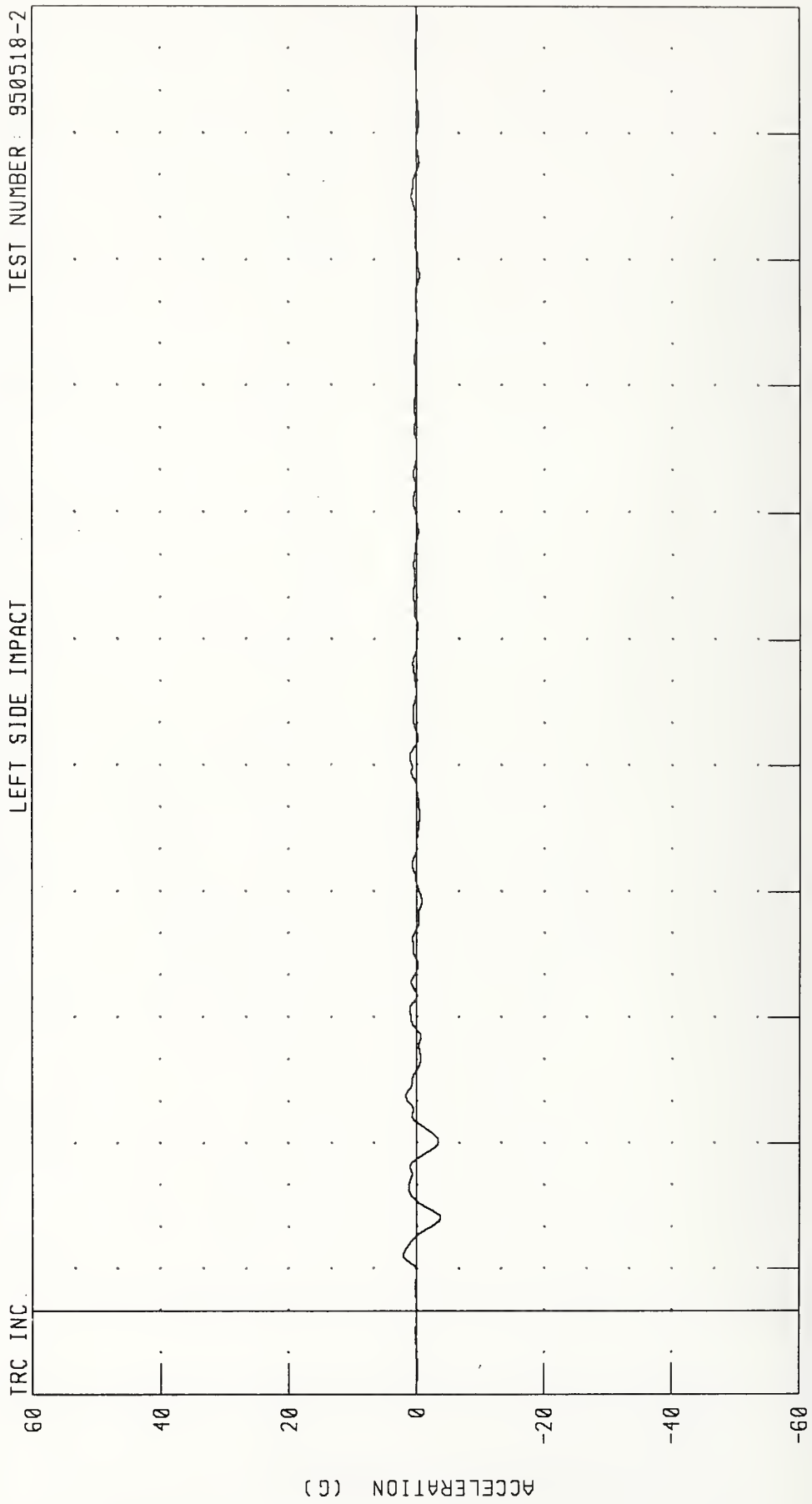


CHANNEL: BCGXD1 FILTER: CH CLASS 180

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Y-AXIS ACCELERATION

TEST NUMBER: 950518-2

LEFT SIDE IMPACT



CHANNEL: BCGYG1 FILTER: CH. CLASS 60

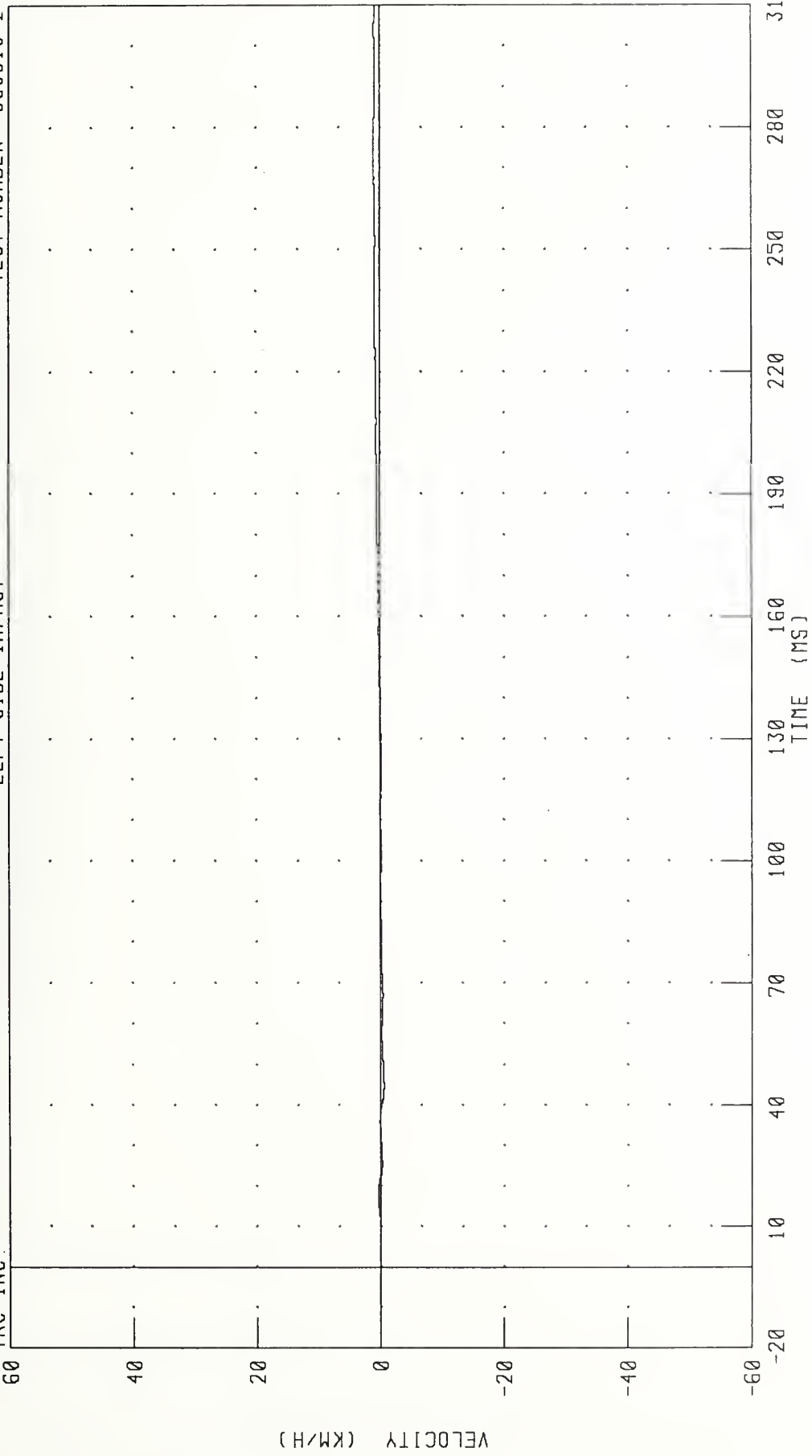
PEAK DATA: 2.07 G @ 13.12 MS; -3.74 G @ 22.16 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY Y-AXIS VELOCITY

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

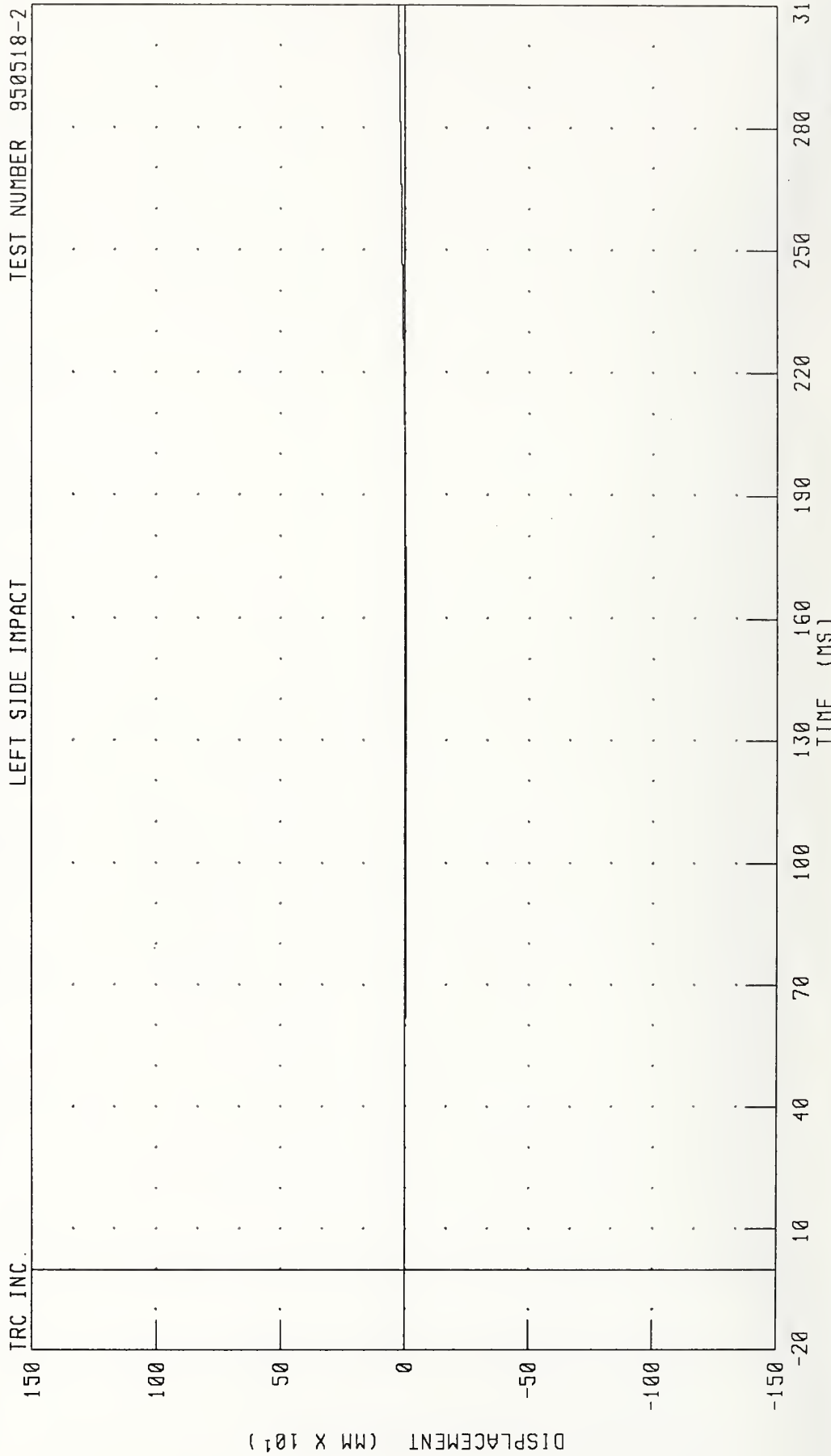
TRC INC



CHANNEL BCGYV1 FILTER: CH. CLASS 180

PEAK DATA: 1 02 KM/H @ 270 64 MS, -0 61 KM/H @ 44 80 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY Y-AXIS DISPLACEMENT

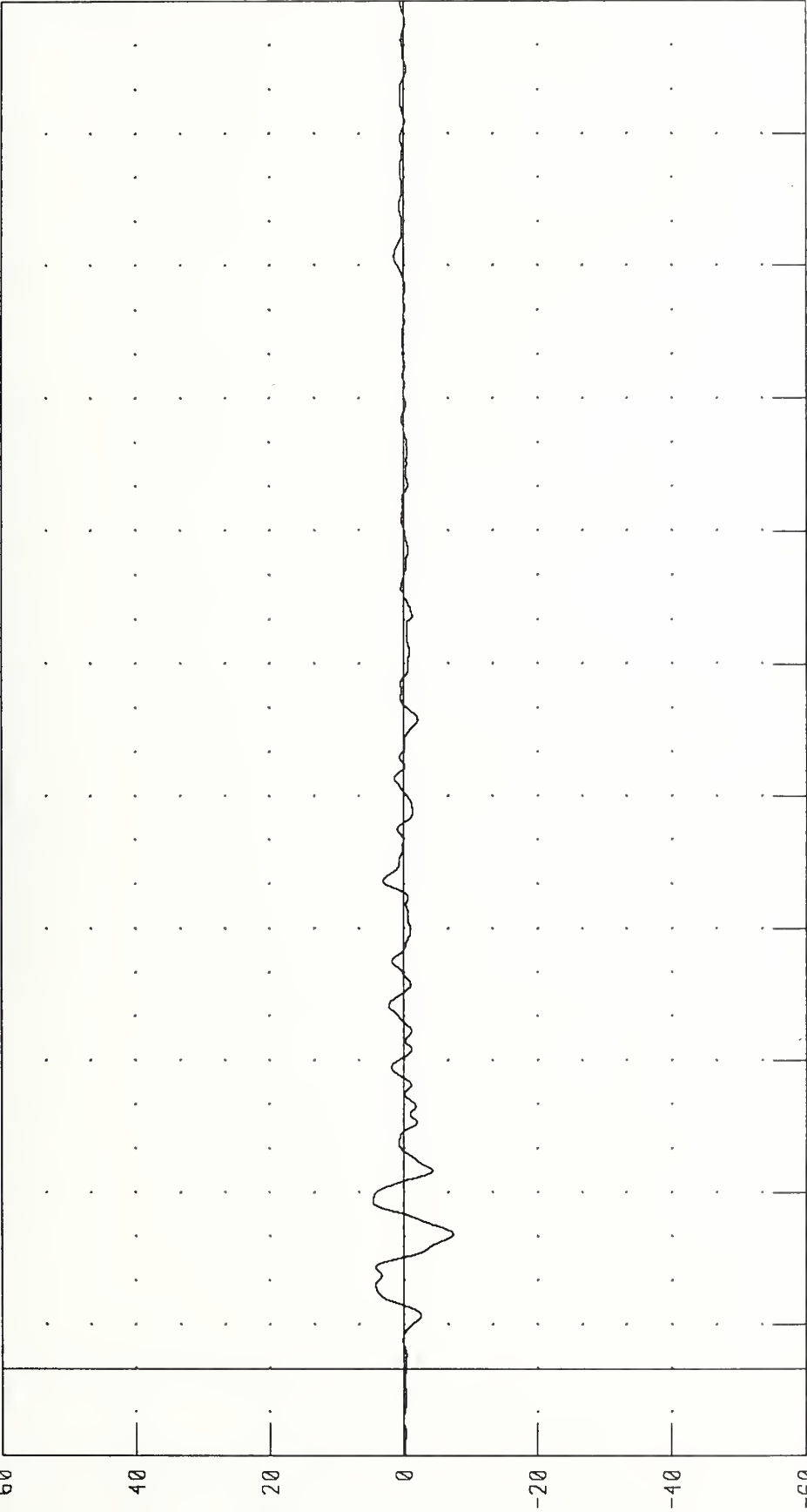


NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Z-AXIS ACCELERATION

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.
60

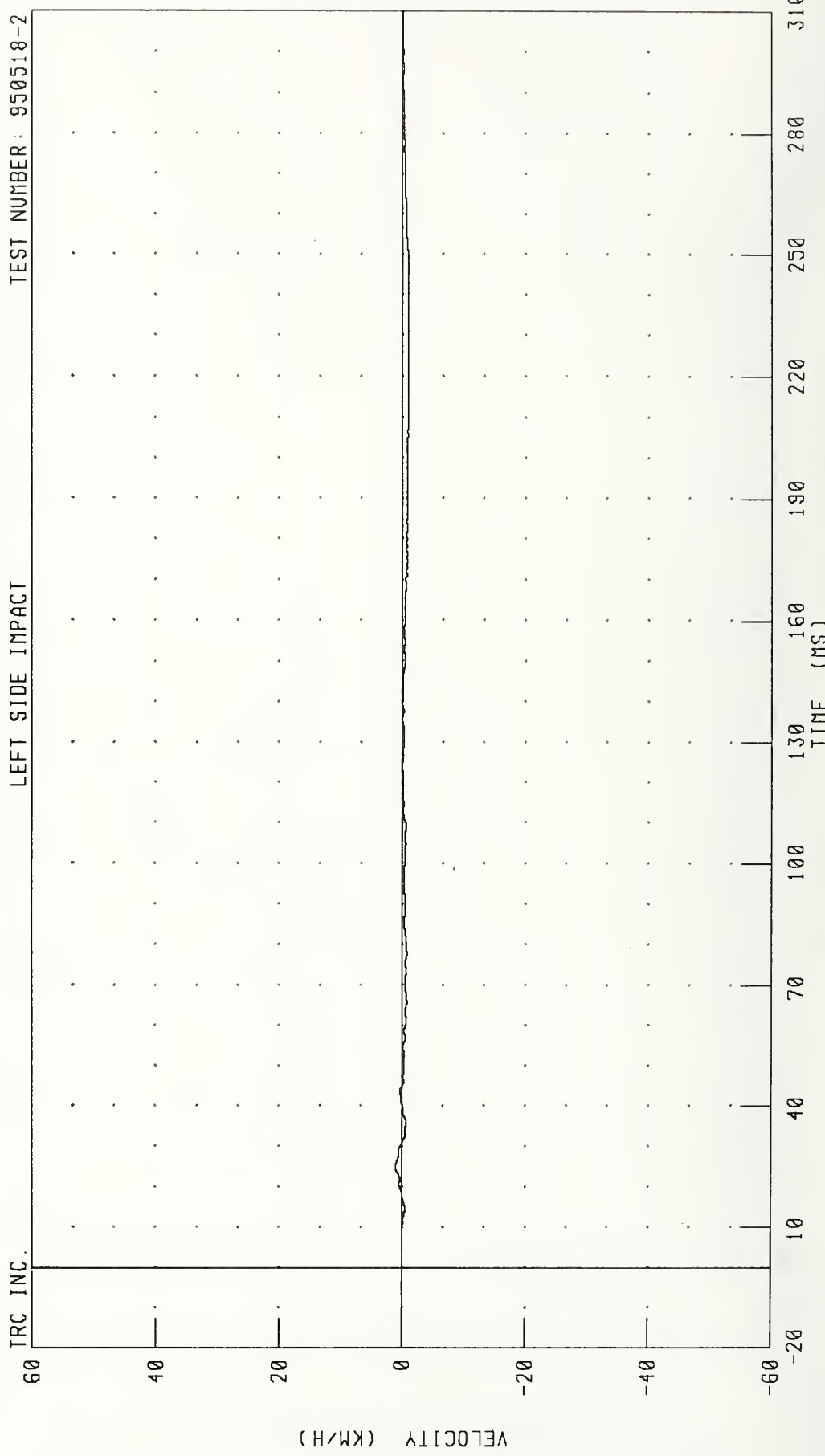


310
280
250
220
190
160
130
100
70
40
10
-20
-40
-60
TIME (MS)

CHANNEL: BCGZG1 FILTER: CH. CLASS 60

PEAK DATA: 4 62 G @ 38 08 MS; -7 36 G @ 30 56 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY Z-AXIS VELOCITY



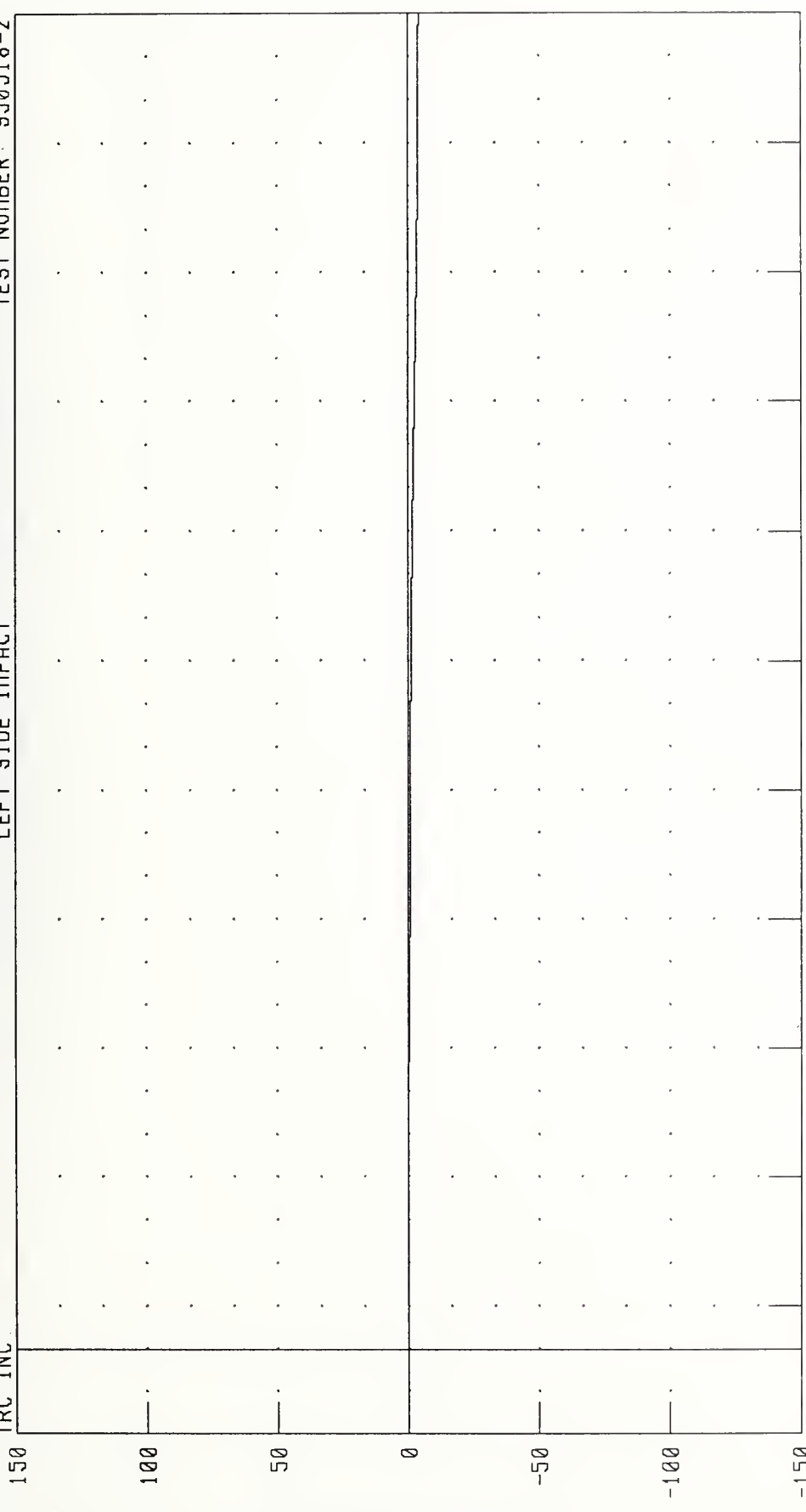
CHANNEL: BCGZY1 FILTER: CH. CLASS 180 PEAK DATA: 1 05 KM/H @ 24.80 MS; -1 08 KM/H @ 214.40 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY Z-AXIS DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



DISPLACEMENT (MM X 10¹)

TIME (MS)

CHANNEL: BCGZD1 FILTER: CH CLASS 180

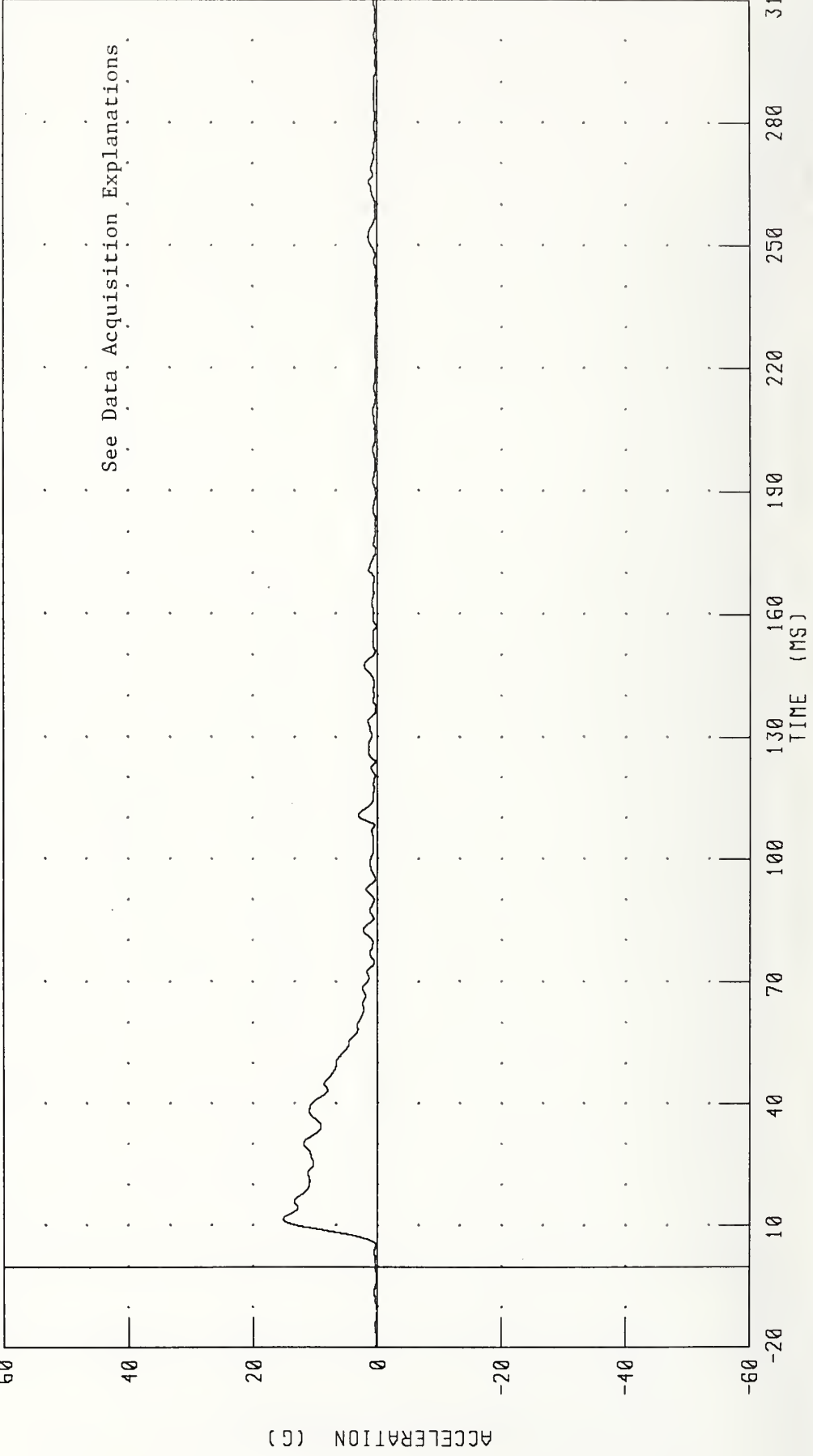
PEAK DATA 1.28 MM @ 30.80 MS, -40.17 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY RESULTANT ACCELERATION

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC



See Data Acquisition Explanations

CHANNEL: BCGRG1 FILTER: CH CLASS 60

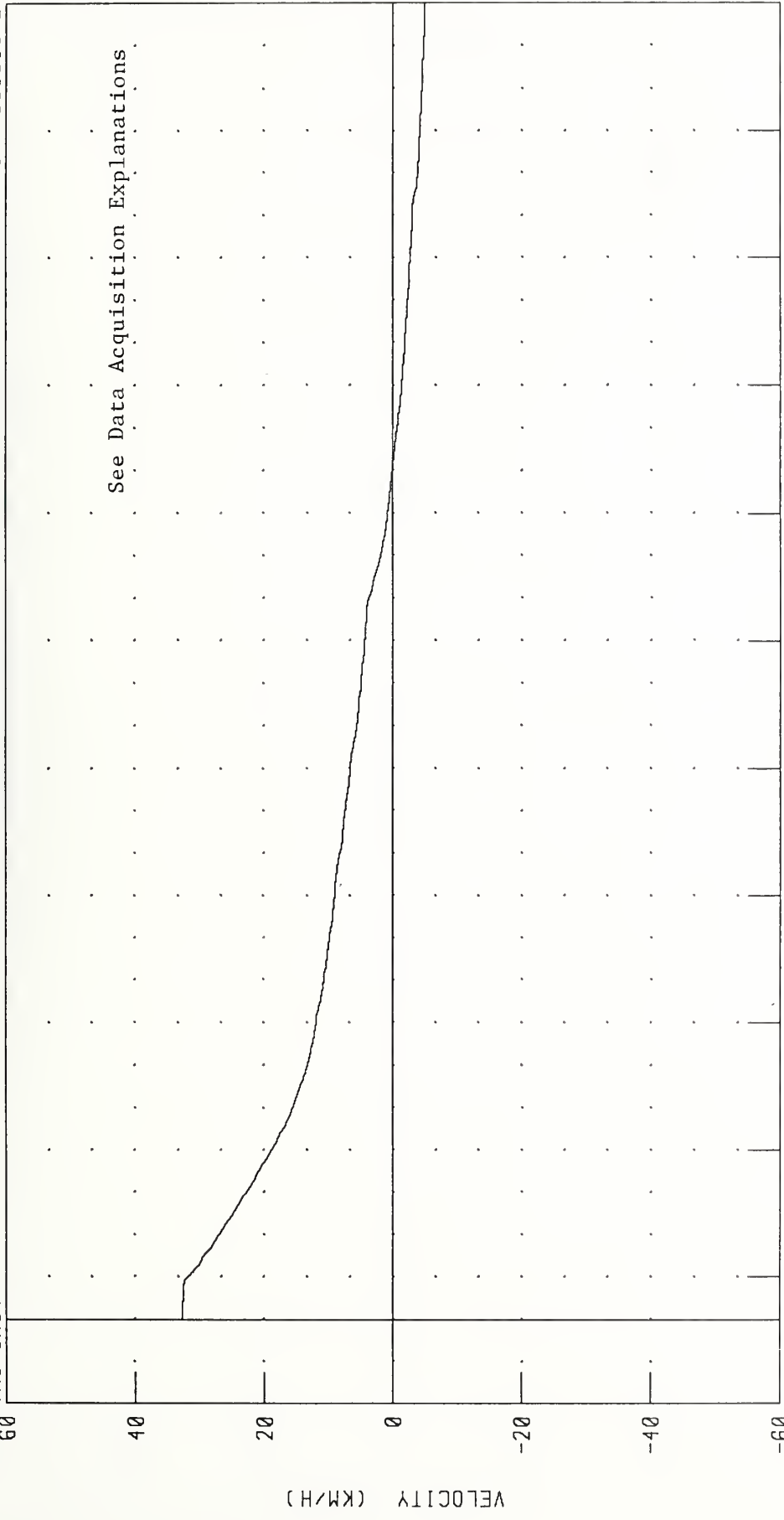
PEAK DATA: 15.17 G @ 11.52 MS; 0.08 G @ 236.48 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY RESULTANT VELOCITY

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



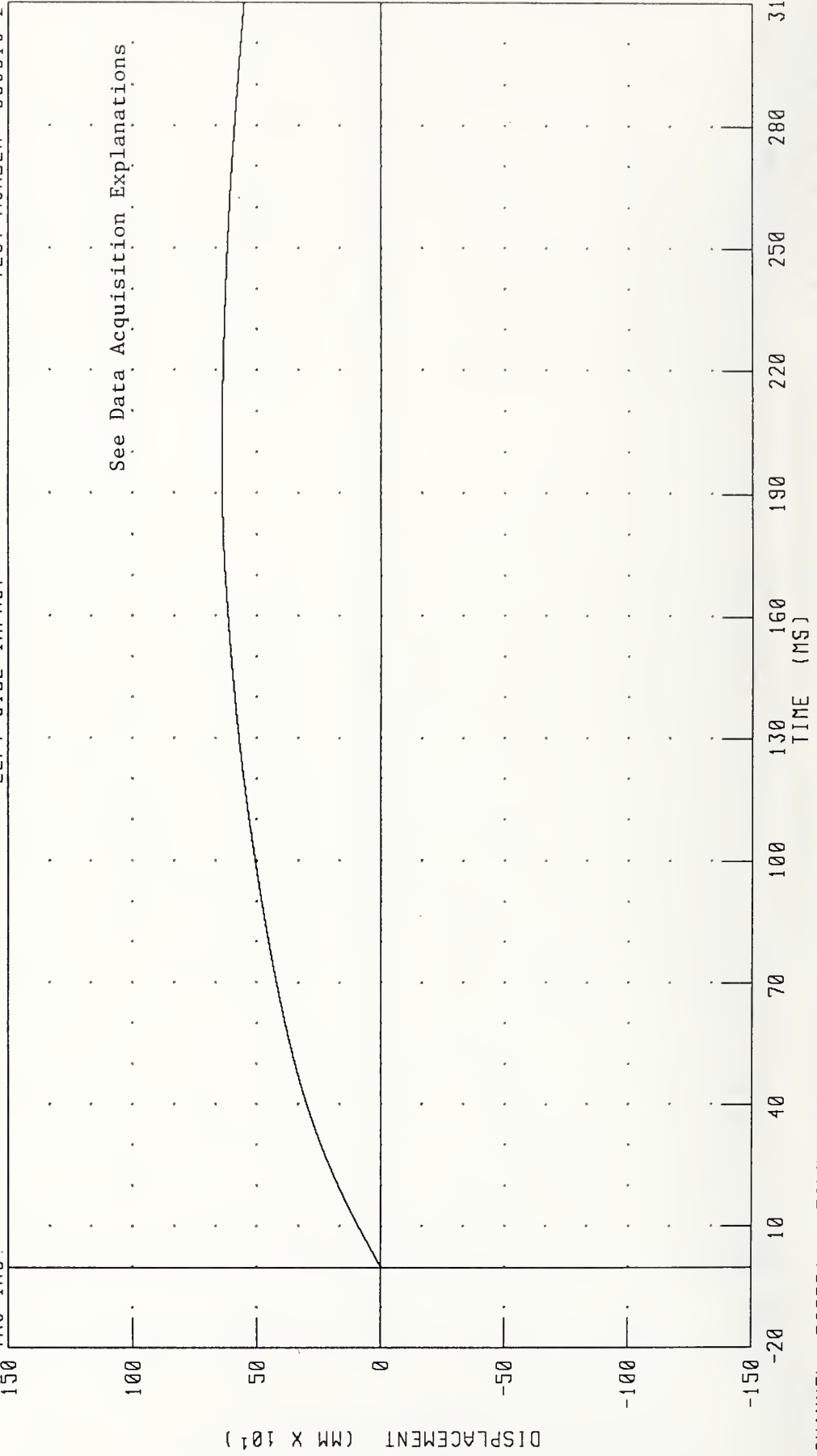
CHANNEL: BCGRV1 FILTER: CH. CLASS 180
PEAK DATA: 32.70 KM/H @ 0 00 MS, -4 98 KM/H @ 310 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY RESULTANT DISPLACEMENT

TEST NUMBER: 950518-2

LEFT SIDE IMPACT

TRC INC.



CHANNEL: BCGRD1 FILTER: CH CLASS 180

PEAK DATA: 640.28 MM @ 201.04 MS; 0.00 MM @ 0.00 MS

Data Plots

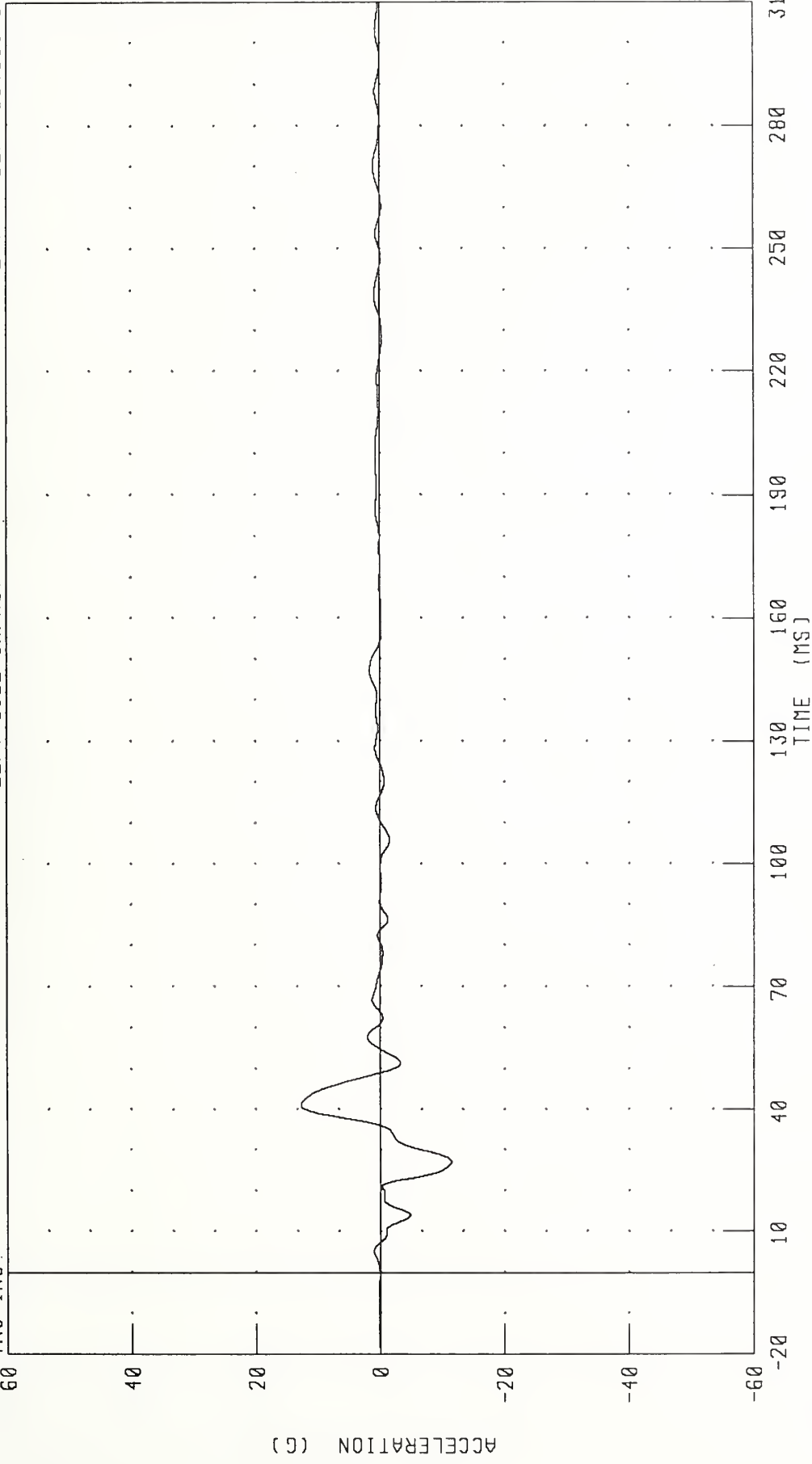
Test No. 950518-3

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG X-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



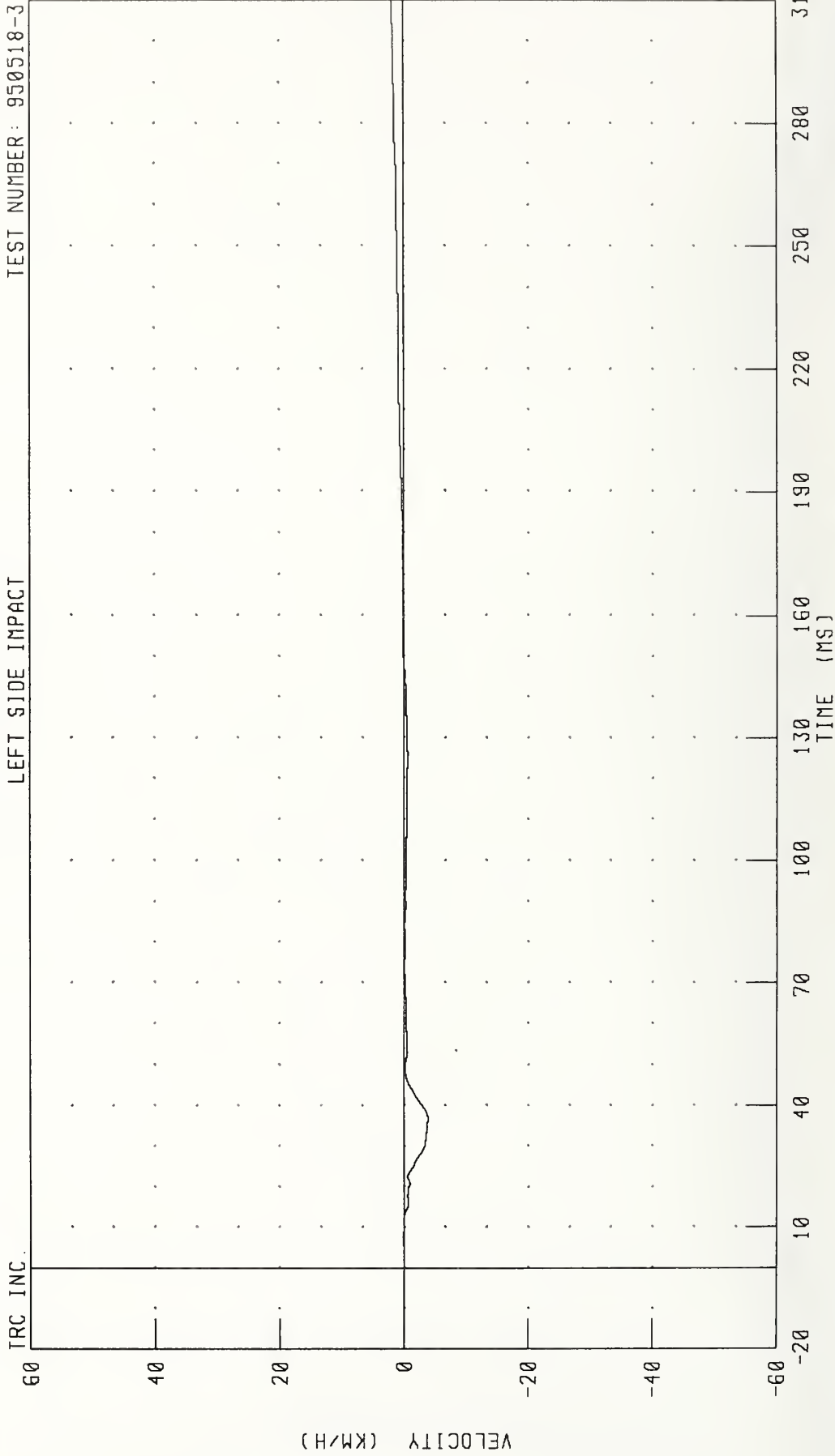
CHANNEL: VCGXG1 FILTER: CH. CLASS 60

PEAK DATA: 12 78 G @ 41 12 MS, -11 45 G @ 27 04 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC

VEHICLE CG X-AXIS VELOCITY

LEFT SIDE IMPACT TEST NUMBER: 950518-3



CHANNEL: VCGXV1 FILTER: CH. CLASS 180

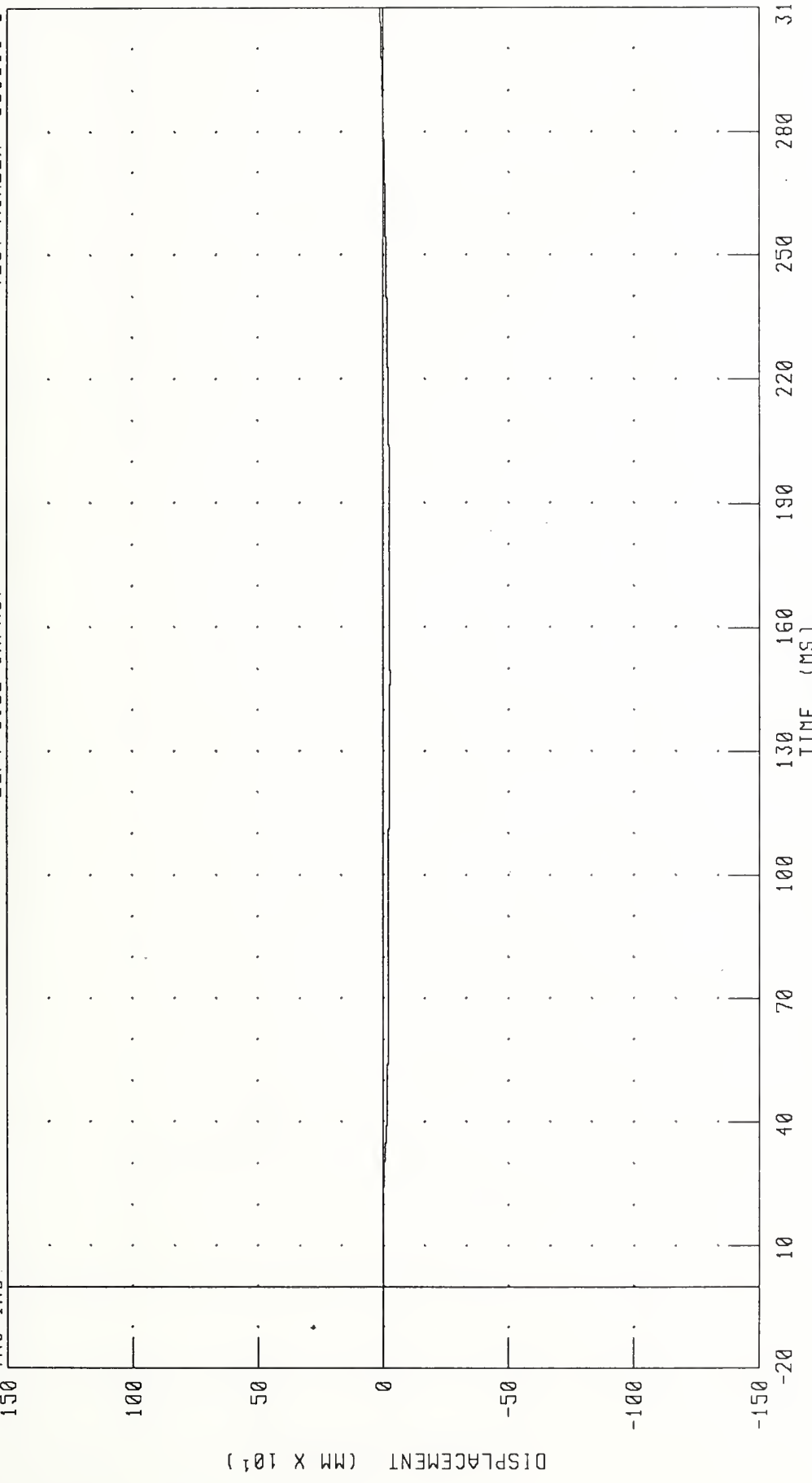
PEAK DATA: 1 88 KM/H @ 310.00 MS; -3.84 KM/H @ 36.88 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 VEHICLE CG X-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC



CHANNEL: VCGXD1 FILTER: CH CLASS 180

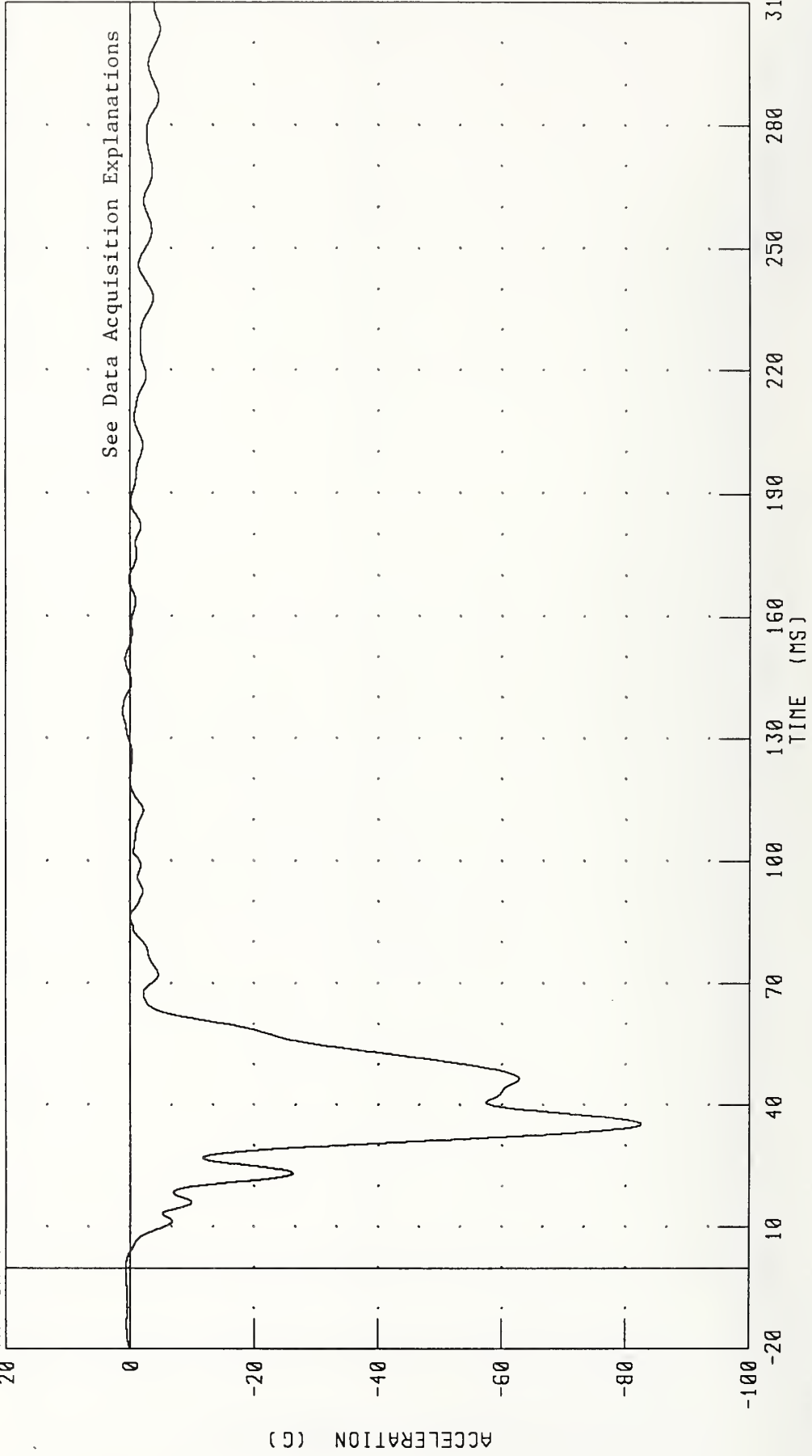
PEAK DATA: 12.65 MM @ 310.00 MS; -27.34 MM @ 147.84 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Y-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: VCGYG1 FILTER: CH CLASS 60

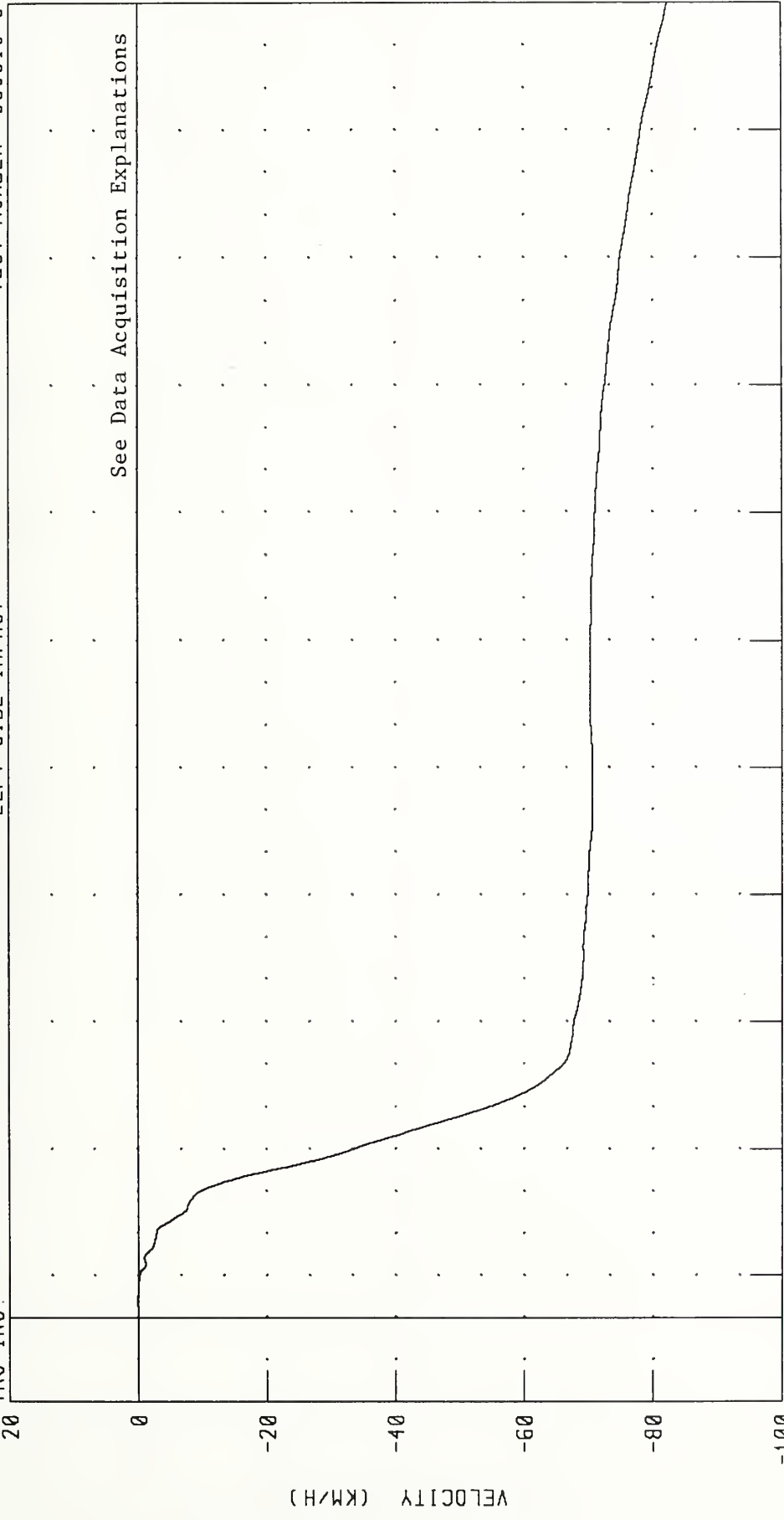
PEAK DATA: 1.14 G @ 136.40 MS; -82.53 G @ 35.36 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 VEHICLE CG Y-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



See Data Acquisition Explanations

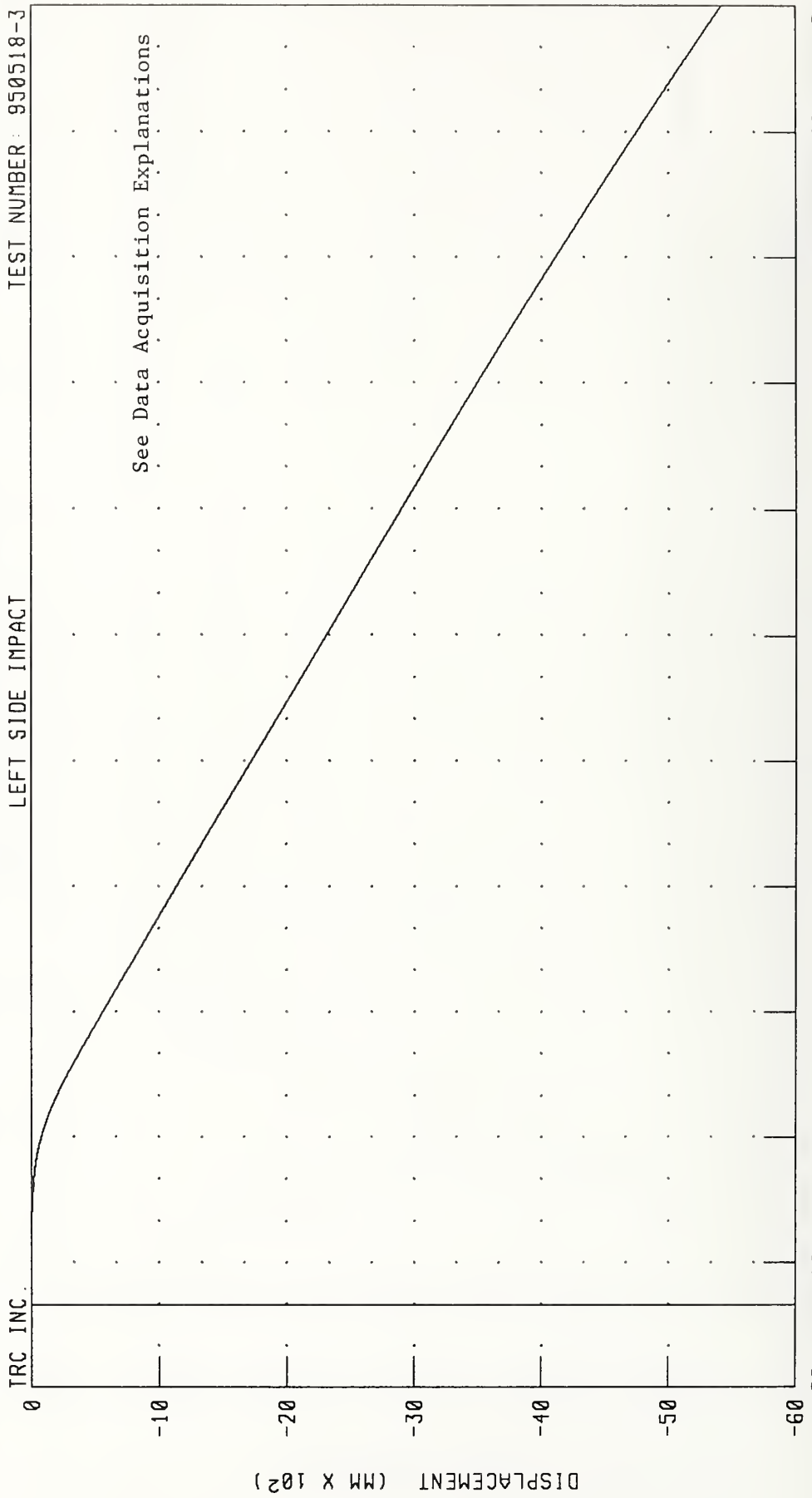
PEAK DATA 0.08 KM/H @ 4.16 MS; -82.30 KM/H @ 310.00 MS

CHANNEL: VCGYV1 FILTER: CH CLASS 180

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

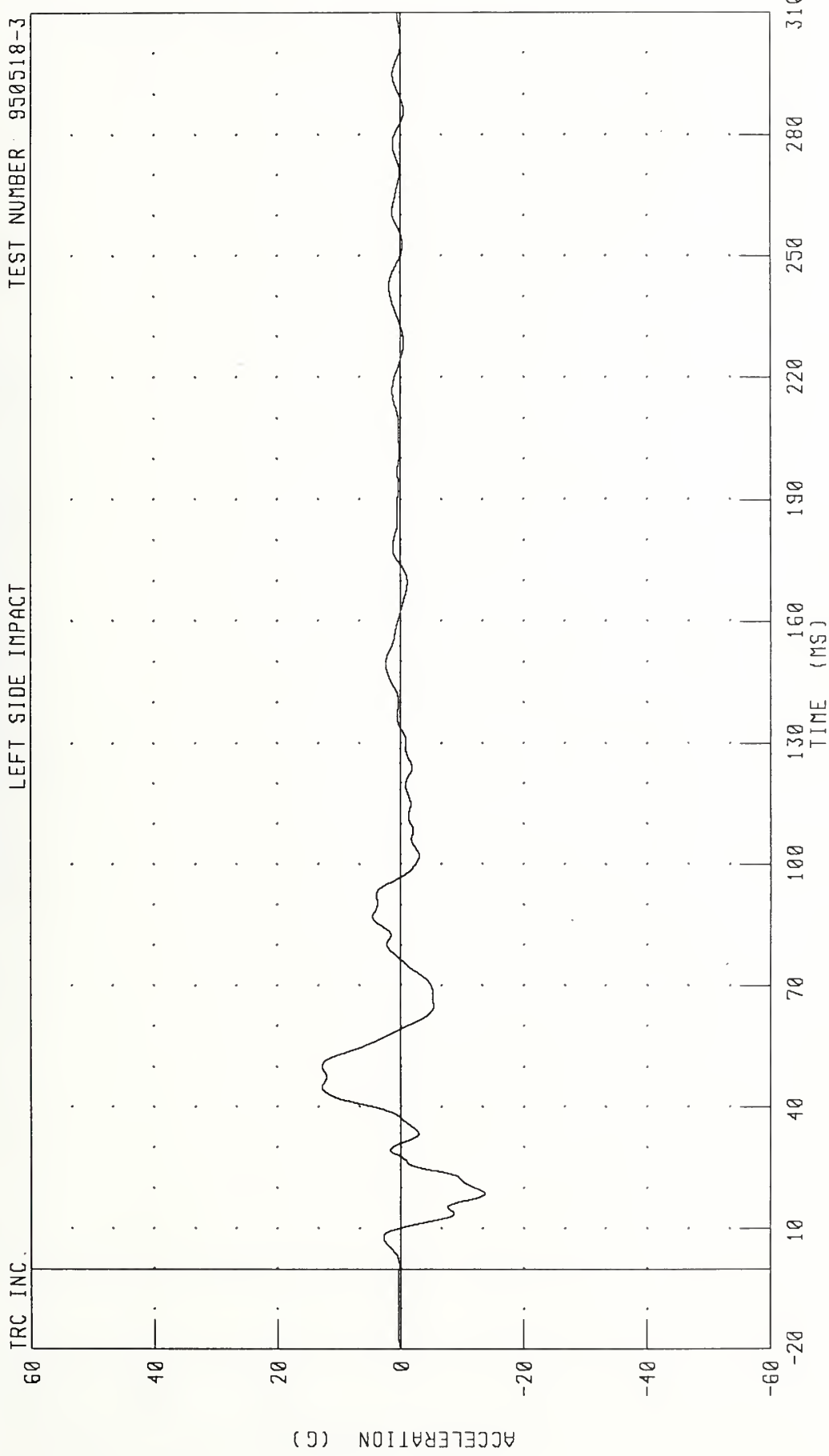
LEFT SIDE IMPACT



CHANNEL: VCGYD1 FILTER: CH. CLASS 180 PEAK DATA: 0.08 MM @ 5.92 MS; -5415.93 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Z-AXIS ACCELERATION

TRC INC.
LEFT SIDE IMPACT
TEST NUMBER 950518-3

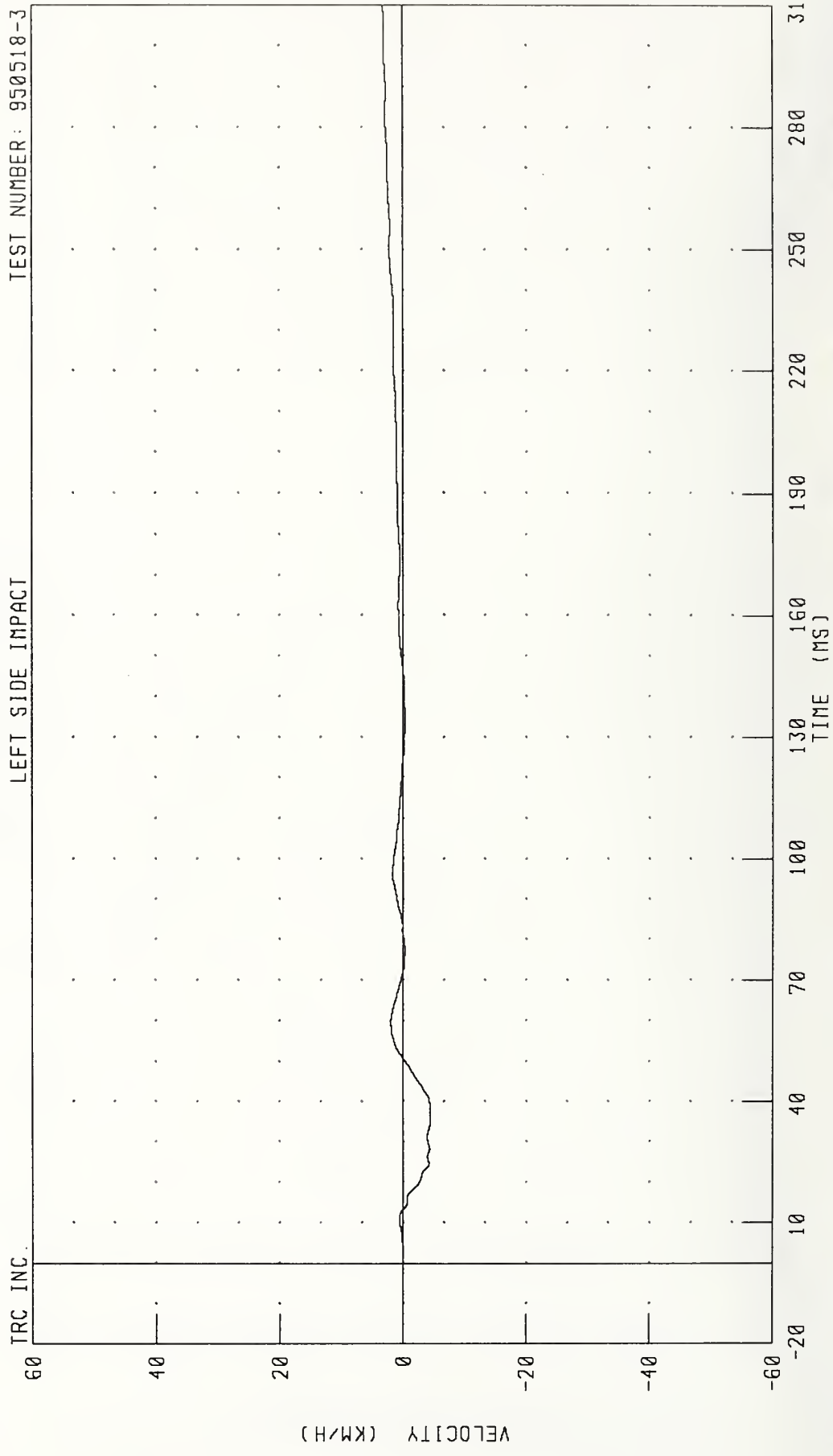


CHANNEL VCGZG1 FILTER: CH. CLASS 60
PEAK DATA: 12.75 G @ 50.08 MS; -13.69 G @ 18.64 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG Z-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT



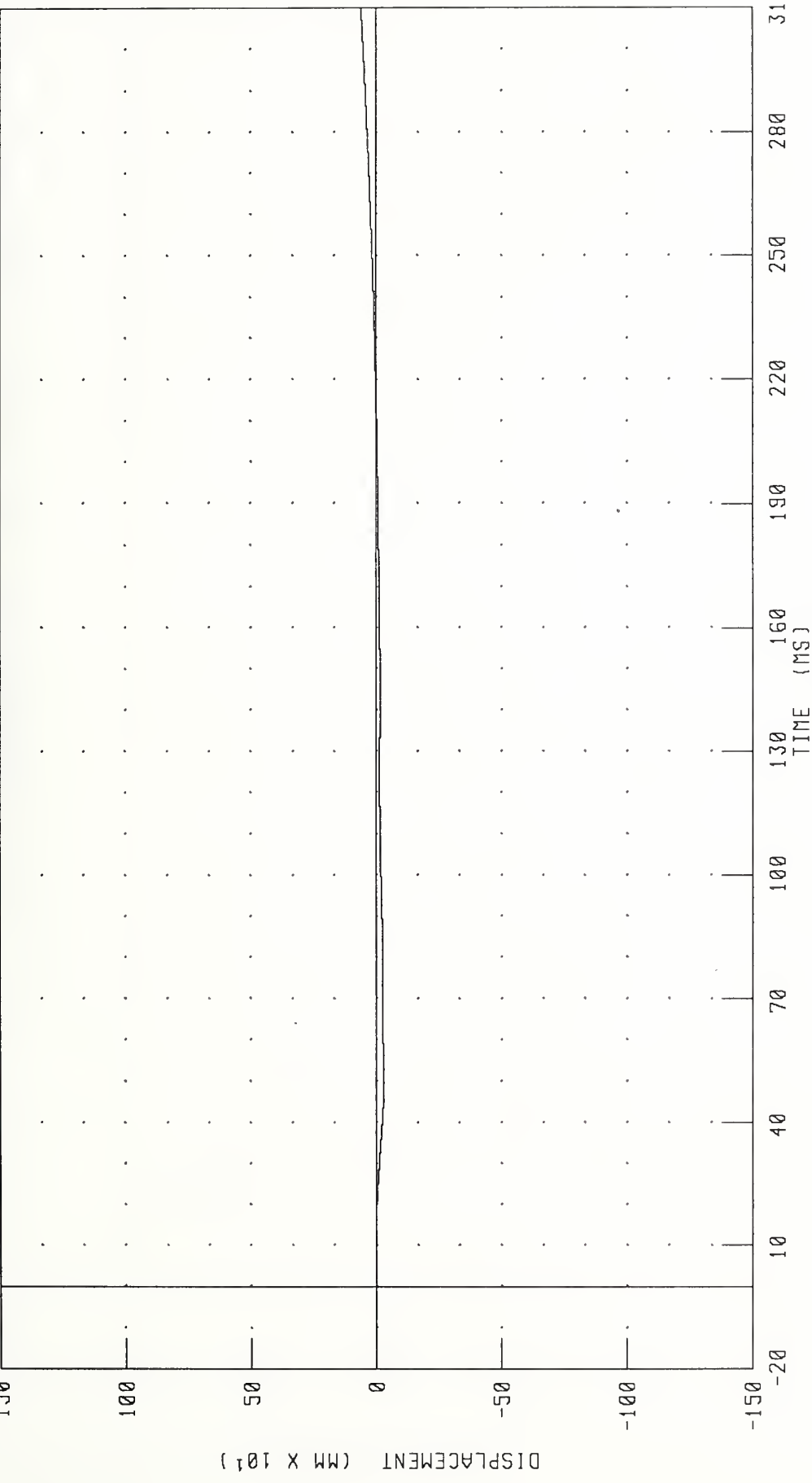
CHANNEL: VCGZV1 FILTER: CH. CLASS 180 PEAK DATA: 3.18 KM/H @ 310 00 MS; -4.39 KM/H @ 35.36 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 VEHICLE CG Z-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: VCGZ01 FILTER: CH CLASS 180

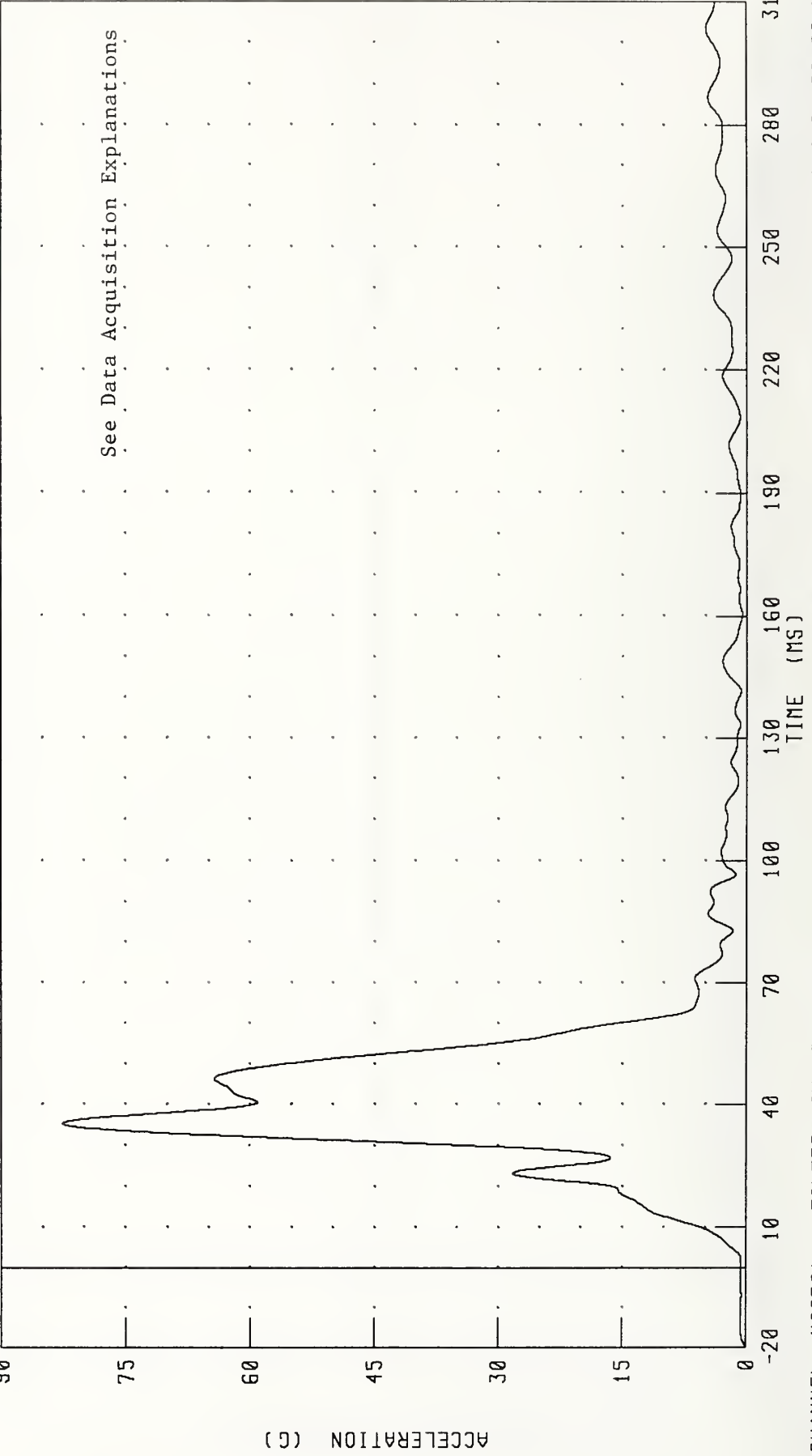
PEAK DATA: 60.18 MM @ 310.00 MS, -30.43 MM @ 50.72 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG RESULTANT ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: VCGRG1 FILTER: CH CLASS 60

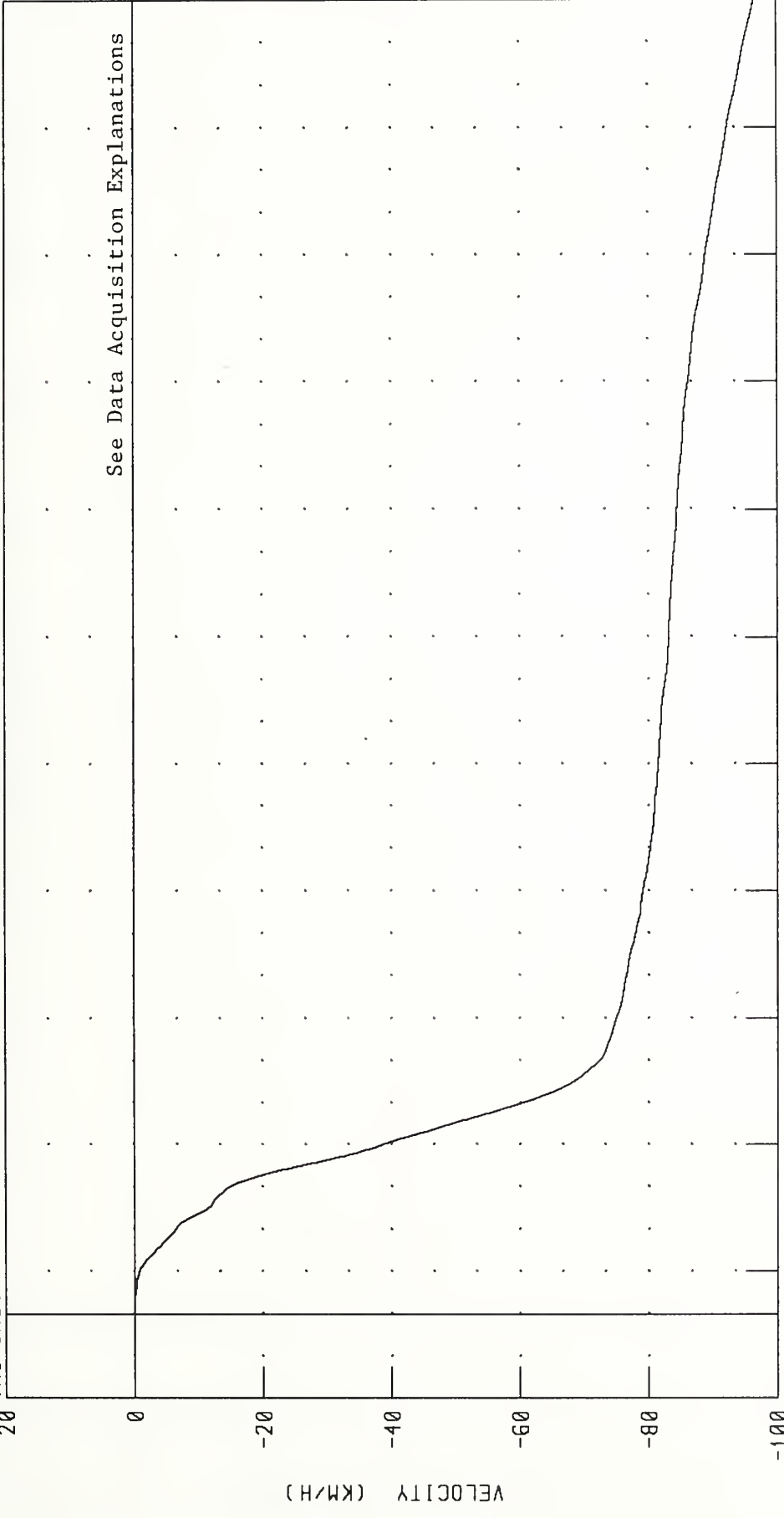
PEAK DATA: 82.55 G @ 35.36 MS, 0.02 G @ -20.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 VEHICLE CG RESULTANT VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



See Data Acquisition Explanations

TIME (MS)

CHANNEL VCGRV1 FILTER CH CLASS 180

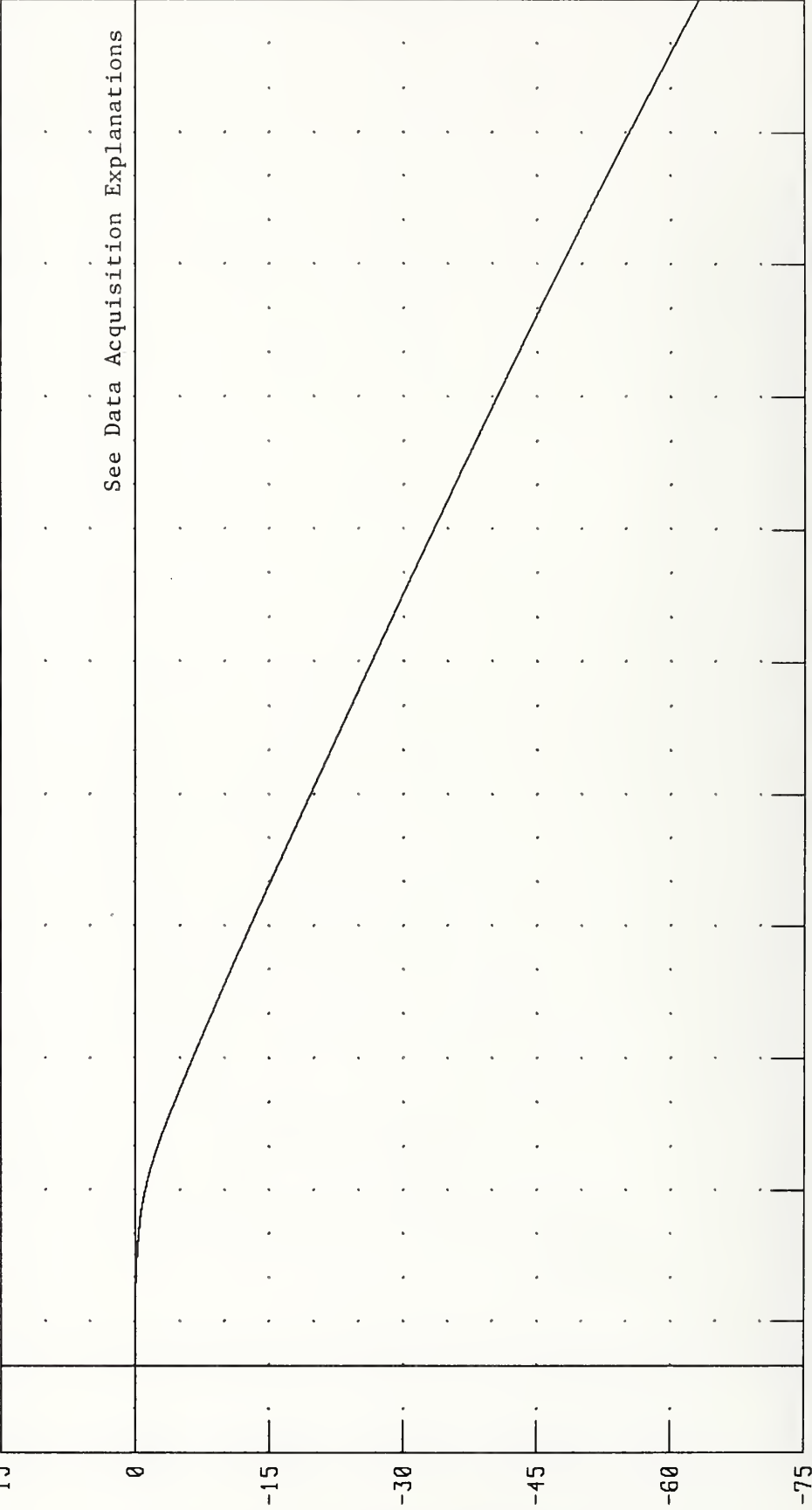
PEAK DATA: 0.00 KM/H @ 0.00 MS, -96.44 KM/H @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
VEHICLE CG RESULTANT DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



See Data Acquisition Explanations

15
0
-15
-30
-45
-60
-75

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310

TIME (MS)

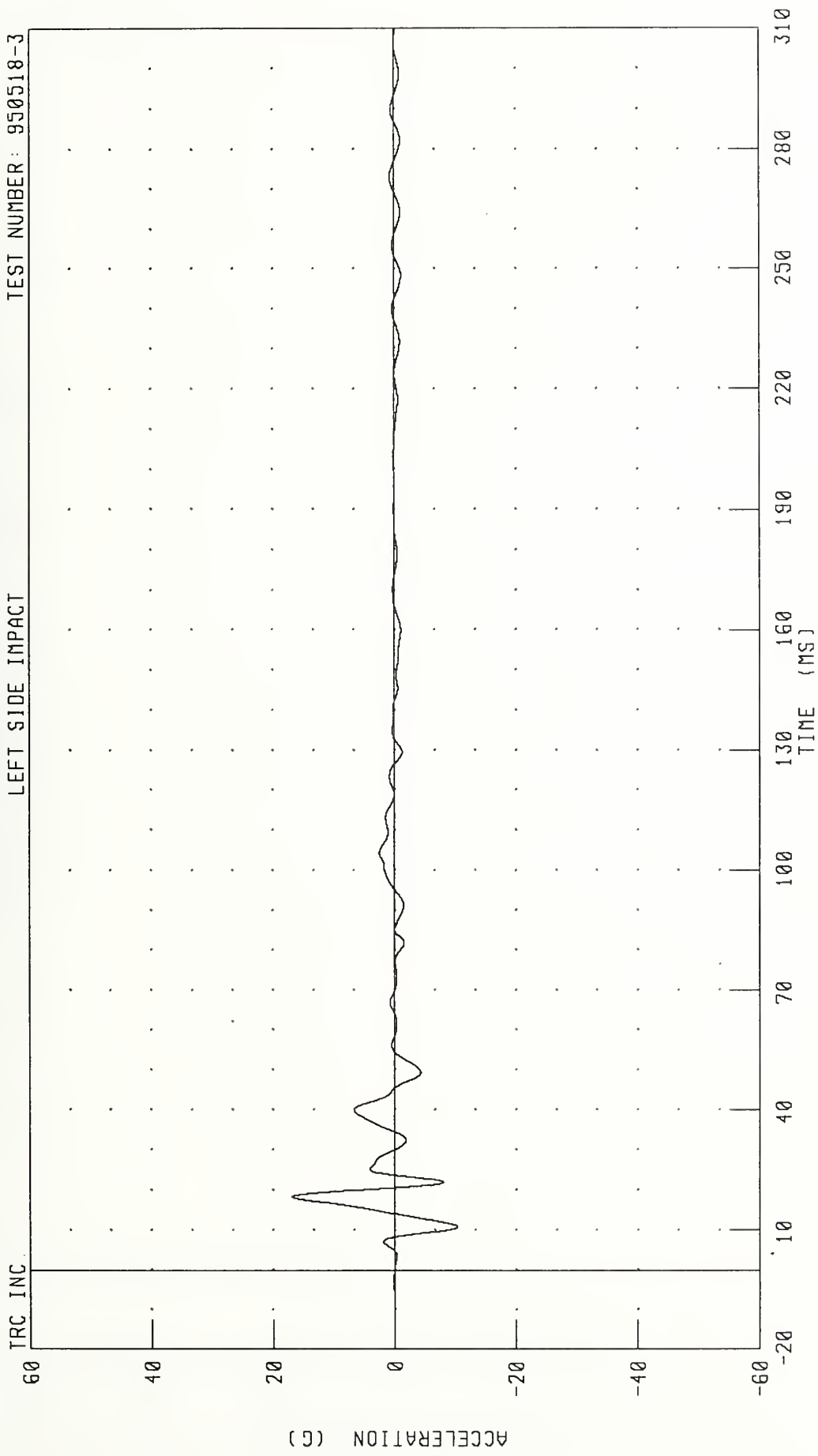
CHANNEL: VCGRD1 FILTER: CH. CLASS 180

PEAK DATA: 0.00 MM @ 0.00 MS; -6321.02 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL X-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT



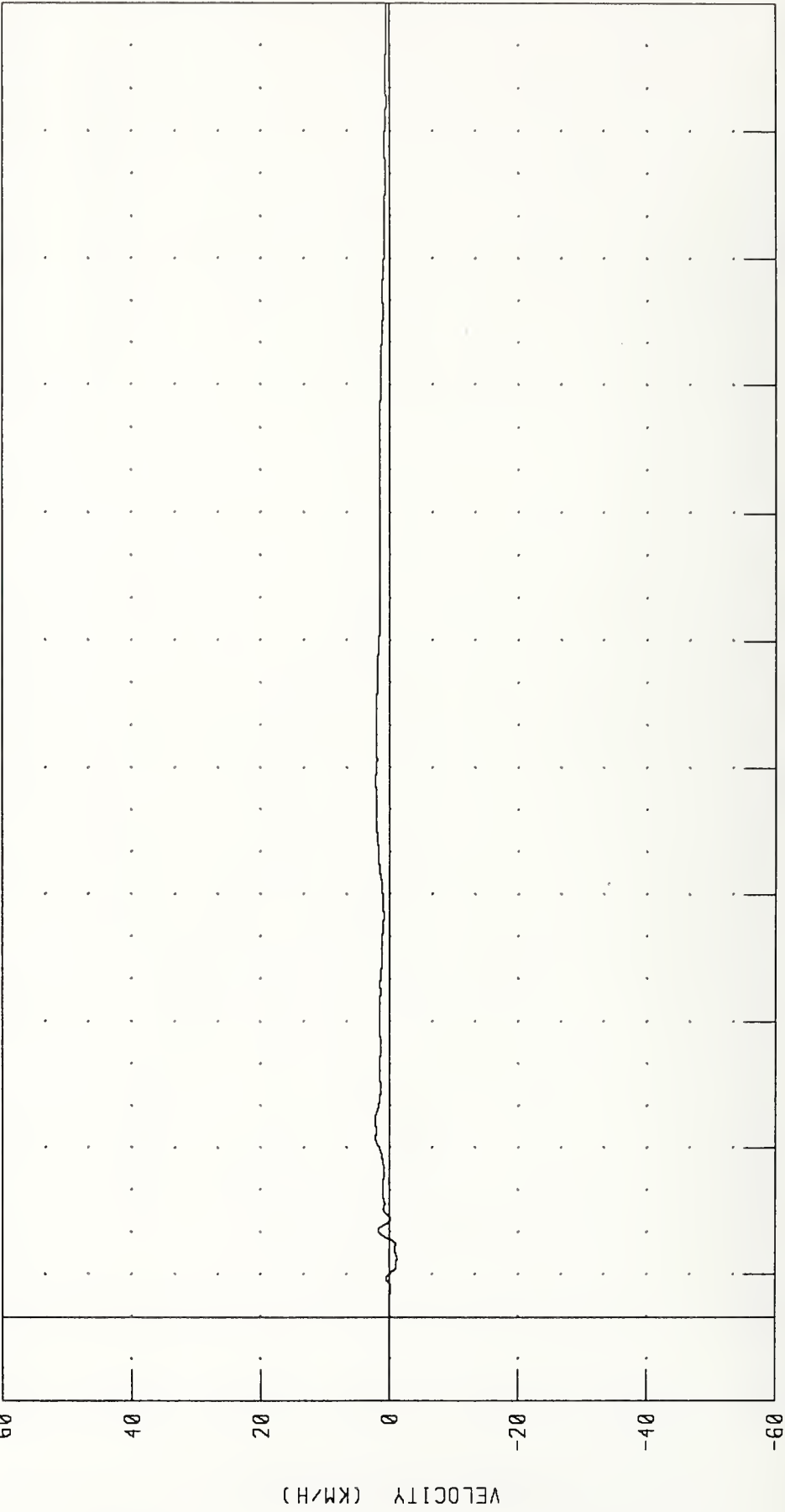
CHANNEL: LFSXG1 FILTER: CH CLASS 60 PEAK DATA: 16.92 G @ 18.24 MS, -10.39 G @ 10.80 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL X-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: LFSXV1 FILTER: CH CLASS 180

TIME (MS)

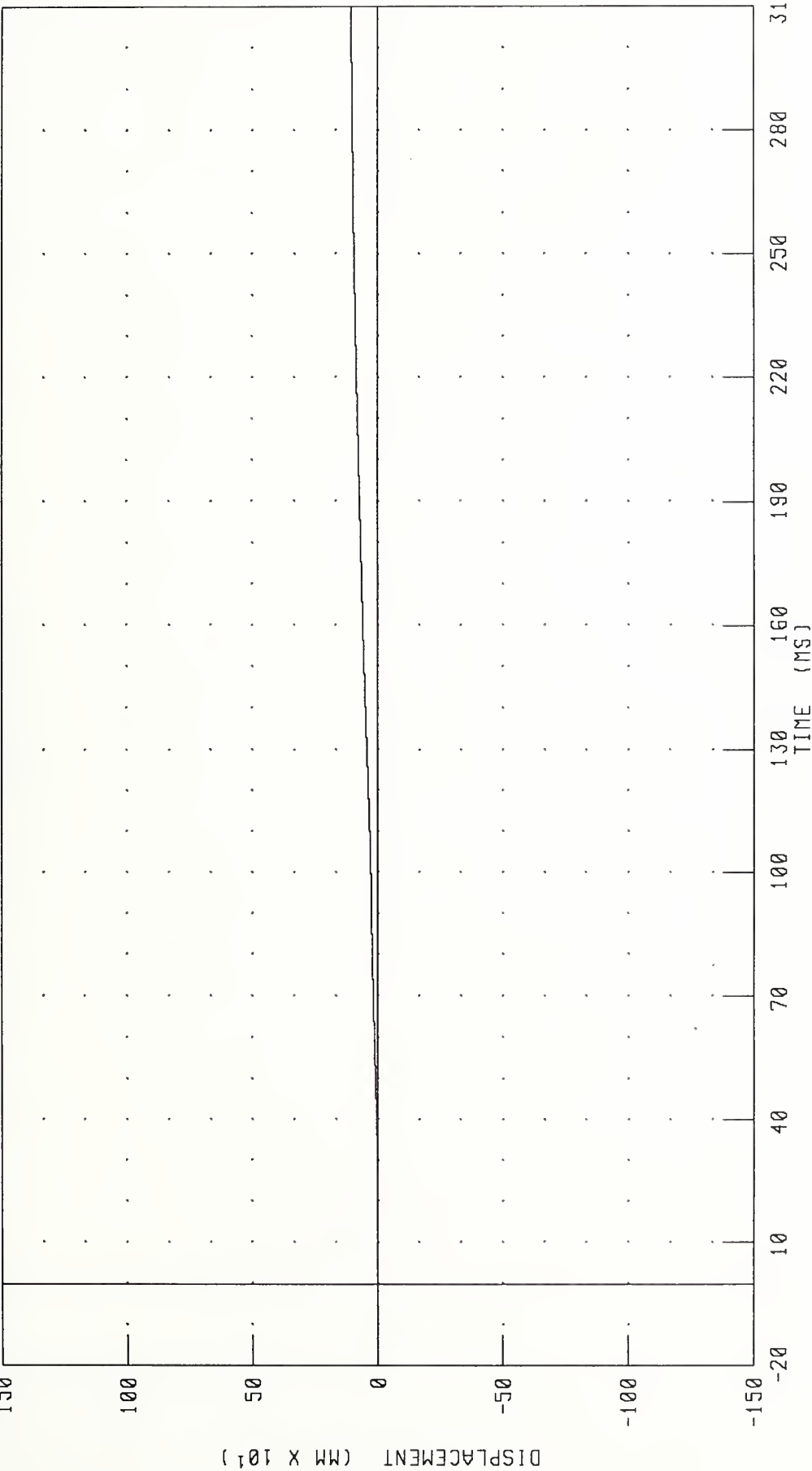
PEAK DATA: 2.21 KM/H @ 46.64 MS, -1 13 KM/H @ 13.92 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 LEFT FRONT SILL X-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: LFSXD1 FILTER: CH. CLASS 180

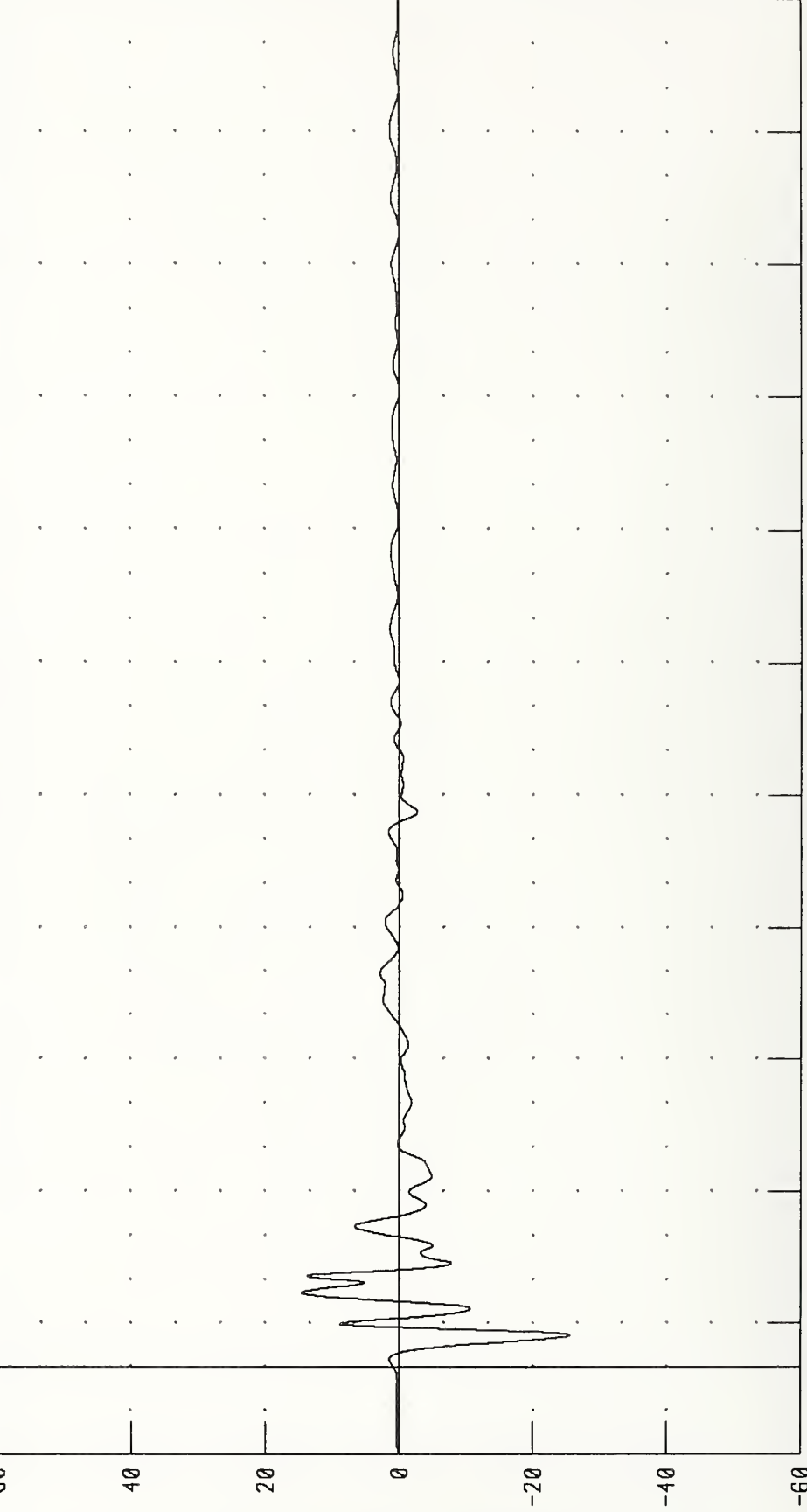
PEAK DATA: 105.93 MM @ 310.00 MS; -1.84 MM @ 18.32 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL Y-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: LFSYG1 FILTER: CH CLASS 60

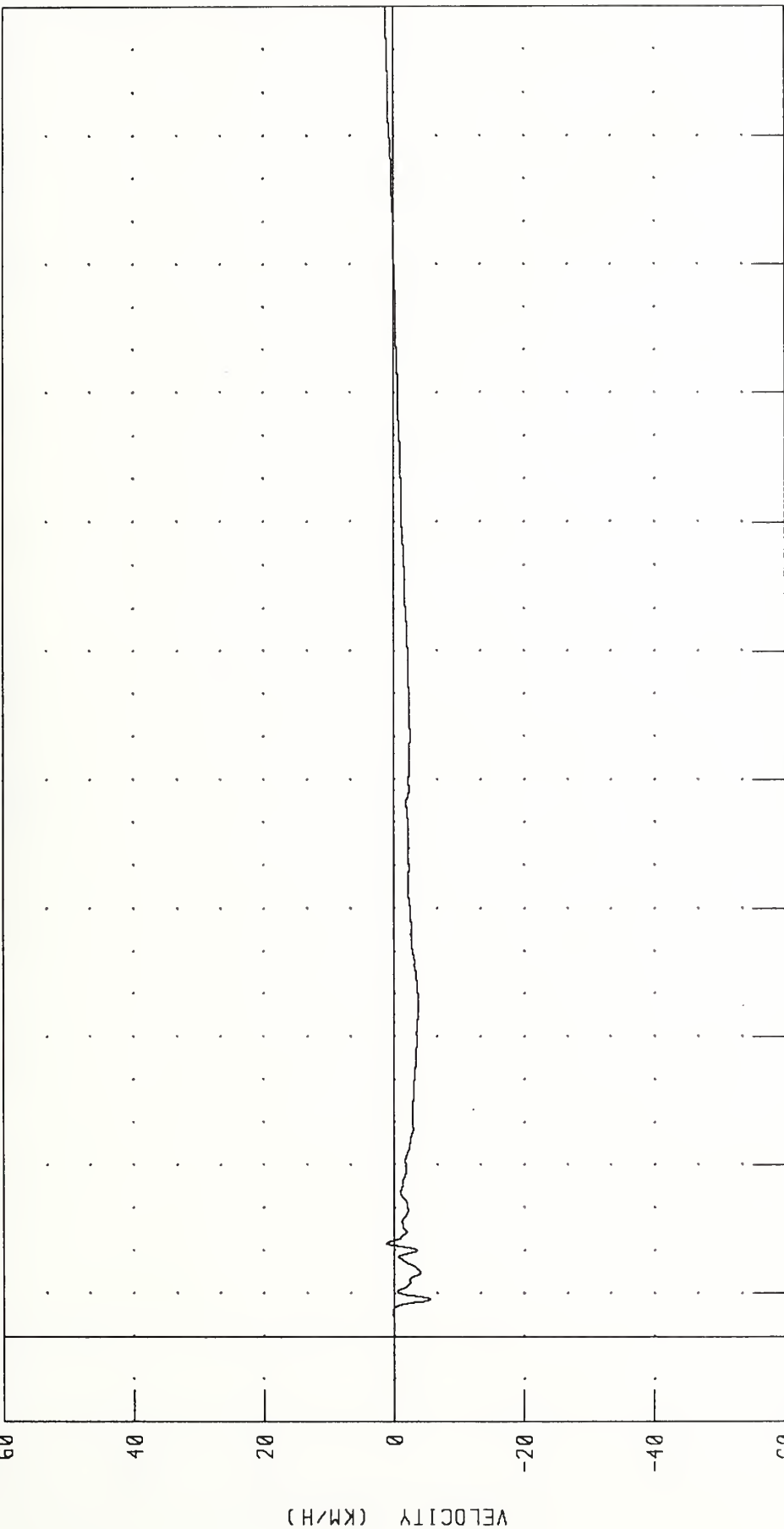
PEAK DATA: 14 65 G @ 16.88 MS; -25.54 G @ 7.12 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT SILL Y-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.

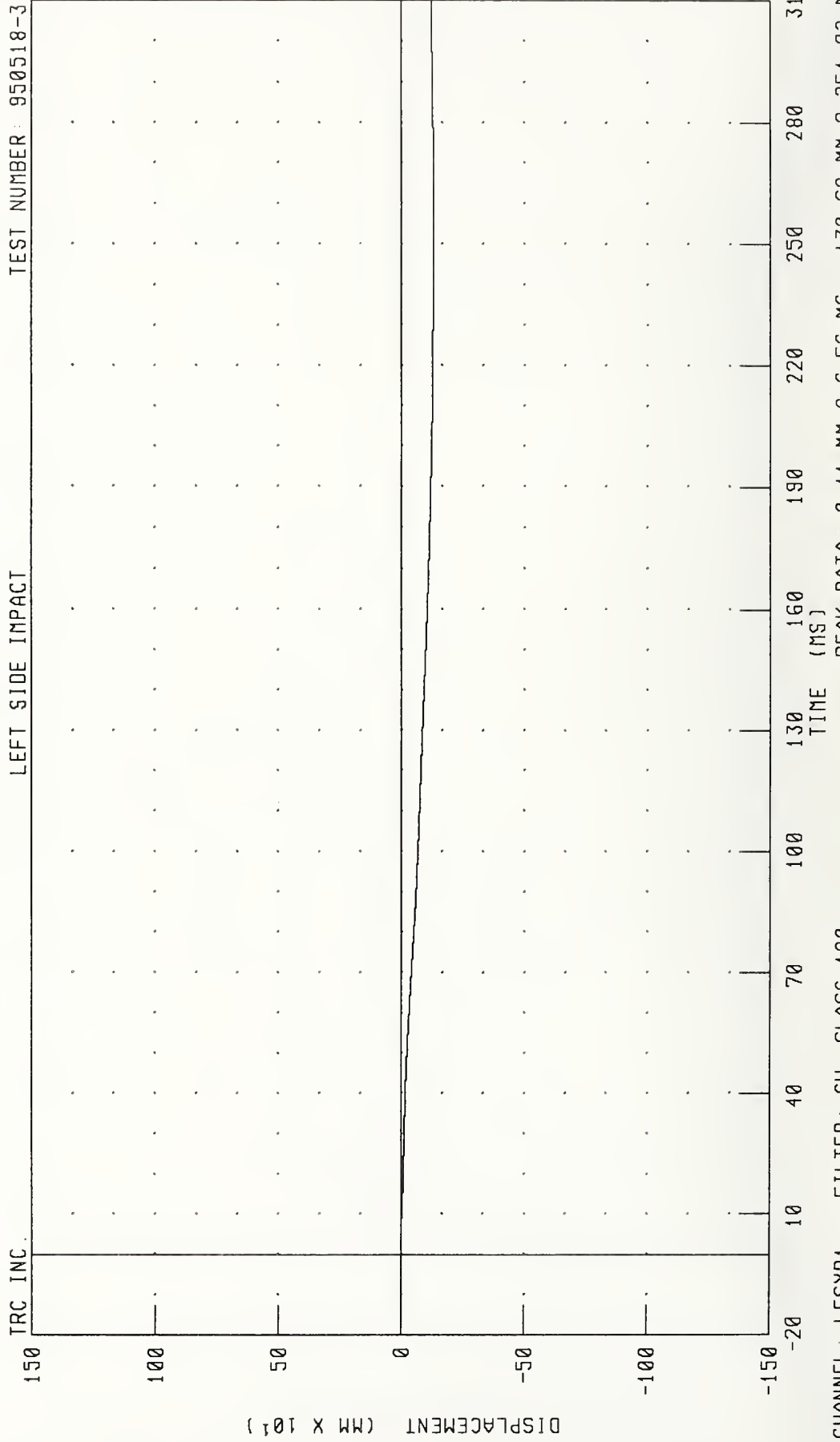


CHANNEL: LFSYV1 FILTER: CH. CLASS 180

PEAK DATA: 1 17 KM/H @ 21.68 MS; -5.53 KM/H @ 8 64 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT FRONT STILL Y-AXIS DISPLACEMENT

TRC INC. LEFT SIDE IMPACT TEST NUMBER: 950518-3



CHANNEL: LFSYD1 FILTER: CH. CLASS 180

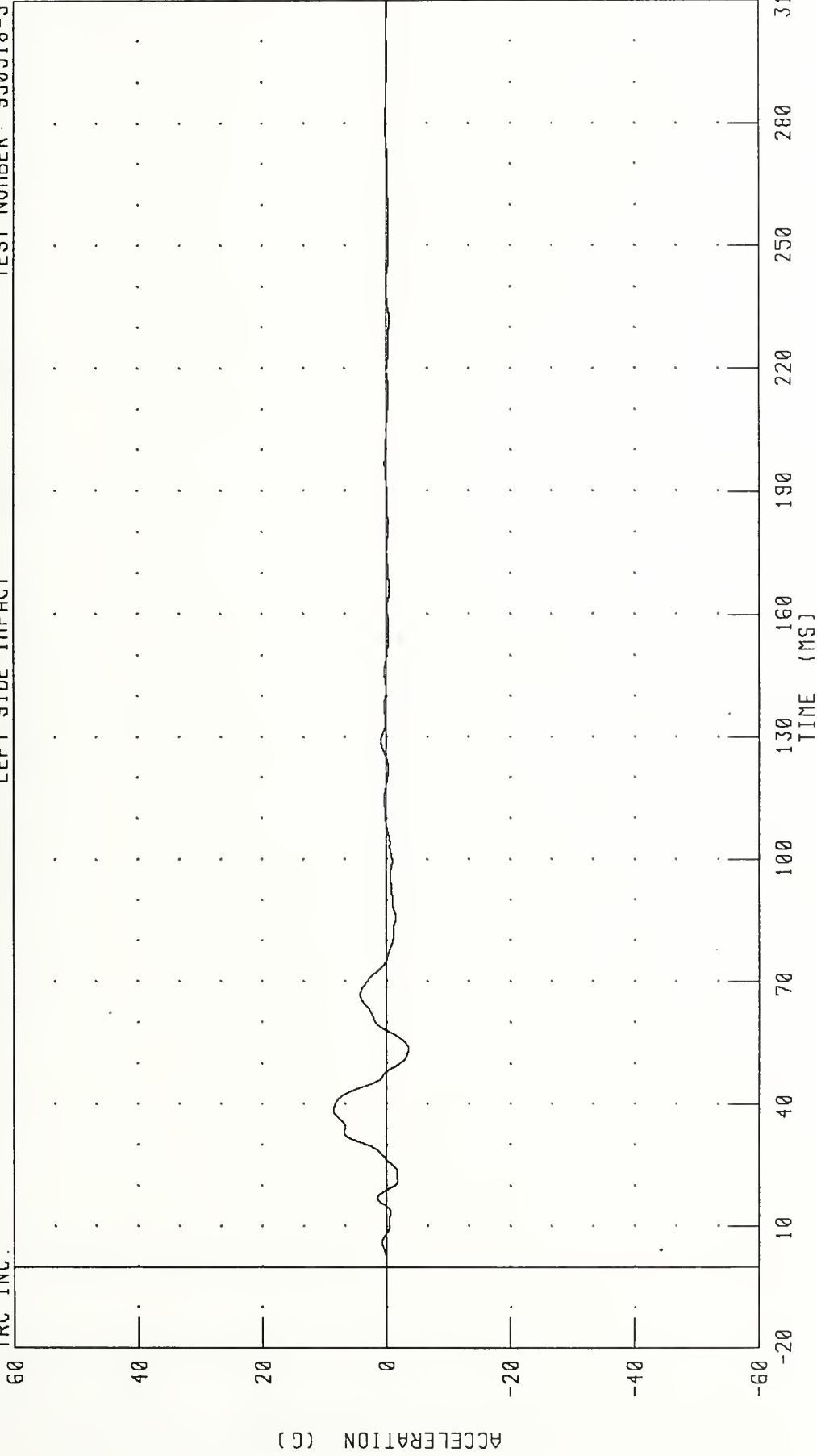
PEAK DATA: 0.11 MM @ 6.56 MS; -130.68 MM @ 251.92 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL X-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: RFSXG1 FILTER: CH. CLASS 60

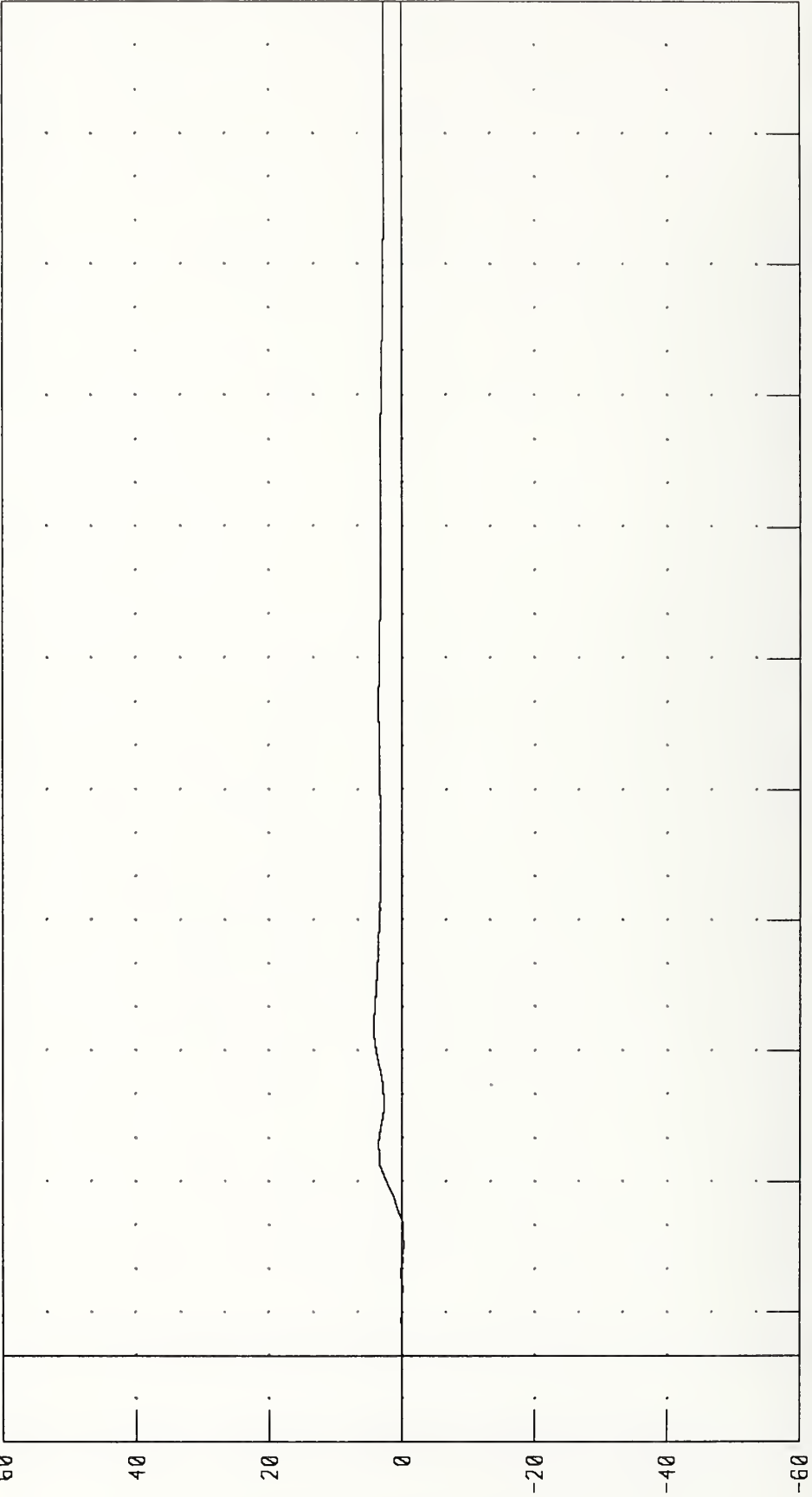
PEAK DATA: 8.53 G @ 38.48 MS; -3.52 G @ 53.52 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL X-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



PEAK DATA: 4.19 KM/H @ 74.24 MS; -0.28 KM/H @ 25.60 MS

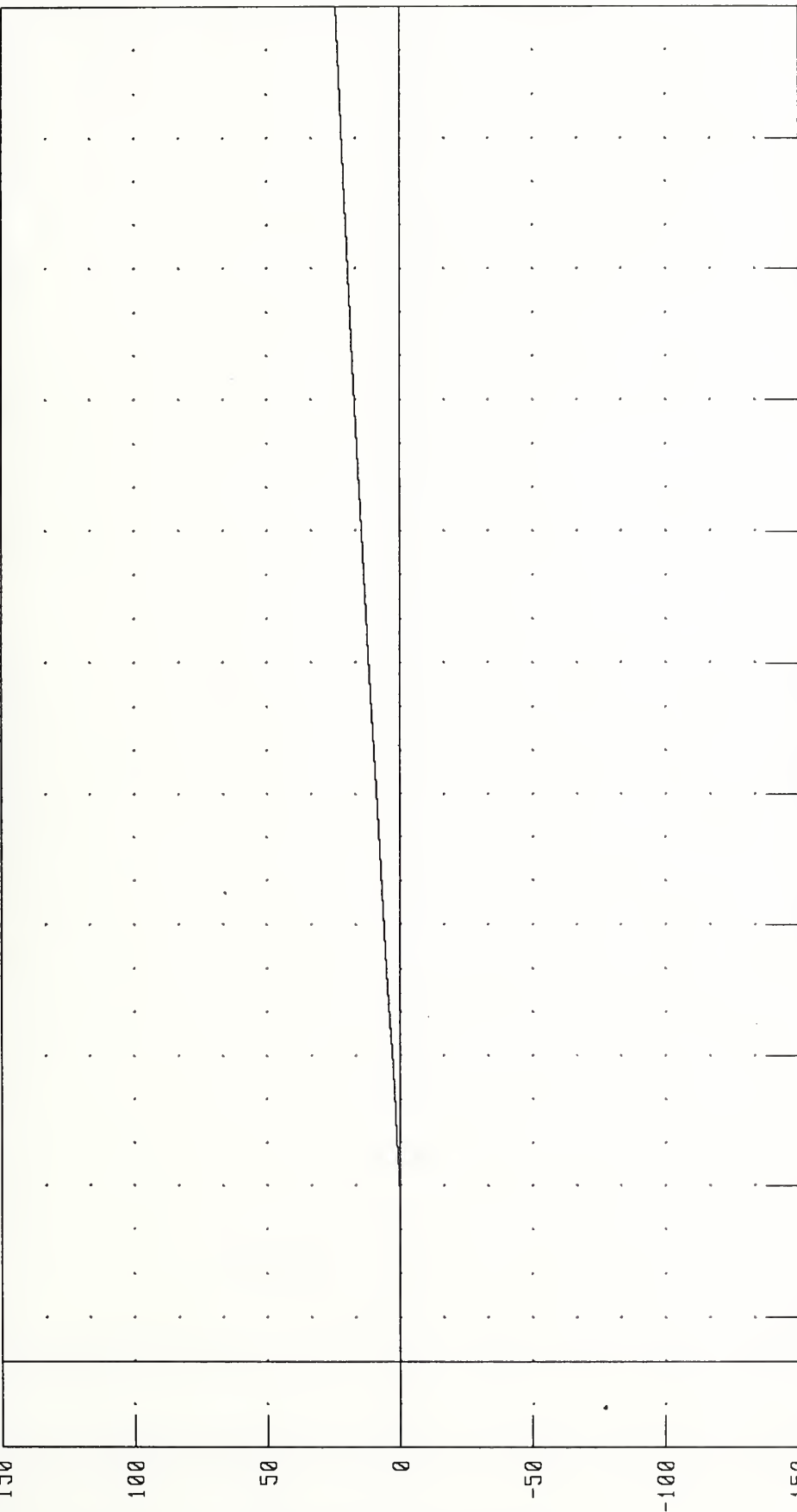
CHANNEL: RFSXVI FILTER: CH CLASS 180

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 RIGHT FRONT SILL X-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



150
100
50
0
-50
-100
-150

DISPLACEMENT (MM X 10¹)

10 40 70 100 130 160 190 220 250 280 310

TIME (MS)

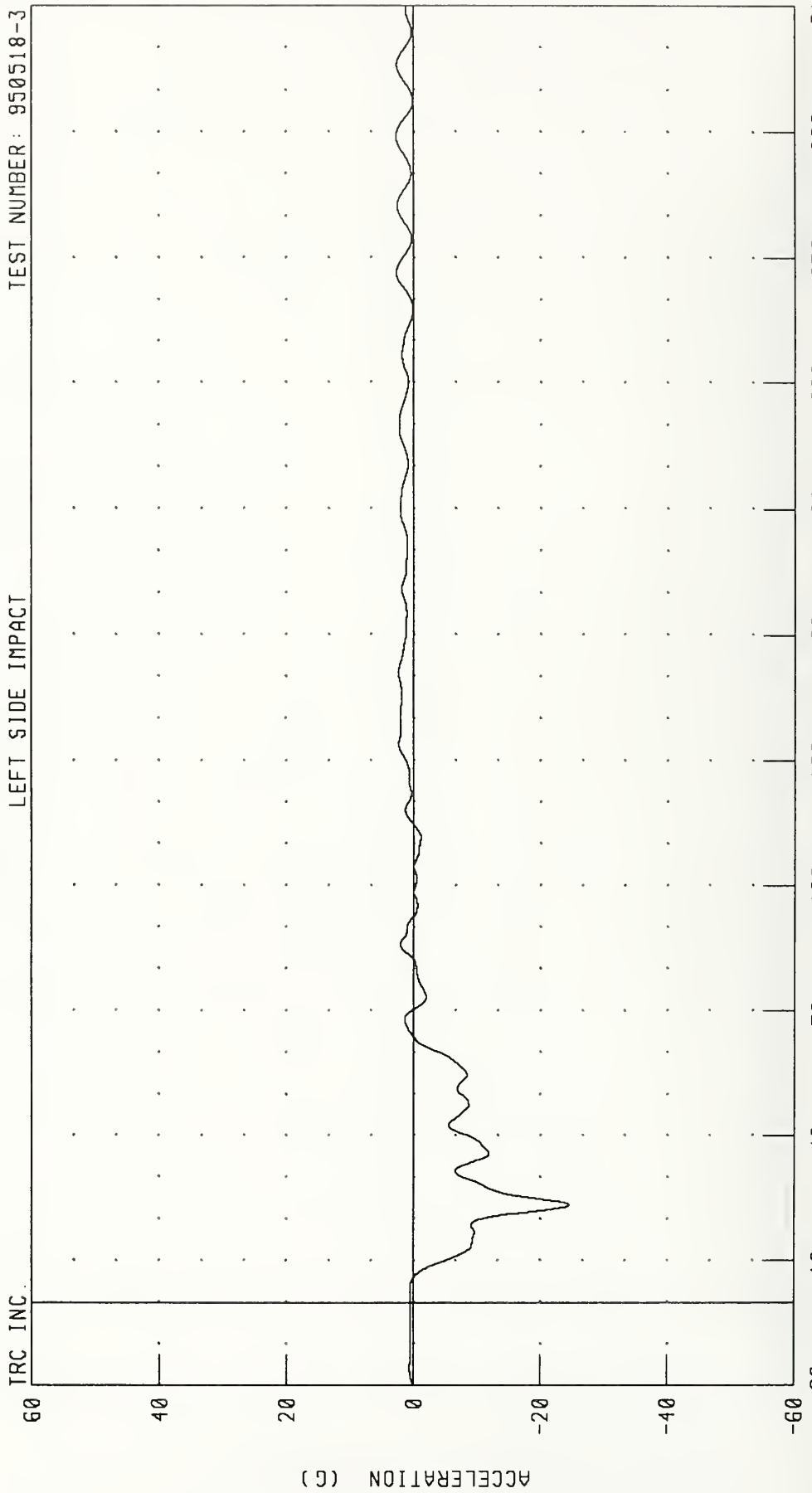
CHANNEL: RFSXD1 FILTER: CH. CLASS 180

PEAK DATA 240.97 MM @ 310.00 MS, -0.29 MM @ 31.28 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL Y-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT



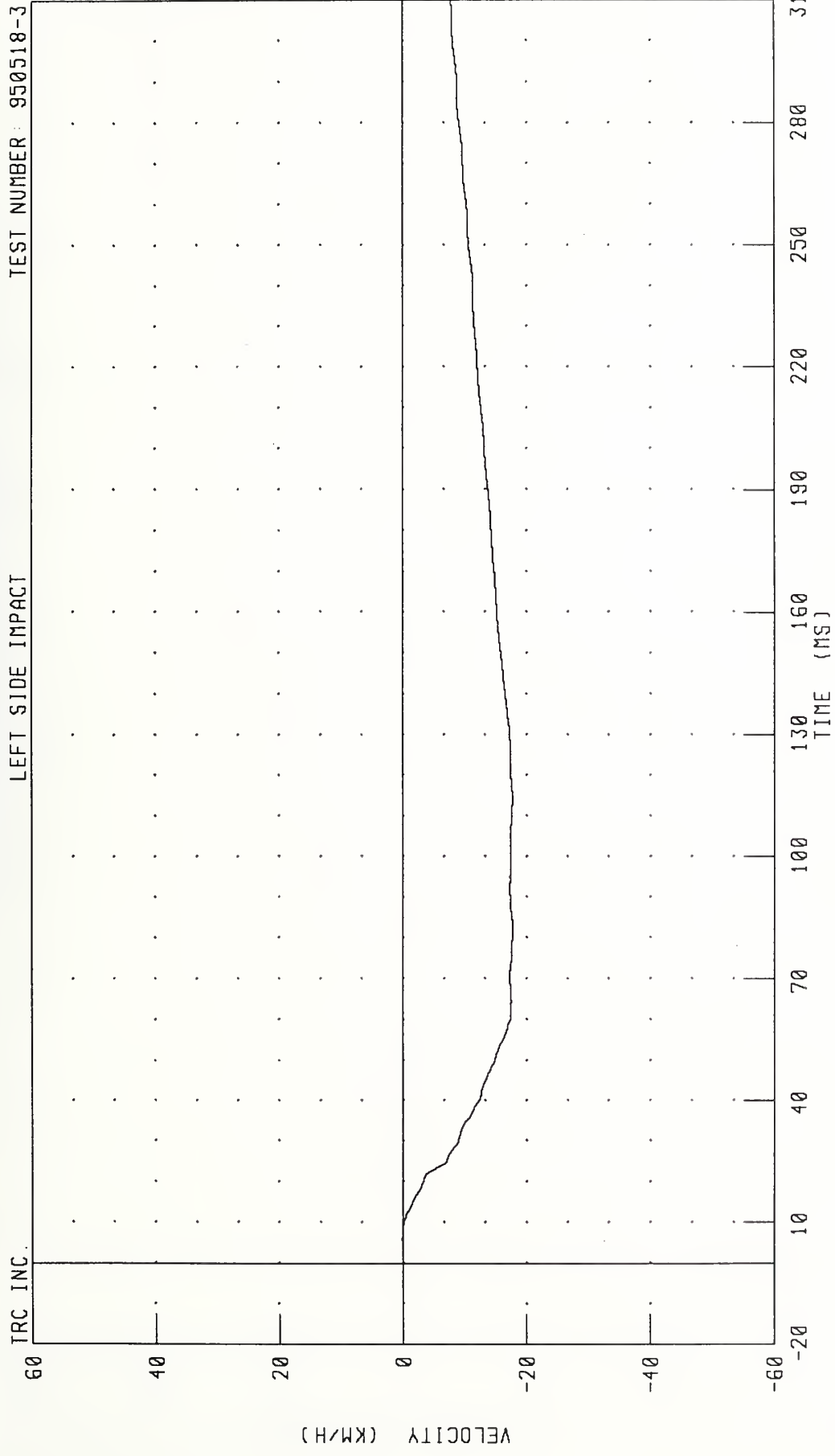
CHANNEL: RFSYG1 FILTER: CH CLASS 60

PEAK DATA: 2.73 G @ 278.88 MS; -24.54 G @ 23.36 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 RIGHT FRONT SILL Y-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT



CHANNEL: RFSYV1 FILTER: CH. CLASS 180

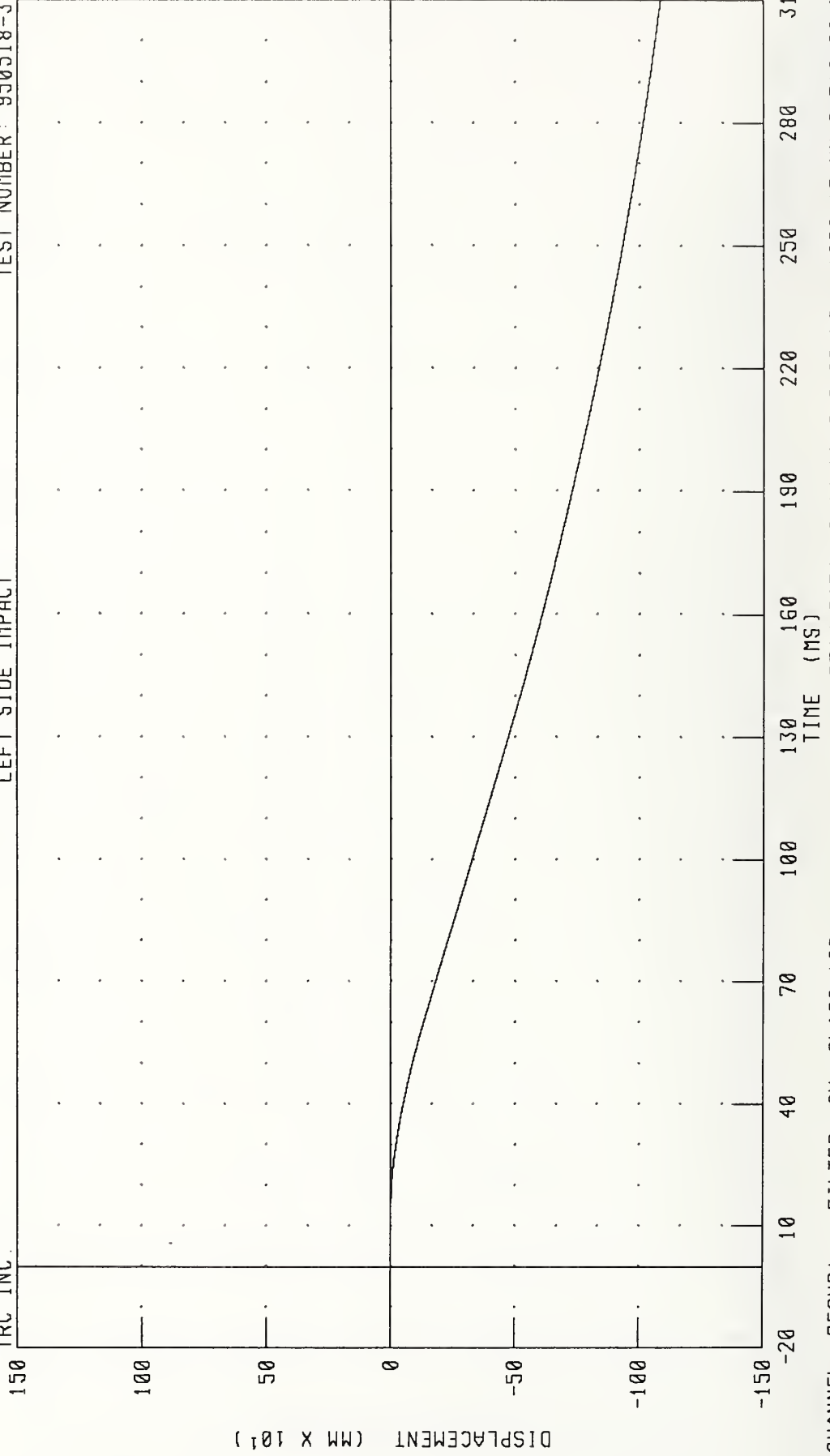
PEAK DATA: 0.10 KM/H @ 5.84 MS; -17.76 KM/H @ 83.12 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT FRONT SILL Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



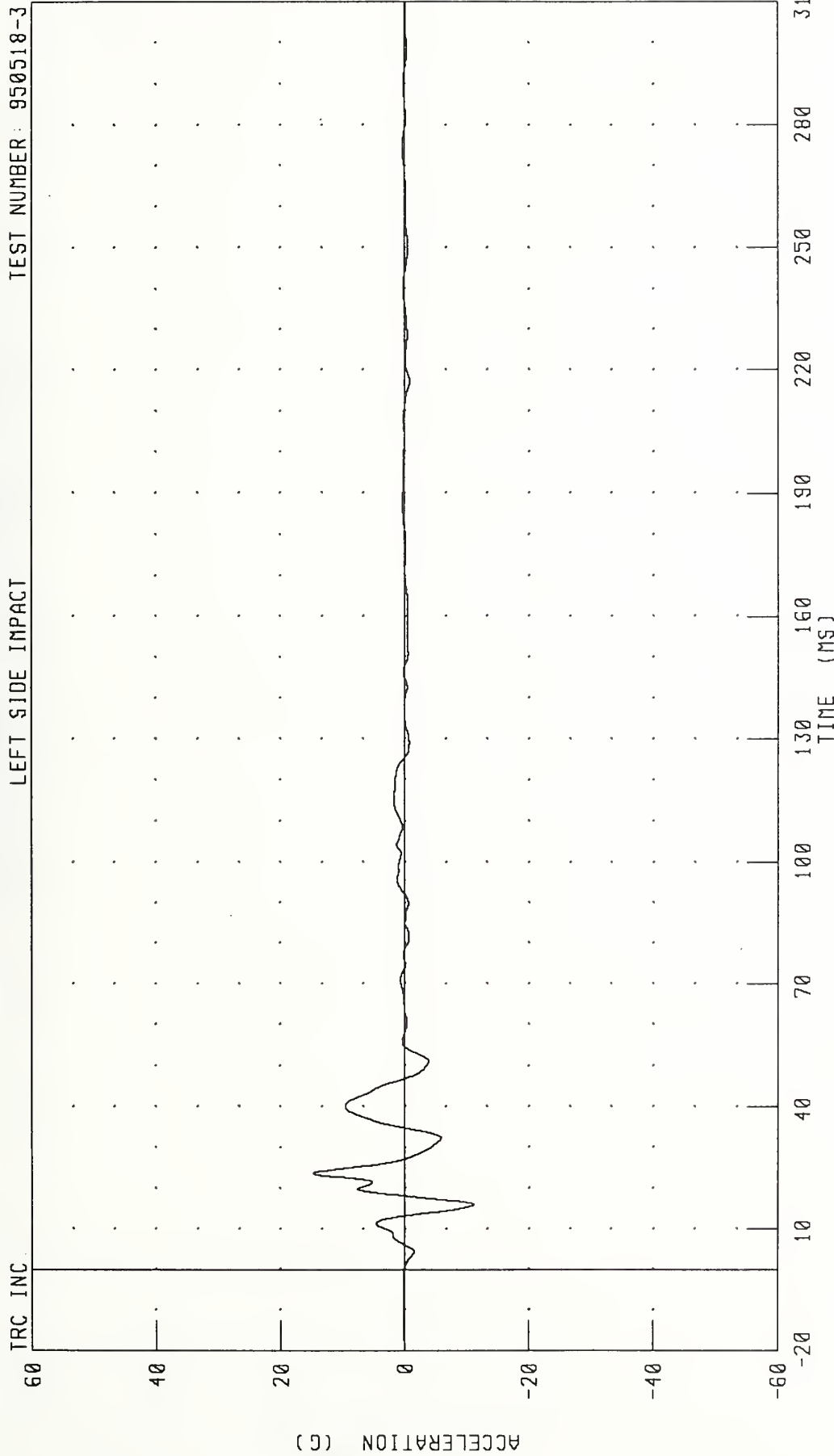
CHANNEL: RFSYD1 FILTER: CH CLASS 180

PEAK DATA: 0.14 MM @ 8.88 MS; -1086.17 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT X-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT



CHANNEL: TLRXG1 FILTER: CH. CLASS 60

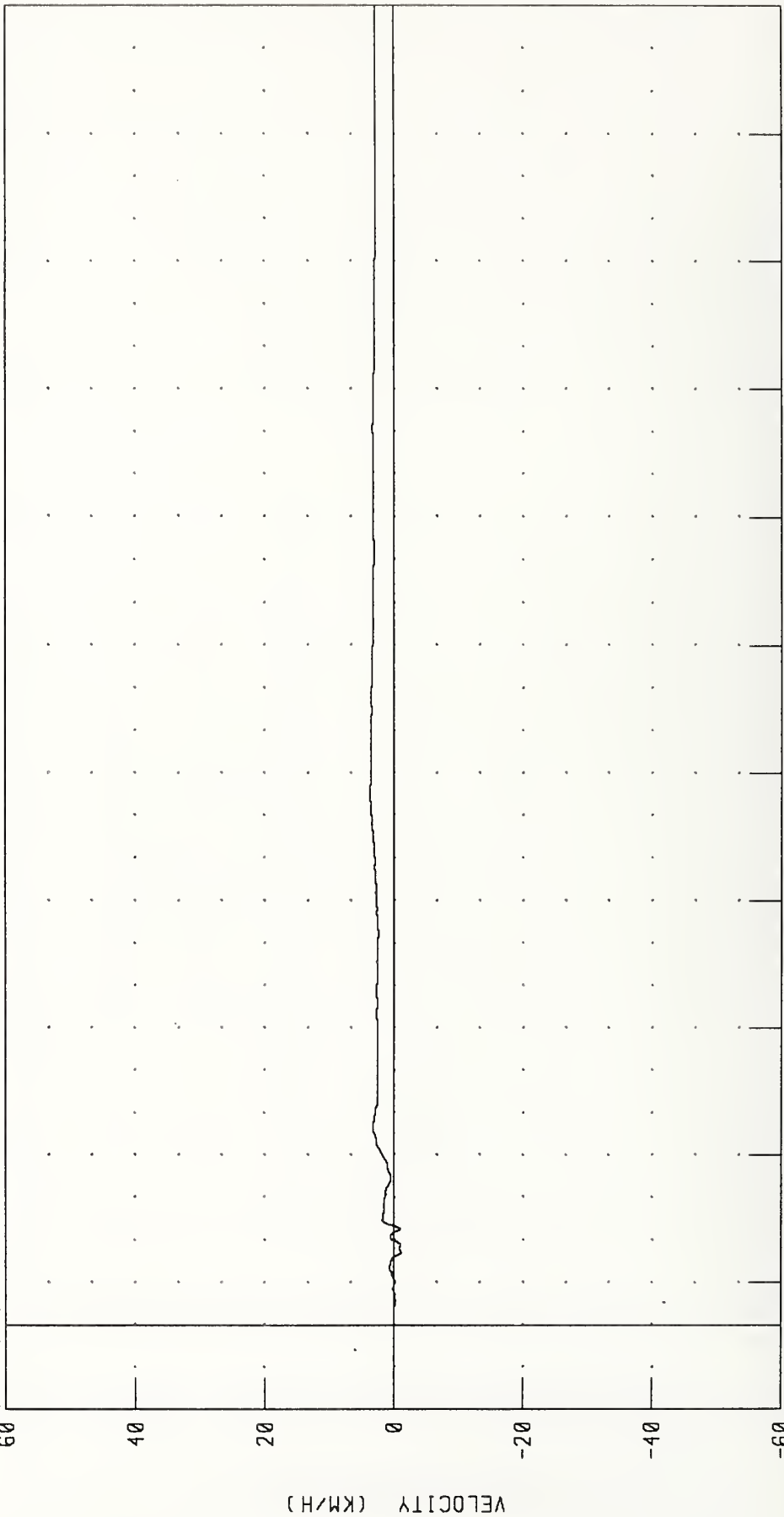
PEAK DATA: 14.75 G @ 23.60 MS; -11.10 G @ 15.92 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT X-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



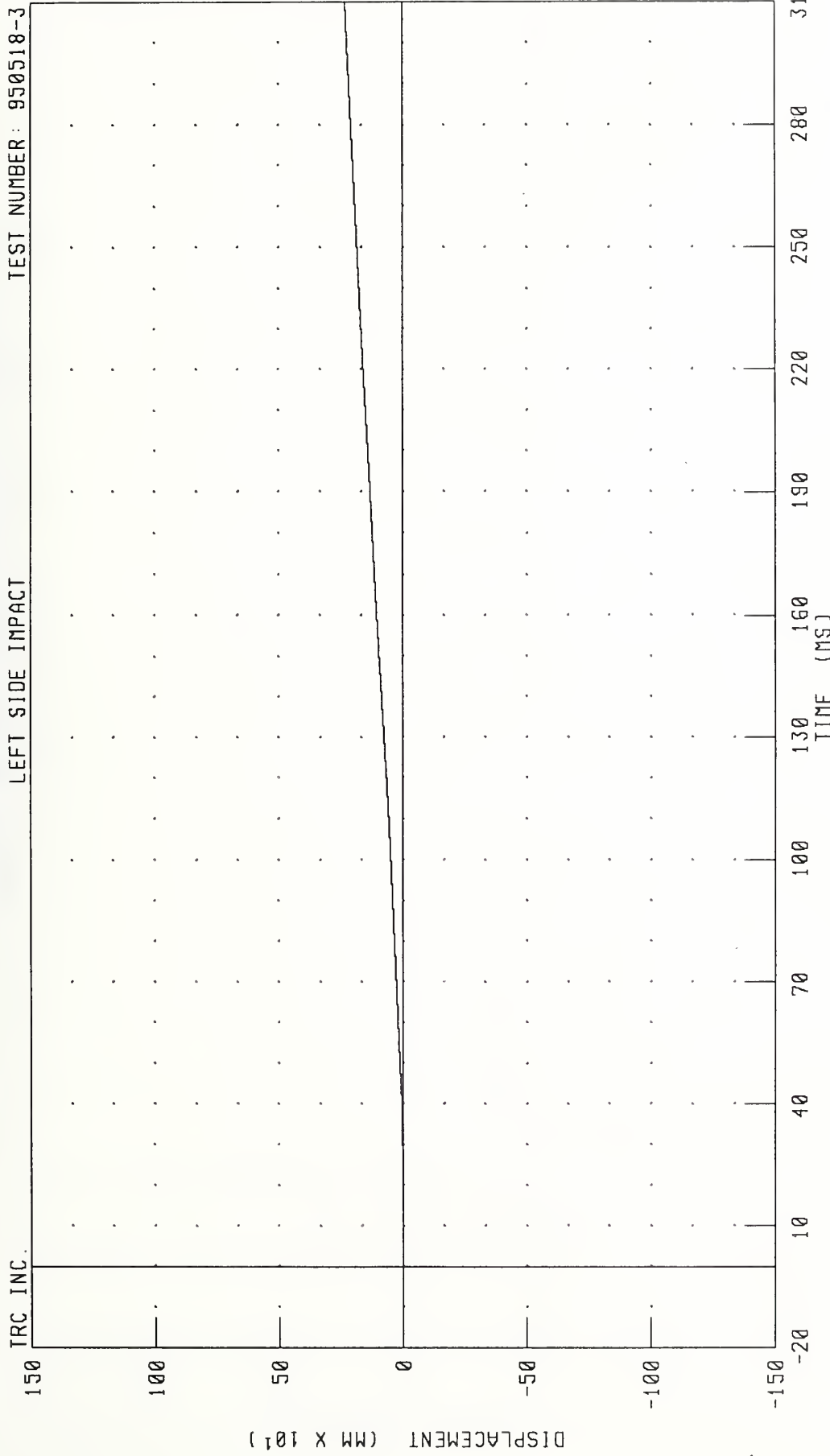
CHANNEL: TLRXY1 FILTER: CH CLASS 180

PEAK DATA: 3.73 KM/H @ 124.88 MS; -1.11 KM/H @ 17.04 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT X-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT



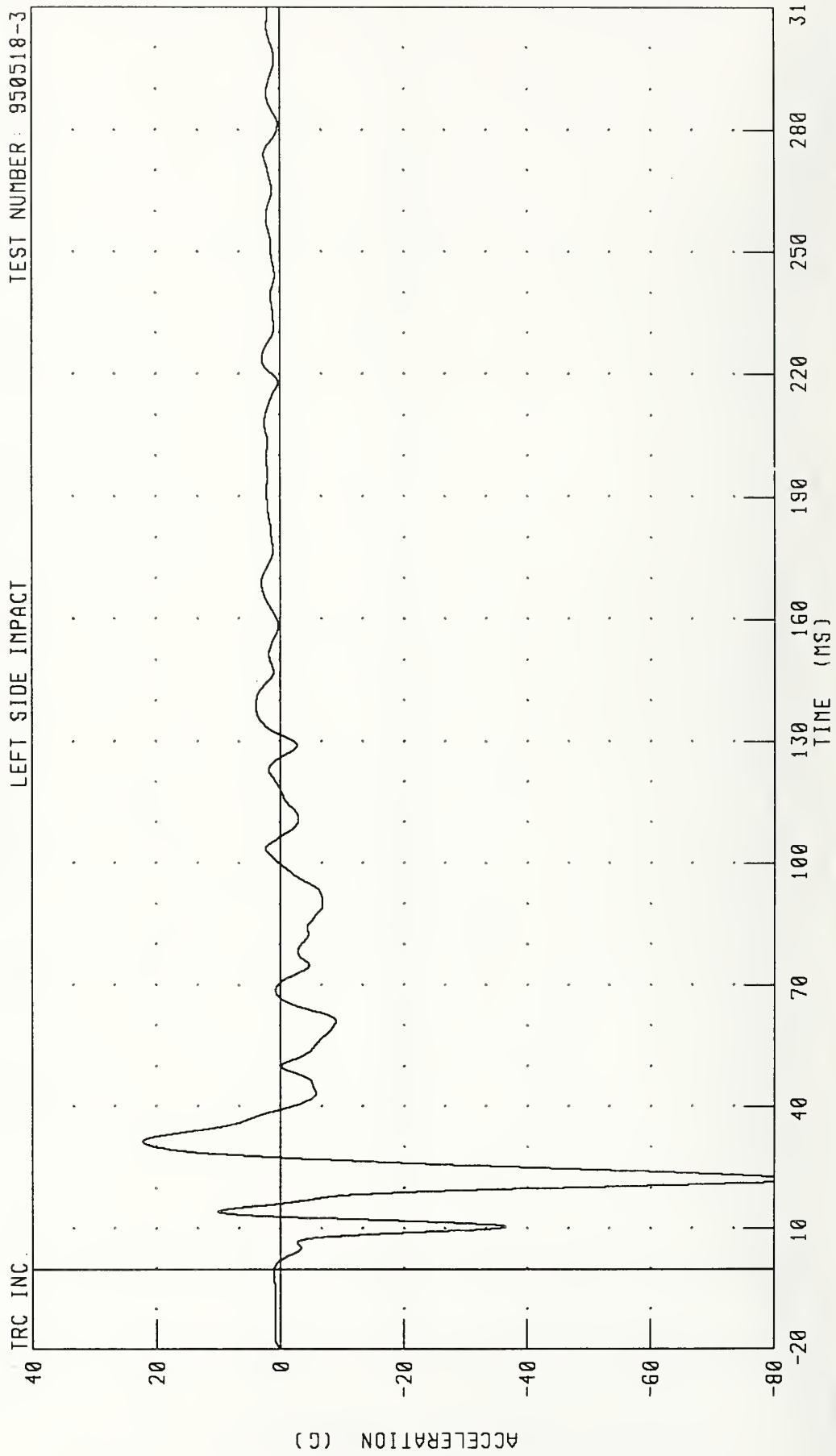
CHANNEL: TLRX01 FILTER: CH. CLASS 180

PEAK DATA: 232.57 MM @ 310.00 MS; -0.39 MM @ 23.28 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT Y-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT



CHANNEL: TLRYG1 FILTER: CH CLASS 60

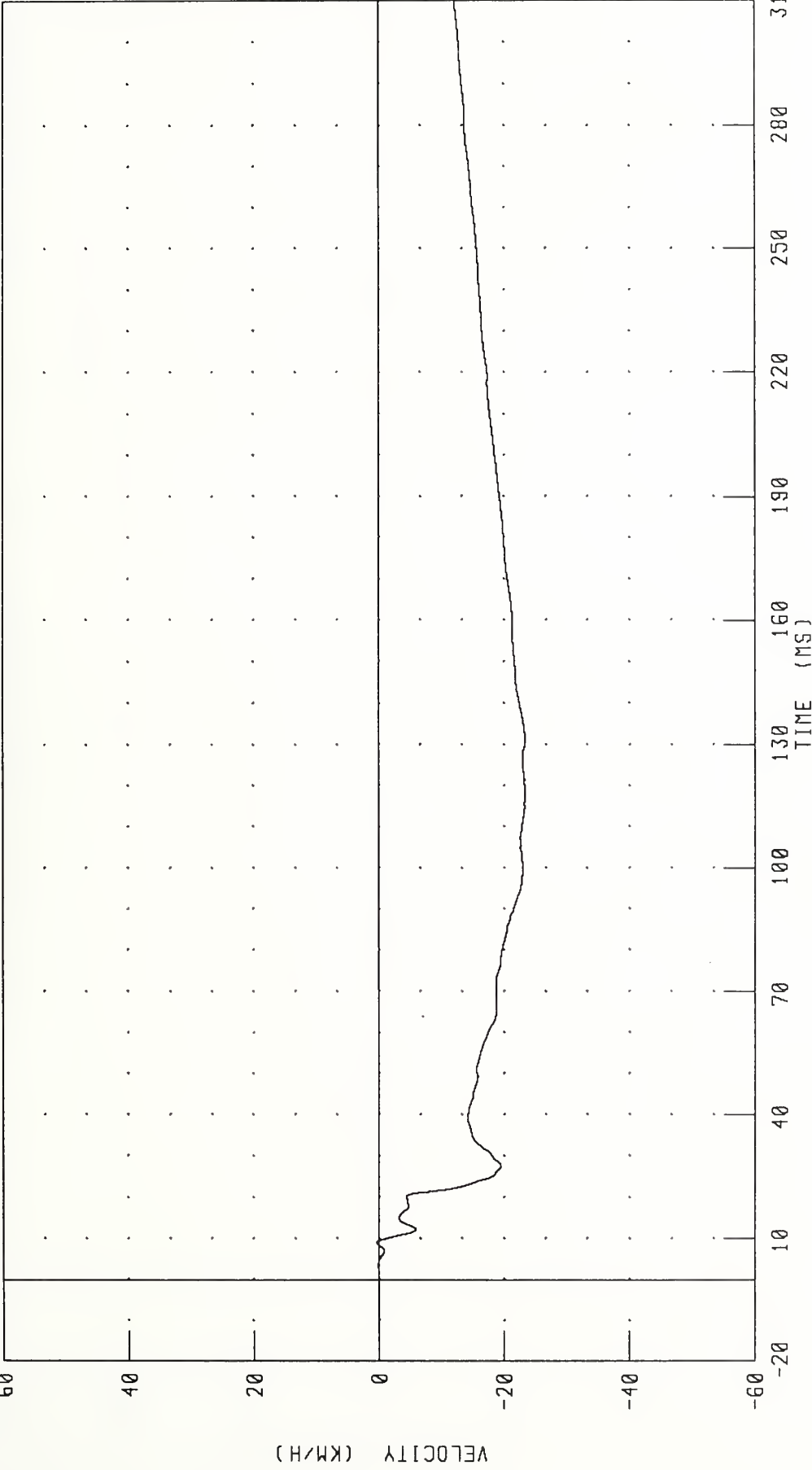
PEAK DATA: 22.28 G @ 31.36 MS; -83.07 G @ 22.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT Y-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: TLRYV1 FILTER CH. CLASS 180

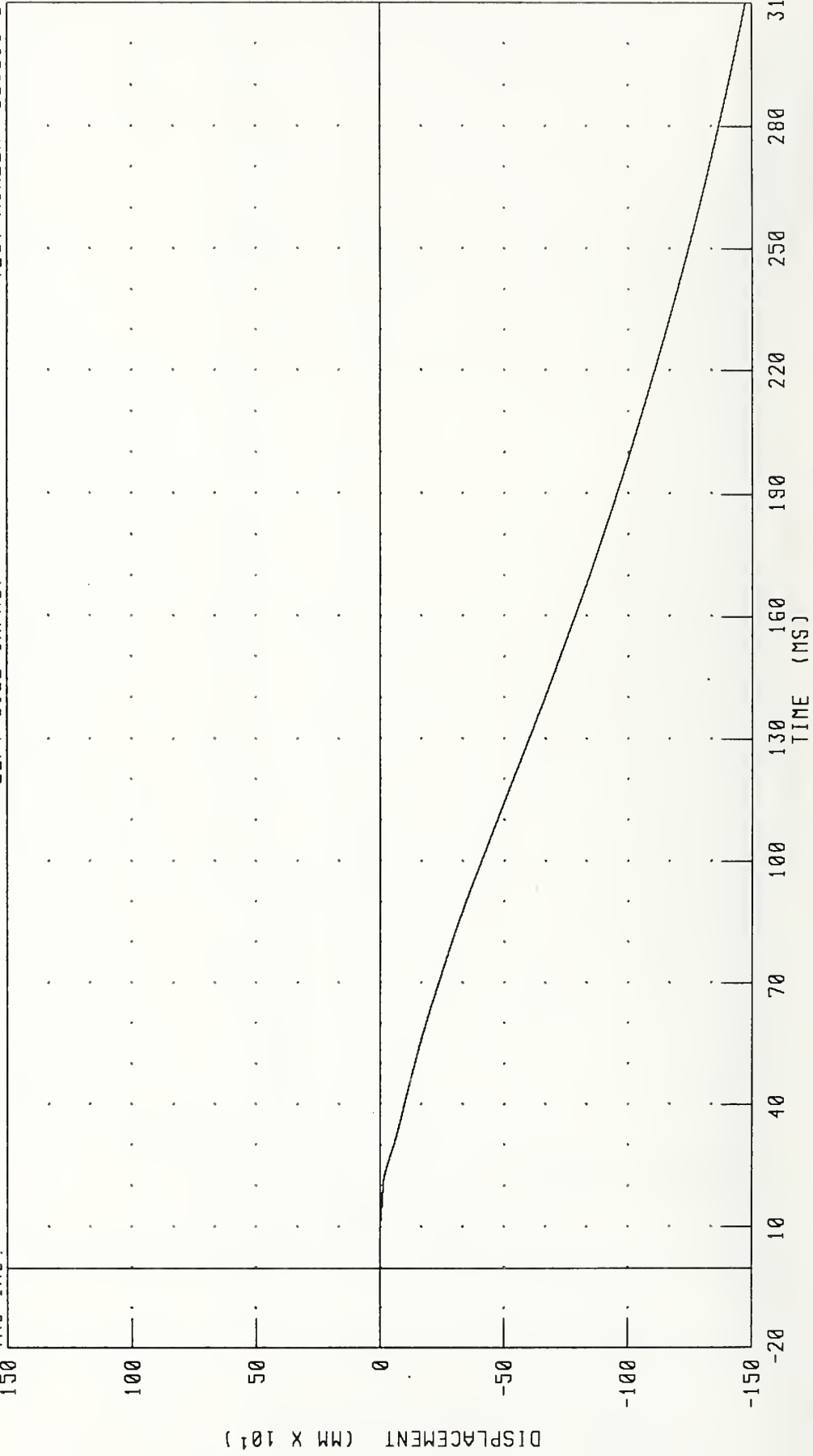
PEAK DATA: 0 36 KM/H @ 8.96 MS, -23 40 KM/H @ 131 60 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
LEFT REAR SEAT Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: TLR01 FILTER: CH CLASS 180

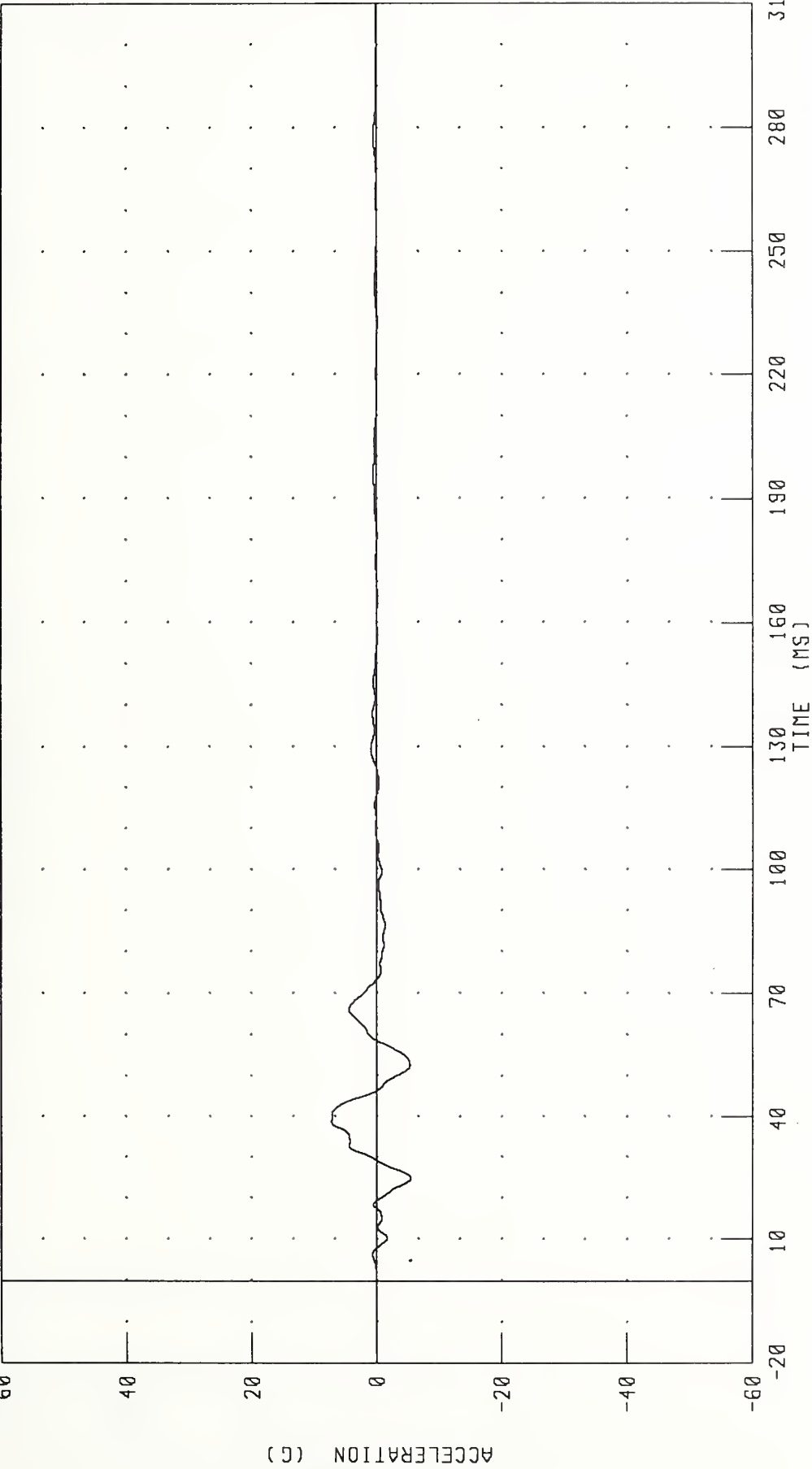
PEAK DATA 0 08 MM @ 4.56 MS; -1472.91 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT X-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: TRRXG1 FILTER: CH. CLASS 60

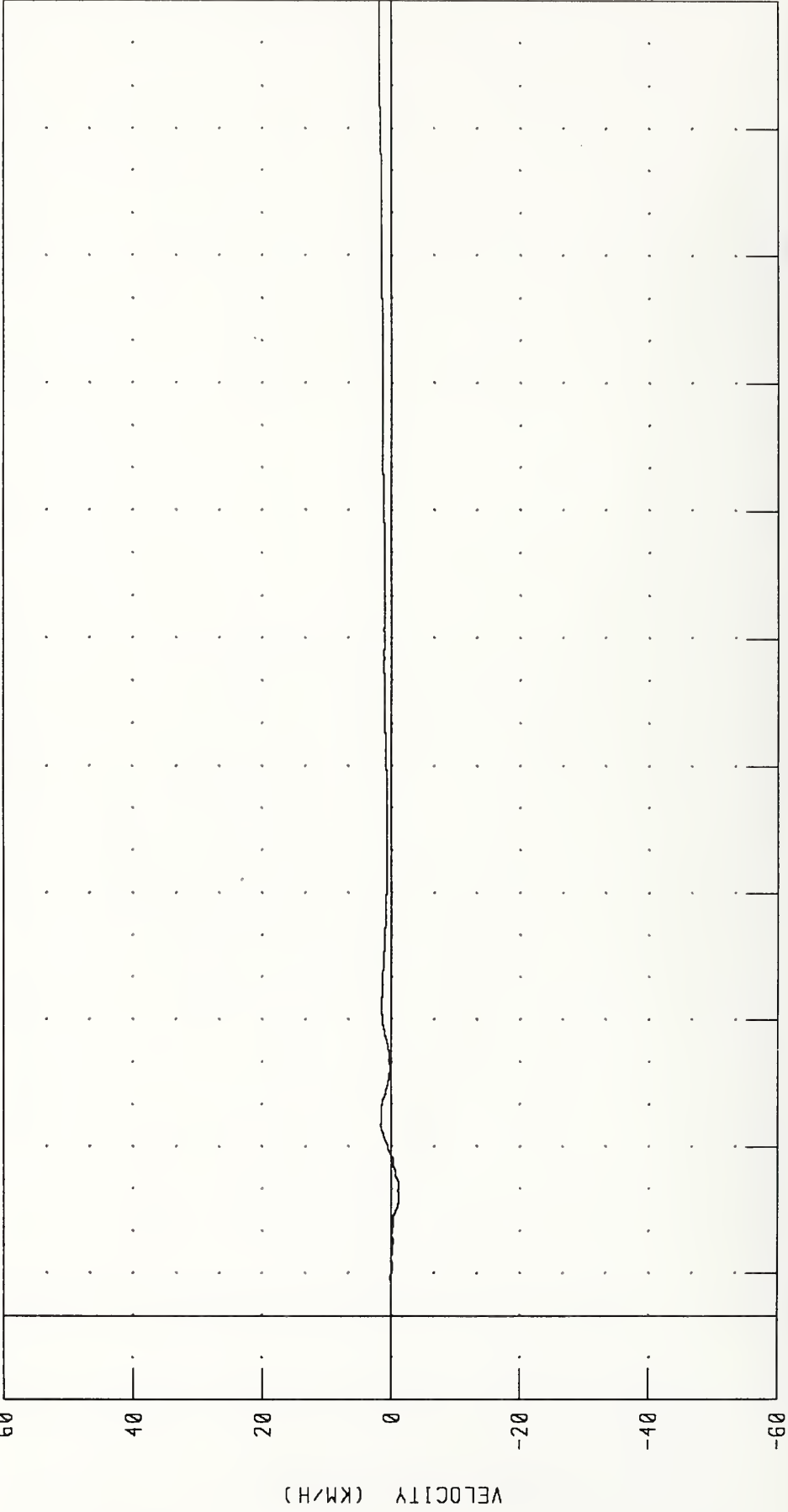
PEAK DATA: 7.23 G @ 38.80 MS, -5.49 G @ 24.80 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT X-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.

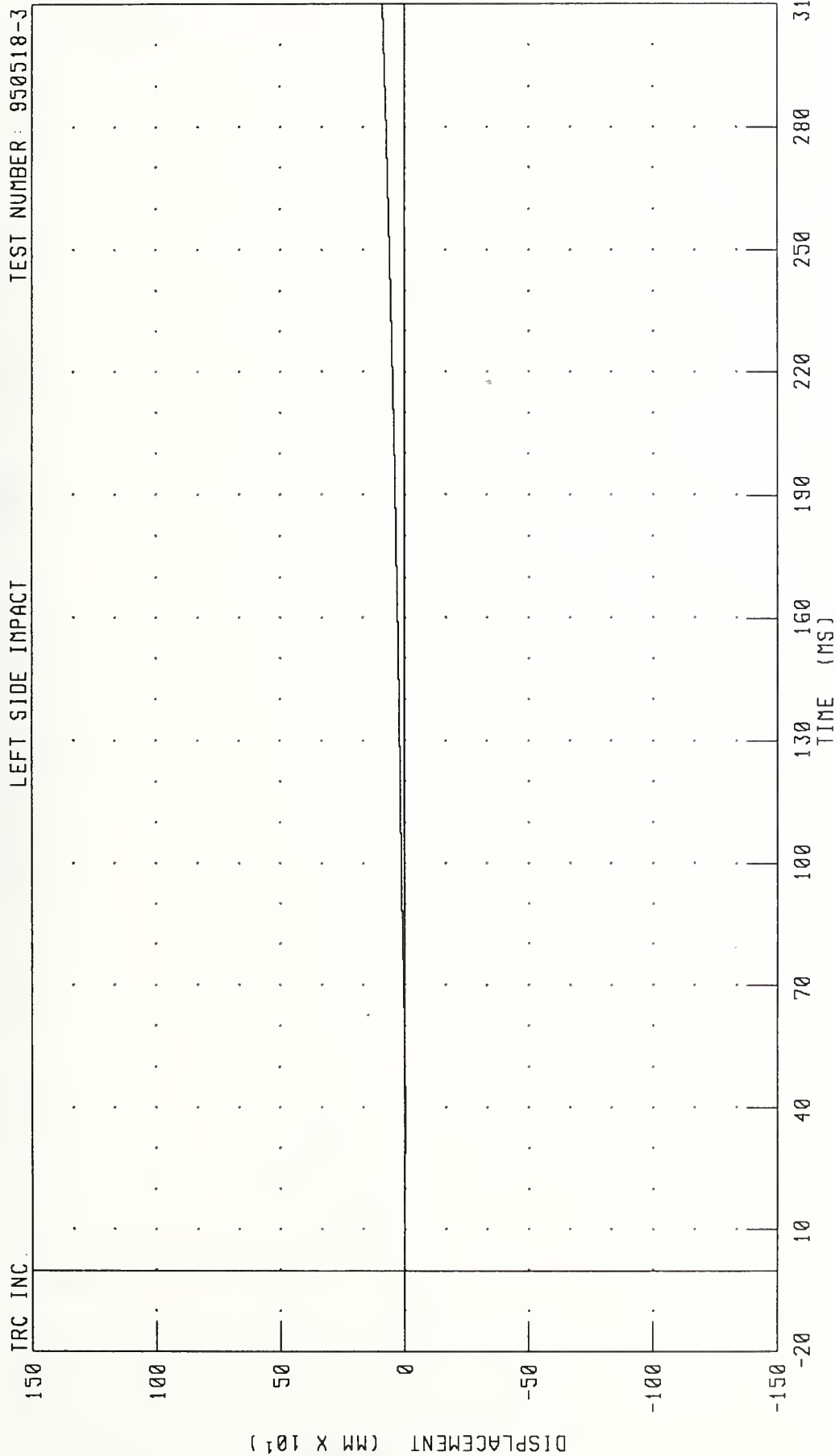


CHANNEL: TRRXV1 FILTER: CH CLASS 180 PEAK DATA: 1.95 KM/H @ 310.00 MS; -1.23 KM/H @ 30.96 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 RIGHT REAR SEAT X-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

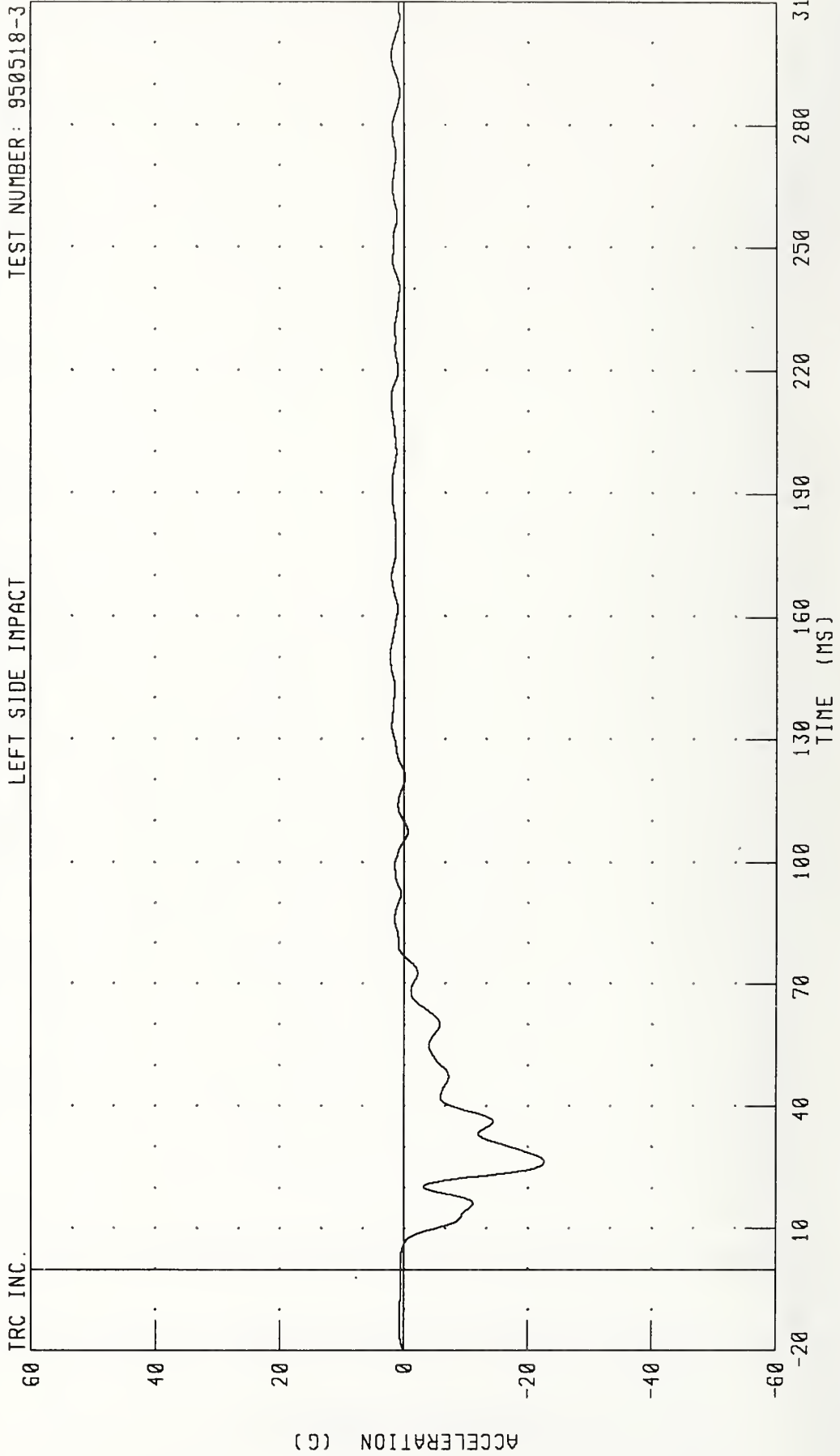


CHANNEL: TRRXD1 FILTER: CH CLASS 180

PEAK DATA: 89 08 MM @ 310.00 MS; -3 77 MM @ 37 92 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT Y-AXIS ACCELERATION

LEFT SIDE IMPACT TEST NUMBER: 950518-3



CHANNEL: TRRYG1 FILTER: CH. CLASS 60

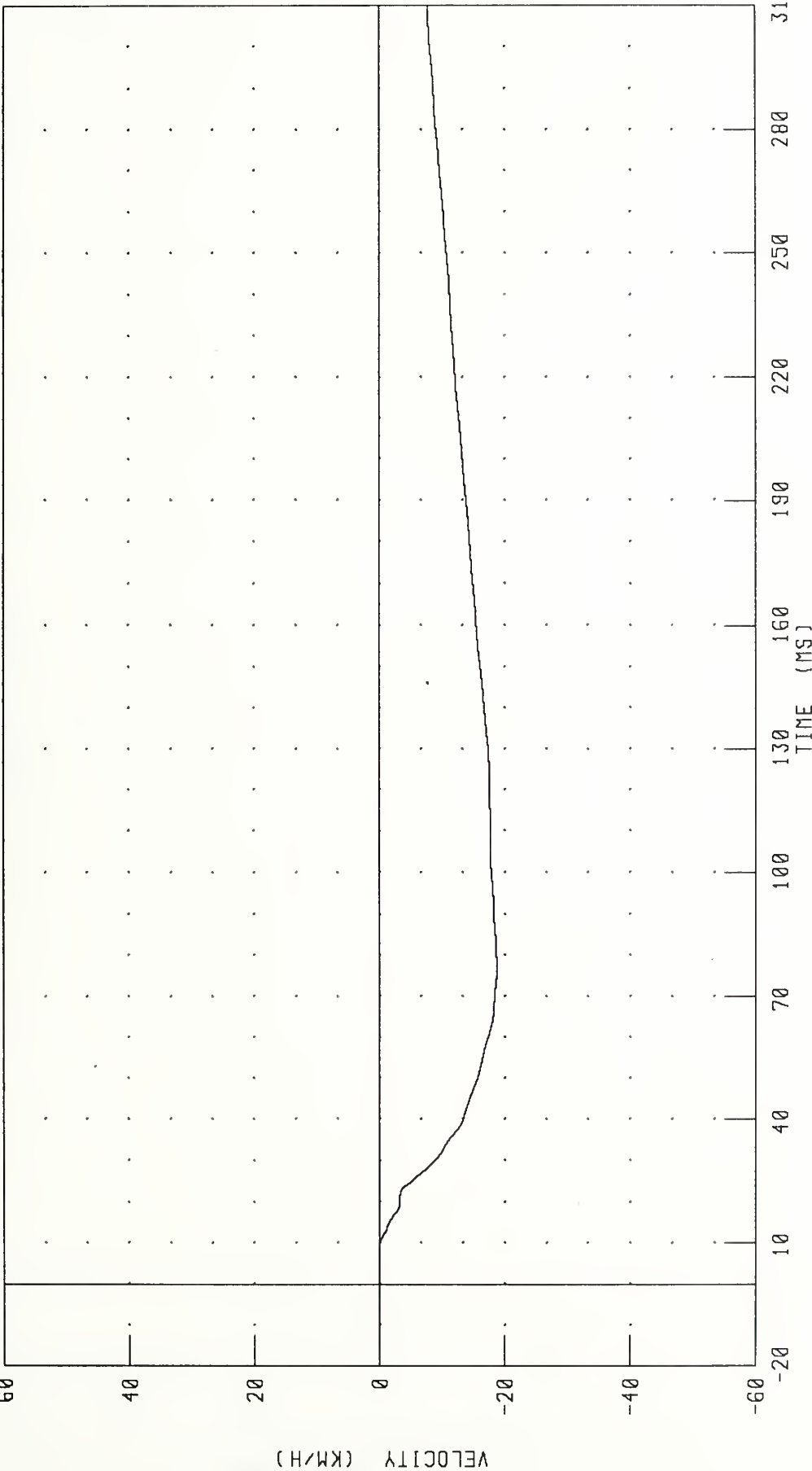
PEAK DATA: 2.26 G @ 150.64 MS; -22.65 G @ 26.48 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT Y-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

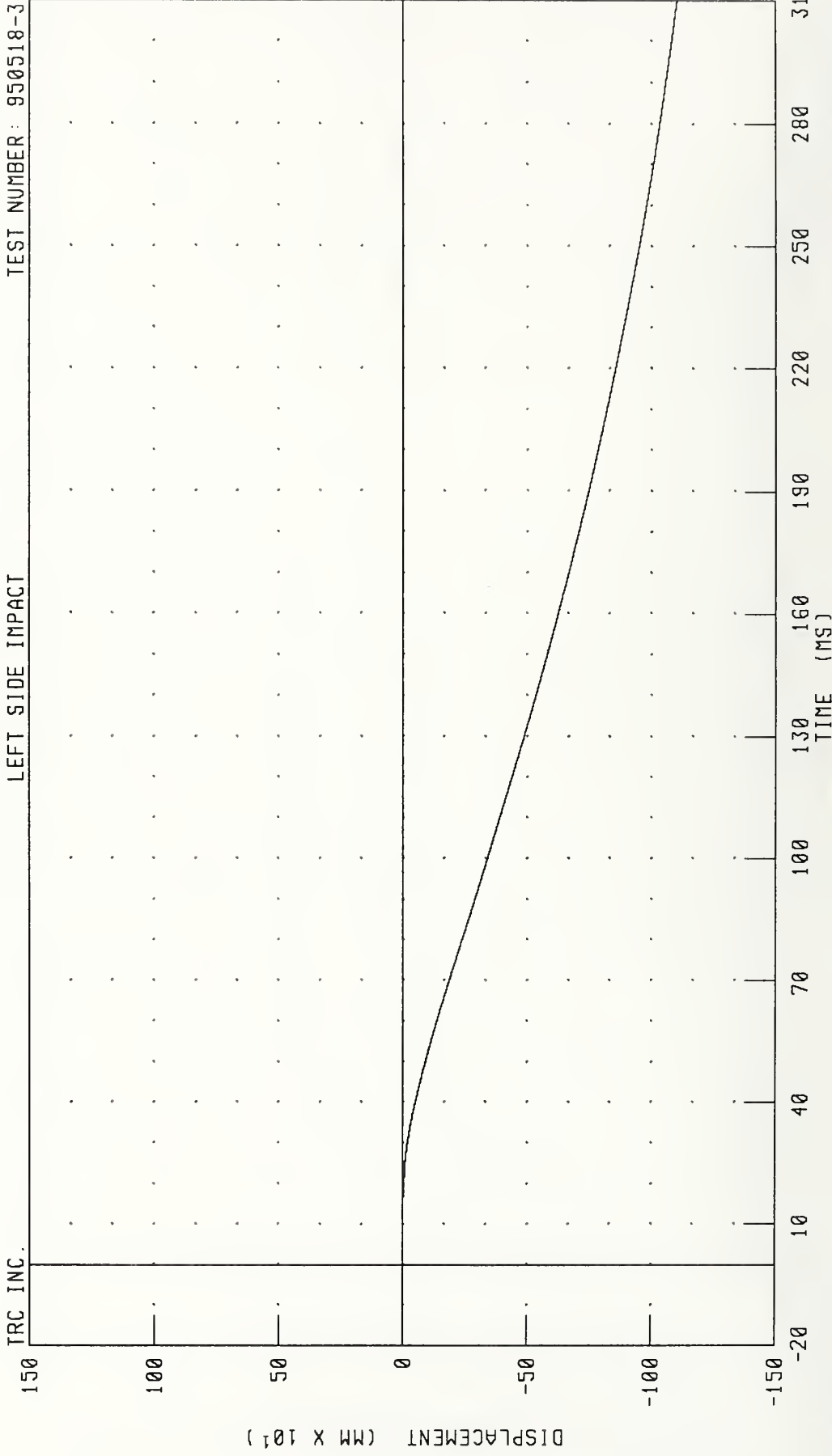
TRC INC.



CHANNEL: TRRYV1 FILTER: CH. CLASS 180

PEAK DATA: 0.09 KM/H @ 5.04 MS, -18.79 KM/H @ 77.12 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
RIGHT REAR SEAT Y-AXIS DISPLACEMENT



CHANNEL: TRRYD1 FILTER: CH. CLASS 180

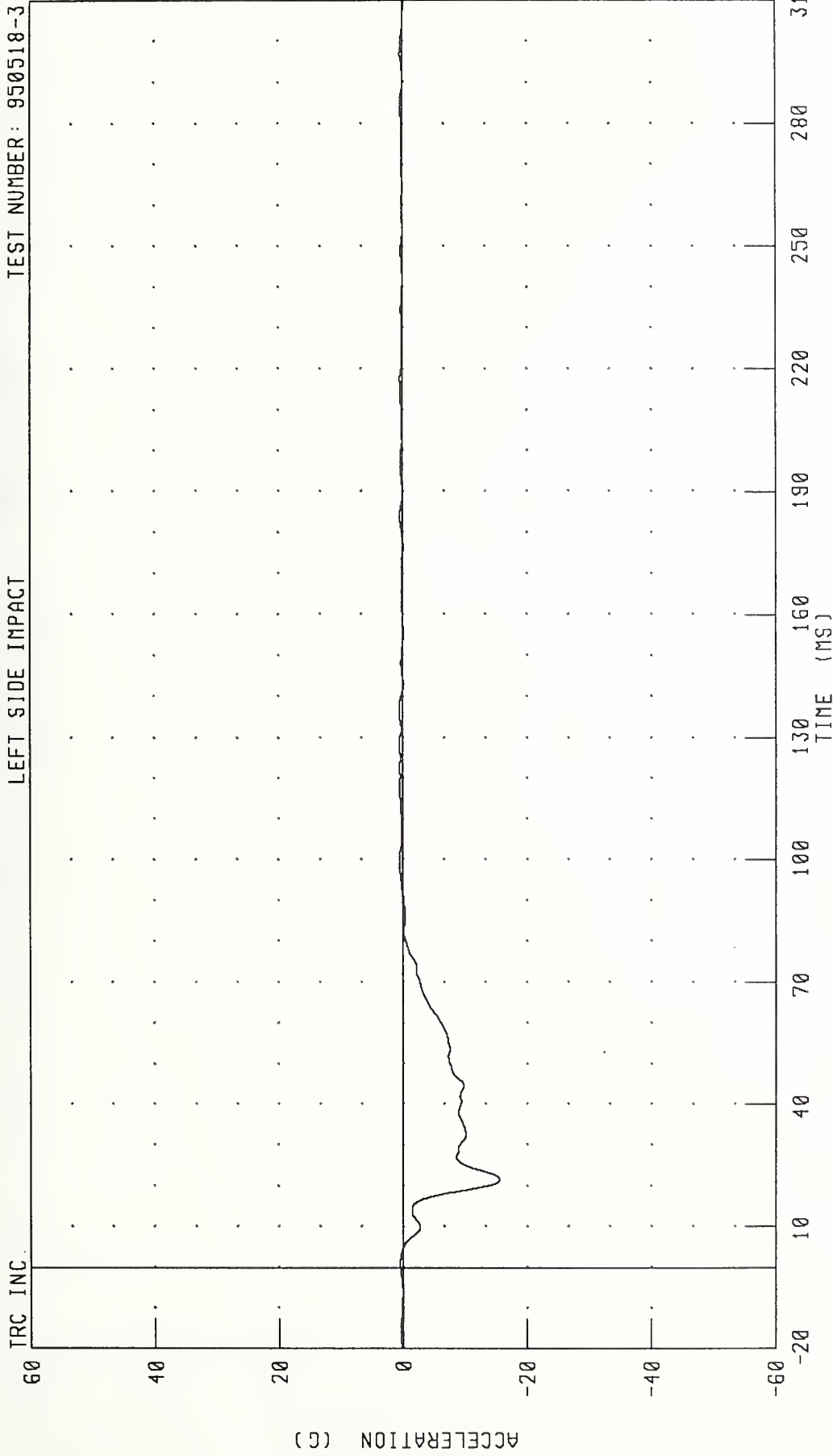
PEAK DATA: 0.15 MM @ 9.76 MS, -1103.36 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY X-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



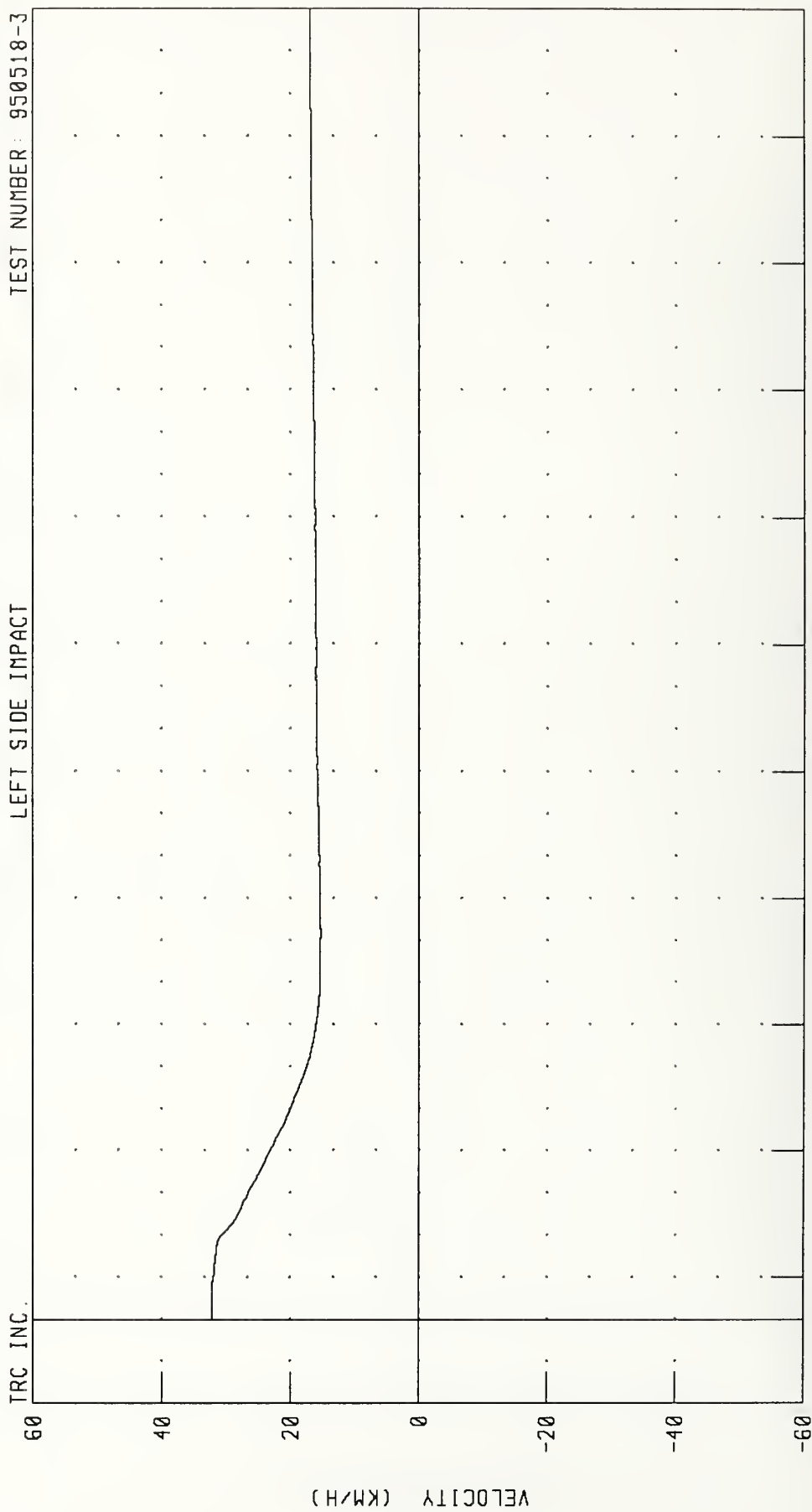
CHANNEL: BCGXG1 FILTER: CH. CLASS 60

PEAK DATA: 0.58 G @ 136.56 MS, -15.63 G @ 21.60 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY X-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT



CHANNEL: BCCXVI FILTER: CH CLASS 180

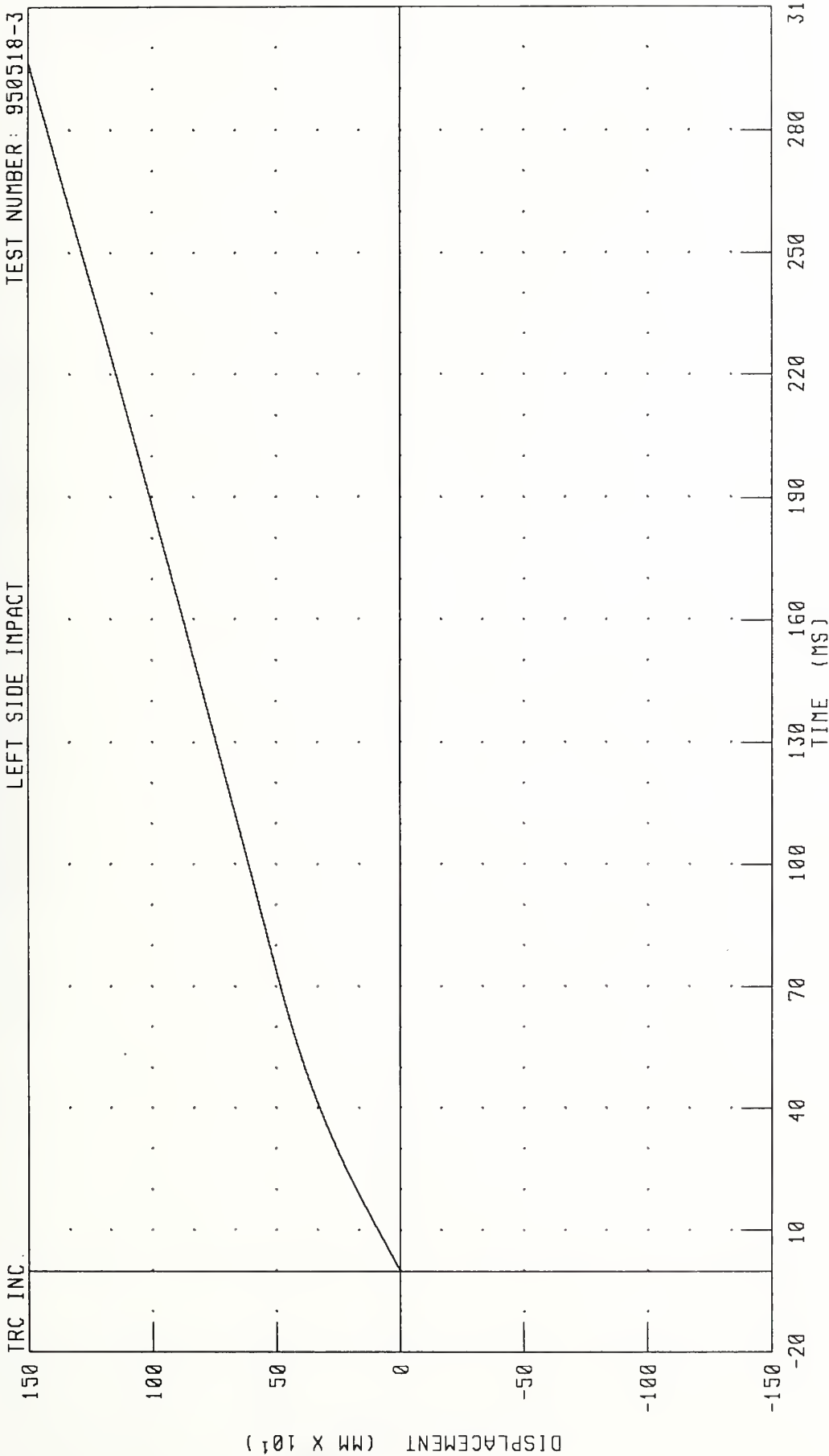
PEAK DATA: 32.25 KM/H @ 4.56 MS; 15.32 KM/H @ 91.68 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY X-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



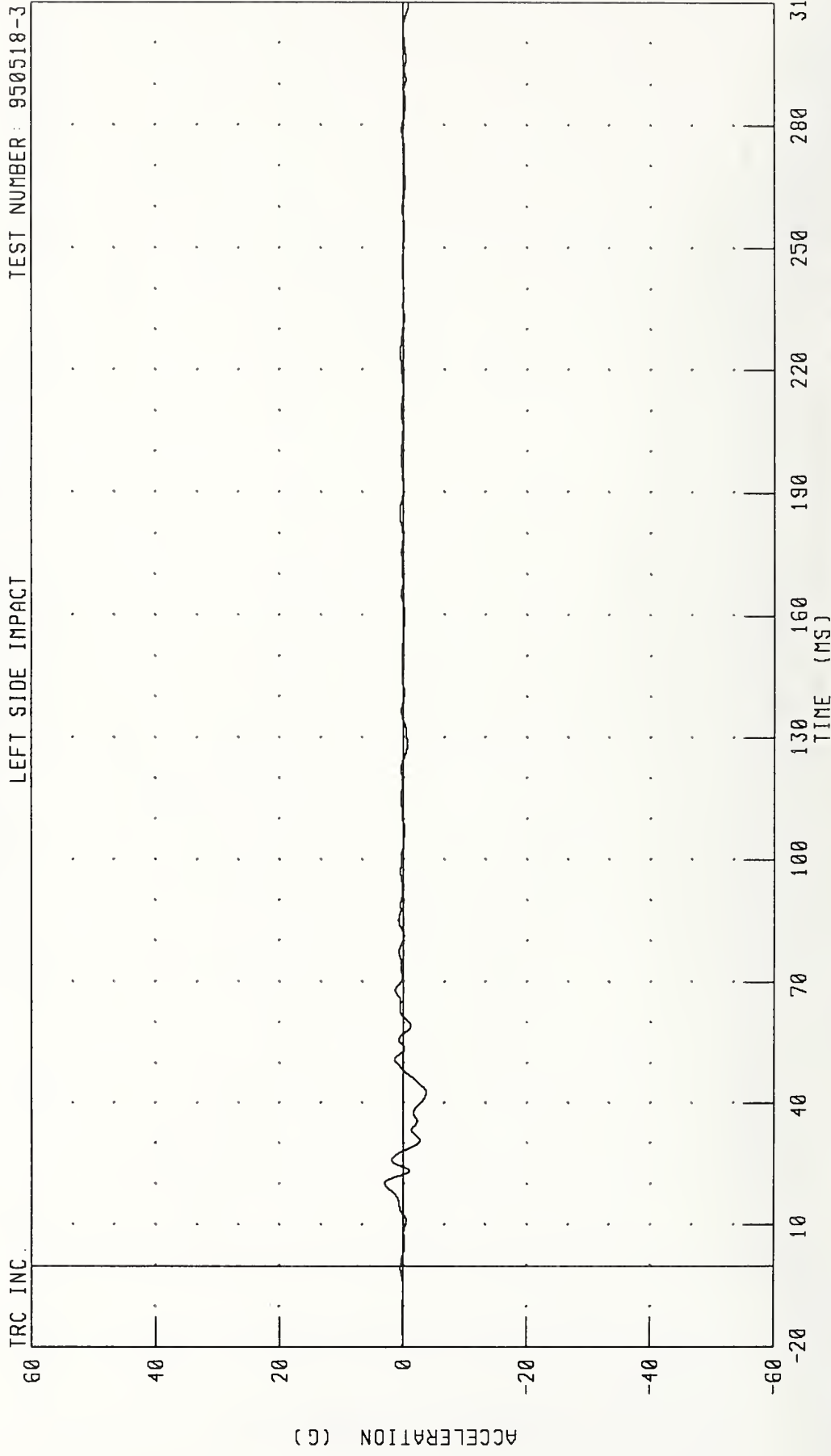
CHANNEL: BCGXD1 FILTER: CH. CLASS 180

PEAK DATA: 1562 58 MM @ 310.00 MS, 0 00 MM @ 0 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Y-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT



CHANNEL: BCGYG1 FILTER: CH. CLASS 60

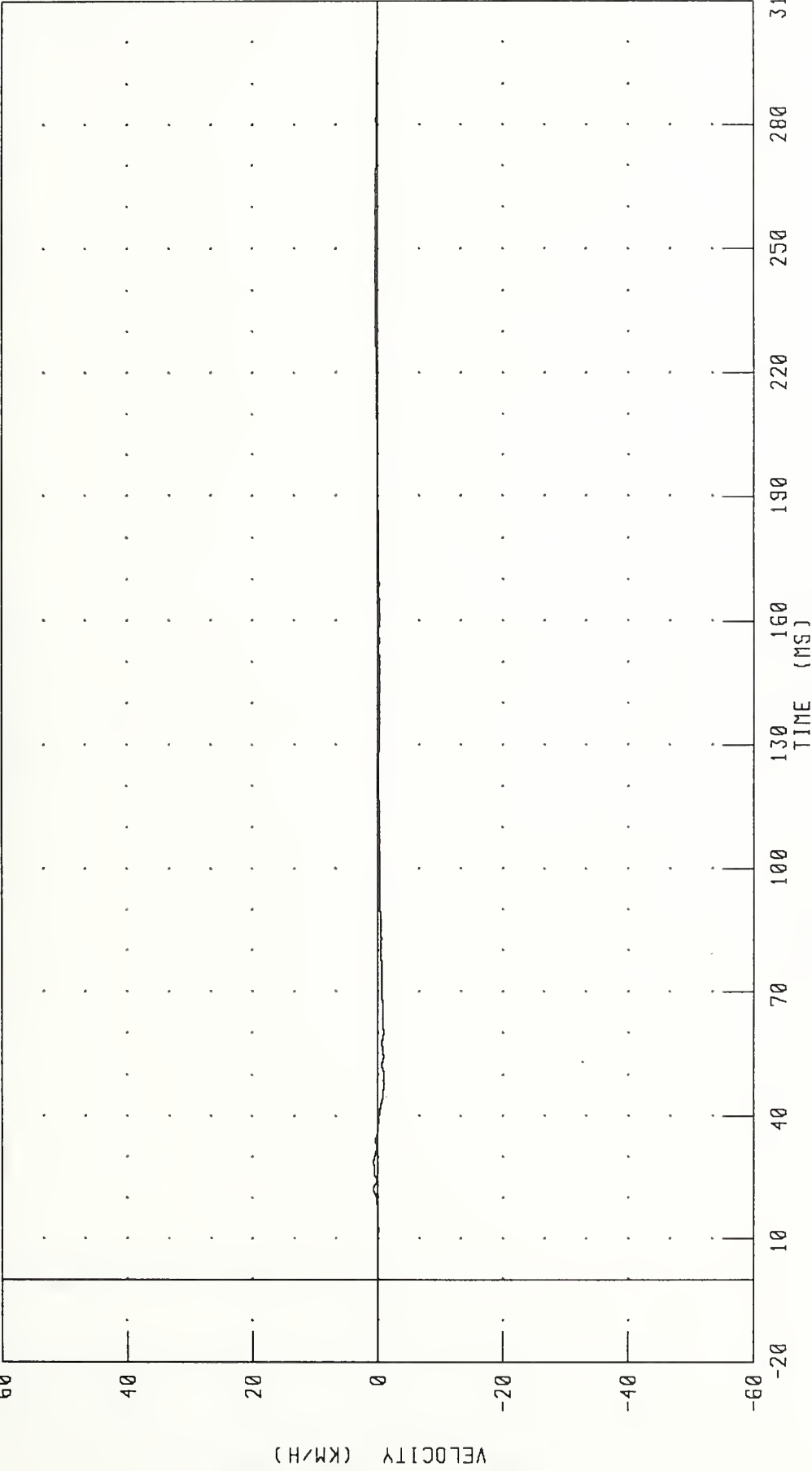
PEAK DATA: 3.07 G @ 20.16 MS; -3.74 G @ 42.64 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY Y-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC



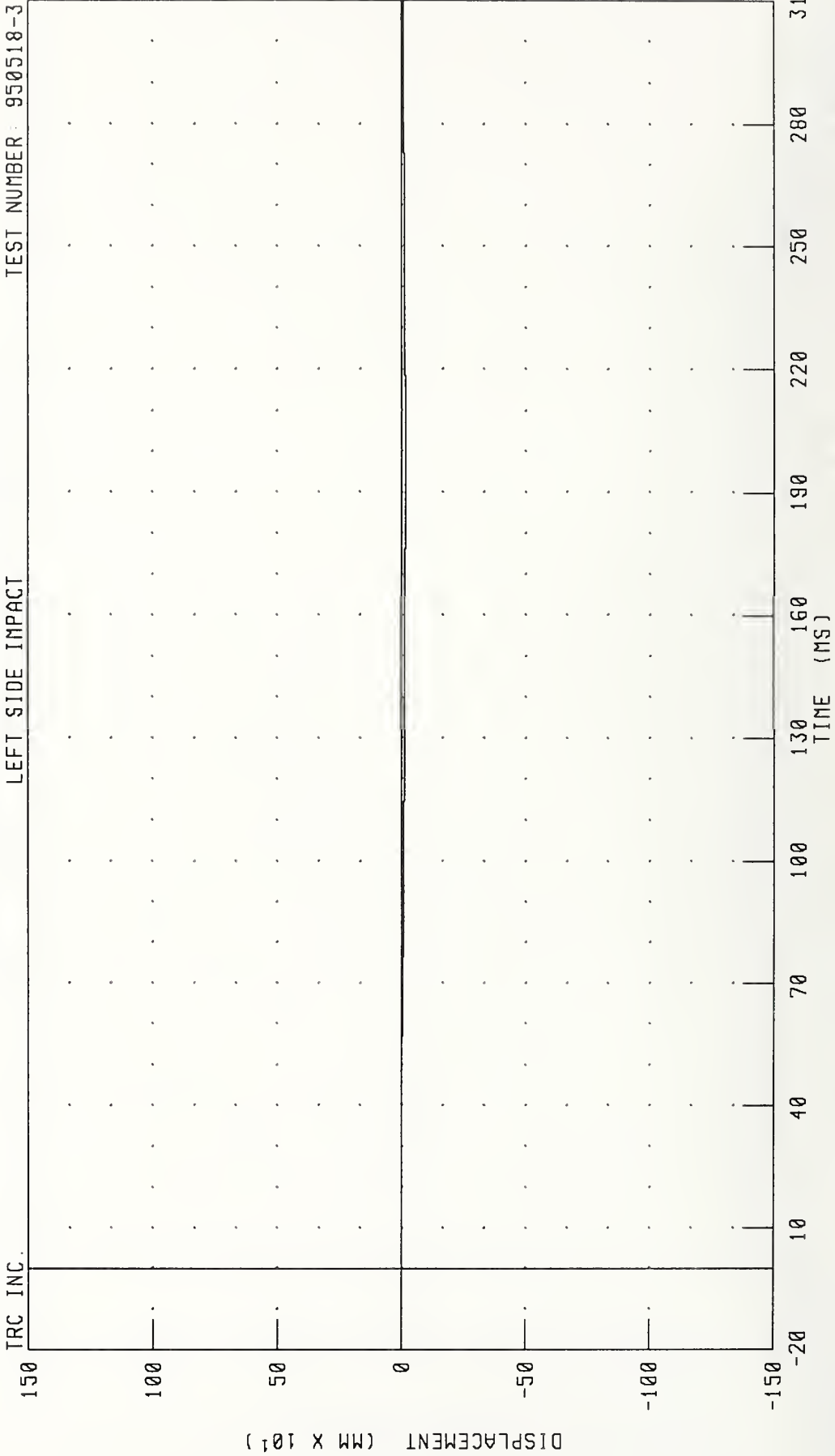
CHANNEL: BCGYV1 FILTER: CH. CLASS 180

PEAK DATA: 0.67 KM/H @ 22.08 MS, -1.01 KM/H @ 50.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT



CHANNEL: BCGYD1 FILTER: CH. CLASS 180

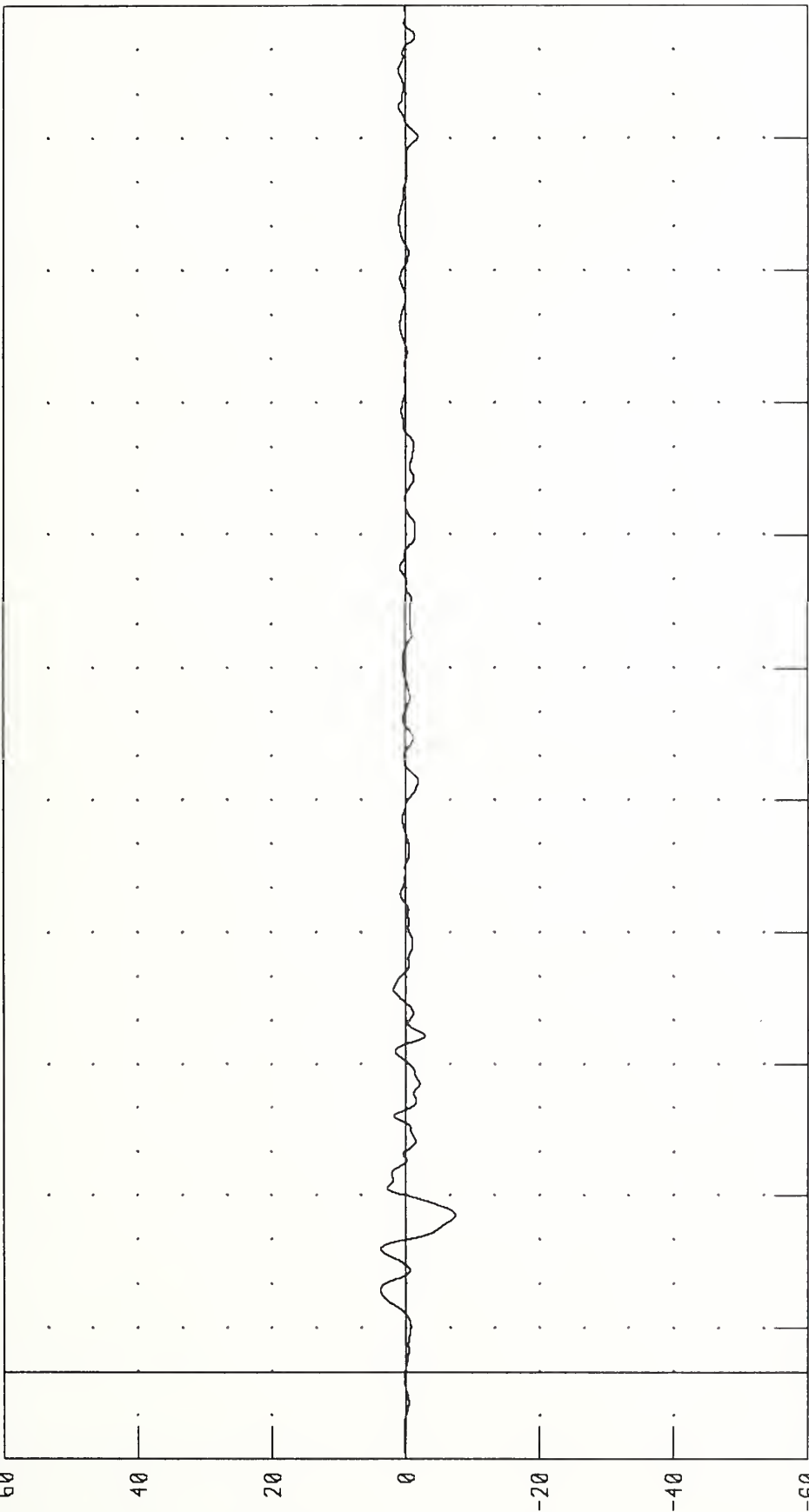
PEAK DATA: 1.84 MM @ 35.84 MS, -15.13 MM @ 197.76 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Z-AXIS ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: BCGZG1 FILTER: CH CLASS 60

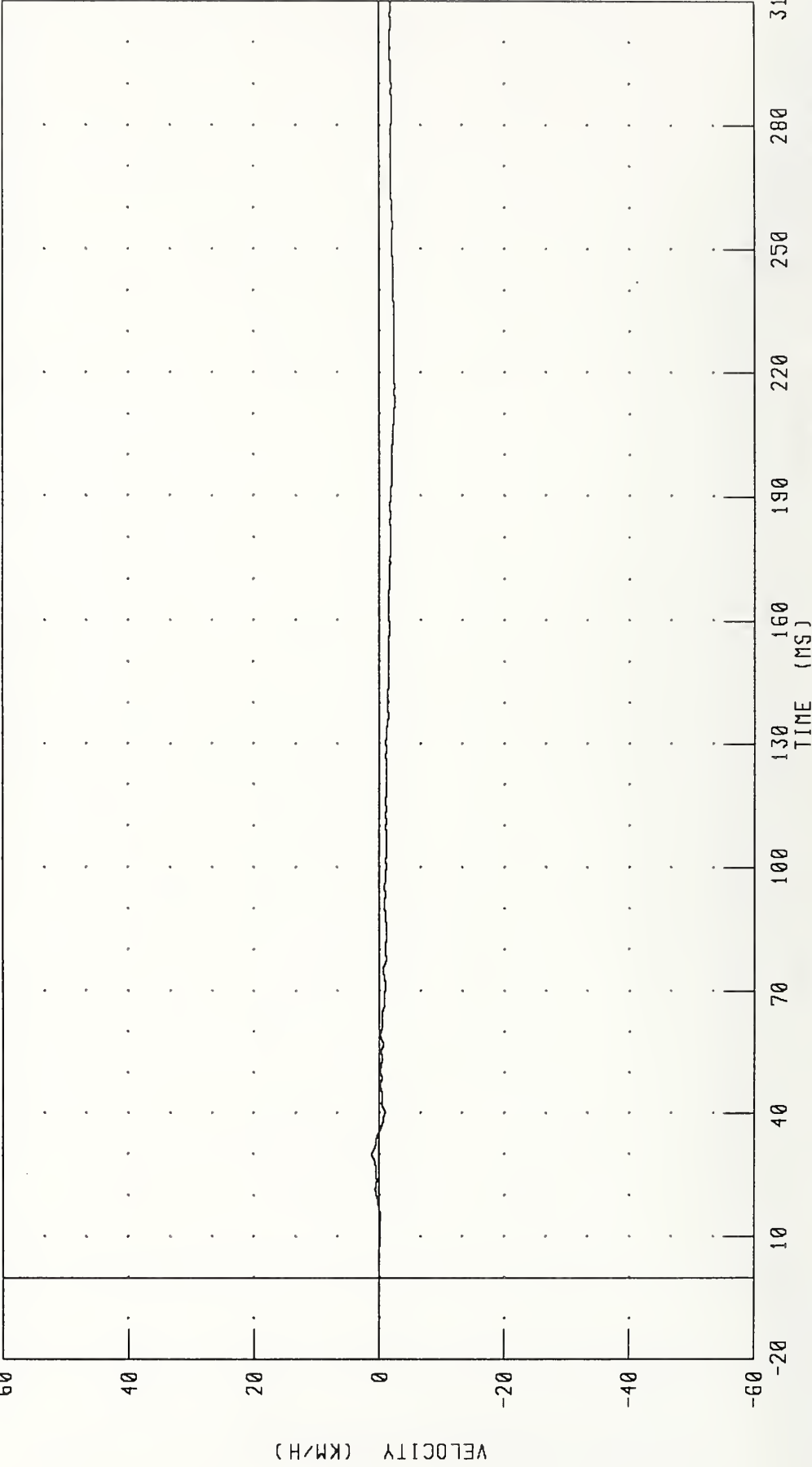
PEAK DATA: 3.78 G @ 18.64 MS, -7.45 G @ 35.52 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Z-AXIS VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: BCGZV1 FILTER: CH CLASS 180

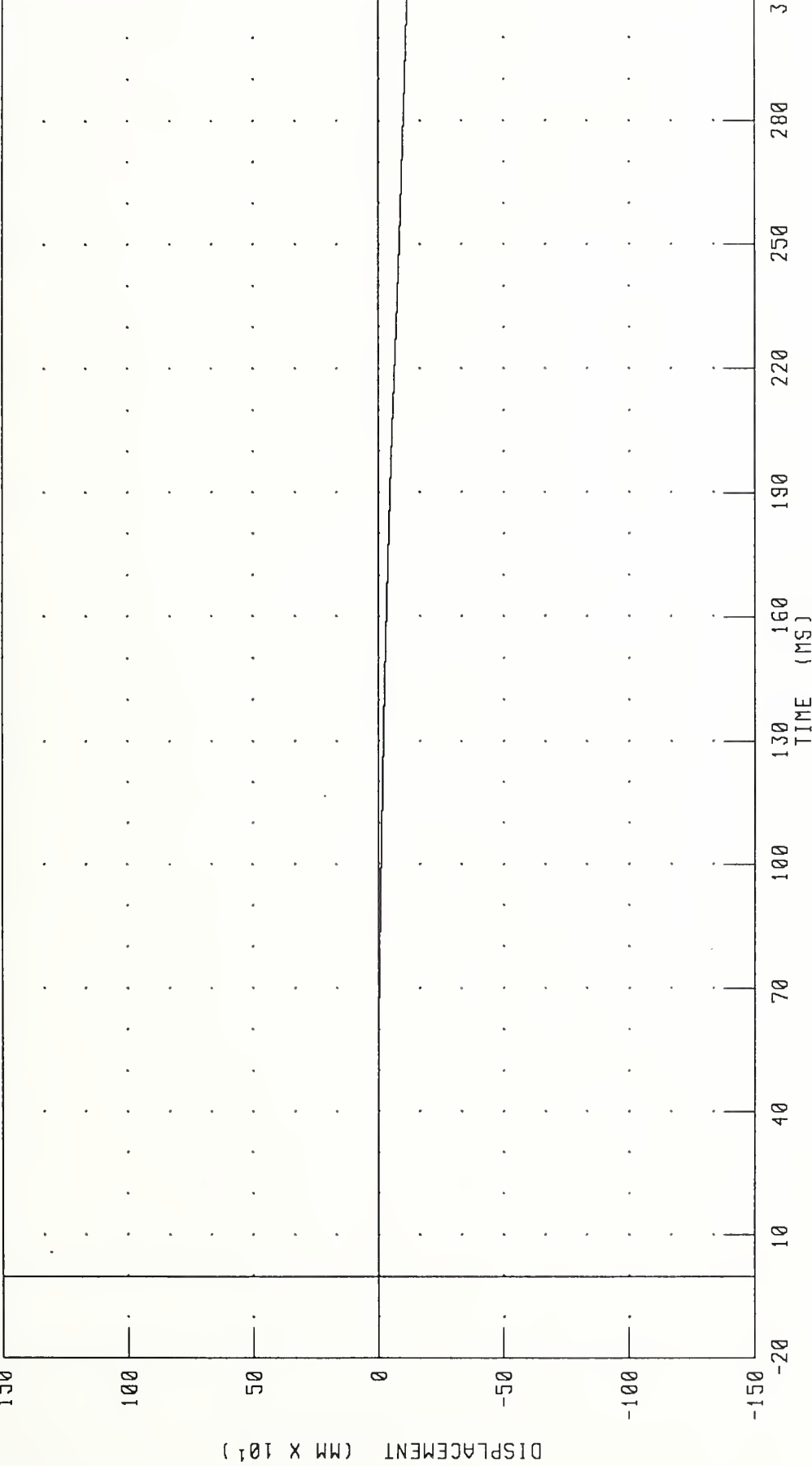
PEAK DATA: 1.16 KM/H @ 29.92 MS; -2.52 KM/H @ 212.96 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY Z-AXIS DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: BCGZD1 FILTER: CH CLASS 180

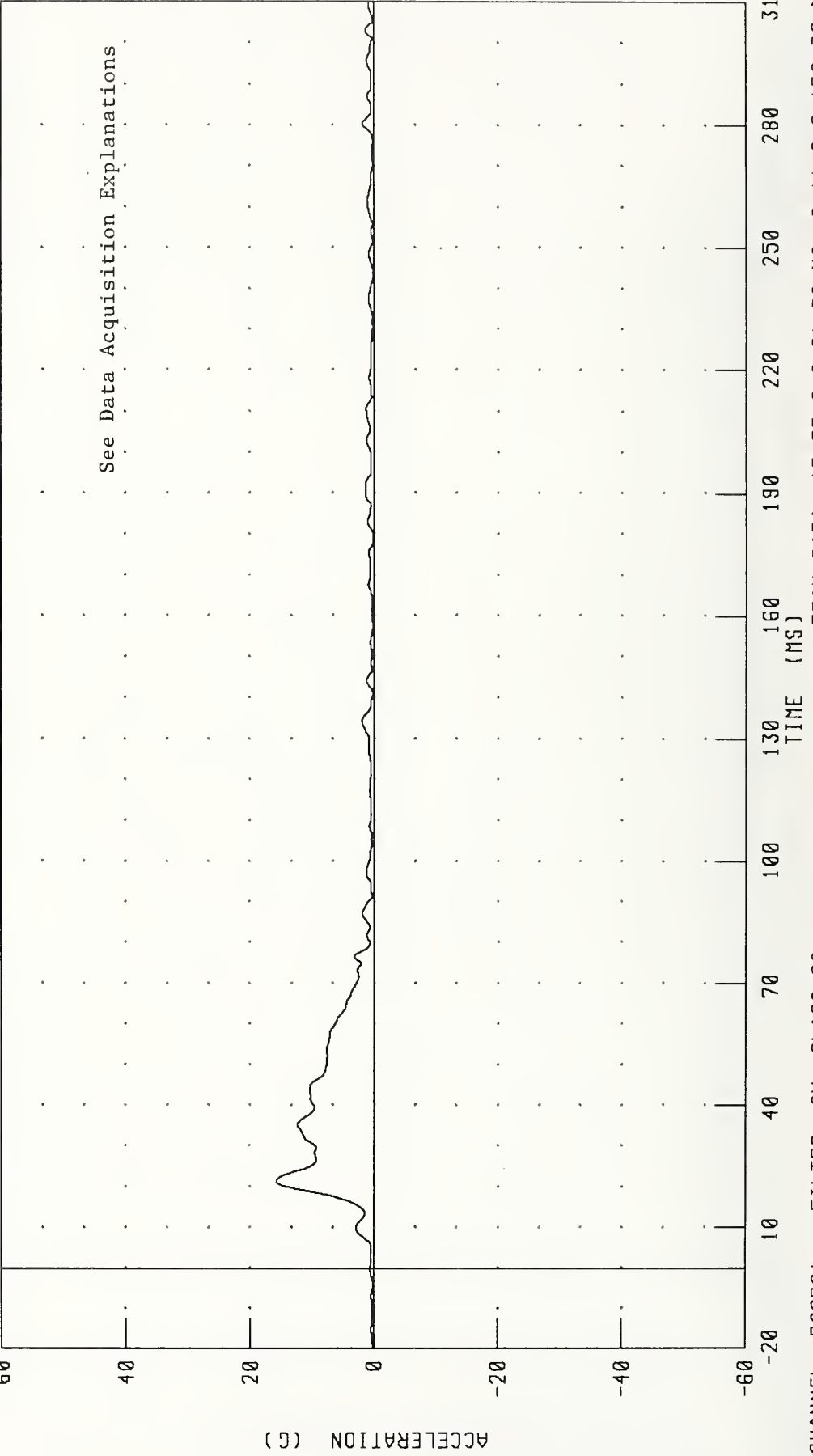
PEAK DATA: 2.28 MM @ 35.52 MS, -115.28 MM @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY RESULTANT ACCELERATION

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: BCGRGI FILTER: CH CLASS 60

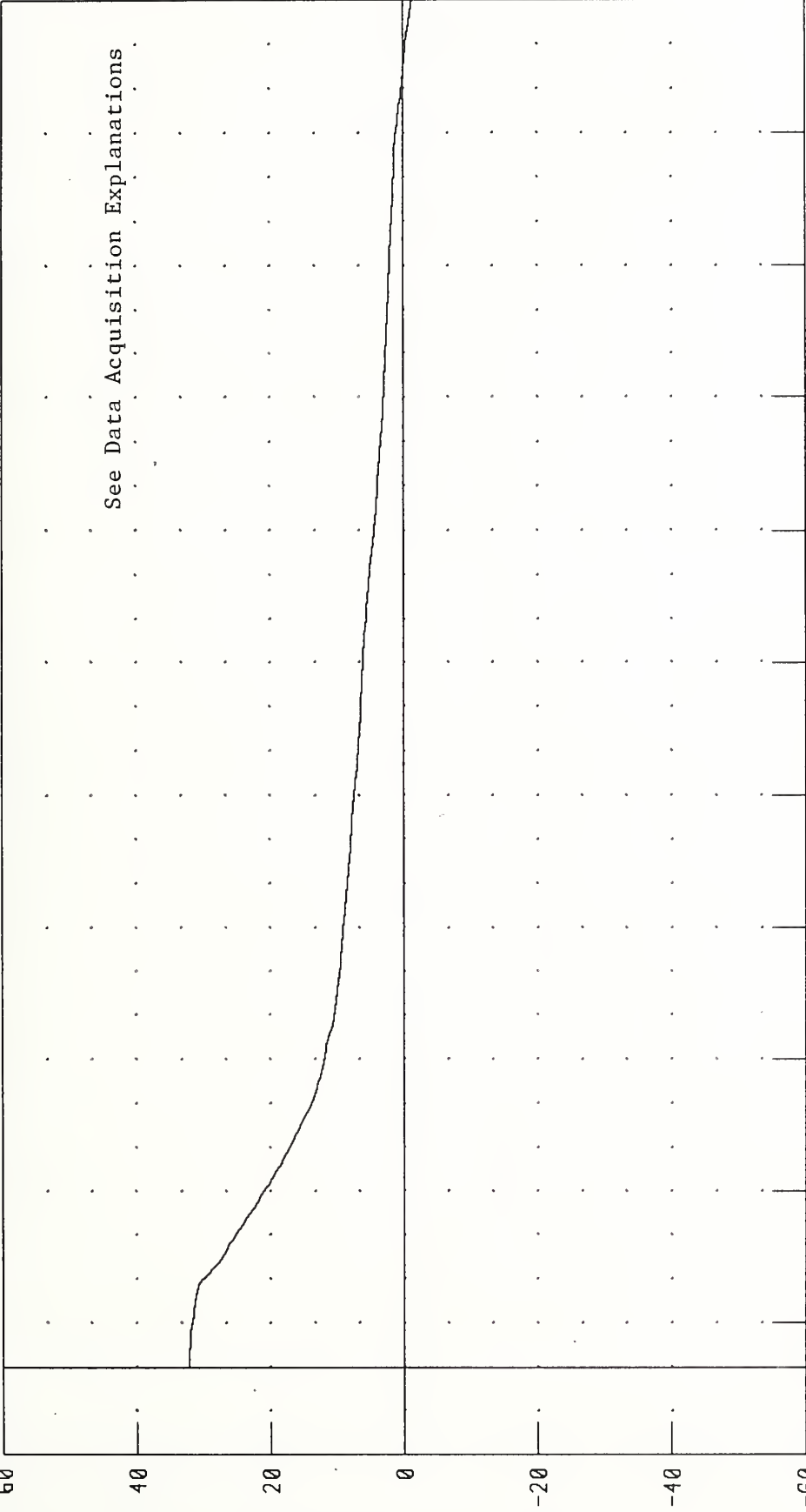
PEAK DATA: 15.75 G @ 21.36 MS; 0.11 G @ 178.32 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY RESULTANT VELOCITY

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



See Data Acquisition Explanations

PEAK DATA: 32.20 KM/H @ 0.00 MS; -1.28 KM/H @ 310.00 MS

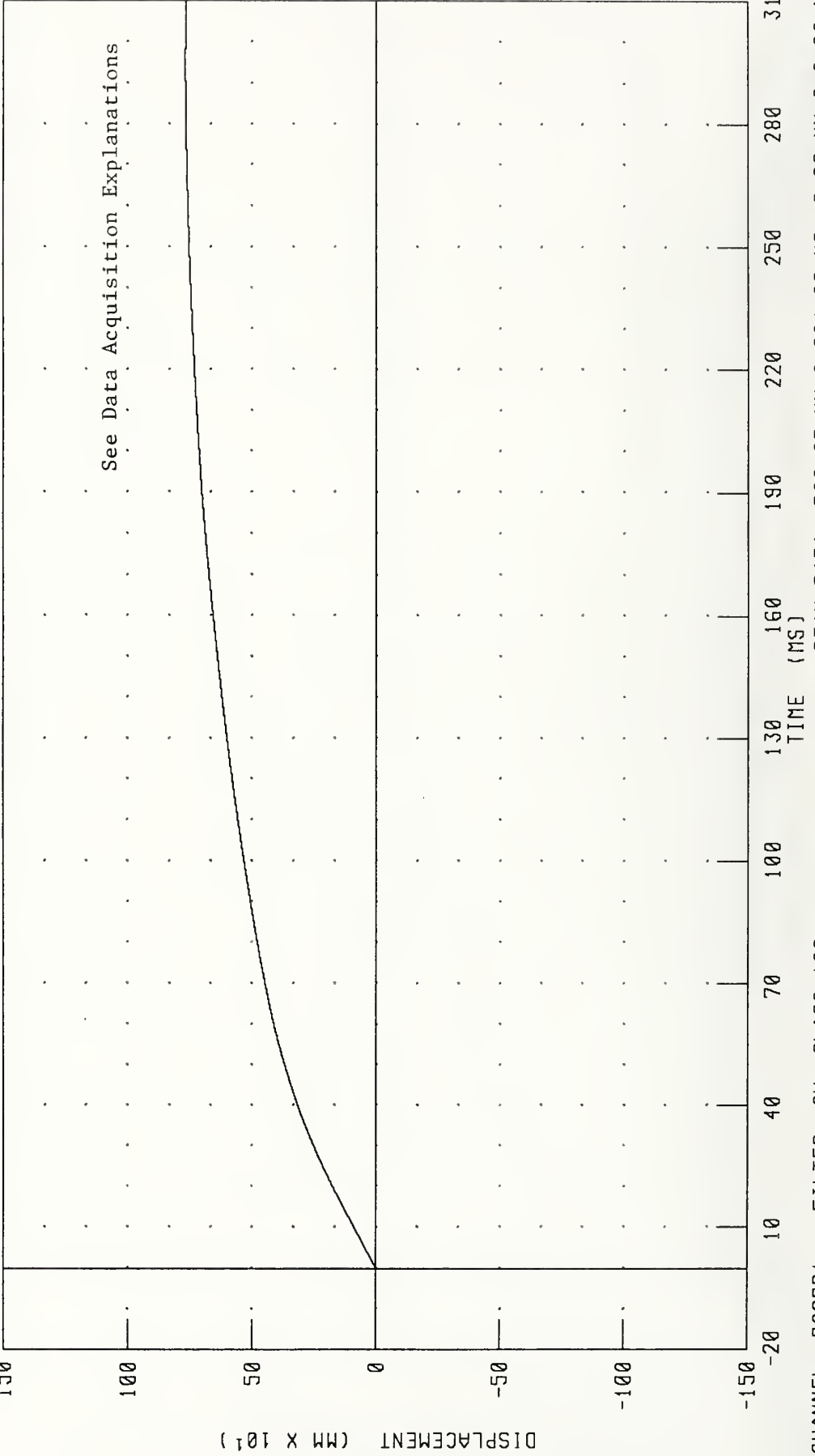
CHANNEL: BCGRV1 FILTER: CH. CLASS 180

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY RESULTANT DISPLACEMENT

TEST NUMBER: 950518-3

LEFT SIDE IMPACT

TRC INC.



CHANNEL: BCGRD1 FILTER: CH CLASS 180

PEAK DATA: 768.67 MM @ 294.80 MS; 0 00 MM @ 0 00 MS

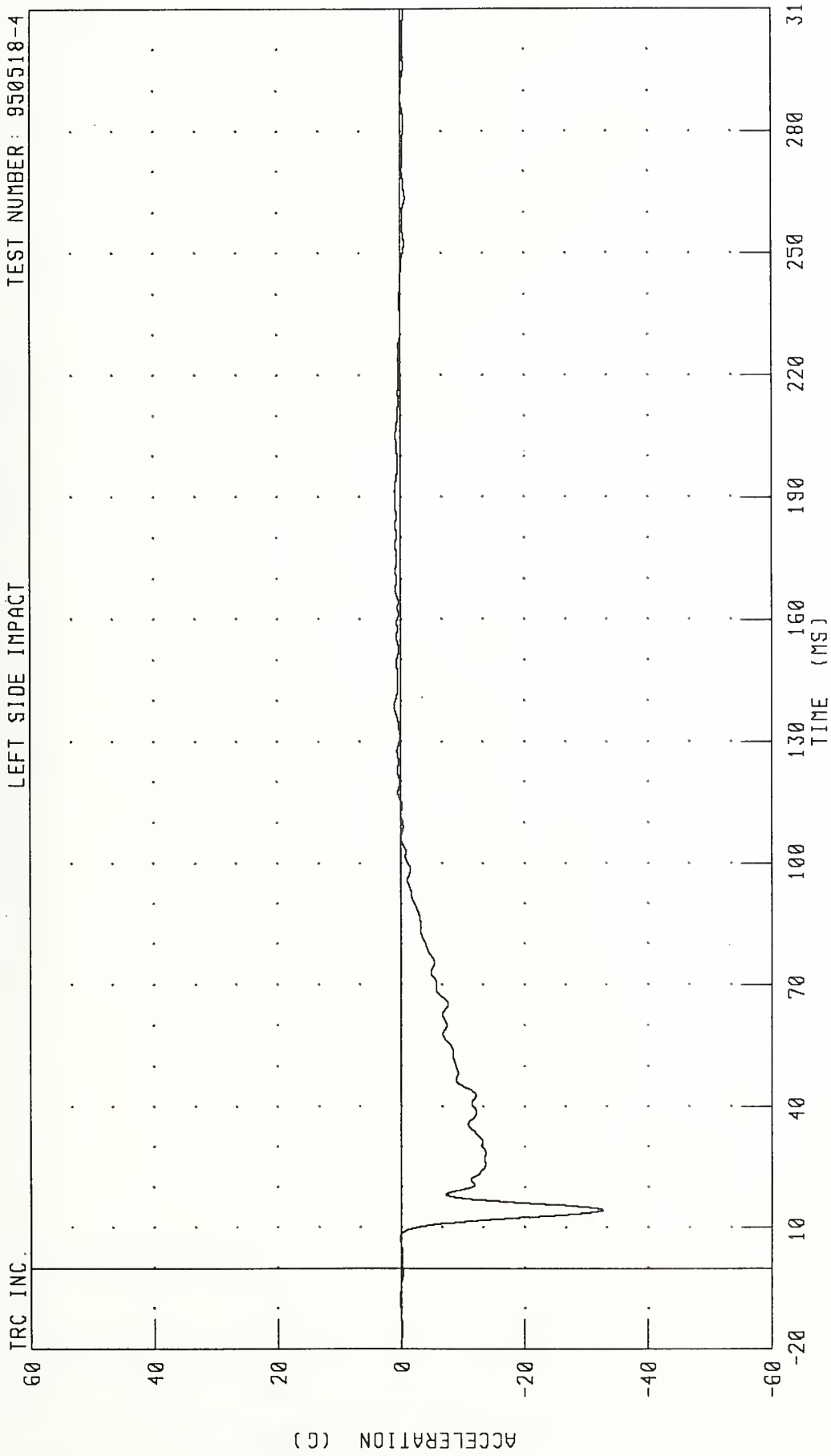
Data Plots

Test No. 950518-4

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY X-AXIS ACCELERATION

TEST NUMBER: 950518-4

LEFT SIDE IMPACT



CHANNEL: BCGXG1 FILTER: CH. CLASS 60

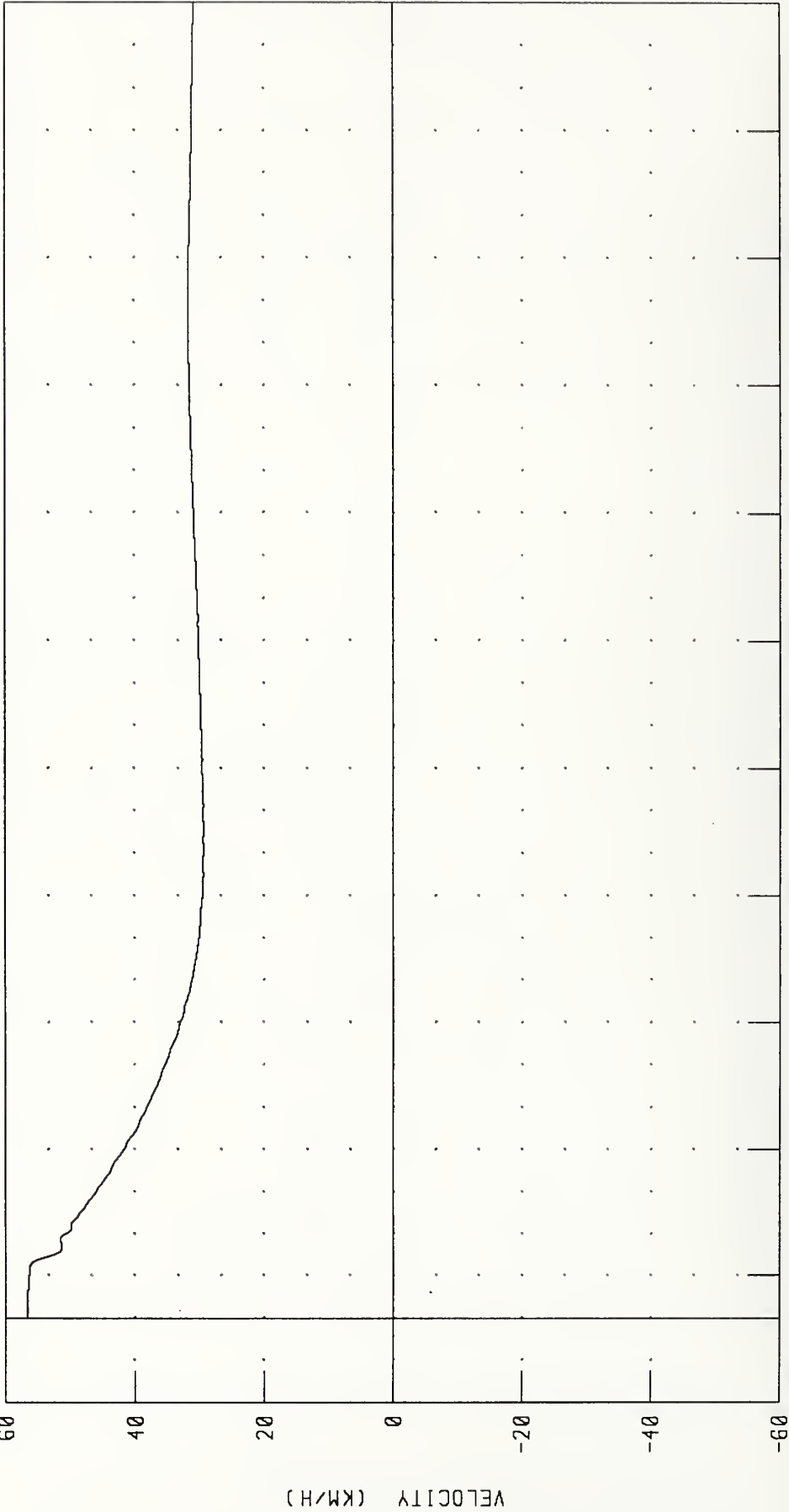
PEAK DATA: 1 05 G @ 138.72 MS, -32 63 G @ 14.32 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY X-AXIS VELOCITY

TEST NUMBER: 950518-4

LEFT SIDE IMPACT

TRC INC.



PEAK DATA: 56.52 KM/H @ 1.44 MS; 29.34 KM/H @ 115.92 MS

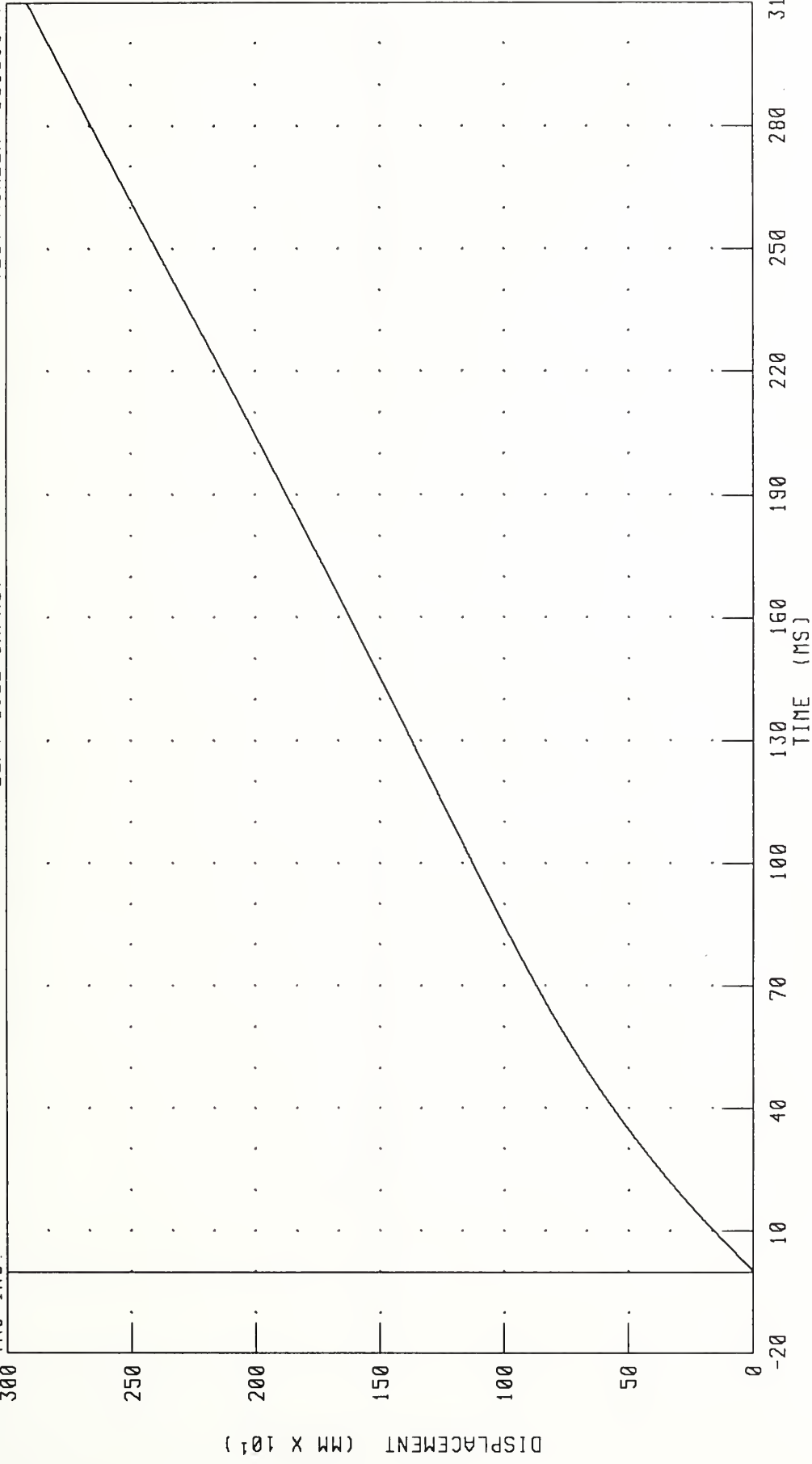
CHANNEL: BCGXY1 FILTER: CH CLASS 180

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY X-AXIS DISPLACEMENT

TEST NUMBER: 950518-4

LEFT SIDE IMPACT

TRC INC.



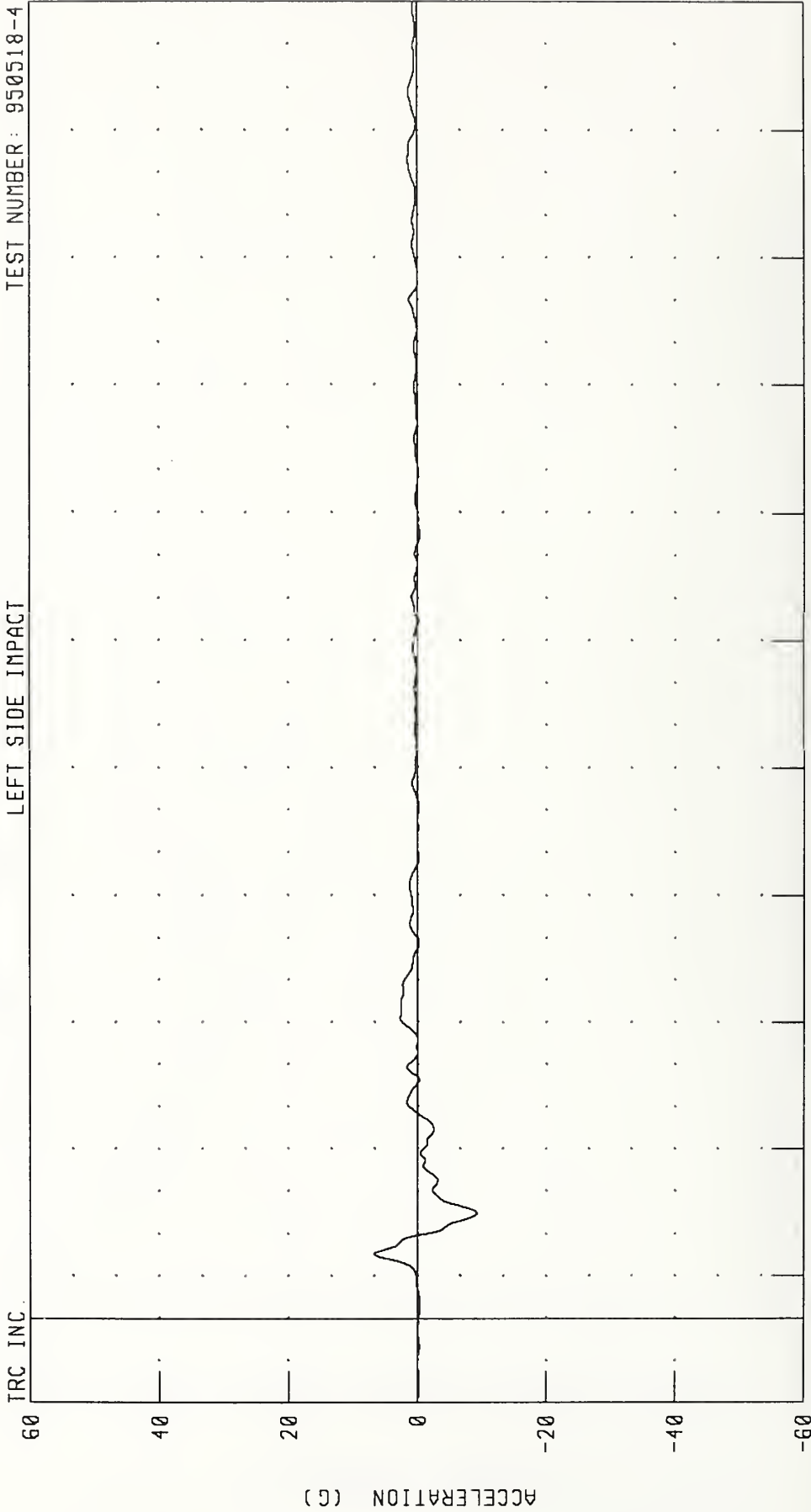
CHANNEL: BCGXD1 FILTER: CH. CLASS 180

PEAK DATA: 2917.78 MM @ 310 00 MS, 0 00 MM @ 0 00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Y-AXIS ACCELERATION

TEST NUMBER: 950518-4

LEFT SIDE IMPACT



CHANNEL: BCGYG1 FILTER: CH. CLASS 60

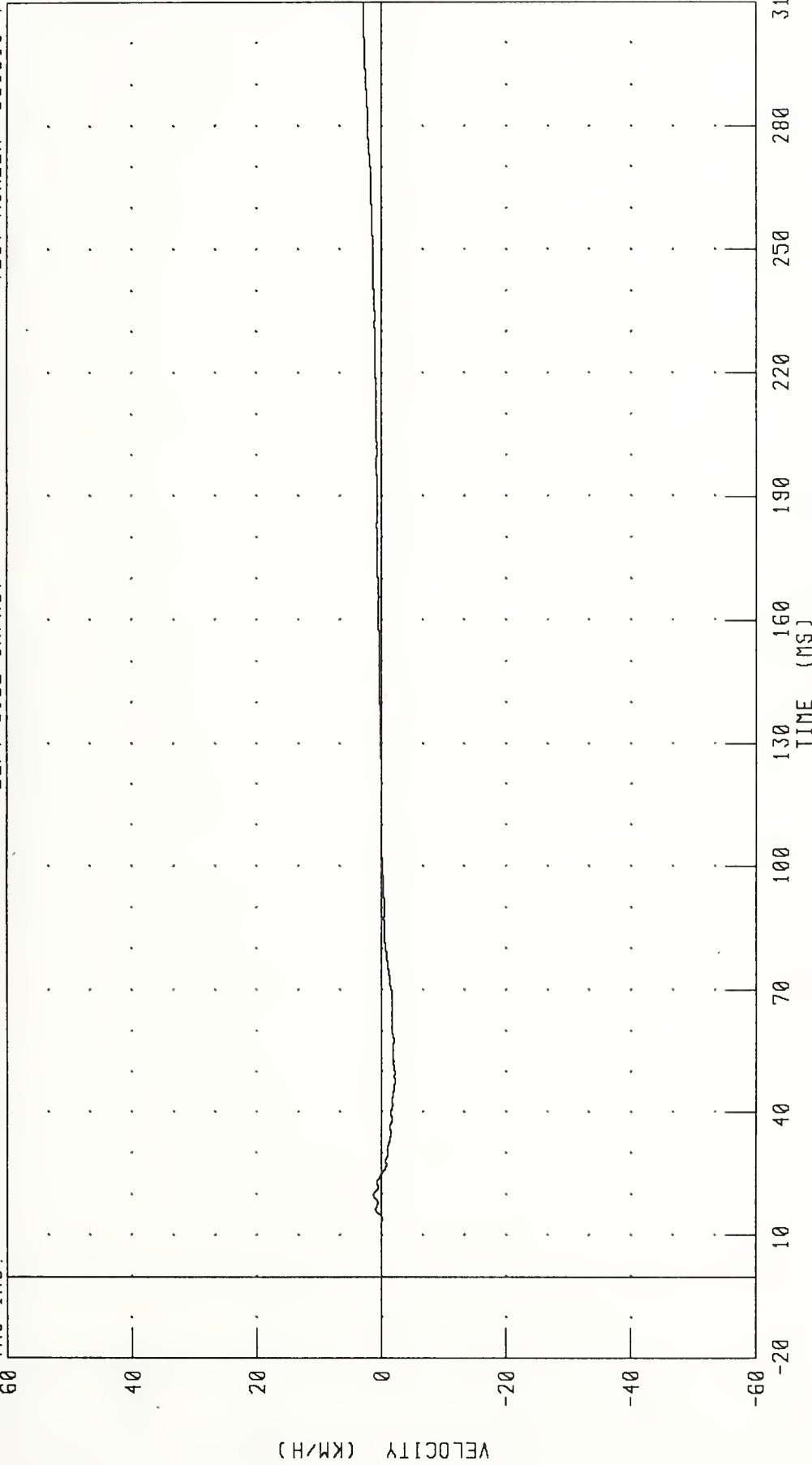
PEAK DATA: 6.75 G @ 15.20 MS; -9.22 G @ 24.88 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Y-AXIS VELOCITY

TEST NUMBER: 950518-4

LEFT SIDE IMPACT

TRC INC.



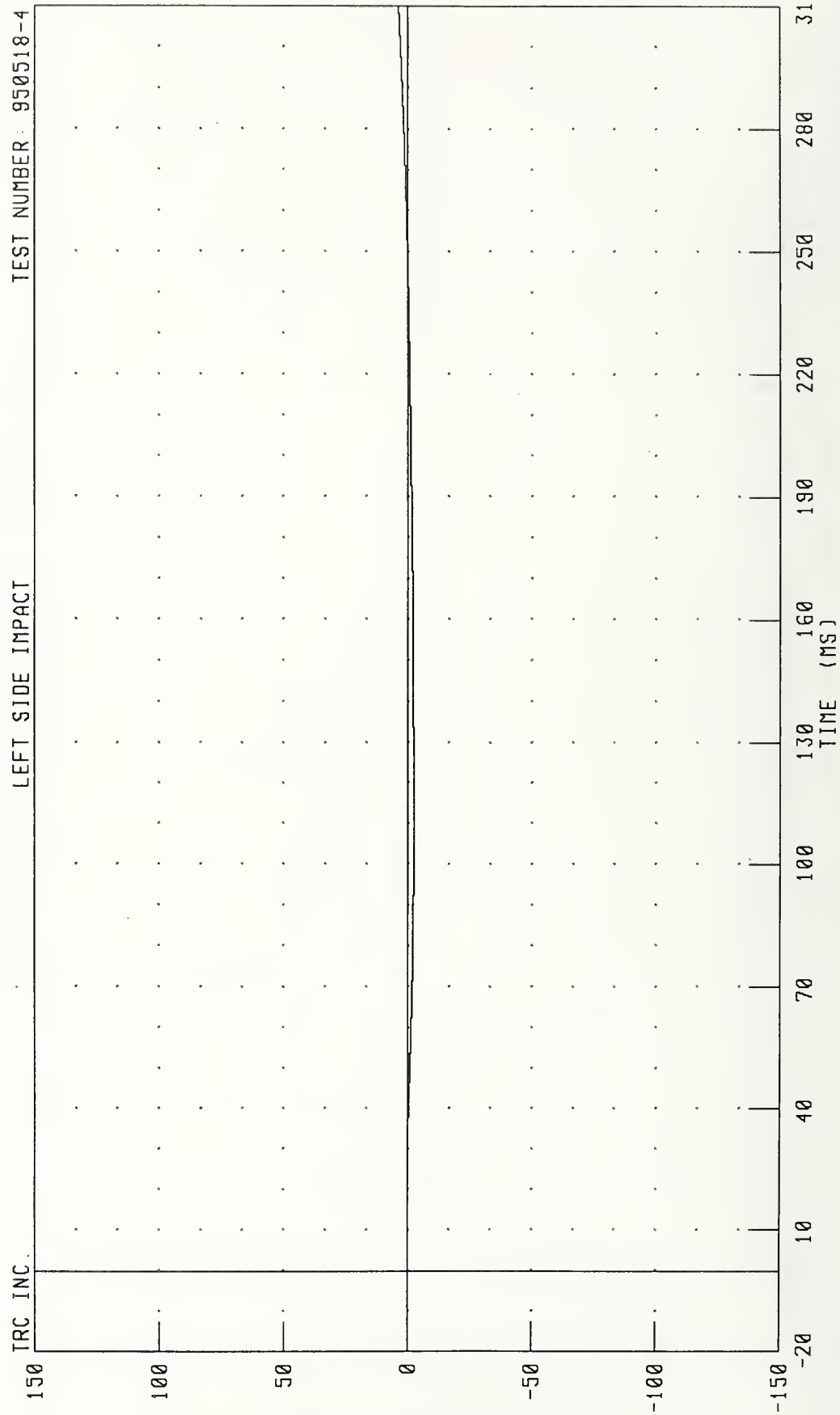
CHANNEL: BCGYV1 FILTER: CH CLASS 180

PEAK DATA: 2.95 KM/H @ 310.00 MS, -2.15 KM/H @ 47.44 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY Y-AXIS DISPLACEMENT

TEST NUMBER: 950518-4

LEFT SIDE IMPACT



CHANNEL: BCGYD1 FILTER: CH. CLASS 180

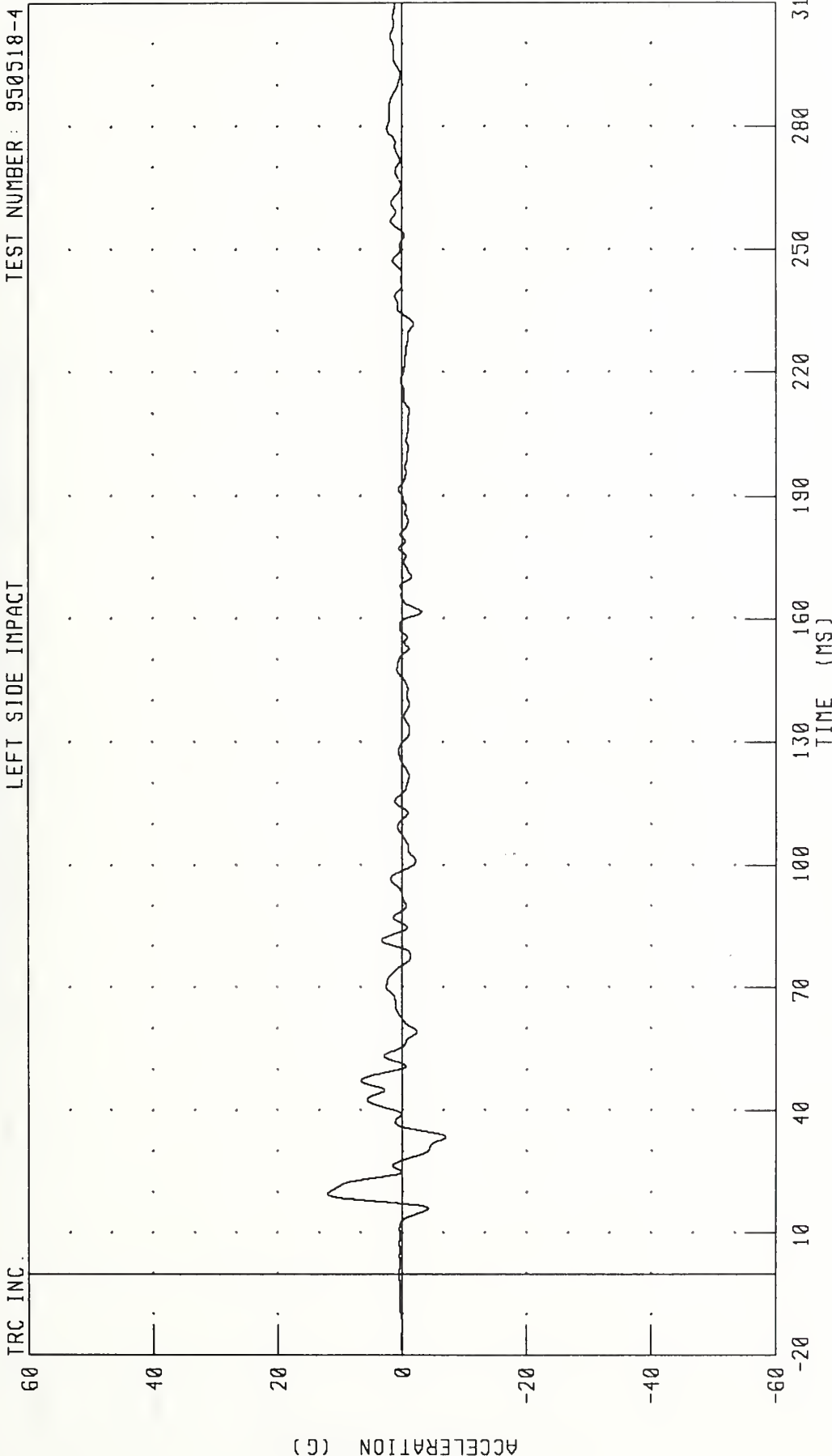
PEAK DATA: 37.55 MM @ 310.00 MS; -23.64 MM @ 104.08 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Z-AXIS ACCELERATION

TEST NUMBER: 950518-4

LEFT SIDE IMPACT

TRC INC.



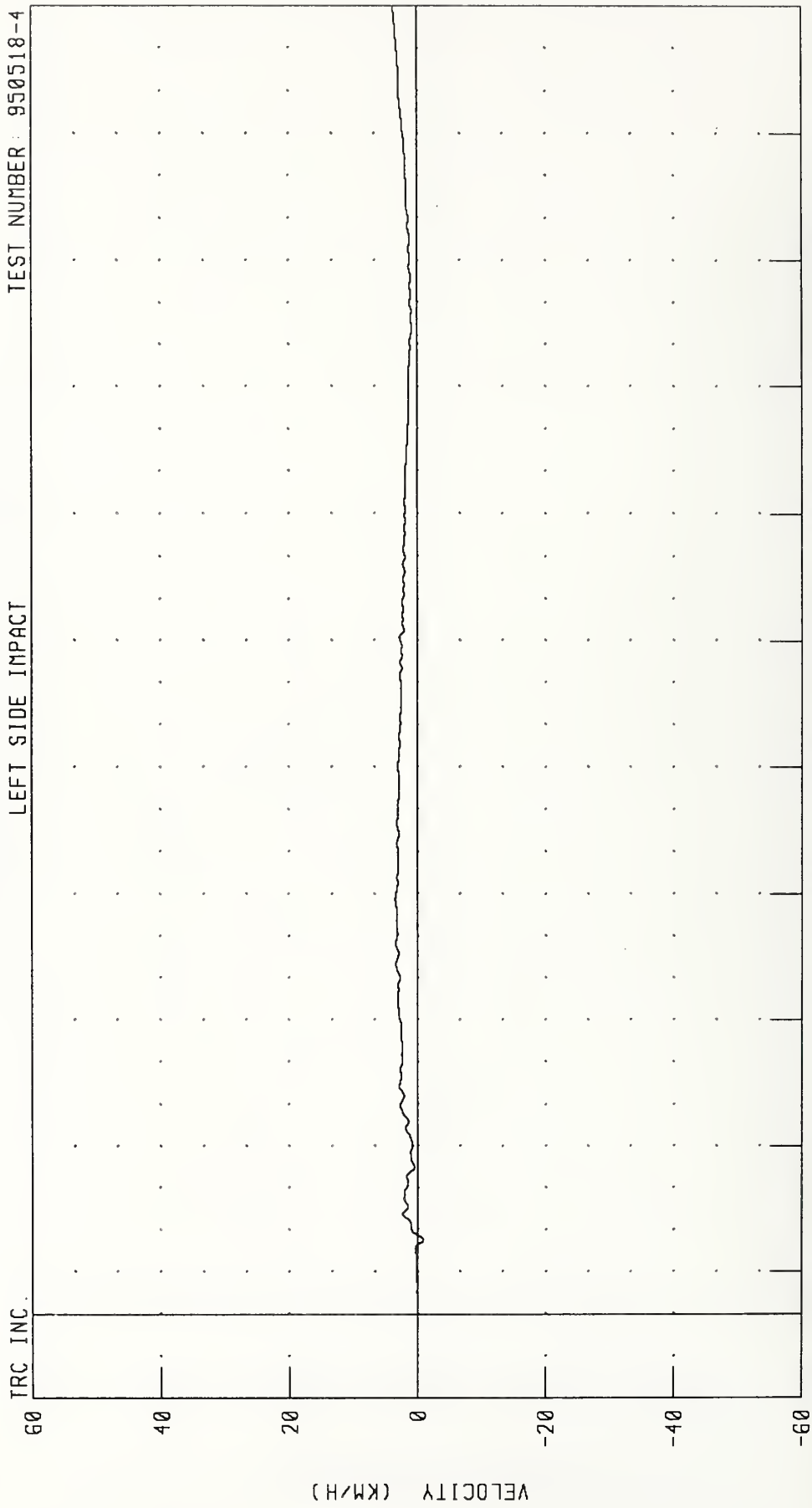
CHANNEL: BCGZG1 FILTER: CH. CLASS 60

PEAK DATA: 11.99 G @ 19.60 MS, -6.99 G @ 33.52 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Z-AXIS VELOCITY

TEST NUMBER: 950518-4

LEFT SIDE IMPACT



CHANNEL: BCGZV1 FILTER: CH. CLASS 180

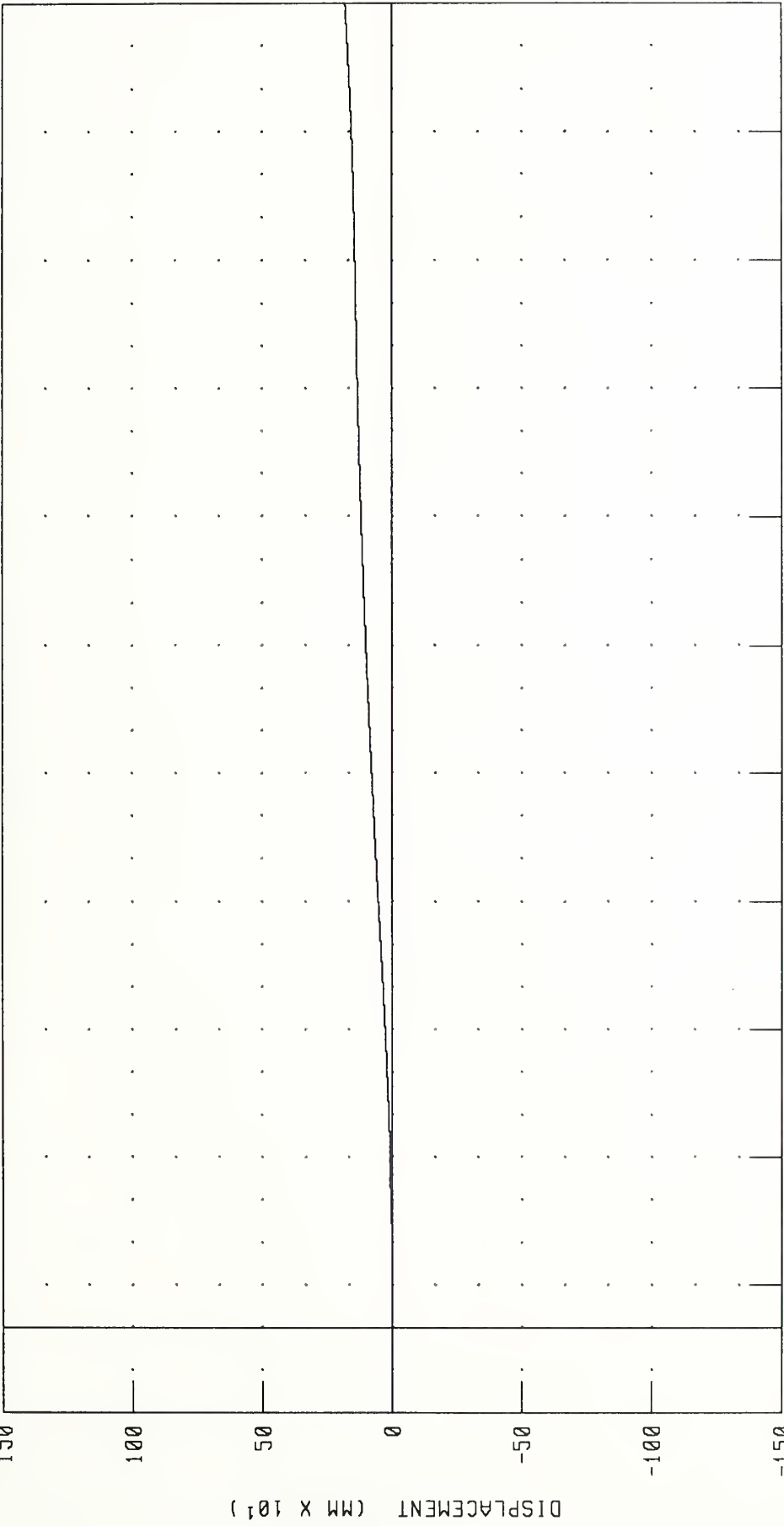
PEAK DATA: 3.68 KM/H @ 310.00 MS; -0.84 KM/H @ 17.60 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY Z-AXIS DISPLACEMENT

TEST NUMBER: 950518-4

LEFT SIDE IMPACT

TRC INC.



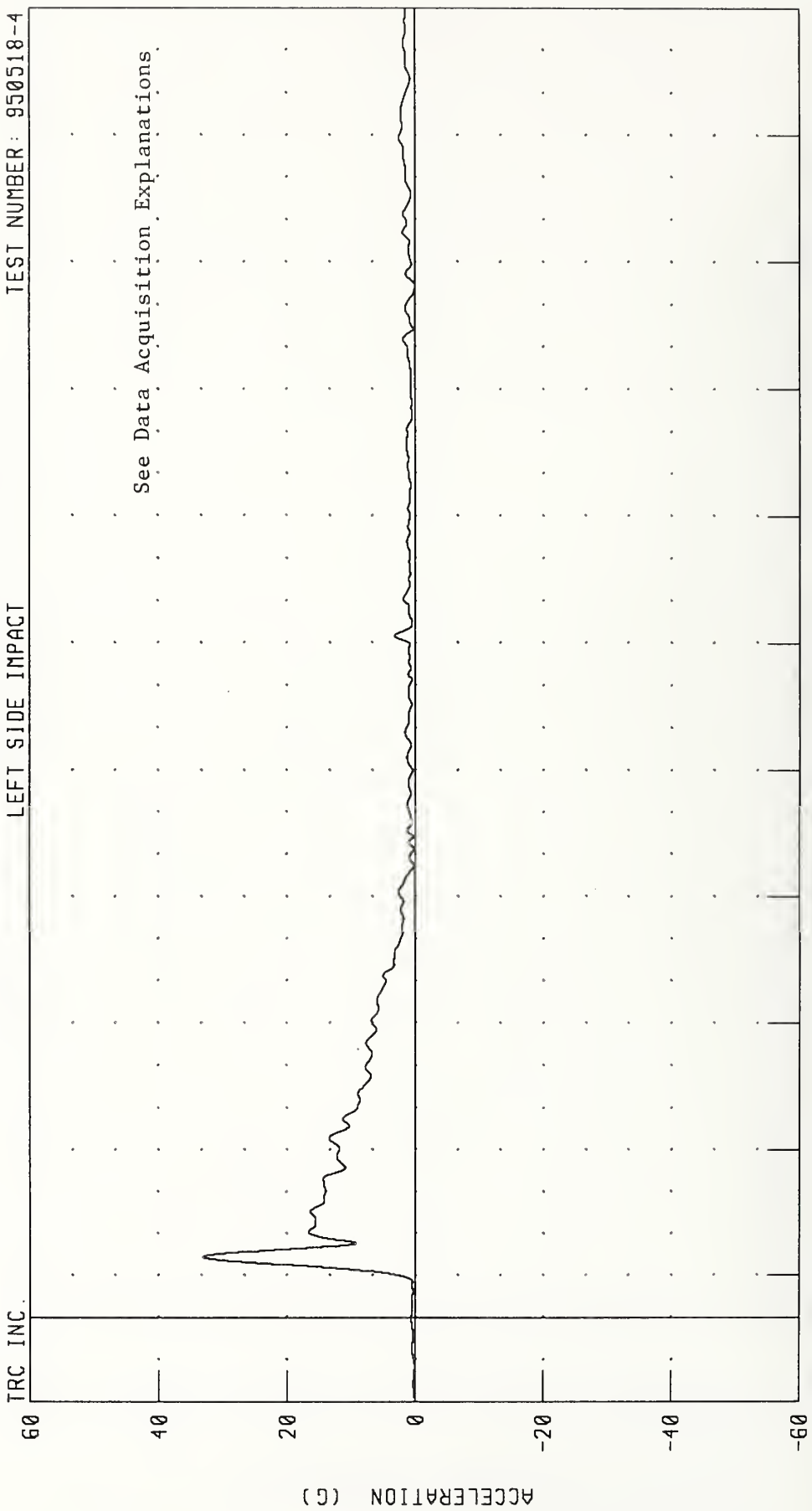
CHANNEL: BCGZD1 FILTER: CH. CLASS 180

PEAK DATA: 180 81 MM @ 310 00 MS; 0.00 MM @ 0.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY RESULTANT ACCELERATION

TEST NUMBER: 950518-4

LEFT SIDE IMPACT



CHANNEL: BCCRG1 FILTER: CH. CLASS 60

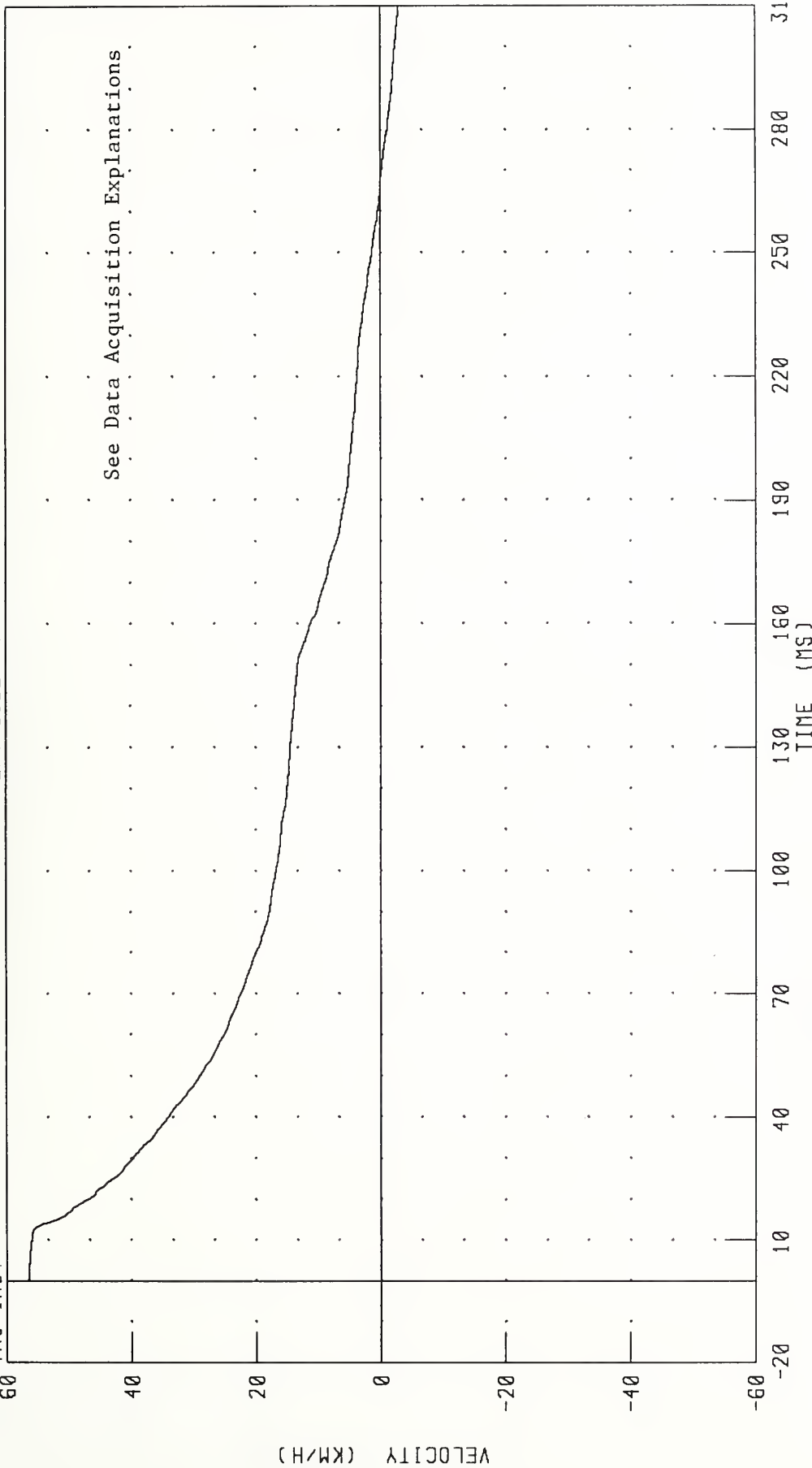
PEAK DATA: 33.13 G @ 14.32 MS; 0.04 G @ -19.52 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
IMPACTOR CENTER OF GRAVITY RESULTANT VELOCITY

TEST NUMBER: 950518-4

LEFT SIDE IMPACT

TRC INC.



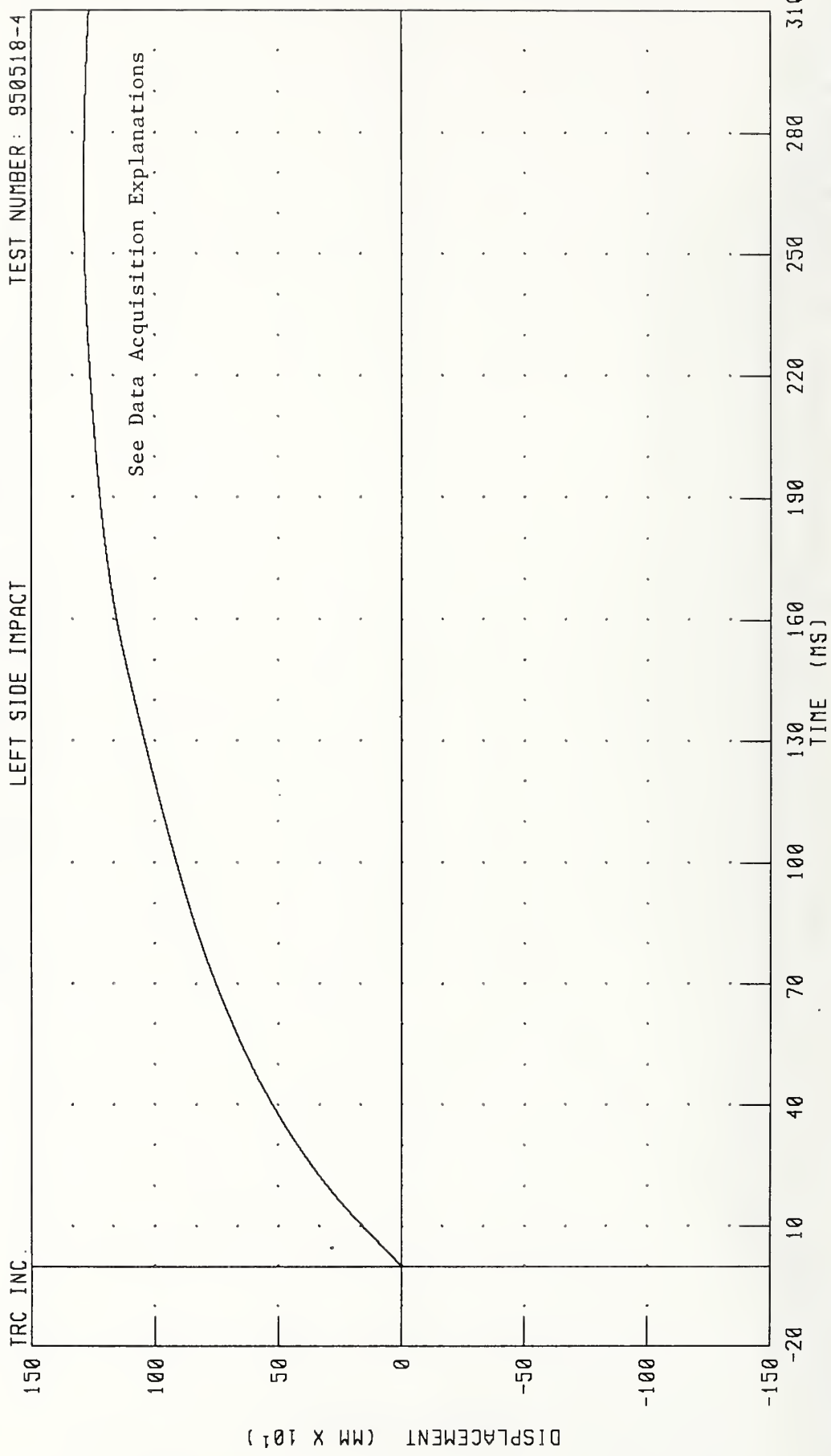
CHANNEL: BCCRVI FILTER: CH. CLASS 180

PEAK DATA: 56.50 KM/H @ 0.00 MS; -2.89 KM/H @ 310.00 MS

NON-DEFORMABLE CONTOURED FACE IMPACTOR INTO LEFT SIDE OF 1990 HONDA CIVIC
 IMPACTOR CENTER OF GRAVITY RESULTANT DISPLACEMENT

TEST NUMBER: 950518-4

LEFT SIDE IMPACT



CHANNEL: BCCRD1 FILTER: CH. CLASS 180

PEAK DATA: 1286.25 MM @ 267.20 MS, 0.00 MM @ 0.00 MS

Appendix C

Miscellaneous Test Information

Vehicle Accelerometer Information

No.	Location	Axis	Manufacturer	Model	Serial Number	Orientation (+ Sensing)
1	Vehicle center of gravity	X	Endevco	7264	BE97J	Front
		Y	Endevco	7264	AK21	Left
		Z	Endevco	7264	AN45	Up
2	Left front sill	X	Endevco	7264	AS95	Rear
		Y	Endevco	7264	AT38	Right
3	Right front sill	X	Endevco	7264	AU31	Front
		Y	Endevco	7264	AY66	Left
4	Left rear seat	X	Endevco	7264	AZ67	Front
		Y	Endevco	7264	BA46	Right
5	Right rear seat	X	Endevco	7264	AW52	Front
		Y	Endevco	7264	BF04	Right

Impactor Accelerometer Information

No.	Location	Axis	Manufacturer	Model	Serial Number	Orientation (+ Sensing)
1	Center of Gravity	X	Endevco	7264	BC75J	Front
		Y	Endevco	7264	BH91J	Left
		Z	Endevco	7264	BF99J	Up

Sign Convention

All Dummy, Barrier, and Vehicle Channels:

+X: Forward

+Y: Leftward

+Z: Upward

+Force: Tension

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