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Vehicle Component Characterization
Vol. II: Data Appendices

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January 1987
Final Report

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

Office of Research and Development
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16. Abstract

MGA Research Corporation has undertaken a project sponsored by the Transportation Systems Center of the U.S. Department of Transportation which involved the quasi-static and dynamic testing of automobile instrument panels and windshields. During the instrument panel testing phase of this project, the instrument panels of 19 vehicles were tested for their stiffness characteristics using procedures developed under a previous study. (This testing attempted to simulate loadings which occur during frontal collisions and includes contacts of knees to lower instrument panel sections, torso to mid-section and head to upper section.) Also included in the instrument panel testing were parametric tests investigating the effects of different loading geometry. The windshield testing portion of this project included developing a procedure for the testing of windshields as they would be loaded under frontal collision conditions (head/windshield contact) through static and dynamic testing of the windshields of the 19 vehicles used in the instrument panel testing. During the procedural study, it was determined that only dynamic impacts properly duplicate the loading conditions found during an accident. Also carried out during the windshield testing was a parametric study into the effects of different loading and physical conditions.

The purpose of this testing was to develop a set of data which could be used in computer crash occupant simulation models in order to study automobile crashworthiness. The data generated by this testing has been used to develop a data base on the National Highway Traffic Safety Administration's VAX 11/780 computer. The data presented in this report are directly available to anyone having access to the NHTSA computer.

This report is presented in two volumes: Volume I Project Results
Volume II Data Appendices

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PREFACE

The purpose of this testing was to develop a set of data which could be used in computer crash occupant simulation models in order to study automobile crashworthiness. The data generated by this testing has been used to develop a data base on the National Highway Traffic Safety Administration's VAX 11/780 computer. The data presented in this report are directly available to anyone having access to the NHTSA computer.

This report is presented in two volumes: Volume I Project Results
Volume II Data Appendices

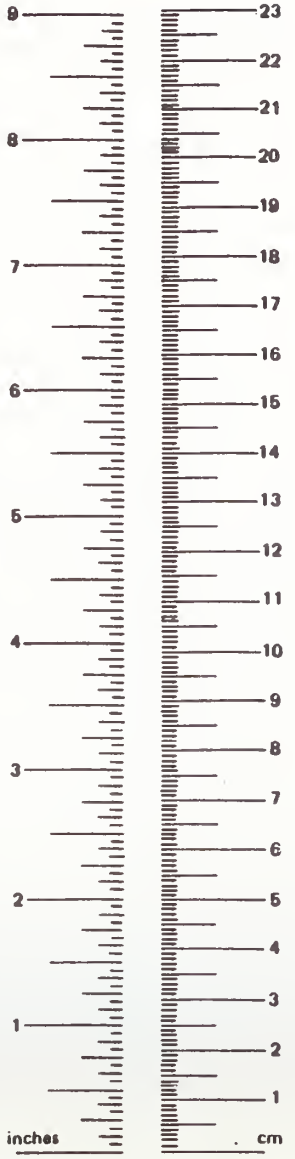
We would like to thank Daniel Cohen of the National Highway Traffic Safety Administration, and Herbert Gould and Lawrence Simeone of the Transportation Systems Center for their support.

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

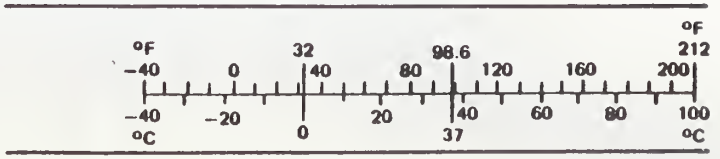
Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hecteres	he
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
tsp	teespoons	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	querts	0.96	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (exact)		
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 In. = 2.54 cm (exactly). For other exact conversions and more detail tables see NBS Misc. Publ. 286, Units of Weight and Measures. Price $2.25 SD Catalog No. C13 10 286.



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
he	hecteres (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	36	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



CONTENTS

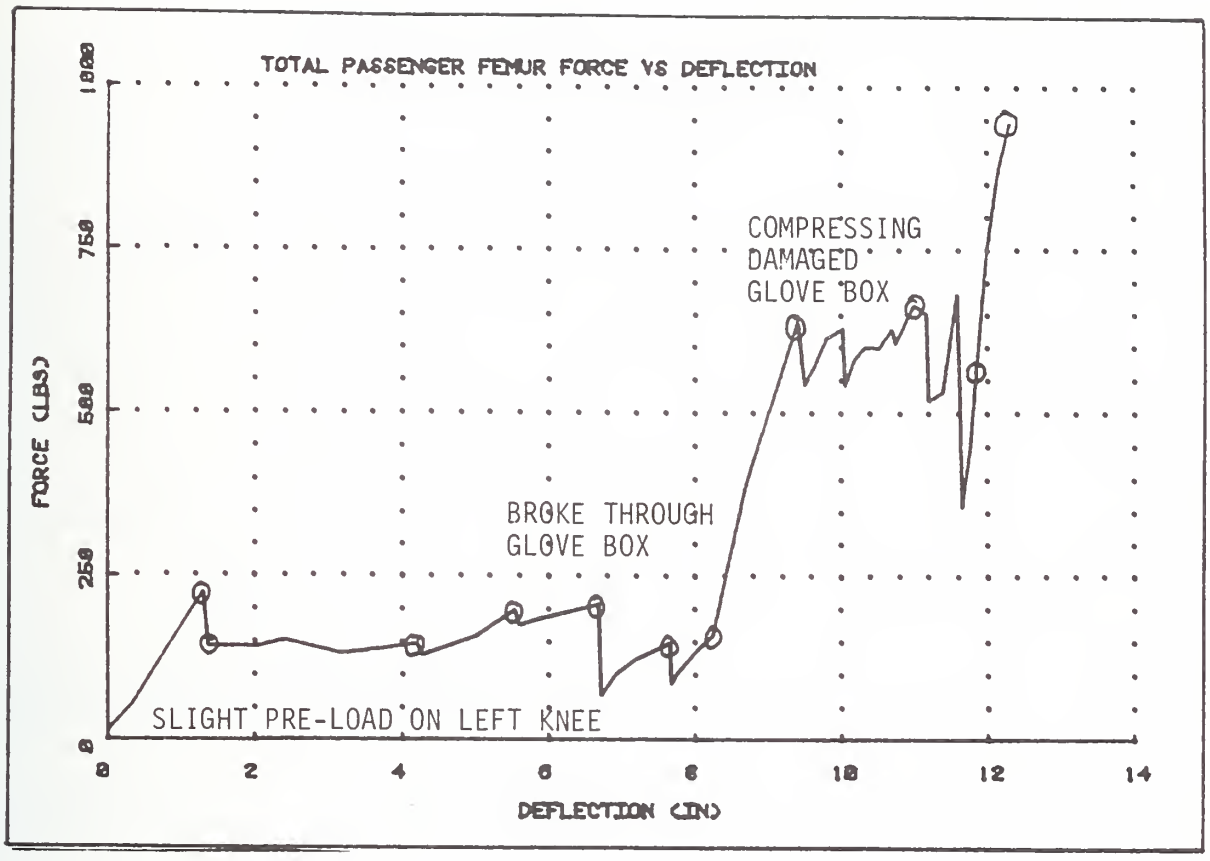
APPENDIX A

STATIC INSTRUMENT PANEL TEST RESULTS

Test: Passenger Side Femur (static) Date: July 27, 1984

Vehicle: 1977 Plymouth Volare

Options: Metal dash top



G= 0.920 R= 0.112 K= 1503

c= 1.55 μ_1= μ_2= μ_3=

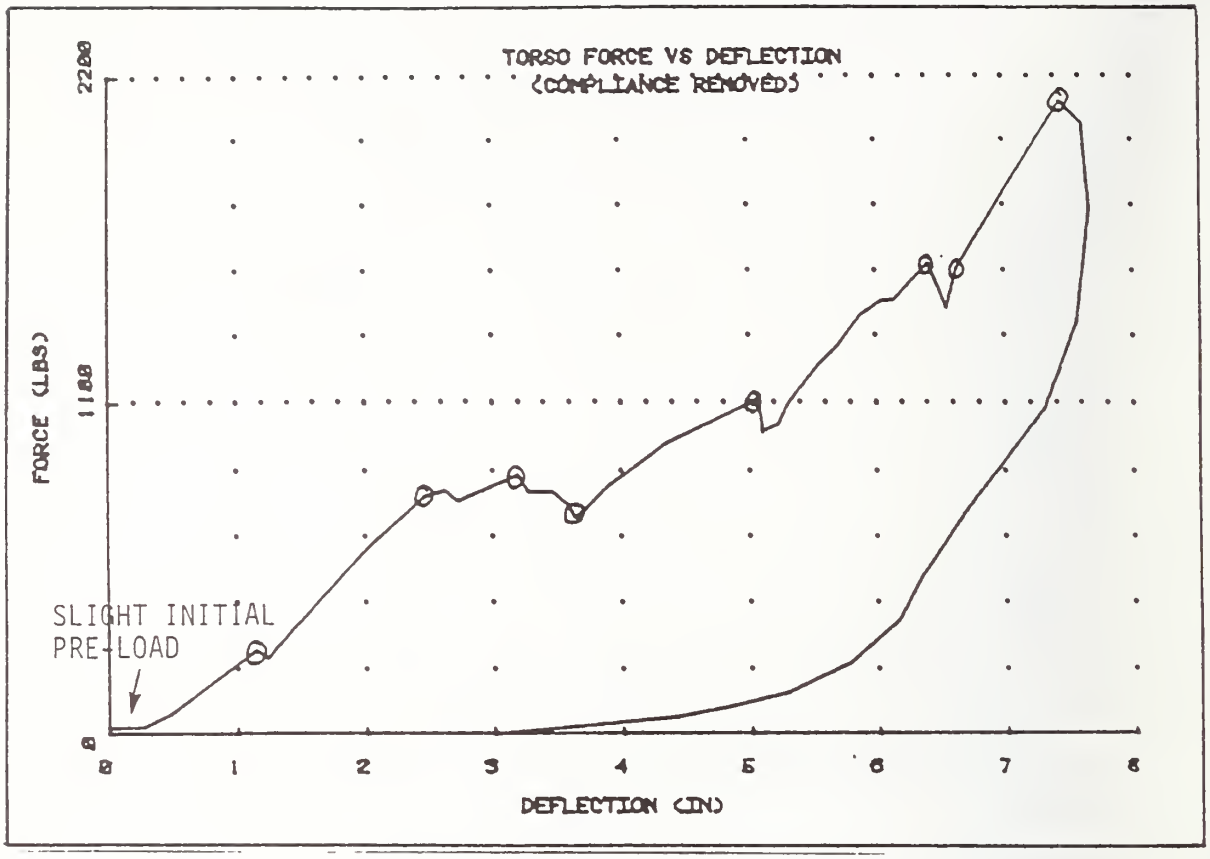
δ_A= 0.0 δ_B= 0.0 δ_C= 18.60 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	11.80	623.36
1.25	221.44	12.28	943.36
1.32	135.68		
4.12	140.80		
5.51	199.68		
6.63	199.68		
7.67	144.64		
8.22	160.00		
9.41	640.00		
11.02	664.32		

Test: Torso (static) Date: July 27, 1984

Vehicle: 1977 Plymouth Volare

Options: Metal dash top



G= 0.408 R= 0.234 K= 2112

c= 0.57 μ_1= μ_2= μ_3=

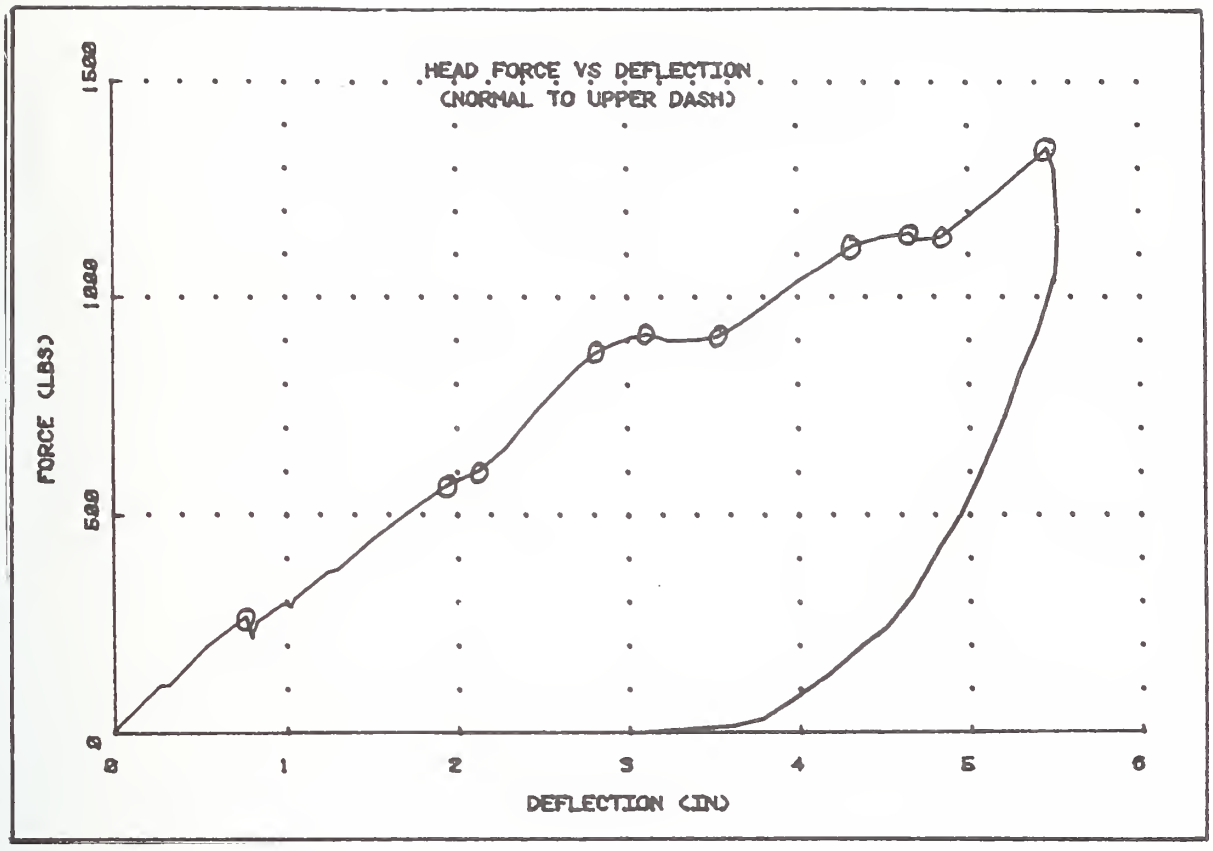
δ_A= 0.0 δ_B= 0.0 δ_C= 6.84 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
1.15	278.78		
2.47	794.11		
3.19	870.14		
3.63	715.26		
5.07	1109.50		
6.42	1560.06		
6.62	1548.80		
7.45	2120.44		

Test: Head (static) Date: July 27, 1984

Vehicle: 1977 Plymouth Volare

Options: Metal dash top



G= 0.563 R= 0.173 K= 973

c= μ_1= μ_2= μ_3=

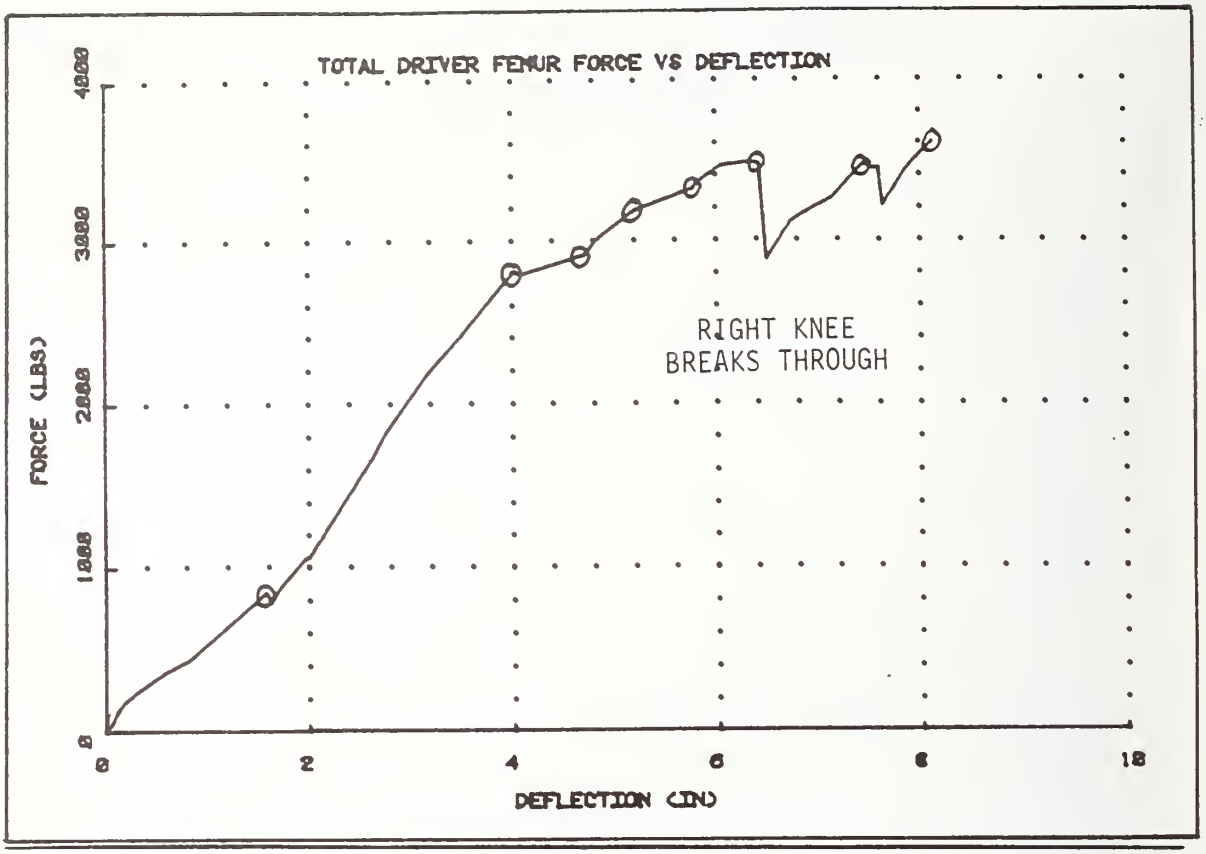
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	5.45	1345.93
0.75	264.96		
1.94	572.16		
2.12	600.96		
2.81	877.44		
3.11	913.92		
3.50	906.24		
4.31	1123.20		
4.64	1144.32		
4.85	1144.32		

Test: Driver Side Femur (static) Date: July 27, 1984

Vehicle: 1977 Plymouth Femur

Options: Metal dash top



G= 0.860 R= 0.052 K= 2466

c= μ_1= μ_2= μ_3=

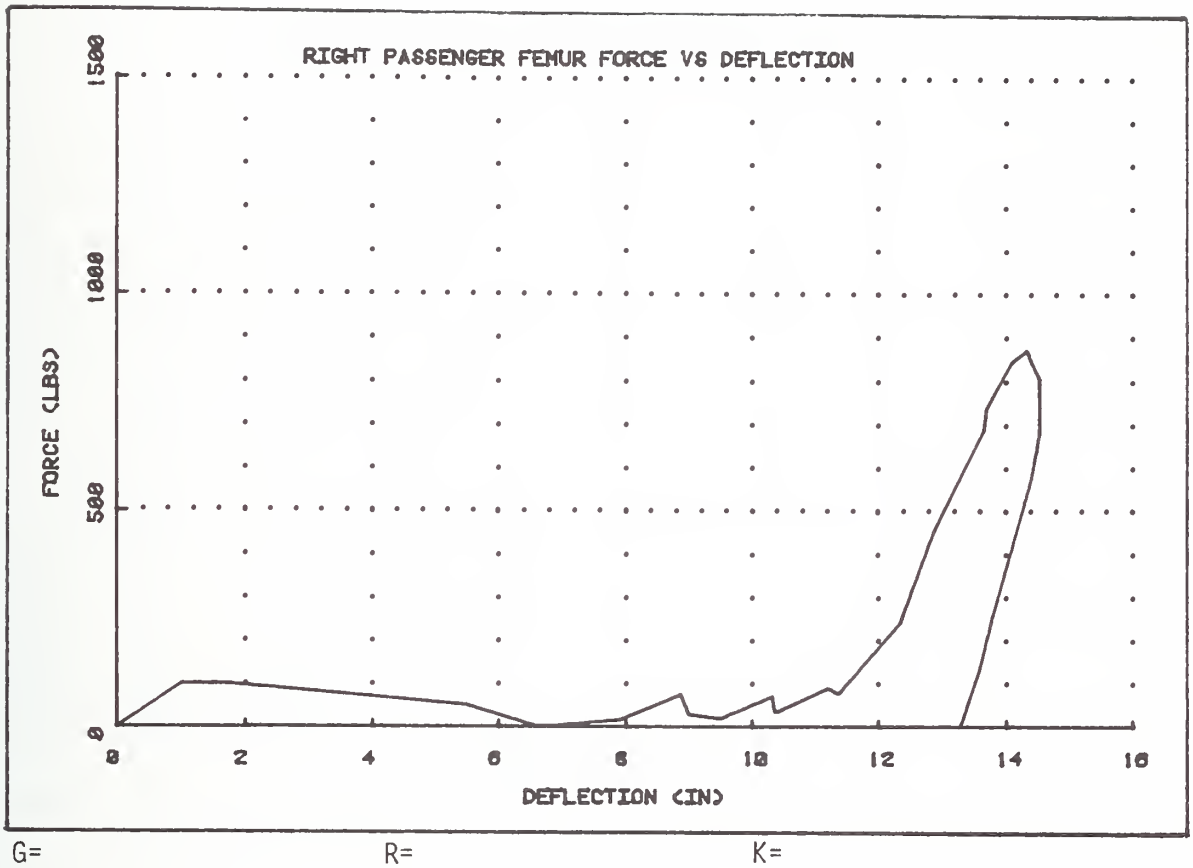
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
1.54	824.32		
3.94	2800.64		
4.69	2997.92		
5.19	3179.52		
5.74	3358.72		
6.44	3476.48		
7.44	3476.48		
8.14	3614.72		

Test Right Passenger Femur Date: July 27, 1984

Vehicle: 1977 Plymouth Volare

Options: Metal dash top



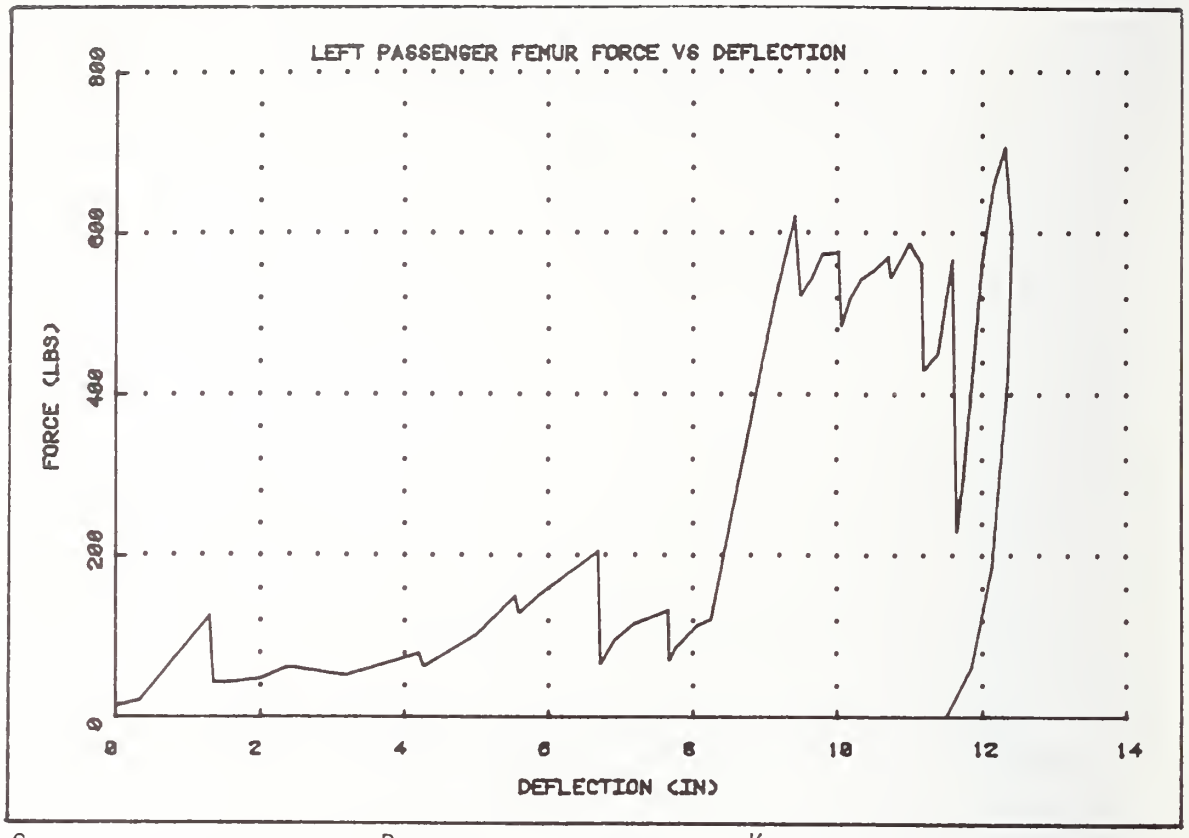
G=_____ R=_____ K=_____

Deflection	Force	Deflection	Force

Test Left Passenger Femur Date: July 27, 1984

Vehicle: 1977 Plymouth Volare

Options: Metal dash top



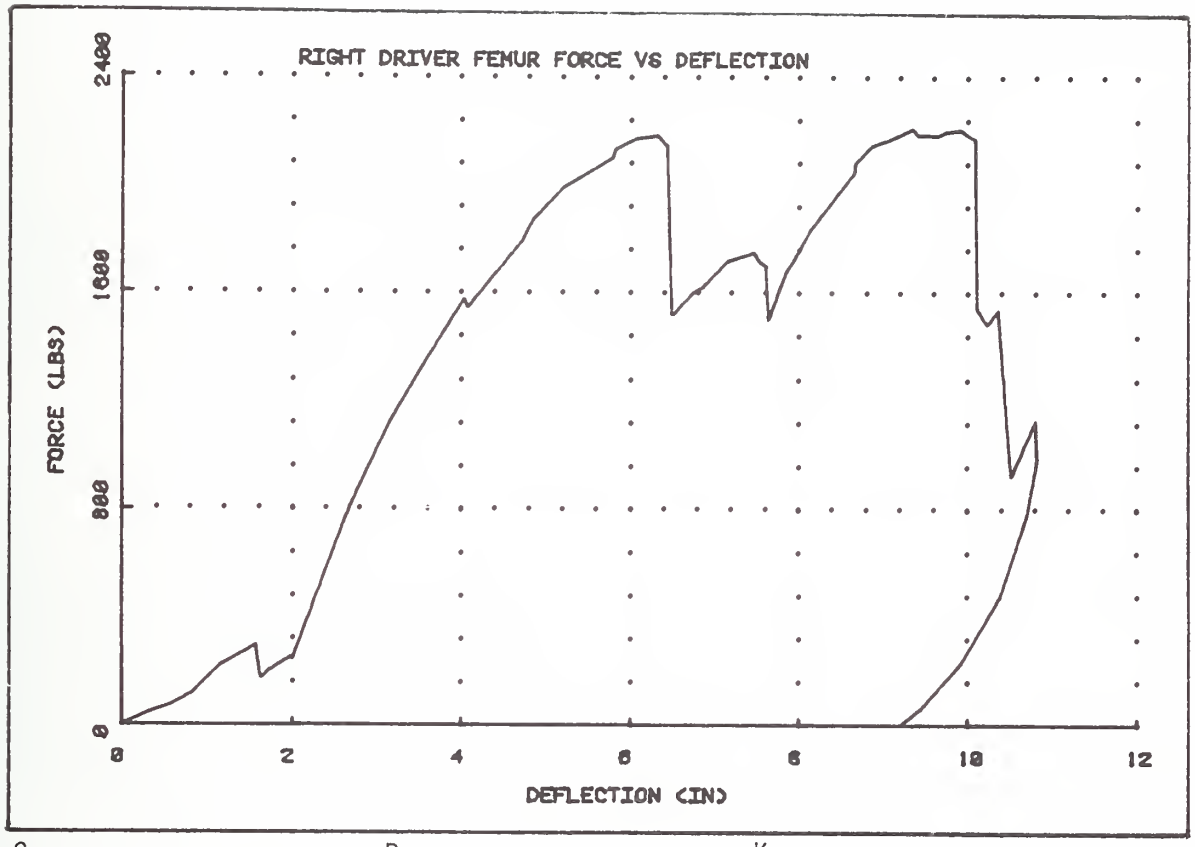
G= R= K=

Deflection	Force	Deflection	Force

Test Right Driver Femur Date: July 27, 1984

Vehicle: 1977 Plymouth Volare

Options: Metal dash top



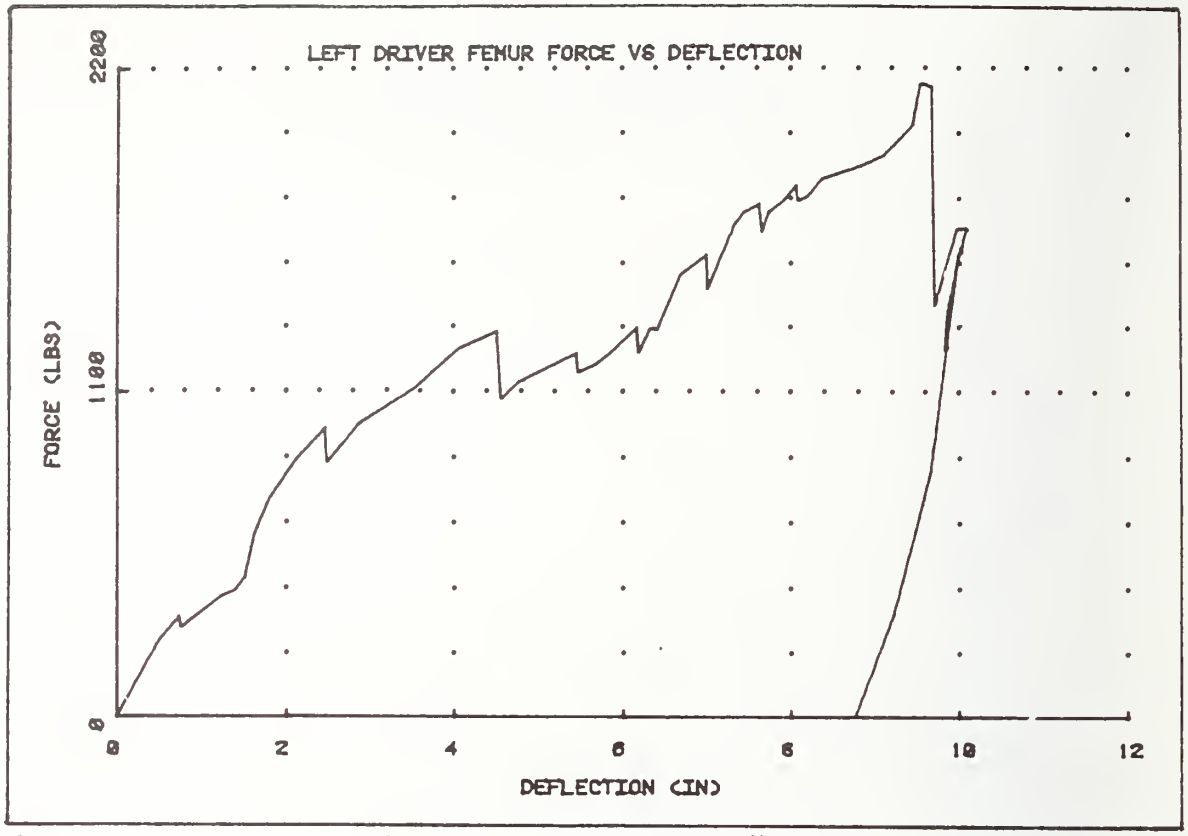
G= R= K=

Deflection	Force	Deflection	Force

Test Left Driver Femur Date: July 27, 1984

Vehicle: 1977 Plymouth Volare

Options: Metal dash top



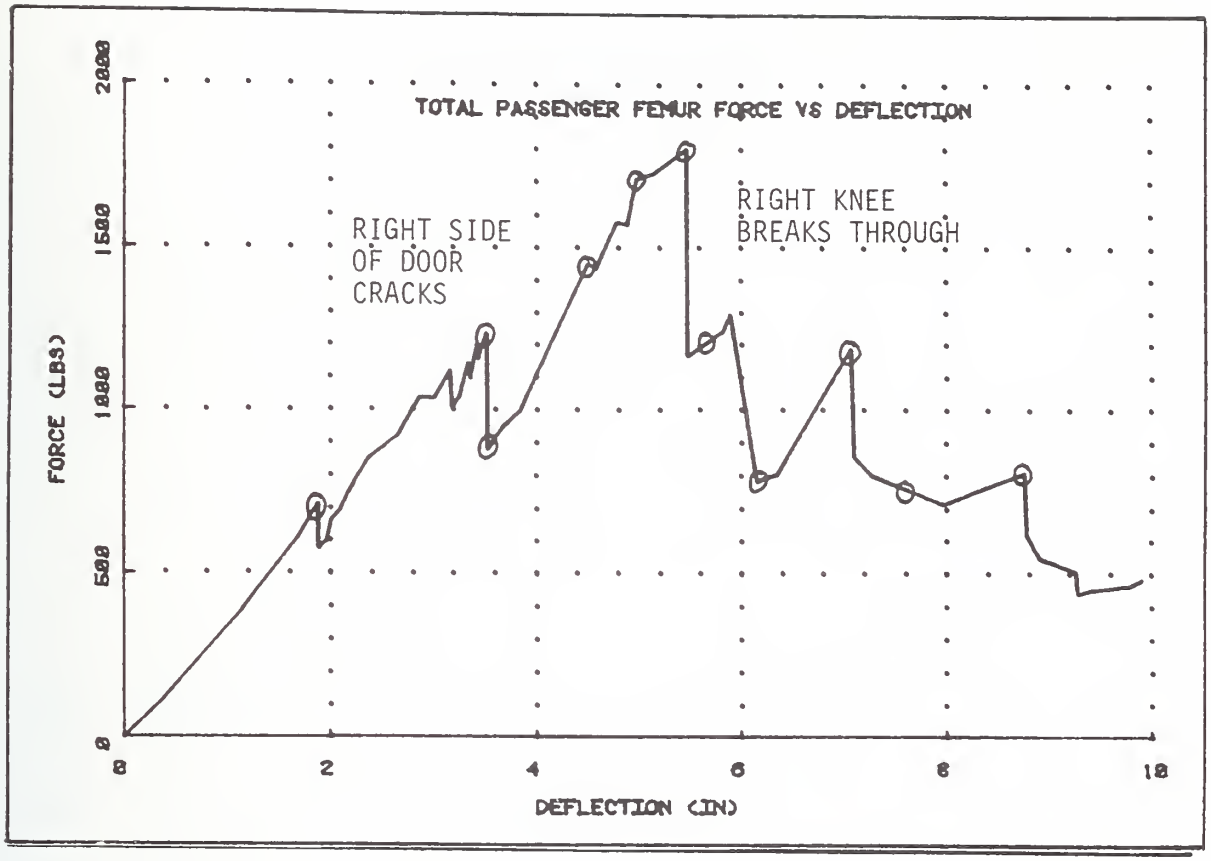
G= R= K=

Deflection	Force	Deflection	Force

Test: Passenger Side Femur (static) Date: August 9, 1984

Vehicle: Chevy Chevette

Options: Metal dash with foam crash pad on top and plastic on front, no radio



G= 0.935 R= 0.011 K= 900

c= 0.0 μ_1= μ_2= μ_3=

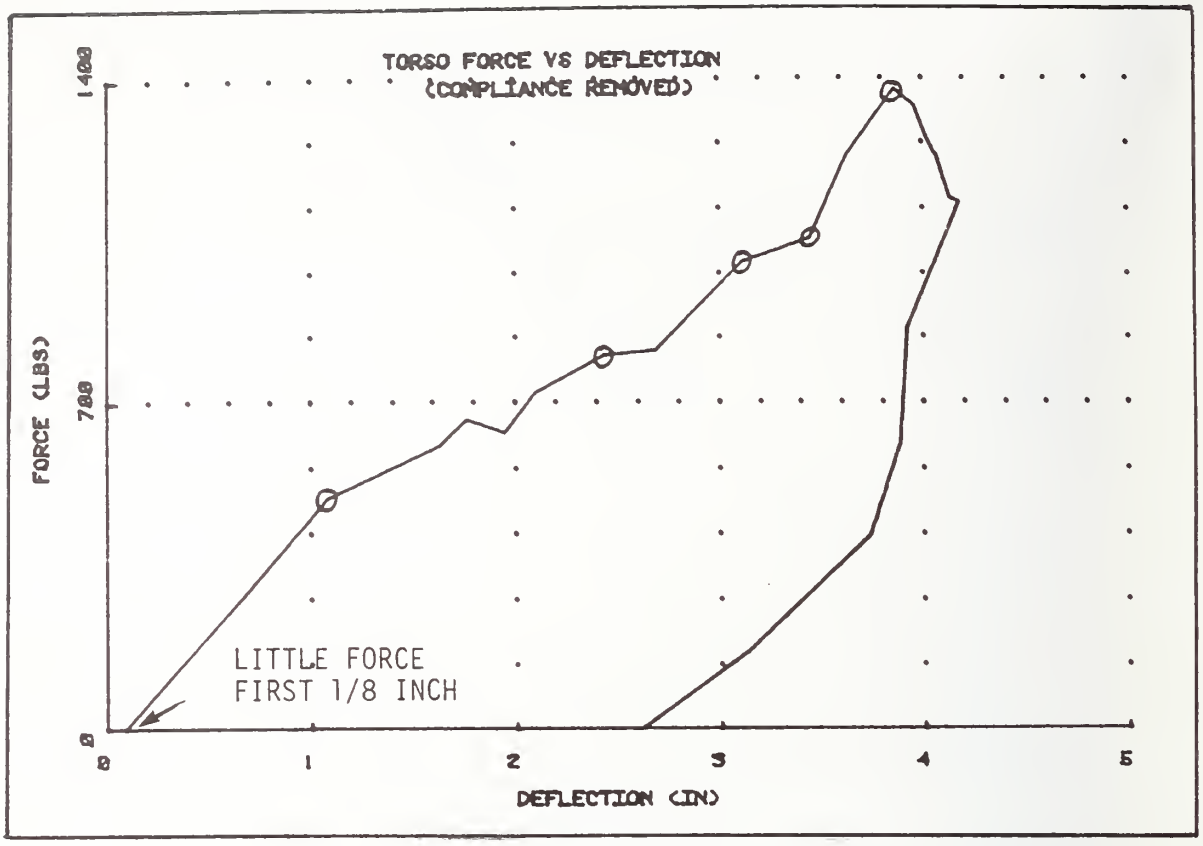
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	7.54	752.64
1.84	704.00	8.64	793.60
3.49	1233.92		
3.54	872.96		
4.49	1441.28		
4.94	1702.40		
5.44	1802.24		
5.65	1203.20		
6.15	773.12		
7.04	1172.48		

Test: Torso (static) Date: August 9, 1984

Vehicle: Chevy Chevette

Options: Metal dash with foam crash pad on top and plastic on front, no radio



G= 0.627 R= 0.195 K= 1279

c= 0.0 μ_1= μ_2= μ_3=

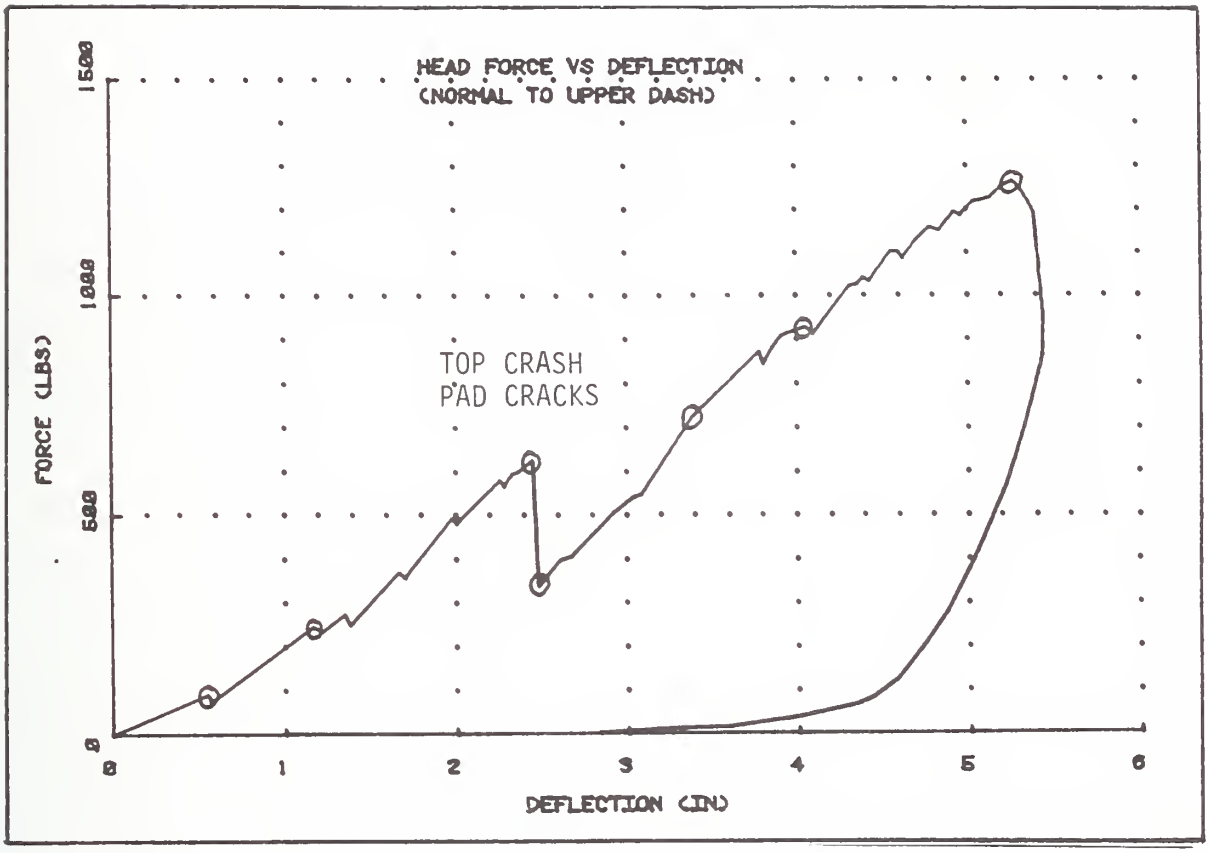
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
1.09	492.80		
2.44	801.02		
3.12	1003.52		
3.44	1051.90		
3.86	1379.84		

Test: Head (static) Date: August 9, 1984

Vehicle: Chevy Chevette

Options: Metal dash with foam crash pad on top and plastic on front, no radio



G= 0.520 R= 0.129 K= 1271

c= μ_1= μ_2= μ_3=

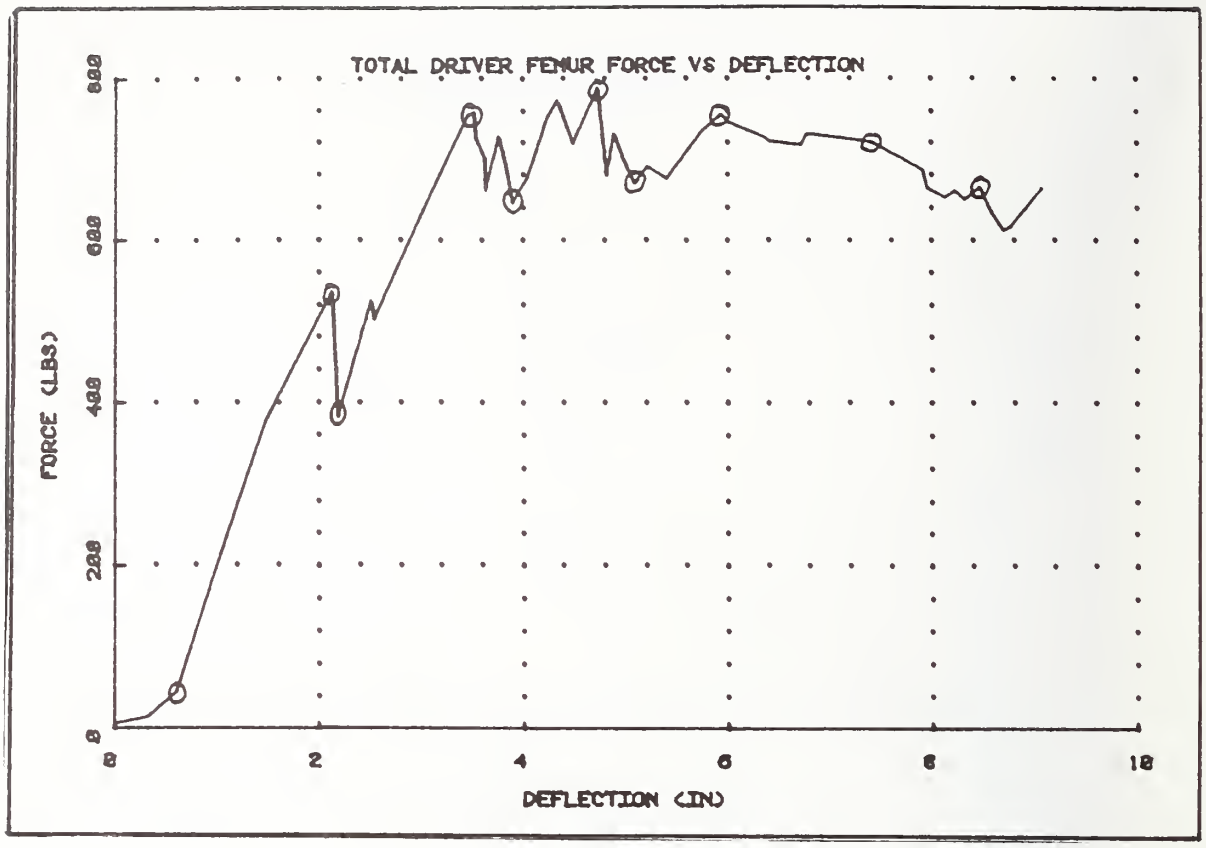
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
0.53	92.16		
1.16	241.92		
2.45	631.68		
2.48	330.24		
3.37	727.68		
4.04	929.28		
5.26	1265.28		

Test: Driver Side Femur Date: August 9, 1984

Vehicle: Chevy Chevette

Options: Metal dash with foam crash pad on top and plastic on front, no radio



G= 0.869 R= 0.034 K= 309

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

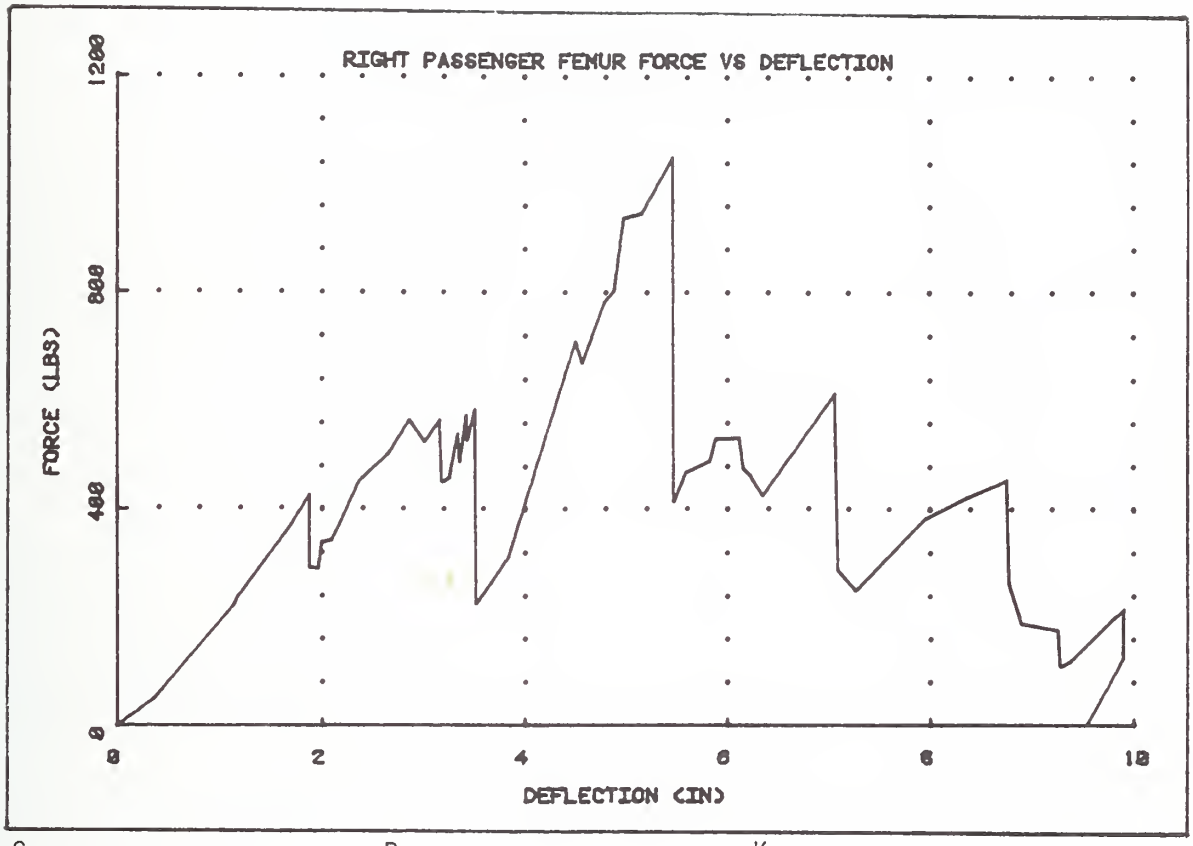
Deflection	Force	Deflection	Force
0.00	0.00	8.46	667.64
0.60	45.05		
2.14	536.57		
2.19	380.92		
3.44	752.64		
3.88	649.09		
4.73	787.45		
5.08	667.64		
5.92	755.71		
7.37	719.87		

Test Right Passenger Femur Date: August 9, 1984

Vehicle: Chevy Chevette

Options: Metal dash with foam crash pad on top and plastic on front

Radio missing



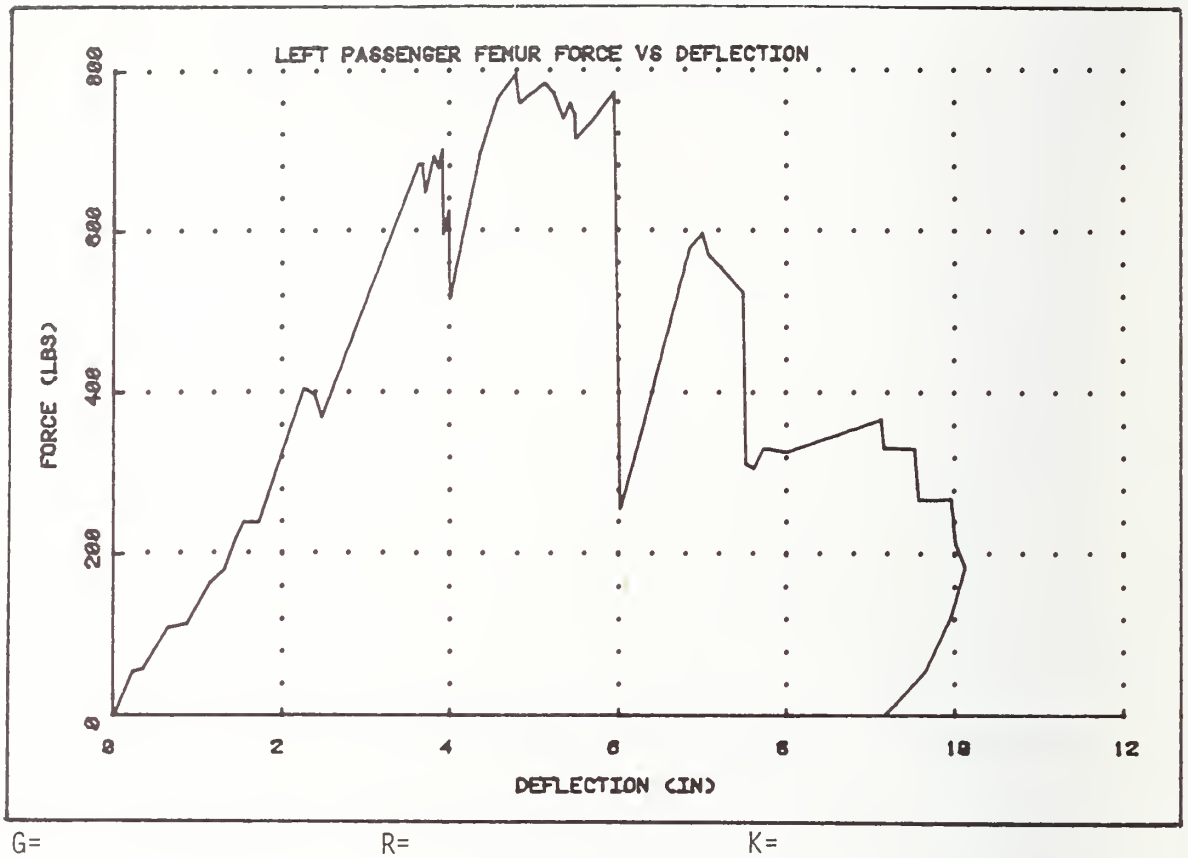
G= R= K=

Deflection	Force	Deflection	Force

Test Left Passenger Femur Date: August 9, 1984

Vehicle: Chevy Chevette

Options: Metal dash with foam crash pad on top and plastic on front
Radio missing



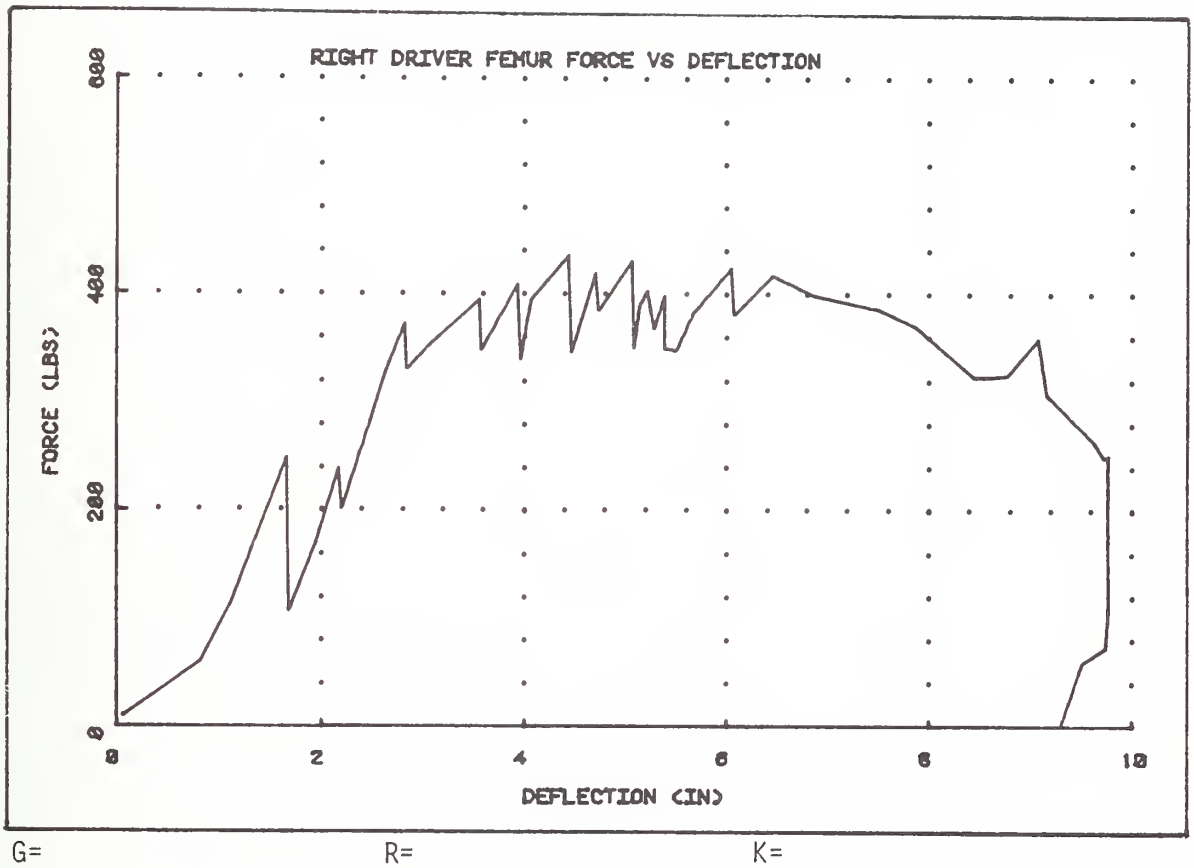
G= R= K=

Deflection	Force	Deflection	Force

Test Right Driver Femur Date: August 9, 1984

Vehicle: Chevy Chevette

Options: Metal dash with foam crash pad on top and plastic on front
Radio missing



G= R= K=

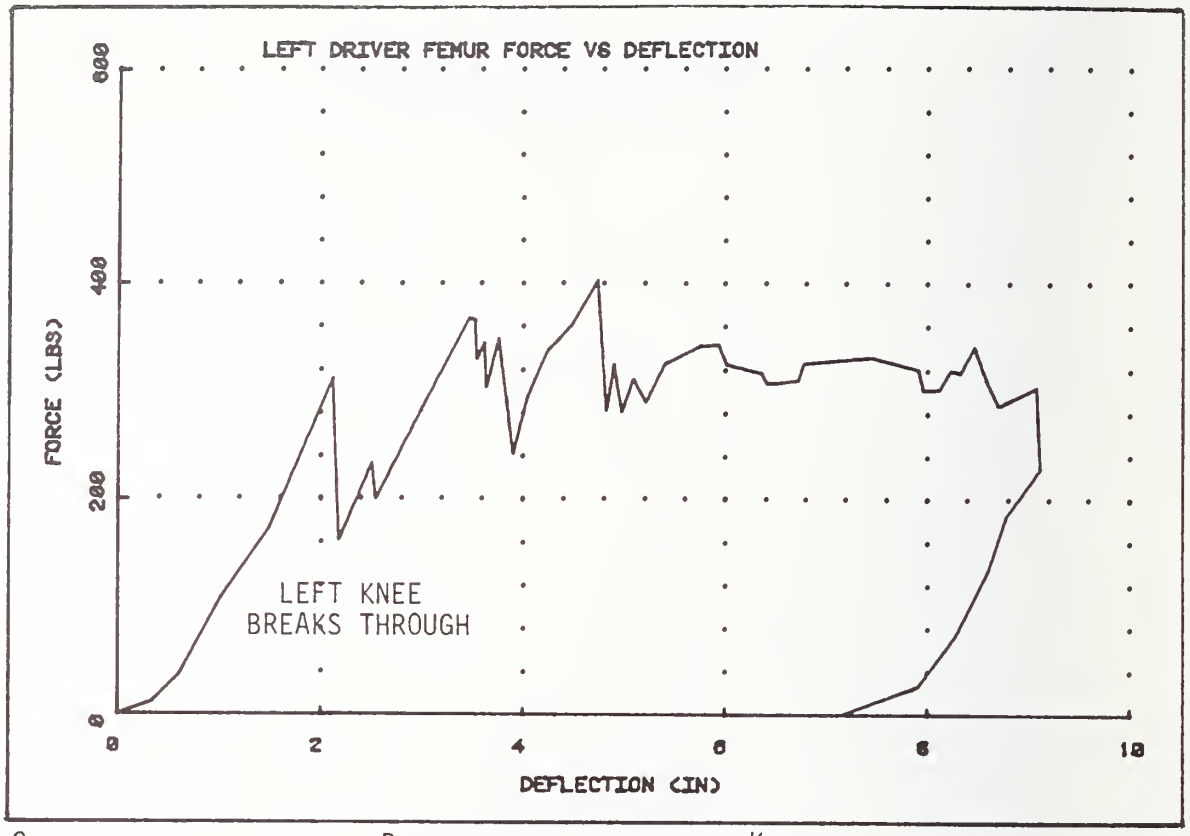
Deflection	Force	Deflection	Force

Test Left Driver Femur Date: August 9, 1984

Vehicle: Chevy Chevette

Options: Metal dash with foam crash pad on top and plastic on front

Radio missing



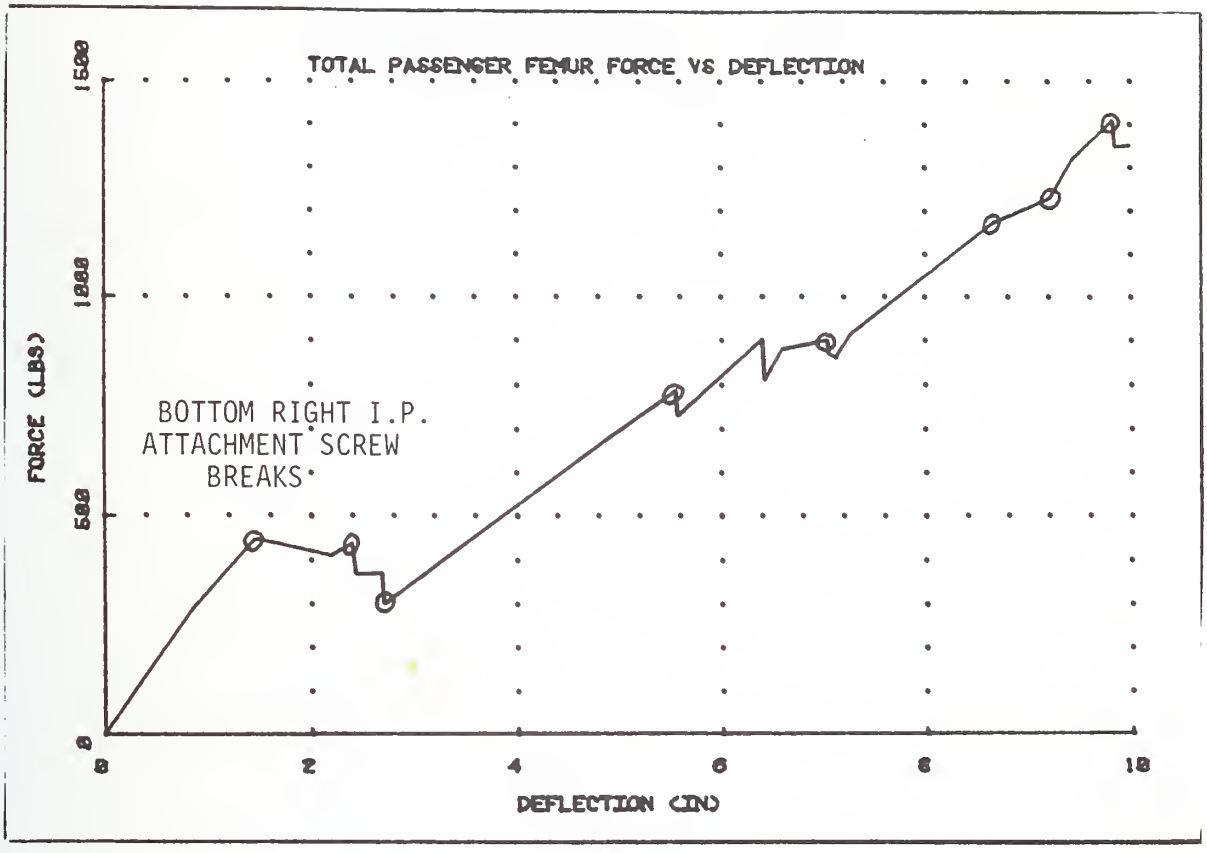
G= R= K=

Deflection	Force	Deflection	Force

Test: Passenger Side Femur (static) Date: August 17, 1984

Vehicle: 1976 Chevy Monza

Options: Metal dash with foam crash pad on front



G= 0.902 R= 0.068 K= 1843

c= 0.62 μ_1= μ_2= μ_3=

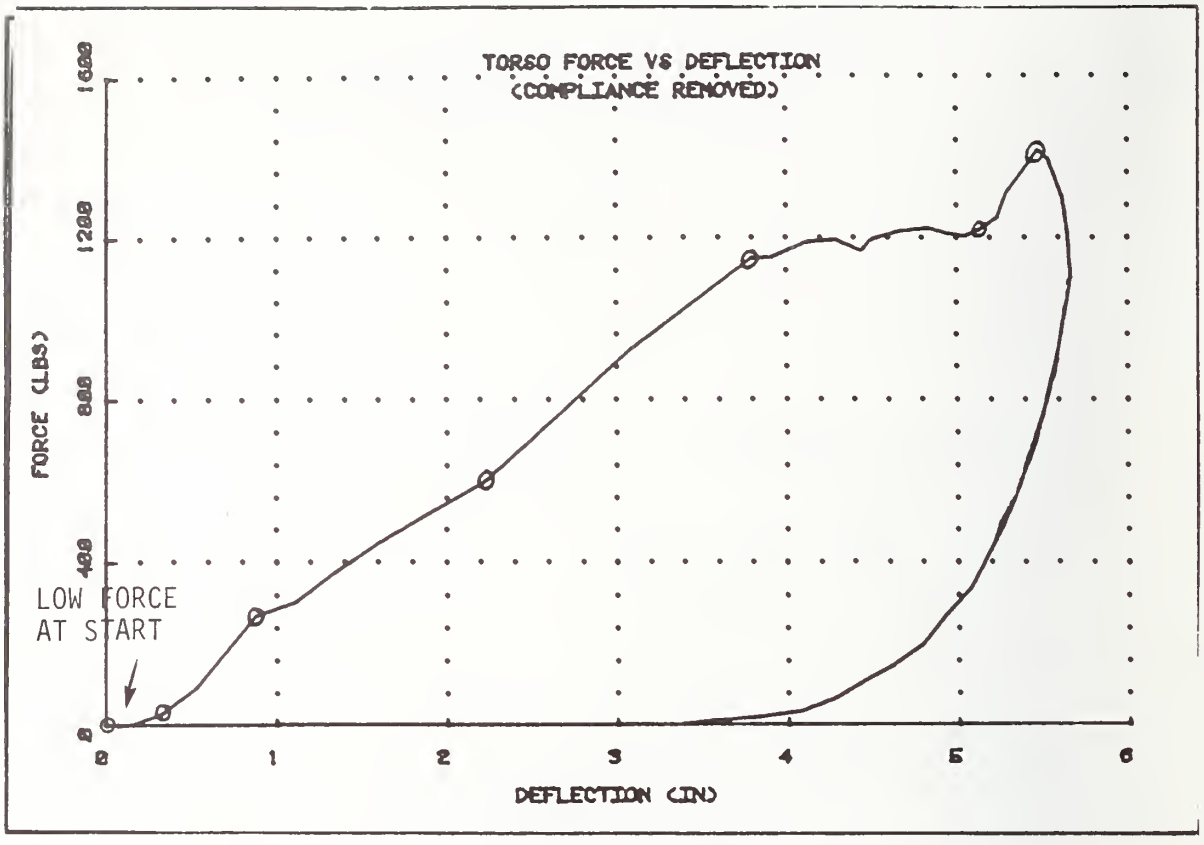
δ_A= 0.0 δ_B= 0.0 δ_C= 7.44 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
1.44	451.20		
2.39	435.20		
2.68	293.76		
5.58	787.20		
7.07	900.48		
8.67	1176.96		
9.22	1228.80		
9.82	1409.28		

Test: Torso (static) Date: August 17, 1984

Vehicle: 1976 Chevy Monza

Options: Metal dash with foam crash pad on front



G= 0.597 R= 0.133 K= 2321

c= 2.59 μ_1= μ_2= μ_3=

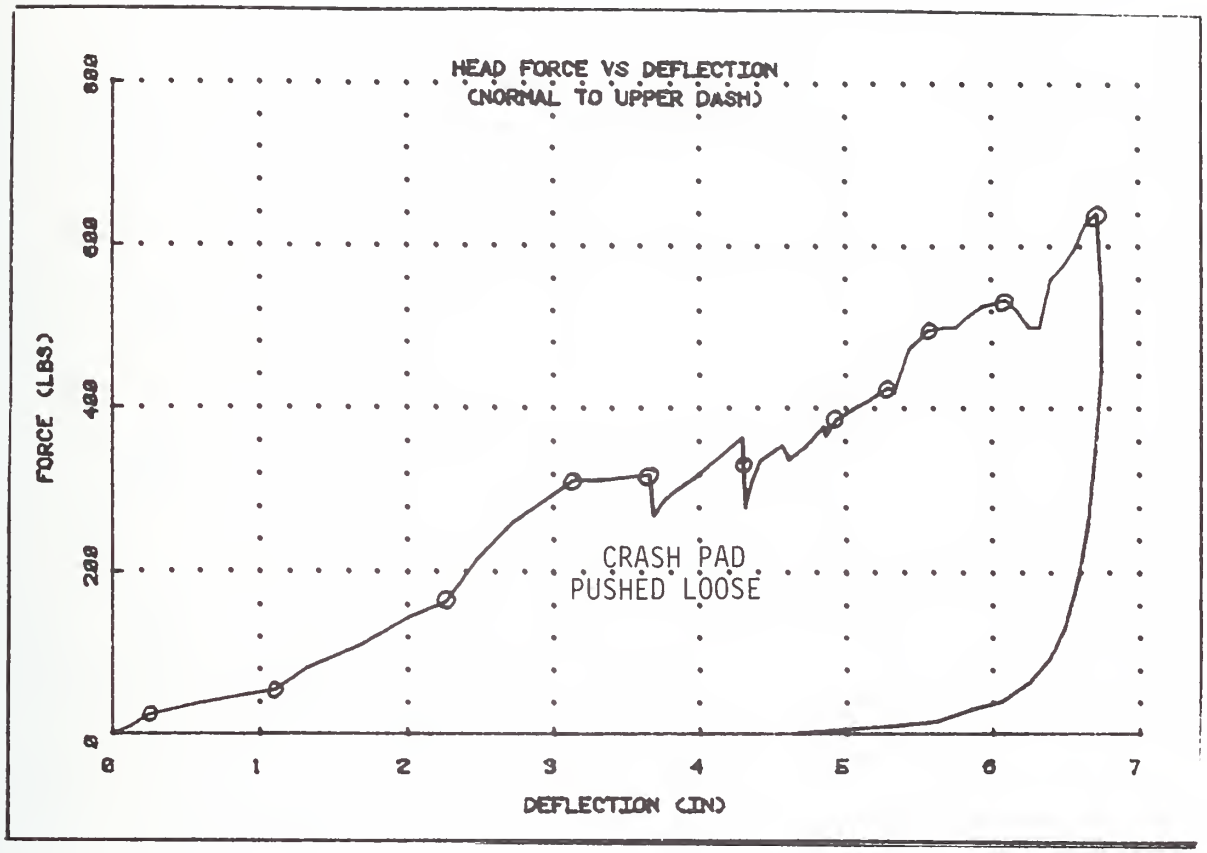
δ_A= 0.0 δ_B= 0.0 δ_C= 4.14 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
0.36	34.81		
0.89	274.43		
2.24	602.11		
3.80	1153.02		
5.15	1224.70		
5.48	1415.16		

Test: Head (static) Date: August 17, 1984

Vehicle: 1976 Chevy Monza

Options: Metal dash with foam crash pad on front



G= 0.691 R= 0.062 K= 1278

c= μ_1= μ_2= μ_3=

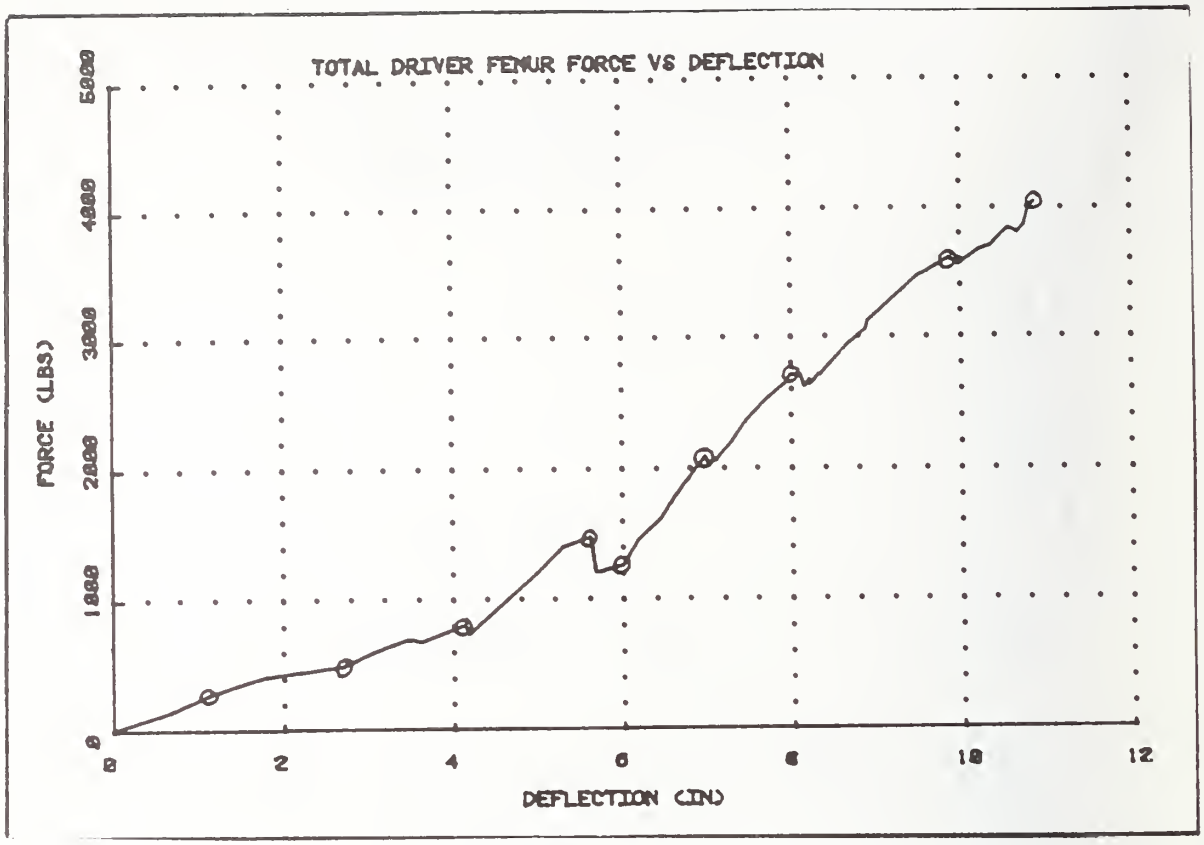
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	6.07	534.52
0.27	25.60	6.73	646.14
1.11	53.24		
2.26	164.86		
3.14	312.32		
3.66	319.48		
4.29	327.68		
4.92	387.07		
5.27	422.91		
5.54	494.59		

Test: Driver Side Femur Date: August 17, 1984

Vehicle: 1976 Chevy Monza

Options: Metal dash with foam crash pad on front



G= 0.809 R= 0.124 K= 1989

c= μ_1= μ_2= μ_3=

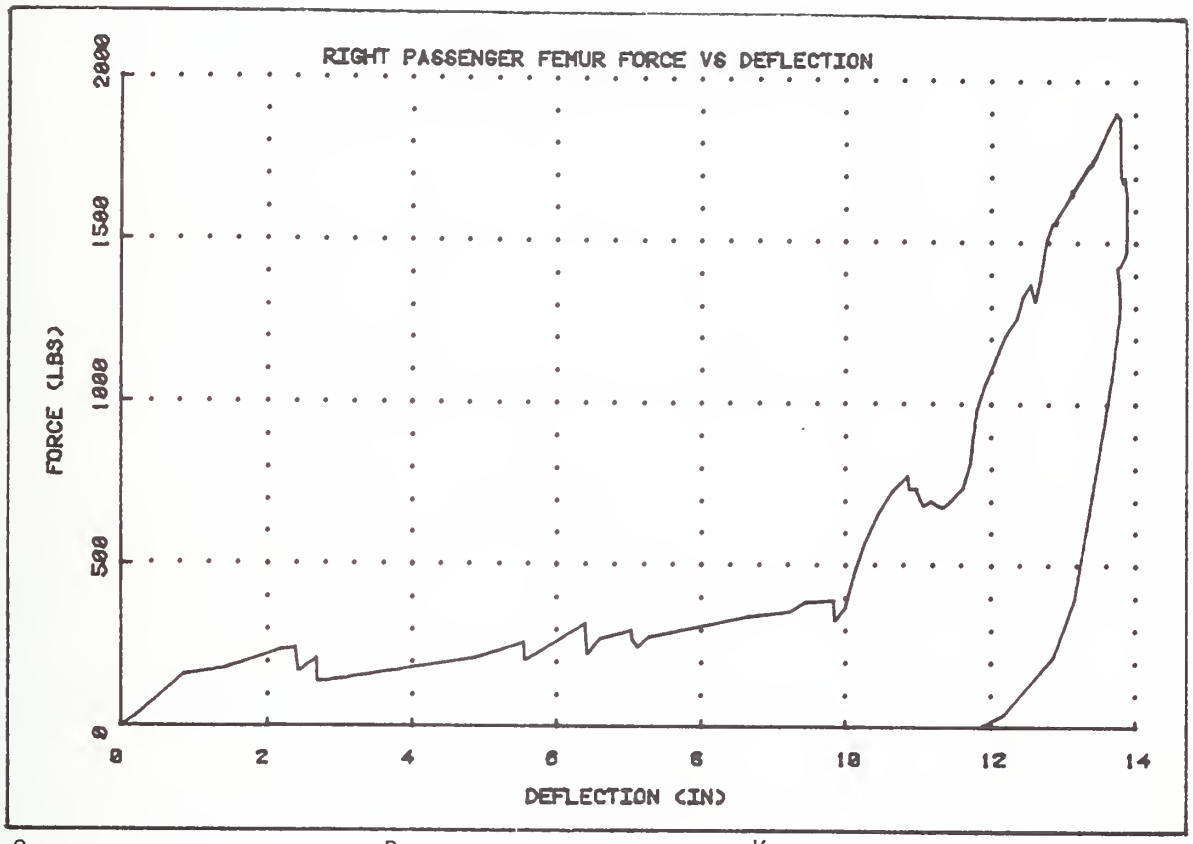
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
1.13	281.60		
2.75	505.60		
4.12	800.00		
5.62	1497.60		
5.97	1273.60		
6.93	2073.60		
8.01	2720.00		
9.86	3616.00		
10.88	4038.40		

Test Right Passenger Femur Date: August 17, 1984

Vehicle: 1976 Chevy Monza

Options: Metal dash with foam crash pad on front



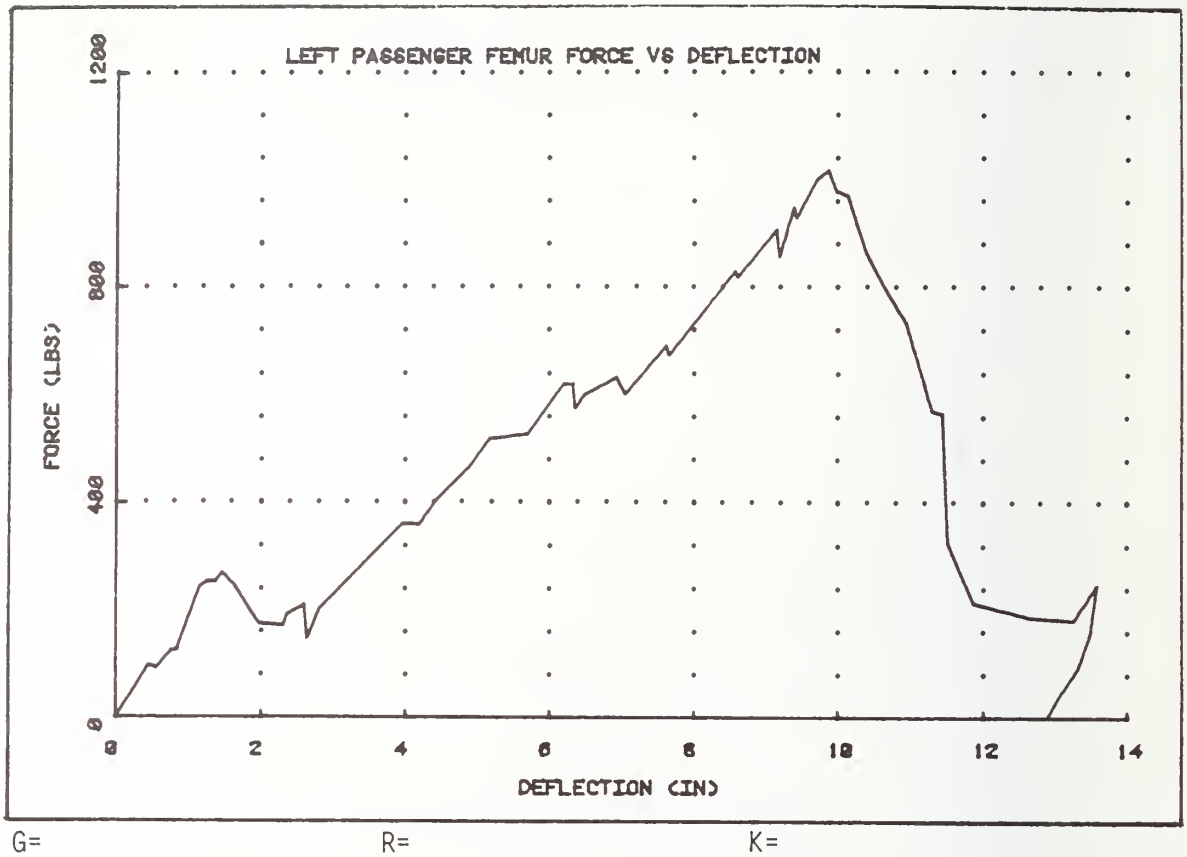
G= R= K=

Deflection	Force	Deflection	Force

Test Left Passenger Femur Date: August 17, 1984

Vehicle: 1976 Chevy Monza

Options: Metal dash with foam crash pad on top



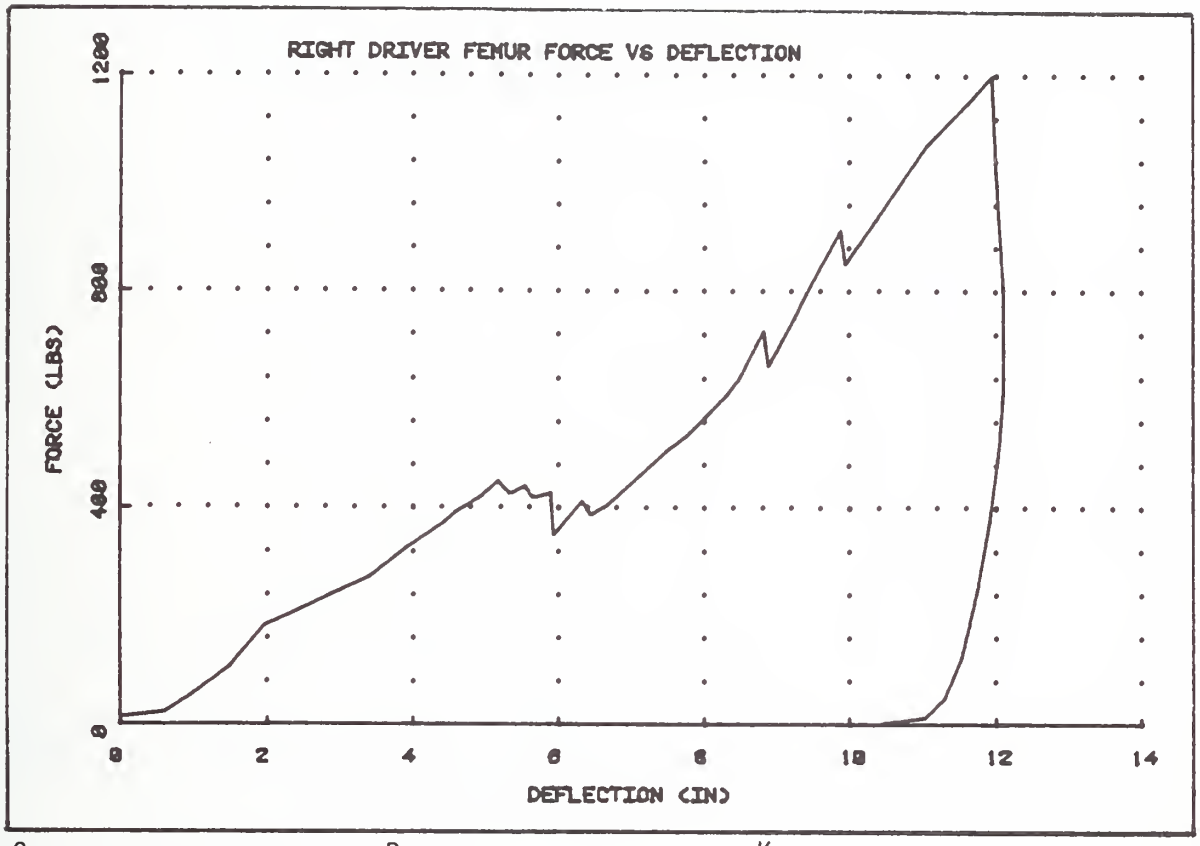
G= R= K=

Deflection	Force	Deflection	Force

Test Right Driver Femur Date: August 17, 1984

Vehicle: 1976 Chevy Monza

Options: Metal dash with foam crash pad on front



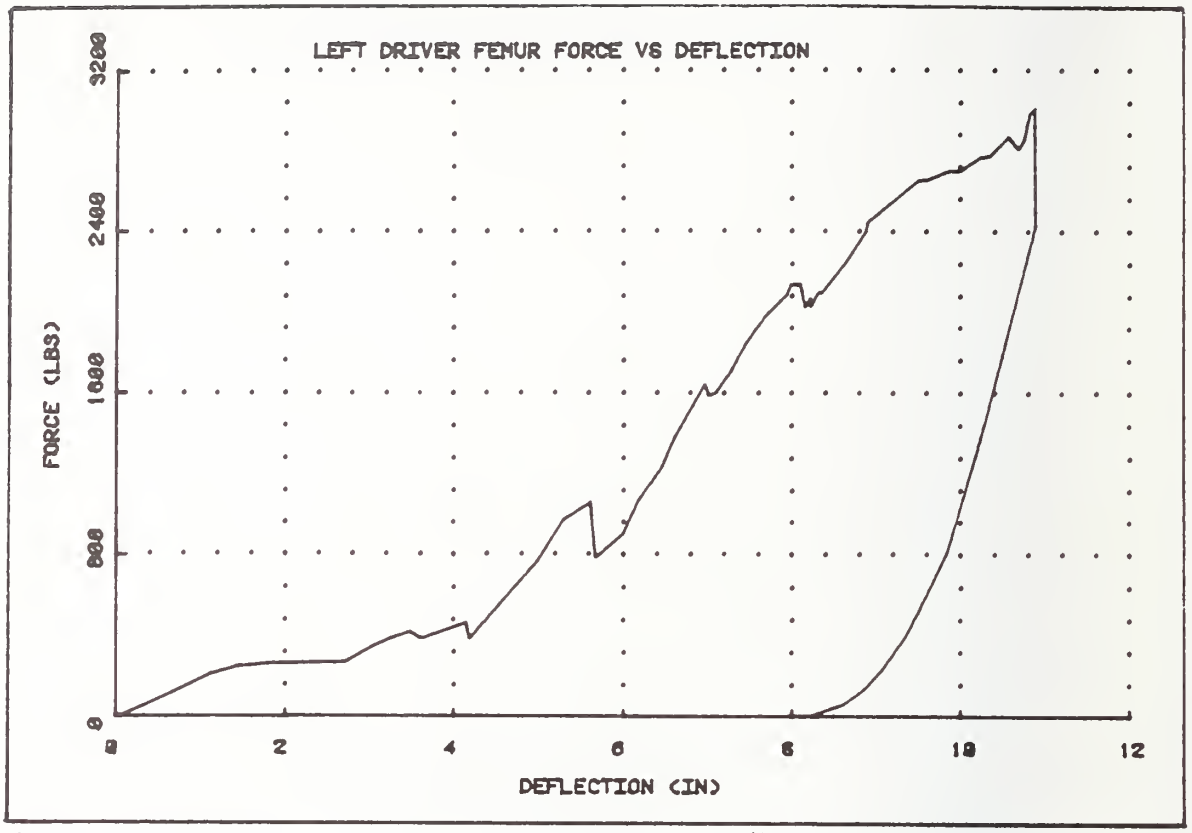
G= R= K=

Deflection	Force	Deflection	Force

Test Left Driver Femur Date: August 17, 1984

Vehicle: 1976 Chevy Monza

Options: Metal dash with foam crash pad on front



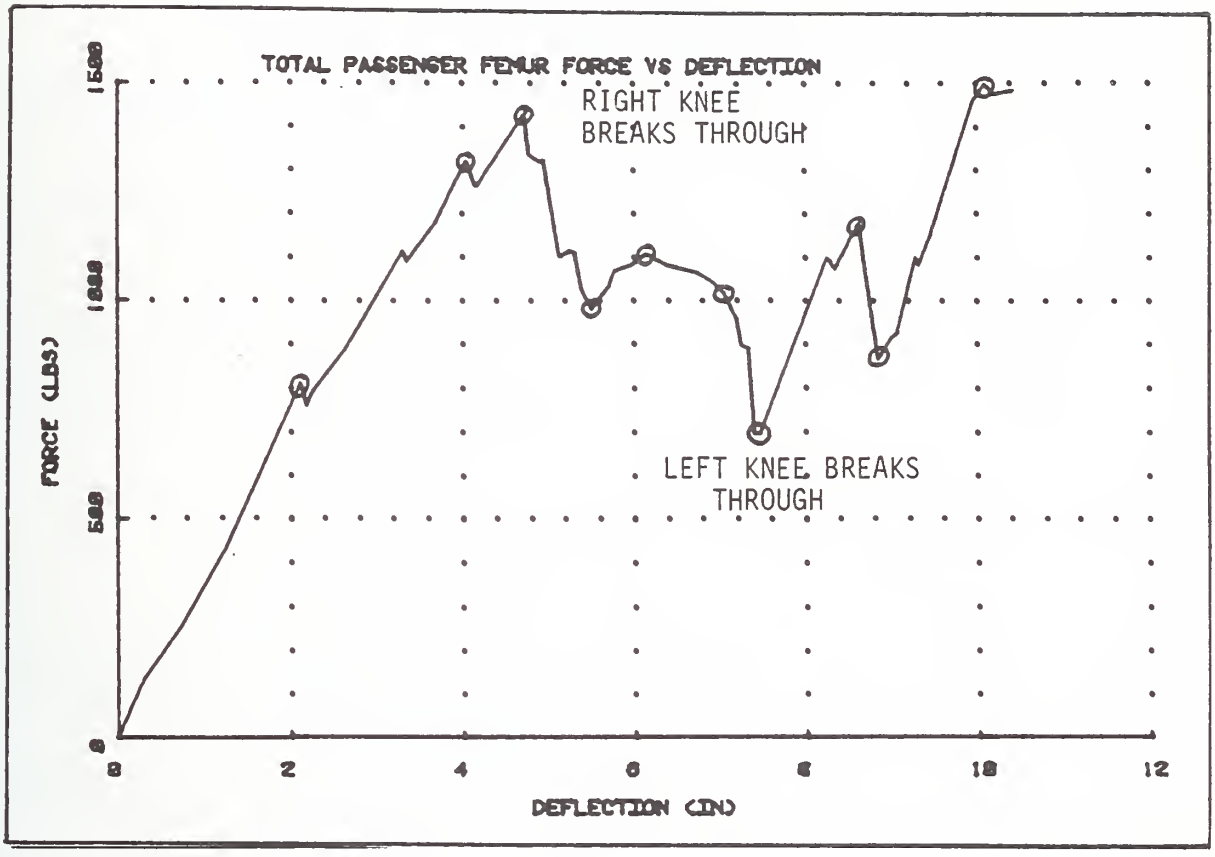
G= R= K=

Deflection	Force	Deflection	Force

Test: Passenger Side Femur (static) Date: August 21, 1984

Vehicle: Honda Civic CVCC

Options: No radio



G= 0.793 R= 0.065 K= 1170

c= μ_1= μ_2= μ_3=

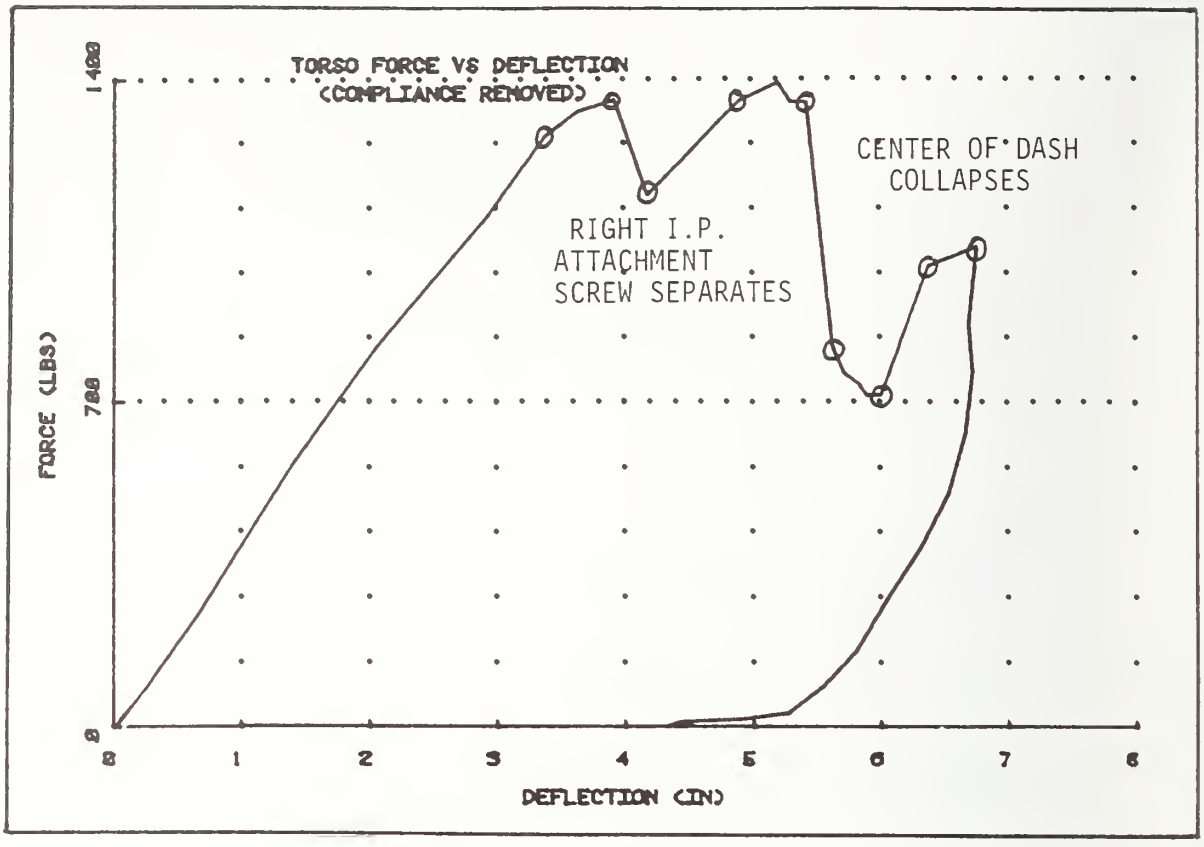
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	10.10	1499.52
2.16	819.84		
4.07	1328.64		
4.73	1434.24		
5.51	983.04		
6.10	1109.76		
7.06	1019.52		
7.42	689.28		
8.67	1184.64		
8.84	862.08		

Test: Torso (static) Date: August 21, 1984

Vehicle: Honda Civic CVCC

Options: No radio



G= 0.641 R= 0.074 K= 1624

c= 2.60 μ_1= μ_2= μ_3=

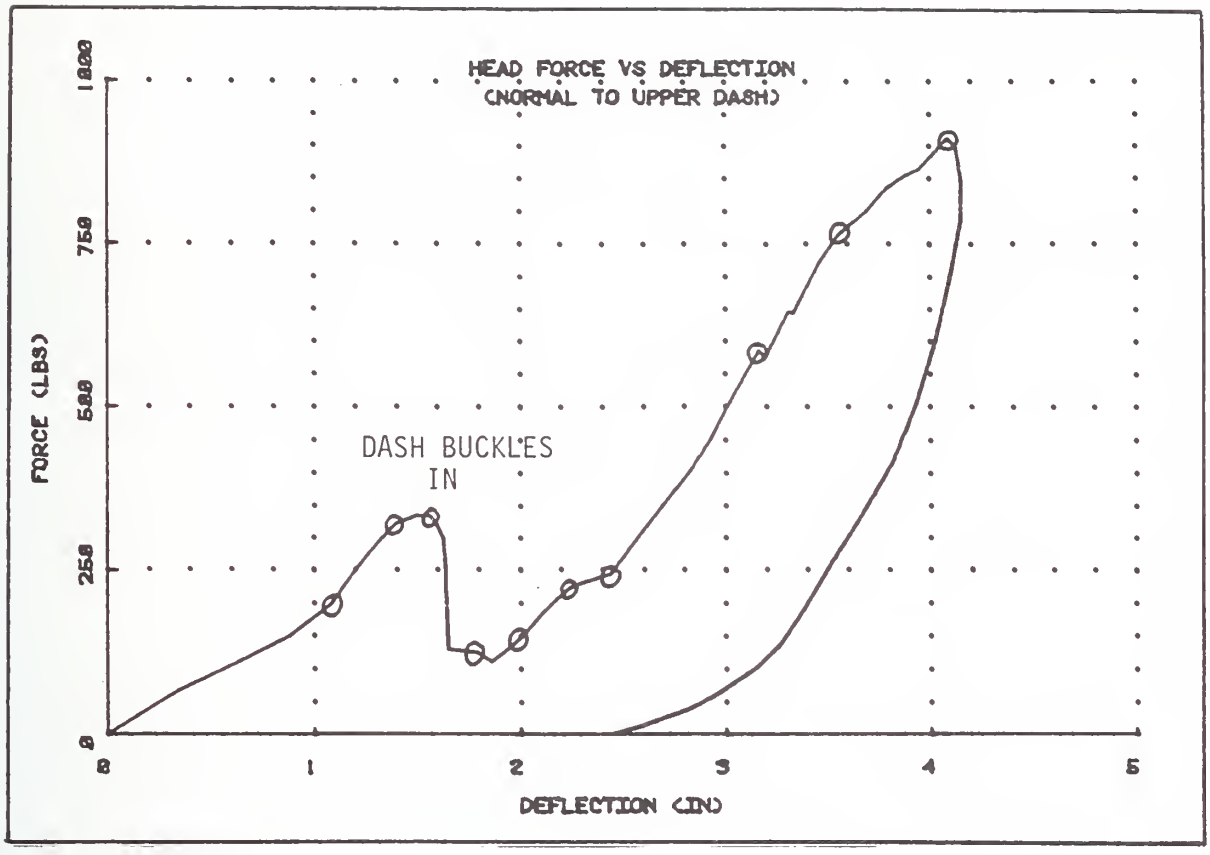
δ_A= 0.0 δ_B= 0.0 δ_C= 31.20 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
3.40	1275.90		
3.92	1352.96		
4.19	1148.67		
4.91	1351.16		
5.43	1351.16		
5.63	818.94		
6.02	713.21		
6.38	992.76		
6.78	1033.98		

Test: Head (static) Date: August 21, 1984

Vehicle: Honda Civic CVCC

Options: No radio



G= 0.591 R= 0.266 K= 965

c= μ_1= μ_2= μ_3=

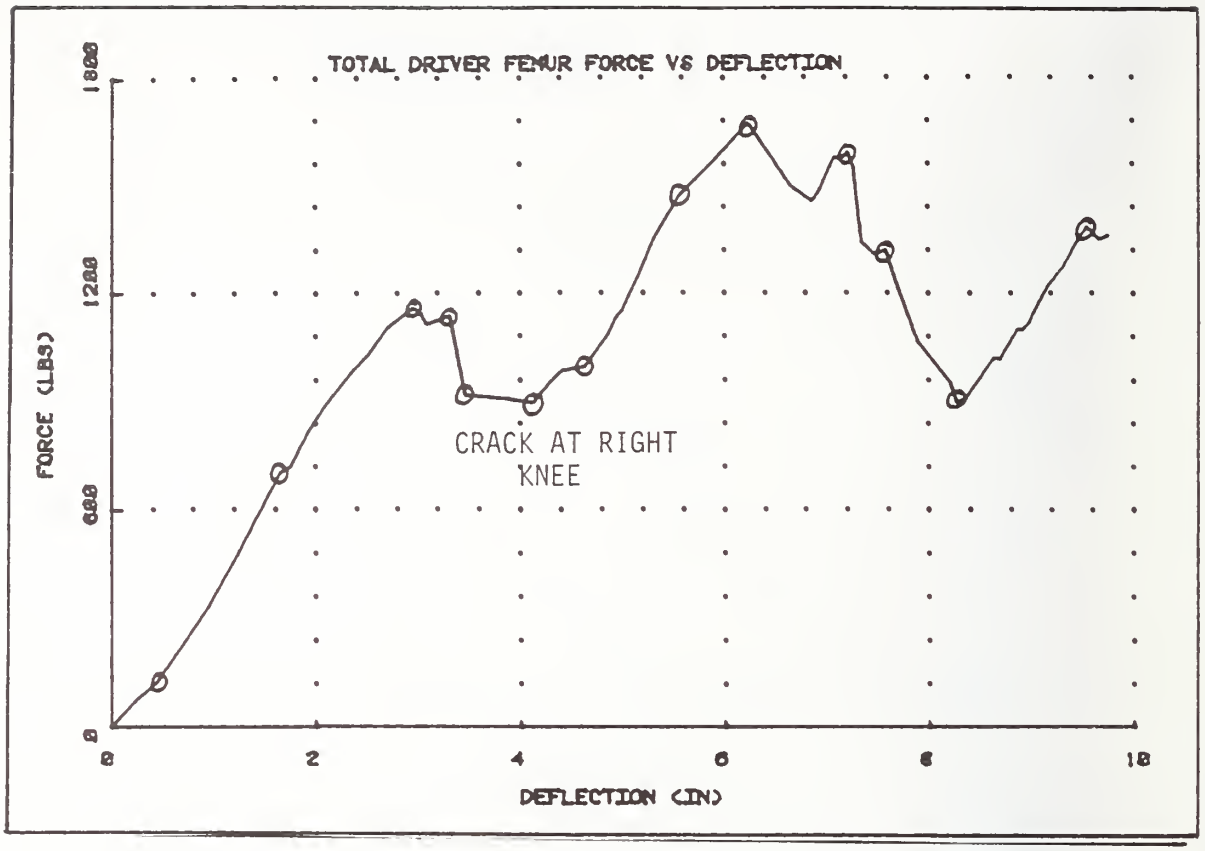
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	4.09	913.93
1.07	197.12		
1.39	326.40		
1.54	336.64		
1.79	126.72		
1.96	136.96		
2.24	226.56		
2.44	245.76		
3.17	590.08		
3.56	764.16		

Test: Driver Side Femur (static) Date: August 21, 1984

Vehicle: Honda Civic CVCC

Options: No radio



G= 0.824 R= 0.072 K= 767

c= μ_1= μ_2= μ_3=

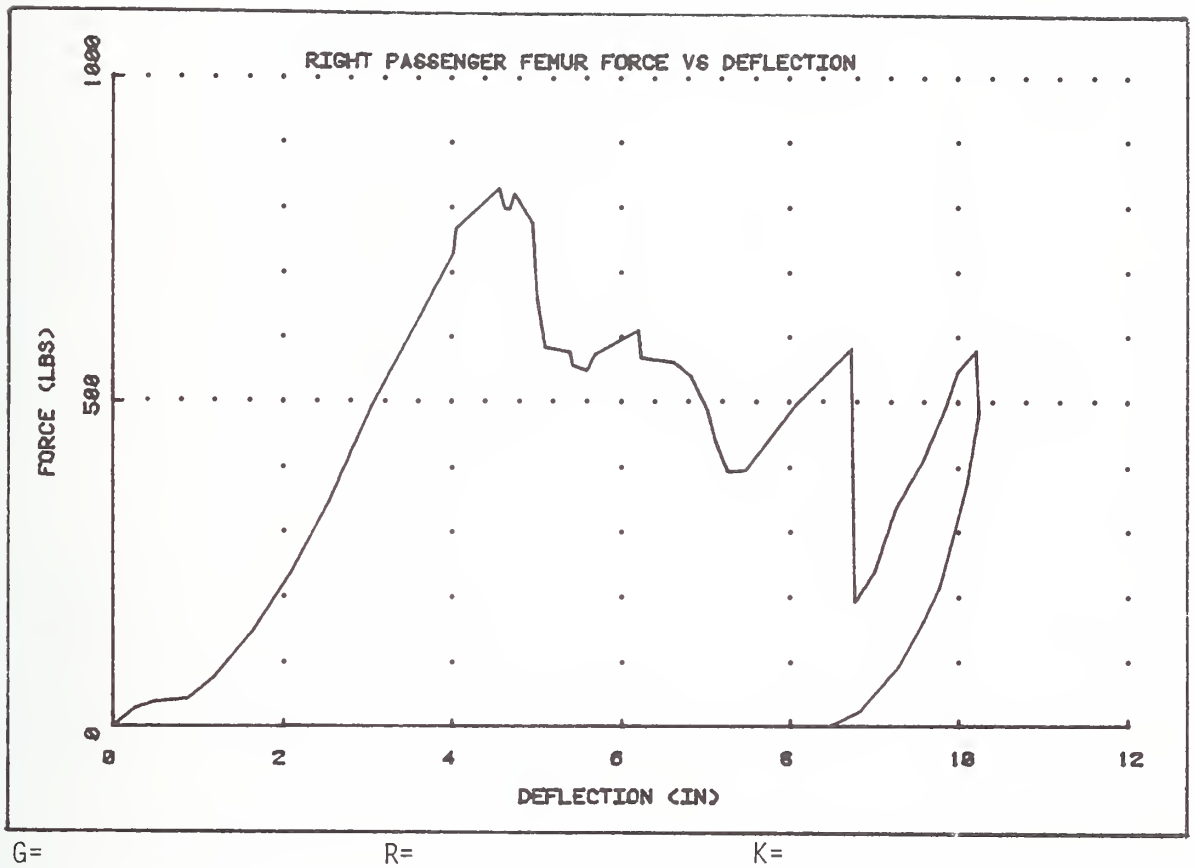
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	7.22	1592.06
0.45	129.02	7.57	1322.44
1.65	705.02	8.27	898.56
2.95	1154.30	9.57	1384.70
3.29	1135.87		
3.44	910.08		
4.44	891.64		
4.63	999.93		
5.58	1476.86		
6.23	1675.00		

Test Right Passenger Femur Date: August 21, 1984

Vehicle: Honda Civic CVCC

Options: No radio



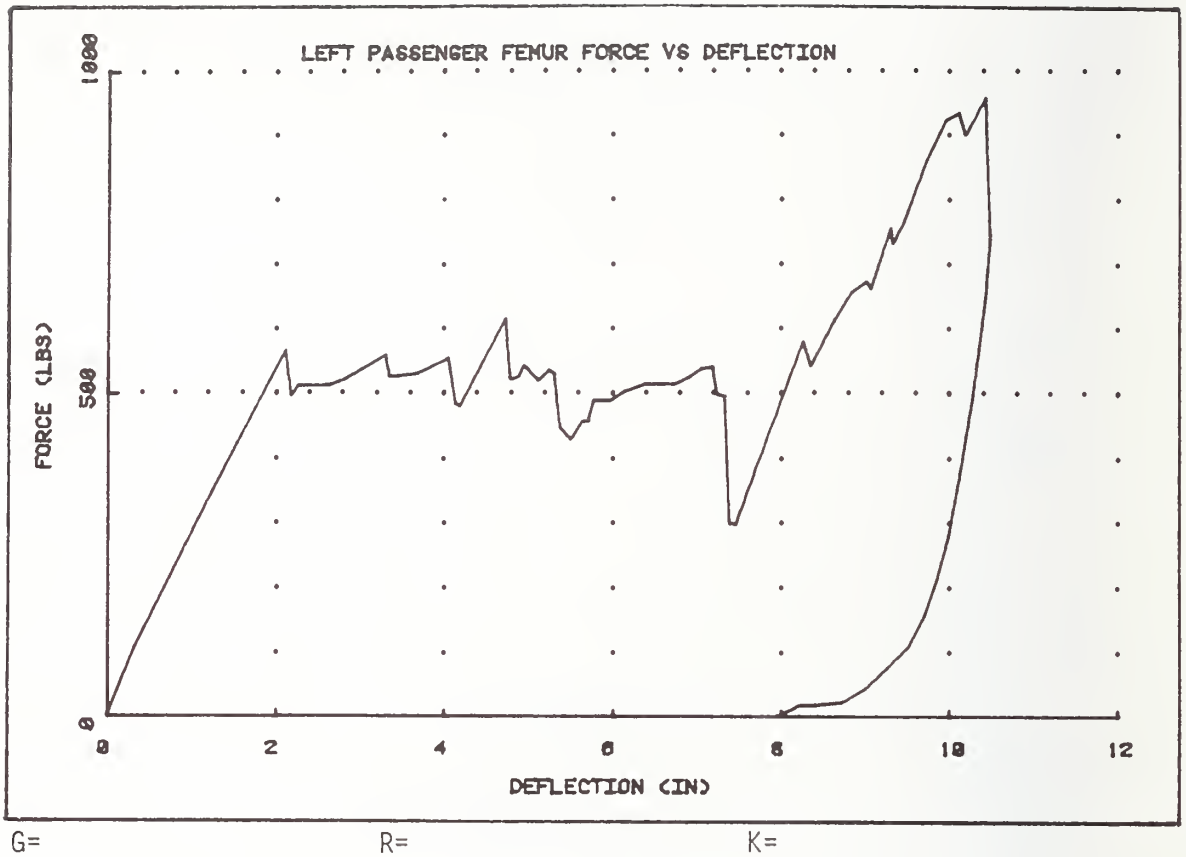
G= R= K=

Deflection	Force	Deflection	Force

Test Left Passenger Femur Date: August 21, 1984

Vehicle: Honda Civic CVCC

Options: No radio



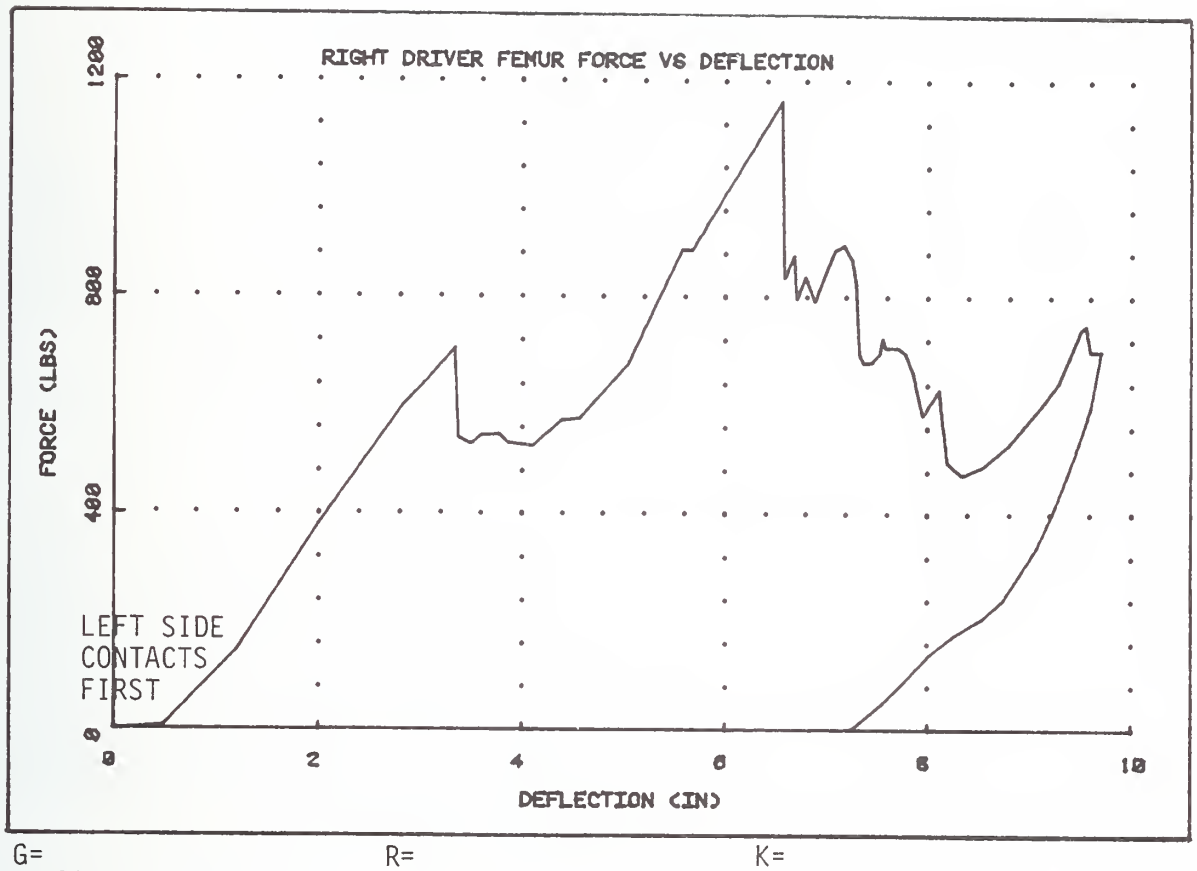
G=_____ R=_____ K=_____

Deflection	Force	Deflection	Force

Test Right Driver Femur Date: August 21, 1984

Vehicle: Honda Civic CVCC

Options: No radio



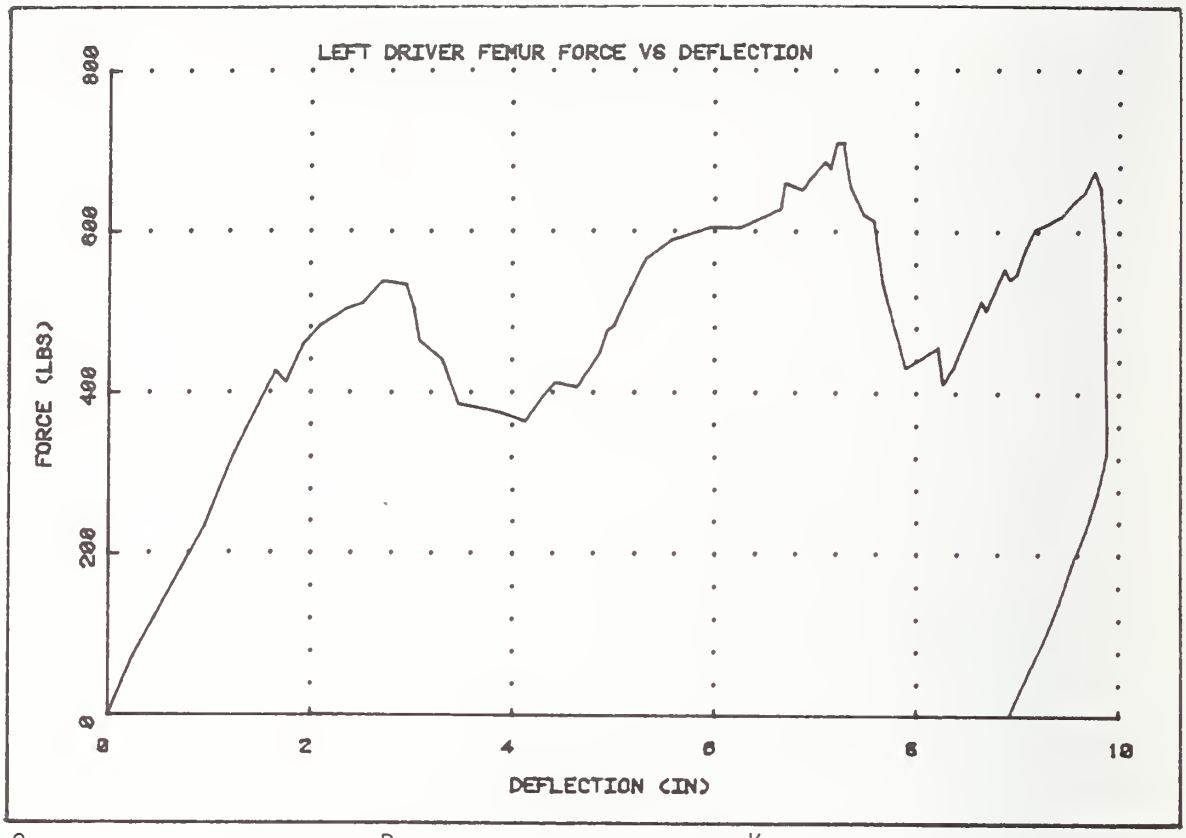
G= R= K=

Deflection	Force	Deflection	Force

Test Left Driver Femur Date: August 21, 1984

Vehicle: Honda Civic CVCC

Options: No radio



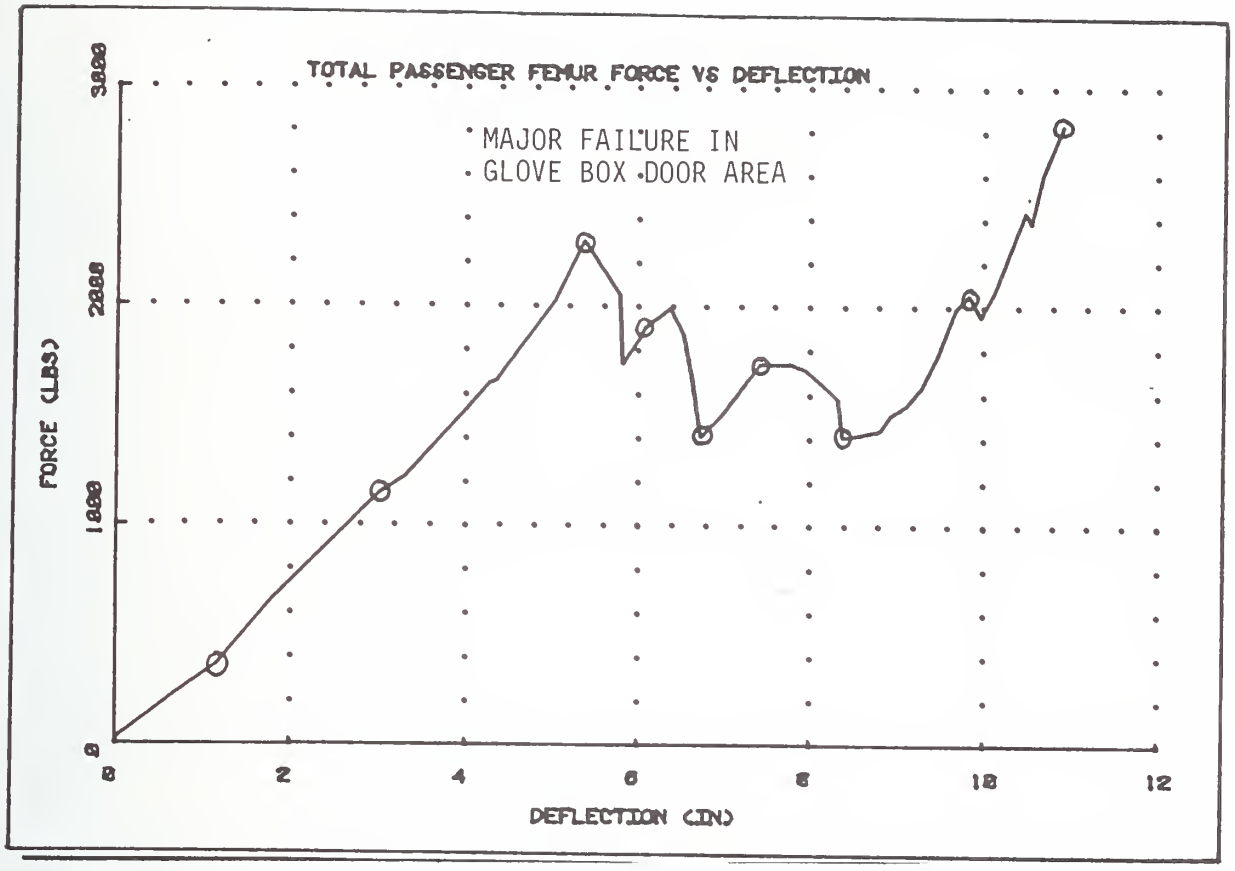
G= R= K=

Deflection	Force	Deflection	Force

Test: Passenger Side Femur (static) Date: August 28, 1984

Vehicle: Ford LTD

Options: Air conditioning, radio missing



G= 0.814 R= 0.094 K= 1792

c= 0.0 μ_1= μ_2= μ_3=

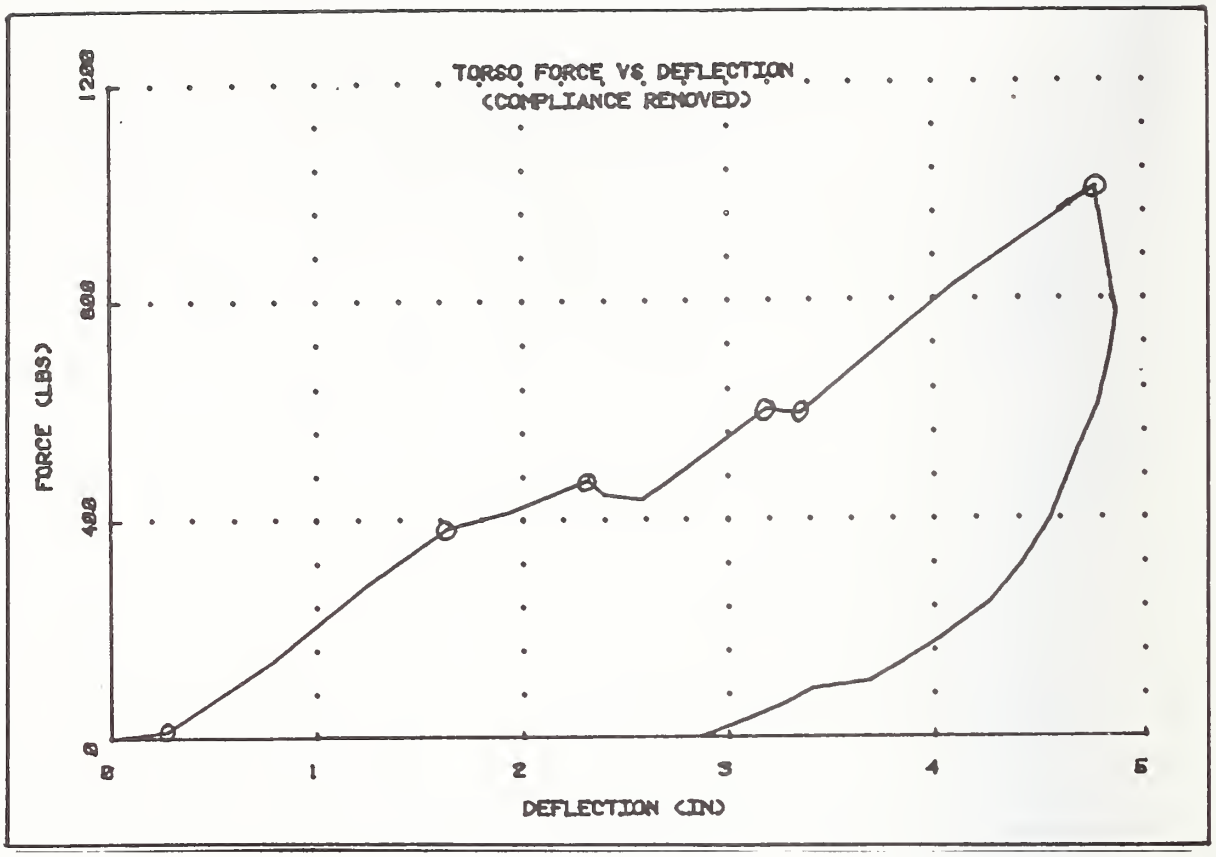
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
1.17	366.42		
3.02	1149.33		
5.36	2298.48		
6.07	1905.88		
6.72	1404.66		
7.75	1740.31		
8.38	1401.95		
9.83	2059.63		
10.91	2836.35		

Test: Torso (static) Date: August 28, 1984

Vehicle: Ford LTD

Options: Air conditioning, radio missing



G= 0.588 R= -0.179 K= 636

c= 0.66 μ_1= μ_2= μ_3=

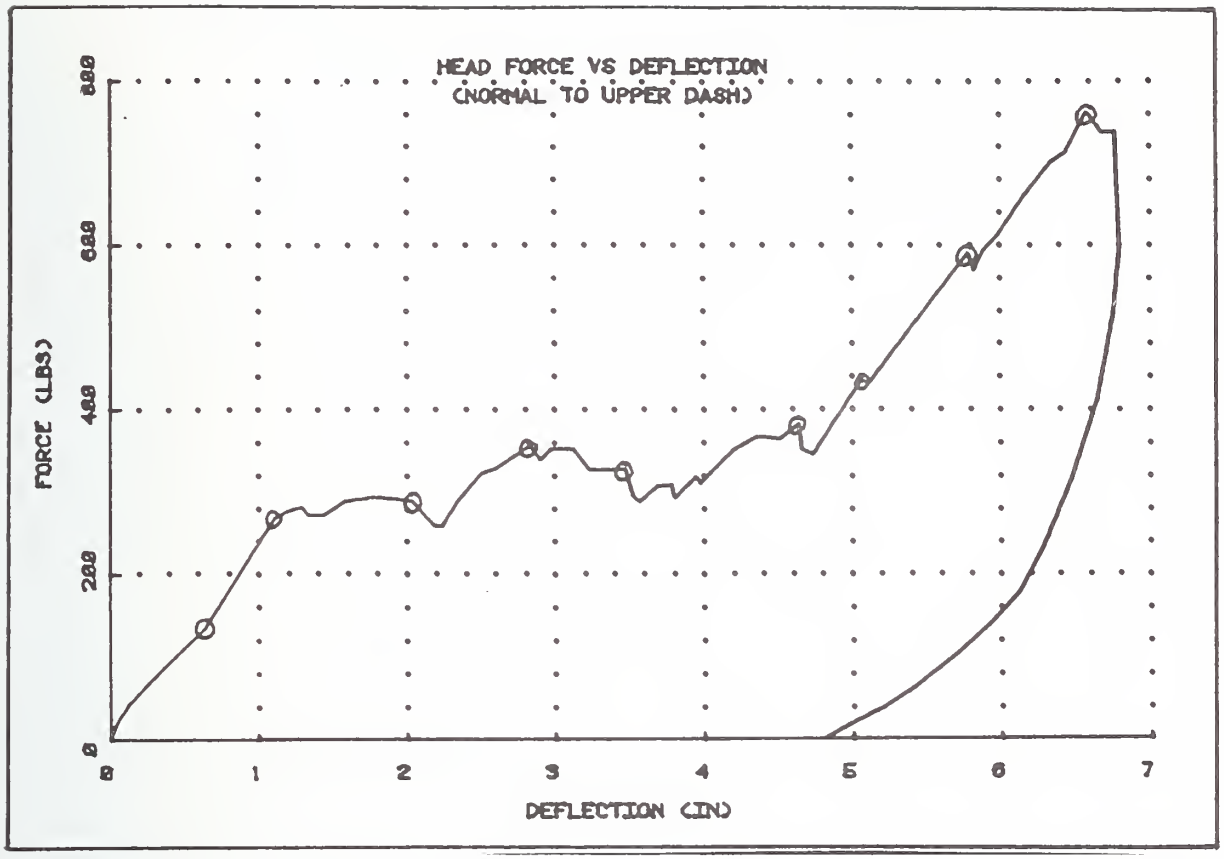
δ_A= 0.0 δ_B= 0.0 δ_C= 7.92 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
0.27	13.27		
1.63	384.98		
2.31	472.01		
3.18	602.81		
3.26	594.03		
4.77	1005.11		

Test: Head (static) Date: August 28, 1984

Vehicle: Ford LTD

Options: Air conditioning, radio missing



G= 0.707 R= 0.132 K= 335

c= μ_1= μ_2= μ_3=

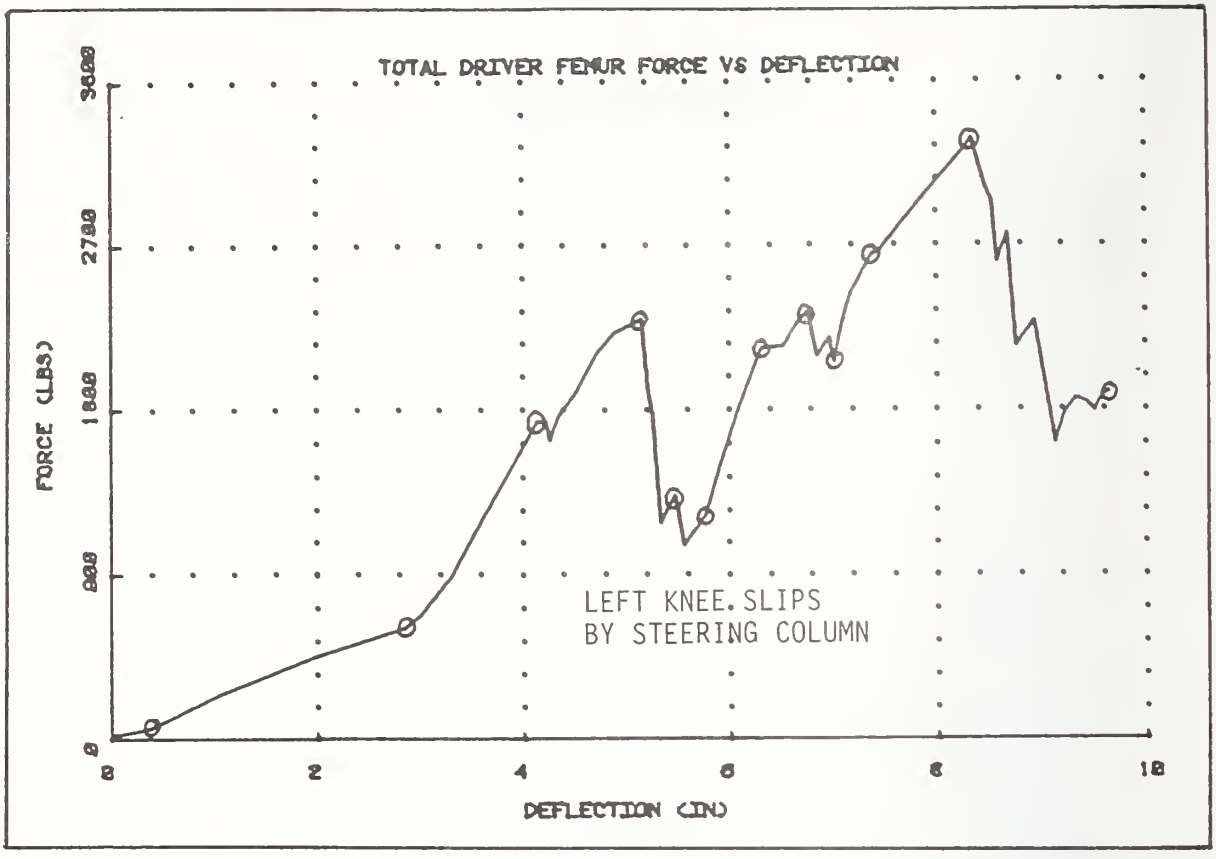
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
0.64	135.23		
1.10	268.59		
2.04	288.25		
2.82	356.34		
3.47	327.73		
4.63	384.13		
5.06	434.88		
5.79	590.72		
6.58	762.03		

Test: Driver Side Femur (static) Date: August 28, 1984

Vehicle: Ford LTD

Options: Air conditioning, radio missing



G= 0.769 R= 0.066 K= 1987

c= μ_1= μ_2= μ_3=

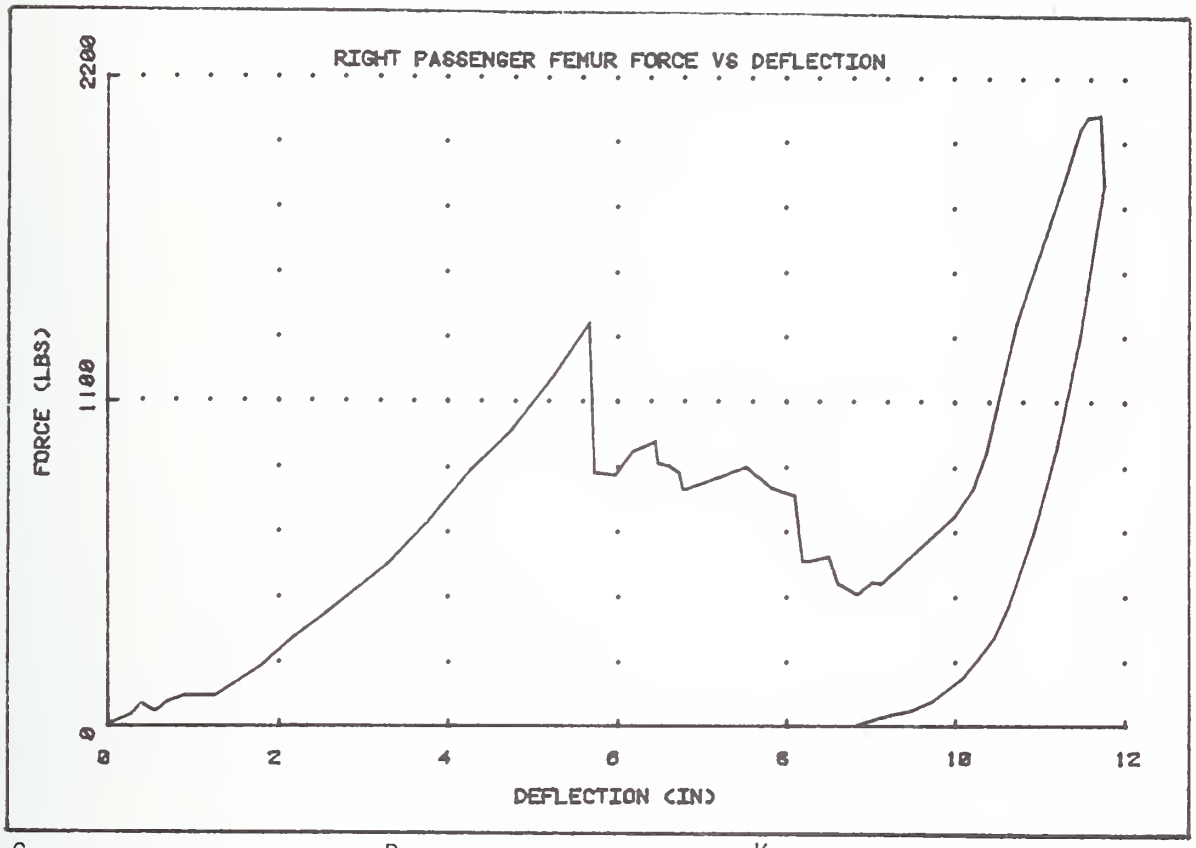
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	7.39	2646.47
0.38	62.33	8.34	3280.81
2.86	611.75	9.64	1891.25
4.14	1734.33		
5.15	2293.73		
5.47	1339.26		
5.77	1228.56		
6.32	2138.37		
6.77	2331.81		
7.02	2048.00		

Test Right Passenger Femur Date: August 28, 1984

Vehicle: Ford LTD

Options: Air Conditioning, Radio missing



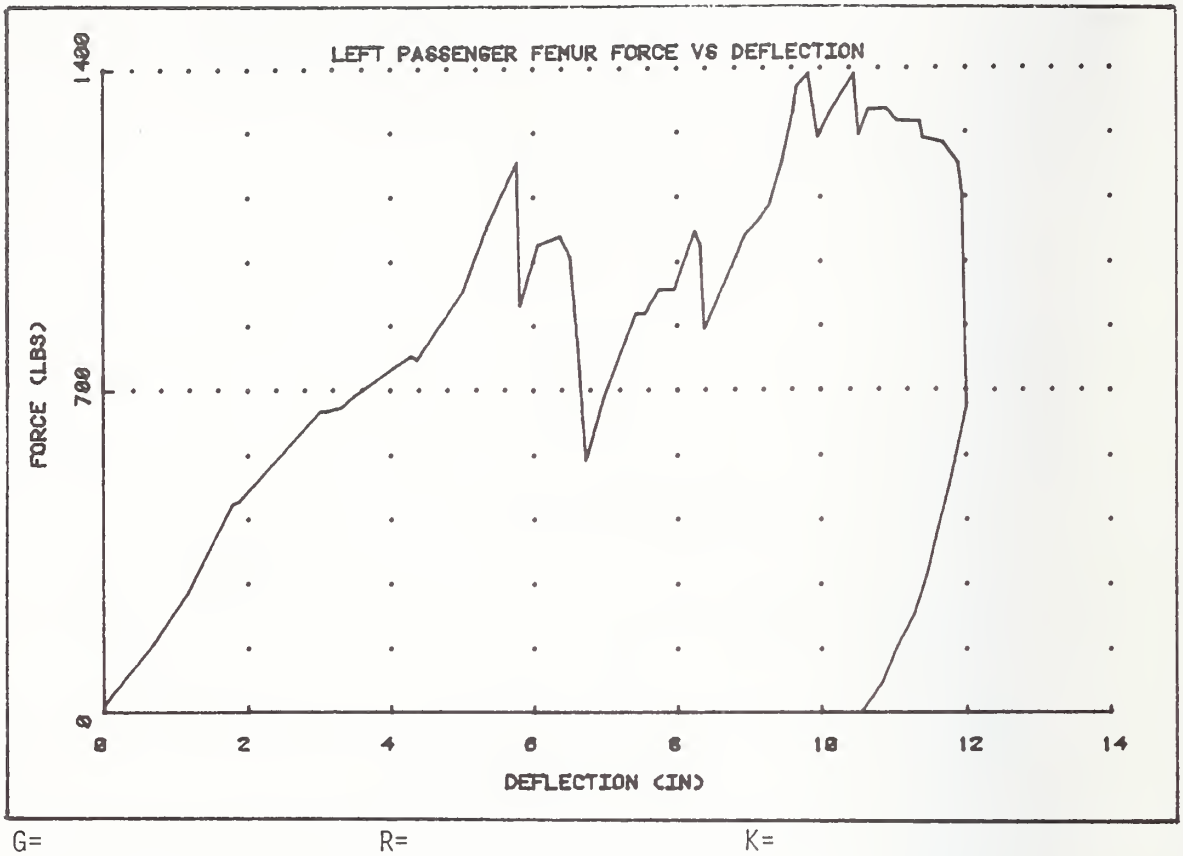
G= R= K=

Deflection	Force	Deflection	Force

Test Left Passenger Femur Date: August 28, 1984

Vehicle: Ford LTD

Options: Air conditioning, Radio missing



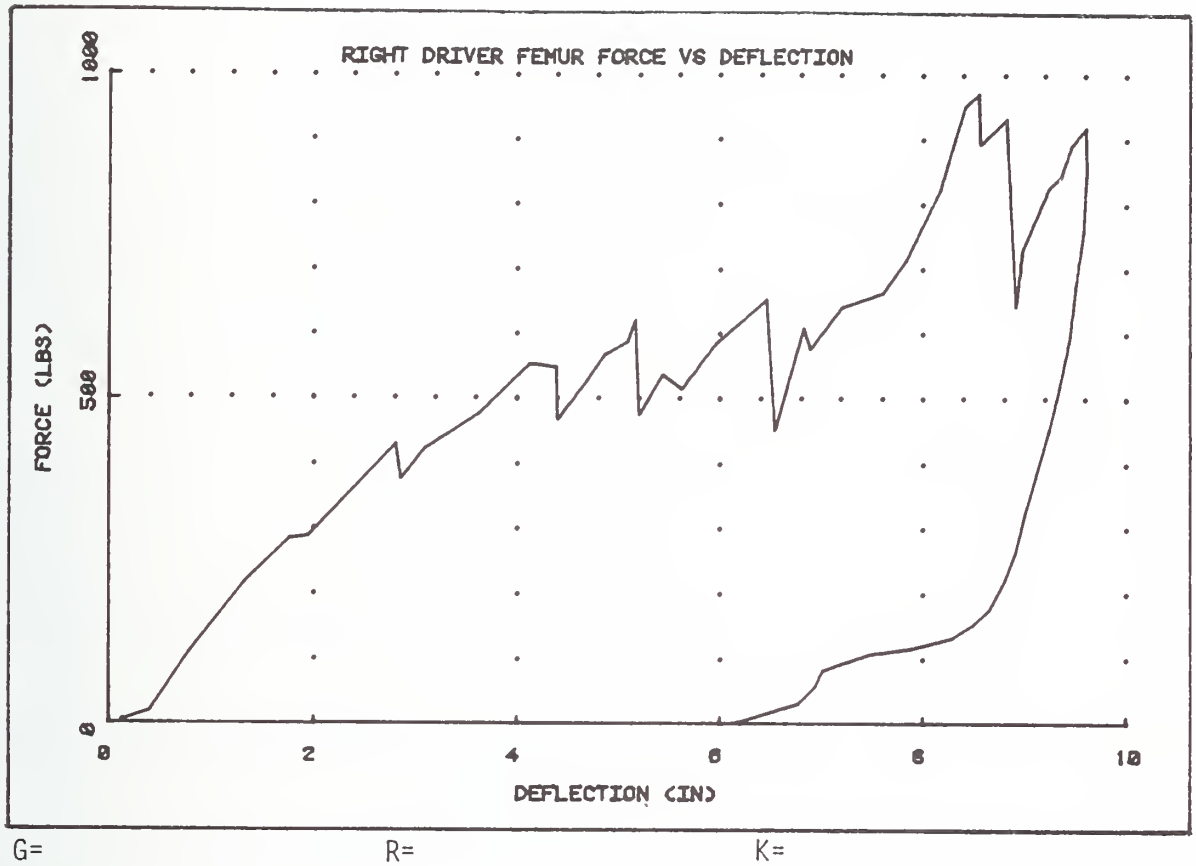
G= R= K=

Deflection	Force	Deflection	Force

Test Right Driver Femur Date: August 28, 1984

Vehicle: Ford LTD

Options: Air conditioning, Radio missing



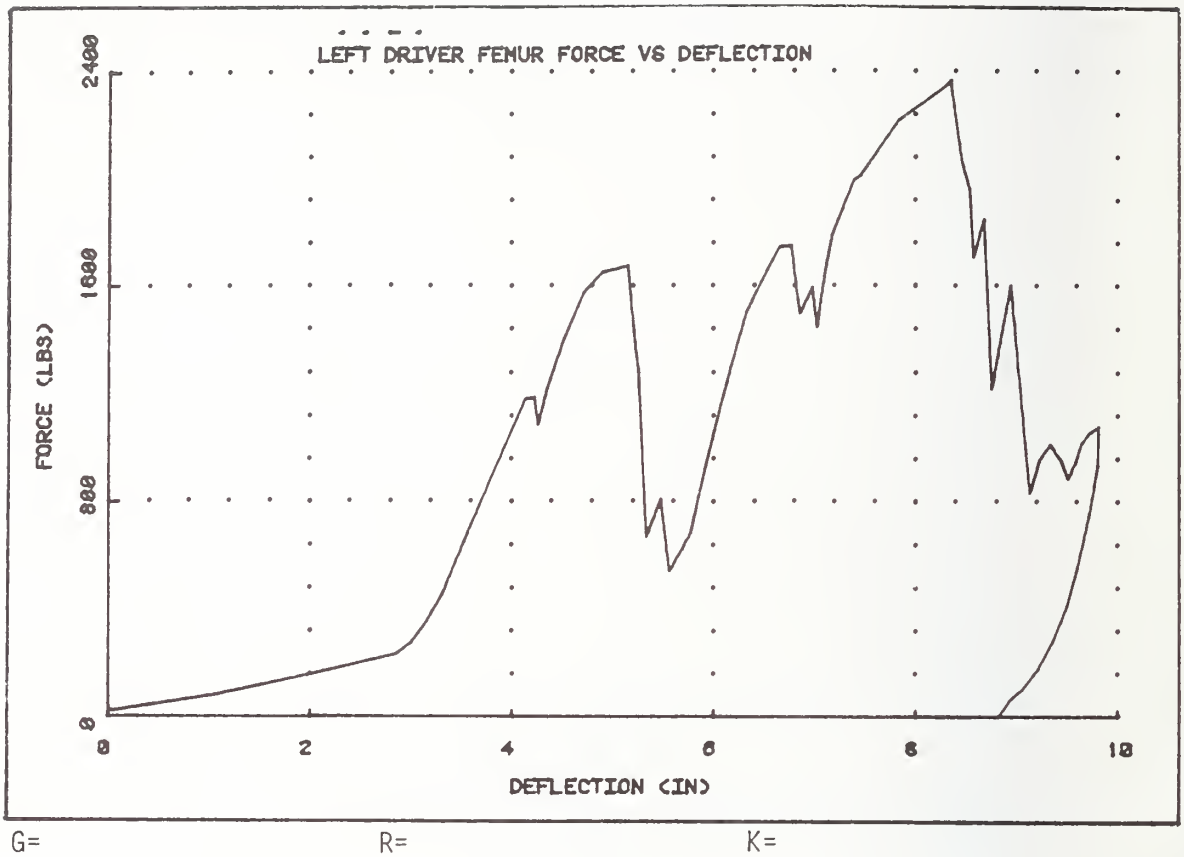
G= R= K=

Deflection	Force	Deflection	Force

Test Left Driver Femur Date: August 28, 1984

Vehicle: Ford LTD

Options: Air conditioning, Radio missing



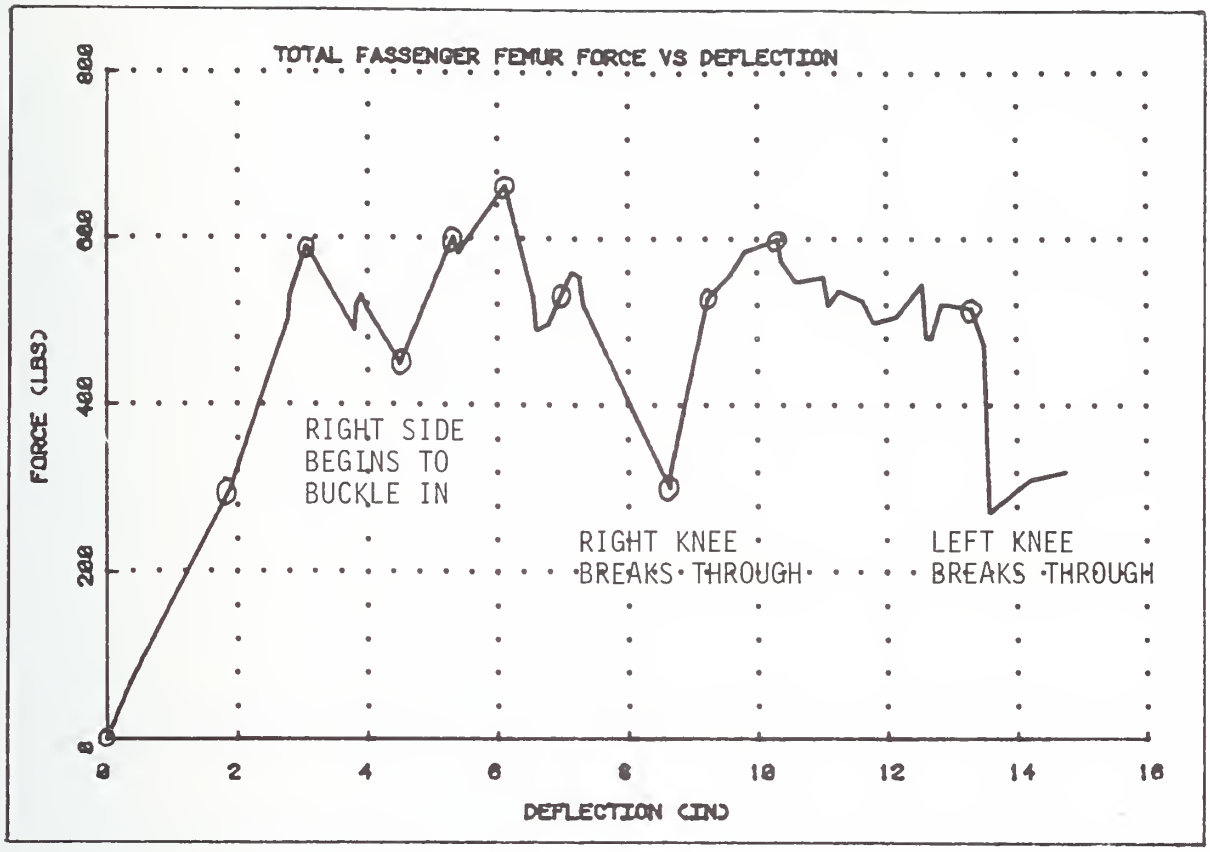
G= R= K=

Deflection	Force	Deflection	Force

Test: Passenger Side Femur (static) Date: August 31, 1984

Vehicle: Dodge Omni

Options: Metal dash top, no radio



G= 0.900 R= 0.016 K= 356

c= 0.16 μ_1= μ_2= μ_3=

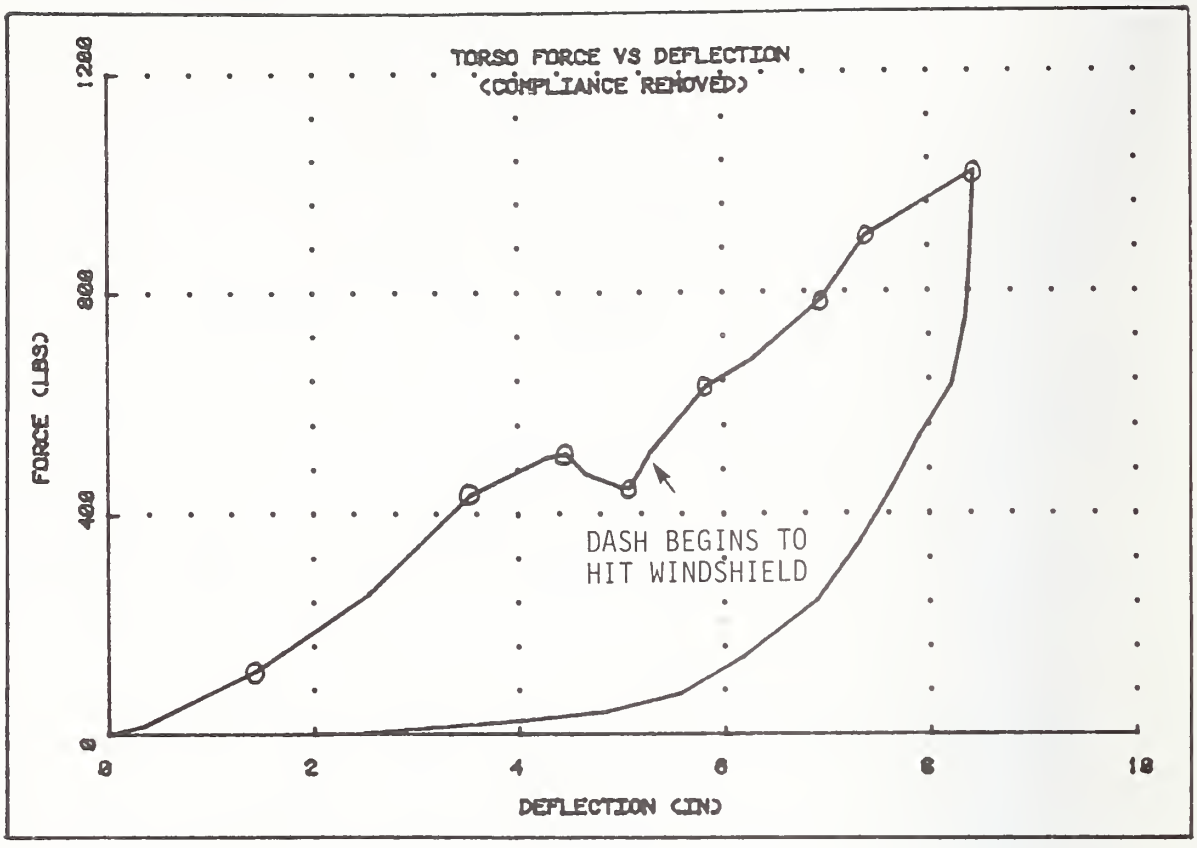
δ_A= 0.0 δ_B= 0.0 δ_C= 1.92 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	13.30	514.78
1.88	298.40		
3.05	589.33		
4.49	447.56		
5.32	601.65		
6.12	663.21		
7.13	558.43		
8.64	301.21		
9.23	527.81		
10.32	599.50		

Test: Torso (static) Date: August 31, 1984

Vehicle: Dodge Omni

Options: Metal dash top, no radio



G= 0.292 R= 0.260 K= 294

c= 2.94 μ_1= μ_2= μ_3=

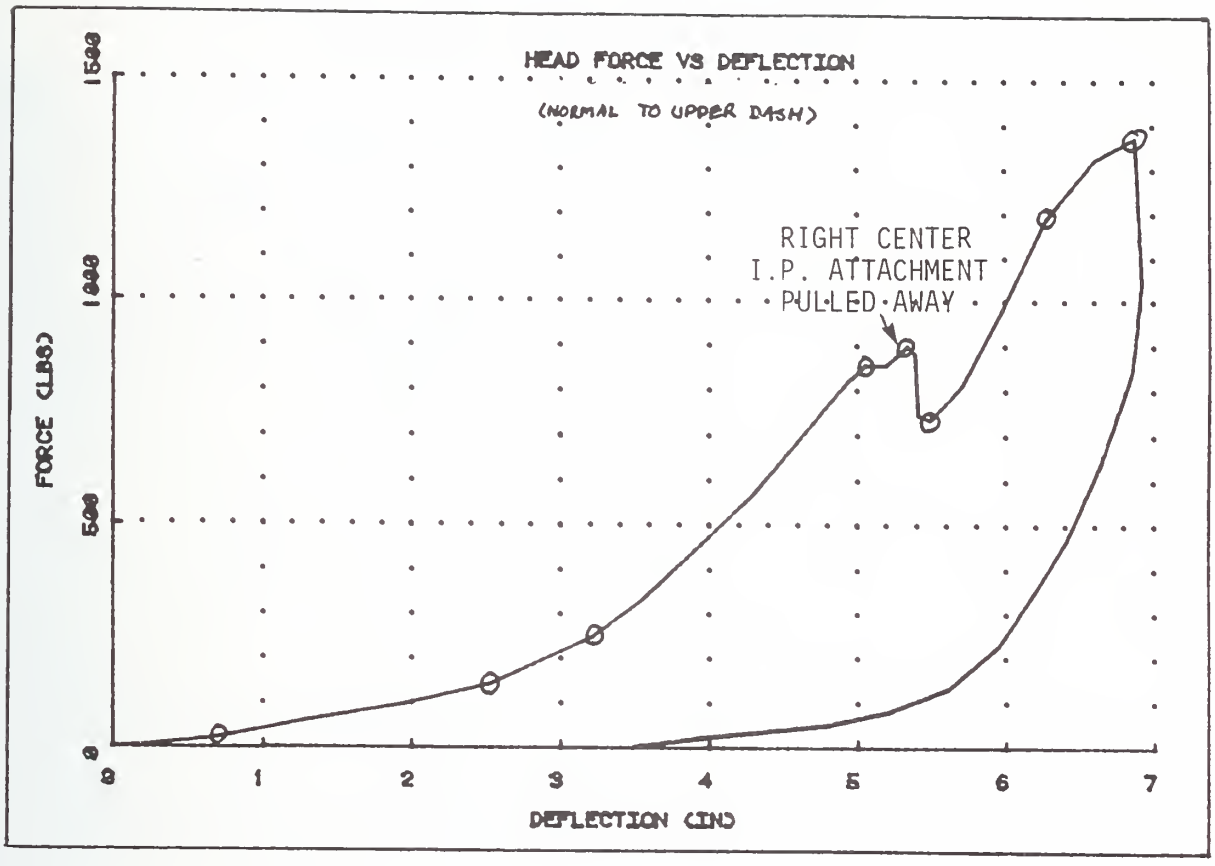
δ_A= 0.0 δ_B= 0.0 δ_C= 35.28 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
1.44	116.80		
3.53	435.18		
4.46	509.37		
5.08	445.61		
5.84	629.89		
6.97	784.92		
7.40	901.70		
8.44	1017.52		

Test: Head (static) Date: August 31, 1984

Vehicle: Dodge Omni

Options: Metal dash top, no radio



G= 0.503 R= 0.210 K= 736

c= μ_1= μ_2= μ_3=

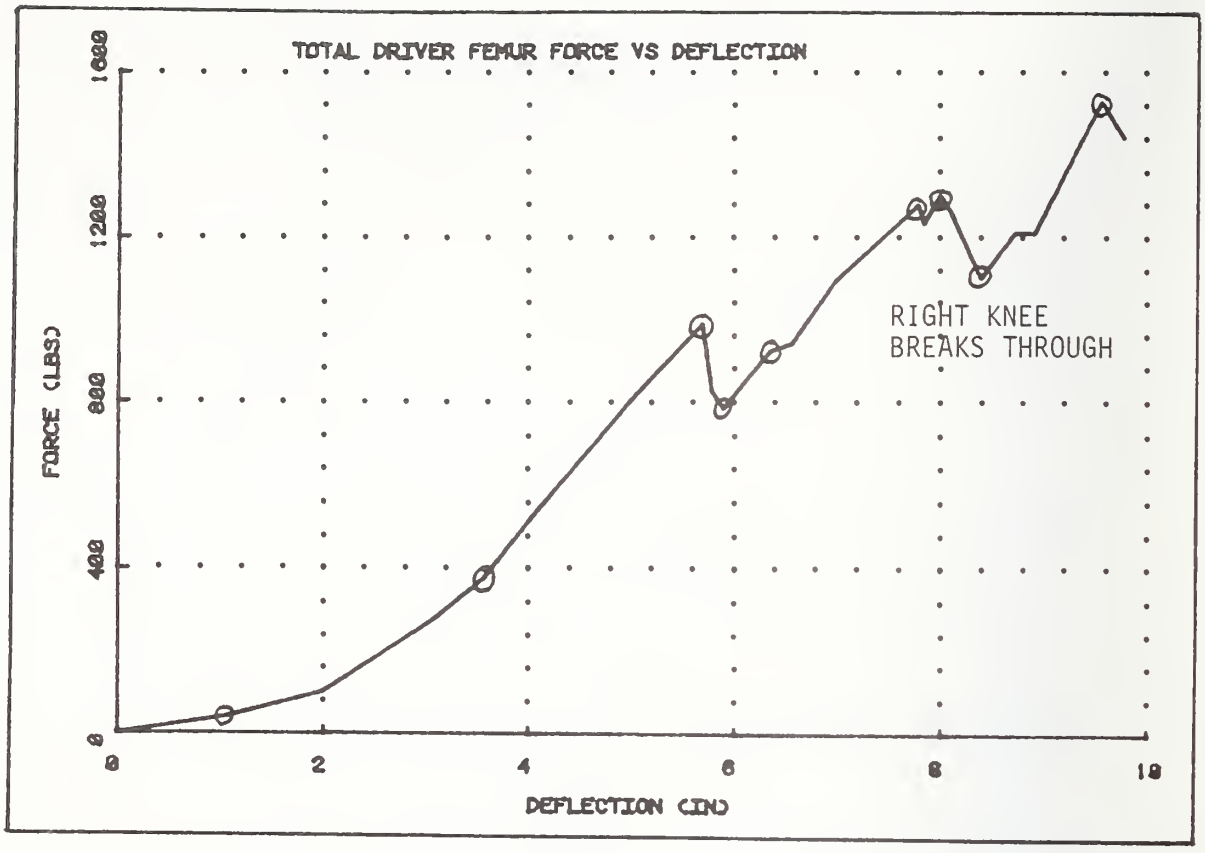
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
0.69	21.23		
2.52	142.02		
3.21	246.65		
5.06	856.13		
5.34	898.81		
5.49	731.79		
6.27	1187.00		
6.88	1373.32		

Test: Driver Side Femur (static) Date: August 31, 1984

Vehicle: Dodge Omni

Options: Metal dash top, no radio



G= 0.706 R= 0.115 K= 961

c= μ_1= μ_2= μ_3=

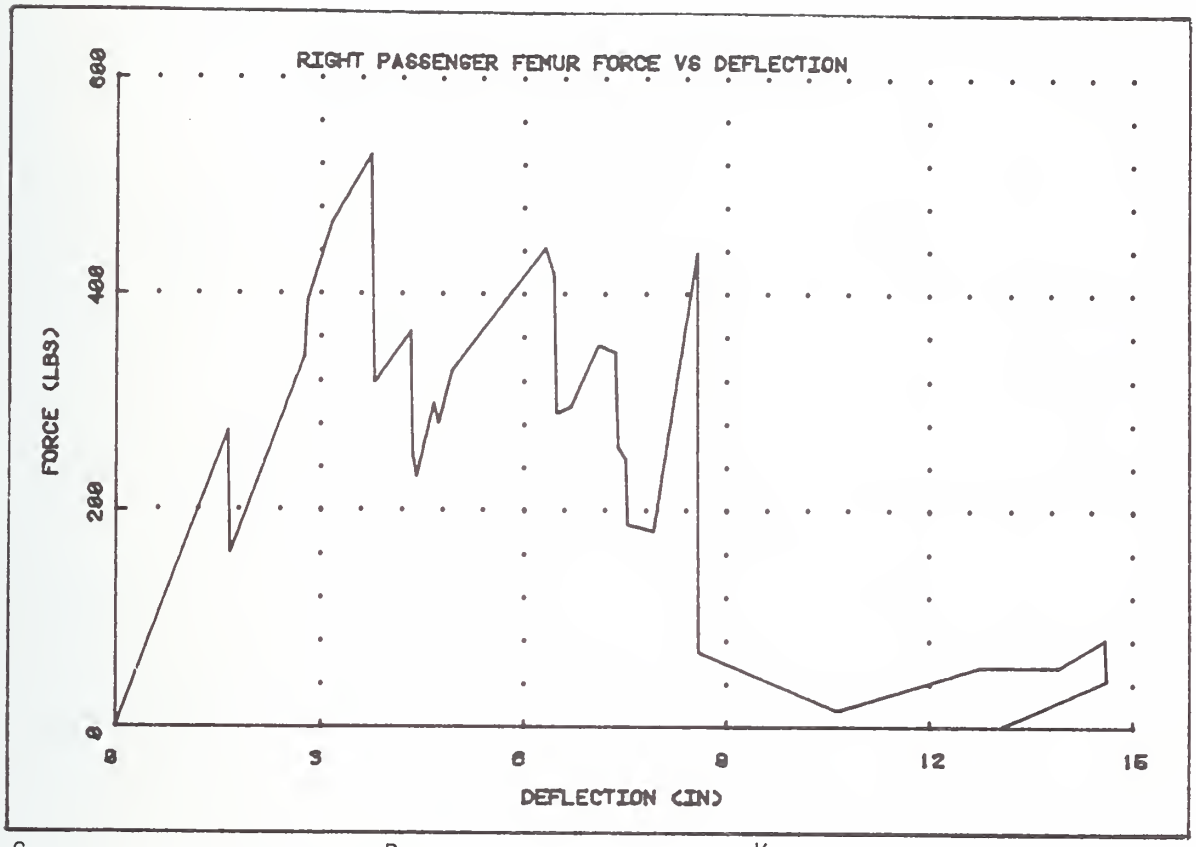
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
1.08	41.93		
3.57	379.45		
5.69	986.46		
5.89	783.39		
6.36	923.12		
7.79	1278.67		
8.00	1302.37		
8.39	1097.80		
9.57	1527.42		

Test Right Passenger Femur Date: August 31, 1984

Vehicle: Dodge Omni

Options: Metal dash top, No radio



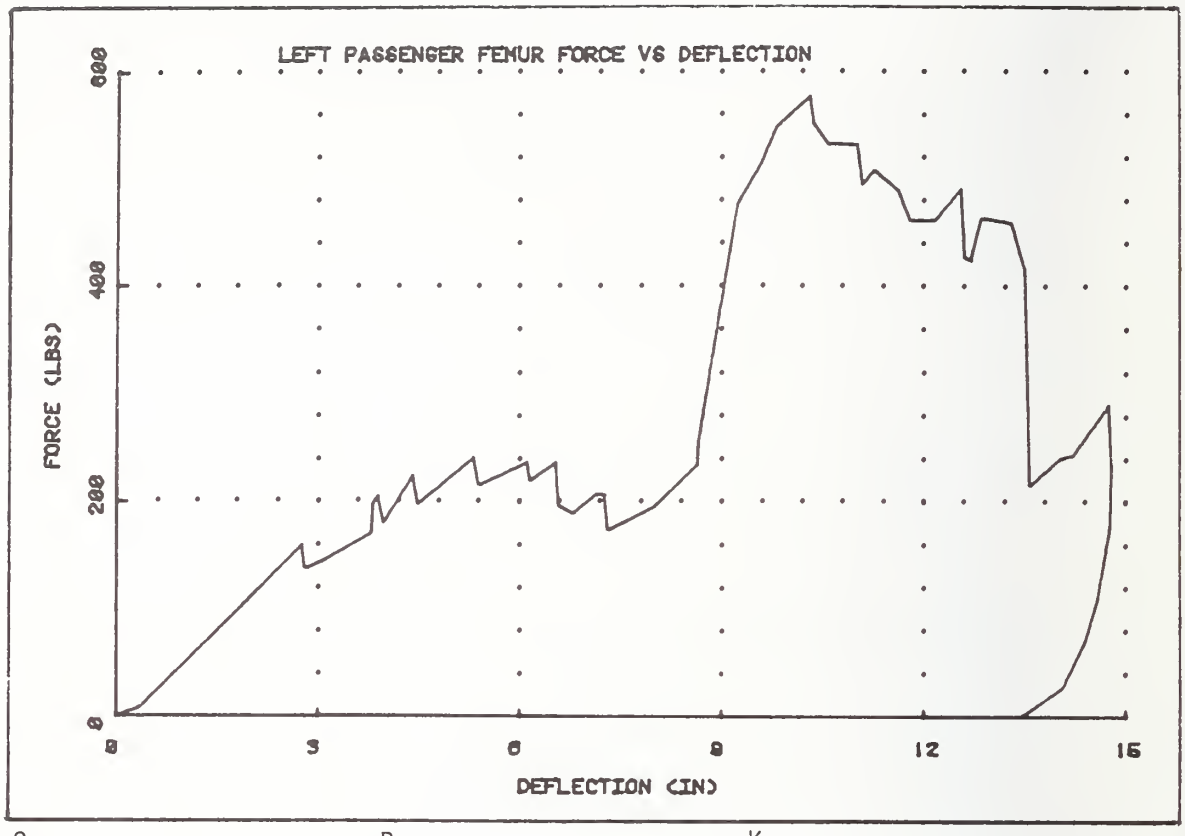
G= R= K=

Deflection	Force	Deflection	Force

Test Left Passenger Femur Date: August 31, 1984

Vehicle: Dodge Omni

Options: Metal Dash top, No radio



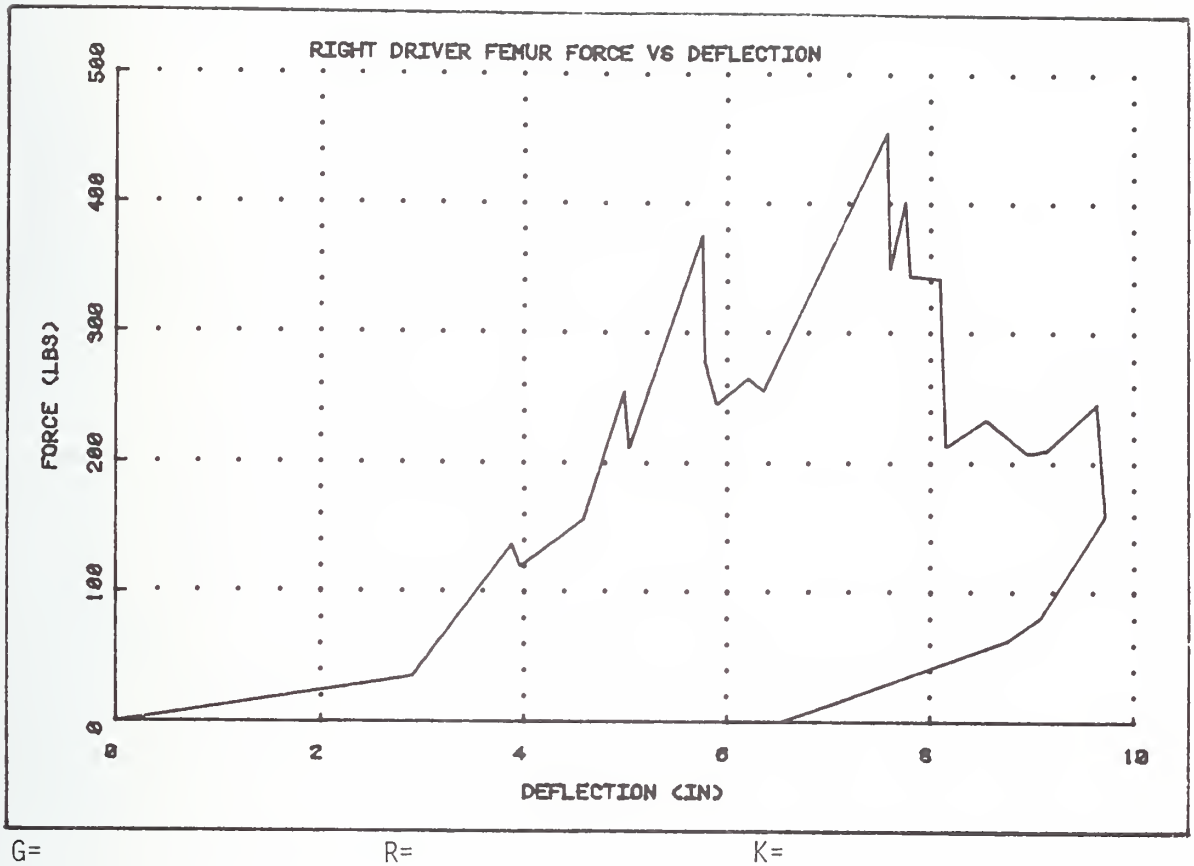
G= R= K=

Deflection	Force	Deflection	Force

Test Right Driver Femur Date: August 31, 1984

Vehicle: Dodge Omni

Options: Metal dash top, No radio



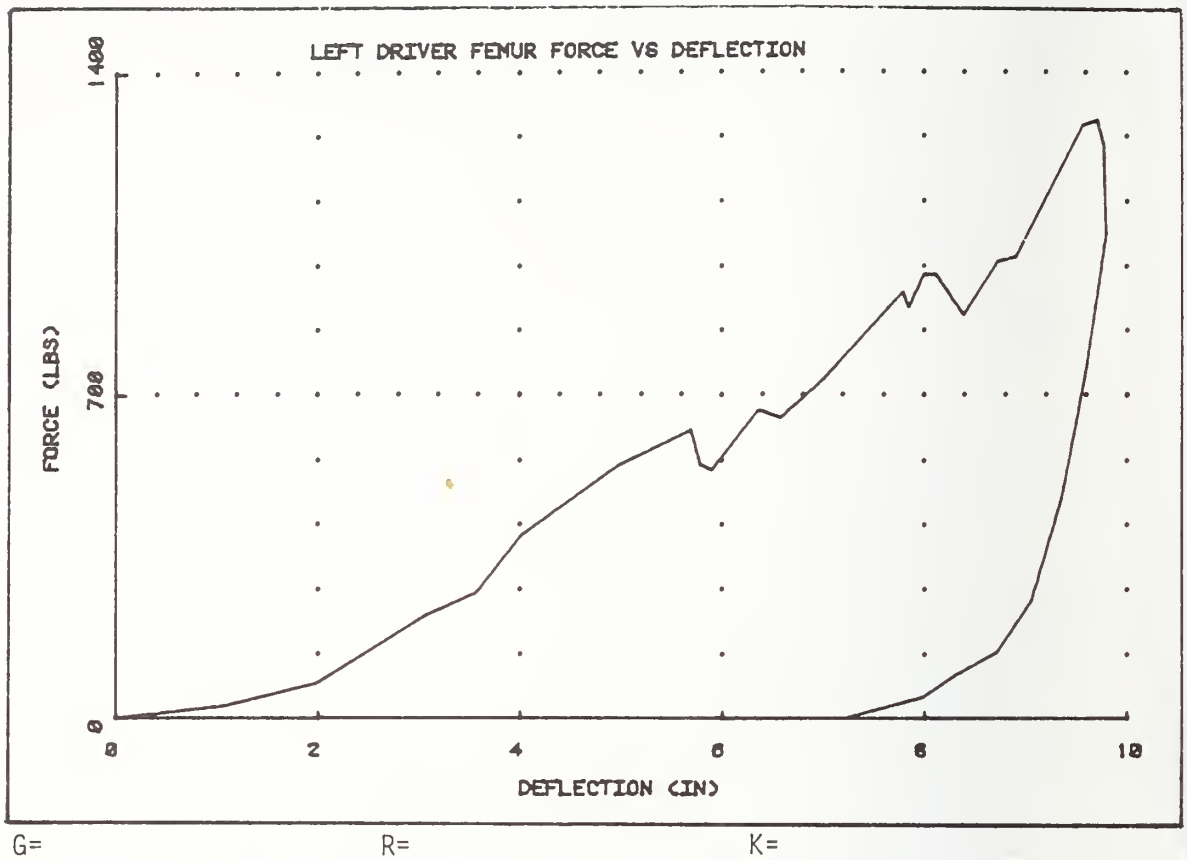
G= R= K=

Deflection	Force	Deflection	Force

Test Left Driver Femur Date: August 31, 1984

Vehicle: Dodge Omni

Options: Metal dash top, No radio



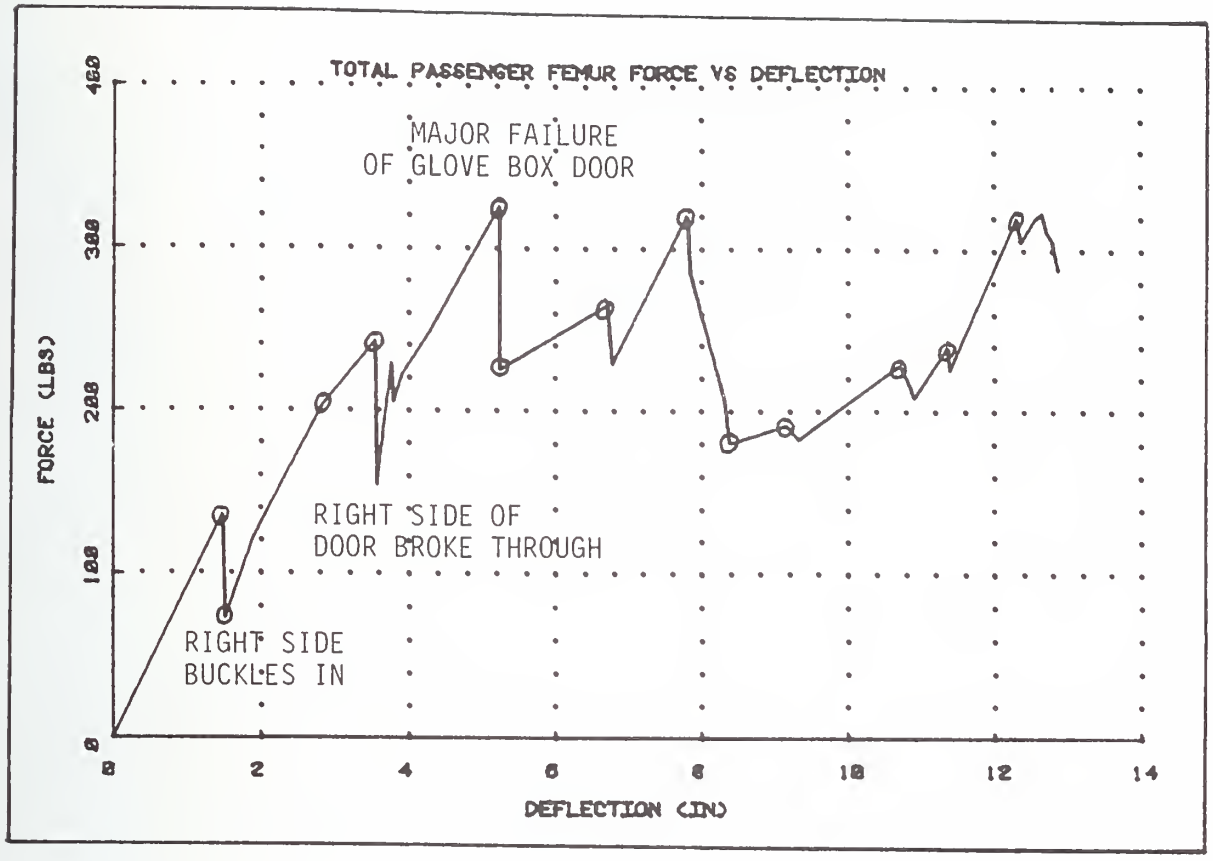
G= R= K=

Deflection	Force	Deflection	Force

Test: Passenger Side Femur (static) Date: September 5, 1984

Vehicle: Ford Mustang

Options:



G= 0.957 R= 0.012 K= 1131

c= 1.01 μ_1= μ_2= μ_3=

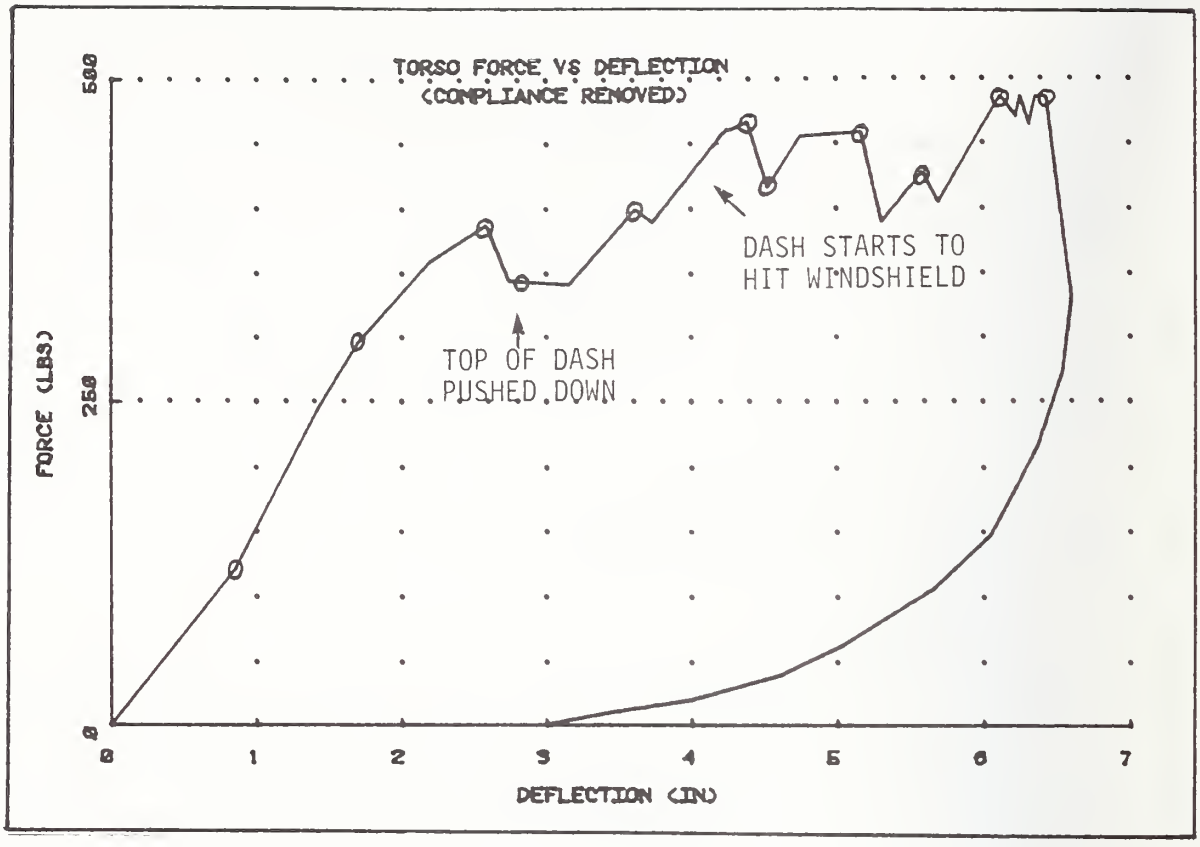
δ_A= 0.0 δ_B= 0.0 δ_C= 12.12 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	9.15	191.19
1.48	136.11	10.71	228.18
1.51	72.30	11.37	239.48
2.82	202.13	12.31	320.27
3.53	242.49		
5.23	326.06		
5.231	224.99		
6.71	265.11		
7.79	320.87		
8.37	179.81		

Test: Torso (static) Date: September 5, 1984

Vehicle: Ford Mustang

Options:



G= 0.454 R= 0.122 K= 273

c= 0.69 μ_1= μ_2= μ_3=

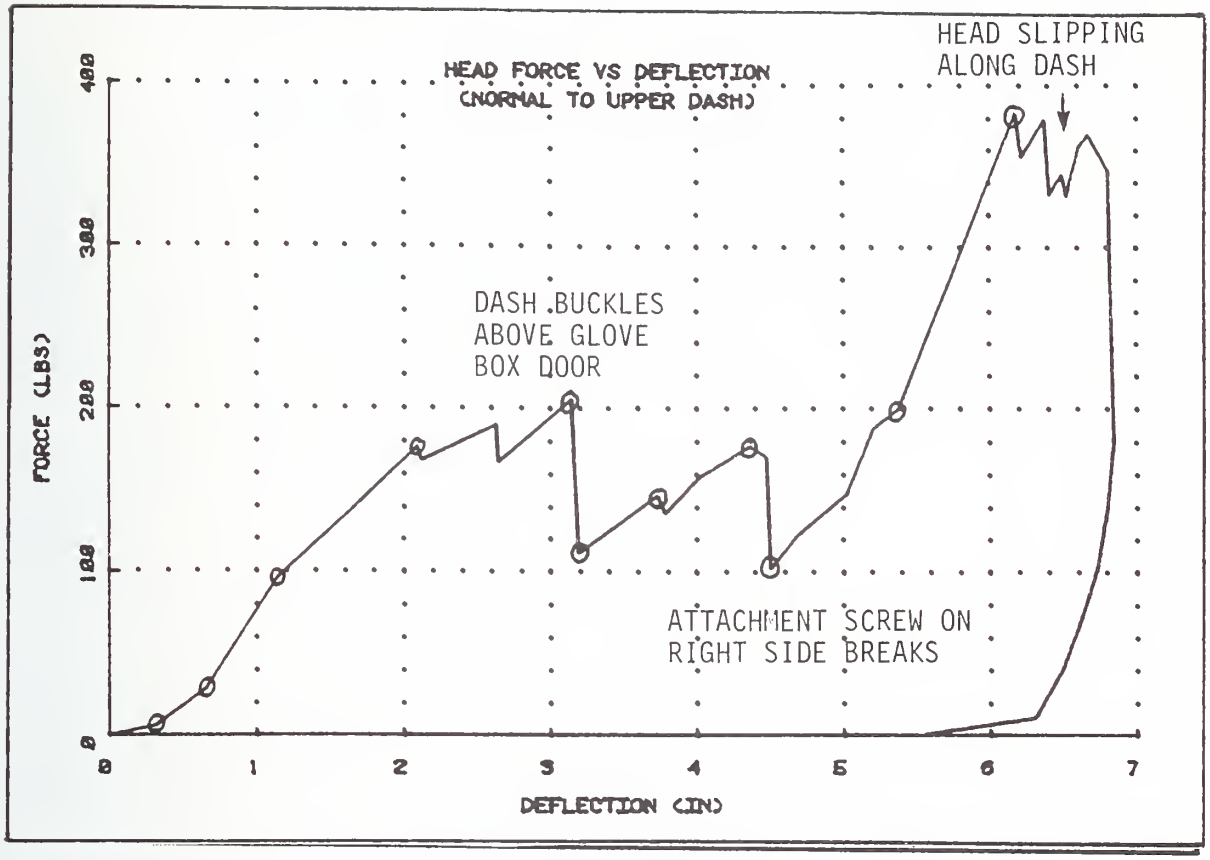
δ_A= 0.0 δ_B= 0.0 δ_C= 8.28 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	6.12	486.05
0.85	121.69	6.44	484.70
1.69	295.72		
2.58	387.64		
2.74	343.55		
3.60	399.08		
4.39	466.80		
4.53	415.87		
5.17	458.53		
5.59	427.14		

Test: Head (static) Date: September 5, 1984

Vehicle: Ford Mustang

Options:



G= 0.811 R= 0.036 K= 232

c= μ_1= μ_2= μ_3=

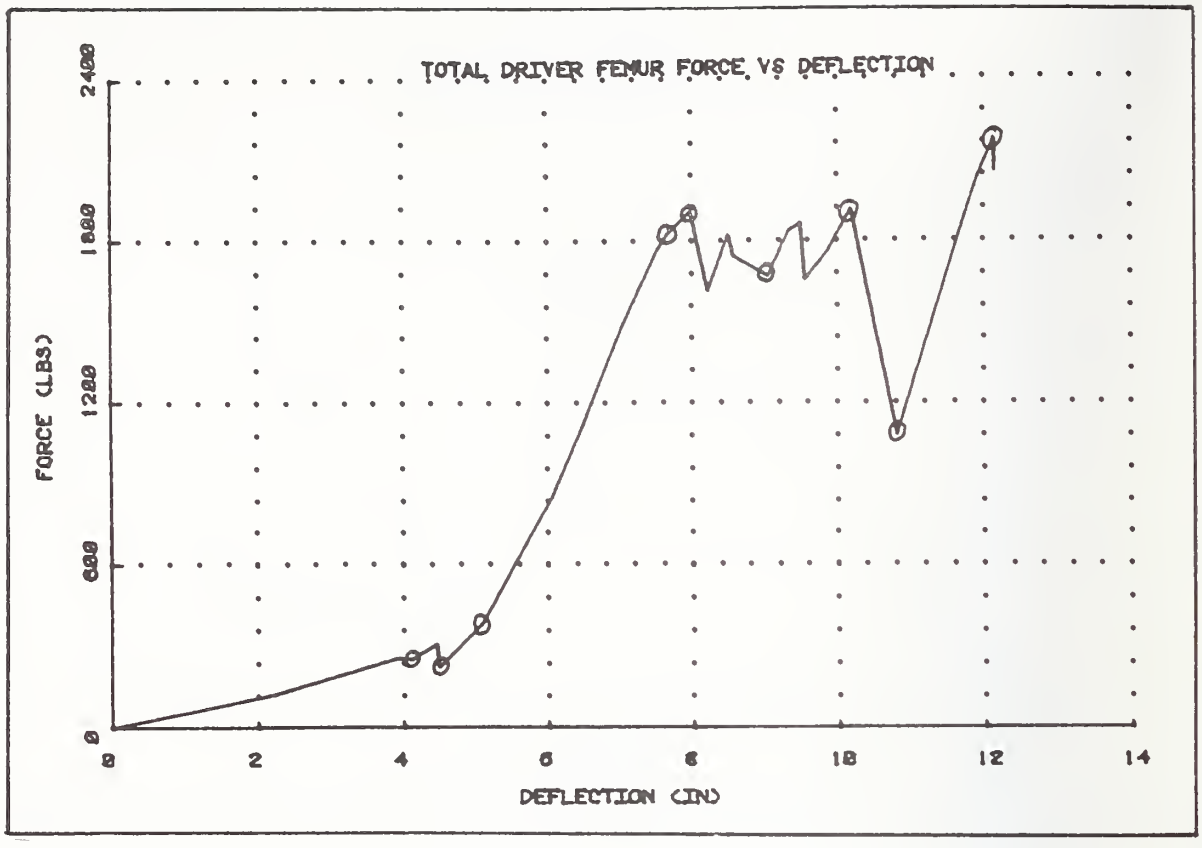
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	5.38	200.00
0.31	6.11	6.18	383.34
0.65	28.33		
1.14	96.66		
2.09	176.11		
3.14	205.56		
3.19	111.66		
3.72	146.67		
4.35	177.22		
4.50	101.66		

Test: Driver Side Femur (static) Date: September 5, 1984

Vehicle: Ford Mustang

Options:



G= 0.801 R= 0.105 K= 1519

c= μ_1= μ_2= μ_3=

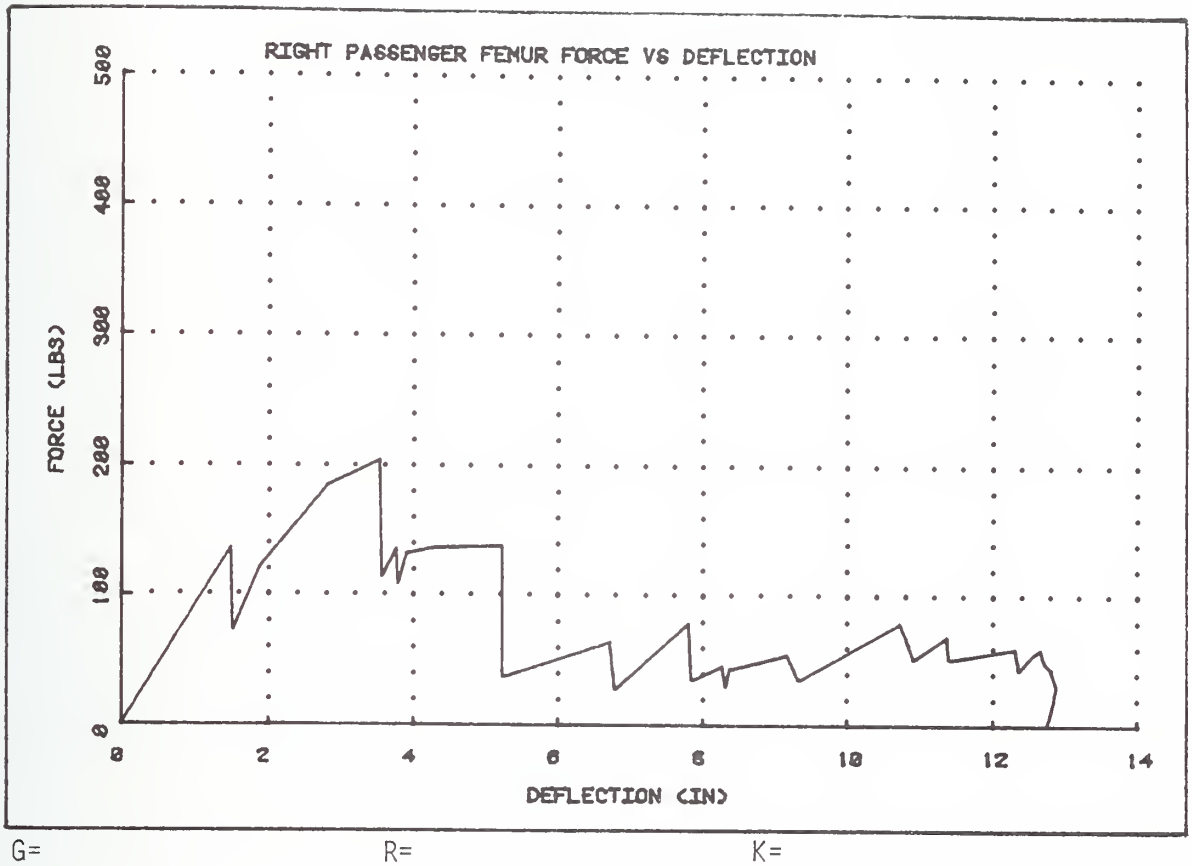
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
4.09	250.57		
4.48	221.54		
5.10	388.52		
7.66	1824.67		
7.98	1907.46		
9.03	1665.69		
10.20	1912.52		
10.81	1076.28		
12.15	2171.27		

Test Right Passenger Femur Date: September 5, 1984

Vehicle: Ford Mustang

Options:



G= R= K=

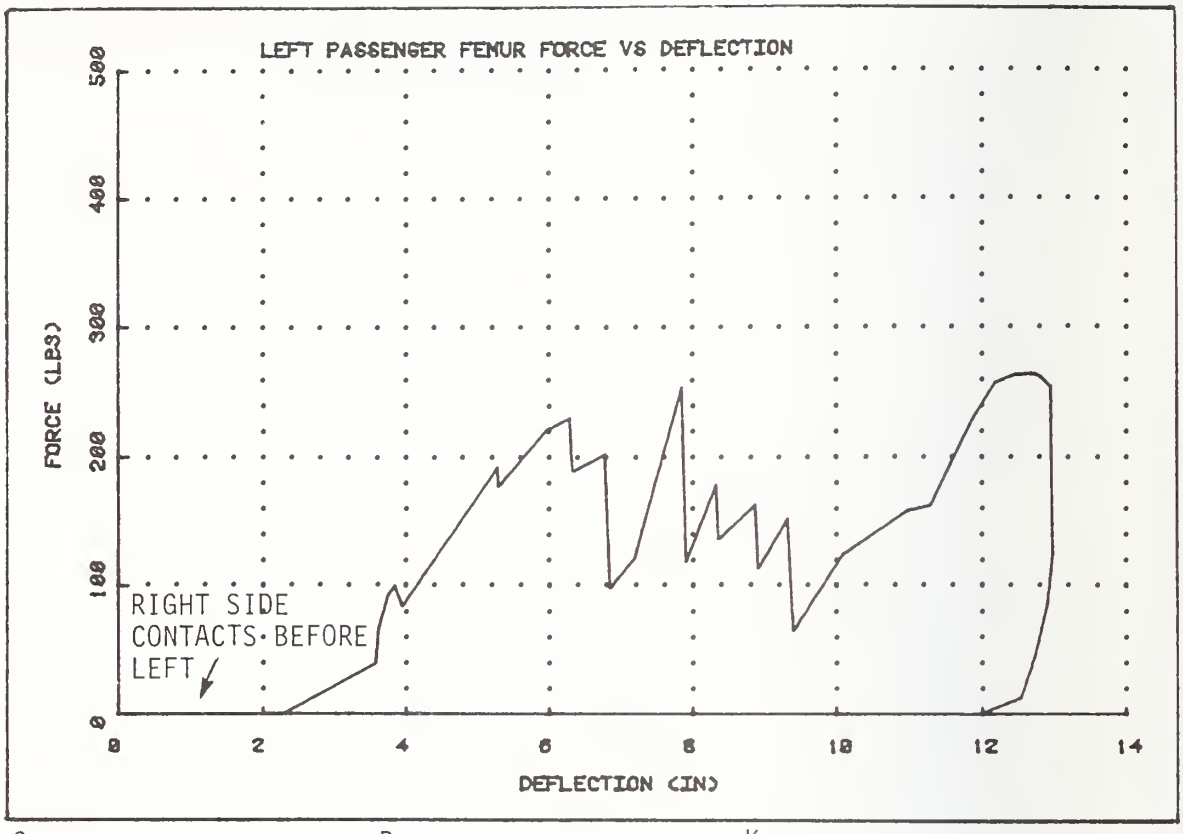
Deflection	Force	Deflection	Force

Test Left Passenger Femur Date: September 5, 1984

Vehicle: Ford Mustang

Options: _____

_____



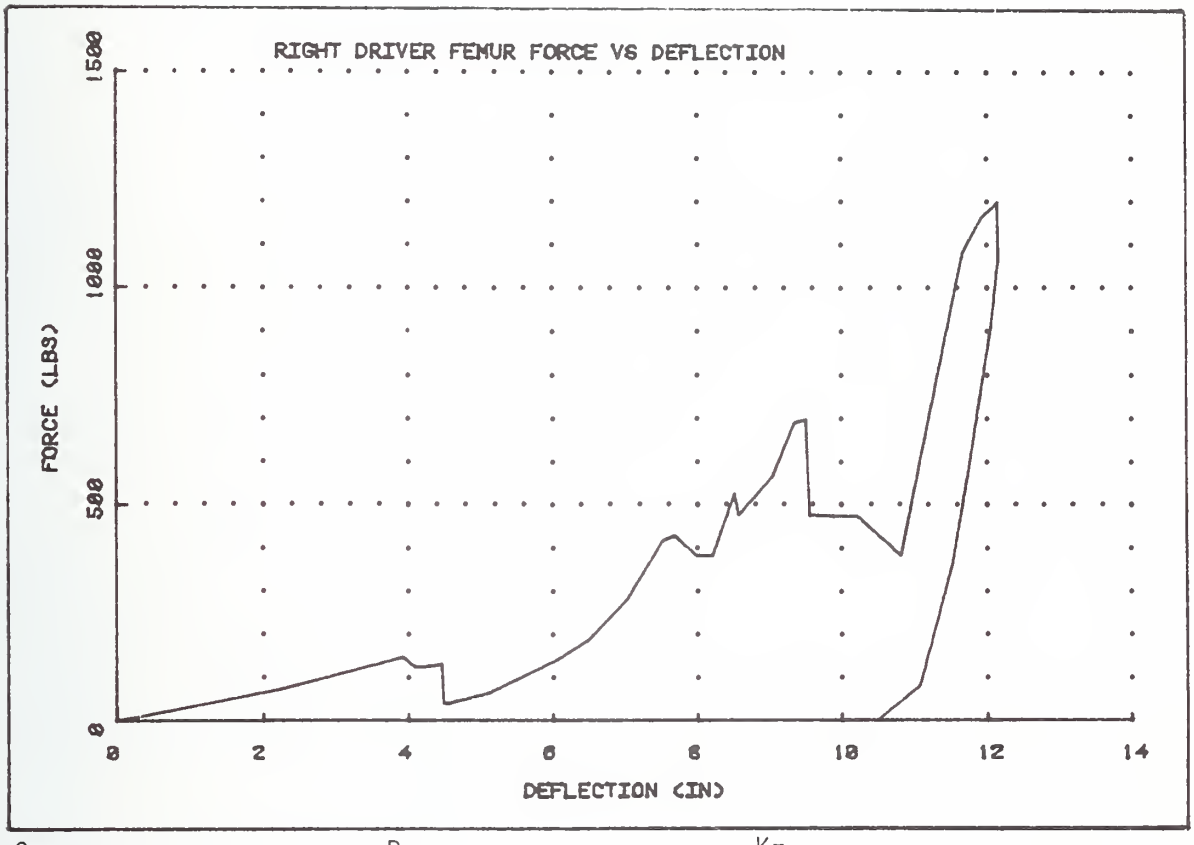
G= _____ R= _____ K= _____

Deflection	Force	Deflection	Force

Test Right Driver Femur Date: September 5, 1984

Vehicle: Ford Mustang

Options:



G= R= K=

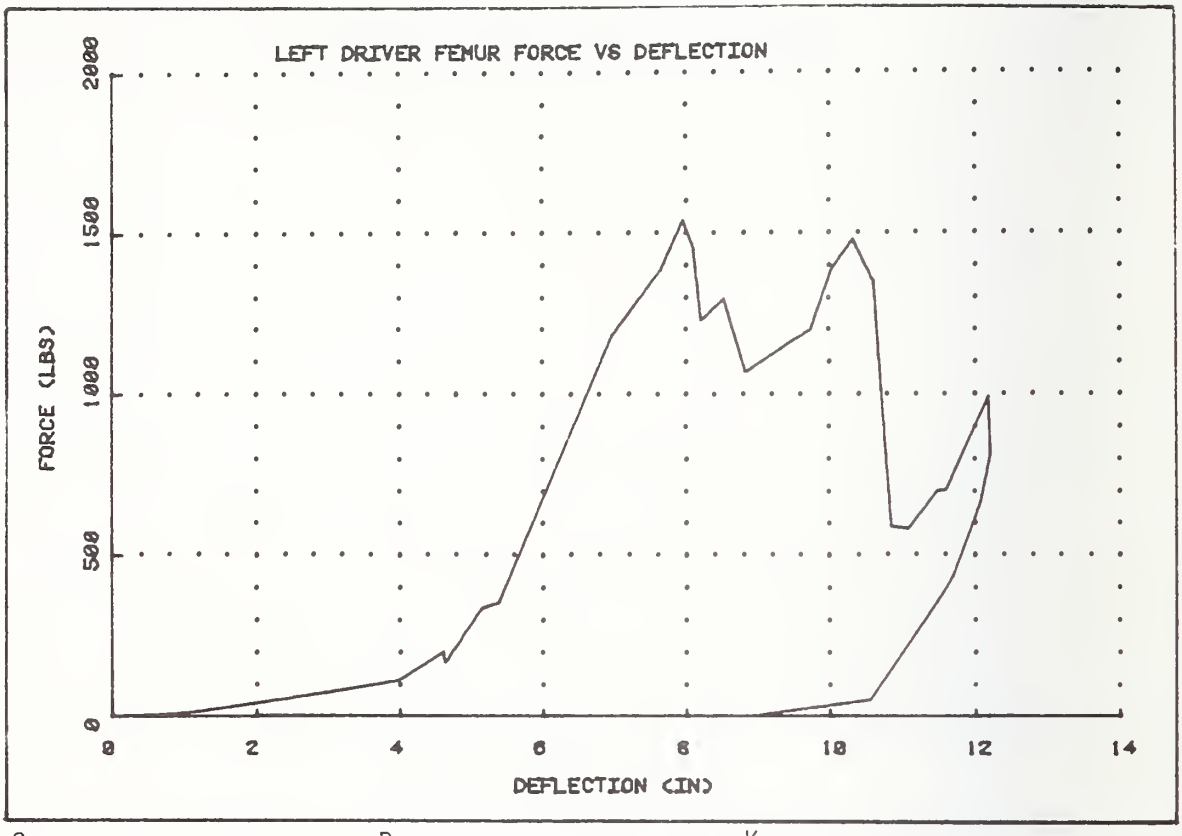
Deflection	Force	Deflection	Force

Test Left Driver Femur Date: September 5, 1984

Vehicle: Ford Mustang

Options: _____

_____



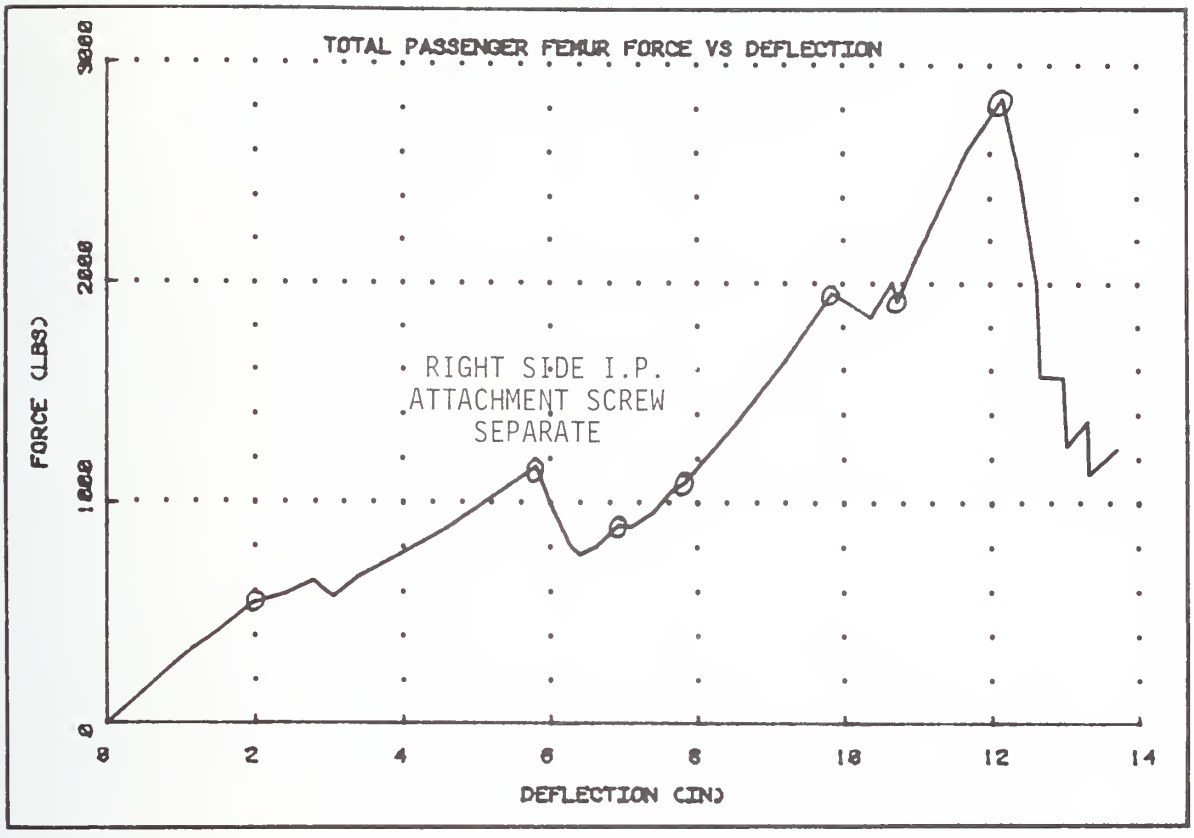
G=_____ R=_____ K=_____

Deflection	Force	Deflection	Force

Test: Passenger Side Femur (static) Date: September 11, 1984

Vehicle: Ford Pinto

Options: Metal dash with foam crash pad on top,
heat control and radio missing



G= 0.871 R= 0.034 K= 1030

c= 0.64 μ_1= μ_2= μ_3=

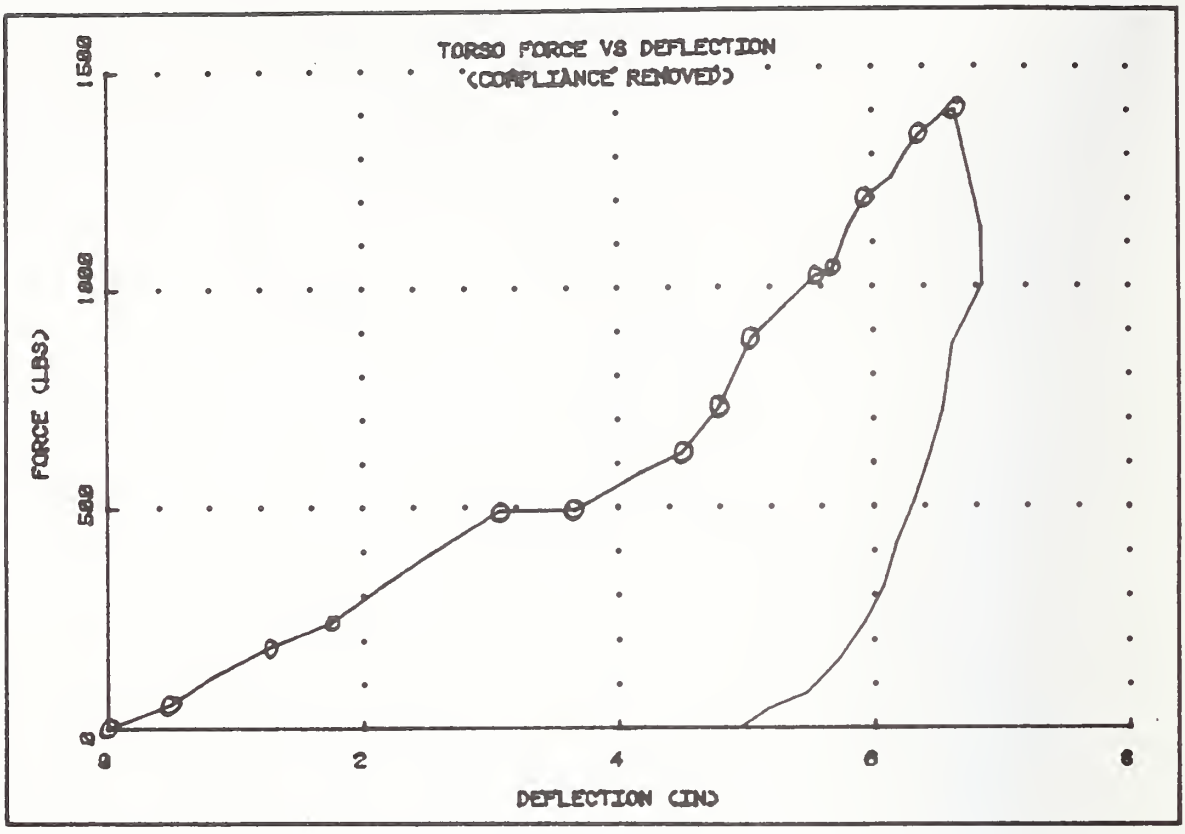
δ_A= δ_B= δ_C= 7.68 δ_D= δ_F=

Deflection	Force	Deflection	Force
0.00	0.00		
2.02	560.64		
5.80	1175.04		
6.91	890.88		
7.82	1082.88		
9.85	1950.72		
10.76	1904.64		
12.15	2849.28		

Test: Torso Date: September 11, 1984

Vehicle: Ford Pinto

Options: Metal dash with foam crash pad on top,
Heat control and radio missing.



G= 0.723 R= 0.165 K= 786.46

c= 2.51 μ_1= μ_2= μ_3=

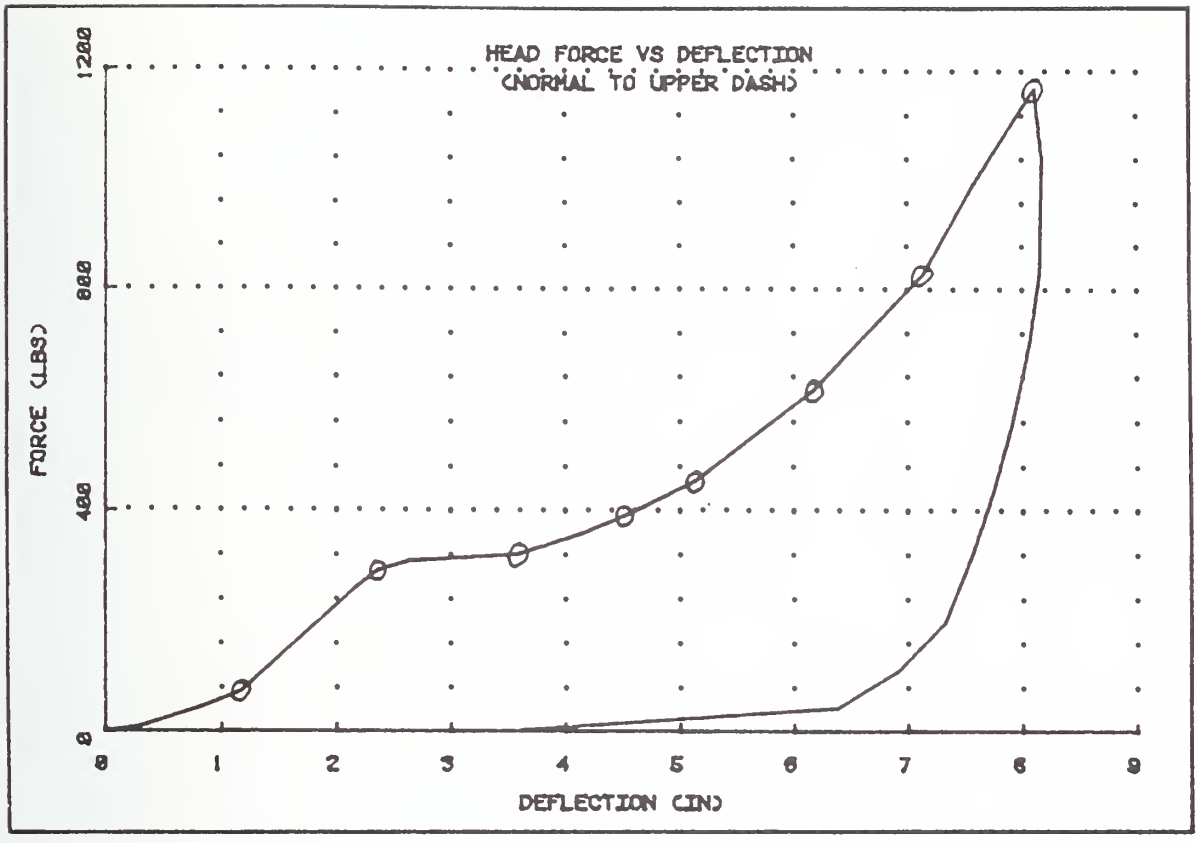
δ_A= 0.0 δ_B= 0.0 δ_C= 30.12 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	5.05	883.11
0.50	56.73	5.55	1024.84
1.25	184.70	5.67	1036.27
1.75	240.42	5.95	1201.17
3.07	493.86	6.36	1344.29
3.67	495.42	6.64	1400.42
4.51	623.60		
4.80	726.18		

Test: Head (static) Date: September 11, 1984

Vehicle: Ford Pinto

Options: Metal dash with foam crash pad on top,
heat control and radio missing



G= 0.440 R= 0.159 K= 787

c= μ_1= μ_2= μ_3=

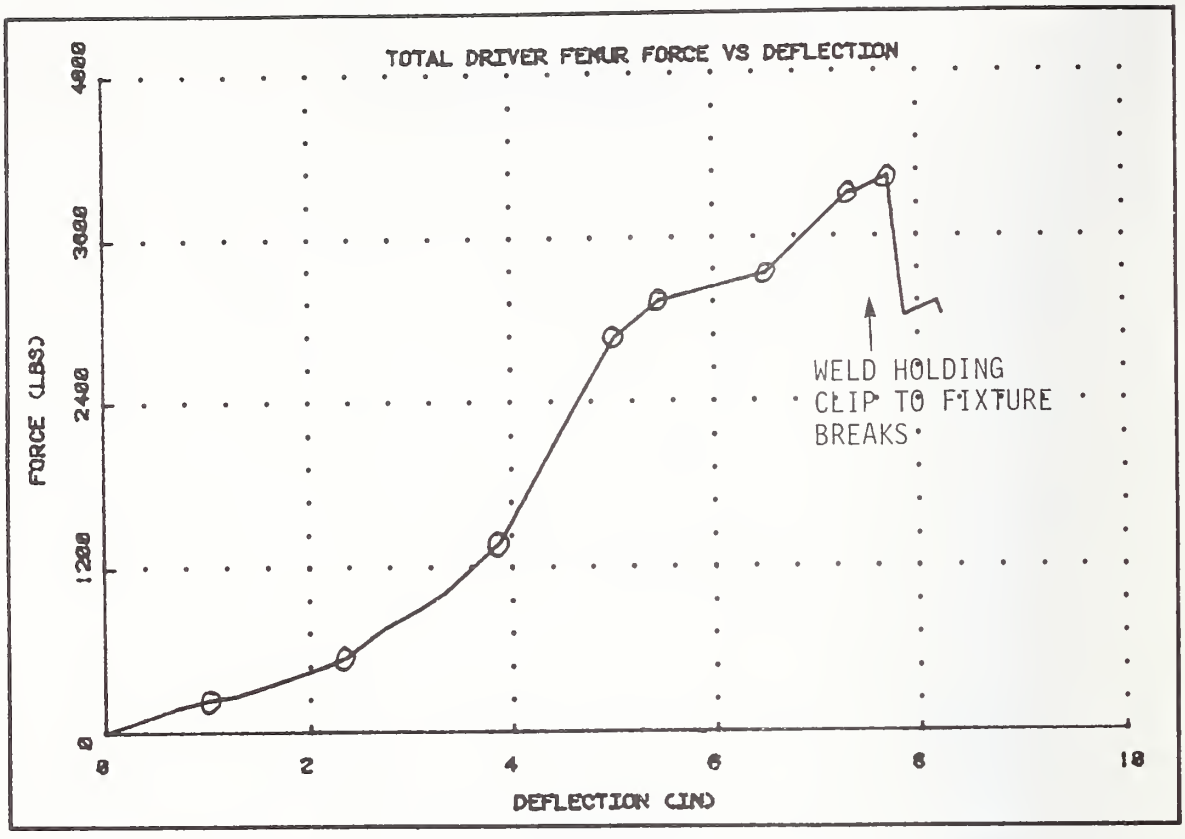
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
1.16	73.72		
2.33	294.91		
3.59	324.09		
4.49	390.14		
5.16	462.33		
6.20	623.61		
7.15	827.90		
8.09	1188.89		

Test: Driver Side Femur (static) Date: September 11, 1984

Vehicle: Ford Pinto

Options: Metal dash with foam crash pad on top,
heat control and radio missing



G= 0.687 R= 0.193 K= 1409

c= μ_1= μ_2= μ_3=

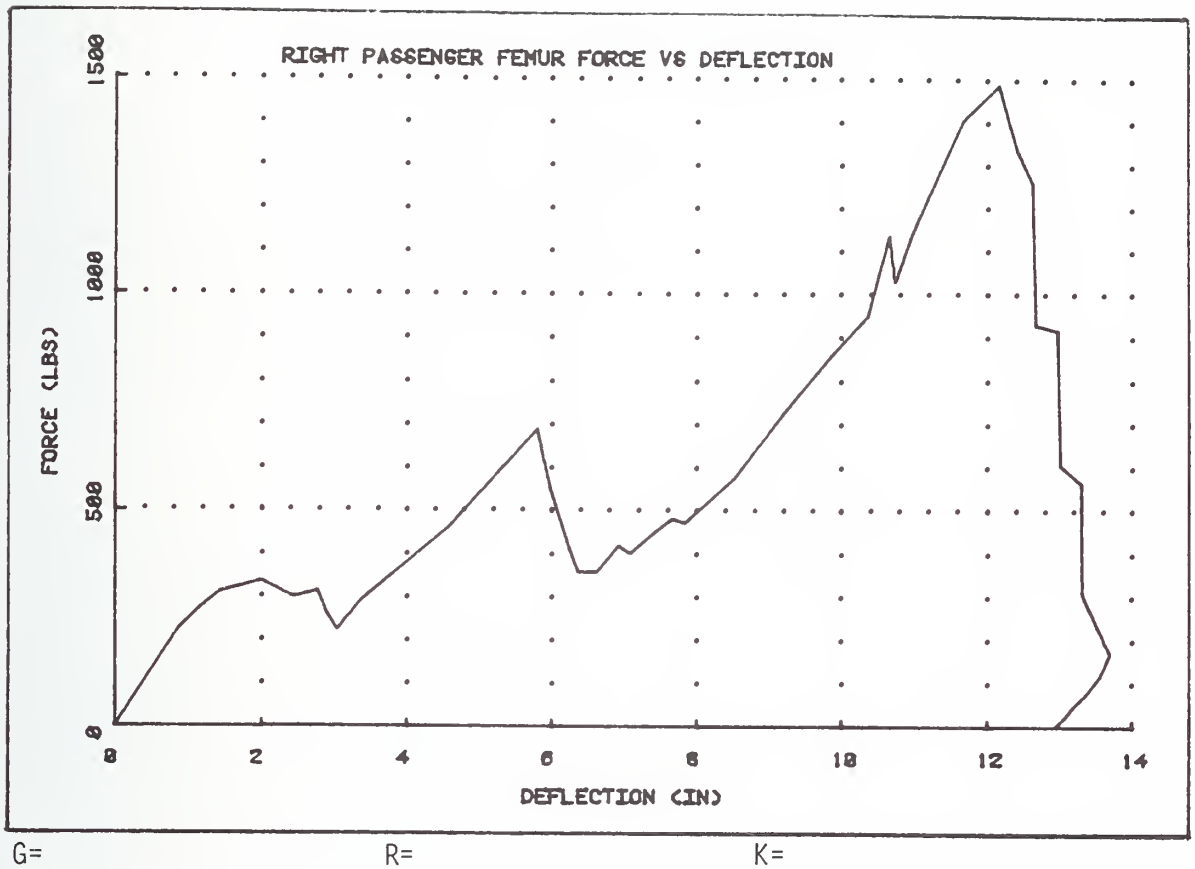
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force
0.00	0.00		
1.04	245.76		
2.39	559.10		
3.88	1394.68		
5.04	2856.96		
5.43	3121.15		
6.52	3336.19		
7.32	3913.72		
7.71	4030.46		

Test Right Passenger Femur Date: September 11, 1984

Vehicle: Ford Pinto

Options: Metal dash with foam crash pad on top, Heat control and radio missing



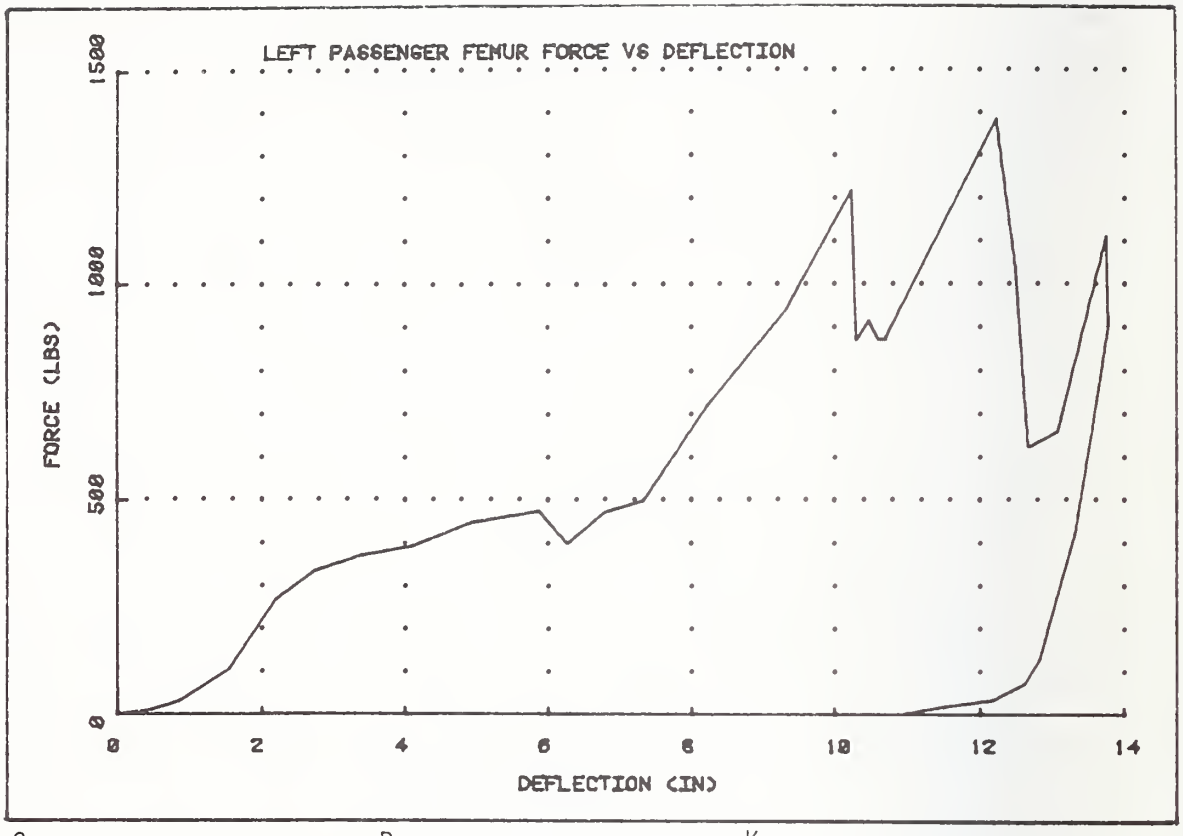
G= R= K=

Deflection	Force	Deflection	Force

Test Left Passenger Femur Date: September 11, 1984

Vehicle: Ford Pinto

Options: Metal dash with foam crash pad on top, Heat control and radio missing



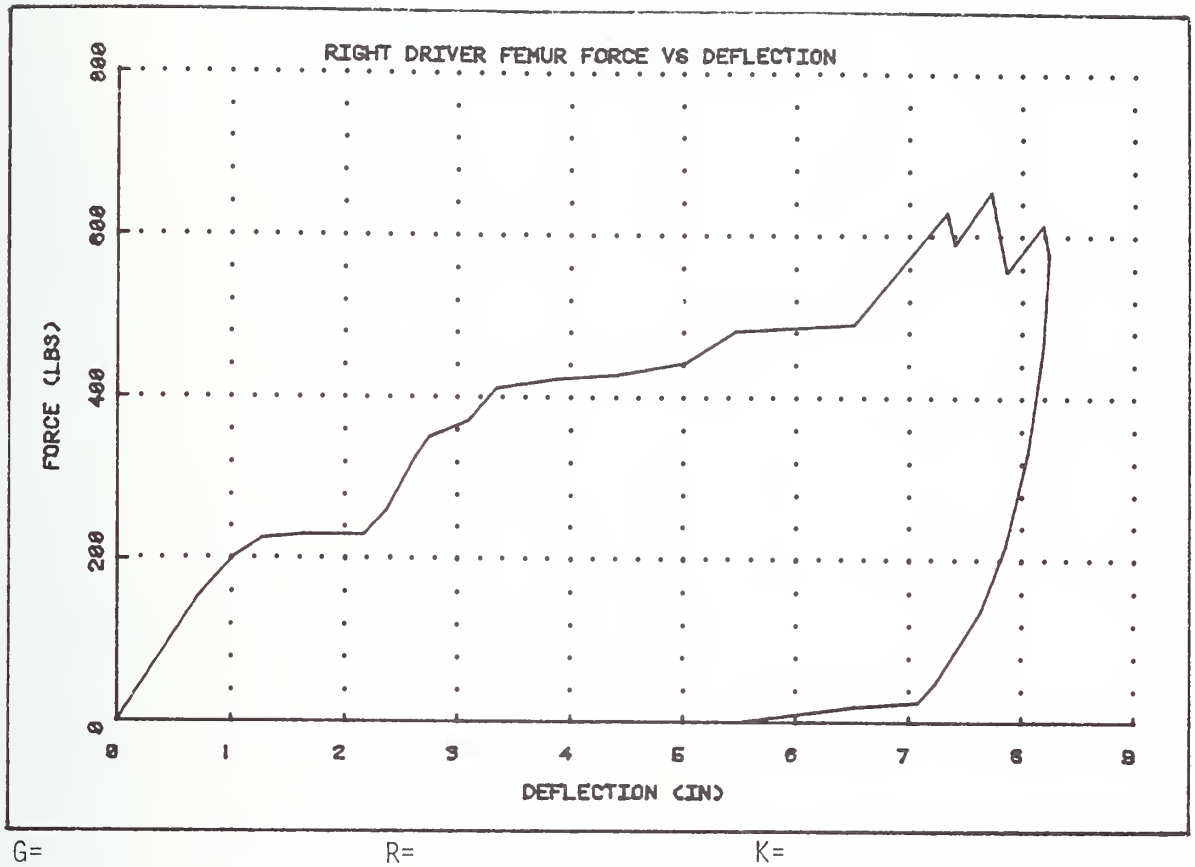
G= R= K=

Deflection	Force	Deflection	Force

Test Right Driver Femur Date: September 11, 1984

Vehicle: Ford Pinto

Options: Metal dash with foam crash pad on top, Heat control and radio missing



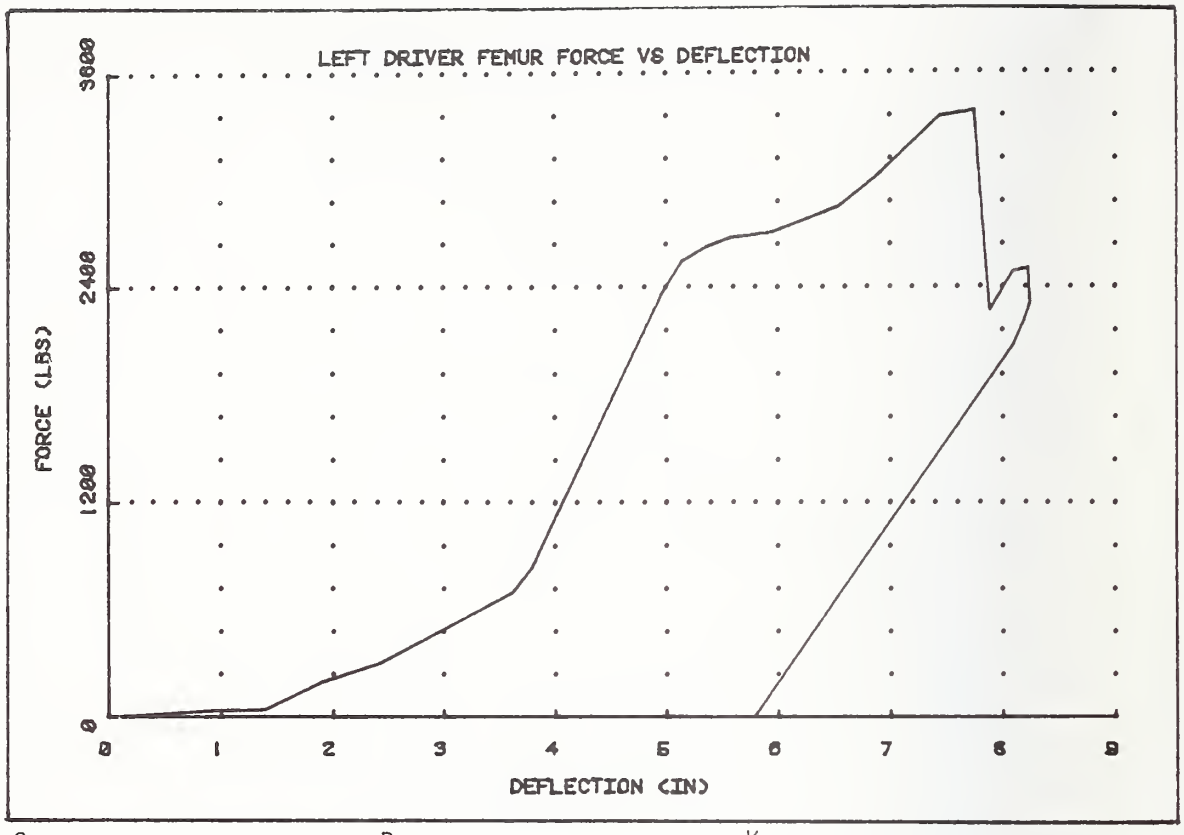
G= R= K=

Deflection	Force	Deflection	Force

Test Left Driver Femur Date: September 11, 1984

Vehicle: Ford Pinto

Options: Metal dash with foam crash pad on top, Heat control and radio missing



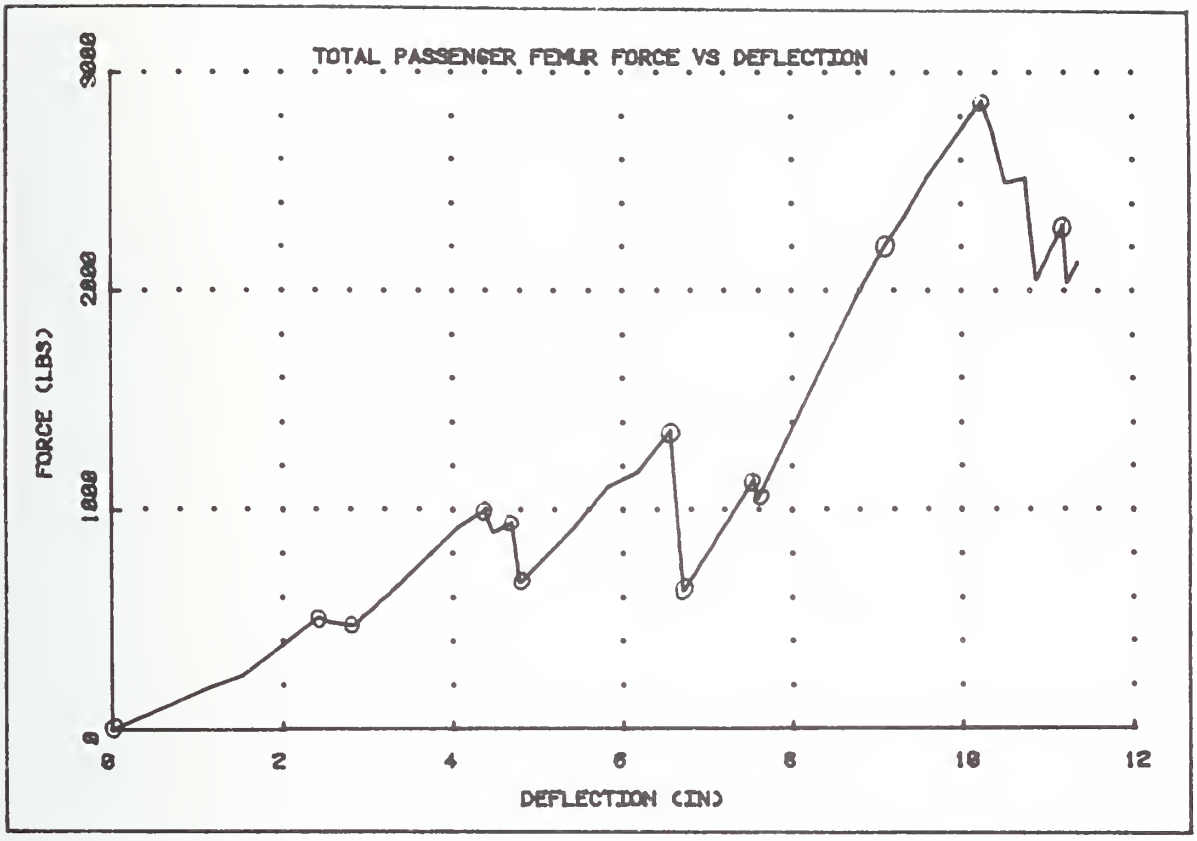
G= R= K=

Deflection	Force	Deflection	Force

Test: Total Passenger Femur (Static) Date: November 29, 1984

Vehicle: Ford Fairmont

Options:



G= 0.862 R= 0.049 K= 2664

c= μ_1= μ_2= μ_3=

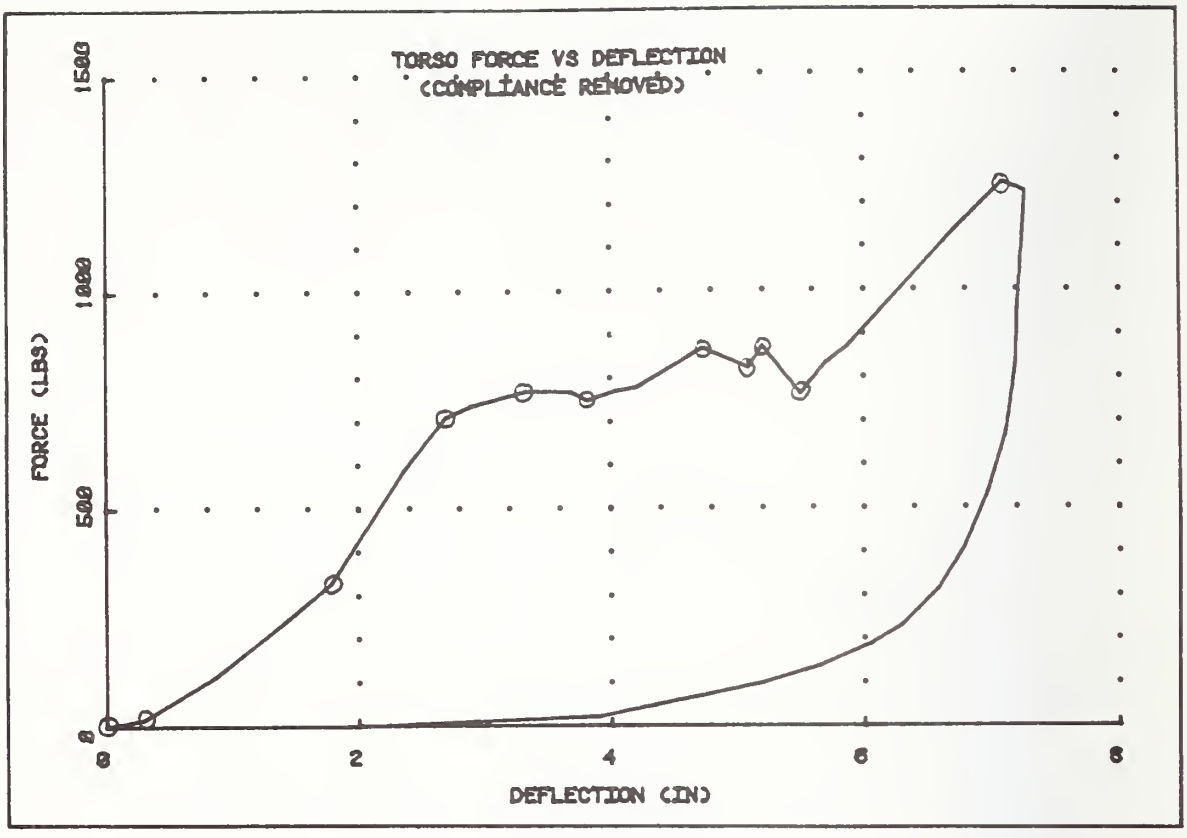
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	7.54	1140.3
2.41	505.7	7.59	1049.11
2.81	466.1	9.10	2200.8
4.37	1000.4	10.24	2870.7
4.70	940.9	11.19	2302.9
4.79	663.6		
6.56	1362.7		
6.71	628.1		

Test: Torso (Static) Date: November 24, 1984

Vehicle: Ford Fairmont

Options: Compliance Removed



G= 0.307 R= 0.153 K= 1033

c= μ_1= μ_2= μ_3=

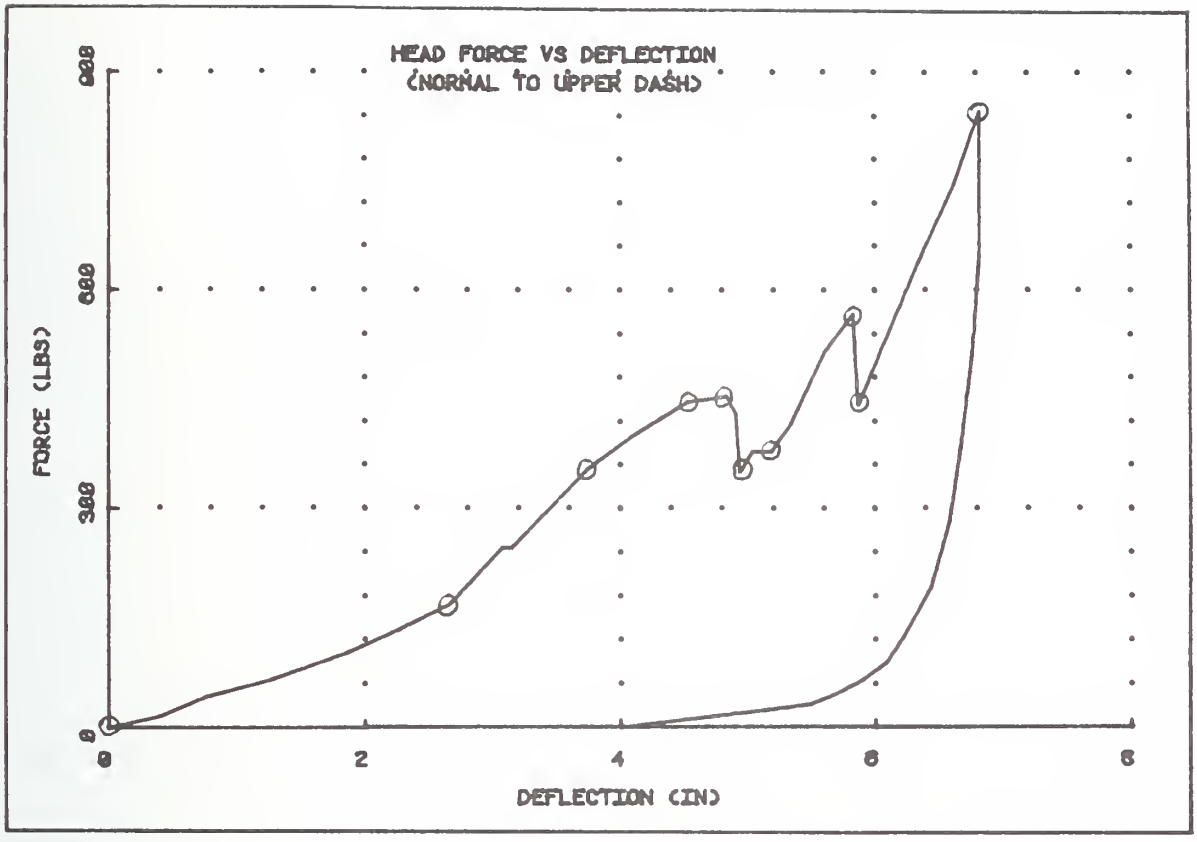
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	5.51	761.71
0.30	16.23	7.09	1246.86
1.79	330.14		
2.70	710.37		
3.33	770.04		
3.81	747.02		
4.72	865.24		
5.09	820.02		
5.21	871.45		

Test: Static Head Test Date: November 29, 1984

Vehicle: Ford Fairmont

Options: Normal



G= 0.596 R= 0.124 K= 1445

c= μ_1= μ_2= μ_3=

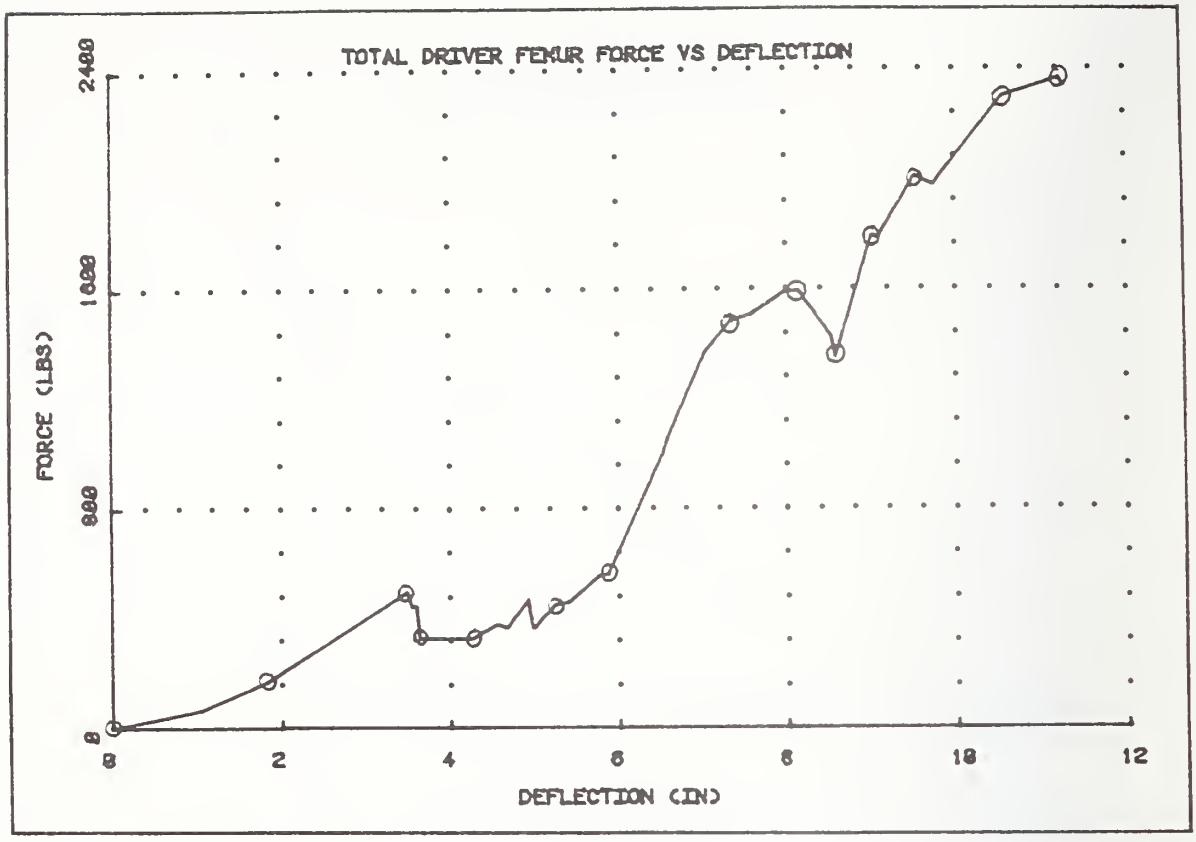
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	5.87	440.6
2.67	169.4	6.83	846.9
3.74	354.0		
4.52	445.6		
4.83	453.72		
4.94	348.74		
5.19	376.8		
5.83	566.6		

Test: Total Driver Femur (Static) Date: November 29, 1984

Vehicle: Ford Fairmont

Options:



G= 0.864 R= 0.116 K= 1979

c= μ_1= μ_2= μ_3=

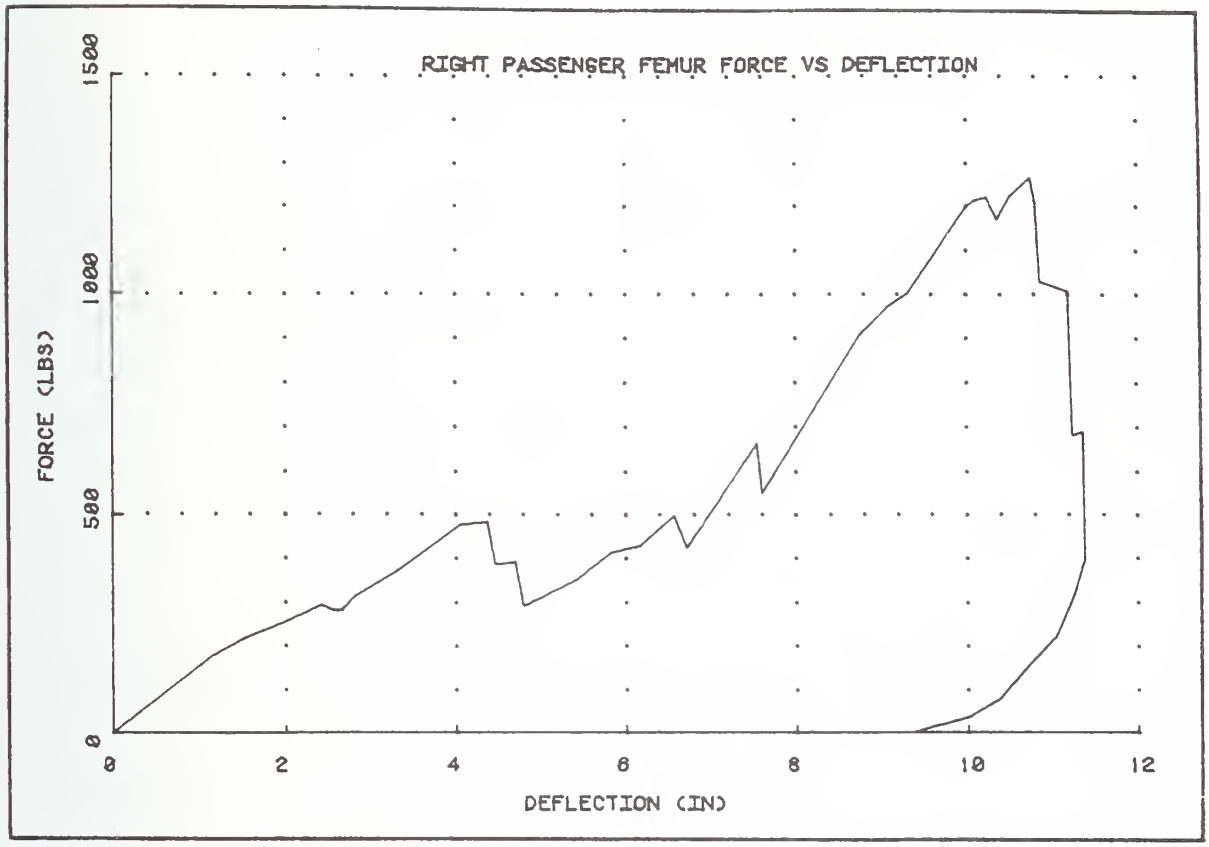
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	8.14	1593.78
1.83	170.7	8.59	1345.64
3.50	498.2	9.03	1790.76
3.64	325.02	9.75	2002.55
4.24	323.9	10.58	2299.02
5.24	451.4	11.24	2366.22
5.87	559.5		
7.34	1483.93		

Test: Right Passenger Femur Date: November 29, 1984

Vehicle: Ford Fairmont

Options: No Radio



G= R= K=

c= μ_1= μ_2= μ_3=

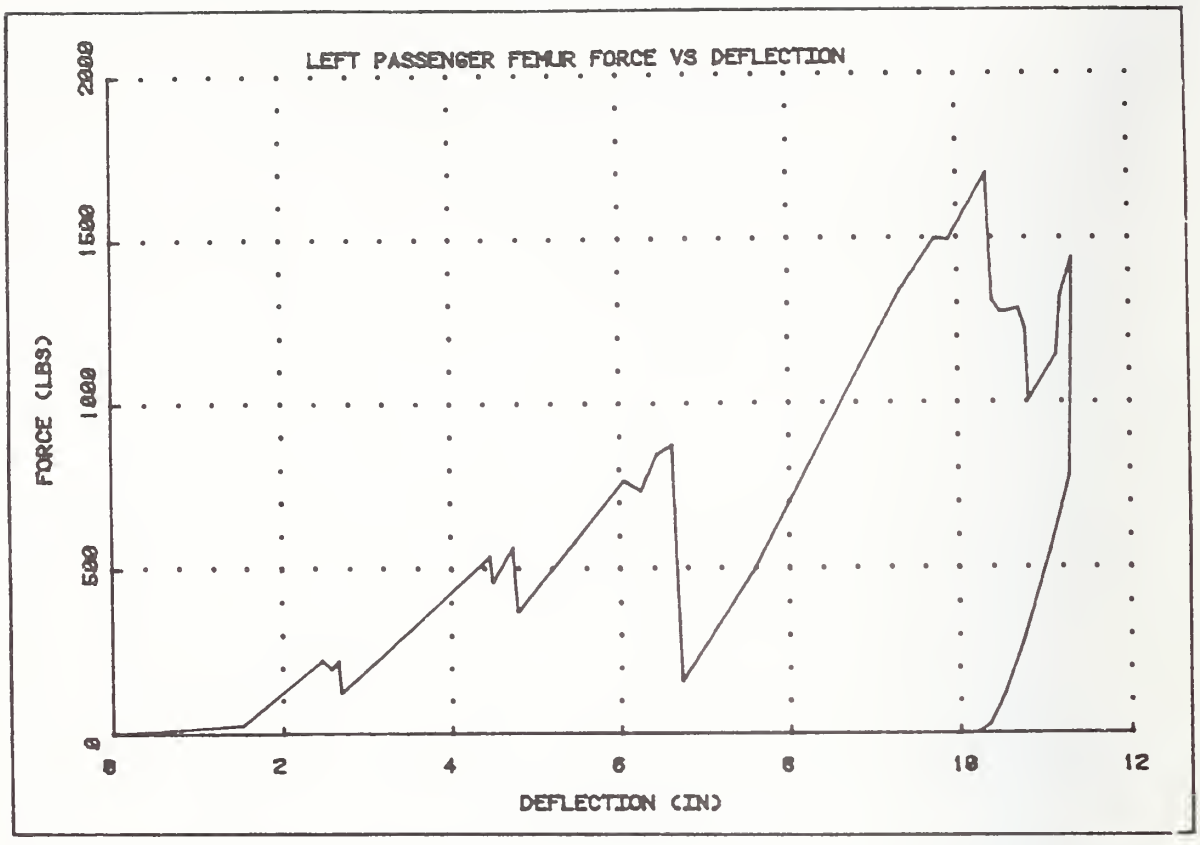
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Passenger Femur Date: November 29, 1984

Vehicle: Ford Fairmont

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

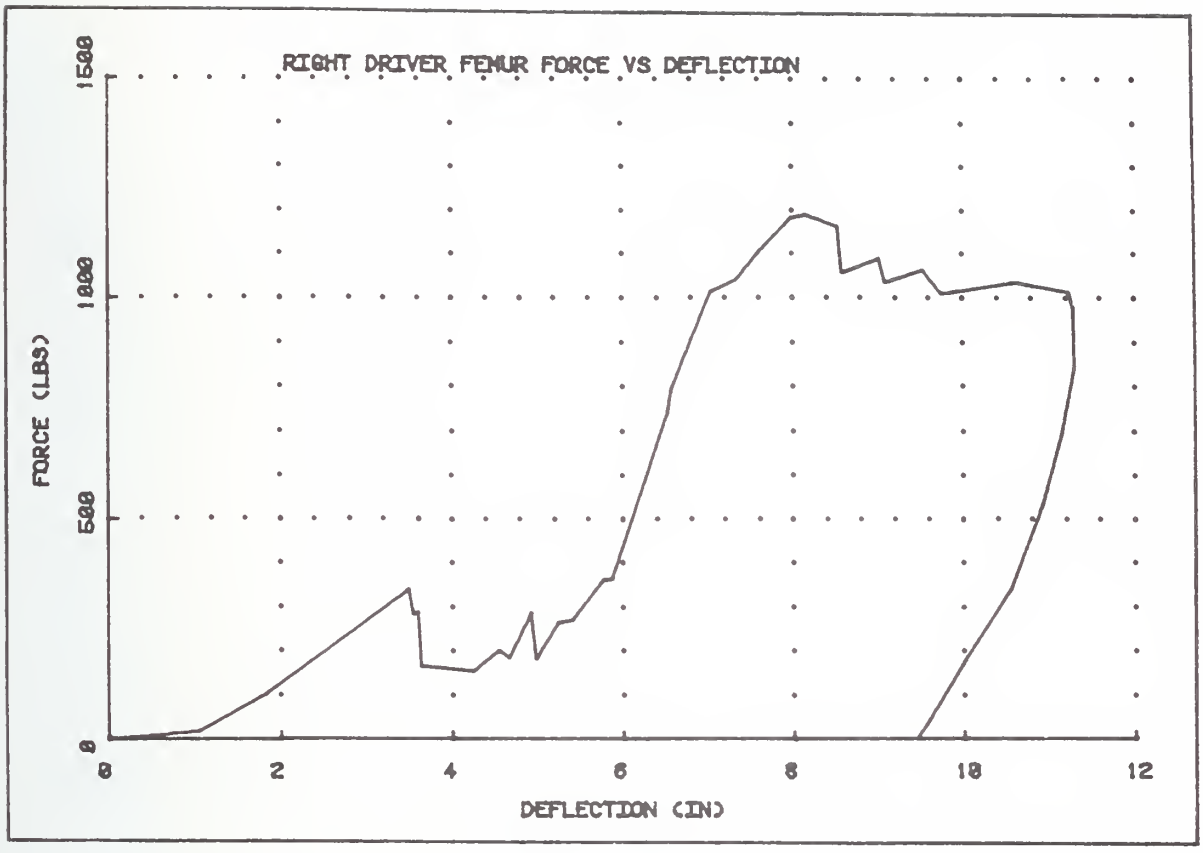
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Right Driver Femur Date: November 29, 1984

Vehicle: Ford Fairmont

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

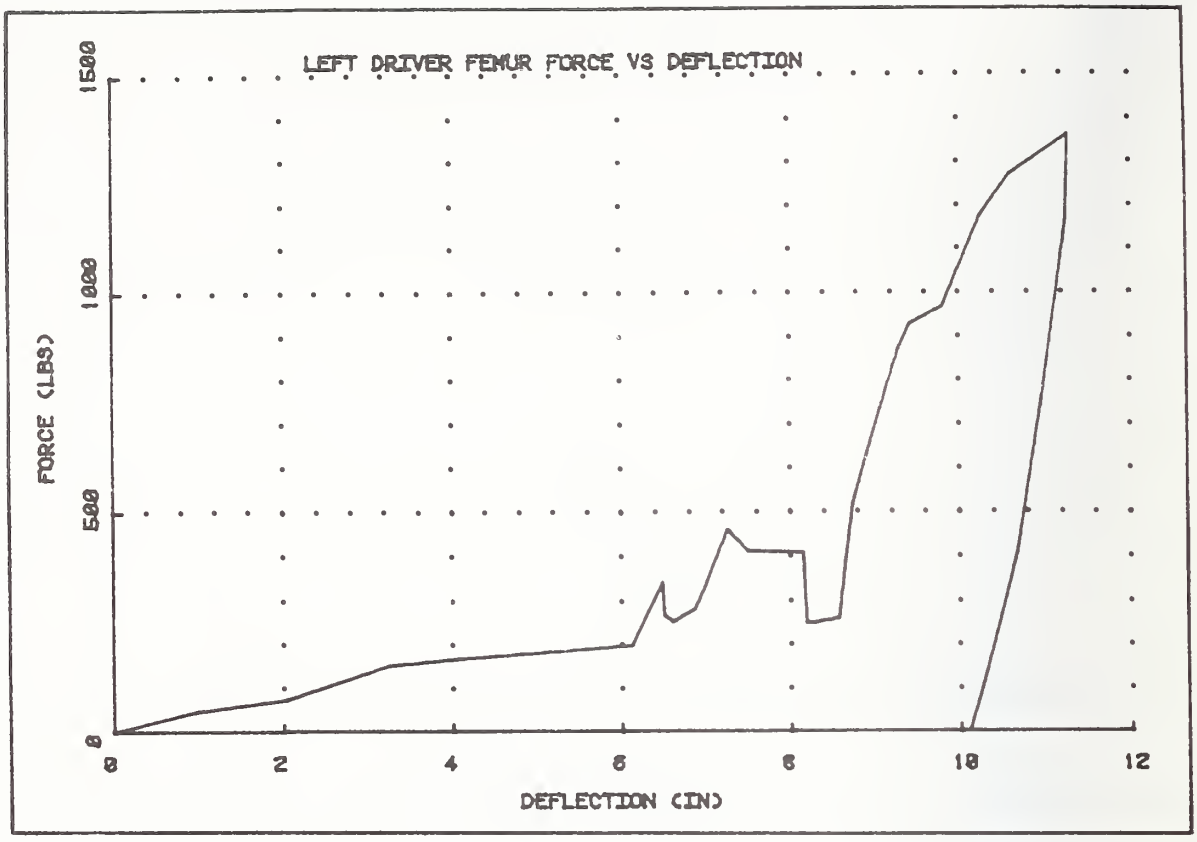
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Driver Femur Date: November 29, 1984

Vehicle: Ford Fairmont

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

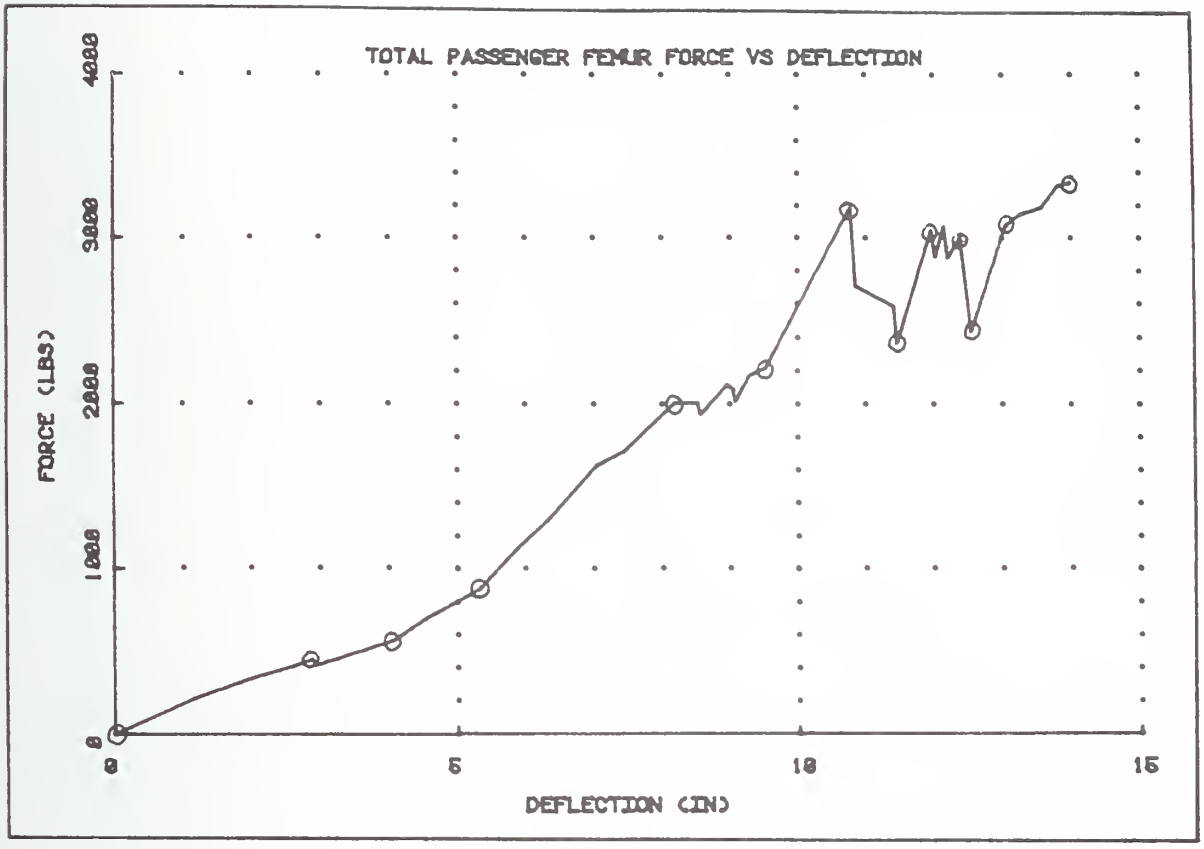
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Total Passenger Femur (Static) Date: January 5, 1985

Vehicle: Pontiac Firebird

Options:



G= 0.858 R= 0.074 K= 3288

c= μ_1= μ_2= μ_3=

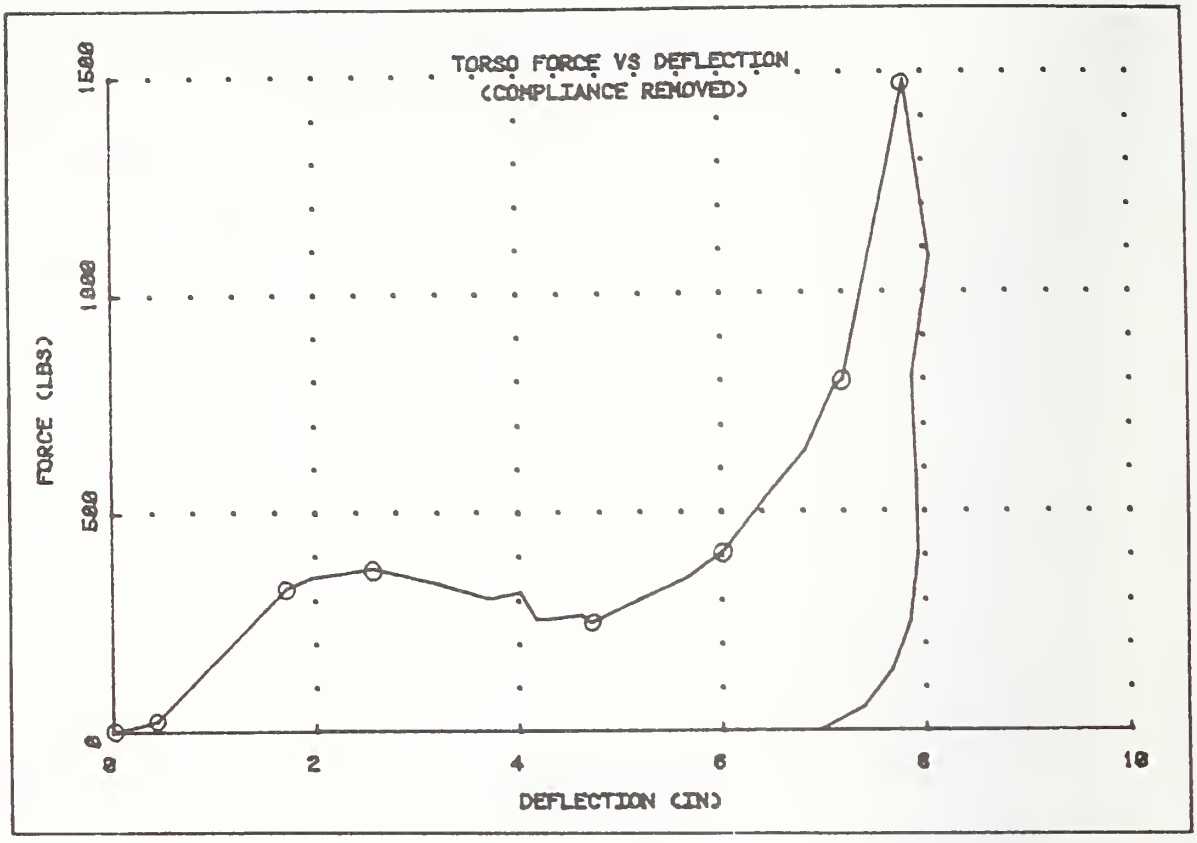
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	11.97	3045.8
2.87	447.4	12.39	3007.5
4.07	565.9	12.54	2426.0
5.33	875.5	13.06	3076.7
8.19	2002.7	14.01	3339.0
9.53	2214.6		
10.79	3190.2		
11.47	2354.9		

Test: Torso Date: January 5, 1985

Vehicle: Pontiac Firebird

Options:



G= 0.864 R= 0.072 K= 2435

c= μ_1= μ_2= μ_3=

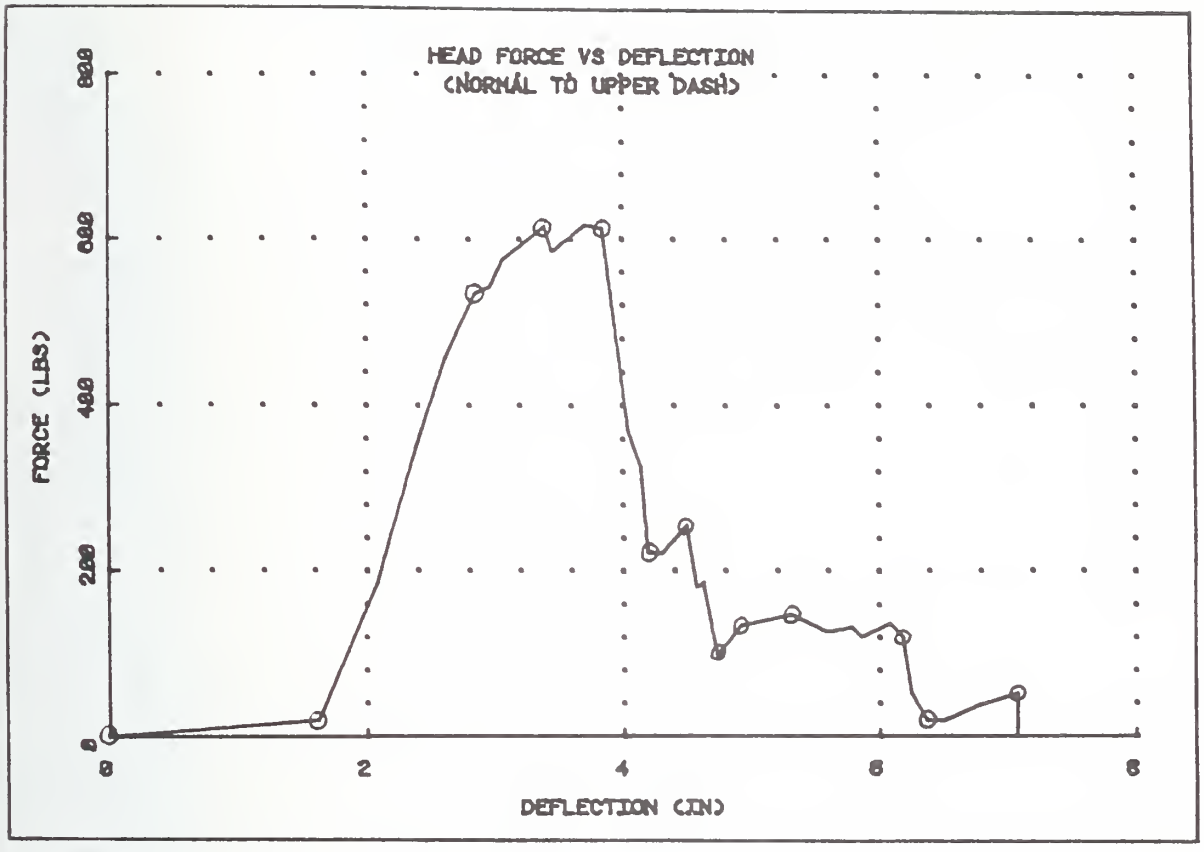
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0		
0.44	23.7		
1.71	327.3		
2.54	371.8		
4.70	249.4		
6.04	413.8		
7.11	780.4		
7.83	1483.3		

Test: Head (Static) Date: January 5, 1985

Vehicle: Pontiac Firebird

Options: Normal



G= 0.999 R= 0.0001 K= 7638

c= μ_1= μ_2= μ_3=

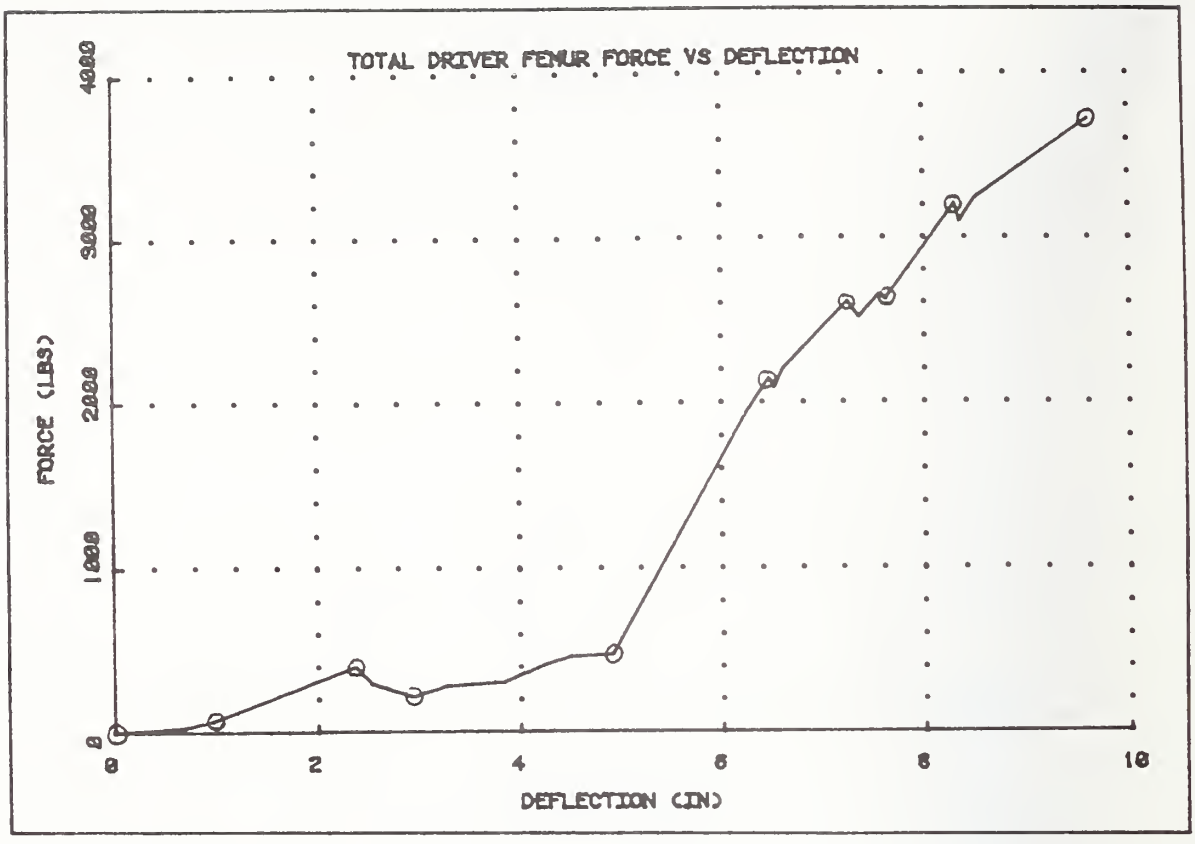
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	4.92	133.8
1.62	19.73	5.30	147.6
2.85	534.1	6.19	119.3
3.40	615.6	6.37	18.8
3.85	612.3	7.08	51.8
4.19	220.9		
4.49	254.7		
4.73	97.4		

Test: Total Driver Femur (Static) Date: January 5, 1985

Vehicle: Pontiac Firebird

Options:



G= 0.743 R= 0.231 K= 2439

C= μ_1= μ_2= μ_3=

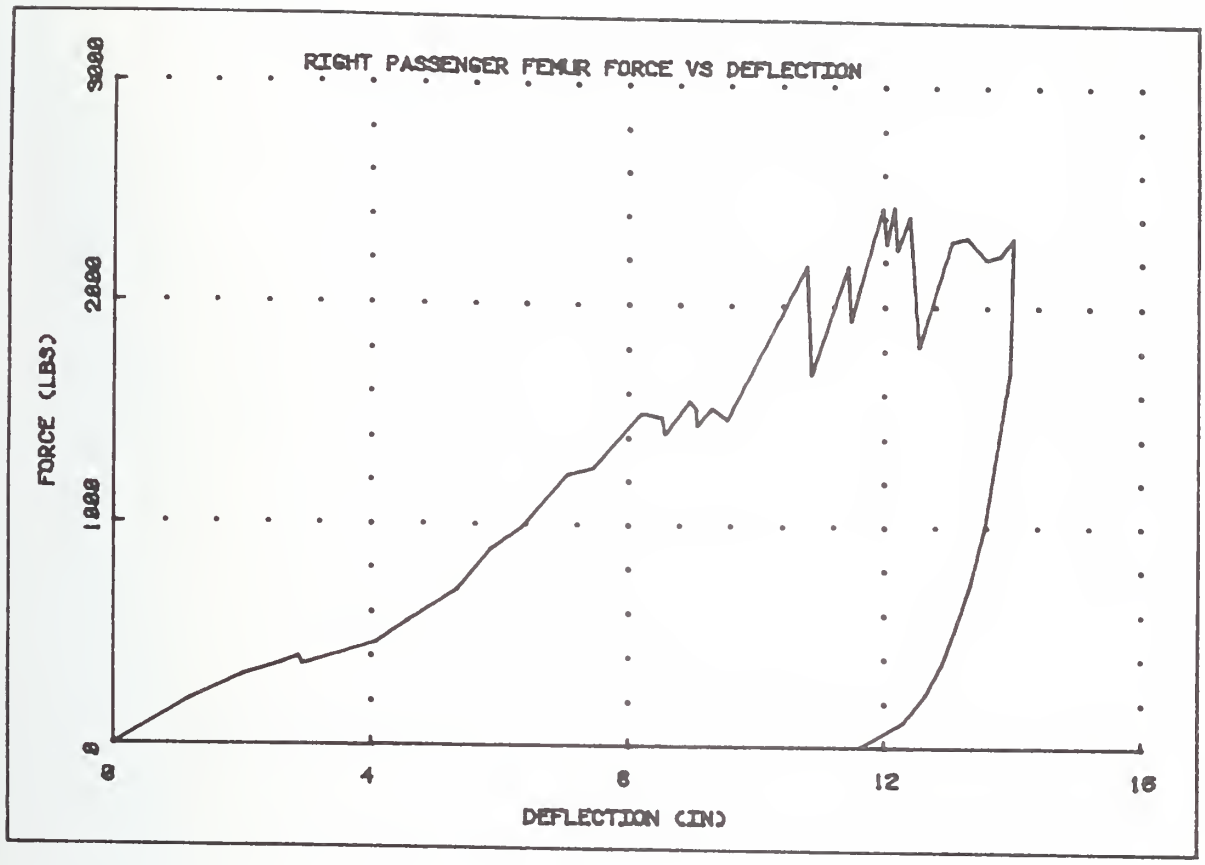
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	8.31	3207.3
0.97	67.09	9.61	3718.5
2.37	403.4		
2.92	215.0		
4.91	477.3		
6.47	2138.5		
7.25	2606.7		
7.62	2621.9		

Test: Right Passenger Femur Date: January 5, 1985

Vehicle: Pontiac Firebird

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

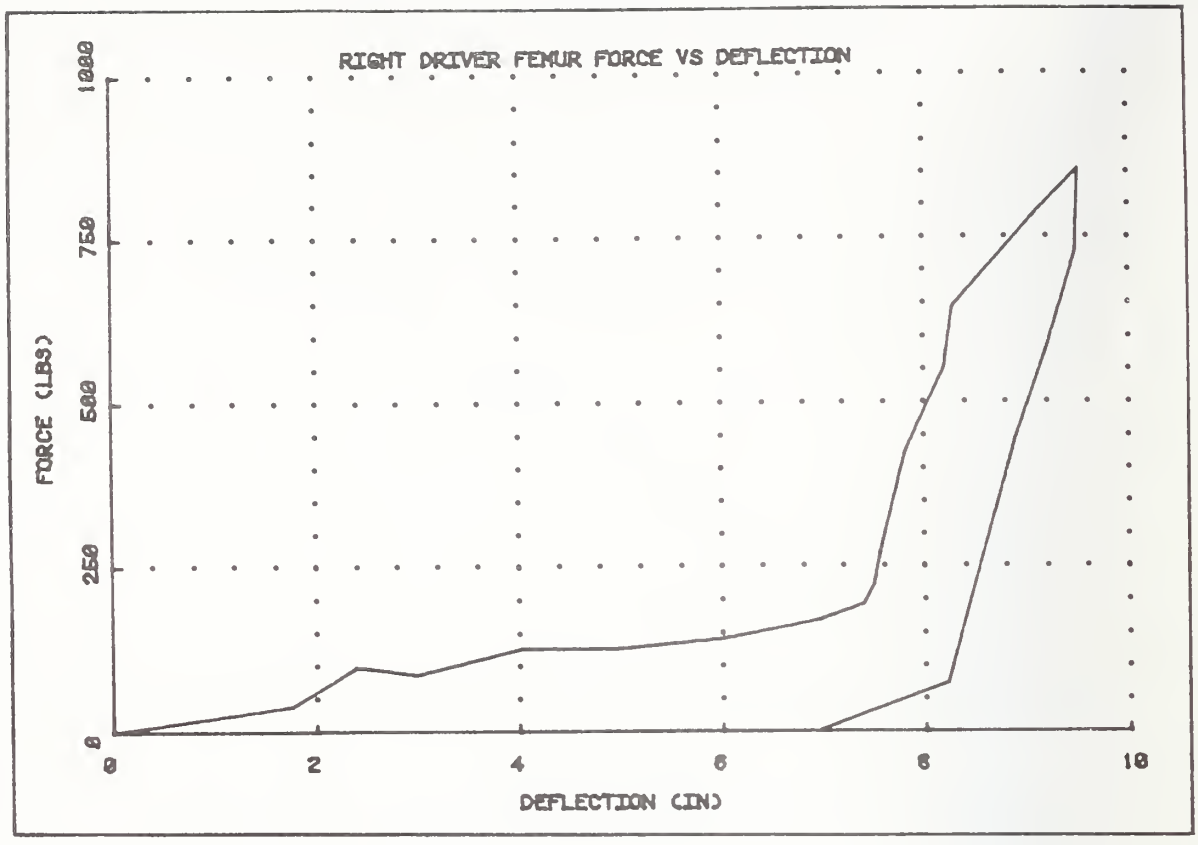
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Right Driver Femur Date: January 5, 1985

Vehicle: Pontiac Firebird

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

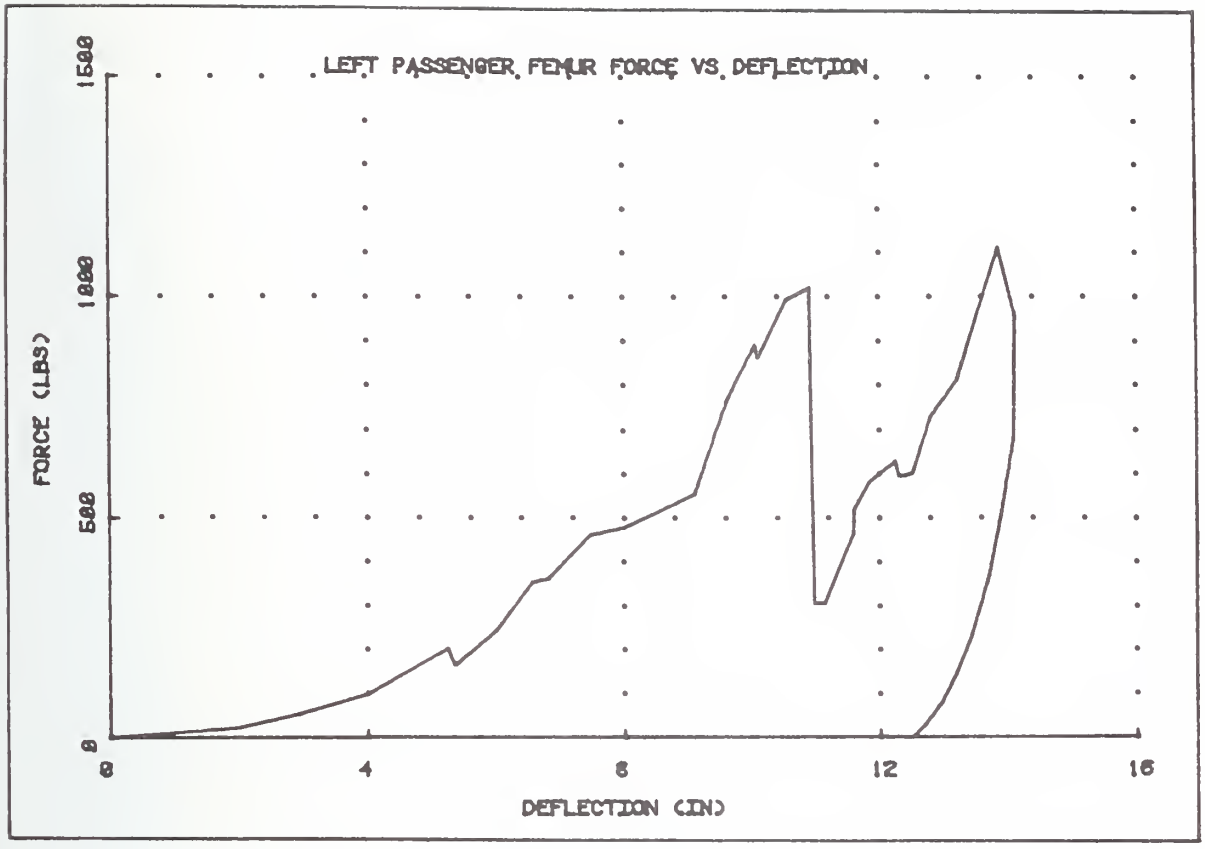
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Passenger Femur Date: January 5, 1985

Vehicle: Pontiac Firebird

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

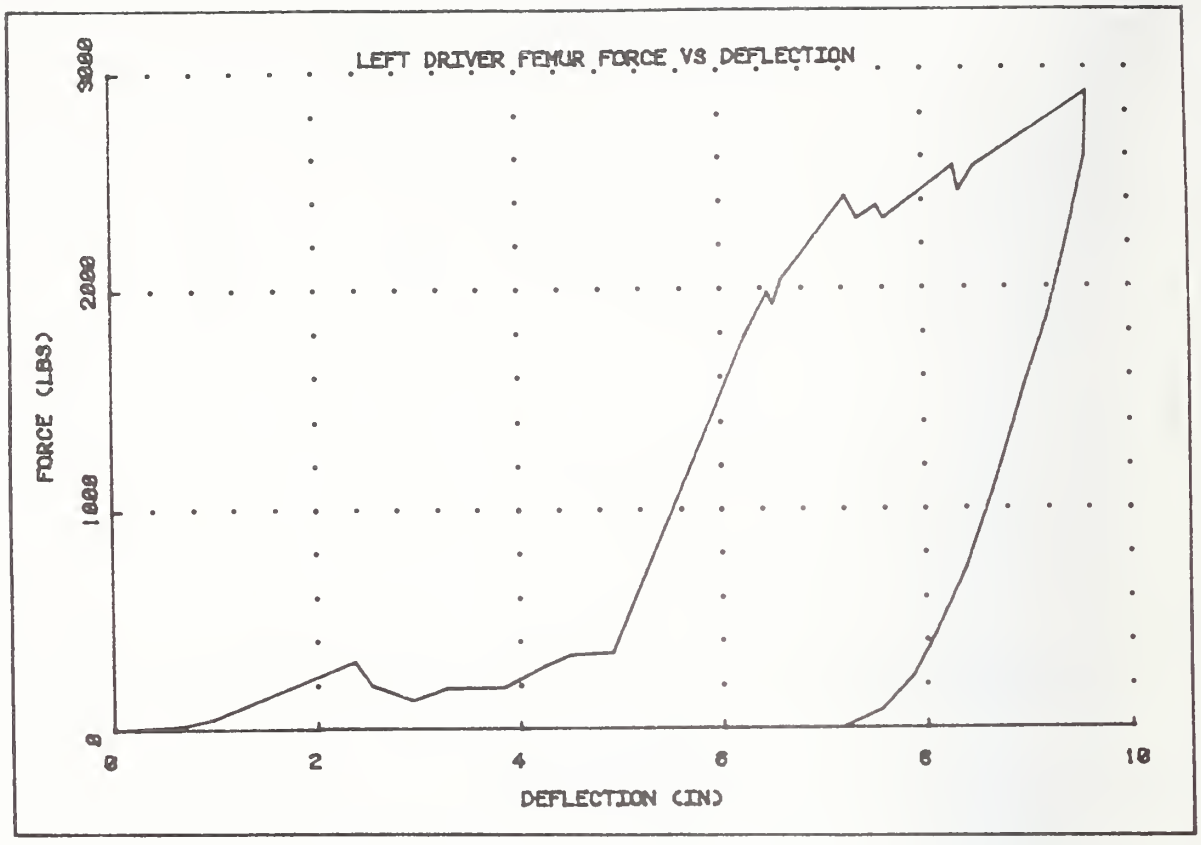
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Driver Femur Date: January 5, 1985

Vehicle: Pontiac Firebird

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

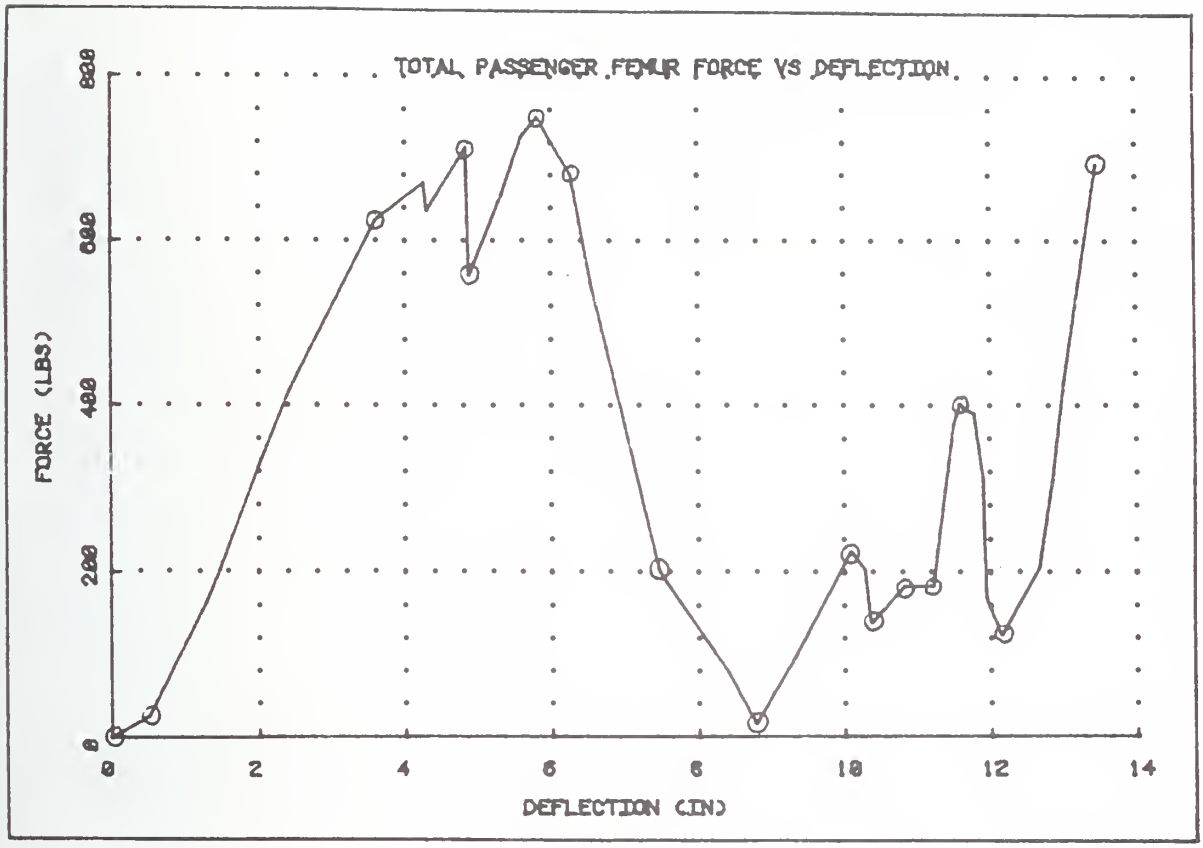
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Total Passenger Femur (Static) Date: January 11, 1985

Vehicle: Chevy Celebrity

Options:



G= 0.966 R= 0.034 K= 1587

c= μ_1= μ_2= μ_3=

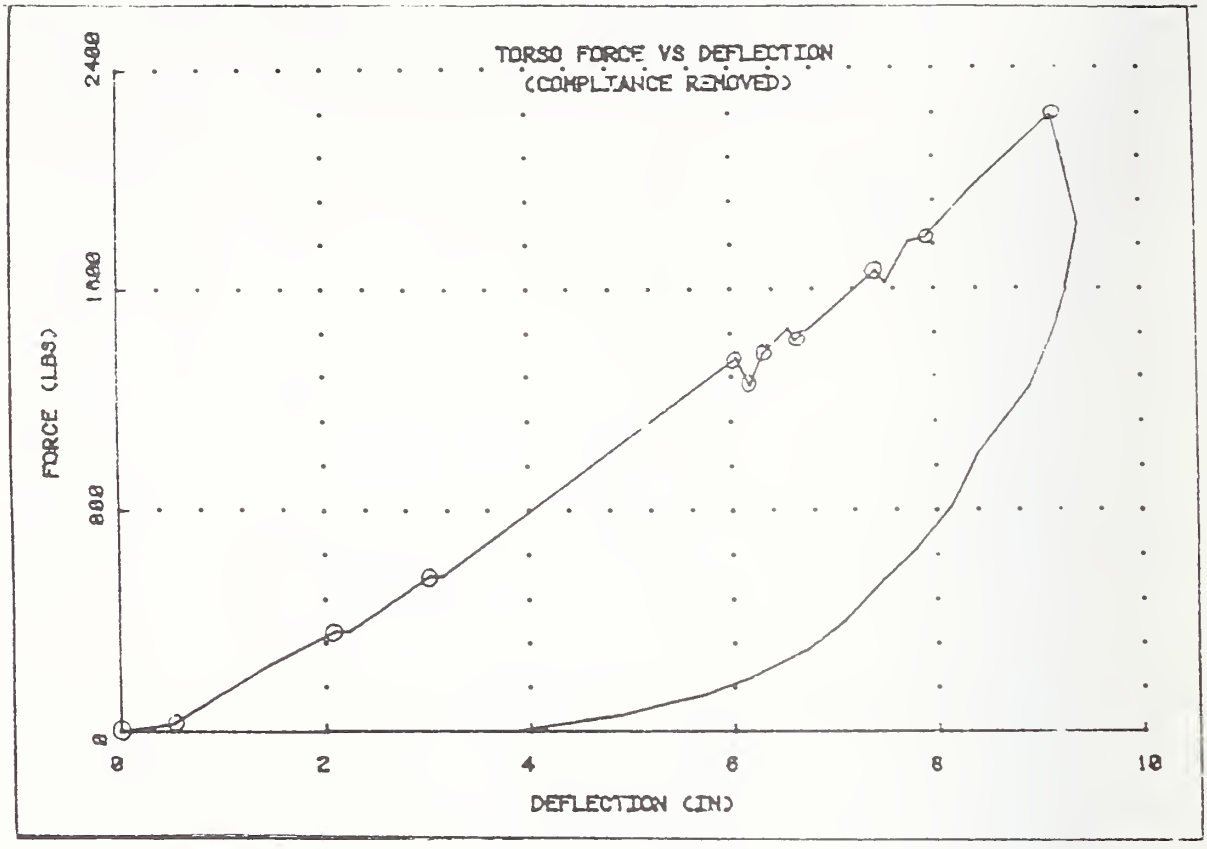
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	8.70	14.46
0.51	25.4	10.10	224.6
3.60	624.2	10.37	137.5
4.84	714.1	10.84	183.1
4.88	556.3	11.22	182.5
5.81	751.5	11.59	399.6
6.27	678.6	12.14	122.4
7.48	200.2	13.48	694.1

Test: Torso (Static) Date: January 11, 1985

Vehicle: Chevy Celebrity

Options:



G= 0.414 R= 0.275 K= 650

c= μ_1= μ_2= μ_3=

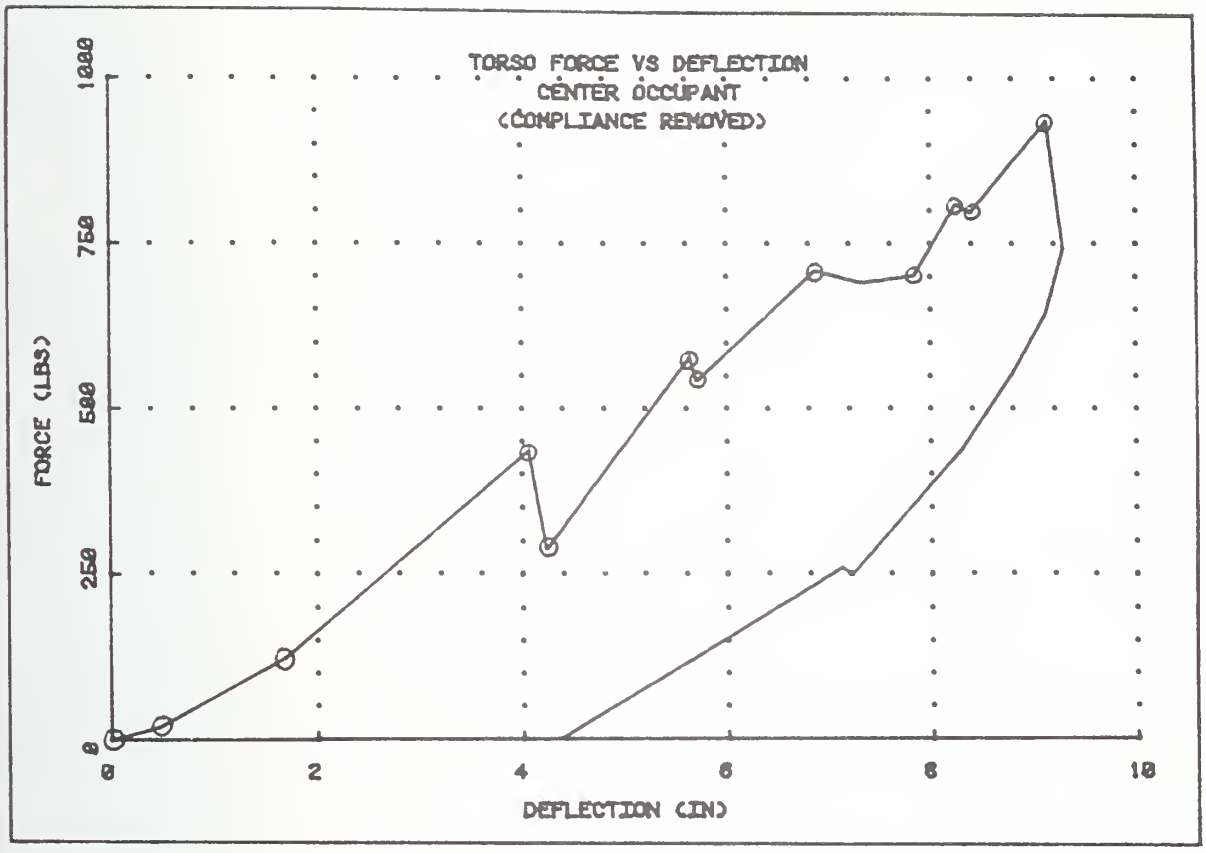
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	7.43	1667.8
0.51	25.9	7.93	1785.9
2.09	363.4	9.16	2238.5
3.02	563.9		
6.05	1347.1		
6.18	1245.9		
6.32	1364.1		
6.63	1410.7		

Test: Torso (center occupant) Date: January 11, 1985

Vehicle: Chevy Celebrity

Options: Compliance Removed



G= 0.470 R= .0.322 K= 210

c= μ_1= μ_2= μ_3=

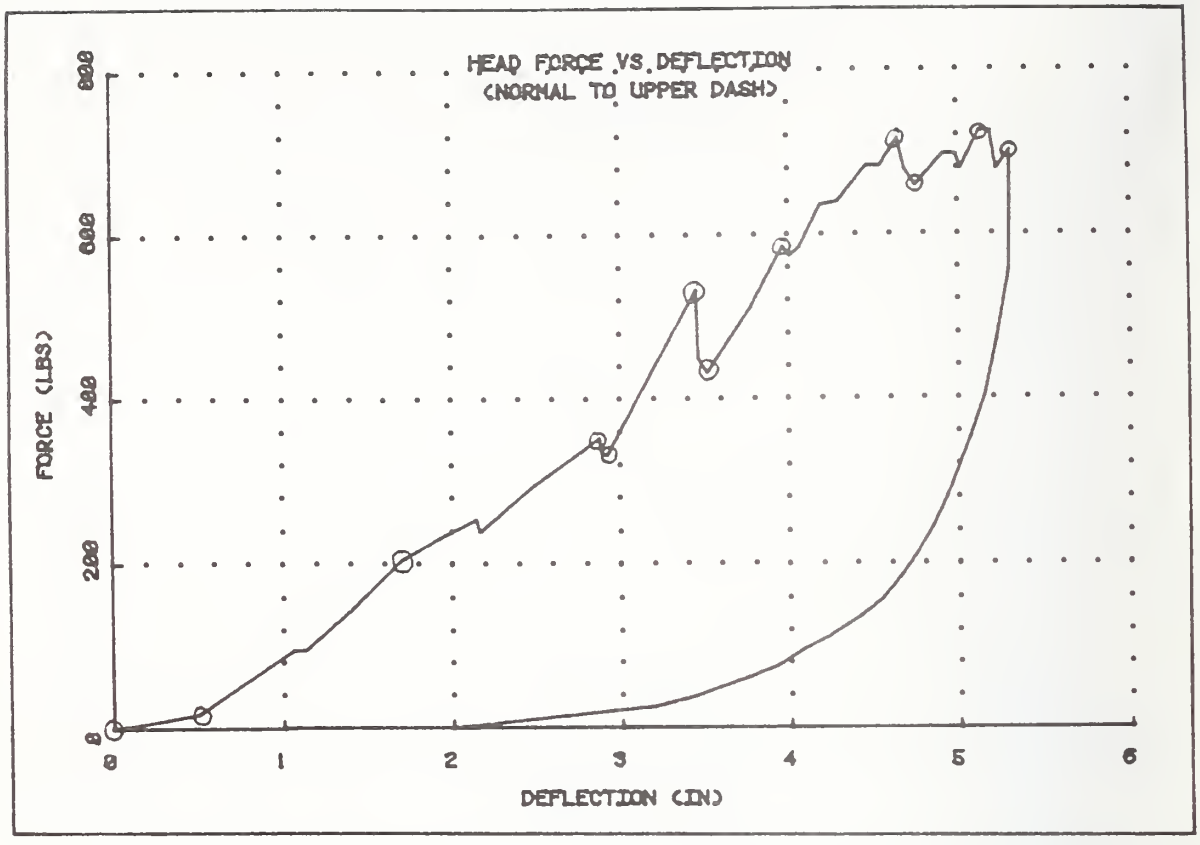
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	7.85	701.8
0.47	18.5	8.25	809.0
1.69	123.4	8.39	795.5
4.07	434.8	9.14	935.8
4.24	286.5		
5.64	577.8		
5.71	541.0		
6.86	707.6		

Test: Head (Static) Date: January 11, 1985

Vehicle: Chevy Celebrity

Options: Normal



G= 0.385 R= 0.190 K= 701

c= μ_1= μ_2= μ_3=

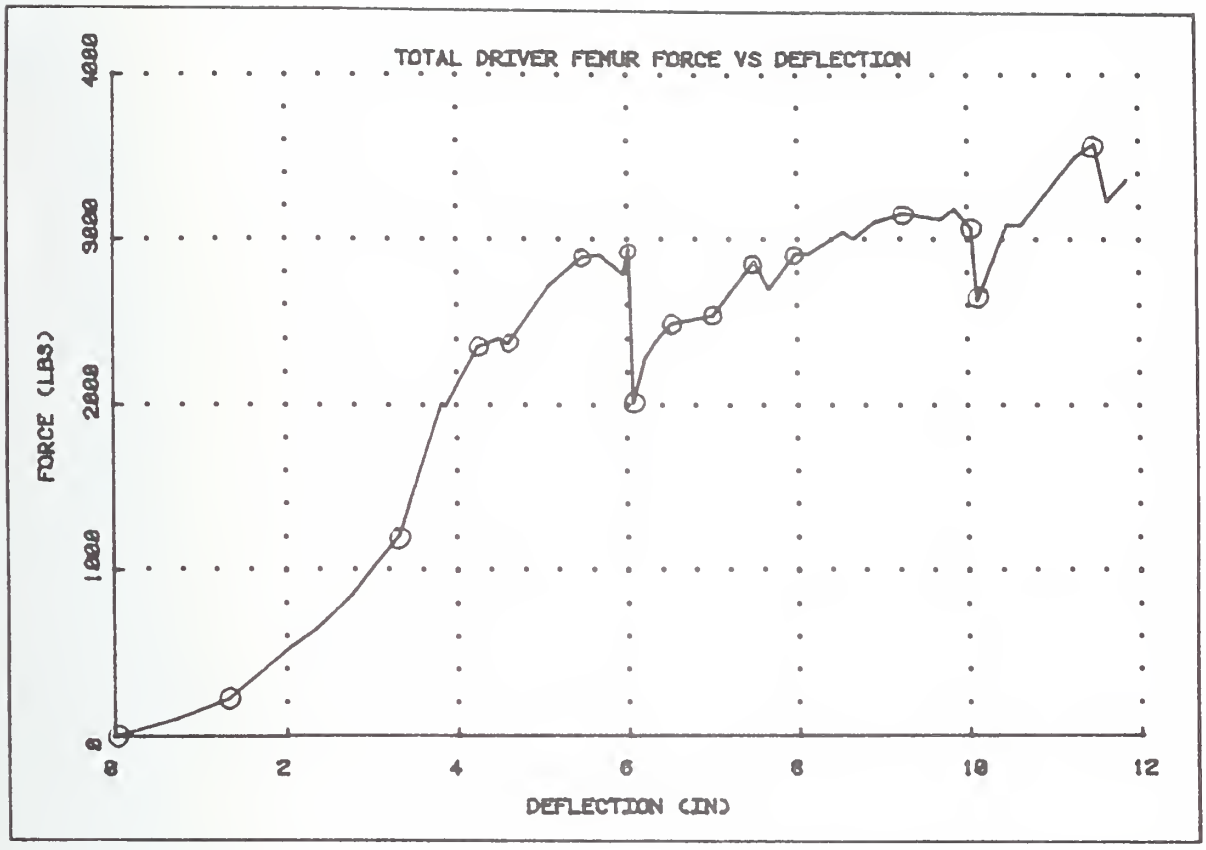
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	4.65	714.5
0.50	16.6	4.75	657.7
1.70	204.6	5.13	724.4
2.88	352.4	5.31	699.7
2.89	330.9		
3.46	532.5		
3.52	430.2		
3.97	584.5		

Test: Total Driver Femur (Static) Date: January 11, 1985

Vehicle: Chevy Celebrity

Options:



G= 0.748 R= 0.106 K= 2409

c= μ_1= μ_2= μ_3=

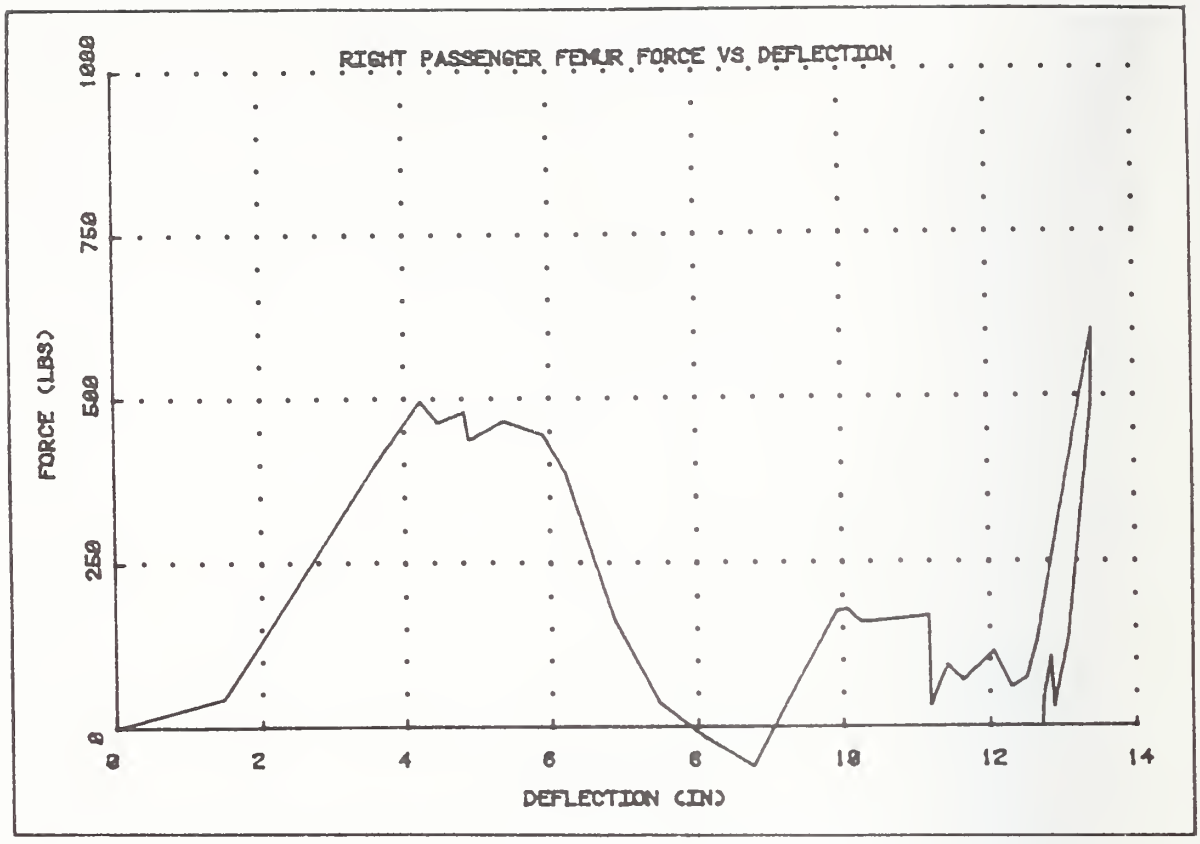
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	6.51	2490.1
1.33	217.3	7.01	2535.4
3.33	2106.6	7.49	2867.7
4.24	2349.1	7.97	2912.1
4.60	2364.4	9.27	3155.4
5.48	2892.3	10.04	3067.3
6.02	2940.2	10.11	2624.6
6.07	2002.4	11.48	3579.4

Test: Right Passenger Femur Date: January 11, 1985

Vehicle: Chevy Celebrity

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

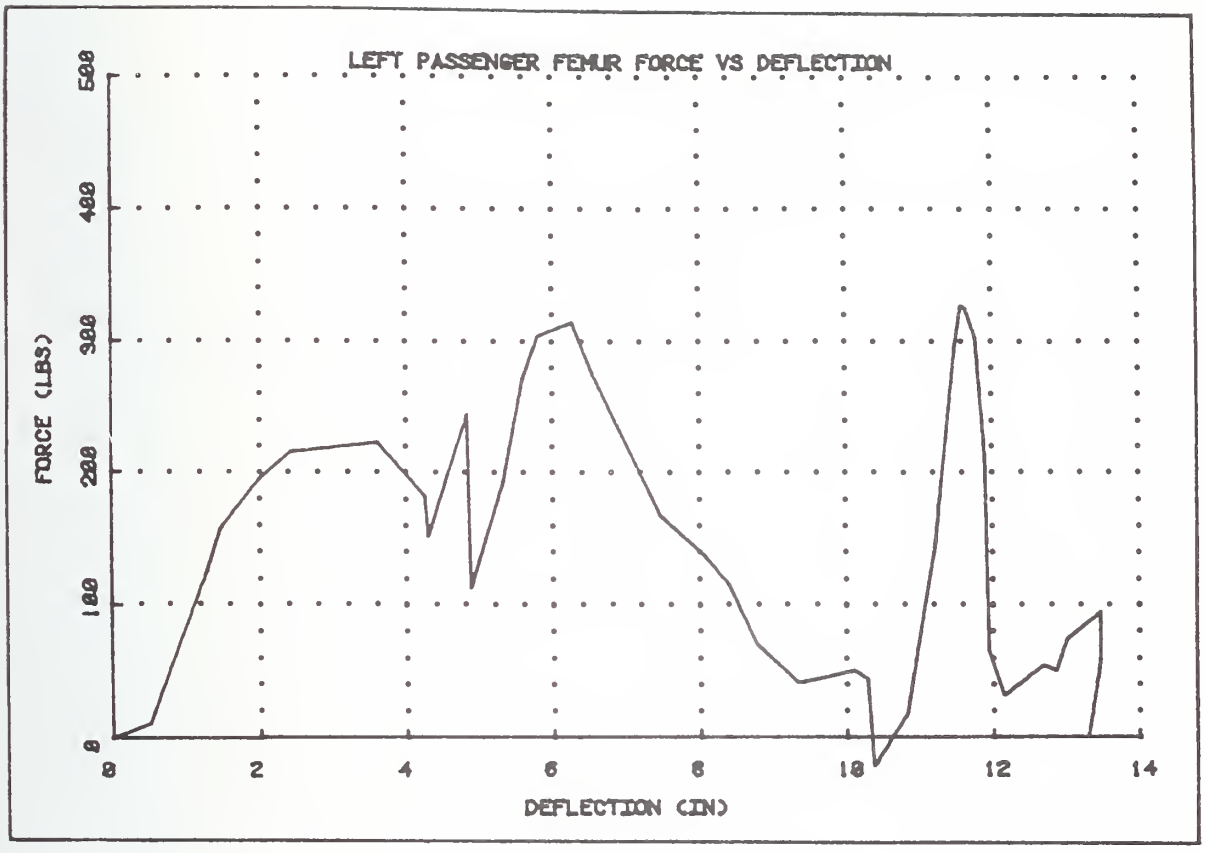
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Passenger Femur Date: January 11, 1985

Vehicle: Chevy Celebrity

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

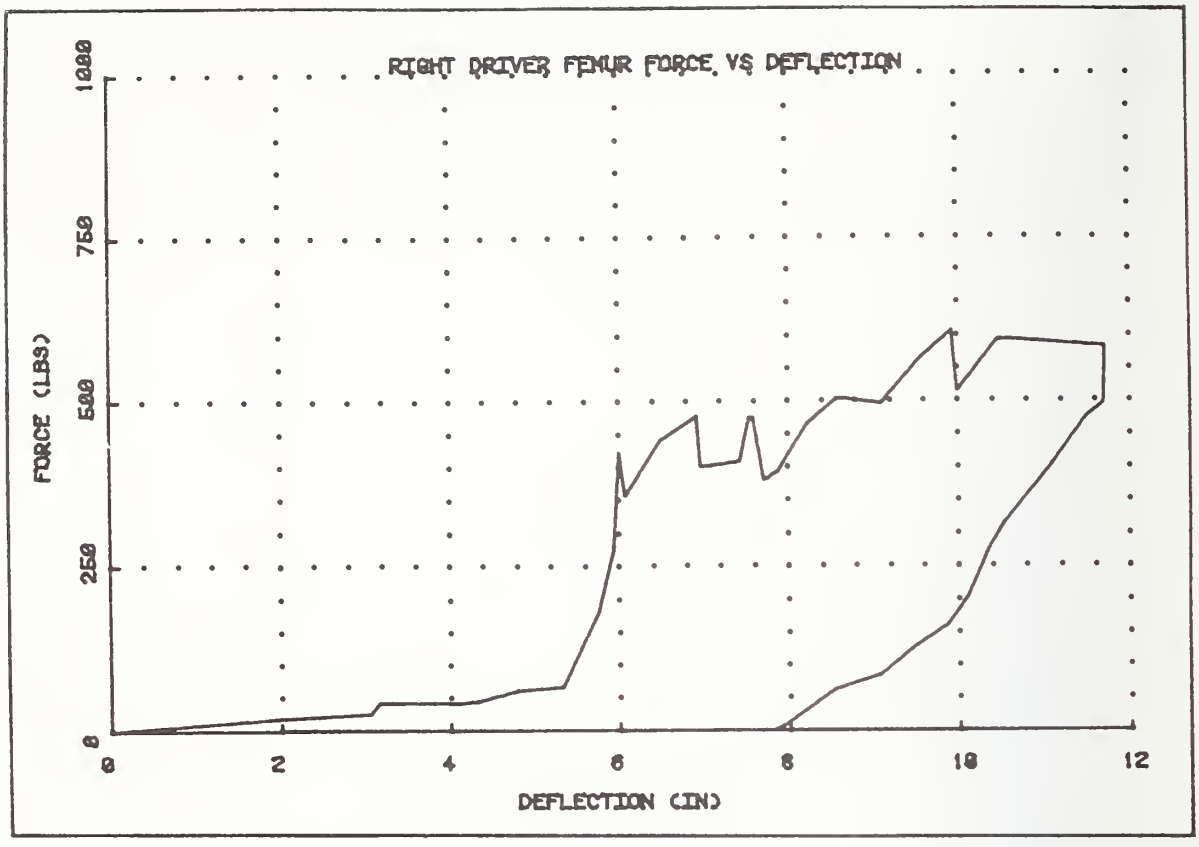
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Right Driver Femur Date: January 11, 1985

Vehicle: Chevy Celebrity

Options:



C= R= K=

c= μ_1= μ_2= μ_3=

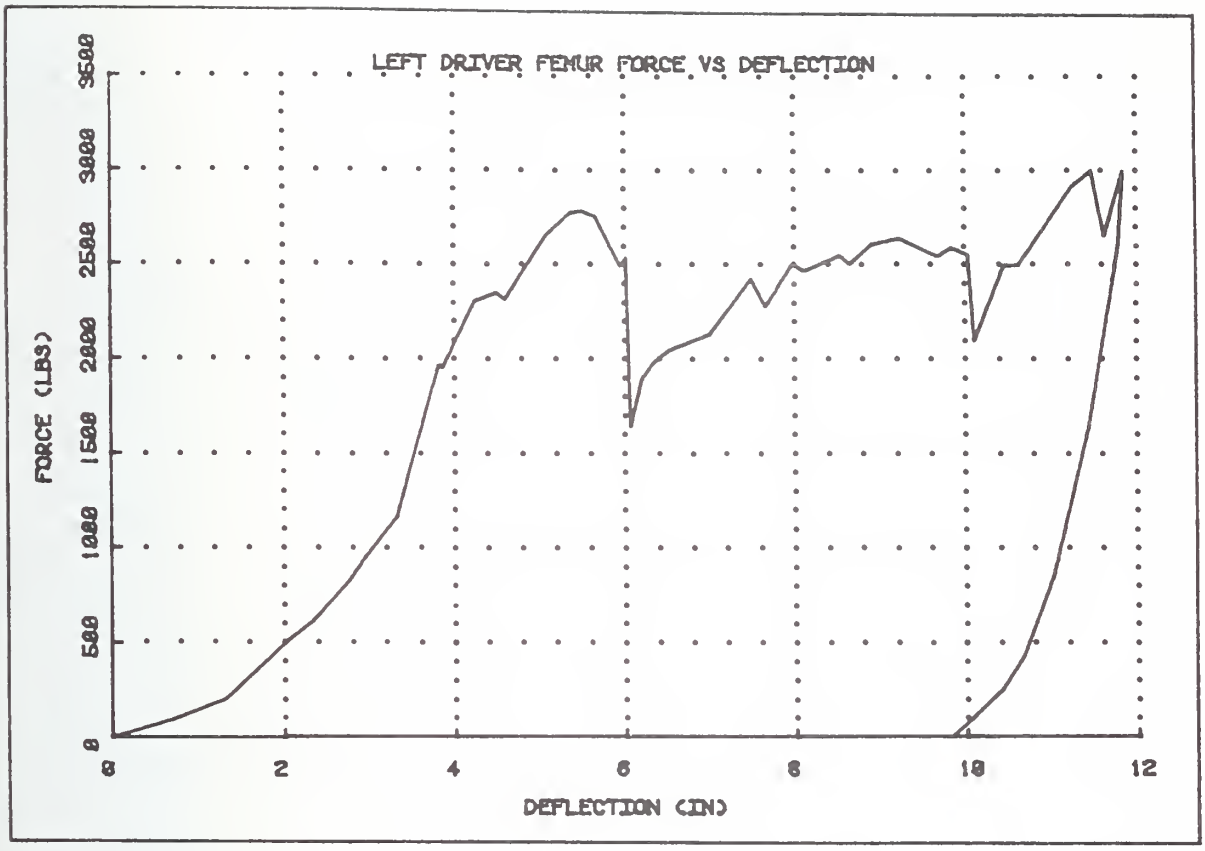
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Driver Femur Date: January 11, 1985

Vehicle: Chevy Celebrity

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

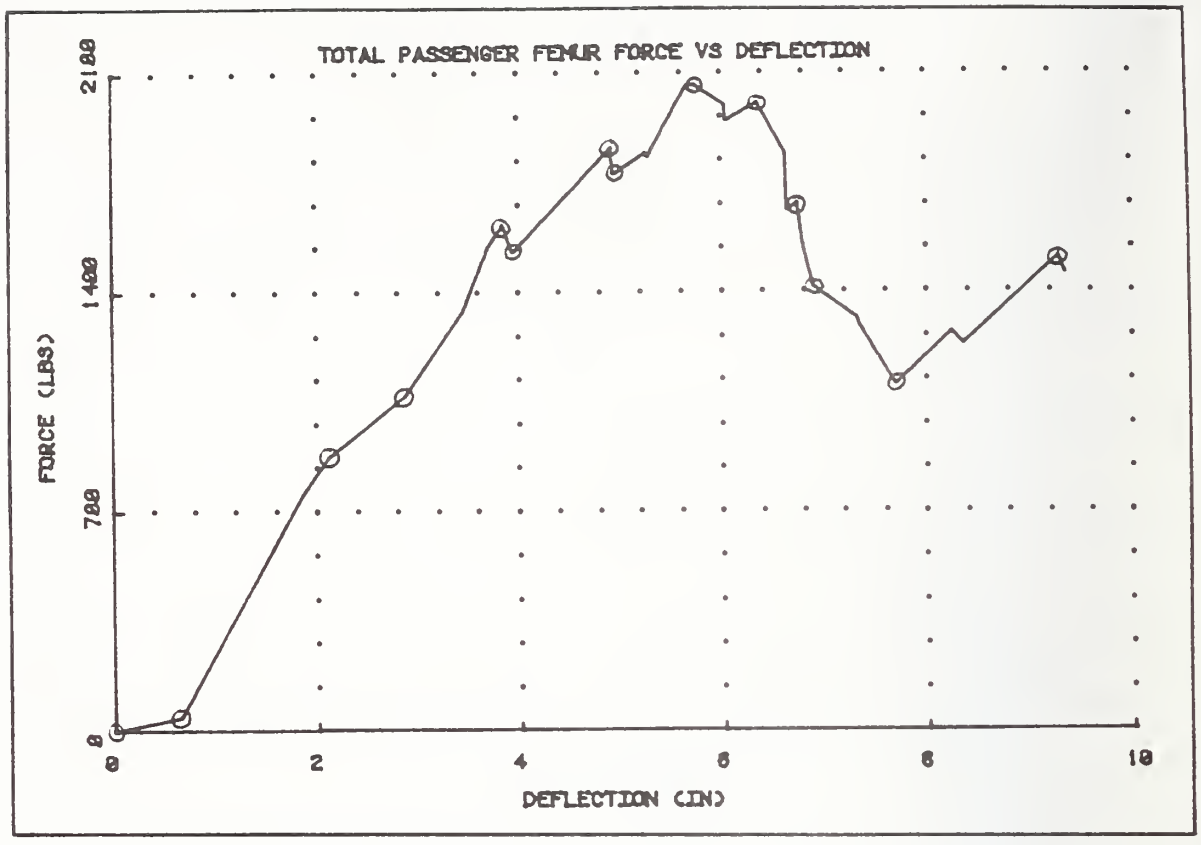
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Total Passenger Femur (Static) Date: January 15, 1985

Vehicle: Datsun 210

Options:



G= 0.821 R= 0.097 K= 1778

c= μ_1= μ_2= μ_3=

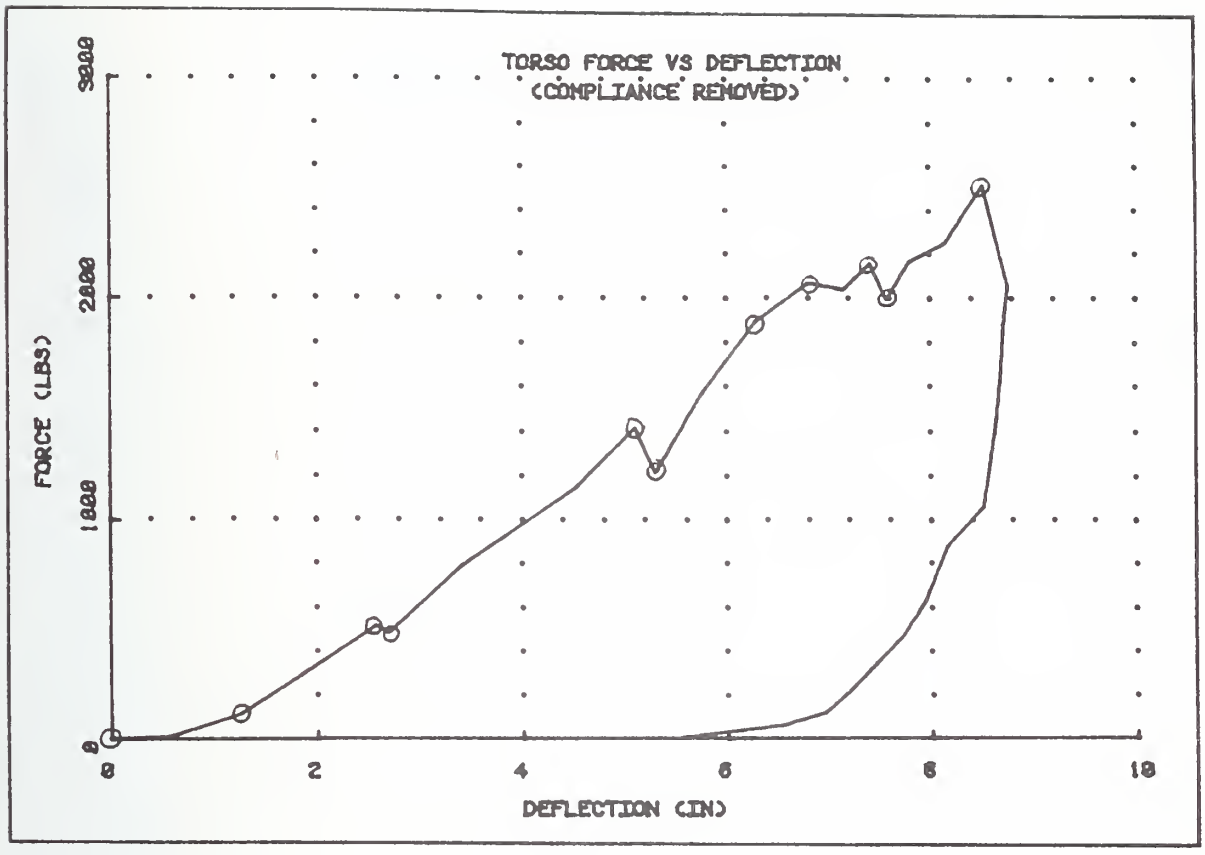
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	5.73	2060.9
0.65	42.27	6.36	2003.7
2.12	875.0	6.75	1678.1
2.88	1072.6	6.90	1409.1
3.85	1616.6	7.69	1100.2
3.94	1525.7	9.29	1507.6
4.93	1860.3		
4.95	1773.9		

Test: Torso (Static) Date: January 15, 1985

Vehicle: Datsun 210

Options: Compliance Removed



G= 0.631 R= 0.130 K= 1639

c= μ_1= μ_2= μ_3=

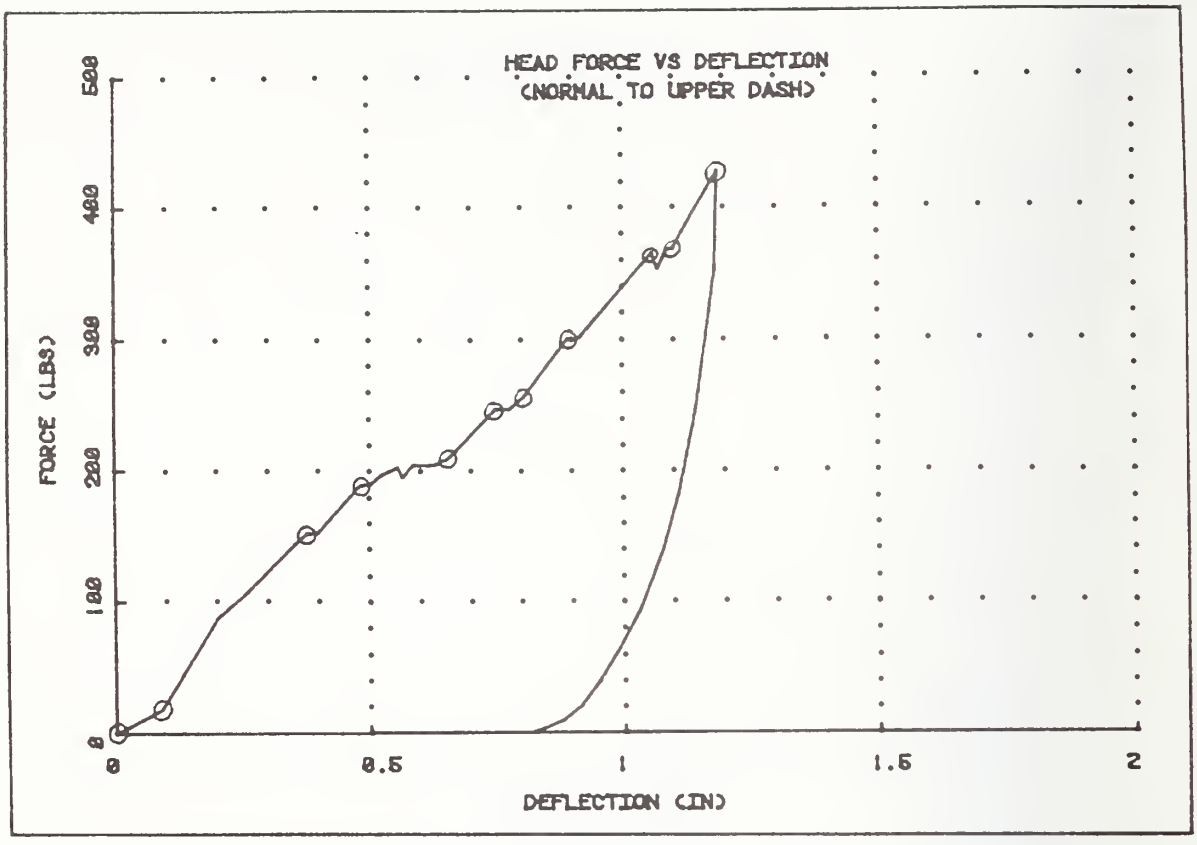
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	7.41	2158.3
1.25	113.1	7.58	1990.5
2.56	516.8	8.53	2516.3
2.68	480.0		
5.10	1415.23		
5.30	1212.5		
6.30	1892.5		
6.80	2065.8		

Test: Head (Static) Date: January 15, 1985

Vehicle: Datsun 210

Options: Normal



G= 0.690 R= 0.159 K= 2354

C= μ_1= μ_2= μ_3=

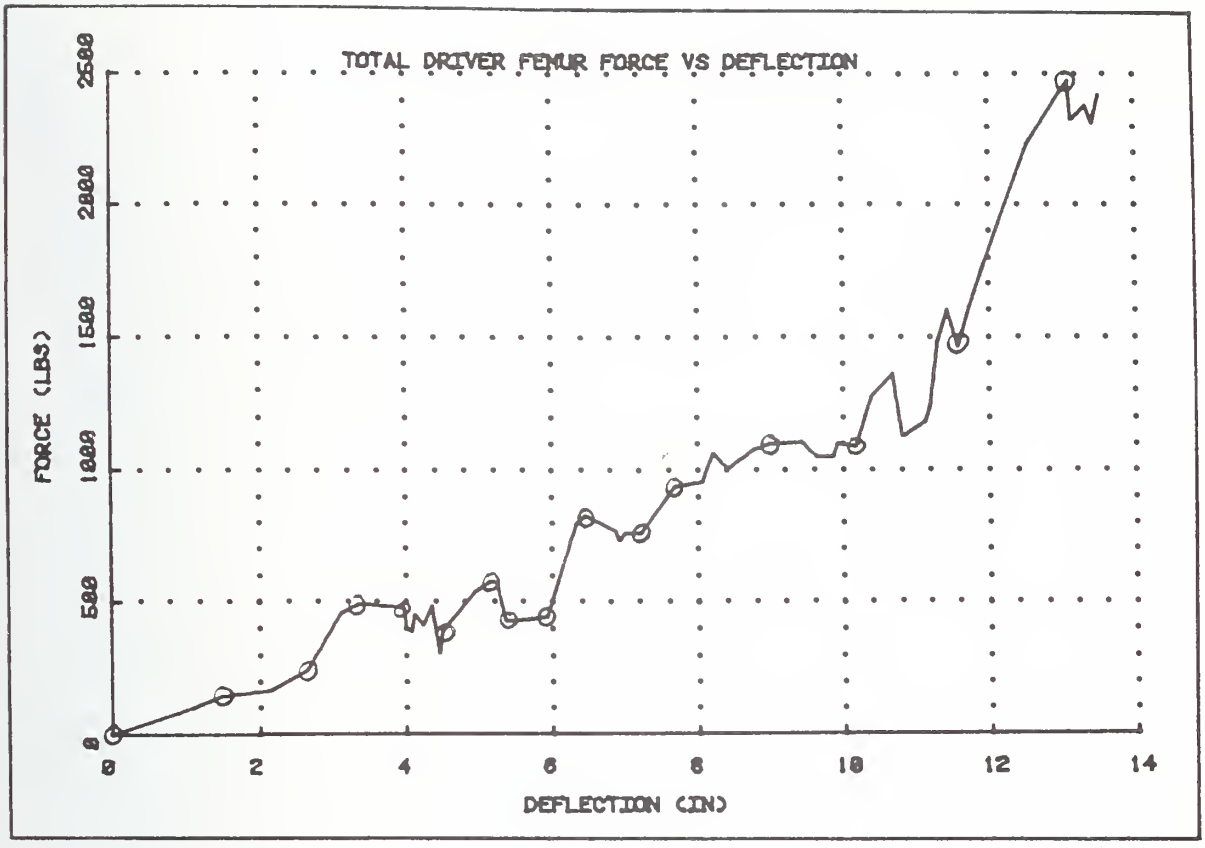
S_A= 0.0 S_B= 0.0 S_C= 0.0 S_D= 1000.0 S_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	1.06	365.1
0.09	17.66	1.10	368.7
0.37	152.2	1.19	427.6
0.48	188.9		
0.65	209.9		
0.75	246.9		
0.81	257.3		
0.89	300.7		

Test: Total Driver Femur (Static) Date: January 15, 1985

Vehicle: Datsun 210

Options:



G= 0.929 R= 0.101 K= 2623

c= μ_1= μ_2= μ_3=

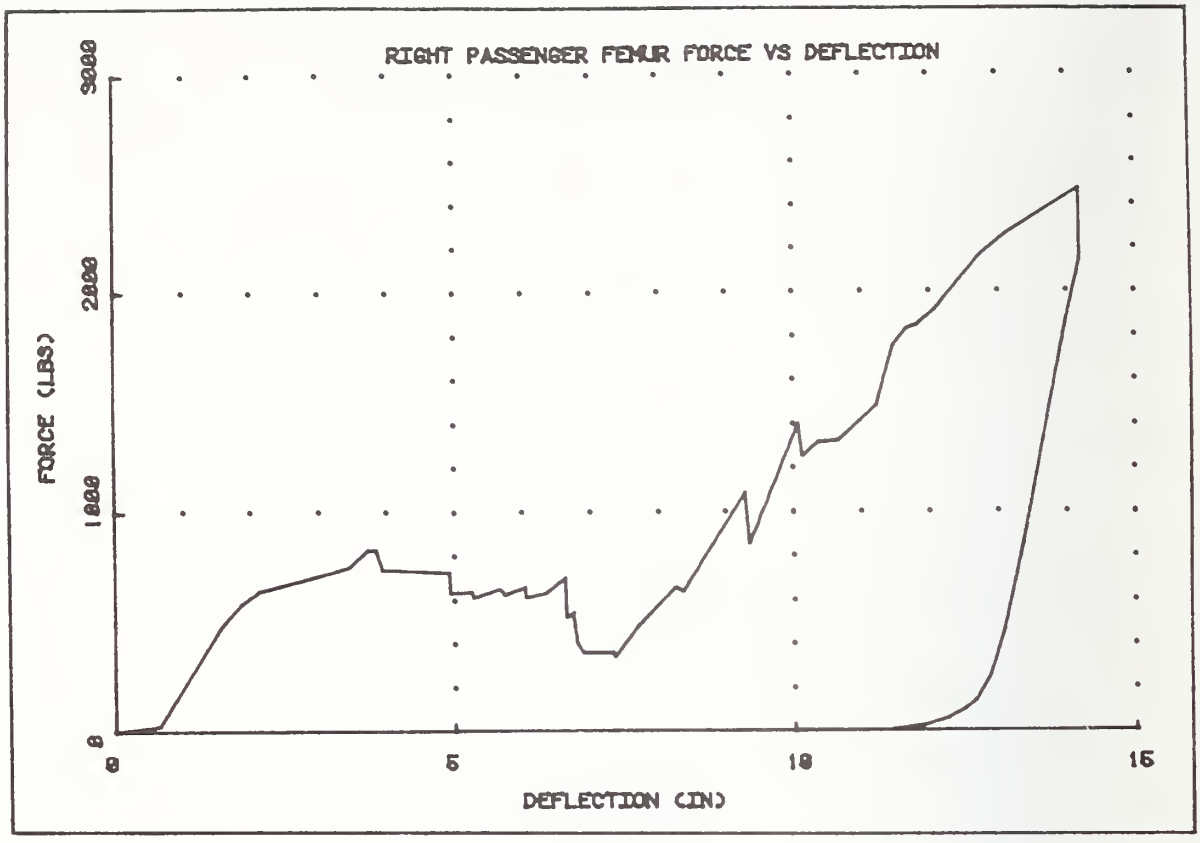
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	5.94	443.32
1.48	144.4	6.45	824.44
2.65	243.4	7.22	758.47
3.33	492.3	7.68	939.8
3.97	474.3	8.99	1098.4
4.50	389.1	10.17	1086.4
5.14	575.4	11.58	1457.1
5.37	427.1	13.11	2476.8

Test: Right Passenger Femur Date: January 15, 1985

Vehicle: Datsun 210

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

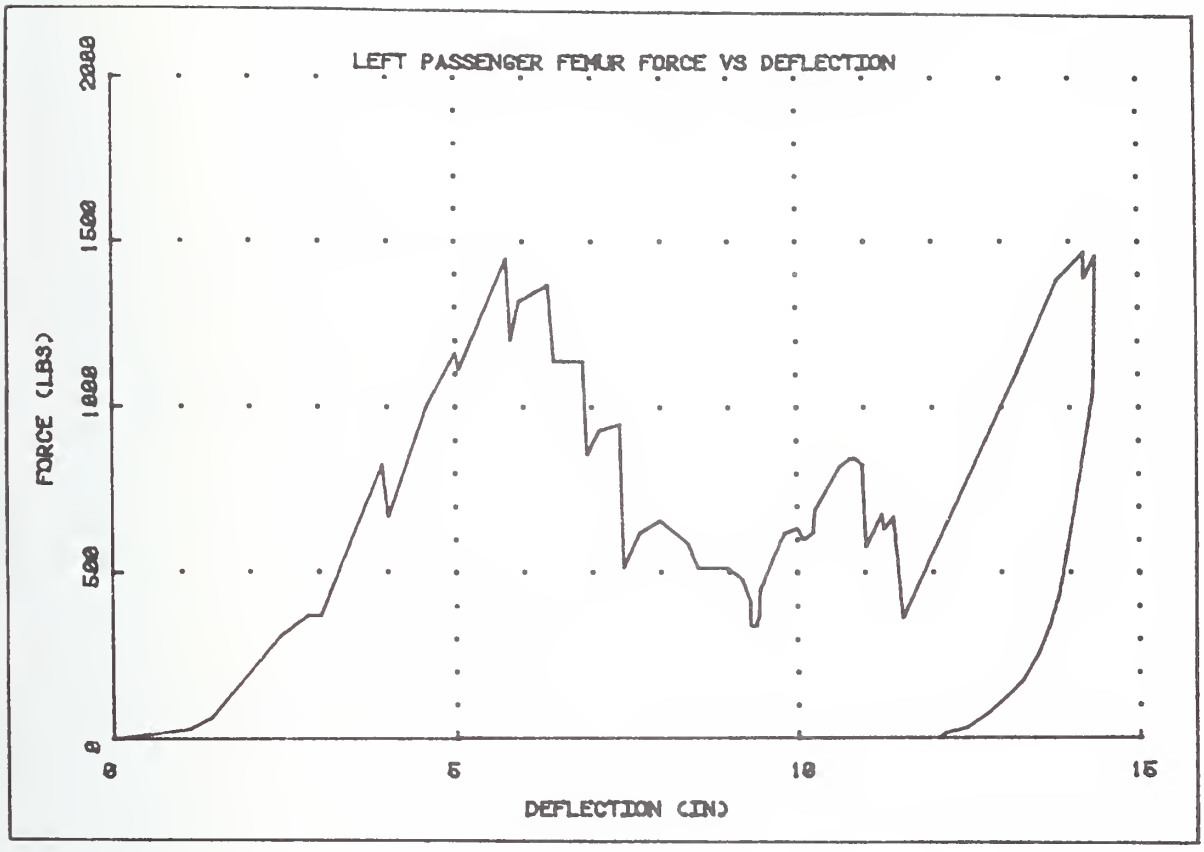
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Passenger Femur Date: January 15, 1985

Vehicle: Datsun 210

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

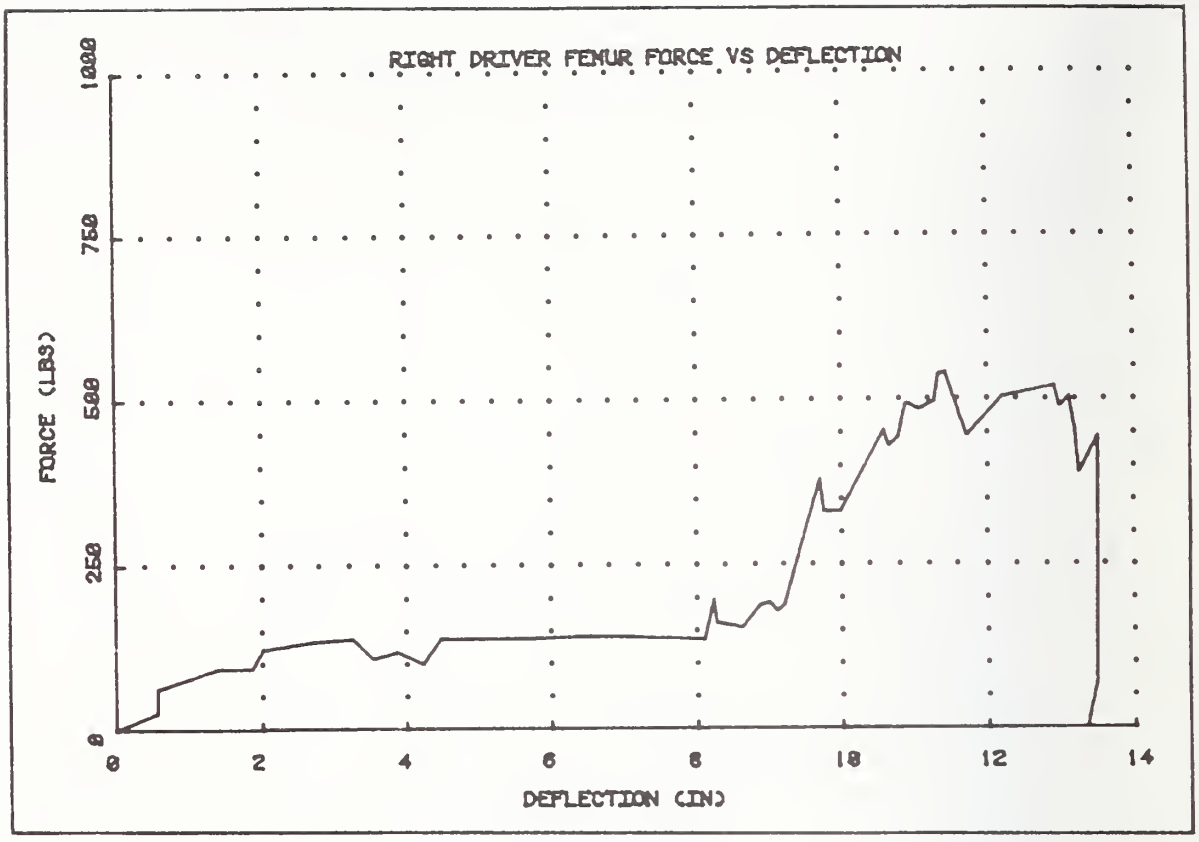
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Right Driver Femur Date: January 15, 1985

Vehicle: Datsun 210

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

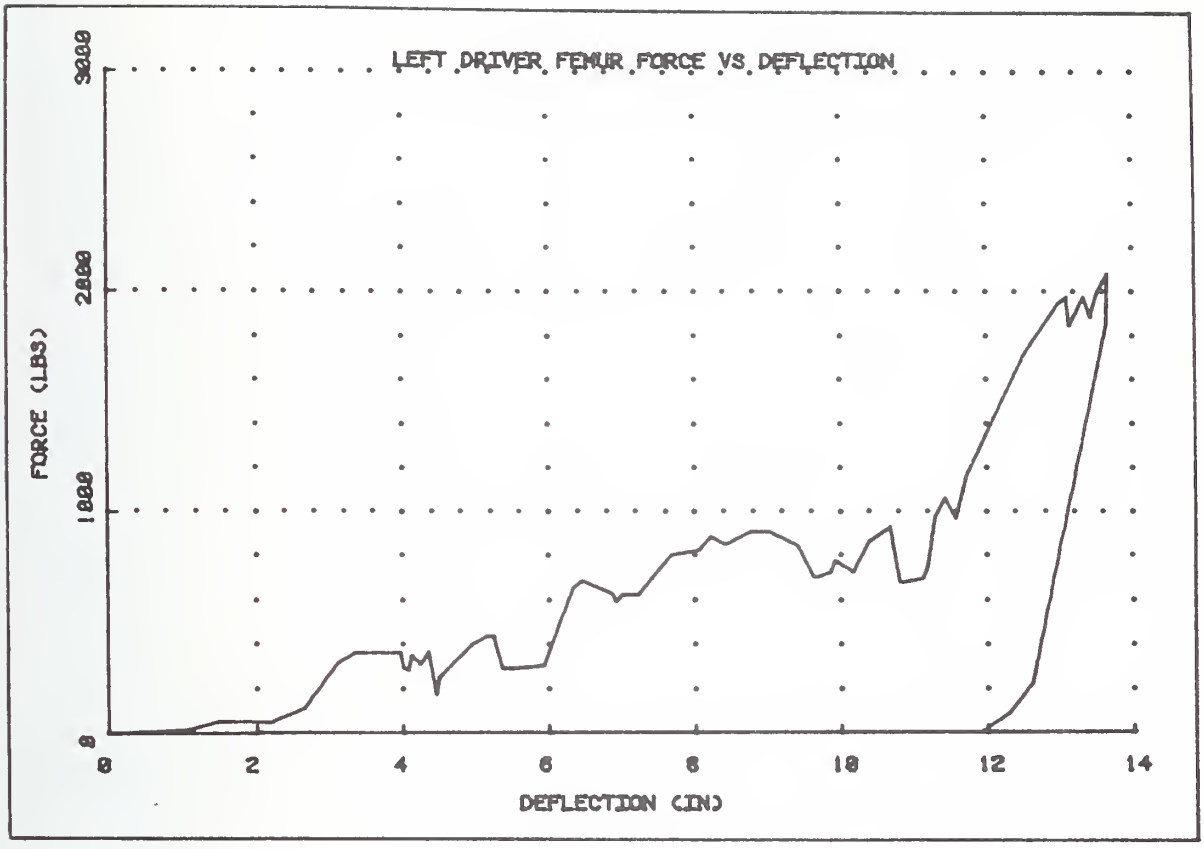
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Driver Femur Date: January 15, 1985

Vehicle: Datsun 210

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

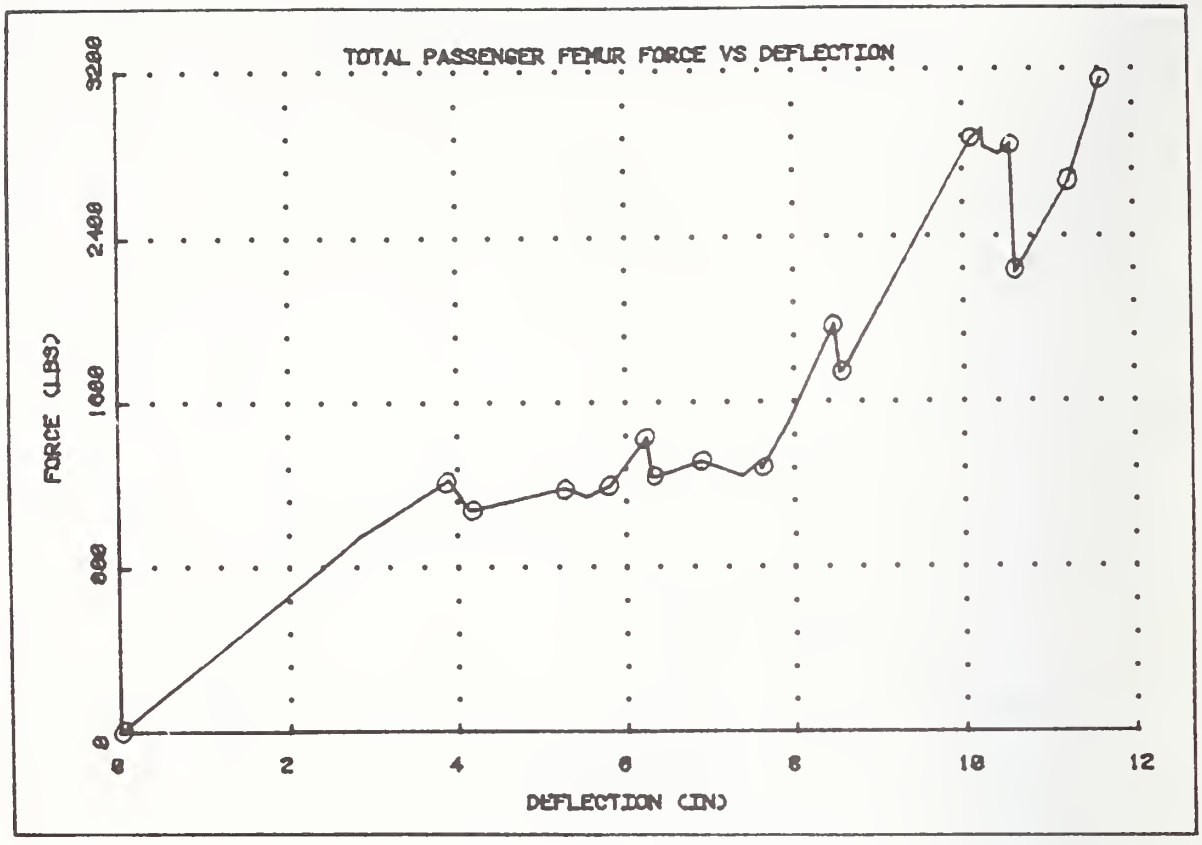
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Total Passenger Femur (Static) Date: January 16, 1985

Vehicle: Pontiac LeMans

Options:



G= 0.815 R= · 0.116 K= 2988

c= μ_1= μ_2= μ_3=

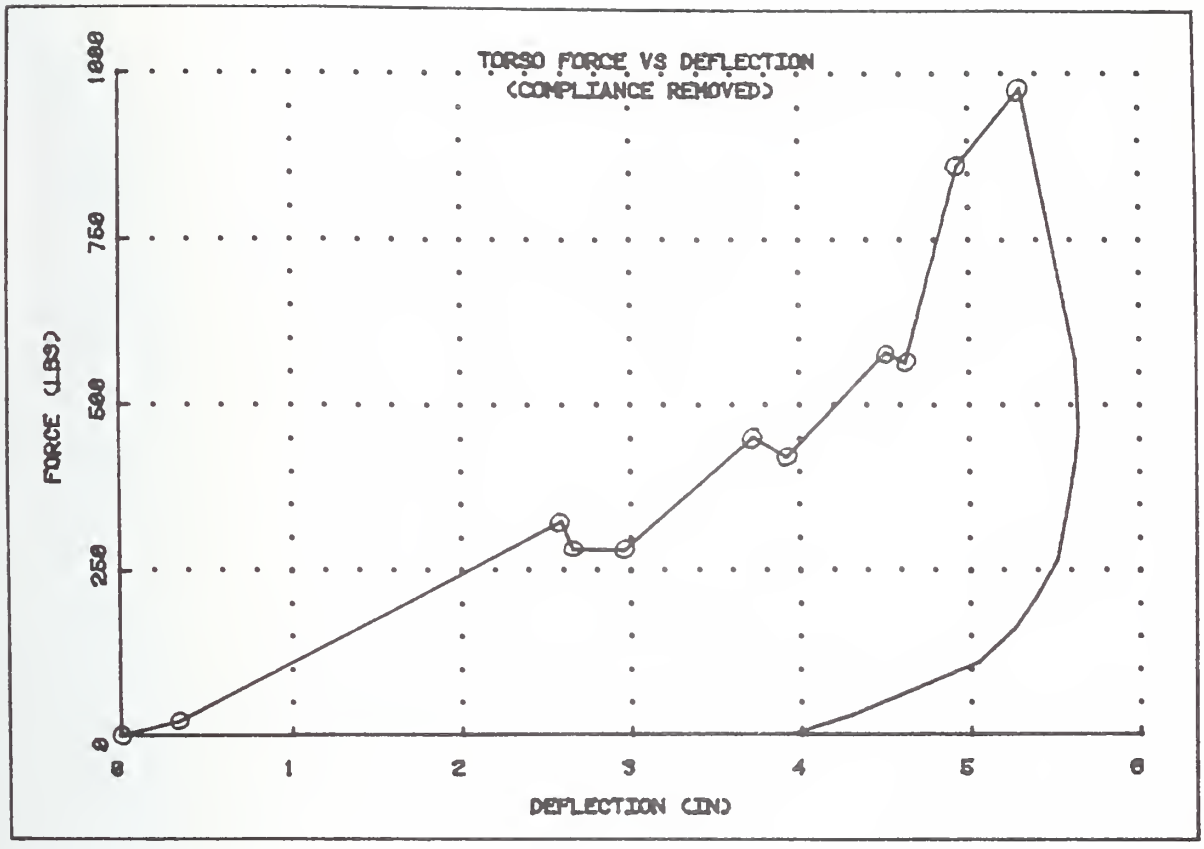
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	7.59	1310.9
3.90	1223.0	8.49	1975.9
4.14	1075.24	8.55	1736.37
5.26	1182.52	10.12	2872.0
5.81	1194.4	10.58	2842.9
6.25	1428.3	10.61	2216.8
6.31	1231.37	11.25	2663.5
6.87	1310.78	11.64	3155.8

Test: Torso (Static) Date: January 16, 1985

Vehicle: Pontiac LeMans

Options: ~~Compliance Removed~~



G= 0.699 R= 0.091 K= 581

c= μ_1= μ_2= μ_3=

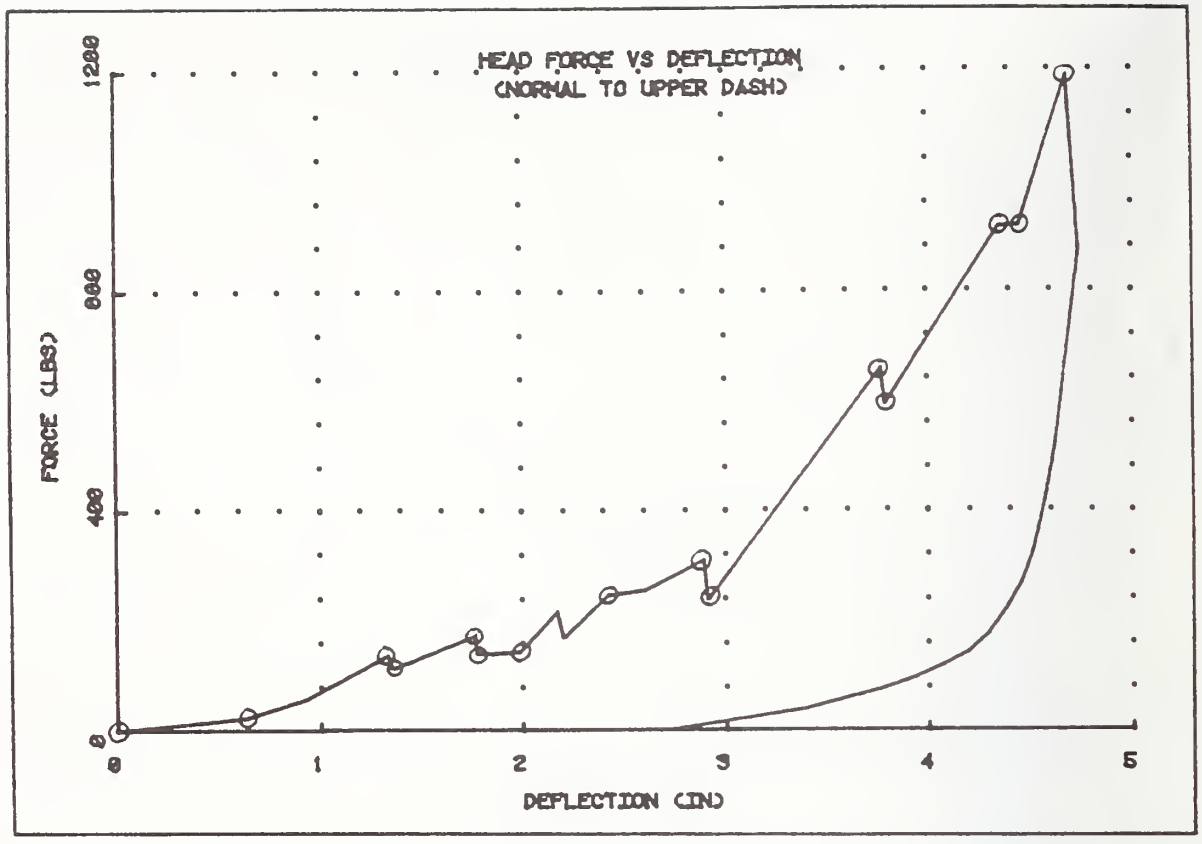
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	4.63	561.2
0.34	22.7	4.94	861.7
2.59	323.74	5.31	978.7
2.66	280.75		
2.96	278.3		
3.72	451.22		
3.92	420.5		
4.51	578.0		

Test: Head (Static) Date: January 16, 1985

Vehicle: Pontiac LeMans

Options: Normal



G= 0.578 R= 0.173 K= 1392

c= μ_1= μ_2= μ_3=

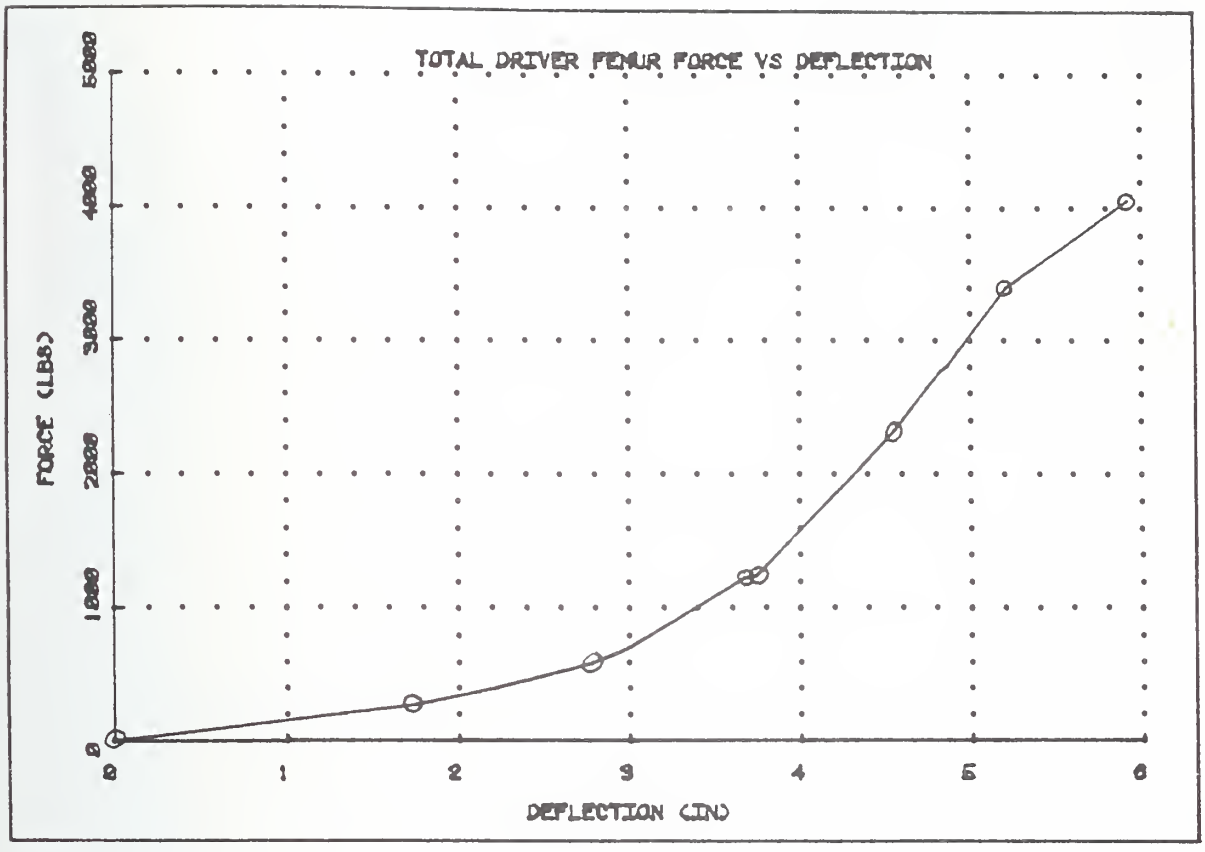
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	2.90	309.79
0.63	23.4	2.92	236.07
1.33	137.5	3.78	658.89
1.35	112.95	3.80	591.18
1.76	172.87	4.36	915.4
1.77	138.11	4.46	917.5
1.99	143.5	4.69	1190.4
2.42	247.29		

Test: Total Driver Femur Date: January 17, 1985

Vehicle: Pontiac LeMans

Options:



G= 0.711 R= 0.292 K= 3729

c= μ_1= μ_2= μ_3=

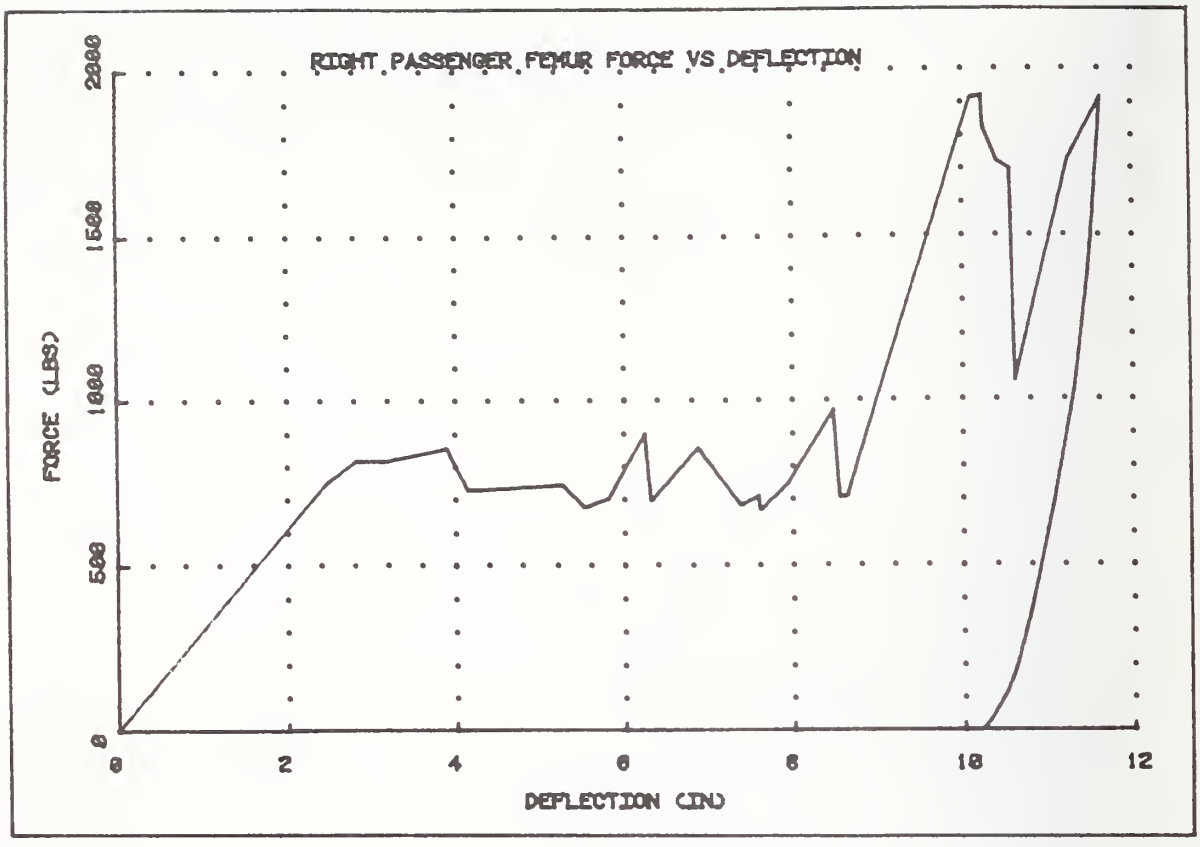
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0		
1.75	269.8		
2.78	591.4		
3.68	1227.0		
3.74	1242.0		
4.56	2334.1		
5.21	3397.7		
5.93	4065.4		

Test: Right Passenger Femur Date: January 16, 1985

Vehicle: Pontiac LeMans

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

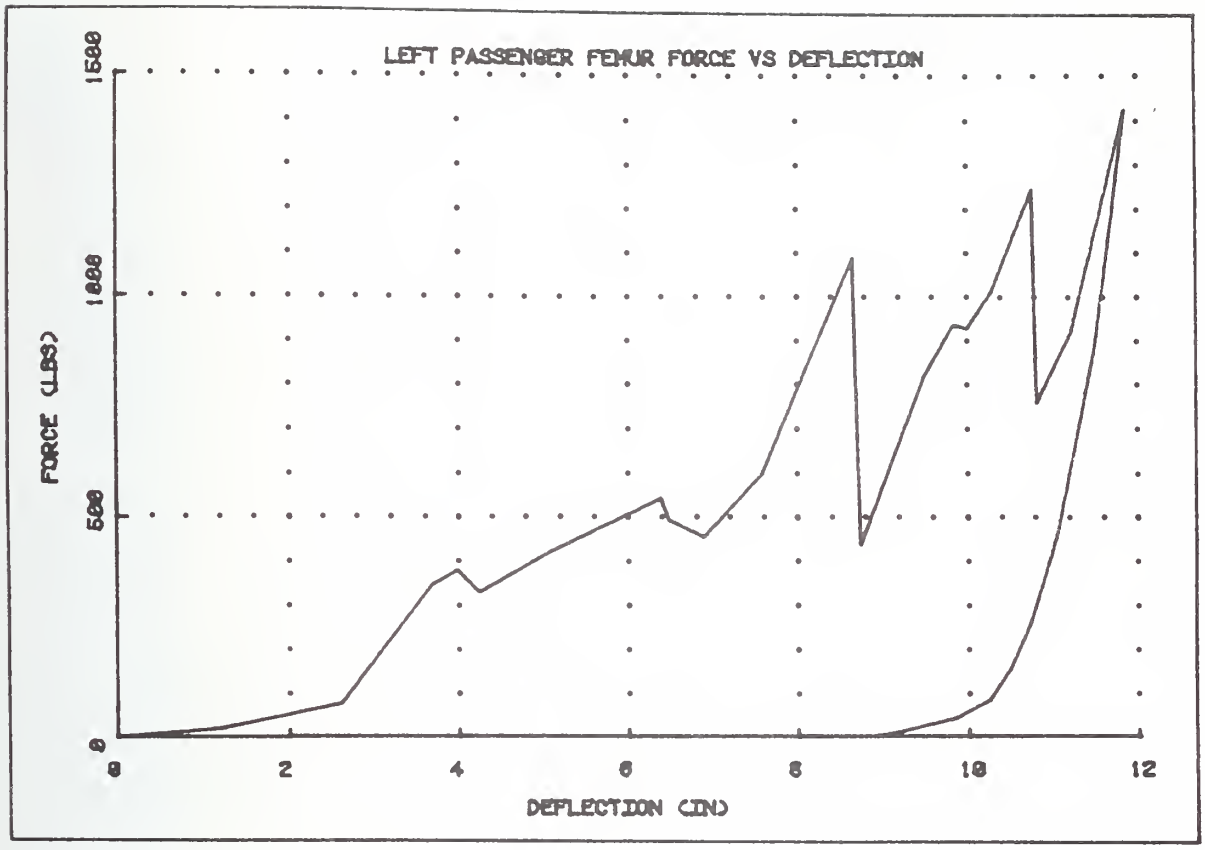
Deflection	Force	Deflection	Force

Test: Left Passenger Femur Date: January 16, 1985

Vehicle: Pontiac LeMans

Options: _____

_____



G=_____ R=_____ K=_____

c=_____ μ_1=_____ μ_2=_____ μ_3=_____

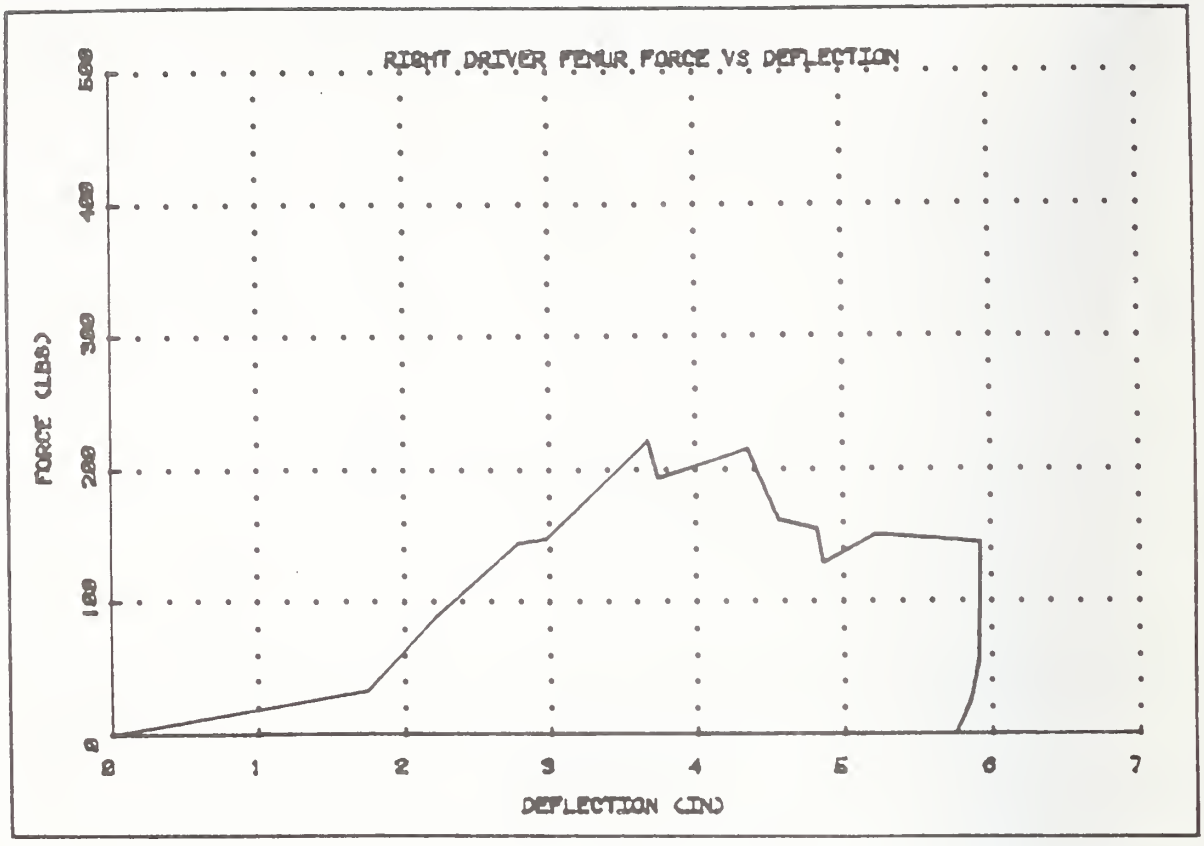
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Right Driver Femur Date: January 17, 1985

Vehicle: Pontiac LeMans

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

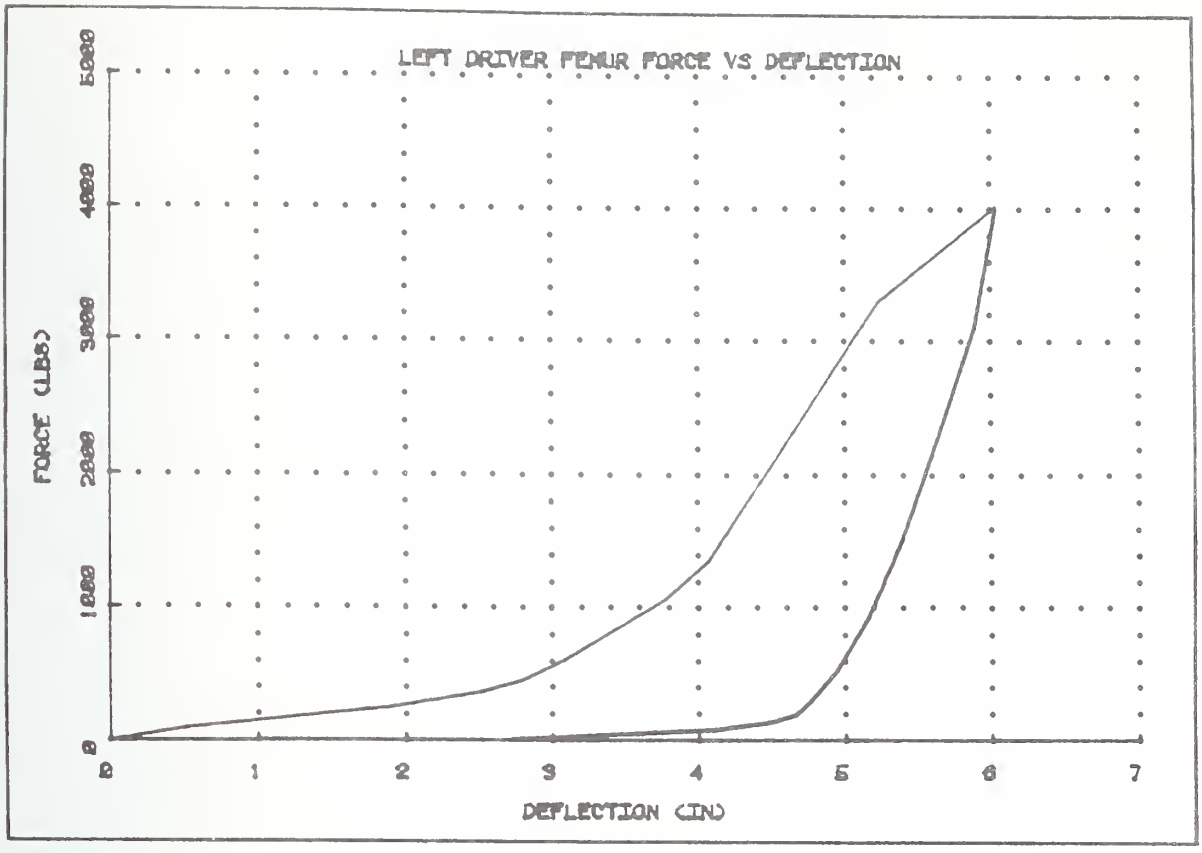
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Driver Femur Date: January 17, 1985

Vehicle: Pontiac LeMans

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

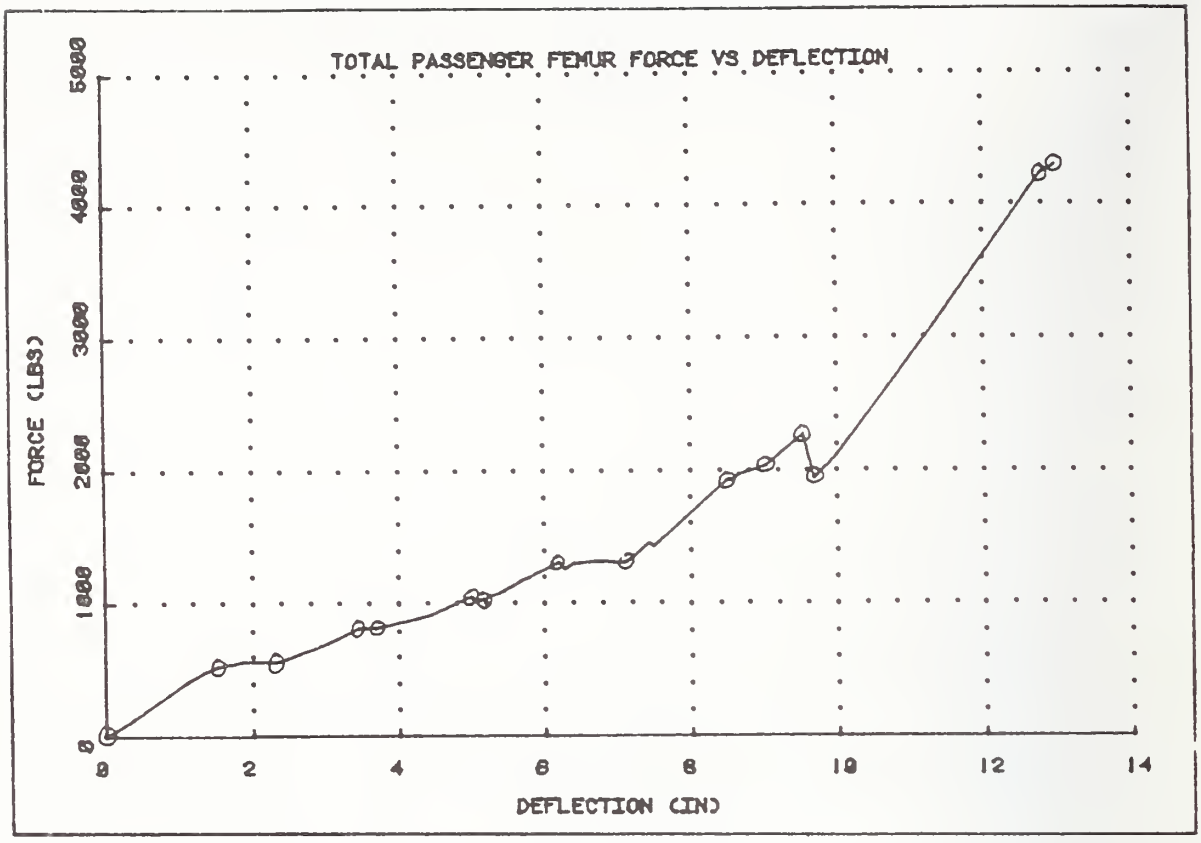
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Passenger Side Femur Date: January 18, 1985

Vehicle: Chevy Nova

Options:



G= 0.815 R= 0.142 K= 3163

c= u_1= u_2= u_3=

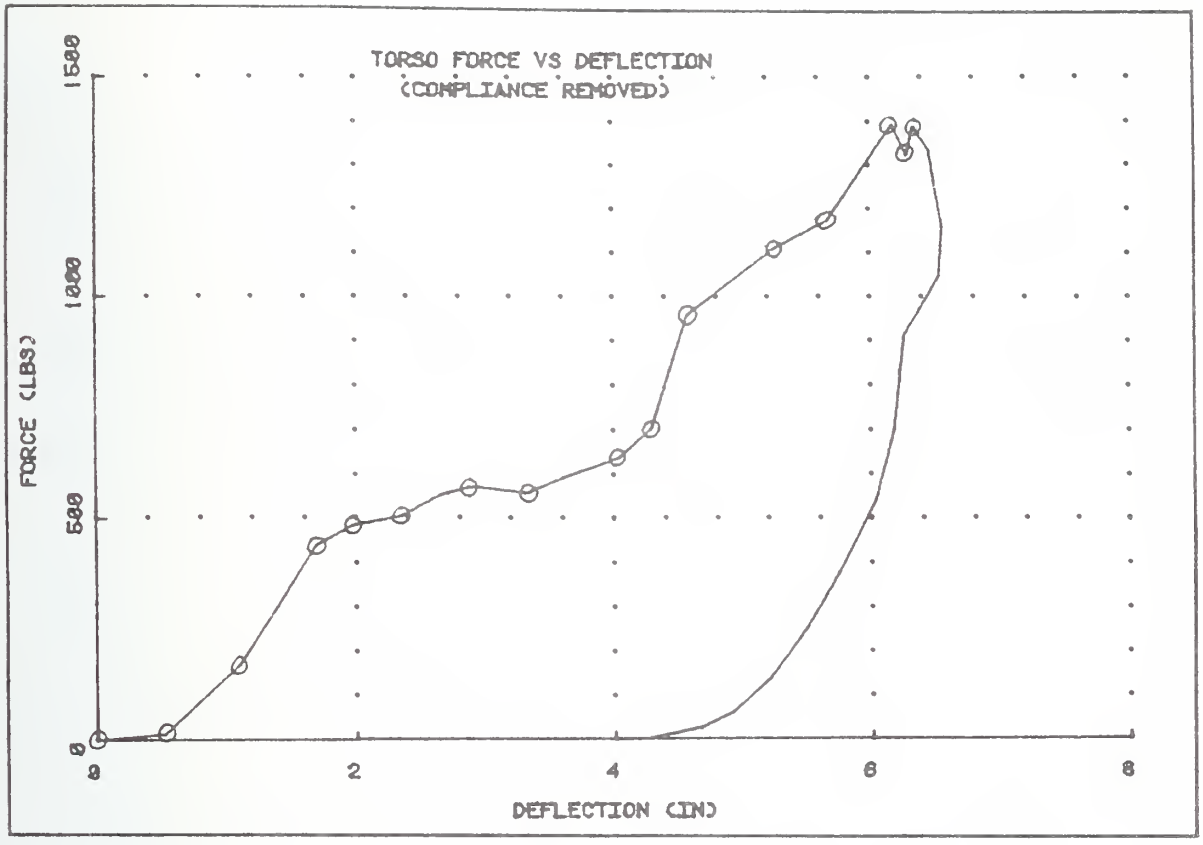
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_E= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	7.07	1302.5
1.52	527.4	8.51	1934.5
2.28	560.8	9.05	2046.5
3.46	820.4	9.54	2278.2
3.68	815.4	9.69	1938.5
5.01	1057.5	12.80	4232.5
5.12	1032.7	12.98	4293.7
6.20	1312.9		

Test: Torso Date: January 18, 1985

Vehicle: Chevy Nova

Options:



G= 0.650 R= 0.179 K= 880

c= μ_1= μ_2= μ_3=

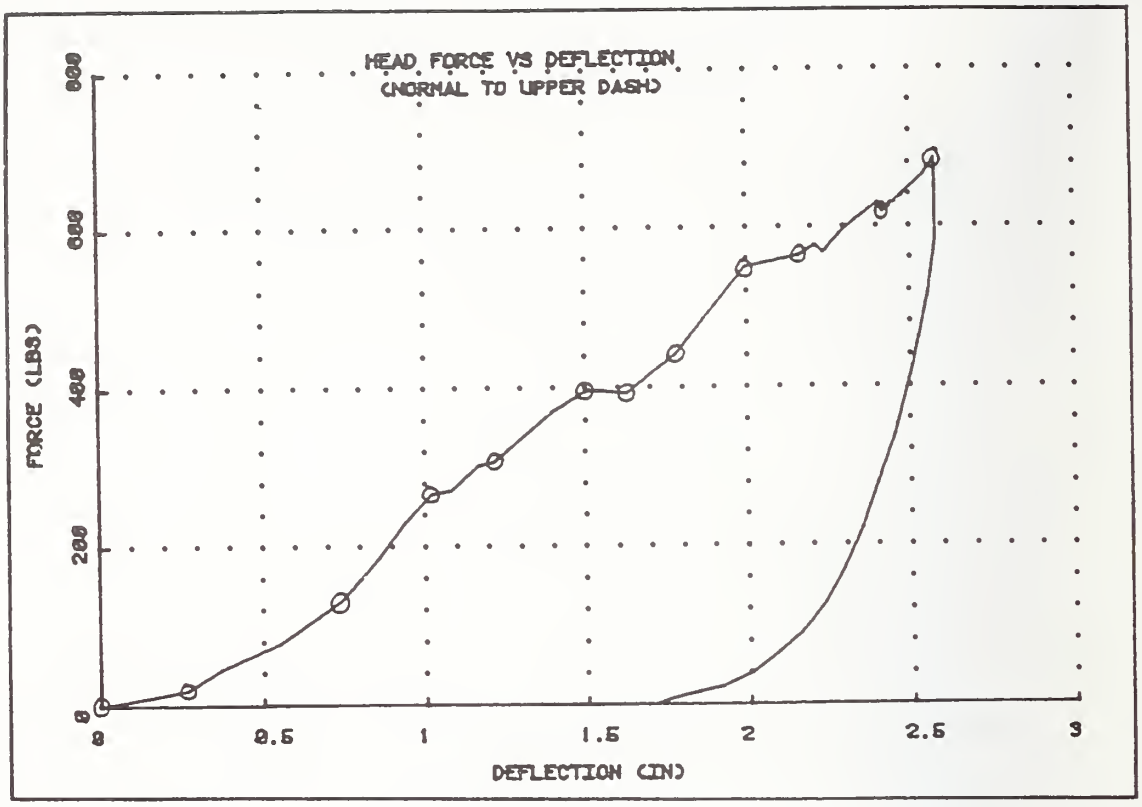
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	4.04	639.7
0.53	13.6	4.30	704.7
1.10	170.1	4.58	958.6
1.69	440.1	5.26	1112.7
1.98	485.2	5.68	1175.7
2.36	507.8	6.19	1391.6
2.88	572.6	6.30	1321.2
3.31	557.5	6.35	1387.7

Test: Head Date: January 18, 1985

Vehicle: Chevy Nova

Options:



G= 0.664 R= 0.157 K= 1831

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

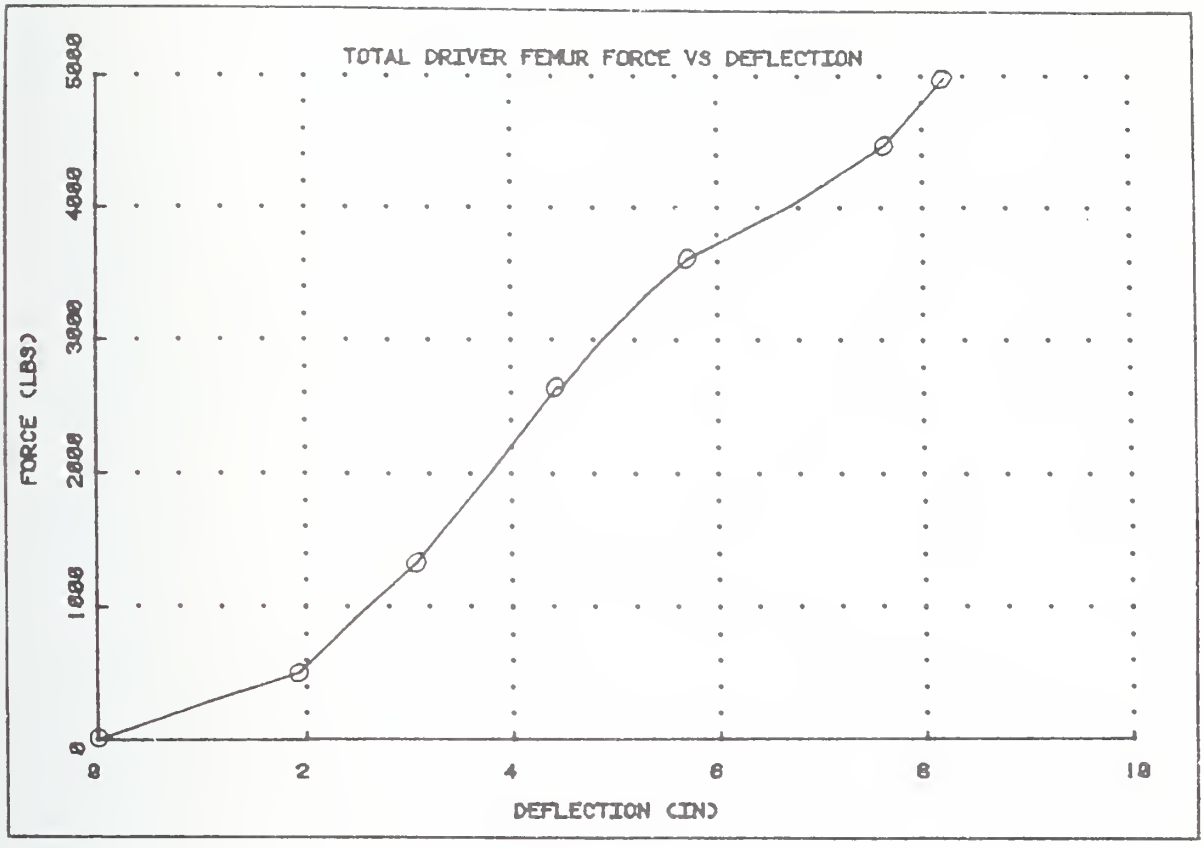
Deflection	Force	Deflection	Force
0.0	0.0	2.00	549.9
0.27	20.1	2.16	564.3
0.75	132.8	2.42	616.8
1.02	267.0	2.58	685.3
1.22	307.1		
1.50	396.4		
1.62	392.6		
1.78	442.1		

Intermediate Unloads	Maximum Deflection (in.)	G	R	K
First	1.41	0.641	0.297	1072
Second	2.02	0.641	0.232	1075

Test: Driver Side Femur Date: January 18, 1985

Vehicle: Chevy Nova

Options:



G= 0.715 R= 0.163 K= 4071

c= u_1= u_2= u_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

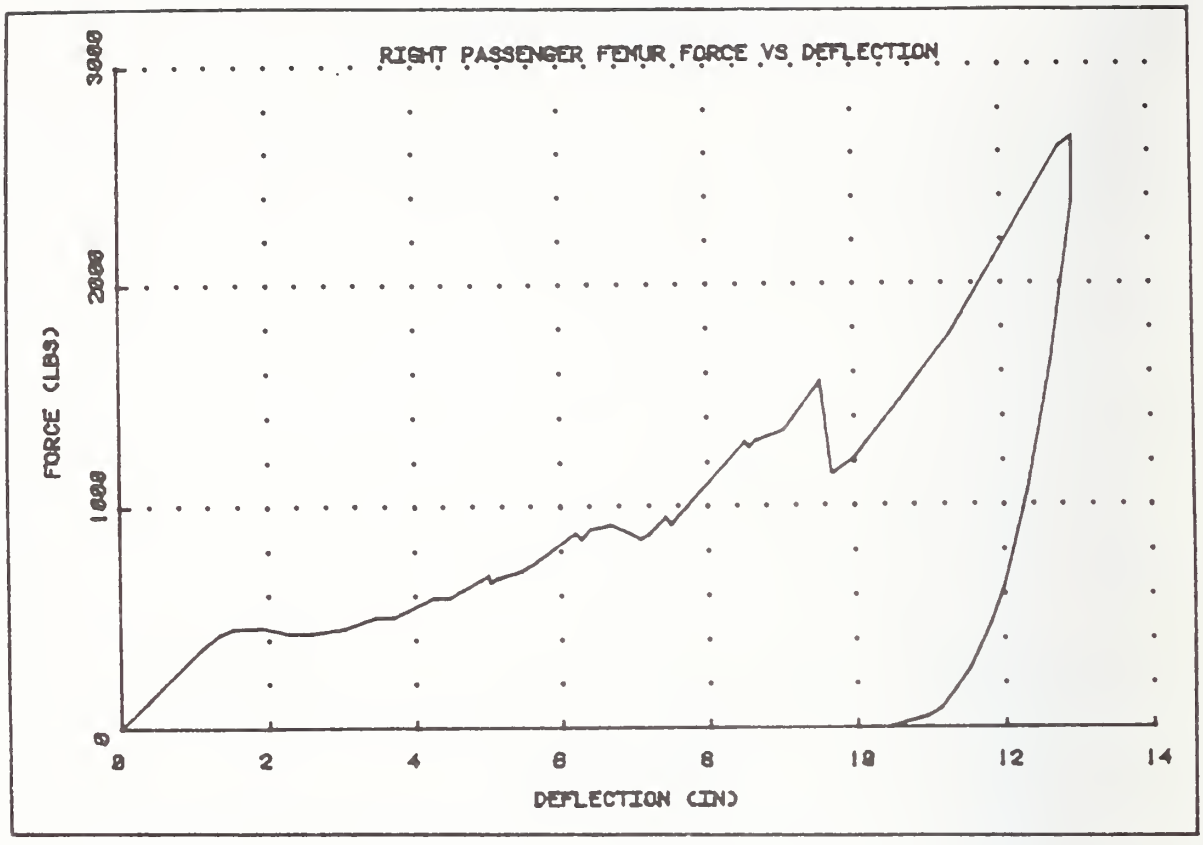
Deflection	Force	Deflection	Force
0.0	0.0		
1.94	508.6		
3.07	1336.3		
4.45	2650.0		
5.72	3620.5		
7.64	4482.1		
8.22	4978.9		

Test: Right Passenger Femur Date: January 18, 1985

Vehicle: Chevy Nova

Options: _____

_____



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

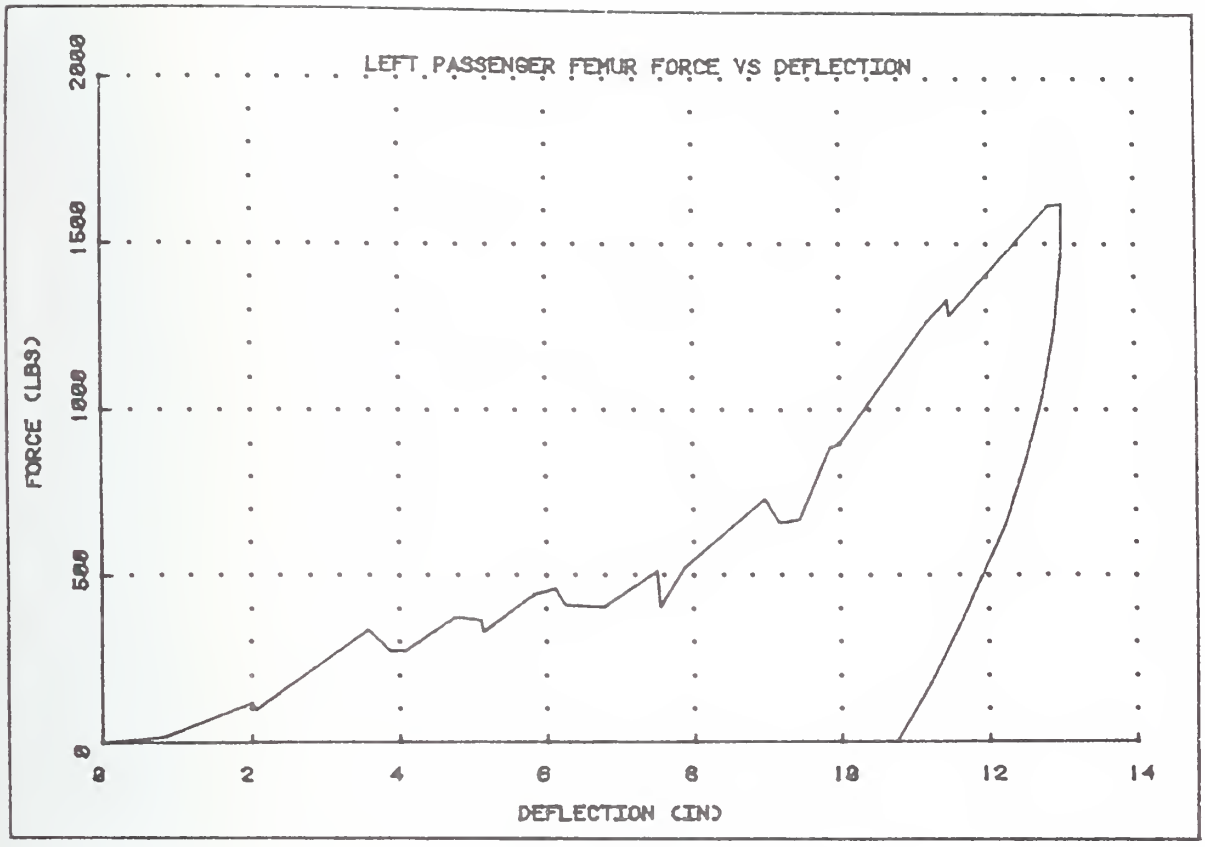
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Passenger Femur Date: January 18, 1985

Vehicle: Chevy Nova

Options:



G= R= K=

c= u_1= u_2= u_3=

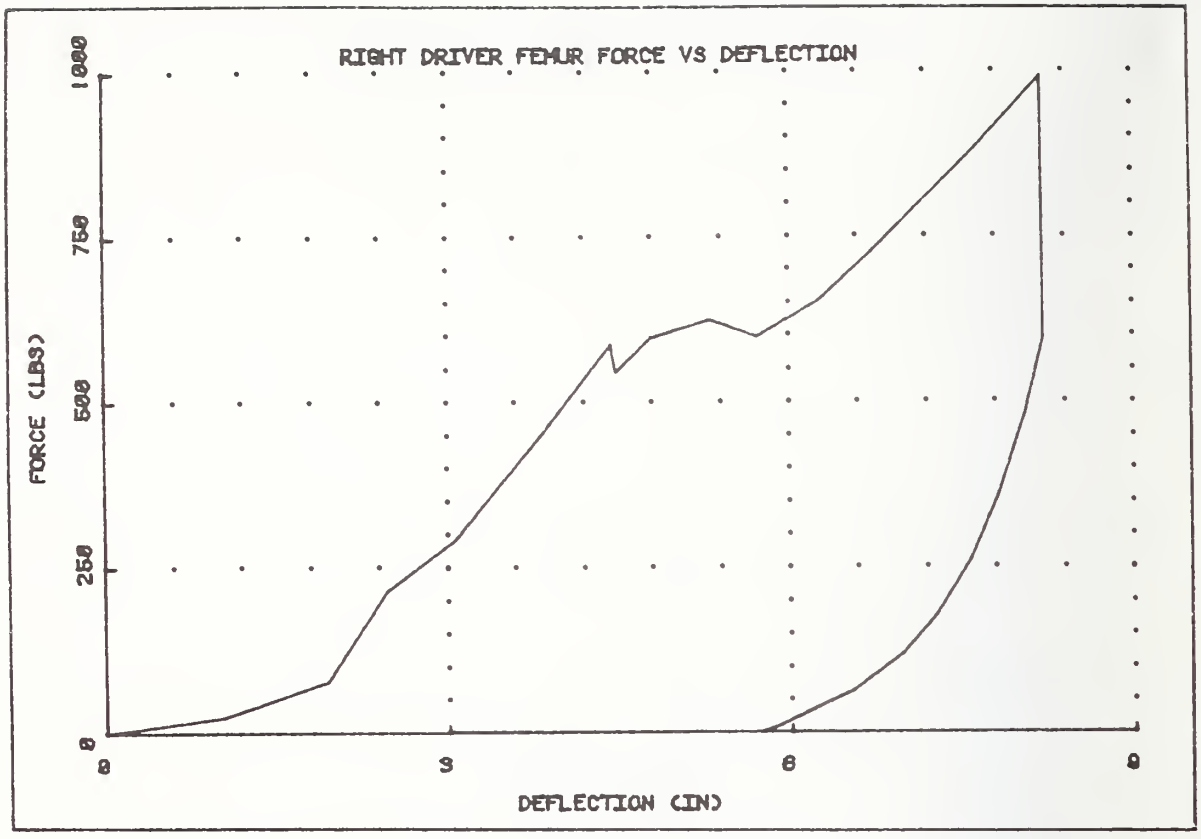
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Right Driver Femur Date: January 18, 1985

Vehicle: Chevy Nova

Options:



G= R= K=

c= u_1= u_2= u_3=

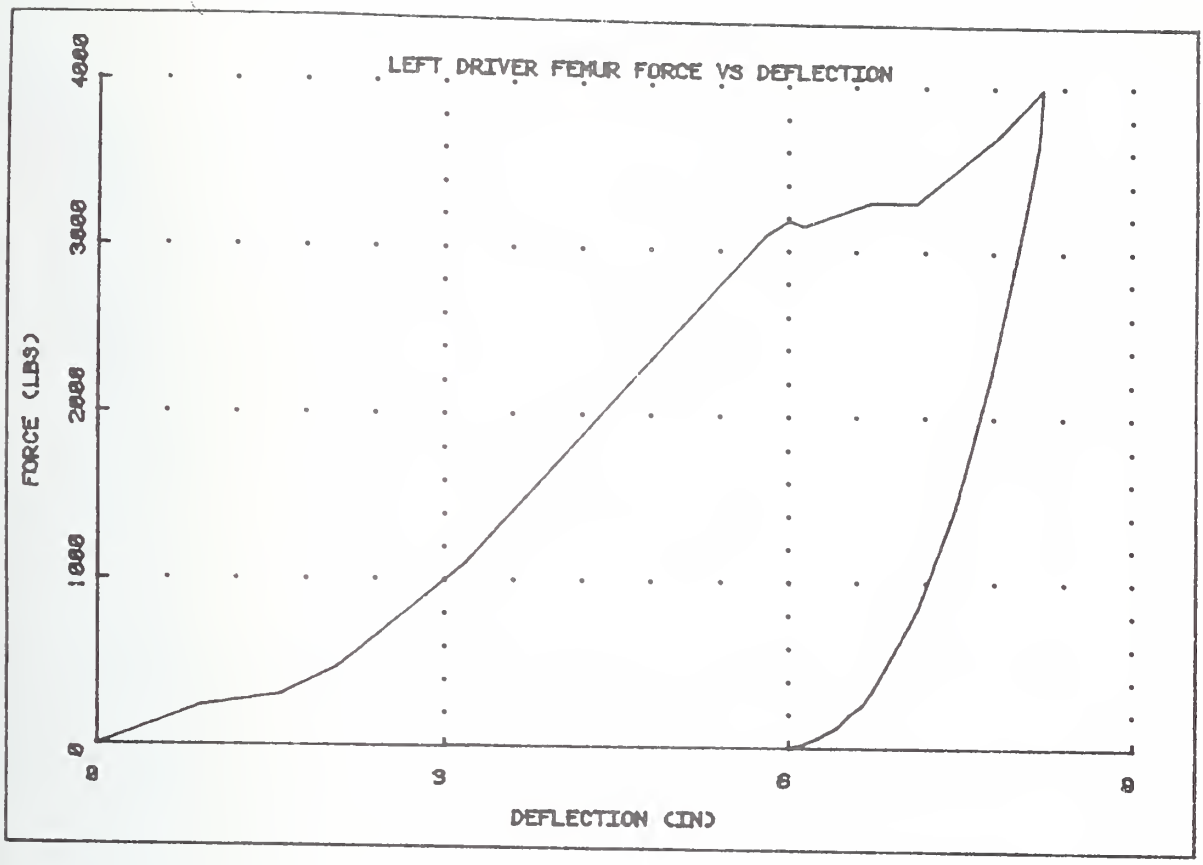
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Driver Femur Date: January 18, 1985

Vehicle: Chevy Nova

Options:



G= R= K=

c= u_1= u_2= u_3=

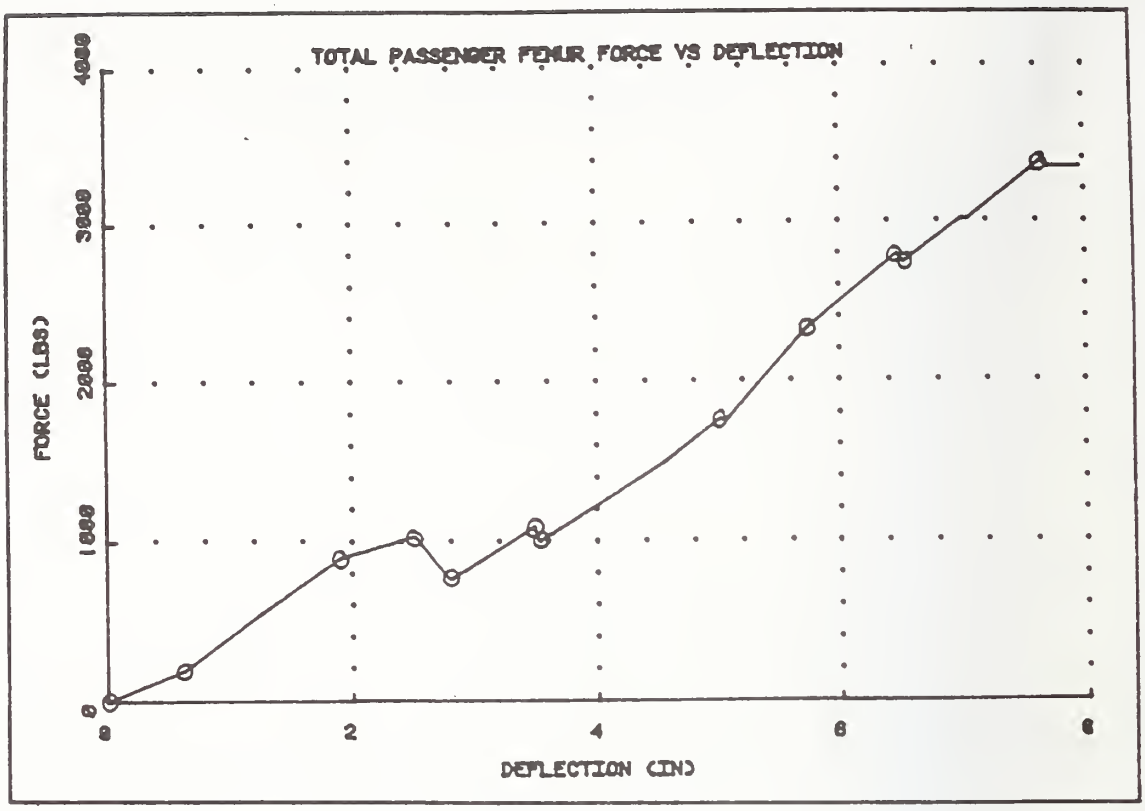
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Passenger Side Femur Date: January 24, 1985

Vehicle: Ford Granada

Options:



G= 0.677 R= 0.135 K= 2492

c= u_1= u_2= u_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

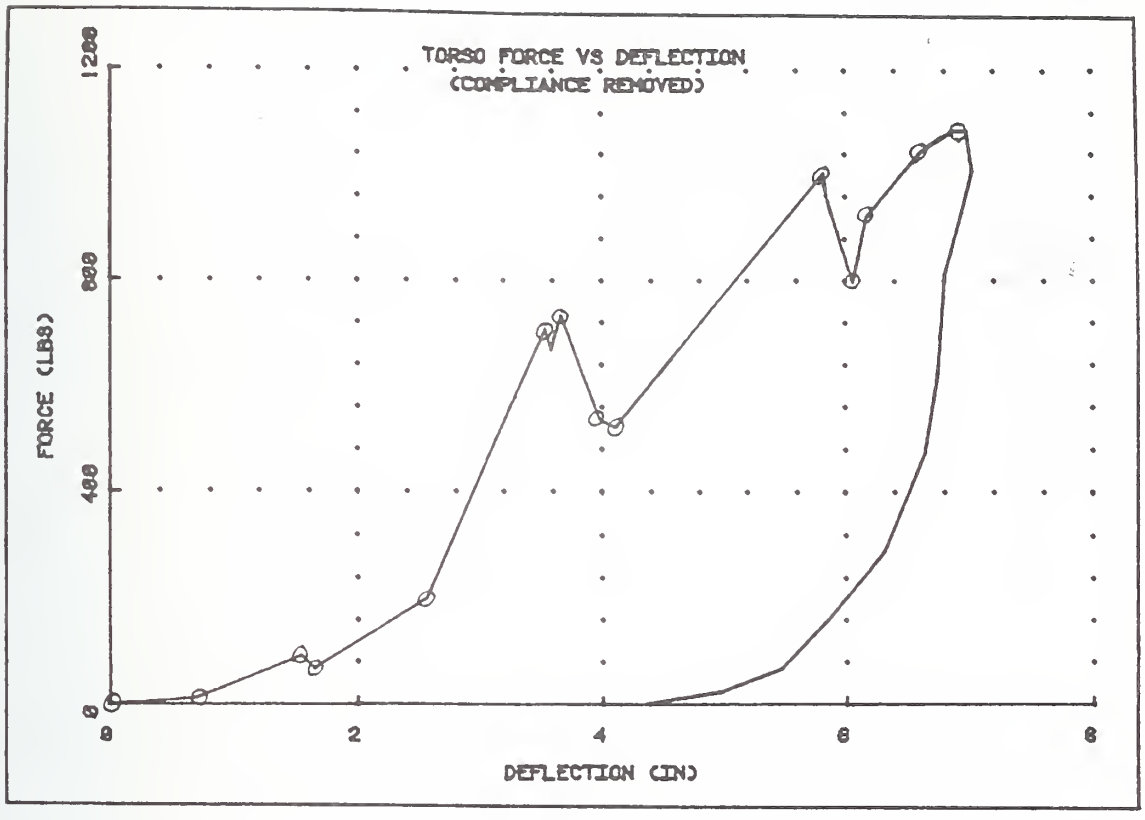
Deflection	Force	Deflection	Force
0.0	0.0	5.73	2327.6
0.63	189.0	6.47	2791.2
1.91	900.3	6.52	2740.7
2.50	1031.3	7.65	3381.6
2.79	758.2		
3.49	1092.3		
3.53	995.1		
5.02	1761.6		

Intermediate Unload	Maximum Deflection (in.)	G	R	K
First	5.03	0.502	0.313	1080
Second	4.92	0.641	0.252	1903

Test: Torso Date: January 24, 1985

Vehicle: Ford Granada

Options:



G= 0.621 R= 0.175 K= 836

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

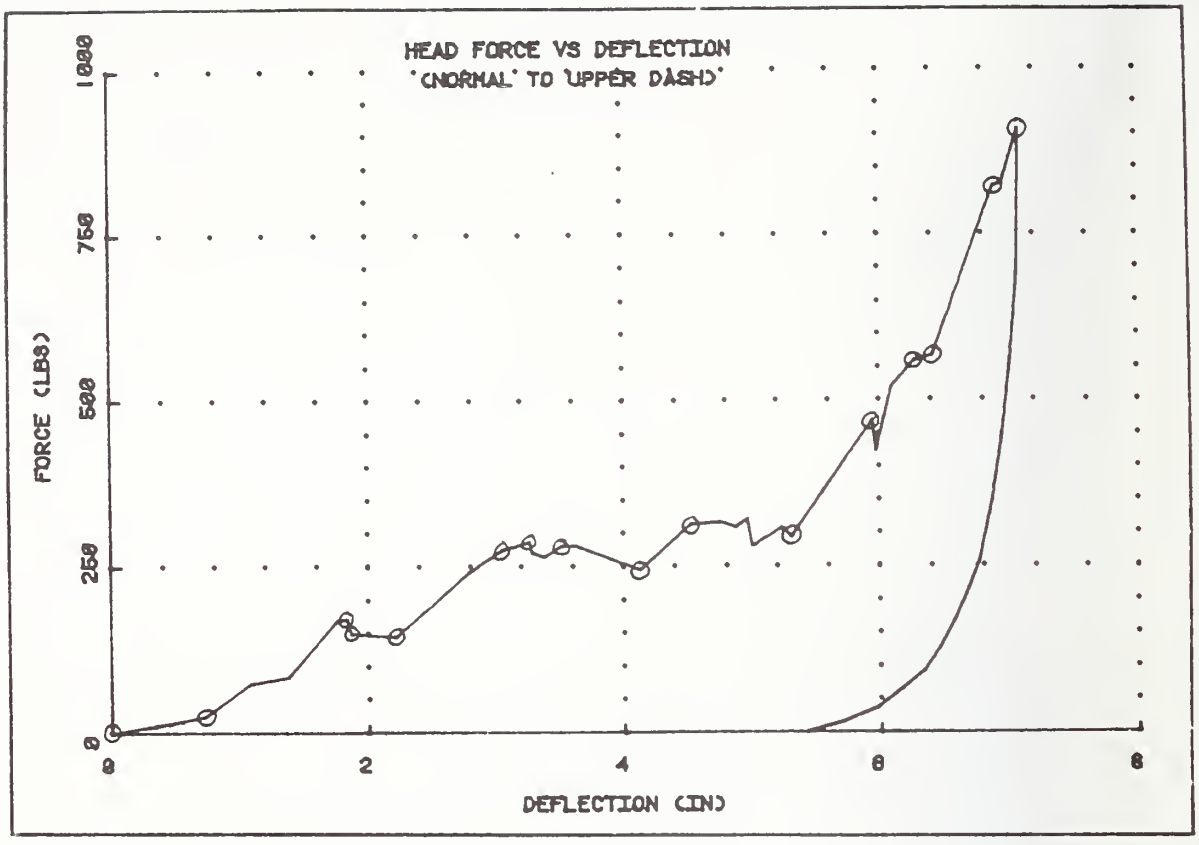
Deflection	Force	Deflection	Force
0.0	0.0	4.11	521.0
0.69	12.1	5.83	1003.9
1.53	89.8	6.06	797.5
1.64	65.4	6.17	922.8
2.56	201.4	6.61	1044.4
3.54	706.1	6.93	1086.7
3.67	732.7		
3.99	533.4		

Intermediate Unload	Maximum Deflection (in.)	G	R	K
First	4.14	0.671	0.220	611
Second	6.61	0.701	0.119	1431

Test: Head Date: January 24, 1985

Vehicle: Ford Granada

Options:



G= 0.764 R= 0.129 K= 1613

c= μ_1= μ_2= μ_3=

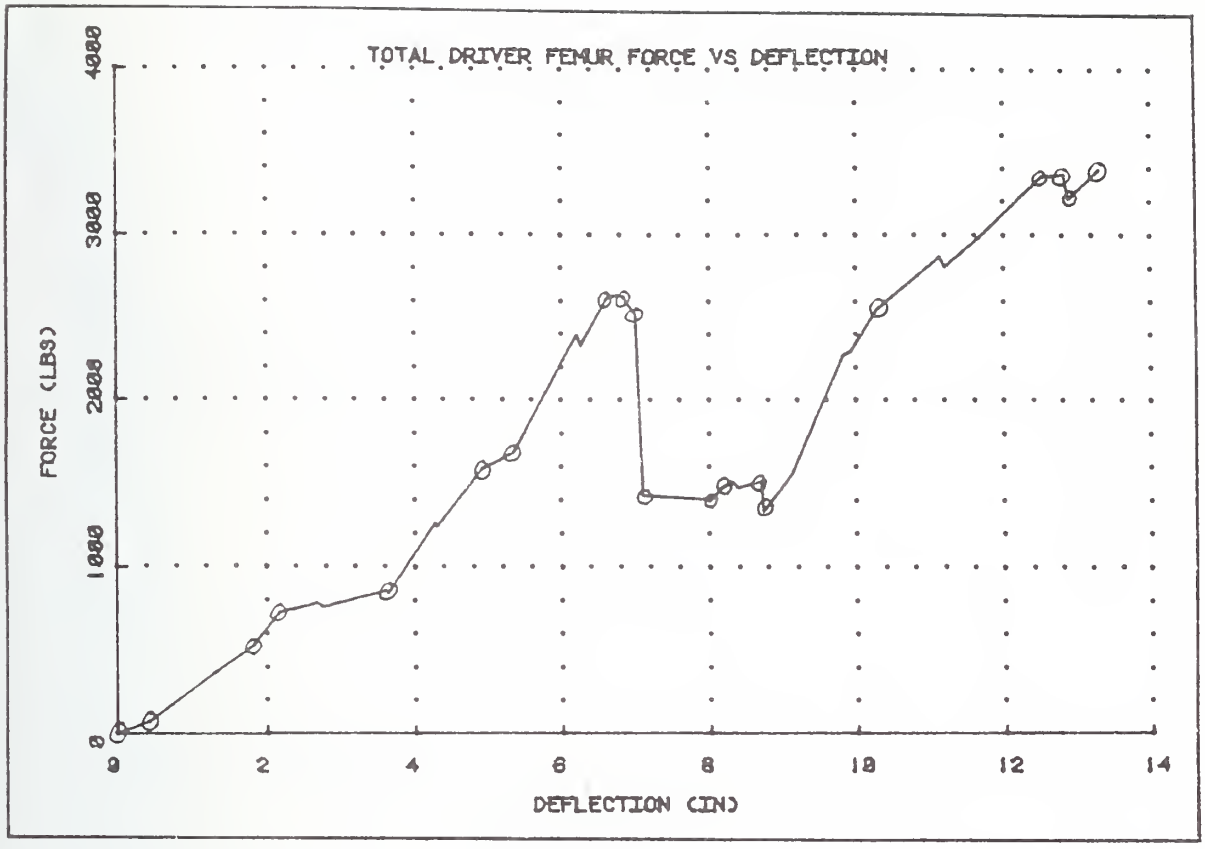
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	4.12	243.7
0.73	24.7	4.53	313.0
1.83	171.7	5.31	292.6
1.87	147.9	5.95	469.5
2.21	143.0	6.28	559.9
3.06	275.4	6.42	566.7
3.26	287.7	6.90	820.5
3.52	280.9	7.10	908.3

Test: Driver Side Femur Date: January 24, 1985

Vehicle: Ford Granada

Options:



G= 0.822 R= 0.116 K= 2228

c= μ_1= μ_2= μ_3=

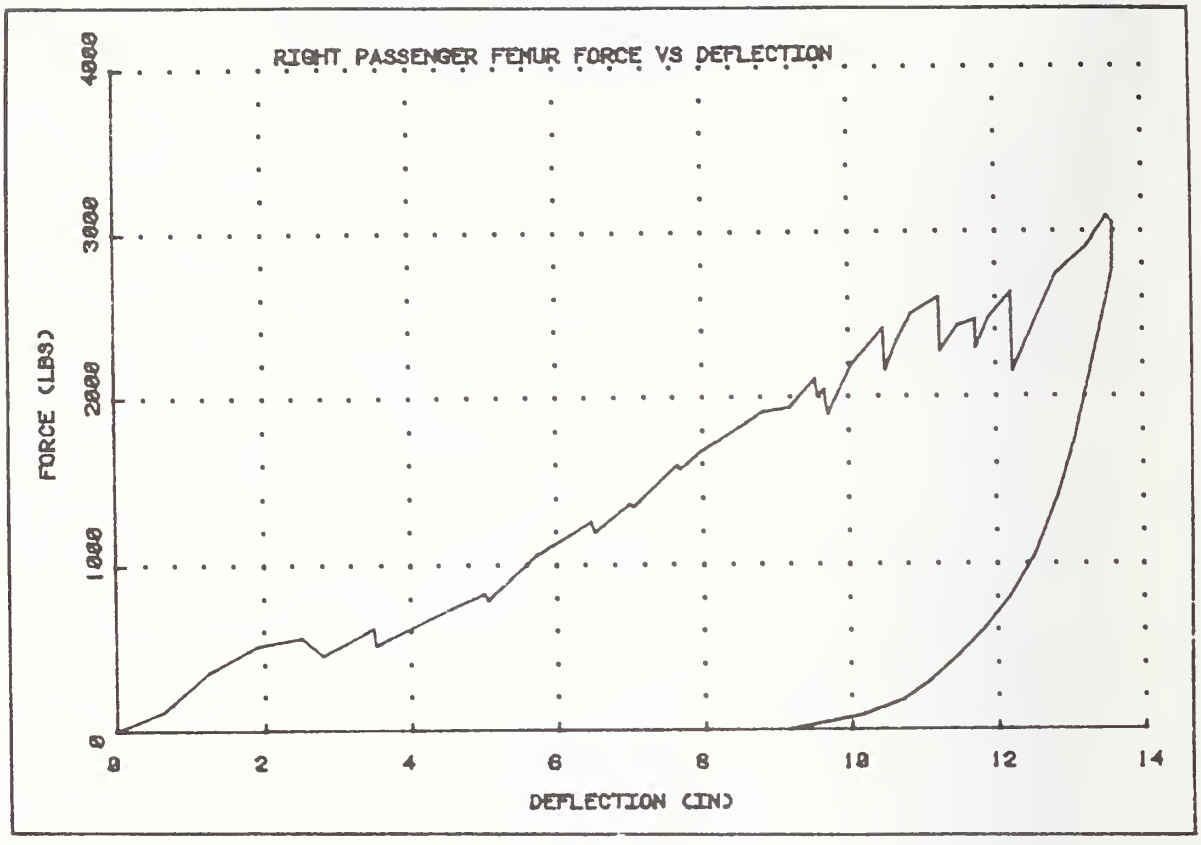
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	7.10	1420.4
0.44	73.8	7.99	1399.1
1.82	527.2	8.18	1481.1
2.18	730.0	8.70	1515.2
3.64	839.2	8.74	1330.9
4.93	1588.3	10.28	2550.6
5.36	1686.9	12.52	3353.4
6.63	2624.2	12.83	3366.9
6.84	2620.3	12.88	3213.3
7.01	2512.3	13.31	3394.9

Test: Right Passenger Femur Date: January 24, 1985

Vehicle: Ford Granada

Options: _____



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

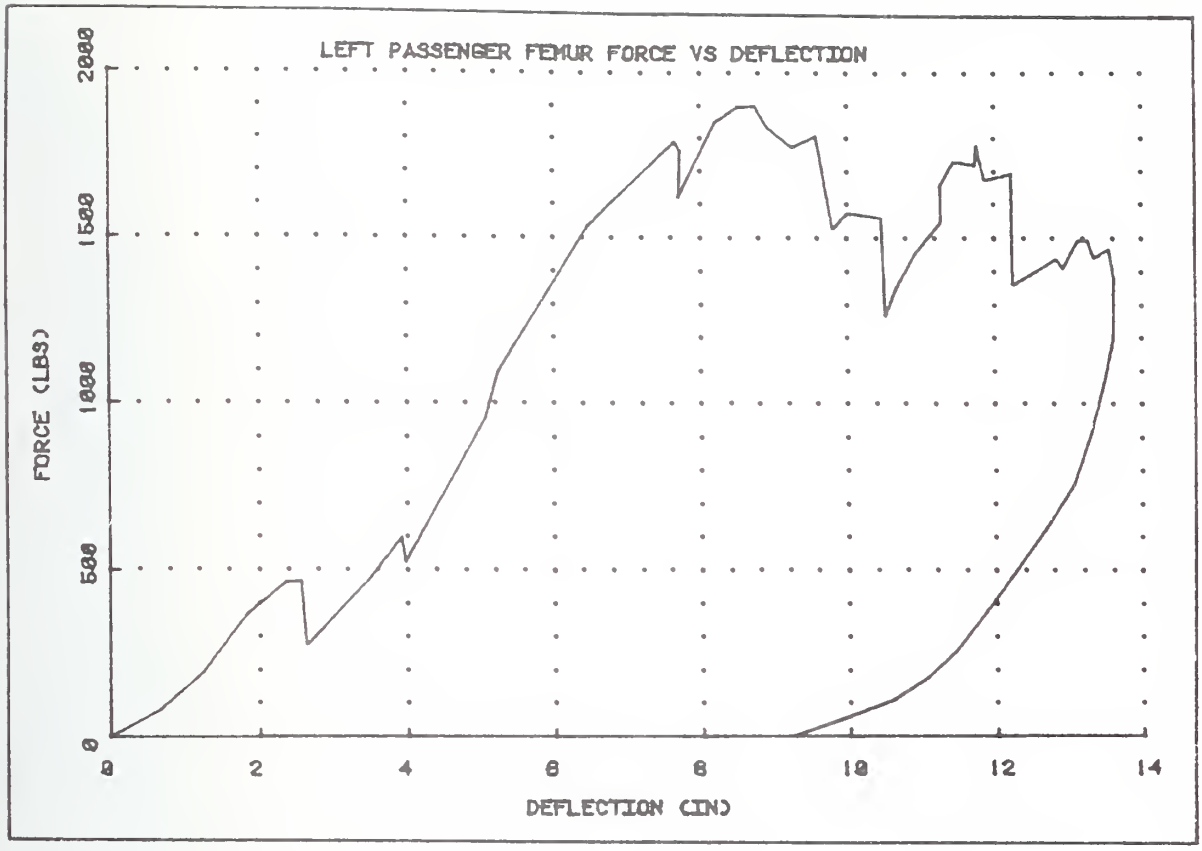
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Passenger Femur Date: January 24, 1985

Vehicle: Ford Granada

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

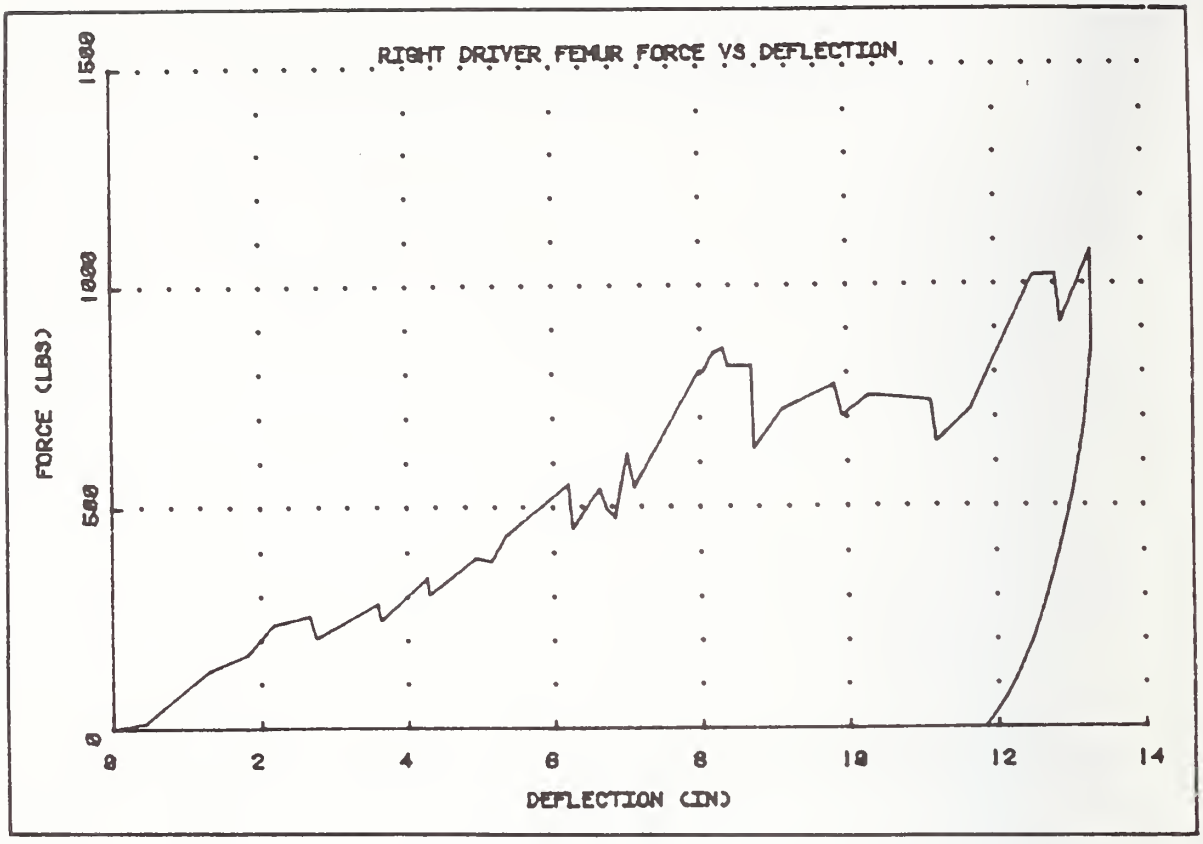
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Right Driver Femur Date: January 24, 1985

Vehicle: Ford Granada

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

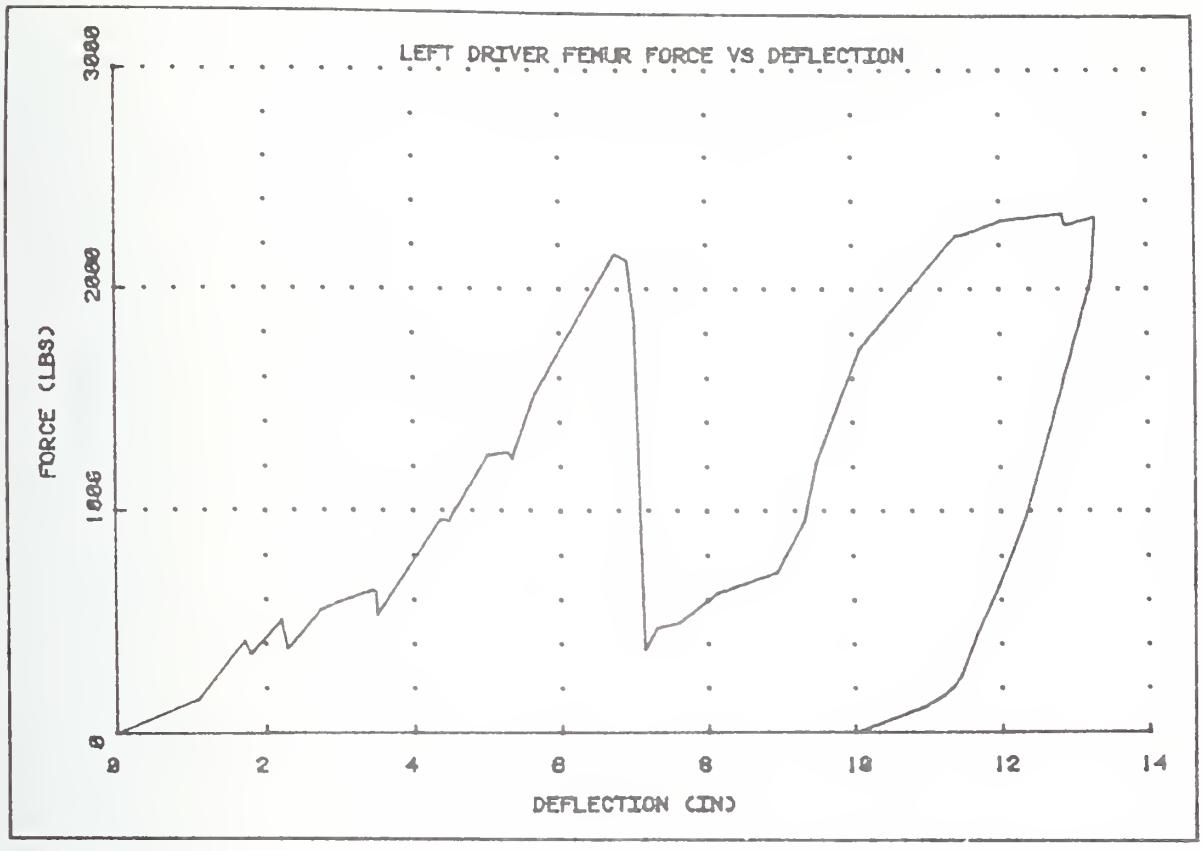
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Driver Femur Date: January 24, 1985

Vehicle:

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

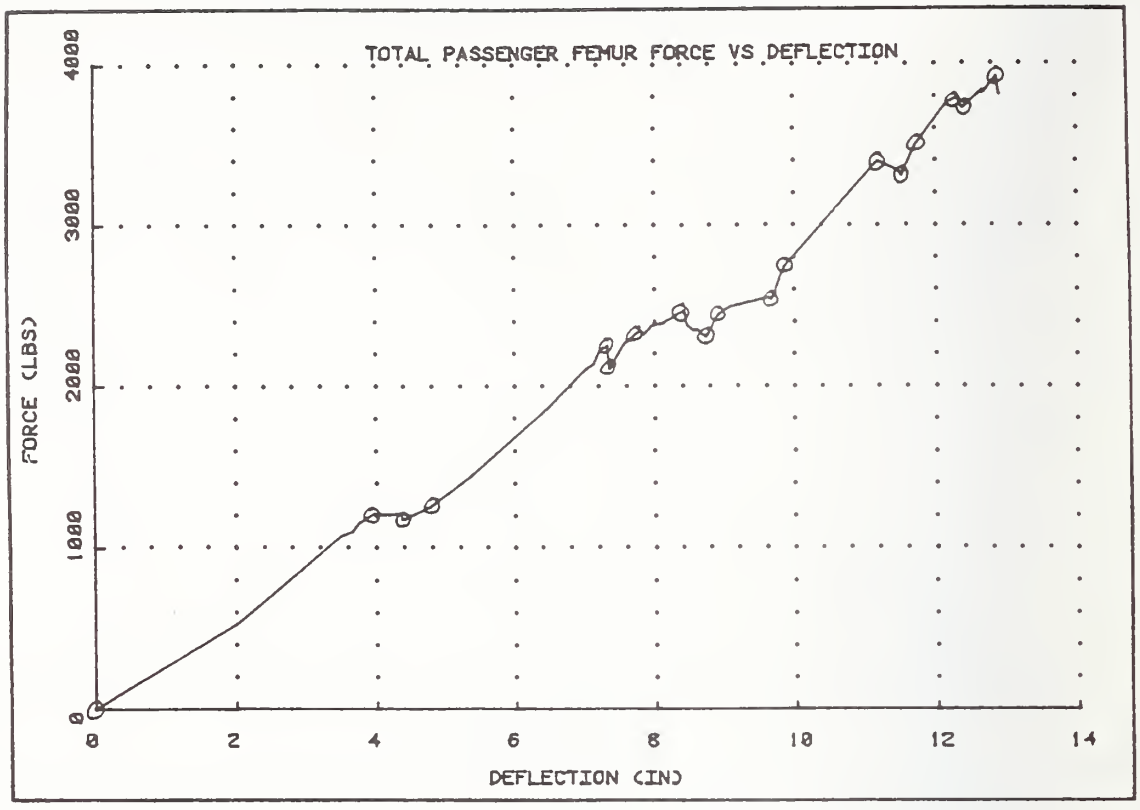
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Passenger Femur Date: January 28, 1985

Vehicle: 1979 Chrysler Cordoba

Options:



G= 0.784 R= 0.104 K= 2806

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

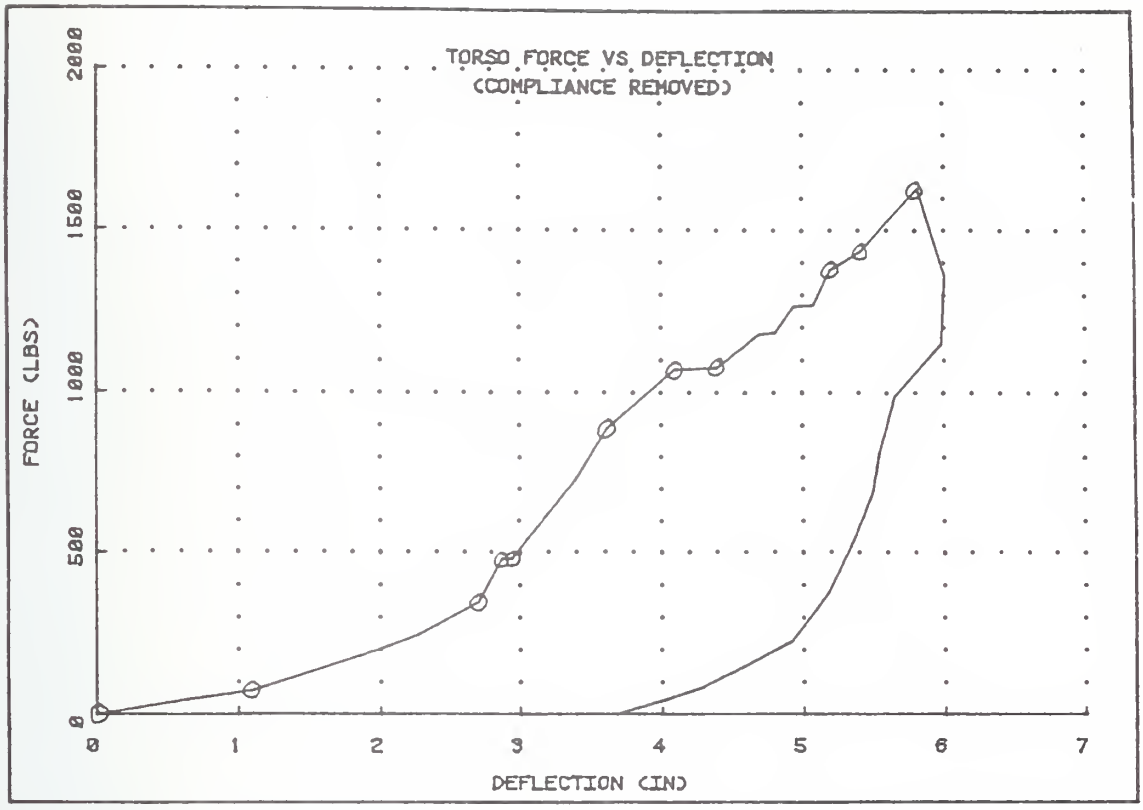
Deflection	Force	Deflection	Force
0.0	0.0	8.91	2438.3
3.96	1209.7	9.67	2532.2
4.38	1170.9	9.85	2739.5
4.80	1256.2	11.21	3393.6
7.33	2244.0	11.54	3303.1
7.35	2097.5	11.73	3489.6
7.80	2341.1	12.32	3789.9
8.43	2470.0	12.40	3719.8
8.75	2297.1	12.87	3922.1

Intermediate Unloads	Maximum Deflection	G	R	K
First	4.07	0.708	0.223	1316
Second	8.09	0.669	0.185	1649

Test: Torso Date: January 28, 1985

Vehicle: 1979 Chrysler Cordoba

Options:



G= 0.614 R= 0.226 K= 1056

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

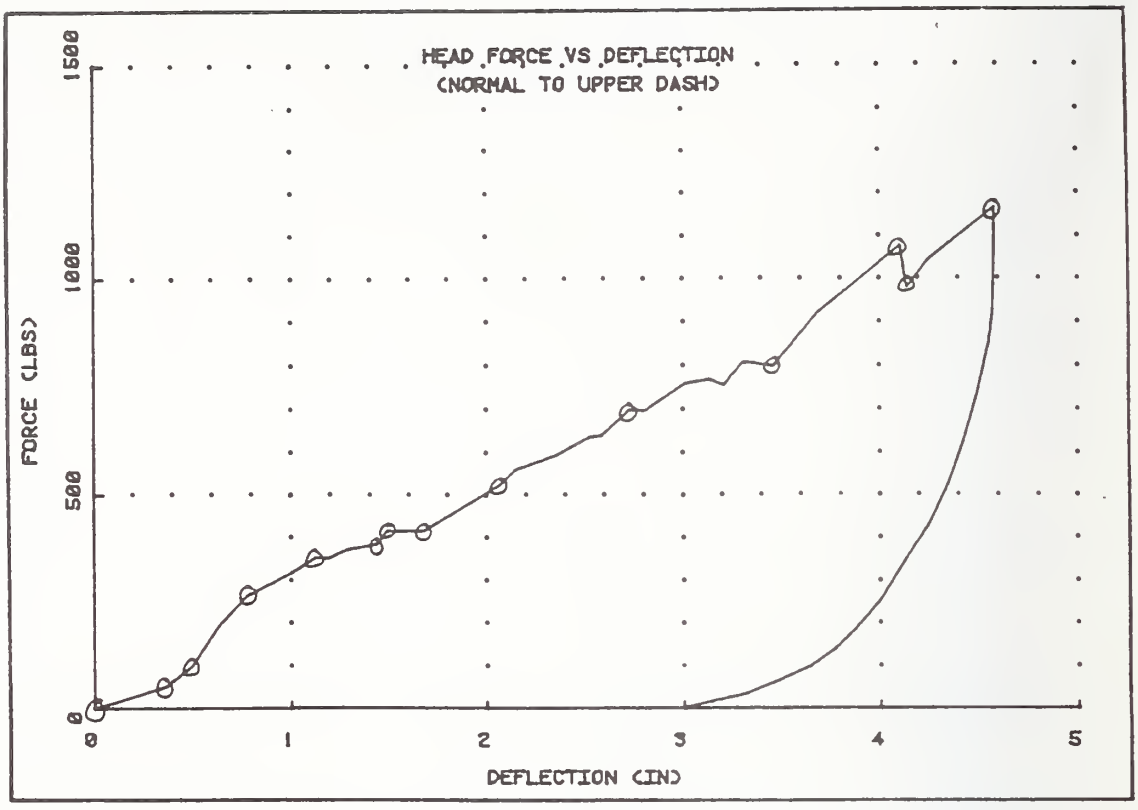
Deflection	Force	Deflection	Force
0.0	.0.0	5.2	1378.1
1.10	73.2	5.42	1438.6
2.71	349.3	5.82	1630.4
2.88	481.8		
2.95	481.2		
3.62	891.8		
4.10	1071.7		
4.40	1076.6		

Intermediate Unloads	Maximum Deflection	G	R	K
First	2.27	0.629	0.325	424.
Second	3.43	0.662	0.230	1194.

Test: Head Date: January 28, 1985

Vehicle: 1979 Chrysler Cordoba

Options:



G= 0.656 R= 0.144 K= 1775

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

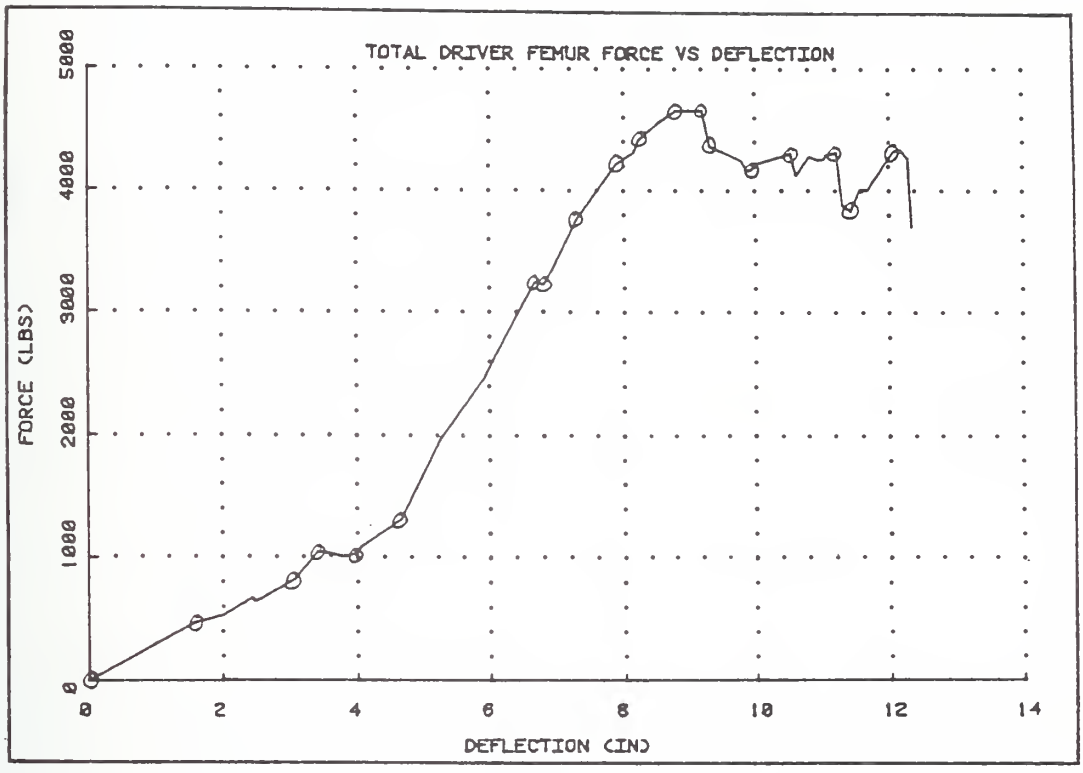
Deflection	Force	Deflection	Force
0.0	0.0	2.07	524.8
0.37	50.2	2.73	698.5
0.50	99.7	3.46	794.8
0.78	262.3	4.11	1076.4
1.12	354.1	4.15	976.3
1.44	385.7	4.58	1164.2
1.49	415.0		
1.67	412.9		

Intermediate Unloads	Maximum Deflection	G	R	K
First	1.29	0.526	0.298	995
Second	2.59	0.510	0.226	1011

Test: Driver Femur Date: January 28, 1985

Vehicle: 1979 Chrysler Cordoba

Options:



G= 0.825 R= 0.083 K= 2493.

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

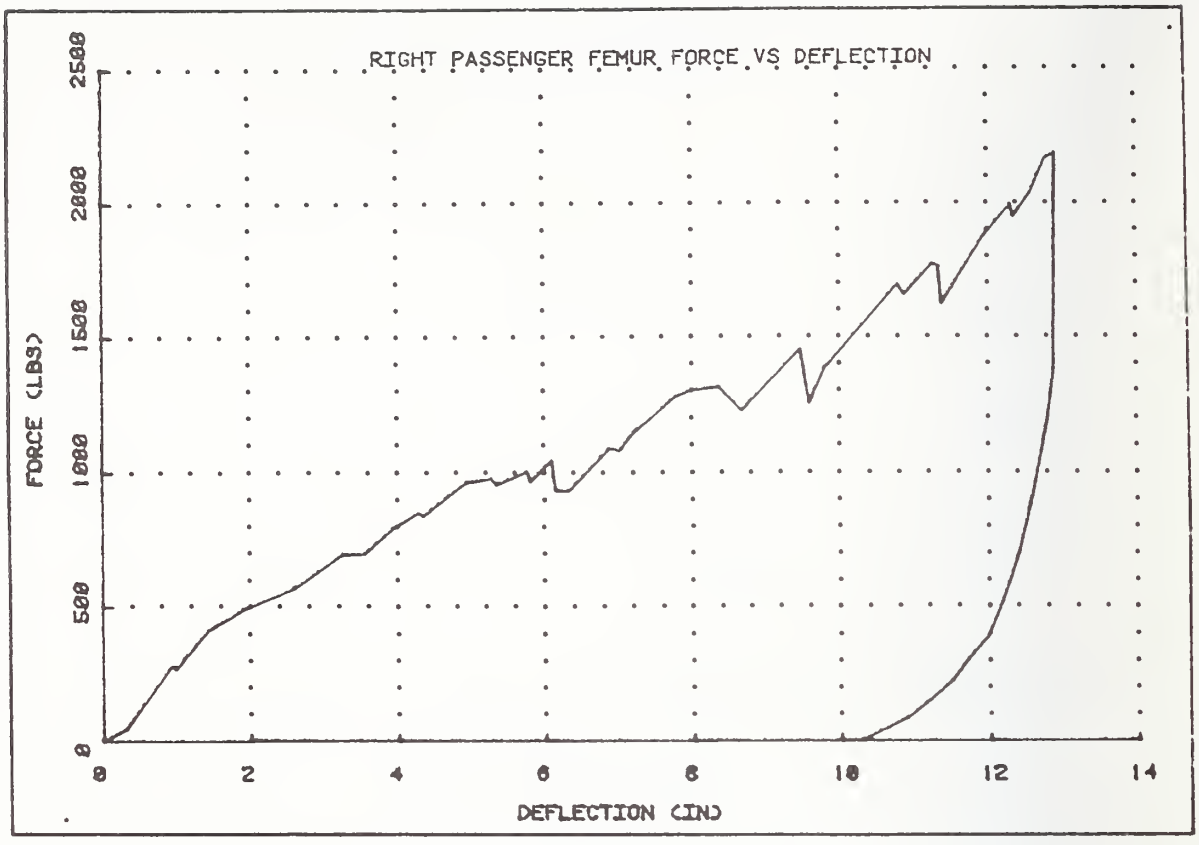
Deflection	Force	Deflection	Force
0.0	.0.0	9.21	4659.7
1.58	470.9	9.32 9.93	4359.7 4166.5
3.07	819.0	10.55	4305.0
3.42	1050.3	11.23	4311.7
4.00	1031.4	11.43	3827.0
4.66 6.67	1313.0 3245.4	12.08	4329.6
6.79	3220.9		
7.29 7.89	3759.9 4216.9		
8.24	4416.7		
8.81	4658.9		

Intermediate Unloads	Maximum Deflection	G	R	K
First	3.45	0.443	0.308	1103.
Second	7.31	0.521	0.269	2576.

Test: Right Passenger Femur Date: January 28, 1985

Vehicle: 1979 Chrysler Cordoba

Options: _____



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_c= _____

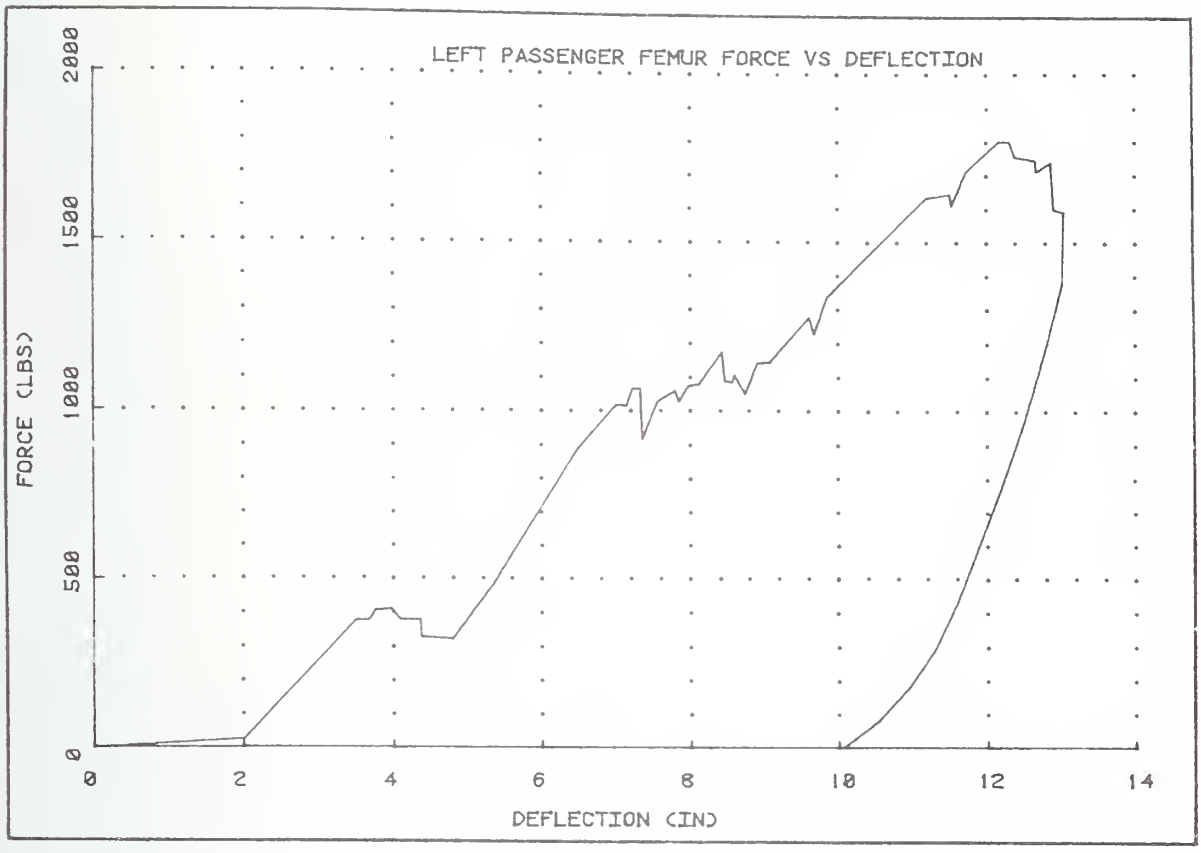
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Passenger Femur Date: January 28, 1985

Vehicle: 1979 Chrysler Cordoba

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

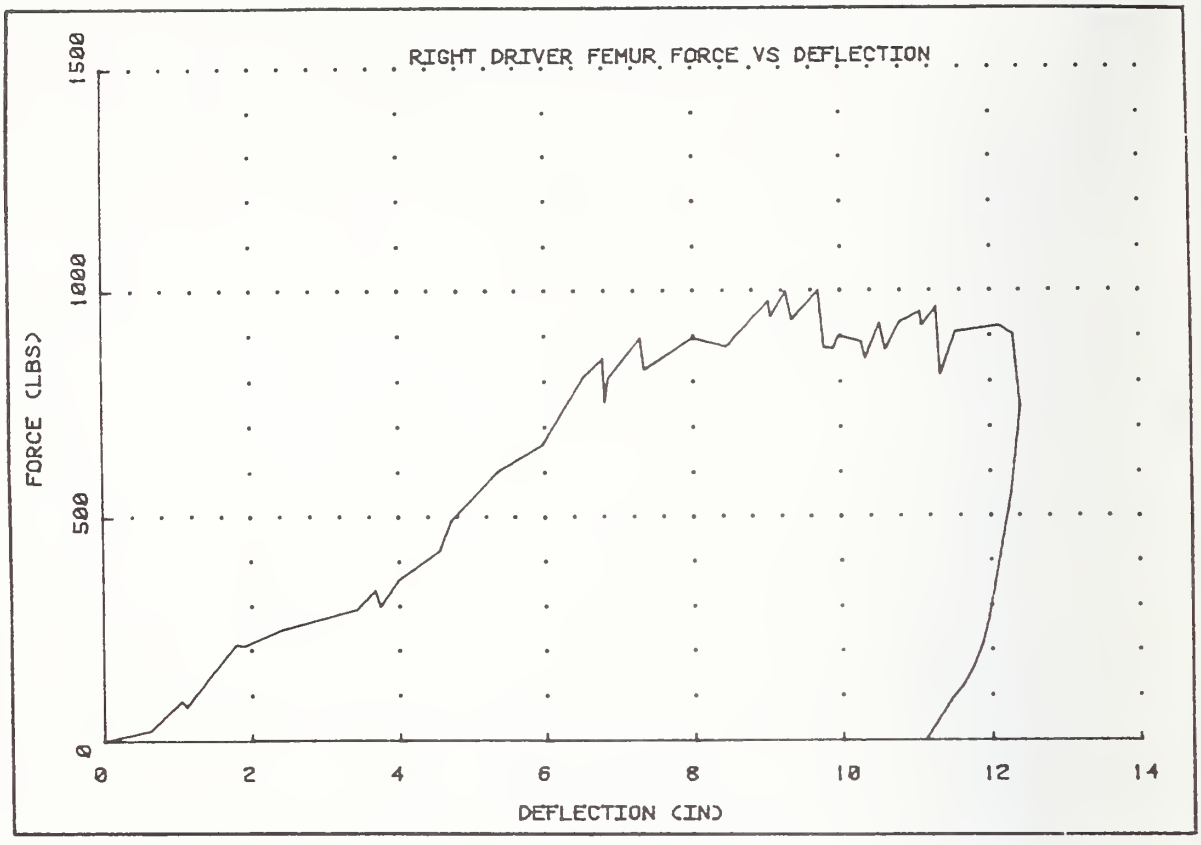
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Right Driver Femur Date: January 28, 1985

Vehicle: 1979 Chrysler Cordoba

Options: _____



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

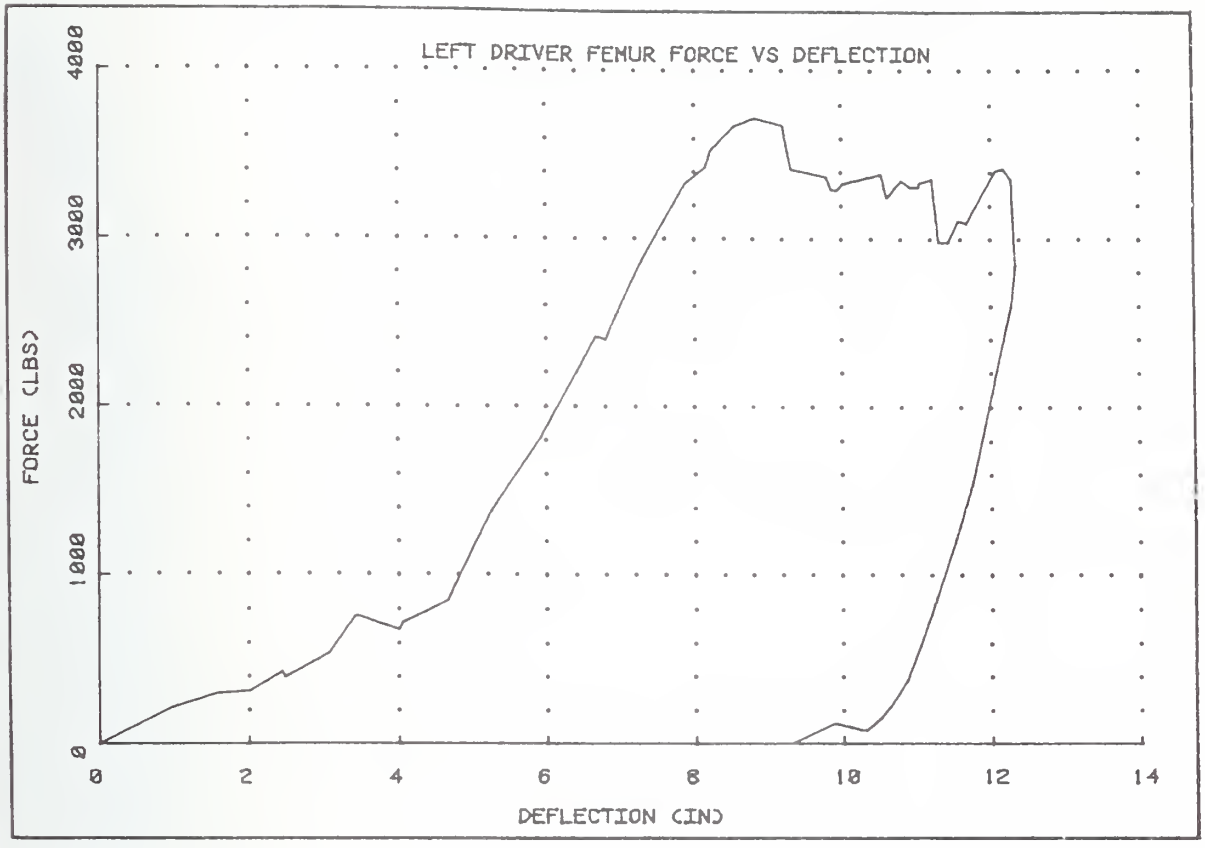
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Driver Femur Date: January 28, 1985

Vehicle: 1979 Chrysler Cordoba

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

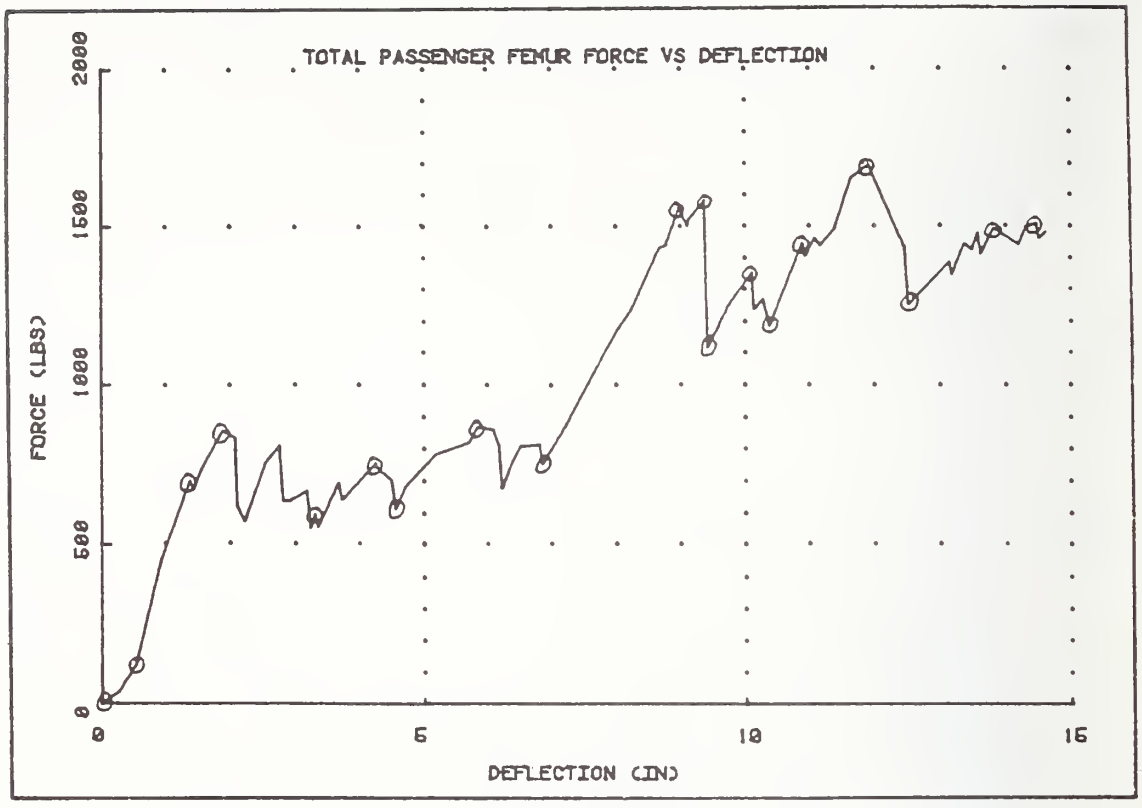
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Passenger Side Femur Date: January 30, 1985

Vehicle: Buick LeSabre

Options:



G= 0.776 R= 0.043 K= 1728

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_E= 1000.1

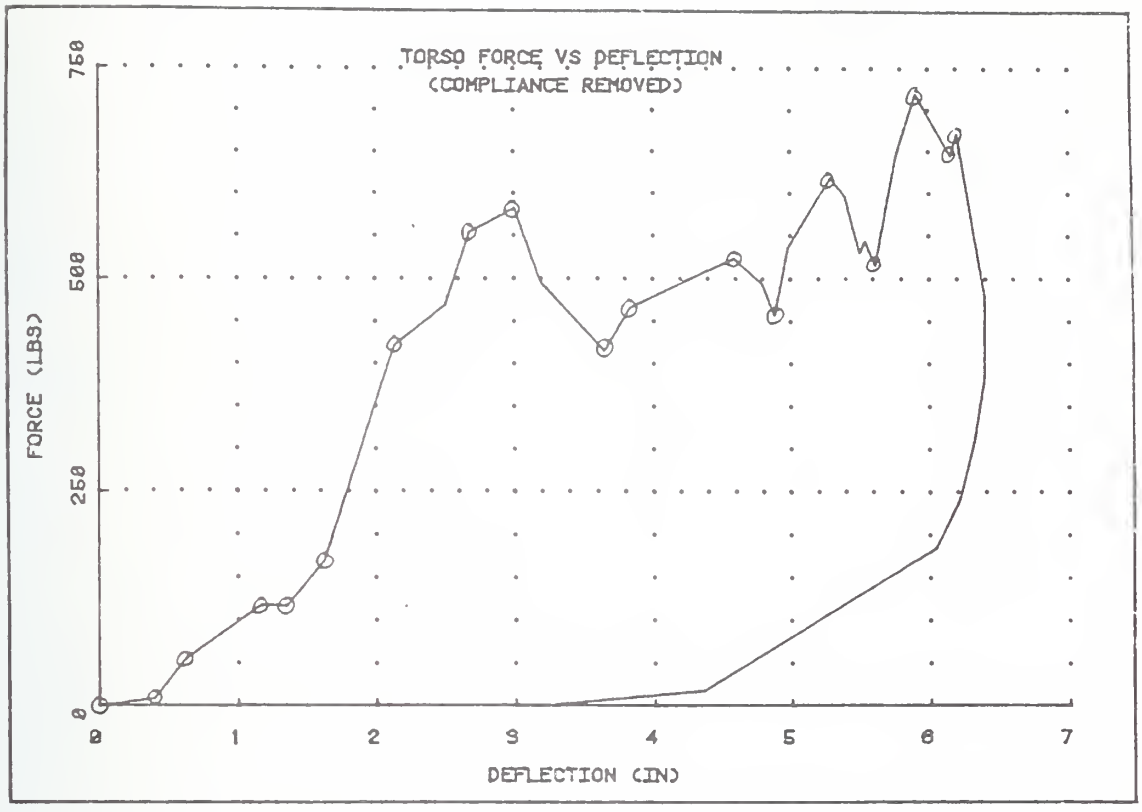
Deflection	Force	Deflection	Force
0.0	0.0	9.38	1580.0
0.54	123.9	9.42	1112.2
1.37	700.5	10.11	1352.5
1.88	855.7	10.39	1183.2
3.31	595.7	10.89	1445.7
4.25	755.7	11.92	1692.3
4.56	610.5	12.52	1247.8
5.84	867.2	13.82	1489.9
6.85	752.8	14.48	1508.7
8.99	1558.3		

Intermediate Unloads	Maximum Deflection	G	R	K
First	3.95	0.515	0.194	543
Second	8.03	0.670	0.140	910

Test: Torso Date: January 30, 1985

Vehicle: Buick LeSabre

Options:



G= 0.514 R= 0.107 K= 427

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

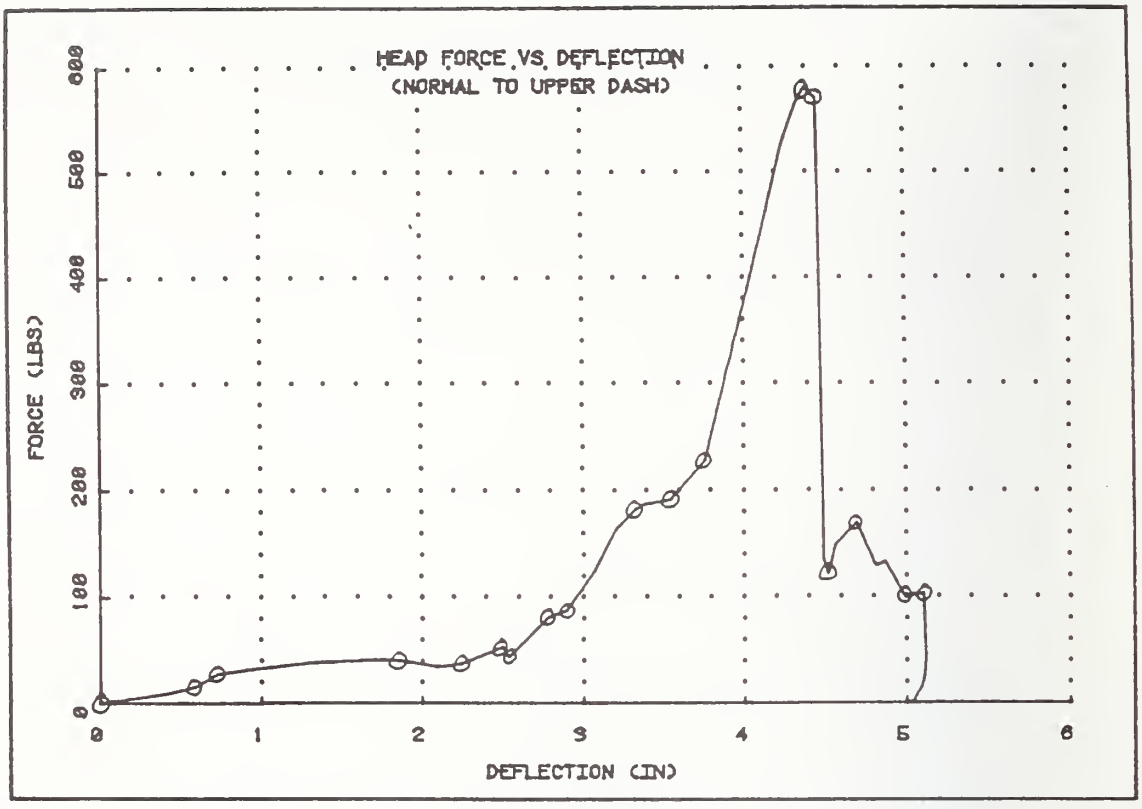
Deflection	Force	Deflection	Force
0.0	0.0	3.64	413.7
0.41	8.9	3.84	466.2
0.63	55.5	4.59	523.0
1.16	117.8	4.88	456.6
1.34	115.2	5.30	618.7
1.63	169.9	5.62	514.3
2.14	421.3	5.92	719.2
2.68	554.7	6.16	644.7
3.01	582.5	6.20	671.8

Intermediate Unload	Maximum Deflection	G	R	K
First	2.38	0.535	0.351	759
Second	4.37	0.437	0.228	426

Test: Head Date: January 30, 1985

Vehicle: Buick LeSabre

Options:



G= 0.984 R= 0.002 K= 906

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

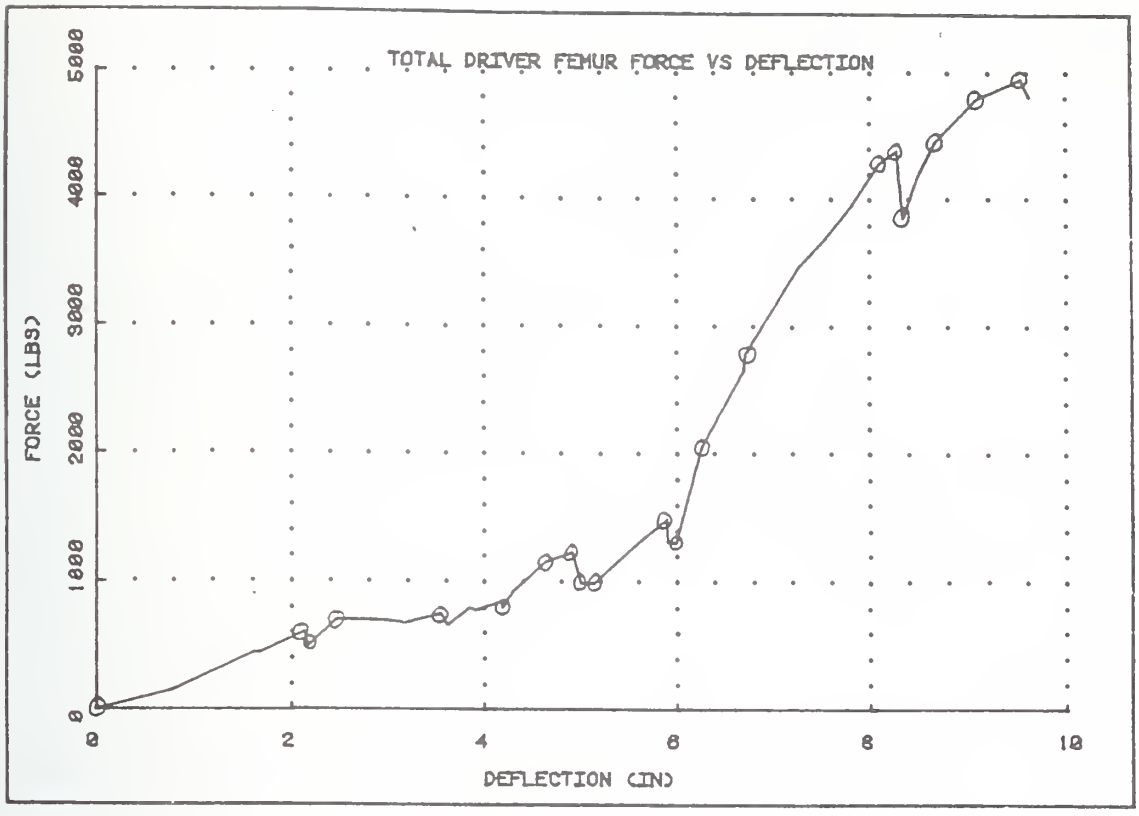
Deflection	Force	Deflection	Force
0.0	0.0	3.33	182.5
0.59	15.9	3.55	191.1
0.74	28.3	3.76	227.1
1.87	39.5	4.40	580.6
2.24	38.1	4.47	569.7
2.50	53.1	4.52	120.7
2.54	44.1	4.70	169.0
2.79	81.6	4.99	100.6
2.90	87.7	5.11	103.3

Intermediate Unloads	Maximum Deflection	G	R	K
First	2.89	0.883	0.081	318
Second	4.03	0.857	0.178	1302

Test: Driver Side Femur Date: January 30, 1985

Vehicle: Buick LeSaber

Options:



G= 0.728 R= 0.215 K= 3042

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

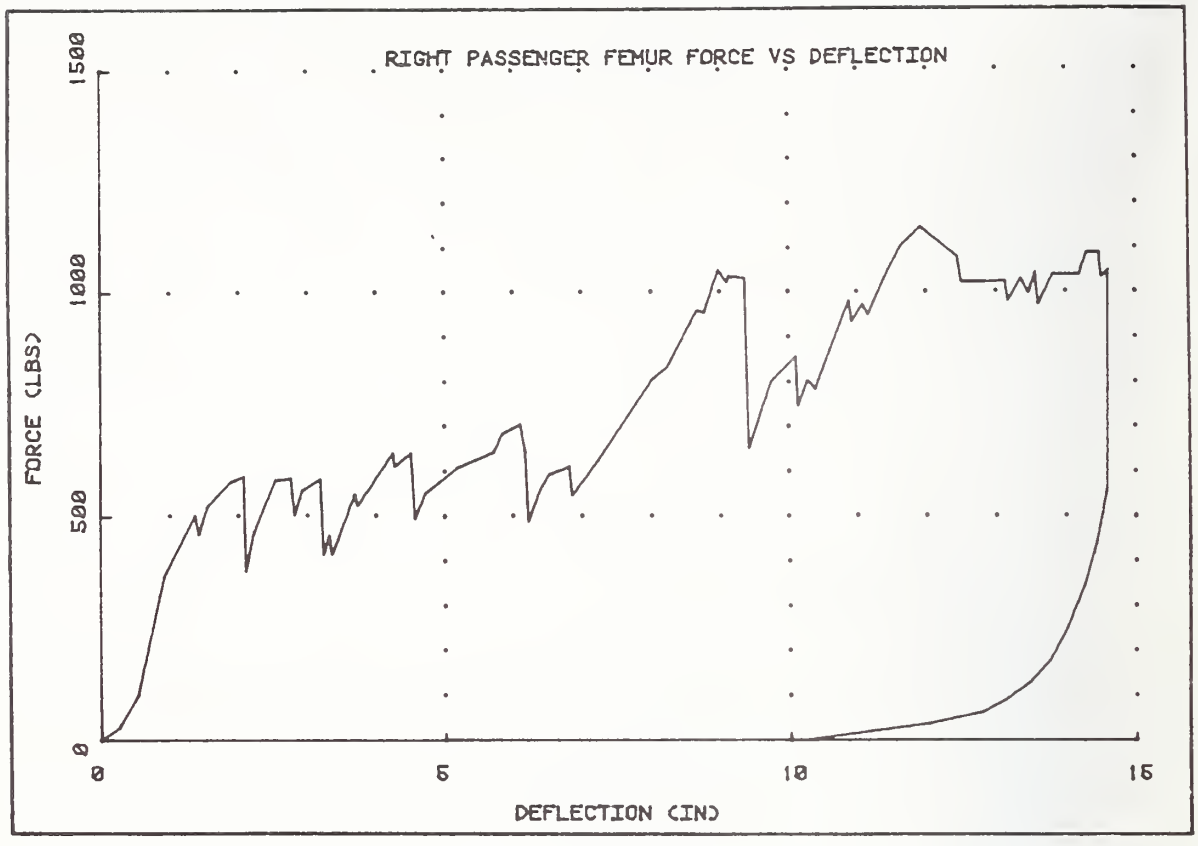
Deflection	Force	Deflection	Force
0.0	0.0	5.89	1487.4
2.13	608.3	5.99	1298.7
2.17	493.6	6.27	2049.8
2.46	705.5	6.71	2783.7
3.54	751.0	8.10	4283.3
4.19	796.0	8.28	4386.6
4.64	1155.4	8.35	3853.4
4.91	1230.5	8.67	4454.4
5.00	981.7	9.09	4795.0
5.13	991.3	9.54	4951.4

Intermediate Unloads	Maximum Deflection	G	R	K
First	4.96	0.548	0.179	985
Second	7.51	0.713	0.275	2998

Test: Right Passenger Femur Date: January 30, 1985

Vehicle: Buick LeSabre

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

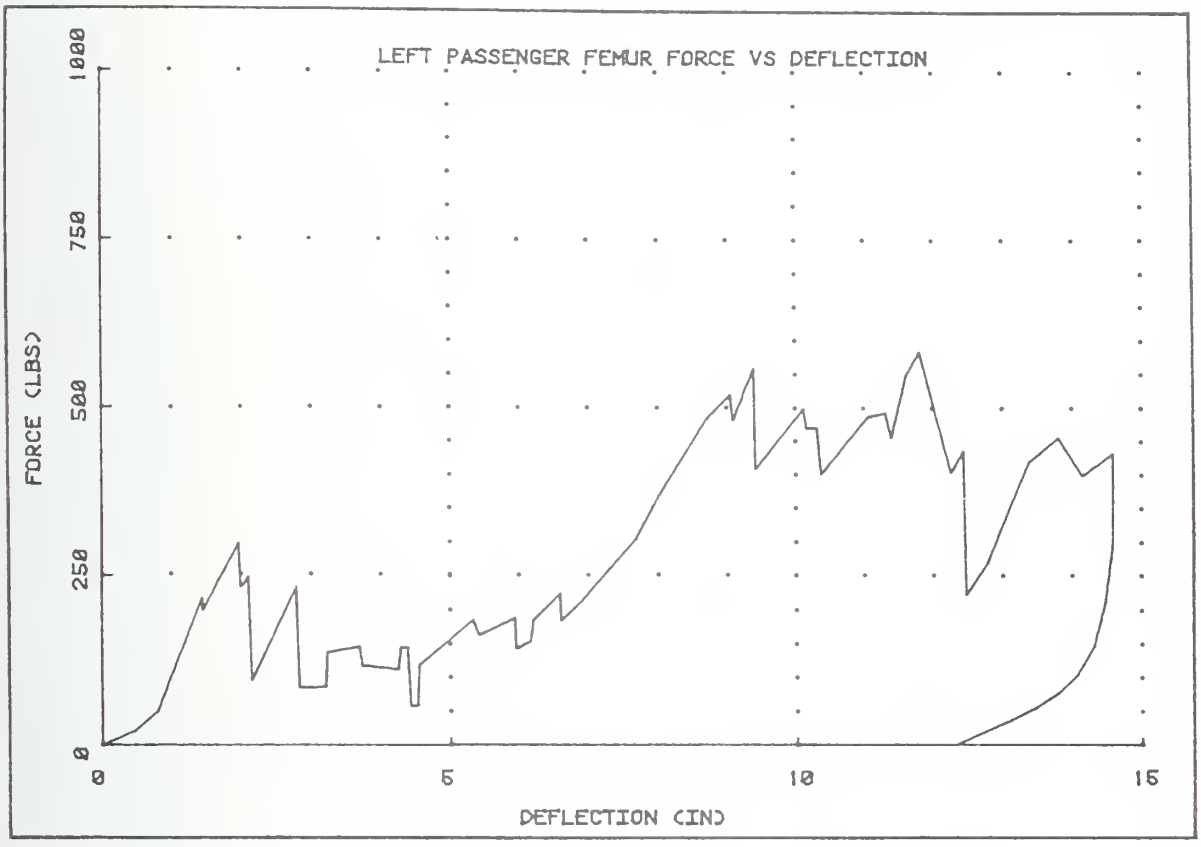
Deflection	Force	Deflection	Force

Test: Left Passenger Femur Date: January 30, 1985

Vehicle: Buick LeSabre

Options: _____

_____



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

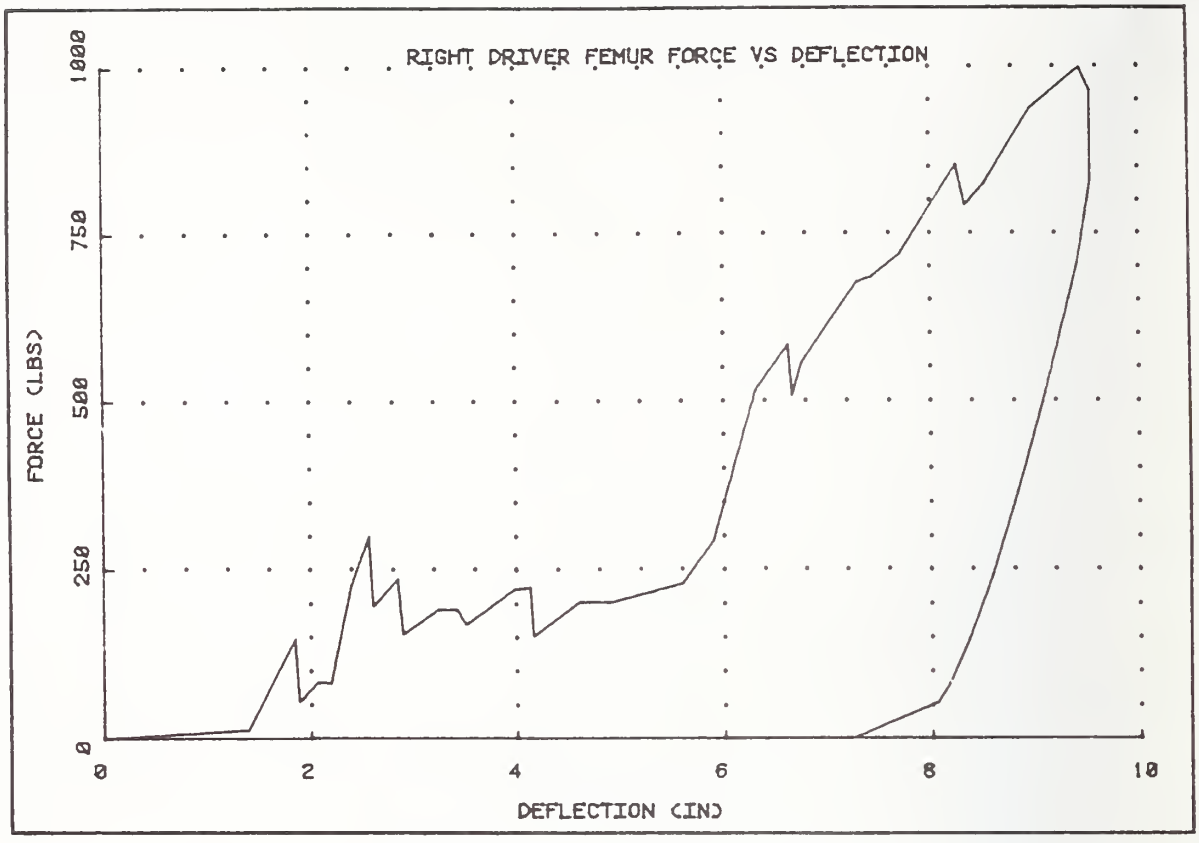
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Right Driver Femur Date: January 30, 1985

Vehicle: Buick LeSabre

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

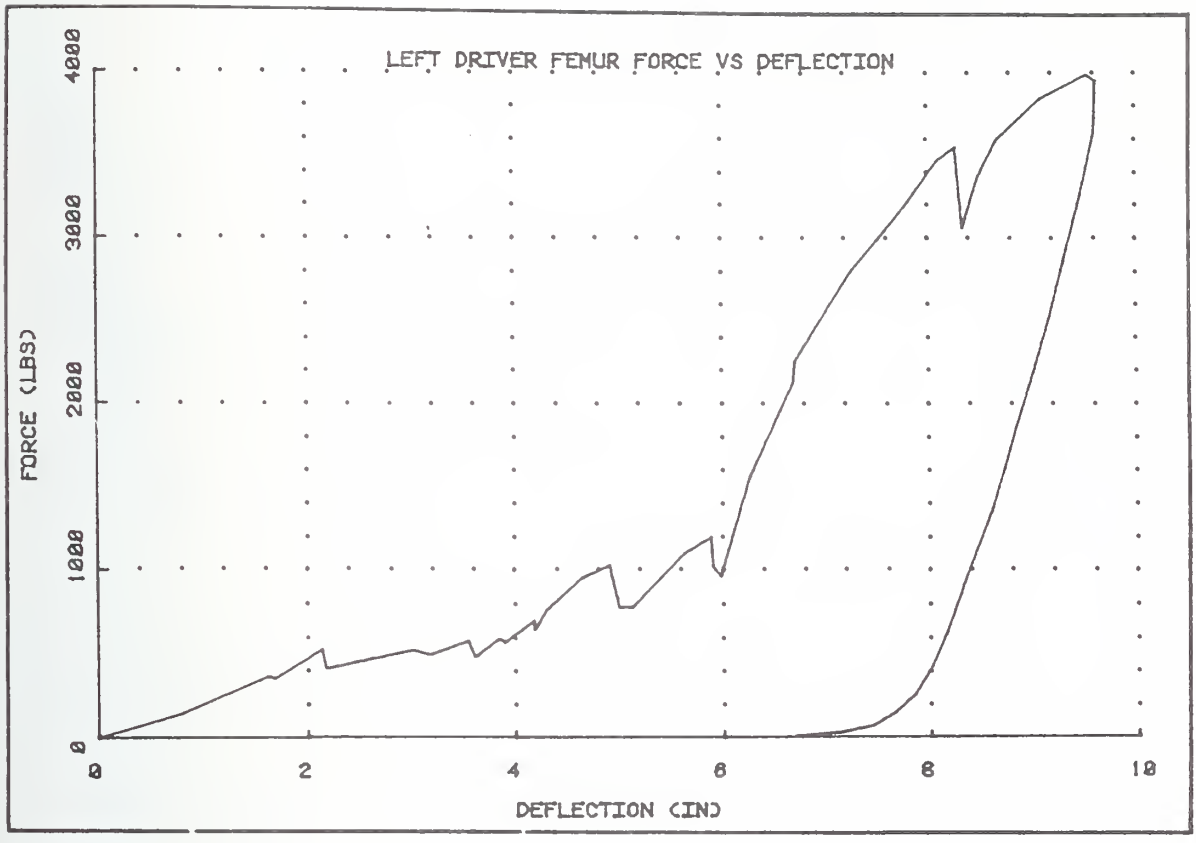
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Driver Femur Date: January 30, 1985

Vehicle: Buick LeSabre

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

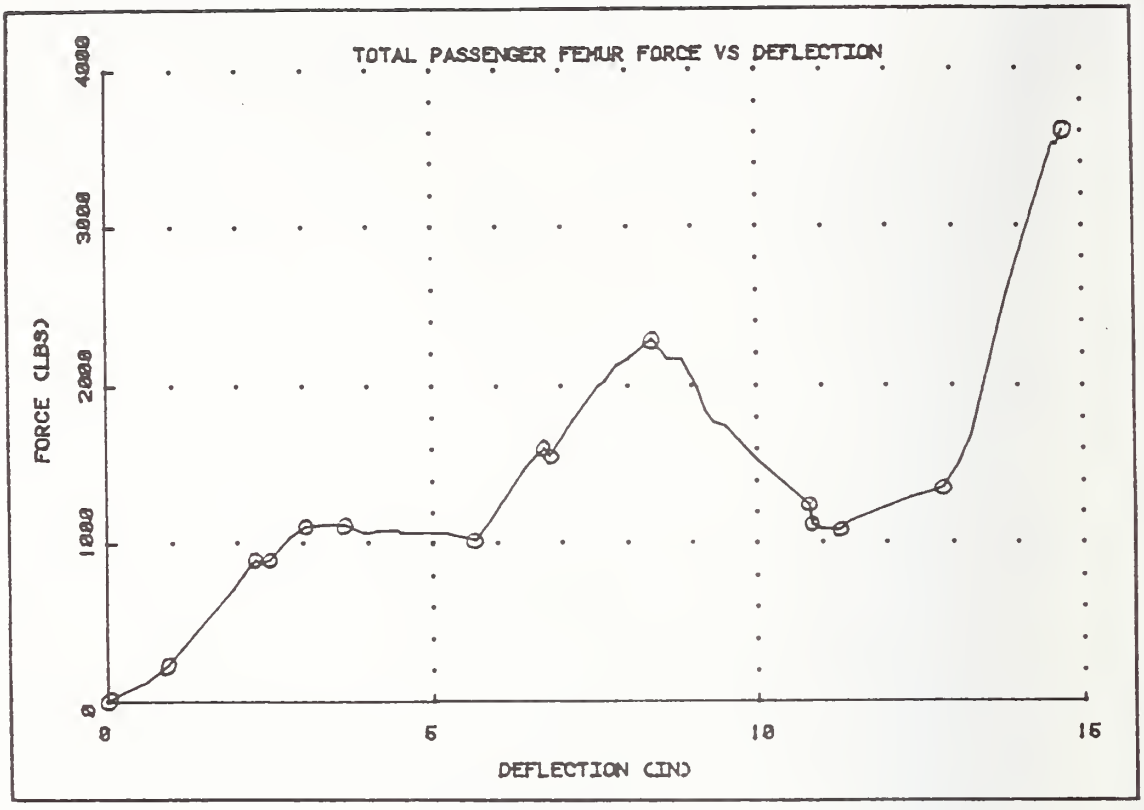
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.0

Deflection	Force	Deflection	Force

Test: Passenger Side Femur Date: February 12, 1985

Vehicle: V W Rabbit

Options:



G= 0.884 R= 0.074 K= 4414.

C= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

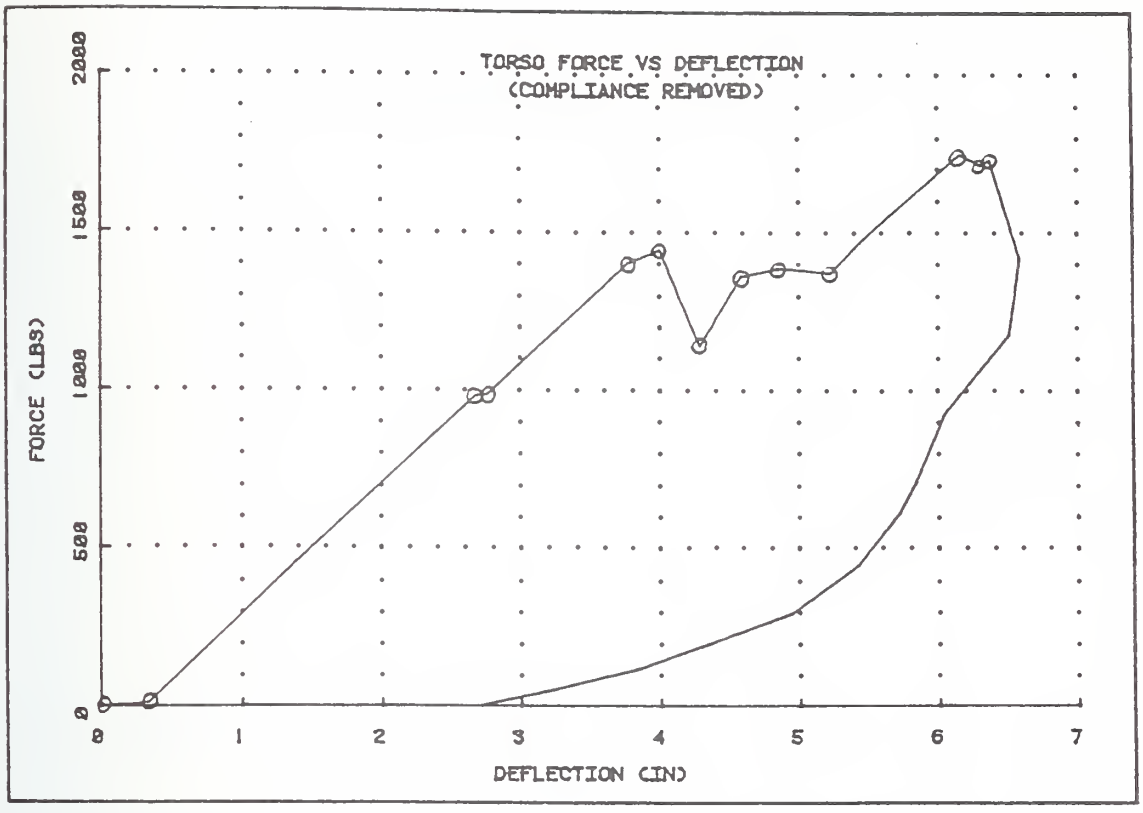
Deflection	Force	Deflection	Force
0.0	0.0	6.82	1555.4
0.94	232.6	8.38	2287.4
2.29	895.8	10.81	1234.4
2.50	906.2	10.84	1114.3
3.03	1113.9	11.25	1080.9
3.64	1120.6	12.87	1357.3
5.66	1017.9	14.71	3608.4
6.74	1607.6		

Intermediate Unloadings	Maximum Deflection	G	R	K
First	3.09	0.483	0.311	1174.
Second	6.12	0.699	0.119	1259.

Test: Torso Date: February 12, 1985

Vehicle: V W Rabbit

Options:



G= 0.411 R= 0.221 K= 694.

C= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	4.84	1385.3
0.34	12.6	5.22	1370.1
2.68	982.2	6.15	1746.6
2.77	987.6	6.30	1714.3
3.77	1405.3	6.37	1729.6
4.00	1445.4		
4.29	1137.6		
4.58	1362.1		

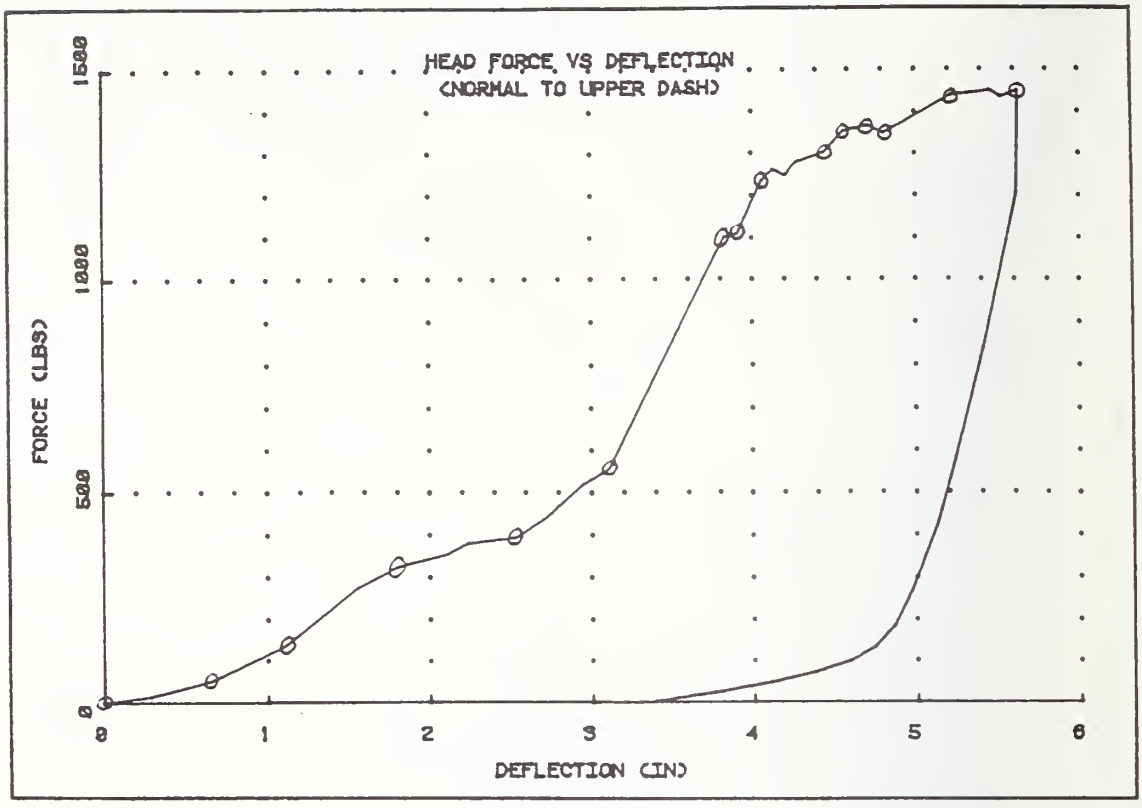
Intermediate Unload

Maximum Deflection	G	R	K
3.16	0.300	0.536	635.

Test: Head Date: February 12, 1985

Vehicle: V W Rabbit

Options:



G= 0.599 R= 0.152 K= 1832.

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.0	0.0	4.06	1232.4
0.66	52.8	4.46	1304.8
1.11	137.4	4.57	1354.5
1.80	323.3	4.71	1366.8
2.54	395.1	4.81	1347.8
3.11	560.1	5.23	1440.4
3.83	1101.1	5.63	1450.8
3.91	1109.7		

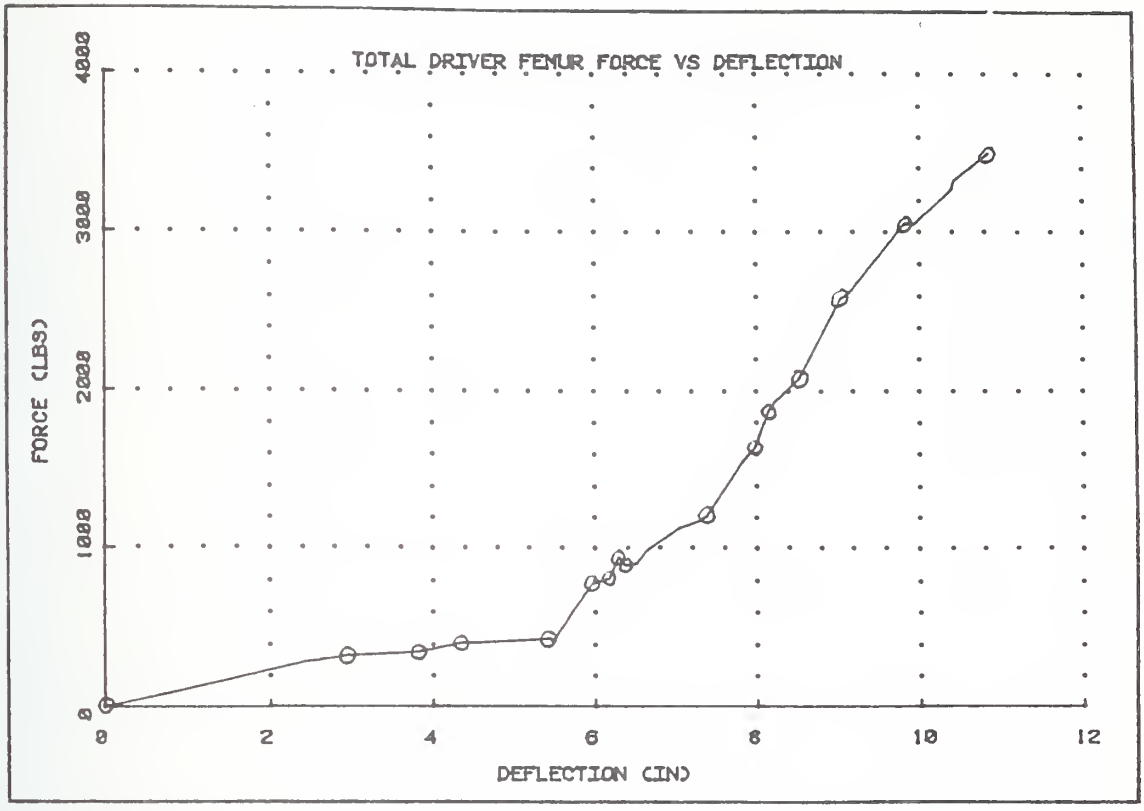
Intermediate Unload

Maximum Deflection	G	R	K
1.88	0.359	0.440	497.

Test: Driver Side Femur Date: February 12, 1985

Vehicle: V W Rabbit

Options:



G= 0.872 R= 0.106 K= 5075.

c= u_1= u_2= u_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

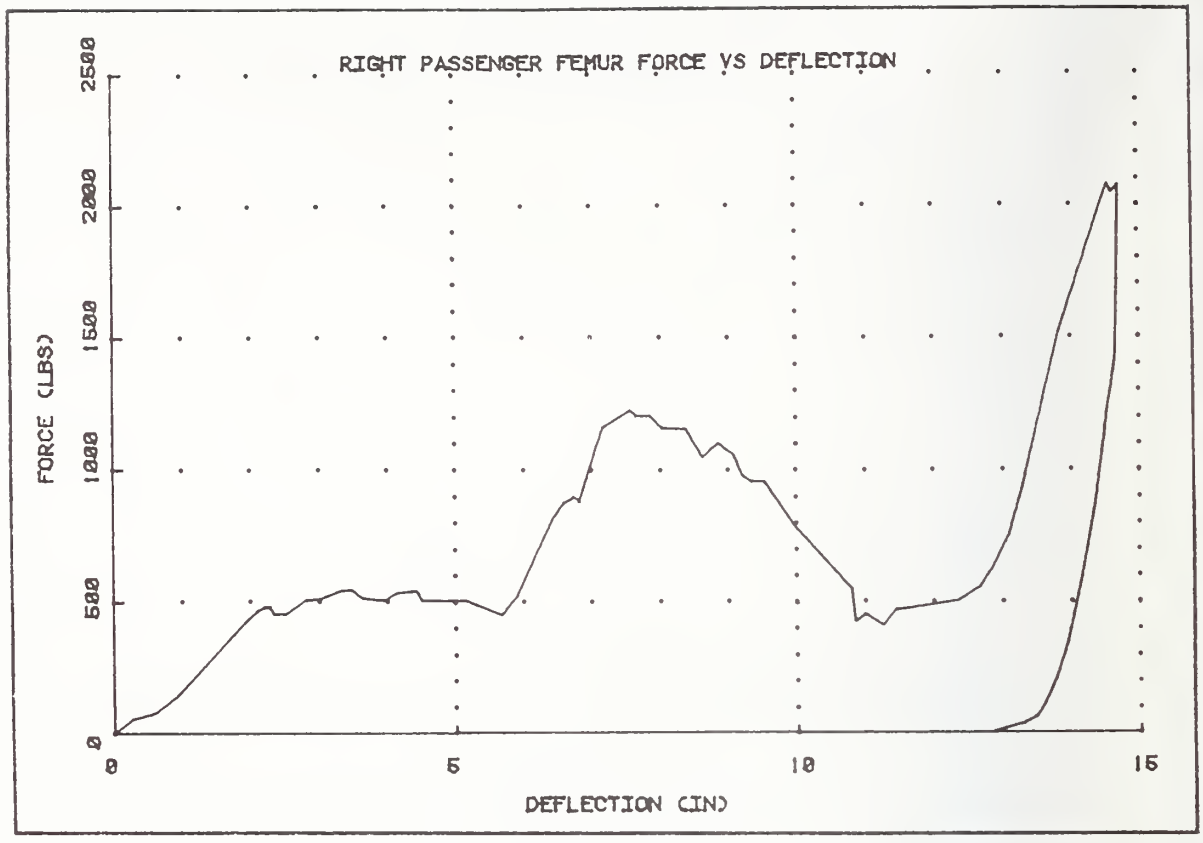
Deflection	Force	Deflection	Force
0.0	0.0	6.37	891.8
2.95	325.0	7.38	1208.7
3.82	350.1	7.98	1646.5
4.34	410.3	8.16	1876.2
5.45	440.6	8.53	2078.0
5.96	780.7	9.05	2588.2
6.18	818.9	9.82	3055.4
6.29	944.6	10.84	3497.0

Intermediate Unloadings	Maximum Deflection	G	R	K
First	4.12	0.794	0.091	805.
Second	8.01	0.846	0.158	2310.

Test: Right Passenger Femur Date: February 12, 1985

Vehicle: V W Rabbit

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

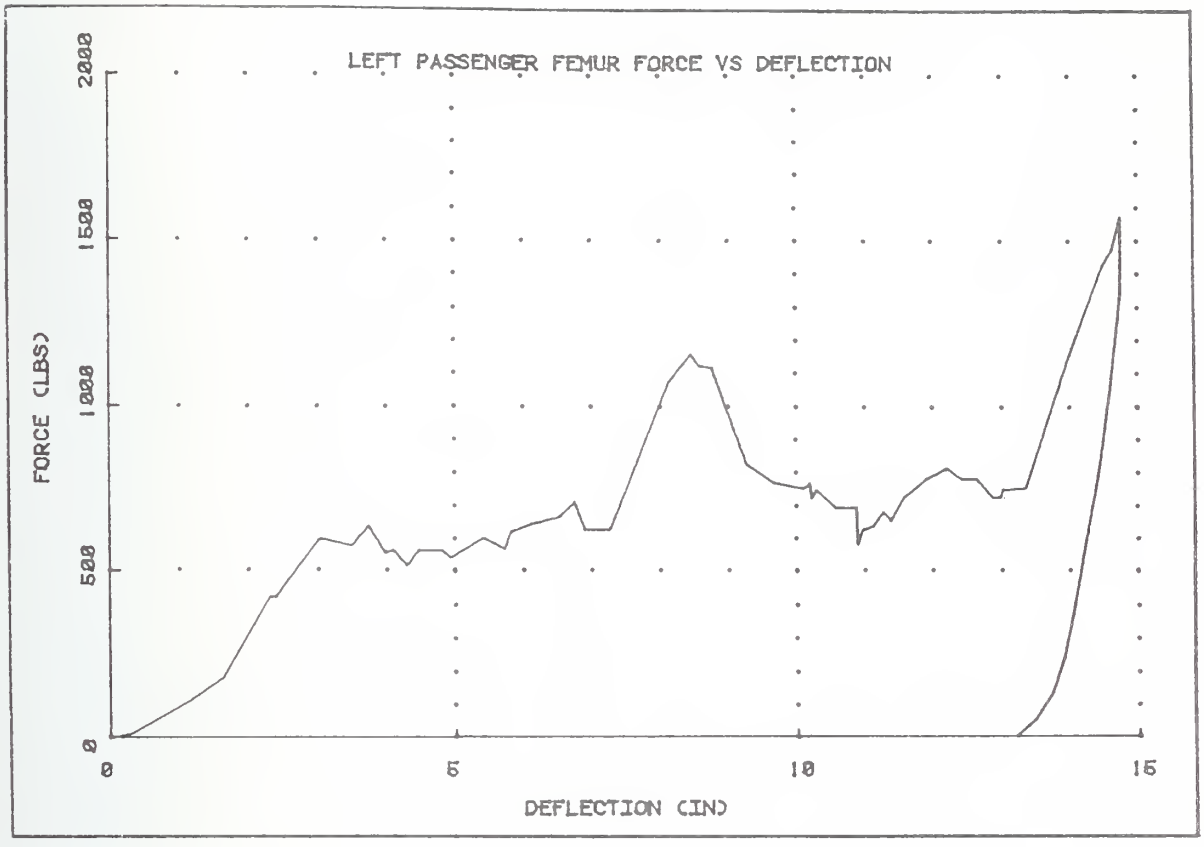
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Passenger Femur Date: February 12, 1985

Vehicle: V W Rabbit

Options:



G= R= K=

C= μ_1= μ_2= μ_3=

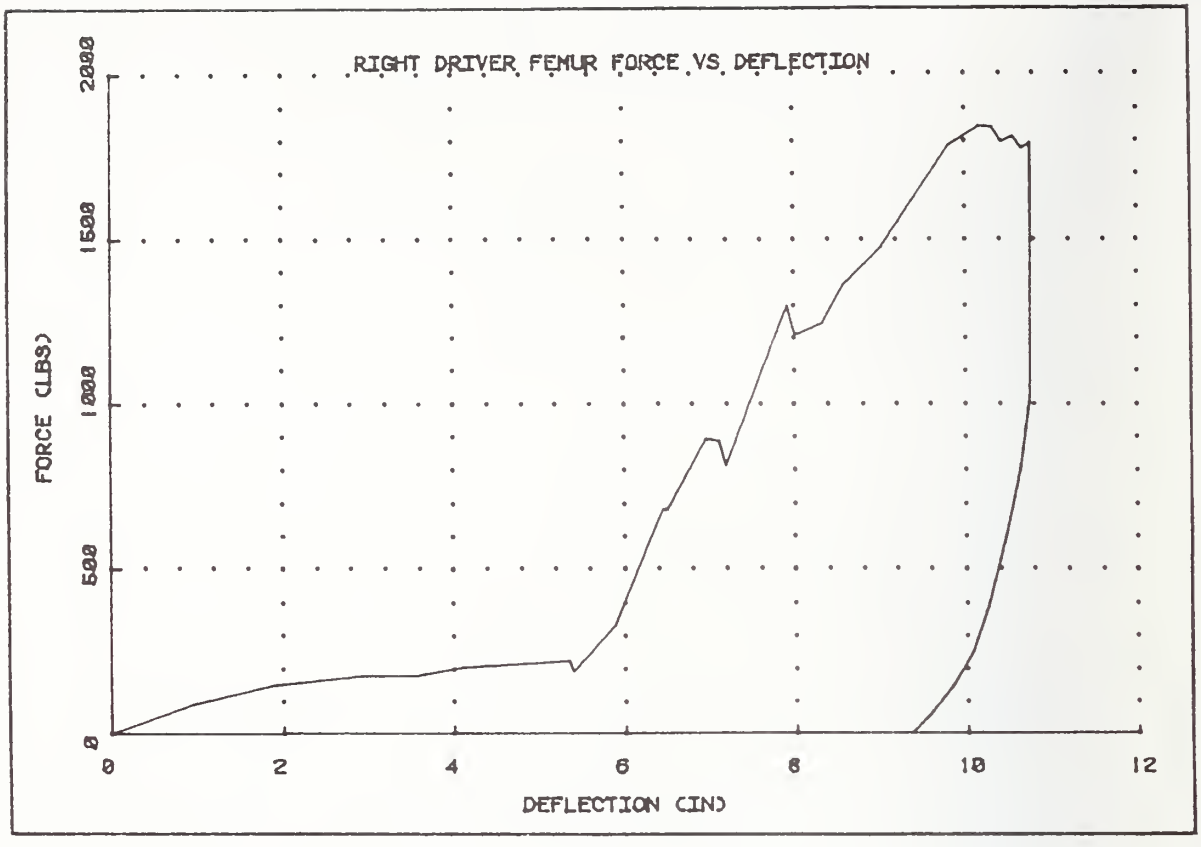
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Right Driver Femur Date: February 12, 1985

Vehicle: V W Rabbit

Options:



G= R= K=

C= μ_1= μ_2= μ_3=

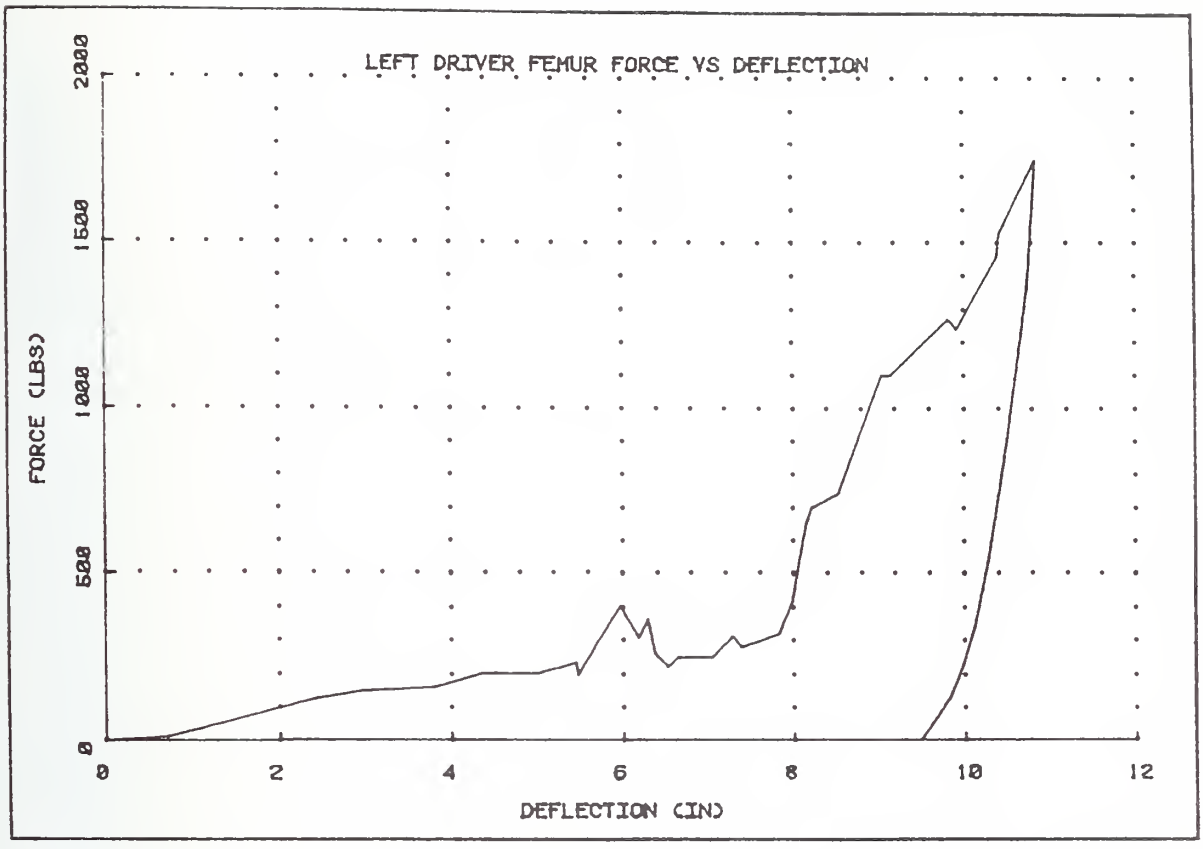
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

Test: Left Driver Femur Date: February 12,1985

Vehicle: V W Rabbit

Options:



G= R= K=

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force

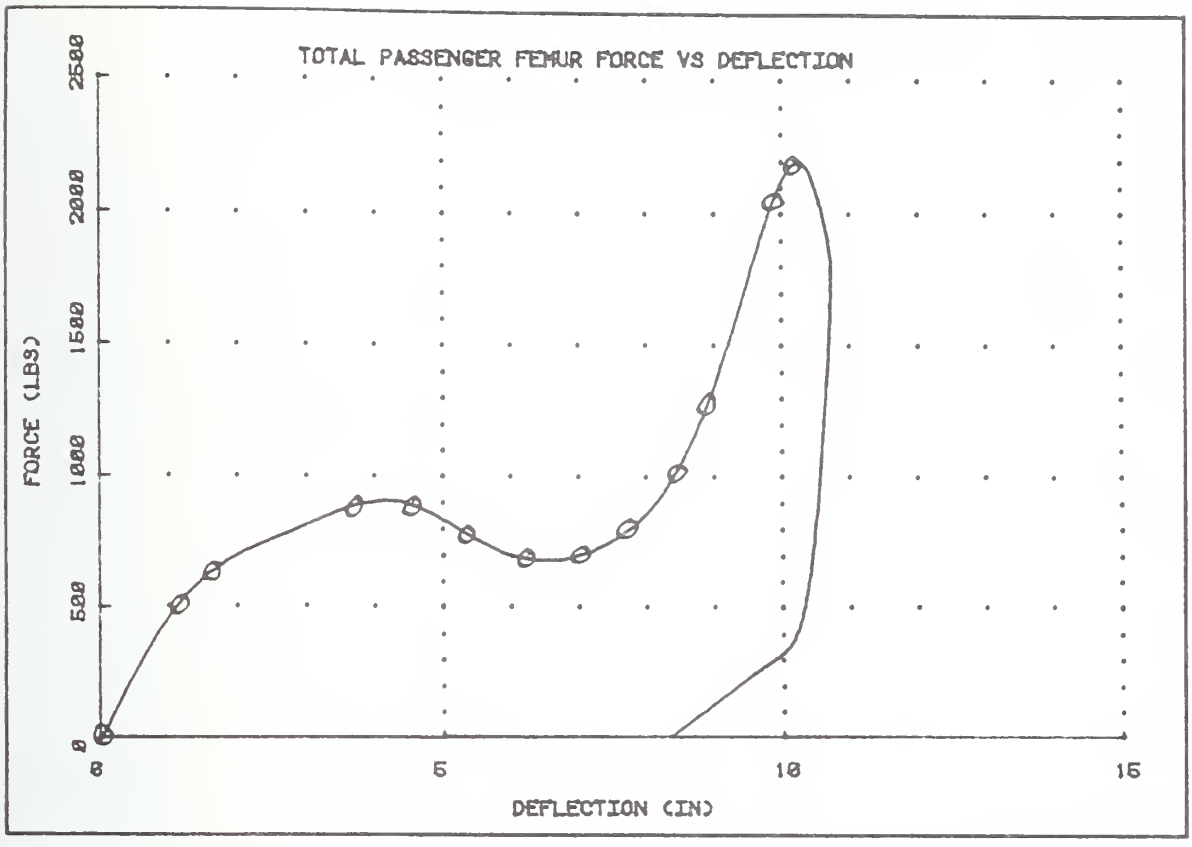
APPENDIX B

DYNAMIC INSTRUMENT PANEL TEST RESULTS

Test: Passenger Side Femur (dynamic) Date: October 4, 1984

Vehicle: Chevy Monza

Options: No radio, no heater



G= 0.777 R= 0.080 K= 1983.45

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

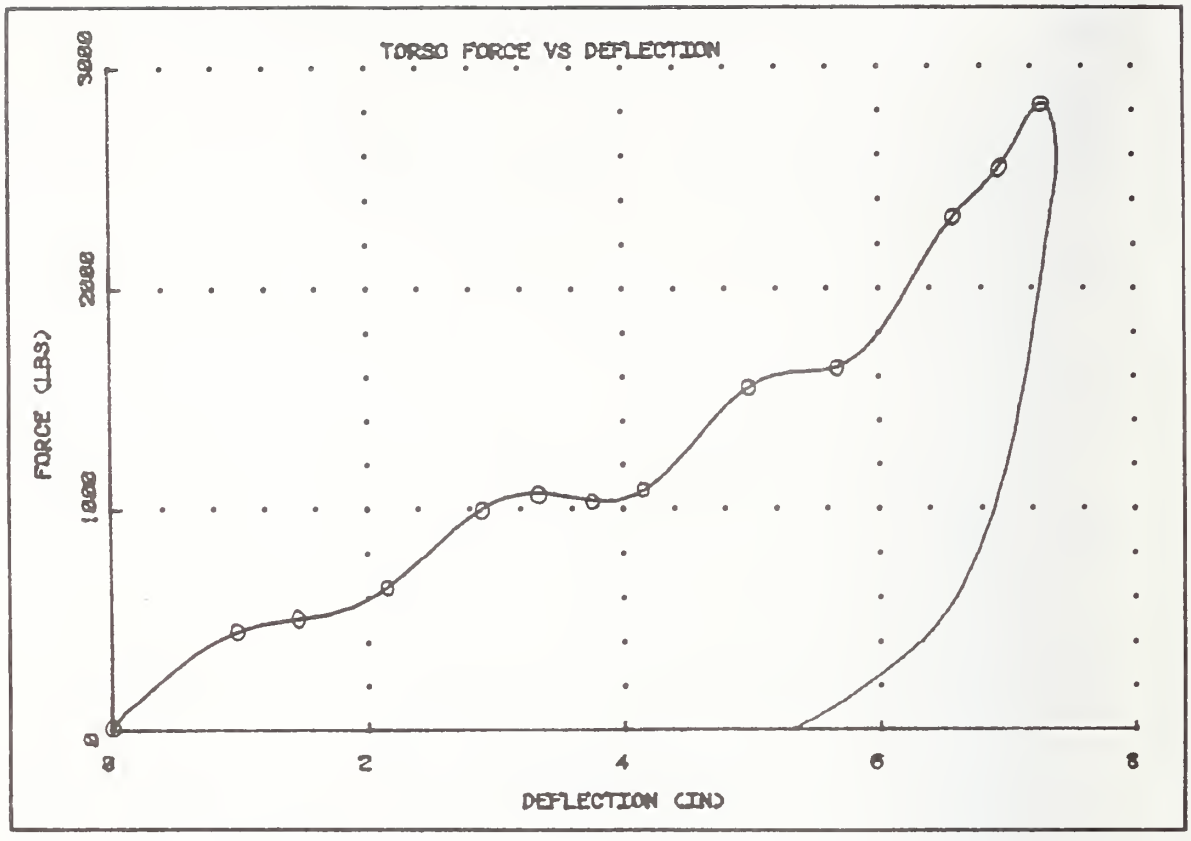
Deflection	Force	Deflection	Force
0.0	0.0	7.84	819.20
1.12	506.88	8.43	1018.88
1.71	645.12	8.88	1259.52
3.88	906.24	9.92	2078.72
4.63	885.76	10.15	2196.48
5.38	783.36		
6.20	680.96		
7.03	701.44		

Filter cutoff frequency: 25 Hz.

Test: Torso (dynamic) Date: October 5, 1984

Vehicle: Chevy Monza

Options: No radio, no heater



G= 0.717 R= 0.158 K= 2357.99

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

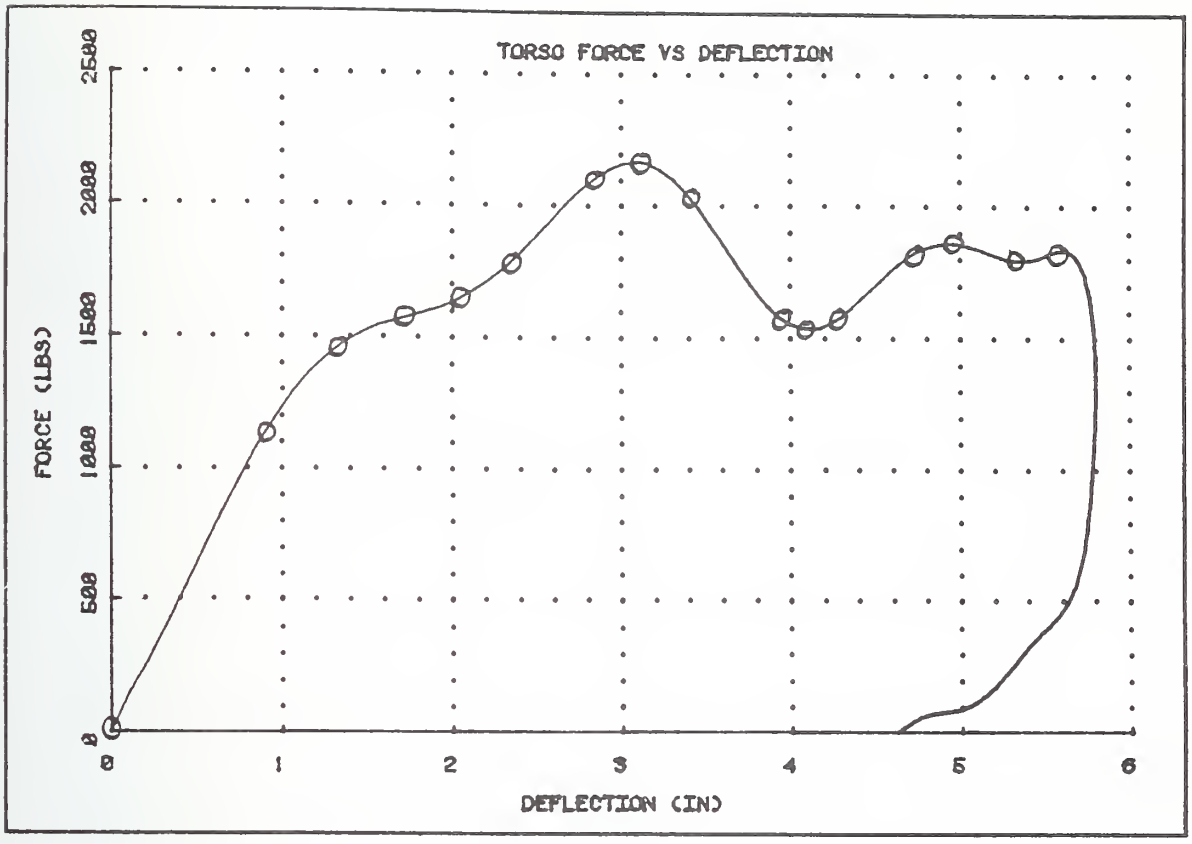
Deflection	Force	Deflection	Force
0.0	0.0	4.93	1528.89
0.95	443.26	5.61	1633.51
1.47	506.50	6.65	2363.40
2.19	663.36	6.97	2554.22
2.88	997.94	7.29	2832.41
3.36	1074.51		
3.82	1036.11		
4.17	1092.72		

Filter cutoff frequency: 100 Hz.

Test: Torso (dynamic) Date: October 9, 1984

Vehicle: Honda Civic CVCC

Options: No radio



G= 0.797 R= 0.035 K= 2908.47

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

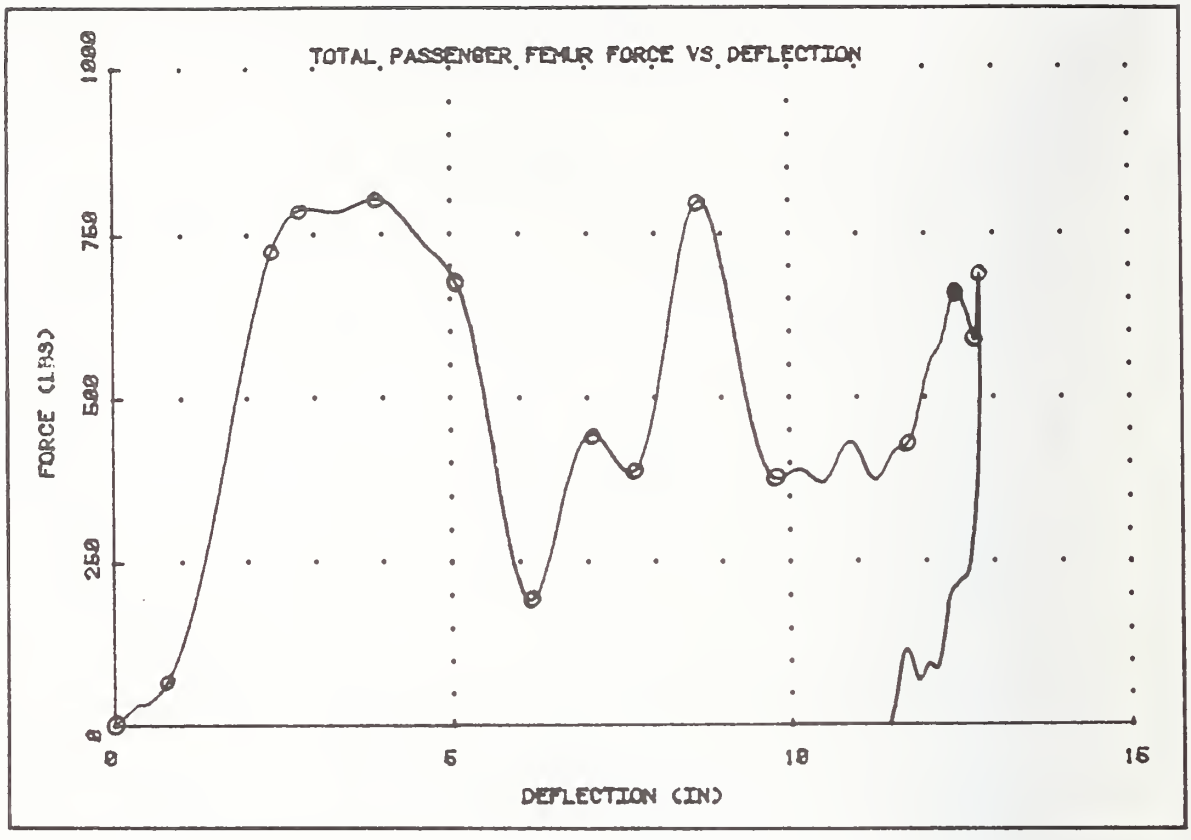
Deflection	Force	Deflection	Force
0.0	0.0	3.40	2048.00
0.96	1203.20	3.91	1587.20
1.33	1459.20	4.06	1546.24
1.70	1576.96	4.28	1566.72
2.07	1653.76	4.73	1827.84
2.36	1792.00	4.87	1848.32
2.88	2129.92	5.32	1807.36
3.10	2170.88	5.54	1827.84

Filter cutoff frequency: 100 Hz.

Test: Passenger Side Femur (dynamic) Date: October 10, 1984

Vehicle: Dodge Omni

Options: No radio



G= 0.892 R= -0.033 K= 946.95

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

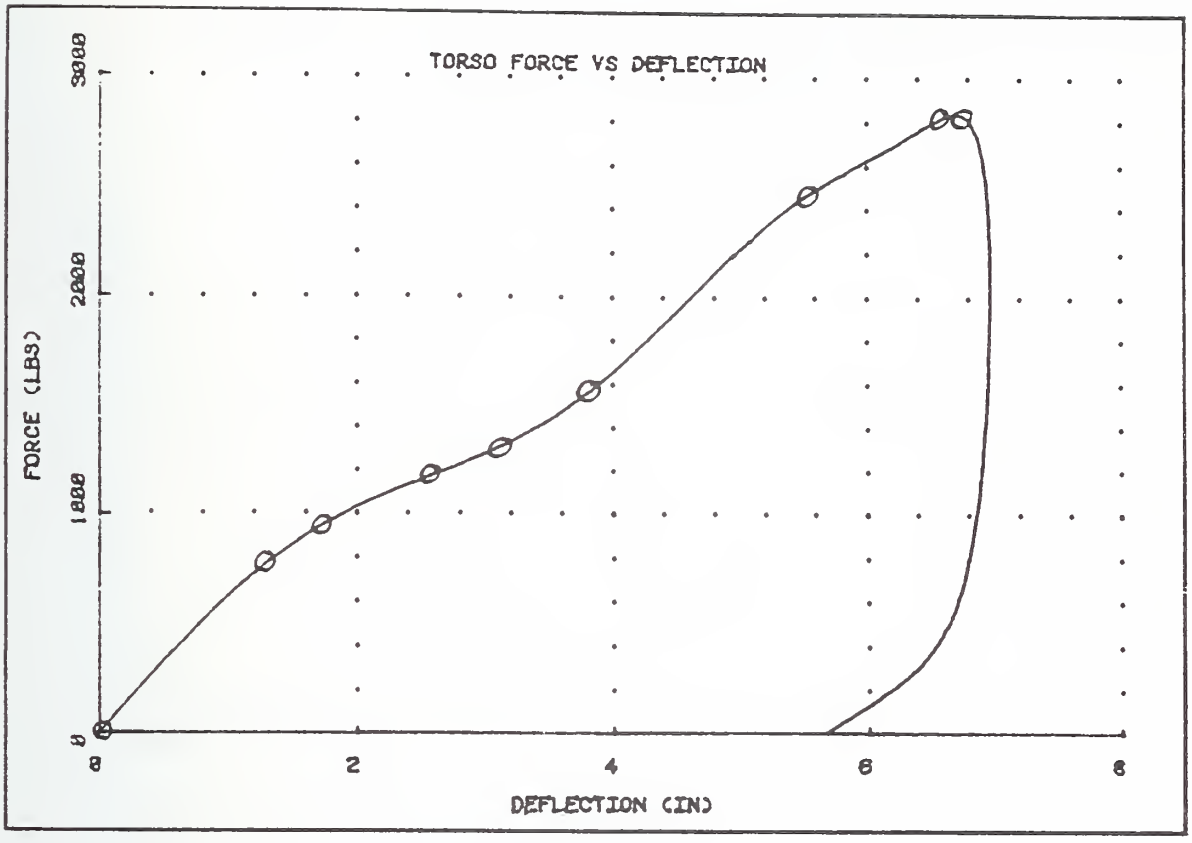
Deflection	Force	Deflection	Force
0.0	0.0	7.61	386.56
0.74	55.04	8.65	796.16
2.38	733.44	9.78	380.16
2.74	783.36	11.73	424.96
3.85	802.56	12.47	664.32
5.05	682.24	12.69	583.68
6.10	192.00	12.76	688.64
7.00	441.60		

Filter cutoff frequency: 100 Hz.

Test: Torso (dynamic) Date: October 10, 1984

Vehicle: Dodge Omni

Options: No radio



G= 0.813 R= 0.047 K= 4296.33

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

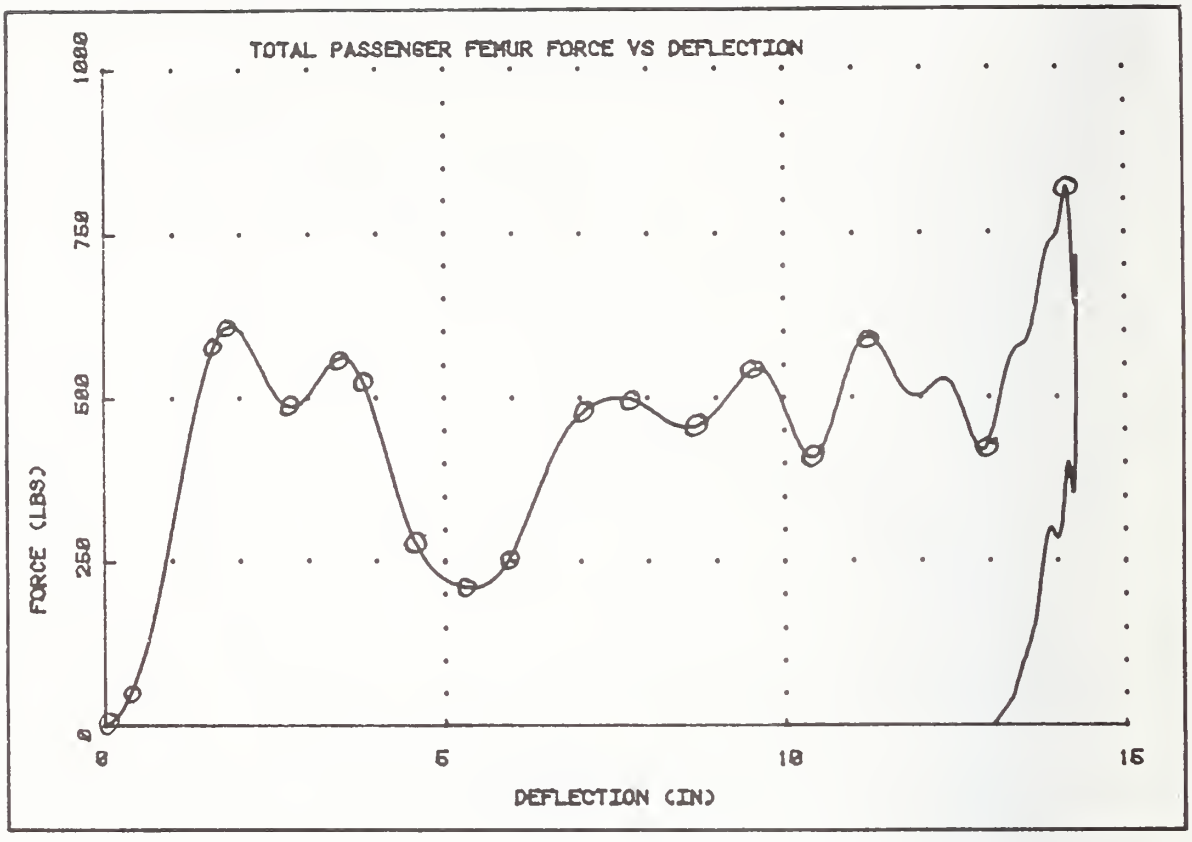
Deflection	Force	Deflection	Force
0.0	0.0	6.71	2841.60
1.27	768.00		
1.71	947.20		
2.30	1105.92		
3.20	1346.56		
3.72	1525.76		
5.58	2483.20		
6.48	2800.00		

Filter cutoff frequency: 25 Hz.

Test: Passenger Side Femur (dynamic) Date: October 11, 1984

Vehicle: Ford Mustang

Options: No radio



G= 0.912 R= 0.037 K= 972.62

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D=1000.0 δ_F=1000.1

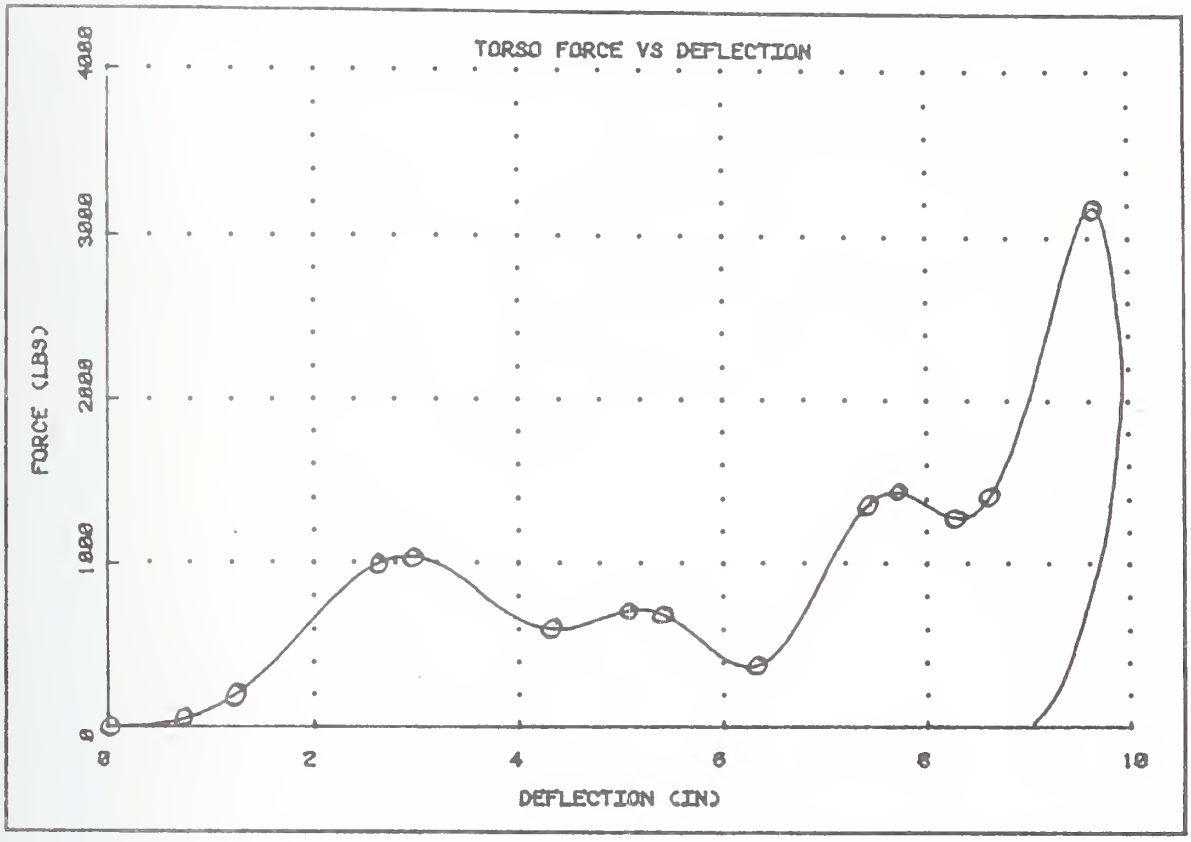
Deflection	Force	Deflection	Force
0.0	0.0	5.95	256.00
0.37	46.09	7.00	476.16
1.57	563.20	7.61	496.64
1.79	604.16	8.65	455.68
2.61	501.76	9.63	552.96
3.43	558.08	10.38	409.60
3.80	517.12	11.12	588.80
4.61	276.48	12.91	430.08
5.20	215.40	14.10	808.96

Filter cutoff frequency: 100 Hz.

Test: Torso (dynamic) Date: October 11, 1984

Vehicle: Ford Mustang

Options: No Radio



G= 0.907 R= 0.066 K= 4150.69

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F=1000.1

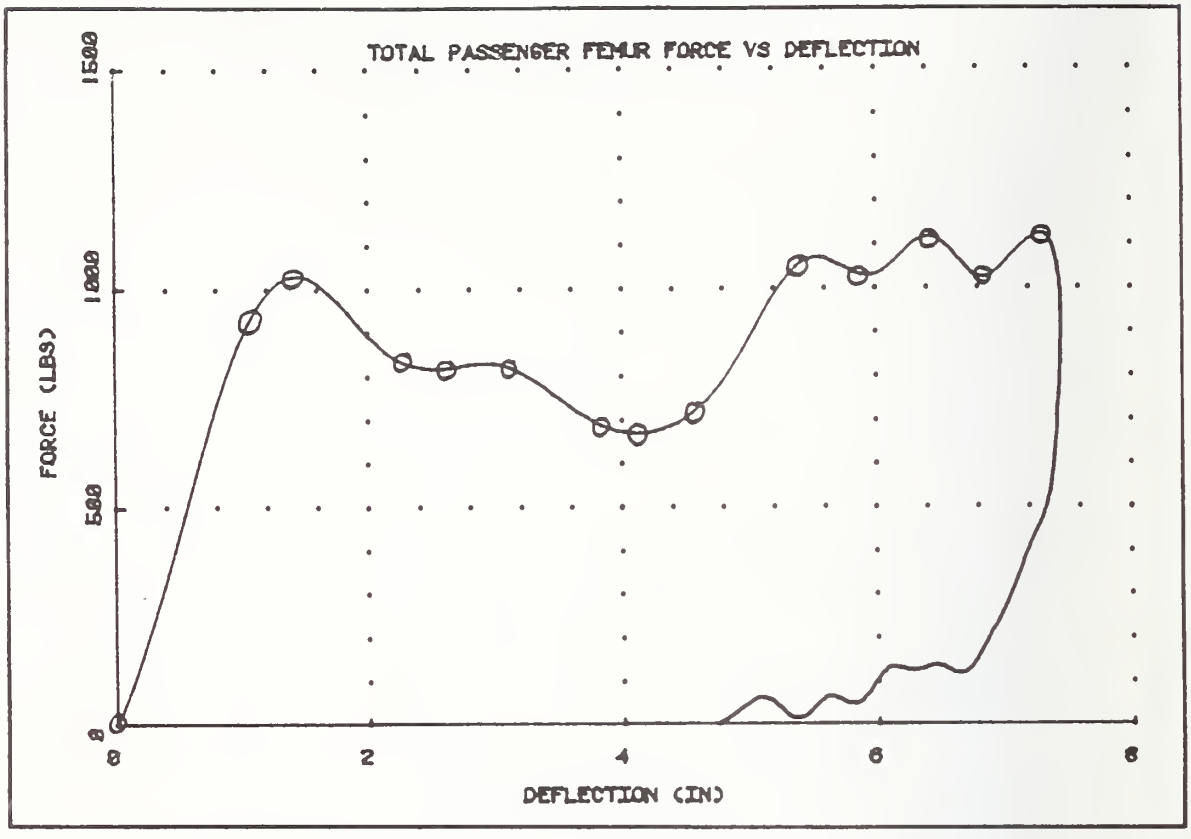
Deflection	Force	Deflection	Force
0.0	0.0	6.26	373.76
0.75	46.08	7.31	1274.88
1.20	184.32	7.68	1433.60
2.61	998.40	8.29	1274.88
2.91	1039.36	8.65	1433.60
4.25	599.04	9.63	3174.40
5.07	716.80		
5.44	675.84		

Filter cutoff frequency: 100 Hz.

Test: Passenger side femur (dynamic) Date: October 12, 1984

Vehicle: Ford Pinto

Options: Metal dash



G= 0.636 R= 0.065 K= 1102.31

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F=1000.1

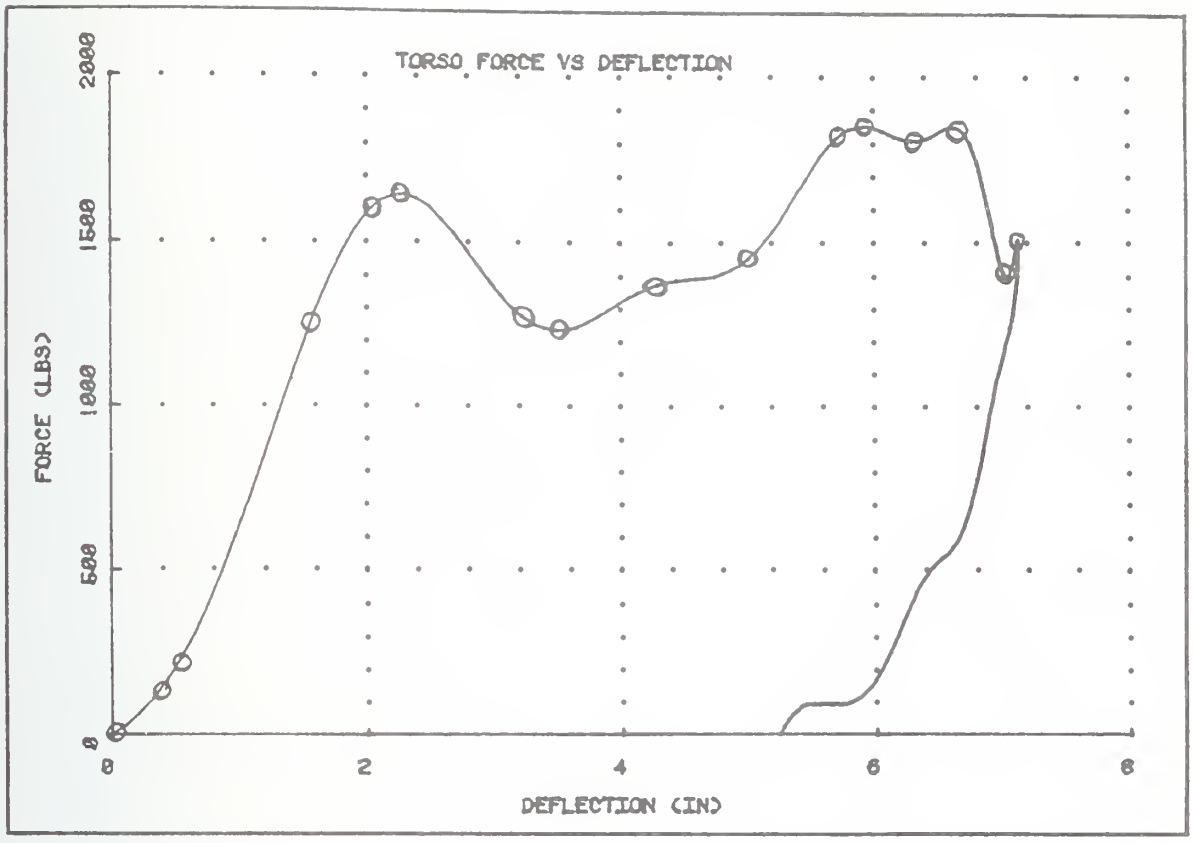
Deflection	Force	Deflection	Force
0.0	0.0	4.52	732.16
0.96	921.60	5.27	1049.60
1.33	1039.36	5.79	1029.12
2.16	839.68	6.31	1126.40
2.53	819.20	6.68	1024.00
2.97	839.68	7.19	1121.28
3.71	696.32		
4.00	675.84		

Filter cutoff frequency: 100 Hz.

Test: Torso (dynamic) Date: October 12,1984

Vehicle: Ford Pinto

Options: Metal dash



G= 0.734 R=0.086 K= 1394.66

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D=1000.0 δ_F=1000.1

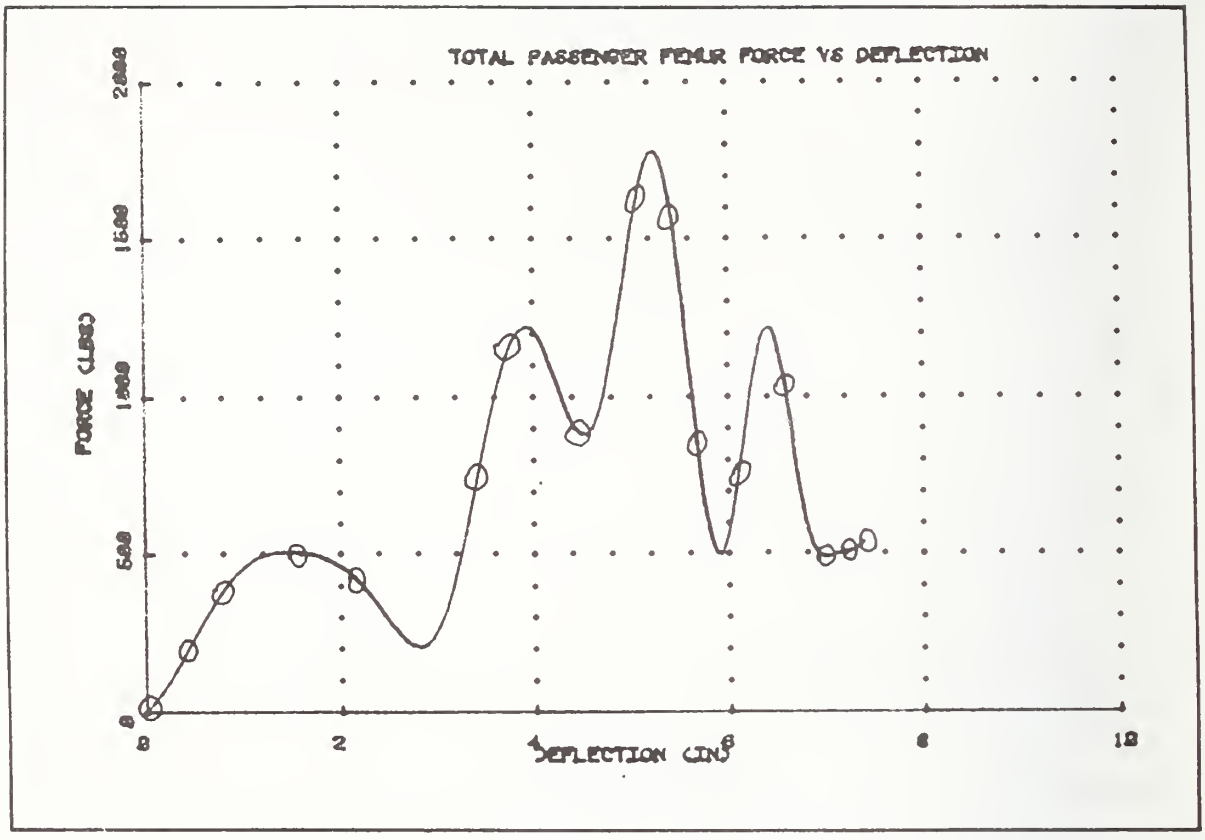
Deflection	Force	Deflection	Force
0.0	0.0	4.25	1377.28
0.30	107.52	5.01	1454.08
0.52	225.28	5.67	1812.48
1.57	1264.64	5.89	1853.44
2.01	1602.56	6.26	1812.48
2.30	1643.52	6.63	1853.44
3.20	1280.00	6.93	1413.12
3.43	1239.04	7.07	1510.40

Filter cutoff frequency: 100 Hz.

Test: Passenger Side Femur (dynamic) Date: October 14, 1984

Vehicle: Chevy Chevette

Options: No radio



G= 1.0 R= 0.0 K= N/A

c= μ_1= μ_2= μ_3=

δ_A= 0 δ_B= 0 δ_C= 0 δ_D= 1000.0 δ_F= 1000.1

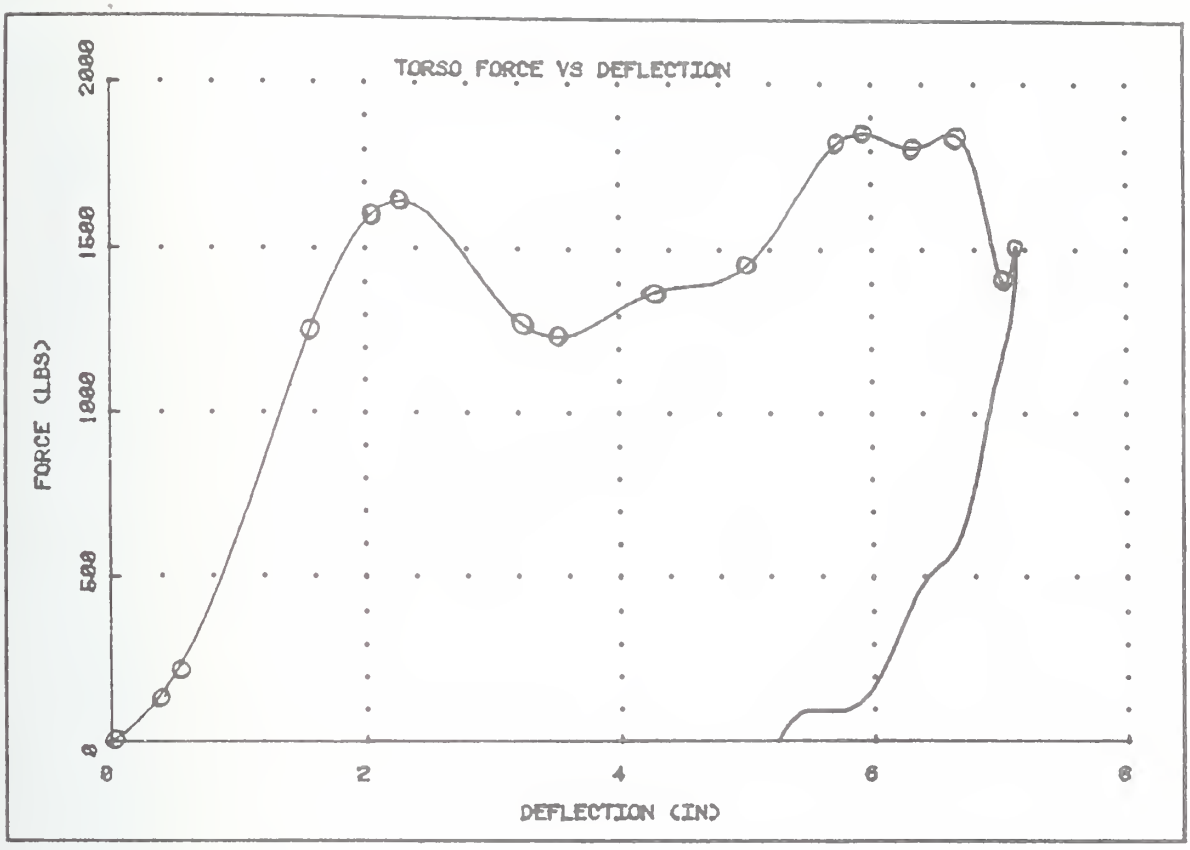
Deflection	Force	Deflection	Force
0.0	0.0	5.21	1775.80
0.47	221.27	5.49	1409.36
0.86	416.27	5.95	518.34
1.48	508.26	6.11	768.63
2.08	442.32	6.56	1063.63
3.44	773.17	7.04	493.50
3.78	1178.16	7.13	501.84
4.54	878.87	7.38	536.07

Filter cutoff frequency: 100 Hz.

Test: Torso (dynamic) Date: October 12,1984

Vehicle: Ford Pinto

Options: Metal dash



G= 0.734 R=0.086 K= 1394.66

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D=1000.0 δ_F=1000.1

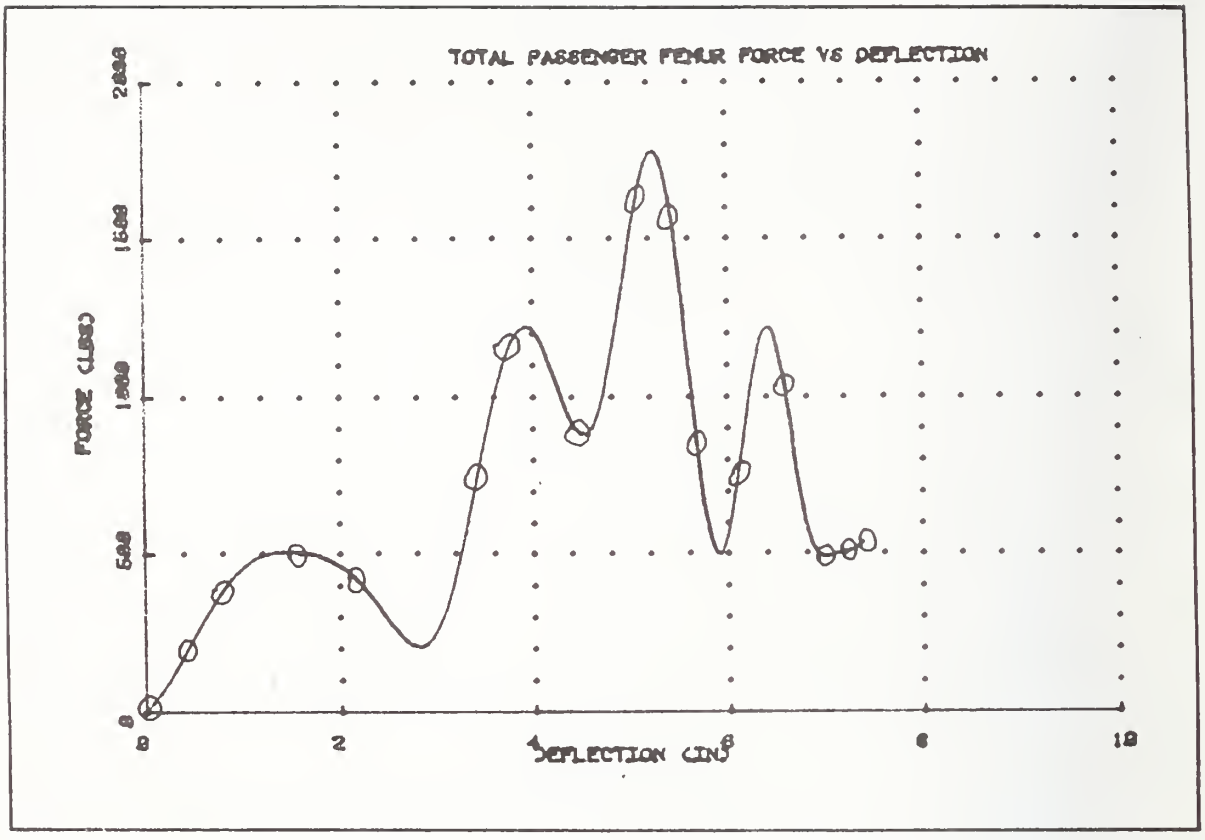
Deflection	Force	Deflection	Force
0.0	0.0	4.25	1377.28
0.30	107.52	5.01	1454.08
0.52	225.28	5.67	1812.48
1.57	1264.64	5.89	1853.44
2.01	1602.56	6.26	1812.48
2.30	1643.52	6.63	1853.44
3.20	1280.00	6.93	1413.12
3.43	1239.04	7.07	1510.40

Filter cutoff frequency: 100 Hz.

Test: Passenger Side Femur (dynamic) Date: October 14, 1984

Vehicle: Chevy Chevette

Options: No radio



G= 1.0 R= 0.0 K= N/A

c= μ_1= μ_2= μ_3=

δ_A= 0 δ_B= 0 δ_C= 0 δ_D= 1000.0 δ_F= 1000.1

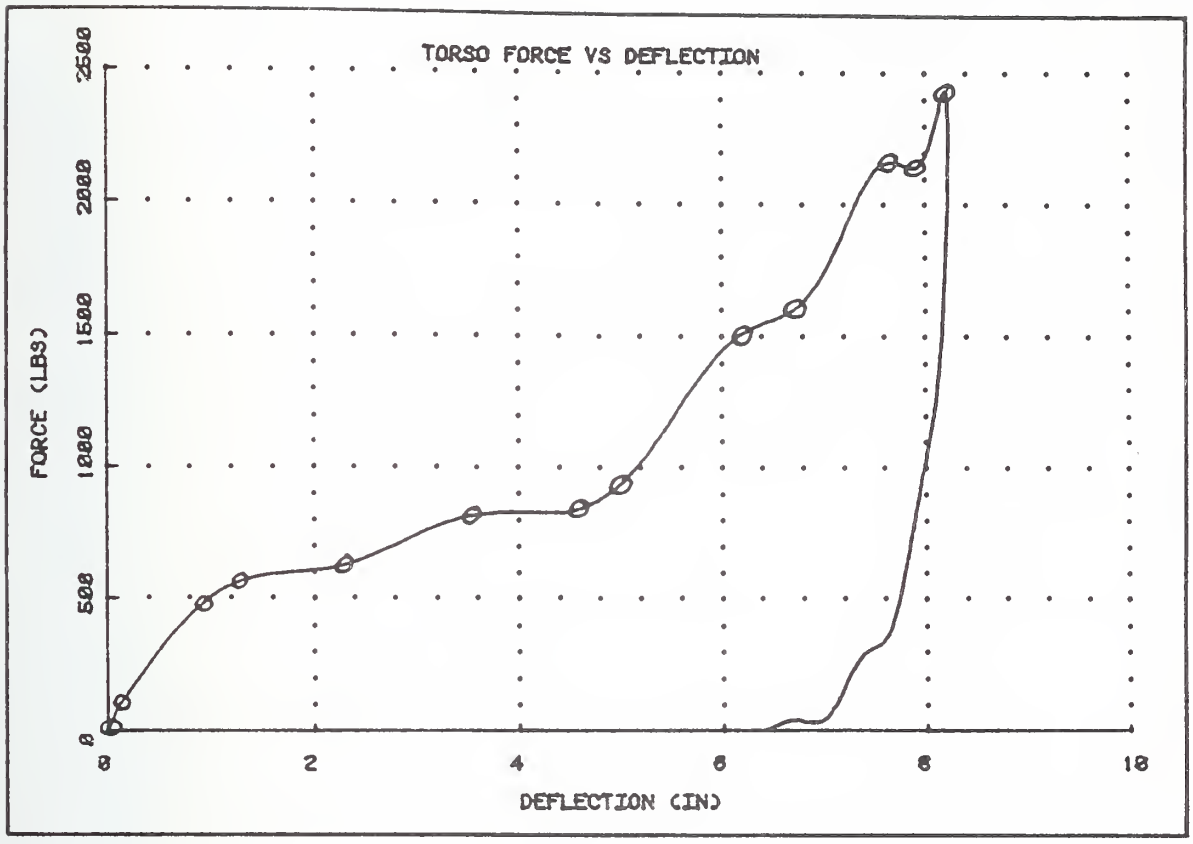
Deflection	Force	Deflection	Force
0.0	0.0	5.21	1775.80
0.47	221.27	5.49	1409.36
0.86	416.27	5.95	518.34
1.48	508.26	6.11	768.63
2.08	442.32	6.56	1063.63
3.44	773.17	7.04	493.50
3.78	1178.16	7.13	501.84
4.54	878.87	7.38	536.07

Filter cutoff frequency: 100 Hz.

Test: Torso (dynamic) Date: October 14, 1984

Vehicle: Chevy Chevette

Options: No radio



G= 0.780 R= 0.086 K= 3505.84

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D=1000.0 δ_F=1000.1

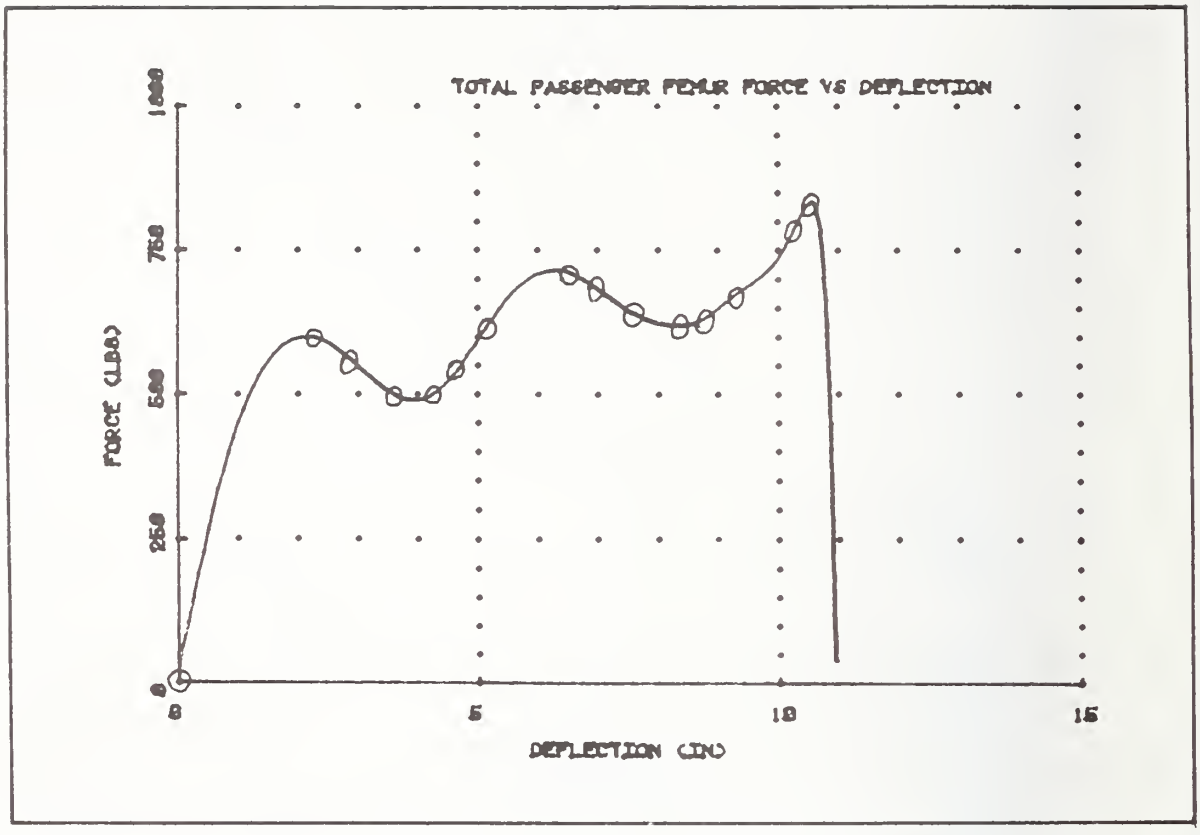
Deflection	Force	Deflection	Force
0.0	0.0	6.19	1515.52
0.15	128.00	6.78	1633.28
0.90	465.92	7.67	2165.76
1.27	563.20	7.89	2145.28
2.38	640.00	8.18	2426.88
3.57	819.20		
4.55	839.68		
4.92	916.48		

Filter cutoff frequency: 100 Hz.

Test: Passenger Side Femur (dynamic) Date: October 15, 1984

Vehicle: Plymouth Volare

Options: _____



G= 1.0 R= 0.0 K= N/A

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

δ_A= 0 δ_B= 0 δ_C= 0 δ_D= 1000.0 δ_F= 1000.1

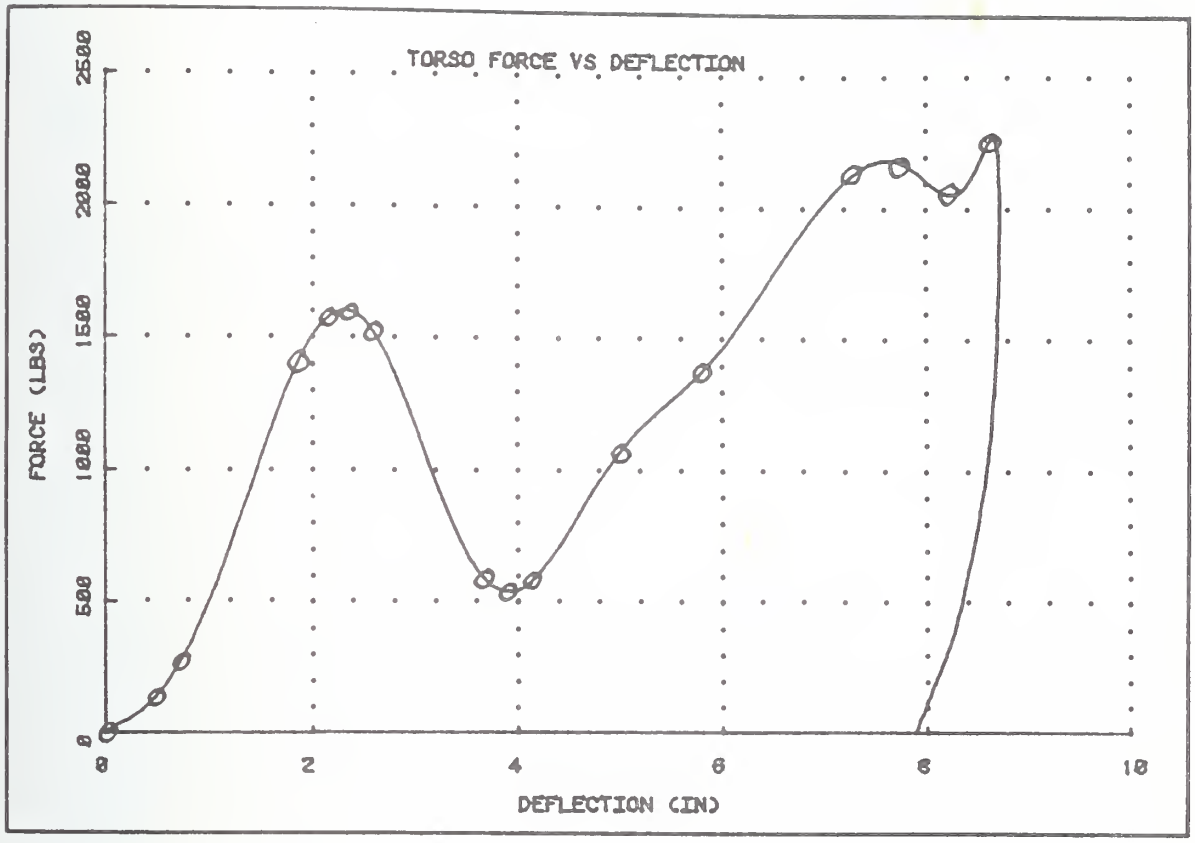
Deflection	Force	Deflection	Force
0.0	0.0	6.92	686.37
2.15	599.92	7.51	643.38
2.93	553.35	8.38	618.02
3.53	500.97	8.72	629.04
4.11	491.51	9.27	671.34
4.67	543.96	10.36	804.36
5.08	606.41	10.72	772.41
6.46	712.07		

Filter cutoff frequency: 25 Hz.

Test: Torso (dynamic) Date: October 16, 1984

Vehicle: Plymouth Volare

Options:



G= 0.904 R= 0.042 K= 4338.77

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F=1000.1

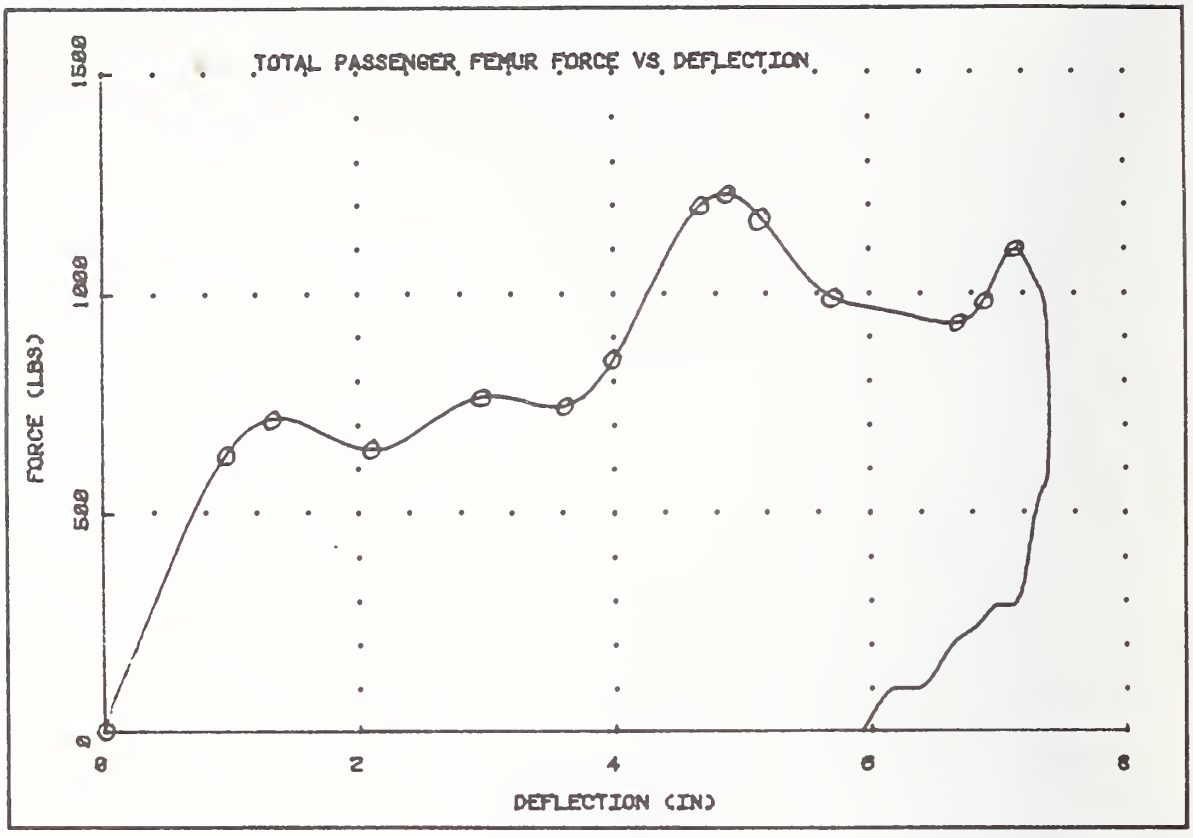
Deflection	Force	Deflection	Force
0.0	0.0	3.87	537.60
0.44	102.40	4.09	578.56
0.74	302.08	4.99	1075.20
1.87	1402.88	5.82	1392.64
2.08	1561.60	7.31	2150.40
2.38	1582.08	7.68	2191.36
2.60	1520.64	8.29	2053.12
3.65	599.04	8.65	2273.28

Filter cutoff frequency: 100 Hz.

Test: Passenger Side Femur (dynamic) Date: October 18, 1984

Vehicle: Ford LTD

Options:



G= 0.801 R= 0.053 K= 856.43

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D=1000.0 δ_F= 1000.1

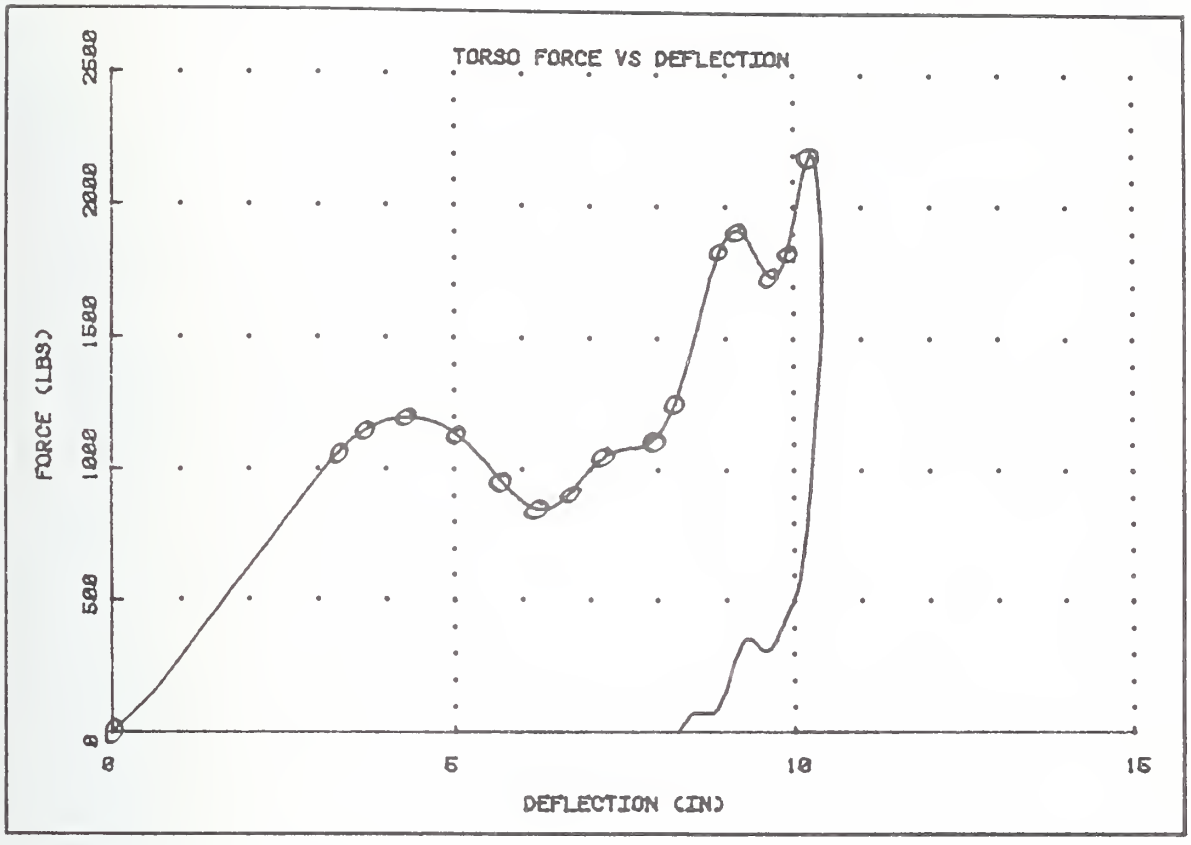
Deflection	Force	Deflection	Force
0.0	0.0	4.86	1228.80
0.90	619.52	5.15	1167.36
1.27	716.80	5.67	988.16
2.10	634.88	6.72	926.72
3.00	773.12	6.87	983.04
3.60	752.64	7.16	1100.80
3.97	849.92		
4.64	1187.84		

Filter cutoff frequency: 100 Hz.

Test: Torso (dynamic) Date: October 18, 1984

Vehicle: Ford LTD

Options:



G= 0.795 R= 0.073 K= 1858.08

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

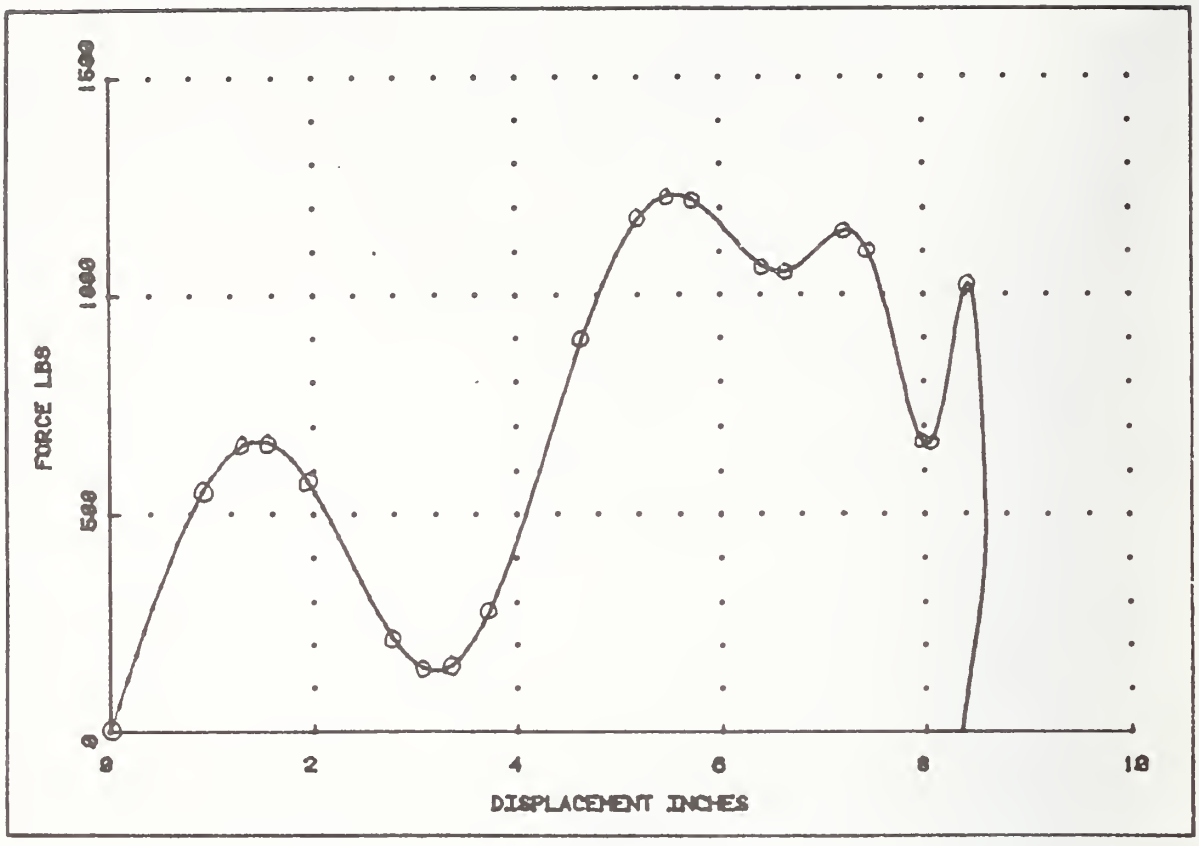
Deflection	Force	Deflection	Force
0.0	0.0	7.22	1049.60
3.29	1059.84	7.89	1111.04
3.96	1177.60	8.26	1249.28
4.40	1198.08	8.92	1848.32
5.01	1136.64	9.14	1909.76
5.60	972.80	9.67	1730.56
6.19	849.92	9.90	1807.36
6.63	890.88	10.26	2206.72

Filter cutoff frequency: 100 Hz.

Test: Passenger side femur (dynamic) Date: February 4, 1985

Vehicle: Chevy Celebrity

Options: No radio or ashtray



G= .971 R= .008 V= 2343

C= μ_1= μ_2= .=

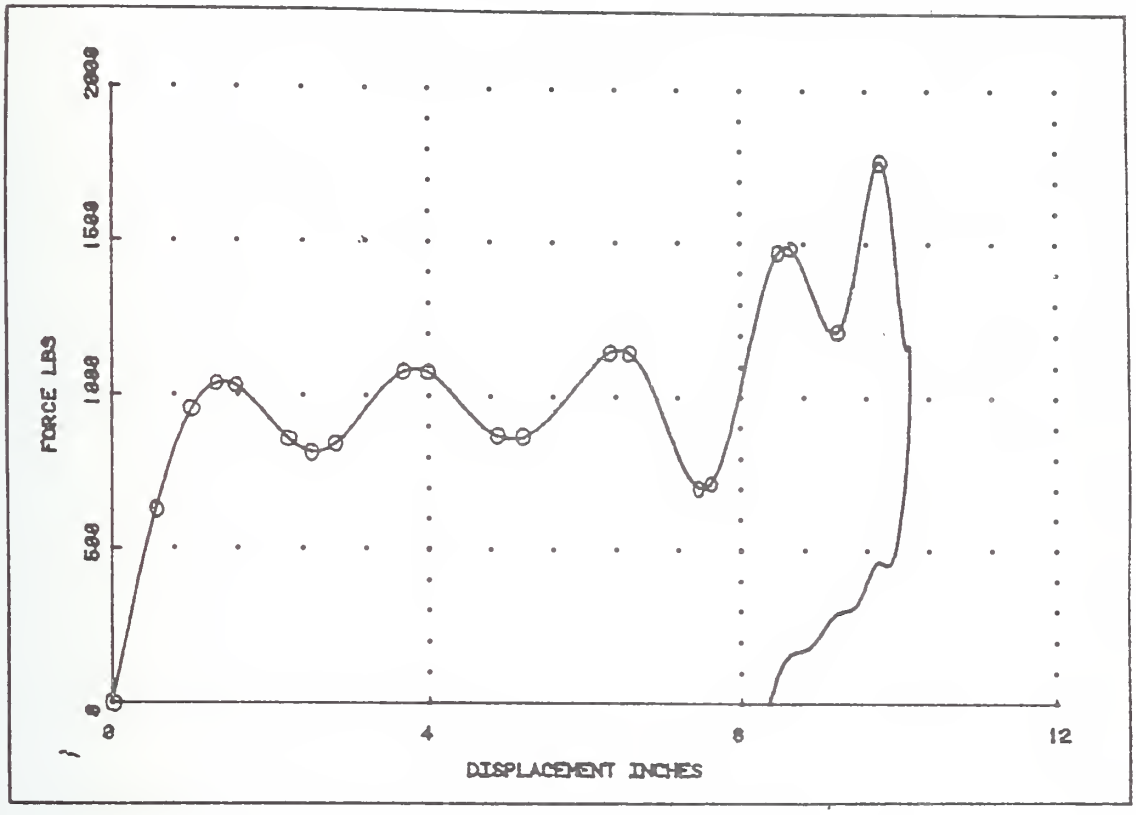
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_1 =1000.0 δ_F= 1000.0

Deflection	Force	Deflection	Force
0.0	0.0	5.23	1186.5
.91	549.9	5.54	1228.7
1.31	658.5	5.71	1217.9
1.55	663.8	6.36	1073.5
1.90	578.4	6.60	1051.4
2.76	217.4	7.19	1146.5
3.21	139.5	7.49	1102.5
3.43	169.1	7.98	662.2
3.72	279.2	8.02	658.2
4.64	897.6	8.43	1024.5

Test: Torso (dynamic) Date: February 4, 1985

Vehicle: Chevy Celebrity

Options: No radio or ashtray



G= .819 R= .057 K= 1095

c= μ_1= μ_2= =

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_E= 1000.0

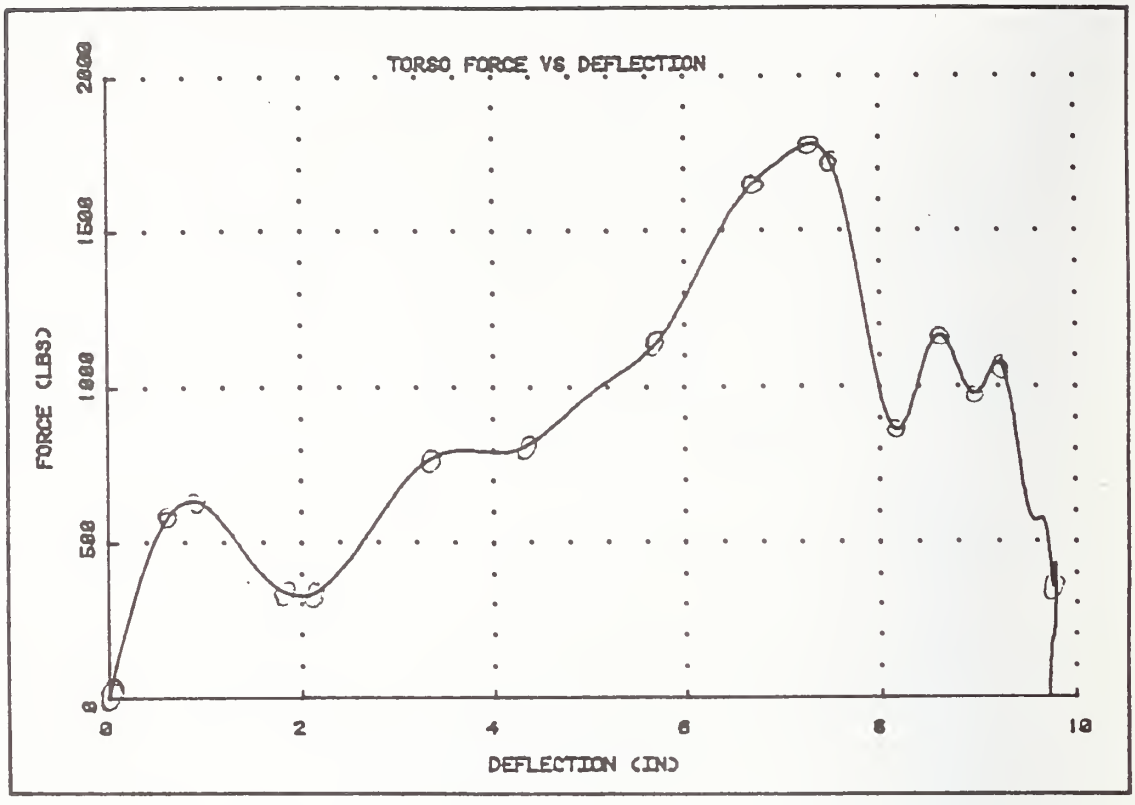
Deflection	Force	Deflection	Force
0.0	0.0	4.87	870.5
.56	634.9	5.29	879.8
1.01	955.2	6.18	1121.4
1.34	1039.7	6.56	1143.0
1.55	1029.5	7.53	702.7
2.19	860.8	7.59	715.3
2.50	815.1	8.45	1465.6
2.81	842.6	8.61	1484.3
3.78	1086.9	9.18	1209.0
4.06	1061.4	9.78	1769.5

Note: Corresponding VAX data file is [MGAPROG] CELEBRITY. F20;1

Test: Torso (dynamic) Date: March 12, 1985

Vehicle: Chevy Celebrity

Options:



G= 0.993 R= 0.001 K= 7279.0

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.0

Deflection	Force	Deflection	Force
0.0	0.0	6.74	1661.8
0.57	556.0	7.27	1778.9
0.88	634.5	7.49	1732.1
1.82	335.4	8.18	861.7
2.13	337.5	8.62	1164.7
3.33	769.7	8.96	975.8
4.33	810.8	9.20	1075.8
5.71	1146.8	9.76	353.2

*Note:
Corresponding VAX data file is [MGAPROG] CELEBRITY. F20;2 (second test done to check out MGA's data acquisition system).

APPENDIX C

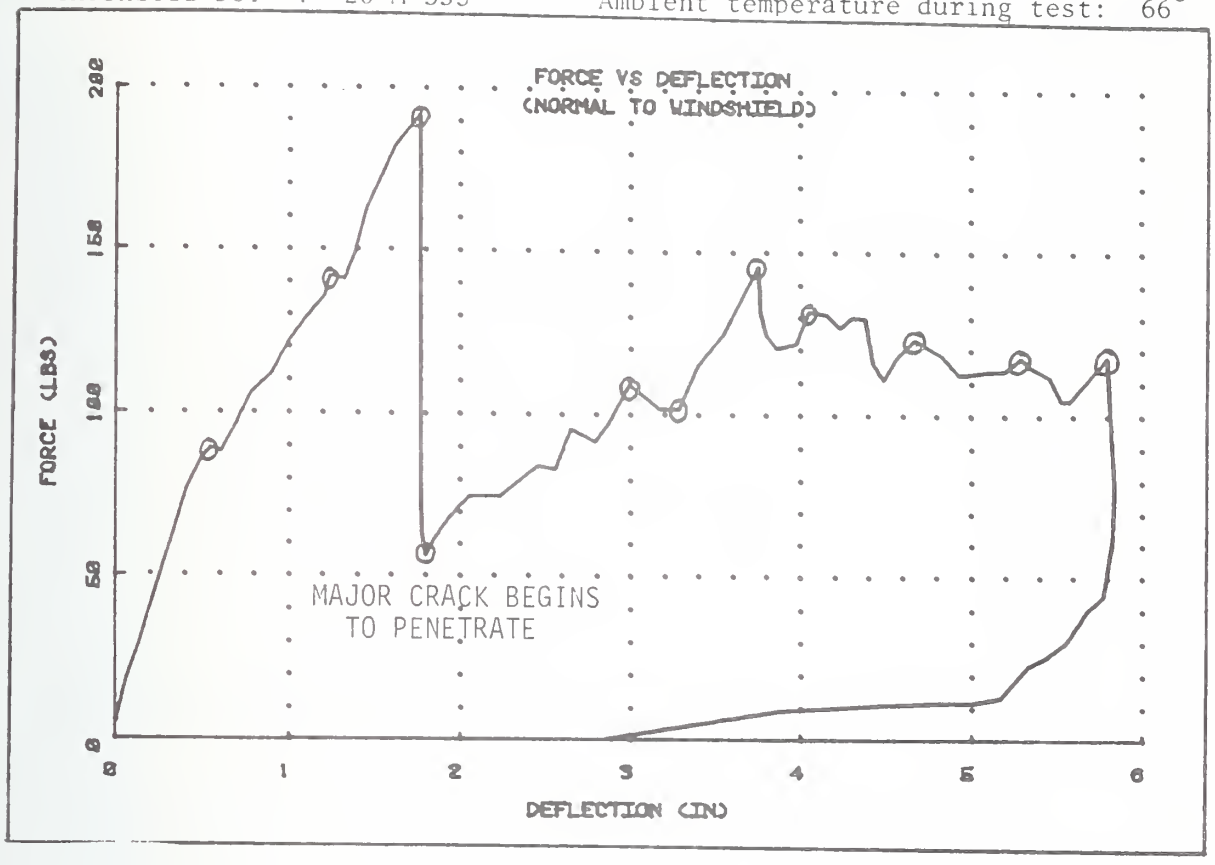
STATIC WINDSHIELD TEST RESULTS

Test: Windshield (static) Date: August 21, 1984

Vehicle: Honda Civic CVCC

Options: No radio

Windshield DOT #: 20 M 355 Ambient temperature during test: 66°



G= 0.489 R= 0.062 K= 218

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	5.29	118.01
0.53	88.32	5.80	119.04
1.22	142.33		
1.76	191.23		
1.79	56.06		
2.99	109.05		
3.29	101.12		
3.74	146.17		
4.04	132.09		
4.67	123.13		

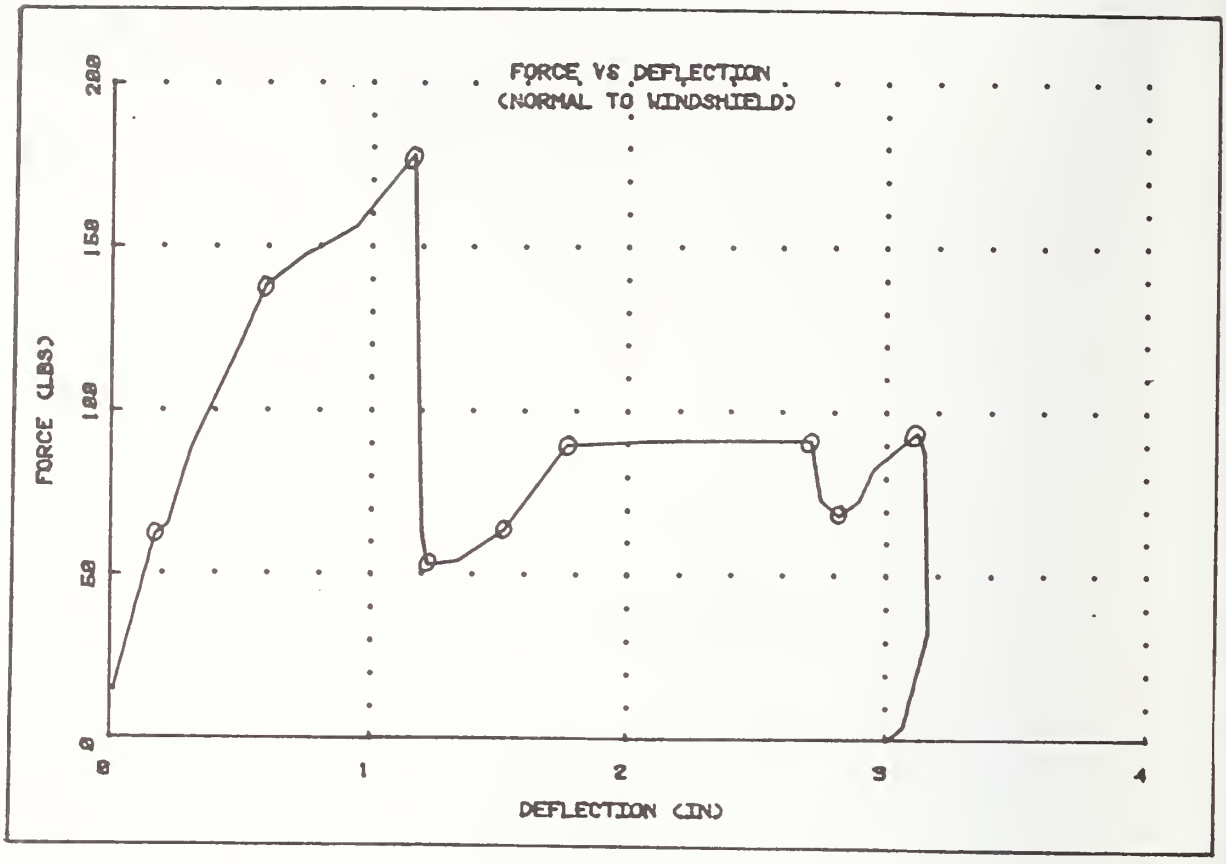
COMMENT: Static test data is not representative of dynamic data

Test: Windshield (static) Date: August 28, 1984

Vehicle: Ford LTD

Options: Air conditioning, radio missing

Windshield DOT #: 75FM-M91 Ambient temperature during test: 75°



G= 0.953 R= 0.006 K= 300

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
0.17	62.47		
0.59	138.05		
1.17	178.20		
1.22	53.04		
1.53	63.91		
1.76	89.54		
2.71	91.21		
2.81	68.18		
3.12	97.97		

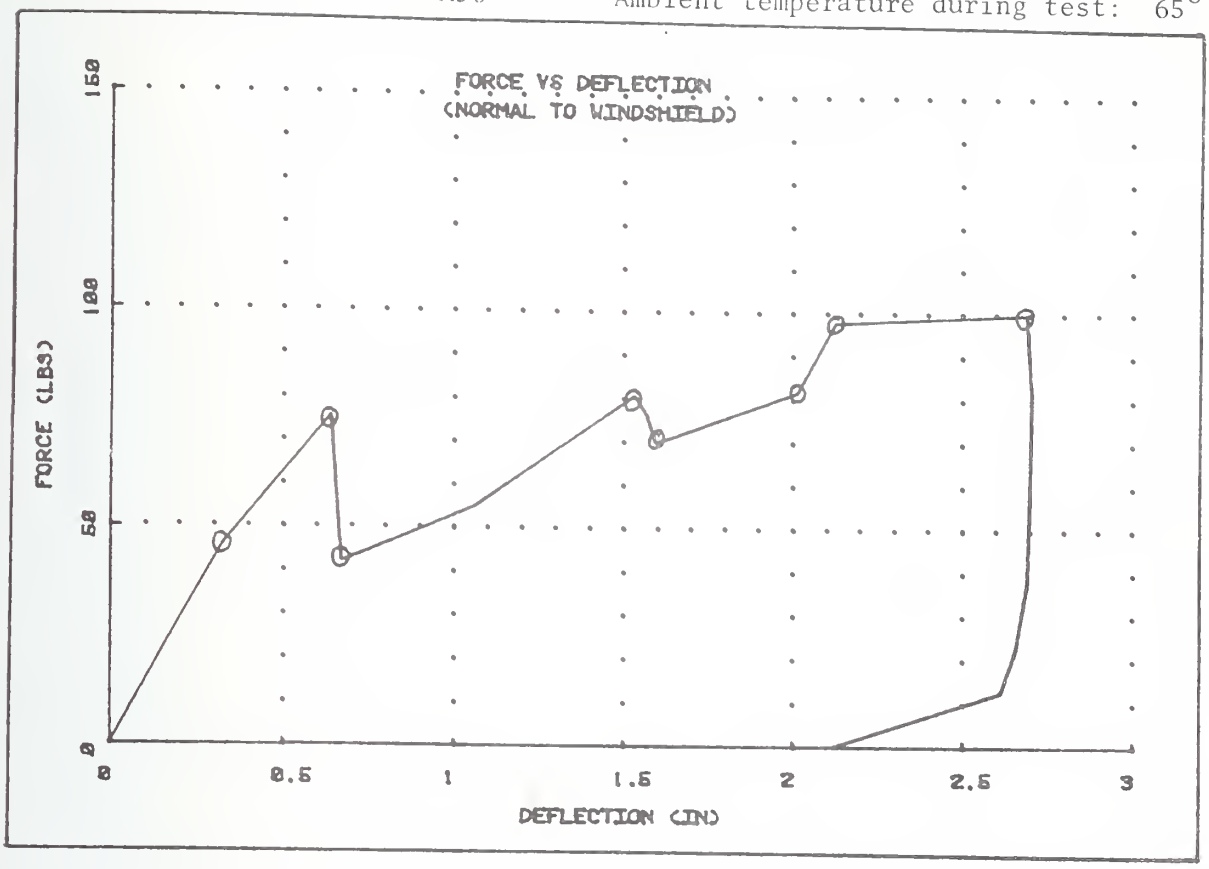
COMMENT: Static test data is not representative of dynamic data

Test: Windshield (static) Date: September 5, 1984

Vehicle: Ford Mustang

Options:

Windshield DOT #: 75 FM-M90 Ambient temperature during test: 65°



G= 0.784 R= 0.031 K= 345

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00		
0.32	46.07		
0.63	75.40		
0.67	41.89		
1.53	80.63		
1.59	69.64		
2.01	81.68		
2.12	97.91		
2.68	100.01		

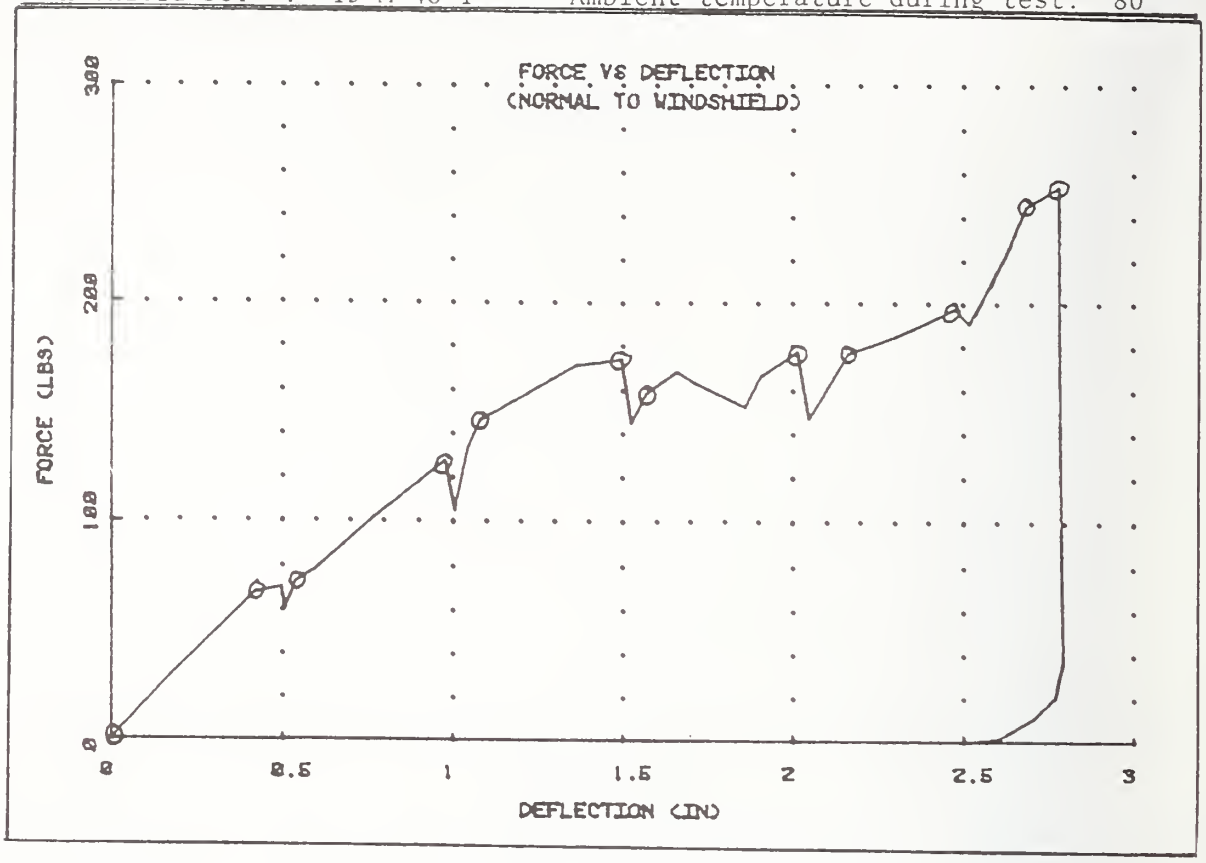
COMMENT: Static test data is not representative of dynamic data

Test: Windshield (static) Date: August 17, 1984

Vehicle: 1976 Chevy Monza

Options: Metal dash with foam crash pad on front

Windshield DOT #: 19 M-46 1 Ambient temperature during test: 80°



G= 0.911 R= 0.006 K= 612

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.1

Deflection	Force	Deflection	Force
0.00	0.00	2.16	176.64
0.41	67.96	2.46	197.76
0.54	73.72	2.69	245.76
0.97	127.48	2.77	254.54
1.07	146.68		
1.49	173.56		
1.57	158.59		
2.02	178.17		

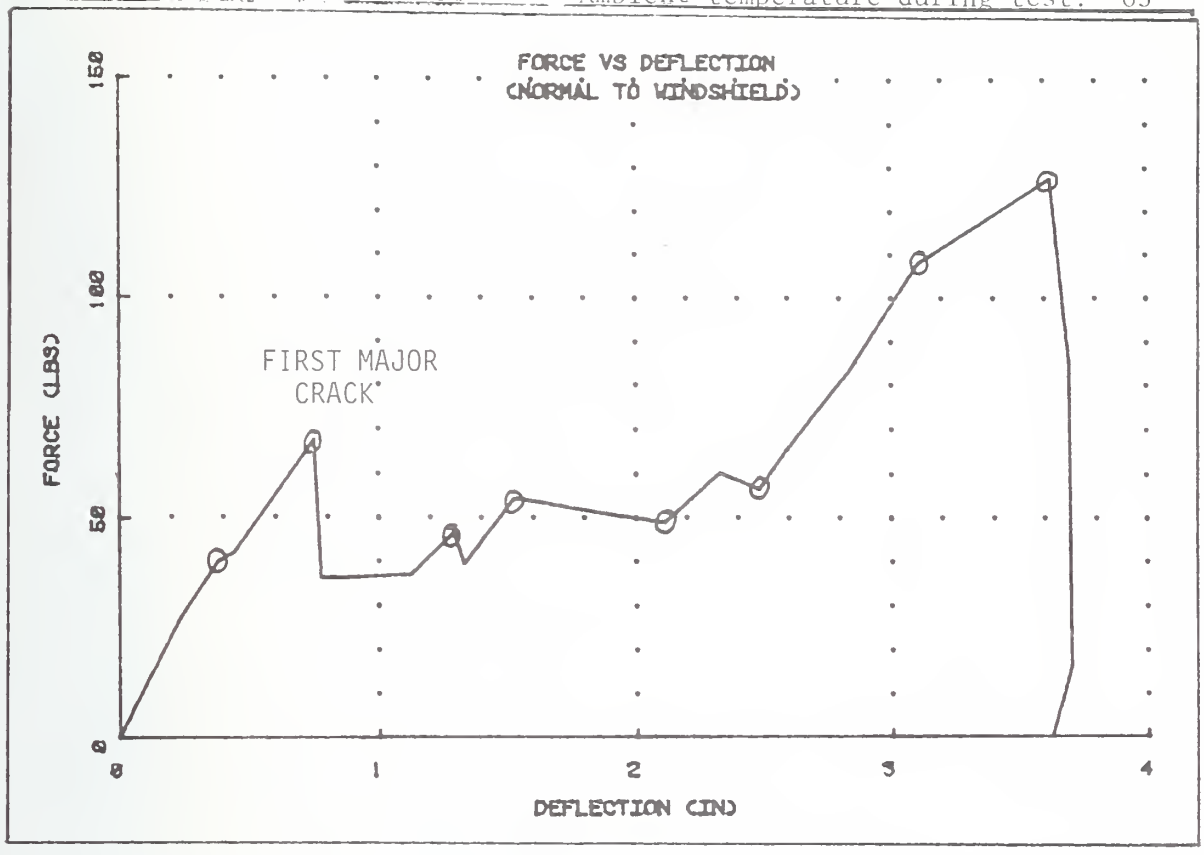
COMMENT: Static test data is not representative of dynamic data

Test: Windshield (static) Date: September 11, 1984

Vehicle: Ford Pinto

Options: Metal dash with foam crash pad on top,
heat control and radio missing

Windshield DOT #: 75EM-M90 Ambient temperature during test: 65°



G= 0.978 R= 0.003 K= 1077

c= μ_1= μ_2= μ_3=

δ_A= δ_B= δ_C= δ_D= δ_F=

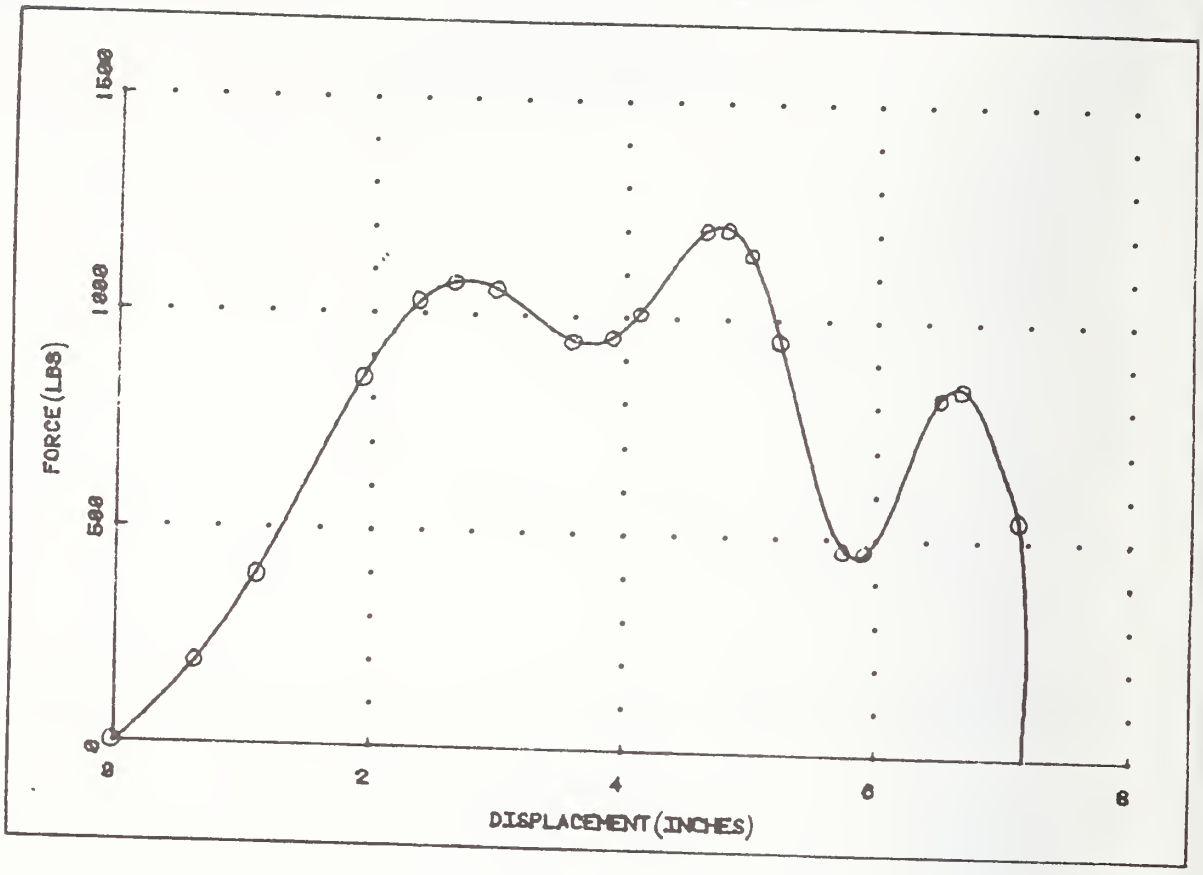
Deflection	Force	Deflection	Force
0.00	0.00		
0.39	40.70		
0.73	67.58		
1.29	47.23		
1.53	54.72		
2.11	48.57		
2.47	56.83		
3.11	108.48		
3.63	127.87		

COMMENT: Static test data is not representative of dynamic data

Test: Driver side femur (dynamic) Date: February 1, 1985

Vehicle: Chevy Celebrity

Options: No radio or ashtray



G= 0.994 R= 0.0008 K= 5803

c= u_1= u_2=

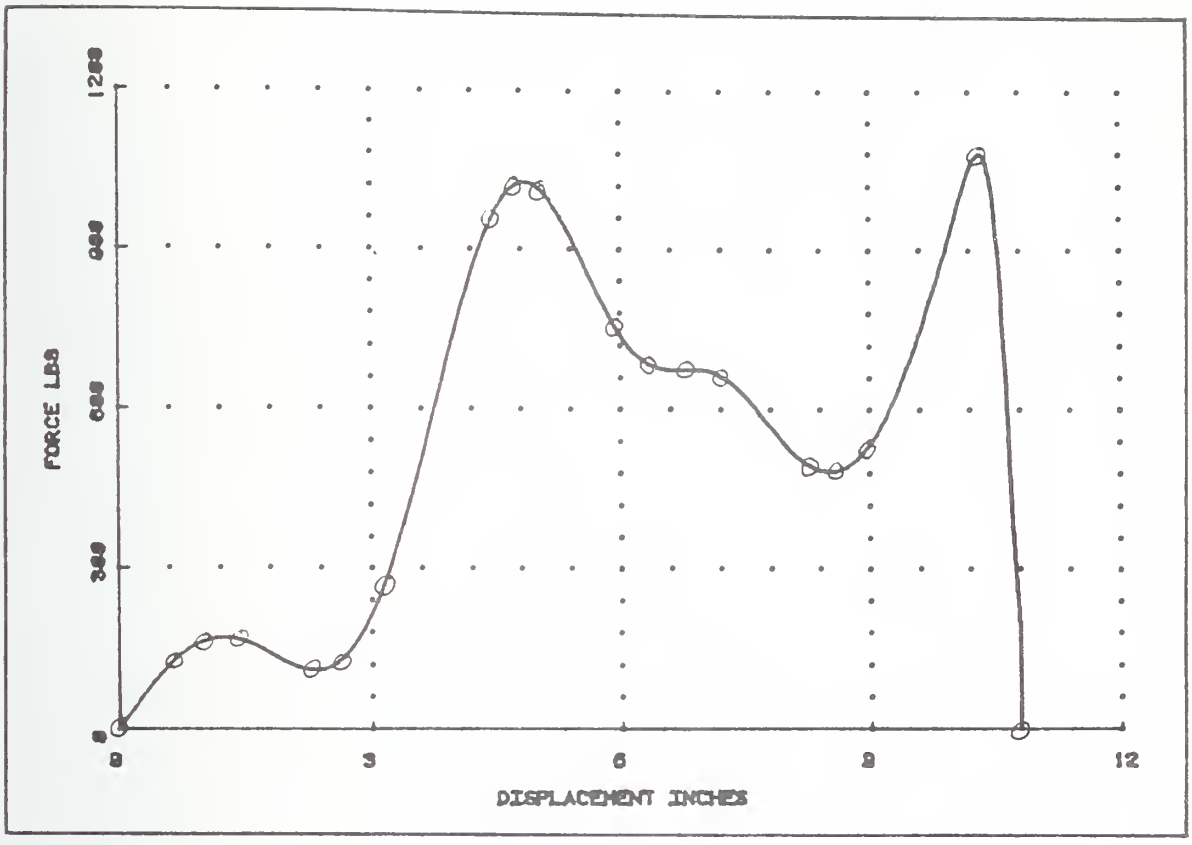
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 - 1000.0 = 1000.0

Deflection	Force	Deflection	Force
0.0	0.0	4.61	1202.5
0.63	191.7	4.80	1210.5
1.09	396.9	4.98	1150.7
1.93	856.8	5.21	952.7
2.36	1028.7	5.72	483.7
2.64	1074.0	5.88	463.5
2.90	1067.5	6.48	822.4
3.59	942.7	6.64	850.8
3.88	951.6	7.12	549.3
4.10	1010.1		

Test: Passenger side femur (dynamic) Date: February 5, 1985

Vehicle: Buick LeSabre

Options:



G= 1.0 R= 0.0 K= N/A

C= μ_1= μ_2= μ_3=

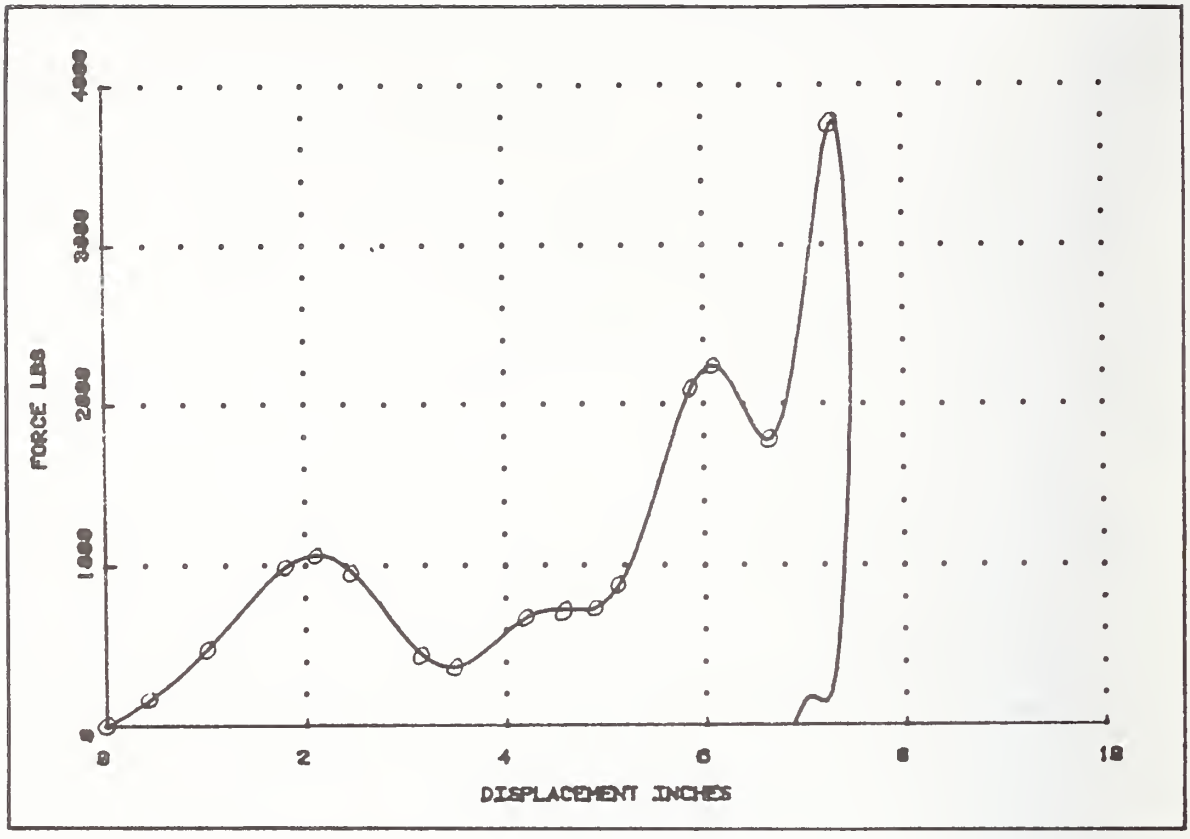
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 10.31 δ_F= 10.78

Deflection	Force	Deflection	Force
0.0	0.0	5.91	759.5
.57	115.1	6.33	688.8
.97	162.7	6.78	673.3
1.38	166.8	7.21	660.5
2.18	109.9	8.22	496.9
2.59	123.2	8.62	486.4
3.14	270.4	8.91	517.9
4.44	956.1	10.31	1080.1
4.72	1019.1		
5.01	1014.8	10.78	0

Test: Torso (dynamic) Date: February 5, 1985

Vehicle: Buick LeSabre

Options:



G= .919 R= .030 K= 11234.

c= μ_1= μ_2= μ_3=

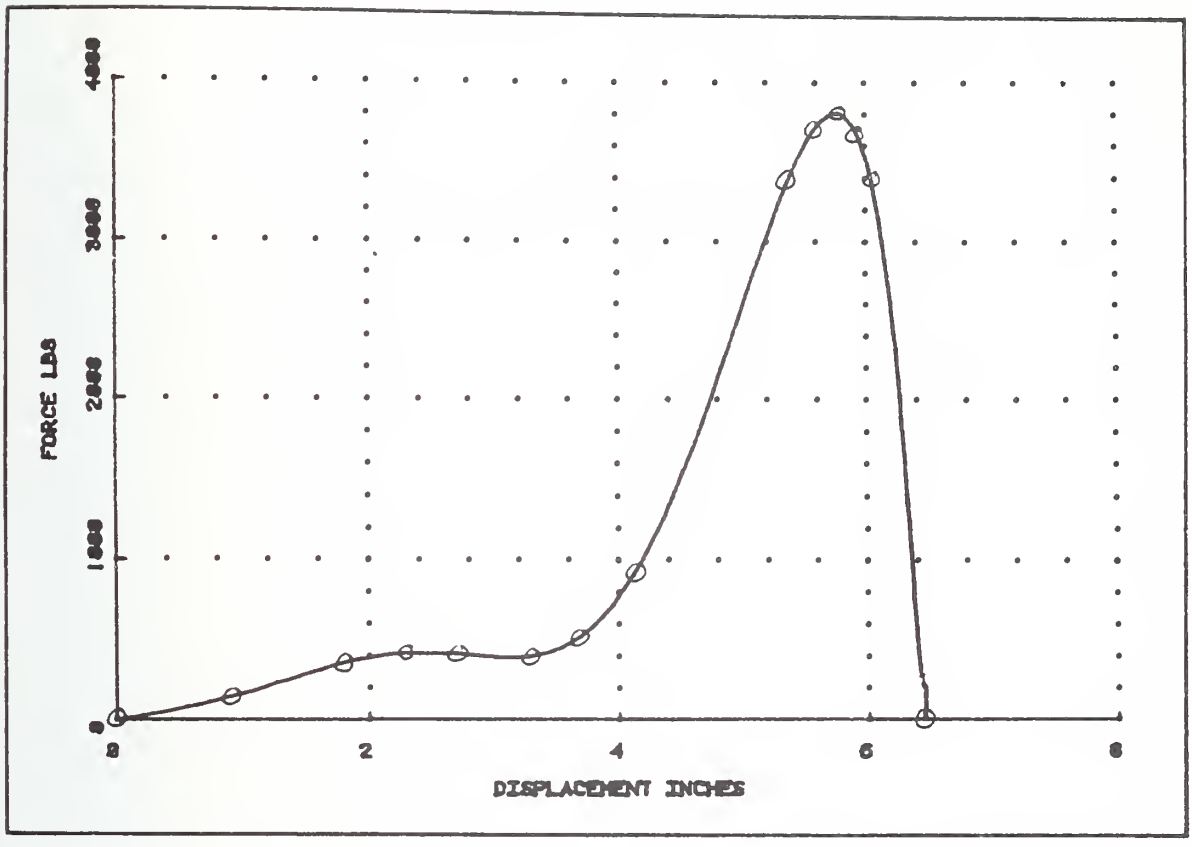
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.0

Deflection	Force	Deflection	Force
0.0	0.0	4.22	685.2
.51	196.1	4.64	724.8
1.01	479.0	4.88	737.5
1.80	993.8	5.13	869.8
2.08	1064.3	5.88	2107.3
2.45	957.8	6.08	2235.4
3.17	425.4	6.62	1773.4
3.44	363.8	7.31	3770.9

Test: Driver side femur (dynamic) Date: February 5, 1985

Vehicle: Buick LeSabre

Options:



G= 1.0 R= 0.0 K= N/A

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 5.79 δ_F= 6.44

Deflection	Force	Deflection	Force
0.0	0.0	5.39	3414.6
.90	142.4	5.59	3708.6
1.80	354.4	5.79	3804.5
2.33	417.1	5.94	3641.9
2.68	408.3	6.03	3415.0
3.27	395.4	6.44	0.0
3.69	532.1		
4.11	907.9		

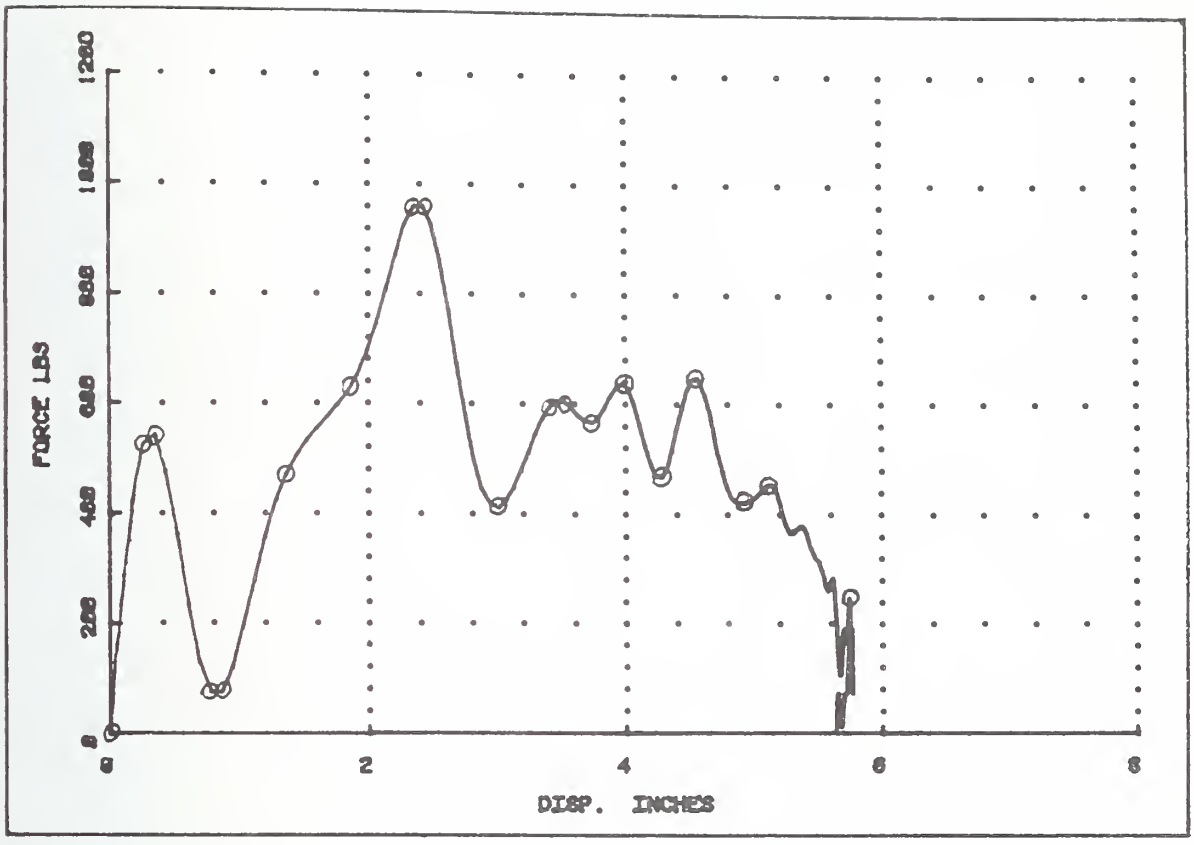
APPENDIX D

DYNAMIC WINDSHIELD TEST RESULTS

Test: Windshield (dynamic) Date: January 10, 1985

Vehicle: Chevy Celebrity

Options:



G= 0.977 R= 0.004 K= 601

c= μ_1= μ_2= μ_3=

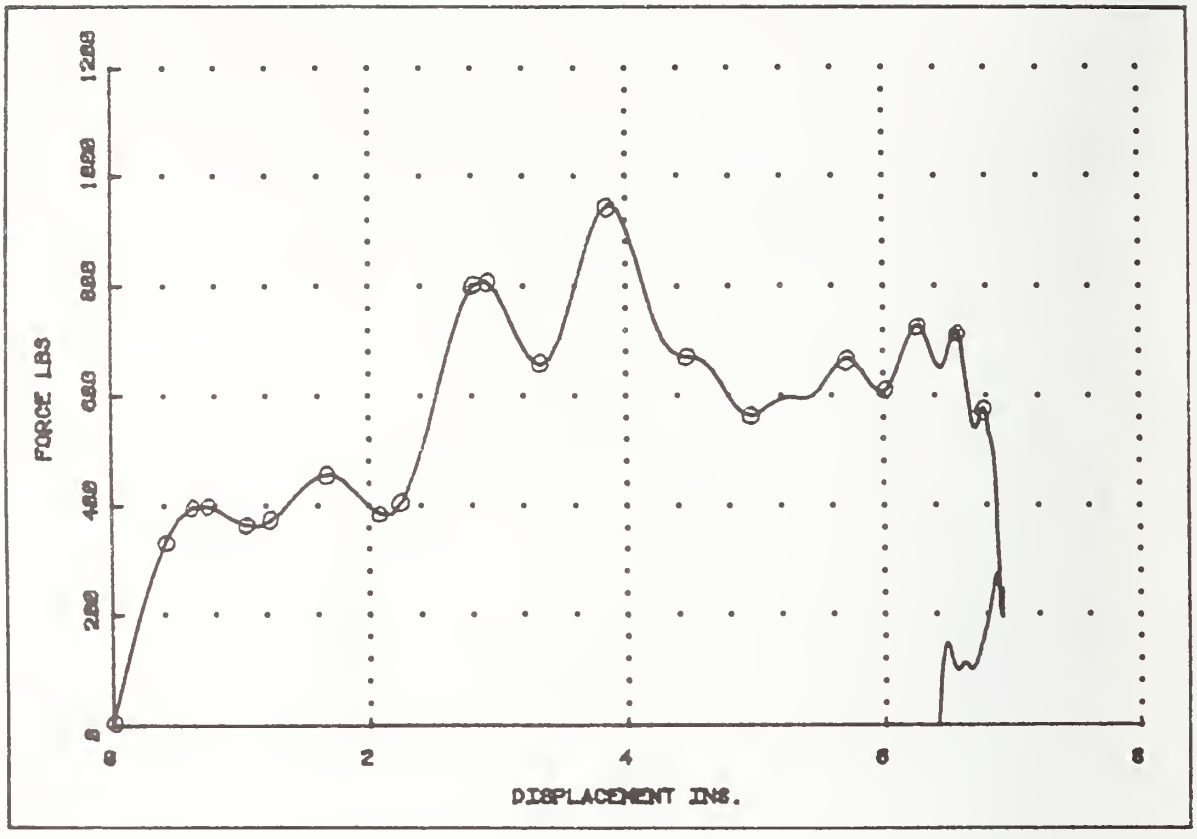
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force
0.0	0.0	3.39	592.9
0.28	529.9	3.51	605.2
0.35	542.2	3.74	568.3
0.75	73.7	3.98	634.4
0.87	73.7	4.25	471.6
1.35	470.0	4.53	645.1
1.87	637.4	4.89	416.3
2.35	960.0	5.13	451.6
2.43	960.0	5.73	247.3
2.99	413.2		

Test: Windshield (dynamic) Date: January 14, 1985

Vehicle: Datsun - Nissan 210

Options:



G= 0.926 R= 0.019 K= 313

c= μ_1= μ_2= μ_3=

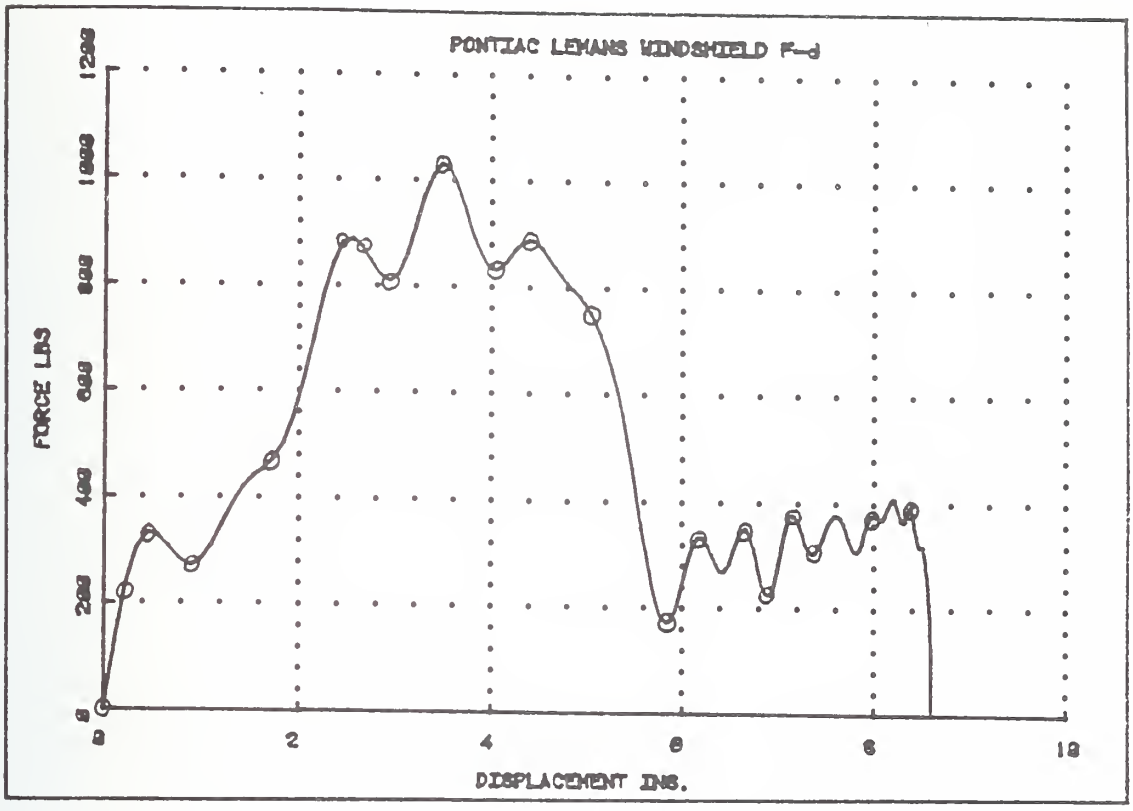
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force
0.0	0.0	2.91	809.5
0.40	328.7	3.31	652.8
0.60	394.8	3.87	946.2
0.72	400.9	4.43	669.7
1.03	364.0	4.94	560.6
1.23	370.2	5.70	668.2
1.67	454.7	6.01	608.3
2.07	382.5	6.28	728.1
2.23	400.9	6.56	715.8
2.83	803.3	6.76	577.5

Test: Windshield (dynamic) Date: January 16, 1985

Vehicle: Pontiac LeMans

Options:



G= 1.0 R= 0 K= N/A

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 8.39* δ_F= 8.6*

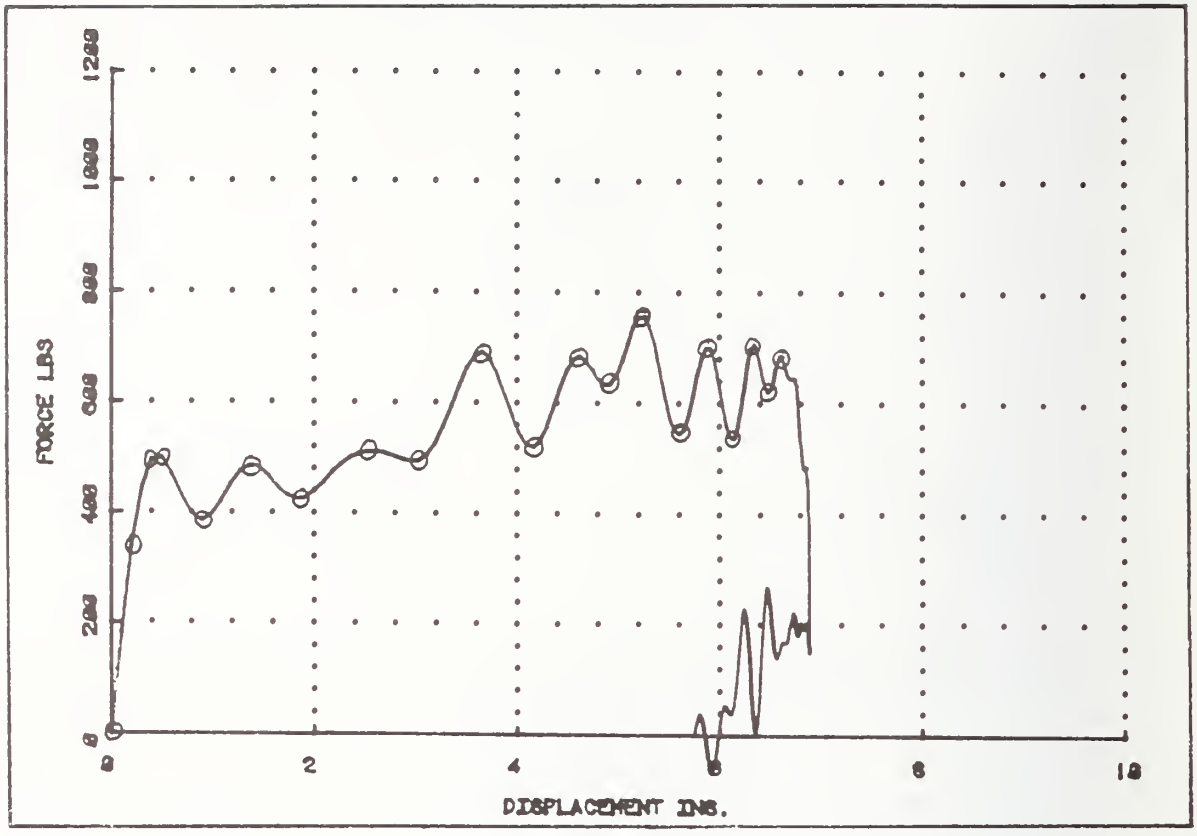
Deflection	Force	Deflection	Force
0	0	4.39	888.1
0.22	231.7	5.03	753.8
0.44	331.0	5.83	172.2
0.88	270.8	6.17	333.7
1.74	471.8	6.66	350.1
2.45	880.7	6.90	224.5
2.65	872.7	7.13	377.4
2.93	808.9	7.35	303.8
3.46	1029.0	8.00	378.6
4.03	831.4	8.39	393.2

*Values for δD and δF are estimates there is no unloading due to complete penetration.

Test: Windshield (dynamic) Date: January 17, 1985

Vehicle: Chevy Nova

Options:



G= 0.834 R= 0.033 K= 257

c= u_1= u_2= u_3=

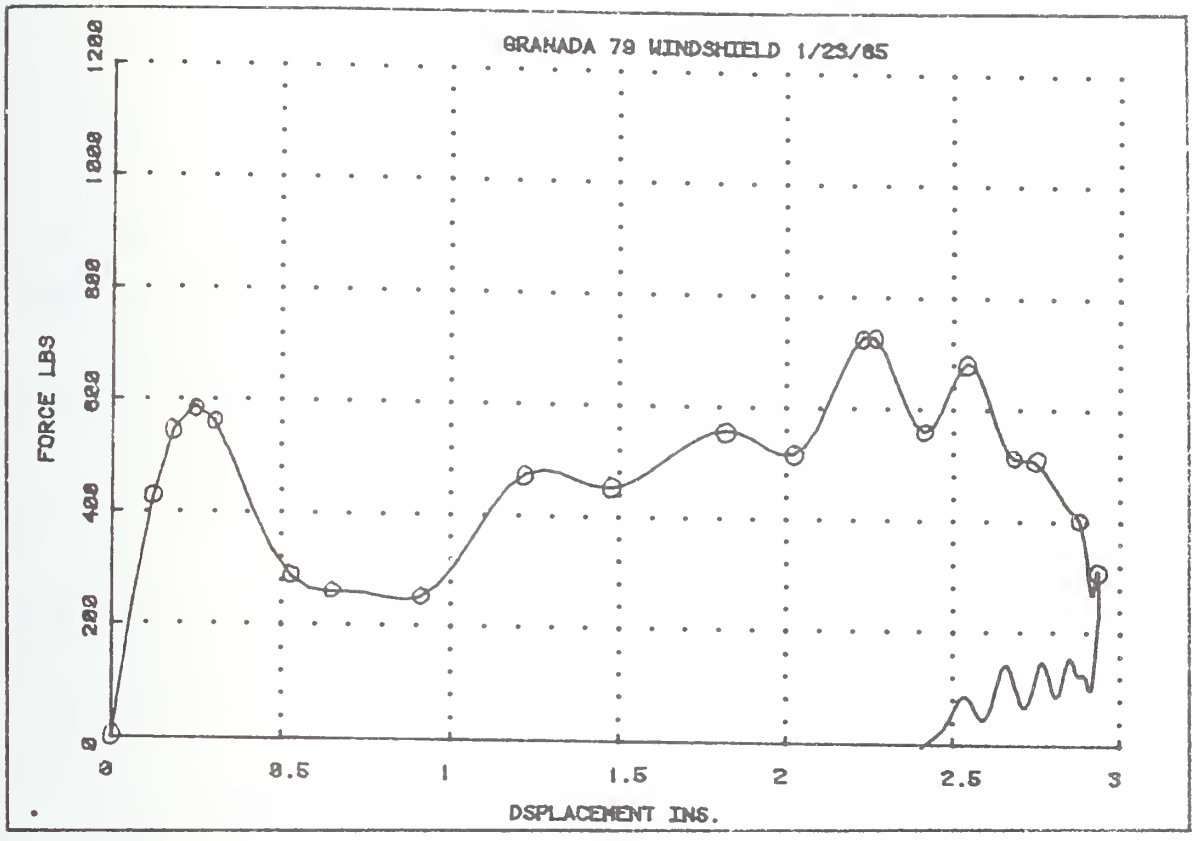
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.0

Deflection	Force	Deflection	Force
0	0	4.16	519.3
0.20	335.5	4.62	682.1
0.40	494.6	4.86	631.9
0.50	498.0	5.26	755.7
0.89	383.8	5.61	543.3
1.37	484.7	5.87	699.4
1.83	423.8	6.14	535.1
2.53	510.3	6.34	705.0
2.95	493.5	6.48	618.2
3.65	689.1	6.60	685.4

Test: Windshield (dynamic) Date: January 23, 1985

Vehicle: Ford Granada

Options:



G= 0.761 R= 0.032 K= 783

c= μ_1= μ_2= μ_3=

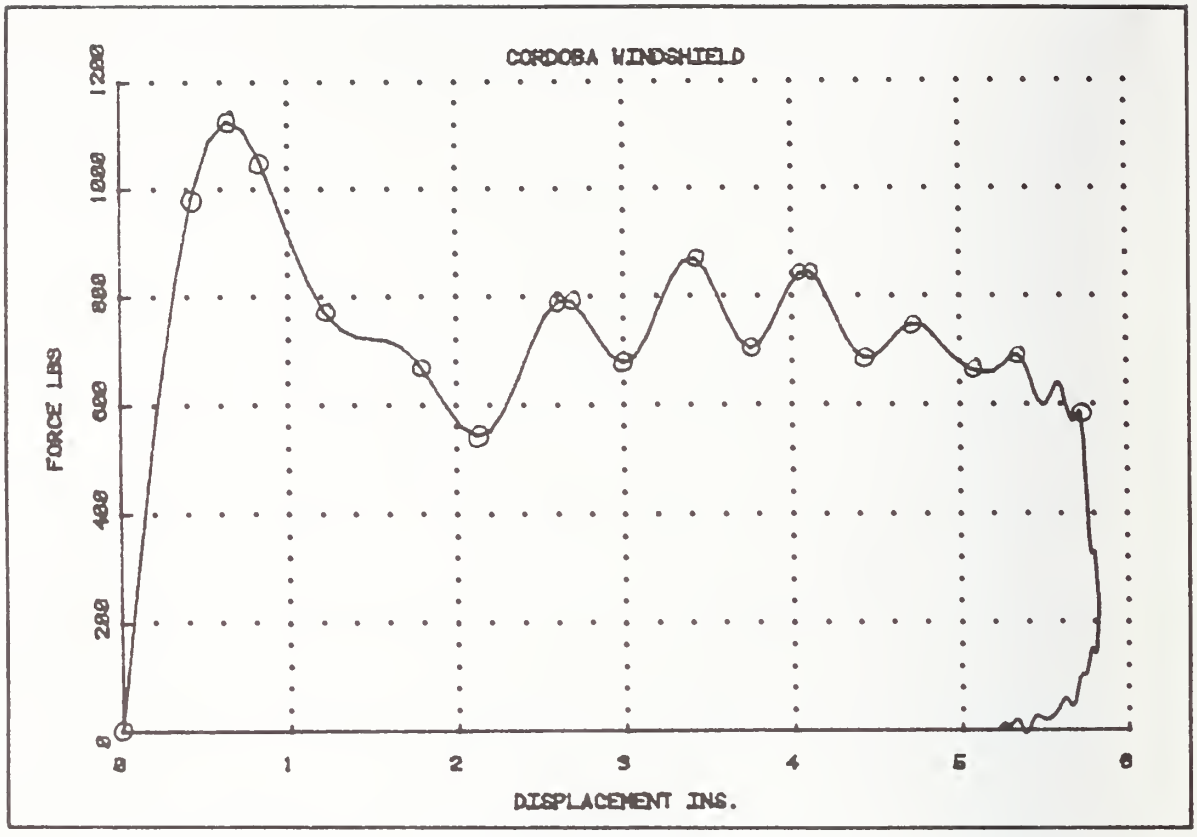
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_E= 1000.0

Deflection	Force	Deflection	Force
0.0	0.0	1.82	557.0
0.12	424.6	2.02	516.9
0.18	546.7	2.23	728.2
0.24	589.1	2.26	725.5
0.30	562.4	2.41	559.8
0.53	286.7	2.54	683.0
0.64	258.8	2.68	512.5
0.91	252.9	2.74	505.7
1.22	475.5	2.88	403.5
1.46	451.4	2.93	311.1

Test: Windshield (dynamic) Date: January 25, 1985

Vehicle: 1979 Chrysler Cordoba

Options:



G= 0.896 R= 0.007 K= 966

c= μ_1= μ_2= μ_3=

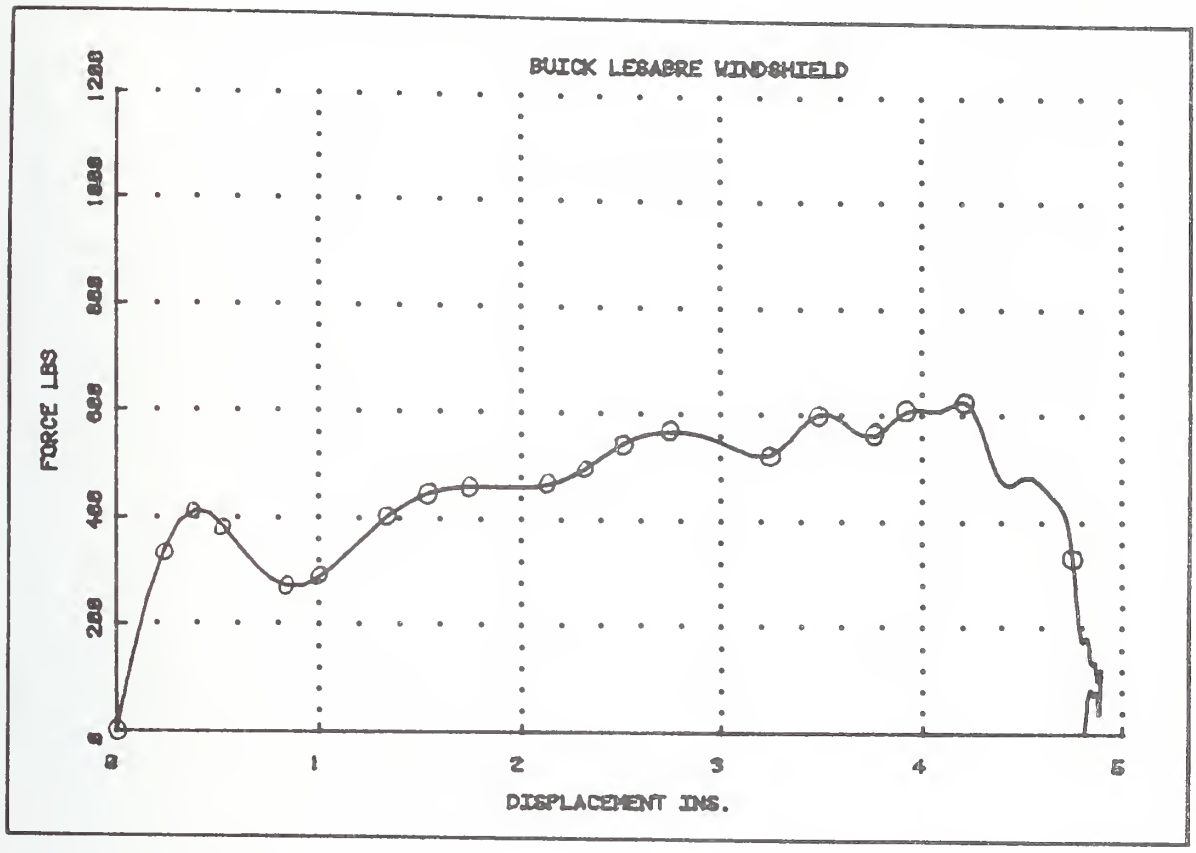
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.0

Deflection	Force	Deflection	Force
0	0	3.42	869.9
0.43	987.6	3.75	702.9
0.64	1126.1	4.05	841.3
0.84	1052.3	4.11	844.2
1.22	769.7	4.42	684.4
1.77	677.1	4.75	746.7
2.11	541.7	5.13	657.5
2.61	791.8	5.35	689.3
2.69	790.3	5.72	585.0
2.99	675.4		

Test: Windshield (dynamic) Date: January 28, 1985

Vehicle: Buick LeSabre

Options:



G= 0.983 R= 0.002 K= 1247

c= μ_1= μ_2= μ_3=

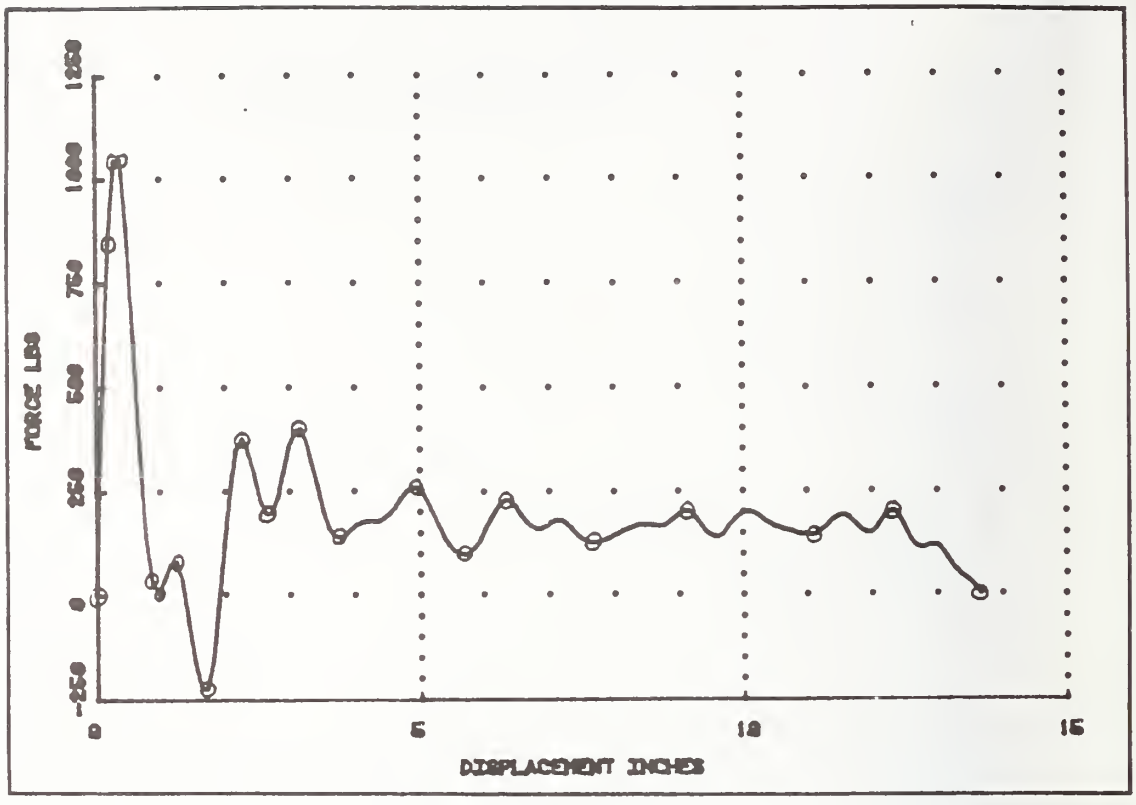
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.0

Deflection	Force	Deflection	Force
0.0	0.0	2.33	498.2
0.23	337.2	2.51	542.1
0.46	405.7	2.74	566.3
0.54	378.5	3.21	522.2
0.84	270.6	3.49	600.9
0.98	283.3	3.74	560.8
1.34	403.5	3.93	608.2
1.55	448.2	4.22	625.1
1.75	461.3	4.75	358.4
2.08	463.3		

Test: Windshield (dynamic) Date: February 15, 1985

Vehicle: V. W. Rabbit

Options: Windshield was mounted using a gasket with no adhesive.



G= 1.0 R= 0.0 K= N/A

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 12.67 δ_F= 12.93

Deflection	Force	Deflection	Force
0.0	0.0	3.16	398.6
0.20	846.0	3.77	136.5
0.30	1044.6	4.96	258.0
0.39	1047.3	5.69	97.9
0.87	27.8	6.33	228.9
0.96	3.5	7.63	126.2
1.24	78.6	9.08	202.8
1.70	-228.2	11.02	144.1
2.26	374.9	12.30	201.0
2.62	194.7	13.67	0.0

Entire windshield was separated from mounting δD and δF are estimated from above data.

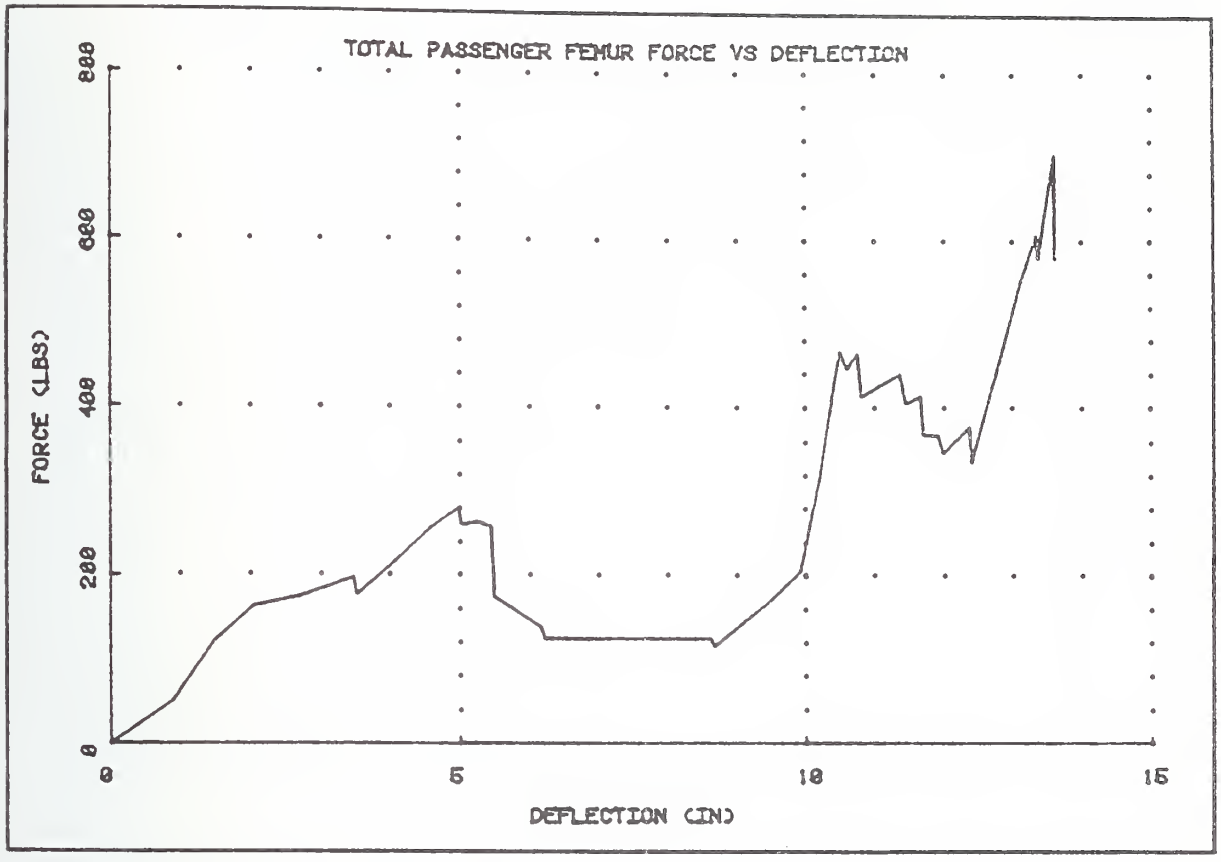
APPENDIX E

PARAMETRIC INSTRUMENT PANEL TEST RESULTS

Test: Passenger Femur Date: _____

Vehicle: Plymouth Volare

Options: Loading Point Variation Test



G=_____ R=_____ K=_____

c=_____ μ_1=_____ μ_2=_____ μ_3=_____

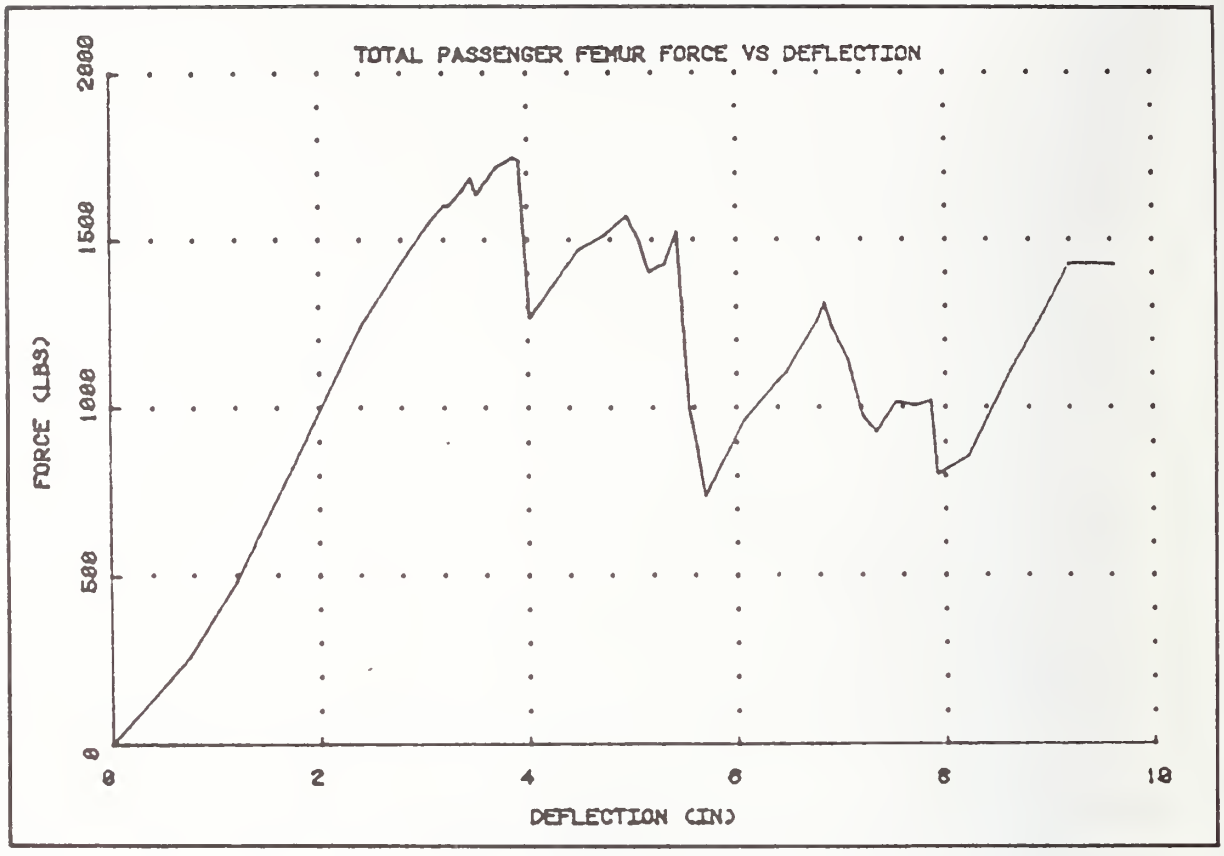
δ_A=_____ δ_B=_____ δ_C=_____ δ_D=_____ δ_F=_____

Deflection	Force	Deflection	Force

Test: Passenger Femur Date: _____

Vehicle: Honda Civic

Options: Loading Point Variation Test



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

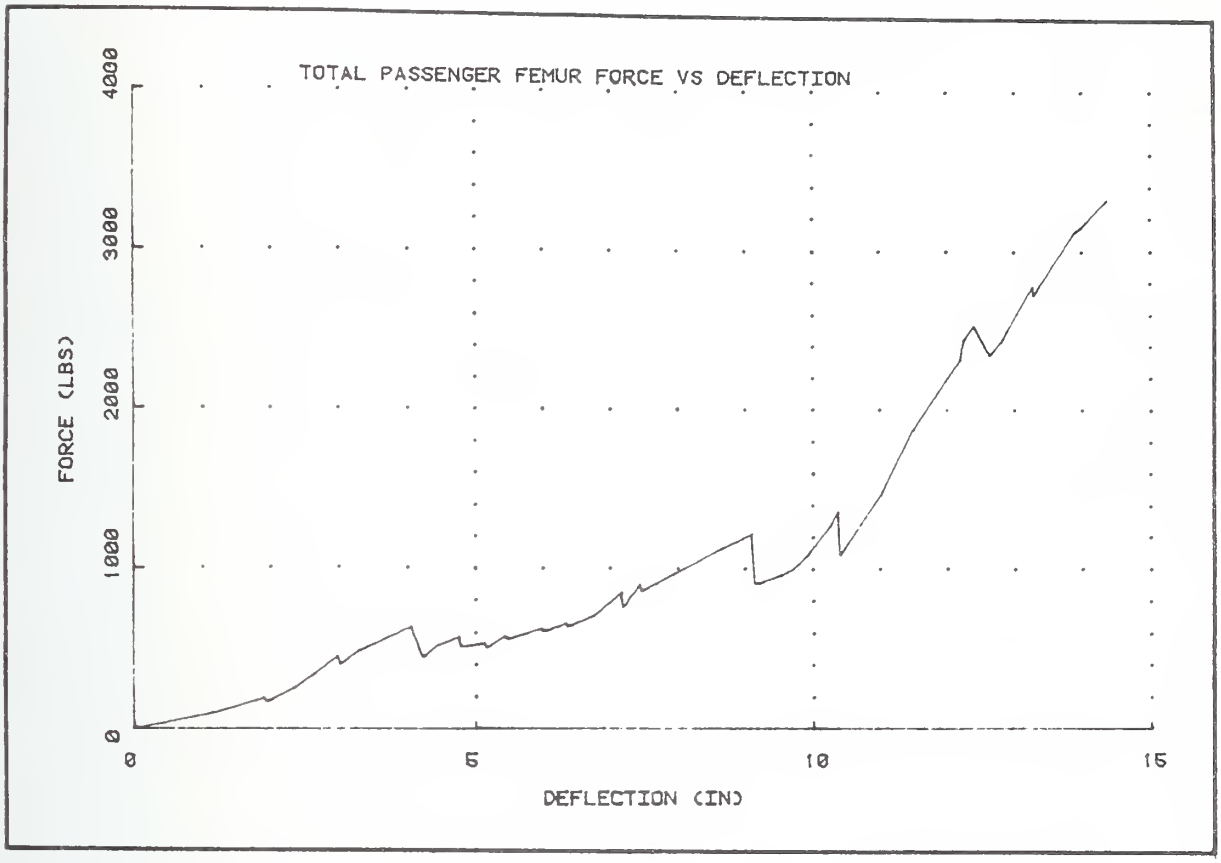
δ_A= _____ δ_B= _____ δ_C= _____ δ_D= _____ δ_F= _____

Deflection	Force	Deflection	Force

Test: Passenger Femur Date:

Vehicle: Ford LTD

Options: Loading Point Variation Test



G= R= K=

c= μ_1= μ_2= μ_3=

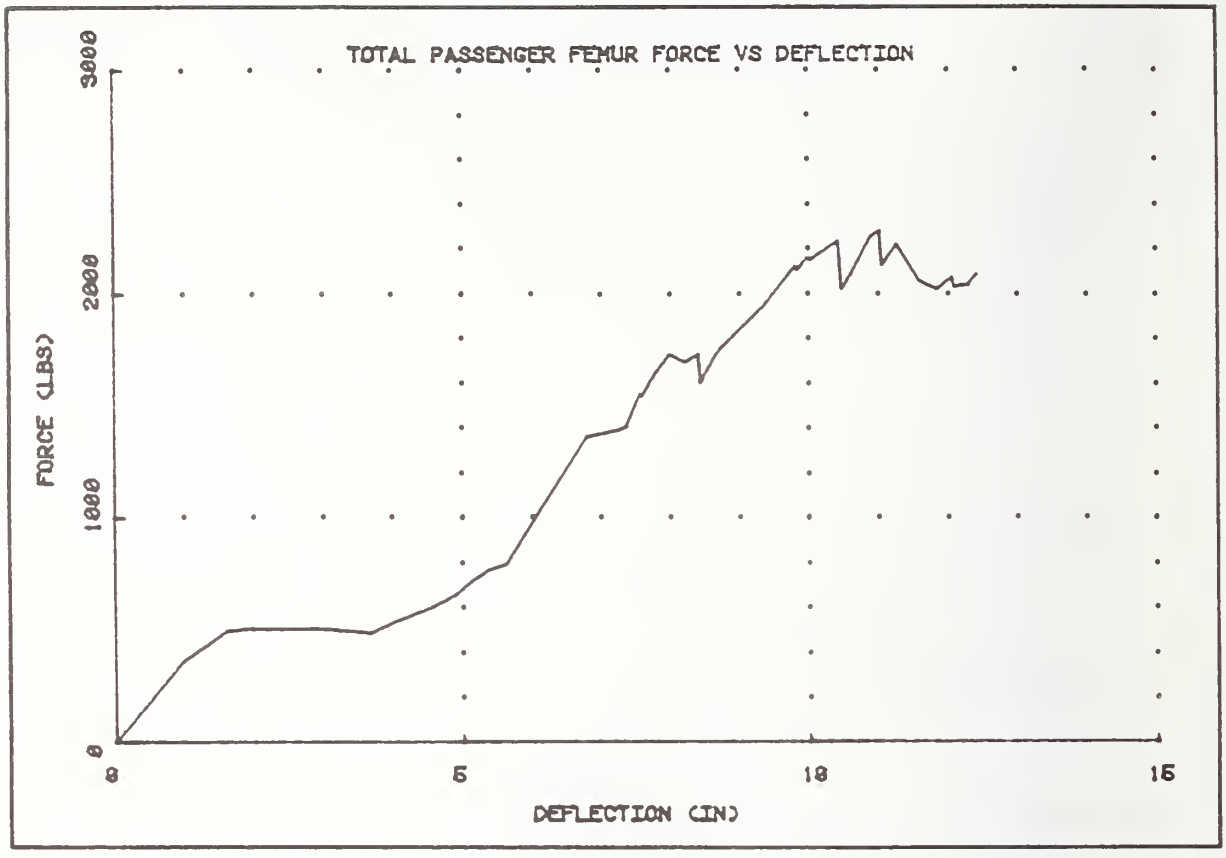
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force

Test: Total Passenger Femurs Date: _____

Vehicle: Chevy Monza

Options: Loading Point Variation Test



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

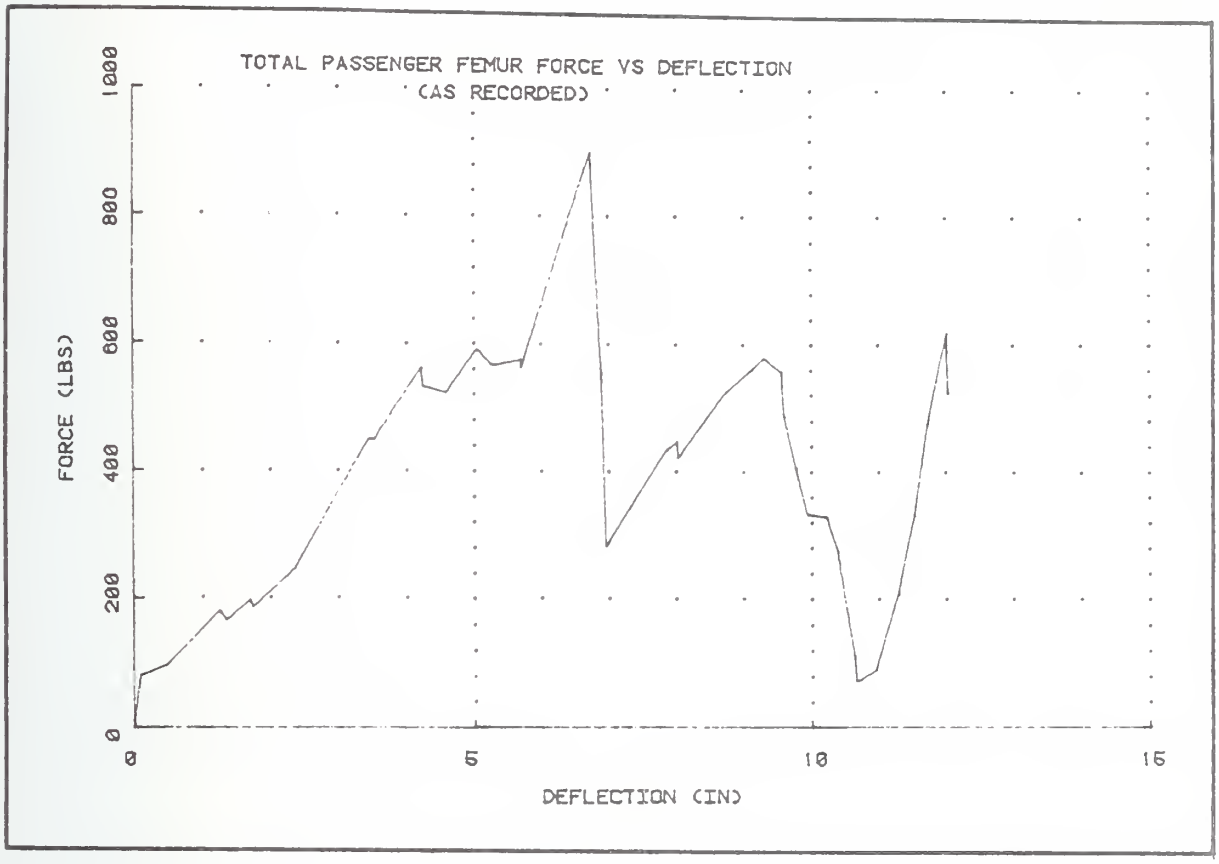
δ_A= _____ δ_B= _____ δ_C= _____ δ_D= _____ δ_F= _____

Deflection	Force	Deflection	Force

Test: Passenger Femur Date:

Vehicle: Plymouth Volare

Options: Loading Angle Variation Test



G= R= K=

c= μ_1= μ_2= μ_3=

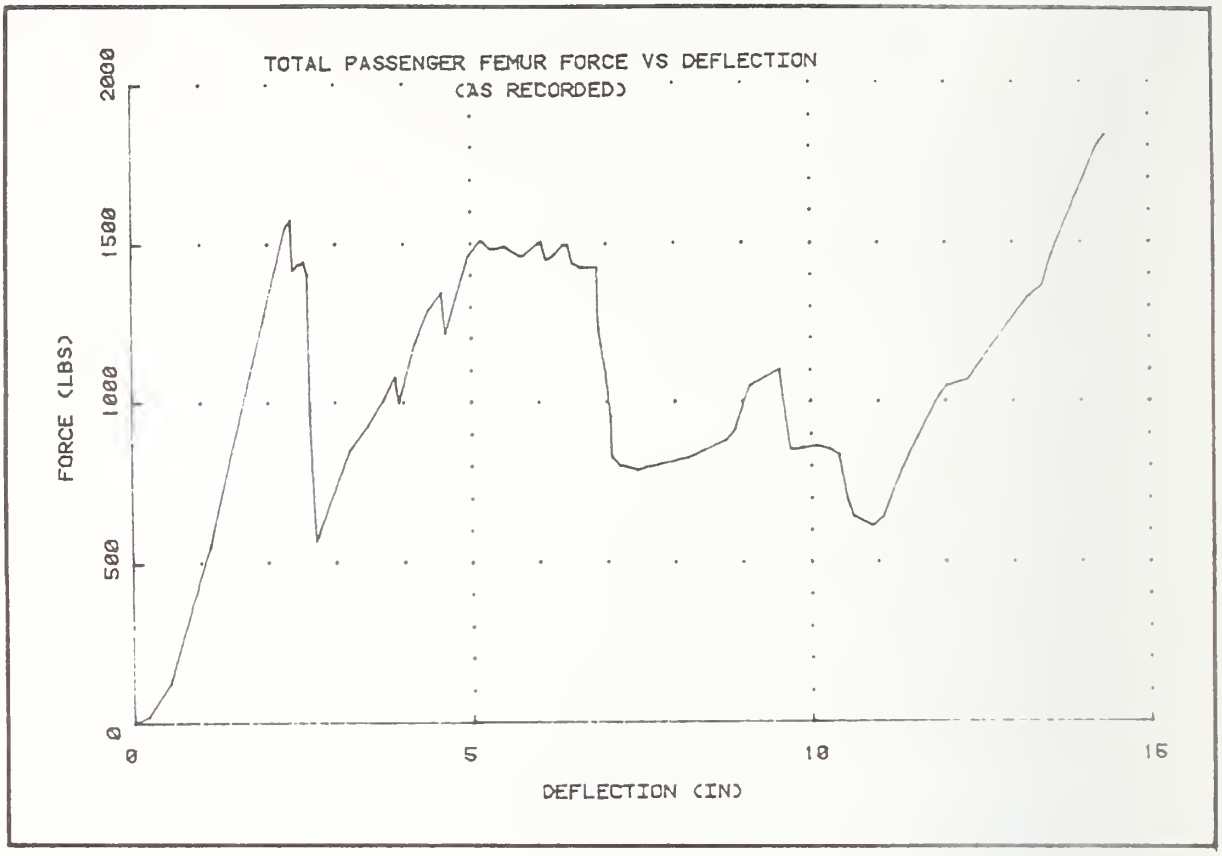
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force

Test: Passenger Femur Date: _____

Vehicle: Honda Civic

Options: Loading Angle Variation Test



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

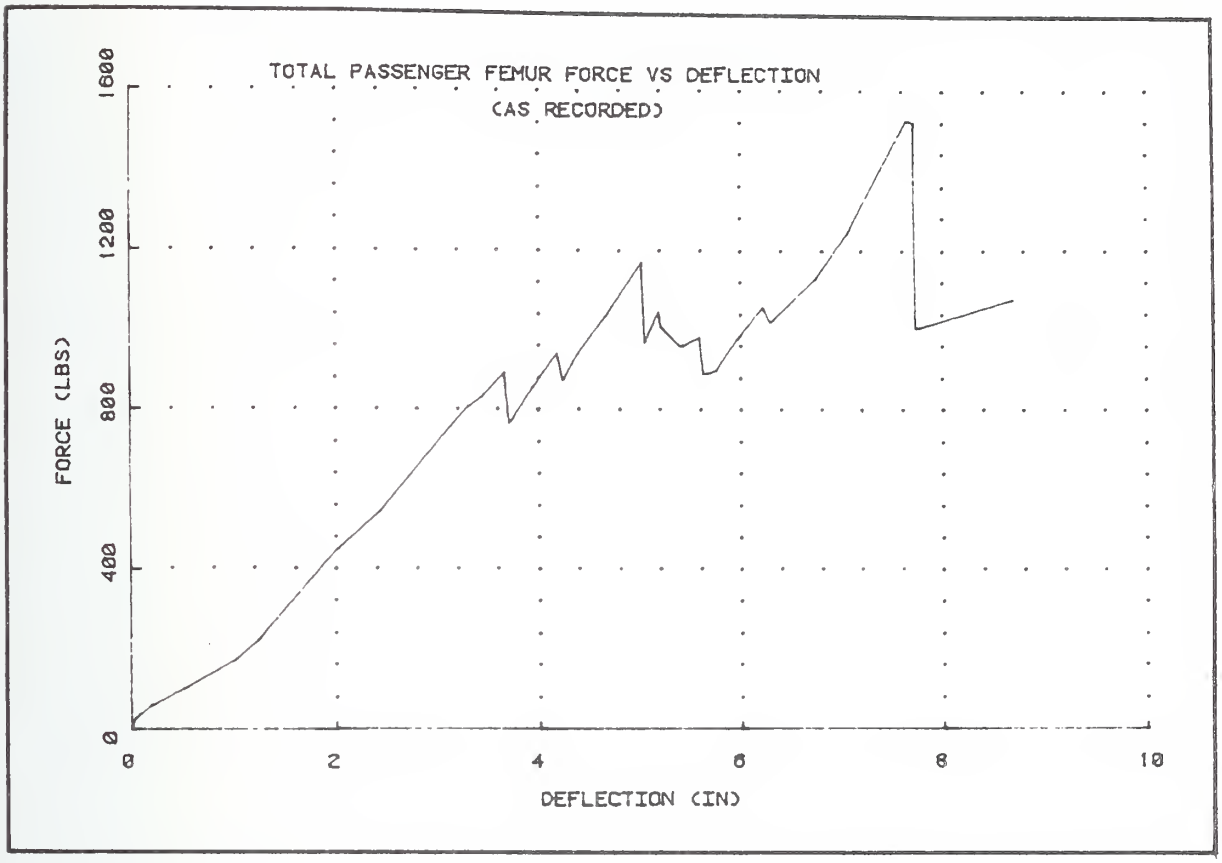
δ_A= _____ δ_B= _____ δ_C= _____ δ_D= _____ δ_F= _____

Deflection	Force	Deflection	Force

Test: Passenger Femur Date: _____

Vehicle: Ford LTD

Options: Loading Angle Variation Test



G=_____ R=_____ K=_____

c=_____ μ_1=_____ μ_2=_____ μ_3=_____

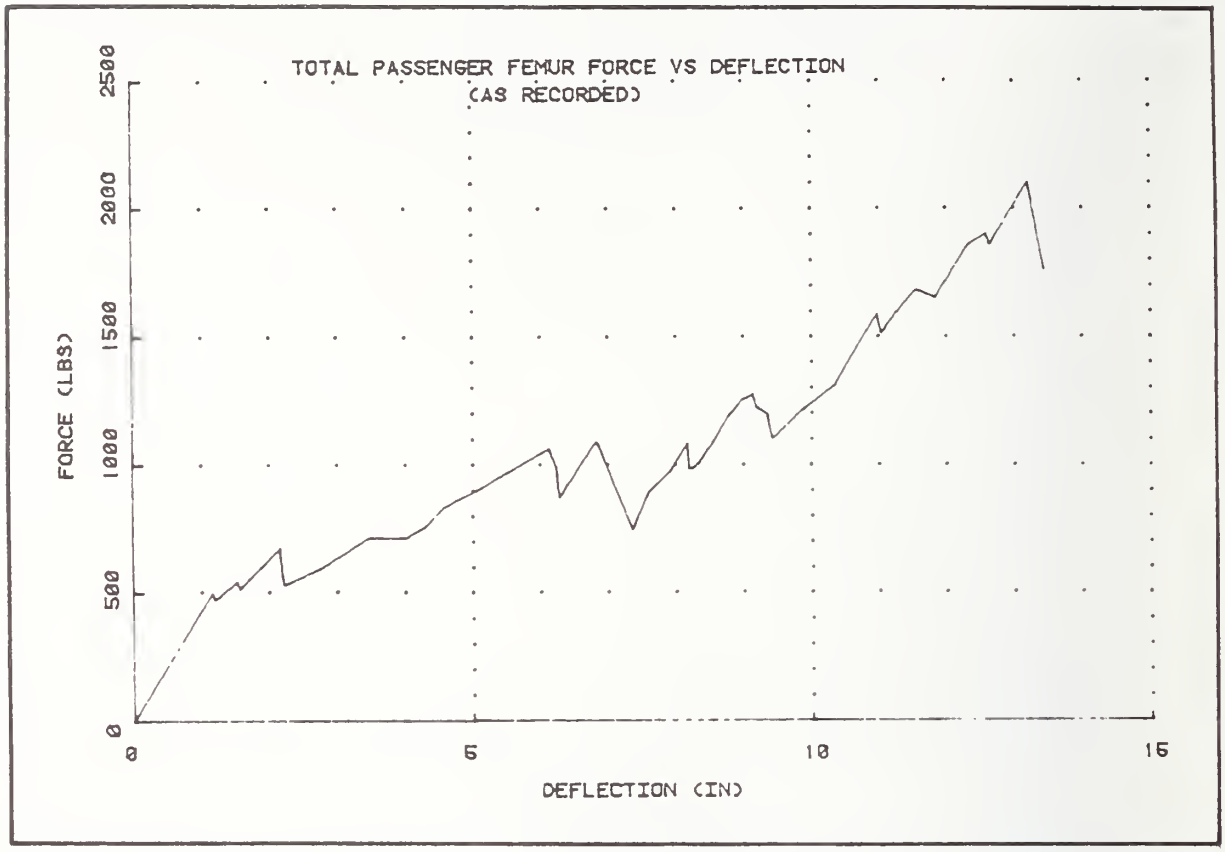
δ_A=_____ δ_B=_____ δ_C=_____ δ_D=_____ δ_F=_____

Deflection	Force	Deflection	Force

Test: Passenger Femur Date: _____

Vehicle: Chevy Monza

Options: Loading Angle Variation Test



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

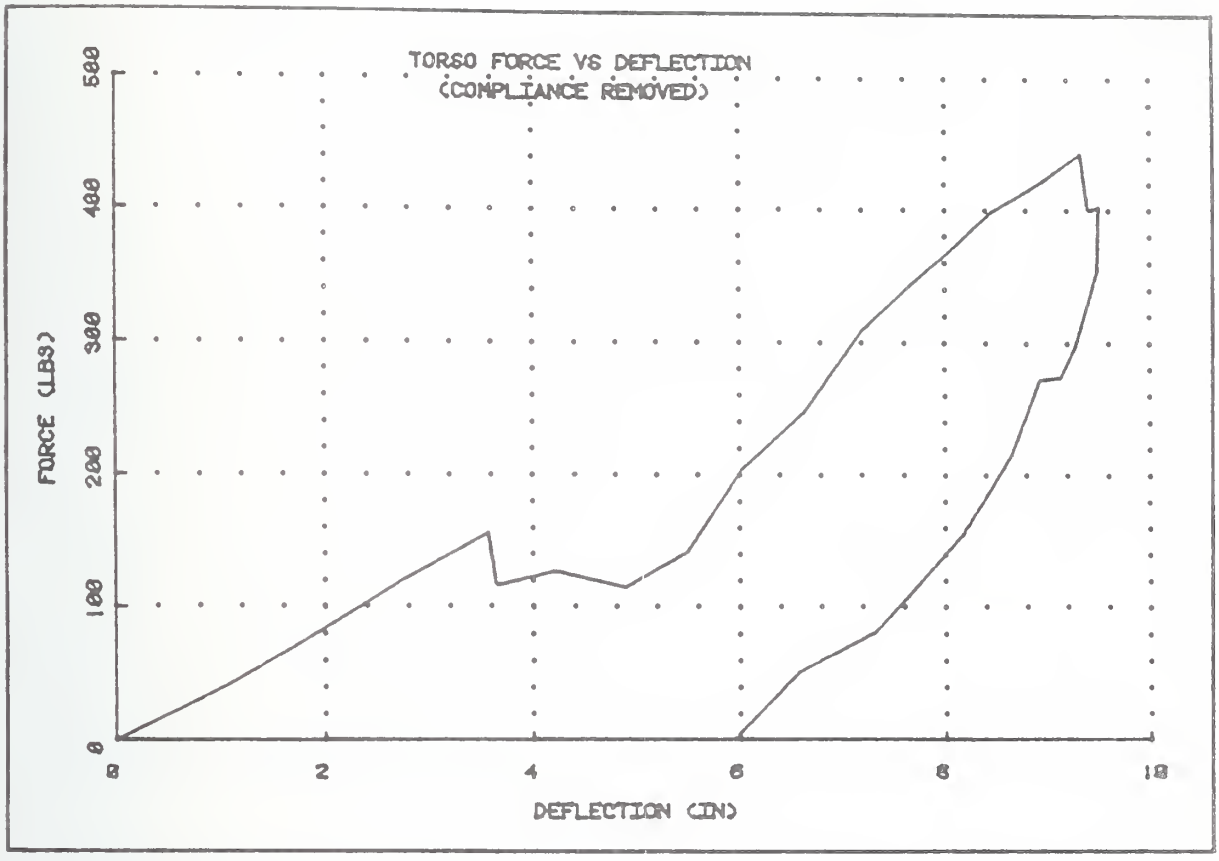
δ_A= _____ δ_B= _____ δ_C= _____ δ_D= _____ δ_F= _____

Deflection	Force	Deflection	Force

Test: Torso Date: _____

Vehicle: Plymouth Volare

Options: Loading Point Variation Test



G=_____ R=_____ K=_____

c=_____ μ_1=_____ μ_2=_____ μ_3=_____

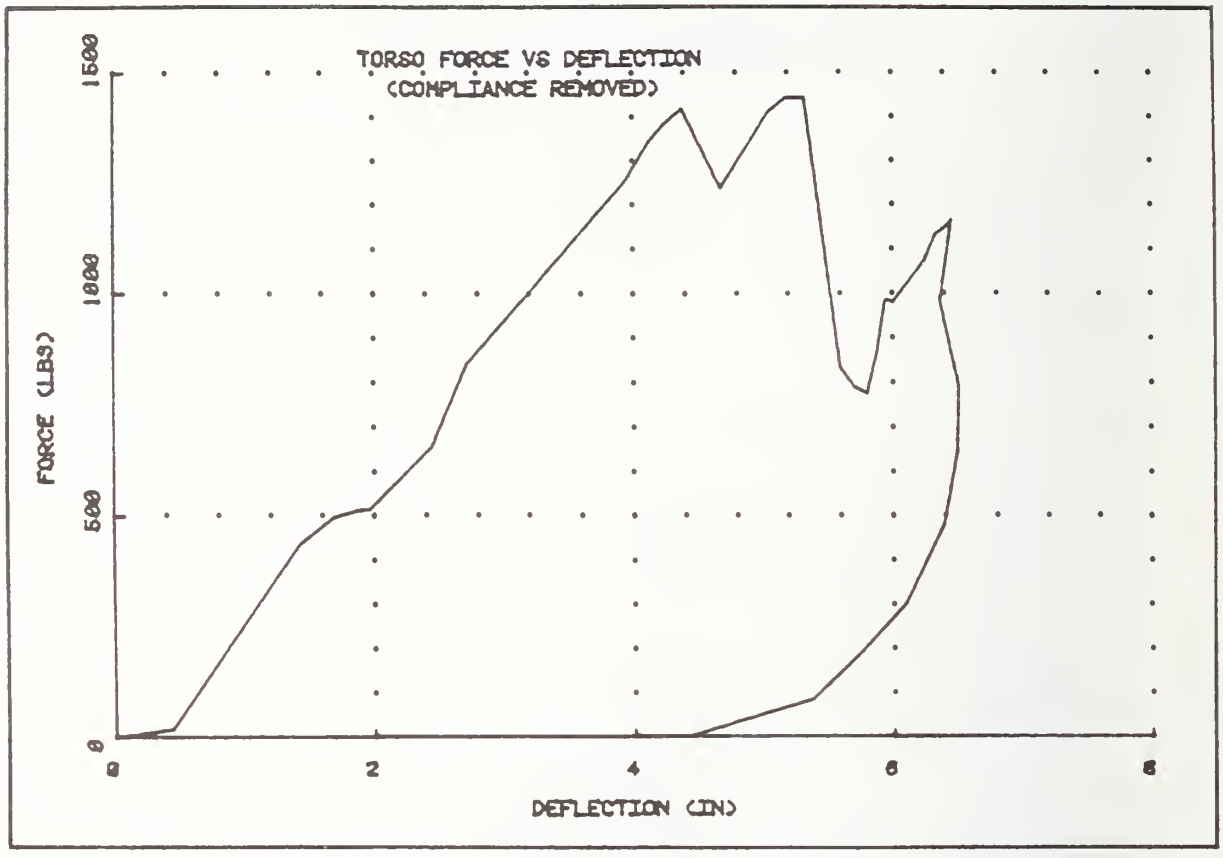
δ_A=_____ δ_B=_____ δ_C=_____ δ_D=_____ δ_E=_____

Deflection	Force	Deflection	Force

Test: Torso Date: _____

Vehicle: Honda Civic

Options: Loading Point Variation Test



G=_____ R=_____ K=_____

c=_____ μ_1=_____ μ_2=_____ μ_3=_____

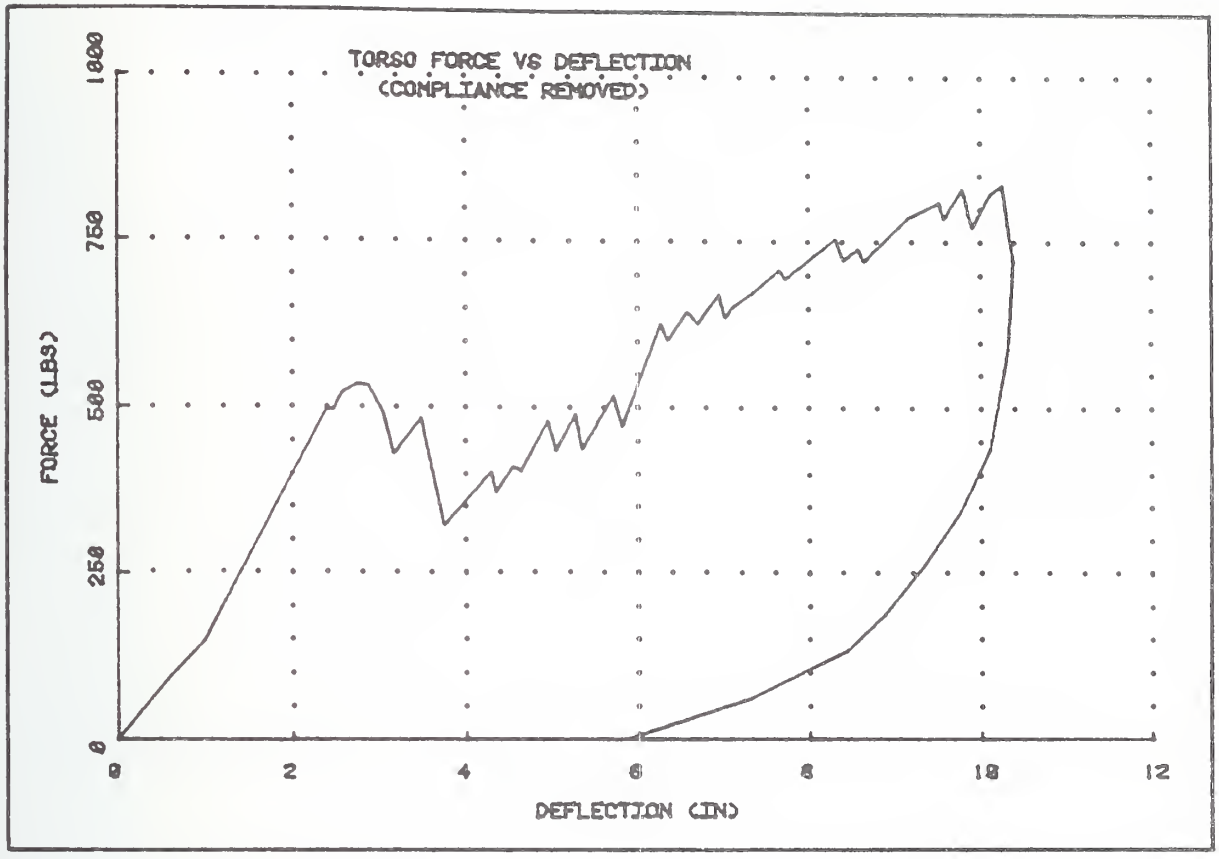
δ_A=_____ δ_B=_____ δ_C=_____ δ_D=_____ δ_F=_____

Deflection	Force	Deflection	Force

Test: Torso Date:

Vehicle: Ford LTD

Options: Loading Point Variation Test



G= R= K=

c= μ_1= μ_2= μ_3=

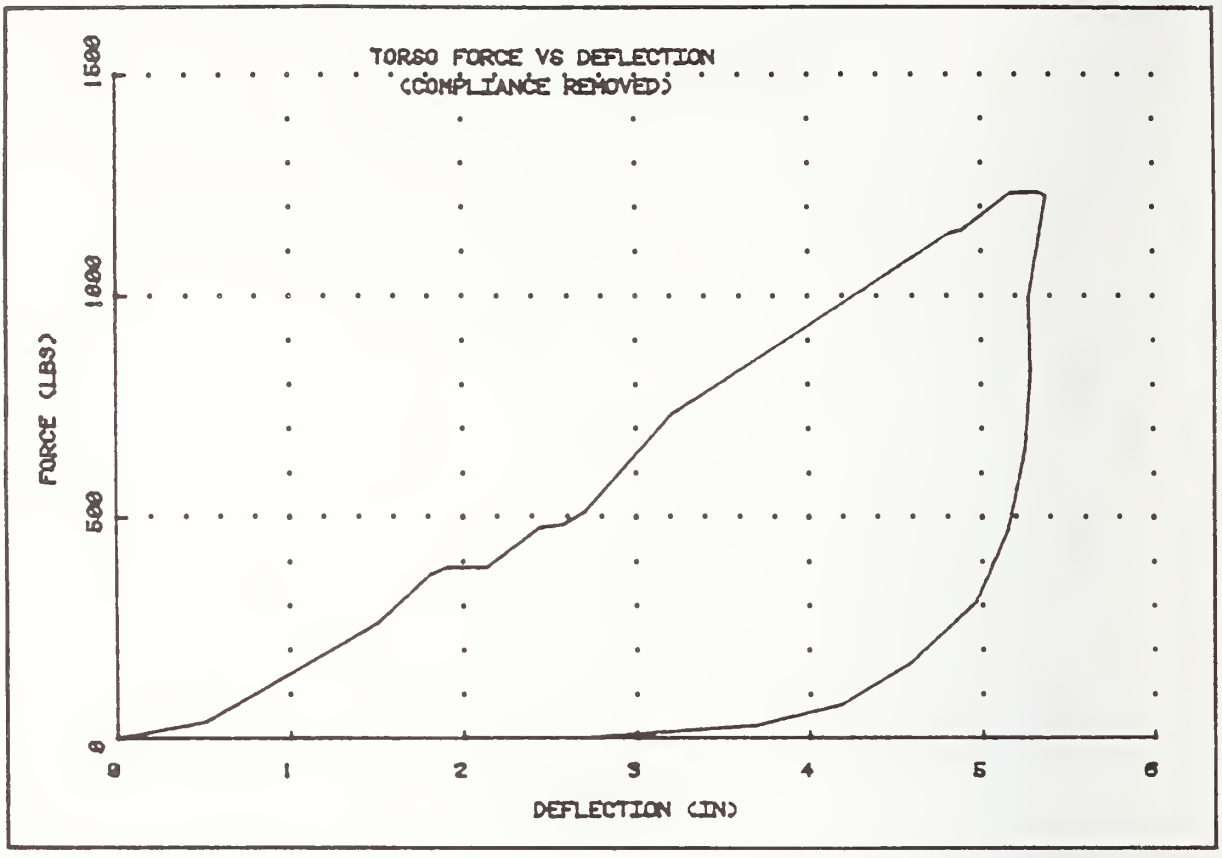
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force

Test: Torso Date: _____

Vehicle: Chevy Monza

Options: Loading Point Variation Test



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

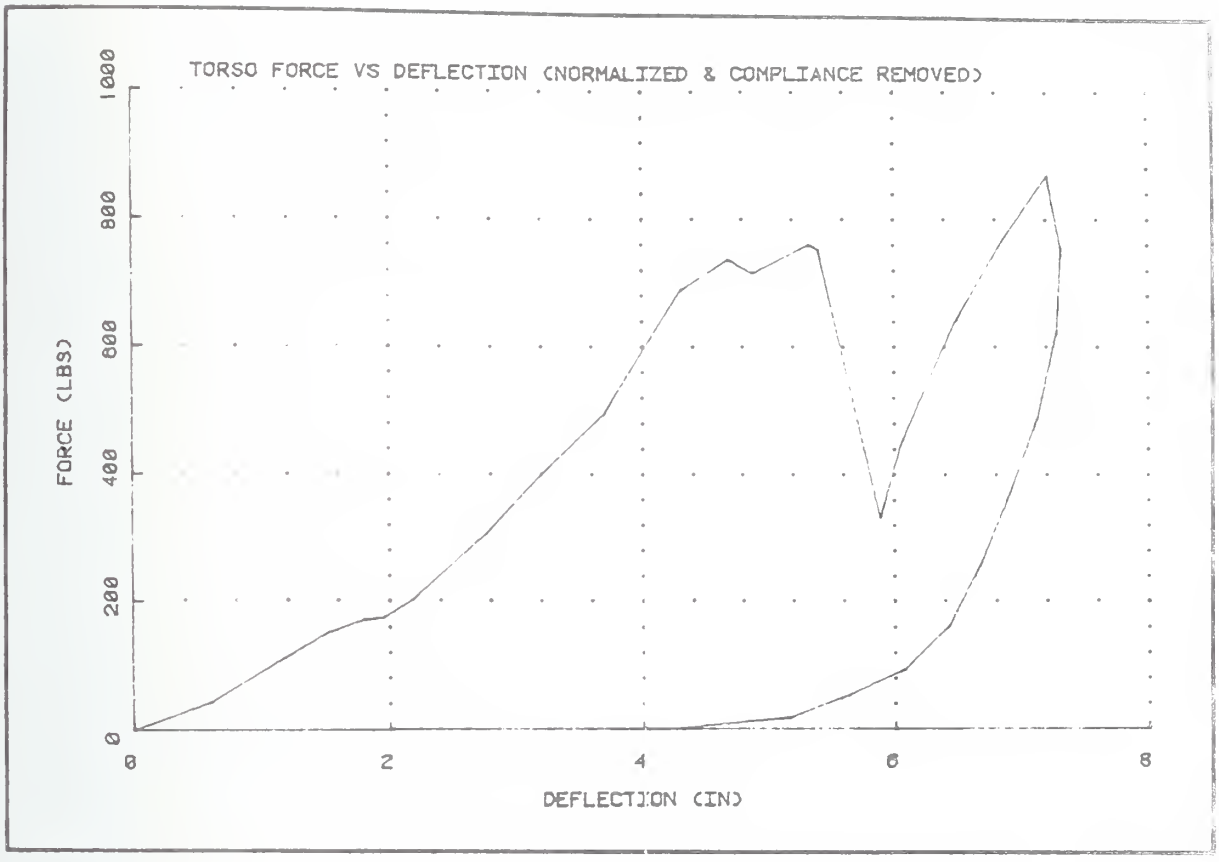
δ_A= _____ δ_B= _____ δ_C= _____ δ_D= _____ δ_F= _____

Deflection	Force	Deflection	Force

Test: Torso Date:

Vehicle: Plymouth Volare

Options: Loading Angle Variation Test



G= R= K=

c= μ_1= μ_2= μ_3=

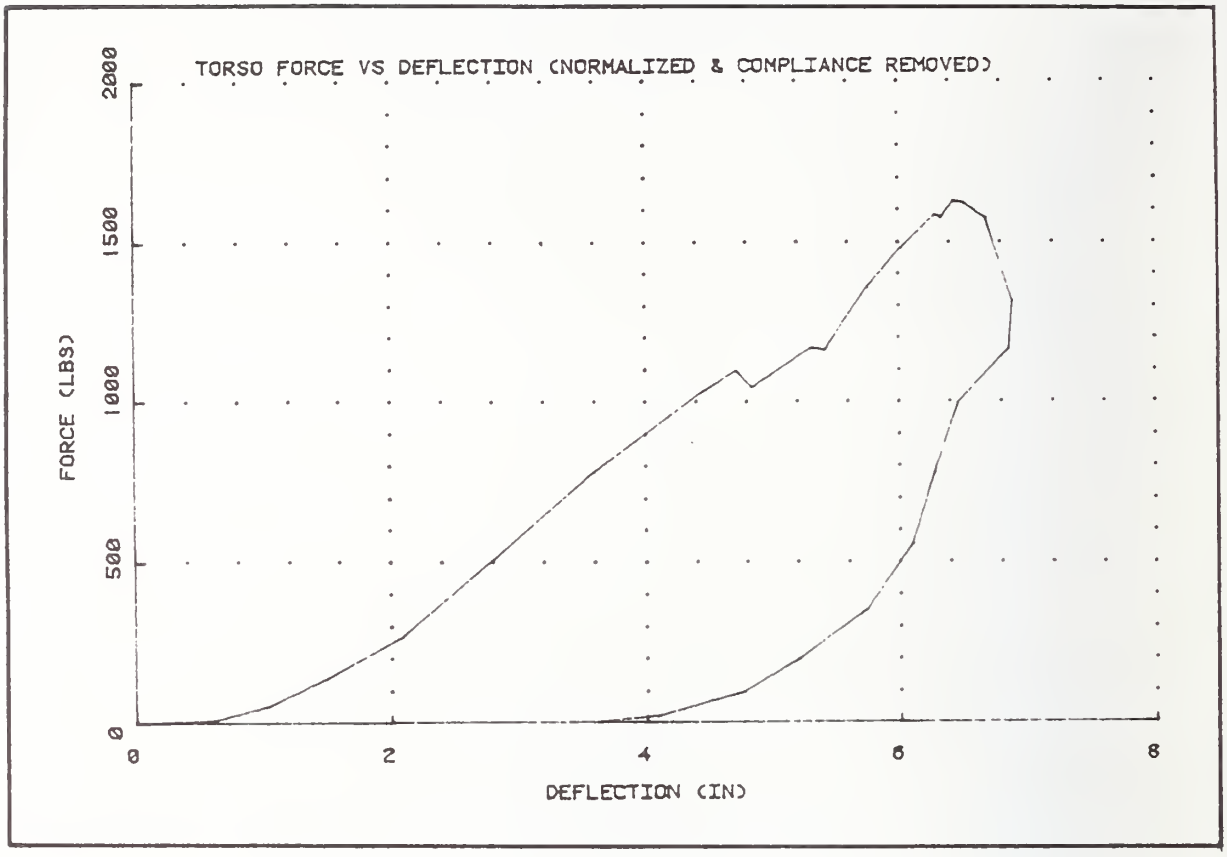
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force

Test: Torso Date: _____

Vehicle: Honda Civic

Options: Loading Angle Variation Test



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

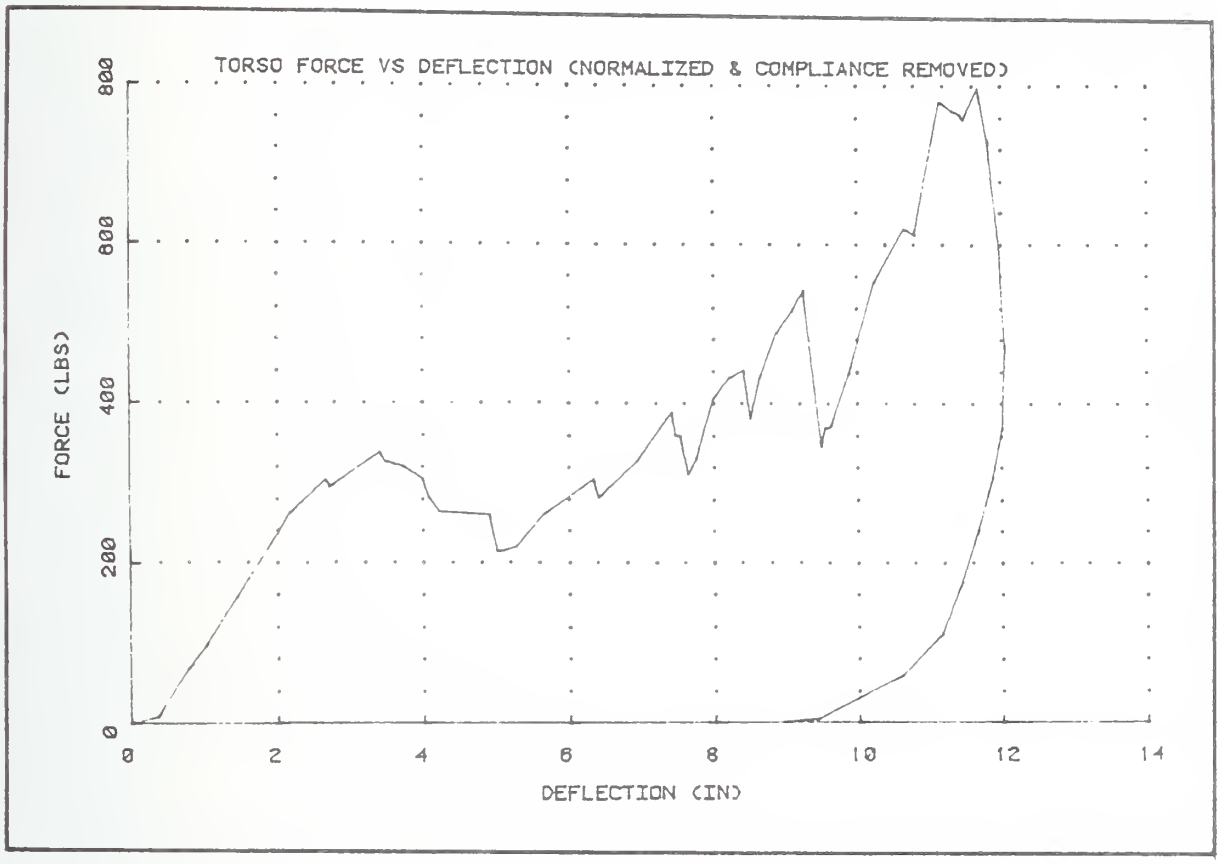
δ_A= _____ δ_B= _____ δ_C= _____ δ_D= _____ δ_E= _____

Deflection	Force	Deflection	Force

Test: Torso Date: _____

Vehicle: Ford LTD

Options: Loading Angle Variation Test



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

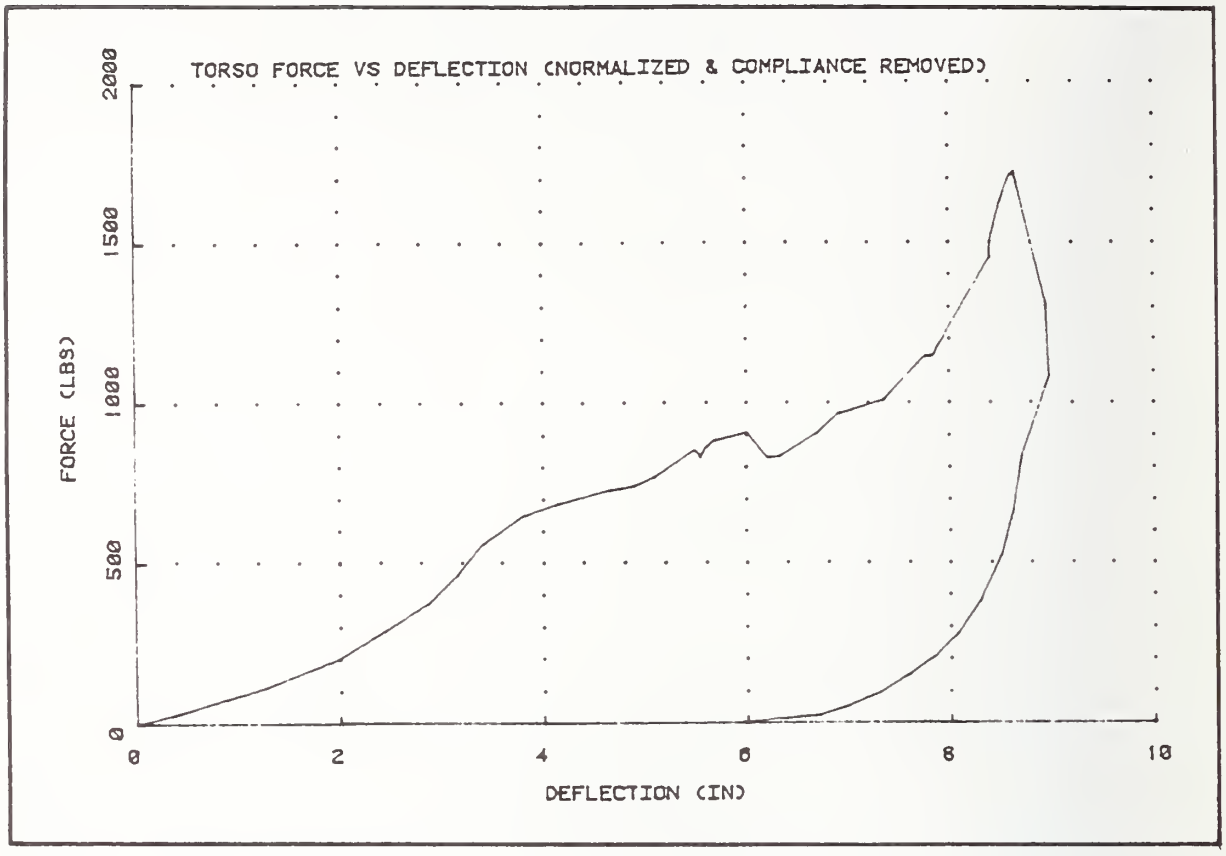
δ_A= _____ δ_B= _____ δ_C= _____ δ_D= _____ δ_F= _____

Deflection	Force	Deflection	Force

Test: Torso Date: _____

Vehicle: Chevy Monza

Options: Loading Angle Variation Test



G=_____ R=_____ K=_____

c=_____ μ_1=_____ μ_2=_____ μ_3=_____

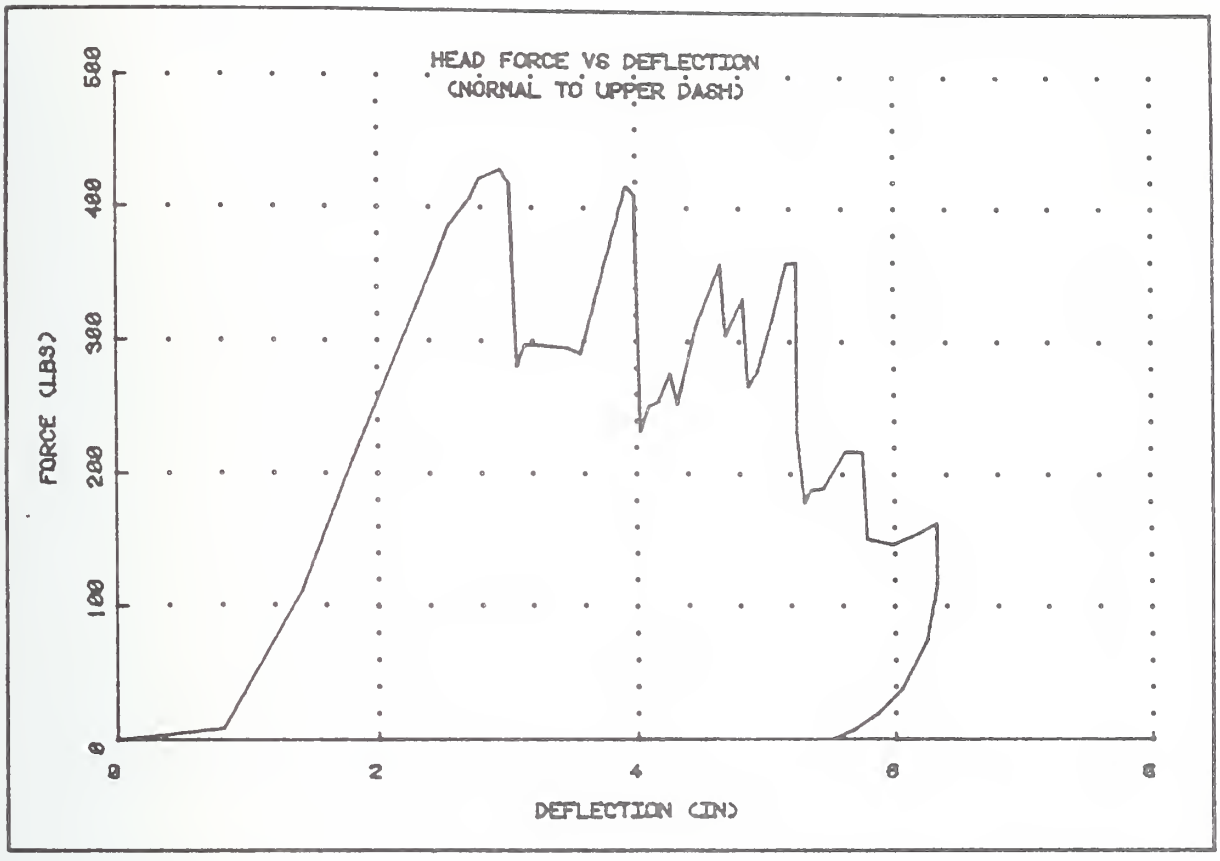
δ_A=_____ δ_B=_____ δ_C=_____ δ_D=_____ δ_F=_____

Deflection	Force	Deflection	Force

Test: Head Date:

Vehicle: Plymouth Volare

Options: Loading Point Variation Test



G= R= K=

c= μ_1= μ_2= μ_3=

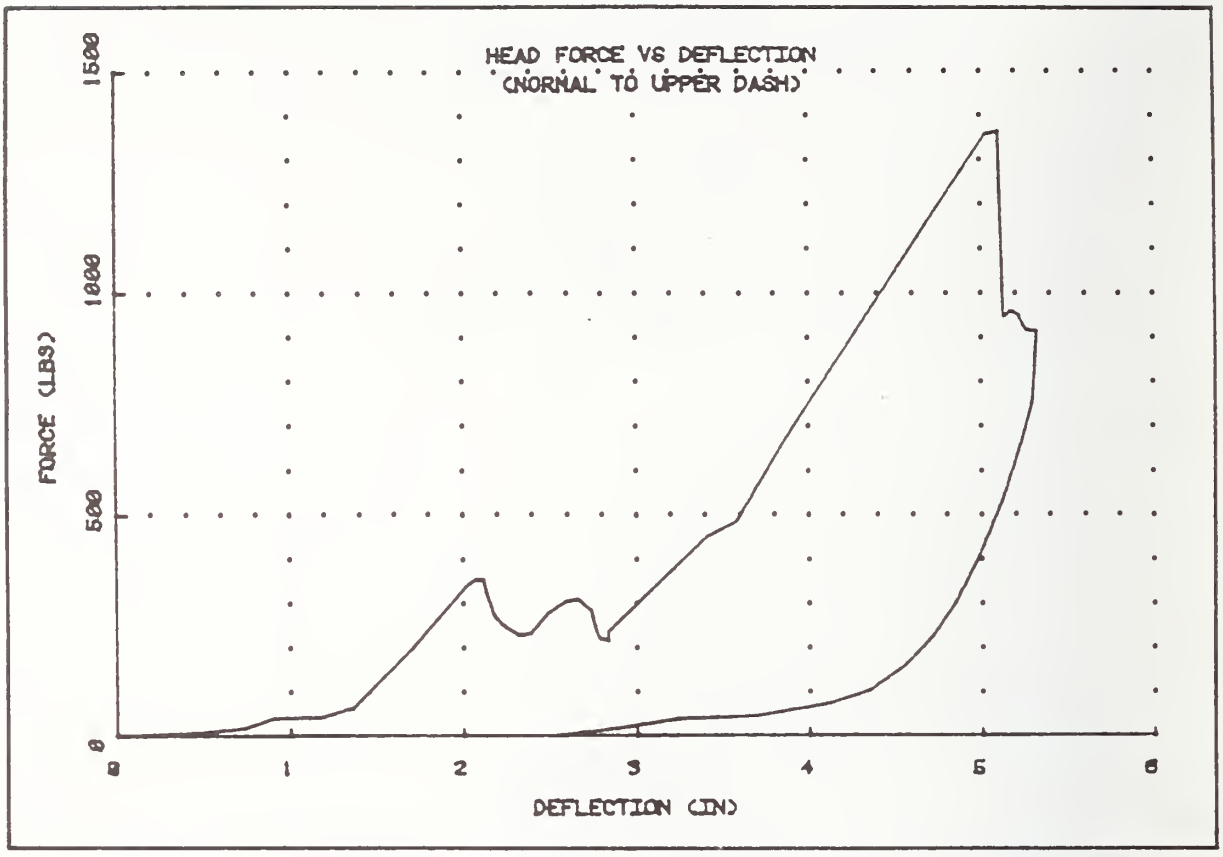
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force

Test: Head Date: _____

Vehicle: Honda Civic

Options: Loading Point Variation Test



G= _____ R= _____ K= _____

c= _____ μ_1= _____ μ_2= _____ μ_3= _____

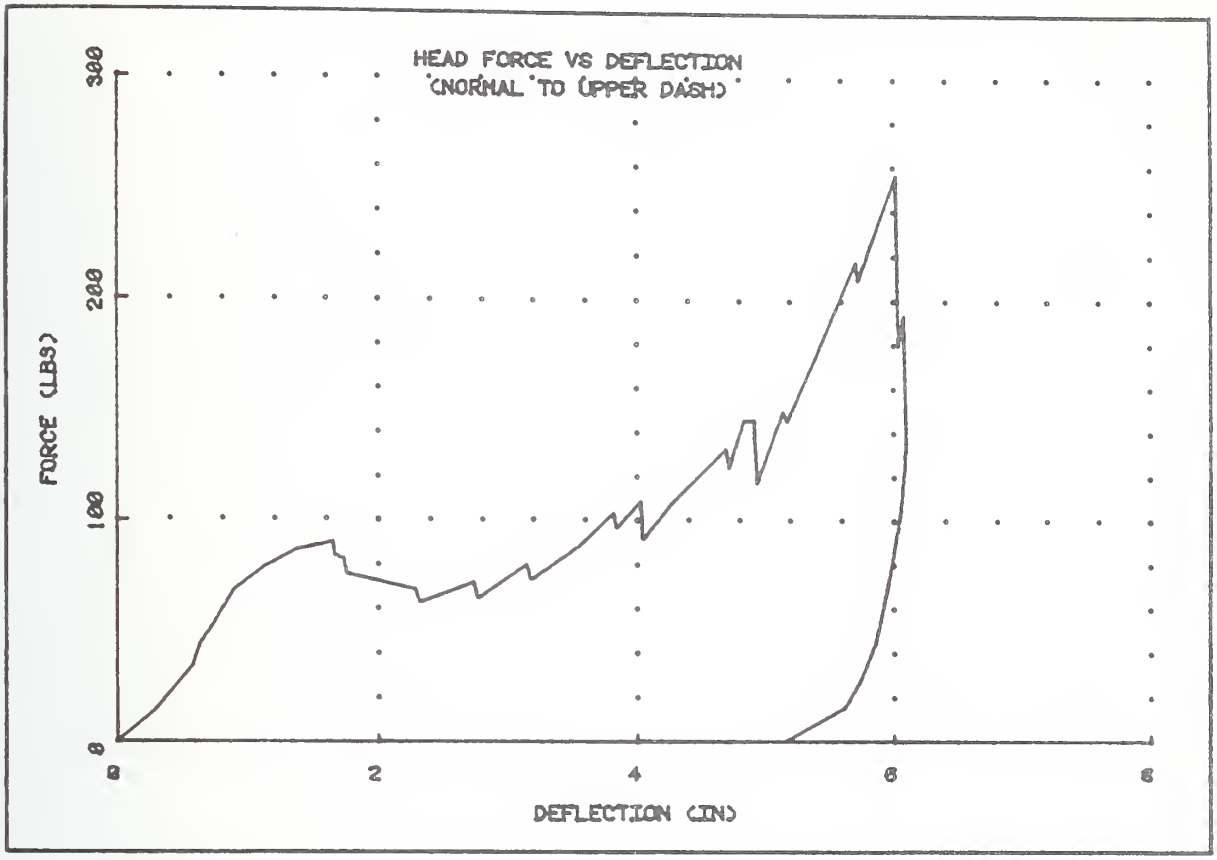
δ_A= _____ δ_B= _____ δ_C= _____ δ_D= _____ δ_F= _____

Deflection	Force	Deflection	Force

Test: Head Date:

Vehicle: Ford LTD

Options: Loading Point Variation Test



G= R= K=

c= μ_1= μ_2= μ_3=

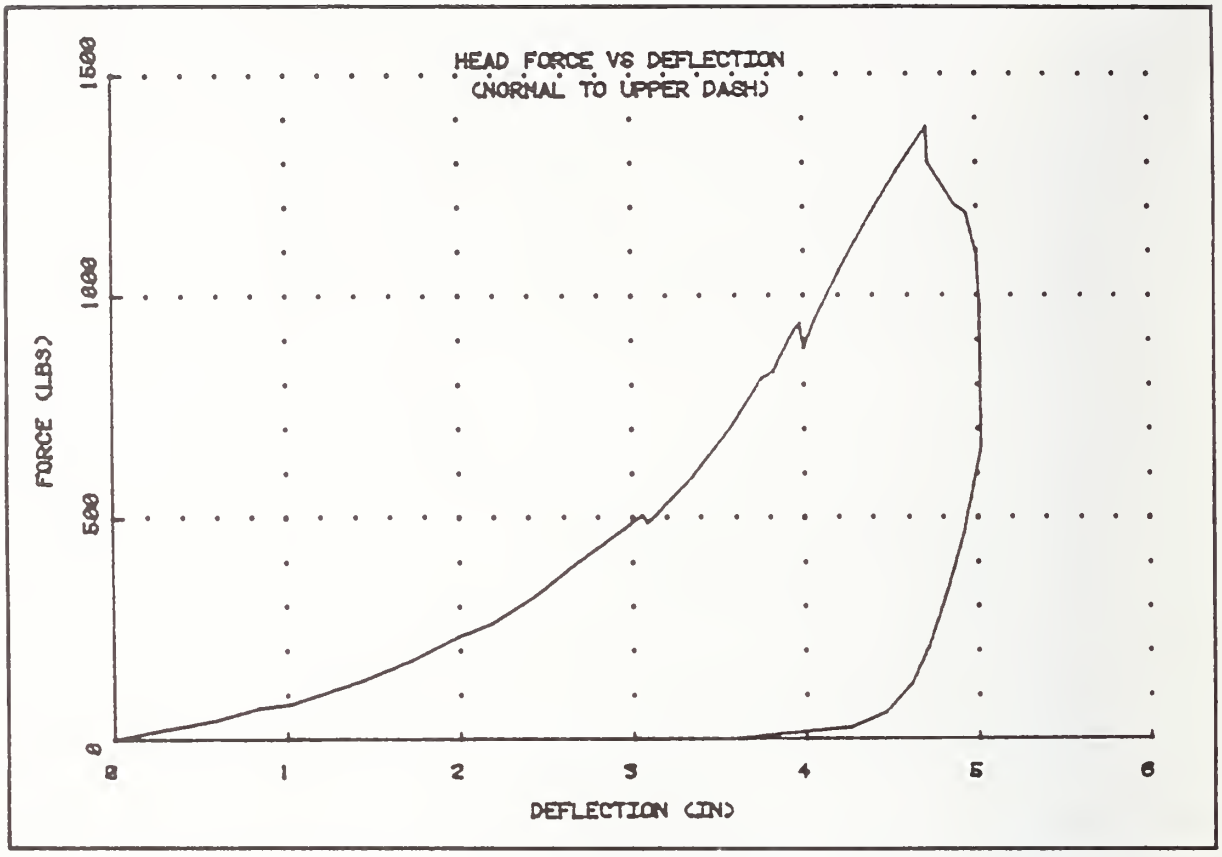
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force

Test: Head Date:

Vehicle: Chevy Monza

Options: Loading Point Variation Test



G= R= K=

c= μ_1= μ_2= μ_3=

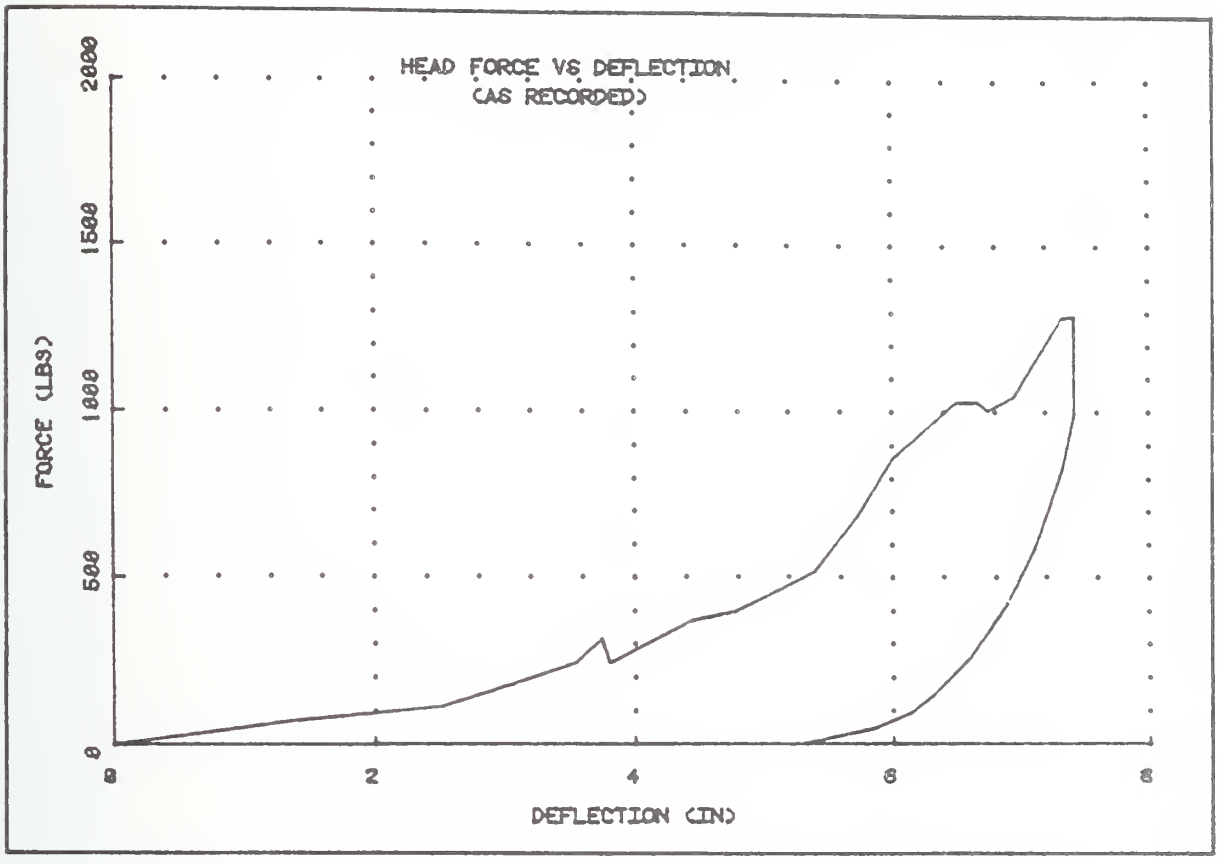
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force

Test: Head Date:

Vehicle: Plymouth Volare

Options: Loading Angle Variation Test



G= R= K=

c= μ_1= μ_2= μ_3=

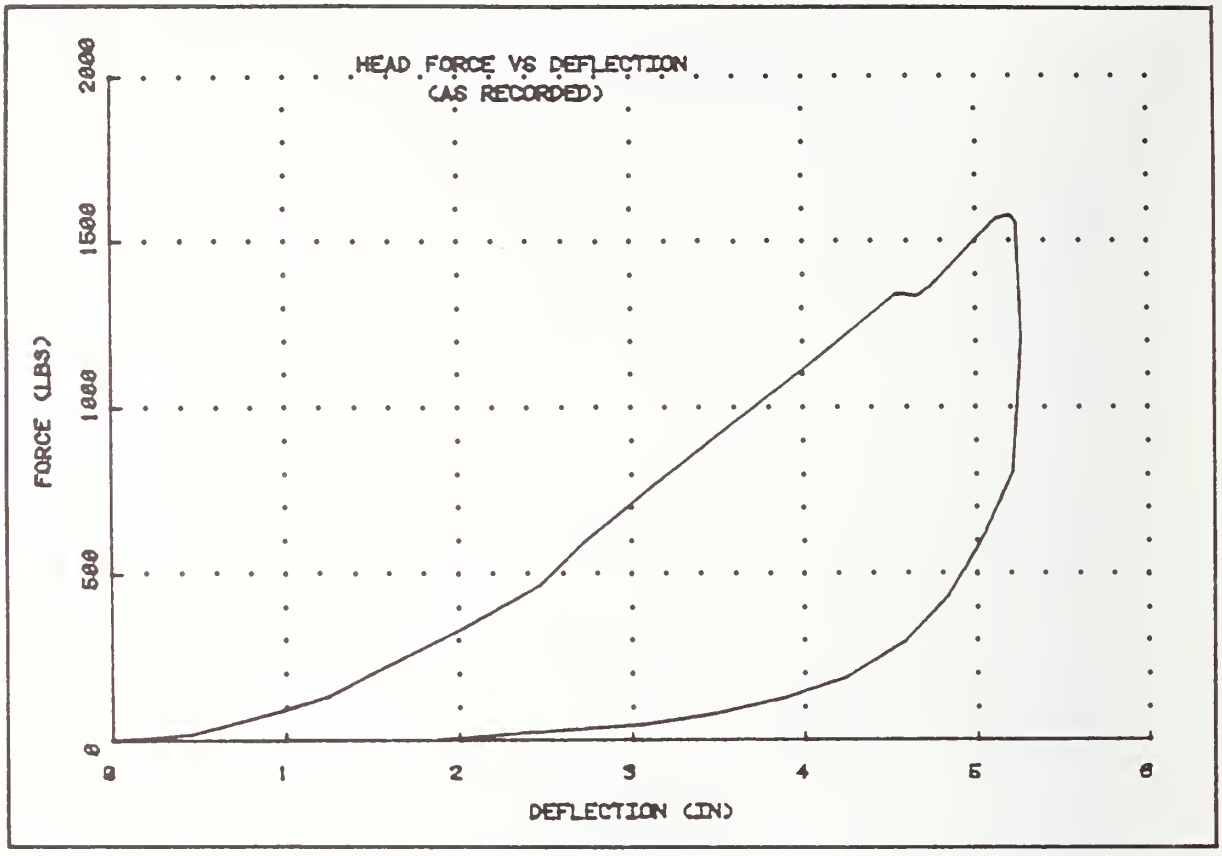
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force

Test: Head Date: 11/15/84

Vehicle: Honda Civic

Options: Loading Angle Variation Test



G= R= K=

c= μ_1= μ_2= μ_3=

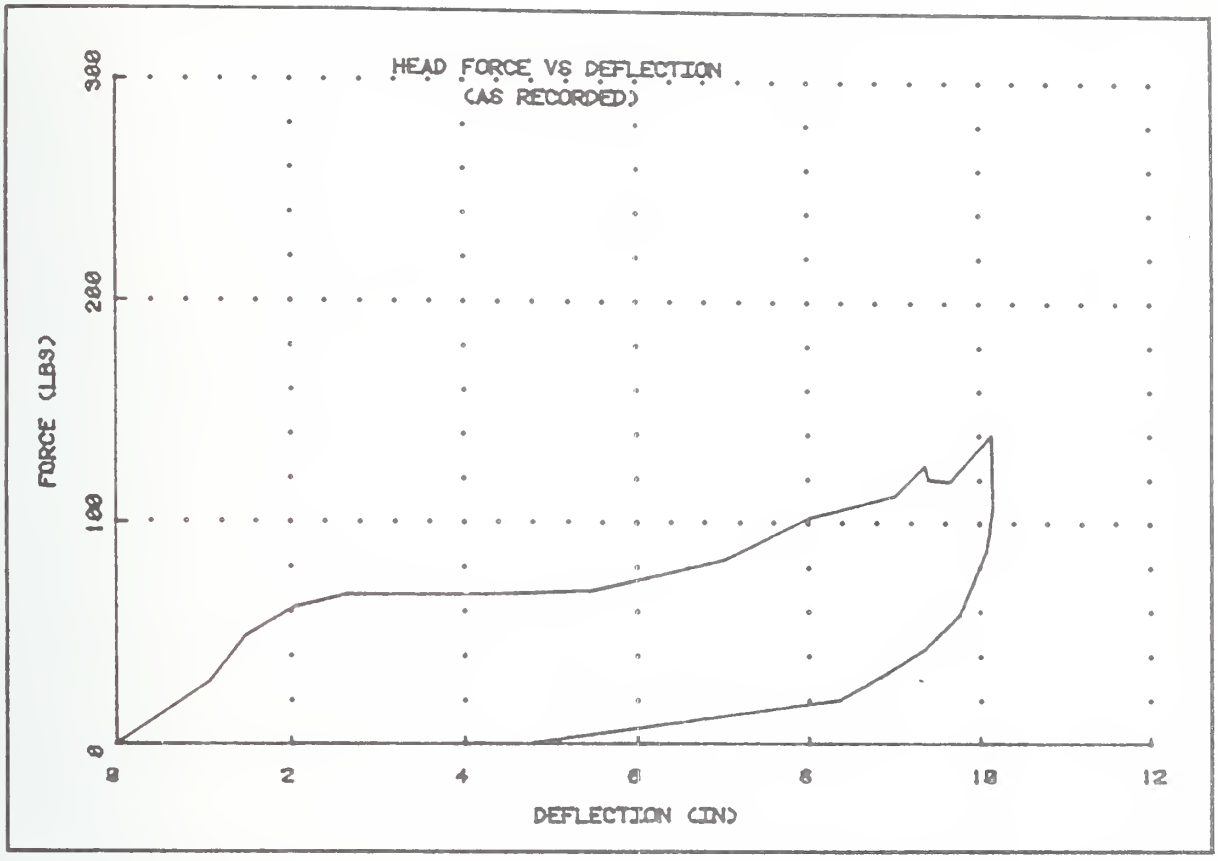
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force

Test: Head Date: 11/14

Vehicle: Ford LTD

Options: Loading Angle Variation Test



G= R= K=

c= μ_1= μ_2= μ_3=

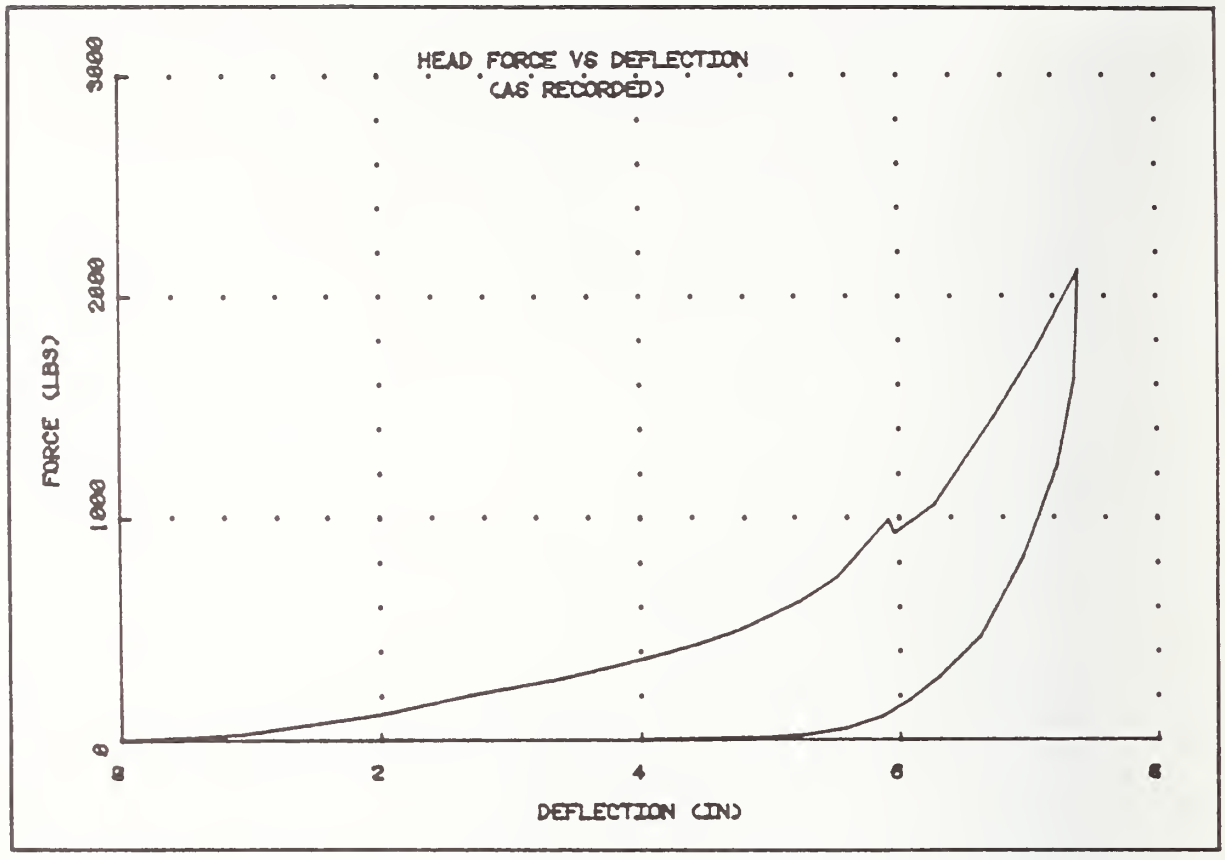
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force

Test: Head Date:

Vehicle: Chevy Monza

Options: Loading Angle Variation Test



G= R= K=

c= μ_1= μ_2= μ_3=

δ_A= δ_B= δ_C= δ_D= δ_F=

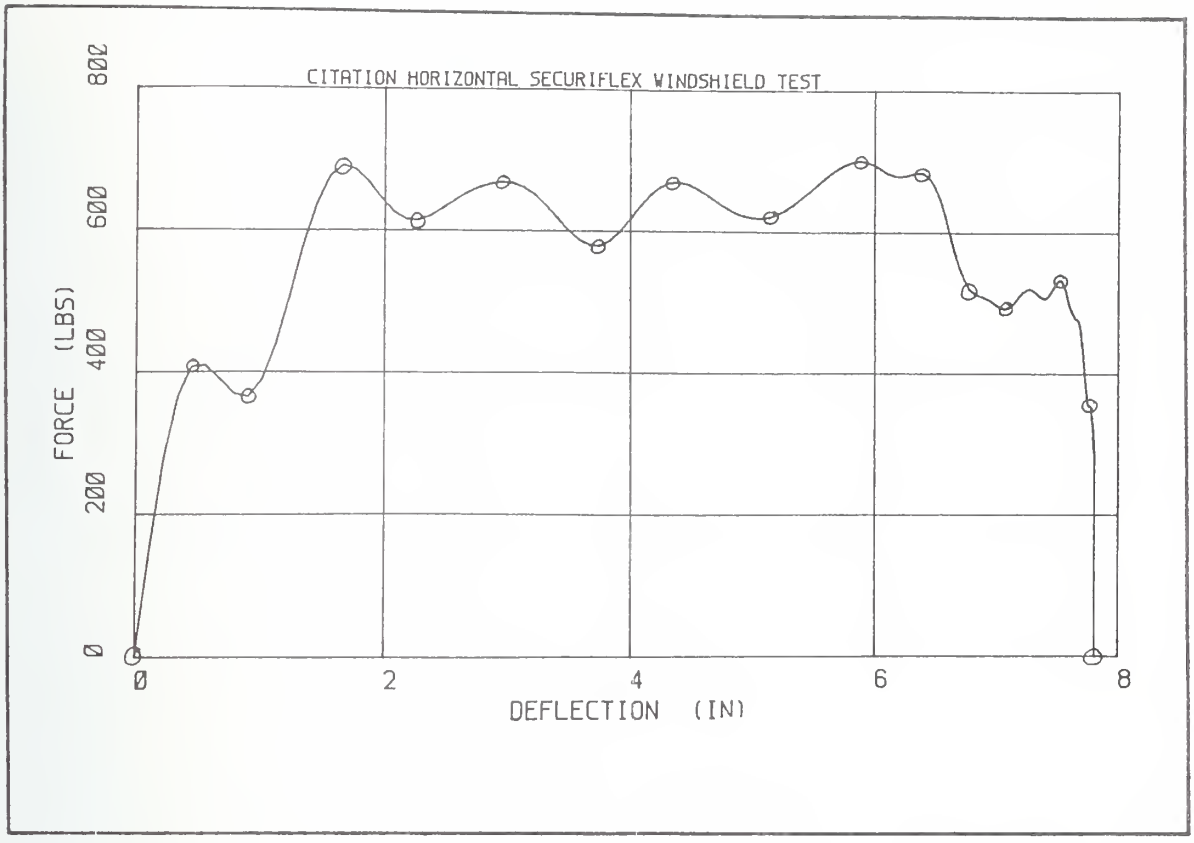
Deflection	Force	Deflection	Force

Test: Windshield Date: March 20, 1985

Vehicle: Chevy Citation

Options: Test A - Horizontal - Securiflex

(Data not normalized)



G= 1.0 R= 0.0 K= N/A

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 7.77 δ_F= 7.81

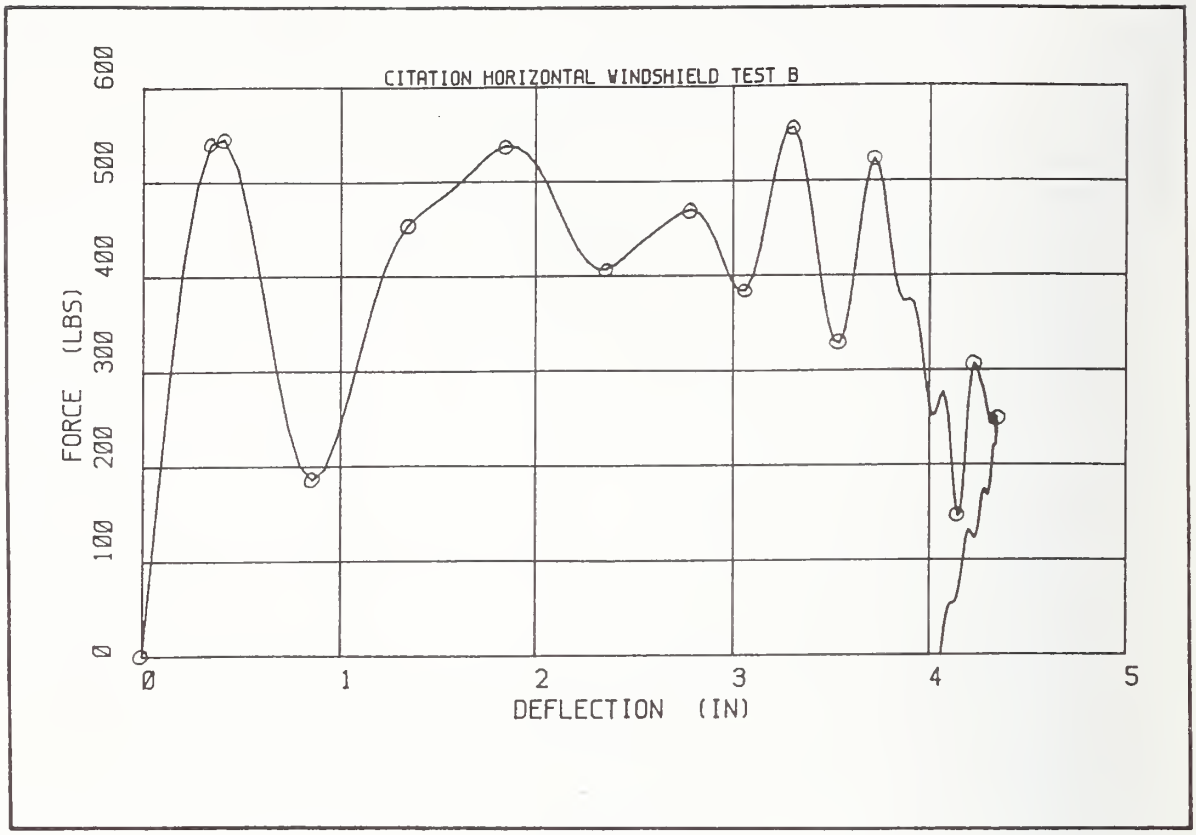
Deflection	Force	Deflection	Force
0.0	0.0	5.06	618.6
.46	407.0	5.88	700.3
.90	365.2	6.34	684.4
1.66	691.8	6.78	520.0
2.28	613.8	7.06	491.5
2.95	667.8	7.58	531.7
3.75	578.9	7.77	354.3
4.40	669.3	7.81	0.0

Test: Windshield (dynamic) Date: February 8, 1985

Vehicle: Chevy Citation

Options: Test B - Horizontal

(Data not normalized)



G= 0.934 R= 0.019 K= 916

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.0

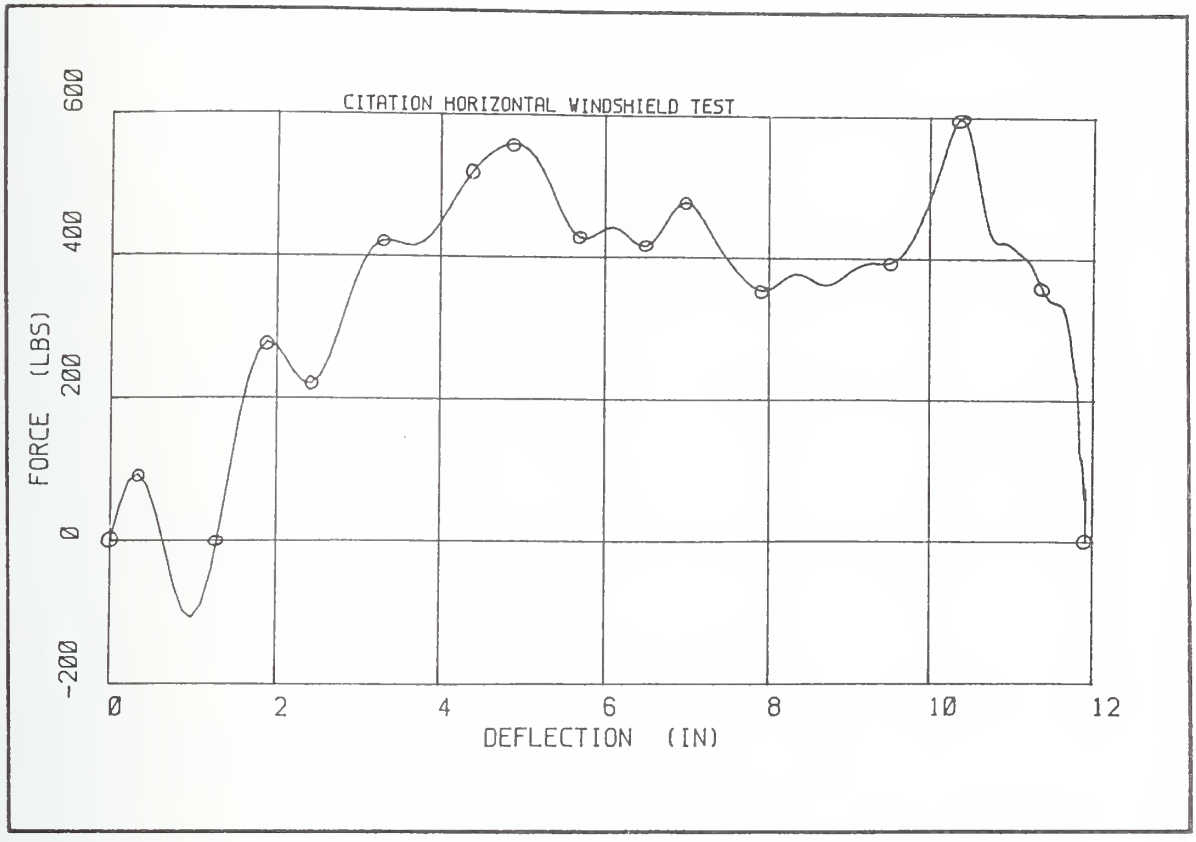
Deflection	Force	Deflection	Force
0.0	0.0	3.02	383.2
0.34	539.4	3.30	555.3
0.41	544.9	3.54	328.2
0.86	185.0	3.72	522.0
1.35	453.3	4.15	145.5
1.86	537.1	4.23	305.9
2.35	406.2	4.30	249.6
2.79	468.9		

Test: Windshield (dynamic) Date: March 15, 1985

Vehicle: Chevy Citation

Options: Test B2 - Horizontal

(Data not normalized)



G= 1.0 R= 0.0 K= N/A

c= μ_1= μ_2= μ_3=

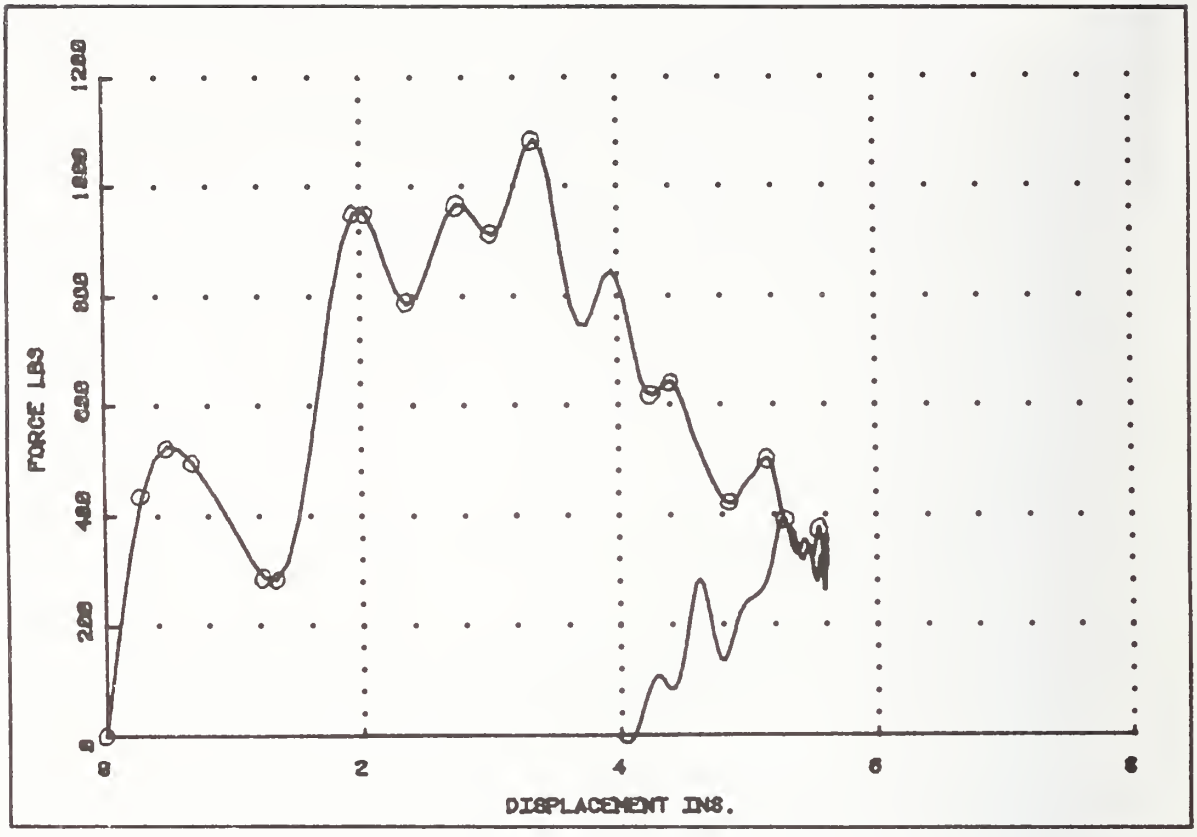
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 11.34 δ_F= 11.90

Deflection	Force	Deflection	Force
0.0	0.0	5.76	425.3
0.33	93.6	6.67	432.7
1.29	0.0	6.98	477.4
1.88	277.1	7.91	352.4
2.43	219.4	9.57	397.2
3.49	418.1	10.39	596.7
4.39	519.8	11.34	361.3
5.05	550.3	11.90	0.0

Test: Windshield (dynamic) Date: January 14, 1985

Vehicle: Chevy Citation

Options: Securiflex windshield (E2)



G= 0.707 R= 0.095 K= 154

c= μ_1= μ_2= μ_3=

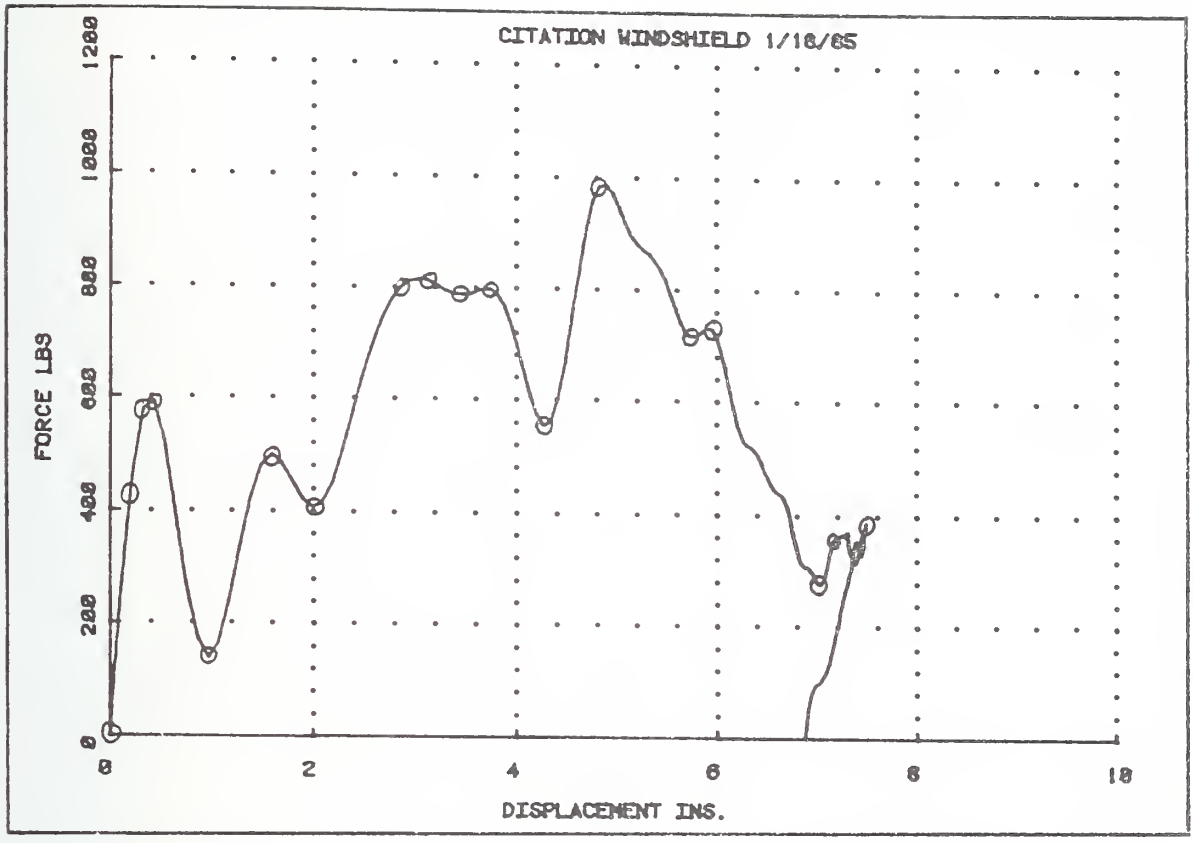
δ_A= δ_B= δ_C= δ_D= δ_F=

Deflection	Force	Deflection	Force
0.0	0.0	2.73	965.0
0.28	434.1	3.01	913.4
0.47	524.0	3.36	1084.8
0.67	497.4	4.28	617.2
1.23	289.4	4.40	635.5
1.35	282.72	4.88	420.8
1.95	951.6	5.16	499.0
2.02	951.6	5.23	394.2
2.34	788.6	5.55	374.2

Test: Windshield (dynamic) Date: January 18, 1985

Vehicle: Chevy Citation

Options: TSC Demo - Test F



G= 0.917 R= 0.028 K= 604

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.0

Deflection	Force	Deflection	Force
0.0	0.0	3.47	786.3
0.22	461.1	3.72	798.6
0.33	577.1	4.26	555.2
0.43	591.8	4.83	983.6
0.96	136.6	5.74	715.3
1.58	499.0	5.92	732.0
1.99	406.0	7.04	276.4
2.85	799.7	7.19	360.7
3.13	811.9	7.49	387.4

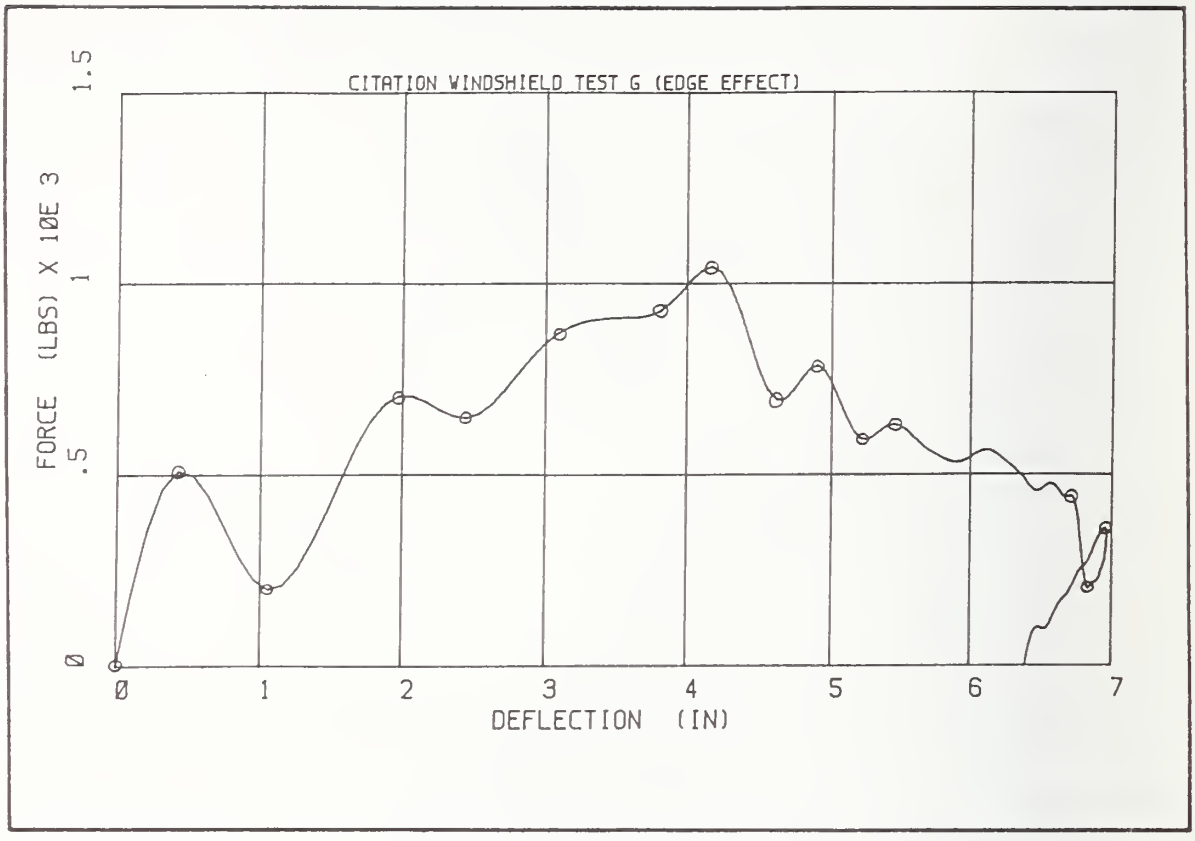
Note: Vo - Adjusted up to satisfy displacement.

Test: Windshield (dynamic) Date: February 14, 1985

Vehicle: Chevy Citation

Options: Test G - Normal

Edge Effect



C= 0.917 R= 0.026 K= 560

c= μ_1= μ_2= μ_3=

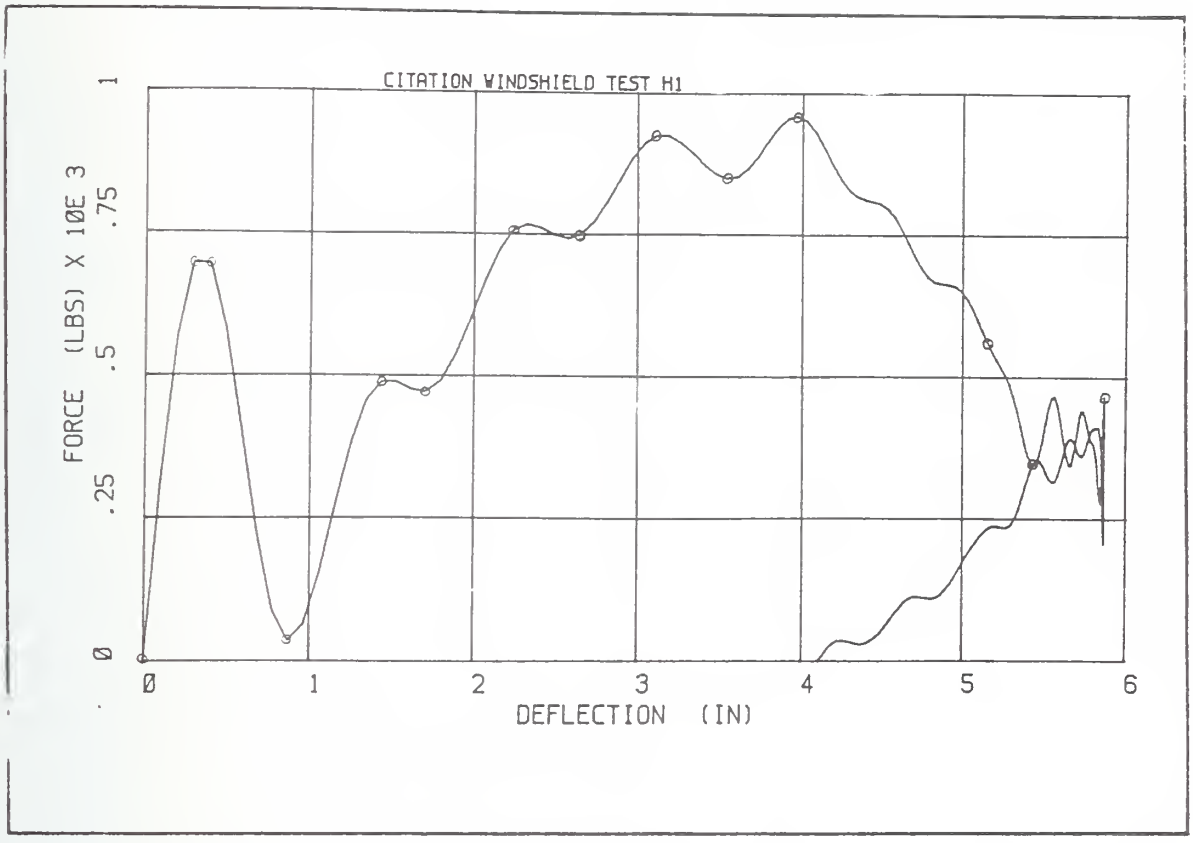
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.0

Deflection	Force	Deflection	Force
0.0	0.0	4.62	695.0
0.43	509.4	4.91	784.2
1.06	201.5	5.22	593.2
1.98	705.2	5.46	631.6
2.45	647.8	6.72	442.5
3.17	885.3	6.85	203.5
3.81	926.6	6.96	354.7
4.17	1041.9		

Test: Windshield (dynamic) Date: February 5, 1985

Vehicle: Chevy Citation

Options: Test H1 - Normal



G= 0.698 R= 0.091 K= 244

c= μ_1= μ_2= μ_3=

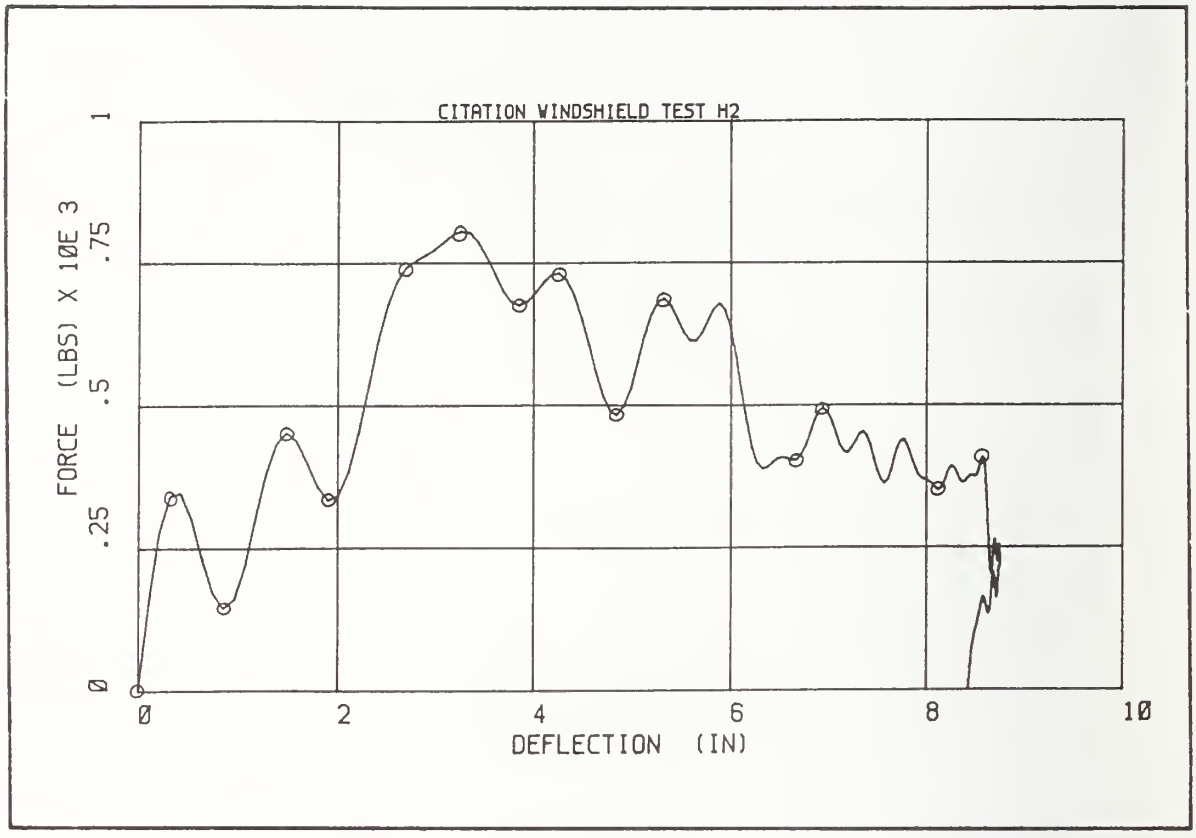
δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.0

Deflection	Force	Deflection	Force
0.0	0.0	3.11	924.8
0.30	695.7	3.53	848.8
0.39	695.2	3.97	958.8
0.87	34.8	5.17	543.9
1.43	488.3	5.44	345.7
1.71	471.5	5.86	465.2
2.24	755.4		
2.65	748.8		

Test: Windshield (dynamics) Date: February 19, 1985

Vehicle: Chevy Citation

Options: Test H2 - Normal



G= 0.963 R= 0.010 K= 594

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 1000.0 δ_F= 1000.0

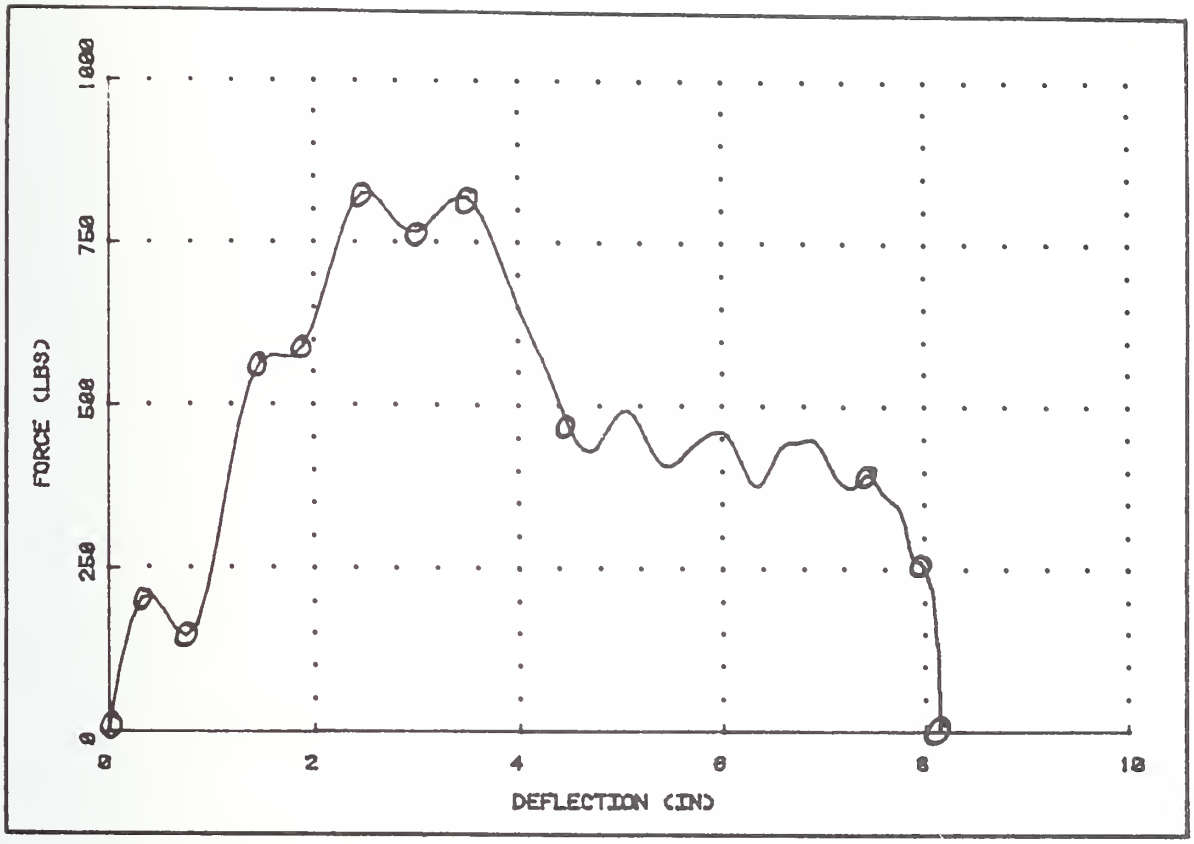
Deflection	Force	Deflection	Force
0.0	0.0	4.26	730.8
0.33	341.9	4.85	482.6
0.86	145.2	5.33	685.7
1.49	452.4	6.66	403.1
1.90	334.0	6.94	494.5
2.60	717.2	8.12	349.8
3.26	804.8	8.58	407.1
3.86	675.0		

Test: Windshield Date: March 12, 1985

Vehicle: Citation

Options: Test J - Normal

Prestress



G= 1.0 R= 0.0 K= N/A

c= μ_1= μ_2= μ_3=

δ_A= 0.0 δ_B= 0.0 δ_C= 0.0 δ_D= 7.95 δ_F= 8.14

Deflection	Force	Deflection	Force
0.0	0.0	4.50	464.9
0.32	204.5	7.45	395.1
0.75	144.9	7.95	261.1
1.48	565.5	8.14	0.0
1.89	588.4		
2.47	825.2		
3.00	765.5		
3.50	817.0		

APPENDIX F

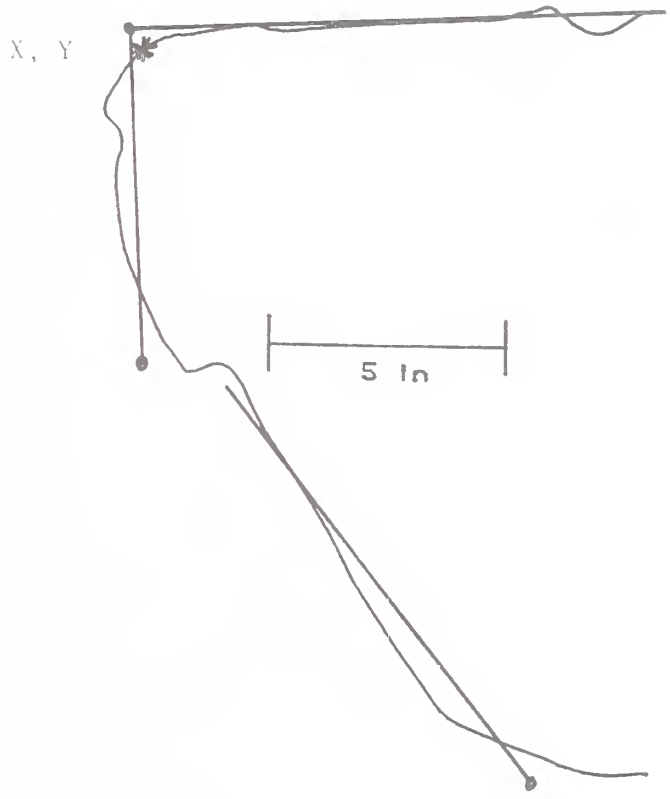
VEHICLE DIMENSIONAL DATA SUMMARIES

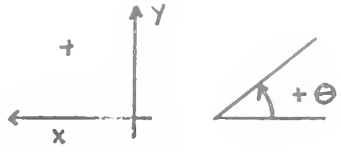
Test _____ Date: July 27, 1984

Vehicle: 1977 Plymouth Volare

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y = 15.375", 26.75"

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	8.05	10.58	124.77	10.63
Center Instrument Panel (4)	15.47	19.31	96.35	7.42
Upper Instrument Panel (5)	16.29	26.68	4.87	10.83
Windshield (6)	3.0	27.5	147.9°	25.0
Header (7)	23.0	40.0	160.3°	4.0

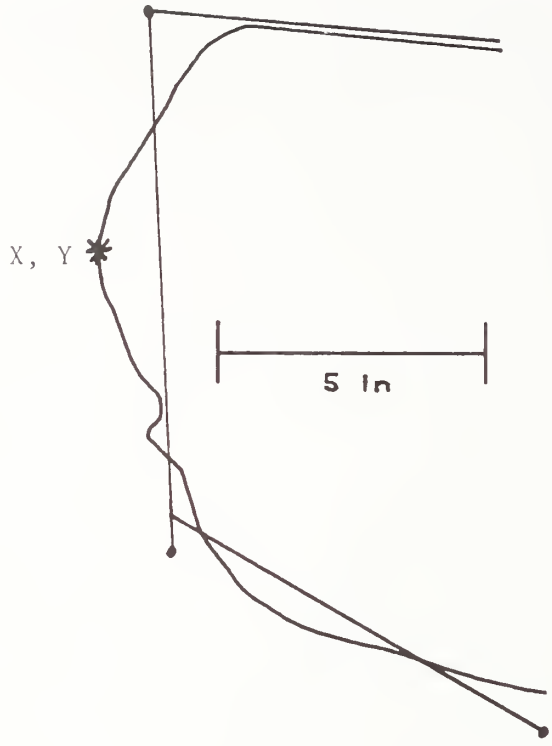
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

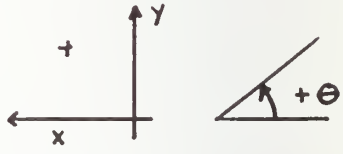
Test _____ Date: August 9, 1984

Vehicle: Chevy Chevette

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y = 11.1875", 23.25"

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	3.45	14.03	155.99	6.83
Center Instrument Panel (4)	9.69	16.81	94.54	10.74
Upper Instrument Panel (5)	10.54	27.52	356.5	6.72
Windshield (6)	5.0	28.0	138.6°	24.0
Header (7)	23.0	43.0	165.5°	5.0

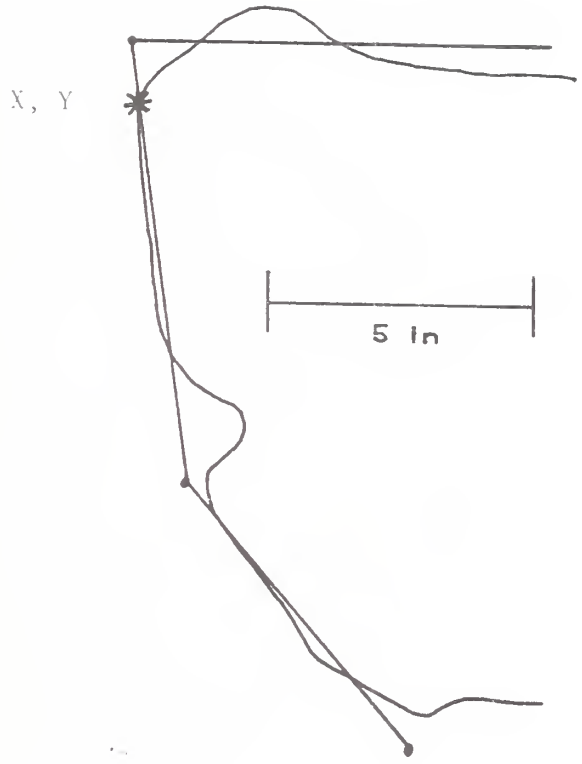
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

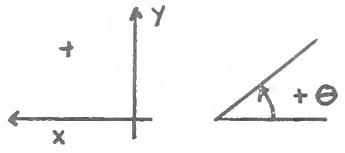
Test _____ Date: August 17, 1984

Vehicle: 1976 Chevy Monza

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y = 15.4375", 26"

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	10.39	13.43	128.19	6.62
Center Instrument Panel (4)	14.48	18.63	98.05	8.65
Upper Instrument Panel (5)	15.69	27.19	358.91	8.39
Windshield (6)	7.0	26.75	152.5°	25.0
Header (7)	29.0	38.0	164°	3.0

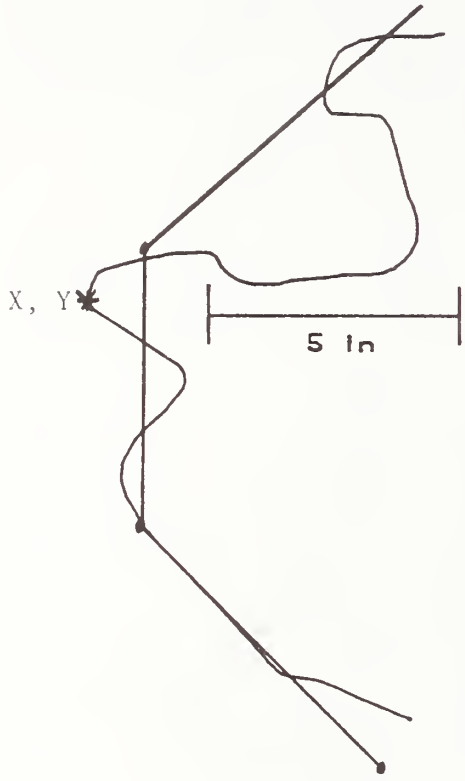
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

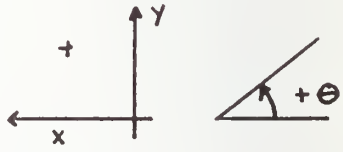
Test _____ Date: August 21, 1984

Vehicle: Honda Civic CVCC

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y = 13.3215", 21"

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	8.65	12.04	131.11	5.84
Center Instrument Panel (4)	12.49	16.44	90.0	5.44
Upper Instrument Panel (5)	12.49	21.88	41.03	7.75
Windshield (6)	5.0	27.5	143.67°	21.5
Header (7)	21.75	40.0	163.5°	3.25

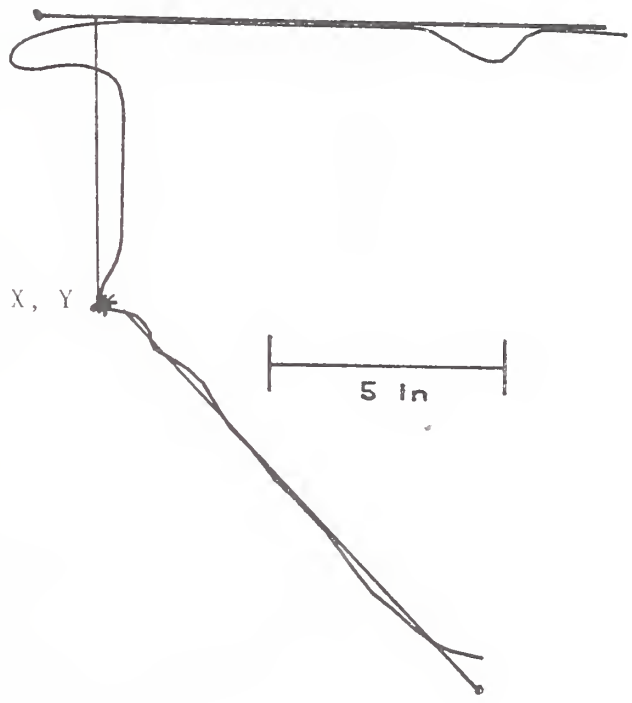
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

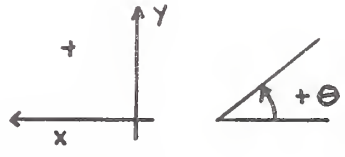
Test _____ Date: August 28, 1984

Vehicle: Ford LTD

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y = 10.9375", 21.25"

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	3.35	13.37	133.36	10.61
Center Instrument Panel (4)	11.06	21.06	93.53	6.49
Upper Instrument Panel (5)	12.68	27.54	0.42	12.15
Windshield (6)	-2.0	24.0	143.5°	28.0
Header (7)	20.0	40.0	157°	5.5

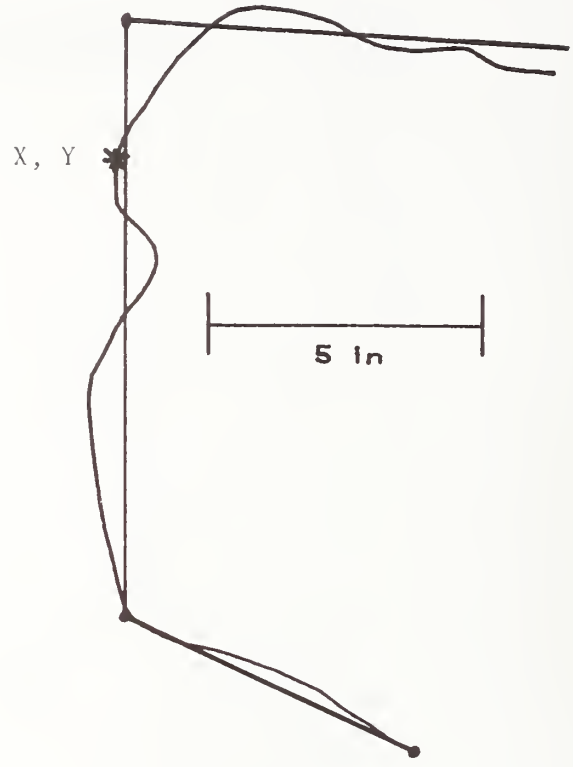
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

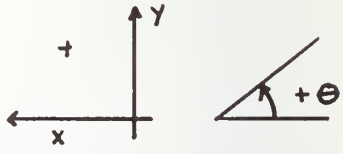
Test _____ Date: August 31, 1984

Vehicle: Dodge Omni

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y = 11.1875", 23"

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	6.29	11.51	152.8	5.25
Center Instrument Panel (4)	10.96	13.91	90.58	11.92
Upper Instrument Panel (5)	11.08	25.83	356.89	7.93
Windshield (6)	-2.0	27.5	151.0°	27.5
Header (7)	21.0	40.5	169.0°	5.0

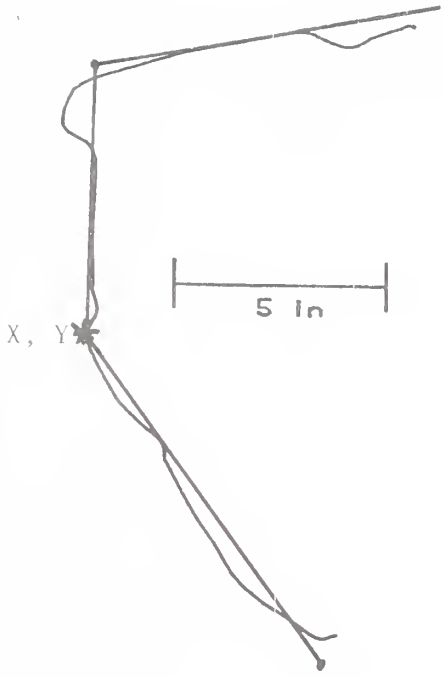
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

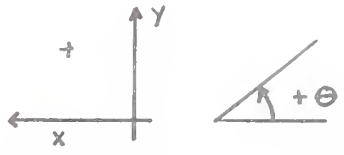
Test _____ Date: September 5, 1984

Vehicle: Ford Mustang

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y = 13", 21.625"

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	7.81	13.61	122.47	9.74
Center Instrument Panel (4)	13.04	21.83	92.77	6.21
Upper Instrument Panel (5)	13.34	28.03	13.37	8.17
Windshield (6)	3.5	27.0	148.0°	24.0
Header (7)	23.5	38.0	165.5°	4.5

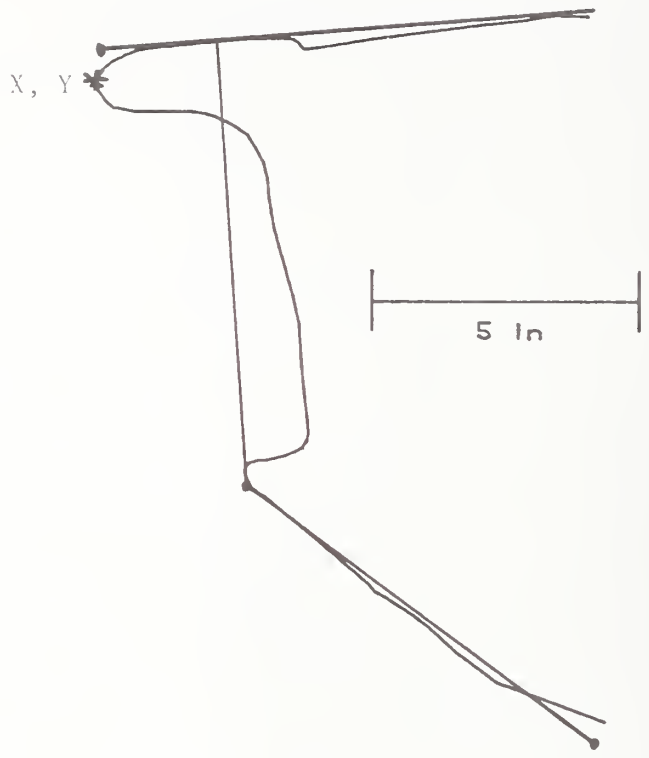
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

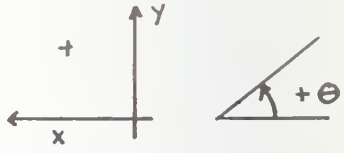
Test _____ Date: September 5, 1984

Vehicle: Ford Mustang

INSTRUMENT PANEL PROFILE

Driver Side





* X, Y = 15.125", 27.25"

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	5.7	14.51	144.56	8.55
Center Instrument Panel (4)	12.67	19.47	96.53	8.54
Upper Instrument Panel (5)	15.32	27.95	4.95	9.27
Windshield (6)	3.5	27.0	148.0°	24.0
Header (7)	23.5	38.0	165.0°	4.5

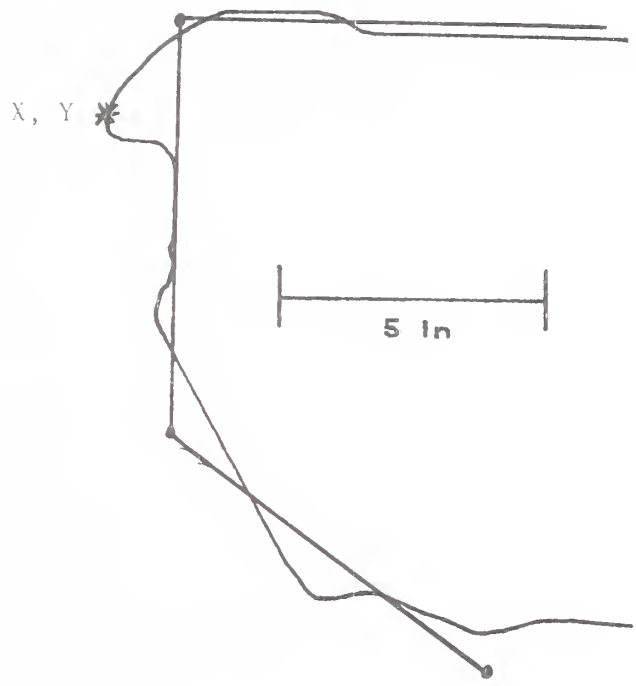
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

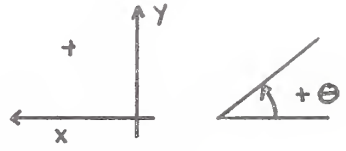
Test _____ Date: September 11, 1984

Vehicle: Ford Pinto

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y = 15.6875", 26.5"

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	9.32	16.11	142.34	6.53
Center Instrument Panel (4)	14.49	20.1	91.67	8.24
Upper Instrument Panel (5)	14.73	28.34	1.09	8.39
Windshield (6)	4.0	28.5	152.0°	24.0
Header (7)	25.0	39.0	145°	3.5

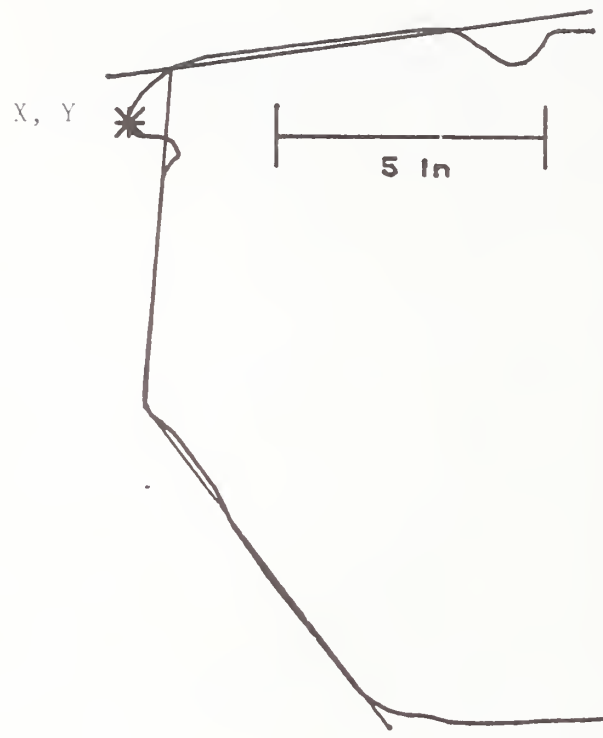
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

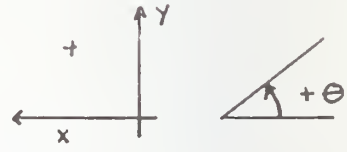
Test _____ Date: November 29, 1984

Vehicle: Ford Fairmont

INSTRUMENT PANEL PROFILE

PASSENGER SIDE





* X, Y = 13.75, 25.25

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	8.9	13.3	125.8	7.80
Center Instrument Panel (4)	13.4	19.6	86.0	6.74
Upper Instrument Panel (5)	14.2	26.2	8.7	9.10
Windshield (6)	1.0	29.0	129.0	26.25
Header (7)	18.0	43.0	146.0	4.75

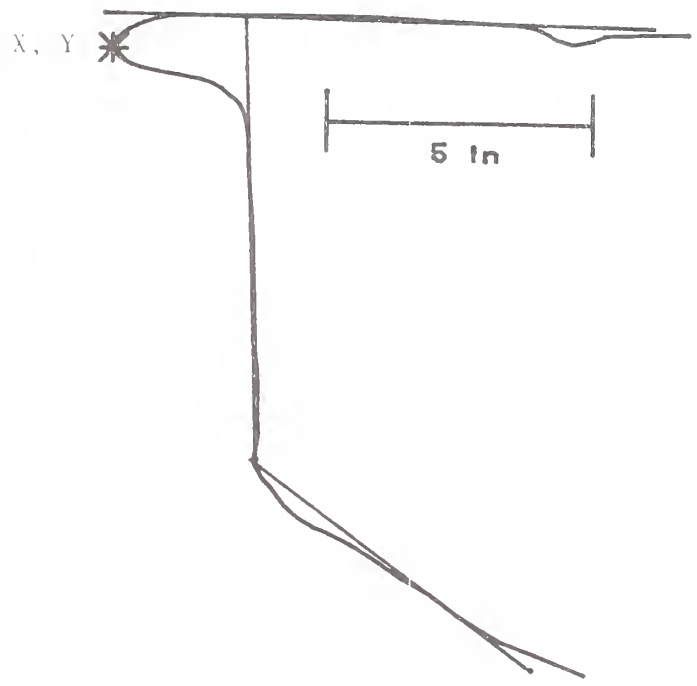
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

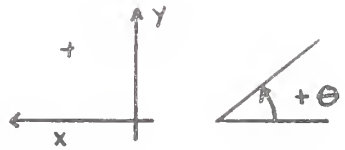
Test _____ Date: November 29, 1984

Vehicle: Ford Fairmont

INSTRUMENT PANEL PROFILE

DRIVER SIDE





* X, Y = 15, 27.38

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	7.1	15.1	141.7	6.71
Center Instrument Panel (4)	12.3	19.3	91.5	8.79
Upper Instrument Panel (5)	15.2	28.1	0.9	10.30
Windshield (6)	1.0	29.0	129.0	26.25
Header (7)	18.0	43.0	146.0	4.75

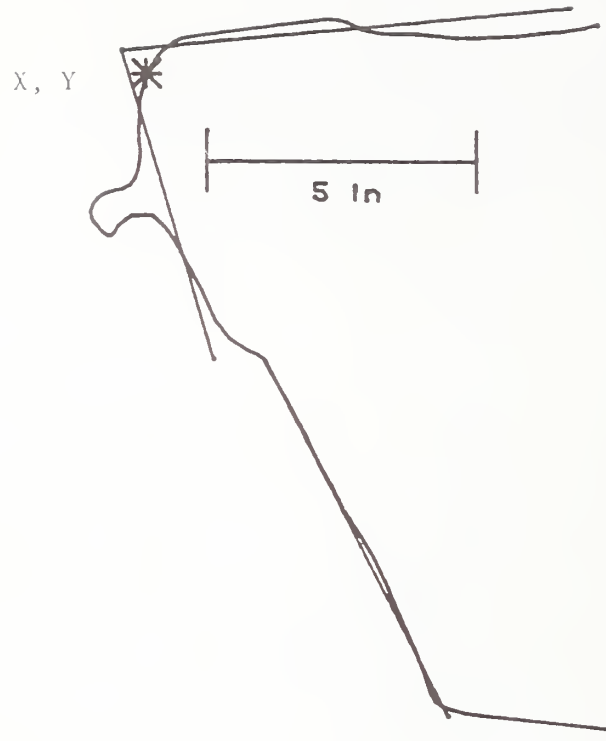
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

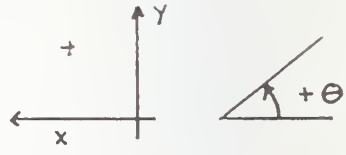
Test _____ Date: January 5, 1985

Vehicle: Pontiac Firebird

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y = 13.13, 24.75

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	7.5	12.1	115.5	7.79
Center Instrument Panel (4)	11.9	19.1	105.6	6.32
Upper Instrument Panel (5)	13.6	25.2	6.0	8.44
Windshield (6)	0.0	22.5	145.0	24.75
Header (7)	20.75	38.0	160.0	7.5

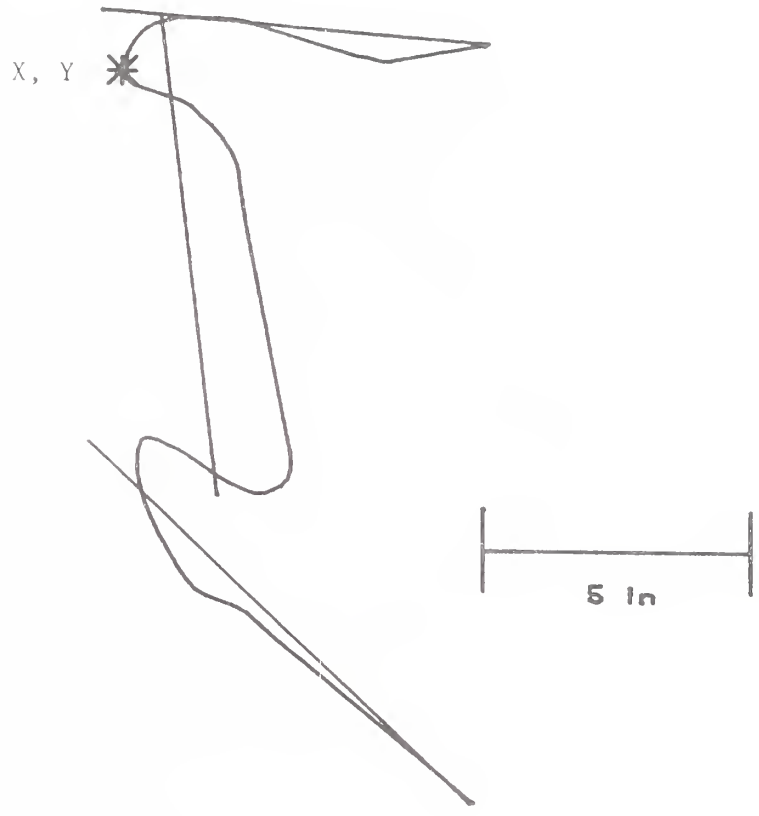
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

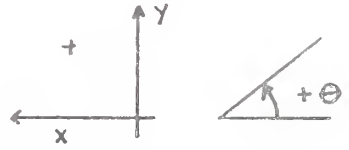
Test _____ Date: January 5, 1985

Vehicle: Pontiac Firebird

INSTRUMENT PANEL PROFILE

Driver Side





* X, Y = 14.75, 24.75

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	8.3	14.0	143.3	8.84
Center Instrument Panel (4)	13.0	18.5	98.7	7.16
Upper Instrument Panel (5)	15.1	25.6	356.7	7.22
Windshield (6)	0.0	22.5	145	24.75
Header (7)	20.75	38.0	160	7.5

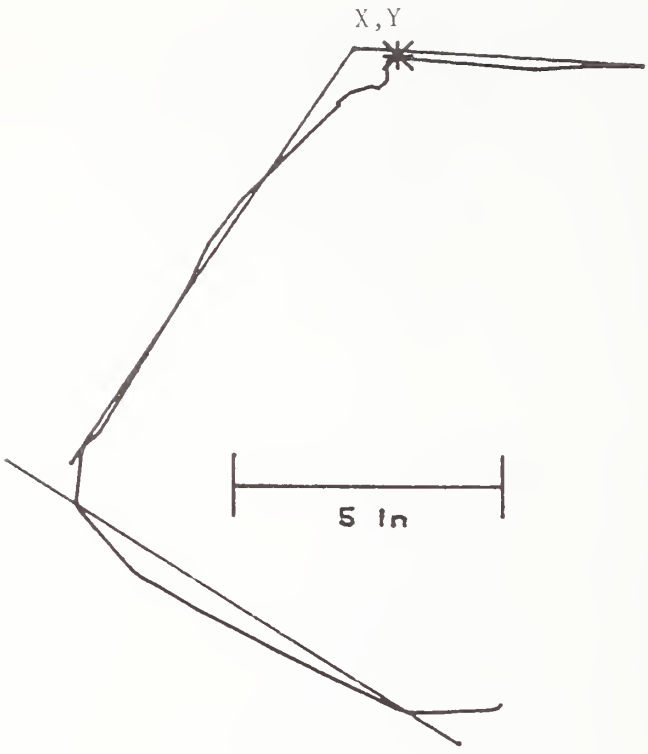
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

Test _____ Date: January 11, 1985

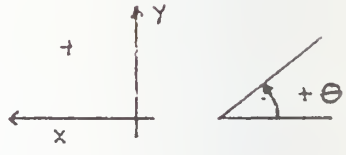
Vehicle: Chevy Celebrity

INSTRUMENT PANEL PROFILE

Passenger Side



* X, Y = 11.94,29.0



Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	10.8	15.5	146.6	10.05
Center Instrument Panel (4)	18.0	20.9	57.4	9.78
Upper Instrument Panel (5)	12.8	29.1	356.5	5.40
Windshield (6)	0.0	29.75	147.0	27.5
Header (7)	27.0	48.0	157.0	6.5

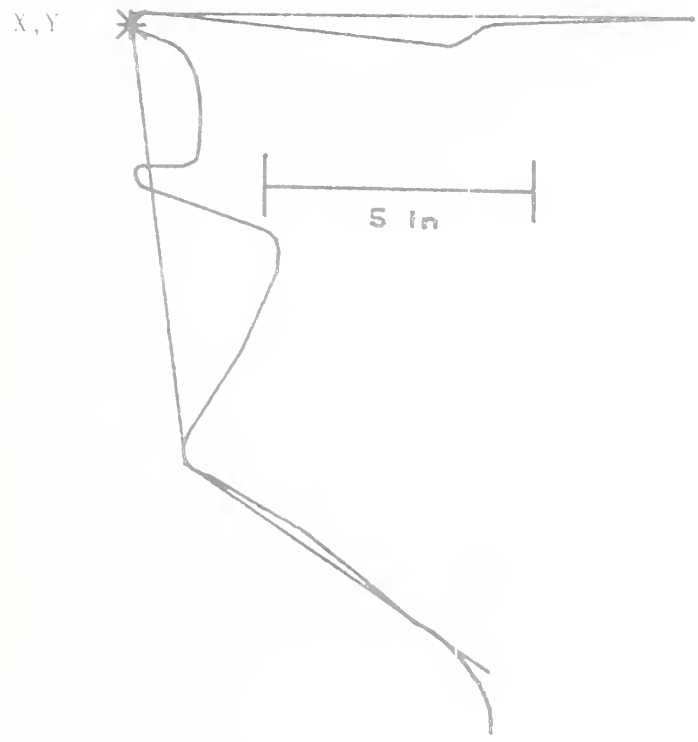
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

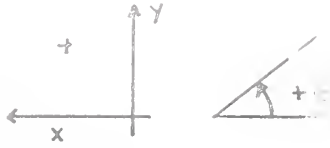
Test: _____ Date: January 11, 1985

Vehicle: Chevy Celebrity

INSTRUMENT PANEL PROFILE

Driver Side





* X, Y = 17,28.13

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

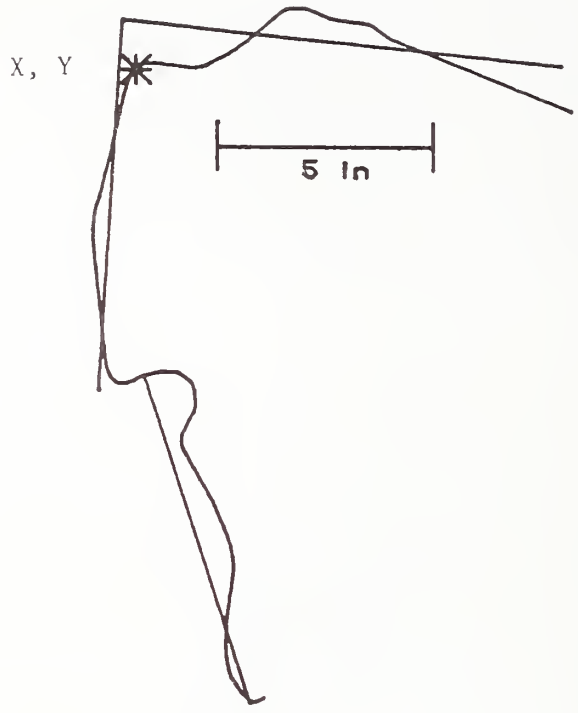
Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	10.3	15.5	144.6	6.90
Center Instrument Panel (4)	15.9	19.5	96.9	8.87
Upper Instrument Panel (5)	17.0	28.3	0.9	10.42
Windshield (6)	0.0	29.75	147.0	27.5
Header (7)	27.0	48.0	157.0	6.5

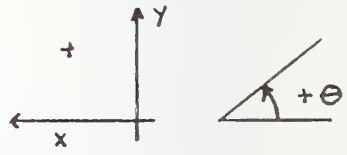
Number in parenthesis represents the corresponding contact plane number for the PADS2 Program.

Test _____ Date: January 15, 1985

Vehicle: Datsun 210

INSTRUMENT PANEL PROFILE
Passenger Side





* X, Y = 15.38, 26.88

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

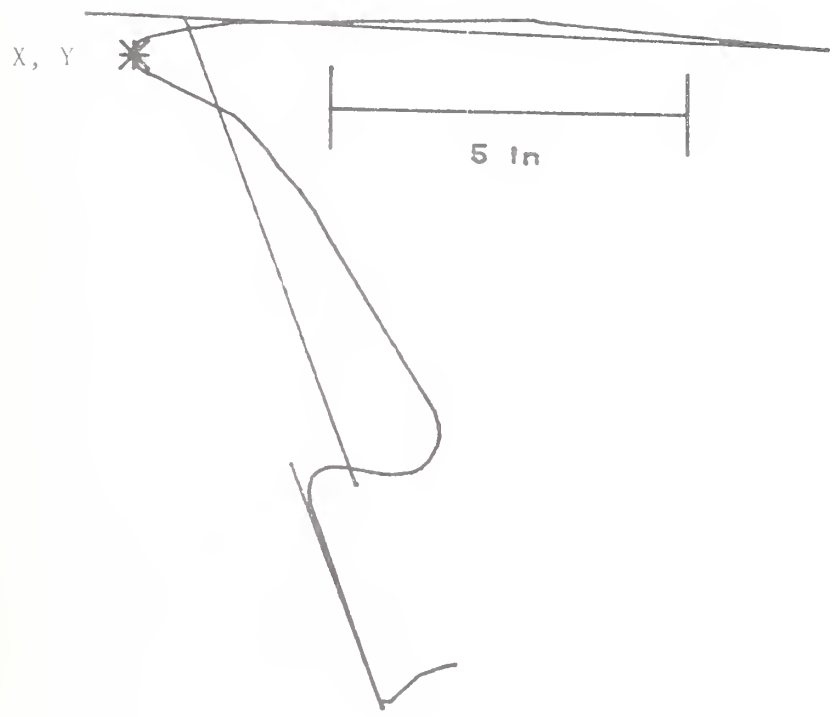
Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	12.8	11.3	106.7	8.44
Center Instrument Panel (4)	16.3	19.0	86.3	9.11
Upper Instrument Panel (5)	15.7	28.1	353.8	10.25
Windshield (6)	3.0	29.0	144.0	23.5
Header (7)	27.0	48.0	155	4.5

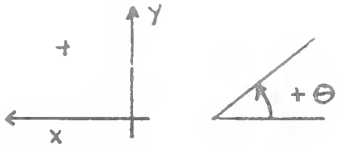
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

Test _____ Date: January 15, 1985

Vehicle: Datsun 210

INSTRUMENT PANEL PROFILE
Driver Side





* X, Y = 13.75, 28.75

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

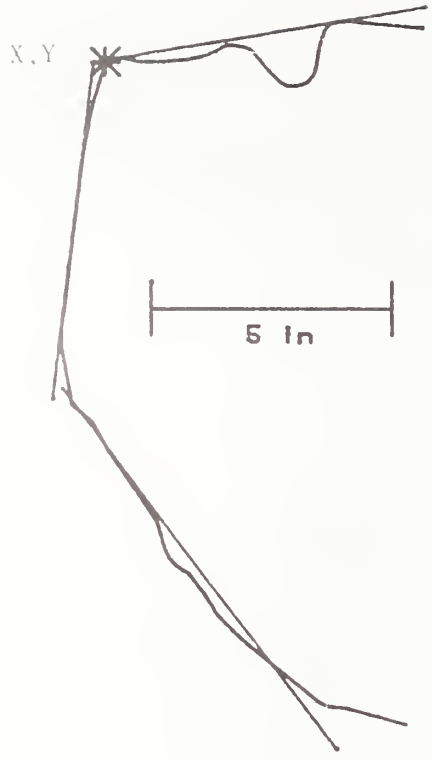
Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	10.3	19.2	109.5	3.83
Center Instrument Panel (4)	10.6	22.5	109.6	7.25
Upper Instrument Panel (5)	14.4	29.4	358.0	10.36
Windshield (6)	3.0	29.0	144.0	23.5
Header (7)	27.0	48.0	155.0	4.5

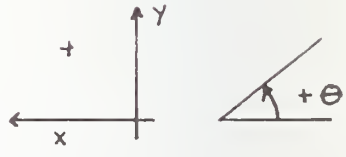
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

Test _____ Date: January 16, 1985

Vehicle: Pontiac LeMans

INSTRUMENT PANEL PROFILE
Passenger Side





* X, Y = 7.75, 26.5

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	3.2	11.25	125.4	9.82
Center Instrument Panel (4)	9.1	19.0	83.5	7.52
Upper Instrument Panel (5)	8.2	26.5	10.0	7.04
Windshield (6)	-1.0	28.0	148.0	27.5
Header (7)	21.0	42.0	159.0	5.25

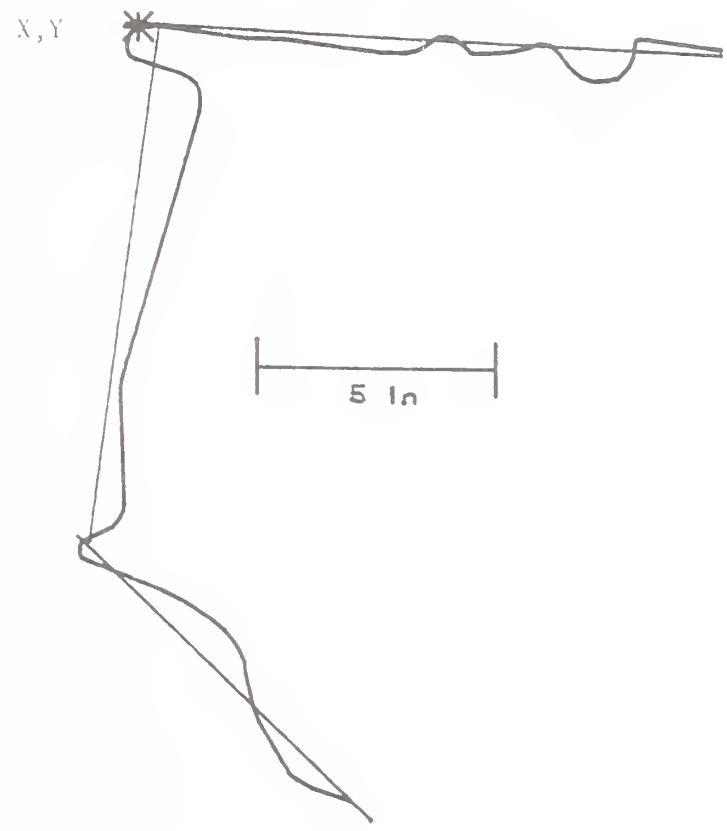
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

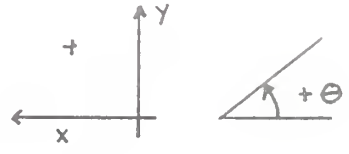
Test _____ Date: January 16, 1985

Vehicle: Pontiac LeMans

INSTRUMENT PANEL PROFILE

Driver Side





* X, Y = 13.5,27.49

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	8.63	10.0	134.4	8.75
Center Instrument Panel (4)	14.5	16.3	84.3	11.47
Upper Instrument Panel (5)	13.75	27.53	357.6	12.5
Windshield (6)	-1.0	28.0	148.0	27.5
Header (7)	21.0	42.0	159.0	5.25

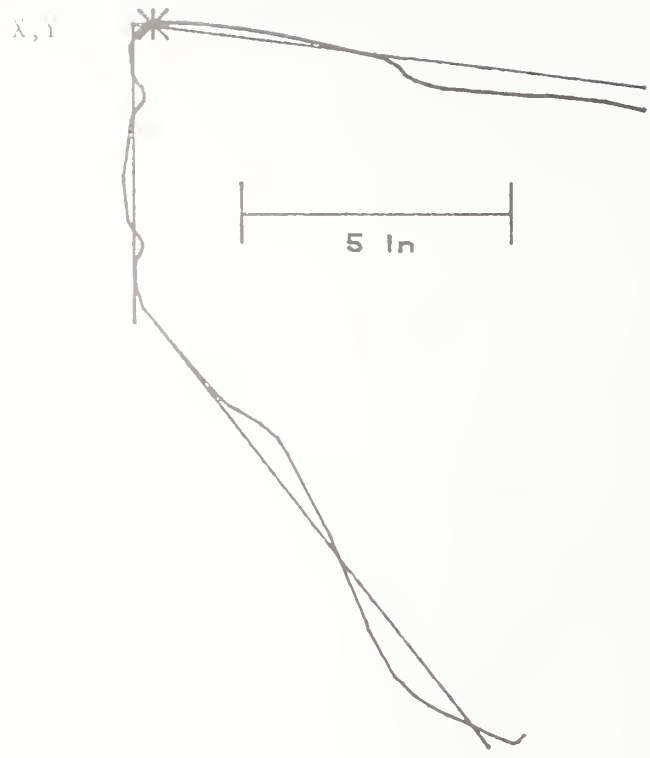
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

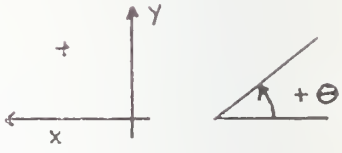
Test _____ Date: January 18, 1985

Vehicle: Chevy Nova

INSTRUMENT PANEL PROFILE

Passenger Side





13.125, 28.75

located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	7.0	14.5	126.2	10.38
Center Instrument Panel (4)	13.5	22.9	90.0	5.88
Upper Instrument Panel (5)	13.5	28.8	352.5	9.58
Windshield (6)	4.8	29.8	147.0	26.00
Header (7)	26.5	42.0	158.0	8.00

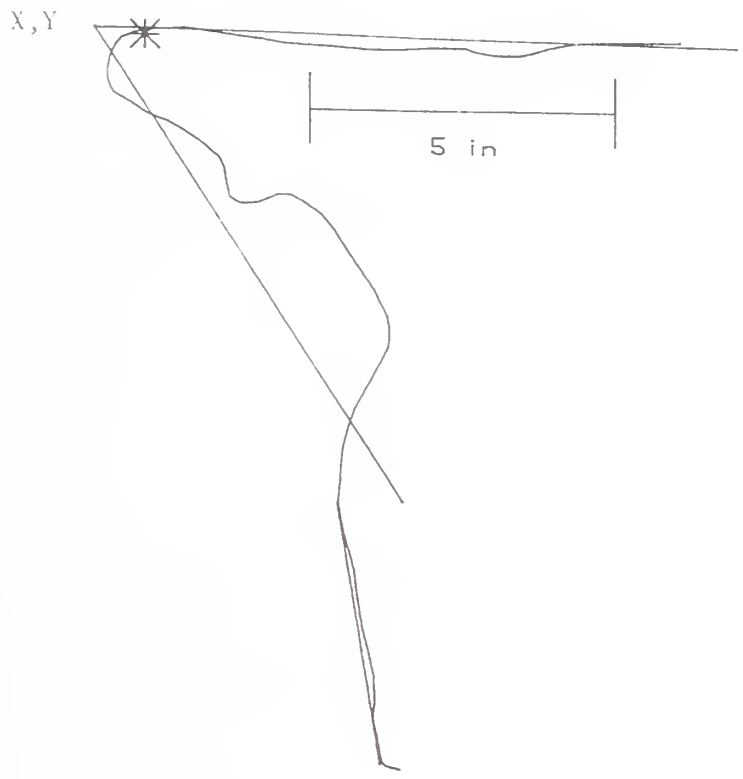
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

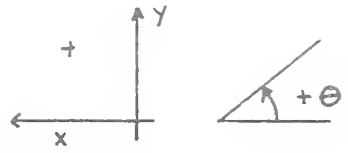
Test _____ Date: January 18, 1985

Vehicle: Chevy Nova

INSTRUMENT PANEL PROFILE

Driver Side





* X, Y =

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	7.9	15.3	95.1	4.55
Center Instrument Panel (4)	7.5	19.8	121.6	9.54
Upper Instrument Panel (5)	12.5	27.9	358.6	10.50
Windshield (6)	4.8	29.8	147.0	26.0
Header (7)	26.5	42.0	158.0	8.0

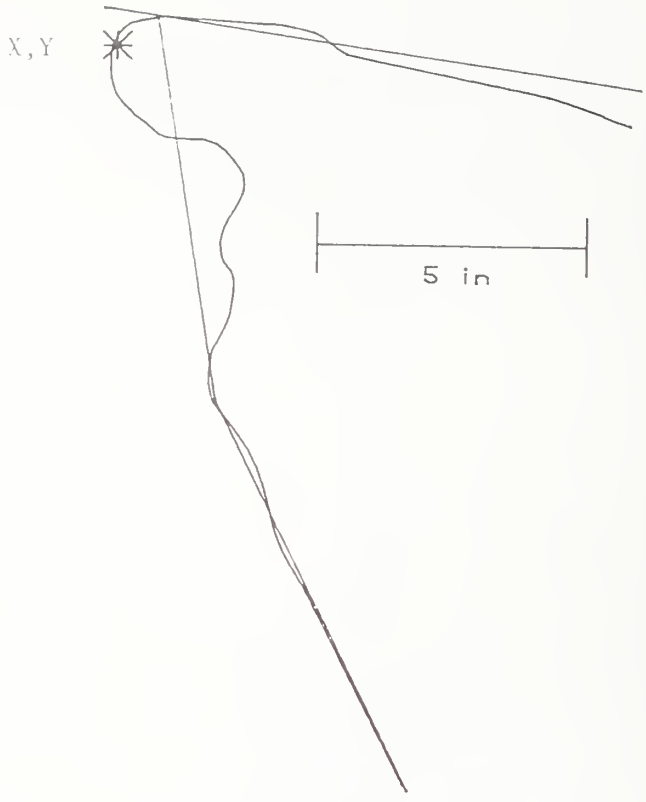
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

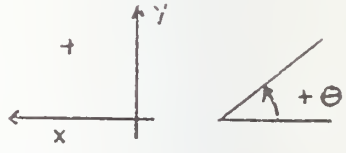
Test _____ Date: January 24, 1985

Vehicle: Ford Granada

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y =

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	10.8	14.8	115.4	8.47
Center Instrument Panel (4)	14.4	22.4	98.5	7.62
Upper Instrument Panel (5)	16.5	30.1	351.5	10.11
Windshield (6)	1.0	32.0	148.0	25.00
Header (7)	23.0	42.5	156.0	7.75

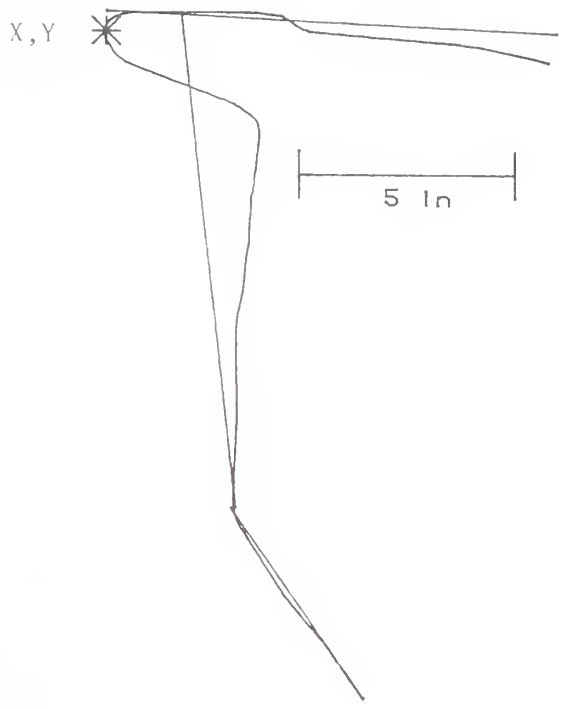
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

Test _____ Date: January 24, 1985

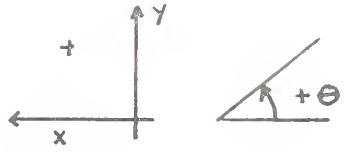
Vehicle: Ford Granada

INSTRUMENT PANEL PROFILE

Driver Side



* X, Y =



Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

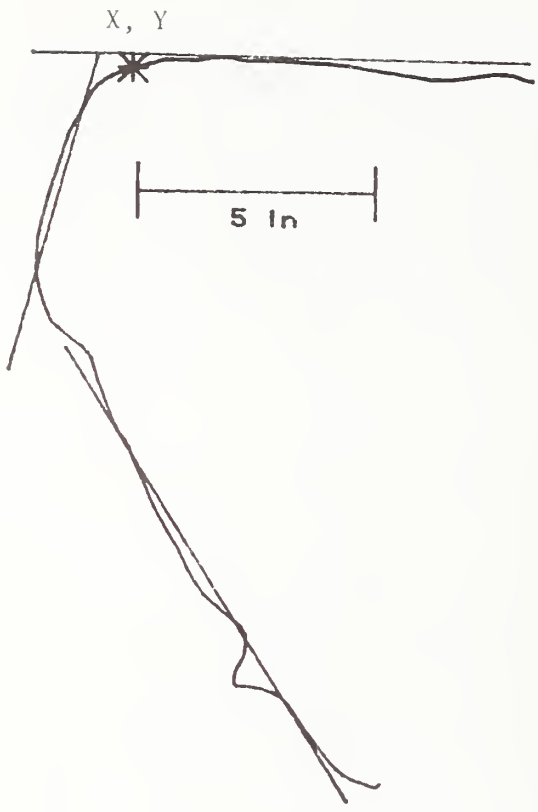
Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	10.6	15.5	123.2	5.59
Center Instrument Panel (4)	13.5	19.8	95.9	12.26
Upper Instrument Panel (5)	16.5	32.0	357.3	10.51
Windshield (6)	1.0	32.0	148.0	25.00
Header (7)	23.0	42.5	156.0	7.75

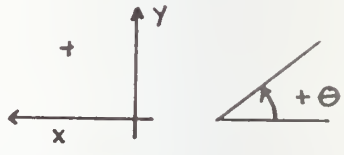
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

Test _____ Date: January 28, 1985

Vehicle: 1979 Chrysler Cordoba

INSTRUMENT PANEL PROFILE
Passenger Side





* X, Y = 14.125, 26.75

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

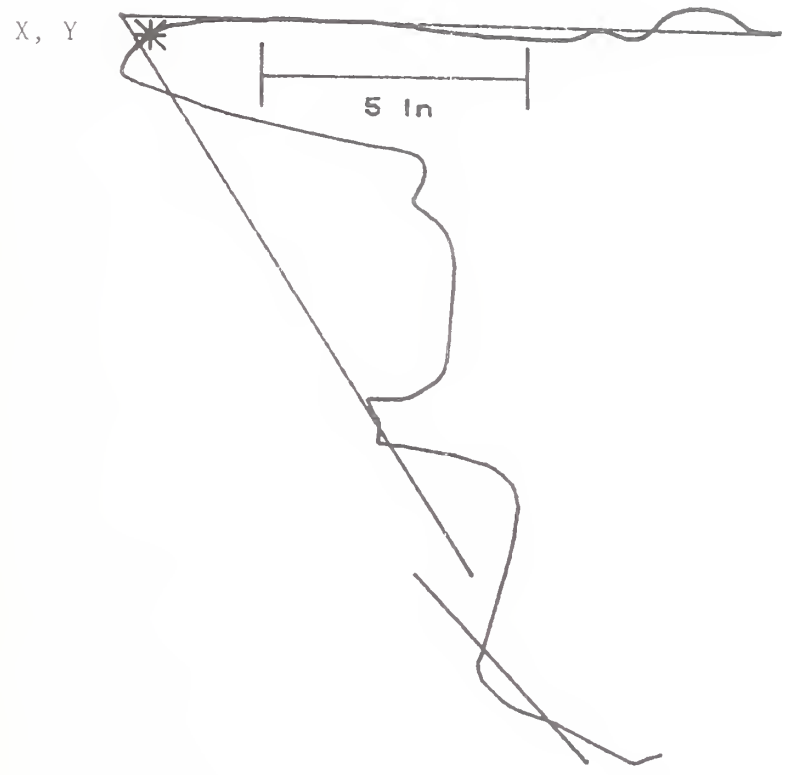
Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	9.5	10.5	121.0	11.66
Center Instrument Panel (4)	16.7	20.0	75.4	7.23
Upper Instrument Panel (5)	16.3	27.1	359.3	10.50
Windshield (6)	1.5	31.5	148.0	25.75
Header (7)	23.5	42.0	161.0	7.00

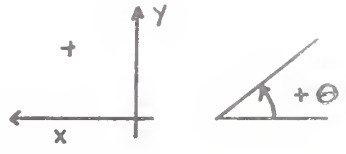
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

Test _____ Date: January 28, 1985

Vehicle: 1979 Chrysler Cordoba

INSTRUMENT PANEL PROFILE
Driver Side





* X, Y = 14.0625, 27.75

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	5.9	13.5	138.9	4.91
Center Instrument Panel (4)	8.1	17.2	121.0	12.75
Upper Instrument Panel (5)	14.6	28.1	359.1	12.25
Windshield (6)	1.5	31.5	148.0	25.75
Header (7)	23.5	42.0	161.0	7.00

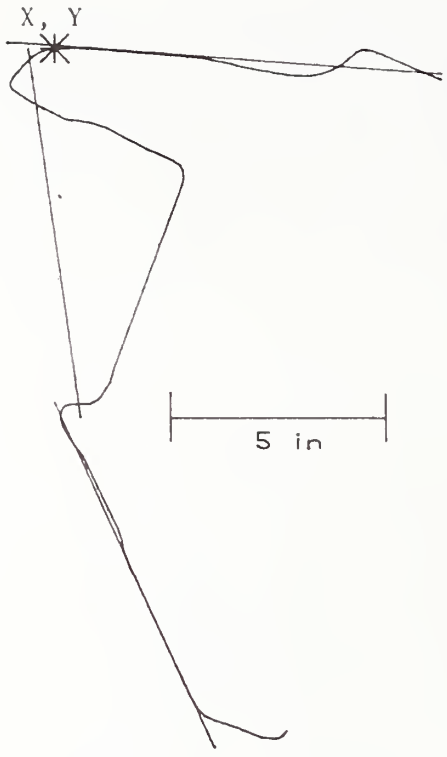
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

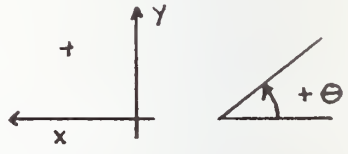
Test _____ Date: January 30, 1985

Vehicle: Buick LeSabre

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y = 15.125, 27.125

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	11.6	9.9	113.3	9.23
Center Instrument Panel (4)	14.6	18.0	97.2	9.20
Upper Instrument Panel (5)	16.3	27.3	355.8	10.15
Windshield (6)	0.0	29.8	144.0	27.00
Header (7)	22.0	43.0	164.0	7.50

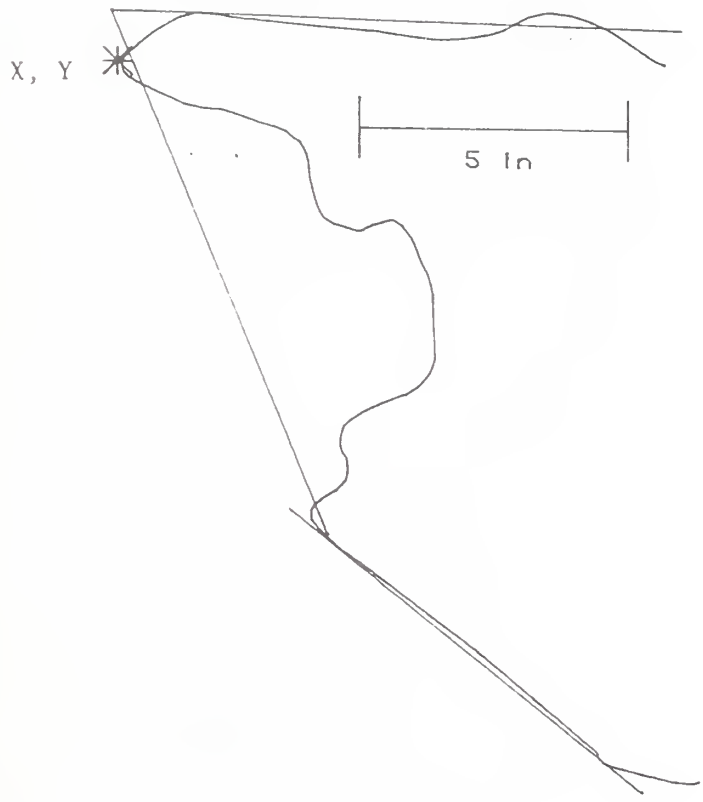
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

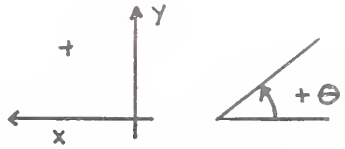
Test _____ Date: January 30, 1985

Vehicle: Buick LeSabre

INSTRUMENT PANEL PROFILE

Driver Side





* X, Y = 15.5, 28.25

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	5.8	14.0	140.0	8.55
Center Instrument Panel (4)	11.6	19.0	111.4	11.01
Upper Instrument Panel (5)	15.6	29.3	358.7	10.63
Windshield (6)	0.0	29.8	144.0	27.00
Header (7)	22.0	43.0	164.0	7.50

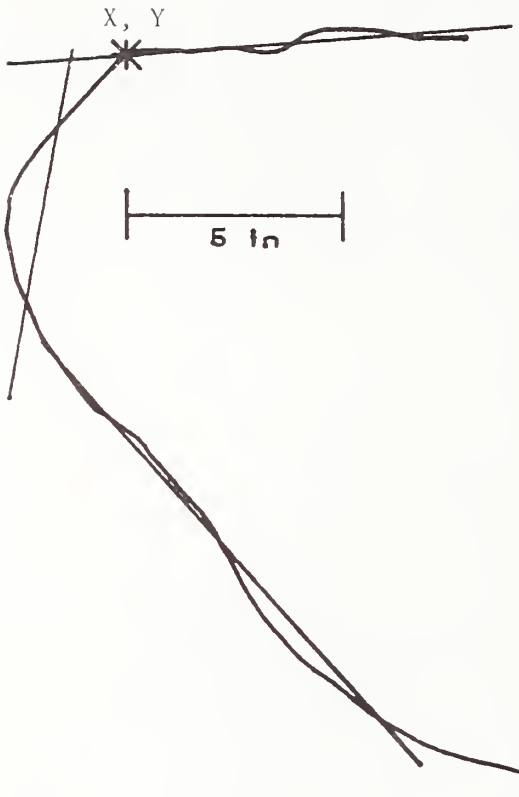
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

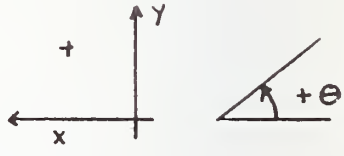
Test _____ Date: February 12, 1985

Vehicle: V W Rabbit

INSTRUMENT PANEL PROFILE

Passenger Side





* X, Y = 5.5, 25.0

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	-1.3	7.5	130.0	13.59
Center Instrument Panel (4)	8.3	16.5	80.1	8.75
Upper Instrument Panel (5)	8.3	24.8	4.9	11.79
Windshield (6)	-5.0	26.0	128.0	25.00
Header (7)	15.0	42.0	157.0	3.75

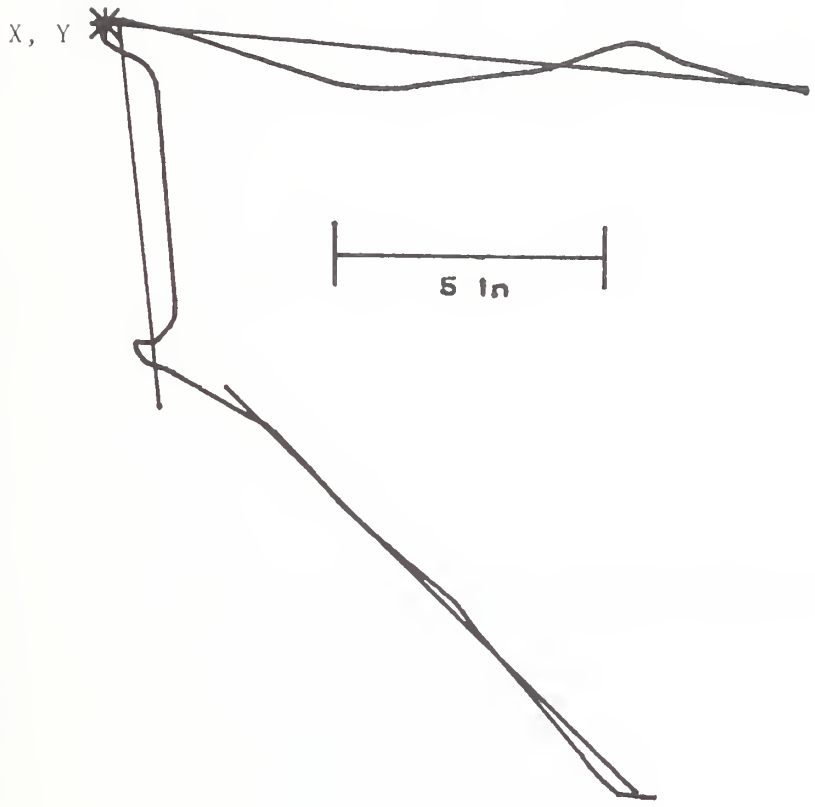
Number in parenthesis represents the corresponding contact plane numbers for the PADS2 Program.

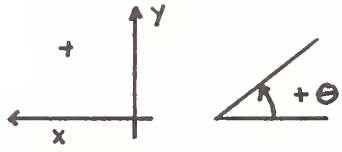
Test _____ Date: February 12, 1985

Vehicle: V W Rabbit

INSTRUMENT PANEL PROFILE

Driver Side





* X, Y = 8.25, 23.5

Origin (0,0) located at junction of toeboard and floorboard

Suggested Instrument Panel Profile Descriptors

Plane	X	Y	Angle (deg.)	Length
Lower Instrument Panel (3)	-1.6	8.5	133.9	10.96
Center Instrument Panel (4)	7.2	16.0	96.0	7.64
Upper Instrument Panel (5)	8.3	23.5	355.2	13.09
Windshield (6)	-5.0	26.0	128.0	25.00
Header (7)	15.0	42.0	157.0	3.75

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