PENETRATION CHARACTERISTICS OF HYPODERMIC NEEDLES IN POTENTIAL SKIN SIMULANTS SERIES I

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16. Abstract

Penetration characteristics of hypodermic needles in three synthetic materials being considered as skin simulants for needle testing were studied using an automatic, constant-velocity, computer-controlled injection device. The materials were penetrated in both dry and olive-oil-soaked conditions using dry, 1249-lubricated, and 360-lubricated needles. Penetrations were made at 90 and 45 degrees to the material surface at 5 and 10 inches/second to a depth of 1-1/2 inches. Force and displacement signals were digitized during the tests and analyzed by computer. Results are compared for the different materials and test conditions and also with results from previous cadaver tissue tests.

17. Key Words		18. Distribution Statement
Hypodermic needle	Force	With Sponsor Approval Only
Lubricant	Displacement	
Synthetic		
Skin simulant		

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
None	None	143	

CONTENTS

A. Introduction

To compare and evaluate modifications in needle design and lubricants, a standard penetration test using a skin simulant with reproducable penetration characteristics similar to those of real tissue must be available. This material need not produce identical force values as normal tissue during penetration, but should exhibit the general force-displacement characteristics and the same pattern of response differences to different needles, lubricants, and test conditions. In a previous study (1), force-displacement characteristics of hypodermic needles in cadaver tissue were obtained and quantitatively evaluated and compared for a number of tissue, needle lubricant, and test conditions. This report contains the results of penetration tests on three potential skin simulants in dry and oil-soaked states and compares these results to the characteristics of cadaver tissue.

B. Methods and Procedure

A total of 266 penetration tests were performed on three potential skin simulants supplied by Becton-Dickinson, using the procedures and test set-up described in (1). Each piece of synthetic material was glued between the two aluminum rings used for excised cadaver skin tests, trimmed of excess material, and placed in the spring-clamp fixture. Materials were first tested in the dry condition, then soaked for 2 hours in olive oil containing 2% PVA* and retested after mopping the material surfaces. Each material in the dry and oil-soaked conditions was penetrated with DRY, BD1249-lubricated, and 360-lubricated hypodermic needles (22-1/2 g - 1-1/2") at 90 and 45 degrees to the skin surface. Ninety degree tests

*poly vinyl alcohol

were performed at velocities of 5 and 10 inches/second, while 45° tests were performed only at 5 inches/second. Table 1 lists the six material conditions tested and gives the abbreviations used in referring to them in this report. Table 2 shows the sample sizes of tests performed for each material/test condition. All punctures were made to a depth of 1.5 inches, and force-displacement curves were analyzed by the same computer program, "WCAL", as used for cadaver tests.

C. Results

1. General

Figures 1 through 6 show actual force-time curves obtained for each material condition tested for the three lubricant conditions at 5 inches/second and 90 degrees. Appendix C contains the summary statistics for each measurement variable for the 54 test strata (velocity/lubricant/angle/material) comprising the synthetic material tests. Tables 3, 4, and 5 present the average values of selected variables derived from these data, while Figures 7, 8, and 9 compare the average reconstructed force-displacement curves for tests at 5 inches/second and 90 degrees. In general, it is seen that all the curves demonstrate the same general features observed for cadaver tests of excised skin. In every case the force increases to a peak value, then drops suddenly to a much smaller but non-zero value which slowly decreases as penetration continues. In only one case (DRY/BLKO) is the force F4 significantly greater than F3.

2. Effect of Penetration Velocity

Figures 10A through 10R graphically compare the average reconstructed force-displacement curves for penetrations at 5 and 10 inches/second. In every case it is seen that the curve at 10 inches/second lies above the

curve at 5 inches/second. Table 6 illustrates that in a majority of cases the peak force (F2), force at 1 inch penetration (F4), and normalized drag work (NDWK2) differences are significant. Differences in D2 and D3 are not consistent and generally not significant.

3. Effects of Penetration Angle

Figures 11A through 11R graphically compare the average reconstructed force-displacement curves for penetrations at 45 and 90 degrees to the material surface. In every case the curve at 45 degrees lies above the curve at 90 degrees, indicating a consistent difference in results at the two angles.

4. Effect of Needle Lubricant

Figures 12A through 12F compare the average reconstructed force-displacement curves for the three lubricant conditions for each material condition. For the dry materials, it is seen that the curves for DRY needles lie considerably above the curves for lubricated needles. This is similar to the results obtained in cadaver tissue. Comparing the two lubricant conditions in dry material, it is seen that the peak force values are nearly identical but that the values of F3 and F4 are consistently larger for the 1249 lubricated needles. This is also similar to the results in cadaver tissue.

For the oil-soaked materials, the differences in peak force values between DRY and lubricated needles become insignificant and, in fact, for the white oiled material, the peak force is greater for 360-lubricated needles than DRY needles. Figures 7, 8 and 9 show that the effect of oil soaking the materials is to markedly reduce peak force (F2) and distance at peak force (D2) for DRY needles. Results for lubricated needles are altered only slightly but in a similar manner.

5. Comparisons of Materials

Figures 7 through 9 show that force values for the white material are consistently greater by a factor of 2 or more than those for GWHT or BLK in both the dry and oil soaked conditions. Force values for GWHT and BLK are nearly identical for all conditions, with the primary difference between these materials being the displacement at peak force, with D2 for GWHT being consistently greater than for BLK for all conditions.

6. Comparisons with Cadaver Results

a. General Fit. Table 7 shows the average values of selected measurements for cadaver buttock skin tests. Figures 13, 14, and 15 compare the average reconstructed curves for these cadaver tests with those of the synthetic materials for each needle lubricant condition. Tables 8 through 13 give the ratios of average measurement values for the synthetics with those of the cadaver buttock tests.

For dry needles, it is seen that the material BLK gives perhaps the best fit to the BUTT/SKIN curve in terms of values and ratios, while GWHTO is also a good fit to BUTT/SKIN in terms of force ratios being fairly constant for F2, F3, and F4, and D2 and D3 being fairly close in values. The material GWHT provides the best match to BUTT/SMIS for DRY needles.

For 360-lubricated needles, the BLK and GWHT materials in dry and oil-soaked conditions provide a fair match in force values to the cadaver data but differ significantly in values of D2 and D3, the synthetics having the smaller values in every case. However, none of the synthetic materials matches the intact cadaver tissue in the value of F4 or F4/F3.

For the 1249-lubricated needles, peak force values match fairly well for GWHT and BLK in dry and oil-soaked conditions, but the values of F3 match less well, the cadaver tests having the higher value. As with the 360 lubricant, the values of D2 and D3 are consistently smaller for the synthetics, and none of the synthetics match the intact buttock skin results in values of F4 and F4/F3.

b. Lubricant Relationships. Tables 14 and 15 show the ratio of average measurement values for different lubricant conditions for excised and intact buttock skin tests, respectively. Tables 16 through 21 show these values for the six synthetic material conditions.

It is clear from these results that the oil-soaked materials cannot be considered for comparing dry needles with lubricated needles. However, the ratios for BLK/O are among the best in comparison to cadaver data for comparing 1249 and 360 lubricants. The ratio of F4 values for 1249 and 360 lubricants in BLK/O is in fact the only one that compares favorably with this ratio from BUTT/SKIN tests. For comparing 1249 and 360 lubricants, all the dry materials do a reasonable job, especially for BUTT/SKIN tests, but the best ratio comparisons are probably for the material WHT. For comparing dry and lubricated needles, the dry materials generally show larger force ratios than the cadaver tissue tests for F3 and F4, but fairly comparable ratios of peak force, F2. The ratios of D2 and D3 are also a fairly good match, especially to those of intact buttock tissue.

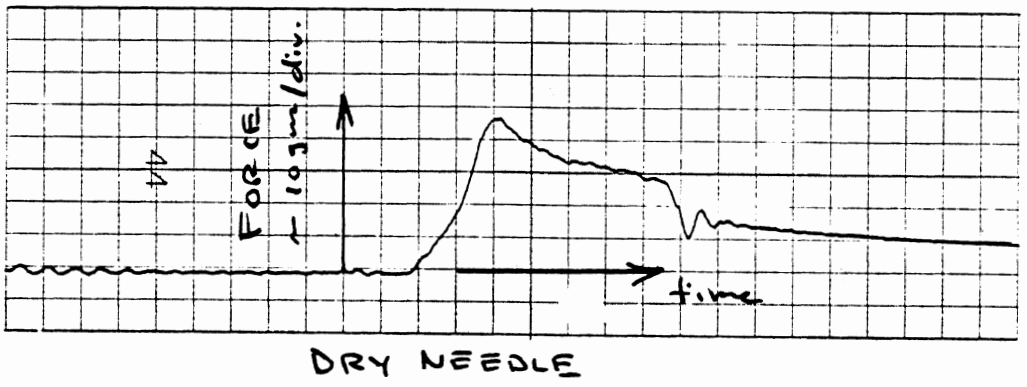
In terms of an overall match to the relationships of measurement variables for different lubricant conditions, the material WHT seems to provide the best results.

REFERENCES

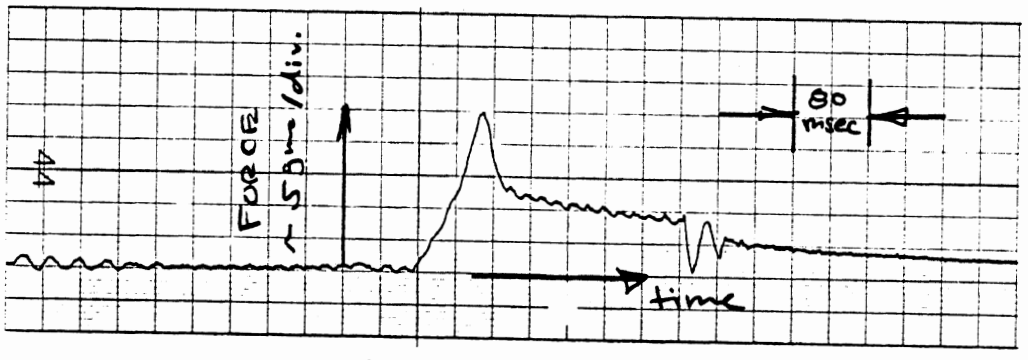
1. Schneider, L.W., Peck, L.S., Melvin, J.W., "Penetration Characteristics of Hypodermic Needles in Skin and Muscle Tissue", Phase I Report, Report No. UM-HSRI-78-23, June 1978.

APPENDIX A

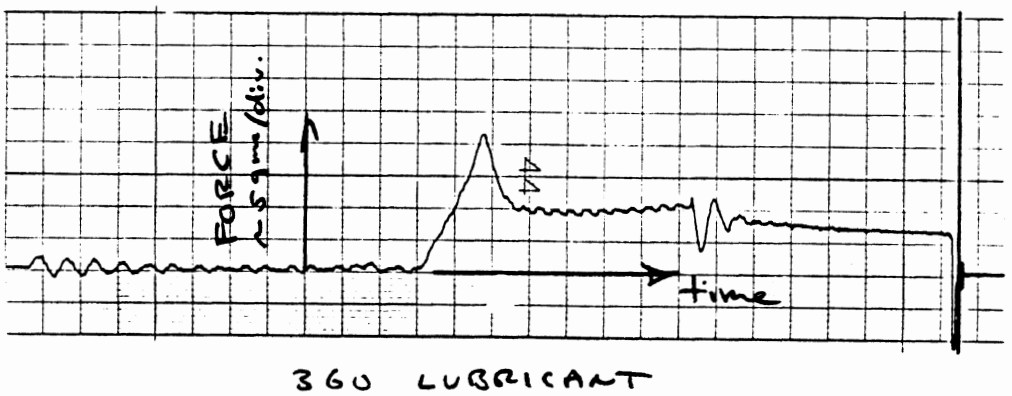
Figures 1 through 15



DRY NEEDLE

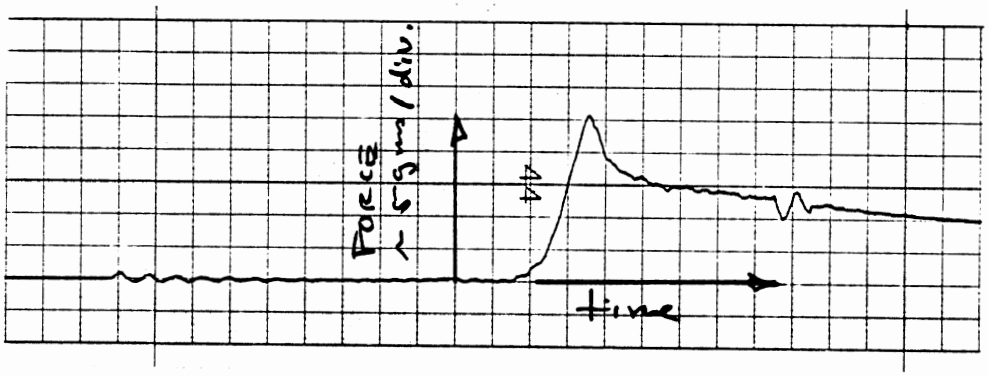


1249 LUBRICANT

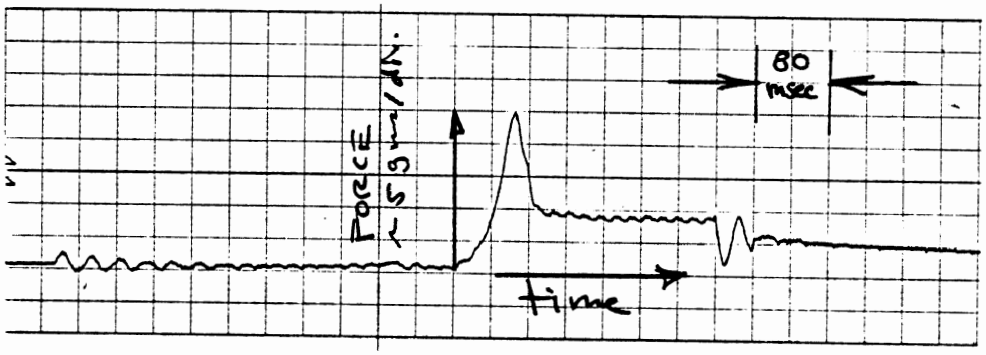


360 LUBRICANT

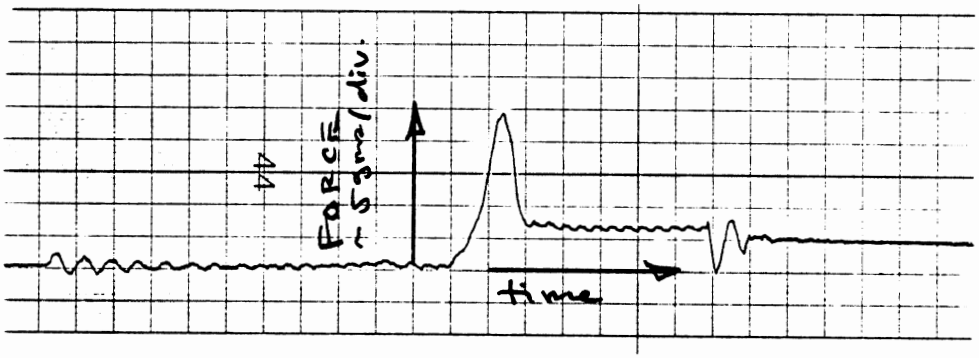
Figure 1. Actual force-time traces for GWHT material for Dry, 1249 lubricated, and 360 lubricated needles.



DRY NEEDLE

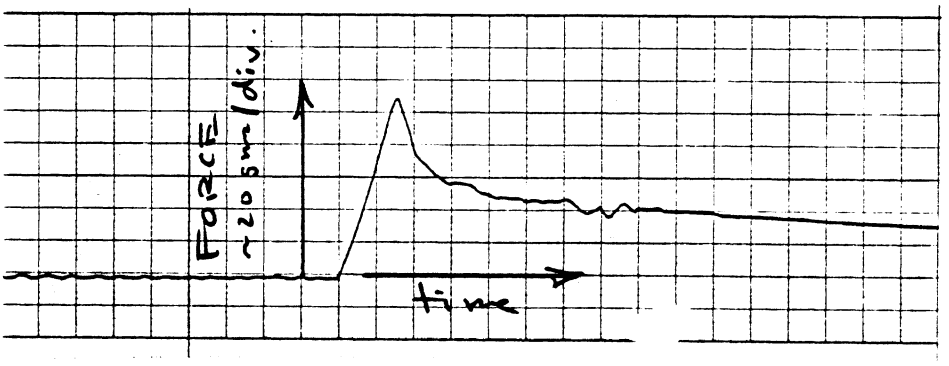


1249 LUBRICANT

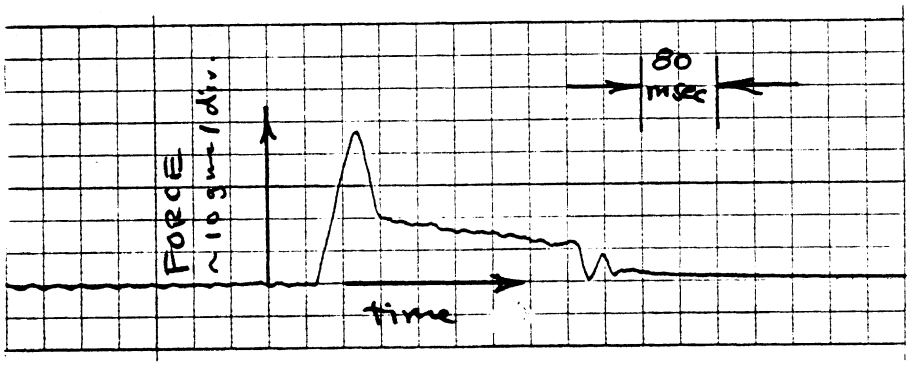


360 LUBRICANT

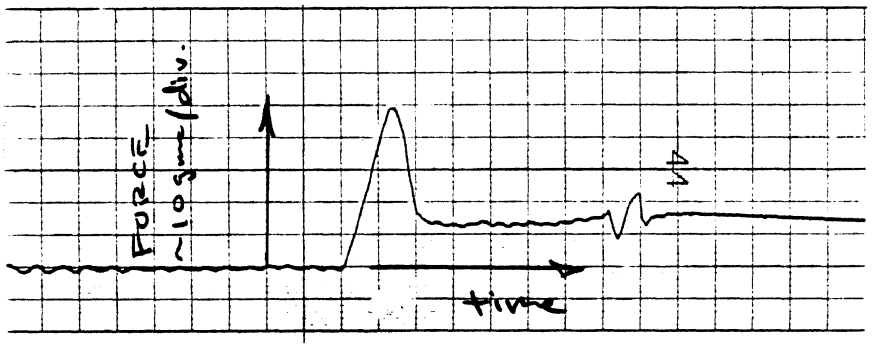
Figure 2. Actual force-time traces for BLK material for Dry, 1249 lubricated, and 360 lubricated needles.



DRY NEEDLE

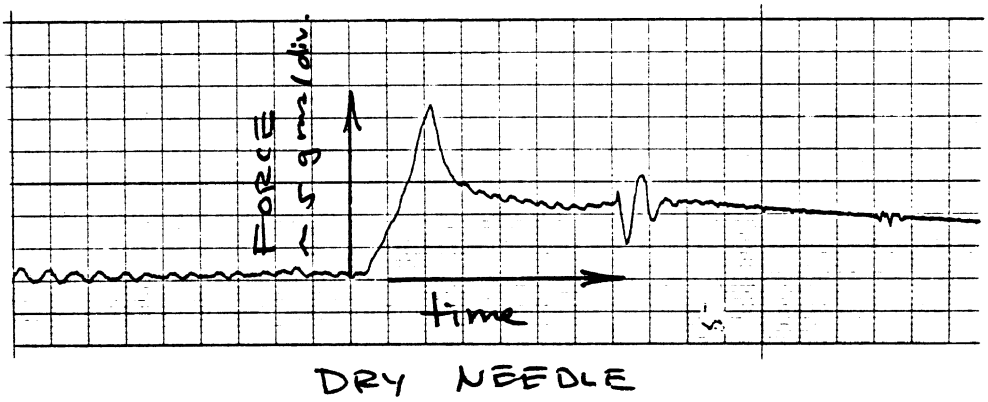


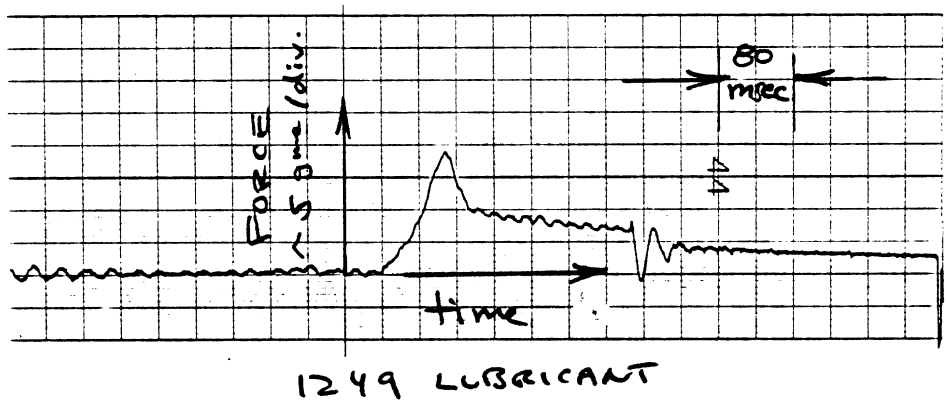
1249 LUBRICANT



360 LUBRICANT

Figure 3. Actual force-time tracers for WHT material for Dry, 1249 lubricated and 360 lubricated needles.





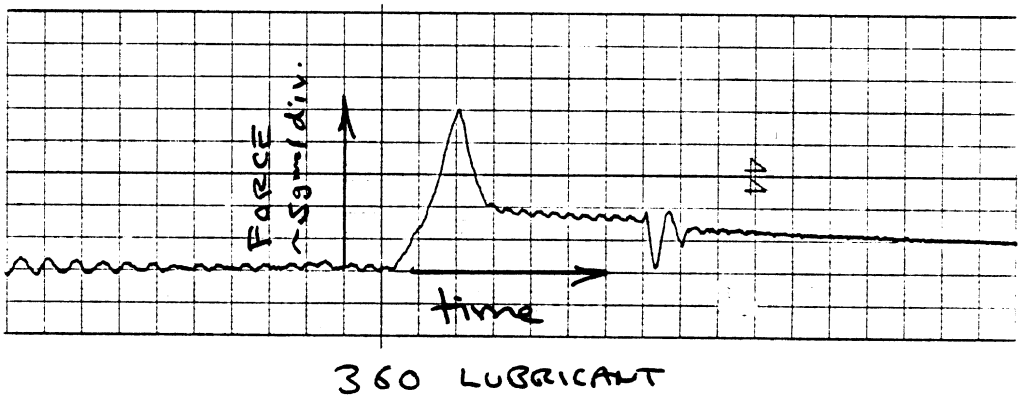
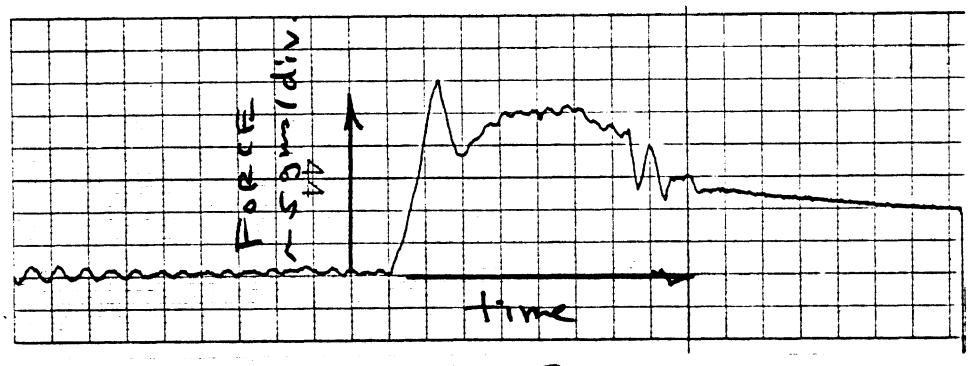
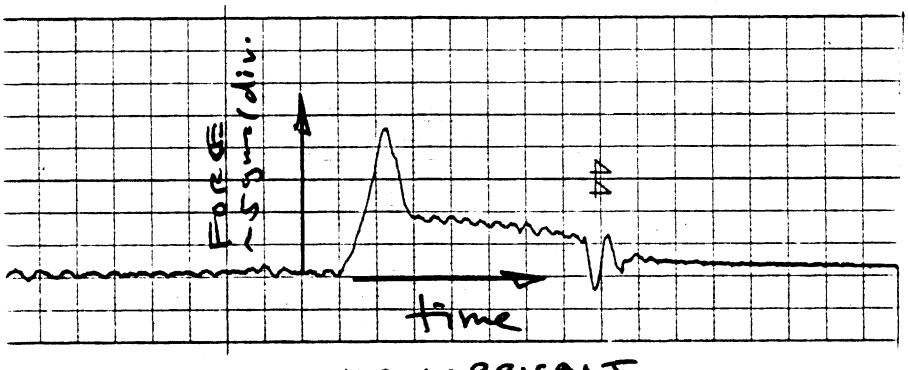


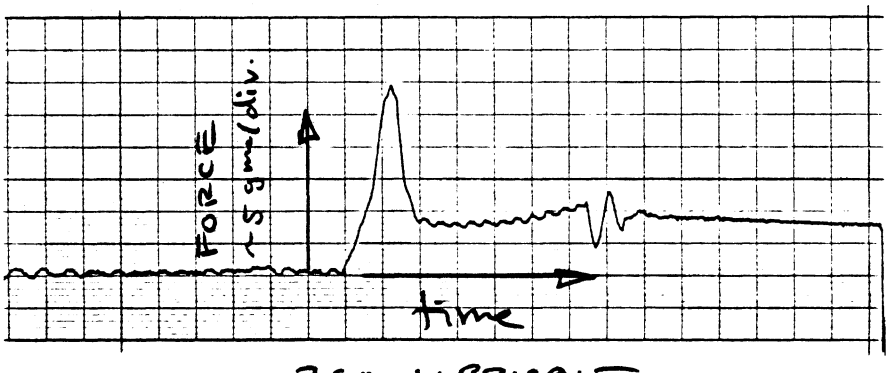
Figure 4. Actual force-time traces for GWHTO material for Dry, 1249 lubricated, and 360 lubricated needles.



DRY NEEDLE

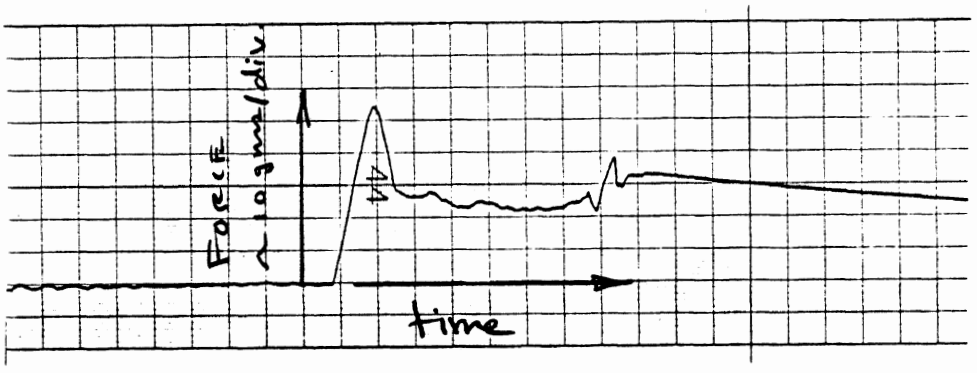


1249 LUBRICANT

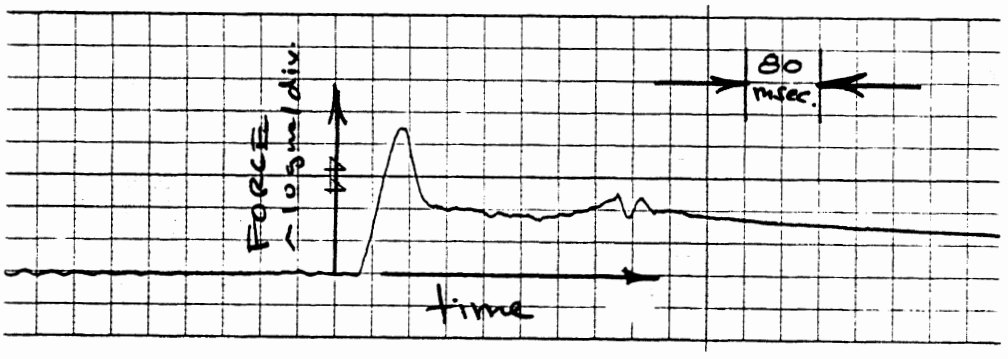


360 LUBRICANT

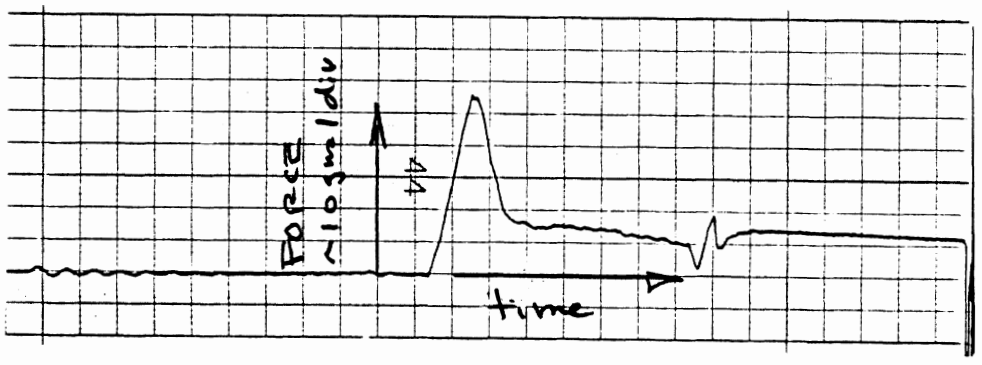
Figure 5. Actual force-time traces for BLKO material for Dry, 1249 lubricated, and 360 lubricated needles.



DRY NEEDLE



1249 LUBRICANT



360 LUBRICANT

Figure 6. Actual force-time traces for WHTO material for Dry, 1249 lubricated, and 360 lubricated needles.

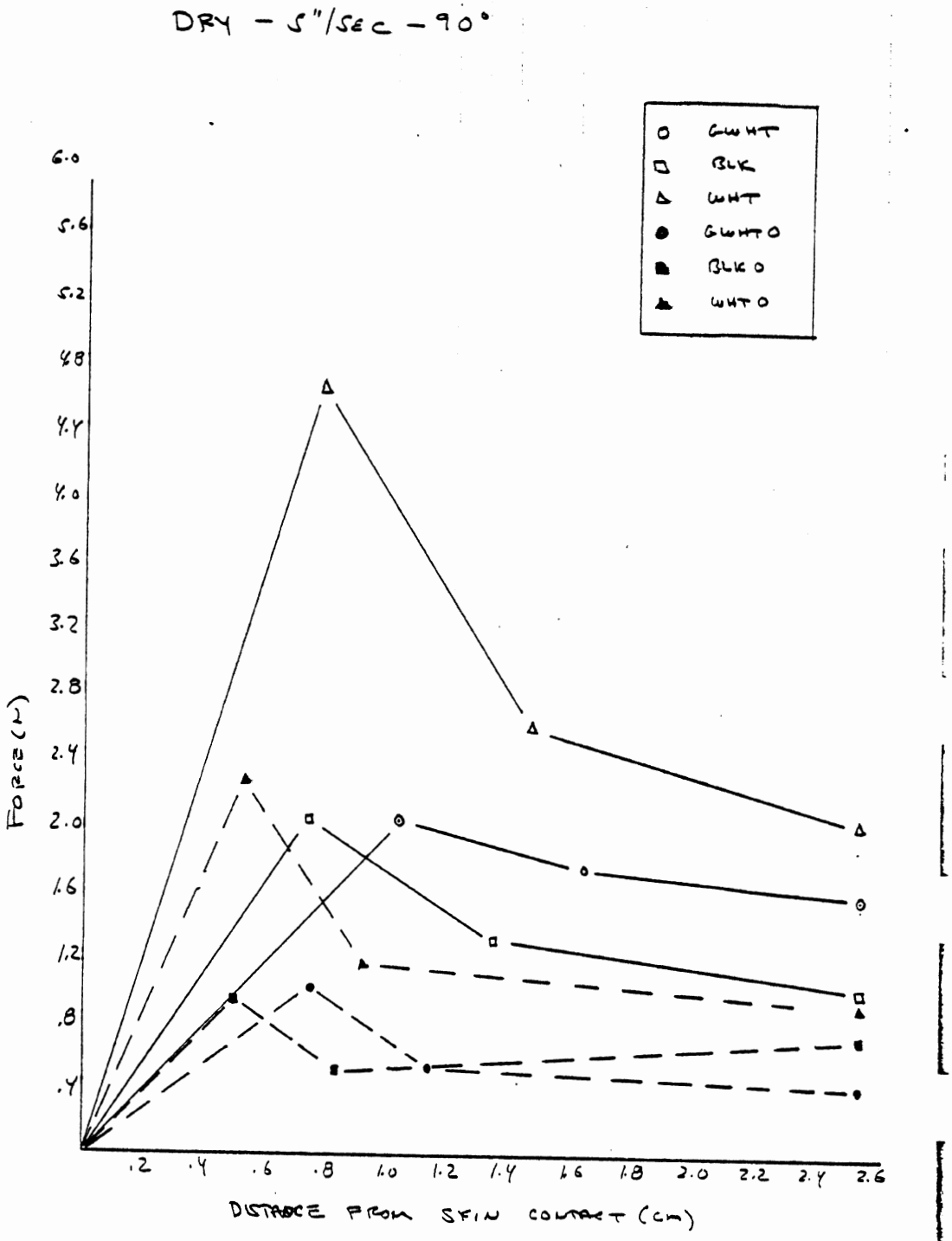


Figure 7. Comparison of average reconstructed force-displacement curves for dry needles in different materials at 5"/second and 90 degrees.

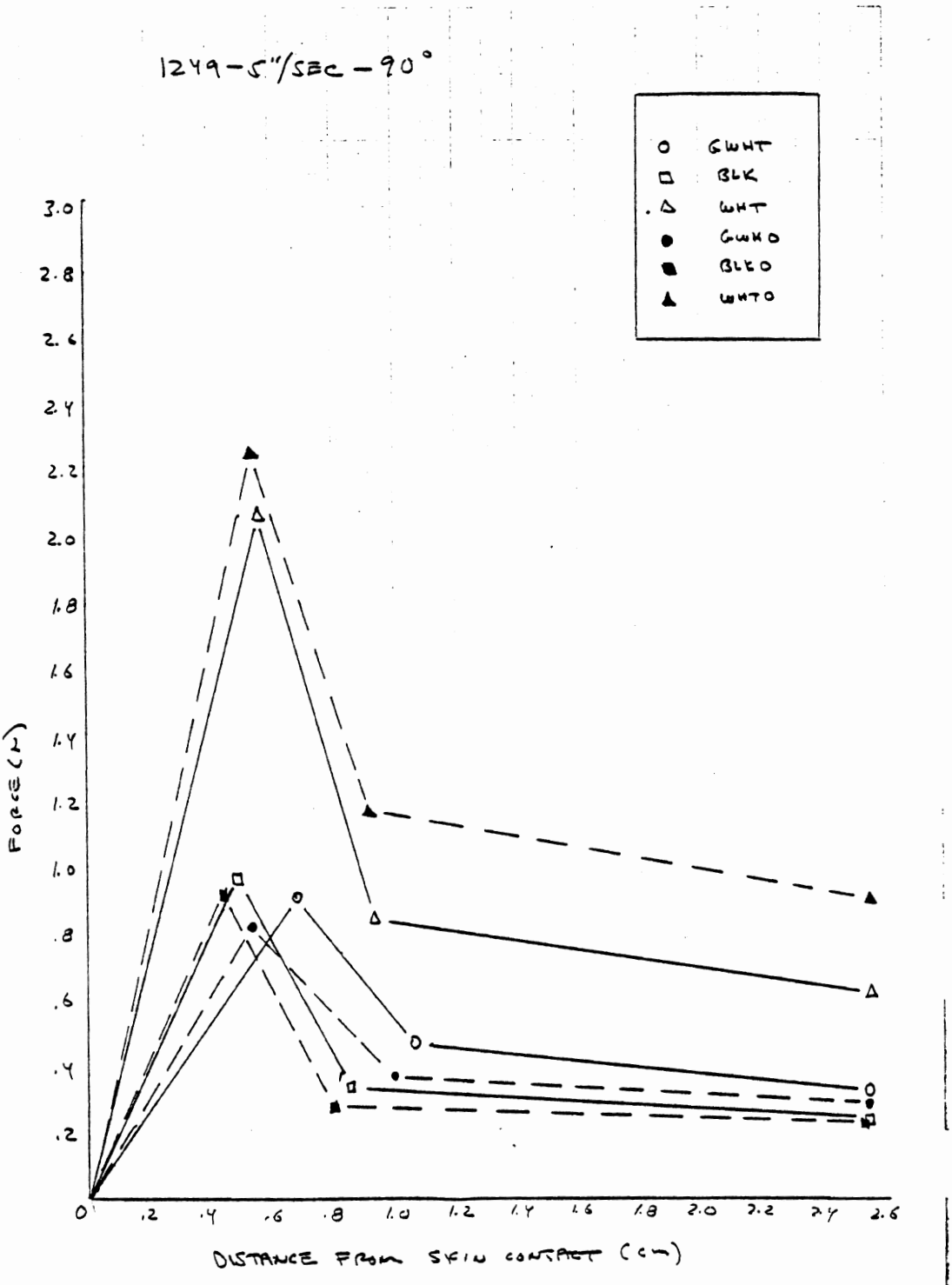


Figure 8. Comparison of average reconstructed force-displacement curves for 1249 lubricated needles in different materials at 5"/second and 90 degrees.

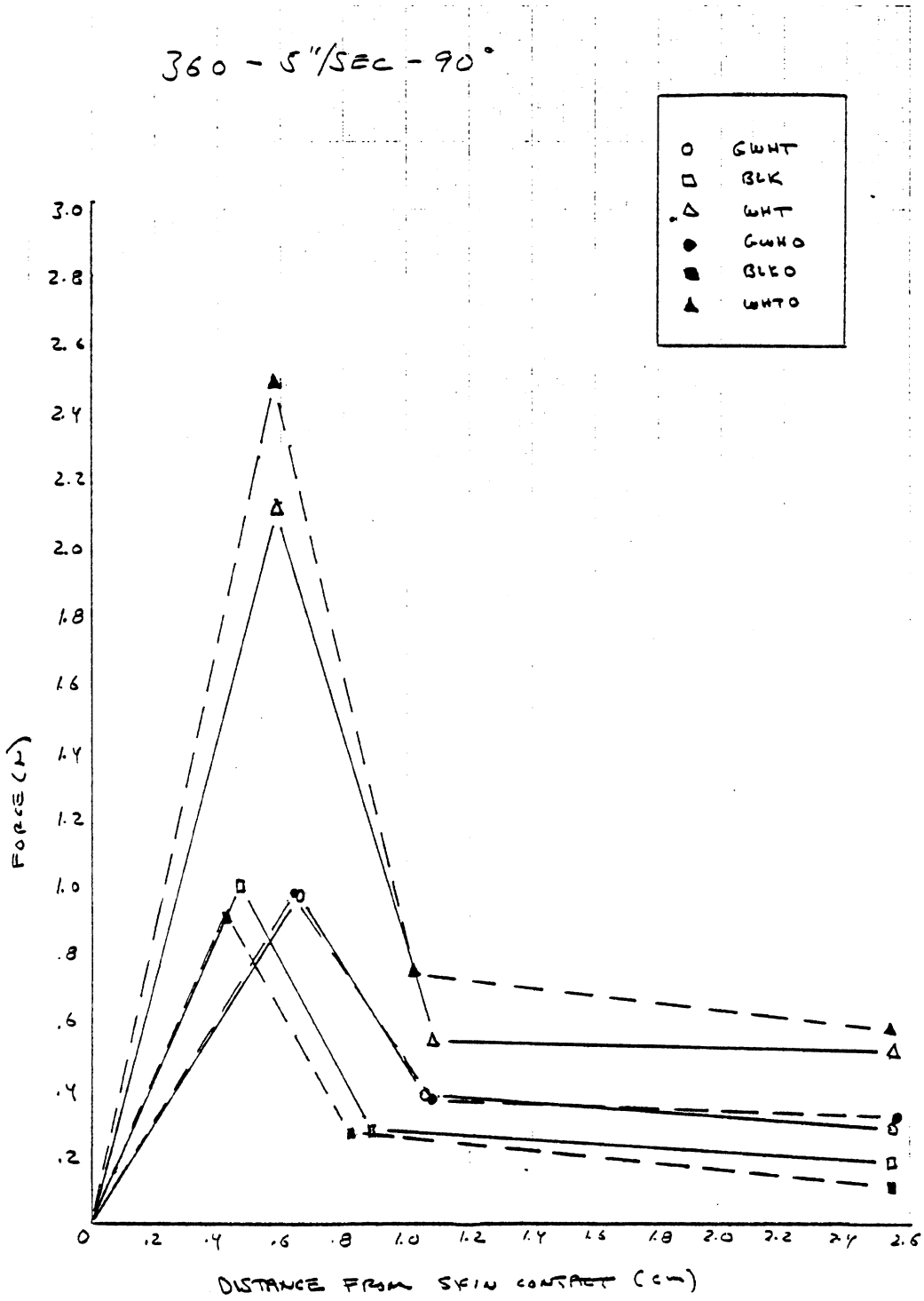
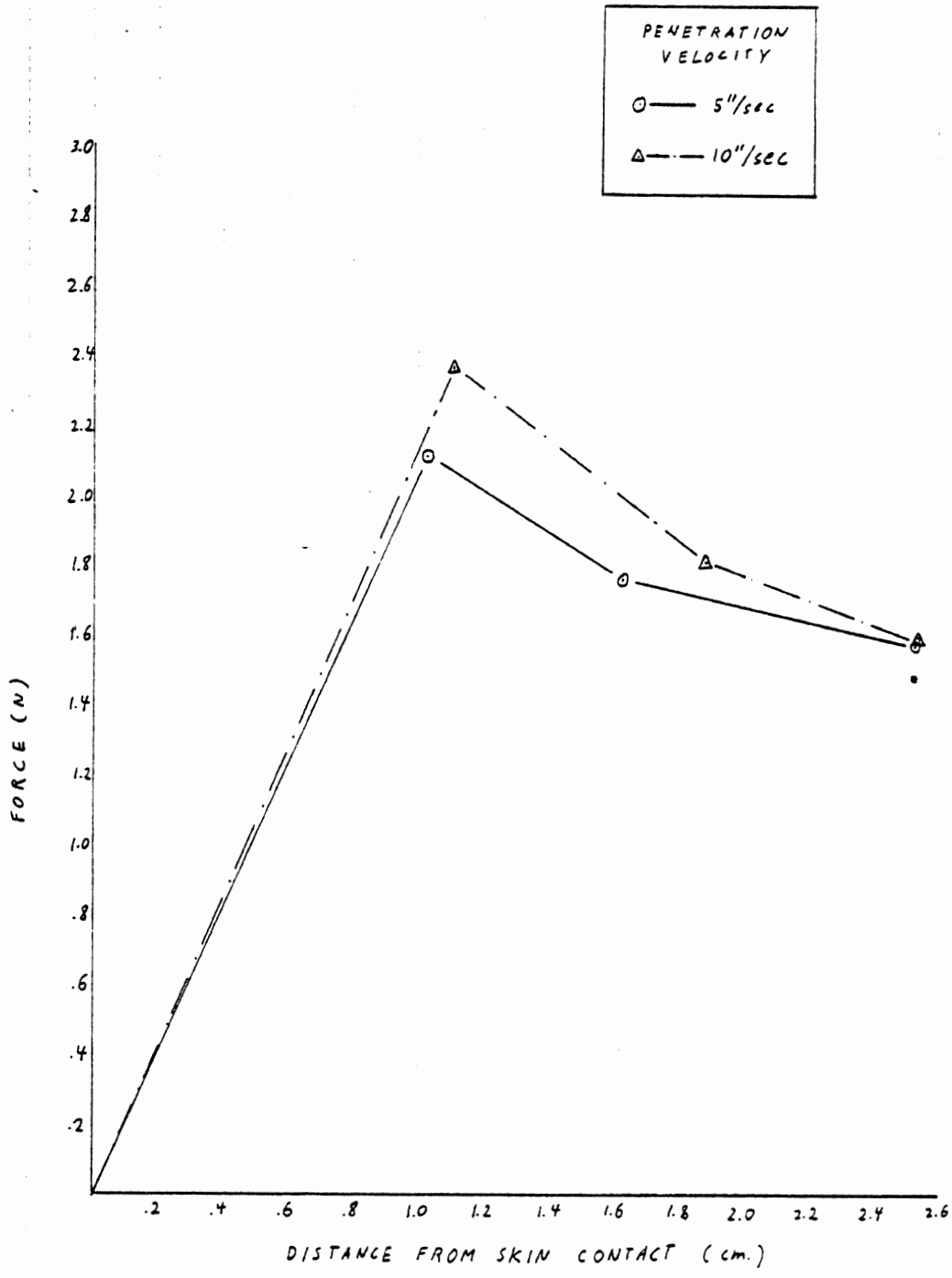


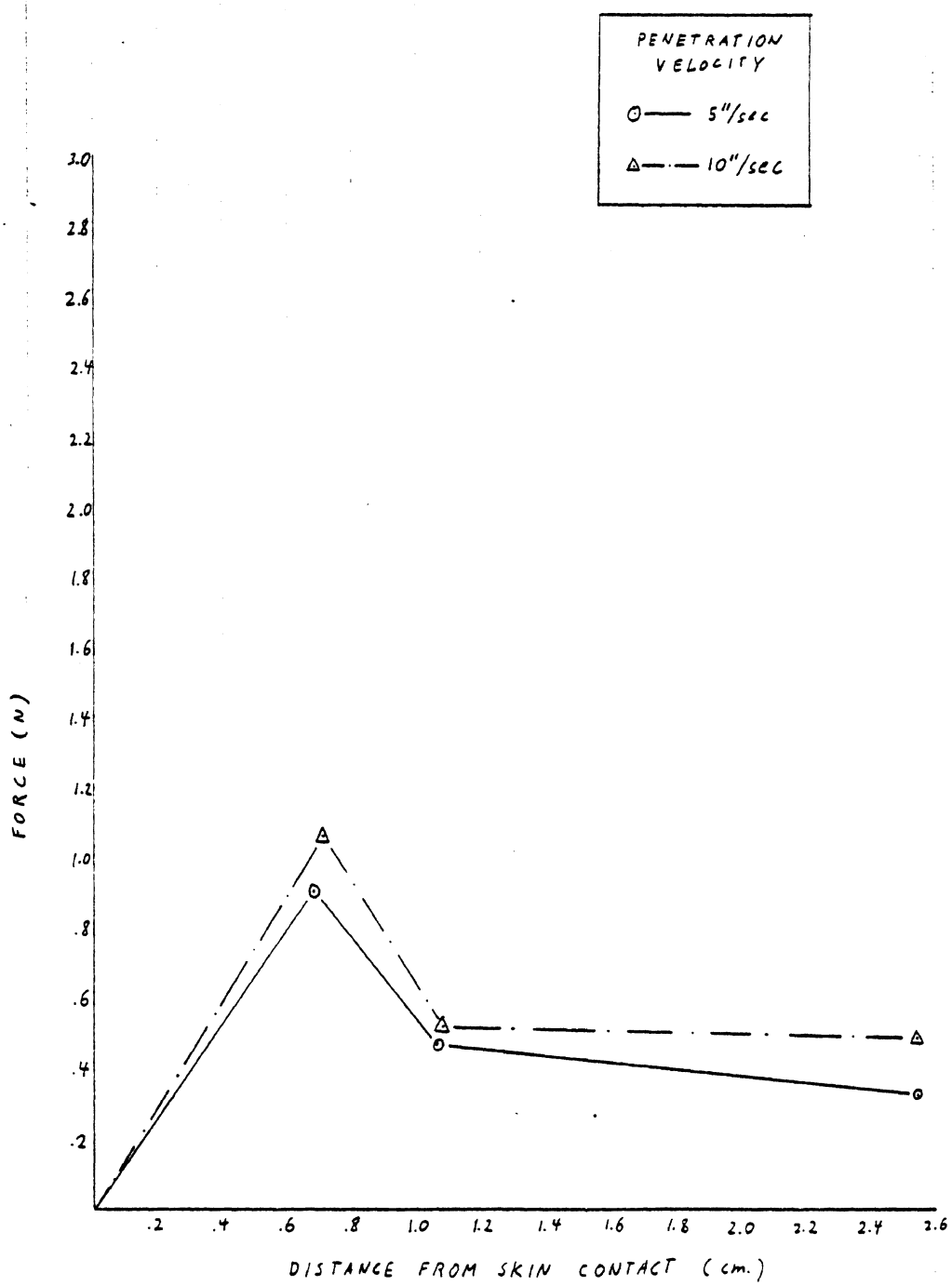
Figure 9. Comparison of average reconstructed force-displacement curves for 360 lubricated needles in different materials at 5"/second and 90 degrees.

Figure 10A through 10R. Comparison of average reconstructed force-displacement curves for penetration velocities of 5 and 10 inches/second.



GRAY-WHITE DRY

FIGURE 10A



GRAY-WHITE 1249

FIGURE 10B

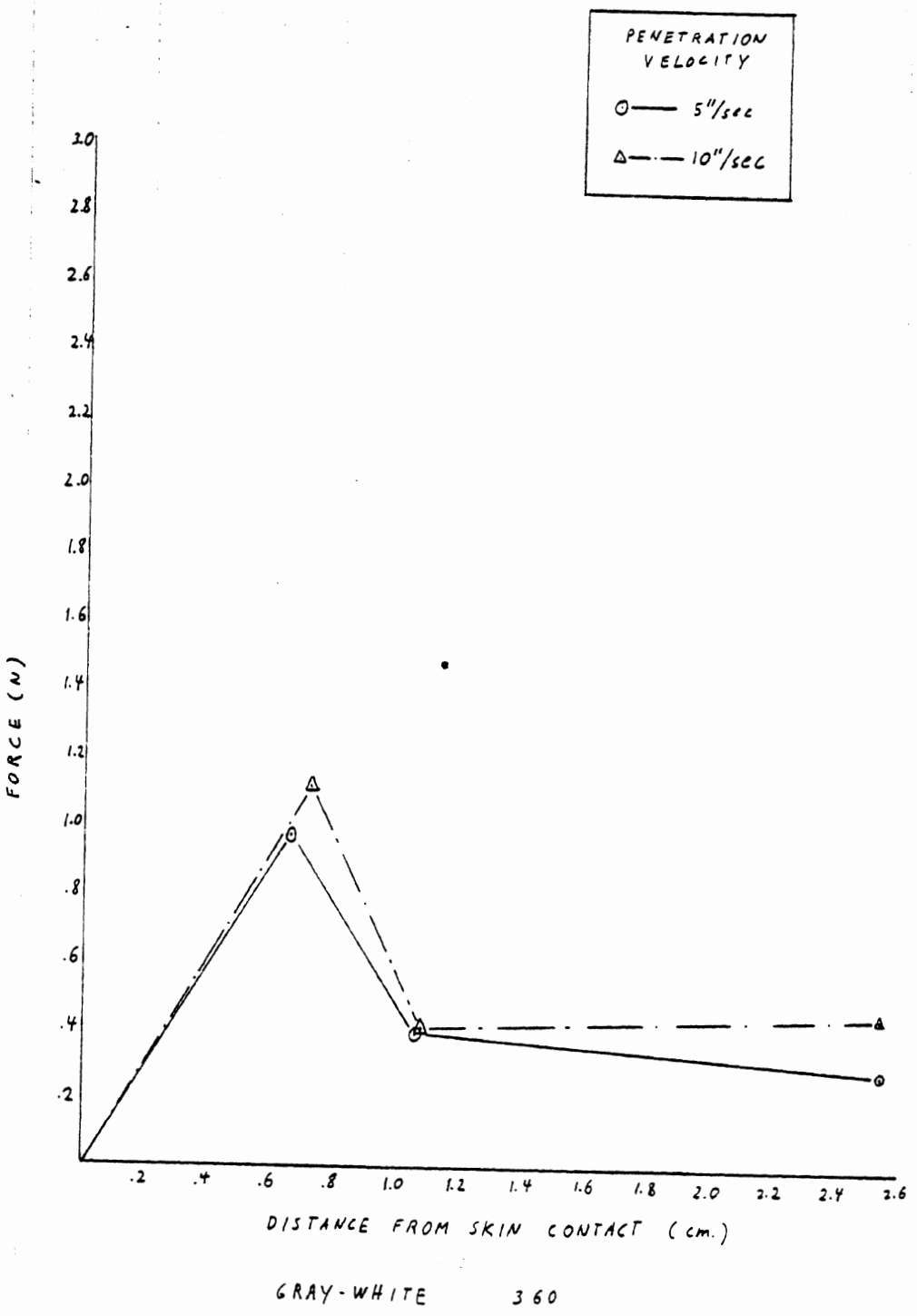
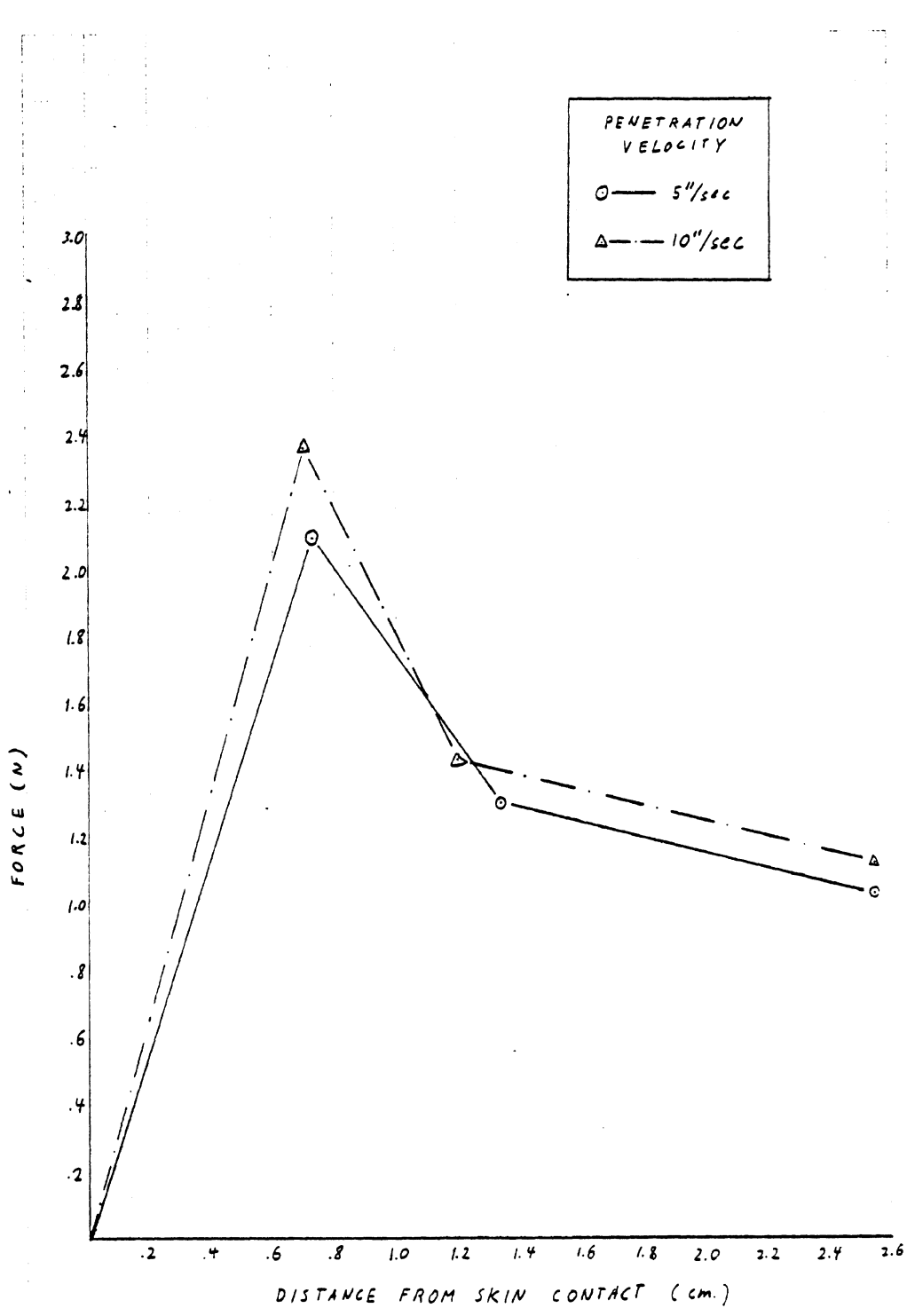
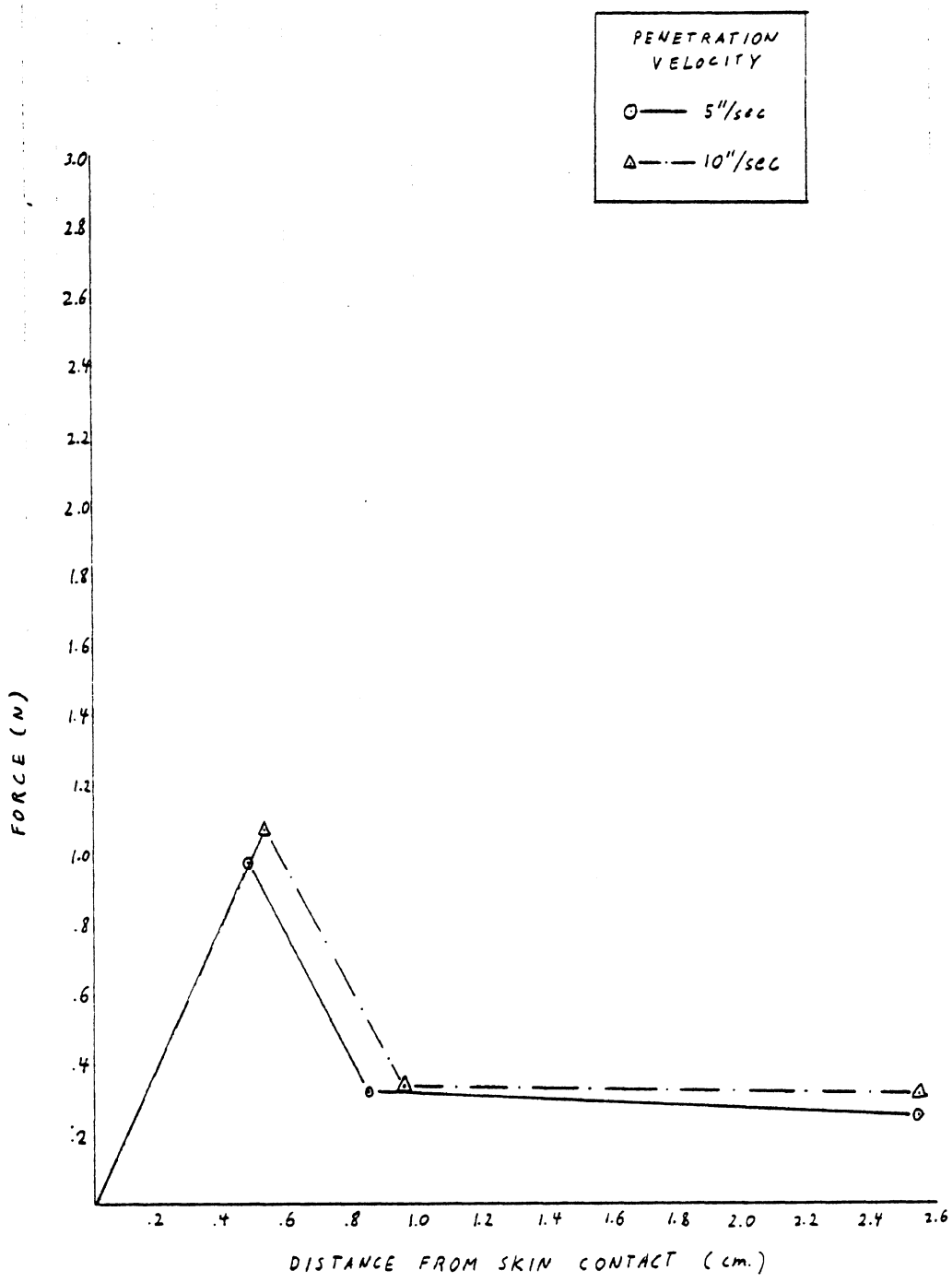

PENETRATION VELOCITY
5"/sec
10"/sec
FORCE (N)
2.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
.2
.4
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
DISTANCE FROM SKIN CONTACT (cm.)
GRAY-WHITE 360

FIGURE 10C



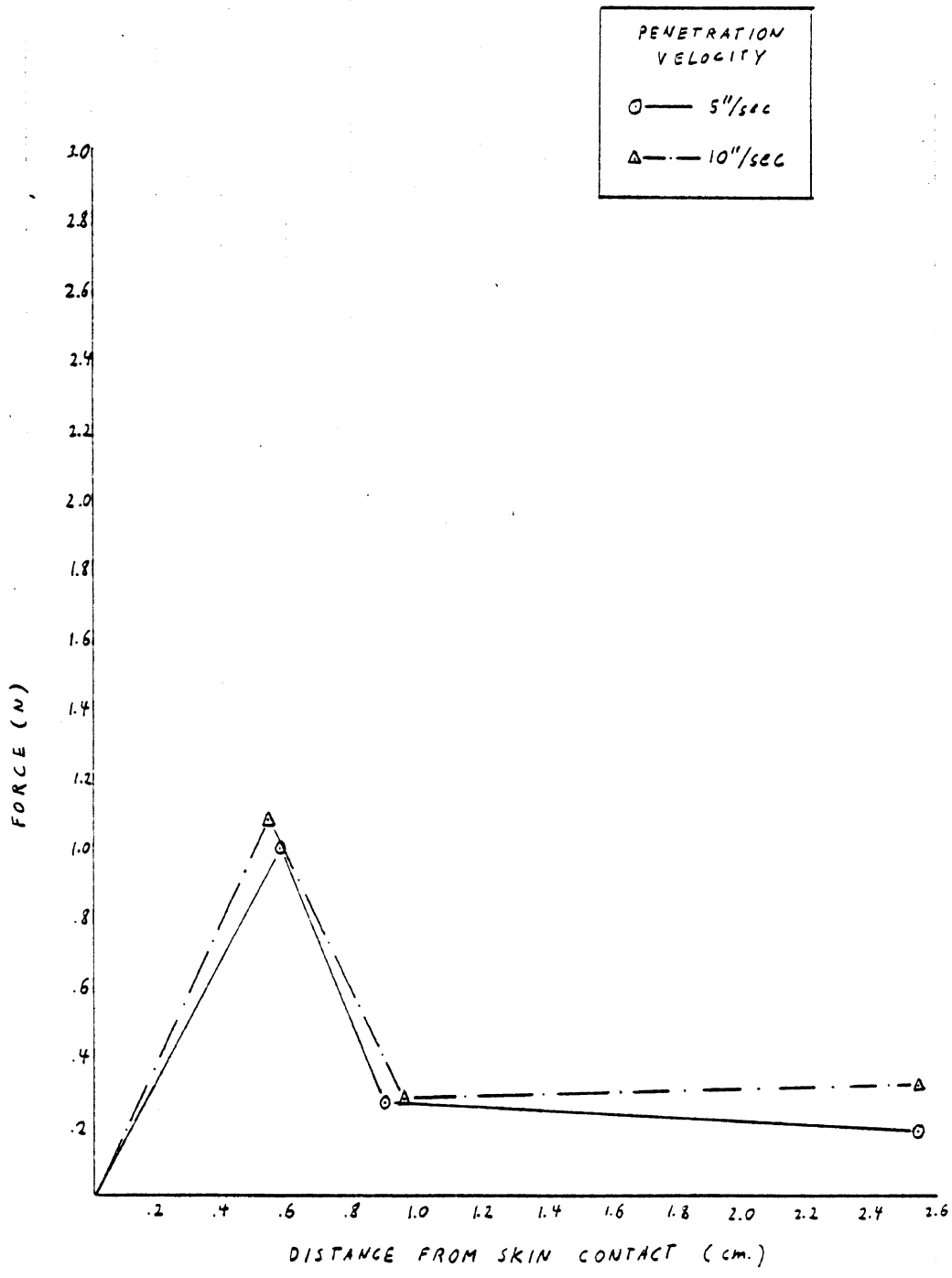
BLACK DRY

FIGURE 10D



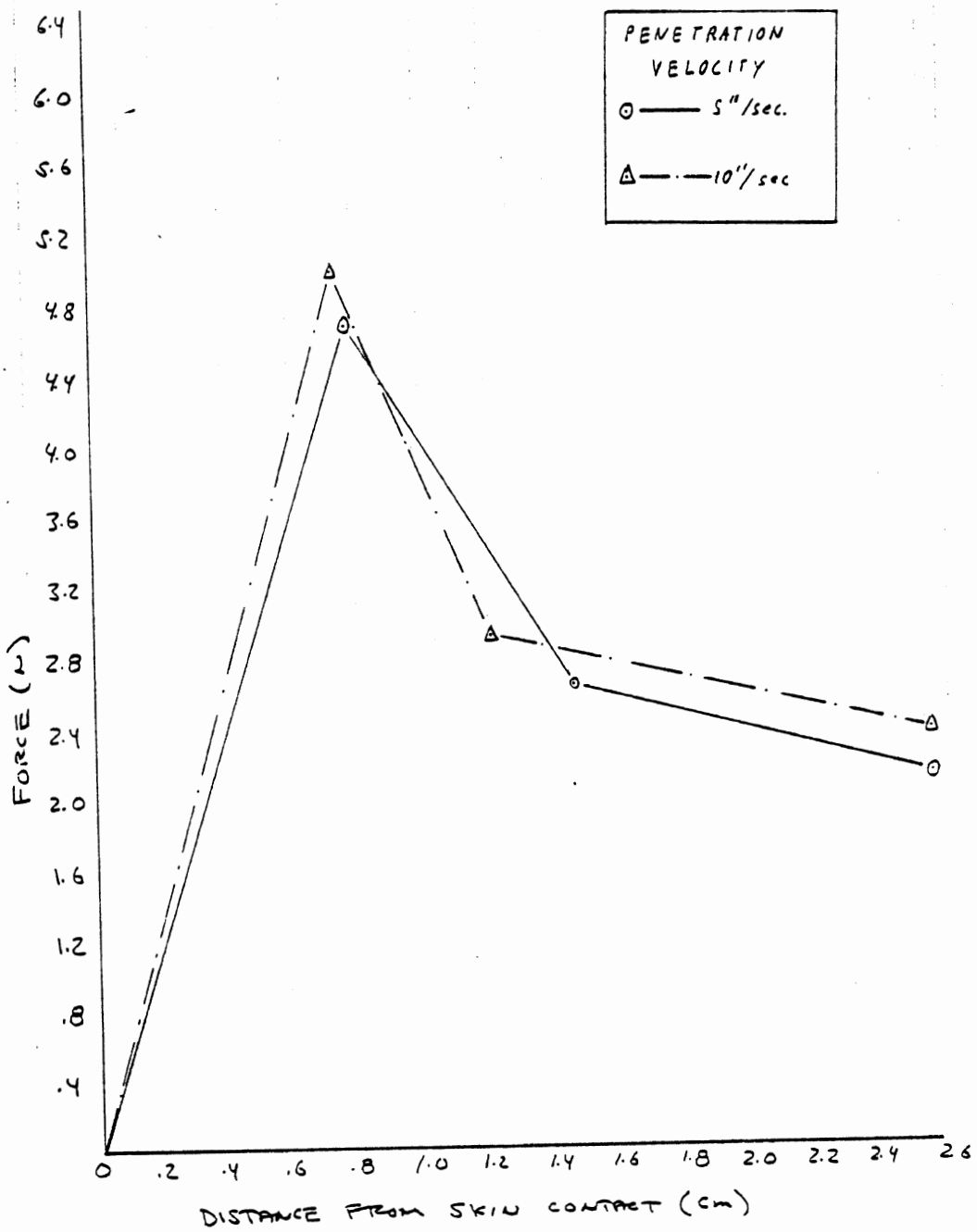
BLACK 1249

FIGURE 10E



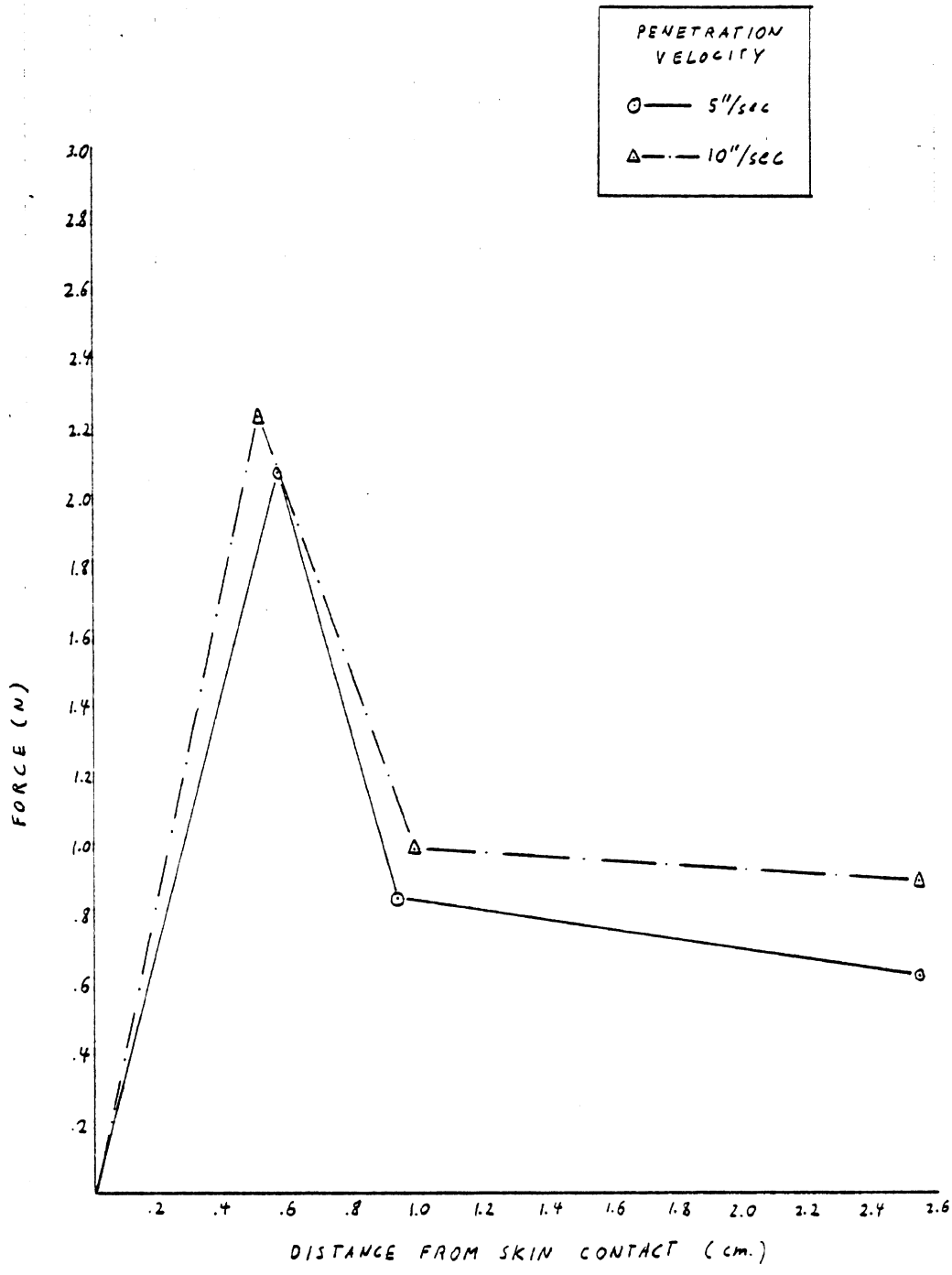
BLACK 360

FIGURE 10F



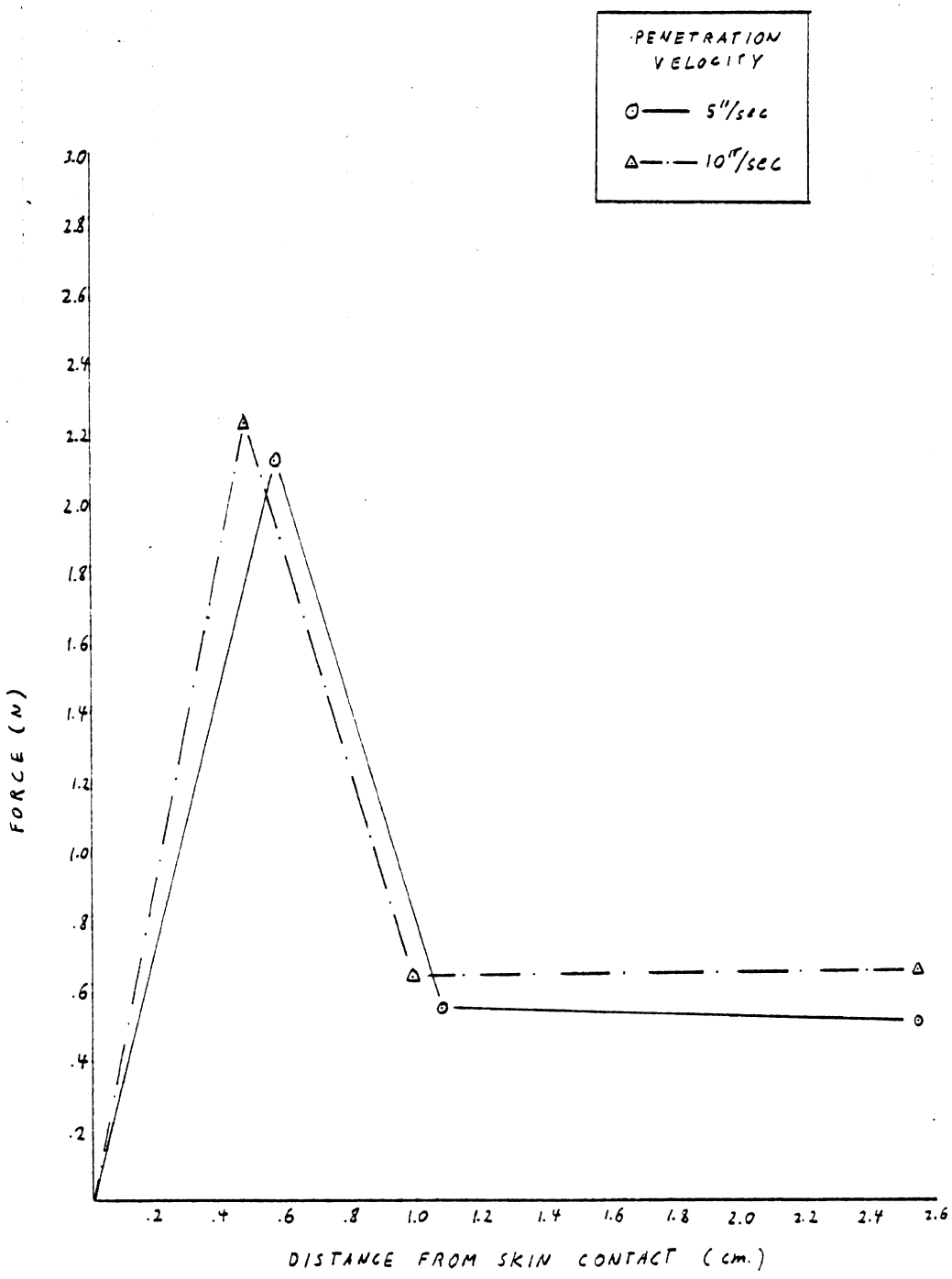
WHITE DRY

FIGURE 10G



WHITE 1249

FIGURE 10H



white - 360

FIGURE 10I

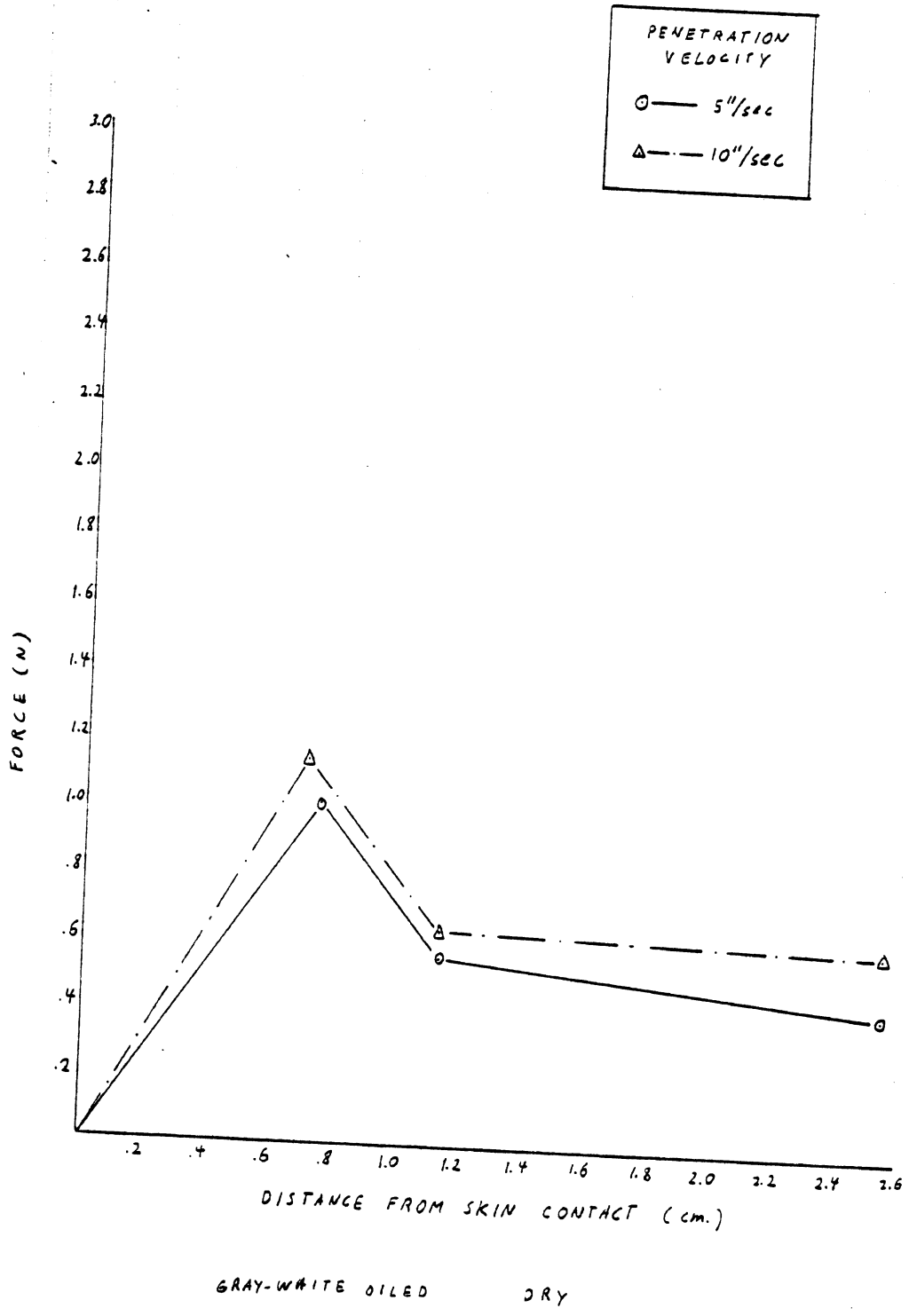
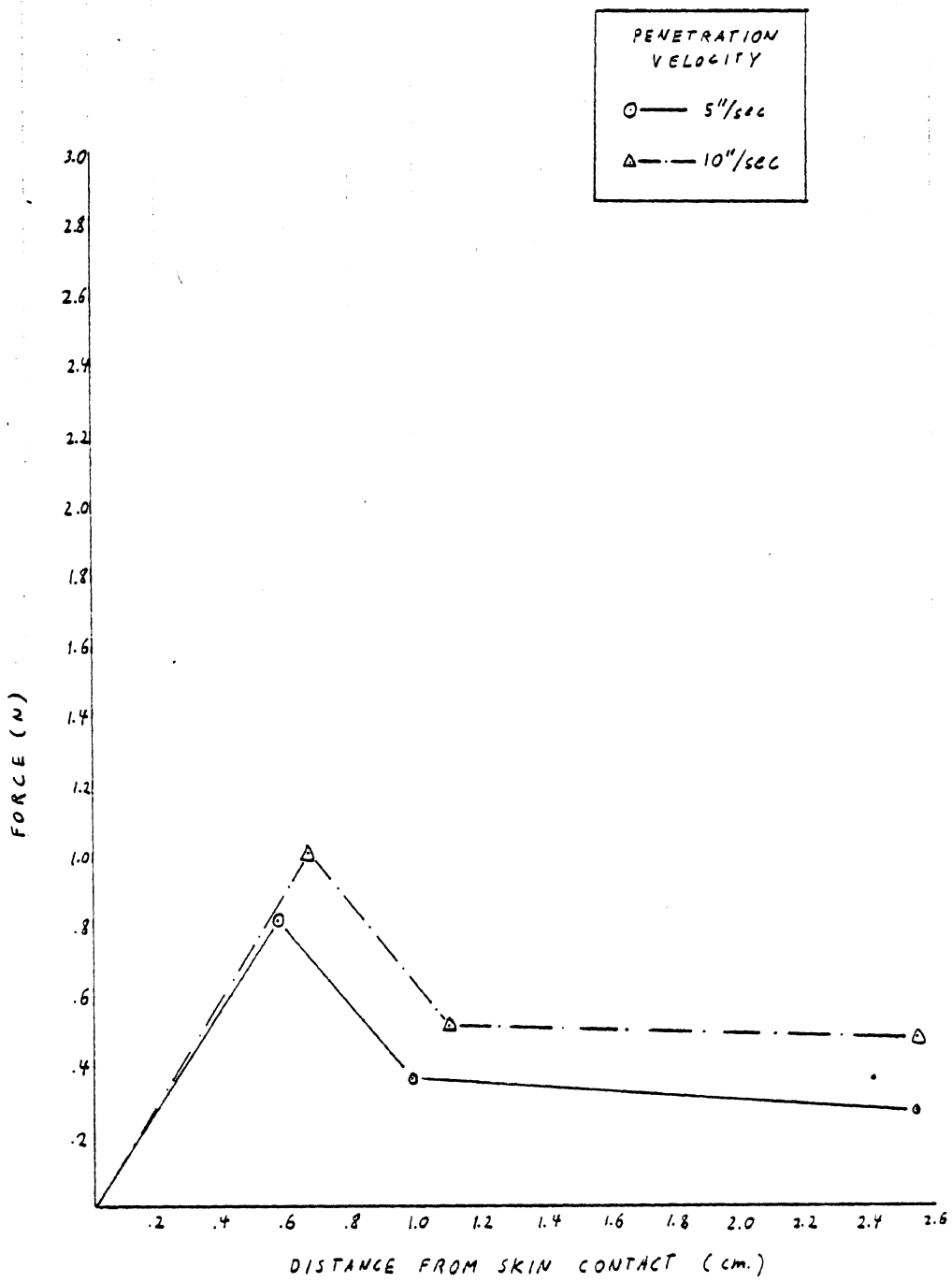
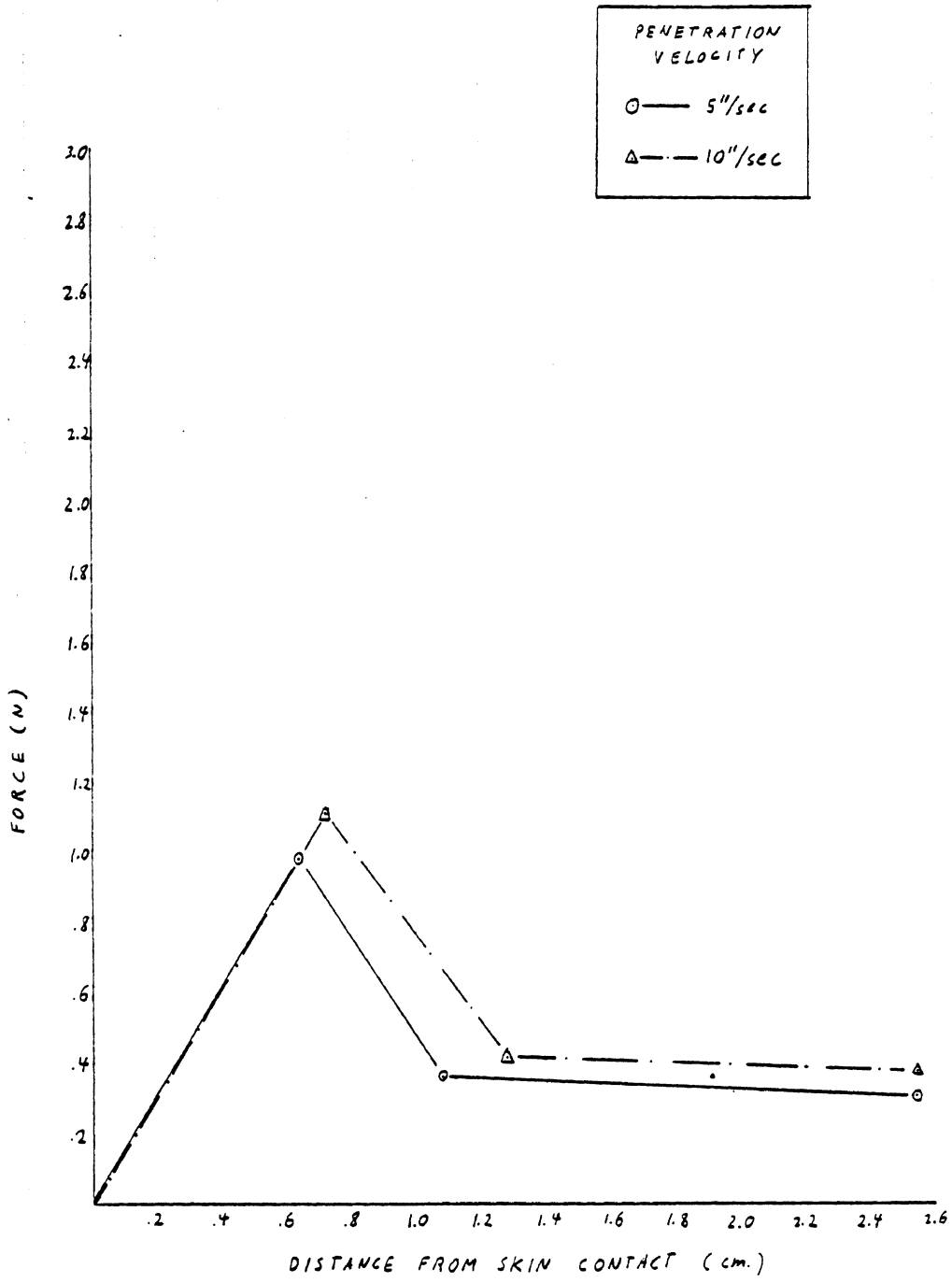

PENETRATION VELOCITY
5"/sec
10"/sec
FORCE (N)
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
.2
.4
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
DISTANCE FROM SKIN CONTACT (cm.)
GRAY-WHITE OILED
DRY

FIGURE 10J



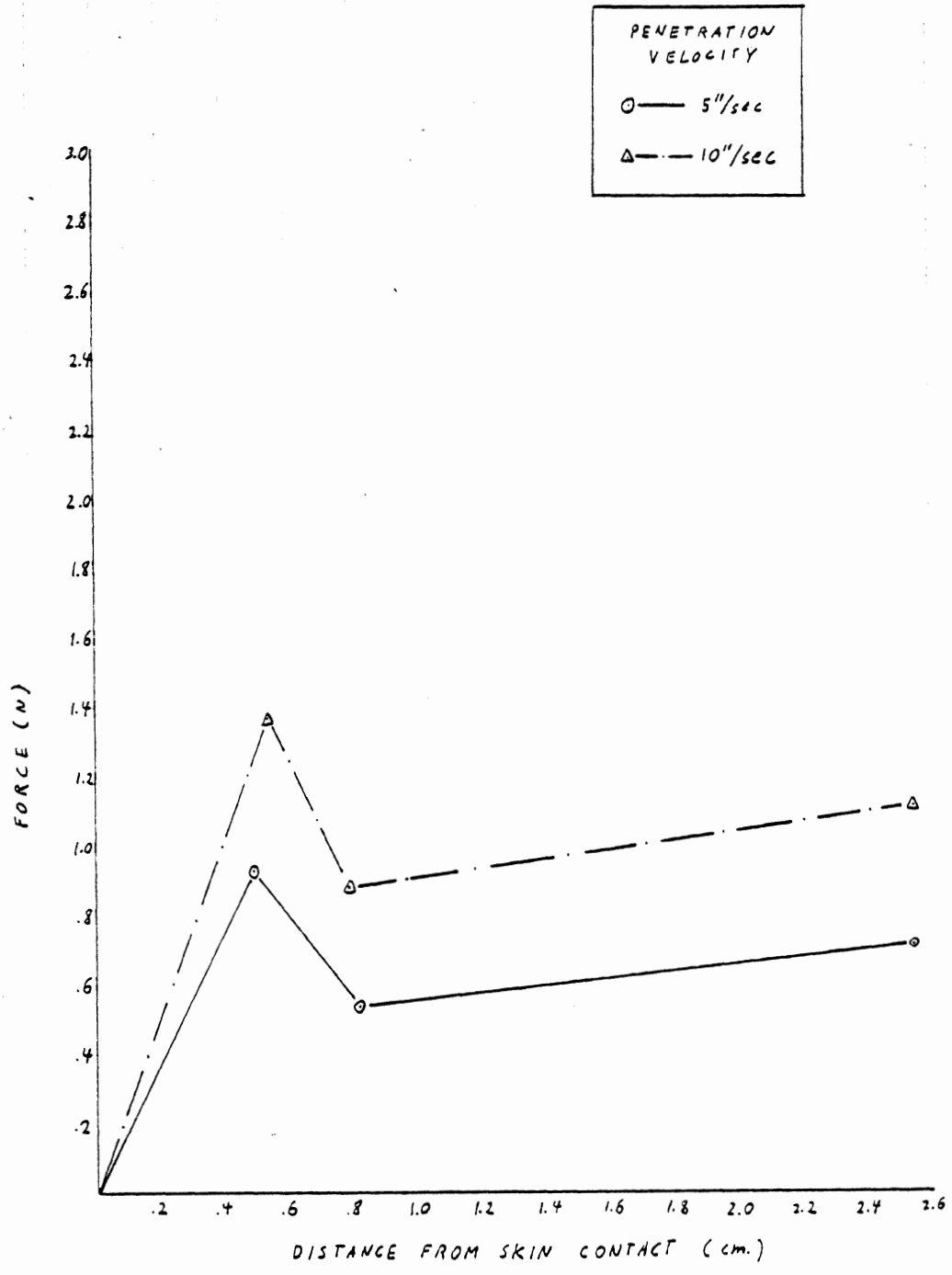
GRAY-WHITE OILED 1249

FIGURE 10K



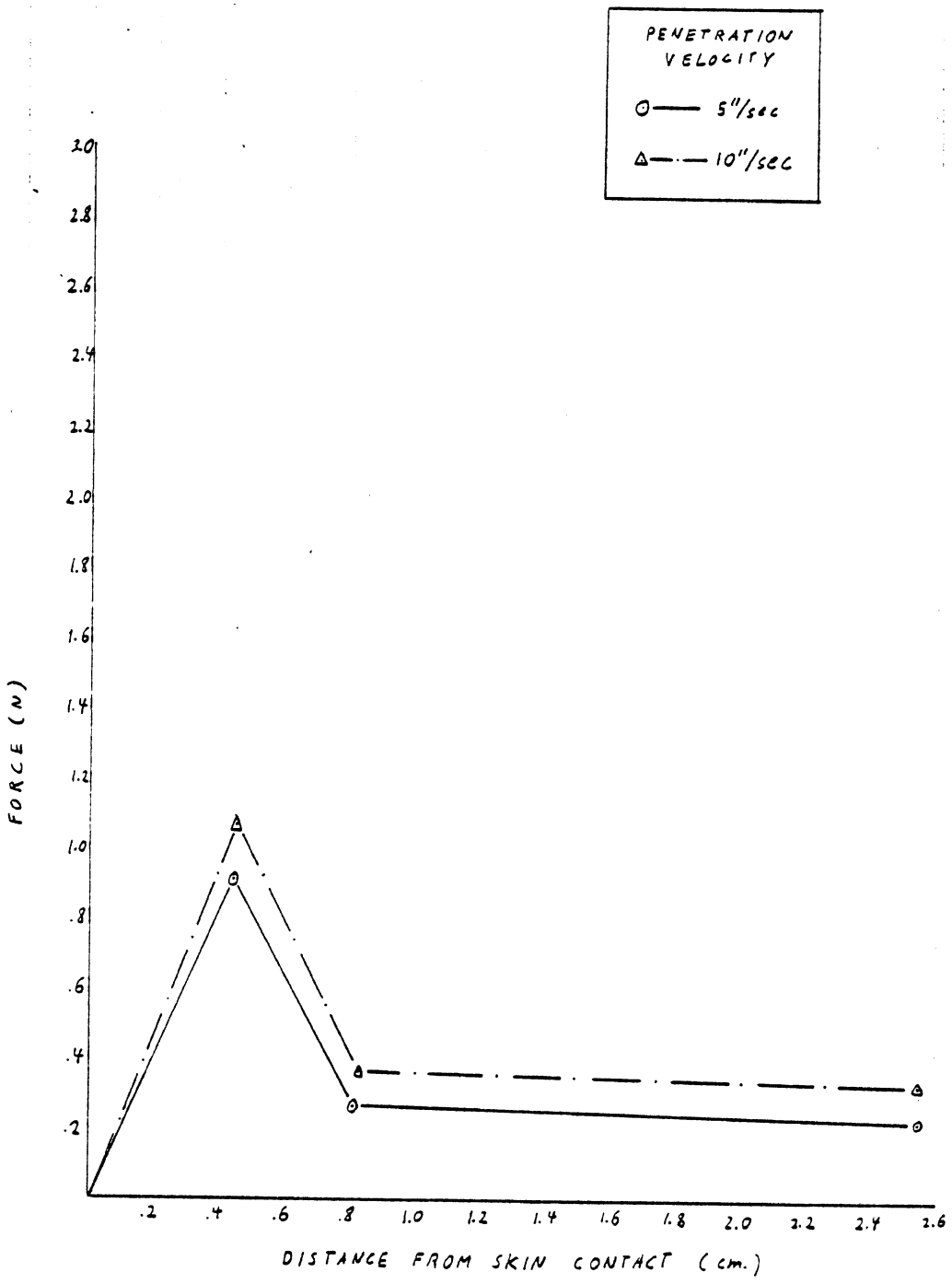
GRAY-WHITE OILED 360

FIGURE 10L



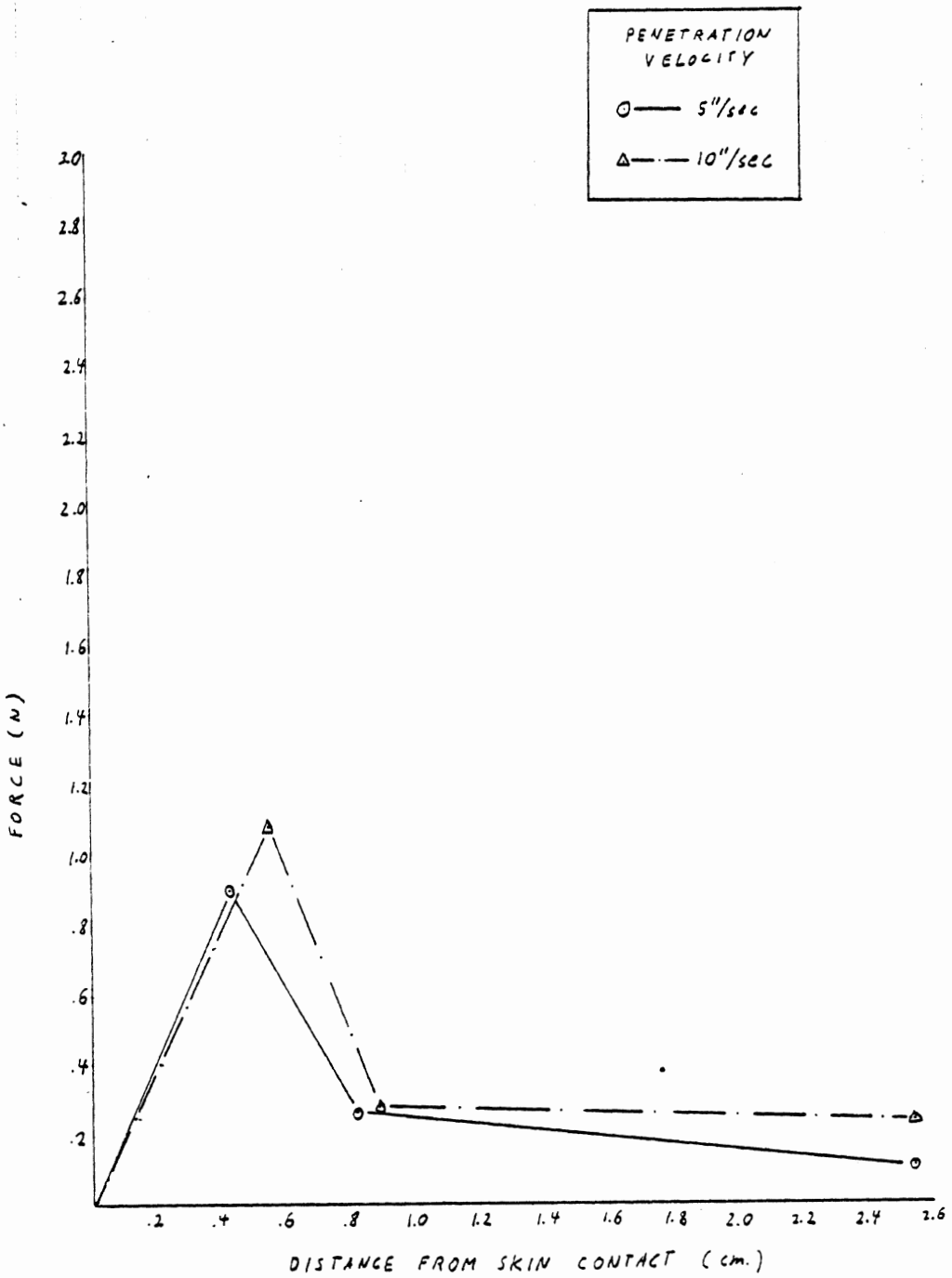
BLACK OILED DRY

FIGURE 10M



BLACK OILED 1249

FIGURE 10N



BLACK OILED 360

FIGURE 100

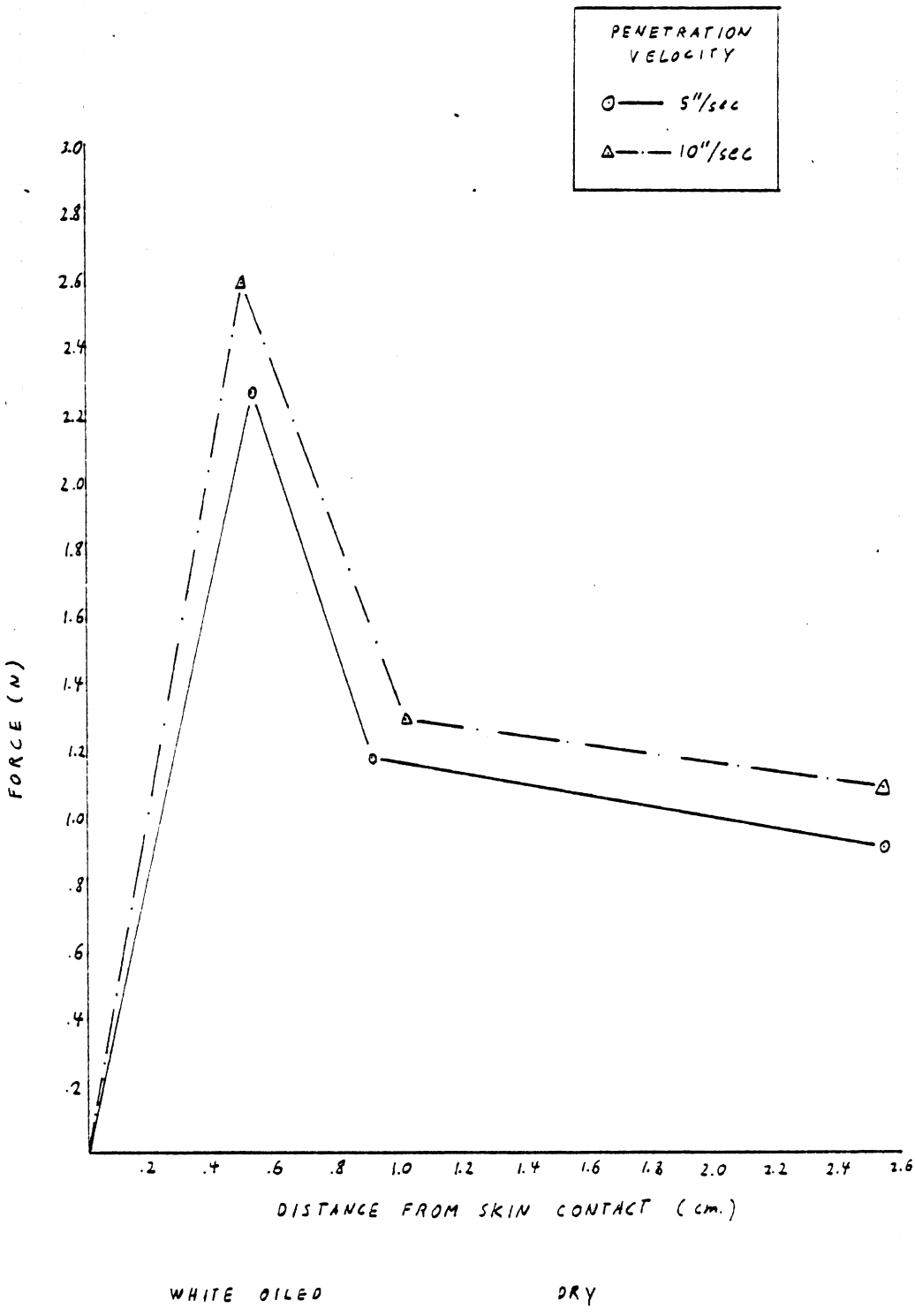
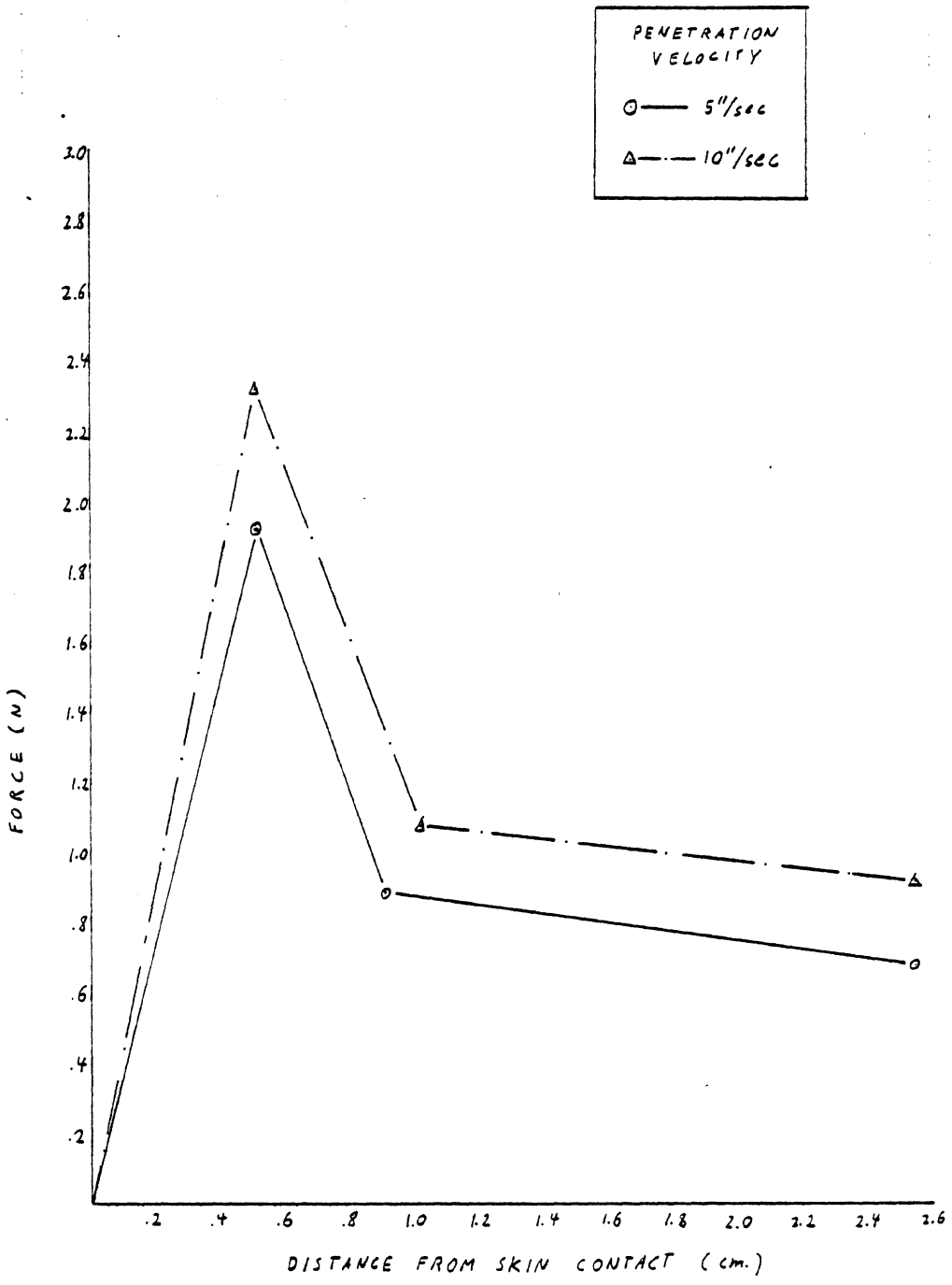
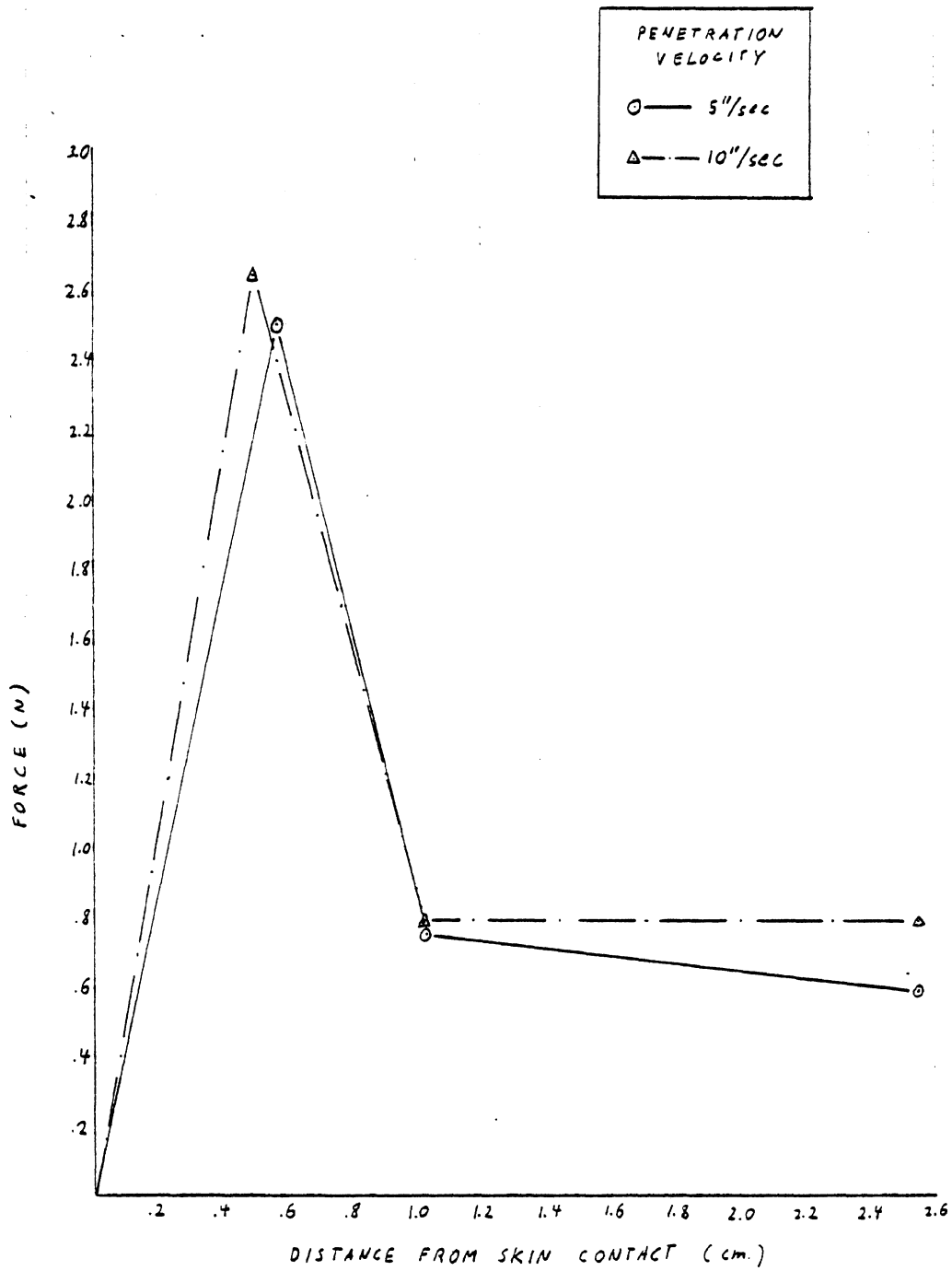

PENETRATION VELOCITY
5"/sec
10"/sec
FORCE (N)
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
.2 .4 .6 .8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6
DISTANCE FROM SKIN CONTACT (cm.)
WHITE OILED
DRY

FIGURE 10P



WHITE OILED 1249

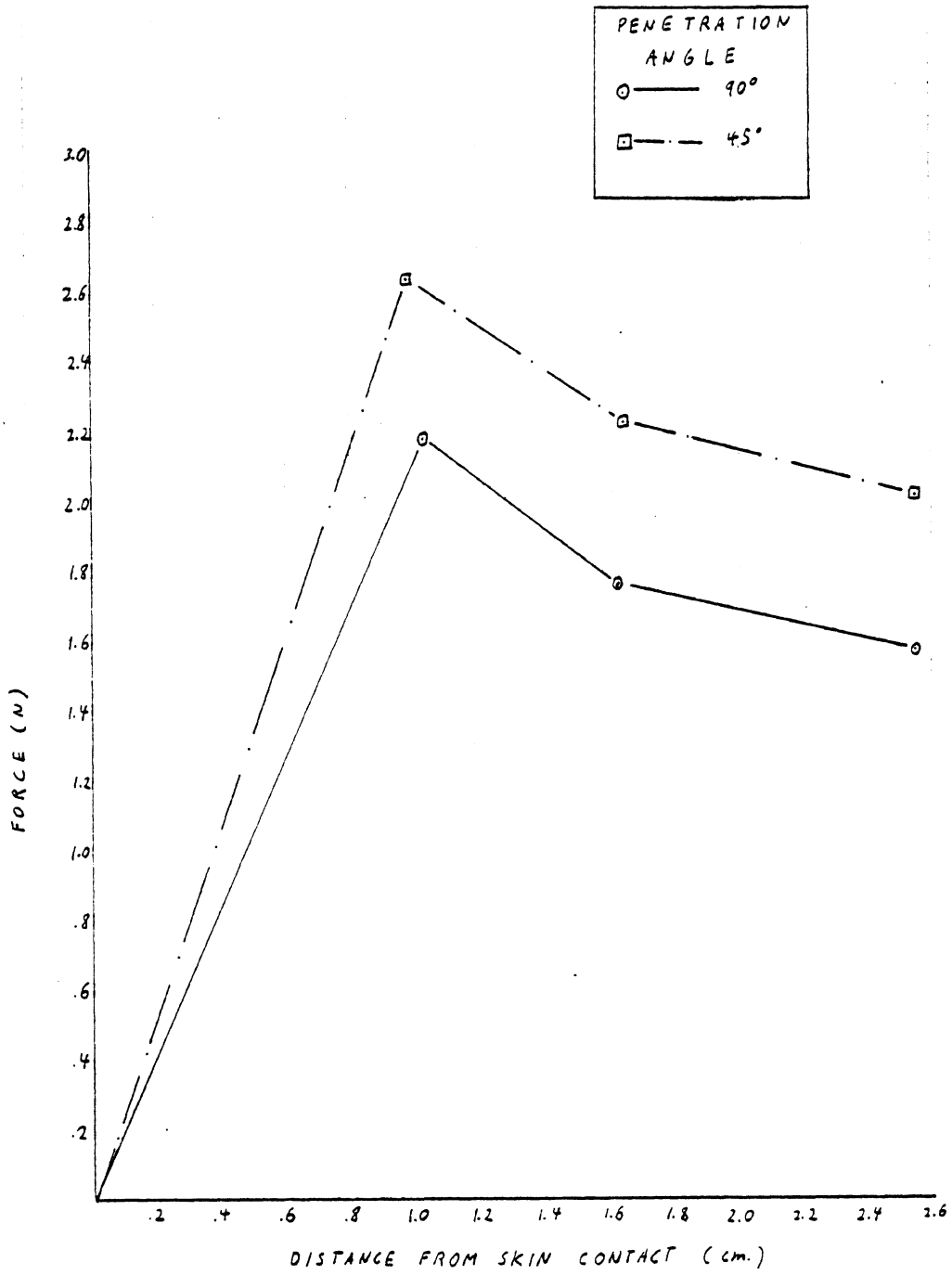
FIGURE 10Q



WHITE OILED 360

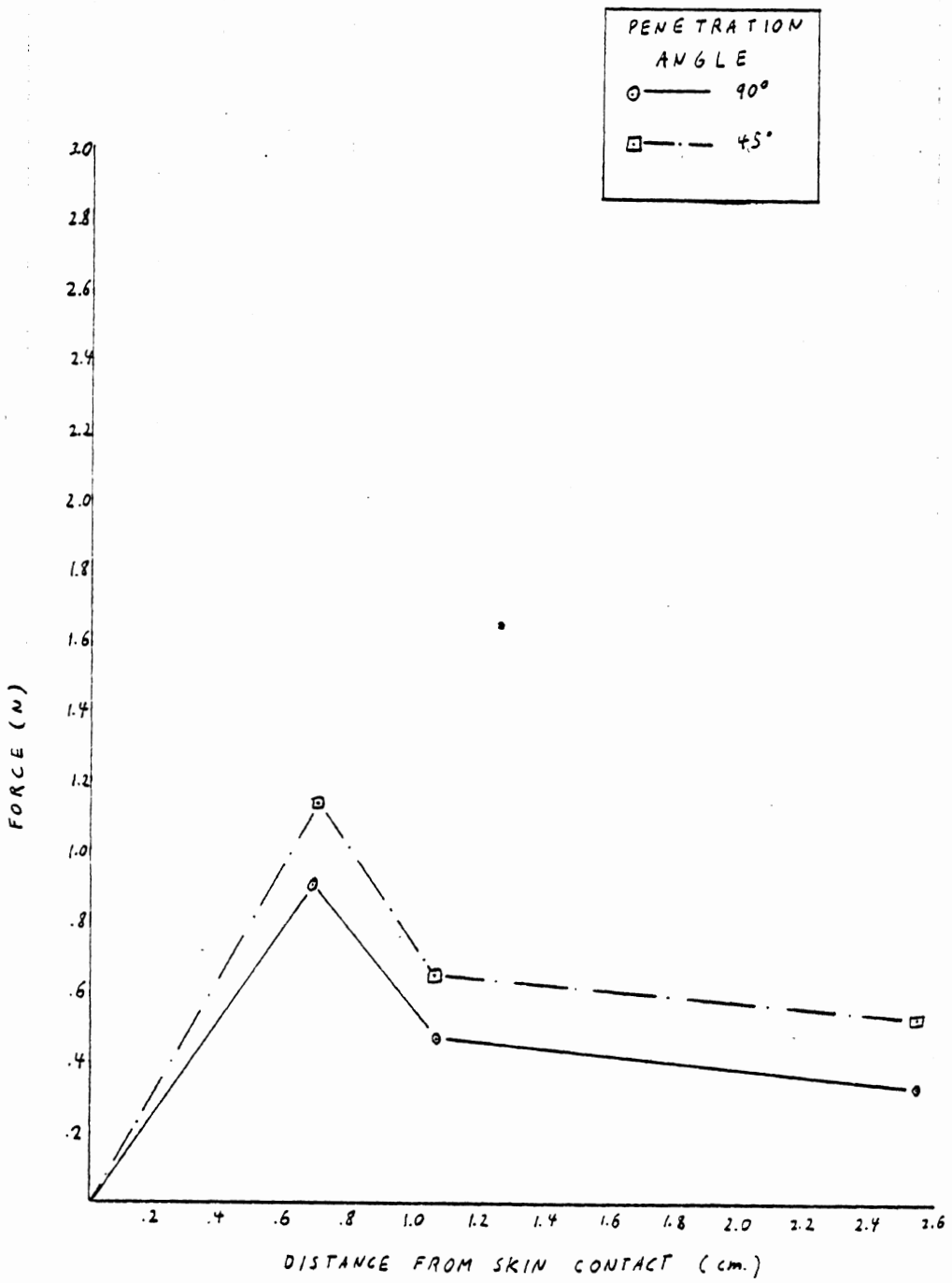
FIGURE 10R

Figure 11A through 11R. Comparison of average reconstructed force-displacement curves for 90 and 45 degree penetration angles.



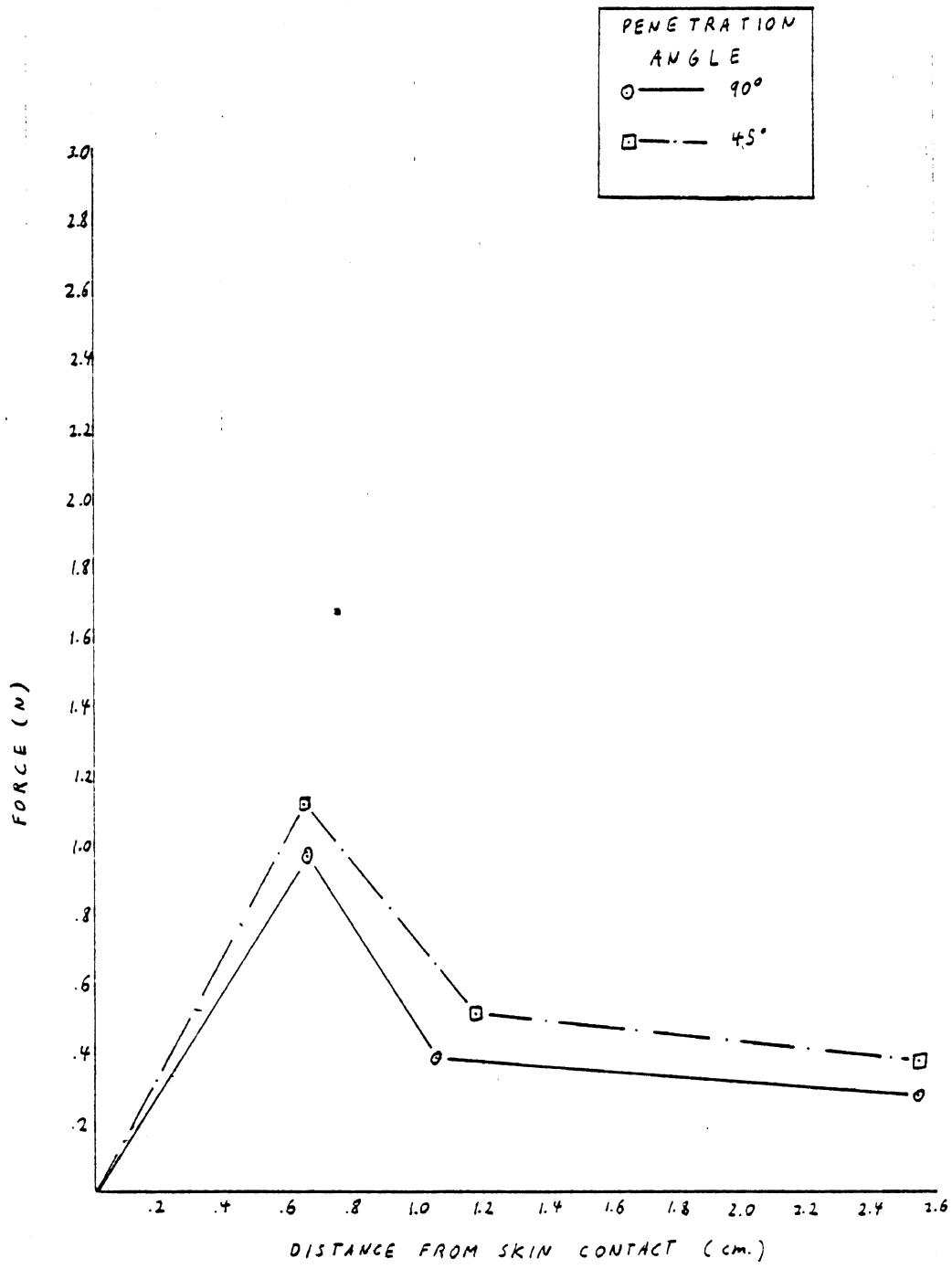
GRAY-WHITE DRY

FIGURE 11A



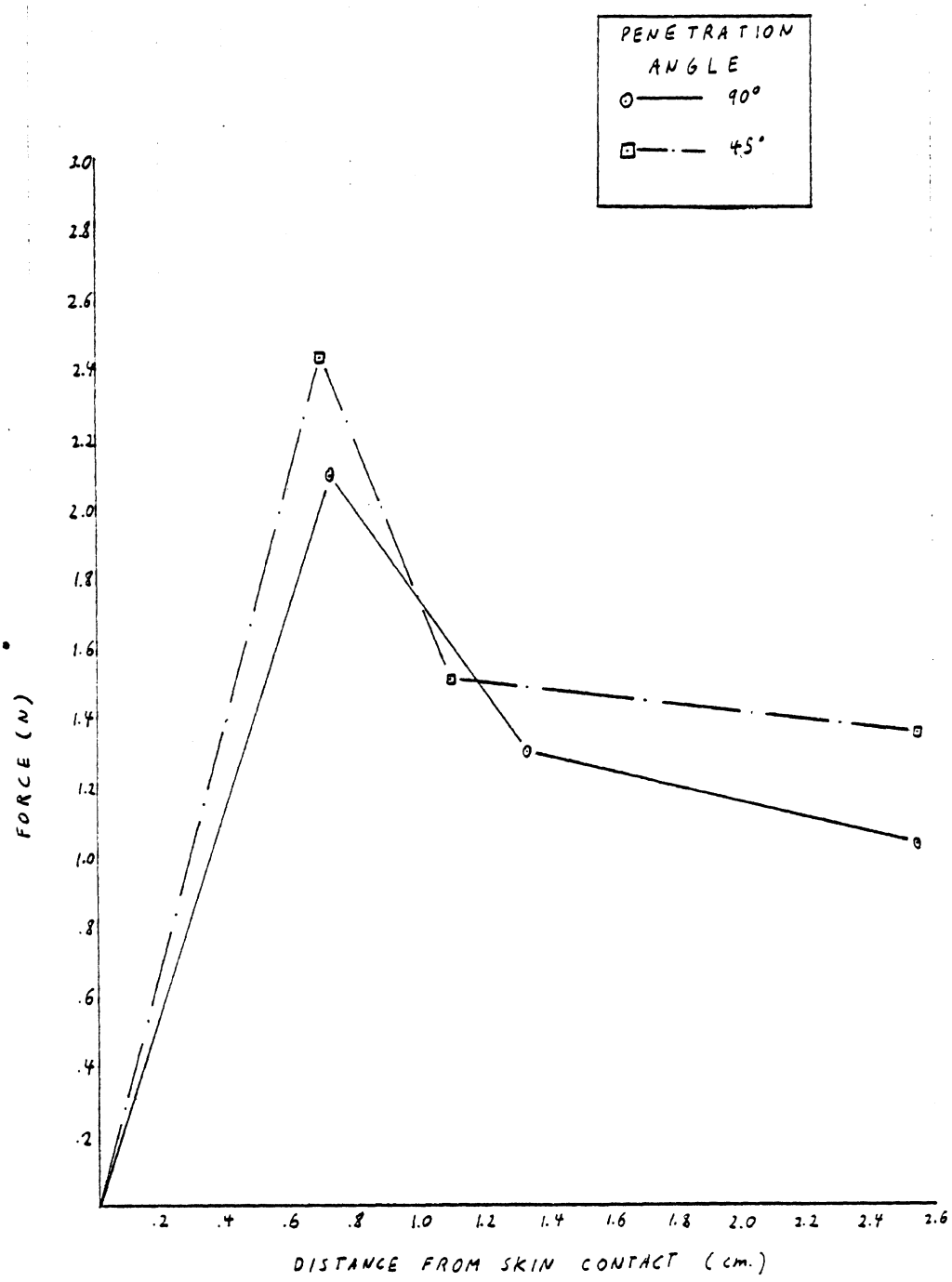
GRAY-WHITE 1249

FIGURE 11B



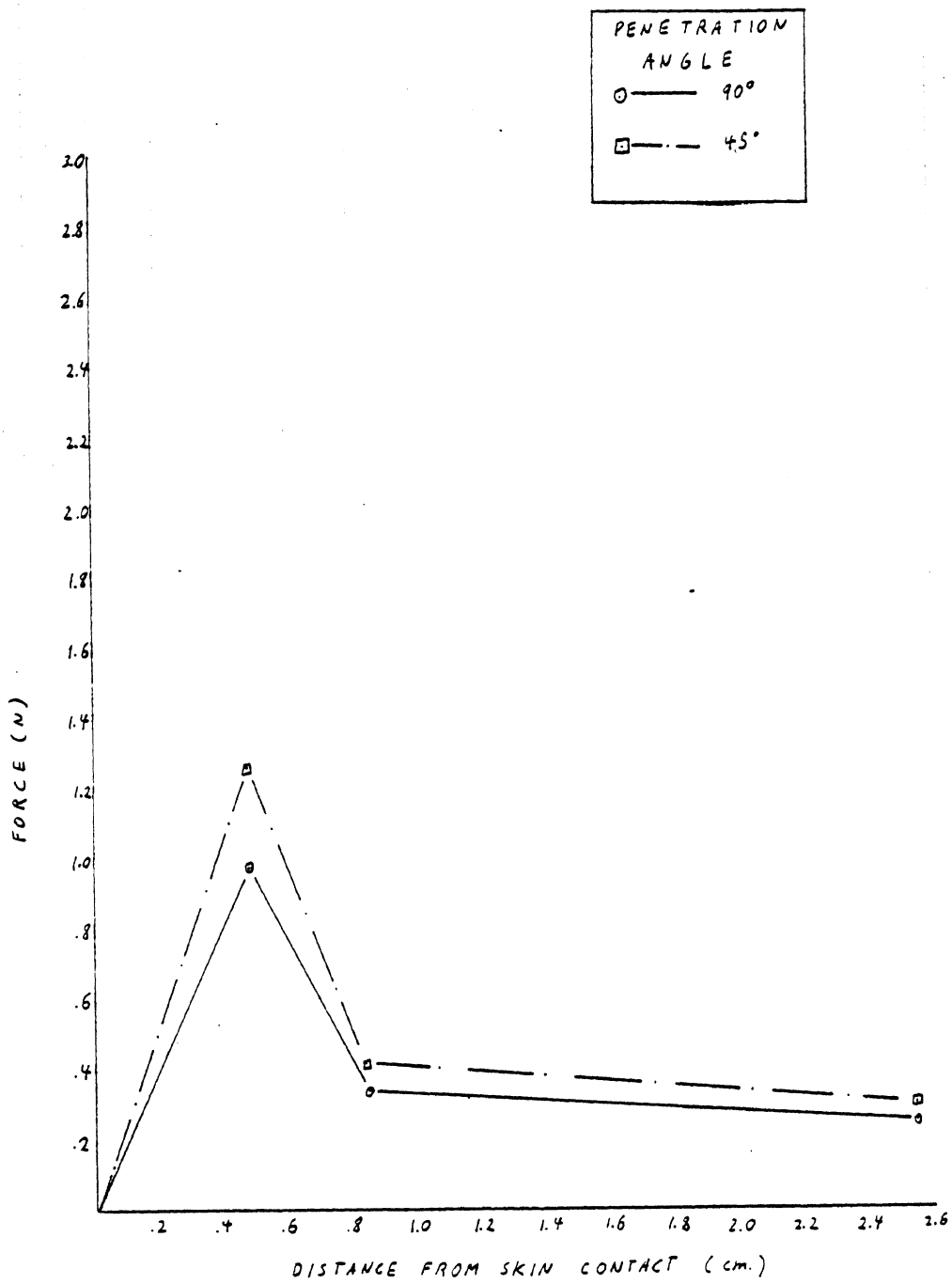
GRAY-WHITE 360

FIGURE 11C



BLACK DRY

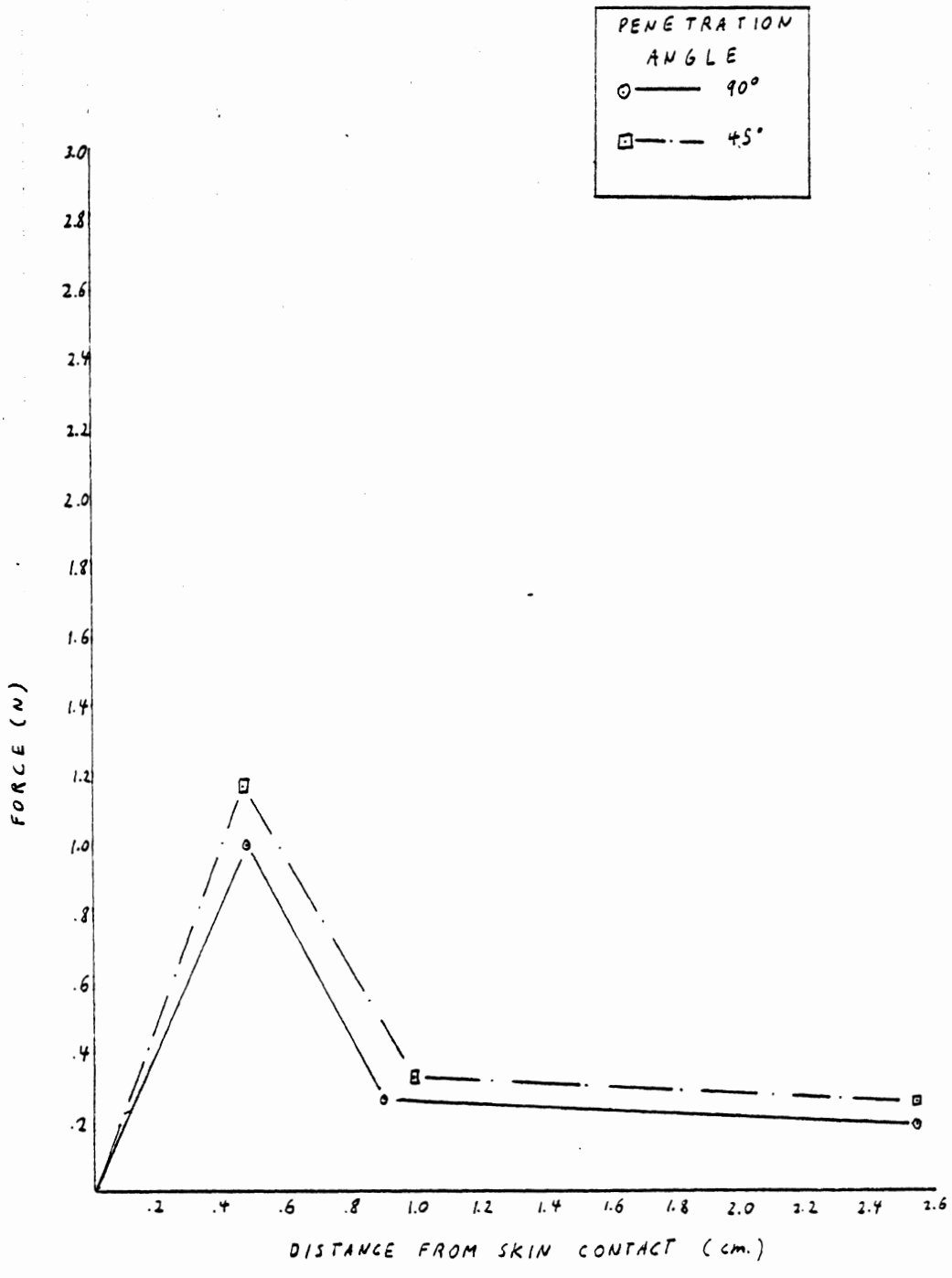
FIGURE 11D



BLACK

1249

FIGURE 11E



BLACK 360

FIGURE 11F

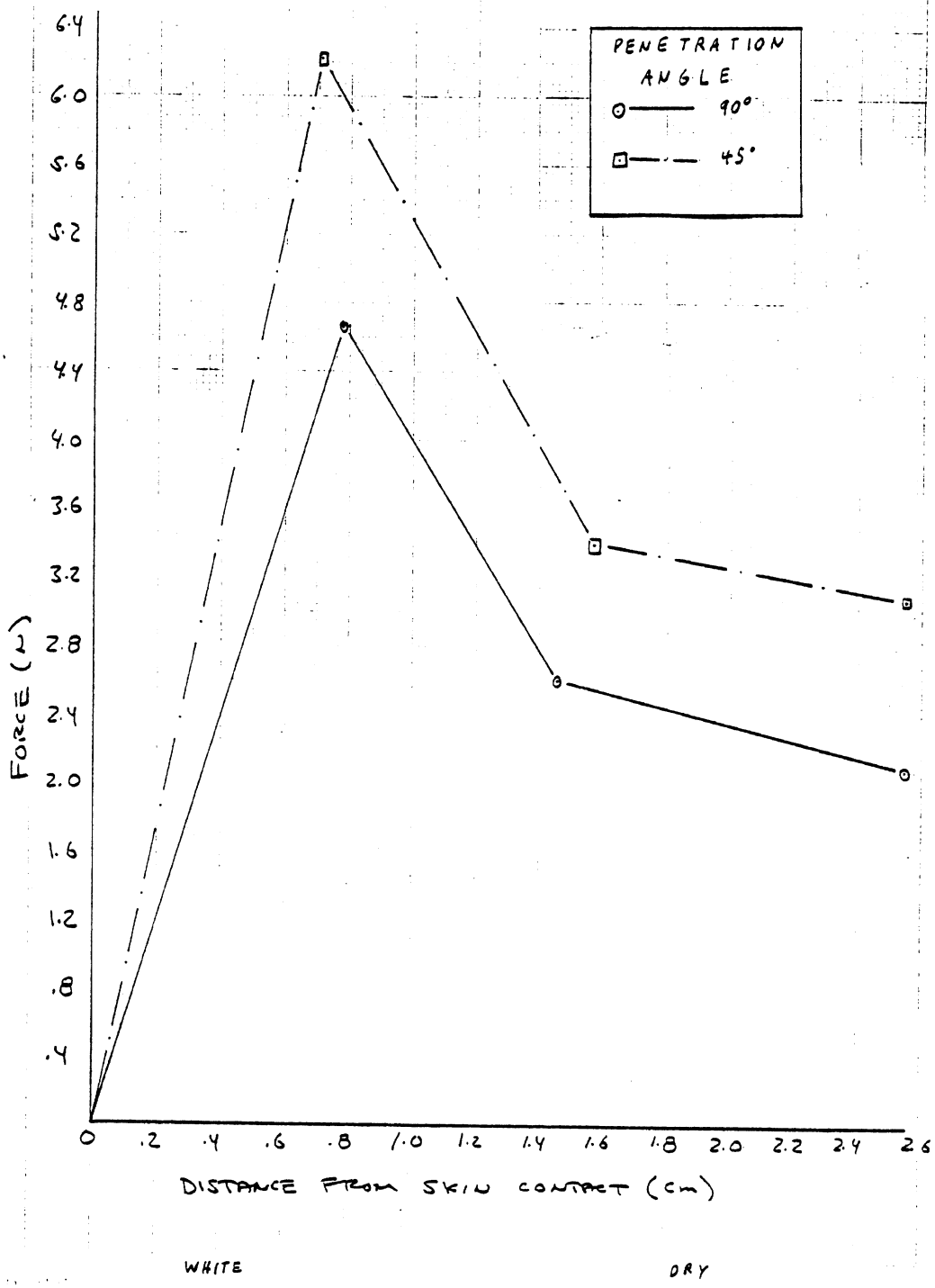
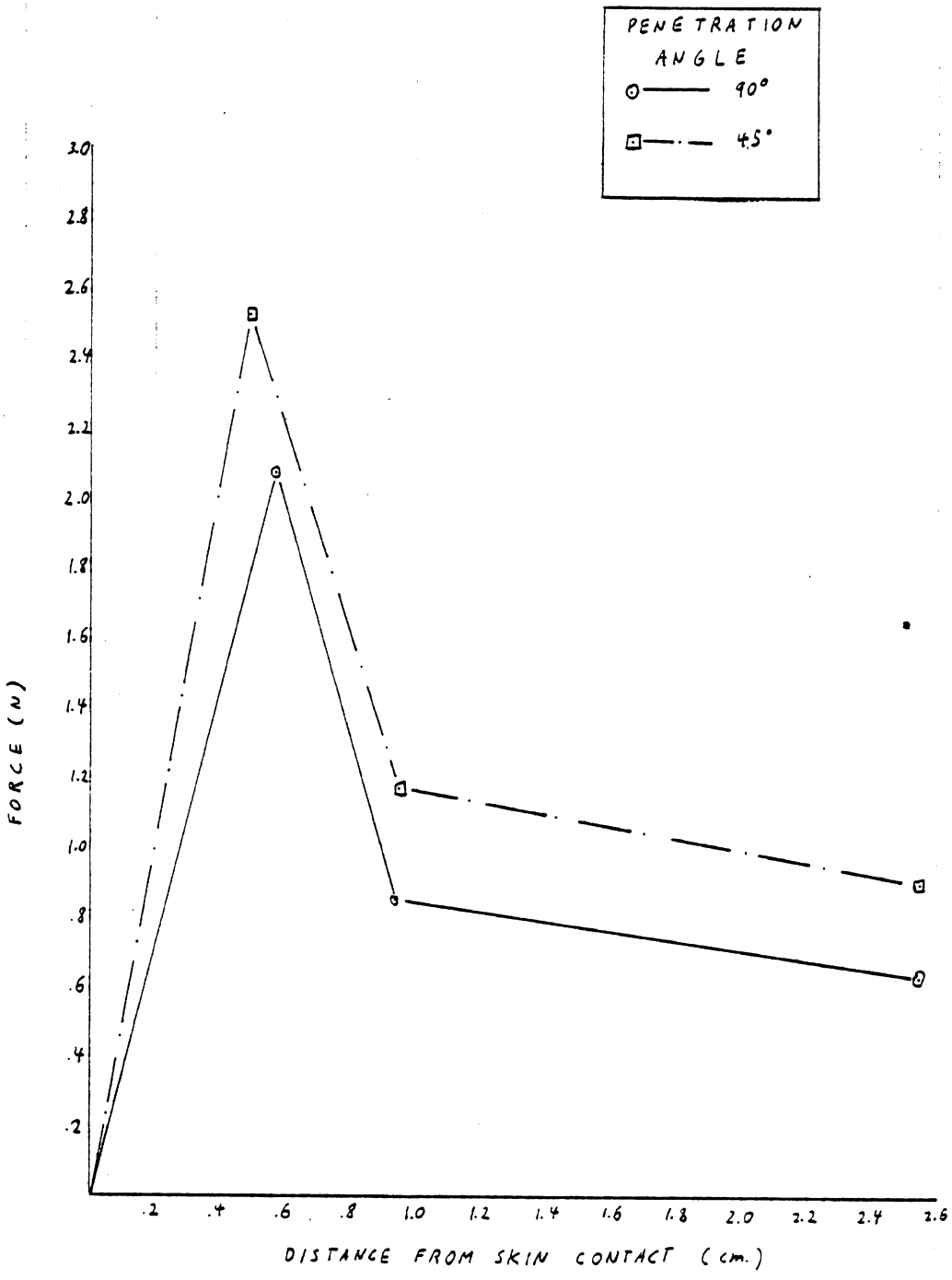
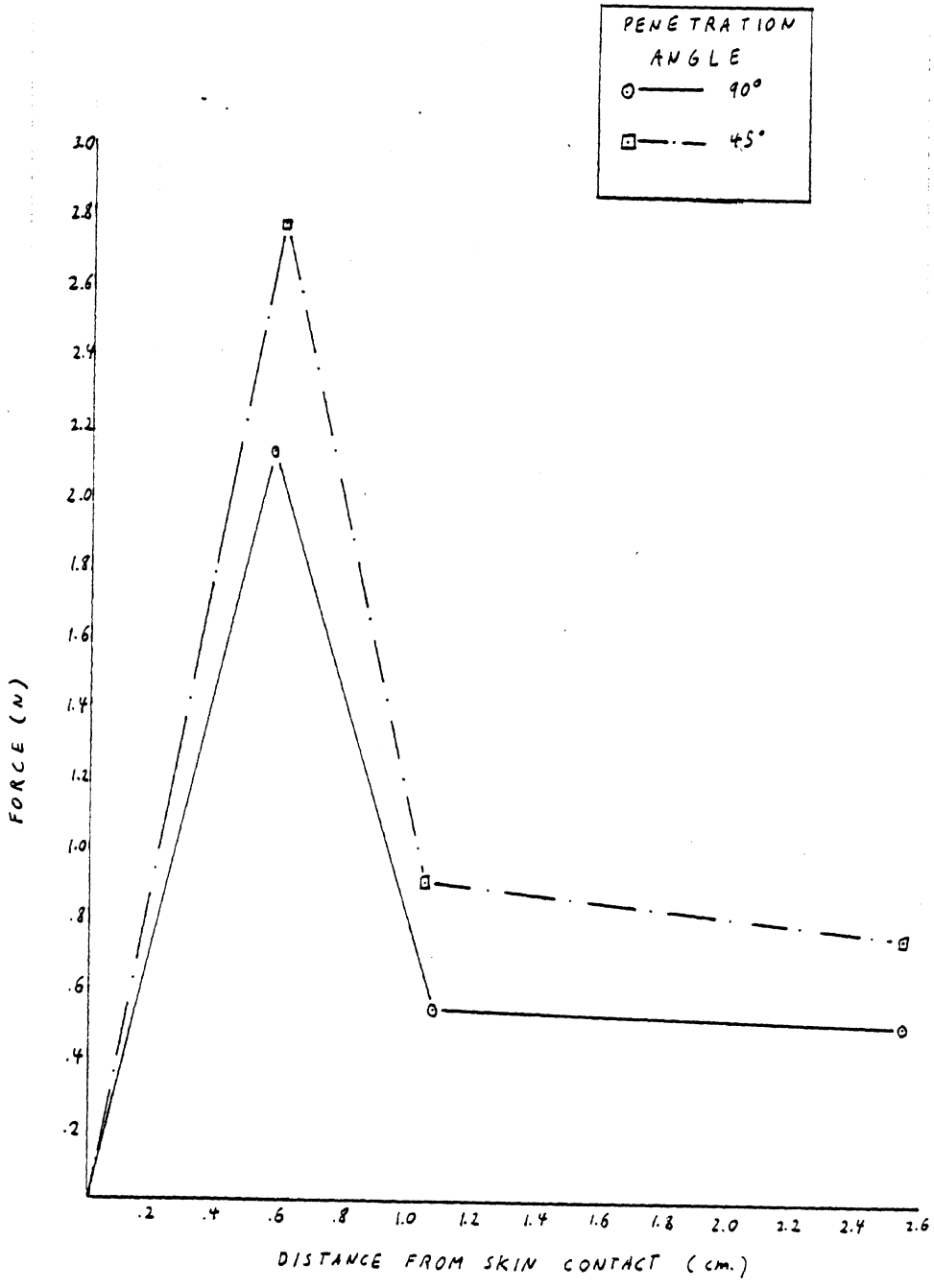

PENETRATION ANGLE
90°
45°
FORCE (1)
6.4
6.0
5.6
5.2
4.8
4.4
4.0
3.6
3.2
2.8
2.4
2.0
1.6
1.2
.8
.4
0
.2
.4
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
DISTANCE FROM SKIN CONTACT (cm)
WHITE
DRY

FIGURE 11G



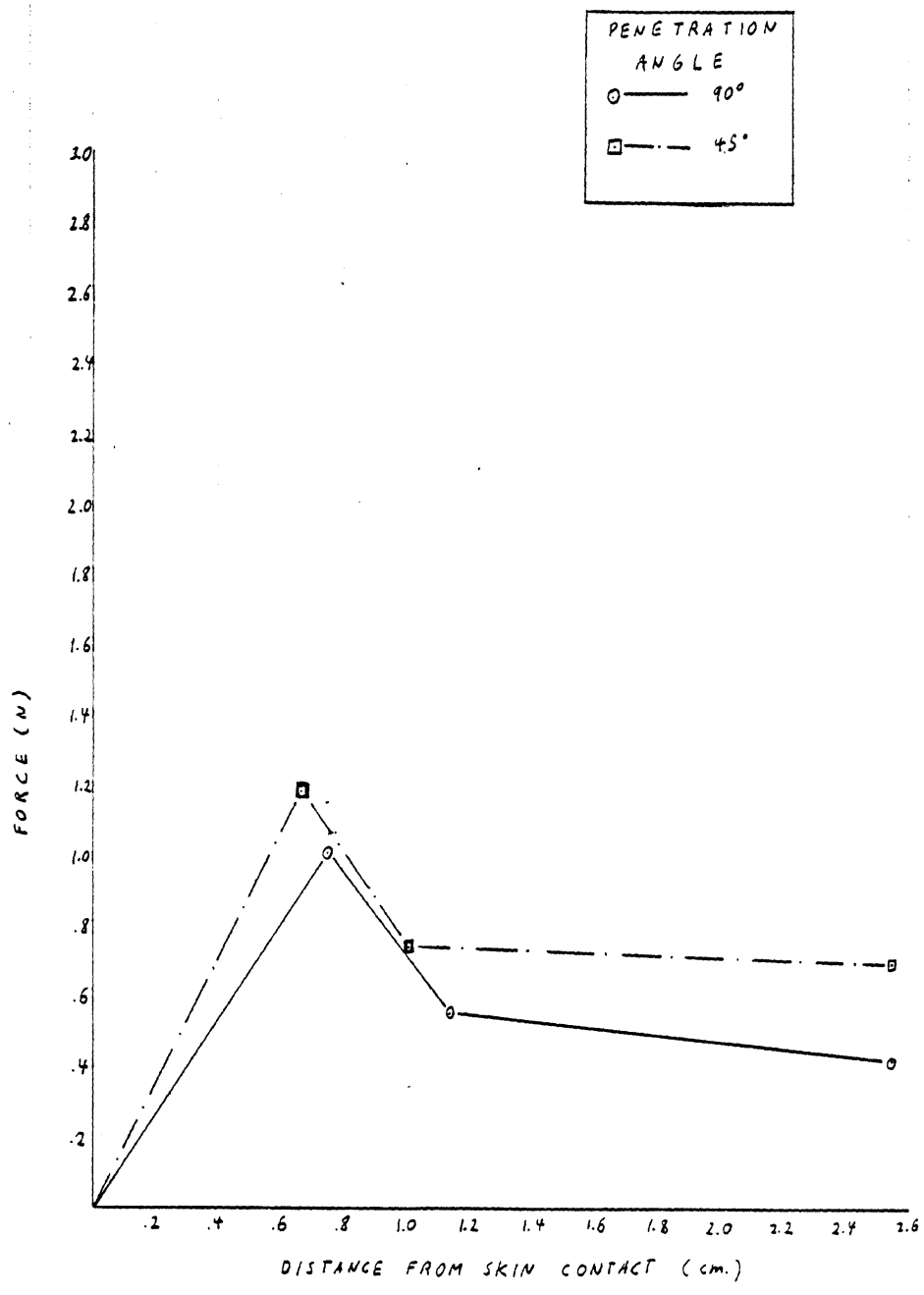
WHITE 1249

FIGURE 11H



WHITE 360

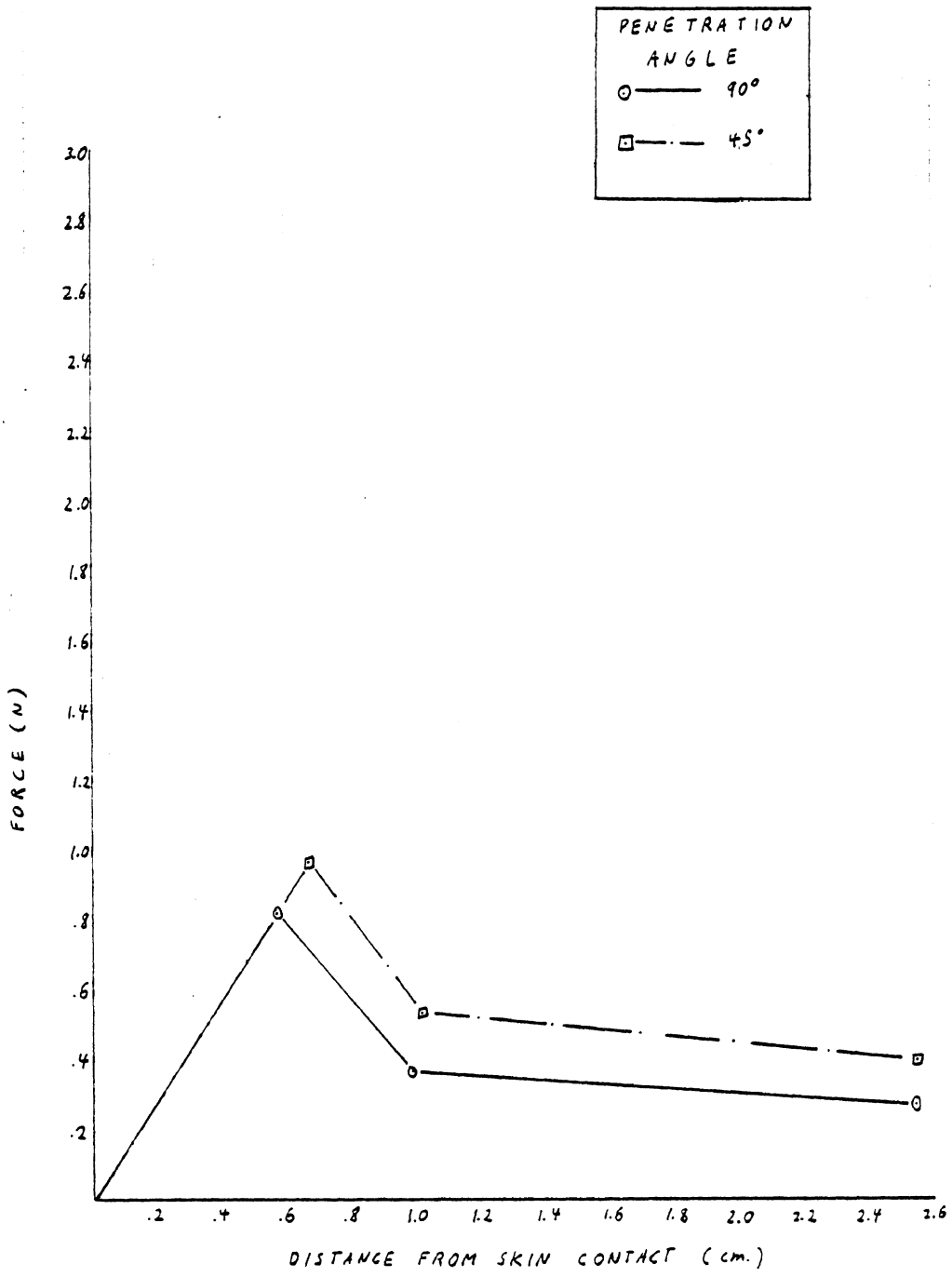
FIGURE 11I



GRAY-WHITE OILED

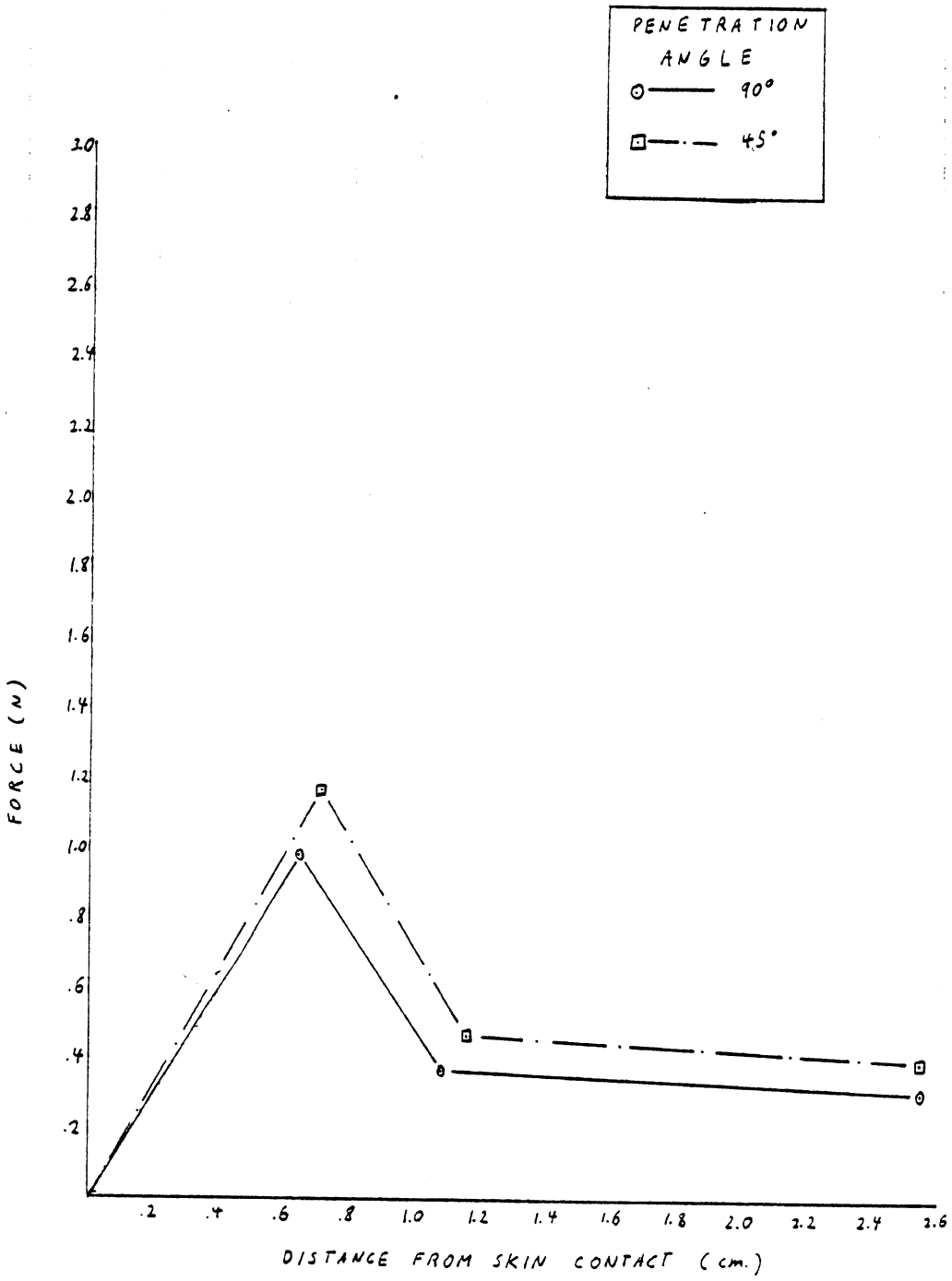
DRY

FIGURE 11J



GRAY-WHITE OILED 1249

FIGURE 11K



GRAY-WHITE OILED 360

FIGURE 11L

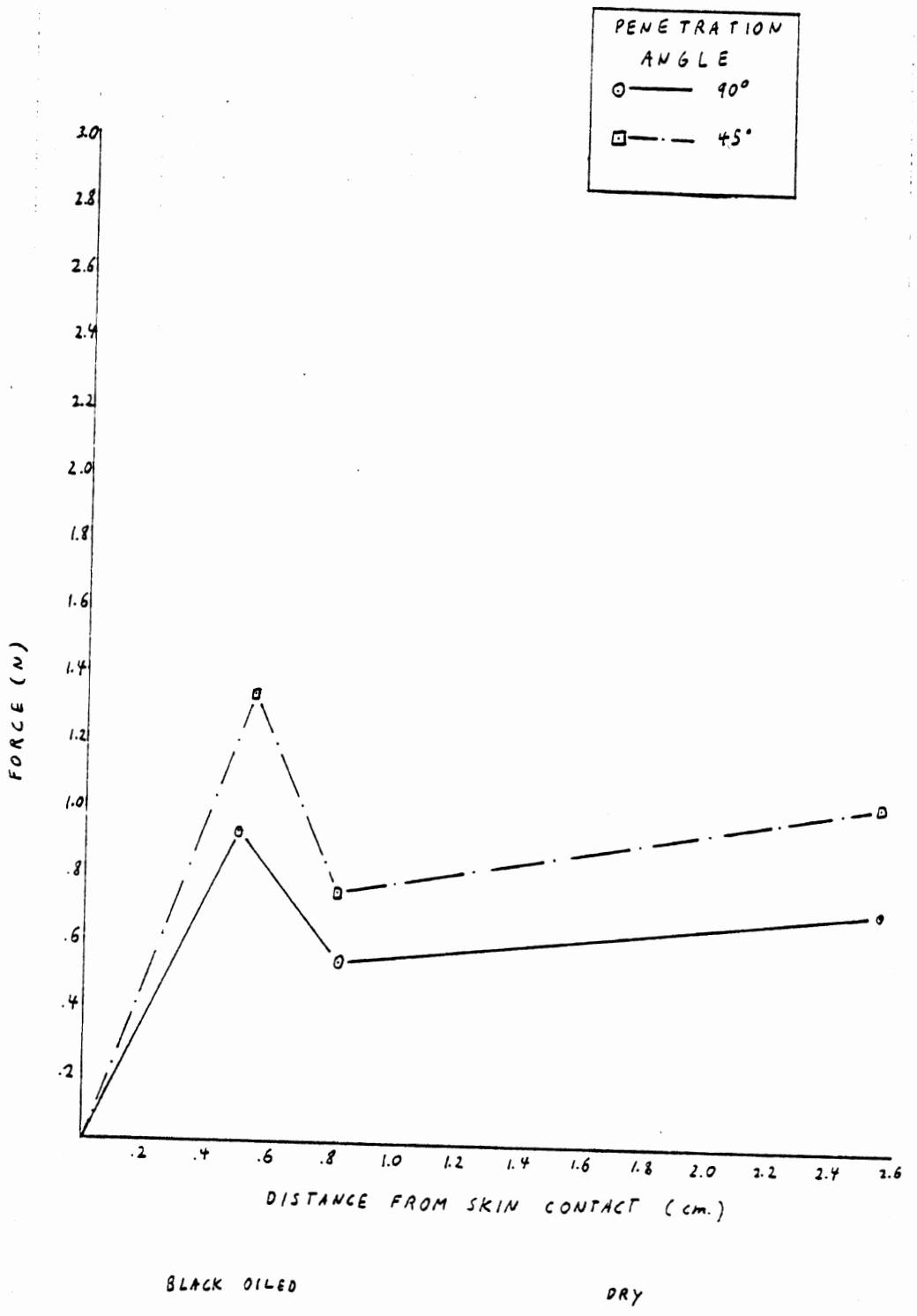
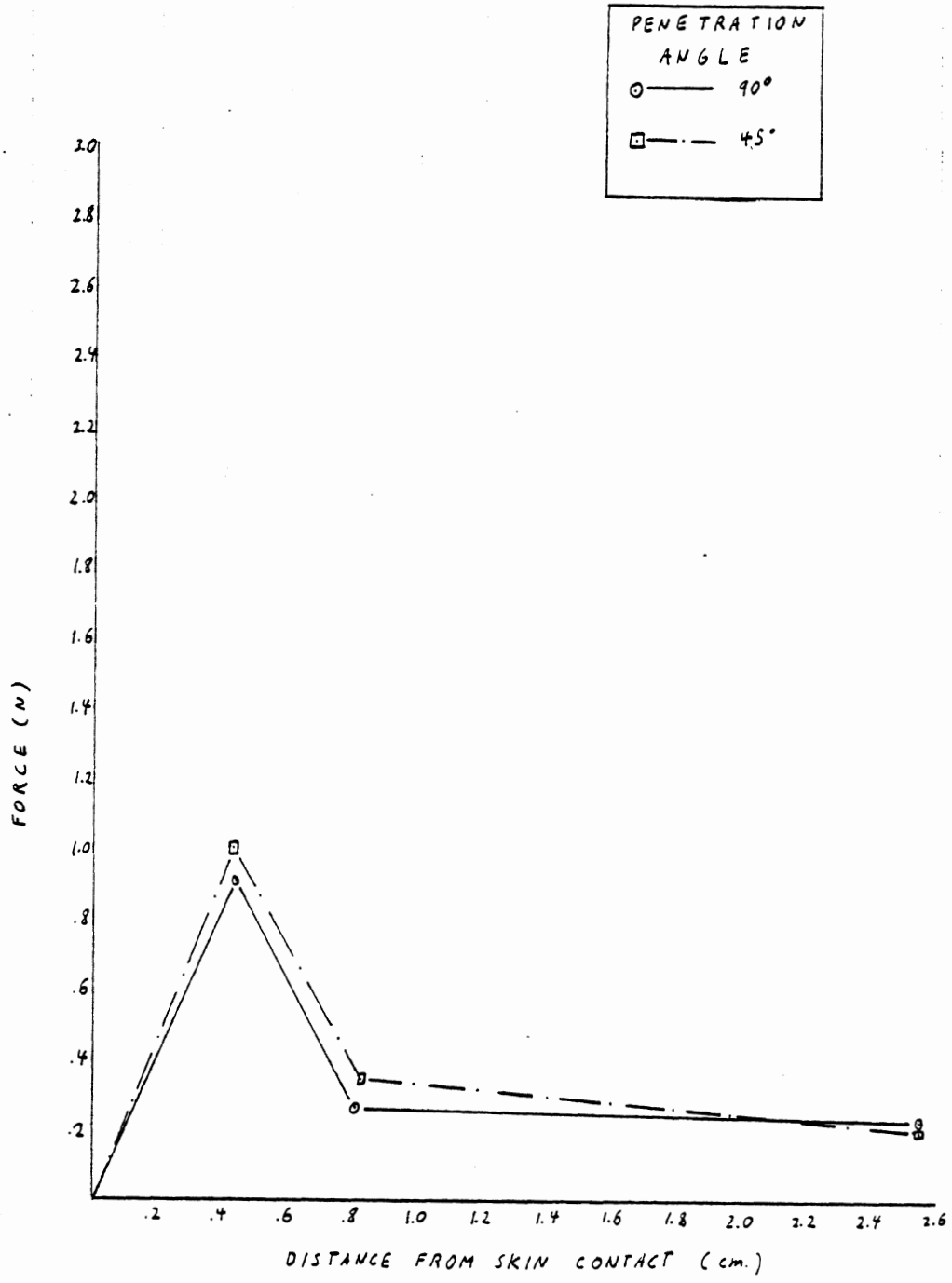

PENETRATION ANGLE
90°
45°
FORCE (N)
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
.2
.4
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
DISTANCE FROM SKIN CONTACT (cm.)
BLACK OILED
DRY

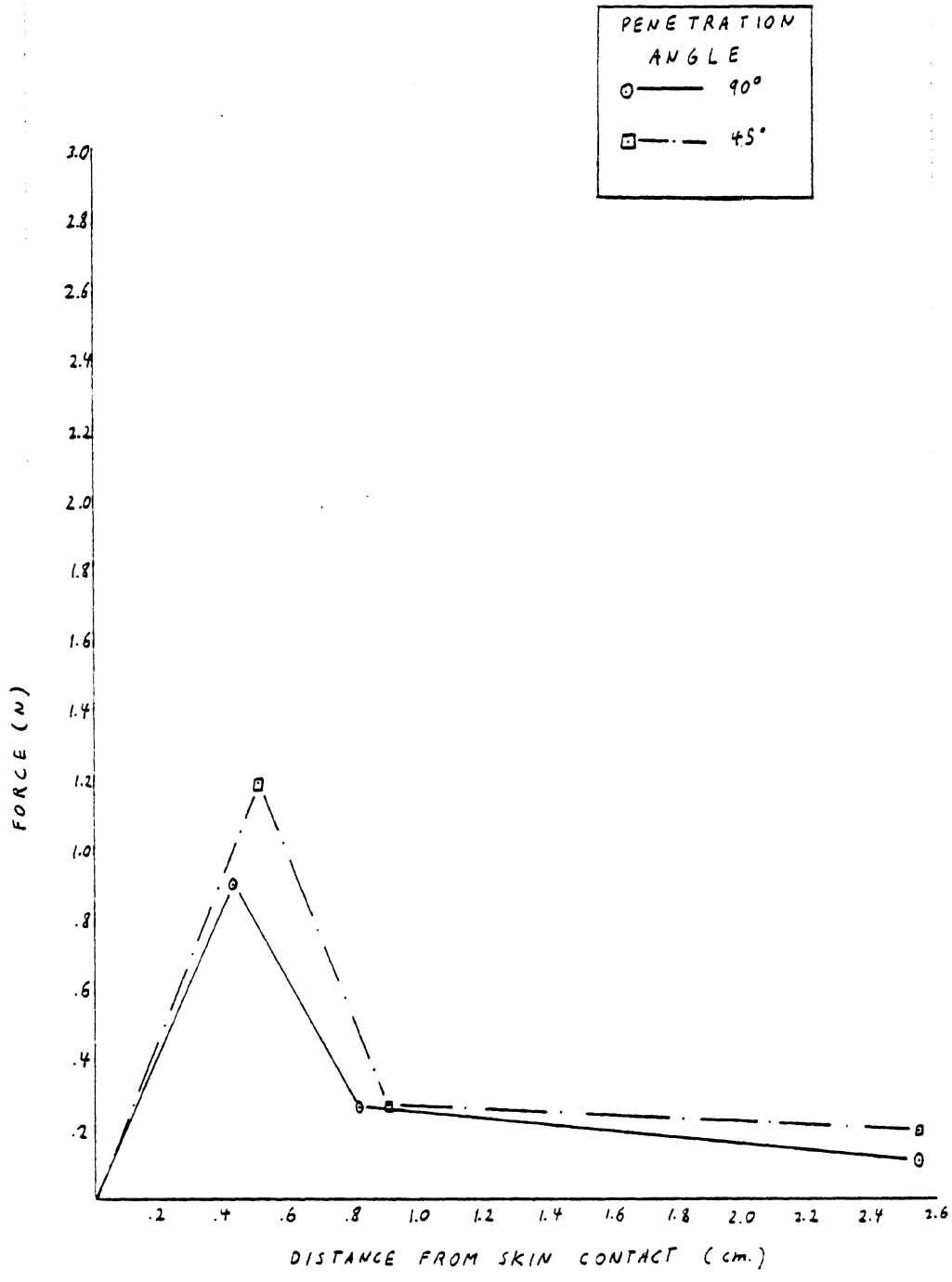
FIGURE 11M



BLACK OILED

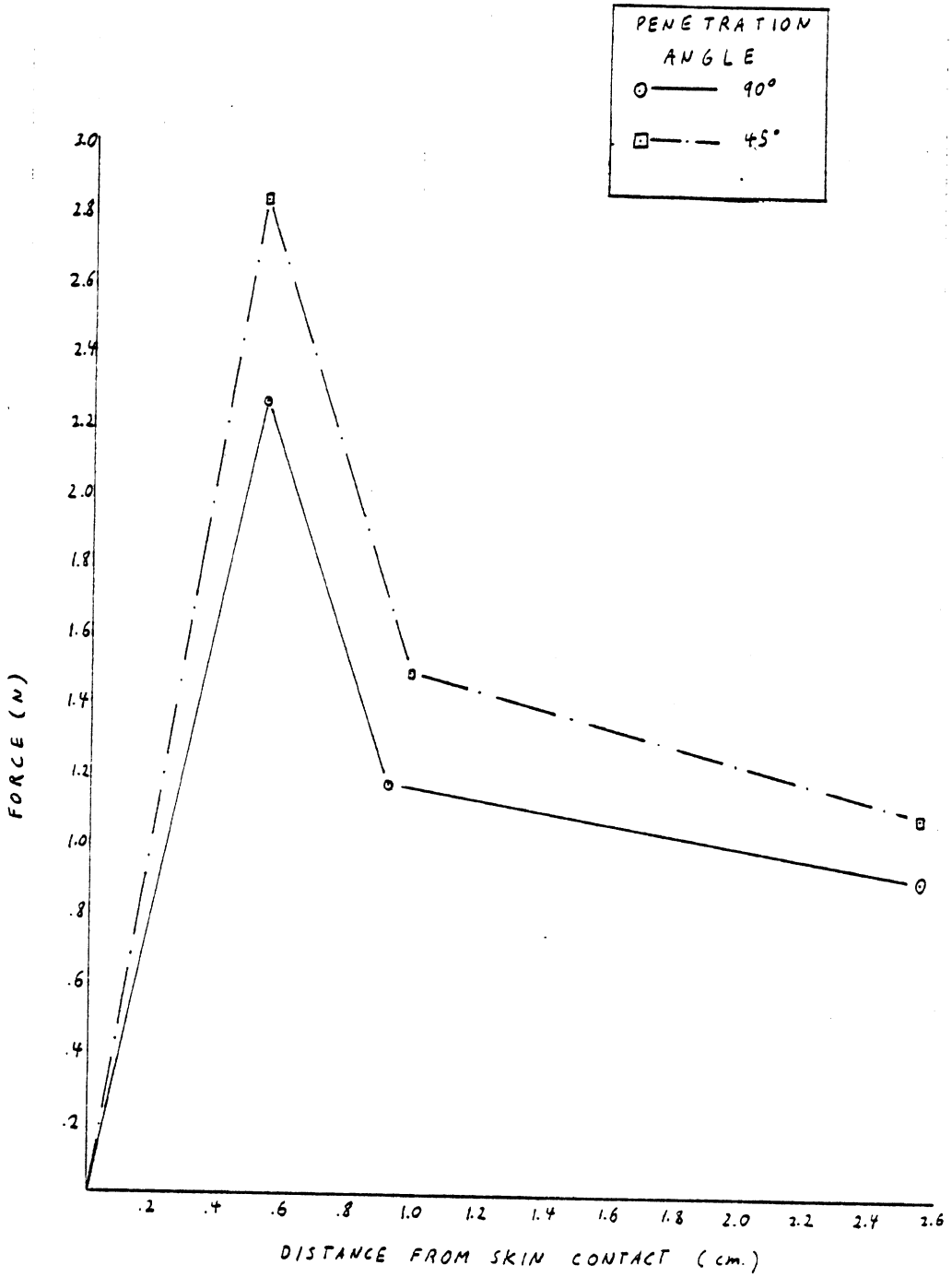
1249

FIGURE 11N



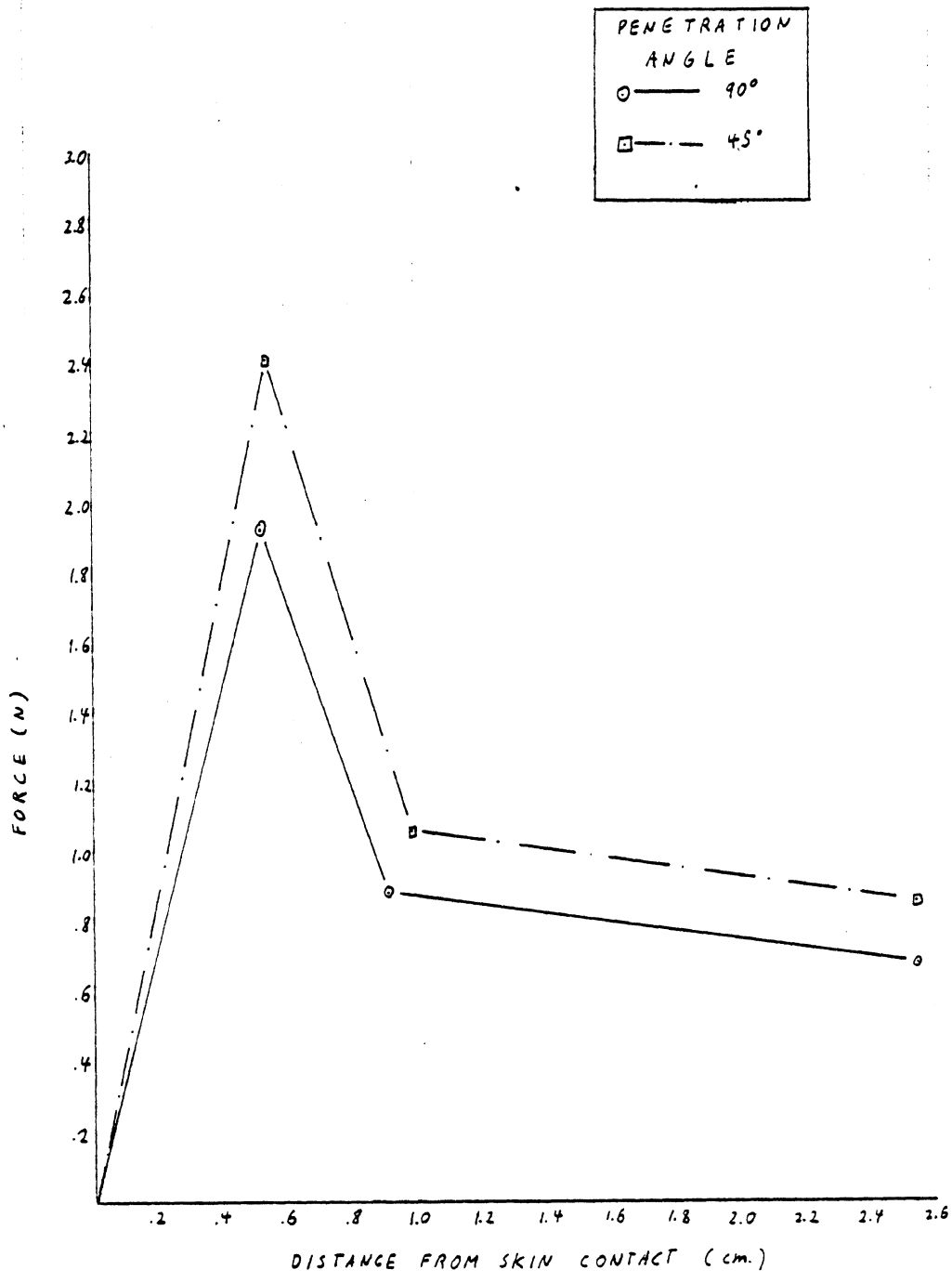
BLACK OILED 360

FIGURE 110



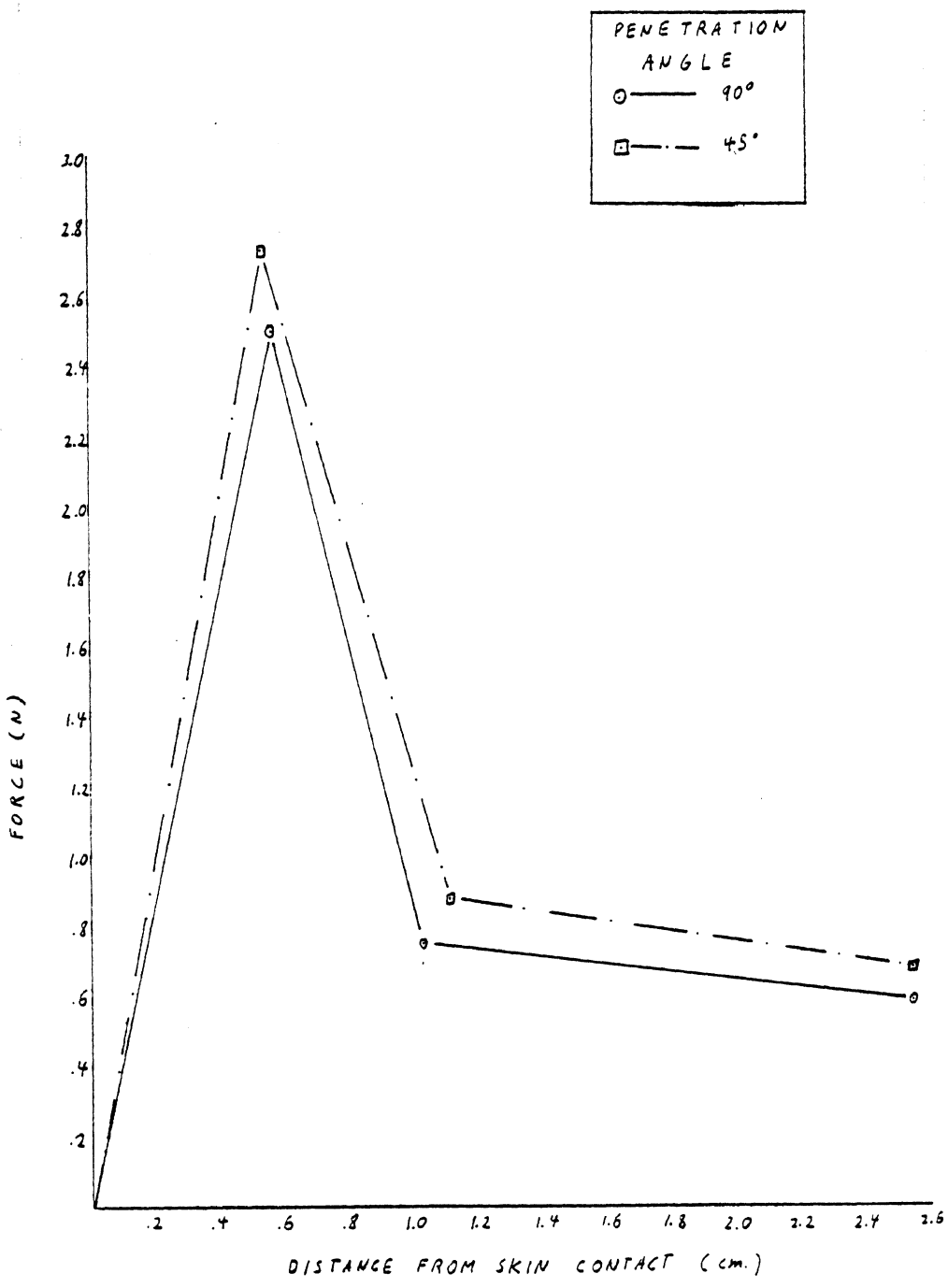
WHITE OILED DRY

FIGURE 11P



WHITE OILED 1249

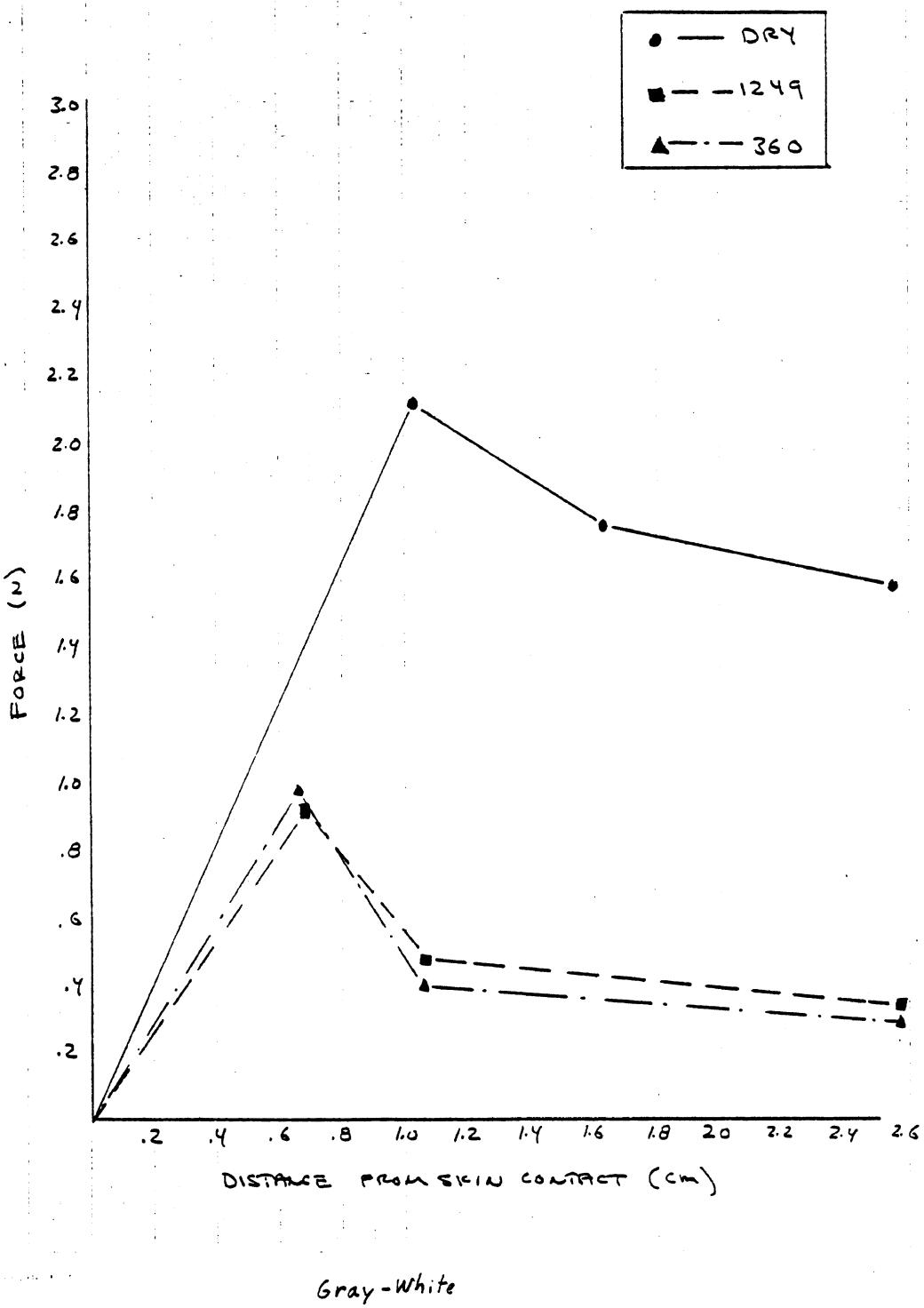
FIGURE 110



WHITE OILED 360

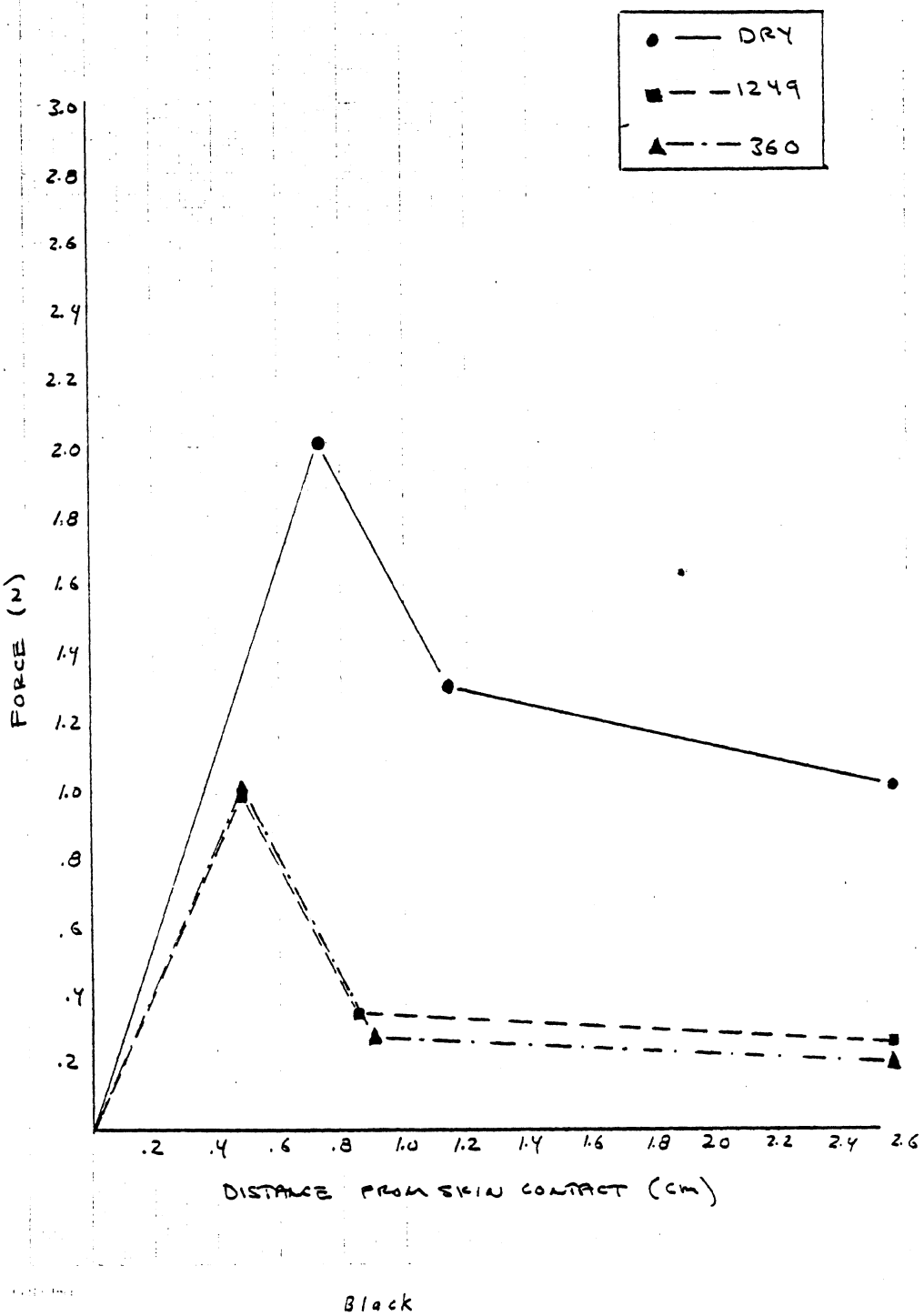
FIGURE 11R

Figure 12A through 12F. Comparisons of average reconstructed force-displacement curves for different needle lubribant conditions.



Gray-White

FIGURE 12A



Black

FIGURE 12B

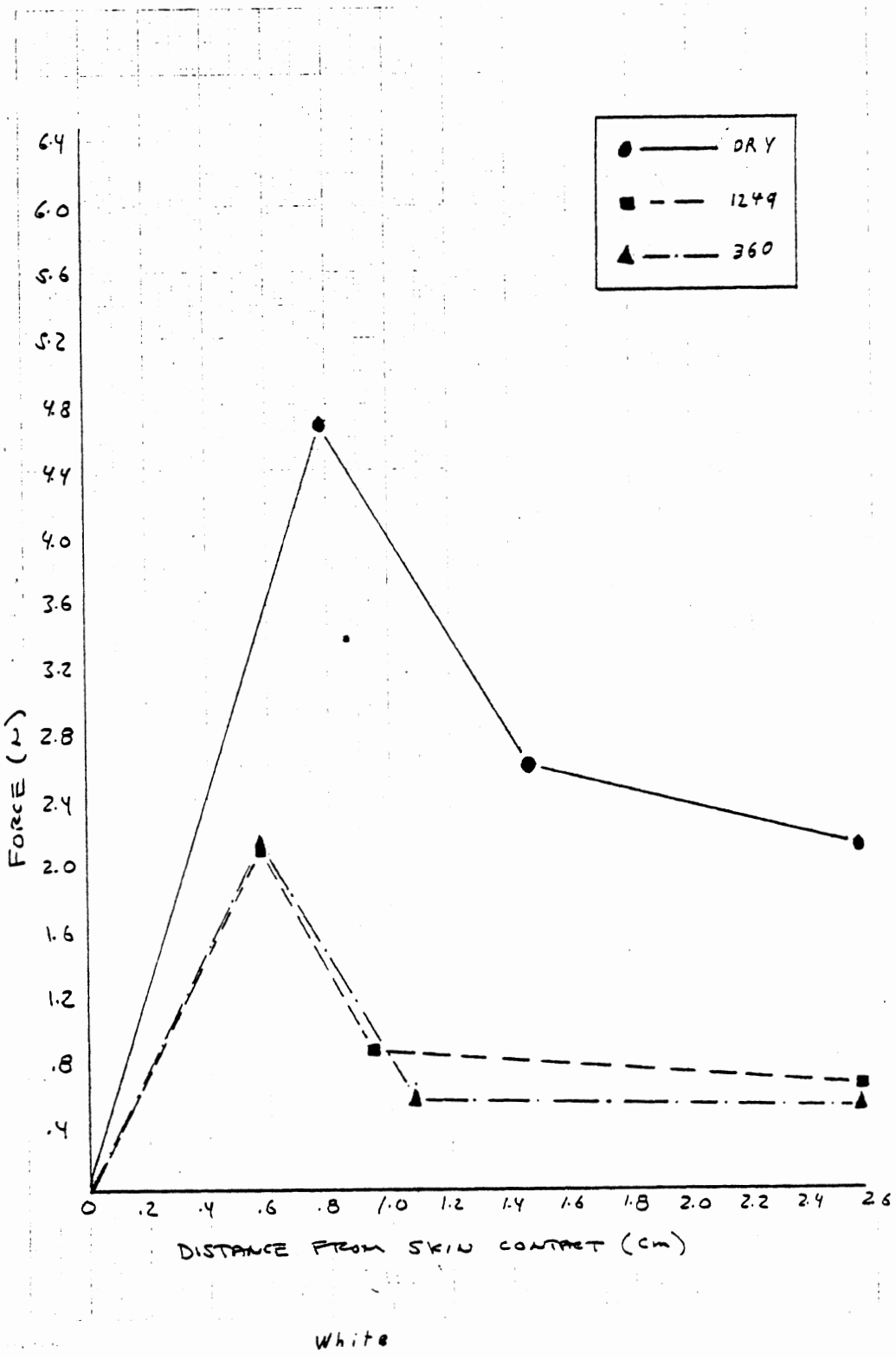
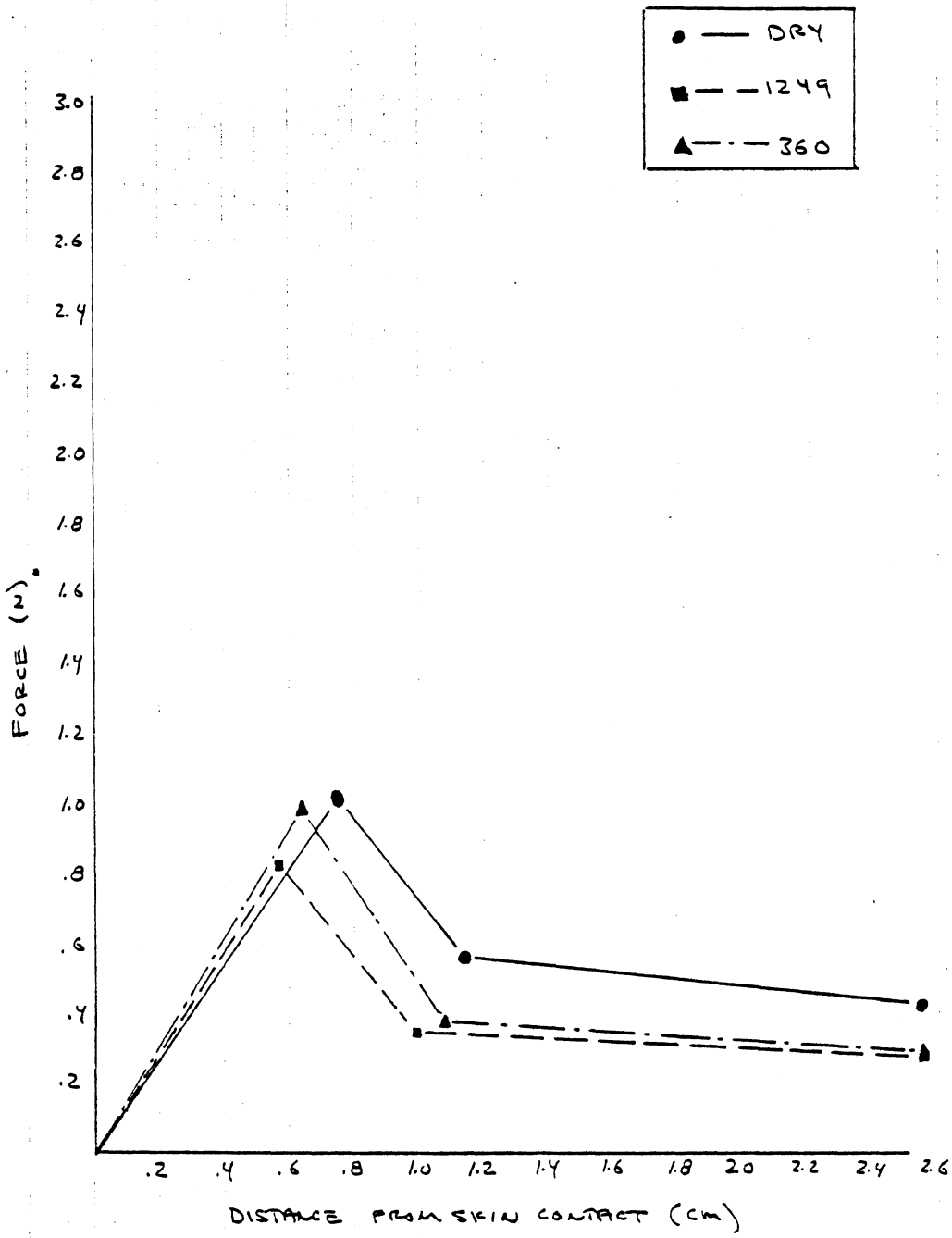
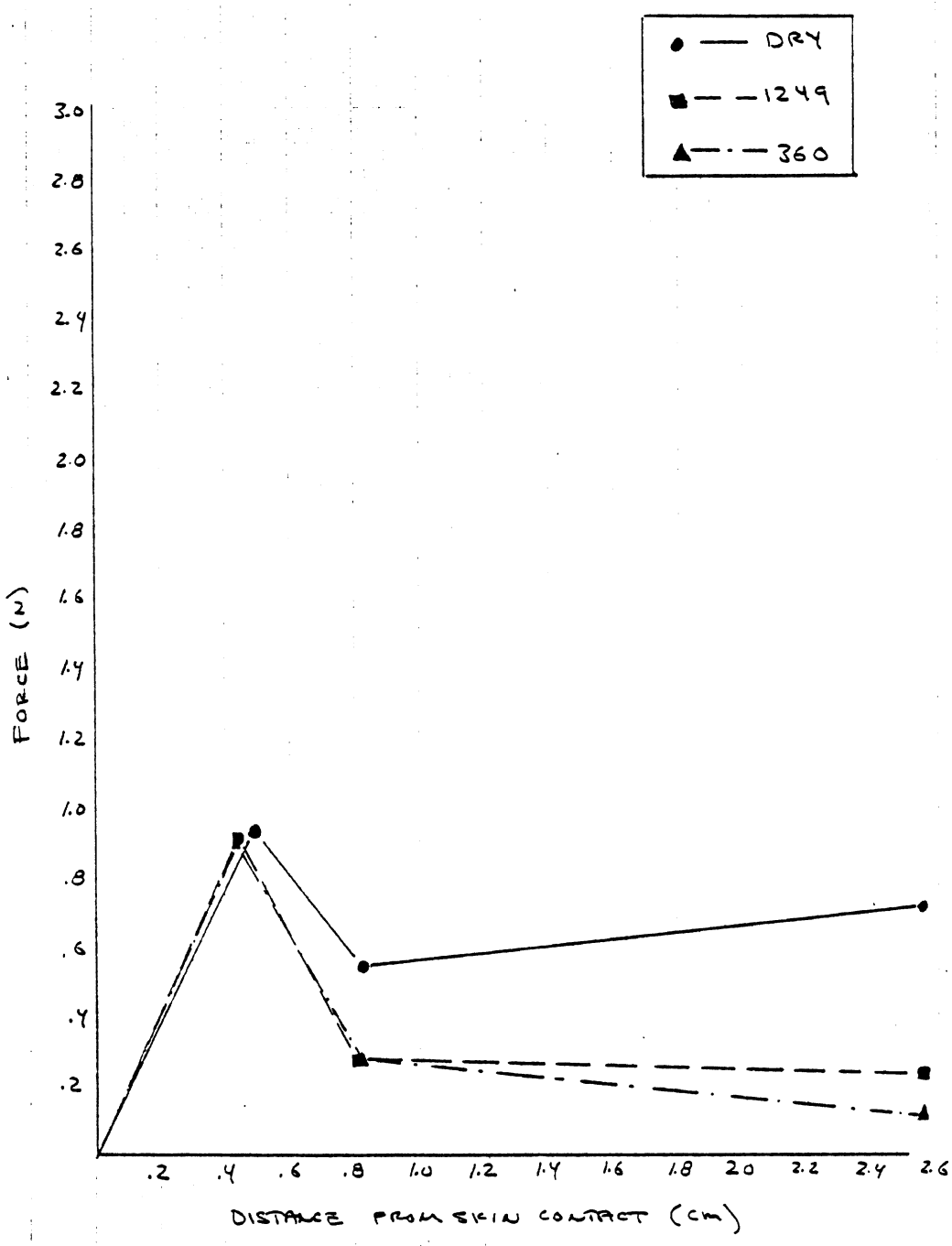

DRY
1249
360
6.4
6.0
5.6
5.2
4.8
4.4
4.0
3.6
3.2
2.8
2.4
2.0
1.6
1.2
.8
.4
FORCE (#)
0
.2
.4
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
DISTANCE FROM SKIN CONTACT (cm)
White

FIGURE 12C



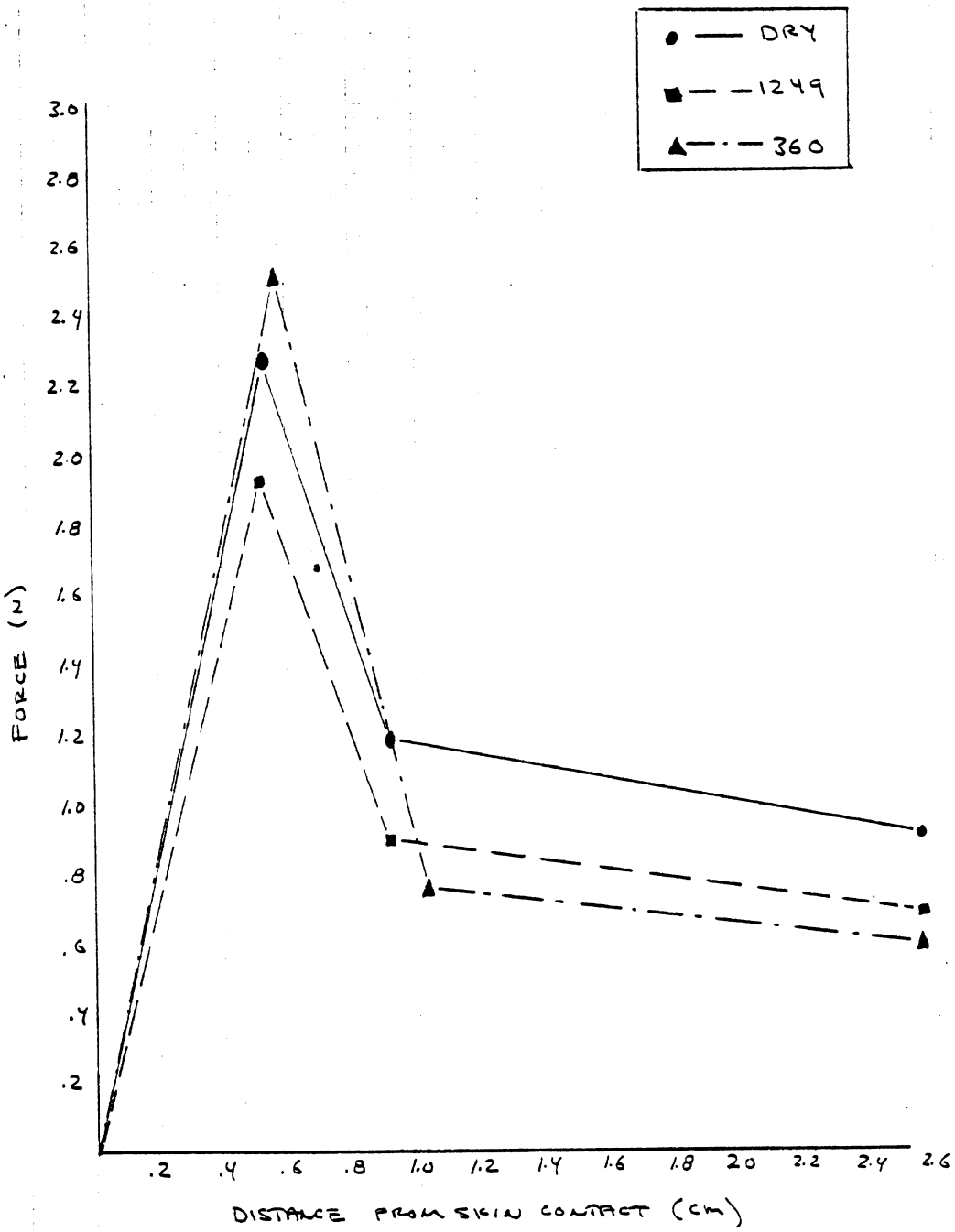
Gray - White oiled

FIGURE 12D



Black oiled

FIGURE 12E



White oiled

FIGURE 12F

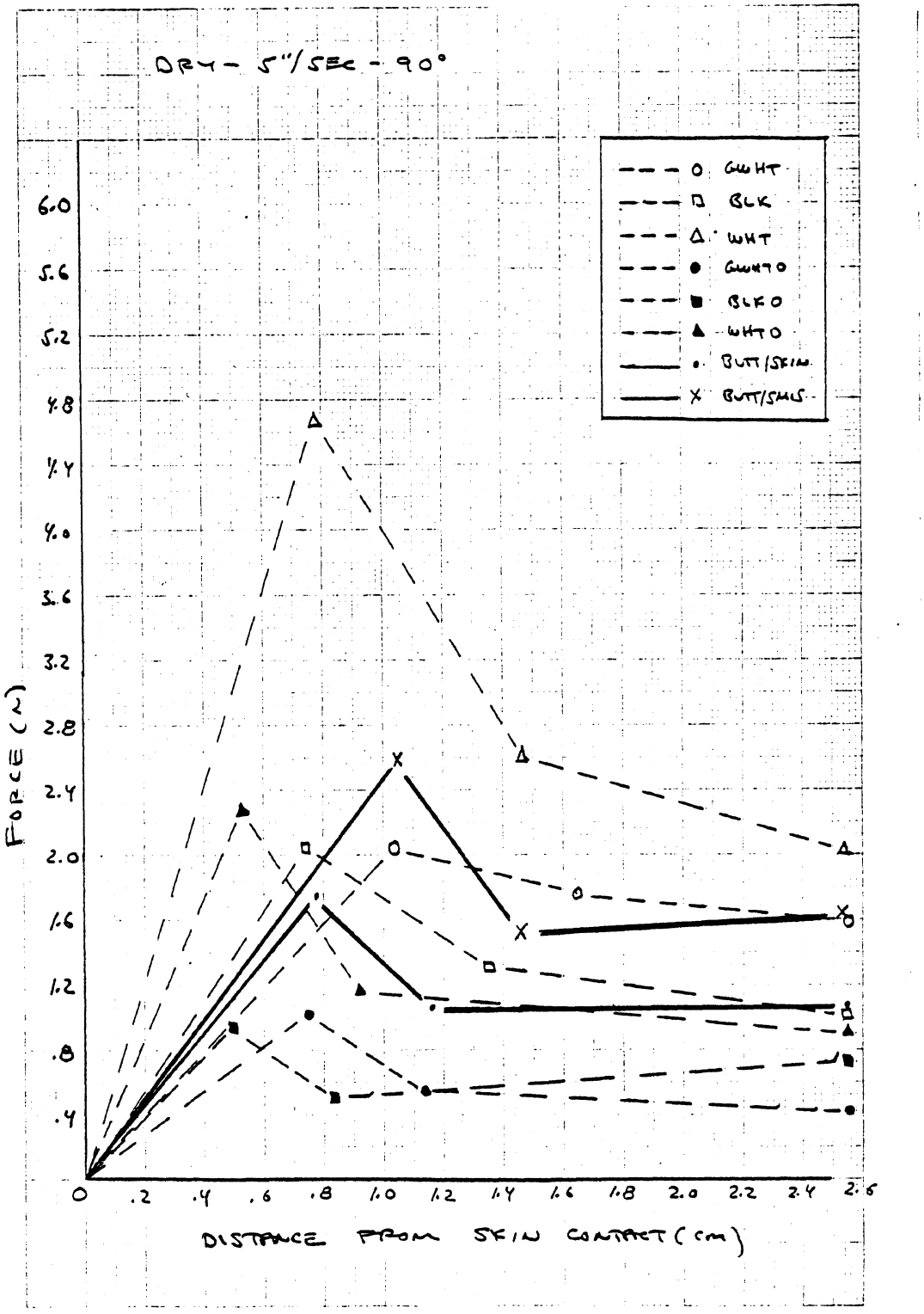
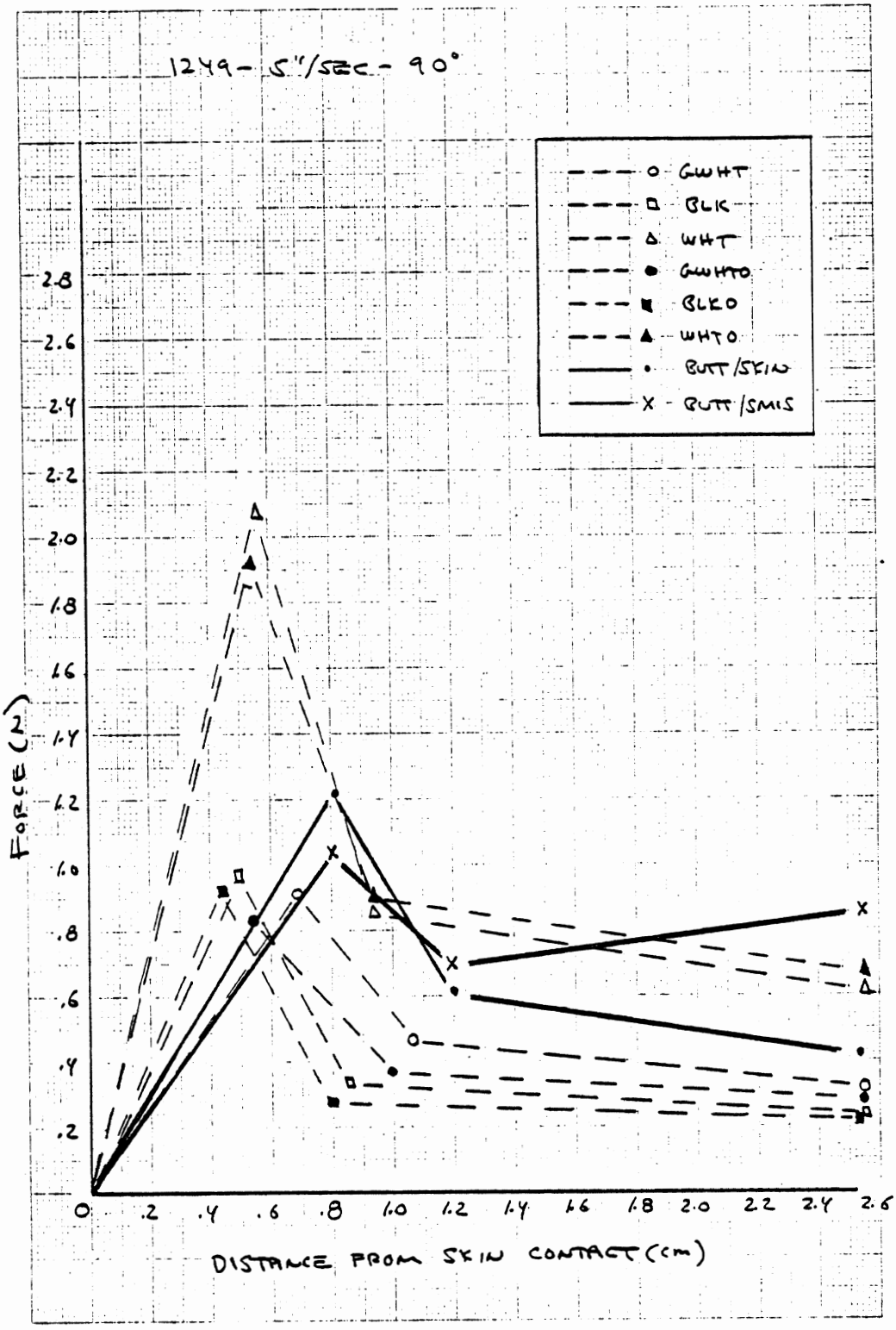


Figure 13. Comparison of Average Reconstructed Force-Displacement Curves of Cadaver Buttock Tests with Synthetic Materials for Dry Needles at 5 inches/second and 90 degrees.



20 Squares to the Inch

Figure 14. Comparison of Average Reconstructed Force-Displacement Curves of Cadaver Buttock Tests with Synthetic Materials for 1249 Lubricated Needles at 5 inches/second and 90 degrees.

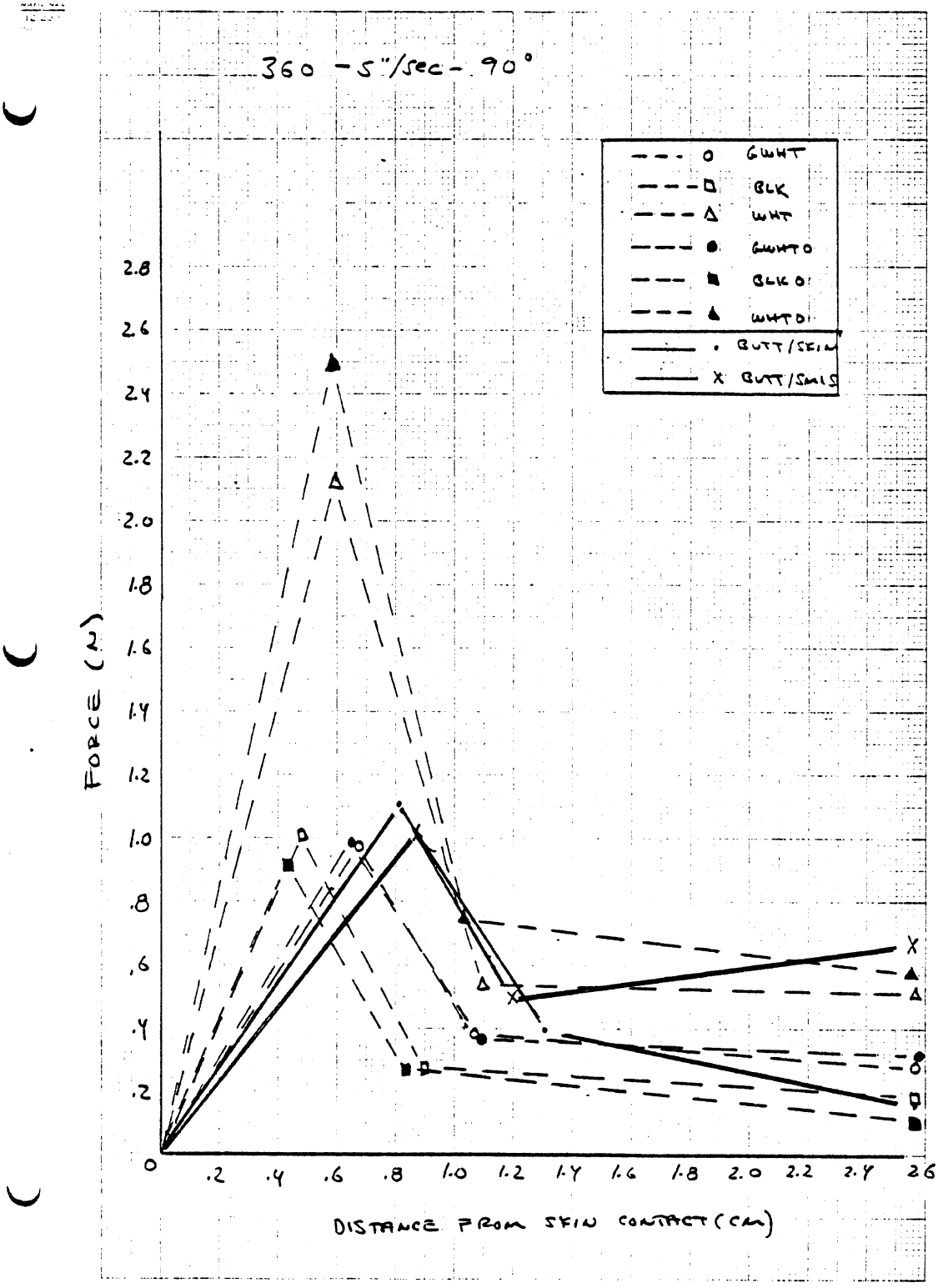


Figure 15. Comparison of Average Reconstructed Force-Displacement Curves of Cadaver Buttock Tests with Synthetic Materials for 360 Lubricated Needles at 5 inches/second and 90 degrees.

APPENDIX B

Tables 1 through 21

TABLE 1

LIST OF MATERIALS, CONDITIONS AND ABBREVIATIONS

USED IN TEXT AND TABLES

Specimen Code No.	Material	Condition	Abbreviation
1	4800 White-Gray*	DRY	GWHT
2	4701 Black	DRY	BLK
3	White	DRY	WHT
4	4800 White-Gray*	Oil Soaked	GWHTO
5	4701 Black	Oil Soaked	BLKO
6	White	Oil Soaked	WHTO

*penetrated with grey side toward needle

TABLE 2

TEST MATRIX AND SAMPLE SIZES

TEST CONDITIONS			MATERIAL						
Needle Lubricant	Penet. Angle	Penet. Velocity	GWHT Dry	GWHT Oil	BLK Dry	BLK Oil	WHT Dry	WHT Oil	Row Total
DRY	90	5	6	5	5	4	6	5	31
		10	5	5	5	5	5	5	25
	45	5	5	4	5	4	5	5	28
1249	90	5	6	5	5	4	5	5	31
		10	5	5	5	5	5	5	25
	45	5	5	4	5	4	5	5	28
360	90	5	6	5	5	5	5	5	31
		10	5	4	5	5	5	5	29
	45	5	5	4	5	4	5	5	28
	Column Total		48	41	45	41	46	45	266

TABLE 3

AVERAGE MEASUREMENT RESULTS FOR DRY NEEDLE TESTS

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
GWHT	2.1	1.75	1.6	1.0	1.6	11.5	16.4	38.3
BLK	2.09	1.29	1.03	.73	1.34	8.45	11.77	32.4
WHT	4.67	2.61	2.10	.78	1.45	19.7	23.1	68.4
GWHT/O	1.01	.56	.42	.75	1.14	4.0	4.9	14.0
BLK/O	.93	.54	.71	.49	.82	2.66	7.5	18.0
WHT/O	2.26	1.18	.91	.53	.91	7.25	10.4	30.7

TABLE 4

AVERAGE MEASUREMENT RESULTS FOR 1249 LUBRICATED NEEDLES

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
GWHT	.9	.47	.32	.68	1.06	3.35	4.17	12.2
BLK	.98	.34	.25	.48	.85	2.67	3.04	10.1
WHT	2.07	.85	.63	.57	.94	6.93	7.43	24.2
GWHT/O	.82	.37	.27	.57	.99	2.76	3.22	10.2
BLK/O	.91	.27	.23	.44	.81	2.2	2.81	9.3
WHT/O	1.92	.89	.68	.52	.91	6.2	7.6	24.1

TABLE 5

AVERAGE MEASUREMENT RESULTS FOR 360 LUBRICATED NEEDLES

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
GWHT	.97	.39	.28	.66	1.06	3.47	3.38	11.1
BLK	1.0	.27	.19	.48	.90	2.74	2.36	9.2
WHT	2.12	.55	.51	.57	1.08	7.09	5.49	21.68
GWHT/O	.98	.37	.31	.64	1.08	3.43	3.64	11.7
BLK/O	.90	.27	.11	.43	.82	2.32	1.95	8.0
WHT/O	2.50	.75	.59	.57	1.03	8.3	6.64	25.8

TABLE 6

Summary of Student T-Test Results Comparing
Mean Values of Selected Parameters at 5 and 10 Inches/Second
("X" indicates a significant difference in mean values at the .05 level.)

		F2	F3	F4	D2	D3	PWORK	NDWK2
DRY	GWHT	X					X	
	BLK	X	X					
	WHT		X	X	X	X		X
	GWHTO	X	X	X				X
	BLKO	X	X	X			X	X
	WHTO	X	X	X	X	X		X
1249	GWHT	X		X	X		X	X
	BLK					X		X
	WHT	X	X	X				X
	GWHTO	X	X	X			X	X
	BLKO	X	X	X				X
	WHTO	X	X	X		X		X
360	GWHT	X		X			X	X
	DLK			X				X
	WHT		X	X	X	X		X
	GWHTO	X					X	X
	BLKO	X		X	X		X	X
	WHTO			X	X			X

TABLE 7

AVERAGE CADAVER RESULTS FROM BUTTOCK TESTS

TEST CONDITION (LBS./VEL./ANGLE)	F2		F3		F4		D2		D3		PWORK		NDWK2		TWORK	
	SKIN	SMIS	SKIN	SMIS	SKIN	SMIS	SKIN	SMIS	SKIN	SMIS	SKIN	SMIS	SKIN	SMIS	SKIN	SMIS
DRY/5/90	1.7	2.5	1.0	1.5	1.0	1.7	.8	1.1	1.2	1.5	6.6	12.6	10.0	15.7	25.5	36.0
1249/5/90	1.2	1.1	.6	.7	.5	.9	.8	.8	1.2	1.2	4.1	4.4	5.6	8.0	15.0	18.5
360/5/90	1.1	1.0	.4	.5	.2	.7	.8	.9	1.3	1.2	4.1	4.2	3.1	5.5	11.2	14.3

TABLE 8

RATIOS OF AVERAGE RESULTS FOR DRY NEEDLE TESTS IN SYNTHETIC MATERIALS WITH AVERAGE CADAVER RESULTS IN EXCISED BUTTOCK SKIN

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
GWHT	1.23	1.75	1.6	1.25	1.33	1.74	1.64	1.5
BLK	1.22	1.29	1.03	.91	1.11	1.28	1.17	1.27
WHT	2.74	2.61	2.10	.97	1.2	2.98	2.3	2.68
GWHT/O	.59	.56	.42	.94	.95	.60	.49	.54
BLK/O	.54	.54	.71	.61	.6	.40	.75	.70
WHT/O	1.33	1.18	.91	.66	.76	1.1	1.04	1.2

TABLE 9

RATIOS OF AVERAGE RESULTS FOR DRY NEEDLES IN SYNTHETIC MATERIALS WITH AVERAGE CADAVER RESULTS FOR INTACT BUTTOCK SKIN

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
GWHT	.84	1.17	.94	.91	1.07	.91	1.04	1.06
BLK	.84	.86	.60	.66	.89	.67	.75	.90
WHT	1.87	1.74	1.24	.71	.96	1.56	1.47	1.9
GWHT/O	.40	.37	.25	.68	.76	.31	.31	.39
BLK/O	.37	.36	.42	.44	.55	.21	.48	.50
WHT/O	.90	.78	.54	.48	.61	.57	.66	.85

TABLE 10

RATIOS OF AVERAGE RESULTS FOR 360 LUBRICATED NEEDLES IN SYNTHETIC MATERIALS WITH AVERAGE CADAVER RESULTS FOR EXCISED BUTTOCK SKIN

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
GWHT	.88	.98	1.4	.83	.81	.84	1.09	.99
BLK	.91	.68	.95	.60	.69	.67	.76	.82
WHT	1.92	1.38	2.55	.71	.83	1.73	1.77	1.94
GWHT/O	.89	.93	1.55	.80	.83	.84	1.17	1.04
BLK/O	.82	.67	1.15	.55	.62	.54	.91	.83
WHT/O	2.27	1.87	2.95	.71	.79	2.02	2.14	2.30

TABLE 11

RATIOS OF AVERAGE RESULTS FOR 360 LUBRICATED NEEDLES IN SYNTHETIC MATERIALS WITH AVERAGE CADAVER RESULTS FOR INTACT BUTTOCK SKIN

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
GWHT	.97	1.38	.4	.73	.88	.82	.61	.77
BLK	1.0	.54	.27	.53	.75	.65	.43	.64
WHT	2.12	1.10	.73	.63	.9	1.68	1.0	1.51
GWHT/O	.98	.74	.44	.71	.9	.82	.66	.82
BLK/O	.90	.54	.32	.49	.68	.52	.51	.65
WHT/O	2.50	1.50	.84	.63	.85	1.97	1.21	1.80

TABLE 12

RATIOS OF AVERAGE RESULTS FOR 1249 LUBRICATED NEEDLES IN SYNTHETIC MATERIALS WITH AVERAGE CADAVER RESULTS FOR EXCISED BUTTOCK SKIN

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
GWHT	.75	.78	.64	.85	.88	.81	.74	.81
BLK	.82	.57	.5	.6	.71	.65	.54	.67
WHT	1.73	1.4	1.26	.71	.78	1.69	1.32	1.6
GWHT/O	.77	.61	.54	.71	.82	.67	.57	.68
BLK/O	.76	.45	.46	.55	.68	.53	.50	.62
WHT/O	1.6	1.48	1.36	.65	.76	1.5	1.35	1.61

TABLE 13

RATIOS OF AVERAGE RESULTS FOR 1249 LUBRICATED NEEDLES IN SYNTHETIC MATERIALS WITH AVERAGE CADAVER RESULTS FOR INTACT BUTTOCK SKIN

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWF2	TWORK
GWHT	.81	.67	.36	.85	.88	.76	.52	.65
BLK	.89	.48	.28	.6	.71	.61	.38	.55
WHT	1.88	1.2	.70	.7	.78	1.58	.92	1.31
GWHT/O	.75	.53	.30	.7	.83	.63	.40	.55
BLK/O	.83	.39	.26	.55	.67	.5	.35	.50
WHT/O	1.74	1.27	.76	.65	.76	1.41	.95	1.3

TABLE 14

RATIOS OF AVERAGE RESULTS FOR DIFFERENT LUBRICANT CONDITIONS FOR CADAVER TESTS ON EXCISED BUTTOCK SKIN

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
DRY/1249	1.4	1.67	2.0	1.0	1.0	1.6	1.78	1.7
DRY/360	1.54	2.5	5.0	1.0	.92	1.6	3.2	2.27
1249/360	1.09	1.5	2.5	1.0	.92	1.0	1.75	1.33

TABLE 15

RATIOS OF AVERAGE RESULTS FOR DIFFERENT LUBRICANT CONDITIONS
FOR CADAVER TESTS ON INTACT BUTTOCK SKIN

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
DRY/1249	2.27	2.14	1.89	1.38	1.25	2.86	1.96	1.94
DRY/360	2.5	3.0	2.42	1.22	1.25	3.0	2.85	2.52
1249/360	1.1	1.4	1.28	.89	1.0	1.04	1.45	1.29

TABLE 16

RATIOS OF AVERAGE RESULTS FOR DIFFERENT LUBRICANT CONDITIONS FOR TESTS IN DRY 4800 WHITE-GRAY (GWHT) MATERIAL

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
DRY/1249	2.33	3.72	5.0	1.47	1.5	3.4	3.93	3.14
DRY/360	2.16	4.48	5.7	1.51	1.5	3.3	4.85	3.45
1249/360	.92	1.2	1.14	1.03	1.0	.96	1.23	1.10

TABLE 17

RATIOS OF AVERAGE RESULTS FOR DIFFERENT LUBRICANT CONDITIONS FOR TESTS IN DRY 4701 BLACK (BLK) MATERIAL

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
DRY/1249	2.13	3.79	4.12	1.52	1.57	3.16	3.87	3.2
DRY/360	2.09	4.78	5.42	1.52	1.49	3.1	4.98	3.52
1249/360	.98	1.25	1.31	1.0	.94	.97	1.29	1.10

TABLE 18

RATIOS OF AVERAGE RESULTS FOR DIFFERENT LUBRICANT CONDITIONS FOR TESTS IN DRY WHITE (WHT) MATERIAL

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
DRY/1249	2.25	3.07	3.33	1.37	1.54	2.84	3.11	2.83
DRY/360	2.20	4.74	4.11	1.37	1.34	2.78	4.21	3.15
1249/360	.97	1.54	1.23	1.0	.87	.98	1.35	1.11

TABLE 19

RATIOS OF AVERAGE RESULTS FOR DIFFERENT LUBRICANT CONDITIONS FOR TESTS IN OIL SOAKED 4800 WHITE-GRAY (GWHTO) MATERIAL

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
DRY/1249	1.23	1.51	1.55	1.31	1.15	1.45	1.52	1.37
DRY/360	1.03	1.51	1.35	1.17	1.05	1.17	1.34	1.19
1249/360	.84	1.0	.87	.89	.91	.81	.88	.87

TABLE 20

RATIOS OF AVERAGE RESULTS FOR DIFFERENT LUBRICANT CONDITIONS FOR TESTS IN OIL SOAKED 4701 BLACK (BLKO) MATERIAL

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
DRY/1249	1.02	2.0	3.08	1.11	1.01	1.21	2.66	1.93
DRY/360	1.03	2.0	6.45	1.13	1.0	1.14	3.84	2.25
1249/360	1.0	1.0	2.09	1.02	.99	.94	1.44	1.16

TABLE 21

RATIOS OF AVERAGE RESULTS FOR DIFFERENT LUBRICANT CONDITIONS FOR TESTS IN OIL SOAKED WHITE (WHTO) MATERIAL

TEST CONDITION	F2	F3	F4	D2	D3	PWORK	NDWK2	TWORK
DRY/1249	1.17	1.32	1.33	1.02	1.0	1.17	1.36	1.27
DRY/360	.90	1.57	1.54	.93	.88	.87	1.56	1.17
1249/360	.77	1.19	1.16	.91	.88	.74	1.15	.92

APPENDIX C

Statistics By Test Group

<DES BYSTRATA VAR=11-32,35-36 CASES=ALL STRAT=VELOCITY*LUBRICNT*ANGLE*MAT'L HEAD=11 STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6>
DESCRIPTIVE MEASURES <2> VELOCITY:5.0*LUBRICNT:DRY*ANGLE:90.*MAT'L:GWHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	6	2.0100	2.2900	2.1117	.11017
12.F3	6	1.5500	1.9400	1.7550	.13722
13.F4	6	1.3500	1.7100	1.5667	.14109
14.F32	6	.74000	.96000	.83000	.77974 -1
15.F43	6	.80000	1.0000	.89000	.75366 -1
16.F42	6	.66000	.79000	.73667	.54650 -1
17.D2	6	.94300	1.0930	1.0305	.54614 -1
18.D3	6	1.2660	2.0500	1.6348	.29003
19.D4	6	2.5400	2.5450	2.5420	.18974 -2
20.D24	6	.37000	.43000	.40167	.22286 -1
21.D34	6	.49000	.82000	.63667	.11639
22.T2	6	75.000	87.000	82.000	4.5166
23.T3	6	101.00	166.00	129.83	22.833
24.T4	6	202.00	202.00	202.00	
25.PWORK	6	9.9400	13.150	11.537	1.0284
26.DWORK	6	25.670	28.770	26.750	1.2328
27.TWORK	6	35.680	40.830	38.300	1.9421
28.DRAGW1	6	4.4400	20.000	11.785	5.2724
29.DRAGW2	6	7.7200	21.910	14.957	5.3294
30.PWORK2	6	27.000	32.000	29.667	1.8619
31.DWORK2	6	67.000	72.000	69.333	1.9619
32.DRWK12	6	16.000	72.000	43.500	19.501
35.NDWK	6	16.058	19.164	17.724	1.0532
36.NDWK2	6	14.479	17.636	16.432	1.2022

DESCRIPTIVE MEASURES <3> VELOCITY:10.0*LUBRICNT:DRY*ANGLE:90.*MAT'L:GWHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.2800	2.5200	2.3620	.97314 -1
12.F3	5	1.6000	2.2000	1.8140	.22623
13.F4	5	1.5400	1.8300	1.6640	.11415
14.F32	5	.67000	.87000	.76400	.71274 -1
15.F43	5	.83000	.97000	.91800	.56303 -1
16.F42	5	.64000	.74000	.69800	.38987 -1
17.D2	5	1.0520	1.1900	1.1080	.68370 -1
18.D3	5	1.2700	2.2200	1.8832	.38997
19.D4	5	2.5400	2.5520	2.5478	.47117 -2
20.D24	5	.41000	.46000	.43000	.27386 -1
21.D34	5	.49000	.87000	.73200	.15418
22.T2	5	43.000	49.000	45.400	2.8810
23.T3	5	52.000	90.000	76.600	15.646
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	13.770	16.090	14.696	1.0317
26.DWORK	5	25.400	31.490	29.090	2.2596
27.TWORK	5	41.490	45.690	42.790	1.6949
28.DRAGW1	5	5.5000	23.600	15.974	7.0269
29.DRAGW2	5	5.1700	25.570	12.110	8.3793
30.PWORK%	5	31.000	38.000	34.000	2.9155
31.DWORK%	5	61.000	68.000	65.000	2.9155
32.DRWK12%	5	17.000	82.000	57.600	25.851
35.NDWK	5	18.663	21.043	19.495	.96528
36.NDWK2	5	16.156	20.321	17.576	1.6104

DESCRIPTIVE MEASURES <5> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:90.*MAT'L:GWHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	6	.81000	1.0300	.91333	.84774 -1
12.F3	6	.43000	.52000	.47000	.33466 -1
13.F4	6	.20000	.38000	.32833	.66156 -1
14.F32	6	.45000	.57000	.51833	.49967 -1
15.F43	6	.43000	.88000	.69667	.15958
16.F42	6	.24000	.43000	.35667	.65320 -1
17.D2	6	.66500	.69100	.67900	.11662 -1
18.D3	6	.99000	1.2040	1.0653	.72762 -1
19.D4	6	2.5400	2.5500	2.5460	.41473 -2
20.D24	6	.26000	.27000	.26333	.51640 -2
21.D34	6	.38000	.47000	.41333	.30768 -1
22.T2	6	53.000	55.000	54.167	.98319
23.T3	6	78.000	96.000	84.667	6.0222
24.T4	6	202.00	202.00	202.00	
25.PWORK	6	2.9200	3.6600	3.3583	.26634
26.DWORK	6	8.1100	9.6100	8.8667	.51407
27.TWORK	6	11.390	13.270	12.232	.68394
28.DRAGW1	6	2.1100	3.4800	2.6917	.45508
29.DRAGW2	6	5.7500	6.7500	6.1700	.33305
30.PWORK%	6	25.000	29.000	27.000	1.4142
31.DWORK%	6	70.000	74.000	72.000	1.4142
32.DRWK12%	6	26.000	37.000	29.667	3.7771
35.NDWK	6	4.3092	5.1253	4.7499	.28711
36.NDWK2	6	3.8422	4.4791	4.1717	.21852

DESCRIPTIVE MEASURES <65 VELOCITY:10.0*LUBRICNT:1249.*ANGLE:90.*MAT*L:GWHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.99000	1.1300	1.0600	.57009 -1
12.F3	5	.49000	.60000	.52200	.44385 -1
13.F4	5	.44000	.53000	.48600	.32094 -1
14.F32	5	.45000	.53000	.49000	.33912 -1
15.F43	5	.79000	1.0700	.93400	.10968
16.F42	5	.42000	.49000	.45600	.32863 -1
17.D2	5	.67900	.74100	.71000	.28636 -1
18.D3	5	1.0230	1.1240	1.0834	.37826 -1
19.D4	5	2.5420	2.5520	2.5488	.43244 -2
20.D24	5	.26000	.29000	.27200	.13038 -1
21.D34	5	.40000	.44000	.42200	.14832 -1
22.T2	5	28.000	31.000	29.400	1.5166
23.T3	5	42.000	46.000	44.400	1.5166
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	3.9800	4.7200	4.2600	.30801
26.DWORK	5	9.4600	11.630	10.480	.81071
27.TWORK	5	13.440	15.620	14.750	.86308
28.DRAGW1	5	2.3800	3.6500	2.9120	.48484
29.DRAGW2	5	6.7500	7.9700	7.5640	.46463
30.PWORK%	5	25.000	30.000	28.400	2.0736
31.DWORK%	5	69.000	74.000	70.600	2.0736
32.DRWK12%	5	23.000	31.000	27.400	3.0496
35.NDWK	5	5.2236	6.2272	5.6967	.38715
36.NDWK2	5	4.6659	5.5812	5.1646	.35397

DESCRIPTIVE MEASURES <8> VELOCITY:5.0*LUBRICNT:360.*ANGLE:90.*MAT'L:GWHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	6	.90000	1.1000	.97000	.77974 -1
12.F3	6	.38000	.41000	.38833	.11690 -1
13.F4	6	.21000	.37000	.27833	.51929 -1
14.F32	6	.34000	.45000	.40167	.39707 -1
15.F43	6	.84000	.92000	.71833	.12400
16.F42	6	.23000	.41000	.28833	.66458 -1
17.D2	6	.65400	.72000	.65550	.60981 -1
19.D3	6	.96400	1.1430	1.0617	.66686 -1
19.D4	6	2.5430	2.5480	2.5453	.19665 -2
20.D24	6	.21000	.28000	.25333	.25033 -1
21.D34	6	.37000	.44000	.41167	.26394 -1
22.T2	6	44.000	57.000	52.000	4.9396
23.T3	6	76.000	91.000	84.000	5.5857
24.T4	6	202.00	202.00	202.00	
25.PWORK	6	3.1400	3.9200	3.4750	.30125
26.DWORK	6	7.0700	8.2500	7.6383	.41586
27.TWORK	6	10.750	11.570	11.119	.33283
28.DRAGW1	6	2.3000	2.9100	2.6200	.20070
29.DRAGW2	6	4.4500	5.5300	5.0150	.39470
30.PWORK%	6	28.000	34.000	30.667	2.7325
31.DWORK%	6	65.000	71.000	68.333	2.7325
32.DRWK12%	6	32.000	39.000	33.667	2.7325
35.NDWK	6	3.8761	4.4595	4.0432	.21434
36.NDWK2	6	3.1119	3.9472	3.3843	.29483

DESCRIPTIVE MEASURES <9> VELOCITY:10.0*LUBRICNT:360.*ANGLE:90.*MAT'L:GWHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.99000	1.2600	1.1180	.11692
12.F3	5	.37000	.47000	.40800	.38987 -1
13.F4	5	.38000	.50000	.44800	.49699 -1
14.F32	5	.32000	.42000	.36400	.40373 -1
15.F43	5	.94000	1.3700	1.1040	.19034
16.F42	5	.31000	.48000	.40200	.70498 -1
17.D2	5	.61700	.69500	.66240	.31101 -1
18.D3	5	1.0370	1.1240	1.0788	.34047 -1
19.D4	5	2.5470	2.5510	2.5490	.19999 -2
20.D24	5	.24000	.27000	.25600	.11402 -1
21.D34	5	.40000	.44000	.41800	.14832 -1
22.T2	5	26.000	29.000	27.600	1.1402
23.T3	5	43.000	46.000	44.200	1.3038
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	3.4900	4.6700	4.1520	.46644
26.DWORK	5	8.8700	10.200	9.7700	.57931
27.TWORK	5	13.080	14.680	13.930	.66268
28.DRAGW1	5	2.4000	3.6200	3.1020	.44556
29.DRAGW2	5	6.3700	7.0700	6.6640	.28763
30.PWORK%	5	25.000	32.000	29.400	3.2094
31.DWORK%	5	67.000	74.000	69.600	3.2094
32.DPWK12%	5	27.000	35.000	31.200	2.9496
35.NDWK	5	4.7894	5.4692	5.1772	.26292
36.NDWK2	5	4.7781	4.7259	4.5337	.19335

DESCRIPTIVE MEASURES <11> VELOCITY:5.0*LUBRICNT:DRY*ANGLE:45.*MAT'L:GWHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.5100	2.7100	2.6340	.76354 -1
12.F3	5	1.9000	2.4700	2.2160	.21824
13.F4	5	1.6100	2.2300	2.0140	.25353
14.F32	5	.75000	.92000	.83400	.68411 -1
15.F43	5	.85000	.97000	.90400	.44497 -1
16.F42	5	.64000	.85000	.76000	.85147 -1
17.D2	5	.88500	1.0260	.97540	.57169 -1
18.D3	5	1.3380	1.9550	1.6534	.26877
19.D4	5	2.5400	2.5470	2.5426	.26077 -2
20.D24	5	.34000	.40000	.37800	.23875 -1
21.D34	5	.52000	.76000	.64400	.10407
22.T2	5	71.000	82.000	77.800	4.4385
23.T3	5	106.00	155.00	131.20	21.183
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	12.200	15.700	14.498	1.5428
26.DWORK	5	32.820	36.210	35.068	1.3232
27.TWORK	5	45.020	51.700	49.570	2.7209
28.DRAGW1	5	8.3000	23.100	16.468	6.2446
29.DRAGW2	5	11.940	27.360	18.594	6.7795
30.PWORK%	5	27.000	30.000	28.600	1.5166
31.DWORK%	5	69.000	72.000	70.400	1.5166
32.DRWK12%	5	23.000	65.000	46.800	18.254
35.NDWK	5	19.747	23.687	22.423	1.5045
36.NDWK2	5	16.865	22.724	20.693	2.3410

DESCRIPTIVE MEASURES <14> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:45.*MAT'L:GWHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	1.0400	1.2200	1.1380	.67971 -1
12.F3	5	.60000	.72000	.64600	.51769 -1
13.F4	5	.51000	.58000	.53000	.28284 -1
14.F32	5	.49000	.63000	.56400	.52726 -1
15.F43	5	.72000	.94000	.82400	.84439 -1
16.F42	5	.43000	.56000	.46600	.53198 -1
17.D2	5	.63600	.76200	.69660	.44607 -1
18.D3	5	.97500	1.1730	1.0646	.83453 -1
19.D4	5	2.5440	2.5470	2.5456	.11402 -2
20.D24	5	.25000	.29000	.27000	.14142 -1
21.D34	5	.39000	.46000	.41400	.34351 -1
22.T2	5	51.000	61.000	55.400	3.5777
23.T3	5	77.000	93.000	84.200	6.6858
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	4.5800	4.8700	4.7600	.11136
26.DWORK	5	11.560	12.580	12.072	.47557
27.TWORK	5	16.390	17.350	16.836	.40048
28.DRAGW1	5	2.7300	4.3900	3.2980	.66796
29.DRAGW2	5	9.1800	9.2800	8.7680	.51548
30.PWORK*	5	26.000	29.000	27.800	1.3038
31.DWORK*	5	70.000	73.000	71.200	1.3038
32.DRWK12*	5	22.000	34.000	26.600	4.7749
35.NDWK	5	6.2453	6.7963	6.5288	.19752
36.NDWK2	5	5.6712	6.1538	5.9216	.17187

DESCRIPTIVE MEASURES <17> VELOCITY:5.0*LUBRICNT:360.*ANGLE:45.*MAT'L:GWHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	1.0100	1.2500	1.1220	.90939 -1
12.F3	5	.45000	.60000	.50600	.55946 -1
13.F4	5	.27000	.50000	.38200	.96021 -1
14.F32	5	.40000	.52000	.44800	.44385 -1
15.F43	5	.60000	.91000	.74200	.12558
16.F42	5	.27000	.43000	.33400	.65038 -1
17.02	5	.53600	.69200	.64600	.64529 -1
18.03	5	1.0450	1.2690	1.1752	.97932 -1
19.04	5	2.5430	2.5470	2.5448	.20493 -2
20.024	5	.21000	.27000	.25200	.24900 -1
21.034	5	.41000	.49000	.45800	.35637 -1
22.T2	5	43.000	55.000	51.600	4.9800
23.T3	5	83.000	101.00	93.200	7.7589
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	3.1800	5.0100	4.4360	.73850
26.DWORK	5	9.1400	11.800	10.366	1.1189
27.TWORK	5	12.850	16.820	14.808	1.5667
28.DRAGW1	5	2.8100	4.7500	4.0880	.78519
29.DRAGW2	5	5.6800	7.0400	6.2740	.56514
30.PWORK%	5	24.000	33.000	29.400	3.7815
31.DWORK%	5	66.000	75.000	69.600	3.7815
32.DRWK12%	5	30.000	42.000	38.800	4.9699
35.NDWK	5	4.8157	6.3612	5.4695	.67576
36.NDWK2	5	3.9281	5.3546	4.6051	.58643

DESCRIPTIVE MEASURES <20> VELOCITY:5.0*LUBRICNT:DRY*ANGLE:90.*MAT'L:BLK STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	1.8500	2.3000	2.0940	.16196
12.F3	5	1.1900	1.3900	1.2980	.72939 -1
13.F4	5	.85000	1.1400	1.0320	.12071
14.F32	5	.56000	.75000	.62000	.76485 -1
15.F43	5	.60000	.98000	.79400	.11610
16.F42	5	.45000	.55000	.49000	.46904 -1
17.D2	5	.69100	.91800	.73400	.55186 -1
18.D3	5	1.1140	1.5770	1.3432	.17461
19.D4	5	2.5400	2.5520	2.5426	.52726 -2
20.D24	5	.27000	.32000	.28400	.21909 -1
21.D34	5	.43000	.62000	.52400	.71624 -1
22.T2	5	55.000	65.000	58.400	4.4497
23.T3	5	88.000	125.00	106.60	13.903
24.T4	5	202.00	203.00	202.20	.44721
25.PWORK	5	7.6600	10.340	8.4580	1.1083
26.DWORK	5	21.660	25.420	23.986	1.5144
27.TWORK	5	30.200	33.560	32.448	1.5072
28.DRAGW1	5	5.7500	13.490	9.8640	2.7545
29.DRAGW2	5	10.500	15.900	14.116	2.1415
30.PWORK*	5	23.000	30.000	25.800	3.0332
31.DWORK*	5	69.000	76.000	73.200	3.0332
32.DRWK12*	5	26.000	56.000	40.200	10.640
35.NDWK	5	12.101	13.770	13.262	.72819
36.NDWK2	5	10.903	12.604	11.772	.75821

DESCRIPTIVE MEASURES <21> VELOCITY:10.0*LUBRICNT:DRY*ANGLE:90.*MAT'L:BLK STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.1700	2.6000	2.3640	.20526
12.F3	5	1.4100	1.4500	1.4300	.14142 -1
13.F4	5	1.0800	1.1900	1.1180	.45497 -1
14.F32	5	.55000	.65000	.60400	.46152 -1
15.F43	5	.75000	.82000	.78000	.26458 -1
16.F42	5	.43000	.49000	.47000	.25495 -1
17.D2	5	.65800	.73900	.69560	.39157 -1
18.D3	5	1.1520	1.2630	1.1996	.43166 -1
19.D4	5	2.5400	2.5520	2.5464	.53667 -2
20.D24	5	.25000	.29000	.26800	.16432 -1
21.D34	5	.45000	.49000	.46600	.15166 -1
22.T2	5	27.000	31.000	29.000	1.8708
23.T3	5	47.000	52.000	49.000	2.0000
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	6.9500	8.5800	7.7340	.77216
26.DWORK	5	25.520	26.360	25.866	.37720
27.TWORK	5	32.590	34.220	33.609	.67281
28.DRAGW1	5	8.0900	10.740	9.3100	1.0378
29.DRAGW2	5	15.620	17.540	16.548	.80682
30.PWORK*	5	20.000	25.000	22.400	2.0736
31.DWORK*	5	74.000	79.000	76.600	2.0736
32.DRWK12*	5	31.000	40.000	35.400	3.5071
35.NDWR	5	13.560	14.237	13.979	.25618
36.NDWK2	5	11.923	12.637	12.283	.26950

DESCRIPTIVE MEASURES <23> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:90.*MAT'L:BLK STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.94000	1.0000	.97600	.25100 -1
12.F3	5	.31000	.39000	.34400	.28810 -1
13.F4	5	.20000	.29000	.24600	.34351 -1
14.F32	5	.32000	.41000	.35200	.35637 -1
15.F43	5	.53000	.83000	.72400	.11610
16.F42	5	.22000	.28000	.25400	.27018 -1
17.D2	5	.42800	.52800	.48160	.41004 -1
18.D3	5	.83500	.86400	.85040	.10359 -1
19.D4	5	2.5430	2.5460	2.5444	.11400 -2
20.D24	5	.16000	.20000	.18400	.18166 -1
21.D34	5	.32000	.33000	.32800	.44721 -2
22.T2	5	34.000	42.000	38.200	3.3466
23.T3	5	66.000	68.000	67.000	.70711
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	2.5500	2.9600	2.6720	.16377
26.DWORK	5	6.8700	8.0000	7.4400	.51841
27.TWORK	5	9.4900	10.560	10.118	.43275
28.DRAGW1	5	2.0100	2.5200	2.2800	.20457
29.DRAGW2	5	4.7100	5.4800	5.1540	.34732
30.PWORK*	5	24.000	30.000	26.200	2.3875
31.DWORK*	5	69.000	75.000	72.800	2.3875
32.DRWK12*	5	29.000	31.000	30.200	1.0954
35.NDWK	5	3.4039	3.7789	3.6040	.18292
36.NDWK2	5	2.7804	3.2600	3.0425	.20486

DESCRIPTIVE MEASURES <24> VELOCITY:10.0*LUBRICNT:1249.*ANGLE:90.*MAT'L:BLK STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.54000	1.2400	1.0700	.11358
12.F3	5	.30000	.35000	.32800	.25884 -1
13.F4	5	.25000	.38000	.30600	.52726 -1
14.F32	5	.27000	.35000	.30800	.32711 -1
15.F43	5	.81000	1.0900	.92800	.11798
16.F42	5	.23000	.38000	.28900	.57184 -1
17.D2	5	.50000	.56700	.53020	.30136 -1
19.D3	5	.98100	1.0190	.95780	.49328 -1
19.D4	5	2.5400	2.5530	2.5442	.54498 -2
20.D24	5	.19000	.22000	.20200	.13038 -1
21.D34	5	.34000	.40000	.37000	.21213 -1
22.T2	5	21.000	23.000	22.000	1.0000
23.T3	5	36.000	42.000	39.000	2.1213
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	2.7300	3.7300	3.1100	.39793
26.DWORK	5	7.8600	9.0500	8.2780	.46160
27.TWORK	5	10.740	12.030	11.392	.58182
28.DRAGW1	5	2.6300	3.0200	2.8840	.15076
29.DRAGW2	5	5.1000	6.0300	5.3860	.36855
30.PWORK%	5	23.000	31.000	26.800	3.0332
31.DWORK%	5	68.000	76.000	72.200	3.0332
32.DRWK12%	5	33.000	36.000	34.400	1.3416
35.NDWK	5	3.8454	4.4580	4.1123	.26079
36.NDWK2	5	3.1351	3.8286	3.3991	.27566

DESCRIPTIVE MEASURES <26> VELOCITY:5.0*LUBRICNT:360.*ANGLE:90.*MAT'L:BLK STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.96000	1.1000	1.0040	.55947 -1
12.F3	5	.26000	.30000	.27200	.16432 -1
13.F4	5	.14000	.22000	.18600	.34351 -1
14.F32	5	.26000	.28000	.27000	.70711 -2
15.F43	5	.54000	.83000	.69600	.12661
16.F42	5	.14000	.23000	.18800	.37014 -1
17.D2	5	.45500	.51300	.47880	.30785 -1
18.D3	5	.79200	.94500	.89700	.72350 -1
19.D4	5	2.5440	2.5460	2.3450	.99993 -3
20.D24	5	.17000	.20000	.18400	.15166 -1
21.D34	5	.31000	.37000	.35000	.28284 -1
22.T2	5	36.000	41.000	38.000	2.7386
23.T3	5	63.000	75.000	71.000	5.6559
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	2.3300	3.4400	2.7380	.42092
26.DWORK	5	6.0900	7.4100	6.5020	.52742
27.TWORK	5	8.7500	9.7800	9.2440	.48819
28.DRAGW1	5	2.0600	3.1500	2.6000	.45918
29.DRAGW2	5	3.2800	4.4000	3.8980	.50420
30.PWORK%	5	23.000	35.000	29.200	4.3818
31.DWORK%	5	64.000	76.000	69.800	4.3818
32.DRWK12%	5	31.000	47.000	39.600	6.4653
35.NDWK	5	2.9722	3.5438	3.1458	.23120
36.NDWK2	5	2.0539	2.6612	2.3617	.25196

DESCRIPTIVE MEASURES <27> VELOCITY:10.0*LUBRICNT:360.*ANGLE:90.*MAT'L:BLK STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.93000	1.2500	1.0800	.12247
12.F3	5	.26000	.32000	.28200	.26833 -1
13.F4	5	.26000	.43000	.32000	.66708 -1
14.F32	5	.21000	.34000	.26200	.55857 -1
15.F43	5	.84000	1.6300	1.1360	.29771
16.F42	5	.22000	.40000	.29600	.75697 -1
17.D2	5	.52600	.56700	.54220	.17268 -1
18.D3	5	.89500	1.0010	.93660	.42835 -1
19.D4	5	2.5430	2.5530	2.5458	.40868 -2
20.D24	5	.20000	.22000	.20800	.83666 -2
21.D34	5	.35000	.39000	.37000	.15811 -1
22.T2	5	22.000	23.000	22.400	.54772
23.T3	5	37.000	41.000	39.200	1.7889
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	2.7800	3.7700	3.3100	.39446
26.DWORK	5	7.2800	8.2200	7.7240	.40185
27.TWORK	5	10.680	11.370	11.042	.25094
28.DRAGW1	5	2.3000	3.1600	2.7660	.31620
29.DRAGW2	5	4.4600	5.2200	4.9520	.28891
30.PWORK%	5	26.000	34.000	29.800	3.5637
31.DWORK%	5	65.000	73.000	69.200	3.5637
32.DRWK12%	5	31.000	39.000	35.400	3.3615
35.NDWK	5	3.6427	4.0754	3.9546	.19660
36.NDWK2	5	2.7980	3.2750	3.1175	.19212

DESCRIPTIVE MEASURES <23> VELOCITY:5.0*LUBRICNT:DRY*ANGLE:45.*MAT'L:BLK STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.2300	2.7600	2.4320	.20584
12.F3	5	1.4500	1.6200	1.5100	.66333 -1
13.F4	5	1.1600	1.4400	1.3460	.10968
14.F32	5	.52000	.66000	.62200	.60992 -1
15.F43	5	.80000	.96000	.89600	.59833 -1
16.F42	5	.42000	.60000	.55400	.75697 -1
17.D2	5	.63500	.85700	.70060	.90085 -1
18.D3	5	1.0130	1.1680	1.1002	.60940 -1
19.D4	5	2.5400	2.5530	2.5452	.62609 -2
20.D24	5	.25000	.33000	.27000	.33912 -1
21.D34	5	.39000	.46000	.42800	.25884 -1
22.T2	5	51.000	68.000	56.000	6.8920
23.T3	5	81.000	93.000	87.600	4.7749
24.T4	5	202.00	203.00	202.40	.54772
25.PWORK	5	7.1600	11.190	8.7960	1.5418
26.DWORK	5	24.930	30.200	27.842	1.9086
27.TWORK	5	34.800	38.410	36.642	1.3337
28.DRAGW1	5	5.7900	9.4700	7.9040	1.5527
29.DRAGW2	5	19.530	20.810	19.936	1.0356
30.PWORK%	5	20.000	30.000	23.600	4.0373
31.DWORK%	5	69.000	79.000	75.400	4.0373
32.DPWK12%	5	23.000	33.000	27.800	4.1473
35.NDWK	5	14.502	15.853	15.088	.51747
36.NDWK2	5	13.123	14.376	13.799	.52328

DESCRIPTIVE MEASURES <32> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:45.*MAT'L:BLK STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	1.1900	1.3500	1.2660	.85616 -1
12.F3	5	.38000	.45000	.42400	.27019 -1
13.F4	5	.18000	.37000	.30400	.72319 -1
14.F32	5	.31000	.37000	.33200	.26833 -1
15.F43	5	.47000	.85000	.70900	.14618
16.F42	5	.15000	.28000	.24000	.54314 -1
17.D2	5	.45600	.49700	.48040	.15076 -1
18.D3	5	.81900	.86300	.93520	.20741 -1
19.D4	5	2.5440	2.5480	2.5456	.15167 -2
20.D24	5	.17000	.19000	.18200	.83666 -2
21.D34	5	.32000	.33000	.32400	.54772 -2
22.T2	5	36.000	39.000	37.800	1.0954
23.T3	5	65.000	69.000	66.000	1.4142
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	2.8900	3.5500	3.1860	.29441
26.DWORK	5	8.3600	9.3900	9.1140	.42577
27.TWORK	5	11.260	12.540	12.306	.65466
28.DRAGW1	5	2.5500	3.0500	2.8220	.20192
29.DRAGW2	5	5.3000	6.8400	6.2860	.58769
30.PWORK*	5	24.000	27.000	25.400	1.5166
31.DWORK*	5	72.000	75.000	73.600	1.5166
32.DRWK12*	5	27.000	36.000	30.900	3.4205
35.NDWK	5	3.9962	4.5605	4.4145	.23621
36.NDWK2	5	3.0689	3.9675	3.6761	.35035

DESCRIPTIVE MEASURES <35> VELOCITY:5.0*LUBRICNT:360.*ANGLE:45.*MAT'L:BLK STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	1.1100	1.2500	1.1740	.58566 -1
12.F3	5	.30000	.40000	.33000	.42426 -1
13.F4	5	.14000	.35000	.25200	.95760 -1
14.F32	5	.24000	.36000	.28200	.49194 -1
15.F43	5	.48000	.99000	.74200	.20620
16.F42	5	.11000	.31000	.21200	.86718 -1
17.D2	5	.44000	.52300	.47240	.32362 -1
18.D3	5	.85000	1.0740	.98860	.91852 -1
19.D4	5	2.5440	2.5480	2.5462	.14835 -2
20.D24	5	.17000	.20000	.18000	.14142 -1
21.D34	5	.33000	.42000	.38400	.35777 -1
22.T2	5	35.000	42.000	37.400	2.7928
23.T3	5	67.000	85.000	78.400	7.4699
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	2.7000	3.7300	3.0580	.44930
26.DWORK	5	7.3700	9.4000	8.5000	.96083
27.TWORK	5	10.080	13.130	11.562	1.1573
28.DRAGW1	5	3.1100	4.5800	3.7140	.54303
29.DRAGW2	5	3.8500	5.9100	4.7820	.96629
30.PWORK*	5	23.000	30.000	26.000	3.0822
31.DWORK*	5	69.000	76.000	73.000	3.0822
32.DRWK12*	5	34.000	50.000	43.600	6.8775
35.NDWK	5	3.5297	4.6443	4.1006	.48048
36.NDWK2	5	2.4438	3.8493	3.0726	.60716

DESCRIPTIVE MEASURES <3P> VELOCITY:5.0*LUBRICNT:DRY*ANGLE:90.*MAT'L:WHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	6	4.2900	4.8500	4.6700	.20986
12.F3	6	2.3000	2.7300	2.6083	.17151
13.F4	6	1.8700	2.3600	2.0933	.17072
14.F32	6	.49000	.63000	.55500	.45056 -1
15.F43	6	.68000	.89000	.80000	.72938 -1
16.F42	6	.42000	.48000	.44167	.20412 -1
17.D2	6	.74100	.79700	.77950	.22924 -1
18.D3	6	1.2600	1.7070	1.4583	.18163
19.D4	6	2.5410	2.5520	2.5462	.43551 -2
20.D24	6	.29000	.31000	.30333	.81650 -2
21.D34	6	.49000	.66000	.56500	.70071 -1
22.T2	6	59.000	64.000	62.667	1.9664
23.T3	6	101.00	135.00	116.00	14.014
24.T4	6	202.00	203.00	202.17	.40825
25.PWORK	6	18.700	21.990	19.688	1.2910
26.DWORK	6	45.240	51.870	48.700	2.3700
27.TWORK	6	63.950	73.870	68.397	3.5601
28.DRAGW1	6	16.360	29.970	23.558	5.6611
29.DRAGW2	6	18.860	30.060	25.142	4.2213
30.PWORK%	6	28.000	29.000	28.333	.51640
31.DWORK%	6	70.000	71.000	70.667	.51640
32.DRWK12%	6	36.000	61.000	47.500	10.095
35.NDWK	6	25.748	29.640	27.576	1.5389
36.NDWK2	6	22.353	24.737	23.119	.95634

DESCRIPTIVE MEASURES <39> VELOCITY:10.0*LUBRICNT:DRY*ANGLE:90.*MAT'L:WHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	4.4600	5.2700	4.9740	.34464
12.F3	5	2.6300	3.1400	2.8960	.20995
13.F4	5	2.1400	2.5100	2.3460	.14328
14.F32	5	.57000	.59000	.57000	.83666 -2
15.F43	5	.76000	.83000	.80000	.28636 -1
16.F42	5	.45000	.48000	.46800	.13038 -1
17.D2	5	.70200	.76700	.74280	.24864 -1
18.D3	5	1.1240	1.2780	1.2086	.62668 -1
19.D4	5	2.5400	2.5530	2.5452	.48168 -2
20.D24	5	.27000	.30000	.28800	.10954 -1
21.D34	5	.44000	.50000	.47200	.25884 -1
22.T2	5	29.000	32.000	31.200	1.3038
23.T3	5	47.000	53.000	50.200	2.5884
24.T4	5	103.00	104.00	103.20	.44721
25.PWORK	5	18.630	21.610	19.954	1.2290
26.DWORK	5	48.540	55.490	51.872	2.8498
27.TWORK	5	67.180	77.110	71.832	4.0650
28.DRAGW1	5	15.590	21.270	18.354	2.1312
29.DRAGW2	5	31.850	34.870	33.516	1.1678
30.PWORK%	5	27.000	28.000	27.400	.54772
31.DWORK%	5	71.000	72.000	71.600	.54772
32.DRWK12%	5	32.000	38.000	34.800	2.3875
35.NDWR	5	26.224	30.811	28.796	1.0480
36.NDWK2	5	23.058	27.116	25.129	1.5881

DESCRIPTIVE MEASURES <41> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:90.*MAT'L:WHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	1.9700	2.1700	2.0700	.87178 -1
12.F3	5	.79000	.92000	.85000	.51478 -1
13.F4	5	.56000	.71000	.62800	.57619 -1
14.F32	5	.37000	.43000	.40400	.23022 -1
15.F43	5	.71000	.77000	.73600	.24083 -1
16.F42	5	.27000	.32000	.29900	.19235 -1
17.D2	5	.46100	.64800	.56640	.68090 -1
18.D3	5	.86100	1.0020	.93500	.53740 -1
19.D4	5	2.5450	2.5530	2.5490	.37416 -2
20.D24	5	.18000	.25000	.21600	.28810 -1
21.D34	5	.33000	.39000	.36200	.22804 -1
22.T2	5	38.000	52.000	45.000	5.5678
23.T3	5	69.000	79.000	74.000	4.1833
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	5.7200	7.9300	6.9300	.79476
26.DWORK	5	16.430	18.030	17.226	.69967
27.TWORK	5	23.180	25.490	24.160	1.1283
28.DRAGW1	5	4.9000	5.5200	5.2320	.26883
29.DRAGW2	5	11.520	12.510	11.988	.45395
30.PWORK%	5	24.000	30.000	28.000	2.4495
31.DWORK%	5	69.000	75.000	71.000	2.4495
32.DRWK12%	5	29.000	31.000	30.000	.70711
35.NDWK	5	8.1778	9.1688	8.6953	.42071
36.NDWK2	5	7.0152	7.9236	7.4343	.37554

DESCRIPTIVE MEASURES <42> VELOCITY:10.0*LUBRICNT:1249.*ANGLE:90.*MAT'L:WHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.1400	2.3600	2.2340	.95812 -1
12.F3	5	.95000	1.0300	.98800	.31937 -1
13.F4	5	.77000	1.0500	.90200	.11300
14.F32	5	.41000	.46000	.44000	.18708 -1
15.F43	5	.76000	1.0100	.91200	.10780
16.F42	5	.33000	.46000	.40000	.58310 -1
17.D2	5	.45100	.58600	.50600	.50408 -1
18.D3	5	.96600	1.0210	.99140	.26969 -1
19.D4	5	2.5420	2.5490	2.5449	.26832 -2
20.D24	5	.17000	.23000	.19200	.22904 -1
21.D34	5	.37000	.40000	.38600	.13416 -1
22.T2	5	19.000	24.000	21.000	1.8708
23.T3	5	40.000	42.000	41.000	1.0000
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	6.7500	8.0500	7.2060	.49863
26.DWORK	5	21.420	23.610	22.336	.90511
27.TWORK	5	28.490	30.750	29.550	.80178
28.DRAGW1	5	6.4700	8.1000	7.3240	.61800
29.DRAGW2	5	13.820	15.990	14.806	.78315
30.PWORK*	5	22.000	27.000	24.000	1.8708
31.DWORK*	5	72.000	77.000	75.000	1.8708
32.DPWK12*	5	30.000	35.000	33.200	2.1679
35.NDWK	5	10.569	11.574	10.956	.37263
36.NDWK2	5	9.0802	10.133	9.5300	.43434

DESCRIPTIVE MEASURES <44> VELOCITY:5.0*LUBRICNT:360.*ANGLE:90.*MAT'L:WHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	1.8600	2.4700	2.1220	.22084
12.F3	5	.46000	.63000	.54800	.63008 -1
13.F4	5	.44000	.57000	.50800	.65345 -1
14.F32	5	.24000	.27000	.25400	.11402 -1
15.F43	5	.69000	1.0200	.93000	.13657
16.F42	5	.17000	.27000	.23800	.41473 -1
17.D2	5	.51500	.60500	.57120	.35892 -1
18.D3	5	1.0420	1.1830	1.0828	.57512 -1
19.D4	5	2.5430	2.5500	2.5464	.28811 -2
20.D24	5	.20000	.23000	.21800	.13038 -1
21.D34	5	.40000	.45000	.42000	.23452 -1
22.T2	5	41.000	48.000	45.200	2.7749
23.T3	5	83.000	94.000	86.000	4.5277
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	6.2600	8.4400	7.0900	.89084
26.DWORK	5	13.090	16.030	14.590	1.0876
27.TWORK	5	19.350	24.530	21.684	1.9426
28.DRAGW1	5	5.9100	7.4900	6.5460	.65087
29.DRAGW2	5	7.1800	9.1600	8.0360	.80872
30.PWORK*	5	30.000	34.000	32.000	1.4142
31.DWORK*	5	65.000	69.000	67.000	1.4142
32.DRWK12*	5	41.000	50.000	44.600	3.3615
35.NDWK	5	6.5845	9.2260	7.3926	.62717
36.NDWK2	5	4.7676	6.1477	5.4911	.50658

DESCRIPTIVE MEASURES <45> VELOCITY:10.0*LUBRICNT:360.*ANGLE:90.*MAT'L:WHI STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.0100	2.4500	2.2320	.17355
12.F3	5	.63000	.66000	.64200	.13038 -1
13.F4	5	.59000	.71000	.65800	.48683 -1
14.F32	5	.25000	.31000	.28200	.22804 -1
15.F43	5	.91000	1.0700	1.0220	.69065 -1
16.F42	5	.23000	.33000	.29400	.39115 -1
17.D2	5	.43900	.54500	.48280	.39188 -1
18.D3	5	.93800	1.0320	.99440	.34796 -1
19.D4	5	2.5400	2.5430	2.5412	.10955 -2
20.D24	5	.17000	.21000	.18600	.15166 -1
21.D34	5	.36000	.40000	.38600	.15166 -1
22.T2	5	19.000	23.000	20.200	1.9235
23.T3	5	39.000	43.000	41.400	1.5166
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	5.8500	7.5600	6.6940	.81070
26.DWORK	5	16.370	18.130	17.236	.72040
27.TWORK	5	22.760	25.290	23.930	1.1094
28.DRAGW1	5	6.2000	7.8600	7.0720	.68273
29.DRAGW2	5	9.8600	10.530	10.160	.23975
30.PWORK%	5	25.000	31.000	27.400	2.5100
31.DWORK%	5	68.000	74.000	71.600	2.5100
32.DRWK12%	5	37.000	44.000	40.400	2.6077
35.NDWK	5	9.0447	8.7578	8.3734	.30657
36.NDWK2	5	6.4068	6.9990	6.5698	.19861

DESCRIPTIVE MEASURES <47> VELOCITY:5.0*LUBRICNT:DRY*ANGLE:45.*MAT'L:WHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	5.7700	6.8100	6.2180	.39940
12.F3	5	3.2000	3.6500	3.4000	.19157
13.F4	5	2.5700	3.3600	3.0740	.30484
14.F32	5	.48000	.61000	.54400	.54589 -1
15.F43	5	.72000	1.0500	.90600	.12818
16.F42	5	.44000	.56000	.49200	.48683 -1
17.D2	5	.69300	.72000	.70660	.14792 -1
18.D3	5	1.3440	1.7520	1.5664	.16493
19.D4	5	2.5440	2.5530	2.5492	.43245 -2
20.D24	5	.26000	.28000	.27200	.83666 -2
21.D34	5	.52000	.69000	.60800	.65345 -1
22.T2	5	56.000	58.000	57.200	.83666
23.T3	5	107.00	139.00	124.80	13.084
24.T4	5	202.00	204.00	203.00	.70711
25.PWORK	5	22.940	26.230	24.076	1.3258
26.DWORK	5	63.360	74.840	70.710	4.5161
27.TWORK	5	87.220	101.08	94.792	5.2613
28.DRAGW1	5	28.090	48.240	38.680	7.4529
29.DRAGW2	5	26.590	37.730	32.024	4.5225
30.PWORK%	5	24.000	27.000	24.800	1.3038
31.DWORK%	5	72.000	75.000	74.200	1.3038
32.DRWK12%	5	44.000	64.000	54.000	8.0932
35.NDWK	5	34.737	40.807	38.372	2.3846
36.NDWK2	5	29.352	34.871	32.741	2.1149

DESCRIPTIVE MEASURES <50> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:45.*MAT'L:WHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.1900	2.7500	2.5240	.21559
12.F3	5	1.1000	1.2600	1.1660	.61482 -1
13.F4	5	.79000	1.0100	.90200	.82280 -1
14.F32	5	.44000	.50000	.46000	.23452 -1
15.F43	5	.68000	.88000	.77000	.86871 -1
16.F42	5	.31000	.42000	.35800	.46583 -1
17.D2	5	.45000	.53400	.49400	.37517 -1
18.D3	5	.91700	.99500	.94720	.28429 -1
19.D4	5	2.5410	2.5530	2.5450	.47436 -2
20.D24	5	.17000	.21000	.19000	.15811 -1
21.D34	5	.36000	.38000	.36600	.89443 -2
22.T2	5	36.000	43.000	39.400	3.3615
23.T3	5	73.000	78.000	75.200	1.9235
24.T4	5	202.00	203.00	202.20	.44721
25.PWORK	5	5.9600	8.5500	7.3820	1.0975
26.DWORK	5	23.890	25.110	24.450	.47849
27.TWORK	5	30.360	33.660	31.836	1.2900
28.DRAGW1	5	7.0900	8.9900	8.0300	.69846
29.DRAGW2	5	15.160	17.290	16.412	.78445
30.PWORK2	5	19.000	25.000	22.400	2.6077
31.DWORK2	5	74.000	80.000	76.600	2.6077
32.DRWK12%	5	29.000	37.000	32.400	2.9665
35.NDWK	5	11.598	12.486	11.925	.35929
36.NDWK2	5	9.7429	10.713	10.269	.34874

DESCRIPTIVE MEASURES <53> VELOCITY:5.0*LUBRICNT:360.*ANGLE:45.*MAT'L:WHT STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.5600	3.0500	2.7720	.21925
12.F3	5	.82000	1.0900	.90600	.10644
13.F4	5	.67000	.87000	.75400	.73007 -1
14.F32	5	.28000	.40000	.32600	.45607 -1
15.F43	5	.67000	1.0000	.83600	.12300
16.F42	5	.22000	.33000	.27000	.40620 -1
17.D2	5	.56400	.61800	.59600	.20833 -1
18.D3	5	.98600	1.1460	1.0518	.63786 -1
19.D4	5	2.5430	2.5470	2.5454	.18165 -2
20.D24	5	.22000	.24000	.23000	.70711 -2
21.D34	5	.38000	.44000	.40600	.24083 -1
22.T2	5	45.000	49.000	47.400	1.5166
23.T3	5	78.000	91.000	83.600	5.0299
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	8.1100	9.9700	9.1340	.83194
26.DWORK	5	19.100	21.600	20.210	1.0184
27.TWORK	5	27.210	31.520	29.348	1.6314
28.DRAGW1	5	7.0000	8.9100	7.9740	.84937
29.DRAGW2	5	11.150	13.880	12.230	1.0737
30.PWORK*	5	29.000	33.000	30.400	1.6733
31.DWORK*	5	66.000	70.000	68.600	1.6733
32.DRWK12*	5	33.000	44.000	39.000	4.0620
35.NDWK	5	9.6319	11.134	10.372	.61115
36.NDWK2	5	7.6501	8.8574	8.1856	.57163

DESCRIPTIVE MEASURES <56> VELOCITY:5.0*LUBRICNT:DRY*ANGLE:90.*MAT'L:GHNTO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.92000	1.0500	1.0140	.83845 -1
12.F3	5	.51000	.60000	.55600	.41593 -1
13.F4	5	.40000	.45000	.41800	.24900 -1
14.F32	5	.49000	.64000	.55000	.63640 -1
15.F43	5	.66000	.82000	.74600	.59833 -1
16.F42	5	.36000	.48000	.41000	.46904 -1
17.D2	5	.69100	.82100	.74600	.60000 -1
18.D3	5	1.1190	1.1710	1.1392	.22950 -1
19.D4	5	2.5440	2.5470	2.5454	.13417 -2
20.D24	5	.27000	.32000	.29000	.23452 -1
21.D34	5	.43000	.46000	.44400	.11402 -1
22.T2	5	55.000	65.000	59.400	4.8270
23.T3	5	89.000	93.000	90.400	1.9494
24.T4	5	202.00	203.00	202.20	.44721
25.PWORK	5	3.6000	4.6600	3.9960	.40648
26.DWORK	5	9.1100	10.890	9.9980	.72778
27.TWORK	5	13.130	14.640	14.000	.55574
28.DRAGW1	5	2.4100	3.6500	3.0640	.52790
29.DRAGW2	5	6.6600	7.2900	6.9280	.30589
30.PWORK*	5	25.000	33.000	28.000	3.4641
31.DWORK*	5	66.000	74.000	71.000	3.4641
32.DRWK12*	5	26.000	34.000	30.200	3.2711
35.NDWK	5	5.2057	5.8675	5.5513	.24565
36.NDWK2	5	4.6952	5.1977	4.9276	.22545

DESCRIPTIVE MEASURES <57> VELOCITY:10.0*LUBRICNT:DRY*ANGLE:90.*MAT'L:GWHTO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	1.0700	1.2100	1.1420	.63008 -1
12.F3	5	.57000	.73000	.63600	.58566 -1
13.F4	5	.51000	.67000	.60600	.60249 -1
14.F32	5	.47000	.60000	.55600	.54129 -1
15.F43	5	.87000	1.0400	.95000	.67082 -1
16.F42	5	.42000	.63000	.53200	.74967 -1
17.D2	5	.66600	.73100	.69840	.25185 -1
18.D3	5	1.0490	1.2400	1.1384	.82748 -1
19.D4	5	2.5420	2.5490	2.5442	.29495 -2
20.D24	5	.26000	.29000	.27200	.83666 -2
21.D34	5	.41000	.49000	.44200	.31145 -1
22.T2	5	27.000	30.000	28.400	1.1402
23.T3	5	43.000	51.000	46.400	3.4351
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	3.6300	4.5100	4.1000	.39693
26.DWORK	5	11.090	13.830	12.480	1.0918
27.TWORK	5	15.410	18.150	16.586	1.0018
28.DRAGW1	5	2.7400	5.0200	3.7740	.90784
29.DRAGW2	5	8.0500	9.0500	8.7000	.39566
30.PWORK%	5	21.000	28.000	24.200	3.1145
31.DWORK%	5	71.000	78.000	74.800	3.1145
32.DRWK12%	5	23.000	36.000	29.400	4.8270
35.NDWK	5	6.0701	7.4636	6.7581	.53610
36.NDWK2	5	5.4782	6.7433	6.2106	.53455

DESCRIPTIVE MEASURES <59> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:90.*MAT'L:GWHTU STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.78000	.86000	.81600	.40588 -1
12.F3	5	.34000	.41000	.36800	.34205 -1
13.F4	5	.20000	.31000	.27000	.46368 -1
14.F32	5	.40000	.52000	.45400	.53666 -1
15.F43	5	.60000	.82000	.73000	.82765 -1
16.F42	5	.26000	.33000	.33000	.56125 -1
17.D2	5	.46000	.63300	.57320	.92411 -1
18.D3	5	.81100	1.1710	.99040	.15564
19.D4	5	2.5460	2.5540	2.5498	.30332 -2
20.D24	5	.18000	.25000	.22200	.34205 -1
21.D34	5	.31000	.45000	.38200	.61400 -1
22.T2	5	36.000	52.000	45.200	7.6942
23.T3	5	64.000	93.000	78.200	12.518
24.T4	5	201.00	202.00	201.80	.44721
25.PWORK	5	2.3000	3.1500	2.7620	.42411
26.DWORK	5	7.0800	7.9600	7.4020	.34281
27.TWORK	5	9.5000	10.650	10.164	.42606
28.DRAGW1	5	1.8100	3.0800	2.3600	.53362
29.DRAGW2	5	4.3500	6.0100	5.0320	.72272
30.PWORK%	5	22.000	29.000	26.600	3.3615
31.DWORK%	5	70.000	77.000	72.400	3.3615
32.DRWK12%	5	24.000	41.000	31.600	7.8294
35.NDWK	5	3.4435	3.8567	3.7484	.17805
36.NDWK2	5	2.9539	3.4657	3.2202	.23063

DESCRIPTIVE MEASURES <60> VELOCITY:10.0*LUBRICNT:1249.*ANGLE:90.*MAT'L:GWHTO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.56000	1.0200	1.0060	.27929 -1
12.F3	5	.49000	.56000	.52400	.32863 -1
13.F4	5	.39000	.59000	.48400	.77330 -1
14.F32	5	.48000	.57000	.52000	.38730 -1
15.F43	5	.74000	1.2000	.92200	.16947
16.F42	5	.38000	.58000	.49200	.79183 -1
17.D2	5	.59900	.73300	.67320	.58165 -1
18.D3	5	1.0460	1.1300	1.1016	.34224 -1
19.D4	5	2.5400	2.5540	2.5468	.56302 -2
20.D24	5	.23000	.28000	.26000	.23452 -1
21.D34	5	.41000	.44000	.42600	.11402 -1
22.T2	5	24.000	30.000	27.400	2.4083
23.T3	5	43.000	46.000	45.000	1.4142
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	2.9100	3.6300	3.3860	.32036
26.DWORK	5	9.4000	11.330	10.342	.73056
27.TWORK	5	13.040	14.300	13.734	.57051
28.DFAGW1	5	2.6800	3.8700	3.1980	.43980
29.DFAGW2	5	6.3500	7.8300	7.1400	.60926
30.PWORK2	5	20.000	27.000	24.200	2.5884
31.DWORK2	5	72.000	79.000	74.800	2.5884
32.DPWK12	5	25.000	34.000	30.600	3.6469
35.NDWK	5	5.1479	5.8261	5.5189	.32104
36.NDWK2	5	4.4876	5.2481	4.9384	.37399

DESCRIPTIVE MEASURES <62> VELOCITY:5.0*LUBRICNT:350.*ANGLE:90.*MAT'L:GWHIO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.90000	1.0600	.98000	.75167 -1
12.F3	5	.33000	.43000	.37400	.41593 -1
13.F4	5	.27000	.40000	.31200	.50695 -1
14.F32	5	.35000	.47000	.38000	.50990 -1
15.F43	5	.68000	.92000	.82800	.96799 -1
16.F42	5	.25000	.44000	.32000	.72457 -1
17.D2	5	.49700	.68000	.63640	.78736 -1
18.D3	5	.97400	1.2320	1.0828	.11112
19.D4	5	2.5470	2.5510	2.5486	.18165 -2
20.D24	5	.19000	.26000	.24400	.30496 -1
21.D34	5	.38000	.48000	.42000	.42426 -1
22.T2	5	39.000	54.000	50.600	6.5422
23.T3	5	77.000	98.000	85.800	9.0940
24.TA	5	202.00	203.00	202.20	.44721
25.PWORK	5	3.2000	3.7300	3.4380	.21879
26.DWORK	5	7.9400	8.7200	8.2600	.30025
27.TWORK	5	11.140	12.050	11.704	.41464
28.DRAGW1	5	2.0600	3.5100	2.9060	.56536
29.DRAGW2	5	4.7900	6.2300	5.3500	.58528
30.PWORK%	5	27.000	31.000	29.000	1.5811
31.DWORK%	5	68.000	72.000	70.000	1.5811
32.DRWK12%	5	24.000	42.000	34.600	6.9138
35.NDWK	5	4.1879	4.4264	4.3212	.10557
36.NDWK2	5	3.4449	3.8530	3.6456	.20136

DESCRIPTIVE MEASURES <(3> VELOCITY:10.0*LUBRICNT:360.*ANGLE:90.*MAT'L:GWHTO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	4	1.0500	1.1800	1.1100	.57155 -1
12.F3	4	.37000	.49000	.42000	.55976 -1
13.F4	4	.31000	.44000	.38000	.53541 -1
14.F32	4	.31000	.45000	.37750	.58523 -1
15.F43	4	.84000	1.0300	.90750	.84212 -1
16.F42	4	.26000	.40000	.34250	.60208 -1
17.D2	4	.61600	.79900	.71525	.81082 -1
18.D3	4	1.0890	1.4900	1.2777	.16748
19.D4	4	2.5410	2.5470	2.5435	.25164 -2
20.D24	4	.24000	.31000	.27500	.31091 -1
21.D34	4	.42000	.58000	.49750	.66521 -1
22.T2	4	25.000	33.000	29.250	3.5000
23.T3	4	44.000	61.000	52.000	7.0711
24.T4	4	102.00	103.00	102.75	.50000
25.PWORK	4	3.6500	4.3200	4.0575	.29895
26.DWORK	4	8.5200	10.120	9.1550	.70373
27.TWORK	4	12.710	13.780	13.220	.44460
28.DPAGW1	4	2.5600	4.6000	3.9475	.95942
29.DPAGW2	4	4.1700	6.0700	5.2050	.94958
30.PWORK%	4	26.000	33.000	30.250	3.0957
31.DWORK%	4	66.000	73.000	68.750	3.0957
32.DPWK12%	4	30.000	52.000	42.750	9.9121
35.NDWK	4	4.7678	5.4496	5.0076	.31790
36.NDWK2	4	3.7490	4.6090	4.0997	.36614

DESCRIPTIVE MEASURES (65) VELOCITY:5.0*LUBRICNT:DRY*ANGLE:45.*MAT'L:GWHTO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	4	.94000	1.3300	1.1925	.17424
12.F3	4	.60000	.87000	.74250	.11087
13.F4	4	.51000	.88000	.70000	.17795
14.F32	4	.59000	.65000	.61750	.27538 -1
15.F43	4	.77000	1.1000	.93500	.15155
16.F42	4	.46000	.67000	.59250	.10079
17.D2	4	.63400	.70000	.67125	.33915 -1
18.D3	4	.99000	1.0390	1.0127	.19653 -1
19.D4	4	2.5430	2.5490	2.5457	.27537 -2
20.D24	4	.24000	.27000	.25750	.15000 -1
21.D34	4	.38000	.40000	.39000	.81650 -2
22.T2	4	51.000	56.000	53.750	2.6300
23.T3	4	79.000	83.000	80.750	2.0616
24.T4	4	202.00	202.00	202.00	
25.PWORK	4	3.1500	4.8500	4.0700	.74041
26.DWORK	4	11.150	16.930	14.110	2.4803
27.TWORK	4	14.310	21.780	18.190	3.0993
28.DRAGW1	4	2.6100	3.9200	3.3600	.62594
29.DRAGW2	4	8.5400	12.990	10.742	1.8756
30.PWORK*	4	20.000	25.000	22.250	2.0616
31.DWORK*	4	74.000	79.000	76.750	2.0616
32.DRWK12*	4	23.000	25.000	23.500	1.0000
35.NDWK	4	5.8808	9.1757	7.5357	1.3809
36.NDWK2	4	5.4849	8.6255	7.0209	1.3203

DESCRIPTIVE MEASURES <6A> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:45.*MAT'L:GWHTO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	4	.89000	1.0600	.96500	.71414 -1
12.F3	4	.50000	.57000	.53500	.35119 -1
13.F4	4	.37000	.57000	.39750	.11701
14.F32	4	.47000	.63000	.55750	.75443 -1
15.F43	4	.57000	.99000	.73500	.18212
16.F42	4	.34000	.60000	.41250	.12527
17.D2	4	.62600	.72600	.67150	.53050 -1
18.D3	4	1.0020	1.0740	1.0225	.34501 -1
19.D4	4	2.5480	2.5530	2.5513	.22173 -2
20.D24	4	.24000	.28000	.25750	.20616 -1
21.D34	4	.39000	.42000	.39750	.15000 -1
22.T2	4	49.000	57.000	52.750	4.3493
23.T3	4	79.000	85.000	80.500	3.0000
24.T4	4	202.00	202.00	202.00	
25.PWORK	4	3.3500	4.1000	3.7150	.30643
26.DWORK	4	8.7700	11.130	9.5050	1.1375
27.TWORK	4	12.490	14.550	13.227	.95402
28.DRAGW1	4	2.0700	2.8500	2.5800	.34900
29.DRAGW2	4	6.0900	8.3300	6.9250	.98063
30.PWORK%	4	23.000	30.000	27.750	3.2016
31.DWORK%	4	69.000	76.000	71.250	3.2016
32.DRWK12%	4	23.000	30.000	26.750	3.3040
35.NDWK	4	4.5511	5.8221	5.0536	.54354
36.NDWK2	4	3.9265	5.4161	4.5299	.62968

DESCRIPTIVE MEASURES <71> VELOCITY:5.0*LUBRICNT:360.*ANGLE:45.*MAT'L:GWHTO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	4	1.0700	1.2700	1.1700	.81650 -1
12.F3	4	.44000	.51000	.46750	.34034 -1
13.F4	4	.31000	.43000	.39750	.76322 -1
14.F32	4	.35000	.44000	.40000	.46904 -1
15.F43	4	.70000	.96000	.84750	.12842
16.F42	4	.26000	.42000	.34000	.65828 -1
17.D2	4	.66600	.76400	.70650	.43217 -1
18.D3	4	1.0480	1.2710	1.1578	.93888 -1
19.D4	4	2.5480	2.5520	2.5495	.19147 -2
20.D24	4	.26000	.30000	.27500	.19149 -1
21.D34	4	.41000	.49000	.45000	.33665 -1
22.T2	4	53.000	61.000	56.000	3.5590
23.T3	4	83.000	101.00	91.750	7.6322
24.T4	4	202.00	202.00	202.00	
25.PWORK	4	4.0400	4.9100	4.5000	.36028
26.DWORK	4	8.7000	10.310	9.7450	.71752
27.TWORK	4	13.290	14.810	14.253	.71425
28.DRAGW1	4	2.7600	4.3300	3.5875	.83360
29.DRAGW2	4	5.7500	6.9100	6.1525	.51732
30.PWORK%	4	28.000	34.000	31.250	2.7538
31.DWORK%	4	65.000	71.000	67.750	2.7538
32.DFWR12%	4	30.000	42.000	36.000	6.3770
35.NDWK	4	4.6624	5.5437	5.2907	.42014
36.NDWK2	4	3.9533	4.9662	4.4290	.37535

DESCRIPTIVE MEASURES <74> VELOCITY:5.0*LUBRICNT:DRY*ANGLE:90.*MAT'L:BLKO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	4	.65000	1.1000	.93000	.19476
12.F3	4	.40000	.63000	.53750	.98784 -1
13.F4	4	.44000	1.0000	.71250	.23056
14.F32	4	.56000	.62000	.58250	.26200 -1
15.F43	4	1.0900	1.5900	1.3000	.22465
16.F42	4	.67000	.91000	.75500	.11031
17.D2	4	.44400	.54500	.49150	.42757 -1
18.D3	4	.77900	.82600	.82475	.54671 -1
19.D4	4	2.5450	2.5510	2.5487	.26298 -2
20.D24	4	.17000	.21000	.18750	.17078 -1
21.D34	4	.30000	.35000	.31750	.23629 -1
22.T2	4	35.000	43.000	38.500	3.4157
23.T3	4	62.000	71.000	65.250	4.2720
24.T4	4	202.00	202.00	202.00	.
25.PWORK	4	1.8600	3.1500	2.6650	.56223
26.DWORK	4	9.4900	20.410	15.340	4.5192
27.TWORK	4	11.360	23.300	18.015	4.9565
28.DRAGW1	4	1.8900	2.6400	2.2900	.31927
29.DRAGW2	4	7.2700	17.990	13.045	4.4118
30.PWORK%	4	12.000	17.000	14.750	2.2174
31.DWORK%	4	82.000	87.000	84.250	2.2174
32.DPWK12%	4	11.000	23.000	15.500	5.4467
35.NDWK	4	4.5040	9.9756	7.4772	2.2580
36.NDWK2	4	4.3929	10.181	7.5203	2.3925

DESCRIPTIVE MEASURES <75> VELOCITY:10.0*LUBRICNT:DRY*ANGLE:50.*MAT'L:BLKD STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	1.1500	1.5700	1.3700	.14213
12.F3	5	.76000	1.0500	.88000	.11000
13.F4	5	.97000	1.3500	1.1120	.15466
14.F32	5	.57000	.75000	.64200	.66106 -1
15.F43	5	.93000	1.5000	1.2760	.25851
16.F42	5	.68000	.96000	.81200	.11883
17.D2	5	.41300	.59400	.53840	.73269 -1
18.D3	5	.74000	.82600	.79200	.33623 -1
19.D4	5	2.5400	2.5470	2.5438	.31145 -2
20.D24	5	.16000	.23000	.20800	.28636 -1
21.D34	5	.29000	.32000	.30800	.13038 -1
22.T2	5	17.000	24.000	22.000	2.9155
23.T3	5	30.000	34.000	32.200	1.4832
24.T4	5	102.00	103.00	102.80	.44721
25.PWORK	5	2.6600	4.5600	3.7900	.69685
26.DWORK	5	21.290	25.660	23.200	1.7562
27.TWORK	5	25.310	30.230	26.994	1.9607
28.DRAGW1	5	2.4400	3.2800	2.8520	.38408
29.DRAGW2	5	18.590	23.220	20.340	1.8036
30.PWORK2	5	9.0000	15.000	13.400	2.5100
31.DWORK2	5	84.000	90.000	85.600	2.5100
32.DRAGW12	5	9.0000	13.000	11.600	1.6733
35.NDWK	5	10.910	13.085	11.575	.89869
36.NDWK2	5	10.928	13.223	11.608	.95806

DESCRIPTIVE MEASURES <77> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:90.*MAT'L:BLKO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.87000	.96000	.90800	.39623 -1
12.F3	5	.23000	.37000	.27000	.57009 -1
13.F4	5	.15000	.34000	.23200	.71903 -1
14.F32	5	.26000	.39000	.29600	.53666 -1
15.F43	5	.58000	1.0000	.84600	.16056
16.F42	5	.17000	.36000	.25400	.69498 -1
17.D2	5	.36000	.47400	.43740	.46290 -1
18.D3	5	.72800	.89400	.80520	.60805 -1
19.D4	5	2.5500	2.5530	2.5514	.13417 -2
20.D24	5	.14000	.19000	.16800	.16432 -1
21.D34	5	.29000	.35000	.31200	.25884 -1
22.T2	5	28.000	37.000	34.200	3.7014
23.T3	5	57.000	71.000	63.600	5.0794
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	2.0400	2.3800	2.2180	.12133
26.DWORK	5	5.9000	8.8700	7.0460	1.1431
27.TWORK	5	8.2900	10.520	9.2700	1.0308
28.DRAGW1	5	1.8000	2.3200	2.1140	.19437
29.DRAGW2	5	4.0500	6.5500	4.9240	1.0012
30.PWORK2	5	18.000	28.000	23.800	3.7683
31.DWORK2	5	71.000	81.000	75.200	3.7683
32.DRWK12	5	26.000	33.000	30.000	2.7386
35.NDWK	5	2.8393	4.0502	3.3252	.46311
36.NDWK2	5	2.3345	3.5950	2.8099	.48659

DESCRIPTIVE MEASURES <70> VELOCITY:10.0*LUBRICNT:1249.*ANGLE:90.*MAT'L:BLKO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.94000	1.1600	1.0660	.95551 -1
12.F3	5	.32000	.39000	.37000	.29155 -1
13.F4	5	.30000	.36000	.33400	.24083 -1
14.F32	5	.34000	.37000	.34800	.13038 -1
15.F43	5	.82000	.92000	.90000	.44721 -1
16.F42	5	.29000	.35000	.31400	.21909 -1
17.D2	5	.31600	.52200	.44740	.91410 -1
19.D3	5	.78500	.90200	.83440	.44399 -1
19.D4	5	2.5400	2.5510	2.5446	.47221 -2
20.D24	5	.12000	.20000	.17200	.35637 -1
21.D34	5	.30000	.35000	.32200	.19235 -1
22.T2	5	13.000	21.000	18.200	3.5637
23.T3	5	32.000	37.000	33.800	1.9235
24.T4	5	102.00	103.00	102.20	.44721
25.PWORK	5	1.9400	3.1500	2.6320	.52884
26.DWORK	5	8.4900	9.6100	8.9700	.49234
27.TWORK	5	10.860	12.400	11.604	.60044
28.DRAGW1	5	2.2400	3.2400	2.6820	.38655
29.DRAGW2	5	5.9200	6.5300	6.2820	.26052
30.PWORK*	5	16.000	26.000	22.000	4.0000
31.DWORK*	5	73.000	83.000	77.000	4.0000
32.DRWK12*	5	25.000	33.000	29.200	2.9496
35.NDWK	5	3.9954	4.6100	4.2803	.23267
36.NDWK2	5	3.4755	3.9357	3.6757	.19580

DESCRIPTIVE MEASURES <RO> VELOCITY=5.0*LUBRICNT=360.*ANGLE=90.*MAT'L=BLK0 STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.82000	.95000	.90000	.51478 -1
12.F3	5	.24000	.31000	.27000	.29155 -1
13.F4	5	.40000 -1	.23000	.10600	.74027 -1
14.F32	5	.27000	.33000	.29800	.22804 -1
15.F43	5	.15000	.91000	.41200	.30170
16.F42	5	.40000 -1	.25000	.11800	.81056 -1
17.D2	5	.36000	.51500	.42720	.56300 -1
18.D3	5	.75000	.87500	.82060	.58308 -1
19.D4	5	2.5400	2.5510	2.5478	.44384 -2
20.D24	5	.14000	.20000	.16200	.22804 -1
21.D34	5	.29000	.34000	.31600	.20736 -1
22.T2	5	28.000	41.000	33.800	4.7117
23.T3	5	59.000	69.000	64.600	4.3932
24.T4	5	201.00	202.00	201.80	.44721
25.PWORK	5	1.8900	2.7800	2.3200	.34547
26.DWORK	5	5.0200	6.2000	5.6680	.57825
27.TWORK	5	7.2500	8.6800	7.9980	.52285
28.DRAGW1	5	2.0200	2.6300	2.2820	.28084
29.DRAGW2	5	2.9700	3.7300	3.3820	.35024
30.PWORK*	5	23.000	35.000	29.800	4.3818
31.DWORK*	5	64.000	76.000	70.200	4.3818
32.DPWK12*	5	36.000	42.000	39.600	2.3022
35.NDWK	5	2.3904	2.8874	2.6700	.22607
36.NDWK2	5	1.7763	2.1390	1.9565	.17360

DESCRIPTIVE MEASURES <81> VELOCITY:10.0*LUBRICNT:360.*ANGLE:90.*MAT'L:BLKD STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	.92000	1.2800	1.0780	.14290
12.F3	5	.23000	.33000	.28200	.41473 -1
13.F4	5	.17000	.35000	.24000	.69642 -1
14.F32	5	.19000	.33000	.26600	.59414 -1
15.F43	5	.60000	1.0500	.85600	.20144
16.F42	5	.16000	.35000	.22800	.75631 -1
17.D2	5	.45000	.60100	.55020	.65105 -1
18.D3	5	.82000	.94100	.89460	.45720 -1
19.D4	5	2.5420	2.5530	2.5480	.40623 -2
20.D24	5	.17000	.22000	.21000	.25495 -1
21.D34	5	.32000	.36000	.34600	.16733 -1
22.T2	5	18.000	24.000	22.200	2.6833
23.T3	5	33.000	38.000	36.200	1.9235
24.T4	5	102.00	103.00	102.80	.44721
25.PWORK	5	2.3200	3.9200	3.3260	.64887
26.DWORK	5	5.7700	9.2800	6.9460	.94238
27.TWORK	5	9.4600	10.600	10.176	.42688
28.DRAGW1	5	1.7000	2.7000	2.2580	.36376
29.DRAGW2	5	4.0600	5.5800	4.5840	.62724
30.PWORK%	5	21.000	38.000	32.200	7.2595
31.DWORK%	5	61.000	78.000	66.800	7.2595
32.DRWK12%	5	29.000	34.000	32.600	2.5100
35.NDWK	5	2.9727	3.9429	3.4177	.35497
36.NDWK2	5	2.5015	3.2254	2.7658	.29448

DESCRIPTIVE MEASURES <83> VELOCITY:5.0*LUBRICNT:DRY*ANGLE:45.*MAT'L:BLKD STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	4	1.2200	1.5400	1.3350	.14059
12.F3	4	.72000	.78000	.74500	.30000 -1
13.F4	4	.84000	1.1700	1.0275	.13745
14.F32	4	.46000	.64000	.56000	.76158 -1
15.F43	4	1.1700	1.5300	1.3750	.19070
16.F42	4	.65000	.85000	.77000	.88318 -1
17.D2	4	.51200	.55300	.53575	.20172 -1
18.D3	4	.77600	.83000	.80650	.22782 -1
19.D4	4	2.5400	2.5460	2.5440	.28282 -2
20.D24	4	.20000	.21000	.20500	.57735 -2
21.D34	4	.30000	.32000	.31250	.95743 -2
22.T2	4	41.000	44.000	42.750	1.5000
23.T3	4	62.000	66.000	64.250	1.7078
24.T4	4	202.00	202.00	202.00	
25.PWORK	4	3.4200	4.0600	3.8050	.28630
26.DWORK	4	18.460	23.040	20.792	1.9746
27.TWORK	4	22.230	27.100	24.602	2.0309
28.DRAGW1	4	2.4800	3.3300	2.8475	.35340
29.DRAGW2	4	15.970	20.230	17.937	1.7972
30.PWORK2	4	13.000	16.000	14.750	1.5000
31.DWORK2	4	83.000	86.000	84.250	1.5000
32.DRWK12	4	12.000	15.000	13.250	1.2583
35.NDWK	4	9.1386	11.595	10.357	1.0282
36.NDWK2	4	9.0226	11.660	10.331	1.1104

DESCRIPTIVE MEASURES <86> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:45.*MAT'L:BLKO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	4	.96000	1.0600	1.0000	.45461 -1
12.F3	4	.29000	.40000	.35000	.45461 -1
13.F4	4	.60000 -1	.20000	.20000	.96609 -1
14.F32	4	.30000	.41000	.35000	.46904 -1
15.F43	4	.21000	.79000	.55250	.24473
16.F42	4	.60000 -1	.26000	.19500	.91469 -1
17.D2	4	.40600	.45800	.42900	.22730 -1
18.D3	4	.75300	.93900	.82650	.80707 -1
19.D4	4	2.5440	2.5510	2.5487	.33040 -2
20.D24	4	.15000	.17000	.16250	.95743 -2
21.D34	4	.29000	.36000	.31750	.30957 -1
22.T2	4	32.000	36.000	33.750	1.7078
23.T3	4	59.000	74.000	65.250	6.3443
24.T4	4	201.00	202.00	201.75	.50000
25.PWORK	4	2.1800	2.5600	2.4150	.16862
26.DWORK	4	5.2400	8.5100	7.6250	1.5913
27.TWORK	4	7.8000	11.020	10.043	1.5063
28.DRAGW1	4	1.7200	3.3300	2.5800	.68328
29.DRAGW2	4	3.5100	5.9400	5.0400	1.0674
30.PWORK2	4	20.000	32.000	24.000	5.4160
31.DWORK2	4	67.000	79.000	75.000	5.4160
32.DRWK12	4	28.000	39.000	33.000	4.5461
35.NDWK	4	2.4764	4.0009	3.5967	.74804
36.NDWK2	4	1.9522	3.3731	2.9395	.66237

DESCRIPTIVE MEASURES <89> VELOCITY:5.0*LUBRICNT:360.*ANGLE:45.*MAT'L:BLKO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	4	1.0100	1.2900	1.1850	.13077
12.F3	4	.21000	.34000	.27000	.54772 -1
13.F4	4	.11000	.23000	.19500	.56862 -1
14.F32	4	.17000	.26000	.23000	.40825 -1
15.F43	4	.34000	1.0600	.75750	.30358
16.F42	4	.90000 -1	.21000	.16750	.53151 -1
17.D2	4	.47100	.61100	.51275	.65820 -1
18.D3	4	.84900	1.0060	.92125	.66954 -1
19.D4	4	2.5490	2.5500	2.5495	.57758 -3
20.D24	4	.19000	.23000	.19500	.23805 -1
21.D34	4	.33000	.39000	.35750	.25000 -1
22.T2	4	37.000	48.000	40.250	5.1881
23.T3	4	67.000	79.000	72.750	5.0580
24.T4	4	202.00	202.00	202.00	
25.PWORK	4	3.1900	3.9300	3.4250	.34034
26.DWORK	4	5.9100	7.6300	6.9725	.75703
27.TWORK	4	9.8400	10.830	10.405	.44800
28.DRAGW1	4	1.6500	3.3200	2.7400	.72125
29.DRAGW2	4	3.9300	4.7300	4.2325	.35236
30.PWORK%	4	29.000	39.000	32.500	4.4347
31.DWORK%	4	60.000	70.000	66.500	4.4347
32.DRWK12%	4	28.000	45.000	38.500	7.5939
35.NDWK	4	3.0480	3.6931	3.4177	.28251
36.NDWK2	4	2.3118	2.9342	2.6040	.25697

DESCRIPTIVE MEASURES <92> VELOCITY:5.0*LUBRICNT:DRY*ANGLE:90.*MAT'L:WHITO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.1300	2.3500	2.2640	.95551 -1
12.F3	5	1.1000	1.3100	1.1840	.78930 -1
13.F4	5	.81000	1.0600	.91200	.97314 -1
14.F32	5	.50000	.55000	.51800	.19235 -1
15.F43	5	.70000	.81000	.75600	.40988 -1
16.F42	5	.35000	.45000	.39800	.32711 -1
17.D2	5	.50600	.55000	.53340	.16426 -1
18.D3	5	.65500	1.0110	.91240	.58376 -1
19.D4	5	2.5410	2.5540	2.5468	.47643 -2
20.D24	5	.19000	.21000	.20600	.89443 -2
21.D34	5	.33000	.39000	.35400	.21909 -1
22.T2	5	41.000	44.000	42.800	1.0954
23.T3	5	68.000	81.000	72.800	4.8683
24.T4	5	202.00	203.00	202.20	.44721
25.PWORK	5	6.4600	7.6100	7.2540	.49018
26.DWORK	5	21.720	25.420	23.476	1.4443
27.TWORK	5	28.190	33.030	30.740	1.8802
28.DRAGW1	5	5.7500	8.0800	6.5480	.94009
29.DRAGW2	5	15.970	18.650	16.926	1.1641
30.PWORK%	5	22.000	24.000	23.200	.83666
31.DWORK%	5	75.000	77.000	75.800	.83666
32.DRWK12%	5	25.000	33.000	27.400	3.2094
35.NDWK	5	10.605	12.659	11.664	.78600
36.NDWK2	5	9.3996	11.324	10.364	.73197

DESCRIPTIVE MEASURES <93> VELOCITY:10.0*LUBRICNT:DRY*ANGLE:90.*MAT'L:WHTO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.4500	2.7200	2.5860	.11371
12.F3	5	1.2600	1.3300	1.2960	.30496 -1
13.F4	5	1.0400	1.3500	1.1940	.12095
14.F32	5	.47000	.53000	.50000	.22361 -1
15.F43	5	.81000	1.0600	.91400	.98641 -1
16.F42	5	.41000	.50000	.45400	.42778 -1
17.D2	5	.48700	.53800	.50220	.20753 -1
18.D3	5	.97900	1.0590	1.0198	.29752 -1
19.D4	5	2.5400	2.5460	2.5440	.24493 -2
20.D24	5	.19000	.21000	.19400	.89443 -2
21.D34	5	.38000	.41000	.39600	.11402 -1
22.T2	5	21.000	22.000	21.200	.44721
23.T3	5	41.000	44.000	42.400	1.1402
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	7.4900	8.7100	7.8780	.52285
26.DWORK	5	27.220	28.920	28.342	.72575
27.TWORK	5	34.760	36.960	36.224	.86734
28.DRAGW1	5	9.0500	10.650	9.6660	.74985
29.DRAGW2	5	17.870	19.550	18.670	.69416
30.PWORK%	5	20.000	23.000	21.000	1.2247
31.DWORK%	5	76.000	79.000	78.000	1.2247
32.DRWK12%	5	31.000	37.000	33.600	2.3022
35.NDWK	5	13.272	14.143	13.881	.35095
36.NDWK2	5	11.627	12.522	12.249	.37002

DESCRIPTIVE MEASURES <95> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:90.*MAT'L:WHIO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	1.7200	2.1200	1.9240	.14433
12.F3	5	.76000	.97000	.88600	.78930 -1
13.F4	5	.62000	.76000	.68200	.67602 -1
14.F32	5	.41000	.49000	.45600	.31305 -1
15.F43	5	.70000	.84000	.77000	.58310 -1
16.F42	5	.30000	.40000	.35600	.41593 -1
17.D2	5	.43000	.55300	.51660	.49742 -1
19.D3	5	.84700	.94600	.91200	.39058 -1
19.D4	5	2.5450	2.5490	2.5458	.13039 -2
20.D24	5	.16000	.21000	.19800	.21679 -1
21.D34	5	.33000	.37000	.35400	.15166 -1
22.T2	5	34.000	44.000	41.200	4.0866
23.T3	5	67.000	75.000	72.400	3.2094
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	4.4800	6.8900	6.2320	1.0201
26.DWORK	5	17.020	19.170	17.900	.79840
27.THOPK	5	21.510	26.050	24.136	1.6425
28.DRAGW1	5	4.8200	6.0400	5.4300	.51522
29.DRAGW2	5	10.980	13.510	12.466	1.0358
30.PWORK*	5	20.000	28.000	25.200	3.1145
31.DWORK*	5	71.000	79.000	73.800	3.1145
32.DRWK12*	5	26.000	35.000	29.800	3.7014
35.NDWK	5	8.0359	9.5659	8.8302	.54678
36.NDWK2	5	6.6870	8.3653	7.6315	.63073

DESCRIPTIVE MEASURES <36> VELOCITY:10.0*LUBRICNT:1249.*ANGLE:90.*MAT'L:WHTO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.2200	2.5800	2.3160	.14977
12.F3	5	1.0000	1.2100	1.0760	.78930 -1
13.F4	5	.79000	1.0100	.91800	.87864 -1
14.F32	5	.44000	.47000	.45800	.10954 -1
15.F43	5	.75000	1.0100	.85400	.10065
16.F42	5	.35000	.45000	.39200	.38987 -1
17.D2	5	.47700	.56400	.51120	.31917 -1
18.D3	5	.99100	1.0340	1.0166	.22920 -1
19.D4	5	2.5420	2.5470	2.5442	.17889 -2
20.D24	5	.19000	.22000	.19400	.15166 -1
21.D34	5	.38000	.40000	.39400	.89443 -2
22.T2	5	20.000	23.000	21.200	1.0954
23.T3	5	41.000	43.000	42.200	1.0954
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	6.4300	8.9100	7.3360	.93192
26.DWORK	5	22.390	24.600	23.542	.79992
27.TWORK	5	29.590	33.520	30.884	1.5224
28.DRAGW1	5	7.8700	8.7400	8.2660	.32508
29.DRAGW2	5	14.290	16.730	15.274	.89481
30.PWORK*	5	21.000	26.000	23.200	1.9235
31.DWORK*	5	73.000	78.000	75.800	1.9235
32.DRWK12*	5	31.000	36.000	34.600	2.0736
35.NDWK	5	10.986	12.424	11.585	.52145
36.NDWK2	5	9.4573	10.790	9.9954	.48447

DESCRIPTIVE MEASURES <99> VELOCITY:5.0*LUBRICNT:360.*ANGLE:90.*MAT'L:WOOD STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.2600	2.9300	2.4980	.23700
12.F3	5	.72000	.90000	.75200	.39623 -1
13.F4	5	.52000	.64000	.53200	.46043 -1
14.F32	5	.27000	.33000	.29800	.21679 -1
15.F43	5	.65000	.89000	.78800	.88431 -1
16.F42	5	.21000	.28000	.23600	.28810 -1
17.D2	5	.52300	.62300	.57280	.40530 -1
18.D3	5	.93100	1.0840	1.0290	.59762 -1
19.D4	5	2.5420	2.5500	2.5454	.29666 -2
20.D24	5	.20000	.24000	.22000	.15811 -1
21.D34	5	.36000	.42000	.39800	.23875 -1
22.T2	5	42.000	49.000	45.600	2.8810
23.T3	5	74.000	86.000	81.800	4.7117
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	7.3000	9.7800	8.3120	1.0121
26.DWORK	5	15.720	19.050	17.474	1.3326
27.TWORK	5	24.340	28.840	25.790	1.9983
28.DRAGW1	5	5.7700	8.6000	7.4120	1.2353
29.DRAGW2	5	9.2800	10.450	10.058	.47934
30.PWORK%	5	29.000	35.000	31.400	2.5100
31.DWORK%	5	64.000	70.000	67.600	2.5100
32.DRWK12%	5	36.000	45.000	41.800	4.4385
35.NDWK	5	8.1578	9.8095	8.8598	.68363
36.NDWK2	5	6.3649	7.0134	6.6355	.28128

DESCRIPTIVE MEASURES <99> VELOCITY:10.0*LUBRICNT:360.*ANGLE:90.*MAT'L:WHITO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	1.8400	3.0800	2.6400	.49260
12.F3	5	.69000	.86000	.79400	.64653 -1
13.F4	5	.77000	.80000	.78600	.11402 -1
14.F32	5	.26000	.37000	.30200	.42071 -1
15.F43	5	.90000	1.1400	.99400	.90720 -1
16.F42	5	.25000	.43000	.30600	.73689 -1
17.D2	5	.44000	.54400	.50200	.38158 -1
18.D3	5	.96500	1.0480	1.0176	.34137 -1
19.D4	5	2.5430	2.5460	2.5450	.14139 -2
20.D24	5	.17000	.21000	.19200	.14832 -1
21.D34	5	.37000	.41000	.39600	.16733 -1
22.T2	5	18.000	23.000	21.000	1.8708
23.T3	5	40.000	43.000	42.000	1.2247
24.T4	5	103.00	103.00	103.00	
25.PWORK	5	5.1100	9.4700	7.9380	1.7390
26.DWORK	5	18.840	22.210	20.720	1.3220
27.TWORK	5	23.560	31.440	28.560	3.0352
28.DSAGW1	5	7.7400	9.7400	8.6160	.88616
29.DSAGW2	5	11.090	12.840	12.096	.67322
30.PWORK%	5	21.000	30.000	26.800	3.4928
31.DWORK%	5	69.000	78.000	72.200	3.4928
32.DSWK12%	5	38.000	44.000	41.000	2.2361
35.NDWK	5	9.9459	10.941	10.153	.80863
36.NDWK2	5	7.4032	8.3377	7.9166	.33474

DESCRIPTIVE MEASURES <101> VELOCITY:5.0*LUBRICNT:DRY*ANGLE:45.*MAT'L:WHTO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.7100	3.0700	2.8340	.15662
12.F3	5	1.3600	1.7200	1.4940	.14588
13.F4	5	.98000	1.2900	1.1860	.12321
14.F32	5	.46000	.56000	.52200	.41473 -1
15.F43	5	.71000	.86000	.79000	.65955 -1
16.F42	5	.33000	.46000	.41400	.50299 -1
17.D2	5	.49600	.56200	.53420	.25440 -1
18.D3	5	.90800	1.0330	.97840	.46891 -1
19.D4	5	2.5410	2.5470	2.5450	.25493 -2
20.D24	5	.19000	.22000	.20600	.11402 -1
21.D34	5	.35000	.40000	.37800	.17889 -1
22.T2	5	39.000	45.000	42.600	2.3022
23.T3	5	72.000	83.000	77.600	3.9115
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	8.3500	10.530	8.9660	.89237
26.DWORK	5	28.060	33.140	29.970	2.0460
27.TWORK	5	36.410	43.670	38.940	2.9031
28.DRAGW1	5	8.7000	10.430	9.4220	.68218
29.DRAGW2	5	19.310	23.410	20.542	1.7092
30.PWORK2	5	22.000	24.000	22.600	.89443
31.DWORK2	5	75.000	77.000	76.400	.89443
32.DRWK12%	5	29.000	34.000	31.000	1.8708
35.NDWK	5	13.681	16.695	14.915	1.1876
36.NDWK2	5	11.806	14.978	13.127	1.2222

DESCRIPTIVE MEASURES <104> VELOCITY:5.0*LUBRICNT:1249.*ANGLE:45.*MAT'L:WHITO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.2300	2.5400	2.4140	.12341
12.F3	5	.99000	1.2700	1.1580	.11189
13.F4	5	.73000	.93000	.86400	.10807
14.F32	5	.44000	.51000	.47200	.29636 -1
15.F43	5	.63000	.97000	.74600	.93968 -1
16.F42	5	.29000	.42000	.35600	.50794 -1
17.D2	5	.45600	.60400	.53880	.52969 -1
18.D3	5	.92800	1.0140	.97920	.31917 -1
19.D4	5	2.5410	2.5500	2.5446	.35777 -2
20.D24	5	.18000	.23000	.20600	.18166 -1
21.D34	5	.36000	.39000	.38000	.12247 -1
22.T2	5	36.000	48.000	43.000	4.4159
23.T3	5	74.000	81.000	77.600	2.5100
24.T4	5	201.00	202.00	201.80	.44721
25.PWORK	5	5.8100	8.9100	7.7380	1.1825
26.DWORK	5	22.580	24.370	23.466	.67925
27.TWORK	5	28.400	32.540	31.210	1.6653
28.DRAGW1	5	6.6600	8.9900	7.6860	1.0025
29.DRAGW2	5	14.150	16.950	15.776	1.0673
30.PWORK*	5	20.000	27.000	24.200	2.6833
31.DWORK*	5	72.000	79.000	74.800	2.6833
32.DRWK12*	5	28.000	37.000	32.200	4.0866
35.NDWK	5	10.840	12.163	11.708	.53421
36.NDWK2	5	9.1349	10.879	10.076	.62550

DESCRIPTIVE MEASURES <107> VELOCITY:5.0*LUBRICNT:360.*ANGLE:45.*MAT'L:WHTO STATISTICS BY STRATA FOR SYNTHETIC MATERIALS 1-6

VARIABLE	N	MINIMUM	MAXIMUM	MEAN	STD DEV
11.F2	5	2.6200	2.8300	2.7260	.12013
12.F3	5	.82000	.94000	.88400	.57706 -1
13.F4	5	.48000	.78000	.67800	.12736
14.F12	5	.29000	.35000	.32200	.23875 -1
15.F43	5	.59000	.83000	.75000	.10085
16.F42	5	.17000	.24000	.20600	.47223 -1
17.D2	5	.52200	.56000	.54100	.17436 -1
19.D3	5	.98200	1.2560	1.1070	.10161
19.D4	5	2.5420	2.5470	2.5450	.20000 -2
20.D23	5	.20000	.22000	.20800	.83666 -2
21.D13	5	.38000	.49000	.43000	.40620 -1
22.T2	5	42.000	45.000	43.400	1.3416
23.T3	5	78.000	99.000	97.800	7.8549
24.T4	5	202.00	202.00	202.00	
25.PWORK	5	7.1700	9.0300	8.1780	.86514
26.DWORK	5	20.220	23.940	21.776	1.5038
27.TWORK	5	27.930	31.160	29.958	1.4128
28.DRAG41	5	8.3800	13.150	10.374	1.7408
29.DRAG42	5	10.120	13.310	11.398	1.3636
30.PWORK3	5	23.000	30.000	27.000	2.7386
31.DWORK3	5	69.000	76.000	72.000	2.7386
32.DRAG123	5	38.000	54.000	46.000	6.0992
35.3DWK	5	10.120	11.848	10.866	.72760
36.3D4K2	5	7.0007	8.5321	7.9276	.75703