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STATISTICAL EVALUATION OF DESERT INDIVIDUAL CAMOUFLAGE COVERS (ICC) BY GROUND OBSERVERS

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ABSTRACT

The ICC is a personal camouflage net for soldiers which will be useful for patrols, snipers, and ambush situations. This study determined whether the ICC should have large or small Hogan incisions, and what color(s) best blended with the desert backgrounds. Ten U.S. Marines and two civilians subjectively evaluated seventy-four ICCs (thirty-seven different colors half large and half small Hogan incisions) at five desert sites. The ICCs were ranked in groups of six, selecting four at a time, to reduce the number to the final six colors with associated incisions. The final six were subjected to paired comparison rankings which overcomes the problem of inconsistency of judgements given by the same observer. The data was analyzed statistically to determine preferred color with associated incision, establish confidence limits, and color grouping for each site and across all sites.

1.0 SECTION 1 - INTRODUCTION

The Countersurveillance and Deception Division was tasked by FORSCOM in early 1986 to develop the individual camouflage cover (ICC) for desert. woodland, and snow environments. The ICC is a small cloth cover, 5' x 7', which will weigh about 10-14 ounces, and be able to fit into a battle dress uniform pocket when not being used. It will deny the detection of a prone soldier in an ambush situation, or when on a surveillance, long-range patrol situation. The purpose of this study was twofold. The task first was to determine if a small or large Hogan garnish incision was best. The second task was to determine the best desert color to accompany the incision. Five sites were selected in the desert southwest, and the ICCs were evaluated by ground observers as to how well they blended with the desert backgrounds.

2.0 SECTION 2 - PROCEDURE

2.1 Test ICCs.

There were a total of thirty-seven variations of desert colors for this study. The nucleus of these colors was taken from the Saudi Arabian net palette study. These original colors were tested in the deserts of Saudi Arabia^{2/} and the U.S. desert southwest. Additional colors were obtained through modification. Each of thirty-seven colors were painted on seventyfour vinyl-coated sheets, 5' x 7', which were then incised with either the small or large Hogan incision. Thus, there was a total of seventy-four vinyl-coated ICCs - thirty-seven small Hogans and thirty-seven large Hogans.

2.2 Test Sites.

Five sites were used to evaluate the ICCs. Two of the sites were in the Yuma, Arizona area, two at Anza Borrego State Park, California, and one at Jean Lake, near Las Vegas, Nevada. Both sites at Anza Borrego State Park were sandy with small stones. Vegetation was very sparce. Yuma site #1 was very sandy with some vegetation, while Yuma site #2 was on Ogilby Road and was rocky with very sparce vegetation. The Jean Lake site contained moderate vegetation with rocks, and was located on a hillside.

2.3 Test Subjects.

The test subjects consisted of ten enlisted U.S. Marine Corps personnel from Camp Pendleton, California, and two civilians from the Belvoir Research, Development, and Engineering Center, Fort Belvoir, Virginia. All personnel had corrected 20/20 vision and normal color vision. No observations were made with sunglasses.

2.4 Data Generation.

The seventy-four Hogan incised ICCs were randomly assigned to groups of six each. The four that best blended with the desert environment, in terms of color and texture, were selected and put aside for additional evaluations. This process continued until the original seventy-four ICCs were reduced to the six best. The best six ICCs were then shown in all possible pairs - fifteen, with the best ICC for each pair chosen for ability to blend with the desert. The number of times the individual ICC was judged to be the best was tabulated and subjected to data analysis.

3.0 SECTION 3 - RESULTS

NOTE:

The ICCs were evaluated at each of the five sites to determine which colors best blended with the desert environment. Section 2.4 describes how the best six ICCs were selected for each site. Table 1 shows the top six colors for each of the five sites.

			Site		
	Yuma	Yuma		Anza Borrego	Anza Borrego
Colors	Site l	Site 2	Jean Lake	Site 1	Site 2
P6-S			X	1	
W-S	Х	X		X	
XI-S	Х	X			Х
XI-L	Х	X	X		
12-S				X	
21-S			X		Х
21-L	X	x			X
26-S	Х		X	X	X
26-L		X		X	
33-S	Х	x	x	X	Х
33-L				x	X
37-S			X		

The L is large Hogan incision, while S is small Hogan incision. Net 33-S is the only color to make the best six colors for all five sites.

TABLE 1

Summary of the Best Six Desert ICCs for Each Site

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The results of each site for the above six best nets will not be included, because they would be too voluminous to present in these proceedings. This data is available upon request from the U.S. Army Belvoir Research, Development and Engineering Center, ATTN: STRBE-JDS, Fort Belvoir, VA 22060. When averaging the final best six ICCs across all five sites, a total of twelve ICCs made the best list. Some nets such as 37-S made the final six ICCs for only one site. A value of zero was added for each cell block when the ICC did not make the final six for that particular site. Tables 2-4 contain the statistics for the twelve ICCs. Figure 1 is the graphic display of Table 2. Table 5 describes the final twelve ICC nets as to color and incision.

TABLE 2

Descriptive Data for Final ICCs (Color Blend) with Desert Background, Across All Sites

		STANDARD	95% CONFIDENCE	INTE RVAL
<u>N</u>	MEAN	ERROR	LOWER LIM	UPPER LIM
59	0.1864	0.6010	0.0298	0.3431
59	1.4237	1.6422	0.9957	1.8517
59	1.5932	1.5550	1.1879	1.9985
59	1.6780	1.8795	1.1881	2.1678
59	0.1017	0.6616	0.0000	0.2741
59	0.9153	1.3808	0.5554	1.2751
59	0.9831	1.2931	0.6460	1.3201
59	2.8983	1.8541	2.4151	3.3816
59	1.2712	1.7304	0.8202	1.7222
59	2.7119	1.4026	2.3463	3.0774
59	0.6610	1.1539	0.3603	0.9618
59	0.5763	1.2206	0.2581	0.8944
	<u>N</u> 59 59 59 59 59 59 59 59 59 59 59	NMEAN590.1864591.4237591.5932591.6780590.1017590.9153590.9831592.8983591.2712592.7119590.6610590.5763	NMEANERROR590.18640.6010591.42371.6422591.59321.5550591.67801.8795590.10170.6616590.91531.3808590.98311.2931592.89831.8541591.27121.7304592.71191.4026590.66101.1539590.57631.2206	STANDARD 95% CONFIDENCE N MEAN ERROR LOWER LIM 59 0.1864 0.6010 0.0298 59 1.4237 1.6422 0.9957 59 1.5932 1.5550 1.1879 59 1.6780 1.8795 1.1881 59 0.1017 0.6616 0.0000 59 0.9153 1.3808 0.5554 59 0.9831 1.2931 0.6460 59 2.8983 1.8541 2.4151 59 1.2712 1.7304 0.8202 59 2.7119 1.4026 2.3463 59 0.6610 1.1539 0.3603 59 0.5763 1.2206 0.2581

Note that the higher the mean value, the better the ICC blended with the desert environments.

TABLE 3

Analysis of Variance for Final ICCs (Color Blend) with Desert Background, Across All Sites

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F-TEST	SIG LEVEL
Color	11	508.5466	46.2315	22.8823	0.0000*
Error	696	1406.2034	2.0204		
Total	707	1914.7500			

* Significant at α less than .001 level.

This table indicates that there are significant differences in the ability of the final ICCs to blend with the desert backgrounds. Table 4 identifies which ICCs are significantly different from each other.



Figure 1. Ability of the Final ICCs to Blend with Desert Background, Averaged Across All Sites.

TABLE 4

Individual Comparisons, Identifying Which of the Final ICC Colors Differed Significantly from Each Other, Averaged Across Sites

AND COLOR W-S COLOR P6-S COMPARISON = -1.23729 SUM OF SQUARES = 45.16102 F = 22.352 SIGNIFICANCE LEVEL = 0.00000 *** COLOR P6-S AND COLOR XI-S -1.40678 SUM OF SQUARES = 58.38136 COMPARISON = F = 28.896 SIGNIFICANCE LEVEL = 0.00000 *** COLOR P6-S AND COLOR XI-L COMPARISON = -1.49153 SUM OF SQUARES = 65.62712 SIGNIFICANCE LEVEL = 0.00000 *** 32.482 F = COLOR P6-S AND COLOR 12-S 0.08475 SUM OF SQUARES = 0.21186 COMPARISON = 0.105 SIGNIFICANCE LEVEL = 1.00000 F =

COLOR P6-SAND COLOR 21-SCOMPARISON =-0.72881SUM OF SQUARES =15.66949 F = 7.756 SIGNIFICANCE LEVEL = 0.00543 ** COLOR P6-SAND COLOR 21-LCOMPARISON =-0.79661SUM OF SQUARES =18.72034 F = 9.266 SIGNIFICANCE LEVEL = 0.00238 ** COLOR P6-SAND COLOR 26-SCOMPARISON =-2.71186SUM OF SQUARES =216.94915 F = 107.379 SIGNIFICANCE LEVEL = 0.00000 *** COLOR P6-SAND COLOR 26-LCOMPARISON =-1.08475SUM OF SQUARES =34.71186 F = 17.181 SIGNIFICANCE LEVEL = 0.00004 ***
 COLOR P6-S
 AND COLOR 33-S

 COMPARISON =
 -2.52542
 SUM OF SQUARES =
 188.14407
F = 93.122 SIGNIFICANCE LEVEL = 0.00000 *** COLOR P6-SAND COLOR 33-LCOMPARISON =-0.47458SUM OF SQUARES =6.64407 F = 3.288 SIGNIFICANCE LEVEL = 0.06998
 COLOR P6-S
 AND COLOR 37-S

 COMPARISON =
 -0.38983
 SUM OF SQUARES =
 4.48305
F = 2.219 SIGNIFICANCE LEVEL = 0.13656 COLOR W-SAND COLOR XI-SCOMPARISON =-0.16949SUM OF SQUARES = 0.84746 F = 0.419 SIGNIFICANCE LEVEL = 0.51732 COLOR W-SAND COLOR XI-LCOMPARISON =-0.25424SUM OF SQUARES =1.90678 F = 0.944 SIGNIFICANCE LEVEL = 0.33148 COLOR W-SAND COLOR 12-SCOMPARISON =1.32203SUM OF SQUARES =51.55932 F = 25.519 SIGNIFICANCE LEVEL = 0.00000 *** COLOR W-SAND COLOR 21-SCOMPARISON =0.50847SUM OF SQUARES =7.62712 F = 3.775 SIGNIFICANCE LEVEL = 0.05222COLOR W-SAND COLOR 21-LCOMPARISON =0.44068SUM OF SQUARES = 5.72881 F = 2.835 SIGNIFICANCE LEVEL = 0.09243 COLOR W-SAND COLOR 26-SCOMPARISON =-1.47458 SUM OF SQUARES =64.14407F = 31.748 SIGNIFICANCE LEVEL = 0.00000 ***

COLOR W-SAND COLOR 26-LCOMPARISON =0.15254SUM OF SQUARES =0.68644 F = 0.340 SIGNIFICANCE LEVEL = 0.56006 AND COLOR 33-S COLOR W-S COMPARISON = -1.28814 SUM OF SQUARES = 48.94915 F = 24.227 SIGNIFICANCE LEVEL = 0.00000 *** COLOR W-SAND COLOR 33-LCOMPARISON =0.76271SUM O 0.76271 SUM OF SQUARES = 17.16102 F = 8.494 SIGNIFICANCE LEVEL = 0.00362 ** AND COLOR 37-S COLOR W-S COMPARISON = 0.84746 SUM OF SQUARES = 21.18644F = 10.486 SIGNIFICANCE LEVEL = 0.00123 ** COLOR XI-S AND COLOR XI-L COMPARISON = -0.08475 SUM OF SQUARES = 0.21186 F = 0.105 SIGNIFICANCE LEVEL = 1.00000 COLOR XI-SAND COLOR 12-SCOMPARISON =1.49153SUM OF SQUARES =65.62712 F = 32.482 SIGNIFICANCE LEVEL = 0.00000 *** COLOR XI-SAND COLOR 21-SCOMPARISON =0.67797SUM O 0.67797 SUM OF SQUARES = 13.55932 F = 6.711 SIGNIFICANCE LEVEL = 0.00968 ** COLOR XI-SAND COLOR 21-LCOMPARISON =0.61017SUM OF SQUARES =10.98305 F = 5.436 SIGNIFICANCE LEVEL = 0.01987 * COLOR XI-SAND COLOR 26-SCOMPARISON =-1.30508SUM OF SQUARES =50.24576 F = 24.869 SIGNIFICANCE LEVEL = 0.00000 *** COLOR XI-SAND COLOR 26-LCOMPARISON =0.32203 SUM OF SQUARES =3.05932AND COLOR 26-L F = 1.514 SIGNIFICANCE LEVEL = 0.21870 COLOR XI-SAND COLOR 33-SCOMPARISON =-1.11864 -1.11864 SUM OF SQUARES = 36.91525 F = 18.271 SIGNIFICANCE LEVEL = 0.00002 *** COLOR XI-SAND COLOR 33-LCOMPARISON =0.93220SUM OF SQUARES =25.63559 F = 12.688 SIGNIFICANCE LEVEL = 0.00038 *** COLOR XI-S AND COLOR 37-S 1.01695 SUM OF SQUARES = 30.50847 COMPARISON = F = 15.100 SIGNIFICANCE LEVEL = 0.00011 ***

COLOR XI-LAND COLOR 12-SCOMPARISON =1.57627 1.57627 SUM OF SQUARES = 73.29661 F = 36.278 SIGNIFICANCE LEVEL = 0.00000 *** COLOR XI-LAND COLOR 21-SCOMPARISON =0.76271SUM COLOR 0.76271 SUM OF SQUARES = 17.16102 F = 8.494 SIGNIFICANCE LEVEL = 0.00362 ** COLOR XI-LAND COLOR 21-LCOMPARISON =0.694920.69492SUM OF SQUARES =14.24576 F = 7.051 SIGNIFICANCE LEVEL = 0.00801 ** COLOR XI-LAND COLOR 26-SCOMPARISON =-1.22034SUM OF SQUARES =43.93220 F = 21.744 SIGNIFICANCE LEVEL = 0.00000 *** COLOR XI-LAND COLOR 26-LCOMPARISON =0.40678SUM C 0.40678 SUM OF SQUARES = 4.88136 F = 2.416 SIGNIFICANCE LEVEL = 0.12032 COLOR XI-LAND COLOR 33-SCOMPARISON =-1.03390SUM OF SQUARES =31.53390 F = 15.608 SIGNIFICANCE LEVEL = 0.00008 *** COLOR XI-LAND COLOR 33-LCOMPARISON =1.01695SUM OF SQUARES =30.50847 F = 15.100 SIGNIFICANCE LEVEL = 0.00011 *** COLOR XI-LAND COLOR 37-SCOMPARISON =1.10169SUM O 1.10169 SUM OF SQUARES = 35.80508 F = 17.722 SIGNIFICANCE LEVEL = 0.00003 *** COLOR 12-SAND COLOR 21-SCOMPARISON =-0.81356SUM 0 -0.81356 SUM OF SQUARES = 19.52542 F = 9.664 SIGNIFICANCE LEVEL = 0.00192 ** COLOR 12-SAND COLOR 21-LCOMPARISON =-0.88136SUM OF SQUARES =22.91525 F = 11.342 SIGNIFICANCE LEVEL = 0.00078 ***
 COLOR 12-S
 AND COLOR 26-S

 COMPARISON =
 -2.79661
 SUM OF SQUARES =
 230.72034
F = 114.195 SIGNIFICANCE LEVEL = 0.00000 *** COLOR 12-SAND COLOR 26-LCOMPARISON =-1.16949SUM O -1.16949 SUM OF SQUARES = 40.34746 F = 19.970 SIGNIFICANCE LEVEL = 0.00001 *** COLOR 12-SAND COLOR 33-SCOMPARISON =-2.61017SUM OF SQUARES =200.98305 F = 99.477 SIGNIFICANCE LEVEL = 0.00000 ***

COLOR 12-SAND COLOR 33-LCOMPARISON =-0.55932SUM OF SQUARES =9.22881 F = 4.568 SIGNIFICANCE LEVEL = 0.03275 * COLOR 12-SAND COLOR 37-SCOMPARISON =-0.47458SUM OF SQUARES =6.64407 F = 3.288 SIGNIFICANCE LEVEL = 0.06998 COLOR 21-SAND COLOR 21-LCOMPARISON =-0.06780 SUM OF SQUARES =0.13559F = 0.067 SIGNIFICANCE LEVEL = 1.00000 COLOR 21-SAND COLOR 26-SCOMPARISON =-1.98305SUM OF SQUARES =116.00847 F = 57.418 SIGNIFICANCE LEVEL = 0.00000 *** COLOR 21-SAND COLOR 26-LCOMPARISON =-0.35593SUM OF SQUARES =3.73729F = 1.850 SIGNIFICANCE LEVEL = 0.17403
 COLOR 21-S
 AND COLOR 33-S

 COMPARISON =
 -1.79661
 SUM OF SQUARES =
 95.22034
F = 47.129 SIGNIFICANCE LEVEL = 0.00000 ***
 COLOR 21-S
 AND COLOR 33-L

 COMPARISON =
 0.25424
 SUM OF SQUARES =
 1.90678
F = 0.944 SIGNIFICANCE LEVEL = 0.33148 COLOR 21-SAND COLOR 37-SCOMPARISON =0.33898SUM O 0.33898 SUM OF SQUARES = 3.38983 F = 1.678 SIGNIFICANCE LEVEL = 0.19543 COLOR 21-LAND COLOR 26-SCOMPARISON =-1.91525SUM OF SQUARES =108.21186 F = 53.559 SIGNIFICANCE LEVEL = 0.00000 *** COLOR 21-LAND COLOR 26-LCOMPARISON =-0.28814SUM O -0.28814 SUM OF SQUARES = 2.44915F = 1.212 SIGNIFICANCE LEVEL = 0.27108
 COLOR 21-L
 AND COLOR 33-S

 COMPARISON =
 -1.72881
 SUM OF SQUARES =
 88.16949
F = 43.639 SIGNIFICANCE LEVEL = 0.00000 *** COLOR 21-LAND COLOR 33-LCOMPARISON =0.32203SUM OF 0.32203 SUM OF SQUARES = 3.05932 F = 1.514 SIGNIFICANCE LEVEL = 0.21870 COLOR 21-LAND COLOR 37-SCOMPARISON =0.40678 SUM 0 0.40678 SUM OF SQUARES = 4.88136 F = 2.416 SIGNIFICANCE LEVEL = 0.12032

AND COLOR 26-L COLOR 26-SAND COLOR 26-LCOMPARISON =1.62712SUM OF SQUARES =78.10169 F = 38.656 SIGNIFICANCE LEVEL = 0.00000 *** COLOR 26-S COMPARISON = AND COLOR 33-S 0.18644 SUM OF SQUARES = 1.02542 F = 0.508 SIGNIFICANCE LEVEL = 0.47633 COLOR 26-S COMPARISON = AND COLOR 33-L 2.23729 SUM OF SQUARES = 147.66102 F = 73.085 SIGNIFICANCE LEVEL = 0.00000 *** COMPARISON = 2 32202 2.32203 SUM OF SQUARES = 159.05932 F = 78.726 SIGNIFICANCE LEVEL = 0.00000 *** COLOR 20-L AND COLOR 33-S COMPARISON = -1 44000 E = -1-1.44068 SUM OF SQUARES = 61.22881F = 30.305 SIGNIFICANCE LEVEL = 0.00000 *** COLOR 26-LAND COLOR 33-LCOMPARISON =0.61017 SUM (0.61017 SUM OF SQUARES = 10.98305 F = 5.436 SIGNIFICANCE LEVEL = 0.01987 * COLUK 26-L AND COLOR 37-S COMPARISON = 0.69492 CITE 0.69492 SUM OF SQUARES = 14.24576F = 7.051 SIGNIFICANCE LEVEL = 0.00801 **
 COLOR 33-S
 AND COLOR 33-L

 COMPARISON =
 2.05085
 SUM OF SQUARES =
 124.07627
F = 61.412 SIGNIFICANCE LEVEL = 0.00000 *** COLUK 33-S AND COLOR 37-S COMPARISON = 2 12550 2.13559 SUM OF SQUARES = 134.54237 66.592 SIGNIFICANCE LEVEL = 0.00000 *** F = COLOR 33-LAND COLOR 37-SCOMPARISON =0.08475 0.08475 SUM OF SQUARES = 0.21186 F = 0.105 SIGNIFICANCE LEVEL = 1.00000

The following ICCs differed significantly from each other: P6-S vs. W-S, P6-S vs. XI-S, P6-S vs. XI-L, P6-S vs. 21-S, P6-S vs. 21-L, P6-S vs. 26-S, P6-S vs. 26-L, P6-S vs. 33-S, W-S vs. 12-S, W-S vs. 26-S, W-S vs. 33-S, W-S vs. 33-L, W-S vs. 37-S, XI-S vs. 12-S, XI-S vs. 21-S, XI-S vs. 21-L, XI-S vs. 26-S, XI-S vs. 33-S, XI-S vs. 33-L, XI-S vs. 37-S, XI-L vs. 12-S, XI-L vs. 21-S, XI-L vs. 21-L, XI-L vs. 26-S, XI-L vs. 33-S, XI-L vs. 33-L, XI-L vs. 37-S, 12-S vs. 21-S, 12-S vs. 21-L, 12-S vs. 26-S, 12-S vs. 26-L, 12-S vs. 33-S, 12-S vs. 21-S, 12-S vs. 26-S, 21-S vs. 33-S, 21-L vs. 26-S, 21-L vs. 33-S, 26-S vs. 26-L, 26-S vs. 33-L, 26-S vs. 37-S, 26-L vs. 33-S, 26-L vs. 33-L, 26-L vs. 37-S, 33-S vs. 33-L, and 33-S vs. 37-S.

* Significant at α less than .05 level. ** Significant at α less than .01 level. *** Significant at α less than .001 level.

TABLE 5

Physical	Descriptio	n of the	e Final	Twelve	ICCs
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COLOR/INCISION	DESCRIPTION
P6-S	Black spots on tan color 26, color XI on reverse side.
W-S	A fifty-fifty mixture of Saudi Arabian color 8 and 7 in both sides of the net.
XI-S	Standard tan color on both sides of the net.
XI-L	Same color as XI-S, only this ICC has large incisions.
12-5	New color on both sides of net.
21 - S	Color XI on one side of the net, new color 33 on the other side.
21-L	Same color as 21, only this ICC has large incisions.
26-5	New color on both sides of net.
26-L	Same color as 26, only this ICC has large incisions.
33-s	New color on both sides of net.
33-L	Same color as 33, only this ICC has large incisions.
37-S	Color XI on one side of the net, with color W on the other side.

Note that S is small Hogan incisions, while L is large Hogan incisions.

4.0 SECTION 4 - DISCUSSION

All the colors were on the gray or tan scale, with the tan colors rated as having the most ability to blend with the desert background. Table 1 shows that the pattern ICC net P6-S was the only multi-color to make the final twelve ICCs, and it along with net 12-S was judged by the ground observers as having the least ability to blend with the desert background when averaged across all five sites. Net 33-S was the only net to make the final six for all sites. ICC 26-S was a final net for all sites, except for Yuma site #2. These nets did not significantly differ from each other ($\alpha = 0.476$), with net 33-S having a preference rating of 3.07 to 3.38 for net 26-S. The Yuma site #2 area was very rocky, while the other sites were very sandy. The test team has seen deserts in Egypt and Saudi Arabia, and these deserts were very sandy. Therefore, net 26-S appears to be the best ICC for general desert use. This color was among the best six at Yuma site #2, only it had large Hogan incisions (26-L). The texture of the rocks is larger and more rough in appearance than that of sand. It appears that the texture of the rocks was the driving force in the selection of 26-L rather than 26-S. Four of the top five ICCs, 26-S, 33-S, XI-S and W-S, were small incisions. The only exception is ICC XI-L. Except for very rocky deserts, the small incision blends best with the texture of the desert floor. Desert color paint studies²,³,⁴/ have shown that the desert southwest is a darker more gray desert than those seen in Saudi Arabia and Egypt. Additional deserts of interest in the Middle East should be photographed and soil samples studied before a final decision is made for the colors 26 and 33.

5.0 SECTION 5 - SUMMARY AND CONCLUSIONS

A total of thirty-seven colors were painted on seventy-four vinyl-coated sheets 5' x 7'. Each color was given either the small or large Hogan incision. These ICCs were then taken to five sites in the desert southwest and evaluated as to their ability to blend with the desert background in terms of color and texture. Ten enlisted U.S. Marine Corps personnel from Camp Pendleton, California, and two civilians from the Belvoir Research, Development and Engineering Center, Fort Belvoir, Virginia, served as ground observers. The seventy-four ICCs were randomly assigned to groups of six each. The four ICCs that best blended with the desert environment were selected and put aside for additional evaluation which continued until the best six for each site remained. These best six ICCs were then viewed on all possible pairs (15), with the best selected for each pair in their ability to match the desert floor. The number of times the individual ICC was judged to be best was tabulated and subjected to data analysis. The following conclusions were drawn:

a. Colors 26 and 36 were the most effective in blending with the desert.

b. Color 26 was selected for initial ICC production.

c. The small Hogan incision (S) is more effective than the large Hogan incision (L) except for very rocky terrain.

d. The U.S. desert southwest is darker and more gray than the sites seen in the Middle East, making additional work on the two colors necessary before final color selection.

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