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ANALYSIS OF BODY SIZE MEASUREMENTS FOR U.S. NAVY WOMEN'S CLOTHING AND PATTERN DESIGN

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NAVY CLOTHING AND TEXTILE RESEARCH FACILITY
NATICK, MASSACHUSETTS

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TECHNICAL REPORT NO. 138

93-00616

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: 138

2. GOVT ACCESSION NO.:

3. RECIPIENT'S CATALOG NUMBER:

4. TITLE (and Subtitle): ANALYSIS OF BODY SIZE MEASUREMENTS FOR U.S. NAVY WOMEN'S CLOTHING AND PATTERN DESIGN

5. TYPE OF REPORT & PERIOD COVERED: Final Report

6. PERFORMING ORG. REPORT NUMBER:

7. AUTHOR(s):

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8. CONTRACT OR GRANT NUMBER(s): N00140-77-C-6882

9. PERFORMING ORGANIZATION NAME AND ADDRESS:

Anthropology Research Project, Inc.
503 Xenia Avenue
Yellow Springs, Ohio 45387

10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS:
62758N; F661523;
TF66152309
523-003-55

11. CONTROLLING OFFICE NAME AND ADDRESS:

Navy Clothing & Textile Research Facility
21 Strathmore Road
Natick, Mass. 01760

12. REPORT DATE: March 1979

13. NUMBER OF PAGES: 220

14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office):

Same as 11.

15. SECURITY CLASS. (of this report): UNCLASSIFIED

15a. DECLASSIFICATION/DOWNGRADING SCHEDULE:

16. DISTRIBUTION STATEMENT (of this Report):

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report):

Same as 16.

18. SUPPLEMENTARY NOTES:

19. KEY WORDS (Continue on reverse side if necessary and identify by block number):

Anthropometry
Body measurements
Key dimensions
Sizing programs
Clothing designers
Women's anthropometric surveys
Statistics

20. ABSTRACT (Continue on reverse side if necessary and identify by block number):

Data from major anthropometric surveys of U.S. Army and U.S. Air Force women are analyzed with a view toward establishing sizing programs for U.S. Navy women's clothing. Summary statistics, percentile and frequency tables, and measurement descriptions are presented for 49 variables related specifically to clothing design. A high degree of comparability was found between the two measured samples in most dimensions, although the Army women, measured in 1976-77, were found to be slightly taller and heavier

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

20. ABSTRACT (continued)

than the USAF subjects surveyed in 1968, and to have somewhat larger waists and smaller bust dimensions. (U)

Using the data from the two military women's surveys and key dimensions and sizing intervals specified by the Navy Clothing and Textile Research Facility, a sizing analysis was conducted. Several different approaches were tried, but the resulting sizing programs do not satisfactorily cover the measured samples and presumably would be similarly deficient for a U.S. Navy population. (U)

The authors recommend the selection of different key dimensions and sizing intervals suggested by the actual distribution of body size variability in the military women's samples. A limited-objective survey of U.S. Navy women is also recommended for purposes of resolving various noted discrepancies. (U)

ACKNOWLEDGEMENTS

This report was initiated by the Navy Clothing and Textile Research Facility at Natick, Massachusetts with Ms. Josephine Brucato, project leader, serving as contract monitor during its preparation.

We would like to acknowledge the talents of Ms. Kay Downing who was responsible for the illustrations and of Ms. Jane Reese whose typing and proofreading skills contributed substantially to the editorial preparation of this document. Thanks go also to Paul Kikta of the University of Dayton Research Institute who prepared the computer graphics appearing in Chapter III.

Edmund Churchill served as senior statistical consultant in the planning stages of this report.

Additional thanks are due Charles E. Clauser, of the Aerospace Medical Research Laboratory at Wright-Patterson Air Force Base, Ohio and Robert M. White of the U.S. Army Natick Research and Development Command, Natick, Massachusetts for use of the USAF and Army women's survey data which provided the basis for our analysis.

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Availability Codes
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CHAPTER I

Introduction

The research reported here is an analysis of existing anthropometric data for U. S. women aged 18-45 years, for purposes of garment and pattern sizing.

Anthropometric data for women are, on the whole, limited. The only nation-wide anthropometric study of U. S. women ever to be conducted for the purpose of garment and pattern construction was done in the late 1930's and, although the results have been reported (O'Brien and Shelton, 1941), the raw data are no longer available to us for further analysis. They would in any case, be highly suspect for the research is more than a generation out of date and was conducted on a sample of questionable representativeness.

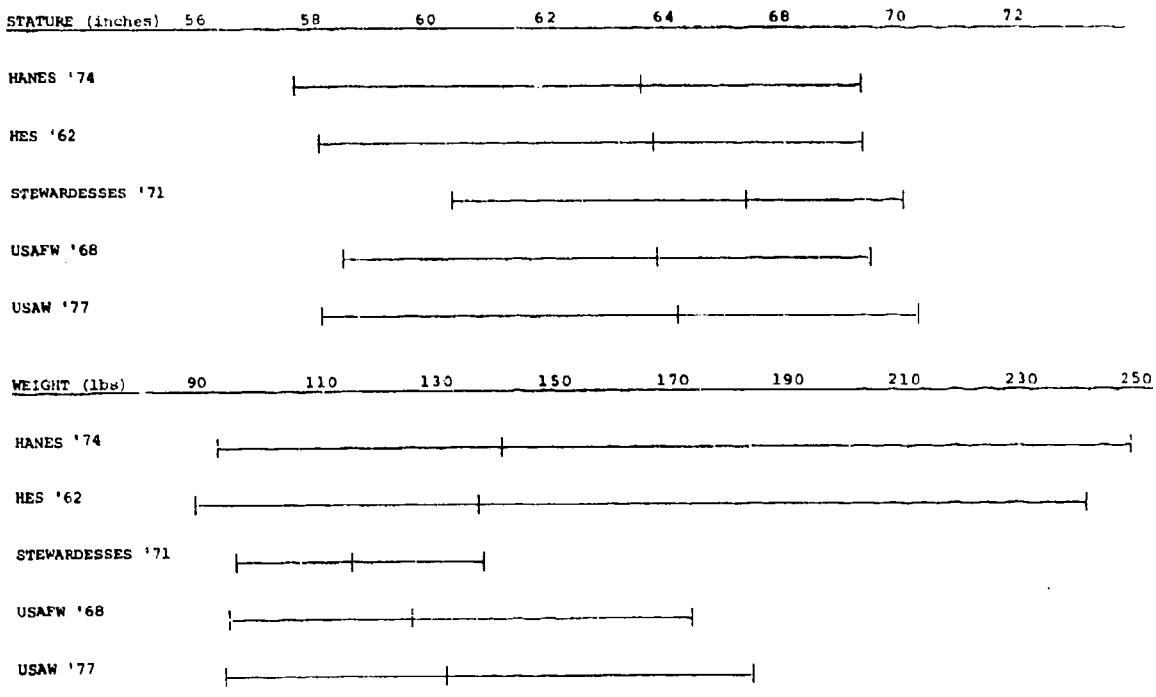
Since that time, a limited number of dimensions were measured on a national probability sample of 6672 civilians during the 1960-1962 Health Examination Survey (HES) (Stoudt et al., 1965). The body size data obtained during this survey was restricted to stature and weight, some 10 work-space dimensions, three circumferences, two skinfolds and a single measure of body breadth. Even fewer dimensions were measured in 1971-1974 in the Health and Nutrition Examination Survey (HANES) (Abraham et al., 1976). These data are, therefore, of little use in this analysis.

In a recent study by the Federal Aviation Administration, 72 measurements were obtained on a sample of 423 airline stewardess trainees (Snow et al., 1975). This group of tall slender women is highly selected with regard to size, weight and proportion and the resulting data, therefore, are not particularly applicable to our purposes.

The anthropometric data which are probably most appropriate for this analysis are those obtained in the anthropometric surveys of Air Force women conducted in 1968 (Clauser et al.) and U. S. Army women conducted in 1977 (Churchill et al.). Both surveys used relatively sizeable samples (Air Force women, 1905 and Army women, 1331) and included a large number of measurements of body size variability (Air Force women 138, and Army women, 142). Indeed, a major impetus for the conduct of these surveys was the desire to develop an adequate base of body size information on the current military women's populations which would assist in the proper design of their clothing, personal-protective equipment and workspaces.

It is of some interest to see how closely these two women's samples correspond to one another in overall body

size and how representative they are of the civilian population in general. Figure 1 is a series of bar graphs depicting the mean and range of body weight and stature from the first to the ninety-ninth percentiles for representative U. S. populations.



* Mean, 1st, and 99th percentiles indicated with vertical line for each group.

Figure 1. Stature and weight of representative U. S. women's populations.*

It will be noted that the two military samples are quite similar in overall body size and that both military surveys correspond well with the civilian distribution except that the range for civilian women includes subjects weighing in excess of 190 pounds. Few, if any, military women are found in such high weight categories. It appears, therefore, that the anthropometric data from these two military surveys are the best available data base for the sizing analysis to be undertaken here.

The Samples

The sample populations whose dimensions form the basis of the analyses in this report were both surveyed in the last decade. In 1968 a total of 1905 women of the Air Force (AFW) were measured at five different air bases. In 1976-77, 1331

Army women, stationed at four Army bases, were measured. Study of the socio-military background data for both samples reveals that they are strikingly similar except in the matter of racial composition.

The median age of both samples is 23. Approximately 95% of all the subjects fall between the ages of 18 and 35 with by far the largest number to be found below age 27.

The Army sample is composed of about 26% officers and 74% enlisted personnel; the AFW population contained 29% officers and 71% enlisted women. In both cases the great majority of subjects came from the lowest three enlisted ranks and the lowest three officer grades.

Medical personnel make up the largest proportion of both Army and AFW samples. Two-thirds of the officers in the Army sample and 84% of the AFW officers' samples were nurses. Some 35% of the enlisted personnel in the Army and 52% of the AFW enlisted women were in medical, dental or health related occupations. It is difficult to make additional comparisons between the groups because the occupations are listed by specific job in the Army survey (i.e. clerk, cook, truck driver) and by general category in the AFW report (i.e. administrative personnel, supply). Probably the somewhat more heterogeneous distribution in the Army sample reflects the gradual expansion of job opportunities open to women in the armed services with each passing year.

The earlier AFW sample is 91% White and 8% Black while the Army sample is 75% White and 23% Black. The more heterogeneous racial compositon of the more recent sample probably reflects the improved climate and increased opportunities for Blacks in the past decade and, in this regard, the Army sample may well be more representative of the current Navy population than the older AFW sample.

The preponderance of subjects in both samples (65-70%) come from the Eastern United States with the largest concentration from the mid-Atlantic, South Atlantic and East North Central states. In both cases, the sample populations closely mirrored the distribution of the U. S. population as a whole.

There is great similarity in handedness in the subject populations. The Army women are 88% right-handed, 8% left-handed and 4% ambidextrous. The Air Force women are 88% right-handed, 9% left-handed and 3% ambidextrous.

Tables detailing the distributions of both samples in age, rank, military occupation, race, birthplace, handedness and measuring sites appear in Appendix A.

Selection of Measurements

While the human body in its innumerable irregularities provides any number of surfaces and points which can be usefully measured--and at least 350 different dimensions have been measured in major military and civilian surveys--the selection of measurements in this report is limited to those which have been found to be of most use in developing sizing programs for clothing worn on the torso. The 49 variables analyzed here were selected in large part by Navy clothing designers and supplemented by several additions recommended by the authors. (See Table 1.)

Since circumferential measurements of the body bear little relationship to vertical measurements, any practical sizing system should be based on at least a pair of measurements which can take into account that women with bust circumferences of 44 inches, for example, are not necessarily taller than those with 32-inch busts. Two sets of sizing charts are provided in this report--one for garments worn above the waist and one for garments worn below the waist. The control measurements for sizing shirts and jackets requested by the Navy clothing designers were combinations of bust circumference and neck to bustpoint length and bustpoint to bustpoint breadth and, for the lower body, waist circumference with crotch length. The midpoint value for these control dimensions for the size categories of interest are shown in Table 2 below. These values are similar to those given in NBS Voluntary Product Standard PS42-70, "Body Measurements for the Sizing of Women's Patterns and Apparel" - Sept. 1971.

TABLE 2

MIDPOINT VALUES FOR UPPER AND LOWER BODY SIZING CATEGORIES

UPPER TORSO	Junior Size	3	5	7	9			
	Bust Circumference	30	31	32	33			
	Neck to Bustpoint Lgth	7 3/4	8	8 1/4	8 1/2			
	Bustpoint to Bustpoint Br	6 3/4	6 5/8	6 7/8	7 1/8			
	Misses Size	6	8	10	12	14		
	Bust Circumference	31 1/2	32 1/2	33 1/2	35	36 1/2		
	Neck to Bustpoint Lgth	8 1/2	8 3/4	9	9 3/8	9 3/4		
	Bustpoint to Bustpoint Br	6 3/4	7	7 1/4	7 1/2	7 3/4		
	Women's Size	34	36	38	40			
	Bust Circumference	38	40	42	44			
	Neck to Bustpoint Lgth	10 5/8	11 1/8	11 5/8	12 1/8			
	Bustpoint to Bustpoint Br	8	8 1/4	8 1/2	8 3/4			
LOWER TORSO	Junior Size	3	5	7	9	11	13	15
	Waist Circumference	20	21	22	23	24 1/2	26	27 1/2
	Crotch Length	23 1/2	24 1/4	25	25 3/4	26 1/2	27 1/4	28
	Misses Size	6	8	10	12	14	16	18
	Waist Circumference	22 1/2	23 1/2	24 1/2	26	27 1/2	29	31
	Crotch Length	26 1/8	27 1/8	27 7/8	28 5/8	29 3/8	30 1/8	30 7/8
	Women's Size	38	40	42	44	46	48	
	Waist Circumference	34	36 1/2	39	41 1/2	44	46 1/2	
	Crotch Length	32 1/8	32 7/8	33 5/8	34	34 1/8	34 1/4	

TABLE 1

NAVY VARIABLES

Variable	Army	A.F.	Top	Bottom
1. Ankle circumference	X	X		X
2. Arm scye circumference	X	X	X	
3. Axilla to waist	X		X	
4. Back curvature at bust	X	X	X	
5. Back curvature at hip	X			X
6. Back curvature at waist	X		X	X
7. Biacromial (shoulder) breadth	X	X	X	
8. Biceps circumference, relaxed	X	X	X	
9. Bust circumference	X	X	X	
10. Bustpoint to bustpoint breadth		X	X	
11. Buttock circumference, sitting	X	X	X	X
12. Calf circumference	X	X		X
13. Cervicale height	X	X	X	
14. Chest breadth	X	X	X	
15. Chest circumference at scye	X	X	X	
16. Crotch height	X	X		X
17. Crotch length	X			X
18. Elbow circumference, flexed	X	X	X	
19. Front curvature at bust	Calculate		X	
20. Front curvature at hip	Calc.*			X
21. Front curvature at waist	Calc.*		X	X
22. Hip breadth	X	X	X	X
23. Hip circumference	X	X**		X
24. Interscye curvature		X	X	
25. Knee circumference	X	X		X
26. Knee (tibiale) height	X	X		X
27. Midscye, back	X		X	
28. Midscye, front	X		X	
29. Neck to bustpoint	X	X	X	

* These can only be calculated from Army data since the A.F. did not measure back curvatures at these levels.

** Use A.F. data for hip circumference 9" below waist (or 7" below waist in the few cases where this represents the larger measurement).

TABLE 1 (continued)

NAVY VARIABLES

Variable	Army	A.F.	Top	Bottom
30. Neck circumference	X	X	X	
31. Shoulder (bideltoid) breadth	X	X	X	
32. Shoulder circumference	X	X	X	
33. Shoulder length	X	X	X	
34. Sleeve inseam	X	X	X	
35. Spine to elbow length		X	X	
36. Spine to scye length		X	X	
37. Spine to wrist length		X	X	
38. Stature	X	X	X	X
39. Strap length		X	X	
40. Upper thigh circumference	X	X		X
41. Vertical trunk circumference, sitting	X	X	X	
42. Vertical trunk circumference, standing	X	X	X	
43. Waist back length	X	X	X	
44. Waist breadth	X	X	X	X
45. Waist circumference	X	X		X
46. Waist front length	X	X	X	
47. Waist height	X	X		X
48. Weight	X	X	X	X
49. Wrist circumference	X	X	X	

Measuring Techniques and Equipment

Although the Army and AFW surveys were made almost a decade apart, anthropometric techniques are sufficiently standardized so as to produce largely comparable results. A careful review of the descriptions of the measurements of each variable reveals only a few cases in which differences in measuring procedure should be the significant factor in differing results. Neck landmarks, for example, were marked around the perimeter of a tape placed around the neck on a plane perpendicular to the long axis of the neck in the AFW survey whereas in the Army survey the encircling tape was placed in such a way that its plane was not perpendicular to the long axis of the neck. While this seems not to have markedly affected the outcomes of measurements involving the neck landmarks, what differences do exist between the Army and AFW samples could well be attributed to the variation in measuring techniques.

The traditional series of body postures which subjects are instructed to assume for anthropometric measurements was used in both surveys. When the subject is measured in a standing position, she is asked to distribute her weight evenly on both feet and stand with her heels close together. The legs and trunk are held straight without stiffness and the arms hang straight but loosely at the sides with palms turned inward but not touching the body. The head is positioned in the so-called Frankfort plane--eyes straight ahead with the line of vision parallel to the plane of the floor. The standing position, in short, approximates the body posture in the position of military attention but without the stiffness and exaggerated bracing of the shoulders.

For measurements in the seated position, subjects are seated on a hard flat surface. An adjustable footstool is used so that the lower legs are maintained at a 90-degree angle to the long axis of the thighs. The thighs are held sufficiently apart so their long axes are parallel. The trunk is held erect with the head in the Frankfort plane. The upper arms hang relaxed at the sides with the lower arms flexed at the elbows at a 90-degree angle with the upper arms. The hands are held straight out maintaining a continuous line with the long axis of the lower arms.

The measuring equipment used in both surveys for the 49 variables used in this report included only the standard anthropometer and a steel tape. The anthropometer, whole and in its two parts, is the basic tool of the anthropometrist and is used to measure all heights. The detached upper half forms a beam caliper used to measure breadths, depths and segment lengths. Slightly different steel tapes for measuring circumferences were used in both surveys but there is no indication that the different brands caused any differences in

measurement. Weight was determined by a physician's balance scale.

CHAPTER II

Summary Statistics

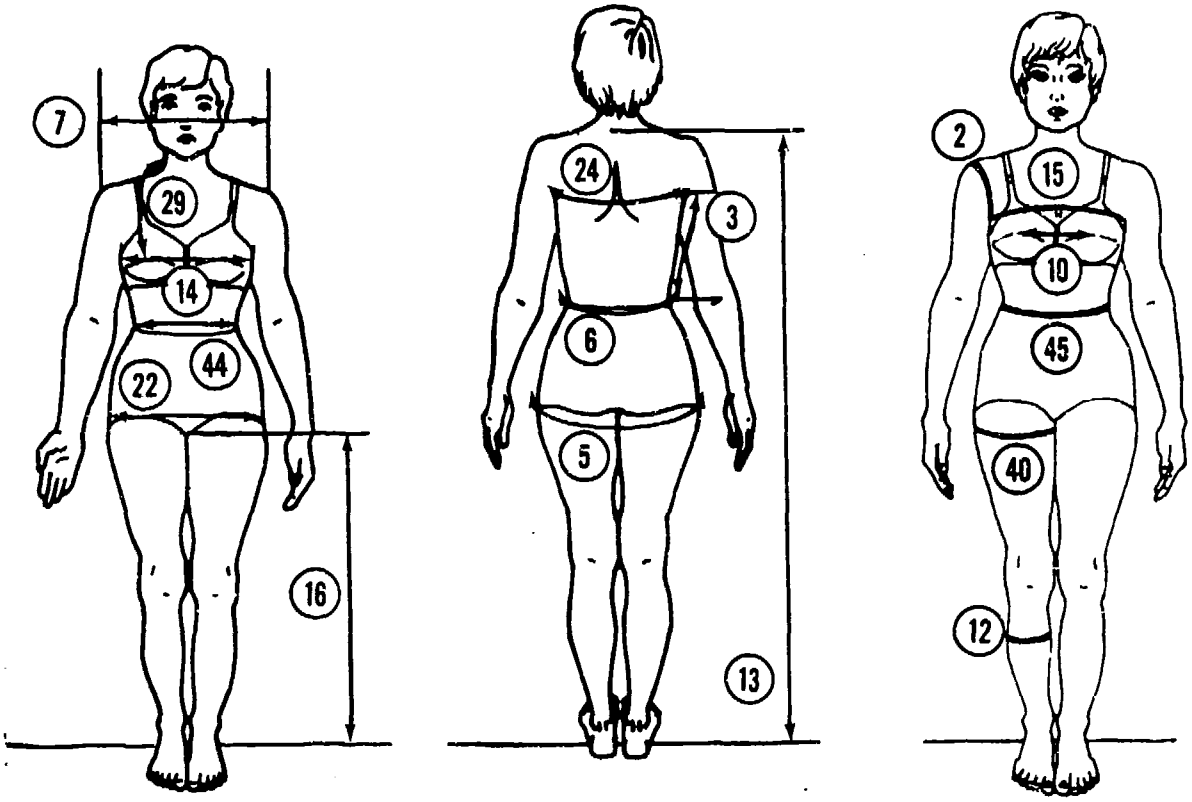
Presented in this chapter are the basic statistics for 49 variables measured in the AFW and/or Army surveys and selected for their relevance to sizing programs for Navy women's clothing. The chapter begins with a visual index which enables the reader to identify and find the specific measurement or measurements required for a particular pattern.

On the following pages each dimension is described and illustrated. In all cases the subjects assumed the standardized postures described in the previous chapter with variations indicated. All bilateral dimensions were measured on the right side unless otherwise indicated. Also indicated in the measurement descriptions are any meaningful variations between Army and AFW measuring procedures.

Results of the measurements from each survey appear in the form of summary statistics and percentile tables. Appendix B contains a brief explanation of the statistical terms and their significance for readers who are not familiar with them.

Of most practical use to Navy clothing designers may be adjusted composite values which appear in the lower left corners. These values result from combining the Army and AFW samples in all cases where review of the data for a given variable indicates that such composites are valid. Dimensions for which measurement results are not comparable are discussed in Chapter VI.

Concluding Chapter II are definitions of the landmarks used in measuring the subjects (with deviations between Army and AFW surveys noted) and a glossary of anthropometric terms relevant to the variables used in this report.



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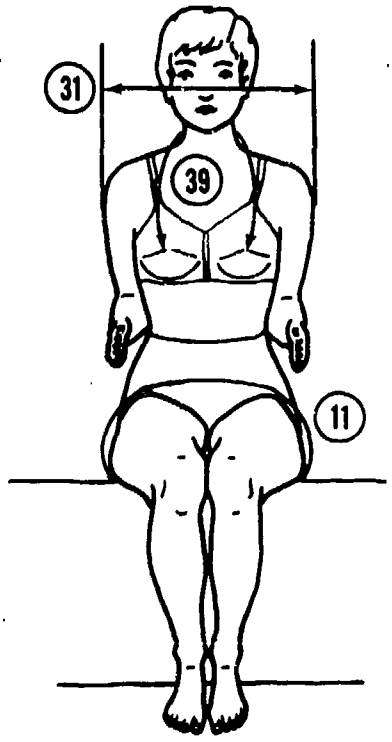
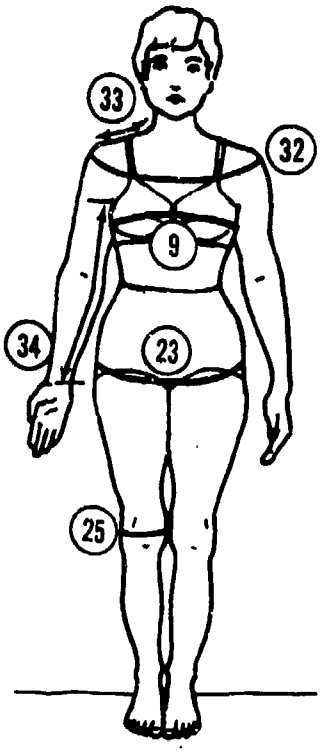
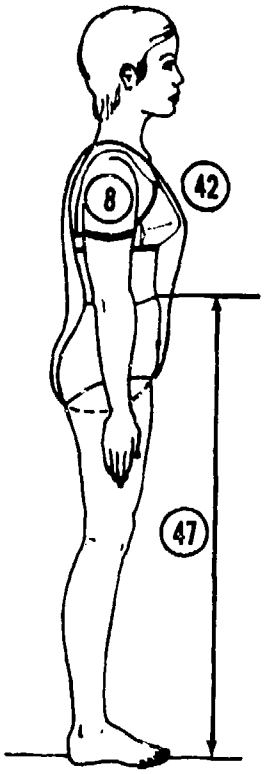
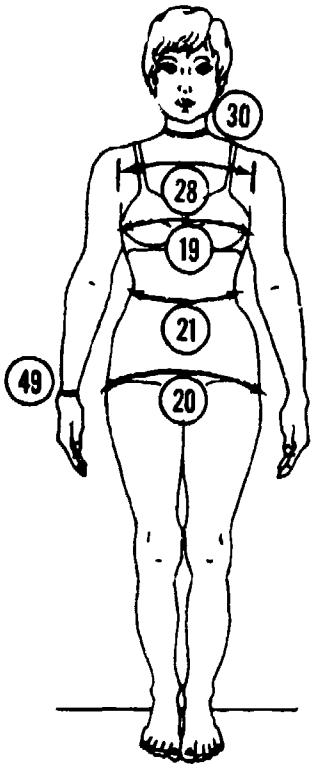


2. Arm scye circumference
3. Axilla to waist
5. Back curvature at hip
6. Back curvature at waist
7. Biacromial (shoulder) breadth
10. Bustpoint to bustpoint breadth
11. Buttock circumference (sitting)
12. Calf circumference
13. Cervicale height
14. Chest breadth
15. Chest circumference at scye
16. Crotch height
22. Hip breadth
24. Interscye curvature
29. Neck to bustpoint
31. Shoulder (bideltoid) breadth
39. Strap length
40. Upper thigh circumference
44. Waist breadth
45. Waist circumference

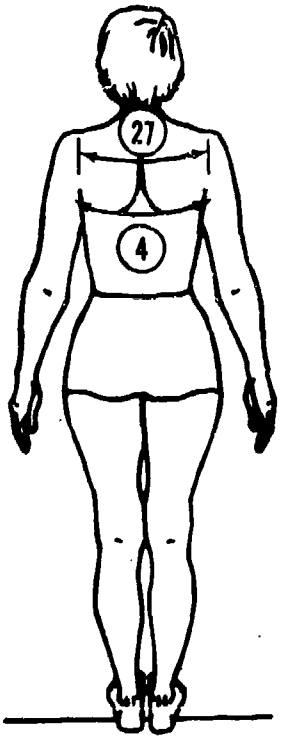


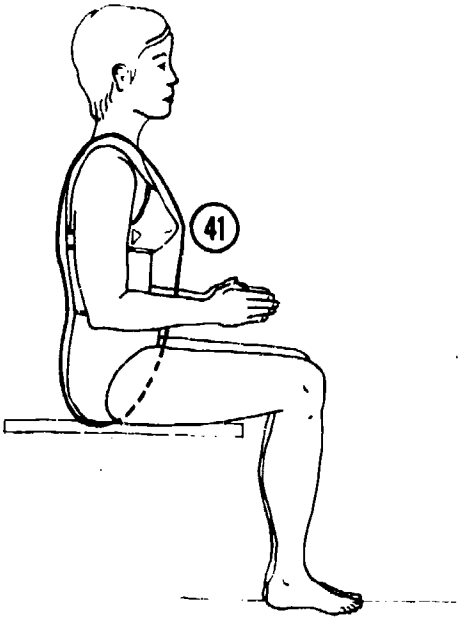


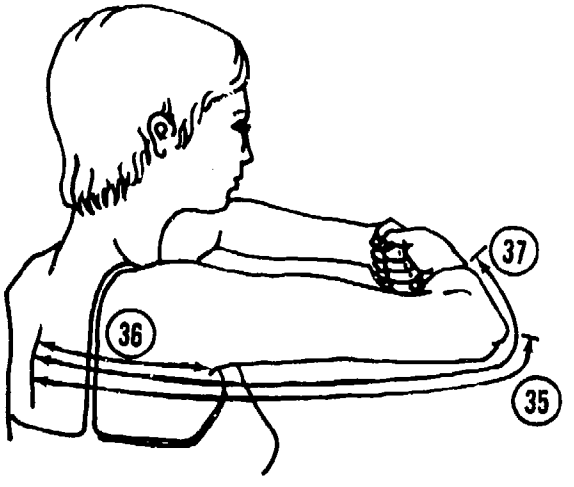


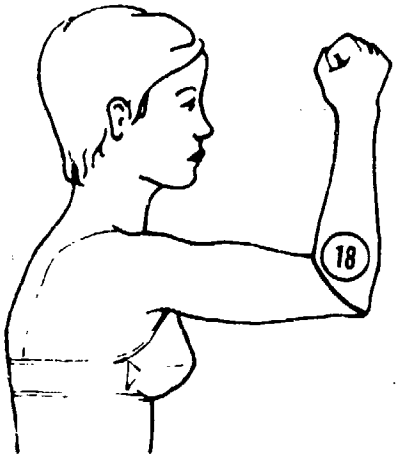
VISUAL INDEX (continued)

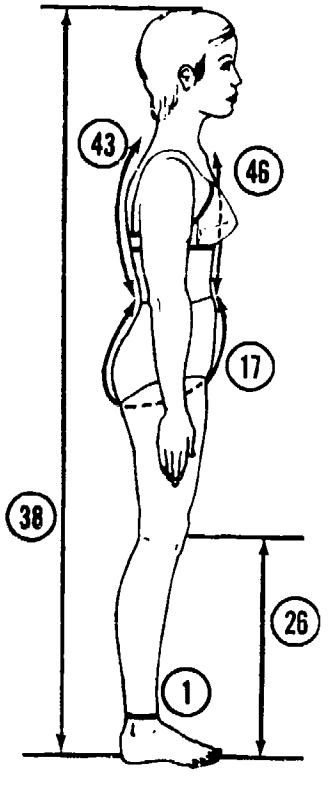
4. Back curvature at bust
8. Biceps circumference, relaxed
9. Bust circumference
19. Front curvature at bust
20. Front curvature at hip
21. Front curvature at waist
23. Hip circumference
25. Knee circumference
27. Midscye, back
28. Midscye, front
30. Neck circumference
32. Shoulder circumference
33. Shoulder length
34. Sleeve inseam
42. Vertical trunk circumference, standing
47. Waist height
49. Wrist circumference





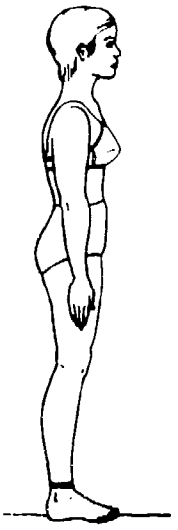






VISUAL INDEX (continued)

1. Ankle circumference
17. Crotch length
18. Elbow circumference, flexed
26. Knee (tibiale) height
35. Spine to elbow length
36. Spine to scye length
37. Spine to wrist length
38. Stature
41. Vertical trunk circumference, sitting
43. Waist back length
46. Waist front length



1. ANKLE CIRCUMFERENCE

Landmark: Ankle

Instrument: Tape

Position: Subject stands erect with weight distributed equally on both feet.

Procedure: With a tape held in a plane perpendicular to the long axis of the lower leg, measure the circumference of the leg at the level of the ankle landmark.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	8.16	INCHES
ST. DEV.	.49	INCHES
COEF. OF VAR.	6.0%	
SYMMETRY	.11	
KURTOSIS	2.99	

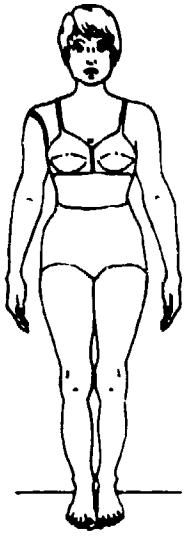
AFW

NO. OF SUBJECTS	1905	
MEAN	8.30	INCHES
ST. DEV.	.51	INCHES
COEF. OF VAR.	6.1%	
SYMMERTY	.26	
KURTOSIS	2.95	

ADJUSTED COMPOSITE VALUE	
MEAN	8.23
ST. DEV.	0.50

THE PERCENTILES

ARMY INCHES		AFW INCHES
9.35	99TH	9.60
9.21	98TH	9.43
9.12	97TH	9.33
9.00	95TH	9.19
8.80	90TH	8.98
8.68	85TH	8.84
8.58	80TH	8.73
8.49	75TH	8.64
8.41	70TH	8.56
8.34	65TH	8.49
8.28	60TH	8.42
8.21	55TH	8.35
8.15	50TH	8.28
8.09	45TH	8.22
8.03	40TH	8.15
7.96	35TH	8.09
7.90	30TH	8.02
7.82	25TH	7.94
7.74	20TH	7.86
7.65	15TH	7.77
7.54	10TH	7.66
7.37	5TH	7.50
7.26	3TH	7.40
7.18	2ND	7.33
7.05	1ST	7.22



2. ARM SCYE CIRCUMFERENCE

Landmark: Shoulder (acromiale)

Instrument: Tape

Position: Subject stands with shoulder relaxed and her arm abducted sufficiently to allow placement of a tape into the axilla (armpit).

Procedure: With a tape passing through the axilla and over the acromial landmark, measure the circumference of the scye. The axillary tissue is not compressed.

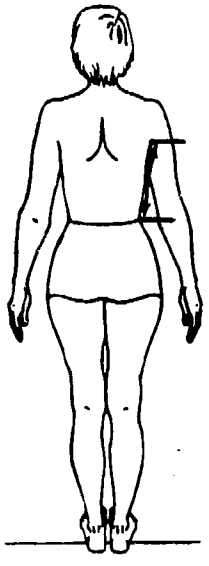
THE SUMMARY STATISTICS

	ARMY	AFW
NO. OF SUBJECTS	1331	1905
MEAN	14.77 INCHES	14.61 INCHES
ST. DEV.	.95 INCHES	.90 INCHES
COEF. OF VAR.	6.4%	6.2%
SYMMETRY	.55	.42
KURTOSIS	4.20	3.64

ADJUSTED COMPOSITE VALUE	
MEAN	14.69
ST. DEV.	0.93

THE PERCENTILES

ARMY INCHES		AFW INCHES
17.39	99TH	16.95
16.96	98TH	16.64
16.72	97TH	16.44
16.41	95TH	16.17
15.98	90TH	15.78
15.71	85TH	15.52
15.51	80TH	15.33
15.34	75TH	15.16
15.20	70TH	15.02
15.06	65TH	14.89
14.94	60TH	14.77
14.83	55TH	14.65
14.71	50TH	14.54
14.60	45TH	14.43
14.49	40TH	14.32
14.37	35TH	14.22
14.25	30TH	14.10
14.12	25TH	13.98
13.98	20TH	13.85
13.81	15TH	13.70
13.61	10TH	13.51
13.31	5TH	13.24
13.13	3TH	13.06
13.00	2ND	12.92
12.81	1ST	12.70



3. AXILLA TO WAIST
(Army only)

Landmarks: Axilla (armpit) and waist

Instrument: Tape

Position: Subject stands erect with arms slightly abducted.

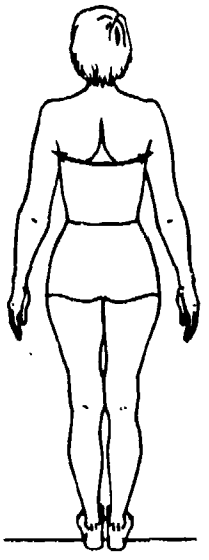
Procedure: With a tape, measure the surface distance along the midaxillary line from the axilla to the waist.

THE SUMMARY STATISTICS

ARMY		
NO. OF.SUBJECTS	1331	
MEAN	9.09	INCHES
ST. DEV.	.99	INCHES
COEF. OF VAR.	10.9%	
SYMMETRY	.60	
KURTOSIS	3.88	

THE PERCENTILES

ARMY INCHES		AFW INCHES
12.06	99TH	
11.52	98TH	
11.22	97TH	
10.85	95TH	
10.35	90TH	
10.05	85TH	
9.84	80TH	
9.66	75TH	
9.51	70TH	
9.37	65TH	
9.25	60TH	
9.13	55TH	
9.02	50TH	
8.90	45TH	
8.79	40TH	
8.67	35TH	
8.55	30TH	
8.42	25TH	
8.28	20TH	
8.11	15TH	
7.91	10TH	
7.61	5TH	
7.43	3TH	
7.30	2TH	
7.12	1TH	



4. BACK CURVATURE AT BUST

Landmark: Midaxillary line and bustpoint

Instrument: Tape

Position: Subject stands erect with arms slightly abducted (Army) or with hands on hips (AFW).

Procedure: With a tape, measure the surface distance across the back between the midaxillary landmarks at the level of the bustpoint landmarks.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	16.52	INCHES
ST. DEV.	1.25	INCHES
COEF. OF VAR.	7.6%	
SYMMETRY	.57	
KURTOSIS	4.78	

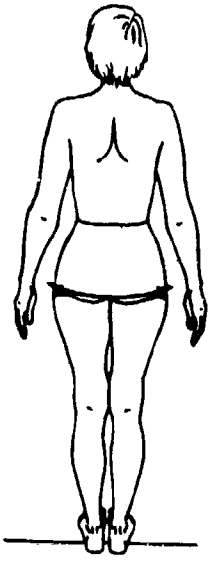
AFW

NO. OF SUBJECTS	1905	
MEAN	16.59	INCHES
ST. DEV.	1.20	INCHES
COEF. OF VAR.	7.2%	
SYMMERTY	.44	
KURTOSIS	3.28	

ADJUSTED COMPOSITE VALUE	
MEAN	16.56
ST. DEV.	1.23

THE PERCENTILES

ARMY INCHES		AFW INCHES
19.91	99TH	19.78
19.36	98TH	19.36
19.04	97TH	19.09
18.64	95TH	18.73
18.09	90TH	18.18
17.75	85TH	17.83
17.50	80TH	17.55
17.28	75TH	17.33
17.10	70TH	17.13
16.93	65TH	16.95
16.77	60TH	16.79
16.62	55TH	16.63
16.47	50TH	16.48
16.33	45TH	16.34
16.18	40TH	16.20
16.02	35TH	16.05
15.86	30TH	15.91
15.69	25TH	15.75
15.49	20TH	15.58
15.27	15TH	15.39
14.99	10TH	15.15
14.58	5TH	14.79
14.33	3TH	14.56
14.16	2ND	14.38
13.90	1ST	14.07



5. BACK CURVATURE AT HIP
(Army only)

Landmarks: Midaxillary line and buttock

Instrument: Tape

Position: Subject stands erect with arms slightly abducted.

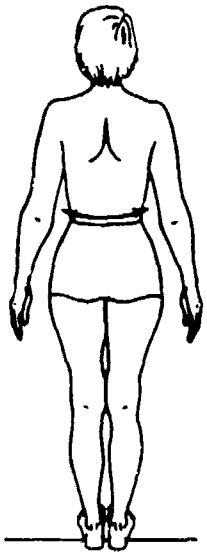
Procedure: With a tape, measure the surface distance across the back between the midaxillary landmarks at the level of the maximum protrusion of the buttocks.

THE SUMMARY STATISTICS

ARMY	
NO. OF.SUBJECTS	1331
MEAN	18.70 INCHES
ST. DEV.	1.47 INCHES
COEF. OF VAR.	7.9%
SYMMETRY	.47
KURTOSIS	4.26

THE PERCENTILES

ARMY INCHES		AFW INCHES
22.58	99TH	
22.02	98TH	
21.69	97TH	
21.24	95TH	
20.60	90TH	
20.19	85TH	
19.88	80TH	
19.61	75TH	
19.38	70TH	
19.18	65TH	
18.98	60TH	
18.80	55TH	
18.62	50TH	
18.45	45TH	
18.27	40TH	
18.10	35TH	
17.91	30TH	
17.71	25TH	
17.49	20TH	
17.24	15TH	
16.93	10TH	
16.47	5TH	
16.16	3TH	
15.94	2TH	
15.58	1TH	



6. BACK CURVATURE AT WAIST
(Army only)

Landmarks: Waist and midaxillary line

Instrument: Tape

Position: Subject stands erect with arms slightly abducted.

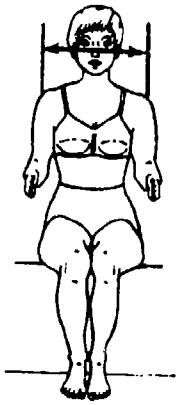
Procedure: With a tape, measure the surface distance across the back between the midaxillary line at the level of the waist landmark.

THE SUMMARY STATISTICS

ARMY		
NO. OF.SUBJECTS	1331	
MEAN	13.90	INCHES
ST. DEV.	1.37	INCHES
COEF. OF VAR.	9.9%	
SYMMETRY	1.26	
KURTOSIS	6.84	

THE PERCENTILES

ARMY INCHES		AFW INCHES
18.24	99TH	
17.42	98TH	
16.96	97TH	
16.39	95TH	
15.63	90TH	
15.18	85TH	
14.86	80TH	
14.61	75TH	
14.39	70TH	
14.20	65TH	
14.03	60TH	
13.87	55TH	
13.72	50TH	
13.57	45TH	
13.43	40TH	
13.29	35TH	
13.14	30TH	
12.98	25TH	
12.81	20TH	
12.62	15TH	
12.38	10TH	
12.04	5TH	
11.83	3TH	
11.68	2TH	
11.45	1TH	



7. BIACROMIAL (SHOULDER) BREADTH

Landmark: Shoulder (acromiale)

Instrument: Beam caliper

Position: Subject sits erect, looking straight ahead, upper arms hanging relaxed, forearms and hands extended forward horizontally.

Procedure: With a beam caliper, measure the distance between the acromial landmarks.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	255	
MEAN	14.06	INCHES
ST. DEV.	.63	INCHES
COEF. OF VAR.	4.5%	
SYMMETRY	-.08	
KURTOSIS	2.97	

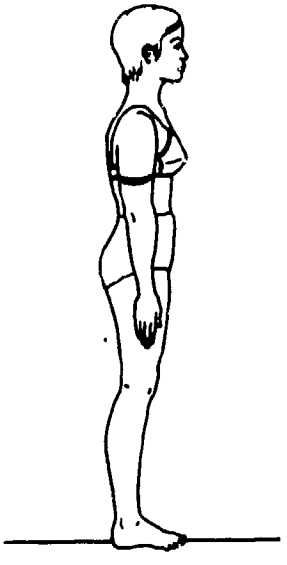
AFW

NO. OF SUBJECTS	1905	
MEAN	14.11	INCHES
ST. DEV.	.65	INCHES
COEF. OF VAR.	4.6%	
SYMMERTY	.09	
KURTOSIS	3.19	

ADJUSTED COMPOSITE VALUE	
MEAN	14.08
ST. DEV.	0.64

THE PERCENTILES

ARMY INCHES		AFW INCHES
15.60	99TH	15.67
15.38	98TH	15.48
15.26	97TH	15.36
15.09	95TH	15.19
14.86	90TH	14.94
14.71	85TH	14.77
14.59	80TH	14.64
14.49	75TH	14.53
14.40	70TH	14.43
14.31	65TH	14.34
14.23	60TH	14.26
14.15	55TH	14.18
14.07	50TH	14.10
13.99	45TH	14.02
13.90	40TH	13.94
13.82	35TH	13.86
13.73	30TH	13.77
13.63	25TH	13.68
13.52	20TH	13.58
13.39	15TH	13.46
13.23	10TH	13.30
13.01	5TH	13.06
12.88	3TH	12.90
12.79	2ND	12.78
12.68	1ST	12.57



8. BICEPS CIRCUMFERENCE, RELAXED

Landmark: Biceps

Instrument: Tape

Position: Subject stands with arm slightly abducted.

Procedure: With a tape held in a plane perpendicular to the long axis of the upper arm, measure the circumference of the arm at the level of the biceps landmark.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	255	
MEAN	10.19	INCHES
ST. DEV.	1.01	INCHES
COEF. OF VAR.	9.9%	
SYMMETRY	.43	
KURTOSIS	3.57	

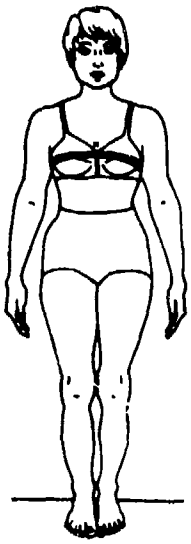
AFW

NO. OF SUBJECTS	1905	
MEAN	10.08	INCHES
ST. DEV.	.90	INCHES
COEF. OF VAR.	8.9%	
SYMMERTY	.62	
KURTOSIS	4.03	

ADJUSTED COMPOSITE VALUE	
MEAN	10.13
ST. DEV.	0.95

THE PERCENTILES

ARMY INCHES		AFW INCHES
13.18	99TH	12.52
12.85	98TH	12.17
12.31	97TH	11.96
11.92	95TH	11.67
11.34	90TH	11.26
11.10	85TH	10.99
10.93	80TH	10.79
10.77	75TH	10.62
10.66	70TH	10.48
10.55	65TH	10.35
10.42	60TH	10.22
10.28	55TH	10.11
10.19	50TH	10.00
10.10	45TH	9.89
10.00	40TH	9.78
9.85	35TH	9.68
9.66	30TH	9.57
9.49	25TH	9.45
9.32	20TH	9.32
9.15	15TH	9.18
8.82	10TH	9.00
8.48	5TH	8.75
8.41	3TH	8.59
8.38	2ND	8.47
8.28	1ST	8.29



9. BUST CIRCUMFERENCE

Landmark: Bustpoint

Instrument: Tape

Position: Subject stands erect, looking straight ahead, heels together, and weight distributed equally on both feet. The arms are abducted sufficiently to allow clearance of a tape between the arms and trunk.

Procedure: With a tape held in the horizontal plane and passing over the bustpoints, measure the circumference of the trunk. The reading is made at the point of maximum quiet inspiration.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	34.73	INCHES
ST. DEV.	2.53	INCHES
COEF. OF VAR.	7.3%	
SYMMETRY	.66	
KURTOSIS	4.73	

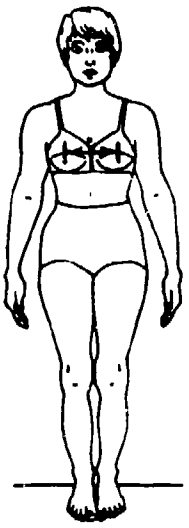
AFW

NO. OF SUBJECTS	1905	
MEAN	35.33	INCHES
ST. DEV.	2.24	INCHES
COEF. OF VAR.	6.3%	
SYMMERTY	.74	
KURTOSIS	3.87	

ADJUSTED COMPOSITE VALUE	
MEAN	35.03
ST. DEV.	2.40

THE PERCENTILES

ARMY INCHES		AFW INCHES
41.67	99TH	41.96
40.47	98TH	40.91
39.80	97TH	40.28
38.97	95TH	39.46
37.86	90TH	38.29
37.18	85TH	37.57
36.68	80TH	37.04
36.25	75TH	36.60
35.88	70TH	36.22
35.54	65TH	35.89
35.21	60TH	35.59
34.90	55TH	35.30
34.60	50TH	35.04
34.29	45TH	34.78
33.98	40TH	34.52
33.66	35TH	34.27
33.33	30TH	34.01
32.96	25TH	33.74
32.56	20TH	33.45
32.11	15TH	33.12
31.57	10TH	32.72
30.85	5TH	32.13
30.46	3TH	31.75
30.24	2ND	31.46
30.01	1ST	30.99



10. BUSTPOINT TO BUSTPOINT BREADTH (AFW only)

Landmark: Bustpoint

Instrument: Beam caliper

Position: The subject stands erect looking straight ahead.

Procedure: With a beam caliper, measure the horizontal distance between the bustpoint landmarks.

THE SUMMARY STATISTICS

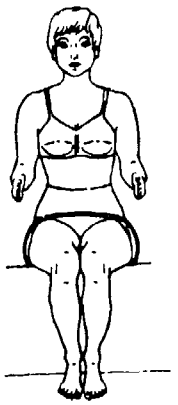
AFW

NO. OF SUBJECTS	1905
MEAN	7.30 INCHES
ST. DEV.	.61 INCHES
COEF. OF VAR.	8.4%
SYMMERTY	.21
KURTOSIS	3.41

THE PERCENTILES

ARMY INCHES		AFW INCHES
	99TH	8.87
	98TH	8.65
	97TH	8.51
	95TH	8.34
	90TH	8.08
	85TH	7.91
	80TH	7.78
	75TH	7.68
	70TH	7.58
	65TH	7.50
	60TH	7.42
	55TH	7.34
	50TH	7.27
	45TH	7.20
	40TH	7.12
	35TH	7.05
	30TH	6.97
	25TH	6.88
	20TH	6.79
	15TH	6.68
	10TH	6.54
	5TH	6.32
	3RD	6.19
	2ND	6.08
	1ST	5.91

11. BUTTOCK CIRCUMFERENCE, SITTING



Landmarks: None

Instrument: Tape

Position: Subject sits erect on a flat surface, looking straight ahead, thighs parallel, upper arms hanging relaxed, forearms and hands extended forward horizontally (Army) or arms folded across chest (AFW).

Procedure: Drawing a tape as far forward as freely possible under the subject's buttocks and bringing it upward and diagonally across her lap at the level of the thigh-trunk intersection, measure the circumference of the buttocks.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	255	
MEAN	38.62	INCHES
ST. DEV.	2.69	INCHES
COEF. OF VAR.	7.0%	
SYMMETRY	.45	
KURTOSIS	3.48	

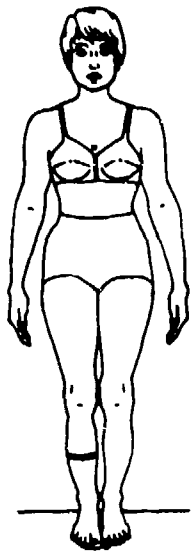
AFW

NO. OF SUBJECTS	1905	
MEAN	39.37	INCHES
ST. DEV.	2.40	INCHES
COEF. OF VAR.	6.1%	
SYMMERTY	.62	
KURTOSIS	3.98	

ADJUSTED COMPOSITE VALUE	
MEAN	39.00
ST. DEV.	2.50

THE PERCENTILES

ARMY INCHES		AFW INCHES
45.64	99TH	46.47
44.62	98TH	45.22
44.01	97TH	44.50
43.22	95TH	43.62
42.08	90TH	42.41
41.35	85TH	41.69
40.79	80TH	41.16
40.31	75TH	40.73
39.89	70TH	40.36
39.51	65TH	40.03
39.15	60TH	39.73
38.80	55TH	39.44
38.47	50TH	39.17
38.13	45TH	38.89
37.80	40TH	38.62
37.45	35TH	38.35
37.10	30TH	38.06
36.72	25TH	37.75
36.31	20TH	37.40
35.84	15TH	37.01
35.29	10TH	36.51
34.54	5TH	35.77
34.11	3TH	35.29
33.84	2ND	34.94
33.50	1ST	34.41



12. CALF CIRCUMFERENCE

Landmark: Calf

Instrument: Tape

Position: Subject stands erect, heels approximately 10 centimeters apart, and weight distributed equally on both feet.

Procedure: With a tape held in a plane perpendicular to the long axis of the lower leg, measure the circumference of the calf at the level of the calf landmark.

THE SUMMARY STATISTICS

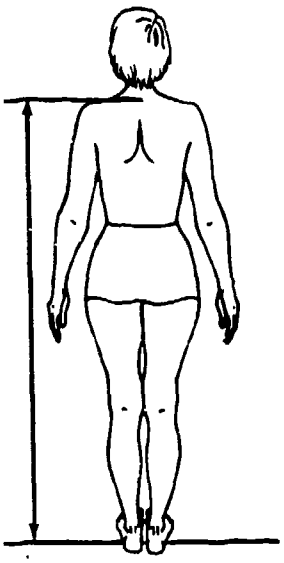
ARMY		
NO. OF SUBJECTS	1331	
MEAN	13.82	INCHES
ST. DEV.	.99	INCHES
COEF. OF VAR.	7.2%	
SYMMETRY	.23	
KURTOSIS	3.44	

AFW		
NO. OF SUBJECTS	1905	
MEAN	13.44	INCHES
ST. DEV.	.88	INCHES
COEF. OF VAR.	6.5%	
SYMMERTY	.25	
KURTOSIS	3.28	

ADJUSTED COMPOSITE VALUE	
MEAN	13.63
ST. DEV.	0.94

THE PERCENTILES

ARMY INCHES		AFW INCHES
16.26	99TH	15.62
15.92	98TH	15.34
15.71	97TH	15.17
15.45	95TH	14.94
15.07	90TH	14.59
14.82	85TH	14.36
14.63	80TH	14.18
14.46	75TH	14.02
14.31	70TH	13.88
14.18	65TH	13.76
14.05	60TH	13.64
13.92	55TH	13.53
13.80	50TH	13.41
13.67	45TH	13.30
13.55	40TH	13.19
13.42	35TH	13.08
13.28	30TH	12.96
13.13	25TH	12.83
12.97	20TH	12.69
12.78	15TH	12.53
12.54	10TH	12.33
12.22	5TH	12.05
12.02	3TH	11.87
11.90	2ND	11.75
11.72	1ST	11.57



13. CERVICALE HEIGHT

Landmark: Cervicale

Instrument: Anthropometer

Position: Subject stands erect, looking straight ahead, heels together and weight distributed equally on both feet.

Procedure: With an anthropometer, measure the vertical distance from the standing surface to the cervical landmark.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	255	
MEAN	55.23	INCHES
ST. DEV.	2.37	INCHES
COEF. OF VAR.	4.3%	
SYMMETRY	.18	
KURTOSIS	3.35	

AFW

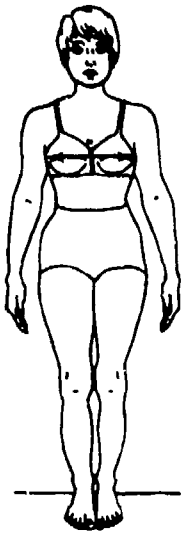
NO. OF SUBJECTS	1905	
MEAN	54.80	INCHES
ST. DEV.	2.17	INCHES
COEF. OF VAR.	4.0%	
SYMMERTY	.14	
KURTOSIS	2.78	

ADJUSTED COMPOSITE VALUE	
MEAN	55.01
ST. DEV.	2.25

THE PERCENTILES

ARMY INCHES		AFW INCHES
61.75	99TH	60.02
60.44	98TH	59.37
59.76	97TH	58.97
58.97	95TH	58.43
58.00	90TH	57.61
57.45	85TH	57.06
57.05	80TH	56.63
56.71	75TH	56.25
56.41	70TH	55.92
56.13	65TH	55.61
55.86	60TH	55.31
55.59	55TH	55.03
55.32	50TH	54.75
55.04	45TH	54.47
54.74	40TH	54.19
54.43	35TH	53.89
54.08	30TH	53.59
53.70	25TH	53.26
53.26	20TH	52.90
52.74	15TH	52.49
52.08	10TH	51.99
51.17	5TH	51.30
50.65	3TH	50.89
50.33	2ND	50.62
49.98	1ST	50.24

14. CHEST BREADTH



Landmark: Bustpoint

Instrument: Beam caliper

Position: Subject stands erect, looking straight ahead, with heels together and arms slightly abducted.

Procedure: With a beam caliper, measure the horizontal distance across the torso at the level of the bustpoint landmarks.

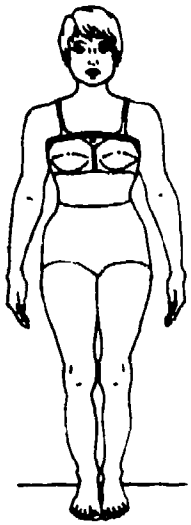
THE SUMMARY STATISTICS

ARMY		
NO. OF SUBJECTS	1331	
MEAN	11.12	INCHES
ST. DEV.	.73	INCHES
COEF. OF VAR.	6.6%	
SYMMETRY	.65	
KURTOSIS	5.19	
AFW		
NO. OF SUBJECTS	1905	
MEAN	11.02	INCHES
ST. DEV.	.75	INCHES
COEF. OF VAR.	6.8%	
SYMMERTY	.47	
KURTOSIS	3.39	

ADJUSTED COMPOSITE VALUE	
MEAN	11.07
ST. DEV.	0.74

THE PERCENTILES

ARMY INCHES		AFW INCHES
13.07	99TH	13.06
12.77	98TH	12.77
12.59	97TH	12.60
12.37	95TH	12.36
12.05	90TH	12.02
11.85	85TH	11.79
11.70	80TH	11.62
11.57	75TH	11.48
11.46	70TH	11.36
11.36	65TH	11.25
11.26	60TH	11.15
11.17	55TH	11.05
11.08	50TH	10.96
10.99	45TH	10.86
10.90	40TH	10.77
10.81	35TH	10.68
10.72	30TH	10.59
10.62	25TH	10.49
10.50	20TH	10.38
10.37	15TH	10.25
10.21	10TH	10.10
9.99	5TH	9.87
9.86	3TH	9.73
9.77	2ND	9.62
9.64	1ST	9.45



15. CHEST CIRCUMFERENCE AT SCYE

Landmark: Scye

Instrument: Tape

Position: Subject stands erect, looking straight ahead, heels together, weight distributed equally on both feet, shoulders relaxed, and arms abducted sufficiently to allow passage of a tape between arms and trunk.

Procedure: With a tape, measure the circumference of the trunk at the level of the horizontal scye landmark. The reading is made at the point of maximum quiet inspiration.

THE SUMMARY STATISTICS

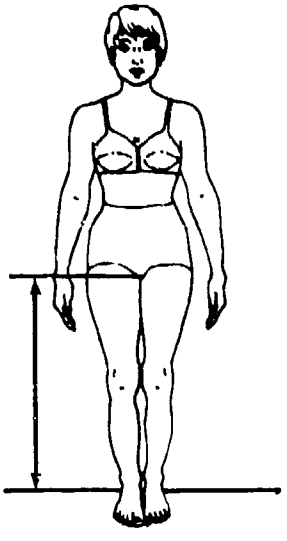
ARMY		
NO. OF SUBJECTS	1331	
MEAN	33.68	INCHES
ST. DEV.	2.05	INCHES
COEF. OF VAR.	6.1%	
SYMMETRY	.64	
KURTOSIS	4.95	

AFW		
NO. OF SUBJECTS	1905	
MEAN	33.17	INCHES
ST. DEV.	1.95	INCHES
COEF. OF VAR.	5.9%	
SYMMERTY	.61	
KURTOSIS	3.66	

ADJUSTED COMPOSITE VALUE	
MEAN	33.43
ST. DEV.	2.00

THE PERCENTILES

ARMY INCHES		AFW INCHES
39.15	99TH	38.88
38.28	98TH	37.95
37.77	97TH	37.40
37.14	95TH	36.70
36.25	90TH	35.72
35.70	85TH	35.11
35.28	80TH	34.67
34.93	75TH	34.30
34.62	70TH	33.98
34.34	65TH	33.70
34.08	60TH	33.44
33.82	55TH	33.20
33.58	50TH	32.97
33.33	45TH	32.74
33.08	40TH	32.51
32.82	35TH	32.29
32.56	30TH	32.06
32.27	25TH	31.81
31.95	20TH	31.54
31.59	15TH	31.23
31.14	10TH	30.85
30.53	5TH	30.30
30.17	3TH	29.94
29.93	2ND	29.68
29.61	1ST	29.26



16. CROTCH HEIGHT

Landmarks: None

Instrument: Anthropometer

Position: Subject stands erect, looking straight ahead, weight distributed equally on both feet, heels approximately 10 cm apart (initially: Army; throughout: AFW).

Procedure: The arm of the anthropometer is raised (by the subject herself: AFW; by the technician: Army) until contact is made with the inferior surface of the crotch. The subject maintains her position (AFW) or brings her heels together (Army) and the vertical distance from the standing surface to the crotch is measured.

THE SUMMARY STATISTICS

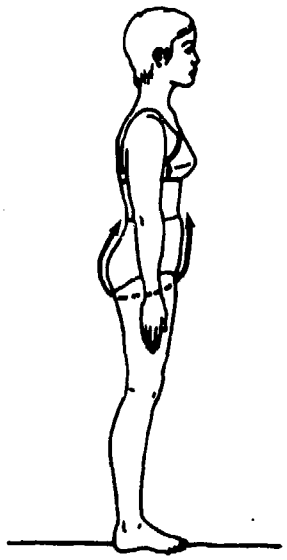
ARMY		
NO. OF SUBJECTS	1331	
MEAN	30.07	INCHES
ST. DEV.	1.72	INCHES
COEF. OF VAR.	5.7%	
SYMMETRY	.21	
KURTOSIS	2.98	

AFW		
NO. OF SUBJECTS	1905	
MEAN	29.33	INCHES
ST. DEV.	1.59	INCHES
COEF. OF VAR.	5.4%	
SYMMERTY	.17	
KURTOSIS	3.00	

ADJUSTED COMPOSITE VALUE	
MEAN	29.70
ST. DEV.	1.66

THE PERCENTILES

ARMY INCHES		AFW INCHES
34.18	99TH	33.17
33.75	98TH	32.73
33.46	97TH	32.44
33.04	95TH	32.04
32.36	90TH	31.42
31.89	85TH	31.00
31.52	80TH	30.67
31.20	75TH	30.39
30.92	70TH	30.14
30.66	65TH	29.91
30.42	60TH	29.69
30.20	55TH	29.48
29.97	50TH	29.28
29.75	45TH	29.08
29.54	40TH	28.88
29.32	35TH	28.67
29.09	30TH	28.46
28.85	25TH	28.23
28.58	20TH	27.98
28.29	15TH	27.69
27.92	10TH	27.34
27.37	5TH	26.82
27.01	3TH	26.50
26.74	2ND	26.26
26.30	1ST	25.88



17. CROTCH LENGTH
(Army only)

Landmarks: Waist and buttocks

Instrument: Tape

Position: Subject initially stands erect, heels approximately 10 centimeters apart, and weight distributed equally on both feet.

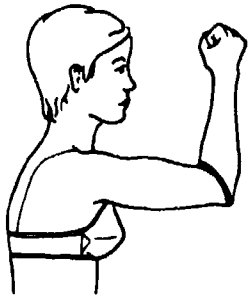
Procedure: With a tape, measure the surface distance from the waist level directly over the protuberance of the right buttock, across the buttock, through the crotch, and up to the anterior waist landmark after the subject has brought her heels together. Maintain the contact of the tape in the crotch. The tape follows the posterior and anterior body contour.

THE SUMMARY STATISTICS

ARMY		
NO. OF.SUBJECTS	1331	
MEAN	28.71	INCHES
ST. DEV.	2.15	INCHES
COEF. OF VAR.	7.5%	
SYMMETRY	-.29	
KURTOSIS	4.07	

THE PERCENTILES

ARMY INCHES		AFW INCHES
33.60	99TH	
32.99	98TH	
32.60	97TH	
32.09	95TH	
31.33	90TH	
30.83	85TH	
30.44	80TH	
30.10	75TH	
29.81	70TH	
29.54	65TH	
29.29	60TH	
29.04	55TH	
28.79	50TH	
28.55	45TH	
28.29	40TH	
28.03	35TH	
27.75	30TH	
27.44	25TH	
27.07	20TH	
26.64	15TH	
26.05	10TH	
25.09	5TH	
24.39	3TH	
23.83	2TH	
22.87	1TH	



18. ELBOW CIRCUMFERENCE, FLEXED

Landmark: None

Instrument: Tape

Position: Subject stands, upper arm raised so that its long axis is horizontal, elbow flexed 90 degrees, biceps strongly contracted, and fist tightly clenched.

Procedure; With a tape passing over the tip and through the crotch of the elbow, measure the circumference of the elbow.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	10.23	INCHES
ST. DEV.	.64	INCHES
COEF. OF VAR.	6.3%	
SYMMETRY	.38	
KURTOSIS	3.43	

AFW

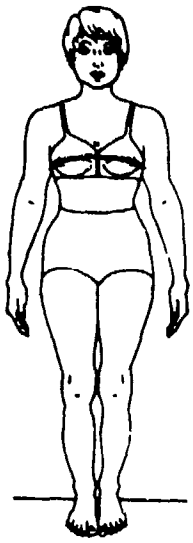
NO. OF SUBJECTS	1905	
MEAN	10.62	INCHES
ST. DEV.	.70	INCHES
COEF. OF VAR.	6.6%	
SYMMERTY	.26	
KURTOSIS	3.31	

ADJUSTED COMPOSITE VALUE	
MEAN	10.42
ST. DEV.	0.67

THE PERCENTILES

ARMY INCHES		AFW INCHES
11.93	99TH	12.39
11.68	98TH	12.16
11.53	97TH	12.01
11.34	95TH	11.82
11.05	90TH	11.53
10.88	85TH	11.34
10.74	80TH	11.19
10.62	75TH	11.07
10.53	70TH	10.96
10.44	65TH	10.86
10.35	60TH	10.77
10.27	55TH	10.68
10.19	50TH	10.59
10.12	45TH	10.50
10.04	40TH	10.41
9.96	35TH	10.33
9.88	30TH	10.23
9.79	25TH	10.13
9.70	20TH	10.02
9.59	15TH	9.90
9.45	10TH	9.74
9.24	5TH	9.51
9.11	3TH	9.36
9.01	2ND	9.24
8.85	1ST	9.07

19. FRONT CURVATURE AT BUST



This dimension was not measured; it was calculated by subtracting the back-curvature-at bust dimension from bust circumference.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	18.21	INCHES
ST. DEV.	1.60	INCHES
COEF. OF VAR.	8.8%	
SYMMETRY	.46	
KURTOSIS	3.71	

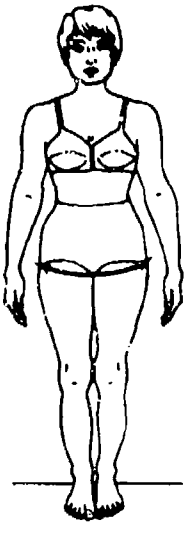
AFW

NO. OF SUBJECTS	1905	
MEAN	18.73	INCHES
ST. DEV.	1.76	INCHES
COEF. OF VAR.	9.4%	
SYMMERTY	.44	
KURTOSIS	3.64	

ADJUSTED COMPOSITE VALUE	
MEAN	18.47
ST. DEV.	1.68

THE PERCENTILES

ARMY INCHES		AFW INCHES
22.43	99TH	23.51
21.83	98TH	22.86
21.46	97TH	22.46
20.98	95TH	21.91
20.29	90TH	21.11
19.84	85TH	20.59
19.50	80TH	20.19
19.21	75TH	19.86
18.96	70TH	19.57
18.73	65TH	19.32
18.51	60TH	19.08
18.31	55TH	18.85
18.11	50TH	18.64
17.91	45TH	18.43
17.71	40TH	18.22
17.51	35TH	18.01
17.30	30TH	17.80
17.08	25TH	17.57
16.84	20TH	17.32
16.56	15TH	17.03
16.22	10TH	16.68
15.75	5TH	16.14
15.47	3TH	15.78
15.27	2ND	15.50
14.98	1ST	15.04



20. FRONT CURVATURE AT HIP
(Army only)

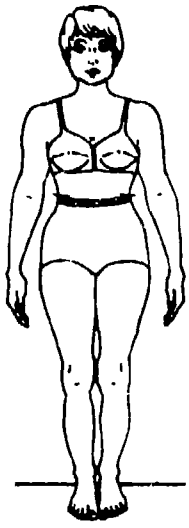
This dimension was not measured; it was calculated by subtracting the back-curvature-at-hip dimension from hip circumference.

THE SUMMARY STATISTICS

ARMY		
NO. OF.SUBJECTS	1331	
MEAN	18.90	INCHES
ST. DEV.	1.44	INCHES
COEF. OF VAR.	7.6%	
SYMMETRY	.61	
KURTOSIS	4.51	

THE PERCENTILES

ARMY INCHES		AFW INCHES
22.80	99TH	
22.12	98TH	
21.74	97TH	
21.28	95TH	
20.66	90TH	
20.28	85TH	
20.00	80TH	
19.76	75TH	
19.56	70TH	
19.37	65TH	
19.19	60TH	
19.01	55TH	
18.84	50TH	
18.67	45TH	
18.50	40TH	
18.32	35TH	
18.12	30TH	
17.92	25TH	
17.69	20TH	
17.43	15TH	
17.10	10TH	
16.66	5TH	
16.42	3TH	
16.27	2TH	
16.08	1TH	



21. FRONT CURVATURE AT WAIST
(Army only)

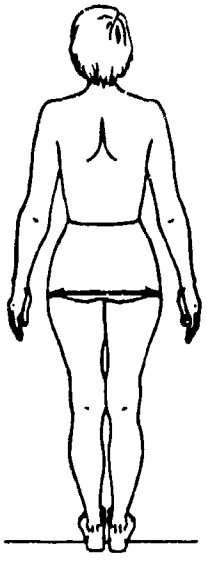
This dimension was not measured; it was calculated by subtracting the back-curvature-at-waist dimension from waist circumference.

THE SUMMARY STATISTICS

ARMY		
NO. OF.SUBJECTS	1331	
MEAN	14.06	INCHES
ST. DEV.	1.51	INCHES
COEF. OF VAR.	10.7%	
SYMMETRY	.97	
KURTOSIS	5.56	

THE PERCENTILES

ARMY INCHES		AFW INCHES
18.58	99TH	
17.77	98TH	
17.30	97TH	
16.73	95TH	
15.96	90TH	
15.50	85TH	
15.16	80TH	
14.89	75TH	
14.65	70TH	
14.45	65TH	
14.25	60TH	
14.07	55TH	
13.90	50TH	
13.73	45TH	
13.56	40TH	
13.39	35TH	
13.21	30TH	
13.02	25TH	
12.82	20TH	
12.59	15TH	
12.31	10TH	
11.93	5TH	
11.71	3TH	
11.56	2TH	
11.37	1TH	



22. HIP BREADTH

Landmark: None

Instrument: Beam caliper

Position: Subject stands erect, heels together, and weight distributed equally on both feet.

Procedure: With a beam caliper, measure the maximum horizontal breadth of the hips.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	13.92	INCHES
ST. DEV.	.97	INCHES
COEF. OF VAR.	7.0%	
SYMMETRY	.48	
KURTOSIS	4.21	

AFW

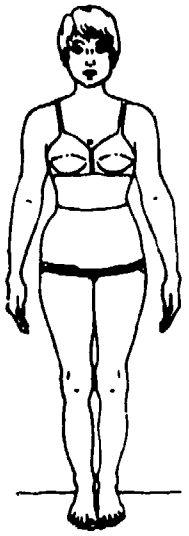
NO. OF SUBJECTS	1905	
MEAN	13.77	INCHES
ST. DEV.	.87	INCHES
COEF. OF VAR.	6.3%	
SYMMERTY	.39	
KURTOSIS	3.43	

ADJUSTED COMPOSITE VALUE	
MEAN	13.84
ST. DEV.	0.92

THE PERCENTILES

ARMY INCHES		AFW INCHES
16.49	99TH	16.11
16.10	98TH	15.77
15.86	97TH	15.56
15.57	95TH	15.29
15.15	90TH	14.90
14.88	85TH	14.65
14.68	80TH	14.46
14.52	75TH	14.31
14.37	70TH	14.17
14.24	65TH	14.04
14.11	60TH	13.93
14.00	55TH	13.82
13.88	50TH	13.71
13.76	45TH	13.61
13.65	40TH	13.50
13.53	35TH	13.40
13.40	30TH	13.28
13.27	25TH	13.17
13.12	20TH	13.04
12.95	15TH	12.89
12.73	10TH	12.70
12.41	5TH	12.42
12.21	3TH	12.24
12.07	2ND	12.11
11.86	1ST	11.90

23. HIP CIRCUMFERENCE



Landmark: Hip

Instrument: Tape

Position: Subject stands erect, looking straight ahead, heels together and weight distributed equally on both feet.

Procedure: With a tape held in the horizontal plane, measure the circumference of the trunk at the level of the maximum lateral protrusion of the hips.

THE SUMMARY STATISTICS

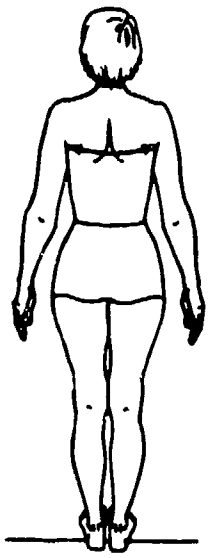
ARMY		
NO. OF SUBJECTS	1331	
MEAN	37.61	INCHES
ST. DEV.	2.51	INCHES
COEF. OF VAR.	6.7%	
SYMMETRY	.57	
KURTOSIS	5.10	

AFW		
NO. OF SUBJECTS	1905	
MEAN	37.60	INCHES
ST. DEV.	2.33	INCHES
COEF. OF VAR.	6.2%	
SYMMERTY	.45	
KURTOSIS	3.65	

ADJUSTED COMPOSITE VALUE	
MEAN	37.61
ST. DEV.	2.42

THE PERCENTILES

ARMY INCHES		AFW INCHES
44.16	99TH	44.14
43.13	98TH	43.07
42.53	97TH	42.44
41.77	95TH	41.65
40.70	90TH	40.56
40.04	85TH	39.89
39.54	80TH	39.39
39.12	75TH	38.98
38.75	70TH	38.62
38.42	65TH	38.30
38.11	60TH	38.00
37.81	55TH	37.72
37.51	50TH	37.45
37.22	45TH	37.18
36.92	40TH	36.91
36.61	35TH	36.63
36.29	30TH	36.34
35.94	25TH	36.03
35.55	20TH	35.68
35.09	15TH	35.28
34.51	10TH	34.77
33.66	5TH	34.02
33.11	3TH	33.53
32.72	2ND	33.16
32.11	1ST	32.60



24. INTERSCYE CURVATURE
(AFW only)

Landmark: Scye

Instrument: Tape

Position: Subject stands erect with arms relaxed.

Procedure: With a tape held in the horizontal plane, measure the surface distance across the back between the posterior scye point landmarks.

THE SUMMARY STATISTICS

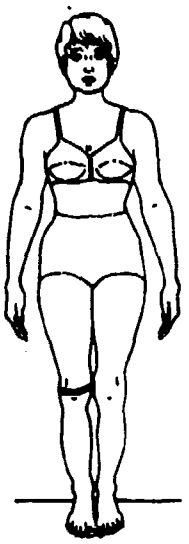
AFW

NO. OF SUBJECTS	1905	
MEAN	13.80	INCHES
ST. DEV.	.96	INCHES
COEF. OF VAR.	7.0%	
SYMMERTY	.19	
KURTOSIS	3.02	

THE PERCENTILES

ARMY INCHES		AFW INCHES
	99TH	16.15
	98TH	15.86
	97TH	15.68
	95TH	15.43
	90TH	15.05
	85TH	14.80
	80TH	14.60
	75TH	14.43
	70TH	14.28
	65TH	14.14
	60TH	14.01
	55TH	13.88
	50TH	13.76
	45TH	13.64
	40TH	13.52
	35TH	13.40
	30TH	13.27
	25TH	13.13
	20TH	12.97
	15TH	12.80
	10TH	12.58
	5TH	12.27
	3RD	12.07
	2ND	11.92
	1ST	11.69

25. KNEE CIRCUMFERENCE



Landmark: Knee

Instrument: Tape

Position: Subject stands erect, looking straight ahead, heels approximately 10 centimeters apart, and weight distributed equally on both feet.

Procedure: With a tape held in a plane perpendicular to the long axis of the leg, measure the circumference of the knee at the level of the knee landmark. The subject must not tense her knee during the measurement.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	13.71	INCHES
ST. DEV.	.89	INCHES
COEF. OF VAR.	6.5%	
SYMMETRY	.40	
KURTOSIS	3.50	

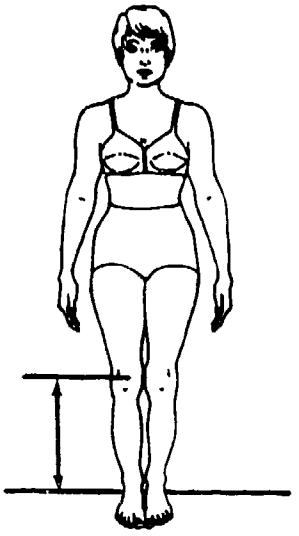
AFW

NO. OF SUBJECTS	1905	
MEAN	14.29	INCHES
ST. DEV.	.89	INCHES
COEF. OF VAR.	6.2%	
SYMMERTY	.45	
KURTOSIS	3.44	

ADJUSTED COMPOSITE VALUE	
MEAN	14.00
ST. DEV.	0.89

THE PERCENTILES

ARMY INCHES		AFW INCHES
16.14	99TH	16.63
15.74	98TH	16.31
15.51	97TH	16.11
15.23	95TH	15.84
14.84	90TH	15.46
14.60	85TH	15.21
14.42	80TH	15.01
14.27	75TH	14.85
14.14	70TH	14.71
14.01	65TH	14.58
13.90	60TH	14.46
13.79	55TH	14.35
13.68	50TH	14.24
13.57	45TH	14.13
13.46	40TH	14.02
13.34	35TH	13.90
13.22	30TH	13.79
13.10	25TH	13.66
12.95	20TH	13.53
12.79	15TH	13.38
12.58	10TH	13.19
12.30	5TH	12.93
12.14	3TH	12.77
12.03	2ND	12.65
11.90	1ST	12.49



26. KNEE (TIBIALE) HEIGHT

Landmark: Knee (tibiale)

Instrument: Anthropometer

Position: Subject stands erect, heels together, and weight distributed equally on both feet.

Procedure: With an anthropometer, measure the vertical distance from the standing surface to the tibial landmark.

THE SUMMARY STATISTICS

ARMY		
NO. OF SUBJECTS	255	
MEAN	17.34	INCHES
ST. DEV.	.97	INCHES
COEF. OF VAR.	5.6%	
SYMMETRY	.15	
KURTOSIS	3.02	

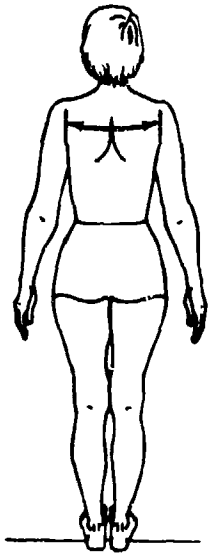
AFW		
NO. OF SUBJECTS	1905	
MEAN	16.53	INCHES
ST. DEV.	.94	INCHES
COEF. OF VAR.	5.7%	
SYMMERTY	.22	
KURTOSIS	3.01	

ADJUSTED COMPOSITE VALUE

Suspected difference in measurement techniques makes composite invalid.

THE PERCENTILES

ARMY INCHES		AFW INCHES
19.92	99TH	18.90
19.51	98TH	18.59
19.28	97TH	18.40
18.99	95TH	18.14
18.58	90TH	17.76
18.32	85TH	17.51
18.13	80TH	17.31
17.97	75TH	17.14
17.82	70TH	16.99
17.69	65TH	16.86
17.56	60TH	16.73
17.44	55TH	16.61
17.32	50TH	16.49
17.20	45TH	16.38
17.08	40TH	16.26
16.96	35TH	16.14
16.82	30TH	16.01
16.68	25TH	15.88
16.51	20TH	15.73
16.32	15TH	15.56
16.09	10TH	15.35
15.75	5TH	15.05
15.54	3TH	14.87
15.39	2ND	14.73
15.19	1ST	14.53



27. MIDSCYE BACK
(Army only)

Landmark: Scye

Instrument: Tape

Position: Subject stands erect, looking straight ahead, arms at sides.

Procedure: With a tape, measure the surface distance between the right and left midscye posterior landmarks.

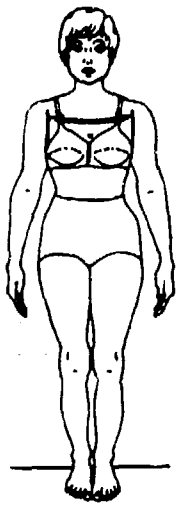
THE SUMMARY STATISTICS

ARMY

NO. OF.SUBJECTS	1331	
MEAN	14.90	INCHES
ST. DEV.	.93	INCHES
COEF. OF VAR.	6.2%	
SYMMETRY	.08	
KURTOSIS	3.21	

THE PERCENTILES

ARMY INCHES		AFW INCHES
17.15	99TH	
16.84	98TH	
16.65	97TH	
16.42	95TH	
16.07	90TH	
15.84	85TH	
15.66	80TH	
15.51	75TH	
15.38	70TH	
15.25	65TH	
15.13	60TH	
15.02	55TH	
14.90	50TH	
14.79	45TH	
14.67	40TH	
14.55	35TH	
14.42	30TH	
14.28	25TH	
14.12	20TH	
13.94	15TH	
13.71	10TH	
13.36	5TH	
13.15	3TH	
12.99	2TH	
12.75	1TH	



28. MIDSCYE FRONT
(Army only)

Landmark: Scye

Instrument: Tape

Position: Subject stands erect, looking straight ahead, arms at sides.

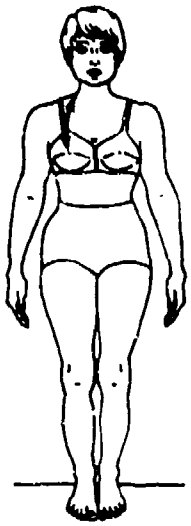
Procedure: With a tape, measure the surface distance across the chest between the right and left midscye landmarks.

THE SUMMARY STATISTICS

ARMY		
NO. OF.SUBJECTS	1331	
MEAN	13.06	INCHES
ST. DEV.	.69	INCHES
COEF. OF VAR.	5.3%	
SYMMETRY	.22	
KURTOSIS	3.11	

THE PERCENTILES

ARMY INCHES		AFW INCHES
14.80	99TH	
14.56	98TH	
14.42	97TH	
14.23	95TH	
13.95	90TH	
13.77	85TH	
13.63	80TH	
13.51	75TH	
13.40	70TH	
13.30	65TH	
13.21	60TH	
13.12	55TH	
13.04	50TH	
12.95	45TH	
12.86	40TH	
12.78	35TH	
12.68	30TH	
12.58	25TH	
12.47	20TH	
12.34	15TH	
12.19	10TH	
11.96	5TH	
11.82	3TH	
11.72	2TH	
11.57	1TH	



29. NECK TO BUSTPOINT

Landmarks: Neck and bustpoint

Instrument: Tape

Position: Subject stands erect looking straight ahead.

Procedure: With a tape, measure the straight line distance from the lateral neck landmark to the bustpoint landmark. The tape is held tense and does not follow the surface contour of the body.

THE SUMMARY STATISTICS

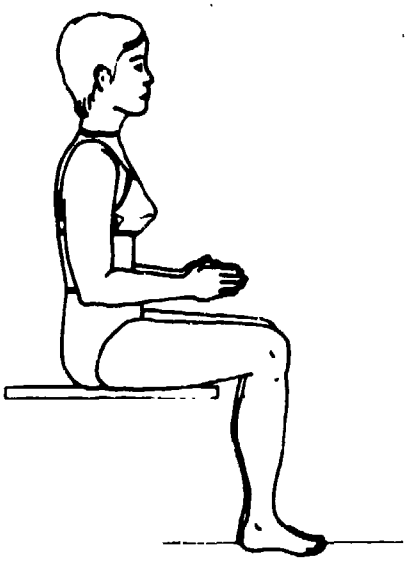
ARMY		
NO. OF SUBJECTS	1331	
MEAN	9.95	INCHES
ST. DEV.	.82	INCHES
COEF. OF VAR.	8.2%	
SYMMETRY	.20	
KURTOSIS	3.01	

AFW		
NO. OF SUBJECTS	1905	
MEAN	10.04	INCHES
ST. DEV.	.74	INCHES
COEF. OF VAR.	7.4%	
SYMMERTY	.29	
KURTOSIS	3.06	

ADJUSTED COMPOSITE VALUE	
MEAN	10.00
ST. DEV.	0.78

THE PERCENTILES

ARMY INCHES		AFW INCHES
12.03	99TH	11.94
11.73	98TH	11.70
11.56	97TH	11.54
11.34	95TH	11.33
11.01	90TH	11.02
10.80	85TH	10.81
10.64	80TH	10.65
10.50	75TH	10.51
10.37	70TH	10.39
10.26	65TH	10.28
10.15	60TH	10.18
10.04	55TH	10.08
9.94	50TH	9.99
9.83	45TH	9.90
9.73	40TH	9.80
9.62	35TH	9.71
9.50	30TH	9.61
9.38	25TH	9.51
9.24	20TH	9.39
9.09	15TH	9.26
8.90	10TH	9.10
8.64	5TH	8.87
8.49	3TH	8.71
8.39	2ND	8.60
8.26	1ST	8.42



30. NECK CIRCUMFERENCE

Landmark: Neck

Instrument: Tape

Position: Subject sits erect looking straight ahead.

Procedure: Measure the circumference of the neck with a tape which is placed around the neck so that it passes over the neck marks. The plane of this circumference is perpendicular to the long axis of the neck (AFW) and is not perpendicular to the long axis of the neck in the Army survey.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	12.74	INCHES
ST. DEV.	.62	INCHES
COEF. OF VAR.	4.9%	
SYMMETRY	.37	
KURTOSIS	3.84	

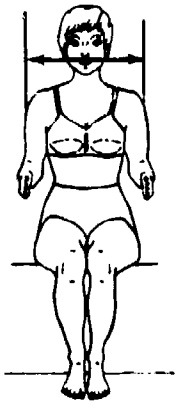
AFW

NO. OF SUBJECTS	1905	
MEAN	13.29	INCHES
ST. DEV.	.66	INCHES
COEF. OF VAR.	5.0%	
SYMMERTY	.30	
KURTOSIS	3.10	

ADJUSTED COMPOSITE VALUE
Difference in measurement techniques makes composite invalid

THE PERCENTILES

ARMY INCHES		AFW INCHES
14.31	99TH	15.04
14.09	98TH	14.79
13.96	97TH	14.63
13.79	95TH	14.43
13.54	90TH	14.15
13.38	85TH	13.96
13.25	80TH	13.83
13.14	75TH	13.71
13.05	70TH	13.60
12.96	65TH	13.51
12.88	60TH	13.42
12.80	55TH	13.34
12.72	50TH	13.25
12.64	45TH	13.17
12.56	40TH	13.09
12.48	35TH	13.00
12.40	30TH	12.92
12.31	25TH	12.82
12.21	20TH	12.72
12.09	15TH	12.60
11.95	10TH	12.45
11.75	5TH	12.23
11.64	3TH	12.10
11.56	2ND	12.01
11.45	1ST	11.87



31. SHOULDER (BIDELTOID) BREADTH

Landmark: Deltoid

Instrument: Beam caliper

Position: Subject sits erect, looking straight ahead, upper arms hanging relaxed, forearms and hands extended forward horizontally.

Procedure: With a beam caliper, measure the distance across the body at the level of the deltoid landmarks.

THE SUMMARY STATISTICS

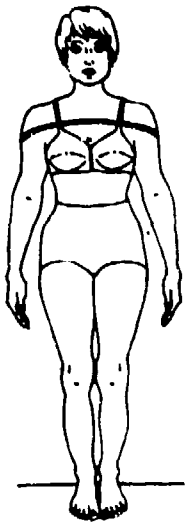
	ARMY	
NO. OF SUBJECTS	1331	
MEAN	16.55	INCHES
ST. DEV.	.88	INCHES
COEF. OF VAR.	5.3%	
SYMMETRY	.38	
KURTOSIS	4.23	

	AFW	
NO. OF SUBJECTS	1905	
MEAN	16.49	INCHES
ST. DEV.	.91	INCHES
COEF. OF VAR.	5.5%	
SYMMERTY	.26	
KURTOSIS	3.23	

ADJUSTED COMPOSITE VALUE	
MEAN	16.52
ST. DEV.	0.90

THE PERCENTILES

ARMY INCHES		AFW INCHES
18.70	99TH	18.88
18.39	98TH	18.53
18.21	97TH	18.32
17.98	95TH	18.05
17.65	90TH	17.66
17.43	85TH	17.41
17.26	80TH	17.21
17.12	75TH	17.05
16.99	70TH	16.91
16.87	65TH	16.78
16.76	60TH	16.67
16.65	55TH	16.55
16.54	50TH	16.44
16.43	45TH	16.33
16.32	40TH	16.22
16.20	35TH	16.11
16.08	30TH	15.99
15.94	25TH	15.87
15.80	20TH	15.73
15.62	15TH	15.56
15.41	10TH	15.36
15.12	5TH	15.05
14.95	3TH	14.84
14.84	2ND	14.69
14.69	1ST	14.44



32. SHOULDER CIRCUMFERENCE

Landmark: Deltoid

Instrument: Tape

Position: Subject stands erect, looking straight ahead, arms relaxed at sides, heels together, and weight distributed equally on both feet.

Procedure: With a tape, measure the circumference of the body at the level of the deltoid landmarks.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	39.52	INCHES
ST. DEV.	2.15	INCHES
COEF. OF VAR.	5.4%	
SYMMETRY	.63	
KURTOSIS	5.25	

AFW

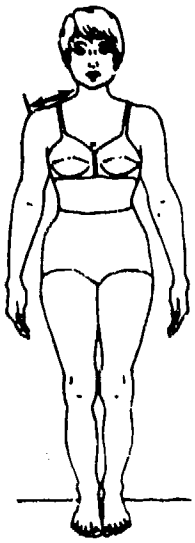
NO. OF SUBJECTS	1905	
MEAN	39.53	INCHES
ST. DEV.	2.02	INCHES
COEF. OF VAR.	5.1%	
SYMMERTY	.50	
KURTOSIS	3.40	

ADJUSTED COMPOSITE VALUE	
MEAN	39.53
ST. DEV.	2.09

THE PERCENTILES

ARMY INCHES		AFW INCHES
44.99	99TH	45.16
44.16	98TH	44.26
43.67	97TH	43.73
43.06	95TH	43.06
42.19	90TH	42.13
41.64	85TH	41.56
41.22	80TH	41.12
40.86	75TH	40.76
40.54	70TH	40.44
40.25	65TH	40.16
39.98	60TH	39.89
39.71	55TH	39.64
39.45	50TH	39.39
39.19	45TH	39.14
38.93	40TH	38.90
38.65	35TH	38.64
38.36	30TH	38.38
38.06	25TH	38.10
37.71	20TH	37.80
37.32	15TH	37.45
36.84	10TH	37.04
36.18	5TH	36.47
35.80	3TH	36.14
35.54	2ND	35.92
35.21	1ST	35.64

33. SHOULDER LENGTH



Landmarks: Neck and shoulder (acromiale).

Instrument: Tape

Position: Subject stands erect looking straight ahead.

Procedure: With a tape, measure the surface distance along the top of the shoulder from the lateral neck landmark to the acromial landmark.

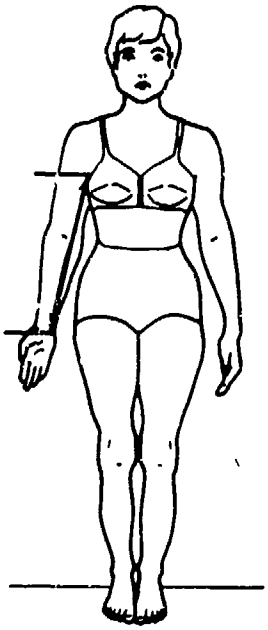
THE SUMMARY STATISTICS

ARMY		
NO. OF SUBJECTS	1331	
MEAN	5.91	INCHES
ST. DEV.	.42	INCHES
COEF. OF VAR.	7.1%	
SYMMETRY	.13	
KURTOSIS	3.22	
AFW		
NO. OF SUBJECTS	1905	
MEAN	5.77	INCHES
ST. DEV.	.40	INCHES
COEF. OF VAR.	6.9%	
SYMMERTY	.16	
KURTOSIS	3.02	

ADJUSTED COMPOSITE VALUE	
MEAN	5.84
ST. DEV.	0.41

THE PERCENTILES

ARMY INCHES		AFW INCHES
6.97	99TH	6.75
6.83	98TH	6.63
6.74	97TH	6.56
6.62	95TH	6.46
6.44	90TH	6.30
6.33	85TH	6.19
6.25	80TH	6.10
6.17	75TH	6.03
6.11	70TH	5.97
6.05	65TH	5.91
6.00	60TH	5.85
5.95	55TH	5.80
5.90	50TH	5.75
5.85	45TH	5.70
5.80	40TH	5.65
5.74	35TH	5.59
5.69	30TH	5.54
5.63	25TH	5.48
5.56	20TH	5.42
5.49	15TH	5.34
5.39	10TH	5.25
5.23	5TH	5.11
5.13	3TH	5.02
5.04	2ND	4.95
4.91	1ST	4.85



34. SLEEVE INSEAM

Landmarks: Scye and wrist

Instrument: Tape

Position: Subject stands, right arm slightly abducted and palm forward.

Procedure: With a tape, measure the distance from the anterior scye point landmark to the ulnar side of the wrist landmark. The tape is held tense and does not follow the surface contour of the arm.

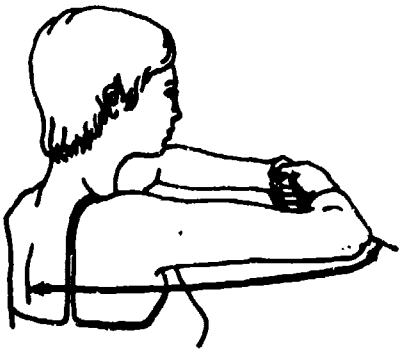
THE SUMMARY STATISTICS

ARMY		
NO. OF SUBJECTS	1331	
MEAN	17.74	INCHES
ST. DEV.	1.03	INCHES
COEF. OF VAR.	5.8%	
SYMMETRY	.23	
KURTOSIS	3.04	
AFW		
NO. OF SUBJECTS	1905	
MEAN	17.37	INCHES
ST. DEV.	.95	INCHES
COEF. OF VAR.	5.5%	
SYMMERTY	.16	
KURTOSIS	3.10	

ADJUSTED COMPOSITE VALUE	
MEAN	17.55
ST. DEV.	0.99

THE PERCENTILES

ARMY INCHES		AFW INCHES
20.34	99TH	19.66
20.00	98TH	19.39
19.79	97TH	19.2[illegible]
19.51	95TH	18.97
19.09	90TH	18.60
18.80	85TH	18.35
18.59	80TH	18.16
18.40	75TH	17.99
18.24	70TH	17.84
18.09	65 [illegible]	17.71
17.95	60TH	17.58
17.81	55TH	17.46
17.68	50TH	17.34
17.56	45TH	17.22
17.43	40TH	17.10
17.30	35TH	16.97
17.16	30TH	16.85
17.02	25TH	16.71
16.86	20TH	16.55
16.67	15TH	16.38
16.45	10TH	16.16
16.13	5TH	15.84
15.92	3TH	15.64
15.77	2ND	15.49
15.54	1ST	15.25



35. SPINE TO ELBOW LENGTH
(AFW only)

Landmark: Wrist

Instrument: Tape

Position: Subject stands, arms horizontal, elbows flexed about 60 degrees, and fists clenched and touching.

Procedure: A tape with its zero-point on the midline of the spine is passed horizontally around the shoulder and over the tip of the elbow to the wrist landmark. Measure the surface distance from the spine to the tip of the elbow.

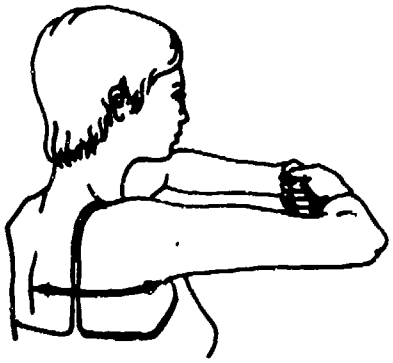
THE SUMMARY STATISTICS

AFW

NO. OF SUBJECTS	1905	
MEAN	20.99	INCHES
ST. DEV.	.95	INCHES
COEF. OF VAR.	4.5%	
SYMMERTY	.18	
KURTOSIS	3.22	

THE PERCENTILES

ARMY INCHES		AFW INCHES
	99TH	23.38
	98TH	23.04
	97TH	22.83
	95TH	22.57
	90TH	22.19
	85TH	21.94
	80TH	21.75
	75TH	21.59
	70TH	21.45
	65TH	21.32
	60TH	21.20
	55TH	21.08
	50TH	20.96
	45TH	20.85
	40TH	20.73
	35TH	20.61
	30TH	20.48
	25TH	20.34
	20TH	20.19
	15TH	20.01
	10TH	19.79
	5TH	19.46
	3RD	19.26
	2ND	19.11
	1ST	18.90



36. SPINE TO SCYE LENGTH
(AFW only)

Landmarks: Wrist and scye

Instrument: Tape

Position: Subject stands, arms horizontal, elbows flexed about 60 degrees, fists clenched and touching.

Procedure: A tape with its zero-point on the midline of the spine is passed horizontally around the shoulder and over the tip of the elbow to the wrist landmark. Measure the surface distance from the spine to the posterior vertical-scye landmark.

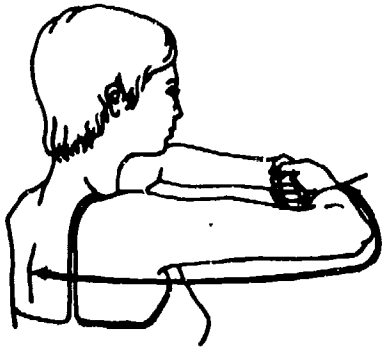
THE SUMMARY STATISTICS

AFW

NO. OF SUBJECTS	1905	
MEAN	8.02	INCHES
ST. DEV.	.53	INCHES
COEF. OF VAR.	6.6%	
SYMMERTY	.16	
KURTOSIS	3.43	

THE PERCENTILES

ARMY INCHES		AFW INCHES
	99TH	9.34
	98TH	9.18
	97TH	9.08
	95TH	8.94
	90TH	8.72
	85TH	8.57
	80TH	8.46
	75TH	8.36
	70TH	8.28
	65TH	8.20
	60TH	8.13
	55TH	8.06
	50TH	7.99
	45TH	7.93
	40TH	7.86
	35TH	7.80
	30TH	7.73
	25TH	7.66
	20TH	7.58
	15TH	7.49
	10TH	7.37
	5TH	7.18
	3RD	7.05
	2ND	6.95
	1ST	6.76



37. SPINE TO WRIST LENGTH
(AFW only)

Landmark: Wrist

Instrument: Tape

Position: Subject stands, arms horizontal, elbows flexed about 60 degrees, and fists clenched and touching.

Procedure: A tape with its zero-point on the midline of the spine is passed horizontally around the shoulder and over the tip of the elbow to the wrist landmark. Measure the surface distance from the spine to the wrist landmark.

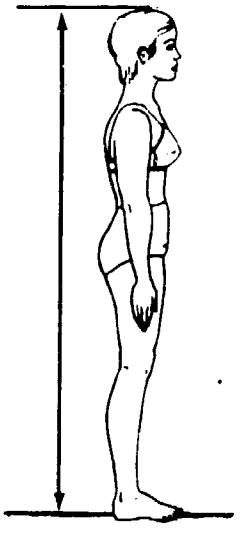
THE SUMMARY STATISTICS

AFW

NO. OF SUBJECTS	1905	
MEAN	31.33	INCHES
ST. DEV.	1.31	INCHES
COEF. OF VAR.	4.2%	
SYMMERTY	.19	
KURTOSIS	3.16	

THE PERCENTILES

ARMY INCHES		AFW INCHES
	99TH	34.65
	98TH	34.16
	97TH	33.87
	95TH	33.51
	90TH	32.99
	85TH	32.65
	80TH	32.40
	75TH	32.18
	70TH	31.98
	65TH	31.80
	60TH	31.63
	55TH	31.47
	50TH	31.30
	45TH	31.14
	40TH	30.98
	35TH	30.80
	30TH	30.62
	25TH	30.43
	20TH	30.21
	15TH	29.96
	10TH	29.65
	5TH	29.20
	3RD	28.94
	2ND	28.76
	1ST	28.51



38. STATURE

Landmark: None

Instrument: Anthropometer

Position: Subject stands erect, looking straight ahead, heels together, and weight distributed equally on both feet.

Procedure: With the arm of the anthropometer firmly touching the scalp, measure the vertical distance from the standing surface to the top of the head.

THE SUMMARY STATISTICS

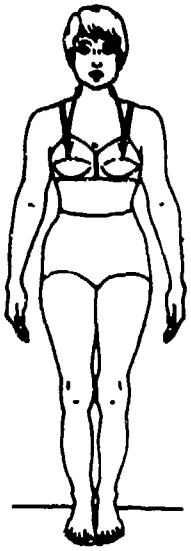
ARMY		
NO. OF SUBJECTS	1331	
MEAN	64.16	INCHES
ST. DEV.	2.57	INCHES
COEF. OF VAR.	4.0%	
SYMMETRY	.12	
KURTOSIS	2.89	

AFW		
NO. OF SUBJECTS	1905	
MEAN	63.82	INCHES
ST. DEV.	2.36	INCHES
COEF. OF VAR.	3.7%	
SYMMERTY	.16	
KURTOSIS	2.77	

ADJUSTED COMPOSITE VALUE	
MEAN	64.00
ST. DEV.	2.48

THE PERCENTILES

ARMY INCHES		AFW INCHES
70.24	99TH	69.48
69.60	98TH	68.79
69.16	97TH	68.35
68.54	95TH	67.77
67.55	90TH	66.89
66.87	85TH	66.30
66.34	80TH	65.82
65.88	75TH	65.42
65.47	70TH	65.05
65.09	65TH	64.71
64.74	60TH	64.39
64.40	55TH	64.08
64.07	50TH	63.77
63.75	45TH	63.46
63.42	40TH	63.15
63.09	35TH	62.83
62.75	30TH	62.49
62.38	25TH	62.13
61.97	20TH	61.74
61.51	15TH	61.29
60.93	10TH	60.74
60.06	5TH	59.99
59.48	3TH	59.55
59.05	2ND	59.26
58.33	1ST	58.87



39. STRAP LENGTH
(AFW only)

Landmarks: Neck, bustpoint

Instrument: Tape

Position: Subject stands erect looking straight ahead.

Procedure: With a tape, measure the distance from the right bustpoint landmark, across the posterior neck landmark, to the left bustpoint landmark. The tape is held tense and does not follow the curvature of the front of the body.

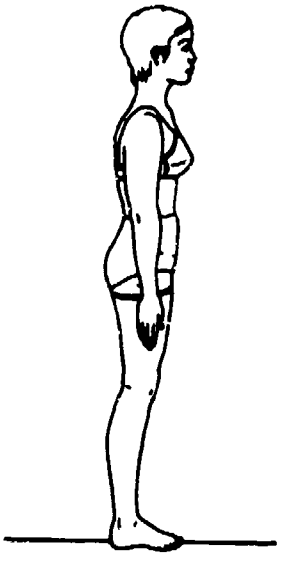
THE SUMMARY STATISTICS

AFW

NO. OF SUBJECTS	1905	
MEAN	25.68	INCHES
ST. DEV.	1.54	INCHES
COEF. OF VAR.	6.0%	
SYMMERTY	.31	
KURTOSIS	3.17	

THE PERCENTILES

ARMY INCHES		AFW INCHES
	99TH	29.61
	98TH	29.13
	97TH	28.82
	95TH	28.39
	90TH	27.72
	85TH	27.28
	80TH	26.94
	75TH	26.65
	70TH	26.40
	65TH	26.17
	60TH	25.96
	55TH	25.75
	50TH	25.56
	45TH	25.37
	40TH	25.18
	35TH	24.99
	30TH	24.79
	25TH	24.59
	20TH	24.36
	15TH	24.10
	10TH	23.78
	5TH	23.30
	3RD	22.98
	2ND	22.73
	1ST	22.32



40. UPPER THIGH CIRCUMFERENCE

Landmark: Gluteal furrow

Instrument: Tape

Position: Subject stands erect, heels approximately 10 centimeters apart and weight distributed equally on both feet.

Procedure: With a tape held in a plane perpendicular to the long axis of the thigh, measure the circumference of the thigh at the level of the lowest point on the gluteal furrow. (The measurement was taken with heels apart in the AFW survey; in the Army survey, the subject's heels were brought back together after the tape was placed.) Where the furrow is deeply indented, the measurement is made just distal to the furrow.

THE SUMMARY STATISTICS

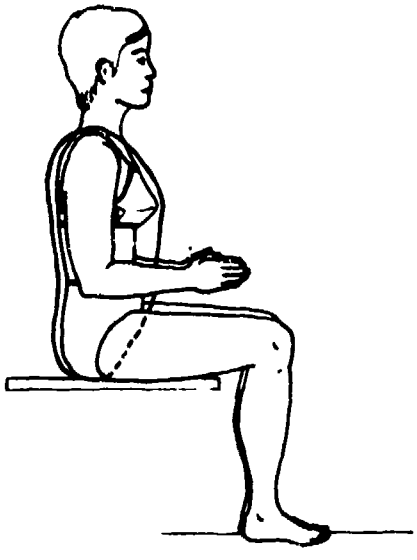
ARMY		
NO. OF SUBJECTS	1331	
MEAN	22.41	INCHES
ST. DEV.	1.81	INCHES
COEF. OF VAR.	8.1%	
SYMMETRY	.21	
KURTOSIS	3.61	

AFW		
NO. OF SUBJECTS	1905	
MEAN	21.84	INCHES
ST. DEV.	1.66	INCHES
COEF. OF VAR.	7.6%	
SYMMERTY	.32	
KURTOSIS	3.42	

ADJUSTED COMPOSITE VALUE	
MEAN	22.12
ST. DEV.	1.74

THE PERCENTILES

ARMY INCHES		AFW INCHES
27.17	99TH	26.26
26.39	98TH	25.56
25.95	97TH	25.16
25.40	95TH	24.65
24.65	90TH	23.93
24.19	85TH	23.49
23.84	80TH	23.15
23.55	75TH	22.87
23.29	70TH	22.62
23.06	65TH	22.39
22.83	60TH	22.18
22.62	55TH	21.98
22.40	50TH	21.78
22.19	45TH	21.58
21.97	40TH	21.38
21.73	35TH	21.17
21.49	30TH	20.95
21.22	25TH	20.71
20.91	20TH	20.45
20.56	15TH	20.14
20.10	10TH	19.75
19.43	5TH	19.19
19.01	3TH	18.84
18.71	2ND	18.58
18.26	1ST	18.21



41. VERTICAL TRUNK CIRCUMFERENCE, SITTING

Landmarks: Midshoulder, bustpoint and buttock

Instrument: Tape

Position: Subject initially stands with legs slightly apart.

Procedure: A length of tape is passed between the legs, over the protrusion of the right buttock, and up the back to the midshoulder landmark. The subject then sits, her trunk erect and arms relaxed. The other end of the tape is brought over the right bustpoint landmark to midshoulder. The subject brings her legs together and the circumference of the torso is measured at the point of maximum quiet inspiration.

THE SUMMARY STATISTICS

ARMY		
NO. OF SUBJECTS	255	
MEAN	57.65	INCHES
ST. DEV.	2.86	INCHES
COEF. OF VAR.	5.0%	
SYMMETRY	.12	
KURTOSIS	2.67	

AFW		
NO. OF SUBJECTS	1905	
MEAN	59.08	INCHES
ST. DEV.	2.58	INCHES
COEF. OF VAR.	4.4%	
SYMMERTY	.17	
KURTOSIS	2.87	

! ADJUSTED COMPOSITE VALUE !
!Suspected difference in !
!measurement techniques makes!
!composite invalid. !

THE PERCENTILES

ARMY INCHES		AFW INCHES
64.57	99TH	65.45
63.71	98TH	64.58
63.18	97TH	64.06
62.47	95TH	63.39
61.39	90TH	62.39
60.67	85TH	61.74
60.09	80TH	61.23
59.60	75TH	60.79
59.15	70TH	60.40
58.74	65TH	60.03
58.35	60TH	59.69
57.97	55TH	59.35
57.59	50TH	59.02
57.22	45TH	58.69
56.84	40TH	58.36
56.46	35TH	58.01
56.05	30TH	57.64
55.62	25TH	57.25
55.14	20TH	56.82
54.61	15TH	56.32
53.96	10TH	55.72
53.08	5TH	54.89
52.58	3TH	54.41
52.26	2ND	54.10
51.84	1ST	53.69

42. VERTICAL TRUNK CIRCUMFERENCE, STANDING

Landmarks: Midshoulder, bustpoint and buttock

Instrument: Tape

Position: Subject stands with legs slightly apart.

Procedure: Pass a tape between the legs, over the protrusion of the right buttock and up the back to the midshoulder mark. Bring the other end of the tape up over the right bustpoint to midshoulder. The subject brings her heels together and the trunk circumference is measured at the point of maximum quiet inspiration. (The tape follows the back body contour but not the front.)

THE SUMMARY STATISTICS

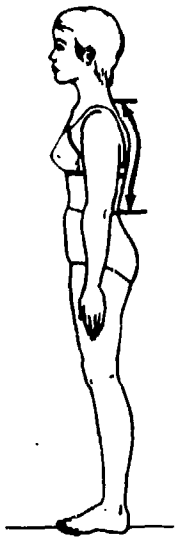
ARMY		
NO. OF SUBJECTS	1331	
MEAN	60.57	INCHES
ST. DEV.	2.86	INCHES
COEF. OF VAR.	4.7%	
SYMMETRY	.13	
KURTOSIS	3.40	

AFW		
NO. OF SUBJECTS	1905	
MEAN	60.80	INCHES
ST. DEV.	2.70	INCHES
COEF. OF VAR.	4.4%	
SYMMERTY	.26	
KURTOSIS	2.95	

ADJUSTED COMPOSITE VALUE	
MEAN	60.68
ST. DEV.	2.78

THE PERCENTILES

ARMY INCHES		AFW INCHES
67.64	99TH	67.92
66.72	98TH	66.88
66.15	97TH	66.27
65.38	95TH	65.47
64.23	90TH	64.32
63.48	85TH	63.59
62.90	80TH	63.02
62.41	75TH	62.54
61.98	70TH	62.12
61.58	65TH	61.73
61.21	60TH	61.37
60.86	55TH	61.02
60.52	50TH	60.68
60.17	45TH	60.34
59.83	40TH	60.00
59.47	35TH	59.64
59.10	30TH	59.28
58.70	25TH	58.88
58.24	20TH	58.45
57.71	15TH	57.95
57.03	10TH	57.35
55.97	5TH	56.51
55.24	3TH	56.01
54.68	2ND	55.68
53.74	1ST	55.22



43. WAIST BACK LENGTH

Landmarks: Cervicale and waist

Instrument: Tape

Position: Subject stands erect looking straight ahead.

Procedure: With a tape, measure the surface distance along the spine from the cervicale landmark to the posterior waist landmark.

THE SUMMARY STATISTICS

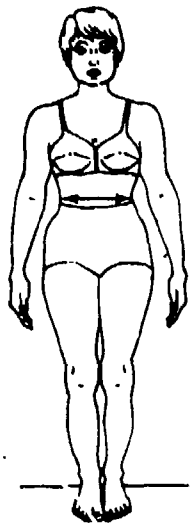
ARMY		
NO. OF SUBJECTS	1331	
MEAN	16.08	INCHES
ST. DEV.	1.04	INCHES
COEF. OF VAR.	6.5%	
SYMMETRY	.31	
KURTOSIS	3.18	

AFW		
NO. OF SUBJECTS	1905	
MEAN	15.95	INCHES
ST. DEV.	.87	INCHES
COEF. OF VAR.	5.5%	
SYMMERTY	.10	
KURTOSIS	3.00	

ADJUSTED COMPOSITE VALUE	
MEAN	16.02
ST. DEV.	0.96

THE PERCENTILES

ARMY INCHES		AFW INCHES
18.74	99TH	18.04
18.38	98TH	17.80
18.16	97TH	17.65
17.87	95TH	17.43
17.44	90TH	17.09
17.16	85TH	16.86
16.94	80TH	16.68
16.76	75TH	16.52
16.59	70TH	16.38
16.44	65TH	16.26
16.30	60TH	16.14
16.17	55TH	16.03
16.04	50TH	15.91
15.91	45TH	15.81
15.77	40TH	15.70
15.64	35TH	15.59
15.50	30TH	15.47
15.35	25TH	15.34
15.19	20TH	15.21
15.00	15TH	15.05
14.77	10TH	14.85
14.45	5TH	14.55
14.26	3TH	14.35
14.12	2ND	14.19
13.92	1ST	13.94



44. WAIST BREADTH

Landmarks: Waist and midaxillary line.

Instrument: Beam caliper

Position: Subject stands erect, looking straight ahead, with heels together and arms slightly abducted.

Procedure: With a beam caliper, measure the horizontal breadth across the trunk at the level of the waist landmarks.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	10.07	INCHES
ST. DEV.	.97	INCHES
COEF. OF VAR.	9.6%	
SYMMETRY	.93	
KURTOSIS	5.06	

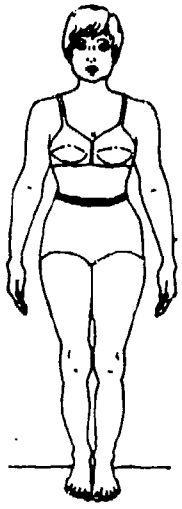
AFW

NO. OF SUBJECTS	1905	
MEAN	9.50	INCHES
ST. DEV.	.76	INCHES
COEF. OF VAR.	8.0%	
SYMMERTY	.53	
KURTOSIS	3.54	

ADJUSTED COMPOSITE VALUE	
MEAN	9.79
ST. DEV.	0.87

THE PERCENTILES

ARMY INCHES		AFW INCHES
13.02	99TH	11.57
12.49	98TH	11.27
12.18	97TH	11.09
11.81	95TH	10.85
11.30	90TH	10.50
11.00	85TH	10.28
10.78	80TH	10.11
10.60	75TH	9.96
10.45	70TH	9.84
10.31	65TH	9.73
10.19	60TH	9.63
10.07	55TH	9.53
9.96	50TH	9.44
9.85	45TH	9.34
9.74	40TH	9.25
9.63	35TH	9.16
9.52	30TH	9.06
9.40	25TH	8.96
9.27	20TH	8.85
9.12	15TH	8.72
8.95	10TH	8.57
8.70	5TH	8.35
8.56	3TH	8.22
8.46	2ND	8.12
8.33	1ST	7.98



45. WAIST CIRCUMFERENCE

Landmark: Waist

Instrument: Tape

Position: Subject stands erect, looking straight ahead, heels together, and weight distributed equally on both feet.

Procedure: With a tape passing over the waist landmarks, measure the circumference of the trunk. The reading is made at the point of maximum quiet inspiration. The subject must not pull in her stomach.

THE SUMMARY STATISTICS

ARMY		
NO. OF SUBJECTS	1331	
MEAN	27.96	INCHES
ST. DEV.	2.72	INCHES
COEF. OF VAR.	9.7%	
SYMMETRY	1.22	
KURTOSIS	6.42	

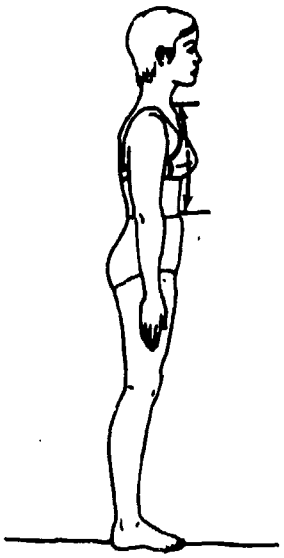
AFW		
NO. OF SUBJECTS	1905	
MEAN	26.46	INCHES
ST. DEV.	2.16	INCHES
COEF. OF VAR.	8.2%	
SYMMERTY	.88	
KURTOSIS	4.36	

ADJUSTED COMPOSITE VALUE	
MEAN	27.21
ST. DEV.	2.44

THE PERCENTILES

ARMY INCHES		AFW INCHES
36.36	99TH	33.08
34.85	98TH	31.92
33.97	97TH	31.25
32.88	95TH	30.41
31.40	90TH	29.26
30.52	85TH	28.57
29.88	80TH	28.06
29.37	75TH	27.65
28.94	70TH	27.30
28.55	65TH	26.99
28.21	60TH	26.70
27.89	55TH	26.43
27.58	50TH	26.17
27.28	45TH	25.93
27.00	40TH	25.68
26.71	35TH	25.43
26.41	30TH	25.18
26.10	25TH	24.92
25.77	20TH	24.63
25.40	15TH	24.32
24.94	10TH	23.94
24.30	5TH	23.43
23.91	3TH	23.13
23.63	2ND	22.94
23.21	1ST	22.68

46. WAIST FRONT LENGTH



Landmarks: Neck and waist

Instrument: Tape

Position: Subject stands erect looking straight ahead.

Procedure: With a tape, measure the surface distance from the anterior neck landmark to the anterior waist landmark.

THE SUMMARY STATISTICS

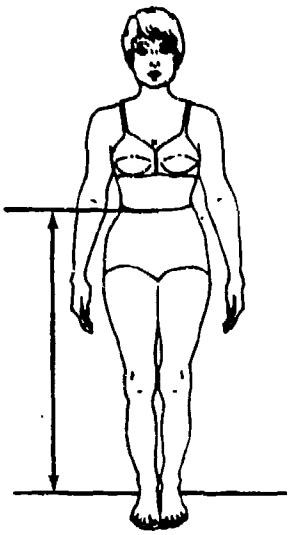
ARMY		
NO. OF SUBJECTS	1331	
MEAN	14.46	INCHES
ST. DEV.	1.03	INCHES
COEF. OF VAR.	7.1%	
SYMMETRY	.56	
KURTOSIS	3.70	
AFW		
NO. OF SUBJECTS	1905	
MEAN	13.22	INCHES
ST. DEV.	.77	INCHES
COEF. OF VAR.	5.8%	
SYMMERTY	.31	
KURTOSIS	3.24	

! ADJUSTED COMPOSITE VALUE !
! Suspected difference in !
! measurement techniques makes!
! composite invalid. !

THE PERCENTILES

ARMY INCHES		AFW INCHES
17.45	99TH	15.20
16.94	98TH	14.93
16.65	97TH	14.76
16.28	95TH	14.54
15.78	90TH	14.22
15.48	85TH	14.00
15.25	80TH	13.84
15.07	75TH	13.70
14.91	70TH	13.58
14.76	65TH	13.47
14.63	60TH	13.37
14.50	55TH	13.27
14.38	50TH	13.18
14.26	45TH	13.08
14.13	40TH	12.98
14.01	35TH	12.89
13.88	30TH	12.79
13.74	25TH	12.68
13.59	20TH	12.56
13.42	15TH	12.42
13.20	10TH	12.25
12.91	5TH	12.00
12.73	3TH	11.85
12.61	2ND	11.74
12.45	1ST	11.58

47. WAIST HEIGHT



Landmark: Waist

Instrument: Anthropometer

Position: Subject stands erect, looking straight ahead, heels together, and weight distributed equally on both feet.

Procedure: With an anthropometer, measure the vertical distance from the standing surface to the anterior waist landmark.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	39.92	INCHES
ST. DEV.	2.05	INCHES
COEF. OF VAR.	5.1%	
SYMMETRY	.17	
KURTOSIS	3.12	

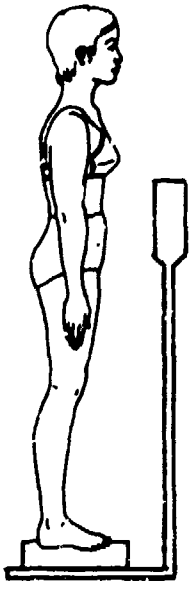
AFW

NO. OF SUBJECTS	1905	
MEAN	39.48	INCHES
ST. DEV.	1.77	INCHES
COEF. OF VAR.	4.5%	
SYMMERTY	.15	
KURTOSIS	2.86	

ADJUSTED COMPOSITE VALUE	
MEAN	39.70
ST. DEV.	1.91

THE PERCENTILES

ARMY INCHES		AFW INCHES
44.97	99TH	43.76
44.36	98TH	43.24
43.97	97TH	42.92
43.43	95TH	42.47
42.60	90TH	41.79
42.05	85TH	41.33
41.61	80TH	40.97
41.25	75TH	40.66
40.92	70TH	40.38
40.63	65TH	40.13
40.35	60TH	39.89
40.09	55TH	39.66
39.84	50TH	39.43
39.58	45TH	39.20
39.33	40TH	38.97
39.08	35TH	38.74
38.81	30TH	38.49
38.52	25TH	38.23
38.21	20TH	37.94
37.84	15TH	37.61
37.38	10TH	37.21
36.70	5TH	36.64
36.23	3TH	36.29
35.88	2ND	36.04
35.30	1ST	35.69



48. WEIGHT

Landmark: None

Instrument: Balance scales

Position: Subject stands on center of scale platform wearing panties and bra.

Procedure: Adjust balance and record weight to the nearest quarter pound (Army) or pound (AFW).

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	132.22	POUNDS
ST. DEV.	19.16	POUNDS
COEF. OF VAR.	14.5%	
SYMMETRY	.80	
KURTOSIS	5.90	

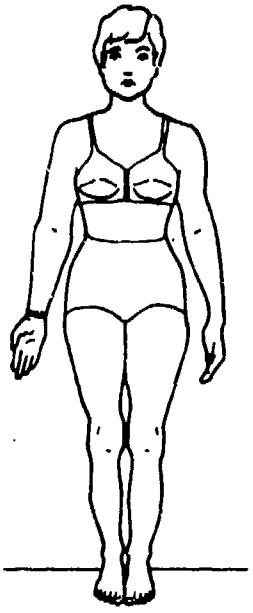
AFW

NO. OF SUBJECTS	1905	
MEAN	127.28	POUNDS
ST. DEV.	16.59	POUNDS
COEF. OF VAR.	13.0%	
SYMMERTY	.64	
KURTOSIS	3.86	

ADJUSTED COMPOSITE VALUE	
MEAN	130.00
ST. DEV.	17.88

THE PERCENTILES

ARMY POUNDS		AFW POUNDS
186.75	99TH	175.20
176.95	98TH	166.90
171.50	97TH	162.19
164.87	95TH	156.38
156.04	90TH	148.49
150.76	85TH	143.70
146.87	80TH	140.15
143.63	75TH	137.19
140.82	70TH	134.63
138.27	65TH	132.32
135.88	60TH	130.15
133.58	55TH	128.09
131.32	50TH	126.08
129.05	45TH	124.08
126.77	40TH	122.08
124.41	35TH	120.03
121.93	30TH	117.89
119.25	25TH	115.61
116.27	20TH	113.10
112.87	15TH	110.27
108.69	10TH	106.86
102.98	5TH	102.29
99.75	3TH	99.77
97.71	2ND	98.20
95.26	1ST	96.36



49. WRIST CIRCUMFERENCE

Landmark: Wrist

Instrument: Tape

Position: Subject stands with arm slightly abducted and the hand extended.

Procedure: With a tape held in a plane perpendicular to the long axis of the forearm and hand, measure the circumference of the wrist at the level of the wrist landmark.

THE SUMMARY STATISTICS

ARMY

NO. OF SUBJECTS	1331	
MEAN	5.79	INCHES
ST. DEV.	.27	INCHES
COEF. OF VAR.	4.7%	
SYMMETRY	.18	
KURTOSIS	3.10	

AFW

NO. OF SUBJECTS	1905	
MEAN	5.89	INCHES
ST. DEV.	.28	INCHES
COEF. OF VAR.	4.8%	
SYMMERTY	.26	
KURTOSIS	3.14	

ADJUSTED COMPOSITE VALUE	
MEAN	5.85
ST. DEV.	0.28

THE PERCENTILES

ARMY INCHES		AFW INCHES
6.40	99TH	6.63
6.34	98TH	6.53
6.30	97TH	6.46
6.24	95TH	6.38
6.14	90TH	6.26
6.07	85TH	6.19
6.02	80TH	6.13
5.97	75TH	6.08
5.93	70TH	6.03
5.89	65TH	5.99
5.85	60TH	5.95
5.82	55TH	5.91
5.78	50TH	5.88
5.75	45TH	5.84
5.71	40TH	5.80
5.68	35TH	5.77
5.64	30TH	5.73
5.60	25TH	5.69
5.56	20TH	5.64
5.51	15TH	5.59
5.45	10TH	5.52
5.36	5TH	5.43
5.30	3TH	5.37
5.26	2ND	5.33
5.18	1ST	5.27

DEFINITIONS OF LANDMARKS

ACROMIALE: see SHOULDER

ANKLE: the level of the minimum circumference of the ankle above the projections of the ankle bones (the malleoli) as established by measurement.

AXILLA: the armpit. Landmarks are the points on the axillary skinfolds at the inferior edge of the armpit determined by placing a straight edge horizontally and as high as possible into the axilla without compression of the soft tissue and marking the front and rear points of contact of this straight edge. The MIDAXILLARY LINE is a vertical line originating at the center of the axillary space.

BICEPS: the point of maximum protuberance of the biceps brachii muscle as established by visual inspection when the elbow is flexed 90 degrees, fist clenched and the biceps strongly contracted.

BUSTPOINT: the most anterior protrusion of the bra cup.

BUTTOCK: the level of the maximum posterior protrusion of the buttocks as determined by visual inspection.

CALF: the level of the maximum circumference of the calf as determined by measurement.

CERVICALE: the base of the neck portion of the spine. The landmark is located at the tip of the spinous process of the seventh cervical vertebra as determined by palpation. Often it is most easily found when the subject's head is bent forward.

DELTOID: the most lateral protrusion of the deltoid muscle of the upper arm as determined by visual inspection.

GLUTEAL FURROW: the crease formed on the back of the thigh at its juncture with the buttock.

HIP: this landmark was placed in the Army survey at the maximum lateral protrusion of the hip bones. In the AFW survey, hip landmarks were located at points 7 inches and 9 inches below the right waist landmark as measured over the body surface. For purposes of this report, we used whichever of the two AFW landmarks represented the larger lateral protrusion--in most cases, the 9-inch-below-waist landmark. Measurements at this level corresponded closely to Army measurements. (See also TROCHANTERION.)

KNEE: the upper and lower borders of the patella (kneecap) are located by palpation and the horizontal midpoint between the borders is determined visually and marked with a short horizontal line. The subject's knee is straight but care is taken to insure that it is not locked. Landmark for circumference. (See also KNEE (TIBIALE).)

KNEE (TIBIALE): the level of the proximal medial merging of the tibia as determined by palpation. Landmark for knee height.

MIDAXILLARY LINE: see AXILLA

MIDSCYE: see SCYE

MIDSHOULDER: see SHOULDER

NECK: a circle is established by placing a loop over the subject's head and tightening it around the neck at the neck-shoulder juncture. In the AFW survey the loop was adjusted so that the plane formed was perpendicular to the long axis of the neck. In the Army survey the loop <u>was not</u> perpendicular to the long axis of the neck and was <u>usually</u> higher on the posterior neck surface than on the anterior neck surface. Anterior, right and left lateral and posterior points were marked at the intersections of the circle with the mid-sagittal plane, with the neck-shoulder junctures and with the spine.

OLECRANON: the proximal end of the ulna, the bone on the little finger side of the forearm.

RADIAL STYLION: see WRIST

SCYE: the line followed by a typical set-in sleeve. This is a series of marks drawn at the axillary folds formed by the juncture of the arms and trunk. Subject stands and initially abducts her right arm slightly; a straight edge is placed horizontally under the armpit without compressing the tissue, so that the top of the straight edge touches the inferior point of the axillary fold. The subject then relaxes her arm and short horizontal lines are drawn at the level of the top of the straight edge on the anterior and posterior surfaces of the arms and torso. On the posterior surface, a line is also drawn upward following the fold towards the acromial landmark. The process is repeated on the left side of the body. The intersections of the posterior horizontal scye landmarks and the lines following the axillary folds are the SCYE POINT landmarks. The points located halfway between the anterior scye landmark and acromiale (tip of the shoulder) and between the posterior scye landmark and acromiale are known as the MIDSCYE landmarks.

SHOULDER (ACROMIALE): the superior bony tip of the shoulder blade. The landmark is located at the most lateral margin of each acromial process as determined by palpation.

MIDSHOULDER: a point on the upper surface of the shoulder midway between the lateral neck mark and the acromial landmark, as determined by visual inspection.

STYLION: see WRIST

TIBIALE: see KNEE (TIBIALE)

TROCHANTERION: the tip of the bony lateral protrusion of the proximal end of the femur (thigh bone).

ULNAR STYLION: see WRIST

WAIST: the level established by the subject placing an elastic tape around her "natural waist." This level is marked anteriorly and posteriorly in the midsagittal plane and on the midaxillary lines.

WRIST: the tip of the styloid process of the right radius is determined by palpation and marked with a short horizontal line. The landmark is extended along the anterior and posterior aspects of the wrist perpendicular to the long axis of the forearm. The RADIAL-STYLION is marked at the bony protrusion on the distal end of the radius, the forearm bone on the thumb side of the arm. The ULNAR STYLION is marked at the distal end of the ulna, the forearm bone on the little finger side of the hand.

GLOSSARY

ABDOMINAL EXTENSION: the most anterior point on the curve of the abdomen in the midsagittal plane.

ABDUCT: to move away from the axis of the body or one of its parts.

ACROMION: tip of the shoulder. The most lateral point of the lateral edge of the acromial process of the scapula (shoulder blade).

ANKLE LEVEL: the level of the smallest girth of the right ankle above the protuberances of the ankle bones (malleoli).

ANTERIOR: pertaining to the front of the body, as opposed to posterior.

AXILLA: the armpit; AXILLARY: pertaining to the armpit.

AXILLARY FOLD, POSTERIOR: the furrow formed by the juncture of the upper arm and the back.

BICEPS BRACHII: the large protruding muscle mass on the anterior surface of the upper arm.

BUST LEVEL: the level of the right bustpoint.

BUSTPOINT: most anterior protrusion of the bra pocket.

BUTTOCK LEVEL: the level of the maximum posterior protrusion of the right buttock.

CALF HEIGHT: the level of the maximum circumference of the right calf.

CERVICALE: the protrusion of the spinal column at the base of the neck, caused by the tip of the spine of the 7th cervical vertebra.

CORONAL PLANE: a vertical plane which divides the body into anterior and posterior sections; a vertical plane perpendicular to a sagittal plane.

DELTOID MUSCLE: the large muscle on the lateral border of the upper arm in the shoulder region.

DISTAL: the end of a body segment farthest from the head or area of attachment; opposed to proximal.

EXTEND: to move adjacent segments so that the angle between them is increased as when the leg is straightened; opposite of flex.

EXTERNAL: away from the midplane of the body; lateral, opposed to medial or internal.

FEMUR: the thigh bone.

FIBULA: the bone on the lateral side of the lower leg.

FLEX: to move a joint in such a direction as to bring together the two parts which it connects, as when the elbow is bent.

FRANKFORT PLANE: the standard horizontal plane of orientation of the head, containing tragion and the lowest point of the orbit. This plane is closely approximated when the subject looks directly forward with her line of vision horizontal.

GLUTEAL FURROW: the furrow formed by the junction of the buttock with the back of the leg.

HUMERUS: the upper arm bone.

ILIUM: the hip bone.

INFERIOR (INFRA): lower edge (below), as opposed to superior (SUPRA).

INSEAM: a tailoring term indicating the inside length of sleeve or trouser, measured on the medial side of arm or leg.

INTERNAL: near the midplane of the body, as opposed to external.

LATERAL: lying toward the sides of the body; opposed to medial.

MALLEOLUS: the bony protrusion, either lateral or medial, of the ankle.

MEDIAL: lying near the midsagittal plane of the body; opposed to lateral.

MIDAXILLARY PLANE: the vertical plane parallel to the coronal plane passing through the centers of the armpits; MIDAXILLARY LINES--the intersection of the torso and the midaxillary plane.

MIDSAGITTAL PLANE: the vertical plane which divides the body into essentially equal right and left sections.

MIDSHOULDER: the point on the superior border of the shoulder midway between acromion and the juncture of the neck and shoulder.

NECK POINT: the point marking the intersection of the right side of the neck with the trapezius muscle of the right shoulder.

OLECRANON: the proximal (upper) end of the ulna (the medial forearm bone).

OMPHALION: the midpoint of the umbilicus or navel.

PATELLA: the kneecap.

POPLITEAL: the hollowed-out region of the leg directly behind the bent knee, involving both the bottom of the thigh and the top of the calf.

POSTERIOR: pertaining to the back of the body, as opposed to anterior.

PROXIMAL: the end of a body segment nearest the head; opposed to distal.

RADIALE: the highest point on the proximal head of the radius, near the midpoint of the elbow joint on the posterior side of the arm.

RADIUS: the bone of the lower arm which extends from the lateral side of the elbow to the wrist at the base of the thumb; radial, pertaining to radius.

SCAPULA: the shoulder blade.

SCYE: a tailoring term used to designate the armhole of a garment. Here it is used to refer to points on either side of the body at approximately the level of the axilla (armpit).

SITS ERECT: subject sits on a flat horizontal surface with her head in the Frankfort plane, weight distributed equally, her back held in, her shoulders held back, and her thighs parallel. This position requires holding the torso straight, but not rigid.

SPHYRION: the most distal point of the tibia; it lies at the tip of the malleolar process.

STANDS ERECT: subject stands on a flat surface, with her head in the Frankfort plane, her weight distributed equally, her back held in and her shoulders held back, and her legs fully straightened. This position requires holding the body straight but not rigid.

STYLION: the point in the wrist region at the distal end of the radius-ulna.

SUB (INFRA): lower edge (below), as opposed to supra.

SUBSCAPULAR: inferior edge of the shoulder blade.

SUBSTERNALE: inferior edge of the sternum (breast bone).

SUPERIOR (SUPRA): upper edge (above), as opposed to sub or inferior.

SUPRAILIAC: superior edge of the pelvis in the midaxillary plane.

SUPRASTERNALE: the lowest point in the notch in the upper edge of the breast bone.

SURFACE DISTANCE: a measurement that follows the general contours of the surface of the body.

TIBIALE: the uppermost point on the medial superior surface of the tibia.

TRAPEZIUS: a superficial muscle running from the spine to the shoulder.

TRANSVERSE PLANE: any horizontal plane through the body.

TROCHANTERION: the top of the bony lateral protrusion of the proximal end of the femur (thigh bone).

ULNA: the bone of the lower arm which runs from the tip of the elbow to the wrist on the same side as the little finger.

VERTEX: the top of the head in the midsagittal plane when the head is held in the Frankfort plane.

WAIST LEVEL: the height of the horizontal plane at the "natural" waist level.

WRIST LEVEL: the level of the extension of the radial stylion point across the anterior surface of the forearm perpendicular to the long axis of the forearm.

CHAPTER III

Selected Bivariate Frequency Tables

Among the more graphic ways of presenting information on the various ways and degrees to which body dimensions related to one other are bivariate frequency tables. The bivariate table shows the ranges of any two given measurements and the numbers of subjects who fall within a particular range of values for one variable and simultaneously within a specified range for a second variable. The double bivariates in this chapter encompass both Army and AFW samples. Thus, as can be seen by scanning Table 1, 30 USAF women and 25 Army women fall in the weight range from 122.0 to 126.9 pounds (the box designated by the five-pound interval value of 124.5) and in the height range between 64.6 and 65.5 inches (in the 65-inch box).

Bivariate tables can be useful to clothing designers in a number of ways. For example, while the relationship between two measurements is indicated by the correlation coefficient (here denoted by R), the extent of correlation can be estimated by the general shape of the bivariate. Table 2, which relates hip circumference and weight, shows a well defined band extending from the lower left to the upper right which indicates that increasing hip circumferences tend to accompany corresponding increases in weight. This apparently strong relationship is confirmed by the high R values (.895 and .903 out of a possible 1.0). There is, on the other hand, no such pattern displayed in Table 3 (crotch height and waist circumference). Its generally oval shape indicates a poor degree of relationship between these two variables which means that almost any crotch height can be expected to occur with almost any waist circumference (R values of .221 and .144).

Probably the most useful purpose served by the bivariate frequency table is establishment of a clothing tariff which can be defined as the number of garments of each size which must be provided for a given population. For example, in Table 4, which gives the control dimensions neck-to-bustpoint length and bust circumference, it can be seen that a total of 126 (76/50) women have a neck-to-bustpoint length falling within the 10.1-inch interval and a bust circumference falling within the 35.4-inch interval. This represents about 4.0% of the combined samples. Sizing programs, of course, cannot feasibly contain as many size increments as are reflected in the bivariate tables, but the combinations of bivariate boxes to correspond to the ranges reflected in the sizing program will achieve the purpose with the same simple calculation.

The tables included here are selected with a view toward their relevance to clothing for the upper and lower body, and include those for the key dimensions used in the sizing tables which appear in Chapters V and VI.

TABLE 1

A BIVARIATE FREQUENCY TABLE FOR
STATURE AND WEIGHT
1968 USAF WOMEN/1976 USA WOMEN

STATURE(IN) \ WEIGHT(LB)	84.5	89.5	94.5	99.5	104.5	109.5	114.5	119.5	124.5	129.5	134.5	139.5	144.5	149.5	154.5	159.5	164.5	169.5	174.5	179.5	184.5	189.5	194.5	199.5	204.5	209.5	214.5	219.5	TOTAL
72.0													/ 1		/ 1				1/										1/ 2
71.0								1/		1/		1/	/ 1	/ 1	/ 2	1/ 2	/ 1	/ 1											4/ 8
70.0								1/	2/ 1		1/ 1	1/ 3	5/ 2	1/ 2	3/ 1	1/ 4	/ 2	1/	/ 1										16/ 17
69.0									2/ 2	/ 4	4/ 4	4/ 4	6/ 7	/ 7	1/ 3	1/ 6	1/ 7	2/ 1	/ 1		/ 3			1/	/ 1			/ 1	22/ 51
68.0						3/	3/ 2	3/	6/ 4	10/ 2	16/ 8	5/ 4	10/ 4	7/ 8	7/10	3/ 6	4/ 3	2/ 3	1/ 2	1/ 2	/ 1		1/						62/ 59
67.0						2/ 3	4/ 4	8/ 7	11/ 8	15/10	10/13	23/ 8	21/11	13/15	7/ 7	6/ 8	2/ 3	2/ 2	1/ 1	1/ 4	3/		/ 1						129/109
66.0				1/	4/	6/ 1	14/ 5	18/13	28/12	29/ 9	33/20	27/18	18/19	24/18	7/12	9/ 8	5/ 2	2/	3/ 1	1/ 2	/ 1	1/ 1		/ 2				/ 1	227/140
65.0		/ 1		/ 2	6/ 4	10/11	16/ 9	29/24	30/25	45/25	30/27	24/20	25/18	12/18	14/12	1/ 8	1/ 3	/ 1	1/		3/	1/ 1		1/					249/208
64.0			/ 1	5/ 4	11/ 9	18/12	35/12	41/20	50/26	46/15	34/30	19/24	27/16	9/10	4/ 3	5/ 3	1/ 2	1/ 1	/ 3	/ 1	1/ 2	/ 1	/ 1			/ 1			307/197
63.0			3/	9/ 4	17/10	29/14	44/14	51/18	41/26	39/34	25/21	18/16	5/18	2/ 3	2/ 5	3/ 3	2/ 1	1/ 1	/ 1				1/						290/168
62.0		2/ 1	3/ 2	6/ 5	24/10	31/17	40/19	34/17	40/21	21/27	15/14	13/19	4/ 6	1/ 4	4/ 2	/ 1	1/	2/											243/165
61.0	1/	/ 1	9/ 4	18/ 9	32/ 5	25/12	28/11	22/17	20/12	16/12	10/ 8	8/ 3	/ 5	2/ 1	/ 2	1/													192/100
60.0		1/ 1	2/ 6	13/ 7	8/12	19/ 5	14/ 4	12/ 5	7/ 8	6/ 3	2/ 1		/ 1	1/ 1		/ 1		1/											86/ 54
59.0		1/	4/ 3	5/ 1	3/ 3	7/ 5	6/ 2	1/ 6	6/ 2	2/ 1	1/ 3	1/	1/																46/ 28
58.0		/ 1	1/ 2	/ 5	2/ 1	2/	3/	/ 2		1/				/ 1															9/ 12
57.0				2/			/ 1		/ 2																				2/ 3
56.0							/ 1																						/ 1
TOTAL	1/ 5	4/ 17	22/ 37	61/ 54	113/ 80	152/ 83	209/ 129	221/ 148	241/ 142	231/ 148	181/ 117	142/ 108	122/ 87	72/ 80	49/ 46	30/ 24	17/ 10	14/ 10	7/ 9	3/ 7	7/ 3	2/ 2	2/ 2	2/ 1	/ 1	/ 1	/ 1	1905/ 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WEIGHT(LB)	127.28	16.59	0.533	= (3.737)*STATURE(IN)+(-111.21)	14.04
STATURE(IN)	63.82	2.36	0.533	= (0.076)*WEIGHT(LB)+(54.15)	2.00

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WEIGHT(LB)	132.11	18.76	0.536	= (3.916)*STATURE(IN)+(-119.12)	15.84
STATURE(IN)	64.15	2.57	0.536	= (0.073)*WEIGHT(LB)+(54.51)	2.17

TABLE 2

A BIVARIATE FREQUENCY TABLE FOR
HIP CIRCUMFERENCE AND WEIGHT
1968 USAF WOMEN/1976 USA WOMEN

WEIGHT(LB)

HIP CIRCUMFERENCE(IN)	84.5	89.5	94.5	99.5	104.5	109.5	114.5	119.5	124.5	129.5	134.5	139.5	144.5	149.5	154.5	159.5	164.5	169.5	174.5	179.5	184.5	189.5	194.5	199.5	204.5	209.5	214.5	219.5	TOTAL
52.5																												/ 1	/ 1
51.5																													
50.5																													
49.5																											/ 1		/ 1
48.5																								1/		/ 1			1/ 1
47.5																					2/ 1	/ 1							4/ 2
46.5																	1/	1/		/ 1	2/		1/ 1	/ 1					5/ 3
45.5																1/	1/		4/ 2	1/ 2	2/				/ 1				9/ 5
44.5														2/	7/	4/ 2	1/ 2	5/ 1	1/ 3	1/ 2	1/ 2	/ 1	1/	1/ 1					24/ 14
43.5												1/	3/ 2	4/ 2	5/ 2	9/ 6	3/ 5	3/ 4	/ 1	1/ 2	/ 3		/ 1						29/ 20
42.5											1/ 1	5/	13/ 6	16/ 6	14/12	5/11	7/ 7	3/ 1	1/ 1	/ 1									65/ 48
41.5								1/	3/	5/ 1	13/ 5	22/ 8	34/13	24/25	12/20	8/18	4/ 5	1/ 3	/ 2	/ 1	/ 1	/ 1							127/101
40.5							1/	3/ 2	10/ 3	34/ 9	47/22	46/28	36/41	19/28	7/14	2/ 8	/ 4	1/ 1	1/ 1										207/157
39.5							4/ 1	14/ 5	44/10	72/26	66/45	46/40	30/33	8/16	3/ 9	1/ 5	/ 1												290/183
38.5					2/	12/ 3	35/ 5	60/18	112/43	77/81	34/53	17/33	8/11	1/11	1/ 3														357/241
37.5				2/	12/	33/ 7	72/20	102/47	57/57	39/34	17/21	3/ 8		/ 1															337/195
36.5			1/ 1	2/ 4	31/ 6	62/32	72/37	34/48	14/34	4/ 7	1/ 1																		221/170
35.5			5/ 2	24/ 7	48/18	39/29	22/17	7/ 8	1/ 1	/ 2																			148/ 84
34.5		/ 1	6/ 4	18/12	19/25	6/ 9	3/ 3	/ 1																					82/ 55
33.5		1/ 2	9/ 7	11/11	1/ 5																								22/ 25
32.5	1/	3/ 1	1/ 2	4/ 3																									9/ 8
31.5		/ 1	/ 1																										/ 2
30.5	1	4	22	61	113	152	209	221	241	231	181	142	122	72	49	30	17	14	7	3	7	2	2	2					1906
TOTAL		5	17	37	54	80	83	129	148	142	148	117	106	67	80	48	24	10	10	9	7	3	2	2	1	1	1	1	1990

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WEIGHT(LB)	127.28	16.59	0.895	= (6.383)*HIP CIRCUMFERENCE(IN)+(-112.70)	7.39
HIP CIRCUMFERENCE(IN)	37.60	2.33	0.895	= (0.126)*WEIGHT(LB)+(21.56)	1.04

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WEIGHT(LB)	132.11	18.76	0.903	= (6.832)*HIP CIRCUMFERENCE(IN)-(-124.73)	8.05
HIP CIRCUMFERENCE(IN)	37.59	2.48	0.903	= (0.119)*WEIGHT(LB)+(21.87)	1.06

TABLE 3

A BIVARIATE FREQUENCY TABLE FOR
WAIST CIRCUMFERENCE AND CROTCH HEIGHT
1968 USAF WOMEN/1976 USA WOMEN

WAIST CIRCUMFERENCE(IN) \ CROTCH HEIGHT(IN)	23.7	24.2	24.7	25.2	25.7	26.2	26.7	27.2	27.7	28.2	28.7	29.2	29.7	30.2	30.7	31.2	31.7	32.2	32.7	33.2	33.7	34.2	34.7	35.2	35.7	36.2	TOTAL
42.0															/ 1												/ 1
41.0																/ 1			/ 1								/ 2
40.0														/ 2													/ 2
39.0																											
38.0															/ 1												/ 1
37.0						1/								/ 1	/ 2				/ 1								1/ 4
36.0										/ 1	1/	/ 1		/ 3	/ 3		1/ 1							/ 1			2/ 10
35.0						/ 1						1/	1/	/ 1	2/ 3	/ 3		/ 1	/ 3				/ 1				4/ 13
34.0				/ 1		/ 1		/ 1		2/	/ 3	1/ 1	2/ 2	1/ 3	1/ 2	/ 2	/ 1			/ 1		/ 1					7/ 19
33.0						2/	/ 1	/ 1		1/ 6	1/ 2	1/ 1	1/ 3	3/	2/ 7	1/ 1	/ 1	/ 2	/ 1	/ 2	1/						13/ 28
32.0							1/ 1	1/ 1	1/ 1	4/	3/ 3	2/ 6	1/ 7	2/ 3	2/ 3	6/ 2	1/ 3	1/ 2	/ 2				/ 1				25/ 35
31.0					1/ 1		1/ 1	/ 1	1/ 5	3/ 6	4/ 5	5/ 7	3/12	5/ 6	5/ 6	3/ 3	3/ 6	3/ 9	3/ 7	1/ 2	1/ 2			/ 1		/ 1	42/ 63
30.0				/ 1			1/ 1	2/	4/ 5	8/ 6	8/16	11/20	16/11	7/13	13/11	5/ 8	1/11	4/ 3	2/ 6	1/ 2	/ 1	/ 1					83/117
29.0					1/ 2	2/	1/ 2	5/ 6	6/ 3	9/ 6	11/13	22/19	13/13	15/21	7/13	6/15	7/16	6/15	4/ 7	2/ 6	/ 2	1/ 3	/ 1				118/165
28.0				1/		1/ 1	5/ 3	6/ 4	13/10	19/14	21/12	33/22	31/26	20/29	24/12	15/12	10/14	6/ 6	3/ 9	3/ 7	/ 3	2/ 2	/ 1	/ 1	/ 1		215/190
27.0					2/ 1	4/ 1	9/ 4	11/ 5	25/11	32/15	33/20	49/34	38/32	32/27	21/24	31/22	20/12	10/19	6/ 9	3/ 5	/ 3	3/ 4	/ 1				330/249
26.0			/ 1		4/	7/ 2	11/ 5	17/ 9	17/ 6	37/14	49/26	50/15	59/23	51/29	34/13	27/13	17/19	5/ 5	5/ 9	3/	1/ 1	/ 1					388/195
25.0			2/		5/	4/	15/ 4	28/ 4	25/ 9	44/10	52/15	40/14	34/16	28/12	21/12	16/12	10/ 9	4/ 6	3/ 1	1/ 3	/ 1	2/ 2					330/129
24.0	1/		1/	3/	2/	2/	29/ 4	28/ 5	27/ 7	25/ 5	34/ 9	24/10	28/ 7	21/ 6	10/ 7	8/ 2	4/ 4	5/	1/	3/	/ 1	1/					247/ 67
23.0			1/			1/	5/	13/	11/ 3	12/ 1	10/ 5	15/ 2	7/ 2	7/ 2	1/	2/	1/	1/	1/ 1								89/ 16
22.0										3/ 1	4/ 1		1/ 1	1/	/ 1	1/											10/ 4
21.0							1/																				1/
TOTAL	1 /		4 / 1	4 / 2	15 / 4	24 / 6	74 / 26	107 / 37	130 / 61	199 / 85	225 / 134	264 / 152	234 / 155	181 / 159	143 / 121	121 / 98	75 / 97	47 / 70	28 / 58	17 / 30	3 / 14	9 / 14	/ 5	/ 3	/ 1	/ 1	1906 / 1930

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
CROTCH HEIGHT(IN)	29.33	1.59	0.221	= (0.162)*WAIST CIRCUMFERENCE(IN)+(25.05)	1.55
WAIST CIRCUMFERENCE(IN)	26.46	2.16	0.221	= (0.300)*CROTCH HEIGHT(IN)+(17.66)	2.10

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
CROTCH HEIGHT(IN)	30.07	1.72	0.144	= (0.093)*WAIST CIRCUMFERENCE(IN)+(27.47)	1.71
WAIST CIRCUMFERENCE(IN)	27.94	2.67	0.144	= (0.224)*CROTCH HEIGHT(IN)+(21.21)	2.64

TABLE 4

A BIVARIATE FREQUENCY TABLE FOR
BUST CIRCUMFERENCE AND NECK-BUSTPOINT LGT
1968 USAF WOMEN/1976 USA WOMEN

NECK-BUSTPOINT LGT(IN)

BUST CIRCUMFERENCE(IN)	7.4	7.7	8.0	8.3	8.6	8.9	9.2	9.5	9.8	10.1	10.4	10.7	11.0	11.3	11.6	11.9	12.2	12.5	12.8	13.1	TOTAL
46.4												/ 1									/ 1
45.4													/ 1								/ 1
44.4													/ 1	/ 1		1/		2/			3/ 2
43.4													1/	1/	1/	1/	1/	1/ 1			8/ 1
42.4												/ 1	3/	1/ 1	/ 1	3/	1/ 1				8/ 4
41.4									/ 1	/ 1	1/	4/ 2	3/	5/ 3	3/ 1	4/ 1	/ 2	2/ 1			23/ 12
40.4								/ 1	/ 2	5/ 1	3/ 1	4/ 1	7/	3/ 1	4/ 1	2/ 1	3/			1	31/ 10
39.4						/ 2		2/	1/ 2	3/ 2	6/ 4	13/ 5	11/ 9	14/ 3	8/ 1	4/ 3	1/ 2	/ 1			83/ 34
38.4						/ 1	/ 1	5/ 1	8/ 2	21/ 8	12/ 3	22/ 19	21/ 15	11/ 11	2/ 2	3/ 1					105/ 85
37.4					/ 1		2/ 6	7/ 4	11/ 9	32/ 16	20/ 17	28/ 21	22/ 9	13/ 7	3/ 3	3/ 4					141/ 96
36.4				1/ 1	3/ 1	4/	10/ 5	27/ 14	38/ 15	82/ 32	40/ 30	54/ 23	20/ 17	12/ 8	4/ 5	2/ 5	/ 1	/ 1			277/ 156
35.4				/ 1	7/ 2	6/ 10	37/ 6	58/ 30	63/ 36	76/ 2	33/ 23	40/ 31	13/ 19	8/ 5	2/ 8	1/ 1	1/				328/ 218
34.4				1/	8/ 5	9/ 5	41/ 22	84/ 28	65/ 48	87/ 29	41/ 19	31/ 18	10/ 13	3/ 2	1/	/ 1					381/ 192
33.4		/ 1	1/	4/ 3	12/ 5	19/ 18	84/ [illegible]	[illegible]	43/ 38	61/ 20	14/ 23	12/ 18	2/ 3	2/ 2	1/						299/ 195
32.4			1/ 1	5/ 4	13/ 26	15/ 14	39/ [illegible]	44/ 38	20/ 31	10/ 11	8/ 7	2/ 6	/ 2	1/							153/ 180
31.4		/ 1		3/ 8	8/ 13	8/ 8	14/ 25	13/ 19	10/ 13	4/ 6	1/ 2	2/ 2									85/ 97
30.4	/ 1		/ 2	[illegible]	5/ 12	3/ 7	3/ 16	2/ 6	2/ 9	/ 2	1/ 1	1/									15/ 69
29.4			/ 1	[illegible]	/ 2	1/ 4	/ 1	/ 1	1/												2/ 10
28.4					/ 1					/ 1											/ 2
27.4			/ 1																		/ 1
TOTAL	/ 1	/ 2	2/ 5	[illegible]	[illegible]	83/ 67	205/ 148	320/ 186	252/ 198	351/ 179	180/ 130	213/ 146	113/ 89	75/ 42	29/ 20	24/ 17	7/ 6	5/ 4		/ 1	1905/ 1330

1968 USAF WOMEN	MEAN	ST DEV	REGRESSION EQUATIONS	STD ERROR
NECK-BUSTPOINT LGT(IN)	10.04	0	= (0.213)*BUST CIRCUMFERENCE(IN)+(2.51)	0.57
BUST CIRCUMFERENCE(IN)	35.33	2	= (1.937)*NECK-BUSTPOINT LGT(IN)+(15.88)	1.72

1976 USA WOMEN	MEAN	ST [illegible]	REGRESSION EQUATIONS	STD ERROR
NECK-BUSTPOINT LGT(IN)	9.95	0.32	= (0.206)*BUST CIRCUMFERENCE(IN)+(2.90)	0.64
BUST CIRCUMFERENCE(IN)	34.72	2.49	= (1.909)*NECK-BUSTPOINT LGT(IN)+(15.72)	1.94

TABLE 5

A BIVARIATE FREQUENCY TABLE FOR
BUST CIRCUMFERENCE AND HIP CIRCUMFERENCE
1968 USAF WOMEN/1976 USA WOMEN

HIP CIRCUMFERENCE (IN)

BUST CIRCUMFERENCE (IN)	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	TOTAL
48.4																			/ 1					/ 1
46.4														/ 1										/ 1
44.4										1/			/ 1	2/				/ 1						3/ 2
43.4											1/	1/	1/		1/ 1	1/		1/						6/ 1
42.4									1/	1/	/ 3	4/			1/		1/						/ 1	8/ 4
41.4									1/	3/ 1	6/ 2	2/ 3	2/ 2	4/ 1	2/	2/ 2	2/ 1							23/ 12
40.4								2/ 1	3/ 1	3/ 2	6/ 3	6/ 1	2/	5/ 2	3/	1/	1/							31/ 10
39.4						1/	/ 1	7/ 3	9/ 9	14/ 5	13/ 7	7/ 5	6/ 1	4/ 1	2/ 1	/ 1								83/ 34
38.4					1/	/ 1	6/ 5	12/ 6	20/ 9	20/ 9	17/12	18/ 7	7/10	6/ 4	/ 1		/ 1							105/ 65
37.4					/ 2	2/ 2	6/ 4	27/12	35/23	31/18	23/19	7/ 7	6/ 6	1/ 1	/ 2	1/								141/ 98
36.4				2/	3/ 1	8/ 2	40/17	58/35	66/30	58/38	25/18	13/10	4/ 4	1/ 3										277/156
35.4			1/	3/	10/ 3	40/15	70/23	71/38	84/55	40/38	22/19	6/ 7	/ 1	1/ 1										328/218
34.4			1/ 1	6/	24/ 6	64/31	97/36	103/44	50/37	19/23	12/10	4/ 4	1/ 1											381/192
33.4		1/	4/ 1	14/ 3	41/13	54/45	72/49	68/37	34/21	18/13	3/ 6	/ 1												289/195
32.4	/ 1	6/ 1	3/ 8	16/16	41/26	34/37	34/36	14/36	6/ 7	1/ 9	/ 1	/ 1												158/180
31.4		5/ 1	7/ 3	9/20	20/22	14/26	6/17	4/ 8	/ 1	/ 1														65/ 97
30.4	/ 1	2/ 2	2/10	/15	6/11	9/ 7	1/ 8	2/ 1	1/															16/ 53
29.4		/ 1	/ 1	/ 1	1/ 1	/ 4	1/ 1				/ 1													2/ 10
28.4			/ 1	/ 1																				/ 2
27.4		/ 1																						/ 1
TOTAL	2	8	25	55	84	170	155	241	193	157	101	48	28	14	5	3	2	1	1				1	1905/1390

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP CIRCUMFERENCE(IN)	37.60	2.33	0.692	= (0.717)*BUST CIRCUMFERENCE(IN)+(12.27)	1.68
BUST CIRCUMFERENCE(IN)	35.33	2.24	0.692	= (0.667)*HIP CIRCUMFERENCE(IN)+(10.25)	1.62

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP CIRCUMFERENCE(IN)	37.59	2.48	0.707	= (0.703)*BUST CIRCUMFERENCE(IN)+(13.19)	1.75
BUST CIRCUMFERENCE(IN)	34.72	2.49	0.707	= (0.711)*HIP CIRCUMFERENCE(IN)+(7.99)	1.76

TABLE 6

A BIVARIATE FREQUENCY TABLE FOR
BUST CIRCUMFERENCE AND BACK CURV AT BUST
1968 USAF WOMEN/1976 USA WOMEN

BACK CURV AT BUST (IN)

BUST CIRCUMFERENCE (IN)	12.2	12.	13.8	13.4	13.8	14.2	14.6	15.0	15.4	15.8	16.2	16.6	17.0	17.4	17.8	18.2	18.6	19.0	19.4	19.8	20.2	20.6	21.0	21.4	21.8	TOTAL
48.4																									/ 1	/ 1
46.4																									/ 1	/ 1
44.4																		1/		2/	/ 1		/ 1			3/ 2
43.4												1/					1/	1/	1/		1/ 1	1/				6/ 1
42.4														1/		1/	1/	/ 1		2/	1/ 1	2/ 2				8/ 4
41.4									1/					1/	1/	4/	4/ 1	2/ 3	3/ 2	2/ 5	1/ 1	3/	1/			23/ 12
40.4													2/	3/ 1	5/	7/ 3	4/ 1	2/ 1	3/ 1	3/ 2		2/	/ 1			31/ 10
39.4							1/		1/	1/	2/ 1	2/	8/ 1	10/ 6	7/ 3	5/ 5	16/ 9	7/ 8	1/	1/ 1		1/				63/ 34
38.4					1/				4/	6/ 1	8/ 1	10/ 3	15/ 3	14/ 7	16/12	12/16	9/11	6/ 5	2/ 5	3/ 1						105/ 65
37.4							1/	4/	3/	7/	7/ 4	17/ 4	21/17	23/22	22/20	16/16	15/10	8/ 2	1/	1/	1/ 1					141/ 96
36.4						1/	1/	3/	11/ 1	23/ 4	44/ 6	38/ 3	38/34	46/39	36/25	18/ 8	9/ 8	6/	2/	1/ 1						277/156
35.4						1/	7/	17/ 2	31/ 9	52/15	45/29	49/49	51/46	40/43	27/15	10/ 8	4/ 2	2/	1/		1/					328/218
34.4						9/	11/ 1	25/ 3	38/16	76/32	81/46	47/ 45	45/26	31/ 15	11/ 5	6/		1/								381/192
33.4					3/ 1	7/ 1	10/ 3	37/19	52/26	46/47	55/54	43/28	38/13	12/ 4	4/	2/	2/		3/							299/195
32.4				1/ 1	3/ 1	3/ 4	20/12	18/30	30/37	31/42	25/38	15/10	9/ 3	3/		1/ 1	1/									153/160
[illegible].4				3/	1/ 3	1/ 5	14/17	8/28	11/21	11/17	9/ 6	2/	3/ 1	1/ 1												85/ 97
30.4				/ 1	1/ 8	1/ 9	2/13	4/15	1/ 3	3/ 1	/ 2	/ 1					1/									15/ 53
29.4				1/		/ 2	1/ 5	/ 2	/ 1																	2/ 10
28.4				/ 1	/ 1																					/ 2
27.4	/ 1																									/ 1
TOTAL	1		3	5 / 3	9 / 14	23 / 21	66 / 61	115 / 97	183 / 114	256 / 159	278 / 188	225 / 173	220 / 143	184 / 138	129 / 80	82 / 67	67 / 42	36 / 20	17 / 8	15 / 10	5 / 5	3 / 2	1 / 2		/ 1	1906 / 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
BACK CURV AT BUST(IN)	16.59	1.20	0.625	= (0.335)*BUST CIRCUMFERENCE(IN)+(4.76)	0.84
BUST CIRCUMFERENCE(IN)	35.33	2.24	0.625	= (1.167)*BACK CURV AT BUST(IN)+(15.96)	1.75

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
BACK CURV AT BUST(IN)	16.52	1.23	0.849	= (0.418)*BUST CIRCUMFERENCE(IN)+(2.01)	0.65
BUST CIRCUMFERENCE(IN)	34.72	2.49	0.849	= (1.723)*BACK CURV AT BUST(IN)+(6.26)	1.32

TABLE 7

A BIVARIATE FREQUENCY TABLE FOR
BUST CIRCUMFERENCE AND ARM SCYE CIRC
1968 USAF WOMEN/1976 USA WOMEN

BUST CIRCUMFERENCE(IN) \ ARM SCYE CIRC(IN)	11.1	11.4	11.7	12.0	12.3	12.6	12.9	13.2	13.5	13.8	14.1	14.4	14.7	15.0	15.3	15.6	15.9	16.2	16.5	16.8	17.1	17.4	17.7	18.0	18.3	18.6	18.9	19.2	TOTAL
48.4																						/ 1							/ 1
45.4																											/ 1		/ 1
44.4																		1/		2/	/ 1				/ 1				3/ 2
43.4																		2/	1/		3/			/ 1					6/ 1
42.4																1/	1/	2/	1/	2/ 1	/ 1		/ 1		/ 1			1/	6/ 4
41.4															1/	2/	2/ 1	4/ 1	4/ 3	4/ 3	2/ 1	1/	/ 2	2/	/ 1	1/			23/ 12
40.4										/ 1			2/		3/	5/ 1	5/ 1	5/ 2	7/ 1	1/	1/ 1	1/ 3		1/					31/ 10
39.4												2/	5/	8/ 2	10/ 3	13/ 3	8/ 7	11/ 5	2/ 4	3/ 6	1/ 2	/ 1	/ 1						63/ 34
38.4										1/	9/	2/ 4	11/ 2	9/ 5	24/ 13	18/ 11	20/ 3	7/ 8	6/ 9	4/ 1	/ 2	/ 2							105/ 65
37.4								2/	1/ 1	8/		3/ 8	28/ 10	28/ 15	37/ 17	21/ 18	8/ 10	4/ 8	1/ 3	1/ 2	1/ 1		/ 1						141/ 96
36.4							2/	5/ 1	12/ 2	28/ 8	22/ 14	55/ 23	48/ 20	55/ 39	26/ 17	8/ 19	11/ 5	3/ 6	2/ 1	1/ 1									277/ 150
35.4						1/	/ 1	4/	11/ 2	23/ 2	40/ 15	51/ 28	83/ 40	44/ 39	38/ 38	15/ 27	8/ 14	8/ 9	1/ 2	1/ 1	1/								328/ 218
34.4						1/	2/	8/ 1	34/ 3	58/ 20	77/ 29	60/ 29	33/ 38	39/ 23	23/ 26	13/ 12	2/ 9	1/	/ 1	/ 1									361/ 192
33.4					1/	6/	8/	20/ 5	39/ 16	43/ 26	70/ 35	41/ 37	40/ 33	10/ 20	17/ 15	4/ 8		/ 1											289/ 195
32.4					/ 1	7/	11/ 7	20/ 11	35/ 14	28/ 29	24/ 34	15/ 41	10/ 24	9/ 12	5/ 5	/ 2													159/ 190
31.4	1/					4/	9/ 7	8/ 12	13/ 16	14/ 26	9/ 17	6/ 6	1/ 9	/ 3	/ 1	1/	/ 1												65/ 97
30.4				/ 1		1/ 5	1/ 4	2/ 13	/ 13	9/ 9	2/ 6	1/ 1		/ 1															15/ 53
29.4					/ 1	/ 1	/ 2	1/ 1		1/ 4	/ 1																		2/ 10
28.4						/ 1			/ 1																				/ 2
27.4					/ 1																								/ 1
TOTAL	1/ 1			/ 1	1/ 3	20/ 7	31/ 21	65/ 43	144/ 84	184/ 122	259/ 143	202/ 168	296/ 179	187/ 140	213/ 157	119/ 96	81/ 70	57/ 40	26/ 31	20/ 16	10/ 10	2/ 7	/ 5	3/ 1	/ 3	/ 1	/ 1	1/	1905/ 1930

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
ARM SCYE CIRC(IN)	14.61	0.90	0.714	= (0.287)*BUST CIRCUMFERENCE(IN)+(4.47)	0.63
BUST CIRCUMFERENCE(IN)	35.33	2.24	0.714	= (1.780)*ARM SCYE CIRC(IN)+(9.33)	1.57

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
ARM SCYE CIRC(IN)	14.77	0.94	0.758	= (0.287)*BUST CIRCUMFERENCE(IN)+(4.80)	0.62
BUST CIRCUMFERENCE(IN)	34.72	2.49	0.758	= (2.005)*ARM SCYE CIRC(IN)+(5.11)	1.63

TABLE 8

A BIVARIATE FREQUENCY TABLE FOR
BUST CIRCUMFERENCE AND WEIGHT
1968 USAF WOMEN/1976 USA WOMEN

BUST CIRCUMFERENCE(IN) \ WEIGHT(LB)	84.5	89.5	94.5	99.5	104.5	109.5	114.5	119.5	124.5	129.5	134.5	139.5	144.5	149.5	154.5	159.5	164.5	169.5	174.5	179.5	184.5	189.5	194.5	199.5	204.5	209.5	214.5	219.5	TOTAL
48.4																											/ 1		/ 1
46.4																								/ 1					/ 1
44.4															1/			1/	1/				/ 1			/ 1			3/ 2
43.4														1/		1/		1/			2/			1/	/ 1				8/ 1
42.4												1/				2/	1/	1/	1/ 2	/ 1	1/	1/						/ 1	8/ 4
41.4												1/	2/	2/	2/	1/ 3	2/	4/ 3	1/ 1	2/	3/ 2	1/ 1	2/ 1	/ 1					23/ 12
40.4										1/	2/		2/ 1	8/	1/ 3	5/ 1	6/ 2	3/	1/	/ 1	1/	/ 2		1/					31/ 10
39.4									4/	4/	5/	7/ 5	9/ 6	8/ 5	12/ 5	7/ 6	3/ 2	2/ 1	2/	/ 3	/ 1								63/ 34
38.4								2/	2/ 2	13/ 5	11/ 1	14/ 7	14/ 5	18/ 9	18/ 12	7/ 6	2/ 8	2/ 1	1/ 5	1/ 1	/ 3								105/ 65
37.4								5/ 2	11/ 1	15/ 11	25/ 5	27/ 12	30/ 17	13/ 11	10/ 16	9/ 10	2/ 2	/ 3	/ 2	/ 3	/ 1								141/ 96
36.4						5/	6/	21/ 4	41/ 6	50/ 14	51/ 26	44/ 22	38/ 26	13/ 31	4/ 7	3/ 11	1/ 5	/ 2											277/ 158
35.4			1/	1/	7/	16/ 2	29/ 4	44/ 10	66/ 20	58/ 31	44/ 51	33/ 32	21/ 25	6/ 18	/ 14	1/ 8	/ 3												328/ 218
34.4				4/ 1	19/ 1	40/ 2	66/ 11	73/ 26	74/ 37	58/ 34	30/ 31	10/ 23	5/ 13	3/ 8	1/ 2	/ 1	/ 2												301/ 192
33.4		1/	3/	16/ 1	27/ 1	45/ 18	66/ 22	57/ 38	34/ 41	31/ 26	13/ 21	5/ 13	1/ 9	/ 4	/ 1														299/ 195
32.4			10/ 8	19/ 10	39/ 18	29/ 25	36/ 22	18/ 34	7/ 31	2/ 19	/ 8	/ 3	/ 3	/ 1															158/ 160
31.4		2/	8/ 2	18/ 10	17/ 22	15/ 24	6/ 13	3/ 12	/ 10	/ 1	/ 2		/ 1																95/ 97
30.4	1/	1/ 4	1/ 8	5/ 10	3/ 11	2/ 8	/ 10	/ 3	2/	/ 1																			15/ 53
29.4			1/ 2	/ 4	1/ 1	/ 1	/ 1				/ 1																		2/ 10
28.4			/ 1	/ 1																									/ 2
27.4		/ 1																											/ 1
TOTAL	1/	4/ 5	22/ 17	61/ 37	113/ 54	152/ 80	209/ 83	221/ 129	241/ 148	231/ 142	181/ 148	142/ 117	122/ 106	72/ 87	49/ 60	30/ 46	17/ 24	14/ 10	7/ 10	3/ 9	7/ 7	2/ 3	2/ 2	2/ 2	/ 1	/ 1	/ 1	/ 1	1905/ 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WEIGHT(LB)	127.28	16.59	0.799	= (5.905)*BUST CIRCUMFERENCE(IN)+(-81.31)	9.97
BUST CIRCUMFERENCE(IN)	35.33	2.24	0.799	= (0.103)*WEIGHT(LB)+(21.58)	1.35

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WEIGHT(LB)	132.11	18.76	0.808	= (6.081)*BUST CIRCUMFERENCE(IN)+(-79.01)	11.04
BUST CIRCUMFERENCE(IN)	34.72	2.49	0.808	= (0.107)*WEIGHT(LB)+(20.58)	1.47

TABLE 9

A BIVARIATE FREQUENCY TABLE FOR
BUST CIRCUMFERENCE AND NECK CIRCUMFERENCE
1968 USAF WOMEN/1976 USA WOMEN

NECK CIRCUMFERENCE(IN)

BUST CIRCUMFERENCE(IN)	10.8	11.0	11.2	11.4	11.6	11.8	12.0	12.2	12.4	12.6	12.8	13.0	13.2	13.4	13.6	13.8	14.0	14.2	14.4	14.6	14.8	15.0	15.2	15.4	15.6	15.8	TOTAL
46.4																	/ 1										/ 1
45.4																						/ 1					/ 1
44.4															/ 1			/ 1			1/		1/	1/			3/ 2
43.4										1/						1/		2/ 1	1/				1/				8/ 1
42.4														/ 1	1/	/ 2	1/			2/ 1	2/	1/		1/			8/ 4
41.4										/ 1		/ 1	1/ 2	/ 2	1/ 1	/ 1	1/ 2	7/	1/ 2	[illegible]	4/	3/		2/			23/ 12
40.4									/ 1	/ 1	2/	1/ 1	2/	4/	3/ 3	8/	2/	2/ 1	[illegible]	[illegible]	/ 1	1/	1/				31/ 10
39.4									2/	1/ 1	3/ 1	2/ 6	3/ 9	4/ 7	8/ 3	14/ 2	7/ 3	7/ 1	4/	[illegible] 1	2/	3/				1/	63/ 34
38.4								2/	1/ 2	3/ 8	8/11	9/ 9	5/ 9	10/11	9/ 8	20/ 7	13/ 1	10/	5/	[illegible]	2/ 1	3/	1/	1/			105/ 66
37.4							1/ 1	2/ 2	1/ 8	4/ 9	6/17	15/ 7	8/15	25/13	19/ 7	21/ 7	14/ 5	7/ 3	8/	[illegible] 1	1/ 1		2/				141/ 98
36.4					/ 1	/ 2	3/ 6	4/10	9/ 4	15/16	17/27	34/30	21/15	48/14	30/ 9	37/ 7	23/ 3	16/ 1	9/ [illegible]	7/	2/	1/	1/				277/156
35.4				/ 1	1/ 2	3/ 4	/ 4	9/14	11/19	27/32	26/35	49/31	37/20	41/20	31/15	46/16	21/ 4	15/ 1	6/	[illegible]	1/	1/	1/	1/			328/218
34.4			1/		/ 5	5/ 8	5/16	12/24	18/24	38/32	37/31	68/21	43/11	50/ 7	33/ 4	36/ 3	18/ 5	8/ 1	2/	4/	1/	1/		1/			381/192
33.4			/ 1		1/ 5	3/15	2/12	17/26	22/31	40/34	38/21	40/24	37/11	43/10	29/ 3	10/ 2	10/ 1	3/	3/		1/						299/195
32.4		/ 1		/ 4	1/ 9	5/19	9/22	10/20	22/17	25/29	15/29	27/13	12/11	15/ 7	8/ 4	8/ 1	1/	1/	1/								158/180
31.4				/ 8	1/ 8	2/ 9	5/17	7/18	7/ 9	9/14	12/ 9	4/ 7	8/ 4	1/	5/	2/		2/									85/ 97
30.4	/ 1		/ 3	/ 5	/ 4	/ 8	1/ 8	3/ 9	2/ 5	2/ 8	4/ 2	1/ 1	/ 9	1/		1/											15/ 53
29.4					/ 2	1/ 2	1/ 3	/ 3																			2/ 10
28.4					/ 1			/ 1																			/ 2
27.4								/ 1																			/ 1
TOTAL	/ 1	/ 1	1/ 4	/ 16	4/ 36	19/ 65	27/ 97	66/ 126	95/ 130	165/ 177	165/ 183	250/ 151	177/ 110	242/ 92	175/ 58	202/ 48	111/ 25	80/ 10	45/ 5	34/ 3	17/ 3	14/ 1	8/	7/		1/	1905/ 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
NECK CIRCUMFERENCE(IN)	13.29	0.66	0.505	= (0.148)*BUST CIRCUMFERENCE(IN)+(8.06)	0.57
BUST CIRCUMFERENCE(IN)	35.33	2.24	0.505	= (1.717)*NECK CIRCUMFERENCE(IN)+(12.51)	1.94

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
NECK CIRCUMFERENCE(IN)	12.74	0.62	0.563	= (0.139)*BUST CIRCUMFERENCE(IN)+(7.91)	0.51
BUST CIRCUMFERENCE(IN)	34.72	2.49	0.563	= (2.275)*NECK CIRCUMFERENCE(IN)+(5.74)	2.06

TABLE 10

A BIVARIATE FREQUENCY TABLE FOR
BUST CIRCUMFERENCE AND WAIST FRONT LENGTH
1968 USAF WOMEN/1976 USA WOMEN

WAIST FRONT LENGTH(IN)

BUST CIRCUMFERENCE(IN)	10.9	11.2	11.5	11.8	12.1	12.4	12.7	13.0	13.3	13.6	13.9	14.2	14.5	14.8	15.1	15.4	15.7	16.0	16.3	16.6	16.9	17.2	17.5	17.8	18.1	18.4	18.7	TOTAL
46.4																/ 1												/ 1
45.4																								/ 1				/ 1
44.4											2/		1/		/ 1						/ 1							3/ 2
43.4							1/					1/	1/		2/	1/								/ 1				6/ 1
42.4				1/					1/		1/	1/ 1	1/	1/		1/ 1			1/	/ 1	/ 1							8/ 4
41.4						1/	4/	2/	2/	2/	3/	2/ 1	3/	/ 1	1/ 1	1/ 1	1/ 1	/ 1	1/ 3	/ 2					/ 1			23/ 12
40.4					1/	2/	1/	4/	3/ 1	2/	6/	4/ 1	6/ 2	1/ 1	1/ 1		/ 3			/ 1								31/ 10
39.4	1/				1/	3/	3/	8/ 1	5/ 3	6/ 1	10/	7/	9/ 4	4/ 2	3/ 7	2/ 3	1/ 4		/ 4	/ 1		/ 1	/ 2			/ 1		63/ 34
38.4				1/	4/	4/	9/ 1	5/ 1	16/ 2	14/ 3	20/ 5	13/ 2	12/ 5	6/ 9	2/17	/ 4	/ 4	/ 3	/ 3	/ 3	/ 1	/ 1				/ 1		105/ 65
37.4				1/	5/	10/ 1	18/ 1	15/ 3	23/ 4	10/13	28/ 4	20/ 8	6/16	2/10	1/17	2/ 1	/ 9	/ 6	/ 1		/ 1	/ 2		/ 1				141/ 98
36.4			1/	4/	9/	13/	30/ 1	39/ 7	42/ 2	56/17	46/15	20/20	10/14	2/15	3/25	/ 18	2/ 8	/ 3	/ 3	/ 5	/ 1		/ 1		/ 1			277/156
35.4		1/	1/	6/	18/ 3	18/	46/ 9	47/ 9	56/11	44/21	34/17	25/20	22/34	5/23	1/28	1/10	/ 11	1/ 6	/ 9	/ 1	/ 2	/ 1	/ 1		/ 1		/ 1	328/219
34.4		2/	4/	14/	26/ 1	29/ 2	69/ 3	64/ 7	62/21	49/24	35/16	13/16	5/40	4/19	3/12	/ 9	2/ 9	/ 8	/ 2	/ 1	/ 1		/ 1					381/192
33.4		1/	6/	9/	31/ 1	32/ 1	71/ 4	60/10	36/22	22/16	19/22	15/33	3/33	4/19	/ 18	/ 4	/ 4	1/ 2	/ 4		/ 1	/ 1						299/196
32.4	1/	2/	2/ 1	6/ 1	18/ 1	23/ 3	39/ 4	25/11	18/21	13/18	6/21	2/31	1/23	1/ 8	1/11	/ 11	/ 7	/ 2	/ 2	/ 1	/ 2		/ 1					158/150
31.4				2/	14/	8/ 2	17/ 5	8/ 8	11/14	5/12	2/ 9	/ 15	/ 9	/ 6	/ 8	/ 3	/ 1	/ 3	/ 1	/ 1	/ 1		/ 1					65/ 97
30.4			1/	2/	2/	1/	3/ 4	3/ 4	2/ 6	1/ 5	/ 3	/ 9	/ 6	/ 3	/ 4	/ 2			/ 1									15/ 53
29.4				2/	/ 1			/ 1	/ 4	/ 1	/ 2								/ 1									2/ 10
28.4								/ 1				/ 1																/ 2
27.4									/ 1																			/ 1
TOTAL	2/	6/ 1	14/ 1	48/ 1	129/ 7	142/ 9	313/ 32	270/ 81	278/ 112	224/ 131	212/ 120	123/ 155	80/ 186	30/ 116	18/ 150	6/ 68	6/ 61	2/ 34	2/ 34	/ 17	/ 12	/ 6	/ 7	/ 3	/ 3	/ 2	/ 1	1905/ 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WAIST FRONT LENGTH(IN)	13.22	0.77	0.397	= (0.136)*BUST CIRCUMFERENCE(IN)+(8.42)	0.71
BUST CIRCUMFERENCE(IN)	35.33	2.24	0.397	= (1.155)*WAIST FRONT LENGTH(IN)+(20.06)	2.06

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WAIST FRONT LENGTH(IN)	14.46	1.03	0.343	= (0.142)*BUST CIRCUMFERENCE(IN)+(9.53)	0.97
BUST CIRCUMFERENCE(IN)	34.72	2.49	0.343	= (0.829)*WAIST FRONT LENGTH(IN)+(22.73)	2.34

TABLE 11

A BIVARIATE FREQUENCY TABLE FOR
BUST CIRCUMFERENCE AND WAIST CIRCUMFERENCE
1968 USAF WOMEN/1976 USA WOMEN

WAIST CIRCUMFERENCE (IN)

BUST CIRCUMFERENCE(IN)	21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0	36.0	37.0	38.0	39.0	40.0	41.0	42.0	TOTAL
48.4																					/ 1		/ 1
46.4																						/ 1	/ 1
44.4												1/	1/				1/			/ 2			3/ 2
43.4											1/	1/		3/	1/						/ 1		6/ 1
42.4										1/	3/		1/	1/	1/ 2	1/ 2							8/ 4
41.4								1/	2/	2/	4/	8/ 1	3/ 3	2/ 2	2/ 2	1/ 1	/ 2	/ 1					29/ 12
40.4							2/	2/	2/ 1	8/ 1	7/	7/ 2	5/ 1	/ 1		/ 4							31/ 10
39.4						2/	2/	16/ 1	11/ 4	15/ 3	11/ 5	3/ 7	2/ 5	1/ 6	/ 2	/ 1							63/ 34
38.4					2/	6/	8/ 1	21/ 3	28/ 7	19/15	13/11	7/ 7	1/10	/ 8	/ 3	/ 1	/ 1						106/ 65
37.4					2/	20/ 1	26/ 9	42/11	26/22	22/19	9/22	/ 8	/ 4	/ 3	/ 1	/ 1	/ 1						141/ 98
36.4			2/	6/	15/ 1	63/ 7	69/17	64/27	27/37	11/37	/20	/ 7	/ 1		/ 2								277/156
35.4			2/	28/	59/ 3	75/ 9	58/44	39/56	18/48	5/23	/12	/ 1	/ 4	/ 1	/ 1								320/218
34.4		1/	10/	69/ 2	96/13	150/36	62/64	22/36	1/25	/ 9	/ 6	/ 2											381/192
33.4		1/	20/	80/ 6	92/26	69/58	35/61	7/31	3/10	2/ 8	/ 5												299/195
32.4		4/	28/ 2	48/21	53/39	15/41	6/47	1/19	/ 7	/ 2	/ 2												158/180
31.4		2/ 1	20/ 3	23/18	15/30	4/23	1/14	/ 5	/ 3														85/ 97
30.4	1/	1/ 1	8/ 7	3/16	3/15	/10	1/ 2	/ 2															15/ 53
29.4		1/	1/ 4	/ 3	/ 2				/ 1														2/ 1
28.4		/ 1		/ 1																			/ 2
27.4		/ 1																					/ 1
TOTAL	1/ 1	10/ 4	89/ 18	247/ 67	330/ 129	388/ 195	330/ 249	215/ 190	118/ 165	83/ 117	42/ 83	25/ 35	13/ 26	7/ 19	4/ 13	2/ 10	1/ 4	/ 1		/ 2	/ 2	/ 1	1905/ 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WAIST CIRCUMFERENCE(IN)	26.46	2.16	0.796	= (0.764)*BUST CIRCUMFERENCE(IN)+(-0.53)	1.31
BUST CIRCUMFERENCE(IN)	35.33	2.24	0.796	= (0.829)*WAIST CIRCUMFERENCE(IN)+(13.39)	1.36

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WAIST CIRCUMFERENCE(IN)	27.94	2.67	0.793	= (0.849)*BUST CIRCUMFERENCE(IN)+(-1.53)	1.63
BUST CIRCUMFERENCE(IN)	34.72	2.49	0.793	= (0.740)*WAIST CIRCUMFERENCE(IN)+(14.04)	1.52

TABLE 12

A BIVARIATE FREQUENCY TABLE FOR
BUST CIRCUMFERENCE AND SLEEVE INSEAM
1968 USAF WOMEN/1976 USA WOMEN

SLEEVE INSEAM(IN)

BUST CIRCUMFERENCE(IN)	14.4	14.7	15.0	15.3	15.6	15.9	16.2	16.5	16.8	17.1	17.4	17.7	18.0	18.3	18.6	18.9	19.2	19.5	19.8	20.1	20.4	20.7	21.0	21.3	21.6	TOTAL
45.4																		/ 1								/ 1
45.4											/ 1															/ 1
44.4					1/				1/				1/ 2													3/ 2
43.4						1/	1/		1/	1/		/ 1			1/		1/									8/ 1
42.4							1/	1/	2/			1/	/ 1		2/	1/ 1				/ 1	/ 1					8/ 4
41.4		1/				1/ 1	1/ 2	5/	2/	3/ 2	2/ 2	2/ 1	1/ 2	3/	1/ 1	1/		/ 1								23/ 12
40.4						2/	1/	9/	6/ 1	2/ 1	3/ 2	4/ 2	7/	1/	/ 3	1/ 1			1/							31/ 10
39.4			1/			3/ 1	3/ 3	5/ 2	11/ 2	10/ 4	3/ 2	5/ 3	4/ 5	5/ 6	3/ 2	4/ 1	3/ 2	2/ 1	1/							83/ 34
38.4			1/ 2	2/	2/ 1	3/ 1	7/ 1	10/ 4	8/ 4	10/ 4	8/ 4	14/ 6	13/ 11	10/ 6	4/ 5	5/ 7	5/ 3	/ 2	1/ 1	/ 1	/ 1		/ 1			105/ 65
37.4		1/ 1	1/	1/ 2	3/ 2	2/ 1	10/ 3	4/ 3	10/ 8	18/ 11	21/ 6	17/ 15	18/ 8	14/ 4	10/ 11	3/ 6	5/ 5	2/ 3	1/ 2	/ 2	/ 2	/ 1				141/ 96
36.4			1/ 1	4/	4/	9/ 5	7/ 3	26/ 10	27/ 10	34/ 17	33/ 11	45/ 20	25/ 21	18/ 17	16/ 10	15/ 7	6/ 12	5/ 7	/ 2	1/ 2	/ 1	1/				277/ 156
35.4	/ 1	1/	/ 1	6/ 2	5/ 1	10/ 3	20/ 5	22/ 17	41/ 16	43/ 28	42/ 21	38/ 27	38/ 22	18/ 10	20/ 18	6/ 19	6/ 13	6/ 9	3/ 3	/ 3	1/ 1	1/	1/			328/ 218
34.4			3/	4/	11/ 2	14/ 4	29/ 8	35/ 9	41/ 14	33/ 20	67/ 21	46/ 22	37/ 20	23/ 22	20/ 20	9/ 12	10/ 9	4/ 2	3/ 4	1/	/ 1	1/ 2				361/ 192
33.4		1/	1/	3/	8/ 1	10/ 2	24/ 9	32/ 7	25/ 21	44/ 25	39/ 25	34/ 18	29/ 25	20/ 20	11/ 17	4/ 3	8/ 14	3/ 3	2/ 2	1/ 2					/ 1	299/ 196
32.4		1/		3/	2/ 5	11/ 9	11/ 14	17/ 12	18/ 16	16/ 20	29/ 24	13/ 27	15/ 11	7/ 13	8/ 8	4/ 7	3/ 5	/ 3	/ 2		/ 1	/ 2	/ 1			159/ 180
31.4				1/	3/	1/ 3	6/ 1	8/ 11	8/ 10	12/ 12	8/ 10	6/ 11	6/ 12	2/ 7	2/ 9	3/ 2	1/ 2	/ 2	/ 3	/ 1	/ 1					65/ 97
30.4					1/	1/ 1	2/ 2	2/ 7	1/ 6	/ 12	2/ 9	/ 5	2/ 1	1/ 3	3/ 3		/ 3			/ 1						15/ 53
29.4						/ 1	1/ 1	/ 1	/ 1		/ 4	1/ 1			/ 1											2/ 10
29.4							/ 1						/ 1													/ 2
27.4														/ 1												/ 1
TOTAL	1	5 / 1	8 / 4	24 / 4	40 / 12	68 / 32	124 / 53	168 / 83	202 / 109	228 / 154	247 / 142	228 / 159	198 / 142	122 / 109	101 / 108	56 / 86	48 / 88	22 / 34	12 / 19	3 / 13	1 / 9	3 / 5	1 / 2		1	1905 / 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
SLEEVE INSEAM(IN)	17.37	0.95	0.072	= (0.031)*BUST CIRCUMFERENCE(IN)+(16.28)	0.95
BUST CIRCUMFERENCE(IN)	35.33	2.24	0.072	= (0.171)*SLEEVE INSEAM(IN)+(32.35)	2.24

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
SLEEVE INSEAM(IN)	17.74	1.03	0.120	= (0.050)*BUST CIRCUMFERENCE(IN)+(16.00)	1.02
BUST CIRCUMFERENCE(IN)	34.72	2.49	0.120	= (0.291)*SLEEVE INSEAM(IN)+(29.56)	2.48

TABLE 13

A BIVARIATE FREQUENCY TABLE FOR
BUST CIRCUMFERENCE AND VERTICAL TRUNK CIRC
1968 USAF WOMEN/1976 USA WOMEN

VERTICAL TRUNK CIRC (IN)

BUST CIRCUMFERENCE(IN)	51.4	52.4	53.4	54.4	55.4	56.4	57.4	58.4	59.4	60.4	61.4	62.4	63.4	64.4	65.4	66.4	67.4	68.4	69.4	70.4	71.4	TOTAL
48.4																	/ 1					/ 1
45.4																	/ 1					/ 1
44.4														1/	2/ 1				/ 1			3/ 2
43.4												2/		1/			1/	2/ 1				6/ 1
42.4											1/ 1			/ 1	1/	1/	3/ 1	2/			/ 1	8/ 4
41.4										1/	2/	/ 2	1/	4/ 2	5/ 2	2/ 1	4/ 3	2/ 2	2/			23/ 12
40.4								1/		2/ 1	2/	2/ 2	4/ 3	5/ 1	6/ 1	3/	3/ 2	2/		1/		31/ 10
39.4								/ 1	3/ 1	2/ 4	10/ 6	8/ 3	12/ 4	13/ 6	7/ 2	4/ 2	2/ 3	2/ 2				63/ 34
38.4							/ 1	2/ 1	5/ 3	11/12	16/13	18/ 9	15/ 9	21/ 8	8/ 4	4/ 5	4/ 2	1/				105/ 65
37.4					/ 1	/ 1	1/	2/ 4	12/10	22/11	21/11	29/18	22/12	14/17	9/ 7	7/ 3	2/		/ 1			141/ 98
36.4					1/ 1	2/	11/ 8	18/ 9	27/17	48/18	51/24	39/31	39/22	28/18	9/ 8	3/ 3	2/ 1					277/156
35.4					3/ 3	9/ 4	18/ 7	34/20	50/33	47/28	52/36	53/42	41/30	13/ 8	8/ 8	1/	3/ 1					328/218
34.4				3/ 1	6/ 2	15/ 5	32/12	56/26	63/39	73/27	55/36	41/19	19/18	14/ 5	6/ 2	/ 2	1/					381/192
33.4			1/	2/ 2	9/ 4	21/ 5	38/22	80/37	58/38	44/35	34/24	24/15	1/ 8	7/ 4	2/ 3							299/195
32.4		/ 1	1/ 3	4/ 2	10/ 8	22/25	28/23	28/33	32/31	17/23	10/14	4/ 9	1/ 5	1/ 3	/ 1		/ 1					158/180
31.4		/ 1	1/ 3	3/ 3	3/12	17/ 7	18/19	8/18	4/18	8/10	3/ 4	1/ 3	1/		/ 1							85/ 97
30.4	/ 2		/ 4	/ 5	2/ 7	2/ 5	6/ 7	3/10	1/ 8	1/ 5	/ 2		1/									15/ 53
29.4			/ 3	/ 1	/ 1	2/ 1	/ 1	/ 1	/ 2													2/ 10
28.4		/ 1				/ 1																/ 2
27.4							/ 1															/ 1
TOTAL	2	3	13	14	37	54	101	180	194	172	171	159	108	67	40	18	16	5	2	1	1	1906 / 1930

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
VERTICAL TRUNK CIRC(IN)	60.80	2.70	0.623	= (0.751)*BUST CIRCUMFERENCE(IN)+(34.27)	2.12
BUST CIRCUMFERENCE(IN)	35.33	2.24	0.623	= (0.517)*VERTICAL TRUNK CIRC(IN)+(3.89)	1.76

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
VERTICAL TRUNK CIRC(IN)	60.56	2.84	0.616	= (0.702)*BUST CIRCUMFERENCE(IN)+(36.19)	2.24
BUST CIRCUMFERENCE(IN)	34.72	2.49	0.616	= (0.541)*VERTICAL TRUNK CIRC(IN)+(1.96)	1.96

TABLE 14

A BIVARIATE FREQUENCY TABLE FOR
BUST CIRCUMFERENCE AND BUST PT-BUST PT BR
1968 USAF WOMEN

BUST CIRCUMFERENCE(IN) \ BUST PT-BUST PT BR(IN)	5.2	5.4	5.6	5.9	6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	9.2	9.4	9.6	TOTAL
44.4															1						1		1	3
43.4																	1	3	1	1			1	7
42.4														2	1		1	1		2	1			8
41.4													1	3	1	6	3	4	2	1			1	24
40.4												1		6	4	6	7	3	3		1			31
39.4									1		4	2	2	8	15	9	9	5	4	2	1			62
38.4								1	1	2	11	8	11	20	17	11	9	7	4	2				104
37.4							1		4	4	21	18	26	29	17	18	5	2	1					148
36.4							5	6	12	23	40	60	53	42	26	14	4	3	1	1				290
35.4			1			2	6	13	29	45	60	49	45	40	15	3	7	2						319
34.4				1	1	9	18	28	50	70	77	67	36	17	4	2	3	1						384
33.4	1		1		2	11	21	49	60	46	46	27	22	3	1									289
32.4			2	2	10	20	15	28	34	23	13	4	2		1									154
31.4	1	1	1	3	7	13	8	11	14	3	7	2												71
30.4			1		1	3	1	2	1	1														10
29.4									1															1
TOTAL	2	1	6	8	21	58	77	137	207	217	279	236	200	170	103	71	49	31	18	9	4		3	1905

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
BUST PT-BUST PT BR(IN)	7.30	0.61	0.720	= (0.195)*BUST CIRCUMFERENCE(IN)+(0.41)	0.42
BUST CIRCUMFERENCE(IN)	35.33	2.24	0.720	= (2.652)*BUST PT-BUST PT BR(IN)+(15.98)	1.56

TABLE 15

A BIVARIATE FREQUENCY TABLE FOR
STATURE AND BUST CIRCUMFERENCE
1968 USAF WOMEN/1976 USA WOMEN

BUST CIRCUMFERENCE(IN)

STATURE(IN)	27.4	28.4	29.4	30.4	31.4	32.4	33.4	34.4	35.4	36.4	37.4	38.4	39.4	40.4	41.4	42.4	43.4	44.4	45.4	46.4	TOTAL
72.0							/ 1	/ 1								1/					1/ 2
71.0						/ 1		2/	/ 2	2/ 2	/ 2		/ 1								4/ 8
70.0					/ 1	/ 3	1/ 3	1/ 2	4/ 3	5/ 3	1/ 1	2/	2/			/ 1					16/ 17
69.0				/ 1	/ 2	/ 4	3/ 5	4/ 4	2/12	7/ 8	1/ 7	1/ 3	2/ 2	1/ 1	1/	/ 1	/ 1				22/ 51
68.0				1/ 1	/ 1	5/ 2	6/ 4	16/13	15/12	12/ 9	8/ 7	12/ 7	2/ 2	2/	3/ 1						92/ 58
67.0				/ 2	1/10	5/ 6	16/17	14/14	23/15	23/14	19/ 3	11/10	8/ 3	2/	4/ 2	1/ 1	2/				129/109
66.0				/ 2	5/ 5	7/ 9	20/16	49/28	42/28	30/19	20/16	11/ 4	10/ 6	10/ 3	4/ 2	2/		1/	/ 1	/ 1	227/140
65.0	/ 1		/ 2	/ 5	4/12	11/26	30/33	51/31	47/43	40/24	25/ 8	21/13	11/ 8	2/ 1	4/ 1	2/	1/				249/206
64.0				3/10	9/16	25/31	44/27	69/27	53/32	46/28	21/11	14/ 7	13/ 1	5/ 1	2/ 3	1/ 1		/ 2			307/197
63.0				3/ 5	12/16	29/30	54/29	82/26	56/30	34/20	27/13	10/ 6	5/ 6	4/ 3	2/ 1	1/	1/				290/186
62.0		/ 1	1/ 2	4/ 9	10/12	30/25	42/29	59/22	37/24	30/17	7/ 9	12/ 8	8/ 4	2/ 1	1/ 1		1/	1/			243/185
61.0		/ 1	1/ 2	3/ 6	14/ 8	26/18	42/22	36/17	28/ 8	22/ 8	7/ 8	9/ 2	/ 2	3/			1/				192/100
60.0			/ 2	/ 6	9/10	14/15	17/ 5	15/ 5	14/ 5	11/ 2	2/ 2	1/	3/ 1		/ 1			1/			86/ 54
59.0			/ 1	1/ 2	1/ 1	5/ 7	10/ 3	11/ 3	6/ 3	3/ 4	2/ 2	1/	1/		2/						46/ 26
58.0			/ 1	/ 2	1/ 3	1/ 3	1/	2/	1/ 1	2/	1/ 1	/ 1									9/ 12
57.0							2/	/ 1	/ 1			/ 1									2/ 3
56.0									/ 1												/ 1
TOTAL	/ 1	/ 2	2/ 10	16/ 63	65/ 97	158/ 180	299/ 195	381/ 192	328/ 218	277/ 158	141/ 96	105/ 86	63/ 34	31/ 10	23/ 12	8/ 4	6/ 1	3/ 2	/ 1	/ 1	1906/ 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
BUST CIRCUMFERENCE(IN)	35.33	2.24	0.257	= (0.244)*STATURE(IN)+(19.75)	2.17
STATURE(IN)	63.82	2.36	0.257	= (0.270)*BUST CIRCUMFERENCE(IN)+(54.28)	2.28

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
BUST CIRCUMFERENCE(IN)	34.72	2.49	0.239	= (0.232)*STATURE(IN)+(19.83)	2.42
STATURE(IN)	64.15	2.57	0.239	= (0.246)*BUST CIRCUMFERENCE(IN)+(55.61)	2.49

TABLE 16

A BIVARIATE FREQUENCY TABLE FOR
NECK-BUSTPOINT LENGTH AND BUST PT-BUST PT BR
1968 USAF WOMEN

NECK-BUSTPOINT LENGTH(IN)	BUST PT-BUST PT BR(IN) 5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	9.2	9.4	9.6	TOTAL
12.5															1	2	1						1	5
12.2									1			1			1		1	1	1	1				7
11.9											3		1	5	2	4	2	3	2	1	1			24
11.6								1	1	1	4	2	1	4	3	3	1	4	2	1			1	29
11.3								1	2	6	10	6	7	9	6	11	8	5	1	2	2			75
11.0						1	1	2	2	5	15	8	14	23	15	9	8	7	4	1				113
10.7			2		1	1	3	5	14	21	30	34	22	27	25	13	10	2	1	1			1	213
10.4					2	4	4	10	15	20	23	28	29	15	8	8	4	5	1	2	1			180
10.1			1		1	2	10	24	35	38	59	51	53	34	23	10	7	2	1					351
9.6					1	10	8	19	33	39	39	35	28	21	11	3	2		2					252
9.5			1	1	7	16	20	30	49	45	48	41	23	20	7	5	6	2	1					320
9.2				2	7	13	18	24	32	24	34	24	18	9	1	1								205
8.9			1	2	2	6	5	9	12	7	8	6	2	2		1								63
8.6		1	1	1		4	5	8	8	10	6	1	4	1		1	1							52
8.3						1	3	3	3		2	1												14
8.0								1		1														2
TOTAL	2	1	8	8	21	58	77	137	207	217	279	238	200	170	103	71	49	31	18	9	4		3	1905

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
BUST PT-BUST PT BR(IN)	7.30	0.61	0.490	= (0.401)*NECK-BUSTPOINT LENGTH(IN)+(3.27)	0.53
NECK-BUSTPOINT LENGTH(IN)	10.04	0.74	0.490	= (0.599)*BUST PT-BUST PT BR(IN)+(5.67)	0.65

TABLE 17

A BIVARIATE FREQUENCY TABLE FOR
CROTCH HEIGHT AND HIP BREADTH
1968 USAF WOMEN/1976 USA WOMEN

HIP BREADTH (IN)

CROTCH HEIGHT(IN)	11.1	11.4	11.7	12.0	12.3	12.6	12.9	13.2	13.5	13.8	14.1	14.4	14.7	15.0	15.3	15.6	15.9	16.2	16.5	16.8	17.1	17.4	17.7	18.0	18.3	18.6	18.9	19.2	TOTAL
36.2											/ 1																		/ 1
35.7								/ 1																					/ 1
35.2													/ 3																/ 3
34.7							/ 1			/ 2		/ 1				/ 1													/ 5
34.2					1/	/ 1		2/ 1	1/ 2	1/ 2	3/ 2	1/ 1	/ 2	/ 1	/ 1	/ 1													9/ 14
33.7							/ 2	1/ 1	/ 1	/ 1	1/ 1	/ 1	/ 2	/ 2	1/	/ 3													3/ 14
33.2					2/		1/ 2	/ 1	2/ 4	4/ 2	2/ 6	3/ 4	/ 3	1/ 5	/ 2	/ 1	1/	1/											17/ 30
32.7						/ 2	/ 6	3/ 4	5/ 4	5/ 7	1/ 4	3/ 8	4/ 7	3/ 3	2/ 5	1/ 2	1/ 3			/ 1									28/ 56
32.2			/ 1	1/	1/	/ 3	2/ 5	4/ 2	8/ 4	8/ 9	5/ 9	8/ 7	4/13	1/ 6	3/ 4	1/ 2	/ 1	1/ 1	/ 1	/ 1								/ 1	47/ 70
31.7					3/ 3	/ 7	5/ 6	11/ 4	8/ 8	9/16	14/ 9	7/14	8/10	5/ 4	/ 5	3/ 6	2/ 3	/ 1											76/ 97
31.2		1/	/ 1	1/	3/ 4	2/ 3	7/ 8	10/10	14/11	19/13	17/13	20/14	8/ 7	9/ 2	4/ 5	3/ 3	1/ 1	2/ 1		/ 1		/ 1							121/ 96
30.7			/ 2	/ 1	2/ 3	2/ 1	9/ 9	11/15	16/17	25/16	18/10	12/ 7	17/11	9/14	9/ 2	10/ 3	2/ 3	/ 2	/ 2	/ 9	1/		/ 1							143/121
30.2		/ 1	1/ 1	2/ 1	4/ 3	8/ 8	21/13	20/14	24/13	23/21	32/21	20/19	18/24	4/ 7	5/ 7	2/ 3	2/ 2	3/ 2	/ 1	1/	1/								191/159
29.7		1/	/ 1	3/ 2	7/ 5	11/ 8	31/ 7	21/20	27/21	34/30	37/19	13/19	19/ 9	11/ 9	5/ 2	6/ 4	5/	1/	1/ 1	1/									234/155
29.2			1/	5/ 1	9/ 4	8/ 8	25/12	22/19	36/23	49/24	26/18	33/19	20/ 8	6/ 7	11/ 6	4/ 1		/ 1	/ 1	/ 2		2/							254/152
28.7		2/	2/ 2	/ 6	13/ 7	14/ 6	27/ 8	30/22	33/15	29/21	30/ 6	19/12	12/12	6/ 5	4/ 5	2/ 4	1/ 2	2/ 1											225/134
28.2		/ 1	1/	6/	9/ 4	8/ 7	28/11	26/12	28/ 6	41/ 9	18/ 9	11/ 7	7/ 7	8/ 4	4/ 5		3/ 2	3/	/ 1										199/ 85
27.7			1/	2/ 2	4/ 4	7/ 5	26/ 6	19/ 9	15/ 8	24/ 9	11/ 4	6/ 6	8/ 6	4/ 1	1/	1/		/ 1	1/										130/ 61
27.2	/ 1	1/	1/	3/ 3	9/ 4	7/ 1	17/ 8	17/ 5	16/ 4	9/ 6	12/ 3	6/ 1	5/	2/ 1	2/	/ 2													107/ 37
26.7		/ 1	1/	1/ 3	3/ 2	9/ 1	13/ 3	11/ 6	13/ 3	11/	5/ 2	2/ 1	3/ 2	1/		1/ 2													74/ 26
26.2				1/	1/	1/		2/ 1	4/ 2	2/	1/	3/ 1	5/ 1	1/	1/	1/ 1	1/												24/ 6
25.7		1/			2/		3/ 2	1/	4/	1/ 1		/ 1	3/																16/ 4
25.2					1/		/ 1		1/	1/		1/		/ 1															4/ 2
24.7				2/		1/				/ 1	1/																		4/ 1
24.2																													
23.7					1/																								1/
TOTAL	1	8	9	19	41	57	108	147	146	190	137	143	125	72	50	39	17	10	7	7		1	1					1	1905 / 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP BREADTH(IN)	13.77	0.87	0.225	= (0.124)*CROTCH HEIGHT(IN)+(10.13)	0.85
CROTCH HEIGHT(IN)	29.33	1.59	0.225	= (0.409)*HIP BREADTH(IN)+(23.70)	1.55

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP BREADTH(IN)	13.92	0.96	0.228	= (0.127)*CROTCH HEIGHT(IN)+(10.10)	0.94
CROTCH HEIGHT(IN)	30.07	1.72	0.228	= (0.408)*HIP BREADTH(IN)+(24.39)	1.68

TABLE 18

A BIVARIATE FREQUENCY TABLE FOR
CROTCH HEIGHT AND HIP CIRCUMFERENCE
1968 USAF WOMEN/1976 USA WOMEN

HIP CIRCUMFERENCE (IN)

CROTCH HEIGHT(IN)	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	TOTAL
36.2										/ 1														/ 1
35.7								/ 1																/ 1
35.2									/ 1		/ 1	/ 1												/ 3
34.7							/ 1	/ 1		/ 1	/ 1	/ 1												/ 5
34.2					/ 1	1/ 1	3/ 2	1/ 3	3/ 2	1/ 3	/ 1		/ 1											9/ 14
33.7					/ 1	/ 1	1/ 1	/ 5	/ 1	/ 3	/ 1	1/	/ 1	1/										3/ 14
33.2				/ 1	2/	3/ 1	1/ 3	2/ 4	1/ 9	3/ 3	3/ 4	1/ 4	/ 1	1/										17/ 30
32.7				/ 1	/ 2	1/ 7	4/ 7	2/ 5	7/ 8	5/10	4/ 5	4/ 4	1/ 4		/ 2	/ 1								28/ 58
32.2			/ 1	/ 1	1/ 1	5/ 8	8/ 8	8/11	8/12	7/17	3/ 8	3/ 2	3/ 1	1/ 1									/ 1	47/ 70
31.7			/ 1	2/ 3	5/ 7	2/11	10/ 9	16/20	15/13	7/11	11/11	4/ 4	1/ 4	1/ 3		1/								75/ 97
31.2		1/		1/ 4	/ 2	11/13	16/14	26/14	21/23	20/ 7	15/ 9	5/ 4	4/ 2	1/ 1	/ 2				/ 1					121/ 96
30.7		/ 2	/ 3	1/ 2	5/ 6	11/17	19/15	23/22	35/ 8	21/18	11/12	8/ 5	4/ 3	2/ 4	1/ 1	/ 1	2/ 2							143/121
30.2	/ 1		1/ 2	3/ 3	14/ 7	19/23	30/21	39/27	25/29	31/23	15/14	7/ 5	5/ 2	1/		/ 1	1/	/ 1						191/159
29.7		1/ 1	3/ 1	4/ 8	13/12	29/15	38/24	50/40	32/21	27/17	17/12	10/	3/ 2	3/ 2	1/	2/	1/							234/155
28.2		1/	1/ 1	10/ 7	16/12	25/15	49/38	49/29	44/22	23/13	18/ 6	8/ 4	2/ 2	4/ 3	3/			1/						254/152
26.7		1/ 3	5/ 8	5/ 8	23/ 8	26/15	53/27	46/25	29/16	15/12	8/ 8	7/ 7	1/ 3	2/	4/									225/134
28.2	/ 1	1/	5/ 3	4/ 5	24/12	33/14	34/ 7	37/ 9	22/15	18/11	8/ 6	5/ 2	3/	3/		2/								199/ 85
27.7		1/	1/ 2	6/ 4	12/ 6	27/15	26/ 7	13/14	19/ 8	16/ 4	5/		/ 1	2/										130/ 61
27.2		2/	5/	7/ 8	14/ 4	14/ 8	20/ 4	23/ 7	12/ 3	8/	4/ 1	/ 2												107/ 37
26.7		1/	/ 5	3/ 2	13/ 2	13/ 3	17/ 8	14/ 3	7/ 2	3/ 1	1/ 1	1/	1/ 1											74/ 26
26.2				1/		1/ 2	4/ 1	4/	7/	1/ 1	2/ 1	1/ 1	1/	2/										24/ 6
25.7				2/	3/ 1	/ 1	3/	2/ 1	2/	1/ 1	2/													15/ 4
25.2				1/			1/ 1	1/	1/		/ 1													4/ 2
24.7			1/	1/	1/		/ 1	1/																4/ 1
24.2																								
23.7				1/																				1/
TOTAL	2	9/ 6	22/ 25	52/ 55	146/ 84	221/ 170	337/ 195	357/ 241	290/ 193	207/ 157	127/ 101	65/ 46	29/ 28	24/ 14	9/ 5	5/ 3	4/ 2	1/ 1	1				1	1905/ 1930

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP CIRCUMFERENCE(IN)	37.60	2.33	0.246	= (0.361)*CROTCH HEIGHT(IN)+(27.01)	2.26
CROTCH HEIGHT(IN)	29.33	1.59	0.246	= (0.168)*HIP CIRCUMFERENCE(IN)+(23.02)	1.54

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP CIRCUMFERENCE(IN)	37.59	2.48	0.260	= (0.374)*CROTCH HEIGHT(IN)+(26.35)	2.39
CROTCH HEIGHT(IN)	30.07	1.72	0.260	= (0.181)*HIP CIRCUMFERENCE(IN)+(23.26)	1.66

TABLE 19

A BIVARIATE FREQUENCY TABLE FOR
CROTCH LENGTH AND CROTCH HEIGHT
1976 USA WOMEN

CROTCH HEIGHT (IN)

CROTCH LENGTH(IN)	24.7	25.2	25.7	26.2	26.7	27.2	27.7	28.2	28.7	29.2	29.7	30.2	30.7	31.2	31.7	32.2	32.7	33.2	33.7	34.2	34.7	35.2	35.7	36.2	TOTAL
39.0																1									1
38.0																									
37.0																									
36.0																									
35.0													1												1
34.0								1	1	1		3	4	1	1										12
33.0							1	4	1	3	2	1	5	1	5	1	2								26
32.0				1				1	4	7	2	4	6	5	7	5	7	6		2	1	1			59
31.0				2		2	3	8	16	10	25	27	13	14	18	13	8	11	4			1			175
30.0				1	4	4	8	10	23	13	31	30	24	20	14	16	8	1	2	5			1		213
29.0			2		6	4	13	15	26	32	28	26	16	17	16	8	12	5	4	5	1	1		1	242
28.0	1	2		1	5	8	13	19	28	37	34	26	19	18	14	13	7	2	3	2	1				249
27.0			1	1	2	11	12	9	12	30	16	18	14	10	14	3	8	1	1						163
26.0			1		3	5	9	8	11	13	9	14	10	7	6	5	4	2			1				108
25.0					3	3	4	4	8	1	2	1	4	3	1	2					1				35
24.0					1			2	4	4	3	4	1	1	1	3									24
23.0								4	1	1	1	3						2							12
22.0												2	1												3
21.0					2				1		2		1	1											7
TOTAL	1	2	4	6	26	37	61	85	134	152	155	159	121	96	97	70	56	30	14	14	5	3	1	1	1330

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
CROTCH HEIGHT(IN)	30.07	1.72	0.205	= (0.164)*CROTCH LENGTH(IN)+(25.36)	1.69
CROTCH LENGTH(IN)	28.71	2.15	0.205	= (0.255)*CROTCH HEIGHT(IN)+(21.04)	2.10

TABLE 20

A BIVARIATE FREQUENCY TABLE FOR
CROTCH LENGTH AND WAIST CIRCUMFERENCE
1976 USA WOMEN

WAIST CIRCUMFERENCE (IN)

CROTCH LENGTH(IN)	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0	36.0	37.0	38.0	39.0	40.0	41.0	42.0	TOTAL
39.0														1								1
38.0																						
37.0																						
36.0																						
35.0						1																1
34.0							1	2	1		2	2	1		1	1			1			12
33.0					1	3	3	8	2		2	1	2		2	1				1		26
32.0				4	5	9	7	11	9	7	3	3	1									59
31.0			1	8	8	39	35	25	18	15	8	7	5	3	2					1	1	176
30.0			3	15	28	51	32	31	25	17	4	3	1	4	1							213
29.0	1	2	12	26	35	51	28	34	22	14	4	4	5		2	1	1					242
28.0	1	4	16	31	55	41	36	22	18	12	8	3	2		1				1			249
27.0		2	10	23	31	28	31	17	14	2	2			2	1							163
26.0	2	5	14	17	21	14	11	7	3	10	2	1		1								108
25.0		2	5	4	8	5	1	3	2	4	1		1	1								35
24.0		1	4	3	4	3	2	3	1		1	2										24
23.0			1		1		2		2	2		2	1			1						12
22.0			1			1		1														3
21.0					1	3	1	1						1								7
TOTAL	4	16	67	129	185	249	190	165	117	83	35	28	19	13	10	4	1		2	2	1	1330

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WAIST CIRCUMFERENCE(IN)	27.94	2.67	0.262	= (0.326)*CROTCH LENGTH(IN)+(18.59)	2.58
CROTCH LENGTH(IN)	28.71	2.15	0.262	= (0.210)*WAIST CIRCUMFERENCE(IN)+(22.84)	2.07

TABLE 21

A BIVARIATE FREQUENCY TABLE FOR
CROTCH LENGTH AND HIP CIRCUMFERENCE
1976 USA WOMEN

HIP CIRCUMFERENCE (IN)

CROTCH LENGTH(IN)	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	TOTAL
39.0																							1	1
38.0																								
37.0																								
36.0																								
35.0											1													1
34.0										3	2		1	1	2	2		1						12
33.0								1	2	5	4	2	5	4			2		1					26
32.0							1	4	10	13	14	11	3	2	1									59
31.0						4	9	29	36	36	34	16	6	3	2									175
30.0					2	12	19	52	46	46	20	7	6	1		1								213
29.0				6	6	33	39	52	48	30	14	5	5	2										242
28.0			2	10	25	48	65	47	23	15	7	5	1	1										249
27.0			3	6	20	37	38	40	14	2	2		1											163
26.0		1	8	17	22	25	16	8	6	3	2													108
25.0		2	5	7	2	7	3	4	4		1													35
24.0		1	5	6	4	2	3		2	1														24
23.0	1		1			1	3	3	2	1														12
22.0	1	1			1																			3
21.0		1	1	3		1		1																7
TOTAL	2	6	25	55	84	170	195	241	193	157	101	46	28	14	5	3	2	1	1				1	1330

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP CIRCUMFERENCE(IN)	37.59	2.48	0.653	= (0.755)*CROTCH LENGTH(IN)+(15.92)	1.88
CROTCH LENGTH(IN)	28.71	2.15	0.653	= (0.565)*HIP CIRCUMFERENCE(IN)+(7.47)	1.62

TABLE 22

A BIVARIATE FREQUENCY TABLE FOR
SLEEVE INSEAM AND WRIST CIRCUMFERENCE
1968 USAF WOMEN/1976 USA WOMEN

WRIST CIRCUMFERENCE (IN)

SLEEVE INSEAM(IN)	4.8	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	TOTAL
21.6											/ 1											/ 1
21.3																						
21.0										/ 1		/ 1	1/									1/ 2
20.7										/ 1		1/ 1	2/	/ 2	/ 1							3/ 5
20.4							/ 2				/ 1	/ 1	1/ 1	/ 3	/ 1							1/ 9
20.1										/ 2	/ 1	/ 1	1/ 3	1/ 5	1/ 1							3/ 13
19.8							/ 1	/ 1	/ 1	2/ 2	/ 2	/ 2	3/ 1	/ 4	4/ 3		1/ 2	1/	1/			12/ 18
19.5								/ 1	2/ 6	3/ 2	3/ 5	1/ 6	2/ 3	4/ 5	4/ 3	2/	/ 1	1/				22/ 34
19.2						/ 1	/ 1	2/ 7	4/ 9	5/ 9	7/14	2/10	12/ 8	4/ 8	7/ 4	1/ 1	2/		2/			48/ 68
18.9					1/	1/	3/ 2	1/ 2	5/12	/12	10/17	5/ 9	18/ 7	2/ 1	4/ 3	2/	2/	2/ 1				58/ 66
18.6				1/	1/ 2	/ 3	5/ 6	5/13	12/ 8	10/17	15/20	5/15	18/12	7/ 4	6/ 8	4/ 1	8/ 1	1/		1/	1/	101/106
18.3				/ 1	1/ 3	4/ 5	3/ 4	5/14	15/23	8/ 8	28/13	8/12	25/13	10/ 5	7/ 8	2/	2/	1/	2/		1/	122/109
18.0			/ 1		1/ 1	4/ 3	4/ 6	16/22	32/31	17/22	41/27	12/ 4	38/10	12/ 4	15/ 8	2/ 4	8/	/ 1				198/142
17.7			/ 1	1/ 3	1/ 5	8/ 7	10/ 8	12/22	41/29	21/18	44/29	18/17	38/14	11/ 8	12/ 2	4/ 1	3/ 1	3/ 1	1/ 1			226/159
17.4			/ 2	/ 2	1/ 1	10/11	21/12	7/23	47/29	22/24	40/11	23/18	48/ 3	7/ 4	12/ 2	2/ 1	4/	1/ 1	2/			247/142
17.1				1/ 1	3/ 9	13/13	16/19	11/24	46/23	24/25	37/ 9	17/ 8	35/11	5/ 6	7/ 5	1/ 1	4/	1/	1/		2/	226/154
16.8			1/	/ 1	5/ 5	7/11	11/10	20/25	35/22	27/ 7	37/16	9/ 3	26/ 5	5/ 2	10/	3/ 2	5/		1/			202/109
16.5			/ 2	/ 5	4/ 8	2/ 4	22/ 6	17/10	27/16	15/10	29/12	8/ 5	25/ 3	5/ 3	4/ 1		1/	2/				169/ 63
16.2			/ 1	/ 1	4/ 5	2/ 7	16/ 7	13/ 8	25/10	15/ 8	17/ 5	6/ 2	11/ 1	4/	6/		3/		1/			124/ 53
15.9	1/		/ 1	/ 1	2/ 1	7/ 2	4/ 4	7/ 6	12/ 9	9/ 1	7/ 3	4/ 1	10/ 1	1/	2/	1/ 1	1/ 1					68/ 32
15.6				/ 1	1/	2/ 1	7/ 3	7/	10/ 2	3/ 3	4/	3/	2/ 1	/ 1			1/					40/ 12
15.3			1/	/ 1	1/	1/	2/	3/ 2	7/ 1		2/	1/	4/	2/								24/ 4
15.0								/ 3	4/		2/	1/	1/	/ 1								8/ 4
14.7						1/		1/	1/ 1	1/			1/									5/ 1
14.4							/ 1															/ 1
TOTAL	1 /		2 / 3	3 / 17	26 / 36	67 / 68	125 / 92	127 / 183	325 / 228	182 / 170	323 / 188	127 / 114	320 / 95	80 / 82	101 / 48	24 / 12	43 / 6	13 / 4	11 / 1	1 /	4 /	1905 / 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WRIST CIRCUMFERENCE(IN)	5.89	0.28	0.288	= (0.085)*SLEEVE INSEAM(IN)+(4.41)	0.27
SLEEVE INSEAM(IN)	17.37	0.95	0.288	= (0.977)*WRIST CIRCUMFERENCE(IN)+(11.62)	0.91

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
WRIST CIRCUMFERENCE(IN)	5.79	0.27	0.358	= (0.093)*SLEEVE INSEAM(IN)+(4.14)	0.25
SLEEVE INSEAM(IN)	17.74	1.03	0.358	= (1.372)*WRIST CIRCUMFERENCE(IN)+(9.79)	0.96

TABLE 23

A BIVARIATE FREQUENCY TABLE FOR
UPPER THIGH CIRC AND HIP CIRCUMFERENCE
1968 USAF WOMEN/1976 USA WOMEN

HIP CIRCUMFERENCE (IN)

UPPER THIGH CIRC(IN)	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	TOTAL
28.7																	/ 1		/ 1					/ 2
28.2											/ 1				1/	/ 1	1/	1/					/ 1	3/ 3
27.7														1/ 1	1/	1/								3/ 1
27.2													/ 2	2/ 4	1/ 2	1/	1/ 1							5/ 9
26.7											/ 1	/ 1	1/ 4	/ 2	3/ 1	1/ 2		/ 1						5/ 12
26.2											1/ 2	/ 2	3/ 7	4/ 3	1/	2/	1/							12/ 14
25.7										/ 2	2/ 3	/ 7	2/ 2	5/ 2	1/ 1		1/							11/ 17
25.2									/ 1	1/ 7	7/10	12/10	6/ 5	5/ 2	/ 1									33/ 36
24.7								/ 1	1/ 2	6/14	9/18	12/ 7	5/ 5	3/										36/ 47
24.2								/ 1	7/18	18/31	30/27	17/12	5/ 2	2/										77/ 89
23.7							/ 2	3/13	17/46	41/45	32/18	10/ 5	3/		1/									107/129
23.2						1/ 1	2/ 9	22/34	57/47	60/29	22/18	6/ 2		1/										173/138
22.7						1/ 7	6/22	32/67	66/42	39/18	16/ 4	3/	1/ 1											164/161
22.2					1/	7/10	26/49	69/81	76/21	30/ 6	6/ 1	3/	1/	1/										240/148
21.7				/ 1	1/ 5	13/26	74/57	106/38	46/11	9/ 5	2/													253/143
21.2				/ 1	7/ 7	36/33	94/34	60/19	9/ 7	2/														208/101
20.7				/ 2	19/15	66/44	80/17	33/ 7	4/	2/														204/ 86
20.2				3/10	28/32	54/34	34/ 4	10/	3/	1/														133/ 80
19.7			1/ 1	13/20	47/12	27/14	14/ 1	1/	2/															106/ 48
19.2		2/	7/ 9	14/12	29/11	11/	6/	1/																70/ 32
18.7		1/ 4	6/ 6	13/ 3	10/ 2	2/ 1																		32/ 16
18.2		2/ 1	5/ 7	7/ 4	4/	3/	1/																	22/ 12
17.7	/ 2	1/	2/ 2	2/ 1																				5/ 6
17.2		3/ 1	1/																					4/ 1
16.7																								
TOTAL	2	9 / 6	22 / 25	52 / 55	146 / 84	221 / 170	337 / 195	357 / 241	290 / 193	207 / 157	127 / 101	65 / 48	29 / 28	24 / 14	9 / 5	5 / 3	4 / 2	1 / 1	1				1	1905 / 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP CIRCUMFERENCE(IN)	37.60	2.33	0.895	= (1.254)*UPPER THIGH CIRC(IN)+(10.21)	1.04
UPPER THIGH CIRC(IN)	21.84	1.66	0.895	= (0.639)*HIP CIRCUMFERENCE(IN)+(-2.18)	0.74

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP CIRCUMFERENCE(IN)	37.59	2.48	0.907	= (1.255)*UPPER THIGH CIRC(IN)+(9.48)	1.05
UPPER THIGH CIRC(IN)	22.40	1.79	0.907	= (0.655)*HIP CIRCUMFERENCE(IN)+(-2.22)	0.76

TABLE 24

A BIVARIATE FREQUENCY TABLE FOR
WAIST CIRCUMFERENCE AND HIP CIRCUMFERENCE
1968 USAF WOMEN/1976 USA WOMEN

HIP CIRCUMFERENCE (IN)

WAIST CIRCUMFERENCE(IN)	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	TOTAL
42.0														/ 1										/ 1
41.0															/ 1				/ 1					/ 2
40.0													/ 1					/ 1						/ 2
39.0																								
38.0														/ 1										/ 1
37.0									/ 1				/ 1	1/		/ 1	/ 1							1/ 4
36.0											/ 5	/ 1		/ 3	1/	1/	/ 1							2/ 10
35.0								/ 1	/ 1		/ 3	/ 3	/ 2	1/	/ 1	/ 1	2/	1/					/ 1	4/ 13
34.0									/ 2	/ 1	2/ 5	1/ 5	/ 3	/ 3	2/	2/								7/ 19
33.0								/ 3	2/ 3	2/ 7	2/ 5	2/ 4	1/ 4	3/ 1	1/ 1									13/ 28
32.0							/ 1	/ 4	/ 8	3/ 5	3/10	6/ 3	3/ 2	7/	1/ 1	1/ 1	1/							25/ 35
31.0					/ 1	/ 1	/ 9	3/ 8	3/19	4/22	12/14	7/ 5	8/ 3	3/ 1	1/		1/							42/ 83
30.0					/ 1	/ 2	1/11	5/24	17/27	19/20	16/19	10/ 6	8/ 4	4/ 2	2/ 1	1/								83/117
29.0				1/	1/ 4	1/ 4	7/16	8/43	28/40	31/28	19/13	15/12	4/ 5	2/ 2	1/									118/165
28.0			/ 1	/ 1	3/ 4	8/16	13/32	47/50	50/38	46/32	30/14	13/ 2	2/ 2	3/										215/190
27.0		/ 2		/ 8	8/ 5	14/42	57/50	82/55	75/40	56/33	32/10	7/ 5	1/ 1											330/249
26.0		/ 1	3/ 8	3/13	11/24	43/55	97/42	112/32	72/11	34/ 9	8/ 2	3/	2/											386/195
25.0		2/	/ 8	11/15	43/20	69/33	93/29	69/19	31/ 3	10/ 1	1/ 1	1/												330/129
24.0	/ 2	3/ 1	5/ 7	20/1[illegible]	58/21	69/16	53/ 4	30/ 2	12/ 2	2/ 1	1/													247/ 67
23.0		2/ 1	12/ 2	16/ 8	20/ 3	21/ 1	16/ 1	1/			1/													89/ 16
22.0		1/ 1	2/ 1	1/ 1	4/ 1	2/																		10/ 4
21.0		1/																						1/
TOTAL	2	9 / 6	22 / 25	52 / 56	146 / 84	221 / 170	337 / 196	357 / 241	290 / 193	207 / 157	127 / 101	66 / 46	29 / 28	24 / 14	9 / 6	5 / 3	4 / 2	1 / 1	/ 1				/ 1	1906 / 1330

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP CIRCUMFERENCE(IN)	37.60	2.33	0.747	= (0.806)*WAIST CIRCUMFERENCE(IN)+(16.27)	1.55
WAIST CIRCUMFERENCE(IN)	26.46	2.16	0.747	= (0.692)*HIP CIRCUMFERENCE(IN)+(0.44)	1.43

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP CIRCUMFERENCE(IN)	37.59	2.48	0.700	= (0.650)*WAIST CIRCUMFERENCE(IN)+(19.43)	1.77
WAIST CIRCUMFERENCE(IN)	27.94	2.67	0.700	= (0.754)*HIP CIRCUMFERENCE(IN)+(-0.40)	1.91

TABLE 25

A BIVARIATE FREQUENCY TABLE FOR
VERTICAL TRUNK CIRC AND HIP CIRCUMFERENCE
1968 USAF WOMEN/1976 USA WOMEN

HIP CIRCUMFERENCE(IN)

VERTICAL TRUNK CIRC(IN)	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	TOTAL
71.4																							/ 1	/ 1
70.4																	1/							1/
69.4											1/		/ 1	1/				/ 1						2/ 2
68.4										1/	2/ 2	2/ 1		3/	2/ 1	1/ 1								11/ 6
67.4									5/ 1	/ 1	4/ 3	6/	1/ 4	2/ 4	2/ 1	2/ 1	2/	1/	/ 1					25/ 16
66.4								1/	2/	4/ 5	6/ 2	1/ 1	4/ 2	2/ 3	3/ 1	1/	1/ 2							25/ 16
65.4						1/	2/ 1	2/ 1	13/ 7	12/ 5	11/12	7/ 7	7/ 4	5/ 2	1/	/ 1								61/ 40
64.4						1/ 1	7/ 1	12/ 5	23/12	21/16	25/16	23/ 8	4/ 6	5/ 1	/ 1	1/								122/ 67
63.4						2/ 1	6/ 2	27/17	33/19	45/31	25/21	11/ 8	5/ 6	1/ 3	/ 1									187/109
62.4				1/ 1	2/	13/ 3	27/15	45/26	53/43	44/27	18/21	7/15	7/ 2	3/	1/									221/153
61.4			1/	1/	6/ 1	18/12	48/23	68/51	57/38	37/28	14/10	6/ 5	1/ 2	/ 1										257/171
60.4				4/ 2	13/10	38/15	57/38	76/40	46/34	22/24	18/ 7	2/ 1	/ 1	2/										274/172
59.4				5/ 4	20/ 9	42/46	74/45	64/51	29/21	15/11	4/ 7													253/194
58.4			2/ 3	9/13	30/28	41/42	60/32	40/22	21/15	6/ 7	1/													210/180
57.4		1/ 1	6/ 4	10/ 9	36/14	38/23	32/21	18/24	6/ 3	/ 2														147/101
56.4	/ 1	3/ 1	7/ 5	9/ 9	24/12	24/12	17/10	4/ 4	2/															90/ 54
55.4		2/	3/ 3	11/ 6	10/ 7	3/12	3/ 7	2/																34/ 37
54.4		2/	2/ 3	2/ 4	3/ 5	1/ 2	2/																	12/ 14
53.4		1/ 2	1/ 5	/ 5		1/ 1																		3/ 13
52.4		/ 1	/ 2																					/ 3
51.4	/ 1	/ 1																						/ 2
TOTAL	2	9 / 6	22 / 26	52 / 55	146 / 84	221 / 170	337 / 195	357 / 241	290 / 193	207 / 157	127 / 101	65 / 46	29 / 28	24 / 14	9 / 5	5 / 3	4 / 2	1 / 1	/ 1				/ 1	1906 / 1930

1968 USAF WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP CIRCUMFERENCE(IN)	37.60	2.33	0.718	= (0.617)*VERTICAL TRUNK CIRC(IN)+(0.09)	1.62
VERTICAL TRUNK CIRC(IN)	60.80	2.70	0.718	= (0.834)*HIP CIRCUMFERENCE(IN)+(29.44)	1.88

1976 USA WOMEN	MEAN	ST DEV	R	REGRESSION EQUATIONS	STD ERROR
HIP CIRCUMFERENCE(IN)	37.59	2.48	0.760	= (0.663)*VERTICAL TRUNK CIRC(IN)+(-2.56)	1.61
VERTICAL TRUNK CIRC(IN)	60.56	2.84	0.760	= (0.870)*HIP CIRCUMFERENCE(IN)+(27.85)	1.85

CHAPTER IV

An Introduction to Anthropometric Sizing

An anthropometric sizing analysis for clothing and personal protective equipment is based on the concept of dividing the population into subgroups of individuals who are more or less similar in certain relevant body size dimensions (i.e. tall and slender, short and heavy, large-busted and long-waisted) and then analyzing the anthropometric data for these subgroups in order to arrive at appropriate dimensional design values which will accommodate the size variability within each group.

Specifically, the sequence of steps involved is: 1) selection of an appropriate body of data for analysis, 2) selection of the key or sizing dimensions, 3) selection of intervals for the key dimensions (that is, the upper and lower limits of the key dimensions that will establish each size category), 4) development of the dimensional data for each of the established size categories, 5) conversion of the summary statistical data to the appropriate design values, and 5) establishment of the tariff or numbers of each size necessary to outfit the user population.

In Chapter I we established the rationale for using the data for USAF women and U.S. Army women for this analysis. Thus, Step #1 has already been completed.

Step 2, the choice of key or sizing dimensions is of crucial importance but is seldom, if ever, clear cut. These dimensions should have the attributes of being conveniently measurable, of being an integral part of the garment to be fabricated and have a high degree of correlation with other dimensions which are of importance in the design and sizing of the end item. Sometimes a key dimension, such as bust circumference, is chosen simply because it is the most obviously critical dimension in the fit of the garment. In fact, no single body measurement or dimension is adequate as a basis for sizing most items of clothing or personal protective equipment because no single dimension is closely related both to the lengths or heights of the body <u>and</u> to its girths, breadths and depths. For example, waist or hip measurements alone are inadequate to obtain a good fit in women's slacks since women vary so widely in height.

The obvious solution is to select two or more key dimensions selected so that each will control some different aspect of body size variability such as linearity or mass. The next problem is to determine which pair or group of three should be used in a particular sizing program. The selection often

depends on which ones exercise maximum control over other dimensions of body size which are relevant in the design. By "control" we mean the degree to which changes in a given dimension correlate with changes in another dimension. The statistic used to measure this relationship is the correlation coefficient--the closer the relationship, the closer the correlation coefficient approaches 1.0.

While it should be clear from the foregoing discussion that pairs of key dimensions should not correlate well with each other, each key dimension should correlate well with other related dimensions. Thus, for example, stature might be chosen because it controls other height measurements such as leg length and waist height, and weight might be chosen as a companion value because it correlates well with other measurements of girth and breadth. Stature and weight typically have very little control over each other ($r \sim .500$).

We do not believe it to be either necessary or desirable to use the same key dimensions for all garments, even for a given part of the body. Men's dress shirts, for a number of reasons, are usually sized on neck circumference and sleeve length but it may be far more appropriate to size a vest on chest circumference and waist front length.

In selecting the key dimensions, an evaluation of the interrelationships of the dimensions involved in the design of the garment is made using simple, multiple and partial correlations in a manner similar to that described by O'Brien and Shelton (1941), and Emanuel, et al. (1959).

Key dimensions for the sizing programs presented in this chapter are Bust Circumference, Bustpoint-to-Bustpoint Breadth and Neck-to-Bustpoint Length for garments worn above the waist, and Waist Circumference combined with Crotch Length for lower torso garments. Although these sizing dimensions are used because they were specified by the Navy Clothing and Textile Research Facility, we believe they are of questionable value. A discussion of this point and our own recommendations will be found in Chapter VI.

Step 3 calls for the establishment of size intervals. The width of the size interval of the key dimension(s) dictates not only the size variation for that dimension but for all the other design dimensions that are highly correlated with it as well. Thus, in the small-medium-large system often used to categorize inexpensive clothing, there is a very high degree of body size variability to be found among persons in each group. A "medium" sized sweater might be the garment of choice for a very short woman with a relatively heavy torso, a woman whose height and bust circumference approach the mean for U.S. women, or a tall woman with a narrow torso and small bust. Obviously there will be a good

deal less variation among women in each group if a six-size system (10, 12 . . . 18) is used.

While a surprisingly large number of women can be successfully fitted in upper-torso garments by a three-size program, it is clear that more sizes will fit more women better. On the other hand, it has been found that overall size homogeneity of individuals within a size category cannot be indefinitely improved by the addition of more sizes--that is, by subdivision of the key dimensions into more and more increments. At some point the minimum level of within-group variance for the body dimensions in the design will be approached and even by doubling the number of sizes, this level of within-a-size variance will remain essentially constant. This is a function of the less than perfect relationships that other body dimensions have with the key dimensions by which the individuals in the size category are selected.

It is not only the body size variability that must be considered in establishing the sizing interval but factors such as the type of fit necessitated, the material that will be used in fabrication, the cut and possibly the logistics of procurement and stocking of the final item. At some point, decisions will be made regarding the various trade-offs among the design considerations, and the sizing category intervals will be established. The major thrust of any such decision, of course, is to provide the best fit possible for the maximum proportion of users with the fewest number of sizes. Inevitably, there will be individuals within the design group who, because of extremes in body dimensions or unusual proportions, will not be satisfactorily fitted. An effective size scheme, however, will keep the numbers of individuals disaccommodated to a minimum.

In this sizing analysis, the key dimension intervals specified are those adopted by the contract monitor from the National Bureau of Standards publication PS42-70 (see Chapter I, Table 2).

The next step is to establish the dimensional data for each of the size categories. This is done by treating all the individuals in the sample who fall within the limits of a size category as a subsample and computing the means and standard deviations for each of the dimensions included in the design. It can be seen on Table 2, Chapter I, that size 3 for the lower torso indicates that the key dimensions of Waist Circumference and Crotch Length have midpoint values of 20" and 23.5", respectively. The sizing intervals are one inch for Waist Circumference and 0.75 inch for Crotch Length. All the individuals in our samples who have waist circumferences between 19.5" and 20.49" and also have crotch lengths between 23.125" and 23.875" become the size 3 Junior subsample.

While we have established that slacks for all the women in Junior size 3 will have waist measurements of approximately 20" and crotch length measurements of approximately 23.5", we must now establish dimensions for all the other variables. What are the crotch heights for this subset, the thigh girths, the hip girths? The means and standard deviations for all the relevant variables are computed, using the Junior size 3 sub-sample. This step is, of course, repeated for each size category. For reasons relating to sampling stability, the standard deviations for the individual subsets are, in effect, averaged to provide for each dimension a single within-a-size standard deviation. This value is then used in conjunction with the mean value to develop the next element in the sizing analysis, the design value.

The design value is a single numerical value for each variable that represents the actual body measurement for which a given end item will be designed. While the mean value of the Junior size 3 waist circumference is 20 inches, the design value for hip circumference may be set at the mean value plus two standard deviations since it must be large enough to fit around the hips of the largest individual in that size group. The design value for an elasticized wrist closure, on the other hand, may be the mean value minus two standard deviations so it will be small enough to seal the sleeve of the person having the smallest wrist circumference in the same size group. For each dimensional variable of interest, there will be a specific design value for each size category.

The design value can be any combination of the mean plus or minus some increment of the within-a-size standard deviation. Figure 1 shows the coverage of a normal distribution of values as a function of the plus or minus increments of standard deviation.

The ranges suggested by the graph are from approximately three standard deviations below the mean ($\bar{X}$ - 3SD) to three standard deviations above it ($\bar{X}$ + 3SD). Other important points on the distribution of a set of anthropometric data can be located, at least approximately, by adding or subtracting a multiple of the standard deviation to the mean value. In particular, it is worth noting that:

about 2/3 of a set of data fall between $\bar{X}$ - 1.0SD and $\bar{X}$ + 1.0SD
about 87% of a set of data fall between $\bar{X}$ - 1.5SD and $\bar{X}$ + 1.5SD
about 95% of a set of data fall between $\bar{X}$ - 2.0SD and $\bar{X}$ + 2.0SD
almost all of a set of data fall between $\bar{X}$ - 3.0SD and $\bar{X}$ + 3.0SD

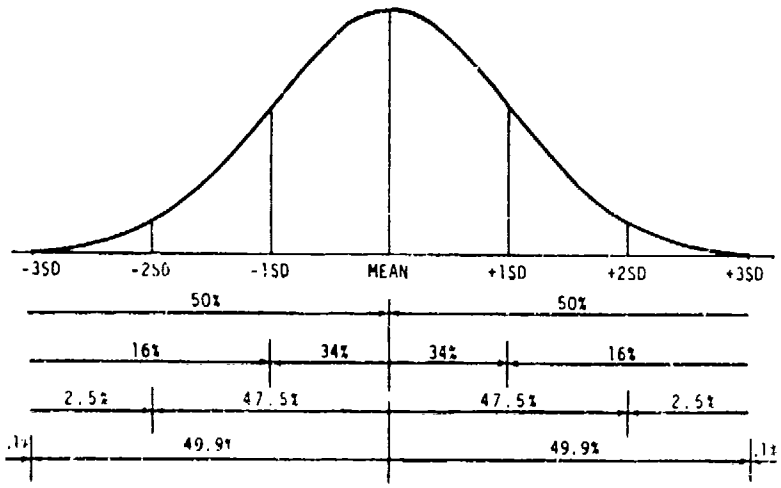


Figure 1. Areas under the normal curve.

It should be stressed that the design value is related to the body size of the population and should not be confused with the actual garment and pattern measurements. To arrive at those values, seam allowances are added and, where necessary, varying increments to permit freedom of movement within the garment.

The final step is to prepare a tariff for procurement of the various sizes. Usage rate will soon establish how many of what sizes must be purchased to maintain the stock of a particular item of clothing or personal protective equipment. Initially, however, the tariff, which is based on the number or percentage of individuals in each size category, establishes the numbers of garments to be provided in each size. If we found, for example, that 6.3 percent of the sample fell within the size 34 category, then the best initial procurement estimate for size 34 would be 63 units per thousand of the production run.

The sequence of steps described above constitutes a well-tried procedure which has been successfully used to develop military sizing programs for such items as USAF flight clothing and protective garments.

CHAPTER V

Sizing Analysis for Navy Women's Clothing

It was our intent to follow the procedures outlined in the previous chapter and subject the combined data from the two military women's surveys to a comprehensive anthropometric sizing analysis. A number of difficulties arose, however, to prevent this straightforward approach.

A significant obstacle to combining the data is that in some instances we lack one or more critical measurements in either one or the other of the samples. In the U.S. Air Force survey, for example, the dimension Crotch Length was not measured, and in the U.S. Army sample the dimension Bustpoint to Bustpoint Breadth was not measured. Using regression equations based on correlates, we had intended to develop the missing data for each sample. Such values would, of course, be estimated with the characteristics of regression on the mean and the lack of outriders for such values. These difficulties would not be insurmountable except that the missing values noted above are key dimensions necessary for the sizing analysis.

A second problem arose with the discovery of inconsistencies in the anthropometric data for some dimensions in the two surveys for which there is no easy resolution. We find, for example, that while the U.S. Army women were, on the average, taller (+0.34 inch), heavier (+4.96 pounds), and had a larger waist girth (+1.50 inches) and comparable hip girth (+0.10 inch), they had a smaller bust girth (-0.60 inch) than did the U.S. Air Force women. This difference in average bust circumference between the two samples is not fully understood but is believed to be a real difference in size and not an artifact of the measurement technique because of corresponding differences in allied dimensions such as Bust Depth. Such inconsistencies would not be so serious were it not for the fact that Bust Circumference is one of the key sizing dimensions for the upper torso. By creating size subsets on the dimension Bust Circumference, we would select Army women for inclusion who were, on the average, larger overall than the similarly selected Air Force women subsample.

For these reasons our initial approach to the development of a sizing program is based on U.S. Army data only since this survey contains the majority of the key dimensions requested (Bust Circumference and Neck to Bustpoint Length for the upper torso sizes and Waist Circumference and Crotch Length for the lower torso sizes). The dimension Bustpoint to Bustpoint Breadth was not measured in the Army survey. The key dimension

intervals specified by the Navy and used to establish the size categories are shown in Tables 1 and 2 which summarize the number of individuals who fall into each size category, the number of subjects in each size as a percent of the total number of individuals who fall within the given size categories (Percent A) and the number of individuals in each size category as a percent of the total sample (Percent B).

TABLE 1

INDIVIDUALS ACCOMMODATED IN SIZE SCHEME*

- Upper Torso

Size		Bust Circ	Neck to Bustpoint	No. in Size	%A	%B
Junior	3	29.5 - 30.5	7.63 - 7.88	0	0	0
	5	30.5 - 31.5	7.88 - 8.13	0	0	0
	7	31.5 - 32.5	8.13 - 8.38	8	57.14	0.60
	9	32.5 - 33.5	8.38 - 8.63	6	42.86	0.45
	Total			14	100.00	1.05
Misses	6	31.0 - 32.0	8.38 - 8.63	4	3.15	0.30
	8	32.0 - 33.0	8.63 - 8.88	24	18.90	1.80
	10	33.0 - 34.0	8.88 - 9.13	14	11.02	1.05
	12	34.0 - 35.5	9.13 - 9.50	43	33.86	3.23
	14	35.5 - 37.0	9.50 - 9.88	42	33.07	3.16
	Total			127	100.00	9.54
Women	34	37.00 - 39.00	10.38 - 10.88	57	78.08	4.28
	36	39.00 - 41.00	10.88 - 11.38	13	17.81	0.98
	38	41.00 - 43.00	11.38 - 11.88	3	4.11	0.23
	40	43.00 - 45.00	11.88 - 12.38	0	0	0
	Total			73	100.00	5.49

* Dimensions in inches.

TABLE 2

INDIVIDUALS ACCOMMODATED IN SIZE SCHEME*

- Lower Torso -

Size		Waist Circ	Crotch Length	No. in Size	%A	%B
Junior	3	19.5 - 20.5	23.13 - 23.88	0	0	0
	5	20.5 - 21.5	23.88 - 24.63	0	0	0
	7	21.5 - 22.5	24.63 - 25.38	0	0	0
	9	22.5 - 23.5	25.38 - 26.13	2	1.94	0.15
	11	23.5 - 25.0	26.13 - 26.88	17	16.50	1.28
	13	25.0 - 26.75	26.88 - 27.63	41	39.81	3.08
	15	26.75 - 28.25	27.63 - 28.78	43	41.75	3.23
	Total			103	100.00	7.74
Misses	6	22.0 - 23.0	26.00 - 26.75	2	1.05	0.15
	8	23.0 - 24.0	26.75 - 27.50	5	2.61	0.38
	10	24.0 - 25.0	27.50 - 28.25	19	9.95	1.43
	12	25.0 - 26.75	28.25 - 29.00	55	28.80	4.13
	14	26.75 - 28.25	29.00 - 29.75	53	27.75	3.98
	16	28.25 - 30.00	29.75 - 30.50	35	18.32	2.63
	18	30.00 - 32.00	30.50 - 31.25	22	11.52	1.65
	Total			191	100.00	14.35
Women	38	32.75 - 35.25	31.75 - 32.50	1	25.00	0.08
	40	35.25 - 37.75	32.50 - 33.25	3	75.00	0.23
	42	37.75 - 40.25	33.25 - 33.81	0	0	0
	44	40.25 - 42.75	33.81 - 34.19	0	0	0
	46	42.75 - 45.25	34.19 - 34.56	0	0	0
	48	45.25 - 47.75	34.56 - 34.94	0	0	0
	Total			4	100.00	0.31

* Dimensions in inches.

It will be noted that a number of the size categories contain either very few subjects or none at all. The size categories cover only 16.08 percent of the Army women for the sizing dimensions of the upper torso and 24.3 percent of the women for the sizing dimensions of the lower torso. As illustrated graphically in Figures 1 and 2, it can be seen that large numbers of the sample fall well outside the chosen size categories.

Detailed computer analyses for each size are shown in Tables 3-25. The values given for each dependent variable include the category mean, the within-a-size standard deviation and the mean plus and minus two standard deviations. The latter values cover approximately 95 percent of the individuals to be found in each size category.

BUST CIRCUMFERENCE(IN)

NECK-BUST POINT L(IN)	27.4	28.4	29.4	30.4	31.4	32.4	33.4	34.4	35.4	36.4	37.4	38.4	39.4	40.4	41.4	42.4	43.4	44.4	45.4	46.4	TOTAL
13.1														/ 1							/ 1
12.8																					
12.5										/ 1			/ 1		2/ 1		1/ 1	2/			5/ 4
12.2									1/	/ 1			1/ 2	3/	/ 2	1/ 1	1/				7/ 6
11.9								/ 1	1/ 1	2/ 5	9/ 4	3/ 1	4/ 3	2/ 1	~~4/ 1~~	~~8/~~	~~1/~~	~~4/~~			24/ 17
11.6							1/	1/	2/ 6	4/ 5	3/ 3	2/ 2	8/ 1	4/ 1	3/ 1	/ 1	1/				29/ 20
11.3						1/	2/ 2	3/ 2	8/ 5	12/ 6	13/ 7	11/11	~~14/ 3~~	~~3/ 1~~	~~8/ 3~~	~~1/ 1~~	1/	/ 1			75/ 42
11.0						/ 2	2/ 3	10/13	13/19	20/17	22/ 9	21/15	11/ 9	7/	3/	3/	1/	/ 1	/ 1		113/ 89
10.7				1/	2/ 2	2/ 6	12/16	31/18	40/31	54/23	28/21	22/19	13/ 5	4/ 1	4/ 2	/ 1				/ 1	213/146
10.4				1/ 1	1/ 2	8/ 7	14/23	41/19	33/23	40/30	~~20/17~~	~~12/ 8~~	6/ 4	3/ 1	1/						180/130
10.1		/ 1		/ 2	4/ 6	10/11	51/20	87/29	76/50	62/32	32/15	21/ 9	3/ 2	5/ 1	/ 1						351/179
9.8			1/	2/ 3	10/13	20/31	43/36	65/49	53/ 35	~~30/15~~	11/ 9	8/ 2	1/ 2	/ 2	/ 1						252/198
9.5			/ 1	2/ 5	19/19	44/38	74/44	~~84/28~~	~~78/ 30~~	~~27/14~~	7/ 4	5/ 1	2/	/ 1							320/185
9.2			/ 1	3/15	14/25	39/40	54/26	~~41/22~~	32/ 5	10/ 5	2/ 6	/ 1									205/146
8.9			1/ 4	3/ 7	6/ 8	15/14	19/18	9/ 5	6/10	4/		/ 1	/ 2								63/ 67
8.6		/ 1	/ 2	3/12	6/ 13	13/ 26	12/ 5	8/ 6	7/ 2	3/ 1	/ 1										52/ 69
8.3			/ 1	/ 5	3/ 8	6/ 4	4/ 3	1/	/ 1	1/ 1											14/ 23
8.0	/ 1		/ 1	2		1/ 1	1/														2/ 5
7.7					/ 1		/ 1														/ 2
7.4				/ 1																	/ 1
TOTAL	1	2	2/ 10	15/ 53	85/ 97	158/ 180	299/ 195	381/ 192	328/ 210	277/ 156	141/ 96	105/ 65	63/ 34	31/ 10	23/ 12	8/ 4	6/ 1	3/ 2	/ 1	/ 1	1905/ 1330

Figure 1. Upper torso size categories plotted on a bivariate frequency table for Bust Circumference and Neck-Bustpoint Length, 1968 USAF women/1976 USA women.

WAIST CIRCUMFERENCE (IN)

CROTCH LENGTH (IN)	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0	36.0	37.0	38.0	39.0	40.0	41.0	42.0	TOTAL
39.0														1								1
38.0																						
37.0																						
36.0																						
35.0						1																1
34.0							1	2	1		2	2	1		1	1			1			12
33.0					1	3	3	8	2		2	1	2		2	1				1		26
32.0				4	5	9	7	11	9	7	3	3	1									59
31.0			1	6	9	39	35	25	16	10	9	7	5	3	2					1	1	175
30.0			3	15	26	51	32	31	25	17	4	3	1	4	1							213
29.0	1	2	12	20	38	41	28	34	22	14	4	4	5		2	1	1					242
28.0	1	4	15	31	33	41	34	22	18	12	6	3	2		1				1			249
27.0		6	10	8	31	28	31	17	14	2	2			2	1							183
26.0	2	5	14	9	21	14	11	7	9	10	2	1		1								108
25.0		2	5	4	6	5	1	3	2	4	1		1	1								35
24.0		1	4	3	4	3	2	3	1		1	2										24
23.0			1		1		2		2	2		2	1			1						12
22.0			1			1		1														3
21.0					1	3	1	1						1								7
TOTAL	4	16	67	129	195	249	190	165	117	83	35	28	19	13	10	4	1		2	2	1	1330

Figure 2. Lower torso size categories plotted on a bivariate frequency table for Crotch Length and Waist Circumference, 1976 USA women.

NOTE: Junior sizes 3 and 5 and women's sizes 46 and 48 specify waist circumferences too small and too large, respectively, to appear on this table.

TABLE 3

AN UPPER TORSO SIZING PROGRAM FOR ARMY WOMEN, JUNIOR SIZES

RESULTS FOR SIZE # 7 JUNIOR N = 8

PERCENT OF SYSTEM = 57.14%, PERCENT OF TOTAL = .60%

THE RANGE FOR BUST CIRCUMFERENCE 31.50- 32.50

THE RANGE FOR NECK TO BUSTPOINT 8.13- 8.38

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
2	ARM SCYE CIRC	13.62	.74	12.13	15.10
3	AXILLA TO WAIST	9.85	1.32	7.20	12.50
4	BACK CURV AT BUST	15.59	.43	14.73	16.45
6	BACK CURV AT WAIST	12.90	.73	11.44	14.37
9	BUST CIRCUMFERENCE	31.91	.22	31.48	32.35
14	CHEST BREADTH	10.30	.31	9.68	10.92
15	CHEST CIRC AT SCYE	31.45	.66	30.12	32.77
18	ELBOW CIRC, FLEXED	9.92	.57	8.77	11.07
19	FRONT CURV AT BUST	16.32	.48	15.36	17.29
21	FRONT CURV - WAIST	17.46	1.10	15.25	19.67
22	HIP BREADTH	12.80	.59	11.62	13.97
27	MIDSCYE BACK	14.33	.58	13.18	15.48
28	MIDSCYE FRONT	12.63	.40	11.83	13.44
29	NECK TO BUSTPOINT	8.29	.06	8.17	8.40
30	NECK CIRCUMFERENCE	12.50	.53	11.45	13.55
31	SHOULDER BREADTH	15.70	.40	14.91	16.50
32	SHOULDER CIRC	37.36	1.01	35.35	39.37
33	SHOULDER LENGTH	5.74	.34	5.07	6.42
34	SLEEVE INSEAM	17.83	1.04	15.76	19.91
38	STATURE	63.48	2.62	58.24	68.72
42	VERT TRUNK CIRC	57.50	2.32	52.86	62.14
43	WAIST BACK LENGTH	16.19	.99	14.21	18.16
44	WAIST BREADTH	9.43	.46	8.50	10.35
46	WAIST FRONT LENGTH	14.38	1.10	12.18	16.59
48	WEIGHT	111.88	9.79	92.30	131.45
49	WRIST CIRC	5.63	.18	5.27	6.00

TABLE 4

AN UPPER TORSO SIZING PROGRAM FOR ARMY WOMEN, JUNIOR SIZES

RESULTS FOR SIZE # 9 JUNIOR N = 6

PERCENT OF SYSTEM = 42.86%, PERCENT OF TOTAL = .45%

THE RANGE FOR BUST CIRCUMFERENCE 32.50- 33.50

THE RANGE FOR NECK TO BUSTPOINT 8.38- 8.63

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
2	ARM SCYE CIRC	14.61	.74	13.12	16.09
3	AXILLA TO WAIST	8.69	1.32	6.04	11.34
4	BACK CURV AT BUST	16.25	.43	15.40	17.11
6	BACK CURV AT WAIST	14.14	.73	12.68	15.60
9	BUST CIRCUMFERENCE	32.99	.22	32.55	33.43
14	CHEST BREADTH	11.20	.31	10.58	11.82
15	CHEST CIRC AT SCYE	33.46	.66	32.14	34.79
18	ELBOW CIRC, FLEXED	10.59	.57	9.44	11.74
19	FRONT CURV AT BUST	16.74	.48	15.77	17.70
21	FRONT CURV - WAIST	18.06	1.10	15.86	20.27
22	HIP BREADTH	13.70	.59	12.52	14.88
27	MIDSCYE BACK	15.28	.58	14.13	16.43
28	MIDSCYE FRONT	12.97	.40	12.16	13.77
29	NECK TO BUSTPOINT	8.52	.06	8.41	8.64
30	NECK CIRCUMFERENCE	12.91	.53	11.86	13.96
31	SHOULDER BREADTH	16.59	.40	15.79	17.38
32	SHOULDER CIRC	39.95	1.01	37.94	41.97
33	SHOULDER LENGTH	5.94	.34	5.27	6.62
34	SLEEVE INSEAM	17.74	1.04	15.66	19.81
38	STATURE	63.29	2.62	58.04	68.53
42	VERT TRUNK CIRC	59.99	2.32	55.35	64.63
43	WAIST BACK LENGTH	15.81	.99	13.84	17.79
44	WAIST BREADTH	9.93	.46	9.00	10.85
46	WAIST FRONT LENGTH	13.94	1.10	11.74	16.14
48	WEIGHT	128.13	9.79	108.55	147.71
49	WRIST CIRC	5.86	.18	5.50	6.22

TABLE 5

AN UPPER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 6 MISSES N = 4

PERCENT OF SYSTEM = 3.15%, PERCENT OF TOTAL = .30%

THE RANGE FOR BUST CIRCUMFERENCE 31.00- 32.00

THE RANGE FOR NECK TO BUSTPOINT 8.38- 8.63

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
2	ARM SCYE CIRC	14.06	.59	12.89	15.24
3	AXILLA TO WAIST	9.22	.93	7.37	11.07
4	BACK CURV AT BUST	15.71	.61	14.48	16.93
6	BACK CURV AT WAIST	13.63	.76	12.10	15.16
9	BUST CIRCUMFERENCE	31.36	.40	30.57	32.15
14	CHEST BREADTH	10.58	.38	9.81	11.35
15	CHEST CIRC AT SCYE	31.60	.96	29.69	33.52
18	ELBOW CIRC, FLEXED	9.69	.54	8.62	10.77
19	FRONT CURV AT BUST	15.65	.70	14.25	17.04
21	FRONT CURV - WAIST	17.48	.94	15.59	19.37
22	HIP BREADTH	13.06	.66	11.75	14.37
27	MIDSCYE BACK	14.54	.74	13.05	16.03
28	MIDSCYE FRONT	12.60	.63	11.34	13.86
29	NECK TO BUSTPOINT	8.49	.09	8.31	8.68
30	NECK CIRCUMFERENCE	12.24	.50	11.24	13.25
31	SHOULDER BREADTH	15.94	.59	14.77	17.12
32	SHOULDER CIRC	37.76	1.20	35.36	40.15
33	SHOULDER LENGTH	5.46	.40	4.67	6.25
34	SLEEVE INSEAM	16.26	.94	14.38	18.14
38	STATURE	59.80	2.14	55.53	64.08
42	VERT TRUNK CIRC	56.06	1.98	52.11	60.02
43	WAIST BACK LENGTH	15.33	1.00	13.34	17.33
44	WAIST BREADTH	9.85	.61	8.62	11.08
46	WAIST FRONT LENGTH	14.08	.95	12.19	15.98
48	WEIGHT	107.60	10.19	87.22	127.98
49	WRIST CIRC	5.53	.24	5.06	6.00

TABLE 6

AN UPPER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 8 MISSES N = 24

PERCENT OF SYSTEM = 18.90%, PERCENT OF TOTAL = 1.80%

THE RANGE FOR BUST CIRCUMFERENCE 32.00- 33.00

THE RANGE FOR NECK TO BUSTPOINT 8.63- 8.88

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
2	ARM SCYE CIRC	13.92	.59	12.75	15.10
3	AXILLA TO WAIST	9.18	.93	7.33	11.03
4	BACK CURV AT BUST	15.68	.61	14.45	16.90
6	BACK CURV AT WAIST	13.15	.76	11.62	14.67
9	BUST CIRCUMFERENCE	32.41	.40	31.62	33.20
14	CHEST BREADTH	10.58	.38	9.81	11.35
15	CHEST CIRC AT SCYE	31.70	.96	29.78	33.62
18	ELBOW CIRC, FLEXED	9.91	.54	8.84	10.98
19	FRONT CURV AT BUST	16.73	.70	15.34	18.13
21	FRONT CURV - WAIST	17.85	.94	15.96	19.74
22	HIP BREADTH	13.32	.66	12.01	14.63
27	MIDSCYE BACK	14.45	.74	12.96	15.94
28	MIDSCYE FRONT	12.60	.63	11.35	13.86
29	NECK TO BUSTPOINT	8.75	.09	8.56	8.93
30	NECK CIRCUMFERENCE	12.41	.50	11.40	13.42
31	SHOULDER BREADTH	15.75	.59	14.58	16.92
32	SHOULDER CIRC	37.37	1.20	34.98	39.76
33	SHOULDER LENGTH	5.73	.40	4.94	6.52
34	SLEEVE INSEAM	17.70	.94	15.82	19.58
38	STATURE	63.47	2.14	59.20	67.75
42	VERT TRUNK CIRC	58.42	1.98	54.46	62.37
43	WAIST BACK LENGTH	15.94	1.00	13.94	17.93
44	WAIST BREADTH	9.61	.61	8.38	10.84
46	WAIST FRONT LENGTH	14.09	.95	12.19	15.98
48	WEIGHT	116.13	10.19	95.75	136.52
49	WRIST CIRC	5.63	.24	5.16	6.10

TABLE 7

AN UPPER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 10 MISSES N = 14

PERCENT OF SYSTEM = 11.02%, PERCENT OF TOTAL = 1.05%

THE RANGE FOR BUST CIRCUMFERENCE 33.00- 34.00

THE RANGE FOR NECK TO BUSTPOINT 8.88- 9.13

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
2	ARM SCYE CIRC	14.37	.59	13.2[illegible]	15.55
3	AXILLA TO WAIST	9.09	.93	7.24	10.94
4	BACK CURV AT BUST	15.98	.61	14.75	17.20
6	BACK CURV AT WAIST	13.49	.76	11.96	15.02
9	BUST CIRCUMFERENCE	33.50	.40	32.71	34.29
14	CHEST BREADTH	10.78	.38	10.02	11.55
15	CHEST CIRC AT SCYE	33.32	.96	31.40	35.24
18	ELBOW CIRC, FLEXED	10.27	.54	9.20	11.35
19	FRONT CURV AT BUST	17.52	.70	16.13	18.92
21	FRONT CURV - WAIST	18.48	.94	16.59	20.37
22	HIP BREADTH	13.76	.66	12.44	15.07
27	MIDSCYE BACK	14.98	.74	13.49	16.47
28	MIDSCYE FRONT	13.08	.63	11.83	14.34
29	NECK TO BUSTPOINT	9.03	.09	8.84	9.22
30	NECK CIRCUMFERENCE	12.74	.50	11.73	13.75
31	SHOULDER BREADTH	16.59	.59	15.42	17.77
32	SHOULDER CIRC	39.50	1.20	37.11	41.89
33	SHOULDER LENGTH	6.00	.40	5.21	6.79
34	SLEEVE INSEAM	17.91	.94	16.03	19.79
38	STATURE	64.42	2.14	60.14	68.70
42	VERT TRUNK CIRC	59.87	1.98	55.91	63.82
43	WAIST BACK LENGTH	16.03	1.00	14.04	18.02
44	WAIST BREADTH	9.88	.61	8.65	11.11
46	WAIST FRONT LENGTH	14.23	.95	12.33	16.12
48	WEIGHT	127.55	10.19	107.17	147.93
49	WRIST CIRC	5.81	.24	5.34	6.28

TABLE 8

AN UPPER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 12 MISSES N = 43

PERCENT OF SYSTEM = 33.86%, PERCENT OF TOTAL = 3.23%

THE RANGE FOR BUST CIRCUMFERENCE 34.00- 35.50

THE RANGE FOR NECK TO BUSTPOINT 9.13- 9.50

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
2	ARM SCYE CIRC	14.62	.59	13.45	15.80
3	AXILLA TO WAIST	8.92	.93	7.06	10.77
4	BACK CURV AT BUST	16.43	.61	15.21	17.66
6	BACK CURV AT WAIST	13.66	.76	12.13	15.19
9	BUST CIRCUMFERENCE	34.63	.46	33.84	35.42
14	CHEST BREADTH	11.16	.38	10.39	11.93
15	CHEST CIRC AT SCYE	33.61	.96	31.69	35.52
18	ELBOW CIRC, FLEXED	10.16	.54	9.09	11.24
19	FRONT CURV AT BUST	18.20	.70	16.80	19.59
21	FRONT CURV - WAIST	18.87	.94	16.98	20.76
22	HIP BREADTH	14.02	.66	12.71	15.33
27	MIDSCYE BACK	14.79	.74	13.30	16.28
28	MIDSCYE FRONT	13.06	.63	11.80	14.31
29	NECK TO BUSTPOINT	9.34	.09	9.15	9.53
30	NECK CIRCUMFERENCE	12.60	.50	11.59	13.61
31	SHOULDER BREADTH	16.50	.59	15.33	17.67
32	SHOULDER CIRC	39.26	1.20	36.87	41.65
33	SHOULDER LENGTH	5.88	.40	5.09	6.67
34	SLEEVE INSEAM	17.80	.94	15.92	19.68
38	STATURE	63.94	2.14	59.66	68.22
42	VERT TRUNK CIRC	60.37	1.98	56.42	64.33
43	WAIST BACK LENGTH	15.93	1.00	13.94	17.93
44	WAIST BREADTH	9.88	.61	8.65	11.11
46	WAIST FRONT LENGTH	14.13	.95	12.23	16.02
48	WEIGHT	131.18	10.19	110.80	151.56
49	WRIST CIRC	5.76	.24	5.29	6.23

TABLE 9

AN UPPER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 14 MISSES N = 42

PERCENT OF SYSTEM = 33.07%, PERCENT OF TOTAL = 3.16%

THE RANGE FOR BUST CIRCUMFERENCE 35.50- 37.00

THE RANGE FOR NECK TO BUSTPOINT 9.50- 9.88

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
2	ARM SCYE CIRC	15.18	.59	14.00	16.36
3	AXILLA TO WAIST	9.03	.93	7.18	10.88
4	BACK CURV AT BUST	17.14	.61	15.91	18.36
6	BACK CURV AT WAIST	14.40	.76	12.87	15.93
9	BUST CIRCUMFERENCE	36.08	.40	35.29	36.87
14	CHEST BREADTH	11.54	.38	10.77	12.31
15	CHEST CIRC AT SCYE	34.94	.96	33.02	36.86
18	ELBOW CIRC, FLEXED	10.45	.54	9.38	11.53
19	FRONT CURV AT BUST	18.94	.70	17.55	20.34
21	FRONT CURV - WAIST	19.27	.94	17.38	21.16
22	HIP BREADTH	14.09	.66	12.78	15.41
27	MIDSCYE BACK	15.16	.74	13.67	16.65
28	MIDSCYE FRONT	13.29	.63	12.03	14.54
29	NECK TO BUSTPOINT	9.72	.09	9.53	9.91
30	NECK CIRCUMFERENCE	12.97	.50	11.97	13.98
31	SHOULDER BREADTH	16.99	.59	15.82	18.17
32	SHOULDER CIRC	40.81	1.20	38.42	43.20
33	SHOULDER LENGTH	5.91	.40	5.12	6.71
34	SLEEVE INSEAM	17.84	.94	15.96	19.72
38	STATURE	64.48	2.14	60.20	68.75
42	VERT TRUNK CIRC	61.37	1.98	57.42	65.33
43	WAIST BACK LENGTH	16.11	1.00	14.12	18.11
44	WAIST BREADTH	10.39	.61	9.16	11.62
46	WAIST FRONT LENGTH	14.50	.95	12.60	16.39
48	WEIGHT	139.83	10.19	119.45	160.21
49	WRIST CIRC	5.87	.24	5.40	6.34

TABLE 10

AN UPPER TORSO SIZING PROGRAM FOR ARMY WOMEN, WOMEN'S SIZES

RESULTS FOR SIZE # 34 WOMEN'S N = 57

PERCENT OF SYSTEM = 78.08%, PERCENT OF TOTAL = 4.28%

THE RANGE FOR BUST CIRCUMFERENCE 37.00- 39.00

THE RANGE FOR NECK TO BUSTPOINT 10.38- 10.88

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
2	ARM SCYE CIRC	15.60	.67	14.26	16.93
3	AXILLA TO WAIST	9.01	1.14	6.74	11.29
4	BACK CURV AT BUST	17.91	.76	16.39	19.44
6	BACK CURV AT WAIST	15.35	1.12	13.12	17.59
9	BUST CIRCUMFERENCE	37.82	.57	36.67	38.96
14	CHEST BREADTH	11.79	.38	11.04	12.54
15	CHEST CIRC AT SCYE	35.84	1.24	33.36	38.32
18	ELBOW CIRC, FLEXED	10.61	.56	9.48	11.74
19	FRONT CURV AT BUST	19.90	.71	18.49	21.32
21	FRONT CURV - WAIST	20.14	1.28	17.58	22.70
22	HIP BREADTH	14.72	.82	13.08	16.35
27	MIDSCYE BACK	15.58	.76	14.06	17.10
28	MIDSCYE FRONT	13.48	.56	12.35	14.61
29	NECK TO BUSTPOINT	10.66	.14	10.38	10.95
30	NECK CIRCUMFERENCE	13.20	.47	12.25	14.14
31	SHOULDER BREADTH	17.53	.63	16.27	18.79
32	SHOULDER CIRC	41.82	1.45	38.92	44.71
33	SHOULDER LENGTH	5.96	.39	5.17	6.75
34	SLEEVE INSEAM	17.92	1.01	15.90	19.95
38	STATURE	64.76	2.19	60.38	69.13
42	VERT TRUNK CIRC	62.48	2.05	58.39	66.58
43	WAIST BACK LENGTH	16.08	.98	14.13	18.04
44	WAIST BREADTH	11.07	.88	9.30	12.84
46	WAIST FRONT LENGTH	14.77	1.11	12.54	17.00
48	WEIGHT	151.87	12.12	127.63	176.12
49	WRIST CIRC	5.95	.23	5.48	6.41

TABLE 11

AN UPPER TORSO SIZING PROGRAM FOR ARMY WOMEN, WOMEN'S SIZES

RESULTS FOR SIZE # 36 WOMEN'S N = 13

PERCENT OF SYSTEM = 17.81%, PERCENT OF TOTAL = .98%

THE RANGE FOR BUST CIRCUMFERENCE 39.00- 41.00

THE RANGE FOR NECK TO BUSTPOINT 10.88- 11.38

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
2	ARM SCYE CIRC	16.30	.67	14.96	17.63
3	AXILLA TO WAIST	9.56	1.14	7.29	11.83
4	BACK CURV AT BUST	18.40	.76	16.88	19.93
6	BACK CURV AT WAIST	15.69	1.12	13.46	17.93
9	BUST CIRCUMFERENCE	39.61	.57	38.47	40.76
14	CHEST BREADTH	12.31	.38	11.56	13.06
15	CHEST CIRC AT SCYE	36.67	1.24	34.19	39.15
18	ELBOW CIRC, FLEXED	10.91	.56	9.78	12.04
19	FRONT CURV AT BUST	21.21	.71	19.79	22.62
21	FRONT CURV - WAIST	19.89	1.28	17.33	22.45
22	HIP BREADTH	14.60	.82	12.97	16.23
27	MIDSCYE BACK	15.35	.76	13.83	16.87
28	MIDSCYE FRONT	13.67	.56	12.54	14.80
29	NECK TO BUSTPOINT	11.10	.14	10.81	11.39
30	NECK CIRCUMFERENCE	13.30	.47	12.35	14.24
31	SHOULDER BREADTH	17.65	.63	16.39	18.91
32	SHOULDER CIRC	42.45	1.45	39.56	45.35
33	SHOULDER LENGTH	5.89	.39	5.10	6.68
34	SLEEVE INSEAM	17.77	1.01	15.75	19.79
38	STATURE	65.38	2.19	61.00	69.76
42	VERT TRUNK CIRC	63.79	2.05	59.70	67.89
43	WAIST BACK LENGTH	16.68	.98	14.73	18.64
44	WAIST BREADTH	11.46	.88	9.69	13.23
46	WAIST FRONT LENGTH	15.44	1.11	13.21	17.67
48	WEIGHT	154.25	12.12	130.01	178.50
49	WRIST CIRC	5.94	.23	5.48	6.40

TABLE 12

AN UPPER TORSO SIZING PROGRAM FOR ARMY WOMEN, WOMEN'S SIZES

RESULTS FOR SIZE # 38 WOMEN'S N = 3

PERCENT OF SYSTEM = 4.11%, PERCENT OF TOTAL = .23%

THE RANGE FOR BUST CIRCUMFERENCE 41.00- 43.00

THE RANGE FOR NECK TO BUSTPOINT 11.38- 11.88

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
2	ARM SCYE CIRC	17.20	.67	15.87	18.54
3	AXILLA TO WAIST	9.92	1.14	7.65	12.19
4	BACK CURV AT BUST	19.75	.76	18.23	21.27
6	BACK CURV AT WAIST	17.65	1.12	15.42	19.89
9	BUST CIRCUMFERENCE	42.01	.57	40.86	43.15
14	CHEST BREADTH	12.80	.38	12.04	13.55
15	CHEST CIRC AT SCYE	38.27	1.24	35.79	40.75
18	ELBOW CIRC, FLEXED	11.42	.56	10.29	12.55
19	FRONT CURV AT BUST	22.26	.71	20.84	23.67
21	FRONT CURV - WAIST	21.64	1.28	19.08	24.20
22	HIP BREADTH	15.54	.82	13.90	17.17
27	MIDSCYE BACK	16.44	.76	14.92	17.96
28	MIDSCYE FRONT	13.77	.56	12.64	14.90
29	NECK TO BUSTPOINT	11.59	.14	11.30	11.88
30	NECK CIRCUMFERENCE	13.85	.47	12.90	14.79
31	SHOULDER BREADTH	18.53	.63	17.27	19.79
32	SHOULDER CIRC	44.53	1.45	41.63	47.42
33	SHOULDER LENGTH	6.06	.39	5.28	6.85
34	SLEEVE INS AM	18.94	1.01	16.91	20.96
38	STATURE	68.19	2.19	63.81	72.57
42	VERT TRUNK CIRC	66.18	2.05	62.08	70.28
43	WAIST BACK LENGTH	13.12	.96	16.17	20.08
44	WAIST BREADTH	13.12	.88	11.35	14.89
46	WAIST FRONT LENGTH	16.36	1.11	14.14	18.59
48	WEIGHT	180.10	12.12	155.86	204.34
49	WRIST CIRC	6.19	.23	5.73	6.66

TABLE 13

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, JUNIOR SIZES

RESULTS FOR SIZE # 9 JUNIOR N = 2

PERCENT OF SYSTEM = 1.94%, PERCENT OF TOTAL = .15%

THE RANGE FOR WAIST CIRC 22.50- 23.50

THE RANGE FOR CROTCH LENGTH 25.38- 26.13

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	7.48	.38	6.72	8.24
5	BACK CURV AT HIP	16.34	.85	14.63	18.04
6	BACK CURV AT WAIST	11.71	.46	10.80	12.62
12	CALF CIRCUMFERENCE	12.72	.79	11.13	14.30
16	CROTCH HEIGHT	28.66	1.70	25.27	32.06
17	CROTCH LENGTH	25.98	.21	25.56	26.40
20	FRONT CURV AT HIP	11.59	.55	10.50	12.68
21	FRONT CURV - WAIST	16.59	.84	14.91	18.27
22	HIP BREADTH	12.36	.55	11.27	13.45
23	HIP CIRCUMFERENCE	32.93	1.14	30.64	35.22
25	KNEE CIRCUMFERENCE	12.44	.56	11.31	13.57
38	STATURE	61.02	2.39	56.24	65.81
40	UPPER THIGH CIRC	19.43	1.02	17.39	21.47
44	WAIST BREADTH	8.33	.38	7.57	9.08
45	WAIST CIRC	23.31	.47	22.36	24.25
47	WAIST HEIGHT	37.81	1.76	34.29	41.34
48	WEIGHT	100.40	7.94	84.51	116.29

TABLE 14

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, JUNIOR SIZES

RESULTS FOR SIZE # 11 JUNIOR N = 17

PERCENT OF SYSTEM = 16.50%, PERCENT OF TOTAL = 1.28%

THE RANGE FOR WAIST CIRC 23.50- 25.00

THE RANGE FOR CROTCH LENGTH 26.13- 26.88

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	7.66	.38	6.90	8.42
5	BACK CURV AT HIP	16.89	.85	15.19	18.60
6	BACK CURV AT WAIST	12.34	.46	11.43	13.26
12	CALF CIRCUMFERENCE	12.62	.79	11.03	14.20
16	CROTCH HEIGHT	29.14	1.70	25.74	32.53
17	CROTCH LENGTH	26.44	.21	26.02	26.86
20	FRONT CURV AT HIP	12.03	.55	10.94	13.12
21	FRONT CURV - WAIST	17.17	.84	15.49	18.85
22	HIP BREADTH	12.69	.55	11.60	13.78
23	HIP CIRCUMFERENCE	34.06	1.14	31.77	36.35
25	KNEE CIRCUMFERENCE	12.75	.56	11.62	13.88
38	STATURE	61.65	2.39	56.86	66.43
40	UPPER THIGH CIRC	19.93	1.02	17.89	21.97
44	WAIST BREADTH	8.90	.38	8.15	9.66
45	WAIST CIRC	24.37	.47	23.42	25.32
47	WAIST HEIGHT	38.47	1.76	34.95	42.00
48	WEIGHT	105.33	7.94	89.44	121.22

TABLE 15

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, JUNIOR SIZES

RESULTS FOR SIZE # 13 JUNIOR N = 41

PERCENT OF SYSTEM = 39.81%, PERCENT OF TOTAL = 3.08%

THE RANGE FOR WAIST CIRC 25.00- 26.75

THE RANGE FOR CROTCH LENGTH 26.88- 27.63

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	7.95	.38	7.19	8.71
5	BACK CURV AT HIP	17.82	.85	16.12	19.53
6	BACK CURV AT WAIST	12.85	.46	11.94	13.76
12	CALF CIRCUMFERENCE	13.21	.79	11.62	14.79
16	CROTCH HEIGHT	29.71	1.70	26.31	33.10
17	CROTCH LENGTH	27.28	.21	26.86	27.70
20	FRONT CURV AT HIP	13.02	.55	11.93	14.11
21	FRONT CURV - WAIST	18.08	.84	16.40	19.76
22	HIP BREADTH	13.43	.55	12.34	14.52
23	HIP CIRCUMFERENCE	35.91	1.14	33.62	38.20
25	KNEE CIRCUMFERENCE	13.18	.56	12.05	14.30
38	STATURE	63.09	2.39	58.31	67.88
40	UPPER THIGH CIRC	21.17	1.02	19.13	23.21
44	WAIST BREADTH	9.48	.38	8.73	10.23
45	WAIST CIRC	25.87	.47	24.93	26.82
47	WAIST HEIGHT	39.37	1.76	35.84	42.90
48	WEIGHT	116.62	7.94	100.74	132.51

TABLE 16

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, JUNIOR SIZES

RESULTS FOR SIZE # 15 JUNIOR N = 43

PERCENT OF SYSTEM = 41.75%, PERCENT OF TOTAL = 3.23%

THE RANGE FOR WAIST CIRC 26.75- 28.25

THE RANGE FOR CROTCH LENGTH 27.63- 28.38

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	8.10	.38	7.34	8.85
5	BACK CURV AT HIP	18.16	.85	16.45	19.86
6	BACK CURV AT WAIST	13.68	.46	12.77	14.59
12	CALF CIRCUMFERENCE	13.63	.79	12.05	15.22
16	CROTCH HEIGHT	29.53	1.70	26.14	32.93
17	CROTCH LENGTH	27.98	.21	27.56	28.40
20	FRONT CURV AT HIP	13.77	.55	12.68	14.86
21	FRONT CURV - WAIST	18.60	.84	16.92	20.28
22	HIP BREADTH	13.66	.55	12.57	14.76
23	HIP CIRCUMFERENCE	36.76	1.14	34.47	39.05
25	KNEE CIRCUMFERENCE	13.42	.56	12.29	14.55
38	STATURE	63.23	2.39	58.44	68.01
40	UPPER THIGH CIRC	21.93	1.02	19.89	23.97
44	WAIST BREADTH	9.92	.38	9.17	10.67
45	WAIST CIRC	27.45	.47	26.50	28.39
47	WAIST HEIGHT	39.08	1.76	35.55	42.61
48	WEIGHT	126.01	7.94	110.13	141.90

TABLE 17

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 6 MISSES N = 2

PERCENT OF SYSTEM = 1.05%, PERCENT OF TOTAL = .15%

THE RANGE FOR WAIST CIRC 22.00- 23.00

THE RANGE FOR CROTCH LENGTH 26.00- 26.75

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	7.78	.41	6.96	8.59
5	BACK CURV AT HIP	17.03	.97	15.09	18.96
6	BACK CURV AT WAIST	11.59	.52	10.56	12.63
12	CALF CIRCUMFERENCE	12.78	.73	11.31	14.24
16	CROTCH HEIGHT	29.13	1.58	25.97	32.30
17	CROTCH LENGTH	26.34	.21	25.92	26.76
20	FRONT CURV AT HIP	11.26	.58	10.11	12.41
21	FRONT CURV - WAIST	16.79	1.00	14.79	18.80
22	HIP BREADTH	12.46	.63	11.21	13.71
23	HIP CIRCUMFERENCE	33.82	1.35	31.11	36.53
25	KNEE CIRCUMFERENCE	12.66	.63	11.39	13.93
38	STATURE	61.83	2.24	57.36	66.30
40	UPPER THIGH CIRC	19.90	1.02	17.86	21.94
44	WAIST BREADTH	8.29	.33	7.63	8.95
45	WAIST CIRC	22.85	.45	21.96	23.75
47	WAIST HEIGHT	38.64	1.68	35.29	41.99
48	WEIGHT	101.15	8.47	84.22	118.08

TABLE 18

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 8 MISSES N = 5

PERCENT OF SYSTEM = 2.62%, PERCENT OF TOTAL = .38%

THE RANGE FOR WAIST CIRC 23.00- 24.00

THE RANGE FOR CROTCH LENGTH 26.75- 27.50

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	7.65	.41	6.83	8.46
5	BACK CURV AT HIP	16.99	.97	15.06	18.93
6	BACK CURV AT WAIST	11.83	.52	10.80	12.87
12	CALF CIRCUMFERENCE	12.32	.73	10.85	13.79
16	CROTCH HEIGHT	28.98	1.58	25.82	32.15
17	CROTCH LENGTH	27.22	.21	26.80	27.64
20	FRONT CURV AT HIP	11.76	.58	10.60	12.91
21	FRONT CURV - WAIST	17.08	1.00	15.07	19.08
22	HIP BREADTH	12.99	.63	11.74	14.25
23	HIP CIRCUMFERENCE	34.07	1.35	31.36	36.78
25	KNEE CIRCUMFERENCE	12.50	.63	11.23	13.76
38	STATURE	62.77	2.24	58.30	67.24
40	UPPER THIGH CIRC	19.37	1.02	17.33	21.41
44	WAIST BREADTH	8.71	.33	8.05	9.37
45	WAIST CIRC	23.59	.45	22.70	24.48
47	WAIST HEIGHT	39.04	1.68	35.69	42.39
48	WEIGHT	101.76	8.47	84.83	118.69

TABLE 19

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 10 MISSES N = 19

PERCENT OF SYSTEM = 9.95%, PERCENT OF TOTAL = 1.43%

THE RANGE FOR WAIST CIRC 24.00- 25.00

THE RANGE FOR CROTCH LENGTH 27.50- 28.25

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	7.83	.41	7.02	8.65
5	BACK CURV AT HIP	17.39	.97	15.45	19.32
6	BACK CURV AT WAIST	12.40	.52	11.37	13.43
12	CALF CIRCUMFERENCE	13.15	.73	11.68	14.62
16	CROTCH HEIGHT	29.83	1.58	26.67	33.00
17	CROTCH LENGTH	27.86	.21	27.44	28.28
20	FRONT CURV AT HIP	12.14	.58	10.98	13.29
21	FRONT CURV - WAIST	17.94	1.00	15.94	19.94
22	HIP BREADTH	13.22	.63	11.97	14.47
23	HIP CIRCUMFERENCE	35.33	1.35	32.62	38.03
25	KNEE CIRCUMFERENCE	13.07	.63	11.80	14.34
38	STATURE	63.78	2.24	59.30	68.25
40	UPPER THIGH CIRC	20.58	1.02	18.54	22.62
44	WAIST BREADTH	8.93	.33	8.27	9.59
45	WAIST CIRC	24.54	.45	23.65	25.43
47	WAIST HEIGHT	39.82	1.68	36.46	43.17
48	WEIGHT	114.32	8.47	97.39	131.25

TABLE 20

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 12 MISSES N = 55

PERCENT OF SYSTEM = 28.80%, PERCENT OF TOTAL = 4.13%

THE RANGE FOR WAIST CIRC 25.00- 26.75

THE RANGE FOR CROTCH LENGTH 28.25- 29.00

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	8.07	.41	7.25	8.88
5	BACK CURV AT HIP	18.10	.97	16.17	20.03
6	BACK CURV AT WAIST	12.91	.52	11.87	13.94
12	CALF CIRCUMFERENCE	13.50	.73	12.03	14.97
16	CROTCH HEIGHT	29.96	1.58	26.80	33.13
17	CROTCH LENGTH	28.58	.21	28.16	29.01
20	FRONT CURV AT HIP	13.03	.58	11.87	14.18
21	FRONT CURV - WAIST	18.21	1.00	16.21	20.21
22	HIP BREADTH	13.56	.63	12.31	14.82
23	HIP CIRCUMFERENCE	36.31	1.35	33.61	39.02
25	KNEE CIRCUMFERENCE	13.40	.63	12.13	14.67
38	STATURE	64.02	2.24	59.55	68.49
40	UPPER THIGH CIRC	21.44	1.02	19.40	23.47
44	WAIST BREADTH	9.37	.33	8.71	10.03
45	WAIST CIRC	25.93	.45	25.04	26.82
47	WAIST HEIGHT	39.92	1.68	36.57	43.27
48	WEIGHT	122.18	8.47	105.25	139.11

TABLE 21

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 14 MISSES N = 53

PERCENT OF SYSTEM = 27.75%, PERCENT OF TOTAL = 3.98%

THE RANGE FOR WAIST CIRC 26.75- 28.25

THE RANGE FOR CROTCH LENGTH 29.00- 29.75

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	8.18	.41	7.36	8.99
5	BACK CURV AT HIP	18.90	.97	16.96	20.83
6	BACK CURV AT WAIST	13.69	.52	12.65	14.72
12	CALF CIRCUMFERENCE	13.89	.73	12.42	15.36
16	CROTCH HEIGHT	29.98	1.58	26.81	33.14
17	CROTCH LENGTH	29.39	.21	28.97	29.81
20	FRONT CURV AT HIP	13.69	.58	12.54	14.85
21	FRONT CURV - WAIST	19.12	1.00	17.11	21.12
22	HIP BREADTH	14.07	.63	12.82	15.33
23	HIP CIRCUMFERENCE	38.01	1.35	35.31	40.72
25	KNEE CIRCUMFERENCE	13.71	.63	12.45	14.98
38	STATURE	64.00	2.24	59.52	68.47
40	UPPER THIGH CIRC	22.78	1.02	20.74	24.82
44	WAIST BREADTH	9.87	.33	9.21	10.53
45	WAIST CIRC	27.38	.45	26.49	28.27
47	WAIST HEIGHT	40.12	1.68	36.77	43.47
48	WEIGHT	131.81	8.47	114.88	148.74

TABLE 22

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 16 MISSES N = 35

PERCENT OF SYSTEM = 18.32%, PERCENT OF TOTAL = 2.63%

THE RANGE FOR WAIST CIRC 28.25- 30.00

THE RANGE FOR CROTCH LENGTH 29.75- 30.50

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	8.41	.41	7.59	9.22
5	BACK CURV AT HIP	19.71	.97	17.78	21.64
6	BACK CURV AT WAIST	14.42	.52	13.39	15.45
12	CALF CIRCUMFERENCE	14.28	.73	12.82	15.75
16	CROTCH HEIGHT	30.65	1.58	27.48	33.82
17	CROTCH LENGTH	30.17	.21	29.75	30.59
20	FRONT CURV AT HIP	14.62	.58	13.46	15.77
21	FRONT CURV - WAIST	19.61	1.00	17.60	21.61
22	HIP BREADTH	14.51	.63	13.25	15.76
23	HIP CIRCUMFERENCE	39.31	1.35	36.61	42.02
25	KNEE CIRCUMFERENCE	14.26	.63	12.99	15.53
38	STATURE	65.16	2.24	60.69	69.64
40	UPPER THIGH CIRC	23.57	1.02	21.54	25.61
44	WAIST BREADTH	10.39	.33	9.73	11.05
45	WAIST CIRC	29.04	.45	28.15	29.93
47	WAIST HEIGHT	40.73	1.68	37.38	44.08
48	WEIGHT	145.02	8.47	128.09	161.95

TABLE 23

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, MISSES SIZES

RESULTS FOR SIZE # 18 MISSES N = 22

PERCENT OF SYSTEM = 11.52%, PERCENT OF TOTAL = 1.65%

THE RANGE FOR WAIST CIRC 30.00- 32.00

THE RANGE FOR CROTCH LENGTH 30.50- 31.25

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	8.42	.41	7.61	9.23
5	BACK CURV AT HIP	20.05	.97	18.12	21.99
6	BACK CURV AT WAIST	15.07	.52	14.03	16.10
12	CALF CIRCUMFERENCE	14.47	.73	13.00	15.94
16	CROTCH HEIGHT	31.01	1.58	27.84	34.17
17	CROTCH LENGTH	30.80	.21	30.38	31.22
20	FRONT CURV AT HIP	15.74	.58	14.58	16.89
21	FRONT CURV - WAIST	19.67	1.00	17.67	21.68
22	HIP BREADTH	14.73	.63	13.48	15.99
23	HIP CIRCUMFERENCE	39.73	1.35	37.02	42.43
25	KNEE CIRCUMFERENCE	14.51	.63	13.24	15.77
38	STATURE	65.92	2.24	61.45	70.39
40	UPPER THIGH CIRC	23.89	1.02	21.85	25.93
44	WAIST BREADTH	11.03	.33	10.37	11.69
45	WAIST CIRC	30.80	.45	29.91	31.69
47	WAIST HEIGHT	41.23	1.68	37.87	44.58
48	WEIGHT	153.29	8.47	136.35	170.22

TABLE 24

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, WOMEN'S SIZES

RESULTS FOR SIZE # 38 WOMEN'S N = 1

PERCENT OF SYSTEM = 25.00%, PERCENT OF TOTAL = .08%

THE RANGE FOR WAIST CIRC 32.75- 35.25

THE RANGE FOR CROTCH LENGTH 31.75- 32.50

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	8.15	.07	8.00	8.30
5	BACK CURV AT HIP	22.09	.41	21.28	22.90
6	BACK CURV AT WAIST	17.44	.88	15.68	19.20
12	CALF CIRCUMFERENCE	14.25	.39	13.47	15.04
16	CROTCH HEIGHT	26.14	.97	24.21	28.07
17	CROTCH LENGTH	32.44	.13	32.18	32.70
20	FRONT CURV AT HIP	16.85	1.01	14.83	18.88
21	FRONT CURV - WAIST	18.03	2.05	13.94	22.13
22	HIP BREADTH	14.37	.63	13.11	15.63
23	HIP CIRCUMFERENCE	40.12	2.34	35.44	44.80
25	KNEE CIRCUMFERENCE	13.82	.35	13.13	14.51
38	STATURE	60.12	.57	58.98	61.26
40	UPPER THIGH CIRC	24.69	.61	23.46	25.91
44	WAIST BREADTH	11.57	.17	11.23	11.92
45	WAIST CIRC	34.29	.45	33.38	35.20
47	WAIST HEIGHT	36.85	1.06	34.73	38.97
48	WEIGHT	148.30	2.64	143.02	153.58

TABLE 25

A LOWER TORSO SIZING PROGRAM FOR ARMY WOMEN, WOMEN'S SIZES

RESULTS FOR SIZE # 40 WOMEN'S N = 3

PERCENT OF SYSTEM = 75.00%, PERCENT OF TOTAL = .23%

THE RANGE FOR WAIST CIRC 35.25- 37.75

THE RANGE FOR CROTCH LENGTH 32.50- 33.25

		SZ-MEAN	SZ-SD	-2.00SD	2.00SD
1	ANKLE CIRC	8.70	.07	8.55	8.85
5	BACK CURV AT HIP	22.43	.41	21.62	23.24
6	BACK CURV AT WAIST	18.73	.88	16.97	20.48
12	CALF CIRCUMFERENCE	15.91	.39	15.12	16.69
16	CROTCH HEIGHT	29.84	.97	27.91	31.77
17	CROTCH LENGTH	32.66	.13	32.40	32.93
20	FRONT CURV AT HIP	17.51	1.01	15.48	19.53
21	FRONT CURV - WAIST	22.24	2.05	18.15	26.34
22	HIP BREADTH	16.81	.63	15.55	18.07
23	HIP CIRCUMFERENCE	44.67	2.34	39.99	49.35
25	KNEE CIRCUMFERENCE	15.64	.35	14.95	16.33
38	STATURE	64.38	.57	63.24	65.53
40	UPPER THIGH CIRC	28.04	.61	26.82	29.27
44	WAIST BREADTH	13.07	.17	12.72	13.42
45	WAIST CIRC	36.23	.45	35.33	37.14
47	WAIST HEIGHT	39.61	1.06	37.48	41.73
48	WEIGHT	189.10	2.64	183.82	194.38

Clearly, there are too few subjects in a number of sizing categories to permit a meaningful sizing analysis to be made. All other things being equal, even if we combined data from both sample populations the same size categories would remain deficient in subjects since the two groups are relatively homogeneous in terms of most body size dimensions.

Faced with these difficulties an alternate approach to the sizing analysis was sought. The method which seems to offer the optimum solution from a statistical standpoint and, more importantly, satisfies the intent of the research task is to compute the necessary sizing data from multiple regression equations. The regression equations were developed from the military surveys described in the previous section and take the following form for a two-variable predictor combination:

$$A_1 = aX_1 + bY_1 + C$$

If, for example, an equation to estimate each woman's hip circumference in terms of her waist girth and crotch length is desired, we develop the regression equation,

Hip Girth = a x Waist Circ + b x Crotch Lgth + c

The terms a, b and c are parameters determined so that the resulting estimates of Hip Circumference are, as a group, the most accurate estimates that can be obtained from the linear combination of Waist Girth and Crotch Length. Similar multiple regressions and correlations, whether based on two or a larger number of predictor variables, are calculated directly from the simple correlation coefficient, the means and standard deviations without recourse to the original data.

This approach results in sizing tables which cover areas of sizing for which there are no individuals in the limited survey samples but for which there may well be individuals in the larger population represented by the sample subjects.

The sizing tables for upper and lower torso which follow are based on multiple regression equations developed from the U.S. Air Force and U.S. Army survey data, respectively, and the size category midpoint values shown in Table 1. The predictor or sizing variables for the upper torso are Bust Circumference, Neck to Bustpoint Length and Bustpoint to Bustpoint Breadth, and for the lower torso Waist Circumference and Crotch Length. For each size and each dimensional variable a single entry (the regression estimate) is given. These same values, rounded to the nearest eighth of an inch and reordered in the format and terminology requested by the contract monitor, are also given in Appendix D.

TABLE 26

UPPER TORSO

JUNIOR SIZING PROGRAM BASED ON AIR FORCE WOMEN'S

BUST CIRCUMFERENCE, NECK TO BUSTPOINT LENGTH

AND BUSTPOINT TO BUSTPOINT BREADTH

	SIZE	3	5	7	9
	BUST CIRCUMFERENCE	30.00	31.00	32.00	33.00
	BUSTPT - BUSTPT BR	6.38	6.63	6.88	7.13
	NECK TO BUSTPOINT	7.75	8.00	8.25	8.50
2	ARM SCYE CIRC	12.99	13.27	13.56	13.84
4	BACK CURV AT BUST	14.92	15.23	15.54	15.85
7	BIACROMIAL BREADTH	13.48	13.59	13.69	13.80
8	BICEPS CIRC, RLXD	8.49	8.78	9.07	9.36
9	BUST CIRCUMFERENCE	30.00	31.00	32.00	33.00
10	BUSTPT - BUSTPT BR	6.38	6.63	6.88	7.13
11	BUTTOCK CIRC SIT	34.83	35.61	36.39	37.17
13	CERVICALE HEIGHT	52.89	53.17	53.45	53.73
14	CHEST BREADTH	9.76	10.00	10.24	10.48
15	CHEST CIRC AT SCYE	29.09	29.84	30.59	31.34
18	ELBOW CIRC, FLEXED	9.87	10.02	10.16	10.30
19	FRONT CURV AT BUST	15.08	15.77	16.46	17.15
22	HIP BREADTH	12.43	12.65	12.86	13.08
24	INTERSCYE CURV	12.45	12.68	12.91	13.14
29	NECK TO BUSTPOINT	7.75	8.00	8.25	8.50
30	NECK CIRCUMFERENCE	12.47	12.62	12.77	12.91
31	SHOULDER BREADTH	14.81	15.11	15.41	15.71
32	SHOULDER CIRC	35.65	36.37	37.09	37.81
33	SHOULDER LENGTH	5.42	5.46	5.49	5.52
34	SLEEVE INSEAM	17.14	17.18	17.22	17.26
35	SPINE TO ELBOW LN	19.95	20.12	20.30	20.47
36	SPINE TO SCYE LN	7.41	7.50	7.60	7.69
37	SPINE TO WRIST LN	30.07	30.28	30.50	30.72
38	STATURE	61.79	62.09	62.38	62.68
39	STRAP LENGTH	21.28	21.82	22.37	22.91
41	VERT TRNK CIRC SIT	54.95	55.61	56.28	56.94
42	VERT TRUNK CIRC	56.18	56.93	57.69	58.45
43	WAIST BACK LENGTH	15.52	15.57	15.62	15.67
44	WAIST BREADTH	8.16	8.40	8.64	8.87
46	WAIST FRONT LENGTH	12.39	12.54	12.68	12.82
48	WEIGHT	93.30	99.32	105.33	111.35
49	WRIST CIRC	5.53	5.59	5.66	5.72

TABLE 27

UPPER TORSO

MISSES SIZING PROGRAM BASED ON AIR FORCE WOMEN'S

BUST CIRCUMFERENCE, NECK TO BUSTPOINT LENGTH

AND BUSTPOINT TO BUSTPOINT BREADTH

	SIZE	6	8	10	12	14
	BUST CIRCUMFERENCE	31.50	32.50	33.50	35.00	36.50
	BUSTPT - BUSTPT BR	6.75	7.00	7.25	7.50	7.75
	NECK TO BUSTPOINT	8.50	8.75	9.00	9.38	9.75
2	ARM SCYE CIRC	13.44	13.73	14.01	14.45	14.89
4	BACK CURV AT BUST	15.34	15.64	15.95	16.46	16.97
7	BIACROMIAL BREADTH	13.66	13.76	13.37	14.03	14.20
8	BICEPS CIRC, RLXD	8.93	9.22	9.51	9.96	10.40
9	BUST CIRCUMFERENCE	31.50	32.50	33.50	35.00	36.50
10	BUSTPT - BUSTPT BR	6.75	7.00	7.25	7.50	7.75
11	BUTTOCK CIRC SIT	36.15	36.93	37.70	38.88	40.06
13	CERVICALE HEIGHT	53.50	53.78	54.06	54.47	54.87
14	CHEST BREADTH	10.10	10.34	10.58	10.95	11.32
15	CHEST CIRC AT SCYE	30.19	30.94	31.69	32.86	34.03
18	ELBOW CIRC, FLEXED	10.09	10.23	10.37	10.58	10.80
19	FRONT CURV AT BUST	16.16	16.86	17.55	18.54	19.53
22	HIP BREADTH	12.82	13.03	13.25	13.58	13.92
24	INTERSCYE CURV	12.80	13.03	13.26	13.64	14.02
29	NECK TO BUSTPOINT	8.50	8.75	9.00	9.38	9.75
30	NECK CIRCUMFERENCE	12.70	12.84	12.99	13.22	13.44
31	SHOULDER BREADTH	15.27	15.57	15.88	16.34	16.81
32	SHOULDER CIRC	36.72	37.44	38.16	39.26	40.36
33	SHOULDER LENGTH	5.54	5.57	5.60	5.65	5.70
34	SLEEVE INSEAM	17.23	17.27	17.30	17.35	17.39
35	SPINE TO ELBOW LN	20.26	20.43	20.60	20.86	21.12
36	SPINE TO SCYE LN	7.57	7.67	7.76	7.92	8.08
37	SPINE TO WRIST LN	30.44	30.66	30.88	31.20	31.52
38	STATURE	62.43	62.73	63.03	63.46	63.89
39	STRAP LENGTH	22.69	23.24	23.78	24.60	25.40
41	VERT TRNK CIRC SIT	56.15	56.81	57.47	58.50	59.52
42	VERT TRUNK CIRC	57.50	58.26	59.02	60.19	61.35
43	WAIST BACK LENGTH	15.66	15.71	15.76	15.84	15.91
44	WAIST BREADTH	8.54	8.77	9.01	9.38	9.74
46	WAIST FRONT LENGTH	12.64	12.79	12.93	13.14	13.34
48	WEIGHT	103.16	109.18	115.19	124.16	133.12
49	WRIST CIRC	5.64	5.70	5.76	5.86	5.95

TABLE 28

UPPER TORSO

WOMEN'S SIZING PROGRAM BASED ON AIR FORCE WOMEN'S

BUST CIRCUMFERENCE, NECK TO BUSTPOINT LENGTH

AND BUSTPOINT TO BUSTPOINT BREADTH

	SIZE	34	36	38	40
	BUST CIRCUMFERENCE	38.00	40.00	42.00	44.00
	BUSTPT - BUSTPT BR	8.00	8.25	8.50	8.75
	NECK TO BUSTPOINT	10.63	11.13	11.63	12.13
2	ARM SCYE CIRC	15.36	15.95	16.54	17.13
4	BACK CURV AT BUST	17.41	18.13	18.84	19.55
7	BIACROMIAL BREADTH	14.39	14.61	14.84	15.06
8	BICEPS CIRC, RLXD	10.85	11.45	12.05	12.65
9	BUST CIRCUMFERENCE	38.00	40.00	42.00	44.00
10	BUSTPT - BUSTPT BR	8.00	8.25	8.50	8.75
11	BUTTOCK CIRC SIT	41.42	42.99	44.57	46.14
13	CERVICALE HEIGHT	55.52	56.05	56.57	57.10
14	CHEST BREADTH	11.66	12.17	12.67	13.17
15	CHEST CIRC AT SCYE	35.17	36.76	38.36	39.95
18	ELBOW CIRC, FLEXED	11.01	11.28	11.56	11.84
19	FRONT CURV AT BUST	20.59	21.87	23.16	24.45
22	HIP BREADTH	14.33	14.78	15.23	15.68
24	INTERSCYE CURV	14.41	14.94	15.47	16.00
29	NECK TO BUSTPOINT	10.63	11.13	11.63	12.13
30	NECK CIRCUMFERENCE	13.67	13.98	14.29	14.59
31	SHOULDER BREADTH	17.29	17.92	18.55	19.18
32	SHOULDER CIRC	41.46	42.94	44.42	45.90
33	SHOULDER LENGTH	5.84	5.91	5.98	6.05
34	SLEEVE INSEAM	17.48	17.53	17.58	17.63
35	SPINE TO ELBOW LN	21.45	21.79	22.13	22.48
36	SPINE TO SCYE LN	8.27	8.49	8.71	8.93
37	SPINE TO WRIST LN	31.91	32.33	32.76	33.18
38	STATURE	64.59	65.14	65.70	66.25
39	STRAP LENGTH	27.01	28.09	29.16	30.24
41	VERT TRNK CIRC SIT	60.81	62.19	63.57	64.95
42	VERT TRUNK CIRC	62.77	64.35	65.92	67.50
43	WAIST BACK LENGTH	16.08	16.17	16.27	16.37
44	WAIST BREADTH	10.13	10.62	11.11	11.61
46	WAIST FRONT LENGTH	13.60	13.87	14.14	14.41
48	WEIGHT	143.21	155.13	167.04	178.96
49	WRIST CIRC	6.06	6.18	6.30	6.42

TABLE 29

LOWER TORSO

JUNIOR SIZING PROGRAM BASED ON ARMY WOMEN'S

WAIST CIRCUMFERENCE AND CROTCH LENGTH

	SIZE	3	5	7	9	11	13	15
	WAIST CIRC	20.0	21.0	22.0	23.0	24.5	26.0	27.5
	CROTCH LENGTH	23.5	24.3	25.0	25.8	26.5	27.3	28.0
1	ANKLE CIRC	7.32	7.43	7.55	7.66	7.80	7.94	8.08
5	BACK CURV AT HIP	14.94	15.44	15.94	16.44	17.08	17.73	18.37
6	BACK CURV AT WAIST	10.08	10.57	11.05	11.53	12.24	12.96	13.67
12	CALF CIRCUMFERENCE	11.67	11.96	12.24	12.53	12.89	13.26	13.62
16	CROTCH HEIGHT	28.83	29.00	29.17	29.34	29.54	29.74	29.94
17	CROTCH LENGTH	23.50	24.25	25.00	25.75	26.50	27.25	28.00
20	FRONT CURV AT HIP	15.38	15.86	16.33	16.80	17.39	17.98	18.57
21	FRONT CURV - WAIST	9.91	10.43	10.95	11.47	12.26	13.04	13.83
22	HIP BREADTH	11.48	11.81	12.14	12.47	12.87	13.28	13.69
23	HIP CIRCUMFERENCE	30.32	31.29	32.26	33.24	34.47	35.71	36.94
25	KNEE CIRCUMFERENCE	11.58	11.87	12.15	12.44	12.80	13.16	13.51
38	STATURE	60.90	61.35	61.81	62.26	62.77	63.27	63.77
40	UPPER THIGH CIRC	17.41	18.07	18.74	19.40	20.26	21.11	21.97
44	WAIST BREADTH	7.52	7.84	8.16	8.48	8.96	9.45	9.93
45	WAIST CIRC	20.00	21.00	22.00	23.00	24.50	26.00	27.50
47	WAIST HEIGHT	37.86	38.16	38.47	38.77	39.05	39.32	39.60
48	WEIGHT	73.34	81.12	88.90	96.69	106.84	117.00	127.16

TABLE 30

LOWER TORSO

MISSES SIZING PROGRAM BASED ON ARMY WOMEN'S

WAIST CIRCUMFERENCE AND CROTCH LENGTH

	SIZE	6	8	10	12	14	16	18
	WAIST CIRC	22.5	23.5	24.5	26.0	27.5	29.0	31.0
	CROTCH LENGTH	26.4	27.1	27.9	28.6	29.4	30.1	30.9
1	ANKLE CIRC	7.69	7.81	7.92	8.06	8.20	8.34	8.50
5	BACK CURV AT HIP	16.47	16.97	17.47	18.11	18.76	19.40	20.19
6	BACK CURV AT WAIST	11.30	11.78	12.26	12.98	13.69	14.41	15.36
12	CALF CIRCUMFERENCE	12.56	12.85	13.13	13.50	13.86	14.22	14.67
16	CROTCH HEIGHT	29.40	29.57	29.74	29.93	30.13	30.33	30.56
17	CROTCH LENGTH	26.38	27.13	27.88	28.63	29.38	30.13	30.88
20	FRONT CURV AT HIP	16.87	17.34	17.81	18.40	18.99	19.59	20.30
21	FRONT CURV - WAIST	11.20	11.72	12.24	13.02	13.81	14.59	15.64
22	HIP BREADTH	12.53	12.85	13.18	13.59	14.00	14.41	14.90
23	HIP CIRCUMFERENCE	33.34	34.31	35.28	36.51	37.75	38.99	40.49
25	KNEE CIRCUMFERENCE	12.48	12.76	13.05	13.41	13.76	14.12	14.56
38	STATURE	62.51	62.97	63.42	63.92	64.43	64.93	65.48
40	UPPER THIGH CIRC	19.44	20.10	20.76	21.62	22.48	23.33	24.38
44	WAIST BREADTH	8.29	8.61	8.93	9.42	9.90	10.39	11.04
45	WAIST CIRC	22.50	23.50	24.50	26.00	27.50	29.00	31.00
47	WAIST HEIGHT	39.10	39.41	39.71	39.99	40.26	40.54	40.79
48	WEIGHT	96.86	104.64	112.43	122.58	132.74	142.90	155.43

TABLE 31

LOWER TORSO

WOMEN'S SIZING PROGRAM BASED ON ARMY WOMEN'S

WAIST CIRCUMFERENCE AND CROTCH LENGTH

	SIZE	38	40	42	44	46	48
	WAIST CIRC	34.0	36.5	39.0	41.5	44.0	46.5
	CROTCH LENGTH	32.1	32.9	33.6	34.0	34.4	34.8
1	ANKLE CIRC	8.76	8.95	9.14	9.29	9.45	9.60
5	BACK CURV AT HIP	21.41	22.34	23.28	24.11	24.94	25.77
6	BACK CURV AT WAIST	16.79	17.98	19.16	20.34	21.52	22.70
12	CALF CIRCUMFERENCE	15.35	15.87	16.39	16.85	17.30	17.76
16	CROTCH HEIGHT	30.92	31.18	31.44	31.65	31.85	32.06
17	CROTCH LENGTH	32.13	32.88	33.63	34.00	34.38	34.75
20	FRONT CURV AT HIP	21.41	22.24	23.07	23.79	24.51	25.23
21	FRONT CURV - WAIST	17.21	18.53	19.84	21.16	22.48	23.80
22	HIP BREADTH	15.66	16.22	16.79	17.28	17.76	18.25
23	HIP CIRCUMFERENCE	42.82	44.59	46.35	47.90	49.45	51.00
25	KNEE CIRCUMFERENCE	15.23	15.74	16.24	16.68	17.12	17.56
38	STATURE	66.37	66.98	67.58	68.00	68.43	68.85
40	UPPER THIGH CIRC	26.00	27.25	28.49	29.59	30.70	31.80
44	WAIST BREADTH	12.02	12.84	13.66	14.49	15.32	16.15
45	WAIST CIRC	34.00	36.50	39.00	41.50	44.00	46.50
47	WAIST HEIGHT	41.22	41.44	41.66	41.70	41.74	41.78
48	WEIGHT	174.73	189.64	204.54	217.91	231.32	244.69

CHAPTER VI

Summary and Conclusions

The anthropometric data from the 1968 survey of U.S. Air Force women and the 1977 survey of U.S. Army women are, in general, remarkably similar in terms of both mean values as well as in their degrees of variance. Dissimilarities and discrepancies surfaced in a surprisingly few number of variables. Their effect, however, was disproportionately disruptive since problems arose in three of the five specified key sizing dimensions. Bustpoint to Bustpoint was not measured in the Army survey and Crotch Length was not measured in the Air Force survey. Of more significant concern is the overall difference in Bust Circumference which we suspect represents a real dimensional difference between the two samples rather than a discrepancy in measuring techniques.

Four variables (Knee Height, Vertical Trunk Circumference, Sitting, Waist Front Length and Neck Circumference) show large enough between-sample differences to preclude our calculating composite values in Chapter II. The discrepancies in all these dimensions, however, are almost certainly due to differences in the measurement techniques employed and do not, therefore, suggest any significant proportional discrepancies in the subject groups.

While a detailed review of the considerable body of anthropometric information for military women leads us to believe that a large-scale survey of Navy women for similar purposes is unnecessary, we would certainly recommend a carefully designed limited survey to establish the missing data, resolve the artifactual discrepancies and determine whether the Navy women's population more nearly mirrors the marginally taller and heavier Army women with their slightly larger waist and smaller bust dimensions, than the somewhat shorter, lighter, slenderer but larger busted subjects in the AFW sample. Such a survey might use one of several sampling strategies designed for relatively small representative groups (Churchill & McConville, 1976) and focus on a selected group of "problem" variables.

In a good sizing scheme, the body size variability of the population should determine the sizing program. The drawbacks of fitting a pre-determined pattern of size categories and key dimensions around a population have been amply demonstrated in this analysis. It has become clear from our distribution of the subject data into the specified categories that the resulting sizing scheme actually accommodates very few of the people in the sample population. This is perhaps most graphically shown in Chapter V, Figures 1 and 2, combined

bivariate tables which reflect, outside the marked boxes, the large number of subjects who fall into none of the specified size categories.

The key dimensions do not meet a number of the proven criteria for effective sizing dimensions outlined in Chapter IV. It can be seen, for example, by examining Tables 26-28 in Chapter V that Neck-to-Bustpoint does not realistically control a significant dimension such as Stature. Only in the very largest sizes (women's 38-44) do stature dimensions creep even marginally beyond the average of 64 inches. This means that most sizes and certainly all the popular sizes are geared for women of average height or below. We would recommend that alternate key dimensions such as Bust Circumference and Waist Front or Sleeve Inseam be considered for the upper torso and that Hip Circumference and Crotch Height or Leg Outseam be used for the lower torso.

Since, by and large, the military women's populations appear to be relatively homogeneous in body size, the sizing dimensions used to discriminate between the youthful junior body and the mature woman's figure in the civilian clothing industry may be of very limited use to the military clothier, as can be seen from the numbers of junior and women's size categories left totally unoccupied in our analysis of the subject military samples (Chapter V, Tables 1 and 2).

The intervals of one inch for Bust Circumference, Waist Circumference, etc. also appear to be unreasonably stringent and unrealistic. The human body is a dynamic rather than a static structure--it may, on the average, lose 3/4" in stature from morning to night and as much as five percent body weight. The very act of respiration can change the girths of the torso by a factor of 5 to 10 percent and even more when combined with motion. We would recommend that size category intervals be increased to accommodate a larger proportion of the individuals within their boundaries.

Finally, we would recommend an improved approach to the sizing scheme itself. Under current specifications, each of a pair (or triplet) of key dimensions is coupled with only one size of its companion dimension. This is based on the erroneous assumption that people's dimensions vary from smaller to larger in lock-step progression--that small waists always accompany short crotch lengths and that as waists are larger, women invariably get taller.

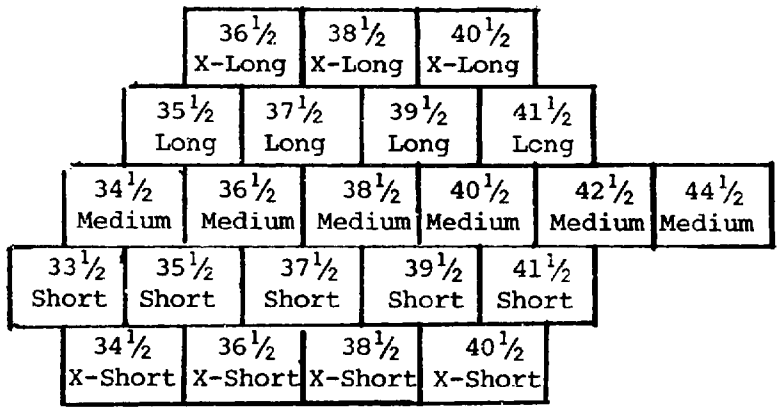
A sample sizing scheme incorporating the above recommendations appears below in Figure 1. Using the key dimensions of Crotch Height and Hip Circumference, this program was developed from the data which appear in the bivariate frequency table for those dimensions (Table 18) in Chapter III and thus reflects the actual distribution of the military women's population.

HIP CIRCUMFERENCE (in)

CROTCH HEIGHT (in)	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	TOTAL
36.2										/ 1														/ 1
35.7								/ 1																/ 1
35.2									/ 1		/ 1	1												/ 3
34.7							/ 1	1		1	/ 1	1												/ 5
34.2					/ 1	1	1 / 2	1	3 / 2	1	/ 1		/ 1											9 / 14
33.7					/ 1	1	1 / 1	5	/ 1	3	/ 1	1	/ 1	1 /										3 / 14
33.2				1 / 1	1	3 / 1	1 / 3	2 / 4	1 / 9	3 / 3	3 / 4	1 / 4	1 / 1	1 /										17 / 30
32.7				/ 1	/ 2	1 / 7	4 / 7	2 / 5	7 / 8	6 / 10	4 / 5	4 / 4	1 / 4		/ 2	/ 1								28 / 58
32.2			/ 1	/ 1	1 / 1	8 / 8	8 / 8	8 / 11	8 / 12	8 / 17	3 / 8	3 / 2	3 / 1	1 / 1									/ 1	47 / 70
31.7			2 / 1	/ 3	5 / 7	2 / 11	12 / 9	16 / 20	13 / 13	7 / 11	11 / 11	4 / 4	1 / 4	1 / 3	1 /									75 / 97
31.2	1 /		1 /	4	2 / 2	13 / 13	16 / 14	23 / 14	20 / 23	21 / 7	18 / 9	2 / 4	3 / 2	1 / 1	/ 2				/ 1					121 / 96
30.7		/ 2	/ 3	2 / 2	4 / 6	12 / 17	20 / 15	21 / 22	35 / 8	21 / 18	11 / 12	8 / 5	4 / 3	2 / 4	1 / 1		1	2 / 2						143 / 121
30.2	/ 1		2 / 2	4 / 3	13 / 7	20 / 23	31 / 21	37 / 27	27 / 29	28 / 23	15 / 14	8 / 5	4 / 2	1 /			1	1 /	/ 1					191 / 159
28.7		3 / 1	3 / 1	3 / 8	15 / 12	26 / 15	40 / 24	51 / 40	30 / 21	28 / 17	15 / 12	10 /	3 / 2	3 / 2	1 /	2 /		1 /						234 / 155
29.2		1 /	2 / 1	10 / 7	17 / 12	30 / 15	44 / 38	48 / 29	43 / 22	25 / 13	16 / 5	8 / 4	3 / 2	4 / 3	2 /				1 /					254 / 152
28.7		2 / 3	4 / 6	9 / 6	21 / 8	28 / 15	51 / 27	46 / 25	27 / 16	16 / 12	7 / 6	7 / 7	1 / 3	?/	4 /									225 / 134
28.2	1 / 1	1 /	7 / 3	6 / 5	21 / 12	33 / 14	34 / 7	36 / 9	23 / 15	17 / 11	8 / 6	4 / 2	3 /	3 /	1 /	1 /								199 / 85
27.7		1 /	1 / 2	9 / 4	12 / 8	27 / 15	24 / 7	12 / 14	13 / 8	18 / 4	5 /		1 / 1	1 /										130 / 81
27.2	1 /	1 /	6 /	7 / 3	14 / 4	13 / 8	24 / 4	19 / 7	12 / 3	7 /	3 / 1	2												107 / 37
26.7		1 /	/ 5	5 / 2	11 / 2	14 / 3	17 / 6	13 / 3	7 / 2	3 / 1	1 / 1	1 /	1 / 1											74 / 26
26.2				1 /		2 / 2	3 / 1	5 /	6 /	2 / 1	2 / 1	1 / 1	1 /	1 /										24 / 6
25.7			1 /	2 /	2 / 1	1 / 1	3 /	3 / 1	1 /	1 / 1	2 /													15 / 4
25.2			1 /				1 / 1	1 /	1 /		/ 1													4 / 2
24.7			1 /	1 /	1 /		/ 1	1 /																4 / 1
24.2																								
23.7				1 /																				1 /
TOTAL	3 / 2	10 / 6	31 / 26	61 / 55	140 / 84	233 / 170	335 / 195	345 / 241	283 / 193	209 / 157	124 / 101	62 / 46	29 / 28	22 / 14	10 / 5	3 / 3	4 / 2	1 / 1	/ 1				/ 1	1905 / 1330

1968 USAF WOMEN/1976 USA WOMEN

Figure 1. Hypothetical 22-size lower torso system with Hip Circumference and Crotch Height as key dimensions.



Reading across the bottom row of boxes, one finds sizes 34½ extra short, 36½ extra short, 38½ extra short and 40½ extra short. Short, medium, tall and extra tall sizes follow from bottom to top. The top-most box on the right would be size 40½ extra tall. Such a sizing scheme reflects the body size range and variability of the actual target population rather than being imposed upon it.

In summary we would recommend that the next steps for the improvement of sizing clothing for U.S. Navy women include: (1) a limited-objective survey of Navy personnel to supplement and refine current data and to establish the comparability of Navy subjects to the military women already measured, and (2) development of sizing programs using key dimensions, intervals and combinations which better reflect the subject population and exert better control over its variability.

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APPENDIX A

Background Data for Army and AFW Subjects

E 1

DISTRIBU.. OF SAMPLES BY AGE

	ARMY		AFW	
Age	N	%	N	%
50-60	3	0.2	9	0.5
45-50	12	0.9	18	0.9
40-45	13	1.0	56	2.9
35-40	26	2.0	72	3.8
30-35	74	5.6	87	4.6
28-30	67	5.0	44	2.3
26-28	104	7.8	82	4.3
24-26	188	14.1	144	7.6
23-24	103	7.7	108	5.7
22-23	138	10.4	133	7.0
21-22	102	7.7	191	10.0
20-21	108	8.1	260	13.7
19-20	156	11.7	380	20.0
18-19	219	16.5	321	16.9
17-18	18	1.4	0	0
Total	1331	100.1	1905	100.2
	Mean Age: 23.1		Mean Age: 23.4	
	Standard Deviation: 5.4		Standard Deviation: 6.5	

TABLE 2a

DISTRIBUTION OF SAMPLE BY MILITARY OCCUPATION (ARMY)

a. Officers	N	%
Nurses	228	66.3
Student Officers	67	19.5
Dietitians	22	6.4
Company Commanders and Training Officers	7	2.0
Therapists	5	1.5
Military Police	4	1.2
Miscellaneous	11	3.2
	344	100.1

b. Enlisted Women		
Typists	209	21.2
Clerks, personnel record clerks	61	6.2
Supply clerks	44	4.5
Finance clerks	17	1.7
Medical laboratory technicians	105	10.6
Medical assistants, nurses' aides, etc.	101	10.2
X-ray technicians	13	1.3
Dental specialists	24	2.4
Pharmacy technicians	7	0.7
Medical records specialists	12	1.2
Occupational specialists	9	0.9
Operating room technicians	26	2.6
Miscellaneous health specialists	26	2.6
Military police	67	6.8
Chaplains' assistants, para-legal aides, etc.	17	1.7
Cooks	38	3.9
Food inspectors	10	1.0
Drill sergeants	31	3.1

TABLE 2a (continued)

b. Enlisted Women (cont'd)	N	%
Communication specialists	25	2.5
Intelligence analysts	23	2.3
Cryptologists	6	0.6
Data processors	2	0.2
Truck drivers	23	2.3
Transportation coordinators	10	1.0
Photographers	3	0.3
Musicians	3	0.3
Telephone installers, repairers, operators	9	0.9
Ammunition, weapons specialists	6	0.6
Electronics	9	0.9
Mechanics, welders, carpenters, etc.	18	1.8
Not given	33	3.3
	987	99.6
GRAND TOTAL	1,331	

TABLE 2b

DISTRIBUTION OF SAMPLE BY OCCUPATIONAL CATEGORY (AFW)

	N	%
a. Officers*		
Nurse	389	84.2
Biomedical Sciences	39	8.4
Administration	12	2.6
Education and Training	10	2.2
Personnel	4	0.9
Miscellaneous	8	1.7
	462	100.0
b. Enlisted Women*		
Medical	440	43.9
Administrative	163	16.3
Dental	81	8.1
Communications Operations	60	6.1
Personnel	59	5.9
Supply	48	4.8
Special Duty	36	3.6
Accounting & Finance	35	3.5
Miscellaneous	81	8.1
	1,003	100.0
c. Unknown	21	
GRAND TOTAL	1,486	

*Trainees omitted

TABLE 3

DISTRIBUTION OF SAMPLES BY RANK AND GRADE

	ARMY		AFW*	
Officers	N	%	N	%
Colonel (0-6)	4	1.2	1	0.2
Lt. Colonel (0-5)	21	6.1	24	5.2
Major (0-4)	11	3.2	70	15.2
Captain (0-3)	90	26.2	121	26.2
1st Lieutenant (0-2)	134	39.0	161	34.8
2nd Lieutenant (0-1)	84	24.4	85	18.4
	344	100.1	462	100.0
Enlisted				
E-7	6	0.6	4	0.4
E-6	17	1.7	6	0.6
E-5	78	7.9	12	1.2
E-4	98	9.9	35	3.4
E-3	166	16.8	140	13.7
E-2	191	19.4	411	40.1
E-1	431	43.7	416	40.6
	987	100.0	1,024	100.0
GRAND TOTAL	1,331		1,486	

*Trainees omitted

TABLE 4

DISTRIBUTION OF SAMPLES BY BIRTHPLACE

Region	ARMY N	ARMY %	AFW N	AFW %
1. New England	87	6.6	129	6.8
2. Mid-Atlantic	205	15.5	391	20.6
3. South Atlantic	249	18.7	240	12.6
4. East North Central	250	18.8	347	18.2
5. East South Central	90	6.8	132	6.9
6. West North Central	118	8.9	180	9.5
7. West South Central	99	7.4	195	10.3
8. Mountain	40	3.0	56	2.9
9. Pacific	114	8.6	168	8.8
10. Foreign**	77	5.8	65	3.4
TOTAL	1,329	100.1	1,903	100.0

1. Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut
2. New York, New Jersey, Pennsylvania
3. Delaware, Maryland, District of Columbia, Virginia, West Virginia, North and South Carolina, Georgia, Florida
4. Ohio, Indiana, Illinois, Michigan, Wisconsin
5. Kentucky, Tennessee, Mississippi, Alabama
6. Minnesota, Iowa, Missouri, North and South Dakota, Nebraska, Kansas
7. Arkansas, Louisiana, Oklahoma, Texas
8. Montana, Idaho, Wyoming, Colorado, Utah, Nevada, Arizona, New Mexico
9. California, Oregon, Washington, Alaska, Hawaii
10. Foreign** (Including U.S. Territories)

TABLE 5

DISTRIBUTION OF SAMPLES BY RACE

	ARMY					
	Total		Officers		Enlisted	
	N	%*	N	%*	N	%*
White	989	75.2	302	89.1	687	70.3
Black	302	22.9	29	8.6	273	27.9
Oriental	25	1.9	8	2.4	17	1.7
Not Identified	15		5		10	
	1331	100.0	344	100.1	987	99.9

*Percents of those identified.

	AFW					
	Total		Officers		Enlisted	
	N	%	N	%	N	%
White	1742	91.4	526	96.0	1216	89.6
Black	146	7.7	15	2.7	131	9.7
Others	17	0.9	7	1.3	10	0.7
	1905	100.0	548	100.0	1357	100.0

TABLE 6

DISTRIBUTION OF SAMPLES BY HANDEDNESS

	ARMY		AFW	
	N	%	N	%
Right Handed	1165	87.5	1676	88.7
Left Handed	112	8.4	167	8.8
Ambidextrous	48	3.6	47	2.5
Unascertained	6	0.5		
TOTAL	1331	100.0	1890	100.0

TABLE 7

NUMBER OF SUBJECTS AT EACH SITE

ARMY

Location	Core	Trad. Anthro.	Work-space	Head & Face	Static Strength
	Measurement Categories				
Fort Sam Houston	261	73	--	72	119
Fort McClellan	506	94	234	107	156
Walter Reed Med. Center	298	88	32	--	32
Fort Jackson	266	--	34	37	42
TOTAL	1331	255	300	216	349

AFW

	Total	Enlisted	Officers
Sewart AFB	1		1
Wright-Patterson AFB	39		39
Sheppard AFB	593	491	102
Randolph AFB	79	79	
Lackland AFB	1044	681	363
Carswell AFB	149	106	43
	1905	1357	548

APPENDIX B

Explanation of Statistical Terms

The Mean

This commonest of the statistics denoting an average value is widely understood. The arithmetic mean is simply the sum of a given set of values divided by the number of values. Thus, since the 1905 women measured in the AFW survey weighed a grand total of 242,468 pounds, their mean weight was

$$\bar{x} = \frac{\Sigma X}{N} = \frac{242,468}{1905} = 127.3 \text{ pounds.}$$

where Σ is the summation operator, x represents the individual values, $\bar{x}$ their arithmetic mean, and N the number of values. The mean is designated in the statistical literature by a variety of symbols the most common being M, μ and $\bar{x}$.

The Standard Deviation

A basic measure of variability, the standard deviation (SD) indicates the extent to which the values cluster around the mean. If most of the data cluster close to their mean value, the standard deviation is low; if a large number of values in the set lie at some distance from the mean, the standard deviation is high. By definition the standard deviation is the square root of the mean of the squared deviations from the mean value:

$$SD = \sqrt{\Sigma (x-\bar{x})^2/N}$$

For the designer it is useful to know that two-thirds of the values in a given set of data will fall between one standard deviation below and one standard deviation above the mean. Thus, when the mean stature of the Army women was found to be approximately 64 inches and the standard deviation approximately 2½ inches, it can be safely assumed that two-thirds of the 1331 subjects measured are between 61½ and 66½ inches tall. It is further true that 95% of a given sample will fall between two standard deviations below and two standard deviations above the mean and virtually all the

subjects in a sample will be encompassed in a range from three standard deviations below the mean to three standard deviations above it.

The Coefficient of Variation

This statistic, usually denoted as V, is a restatement of the standard deviation expressed as a percentage of the mean. The relationships noted for the standard deviation also pertain to the coefficent of variation. Thus, in the case of the Army survey where mean stature is about 64 inches and the coefficient of variation is 4%, about two-thirds of the women will, once again, be between (64 inches -4% and 64 inches +4%) while 95% of the subjects will fall between (64 inches-8%) and (64 inches +8%), etc.

The value of V is often associated with the general anatomical nature of the variable involved. Long bone lengths, such as stature and other height measurements, tend to have coefficients of variation which range from 3.5% to 5%. For fleshy circumferences, V ranges from 6% to 10%. For skinfold measurements (not included in this report) the range for V is as high as 30% to 40%.

Symmetry and Kurtosis

A "normal" distribution of values is one in which there will be very few quite low or high values and generally increasing frequencies of a given value as they move toward the center of the distribution where the maximum frequencies occur. The normal curve, which approximates many actual anthropometric distributions of data, looks like this.

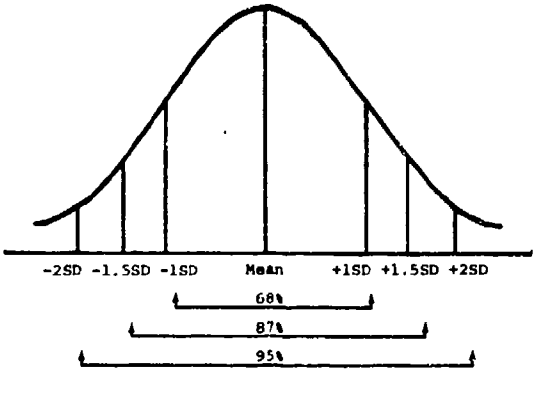

Figure 1. The normal curve.

Many generalizations about a set of data are based on the assumption of this mathematical model. (One such is the

relationship of numbers of subjects to standard deviations noted above.) There is no simple way of determining when a set of data differs so drastically from this distribution that it is an inappropriate model and the use of the usual statistical methods, therefore, undesirable. One indication of normally distributed data is their symmetry; that is, data which are normally distributed occur with equal frequency above and below the mean values. This statistic, denoted as β_1 or Veta I, is computed from the sum of the cubed deviations by dividing it by the sample size and the cube of the standard deviation producing a dimensionless statistic:

$$\beta_1 = \frac{\Sigma(x-\bar{x})^3}{N \cdot SD^3}$$

The size of β_1 is considered a useful indication of whether a set of data is unsymmetrically distributed and, if so, how badly. Since, ideally, values on each side of the mean should balance each other out, a perfect symmetry would approach zero. In the Army survey, for example, the β_1 value for stature is .12 indicating a highly symmetrical distribution of values around the mean; weight, on the other hand, always a more erratic dimension, has a β_1 value of .80, reflecting a more skewed distribution.

Kurtosis, denoted as β_2 or Veta II, is an indicator of the peakedness of the distribution curve--how closely do the values cluster around the mean? The statistic is computed from the fourth powers of the deviation:

$$\beta_2 = \frac{\Sigma(x-\bar{x})^4}{N \cdot SD^4}$$

In the normal distribution curve, the ideal value of β_2 is 3. Using the examples cited above, stature shows a β_2 value of 2.89 (very close to the ideal value) while weight has a β_2 value of 5.90. In theory, data distributions can deviate from either β_1 or β_2 without deviating from the other; for the data in the surveys used in this report deviant values of either β_1 or β_2 are usually accompanied by deviant values of the other. Together they can be used to assess the level of agreement between the normal distribution and the actual distribution of data for a given variable.

Correlation Coefficients and Regression Equations

Single correlation coefficients measure the extent to which pairs of variables agree with each other or, put

another way, the extent to which one variable can be predicted from another. This statistic is usually signified by r but in computer generated material found in this report it is designated as R since the computer has no lower-case letters. The correlation coefficient derives from the related concept of the regression line or the regression formula by which we estimate the value of one variable y from that of the second variable x:

$$y = a + bx \text{ (a and b being constants)}$$

Thus, when stature is higher or lower, other measurements of height such as waist height or knee height are likely to vary correspondingly and by predictable amounts. A perfect agreement is expressed as 1.0; the correlation coefficient of stature and shoulder height is likely to be around .9. Near the other end of the scale are correlation coefficients for such combinations as stature and bust circumference which tend to range around .2 since there is little predictable relationship between a woman's height and her bra size. A moderate degree of relationship (r=.5) usually exists between stature and weight.

If large values of one variable tend to accompany large values of another, the correlation coefficient is a positive number. If, on the other hand, one variable tends to get smaller as the other gets larger, the correlation coefficient carries a negative sign.

A multiple correlation, usually designated as R, expresses the degree to which one variable agrees with or can be predicted by a combination of two others:

$$z = a + bx + cy$$

This multiple correlation will always be at least as large as the simple correlations between a and x and between a and y, but will often be only trivially larger.

APPENDIX C

Frequency Tables

Frequency tables are another means of portraying the population distribution of measurements for a given variable. Here, the data are grouped into tables containing up to fifty intervals of a half, a quarter or an eighth of an inch, depending on the width of the range.

The first table, Ankle Circumference, is divided into eighth-inch intervals, showing data for Army women on the left and comparative data for Air Force women on the right. The fourth and seventh columns (FRQ - frequency) designate how many subjects in each sample fall within the measurement limits of the indicated interval. For example, it can be seen that no subjects in the Army sample had ankle girth measurements exceeding 10 inches, whereas two AFW subjects did fall into that category. The second and ninth columns (FRQ% - percentage of frequency) convey the same information in terms of the percentage of each population whose measurements fall into the given interval.

Reading from the bottom, the third and eighth columns (CUMF - cumulative frequency) show how many women in each sample have measurements up to a given size. For instance, the table indicates that 524 Army subjects and 556 AFW subjects measure eight inches or less, around the ankle. These numbers represent 39.37% of the Army population but only 29.19% of the Air Force population as can be seen in columns 1 and 10 (CUMF% - cumulative frequency percentage).

Frequency tables have a number of practical uses. It could be calculated from a table such as this, for example, that a 9-inch maximum circumference for an elasticized ankle band will fit 95% of the Army sample; 62 women would be disaccommodated. In the AFW population, obviously the 9-inch maximum would disaccommodate a considerably larger number of subjects -- 184 women representing almost 10% of the population. It will be noted, however, that an extra quarter inch would cut the percentage of disaccommodated AFW subjects in half and produce a garment which would fit 95% of that population too.

1. ANKLE CIRCUMFERENCE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	0.00	1331	0	10.000 - 10.125	2	1905	.10	100.00
100.00	0.00	1331	0	9.875 - 10.000	0	1903	0.00	99.90
100.00	.08	1331	1	9.750 - 9.875	7	1903	.37	99.90
99.92	.15	1330	2	9.625 - 9.750	11	1896	.58	99.53
99.77	.23	1328	3	9.500 - 9.625	6	1885	.31	98.95
99.55	.38	1325	5	9.375 - 9.500	18	1879	.94	98.64
99.17	1.05	1320	14	9.250 - 9.375	42	1861	2.20	97.69
98.12	1.05	1306	14	9.125 - 9.250	32	1819	1.68	95.49
97.07	1.73	1292	23	9.000 - 9.125	66	1787	3.46	93.81
95.34	2.33	1269	31	8.875 - 9.000	45	1721	2.36	90.34
93.01	5.41	1238	72	8.750 - 8.875	102	1676	5.35	87.98
87.60	4.73	1166	63	8.625 - 8.750	161	1574	8.45	82.62
82.87	7.89	1103	105	8.500 - 8.625	123	1413	6.46	74.17
74.98	7.59	998	101	8.375 - 8.500	201	1290	10.55	67.72
67.39	9.84	897	131	8.250 - 8.375	244	1089	12.81	57.17
57.55	9.02	766	120	8.125 - 8.250	110	845	5.77	44.36
48.53	9.17	646	122	8.000 - 8.125	179	735	9.40	38.58
39.37	8.64	524	115	7.875 - 8.000	110	556	5.77	29.19
30.73	11.87	409	158	7.750 - 7.875	178	446	9.34	23.41
18.86	6.24	251	83	7.625 - 7.750	118	268	6.19	14.07
12.62	3.83	168	51	7.500 - 7.625	39	150	2.05	7.87
8.79	3.83	117	51	7.375 - 7.500	61	111	3.20	5.83
4.96	1.58	66	21	7.250 - 7.375	28	50	1.47	2.62
3.38	2.10	45	28	7.125 - 7.250	13	22	.68	1.15
1.28	.68	17	9	7.000 - 7.125	8	9	.42	.47
.60	.30	8	4	6.875 - 7.000	1	1	.05	.05
.30	.15	4	2	6.750 - 6.875	0	0	0.00	0.00
.15	0.00	2	0	6.625 - 6.750	0	0	0.00	0.00
.15	.15	2	2	6.500 - 6.625	0	0	0.00	0.00

2. ARM SCYE CIRCUMFERENCE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	20.000 - 20.250	0	1905	0.00	100.00
99.92	0.00	1330	0	19.750 - 20.000	0	1905	0.00	100.00
99.92	0.00	1330	0	19.500 - 19.750	0	1905	0.00	100.00
99.92	0.00	1330	0	19.250 - 19.500	1	1905	.05	100.00
99.92	0.00	1330	0	19.000 - 19.250	0	1904	0.00	99.95
99.92	.08	1330	1	18.750 - 19.000	0	1904	0.00	99.95
99.85	0.00	1329	0	18.500 - 18.750	1	1904	.05	99.95
99.85	.08	1329	1	18.250 - 18.500	0	1903	0.00	99.90
99.77	.23	1328	3	18.000 - 18.250	2	1903	.10	99.90
99.55	.15	1325	2	17.750 - 18.000	1	1901	.05	99.79
99.40	.23	1323	3	17.500 - 17.750	0	1900	0.00	99.74
99.17	.53	1320	7	17.250 - 17.500	2	1900	.10	99.74
98.65	.60	1313	8	17.000 - 17.250	9	1898	.47	99.63
98.05	.68	1305	9	16.750 - 17.000	14	1889	.73	99.16
97.37	1.13	1296	15	16.500 - 16.750	23	1875	1.21	98.43
96.24	2.63	1281	35	16.250 - 16.500	33	1852	1.73	97.22
93.61	2.85	1246	38	16.000 - 16.250	42	1819	2.20	95.49
90.76	4.66	1208	62	15.750 - 16.000	53	1777	2.78	93.28
86.10	6.39	1146	85	15.500 - 15.750	118	1724	6.19	90.50
79.71	8.64	1061	115	15.250 - 15.500	129	1606	6.77	84.30
71.07	9.69	946	129	15.000 - 15.250	159	1477	8.35	77.53
61.38	10.97	817	146	14.750 - 15.000	228	1318	11.97	69.19
50.41	9.02	671	120	14.500 - 14.750	186	1090	9.76	57.22
41.40	11.04	551	147	14.250 - 14.500	199	904	10.45	47.45
30.35	9.39	404	125	14.000 - 14.250	186	705	9.87	37.01
20.96	8.04	279	107	13.750 - 14.000	210	517	11.02	27.14
12.92	5.79	172	77	13.500 - 13.750	123	307	6.46	16.12
7.14	3.46	95	46	13.250 - 13.500	87	184	4.57	9.66
3.68	1.80	49	24	13.000 - 13.250	46	97	2.41	5.09
1.88	1.05	25	14	12.750 - 13.000	29	51	1.52	2.68
.83	.53	11	7	12.500 - 12.750	19	22	1.00	1.15
.30	.15	4	2	12.250 - 12.500	1	3	.05	.16
.15	.08	2	1	12.000 - 12.250	1	2	.05	.10
.08	.08	1	1	11.750 - 12.000	0	1	0.00	.05
0.00	0.00	0	0	11.500 - 11.750	0	1	0.00	.05
0.00	0.00	0	0	11.250 - 11.500	0	1	0.00	.05
0.00	0.00	0	0	11.000 - 11.250	1	1	.05	.05

3. AXILLA TO WAIST

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	13.750 - 14.000				
99.92	0.00	1330	0	13.500 - 13.750				
99.92	0.00	1330	0	13.250 - 13.500				
99.92	0.00	1330	0	13.000 - 13.250				
99.92	0.00	1330	0	12.750 - 13.000				
99.92	.38	1330	5	12.500 - 12.750				
99.55	.08	1325	1	12.250 - 12.500				
99.47	.60	1324	8	12.000 - 12.250				
98.87	.60	1316	8	11.750 - 12.000				
98.27	.60	1308	8	11.500 - 11.750				
97.67	.30	1300	4	11.250 - 11.500				
97.37	1.13	1296	15	11.000 - 11.250				
96.24	1.35	1281	18	10.750 - 11.000				
94.89	3.01	1263	40	10.500 - 10.750				
91.89	3.46	1223	46	10.250 - 10.500				
88.43	5.18	1177	69	10.000 - 10.250				
83.25	6.16	1108	82	9.750 - 10.000				
77.08	7.81	1026	104	9.500 - 9.750				
69.27	11.34	922	151	9.250 - 9.500				
57.93	8.56	771	114	9.000 - 9.250				
49.36	9.24	657	123	8.750 - 9.000				
40.12	11.80	534	157	8.500 - 8.750				
28.32	8.19	377	109	8.250 - 8.500				
20.14	8.04	268	107	8.000 - 8.250				
12.10	6.24	161	83	7.750 - 8.000				
5.86	2.33	78	31	7.500 - 7.750				
3.53	1.73	47	23	7.250 - 7.500				
1.80	1.20	24	16	7.000 - 7.250				
.60	.30	8	4	6.750 - 7.000				
.30	.23	4	3	6.500 - 6.750				
.08	.08	1	1	6.250 - 6.500				

4. BACK CURVATURE AT BUST

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	24.250 - ABOVE	0	1905	0.00	100.00
99.92	0.00	1330	0	24.000 - 24.250	0	1905	0.00	100.00
99.92	0.00	1330	0	23.750 - 24.000	0	1905	0.00	100.00
99.92	0.00	1330	0	23.500 - 23.750	0	1905	0.00	100.00
99.92	0.00	1330	0	23.250 - 23.500	0	1905	0.00	100.00
99.92	0.00	1330	0	23.000 - 23.250	0	1905	0.00	100.00
99.92	0.00	1330	0	22.750 - 23.000	0	1905	0.00	100.00
99.92	0.00	1330	0	22.500 - 22.750	0	1905	0.00	100.00
99.92	0.00	1330	0	22.250 - 22.500	0	1905	0.00	100.00
99.92	0.00	1330	0	22.000 - 22.250	0	1905	0.00	100.00
99.92	.15	1330	2	21.750 - 22.000	0	1905	0.00	100.00
99.77	0.00	1328	0	21.500 - 21.750	0	1905	0.00	100.00
99.77	0.00	1328	0	21.250 - 21.500	0	1905	0.00	100.00
99.77	.15	1328	2	21.000 - 21.250	1	1905	.05	100.00
99.62	.08	1326	1	20.750 - 21.000	1	1904	.05	99.95
99.55	.08	1325	1	20.500 - 20.750	2	1903	.10	99.90
99.47	0.00	1324	0	20.250 - 20.500	9	1901	.47	99.79
99.47	.38	1324	5	20.000 - 20.250	2	1892	.10	99.32
99.10	.23	1319	3	19.750 - 20.000	4	1890	.21	99.21
98.87	.53	1316	7	19.500 - 19.750	12	1886	.63	99.00
98.35	.53	1309	7	19.250 - 19.500	16	1874	.84	98.37
97.82	.68	1302	9	19.000 - 19.250	13	1858	.68	97.53
97.15	.98	1293	13	18.750 - 19.000	28	1845	1.47	96.85
96.17	2.40	1280	32	18.500 - 18.750	61	1817	3.20	95.38
93.76	2.03	1248	27	18.250 - 18.500	25	1756	1.31	92.18
91.74	2.93	1221	39	18.000 - 18.250	58	1731	3.04	90.87
88.81	3.68	1182	49	17.750 - 18.000	76	1673	3.99	87.82
85.12	4.43	1133	59	17.500 - 17.750	112	1597	5.88	83.83
80.69	6.31	1074	84	17.250 - 17.500	102	1485	5.35	77.95
74.38	7.36	990	98	17.000 - 17.250	118	1383	6.19	72.60
67.02	6.31	892	84	16.750 - 17.000	137	1265	7.19	66.40
60.71	9.47	808	126	16.500 - 16.750	198	1128	10.39	59.21
51.24	8.11	682	108	16.250 - 16.500	103	930	5.41	48.82
43.13	8.56	574	114	16.000 - 16.250	188	827	9.87	43.41
34.56	7.29	460	97	15.750 - 16.000	113	639	5.93	33.54
27.27	7.51	363	100	15.500 - 15.750	226	526	11.86	27.61
19.76	5.11	263	68	15.250 - 15.500	74	300	3.88	15.75
14.65	4.43	195	59	15.000 - 15.250	66	226	3.46	11.86
10.22	3.76	136	50	14.750 - 15.000	76	160	3.99	8.40
6.46	2.33	86	31	14.500 - 14.750	35	84	1.84	4.41
4.13	1.95	55	26	14.250 - 14.500	21	49	1.10	2.57
2.18	.83	29	11	14.000 - 14.250	14	28	.73	1.47
1.35	.90	18	12	13.750 - 14.000	9	14	.47	.73
.45	.30	6	4	13.500 - 13.750	2	5	.10	.26
.15	.08	2	1	13.250 - 13.500	3	3	.16	.16
.08	0.00	1	0	13.000 - 13.250	0	0	0.00	0.00
.08	0.00	1	0	12.750 - 13.000	0	0	0.00	0.00
.08	0.00	1	0	12.500 - 12.750	0	0	0.00	0.00
.08	0.00	1	0	12.250 - 12.500	0	0	0.00	0.00
.08	.08	1	1	12.000 - 12.250	0	0	0.00	0.00

5. BACK CURVATURE AT HIP

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	26.250 - ABOVE				
99.92	.08	1330	1	26.000 - 26.250				
99.85	0.00	1329	0	25.750 - 26.000				
99.85	0.00	1329	0	25.500 - 25.750				
99.85	0.00	1329	0	25.250 - 25.500				
99.85	0.00	1329	0	25.000 - 25.250				
99.85	0.00	1329	0	24.750 - 25.000				
99.85	0.00	1329	0	24.500 - 24.750				
99.85	0.00	1329	0	24.250 - 24.500				
99.85	0.00	1329	0	24.000 - 24.250				
99.85	.15	1329	2	23.750 - 24.000				
99.70	0.00	1327	0	23.500 - 23.750				
99.70	.08	1327	1	23.250 - 23.500				
99.62	.15	1326	2	23.000 - 23.250				
99.47	.15	1324	2	22.750 - 23.000				
99.32	.30	1322	4	22.500 - 22.750				
99.02	.30	1318	4	22.250 - 22.500				
98.72	.68	1314	9	22.000 - 22.250				
98.05	1.20	1305	16	21.750 - 22.000				
96.84	1.05	1289	14	21.500 - 21.750				
95.79	1.35	1275	18	21.250 - 21.500				
94.44	1.05	1257	14	21.000 - 21.250				
93.39	1.35	1243	18	20.750 - 21.000				
92.04	3.01	1225	40	20.500 - 20.750				
89.03	2.25	1185	30	20.250 - 20.500				
86.78	3.46	1155	46	20.000 - 20.250				
83.32	4.13	1109	55	19.750 - 20.000				
79.19	5.26	1054	70	19.500 - 19.750				
73.93	7.74	984	103	19.250 - 19.500				
66.19	5.48	881	73	19.000 - 19.250				
60.71	6.54	808	87	18.750 - 19.000				
54.17	9.24	721	123	18.500 - 18.750				
44.93	6.01	598	80	18.250 - 18.500				
38.92	6.69	518	89	18.000 - 18.250				
32.23	7.51	429	100	17.750 - 18.000				
24.72	5.79	329	77	17.500 - 17.750				
18.93	4.06	252	54	17.250 - 17.500				
14.88	3.46	198	46	17.000 - 17.250				
11.42	2.78	152	37	16.750 - 17.000				
8.64	3.08	115	41	16.500 - 16.750				
5.56	1.80	74	24	16.250 - 16.500				
3.76	1.58	50	21	16.000 - 16.250				
2.18	.75	29	10	15.750 - 16.000				
1.43	.68	19	9	15.500 - 15.750				
.75	.23	10	3	15.250 - 15.500				
.53	.15	7	2	15.000 - 15.250				
.38	.23	5	3	14.750 - 15.000				
.15	.08	2	1	14.500 - 14.750				
.08	0.00	1	0	14.250 - 14.500				
.08	.08	1	1	14.000 - 14.250				

6. BACK CURVATURE AT WAIST

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	23.000 - 23.500				
99.92	0.00	1330	0	22.500 - 23.000				
99.92	0.00	1330	0	22.000 - 22.500				
99.92	.08	1330	1	21.500 - 22.000				
99.85	0.00	1329	0	21.000 - 21.500				
99.85	.08	1329	1	20.500 - 21.000				
99.77	.08	1328	1	20.000 - 20.500				
99.70	.08	1327	1	19.500 - 20.000				
99.62	.08	1326	1	19.000 - 19.500				
99.55	.30	1325	4	18.500 - 19.000				
99.25	.38	1321	5	18.000 - 18.500				
98.87	.75	1316	10	17.500 - 18.000				
98.12	1.13	1306	15	17.000 - 17.500				
96.99	1.73	1291	23	16.500 - 17.000				
95.27	2.25	1268	30	16.000 - 16.500				
93.01	3.23	1238	43	15.500 - 16.000				
89.78	5.79	1195	77	15.000 - 15.500				
84.00	10.74	1118	143	14.500 - 15.000				
73.25	14.20	975	189	14.000 - 14.500				
59.05	17.43	786	232	13.500 - 14.000				
41.62	15.18	554	202	13.000 - 13.500				
26.45	14.12	352	188	12.500 - 13.000				
12.32	7.96	164	106	12.000 - 12.500				
4.36	3.38	58	45	11.500 - 12.000				
.98	.90	13	12	11.000 - 11.500				
.08	.08	1	1	10.500 - 11.000				

7. BIACROMIAL (SHOULDER) BREADTH

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	0.00	255	0	16.375 - 16.500	1	1905	.05	100.00
100.00	0.00	255	0	16.250 - 16.375	1	1904	.05	99.95
100.00	0.00	255	0	16.125 - 16.250	2	1903	.10	99.90
100.00	0.00	255	0	16.000 - 16.125	4	1901	.21	99.79
100.00	0.00	255	0	15.875 - 16.000	3	1897	.16	99.58
100.00	0.00	255	0	15.750 - 15.875	4	1894	.21	99.42
100.00	0.00	255	0	15.625 - 15.750	11	1890	.58	99.21
100.00	1.57	255	4	15.500 - 15.625	11	1879	.58	98.64
98.43	.78	251	2	15.375 - 15.500	20	1868	1.05	98.06
97.65	.78	249	2	15.250 - 15.375	21	1848	1.10	97.01
96.86	1.18	247	3	15.125 - 15.250	39	1827	2.05	95.91
95.69	2.35	244	6	15.000 - 15.125	30	1788	1.57	93.86
93.33	4.31	238	11	14.875 - 15.000	73	1758	3.83	92.28
89.02	3.14	227	8	14.750 - 14.875	73	1685	3.83	88.45
85.88	2.75	219	7	14.625 - 14.750	87	1612	4.57	84.62
83.14	7.06	212	18	14.500 - 14.625	123	1525	6.46	80.05
76.08	5.88	194	15	14.375 - 14.500	99	1402	5.20	73.60
70.20	7.84	179	20	14.250 - 14.375	187	1303	9.82	68.40
62.35	8.24	159	21	14.125 - 14.250	181	1116	9.50	58.58
54.12	9.80	138	25	14.000 - 14.125	101	935	5.30	49.08
44.31	8.24	113	21	13.875 - 14.000	145	834	7.61	43.78
36.08	5.10	92	13	13.750 - 13.875	154	689	8.08	36.17
30.98	4.71	79	12	13.625 - 13.750	85	535	4.46	28.08
26.27	8.24	67	21	13.500 - 13.625	133	450	6.98	23.62
18.04	2.75	46	7	13.375 - 13.500	94	317	4.93	16.64
15.29	4.31	39	11	13.250 - 13.375	57	223	2.99	11.71
10.98	3.14	28	8	13.125 - 13.250	62	166	3.25	8.71
7.84	2.35	20	6	13.000 - 13.125	23	104	1.21	5.46
5.49	2.35	14	6	12.875 - 13.000	27	81	1.42	4.25
3.14	1.96	8	5	12.750 - 12.875	24	54	1.26	2.83
1.18	.39	3	1	12.625 - 12.750	8	30	.42	1.57
.78	0.00	2	0	12.500 - 12.625	6	22	.31	1.15
.78	0.00	2	0	12.375 - 12.500	8	16	.42	.84
.78	.39	2	1	12.250 - 12.375	3	8	.16	.42
.39	0.00	1	0	12.125 - 12.250	5	5	.26	.26
.39	.39	1	1	12.000 - 12.125	0	0	0.00	0.00

8. BICEPS CIRCUMFERENCE, RELAXED

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	0.00	255	0	14.500 - 14.750	1	1905	.05	100.00
100.00	0.00	255	0	14.250 - 14.500	0	1904	0.00	99.95
100.00	0.00	255	0	14.000 - 14.250	2	1904	.10	99.95
100.00	0.00	255	0	13.750 - 14.000	1	1902	.05	99.84
100.00	.39	255	1	13.500 - 13.750	2	1901	.10	99.79
99.61	0.00	254	0	13.250 - 13.500	0	1899	0.00	99.69
99.61	1.18	254	3	13.000 - 13.250	5	1899	.26	99.69
98.43	1.18	251	3	12.750 - 13.000	6	1894	.31	99.42
97.25	0.00	248	0	12.500 - 12.750	2	1888	.10	99.11
97.25	.39	248	1	12.250 - 12.500	11	1886	.58	99.00
96.86	1.18	247	3	12.000 - 12.250	33	1875	1.73	98.43
95.69	1.96	244	5	11.750 - 12.000	26	1842	1.36	96.69
93.73	2.35	239	6	11.500 - 11.750	35	1816	1.84	95.33
91.37	3.53	233	9	11.250 - 11.500	62	1781	3.25	93.49
87.84	4.31	224	11	11.000 - 11.250	106	1719	5.56	90.24
83.53	7.06	213	18	10.750 - 11.000	100	1613	5.25	84.67
76.47	14.12	195	36	10.500 - 10.750	144	1513	7.56	79.42
62.35	8.24	159	21	10.250 - 10.500	197	1369	10.34	71.86
54.12	13.33	138	34	10.000 - 10.250	270	1172	14.17	61.52
40.78	9.41	104	24	9.750 - 10.000	185	902	9.71	47.35
31.37	5.88	80	15	9.500 - 9.750	197	717	10.34	37.64
25.49	7.84	65	20	9.250 - 9.500	209	520	10.97	27.30
17.65	6.27	45	16	9.000 - 9.250	121	311	6.35	16.33
11.37	2.35	29	6	8.750 - 9.000	90	190	4.72	9.97
9.02	3.92	23	10	8.500 - 8.750	61	100	3.20	5.25
5.10	4.31	13	11	8.250 - 8.500	23	39	1.21	2.05
.78	.39	2	1	8.000 - 8.250	12	16	.63	.84
.39	.39	1	1	7.750 - 8.000	3	4	.16	.21
0.00	0.00	0	0	7.500 - 7.750	1	1	.05	.05

9. BUST CIRCUMFERENCE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	50.500 - 51.000	0	1905	0.00	100.00
99.92	0.00	1330	0	50.000 - 50.500	0	1905	0.00	100.00
99.92	0.00	1330	0	49.500 - 50.000	0	1905	0.00	100.00
99.92	0.00	1330	0	49.000 - 49.500	0	1905	0.00	100.00
99.92	0.00	1330	0	48.500 - 49.000	0	1905	0.00	100.00
99.92	0.00	1330	0	48.000 - 48.500	0	1905	0.00	100.00
99.92	0.00	1330	0	47.500 - 48.000	0	1905	0.00	100.00
99.92	0.00	1330	0	47.000 - 47.500	0	1905	0.00	100.00
99.92	.08	1330	1	46.500 - 47.000	0	1905	0.00	100.00
99.85	0.00	1329	0	46.000 - 46.500	0	1905	0.00	100.00
99.85	0.00	1329	0	45.500 - 46.000	0	1905	0.00	100.00
99.85	.08	1329	1	45.000 - 45.500	0	1905	0.00	100.00
99.77	.15	1328	2	44.500 - 45.000	1	1905	.05	100.00
99.62	0.00	1326	0	44.000 - 44.500	2	1904	.10	99.95
99.62	0.00	1326	0	43.500 - 44.000	2	1902	.10	99.84
99.62	0.00	1326	0	43.000 - 43.500	4	1900	.21	99.74
99.62	.23	1326	3	42.500 - 43.000	4	1896	.21	99.53
99.40	.15	1323	2	42.000 - 42.500	4	1892	.21	99.32
99.25	.45	1321	6	41.500 - 42.000	9	1888	.47	99.11
98.80	.38	1315	5	41.000 - 41.500	14	1879	.73	98.64
98.42	.30	1310	4	40.500 - 41.000	11	1865	.58	97.90
98.12	.53	1306	7	40.000 - 40.500	17	1854	.89	97.32
97.60	.83	1299	11	39.500 - 40.000	21	1837	1.10	96.43
96.77	1.58	1288	21	39.000 - 39.500	39	1816	2.05	95.33
95.19	2.10	1267	28	38.500 - 39.000	48	1777	2.52	93.28
93.09	2.78	1239	37	38.000 - 38.500	52	1729	2.73	90.76
90.31	2.55	1202	34	37.500 - 38.000	64	1677	3.36	88.03
87.75	4.43	1168	59	37.000 - 37.500	88	1613	4.62	84.67
83.32	5.63	1109	75	36.500 - 37.000	108	1525	5.67	80.05
77.69	5.94	1034	79	36.000 - 36.500	158	1417	8.29	74.38
71.75	9.09	955	121	35.500 - 36.000	145	1259	7.61	66.09
62.66	7.21	834	96	35.000 - 35.500	188	1114	9.87	58.48
55.45	6.46	738	86	34.500 - 35.000	175	926	9.19	48.61
48.99	8.04	652	107	34.000 - 34.500	209	751	10.97	39.42
40.95	8.11	545	108	33.500 - 34.000	145	542	7.61	28.45
32.83	6.31	437	84	33.000 - 33.500	138	397	7.24	20.84
26.52	6.84	353	91	32.500 - 33.000	104	259	5.46	13.60
19.68	6.61	262	88	32.000 - 32.500	71	155	3.73	8.14
13.07	4.58	174	61	31.500 - 32.000	44	84	2.31	4.41
8.49	3.31	113	44	31.000 - 31.500	23	40	1.21	2.10
5.18	2.25	69	30	30.500 - 31.000	13	17	.68	.89
2.93	1.95	39	26	30.000 - 30.500	2	4	.10	.21
.98	.38	13	5	29.500 - 30.000	2	2	.10	.10
.60	.30	8	4	29.000 - 29.500	0	0	0.00	0.00
.30	.23	4	3	28.500 - 29.000	0	0	0.00	0.00
.08	0.00	1	0	28.000 - 28.500	0	0	0.00	0.00
.08	0.00	1	0	27.500 - 28.000	0	0	0.00	0.00
.08	.08	1	1	27.000 - 27.500	0	0	0.00	0.00

10. BUSTPOINT TO BUSTPOINT BREADTH

ARMY WOMEN CFRQ%	FRQ%	CFRQ	FRQ	INTERVALS IN INCHES	AIR FORCE WOMEN FRQ	CFRQ	FRQ%	CFRQ%
				9.625 - 9.750	1	1905	.05	100.00
				9.500 - 9.625	2	1904	.10	99.95
				9.375 - 9.500	0	1902	0.00	99.84
				9.250 - 9.375	1	1902	.05	99.84
				9.125 - 9.250	3	1901	.16	99.79
				9.000 - 9.125	5	1898	.26	99.63
				8.875 - 9.000	5	1893	.26	99.37
				8.750 - 8.875	10	1888	.52	99.11
				8.625 - 8.750	11	1878	.58	98.58
				8.500 - 8.625	25	1867	1.31	98.01
				8.375 - 8.500	22	1842	1.15	96.69
				8.250 - 8.375	46	1820	2.41	95.54
				8.125 - 8.250	39	1774	2.05	93.12
				8.000 - 8.125	60	1735	3.15	91.08
				7.875 - 8.000	56	1675	2.94	87.93
				7.750 - 7.875	138	1619	7.24	84.99
				7.625 - 7.750	126	1481	6.61	77.74
				7.500 - 7.625	106	1355	5.56	71.13
				7.375 - 7.500	146	1249	7.66	65.56
				7.250 - 7.375	165	1103	8.66	57.90
				7.125 - 7.250	206	938	10.81	49.24
				7.000 - 7.125	133	732	6.98	38.43
				6.875 - 7.000	148	599	7.77	31.44
				6.750 - 6.875	109	451	5.72	23.67
				6.625 - 6.750	114	342	5.98	17.95
				6.500 - 6.625	57	228	2.99	11.97
				6.375 - 6.500	65	171	3.41	8.98
				6.250 - 6.375	37	106	1.94	5.56
				6.125 - 6.250	20	69	1.05	3.62
				6.000 - 6.125	25	49	1.31	2.57
				5.875 - 6.000	9	24	.47	1.26
				5.750 - 5.875	5	15	[illegible]	.79
				5.625 - 5.750	2	10	[illegible]	.52
				5.500 - 5.625	5	8	.26	.42
				5.375 - 5.500	1	3	.05	.16
				5.250 - 5.375	1	2	.05	.10
				5.125 - 5.250	1	1	.05	.05

11. BUTTOCK CIRCUMFERENCE, SITTING

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	0.00	255	0	50.500 - 51.000	1	1905	.05	100.00
100.00	0.00	255	0	50.000 - 50.500	0	1904	0.00	99.95
100.00	0.00	255	0	49.500 - 50.000	1	1904	.05	99.95
100.00	.39	255	1	49.000 - 49.500	0	1903	0.00	99.90
99.61	0.00	254	0	48.500 - 49.000	2	1903	.10	99.90
99.61	0.00	254	0	48.000 - 48.500	3	1901	.16	99.79
99.61	0.00	254	0	47.500 - 48.000	2	1898	.10	99.63
99.61	0.00	254	0	47.000 - 47.500	5	1896	.26	99.53
99.61	0.00	254	0	46.500 - 47.000	4	1891	.21	99.27
99.61	.39	254	1	46.000 - 46.500	10	1887	.52	99.06
99.22	.39	253	1	45.500 - 46.000	5	1877	.26	98.53
98.82	.78	252	2	45.000 - 45.500	10	1872	.52	98.27
98.04	0.00	250	0	44.500 - 45.000	9	1862	.47	97.74
98.04	1.18	250	3	44.000 - 44.500	26	1853	1.36	97.27
96.86	.39	247	1	43.500 - 44.000	23	1827	1.21	95.91
96.47	2.75	246	7	43.000 - 43.500	28	1804	1.47	94.70
93.73	1.18	239	3	42.500 - 43.000	48	1776	2.52	93.23
92.55	3.14	236	8	42.000 - 42.500	56	1728	2.94	90.71
89.41	4.31	228	11	41.500 - 42.000	83	1672	4.36	87.77
85.10	4.31	217	11	41.000 - 41.500	101	1589	5.30	83.41
80.78	3.53	206	9	40.500 - 41.000	144	1488	7.56	78.11
77.25	5.88	197	15	40.000 - 40.500	118	1344	6.19	70.55
71.37	6.27	182	16	39.500 - 40.000	148	1226	7.77	64.36
65.10	5.88	166	15	39.000 - 39.500	171	1078	8.98	56.59
59.22	7.45	151	19	38.500 - 39.000	198	907	10.39	47.61
51.76	9.41	132	24	38.000 - 38.500	142	709	7.45	37.22
42.35	8.24	108	21	37.500 - 38.000	157	567	8.24	29.76
34.12	5.88	87	15	37.000 - 37.500	140	410	7.35	21.52
28.24	6.67	72	17	36.500 - 37.000	76	270	3.99	14.17
21.57	5.88	55	15	36.000 - 36.500	81	194	4.25	10.18
15.69	2.75	40	7	35.500 - 36.000	46	113	2.41	5.93
12.94	5.10	33	13	35.000 - 35.500	31	67	1.63	3.52
7.84	1.96	20	5	34.500 - 35.000	15	36	.79	1.89
5.88	3.53	15	9	34.000 - 34.500	13	21	.68	1.10
2.35	1.57	6	4	33.500 - 34.000	8	8	.42	.42
.78	0.00	2	0	33.000 - 33.500	0	0	0.00	0.00
.78	.39	2	1	32.500 - 33.000	0	0	0.00	0.00
.39	.39	1	1	32.000 - 32.500	0	0	0.00	0.00

12. CALF CIRCUMFERENCE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	18.500 - 18.750	0	1905	0.00	100.00
99.92	0.00	1330	0	18.250 - 18.500	0	1905	0.00	100.00
99.92	0.00	1330	0	18.000 - 18.250	0	1905	0.00	100.00
99.92	0.00	1330	0	17.750 - 18.000	0	1905	0.00	100.00
99.92	.08	1330	1	17.500 - 17.750	1	1905	.05	100.00
99.85	0.00	1329	0	17.250 - 17.500	1	1904	.05	99.95
99.85	.08	1329	1	17.000 - 17.250	0	1903	0.00	99.90
99.77	.23	1328	3	16.750 - 17.000	0	1903	0.00	99.90
99.55	.15	1325	2	16.500 - 16.750	0	1903	0.00	99.90
99.40	.38	1323	5	16.250 - 16.500	2	1903	.10	99.90
99.02	.53	1318	7	16.000 - 16.250	4	1901	.21	99.79
98.50	1.20	1311	16	15.750 - 16.000	8	1897	.42	99.58
97.30	2.10	1295	28	15.500 - 15.750	9	1889	.47	99.16
95.19	2.40	1267	32	15.250 - 15.500	19	1880	1.00	98.69
92.79	3.23	1235	43	15.000 - 15.250	27	1861	1.42	97.69
89.56	5.48	1192	73	14.750 - 15.000	71	1834	3.73	96.27
84.07	7.74	1119	103	14.500 - 14.750	78	1763	4.09	92.55
76.33	9.09	1016	121	14.250 - 14.500	136	1685	7.14	88.45
67.24	8.41	895	112	14.000 - 14.250	128	1549	6.72	81.31
58.83	11.42	783	152	13.750 - 14.000	208	1421	10.92	74.59
47.41	10.82	631	144	13.500 - 13.750	179	1213	9.40	63.67
36.59	8.19	487	109	13.250 - 13.500	207	1034	10.87	54.28
28.40	8.11	378	108	13.000 - 13.250	204	827	10.71	43.41
20.29	6.24	270	83	12.750 - 13.000	219	623	11.50	32.70
14.05	4.21	187	56	12.500 - 12.750	130	404	6.82	21.21
9.84	3.46	131	46	12.250 - 12.500	108	274	5.67	14.38
6.39	3.83	85	51	12.000 - 12.250	90	166	4.72	8.71
2.55	1.58	34	21	11.750 - 12.000	44	76	2.31	3.99
.98	.53	13	7	11.500 - 11.750	15	32	.79	1.68
.45	.08	6	1	11.250 - 11.500	9	17	.47	.89
.38	.30	5	4	11.000 - 11.250	4	8	.21	.42
.08	.08	1	1	10.750 - 11.000	3	4	.16	.21
0.00	0.00	0	0	10.500 - 10.750	1	1	.05	.05

13. CERVICALE HEIGHT

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.39	255	1	63.500 - 64.000	0	1905	0.00	100.00
99.61	0.00	254	0	63.000 - 63.500	0	1905	0.00	100.00
99.61	0.00	254	0	62.500 - 63.000	0	1905	0.00	100.00
99.61	.39	254	1	62.000 - 62.500	0	1905	0.00	100.00
99.22	.39	253	1	61.500 - 62.000	2	1905	.10	100.00
98.82	0.00	252	0	61.000 - 61.500	3	1903	.16	99.90
98.82	.39	252	1	60.500 - 61.000	8	1900	.42	99.74
98.43	.78	251	2	60.000 - 60.500	9	1892	.47	99.32
97.65	1.57	249	4	59.500 - 60.000	6	1883	.31	98.85
96.08	1.18	245	3	59.000 - 59.500	21	1877	1.10	98.53
94.90	2.35	242	6	58.500 - 59.000	35	1856	1.84	97.43
92.55	2.35	236	6	58.000 - 58.500	59	1821	3.10	95.59
90.20	4.31	230	11	57.500 - 58.000	80	1762	4.20	92.49
85.88	7.84	219	20	57.000 - 57.500	94	1682	4.93	88.29
78.04	8.24	199	21	56.500 - 57.000	110	1588	5.77	83.36
69.80	7.06	178	18	56.000 - 56.500	131	1478	6.88	77.59
62.75	8.63	160	22	55.500 - 56.000	156	1347	8.19	70.71
54.12	6.67	138	17	55.000 - 55.500	147	1191	7.72	62.52
47.45	9.80	121	25	54.500 - 55.000	179	1044	9.40	54.80
37.65	8.63	96	22	54.000 - 54.500	158	865	8.29	45.41
29.02	7.45	74	19	53.500 - 54.000	172	707	9.03	37.11
21.57	4.31	55	11	53.000 - 53.500	113	535	5.93	28.08
17.25	4.71	44	12	52.500 - 53.000	117	422	6.14	22.15
12.55	3.14	32	8	52.000 - 52.500	128	305	6.72	16.01
9.41	2.35	24	6	51.500 - 52.000	68	177	3.57	9.29
7.06	3.14	18	8	51.000 - 51.500	47	109	2.47	5.72
3.92	1.57	10	4	50.500 - 51.000	33	62	1.73	3.25
2.35	1.57	6	4	50.000 - 50.500	18	29	.94	1.52
.78	.78	2	2	49.500 - 50.000	4	11	.21	.58
0.00	0.00	0	0	49.000 - 49.500	4	7	.21	.37
0.00	0.00	0	0	48.500 - 49.000	2	3	.10	.16
0.00	0.00	0	0	48.000 - 48.500	0	1	0.00	.05
0.00	0.00	0	0	47.500 - 48.000	1	1	.05	.05

14. CHEST BREADTH

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.15	1331	2	14.875 - ABOVE	0	1905	0.00	100.00
99.85	0.00	1329	0	14.750 - 14.875	0	1905	0.00	100.00
99.85	0.00	1329	0	14.625 - 14.750	0	1905	0.00	100.00
99.85	0.00	1329	0	14.500 - 14.625	0	1905	0.00	100.00
99.85	0.00	1329	0	14.375 - 14.500	0	1905	0.00	100.00
99.85	0.00	1329	0	14.250 - 14.375	0	1905	0.00	100.00
99.85	0.00	1329	0	14.125 - 14.250	1	1905	.05	100.00
99.85	0.00	1329	0	14.000 - 14.125	0	1904	0.00	99.95
99.85	0.00	1329	0	13.875 - 14.000	0	1904	0.00	99.95
99.85	.08	1329	1	13.750 - 13.875	0	1904	0.00	99.95
99.77	.08	1328	1	13.625 - 13.750	2	1904	.10	99.95
99.70	.08	1327	1	13.500 - 13.625	4	1902	.21	99.84
99.62	0.00	1326	0	13.375 - 13.500	3	1898	.16	99.63
99.62	.15	1326	2	13.250 - 13.375	2	1895	.10	99.48
99.47	.30	1324	4	13.125 - 13.250	6	1893	.31	99.37
99.17	.45	1320	6	13.000 - 13.125	4	1887	.21	99.06
98.72	.30	1314	4	12.875 - 13.000	6	1883	.31	98.85
98.42	.53	1310	7	12.750 - 12.875	11	1877	.58	98.53
97.90	.75	1303	10	12.625 - 12.750	9	1866	.47	97.95
97.15	.75	1293	10	12.500 - 12.625	25	1857	1.31	97.48
96.39	.98	1283	13	12.375 - 12.500	30	1832	1.57	96.17
95.42	1.43	1270	19	12.250 - 12.375	20	1802	1.05	94.59
93.99	2.10	1251	28	12.125 - 12.250	43	1782	2.26	93.54
91.89	2.25	1223	30	12.000 - 12.125	41	1739	2.15	91.29
89.63	3.23	1193	43	11.875 - 12.000	40	1698	2.10	89.13
86.40	3.91	1150	52	11.750 - 11.875	54	1658	2.83	87.03
82.49	4.51	1098	60	11.625 - 11.750	54	1604	2.83	84.20
77.99	6.01	1038	80	11.500 - 11.625	82	1550	4.30	81.36
71.98	8.26	958	110	11.375 - 11.500	139	1468	7.30	77.06
63.71	5.94	848	79	11.250 - 11.375	97	1329	5.09	69.76
57.78	6.16	769	82	11.125 - 11.250	129	1232	6.77	64.67
51.62	5.71	687	76	11.000 - 11.125	134	1103	7.03	57.90
45.91	6.09	611	81	10.875 - 11.000	99	969	5.20	50.87
39.82	6.76	530	90	10.750 - 10.875	145	870	7.61	45.67
33.06	8.64	440	115	10.625 - 10.750	155	725	8.14	38.06
24.42	5.18	325	69	10.500 - 10.625	95	570	4.99	29.92
19.23	5.11	256	68	10.375 - 10.500	137	475	7.19	24.93
14.12	3.38	188	45	10.250 - 10.375	65	338	3.41	17.74
10.74	3.01	143	40	10.125 - 10.250	67	273	3.52	14.33
7.74	3.31	103	44	10.000 - 10.125	88	206	4.62	10.81
4.43	1.05	59	14	9.875 - 10.000	31	118	1.63	6.19
3.38	1.65	45	22	9.750 - 9.875	27	87	1.42	4.57
1.73	.60	23	8	9.625 - 9.750	24	60	1.26	3.15
1.13	.75	15	10	9.500 - 9.625	18	36	.94	1.89
.38	.15	5	2	9.375 - 9.500	10	18	.52	.94
.23	.23	3	3	9.250 - 9.375	4	8	.21	.42
0.00	0.00	0	0	9.125 - 9.250	2	4	.10	.21
0.00	0.00	0	0	9.000 - 9.125	0	2	0.00	.10
0.00	0.00	0	0	8.875 - 9.000	1	2	.05	.10
0.00	0.00	0	0	8.750 - 8.875	1	1	05	.05

15. CHEST CIRCUMFERENCE AT SCYE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	47.250 - 47.750	0	1905	0.00	100.00
99.92	0.00	1330	0	46.750 - 47.250	0	1905	0.00	100.00
99.92	0.00	1330	0	46.250 - 46.750	0	1905	0.00	100.00
99.92	0.00	1330	0	45.750 - 46.250	0	1905	0.00	100.00
99.92	0.00	1330	0	45.250 - 45.750	0	1905	0.00	100.00
99.92	0.00	1330	0	44.750 - 45.250	0	1905	0.00	100.00
99.92	0.00	1330	0	44.250 - 44.750	0	1905	0.00	100.00
99.92	0.00	1330	0	43.750 - 44.250	0	1905	0.00	100.00
99.92	0.00	1330	0	43.250 - 43.750	0	1905	0.00	100.00
99.92	.08	1330	1	42.750 - 43.250	0	1905	0.00	100.00
99.85	.08	1329	1	42.250 - 42.750	0	1905	0.00	100.00
99.77	0.00	1328	0	41.750 - 42.250	0	1905	0.00	100.00
99.77	.08	1328	1	41.250 - 41.750	0	1905	0.00	100.00
99.70	.08	1327	1	40.750 - 41.250	0	1905	0.00	100.00
99.62	0.00	1326	0	40.250 - 40.750	2	1905	.10	100.00
99.62	.38	1326	5	39.750 - 40.250	8	1903	.42	99.90
99.25	.15	1321	2	39.250 - 39.750	6	1895	.31	99.48
99.10	.45	1319	6	38.750 - 39.250	8	1889	.42	99.16
98.65	.45	1313	6	38.250 - 38.750	5	1881	.26	98.74
98.20	1.50	1307	20	37.750 - 38.250	13	1876	.68	98.48
96.69	.98	1287	13	37.250 - 37.750	23	1863	[illegible]	97.80
95.72	1.58	1274	21	36.750 - 37.250	32	1840	[illegible]	59
94.14	3.91	1253	52	36.250 - 36.750	28	1808	[illegible]	[illegible]
90.23	4.13	1201	55	35.750 - 36.250	59	1780	[illegible]	
86.10	6.84	1146	91	35.250 - 35.750	67	1721	[illegible]	
79.26	7.89	1055	105	34.750 - 35.250	125	1654	[illegible]	[illegible]
71.37	9.77	950	130	34.250 - 34.750	134	1529	[illegible]	[illegible].26
61.61	7.89	820	105	33.750 - 34.250	122	1395	6.40	[illegible]3.23
53.72	9.54	715	127	33.250 - 33.750	212	1273	11.13	66.82
44.18	10.82	588	144	32.750 - 33.250	215	1061	11.29	55.70
33.36	7.29	444	97	32.250 - 32.750	202	846	10.60	44.41
26.07	9.09	347	121	31.750 - 32.250	191	644	10.03	33.81
16.98	6.39	226	85	31.250 - 31.750	180	453	9.45	23.78
10.59	4.51	141	60	30.750 - 31.250	103	273	[illegible]	14.33
6.09	2.78	81	37	30.250 - 30.750	83	[illegible]	[illegible]	8.92
3.31	2.10	44	28	29.750 - 30.250	40	87	0	4.57
1.20	.68	16	9	29.250 - 29.750	36	47	.57	2.47
.53	.38	7	5	28.750 - 29.250	10	17	.52	.89
.15	.15	2	2	28.250 - 28.750	6	7	.31	.37
0.00	0.00	0	0	27.750 - 28.250	1	1	.05	.05

16. CROTCH HEIGHT

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	36.000 - ABOVE	0	1905	0.00	100.00
99.92	0.00	1330	0	35.750 - 36.000	0	1905	0.00	100.00
99.92	.08	1330	1	35.500 - 35.750	0	1905	0.00	100.00
99.85	.08	1329	1	35.250 - 35.500	0	1905	0.00	100.00
99.77	.08	1328	1	35.000 - 35.250	0	1905	0.00	100.00
99.70	.30	1327	4	34.750 - 35.000	0	1905	0.00	100.00
99.40	.15	1323	2	34.500 - 34.750	0	1905	0.00	100.00
99.25	.15	1321	2	34.250 - 34.500	5	1905	.26	100.00
99.10	.75	1319	10	34.000 - 34.250	3	1900	.16	99.74
98.35	.68	1309	9	33.750 - 34.000	4	1897	.21	99.58
97.67	.45	1300	6	33.500 - 33.750	0	1893	0.00	99.37
97.22	.98	1294	13	33.250 - 33.500	3	1893	.16	99.37
96.24	.83	1281	11	33.000 - 33.250	14	1890	.73	99.21
95.42	2.63	1270	35	32.750 - 33.000	7	1876	.37	98.48
92.79	1.73	1235	23	32.500 - 32.750	12	1869	.63	98.11
91.06	2.78	1212	37	32.250 - 32.500	25	1857	1.31	97.48
88.28	2.48	1175	33	32.000 - 32.250	24	1832	1.26	96.17
85.80	2.63	1142	35	31.750 - 32.000	33	1808	1.73	94.91
83.17	3.83	1107	51	31.500 - 31.750	39	1775	2.05	93.18
79.34	3.68	1056	49	31.250 - 31.500	56	1736	2.94	91.13
75.66	4.13	1007	55	31.000 - 31.250	65	1680	3.41	88.19
71.53	3.68	952	49	30.750 - 31.000	61	1615	3.20	84.78
67.84	5.63	903	75	30.500 - 30.750	79	1554	4.15	81.57
62.21	5.03	828	67	30.250 - 30.500	80	1475	4.20	77.43
57.18	6.59	761	89	30.000 - 30.250	97	1395	5.09	73.23
50.49	4.88	672	65	29.750 - 30.000	120	1298	6.30	68.14
45.60	6.39	607	85	29.500 - 29.750	131	1178	6.88	61.84
39.22	6.99	522	93	29.250 - 29.500	129	1047	6.77	54.96
32.23	4.88	429	65	29.000 - 29.250	121	918	6.35	48.19
27.35	4.88	364	65	28.750 - 29.000	93	797	4.88	41.84
22.46	5.18	299	69	28.500 - 28.750	131	704	6.88	36.96
17.28	3.38	230	45	28.250 - 28.500	96	573	5.04	30.08
13.90	2.93	185	39	28.000 - 28.250	80	477	4.20	25.04
10.97	2.93	146	39	27.750 - 28.000	92	397	4.83	20.84
8.04	2.10	107	28	27.500 - 27.750	63	305	3.31	16.01
5.94	1.58	79	21	27.250 - 27.500	70	242	3.67	12.70
4.36	1.20	58	16	27.000 - 27.250	44	172	2.31	9.03
3.16	1.13	42	15	26.750 - 27.000	42	128	2.20	6.72
2.03	.75	27	10	26.500 - 26.750	33	86	1.73	4.51
1.28	.38	17	5	26.250 - 26.500	17	53	.89	2.78
.90	.30	12	4	26.000 - 26.250	10	36	.52	1.89
.60	.15	8	2	25.750 - 26.000	12	26	.63	1.36
.45	.23	6	3	25.500 - 25.750	5	14	.26	.73
.23	.08	3	1	25.250 - 25.500	4	9	.21	.47
.15	.08	2	1	25.000 - 25.250	0	5	0.00	.26
.08	0.00	1	0	24.750 - 25.000	3	5	.16	.26
.08	.08	1	1	24.500 - 24.750	0	2	0.00	.10
0.00	0.00	0	0	24.250 - 24.500	1	2	.05	.10
0.00	0.00	0	0	24.000 - 24.250	0	1	0.00	.05
0.00	0.00	0	0	23.750 - 24.000	1	1	.05	.05

17. CROTCH LENGTH

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	39.375 - 39.875				
99.92	0.00	1330	0	38.875 - 39.375				
99.92	0.00	1330	0	38.375 - 38.875				
99.92	0.00	1330	0	37.875 - 38.375				
99.92	0.00	1330	0	37.375 - 37.875				
99.92	0.00	1330	0	36.875 - 37.375				
99.92	0.00	1330	0	36.375 - 36.875				
99.92	0.00	1330	0	35.875 - 36.375				
99.92	0.00	1330	0	35.375 - 35.875				
99.92	0.00	1330	0	34.875 - 35.375				
99.92	.08	1330	1	34.375 - 34.875				
99.85	.45	1329	6	33.875 - 34.375				
99.40	.75	1323	10	33.375 - 33.875				
98.65	.90	1313	12	32.875 - 33.375				
97.75	1.43	1301	19	32.375 - 32.875				
96.32	2.33	1282	31	31.875 - 32.375				
93.99	3.23	1251	43	31.375 - 31.875				
90.76	4.13	1208	55	30.875 - 31.375				
86.63	8.94	1153	119	30.375 - 30.875				
77.69	7.74	1034	103	29.875 - 30.375				
69.95	8.11	931	108	29.375 - 29.875				
61.83	10.59	823	141	28.875 - 29.375				
51.24	8.56	682	114	28.375 - 28.875				
42.67	10.52	568	140	27.875 - 28.375				
32.16	7.89	428	105	27.375 - 27.875				
24.27	6.39	323	85	26.875 - 27.375				
17.88	5.79	238	77	26.375 - 26.875				
12.10	4.21	161	56	25.875 - 26.375				
7.89	2.03	105	27	25.375 - 25.875				
5.86	1.58	78	21	24.875 - 25.375				
4.28	1.35	57	18	24.375 - 24.875				
2.93	.90	39	12	23.875 - 24.375				
2.03	.53	27	7	23.375 - 23.875				
1.50	.30	20	4	22.875 - 23.375				
1.20	.45	16	6	22.375 - 22.875				
.75	.15	10	2	21.875 - 22.375				
.60	.08	8	1	21.375 - 21.875				
.53	.23	7	3	20.875 - 21.375				
.30	.30	4	4	20.375 - 20.875				

18. ELBOW CIRCUMFERENCE, FLEXED

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	0.00	1331	0	14.000 - 14.125	1	1905	.05	100.00
100.00	0.00	1331	0	13.875 - 14.000	0	1904	0.00	99.95
100.00	0.00	1331	0	13.750 - 13.875	0	1904	0.00	99.95
100.00	0.00	1331	0	13.625 - 13.750	0	1904	0.00	99.95
100.00	0.00	1331	0	13.500 - 13.625	0	1904	0.00	99.95
100.00	0.00	1331	0	13.375 - 13.500	0	1904	0.00	99.95
100.00	0.00	1331	0	13.250 - 13.375	1	1904	.05	99.95
100.00	0.00	1331	0	13.125 - 13.250	0	1903	0.00	99.90
100.00	0.00	1331	0	13.000 - 13.125	1	1903	.05	99.90
100.00	.08	1331	1	12.875 - 13.000	0	1902	0.00	99.84
99.92	.08	1330	1	12.750 - 12.875	1	1902	.05	99.84
99.85	0.00	1329	0	12.625 - 12.750	3	1901	.16	99.79
99.85	0.00	1329	0	12.500 - 12.625	7	1898	.37	99.63
99.85	0.00	1329	0	12.375 - 12.500	8	1891	.42	99.27
99.85	.15	1329	2	12.250 - 12.375	3	1883	.16	98.85
99.70	.30	1327	4	12.125 - 12.250	18	1880	.94	98.69
99.40	.15	1323	2	12.000 - 12.125	21	1862	1.10	97.74
99.25	.53	1321	7	11.875 - 12.000	18	1841	.94	96.64
98.72	.30	1314	4	11.750 - 11.875	31	1823	1.63	95.70
98.42	.38	1310	5	11.625 - 11.750	28	1792	1.47	94.07
98.05	1.20	1305	16	11.500 - 11.625	52	1764	2.73	92.60
96.84	1.58	1289	21	11.375 - 11.500	83	1712	4.36	89.87
95.27	1.20	1268	16	11.250 - 11.375	50	1629	2.62	85.51
94.06	2.48	1252	33	11.125 - 11.250	116	1579	6.09	82.89
91.59	3.23	1219	43	11.000 - 11.125	133	1463	6.98	76.80
88.35	2.63	1176	35	10.875 - 11.000	49	1330	2.57	69.82
85.73	5.11	1141	68	10.750 - 10.875	148	1281	7.77	67.24
80.62	7.14	1073	95	10.625 - 10.750	206	1133	10.81	59.48
73.48	5.26	978	70	10.500 - 10.625	58	927	3.04	48.66
68.22	7.21	908	96	10.375 - 10.500	172	869	9.03	45.62
61.01	7.59	812	101	10.250 - 10.375	84	697	4.41	36.59
53.42	6.99	711	93	10.125 - 10.250	130	613	6.82	32.18
46.43	8.11	618	108	10.000 - 10.125	126	483	6.61	25.35
38.32	8.79	510	117	9.875 - 10.000	88	357	4.62	18.74
29.53	5.26	393	70	9.750 - 9.875	76	269	3.99	14.12
24.27	7.36	323	98	9.625 - 9.750	66	193	3.46	10.13
16.90	5.41	225	72	9.500 - 9.625	44	127	2.31	6.67
11.50	3.23	153	43	9.375 - 9.500	27	83	1.42	4.36
8.26	3.68	110	49	9.250 - 9.375	21	56	1.10	2.94
4.58	1.88	61	25	9.125 - 9.250	10	35	.52	1.84
2.70	.90	36	12	9.000 - 9.125	12	25	.63	1.31
1.80	.53	24	7	8.875 - 9.000	5	13	.26	.68
1.28	.60	17	8	8.750 - 8.875	4	8	.21	.42
.68	.45	9	6	8.625 - 8.750	2	4	.10	.21
.23	.15	3	2	8.500 - 8.625	1	2	.05	.10
.08	.08	1	1	8.375 - 8.500	1	1	.05	.05

19. FRONT CURVATURE AT BUST

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	0.00	1331	0	26.250 - 26.750	1	1905	.05	100.00
100.00	.08	1331	1	25.750 - 26.250	1	1904	.05	99.95
99.92	0.00	1330	0	25.250 - 25.750	0	1903	0.00	99.90
99.92	.08	1330	1	24.750 - 25.250	3	1903	.16	99.90
99.85	.08	1329	1	24.250 - 24.750	5	1900	.26	99.74
99.77	0.00	1328	0	23.750 - 24.250	4	1895	.21	99.48
99.77	.38	1328	5	23.250 - 23.750	7	1891	.37	99.27
99.40	.15	1323	2	22.750 - 23.250	22	1884	1.15	98.90
99.25	.60	1321	8	22.250 - 22.750	26	1862	1.36	97.74
98.65	.83	1313	11	21.750 - 22.250	39	1836	2.05	96.38
97.82	1.50	1302	20	21.250 - 21.750	56	1797	2.94	94.33
96.32	2.18	1282	29	20.750 - 21.250	62	1741	3.25	91.39
94.14	3.91	1253	52	20.250 - 20.750	117	1679	6.14	88.14
90.23	5.86	1201	78	19.750 - 20.250	141	1562	7.40	81.99
84.37	9.69	1123	129	19.250 - 19.750	204	1421	10.71	74.59
74.68	9.47	994	126	18.750 - 19.250	181	1217	9.50	63.88
65.21	11.95	868	159	18.250 - 18.750	267	1036	14.02	54.38
53.27	13.22	709	176	17.750 - 18.250	207	769	10.87	40.37
40.05	10.59	533	141	17.250 - 17.750	170	562	8.92	29.50
29.45	10.52	392	140	16.750 - 17.250	159	392	8.35	20.58
18.93	8.94	252	119	16.250 - 16.750	121	233	6.35	12.23
9.99	5.03	133	67	15.750 - 16.250	49	112	2.57	5.88
4.96	3.31	66	44	15.250 - 15.750	36	63	1.89	3.31
1.65	.98	22	13	14.750 - 15.250	15	27	.79	1.42
.68	.45	9	6	14.250 - 14.750	7	12	.37	.63
.23	.23	3	3	13.750 - 14.250	3	5	.16	.26
0.00	0.00	0	0	13.250 - 13.750	1	2	.05	.10
0.00	0.00	0	0	12.750 - 13.250	0	1	0.00	.05
0.00	0.00	0	0	12.250 - 12.750	0	1	0.00	.05
0.00	0.00	0	0	11.750 - 12.250	0	1	0.00	.05
0.00	0.00	0	0	11.250 - 11.750	1	1	.05	.05

20. FRONT CURVATURE AT HIP

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.15	1331	2	25.750 - 26.000				
99.85	.15	1329	2	25.500 - 25.750				
99.70	0.00	1327	0	25.250 - 25.500				
99.70	0.00	1327	0	25.000 - 25.250				
99.70	.08	1327	1	24.750 - 25.000				
99.62	0.00	1326	0	24.500 - 24.750				
99.62	.08	1326	1	24.250 - 24.500				
99.55	.08	1325	1	24.000 - 24.250				
99.47	0.00	1324	0	23.750 - 24.000				
99.47	0.00	1324	0	23.500 - 23.750				
99.47	.23	1324	3	23.250 - 23.500				
99.25	.15	1321	2	23.000 - 23.250				
99.10	.23	1319	3	[illegible] - 23.000				
98.87	.08	1316	1	22.500 - 22.750				
98.80	.23	1315	3	22.250 - 22.500				
98.57	.68	1312	9	22.000 - 22.250				
97.90	.83	1303	11	21.750 - 22.000				
97.07	.83	1292	11	21.500 - 21.750				
96.24	1.05	1281	14	21.250 - 21.500				
95.19	2.10	1267	28	21.000 - 21.250				
93.09	2.63	1239	35	20.750 - 21.000				
90.46	2.70	1204	36	20.500 - 20.750				
87.75	3.83	1168	51	20.250 - 20.500				
83.92	4.21	1117	56	20.000 - 20.250				
79.71	5.11	1061	68	19.750 - 20.000				
74.61	6.16	993	82	19.500 - 19.750				
68.44	7.29	911	97	19.250 - 19.500				
61.16	5.94	814	79	19.000 - 19.250				
55.22	6.91	735	92	18.750 - 19.000				
48.31	7.74	643	103	18.500 - 18.750				
40.57	7.06	540	94	18.250 - 18.500				
33.51	6.91	446	92	18.000 - 18.250				
26.60	6.24	354	83	17.750 - 18.000				
20.36	4.81	271	64	17.500 - 17.750				
15.55	2.85	207	38	17.250 - 17.500				
12.70	4.66	169	62	17.000 - 17.250				
8.04	2.78	107	37	16.750 - 17.000				
5.26	1.73	70	23	16.500 - 16.750				
3.53	1.73	47	23	16.250 - 16.500				
1.80	1.13	24	15	16.000 - 16.250				
.68	.30	9	4	15.750 - 16.000				
.38	.23	5	3	15.500 - 15.750				
.15	.08	2	1	15.250 - 15.500				
.08	0.00	1	0	15.000 - 15.250				
.08	.08	1	1	14.750 - 15.000				

21. FRONT CURVATURE AT WAIST

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.15	1331	2	22.500 - 23.000				
99.85	0.00	1329	0	22.000 - 22.500				
99.85	0.00	1329	0	21.500 - 22.000				
99.85	.08	1329	1	21.000 - 21.500				
99.77	.08	1328	1	20.500 - 21.000				
99.70	0.00	1327	0	20.000 - 20.500				
99.70	.08	1327	1	19.500 - 20.000				
99.62	.30	1326	4	19.000 - 19.500				
99.32	.38	1322	5	18.500 - 19.000				
98.95	.53	1317	7	18.000 - 18.500				
98.42	.83	1310	11	17.500 - 18.000				
97.60	1.58	1299	21	17.000 - 17.500				
96.02	1.73	1278	23	16.500 - 17.000				
94.29	3.68	1255	49	16.000 - 16.500				
90.61	6.24	1206	83	15.500 - 16.000				
84.37	6.99	1123	93	15.000 - 15.500				
77.39	11.12	1030	148	14.500 - 15.000				
66.27	12.10	882	161	14.000 - 14.500				
54.17	15.33	721	204	13.500 - 14.000				
38.84	14.35	517	191	13.000 - 13.500				
24.49	11.80	326	157	12.500 - 13.000				
12.70	7.66	169	102	12.000 - 12.500				
5.03	3.53	67	47	11.500 - 12.000				
1.50	1.13	20	15	11.000 - 11.500				
.38	.23	5	3	10.500 - 11.000				
.15	.08	2	1	10.000 - 10.500				
.08	0.00	1	0	9.500 - 10.000				
.08	.08	1	1	9.000 - 9.500				

22. HIP BREADTH

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	19.250 - 19.500	0	1905	0.00	100.00
99.92	0.00	1330	0	19.000 - 19.250	0	1905	0.00	100.00
99.92	.08	1330	1	18.750 - 19.000	0	1905	0.00	100.00
99.85	0.00	1329	0	18.500 - 18.750	0	1905	0.00	100.00
99.85	0.00	1329	0	18.250 - 18.500	0	1905	0.00	100.00
99.85	0.00	1329	0	18.000 - 18.250	0	1905	0.00	100.00
99.85	.08	1329	1	17.750 - 18.000	0	1905	0.00	100.00
99.77	0.00	1328	0	17.500 - 17.750	0	1905	0.00	100.00
99.77	.08	1328	1	17.250 - 17.500	2	1905	.10	100.00
99.70	0.00	1327	0	17.000 - 17.250	1	1903	.05	99.90
99.70	.45	1327	6	16.750 - 17.000	2	1902	.10	99.84
99.25	.30	1321	4	16.500 - 16.750	2	1900	.10	99.74
98.95	.45	1317	6	16.250 - 16.500	2	1898	.10	99.63
98.50	.60	1 11	8	16.000 - 16.250	13	1896	.68	99.53
97.90	1.28	1303	17	15.750 - 16.000	18	1883	.94	98.85
96.62	2.25	1286	30	15.500 - 15.750	34	1865	1.78	97.90
94.37	2.70	1256	36	15.250 - 15.500	29	1831	1.52	96.12
91.66	4.96	1220	66	15.000 - 15.250	61	1802	3.20	94.59
86.70	5.94	1154	79	14.750 - 15.000	79	1741	4.15	91.39
80.77	6.54	1075	87	14.500 - 14.750	110	1662	5.77	87.24
74.23	9.84	988	131	14.250 - 14.500	153	1552	8.03	81.47
64.39	8.87	857	118	14.000 - 14.250	181	1399	9.50	73.44
55.52	10.52	739	140	13.750 - 14.000	258	1218	13.54	63.94
45.00	11.72	599	156	13.500 - 13.750	230	960	12.07	50.39
33.28	8.49	443	113	13.250 - 13.500	192	730	10.08	38.32
24.79	8.26	330	110	13.000 - 13.250	162	538	8.50	28.24
16.53	6.84	220	91	12.750 - 13.000	185	376	9.71	19.74
9.69	3.83	129	51	12.500 - 12.750	67	191	3.52	10.03
5.86	2.70	78	36	12.250 - 12.500	61	124	3.20	6.51
3.16	1.65	42	22	12.000 - 12.250	42	63	2.20	3.31
1.50	.75	20	10	11.750 - 12.000	12	21	.63	1.10
.75	.45	10	6	11.500 - 11.750	5	9	.26	.47
.30	.23	4	3	11.250 - 11.500	4	4	.21	.21
.08	.08	1	1	11.000 - 11.250	0	0	0.00	0.00

23. HIP CIRCUMFERENCE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	52.750 - 53.250	0	1905	0.00	100.00
99.92	0.00	1330	0	52.250 - 52.750	0	1905	0.00	100.00
99.92	.08	1330	1	51.750 - 52.250	0	1905	0.00	100.00
99.85	0.00	1329	0	51.250 - 51.750	0	1905	0.00	100.00
99.85	0.00	1329	0	50.750 - 51.250	0	1905	0.00	100.00
99.85	0.00	1329	0	50.250 - 50.750	0	1905	0.00	100.00
99.85	0.00	1329	0	49.750 - 50.250	0	1905	0.00	100.00
99.85	0.00	1329	0	49.250 - 49.750	0	1905	0.00	100.00
99.85	0.00	1329	0	48.750 - 49.250	0	1905	0.00	100.00
99.85	.08	1329	1	48.250 - 48.750	0	1905	0.00	100.00
99.77	.08	1328	1	47.750 - 48.250	0	1905	0.00	100.00
99.70	0.00	1327	0	47.250 - 47.750	1	1905	.05	100.00
99.70	.08	1327	1	46.750 - 47.250	1	1904	.05	99.95
99.62	.08	1326	1	46.250 - 46.750	3	1903	.16	99.90
99.55	0.00	1325	0	45.750 - 46.250	0	1900	0.00	99.74
99.55	.15	1325	2	45.250 - 45.750	2	1900	.10	99.74
99.40	.08	1323	1	44.750 - 45.250	5	1898	.26	99.63
99.32	.30	1322	4	44.250 - 44.750	5	1893	.26	99.37
99.02	.38	1318	5	43.750 - 44.250	6	1888	.31	99.11
98.65	.45	1313	6	43.250 - 43.750	13	1882	.68	98.79
98.20	.60	1307	8	42.750 - 43.250	15	1869	.79	98.11
97.60	1.13	1299	15	42.250 - 42.750	11	1854	.58	97.32
96.47	1.50	1284	20	41.750 - 42.250	25	1843	1.31	96.75
94.97	1.73	1264	23	41.250 - 41.750	31	1818	1.63	95.43
93.24	2.25	1241	30	40.750 - 41.250	42	1787	2.20	93.81
90.98	3.83	1211	51	40.250 - 40.750	69	1745	3.62	91.60
87.15	5.26	1160	70	39.750 - 40.250	84	1676	4.41	87.98
81.89	5.63	1090	75	39.250 - 39.750	108	1592	5.67	83.57
76.26	6.54	1015	87	38.750 - 39.250	136	1484	7.14	77.90
69.72	6.24	928	83	38.250 - 38.750	133	1348	6.98	70.76
63.49	9.69	845	129	37.750 - 38.250	184	1215	9.66	63.78
53.79	8.04	716	107	37.250 - 37.750	143	1031	7.51	54.12
45.76	9.02	609	120	36.750 - 37.250	168	888	8.82	46.61
36.74	7.44	489	99	36.250 - 36.750	179	720	9.40	37.80
29.30	6.16	390	82	35.750 - 36.250	143	541	7.51	28.40
23.14	6.31	308	84	35.250 - 35.750	100	398	5.25	20.89
16.83	5.41	224	72	34.750 - 35.250	110	298	5.77	15.64
11.42	3.83	152	51	34.250 - 34.750	89	188	4.67	9.87
7.59	2.33	101	31	33.750 - 34.250	35	99	1.84	5.20
5.26	2.03	70	27	33.250 - 33.750	24	64	1.26	3.36
3.23	.98	43	13	32.750 - 33.250	15	40	.79	2.10
2.25	1.35	30	18	32.250 - 32.750	16	25	.84	1.31
.90	.30	12	4	31.750 - 32.250	7	9	.37	.47
.60	.30	8	4	31.250 - 31.750	1	2	.05	.10
.30	.23	4	3	30.750 - 31.250	1	1	.05	.05
.08	.08	1	1	30.250 - 30.750	0	0	0.00	0.00

24. INTERSCYE CURVATURE

ARMY WOMEN CFRQ%	FRQ%	CFRQ	FRQ	INTERVALS IN INCHES	AIR FORCE WOMEN FRQ	CFRQ	FRQ%	CFRQ%
				17.375 - 17.625	1	1905	.05	100.00
				17.125 - 17.375	1	1904	.05	99.95
				16.875 - 17.125	0	1903	0.00	99.90
				16.625 - 16.875	3	1903	.16	99.90
				16.375 - 16.625	8	1900	.42	99.74
				16.125 - 16.375	12	1892	.63	99.32
				15.875 - 16.125	10	1880	.52	98.69
				15.625 - 15.875	36	1870	1.89	98.16
				15.375 - 15.625	25	1834	1.31	96.27
				15.125 - 15.375	80	1809	4.20	94.96
				14.875 - 15.125	86	1729	4.51	90.76
				14.625 - 14.875	95	1643	4.99	86.25
				14.375 - 14.625	146	1548	7.66	81.26
				14.125 - 14.375	203	1402	10.66	73.60
				13.875 - 14.125	141	1199	7.40	62.94
				13.625 - 13.875	181	1058	9.50	55.54
				13.375 - 13.625	283	877	14.86	46.04
				13.125 - 13.375	139	594	7.30	31.18
				12.875 - 13.125	135	455	7.09	23.88
				12.625 - 12.875	100	320	5.25	16.80
				12.375 - 12.625	105	220	5.51	11.55
				12.125 - 12.375	56	115	2.94	6.04
				11.875 - 12.125	27	59	1.42	3.10
				11.625 - 11.875	14	32	.73	1.68
				11.375 - 11.625	13	18	.68	.94
				11.125 - 11.375	2	5	.10	.26
				10.875 - 11.125	2	3	.10	.16
				10.625 - 10.875	1	1	.05	.05

25. KNEE CIRCUMFERENCE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	17.750 - 18.000	3	1905	.16	100.00
99.92	0.00	1330	0	17.500 - 17.750	2	1902	.10	99.84
99.92	0.00	1330	0	17.250 - 17.500	3	1900	.16	99.74
99.92	0.00	1330	0	17.000 - 17.250	3	1897	.16	99.58
99.92	.15	1330	2	16.750 - 17.000	3	1894	.16	99.42
99.77	.30	1328	4	16.500 - 16.750	16	1891	.84	99.27
99.47	.30	1324	4	16.250 - 16.500	16	1875	.84	98.43
99.17	.45	1320	6	16.000 - 16.250	24	1859	1.26	97.59
98.72	.60	1314	8	15.750 - 16.000	33	1835	1.73	96.33
98.12	1.05	1306	14	15.500 - 15.750	75	1802	3.94	94.59
97.07	1.88	1292	25	15.250 - 15.500	77	1727	4.04	90.66
95.19	2.48	1267	33	15.000 - 15.250	127	1650	6.67	86.61
92.71	4.66	1234	62	14.750 - 15.000	173	1523	9.08	79.95
88.05	5.79	1172	77	14.500 - 14.750	192	1350	10.08	70.87
82.27	8.79	1095	117	14.250 - 14.500	202	1158	10.60	60.79
73.48	8.72	978	116	14.000 - 14.250	185	956	9.71	50.18
64.76	11.72	862	156	13.750 - 14.000	249	771	13.07	40.47
53.04	11.80	706	157	13.500 - 13.750	164	522	8.61	27.40
41.25	9.69	549	129	13.250 - 13.500	139	358	7.30	18.79
31.56	9.02	420	120	13.000 - 13.250	91	219	4.78	11.50
22.54	8.72	300	116	12.750 - 13.000	78	128	4.09	6.72
13.82	6.24	184	83	12.500 - 12.750	31	50	1.63	2.62
7.59	3.23	101	43	12.250 - 12.500	13	19	.68	1.00
4.36	2.70	58	36	12.000 - 12.250	6	6	.31	.31
1.65	1.13	22	15	11.750 - 12.000	0	0	0.00	0.00
.53	.38	7	5	11.500 - 11.750	0	0	0.00	0.00
.15	.15	2	2	11.250 - 11.500	0	0	0.00	0.00

26. KNEE (TIBIALE) HEIGHT

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.39	255	1	20.250 - 20.500	0	1905	0.00	100.00
99.61	.39	254	1	20.000 - 20.250	0	1905	0.00	100.00
99.22	.39	253	1	19.750 - 20.000	0	1905	0.00	100.00
98.82	.39	252	1	19.500 - 19.750	2	1905	.10	100.00
98.43	1.57	251	4	19.250 - 19.500	5	1903	.26	99.90
96.86	.39	247	1	19.000 - 19.250	8	1898	.42	99.63
96.47	3.53	246	9	18.750 - 19.000	8	1890	.42	99.21
92.94	5.88	237	15	18.500 - 18.750	32	1882	1.68	98.79
87.06	4.71	222	12	18.250 - 18.500	26	1850	1.36	97.11
82.35	7.84	210	20	18.000 - 18.250	34	1824	1.78	95.75
74.51	7.06	190	18	17.750 - 18.000	73	1790	3.83	93.96
67.45	9.02	172	23	17.500 - 17.750	97	1717	5.09	90.13
58.43	12.94	149	33	17.250 - 17.500	120	1620	6.30	85.04
45.49	8.63	116	22	17.000 - 17.250	169	1500	8.87	78.74
36.86	8.24	94	21	16.750 - 17.000	171	1331	8.98	69.87
28.63	7.06	73	18	16.500 - 16.750	207	1160	10.87	60.89
21.57	9.41	55	24	16.250 - 16.500	205	953	10.76	50.03
12.16	4.31	31	11	16.000 - 16.250	192	748	10.08	39.27
7.84	3.53	20	9	15.750 - 16.000	161	556	8.45	29.19
4.31	1.96	11	5	15.500 - 15.750	135	395	7.09	20.73
2.35	.78	6	2	15.250 - 15.500	100	260	5.25	13.65
1.57	1.18	4	3	15.000 - 15.250	75	160	3.94	8.40
.39	0.00	1	0	14.750 - 15.000	47	85	2.47	4.46
.39	.39	1	1	14.500 - 14.750	17	38	.89	1.99
0.00	0.00	0	0	14.250 - 14.500	14	21	.73	1.10
0.00	0.00	0	0	14.000 - 14.250	4	7	.21	.37
0.00	0.00	0	0	13.750 - 14.000	2	3	.10	.16
0.00	0.00	0	0	13.500 - 13.750	0	1	0.00	.05
0.00	0.00	0	0	13.250 - 13.500	1	1	.05	.05

27. MIDSCYE, BACK

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	18.750 - 19.000				
99.92	0.00	1330	0	18.500 - 18.750				
99.92	0.00	1330	0	18.250 - 18.500				
99.92	0.00	1330	0	18.000 - 18.250				
99.92	.15	1330	2	17.750 - 18.000				
99.77	.30	1328	4	17.500 - 17.750				
99.47	.15	1324	2	17.250 - 17.500				
99.32	.83	1322	11	17.000 - 17.250				
98.50	.38	1311	5	16.750 - 17.000				
98.12	1.88	1306	25	16.500 - 16.750				
96.24	3.83	1281	51	16.250 - 16.500				
92.41	3.91	1230	52	16.000 - 16.250				
88.50	5.63	1178	75	15.750 - 16.000				
82.87	8.64	1103	115	15.500 - 15.750				
74.23	8.79	988	117	15.250 - 15.500				
65.44	11.50	871	153	15.000 - 15.250				
53.94	11.04	718	147	14.750 - 15.000				
42.90	8.79	571	117	14.500 - 14.750				
34.11	11.42	454	152	14.250 - 14.500				
22.69	6.99	302	93	14.000 - 14.250				
15.70	5.26	209	70	13.750 - 14.000				
10.44	4.36	139	58	13.500 - 13.750				
6.09	2.40	81	32	13.250 - 13.500				
3.68	1.35	49	18	13.000 - 13.250				
2.33	1.58	31	21	12.750 - 13.000				
.75	.23	10	3	12.500 - 12.750				
.53	.30	7	4	12.250 - 12.500				
.23	.23	3	3	12.000 - 12.250				

28. MIDSCYE, FRONT

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	15.875 - 16.000				
99.92	0.00	1330	0	15.750 - 15.875				
99.92	0.00	1330	0	15.625 - 15.750				
99.92	0.00	1330	0	15.500 - 15.625				
99.92	0.00	1330	0	15.375 - 15.500				
99.92	.15	1330	2	15.250 - 15.375				
99.77	.08	1328	1	15.125 - 15.250				
99.70	0.00	1327	0	15.000 - 15.125				
99.70	.23	1327	3	14.875 - 15.000				
99.47	.60	1324	8	14.750 - 14.875				
98.87	.75	1316	10	14.625 - 14.750				
98.12	.60	1306	8	14.500 - 14.625				
97.52	.75	1298	10	14.375 - 14.500				
96.77	1.73	1288	23	14.250 - 14.375				
95.04	1.58	1265	21	14.125 - 14.250				
93.46	2.25	1244	30	14.000 - 14.125				
91.21	3.01	1214	40	13.875 - 14.000				
88.20	4.06	1174	54	13.750 - 13.875				
84.15	3.46	1120	46	13.625 - 13.750				
80.69	6.46	1074	86	13.500 - 13.625				
74.23	6.46	988	86	13.375 - 13.500				
67.77	4.06	902	54	13.250 - 13.375				
63.71	7.51	848	100	13.125 - 13.250				
56.20	7.74	748	103	13.000 - 13.125				
48.46	7.29	645	97	12.875 - 13.000				
41.17	9.02	548	120	12.750 - 12.875				
32.16	5.94	428	79	12.625 - 12.750				
26.22	6.09	349	81	12.500 - 12.625				
20.14	4.36	268	58	12.375 - 12.500				
15.78	3.23	210	43	12.250 - 12.375				
12.55	4.66	167	62	12.125 - 12.250				
7.89	2.40	105	32	12.000 - 12.125				
5.48	1.73	73	23	11.875 - 12.000				
3.76	1.13	50	15	11.750 - 11.875				
2.63	1.43	35	19	11.625 - 11.750				
1.20	.53	16	7	11.500 - 11.625				
.68	.30	9	4	11.375 - 11.500				
.38	.15	5	2	11.250 - 11.375				
.23	.23	3	3	11.125 - 11.250				

29. NECK TO BUSTPOINT

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	13.000 - 13.125	0	1905	0.00	100.00
99.92	0.00	1330	0	12.875 - 13.000	0	1905	0.00	100.00
99.92	0.00	1330	0	12.750 - 12.875	0	1905	0.00	100.00
99.92	.15	1330	2	12.625 - 12.750	0	1905	0.00	100.00
99.77	.08	1328	1	12.500 - 12.625	3	1905	.16	100.00
99.70	.08	1327	1	12.375 - 12.500	2	1902	.10	99.84
99.62	0.00	1326	0	12.250 - 12.375	1	1900	.05	99.74
99.62	.53	1326	7	12.125 - 12.250	4	1899	.21	99.69
99.10	.15	1319	2	12.000 - 12.125	10	1895	.52	99.48
98.95	.45	1317	6	11.875 - 12.000	2	1885	.10	98.95
98.50	.68	1311	9	11.750 - 11.875	14	1883	.73	98.85
97.82	.08	1302	1	11.625 - 11.750	7	1869	.37	98.11
97.75	.68	1301	9	11.500 - 11.625	20	1862	1.05	97.74
97.07	1.65	1292	22	11.375 - 11.500	29	1842	1.52	96.69
95.42	1.43	1270	19	11.250 - 11.375	16	1813	.84	95.17
93.99	.90	1251	12	11.125 - 11.250	38	1797	1.99	94.33
93.09	3.53	1239	47	11.000 - 11.125	72	1759	3.78	92.34
89.56	2.63	1192	35	10.875 - 11.000	23	1687	1.21	88.56
86.93	3.38	1157	45	10.750 - 10.875	78	1664	4.09	87.35
83.55	6.01	1112	80	10.625 - 10.750	134	1586	7.03	83.25
77.54	3.31	1032	44	10.500 - 10.625	25	1452	1.31	76.22
74.23	4.66	988	62	10.375 - 10.500	121	1427	6.35	74.91
69.57	3.83	926	51	10.250 - 10.375	47	1306	2.47	68.56
65.74	5.56	875	74	10.125 - 10.250	152	1259	7.98	66.09
60.18	6.39	801	85	10.000 - 10.125	170	1107	8.92	58.11
53.79	5.48	716	73	9.875 - 10.000	76	937	3.99	49.19
48.31	7.06	643	94	9.750 - 9.875	168	861	8.82	45.20
41.25	7.74	549	103	9.625 - 9.750	161	693	8.45	36.38
33.51	3.61	446	48	9.500 - 9.625	61	532	3.20	27.93
29.90	4.81	398	64	9.375 - 9.500	128	471	6.72	24.72
25.09	6.69	334	89	9.250 - 9.375	111	343	5.83	18.01
18.41	3.23	245	43	9.125 - 9.250	36	232	1.89	12.18
15.18	3.08	202	41	9.000 - 9.125	67	196	3.52	10.29
12.10	1.50	161	20	8.875 - 9.000	18	129	.94	6.77
10.59	3.08	141	41	8.750 - 8.875	43	111	2.26	5.83
7.51	2.55	100	34	8.625 - 8.750	37	68	1.94	3.57
4.96	2.10	66	28	8.500 - 8.625	3	31	.16	1.63
2.85	.98	38	13	8.375 - 8.500	15	28	.79	1.47
1.88	1.05	25	14	8.250 - 8.375	11	13	.58	.68
.83	.23	11	3	8.125 - 8.250	0	2	0.00	.10
.60	.23	8	3	8.000 - 8.125	1	2	.05	.10
.38	.08	5	1	7.875 - 8.000	0	1	0.00	.05
.30	.15	4	2	7.750 - 7.875	1	1	.05	.05
.15	.08	2	1	7.625 - 7.750	0	0	0.00	0.00
.08	0.00	1	0	7.500 - 7.625	0	0	0.00	0.00
.08	.08	1	1	7.375 - 7.500	0	0	0.00	0.00

30. NECK CIRCUMFERENCE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.03	1331	1	16.375 - 16.500	0	1905	0.00	100.00
99.92	0.00	1330	0	16.250 - 16.375	0	1905	0.00	100.00
99.92	0.00	1330	0	16.125 - 16.250	0	1905	0.00	100.00
99.92	0.00	1330	0	16.000 - 16.125	0	1905	0.00	100.00
99.92	0.00	1330	0	15.875 - 16.000	0	1905	0.00	100.00
99.92	0.00	1330	0	15.750 - 15.875	0	1905	0.00	100.00
99.92	0.00	1330	0	15.625 - 15.750	1	1905	.05	100.00
99.92	0.00	1330	0	15.500 - 15.625	0	1904	0.00	99.95
99.92	0.00	1330	0	15.375 - 15.500	1	1904	.05	99.95
99.92	0.00	1330	0	15.250 - 15.375	7	1903	.37	99.90
99.92	0.00	1330	0	15.125 - 15.250	7	1896	.37	99.53
99.92	0.00	1330	0	15.000 - 15.125	6	1889	.31	99.16
99.92	.15	1330	2	14.875 - 15.000	13	1883	.68	98.85
99.77	.15	1328	2	14.750 - 14.875	12	1870	.63	98.16
99.62	0.00	1326	0	14.625 - 14.750	5	1858	.26	97.53
99.62	.23	1326	3	14.500 - 14.625	29	1853	1.52	97.27
99.40	.08	1323	1	14.375 - 14.500	13	1824	.68	95.75
99.32	.45	1322	6	14.250 - 14.375	49	1811	2.57	95.07
98.87	.60	1316	8	14.125 - 14.250	63	1762	3.31	92.49
98.27	.90	1308	12	14.000 - 14.125	41	1699	2.15	89.19
97.37	1.43	1296	19	13.875 - 14.000	78	1658	4.09	87.03
95.94	1.65	1277	22	13.750 - 13.875	154	1580	8.08	82.94
94.29	2.33	1255	31	13.625 - 13.750	65	1426	3.41	74.86
91.96	3.53	1224	47	13.500 - 13.625	150	1361	7.87	71.44
88.43	3.61	1177	48	13.375 - 13.500	197	1211	10.34	63.57
84.82	4.73	1129	63	13.250 - 13.375	74	1014	3.88	53.23
80.09	5.79	1066	77	13.125 - 13.250	135	940	7.09	49.34
74.31	4.73	989	63	13.000 - 13.125	65	805	3.41	42.26
69.57	7.66	926	102	12.875 - 13.000	198	740	10.39	38.85
61.91	11.72	824	156	12.750 - 12.875	154	542	8.08	28.45
50.19	6.84	668	91	12.625 - 12.750	58	388	3.04	20.37
43.35	8.49	577	113	12.500 - 12.625	118	330	6.19	17.32
34.86	6.91	464	92	12.375 - 12.500	84	212	4.41	11.13
27.95	5.03	372	67	12.250 - 12.375	25	128	1.31	6.72
22.92	7.21	305	96	12.125 - 12.250	52	103	2.73	5.41
15.70	4.66	209	62	12.000 - 12.125	25	51	1.31	2.68
11.04	3.38	147	45	11.875 - 12.000	8	26	.42	1.36
7.66	2.63	102	35	11.750 - 11.875	13	18	.68	.94
5.03	1.88	67	25	11.625 - 11.750	2	5	.10	.26
3.16	1.50	42	20	11.500 - 11.625	2	3	.10	.16
1.65	1.20	22	16	11.375 - 11.500	0	1	0.00	.05
.45	.08	6	1	11.250 - 11.375	0	1	0.00	.05
.38	.15	5	2	11.125 - 11.250	1	1	.05	.05
.23	.15	3	2	11.000 - 11.125	0	0	0.00	0.00
.08	0.00	1	0	10.875 - 11.000	0	0	0.00	0.00
.08	.08	1	1	10.750 - 10.875	0	0	0.00	0.00

31. SHOULDER (BIDELTOID) BREADTH

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.15	1331	2	19.875 - ABOVE	0	1905	0.00	100.00
99.85	.08	1329	1	19.750 - 19.875	0	1905	0.00	100.00
99.77	0.00	1328	0	19.625 - 19.750	2	1905	.10	100.00
99.77	0.00	1328	0	19.500 - 19.625	0	1903	0.00	99.90
99.77	.08	1328	1	19.375 - 19.500	3	1903	.16	99.90
99.70	.15	1327	2	19.250 - 19.375	3	1900	.16	99.74
99.55	.08	1325	1	19.125 - 19.250	1	1897	.05	99.58
99.47	.15	1324	2	19.000 - 19.125	6	1896	.31	99.53
99.32	.08	1322	1	18.875 - 19.000	4	1890	.21	99.21
99.25	.15	1321	2	18.750 - 18.875	6	1886	.31	99.00
99.10	.30	1319	4	18.625 - 18.750	6	1880	.31	98.69
98.80	.15	1315	2	18.500 - 18.625	13	1874	.68	98.37
98.65	.53	1313	7	18.375 - 18.500	8	1861	.42	97.69
98.12	.60	1306	8	18.250 - 18.375	14	1853	.73	97.27
97.52	.90	1298	12	18.125 - 18.250	15	1839	.79	96.54
96.62	1.43	1286	19	18.000 - 18.125	19	1824	1.00	95.75
95.19	1.43	1267	19	17.875 - 18.000	31	1805	1.63	94.75
93.76	1.95	1248	26	17.750 - 17.875	42	1774	2.20	93.12
91.81	2.55	1222	34	17.625 - 17.750	38	1732	1.99	90.92
89.26	3.68	1188	49	17.500 - 17.625	42	1694	2.20	88.92
85.57	3.08	1139	41	17.375 - 17.500	44	1652	2.31	86.72
82.49	2.70	1098	36	17.250 - 17.375	55	1608	2.89	84.41
79.79	6.09	1062	81	17.125 - 17.250	91	1553	4.78	81.52
73.70	3.38	981	45	17.000 - 17.125	69	1462	3.62	76.75
70.32	4.73	936	63	16.875 - 17.000	97	1393	5.09	73.12
65.59	5.71	873	76	16.750 - 16.875	73	1296	3.83	68.03
59.88	5.71	797	76	16.625 - 16.750	96	1223	5.04	64.20
54.17	5.18	721	69	16.500 - 16.625	126	1127	6.61	59.16
48.99	7.44	652	99	16.375 - 16.500	114	1001	5.98	52.55
41.55	5.33	553	71	16.250 - 16.375	104	887	5.46	46.56
36.21	5.26	482	70	16.125 - 16.250	110	783	5.77	41.10
30.95	3.38	412	45	16.000 - 16.125	79	673	4.15	35.33
27.57	4.21	367	56	15.875 - 16.000	127	594	6.67	31.18
23.37	4.36	311	58	15.750 - 15.875	76	467	3.99	24.51
19.01	4.28	253	57	15.625 - 15.750	91	391	4.78	20.52
14.73	3.61	196	48	15.500 - 15.625	71	300	3.73	15.75
11.12	2.93	148	39	15.375 - 15.500	34	229	1.78	12.02
8.19	1.88	109	25	15.250 - 15.375	31	195	1.63	10.24
6.31	1.50	84	20	15.125 - 15.250	40	164	2.10	8.61
4.81	.83	64	11	15.000 - 15.125	33	124	1.73	6.51
3.98	1.95	53	26	14.875 - 15.000	31	91	1.63	4.78
2.03	.83	27	11	14.750 - 14.875	14	60	.73	3.15
1.20	.45	16	6	14.625 - 14.750	11	46	.58	2.41
.75	.45	10	6	14.500 - 14.625	15	35	.79	1.84
.30	.08	4	1	14.375 - 14.500	4	20	.21	1.05
.23	.23	3	3	14.250 - 14.375	8	16	.42	.84
0.00	0.00	0	0	14.125 - 14.250	5	8	.26	.42
0.00	0.00	0	0	14.000 - 14.125	1	3	.05	.16
0.00	0.00	0	0	13.875 - 14.000	1	2	.05	.10
0.00	0.00	0	0	13.750 - 13.875	1	1	.05	.05

32. SHOULDER CIRCUMFERENCE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	54.750 - 55.250	0	1905	0.00	100.00
99.92	0.00	1330	0	54.250 - 54.750	0	1905	0.00	100.00
99.92	0.00	1330	0	53.750 - 54.250	0	1905	0.00	100.00
99.92	0.00	1330	0	53.250 - 53.750	0	1905	0.00	100.00
99.92	0.00	1330	0	52.750 - 53.250	0	1905	0.00	100.00
99.92	0.00	1330	0	52.250 - 52.750	0	1905	0.00	100.00
99.92	0.00	1330	0	51.750 - 52.250	0	1905	0.00	100.00
99.92	0.00	1330	0	51.250 - 51.750	0	1905	0.00	100.00
99.92	0.00	1330	0	50.750 - 51.250	0	1905	0.00	100.00
99.92	0.00	1330	0	50.250 - 50.750	0	1905	0.00	100.00
99.92	0.00	1330	0	49.750 - 50.250	0	1905	0.00	100.00
99.92	0.00	1330	0	49.250 - 49.750	0	1905	0.00	100.00
99.92	0.00	1330	0	48.750 - 49.250	0	1905	0.00	100.00
99.92	.15	1330	2	48.250 - 48.750	0	1905	0.00	100.00
99.77	.08	1328	1	47.750 - 48.250	1	1905	.05	100.00
99.70	.08	1327	1	47.250 - 47.750	0	1904	0.00	99.95
99.62	0.00	1326	0	46.750 - 47.250	3	1904	.16	99.95
99.62	.08	1326	1	46.250 - 46.750	3	1901	.16	99.79
99.55	.30	1325	4	45.750 - 46.250	5	1898	.26	99.63
99.25	.15	1321	2	45.250 - 45.750	8	1893	.42	99.37
99.10	.38	1319	5	44.750 - 45.250	6	1885	.31	98.95
98.72	.23	1314	3	44.250 - 44.750	11	1879	.58	98.64
98.50	.53	1311	7	43.750 - 44.250	9	1868	.47	98.06
97.97	2.33	1304	31	43.250 - 43.750	30	1859	1.57	97.59
95.64	2.40	1273	32	42.750 - 43.250	49	1829	2.57	96.01
93.24	2.70	1241	36	42.250 - 42.750	60	1780	3.15	93.44
90.53	4.88	1205	65	41.750 - 42.250	73	1720	3.83	90.29
85.65	5.71	1140	76	41.250 - 41.750	104	1647	5.46	86.46
79.94	6.84	1064	91	40.750 - 41.250	110	1543	5.77	81.00
73.10	8.19	973	109	40.250 - 40.750	160	1433	8.40	75.22
64.91	8.04	864	107	39.750 - 40.250	186	1273	9.76	66.82
56.87	11.27	757	150	39.250 - 39.750	179	1087	9.40	57.06
45.60	7.74	607	103	38.750 - 39.250	204	908	10.71	47.66
37.87	8.72	504	116	38.250 - 38.750	173	704	9.08	36.96
29.15	8.49	388	113	37.750 - 38.250	159	531	8.35	27.87
20.66	6.31	275	84	37.250 - 37.750	133	372	6.98	19.53
14.35	6.24	191	83	36.750 - 37.250	108	239	5.67	12.55
8.11	3.16	108	42	36.250 - 36.750	70	131	3.67	6.88
4.96	2.03	66	27	35.750 - 36.250	36	61	1.89	3.20
2.93	1.80	39	24	35.250 - 35.750	13	25	.68	1.31
1.13	.60	15	8	34.750 - 35.250	10	12	.52	.63
.53	.45	7	6	34.250 - 34.750	1	2	.05	.10
.08	.08	1	1	33.750 - 34.250	1	1	.05	.05

33. SHOULDER LENGTH

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	0.00	1331	0	7.375 - 7.500	1	1905	.05	100.00
100.00	.08	1331	1	7.250 - 7.375	0	1904	0.00	99.95
99.92	.38	1330	5	7.125 - 7.250	1	1904	.05	99.95
99.55	.53	1325	7	7.000 - 7.125	3	1903	.16	99.90
99.02	.68	1318	9	6.875 - 7.000	4	1900	.21	99.74
98.35	1.05	1309	14	6.750 - 6.875	8	1896	.42	99.53
97.30	1.80	1295	24	6.625 - 6.750	19	1888	1.00	99.11
95.49	2.93	1271	39	6.500 - 6.625	30	1869	1.57	98.11
92.56	5.48	1232	73	6.375 - 6.500	68	1839	3.57	96.54
87.08	6.91	1159	92	6.250 - 6.375	98	1771	5.14	92.97
80.17	8.72	1067	116	6.125 - 6.250	123	1673	6.46	87.82
71.45	10.82	951	144	6.000 - 6.125	167	1550	8.77	81.36
60.63	12.10	807	161	5.875 - 6.000	238	1383	12.49	72.60
48.53	11.04	646	147	5.750 - 5.875	164	1145	8.61	60.10
37.49	13.75	499	183	5.625 - 5.750	277	981	14.54	51.50
23.74	8.49	316	113	5.500 - 5.625	275	704	14.44	36.96
15.25	6.16	203	82	5.375 - 5.500	127	429	6.67	22.52
9.09	3.46	121	46	5.250 - 5.375	131	302	6.88	15.85
5.63	2.48	75	33	5.125 - 5.250	59	171	3.10	8.98
3.16	1.58	42	21	5.000 - 5.125	60	112	3.15	5.88
1.58	.75	21	10	4.875 - 5.000	37	52	1.94	2.73
.83	.53	11	7	4.750 - 4.875	9	15	.47	.79
.30	.30	4	4	4.625 - 4.750	5	6	.26	.31
0.00	0.00	0	0	4.500 - 4.625	1	1	.05	.05

34. SLEEVE INSEAM

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	21.250 - 21.500	0	1905	0.00	100.00
99.92	.08	1330	1	21.000 - 21.250	1	1905	.05	100.00
99.85	.15	1329	2	20.750 - 21.000	1	1904	.05	99.95
99.70	.38	1327	5	20.500 - 20.750	2	1903	.10	99.90
99.32	.60	1322	8	20.250 - 20.500	1	1901	.05	99.79
98.72	.53	1314	7	20.000 - 20.250	3	1900	.16	99.74
98.20	1.35	1307	18	19.750 - 20.000	8	1897	.42	99.58
96.84	1.35	1289	18	19.500 - 19.750	8	1889	.42	99.16
95.49	3.76	1271	50	19.250 - 19.500	34	1881	1.78	98.74
91.74	3.53	1221	47	19.000 - 19.250	34	1847	1.78	96.96
88.20	4.51	1174	60	18.750 - 19.000	54	1813	2.83	95.17
83.70	7.21	1114	96	18.500 - 18.750	97	1759	5.09	92.34
76.48	7.14	1018	95	18.250 - 18.500	99	1662	5.20	87.24
69.35	7.21	923	96	18.000 - 18.250	107	1563	5.62	82.05
62.13	9.84	827	131	17.750 - 18.000	191	1456	10.03	76.43
52.29	9.92	696	132	17.500 - 17.750	198	1265	10.39	66.40
42.37	8.34	564	111	17.250 - 17.500	202	1067	10.60	56.01
34.03	10.22	453	136	17.000 - 17.250	202	865	10.60	45.41
23.82	6.54	317	87	16.750 - 17.000	141	663	7.40	34.80
17.28	5.94	230	79	16.500 - 16.750	187	522	9.82	27.40
11.34	5.33	151	71	16.250 - 16.500	97	335	5.09	17.59
6.01	2.40	80	32	16.000 - 16.250	105	238	5.51	12.49
3.61	1.95	48	26	15.750 - 16.000	56	133	2.94	6.98
1.65	.90	22	12	15.500 - 15.750	40	77	2.10	4.04
.75	.23	10	3	15.250 - 15.500	18	37	.94	1.94
.53	.15	7	2	15.000 - 15.250	10	19	.52	1.00
.38	.30	5	4	14.750 - 15.000	5	9	.26	.47
.08	0.00	1	0	14.500 - 14.750	4	4	.21	.21
.08	.08	1	1	14.250 - 14.500	0	0	0.00	0.00

35. SPINE TO ELBOW LENGTH

ARMY WOMEN CFRQ%	FRQ%	CFRQ	FRQ	INTERVALS IN INCHES	AIR FORCE WOMEN FRQ	CFRQ	FRQ%	CFRQ%
				24.500 - 24.750	2	1905	.10	100.00
				24.250 - 24.500	3	1903	.16	99.90
				24.000 - 24.250	0	1900	0.00	99.74
				23.750 - 24.000	3	1900	.16	99.74
				23.500 - 23.750	6	1897	.31	99.58
				23.250 - 23.500	10	1891	.52	99.27
				23.000 - 23.250	14	1881	.73	98.74
				22.750 - 23.000	29	1867	1.52	98.01
				22.500 - 22.750	37	1838	1.94	96.48
				22.250 - 22.500	64	1801	3.36	94.54
				22.000 - 22.250	106	1737	5.56	91.18
				21.750 - 22.000	114	1631	5.98	85.62
				21.500 - 21.750	139	1517	7.30	79.63
				21.250 - 21.500	230	1378	12.07	72.34
				21.000 - 21.250	190	1148	9.97	60.26
				20.750 - 21.000	179	958	9.40	50.29
				20.500 - 20.750	188	779	9.87	40.89
				20.250 - 20.500	184	591	9.66	31.02
				20.000 - 20.250	137	407	7.19	21.36
				19.750 - 20.000	94	270	4.93	14.17
				19.500 - 19.750	67	176	3.52	9.24
				19.250 - 19.500	61	109	3.20	5.72
				19.000 - 19.250	22	48	1.15	2.52
				18.750 - 19.000	12	26	.63	1.36
				18.500 - 18.750	10	14	.52	.73
				18.250 - 18.500	2	4	.10	.21
				18.000 - 18.250	1	2	.05	.10
				17.750 - 18.000	1	1	.05	.05

36. SPINE TO SCYE LENGTH

ARMY WOMEN CFRQ%	FRQ%	CFRQ	FRQ	INTERVALS IN INCHES	AIR FORCE WOMEN FRQ	CFRQ	FRQ%	CFRQ%
				10.000 - 10.125	1	1905	.05	100.00
				9.875 - 10.000	0	1904	0.00	99.95
				9.750 - 9.875	6	1904	.31	99.95
				9.625 - 9.750	3	1898	.16	99.63
				9.500 - 9.625	3	1895	.16	99.48
				9.375 - 9.500	4	1892	.21	99.32
				9.250 - 9.375	19	1888	1.00	99.11
				9.125 - 9.250	7	1869	.37	98.11
				9.000 - 9.125	28	1862	1.47	97.74
				8.875 - 9.000	27	1834	1.42	96.27
				8.750 - 8.875	54	1807	2.83	94.86
				8.625 - 8.750	86	1753	4.51	92.02
				8.500 - 8.625	95	1667	4.99	87.51
				8.375 - 8.500	141	1572	7.40	82.52
				8.250 - 8.375	185	1431	9.71	75.12
				8.125 - 8.250	92	1246	4.83	65.41
				8.000 - 8.125	198	1154	10.39	60.58
				7.875 - 8.000	92	956	4.83	50.18
				7.750 - 7.875	277	864	14.54	45.35
				7.625 - 7.750	187	587	9.82	30.81
				7.500 - 7.625	59	400	3.10	21.00
				7.375 - 7.500	142	341	7.45	17.90
				7.250 - 7.375	87	199	4.57	10.45
				7.125 - 7.250	37	112	1.94	5.88
				7.000 - 7.125	35	75	1.84	3.94
				6.875 - 7.000	15	40	.79	2.10
				6.750 - 6.875	3	25	.16	1.31
				6.625 - 6.750	12	22	.63	1.15
				6.500 - 6.625	3	10	.16	.52
				6.375 - 6.500	3	7	.16	.37
				6.250 - 6.375	2	4	.10	.21
				6.125 - 6.250	0	2	0.00	.10
				6.000 - 6.125	2	2	.10	.10

37. SPINE TO WRIST LENGTH

ARMY WOMEN CFRQ%	ARMY WOMEN FRQ%	ARMY WOMEN CFRQ	ARMY WOMEN FRQ	INTERVALS IN INCHES	AIR FORCE WOMEN FRQ	AIR FORCE WOMEN CFRQ	AIR FORCE WOMEN FRQ%	AIR FORCE WOMEN CFRQ%
				35.875 - 36.125	1	1905	.05	100.00
				35.625 - 35.875	2	1904	.10	99.95
				35.375 - 35.625	4	1902	.21	99.84
				35.125 - 35.375	3	1898	.16	99.63
				34.875 - 35.125	5	1895	.26	99.48
				34.625 - 34.875	6	1890	.31	99.21
				34.375 - 34.625	8	1884	.42	98.90
				34.125 - 34.375	9	1876	.47	98.48
				33.875 - 34.125	17	1867	.89	98.01
				33.625 - 33.875	31	1850	1.63	97.11
				33.375 - 33.625	36	1819	1.89	95.49
				33.125 - 33.375	34	1783	1.78	93.60
				32.875 - 33.125	58	1749	3.04	91.81
				32.625 - 32.875	85	1691	4.46	88.77
				32.375 - 32.625	82	1606	4.30	84.30
				32.125 - 32.375	122	1524	6.40	80.00
				31.875 - 32.125	137	1402	7.19	73.60
				31.625 - 31.875	115	1265	6.04	66.40
				31.375 - 31.625	160	1150	8.40	60.37
				31.125 - 31.375	132	990	6.93	51.97
				30.875 - 31.125	164	858	8.61	45.04
				30.625 - 30.875	142	694	7.45	36.43
				30.375 - 30.625	93	552	4.88	28.98
				30.125 - 30.375	113	459	5.93	24.09
				29.875 - 30.125	108	346	5.67	18.16
				29.625 - 29.875	46	238	2.41	12.49
				29.375 - 29.625	63	192	3.31	10.08
				29.125 - 29.375	59	129	3.10	6.77
				28.875 - 29.125	22	70	1.15	3.67
				28.625 - 28.875	22	48	1.15	2.52
				28.375 - 28.625	16	26	.84	1.36
				28.125 - 28.375	5	10	.26	.52
				27.875 - 28.125	0	5	0.00	.26
				27.625 - 27.875	2	5	.10	.26
				27.375 - 27.625	1	3	.05	.16
				27.125 - 27.375	1	2	.05	.10
				26.875 - 27.125	0	1	0.00	.05
				26.625 - 26.875	1	1	.05	.05

38. STATURE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	72.250 - 72.750	0	1905	0.00	100.00
99.92	.08	1330	1	71.750 - 72.250	1	1905	.05	100.00
99.85	.15	1329	2	71.250 - 71.750	0	1904	0.00	99.95
99.70	.30	1327	4	70.750 - 71.250	2	1904	.10	99.95
99.40	.30	1323	4	70.250 - 70.750	7	1902	.37	99.84
99.10	.75	1319	10	69.750 - 70.250	5	1895	.26	99.48
98.35	.98	1309	13	69.250 - 69.750	13	1890	.68	99.21
97.37	1.58	1296	21	68.750 - 69.250	8	1877	.42	98.53
95.79	2.25	1275	30	68.250 - 68.750	26	1869	1.36	98.11
93.54	2.18	1245	29	67.750 - 68.250	33	1843	1.73	96.75
91.36	3.16	1216	42	67.250 - 67.750	51	1810	2.68	95.01
88.20	3.76	1174	50	66.750 - 67.250	65	1759	3.41	92.34
84.45	5.48	1124	73	66.250 - 66.750	87	1694	4.57	88.92
78.96	4.51	1051	60	65.750 - 66.250	109	1607	5.72	84.36
74.46	7.36	991	98	65.250 - 65.750	126	1498	6.61	78.64
67.09	7.44	893	99	64.750 - 65.250	123	1372	6.46	72.02
59.65	7.89	794	105	64.250 - 64.750	143	1249	7.51	65.56
51.77	7.14	689	95	63.750 - 64.250	158	1106	8.29	58.06
44.63	6.99	594	93	63.250 - 63.750	148	948	7.77	49.76
37.64	7.36	501	98	62.750 - 63.250	156	800	8.19	41.99
30.28	6.99	403	93	62.250 - 62.750	124	644	6.51	33.81
23.29	5.94	310	79	61.750 - 62.250	130	520	6.82	27.30
17.36	5.56	231	74	61.250 - 61.750	113	390	5.93	20.47
11.80	2.48	157	33	60.750 - 61.250	100	277	5.25	14.54
9.32	3.61	124	48	60.250 - 60.750	55	177	2.89	9.29
5.71	1.95	76	26	59.750 - 60.250	52	122	2.73	6.40
3.76	1.28	50	17	59.250 - 59.750	42	70	2.20	3.67
2.48	1.13	33	15	58.750 - 59.250	11	28	.58	1.47
1.35	.45	18	6	58.250 - 58.750	8	17	.42	.89
.90	.38	12	5	57.750 - 58.250	7	9	.37	.47
.53	.30	7	4	57.250 - 57.750	1	2	.05	.10
.23	.15	3	2	56.750 - 57.250	1	1	.05	.05
.08	0.00	1	0	56.250 - 56.750	0	0	0.00	0.00
.08	.08	1	1	55.750 - 56.250	0	0	0.00	0.00

39. STRAP LENGTH

ARMY WOMEN CFRQ%	FRQ%	CFRQ	FRQ	INTERVALS IN INCHES	AIR FORCE WOMEN FRQ	CFRQ	FRQ%	CFRQ%
				31.250 - 31.500	1	1905	.05	100.00
				31.000 - 31.250	0	1904	0.00	99.95
				30.750 - 31.000	1	1904	.05	99.95
				30.500 - 30.750	6	1903	.31	99.90
				30.250 - 30.500	1	1897	.05	99.58
				30.000 - 30.250	2	1896	.10	99.53
				29.750 - 30.000	5	1894	.26	99.42
				29.500 - 29.750	7	1889	.37	99.16
				29.250 - 29.500	9	1882	.47	98.79
				29.000 - 29.250	15	1873	.79	98.32
				28.750 - 29.000	19	1858	1.00	97.53
				28.500 - 28.750	18	1839	.94	96.54
				28.250 - 28.500	26	1821	1.36	95.59
				28.000 - 28.250	34	1795	1.78	94.23
				27.750 - 28.000	49	1761	2.57	92.44
				27.500 - 27.750	31	1712	1.63	89.87
				27.250 - 27.500	48	1681	2.52	88.24
				27.000 - 27.250	74	1633	3.88	85.72
				26.750 - 27.000	103	1559	5.41	81.84
				26.500 - 26.750	91	1456	4.78	76.43
				26.250 - 26.500	116	1365	6.09	71.65
				26.000 - 26.250	83	1249	4.36	65.56
				25.750 - 26.000	148	1166	7.77	61.21
				25.500 - 25.750	109	1018	5.72	53.44
				25.250 - 25.500	116	909	6.09	47.72
				25.000 - 25.250	163	793	8.56	41.63
				24.750 - 25.000	99	630	5.20	33.07
				24.500 - 24.750	74	531	3.88	27.87
				24.250 - 24.500	113	457	5.93	23.99
				24.000 - 24.250	115	344	6.04	18.06
				23.750 - 24.000	51	229	2.68	12.02
				23.500 - 23.750	56	178	2.94	9.34
				23.250 - 23.500	33	122	1.73	6.40
				23.000 - 23.250	38	89	1.99	4.67
				22.750 - 23.000	17	51	.89	2.68
				22.500 - 22.750	7	34	.37	1.78
				22.250 - 22.500	11	27	.58	1.42
				22.000 - 22.250	6	16	.31	.84
				21.750 - 22.000	2	10	.10	.52
				21.500 - 21.750	5	8	.26	.42
				21.250 - 21.500	2	3	.10	.16
				21.000 - 21.250	0	1	0.00	.05
				20.750 - 21.000	0	1	0.00	.05
				20.500 - 20.750	1	1	.05	.05

40. UPPER THIGH CIRCUMFERENCE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	29.000 - ABOVE	0	1905	0.00	100.00
99.92	.15	1330	2	28.750 - 29.000	0	1905	0.00	100.00
99.77	0.00	1328	0	28.500 - 28.750	0	1905	0.00	100.00
99.77	.08	1328	1	28.250 - 28.500	1	1905	.05	100.00
99.70	.08	1327	1	28.000 - 28.250	2	1904	.10	99.95
99.62	.08	1326	1	27.750 - 28.000	0	1902	0.00	99.84
99.55	.08	1325	1	27.500 - 27.750	3	1902	.16	99.84
99.47	.23	1324	3	27.250 - 27.500	1	1899	.05	99.69
99.25	.38	1321	5	27.000 - 27.250	4	1898	.21	99.63
98.87	.38	1316	5	26.750 - 27.000	3	1894	.16	99.42
98.50	.23	1311	3	26.500 - 26.750	2	1891	.10	99.27
98.27	.83	1308	11	26.250 - 26.500	2	1889	.10	99.16
97.45	.53	1297	7	26.000 - 26.250	7	1887	.37	99.06
96.92	.53	1290	7	25.750 - 26.000	5	1880	.26	98.69
96.39	.83	1283	11	25.500 - 25.750	9	1875	.47	98.43
95.57	.90	1272	12	25.250 - 25.500	12	1866	.63	97.95
94.67	.98	1260	13	25.000 - 25.250	15	1854	.79	97.32
93.69	2.18	1247	29	24.750 - 25.000	26	1839	1.36	96.54
91.51	1.88	1218	25	24.500 - 24.750	12	1813	.63	95.17
89.63	3.46	1193	46	24.250 - 24.500	35	1801	1.84	94.54
86.18	3.16	1147	42	24.000 - 24.250	45	1766	2.36	92.70
83.02	4.81	1105	64	23.750 - 24.000	37	1721	1.94	90.34
78.21	4.51	1041	60	23.500 - 23.750	64	1684	3.36	88.40
73.70	4.81	981	64	23.250 - 23.500	66	1620	3.46	85.04
68.90	4.88	917	65	23.000 - 23.250	90	1554	4.72	81.57
64.01	6.61	852	88	22.750 - 23.000	96	1464	5.04	76.85
57.40	5.86	764	78	22.500 - 22.750	77	1368	4.04	71.81
51.54	5.71	686	76	22.250 - 22.500	107	1291	5.62	67.77
45.83	5.33	610	71	22.000 - 22.250	136	1184	7.14	62.15
40.50	5.71	539	76	21.750 - 22.000	108	1048	5.67	55.01
34.79	4.66	463	62	21.500 - 21.750	108	940	5.67	49.34
30.13	5.26	401	70	21.250 - 21.500	149	832	7.82	43.67
24.87	3.38	331	45	21.000 - 21.250	101	683	5.30	35.85
21.49	3.23	286	43	20.750 - 21.000	93	582	4.88	30.55
18.26	3.08	243	41	20.500 - 20.750	91	489	4.78	25.67
15.18	3.23	202	43	20.250 - 20.500	82	398	4.30	20.89
11.95	2.48	159	33	20.000 - 20.250	68	316	3.57	16.59
9.47	2.93	126	39	19.750 - 20.000	62	248	3.25	13.02
6.54	1.20	87	16	19.500 - 19.750	35	186	1.84	9.76
5.33	1.80	71	24	19.250 - 19.500	57	151	2.99	7.93
3.53	.90	47	12	19.000 - 19.250	26	94	1.36	4.93
2.63	.60	35	8	18.750 - 19.000	23	68	1.21	3.57
2.03	.68	27	9	18.500 - 18.750	14	45	.73	2.36
1.35	.53	18	7	18.250 - 18.500	10	31	.52	1.63
.83	.23	11	3	18.000 - 18.250	12	21	.63	1.10
.60	.38	8	5	17.750 - 18.000	4	9	.21	.47
.23	.15	3	2	17.500 - 17.750	1	5	.05	.26
.08	0.00	1	0	17.250 - 17.500	3	4	.16	.21
.08	0.00	1	0	17.000 - 17.250	1	1	.05	.05
.08	.08	1	1	16.750 - 17.000	0	0	0.00	0.00

41. VERTICAL TRUNK CIRCUMFERENCE, SITTING

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	0.00	255	0	67.000 - 67.500	3	1905	.16	100.00
100.00	0.00	255	0	66.500 - 67.000	4	1902	.21	99.84
100.00	0.00	255	0	66.000 - 66.500	7	1898	.37	99.63
100.00	0.00	255	0	65.500 - 66.000	5	1891	.26	99.27
100.00	1.18	255	3	65.000 - 65.500	8	1886	.42	99.00
98.82	0.00	252	0	64.500 - 65.000	17	1878	.89	98.58
98.82	0.00	252	0	64.000 - 64.500	19	1861	1.00	97.69
98.82	.78	252	2	63.500 - 64.000	20	1842	1.05	96.69
98.04	.78	250	2	63.000 - 63.500	39	1822	2.05	95.64
97.25	2.35	248	6	62.500 - 63.000	59	1783	3.10	93.60
94.90	1.96	242	5	62.000 - 62.500	82	1724	4.30	90.50
92.94	3.14	237	8	61.500 - 62.000	61	1642	3.20	86.19
89.80	3.53	229	9	61.000 - 61.500	110	1581	5.77	82.99
86.27	3.92	220	10	60.500 - 61.000	107	1471	5.62	77.22
82.35	4.31	210	11	60.000 - 60.500	152	1364	7.98	71.60
78.04	4.31	199	11	59.500 - 60.000	112	1212	5.88	63.62
73.73	4.71	188	12	59.000 - 59.500	186	1100	9.76	57.74
69.02	7.45	176	19	58.500 - 59.000	131	914	6.88	47.98
61.57	5.49	157	14	58.000 - 58.500	137	783	7.19	41.10
56.08	7.45	143	19	57.500 - 58.000	91	646	4.78	33.91
48.63	6.27	124	16	57.000 - 57.500	125	555	6.56	29.13
42.35	5.88	108	15	56.500 - 57.000	97	430	5.09	22.57
36.47	7.45	93	19	56.000 - 56.500	107	333	5.62	17.48
29.02	4.31	74	11	55.500 - 56.000	74	226	3.88	11.86
24.71	5.88	63	15	55.000 - 55.500	48	152	2.52	7.98
18.82	5.49	48	14	54.500 - 55.000	45	104	2.36	5.46
13.33	4.31	34	11	54.000 - 54.500	29	59	1.52	3.10
9.02	1.18	23	3	53.500 - 54.000	16	30	.84	1.57
7.84	3.14	20	8	53.000 - 53.500	7	14	.37	.73
4.71	2.35	12	6	52.500 - 53.000	2	7	.10	.37
2.35	1.18	6	3	52.000 - 52.500	5	5	.26	.26
1.18	.39	3	1	51.500 - 52.000	0	0	0.00	0.00
.78	.39	2	1	51.000 - 51.500	0	0	0.00	0.00
.39	0.00	1	0	50.500 - 51.000	0	0	0.00	0.00
.39	0.00	1	0	50.000 - 50.500	0	0	0.00	0.00
.39	0.00	1	0	49.500 - 50.000	0	0	0.00	0.00
.39	.39	1	1	49.000 - 49.500	0	0	0.00	0.00

42. VERTICAL TRUNK CIRCUMFERENCE, STANDING

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	73.000 - 73.500	0	1905	0.00	100.00
99.92	0.00	1330	0	72.500 - 73.000	0	1905	0.00	100.00
99.92	0.00	1330	0	72.000 - 72.500	0	1905	0.00	100.00
99.92	.08	1330	1	71.500 - 72.000	0	1905	0.00	100.00
99.85	0.00	1329	0	71.000 - 71.500	0	1905	0.00	100.00
99.85	0.00	1329	0	70.500 - 71.000	0	1905	0.00	100.00
99.85	0.00	1329	0	70.000 - 70.500	1	1905	.05	100.00
99.85	0.00	1329	0	69.500 - 70.000	1	1904	.05	99.95
99.85	.15	1329	2	69.000 - 69.500	0	1903	0.00	99.90
99.70	.08	1327	1	68.500 - 69.000	4	1903	.21	99.90
99.62	.30	1326	4	68.000 - 68.500	7	1899	.37	99.69
99.32	.45	1322	6	67.500 - 68.000	16	1892	.84	99.32
98.87	.75	1316	10	67.000 - 67.500	10	1876	.52	98.48
98.12	.53	1306	7	66.500 - 67.000	11	1866	.58	97.95
97.60	.68	1299	9	66.000 - 66.500	14	1855	.73	97.38
96.92	.98	1290	13	65.500 - 66.000	19	1841	1.00	96.64
95.94	1.65	1277	22	65.000 - 65.500	32	1822	1.68	95.64
94.29	2.93	1255	39	64.500 - 65.000	45	1790	2.36	93.96
91.36	2.33	1216	31	64.000 - 64.500	76	1745	3.99	91.60
89.03	3.83	1185	51	63.500 - 64.000	65	1669	3.41	87.61
85.20	4.21	1134	56	63.000 - 63.500	80	1604	4.20	84.20
80.99	5.11	1078	68	62.500 - 63.000	120	1524	6.30	80.00
75.88	6.24	1010	83	62.000 - 62.500	117	1404	6.14	73.70
69.65	7.06	927	94	61.500 - 62.000	117	1287	6.14	67.56
62.58	5.94	833	79	61.000 - 61.500	146	1170	7.66	61.42
56.65	6.69	754	89	60.500 - 61.000	127	1024	6.67	53.75
49.96	5.48	665	73	60.000 - 60.500	137	897	7.19	47.09
44.48	8.41	592	112	59.500 - 60.000	123	760	6.46	39.90
36.06	6.69	480	89	59.000 - 59.500	131	637	6.88	33.44
29.38	6.16	391	82	58.500 - 59.000	114	506	5.98	26.56
23.22	5.48	309	73	58.000 - 58.500	97	392	5.09	20.58
17.73	4.73	236	63	57.500 - 58.000	86	295	4.51	15.49
13.00	3.68	173	49	57.000 - 57.500	68	209	3.57	10.97
9.32	2.33	124	31	56.500 - 57.000	47	141	2.47	7.40
6.99	1.50	93	20	56.000 - 56.500	41	94	2.15	4.93
5.48	2.10	73	28	55.500 - 56.000	26	53	1.36	2.78
3.38	.90	45	12	55.000 - 55.500	11	27	.58	1.42
2.48	.68	33	9	54.500 - 55.000	9	16	.47	.84
1.80	.45	24	6	54.000 - 54.500	4	7	.21	.37
1.35	.38	18	5	53.500 - 54.000	1	3	.05	.16
.98	.45	13	6	53.000 - 53.500	1	2	.05	.10
.53	.38	7	5	52.500 - 53.000	1	1	.05	.05
.15	0.00	2	0	52.000 - 52.500	0	0	0.00	0.00
.15	0.00	2	0	51.500 - 52.000	0	0	0.00	0.00
.15	.15	2	2	51.000 - 51.500	0	0	0.00	0.00

43. WAIST BACK LENGTH

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.53	1331	7	19.250 - ABOVE	0	1905	0.00	100.00
99.47	0.00	1324	0	19.125 - 19.250	0	1905	0.00	100.00
99.47	.08	1324	1	19.000 - 19.125	0	1905	0.00	100.00
99.40	.23	1323	3	18.875 - 19.000	2	1905	.10	100.00
99.17	.15	1320	2	18.750 - 18.875	0	1903	0.00	99.90
99.02	0.00	1318	0	18.625 - 18.750	0	1903	0.00	99.90
99.02	.75	1318	10	18.500 - 18.625	3	1903	.16	99.90
98.27	.45	1308	6	18.375 - 18.500	0	1900	0.00	99.74
97.82	.30	1302	4	18.250 - 18.375	3	1900	.16	99.74
97.52	.83	1298	11	18.125 - 18.250	5	1897	.26	99.58
96.69	.75	1287	10	18.000 - 18.125	7	1892	.37	99.32
95.94	1.05	1277	14	17.875 - 18.000	12	1885	.63	98.95
94.89	1.35	1263	18	17.750 - 17.875	14	1873	.73	98.32
93.54	1.13	1245	15	17.625 - 17.750	17	1859	.89	97.59
92.41	1.80	1230	24	17.500 - 17.625	23	1842	1.21	96.69
90.61	1.20	1206	16	17.375 - 17.500	9	1819	.47	95.49
89.41	1.95	1190	26	17.250 - 17.375	43	1810	2.26	95.01
87.45	2.40	1164	32	17.125 - 17.250	50	1767	2.62	92.76
85.05	2.55	1132	34	17.000 - 17.125	34	1717	1.78	90.13
82.49	3.68	1098	49	16.875 - 17.000	66	1683	3.46	88.35
78.81	3.83	1049	51	16.750 - 16.875	54	1617	2.83	84.88
74.98	3.38	998	45	16.625 - 16.750	58	1563	3.04	82.05
71.60	5.11	953	68	16.500 - 16.625	103	1505	5.41	79.00
66.49	5.56	885	74	16.375 - 16.500	82	1402	4.30	73.60
60.93	4.66	811	62	16.250 - 16.375	78	1320	4.09	69.29
56.27	4.36	749	58	16.125 - 16.250	134	1242	7.03	65.20
51.92	3.83	691	51	16.000 - 16.125	84	1108	4.41	58.16
48.08	4.13	640	55	15.875 - 16.000	140	1024	7.35	53.75
43.95	3.91	585	52	15.750 - 15.875	58	884	3.04	46.40
40.05	5.03	533	67	15.625 - 15.750	137	826	7.19	43.36
35.01	4.88	466	65	15.500 - 15.625	122	689	6.40	36.17
30.13	4.13	401	55	15.375 - 15.500	58	567	3.04	29.76
26.00	3.83	346	51	15.250 - 15.375	90	509	4.72	26.72
22.16	3.38	295	45	15.125 - 15.250	82	419	4.30	21.99
18.78	3.76	250	50	15.000 - 15.125	60	337	3.15	17.69
15.03	2.93	200	39	14.875 - 15.000	88	277	4.62	14.54
12.10	2.33	161	31	14.750 - 14.875	49	189	2.57	9.92
9.77	2.10	130	28	14.625 - 14.750	26	140	1.36	7.35
7.66	2.18	102	29	14.500 - 14.625	34	114	1.78	5.98
5.48	1.35	73	18	14.375 - 14.500	17	80	.89	4.20
4.13	1.80	55	24	14.250 - 14.375	24	63	1.26	3.31
2.33	.75	31	10	14.125 - 14.250	11	39	.58	2.05
1.58	.23	21	3	14.000 - 14.125	4	28	.21	1.47
1.35	.38	18	5	13.875 - 14.000	7	24	.37	1.26
.98	.23	13	3	13.750 - 13.875	6	17	.31	.89
.75	.30	10	4	13.625 - 13.750	2	11	.10	.58
.45	.23	6	3	13.500 - 13.625	4	9	.21	.47
.23	.08	3	1	13.375 - 13.500	1	5	.05	.26
.15	.15	2	2	13.250 - 13.375	3	4	.16	.21
0.00	0.00	0	0	13.125 - 13.250	1	1	.05	.05

44. WAIST BREADTH

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.38	1331	5	13.500 - ABOVE	0	1905	0.00	100.00
99.62	.08	1326	1	13.375 - 13.500	0	1905	0.00	100.00
99.55	.23	1325	3	13.250 - 13.375	0	1905	0.00	100.00
99.32	.15	1322	2	13.125 - 13.250	0	1905	0.00	100.00
99.17	.08	1320	1	13.000 - 13.125	0	1905	0.00	100.00
99.10	.45	1319	6	12.875 - 13.000	0	1905	0.00	100.00
98.65	.30	1313	4	12.750 - 12.875	2	1905	.10	100.00
98.35	.08	1309	1	12.625 - 12.750	0	1903	0.00	99.90
98.27	.08	1308	1	12.500 - 12.625	1	1903	.05	99.90
98.20	.23	1307	3	12.375 - 12.500	0	1902	0.00	99.84
97.97	.68	1304	9	12.250 - 12.375	0	1902	0.00	99.84
97.30	.90	1295	12	12.125 - 12.250	1	1902	.05	99.84
96.39	.53	1283	7	12.000 - 12.125	3	1901	.16	99.79
95.87	.30	1276	4	11.875 - 12.000	3	1898	.16	99.63
95.57	.53	1272	7	11.750 - 11.875	4	1895	.21	99.48
95.04	.83	1265	11	11.625 - 11.750	3	1891	.16	99.27
94.21	1.05	1254	14	11.500 - 11.625	3	1888	.16	99.11
93.16	2.18	1240	29	11.375 - 11.500	8	1885	.42	98.95
90.98	1.35	1211	18	11.250 - 11.375	15	1877	.79	98.53
89.63	2.70	1193	36	11.125 - 11.250	13	1862	.68	97.74
86.93	2.48	1157	33	11.000 - 11.125	14	1849	.73	97.06
84.45	2.25	1124	30	10.875 - 11.000	12	1835	.63	96.33
82.19	3.53	1094	47	10.750 - 10.875	42	1823	2.20	95.70
78.66	3.76	1047	50	10.625 - 10.750	52	1781	2.73	93.49
74.91	4.06	997	54	10.500 - 10.625	26	1729	1.36	90.76
70.85	3.38	943	45	10.375 - 10.500	45	1703	2.36	89.40
67.47	3.76	898	50	10.250 - 10.375	47	1658	2.47	87.03
63.71	5.71	848	76	10.125 - 10.250	62	1611	3.25	84.57
58.00	5.03	772	67	10.000 - 10.125	75	1549	3.94	81.31
52.97	6.99	705	93	9.875 - 10.000	101	1474	5.30	77.38
45.98	5.18	612	69	9.750 - 9.875	106	1373	5.56	72.07
40.80	6.09	543	81	9.625 - 9.750	108	1267	5.67	66.51
34.71	5.11	462	68	9.500 - 9.625	108	1159	5.67	60.84
29.60	5.11	394	68	9.375 - 9.500	144	1051	7.56	55.17
24.49	6.01	326	80	9.250 - 9.375	177	907	9.29	47.61
18.48	3.46	246	46	9.125 - 9.250	140	730	7.35	38.32
15.03	3.91	200	52	9.000 - 9.125	113	590	5.93	30.97
11.12	2.70	148	36	8.875 - 9.000	85	477	4.46	25.04
8.41	2.63	112	35	8.750 - 8.875	96	392	5.04	20.58
5.79	1.88	77	25	8.625 - 8.750	79	296	4.15	15.54
3.91	1.43	52	19	8.500 - 8.625	46	217	2.41	11.39
2.48	1.28	33	17	8.375 - 8.500	58	171	3.04	8.98
1.20	.53	16	7	8.250 - 8.375	50	113	2.62	5.93
.68	.45	9	6	8.125 - 8.250	26	63	1.36	3.31
.23	.15	3	2	8.000 - 8.125	21	37	1.10	1.94
.08	0.00	1	0	7.875 - 8.000	10	16	.52	.84
.08	0.00	1	0	7.750 - 7.875	4	6	.21	.31
.08	.08	1	1	7.625 - 7.750	0	2	0.00	.10
0.00	0.00	0	0	7.500 - 7.625	1	2	.05	.10
0.00	0.00	0	0	7.375 - 7.500	1	1	.05	.05

45. WAIST CIRCUMFERENCE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	45.000 - ABOVE	0	1905	0.00	100.00
99.92	0.00	1330	0	44.500 - 45.000	0	1905	0.00	100.00
99.92	0.00	1330	0	44.000 - 44.500	0	1905	0.00	100.00
99.92	0.00	1330	0	43.500 - 44.000	0	1905	0.00	100.00
99.92	0.00	1330	0	43.000 - 43.500	0	1905	0.00	100.00
99.92	0.00	1330	0	42.500 - 43.000	0	1905	0.00	100.00
99.92	0.00	1330	0	42.000 - 42.500	0	1905	0.00	100.00
99.92	.08	1330	1	41.500 - 42.000	0	1905	0.00	100.00
99.85	.15	1329	2	41.000 - 41.500	0	1905	0.00	100.00
99.70	0.00	1327	0	40.500 - 41.000	0	1905	0.00	100.00
99.70	.15	1327	2	40.000 - 40.500	0	1905	0.00	100.00
99.55	0.00	1325	0	39.500 - 40.000	0	1905	0.00	100.00
99.55	0.00	1325	0	39.000 - 39.500	0	1905	0.00	100.00
99.55	0.00	1325	0	38.500 - 39.000	0	1905	0.00	100.00
99.55	0.00	1325	0	38.000 - 38.500	0	1905	0.00	100.00
99.55	.08	1325	1	37.500 - 38.000	0	1905	0.00	100.00
99.47	.15	1324	2	37.000 - 37.500	1	1905	.05	100.00
99.32	.15	1322	2	36.500 - 37.000	0	1904	0.00	99.95
99.17	.38	1320	5	36.000 - 36.500	0	1904	0.00	99.95
98.80	.38	1315	5	35.500 - 36.000	2	1904	.10	99.95
98.42	.30	1310	4	35.000 - 35.500	1	1902	.05	99.84
98.12	.68	1306	9	34.500 - 35.000	3	1901	.16	99.79
97.45	.83	1297	11	34.000 - 34.500	3	1898	.16	99.63
96.62	.60	1286	8	33.500 - 34.000	4	1895	.21	99.48
96.02	.90	1278	12	33.000 - 33.500	6	1891	.31	99.27
95.12	1.20	1266	16	32.500 - 33.000	7	1885	.37	98.95
93.91	1.05	1250	14	32.000 - 32.500	10	1878	.52	98.58
92.86	1.58	1236	21	31.500 - 32.000	15	1868	.79	98.06
91.28	2.55	1215	34	31.000 - 31.500	17	1853	.89	97.27
88.73	3.68	1181	49	30.500 - 31.000	25	1836	1.31	96.38
85.05	4.21	1132	56	30.000 - 30.500	19	1811	1.00	95.07
80.84	4.58	1076	61	29.500 - 30.000	64	1792	3.36	94.07
76.26	5.56	1015	74	29.000 - 29.500	41	1728	2.15	90.71
70.70	6.84	941	91	28.500 - 29.000	77	1687	4.04	88.56
63.86	7.51	850	100	28.000 - 28.500	73	1610	3.83	84.51
56.35	6.76	750	90	27.500 - 28.000	142	1537	7.45	80.68
49.59	9.24	660	123	27.000 - 27.500	160	1395	8.40	73.23
40.35	9.47	537	126	26.500 - 27.000	170	1235	8.92	64.83
30.88	7.06	411	94	26.000 - 26.500	189	1065	9.92	55.91
23.82	7.59	317	101	25.500 - 26.000	199	876	10.45	45.98
16.23	5.86	216	78	25.000 - 25.500	153	677	8.03	35.54
10.37	3.83	138	51	24.500 - 25.000	177	524	9.29	27.51
6.54	3.53	87	47	24.000 - 24.500	161	347	8.45	18.22
3.01	1.50	40	20	23.500 - 24.000	86	186	4.51	9.76
1.50	.90	20	12	23.000 - 23.500	57	100	2.99	5.25
.60	.30	8	4	22.500 - 23.000	32	43	1.68	2.26
.30	.30	4	4	22.000 - 22.500	9	11	.47	.58
0.00	0.00	0	0	21.500 - 22.000	1	2	.05	.10
0.00	0.00	0	0	21.000 - 21.500	0	1	0.00	.05
0.00	0.00	0	0	20.500 - 21.000	1	1	.05	.05

46. WAIST FRONT LENGTH

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	2.03	1331	27	16.875 - ABOVE	0	1905	0.00	100.00
97.97	.60	1304	8	16.750 - 16.875	0	1905	0.00	100.00
97.37	.53	1296	7	16.625 - 16.750	0	1905	0.00	100.00
96.84	.45	1289	6	16.500 - 16.625	0	1905	0.00	100.00
96.39	.75	1283	10	16.375 - 16.500	0	1905	0.00	100.00
95.64	1.35	1273	18	16.250 - 16.375	1	1905	.05	100.00
94.29	.90	1255	12	16.125 - 16.250	1	1904	.05	99.95
93.39	1.05	1243	14	16.000 - 16.125	1	1903	.05	99.90
92.34	.90	1229	12	15.875 - 16.000	1	1902	.05	99.84
91.44	2.18	1217	29	15.750 - 15.875	0	1901	0.00	99.79
89.26	1.73	1188	23	15.625 - 15.750	4	1901	.21	99.79
87.53	1.50	1165	20	15.500 - 15.625	2	1897	.10	99.58
86.03	2.25	1145	30	15.375 - 15.500	1	1895	.05	99.48
83.77	2.48	1115	33	15.250 - 15.375	7	1894	.37	99.42
81.29	4.73	1082	63	15.125 - 15.250	6	1887	.31	99.06
76.56	4.43	1019	59	15.000 - 15.125	2	1881	.10	98.74
72.13	4.43	960	59	14.875 - 15.000	17	1879	.89	98.64
67.69	3.98	901	53	14.750 - 14.875	20	1862	1.05	97.74
63.71	3.83	848	51	14.625 - 14.750	9	1842	.47	96.69
59.88	4.81	797	64	14.500 - 14.625	34	1833	1.78	96.22
55.07	5.26	733	70	14.375 - 14.500	12	1799	.63	94.44
49.81	6.91	663	92	14.250 - 14.375	53	1787	2.78	93.81
42.90	4.66	571	62	14.125 - 14.250	71	1734	3.73	91.02
38.24	4.28	509	57	14.000 - 14.125	45	1663	2.36	87.30
33.96	3.46	452	46	13.875 - 14.000	72	1618	3.78	84.93
30.50	3.91	406	52	13.750 - 13.875	122	1546	6.40	81.15
26.60	3.98	354	53	13.625 - 13.750	53	1424	2.78	74.75
22.61	4.88	301	65	13.500 - 13.625	135	1371	7.09	71.97
17.73	4.66	236	62	13.375 - 13.500	154	1236	8.08	64.88
13.07	2.40	174	32	13.250 - 13.375	49	1082	2.57	56.80
10.67	3.01	142	40	13.125 - 13.250	133	1033	6.98	54.23
7.66	1.88	102	25	13.000 - 13.125	79	900	4.15	47.24
5.79	1.58	77	21	12.875 - 13.000	150	821	7.87	43.10
4.21	1.35	56	18	12.750 - 12.875	148	671	7.77	35.22
2.85	.83	38	11	12.625 - 12.750	79	523	4.15	27.45
2.03	.90	27	12	12.500 - 12.625	116	444	6.09	23.31
1.13	.30	15	4	12.375 - 12.500	84	328	4.41	17.22
.83	.15	11	2	12.250 - 12.375	45	244	2.36	12.81
.68	.15	9	2	12.125 - 12.250	81	199	4.25	10.45
.53	.30	7	4	12.000 - 12.125	38	118	1.99	6.19
.23	.08	3	1	11.875 - 12.000	25	80	1.31	4.20
.15	.08	2	1	11.750 - 11.875	26	55	1.36	2.89
.08	0.00	1	0	11.625 - 11.750	7	29	.37	1.52
.08	.08	1	1	11.500 - 11.625	5	22	.26	1.15
0.00	0.00	0	0	11.375 - 11.500	9	17	.47	.89
0.00	0.00	0	0	11.250 - 11.375	5	8	.26	.42
0.00	0.00	0	0	11.125 - 11.250	1	3	.05	.16
0.00	0.00	0	0	11.000 - 11.125	1	2	.05	.10
0.00	0.00	0	0	10.875 - 11.000	0	1	0.00	.05
0.00	0.00	0	0	10.750 - 10.875	1	1	.05	.05

47. WAIST HEIGHT

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.38	1331	5	45.500 - ABOVE	0	1905	0.00	100.00
99.62	.23	1326	3	45.250 - 45.500	2	1905	.10	100.00
99.40	.23	1323	3	45.000 - 45.250	2	1903	.10	99.90
99.17	.45	1320	6	44.750 - 45.000	1	1901	.05	99.79
98.72	.45	1314	6	44.500 - 44.750	1	1900	.05	99.74
98.27	.60	1308	8	44.250 - 44.500	3	1899	.16	99.69
97.67	.68	1300	9	44.000 - 44.250	4	1896	.21	99.53
96.99	.83	1291	11	43.750 - 44.000	7	1892	.37	99.32
96.17	1.20	1280	16	43.500 - 43.750	7	1885	.37	98.95
94.97	1.28	1264	17	43.250 - 43.500	7	1878	.37	98.58
93.69	1.20	1247	16	43.000 - 43.250	14	1871	.73	98.22
92.49	1.20	1231	16	42.750 - 43.000	18	1857	.94	97.48
91.28	2.18	1215	29	42.500 - 42.750	17	1839	.89	96.54
89.11	2.03	1186	27	42.250 - 42.500	37	1822	1.94	95.64
87.08	1.88	1159	25	42.000 - 42.250	40	1785	2.10	93.70
85.20	3.38	1134	45	41.750 - 42.000	39	1745	2.05	91.60
81.82	2.85	1089	38	41.500 - 41.750	55	1706	2.89	89.55
78.96	3.68	1051	49	41.250 - 41.500	58	1651	3.04	86.67
75.28	2.55	1002	34	41.000 - 41.250	31	1593	1.63	83.62
72.73	3.68	968	49	40.750 - 41.000	99	1562	5.20	81.99
69.05	6.01	919	80	40.500 - 40.750	101	1463	5.30	76.80
63.0.	4.96	839	66	40.250 - 40.500	96	1362	5.04	71.50
58.08	5.18	773	69	40.000 - 40.250	99	1266	5.20	66.46
52.89	5.41	704	72	39.750 - 40.000	103	1167	5.41	61.26
47.48	5.03	632	67	39.500 - 39.750	85	1064	4.46	55.85
42.45	5.63	565	75	39.250 - 39.500	113	979	5.93	51.39
36.81	3.83	490	51	39.000 - 39.250	63	866	4.36	45.46
32.98	5.03	439	67	38.750 - 39.000	112	783	5.88	41.10
27.95	4.28	372	57	38.500 - 38.750	98	671	5.14	35.22
23.67	3.68	315	49	38.250 - 38.500	81	573	4.25	30.08
19.98	2.33	266	31	38.000 - 38.250	86	492	4.51	25.83
17.66	3.08	235	41	37.750 - 38.000	80	406	4.20	21.31
14.58	2.55	194	34	37.500 - 37.750	70	326	3.67	17.11
12.02	1.80	160	24	37.250 - 37.500	59	256	3.10	13.44
10.22	3.08	136	41	37.000 - 37.250	56	197	2.94	10.34
7.14	1.43	95	19	36.750 - 37.000	29	141	1.52	7.40
5.71	1.88	76	25	36.500 - 36.750	45	112	2.36	5.88
3.83	1.20	51	16	36.250 - 36.500	20	67	1.05	3.52
2.63	.38	35	5	36.000 - 36.250	13	47	.68	2.47
2.25	.45	30	6	35.750 - 36.000	9	34	.47	1.78
1.80	.45	24	6	35.500 - 35.750	10	25	.52	1.31
1.35	.38	18	5	35.250 - 35.500	4	15	.21	.79
.98	.23	13	3	35.000 - 35.250	4	11	.21	.58
.75	.30	10	4	34.750 - 35.000	4	7	.21	.37
.45	.15	6	2	34.500 - 34.750	1	3	.05	.16
.30	.08	4	1	34.250 - 34.500	2	2	.10	.10
.23	.08	3	1	34.000 - 34.250	0	0	0.00	0.00
.15	.08	2	1	33.750 - 34.000	0	0	0.00	0.00
.08	0.00	1	0	33.500 - 33.750	0	0	0.00	0.00
.08	.08	1	1	33.250 - 33.500	0	0	0.00	0.00

48. WEIGHT

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN POUNDS	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	272.50 - 276.50	0	1905	0.00	100.00
99.92	0.00	1330	0	268.50 - 272.50	0	1905	0.00	100.00
99.92	0.00	1330	0	264.50 - 268.50	0	1905	0.00	100.00
99.92	0.00	1330	0	260.50 - 264.50	0	1905	0.00	100.00
99.92	0.00	1330	0	256.50 - 260.50	0	1905	0.00	100.00
99.92	0.00	1330	0	252.50 - 256.50	0	1905	0.00	100.00
99.92	0.00	1330	0	248.50 - 252.50	0	1905	0.00	100.00
99.92	0.00	1330	0	244.50 - 248.50	0	1905	0.00	100.00
99.92	0.00	1330	0	240.50 - 244.50	0	1905	0.00	100.00
99.92	0.00	1330	0	236.50 - 240.50	0	1905	0.00	100.00
99.92	0.00	1330	0	232.50 - 236.50	0	1905	0.00	100.00
99.92	0.00	1330	0	228.50 - 232.50	0	1905	0.00	100.00
99.92	0.00	1330	0	224.50 - 228.50	0	1905	0.00	100.00
99.92	0.00	1330	0	220.50 - 224.50	0	1905	0.00	100.00
99.92	.08	1330	1	216.50 - 220.50	0	1905	0.00	100.00
99.85	.08	1329	1	212.50 - 216.50	0	1905	0.00	100.00
99.77	0.00	1328	0	208.50 - 212.50	0	1905	0.00	100.00
99.77	.08	1328	1	204.50 - 208.50	0	1905	0.00	100.00
99.70	.15	1327	2	200.50 - 204.50	0	1905	0.00	100.00
99.55	.08	1325	1	196.50 - 200.50	2	1905	.10	100.00
99.47	.08	1324	1	192.50 - 196.50	2	1903	.10	99.90
99.40	.30	1323	4	188.50 - 192.50	2	1901	.10	99.79
99.10	.08	1319	1	184.50 - 188.50	3	1899	.16	99.69
99.02	.53	1318	7	180.50 - 184.50	6	1896	.31	99.53
98.50	.75	1311	10	176.50 - 180.50	3	1890	.16	99.21
97.75	.53	1301	7	172.50 - 176.50	5	1887	.26	99.06
97.22	.60	1294	8	168.50 - 172.50	13	1882	.68	98.79
96.62	.90	1286	12	164.50 - 168.50	12	1869	.63	98.11
95.72	1.95	1274	26	160.50 - 164.50	13	1857	.68	97.48
93.76	3.31	1248	44	156.50 - 160.50	27	1844	1.42	96.80
90.46	3.61	1204	48	152.50 - 156.50	45	1817	2.36	95.38
86.85	5.41	1156	72	148.50 - 152.50	61	1772	3.20	93.02
81.44	5.41	1084	72	144.50 - 148.50	75	1711	3.94	89.82
76.03	6.99	1012	93	140.50 - 144.50	109	1636	5.72	85.88
69.05	7.59	919	101	136.50 - 140.50	125	1527	6.56	80.16
61.46	8.49	818	113	132.50 - 136.50	147	1402	7.72	73.60
52.97	8.56	705	114	128.50 - 132.50	174	1255	9.13	65.88
44.40	8.87	591	118	124.50 - 128.50	204	1081	10.71	56.75
35.54	9.24	473	123	120.50 - 124.50	189	877	9.92	46.04
26.30	6.16	350	82	116.50 - 120.50	167	688	8.77	36.12
20.14	5.48	268	73	112.50 - 116.50	168	521	8.82	27.35
14.65	5.26	195	70	108.50 - 112.50	123	353	6.46	18.53
9.39	3.31	125	44	104.50 - 108.50	105	230	5.51	12.07
6.09	2.63	81	35	100.50 - 104.50	54	125	2.83	6.56
3.46	2.03	46	27	96.50 - 100.50	50	71	2.62	3.73
1.43	1.05	19	14	92.50 - 96.50	16	21	.84	1.10
.38	.23	5	3	88.50 - 92.50	4	5	.21	.26
.15	.15	2	2	84.50 - 88.50	1	1	.05	.05

49. WRIST CIRCUMFERENCE

ARMY WOMEN				INTERVALS	AIR FORCE WOMEN			
CFRQ%	FRQ%	CFRQ	FRQ	IN INCHES	FRQ	CFRQ	FRQ%	CFRQ%
100.00	.08	1331	1	6.875 - 7.000	4	1905	.21	100.00
99.92	0.00	1330	0	6.750 - 6.875	1	1901	.05	99.79
99.92	.08	1330	1	6.625 - 6.750	11	1900	.58	99.74
99.85	.60	1329	8	6.500 - 6.625	16	1889	.84	99.16
99.25	1.05	1321	14	6.375 - 6.500	64	1873	3.36	98.32
98.20	3.46	1307	46	6.250 - 6.375	101	1809	5.30	94.96
94.74	6.24	1261	83	6.125 - 6.250	132	1708	6.93	89.66
88.50	9.17	1178	122	6.000 - 6.125	302	1576	15.85	82.73
79.34	13.52	1056	180	5.875 - 6.000	387	1274	20.31	66.88
65.82	18.18	876	242	5.750 - 5.875	211	887	11.08	46.56
47.63	23.14	634	308	5.625 - 5.750	354	676	18.58	35.49
24.49	10.82	326	144	5.500 - 5.625	213	322	11.18	16.90
13.67	7.44	182	99	5.375 - 5.500	62	109	3.25	5.72
6.24	4.36	83	58	5.250 - 5.375	41	47	2.15	2.47
1.88	1.28	25	17	5.125 - 5.250	3	6	.16	.31
.60	.60	8	8	5.000 - 5.125	2	3	.10	.16
0.00	0.00	0	0	4.875 - 5.000	1	1	.05	.05

APPENDIX D

Sizing Tables: U.S. Navy Specifications

Grouped in this appendix are sizing tables roughly in the format and terminology specifically called for by the contract specifications. Variable names have been changed only where interpretation altered the original meaning; numbers in parentheses following variable names refer the reader to the comparable (and often-renamed) variable used in the body of the report. Values, rounded to the nearest eighth, are regression estimates. (See Chapter V.)

TABLE 1

UPPER TORSO BODY MEASUREMENTS (inches)

JUNIOR SIZES

SIZE:	3	5	7	9			
BUST CIRCUMFERENCE (9)	30	31	32	33			
NECK TO BUSTPOINT (29)	7 3/4	8	8 1/4	8 1/2			
BUSTPOINT TO BUSTPOINT (10)	6 3/8	6 5/8	6 7/8	7 1/8			
Weight (lbs) (48)	93 1/4	99 3/8	105 3/8	111 3/8			
Height (38)	61 3/4	62 1/8	62 3/8	62 5/8			
Cervicale Height (13)	52 7/8	53 1/8	53 1/2	53 3/4			
Neck Girth (30)	12 1/2	12 5/8	12 3/4	12 7/8			
Shoulder Girth (32)	35 5/8	36 3/8	37 1/8	37 3/4			
Chest Girth at Scye (15)	29 1/8	29 7/8	30 5/8	31 3/8			
Vertical Trunk Girth (42)	56 1/8	56 7/8	57 3/4	58 1/2			
Vertical Trunk Girth, Sitting (41)	55	55 5/8	56 1/4	57			
Buttock Girth, Sitting (11)	34 7/8	35 5/8	36 3/8	37 1/8			
Arm Scye Girth (2)	13	13 1/4	13 1/2	13 7/8			
Biceps Girth (Upper Arm) (8)	8 1/2	8 3/4	9 1/8	9 3/8			
Elbow Girth (18)	9 7/8	10	10 1/8	10 1/4			
Wrist Girth (49)	5 1/2	5 5/8	5 5/8	5 3/4			
Biacromial Width (Shoulder) (7)	13 1/2	13 5/8	13 3/4	13 3/4			
Bideltoid Width (Back) (31)	14 3/4	15 1/8	15 3/8	15 3/4			
Chest Width (14)	9 3/4	10	10 1/4	10 1/2			
Waist Width (44)	8 1/8	8 3/8	8 5/8	8 7/8			
Hip Width (22)	12 3/8	12 5/8	12 7/8	13 1/8			
Shoulder Length (33)	5 3/8	5 1/2	5 1/2	5 1/2			
Strap Length (39)	21 1/4	21 7/8	22 3/8	22 7/8			
Interscye Curvature (24)	12 1/2	12 5/8	12 7/8	13 1/8			
Back Curvature (4)	14 7/8	15 1/4	15 1/2	15 7/8			
Waist Back Length (43)	15 1/2	15 5/8	15 5/8	15 5/8			
Waist Front Length (46)	12 3/8	12 1/2	12 5/8	12 7/8			

TABLE 1 (continued)

SIZE:	3	5	7	9			
BUST CIRCUMFERENCE (9) NECK TO BUSTPOINT (29) BUSTPOINT TO BUSTPOINT (10)	30 7 3/4 6 3/8	31 8 6 5/8	32 8 1/4 6 7/8	33 8 1/2 7 1/8			
Sleeve Inseam (34)	17 1/8	17 1/8	17 1/4	17 1/4			
Spine to Scye Length (36)	7 3/8	7 1/2	7 5/8	7 3/4			
Spine to Elbow Length (35)	20	20 1/8	20 1/4	20 1/2			
Spine to Wrist Length (37)	30 1/8	30 1/4	30 1/2	30 3/4			
* Waist to Hip (Side Seam)							
† Arm Scye to Waist (Side Seam) (3)	9	9	9 1/8	9 1/8			
* Arm Length							
* Front Length							
* Scye Depth							
† Chest Width (28)	9 7/8	10 1/8	10 3/8	10 5/8			
† Back Width (27)	14	14 1/8	14 3/8	14 1/2			

* Not measured in either the AFW or Army surveys.

† Army data based on key dimensions of Bust Circumference and Neck-to-Bustpoint only.

TABLE 2

UPPER TORSO BODY MEASUREMENTS (inches)

MISSES SIZES

SIZE:	6	8	10	12	14		
BUST CIRCUMFERENCE (9) NECK TO BUSTPOINT (29) BUSTPOINT TO BUSTPOINT (10)	31 1/2 8 1/2 6 3/4	32 1/2 8 3/4 7	33 1/2 9 7 1/4	35 9 3/8 7 1/2	36 1/2 9 3/4 7 3/4		
Weight (lbs) (48)	103 1/8	109 1/8	115 1/4	124 1/8	133 1/8		
Height (38)	62 3/8	62 3/4	63	63 1/2	63 7/8		
Cervicale Height (13)	53 1/2	53 3/4	54	54 1/2	54 7/8		
Neck Girth (30)	12 3/4	12 7/8	13	13 1/4	13 1/2		
Shoulder Girth (32)	36 3/4	37 1/2	38 1/8	39 1/4	40 3/8		
Chest Girth at Scye (15)	30 1/4	31	31 3/4	32 7/8	34		
Vertical Trunk Girth (42)	57 1/2	58 1/4	59	60 1/4	61 3/8		
Vertical Trunk Girth, Sitting (41)	56 1/8	56 3/4	57 1/2	58 1/2	59 1/2		
Buttock Girth, Sitting (11)	36 1/8	36 7/8	37 3/4	38 7/8	40		
Arm Scye Girth (2)	13 1/2	13 3/4	14	14 1/2	14 7/8		
Biceps Girth (Upper Arm) (8)	8 7/8	9 1/4	9 1/2	10	10 3/8		
Elbow Girth (18)	10 1/8	10 1/4	10 3/8	10 5/8	10 3/4		
Wrist Girth (49)	5 5/8	5 3/4	5 3/4	5 7/8	6		
Biacromial Width (Shoulder) (7)	13 5/8	13 3/4	13 7/8	14	14 1/4		
Bideltoid Width (Back) (31)	15 1/4	15 5/8	15 7/8	16 3/8	16 3/4		
Chest Width (14)	10 1/8	10 3/8	10 5/8	11	11 3/8		
Waist Width (44)	8 1/2	8 3/4	9	9 3/8	9 3/4		
Hip Width (22)	12 7/8	13	13 1/4	13 5/8	13 7/8		
Shoulder Length (33)	5 1/2	5 5/8	5 5/8	5 5/8	5 3/4		
Strap Length (39)	22 3/4	23 1/4	23 3/4	24 5/8	25 3/8		
Interscye Curvature (24)	12 3/4	13	13 1/4	13 5/8	14		
Back Curvature (4)	15 3/8	15 5/8	16	16 1/2	17		
Waist Back Length (43)	15 5/8	15 3/4	15 3/4	15 7/8	15 7/8		
Waist Front Length (46)	12 5/8	12 3/4	12 7/8	13 1/8	13 3/8		

TABLE 2 (continued)

SIZE	6	8	10	12	14		
BUST CIRCUMFERENCE (9) NECK TO BUSTPOINT (29) BUSTPOINT TO BUSTPOINT (10)	31 1/2 8 1/2 6 3/4	32 1/2 8 3/4 7	33 1/2 9 7 1/4	35 9 3/8 7 1/2	36 1/2 9 3/4 7 3/4		
Sleeve Inseam (34)	17 1/4	17 1/4	17 1/4	17 3/8	17 3/8		
Spine to Scye Length (36)	7 5/8	7 5/8	7 3/4	7 7/8	8 1/8		
Spine to Elbow Length (35)	20 1/2	20 3/8	20 5/8	20 7/8	21 1/8		
Spine to Wrist Length (37)	30 1/2	30 5/8	30 7/8	31 1/4	31 1/2		
* Waist to Hip (Side Seam)							
† Arm Scye to Waist (Side Seam) (3)	9	9	9 1/8	9 1/8	9 1/4		
* Arm Length							
* Front Length							
* Scye Depth							
† Chest Width (28)	10 1/4	10 1/2	10 3/4	11 1/8	11 1/2		
† Back Width (27)	14 1/4	14 1/2	14 5/8	14 7/8	15 1/8		

* Not measured in either the AFW or Army surveys.

† Army data based on key dimensions of Bust Circumference and Neck-to-Bustpoint only.

TABLE 3

UPPER TORSO BODY MEASUREMENTS (inches)

WOMEN'S SIZES

SIZE:	34	36	38	40			
BUST CIRCUMFERENCE (9) NECK TO BUSTPOINT (29) BUSTPOINT TO BUSTPOINT (10)	38 10 5/8 8	40 11 1/8 8 1/4	42 11 5/8 8 1/2	44 12 1/8 8 3/4			
Weight (lbs) (48)	143 1/4	155 1/8	167	179			
Height (38)	64 5/8	65 1/8	65 3/4	66 1/4			
Cervicale Height (13)	55 1/2	56	56 1/2	57 1/8			
Neck Girth (30)	13 5/8	14	14 1/4	14 5/8			
Shoulder Girth (32)	41 1/2	43	44 1/2	45 7/8			
Chest Girth at Scye (15)	35 1/8	36 3/4	38 3/8	40			
Vertical Trunk Girth (42)	62 3/4	64 3/8	65 7/8	67 1/2			
Vertical Trunk Girth, Sitting (41)	60 3/4	62 1/4	63 1/2	65			
Buttock Girth, Sitting (11)	41 3/8	43	44 5/8	46 1/8			
Arm Scye Girth (2)	15 3/8	16	16 1/2	17 1/8			
Biceps Girth (Upper Arm) (8)	10 7/8	11 1/2	12	12 5/8			
Elbow Girth (18)	11	11 1/4	11 1/2	11 7/8			
Wrist Girth (49)	6	6 1/8	6 1/4	6 1/4			
Biacromial Width (Shoulder) (7)	14 3/8	14 5/8	14 7/8	15			
Bideltoid Width (Back) (31)	17 1/4	17 7/8	18 1/2	19 1/8			
Chest Width (14)	11 5/8	12 1/8	12 5/8	13 1/8			
Waist Width (44)	10 1/8	10 5/8	11 1/8	11 5/8			
Hip Width (22)	14 3/8	14 3/4	15 1/4	15 5/8			
Shoulder Length (33)	5 7/8	5 7/8	6	6			
Strap Length (39)	27	28 1/8	29 1/8	30 1/4			
Interscye Curvature (24)	14 3/8	15	15 1/2	16			
Back Curvature (4)	17 3/8	18 1/8	18 7/8	19 1/2			
Waist Back Length (43)	16 1/8	16 1/8	16 1/4	16 3/8			
Waist Front Length (46)	13 5/8	13 7/8	14 1/8	14 3/8			

TABLE 3 (continued)

	SIZE: 34	36	38	40			
BUST CIRCUMFERENCE (9) NECK TO BUSTPOINT (29) BUSTPOINT TO BUSTPOINT (10)	38 10 5/8 8	40 11 1/8 8 1/4	42 11 5/8 8 1/2	44 12 1/8 8 3/4			
Sleeve Inseam (34)	17 1/2	17 1/2	17 5/8	17 5/8			
Spine to Scye Length (36)	8 1/4	8 1/2	8 3/4	8 7/8			
Spine to Elbow Length (35)	21 1/2	21 3/4	22 1/8	22 1/2			
Spine to Wrist Length (37)	31 7/8	32 3/8	32 3/4	33 1/8			
* Waist to Hip (Side Seam)							
† Arm Scye to Waist (Side Seam) (3)	9 1/4	9 3/8	9 3/8	9 1/2			
* Arm Length							
* Front Length							
* Scye Depth							
† Chest Width (28)	12	12 1/2	12 7/8	13 3/8			
† Back Width (27)	15 1/2	15 7/8	16 1/8	16 1/2			

* Not measured in either the AFW or Army surveys.

† Army data based on key dimensions of Bust Circumference and Neck-to-Bustpoint only.

TABLE 4

LOWER TORSO BODY MEASUREMENTS (inches)

JUNIOR SIZES

SIZE:	3	5	7	9	11	13	15
WAIST CIRCUMFERENCE (45)	20	21	22	23	24 1/2	26	27 1/2
TOTAL CROTCH GIRTH (17)	23 1/2	24 1/4	25	25 3/4	26 1/2	27 1/4	28
Waist Height to Feet (Outseam) (47)	37 7/8	38 1/8	38 1/2	38 3/4	39	39 3/8	39 5/8
* Tibiale Height (Knee) (26)	--	--	--	--	--	--	--
Crotch Height (Inseam) (16)	28 7/8	29	29 1/8	29 3/8	29 1/2	29 3/4	30
** Hip Girth (7" Below Waist)	--	--	--	--	--	--	--
Hip Girth (9" Below Waist) (23)	30 3/8	31 1/4	32 1/4	33 1/4	34 1/2	35 3/4	36 7/8
Upper Thigh Girth (40)	17 3/8	18 1/8	18 3/4	19 5/8	20 1/4	21 1/8	22
Knee Girth (25)	11 5/8	11 7/8	12 1/8	12 1/2	12 3/4	13 1/8	13 1/2
Calf Girth (12)	11 5/8	12	12 1/4	12 1/2	12 7/8	13 1/4	13 5/8
* Buttock Girth (Sitting) (11)	--	--	--	--	--	--	--
Waist Curvature (Back) (6)	10 1/8	10 5/8	11	11 1/2	12 1/4	13	13 5/8
Hip Curvature (Back) (5)	15	15 3/8	15 7/8	16 1/2	17 1/8	17 3/4	18 3/8
Waist Curvature (Front) (21)	9 7/8	10 3/8	11	11 1/2	12 1/4	13	13 7/8
Hip Curvature (Front) (20)	15 3/8	15 7/8	16 3/8	16 3/4	17 3/8	18	18 1/2
† Mid-Thigh Girth	--	--	--	--	--	--	--
Ankle Girth (1)	7 3/8	7 1/2	7 1/2	7 5/8	7 7/8	8	8 1/8

* Data were insufficient to perform regression analysis on this variable.

** A single hip girth--at the point of maximum protrusion--was used in this analysis.

† Not measured in either the AFW or Army surveys.

TABLE 5

LOWER TORSO BODY MEASUREMENTS (inches)

MISSES SIZES

SIZE:	6	8	10	12	14	16	18
WAIST CIRCUMFERENCE (45)	22 1/2	23 1/2	24 1/2	26	27 1/2	29	31
TOTAL CROTCH GIRTH (17)	26 3/8	27 1/8	27 7/8	28 5/8	29 3/8	30 1/8	30 7/8
Waist Height to Feet (Outseam) (47)	39 1/8	39 3/8	39 3/4	40	40 1/4	40 1/2	40 3/4
* Tibiale Height (Knee) (26)	--	--	--	--	--	--	--
Crotch Height (Ins[illegible] (16)	29 3/8	29 5/8	29 3/4	29 7/8	30 1/8	30 3/8	30 1/2
** Hip Girth (7" Below Waist)	--	--	--	--	--	--	--
Hip Girth (9" Below Waist) (23)	33 3/8	34 1/4	35 1/4	36 1/2	37 3/4	39	40 1/2
Upper Thigh Girth (40)	19 1/2	20 1/8	20 3/4	21 5/8	22 1/2	23 3/8	24 5/8
Knee Girth (25)	12 1/2	12 3/4	13	13 3/8	13 3/4	14 1/8	14 1/2
Calf Girth (12)	12 1/2	12 7/8	13 1/8	13 1/2	13 7/8	14 1/4	14 5/8
* Buttock Girth (Sitting) (11)	--	--	--	--	--	--	--
Waist Curvature (Back) (6)	11 1/4	11 3/4	12 1/4	13	13 3/4	14 3/8	15 3/8
Hip Curvature (Back) (5)	16 1/2	17	17 1/2	18 1/8	18 3/4	19 3/8	20 1/4
Waist Curvature (Front) (21)	11 1/4	11 3/4	12 1/4	13	13 3/4	14 5/8	15 5/8
Hip Curvature (Front) (20)	16 7/8	17 1/4	17 3/4	18 3/8	19	19 5/8	20 1/4
† Mid-Thigh Girth	--	--	--	--	--	--	--
Ankle Girth (1)	7 3/4	7 3/4	7 7/8	8	8 1/4	8 3/8	8 1/2

* Data were insufficient to perform regression analysis on this variable.

** A single hip girth--at the point of maximum protrusion--was used in this analysis.

† Not measured in either the AFW or Army surveys.

TABLE 6

LOWER TORSO BODY MEASUREMENTS (inches)

WOMEN'S SIZES

SIZE:	38	40	42	44	46	48
WAIST CIRCUMFERENCE (45)	34	36 1/2	39	41 1/2	44	46 1/2
TOTAL CROTCH GIRTH (17)	32 1/8	32 7/8	33 5/8	34	34 3/8	34 3/4
Waist Height to Feet (Outseam) (47)	41 1/4	41 1/2	41 5/8	41 3/4	41 3/4	41 3/4
* Tibiale Height (Knee) (26)	--	--	--	--	--	--
Crotch Height (Inseam) (16)	30 7/8	31 1/4	31 1/2	31 5/8	31 7/8	32
** Hip Girth (7" Below Waist)	--	--	--	--	--	--
Hip Girth (9" Below Waist) (23)	42 7/8	44 5/8	46 3/8	47 7/8	49 1/2	51
Upper Thigh Girth (40)	26	27 1/4	28 1/2	29 5/8	30 3/4	31 3/4
Knee Girth (25)	15 1/4	15 3/4	16 1/4	16 5/8	17 1/8	17 1/2
Calf Girth (12)	15 3/8	15 7/8	16 3/8	16 7/8	17 1/4	17 3/4
* Buttock Girth (Sitting) (11)	--	--	--	--	--	--
Waist Curvature (Back) (6)	16 3/4	18	19 1/8	20 3/8	21 1/2	22 3/4
Hip Curvature (Back) (5)	21 3/8	22 3/8	23 1/4	24 1/8	25	25 3/4
Waist Curvature (Front) (21)	17 1/4	18 1/2	19 7/8	21 1/8	22 1/2	23 3/4
Hip Curvature (Front) (20)	21 1/2	22 1/4	23 1/8	23 3/4	24 1/2	25 1/4
† Mid-Thigh Girth	--	--	--	--	--	--
Ankle Girth (1)	8 3/4	9	9 1/8	9 1/4	9 1/2	9 5/8

* Data were insufficient to perform regression analysis on this variable.

** A single hip girth--at the point of maximum protrusion--was used in this analysis.

† Not measured in either the AFW or Army surveys.