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Specimen Size-Rolls for Aircrew Headgear Based
on an Analysis of the Head Measurements
of 2000 Royal Air Force Aircrew

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Summary

The head measurements obtained during the 1970/1971 anthropometric survey of 2000 Royal Air Force aircrew have been processed to provide size-roll data in a form suitable for use by headgear designers.

Specimen size-rolls are presented based on sizing control measurements thought likely to meet the requirements of the headgear designer.

The logistic need for a minimum number of sizes of the end product has been the major criterion in the selection of control measurement range intervals; the acceptability of the intervals or sizing steps chosen will need to be proved for specific designs of headgear.

Selection of the most appropriate sizing control measurement(s) by the designer will be influenced by many factors depending on the type of headgear, critical fit measurements, etc. Some guidance on control measurement selection is provided in the discussion of the results of the various approaches outlined in this Report.

* Replaces R.A.E. Technical Report 74072—A.R.C. 35 666.

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1. Introduction

Anthropometric survey reports conventionally publish the acquired data in the form of percentile tables which are useful to the workspace designer, whose main interest is in the accommodation of extreme or defined percentile range measurements. Such tables, however, are of little value in the sizing of functional clothing or headgear, where knowledge of the inter-relationship between critical measurements of discrete sub-groups of the population is required. For example there is little value in the headgear designer knowing that the 50th percentile head circumference is 576 mm when he cannot, from the percentile tables, determine the range of head breadths or head lengths of the 50th percentile head-circumference subjects. Furthermore, the correlation between any pair of head measurements relevant to headgear sizing is too poor to enable that approach to be used satisfactorily for practical sizing purposes. This poor correlation is well illustrated at Figs. 1 to 8 inclusive which show distribution plots based on the 2000 R.A.F. aircrew survey¹ of head breadth against head length, head breadth against head circumference, head length against head circumference etc. It is also illustrated at Table 39 where the correlation coefficients of paired head measurements are tabulated.

In this Report specimen size-rolls for aircrew headgear are presented, based on the head measurements obtained from the 1970/1971 anthropometric survey of 2000 R.A.F. aircrew. The size-roll data are tabulated in a form readily usable by the designers of military aircrew and other headgear. These data define size-roll head measurements to which the designers of headgear will need to apply allowances for helmet shell clearance etc., and to provide appropriate internal fitting adjustments.

For reference purposes the percentile tables of the head measurements recorded in the 2000 R.A.F. aircrew survey, together with a definition and a photograph illustrating the measuring technique, are reproduced at Tables 1 to 20. These tables are preceded by the Visual Index at Fig. 9 to simplify reference to the data. For full details of measuring apparatus, subject posture during measurement, definition of anatomical and statistical terms etc., reference should be made to the Reports published on the 1970/1971 Anthropometric Survey of 2000 R.A.F. aircrew (A.R.C. R. & M. 3772).

In addition to the aircrew head data obtained from the 1970/1971 survey on which this Report is based, data on a greater number of head measurements were obtained from 500 R.A.F. aircrew in a further survey in 1972² in which photogrammetric techniques were used. A comparison of the more important statistical data from these surveys and surveys of 144 Army Aviation aircrew in 1971 and 500 Royal Armoured Corps servicemen in 1972³ is given at Table 21. The data at that table indicate sufficient similarity between the head measurements of these service populations for the size-rolls for R.A.F. headgear presented in this Report to be used for the above defined military populations with reasonable confidence.

Care should be exercised, however, in reading the size-roll data across to other U.K. military or civilian populations although, in the absence of similar precise data on such populations of U.K. male adults, use of the presented headgear size-rolls will be much preferable to guesswork and is unlikely to lead to serious errors.

2. Aircrew Headgear Sizing

2.1. General Considerations

Military aircrew headgear ranges in complexity from the simple head-set which acts as a carrier of noise attenuating earpads, telephones and a microphone to the sophisticated protective helmet which envelopes the complete head and may have to provide or possess any or all of the following facilities and properties:

- (i) Inter-communication
- (ii) External noise attenuation
- (iii) Breathing oxygen
- (iv) Pressure protection
- (v) Buffet, crash impact and penetration protection
- (vi) Escape air-blast protection
- (vii) Glare protection
- (viii) Bird-strike protection
- (ix) Laser protection
- (x) Nuclear-flash protection
- (xi) Chemical and biological agent protection
- (xii) Thermal conditioning
- (xiii) An adequate field of vision
- (xiv) Low overall weight

- (xv) Low bulk
- (xvi) An acceptable centre-of-gravity location
- (xvii) An acceptable level of comfort for role mission duration.

To meet the requirements in the above list, especially those which relate directly or indirectly to aircrew comfort, and thereby efficiency, it is important that the headgear provides an acceptable standard of fit. Although in certain instances where adequate adjustments can be provided a single size may be practicable, this is the exception rather than the rule. Normally, aircrew helmets are provided in a range of sizes and the helmet design is such that each size provides a range of internal adjustments to cater for limited variations of certain head measurements. Such adjustments are usually achieved by internal webbings, packing pads etc. within the hard shell of the helmet. For optimum fit and protective performance it is necessary for the headgear sizing to be based accurately on the anthropometry of the wearer population. It is this Report's purpose to provide U.K. aircrew headgear designers with such data, in a readily usable form, from which size-rolls of many types of headgear may be determined.

2.2. Statistical Approach

A conventional statistical approach to sizing aircrew headgear has been adopted for the sizing programmes covered by this Report. This involves the selection of one or two key measurements and the division into sub-groups of the ranges of these measurements. Within each of these sub-groups there is a defined range of the key dimension(s). The subsidiary head measurements of all subjects falling within each sub-group are separately computed to provide the ranges and percentile data of these subsidiary measurements which apply to the sizes of headgear defined by the key or direct-control measurements. For example, if head breadth is taken as the direct control measurement, its range from the survey data at Table 1, is 140 mm to 180 mm. Assuming a 4-size equal step headgear size-roll and 100 per cent coverage of the population, the population sub-groups will comprise subjects having head breadths of:

| | |
|--------|------------------|
| Size 1 | 140 mm to 149 mm |
| Size 2 | 150 mm to 159 mm |
| Size 3 | 160 mm to 169 mm |
| Size 4 | 170 mm to 180 mm |

(Measurement of the subjects in the 1970/1971 anthropometric survey was to the nearest millimetre.)

Each of the above sub-groups is then analysed to provide the percentiles and range of each subsidiary head measurement in that sub-group.

2.3. Selection of Direct Control Measurement Range Intervals

The choice of sub-divisions of the control measurement range will depend upon a number of factors such as:

- (a) The logistic disadvantages of a large number of sizes of headgear,
- (b) the degree of adjustment for the control measurement(s) which can be provided and/or accepted by the headgear under consideration,
- (c) the degree of adjustment which can be provided for the major subsidiary, or indirect, control measurements by the headgear under consideration.

Whether the sub-divisions are based on the 100 per cent range of the control measurement(s), or, for example, the 1st to 99th percentile will depend upon the degree of population coverage required for specific forms of headgear. There are obvious disadvantages in the use of a reduced range, in necessitating the additional provisioning of special custom-made items for the excluded subjects or accepting that some subjects cannot be fitted. Such custom-made items are likely to be impracticable, on cost grounds, for sophisticated headgear depends for its manufacture upon expensive formers. There are, however, equally obvious advantages in reducing the sub-division ranges by catering for, say, the 1st to 99th percentile or 3rd to 97th percentile ranges of the key measurement as such a reduction eases the task of the headgear designer in terms of the headgear adjustment ranges he has to provide for.

The choice of control measurement range upon which the sub-divisions are based must therefore be decided by or, more probably, for the headgear designer for the specific item of headgear being considered.

Although it is obviously desirable to be able to fit all trained men, catering for the full range of the control measurement(s) may require an increased number of sub-divisions, and hence more headgear sizes, or, alternatively, coarser sub-divisions necessitating the provision of increased adjustments in the final headgear.

As an example, from Table 1 the 100 per cent range of head breadth is 40 mm whilst the 1st to 99th percentile range is 25.8 mm. Therefore, if for design reasons a maximum 'within-size' range of 10 mm were

dictated, coverage of the full range of head breadths would require four sizes, whereas coverage of 98 per cent of head breadths would require only three sizes. Logistically this is a high penalty to pay for the inclusion of an additional 2 per cent or less of subjects. It may be justified, however, in terms of overall economy when considering the disproportionate cost of special-to-measure headgear for subjects excluded from the size-roll, rejection of expensively trained airmen for certain operational roles because special-to-role helmets do not fit them or, in the chemical or bacteriological environment, failure to provide protection for 'oversize' or 'undersize' personnel. These considerations have influenced the control measurement ranges adopted for the size-rolls outlined in Section 3 of this Report. The maximum practical coverage of the control measurement ranges has been used, in some cases the 100 per cent range where it involves little penalty, and in other cases ranges such as the measurement range of the minimum plus one, two or three men to the maximum minus three, two or one man. By this latter means 'freak measurement' individuals who would extend the control measurement range if included in the size-roll can be omitted with very little penalty.

It should be stated that the minimum and maximum values of the head measurements recorded during the 1970/1971 anthropometric survey of R.A.F. aircrew, upon which this headgear sizing programme is based, are not necessarily the minimum and maximum values of those measurements to be found in the total R.A.F. aircrew population. It is therefore probable that in selecting a control measurement range of, say, the 'minimum plus three' man to the 'maximum minus three' man's measurements, more than the six subjects would be excluded from the size-roll when considering the whole R.A.F. aircrew population.

2.4. Selection of Subsidiary Measurement Ranges

In the choice of the subsidiary measurement ranges to be accommodated within each size of headgear, the headgear designer is given some latitude by the method of presentation of the size-roll data outlined at Section 3. If exclusion of further subjects from the size-roll beyond those which may already have been excluded by limiting the control measurement range is undesirable, the designer must cater in the headgear design for accommodation of the full range of each subsidiary measurement. The specimen size-roll data do however allow a choice of subsidiary measurement range covering 100 per cent, 1st to 99th percentile, 2nd to 98th percentile etc., measurement of the minimum plus one, two or three men to the measurement of the maximum minus one, two or three men etc., or a range choice based on values determined from the measurement mean and the standard deviation (S.D.). Where there is a Normal (Gaussian) distribution the following approximations apply:

| | |
|--------------------|---------------------------|
| Mean \pm 1.00 SD | = 84th to 16th percentile |
| Mean \pm 1.28 SD | = 90th to 10th percentile |
| Mean \pm 1.50 SD | = 93rd to 7th percentile |
| Mean \pm 1.65 SD | = 95 to 5th percentile |
| Mean \pm 2.33 SD | = 99th to 1st percentile |

Note 1. Care must be exercised in this latter approach as the 'within a size' data presented at Tables 23 to 37 include many distributions which are significantly skewed.

Note 2. The percentile values given at Tables 23 to 37 have been derived by linear interpolation between successive measured values.

For those measurements which directly influence headgear fit, the designer must accommodate the largest size in the selected range of control or subsidiary measurements and provide sufficient internal webbing and/or padding adjustment to ensure a fit on the smallest size in the selected measurement range. Such adjustment will of course be additional to the skull/helmet shell clearance dictated by the necessary head deceleration distance and impact attenuating and load spreading fittings for the largest head to be accommodated by each helmet size.

2.5. Selection of Direct Control Measurements

The choice of control measurement(s) upon which the sizing programme should be based depends on a number of factors such as:

- (a) The head measurement(s) on which the helmet design requires the greatest degree of control.
- (b) Measurements which can readily be interpreted and used by the designer in the design of a specific headgear.
- (c) Measurements which correlate best with a paired control measurement and/or with the more important of the subsidiary or indirect control measurements.

(d) Measurements which can readily be taken on the subject, for headgear issue purposes, by personnel unacquainted with sophisticated anthropometry.

These factors have been borne in mind in the selection of the control measurements upon which the specimen size-rolls defined in Section 3 of this Report are based. In a report of this nature the requirements of the headgear designer must be anticipated in choosing the control measurements and the sub-divisions of the control measurement ranges used. Some implications of the use of single or twin control measurements are covered at Section 4 of this Report where the results of the specimen size-roll computations are discussed. There are, however, potential disadvantages in using twin control measurements, primarily from the logistic point of view. From the use of a single control measurement the number of sizes of headgear relates directly to the number of control measurement range intervals selected, whereas with twin control measurements the number of sizes of headgear required will normally be the product of the number of range intervals for each control measurement. Thus headgear based on, say, three range intervals of head breadth and four range intervals of head circumference could involve 12 sizes of headgear. This twin control measurement approach may be justified if the required degree of direct control on two critical measurements can only thus be obtained. Those sizing programmes at Section 3 of this Report in which twin control measurements have been used have been limited to a maximum of six sizes, involving combinations of two and three range intervals of the two control measurements.

3. Specimen Size-Roll Details

For convenience of reference, the specimen size-rolls for which data are presented in this Report are listed below:

| Size-roll Ref. | Direct control measurement(s) | No. of sizes in roll |
|----------------|---|----------------------|
| A | Head circumference | 3 |
| B | Head circumference | 4 |
| C | Head circumference | 6 |
| D | Head breadth | 2 |
| E | Head breadth | 3 |
| F | Head length | 2 |
| G | Head length | 3 |
| H | Head breadth (2)* and head circumference (2) | 4 |
| J | Head length (2) and head circumference (2) | 4 |
| K | Head length (2) and head breadth (2) | 4 |
| L | Head length (2) and head breadth (3) | 6 |
| M | Head breadth (2) and head length (3) | 6 |
| N | Head breadth (2) and menton to vertex (2) | 4 |
| O | Head breadth (2) and menton to back of head (2) | 4 |
| P | Head breadth (2) and menton to back of head minus head length (chin recession or protrusion from brow line) (2) | 4 |

* The number in brackets indicates the number of range intervals used.

The selected control measurement ranges and range intervals used for the specimen size-rolls are tabulated below. These are based on the summarised data from the anthropometric survey of 2000 R.A.F. aircrew given at Table 22. Reference to that table shows the relationship between the selected control measurement ranges and the total range of the control measurements from the 1970/1971 survey.

| Size-roll Ref. | Control measurement | Range covered by size-roll cm | Size-roll range intervals cm | | Size-roll statistical data presented at Table No. |
|----------------|------------------------------------|-------------------------------|---|--------------------|--|
| A | Head circumference | 53.6 to 62.0 | 53.6 to 56.39 56.4 to 59.19 59.2 to 62.0 | | Table 23 Part 1 Table 23 Part 2 Table 23 Part 3 |
| B | Head circumference | 53.6 to 62.0 | 53.6 to 55.69 55.7 to 57.79 57.8 to 59.89 59.9 to 62.0 | | Table 24 Part 1 Table 24 Part 2 Table 24 Part 3 Table 24 Part 4 |
| C | Head circumference | 53.6 to 62.0 | 53.6 to 54.99 55.0 to 56.39 56.4 to 57.79 57.8 to 59.19 59.2 to 60.59 60.6 to 62.0 | | Table 25 Part 1 Table 25 Part 2 Table 25 Part 3 Table 25 Part 4 Table 25 Part 5 Table 25 Part 6 |
| D | Head breadth | 14.2 to 17.5 | 14.2 to 15.89 15.9 to 17.5 | | Table 26 Part 1 Table 26 Part 2 |
| E | Head breadth | 14.2 to 17.5 | 14.2 to 15.29 15.3 to 16.39 16.4 to 17.5 | | Table 27 Part 1 Table 27 Part 2 Table 27 Part 3 |
| F | Head length | 18.0 to 21.8 | 18.0 to 19.89 19.9 to 21.8 | | Table 28 Part 1 Table 28 Part 2 |
| G | Head length | 18.0 to 21.8 | 18.0 to 19.29 19.3 to 20.59 20.6 to 21.8 | | Table 29 Part 1 Table 29 Part 2 Table 29 Part 3 |
| H | Head breadth Head circumference | 14.2 to 17.5 53.6 to 62.0 | Head breadth | Head circumference | Table 30 Part 1 Table 30 Part 2 Table 30 Part 3 Table 30 Part 4 |
| | | | 14.2 to 15.89 | 53.6 to 57.09 | |
| | | | 14.2 to 15.89 | 57.1 to 60.6 | |
| | | | 15.9 to 17.5 | 55.0 to 58.49 | |
| J | Head length Head circumference | 18.0 to 21.8 53.6 to 62.0 | Head length | Head circumference | Table 31 Part 1 Table 31 Part 2 Table 31 Part 3 Table 31 Part 4 |
| | | | 18.0 to 19.89 | 53.6 to 56.79 | |
| | | | 18.0 to 19.89 | 56.8 to 60.0 | |
| | | | 19.9 to 21.8 | 55.6 to 58.79 | |
| K | Head length Head breadth | 18.0 to 21.8 14.2 to 17.5 | Head length | Head breadth | Table 32 Part 1 Table 32 Part 2 Table 32 Part 3 Table 32 Part 4 |
| | | | 18.0 to 19.89 | 14.2 to 15.89 | |
| | | | 18.0 to 19.89 | 15.9 to 17.5 | |
| | | | 19.9 to 21.8 | 14.2 to 15.89 | |
| | | | 19.9 to 21.8 | 15.9 to 17.5 | |

| Size-roll Ref. | Control measurement | Range covered by size-roll cm | Size-roll range intervals cm | | Size-roll statistical data presented at Table No. |
|----------------|--|-------------------------------|------------------------------|--|--|
| | | | Head length | Head breadth | |
| L | Head length Head breadth | 18.0 to 21.8 14.2 to 17.5 | 18.0 to 19.89 | 14.2 to 15.29 | Table 33 Part 1 Table 33 Part 2 Table 33 Part 3 Table 33 Part 4 Table 33 Part 5 Table 33 Part 6 |
| | | | 18.0 to 19.89 | 15.3 to 16.39 | |
| | | | 18.0 to 19.89 | 16.4 to 17.5 | |
| | | | 19.9 to 21.8 | 14.2 to 15.29 | |
| | | | 19.9 to 21.8 | 15.3 to 16.39 | |
| | | | 19.9 to 21.8 | 16.4 to 17.5 | |
| M | Head breadth Head length | 14.2 to 17.5 18.0 to 21.8 | Head breadth | Head length | Table 34 Part 1 Table 34 Part 2 Table 34 Part 3 Table 34 Part 4 Table 34 Part 5 Table 34 Part 6 |
| | | | 14.2 to 15.89 | 18.0 to 19.29 | |
| | | | 14.2 to 15.89 | 19.3 to 20.59 | |
| | | | 14.2 to 15.89 | 20.6 to 21.8 | |
| | | | 15.9 to 17.5 | 18.0 to 19.29 | |
| | | | 15.9 to 17.5 | 19.3 to 20.59 | |
| N | Head breadth Menton to vertex | 14.2 to 17.5 19.5 to 26.0 | Head breadth | Menton to vertex | Table 35, Part 1 Table 35 Part 2 Table 35 Part 3 Table 35 Part 4 |
| | | | 14.2 to 15.89 | 19.5 to 22.79 | |
| | | | 14.2 to 15.89 | 22.8 to 26.0 | |
| | | | 15.9 to 17.5 | 19.5 to 22.79 | |
| O | Head breadth Menton to back of head | 14.2 to 17.5 16.5 to 23.0 | Head breadth | Menton to back of head | Table 36 Part 1 Table 36 Part 2 Table 36 Part 3 Table 36 Part 4 |
| | | | 14.2 to 15.89 | 16.5 to 19.79 | |
| | | | 14.2 to 15.89 | 19.8 to 23.0 | |
| | | | 15.9 to 17.5 | 16.5 to 19.79 | |
| P | Head breadth Menton to back of head minus head length | 14.2 to 17.5 - 3.0 to +3.0 | Head breadth | Menton to back of head minus head length | Table 37 Part 1 Table 37 Part 2 Table 37 Part 3 Table 37 Part 4 |
| | | | 14.2 to 15.89 | - 3.0 to 0 | |
| | | | 14.2 to 15.89 | +0.01 to +3.0 | |
| | | | 15.9 to 17.5 | - 3.0 to 0 | |
| P | Head breadth Menton to back of head minus head length | 14.2 to 17.5 - 3.0 to +3.0 | 15.9 to 17.5 | +0.01 to +3.0 | Table 37 Part 3 Table 37 Part 4 |
| | | | 15.9 to 17.5 | +0.01 to +3.0 | |

The sizing grid boundaries outlined above for the twin control size-rolls referenced 'H' to 'P' inclusive are shown superimposed upon plots of the relevant control measurements at Fig. 1 to 8.

The results of the computations for all the considered size-rolls are given at Tables 23 to 37. As recorded at Section 2.4, these tables provide the headgear designer with a choice of subsidiary measurement ranges from which the most appropriate ranges for particular applications may be selected. The penalties incurred by differing choices of subsidiary measurement ranges, in terms of the number of subjects or percentage of the specified group population excluded by the size-roll, can also be determined from Tables 23 to 37. The number

of subjects listed in the bottom column of each of these tables is the number of the 2000 total survey subjects fitted by that size, it may be converted to a percentage for each size of headgear to determine the tariff to be provisioned.

The twelve size-rolls references A to M cover possible approaches to the sizing of conventional type aircrew protective helmets. Whilst these size-rolls include data which are applicable to the more recently considered form of encapsulating headgear in which the menton (chin) is included within the hard shell of the helmet, size-rolls 'N', 'O' and 'P' have been included to give the headgear designer alternative approaches in which menton location has been included as a direct control measurement. The pros and cons of these approaches for such headgear are discussed in Section 4 of this Report.

It may reasonably be argued that the fifteen approaches to headgear sizing covered by this Report should have been analysed prior to its drafting and only the few sizing approaches giving the better theoretical solutions included. However, the author believes that the headgear designer should be provided with the full facts and thus be free to adopt compromise solutions which best meet his own particular requirements rather than those of the theoretician. The statistical data presented at Tables 23 to 37, whilst not giving the headgear designer a comprehensive coverage of all possible approaches to headgear sizing, at least anticipate the majority of queries which would probably be posed were he to be presented with a single 'theoretically best' solution to headgear sizing.

4. Discussion

4.1. General

For convenience of discussion of the relative merits of the size-rolls covered by this Report some of the data of the more important measurements from Tables 23 to 37 have been summarised at Table 38. For comparative purposes only, that table lists the 2nd and 98th percentile values and range of selected measurements applicable to each size within each of the considered size-rolls. The presentation of the 2nd to 98th percentile range is a purely arbitrary choice for data comparison purposes which avoids possible influences on the subsidiary measurement ranges by 'freak' subjects at the range extremes. It is pointed out, however, that the headgear designer may, of necessity, have to cover ranges of subsidiary measurements greater than the 2nd to 98th percentile: that point has been covered at Section 2.4 of this Report. If ranges of subsidiary measurements other than the 2nd to 98th percentile are to be utilised, reference should be made to the full size-roll data at Tables 23 to 37 to check whether the observations made in this discussion section still apply.

It should be noted that Table 38 lists the 2nd to 98th percentile values of the six measurements which are used as control measurements for some size-rolls but are subsidiary measurements in other size-rolls. Where these particular measurements are used for size-roll control, i.e. where shown asterisked (*) at Table 38, their full sub-group ranges as stated at the top of Tables 23 to 37 should be used by the headgear designer, as the subsidiary measurement data at those tables have been computed from the full sub-group ranges of the control measurement(s). These control sub-group ranges are for convenience also listed in Section 3 of this Report.

The designer of a specific form of headgear may have overriding reasons for selecting a certain control, or pair of control, dimension(s) and/or tariff of headgear sizes. For these reasons the following sections in which the relative merits of the various approaches dealt with in this Report are outlined can, at best, only serve as a broad guide. For example, in some current strike aircraft minimal helmet width is of critical importance in enabling the wearer to obtain a maximum visual field with the side of the head/helmet combination in contact with the aircraft canopy. Similarly, in some instances excessive helmet (fore-aft) length might be an embarrassment by positioning the subject's head in an unnatural attitude against the aircraft seat headrest.

The reasoning supporting the choice of the wide ranges of the control measurements adopted are outlined at Section 2.3 of this Report and for certain headgear applications it may justifiably be argued that these ranges are unnecessarily or uneconomically wide. However, in a Report of this type it is not possible to provide data covering all possible requirements as regards choice of overall control measurement(s) range. Alternative control measurement range data can of course be determined from the computer banked data if required. An instance of the possible shortcomings of the use of a wide total range of control measurements is indicated at Table 25 Part 1 and Table 25 Part 6, where those two sizes in that size-roll involve only 33 and 37 subjects from the 2000 survey population respectively. Such small numbers of subjects, 1.65 per cent and 1.85 per cent of the aircrew survey population, might be thought barely to justify the provisioning of those sizes of headgear. To provide information from which the practical effect on the considered size-rolls data of the correlation coefficients of paired head measurements can be deduced, Table 39 is included which tabulates the correlation coefficients of all subsidiary measurements with relation to the considered control measurements.

4.2. Single Control Measurement Size-Rolls

The single control measurement size-rolls covered by this Report are:

| | |
|--------------------|--------------------------------------|
| Head circumference | —3, 4 and 6 sizes (rolls A, B and C) |
| Head breadth | —2 and 3 sizes (rolls D and E) |
| Head length | —2 and 3 sizes (rolls F and G) |

The data at Table 38 Parts 1 and 2 on size-rolls referenced A, B and C indicate that there is very little advantage in adopting size-rolls B or C, which cover the four and six size rolls based on head circumference, in preference to the three size roll given at size-roll A. The 2nd to 98th percentile ranges and values of subsidiary measurements are very similar for all three size-rolls and adoption of size-rolls B or C in preference to size-roll A (three sizes) could only be justified if very close control of head circumference is required or the associated marginal reduction of head-breadth and head-length ranges, which occur with increase of the number of sizes based on head-circumference control, is important.

From Table 38 Parts 1 and 2 it is apparent from the data listed against size-rolls D, E, F and G that only a requirement for very close control of head breadth (size-rolls D and E) or head length (size-rolls F and G) would justify adoption of the three-size roll, reference E, in preference to the two-size roll, reference D, based on head breadth or the three-size roll, reference G, in preference to the two-size roll, reference F, based on head length.

Of the single control dimension size-rolls with three sizes (size-rolls referenced A, E and G based on head circumference, head breadth and head length respectively) which can be directly compared there is little difference in the 2nd and 98th percentile values or ranges given at Table 38 Parts 1 and 2 for the non-control, or subsidiary, measurements. Thus choice of the control measurement to be adopted by the headgear designer would depend upon the relative importance of control of head circumference, head breadth or head length. If from a single measurement control size-roll, limitation of the measurement ranges of head circumference, head breadth and head length are required, there is some advantage in adopting head circumference as the sizing control. This advantage does not however extend to the subsidiary measurements where the 98th percentile values and 2nd to 98th percentile ranges for size-rolls A, E and G are very similar for comparable size-roll sizes. It is pointed out that whilst head circumference is a convenient measure for helmet fitting and issue purposes, head length and head breadth are likely to be of more importance to the headgear designer in defining a rigid-helmet-shell profile within which the appropriate maximum head circumference and the required harness webbings, packing pads etc., must be accommodated. It is essential that the rigid shells of crash helmets accommodate the maximum subject head breadths and head lengths of the intended population sub-groups in addition to skull/shell clearance for impact attenuating and load spreading devices and/or materials and noise-attenuating earpads. The adoption of either size-roll E (three-size head-breadth control) or size-roll G (three-size head-length control) naturally involves the accommodation of greater head circumference ranges than apply to size-roll A which is based on head circumference control. There is, however, considerable evidence from current inservice military headgear that these greater head-circumference ranges can be adequately catered for.

4.3. Twin Control Measurement Size-Rolls

The twin control size-rolls covered by this Report are:

- Head circumference/head breadth—four sizes (size-roll H)
- Head circumference/head length—four sizes (size-roll J)
- Head breadth/head length—four sizes (size-roll K)
- Head breadth (3)/head length (2)—six sizes (size-roll L)
- Head length (3)/head breadth (2)—six sizes (size-roll M)
- Head breadth/menton to vertex—four sizes (size-roll N)
- Head breadth/menton to back of head—four sizes (size-roll O)
- Head breadth/menton to back of head minus head length—four sizes (size-roll P).

Note 1. The figure in brackets () after each measurement at size-rolls L and M above indicates the number of range sub-divisions used.

Note 2. Size-rolls N, O and P are included primarily for possible application to 'encapsulating' headgear in which the menton (chin) is enclosed within the hard shell of the helmet. These size-rolls, which include a menton location measurement as one of the control measurements, are further discussed at Section 4.5.

A comparison of the 2nd and 98th percentile values and range data at Table 38 Parts 3 and 4 for size-rolls referenced K, L and M indicates that there is little practical advantage in using the six-size-rolls L or M in

preference to the four-size-roll K. The only justification for so doing would be to provide a closer degree of control of head breadth (size-roll L) or closer control of head length (size-roll M), both of which measurements have three range sub-divisions in their respective size-rolls.

The 2nd and 98th percentile values and range data from Table 38 Parts 1, 2, 3 and 4 for size-rolls H (head circumference/head breadth), J (head circumference/head length) and K (head breadth/head length), each of which consists of a roll of four sizes, can be directly compared. Such a comparison shows little practical difference between the values, or ranges, for equivalent sizes of the subsidiary measurements for the three rolls. The designer's choice of two control measurements from head circumference, head breadth and head length for a four-size-roll would depend upon the two measurements over which the greatest degree of control (i.e. the smallest measurement ranges or 'within size' maxima) are required. There are generally considerable differences in the 2nd to 98th percentile ranges and of 98th percentile values, for equivalent roll sizes, of any one of these three measurements depending upon whether or not it is included as a control measurement.

Considering briefly the possible use of the four-size-rolls N, O and P for sizing conventional protective helmets, i.e. those not including the chin within the hard helmet shell, it is apparent from a study of the data at Table 38 that such an approach would impose penalties in the form of increased 'within size' ranges of head circumference and head length although not having a significant effect on the range values of the subsidiary measurements when compared with the other sizing approaches. It is perhaps worth noting that the 'within size' pupil to vertex 2nd to 98th percentile ranges are somewhat smaller with size-roll N (head breadth/menton to vertex control) and size-roll P (head breadth/menton to back of head minus head length control) than with any of the other twin control size-rolls considered in this Report.

4.4. Comparison of the Merits of Twin Control and Single Control Measurement Size-Rolls

The following observations are made on the 2nd to 98th percentile range data and those actual percentile values tabulated at Table 38 Parts 1, 2, 3 and 4.

A comparison of the data for the four-size-roll reference B, based on the single control of head circumference, with the four-size-rolls based on twin control measurements and referenced H (head circumference/head breadth control) J (head circumference/head length control) and K (head breadth/head length control) indicates that:

(i) As is to be expected, the 2nd to 98th percentile range of head circumference is less with size-roll B, where the total measurement range is divided into four sub-groups, than with size-rolls H and J where the head circumference control measurement is divided into two sub-groups.

(ii) The 2nd to 98th percentile ranges of head circumference are considerably less with size-rolls B, H and J where that measurement serves as a control, than with size-roll K where head circumference is not a control measurement.

(iii) Twin control size-rolls H and K which include head breadth as a control measurement have smaller 2nd to 98th percentile ranges of that measurement than size-rolls B and J where head breadth is not a control. However, it is perhaps worth noting that there is little difference in this measurement percentile range for size-rolls B and J which are based on single and twin control measurements respectively.

(iv) Twin control size-rolls J and K which include head length as a control measurement have smaller 2nd to 98th percentile ranges of that measurement than size-rolls B and H where head length is not a control measurement.

(v) The 2nd to 98th percentile data on subsidiary measurements (i.e. those not used for size-roll control) for size-rolls reference B, H, J and K show no support for adopting the twin control size-rolls in preference to the single control size-roll. Any decision to adopt a twin-control size-roll would appear to be dependent upon the degree of need for close control of *two* particular measurements.

A similar comparison of the data at Table 38 for the six-size-rolls referenced C, L and M in which size-roll C is based on head circumference as a single control, size-roll L is based on the twin controls head breadth (three range intervals) and head length (two range intervals) and size-roll M is based on head length (three range intervals) and head breadth (two range intervals) shows, as with the previous comparison of four-size-rolls, little is to be gained from adopting twin measurement control unless close direct control of two measurements is essential. Whilst generally the subsidiary measurement ranges are, size for size, of the same order, some subsidiary measurements have a reduced 2nd to 98th percentile range in the single control size-roll reference C.

A further comparison of single- *versus* twin control measurement size-rolls may be made by studying the Table 38 data on size-rolls E and L and on size-rolls G and M. Size-roll E is a three-size-roll based on head breadth as a single control and size-roll L is a six-size-roll based on twin controls, three range intervals of head breadth and two range intervals of head length. Size-roll G is a three-size-roll based on head length as a

single control and size-roll M is a six-size-roll based on twin controls, three range intervals of head length and two range intervals of head breadth.

From this comparison of pairs of single and twin control measurement size-rolls, in which the common control measurement is divided into three range intervals, there is little evidence of any practical advantage accruing from the introduction of the second control measurement apart from the expected closer control of the ranges of two rather than one measurement.

This Report has assumed a practical limit of six sizes for the twin control size-rolls considered. Whilst it may be argued that increasing the twin control size-rolls to nine, 12 or 16 sizes might prove advantageous in comparison with single control size-rolls of equivalent numbers of sizes, there is little evidence, apart from providing smaller ranges and magnitude of the control measurements, that this would be the case with the many other subsidiary measurements which the headgear designer may have to consider.

4.5. Sizing Control Measurements for Encapsulating Headgear in which the Menton (Chin) is included within the Helmet Shell

For purposes of analysis and comparison, all the size-rolls covered by this Report include data which provide information on the position of the menton (chin) relative to vertex (top of head), back of head, and vertical plane of brow line (chin recession or protrusion from brow line). Size-rolls referenced N, O and P, each of which are twin control size-rolls, include a menton location measurement as one of the control measurements. The control measurements of the four-size-rolls referenced N, O and P are:

Size-roll N—head breadth/menton to vertex

Size-roll O—head breadth/menton to back of head

Size-roll P—head breadth/menton to back of head minus head length (chin recession/protrusion from brow line).

Reference to the 2nd and 98th percentile data at Table 38 shows that use of size-rolls N, O or P imposes penalties by increasing the ranges of head circumference and head length to be catered for. Against these penalties must be weighed the considerably reduced menton location measurement ranges where any of these is used as a control measurement, and an associated reduction of some of these same measurements where they are not control measurements. Apart from the above menton location measurements, head circumference and head length, the 2nd to 98th percentile ranges of all other subsidiary measurements for size-rolls N, O and P are very similar to those of the other twin control four-size-rolls. An exception to this is the reduced pupil to vertex ranges associated with size-rolls N and P.

The use of size-rolls N, O or P may be justified by the headgear designer if control of menton position, for example for location in a padded hard-shell chin-cup, is an essential feature of the helmet design or if unnecessary downward or forward protrusion of the chin-cup is undesirable. If such requirements are not essential, consideration should be given to using alternative size-rolls in which a menton location measurement is not utilised as a control measurement. It is appreciated that the taking of menton location measurements of the subject for helmet fitting purposes would require the services of skilled personnel and the use of a simple measuring rig. However it is current practice in military aviation in the U.K. to employ skilled personnel for the fitting of all protective headgear. An important criterion on helmet acceptance by a wearer is, however, subjective comfort and this may finally have to be decided by selective fitting of alternative available sizes despite anthropometric evidence pointing firmly to a particular size.

5. Conclusions

(i) The specimen size-rolls outlined in this Report, whilst by no means comprehensive in their coverage of all possible approaches, should provide the designer of military aircrew and other types of headgear with a fuller appreciation of the relationship between the various head measurements and the advantages and disadvantages of the various sizing approaches for specific forms of headgear.

(ii) By providing quantitative data for 20 head measurements in each of the specimen size-rolls at Tables 23 to 37 the information on any size-roll that meets the designers requirements may be used directly for design purposes.

(iii) Whilst the overall control measurement(s) ranges, from which the subsidiary measurements data have been computed, have been determined by the author, considerable latitude in the choice of subsidiary measurement ranges has been provided by the method of presentation of these data in Tables 23 to 37.

(iv) The penalties incurred in terms of the number, or percentage, of the 2000 aircrew survey population not covered by the specific control measurement ranges and selected subsidiary measurement ranges for any size-roll may be determined readily from the data provided.

(v) The theoretical tariff of individual sizes of headgear within any of the considered size-rolls can be determined from Tables 23 to 37.

(vi) The primary aim of this Report is to provide the headgear designer with numerical data on head measurements pertaining to various approaches to headgear sizing upon which he can make judgement on the best practical approach to his particular problems. This is regarded as a more useful approach than providing the designer with a theoretically best statistical solution to headgear sizing which may not be the best practical approach for all forms of protective headgear.

(vii) As the designer's choice of method of headgear sizing may be determined by many factors such as type of headgear, customer's stipulations regarding certain measurement controls, size-roll tariff etc., no specific recommendations regarding choice of size-roll can be made. However, broad guide lines which arise from the presented data and the discussion at Section 4 of this Report indicate that:

- (a) Single control measurement size-rolls should be used in preference to twin control size-rolls wherever practicable and, unless precise control of head breadth or head length is required, the best compromise solution is to use head circumference as the single-control measurement in preference to head breadth or head length.
- (b) With single control measurement size-rolls an increase in the number of sizes in the roll generally only decreases the 'within size' range and magnitude of the control measurement and has little practical effect on the magnitude or ranges of the subsidiary measurements. Therefore, consistent with meeting the control measurement requirements, the minimum number of sizes should be adopted.
- (c) The advantage of using twin control measurement size-rolls is a close control of two head measurements rather than one. However, with the arbitrary practical limit of a six-size-roll adopted in this Report, the advantages are in some cases marginal and should be given serious consideration before adoption in preference to a single control measurement size-roll.
- (d) The use of twin control measurement size-rolls does not generally reduce the magnitude or range of subsidiary measurements to be accommodated when compared with single control size-rolls of an equal number of sizes.
- (e) There is little evidence that an increase in the number of sizes of twin control measurement size-rolls to 9, 12, or 16 sizes i.e. three or four sub-groups of either control measurement, would have any major effect on the subsidiary measurement ranges to be accommodated. It would of course decrease the ranges and magnitude of the control measurements but at considerable logistic and financial cost.
- (f) The use of twin control measurement size-rolls which include one menton (chin) location measurement may be justified for encapsulating headgear in which the chin is included within the helmet hard shell.

Acknowledgments

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REFERENCES

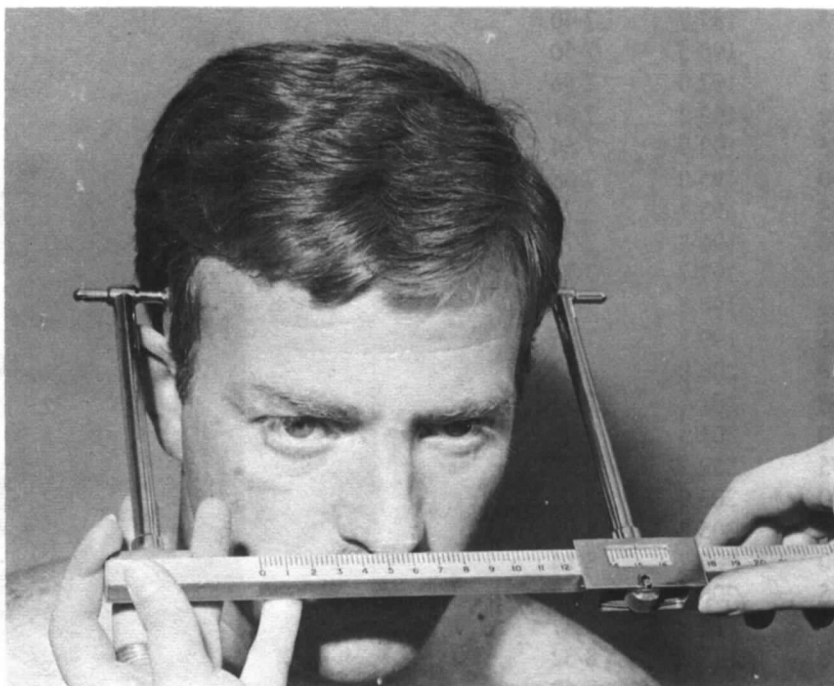
- | <i>No.</i> | <i>Author(s)</i> | <i>Title, etc.</i> |
|------------|---|---|
| 1 | C. B. Bolton, M. Kenward, R. E. Simpson and G. M. Turner | An anthropometric survey of 2000 Royal Air Force aircrew 1970/1971. R.A.E. Technical Report 73083 and R.A.F. I.A.M. Report 531, A.R.C. R. & M. 3772. |
| 2 | Fl. Lt. P. C. Hobbs, R.A.F. | An anthropometric survey of 500 Royal Air Force aircrew heads, 1972. A.R.C. R. & M. 3773. |
| 3 | N. E. Ince, Susan Redrup and Jane Piper .. | Anthropometry of 500 Royal Armoured Corps Servicemen 1972. Report A.P.R.E. 36/73(R.). |

TABLE 1
Head Breadth

Measurement with disc heads of head caliper placed over maximum breadth of head (pressure sufficient to flatten hair).

Percentile values

| % | mm | in. |
|----|-------|------|
| 1 | 144.8 | 5.70 |
| 2 | 145.8 | 5.74 |
| 3 | 147.1 | 5.79 |
| 5 | 148.6 | 5.85 |
| 10 | 150.4 | 5.92 |
| 15 | 151.6 | 5.97 |
| 20 | 152.7 | 6.01 |
| 25 | 153.6 | 6.05 |
| 30 | 154.4 | 6.08 |
| 35 | 155.3 | 6.11 |
| 40 | 155.9 | 6.14 |
| 45 | 156.6 | 6.17 |
| 50 | 157.3 | 6.19 |
| 55 | 158.0 | 6.22 |
| 60 | 158.8 | 6.25 |
| 65 | 159.5 | 6.28 |
| 70 | 160.2 | 6.31 |
| 75 | 161.1 | 6.34 |
| 80 | 161.9 | 6.37 |
| 85 | 163.0 | 6.42 |
| 90 | 164.2 | 6.46 |
| 95 | 165.9 | 6.53 |
| 97 | 167.8 | 6.60 |
| 98 | 168.8 | 6.65 |
| 99 | 170.6 | 6.72 |



Mean: 157.8 mm; 6.21 in.

Standard deviation: 5.4 mm; 0.21 in.

Coefficient of variation: 3.45%

Range: 140.0–180.0 mm; 5.51–7.09 in.

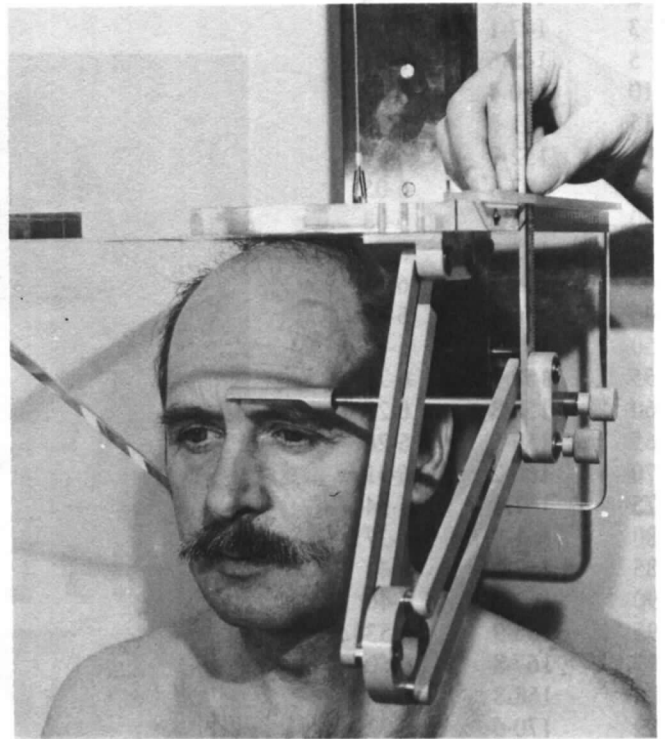
Number of subjects: 2000

TABLE 2
Head Length

Sitting (head measuring rig). Measurement of horizontal distance from back of head box to datum face of pointer in light contact with maximum prominence of glabella or brow-ridge.

Percentile values

| % | mm | in. |
|----|-------|------|
| 1 | 183.2 | 7.21 |
| 2 | 185.0 | 7.28 |
| 3 | 186.3 | 7.33 |
| 5 | 187.9 | 7.40 |
| 10 | 190.5 | 7.50 |
| 15 | 192.0 | 7.56 |
| 20 | 193.2 | 7.61 |
| 25 | 193.9 | 7.64 |
| 30 | 195.0 | 7.68 |
| 35 | 195.7 | 7.71 |
| 40 | 196.8 | 7.75 |
| 45 | 197.7 | 7.78 |
| 50 | 198.5 | 7.82 |
| 55 | 199.3 | 7.85 |
| 60 | 200.0 | 7.87 |
| 65 | 201.1 | 7.92 |
| 70 | 201.9 | 7.95 |
| 75 | 202.9 | 7.99 |
| 80 | 203.9 | 8.03 |
| 85 | 205.2 | 8.08 |
| 90 | 206.7 | 8.14 |
| 95 | 208.7 | 8.22 |
| 97 | 210.0 | 8.27 |
| 98 | 211.3 | 8.32 |
| 99 | 213.3 | 8.40 |



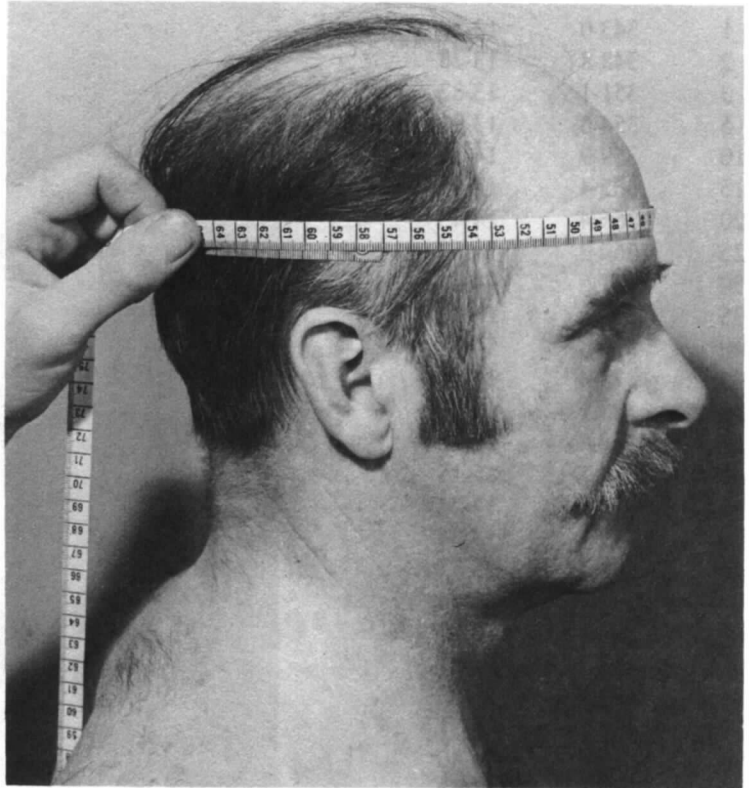
Mean: 199.0 mm; 7.83 in.
 Standard deviation: 6.4 mm; 0.25 in.
 Coefficient of variation: 3.20 %
 Range: 178.0-220.0 mm; 7.01-8.66 in.
 Number of subjects: 2000

TABLE 3
Head Circumference

Head forward facing. Measurement with tape passing around head just above brow-ridges and over occiput (tape tension sufficient to flatten hair).

Percentile values

| % | mm | in. |
|----|-------|-------|
| 1 | 546.6 | 21.52 |
| 2 | 549.5 | 21.63 |
| 3 | 551.4 | 21.71 |
| 5 | 554.4 | 21.83 |
| 10 | 558.7 | 22.00 |
| 15 | 561.6 | 22.11 |
| 20 | 564.4 | 22.22 |
| 25 | 566.6 | 22.31 |
| 30 | 568.9 | 22.40 |
| 35 | 570.6 | 22.47 |
| 40 | 573.1 | 22.56 |
| 45 | 574.6 | 22.62 |
| 50 | 576.2 | 22.69 |
| 55 | 578.1 | 22.76 |
| 60 | 579.7 | 22.82 |
| 65 | 581.6 | 22.90 |
| 70 | 583.3 | 22.96 |
| 75 | 585.1 | 23.03 |
| 80 | 587.5 | 23.13 |
| 85 | 590.3 | 23.24 |
| 90 | 594.0 | 23.39 |
| 95 | 598.9 | 23.58 |
| 97 | 602.6 | 23.73 |
| 98 | 604.8 | 23.81 |
| 99 | 608.4 | 23.95 |



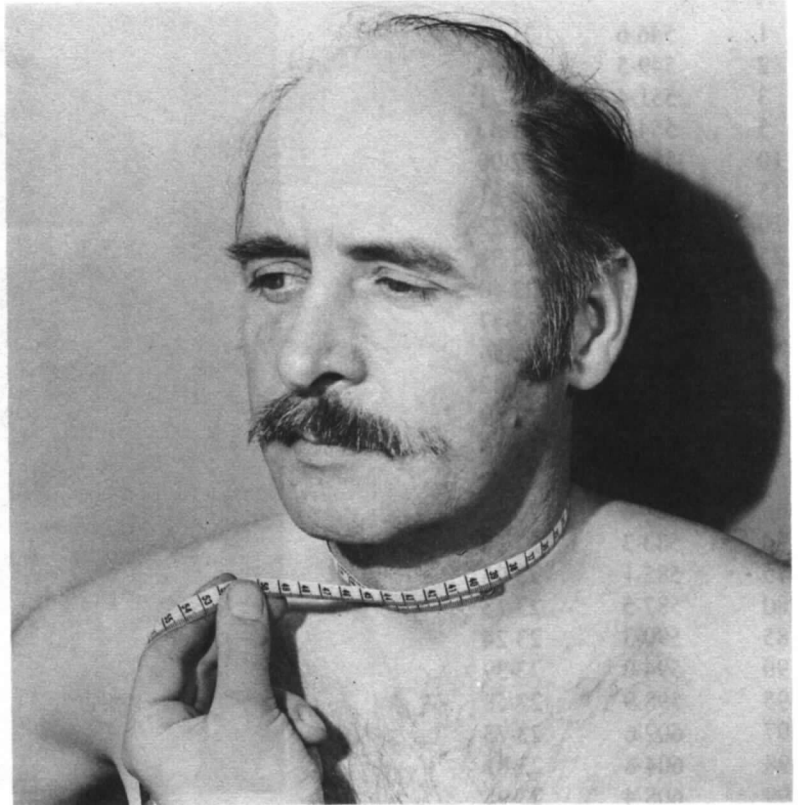
Mean: 576.7 mm; 22.71 in.
 Standard deviation: 13.6 mm; 0.54 in.
 Coefficient of variation: 2.36 %
 Range: 530.0-624.0 mm; 20.87-24.57 in.
 Number of subjects: 2000

TABLE 4
Neck Circumference

Standing erect, head forward facing. Measurement with tape passing around neck giving circumference perpendicular to axis of neck immediately below larynx.

Percentile values

| % | mm | in. |
|----|-------|-------|
| 1 | 343.0 | 13.50 |
| 2 | 348.8 | 13.73 |
| 3 | 351.1 | 13.82 |
| 5 | 354.6 | 13.96 |
| 10 | 359.9 | 14.17 |
| 15 | 363.4 | 14.31 |
| 20 | 366.4 | 14.43 |
| 25 | 369.2 | 14.53 |
| 30 | 371.5 | 14.63 |
| 35 | 373.8 | 14.72 |
| 40 | 376.0 | 14.81 |
| 45 | 378.4 | 14.90 |
| 50 | 380.1 | 14.96 |
| 55 | 382.4 | 15.06 |
| 60 | 384.7 | 15.15 |
| 65 | 387.2 | 15.24 |
| 70 | 389.7 | 15.34 |
| 75 | 392.3 | 15.45 |
| 80 | 394.7 | 15.54 |
| 85 | 398.1 | 15.67 |
| 90 | 403.2 | 15.87 |
| 95 | 409.7 | 16.13 |
| 97 | 414.2 | 16.31 |
| 98 | 416.6 | 16.40 |
| 99 | 420.8 | 16.57 |



Mean: 381.5 mm; 15.02 in.
 Standard deviation: 16.9 mm; 0.66 in.
 Coefficient of variation: 4.42%
 Range: 332.0–448.0 mm; 13.07–17.64 in.
 Number of subjects: 2000

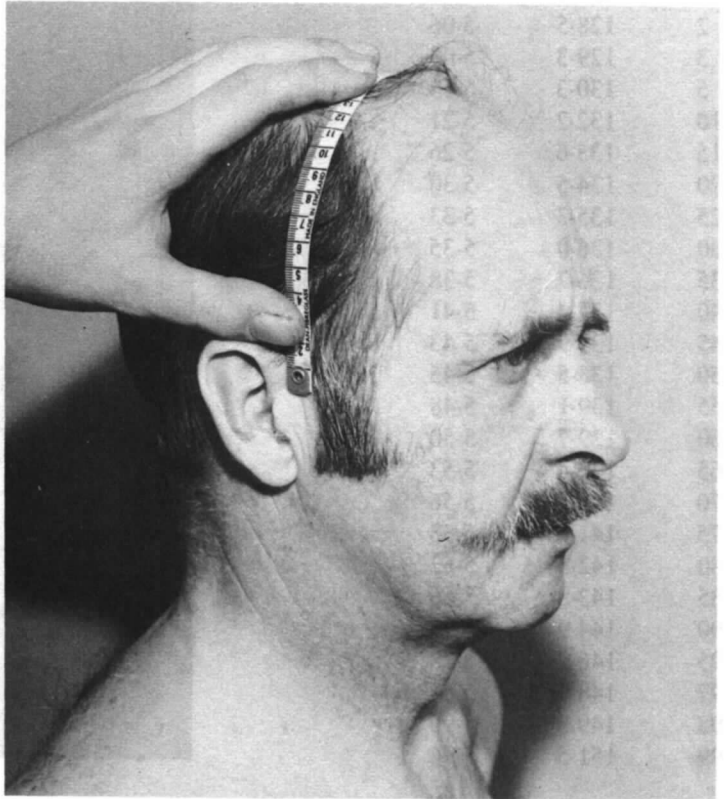
TABLE 5

Bitracion-Coronal Arc

Measurement from tracion of one ear vertically over head to tracion of other ear (tape tension sufficient to flatten hair).

Percentile values

| % | mm | in. |
|----|-------|-------|
| 1 | 323.6 | 12.74 |
| 2 | 327.5 | 12.89 |
| 3 | 329.7 | 12.98 |
| 5 | 332.0 | 13.07 |
| 10 | 336.6 | 13.25 |
| 15 | 340.6 | 13.41 |
| 20 | 342.3 | 13.48 |
| 25 | 344.4 | 13.56 |
| 30 | 346.3 | 13.63 |
| 35 | 348.1 | 13.71 |
| 40 | 349.8 | 13.77 |
| 45 | 351.4 | 13.84 |
| 50 | 352.9 | 13.89 |
| 55 | 354.4 | 13.95 |
| 60 | 355.8 | 14.01 |
| 65 | 357.6 | 14.08 |
| 70 | 359.4 | 14.15 |
| 75 | 361.1 | 14.21 |
| 80 | 362.7 | 14.28 |
| 85 | 365.1 | 14.37 |
| 90 | 368.6 | 14.51 |
| 95 | 373.9 | 14.72 |
| 97 | 377.0 | 14.84 |
| 98 | 380.5 | 14.98 |
| 99 | 385.2 | 15.17 |



Mean: 353.4 mm; 13.91 in.

Standard deviation: 12.6 mm; 0.50 in.

Coefficient of variation: 3.56%

Range: 311.0-404.0 mm; 12.24-15.91 in.

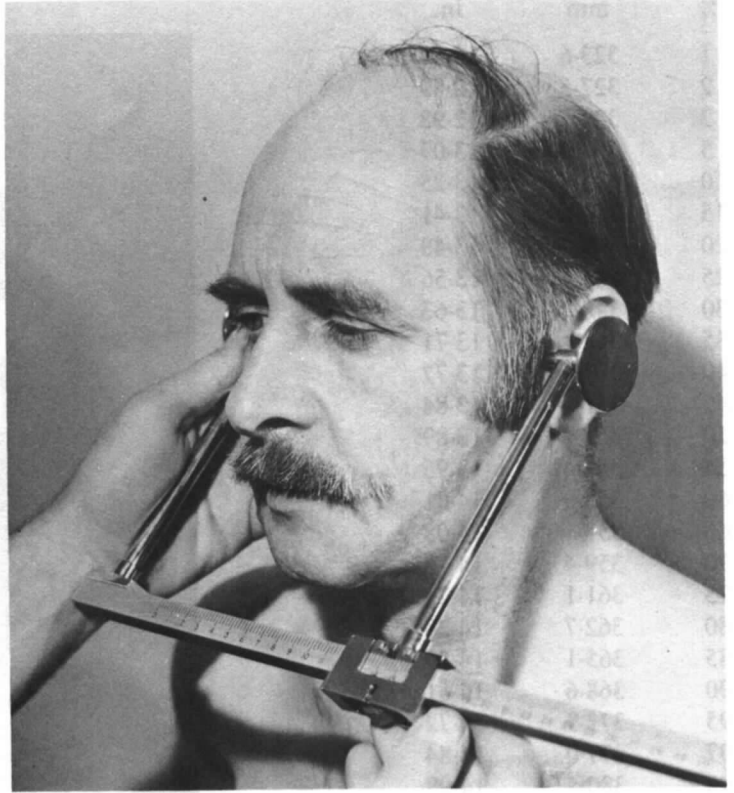
Number of subjects: 2000

TABLE 6
Bitracion Diameter

Measurement with ball ends of head caliper in light contact with both tragions.

Percentile values

| % | mm | in. |
|----|-------|------|
| 1 | 127.1 | 5.00 |
| 2 | 128.5 | 5.06 |
| 3 | 129.3 | 5.09 |
| 5 | 130.3 | 5.13 |
| 10 | 132.2 | 5.21 |
| 15 | 133.6 | 5.26 |
| 20 | 134.5 | 5.30 |
| 25 | 135.3 | 5.33 |
| 30 | 136.0 | 5.35 |
| 35 | 136.7 | 5.38 |
| 40 | 137.4 | 5.41 |
| 45 | 137.9 | 5.43 |
| 50 | 138.5 | 5.45 |
| 55 | 139.1 | 5.48 |
| 60 | 139.7 | 5.50 |
| 65 | 140.4 | 5.53 |
| 70 | 141.1 | 5.56 |
| 75 | 141.8 | 5.58 |
| 80 | 142.8 | 5.62 |
| 85 | 143.8 | 5.66 |
| 90 | 144.9 | 5.71 |
| 95 | 146.9 | 5.78 |
| 97 | 148.6 | 5.85 |
| 98 | 149.8 | 5.90 |
| 99 | 151.5 | 5.96 |



Mean: 139.1 mm; 5.48 in.
 Standard deviation: 5.0 mm; 0.20 in.
 Coefficient of variation: 3.60 %
 Range: 122.0–157.0 mm; 4.80–6.18 in.
 Number of subjects: 2000

TABLE 7

Maximum Head Diagonal from Menton

Fixed disc head of head caliper placed on chin of closed jaw and other disc head moved about vertex to determine position of maximum diagonal. Measurement from vertex to fixed disc head of caliper in light contact with chin.

Percentile values

| % | mm | in. |
|----|-------|-------|
| 1 | 244.7 | 9.64 |
| 2 | 246.3 | 9.70 |
| 3 | 247.2 | 9.73 |
| 5 | 249.0 | 9.80 |
| 10 | 251.7 | 9.91 |
| 15 | 253.6 | 9.98 |
| 20 | 255.2 | 10.05 |
| 25 | 256.4 | 10.10 |
| 30 | 257.6 | 10.14 |
| 35 | 258.7 | 10.19 |
| 40 | 259.6 | 10.22 |
| 45 | 260.6 | 10.26 |
| 50 | 261.5 | 10.30 |
| 55 | 262.4 | 10.33 |
| 60 | 263.3 | 10.37 |
| 65 | 264.3 | 10.40 |
| 70 | 265.4 | 10.45 |
| 75 | 266.6 | 10.50 |
| 80 | 267.8 | 10.54 |
| 85 | 269.4 | 10.61 |
| 90 | 271.6 | 10.69 |
| 95 | 275.1 | 10.83 |
| 97 | 276.8 | 10.90 |
| 98 | 277.8 | 10.94 |
| 99 | 280.3 | 11.03 |



Mean: 262.1 mm; 10.32 in.

Standard deviation: 7.7 mm; 0.30 in.

Coefficient of variation: 2.93%

Range: 237.0–286.0 mm; 9.33–11.26 in.

Number of subjects: 1999

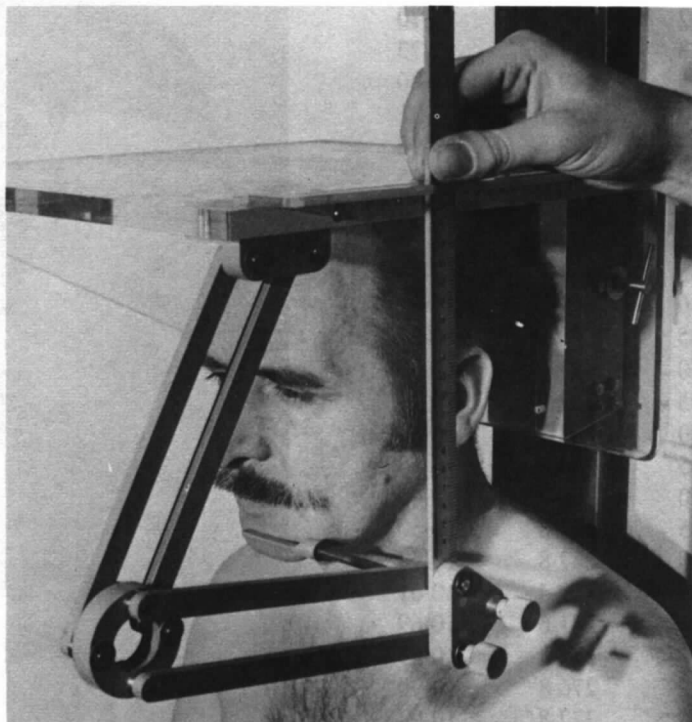
TABLE 8

Menton to Back of Head

Sitting (head measuring rig). Measurement of horizontal distance from back of head box to datum face of pointer in light contact with front of chin.

Percentile values

| % | mm | in. |
|----|-------|------|
| 1 | 174.4 | 6.87 |
| 2 | 177.1 | 6.97 |
| 3 | 178.7 | 7.04 |
| 5 | 181.3 | 7.14 |
| 10 | 185.2 | 7.29 |
| 15 | 188.0 | 7.40 |
| 20 | 190.2 | 7.49 |
| 25 | 191.9 | 7.56 |
| 30 | 193.9 | 7.63 |
| 35 | 195.5 | 7.70 |
| 40 | 197.0 | 7.76 |
| 45 | 198.5 | 7.81 |
| 50 | 199.7 | 7.86 |
| 55 | 200.9 | 7.91 |
| 60 | 201.9 | 7.95 |
| 65 | 203.4 | 8.01 |
| 70 | 205.0 | 8.07 |
| 75 | 206.9 | 8.14 |
| 80 | 208.2 | 8.20 |
| 85 | 210.3 | 8.28 |
| 90 | 213.0 | 8.38 |
| 95 | 216.6 | 8.53 |
| 97 | 219.0 | 8.62 |
| 98 | 220.7 | 8.69 |
| 99 | 224.0 | 8.82 |



Mean: 199.8 mm; 7.87 in.

Standard deviation: 10.7 mm; 0.42 in.

Coefficient of variation: 5.37%

Range: 160.0–240.0 mm; 6.30–9.45 in.

Number of subjects: 1998

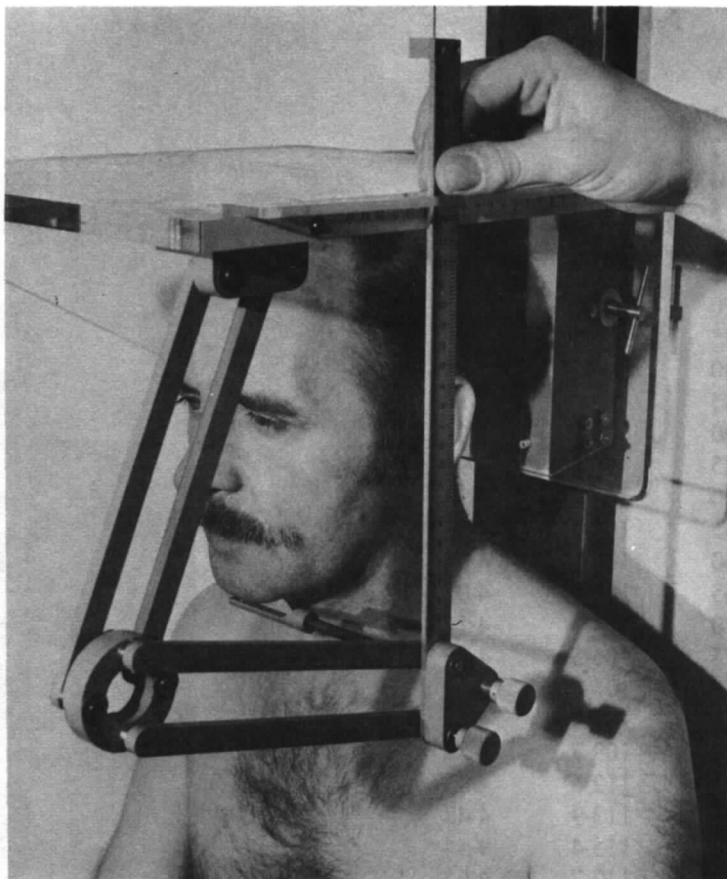
TABLE 9

Menton to Vertex

Sitting (head measuring rig). Measurement of vertical distance from roof of head box to datum face of pointer in light contact with lower surface of chin.

Percentile values

| % | mm | in. |
|----|-------|------|
| 1 | 203.9 | 8.03 |
| 2 | 207.6 | 8.17 |
| 3 | 210.0 | 8.27 |
| 5 | 212.3 | 8.36 |
| 10 | 216.2 | 8.51 |
| 15 | 219.1 | 8.62 |
| 20 | 221.1 | 8.71 |
| 25 | 222.5 | 8.76 |
| 30 | 223.8 | 8.81 |
| 35 | 225.1 | 8.86 |
| 40 | 226.5 | 8.92 |
| 45 | 227.7 | 8.96 |
| 50 | 229.0 | 9.01 |
| 55 | 230.2 | 9.06 |
| 60 | 231.5 | 9.11 |
| 65 | 232.8 | 9.17 |
| 70 | 234.3 | 9.22 |
| 75 | 235.8 | 9.28 |
| 80 | 237.6 | 9.35 |
| 85 | 239.5 | 9.43 |
| 90 | 241.7 | 9.51 |
| 95 | 245.4 | 9.66 |
| 97 | 247.9 | 9.76 |
| 98 | 249.6 | 9.83 |
| 99 | 252.4 | 9.94 |



Mean: 229.5 mm; 9.04 in.

Standard deviation: 10.1 mm; 0.40 in.

Coefficient of variation: 4.39%

Range: 191.0-262.0 mm; 7.52-10.31 in.

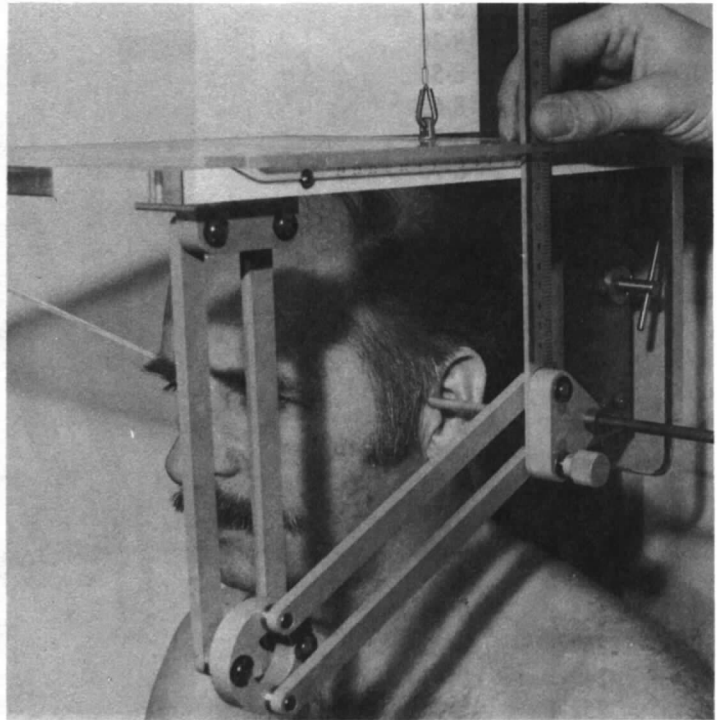
Number of subjects: 2000

TABLE 10
Tragion to Back of Head

Sitting (head measuring rig). Measurement of horizontal distance from back of head box to datum edge of pointer aligned with left tragion.

Percentile values

| % | mm | in. |
|----|-------|------|
| 1 | 85.5 | 3.37 |
| 2 | 87.3 | 3.44 |
| 3 | 88.3 | 3.47 |
| 5 | 90.1 | 3.55 |
| 10 | 92.3 | 3.64 |
| 15 | 93.7 | 3.69 |
| 20 | 95.2 | 3.75 |
| 25 | 95.9 | 3.78 |
| 30 | 97.2 | 3.83 |
| 35 | 98.0 | 3.86 |
| 40 | 99.1 | 3.90 |
| 45 | 99.8 | 3.93 |
| 50 | 101.1 | 3.98 |
| 55 | 101.7 | 4.01 |
| 60 | 102.6 | 4.04 |
| 65 | 103.5 | 4.07 |
| 70 | 104.3 | 4.11 |
| 75 | 105.5 | 4.15 |
| 80 | 106.6 | 4.20 |
| 85 | 107.8 | 4.24 |
| 90 | 109.7 | 4.32 |
| 95 | 112.6 | 4.43 |
| 97 | 113.9 | 4.48 |
| 98 | 115.4 | 4.54 |
| 99 | 117.7 | 4.63 |



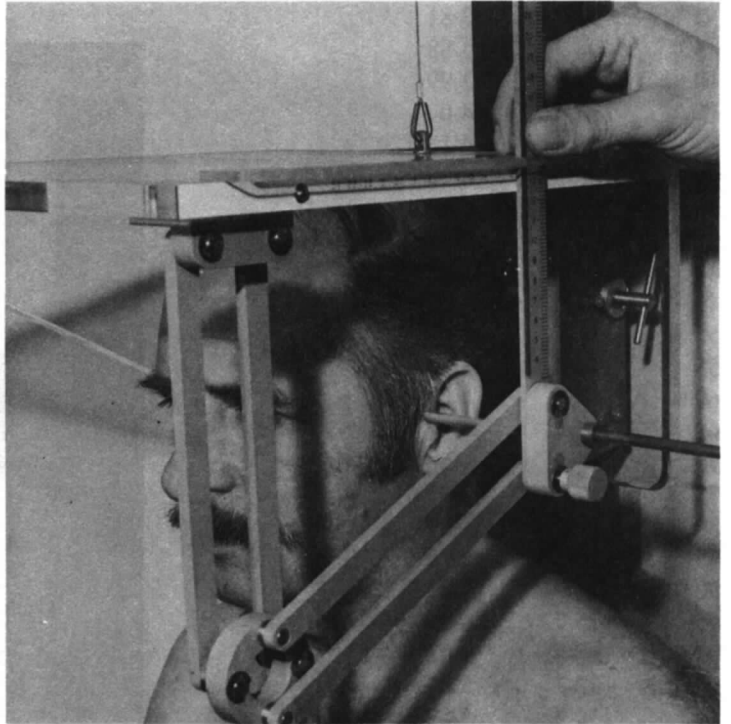
Mean: 101.4 mm; 3.99 in.
 Standard deviation: 6.9 mm; 0.27 in.
 Coefficient of variation: 6.84 %
 Range: 78.0-141.0 mm; 3.07-5.55 in.
 Number of subjects: 2000

TABLE 11
Tragion to Vertex

Sitting (head measuring rig). Measurement of vertical distance from roof of head box to datum edge of pointer aligned with left tragion.

Percentile values

| % | mm | in. |
|----|-------|------|
| 1 | 114.2 | 4.50 |
| 2 | 116.8 | 4.60 |
| 3 | 118.1 | 4.65 |
| 5 | 119.5 | 4.71 |
| 10 | 121.5 | 4.79 |
| 15 | 123.2 | 4.85 |
| 20 | 124.6 | 4.90 |
| 25 | 125.5 | 4.94 |
| 30 | 126.4 | 4.97 |
| 35 | 127.3 | 5.01 |
| 40 | 128.0 | 5.04 |
| 45 | 129.1 | 5.08 |
| 50 | 129.8 | 5.11 |
| 55 | 130.7 | 5.15 |
| 60 | 131.5 | 5.18 |
| 65 | 132.3 | 5.21 |
| 70 | 133.3 | 5.25 |
| 75 | 134.2 | 5.28 |
| 80 | 135.2 | 5.32 |
| 85 | 136.3 | 5.36 |
| 90 | 137.8 | 5.43 |
| 95 | 139.9 | 5.51 |
| 97 | 141.3 | 5.56 |
| 98 | 142.2 | 5.60 |
| 99 | 144.6 | 5.69 |



Mean: 130.3 mm; 5.13 in.

Standard deviation: 6.4 mm; 0.25 in.

Coefficient of variation: 4.93%

Range: 95.0-156.0 mm; 3.74-6.14 in.

Number of subjects: 2000

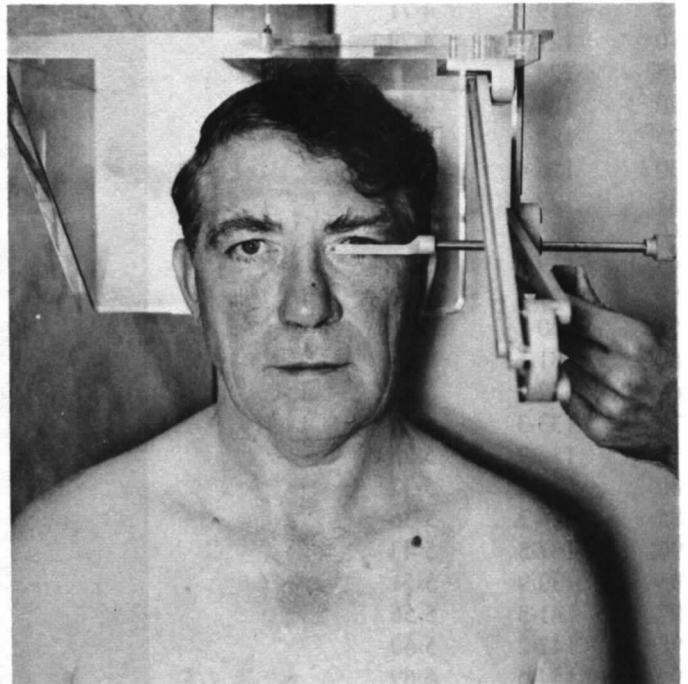
TABLE 12

Pupil to Vertex

Sitting (head measuring rig). Measurement of vertical distance from roof of head box to datum edge of pointer, raised until subject sees datum edge bisect left pupil in vertical mirror opposite.

Percentile values

| % | mm | in. |
|----|-------|------|
| 1 | 92.4 | 3.64 |
| 2 | 94.8 | 3.73 |
| 3 | 96.8 | 3.81 |
| 5 | 98.5 | 3.88 |
| 10 | 101.3 | 3.99 |
| 15 | 103.4 | 4.07 |
| 20 | 105.0 | 4.13 |
| 25 | 106.5 | 4.19 |
| 30 | 107.7 | 4.24 |
| 35 | 109.1 | 4.30 |
| 40 | 110.0 | 4.33 |
| 45 | 111.2 | 4.38 |
| 50 | 112.1 | 4.41 |
| 55 | 113.3 | 4.46 |
| 60 | 114.3 | 4.50 |
| 65 | 115.4 | 4.54 |
| 70 | 116.6 | 4.59 |
| 75 | 117.7 | 4.63 |
| 80 | 119.0 | 4.69 |
| 85 | 120.5 | 4.75 |
| 90 | 122.7 | 4.83 |
| 95 | 125.7 | 4.95 |
| 97 | 127.5 | 5.02 |
| 98 | 128.7 | 5.07 |
| 99 | 130.2 | 5.12 |



Mean: 112.6 mm; 4.43 in.
 Standard deviation: 8.2 mm; 0.32 in.
 Coefficient of variation: 7.31 %
 Range: 85.0-138.0 mm; 3.35-5.43 in.
 Number of subjects: 2000

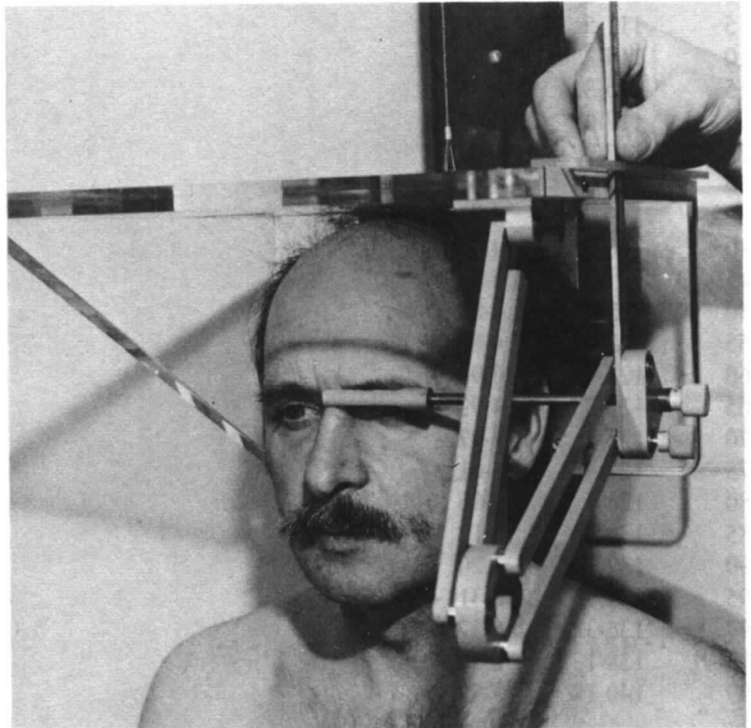
TABLE 13

Nasion to Vertex

Sitting (head measuring rig). Measurement of vertical distance from roof of head box to datum edge of pointer in light contact with nasion (located by palpation).

Percentile values

| % | mm | in. |
|----|-------|------|
| 1 | 83.7 | 3.29 |
| 2 | 85.9 | 3.38 |
| 3 | 88.0 | 3.46 |
| 5 | 90.1 | 3.55 |
| 10 | 92.9 | 3.66 |
| 15 | 95.8 | 3.77 |
| 20 | 97.6 | 3.84 |
| 25 | 99.1 | 3.90 |
| 30 | 100.6 | 3.96 |
| 35 | 102.1 | 4.02 |
| 40 | 103.4 | 4.07 |
| 45 | 104.6 | 4.12 |
| 50 | 106.0 | 4.17 |
| 55 | 107.2 | 4.22 |
| 60 | 108.2 | 4.26 |
| 65 | 109.5 | 4.31 |
| 70 | 111.0 | 4.37 |
| 75 | 112.3 | 4.42 |
| 80 | 113.9 | 4.48 |
| 85 | 115.9 | 4.56 |
| 90 | 118.7 | 4.67 |
| 95 | 121.7 | 4.79 |
| 97 | 124.0 | 4.88 |
| 98 | 125.3 | 4.93 |
| 99 | 127.5 | 5.02 |



Mean: 106.3 mm; 4.19 in.
 Standard deviation: 9.6 mm; 0.38 in.
 Coefficient of variation: 9.07%
 Range: 75.0-136.0 mm; 2.95-5.35 in.
 Number of subjects: 2000

TABLE 14
Menton to Nasion, Vertical

Menton to vertex less nasion to vertex.

| Percentile values | | |
|-------------------|-------|------|
| % | mm | in. |
| 1 | 105.5 | 4.15 |
| 2 | 108.5 | 4.27 |
| 3 | 109.8 | 4.32 |
| 5 | 111.5 | 4.39 |
| 10 | 114.2 | 4.50 |
| 15 | 115.8 | 4.56 |
| 20 | 117.0 | 4.61 |
| 25 | 117.9 | 4.64 |
| 30 | 118.7 | 4.67 |
| 35 | 119.7 | 4.71 |
| 40 | 120.7 | 4.75 |
| 45 | 121.6 | 4.79 |
| 50 | 122.4 | 4.82 |
| 55 | 123.4 | 4.86 |
| 60 | 124.4 | 4.90 |
| 65 | 125.3 | 4.93 |
| 70 | 126.2 | 4.97 |
| 75 | 127.3 | 5.01 |
| 80 | 128.6 | 5.06 |
| 85 | 130.1 | 5.12 |
| 90 | 132.2 | 5.20 |
| 95 | 134.8 | 5.31 |
| 97 | 136.3 | 5.37 |
| 98 | 138.1 | 5.44 |
| 99 | 140.1 | 5.52 |

Mean: 123.2 mm; 4.85 in.

Standard deviation: 7.2 mm; 0.28 in.

Coefficient of variation: 5.86%

Range: 86.0–155.0 mm; 3.39–6.10 in.

Number of subjects: 2000

DEDUCED MEASURE

TABLE 15
Tragion to Menton, Horizontal

Menton to back of head less tragion to back of head.

| Percentile values | | |
|-------------------|-------|------|
| % | mm | in. |
| 1 | 76.7 | 3.02 |
| 2 | 79.1 | 3.11 |
| 3 | 80.5 | 3.17 |
| 5 | 82.9 | 3.26 |
| 10 | 86.2 | 3.39 |
| 15 | 88.2 | 3.47 |
| 20 | 90.3 | 3.55 |
| 25 | 91.8 | 3.62 |
| 30 | 93.3 | 3.67 |
| 35 | 94.9 | 3.74 |
| 40 | 95.9 | 3.77 |
| 45 | 97.0 | 3.82 |
| 50 | 98.0 | 3.86 |
| 55 | 99.2 | 3.90 |
| 60 | 100.0 | 3.94 |
| 65 | 101.4 | 3.99 |
| 70 | 102.7 | 4.04 |
| 75 | 104.0 | 4.09 |
| 80 | 105.5 | 4.15 |
| 85 | 107.1 | 4.22 |
| 90 | 109.2 | 4.30 |
| 95 | 112.3 | 4.42 |
| 97 | 114.2 | 4.50 |
| 98 | 115.7 | 4.56 |
| 99 | 117.4 | 4.62 |

Mean: 98.4 mm; 3.87 in.

Standard deviation: 9.1 mm; 0.36 in.

Coefficient of variation: 9.20%

Range: 65.0-144.0 mm; 2.56-5.67 in.

Number of subjects: 1998

DEDUCED MEASURE

TABLE 16
Tragion to Menton, Vertical

Menton to vertex less tragion to vertex.

| Percentile values | | |
|-------------------|-------|------|
| % | mm | in. |
| 1 | 76.2 | 3.00 |
| 2 | 78.8 | 3.10 |
| 3 | 81.2 | 3.20 |
| 5 | 83.4 | 3.28 |
| 10 | 86.7 | 3.41 |
| 15 | 89.0 | 3.50 |
| 20 | 90.6 | 3.57 |
| 25 | 92.4 | 3.64 |
| 30 | 93.8 | 3.69 |
| 35 | 95.0 | 3.74 |
| 40 | 96.2 | 3.79 |
| 45 | 97.5 | 3.84 |
| 50 | 98.7 | 3.89 |
| 55 | 99.9 | 3.93 |
| 60 | 101.1 | 3.98 |
| 65 | 102.3 | 4.03 |
| 70 | 103.7 | 4.08 |
| 75 | 105.1 | 4.14 |
| 80 | 106.7 | 4.20 |
| 85 | 108.5 | 4.27 |
| 90 | 110.9 | 4.37 |
| 95 | 114.6 | 4.51 |
| 97 | 116.8 | 4.60 |
| 98 | 118.0 | 4.65 |
| 99 | 120.0 | 4.72 |

Mean: 99.2 mm; 3.91 in.

Standard deviation: 9.5 mm; 0.38 in.

Coefficient of variation: 9.62%

Range: 66.0–142.0 mm; 2.60–5.59 in.

Number of subjects: 2000

DEDUCED MEASURE

TABLE 17
Tragion to Brow-Ridge, Horizontal

Head length less tragion to back of head.

| Percentile values | | |
|-------------------|-------|------|
| % | mm | in. |
| 1 | 80.7 | 3.18 |
| 2 | 83.4 | 3.28 |
| 3 | 84.5 | 3.33 |
| 5 | 86.4 | 3.40 |
| 10 | 88.9 | 3.50 |
| 15 | 90.4 | 3.56 |
| 20 | 91.7 | 3.61 |
| 25 | 92.9 | 3.66 |
| 30 | 93.9 | 3.70 |
| 35 | 95.0 | 3.74 |
| 40 | 95.7 | 3.77 |
| 45 | 96.4 | 3.80 |
| 50 | 97.2 | 3.83 |
| 55 | 97.9 | 3.86 |
| 60 | 98.8 | 3.89 |
| 65 | 99.6 | 3.92 |
| 70 | 100.5 | 3.96 |
| 75 | 101.4 | 3.99 |
| 80 | 102.3 | 4.03 |
| 85 | 103.5 | 4.07 |
| 90 | 105.0 | 4.13 |
| 95 | 107.1 | 4.22 |
| 97 | 108.6 | 4.28 |
| 98 | 110.2 | 4.34 |
| 99 | 111.7 | 4.40 |

Mean: 97.5 mm; 3.84 in.

Standard deviation: 6.5 mm; 0.25 in.

Coefficient of variation: 6.62%

Range: 62.0–119.0 mm; 2.44–4.69 in.

Number of subjects: 2000

DEDUCED MEASURE

TABLE 18
Tragion to Pupil, Vertical

Tragion to vertex less pupil to vertex.

| Percentile values | | |
|-------------------|------|-------|
| % | mm | in. |
| 1 | -1.0 | -0.04 |
| 2 | 1.7 | 0.07 |
| 3 | 3.0 | 0.12 |
| 5 | 4.5 | 0.18 |
| 10 | 7.1 | 0.28 |
| 15 | 8.9 | 0.35 |
| 20 | 10.3 | 0.41 |
| 25 | 11.6 | 0.46 |
| 30 | 12.8 | 0.50 |
| 35 | 14.0 | 0.55 |
| 40 | 15.2 | 0.60 |
| 45 | 16.3 | 0.64 |
| 50 | 17.4 | 0.68 |
| 55 | 18.5 | 0.73 |
| 60 | 19.6 | 0.77 |
| 65 | 20.6 | 0.81 |
| 70 | 21.6 | 0.85 |
| 75 | 22.7 | 0.90 |
| 80 | 24.2 | 0.95 |
| 85 | 25.6 | 1.01 |
| 90 | 27.4 | 1.08 |
| 95 | 29.9 | 1.18 |
| 97 | 31.9 | 1.26 |
| 98 | 33.7 | 1.32 |
| 99 | 36.1 | 1.42 |

Mean: 17.8 mm; 0.70 in.

Standard deviation: 7.9 mm; 0.31 in.

Range: -21.0-44.0 mm; -0.83-1.73 in.

Number of subjects: 1992

DEDUCED MEASURE

TABLE 19
Tragion to Nasion, Vertical

Tragion to vertex less nasion to vertex.

| Percentile values | | |
|-------------------|------|-------|
| % | mm | in. |
| 1 | -2.0 | -0.08 |
| 2 | 4.4 | 0.17 |
| 3 | 6.1 | 0.24 |
| 5 | 8.2 | 0.32 |
| 10 | 11.3 | 0.44 |
| 15 | 13.3 | 0.52 |
| 20 | 15.3 | 0.60 |
| 25 | 17.0 | 0.67 |
| 30 | 18.4 | 0.72 |
| 35 | 19.8 | 0.78 |
| 40 | 21.3 | 0.84 |
| 45 | 22.6 | 0.89 |
| 50 | 23.8 | 0.94 |
| 55 | 24.8 | 0.97 |
| 60 | 25.9 | 1.02 |
| 65 | 27.4 | 1.08 |
| 70 | 28.8 | 1.13 |
| 75 | 30.1 | 1.18 |
| 80 | 31.7 | 1.25 |
| 85 | 33.2 | 1.31 |
| 90 | 35.3 | 1.39 |
| 95 | 38.7 | 1.52 |
| 97 | 40.9 | 1.61 |
| 98 | 42.4 | 1.67 |
| 99 | 45.1 | 1.78 |

Mean: 24.0 mm; 0.94 in.

Standard deviation: 9.4 mm; 0.37 in.

Range: -17.0-56.0 mm; -0.67-2.20 in.

Number of subjects: 1997

DEDUCED MEASURE

TABLE 20

Menton to Back of Head Minus Head Length

(Chin Protrusion or Recession from Brow Line)

| Percentile values | | |
|-------------------|-------|-------|
| % | mm | in. |
| 1 | -22.5 | -0.89 |
| 2 | -20.4 | -0.80 |
| 3 | -18.5 | -0.73 |
| 5 | -16.2 | -0.64 |
| 10 | -12.3 | -0.48 |
| 15 | -9.8 | -0.39 |
| 20 | -8.1 | -0.32 |
| 25 | -6.5 | -0.26 |
| 30 | -4.9 | -0.19 |
| 35 | -3.6 | -0.14 |
| 40 | -2.2 | -0.09 |
| 45 | -0.8 | -0.03 |
| 50 | 0.3 | 0.01 |
| 55 | 1.6 | 0.06 |
| 60 | 2.9 | 0.11 |
| 65 | 4.2 | 0.17 |
| 70 | 5.6 | 0.22 |
| 75 | 7.0 | 0.28 |
| 80 | 8.7 | 0.34 |
| 85 | 10.5 | 0.41 |
| 90 | 12.8 | 0.51 |
| 95 | 16.4 | 0.65 |
| 97 | 19.4 | 0.76 |
| 98 | 21.5 | 0.84 |
| 99 | 24.9 | 0.98 |

Mean: 0.9 mm; 0.03 in.

Standard deviation: 10.0 mm; 0.39 in.

Range: -31.0-43.0 mm; -1.22-1.69 in.

Number of subjects: 1998

DEDUCED MEASURE

TABLE 21

COMPARISON OF THE HEAD MEASUREMENTS OF ROYAL AIR FORCE AIRCREW,
UK ARMY AVIATION AIRCREW AND UK ROYAL ARMOURD CORPS SERVICEMEN

| Measurement in cm | SD | | | | MEAN | | | | MINIMUM | | | | MAXIMUM | | | | 1ST PERCENTILE | | | | 99TH PERCENTILE | | | |
|-------------------------------|--------|--------|------|------|--------|--------|-------|-------|---------|--------|-------|-------|---------|--------|-------|-------|----------------|--------|-------|-------|-----------------|--------|-------|-------|
| | RAF(A) | RAF(B) | AA | RAC | RAF(A) | RAF(B) | AA | RAC | RAF(A) | RAF(B) | AA | RAC | RAF(A) | RAF(B) | AA | RAC | RAF(A) | RAF(B) | AA | RAC | RAF(A) | RAF(B) | AA | RAC |
| Neck Circumference | 1.69 | 1.80 | 1.84 | 1.88 | 38.15 | 36.93 | 38.37 | 37.84 | 33.20 | 30.30 | 34.10 | 32.80 | 44.80 | 43.40 | 44.30 | 44.50 | 34.30 | 32.92 | 34.32 | 33.80 | 42.08 | 41.20 | 43.26 | 42.90 |
| Head Circumference | 1.36 | 1.37 | 1.52 | 1.58 | 57.68 | 57.70 | 57.79 | 57.08 | 53.00 | 52.90 | 53.50 | 50.60 | 62.40 | 62.00 | 61.80 | 62.90 | 54.66 | 54.60 | 53.81 | 53.65 | 60.84 | 60.80 | 60.86 | 61.00 |
| Bitrignon Coronal Arc | 1.26 | 1.26 | 1.20 | 1.35 | 35.34 | 36.13 | 35.78 | 35.13 | 31.10 | 33.00 | 33.00 | 31.20 | 40.40 | 41.80 | 39.10 | 44.70 | 32.36 | 33.01 | 33.00 | 32.20 | 38.52 | 38.93 | 38.16 | 38.15 |
| Head Breadth | 0.55 | 0.56 | 0.61 | 0.52 | 15.78 | 16.34 | 15.93 | 15.51 | 14.00 | 14.60 | 14.40 | 14.20 | 18.00 | 18.40 | 17.50 | 17.40 | 14.48 | 15.13 | 14.40 | 14.27 | 17.06 | 17.67 | 17.31 | 16.80 |
| Bitrignon Diameter | 0.50 | 0.61 | 0.52 | 0.54 | 13.91 | 13.76 | 13.99 | 13.34 | 12.20 | 12.40 | 12.70 | 11.80 | 15.70 | 16.20 | 15.40 | 15.20 | 12.71 | 12.53 | 12.74 | 12.05 | 15.15 | 15.40 | 15.26 | 14.58 |
| Max Head Diagonal from Menton | 0.77 | 0.78 | 0.79 | 0.82 | 26.21 | 25.87 | 26.36 | 25.76 | 23.70 | 23.10 | 23.70 | 23.20 | 28.60 | 28.60 | 28.50 | 28.80 | 24.48 | 24.20 | 24.05 | 23.70 | 28.03 | 27.95 | 28.22 | 27.45 |
| Menton to Back of Head | 1.07 | 0.88 | 1.15 | 1.27 | 19.98 | 19.79 | 20.03 | 19.81 | 16.00 | 17.50 | 17.00 | 15.80 | 24.00 | 22.40 | 23.20 | 24.30 | 17.44 | 17.69 | 17.31 | 16.60 | 22.40 | 21.72 | 22.79 | 22.40 |
| Menton to Vertex | 1.01 | 0.85 | 1.01 | 1.11 | 22.95 | 23.87 | 22.99 | 22.51 | 19.10 | 21.40 | 20.10 | 19.50 | 26.20 | 26.50 | 25.20 | 25.60 | 20.39 | 21.69 | 20.41 | 20.05 | 25.24 | 25.77 | 24.86 | 25.30 |
| Trignon to Back of head | 0.69 | 0.57 | 0.70 | 0.68 | 10.15 | 9.94 | 10.11 | 10.02 | 7.80 | 8.30 | 8.00 | 8.20 | 14.10 | 12.50 | 11.70 | 12.40 | 8.55 | 8.53 | 8.26 | 8.52 | 11.77 | 11.22 | 11.56 | 11.80 |
| Trignon to Vertex | 0.64 | 0.53 | 0.58 | 0.67 | 13.03 | 13.87 | 13.05 | 12.73 | 9.50 | 12.30 | 11.70 | 10.40 | 15.60 | 15.70 | 14.80 | 15.40 | 11.42 | 12.58 | 11.71 | 11.30 | 14.46 | 15.14 | 14.47 | 14.60 |
| Pupil to Vertex | 0.82 | 0.63 | 0.79 | 0.90 | 11.26 | 12.02 | 11.37 | 11.16 | 8.50 | 10.10 | 9.50 | 9.00 | 13.80 | 13.80 | 13.50 | 14.10 | 9.24 | 10.49 | 9.50 | 9.20 | 13.02 | 13.41 | 13.17 | 13.25 |
| Nasion to Vertex | 0.97 | 0.77 | 0.91 | 1.07 | 10.63 | 11.33 | 10.65 | 10.57 | 7.50 | 8.70 | 8.50 | 7.90 | 13.60 | 13.50 | 12.70 | 13.70 | 8.37 | 9.37 | 8.59 | 8.40 | 12.75 | 12.98 | 12.58 | 13.25 |
| Head Length | 0.64 | 0.60 | 0.67 | 0.69 | 19.90 | 20.53 | 19.94 | 19.78 | 17.80 | 18.80 | 18.40 | 18.00 | 22.06 | 22.30 | 21.70 | 21.80 | 18.32 | 19.13 | 18.44 | 18.27 | 21.33 | 22.02 | 21.53 | 21.43 |

KEY TO SERVICE POPULATION SURVEY HEADINGS:

RAF(A) = 1970/1971 SURVEY OF 2000 RAF AIRCREW (REF 1)

RAF(B) = 1972 SURVEY OF 500 RAF AIRCREW HEADS (REF 2)

AA = 1971 SURVEY OF 144 UK ARMY AVIATION AIRCREW

RAC = 1972 SURVEY OF 500 UK ROYAL ARMOURD CORPS SERVICEMEN (REF 3)

TABLE 22

SUMMARISED DATA FROM THE ANTHROPOMETRIC SURVEY OF 2000 ROYAL AIR FORCE AIRCREW
1970/1971 FROM WHICH THE HEADGEAR SIZING CONTROL MEASUREMENT RANGES
HAVE BEEN SELECTED

| Control Measurement | Head Circumference | | Head Breadth | | Head Length | | Menton to Vertex | | Menton to back of Head | | Menton to back of Head minus Head Length | |
|--------------------------|--------------------|----------|--------------|----------|-------------|----------|------------------|----------|------------------------|----------|--|---------|
| Minimum | 53.00 | (1) | 14.00 | (1) | 17.80 | (1) | 19.10 | (1) | 16.00 | (1) | -3.10 | (1) |
| Minimum +1 measurement | 53.60 | (2) | 14.20 | (2) | 18.00 | (3) | 19.50 | (1) | 16.40 | (1) | -2.90 | (2) |
| Minimum +2 measurement | 53.90 | (1) | 14.30 | (3) | 18.10 | (4) | 19.60 | (2) | 16.50 | (2) | -2.70 | (3) |
| Minimum +3 measurement | 54.00 | (1) | 14.40 | (5) | 18.20 | (5) | 19.80 | (3) | 16.80 | (1) | -2.50 | (1) |
| Minimum +4 measurement | 54.30 | (5) | 14.50 | (11) | 18.30 | (5) | 20.00 | (1) | 17.10 | (1) | -2.40 | (5) |
| 1st %ile | 54.66 | | 14.48 | | 18.32 | | 20.39 | | 17.44 | | -2.25 | |
| 2nd %ile | 54.95 | | 14.58 | | 18.50 | | 20.76 | | 17.71 | | -2.04 | |
| 3rd %ile | 55.14 | | 14.71 | | 18.63 | | 21.00 | | 17.87 | | -1.85 | |
| 5th %ile | 55.44 | | 14.86 | | 18.79 | | 21.23 | | 18.13 | | -1.62 | |
| 50%ile | 57.62 | | 15.73 | | 19.85 | | 22.90 | | 19.97 | | 0.03 | |
| 95th %ile | 59.89 | | 16.59 | | 20.87 | | 24.54 | | 21.66 | | 1.64 | |
| 97th %ile | 60.26 | | 16.78 | | 21.00 | | 24.79 | | 21.90 | | 1.94 | |
| 98th %ile | 60.48 | | 16.88 | | 21.13 | | 24.96 | | 22.07 | | 2.15 | |
| 99th %ile | 60.84 | | 17.06 | | 21.33 | | 25.24 | | 22.40 | | 2.49 | |
| Maximum -4 measurement | 61.50 | (1) | 17.20 | (5) | 21.50 | (3) | 25.60 | (1) | 22.80 | (4) | 3.10 | (2) |
| Maximum -3 measurement | 61.70 | (1) | 17.30 | (8) | 21.60 | (4) | 25.80 | (2) | 23.00 | (2) | 3.20 | (1) |
| Maximum -2 measurement | 61.80 | (2) | 17.40 | (2) | 21.70 | (4) | 25.90 | (2) | 23.30 | (1) | 3.30 | (1) |
| Maximum -1 measurement | 62.00 | (1) | 17.60 | (1) | 21.80 | (2) | 26.10 | (1) | 23.60 | (2) | 4.00 | (1) |
| Maximum | 62.40 | (1) | 18.00 | (1) | 22.00 | (1) | 26.20 | (2) | 24.00 | (1) | 4.30 | (1) |
| Mean | 57.68 | [0.030] | 15.78 | [0.012] | 19.90 | [0.014] | 22.95 | [0.023] | 19.98 | [0.024] | 0.09 | [0.022] |
| Standard Deviation | 1.36 | [0.022] | 0.55 | [0.009] | 0.64 | [0.010] | 1.01 | [0.016] | 1.07 | [0.017] | 1.00 | [0.016] |
| Coefficient of variation | 2.36 | [0.037]% | 3.45 | [0.055]% | 3.20 | [0.051]% | 4.39 | [0.069]% | 5.37 | [0.085]% | | |
| No of Subjects | 2000 | | 2000 | | 2000 | | 2000 | | 1998 | | 1998 | |

(ALL MEASUREMENTS IN CENTIMETRES)

The figure in Brackets () indicates the number of survey subjects having that specific measurement

TABLE 23 PART 1

SIZE ROLL REFERENCE **A** CONTROL MEASUREMENTS 1ST HEAD CIRCUMFERENCE
 2ND
 NUMBER OF SIZES **3**
 SIZE **1** CONTROL MEASUREMENT RANGES **53.60** TO **56.39** HEAD CIRCUMFERENCE
 TO

37

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.00 | 17.30 | 53.60 | 33.70 | 31.60 | 12.20 | 24.10 | 16.00 | 19.10 | 7.30 | 11.00 | 5.50 | 7.50 | 8.90 | 6.60 | 7.00 | 7.70 | -0.40 | -0.30 | -2.40 |
| Min + 1 Measurement | 14.20 | 18.00 | 54.40 | 33.90 | 31.70 | 12.30 | 24.20 | 16.10 | 19.20 | 7.40 | 11.10 | 5.60 | 7.60 | 9.00 | 6.70 | 7.10 | 7.80 | -0.10 | -0.20 | -2.70 |
| Min + 2 Measurement | 14.30 | 18.10 | 54.60 | 34.00 | 31.80 | 12.40 | 24.30 | 16.20 | 19.30 | 7.50 | 11.20 | 5.70 | 7.70 | 9.10 | 6.80 | 7.20 | 7.90 | 0.00 | -0.10 | -2.40 |
| Min + 3 Measurement | 14.40 | 18.20 | 54.80 | 34.10 | 31.90 | 12.50 | 24.40 | 16.30 | 19.40 | 7.60 | 11.30 | 5.80 | 7.80 | 9.20 | 6.90 | 7.30 | 8.00 | 0.10 | 0.00 | -2.20 |
| Min + 4 Measurement | 14.50 | 18.30 | 54.90 | 34.20 | 32.00 | 12.60 | 24.50 | 16.40 | 19.50 | 7.70 | 11.40 | 5.90 | 7.90 | 9.30 | 7.00 | 7.40 | 8.10 | 0.20 | 0.10 | -2.00 |
| 1st Size | 14.27 | 17.96 | 53.94 | 33.56 | 31.67 | 12.51 | 24.16 | 16.47 | 19.66 | 7.21 | 11.25 | 5.68 | 7.46 | 9.41 | 7.46 | 7.22 | 8.02 | -0.22 | -0.16 | -2.32 |
| 2nd Size | 14.36 | 18.07 | 54.17 | 34.08 | 31.95 | 12.58 | 24.26 | 17.15 | 19.27 | 7.38 | 11.45 | 5.38 | 7.43 | 9.34 | 7.85 | 7.65 | 8.16 | 0.04 | 0.14 | -1.92 |
| 3rd Size | 14.42 | 18.15 | 54.34 | 34.27 | 32.26 | 12.64 | 24.35 | 17.35 | 19.51 | 7.50 | 11.64 | 5.57 | 7.58 | 9.71 | 7.96 | 7.86 | 8.32 | 0.14 | 0.56 | -1.82 |
| 5th Size | 14.51 | 18.31 | 54.62 | 34.65 | 32.52 | 12.70 | 24.53 | 17.53 | 19.77 | 7.59 | 11.80 | 5.59 | 7.58 | 9.96 | 8.12 | 8.22 | 8.44 | 0.40 | 0.70 | -1.54 |
| 50th Size | 15.26 | 19.18 | 55.76 | 36.96 | 34.34 | 13.53 | 25.46 | 19.16 | 22.45 | 9.64 | 12.69 | 10.43 | 10.36 | 11.96 | 9.52 | 9.74 | 9.45 | 1.67 | 2.27 | 0.02 |
| 95 Size | 16.04 | 19.85 | 56.24 | 39.61 | 36.00 | 14.13 | 26.60 | 20.97 | 23.99 | 10.55 | 13.72 | 12.30 | 11.95 | 13.13 | 11.02 | 11.17 | 10.41 | 2.33 | 3.70 | 1.70 |
| 97 Size | 16.13 | 19.96 | 56.26 | 40.06 | 36.38 | 14.23 | 26.76 | 21.12 | 24.15 | 10.72 | 13.84 | 12.49 | 12.10 | 13.32 | 11.10 | 11.56 | 10.49 | 3.09 | 3.98 | 2.08 |
| 98 Size | 16.19 | 20.10 | 56.27 | 40.32 | 36.54 | 14.36 | 26.92 | 21.22 | 24.26 | 10.78 | 13.89 | 12.64 | 12.15 | 13.42 | 11.22 | 11.67 | 10.57 | 3.22 | 4.31 | 2.32 |
| 99 Size | 16.36 | 20.17 | 56.29 | 40.57 | 36.81 | 14.45 | 26.99 | 21.62 | 24.46 | 10.57 | 14.08 | 12.74 | 12.45 | 13.59 | 11.46 | 11.88 | 10.69 | 3.56 | 4.66 | 2.54 |
| Max - 4 Measurement | 16.20 | 20.00 | 55.40 | 40.40 | 36.40 | 14.30 | 26.90 | 21.50 | 24.40 | 10.70 | 13.40 | 12.50 | 12.20 | 13.40 | 11.40 | 11.70 | 10.50 | 3.30 | 4.40 | 2.40 |
| Max - 3 Measurement | 16.30 | 20.10 | 56.00 | 40.60 | 36.50 | 14.40 | 27.00 | 21.70 | 24.50 | 10.80 | 13.60 | 12.60 | 12.40 | 13.50 | 11.50 | 11.80 | 10.60 | 3.40 | 4.60 | 2.50 |
| Max - 2 Measurement | 16.40 | 20.20 | 56.10 | 41.30 | 36.60 | 14.50 | 27.10 | 21.90 | 24.60 | 10.90 | 13.70 | 12.70 | 12.50 | 13.60 | 11.70 | 11.90 | 10.70 | 3.60 | 4.70 | 2.60 |
| Max - 1 Measurement | 16.50 | 20.30 | 56.20 | 41.40 | 37.00 | 14.60 | 27.20 | 22.00 | 24.70 | 11.00 | 13.80 | 12.80 | 12.60 | 13.70 | 11.80 | 12.00 | 10.80 | 3.70 | 5.00 | 2.70 |
| Max | 16.60 | 20.60 | 56.30 | 42.10 | 37.60 | 14.80 | 27.30 | 22.40 | 25.10 | 11.40 | 14.30 | 13.10 | 13.10 | 14.00 | 12.20 | 12.20 | 11.00 | 3.80 | 5.10 | 4.30 |
| Mean | 15.82 | 19.15 | 55.68 | 37.10 | 34.36 | 13.56 | 25.55 | 19.27 | 22.48 | 9.71 | 12.73 | 11.05 | 10.43 | 12.65 | 9.56 | 9.75 | 9.48 | 1.70 | 2.30 | 0.08 |
| SD | 0.45 | 0.47 | 0.52 | 1.51 | 1.09 | 0.42 | 0.65 | 1.06 | 0.94 | 0.61 | 0.58 | 0.77 | 0.94 | 0.70 | 0.91 | 0.92 | 0.54 | 0.76 | 0.94 | 1.03 |
| Coefficient of Variation % | 2.95 | 2.42 | 0.93 | 4.07 | 3.18 | 3.12 | 2.47 | 5.47 | 4.17 | 6.28 | 4.55 | 6.94 | 9.00 | 5.81 | 9.51 | 9.44 | 6.19 | | | |
| No of Survey Subjects | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 | 334 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 23 PART 2

SIZE ROLL REFERENCE **A** CONTROL MEASUREMENTS 1ST HEAD CIRCUMFERENCE
 2ND
 NUMBER OF SIZES **3**
 SIZE **2** CONTROL MEASUREMENT RANGES **56.40** TO **59.19** HEAD CIRCUMFERENCE
 TO

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASTON TO VERTEX | MENTON TO NASTON | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASTON VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.20 | 18.30 | 56.40 | 35.20 | 31.10 | 12.40 | 23.70 | 16.80 | 19.50 | 8.00 | 9.80 | 8.60 | 7.50 | 8.60 | 6.50 | 6.60 | 6.20 | -1.00 | -0.40 | -3.10 |
| Min + 1 Measurement | 14.50 | 18.40 | 56.50 | 34.10 | 31.80 | 12.60 | 24.30 | 17.10 | 19.60 | 8.50 | 10.80 | 8.80 | 8.00 | 9.50 | 7.10 | 6.80 | 6.70 | -0.60 | -0.30 | -2.90 |
| Min + 2 Measurement | 14.50 | 18.50 | 56.60 | 34.20 | 32.00 | 12.70 | 24.60 | 17.20 | 20.10 | 8.60 | 11.00 | 8.90 | 8.10 | 10.00 | 7.20 | 7.00 | 7.70 | -0.50 | -0.10 | -2.70 |
| Min + 3 Measurement | 14.60 | 18.60 | 56.70 | 34.50 | 32.10 | 12.80 | 24.80 | 17.40 | 20.20 | 8.70 | 11.30 | 9.00 | 8.20 | 10.10 | 7.30 | 7.20 | 7.80 | -0.40 | 0.00 | -2.50 |
| Min + 4 Measurement | 14.70 | 18.90 | 56.80 | 34.60 | 32.40 | 12.90 | 24.60 | 17.50 | 20.30 | 8.80 | 11.40 | 9.20 | 8.30 | 10.20 | 7.40 | 7.30 | 7.90 | -0.30 | 0.10 | -2.40 |
| 1st Size | 14.50 | 18.65 | 56.40 | 34.83 | 32.69 | 12.83 | 24.62 | 17.64 | 20.52 | 8.73 | 11.52 | 9.23 | 8.42 | 10.58 | 7.69 | 7.64 | 8.08 | -0.07 | 0.22 | -2.26 |
| 2nd Size | 14.76 | 18.97 | 56.40 | 35.22 | 33.03 | 12.95 | 24.90 | 17.91 | 20.74 | 8.83 | 11.73 | 9.41 | 8.65 | 10.86 | 7.93 | 7.92 | 8.35 | 0.12 | 0.43 | -2.06 |
| 3rd Size | 14.94 | 19.46 | 56.40 | 35.41 | 33.23 | 13.02 | 24.91 | 18.11 | 21.04 | 8.97 | 11.86 | 9.48 | 8.83 | 10.97 | 8.09 | 8.14 | 8.47 | 0.25 | 0.61 | -1.88 |
| 5th Size | 14.97 | 19.67 | 56.40 | 35.42 | 33.49 | 13.12 | 25.07 | 18.24 | 21.17 | 9.11 | 11.99 | 9.54 | 9.02 | 11.13 | 8.36 | 8.35 | 8.66 | 0.42 | 0.91 | -1.65 |
| 50th Size | 15.75 | 19.88 | 57.65 | 38.08 | 35.36 | 13.36 | 26.17 | 19.99 | 22.91 | 10.12 | 13.00 | 11.23 | 10.66 | 12.23 | 9.82 | 9.85 | 9.72 | 1.75 | 2.40 | 0.06 |
| 95 Size | 16.52 | 20.65 | 58.40 | 40.91 | 37.26 | 14.50 | 27.85 | 21.57 | 24.66 | 11.18 | 13.93 | 12.59 | 12.22 | 13.61 | 11.24 | 11.38 | 10.69 | 3.00 | 3.89 | 1.65 |
| 97 Size | 16.65 | 20.77 | 58.40 | 41.13 | 37.55 | 14.76 | 27.53 | 21.81 | 24.71 | 11.35 | 14.11 | 12.77 | 12.43 | 13.56 | 11.46 | 11.65 | 10.75 | 3.18 | 4.07 | 1.90 |
| 98 Size | 16.76 | 20.88 | 58.40 | 41.42 | 37.74 | 14.81 | 27.66 | 21.96 | 24.87 | 11.46 | 14.19 | 12.90 | 12.50 | 13.68 | 11.59 | 11.79 | 10.92 | 3.36 | 4.22 | 2.11 |
| 99 Size | 16.92 | 20.99 | 59.04 | 41.76 | 38.15 | 15.05 | 27.74 | 22.19 | 25.13 | 11.75 | 14.37 | 13.04 | 12.77 | 13.94 | 11.83 | 11.97 | 11.10 | 3.64 | 4.50 | 2.48 |
| Max - 4 Measurement | 17.00 | 21.00 | 58.70 | 42.70 | 38.50 | 15.00 | 28.00 | 22.60 | 25.40 | 12.00 | 14.40 | 13.10 | 12.90 | 14.10 | 12.20 | 12.40 | 11.20 | 3.40 | 4.70 | 2.90 |
| Max - 3 Measurement | 17.10 | 21.10 | 58.80 | 43.50 | 38.60 | 15.10 | 28.10 | 22.80 | 25.50 | 12.20 | 14.50 | 13.20 | 13.00 | 14.20 | 12.40 | 12.50 | 11.30 | 4.00 | 4.80 | 3.00 |
| Max - 2 Measurement | 17.20 | 21.20 | 58.90 | 43.60 | 38.70 | 15.20 | 28.20 | 23.00 | 25.60 | 12.50 | 14.60 | 13.30 | 13.10 | 14.30 | 12.60 | 12.60 | 11.40 | 4.10 | 4.90 | 3.20 |
| Max - 1 Measurement | 17.30 | 21.30 | 59.00 | 43.70 | 39.20 | 15.30 | 28.30 | 23.30 | 25.70 | 12.70 | 14.70 | 13.40 | 13.20 | 14.40 | 12.80 | 12.80 | 11.50 | 4.20 | 5.00 | 3.30 |
| Max | 17.40 | 21.40 | 59.10 | 44.20 | 39.80 | 15.40 | 28.40 | 23.60 | 26.20 | 13.00 | 15.00 | 13.50 | 13.30 | 14.50 | 13.00 | 13.00 | 11.70 | 4.40 | 5.60 | 4.00 |
| Mean | 15.30 | 19.41 | 57.72 | 38.15 | 35.39 | 13.92 | 26.23 | 20.02 | 22.95 | 10.16 | 13.05 | 11.27 | 10.64 | 12.31 | 9.86 | 9.91 | 9.70 | 1.78 | 2.40 | 0.10 |
| SD | 0.45 | 0.50 | 0.75 | 1.56 | 1.14 | 0.40 | 0.67 | 0.94 | 0.65 | 0.62 | 0.83 | 0.97 | 0.70 | 0.84 | 0.93 | 0.63 | 0.80 | 0.94 | 1.00 | |
| No. of Survey Subjects | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 | 1377 |

(ALL MEASUREMENTS IN CENTIMETRES)

THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 23 PART 3

SIZE ROLL REFERENCE A CONTROL MEASUREMENT: 1ST HEAD CIRCUMFERENCE
 2ND
 NUMBER OF SIZES 3
 SIZE 3 CONTROL MEASUREMENT RANGES 59.20 TO 62.00 HEAD CIRCUMFERENCE
 TO

39

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.00 | 19.50 | 59.20 | 34.30 | 33.20 | 12.90 | 25.00 | 17.80 | 20.70 | 8.70 | 4.50 | 9.40 | 8.30 | 11.20 | 6.60 | 7.70 | 6.50 | -2.10 | -1.70 | -2.70 |
| Min + 1 Measurement | 15.10 | 19.60 | 59.30 | 34.40 | 33.30 | 13.00 | 25.10 | 18.00 | 21.00 | 9.10 | 4.90 | 9.80 | 8.60 | 11.40 | 7.00 | 7.90 | 6.70 | -2.00 | -1.60 | -2.40 |
| Min + 2 Measurement | 15.20 | 19.70 | 59.40 | 34.50 | 33.40 | 13.10 | 25.20 | 18.20 | 22.00 | 9.50 | 10.20 | 10.20 | 9.00 | 11.60 | 7.40 | 8.20 | 7.00 | -1.90 | -1.50 | -2.20 |
| Min + 3 Measurement | 15.30 | 19.80 | 59.50 | 34.60 | 33.50 | 13.20 | 25.30 | 18.40 | 23.00 | 9.90 | 10.60 | 10.60 | 9.30 | 11.80 | 7.80 | 8.50 | 7.10 | -1.80 | -1.40 | -2.00 |
| Min + 4 Measurement | 15.40 | 19.90 | 59.60 | 34.70 | 33.60 | 13.30 | 25.40 | 18.60 | 24.00 | 10.30 | 11.00 | 11.00 | 9.60 | 12.00 | 8.20 | 8.80 | 7.20 | -1.70 | -1.30 | -1.80 |
| 1st Size | 15.05 | 19.54 | 59.24 | 34.34 | 33.24 | 12.94 | 25.04 | 17.84 | 20.74 | 8.74 | 4.54 | 9.44 | 8.34 | 11.24 | 6.64 | 7.74 | 6.54 | -2.14 | -1.74 | -2.74 |
| 2nd Size | 15.15 | 19.72 | 59.26 | 34.36 | 33.26 | 13.15 | 25.11 | 18.55 | 21.03 | 9.24 | 4.73 | 9.66 | 8.66 | 11.43 | 7.56 | 7.98 | 6.73 | -2.06 | -1.66 | -2.42 |
| 3rd Size | 15.25 | 19.81 | 59.28 | 34.38 | 33.28 | 13.27 | 25.18 | 18.72 | 21.36 | 9.34 | 4.97 | 9.97 | 8.97 | 11.49 | 7.92 | 8.32 | 6.93 | -2.04 | -1.64 | -2.38 |
| 4th Size | 15.41 | 19.40 | 59.20 | 34.30 | 33.27 | 13.44 | 25.03 | 19.47 | 21.67 | 9.64 | 10.09 | 10.10 | 9.26 | 11.59 | 8.08 | 8.57 | 7.03 | -1.98 | -1.58 | -2.15 |
| 5th Size | 16.17 | 20.54 | 59.67 | 34.46 | 33.14 | 14.22 | 26.92 | 20.65 | 23.47 | 10.62 | 13.27 | 11.49 | 10.78 | 12.55 | 10.67 | 10.12 | 10.24 | -1.78 | -1.41 | -2.05 |
| 95 Size | 17.02 | 21.40 | 60.90 | 34.96 | 33.49 | 15.14 | 27.46 | 22.26 | 25.15 | 11.58 | 14.25 | 12.72 | 12.32 | 13.57 | 11.33 | 11.67 | 11.10 | -1.60 | -1.24 | -1.56 |
| 97 Size | 17.18 | 21.56 | 61.05 | 34.25 | 33.66 | 15.25 | 28.12 | 22.51 | 25.32 | 11.69 | 14.48 | 12.89 | 12.46 | 14.06 | 11.54 | 11.88 | 11.25 | -1.52 | -1.16 | -1.48 |
| 98 Size | 17.25 | 21.63 | 61.30 | 34.44 | 33.54 | 15.37 | 28.22 | 22.58 | 25.44 | 11.97 | 14.64 | 12.98 | 12.62 | 14.11 | 11.61 | 12.04 | 11.35 | -1.42 | -1.06 | -1.35 |
| 99 Size | 17.32 | 21.71 | 61.71 | 34.49 | 34.41 | 15.47 | 28.42 | 22.72 | 25.82 | 12.15 | 14.92 | 13.22 | 12.94 | 14.22 | 11.68 | 12.52 | 11.52 | -1.36 | -0.90 | -1.34 |
| Max - 4 Measurement | 17.20 | 21.50 | 61.40 | 34.80 | 33.90 | 15.30 | 28.20 | 22.60 | 25.50 | 11.90 | 14.80 | 13.00 | 12.70 | 14.10 | 11.50 | 12.10 | 11.40 | -1.30 | -0.80 | -1.20 |
| Max - 3 Measurement | 17.30 | 21.60 | 61.50 | 34.80 | 34.30 | 15.40 | 28.30 | 22.70 | 25.80 | 12.00 | 14.90 | 13.20 | 12.90 | 14.20 | 11.60 | 12.40 | 11.50 | -1.20 | -0.70 | -1.10 |
| Max - 2 Measurement | 17.40 | 21.70 | 61.70 | 34.60 | 34.40 | 15.50 | 28.40 | 22.80 | 26.00 | 12.20 | 15.00 | 13.30 | 13.10 | 14.30 | 11.70 | 12.60 | 11.60 | -1.10 | -0.60 | -1.00 |
| Max - 1 Measurement | 17.60 | 21.80 | 61.80 | 34.30 | 34.50 | 15.60 | 28.50 | 23.00 | 26.10 | 13.00 | 15.50 | 13.40 | 13.20 | 14.60 | 11.90 | 13.00 | 11.70 | -1.00 | -0.50 | -0.90 |
| Max | 18.00 | 22.00 | 62.00 | 34.80 | 34.60 | 15.70 | 28.60 | 23.00 | 26.20 | 14.10 | 15.80 | 13.30 | 13.60 | 14.70 | 11.90 | 13.20 | 11.70 | -0.90 | -0.40 | -0.80 |
| Mean | 16.25 | 20.07 | 59.86 | 34.37 | 33.26 | 14.30 | 26.96 | 20.83 | 23.51 | 10.60 | 13.29 | 11.47 | 10.81 | 12.69 | 10.08 | 10.22 | 10.07 | -1.82 | -1.48 | -2.01 |
| SD | 0.48 | 0.44 | 0.58 | 0.63 | 0.18 | 0.50 | 0.70 | 0.45 | 0.04 | 0.69 | 0.70 | 0.80 | 0.94 | 0.70 | 0.88 | 0.63 | 0.83 | 0.45 | 0.45 | 0.45 |
| Coefficient of Variation | 2.94 | 2.13 | 0.97 | 1.84 | 0.53 | 3.57 | 2.58 | 2.13 | 1.35 | 6.47 | 5.26 | 7.01 | 8.70 | 5.54 | 8.69 | 10.09 | 6.53 | | | |
| No of Survey Subjects | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 24 PART 1

SIZE ROLL REFERENCE **B** CONTROL MEASUREMENTS 1ST HEAD CIRCUMFERENCE
 2ND
 NUMBER OF SIZES **4**
 SIZE **1** CONTROL MEASUREMENT RANGES **53.60** TO **55.69** HEAD CIRCUMFERENCE
 TO

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASTON TO VERTEX | MENTON TO NASTON | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASTON VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14 00 | 17 50 | 53 60 | 33 70 | 31 60 | 12 20 | 24 10 | 16 00 | 19 10 | 7 50 | 11 00 | 9 50 | 7 50 | 9 40 | 6 00 | 7 00 | 7 70 | 0 10 | 0 50 | -2 70 |
| Min + 1 Measurement | 14 40 | 18 00 | 53 90 | 33 80 | 31 70 | 12 40 | 24 20 | 16 40 | 19 30 | 8 30 | 11 30 | 8 00 | 7 80 | 9 70 | 7 70 | 7 10 | 8 00 | 0 10 | 0 10 | -2 40 |
| Min + 2 Measurement | 14 50 | 18 10 | 54 00 | 34 00 | 32 00 | 12 70 | 24 30 | 16 50 | 20 00 | 9 50 | 11 40 | 9 00 | 8 20 | 10 00 | 8 00 | 7 20 | 8 10 | 0 10 | 0 20 | -2 00 |
| Min + 3 Measurement | 14 60 | 18 20 | 54 30 | 34 40 | 32 30 | 12 80 | 24 40 | 17 20 | 20 40 | 9 00 | 11 50 | 9 30 | 8 50 | 10 30 | 8 10 | 7 70 | 8 20 | 0 20 | 0 40 | -1 80 |
| Min + 4 Measurement | 14 70 | 18 30 | 54 60 | 34 50 | 32 40 | 12 90 | 24 50 | 17 40 | 20 50 | 9 70 | 11 60 | 9 50 | 9 00 | 10 40 | 8 20 | 7 50 | 8 30 | 0 30 | 0 50 | -1 00 |
| 1st Size | 14 03 | 17 82 | 53 60 | 33 70 | 31 62 | 12 24 | 24 11 | 16 13 | 19 22 | 7 53 | 11 05 | 9 53 | 7 60 | 9 16 | 6 06 | 7 05 | 7 50 | 0 10 | 0 17 | -2 74 |
| 2nd Size | 14 17 | 17 91 | 53 90 | 33 77 | 31 65 | 12 42 | 24 16 | 16 47 | 19 65 | 8 22 | 11 25 | 9 56 | 8 00 | 9 46 | 7 50 | 7 17 | 8 07 | 0 10 | 0 13 | -2 14 |
| 3rd Size | 14 30 | 18 00 | 54 00 | 33 90 | 31 80 | 12 60 | 24 20 | 17 15 | 20 00 | 8 40 | 11 40 | 9 30 | 8 50 | 10 30 | 8 00 | 7 70 | 8 13 | 0 10 | 0 20 | -1 80 |
| 5th Size | 14 46 | 18 12 | 54 16 | 34 43 | 32 10 | 12 65 | 24 25 | 17 57 | 20 47 | 9 53 | 11 62 | 9 67 | 8 59 | 10 73 | 8 09 | 7 53 | 8 27 | 0 26 | 0 34 | -1 52 |
| 50th Size | 15 19 | 18 94 | 55 21 | 36 62 | 34 17 | 13 45 | 25 32 | 19 96 | 22 26 | 9 55 | 12 54 | 11 01 | 10 26 | 11 53 | 9 41 | 9 71 | 9 35 | 1 65 | 1 21 | 0 11 |
| 95 Size | 15 98 | 19 62 | 55 57 | 39 14 | 35 76 | 14 12 | 26 47 | 20 93 | 24 62 | 10 57 | 13 52 | 12 32 | 11 85 | 13 22 | 11 05 | 11 27 | 10 22 | 2 73 | 3 57 | 1 35 |
| 97 Size | 16 10 | 19 75 | 55 53 | 39 41 | 35 90 | 14 30 | 26 65 | 21 20 | 24 25 | 10 70 | 13 70 | 12 50 | 12 00 | 13 40 | 11 08 | 11 70 | 10 40 | 3 00 | 3 90 | 2 20 |
| 98 Size | 16 17 | 19 53 | 55 59 | 39 43 | 35 97 | 14 57 | 26 72 | 21 33 | 24 43 | 10 77 | 13 77 | 12 57 | 12 17 | 13 53 | 11 17 | 11 82 | 10 43 | 3 27 | 4 27 | 2 37 |
| 99 Size | 16 27 | 19 93 | 55 54 | 40 97 | 36 07 | 14 43 | 26 78 | 21 66 | 24 57 | 10 57 | 13 97 | 12 67 | 12 43 | 13 67 | 11 37 | 11 59 | 10 47 | 3 47 | 4 53 | 2 60 |
| Max - 4 Measurement | 16 00 | 19 50 | 55 20 | 39 40 | 35 90 | 14 10 | 26 50 | 21 10 | 24 10 | 10 60 | 13 60 | 12 30 | 11 90 | 13 40 | 11 00 | 11 40 | 10 00 | 3 70 | 3 90 | 2 10 |
| Max - 3 Measurement | 16 10 | 19 60 | 55 30 | 39 90 | 35 90 | 14 20 | 26 60 | 21 20 | 24 40 | 10 70 | 13 70 | 12 40 | 12 00 | 13 50 | 11 10 | 11 70 | 10 10 | 3 00 | 4 20 | 1 20 |
| Max - 2 Measurement | 16 20 | 19 50 | 55 40 | 40 00 | 36 00 | 14 30 | 26 70 | 21 40 | 24 50 | 10 80 | 13 80 | 12 50 | 12 10 | 13 60 | 11 30 | 11 80 | 10 20 | 3 20 | 4 40 | 2 30 |
| Max - 1 Measurement | 16 30 | 19 40 | 55 50 | 40 30 | 36 10 | 14 40 | 26 80 | 21 70 | 24 60 | 10 90 | 13 90 | 12 60 | 12 20 | 13 70 | 11 40 | 11 90 | 10 30 | 3 40 | 4 60 | 2 50 |
| Max | 16 40 | 19 00 | 55 60 | 42 10 | 36 40 | 14 50 | 27 00 | 22 00 | 24 70 | 11 00 | 14 00 | 12 50 | 12 60 | 13 80 | 11 70 | 12 20 | 10 40 | 3 60 | 4 70 | 2 50 |
| Mean | 15 25 | 18 97 | 55 16 | 36 73 | 34 13 | 13 47 | 25 37 | 19 05 | 22 31 | 9 61 | 12 63 | 11 01 | 10 31 | 11 92 | 9 47 | 9 65 | 9 30 | 1 62 | 2 24 | 0 11 |
| SD | 0 44 | 0 46 | 0 43 | 1 49 | 1 06 | 0 42 | 0 66 | 0 65 | 0 63 | 0 30 | 0 46 | 0 30 | 0 46 | 0 43 | 0 44 | 0 53 | 0 77 | 0 40 | 0 53 | 1 03 |
| Coefficient of Variation | 2 91 | 2 42 | 0 75 | 4 05 | 3 10 | 3 10 | 2 50 | 3 52 | 4 50 | 0 74 | 4 00 | 2 30 | 4 25 | 0 34 | 4 74 | 10 20 | 0 19 | 0 10 | 0 53 | 1 03 |
| No of Survey Subjects | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 | 133 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 24 PART 2

SIZE ROLL REFERENCE **B** CONTROL MEASUREMENTS 1ST **HEAD CIRCUMFERENCE**
 2ND
 NUMBER OF SIZES **4**
 SIZE **2** CONTROL MEASUREMENT RANGES **55.70** TO **57.79** HEAD CIRCUMFERENCE
 TO

41

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASTON TO VERTEX | MENTON TO NASTON | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASTON VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.20 | 18.10 | 55.70 | 35.20 | 31.60 | 12.30 | 23.70 | 16.50 | 19.60 | 8.00 | 4.80 | 8.60 | 7.50 | 8.60 | 6.50 | 6.80 | 6.20 | -1.00 | -0.40 | -3.10 |
| Min + 1 Measurement | 14.30 | 18.30 | 55.80 | 35.40 | 31.80 | 12.50 | 24.20 | 16.80 | 19.80 | 8.20 | 5.00 | 8.80 | 7.70 | 8.80 | 6.70 | 7.00 | 6.70 | -0.50 | -0.30 | -2.90 |
| Min + 2 Measurement | 14.40 | 18.40 | 55.90 | 35.60 | 32.00 | 12.60 | 24.30 | 17.10 | 20.10 | 8.30 | 5.10 | 9.00 | 7.90 | 9.00 | 6.80 | 7.10 | 6.80 | -0.40 | -0.20 | -2.70 |
| Min + 3 Measurement | 14.50 | 18.50 | 56.00 | 35.80 | 32.20 | 12.70 | 24.40 | 17.20 | 20.30 | 8.40 | 5.20 | 9.20 | 8.00 | 9.20 | 6.90 | 7.20 | 6.90 | -0.30 | -0.10 | -2.40 |
| Min + 4 Measurement | 14.60 | 18.60 | 56.10 | 36.00 | 32.40 | 12.80 | 24.50 | 17.30 | 20.40 | 8.50 | 5.30 | 9.30 | 8.10 | 9.30 | 7.00 | 7.30 | 7.00 | -0.20 | 0.00 | -2.30 |
| 1st File | 14.45 | 18.40 | 55.70 | 34.27 | 32.36 | 12.67 | 24.52 | 17.34 | 20.41 | 8.50 | 5.44 | 9.22 | 8.23 | 9.47 | 7.07 | 7.47 | 7.02 | 0.02 | 0.15 | -2.24 |
| 2nd File | 14.53 | 18.56 | 55.70 | 34.85 | 32.67 | 12.81 | 24.63 | 17.53 | 20.73 | 8.63 | 5.63 | 9.36 | 8.55 | 9.77 | 7.87 | 7.90 | 8.25 | 0.15 | 0.46 | -2.02 |
| 3rd File | 14.59 | 18.71 | 55.73 | 35.10 | 32.86 | 12.87 | 24.71 | 17.70 | 20.95 | 8.76 | 5.83 | 9.61 | 8.78 | 10.00 | 8.05 | 8.12 | 8.35 | 0.28 | 0.60 | -1.84 |
| 5th File | 14.74 | 18.78 | 55.79 | 35.42 | 33.07 | 12.97 | 24.83 | 17.94 | 21.15 | 8.96 | 6.05 | 9.79 | 8.98 | 10.06 | 8.25 | 8.33 | 8.48 | 0.47 | 0.79 | -1.61 |
| 50th File | 15.54 | 19.54 | 56.86 | 37.63 | 34.93 | 13.72 | 25.90 | 19.68 | 22.70 | 9.91 | 6.85 | 11.12 | 10.48 | 12.14 | 9.69 | 9.75 | 9.60 | 1.73 | 2.39 | 0.05 |
| 95 File | 16.36 | 20.28 | 57.62 | 40.43 | 36.60 | 14.46 | 26.87 | 21.23 | 24.11 | 10.97 | 7.89 | 12.46 | 12.10 | 13.18 | 11.06 | 11.16 | 10.55 | 2.91 | 3.79 | 1.59 |
| 97 File | 16.66 | 20.39 | 57.65 | 40.78 | 36.80 | 14.58 | 26.98 | 21.48 | 24.27 | 11.13 | 8.09 | 12.65 | 12.27 | 13.38 | 11.24 | 11.36 | 10.65 | 3.14 | 4.03 | 1.90 |
| 98 File | 16.56 | 20.49 | 57.67 | 41.09 | 37.09 | 14.71 | 27.17 | 21.65 | 24.38 | 11.26 | 8.09 | 12.73 | 12.40 | 13.47 | 11.40 | 11.53 | 10.72 | 3.32 | 4.26 | 2.20 |
| 99 File | 16.72 | 20.57 | 57.68 | 41.59 | 37.49 | 14.89 | 27.40 | 21.87 | 24.85 | 11.50 | 8.19 | 12.90 | 12.58 | 13.60 | 11.65 | 11.80 | 10.85 | 3.55 | 4.56 | 2.50 |
| Max - 4 Measurement | 16.70 | 20.40 | 57.30 | 41.90 | 37.70 | 14.90 | 27.50 | 22.00 | 24.90 | 11.80 | 8.20 | 13.00 | 12.70 | 13.70 | 11.80 | 11.90 | 10.90 | 3.70 | 4.80 | 2.70 |
| Max - 3 Measurement | 16.80 | 20.50 | 57.40 | 42.10 | 37.90 | 15.00 | 27.60 | 22.20 | 25.00 | 11.90 | 8.30 | 13.10 | 12.80 | 13.80 | 12.00 | 12.00 | 11.00 | 3.80 | 4.90 | 2.80 |
| Max - 2 Measurement | 16.90 | 20.60 | 57.50 | 42.30 | 38.00 | 15.10 | 27.70 | 22.30 | 25.10 | 12.00 | 8.40 | 13.20 | 12.90 | 13.90 | 12.20 | 12.20 | 11.10 | 4.00 | 5.00 | 2.90 |
| Max - 1 Measurement | 17.00 | 20.70 | 57.60 | 42.70 | 38.10 | 15.20 | 27.80 | 22.40 | 25.30 | 12.10 | 8.50 | 13.30 | 13.00 | 14.00 | 12.40 | 12.40 | 11.20 | 4.10 | 5.10 | 3.00 |
| Max | 17.10 | 21.00 | 57.70 | 43.50 | 38.50 | 15.30 | 28.40 | 22.00 | 25.60 | 13.00 | 8.60 | 13.30 | 13.40 | 14.20 | 12.40 | 13.40 | 11.70 | 4.20 | 5.60 | 3.10 |
| Mean | 15.60 | 19.60 | 56.85 | 37.75 | 34.95 | 13.77 | 25.92 | 19.70 | 22.72 | 9.93 | 6.92 | 11.15 | 10.54 | 12.18 | 9.73 | 9.80 | 9.62 | 1.77 | 2.38 | 0.10 |
| SD | 0.48 | 0.45 | 0.58 | 1.53 | 1.08 | 0.44 | 0.64 | 0.99 | 0.90 | 0.83 | 0.60 | 0.80 | 0.95 | 0.66 | 0.87 | 0.88 | 0.63 | 0.77 | 0.93 | 1.00 |
| Coefficient of Variation | 3.10 | 2.30 | 1.03 | 4.05 | 3.09 | 3.23 | 2.45 | 5.01 | 3.95 | 6.32 | 4.65 | 7.16 | 9.03 | 5.44 | 8.91 | 9.94 | 6.50 | | | |
| No of Survey Subjects | 907 | 907 | 907 | 907 | 907 | 907 | 906 | 905 | 907 | 907 | 907 | 907 | 907 | 907 | 905 | 907 | 907 | 907 | 907 | 905 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 24 PART 3

SIZE ROLL REFERENCE **B** CONTROL MEASUREMENTS 1ST HEAD CIRCUMFERENCE
 2ND
 NUMBER OF SIZES **4**
 SIZE **3** CONTROL MEASUREMENT RANGES **57.80** TO **59.89** HEAD CIRCUMFERENCE
 TO

42

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRACION CORONAL ARC | BITRACION DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRACION TO BACK OF HEAD OF HEAD | TRACION TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRACION TO MENTON HORIZONTAL | TRACION TO MENTON VERTICAL | TRACION TO BROW RIDGE HORIZONTAL | TRACION TO PUPIL VERTICAL | TRACION TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | | |
|--------------------------|--------------|-------------|--------------------|--------------------|-----------------------|--------------------|-------------------------------|------------------------|------------------|---------------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|-------|-------|
| Min | 14.30 | 18.60 | 57.80 | 34.10 | 31.10 | 12.40 | 24.60 | 17.50 | 14.50 | 8.70 | 4.50 | 8.40 | 8.20 | 10.00 | 7.30 | 6.60 | 6.50 | -2.10 | -1.70 | -2.70 | | |
| Min + 1 Measurement | 14.60 | 18.80 | 57.90 | 34.30 | 32.10 | 12.80 | 24.70 | 17.60 | 14.60 | 8.80 | 5.00 | 8.50 | 8.30 | 10.10 | 7.40 | 7.20 | 7.50 | 7.80 | 7.80 | -0.60 | -0.10 | -2.50 |
| Min + 2 Measurement | 14.80 | 19.00 | 58.00 | 34.70 | 32.40 | 12.90 | 24.80 | 17.80 | 14.80 | 9.00 | 5.50 | 8.60 | 8.40 | 10.20 | 7.50 | 7.50 | 7.80 | 8.10 | 8.10 | 0.00 | 0.00 | -2.40 |
| Min + 3 Measurement | 14.40 | 19.00 | 58.10 | 35.00 | 32.80 | 13.00 | 24.90 | 18.00 | 15.00 | 9.00 | 6.00 | 8.70 | 8.50 | 10.30 | 7.60 | 7.60 | 8.00 | 8.40 | 8.40 | -0.30 | 0.10 | -2.30 |
| Min + 4 Measurement | 15.00 | 19.10 | 58.20 | 35.20 | 33.00 | 13.10 | 25.00 | 18.20 | 15.20 | 9.10 | 6.50 | 8.80 | 8.60 | 10.40 | 7.70 | 7.70 | 8.10 | 8.50 | 8.50 | -0.20 | 0.20 | -2.20 |
| 1st Mile | 14.90 | 19.10 | 57.80 | 35.24 | 33.13 | 12.47 | 25.04 | 17.84 | 20.65 | 8.91 | 11.58 | 9.35 | 8.51 | 10.83 | 7.71 | 7.73 | 8.43 | 8.43 | 8.43 | -0.13 | 0.22 | -2.27 |
| 2nd Mile | 14.97 | 19.19 | 57.80 | 35.45 | 33.45 | 13.08 | 25.21 | 18.16 | 20.96 | 9.05 | 11.81 | 9.64 | 8.73 | 10.97 | 7.92 | 7.92 | 8.61 | 8.61 | 8.61 | 0.09 | 0.42 | -2.07 |
| 3rd Mile | 15.05 | 19.30 | 57.80 | 35.65 | 33.60 | 13.14 | 25.33 | 18.35 | 21.19 | 9.13 | 11.93 | 9.77 | 8.85 | 11.12 | 8.04 | 8.13 | 8.73 | 8.73 | 8.73 | 0.25 | 0.64 | -1.90 |
| 5th Mile | 15.16 | 19.42 | 57.80 | 35.94 | 33.74 | 13.24 | 25.50 | 18.54 | 21.54 | 9.24 | 12.10 | 9.93 | 9.08 | 11.33 | 8.36 | 8.35 | 8.83 | 8.83 | 8.83 | 0.41 | 0.85 | -1.66 |
| 50th Mile | 15.43 | 20.20 | 58.43 | 38.55 | 35.70 | 14.01 | 26.44 | 20.21 | 23.17 | 10.30 | 13.13 | 11.33 | 10.70 | 12.37 | 9.96 | 9.99 | 9.87 | 9.87 | 9.87 | 1.76 | 2.38 | 0.03 |
| 95 Mile | 16.70 | 20.91 | 59.53 | 41.26 | 37.58 | 14.69 | 27.54 | 21.82 | 24.70 | 11.32 | 14.07 | 12.62 | 12.28 | 13.58 | 11.37 | 11.61 | 10.84 | 10.84 | 10.84 | 3.05 | 3.94 | 1.71 |
| 97 Mile | 16.80 | 20.99 | 59.63 | 41.58 | 37.95 | 14.90 | 27.73 | 22.08 | 24.91 | 11.46 | 14.20 | 12.85 | 12.47 | 13.80 | 11.56 | 11.78 | 11.00 | 11.00 | 11.00 | 3.22 | 4.12 | 1.95 |
| 98 Mile | 16.90 | 21.06 | 59.69 | 41.79 | 38.15 | 14.98 | 27.74 | 22.21 | 25.10 | 11.58 | 14.38 | 12.94 | 12.58 | 13.94 | 11.65 | 11.93 | 11.13 | 11.13 | 11.13 | 3.43 | 4.24 | 2.09 |
| 99 Mile | 17.09 | 21.17 | 59.74 | 42.23 | 38.46 | 15.14 | 28.04 | 22.66 | 25.27 | 11.77 | 14.57 | 13.07 | 12.77 | 14.08 | 11.86 | 12.16 | 11.27 | 11.27 | 11.27 | 3.67 | 4.33 | 2.46 |
| Max - 4 Measurement | 17.00 | 21.10 | 59.40 | 42.50 | 38.60 | 15.10 | 27.90 | 22.70 | 25.30 | 12.00 | 14.60 | 13.10 | 12.80 | 14.10 | 11.20 | 12.10 | 11.20 | 11.20 | 11.20 | 3.70 | 4.50 | 2.70 |
| Max - 3 Measurement | 17.10 | 21.20 | 59.50 | 43.20 | 38.70 | 15.20 | 28.00 | 22.80 | 25.40 | 12.20 | 14.70 | 13.20 | 12.90 | 14.20 | 11.30 | 12.20 | 11.30 | 11.30 | 11.30 | 3.80 | 4.60 | 3.10 |
| Max - 2 Measurement | 17.20 | 21.30 | 59.60 | 43.60 | 39.20 | 15.30 | 28.10 | 23.00 | 25.50 | 12.50 | 14.90 | 13.30 | 13.00 | 14.30 | 11.40 | 12.60 | 11.40 | 11.40 | 11.40 | 3.90 | 4.70 | 3.20 |
| Max - 1 Measurement | 17.30 | 21.40 | 59.70 | 43.70 | 39.80 | 15.40 | 28.20 | 23.30 | 25.60 | 12.70 | 15.00 | 13.40 | 13.10 | 14.40 | 11.50 | 13.20 | 11.50 | 11.50 | 11.50 | 4.00 | 4.90 | 3.30 |
| Max | 17.40 | 21.50 | 59.80 | 44.20 | 40.40 | 15.70 | 28.30 | 23.60 | 26.20 | 14.10 | 15.50 | 13.50 | 13.00 | 15.50 | 11.60 | 14.20 | 11.70 | 11.70 | 11.70 | 4.40 | 5.00 | 4.00 |
| Mean | 15.48 | 20.23 | 58.58 | 38.61 | 35.77 | 14.06 | 26.53 | 20.31 | 23.19 | 10.32 | 13.14 | 11.36 | 10.75 | 12.46 | 9.99 | 10.05 | 9.91 | 9.91 | 9.91 | 0.83 | 0.95 | 1.01 |
| SD | 0.46 | 0.46 | 0.55 | 1.60 | 1.14 | 0.44 | 0.65 | 0.49 | 0.48 | 0.65 | 0.65 | 0.82 | 0.45 | 0.71 | 0.92 | 0.99 | 0.61 | 0.61 | 0.61 | 0.83 | 0.95 | 1.01 |
| Coefficient of Variation | 2.88 | 2.25 | 0.95 | 4.12 | 3.19 | 3.15 | 2.43 | 4.88 | 4.25 | 6.25 | 4.77 | 7.22 | 8.88 | 5.68 | 9.17 | 9.86 | 6.15 | | | | | |
| No of Survey Subjects | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 | 837 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 24 PART 4

SIZE ROLL REFERENCE **B** CONTROL MEASUREMENTS 1ST HEAD CIRCUMFERENCE
 2ND
 NUMBER OF SIZES **4**
 SIZE **4** CONTROL MEASUREMENT RANGES **59.90** TO **62.00** HEAD CIRCUMFERENCE
 TO

43

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM NENTON | NENTON TO BACK OF HEAD | NENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | NENTON TO NASION | TRAGON TO NENTON HORIZONTAL | TRAGON TO NENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | NENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.00 | 19.80 | 59.90 | 34.30 | 33.40 | 13.00 | 25.50 | 18.60 | 21.50 | 9.10 | 10.80 | 9.70 | 8.40 | 11.40 | 6.60 | 8.20 | 7.20 | -0.60 | -0.40 | -2.20 |
| Min + 1 Measurement | 15.20 | 19.90 | 60.00 | 35.30 | 33.70 | 13.20 | 25.60 | 18.80 | 21.60 | 9.20 | 11.20 | 9.90 | 8.40 | 11.50 | 7.40 | 8.40 | 8.70 | -0.20 | 0.40 | -2.00 |
| Min + 2 Measurement | 15.30 | 20.00 | 60.10 | 36.50 | 34.20 | 13.50 | 25.80 | 19.00 | 21.70 | 9.30 | 11.30 | 10.20 | 8.40 | 11.60 | 8.40 | 8.50 | 8.80 | 0.10 | 0.50 | -1.80 |
| Min + 3 Measurement | 15.40 | 20.10 | 60.20 | 36.70 | 34.50 | 13.60 | 25.90 | 19.30 | 22.00 | 9.40 | 11.80 | 10.30 | 8.40 | 11.70 | 8.60 | 8.60 | 8.90 | 0.40 | 0.60 | -1.50 |
| Min + 4 Measurement | 15.60 | 20.20 | 60.30 | 36.90 | 34.60 | 13.70 | 26.00 | 19.40 | 22.10 | 9.70 | 12.20 | 10.40 | 8.50 | 11.80 | 8.70 | 8.70 | 9.00 | 0.50 | 0.70 | -1.40 |
| 1st Size | 15.04 | 19.81 | 59.90 | 34.61 | 33.46 | 13.00 | 25.50 | 18.64 | 21.52 | 9.12 | 10.88 | 9.74 | 8.51 | 11.40 | 6.77 | 8.21 | 7.51 | -0.52 | -0.23 | -2.16 |
| 2nd Size | 15.24 | 19.87 | 59.90 | 36.09 | 33.91 | 13.08 | 25.50 | 18.84 | 21.64 | 9.24 | 11.24 | 9.93 | 8.74 | 11.42 | 7.82 | 8.24 | 8.74 | -0.07 | 0.44 | -1.92 |
| 3rd Size | 15.36 | 19.96 | 59.90 | 36.63 | 34.39 | 13.26 | 25.56 | 18.96 | 21.89 | 9.33 | 11.46 | 10.00 | 9.04 | 11.48 | 8.44 | 8.38 | 8.86 | 0.29 | 0.53 | -1.61 |
| 5th Size | 15.60 | 20.07 | 59.90 | 36.94 | 34.71 | 13.50 | 25.90 | 19.40 | 22.13 | 9.71 | 11.94 | 10.14 | 9.18 | 11.57 | 8.60 | 8.53 | 8.95 | 0.50 | 0.65 | -1.33 |
| 50th Size | 16.33 | 20.75 | 60.25 | 39.46 | 36.36 | 14.39 | 26.98 | 20.72 | 23.65 | 10.72 | 13.44 | 11.61 | 10.85 | 12.69 | 9.98 | 10.26 | 10.03 | 1.74 | 2.44 | -0.09 |
| 95 Size | 17.20 | 21.62 | 61.24 | 41.90 | 38.70 | 15.30 | 28.20 | 22.25 | 25.37 | 11.65 | 14.30 | 12.90 | 12.60 | 14.00 | 11.40 | 11.77 | 11.15 | 3.10 | 3.90 | 1.30 |
| 97 Size | 17.28 | 21.68 | 61.57 | 42.37 | 39.05 | 15.41 | 28.34 | 22.51 | 25.56 | 11.94 | 14.54 | 13.07 | 12.77 | 14.12 | 11.54 | 11.94 | 11.32 | 3.32 | 4.17 | 1.57 |
| 98 Size | 17.36 | 21.73 | 61.73 | 42.67 | 39.36 | 15.45 | 28.46 | 22.55 | 25.74 | 12.06 | 14.66 | 13.26 | 13.02 | 14.18 | 11.63 | 12.23 | 11.38 | 3.38 | 4.22 | 1.76 |
| 99 Size | 17.56 | 21.79 | 61.79 | 43.99 | 39.44 | 15.49 | 28.54 | 22.59 | 26.04 | 12.18 | 14.78 | 13.38 | 13.18 | 14.28 | 11.69 | 12.56 | 11.56 | 3.56 | 4.26 | 1.88 |
| Max - 4 Measurement | 17.20 | 21.50 | 61.40 | 42.30 | 38.80 | 15.20 | 28.20 | 22.20 | 25.40 | 11.70 | 14.50 | 13.00 | 12.70 | 14.00 | 11.40 | 11.90 | 11.20 | 3.10 | 3.80 | 1.50 |
| Max - 3 Measurement | 17.30 | 21.60 | 61.50 | 42.50 | 39.30 | 15.30 | 28.30 | 22.30 | 25.50 | 11.90 | 14.60 | 13.20 | 12.90 | 14.10 | 11.50 | 12.00 | 11.30 | 3.30 | 3.90 | 1.70 |
| Max - 2 Measurement | 17.40 | 21.70 | 61.70 | 42.80 | 39.40 | 15.40 | 28.40 | 22.50 | 25.80 | 12.00 | 14.70 | 13.30 | 13.10 | 14.20 | 11.60 | 12.40 | 11.40 | 3.40 | 4.10 | 1.80 |
| Max - 1 Measurement | 17.60 | 21.80 | 61.80 | 44.30 | 39.40 | 15.50 | 28.50 | 22.60 | 26.10 | 12.20 | 14.80 | 13.40 | 13.20 | 14.30 | 11.70 | 12.60 | 11.60 | 3.60 | 4.20 | 1.90 |
| Max | 19.00 | 22.00 | 62.00 | 44.80 | 39.50 | 15.60 | 28.60 | 22.70 | 26.20 | 13.60 | 15.60 | 13.80 | 13.60 | 14.70 | 11.90 | 13.00 | 11.90 | 4.10 | 4.30 | 2.20 |
| Mean | 16.39 | 20.84 | 60.34 | 39.49 | 36.58 | 14.45 | 27.07 | 20.80 | 23.71 | 10.77 | 13.43 | 11.59 | 10.93 | 12.78 | 10.03 | 10.27 | 10.07 | 1.85 | 2.50 | -0.04 |
| SD | 0.50 | 0.45 | 0.48 | 1.60 | 1.22 | 0.53 | 0.72 | 0.96 | 1.02 | 0.68 | 0.70 | 0.84 | 1.01 | 0.73 | 0.85 | 1.02 | 0.67 | 0.83 | 0.98 | 0.84 |
| Coefficient of Variation % | 3.05 | 2.18 | 0.79 | 4.06 | 3.34 | 3.68 | 2.66 | 4.13 | 4.30 | 6.35 | 5.21 | 7.25 | 9.28 | 5.71 | 8.47 | 9.96 | 6.63 | | | |
| No of Survey Subjects | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 121 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 25 PART 1

SIZE ROLL REFERENCE **C** CONTROL MEASUREMENTS 1ST HEAD CIRCUMFERENCE
 2ND
 NUMBER OF SIZES **6**
 SIZE **1** CONTROL MEASUREMENT RANGES **53.60** TO **54.99** HEAD CIRCUMFERENCE
 TO

44

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.40 | 17.80 | 53.60 | 33.70 | 31.60 | 12.60 | 24.10 | 16.50 | 19.80 | 7.80 | 11.00 | 9.00 | 8.60 | 10.30 | 7.70 | 8.50 | 8.10 | 0.40 | 0.40 | -1.50 |
| Min + 1 Measurement | 14.50 | 18.00 | 53.40 | 34.50 | 31.70 | 12.70 | 24.20 | 17.50 | 20.70 | 8.30 | 11.30 | 9.80 | 8.80 | 11.20 | 8.00 | 8.70 | 8.20 | 0.50 | 1.00 | -1.30 |
| Min + 2 Measurement | 14.60 | 18.10 | 54.00 | 34.60 | 32.00 | 12.90 | 24.30 | 17.60 | 21.00 | 8.50 | 11.70 | 9.40 | 9.30 | 11.30 | 8.50 | 8.80 | 8.60 | 0.60 | 1.10 | -1.00 |
| Min + 3 Measurement | 14.70 | 18.20 | 54.30 | 34.70 | 32.30 | 13.00 | 24.60 | 17.70 | 21.20 | 8.60 | 11.80 | 10.00 | 9.50 | 11.40 | 8.00 | 8.90 | 8.70 | 0.70 | 1.30 | -0.80 |
| Min + 4 Measurement | 14.80 | 18.30 | 54.40 | 34.80 | 32.60 | 13.10 | 24.70 | 17.80 | 21.30 | 8.70 | 11.90 | 10.20 | 9.60 | 11.50 | 8.10 | 9.00 | 8.80 | 0.80 | 1.40 | -0.70 |
| 1st Size | 14.40 | 17.80 | 53.60 | 33.70 | 31.60 | 12.60 | 24.10 | 16.50 | 19.80 | 7.80 | 11.00 | 9.00 | 8.60 | 10.30 | 7.70 | 8.50 | 8.10 | 0.40 | 0.40 | -1.50 |
| 2nd Size | 14.40 | 17.80 | 53.60 | 33.70 | 31.60 | 12.60 | 24.10 | 16.50 | 19.80 | 7.80 | 11.00 | 9.00 | 8.60 | 10.30 | 7.70 | 8.50 | 8.10 | 0.40 | 0.40 | -1.50 |
| 3rd Size | 14.40 | 17.80 | 53.60 | 33.70 | 31.60 | 12.60 | 24.10 | 16.50 | 19.80 | 7.80 | 11.00 | 9.00 | 8.60 | 10.30 | 7.70 | 8.50 | 8.10 | 0.40 | 0.40 | -1.50 |
| 5th Size | 14.40 | 17.84 | 53.60 | 33.70 | 31.67 | 12.67 | 24.17 | 17.15 | 20.39 | 8.12 | 11.20 | 9.52 | 8.67 | 10.50 | 7.90 | 8.50 | 8.17 | 0.47 | 0.97 | -1.43 |
| 10th Size | 15.03 | 18.03 | 54.61 | 36.35 | 33.45 | 13.30 | 24.87 | 19.55 | 22.11 | 9.34 | 12.26 | 10.93 | 10.10 | 11.72 | 9.09 | 9.60 | 9.23 | 1.55 | 1.95 | -0.10 |
| 95 Size | 15.77 | 19.33 | 54.88 | 38.91 | 35.07 | 14.10 | 25.84 | 20.37 | 23.37 | 10.27 | 13.44 | 12.04 | 11.60 | 12.77 | 10.84 | 10.87 | 10.09 | 2.43 | 3.34 | 1.67 |
| 97 Size | 15.90 | 19.40 | 54.89 | 39.12 | 35.21 | 14.30 | 25.90 | 20.50 | 23.51 | 10.40 | 13.51 | 12.20 | 11.80 | 13.11 | 11.10 | 11.20 | 10.25 | 2.50 | 3.40 | 1.80 |
| 98 Size | 15.97 | 19.47 | 54.89 | 39.85 | 35.61 | 14.37 | 25.93 | 20.60 | 23.87 | 10.43 | 13.74 | 12.34 | 11.83 | 13.37 | 11.20 | 11.37 | 10.33 | 2.57 | 3.43 | 1.94 |
| 99 Size | 16.03 | 19.53 | 54.90 | 40.57 | 36.00 | 14.43 | 25.97 | 20.70 | 24.24 | 10.47 | 13.97 | 12.47 | 11.87 | 13.64 | 11.30 | 11.54 | 10.42 | 2.63 | 3.47 | 2.07 |
| Max - 4 Measurement | 15.50 | 19.90 | 54.50 | 38.20 | 34.60 | 13.80 | 25.50 | 21.90 | 24.90 | 10.40 | 14.20 | 11.30 | 10.40 | 12.30 | 10.40 | 10.40 | 9.60 | 3.20 | 2.40 | 1.40 |
| Max - 3 Measurement | 15.60 | 19.00 | 54.60 | 38.50 | 34.70 | 13.90 | 25.60 | 19.80 | 23.00 | 10.00 | 13.00 | 11.40 | 11.00 | 12.40 | 10.00 | 10.50 | 9.70 | 2.30 | 3.10 | 1.50 |
| Max - 2 Measurement | 15.70 | 19.20 | 54.70 | 38.60 | 34.80 | 14.00 | 25.70 | 20.30 | 23.30 | 10.20 | 13.40 | 11.70 | 11.20 | 12.60 | 10.30 | 10.70 | 9.80 | 2.40 | 3.30 | 1.60 |
| Max - 1 Measurement | 15.40 | 19.40 | 54.80 | 39.10 | 35.20 | 14.30 | 25.90 | 20.50 | 23.50 | 10.40 | 13.50 | 12.20 | 11.80 | 13.10 | 11.10 | 11.20 | 10.00 | 2.50 | 3.40 | 1.80 |
| Max | 16.10 | 19.60 | 54.90 | 41.30 | 36.40 | 14.50 | 26.00 | 20.80 | 24.60 | 10.50 | 14.20 | 12.60 | 11.90 | 13.90 | 11.40 | 11.70 | 10.50 | 2.70 | 3.50 | 2.20 |
| Mean | 15.11 | 18.66 | 54.55 | 36.50 | 33.54 | 13.40 | 25.02 | 18.73 | 22.06 | 9.37 | 12.37 | 10.87 | 10.22 | 11.83 | 9.37 | 9.69 | 9.29 | 1.51 | 2.15 | 0.03 |
| SD | 0.42 | 0.45 | 0.36 | 1.67 | 1.09 | 0.42 | 0.48 | 0.42 | 0.92 | 0.64 | 0.61 | 0.75 | 0.82 | 0.61 | 0.85 | 0.78 | 0.55 | 0.66 | 0.74 | 0.94 |
| Coefficient of Variation | 2.79 | 2.42 | 0.67 | 4.57 | 3.26 | 3.11 | 1.92 | 4.33 | 4.16 | 6.87 | 4.90 | 6.90 | 7.98 | 5.18 | 4.09 | 8.05 | 5.94 | | | |
| No of Survey Subjects | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 25 PART 2

SIZE ROLL REFERENCE **C** CONTROL MEASUREMENTS 1ST
 2ND
 NUMBER OF SIZES **6**
 SIZE **2** CONTROL MEASUREMENT RANGES **55.00** TO **56.39** HEAD CIRCUMFERENCE
 TO

45

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.00 | 18.10 | 55.00 | 33.80 | 31.60 | 12.20 | 24.20 | 16.00 | 14.10 | 8.00 | 11.20 | 8.50 | 7.50 | 8.90 | 6.60 | 7.00 | 7.70 | -0.40 | -0.30 | -2.40 |
| Min + 1 Measurement | 14.20 | 18.20 | 55.10 | 33.90 | 31.70 | 12.30 | 24.30 | 16.40 | 14.80 | 8.20 | 11.30 | 8.60 | 7.80 | 9.70 | 7.10 | 7.10 | 8.00 | -0.10 | -0.20 | -2.70 |
| Min + 2 Measurement | 14.30 | 18.30 | 55.20 | 34.00 | 32.00 | 12.50 | 24.40 | 16.50 | 15.00 | 8.30 | 11.40 | 9.00 | 8.00 | 10.00 | 7.40 | 7.20 | 8.10 | 0.00 | -0.10 | -2.60 |
| Min + 3 Measurement | 14.40 | 18.40 | 55.30 | 34.10 | 32.40 | 12.60 | 24.50 | 17.20 | 15.30 | 8.40 | 11.50 | 9.30 | 8.20 | 10.40 | 7.70 | 7.30 | 8.20 | 0.10 | 0.10 | -2.20 |
| Min + 4 Measurement | 14.50 | 18.50 | 55.40 | 34.20 | 32.50 | 12.70 | 24.60 | 17.30 | 15.60 | 8.50 | 11.60 | 9.40 | 8.50 | 10.60 | 7.80 | 7.40 | 8.30 | 0.20 | 0.20 | -2.00 |
| 1st File | 14.35 | 18.11 | 55.00 | 33.95 | 31.91 | 12.50 | 24.20 | 16.51 | 14.31 | 8.25 | 11.31 | 8.40 | 7.91 | 9.86 | 7.42 | 7.20 | 8.01 | -0.25 | -0.19 | -2.34 |
| 2nd File | 14.37 | 18.27 | 55.00 | 34.20 | 32.33 | 12.58 | 24.33 | 17.21 | 15.31 | 8.46 | 11.56 | 8.41 | 8.24 | 10.42 | 7.84 | 7.44 | 8.21 | 0.01 | 0.11 | -1.99 |
| 3rd File | 14.44 | 18.33 | 55.00 | 34.32 | 32.42 | 12.65 | 24.41 | 17.35 | 15.52 | 8.54 | 11.73 | 8.57 | 8.57 | 10.71 | 8.00 | 7.81 | 8.34 | 0.12 | 0.31 | -1.85 |
| 5th File | 14.53 | 18.42 | 55.04 | 34.78 | 32.67 | 12.80 | 24.62 | 17.55 | 16.01 | 8.71 | 11.87 | 9.32 | 8.91 | 10.95 | 8.13 | 8.17 | 8.45 | 0.36 | 0.64 | -1.57 |
| 50th File | 15.24 | 19.22 | 55.82 | 36.96 | 34.38 | 13.55 | 25.52 | 19.20 | 22.44 | 9.66 | 12.73 | 10.98 | 10.35 | 12.01 | 4.53 | 4.75 | 4.48 | 1.68 | 2.28 | 0.03 |
| 95 File | 16.05 | 19.89 | 56.24 | 39.67 | 36.04 | 14.18 | 26.63 | 20.92 | 24.00 | 10.60 | 13.73 | 12.31 | 11.98 | 13.14 | 11.01 | 11.19 | 10.41 | 2.87 | 3.76 | 1.67 |
| 97 File | 16.15 | 19.98 | 56.27 | 40.06 | 36.48 | 14.28 | 26.74 | 21.15 | 24.15 | 10.74 | 13.94 | 12.49 | 12.12 | 13.32 | 11.10 | 11.56 | 10.50 | 3.13 | 4.08 | 2.08 |
| 98 File | 16.20 | 20.12 | 56.28 | 40.24 | 36.56 | 14.35 | 26.94 | 21.24 | 24.24 | 10.80 | 13.83 | 12.66 | 12.20 | 13.40 | 11.20 | 11.69 | 10.60 | 3.24 | 4.34 | 2.34 |
| 99 File | 16.34 | 20.19 | 56.29 | 40.53 | 36.93 | 14.45 | 27.00 | 21.69 | 24.40 | 10.87 | 14.05 | 12.75 | 12.66 | 13.56 | 11.49 | 11.90 | 10.70 | 3.59 | 4.69 | 2.64 |
| Max - 4 Measurement | 16.20 | 20.00 | 55.90 | 40.20 | 36.40 | 14.30 | 26.90 | 21.50 | 24.30 | 10.70 | 13.90 | 12.50 | 12.20 | 13.30 | 11.40 | 11.70 | 10.50 | 3.30 | 4.40 | 2.40 |
| Max - 3 Measurement | 16.30 | 20.10 | 56.00 | 40.40 | 36.50 | 14.40 | 27.00 | 21.70 | 24.40 | 10.80 | 14.00 | 12.60 | 12.40 | 13.40 | 11.50 | 11.80 | 10.60 | 3.40 | 4.60 | 2.50 |
| Max - 2 Measurement | 16.40 | 20.20 | 56.10 | 40.60 | 36.60 | 14.50 | 27.10 | 21.90 | 24.50 | 10.90 | 14.10 | 12.70 | 12.50 | 13.50 | 11.70 | 11.90 | 10.70 | 3.60 | 4.70 | 2.80 |
| Max - 1 Measurement | 16.50 | 20.30 | 56.20 | 41.40 | 37.30 | 14.60 | 27.20 | 22.00 | 24.70 | 11.00 | 14.20 | 12.80 | 12.60 | 13.60 | 11.80 | 12.00 | 11.00 | 3.70 | 5.00 | 3.10 |
| Max | 16.60 | 20.60 | 56.30 | 42.10 | 37.60 | 14.80 | 27.30 | 22.00 | 25.10 | 11.40 | 14.30 | 12.90 | 13.10 | 13.70 | 12.20 | 12.20 | 11.10 | 3.80 | 5.10 | 4.30 |
| Mean | 15.34 | 19.24 | 55.80 | 37.16 | 34.45 | 13.57 | 25.61 | 19.32 | 22.53 | 9.74 | 12.77 | 11.05 | 10.46 | 12.07 | 4.58 | 4.76 | 4.50 | 1.72 | 2.32 | 0.08 |
| SD | 0.45 | 0.43 | 0.36 | 1.48 | 1.06 | 0.42 | 0.62 | 1.05 | 0.93 | 0.59 | 0.56 | 0.77 | 0.95 | 0.71 | 0.91 | 0.93 | 0.54 | 0.77 | 0.96 | 1.04 |
| Coefficient of Variation % | 2.93 | 2.23 | 0.65 | 3.98 | 3.07 | 3.10 | 2.41 | 5.44 | 4.12 | 6.10 | 4.40 | 6.92 | 9.08 | 5.84 | 9.52 | 9.58 | 6.18 | | | |
| No of Survey Subjects | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 25 PART 3

SIZE ROLL REFERENCE **C** CONTROL MEASUREMENTS 1ST **HEAD CIRCUMFERENCE**
 2ND
 NUMBER OF SIZES **6**.....
 SIZE **3** CONTROL MEASUREMENT RANGES **56.40** TO **57.79** HEAD CIRCUMFERENCE
 TO

46

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.20 | 18.30 | 56.40 | 33.20 | 31.80 | 12.60 | 23.70 | 16.80 | 14.60 | 8.00 | 4.80 | 8.60 | 7.50 | 8.60 | 6.50 | 6.80 | 6.20 | 1.00 | -0.40 | -3.10 |
| Min + 1 Measurement | 14.50 | 18.40 | 56.50 | 34.20 | 32.00 | 12.70 | 24.30 | 17.10 | 15.10 | 8.50 | 5.30 | 9.10 | 8.00 | 9.30 | 7.10 | 7.00 | 6.70 | 0.50 | -0.30 | -2.40 |
| Min + 2 Measurement | 14.60 | 18.50 | 56.60 | 34.30 | 32.40 | 12.80 | 24.40 | 17.20 | 15.20 | 8.60 | 5.40 | 9.20 | 8.10 | 9.40 | 7.20 | 7.30 | 7.80 | 0.20 | 0.00 | -2.40 |
| Min + 3 Measurement | 14.70 | 18.60 | 56.70 | 34.40 | 32.80 | 12.90 | 24.50 | 17.40 | 15.30 | 8.80 | 5.50 | 9.30 | 8.20 | 9.50 | 7.30 | 7.40 | 7.90 | 0.10 | 0.10 | -2.30 |
| Min + 4 Measurement | 14.80 | 18.80 | 56.80 | 34.50 | 33.20 | 13.00 | 24.60 | 17.50 | 15.40 | 9.00 | 5.60 | 9.40 | 8.30 | 9.60 | 7.40 | 7.50 | 8.00 | 0.00 | 0.20 | -2.20 |
| 1st Mile | 14.52 | 18.53 | 56.40 | 34.40 | 32.60 | 12.75 | 24.53 | 17.50 | 15.50 | 8.58 | 5.43 | 9.20 | 8.25 | 9.33 | 7.70 | 7.50 | 8.00 | 0.03 | 0.25 | -2.25 |
| 2nd Mile | 14.58 | 18.68 | 56.40 | 35.07 | 32.80 | 12.87 | 24.66 | 17.72 | 15.75 | 8.73 | 5.60 | 9.33 | 8.54 | 9.50 | 7.93 | 7.90 | 8.18 | 0.17 | 0.53 | -2.07 |
| 3rd Mile | 14.70 | 18.80 | 56.40 | 35.80 | 33.08 | 12.94 | 24.76 | 17.88 | 15.95 | 8.88 | 5.80 | 9.40 | 8.77 | 9.61 | 8.06 | 8.13 | 8.32 | 0.30 | 0.63 | -1.84 |
| 5th Mile | 14.90 | 18.96 | 56.40 | 35.47 | 33.28 | 13.04 | 24.91 | 18.13 | 16.17 | 9.02 | 5.95 | 9.76 | 9.99 | 9.66 | 8.32 | 8.54 | 8.43 | 0.48 | 0.81 | -1.03 |
| 50th Mile | 15.61 | 19.00 | 57.04 | 37.79 | 35.04 | 13.76 | 25.47 | 19.76 | 22.73 | 9.46 | 6.91 | 11.16 | 10.52 | 12.15 | 9.73 | 9.75 | 9.63 | 1.74 | 2.41 | 0.07 |
| 95 Mile | 16.39 | 20.33 | 57.66 | 40.54 | 36.67 | 14.51 | 26.89 | 21.33 | 24.15 | 11.05 | 13.92 | 12.52 | 12.13 | 13.22 | 11.08 | 11.17 | 10.56 | 2.92 | 3.81 | 1.60 |
| 97 Mile | 16.49 | 20.44 | 57.66 | 40.87 | 36.84 | 14.64 | 27.00 | 21.54 | 24.33 | 11.18 | 14.00 | 12.66 | 12.33 | 13.41 | 11.28 | 11.34 | 10.67 | 3.18 | 4.04 | 1.45 |
| 98 Mile | 16.59 | 20.52 | 57.67 | 41.25 | 37.10 | 14.75 | 27.27 | 21.73 | 24.50 | 11.34 | 14.11 | 12.76 | 12.47 | 13.48 | 11.43 | 11.50 | 10.73 | 3.34 | 4.25 | 2.20 |
| 99 Mile | 16.76 | 20.58 | 57.69 | 41.75 | 37.50 | 14.85 | 27.50 | 21.88 | 24.90 | 11.70 | 14.20 | 12.97 | 12.60 | 13.63 | 11.67 | 11.80 | 10.80 | 3.50 | 4.54 | 2.50 |
| Max - 4 Measurement | 16.70 | 20.40 | 57.50 | 41.90 | 37.70 | 14.90 | 27.50 | 21.90 | 24.90 | 11.80 | 14.20 | 12.90 | 12.60 | 13.70 | 11.70 | 11.80 | 10.80 | 3.70 | 4.50 | 2.50 |
| Max - 3 Measurement | 16.80 | 20.50 | 57.40 | 42.10 | 37.90 | 15.00 | 27.60 | 22.00 | 25.00 | 11.90 | 14.30 | 13.00 | 12.70 | 13.80 | 11.80 | 11.90 | 10.90 | 3.80 | 4.60 | 2.60 |
| Max - 2 Measurement | 16.90 | 20.60 | 57.50 | 42.30 | 38.00 | 15.10 | 27.70 | 22.20 | 25.10 | 12.00 | 14.40 | 13.10 | 12.80 | 13.90 | 11.90 | 12.00 | 11.10 | 4.00 | 4.80 | 2.70 |
| Max - 1 Measurement | 17.00 | 20.70 | 57.60 | 42.70 | 38.10 | 15.20 | 27.90 | 22.30 | 25.30 | 12.70 | 14.50 | 13.20 | 13.00 | 14.10 | 12.10 | 12.60 | 11.20 | 4.10 | 4.90 | 2.90 |
| Max | 17.10 | 21.00 | 57.70 | 43.50 | 38.50 | 15.30 | 28.40 | 22.40 | 25.60 | 13.00 | 14.60 | 13.30 | 13.40 | 14.20 | 12.40 | 13.40 | 11.70 | 4.20 | 5.00 | 3.00 |
| Mean | 15.67 | 19.68 | 57.04 | 37.87 | 35.08 | 13.81 | 26.00 | 19.80 | 22.76 | 10.64 | 12.46 | 11.19 | 10.57 | 12.20 | 9.76 | 9.80 | 9.64 | 1.77 | 2.40 | 0.12 |
| SD | 0.47 | 0.43 | 0.41 | 0.52 | 0.54 | 0.44 | 0.65 | 0.45 | 0.40 | 0.63 | 0.61 | 0.81 | 0.46 | 0.67 | 0.86 | 0.88 | 0.64 | 0.77 | 0.92 | 1.00 |
| Coefficient of Variation | 3.01 | 2.17 | 0.71 | 1.42 | 1.47 | 3.20 | 2.44 | 4.81 | 5.97 | 6.81 | 4.68 | 7.26 | 9.07 | 6.47 | 8.77 | 8.95 | 6.60 | | | |
| No. of Survey Subjects | 701 | 701 | 701 | 701 | 701 | 701 | 700 | 694 | 701 | 701 | 701 | 701 | 701 | 701 | 694 | 701 | 701 | 701 | 701 | 694 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 25 PART 4

SIZE ROLL REFERENCE C CONTROL MEASUREMENTS 1ST HEAD CIRCUMFERENCE
 2ND
 NUMBER OF SIZES 6
 SIZE 4 CONTROL MEASUREMENT RANGES 57.80 TO 59.19 HEAD CIRCUMFERENCE
 TO

47

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO MASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO MASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.30 | 18.60 | 57.80 | 34.10 | 31.10 | 12.40 | 24.60 | 17.50 | 19.50 | 18.70 | 10.80 | 8.90 | 8.20 | 0.00 | 7.30 | 6.60 | 7.70 | -0.00 | -0.10 | -2.70 |
| Min + 1 Measurement | 14.60 | 18.80 | 57.90 | 34.30 | 32.10 | 12.80 | 24.70 | 17.60 | 19.60 | 18.80 | 11.00 | 9.20 | 8.30 | 0.10 | 7.40 | 7.20 | 7.80 | -0.40 | 0.00 | -2.50 |
| Min + 2 Measurement | 14.80 | 19.00 | 58.00 | 34.70 | 32.40 | 12.90 | 24.80 | 17.80 | 20.20 | 18.90 | 11.30 | 9.30 | 8.40 | 0.20 | 7.50 | 7.50 | 7.90 | -0.30 | 0.10 | -2.40 |
| Min + 3 Measurement | 14.90 | 19.00 | 58.10 | 35.00 | 32.80 | 13.00 | 24.90 | 18.00 | 20.30 | 19.00 | 11.60 | 9.40 | 8.50 | 0.20 | 7.60 | 7.60 | 8.10 | -0.20 | 0.20 | -2.30 |
| Min + 4 Measurement | 15.00 | 19.10 | 58.20 | 35.20 | 33.00 | 13.10 | 25.00 | 18.20 | 20.40 | 19.10 | 11.70 | 9.50 | 8.60 | 0.30 | 7.70 | 7.70 | 8.20 | -0.10 | 0.30 | -2.20 |
| 1st Size | 14.87 | 18.99 | 57.80 | 35.08 | 33.08 | 12.97 | 24.99 | 17.89 | 20.55 | 18.88 | 11.58 | 9.29 | 8.56 | 0.25 | 7.68 | 7.74 | 8.46 | -0.16 | 0.19 | -2.26 |
| 2nd Size | 14.95 | 19.16 | 57.80 | 35.41 | 33.41 | 13.08 | 25.21 | 18.11 | 20.88 | 19.01 | 11.79 | 9.60 | 8.76 | 0.42 | 7.93 | 7.95 | 8.61 | 0.02 | 0.38 | -2.06 |
| 3rd Size | 15.01 | 19.23 | 57.80 | 35.51 | 33.54 | 13.13 | 25.32 | 18.32 | 21.21 | 19.11 | 11.91 | 9.78 | 8.88 | 0.53 | 8.05 | 8.18 | 8.72 | 0.22 | 0.56 | -1.91 |
| 5th Size | 15.14 | 19.38 | 57.80 | 35.88 | 33.76 | 13.23 | 25.46 | 18.51 | 21.56 | 19.19 | 12.08 | 9.93 | 9.10 | 0.64 | 8.38 | 8.38 | 8.88 | 0.39 | 0.81 | -1.66 |
| 50th Size | 15.89 | 20.13 | 58.24 | 38.43 | 35.64 | 13.98 | 26.37 | 20.17 | 23.14 | 20.25 | 13.12 | 11.32 | 10.68 | 1.23 | 9.93 | 9.98 | 9.91 | 1.75 | 2.39 | 0.04 |
| 95 Size | 16.60 | 20.79 | 58.98 | 40.96 | 37.57 | 14.16 | 27.55 | 21.75 | 24.66 | 21.30 | 14.06 | 12.67 | 12.33 | 1.54 | 11.36 | 11.62 | 10.30 | 3.05 | 3.44 | 1.70 |
| 97 Size | 16.76 | 20.91 | 59.02 | 41.25 | 37.93 | 14.82 | 27.71 | 22.00 | 24.86 | 21.42 | 14.18 | 12.88 | 12.53 | 1.72 | 11.57 | 11.78 | 10.45 | 3.20 | 4.10 | 1.88 |
| 98 Size | 16.89 | 20.99 | 59.05 | 41.53 | 38.14 | 14.97 | 27.77 | 22.13 | 24.99 | 21.53 | 14.31 | 12.96 | 12.65 | 1.91 | 11.67 | 11.93 | 11.06 | 3.42 | 4.22 | 2.03 |
| 99 Size | 17.01 | 21.12 | 59.07 | 41.77 | 38.42 | 15.12 | 28.02 | 22.51 | 25.27 | 21.74 | 14.54 | 13.08 | 12.81 | 2.06 | 11.94 | 12.12 | 11.19 | 3.68 | 4.29 | 2.32 |
| Max - 4 Measurement | 17.00 | 21.00 | 58.70 | 41.90 | 38.50 | 15.00 | 27.90 | 22.60 | 25.30 | 21.80 | 14.40 | 13.10 | 12.80 | 2.10 | 12.10 | 12.10 | 12.20 | 3.60 | 4.50 | 2.40 |
| Max - 3 Measurement | 17.10 | 21.10 | 58.80 | 42.50 | 38.60 | 15.10 | 28.00 | 22.80 | 25.40 | 21.90 | 14.50 | 13.20 | 12.90 | 2.20 | 12.20 | 12.40 | 12.40 | 3.70 | 4.60 | 2.60 |
| Max - 2 Measurement | 17.20 | 21.20 | 58.90 | 43.60 | 38.70 | 15.20 | 28.10 | 23.00 | 25.50 | 22.00 | 14.60 | 13.30 | 13.00 | 2.30 | 12.30 | 12.60 | 12.50 | 3.80 | 4.70 | 3.20 |
| Max - 1 Measurement | 17.30 | 21.30 | 59.00 | 43.70 | 39.20 | 15.30 | 28.20 | 23.30 | 25.90 | 22.50 | 14.70 | 13.40 | 13.10 | 2.40 | 12.40 | 13.20 | 12.60 | 4.00 | 4.90 | 3.30 |
| Max | 17.40 | 21.40 | 59.10 | 44.20 | 39.80 | 15.40 | 28.30 | 23.60 | 26.20 | 22.70 | 14.80 | 13.50 | 13.20 | 2.50 | 12.50 | 13.40 | 13.10 | 4.40 | 5.00 | 4.00 |
| Mean | 15.94 | 20.16 | 58.37 | 38.45 | 35.71 | 14.04 | 26.47 | 20.24 | 23.15 | 19.29 | 13.13 | 11.35 | 10.73 | 1.24 | 9.96 | 10.02 | 9.67 | 1.78 | 2.41 | 0.04 |
| SD | 0.46 | 0.44 | 0.38 | 1.54 | 1.14 | 0.44 | 0.65 | 0.48 | 0.98 | 0.64 | 0.61 | 0.83 | 0.97 | 0.71 | 0.92 | 0.98 | 0.59 | 0.83 | 0.96 | 1.00 |
| Coefficient of Variation | 2.86 | 2.19 | 0.65 | 4.00 | 3.20 | 3.14 | 2.38 | 4.83 | 4.22 | 6.20 | 4.67 | 7.34 | 9.05 | 5.72 | 9.23 | 9.75 | 6.01 | | | |
| No of Survey Subjects | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 25 PART 5

SIZE ROLL REFERENCE **C** CONTROL MEASUREMENTS 1ST HEAD CIRCUMFERENCE
 2ND
 NUMBER OF SIZES **6**
 SIZE **5** CONTROL MEASUREMENT RANGES **59.20** TO **60.59** HEAD CIRCUMFERENCE
 TO

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.00 | 19.50 | 59.20 | 34.30 | 35.20 | 12.90 | 25.00 | 17.80 | 20.70 | 8.70 | 9.50 | 9.40 | 8.30 | 11.20 | 6.60 | 7.70 | 6.50 | -2.10 | -1.70 | -2.70 |
| Min + 1 Measurement | 15.10 | 19.60 | 59.30 | 35.70 | 35.40 | 13.00 | 25.20 | 18.00 | 21.00 | 9.10 | 10.80 | 9.50 | 8.40 | 11.40 | 7.40 | 7.80 | 7.20 | -0.60 | -0.40 | -2.40 |
| Min + 2 Measurement | 15.20 | 19.70 | 59.40 | 35.80 | 35.70 | 13.10 | 25.30 | 18.40 | 21.20 | 9.20 | 11.20 | 9.60 | 8.50 | 11.50 | 7.70 | 7.40 | 8.40 | -0.20 | 0.40 | -2.20 |
| Min + 3 Measurement | 15.30 | 19.80 | 59.50 | 36.20 | 35.80 | 13.20 | 25.50 | 18.50 | 21.40 | 9.30 | 11.50 | 9.70 | 8.60 | 11.60 | 7.80 | 8.00 | 8.50 | 0.10 | 0.50 | -2.10 |
| Min + 4 Measurement | 15.40 | 19.90 | 59.60 | 36.40 | 34.00 | 13.40 | 25.60 | 18.60 | 21.50 | 9.40 | 11.80 | 9.80 | 8.60 | 11.70 | 7.40 | 8.20 | 8.70 | 0.20 | 0.60 | -2.00 |
| 1st File | 15.02 | 19.57 | 59.20 | 35.31 | 35.44 | 12.95 | 25.15 | 18.18 | 20.92 | 9.15 | 10.98 | 9.55 | 8.42 | 11.30 | 7.55 | 7.77 | 7.74 | -0.42 | -0.04 | -2.31 |
| 2nd File | 15.10 | 19.70 | 59.20 | 35.79 | 33.69 | 13.09 | 25.36 | 18.53 | 21.13 | 9.26 | 11.64 | 9.70 | 8.59 | 11.42 | 7.80 | 7.95 | 8.68 | 0.19 | 0.53 | -2.06 |
| 3rd File | 15.21 | 19.78 | 59.20 | 36.42 | 32.02 | 13.27 | 25.51 | 18.64 | 21.29 | 9.33 | 11.87 | 9.81 | 8.82 | 11.47 | 8.12 | 8.14 | 8.81 | 0.41 | 0.61 | -1.86 |
| 5th File | 15.36 | 19.90 | 59.20 | 36.74 | 34.24 | 13.43 | 25.61 | 18.95 | 21.61 | 9.44 | 12.06 | 10.01 | 9.11 | 11.53 | 8.39 | 8.34 | 8.90 | 0.51 | 0.86 | -1.62 |
| 50th File | 16.15 | 20.56 | 59.55 | 39.29 | 36.09 | 14.20 | 26.78 | 20.58 | 23.39 | 10.47 | 13.20 | 11.48 | 10.78 | 12.52 | 10.03 | 10.09 | 10.03 | 1.76 | 2.39 | -0.06 |
| 95 File | 16.90 | 21.29 | 60.36 | 41.93 | 38.08 | 15.00 | 27.80 | 22.19 | 24.93 | 11.56 | 14.19 | 12.63 | 12.18 | 13.85 | 11.37 | 11.62 | 11.10 | 3.06 | 3.89 | 1.56 |
| 97 File | 17.03 | 21.43 | 60.41 | 42.09 | 38.47 | 15.17 | 27.94 | 22.47 | 25.16 | 11.66 | 14.48 | 12.84 | 12.46 | 13.98 | 11.52 | 11.78 | 11.22 | 3.32 | 4.21 | 2.07 |
| 98 File | 17.16 | 21.53 | 60.44 | 42.84 | 38.66 | 15.24 | 28.01 | 22.61 | 25.24 | 11.91 | 14.61 | 12.91 | 12.60 | 14.07 | 11.60 | 11.92 | 11.31 | 3.40 | 4.26 | 2.17 |
| 99 File | 17.28 | 21.59 | 60.47 | 43.41 | 39.07 | 15.35 | 28.15 | 22.75 | 25.35 | 12.11 | 14.95 | 13.11 | 12.81 | 14.18 | 11.69 | 12.49 | 11.45 | 3.53 | 4.35 | 2.41 |
| Max - 4 Measurement | 17.10 | 21.40 | 60.10 | 42.30 | 38.70 | 15.20 | 28.00 | 22.80 | 25.20 | 12.10 | 14.70 | 13.00 | 12.60 | 14.00 | 11.60 | 11.90 | 11.30 | 3.30 | 4.20 | 2.20 |
| Max - 3 Measurement | 17.20 | 21.50 | 60.20 | 42.80 | 38.80 | 15.30 | 28.00 | 22.70 | 25.30 | 12.00 | 14.90 | 13.00 | 12.70 | 14.10 | 11.60 | 12.10 | 11.40 | 3.40 | 4.30 | 2.30 |
| Max - 2 Measurement | 17.30 | 21.60 | 60.30 | 43.20 | 39.50 | 15.40 | 28.10 | 22.80 | 25.40 | 12.20 | 15.00 | 13.20 | 12.90 | 14.20 | 11.70 | 12.60 | 11.50 | 3.50 | 4.40 | 2.50 |
| Max - 1 Measurement | 17.40 | 21.70 | 60.40 | 43.60 | 39.50 | 15.50 | 28.20 | 23.00 | 25.80 | 13.00 | 15.50 | 13.30 | 13.00 | 14.30 | 11.80 | 13.60 | 11.60 | 3.60 | 4.60 | 2.70 |
| Max | 17.60 | 21.80 | 60.50 | 44.80 | 40.40 | 15.70 | 28.30 | 23.60 | 25.90 | 14.10 | 15.60 | 13.40 | 13.20 | 14.60 | 11.90 | 14.20 | 11.70 | 4.00 | 5.00 | 3.10 |
| Mean | 16.21 | 20.62 | 59.68 | 39.30 | 36.16 | 14.26 | 26.84 | 20.63 | 23.43 | 10.57 | 13.24 | 11.45 | 10.24 | 12.64 | 10.06 | 10.19 | 10.05 | 1.79 | 2.45 | 0.01 |
| SD | 0.46 | 0.41 | 0.38 | 1.63 | 1.13 | 0.47 | 0.67 | 0.96 | 0.99 | 0.69 | 0.69 | 0.74 | 0.94 | 0.69 | 0.88 | 1.04 | 0.66 | 0.83 | 0.96 | 0.98 |
| Coefficient of Variation % | 2.83 | 1.99 | 0.63 | 4.14 | 3.13 | 3.31 | 2.50 | 4.66 | 4.22 | 6.51 | 5.24 | 6.89 | 8.65 | 5.45 | 8.78 | 10.25 | 6.61 | | | |
| No of Survey Subjects | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 | 245 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 25 PART 6

SIZE ROLL REFERENCE C CONTROL MEASUREMENTS 1ST HEAD CIRCUMFERENCE
 2ND
 NUMBER OF SIZES 6
 SIZE 6 CONTROL MEASUREMENT RANGES 60-60 TO 62.00 HEAD CIRCUMFERENCE
 TO

49

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.60 | 19.90 | 60.60 | 57.00 | 54.20 | 13.20 | 26.10 | 19.40 | 22.10 | 9.40 | 11.30 | 10.20 | 9.30 | 11.80 | 8.40 | 8.70 | 9.10 | 0.40 | 0.70 | -1.40 |
| Min + 1 Measurement | 15.80 | 20.30 | 60.70 | 57.70 | 54.90 | 13.50 | 26.40 | 19.60 | 22.40 | 10.00 | 12.40 | 10.30 | 9.70 | 11.90 | 8.60 | 9.00 | 9.20 | 0.50 | 1.10 | -1.20 |
| Min + 2 Measurement | 15.90 | 20.40 | 60.80 | 57.80 | 55.10 | 13.60 | 26.50 | 19.80 | 22.40 | 10.10 | 12.60 | 10.40 | 9.80 | 12.00 | 8.70 | 9.30 | 9.30 | 1.00 | 1.20 | -1.10 |
| Min + 3 Measurement | 16.00 | 20.50 | 60.90 | 57.90 | 55.40 | 13.80 | 26.60 | 20.00 | 22.60 | 10.20 | 13.10 | 10.60 | 10.00 | 12.20 | 9.00 | 9.40 | 9.40 | 1.10 | 1.30 | -1.00 |
| Min + 4 Measurement | 16.10 | 20.60 | 61.00 | 58.00 | 55.60 | 13.90 | 26.70 | 20.00 | 22.80 | 10.30 | 13.50 | 10.70 | 10.10 | 12.50 | 9.20 | 9.50 | 9.50 | 1.30 | 1.50 | -0.90 |
| 1st Mile | 15.60 | 19.90 | 60.60 | 57.00 | 54.20 | 13.20 | 26.10 | 19.40 | 22.10 | 9.40 | 11.30 | 10.20 | 9.30 | 11.80 | 8.40 | 8.70 | 9.10 | 0.40 | 0.70 | -1.40 |
| 2nd Mile | 15.60 | 19.90 | 60.60 | 57.00 | 54.20 | 13.20 | 26.10 | 19.40 | 22.10 | 9.40 | 11.30 | 10.20 | 9.30 | 11.80 | 8.40 | 8.70 | 9.10 | 0.40 | 0.70 | -1.40 |
| 3rd Mile | 15.61 | 19.90 | 60.60 | 57.00 | 54.28 | 13.23 | 26.12 | 19.42 | 22.11 | 9.40 | 11.30 | 10.20 | 9.30 | 11.81 | 8.42 | 8.70 | 9.11 | 0.41 | 0.74 | -1.38 |
| 5th Mile | 15.69 | 19.90 | 60.60 | 57.00 | 54.79 | 13.46 | 26.23 | 19.57 | 22.19 | 9.60 | 12.23 | 10.20 | 9.30 | 11.89 | 8.57 | 8.70 | 9.18 | 0.44 | 1.04 | -1.23 |
| 50th Mile | 16.41 | 20.95 | 60.95 | 57.68 | 56.75 | 14.54 | 27.15 | 20.90 | 23.92 | 10.62 | 13.68 | 11.55 | 10.93 | 12.89 | 10.23 | 10.25 | 10.15 | 1.95 | 2.60 | 0.05 |
| 95 Mile | 17.27 | 21.72 | 61.76 | 58.38 | 58.98 | 15.46 | 28.51 | 22.23 | 25.84 | 11.74 | 14.33 | 13.03 | 12.62 | 14.12 | 11.52 | 11.83 | 11.15 | 3.17 | 4.11 | 1.10 |
| 97 Mile | 17.30 | 21.74 | 61.74 | 58.48 | 59.35 | 15.49 | 28.54 | 22.38 | 26.07 | 11.92 | 14.48 | 13.18 | 12.49 | 14.19 | 11.59 | 11.98 | 11.37 | 3.28 | 4.19 | 1.62 |
| 98 Mile | 17.43 | 21.85 | 61.85 | 58.47 | 59.43 | 15.53 | 28.56 | 22.45 | 26.13 | 12.02 | 14.58 | 13.36 | 12.74 | 14.33 | 11.63 | 12.10 | 11.53 | 3.51 | 4.23 | 1.73 |
| 99 Mile | 17.74 | 21.95 | 61.93 | 58.63 | 59.46 | 15.56 | 28.58 | 22.53 | 26.16 | 12.11 | 14.69 | 13.58 | 13.19 | 14.52 | 11.66 | 12.25 | 11.71 | 3.80 | 4.26 | 1.76 |
| Max - 4 Measurement | 17.00 | 21.40 | 61.40 | 58.40 | 58.60 | 15.00 | 28.20 | 21.60 | 25.40 | 11.40 | 14.10 | 12.70 | 12.00 | 13.70 | 11.40 | 11.40 | 10.70 | 2.70 | 3.80 | 0.80 |
| Max - 3 Measurement | 17.10 | 21.50 | 61.50 | 58.70 | 58.70 | 15.20 | 28.40 | 21.80 | 25.50 | 11.50 | 14.20 | 13.00 | 12.10 | 13.90 | 11.40 | 11.60 | 10.80 | 2.80 | 3.90 | 0.90 |
| Max - 2 Measurement | 17.20 | 21.70 | 61.70 | 59.00 | 59.00 | 15.40 | 28.40 | 22.00 | 25.80 | 11.60 | 14.30 | 13.00 | 12.40 | 14.10 | 11.50 | 11.80 | 11.10 | 3.00 | 4.10 | 1.00 |
| Max - 1 Measurement | 17.30 | 21.80 | 61.80 | 59.20 | 59.40 | 15.50 | 28.50 | 22.20 | 26.10 | 11.70 | 14.50 | 13.20 | 12.50 | 14.20 | 11.60 | 12.00 | 11.40 | 3.30 | 4.20 | 1.10 |
| Max | 18.00 | 22.00 | 62.00 | 59.50 | 59.50 | 15.60 | 28.60 | 22.60 | 26.20 | 12.20 | 14.80 | 13.60 | 13.60 | 14.70 | 11.70 | 12.40 | 11.90 | 4.10 | 4.30 | 1.80 |
| Mean | 16.53 | 20.98 | 60.99 | 58.90 | 56.92 | 14.55 | 27.31 | 20.98 | 24.02 | 10.78 | 13.64 | 11.63 | 10.95 | 13.07 | 10.20 | 10.38 | 10.19 | 2.02 | 2.69 | 0.01 |
| SD | 0.52 | 0.50 | 0.36 | 1.53 | 1.30 | 0.57 | 0.71 | 0.79 | 1.09 | 0.64 | 0.62 | 0.89 | 0.46 | 0.68 | 0.82 | 0.92 | 0.60 | 0.80 | 0.85 | 0.80 |
| Coefficient of Variation | 3.12 | 2.40 | 0.60 | 3.83 | 3.52 | 3.94 | 2.61 | 3.76 | 4.53 | 5.91 | 4.57 | 7.65 | 8.73 | 5.18 | 8.00 | 8.90 | 5.86 | | | |
| No of Survey Subjects | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 26 PART 1

SIZE ROLL REFERENCE D CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND
 NUMBER OF SIZES 2
 SIZE 1 CONTROL MEASUREMENT RANGES 14.20 TO 15.89 HEAD BREADTH
 TO

50

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | POPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.20 | 18.00 | 53.00 | 33.20 | 31.10 | 12.20 | 23.70 | 16.00 | 19.10 | 8.00 | 9.80 | 8.50 | 7.50 | 8.90 | 6.50 | 6.60 | 6.20 | -1.00 | -0.40 | -3.10 |
| Min + 1 Measurement | 14.30 | 18.10 | 53.00 | 33.70 | 31.60 | 12.30 | 24.10 | 16.40 | 19.50 | 8.20 | 10.80 | 8.60 | 7.80 | 9.30 | 6.60 | 6.80 | 7.70 | -0.60 | -0.30 | -2.90 |
| Min + 2 Measurement | 14.40 | 18.20 | 53.40 | 33.80 | 31.70 | 12.40 | 24.20 | 16.50 | 19.60 | 8.30 | 11.00 | 8.80 | 8.00 | 10.00 | 7.10 | 7.00 | 7.80 | -0.30 | -0.20 | -2.70 |
| Min + 3 Measurement | 14.50 | 18.30 | 54.00 | 33.90 | 31.80 | 12.50 | 24.50 | 16.80 | 19.80 | 8.40 | 11.20 | 8.90 | 8.20 | 10.10 | 7.20 | 7.10 | 7.90 | -0.10 | -0.10 | -2.50 |
| Min + 4 Measurement | 14.60 | 18.40 | 54.30 | 34.00 | 32.00 | 12.60 | 24.40 | 17.10 | 20.10 | 8.50 | 11.30 | 9.00 | 8.30 | 10.30 | 7.40 | 7.20 | 8.00 | 0.00 | 0.00 | -2.40 |
| 1st Size | 14.41 | 18.25 | 54.37 | 34.20 | 32.00 | 12.61 | 24.31 | 17.33 | 20.25 | 8.54 | 11.40 | 9.10 | 8.25 | 10.53 | 7.76 | 7.30 | 8.12 | 0.05 | 0.20 | -2.33 |
| 2nd Size | 14.50 | 18.40 | 54.75 | 34.50 | 32.40 | 12.74 | 24.52 | 17.65 | 20.64 | 8.72 | 11.53 | 9.31 | 8.54 | 10.80 | 8.01 | 7.75 | 8.30 | 0.23 | 0.54 | -2.05 |
| 3rd Size | 14.55 | 18.53 | 54.91 | 34.87 | 32.65 | 12.83 | 24.61 | 17.82 | 20.85 | 8.74 | 11.75 | 9.50 | 8.71 | 10.95 | 8.11 | 7.94 | 8.47 | 0.35 | 0.70 | -1.85 |
| 5th Size | 14.69 | 18.73 | 55.14 | 35.31 | 32.94 | 12.92 | 24.74 | 18.10 | 21.12 | 8.97 | 11.92 | 9.76 | 8.91 | 11.11 | 8.31 | 8.26 | 8.66 | 0.48 | 0.81 | -1.61 |
| 50th Size | 15.40 | 19.74 | 57.10 | 37.23 | 34.86 | 13.65 | 25.46 | 19.92 | 22.74 | 9.98 | 12.94 | 11.10 | 10.66 | 12.18 | 9.79 | 9.75 | 9.68 | 1.83 | 2.44 | 0.06 |
| 95 Size | 15.76 | 20.28 | 59.11 | 40.49 | 36.64 | 14.31 | 27.17 | 21.56 | 24.32 | 11.51 | 13.93 | 12.51 | 12.14 | 13.38 | 11.24 | 11.32 | 10.66 | 3.06 | 3.90 | 1.62 |
| 97 Size | 15.78 | 20.95 | 59.45 | 40.87 | 36.90 | 14.34 | 27.39 | 21.82 | 24.62 | 11.32 | 14.06 | 12.65 | 12.37 | 13.53 | 11.43 | 11.56 | 10.78 | 3.25 | 4.14 | 1.96 |
| 98 Size | 15.79 | 21.06 | 59.66 | 41.07 | 37.19 | 14.46 | 27.48 | 21.98 | 24.86 | 11.42 | 14.14 | 12.76 | 12.53 | 13.62 | 11.58 | 11.70 | 10.89 | 3.40 | 4.30 | 2.18 |
| 99 Size | 15.79 | 21.20 | 60.00 | 41.37 | 37.43 | 14.55 | 27.73 | 22.18 | 25.10 | 11.70 | 14.25 | 12.96 | 12.77 | 13.92 | 11.80 | 11.86 | 11.08 | 3.66 | 4.55 | 2.55 |
| Max - 4 Measurement | 15.40 | 21.40 | 60.40 | 41.80 | 37.60 | 14.50 | 27.80 | 22.60 | 25.30 | 11.70 | 14.40 | 13.00 | 12.90 | 13.90 | 12.40 | 12.10 | 11.10 | 3.80 | 4.70 | 2.80 |
| Max - 3 Measurement | 15.50 | 21.50 | 60.50 | 42.10 | 37.70 | 14.60 | 28.00 | 22.70 | 25.40 | 11.80 | 14.50 | 13.10 | 13.00 | 14.00 | 12.60 | 12.20 | 11.20 | 4.30 | 5.10 | 3.10 |
| Max - 2 Measurement | 15.60 | 21.60 | 60.80 | 42.30 | 37.80 | 14.70 | 28.10 | 22.80 | 25.50 | 11.90 | 14.60 | 13.20 | 13.10 | 14.10 | 12.70 | 12.30 | 11.30 | 4.00 | 5.00 | 3.20 |
| Max - 1 Measurement | 15.70 | 21.80 | 60.90 | 43.60 | 38.20 | 14.80 | 28.30 | 23.30 | 25.60 | 12.00 | 14.90 | 13.30 | 13.40 | 14.20 | 13.40 | 13.10 | 11.60 | 4.10 | 5.10 | 3.30 |
| Max | 15.80 | 22.00 | 61.00 | 43.70 | 38.50 | 15.20 | 28.40 | 24.00 | 25.90 | 13.00 | 15.00 | 13.40 | 13.60 | 14.30 | 14.40 | 13.40 | 11.70 | 4.20 | 5.60 | 4.30 |
| Mean | 15.39 | 19.80 | 57.15 | 37.79 | 34.86 | 13.67 | 26.01 | 19.92 | 22.79 | 10.08 | 12.98 | 11.14 | 10.53 | 12.26 | 9.84 | 9.72 | 1.84 | 2.45 | 0.12 | |
| SD | 0.33 | 0.63 | 1.22 | 1.60 | 1.13 | 0.42 | 0.73 | 1.07 | 0.99 | 0.67 | 0.63 | 0.81 | 0.97 | 0.70 | 0.91 | 0.94 | 0.63 | 0.79 | 0.94 | 1.00 |
| Coefficient of Variation % | 2.17 | 3.18 | 2.14 | 4.22 | 3.24 | 3.05 | 2.80 | 5.38 | 4.36 | 6.64 | 4.83 | 7.33 | 9.25 | 5.73 | 9.21 | 9.56 | 6.46 | | | |
| No of Survey Subjects | 1096 | 1096 | 1096 | 1096 | 1096 | 1096 | 1095 | 1094 | 1096 | 1096 | 1096 | 1096 | 1096 | 1096 | 1094 | 1096 | 1096 | 1096 | 1096 | 1094 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 26 PART 2

SIZE ROLL REFERENCE D CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND
 NUMBER OF SIZES 2
 SIZE 2 CONTROL MEASUREMENT RANGES 15.90 TO 17.50 HEAD BREADTH
 TO

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASTON TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.90 | 17.80 | 54.30 | 34.30 | 32.80 | 12.90 | 24.50 | 16.50 | 20.40 | 7.80 | 9.50 | 8.60 | 8.10 | 8.60 | 6.60 | 7.00 | 6.50 | -2.10 | -1.70 | -2.70 |
| Min + 1 Measurement | 16.00 | 18.00 | 54.90 | 34.50 | 33.10 | 13.00 | 24.60 | 17.40 | 20.50 | 8.00 | 11.00 | 9.20 | 8.20 | 10.00 | 7.10 | 7.60 | 6.70 | -0.60 | -0.40 | -2.40 |
| Min + 2 Measurement | 16.10 | 18.10 | 55.00 | 34.70 | 33.20 | 13.10 | 24.70 | 17.50 | 20.60 | 8.50 | 11.20 | 9.30 | 8.30 | 10.10 | 7.30 | 7.70 | 7.20 | -0.50 | -0.30 | -2.30 |
| Min + 3 Measurement | 16.20 | 18.30 | 55.20 | 34.90 | 33.30 | 13.20 | 24.80 | 17.60 | 20.70 | 8.60 | 11.30 | 9.40 | 8.40 | 10.20 | 7.40 | 7.80 | 7.70 | -0.40 | -0.10 | -2.20 |
| Min + 4 Measurement | 16.30 | 18.40 | 55.30 | 35.00 | 33.40 | 13.30 | 24.90 | 17.70 | 20.80 | 8.70 | 11.40 | 9.50 | 8.50 | 10.40 | 7.50 | 7.90 | 7.80 | -0.30 | 0.00 | -2.10 |
| 1st Size | 15.90 | 18.43 | 55.50 | 34.45 | 33.35 | 13.25 | 24.80 | 17.52 | 20.70 | 8.58 | 11.45 | 9.60 | 8.47 | 10.25 | 7.60 | 7.84 | 8.03 | -0.23 | 0.14 | -2.14 |
| 2nd Size | 15.90 | 18.71 | 55.85 | 35.36 | 33.58 | 13.35 | 24.94 | 17.75 | 21.00 | 8.75 | 11.77 | 9.72 | 8.71 | 10.91 | 7.78 | 8.13 | 8.31 | -0.03 | 0.33 | -2.02 |
| 3rd Size | 15.90 | 18.77 | 55.99 | 35.49 | 33.76 | 13.40 | 25.00 | 17.93 | 21.21 | 8.97 | 11.91 | 9.83 | 8.93 | 11.03 | 7.92 | 8.26 | 8.42 | 0.13 | 0.46 | -1.85 |
| 5th Size | 15.90 | 18.93 | 56.32 | 35.83 | 34.11 | 13.48 | 25.18 | 18.16 | 21.44 | 9.10 | 12.01 | 10.02 | 9.15 | 11.21 | 8.20 | 8.42 | 8.60 | 0.35 | 0.71 | -1.62 |
| 50th Size | 16.15 | 19.98 | 58.25 | 38.47 | 35.88 | 14.13 | 26.37 | 20.04 | 23.10 | 10.18 | 13.04 | 11.38 | 10.73 | 12.31 | 9.34 | 10.01 | 9.75 | 1.62 | 2.28 | 0.00 |
| 95 Size | 16.84 | 20.94 | 60.35 | 41.49 | 37.92 | 14.94 | 27.68 | 21.76 | 24.71 | 11.35 | 14.06 | 12.66 | 12.21 | 13.58 | 11.21 | 11.58 | 10.77 | 2.89 | 3.81 | 1.67 |
| 97 Size | 16.96 | 21.07 | 60.65 | 41.77 | 38.23 | 15.08 | 27.80 | 21.97 | 24.90 | 11.52 | 14.20 | 12.83 | 12.42 | 13.81 | 11.42 | 11.79 | 11.00 | 3.10 | 4.03 | 1.43 |
| 98 Size | 17.06 | 21.20 | 60.85 | 42.03 | 38.54 | 15.15 | 27.95 | 22.22 | 25.11 | 11.59 | 14.40 | 12.92 | 12.51 | 13.88 | 11.56 | 11.93 | 11.10 | 3.32 | 4.15 | 2.08 |
| 99 Size | 17.21 | 21.40 | 61.07 | 42.70 | 38.70 | 15.26 | 28.12 | 22.52 | 25.27 | 12.00 | 14.56 | 13.12 | 12.70 | 14.08 | 11.70 | 12.30 | 11.30 | 3.50 | 4.28 | 2.45 |
| Max - 4 Measurement | 17.00 | 21.40 | 61.50 | 43.50 | 39.30 | 15.20 | 28.10 | 22.50 | 25.30 | 12.20 | 14.60 | 13.10 | 12.80 | 14.20 | 11.80 | 12.50 | 11.40 | 3.70 | 4.50 | 2.60 |
| Max - 3 Measurement | 17.10 | 21.50 | 61.70 | 43.60 | 39.40 | 15.30 | 28.20 | 22.60 | 25.40 | 12.50 | 14.70 | 13.20 | 12.90 | 14.30 | 11.90 | 12.60 | 11.50 | 3.80 | 4.60 | 2.90 |
| Max - 2 Measurement | 17.20 | 21.60 | 61.80 | 44.20 | 39.50 | 15.40 | 28.30 | 22.80 | 25.50 | 12.70 | 15.00 | 13.30 | 13.00 | 14.40 | 12.00 | 13.10 | 11.60 | 4.00 | 4.70 | 3.00 |
| Max - 1 Measurement | 17.30 | 21.70 | 62.00 | 44.30 | 39.80 | 15.50 | 28.50 | 23.00 | 25.80 | 13.00 | 15.50 | 13.40 | 13.10 | 14.70 | 12.10 | 13.60 | 11.70 | 4.10 | 4.80 | 3.10 |
| Max | 17.40 | 21.80 | 62.40 | 44.80 | 40.40 | 15.70 | 28.60 | 23.60 | 26.20 | 14.10 | 16.60 | 13.50 | 13.20 | 15.50 | 13.20 | 14.20 | 11.90 | 4.40 | 5.00 | 4.00 |
| Mean | 16.26 | 20.01 | 57.31 | 38.57 | 35.92 | 14.20 | 26.45 | 20.06 | 23.14 | 10.23 | 13.08 | 11.39 | 10.75 | 12.39 | 9.84 | 10.06 | 9.79 | 1.69 | 2.33 | 0.05 |
| SD | 0.31 | 0.63 | 1.23 | 1.69 | 1.15 | 0.43 | 0.74 | 1.07 | 0.98 | 0.72 | 0.65 | 0.80 | 0.94 | 0.73 | 0.91 | 0.95 | 0.66 | 0.81 | 0.95 | 0.99 |
| Coefficient of Variation % | 1.91 | 3.12 | 2.11 | 4.39 | 3.20 | 3.02 | 2.81 | 5.34 | 4.23 | 6.99 | 5.00 | 7.01 | 8.70 | 5.92 | 9.20 | 9.48 | 6.78 | | | |
| No of Survey Subjects | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 | 901 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 27 PART 1

SIZE ROLL REFERENCE **E** CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND
 NUMBER OF SIZES **3**
 SIZE **1** CONTROL MEASUREMENT RANGES **14.20** TO **15.29** HEAD BREADTH
 TO

52

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRACION CORONAL ARC | BITRACION DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRACION TO BACK OF HEAD | TRACION TO VERTEX | POPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRACION TO MENTON HORIZONTAL | TRACION TO MENTON VERTICAL | TRACION TO BROW RIDGE HORIZONTAL | TRACION TO POPIL VERTICAL | TRACION TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | |
|--------------------------|--------------|-------------|--------------------|--------------------|-----------------------|--------------------|-------------------------------|------------------------|------------------|-------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|-----|
| Min | 14.20 | 2 19.10 | 1 53.00 | 1 33.70 | 2 31.10 | 1 12.20 | 1 23.70 | 1 16.50 | 1 19.50 | 1 8.30 | 2 11.00 | 1 8.60 | 1 7.50 | 1 8.40 | 1 7.10 | 1 6.80 | 1 7.80 | 1 -0.10 | 3 -0.30 | 2 -2.70 | 1 |
| Min + 1 Measurement | 14.30 | 3 18.20 | 2 53.60 | 2 34.10 | 2 31.60 | 2 12.30 | 1 24.10 | 1 16.50 | 1 19.60 | 1 8.40 | 1 11.30 | 1 8.90 | 1 8.00 | 1 9.30 | 1 7.60 | 1 7.00 | 2 7.40 | 1 0.10 | 1 0.10 | 1 -2.50 | 1 |
| Min + 2 Measurement | 14.40 | 5 18.30 | 1 53.90 | 1 34.20 | 1 31.70 | 2 12.40 | 1 24.30 | 3 17.20 | 1 19.50 | 2 8.50 | 2 11.40 | 2 9.00 | 2 8.20 | 1 10.00 | 2 7.70 | 2 7.20 | 1 8.10 | 1 0.20 | 1 0.20 | 1 -2.40 | 1 |
| Min + 3 Measurement | 14.50 | 11 18.40 | 3 54.00 | 1 34.30 | 2 31.80 | 1 12.50 | 1 24.40 | 4 17.40 | 3 20.10 | 1 8.60 | 2 11.50 | 1 9.10 | 1 8.30 | 1 10.10 | 1 7.90 | 2 7.30 | 1 8.30 | 1 0.30 | 1 0.30 | 1 -2.20 | 3 |
| Min + 4 Measurement | 14.60 | 23 18.50 | 3 54.30 | 2 34.40 | 1 32.00 | 3 12.60 | 5 24.50 | 2 17.50 | 1 20.20 | 1 8.80 | 5 11.60 | 3 9.30 | 2 8.50 | 2 10.30 | 1 8.00 | 4 7.50 | 1 8.40 | 3 0.40 | 4 0.40 | 1 -2.10 | 1 |
| 1st Size | 14.25 | 18 24 | 53.73 | 33.49 | 31.62 | 12.44 | 24.20 | 17.23 | 19.74 | 8.42 | 11.37 | 8.97 | 8.24 | 9.80 | 7.67 | 7.09 | 8.19 | -0.01 | 0.14 | -2.37 | 1 |
| 2nd Size | 14.34 | 18 40 | 54.28 | 34.24 | 31.86 | 12.56 | 24.35 | 17.49 | 20.29 | 8.59 | 11.56 | 9.24 | 8.53 | 10.34 | 7.92 | 7.59 | 8.40 | 0.32 | 0.49 | -2.11 | 1 |
| 3rd Size | 14.40 | 18 51 | 54.57 | 34.72 | 32.13 | 12.62 | 24.46 | 17.73 | 20.61 | 8.73 | 11.68 | 9.47 | 8.71 | 10.61 | 8.01 | 7.85 | 8.48 | 0.41 | 0.66 | -1.99 | 1 |
| 5th Size | 14.47 | 18 71 | 54.82 | 34.93 | 32.52 | 12.74 | 24.61 | 17.90 | 20.81 | 8.94 | 11.80 | 9.74 | 8.92 | 10.37 | 8.22 | 8.22 | 8.67 | 0.52 | 0.99 | -1.66 | 1 |
| 50th Size | 14.99 | 19 60 | 56.46 | 37.34 | 34.30 | 13.40 | 25.75 | 19.77 | 22.50 | 9.92 | 12.82 | 11.03 | 10.35 | 12.07 | 9.77 | 9.64 | 9.65 | 1.84 | 2.42 | 0.06 | 1 |
| 95 Size | 15.18 | 20 65 | 58.36 | 40.09 | 35.97 | 14.00 | 26.99 | 21.50 | 24.10 | 11.09 | 13.81 | 12.24 | 11.95 | 13.40 | 11.22 | 11.20 | 10.67 | 2.93 | 3.30 | 1.04 | 1 |
| 97 Size | 15.19 | 20 88 | 58.69 | 40.47 | 36.17 | 14.07 | 27.19 | 21.67 | 24.27 | 11.19 | 13.90 | 12.48 | 12.15 | 13.57 | 11.37 | 11.57 | 10.78 | 3.09 | 3.49 | 1.94 | 1 |
| 98 Size | 15.19 | 21 01 | 59.11 | 40.81 | 36.34 | 14.10 | 27.34 | 22.01 | 24.41 | 11.30 | 14.10 | 12.56 | 12.31 | 13.67 | 11.51 | 11.68 | 10.96 | 3.26 | 3.21 | 2.10 | 1 |
| 99 Size | 15.20 | 21 15 | 59.47 | 40.98 | 36.54 | 14.16 | 27.53 | 22.43 | 24.83 | 11.39 | 14.19 | 12.68 | 12.56 | 13.86 | 11.68 | 11.85 | 11.09 | 3.46 | 4.48 | 2.19 | 1 |
| Max - 4 Measurement | 14.80 | 26 21.00 | 3 54.30 | 1 40.90 | 2 36.30 | 2 13.90 | 21 27.40 | 5 22.10 | 2 24.60 | 2 11.30 | 3 13.90 | 6 12.60 | 5 12.50 | 1 13.90 | 2 11.60 | 4 11.60 | 1 10.80 | 7 3.30 | 2 4.20 | 1 2.10 | 2 |
| Max - 3 Measurement | 14.90 | 30 21.10 | 2 59.60 | 1 41.00 | 2 36.40 | 3 14.00 | 13 27.50 | 1 22.20 | 1 24.90 | 2 11.40 | 4 14.00 | 3 12.70 | 2 12.60 | 1 13.90 | 1 11.70 | 2 11.70 | 4 11.00 | 3 3.40 | 2 4.40 | 2 2.20 | 4 |
| Max - 2 Measurement | 15.00 | 66 21.20 | 3 59.70 | 1 41.10 | 1 36.50 | 1 14.10 | 10 27.60 | 2 22.60 | 1 25.00 | 1 11.50 | 1 14.10 | 2 12.80 | 1 12.70 | 1 14.00 | 1 11.80 | 1 11.80 | 3 3.50 | 1 4.50 | 2 2.50 | 1 | |
| Max - 1 Measurement | 15.10 | 56 21.40 | 1 60.30 | 1 41.30 | 1 36.70 | 3 14.20 | 6 27.70 | 1 22.80 | 2 25.20 | 1 11.80 | 1 14.20 | 4 12.90 | 1 13.00 | 1 14.10 | 1 12.60 | 1 11.40 | 3 3.70 | 1 4.60 | 2 3.30 | 1 | |
| Max | 15.20 | 10 21.80 | 1 60.40 | 1 42.30 | 1 36.40 | 1 14.30 | 1 28.10 | 1 24.00 | 1 25.60 | 1 11.90 | 1 14.30 | 3 13.20 | 1 13.10 | 1 14.20 | 1 14.40 | 1 12.20 | 1 11.40 | 2 3.80 | 2 5.00 | 1 4.30 | 1 |
| Mean | 14.96 | 19.70 | 56.58 | 37.45 | 34.52 | 13.45 | 25.80 | 19.83 | 22.60 | 10.00 | 12.87 | 11.24 | 10.44 | 12.16 | 9.83 | 9.73 | 9.70 | 2.63 | 0.12 | | |
| SD | 0.23 | 0.61 | 1.14 | 1.54 | 1.08 | 0.38 | 0.73 | 1.11 | 1.00 | 0.64 | 0.60 | 0.78 | 0.95 | 0.78 | 0.92 | 0.94 | 0.62 | 0.76 | 0.93 | 1.03 | |
| Coefficient of Variation | 1.54 | 3.09 | 2.02 | 4.12 | 3.15 | 2.84 | 2.83 | 5.60 | 4.43 | 6.41 | 4.69 | 7.08 | 9.07 | 6.31 | 9.36 | 9.68 | 6.33 | | | | |
| No of Survey Subjects | 344 | 344 | 344 | 344 | 344 | 344 | 343 | 343 | 344 | 344 | 344 | 344 | 344 | 344 | 343 | 344 | 344 | 344 | 344 | 344 | 343 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 27 PART 2

SIZE ROLL REFERENCE **E** CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND
 NUMBER OF SIZES **3**
 SIZE **2** CONTROL MEASUREMENT RANGES **15.30** TO **16.39** HEAD BREADTH
 TO

53

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.30 | 17.80 | 54.30 | 33.20 | 32.00 | 12.60 | 24.20 | 16.00 | 19.10 | 7.80 | 9.50 | 8.50 | 7.50 | 8.60 | 6.50 | 6.60 | 6.20 | -2.10 | -1.70 | -3.10 |
| Min + 1 Measurement | 15.40 | 18.00 | 54.40 | 33.80 | 32.10 | 12.70 | 24.30 | 16.40 | 19.60 | 8.00 | 9.80 | 8.60 | 7.80 | 10.00 | 6.60 | 7.00 | 6.50 | -0.60 | -0.40 | -2.40 |
| Min + 2 Measurement | 15.50 | 18.10 | 54.60 | 35.40 | 32.30 | 12.80 | 24.40 | 16.50 | 19.80 | 8.20 | 10.80 | 8.80 | 8.00 | 10.10 | 6.70 | 7.10 | 6.70 | -0.60 | -0.20 | -2.70 |
| Min + 3 Measurement | 15.60 | 18.20 | 54.70 | 34.00 | 32.40 | 12.90 | 24.50 | 17.10 | 20.30 | 8.30 | 11.00 | 8.40 | 8.10 | 10.20 | 6.80 | 7.20 | 6.80 | -0.40 | -0.10 | -2.40 |
| Min + 4 Measurement | 15.70 | 18.30 | 54.80 | 34.20 | 32.60 | 13.00 | 24.60 | 17.20 | 20.40 | 8.50 | 11.20 | 8.40 | 8.20 | 10.40 | 6.90 | 7.30 | 6.90 | -0.30 | 0.00 | -2.30 |
| 1st Size | 15.30 | 18.31 | 54.91 | 34.35 | 32.85 | 12.88 | 24.54 | 17.47 | 20.64 | 8.55 | 11.44 | 8.24 | 8.32 | 10.72 | 7.71 | 7.74 | 8.08 | -0.09 | 0.17 | -2.25 |
| 2nd Size | 15.30 | 18.51 | 55.14 | 34.90 | 33.15 | 12.98 | 24.67 | 17.71 | 20.96 | 8.73 | 11.73 | 8.45 | 8.58 | 10.94 | 7.97 | 7.91 | 8.31 | 0.10 | 0.38 | -2.02 |
| 3rd Size | 15.30 | 18.63 | 55.42 | 35.28 | 33.24 | 13.04 | 24.79 | 17.89 | 21.12 | 8.85 | 11.90 | 8.66 | 8.79 | 11.04 | 8.10 | 8.14 | 8.46 | 0.20 | 0.56 | -1.81 |
| 5th Size | 15.30 | 18.79 | 55.67 | 35.49 | 33.51 | 13.16 | 24.95 | 18.15 | 21.28 | 9.01 | 11.99 | 8.86 | 9.00 | 11.18 | 8.31 | 8.37 | 8.65 | 0.40 | 0.80 | -1.60 |
| 50th Size | 15.75 | 19.87 | 57.67 | 38.02 | 35.30 | 13.86 | 26.16 | 19.98 | 22.92 | 10.11 | 13.01 | 11.23 | 10.63 | 12.25 | 9.79 | 9.87 | 9.73 | 1.74 | 2.38 | 0.01 |
| 95 Size | 16.21 | 20.85 | 59.69 | 40.87 | 37.20 | 14.56 | 27.45 | 21.67 | 24.52 | 11.24 | 13.98 | 12.61 | 12.19 | 13.42 | 11.25 | 11.48 | 10.72 | 3.02 | 3.89 | 1.63 |
| 97 Size | 16.25 | 21.00 | 59.95 | 41.28 | 37.42 | 14.66 | 27.66 | 21.87 | 24.81 | 11.39 | 14.11 | 12.77 | 12.43 | 13.57 | 11.45 | 11.69 | 10.86 | 3.22 | 4.11 | 1.95 |
| 98 Size | 16.27 | 21.13 | 60.24 | 41.57 | 37.56 | 14.74 | 27.76 | 21.99 | 24.99 | 11.53 | 14.19 | 12.89 | 12.54 | 13.69 | 11.59 | 11.81 | 11.01 | 3.39 | 4.25 | 2.18 |
| 99 Size | 16.28 | 21.34 | 60.65 | 42.01 | 37.95 | 14.93 | 28.01 | 22.22 | 25.24 | 11.75 | 14.42 | 12.99 | 12.74 | 13.94 | 11.79 | 12.06 | 11.18 | 3.64 | 4.52 | 2.55 |
| Max - 4 Measurement | 15.90 | 21.50 | 60.90 | 43.50 | 38.50 | 14.80 | 28.20 | 22.60 | 25.30 | 12.20 | 14.60 | 13.00 | 12.90 | 14.00 | 12.20 | 12.50 | 11.20 | 4.00 | 4.70 | 2.90 |
| Max - 3 Measurement | 16.00 | 21.60 | 61.00 | 43.80 | 38.80 | 14.90 | 28.30 | 22.70 | 25.40 | 12.50 | 14.70 | 13.10 | 13.00 | 14.10 | 12.40 | 12.60 | 11.30 | 4.10 | 5.00 | 3.00 |
| Max - 2 Measurement | 16.10 | 21.70 | 61.10 | 43.70 | 38.90 | 15.00 | 28.40 | 23.00 | 25.50 | 12.70 | 14.80 | 13.20 | 13.10 | 14.20 | 12.70 | 13.10 | 11.40 | 4.20 | 5.10 | 3.10 |
| Max - 1 Measurement | 16.10 | 21.80 | 61.40 | 44.50 | 39.20 | 15.10 | 28.50 | 23.30 | 25.90 | 13.00 | 14.90 | 13.30 | 13.40 | 14.30 | 13.20 | 13.40 | 11.50 | 4.20 | 5.10 | 3.20 |
| Max | 16.30 | 22.00 | 61.50 | 44.80 | 39.80 | 15.20 | 28.60 | 23.60 | 26.20 | 14.10 | 15.00 | 13.40 | 13.00 | 15.50 | 13.40 | 14.20 | 11.70 | 4.40 | 5.60 | 4.00 |
| Mean | 15.80 | 19.91 | 57.71 | 38.15 | 35.36 | 13.92 | 26.23 | 19.98 | 22.98 | 10.14 | 13.04 | 11.28 | 10.65 | 12.33 | 9.84 | 9.94 | 9.77 | 1.77 | 2.39 | 0.07 |
| SD | 0.29 | 0.63 | 1.22 | 1.63 | 1.10 | 0.42 | 0.73 | 0.98 | 0.69 | 0.63 | 0.82 | 0.67 | 0.69 | 0.90 | 0.45 | 0.65 | 0.81 | 0.45 | 0.95 | 0.49 |
| Coefficient of Variation | 1.85 | 3.17 | 2.11 | 4.27 | 3.12 | 3.02 | 2.79 | 5.30 | 4.26 | 6.81 | 4.84 | 7.31 | 4.06 | 5.60 | 4.14 | 4.53 | 6.64 | | | |
| No of Survey Subjects | 1352 | 1352 | 1352 | 1352 | 1352 | 1352 | 1352 | 1351 | 1352 | 1352 | 1352 | 1352 | 1352 | 1352 | 1351 | 1352 | 1352 | 1352 | 1352 | 1351 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 27 PART 3

SIZE ROLL REFERENCE E CONTROL MEASUREMENTS 1ST HEAD BREADTH

2ND

NUMBER OF SIZES 3

SIZE 3 CONTROL MEASUREMENT RANGES 16.40 TO 17.50 HEAD BREADTH

TO

54

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 16.40 | 18.30 | 55.00 | 34.70 | 33.40 | 13.40 | 25.00 | 12.40 | 20.40 | 8.60 | 11.20 | 9.40 | 8.10 | 10.20 | 6.60 | 7.00 | 7.20 | -0.60 | -0.40 | -2.40 |
| Min + 1 Measurement | 16.50 | 18.40 | 55.40 | 34.90 | 33.50 | 13.50 | 25.10 | 12.50 | 20.50 | 8.70 | 11.30 | 9.50 | 8.20 | 10.30 | 6.70 | 7.10 | 7.30 | -0.50 | -0.30 | -2.30 |
| Min + 2 Measurement | 16.60 | 18.50 | 55.80 | 35.10 | 33.60 | 13.60 | 25.20 | 12.60 | 20.60 | 8.80 | 11.40 | 9.60 | 8.30 | 10.40 | 6.80 | 7.20 | 7.40 | -0.40 | -0.20 | -2.20 |
| Min + 3 Measurement | 16.70 | 18.60 | 56.20 | 35.30 | 33.70 | 13.70 | 25.30 | 12.70 | 20.70 | 8.90 | 11.50 | 9.70 | 8.40 | 10.50 | 6.90 | 7.30 | 7.50 | -0.30 | -0.10 | -2.10 |
| Min + 4 Measurement | 16.80 | 18.70 | 56.60 | 35.50 | 33.80 | 13.80 | 25.40 | 12.80 | 20.80 | 9.00 | 11.60 | 9.80 | 8.50 | 10.60 | 7.00 | 7.40 | 7.60 | -0.20 | 0.00 | -2.00 |
| 1st Size | 16.40 | 18.40 | 56.10 | 35.40 | 33.70 | 13.40 | 25.00 | 12.50 | 20.50 | 8.70 | 11.40 | 9.70 | 8.60 | 10.67 | 7.14 | 7.70 | 7.85 | -0.20 | 0.00 | -1.40 |
| 2nd Size | 16.40 | 18.45 | 56.27 | 35.48 | 34.15 | 13.45 | 25.13 | 12.53 | 20.53 | 8.77 | 11.45 | 9.78 | 8.63 | 10.67 | 7.14 | 7.70 | 7.85 | -0.20 | 0.00 | -1.40 |
| 3rd Size | 16.40 | 18.50 | 56.37 | 35.50 | 34.27 | 13.55 | 25.16 | 12.56 | 20.56 | 8.85 | 11.50 | 9.80 | 8.65 | 10.67 | 7.14 | 7.70 | 7.85 | -0.20 | 0.00 | -1.40 |
| 4th Size | 16.40 | 18.54 | 56.50 | 35.55 | 34.57 | 13.74 | 25.31 | 12.54 | 20.54 | 8.97 | 11.54 | 9.87 | 8.70 | 10.67 | 7.14 | 7.70 | 7.85 | -0.20 | 0.00 | -1.40 |
| 5th Size | 16.49 | 18.64 | 56.73 | 35.96 | 34.26 | 14.34 | 26.50 | 12.50 | 20.50 | 9.28 | 12.08 | 10.28 | 9.07 | 11.30 | 8.10 | 8.35 | 8.53 | 0.50 | 0.80 | -1.70 |
| 95 Size | 17.10 | 20.98 | 66.70 | 41.65 | 38.50 | 15.16 | 27.75 | 21.87 | 24.74 | 11.45 | 14.16 | 12.70 | 12.27 | 13.80 | 11.17 | 11.53 | 10.72 | 2.90 | 3.83 | 0.10 |
| 97 Size | 17.21 | 21.10 | 66.87 | 42.00 | 38.62 | 15.26 | 27.95 | 22.23 | 24.87 | 11.60 | 14.40 | 12.87 | 12.40 | 13.90 | 11.40 | 11.70 | 11.00 | 3.07 | 4.10 | 1.90 |
| 98 Size | 17.25 | 21.15 | 66.90 | 42.37 | 38.67 | 15.33 | 28.03 | 22.45 | 24.97 | 11.60 | 14.53 | 13.05 | 12.57 | 14.02 | 11.50 | 11.76 | 11.10 | 3.40 | 4.20 | 2.10 |
| 99 Size | 17.29 | 21.40 | 67.75 | 42.80 | 39.29 | 15.43 | 28.15 | 22.60 | 25.40 | 12.10 | 14.70 | 13.17 | 12.90 | 14.30 | 11.65 | 11.90 | 11.30 | 3.55 | 4.30 | 2.37 |
| Max - 4 Measurement | 17.00 | 21.20 | 67.40 | 42.30 | 38.70 | 15.20 | 28.00 | 22.40 | 24.90 | 11.80 | 14.60 | 13.00 | 12.60 | 14.30 | 11.50 | 11.80 | 11.20 | 3.40 | 4.10 | 2.10 |
| Max - 3 Measurement | 17.10 | 21.30 | 67.70 | 42.50 | 39.30 | 15.30 | 28.10 | 22.50 | 25.00 | 12.00 | 14.70 | 13.10 | 12.70 | 14.40 | 11.60 | 11.90 | 11.30 | 3.50 | 4.20 | 2.20 |
| Max - 2 Measurement | 17.20 | 21.40 | 68.00 | 42.80 | 39.40 | 15.40 | 28.20 | 22.60 | 25.10 | 12.10 | 14.80 | 13.20 | 12.80 | 14.50 | 11.70 | 12.00 | 11.40 | 3.60 | 4.30 | 2.30 |
| Max - 1 Measurement | 17.30 | 21.50 | 68.00 | 43.00 | 39.50 | 15.50 | 28.30 | 22.70 | 25.20 | 12.20 | 14.90 | 13.30 | 13.00 | 14.60 | 11.80 | 12.10 | 11.50 | 3.70 | 4.40 | 2.40 |
| Max | 17.40 | 21.70 | 68.40 | 44.20 | 40.40 | 15.70 | 28.60 | 23.00 | 26.20 | 13.00 | 15.60 | 14.00 | 13.20 | 14.70 | 12.00 | 12.60 | 11.60 | 3.70 | 4.60 | 2.50 |
| Mean | 16.62 | 20.06 | 58.75 | 38.95 | 36.39 | 14.42 | 26.59 | 20.16 | 23.22 | 10.31 | 13.14 | 11.40 | 10.75 | 12.47 | 9.85 | 10.24 | 9.75 | 1.74 | 2.34 | 0.10 |
| SD | 0.24 | 0.64 | 1.24 | 1.73 | 1.16 | 0.45 | 0.74 | 1.07 | 0.99 | 0.75 | 0.64 | 0.81 | 0.94 | 0.75 | 0.92 | 0.96 | 0.74 | 0.94 | 0.44 | 0.44 |
| Coefficient of Variation % | 1.46 | 3.18 | 2.10 | 4.45 | 3.18 | 2.99 | 2.79 | 5.30 | 4.28 | 7.04 | 5.25 | 7.06 | 8.75 | 5.98 | 4.31 | 4.50 | 6.78 | | | |
| No of Survey Subjects | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 28 PART 1

SIZE ROLL REFERENCE **F** CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND
 NUMBER OF SIZES ... **2** ...
 SIZE ... **1** ... CONTROL MEASUREMENT RANGES ... **18.00** ... TO ... **19.89** ... HEAD LENGTH
 TO

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRACION CORONAL ARC | BITRACION DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRACION TO BACK OF HEAD | TRACION TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRACION TO MENTON HORIZONTAL | TRACION TO MENTON VERTICAL | TRACION TO BROW RIDGE HORIZONTAL | TRACION TO PUPIL VERTICAL | TRACION TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|-----------------------|--------------------|-------------------------------|------------------------|------------------|-------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|
| Min | 14.00 | 18.00 | 53.00 | 33.70 | 31.60 | 12.20 | 23.70 | 16.00 | 14.10 | 8.00 | 9.80 | 8.50 | 7.50 | 8.90 | 6.50 | 7.00 | 6.20 | 7.00 | -0.40 | -2.90 |
| Min + 1 Measurement | 14.20 | 18.10 | 53.60 | 33.90 | 31.70 | 12.30 | 24.10 | 16.40 | 14.50 | 8.20 | 11.00 | 8.60 | 7.80 | 9.70 | 6.80 | 7.10 | 6.70 | 7.20 | -0.40 | -2.70 |
| Min + 2 Measurement | 14.40 | 18.20 | 53.90 | 33.90 | 31.80 | 12.50 | 24.20 | 16.50 | 14.60 | 8.30 | 11.20 | 8.80 | 8.00 | 10.00 | 7.10 | 7.20 | 7.70 | 7.70 | -0.10 | -2.40 |
| Min + 3 Measurement | 14.50 | 18.30 | 54.00 | 34.00 | 32.00 | 12.60 | 24.30 | 16.80 | 14.80 | 8.40 | 11.30 | 9.00 | 8.10 | 10.10 | 7.40 | 7.50 | 7.80 | 8.00 | 0.10 | -2.30 |
| Min + 4 Measurement | 14.60 | 18.40 | 54.30 | 34.10 | 32.30 | 12.70 | 24.40 | 17.20 | 15.00 | 8.50 | 11.40 | 9.20 | 8.20 | 10.20 | 7.60 | 7.60 | 7.90 | 8.10 | 0.10 | -2.20 |
| 1st Size | 14.44 | 18.45 | 54.31 | 34.23 | 31.48 | 12.61 | 24.31 | 17.32 | 15.24 | 8.45 | 11.38 | 9.07 | 8.15 | 10.32 | 7.71 | 7.28 | 7.49 | 8.15 | 0.18 | 0.56 |
| 2nd Size | 14.55 | 18.52 | 54.66 | 34.65 | 32.49 | 12.76 | 24.47 | 17.48 | 15.49 | 8.56 | 11.66 | 9.30 | 8.51 | 10.70 | 7.92 | 7.73 | 8.15 | 8.15 | 0.35 | 0.69 |
| 3rd Size | 14.65 | 18.59 | 54.85 | 34.88 | 32.71 | 12.86 | 24.57 | 17.59 | 15.73 | 8.70 | 11.79 | 9.44 | 8.59 | 10.98 | 8.07 | 7.88 | 8.31 | 8.31 | 0.50 | 0.91 |
| 5th Size | 14.78 | 18.55 | 55.04 | 35.18 | 33.00 | 12.97 | 24.67 | 17.82 | 16.04 | 8.78 | 11.92 | 9.72 | 8.87 | 11.04 | 8.28 | 8.16 | 8.44 | 8.44 | 0.50 | 0.91 |
| 50th Size | 15.61 | 19.37 | 56.73 | 37.68 | 34.99 | 13.78 | 25.78 | 19.57 | 22.58 | 9.75 | 12.87 | 11.01 | 10.37 | 12.12 | 11.15 | 11.02 | 10.45 | 11.02 | 3.08 | 3.46 |
| 95 Size | 16.54 | 19.76 | 58.34 | 40.53 | 36.99 | 14.57 | 26.86 | 21.26 | 24.08 | 10.75 | 13.45 | 12.43 | 12.02 | 13.25 | 11.15 | 11.02 | 10.45 | 11.02 | 3.08 | 3.46 |
| 97 Size | 16.71 | 19.78 | 58.55 | 40.95 | 37.32 | 14.75 | 26.97 | 21.47 | 24.27 | 10.89 | 14.08 | 12.62 | 12.17 | 13.41 | 11.34 | 11.27 | 10.56 | 11.27 | 3.34 | 4.24 |
| 98 Size | 16.78 | 19.79 | 58.70 | 41.10 | 37.55 | 14.91 | 27.10 | 21.70 | 24.40 | 10.99 | 14.16 | 12.70 | 12.34 | 13.51 | 11.54 | 11.50 | 10.65 | 11.50 | 3.50 | 4.51 |
| 99 Size | 16.89 | 19.79 | 58.96 | 41.48 | 38.14 | 15.05 | 27.55 | 21.99 | 24.83 | 11.25 | 14.33 | 12.86 | 12.54 | 13.66 | 11.79 | 11.75 | 10.73 | 11.75 | 3.68 | 4.63 |
| Max - 4 Measurement | 17.00 | 19.40 | 59.30 | 41.80 | 38.30 | 15.00 | 27.40 | 22.20 | 24.80 | 11.40 | 14.30 | 12.80 | 12.70 | 13.80 | 11.90 | 11.90 | 10.70 | 11.90 | 3.80 | 4.80 |
| Max - 3 Measurement | 17.10 | 19.50 | 59.40 | 41.90 | 38.40 | 15.10 | 27.50 | 22.30 | 24.90 | 11.50 | 14.40 | 12.90 | 12.80 | 13.90 | 12.00 | 12.00 | 10.80 | 12.00 | 4.00 | 5.00 |
| Max - 2 Measurement | 17.20 | 19.60 | 59.50 | 42.10 | 38.50 | 15.20 | 27.60 | 22.80 | 25.00 | 11.60 | 14.50 | 13.00 | 13.00 | 14.00 | 12.70 | 12.20 | 11.00 | 12.20 | 4.10 | 5.00 |
| Max - 1 Measurement | 17.30 | 19.70 | 59.60 | 42.50 | 38.70 | 15.30 | 27.70 | 23.00 | 25.10 | 12.70 | 14.60 | 13.10 | 13.10 | 14.10 | 13.20 | 12.60 | 11.10 | 13.20 | 4.20 | 5.10 |
| Max | 17.40 | 19.80 | 59.90 | 42.70 | 39.20 | 15.70 | 27.80 | 24.00 | 25.00 | 13.00 | 15.00 | 13.30 | 13.40 | 14.20 | 14.40 | 13.40 | 11.20 | 14.40 | 4.40 | 5.00 |
| Mean | 15.69 | 19.36 | 56.78 | 37.76 | 35.06 | 13.84 | 25.83 | 19.62 | 22.61 | 9.83 | 12.44 | 11.08 | 10.44 | 12.17 | 11.79 | 11.79 | 10.73 | 11.79 | 3.68 | 4.63 |
| SD | 0.54 | 0.37 | 1.02 | 1.60 | 1.23 | 0.49 | 0.67 | 1.05 | 0.94 | 0.61 | 0.63 | 0.81 | 0.45 | 0.68 | 0.40 | 0.40 | 0.61 | 0.79 | 0.94 | 1.02 |
| Coefficient of Variation | 3.43 | 1.91 | 1.80 | 4.24 | 3.51 | 3.54 | 2.58 | 5.33 | 4.14 | 6.19 | 4.88 | 7.35 | 4.12 | 5.57 | 3.22 | 3.32 | 6.37 | 6.37 | 9.44 | 9.44 |
| No of Survey Subjects | 944 | 944 | 944 | 944 | 944 | 944 | 943 | 942 | 944 | 944 | 944 | 944 | 944 | 944 | 942 | 944 | 944 | 944 | 944 | 944 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 28 PART 2

SIZE ROLL REFERENCE **F** CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND
 NUMBER OF SIZES **2**.....
 SIZE **.2** CONTROL MEASUREMENT RANGES **19.90** TO **21.80** HEAD LENGTH
 TO

95

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGION TO BACK OF HEAD OF HEAD | TRAGION TO VERTEX | PUPIL TO VERTEX | NASTON TO VERTEX | MENTON TO NASTON | TRAGION TO MENTON HORIZONTAL | TRAGION TO MENTON VERTICAL | TRAGION TO BROW RIDGE HORIZONTAL | TRAGION TO PUPIL VERTICAL | TRAGION TO NASTON VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|---------------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|
| Min | 14.20 | 19.90 | 55.00 | 33.20 | 31.10 | 12.40 | 24.30 | 17.10 | 19.60 | 8.50 | 9.50 | 8.90 | 8.20 | 8.60 | 6.60 | 6.60 | 6.50 | -2.10 | -1.70 | -3.10 |
| Min + 1 Measurement | 14.30 | 20.00 | 55.40 | 34.10 | 32.10 | 12.70 | 24.60 | 17.20 | 20.10 | 8.70 | 10.80 | 4.20 | 8.30 | 9.30 | 7.10 | 6.80 | 7.20 | -0.60 | -0.40 | -2.90 |
| Min + 2 Measurement | 14.50 | 20.10 | 55.70 | 34.20 | 32.30 | 12.80 | 24.70 | 17.50 | 20.20 | 8.80 | 11.00 | 4.30 | 8.40 | 10.00 | 7.20 | 7.50 | 7.70 | -0.50 | -0.30 | -2.70 |
| Min + 3 Measurement | 14.60 | 20.20 | 55.80 | 34.30 | 32.40 | 12.90 | 24.80 | 17.80 | 20.30 | 8.90 | 11.20 | 4.40 | 8.50 | 10.10 | 7.30 | 7.60 | 7.90 | -0.40 | -0.10 | -2.50 |
| Min + 4 Measurement | 14.70 | 20.30 | 56.00 | 34.40 | 32.60 | 13.00 | 24.90 | 17.90 | 20.40 | 9.00 | 11.30 | 4.50 | 8.60 | 10.50 | 7.40 | 7.70 | 8.00 | -0.30 | 0.00 | -2.40 |
| 1st File | 14.51 | 19.90 | 55.98 | 34.81 | 32.75 | 12.84 | 24.91 | 17.44 | 20.78 | 9.05 | 11.43 | 4.48 | 8.55 | 10.81 | 7.62 | 7.86 | 8.42 | -0.22 | 0.15 | -2.28 |
| 2nd File | 14.60 | 19.90 | 56.32 | 35.36 | 33.08 | 12.92 | 25.15 | 18.17 | 21.13 | 9.16 | 11.70 | 4.73 | 8.52 | 10.97 | 7.90 | 8.22 | 8.64 | 0.02 | 0.35 | -2.12 |
| 3rd File | 14.78 | 19.90 | 56.46 | 35.48 | 33.19 | 12.99 | 25.27 | 18.34 | 21.35 | 9.24 | 11.83 | 4.84 | 8.43 | 11.11 | 8.03 | 8.36 | 8.76 | 0.15 | 0.49 | -1.99 |
| 5th File | 14.93 | 19.90 | 56.67 | 35.80 | 33.48 | 13.04 | 25.43 | 18.57 | 21.61 | 9.34 | 12.00 | 10.02 | 8.13 | 11.24 | 8.51 | 8.57 | 8.91 | 0.37 | 0.73 | -1.73 |
| 50th File | 15.93 | 20.26 | 58.38 | 38.42 | 35.50 | 13.92 | 26.46 | 20.10 | 23.20 | 10.35 | 13.08 | 11.34 | 10.76 | 12.38 | 9.84 | 10.08 | 9.95 | 1.64 | 2.28 | -0.12 |
| 95 File | 16.08 | 21.04 | 60.32 | 41.31 | 37.59 | 14.76 | 27.70 | 21.87 | 24.77 | 11.40 | 14.02 | 12.67 | 12.34 | 13.60 | 11.31 | 11.64 | 10.88 | 2.93 | 3.80 | 1.40 |
| 97 File | 16.84 | 21.18 | 60.61 | 41.69 | 37.47 | 14.92 | 27.83 | 22.05 | 24.99 | 11.57 | 14.18 | 12.87 | 12.52 | 13.55 | 11.49 | 11.80 | 11.06 | 3.09 | 3.97 | 1.67 |
| 98 File | 16.97 | 21.31 | 60.83 | 41.96 | 38.34 | 15.07 | 28.00 | 22.26 | 25.21 | 11.71 | 14.24 | 12.96 | 12.62 | 13.96 | 11.54 | 11.94 | 11.16 | 3.23 | 4.08 | 1.98 |
| 99 File | 17.19 | 21.48 | 61.02 | 42.75 | 38.67 | 15.21 | 28.15 | 22.57 | 25.37 | 11.94 | 14.53 | 13.12 | 12.84 | 14.11 | 11.71 | 12.25 | 11.33 | 3.45 | 4.25 | 2.11 |
| Max - 4 Measurement | 17.20 | 21.40 | 61.50 | 43.60 | 39.30 | 15.20 | 28.20 | 22.70 | 25.50 | 12.20 | 14.80 | 13.20 | 12.90 | 14.20 | 11.90 | 12.50 | 11.40 | 3.70 | 4.20 | 2.50 |
| Max - 3 Measurement | 17.30 | 21.50 | 61.70 | 43.70 | 39.40 | 15.30 | 28.30 | 22.80 | 25.80 | 12.50 | 14.90 | 13.30 | 13.00 | 14.30 | 12.00 | 12.60 | 11.50 | 3.80 | 4.30 | 2.60 |
| Max - 2 Measurement | 17.40 | 21.60 | 61.80 | 44.20 | 39.50 | 15.40 | 28.40 | 23.00 | 26.00 | 12.70 | 15.00 | 13.40 | 13.10 | 14.60 | 12.10 | 12.70 | 11.60 | 3.90 | 4.40 | 2.70 |
| Max - 1 Measurement | 17.60 | 21.70 | 62.00 | 44.30 | 39.80 | 15.50 | 28.50 | 23.30 | 26.10 | 13.00 | 15.50 | 13.50 | 13.20 | 14.70 | 12.40 | 13.00 | 11.70 | 4.00 | 4.50 | 3.00 |
| Max | 18.00 | 21.80 | 62.40 | 44.80 | 40.40 | 15.60 | 28.60 | 23.60 | 26.20 | 14.10 | 16.00 | 13.50 | 13.60 | 15.00 | 12.40 | 13.60 | 11.70 | 4.10 | 4.50 | 3.10 |
| Mean | 15.87 | 20.38 | 56.48 | 33.49 | 35.59 | 13.98 | 26.55 | 20.30 | 23.26 | 10.43 | 13.10 | 11.41 | 10.80 | 12.46 | 9.88 | 10.15 | 9.95 | 1.69 | 2.31 | -0.08 |
| SD | 0.54 | 0.38 | 1.09 | 1.08 | 1.23 | 0.50 | 0.69 | 0.49 | 0.77 | 0.64 | 0.64 | 0.50 | 0.94 | 0.73 | 0.91 | 0.94 | 0.61 | 0.50 | 0.94 | 0.95 |
| Coefficient of Variation % | 3.38 | 1.87 | 1.97 | 3.23 | 3.46 | 3.58 | 2.54 | 2.46 | 3.16 | 6.14 | 4.93 | 4.49 | 8.74 | 5.87 | 9.16 | 9.30 | 6.13 | | | |
| No of Survey Subjects | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 | 1054 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 29 PART 1

SIZE ROLL REFERENCE **G** CONTROL MEASUREMENTS 1ST **HEAD LENGTH**
 2ND
 NUMBER OF SIZES **3**.....
 SIZE **1** CONTROL MEASUREMENT RANGES **18:00** TO **19:29** HEAD LENGTH
 TO

57

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14 00 | 18 00 | 53 00 | 33 70 | 31 70 | 12 20 | 24 10 | 16 00 | 19 10 | 8 00 | 9 80 | 8 50 | 7 50 | 8 90 | 6 50 | 7 00 | 6 20 | -1 00 | -0 40 | -2 90 |
| Min + 1 Measurement | 14 40 | 18 10 | 53 60 | 33 90 | 32 00 | 12 60 | 24 20 | 16 40 | 19 60 | 8 20 | 11 00 | 8 60 | 7 80 | 9 70 | 6 60 | 7 10 | 7 70 | -0 40 | -0 30 | -2 70 |
| Min + 2 Measurement | 14 50 | 18 20 | 53 40 | 34 00 | 32 30 | 12 70 | 24 30 | 16 50 | 19 80 | 8 30 | 11 30 | 8 80 | 8 00 | 10 30 | 7 10 | 7 20 | 7 80 | -0 10 | -0 20 | -2 40 |
| Min + 3 Measurement | 14 60 | 18 30 | 54 00 | 34 30 | 32 40 | 12 80 | 24 40 | 16 80 | 20 00 | 8 50 | 11 40 | 9 00 | 8 20 | 10 40 | 7 40 | 7 30 | 8 00 | 0 00 | -0 10 | -2 00 |
| Min + 4 Measurement | 14 70 | 18 40 | 54 30 | 34 40 | 32 50 | 12 90 | 24 50 | 17 20 | 20 30 | 8 60 | 11 60 | 9 20 | 8 30 | 10 50 | 7 60 | 7 40 | 8 10 | 0 10 | 0 10 | -1 80 |
| 1st File | 14 27 | 18 00 | 53 60 | 33 90 | 31 85 | 12 63 | 24 15 | 16 50 | 19 70 | 8 20 | 11 15 | 8 60 | 7 80 | 10 30 | 7 10 | 7 10 | 7 80 | -0 25 | -0 20 | -2 55 |
| 2nd File | 14 45 | 18 07 | 54 03 | 34 40 | 32 15 | 12 70 | 24 23 | 17 06 | 20 30 | 8 35 | 11 60 | 9 00 | 8 07 | 10 55 | 7 70 | 7 50 | 8 00 | 0 10 | 0 15 | -2 00 |
| 3rd File | 14 52 | 18 14 | 54 30 | 34 62 | 32 35 | 12 76 | 24 32 | 17 33 | 20 50 | 8 50 | 11 70 | 9 24 | 8 30 | 10 80 | 8 03 | 7 60 | 8 10 | 0 16 | 0 50 | -1 61 |
| 5th File | 14 62 | 18 26 | 54 57 | 34 80 | 32 60 | 12 86 | 24 47 | 17 53 | 20 70 | 8 57 | 11 87 | 9 48 | 8 57 | 11 05 | 8 18 | 7 86 | 8 23 | 0 44 | 0 85 | -1 43 |
| 50th File | 15 55 | 18 94 | 56 62 | 37 56 | 34 35 | 13 72 | 25 38 | 19 20 | 22 30 | 9 53 | 12 72 | 10 85 | 10 17 | 12 04 | 9 65 | 9 46 | 9 30 | 1 40 | 2 47 | 0 28 |
| 95 File | 16 47 | 19 18 | 57 80 | 40 40 | 36 63 | 14 48 | 26 53 | 21 11 | 23 95 | 10 60 | 13 86 | 12 36 | 12 00 | 13 23 | 11 16 | 10 97 | 10 30 | 3 17 | 4 25 | 2 30 |
| 97 File | 16 60 | 19 19 | 57 89 | 40 70 | 36 87 | 14 58 | 26 70 | 21 36 | 24 17 | 10 72 | 14 00 | 12 50 | 12 16 | 13 40 | 11 33 | 11 27 | 10 41 | 3 45 | 4 53 | 2 48 |
| 98 File | 16 77 | 19 19 | 58 00 | 41 50 | 37 20 | 14 70 | 26 85 | 21 50 | 24 30 | 10 78 | 14 08 | 12 60 | 12 30 | 13 50 | 11 40 | 11 70 | 10 46 | 3 57 | 4 60 | 2 57 |
| 99 File | 16 90 | 19 20 | 58 40 | 41 80 | 37 60 | 14 80 | 26 97 | 21 80 | 24 65 | 10 90 | 14 17 | 12 73 | 12 45 | 13 67 | 11 85 | 11 90 | 10 50 | 3 75 | 4 90 | 2 75 |
| Max - 4 Measurement | 16 80 | 19 30 | 58 10 | 41 40 | 37 30 | 14 60 | 26 80 | 21 60 | 24 40 | 10 80 | 14 00 | 12 50 | 12 30 | 13 50 | 11 60 | 11 80 | 10 40 | 3 60 | 4 80 | 2 60 |
| Max - 3 Measurement | 16 90 | 19 40 | 58 20 | 41 80 | 37 60 | 14 70 | 26 90 | 21 70 | 24 60 | 10 90 | 14 10 | 12 60 | 12 40 | 13 60 | 11 70 | 11 90 | 10 50 | 3 70 | 4 40 | 2 70 |
| Max - 2 Measurement | 17 00 | 19 00 | 58 40 | 42 10 | 37 90 | 14 80 | 27 00 | 21 80 | 24 70 | 11 00 | 14 20 | 12 70 | 12 50 | 13 70 | 12 00 | 12 00 | 10 60 | 3 80 | 5 00 | 2 80 |
| Max - 1 Measurement | 17 10 | 19 10 | 58 50 | 42 80 | 38 20 | 15 00 | 27 10 | 21 90 | 25 10 | 11 10 | 14 30 | 12 80 | 12 60 | 13 90 | 12 20 | 12 20 | 10 70 | 4 00 | 5 10 | 2 90 |
| Max | 17 40 | 19 20 | 58 60 | 42 70 | 38 70 | 15 10 | 27 30 | 22 00 | 25 60 | 13 00 | 14 50 | 13 30 | 12 70 | 14 20 | 12 70 | 13 40 | 11 20 | 4 20 | 5 60 | 3 10 |
| Mean | 15 63 | 18 91 | 56 44 | 37 50 | 34 84 | 13 77 | 25 50 | 19 30 | 22 37 | 9 61 | 12 83 | 10 42 | 10 28 | 12 09 | 9 69 | 9 55 | 9 30 | 1 91 | 2 55 | 0 38 |
| SD | 0 56 | 0 29 | 0 96 | 1 71 | 1 23 | 0 49 | 0 64 | 1 09 | 0 48 | 0 63 | 0 63 | 0 86 | 1 01 | 0 70 | 0 94 | 0 45 | 0 62 | 0 83 | 1 00 | 1 08 |
| Coefficient of Variation % | 3 59 | 1 54 | 1 72 | 4 57 | 3 54 | 3 53 | 2 51 | 5 64 | 4 39 | 6 54 | 4 91 | 7 83 | 9 85 | 5 78 | 9 67 | 9 94 | 6 67 | | | |
| No of Survey Subjects | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 299 | 300 | 300 | 300 | 300 | 300 | 300 | 299 | 300 | 300 | 300 | 300 | 299 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 29 PART 2

SIZE ROLL REFERENCE **G** CONTROL MEASUREMENTS 1ST HEAD LENGTH

2ND

NUMBER OF SIZES **3**

SIZE **2** CONTROL MEASUREMENT RANGES **19.30** TO **20.59** HEAD LENGTH

TO

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGION TO BACK OF HEAD | TRAGION TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO MASION | TRAGION TO MENTON HORIZONTAL | TRAGION TO MENTON VERTICAL | TRAGION TO BROW RIDGE HORIZONTAL | TRAGION TO PUPIL VERTICAL | TRAGION TO MASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|-------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|------|
| Min | 14.20 | 19.30 | 54.90 | 33.20 | 1 | 31.60 | 12.30 | 17.10 | 19.50 | 8.30 | 10.80 | 8.00 | 8.00 | 7.10 | 6.60 | 6.70 | -0.60 | -0.30 | -3.10 | | |
| Min + 1 Measurement | 14.30 | 19.40 | 55.00 | 33.80 | 1 | 31.70 | 12.40 | 17.20 | 19.60 | 8.40 | 11.00 | 8.10 | 8.10 | 7.20 | 6.80 | 6.70 | -0.50 | -0.10 | -2.90 | | |
| Min + 2 Measurement | 14.40 | 19.50 | 55.10 | 34.00 | 1 | 31.80 | 12.50 | 17.30 | 19.70 | 8.50 | 11.20 | 8.20 | 8.20 | 7.30 | 6.90 | 6.70 | -0.40 | 0.00 | -2.70 | | |
| Min + 3 Measurement | 14.50 | 19.60 | 55.20 | 34.10 | 2 | 32.00 | 12.60 | 17.40 | 19.80 | 8.60 | 11.30 | 8.30 | 8.30 | 7.40 | 7.00 | 6.80 | -0.30 | 0.10 | -2.50 | | |
| Min + 4 Measurement | 14.60 | 19.70 | 55.30 | 34.20 | 2 | 32.10 | 12.70 | 17.50 | 19.90 | 8.70 | 11.40 | 8.40 | 8.40 | 7.50 | 7.10 | 6.80 | -0.20 | 0.20 | -2.40 | | |
| 1st Size | 14.51 | 19.30 | 55.24 | 34.24 | 2 | 32.10 | 12.70 | 17.50 | 19.90 | 8.70 | 11.40 | 8.40 | 8.40 | 7.50 | 7.10 | 6.80 | -0.20 | 0.20 | -2.40 | | |
| 2nd Size | 14.60 | 19.30 | 55.49 | 35.14 | 2 | 32.91 | 12.88 | 17.86 | 20.85 | 9.92 | 11.72 | 9.60 | 8.74 | 10.87 | 7.92 | 7.95 | 8.47 | 0.12 | 0.43 | -1.97 | |
| 3rd Size | 14.75 | 19.30 | 55.65 | 35.34 | 3 | 33.06 | 12.95 | 18.91 | 21.05 | 9.99 | 11.82 | 9.72 | 8.89 | 10.97 | 8.04 | 8.15 | 8.59 | 0.28 | 0.60 | -1.81 | |
| 5th Size | 14.89 | 19.30 | 55.80 | 35.55 | 3 | 33.28 | 13.07 | 19.02 | 21.28 | 9.12 | 11.96 | 9.91 | 9.07 | 11.13 | 8.51 | 8.35 | 8.76 | 0.45 | 0.84 | -1.61 | |
| 50th Size | 15.73 | 19.84 | 57.59 | 37.97 | 35 | 35.24 | 13.95 | 26.14 | 19.96 | 22.89 | 10.10 | 12.98 | 11.21 | 10.58 | 12.22 | 9.31 | 9.85 | 9.71 | 1.75 | 2.41 | 0.05 |
| 95 Size | 16.58 | 20.40 | 59.31 | 40.94 | 37 | 37.30 | 14.67 | 27.35 | 21.52 | 24.36 | 11.15 | 13.98 | 12.55 | 12.17 | 13.41 | 11.22 | 11.29 | 10.64 | 2.98 | 3.97 | 1.59 |
| 97 Size | 16.75 | 20.44 | 59.54 | 41.22 | 37 | 37.58 | 14.86 | 27.55 | 21.80 | 24.61 | 11.52 | 14.14 | 12.76 | 12.40 | 13.57 | 11.42 | 11.55 | 10.76 | 3.20 | 4.04 | 1.87 |
| 98 Size | 16.85 | 20.46 | 59.84 | 41.46 | 37 | 37.85 | 14.97 | 27.68 | 21.99 | 24.79 | 11.59 | 14.22 | 12.87 | 12.51 | 13.75 | 11.56 | 11.70 | 10.84 | 3.36 | 4.20 | 2.06 |
| 99 Size | 17.01 | 20.48 | 60.01 | 41.86 | 38 | 38.44 | 15.15 | 27.79 | 22.31 | 24.98 | 11.58 | 14.51 | 12.94 | 12.73 | 13.94 | 11.76 | 11.87 | 11.02 | 3.63 | 4.32 | 2.41 |
| Max - 4 Measurement | 17.00 | 20.10 | 60.60 | 42.50 | 1 | 38.60 | 15.20 | 27.90 | 22.80 | 25.20 | 11.90 | 14.60 | 13.10 | 12.40 | 14.10 | 12.10 | 11.10 | 10.80 | 4.50 | 3.10 | |
| Max - 3 Measurement | 17.10 | 20.20 | 60.70 | 42.70 | 1 | 38.70 | 15.30 | 28.00 | 23.00 | 25.50 | 11.90 | 14.70 | 13.20 | 12.50 | 14.20 | 12.20 | 11.20 | 10.90 | 4.60 | 3.20 | |
| Max - 2 Measurement | 17.20 | 20.30 | 60.80 | 43.00 | 1 | 39.20 | 15.40 | 28.10 | 23.30 | 25.80 | 12.00 | 15.00 | 13.30 | 12.60 | 14.30 | 12.30 | 11.30 | 11.00 | 4.70 | 3.30 | |
| Max - 1 Measurement | 17.30 | 20.40 | 60.90 | 43.30 | 1 | 39.50 | 15.50 | 28.20 | 23.60 | 26.10 | 12.50 | 15.50 | 13.40 | 12.70 | 14.40 | 12.40 | 11.40 | 11.10 | 4.80 | 3.40 | |
| Max | 17.60 | 20.50 | 61.40 | 44.20 | 1 | 40.40 | 15.70 | 28.40 | 24.00 | 26.20 | 12.70 | 15.60 | 13.50 | 12.80 | 14.50 | 12.60 | 11.50 | 11.20 | 4.90 | 3.50 | |
| Mean | 15.78 | 19.89 | 57.63 | 38.11 | 35.42 | 13.91 | 13.91 | 19.98 | 22.92 | 10.14 | 13.04 | 11.25 | 10.62 | 12.30 | 9.85 | 9.89 | 9.75 | 1.79 | 2.41 | 0.10 | |
| SD | 0.53 | 0.35 | 1.06 | 1.61 | 1.21 | 0.49 | 0.67 | 1.00 | 0.44 | 0.62 | 0.63 | 0.80 | 0.94 | 0.70 | 0.90 | 0.91 | 0.59 | 0.79 | 0.43 | 0.98 | |
| Coefficient of Variation | 3.37 | 1.78 | 1.85 | 4.21 | 3.43 | 3.53 | 2.56 | 5.02 | 4.10 | 6.09 | 4.81 | 7.10 | 8.86 | 5.71 | 9.09 | 9.18 | 6.04 | | | | |
| No of Survey Subjects | 1376 | 1376 | 1376 | 1376 | 1376 | 1376 | 1375 | 1375 | 1376 | 1376 | 1376 | 1376 | 1376 | 1376 | 1376 | 1376 | 1376 | 1376 | 1376 | 1375 | |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 29 PART 3

SIZE ROLL REFERENCE **G** CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND
 NUMBER OF SIZES **3**
 SIZE **3** CONTROL MEASUREMENT RANGES **20.60** TO **21.80** HEAD LENGTH
 TO

59

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROF RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.30 | 20.60 | 56.30 | 34.30 | 31.10 | 12.90 | 25.00 | 18.00 | 20.70 | 9.10 | 9.50 | 9.40 | 8.30 | 10.50 | 6.60 | 8.10 | 6.50 | -2.10 | -1.70 | -2.70 |
| Min + 1 Measurement | 14.50 | 20.70 | 56.70 | 34.50 | 32.40 | 13.00 | 25.20 | 18.20 | 21.70 | 9.20 | 9.80 | 9.50 | 8.40 | 10.60 | 7.30 | 8.20 | 7.20 | -0.60 | -0.40 | -2.40 |
| Min + 2 Measurement | 14.60 | 20.80 | 57.20 | 35.40 | 33.00 | 13.10 | 25.30 | 18.40 | 21.80 | 9.30 | 10.00 | 9.70 | 8.50 | 10.90 | 7.40 | 8.30 | 8.40 | -0.30 | 0.30 | -2.30 |
| Min + 3 Measurement | 14.80 | 20.90 | 57.30 | 35.50 | 33.10 | 13.20 | 25.50 | 18.50 | 21.90 | 9.40 | 10.30 | 9.80 | 8.40 | 11.10 | 7.60 | 8.40 | 8.50 | -0.20 | 0.40 | -2.20 |
| Min + 4 Measurement | 14.90 | 21.00 | 57.40 | 35.70 | 33.20 | 13.30 | 25.60 | 18.60 | 22.00 | 9.50 | 10.50 | 9.90 | 8.40 | 11.20 | 7.70 | 8.50 | 8.80 | -0.10 | 0.50 | -2.10 |
| 1st Size | 14.62 | 20.60 | 57.21 | 34.70 | 32.77 | 12.92 | 25.22 | 18.32 | 21.44 | 9.17 | 11.22 | 9.72 | 8.53 | 10.72 | 7.44 | 8.31 | 8.42 | -0.28 | 0.53 | -2.24 |
| 2nd Size | 14.83 | 20.60 | 57.33 | 35.54 | 33.17 | 12.97 | 25.57 | 18.57 | 21.81 | 9.32 | 11.67 | 9.95 | 8.94 | 11.12 | 7.74 | 8.34 | 8.92 | 0.11 | 0.42 | -2.21 |
| 3rd Size | 14.89 | 20.60 | 57.39 | 35.83 | 33.44 | 13.02 | 25.74 | 18.77 | 21.92 | 9.37 | 11.83 | 10.03 | 9.21 | 11.26 | 8.00 | 8.52 | 9.08 | 0.22 | 0.58 | -2.11 |
| 5th Size | 14.98 | 20.60 | 57.63 | 36.10 | 33.71 | 13.10 | 25.86 | 19.01 | 22.15 | 9.48 | 12.11 | 10.20 | 9.31 | 11.45 | 8.41 | 8.80 | 9.20 | 0.33 | 0.70 | -1.85 |
| 50th Size | 15.92 | 20.74 | 59.24 | 38.90 | 35.73 | 13.96 | 26.84 | 20.51 | 23.55 | 10.59 | 13.20 | 11.58 | 10.93 | 12.53 | 9.94 | 10.31 | 10.44 | 1.51 | 2.17 | -0.31 |
| 95 Size | 16.80 | 21.37 | 60.87 | 41.65 | 38.00 | 14.85 | 27.92 | 21.02 | 25.16 | 11.60 | 14.10 | 12.72 | 12.38 | 13.76 | 11.74 | 11.83 | 11.16 | 2.84 | 3.65 | 1.18 |
| 97 Size | 16.94 | 21.51 | 61.01 | 42.03 | 38.63 | 15.04 | 28.11 | 22.27 | 25.33 | 11.77 | 14.24 | 12.93 | 12.66 | 13.97 | 11.53 | 12.02 | 11.28 | 2.98 | 3.74 | 1.01 |
| 98 Size | 17.08 | 21.59 | 61.27 | 42.41 | 38.76 | 15.15 | 28.22 | 22.52 | 25.46 | 11.96 | 14.35 | 13.03 | 12.78 | 14.09 | 11.61 | 12.43 | 11.36 | 3.09 | 3.98 | 1.53 |
| 99 Size | 17.24 | 21.67 | 61.74 | 43.51 | 39.28 | 15.38 | 28.38 | 22.68 | 25.84 | 12.14 | 14.49 | 13.19 | 12.84 | 14.24 | 11.68 | 12.59 | 11.44 | 3.25 | 4.19 | 1.84 |
| Max - 4 Measurement | 17.10 | 21.40 | 61.50 | 43.20 | 39.20 | 15.20 | 28.10 | 22.40 | 25.50 | 11.90 | 14.40 | 13.00 | 12.80 | 14.10 | 11.50 | 12.50 | 11.40 | 3.00 | 4.00 | 1.60 |
| Max - 3 Measurement | 17.20 | 21.50 | 61.70 | 43.60 | 39.30 | 15.30 | 28.20 | 22.50 | 25.90 | 12.00 | 14.50 | 13.20 | 12.90 | 14.20 | 11.60 | 12.60 | 11.50 | 3.10 | 4.10 | 1.80 |
| Max - 2 Measurement | 17.30 | 21.60 | 61.80 | 43.70 | 39.40 | 15.40 | 28.30 | 22.60 | 26.00 | 12.10 | 14.60 | 13.30 | 13.10 | 14.30 | 11.70 | 12.70 | 11.60 | 3.20 | 4.20 | 1.90 |
| Max - 1 Measurement | 17.40 | 21.70 | 62.00 | 44.30 | 39.50 | 15.50 | 28.50 | 22.70 | 26.10 | 13.60 | 14.80 | 13.40 | 13.20 | 14.40 | 11.80 | 12.80 | 11.70 | 3.40 | 4.30 | 2.00 |
| Max | 18.00 | 21.80 | 62.40 | 44.80 | 39.80 | 15.60 | 28.60 | 22.80 | 26.20 | 14.70 | 14.90 | 13.80 | 13.60 | 14.70 | 11.90 | 14.20 | 11.90 | 3.60 | 4.40 | 2.20 |
| Mean | 15.95 | 20.85 | 59.28 | 38.90 | 35.87 | 14.04 | 26.40 | 20.61 | 23.60 | 10.68 | 13.18 | 11.60 | 10.94 | 12.61 | 9.44 | 10.42 | 10.18 | 1.58 | 2.14 | -0.24 |
| SD | 0.54 | 0.17 | 0.98 | 1.70 | 1.27 | 0.52 | 0.65 | 0.93 | 0.94 | 0.65 | 0.67 | 0.76 | 0.89 | 0.73 | 0.90 | 0.96 | 0.61 | 0.78 | 0.91 | 0.40 |
| Coefficient of Variation % | 3.40 | 1.28 | 1.65 | 4.36 | 3.55 | 3.71 | 2.40 | 4.51 | 3.97 | 6.11 | 5.04 | 6.53 | 8.11 | 5.78 | 4.04 | 4.21 | 6.04 | | | |
| No of Survey Subjects | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 30 PART 1

SIZE ROLL REFERENCE H CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND HEAD CIRCUMFERENCE
 NUMBER OF SIZES 4
 SIZE 1 CONTROL MEASUREMENT RANGES 14.20 TO 15.89 HEAD BREADTH
53.60 TO 57.09 HEAD CIRCUMFERENCE

09

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|--------------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.20 | 18.00 | 53.60 | 33.70 | 31.60 | 12.20 | 24.10 | 16.00 | 19.10 | 8.00 | 11.00 | 8.50 | 7.50 | 8.90 | 6.60 | 6.80 | 7.70 | 6.10 | 3.00 | -3.10 |
| Min + 1 Measurement | 14.30 | 18.10 | 53.90 | 33.80 | 31.70 | 12.30 | 24.20 | 16.40 | 19.20 | 8.20 | 11.20 | 8.60 | 7.80 | 9.30 | 7.10 | 7.00 | 7.80 | 6.00 | 3.20 | -2.40 |
| Min + 2 Measurement | 14.40 | 18.20 | 54.00 | 33.90 | 31.80 | 12.50 | 24.30 | 16.50 | 19.30 | 8.30 | 11.30 | 8.90 | 8.00 | 9.60 | 7.20 | 7.10 | 8.00 | 6.10 | 3.40 | -2.70 |
| Min + 3 Measurement | 14.50 | 18.30 | 54.30 | 34.00 | 32.00 | 12.60 | 24.40 | 16.80 | 19.40 | 8.40 | 11.40 | 9.20 | 8.20 | 9.90 | 7.30 | 7.20 | 8.10 | 6.20 | 3.60 | -2.40 |
| Min + 4 Measurement | 14.60 | 18.40 | 54.40 | 34.10 | 32.30 | 12.70 | 24.50 | 17.10 | 19.50 | 8.50 | 11.50 | 9.30 | 8.30 | 10.40 | 7.40 | 7.30 | 8.20 | 6.30 | 3.80 | -2.20 |
| 1st Size | 14.33 | 18.13 | 54.09 | 33.96 | 31.81 | 12.54 | 24.21 | 17.11 | 19.13 | 8.33 | 11.36 | 9.13 | 8.02 | 10.33 | 7.45 | 7.21 | 8.01 | 6.33 | 3.16 | -2.51 |
| 2nd Size | 14.42 | 18.26 | 54.38 | 34.24 | 32.04 | 12.62 | 24.33 | 17.32 | 19.55 | 8.52 | 11.55 | 9.29 | 8.51 | 10.65 | 7.87 | 7.55 | 8.19 | 6.18 | 3.53 | -1.93 |
| 3rd Size | 14.48 | 18.34 | 54.62 | 34.58 | 32.34 | 12.68 | 24.43 | 17.52 | 19.78 | 8.60 | 11.71 | 9.52 | 8.60 | 10.86 | 8.01 | 7.86 | 8.35 | 6.34 | 3.72 | -1.82 |
| 5th Size | 14.56 | 18.49 | 54.85 | 34.88 | 32.66 | 12.82 | 24.60 | 17.79 | 20.03 | 8.75 | 11.84 | 9.77 | 8.93 | 11.06 | 8.16 | 8.19 | 8.49 | 6.50 | 3.96 | -1.63 |
| 50th Size | 15.27 | 19.36 | 56.16 | 37.08 | 34.39 | 13.53 | 25.62 | 19.45 | 22.50 | 9.76 | 12.78 | 10.99 | 10.36 | 12.08 | 9.62 | 9.35 | 9.54 | 7.78 | 4.42 | 0.65 |
| 95 Size | 15.73 | 20.08 | 56.94 | 39.82 | 36.19 | 14.16 | 26.70 | 21.08 | 24.00 | 10.71 | 13.85 | 12.22 | 11.93 | 13.29 | 11.02 | 11.11 | 10.40 | 8.97 | 5.81 | 1.59 |
| 97 Size | 15.76 | 20.16 | 56.96 | 40.21 | 36.44 | 14.25 | 26.87 | 21.26 | 24.26 | 10.79 | 13.95 | 12.41 | 12.10 | 13.45 | 11.17 | 11.42 | 10.60 | 9.18 | 6.11 | 1.92 |
| 98 Size | 15.77 | 20.20 | 56.97 | 40.52 | 36.59 | 14.34 | 26.96 | 21.37 | 24.36 | 10.87 | 14.02 | 12.61 | 12.18 | 13.52 | 11.32 | 11.59 | 10.68 | 9.37 | 6.45 | 2.25 |
| 99 Size | 15.79 | 20.29 | 56.99 | 41.17 | 36.74 | 14.46 | 27.14 | 21.59 | 24.67 | 11.05 | 14.17 | 12.72 | 12.44 | 13.60 | 11.62 | 11.79 | 10.79 | 9.59 | 6.67 | 2.49 |
| Max - 4 Measurement | 15.40 | 20.30 | 56.60 | 41.30 | 36.70 | 14.30 | 27.10 | 21.60 | 24.70 | 11.00 | 14.00 | 12.60 | 12.40 | 13.50 | 11.60 | 11.70 | 10.60 | 9.50 | 6.70 | 2.50 |
| Max - 3 Measurement | 15.50 | 20.40 | 56.70 | 41.40 | 36.80 | 14.40 | 27.20 | 21.70 | 24.90 | 11.20 | 14.10 | 12.70 | 12.50 | 13.60 | 11.70 | 11.80 | 10.70 | 9.60 | 6.90 | 2.70 |
| Max - 2 Measurement | 15.60 | 20.50 | 56.80 | 41.70 | 36.90 | 14.50 | 27.30 | 21.90 | 25.00 | 11.40 | 14.20 | 12.80 | 12.60 | 13.70 | 11.80 | 11.90 | 10.80 | 9.70 | 7.00 | 2.80 |
| Max - 1 Measurement | 15.70 | 20.60 | 56.90 | 42.10 | 37.30 | 14.60 | 27.40 | 22.00 | 25.10 | 11.80 | 14.30 | 12.90 | 12.70 | 13.80 | 12.00 | 12.00 | 11.00 | 9.80 | 7.10 | 3.10 |
| Max | 15.80 | 21.00 | 57.00 | 42.30 | 38.50 | 14.80 | 28.40 | 22.00 | 25.60 | 11.90 | 14.40 | 13.10 | 13.10 | 14.00 | 12.20 | 12.20 | 11.10 | 10.00 | 7.20 | 3.30 |
| Mean | 15.28 | 19.39 | 56.12 | 37.27 | 34.50 | 13.56 | 25.68 | 19.49 | 22.57 | 9.82 | 12.85 | 11.04 | 10.43 | 12.14 | 9.66 | 9.72 | 9.56 | 7.80 | 4.42 | 0.10 |
| SD | 0.35 | 0.46 | 0.67 | 1.48 | 1.09 | 0.41 | 0.65 | 1.02 | 0.93 | 0.60 | 0.60 | 0.77 | 0.92 | 0.68 | 0.89 | 0.90 | 0.59 | 0.75 | 0.91 | 1.02 |
| Coefficient of Variation % | 2.28 | 2.39 | 1.19 | 3.98 | 3.16 | 3.01 | 2.53 | 5.22 | 4.13 | 6.11 | 4.66 | 6.95 | 8.85 | 5.59 | 9.21 | 9.26 | 6.19 | | | |
| No of Survey Subjects | 526 | 526 | 526 | 526 | 526 | 526 | 525 | 526 | 526 | 526 | 526 | 526 | 526 | 526 | 526 | 526 | 526 | 526 | 526 | 526 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 30 PART 2

SIZE ROLL REFERENCE **H** CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND HEAD CIRCUMFERENCE
 NUMBER OF SIZES **4**
 SIZE **2** CONTROL MEASUREMENT RANGES **14.20** TO **15.89** HEAD BREADTH
57.10 TO **60.60** HEAD CIRCUMFERENCE

19

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM NENTON | NENTON TO BACK OF HEAD | NENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | NENTON TO NASION | TRAGON TO NENTON HORIZONTAL | TRAGON TO NENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | NENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.30 | 18.60 | 57.10 | 33.20 | 31.10 | 12.40 | 23.70 | 17.50 | 19.50 | 9.00 | 9.80 | 8.60 | 7.50 | 10.00 | 6.50 | 6.60 | 6.20 | -1.00 | -0.40 | -2.70 |
| Min + 1 Measurement | 14.50 | 18.80 | 57.20 | 34.10 | 32.10 | 12.70 | 24.60 | 17.70 | 19.60 | 9.10 | 9.90 | 8.80 | 7.50 | 10.10 | 6.70 | 6.80 | 6.40 | -0.60 | -0.10 | -2.50 |
| Min + 2 Measurement | 14.60 | 18.90 | 57.30 | 34.30 | 32.40 | 12.80 | 24.70 | 17.80 | 20.00 | 9.20 | 10.00 | 8.90 | 7.50 | 10.20 | 6.80 | 7.00 | 6.50 | -0.30 | 0.00 | -2.20 |
| Min + 3 Measurement | 14.70 | 19.00 | 57.40 | 34.40 | 32.60 | 12.90 | 24.80 | 17.90 | 20.30 | 9.30 | 10.10 | 9.00 | 7.50 | 10.30 | 6.90 | 7.10 | 6.60 | -0.10 | 0.10 | -2.10 |
| Min + 4 Measurement | 14.80 | 19.10 | 57.50 | 34.50 | 32.70 | 13.00 | 24.90 | 18.00 | 20.40 | 9.40 | 10.20 | 9.10 | 7.50 | 10.40 | 7.00 | 7.20 | 6.70 | 0.00 | 0.20 | -2.00 |
| 1st Size | 14.83 | 18.97 | 57.10 | 34.38 | 32.57 | 12.83 | 24.72 | 17.96 | 20.28 | 9.00 | 11.47 | 9.07 | 8.42 | 10.54 | 7.97 | 7.58 | 8.38 | 0.07 | 0.23 | -2.32 |
| 2nd Size | 14.63 | 19.14 | 57.10 | 35.31 | 32.91 | 12.91 | 24.85 | 18.28 | 20.73 | 9.05 | 11.63 | 9.33 | 8.61 | 10.91 | 8.11 | 7.84 | 8.54 | 0.26 | 0.64 | -2.09 |
| 3rd Size | 14.83 | 19.21 | 57.10 | 35.43 | 33.10 | 12.96 | 24.95 | 18.45 | 21.00 | 9.11 | 11.85 | 9.47 | 8.73 | 11.01 | 8.26 | 8.00 | 8.63 | 0.36 | 0.67 | -1.95 |
| 5th Size | 14.93 | 19.35 | 57.12 | 35.71 | 33.38 | 13.04 | 25.22 | 18.62 | 21.31 | 9.27 | 12.01 | 9.75 | 8.89 | 11.15 | 8.49 | 8.30 | 8.80 | 0.46 | 0.83 | -1.60 |
| 50th Size | 15.52 | 20.12 | 57.92 | 38.26 | 35.16 | 13.73 | 26.23 | 20.25 | 22.92 | 10.21 | 13.09 | 11.18 | 10.55 | 12.29 | 9.93 | 9.83 | 9.87 | 1.88 | 2.46 | 0.06 |
| 95 Size | 15.77 | 20.96 | 59.47 | 40.85 | 36.89 | 14.37 | 27.39 | 21.82 | 24.52 | 11.32 | 13.99 | 12.61 | 12.33 | 13.44 | 11.38 | 11.46 | 10.77 | 3.12 | 3.97 | 1.67 |
| 97 Size | 15.78 | 21.09 | 59.70 | 41.05 | 37.18 | 14.45 | 27.49 | 22.02 | 24.83 | 11.46 | 14.12 | 12.80 | 12.55 | 13.65 | 11.57 | 11.63 | 10.89 | 3.28 | 4.17 | 1.95 |
| 98 Size | 15.79 | 21.16 | 59.84 | 41.22 | 37.29 | 14.50 | 27.59 | 22.14 | 24.96 | 11.59 | 14.18 | 12.93 | 12.66 | 13.91 | 11.67 | 11.76 | 11.03 | 3.47 | 4.27 | 2.15 |
| 99 Size | 15.79 | 21.31 | 60.21 | 41.57 | 37.55 | 14.59 | 27.77 | 22.50 | 25.28 | 11.78 | 14.32 | 13.04 | 12.87 | 14.04 | 11.96 | 11.93 | 11.21 | 3.71 | 4.47 | 2.54 |
| Max - 4 Measurement | 15.40 | 21.30 | 60.10 | 41.70 | 37.50 | 14.50 | 27.70 | 22.30 | 25.20 | 11.70 | 14.30 | 13.00 | 12.90 | 13.90 | 12.00 | 12.00 | 11.10 | 3.70 | 4.30 | 2.40 |
| Max - 3 Measurement | 15.50 | 21.40 | 60.20 | 41.80 | 37.60 | 14.60 | 27.80 | 22.60 | 25.30 | 11.80 | 14.40 | 13.10 | 13.00 | 14.00 | 12.20 | 12.10 | 11.20 | 3.80 | 4.40 | 2.60 |
| Max - 2 Measurement | 15.60 | 21.50 | 60.30 | 42.10 | 37.70 | 14.70 | 28.00 | 22.70 | 25.40 | 11.90 | 14.60 | 13.20 | 13.10 | 14.10 | 12.40 | 12.60 | 11.30 | 3.90 | 4.50 | 2.70 |
| Max - 1 Measurement | 15.70 | 21.60 | 60.40 | 42.30 | 37.80 | 14.80 | 28.10 | 22.80 | 25.50 | 12.00 | 14.90 | 13.30 | 13.40 | 14.20 | 12.60 | 13.10 | 11.40 | 4.00 | 4.60 | 3.20 |
| Max | 15.80 | 21.80 | 60.50 | 43.70 | 38.20 | 15.20 | 28.30 | 23.30 | 25.90 | 13.00 | 15.00 | 13.40 | 13.60 | 14.30 | 13.40 | 13.40 | 11.70 | 4.10 | 4.90 | 3.30 |
| Mean | 15.49 | 20.18 | 58.09 | 38.27 | 35.19 | 13.77 | 26.31 | 20.31 | 22.99 | 10.31 | 13.11 | 11.23 | 10.63 | 12.37 | 10.00 | 9.89 | 9.87 | 1.88 | 2.48 | 0.13 |
| SD | 0.28 | 0.49 | 0.72 | 1.53 | 1.05 | 0.40 | 0.64 | 0.95 | 1.00 | 0.64 | 0.62 | 0.86 | 1.01 | 0.70 | 0.89 | 0.97 | 0.62 | 0.82 | 0.96 | 0.99 |
| Coefficient of Variation | 1.81 | 2.44 | 1.23 | 4.01 | 2.99 | 2.89 | 2.45 | 4.69 | 4.33 | 6.21 | 4.74 | 7.64 | 9.50 | 5.69 | 8.90 | 9.77 | 6.33 | | | |
| No of Survey Subjects | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 564 | 566 | 566 | 566 | 566 | 564 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 30 PART 3

SIZE ROLL REFERENCE **H** CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND HEAD CIRCUMFERENCE
 NUMBER OF SIZES **4**
 SIZE **3** CONTROL MEASUREMENT RANGES **15.90** TO **17.50** HEAD BREADTH
55.00 TO **58.49** HEAD CIRCUMFERENCE

62

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.90 | 18.10 | 55.00 | 34.30 | 32.80 | 12.90 | 24.50 | 17.40 | 20.40 | 8.00 | 11.00 | 8.60 | 8.10 | 8.60 | 7.10 | 7.00 | 6.70 | -0.60 | -0.30 | -2.70 |
| Min + 1 Measurement | 16.00 | 18.30 | 55.20 | 34.70 | 33.10 | 13.00 | 24.60 | 17.50 | 20.50 | 8.30 | 11.30 | 8.70 | 8.20 | 8.90 | 7.30 | 7.00 | 7.70 | -0.50 | -0.10 | -2.40 |
| Min + 2 Measurement | 16.10 | 18.40 | 55.30 | 34.90 | 33.20 | 13.10 | 24.70 | 17.60 | 20.60 | 8.60 | 11.40 | 9.00 | 8.30 | 9.10 | 7.40 | 7.00 | 7.90 | -0.40 | 0.00 | -2.30 |
| Min + 3 Measurement | 16.20 | 18.50 | 55.40 | 35.00 | 33.30 | 13.20 | 24.80 | 17.70 | 20.70 | 8.90 | 11.50 | 9.30 | 8.40 | 9.20 | 7.50 | 7.00 | 8.00 | -0.30 | 0.10 | -2.20 |
| Min + 4 Measurement | 16.30 | 18.60 | 55.50 | 35.10 | 33.40 | 13.30 | 24.90 | 17.80 | 20.80 | 9.20 | 11.60 | 9.60 | 8.50 | 9.30 | 7.60 | 7.00 | 8.10 | -0.20 | 0.20 | -2.10 |
| 1st Size | 15.90 | 18.37 | 55.30 | 34.90 | 33.17 | 13.20 | 24.66 | 17.47 | 20.57 | 8.52 | 11.40 | 9.37 | 8.30 | 9.20 | 7.65 | 7.85 | 8.00 | -0.20 | 0.12 | -2.27 |
| 2nd Size | 15.90 | 18.50 | 55.60 | 35.10 | 33.45 | 13.32 | 24.87 | 17.58 | 20.86 | 8.71 | 11.75 | 9.60 | 8.60 | 9.22 | 7.80 | 8.13 | 8.13 | -0.04 | 0.30 | -2.07 |
| 3rd Size | 15.90 | 18.69 | 55.80 | 35.36 | 33.56 | 13.36 | 24.93 | 17.75 | 21.12 | 8.77 | 11.88 | 9.74 | 8.86 | 9.42 | 7.92 | 8.25 | 8.32 | 0.10 | 0.56 | -1.85 |
| 5th Size | 15.90 | 18.77 | 55.99 | 35.56 | 33.78 | 13.43 | 25.00 | 17.96 | 21.29 | 8.93 | 11.97 | 9.94 | 9.11 | 9.67 | 8.15 | 8.47 | 8.48 | 0.26 | 0.60 | -1.59 |
| 50th Size | 16.08 | 19.61 | 57.50 | 37.98 | 35.53 | 14.04 | 26.15 | 19.77 | 22.89 | 10.00 | 12.85 | 11.29 | 10.66 | 12.14 | 9.70 | 9.97 | 9.60 | 1.57 | 2.21 | 0.06 |
| 95 Size | 16.60 | 20.40 | 58.33 | 40.87 | 37.33 | 14.70 | 27.29 | 21.44 | 24.32 | 11.10 | 13.88 | 12.58 | 12.13 | 13.34 | 11.08 | 11.33 | 10.56 | 2.84 | 3.72 | 1.70 |
| 97 Size | 16.75 | 20.49 | 58.36 | 41.41 | 37.60 | 14.90 | 27.55 | 21.73 | 24.49 | 11.30 | 14.00 | 12.78 | 12.37 | 13.48 | 11.22 | 11.66 | 10.70 | 2.98 | 3.98 | 2.00 |
| 98 Size | 16.79 | 20.57 | 58.37 | 41.70 | 37.90 | 14.97 | 27.65 | 21.85 | 24.73 | 11.37 | 14.13 | 12.88 | 12.48 | 13.70 | 11.35 | 11.80 | 10.78 | 3.15 | 4.13 | 2.15 |
| 99 Size | 16.93 | 20.70 | 58.39 | 41.85 | 38.10 | 15.06 | 27.77 | 22.10 | 24.97 | 11.55 | 14.40 | 13.00 | 12.60 | 13.90 | 11.55 | 11.98 | 10.95 | 3.43 | 4.24 | 2.50 |
| Max - 4 Measurement | 16.80 | 20.50 | 58.00 | 41.00 | 38.20 | 14.90 | 27.70 | 22.20 | 24.90 | 11.50 | 14.30 | 12.90 | 12.60 | 13.80 | 11.60 | 12.00 | 11.00 | 3.40 | 4.10 | 2.40 |
| Max - 3 Measurement | 16.90 | 20.60 | 58.10 | 41.10 | 38.30 | 15.00 | 27.80 | 22.30 | 25.00 | 11.60 | 14.40 | 13.00 | 12.70 | 13.90 | 11.70 | 12.10 | 11.00 | 3.50 | 4.20 | 2.50 |
| Max - 2 Measurement | 17.00 | 20.70 | 58.20 | 41.20 | 38.40 | 15.10 | 27.90 | 22.40 | 25.10 | 11.70 | 14.50 | 13.10 | 12.80 | 14.00 | 11.80 | 12.20 | 11.10 | 3.60 | 4.30 | 2.60 |
| Max - 1 Measurement | 17.10 | 20.80 | 58.30 | 41.30 | 38.50 | 15.20 | 28.00 | 22.50 | 25.20 | 11.80 | 14.60 | 13.20 | 12.90 | 14.10 | 11.90 | 12.30 | 11.20 | 3.70 | 4.40 | 2.70 |
| Max | 17.20 | 21.00 | 58.40 | 41.50 | 39.20 | 15.50 | 28.20 | 23.00 | 26.20 | 12.70 | 15.00 | 13.60 | 13.00 | 14.50 | 12.10 | 13.10 | 11.70 | 3.80 | 4.50 | 3.00 |
| Mean | 16.18 | 19.67 | 57.45 | 38.13 | 35.29 | 14.10 | 26.20 | 19.77 | 22.92 | 10.05 | 12.94 | 11.32 | 10.68 | 12.24 | 9.72 | 9.98 | 9.62 | 1.63 | 2.26 | 0.10 |
| SD | 0.25 | 0.50 | 0.74 | 1.58 | 1.05 | 0.39 | 0.68 | 1.02 | 0.92 | 0.67 | 0.61 | 0.79 | 0.43 | 0.71 | 0.87 | 0.90 | 0.97 | 0.63 | 0.93 | 1.00 |
| Coefficient of Variation | 1.57 | 2.56 | 1.28 | 4.14 | 2.94 | 2.76 | 2.58 | 5.15 | 4.03 | 6.64 | 4.67 | 6.98 | 8.70 | 5.82 | 8.90 | 8.97 | 6.53 | 4.98 | 4.98 | 4.98 |
| No of Survey Subjects | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 | 498 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 30 PART 4

SIZE ROLL REFERENCE **H** CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND HEAD CIRCUMFERENCE
 NUMBER OF SIZES **4**
 SIZE **4** CONTROL MEASUREMENT RANGES **15.90** TO **17.50** HEAD BREADTH
58.50 TO **62.00** HEAD CIRCUMFERENCE

63

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.40 | 19.00 | 58.50 | 34.30 | 33.20 | 13.00 | 25.00 | 17.50 | 20.70 | 8.70 | 9.50 | 9.20 | 8.40 | 10.80 | 6.60 | 7.70 | 6.50 | -2.10 | -1.70 | -2.40 |
| Min + 1 Measurement | 16.00 | 19.20 | 58.60 | 35.20 | 33.40 | 13.20 | 25.10 | 17.80 | 20.80 | 8.80 | 11.20 | 9.50 | 8.50 | 10.90 | 7.40 | 7.80 | 7.20 | -0.60 | -0.40 | -2.20 |
| Min + 2 Measurement | 16.10 | 19.30 | 58.70 | 35.50 | 33.70 | 13.30 | 25.20 | 18.00 | 20.90 | 8.90 | 11.30 | 9.60 | 8.60 | 11.00 | 7.50 | 7.90 | 7.80 | -0.30 | 0.00 | -2.10 |
| Min + 3 Measurement | 16.20 | 19.40 | 58.80 | 35.70 | 33.80 | 13.40 | 25.30 | 18.20 | 21.00 | 9.10 | 11.50 | 9.70 | 8.80 | 11.20 | 7.70 | 8.00 | 8.40 | -0.20 | 0.20 | -2.00 |
| Min + 4 Measurement | 16.30 | 19.50 | 58.90 | 35.80 | 34.00 | 13.50 | 25.40 | 18.40 | 21.20 | 9.20 | 11.70 | 9.80 | 8.90 | 11.30 | 7.80 | 8.20 | 8.50 | -0.10 | 0.30 | -1.90 |
| 1st File | 15.90 | 19.30 | 58.50 | 35.50 | 33.80 | 13.33 | 25.17 | 18.00 | 20.93 | 8.90 | 11.50 | 9.70 | 8.60 | 10.95 | 7.40 | 7.83 | 8.10 | -0.25 | 0.20 | -2.20 |
| 2nd File | 15.90 | 19.45 | 58.50 | 35.77 | 34.09 | 13.41 | 25.35 | 18.28 | 21.20 | 9.12 | 11.77 | 9.84 | 8.93 | 11.15 | 7.75 | 8.07 | 8.50 | 0.00 | 0.50 | -1.95 |
| 3rd File | 15.90 | 19.53 | 58.50 | 36.05 | 34.20 | 13.47 | 25.45 | 18.45 | 21.36 | 9.18 | 11.94 | 9.95 | 9.03 | 11.32 | 7.90 | 8.27 | 8.72 | 0.25 | 0.66 | -1.85 |
| 5th File | 15.90 | 19.65 | 58.50 | 36.46 | 34.52 | 13.60 | 25.58 | 18.60 | 21.67 | 9.31 | 12.09 | 10.13 | 9.21 | 11.47 | 8.33 | 8.39 | 8.88 | 0.43 | 0.88 | -1.66 |
| 50th File | 16.25 | 20.38 | 59.27 | 39.08 | 36.17 | 14.26 | 26.70 | 20.37 | 23.39 | 10.37 | 13.20 | 11.52 | 10.84 | 12.48 | 9.96 | 10.07 | 9.94 | 1.70 | 2.37 | -0.04 |
| 95 File | 16.98 | 21.16 | 60.81 | 41.75 | 38.35 | 15.12 | 27.83 | 21.96 | 24.90 | 11.52 | 14.19 | 12.74 | 12.33 | 13.77 | 11.40 | 11.70 | 11.64 | 3.00 | 3.88 | 1.00 |
| 97 File | 17.13 | 21.33 | 60.93 | 42.10 | 38.62 | 15.19 | 28.00 | 22.27 | 25.15 | 11.63 | 14.43 | 12.88 | 12.46 | 13.89 | 11.58 | 11.90 | 11.16 | 3.25 | 4.10 | 1.90 |
| 98 File | 17.23 | 21.50 | 61.07 | 42.50 | 38.70 | 15.28 | 28.08 | 22.50 | 25.25 | 11.80 | 14.53 | 12.98 | 12.57 | 14.05 | 11.60 | 12.05 | 11.30 | 3.40 | 4.24 | 2.00 |
| 99 File | 17.28 | 21.63 | 61.50 | 43.47 | 39.30 | 15.40 | 28.20 | 22.60 | 25.40 | 12.10 | 14.65 | 13.13 | 12.75 | 14.20 | 11.80 | 12.50 | 11.45 | 3.65 | 4.45 | 2.30 |
| Max - 4 Measurement | 17.00 | 21.40 | 61.40 | 43.20 | 39.30 | 15.20 | 28.10 | 22.50 | 25.30 | 11.80 | 14.60 | 13.00 | 12.70 | 14.10 | 11.70 | 12.40 | 11.40 | 3.60 | 4.20 | 2.30 |
| Max - 3 Measurement | 17.10 | 21.50 | 61.50 | 43.00 | 39.40 | 15.30 | 28.20 | 22.60 | 25.40 | 12.00 | 14.70 | 13.10 | 12.80 | 14.20 | 11.80 | 12.50 | 11.50 | 3.70 | 4.30 | 2.40 |
| Max - 2 Measurement | 17.20 | 21.60 | 61.70 | 44.20 | 39.50 | 15.40 | 28.30 | 22.80 | 25.50 | 12.20 | 14.80 | 13.20 | 12.90 | 14.30 | 11.90 | 12.60 | 11.60 | 4.00 | 4.60 | 2.50 |
| Max - 1 Measurement | 17.30 | 21.70 | 61.80 | 44.30 | 39.80 | 15.50 | 28.50 | 23.00 | 25.80 | 12.30 | 15.00 | 13.30 | 13.10 | 14.40 | 12.00 | 12.60 | 11.70 | 4.10 | 4.70 | 3.10 |
| Max | 17.40 | 21.80 | 62.00 | 44.80 | 40.40 | 15.70 | 28.60 | 23.60 | 26.20 | 14.10 | 15.60 | 13.40 | 13.20 | 14.70 | 13.20 | 14.20 | 11.90 | 4.40 | 5.00 | 4.00 |
| Mean | 16.36 | 20.44 | 59.40 | 39.14 | 36.33 | 14.33 | 26.77 | 20.43 | 23.41 | 10.45 | 13.26 | 11.49 | 10.83 | 12.58 | 9.98 | 10.16 | 9.99 | 1.77 | 2.42 | -0.01 |
| SD | 0.34 | 0.46 | 0.73 | 1.65 | 1.13 | 0.44 | 0.69 | 0.99 | 0.98 | 0.70 | 0.67 | 0.80 | 0.94 | 0.72 | 0.93 | 1.02 | 0.65 | 0.84 | 0.97 | 0.96 |
| Coefficient of Variation | 2.08 | 2.26 | 1.23 | 4.22 | 3.12 | 3.08 | 2.58 | 4.86 | 4.17 | 6.65 | 5.05 | 6.96 | 8.64 | 5.69 | 9.33 | 9.99 | 6.54 | | | |
| No of Survey Subjects | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 31 PART 1

SIZE ROLL REFERENCE J CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD CIRCUMFERENCE
 NUMBER OF SIZES 4
 SIZE 1 CONTROL MEASUREMENT RANGES 18.00 TO 19.89 HEAD LENGTH
 53.60 TO 56.79 HEAD CIRCUMFERENCE

64

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGION TO BACK OF HEAD | TRAGION TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGION TO MENTON HORIZONTAL | TRAGION TO VERTEX VERTICAL | TRAGION TO BROW RIDGE HORIZONTAL | TRAGION TO PUPIL VERTICAL | TRAGION TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|-------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|-------|
| Min | 14.00 | 18.00 | 53.60 | 33.70 | 31.60 | 12.20 | 24.10 | 16.00 | 19.10 | 8.00 | 11.00 | 8.50 | 7.50 | 8.90 | 6.60 | 7.00 | 6.70 | -0.40 | -0.30 | -2.40 | |
| Min + 1 Measurement | 14.20 | 18.10 | 53.90 | 33.80 | 31.70 | 12.30 | 24.20 | 16.10 | 19.20 | 8.10 | 11.10 | 8.60 | 7.60 | 9.00 | 6.70 | 7.10 | 6.80 | -0.10 | -0.20 | -2.70 | |
| Min + 2 Measurement | 14.40 | 18.20 | 54.00 | 33.90 | 31.80 | 12.50 | 24.30 | 16.20 | 19.30 | 8.20 | 11.20 | 8.70 | 7.70 | 9.10 | 6.80 | 7.20 | 6.90 | 0.00 | -0.10 | -2.40 | |
| Min + 3 Measurement | 14.50 | 18.30 | 54.30 | 34.00 | 31.90 | 12.60 | 24.40 | 16.30 | 19.40 | 8.30 | 11.30 | 8.80 | 7.80 | 9.20 | 6.90 | 7.30 | 7.00 | 0.10 | 0.00 | -2.20 | |
| Min + 4 Measurement | 14.60 | 18.40 | 54.40 | 34.10 | 32.00 | 12.70 | 24.50 | 16.40 | 19.50 | 8.40 | 11.40 | 8.90 | 7.90 | 9.30 | 7.00 | 7.40 | 7.10 | 0.20 | 0.10 | -2.00 | |
| 1st Size | 14.30 | 18.04 | 54.04 | 33.93 | 31.76 | 12.53 | 24.19 | 16.08 | 19.92 | 8.29 | 11.29 | 8.12 | 7.12 | 9.12 | 6.12 | 7.63 | 7.23 | 7.96 | -0.13 | -0.04 | -2.34 |
| 2nd Size | 14.44 | 18.15 | 54.34 | 34.22 | 32.02 | 12.60 | 24.32 | 17.32 | 20.42 | 8.48 | 11.51 | 9.46 | 8.54 | 10.61 | 7.84 | 7.62 | 8.11 | 8.10 | 0.22 | -1.90 | |
| 3rd Size | 14.51 | 18.26 | 54.56 | 34.38 | 32.34 | 12.68 | 24.40 | 17.42 | 20.64 | 8.54 | 11.69 | 9.63 | 8.68 | 10.79 | 7.99 | 7.82 | 8.29 | 8.18 | 0.58 | -1.83 | |
| 5th Size | 14.59 | 18.36 | 54.81 | 34.77 | 32.65 | 12.82 | 24.57 | 17.57 | 21.00 | 8.70 | 11.86 | 9.83 | 8.96 | 11.03 | 8.14 | 8.20 | 8.39 | 8.44 | 0.81 | -1.60 | |
| 50th Size | 15.36 | 19.23 | 55.97 | 37.03 | 34.56 | 13.59 | 25.55 | 19.19 | 22.46 | 9.65 | 12.72 | 10.99 | 10.34 | 12.00 | 9.54 | 9.67 | 9.45 | 1.72 | 2.36 | 0.06 | |
| 95 Size | 16.19 | 19.71 | 56.62 | 39.56 | 36.30 | 14.25 | 26.58 | 20.92 | 23.96 | 10.66 | 13.83 | 12.33 | 11.94 | 13.13 | 11.00 | 11.10 | 10.43 | 2.86 | 3.78 | 1.61 | |
| 97 Size | 16.36 | 19.75 | 56.65 | 40.01 | 36.54 | 14.37 | 26.76 | 21.14 | 24.13 | 10.78 | 13.92 | 12.51 | 12.12 | 13.34 | 11.11 | 11.36 | 10.50 | 3.11 | 4.06 | 2.11 | |
| 98 Size | 16.42 | 19.76 | 56.67 | 40.18 | 36.69 | 14.44 | 26.86 | 21.32 | 24.26 | 10.87 | 14.02 | 12.62 | 12.20 | 13.45 | 11.29 | 11.57 | 10.60 | 3.36 | 4.39 | 2.38 | |
| 99 Size | 16.53 | 19.78 | 56.68 | 40.56 | 37.18 | 14.54 | 26.97 | 21.74 | 24.54 | 10.99 | 14.15 | 12.73 | 12.41 | 13.58 | 11.58 | 11.82 | 10.74 | 3.57 | 4.64 | 2.64 | |
| Max - 4 Measurement | 16.30 | 19.40 | 56.30 | 40.40 | 36.80 | 14.30 | 26.90 | 21.70 | 24.50 | 10.90 | 14.00 | 12.50 | 12.30 | 13.40 | 11.50 | 11.70 | 10.60 | 3.40 | 4.60 | 2.60 | |
| Max - 3 Measurement | 16.40 | 19.50 | 56.40 | 40.60 | 36.90 | 14.40 | 27.00 | 21.80 | 24.60 | 11.00 | 14.10 | 12.60 | 12.40 | 13.50 | 11.70 | 11.80 | 10.70 | 3.50 | 4.70 | 2.70 | |
| Max - 2 Measurement | 16.50 | 19.60 | 56.50 | 41.30 | 37.30 | 14.50 | 27.10 | 21.90 | 24.70 | 11.10 | 14.20 | 12.70 | 12.50 | 13.60 | 11.90 | 12.00 | 10.80 | 3.60 | 4.80 | 2.80 | |
| Max - 1 Measurement | 16.60 | 19.70 | 56.60 | 41.40 | 37.60 | 14.60 | 27.20 | 22.00 | 25.10 | 11.20 | 14.30 | 12.80 | 12.60 | 13.70 | 12.10 | 12.10 | 11.00 | 3.70 | 5.00 | 3.10 | |
| Max | 16.90 | 19.80 | 56.70 | 42.10 | 37.90 | 14.80 | 27.30 | 22.00 | 25.60 | 11.20 | 14.40 | 12.90 | 12.70 | 13.90 | 12.20 | 12.20 | 11.10 | 3.80 | 5.10 | 3.20 | |
| Mean | 15.43 | 19.21 | 55.94 | 37.18 | 34.58 | 13.62 | 25.61 | 19.31 | 22.51 | 9.74 | 12.80 | 11.06 | 10.43 | 12.08 | 9.58 | 9.71 | 9.47 | 1.74 | 2.37 | 0.11 | |
| SD | 0.48 | 0.40 | 0.59 | 1.45 | 1.11 | 0.62 | 0.62 | 1.03 | 0.91 | 0.61 | 0.59 | 0.76 | 0.68 | 0.89 | 0.91 | 0.61 | 0.77 | 0.94 | 1.03 | | |
| Coefficient of Variation | 3.09 | 2.08 | 1.06 | 3.90 | 3.21 | 3.18 | 2.42 | 5.33 | 4.06 | 6.27 | 4.63 | 6.84 | 8.78 | 5.60 | 9.25 | 9.34 | 6.44 | | | | |
| No of Survey Subjects | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 | |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 31 PART 2

SIZE ROLL REFERENCE J CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD CIRCUMFERENCE
 NUMBER OF SIZES 4
 SIZE 2 CONTROL MEASUREMENT RANGES 18.00 TO 19.89 HEAD LENGTH
 56.80 TO 60.00 HEAD CIRCUMFERENCE

65

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.70 | 18.50 | 56.80 | 34.40 | 32.00 | 12.80 | 23.70 | 17.40 | 19.50 | 8.00 | 9.80 | 8.60 | 7.50 | 10.00 | 6.50 | 7.00 | 6.20 | -1.00 | -0.40 | -2.30 |
| Min + 1 Measurement | 14.90 | 18.60 | 56.90 | 35.00 | 32.00 | 13.00 | 24.50 | 17.50 | 19.60 | 8.50 | 10.30 | 8.80 | 7.80 | 10.10 | 7.10 | 7.20 | 7.80 | 0.00 | 0.20 | -2.20 |
| Min + 2 Measurement | 15.00 | 18.80 | 57.00 | 35.20 | 32.70 | 13.10 | 24.60 | 17.60 | 20.30 | 8.60 | 11.40 | 9.00 | 8.10 | 10.20 | 7.70 | 7.30 | 7.90 | 0.10 | 0.30 | -2.10 |
| Min + 3 Measurement | 15.10 | 18.90 | 57.10 | 35.30 | 32.80 | 13.20 | 24.70 | 17.70 | 20.40 | 8.70 | 11.60 | 9.20 | 8.20 | 10.50 | 7.80 | 7.60 | 8.00 | 0.20 | 0.60 | -1.90 |
| Min + 4 Measurement | 15.20 | 19.00 | 57.20 | 35.40 | 32.90 | 13.30 | 24.80 | 17.80 | 20.50 | 8.80 | 11.80 | 9.30 | 8.30 | 10.60 | 7.90 | 7.70 | 8.10 | 0.30 | 0.70 | -1.70 |
| 1st Size | 14.93 | 18.59 | 56.80 | 35.24 | 32.74 | 12.99 | 24.57 | 17.63 | 20.34 | 8.68 | 11.52 | 9.06 | 8.14 | 10.54 | 7.79 | 7.43 | 7.99 | 0.18 | 0.44 | -2.11 |
| 2nd Size | 15.01 | 18.69 | 56.80 | 35.41 | 33.18 | 13.11 | 24.66 | 17.83 | 20.57 | 8.76 | 11.75 | 9.24 | 8.29 | 10.81 | 8.02 | 7.79 | 8.19 | 0.35 | 0.69 | -1.65 |
| 3rd Size | 15.06 | 18.79 | 56.80 | 35.52 | 33.38 | 13.19 | 24.78 | 18.12 | 20.79 | 8.85 | 11.87 | 9.33 | 8.52 | 10.91 | 8.27 | 7.93 | 8.35 | 0.43 | 0.86 | -1.46 |
| 5th Size | 15.13 | 18.94 | 56.80 | 35.77 | 33.59 | 13.29 | 24.92 | 18.27 | 21.10 | 8.96 | 11.99 | 9.64 | 8.82 | 11.05 | 8.48 | 8.15 | 8.50 | 0.62 | 1.03 | -1.22 |
| 50th Size | 15.87 | 19.51 | 57.45 | 38.18 | 35.49 | 13.97 | 25.99 | 19.94 | 22.70 | 9.87 | 13.03 | 11.06 | 10.42 | 12.18 | 9.96 | 9.56 | 9.56 | 1.95 | 2.61 | 0.38 |
| 95 Size | 16.73 | 19.78 | 58.61 | 40.85 | 37.33 | 14.78 | 26.97 | 21.40 | 24.18 | 10.80 | 14.04 | 12.54 | 12.10 | 13.32 | 11.27 | 10.99 | 10.47 | 3.22 | 4.13 | 1.96 |
| 97 Size | 16.81 | 19.79 | 58.77 | 41.12 | 37.72 | 14.97 | 27.18 | 21.68 | 24.37 | 10.99 | 14.16 | 12.68 | 12.22 | 13.47 | 11.53 | 11.18 | 10.59 | 3.42 | 4.29 | 2.32 |
| 98 Size | 16.89 | 19.79 | 58.93 | 41.33 | 38.13 | 15.05 | 27.34 | 21.83 | 24.56 | 11.16 | 14.27 | 12.84 | 12.47 | 13.57 | 11.61 | 11.34 | 10.65 | 3.63 | 4.53 | 2.48 |
| 99 Size | 17.04 | 19.80 | 59.22 | 41.72 | 38.31 | 15.14 | 27.57 | 22.21 | 24.92 | 11.31 | 14.53 | 13.01 | 12.72 | 13.86 | 11.92 | 11.71 | 10.72 | 3.76 | 4.62 | 2.66 |
| Max - 4 Measurement | 17.00 | 19.40 | 59.30 | 41.80 | 38.30 | 15.00 | 27.40 | 22.00 | 24.70 | 11.30 | 14.30 | 12.80 | 12.60 | 13.80 | 11.70 | 11.70 | 10.50 | 3.80 | 4.70 | 2.70 |
| Max - 3 Measurement | 17.10 | 19.50 | 59.40 | 41.90 | 38.40 | 15.10 | 27.50 | 22.20 | 24.80 | 11.40 | 14.40 | 12.90 | 12.70 | 13.90 | 12.00 | 11.80 | 10.60 | 4.00 | 4.80 | 2.90 |
| Max - 2 Measurement | 17.20 | 19.60 | 59.50 | 42.10 | 38.50 | 15.20 | 27.60 | 22.30 | 24.90 | 11.50 | 14.50 | 13.00 | 12.80 | 14.00 | 12.20 | 11.90 | 10.70 | 4.10 | 4.90 | 3.00 |
| Max - 1 Measurement | 17.30 | 19.70 | 59.60 | 42.50 | 38.70 | 15.30 | 27.70 | 22.80 | 25.00 | 11.90 | 14.60 | 13.10 | 13.00 | 14.10 | 12.60 | 12.60 | 10.80 | 4.20 | 5.00 | 3.30 |
| Max | 17.40 | 19.80 | 59.90 | 42.70 | 39.20 | 15.70 | 27.80 | 23.60 | 25.10 | 13.00 | 15.00 | 13.30 | 13.40 | 14.20 | 13.20 | 13.40 | 11.20 | 4.40 | 5.60 | 4.00 |
| Mean | 15.93 | 19.50 | 57.59 | 38.32 | 35.51 | 14.04 | 26.04 | 19.92 | 22.70 | 9.93 | 13.07 | 11.10 | 10.46 | 12.25 | 10.00 | 9.63 | 9.58 | 1.98 | 2.62 | 0.42 |
| SD | 0.48 | 0.27 | 0.59 | 1.54 | 1.16 | 0.45 | 0.63 | 0.97 | 0.95 | 0.59 | 0.64 | 0.87 | 0.99 | 0.67 | 0.87 | 0.90 | 0.60 | 0.80 | 0.92 | 0.98 |
| Coefficient of Variation % | 2.98 | 1.36 | 1.02 | 4.01 | 3.27 | 3.22 | 2.44 | 4.87 | 4.18 | 5.97 | 4.89 | 7.79 | 9.44 | 5.46 | 8.70 | 9.29 | 6.26 | | | |
| No of Survey Subjects | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 | 484 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 31 PART 3

SIZE ROLL REFERENCE J CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD CIRCUMFERENCE
 NUMBER OF SIZES 4
 SIZE .3 CONTROL MEASUREMENT RANGES 19.90 TO 21.80 HEAD LENGTH
55.60 TO 58.79 HEAD CIRCUMFERENCE

99

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO MASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO MASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.20 | 19.90 | 55.70 | 33.20 | 31.10 | 12.40 | 24.30 | 17.10 | 19.60 | 8.50 | 10.80 | 8.90 | 8.50 | 8.60 | 7.10 | 6.60 | 7.70 | -0.60 | -0.30 | -3.10 |
| Min + 1 Measurement | 14.30 | 20.00 | 55.80 | 34.10 | 32.10 | 12.70 | 24.40 | 17.20 | 20.10 | 8.80 | 11.00 | 9.20 | 8.60 | 9.30 | 7.20 | 6.80 | 7.90 | -0.50 | -0.10 | -2.90 |
| Min + 2 Measurement | 14.50 | 20.10 | 56.00 | 34.20 | 32.30 | 12.80 | 24.70 | 17.80 | 20.20 | 8.90 | 11.30 | 9.30 | 8.70 | 10.00 | 7.30 | 7.50 | 8.00 | -0.40 | 0.00 | -2.70 |
| Min + 3 Measurement | 14.60 | 20.20 | 56.10 | 34.30 | 32.40 | 12.90 | 24.90 | 17.90 | 20.60 | 9.00 | 11.40 | 9.40 | 8.80 | 10.10 | 7.40 | 7.60 | 8.10 | -0.30 | 0.10 | -2.50 |
| Min + 4 Measurement | 14.70 | 20.30 | 56.20 | 34.40 | 32.60 | 13.00 | 24.90 | 18.00 | 20.70 | 9.10 | 11.50 | 9.50 | 8.90 | 10.50 | 7.60 | 7.90 | 8.20 | -0.20 | 0.20 | -2.40 |
| 1st File | 14.40 | 19.90 | 55.93 | 34.35 | 32.55 | 12.78 | 24.81 | 17.93 | 20.75 | 8.98 | 11.45 | 9.52 | 8.72 | 10.55 | 7.63 | 7.95 | 8.35 | -0.18 | 0.08 | -2.29 |
| 2nd File | 14.53 | 19.90 | 56.16 | 35.00 | 32.90 | 12.87 | 24.98 | 18.13 | 21.07 | 9.15 | 11.63 | 9.72 | 8.87 | 10.86 | 7.90 | 8.30 | 8.62 | -0.02 | 0.30 | -2.17 |
| 3rd File | 14.59 | 19.90 | 56.34 | 35.37 | 33.05 | 12.93 | 25.15 | 18.21 | 21.31 | 9.22 | 11.79 | 9.84 | 8.95 | 10.99 | 7.99 | 8.47 | 8.72 | 0.13 | 0.37 | -2.02 |
| 5th File | 14.80 | 19.90 | 56.50 | 35.59 | 33.21 | 13.02 | 25.34 | 18.47 | 21.58 | 9.33 | 11.97 | 10.01 | 9.11 | 11.15 | 8.17 | 8.64 | 8.87 | 0.34 | 0.69 | -1.76 |
| 50th File | 15.66 | 20.14 | 57.89 | 38.00 | 35.20 | 13.77 | 26.31 | 20.06 | 23.09 | 10.28 | 12.97 | 11.35 | 10.74 | 12.25 | 9.75 | 10.04 | 9.88 | 1.60 | 2.21 | -0.15 |
| 95 File | 16.41 | 20.71 | 58.59 | 40.71 | 37.06 | 14.50 | 27.42 | 21.61 | 24.55 | 11.29 | 13.91 | 12.65 | 12.36 | 13.45 | 11.26 | 11.63 | 10.78 | 2.87 | 3.71 | 1.37 |
| 97 File | 16.49 | 20.78 | 58.63 | 41.04 | 37.36 | 14.58 | 27.59 | 21.88 | 24.81 | 11.43 | 14.11 | 12.87 | 12.54 | 13.62 | 11.45 | 11.78 | 10.92 | 3.02 | 3.93 | 1.52 |
| 98 File | 16.56 | 20.88 | 58.65 | 41.27 | 37.56 | 14.65 | 27.70 | 21.99 | 24.96 | 11.53 | 14.19 | 12.96 | 12.70 | 13.77 | 11.60 | 11.90 | 11.04 | 3.09 | 4.02 | 1.73 |
| 99 File | 16.68 | 20.98 | 58.68 | 41.67 | 37.77 | 14.78 | 27.85 | 22.15 | 25.24 | 11.78 | 14.35 | 13.08 | 12.85 | 13.98 | 11.76 | 11.99 | 11.16 | 3.26 | 4.21 | 1.97 |
| Max - 4 Measurement | 16.60 | 20.90 | 58.36 | 41.80 | 37.70 | 14.70 | 27.80 | 22.30 | 25.20 | 11.80 | 14.20 | 13.00 | 12.80 | 14.00 | 11.90 | 12.10 | 11.10 | 3.20 | 4.00 | 2.10 |
| Max - 3 Measurement | 16.70 | 21.00 | 58.40 | 41.90 | 37.80 | 14.80 | 27.90 | 22.40 | 25.30 | 11.90 | 14.30 | 13.10 | 12.90 | 14.10 | 12.00 | 12.20 | 11.20 | 3.30 | 4.10 | 2.20 |
| Max - 2 Measurement | 16.80 | 21.10 | 58.50 | 42.30 | 38.00 | 14.90 | 28.10 | 22.50 | 25.40 | 12.00 | 14.40 | 13.20 | 13.00 | 14.20 | 12.10 | 12.40 | 11.30 | 3.50 | 4.20 | 2.40 |
| Max - 1 Measurement | 16.90 | 21.20 | 58.60 | 42.70 | 38.50 | 15.00 | 28.20 | 23.00 | 25.50 | 12.50 | 14.60 | 13.40 | 13.10 | 14.30 | 12.40 | 12.60 | 11.40 | 3.60 | 4.30 | 2.60 |
| Max | 17.00 | 21.30 | 58.70 | 43.50 | 38.60 | 15.10 | 28.40 | 23.30 | 26.20 | 12.70 | 14.70 | 13.50 | 13.60 | 15.50 | 13.40 | 13.10 | 11.70 | 3.80 | 4.40 | 3.20 |
| Mean | 15.68 | 20.24 | 57.81 | 38.09 | 35.23 | 13.83 | 26.38 | 20.14 | 23.12 | 10.34 | 13.02 | 11.38 | 10.78 | 12.34 | 9.80 | 10.10 | 9.90 | 1.64 | 2.24 | -0.10 |
| SD | 0.48 | 0.28 | 0.66 | 1.55 | 1.12 | 0.44 | 0.62 | 0.95 | 0.92 | 0.60 | 0.61 | 0.79 | 0.94 | 0.72 | 0.91 | 0.90 | 0.59 | 0.78 | 0.92 | 0.94 |
| Coefficient of Variation | 3.08 | 1.37 | 1.13 | 4.06 | 3.19 | 3.21 | 2.35 | 4.72 | 3.96 | 5.81 | 4.67 | 6.91 | 8.74 | 5.82 | 9.25 | 8.94 | 5.93 | | | |
| No of Survey Subjects | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 | 652 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 31 PART 4

SIZE ROLL REFERENCE J CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD CIRCUMFERENCE
 NUMBER OF SIZES 4.....
 SIZE 4... CONTROL MEASUREMENT RANGES 19.90 TO 21.80 HEAD LENGTH
 58.80 TO 62.00 HEAD CIRCUMFERENCE

67

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASTON TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|--------------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.00 | 2 19.90 | 15 58.80 | 31 34.30 | 1 33.20 | 1 12.90 | 1 25.00 | 1 17.50 | 1 20.30 | 1 8.70 | 1 9.50 | 1 8.90 | 1 8.30 | 1 10.90 | 1 6.60 | 1 7.70 | 2 6.50 | 1 -2.10 | 1 -1.70 | 1 -2.70 |
| Min + 1 Measurement | 15.10 | 3 20.00 | 23 58.90 | 26 35.20 | 1 33.40 | 1 13.00 | 3 25.20 | 1 17.80 | 2 20.70 | 2 9.10 | 3 10.80 | 1 9.40 | 1 8.40 | 2 11.00 | 1 7.40 | 2 7.80 | 2 7.20 | 1 -0.60 | 1 -0.40 | 1 -2.40 |
| Min + 2 Measurement | 15.20 | 5 20.10 | 18 59.00 | 44 35.50 | 1 33.70 | 3 13.10 | 4 25.30 | 3 18.00 | 1 21.00 | 2 9.20 | 5 11.20 | 1 9.50 | 2 8.50 | 3 11.20 | 2 7.50 | 1 7.90 | 2 8.40 | 1 -0.30 | 1 0.30 | 1 -2.20 |
| Min + 3 Measurement | 15.30 | 5 20.20 | 26 59.10 | 24 35.70 | 3 33.80 | 1 13.20 | 4 25.50 | 5 18.20 | 1 21.20 | 4 9.30 | 2 11.30 | 1 9.60 | 1 8.70 | 1 11.30 | 2 7.70 | 1 8.00 | 3 8.50 | 2 -0.20 | 2 0.40 | 1 -2.10 |
| Min + 4 Measurement | 15.40 | 8 20.30 | 24 59.20 | 25 35.80 | 1 33.90 | 1 13.30 | 2 25.60 | 8 18.40 | 2 21.40 | 3 9.40 | 13 11.50 | 1 9.70 | 1 8.80 | 2 11.40 | 5 7.80 | 2 8.20 | 1 8.60 | 1 0.00 | 1 0.50 | 3 -2.00 |
| 1st File | 15.07 | 19.90 | 58.80 | 35.57 | 33.60 | 13.00 | 25.27 | 18.00 | 20.85 | 9.10 | 11.30 | 9.50 | 8.43 | 11.20 | 7.50 | 7.80 | 8.45 | -0.25 | 0.40 | -2.33 |
| 2nd File | 15.16 | 19.90 | 58.80 | 35.90 | 34.00 | 13.10 | 25.42 | 18.50 | 21.15 | 9.18 | 11.80 | 9.77 | 8.75 | 11.34 | 7.90 | 7.97 | 8.73 | 0.15 | 0.53 | -2.07 |
| 3rd File | 15.24 | 19.90 | 58.80 | 36.10 | 34.15 | 13.20 | 25.52 | 18.56 | 21.40 | 9.31 | 11.96 | 9.85 | 8.90 | 11.42 | 8.10 | 8.26 | 8.84 | 0.26 | 0.63 | -1.88 |
| 5th File | 15.36 | 19.92 | 58.80 | 36.46 | 34.33 | 13.37 | 25.65 | 18.80 | 21.70 | 9.37 | 12.12 | 10.06 | 9.21 | 11.52 | 8.49 | 8.40 | 8.95 | 0.44 | 0.82 | -1.68 |
| 50th File | 16.12 | 20.54 | 59.38 | 39.00 | 36.09 | 14.16 | 26.76 | 20.52 | 23.50 | 10.49 | 13.23 | 11.48 | 10.78 | 12.57 | 9.48 | 10.18 | 10.01 | 1.72 | 2.37 | -0.07 |
| 95 File | 16.96 | 21.31 | 60.83 | 41.90 | 38.21 | 15.10 | 27.90 | 22.13 | 25.01 | 11.57 | 14.14 | 12.70 | 12.32 | 13.84 | 11.37 | 11.65 | 11.06 | 3.04 | 3.89 | 1.53 |
| 97 File | 17.14 | 21.44 | 60.95 | 42.31 | 38.63 | 15.19 | 28.04 | 22.50 | 25.27 | 11.68 | 14.30 | 12.86 | 12.48 | 14.02 | 11.52 | 11.87 | 11.23 | 3.27 | 4.07 | 1.90 |
| 98 File | 17.23 | 21.55 | 61.07 | 43.20 | 38.80 | 15.28 | 28.13 | 22.57 | 25.38 | 11.90 | 14.47 | 12.97 | 12.58 | 14.10 | 11.58 | 12.11 | 11.33 | 3.38 | 4.22 | 2.00 |
| 99 File | 17.29 | 21.65 | 61.50 | 43.60 | 39.40 | 15.40 | 28.27 | 22.70 | 25.80 | 12.10 | 14.80 | 13.17 | 12.70 | 14.25 | 11.66 | 12.55 | 11.50 | 3.60 | 4.28 | 2.20 |
| Max - 4 Measurement | 17.20 | 3 21.40 | 8 61.40 | 2 43.60 | 4 39.30 | 1 15.20 | 9 28.10 | 5 22.60 | 6 25.50 | 1 11.90 | 1 14.80 | 1 13.10 | 1 12.70 | 3 14.10 | 5 11.50 | 4 12.50 | 2 11.40 | 3 3.60 | 2 4.20 | 2 2.20 |
| Max - 3 Measurement | 17.30 | 7 21.50 | 3 61.50 | 1 43.70 | 1 39.40 | 1 15.30 | 4 28.20 | 3 22.70 | 2 25.80 | 2 12.00 | 2 14.90 | 1 13.20 | 3 12.90 | 1 14.20 | 3 11.60 | 6 12.60 | 2 11.50 | 2 3.70 | 1 4.30 | 6 2.40 |
| Max - 2 Measurement | 17.40 | 1 21.60 | 4 61.70 | 1 44.20 | 1 39.50 | 2 15.40 | 3 28.30 | 3 22.80 | 2 25.90 | 2 12.20 | 4 15.00 | 1 13.30 | 1 13.10 | 1 14.30 | 2 11.70 | 5 13.10 | 1 11.60 | 1 3.90 | 1 4.40 | 1 2.50 |
| Max - 1 Measurement | 17.60 | 1 21.70 | 4 61.80 | 2 44.30 | 1 39.80 | 1 15.50 | 3 28.50 | 1 23.00 | 1 26.10 | 1 13.60 | 1 15.50 | 1 13.40 | 1 13.20 | 1 14.60 | 2 11.80 | 1 13.60 | 1 11.70 | 2 4.00 | 1 4.50 | 1 2.70 |
| Max | 18.00 | 1 21.80 | 2 62.00 | 1 44.80 | 1 40.40 | 1 15.60 | 1 28.60 | 2 23.00 | 1 26.20 | 1 14.10 | 1 15.60 | 1 13.80 | 1 13.60 | 1 14.70 | 1 11.90 | 1 14.20 | 1 11.90 | 1 4.10 | 1 5.00 | 1 3.10 |
| Mean | 16.18 | 20.61 | 59.58 | 39.15 | 36.18 | 14.23 | 26.83 | 20.57 | 23.49 | 10.56 | 13.25 | 11.48 | 10.83 | 12.65 | 10.01 | 10.24 | 10.05 | 1.77 | 2.42 | -0.05 |
| SD | 0.47 | 0.41 | 0.65 | 1.68 | 1.16 | 0.49 | 0.69 | 0.98 | 1.00 | 0.68 | 0.66 | 0.81 | 0.94 | 0.71 | 0.89 | 1.01 | 0.64 | 0.83 | 0.96 | 0.96 |
| Coefficient of Variation | 2.90 | 1.98 | 1.08 | 4.30 | 3.20 | 3.44 | 2.57 | 4.77 | 4.26 | 6.41 | 4.99 | 7.03 | 8.69 | 5.58 | 8.87 | 9.83 | 6.33 | | | |
| No of Survey Subjects | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 | 398 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 32 PART 1

SIZE ROLL REFERENCE **K** CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD BREADTH
 NUMBER OF SIZES **4**
 SIZE **1** CONTROL MEASUREMENT RANGES **18.00** TO **19.89** HEAD LENGTH
14.20 TO **15.89** HEAD BREADTH

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.20 | 18.00 | 53.00 | 33.70 | 31.60 | 12.20 | 23.70 | 16.00 | 19.10 | 8.00 | 9.80 | 8.50 | 7.50 | 8.90 | 6.50 | 7.00 | 6.20 | 1.00 | 0.40 | 2.90 |
| Min + 1 Measurement | 14.40 | 18.10 | 53.60 | 33.80 | 31.70 | 12.30 | 24.10 | 16.40 | 19.50 | 8.20 | 10.00 | 8.60 | 7.80 | 10.00 | 6.60 | 7.10 | 7.70 | 1.00 | 0.30 | 2.70 |
| Min + 2 Measurement | 14.50 | 18.20 | 53.90 | 33.90 | 31.80 | 12.50 | 24.20 | 16.50 | 19.60 | 8.30 | 11.20 | 8.80 | 8.00 | 10.10 | 7.10 | 7.20 | 7.80 | 0.00 | 0.20 | 2.40 |
| Min + 3 Measurement | 14.60 | 18.30 | 54.00 | 34.00 | 32.00 | 12.60 | 24.30 | 16.80 | 19.80 | 8.40 | 11.30 | 9.00 | 8.20 | 10.30 | 7.40 | 7.30 | 7.90 | 0.10 | 0.10 | 2.20 |
| Min + 4 Measurement | 14.70 | 18.40 | 54.30 | 34.10 | 32.30 | 12.70 | 24.40 | 17.20 | 20.30 | 8.50 | 11.60 | 9.20 | 8.30 | 10.40 | 7.60 | 7.40 | 8.00 | 0.20 | 0.20 | 2.10 |
| 1st Mile | 14.40 | 18.14 | 54.07 | 34.00 | 31.84 | 12.55 | 24.20 | 17.05 | 19.79 | 8.34 | 11.39 | 8.93 | 7.99 | 10.28 | 7.65 | 7.20 | 8.00 | 0.02 | 0.15 | 2.31 |
| 2nd Mile | 14.50 | 18.27 | 54.39 | 34.30 | 32.19 | 12.65 | 24.34 | 17.43 | 20.36 | 8.54 | 11.59 | 9.25 | 8.47 | 10.63 | 7.99 | 7.49 | 8.19 | 0.19 | 0.62 | 1.88 |
| 3rd Mile | 14.55 | 18.35 | 54.64 | 34.66 | 32.48 | 12.76 | 24.46 | 17.59 | 20.64 | 8.69 | 11.76 | 9.35 | 8.56 | 10.89 | 8.11 | 7.76 | 8.34 | 0.41 | 0.77 | 1.77 |
| 5th Mile | 14.67 | 18.51 | 54.87 | 34.95 | 32.81 | 12.88 | 24.60 | 17.83 | 20.94 | 8.77 | 11.91 | 9.62 | 8.79 | 11.06 | 8.26 | 8.03 | 8.48 | 0.52 | 1.01 | 1.53 |
| 50th Mile | 15.35 | 19.36 | 56.34 | 37.42 | 34.61 | 13.60 | 25.67 | 19.54 | 22.51 | 9.73 | 12.83 | 10.94 | 10.30 | 12.09 | 9.74 | 9.55 | 9.51 | 1.90 | 2.50 | 0.19 |
| 95 Mile | 15.75 | 19.76 | 57.93 | 40.22 | 36.41 | 14.27 | 26.75 | 21.21 | 24.07 | 10.74 | 13.45 | 12.38 | 12.04 | 13.27 | 11.14 | 11.04 | 10.46 | 3.11 | 3.96 | 1.86 |
| 97 Mile | 15.77 | 19.78 | 58.04 | 40.58 | 36.69 | 14.36 | 26.89 | 21.38 | 24.29 | 10.83 | 14.02 | 12.63 | 12.19 | 13.42 | 11.38 | 11.29 | 10.58 | 3.34 | 4.36 | 2.19 |
| 98 Mile | 15.78 | 19.78 | 58.14 | 40.83 | 36.79 | 14.42 | 26.97 | 21.56 | 24.42 | 10.90 | 14.10 | 12.71 | 12.38 | 13.52 | 11.61 | 11.55 | 10.65 | 3.54 | 4.54 | 2.44 |
| 99 Mile | 15.79 | 19.79 | 58.27 | 41.11 | 36.97 | 14.53 | 27.14 | 21.91 | 24.93 | 11.10 | 14.18 | 12.90 | 12.62 | 13.64 | 11.93 | 11.84 | 10.74 | 3.70 | 4.71 | 2.67 |
| Max - 4 Measurement | 15.40 | 19.40 | 58.30 | 41.00 | 36.80 | 14.40 | 27.20 | 21.90 | 24.80 | 11.20 | 14.00 | 12.80 | 12.60 | 13.60 | 12.00 | 11.80 | 10.60 | 3.70 | 4.70 | 2.70 |
| Max - 3 Measurement | 15.50 | 19.50 | 58.60 | 41.10 | 36.90 | 14.50 | 27.30 | 22.00 | 24.90 | 11.30 | 14.10 | 12.90 | 12.80 | 13.70 | 12.20 | 11.90 | 10.70 | 3.80 | 4.90 | 2.80 |
| Max - 2 Measurement | 15.60 | 19.60 | 58.70 | 41.20 | 37.00 | 14.60 | 27.50 | 22.30 | 25.00 | 11.40 | 14.20 | 13.00 | 13.00 | 13.90 | 12.60 | 12.00 | 10.80 | 4.00 | 5.00 | 3.10 |
| Max - 1 Measurement | 15.70 | 19.70 | 58.80 | 41.40 | 37.30 | 14.80 | 27.60 | 22.80 | 25.10 | 11.90 | 14.30 | 13.10 | 13.10 | 14.00 | 12.70 | 12.20 | 11.00 | 4.10 | 5.10 | 3.30 |
| Max | 15.80 | 19.80 | 58.90 | 41.50 | 37.50 | 15.00 | 27.80 | 23.00 | 25.60 | 13.00 | 14.60 | 13.30 | 13.40 | 14.20 | 14.40 | 13.40 | 11.10 | 4.20 | 5.60 | 4.30 |
| Mean | 15.36 | 19.34 | 56.43 | 37.52 | 34.66 | 13.64 | 25.72 | 19.58 | 22.55 | 9.81 | 12.92 | 11.01 | 10.34 | 12.16 | 9.77 | 9.63 | 9.53 | 1.90 | 2.52 | 0.25 |
| SD | 0.33 | 0.38 | 0.43 | 1.57 | 1.10 | 0.42 | 0.66 | 1.04 | 0.97 | 0.60 | 0.62 | 0.82 | 0.97 | 0.89 | 0.92 | 0.92 | 0.61 | 0.78 | 0.94 | 1.03 |
| Coefficient of Variation % | 2.15 | 1.97 | 1.65 | 4.17 | 3.18 | 3.08 | 2.56 | 5.33 | 4.32 | 6.14 | 4.79 | 7.48 | 9.36 | 5.65 | 9.40 | 9.69 | 6.39 | | | |
| No of Survey Subjects | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 | 592 |

(ALL MEASUREMENTS IN CENTIMETRES)

THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 32 PART 2

SIZE ROLL REFERENCE **K** CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD BREADTH
 NUMBER OF SIZES **4**
 SIZE **2** CONTROL MEASUREMENT RANGES **18.00** TO **19.89** HEAD LENGTH
15.90 TO **17.50** HEAD BREADTH

69

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | TRAGION CORONAL ARC | TRAGION DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGION TO BACK OF HEAD | TRAGION TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGION TO MENTON HORIZONTAL | TRAGION TO MENTON VERTICAL | TRAGION TO BROW RIDGE HORIZONTAL | TRAGION TO PUPIL VERTICAL | TRAGION TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|---------------------|------------------|-------------------------------|------------------------|------------------|-------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|
| Min | 15.90 | 52 | 18.00 | 54.90 | 34.30 | 32.90 | 13.10 | 24.50 | 17.40 | 20.40 | 9.00 | 11.30 | 8.60 | 10.20 | 7.10 | 7.00 | 6.70 | 0.40 | 0.10 | -2.30 |
| Min + 1 Measurement | 16.00 | 54 | 18.10 | 55.00 | 34.70 | 33.10 | 13.30 | 24.60 | 17.50 | 20.50 | 9.50 | 11.40 | 8.20 | 10.40 | 7.70 | 7.80 | 7.90 | 0.10 | 0.10 | -2.20 |
| Min + 2 Measurement | 16.10 | 56 | 18.30 | 55.20 | 34.90 | 35.20 | 13.40 | 24.70 | 17.60 | 20.60 | 9.60 | 11.60 | 8.30 | 10.70 | 7.80 | 7.90 | 8.00 | 0.00 | 0.20 | -2.10 |
| Min + 3 Measurement | 16.20 | 46 | 18.40 | 55.30 | 35.00 | 35.30 | 13.50 | 24.80 | 17.70 | 20.70 | 9.70 | 11.80 | 8.40 | 10.80 | 7.90 | 8.00 | 8.10 | 0.10 | 0.30 | -1.90 |
| Min + 4 Measurement | 16.30 | 36 | 18.50 | 55.50 | 35.10 | 35.40 | 13.60 | 24.90 | 17.80 | 20.80 | 9.80 | 11.90 | 8.50 | 10.90 | 8.00 | 8.10 | 8.20 | 0.20 | 0.40 | -1.70 |
| 1st Size | 15.90 | 18.20 | 55.05 | 34.93 | 33.18 | 13.51 | 24.61 | 17.42 | 20.53 | 9.51 | 11.32 | 8.25 | 8.23 | 10.35 | 7.75 | 7.67 | 7.95 | 0.05 | 0.13 | -2.15 |
| 2nd Size | 15.90 | 18.40 | 55.40 | 35.30 | 33.45 | 13.35 | 24.68 | 17.52 | 20.80 | 9.58 | 11.73 | 9.45 | 8.47 | 10.82 | 7.87 | 8.00 | 8.10 | 0.18 | 0.50 | -1.70 |
| 3rd Size | 15.90 | 18.49 | 55.58 | 35.39 | 33.56 | 13.34 | 24.85 | 17.59 | 21.03 | 9.71 | 11.95 | 9.63 | 8.75 | 10.89 | 7.98 | 8.14 | 8.23 | 0.28 | 0.61 | -1.59 |
| 5th Size | 15.90 | 19.71 | 55.98 | 35.88 | 33.85 | 13.47 | 24.94 | 17.79 | 21.24 | 9.78 | 11.91 | 9.78 | 9.02 | 11.03 | 8.25 | 8.31 | 8.34 | 0.45 | 0.77 | -1.43 |
| 50th Size | 16.13 | 19.40 | 57.38 | 38.00 | 35.67 | 14.09 | 25.47 | 19.66 | 22.68 | 9.80 | 12.95 | 11.15 | 10.50 | 12.15 | 9.33 | 9.74 | 9.52 | 1.77 | 2.44 | 0.25 |
| 95 Size | 16.79 | 19.77 | 58.69 | 40.95 | 37.59 | 14.92 | 26.95 | 21.32 | 24.09 | 10.78 | 14.01 | 12.48 | 12.01 | 13.21 | 11.16 | 10.99 | 10.41 | 3.02 | 3.96 | 1.81 |
| 97 Size | 16.88 | 19.78 | 58.87 | 41.22 | 38.11 | 15.01 | 27.22 | 21.65 | 24.22 | 10.99 | 14.19 | 12.61 | 12.13 | 13.39 | 11.29 | 11.22 | 10.53 | 3.25 | 4.19 | 2.15 |
| 98 Size | 16.97 | 19.79 | 59.13 | 41.50 | 38.20 | 15.08 | 27.33 | 21.77 | 24.40 | 11.20 | 14.40 | 12.70 | 12.20 | 13.50 | 11.40 | 11.37 | 10.60 | 3.47 | 4.27 | 2.43 |
| 99 Size | 17.08 | 19.79 | 59.35 | 41.75 | 38.37 | 15.16 | 27.55 | 21.98 | 24.55 | 11.35 | 14.55 | 12.79 | 12.47 | 13.75 | 11.58 | 11.65 | 10.72 | 3.65 | 4.57 | 2.57 |
| Max - 4 Measurement | 17.00 | 3 | 19.40 | 59.30 | 41.60 | 38.30 | 15.00 | 27.30 | 21.80 | 11.20 | 14.30 | 12.70 | 12.30 | 13.60 | 11.50 | 11.40 | 10.50 | 3.50 | 4.50 | 2.50 |
| Max - 3 Measurement | 17.10 | 3 | 19.50 | 59.40 | 41.80 | 38.40 | 15.10 | 27.40 | 21.90 | 11.30 | 14.40 | 12.80 | 12.40 | 13.70 | 11.60 | 11.50 | 10.60 | 3.60 | 4.60 | 2.60 |
| Max - 2 Measurement | 17.20 | 1 | 19.60 | 59.50 | 41.90 | 38.50 | 15.20 | 27.50 | 22.00 | 11.40 | 14.50 | 12.90 | 12.50 | 13.80 | 11.70 | 11.60 | 10.70 | 3.70 | 4.70 | 2.70 |
| Max - 1 Measurement | 17.30 | 1 | 19.70 | 59.60 | 42.00 | 38.70 | 15.30 | 27.70 | 22.10 | 11.50 | 14.60 | 13.00 | 12.60 | 13.90 | 11.80 | 11.70 | 10.80 | 3.80 | 4.80 | 2.80 |
| Max | 17.40 | 1 | 19.80 | 59.90 | 42.70 | 39.20 | 15.70 | 27.80 | 23.60 | 12.00 | 14.70 | 13.00 | 12.70 | 14.10 | 12.00 | 11.80 | 11.20 | 4.40 | 5.00 | 4.00 |
| Mean | 16.25 | 19.39 | 57.38 | 38.18 | 35.74 | 14.17 | 26.02 | 19.69 | 22.71 | 9.87 | 12.98 | 11.18 | 10.53 | 12.19 | 9.82 | 9.73 | 9.52 | 1.80 | 2.46 | 0.30 |
| SD | 0.30 | 0.35 | 0.89 | 1.57 | 1.12 | 0.41 | 0.65 | 1.05 | 0.95 | 0.62 | 0.65 | 0.79 | 0.91 | 0.65 | 0.98 | 0.96 | 0.60 | 0.80 | 0.93 | 1.00 |
| Coefficient of Variation % | 1.84 | 1.81 | 1.55 | 4.11 | 3.14 | 2.91 | 2.42 | 5.32 | 3.75 | 6.25 | 4.99 | 7.04 | 9.68 | 5.82 | 8.91 | 9.90 | 6.35 | | | |
| No of Survey Subjects | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 32 PART 3

SIZE ROLL PREFERENCE **K** CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD BREADTH
 NUMBER OF SIZES ... **4** ...
 SIZE **3** CONTROL MEASUREMENT RANGES **19 90** TO **21 80** HEAD LENGTH
14 20 TO **15 89** HEAD BREADTH

70

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGION CORONAL ARC | BITRAGION DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGION TO BACK OF HEAD OF HEAD | TRAGION TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO MASION | TRAGION TO MENTON HORIZONTAL | TRAGION TO MENTON VERTICAL | TRAGION TO BROW RIDGE HORIZONTAL | TRAGION TO PUPIL VERTICAL | TRAGION TO MASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|-----------------------|--------------------|-------------------------------|------------------------|------------------|---------------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|
| Min | 14 20 | 19 90 | 55 00 | 33 20 | 31 10 | 12 40 | 24 30 | 17 10 | 14 60 | 8 90 | 10 80 | 8 40 | 8 20 | 4 30 | 7 10 | 6 60 | 3 00 | -0 60 | -0 10 | -3 10 |
| Min + 1 Measurement | 14 30 | 20 00 | 55 40 | 34 10 | 32 10 | 12 70 | 24 80 | 17 20 | 20 10 | 9 00 | 11 30 | 9 20 | 9 30 | 4 40 | 7 20 | 6 30 | 3 20 | 0 00 | -2 40 | |
| Min + 2 Measurement | 14 50 | 20 10 | 55 70 | 34 20 | 32 30 | 12 80 | 24 70 | 17 80 | 20 20 | 9 10 | 11 40 | 9 30 | 9 40 | 4 50 | 7 30 | 6 40 | 3 30 | 0 10 | -2 70 | |
| Min + 3 Measurement | 14 60 | 20 20 | 55 80 | 34 30 | 32 40 | 12 90 | 24 90 | 17 90 | 20 30 | 9 20 | 11 50 | 9 40 | 9 50 | 4 60 | 7 40 | 6 50 | 3 40 | 0 20 | -2 50 | |
| Min + 4 Measurement | 14 70 | 20 30 | 56 00 | 34 40 | 32 60 | 13 00 | 24 90 | 18 10 | 20 70 | 9 30 | 11 60 | 9 50 | 9 70 | 4 70 | 7 50 | 7 00 | 3 50 | 0 30 | -2 20 | |
| 1st Size | 14 34 | 19 90 | 55 00 | 34 30 | 32 40 | 12 75 | 24 77 | 17 91 | 20 70 | 9 10 | 11 40 | 9 25 | 9 47 | 4 70 | 7 30 | 6 30 | 3 55 | 0 10 | 0 20 | -2 45 |
| 2nd Size | 14 51 | 19 90 | 55 95 | 35 11 | 32 74 | 12 85 | 24 90 | 18 23 | 21 04 | 9 21 | 11 55 | 9 54 | 9 75 | 4 70 | 7 40 | 6 40 | 3 65 | 0 23 | 0 50 | -2 20 |
| 3rd Size | 14 55 | 19 90 | 56 14 | 35 40 | 32 95 | 12 89 | 25 10 | 18 35 | 21 25 | 9 30 | 11 74 | 9 70 | 9 84 | 4 70 | 7 50 | 6 50 | 3 72 | 0 31 | 0 58 | -2 02 |
| 4th Size | 14 71 | 19 90 | 56 39 | 35 60 | 33 15 | 12 96 | 25 28 | 18 62 | 21 54 | 9 38 | 11 94 | 9 88 | 9 05 | 4 80 | 7 60 | 6 50 | 3 85 | 0 44 | 0 74 | -1 71 |
| 50th Size | 15 46 | 20 21 | 57 94 | 38 06 | 35 11 | 13 66 | 26 27 | 20 23 | 22 47 | 10 51 | 13 05 | 11 24 | 10 65 | 12 30 | 9 84 | 9 46 | 4 44 | 1 73 | 2 30 | 0 10 |
| 95 Size | 15 77 | 21 00 | 59 57 | 40 81 | 36 86 | 14 34 | 27 42 | 21 79 | 24 53 | 11 35 | 13 93 | 12 57 | 12 30 | 13 47 | 11 51 | 11 52 | 10 74 | 3 02 | 3 86 | 1 38 |
| 97 Size | 15 78 | 21 14 | 59 80 | 41 07 | 37 20 | 14 41 | 27 55 | 22 00 | 24 83 | 11 50 | 14 12 | 12 68 | 12 53 | 13 65 | 11 50 | 11 67 | 10 95 | 3 17 | 4 00 | 1 50 |
| 98 Size | 15 79 | 21 20 | 59 99 | 41 26 | 37 30 | 14 47 | 27 72 | 22 10 | 25 00 | 11 65 | 14 20 | 12 85 | 12 60 | 13 80 | 11 57 | 11 76 | 11 10 | 3 26 | 4 10 | 1 75 |
| 99 Size | 15 79 | 21 37 | 60 30 | 41 70 | 37 56 | 14 56 | 27 99 | 22 39 | 25 33 | 11 78 | 14 37 | 12 98 | 12 80 | 14 03 | 11 67 | 11 90 | 11 23 | 3 55 | 4 27 | 2 00 |
| Max - 4 Measurement | 15 40 | 21 30 | 60 30 | 41 70 | 37 60 | 14 40 | 27 80 | 22 20 | 25 20 | 11 60 | 14 40 | 12 90 | 12 80 | 13 90 | 11 60 | 11 40 | 11 10 | 3 50 | 4 10 | 2 00 |
| Max - 3 Measurement | 15 50 | 21 40 | 60 40 | 41 80 | 37 70 | 14 50 | 28 00 | 22 60 | 25 30 | 11 70 | 14 60 | 13 00 | 12 90 | 14 00 | 11 70 | 11 40 | 12 00 | 3 60 | 4 20 | 2 20 |
| Max - 2 Measurement | 15 60 | 21 50 | 60 50 | 42 30 | 37 80 | 14 60 | 28 10 | 22 70 | 25 40 | 11 80 | 14 80 | 13 10 | 13 00 | 14 10 | 11 80 | 12 10 | 11 30 | 3 70 | 4 30 | 2 40 |
| Max - 1 Measurement | 15 70 | 21 60 | 60 90 | 43 60 | 38 20 | 14 70 | 28 50 | 22 80 | 25 50 | 11 90 | 15 10 | 13 20 | 13 10 | 14 20 | 12 40 | 12 60 | 11 40 | 3 80 | 4 40 | 2 70 |
| Max | 15 80 | 21 80 | 61 00 | 43 70 | 38 50 | 14 80 | 28 40 | 23 30 | 25 90 | 12 00 | 15 00 | 13 40 | 13 60 | 14 30 | 13 40 | 13 10 | 11 70 | 3 40 | 4 50 | 3 20 |
| Mean | 15 43 | 20 34 | 57 99 | 38 12 | 35 09 | 13 71 | 26 36 | 20 31 | 23 07 | 10 34 | 13 06 | 11 29 | 10 69 | 12 38 | 9 91 | 10 01 | 9 45 | 1 77 | 2 37 | -0 04 |
| SD | 0 33 | 0 37 | 0 45 | 1 57 | 1 11 | 0 41 | 0 64 | 0 97 | 0 94 | 0 60 | 0 63 | 0 90 | 0 95 | 0 70 | 0 58 | 0 91 | 0 57 | 0 79 | 0 93 | 0 95 |
| Coefficient of Variation % | 2 15 | 1 83 | 1 64 | 4 11 | 3 16 | 2 98 | 2 44 | 4 76 | 4 07 | 5 79 | 4 80 | 7 04 | 8 90 | 5 65 | 8 92 | 9 11 | 5 74 | | | |
| No of Survey Subjects | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 | 503 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 32 PART 4

SIZE ROLL REFERENCE **K** CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD BREADTH
 NUMBER OF SIZES **4**
 SIZE **4** CONTROL MEASUREMENT RANGES **19.90** TO **21.80** HEAD LENGTH
15.90 TO **17.50** HEAD BREADTH

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BYTRAGON CORONAL ARC | BYTRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASTON TO VERTEX | MENTON TO NASTON | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASTON VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|-----------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.90 | 19.90 | 56.50 | 35.30 | 33.10 | 12.90 | 15.00 | 17.50 | 20.60 | 8.50 | 9.50 | 9.40 | 8.40 | 8.60 | 6.60 | 7.60 | 6.50 | -2.10 | -1.70 | -2.70 |
| Min + 1 Measurement | 16.00 | 20.00 | 56.60 | 35.40 | 33.20 | 13.00 | 15.20 | 17.80 | 20.70 | 8.70 | 11.00 | 9.50 | 8.50 | 10.00 | 7.30 | 7.70 | 7.20 | -0.60 | -0.40 | -2.40 |
| Min + 2 Measurement | 16.10 | 20.10 | 56.70 | 35.50 | 33.40 | 13.10 | 15.30 | 17.90 | 20.80 | 8.80 | 11.20 | 9.60 | 8.60 | 10.10 | 7.40 | 7.80 | 7.30 | -0.50 | -0.30 | -2.30 |
| Min + 3 Measurement | 16.20 | 20.20 | 56.80 | 35.60 | 33.50 | 13.20 | 15.40 | 18.00 | 21.00 | 8.90 | 11.30 | 9.70 | 8.70 | 10.20 | 7.50 | 7.90 | 7.40 | -0.40 | 0.00 | -2.20 |
| Min + 4 Measurement | 16.30 | 20.30 | 56.90 | 35.70 | 33.60 | 13.30 | 15.50 | 18.20 | 21.20 | 9.00 | 11.50 | 9.80 | 8.80 | 10.30 | 7.60 | 8.00 | 7.50 | -0.30 | 0.20 | -2.10 |
| 1st Size | 15.90 | 19.90 | 56.72 | 35.45 | 33.47 | 13.17 | 15.22 | 17.94 | 20.97 | 9.02 | 11.45 | 9.77 | 8.70 | 10.30 | 7.34 | 7.98 | 7.17 | -0.35 | 0.03 | -2.28 |
| 2nd Size | 15.90 | 19.90 | 56.91 | 35.50 | 33.76 | 13.34 | 15.34 | 18.07 | 21.20 | 9.13 | 11.77 | 9.87 | 8.92 | 11.10 | 7.72 | 8.27 | 8.57 | -0.10 | 0.31 | -2.08 |
| 3rd Size | 15.90 | 19.90 | 56.96 | 35.74 | 34.03 | 13.41 | 15.42 | 18.26 | 21.45 | 9.19 | 11.93 | 10.01 | 9.02 | 11.22 | 7.85 | 8.37 | 8.71 | -0.01 | 0.38 | -1.95 |
| 5th Size | 15.90 | 19.90 | 57.23 | 36.00 | 34.16 | 13.49 | 15.57 | 18.53 | 21.67 | 9.32 | 12.07 | 10.15 | 9.23 | 11.39 | 8.17 | 8.63 | 8.87 | 0.26 | 0.66 | -1.75 |
| 50th Size | 16.15 | 20.30 | 58.94 | 38.41 | 35.48 | 14.16 | 16.04 | 20.19 | 23.43 | 10.38 | 13.11 | 11.52 | 10.86 | 12.45 | 9.85 | 10.22 | 9.92 | 1.55 | 2.18 | -0.13 |
| 95 Size | 16.83 | 21.07 | 60.04 | 41.65 | 37.98 | 14.96 | 17.80 | 21.92 | 24.87 | 11.50 | 14.08 | 12.79 | 12.86 | 13.72 | 11.32 | 11.75 | 10.98 | 2.85 | 3.77 | 1.45 |
| 97 Size | 17.00 | 21.24 | 60.87 | 42.02 | 38.53 | 15.13 | 17.99 | 22.22 | 25.14 | 11.60 | 14.21 | 12.92 | 12.49 | 13.89 | 11.49 | 11.94 | 11.11 | 2.99 | 3.93 | 1.82 |
| 98 Size | 17.13 | 21.36 | 61.00 | 42.40 | 38.64 | 15.19 | 18.08 | 22.40 | 25.23 | 11.80 | 14.40 | 13.00 | 12.60 | 14.04 | 11.62 | 12.05 | 11.20 | 3.10 | 4.05 | 2.00 |
| 99 Size | 17.24 | 21.53 | 61.45 | 43.52 | 39.05 | 15.32 | 18.19 | 22.59 | 25.38 | 12.13 | 14.56 | 13.16 | 12.83 | 14.18 | 11.75 | 12.48 | 11.43 | 3.38 | 4.23 | 2.13 |
| Max - 4 Measurement | 17.00 | 21.40 | 61.50 | 43.50 | 39.30 | 15.10 | 18.10 | 22.50 | 25.30 | 12.20 | 14.50 | 13.10 | 12.80 | 14.20 | 11.70 | 12.50 | 11.40 | 3.40 | 4.00 | 2.20 |
| Max - 3 Measurement | 17.10 | 21.50 | 61.70 | 43.60 | 39.40 | 15.20 | 18.20 | 22.60 | 25.40 | 12.50 | 14.60 | 13.20 | 12.90 | 14.30 | 11.80 | 12.60 | 11.50 | 3.50 | 4.10 | 2.40 |
| Max - 2 Measurement | 17.20 | 21.60 | 61.80 | 44.20 | 39.50 | 15.30 | 18.30 | 22.80 | 25.50 | 12.70 | 14.70 | 13.30 | 13.00 | 14.40 | 11.90 | 12.70 | 11.60 | 3.60 | 4.20 | 2.50 |
| Max - 1 Measurement | 17.30 | 21.70 | 62.00 | 44.30 | 39.80 | 15.40 | 18.50 | 23.00 | 25.80 | 13.00 | 14.80 | 13.40 | 13.10 | 14.70 | 12.00 | 12.80 | 11.70 | 4.00 | 4.30 | 2.60 |
| Max | 17.40 | 21.80 | 62.40 | 44.30 | 40.40 | 15.50 | 18.60 | 23.60 | 26.20 | 14.10 | 15.00 | 13.50 | 13.20 | 15.00 | 12.10 | 13.20 | 11.90 | 4.10 | 5.00 | 3.10 |
| Mean | 16.27 | 20.41 | 58.42 | 38.54 | 36.05 | 14.23 | 16.73 | 20.31 | 23.42 | 10.46 | 13.14 | 11.53 | 10.99 | 12.53 | 9.85 | 10.27 | 9.96 | 1.62 | 2.25 | -0.11 |
| SD | 0.52 | 0.31 | 1.02 | 1.71 | 1.15 | 0.44 | 0.63 | 1.01 | 0.96 | 0.67 | 0.65 | 0.78 | 0.92 | 0.75 | 0.92 | 0.95 | 0.64 | 0.81 | 0.95 | 0.95 |
| Coef. of Variation | 1.95 | 1.84 | 1.73 | 4.61 | 3.20 | 3.07 | 2.53 | 4.95 | 4.08 | 6.43 | 4.94 | 6.73 | 8.45 | 6.02 | 9.39 | 9.28 | 6.47 | 5.49 | 5.49 | 5.49 |
| No of Survey Subjects | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 | 54.9 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 33 PART 1

SIZE ROLL REFERENCE L CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD BREADTH
 NUMBER OF SIZES 6
 SIZE 1 CONTROL MEASUREMENT RANGES 18.00 TO 19.89 HEAD LENGTH
14.20 TO 15.29 HEAD BREADTH

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.20 | 18.10 | 53.00 | 33.70 | 31.60 | 12.20 | 23.70 | 16.50 | 19.50 | 8.30 | 11.00 | 8.60 | 7.50 | 8.90 | 7.10 | 7.00 | 7.80 | -0.10 | -0.30 | -2.70 |
| Min + 1 Measurement | 14.40 | 18.20 | 53.60 | 34.10 | 31.70 | 12.30 | 24.10 | 16.80 | 19.60 | 8.40 | 11.30 | 8.70 | 7.60 | 9.00 | 7.20 | 7.10 | 7.90 | 0.10 | 0.10 | -2.60 |
| Min + 2 Measurement | 14.50 | 18.30 | 53.90 | 34.20 | 31.80 | 12.50 | 24.30 | 17.20 | 19.80 | 8.50 | 11.40 | 8.80 | 7.70 | 9.10 | 7.30 | 7.20 | 8.00 | 0.20 | 0.20 | -2.20 |
| Min + 3 Measurement | 14.60 | 18.40 | 54.00 | 34.30 | 32.00 | 12.60 | 24.40 | 17.40 | 20.00 | 8.60 | 11.60 | 8.90 | 7.80 | 9.20 | 7.40 | 7.30 | 8.10 | 0.40 | 0.40 | -1.90 |
| Min + 4 Measurement | 14.70 | 18.50 | 54.30 | 34.70 | 32.30 | 12.70 | 24.50 | 17.50 | 20.40 | 8.80 | 11.70 | 9.00 | 7.90 | 9.30 | 7.50 | 7.40 | 8.20 | 0.50 | 0.40 | -1.80 |
| 1st Size | 14.24 | 18.15 | 53.35 | 33.74 | 31.60 | 12.32 | 24.11 | 16.83 | 19.61 | 8.31 | 11.31 | 8.82 | 7.50 | 9.50 | 7.61 | 7.02 | 7.92 | -0.10 | -0.23 | -2.38 |
| 2nd Size | 14.33 | 18.31 | 53.92 | 34.21 | 31.72 | 12.52 | 24.24 | 17.18 | 19.89 | 8.46 | 11.52 | 9.31 | 8.42 | 10.14 | 7.92 | 7.35 | 8.31 | 0.12 | 0.23 | -1.89 |
| 3rd Size | 14.40 | 18.38 | 54.19 | 34.35 | 31.88 | 12.57 | 24.33 | 17.42 | 20.43 | 8.56 | 11.66 | 9.43 | 8.63 | 10.45 | 7.96 | 7.71 | 8.41 | 0.41 | 0.58 | -1.83 |
| 5th Size | 14.47 | 18.51 | 54.57 | 34.91 | 32.32 | 12.66 | 24.47 | 17.75 | 20.68 | 8.74 | 11.81 | 9.74 | 8.85 | 10.82 | 8.17 | 8.05 | 8.52 | 0.51 | 0.92 | -1.65 |
| 50th Size | 15.00 | 19.34 | 55.96 | 37.15 | 34.15 | 13.40 | 25.42 | 19.46 | 22.35 | 9.70 | 12.74 | 10.93 | 10.24 | 12.00 | 9.68 | 9.54 | 9.52 | 1.87 | 2.45 | 0.15 |
| 95 Size | 15.18 | 19.75 | 57.36 | 39.96 | 35.78 | 13.95 | 26.53 | 21.12 | 23.45 | 10.65 | 13.69 | 12.11 | 11.83 | 13.33 | 11.12 | 10.99 | 10.47 | 2.88 | 3.85 | 1.82 |
| 97 Size | 15.19 | 19.77 | 57.67 | 40.17 | 36.07 | 14.05 | 26.64 | 21.32 | 24.09 | 10.79 | 13.86 | 12.27 | 12.07 | 13.44 | 11.29 | 11.26 | 10.56 | 3.09 | 4.07 | 2.04 |
| 98 Size | 15.19 | 19.78 | 57.88 | 40.46 | 36.28 | 14.08 | 26.78 | 21.48 | 24.19 | 10.89 | 13.98 | 12.36 | 12.19 | 13.54 | 11.39 | 11.55 | 10.64 | 3.19 | 4.44 | 2.14 |
| 99 Size | 15.20 | 19.79 | 58.00 | 40.60 | 36.40 | 14.13 | 26.93 | 21.69 | 24.57 | 11.00 | 14.15 | 12.49 | 12.39 | 13.65 | 11.69 | 11.88 | 10.97 | 3.49 | 4.55 | 2.48 |
| Max - 4 Measurement | 14.80 | 19.40 | 57.80 | 40.30 | 36.10 | 13.80 | 26.60 | 21.50 | 24.20 | 10.80 | 13.90 | 12.04 | 12.10 | 13.40 | 11.30 | 11.30 | 10.50 | 3.20 | 4.10 | 2.10 |
| Max - 3 Measurement | 14.90 | 19.50 | 57.90 | 40.50 | 36.30 | 13.90 | 26.70 | 21.60 | 24.30 | 10.90 | 14.00 | 12.30 | 12.20 | 13.50 | 11.40 | 11.60 | 10.60 | 3.40 | 4.40 | 2.20 |
| Max - 2 Measurement | 15.00 | 19.60 | 58.00 | 40.60 | 36.40 | 14.00 | 26.80 | 21.70 | 24.40 | 11.00 | 14.10 | 12.40 | 12.30 | 13.60 | 11.70 | 11.70 | 10.70 | 3.50 | 4.50 | 2.50 |
| Max - 1 Measurement | 15.10 | 19.70 | 58.10 | 41.00 | 36.70 | 14.10 | 27.00 | 22.80 | 24.90 | 11.40 | 14.20 | 12.60 | 12.50 | 13.70 | 12.60 | 11.90 | 11.00 | 3.70 | 4.60 | 2.30 |
| Max | 15.20 | 19.80 | 58.20 | 41.30 | 36.90 | 14.20 | 27.60 | 24.00 | 25.60 | 11.90 | 14.30 | 12.90 | 13.10 | 13.90 | 14.40 | 12.20 | 11.10 | 3.80 | 5.00 | 4.30 |
| Mean | 14.99 | 19.51 | 56.02 | 37.30 | 34.16 | 13.43 | 25.53 | 19.52 | 22.40 | 9.77 | 12.79 | 10.94 | 10.32 | 12.08 | 9.75 | 9.61 | 9.64 | 1.85 | 2.47 | 0.20 |
| SD | 0.22 | 0.37 | 0.87 | 1.54 | 1.08 | 0.38 | 0.63 | 1.09 | 0.98 | 0.57 | 0.78 | 0.74 | 0.92 | 0.76 | 0.94 | 0.94 | 0.59 | 0.75 | 0.93 | 1.08 |
| Coefficient of Variation % | 1.49 | 1.90 | 1.55 | 4.14 | 3.16 | 2.83 | 2.47 | 5.56 | 4.38 | 5.87 | 6.55 | 6.80 | 8.90 | 6.27 | 9.66 | 9.74 | 6.22 | | | |
| No of Survey Subjects | 209 | 209 | 209 | 209 | 209 | 209 | 208 | 208 | 209 | 209 | 209 | 209 | 209 | 209 | 208 | 209 | 209 | 209 | 209 | 208 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 33 PART 2

SIZE ROLL REFERENCE L CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD BREADTH
 NUMBER OF SIZES 6
 SIZE 2 CONTROL MEASUREMENT RANGES 18.00 TO 19.89 HEAD LENGTH
15.30 TO 16.39 HEAD BREADTH

73

| | HEAD BREADTH | | HEAD LENGTH | | HEAD CIRCUMFERENCE | | NECK CIRCUMFERENCE | | BYPASSION CORONAL ARC | | BYPASSION DIAMETER | | MAX HEAD DIAGONAL FROM MENTON | | MENTON TO BACK OF HEAD | | MENTON TO VERTEX | | TRAGION TO BACK OF HEAD | | TRAGION TO VERTEX | | PUPIL TO VERTEX | | NASION TO VERTEX | | MENTON TO NASION | | TRAGION TO MENTON HORIZONTAL | | TRAGION TO MENTON VERTICAL | | TRAGION TO BROU RIDGE HORIZONTAL | | TRAGION TO PUPIL VERTICAL | | TRAGION TO NASION VERTICAL | | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | |
|--------------------------|--------------|-------|-------------|-------|--------------------|-------|--------------------|-------|-----------------------|-------|--------------------|-------|-------------------------------|-------|------------------------|-------|------------------|------|-------------------------|-------|-------------------|-----|-----------------|-----|------------------|-----|------------------|-----|------------------------------|-----|----------------------------|-----|----------------------------------|-----|---------------------------|-----|----------------------------|-----|--|-----|
| Min | 15.30 | 50 | 18.00 | 3 | 54.30 | 2 | 33.80 | 1 | 32.00 | 2 | 12.60 | 1 | 24.20 | 4 | 16.00 | 1 | 19.10 | 1 | 8.00 | 2 | 9.80 | 1 | 8.50 | 1 | 7.50 | 1 | 10.00 | 1 | 6.50 | 1 | 7.00 | 1 | 6.20 | 1 | -1.00 | 1 | -0.40 | 1 | -2.90 | 1 |
| Min + 1 Measurement | 15.40 | 59 | 18.10 | 3 | 54.40 | 2 | 33.40 | 1 | 32.30 | 1 | 12.70 | 2 | 24.40 | 3 | 16.40 | 1 | 19.20 | 1 | 8.20 | 1 | 11.20 | 1 | 8.60 | 2 | 7.80 | 1 | 10.20 | 1 | 6.60 | 1 | 7.10 | 1 | 6.70 | 1 | -0.40 | 1 | -0.20 | 1 | -2.40 | 1 |
| Min + 2 Measurement | 15.50 | 59 | 18.20 | 3 | 54.60 | 1 | 34.00 | 2 | 32.60 | 2 | 12.80 | 1 | 24.50 | 2 | 17.20 | 2 | 20.30 | 2 | 8.30 | 1 | 11.30 | 3 | 8.80 | 1 | 8.00 | 2 | 10.40 | 1 | 7.10 | 1 | 7.20 | 1 | 7.70 | 1 | -0.10 | 1 | -0.10 | 1 | -2.30 | 1 |
| Min + 3 Measurement | 15.60 | 80 | 18.30 | 3 | 54.70 | 1 | 34.30 | 3 | 32.70 | 2 | 12.90 | 6 | 24.60 | 8 | 17.50 | 1 | 20.40 | 4 | 8.50 | 3 | 11.40 | 1 | 9.00 | 1 | 8.10 | 1 | 10.50 | 1 | 7.40 | 1 | 7.30 | 2 | 7.80 | 1 | 0.00 | 2 | 0.10 | 1 | -2.20 | 3 |
| Min + 4 Measurement | 15.70 | 62 | 18.40 | 7 | 54.80 | 1 | 34.40 | 2 | 32.80 | 1 | 13.00 | 6 | 24.70 | 13 | 17.40 | 2 | 20.60 | 1 | 8.60 | 9 | 11.60 | 5 | 9.20 | 4 | 8.20 | 3 | 10.60 | 2 | 7.70 | 2 | 7.40 | 1 | 8.00 | 2 | 0.10 | 4 | 0.20 | 3 | -2.10 | 1 |
| 1st File | 15.50 | 18.11 | 54.73 | 34.23 | 32.59 | 12.84 | 24.35 | 17.56 | 20.36 | 9.45 | 11.41 | 9.06 | 8.14 | 10.61 | 7.71 | 7.42 | 8.01 | 0.03 | 0.18 | -2.18 | | | | | | | | | | | | | | | | | | | | |
| 2nd File | 15.30 | 18.31 | 54.42 | 34.63 | 32.48 | 12.94 | 24.54 | 17.51 | 20.78 | 9.56 | 11.66 | 9.26 | 8.35 | 10.88 | 7.93 | 7.78 | 8.13 | 0.16 | 0.51 | -1.84 | | | | | | | | | | | | | | | | | | | | |
| 3rd File | 15.30 | 18.40 | 55.00 | 34.93 | 33.15 | 13.04 | 24.61 | 17.60 | 20.98 | 9.69 | 11.89 | 9.38 | 8.57 | 10.98 | 8.08 | 7.90 | 8.24 | 0.24 | 0.64 | -1.63 | | | | | | | | | | | | | | | | | | | | |
| 5th File | 15.30 | 18.55 | 55.31 | 35.37 | 33.95 | 13.12 | 24.71 | 17.82 | 21.15 | 9.78 | 11.97 | 9.49 | 8.94 | 11.10 | 8.26 | 8.18 | 8.43 | 0.45 | 0.87 | -1.46 | | | | | | | | | | | | | | | | | | | | |
| 50th File | 15.49 | 19.34 | 56.93 | 37.80 | 35.09 | 13.83 | 25.85 | 19.58 | 22.66 | 9.77 | 12.43 | 11.06 | 10.45 | 12.12 | 9.77 | 9.04 | 9.51 | 1.85 | 2.48 | 0.22 | | | | | | | | | | | | | | | | | | | | |
| 95 File | 16.21 | 19.77 | 58.24 | 40.83 | 36.91 | 14.47 | 26.88 | 21.30 | 24.13 | 10.77 | 13.98 | 12.55 | 12.08 | 13.21 | 11.16 | 11.07 | 10.44 | 3.16 | 4.04 | 1.89 | | | | | | | | | | | | | | | | | | | | |
| 97 File | 16.25 | 19.78 | 58.34 | 40.80 | 37.15 | 14.57 | 26.99 | 21.53 | 24.33 | 10.84 | 14.10 | 12.69 | 12.21 | 13.40 | 11.37 | 11.30 | 10.57 | 3.34 | 4.25 | 2.31 | | | | | | | | | | | | | | | | | | | | |
| 98 File | 16.27 | 19.79 | 58.55 | 40.84 | 37.42 | 14.71 | 27.15 | 21.75 | 24.44 | 11.02 | 14.17 | 12.77 | 12.44 | 13.51 | 11.55 | 11.47 | 10.84 | 3.53 | 4.52 | 2.51 | | | | | | | | | | | | | | | | | | | | |
| 99 File | 16.28 | 19.79 | 58.72 | 41.39 | 37.67 | 14.80 | 27.47 | 21.94 | 24.83 | 11.19 | 14.34 | 12.96 | 12.59 | 13.69 | 11.83 | 11.74 | 10.71 | 3.72 | 4.69 | 2.69 | | | | | | | | | | | | | | | | | | | | |
| Max - 4 Measurement | 15.90 | 52 | 19.40 | 84 | 53.60 | 3 | 41.50 | 1 | 37.80 | 2 | 14.70 | 3 | 27.40 | 1 | 21.90 | 4 | 24.50 | 4 | 11.30 | 1 | 14.30 | 3 | 12.80 | 6 | 12.60 | 4 | 13.70 | 2 | 11.70 | 2 | 11.80 | 2 | 10.60 | 8 | 3.80 | 3 | 4.70 | 2 | 2.80 | 2 |
| Max - 3 Measurement | 16.00 | 59 | 19.50 | 54 | 53.70 | 4 | 41.60 | 1 | 38.00 | 1 | 14.80 | 7 | 27.50 | 1 | 22.00 | 2 | 24.70 | 2 | 11.40 | 2 | 14.40 | 2 | 12.90 | 3 | 12.70 | 1 | 13.90 | 2 | 12.00 | 4 | 11.90 | 2 | 10.70 | 9 | 4.00 | 1 | 4.90 | 2 | 2.90 | 1 |
| Max - 2 Measurement | 16.10 | 50 | 19.60 | 97 | 53.80 | 4 | 41.90 | 1 | 38.20 | 2 | 15.00 | 2 | 27.60 | 2 | 22.20 | 1 | 24.80 | 1 | 11.50 | 1 | 14.50 | 1 | 13.00 | 3 | 12.80 | 1 | 14.00 | 2 | 12.20 | 2 | 12.00 | 1 | 10.80 | 5 | 4.10 | 1 | 5.00 | 2 | 3.00 | 1 |
| Max - 1 Measurement | 16.20 | 46 | 19.70 | 50 | 53.40 | 2 | 42.10 | 2 | 38.50 | 1 | 15.10 | 1 | 27.70 | 2 | 22.30 | 3 | 25.00 | 5 | 12.70 | 1 | 14.60 | 3 | 13.10 | 2 | 13.00 | 3 | 14.10 | 1 | 12.70 | 1 | 12.60 | 1 | 11.10 | 1 | 4.20 | 1 | 5.10 | 1 | 3.00 | 1 |
| Max | 16.30 | 36 | 19.80 | 99 | 54.00 | 1 | 42.70 | 1 | 39.20 | 1 | 15.20 | 3 | 27.80 | 2 | 23.60 | 1 | 21.10 | 2 | 13.00 | 1 | 15.00 | 1 | 13.30 | 3 | 13.60 | 1 | 14.20 | 1 | 13.20 | 1 | 13.40 | 1 | 11.20 | 1 | 4.40 | 1 | 5.60 | 1 | 4.00 | 1 |
| Mean | 15.76 | 19.37 | 56.84 | 37.81 | 35.18 | 13.88 | 25.89 | 19.63 | 22.68 | 9.84 | 12.99 | 11.12 | 10.49 | 12.19 | 9.78 | 9.69 | 9.53 | 1.86 | 2.49 | 0.26 | | | | | | | | | | | | | | | | | | | | |
| SD | 0.30 | 0.88 | 0.92 | 1.56 | 1.10 | 0.41 | 0.66 | 1.05 | 0.92 | 0.62 | 0.64 | 0.84 | 0.97 | 0.65 | 0.91 | 0.89 | 0.61 | 0.81 | 0.95 | 1.02 | | | | | | | | | | | | | | | | | | | | |
| Coefficient of Variation | 1.89 | 1.94 | 1.61 | 4.14 | 3.11 | 2.97 | 2.53 | 5.34 | 4.04 | 6.29 | 4.89 | 7.56 | 9.27 | 5.30 | 9.29 | 9.21 | 6.43 | | | | | | | | | | | | | | | | | | | | | | | |
| No of Survey Subjects | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 | 626 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 33 PART 3

SIZE ROLL REFERENCE L CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD BREADTH
 NUMBER OF SIZES 6
 SIZE 3 CONTROL MEASUREMENT RANGES 18.00 TO 19.89 HEAD LENGTH
16.40 TO 17.50 HEAD BREADTH

| | HEAD BREADTH | | | HEAD LENGTH | | | HEAD CIRCUMFERENCE | | | NECK CIRCUMFERENCE | | | BITRAGON CORONAL ARC | | | BITRAGON DIAMETER | | | MAX HEAD DIAGONAL FROM MENTON | | | MENTON TO BACK OF HEAD | | | MENTON TO VERTEX | | | TRAGON TO BACK OF HEAD | | | TRAGON TO VERTEX | | | PUPIL TO VERTEX | | | NASION TO VERTEX | | | MENTON TO NASION | | | TRAGON TO MENTON HORIZONTAL | | | TRAGON TO MENTON VERTICAL | | | TRAGON TO BROW RIDGE HORIZONTAL | | | TRAGON TO PUPIL VERTICAL | | | TRAGON TO NASION VERTICAL | | | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | | |
|--------------------------|--------------|-------|-------|-------------|-------|-------|--------------------|-------|-------|--------------------|-------|-------|----------------------|-------|-------|-------------------|-------|------|-------------------------------|-------|-------|------------------------|-------|---|------------------|----|-------|------------------------|-------|---|------------------|---|-------|-----------------|------|---|------------------|---|-------|------------------|--|--|-----------------------------|--|--|---------------------------|--|--|---------------------------------|--|--|--------------------------|--|--|---------------------------|--|--|--|--|--|
| Min | 16.40 | 33 | 18.30 | 1 | 55.60 | 1 | 34.90 | 1 | 33.50 | 1 | 13.40 | 3 | 25.00 | 3 | 17.40 | 1 | 20.40 | 2 | 8.60 | 1 | 11.40 | 1 | 9.40 | 1 | 8.10 | 1 | 10.20 | 1 | 7.80 | 1 | 7.00 | 1 | 8.00 | 2 | 0.50 | 1 | 0.80 | 2 | -1.10 | 1 | | | | | | | | | | | | | | | | | | | | |
| Min + 1 Measurement | 16.50 | 20 | 18.40 | 2 | 55.40 | 1 | 35.40 | 1 | 33.40 | 1 | 13.50 | 2 | 25.10 | 1 | 17.60 | 2 | 20.50 | 1 | 8.70 | 1 | 11.50 | 1 | 9.70 | 2 | 8.60 | 2 | 10.40 | 3 | 8.00 | 1 | 7.50 | 1 | 8.40 | 4 | 0.70 | 3 | 1.00 | 1 | -1.20 | 3 | | | | | | | | | | | | | | | | | | | | |
| Min + 2 Measurement | 16.60 | 19 | 18.50 | 1 | 56.10 | 1 | 35.50 | 2 | 34.20 | 1 | 13.60 | 1 | 25.20 | 7 | 18.30 | 1 | 20.60 | 1 | 8.80 | 5 | 11.60 | 4 | 9.80 | 4 | 9.40 | 1 | 11.00 | 2 | 8.20 | 1 | 8.00 | 1 | 8.50 | 3 | 0.80 | 3 | 1.20 | 4 | -1.00 | 2 | | | | | | | | | | | | | | | | | | | | |
| Min + 3 Measurement | 16.70 | 6 | 18.60 | 1 | 56.20 | 1 | 35.50 | 2 | 34.30 | 2 | 13.70 | 1 | 25.30 | 2 | 18.40 | 6 | 20.70 | 1 | 8.90 | 2 | 12.00 | 1 | 9.90 | 1 | 9.00 | 1 | 11.10 | 1 | 8.50 | 3 | 8.20 | 3 | 4.60 | 2 | 0.40 | 2 | 1.30 | 2 | -0.80 | 5 | | | | | | | | | | | | | | | | | | | | |
| Min + 4 Measurement | 16.80 | 14 | 18.80 | 4 | 56.40 | 6 | 35.40 | 1 | 34.50 | 2 | 13.80 | 4 | 25.40 | 8 | 18.50 | 1 | 20.80 | 1 | 9.00 | 1 | 12.10 | 1 | 10.00 | 3 | 9.10 | 1 | 11.20 | 2 | 8.60 | 3 | 8.30 | 2 | 8.70 | 1 | 1.00 | 7 | 1.40 | 1 | -0.70 | 1 | | | | | | | | | | | | | | | | | | | | |
| 1st File | 16.40 | 18.30 | 55.62 | 34.94 | 33.53 | 13.40 | 25.00 | 17.41 | 20.40 | 8.61 | 11.43 | 9.41 | 8.12 | 10.22 | 7.82 | 7.00 | 8.00 | 0.51 | 0.80 | -2.08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2nd File | 16.40 | 18.36 | 55.93 | 35.41 | 33.45 | 13.40 | 25.00 | 17.52 | 20.42 | 8.70 | 11.80 | 9.57 | 8.34 | 10.47 | 8.03 | 7.93 | 8.02 | 0.58 | 0.83 | -1.75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3rd File | 16.40 | 18.42 | 56.12 | 35.46 | 34.21 | 13.41 | 25.02 | 17.77 | 20.52 | 8.72 | 11.82 | 9.71 | 8.67 | 10.72 | 8.22 | 8.02 | 8.12 | 0.65 | 1.01 | -1.43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5th File | 16.40 | 18.62 | 56.25 | 35.71 | 34.34 | 13.54 | 25.12 | 18.82 | 20.78 | 8.77 | 11.87 | 9.76 | 9.04 | 10.97 | 8.44 | 8.16 | 8.34 | 0.75 | 1.12 | -1.06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50th File | 16.51 | 19.34 | 57.50 | 38.08 | 36.00 | 14.28 | 25.97 | 19.76 | 22.61 | 9.78 | 12.40 | 10.98 | 10.30 | 12.20 | 9.87 | 9.73 | 9.47 | 1.80 | 2.54 | 0.28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 95 File | 17.02 | 19.70 | 59.19 | 41.27 | 38.18 | 15.07 | 26.98 | 21.16 | 24.04 | 10.79 | 14.03 | 12.34 | 11.99 | 13.26 | 11.06 | 10.82 | 10.43 | 2.89 | 3.76 | 1.78 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 97 File | 17.04 | 19.75 | 59.39 | 41.58 | 38.29 | 15.14 | 27.19 | 21.48 | 24.18 | 10.98 | 14.18 | 12.48 | 12.09 | 13.34 | 11.34 | 10.84 | 10.54 | 3.08 | 4.15 | 2.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 98 File | 17.15 | 19.75 | 59.48 | 41.68 | 38.34 | 15.19 | 27.28 | 21.75 | 24.28 | 11.13 | 14.45 | 12.54 | 12.14 | 13.48 | 11.39 | 10.98 | 10.54 | 3.44 | 4.37 | 2.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 99 File | 17.29 | 19.79 | 59.59 | 41.74 | 38.40 | 15.24 | 27.35 | 21.85 | 24.67 | 11.24 | 14.59 | 12.60 | 12.20 | 13.59 | 11.59 | 11.04 | 10.64 | 3.54 | 4.53 | 2.43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max - 4 Measurement | 17.00 | 3 | 19.40 | 12 | 59.30 | 1 | 41.30 | 3 | 38.10 | 1 | 15.00 | 6 | 27.00 | 2 | 21.10 | 1 | 24.00 | 1 | 10.70 | 3 | 14.10 | 2 | 12.20 | 2 | 11.40 | 2 | 13.30 | 1 | 11.10 | 1 | 10.80 | 4 | 10.40 | 2 | 3.00 | 1 | 3.80 | 1 | 1.70 | 2 | | | | | | | | | | | | | | | | | | | | |
| Max - 3 Measurement | 17.10 | 3 | 19.50 | 15 | 59.40 | 1 | 41.50 | 1 | 38.20 | 2 | 15.10 | 4 | 27.10 | 1 | 21.40 | 1 | 24.20 | 3 | 10.80 | 4 | 14.20 | 1 | 12.30 | 3 | 12.00 | 13 | 13.40 | 2 | 11.30 | 1 | 10.40 | 3 | 10.50 | 2 | 3.10 | 1 | 4.00 | 1 | 1.80 | 2 | | | | | | | | | | | | | | | | | | | | |
| Max - 2 Measurement | 17.20 | 1 | 19.60 | 16 | 59.50 | 1 | 41.60 | 1 | 38.30 | 2 | 15.20 | 2 | 27.20 | 1 | 21.50 | 1 | 24.30 | 1 | 11.00 | 2 | 14.30 | 1 | 12.50 | 3 | 12.10 | 2 | 13.50 | 1 | 11.40 | 2 | 11.00 | 1 | 10.60 | 2 | 3.50 | 1 | 4.20 | 1 | 1.90 | 1 | | | | | | | | | | | | | | | | | | | | |
| Max - 1 Measurement | 17.30 | 1 | 19.70 | 8 | 59.60 | 1 | 41.80 | 2 | 38.40 | 2 | 15.30 | 1 | 27.30 | 1 | 21.80 | 1 | 24.70 | 1 | 11.30 | 2 | 14.60 | 1 | 12.60 | 2 | 12.20 | 2 | 13.60 | 1 | 11.60 | 1 | 11.70 | 1 | 10.70 | 1 | 3.60 | 1 | 4.60 | 2 | 2.30 | 1 | | | | | | | | | | | | | | | | | | | | |
| Max | 17.40 | 1 | 19.80 | 16 | 59.40 | 1 | 42.50 | 1 | 38.70 | 1 | 15.70 | 1 | 27.40 | 2 | 24.40 | 1 | 11.60 | 1 | 15.00 | 1 | 12.80 | 1 | 12.50 | 1 | 13.80 | 1 | 12.00 | 1 | 11.80 | 1 | 10.80 | 1 | 3.70 | 1 | 4.80 | 1 | 2.50 | 3 | | | | | | | | | | | | | | | | | | | | | | |
| Mean | 16.62 | 19.37 | 57.66 | 33.42 | 36.44 | 14.38 | 26.07 | 19.80 | 22.63 | 9.40 | 12.95 | 11.05 | 10.41 | 12.22 | 9.41 | 9.65 | 9.47 | 1.90 | 2.58 | 0.43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SD | 0.23 | 0.34 | 0.90 | 1.64 | 1.07 | 0.44 | 0.97 | 0.45 | 0.88 | 0.61 | 0.65 | 0.76 | 0.88 | 0.66 | 0.78 | 0.60 | 0.60 | 0.72 | 0.84 | 0.57 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coefficient of Variation | 1.35 | 1.76 | 1.56 | 4.27 | 2.95 | 3.04 | 2.26 | 4.70 | 3.94 | 6.15 | 5.02 | 6.98 | 8.47 | 5.25 | 7.82 | 6.44 | 6.24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No of Survey Subjects | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 33 PART 4

SIZE ROLL REFERENCE L CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD BREADTH
 NUMBER OF SIZES ... 6
 SIZE 4 CONTROL MEASUREMENT RANGES 19.90 TO 21.80 HEAD LENGTH
14.20 TO 15.29 HEAD BREADTH

75

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BYTRAGON CORONAL ARC | BYTRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|--------------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.20 | 14.90 | 55.00 | 34.10 | 31.10 | 12.40 | 24.60 | 17.90 | 20.10 | 8.90 | 11.40 | 8.40 | 9.20 | 4.30 | 7.70 | 6.50 | 8.40 | 0.50 | 0.30 | -2.50 |
| Min + 1 Measurement | 14.30 | 15.00 | 55.40 | 34.40 | 32.30 | 12.70 | 24.70 | 17.90 | 20.20 | 9.20 | 11.50 | 8.50 | 9.50 | 4.60 | 8.00 | 7.50 | 8.70 | 0.40 | 0.40 | -2.20 |
| Min + 2 Measurement | 14.50 | 15.20 | 55.70 | 34.90 | 32.40 | 12.80 | 24.80 | 18.30 | 20.80 | 9.40 | 11.60 | 8.60 | 9.70 | 4.90 | 8.10 | 8.10 | 8.80 | 0.50 | 0.60 | -1.70 |
| Min + 3 Measurement | 14.60 | 15.40 | 55.80 | 35.00 | 32.60 | 12.90 | 24.90 | 18.40 | 21.10 | 9.60 | 11.70 | 8.70 | 9.80 | 5.20 | 8.20 | 8.30 | 9.00 | 0.60 | 0.70 | -1.60 |
| Min + 4 Measurement | 14.70 | 15.50 | 56.00 | 35.30 | 32.70 | 13.00 | 25.00 | 19.50 | 21.30 | 9.70 | 11.80 | 8.80 | 10.00 | 5.40 | 8.30 | 8.40 | 9.10 | 0.70 | 0.80 | -1.40 |
| 1st Size | 14.21 | 14.90 | 55.14 | 34.21 | 31.52 | 12.45 | 24.64 | 17.95 | 20.44 | 9.01 | 11.44 | 8.41 | 9.25 | 4.35 | 7.75 | 6.51 | 8.41 | 0.51 | 0.31 | -2.45 |
| 2nd Size | 14.26 | 14.90 | 55.47 | 34.75 | 32.37 | 12.66 | 24.74 | 18.18 | 20.41 | 9.25 | 11.57 | 8.47 | 9.45 | 4.61 | 7.96 | 7.92 | 8.73 | 0.36 | 0.47 | -2.24 |
| 3rd Size | 14.30 | 14.90 | 55.60 | 35.02 | 32.60 | 12.75 | 24.81 | 18.41 | 20.81 | 9.34 | 11.70 | 8.51 | 9.60 | 4.71 | 8.10 | 8.31 | 8.80 | 0.46 | 0.61 | -2.10 |
| 5th Size | 14.41 | 14.90 | 55.85 | 35.48 | 32.79 | 12.85 | 24.94 | 18.59 | 21.25 | 9.44 | 11.79 | 8.74 | 9.84 | 4.98 | 8.35 | 8.46 | 8.92 | 0.52 | 0.75 | -1.75 |
| 50th Size | 14.98 | 15.18 | 57.40 | 37.49 | 34.52 | 13.40 | 26.18 | 20.52 | 22.86 | 10.23 | 12.97 | 11.18 | 10.65 | 12.18 | 9.94 | 9.84 | 11.93 | 1.77 | 2.31 | -0.05 |
| 95 Size | 15.18 | 15.18 | 59.11 | 40.36 | 35.96 | 14.04 | 27.31 | 21.85 | 24.28 | 11.24 | 13.91 | 12.51 | 11.99 | 13.56 | 11.34 | 11.43 | 10.74 | 3.01 | 3.71 | 1.36 |
| 97 Size | 15.19 | 15.18 | 59.30 | 40.85 | 36.19 | 14.10 | 27.40 | 22.05 | 24.40 | 11.33 | 14.09 | 12.60 | 12.24 | 13.75 | 11.45 | 11.63 | 10.99 | 3.10 | 3.89 | 1.54 |
| 98 Size | 15.19 | 15.18 | 59.63 | 40.95 | 36.43 | 14.14 | 27.53 | 22.13 | 24.69 | 11.38 | 14.17 | 12.67 | 12.46 | 13.86 | 11.52 | 11.73 | 11.12 | 3.23 | 4.03 | 1.79 |
| 99 Size | 15.20 | 15.18 | 60.04 | 41.07 | 36.57 | 14.19 | 27.67 | 22.46 | 24.97 | 11.47 | 14.33 | 12.77 | 12.67 | 14.07 | 11.58 | 11.85 | 11.13 | 3.37 | 4.17 | 2.07 |
| Max - 4 Measurement | 14.80 | 15.00 | 59.30 | 40.80 | 36.10 | 13.90 | 27.40 | 22.00 | 24.40 | 11.20 | 13.90 | 12.50 | 12.10 | 13.70 | 11.50 | 11.60 | 10.90 | 3.00 | 3.80 | 1.40 |
| Max - 3 Measurement | 14.90 | 15.10 | 59.60 | 40.90 | 36.20 | 14.00 | 27.50 | 22.10 | 24.60 | 11.30 | 14.00 | 12.60 | 12.40 | 13.90 | 11.60 | 11.70 | 11.00 | 3.10 | 3.90 | 1.60 |
| Max - 2 Measurement | 15.00 | 15.20 | 59.70 | 41.00 | 36.40 | 14.10 | 27.60 | 22.20 | 24.90 | 11.40 | 14.10 | 12.70 | 12.60 | 14.00 | 11.70 | 11.80 | 11.10 | 3.20 | 4.10 | 1.70 |
| Max - 1 Measurement | 15.10 | 15.40 | 60.50 | 41.10 | 36.50 | 14.20 | 27.70 | 22.60 | 25.00 | 11.50 | 14.20 | 12.80 | 12.70 | 14.10 | 11.80 | 11.90 | 11.20 | 3.40 | 4.20 | 2.00 |
| Max | 15.20 | 15.50 | 60.40 | 42.30 | 36.70 | 14.30 | 27.80 | 22.80 | 25.20 | 11.60 | 14.30 | 13.00 | 13.00 | 14.20 | 11.90 | 12.00 | 11.40 | 3.80 | 4.40 | 2.20 |
| Mean | 14.98 | 15.18 | 57.45 | 37.69 | 34.56 | 13.47 | 26.41 | 20.51 | 22.90 | 10.37 | 12.99 | 11.19 | 10.62 | 12.28 | 9.94 | 9.91 | 11.94 | 1.80 | 2.37 | 0.00 |
| SD | 0.24 | 0.37 | 0.96 | 1.51 | 1.03 | 0.38 | 0.67 | 0.97 | 0.45 | 0.57 | 0.62 | 0.81 | 0.46 | 0.74 | 0.57 | 0.92 | 0.53 | 0.70 | 0.91 | 0.94 |
| Coefficient of Variation % | 1.61 | 1.90 | 1.67 | 4.01 | 2.99 | 2.85 | 2.57 | 4.77 | 4.17 | 5.49 | 4.76 | 7.28 | 4.05 | 6.45 | 5.76 | 9.29 | 5.91 | | | |
| No of Survey Subjects | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 33 PART 5

SIZE ROLL REFERENCE L CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD BREADTH
 NUMBER OF SIZES 6
 SIZE .5 CONTROL MEASUREMENT RANGES 19.90 TO 21.80 HEAD LENGTH
 15.30 TO 16.39 HEAD BREADTH

76

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15 30 | 19 40 | 55 40 | 35 20 | 32 10 | 12 70 | 24 30 | 17 10 | 19 40 | 8 50 | 9 50 | 8 40 | 5 30 | 8 60 | 7 10 | 6 60 | 6 50 | -2 10 | -1 70 | -3 10 |
| Min + 1 Measurement | 15 40 | 20 00 | 56 00 | 36 20 | 32 40 | 12 80 | 24 40 | 17 20 | 20 00 | 8 70 | 10 00 | 9 40 | 5 40 | 10 00 | 7 20 | 7 70 | 7 40 | -1 60 | -1 10 | -2 40 |
| Min + 2 Measurement | 15 50 | 20 10 | 56 10 | 36 30 | 32 60 | 12 90 | 24 50 | 17 40 | 21 10 | 9 00 | 11 00 | 9 30 | 5 50 | 10 10 | 7 30 | 7 80 | 7 60 | -1 40 | -1 00 | -2 70 |
| Min + 3 Measurement | 15 60 | 20 20 | 56 30 | 36 40 | 32 70 | 13 00 | 25 00 | 18 00 | 22 00 | 9 10 | 11 30 | 9 40 | 6 00 | 10 50 | 7 40 | 7 90 | 7 70 | -1 20 | -8 20 | -2 40 |
| Min + 4 Measurement | 15 70 | 20 30 | 56 40 | 35 00 | 32 80 | 13 10 | 25 10 | 18 10 | 23 00 | 9 10 | 11 40 | 9 50 | 6 10 | 10 60 | 7 50 | 8 00 | 7 80 | -1 00 | -1 20 | -2 20 |
| 1st Size | 15 30 | 19 40 | 56 42 | 34 56 | 33 02 | 12 42 | 25 10 | 18 02 | 20 82 | 9 06 | 11 43 | 9 52 | 5 52 | 10 73 | 7 71 | 7 41 | 8 51 | -1 24 | -1 16 | -2 36 |
| 2nd Size | 15 30 | 19 40 | 56 57 | 35 22 | 33 19 | 13 01 | 25 22 | 18 19 | 21 14 | 9 17 | 11 72 | 9 72 | 6 82 | 11 01 | 7 94 | 8 21 | 8 61 | -1 01 | -1 34 | -2 13 |
| 3rd Size | 15 30 | 19 40 | 56 71 | 35 47 | 33 44 | 13 08 | 25 32 | 18 37 | 21 34 | 9 24 | 11 91 | 9 83 | 7 94 | 11 13 | 8 11 | 8 35 | 8 78 | -1 05 | -1 47 | -1 91 |
| 5th Size | 15 30 | 19 40 | 56 88 | 35 78 | 33 64 | 13 19 | 25 48 | 18 60 | 21 64 | 9 33 | 12 01 | 10 00 | 9 12 | 11 30 | 8 40 | 8 58 | 9 92 | -1 34 | -1 74 | -1 68 |
| 50th Size | 15 74 | 20 26 | 58 34 | 38 36 | 35 45 | 13 84 | 26 43 | 20 18 | 23 17 | 10 35 | 13 08 | 11 39 | 10 74 | 12 38 | 9 80 | 10 06 | 9 95 | 1 04 | 2 30 | -1 13 |
| 95 Size | 16 21 | 21 05 | 60 02 | 41 21 | 37 29 | 14 57 | 27 67 | 21 80 | 24 77 | 11 39 | 13 97 | 12 65 | 12 33 | 13 53 | 11 32 | 11 65 | 10 88 | 2 42 | 3 81 | 1 54 |
| 97 Size | 16 25 | 21 17 | 60 33 | 41 61 | 37 52 | 14 68 | 27 78 | 21 98 | 25 12 | 11 59 | 14 13 | 12 85 | 12 50 | 13 68 | 11 50 | 11 89 | 11 05 | 3 09 | 3 96 | 1 59 |
| 98 Size | 16 27 | 21 31 | 60 55 | 41 76 | 37 65 | 14 78 | 27 84 | 22 13 | 25 22 | 11 68 | 14 23 | 12 93 | 12 54 | 13 85 | 11 62 | 11 94 | 11 16 | 3 19 | 4 06 | 1 85 |
| 99 Size | 16 28 | 21 44 | 60 89 | 42 56 | 38 08 | 14 96 | 28 16 | 22 45 | 25 34 | 11 86 | 14 49 | 13 00 | 12 78 | 14 04 | 11 74 | 12 33 | 11 33 | 3 44 | 4 21 | 2 49 |
| Max - 4 Measurement | 15 90 | 21 40 | 60 40 | 43 50 | 38 50 | 14 90 | 28 20 | 22 40 | 25 30 | 11 90 | 14 60 | 12 40 | 12 70 | 14 00 | 11 40 | 12 40 | 11 20 | 3 00 | 4 10 | 2 40 |
| Max - 3 Measurement | 16 00 | 21 50 | 61 00 | 43 60 | 39 30 | 14 90 | 28 30 | 22 60 | 25 40 | 12 00 | 14 70 | 13 00 | 12 80 | 14 10 | 11 50 | 12 50 | 11 30 | 3 70 | 4 30 | 2 50 |
| Max - 2 Measurement | 16 10 | 21 60 | 61 10 | 43 70 | 39 40 | 15 00 | 28 40 | 22 70 | 25 50 | 12 10 | 14 80 | 13 10 | 12 90 | 14 20 | 11 60 | 12 60 | 11 40 | 3 50 | 4 40 | 2 60 |
| Max - 1 Measurement | 16 20 | 21 70 | 61 40 | 44 30 | 39 20 | 15 10 | 28 50 | 23 00 | 25 90 | 12 50 | 14 90 | 13 20 | 13 10 | 14 30 | 11 40 | 12 40 | 11 50 | 3 90 | 4 50 | 2 70 |
| Max | 16 30 | 21 80 | 61 50 | 44 80 | 39 30 | 15 20 | 29 00 | 23 30 | 26 20 | 13 10 | 15 00 | 13 40 | 13 00 | 15 50 | 11 40 | 12 40 | 11 70 | 3 40 | 5 00 | 3 20 |
| Mean | 15 33 | 20 33 | 58 42 | 35 44 | 35 52 | 13 95 | 26 52 | 20 24 | 23 24 | 10 41 | 13 09 | 11 41 | 10 74 | 12 45 | 9 34 | 10 14 | 9 97 | 1 63 | 2 30 | -1 09 |
| SD | 0 24 | 0 33 | 0 46 | 1 62 | 1 03 | 0 42 | 0 66 | 0 46 | 0 46 | 0 14 | 0 22 | 0 24 | 0 54 | 0 70 | 0 34 | 0 44 | 0 61 | 0 81 | 0 93 | 0 94 |
| Coefficient of Variation % | 1 30 | 1 35 | 1 64 | 4 21 | 3 05 | 3 03 | 2 44 | 4 73 | 4 12 | 1 10 | 1 76 | 1 84 | 5 05 | 5 65 | 3 93 | 4 24 | 6 03 | | | |
| No of Survey Subjects | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 | 724 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 33 PART 6

SIZE ROLL REFERENCE L CONTROL MEASUREMENTS 1ST HEAD LENGTH
 2ND HEAD BREADTH
 NUMBER OF SIZES 6
 SIZE 6 CONTROL MEASUREMENT RANGES 19-90 TO 21-80 HEAD LENGTH
16-40 TO 17-50 HEAD BREADTH

77

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 16 40 | 19 40 | 57 40 | 34 70 | 35 45 | 13 40 | 25 20 | 17 50 | 21 00 | 8 50 | 11 20 | 11 40 | 11 00 | 11 00 | 6 00 | 7 60 | 7 20 | -0 60 | -0 40 | -2 40 |
| Min + 1 Measurement | 16 50 | 20 00 | 57 50 | 35 50 | 35 70 | 13 50 | 25 50 | 17 40 | 21 40 | 9 10 | 11 30 | 11 00 | 11 00 | 11 20 | 7 40 | 7 70 | 7 70 | -0 50 | -0 30 | -2 30 |
| Min + 2 Measurement | 16 60 | 20 10 | 57 70 | 35 70 | 36 10 | 13 60 | 25 70 | 18 00 | 21 50 | 9 20 | 11 70 | 11 00 | 11 30 | 11 30 | 7 50 | 7 50 | 8 40 | -0 40 | 0 00 | -2 10 |
| Min + 3 Measurement | 16 70 | 20 20 | 57 80 | 35 90 | 36 20 | 13 70 | 25 80 | 18 20 | 21 60 | 9 30 | 11 80 | 11 00 | 11 40 | 11 40 | 7 80 | 8 30 | 9 50 | -0 10 | 0 20 | -2 00 |
| Min + 4 Measurement | 16 80 | 20 30 | 57 90 | 36 00 | 36 30 | 13 80 | 25 90 | 18 40 | 21 70 | 9 40 | 11 90 | 11 00 | 11 50 | 11 50 | 7 90 | 8 40 | 9 40 | 0 00 | 0 40 | -1 40 |
| 1st Size | 16 40 | 19 40 | 57 45 | 35 07 | 35 03 | 13 45 | 25 34 | 17 37 | 21 37 | 8 84 | 11 24 | 11 44 | 11 00 | 11 00 | 6 55 | 7 64 | 7 67 | -0 51 | -0 31 | -2 31 |
| 2nd Size | 16 40 | 19 40 | 57 54 | 35 54 | 36 14 | 13 54 | 25 53 | 17 40 | 21 54 | 9 04 | 11 73 | 11 04 | 11 24 | 11 24 | 7 36 | 8 23 | 8 35 | -0 11 | 0 17 | -2 08 |
| 3rd Size | 16 40 | 19 40 | 57 74 | 36 80 | 36 33 | 13 72 | 25 61 | 18 08 | 21 64 | 9 16 | 11 74 | 11 13 | 11 36 | 11 36 | 7 62 | 8 34 | 8 54 | 0 04 | 0 44 | -2 03 |
| 5th Size | 16 40 | 19 40 | 57 87 | 36 13 | 36 64 | 13 81 | 25 76 | 18 33 | 21 98 | 9 33 | 12 02 | 11 14 | 11 44 | 11 44 | 7 93 | 8 62 | 8 93 | 0 33 | 0 68 | -1 89 |
| 50th Size | 16 48 | 20 34 | 57 25 | 34 31 | 36 34 | 14 30 | 26 77 | 20 31 | 23 57 | 10 43 | 13 14 | 11 54 | 10 41 | 12 43 | 9 41 | 10 35 | 11 83 | 1 55 | 2 17 | -0 14 |
| 95 Size | 17 10 | 21 08 | 60 36 | 41 42 | 38 54 | 15 21 | 27 43 | 22 14 | 24 84 | 11 54 | 14 21 | 12 84 | 12 34 | 13 84 | 11 17 | 11 65 | 10 94 | 2 92 | 3 84 | 1 43 |
| 97 Size | 17 23 | 21 26 | 61 08 | 42 32 | 39 06 | 15 31 | 28 04 | 22 46 | 24 97 | 11 82 | 14 42 | 13 06 | 12 57 | 14 03 | 11 44 | 11 76 | 11 11 | 3 07 | 4 06 | 1 82 |
| 98 Size | 17 26 | 21 36 | 61 71 | 42 54 | 39 78 | 15 37 | 28 11 | 22 56 | 25 23 | 12 01 | 14 56 | 13 14 | 12 73 | 14 13 | 11 51 | 11 81 | 11 21 | 3 31 | 4 16 | 2 01 |
| 99 Size | 17 24 | 21 51 | 61 51 | 43 23 | 39 41 | 15 44 | 28 22 | 22 71 | 25 61 | 12 24 | 14 76 | 13 21 | 12 45 | 14 40 | 11 65 | 12 04 | 11 41 | 3 51 | 4 24 | 2 11 |
| Max - 4 Measurement | 17 00 | 21 20 | 61 40 | 42 30 | 39 70 | 15 10 | 28 00 | 22 40 | 24 90 | 11 90 | 14 50 | 13 00 | 12 60 | 13 40 | 11 40 | 11 80 | 11 20 | 3 30 | 4 10 | 1 90 |
| Max - 3 Measurement | 17 10 | 21 30 | 61 70 | 42 50 | 39 30 | 15 20 | 28 10 | 22 50 | 25 00 | 12 00 | 14 60 | 13 10 | 12 70 | 14 10 | 11 50 | 11 40 | 11 30 | 3 40 | 4 00 | 2 00 |
| Max - 2 Measurement | 17 20 | 21 40 | 62 00 | 42 90 | 39 40 | 15 30 | 28 20 | 22 60 | 25 40 | 12 20 | 14 70 | 13 20 | 12 40 | 14 30 | 11 60 | 12 00 | 11 40 | 3 50 | 4 10 | 2 10 |
| Max - 1 Measurement | 17 30 | 21 50 | 62 00 | 43 00 | 39 50 | 15 40 | 28 30 | 22 80 | 25 80 | 12 70 | 15 50 | 13 30 | 13 00 | 14 60 | 11 70 | 12 00 | 11 60 | 3 60 | 4 20 | 2 20 |
| Max | 17 40 | 21 70 | 62 40 | 44 20 | 40 40 | 15 50 | 28 60 | 23 00 | 26 20 | 13 00 | 15 60 | 13 50 | 13 20 | 14 70 | 11 90 | 12 00 | 11 90 | 4 10 | 4 30 | 3 10 |
| Mean | 16 62 | 20 44 | 57 37 | 34 25 | 36 55 | 14 44 | 26 33 | 20 35 | 23 55 | 10 54 | 13 22 | 11 53 | 10 44 | 12 61 | 11 34 | 10 33 | 11 40 | 1 65 | 2 28 | -0 04 |
| SD | 0 25 | 0 34 | 0 44 | 1 71 | 1 19 | 0 42 | 0 65 | 1 04 | 0 84 | 0 64 | 0 70 | 0 77 | 0 42 | 0 76 | 0 44 | 0 42 | 0 65 | 0 51 | 0 98 | 1 00 |
| Coefficient of Variation | 1 52 | 1 42 | 1 53 | 4 36 | 3 23 | 2 92 | 2 45 | 5 36 | 3 80 | 6 57 | 5 24 | 6 68 | 5 36 | 6 05 | 10 05 | 9 42 | 6 51 | | | |
| No of Survey Subjects | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 34 PART 1

SIZE ROLL REFERENCE M CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND HEAD LENGTH
 NUMBER OF SIZES 6
 SIZE 1 CONTROL MEASUREMENT RANGES 14.20 TO 15.89 HEAD BREADTH
18.00 TO 19.29 HEAD LENGTH

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | POPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | FRAGON TO MENTON HORIZONTAL | FRAGON TO MENTON VERTICAL | FRAGON TO BROW RIDGE HORIZONTAL | FRAGON TO POPIL VERTICAL | FRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.40 | 3 | 53.00 | 33.70 | 31.70 | 12.20 | 24.10 | 16.00 | 19.10 | 9.00 | 9.80 | 8.50 | 7.50 | 8.90 | 6.50 | 7.00 | 6.20 | 1.00 | -0.40 | -2.90 |
| Min + 1 Measurement | 14.50 | 4 | 53.20 | 33.90 | 32.00 | 12.60 | 24.20 | 16.40 | 19.60 | 9.20 | 10.00 | 8.80 | 7.80 | 9.00 | 6.60 | 7.10 | 7.70 | 1.10 | -0.30 | -2.70 |
| Min + 2 Measurement | 14.60 | 5 | 53.40 | 34.00 | 32.30 | 12.70 | 24.30 | 16.80 | 19.80 | 9.30 | 10.30 | 9.00 | 8.00 | 9.10 | 6.70 | 7.20 | 7.80 | 1.20 | -0.20 | -2.40 |
| Min + 3 Measurement | 14.70 | 6 | 53.60 | 34.30 | 32.60 | 12.80 | 24.40 | 17.20 | 20.00 | 9.50 | 10.60 | 9.20 | 8.20 | 9.20 | 6.80 | 7.30 | 8.00 | 1.30 | 0.20 | -2.00 |
| Min + 4 Measurement | 14.80 | 7 | 53.80 | 34.40 | 32.90 | 12.90 | 24.50 | 17.60 | 20.40 | 9.60 | 10.90 | 9.30 | 8.40 | 9.30 | 6.90 | 7.40 | 8.10 | 1.40 | 0.40 | -1.80 |
| 1st Size | 14.40 | 3 | 53.24 | 33.70 | 31.77 | 12.59 | 24.12 | 16.39 | 19.59 | 9.20 | 10.48 | 8.55 | 7.50 | 10.27 | 6.60 | 7.10 | 7.67 | 1.02 | -0.30 | -2.71 |
| 2nd Size | 14.52 | 4 | 53.39 | 34.00 | 31.92 | 12.65 | 24.17 | 16.78 | 19.80 | 9.30 | 10.59 | 8.74 | 7.90 | 10.55 | 6.78 | 7.25 | 7.90 | 1.05 | 0.19 | -2.41 |
| 3rd Size | 14.67 | 5 | 54.07 | 34.39 | 32.14 | 12.70 | 24.23 | 17.05 | 20.33 | 9.49 | 11.70 | 8.99 | 8.09 | 10.74 | 7.69 | 7.39 | 8.05 | 1.09 | 0.68 | -2.02 |
| 4th Size | 14.85 | 6 | 54.33 | 34.61 | 32.40 | 12.80 | 24.34 | 17.44 | 20.54 | 9.57 | 11.83 | 9.27 | 8.52 | 11.10 | 8.12 | 7.74 | 8.20 | 1.10 | 0.50 | -1.56 |
| 50th Size | 15.32 | 19 | 55.90 | 37.08 | 34.42 | 13.58 | 25.32 | 19.21 | 22.24 | 9.54 | 12.70 | 10.75 | 10.11 | 12.03 | 9.62 | 9.43 | 9.30 | 2.00 | 2.56 | 0.27 |
| 95 Size | 15.75 | 19 | 57.17 | 40.11 | 36.10 | 14.26 | 26.50 | 21.12 | 23.98 | 10.59 | 13.84 | 12.21 | 12.01 | 13.34 | 11.26 | 11.21 | 10.21 | 3.30 | 4.46 | 2.34 |
| 97 Size | 15.77 | 19 | 57.51 | 40.11 | 36.30 | 14.34 | 26.65 | 21.34 | 24.25 | 10.73 | 14.00 | 12.37 | 12.15 | 13.51 | 11.42 | 11.71 | 10.38 | 3.55 | 4.58 | 2.47 |
| 98 Size | 15.78 | 19 | 57.70 | 41.11 | 36.41 | 14.38 | 26.80 | 21.38 | 24.41 | 10.78 | 14.10 | 12.50 | 12.20 | 13.63 | 11.71 | 11.85 | 10.43 | 3.70 | 4.71 | 2.61 |
| 99 Size | 15.79 | 19 | 57.90 | 41.35 | 36.80 | 14.45 | 27.00 | 21.71 | 24.71 | 10.87 | 14.17 | 12.65 | 12.40 | 13.70 | 12.01 | 12.00 | 10.48 | 3.80 | 5.00 | 2.75 |
| Max - 4 Measurement | 15.40 | 21 | 57.60 | 40.70 | 36.40 | 14.20 | 26.70 | 21.30 | 24.40 | 10.60 | 13.90 | 12.40 | 12.10 | 13.50 | 11.60 | 11.30 | 10.20 | 3.00 | 4.70 | 2.50 |
| Max - 3 Measurement | 15.50 | 21 | 57.70 | 41.10 | 36.70 | 14.30 | 26.80 | 21.40 | 24.60 | 10.70 | 14.00 | 12.50 | 12.20 | 13.60 | 11.70 | 11.40 | 10.30 | 3.10 | 4.90 | 2.60 |
| Max - 2 Measurement | 15.60 | 21 | 57.90 | 41.30 | 36.80 | 14.40 | 27.00 | 21.70 | 24.70 | 10.80 | 14.10 | 12.60 | 12.40 | 13.70 | 11.80 | 11.50 | 10.40 | 3.20 | 5.00 | 2.70 |
| Max - 1 Measurement | 15.70 | 21 | 58.00 | 41.40 | 37.00 | 14.50 | 27.10 | 21.90 | 24.80 | 10.90 | 14.20 | 12.70 | 12.50 | 13.80 | 11.90 | 11.60 | 10.50 | 3.30 | 5.10 | 2.80 |
| Max | 15.80 | 21 | 58.00 | 41.40 | 37.00 | 14.50 | 27.10 | 21.90 | 24.80 | 10.90 | 14.20 | 12.70 | 12.50 | 13.80 | 11.90 | 11.60 | 10.50 | 3.30 | 5.10 | 2.80 |
| Mean | 15.32 | 18 | 55.53 | 37.30 | 34.47 | 13.00 | 25.39 | 19.28 | 22.30 | 9.61 | 12.74 | 10.74 | 10.19 | 12.12 | 9.67 | 9.52 | 9.29 | 1.99 | 2.61 | 0.39 |
| SD | 0.35 | 0.30 | 0.59 | 1.01 | 1.15 | 0.44 | 0.44 | 1.10 | 1.04 | 0.63 | 0.63 | 0.84 | 1.02 | 0.71 | 1.00 | 1.00 | 0.81 | 0.81 | 0.99 | 1.12 |
| Coefficient of Variation % | 2.31 | 1.54 | 1.05 | 2.70 | 3.33 | 3.25 | 2.51 | 5.72 | 4.66 | 6.63 | 4.95 | 7.82 | 9.99 | 5.99 | 10.52 | 10.52 | 6.64 | | | |
| No of Survey Subjects | 195 | 195 | 195 | 195 | 195 | 195 | 195 | 197 | 195 | 195 | 195 | 195 | 195 | 195 | 197 | 195 | 195 | 195 | 195 | 197 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 34 PART 2

SIZE ROLL REFERENCE M CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND HEAD LENGTH
 NUMBER OF SIZES 6
 SIZE 2 CONTROL MEASUREMENT RANGES 14.20 TO 15.89 HEAD BREADTH
19.30 TO 20.59 HEAD LENGTH

79

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|-------|----|-------|---|-------|---|-------|---|-------|---|-------|---|-------|----|-------|---|-------|---|-------|---|-----|--|
| Min | 14.20 | 2 | 14.30 | 45 | 54.90 | 3 | 33.20 | 1 | 31.60 | 2 | 12.30 | 1 | 23.70 | 1 | 17.10 | 1 | 19.50 | 1 | 8.30 | 1 | 10.90 | 1 | 3.40 | 2 | 8.00 | 1 | 4.30 | 1 | 7.10 | 1 | 6.60 | 1 | 7.40 | 1 | 0.60 | 1 | -0.30 | 1 | -3.10 | 1 | | |
| Min + 1 Measurement | 14.30 | 2 | 14.40 | 46 | 55.00 | 3 | 33.30 | 1 | 31.70 | 1 | 12.40 | 1 | 24.30 | 1 | 17.20 | 1 | 19.60 | 1 | 8.40 | 1 | 11.00 | 1 | 4.00 | 1 | 5.20 | 1 | 10.00 | 3 | 7.20 | 1 | 6.50 | 1 | 7.00 | 1 | -0.50 | 1 | -0.10 | 1 | -2.70 | 1 | | |
| Min + 2 Measurement | 14.40 | 2 | 14.50 | 46 | 55.10 | 3 | 34.00 | 1 | 31.80 | 1 | 12.50 | 1 | 24.40 | 2 | 17.40 | 2 | 19.80 | 1 | 8.50 | 1 | 11.30 | 2 | 4.20 | 3 | 5.50 | 2 | 10.10 | 1 | 7.70 | 1 | 7.00 | 2 | 3.10 | 1 | -0.10 | 2 | 0.00 | 1 | -1.70 | 1 | | |
| Min + 3 Measurement | 14.50 | 6 | 14.60 | 47 | 55.20 | 4 | 34.10 | 2 | 32.00 | 1 | 12.60 | 5 | 24.50 | 1 | 17.50 | 1 | 20.10 | 1 | 8.60 | 1 | 11.40 | 3 | 4.30 | 4 | 5.50 | 2 | 10.40 | 1 | 7.10 | 3 | 7.20 | 1 | 3.20 | 1 | 0.00 | 1 | 0.00 | 3 | -1.50 | 1 | | |
| Min + 4 Measurement | 14.60 | 16 | 14.70 | 50 | 55.30 | 2 | 34.20 | 2 | 32.10 | 1 | 12.70 | 5 | 24.60 | 5 | 17.60 | 1 | 20.20 | 1 | 8.70 | 7 | 11.50 | 3 | 4.40 | 5 | 5.00 | 4 | 10.60 | 3 | 5.00 | 7 | 7.30 | 1 | 3.30 | 1 | 0.10 | 5 | 0.20 | 1 | -1.20 | 5 | | |
| 1st Size | 14.43 | | 14.30 | | 55.11 | | 34.21 | | 32.26 | | 12.54 | | 24.55 | | 17.68 | | 20.24 | | 8.70 | | 11.42 | | 4.24 | | 5.54 | | 10.51 | | 7.42 | | 7.53 | | 3.30 | | 0.05 | | 0.26 | | -2.24 | | | |
| 2nd Size | 14.52 | | 14.30 | | 55.32 | | 34.81 | | 32.62 | | 12.75 | | 24.71 | | 17.84 | | 20.75 | | 8.90 | | 11.56 | | 4.40 | | 8.73 | | 10.80 | | 8.03 | | 7.86 | | 8.52 | | 0.25 | | 0.57 | | -1.70 | | | |
| 3rd Size | 14.57 | | 14.30 | | 55.40 | | 35.17 | | 32.74 | | 12.85 | | 24.81 | | 18.02 | | 20.99 | | 9.06 | | 11.72 | | 4.62 | | 8.84 | | 10.95 | | 8.13 | | 8.00 | | 8.65 | | 0.38 | | 0.74 | | -1.76 | | | |
| 5th Size | 14.71 | | 14.30 | | 55.62 | | 35.45 | | 33.04 | | 12.94 | | 24.93 | | 18.25 | | 21.21 | | 9.08 | | 11.92 | | 4.84 | | 9.03 | | 11.08 | | 8.37 | | 8.30 | | 8.80 | | 0.49 | | 0.92 | | -1.56 | | | |
| 50th Size | 15.40 | | 14.78 | | 57.17 | | 37.78 | | 34.85 | | 13.63 | | 25.99 | | 19.94 | | 22.75 | | 10.00 | | 12.98 | | 11.12 | | 10.48 | | 12.17 | | 9.79 | | 9.74 | | 9.71 | | 1.82 | | 2.45 | | 0.00 | | | |
| 95 Size | 15.76 | | 20.33 | | 58.69 | | 40.48 | | 36.63 | | 14.29 | | 26.98 | | 21.46 | | 24.24 | | 11.07 | | 13.94 | | 12.50 | | 12.11 | | 13.33 | | 11.21 | | 11.17 | | 10.60 | | 3.05 | | 3.89 | | 1.55 | | | |
| 97 Size | 15.78 | | 20.42 | | 58.88 | | 40.55 | | 36.88 | | 14.38 | | 27.17 | | 21.71 | | 24.39 | | 11.19 | | 14.05 | | 12.66 | | 12.36 | | 13.46 | | 11.39 | | 11.35 | | 10.72 | | 3.22 | | 4.04 | | 1.77 | | | |
| 98 Size | 15.74 | | 20.45 | | 59.08 | | 41.03 | | 37.13 | | 14.45 | | 27.37 | | 21.90 | | 24.72 | | 11.31 | | 14.13 | | 12.80 | | 12.51 | | 13.54 | | 11.55 | | 11.55 | | 10.78 | | 3.33 | | 4.20 | | 1.44 | | | |
| 99 Size | 15.79 | | 20.47 | | 59.27 | | 41.22 | | 37.34 | | 14.50 | | 27.52 | | 22.22 | | 24.93 | | 11.48 | | 14.21 | | 12.99 | | 12.82 | | 13.74 | | 11.74 | | 11.70 | | 10.92 | | 3.44 | | 4.34 | | 2.24 | | | |
| Max - 4 Measurement | 15.40 | 91 | 20.10 | 59 | 54.40 | 1 | 41.40 | 1 | 37.60 | 1 | 14.50 | 91 | 27.50 | 6 | 22.60 | 2 | 25.00 | 5 | 11.40 | 6 | 14.20 | 10 | 12.40 | 4 | 12.90 | 2 | 13.10 | 1 | 12.20 | 1 | 11.90 | 2 | 10.80 | 12 | 5.00 | 2 | 4.40 | 1 | 1.60 | 1 | | |
| Max - 3 Measurement | 15.50 | 70 | 20.20 | 60 | 54.50 | 3 | 41.50 | 1 | 37.70 | 1 | 14.60 | 6 | 27.60 | 2 | 22.70 | 1 | 25.10 | 1 | 11.50 | 3 | 14.30 | 3 | 13.00 | 4 | 13.00 | 4 | 14.00 | 3 | 12.40 | 1 | 12.00 | 1 | 10.90 | 5 | 3.70 | 4 | 4.50 | 1 | 2.70 | 3 | | |
| Max - 2 Measurement | 15.60 | 106 | 20.30 | 46 | 54.00 | 1 | 41.80 | 2 | 37.80 | 1 | 14.70 | 1 | 27.80 | 3 | 22.80 | 1 | 25.30 | 1 | 11.80 | 4 | 14.40 | 2 | 13.10 | 4 | 13.10 | 2 | 14.10 | 1 | 12.60 | 1 | 12.10 | 1 | 11.00 | 2 | 5.90 | 3 | 4.60 | 4 | 3.20 | 1 | | |
| Max - 1 Measurement | 15.70 | 145 | 20.40 | 45 | 54.70 | 1 | 42.10 | 1 | 38.20 | 1 | 14.80 | 3 | 28.10 | 2 | 23.30 | 1 | 25.40 | 1 | 11.90 | 2 | 14.60 | 2 | 13.20 | 2 | 13.40 | 1 | 14.20 | 1 | 13.40 | 1 | 12.20 | 1 | 11.00 | 5 | 3.10 | 1 | 4.90 | 1 | 3.30 | 1 | | |
| Max | 15.80 | 180 | 20.50 | 28 | 54.80 | 1 | 42.30 | 1 | 38.50 | 1 | 15.00 | 1 | 28.40 | 1 | 24.00 | 1 | 25.50 | 1 | 12.00 | 1 | 15.00 | 1 | 13.40 | 1 | 13.60 | 1 | 14.30 | 1 | 14.40 | 1 | 12.00 | 1 | 11.20 | 1 | 4.10 | 1 | 5.00 | 1 | 4.30 | 1 | | |
| Mean | 15.40 | | 14.84 | | 57.14 | | 37.80 | | 34.88 | | 13.68 | | 26.04 | | 19.95 | | 22.80 | | 10.10 | | 13.01 | | 11.17 | | 10.55 | | 12.25 | | 9.96 | | 4.74 | | 4.75 | | 1.54 | | 2.46 | | 0.11 | | | |
| SD | 0.33 | | 0.35 | | 0.94 | | 1.53 | | 1.10 | | 0.41 | | 0.63 | | 0.99 | | 0.92 | | 0.00 | | 0.61 | | 0.74 | | 0.94 | | 0.68 | | 0.98 | | 0.84 | | 0.57 | | 0.77 | | 0.11 | | 0.97 | | | |
| Coefficient of Variation % | 2.14 | | 1.75 | | 1.65 | | 4.04 | | 3.15 | | 2.98 | | 2.42 | | 4.98 | | 4.04 | | 5.60 | | 4.71 | | 7.10 | | 8.88 | | 5.58 | | 9.45 | | 9.05 | | 5.84 | | | | | | | | | |
| No of Survey Subjects | 758 | | 758 | | 758 | | 758 | | 758 | | 758 | | 757 | | 757 | | 758 | | 758 | | 758 | | 758 | | 758 | | 758 | | 757 | | 758 | | 758 | | 758 | | 758 | | 758 | | 757 | |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 34 PART 3

SIZE ROLL REFERENCE M CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND HEAD LENGTH
 NUMBER OF SIZES 6
 SIZE 3 CONTROL MEASUREMENT RANGES 14.20 TO 15.89 HEAD BREADTH
20.60 TO 21.80 HEAD LENGTH

08

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGION CORONAL ARC | BITRAGION DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGION TO BACK OF HEAD | TRAGION TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGION TO MENTON HORIZONTAL | TRAGION TO MENTON VERTICAL | TRAGION TO BROW RIDGE HORIZONTAL | TRAGION TO PUPIL VERTICAL | TRAGION TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|-----------------------|--------------------|-------------------------------|------------------------|------------------|-------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|
| Min | 14.30 | 20.60 | 40 | 34.50 | 31.10 | 12.90 | 25.20 | 18.40 | 20.70 | 9.10 | 10.80 | 4.40 | 8.30 | 10.60 | 7.70 | 9.10 | 8.30 | 0.10 | 0.30 | -2.10 |
| Min + 1 Measurement | 14.50 | 20.70 | 44 | 35.40 | 32.40 | 13.00 | 25.30 | 18.60 | 21.70 | 9.20 | 11.00 | 4.50 | 8.40 | 10.90 | 8.10 | 9.40 | 8.40 | 0.20 | 0.40 | -2.10 |
| Min + 2 Measurement | 14.60 | 20.80 | 48 | 36.30 | 33.70 | 13.10 | 25.40 | 18.80 | 22.60 | 9.30 | 11.70 | 4.60 | 8.50 | 11.10 | 8.20 | 9.70 | 8.50 | 0.30 | 0.50 | -2.00 |
| Min + 3 Measurement | 14.80 | 21.00 | 52 | 37.20 | 35.00 | 13.20 | 25.50 | 19.00 | 23.50 | 9.40 | 12.40 | 4.70 | 8.60 | 11.20 | 8.30 | 10.40 | 8.80 | 0.40 | 0.60 | -1.90 |
| Min + 4 Measurement | 14.90 | 21.10 | 56 | 38.10 | 36.30 | 13.30 | 25.60 | 19.20 | 24.40 | 9.50 | 13.10 | 4.80 | 8.70 | 11.30 | 8.40 | 10.70 | 9.10 | 0.50 | 0.70 | -1.80 |
| 1st Size | 14.38 | 20.60 | 46 | 34.85 | 31.61 | 12.90 | 25.24 | 18.40 | 20.70 | 9.12 | 11.11 | 4.44 | 8.34 | 10.72 | 7.73 | 9.18 | 8.34 | 0.02 | 0.34 | -2.20 |
| 2nd Size | 14.58 | 20.60 | 50 | 35.44 | 32.63 | 12.92 | 25.46 | 18.48 | 21.59 | 9.19 | 11.68 | 4.66 | 8.48 | 11.06 | 8.06 | 8.34 | 8.94 | 0.24 | 0.48 | -2.20 |
| 3rd Size | 14.72 | 20.60 | 54 | 36.03 | 33.65 | 12.94 | 25.56 | 18.62 | 22.46 | 9.22 | 12.18 | 4.78 | 8.62 | 11.16 | 8.22 | 8.42 | 9.02 | 0.31 | 0.56 | -2.14 |
| 5th Size | 14.84 | 20.60 | 62 | 37.20 | 35.40 | 13.00 | 25.82 | 18.85 | 23.30 | 9.30 | 12.66 | 4.90 | 8.92 | 11.26 | 8.30 | 9.50 | 9.20 | 0.40 | 0.70 | -2.00 |
| 50th Size | 15.49 | 20.72 | 88 | 38.46 | 38.31 | 13.70 | 26.63 | 20.54 | 23.39 | 10.65 | 13.00 | 11.44 | 10.77 | 12.40 | 9.94 | 10.26 | 10.14 | 1.54 | 2.21 | -0.24 |
| 95 Size | 15.77 | 21.33 | 102 | 40.80 | 37.10 | 14.34 | 27.65 | 22.00 | 25.01 | 11.55 | 13.95 | 12.66 | 12.51 | 13.70 | 11.35 | 11.67 | 11.17 | 2.91 | 3.74 | 1.14 |
| 97 Size | 15.78 | 21.40 | 104 | 41.15 | 37.29 | 14.46 | 27.76 | 22.07 | 25.29 | 11.64 | 14.24 | 12.87 | 12.66 | 13.88 | 11.52 | 11.76 | 11.26 | 3.09 | 3.88 | 1.34 |
| 98 Size | 15.79 | 21.46 | 106 | 41.51 | 37.34 | 14.51 | 27.84 | 22.12 | 25.36 | 11.72 | 14.32 | 12.94 | 12.72 | 14.01 | 11.61 | 11.82 | 11.31 | 3.16 | 4.02 | 1.44 |
| 99 Size | 15.79 | 21.56 | 108 | 42.86 | 37.50 | 14.58 | 28.09 | 22.50 | 25.55 | 11.83 | 14.64 | 13.44 | 12.83 | 14.09 | 11.65 | 12.02 | 11.38 | 3.22 | 4.22 | 1.75 |
| Max - 4 Measurement | 15.40 | 21.30 | 100 | 40.40 | 37.00 | 14.30 | 27.00 | 22.00 | 25.00 | 11.50 | 14.20 | 12.60 | 12.40 | 13.70 | 11.30 | 11.70 | 11.10 | 3.00 | 3.90 | 1.30 |
| Max - 3 Measurement | 15.50 | 21.40 | 104 | 41.20 | 37.10 | 14.40 | 27.70 | 22.10 | 25.20 | 11.60 | 14.30 | 12.70 | 12.60 | 13.80 | 11.40 | 11.80 | 11.20 | 3.10 | 4.00 | 1.40 |
| Max - 2 Measurement | 15.60 | 21.50 | 108 | 42.00 | 37.20 | 14.50 | 28.30 | 22.20 | 25.30 | 11.70 | 14.40 | 12.80 | 12.70 | 13.90 | 11.50 | 11.90 | 11.30 | 3.20 | 4.10 | 1.50 |
| Max - 1 Measurement | 15.70 | 21.60 | 112 | 42.80 | 37.30 | 14.60 | 28.60 | 22.30 | 25.40 | 11.80 | 14.50 | 12.90 | 12.80 | 14.00 | 11.60 | 12.00 | 11.40 | 3.30 | 4.20 | 1.60 |
| Max | 15.80 | 21.80 | 116 | 43.70 | 37.40 | 14.70 | 28.80 | 22.40 | 25.40 | 11.90 | 14.60 | 13.00 | 12.90 | 14.10 | 11.70 | 12.10 | 11.50 | 3.40 | 4.30 | 1.70 |
| Mean | 15.46 | 20.84 | 58.75 | 38.45 | 35.27 | 13.74 | 26.72 | 20.00 | 23.43 | 10.44 | 13.04 | 11.46 | 10.91 | 12.52 | 9.96 | 10.34 | 10.20 | 1.63 | 2.13 | -0.24 |
| SD | 0.51 | 0.25 | 0.84 | 0.57 | 0.08 | 0.42 | 0.60 | 0.43 | 0.42 | 0.60 | 0.43 | 0.77 | 0.45 | 0.71 | 0.36 | 0.40 | 0.50 | 0.70 | 0.93 | 0.91 |
| Coefficient of Variation % | 2.00 | 1.21 | 1.63 | 1.47 | 0.26 | 3.04 | 2.23 | 4.50 | 3.43 | 5.63 | 4.84 | 6.74 | 3.66 | 5.70 | 3.63 | 3.74 | 5.40 | | | |
| No of Survey Subjects | 137 | 139 | 139 | 137 | 134 | 139 | 134 | 134 | 137 | 131 | 139 | 134 | 134 | 134 | 134 | 139 | 139 | 134 | 134 | 134 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 34 PART 4

SIZE ROLL REFERENCE **M** CONTROL MEASUREMENTS 1ST **HEAD BREADTH**
 2ND **HEAD LENGTH**
 NUMBER OF SIZES **6**
 SIZE **4** CONTROL MEASUREMENT RANGES **15.90** TO **17.50** **HEAD BREADTH**
18.00 TO **19.29** **HEAD LENGTH**

81

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGION TO BACK OF HEAD | TRAGION TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGION TO MENTON HORIZONTAL | TRAGION TO MENTON VERTICAL | TRAGION TO BROW RIDGE HORIZONTAL | TRAGION TO PUPIL VERTICAL | TRAGION TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|-------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|
| Min | 15.40 | 16.00 | 54.40 | 34.70 | 33.10 | 13.40 | 24.50 | 17.40 | 20.40 | 9.00 | 11.30 | 9.30 | 8.20 | 10.40 | 7.80 | 7.00 | 8.00 | 0.40 | 0.10 | -1.50 |
| Min + 1 Measurement | 16.00 | 16.10 | 55.00 | 34.90 | 33.20 | 13.50 | 24.60 | 17.60 | 20.50 | 9.50 | 11.40 | 9.70 | 8.40 | 10.50 | 8.10 | 7.80 | 8.10 | 0.10 | 0.10 | -1.40 |
| Min + 2 Measurement | 16.10 | 16.30 | 55.20 | 35.00 | 33.40 | 13.60 | 24.70 | 17.70 | 21.00 | 9.60 | 11.40 | 9.80 | 8.60 | 10.60 | 8.20 | 8.20 | 8.20 | 0.00 | 0.20 | -1.20 |
| Min + 3 Measurement | 16.20 | 16.40 | 55.50 | 35.10 | 33.70 | 13.70 | 24.80 | 17.80 | 21.20 | 9.70 | 11.60 | 9.90 | 8.70 | 10.70 | 8.40 | 8.40 | 8.30 | 0.20 | 0.50 | -1.00 |
| Min + 4 Measurement | 16.30 | 16.50 | 55.80 | 35.20 | 34.00 | 13.80 | 25.00 | 18.00 | 21.30 | 9.80 | 11.70 | 10.00 | 8.80 | 10.80 | 8.60 | 8.60 | 8.40 | 0.50 | 0.80 | -0.90 |
| 1st Size | 15.90 | 18.00 | 54.90 | 34.70 | 33.10 | 13.40 | 24.50 | 17.40 | 20.40 | 9.00 | 11.30 | 9.30 | 8.20 | 10.40 | 7.80 | 7.00 | 8.00 | 0.40 | 0.10 | -1.50 |
| 2nd Size | 16.00 | 18.05 | 54.95 | 34.90 | 33.20 | 13.40 | 24.60 | 17.40 | 20.40 | 9.20 | 11.40 | 9.70 | 8.40 | 10.50 | 8.10 | 7.80 | 8.10 | 0.10 | 0.10 | -1.45 |
| 3rd Size | 16.10 | 18.11 | 55.00 | 35.00 | 33.40 | 13.40 | 24.65 | 17.45 | 20.50 | 9.50 | 11.40 | 9.70 | 8.60 | 10.50 | 8.10 | 7.80 | 8.10 | 0.00 | 0.10 | -1.40 |
| 5th Size | 16.40 | 18.33 | 55.21 | 35.26 | 34.00 | 13.63 | 24.71 | 17.55 | 21.20 | 9.57 | 11.60 | 9.70 | 8.81 | 10.81 | 8.30 | 8.10 | 8.30 | 0.14 | 0.61 | -1.26 |
| 50th Size | 16.14 | 18.96 | 56.71 | 37.91 | 35.53 | 14.04 | 25.64 | 19.19 | 22.46 | 9.53 | 12.78 | 11.11 | 10.41 | 12.06 | 9.69 | 9.65 | 9.31 | 1.66 | 2.33 | 0.25 |
| 95 Size | 16.90 | 19.13 | 58.00 | 40.50 | 37.19 | 14.73 | 26.59 | 21.00 | 23.70 | 10.63 | 13.40 | 12.50 | 12.00 | 13.00 | 11.12 | 10.90 | 10.39 | 3.05 | 4.05 | 1.90 |
| 97 Size | 16.90 | 19.19 | 58.20 | 40.94 | 37.59 | 14.80 | 26.80 | 21.49 | 23.99 | 10.70 | 14.00 | 12.60 | 12.20 | 13.20 | 11.17 | 10.90 | 10.47 | 3.15 | 4.20 | 2.49 |
| 98 Size | 17.00 | 19.19 | 58.40 | 41.78 | 37.94 | 14.90 | 26.95 | 21.60 | 24.10 | 10.90 | 14.05 | 12.70 | 12.30 | 13.30 | 11.20 | 11.00 | 10.50 | 3.20 | 4.25 | 2.55 |
| 99 Size | 17.10 | 19.20 | 58.50 | 42.49 | 38.20 | 15.00 | 26.90 | 21.80 | 24.20 | 11.00 | 14.10 | 12.80 | 12.50 | 13.40 | 11.30 | 11.20 | 10.70 | 3.50 | 4.30 | 2.60 |
| Max - 4 Measurement | 16.90 | 18.90 | 58.10 | 40.60 | 37.20 | 14.60 | 26.00 | 21.30 | 23.70 | 10.60 | 13.90 | 12.40 | 12.10 | 13.00 | 11.00 | 10.90 | 10.20 | 2.90 | 4.00 | 1.90 |
| Max - 3 Measurement | 16.90 | 18.90 | 58.20 | 40.90 | 37.60 | 14.70 | 26.70 | 21.50 | 23.80 | 10.70 | 13.90 | 12.50 | 12.20 | 13.10 | 11.10 | 10.90 | 10.40 | 3.00 | 4.10 | 2.10 |
| Max - 2 Measurement | 17.00 | 19.00 | 58.40 | 41.80 | 37.90 | 14.80 | 26.80 | 21.60 | 24.00 | 10.80 | 14.00 | 12.60 | 12.30 | 13.20 | 11.20 | 11.00 | 10.50 | 3.20 | 4.20 | 2.50 |
| Max - 1 Measurement | 17.10 | 19.10 | 58.50 | 42.50 | 38.20 | 15.00 | 26.90 | 21.80 | 24.20 | 11.00 | 14.10 | 12.70 | 12.50 | 13.30 | 11.30 | 11.20 | 10.70 | 3.50 | 4.30 | 2.60 |
| Max | 17.40 | 19.20 | 58.60 | 42.70 | 38.70 | 15.10 | 27.00 | 21.90 | 24.70 | 11.10 | 14.50 | 13.00 | 12.70 | 13.50 | 11.40 | 11.30 | 11.20 | 3.60 | 4.80 | 2.90 |
| Mean | 16.25 | 18.94 | 56.76 | 37.40 | 35.58 | 14.10 | 25.71 | 19.32 | 22.54 | 9.61 | 12.92 | 11.16 | 10.48 | 12.06 | 9.71 | 9.62 | 9.33 | 1.75 | 2.44 | 0.38 |
| SD | 0.30 | 0.27 | 0.52 | 1.70 | 1.04 | 0.38 | 0.54 | 1.06 | 0.51 | 0.63 | 0.61 | 0.83 | 0.98 | 0.63 | 0.80 | 0.83 | 0.68 | 0.95 | 1.01 | 1.00 |
| Coefficient of Variation | 1.87 | 1.45 | 1.44 | 4.47 | 2.92 | 2.70 | 2.28 | 5.50 | 3.60 | 6.60 | 4.70 | 7.41 | 9.36 | 5.21 | 8.24 | 8.61 | 6.74 | | | |
| No of Survey Subjects | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 34 PART 5

SIZE ROLL REFERENCE M CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND HEAD LENGTH
 NUMBER OF SIZES 6
 SIZE 5 CONTROL MEASUREMENT RANGES 15.90 TO 17.50 HEAD BREADTH
19.30 TO 20.59 HEAD LENGTH

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO MASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO MASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|-----------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.90 | 19.30 | 55.30 | 34.30 | 32.90 | 12.40 | 24.60 | 17.40 | 20.00 | 8.50 | 11.00 | 8.40 | 8.10 | 8.00 | 7.10 | 7.60 | 6.70 | -0.60 | -0.30 | -2.40 |
| Min + 1 Measurement | 16.00 | 19.40 | 55.80 | 34.70 | 33.10 | 13.00 | 24.70 | 17.50 | 20.70 | 8.60 | 11.30 | 8.40 | 8.30 | 8.00 | 7.60 | 7.70 | 7.70 | -0.50 | 0.00 | -2.30 |
| Min + 2 Measurement | 16.10 | 19.50 | 56.00 | 35.00 | 33.20 | 13.10 | 24.90 | 17.60 | 20.90 | 8.70 | 11.40 | 8.40 | 8.40 | 8.10 | 7.50 | 7.80 | 7.80 | -0.40 | 0.20 | -2.20 |
| Min + 3 Measurement | 16.20 | 19.60 | 56.10 | 35.20 | 33.30 | 13.20 | 25.00 | 17.70 | 21.00 | 8.80 | 11.50 | 8.50 | 8.50 | 8.20 | 7.70 | 7.90 | 7.90 | -0.30 | 0.30 | -2.10 |
| Min + 4 Measurement | 16.30 | 19.70 | 56.20 | 35.30 | 33.50 | 13.30 | 25.10 | 17.80 | 21.00 | 8.90 | 11.60 | 8.60 | 8.60 | 8.30 | 7.80 | 8.00 | 8.00 | -0.20 | 0.40 | -2.00 |
| 1st Size | 15.90 | 19.30 | 56.04 | 35.12 | 33.39 | 13.24 | 24.90 | 17.62 | 20.71 | 8.75 | 11.62 | 8.42 | 8.44 | 8.12 | 7.62 | 7.85 | 7.84 | -0.14 | 0.16 | -2.22 |
| 2nd Size | 15.90 | 19.30 | 56.32 | 35.42 | 33.54 | 13.35 | 25.11 | 17.90 | 20.96 | 8.95 | 11.91 | 8.67 | 8.73 | 8.43 | 7.74 | 8.11 | 8.58 | -0.01 | 0.34 | -2.03 |
| 3rd Size | 15.90 | 19.30 | 56.40 | 35.58 | 33.75 | 13.42 | 25.21 | 17.99 | 21.15 | 9.05 | 11.91 | 8.83 | 8.94 | 8.61 | 7.84 | 8.23 | 8.54 | 0.16 | 0.45 | -1.87 |
| 5th Size | 15.90 | 19.31 | 56.52 | 35.87 | 34.09 | 13.51 | 25.33 | 18.22 | 21.36 | 9.15 | 12.00 | 10.01 | 9.13 | 8.81 | 8.16 | 8.34 | 8.73 | 0.36 | 0.71 | -1.66 |
| 50th Size | 16.16 | 19.92 | 58.15 | 38.39 | 35.80 | 14.13 | 26.33 | 20.00 | 23.07 | 10.15 | 12.49 | 11.33 | 10.09 | 12.24 | 9.84 | 9.98 | 9.71 | 1.00 | 2.32 | 0.09 |
| 95 Size | 16.80 | 20.41 | 59.75 | 41.24 | 37.69 | 14.94 | 27.57 | 21.54 | 24.47 | 11.27 | 14.05 | 12.04 | 12.22 | 13.55 | 11.24 | 11.44 | 10.09 | 2.84 | 3.35 | 1.74 |
| 97 Size | 16.94 | 20.45 | 59.94 | 41.57 | 38.12 | 15.09 | 27.69 | 21.89 | 24.71 | 11.38 | 14.28 | 12.04 | 12.43 | 13.78 | 11.46 | 11.64 | 10.51 | 3.12 | 4.04 | 1.94 |
| 98 Size | 17.02 | 20.46 | 60.03 | 41.83 | 38.26 | 15.16 | 27.77 | 22.14 | 24.89 | 11.47 | 14.48 | 12.41 | 12.51 | 13.87 | 11.58 | 11.79 | 10.92 | 3.34 | 4.21 | 2.12 |
| 99 Size | 17.19 | 20.48 | 60.55 | 42.43 | 38.53 | 15.25 | 27.94 | 22.54 | 25.12 | 11.60 | 14.58 | 13.00 | 12.60 | 14.04 | 11.76 | 11.96 | 11.04 | 3.63 | 4.30 | 2.43 |
| Max - 4 Measurement | 16.90 | 20.10 | 60.00 | 42.50 | 38.00 | 15.20 | 27.80 | 22.40 | 25.00 | 11.50 | 14.60 | 13.00 | 12.60 | 14.00 | 11.80 | 12.10 | 11.10 | 3.70 | 4.30 | 2.50 |
| Max - 3 Measurement | 17.00 | 20.20 | 60.70 | 42.70 | 38.70 | 15.30 | 27.90 | 22.50 | 25.20 | 11.80 | 14.70 | 13.00 | 12.70 | 14.10 | 11.90 | 12.20 | 11.20 | 3.80 | 4.50 | 2.60 |
| Max - 2 Measurement | 17.10 | 20.30 | 60.90 | 43.50 | 39.20 | 15.40 | 28.00 | 22.60 | 25.30 | 12.00 | 15.00 | 13.10 | 12.80 | 14.20 | 12.00 | 12.40 | 11.30 | 4.00 | 4.60 | 2.70 |
| Max - 1 Measurement | 17.20 | 20.40 | 60.90 | 43.00 | 39.50 | 15.50 | 28.10 | 23.00 | 25.40 | 12.50 | 15.50 | 13.20 | 12.90 | 14.30 | 12.10 | 12.60 | 11.40 | 4.10 | 4.70 | 3.00 |
| Max | 17.50 | 20.50 | 61.40 | 44.20 | 40.40 | 15.70 | 28.20 | 23.60 | 26.20 | 12.70 | 15.60 | 13.50 | 13.00 | 15.50 | 13.20 | 13.10 | 11.70 | 4.40 | 5.00 | 4.00 |
| Mean | 16.25 | 19.94 | 58.17 | 38.50 | 35.86 | 14.20 | 26.40 | 20.04 | 23.07 | 10.19 | 13.06 | 11.35 | 10.71 | 12.37 | 9.83 | 10.01 | 9.75 | 1.72 | 2.35 | 0.03 |
| SD | 0.51 | 0.35 | 0.94 | 0.22 | 0.12 | 0.22 | 0.66 | 0.01 | 0.94 | 0.13 | 0.65 | 0.74 | 0.94 | 0.72 | 0.91 | 0.92 | 0.61 | 0.81 | 0.95 | 1.00 |
| Coeff. of Variation | 3.3 | 1.77 | 1.62 | 0.57 | 0.33 | 1.59 | 2.50 | 0.07 | 4.07 | 1.21 | 4.94 | 6.74 | 8.75 | 5.82 | 9.27 | 9.15 | 6.48 | | | |
| No of Survey Subjects | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 | 617 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 34 PART 6

SIZE ROLL REFERENCE **M** CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND HEAD LENGTH
 NUMBER OF SIZES **6**
 SIZE **6** CONTROL MEASUREMENT RANGES **15.90** TO **17.50** HEAD BREADTH
20.60 TO **21.80** HEAD LENGTH

83

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUFIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUFIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.90 | 20.60 | 57.40 | 34.30 | 33.20 | 13.00 | 15.00 | 18.00 | 21.70 | 9.20 | 9.50 | 9.80 | 8.90 | 10.50 | 6.60 | 8.20 | 6.50 | -2.10 | -1.70 | -2.70 |
| Min + 1 Measurement | 16.00 | 20.70 | 57.70 | 35.70 | 33.40 | 13.20 | 15.20 | 18.20 | 21.90 | 9.30 | 9.60 | 9.90 | 9.00 | 10.60 | 6.70 | 8.30 | 6.60 | -2.00 | -1.60 | -2.40 |
| Min + 2 Measurement | 16.10 | 20.80 | 57.90 | 35.80 | 33.50 | 13.30 | 15.30 | 18.30 | 22.00 | 9.40 | 9.70 | 10.00 | 9.10 | 10.70 | 6.80 | 8.40 | 6.70 | -1.90 | -1.50 | -2.30 |
| Min + 3 Measurement | 16.20 | 20.90 | 58.00 | 36.00 | 33.70 | 13.40 | 15.40 | 18.40 | 22.10 | 9.50 | 9.80 | 10.10 | 9.20 | 10.80 | 6.90 | 8.50 | 6.80 | -1.80 | -1.40 | -2.20 |
| Min + 4 Measurement | 16.30 | 21.00 | 58.10 | 36.10 | 33.80 | 13.50 | 15.50 | 18.50 | 22.20 | 9.60 | 9.90 | 10.20 | 9.30 | 10.90 | 7.00 | 8.60 | 6.90 | -1.70 | -1.30 | -2.10 |
| 1st Mile | 15.90 | 20.60 | 57.52 | 34.30 | 33.36 | 13.16 | 15.16 | 18.16 | 21.78 | 9.28 | 9.54 | 9.84 | 8.94 | 10.66 | 6.67 | 8.28 | 6.50 | -2.07 | -1.65 | -2.45 |
| 2nd Mile | 15.90 | 20.60 | 57.85 | 35.76 | 33.63 | 13.32 | 15.72 | 18.45 | 21.93 | 9.33 | 9.60 | 9.90 | 9.00 | 10.98 | 6.73 | 8.46 | 6.66 | -2.04 | -1.66 | -2.24 |
| 3rd Mile | 15.90 | 20.60 | 57.97 | 36.05 | 34.02 | 13.36 | 15.78 | 18.42 | 22.05 | 9.37 | 9.67 | 10.00 | 9.10 | 11.21 | 6.75 | 8.55 | 6.74 | -2.02 | -1.63 | -2.01 |
| 5th Mile | 15.90 | 20.60 | 58.20 | 36.51 | 34.21 | 13.45 | 15.96 | 19.15 | 22.20 | 9.47 | 9.77 | 10.10 | 9.20 | 11.67 | 6.81 | 8.71 | 6.80 | -1.97 | -1.51 | -1.70 |
| 50th Mile | 16.18 | 20.74 | 59.54 | 39.30 | 36.15 | 14.22 | 16.96 | 20.50 | 23.65 | 10.57 | 13.24 | 11.71 | 11.01 | 12.62 | 7.45 | 10.36 | 10.14 | 1.51 | 2.17 | -0.32 |
| 95 Mile | 16.93 | 21.40 | 61.03 | 41.89 | 38.62 | 15.03 | 18.06 | 22.09 | 25.15 | 11.66 | 14.10 | 12.75 | 12.21 | 13.82 | 11.33 | 11.97 | 11.05 | 2.74 | 3.50 | 1.20 |
| 97 Mile | 17.08 | 21.58 | 61.45 | 42.25 | 39.75 | 15.15 | 18.18 | 22.45 | 25.33 | 11.63 | 14.19 | 12.75 | 12.45 | 14.01 | 11.43 | 12.63 | 11.33 | 2.83 | 3.75 | 1.45 |
| 98 Mile | 17.17 | 21.63 | 61.72 | 42.61 | 39.01 | 15.24 | 18.34 | 22.55 | 25.44 | 11.62 | 14.34 | 12.79 | 12.74 | 14.17 | 11.61 | 12.52 | 11.42 | 2.97 | 3.87 | 1.54 |
| 99 Mile | 17.26 | 21.68 | 61.84 | 43.40 | 39.32 | 15.41 | 18.51 | 22.62 | 25.63 | 11.65 | 14.46 | 12.82 | 12.94 | 14.35 | 11.67 | 12.78 | 11.52 | 3.13 | 4.12 | 1.82 |
| Max - 4 Measurement | 17.00 | 21.40 | 61.50 | 42.50 | 39.90 | 15.10 | 18.10 | 22.30 | 25.30 | 11.80 | 14.10 | 12.90 | 12.70 | 14.10 | 11.40 | 12.40 | 11.30 | 2.70 | 3.70 | 1.50 |
| Max - 3 Measurement | 17.10 | 21.50 | 61.70 | 42.80 | 39.20 | 15.20 | 18.20 | 22.40 | 25.40 | 11.80 | 14.20 | 13.00 | 12.80 | 14.20 | 11.50 | 12.50 | 11.40 | 2.90 | 3.80 | 1.60 |
| Max - 2 Measurement | 17.20 | 21.60 | 61.80 | 43.20 | 39.30 | 15.30 | 18.30 | 22.50 | 25.50 | 11.80 | 14.30 | 13.10 | 12.90 | 14.30 | 11.60 | 12.60 | 11.50 | 3.00 | 4.00 | 1.70 |
| Max - 1 Measurement | 17.30 | 21.70 | 62.00 | 44.30 | 39.40 | 15.40 | 18.50 | 22.60 | 25.60 | 11.80 | 14.40 | 13.20 | 13.00 | 14.40 | 11.70 | 12.70 | 11.60 | 3.10 | 4.20 | 1.80 |
| Max | 17.40 | 21.80 | 62.40 | 44.90 | 39.80 | 15.50 | 18.60 | 22.80 | 26.20 | 11.80 | 14.70 | 13.40 | 13.20 | 14.70 | 11.90 | 12.80 | 11.90 | 3.40 | 4.30 | 2.00 |
| Mean | 16.31 | 20.86 | 59.08 | 39.23 | 36.31 | 14.27 | 17.03 | 20.63 | 23.71 | 10.70 | 13.24 | 11.68 | 11.03 | 12.67 | 6.93 | 10.47 | 10.16 | 1.55 | 2.20 | -0.23 |
| SD | 0.33 | 0.28 | 0.88 | 1.72 | 1.20 | 0.46 | 0.65 | 0.93 | 0.91 | 0.70 | 0.68 | 0.72 | 0.83 | 0.76 | 0.93 | 0.66 | 0.78 | 0.96 | 0.84 | |
| Coefficient of Variation | 2.01 | 1.33 | 1.47 | 4.38 | 3.30 | 3.22 | 2.39 | 4.51 | 3.86 | 6.46 | 5.12 | 6.13 | 7.48 | 5.81 | 4.34 | 6.48 | 6.44 | | | |
| No of Survey Subjects | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 35 PART 1

SIZE ROLL REFERENCE **N** CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND MENTON TO VERTEX
 NUMBER OF SIZES **4**
 SIZE **1** CONTROL MEASUREMENT RANGES **14.20** TO **15.89** HEAD BREADTH
19.50 TO **22.79** MENTON TO VERTEX

84

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.20 | 18.00 | 53.00 | 33.70 | 31.10 | 12.20 | 24.10 | 17.20 | 19.50 | 9.00 | 10.80 | 8.50 | 7.50 | 8.90 | 7.20 | 6.60 | 7.50 | 0.30 | 0.00 | -2.40 |
| Min + 1 Measurement | 14.30 | 18.10 | 53.60 | 33.90 | 31.60 | 12.50 | 24.20 | 17.50 | 19.60 | 9.20 | 11.00 | 8.60 | 7.60 | 9.00 | 7.30 | 6.80 | 7.60 | 0.30 | 0.30 | -1.80 |
| Min + 2 Measurement | 14.40 | 18.20 | 54.00 | 34.10 | 32.10 | 12.60 | 24.30 | 17.60 | 19.80 | 9.30 | 11.20 | 8.80 | 7.80 | 9.10 | 7.40 | 6.90 | 7.80 | 0.40 | 1.00 | -1.70 |
| Min + 3 Measurement | 14.50 | 18.30 | 54.40 | 34.20 | 32.60 | 12.70 | 24.40 | 17.80 | 20.10 | 9.50 | 11.30 | 8.90 | 7.90 | 9.20 | 7.50 | 7.00 | 8.00 | 0.50 | 1.50 | -1.60 |
| Min + 4 Measurement | 14.60 | 18.40 | 54.80 | 34.30 | 33.10 | 12.80 | 24.50 | 17.90 | 20.20 | 9.60 | 11.40 | 9.00 | 8.00 | 9.30 | 7.60 | 7.10 | 8.10 | 0.60 | 2.00 | -1.50 |
| 1st Size | 14.34 | 18.15 | 54.05 | 34.13 | 32.72 | 12.58 | 24.21 | 17.73 | 19.75 | 9.51 | 11.24 | 8.91 | 8.02 | 9.03 | 7.18 | 6.63 | 7.61 | 0.44 | 1.03 | -1.37 |
| 2nd Size | 14.49 | 18.26 | 54.46 | 34.46 | 33.13 | 12.71 | 24.35 | 18.03 | 20.26 | 9.74 | 11.62 | 9.13 | 8.26 | 9.16 | 7.36 | 6.96 | 7.86 | 0.54 | 1.15 | -1.19 |
| 3rd Size | 14.54 | 18.35 | 54.65 | 34.91 | 33.59 | 12.80 | 24.43 | 18.22 | 20.38 | 9.84 | 11.55 | 9.25 | 8.47 | 9.26 | 7.68 | 7.31 | 8.05 | 0.75 | 1.21 | -1.04 |
| 5th Size | 14.67 | 18.50 | 54.91 | 35.16 | 33.75 | 12.89 | 24.58 | 18.53 | 20.74 | 9.99 | 11.76 | 9.34 | 8.61 | 9.33 | 7.96 | 7.96 | 8.45 | 0.94 | 1.42 | -0.82 |
| 50th Size | 15.36 | 19.55 | 56.79 | 37.50 | 34.66 | 13.62 | 25.63 | 20.25 | 22.12 | 10.07 | 12.73 | 10.61 | 9.86 | 12.05 | 10.10 | 9.19 | 9.44 | 2.16 | 2.98 | 0.58 |
| 95 Size | 15.76 | 20.58 | 58.77 | 40.26 | 36.19 | 14.33 | 26.66 | 21.93 | 22.63 | 11.17 | 13.68 | 11.47 | 10.97 | 13.13 | 11.41 | 10.34 | 10.42 | 3.31 | 4.24 | 2.09 |
| 97 Size | 15.78 | 20.68 | 58.98 | 40.81 | 36.35 | 14.38 | 26.82 | 22.05 | 22.66 | 11.37 | 13.92 | 11.60 | 11.13 | 13.35 | 11.65 | 10.44 | 10.54 | 3.56 | 4.47 | 2.33 |
| 98 Size | 15.78 | 20.77 | 59.18 | 41.05 | 36.65 | 14.45 | 26.91 | 22.16 | 22.67 | 11.49 | 13.88 | 11.69 | 11.19 | 13.44 | 11.72 | 10.61 | 10.61 | 3.67 | 4.56 | 2.48 |
| 99 Size | 15.79 | 20.84 | 59.49 | 41.39 | 37.14 | 14.57 | 27.09 | 22.56 | 22.69 | 11.77 | 14.04 | 11.78 | 11.34 | 13.62 | 11.94 | 10.92 | 10.79 | 3.77 | 4.77 | 2.67 |
| Max - 4 Measurement | 15.40 | 21.00 | 59.50 | 41.40 | 37.10 | 14.50 | 27.10 | 22.30 | 22.30 | 11.50 | 14.10 | 11.70 | 11.20 | 13.60 | 12.20 | 11.00 | 10.70 | 3.80 | 4.70 | 2.70 |
| Max - 3 Measurement | 15.50 | 21.10 | 59.70 | 41.70 | 37.20 | 14.60 | 27.20 | 22.60 | 22.40 | 11.70 | 14.20 | 11.80 | 11.30 | 13.70 | 12.40 | 11.10 | 10.80 | 3.90 | 4.90 | 2.80 |
| Max - 2 Measurement | 15.60 | 21.20 | 59.80 | 41.80 | 37.30 | 14.70 | 27.30 | 22.70 | 22.50 | 11.80 | 14.30 | 11.90 | 11.40 | 13.80 | 12.60 | 11.20 | 10.90 | 4.00 | 5.00 | 2.90 |
| Max - 1 Measurement | 15.70 | 21.40 | 59.90 | 42.10 | 37.40 | 14.80 | 27.40 | 22.80 | 22.60 | 11.90 | 14.40 | 12.00 | 11.50 | 13.90 | 12.70 | 11.30 | 11.00 | 4.10 | 5.10 | 3.00 |
| Max | 15.80 | 21.50 | 60.00 | 42.30 | 37.60 | 15.20 | 27.50 | 22.90 | 22.70 | 12.00 | 14.50 | 12.10 | 11.60 | 14.00 | 12.80 | 11.40 | 11.10 | 4.20 | 5.20 | 3.10 |
| Mean | 15.37 | 19.63 | 56.88 | 37.08 | 34.54 | 13.67 | 25.66 | 20.26 | 21.99 | 10.14 | 12.78 | 10.60 | 9.90 | 12.10 | 10.12 | 9.21 | 9.44 | 2.19 | 2.84 | 0.53 |
| SD | 0.34 | 0.62 | 1.19 | 1.59 | 1.08 | 0.43 | 0.64 | 1.00 | 0.61 | 0.66 | 0.54 | 0.62 | 0.72 | 0.68 | 0.37 | 0.74 | 0.54 | 0.73 | 0.53 | 0.37 |
| Coefficient of Variation | 2.24 | 3.14 | 2.10 | 4.22 | 3.13 | 3.13 | 2.48 | 4.92 | 2.79 | 6.51 | 4.62 | 5.88 | 7.28 | 5.59 | 8.57 | 8.05 | 6.25 | | | |
| No of Survey Subjects | 528 | 528 | 528 | 528 | 528 | 528 | 527 | 527 | 528 | 528 | 528 | 528 | 528 | 528 | 527 | 528 | 528 | 528 | 528 | 527 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 35 PART 2

SIZE ROLL REFERENCE **N** CONTROL MEASUREMENTS 1ST **HEAD BREADTH**
 2ND **MENTON TO VERTEX**
 NUMBER OF SIZES **4**
 SIZE **2** CONTROL MEASUREMENT RANGES **14.20** TO **15.89** **HEAD BREADTH**
22.80 TO **26.00** **MENTON TO VERTEX**

85

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|--------------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 14.20 | 18.00 | 54.30 | 33.20 | 31.80 | 12.30 | 23.70 | 16.00 | 22.90 | 5.30 | 9.90 | 9.90 | 8.90 | 10.40 | 6.50 | 8.70 | 6.20 | -1.00 | -0.40 | -3.10 |
| Min + 1 Measurement | 14.40 | 18.40 | 54.40 | 33.80 | 32.00 | 12.40 | 24.70 | 16.40 | 22.90 | 5.40 | 10.00 | 10.00 | 9.00 | 10.60 | 6.60 | 9.00 | 6.40 | -1.00 | -0.30 | -2.40 |
| Min + 2 Measurement | 14.50 | 18.60 | 54.70 | 34.00 | 32.40 | 12.60 | 24.80 | 16.50 | 23.00 | 5.50 | 11.00 | 10.20 | 9.20 | 10.70 | 7.10 | 9.10 | 6.50 | -1.00 | -0.20 | -2.70 |
| Min + 3 Measurement | 14.60 | 18.70 | 54.90 | 34.20 | 32.50 | 12.70 | 24.90 | 16.60 | 23.10 | 5.60 | 11.10 | 10.30 | 9.30 | 10.80 | 7.40 | 9.20 | 6.60 | -1.00 | -0.10 | -2.50 |
| Min + 4 Measurement | 14.70 | 18.80 | 55.00 | 34.30 | 32.60 | 12.80 | 25.00 | 17.10 | 23.20 | 5.70 | 11.20 | 10.40 | 9.40 | 11.00 | 7.60 | 9.30 | 6.70 | -1.00 | 0.10 | -2.40 |
| 1st File | 14.44 | 18.72 | 54.88 | 34.22 | 32.57 | 12.83 | 24.77 | 17.12 | 23.90 | 5.58 | 11.04 | 10.22 | 9.33 | 10.73 | 7.53 | 9.42 | 6.53 | -0.14 | -0.66 | -2.47 |
| 2nd File | 14.51 | 18.79 | 55.04 | 34.53 | 32.63 | 12.90 | 24.98 | 17.38 | 22.90 | 5.71 | 11.88 | 10.34 | 9.58 | 10.95 | 7.85 | 9.00 | 6.77 | 0.07 | 0.27 | -2.24 |
| 3rd File | 14.50 | 18.86 | 55.30 | 34.83 | 32.48 | 12.87 | 25.12 | 17.62 | 22.80 | 5.78 | 11.95 | 10.40 | 9.72 | 11.05 | 7.97 | 9.13 | 6.84 | 0.17 | 0.47 | -2.13 |
| 5th File | 14.70 | 18.95 | 55.45 | 35.36 | 33.22 | 12.94 | 25.28 | 17.84 | 22.80 | 5.94 | 12.11 | 10.61 | 9.84 | 11.23 | 8.09 | 9.23 | 6.95 | 0.34 | 0.64 | -1.91 |
| 50th File | 15.42 | 19.88 | 57.89 | 37.94 | 35.12 | 13.63 | 26.27 | 19.55 | 23.80 | 6.92 | 13.13 | 11.58 | 11.05 | 12.35 | 9.50 | 10.46 | 9.92 | 1.48 | 2.01 | -0.41 |
| 95 File | 15.76 | 20.95 | 59.43 | 40.59 | 36.86 | 14.30 | 27.42 | 21.26 | 24.72 | 11.14 | 14.06 | 12.68 | 12.43 | 13.51 | 10.94 | 11.60 | 10.77 | 2.58 | 3.30 | 0.98 |
| 97 File | 15.78 | 21.08 | 59.67 | 40.98 | 37.20 | 14.40 | 27.50 | 21.50 | 24.94 | 11.27 | 14.16 | 12.86 | 12.54 | 13.60 | 11.10 | 11.76 | 10.92 | 2.72 | 3.47 | 1.23 |
| 98 File | 15.79 | 21.17 | 59.89 | 41.06 | 37.29 | 14.46 | 27.73 | 21.66 | 25.05 | 11.30 | 14.28 | 12.95 | 12.70 | 13.87 | 11.22 | 11.85 | 11.04 | 2.80 | 3.54 | 1.34 |
| 99 File | 15.79 | 21.34 | 60.32 | 41.33 | 37.50 | 14.54 | 28.02 | 21.82 | 25.34 | 11.53 | 14.37 | 13.04 | 12.90 | 14.04 | 11.38 | 12.07 | 11.21 | 2.98 | 3.74 | 1.52 |
| Max - 4 Measurement | 15.40 | 21.40 | 60.40 | 41.50 | 37.60 | 14.30 | 27.80 | 21.80 | 25.30 | 11.50 | 14.40 | 13.00 | 12.90 | 13.90 | 11.40 | 12.10 | 11.10 | 2.90 | 3.60 | 1.50 |
| Max - 3 Measurement | 15.50 | 21.50 | 60.50 | 41.70 | 37.70 | 14.40 | 28.00 | 22.00 | 25.40 | 11.60 | 14.60 | 13.10 | 13.00 | 14.00 | 11.50 | 12.20 | 11.20 | 3.00 | 3.70 | 1.60 |
| Max - 2 Measurement | 15.60 | 21.60 | 60.80 | 41.80 | 37.80 | 14.50 | 28.10 | 22.10 | 25.50 | 11.80 | 14.80 | 13.20 | 13.10 | 14.10 | 11.60 | 12.30 | 11.30 | 3.10 | 3.80 | 1.80 |
| Max - 1 Measurement | 15.70 | 21.80 | 60.90 | 43.00 | 38.20 | 14.60 | 28.30 | 22.20 | 25.60 | 11.90 | 14.90 | 13.30 | 13.40 | 14.20 | 11.70 | 12.40 | 11.40 | 3.20 | 4.00 | 2.00 |
| Max | 15.80 | 22.00 | 61.00 | 43.70 | 38.50 | 14.80 | 28.40 | 23.30 | 25.90 | 12.00 | 15.00 | 13.40 | 13.60 | 14.30 | 11.80 | 12.50 | 11.50 | 3.20 | 4.10 | 2.10 |
| Mean | 15.41 | 19.96 | 57.40 | 37.91 | 35.16 | 13.67 | 26.34 | 19.54 | 23.54 | 10.02 | 13.17 | 11.65 | 11.13 | 12.41 | 9.57 | 10.37 | 9.94 | 1.52 | 2.04 | -0.37 |
| SD | 0.32 | 0.60 | 1.20 | 1.60 | 1.09 | 0.41 | 0.65 | 1.04 | 0.61 | 0.27 | 0.60 | 0.63 | 0.78 | 0.69 | 0.90 | 0.72 | 0.98 | 0.70 | 0.93 | 0.86 |
| Coefficient of Variation | 2.08 | 3.00 | 2.09 | 4.21 | 3.09 | 2.98 | 2.48 | 5.24 | 2.60 | 2.71 | 4.56 | 5.40 | 6.98 | 5.57 | 8.46 | 6.95 | 5.79 | | | |
| No of Survey Subjects | 567 | 567 | 567 | 567 | 567 | 567 | 567 | 566 | 567 | 567 | 567 | 567 | 567 | 567 | 567 | 567 | 567 | 567 | 567 | 566 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 35 PART 3

SIZE ROLL REFERENCE N CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND MENTON TO VERTEX
 NUMBER OF SIZES 4
 SIZE 3 CONTROL MEASUREMENT RANGES 15.90 TO 17.50 HEAD BREADTH
19.50 TO 22.79 MENTON TO VERTEX

98

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO MASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO MASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | | | | | | | | | | | | | |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|-------|------|-------|------|-------|-------|-------|------|------|-------|------|-----|-----|
| Min | 15.90 | 56 | 18.00 | 54.90 | 34.90 | 32.80 | 12.90 | 24.50 | 17.40 | 2 | 20.60 | 2 | 9.50 | 11.00 | 9.60 | 9.10 | 2 | 5.60 | 7.90 | 7.00 | 7.40 | 1 | 0.60 | 0.20 | 2 | -1.50 | 1 | | | | | | |
| Min + 1 Measurement | 16.00 | 59 | 18.10 | 55.00 | 35.00 | 33.10 | 13.30 | 24.60 | 17.00 | 1 | 20.50 | 3 | 9.60 | 11.30 | 9.20 | 8.20 | 1 | 10.00 | 8.00 | 7.60 | 8.00 | 2 | -0.10 | 0.40 | 2 | -1.40 | 2 | | | | | | |
| Min + 2 Measurement | 16.10 | 37 | 18.30 | 55.50 | 35.40 | 33.20 | 13.40 | 24.70 | 17.50 | 1 | 20.00 | 3 | 9.70 | 11.40 | 9.30 | 8.10 | 1 | 9.20 | 7.70 | 8.10 | 3 | 0.00 | 0.00 | 1 | 0.00 | 1 | -1.20 | 1 | | | | | |
| Min + 3 Measurement | 16.20 | 35 | 18.40 | 55.50 | 35.50 | 33.30 | 13.50 | 24.80 | 18.20 | 3 | 20.70 | 3 | 9.80 | 11.50 | 2 | 9.40 | 3 | 9.40 | 2 | 10.20 | 2 | 9.40 | 4 | 8.20 | 3 | 0.20 | 2 | 0.90 | 3 | -1.00 | 1 | | |
| Min + 4 Measurement | 16.30 | 24 | 18.50 | 55.60 | 35.70 | 33.50 | 13.60 | 24.90 | 18.40 | 1 | 20.80 | 2 | 9.90 | 11.60 | 1 | 9.50 | 3 | 10.40 | 1 | 9.50 | 1 | 7.90 | 5 | 8.30 | 2 | 0.50 | 2 | 1.00 | 2 | -0.90 | 2 | | |
| 1st Size | 15.90 | 18.11 | 55.02 | 34.97 | 33.10 | 13.31 | 24.60 | 17.01 | 20.50 | 9.57 | 11.21 | 9.20 | 10.10 | 9.21 | 7.70 | 8.00 | 0.00 | 0.31 | -1.54 | | | | | | | | | | | | | | |
| 2nd Size | 15.90 | 18.41 | 55.01 | 35.40 | 33.41 | 13.35 | 24.68 | 18.05 | 20.60 | 9.81 | 11.46 | 9.37 | 9.55 | 10.44 | 8.54 | 7.75 | 9.10 | 0.26 | 0.67 | -0.94 | | | | | | | | | | | | | |
| 3rd Size | 15.90 | 18.53 | 55.86 | 35.52 | 33.55 | 13.39 | 24.80 | 18.46 | 20.71 | 9.01 | 11.66 | 9.60 | 9.47 | 10.78 | 9.64 | 7.34 | 9.21 | 0.60 | 0.92 | -0.83 | | | | | | | | | | | | | |
| 5th Size | 15.90 | 18.67 | 56.10 | 35.83 | 33.77 | 13.50 | 24.95 | 18.74 | 20.95 | 9.17 | 11.93 | 9.69 | 9.71 | 10.98 | 9.74 | 9.10 | 9.37 | 0.76 | 1.35 | -0.63 | | | | | | | | | | | | | |
| 50th Size | 16.10 | 19.71 | 57.84 | 38.09 | 35.42 | 14.12 | 25.91 | 20.34 | 22.16 | 10.21 | 12.74 | 10.65 | 9.92 | 12.07 | 10.07 | 9.19 | 9.44 | 2.08 | 2.80 | 0.62 | | | | | | | | | | | | | |
| 95 Size | 16.91 | 20.66 | 59.98 | 41.37 | 37.44 | 14.95 | 26.98 | 22.12 | 22.65 | 11.34 | 13.78 | 11.73 | 11.12 | 12.96 | 11.52 | 10.27 | 10.40 | 3.13 | 4.19 | 2.14 | | | | | | | | | | | | | |
| 97 Size | 16.90 | 20.75 | 60.10 | 41.60 | 37.69 | 15.14 | 26.96 | 22.30 | 22.67 | 11.44 | 13.87 | 11.80 | 11.30 | 13.13 | 11.64 | 10.45 | 10.54 | 3.46 | 4.27 | 2.45 | | | | | | | | | | | | | |
| 98 Size | 16.97 | 20.74 | 60.30 | 42.09 | 37.98 | 15.20 | 27.00 | 22.40 | 22.68 | 11.56 | 13.99 | 11.97 | 11.40 | 13.22 | 11.70 | 10.54 | 10.65 | 3.54 | 4.48 | 2.53 | | | | | | | | | | | | | |
| 99 Size | 17.15 | 20.95 | 60.60 | 43.17 | 38.20 | 15.40 | 27.34 | 22.74 | 22.69 | 11.99 | 14.17 | 12.09 | 11.74 | 13.30 | 11.90 | 10.70 | 10.75 | 3.70 | 4.69 | 2.88 | | | | | | | | | | | | | |
| Max - 4 Measurement | 16.90 | 7 | 20.80 | 60.50 | 42.10 | 13.80 | 15.20 | 27.00 | 22.30 | 3 | 22.30 | 25 | 11.60 | 3 | 14.00 | 11.90 | 11.50 | 1 | 13.00 | 9 | 11.70 | 5 | 10.60 | 2 | 10.60 | 2 | 3.60 | 2 | 4.50 | 1 | 2.00 | 3 | |
| Max - 3 Measurement | 17.00 | 4 | 20.90 | 60.60 | 42.30 | 13.820 | 15.30 | 27.20 | 22.40 | 3 | 22.40 | 50 | 11.80 | 1 | 14.10 | 12.00 | 11.80 | 2 | 13.10 | 2 | 11.80 | 2 | 10.70 | 2 | 10.70 | 4 | 3.70 | 2 | 4.60 | 2 | 2.40 | 1 | |
| Max - 2 Measurement | 17.10 | 1 | 21.00 | 60.70 | 42.70 | 13.830 | 15.40 | 27.60 | 22.60 | 2 | 22.50 | 28 | 12.00 | 1 | 14.20 | 12.10 | 11.90 | 1 | 13.20 | 3 | 12.00 | 2 | 10.80 | 1 | 10.80 | 2 | 3.80 | 1 | 4.70 | 1 | 3.00 | 1 | |
| Max - 1 Measurement | 17.20 | 2 | 21.70 | 61.10 | 43.20 | 13.920 | 15.50 | 27.70 | 22.80 | 1 | 23.00 | 26 | 12.20 | 2 | 14.40 | 12.30 | 12.00 | 1 | 13.30 | 4 | 12.10 | 1 | 10.90 | 1 | 11.00 | 1 | 4.00 | 1 | 4.90 | 1 | 3.10 | 1 | |
| Max | 17.30 | 2 | 21.80 | 61.40 | 43.60 | 13.980 | 15.70 | 27.80 | 23.00 | 2 | 23.00 | 31 | 12.50 | 1 | 14.60 | 12.80 | 12.40 | 1 | 13.40 | 3 | 13.20 | 1 | 11.00 | 1 | 11.10 | 1 | 4.40 | 1 | 5.00 | 2 | 4.00 | 1 | |
| Mean | 16.23 | 19.74 | 57.92 | 38.38 | 35.51 | 14.20 | 25.96 | 20.47 | 22.08 | 10.28 | 12.83 | 10.74 | 10.00 | 12.08 | 10.19 | 9.25 | 9.46 | 2.08 | 2.83 | 0.73 | | | | | | | | | | | | | |
| SD | 0.31 | 0.60 | 1.19 | 1.67 | 1.06 | 0.42 | 0.58 | 1.02 | 0.53 | 0.68 | 0.61 | 0.63 | 0.76 | 0.64 | 0.81 | 0.69 | 0.61 | 0.77 | 0.89 | 0.85 | | | | | | | | | | | | | |
| Coefficient of Variation % | 1.90 | 3.02 | 2.05 | 4.34 | 2.98 | 2.96 | 2.24 | 4.97 | 2.38 | 6.57 | 4.79 | 5.90 | 7.55 | 5.31 | 7.93 | 7.42 | 6.41 | | | | | | | | | | | | | | | | |
| No of Survey Subjects | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 35 PART 4

SIZE ROLL REFERENCE N CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND MENTON TO VERTEX
 NUMBER OF SIZES 4
 SIZE 4 CONTROL MEASUREMENT RANGES 15.90 TO 17.50 HEAD BREADTH
22.80 TO 26.00 MENTON TO VERTEX

87

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD OF HEAD | TRAGON TO VERTEX | POPIL TO VERTEX | MASON TO VERTEX | MENTON TO MASON | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO POPIL VERTICAL | TRAGON TO MASON VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | |
|---------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|--------------------------------|------------------|-----------------|-----------------|-----------------|-----------------------------|---------------------------|---------------------------------|--------------------------|--------------------------|--|---------|
| Min | 15 40 | 72 | 17 80 | 1 54 30 | 1 34 30 | 3 33 20 | 3 13 00 | 2 24 70 | 1 16 50 | 1 22 80 | 4 7 80 | 1 9 50 | 1 9 40 | 2 8 90 | 1 10 80 | 2 6 60 | 1 8 30 | 1 6 50 | 1 -2 10 | 1 -1 70 | 1 -2 70 |
| Min + 1 Measurement | 16 00 | 40 | 18 40 | 1 55 20 | 2 34 50 | 1 33 40 | 2 13 10 | 2 24 90 | 1 17 40 | 1 22 90 | 35 8 00 | 1 11 20 | 1 10 00 | 1 9 00 | 2 10 90 | 4 7 10 | 1 8 40 | 1 6 70 | 1 -0 60 | 1 -0 40 | 1 -2 40 |
| Min + 2 Measurement | 16 10 | 77 | 18 50 | 2 55 50 | 1 34 70 | 2 33 50 | 2 13 20 | 2 25 00 | 5 17 50 | 4 23 00 | 28 8 50 | 2 11 40 | 1 10 10 | 1 9 20 | 1 11 00 | 3 7 30 | 1 8 50 | 1 7 20 | 1 -0 50 | 1 -0 50 | 1 -2 30 |
| Min + 3 Measurement | 16 20 | 95 | 18 70 | 1 55 60 | 2 35 00 | 1 33 60 | 1 13 30 | 3 25 10 | 3 17 60 | 4 23 10 | 43 8 60 | 2 11 80 | 3 9 30 | 4 11 10 | 1 7 40 | 4 8 60 | 4 7 70 | 1 -0 40 | 2 -0 10 | 1 -2 10 | |
| Min + 4 Measurement | 16 30 | 54 | 18 80 | 3 55 80 | 3 35 10 | 1 33 70 | 2 13 40 | 7 25 20 | 2 17 70 | 2 23 20 | 58 8 70 | 2 11 90 | 2 10 30 | 3 9 40 | 2 11 20 | 7 7 80 | 2 7 80 | 1 -0 30 | 1 0 00 | 2 -2 10 | |
| 1st File | 15 90 | 18 72 | 55 80 | 34 69 | 33 45 | 13 20 | 24 98 | 17 50 | 22 80 | 8 60 | 11 79 | 10 16 | 9 25 | 10 90 | 7 37 | 8 57 | 8 08 | -0 31 | 0 00 | -2 30 | |
| 2nd File | 15 90 | 18 83 | 55 88 | 35 33 | 33 75 | 13 34 | 25 19 | 17 69 | 22 80 | 8 74 | 11 94 | 10 26 | 9 61 | 11 13 | 7 70 | 8 91 | 8 66 | -0 09 | 0 26 | -2 17 | |
| 3rd File | 15 90 | 18 94 | 56 09 | 35 48 | 34 04 | 13 41 | 25 33 | 17 84 | 22 80 | 8 82 | 12 01 | 10 37 | 9 66 | 11 21 | 7 78 | 9 00 | 8 77 | 0 02 | 0 37 | -2 02 | |
| 5th File | 15 90 | 19 11 | 56 48 | 35 83 | 34 18 | 13 47 | 25 46 | 17 99 | 22 80 | 9 05 | 12 14 | 10 61 | 9 76 | 11 36 | 8 01 | 9 23 | 8 94 | 0 23 | 0 61 | -1 82 | |
| 50th File | 16 16 | 20 14 | 58 42 | 38 60 | 36 07 | 14 14 | 26 04 | 19 86 | 23 54 | 10 17 | 13 16 | 11 70 | 11 10 | 12 47 | 9 64 | 10 46 | 9 92 | 1 44 | 2 05 | -0 35 | |
| 95 File | 16 80 | 21 02 | 60 49 | 41 52 | 39 11 | 14 94 | 27 77 | 21 53 | 24 82 | 11 35 | 14 15 | 12 80 | 12 39 | 13 71 | 11 02 | 11 72 | 10 94 | 2 67 | 5 42 | 1 05 | |
| 97 File | 16 99 | 21 17 | 60 83 | 41 77 | 38 50 | 15 05 | 27 93 | 21 74 | 25 02 | 11 54 | 14 37 | 12 93 | 12 52 | 13 87 | 11 16 | 11 90 | 11 10 | 2 85 | 3 62 | 1 22 | |
| 98 File | 17 09 | 21 30 | 60 90 | 42 01 | 38 62 | 15 13 | 28 05 | 21 87 | 25 17 | 11 60 | 14 50 | 13 01 | 12 60 | 14 00 | 11 30 | 12 01 | 11 19 | 2 94 | 3 74 | 1 41 | |
| 99 File | 17 23 | 21 50 | 61 41 | 42 51 | 38 81 | 15 20 | 28 16 | 22 31 | 25 30 | 12 01 | 14 60 | 13 17 | 12 80 | 14 14 | 11 50 | 12 45 | 11 40 | 3 21 | 3 97 | 1 77 | |
| Max - 4 Measurement | 17 00 | 9 | 21 30 | 4 61 50 | 1 42 80 | 1 39 20 | 1 15 10 | 8 28 10 | 6 22 10 | 1 25 20 | 7 12 00 | 2 14 60 | 6 13 10 | 2 12 80 | 3 14 10 | 5 11 50 | 3 12 40 | 2 11 40 | 3 7 10 | 3 3 10 | 1 70 |
| Max - 3 Measurement | 17 10 | 6 | 21 40 | 5 61 70 | 1 43 50 | 1 39 30 | 1 15 20 | 8 28 20 | 5 22 30 | 4 12 20 | 2 14 70 | 2 13 20 | 6 12 40 | 2 14 20 | 3 11 60 | 2 12 50 | 2 11 50 | 2 3 30 | 2 4 00 | 3 1 80 | |
| Max - 2 Measurement | 17 20 | 3 | 21 50 | 1 61 80 | 2 44 20 | 1 39 40 | 1 15 30 | 3 28 30 | 1 22 50 | 2 25 40 | 3 12 70 | 2 15 00 | 2 13 30 | 2 13 00 | 1 11 70 | 1 12 60 | 3 11 60 | 1 3 40 | 3 4 10 | 1 2 00 | |
| Max - 1 Measurement | 17 30 | 6 | 21 60 | 3 62 00 | 1 44 30 | 1 39 50 | 1 15 40 | 2 28 50 | 2 22 60 | 2 25 50 | 1 13 60 | 1 15 50 | 1 13 40 | 1 14 60 | 2 11 80 | 1 13 60 | 1 11 70 | 2 3 70 | 1 4 20 | 2 10 2 | |
| Max | 17 40 | 2 | 21 70 | 3 62 40 | 1 44 80 | 1 40 40 | 1 15 50 | 1 29 00 | 1 22 80 | 2 25 80 | 1 14 10 | 1 15 60 | 1 13 50 | 1 14 70 | 1 11 90 | 2 14 20 | 1 11 90 | 1 4 10 | 1 4 30 | 2 2 20 | |
| Mean | 16 88 | 20 15 | 58 51 | 38 69 | 36 12 | 14 21 | 26 70 | 19 85 | 23 69 | 10 20 | 13 21 | 11 73 | 11 13 | 12 55 | 9 66 | 10 47 | 9 95 | 1 48 | 2 08 | -0 30 | |
| SD | 0 31 | 0 54 | 1 21 | 1 70 | 1 14 | 0 43 | 0 69 | 1 04 | 0 44 | 0 73 | 0 64 | 0 66 | 0 77 | 0 72 | 0 90 | 0 75 | 0 63 | 0 75 | 0 57 | 0 57 | |
| Coe. (Coef. of Variation) | 1 91 | 2 94 | 2 06 | 4 34 | 3 15 | 3 05 | 2 58 | 6 23 | 2 70 | 7 18 | 4 80 | 5 54 | 6 92 | 5 70 | 4 31 | 7 40 | 6 32 | 5 94 | 5 94 | 5 94 | |
| No of Survey Subjects | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | 594 | |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 36 PART 1

SIZE ROLL REFERENCE 0 CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND MENTON TO BACK OF HEAD
 NUMBER OF SIZES 4
 SIZE 1 CONTROL MEASUREMENT RANGES 14 20 TO 15 89 HEAD BREADTH
16 50 TO 19 79 MENTON TO BACK OF HEAD

88

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGION CORONAL ARC | BITRAGION DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGION TO BACK OF HEAD | TRAGION TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGION TO MENTON HORIZONTAL | TRAGION TO MENTON VERTICAL | TRAGION TO BROW RIDGE HORIZONTAL | TRAGION TO PUPIL VERTICAL | TRAGION TO NASION VERTICAL | MENTON TO BACK OF HEAD PLUS HEAD LENGTH |
|----------------------------|--------------|-------------|--------------------|--------------------|-----------------------|--------------------|-------------------------------|------------------------|------------------|-------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|---|
| Min | 14 30 | 18 00 | 53 00 | 33 20 | 31 60 | 12 20 | 24 10 | 16 50 | 20 40 | 8 00 | 9 80 | 9 00 | 8 60 | 8 90 | 6 50 | 7 00 | 6 20 | 11 00 | 11 60 | 13 10 |
| Min + 1 Measurement | 14 40 | 19 10 | 53 60 | 33 70 | 31 70 | 12 30 | 24 20 | 16 90 | 20 50 | 8 20 | 11 00 | 9 20 | 8 70 | 9 00 | 7 10 | 7 60 | 6 30 | 11 00 | 11 60 | 13 20 |
| Min + 2 Measurement | 14 50 | 19 20 | 54 00 | 33 80 | 31 80 | 12 40 | 24 30 | 17 10 | 20 70 | 8 30 | 11 40 | 9 30 | 8 90 | 9 30 | 7 20 | 7 70 | 6 40 | 11 00 | 11 60 | 13 30 |
| Min + 3 Measurement | 14 60 | 19 30 | 54 60 | 33 90 | 32 00 | 12 70 | 24 40 | 17 20 | 21 00 | 8 40 | 11 50 | 9 40 | 9 00 | 9 60 | 7 30 | 7 80 | 6 50 | 11 00 | 11 60 | 13 40 |
| Min + 4 Measurement | 14 70 | 19 40 | 55 00 | 34 00 | 32 30 | 12 90 | 24 50 | 17 30 | 21 10 | 8 50 | 11 60 | 9 50 | 9 10 | 9 90 | 7 40 | 7 90 | 6 60 | 11 00 | 11 60 | 13 50 |
| 1st Size | 14 39 | 18 11 | 53 96 | 33 86 | 31 91 | 12 56 | 24 14 | 17 14 | 21 06 | 8 36 | 11 46 | 9 54 | 9 30 | 10 56 | 7 32 | 7 85 | 6 24 | 11 00 | 11 60 | 13 59 |
| 2nd Size | 14 46 | 18 21 | 54 41 | 34 21 | 32 33 | 12 66 | 24 30 | 17 34 | 21 23 | 8 52 | 11 61 | 9 58 | 9 13 | 10 76 | 7 71 | 8 56 | 6 51 | 11 00 | 11 60 | 14 13 |
| 3rd Size | 14 53 | 18 34 | 54 65 | 34 35 | 32 52 | 12 75 | 24 40 | 17 49 | 21 34 | 8 58 | 11 75 | 10 06 | 9 26 | 10 90 | 7 92 | 8 69 | 6 63 | 11 00 | 11 60 | 14 20 |
| 5th Size | 14 66 | 18 50 | 54 86 | 34 80 | 32 85 | 12 88 | 24 01 | 17 72 | 21 52 | 8 74 | 11 90 | 10 20 | 9 45 | 11 03 | 8 03 | 8 85 | 6 79 | 11 00 | 11 60 | 14 30 |
| 50th Size | 15 37 | 19 51 | 56 51 | 37 31 | 34 77 | 13 58 | 25 70 | 19 01 | 23 03 | 9 64 | 12 90 | 11 45 | 10 96 | 11 97 | 9 20 | 10 04 | 7 98 | 11 00 | 11 60 | 15 05 |
| 95 Size | 15 75 | 20 48 | 58 26 | 38 57 | 36 60 | 14 21 | 26 77 | 19 61 | 24 50 | 10 59 | 13 97 | 12 67 | 12 40 | 13 15 | 10 20 | 11 56 | 10 73 | 11 00 | 11 60 | 15 45 |
| 97 Size | 15 77 | 20 58 | 58 52 | 40 41 | 36 78 | 14 35 | 26 90 | 19 64 | 24 78 | 10 75 | 14 07 | 12 80 | 12 56 | 13 40 | 10 32 | 11 72 | 10 85 | 11 00 | 11 60 | 15 64 |
| 98 Size | 15 78 | 20 69 | 58 68 | 40 50 | 36 98 | 14 41 | 26 98 | 19 66 | 24 94 | 10 88 | 14 17 | 12 94 | 12 78 | 13 50 | 10 42 | 11 82 | 11 01 | 11 00 | 11 60 | 15 76 |
| 99 Size | 15 79 | 20 82 | 59 28 | 40 62 | 37 44 | 14 49 | 27 32 | 19 68 | 25 14 | 11 11 | 14 27 | 13 08 | 12 96 | 13 62 | 10 57 | 11 97 | 11 09 | 11 00 | 11 60 | 15 83 |
| Max - 4 Measurement | 15 40 | 20 60 | 59 20 | 40 80 | 36 90 | 14 30 | 27 30 | 19 30 | 25 20 | 11 00 | 14 20 | 13 00 | 12 90 | 13 60 | 10 40 | 11 90 | 11 00 | 11 00 | 11 60 | 16 00 |
| Max - 3 Measurement | 15 50 | 20 70 | 59 40 | 40 90 | 37 00 | 14 40 | 27 40 | 19 40 | 25 30 | 11 10 | 14 30 | 13 10 | 13 00 | 13 70 | 10 50 | 12 00 | 11 10 | 11 00 | 11 60 | 16 10 |
| Max - 2 Measurement | 16 00 | 20 80 | 59 50 | 41 10 | 37 50 | 14 50 | 27 50 | 19 50 | 25 40 | 11 10 | 14 40 | 13 20 | 13 10 | 13 40 | 10 60 | 12 20 | 11 20 | 11 00 | 11 60 | 16 20 |
| Max - 1 Measurement | 15 70 | 21 00 | 59 80 | 41 30 | 37 60 | 14 60 | 27 80 | 19 60 | 25 60 | 11 20 | 14 50 | 13 30 | 13 40 | 14 00 | 10 70 | 12 60 | 11 30 | 11 00 | 11 60 | 16 30 |
| Mean | 15 80 | 21 10 | 60 00 | 41 40 | 37 80 | 14 80 | 28 00 | 19 70 | 25 90 | 11 30 | 14 60 | 13 40 | 13 60 | 14 20 | 11 10 | 13 40 | 11 70 | 11 00 | 11 60 | 16 40 |
| SD | 0 34 | 0 57 | 0 68 | 1 51 | 1 14 | 0 41 | 0 67 | 0 61 | 0 89 | 0 59 | 0 64 | 0 74 | 0 88 | 0 65 | 0 68 | 0 93 | 0 62 | 0 69 | 0 83 | 0 73 |
| Coefficient of Variation % | 2 18 | 2 91 | 1 90 | 4 04 | 3 29 | 3 00 | 2 60 | 3 22 | 3 93 | 6 05 | 4 97 | 6 44 | 8 00 | 5 39 | 7 42 | 8 23 | 6 31 | | | |
| No of Survey Subjects | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 | 461 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 36 PART 2

SIZE ROLL REFERENCE 0 CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND MENTON TO BACK OF HEAD
 NUMBER OF SIZES 4
 SIZE 2 CONTROL MEASUREMENT RANGES 14.20 TO 15.89 HEAD BREADTH
19.80 TO 23.00 MENTON TO BACK OF HEAD

68

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGION TO BACK OF HEAD | TRAGION TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGION TO MENTON HORIZONTAL | TRAGION TO MENTON VERTICAL | TRAGION TO BROW RIDGE HORIZONTAL | TRAGION TO PUPIL VERTICAL | TRAGION TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|-------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|
| Min | 14.20 | 18.30 | 54.30 | 34.00 | 31.10 | 12.40 | 23.70 | 19.80 | 19.10 | 8.80 | 10.90 | 8.50 | 7.50 | 9.30 | 8.40 | 6.60 | 7.70 | 0.30 | 0.00 | -1.30 |
| Min + 1 Measurement | 14.30 | 18.40 | 54.50 | 34.10 | 31.60 | 12.50 | 24.40 | 19.90 | 19.50 | 9.00 | 11.20 | 8.60 | 7.80 | 10.00 | 8.50 | 6.80 | 7.80 | 0.20 | 0.50 | -1.20 |
| Min + 2 Measurement | 14.40 | 18.50 | 54.70 | 34.20 | 32.10 | 12.60 | 24.50 | 20.00 | 20.00 | 9.10 | 11.30 | 8.80 | 8.00 | 10.10 | 8.60 | 7.00 | 7.90 | 0.50 | 0.70 | -1.10 |
| Min + 3 Measurement | 14.50 | 18.60 | 55.00 | 34.40 | 32.60 | 12.70 | 24.60 | 20.10 | 20.10 | 9.20 | 11.40 | 9.00 | 8.20 | 10.20 | 8.70 | 7.10 | 8.00 | 0.40 | 0.90 | -1.00 |
| Min + 4 Measurement | 14.60 | 18.70 | 55.10 | 34.80 | 33.10 | 12.80 | 24.70 | 20.20 | 20.10 | 9.30 | 11.50 | 9.20 | 8.30 | 10.50 | 8.80 | 7.20 | 8.10 | 0.50 | 0.90 | -0.90 |
| 1st Mile | 14.43 | 18.52 | 55.00 | 34.83 | 32.13 | 12.66 | 24.53 | 19.80 | 19.84 | 9.01 | 11.33 | 8.96 | 8.09 | 10.51 | 8.61 | 7.16 | 8.06 | 0.33 | 0.73 | -1.09 |
| 2nd Mile | 14.52 | 18.65 | 55.15 | 35.43 | 32.61 | 12.82 | 24.72 | 19.80 | 20.31 | 9.13 | 11.56 | 9.14 | 8.36 | 10.83 | 8.74 | 7.53 | 8.24 | 0.49 | 1.03 | -0.89 |
| 3rd Mile | 14.56 | 18.75 | 55.39 | 35.53 | 32.76 | 12.87 | 24.84 | 19.80 | 20.65 | 9.23 | 11.76 | 9.33 | 8.53 | 11.03 | 8.89 | 7.77 | 8.41 | 0.63 | 1.13 | -0.76 |
| 5th Mile | 14.71 | 18.92 | 55.60 | 35.63 | 32.99 | 12.96 | 24.95 | 19.50 | 20.91 | 9.35 | 11.93 | 9.57 | 8.73 | 11.14 | 9.07 | 7.98 | 8.57 | 0.81 | 1.30 | -0.62 |
| 50th Mile | 15.42 | 19.92 | 57.55 | 38.10 | 34.94 | 13.07 | 26.16 | 20.45 | 22.49 | 10.26 | 12.97 | 10.85 | 10.44 | 12.33 | 10.27 | 9.50 | 9.60 | 2.10 | 2.82 | 0.59 |
| 95 Mile | 15.77 | 20.94 | 59.43 | 40.83 | 36.67 | 14.35 | 27.36 | 21.81 | 24.17 | 11.32 | 13.88 | 12.08 | 11.62 | 13.46 | 11.41 | 11.09 | 10.57 | 3.24 | 4.13 | 1.93 |
| 97 Mile | 15.78 | 21.10 | 59.65 | 41.06 | 36.98 | 14.41 | 27.49 | 21.99 | 24.36 | 11.45 | 14.04 | 12.32 | 11.90 | 13.54 | 11.59 | 11.35 | 10.73 | 3.50 | 4.33 | 2.19 |
| 98 Mile | 15.79 | 21.18 | 59.86 | 41.28 | 37.16 | 14.49 | 27.62 | 22.11 | 24.67 | 11.59 | 14.13 | 12.45 | 11.99 | 13.76 | 11.68 | 11.52 | 10.79 | 3.63 | 4.52 | 2.41 |
| 99 Mile | 15.79 | 21.37 | 60.29 | 41.74 | 37.37 | 14.53 | 27.79 | 22.24 | 24.99 | 11.77 | 14.20 | 12.69 | 12.36 | 13.99 | 11.94 | 11.72 | 10.99 | 3.75 | 4.60 | 2.64 |
| Max - 4 Measurement | 15.40 | 21.40 | 60.40 | 41.80 | 37.50 | 14.50 | 27.70 | 22.20 | 24.90 | 11.60 | 14.30 | 12.60 | 12.30 | 13.90 | 12.00 | 11.70 | 10.90 | 3.80 | 4.70 | 2.60 |
| Max - 3 Measurement | 15.50 | 21.50 | 60.50 | 42.10 | 37.60 | 14.60 | 27.90 | 22.50 | 25.00 | 11.70 | 14.40 | 12.70 | 12.40 | 14.00 | 12.20 | 11.80 | 11.00 | 3.90 | 4.90 | 2.70 |
| Max - 2 Measurement | 15.60 | 21.60 | 60.80 | 42.30 | 37.70 | 14.70 | 28.10 | 22.60 | 25.30 | 11.80 | 14.60 | 12.80 | 12.50 | 14.10 | 12.40 | 11.90 | 11.20 | 4.00 | 5.00 | 2.80 |
| Max - 1 Measurement | 15.70 | 21.80 | 60.90 | 43.00 | 38.20 | 14.80 | 28.30 | 22.70 | 25.40 | 11.90 | 14.80 | 12.90 | 12.70 | 14.20 | 12.60 | 12.10 | 11.30 | 4.10 | 5.10 | 3.10 |
| Max | 15.80 | 22.00 | 61.00 | 43.70 | 38.50 | 15.20 | 28.40 | 22.80 | 25.90 | 12.00 | 15.00 | 13.00 | 12.80 | 14.30 | 12.70 | 13.10 | 11.40 | 4.20 | 5.60 | 3.30 |
| Mean | 15.41 | 19.94 | 57.56 | 38.13 | 34.93 | 13.71 | 26.21 | 20.44 | 22.56 | 10.34 | 12.99 | 10.87 | 10.18 | 12.38 | 10.30 | 9.57 | 9.64 | 2.12 | 2.81 | 0.66 |
| SD | 0.33 | 0.61 | 1.16 | 1.57 | 1.12 | 0.42 | 0.71 | 0.64 | 1.00 | 0.60 | 0.61 | 0.76 | 0.57 | 0.71 | 0.71 | 0.94 | 0.62 | 0.74 | 0.84 | 0.77 |
| Coefficient of Variation | 2.15 | 3.07 | 2.02 | 4.11 | 3.20 | 3.04 | 2.70 | 3.10 | 4.44 | 5.80 | 4.73 | 7.02 | 8.58 | 5.76 | 6.94 | 9.80 | 6.44 | | | |
| No of Survey Subjects | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 | 629 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 36 PART 3

SIZE ROLL REFERENCE 0 CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND MENTON TO BACK OF HEAD
 NUMBER OF SIZES 4
 SIZE 3 CONTROL MEASUREMENT RANGES 15.90 TO 17.50 HEAD BREADTH
16.50 TO 19.79 MENTON TO BACK OF HEAD

06

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15.90 | 17.80 | 54.30 | 34.30 | 32.30 | 13.00 | 24.50 | 16.50 | 21.00 | 7.80 | 11.30 | 10.00 | 9.00 | 8.60 | 7.10 | 8.20 | 7.80 | -0.50 | -0.30 | -2.70 |
| Min + 1 Measurement | 16.00 | 18.00 | 54.40 | 34.50 | 33.10 | 13.10 | 24.60 | 17.40 | 21.30 | 8.00 | 11.40 | 10.10 | 9.10 | 10.20 | 7.30 | 8.40 | 8.10 | -0.40 | -0.10 | -2.60 |
| Min + 2 Measurement | 16.10 | 18.10 | 55.00 | 34.70 | 33.20 | 13.30 | 24.70 | 17.50 | 21.50 | 8.50 | 11.80 | 10.20 | 9.20 | 10.40 | 7.40 | 8.50 | 8.20 | -0.30 | 0.00 | -2.50 |
| Min + 3 Measurement | 16.20 | 18.20 | 55.20 | 34.90 | 33.40 | 13.40 | 24.80 | 17.60 | 21.70 | 8.60 | 11.90 | 10.30 | 9.30 | 10.90 | 7.50 | 8.60 | 8.40 | -0.20 | 0.10 | -2.20 |
| Min + 4 Measurement | 16.30 | 18.40 | 55.30 | 35.00 | 33.50 | 13.50 | 24.90 | 17.70 | 21.80 | 8.70 | 12.00 | 10.40 | 9.40 | 10.40 | 7.60 | 8.70 | 8.50 | -0.10 | 0.20 | -2.10 |
| 1st Size | 15.90 | 18.07 | 54.97 | 34.93 | 33.14 | 13.13 | 24.63 | 17.20 | 21.23 | 8.22 | 11.66 | 10.03 | 9.23 | 10.46 | 7.33 | 8.51 | 8.23 | -0.37 | -0.03 | -2.47 |
| 2nd Size | 15.90 | 18.35 | 55.20 | 34.93 | 33.43 | 13.32 | 24.76 | 17.47 | 21.61 | 8.53 | 11.91 | 10.28 | 9.43 | 10.53 | 7.46 | 8.63 | 8.52 | -0.18 | 0.14 | -2.24 |
| 3rd Size | 15.90 | 18.45 | 55.55 | 35.20 | 33.60 | 13.37 | 24.90 | 17.54 | 21.75 | 8.60 | 11.94 | 10.30 | 9.60 | 10.53 | 7.70 | 8.77 | 8.65 | -0.03 | 0.25 | -2.22 |
| 5th Size | 15.90 | 18.66 | 55.83 | 35.41 | 34.03 | 13.44 | 24.90 | 17.73 | 21.97 | 8.74 | 12.01 | 10.49 | 9.84 | 11.01 | 7.79 | 8.97 | 8.89 | 0.03 | 0.34 | -2.05 |
| 50th Size | 16.14 | 19.73 | 57.73 | 37.44 | 35.72 | 14.06 | 26.09 | 19.04 | 23.34 | 9.73 | 12.46 | 11.75 | 11.23 | 12.10 | 9.15 | 10.33 | 9.86 | 1.19 | 1.75 | -0.84 |
| 95 Size | 16.78 | 20.48 | 59.42 | 40.95 | 37.81 | 14.82 | 27.09 | 19.62 | 24.32 | 10.75 | 13.99 | 12.89 | 12.47 | 13.31 | 10.17 | 11.69 | 10.88 | 2.37 | 2.90 | 0.28 |
| 97 Size | 16.87 | 20.75 | 59.63 | 41.40 | 37.98 | 15.05 | 27.30 | 19.65 | 25.00 | 10.80 | 14.15 | 12.99 | 12.57 | 13.47 | 10.35 | 11.87 | 11.13 | 2.54 | 3.27 | 0.43 |
| 98 Size | 17.02 | 20.83 | 59.81 | 41.64 | 38.17 | 15.13 | 27.47 | 19.67 | 25.16 | 11.04 | 14.34 | 13.11 | 12.67 | 13.61 | 10.46 | 11.98 | 11.19 | 2.61 | 3.38 | 0.62 |
| 99 Size | 17.15 | 20.97 | 59.93 | 41.74 | 38.62 | 15.22 | 27.62 | 19.68 | 25.28 | 11.35 | 14.56 | 13.19 | 12.83 | 13.77 | 10.58 | 12.34 | 11.33 | 2.73 | 3.57 | 0.78 |
| Max - 4 Measurement | 17.00 | 20.30 | 59.80 | 41.70 | 38.20 | 15.00 | 27.40 | 19.50 | 25.10 | 11.30 | 14.30 | 13.00 | 12.60 | 13.60 | 10.40 | 12.10 | 11.10 | 2.70 | 3.40 | 0.70 |
| Max - 3 Measurement | 17.10 | 20.90 | 59.90 | 41.50 | 38.60 | 15.10 | 27.50 | 19.40 | 25.20 | 11.40 | 14.50 | 13.10 | 12.70 | 13.70 | 10.50 | 12.20 | 11.20 | 2.70 | 3.50 | 0.80 |
| Max - 2 Measurement | 17.20 | 21.00 | 60.00 | 41.90 | 38.60 | 15.20 | 27.60 | 19.50 | 25.30 | 11.50 | 14.60 | 13.20 | 12.80 | 13.80 | 10.60 | 12.40 | 11.30 | 2.80 | 3.60 | 0.90 |
| Max - 1 Measurement | 17.30 | 21.10 | 60.20 | 42.00 | 38.70 | 15.30 | 27.70 | 19.60 | 25.40 | 11.60 | 15.00 | 13.30 | 12.40 | 13.90 | 10.80 | 12.50 | 11.40 | 2.90 | 3.70 | 1.00 |
| Max | 17.40 | 21.20 | 60.40 | 42.00 | 39.00 | 15.40 | 27.80 | 19.70 | 25.80 | 12.00 | 15.50 | 13.50 | 13.00 | 14.00 | 11.10 | 12.60 | 11.70 | 3.10 | 3.80 | 1.30 |
| Mean | 16.25 | 19.73 | 57.73 | 33.05 | 35.78 | 14.14 | 26.10 | 18.96 | 23.41 | 9.81 | 13.04 | 11.79 | 11.26 | 12.10 | 9.15 | 10.38 | 9.92 | 1.25 | 1.78 | -0.77 |
| SD | 0.30 | 0.60 | 1.15 | 1.64 | 1.14 | 0.43 | 0.60 | 0.86 | 0.86 | 0.63 | 0.62 | 0.70 | 0.50 | 0.70 | 0.73 | 0.81 | 0.61 | 0.63 | 0.74 | 0.71 |
| Coefficient of Variation | 1.83 | 3.05 | 1.95 | 4.34 | 3.18 | 3.02 | 2.51 | 3.18 | 3.69 | 6.57 | 4.70 | 5.93 | 7.13 | 5.72 | 7.93 | 7.82 | 6.12 | | | |
| No of Survey Subjects | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 | 332 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 36 PART 4

SIZE ROLL REFERENCE 0 CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND MENTON TO BACK OF HEAD
 NUMBER OF SIZES 4
 SIZE 4 CONTROL MEASUREMENT RANGES 15.90 TO 17.50 HEAD BREADTH
19.80 TO 23.00 MENTON TO BACK OF HEAD

16

| | HEAD BREADTH | | HEAD LENGTH | | HEAD CIRCUMFERENCE | | NECK CIRCUMFERENCE | | BYPTRAGON CORONAL ARC | | BYPTRAGON DIAMETER | | MAX HEAD DIAGONAL FROM MENTON | | MENTON TO BACK OF HEAD | | MENTON TO VERTEX | | TRACION TO BACK OF HEAD OF HEAD | | TRACION TO VERTEX | | PUPIL TO VERTEX | | NASION TO VERTEX | | MENTON TO NASION | | TRACION TO MENTON HORIZONTAL | | TRACION TO MENTON VERTICAL | | TRACION TO BROW RIDGE HORIZONTAL | | TRACION TO PUPIL VERTICAL | | TRACION TO NASION VERTICAL | | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | |
|--------------------------|--------------|----|-------------|----|--------------------|---|--------------------|---|-----------------------|---|--------------------|---|-------------------------------|---|------------------------|----|------------------|---|---------------------------------|---|-------------------|---|-----------------|---|------------------|---|------------------|---|------------------------------|---|----------------------------|---|----------------------------------|---|---------------------------|---|----------------------------|---|--|---|
| Min | 15.90 | 79 | 18.80 | 4 | 55.00 | 1 | 34.30 | 1 | 33.10 | 1 | 12.90 | 1 | 24.60 | 1 | 19.80 | 33 | 20.40 | 2 | 9.90 | 2 | 9.50 | 1 | 8.60 | 1 | 9.10 | 2 | 10.00 | 1 | 6.60 | 1 | 7.00 | 1 | 6.50 | 1 | -2.10 | 1 | -1.70 | 1 | -1.80 | 1 |
| Min + 1 Measurement | 16.00 | 43 | 18.90 | 1 | 56.10 | 2 | 35.00 | 2 | 33.20 | 1 | 13.10 | 1 | 24.70 | 1 | 19.90 | 19 | 20.50 | 1 | 9.00 | 2 | 11.00 | 1 | 9.20 | 1 | 9.20 | 1 | 10.10 | 1 | 7.70 | 1 | 7.60 | 1 | 6.70 | 1 | -0.60 | 2 | -0.40 | 1 | -1.10 | 4 |
| Min + 2 Measurement | 16.10 | 8 | 19.00 | 14 | 56.20 | 2 | 35.20 | 1 | 33.30 | 1 | 13.20 | 2 | 25.00 | 4 | 20.00 | 53 | 20.60 | 3 | 9.10 | 1 | 11.20 | 1 | 9.30 | 1 | 9.30 | 2 | 10.20 | 1 | 7.80 | 1 | 7.80 | 5 | 7.20 | 1 | -0.20 | 1 | 0.20 | 1 | -1.00 | 3 |
| Min + 3 Measurement | 16.20 | 72 | 19.10 | 1 | 56.30 | 1 | 35.50 | 3 | 33.40 | 1 | 13.30 | 2 | 25.20 | 4 | 20.10 | 32 | 20.70 | 3 | 9.20 | 1 | 11.30 | 2 | 9.40 | 3 | 9.40 | 2 | 10.30 | 1 | 8.40 | 1 | 8.40 | 1 | 7.40 | 1 | 0.00 | 1 | 0.50 | 1 | -0.90 | 5 |
| Min + 4 Measurement | 16.30 | 44 | 19.20 | 15 | 56.40 | 5 | 35.60 | 1 | 33.50 | 2 | 13.40 | 8 | 25.30 | 4 | 20.20 | 57 | 20.80 | 2 | 9.30 | 6 | 11.40 | 1 | 9.50 | 1 | 9.50 | 3 | 10.70 | 1 | 8.60 | 3 | 8.00 | 2 | 7.90 | 1 | 0.10 | 2 | 0.40 | 3 | -0.30 | 7 |
| 1st Size | 15.90 | | 18.90 | | 56.27 | | 35.37 | | 33.48 | | 13.28 | | 24.98 | | 19.80 | | 20.54 | | 9.11 | | 11.37 | | 9.34 | | 9.33 | | 10.33 | | 9.51 | | 7.31 | | 7.93 | | 0.03 | | 0.30 | | -1.44 | |
| 2nd Size | 15.90 | | 18.95 | | 56.41 | | 35.75 | | 33.71 | | 13.37 | | 25.23 | | 19.80 | | 20.83 | | 9.14 | | 11.71 | | 9.65 | | 9.54 | | 11.11 | | 8.70 | | 7.97 | | 8.17 | | 0.34 | | 0.32 | | -1.06 | |
| 3rd Size | 15.90 | | 18.99 | | 56.53 | | 35.92 | | 33.80 | | 13.43 | | 25.33 | | 19.80 | | 21.05 | | 9.28 | | 11.83 | | 9.72 | | 9.81 | | 11.23 | | 8.78 | | 8.15 | | 8.35 | | 0.53 | | 0.47 | | -0.92 | |
| 5th Size | 15.90 | | 19.16 | | 56.72 | | 36.33 | | 34.16 | | 13.53 | | 25.46 | | 19.80 | | 21.24 | | 9.34 | | 12.00 | | 9.85 | | 9.97 | | 11.40 | | 8.94 | | 8.32 | | 8.52 | | 0.71 | | 1.14 | | -0.76 | |
| 50th Size | 16.15 | | 20.15 | | 58.48 | | 38.38 | | 35.93 | | 14.17 | | 26.56 | | 20.53 | | 22.43 | | 10.37 | | 13.04 | | 11.14 | | 10.44 | | 12.47 | | 10.17 | | 9.82 | | 9.68 | | 1.93 | | 2.54 | | 0.42 | |
| 95 Size | 16.84 | | 21.04 | | 60.62 | | 41.57 | | 38.06 | | 14.96 | | 27.74 | | 21.42 | | 24.56 | | 11.44 | | 14.11 | | 12.30 | | 11.93 | | 13.64 | | 11.38 | | 11.46 | | 10.72 | | 3.06 | | 4.00 | | 1.88 | |
| 97 Size | 16.98 | | 21.22 | | 60.86 | | 42.00 | | 38.40 | | 15.10 | | 27.47 | | 22.00 | | 24.74 | | 11.68 | | 14.23 | | 12.46 | | 12.00 | | 13.98 | | 11.55 | | 11.70 | | 10.92 | | 3.32 | | 4.18 | | 2.07 | |
| 98 Size | 17.07 | | 21.35 | | 60.94 | | 42.34 | | 38.54 | | 15.16 | | 28.03 | | 22.36 | | 24.93 | | 11.73 | | 14.34 | | 12.64 | | 12.13 | | 14.04 | | 11.64 | | 11.84 | | 11.01 | | 3.43 | | 4.25 | | 2.27 | |
| 99 Size | 17.22 | | 21.58 | | 61.43 | | 42.93 | | 38.95 | | 15.32 | | 28.14 | | 22.56 | | 25.27 | | 12.17 | | 14.56 | | 12.84 | | 12.43 | | 14.18 | | 11.78 | | 12.20 | | 11.13 | | 3.61 | | 4.37 | | 2.48 | |
| Max - 4 Measurement | 17.00 | 12 | 21.40 | 5 | 61.50 | 1 | 43.20 | 1 | 39.20 | 2 | 15.20 | 4 | 28.10 | 6 | 22.40 | 3 | 25.30 | 2 | 12.20 | 4 | 14.50 | 3 | 12.80 | 2 | 12.60 | 1 | 14.20 | 3 | 11.70 | 6 | 12.50 | 1 | 11.20 | 1 | 3.60 | 2 | 4.50 | 1 | 2.40 | 2 |
| Max - 3 Measurement | 17.10 | 5 | 21.50 | 1 | 61.70 | 1 | 43.60 | 2 | 39.30 | 1 | 15.30 | 2 | 28.20 | 5 | 22.50 | 2 | 25.40 | 1 | 12.50 | 1 | 14.60 | 4 | 12.90 | 3 | 12.70 | 1 | 14.30 | 1 | 11.80 | 3 | 12.60 | 1 | 11.40 | 1 | 3.70 | 3 | 4.60 | 2 | 2.50 | 4 |
| Max - 2 Measurement | 17.20 | 3 | 21.60 | 3 | 61.80 | 2 | 44.00 | 1 | 39.40 | 1 | 15.40 | 2 | 28.30 | 2 | 22.60 | 4 | 25.50 | 1 | 12.70 | 2 | 14.70 | 2 | 13.00 | 1 | 12.80 | 1 | 14.60 | 2 | 11.90 | 2 | 13.10 | 1 | 11.50 | 2 | 3.80 | 1 | 4.70 | 1 | 2.60 | 3 |
| Max - 1 Measurement | 17.30 | 6 | 21.70 | 4 | 62.00 | 1 | 44.30 | 1 | 39.50 | 1 | 15.50 | 3 | 28.50 | 2 | 22.80 | 2 | 25.80 | 1 | 13.00 | 1 | 15.00 | 1 | 13.20 | 2 | 13.10 | 1 | 14.70 | 1 | 12.00 | 2 | 13.60 | 1 | 11.60 | 1 | 4.00 | 1 | 4.80 | 1 | 2.90 | 1 |
| Max | 17.40 | 1 | 21.80 | 1 | 62.40 | 1 | 44.80 | 1 | 39.80 | 1 | 15.70 | 1 | 28.60 | 2 | 23.00 | 2 | 26.20 | 2 | 14.10 | 1 | 15.60 | 1 | 13.40 | 1 | 13.20 | 1 | 15.50 | 1 | 12.10 | 1 | 14.20 | 1 | 11.90 | 1 | 4.10 | 1 | 5.00 | 1 | 3.00 | 1 |
| Mean | 16.27 | | 20.18 | | 58.65 | | 38.87 | | 35.94 | | 14.24 | | 26.65 | | 20.70 | | 22.44 | | 10.46 | | 13.11 | | 11.17 | | 10.46 | | 12.53 | | 10.23 | | 9.88 | | 9.71 | | 1.94 | | 2.65 | | 0.52 | |
| SD | 0.32 | | 0.58 | | 1.16 | | 1.64 | | 1.15 | | 0.43 | | 0.72 | | 0.68 | | 1.00 | | 0.65 | | 0.67 | | 0.76 | | 0.97 | | 0.72 | | 0.73 | | 0.97 | | 0.68 | | 0.76 | | 0.87 | | 0.78 | |
| Coefficient of Variation | 1.96 | | 2.87 | | 1.98 | | 4.21 | | 3.19 | | 2.94 | | 2.67 | | 3.26 | | 4.36 | | 6.20 | | 5.12 | | 6.74 | | 8.35 | | 5.75 | | 7.15 | | 4.86 | | 7.03 | | | | | | | |
| No of Survey Subjects | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | | 567 | |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 37 PART 1

SIZE ROLL REFERENCE P CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND MENTON TO BACK OF HEAD MINUS HEAD LENGTH
 NUMBER OF SIZES 4
 SIZE 1 CONTROL MEASUREMENT RANGES 14.20 TO 15.89 HEAD BREADTH
-3.00 TO 0.00 MENTON TO BACK OF HEAD
 MINUS HEAD LENGTH

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| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGION TO BACK OF HEAD | TRAGION TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGION TO MENTON HORIZONTAL | TRAGION TO MENTON VERTICAL | TRAGION TO BROW RIDGE HORIZONTAL | TRAGION TO PUPIL VERTICAL | TRAGION TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|-------------------------|-------------------|-----------------|------------------|------------------|------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|--|-------|
| Min | 14.30 | 18.20 | 53.00 | 33.20 | 31.10 | 12.20 | 24.20 | 16.00 | 21.00 | 8.00 | 10.80 | 9.20 | 8.40 | 10.00 | 6.60 | 7.00 | 8.60 | 2.00 | -0.60 | -0.30 | -2.90 |
| Min + 1 Measurement | 14.40 | 18.30 | 53.90 | 33.80 | 31.60 | 12.30 | 24.30 | 16.40 | 21.10 | 8.20 | 11.40 | 9.50 | 8.60 | 10.40 | 7.10 | 8.30 | 8.70 | 4.00 | -0.10 | -0.20 | -2.70 |
| Min + 2 Measurement | 14.50 | 18.40 | 54.30 | 34.10 | 31.70 | 12.40 | 24.40 | 16.50 | 21.20 | 8.30 | 11.50 | 9.70 | 8.90 | 10.60 | 7.20 | 8.60 | 8.80 | 3.00 | 0.00 | -0.10 | -2.50 |
| Min + 3 Measurement | 14.60 | 18.50 | 54.60 | 34.20 | 31.80 | 12.60 | 24.50 | 16.50 | 21.40 | 8.40 | 11.60 | 9.80 | 9.20 | 10.70 | 7.40 | 8.70 | 8.90 | 4.00 | 0.10 | 0.10 | -2.40 |
| Min + 4 Measurement | 14.70 | 18.60 | 54.60 | 34.30 | 32.00 | 12.70 | 24.60 | 17.20 | 21.50 | 8.50 | 11.70 | 9.90 | 9.30 | 10.80 | 7.60 | 8.80 | 9.00 | 4.00 | 0.20 | 0.20 | -2.20 |
| 1st Size | 14.38 | 18.36 | 54.37 | 34.21 | 31.92 | 12.60 | 24.27 | 16.92 | 21.34 | 8.32 | 11.52 | 9.76 | 9.12 | 10.61 | 7.61 | 8.66 | 8.63 | 4.00 | -0.03 | -0.02 | -2.49 |
| 2nd Size | 14.47 | 18.71 | 54.75 | 34.37 | 32.34 | 12.68 | 24.44 | 17.35 | 21.51 | 8.56 | 11.71 | 10.06 | 9.31 | 10.81 | 7.86 | 8.81 | 8.82 | 4.00 | 0.07 | 0.27 | -2.31 |
| 3rd Size | 14.54 | 18.78 | 54.88 | 34.68 | 32.54 | 12.81 | 24.59 | 17.52 | 21.71 | 8.66 | 11.79 | 10.17 | 9.48 | 10.93 | 7.96 | 8.83 | 8.87 | 4.00 | 0.16 | 0.46 | -2.18 |
| 5th Size | 14.66 | 18.91 | 55.14 | 35.00 | 33.02 | 12.91 | 24.72 | 17.74 | 21.91 | 8.82 | 11.93 | 10.38 | 9.73 | 11.00 | 8.07 | 8.90 | 8.99 | 4.00 | 0.33 | 0.42 | -1.96 |
| 50th Size | 15.34 | 19.85 | 57.09 | 37.37 | 34.93 | 13.53 | 25.97 | 19.16 | 23.21 | 9.85 | 12.97 | 11.56 | 11.05 | 12.08 | 9.24 | 10.19 | 9.93 | 4.00 | 1.34 | 1.83 | -0.64 |
| 95 Size | 15.76 | 20.95 | 59.12 | 39.96 | 36.72 | 14.23 | 27.20 | 20.34 | 24.67 | 11.03 | 13.98 | 12.68 | 12.45 | 13.35 | 10.32 | 11.60 | 10.74 | 4.00 | 2.40 | 3.16 | -0.09 |
| 97 Size | 15.78 | 21.07 | 59.69 | 40.34 | 37.03 | 14.37 | 27.38 | 20.67 | 24.95 | 11.17 | 14.13 | 12.82 | 12.54 | 13.48 | 10.40 | 11.75 | 11.01 | 4.00 | 2.57 | 3.27 | -0.03 |
| 98 Size | 15.78 | 21.14 | 59.83 | 40.55 | 37.24 | 14.44 | 27.47 | 20.78 | 25.15 | 11.25 | 14.21 | 12.94 | 12.75 | 13.54 | 10.48 | 11.84 | 11.09 | 4.00 | 2.73 | 3.38 | -0.02 |
| 99 Size | 15.79 | 21.28 | 60.24 | 40.83 | 37.43 | 14.54 | 27.69 | 20.96 | 25.36 | 11.39 | 14.38 | 13.07 | 12.94 | 13.88 | 10.69 | 12.04 | 11.23 | 4.00 | 2.94 | 3.64 | -0.01 |
| Max - 4 Measurement | 15.40 | 21.30 | 60.20 | 40.70 | 37.30 | 14.50 | 27.50 | 20.90 | 25.30 | 11.30 | 14.40 | 13.00 | 12.90 | 13.80 | 10.80 | 12.00 | 11.10 | 4.00 | 2.80 | 3.50 | -0.40 |
| Max - 3 Measurement | 15.50 | 21.40 | 60.30 | 40.80 | 37.50 | 14.40 | 27.60 | 21.00 | 25.40 | 11.40 | 14.60 | 13.10 | 13.00 | 14.00 | 11.00 | 12.10 | 11.20 | 4.00 | 2.90 | 3.60 | -0.30 |
| Max - 2 Measurement | 15.60 | 21.50 | 60.40 | 40.90 | 37.60 | 14.50 | 27.80 | 21.20 | 25.50 | 11.50 | 14.80 | 13.20 | 13.10 | 14.00 | 11.00 | 12.20 | 11.30 | 4.00 | 3.00 | 3.70 | -0.20 |
| Max - 1 Measurement | 15.70 | 21.60 | 60.50 | 41.10 | 37.80 | 14.60 | 28.00 | 21.30 | 25.60 | 11.60 | 14.90 | 13.30 | 13.40 | 14.10 | 11.10 | 12.30 | 11.40 | 4.00 | 3.10 | 3.80 | -0.10 |
| Max | 15.80 | 21.90 | 60.90 | 41.20 | 38.20 | 14.80 | 28.30 | 21.50 | 25.80 | 11.80 | 15.00 | 13.40 | 13.60 | 14.20 | 11.40 | 13.10 | 11.70 | 4.00 | 3.30 | 4.00 | 0.00 |
| Mean | 15.38 | 19.92 | 57.14 | 37.47 | 34.91 | 13.61 | 26.00 | 19.20 | 23.31 | 9.93 | 13.03 | 11.60 | 11.11 | 12.20 | 9.27 | 10.23 | 9.98 | 4.00 | 1.43 | 1.92 | -0.71 |
| SD | 0.34 | 0.62 | 1.23 | 1.49 | 1.15 | 0.41 | 0.73 | 0.53 | 0.85 | 0.65 | 0.63 | 0.69 | 0.92 | 0.64 | 0.69 | 0.79 | 0.65 | 0.65 | 0.78 | 0.59 | |
| Coefficient of Variation | 2.19 | 3.09 | 2.16 | 3.97 | 3.23 | 3.01 | 2.82 | 4.33 | 3.57 | 6.88 | 4.85 | 6.95 | 7.42 | 5.62 | 7.45 | 7.65 | 5.55 | | | | |
| No of Survey Subjects | 523 | 523 | 523 | 523 | 523 | 523 | 522 | 523 | 523 | 523 | 523 | 523 | 523 | 523 | 523 | 523 | 523 | 523 | 523 | 523 | 523 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 37 PART 2

SIZE ROLL REFERENCE P CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND MENTON TO BACK OF HEAD MINUS HEAD LENGTH
 NUMBER OF SIZES ...4...
 SIZE .2. CONTROL MEASUREMENT RANGES .14.20 TO 15.89 HEAD BREADTH
 0.01 TO 3.00 MENTON TO BACK OF HEAD
 MINUS HEAD LENGTH

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| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | | | | | | | | | | | | | | | | | | | | |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|----|------|---|------|----|------|----|
| Min | 14.20 | 2 | 18.00 | 2 | 53.60 | 2 | 33.70 | 2 | 31.00 | 1 | 12.50 | 1 | 23.70 | 1 | 19.10 | 1 | 9.50 | 1 | 9.80 | 1 | 8.90 | 1 | 6.50 | 1 | 6.60 | 1 | 6.20 | 1 | -1.00 | 1 | -0.40 | 1 | 0.10 | 4 | | | | | | |
| Min + 1 Measurement | 14.30 | 1 | 18.10 | 1 | 54.00 | 1 | 33.90 | 1 | 31.70 | 1 | 12.60 | 4 | 24.10 | 1 | 18.30 | 1 | 14.50 | 1 | 9.60 | 3 | 10.50 | 1 | 9.60 | 1 | 7.80 | 1 | 9.30 | 1 | 6.80 | 1 | 7.70 | 1 | -0.50 | 1 | 0.00 | 1 | 0.20 | 45 | | |
| Min + 2 Measurement | 14.40 | 1 | 18.20 | 3 | 54.30 | 3 | 34.00 | 2 | 32.00 | 3 | 12.70 | 2 | 24.20 | 1 | 18.40 | 1 | 14.60 | 1 | 9.70 | 2 | 11.00 | 1 | 9.80 | 1 | 8.00 | 2 | 10.00 | 2 | 8.60 | 3 | 7.00 | 2 | 7.80 | 1 | 0.30 | 1 | 0.80 | 1 | 0.30 | 32 |
| Min + 3 Measurement | 14.50 | 5 | 18.30 | 2 | 54.50 | 1 | 34.10 | 1 | 32.30 | 2 | 12.80 | 3 | 24.30 | 1 | 18.50 | 1 | 14.90 | 2 | 9.80 | 3 | 11.20 | 1 | 9.90 | 2 | 8.20 | 3 | 10.10 | 1 | 9.70 | 3 | 7.10 | 1 | 7.40 | 1 | 0.40 | 3 | 1.00 | 2 | 0.40 | 41 |
| Min + 4 Measurement | 14.60 | 14 | 18.40 | 7 | 54.60 | 2 | 34.20 | 2 | 32.40 | 2 | 12.90 | 11 | 24.40 | 3 | 18.60 | 3 | 15.00 | 1 | 9.90 | 1 | 11.30 | 3 | 9.00 | 3 | 8.30 | 4 | 10.30 | 1 | 9.80 | 1 | 7.20 | 2 | 8.00 | 3 | 0.50 | 1 | 1.10 | 3 | 0.50 | 40 |
| 1st Size | 14.43 | | 18.16 | | 54.27 | | 34.07 | | 32.10 | | 12.63 | | 24.36 | | 18.56 | | 14.60 | | 9.68 | | 10.20 | | 9.42 | | 8.11 | | 10.23 | | 8.62 | | 7.13 | | 7.96 | | 0.34 | | 1.02 | | 0.10 | |
| 2nd Size | 14.52 | | 18.33 | | 54.73 | | 34.73 | | 32.55 | | 12.81 | | 24.54 | | 18.87 | | 14.31 | | 9.91 | | 11.53 | | 9.20 | | 8.32 | | 10.73 | | 8.93 | | 7.51 | | 8.16 | | 0.67 | | 1.17 | | 0.10 | |
| 3rd Size | 14.56 | | 18.42 | | 54.94 | | 35.10 | | 32.70 | | 12.86 | | 24.62 | | 19.11 | | 14.50 | | 9.96 | | 11.70 | | 9.27 | | 8.52 | | 10.97 | | 9.07 | | 7.70 | | 8.31 | | 0.84 | | 1.34 | | 0.10 | |
| 5th Size | 14.71 | | 18.56 | | 55.13 | | 35.46 | | 32.89 | | 12.95 | | 24.79 | | 19.25 | | 14.79 | | 9.09 | | 11.91 | | 9.46 | | 8.70 | | 11.20 | | 9.18 | | 7.42 | | 8.44 | | 1.05 | | 1.57 | | 0.10 | |
| 50th Size | 15.41 | | 19.62 | | 57.11 | | 38.05 | | 34.77 | | 13.70 | | 25.46 | | 20.47 | | 22.31 | | 10.14 | | 12.93 | | 10.70 | | 9.46 | | 12.27 | | 10.51 | | 4.33 | | 9.65 | | 2.21 | | 2.91 | | 0.70 | |
| 95 Size | 15.77 | | 20.68 | | 59.11 | | 40.85 | | 36.47 | | 14.35 | | 27.15 | | 21.83 | | 23.71 | | 11.27 | | 13.87 | | 11.70 | | 11.16 | | 13.41 | | 11.47 | | 10.67 | | 10.35 | | 3.28 | | 4.19 | | 1.99 | |
| 97 Size | 15.78 | | 20.78 | | 59.37 | | 41.10 | | 36.90 | | 14.40 | | 27.40 | | 22.00 | | 23.85 | | 11.42 | | 14.00 | | 11.79 | | 11.36 | | 13.56 | | 11.60 | | 10.97 | | 10.30 | | 3.54 | | 4.40 | | 2.19 | |
| 98 Size | 15.79 | | 20.86 | | 59.59 | | 41.36 | | 37.03 | | 14.47 | | 27.49 | | 22.11 | | 23.99 | | 11.65 | | 14.08 | | 11.92 | | 11.52 | | 13.66 | | 11.68 | | 11.07 | | 10.56 | | 3.65 | | 4.55 | | 2.34 | |
| 99 Size | 15.79 | | 21.07 | | 59.77 | | 41.77 | | 37.33 | | 14.57 | | 27.72 | | 22.27 | | 24.27 | | 11.81 | | 14.16 | | 12.28 | | 11.77 | | 13.94 | | 11.92 | | 11.24 | | 10.71 | | 3.77 | | 4.73 | | 2.61 | |
| Max - 4 Measurement | 15.40 | 57 | 21.00 | 2 | 59.80 | 2 | 41.80 | 2 | 37.40 | 1 | 14.50 | 8 | 27.60 | 2 | 22.20 | 5 | 24.20 | 3 | 11.70 | 2 | 14.00 | 3 | 12.20 | 1 | 11.90 | 1 | 13.80 | 2 | 11.80 | 2 | 11.30 | 6 | 10.60 | 10 | 3.80 | 5 | 4.70 | 1 | 2.40 | 4 |
| Max - 3 Measurement | 15.50 | 60 | 21.10 | 2 | 59.90 | 2 | 42.10 | 2 | 37.50 | 1 | 14.60 | 5 | 27.70 | 2 | 22.30 | 2 | 24.30 | 2 | 11.80 | 4 | 14.10 | 7 | 12.30 | 3 | 12.00 | 1 | 13.90 | 1 | 12.00 | 4 | 11.40 | 1 | 10.70 | 1 | 3.90 | 1 | 4.90 | 2 | 2.50 | 3 |
| Max - 2 Measurement | 15.60 | 74 | 21.30 | 1 | 60.30 | 1 | 42.30 | 1 | 37.60 | 2 | 14.70 | 1 | 27.80 | 2 | 22.60 | 2 | 24.70 | 1 | 11.40 | 4 | 14.20 | 7 | 12.40 | 2 | 12.10 | 1 | 14.00 | 3 | 12.20 | 2 | 11.60 | 1 | 10.90 | 3 | 4.00 | 1 | 5.00 | 2 | 2.60 | 2 |
| Max - 1 Measurement | 15.70 | 73 | 21.40 | 3 | 60.80 | 1 | 43.60 | 1 | 37.70 | 1 | 14.80 | 2 | 28.10 | 2 | 22.70 | 2 | 24.90 | 2 | 12.00 | 1 | 14.30 | 1 | 12.50 | 1 | 12.20 | 1 | 14.10 | 2 | 12.40 | 1 | 11.40 | 1 | 10.90 | 2 | 4.10 | 1 | 5.10 | 1 | 2.70 | 4 |
| Max | 15.90 | 81 | 22.00 | 1 | 61.00 | 1 | 43.70 | 1 | 38.00 | 1 | 15.20 | 1 | 28.40 | 2 | 22.80 | 1 | 25.00 | 2 | 13.00 | 1 | 14.40 | 2 | 13.00 | 2 | 12.50 | 1 | 14.30 | 2 | 12.70 | 1 | 13.40 | 1 | 11.00 | 1 | 4.20 | 1 | 5.00 | 1 | 2.80 | 2 |
| Mean | 15.40 | | 19.70 | | 57.15 | | 38.08 | | 34.83 | | 13.73 | | 26.03 | | 20.56 | | 22.32 | | 10.21 | | 12.94 | | 10.71 | | 10.01 | | 12.32 | | 10.35 | | 9.33 | | 9.49 | | 2.23 | | 2.94 | | 0.86 | |
| SD | 0.33 | | 0.63 | | 1.22 | | 1.63 | | 1.11 | | 0.42 | | 0.73 | | 0.78 | | 0.87 | | 0.66 | | 0.62 | | 0.68 | | 0.77 | | 0.71 | | 0.71 | | 0.95 | | 0.60 | | 0.70 | | 0.78 | | 0.59 | |
| Coefficient of Variation % | 2.14 | | 3.18 | | 2.13 | | 4.28 | | 3.20 | | 3.02 | | 2.78 | | 3.80 | | 3.91 | | 6.45 | | 4.78 | | 6.33 | | 7.64 | | 5.80 | | 6.92 | | 9.04 | | 6.29 | | | | | | | |
| No of Survey Subjects | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | | 566 | |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 37 PART 3

SIZE ROLL REFERENCE **P** CONTROL MEASUREMENTS 1ST **HEAD BREADTH**
 2ND **MENTON TO BACK OF HEAD MINUS HEAD LENGTH**
 NUMBER OF SIZES **4**
 SIZE **3** CONTROL MEASUREMENT RANGES **15.90** TO **17.50** **HEAD BREADTH**
- 3.00 TO **0.00** **MENTON TO BACK OF HEAD**
MINUS HEAD LENGTH

94

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | NASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH |
|--------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|
| Min | 15 90 | 17 80 | 54 30 | 34 30 | 33 30 | 12 40 | 24 50 | 16 50 | 21 00 | 7 80 | 11 20 | 10 00 | 9 10 | 8 60 | 6 60 | 8 20 | 7 20 | 0 60 | 0 40 | -2 70 |
| Min + 1 Measurement | 16 00 | 18 00 | 54 90 | 34 50 | 33 10 | 13 00 | 24 60 | 17 40 | 21 30 | 8 00 | 11 30 | 10 10 | 9 30 | 10 10 | 7 10 | 8 40 | 7 80 | 0 50 | 0 30 | -2 40 |
| Min + 2 Measurement | 16 10 | 18 40 | 55 00 | 34 70 | 33 20 | 13 10 | 24 70 | 17 50 | 21 50 | 8 50 | 11 40 | 10 20 | 9 50 | 10 20 | 7 30 | 8 60 | 8 10 | 0 40 | 0 20 | -2 30 |
| Min + 3 Measurement | 16 20 | 18 50 | 55 20 | 35 00 | 33 40 | 13 20 | 24 80 | 17 60 | 21 70 | 9 00 | 11 50 | 10 30 | 9 70 | 10 40 | 7 40 | 8 70 | 8 40 | 0 30 | 0 10 | -2 20 |
| Min + 4 Measurement | 16 30 | 18 60 | 55 50 | 35 10 | 33 50 | 13 30 | 24 90 | 17 70 | 21 80 | 9 20 | 11 80 | 10 40 | 9 80 | 10 50 | 7 50 | 8 80 | 8 60 | 0 20 | 0 10 | -2 10 |
| 1st Size | 15 90 | 18 53 | 55 15 | 34 55 | 33 13 | 13 03 | 24 75 | 17 41 | 21 73 | 8 51 | 11 58 | 10 18 | 9 60 | 10 50 | 7 34 | 8 62 | 8 50 | 0 35 | 0 03 | -2 37 |
| 2nd Size | 15 90 | 18 63 | 55 60 | 35 10 | 33 50 | 13 30 | 24 91 | 17 52 | 21 93 | 8 60 | 11 90 | 10 40 | 9 78 | 10 97 | 7 40 | 8 80 | 8 75 | 0 17 | 0 18 | -2 24 |
| 3rd Size | 15 90 | 18 74 | 55 78 | 35 34 | 33 75 | 13 36 | 24 96 | 17 62 | 22 08 | 8 72 | 11 93 | 10 54 | 9 86 | 10 99 | 7 73 | 8 94 | 8 94 | 0 06 | 0 31 | -2 12 |
| 5th Size | 15 90 | 18 96 | 56 03 | 35 53 | 34 00 | 13 44 | 25 12 | 17 87 | 22 19 | 8 93 | 12 01 | 10 69 | 9 99 | 11 16 | 7 56 | 9 11 | 8 98 | 0 12 | 0 43 | -1 90 |
| 50th Size | 16 14 | 20 10 | 59 30 | 38 15 | 35 95 | 14 10 | 26 55 | 19 34 | 23 53 | 10 03 | 13 05 | 11 79 | 11 25 | 12 21 | 9 27 | 10 46 | 9 96 | 1 22 | 1 74 | -0 70 |
| 95 Size | 16 53 | 20 97 | 60 31 | 41 24 | 37 86 | 14 42 | 27 57 | 20 44 | 24 95 | 11 18 | 14 02 | 12 57 | 12 46 | 13 54 | 10 43 | 11 83 | 11 04 | 2 24 | 2 98 | -0 08 |
| 97 Size | 16 96 | 21 11 | 60 68 | 41 62 | 37 99 | 15 00 | 27 73 | 20 63 | 25 16 | 11 33 | 14 15 | 12 48 | 12 58 | 13 73 | 10 53 | 11 95 | 11 16 | 2 51 | 3 23 | -0 03 |
| 98 Size | 17 10 | 21 20 | 60 84 | 41 70 | 38 20 | 15 13 | 27 80 | 20 78 | 25 27 | 11 38 | 14 25 | 13 12 | 12 70 | 13 95 | 10 60 | 12 20 | 11 30 | 2 63 | 3 30 | -0 02 |
| 99 Size | 17 23 | 21 35 | 61 05 | 42 05 | 38 41 | 15 23 | 28 08 | 20 95 | 25 45 | 11 58 | 14 55 | 13 14 | 12 87 | 14 05 | 10 75 | 12 52 | 11 48 | 2 83 | 3 55 | -0 01 |
| Max - 4 Measurement | 17 00 | 21 20 | 61 10 | 42 10 | 38 20 | 15 10 | 27 90 | 20 90 | 25 30 | 11 50 | 14 50 | 13 10 | 12 80 | 14 10 | 10 70 | 12 40 | 11 40 | 2 70 | 3 50 | -0 40 |
| Max - 3 Measurement | 17 10 | 21 30 | 61 50 | 42 30 | 38 40 | 15 20 | 28 00 | 21 00 | 25 40 | 11 60 | 14 60 | 13 20 | 12 90 | 14 20 | 10 80 | 12 50 | 11 50 | 2 80 | 3 60 | -0 30 |
| Max - 2 Measurement | 17 20 | 21 40 | 61 70 | 42 50 | 38 60 | 15 30 | 28 10 | 21 10 | 25 50 | 11 70 | 14 70 | 13 30 | 13 00 | 14 30 | 11 00 | 12 60 | 11 60 | 2 90 | 3 70 | -0 20 |
| Max - 1 Measurement | 17 30 | 21 60 | 61 90 | 43 50 | 38 70 | 15 40 | 28 20 | 21 20 | 25 60 | 11 80 | 14 80 | 13 40 | 13 10 | 14 70 | 11 20 | 13 10 | 11 70 | 3 00 | 3 80 | -0 10 |
| Max | 17 40 | 21 70 | 62 00 | 44 30 | 40 40 | 15 50 | 28 60 | 21 30 | 26 20 | 13 00 | 15 50 | 13 50 | 13 20 | 15 50 | 11 50 | 13 00 | 11 90 | 3 10 | 4 20 | 0 00 |
| Mean | 16 25 | 20 10 | 58 31 | 38 33 | 35 98 | 14 17 | 26 34 | 19 36 | 23 00 | 10 09 | 13 10 | 11 83 | 11 28 | 12 31 | 9 28 | 10 50 | 10 02 | 1 27 | 1 81 | -0 74 |
| SD | 0 31 | 0 61 | 1 27 | 1 65 | 1 15 | 0 44 | 0 73 | 0 82 | 0 94 | 0 71 | 0 63 | 0 65 | 0 74 | 0 76 | 0 75 | 0 52 | 0 61 | 0 67 | 0 77 | 0 58 |
| Coefficient of Variation | 1 91 | 3 05 | 2 17 | 4 34 | 3 15 | 3 10 | 2 78 | 4 23 | 3 66 | 7 02 | 4 77 | 5 52 | 6 56 | 6 14 | 8 03 | 7 79 | 6 11 | | | |
| No of Survey Subjects | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 37 PART 4

SIZE ROLL REFERENCE P CONTROL MEASUREMENTS 1ST HEAD BREADTH
 2ND MENTON TO BACK OF HEAD MINUS HEAD LENGTH
 NUMBER OF SIZES ... 4 ...
 SIZE ... 4 ... CONTROL MEASUREMENT RANGES 15.90 TO 17.50 HEAD BREADTH
 0.01 TO 3.00 MENTON TO BACK OF HEAD
 MINUS HEAD LENGTH

56

| | HEAD BREADTH | HEAD LENGTH | HEAD CIRCUMFERENCE | NECK CIRCUMFERENCE | BITRAGON CORONAL ARC | BITRAGON DIAMETER | MAX HEAD DIAGONAL FROM MENTON | MENTON TO BACK OF HEAD | MENTON TO VERTEX | TRAGON TO BACK OF HEAD | TRAGON TO VERTEX | PUPIL TO VERTEX | MASION TO VERTEX | MENTON TO NASION | TRAGON TO MENTON HORIZONTAL | TRAGON TO MENTON VERTICAL | TRAGON TO BROW RIDGE HORIZONTAL | TRAGON TO PUPIL VERTICAL | TRAGON TO NASION VERTICAL | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | | | | | | | | | | | | | | | | | | | | |
|----------------------------|--------------|-------------|--------------------|--------------------|----------------------|-------------------|-------------------------------|------------------------|------------------|------------------------|------------------|-----------------|------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|--|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|----|------|----|
| Min | 15.90 | 59 | 18.10 | 2 | 55.00 | 1 | 34.90 | 1 | 33.20 | 2 | 13.20 | 1 | 24.60 | 1 | 18.70 | 1 | 20.40 | 2 | 8.50 | 1 | 9.50 | 1 | 8.60 | 1 | 8.10 | 2 | 10.00 | 1 | 7.70 | 1 | 7.00 | 1 | 6.50 | 1 | -2.10 | 1 | -1.70 | 1 | 0.10 | 32 |
| Min + 1 Measurement | 16.00 | 77 | 18.30 | 1 | 55.30 | 1 | 35.00 | 2 | 33.30 | 1 | 13.30 | 1 | 24.70 | 3 | 19.00 | 4 | 20.50 | 1 | 8.60 | 4 | 11.00 | 1 | 9.20 | 1 | 8.20 | 1 | 10.20 | 1 | 7.60 | 1 | 6.70 | 1 | -0.60 | 1 | 0.20 | 1 | 0.20 | 41 | | |
| Min + 2 Measurement | 16.10 | 63 | 18.50 | 2 | 55.60 | 1 | 35.40 | 1 | 33.40 | 1 | 13.40 | 7 | 25.00 | 6 | 19.10 | 2 | 20.60 | 3 | 8.90 | 3 | 11.30 | 2 | 9.30 | 1 | 8.30 | 2 | 10.50 | 1 | 7.80 | 3 | 7.20 | 1 | 0.10 | 1 | 0.40 | 1 | 0.30 | 41 | | |
| Min + 3 Measurement | 16.20 | 54 | 18.60 | 3 | 56.00 | 3 | 35.50 | 4 | 33.50 | 1 | 13.50 | 9 | 25.10 | 1 | 19.20 | 4 | 20.70 | 3 | 9.00 | 1 | 11.40 | 1 | 9.40 | 3 | 8.40 | 2 | 10.70 | 1 | 7.90 | 3 | 7.40 | 5 | 7.40 | 1 | 0.40 | 1 | 0.70 | 1 | 0.40 | 37 |
| Min + 4 Measurement | 16.30 | 36 | 18.70 | 1 | 56.10 | 3 | 35.70 | 1 | 33.60 | 4 | 13.60 | 10 | 25.20 | 7 | 19.30 | 4 | 20.80 | 2 | 9.10 | 2 | 11.50 | 1 | 9.50 | 3 | 8.50 | 3 | 10.90 | 3 | 8.00 | 1 | 8.00 | 2 | 8.00 | 2 | 0.50 | 1 | 1.00 | 3 | 0.50 | 26 |
| 1st %ile | 15.90 | 19.45 | 55.80 | 35.41 | 33.45 | 13.34 | 24.72 | 18.96 | 20.55 | 8.76 | 11.35 | 9.35 | 8.27 | 10.73 | 8.65 | 7.77 | 7.92 | 0.45 | 0.75 | 0.10 | | | | | | | | | | | | | | | | | | | | |
| 2nd %ile | 15.90 | 18.70 | 56.10 | 35.70 | 33.60 | 13.40 | 24.95 | 19.15 | 20.70 | 9.00 | 11.70 | 9.61 | 8.47 | 10.95 | 9.04 | 7.88 | 8.10 | 0.70 | 1.15 | 0.10 | | | | | | | | | | | | | | | | | | | | |
| 3rd %ile | 15.90 | 18.76 | 56.19 | 35.85 | 33.76 | 13.45 | 25.14 | 19.26 | 20.94 | 9.14 | 11.74 | 9.68 | 8.65 | 11.08 | 9.12 | 8.11 | 8.27 | 0.77 | 1.31 | 0.10 | | | | | | | | | | | | | | | | | | | | |
| 5th %ile | 15.90 | 18.92 | 56.37 | 35.99 | 34.13 | 13.54 | 25.29 | 19.42 | 21.17 | 9.27 | 12.01 | 9.78 | 8.99 | 11.33 | 9.32 | 8.23 | 8.42 | 0.93 | 1.54 | 0.10 | | | | | | | | | | | | | | | | | | | | |
| 50th %ile | 16.15 | 19.86 | 58.21 | 38.80 | 35.88 | 14.16 | 26.39 | 20.71 | 22.62 | 10.29 | 13.02 | 10.94 | 10.19 | 12.43 | 10.31 | 9.57 | 9.57 | 2.67 | 2.82 | 0.65 | | | | | | | | | | | | | | | | | | | | |
| 95 %ile | 16.84 | 20.91 | 60.41 | 41.53 | 38.09 | 14.95 | 27.74 | 22.03 | 24.08 | 11.49 | 14.11 | 11.96 | 11.41 | 13.63 | 11.45 | 11.01 | 10.48 | 3.16 | 4.03 | 1.98 | | | | | | | | | | | | | | | | | | | | |
| 97 %ile | 16.96 | 21.02 | 60.63 | 41.99 | 38.43 | 15.11 | 27.88 | 22.29 | 24.22 | 11.59 | 14.32 | 12.15 | 11.63 | 13.94 | 11.61 | 11.19 | 10.65 | 3.54 | 4.23 | 2.15 | | | | | | | | | | | | | | | | | | | | |
| 98 %ile | 17.04 | 21.20 | 60.87 | 42.40 | 39.65 | 15.17 | 28.00 | 22.45 | 24.35 | 11.70 | 14.45 | 12.30 | 11.83 | 14.00 | 11.63 | 11.45 | 10.74 | 3.93 | 4.27 | 2.40 | | | | | | | | | | | | | | | | | | | | |
| 99 %ile | 17.18 | 21.45 | 61.08 | 43.00 | 39.13 | 15.28 | 28.15 | 22.59 | 24.53 | 12.15 | 14.56 | 12.52 | 11.98 | 14.09 | 11.83 | 11.68 | 10.92 | 3.65 | 4.53 | 2.52 | | | | | | | | | | | | | | | | | | | | |
| Max - 4 Measurement | 17.00 | 7 | 21.40 | 4 | 61.00 | 2 | 42.80 | 1 | 39.20 | 2 | 15.20 | 7 | 28.00 | 3 | 22.40 | 3 | 24.50 | 2 | 12.00 | 1 | 14.50 | 4 | 12.40 | 2 | 11.90 | 4 | 13.90 | 6 | 11.70 | 6 | 11.60 | 1 | 10.70 | 5 | 5.00 | 2 | 4.50 | 1 | 2.40 | 2 |
| Max - 3 Measurement | 17.10 | 5 | 21.50 | 1 | 61.10 | 2 | 43.20 | 1 | 39.30 | 1 | 15.30 | 3 | 28.10 | 3 | 22.50 | 2 | 24.60 | 2 | 12.20 | 2 | 14.60 | 4 | 12.50 | 2 | 12.00 | 2 | 14.00 | 1 | 11.80 | 3 | 11.70 | 3 | 10.80 | 5 | 3.70 | 3 | 4.60 | 2 | 2.50 | 4 |
| Max - 2 Measurement | 17.20 | 2 | 21.60 | 2 | 61.40 | 2 | 43.60 | 2 | 39.40 | 1 | 15.40 | 1 | 28.20 | 3 | 22.60 | 4 | 24.70 | 1 | 12.50 | 1 | 14.70 | 1 | 12.60 | 3 | 12.10 | 1 | 14.10 | 5 | 11.90 | 2 | 11.80 | 2 | 10.90 | 1 | 3.30 | 1 | 4.70 | 1 | 2.60 | 3 |
| Max - 1 Measurement | 17.30 | 3 | 21.70 | 1 | 61.80 | 1 | 44.20 | 1 | 39.50 | 1 | 15.50 | 2 | 28.30 | 1 | 22.80 | 2 | 24.80 | 1 | 12.70 | 2 | 15.00 | 1 | 12.70 | 1 | 12.20 | 2 | 14.20 | 2 | 12.00 | 2 | 11.90 | 1 | 11.00 | 3 | 4.00 | 1 | 4.80 | 1 | 2.90 | 1 |
| Max | 17.40 | 1 | 21.80 | 1 | 62.40 | 1 | 44.80 | 1 | 39.90 | 1 | 15.70 | 1 | 28.50 | 2 | 23.00 | 2 | 25.00 | 1 | 14.10 | 1 | 15.60 | 1 | 12.90 | 1 | 12.90 | 1 | 14.60 | 2 | 12.10 | 1 | 14.20 | 1 | 11.10 | 2 | 4.10 | 1 | 5.00 | 1 | 3.00 | 1 |
| Mean | 16.27 | 19.92 | 58.31 | 38.90 | 35.95 | 14.24 | 26.51 | 20.75 | 22.70 | 10.36 | 13.26 | 10.97 | 10.22 | 12.47 | 10.39 | 9.63 | 9.56 | 2.10 | 2.94 | 0.83 | | | | | | | | | | | | | | | | | | | | |
| SD | 0.31 | 0.62 | 1.20 | 1.65 | 1.17 | 0.42 | 0.75 | 0.79 | 0.89 | 0.69 | 0.68 | 0.69 | 0.74 | 0.70 | 0.66 | 0.57 | 0.63 | 0.71 | 0.91 | 0.59 | | | | | | | | | | | | | | | | | | | | |
| Coefficient of Variation % | 1.91 | 3.13 | 2.05 | 4.26 | 3.25 | 2.92 | 2.82 | 3.74 | 3.91 | 6.67 | 5.22 | 6.25 | 7.76 | 5.63 | 6.36 | 6.00 | 6.63 | | | | | | | | | | | | | | | | | | | | | | | |
| No of Survey Subjects | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | | | | | | | | | | | | | | | | | | | | |

(ALL MEASUREMENTS IN CENTIMETRES)
 THE FIGURE GIVEN IN THE SEPARATE COLUMN AGAINST MIN, MIN + 1 ETC, MAX, MAX - 1 ETC INDICATES THE NUMBER OF SURVEY SUBJECTS HAVING THAT PARTICULAR MEASUREMENT

TABLE 38 PART 1

SUMMARY OF DATA ON 2ND TO 98TH PERCENTILE RANGES OF SELECTED MEASUREMENTS FROM TABLES 23 TO 37

| SIZE ROLL REF | SIZE N° | HEAD CIRCUMFERENCE | | | HEAD BREADTH | | | HEAD LENGTH | | | MENTON/VERTEX | | | MENTON/BACK OF HEAD | | | MENTON/BACK OF HEAD MINUS HEAD LENGTH | | | 2 ND TO 98 TH PERCENTILE RANGE |
|---------------|---------|--------------------|--------|-------------|--------------|--------|-------------|-------------|--------|-------------|---------------|--------|-------------|---------------------|--------|-------------|---------------------------------------|--------|-------------|--|
| | | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | |
| A | 1 | 54.17* | 56.27* | 2.10* | 14.36 | 16.19 | 1.83 | 18.07 | 20.10 | 2.03 | 20.27 | 24.26 | 3.99 | 17.15 | 21.22 | 4.07 | -1.92 | 2.32 | 4.24 | 339 |
| | 2 | 56.40* | 58.99* | 2.59* | 14.76 | 16.76 | 2.00 | 18.87 | 20.85 | 1.98 | 20.79 | 24.87 | 4.08 | 17.91 | 21.96 | 4.05 | -2.06 | 2.11 | 4.17 | 1575 |
| | 3 | 59.20* | 61.30* | 2.10* | 15.13 | 17.25 | 2.12 | 19.72 | 21.63 | 1.91 | 21.18 | 25.44 | 4.26 | 18.55 | 22.58 | 4.03 | -2.02 | 2.15 | 4.17 | 282 |
| B | 1 | 53.80* | 55.59* | 1.79* | 14.17 | 16.17 | 2.00 | 17.91 | 19.83 | 1.92 | 19.68 | 24.43 | 4.75 | 16.47 | 21.33 | 4.86 | -2.14 | 2.37 | 4.51 | 133 |
| | 2 | 55.70* | 57.67* | 1.97* | 14.53 | 16.54 | 2.01 | 18.56 | 20.49 | 1.93 | 20.73 | 24.38 | 3.65 | 17.53 | 21.65 | 4.12 | -2.02 | 2.20 | 4.22 | 907 |
| | 3 | 57.80* | 59.69* | 1.89* | 14.97 | 16.90 | 1.93 | 19.19 | 21.06 | 1.87 | 20.96 | 25.10 | 4.14 | 18.14 | 22.21 | 4.07 | -2.07 | 2.09 | 4.16 | 837 |
| | 4 | 59.90* | 61.73* | 1.83* | 15.24 | 17.36 | 2.12 | 19.87 | 21.73 | 1.86 | 21.64 | 25.74 | 4.10 | 18.84 | 22.55 | 3.71 | -1.92 | 1.76 | 3.68 | 121 |
| C | 1 | 53.60* | 54.89* | 1.29* | 14.40 | 15.97 | 1.57 | 17.80 | 19.47 | 1.67 | 19.80 | 23.87 | 4.07 | 16.50 | 20.60 | 4.10 | -1.50 | 1.94 | 3.44 | 33 |
| | 2 | 55.00* | 56.28* | 1.28* | 14.37 | 16.20 | 1.83 | 18.27 | 20.12 | 1.85 | 20.31 | 24.24 | 3.93 | 17.21 | 21.29 | 4.08 | -1.99 | 2.39 | 4.38 | 366 |
| | 3 | 56.40* | 57.67* | 1.27* | 14.58 | 16.59 | 2.01 | 18.68 | 20.52 | 1.84 | 20.75 | 24.50 | 3.75 | 17.72 | 21.73 | 4.01 | -2.07 | 2.20 | 4.27 | 761 |
| | 4 | 57.80* | 59.05* | 1.25* | 14.95 | 16.89 | 1.94 | 19.16 | 20.99 | 1.83 | 20.88 | 24.99 | 4.11 | 18.11 | 22.13 | 4.02 | -2.06 | 2.03 | 4.09 | 676 |
| | 5 | 59.20* | 60.44* | 1.24* | 15.10 | 17.16 | 2.06 | 19.70 | 21.53 | 1.83 | 21.13 | 25.24 | 4.11 | 18.53 | 22.61 | 4.08 | -2.06 | 2.17 | 4.23 | 245 |
| | 6 | 60.60* | 61.85* | 1.25* | 15.60 | 17.48 | 1.88 | 19.90 | 21.85 | 1.95 | 22.10 | 26.13 | 4.03 | 19.40 | 22.45 | 3.05 | -1.40 | 1.73 | 3.13 | 37 |
| D | 1 | 54.75 | 57.66 | 4.91 | 14.50* | 15.79* | 1.29* | 18.40 | 21.06 | 2.66 | 20.64 | 24.86 | 4.22 | 17.65 | 21.98 | 4.33 | -2.05 | 2.18 | 4.23 | 1096 |
| | 2 | 55.85 | 60.85 | 5.00 | 15.90* | 17.06* | 1.16* | 18.71 | 21.20 | 2.49 | 21.00 | 25.11 | 4.11 | 17.75 | 22.22 | 4.47 | -2.02 | 2.08 | 4.10 | 901 |
| E | 1 | 54.28 | 59.11 | 4.83 | 14.34* | 15.19* | 0.85* | 18.40 | 21.01 | 2.61 | 20.29 | 24.41 | 4.12 | 17.49 | 22.01 | 4.52 | -2.11 | 2.18 | 4.29 | 344 |
| | 2 | 55.14 | 60.24 | 5.10 | 15.30* | 16.27* | 0.97* | 18.51 | 21.13 | 2.62 | 20.96 | 24.99 | 4.03 | 17.71 | 21.99 | 4.28 | -2.02 | 2.18 | 4.20 | 1352 |
| | 3 | 56.27 | 61.00 | 4.73 | 16.40* | 17.25* | 0.85* | 18.65 | 21.25 | 2.60 | 20.90 | 24.97 | 4.07 | 17.93 | 22.45 | 4.52 | -2.05 | 2.10 | 4.15 | 361 |
| F | 1 | 54.66 | 58.70 | 4.04 | 14.55 | 16.78 | 2.23 | 18.32* | 19.79* | 1.47* | 20.49 | 24.40 | 3.91 | 17.48 | 21.70 | 4.22 | -1.85 | 2.44 | 4.29 | 944 |
| | 2 | 56.32 | 60.83 | 4.51 | 14.60 | 16.97 | 2.37 | 19.90* | 21.31* | 1.41* | 21.13 | 25.21 | 4.08 | 18.17 | 22.26 | 4.09 | -2.12 | 1.88 | 4.00 | 1054 |
| G | 1 | 54.08 | 58.00 | 3.92 | 14.45 | 16.77 | 2.32 | 18.07* | 19.19* | 1.12* | 20.30 | 24.30 | 4.00 | 17.06 | 21.50 | 4.44 | -2.00 | 2.57 | 4.57 | 300 |
| | 2 | 55.49 | 59.84 | 4.35 | 14.60 | 16.85 | 2.25 | 19.30* | 20.46* | 1.16* | 20.85 | 24.79 | 3.94 | 17.86 | 21.99 | 4.13 | -1.97 | 2.06 | 4.03 | 1376 |
| | 3 | 57.33 | 61.27 | 3.94 | 14.83 | 17.08 | 2.25 | 20.60* | 21.59* | 0.99* | 21.81 | 25.46 | 3.65 | 18.57 | 22.52 | 3.95 | -2.21 | 1.53 | 3.74 | 322 |
| H | 1 | 54.38* | 56.97* | 2.59* | 14.42* | 15.77* | 1.35* | 18.26 | 20.20 | 1.94 | 20.55 | 24.36 | 3.81 | 17.32 | 21.37 | 4.05 | -1.95 | 2.25 | 4.20 | 626 |
| | 2 | 57.10* | 59.84* | 2.74* | 14.63* | 15.79* | 1.16* | 19.14 | 21.16 | 2.02 | 20.73 | 24.96 | 4.23 | 18.28 | 22.14 | 3.86 | -2.09 | 2.15 | 4.24 | 566 |
| | 3 | 55.60* | 58.37* | 2.77* | 15.90* | 16.79* | 0.89* | 18.60 | 20.57 | 2.07 | 20.86 | 24.73 | 3.87 | 17.58 | 21.85 | 4.27 | -2.07 | 2.15 | 4.22 | 498 |
| | 4 | 58.50* | 61.07* | 2.57* | 15.90* | 17.23* | 1.33* | 19.45 | 21.50 | 2.05 | 21.20 | 25.25 | 4.05 | 18.28 | 22.50 | 4.22 | -1.95 | 2.00 | 3.95 | 400 |
| J | 1 | 54.34* | 56.67* | 2.33* | 14.44 | 16.42 | 1.98 | 18.15* | 19.76* | 1.61* | 20.42 | 24.26 | 3.84 | 17.32 | 21.32 | 4.00 | -1.90 | 2.38 | 4.28 | 459 |
| | 2 | 56.80* | 58.93* | 2.13* | 15.01 | 16.89 | 1.88 | 18.69* | 19.79* | 1.10* | 20.57 | 24.56 | 3.99 | 17.83 | 21.83 | 4.00 | -1.65 | 2.48 | 4.13 | 484 |
| | 3 | 56.16* | 58.65* | 2.49* | 14.53 | 16.56 | 2.03 | 19.90* | 20.88* | 0.98* | 21.07 | 24.96 | 3.89 | 18.13 | 21.99 | 3.86 | -2.17 | 1.73 | 3.90 | 652 |
| | 4 | 68.80* | 61.07* | 2.27* | 15.16 | 17.23 | 2.07 | 19.90* | 21.55* | 1.65* | 21.15 | 25.38 | 4.23 | 18.50 | 22.57 | 4.07 | -2.07 | 2.00 | 4.07 | 398 |

ALL MEASUREMENTS IN CM

* DENOTES CONTROL MEASUREMENT

TABLE 38 PART 2

SUMMARY OF DATA ON 2ND TO 38TH %ile RANGES OF SELECTED MEASUREMENTS FROM TABLES 23 TO 37

| SIZE | ROLL REF | SIZE NO | BITRAGON CORONAL ARC | | | BITRAGON DIAMETER | | | TRAGON/VERTEX | | | TRAGON/BACK OF HEAD | | | PUPIL/VERTEX | | | MAX HEAD DIAGONAL FROM MENTON | | | NO. OF SUBJECTS |
|------|----------|---------|----------------------|--------|-------------|-------------------|--------|-------------|---------------|--------|-------------|---------------------|--------|-------------|--------------|--------|-------------|-------------------------------|--------|-------------|-----------------|
| | | | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | |
| A | | 1 | 31.98 | 36.54 | 4.56 | 12.58 | 14.36 | 1.78 | 11.48 | 13.89 | 2.41 | 8.38 | 10.78 | 2.40 | 9.38 | 12.64 | 3.26 | 24.26 | 26.92 | 2.66 | 339 |
| | | 2 | 33.08 | 37.79 | 4.71 | 12.95 | 14.89 | 1.94 | 11.73 | 14.19 | 2.46 | 8.86 | 11.46 | 2.58 | 9.41 | 12.90 | 3.49 | 24.80 | 27.66 | 2.86 | 1375 |
| | | 3 | 33.76 | 38.84 | 5.08 | 13.13 | 15.37 | 2.24 | 11.60 | 14.64 | 3.04 | 9.29 | 11.97 | 2.68 | 9.73 | 12.98 | 3.25 | 25.41 | 28.22 | 2.81 | 282 |
| B | | 1 | 31.68 | 35.97 | 4.29 | 12.42 | 14.37 | 1.95 | 11.25 | 13.77 | 2.52 | 8.22 | 10.77 | 2.55 | 8.86 | 12.57 | 3.71 | 24.16 | 26.72 | 2.56 | 133 |
| | | 2 | 32.67 | 37.09 | 4.42 | 12.81 | 14.71 | 1.90 | 11.63 | 14.09 | 2.46 | 8.63 | 11.26 | 2.63 | 9.36 | 12.73 | 3.37 | 24.63 | 27.17 | 2.54 | 907 |
| | | 3 | 33.45 | 38.15 | 4.70 | 13.08 | 14.98 | 1.90 | 11.81 | 14.38 | 2.57 | 9.05 | 11.58 | 2.53 | 9.64 | 12.94 | 3.30 | 25.21 | 27.79 | 2.58 | 837 |
| | | 4 | 33.91 | 39.36 | 5.45 | 13.08 | 15.45 | 2.37 | 11.24 | 14.66 | 3.42 | 9.24 | 12.06 | 2.82 | 9.93 | 13.26 | 3.33 | 25.90 | 28.46 | 2.96 | 121 |
| C | | 1 | 31.60 | 35.61 | 4.01 | 12.60 | 14.37 | 1.77 | 11.00 | 13.74 | 2.74 | 7.80 | 10.43 | 2.63 | 9.00 | 12.34 | 3.34 | 24.10 | 25.93 | 1.83 | 53 |
| | | 2 | 32.33 | 36.56 | 4.23 | 12.58 | 14.35 | 1.77 | 11.56 | 13.88 | 2.32 | 8.46 | 10.80 | 2.34 | 9.41 | 12.66 | 3.25 | 24.53 | 26.94 | 2.61 | 306 |
| | | 3 | 32.80 | 37.10 | 4.30 | 12.87 | 14.75 | 1.88 | 11.60 | 14.11 | 2.51 | 8.73 | 11.54 | 2.61 | 9.33 | 12.76 | 3.43 | 24.64 | 27.27 | 2.63 | 701 |
| | | 4 | 33.41 | 38.14 | 4.73 | 13.08 | 14.97 | 1.89 | 11.79 | 14.31 | 2.52 | 9.01 | 11.53 | 2.52 | 9.60 | 12.96 | 3.36 | 25.21 | 27.77 | 2.56 | 676 |
| | | 5 | 33.69 | 38.66 | 4.97 | 13.09 | 15.24 | 2.15 | 11.64 | 14.61 | 2.97 | 9.26 | 11.91 | 2.65 | 9.70 | 12.91 | 3.21 | 25.36 | 28.01 | 2.65 | 245 |
| | | 6 | 34.20 | 39.43 | 5.23 | 13.20 | 15.53 | 2.33 | 11.30 | 14.58 | 3.28 | 9.40 | 12.02 | 2.62 | 10.20 | 13.36 | 3.16 | 26.10 | 28.56 | 2.46 | 37 |
| D | | 1 | 32.40 | 37.18 | 4.78 | 12.74 | 14.46 | 1.72 | 11.58 | 14.14 | 2.56 | 8.72 | 11.42 | 2.70 | 9.31 | 12.76 | 3.45 | 24.52 | 27.48 | 2.96 | 1096 |
| | | 2 | 33.58 | 38.54 | 4.96 | 13.35 | 15.15 | 1.80 | 11.77 | 14.40 | 2.63 | 8.75 | 11.59 | 2.84 | 9.72 | 12.92 | 3.20 | 24.94 | 27.95 | 3.01 | 901 |
| E | | 1 | 31.86 | 36.34 | 4.48 | 12.56 | 14.10 | 1.54 | 11.56 | 14.10 | 2.54 | 8.59 | 11.30 | 2.71 | 9.29 | 12.56 | 3.27 | 24.35 | 27.34 | 2.99 | 344 |
| | | 2 | 33.13 | 37.56 | 4.43 | 12.98 | 14.74 | 1.76 | 11.73 | 14.13 | 2.46 | 8.73 | 11.53 | 2.80 | 9.45 | 12.89 | 3.44 | 24.67 | 27.76 | 3.09 | 1352 |
| | | 3 | 34.15 | 38.67 | 4.52 | 13.45 | 15.33 | 1.88 | 11.75 | 14.53 | 2.78 | 8.77 | 11.80 | 3.03 | 9.78 | 13.05 | 3.27 | 25.13 | 28.03 | 2.90 | 301 |
| F | | 1 | 32.49 | 37.55 | 5.06 | 12.76 | 14.91 | 2.15 | 11.66 | 14.16 | 2.50 | 8.56 | 10.99 | 2.43 | 9.30 | 12.70 | 3.40 | 24.47 | 27.10 | 2.63 | 944 |
| | | 2 | 33.08 | 38.39 | 5.31 | 12.92 | 15.07 | 2.15 | 11.70 | 14.29 | 2.59 | 9.16 | 11.71 | 2.55 | 9.73 | 12.96 | 3.23 | 25.15 | 28.00 | 2.85 | 1054 |
| G | | 1 | 32.15 | 37.20 | 5.05 | 12.70 | 14.70 | 2.00 | 11.60 | 14.08 | 2.48 | 8.35 | 10.78 | 2.43 | 9.00 | 12.60 | 3.60 | 24.23 | 26.85 | 2.62 | 300 |
| | | 2 | 32.91 | 37.85 | 4.94 | 12.88 | 14.97 | 2.09 | 11.72 | 14.22 | 2.50 | 8.92 | 11.39 | 2.47 | 9.60 | 12.87 | 3.27 | 24.82 | 27.68 | 2.86 | 1376 |
| | | 3 | 33.17 | 38.76 | 5.59 | 12.97 | 15.15 | 2.18 | 11.67 | 14.35 | 2.68 | 9.32 | 11.96 | 2.64 | 9.85 | 13.03 | 3.18 | 25.57 | 28.22 | 2.65 | 322 |
| H | | 1 | 32.04 | 36.59 | 4.55 | 12.62 | 14.34 | 1.72 | 11.55 | 14.02 | 2.47 | 8.52 | 10.87 | 2.35 | 9.29 | 12.61 | 3.32 | 24.33 | 26.96 | 2.63 | 526 |
| | | 2 | 32.91 | 37.29 | 4.38 | 12.91 | 14.50 | 1.59 | 11.63 | 14.18 | 2.55 | 9.05 | 11.59 | 2.54 | 9.33 | 12.93 | 3.60 | 24.85 | 27.59 | 2.74 | 566 |
| | | 3 | 33.45 | 37.90 | 4.45 | 13.32 | 14.97 | 1.65 | 11.75 | 14.13 | 2.38 | 8.71 | 11.37 | 2.66 | 9.60 | 12.88 | 3.28 | 24.87 | 27.65 | 2.78 | 498 |
| | | 4 | 34.09 | 38.70 | 4.61 | 13.41 | 15.28 | 1.87 | 11.77 | 14.53 | 2.76 | 9.12 | 11.80 | 2.68 | 9.84 | 12.98 | 3.14 | 25.35 | 28.08 | 2.75 | 400 |
| J | | 1 | 32.02 | 36.69 | 4.67 | 12.60 | 14.44 | 1.84 | 11.51 | 14.02 | 2.51 | 8.48 | 10.87 | 2.39 | 9.46 | 12.62 | 3.16 | 24.32 | 26.86 | 2.54 | 459 |
| | | 2 | 33.18 | 38.13 | 4.95 | 13.11 | 15.05 | 1.94 | 11.75 | 14.27 | 2.52 | 8.76 | 11.16 | 2.40 | 9.24 | 12.84 | 3.60 | 24.66 | 27.34 | 2.68 | 484 |
| | | 3 | 32.90 | 37.56 | 4.66 | 12.87 | 14.65 | 1.78 | 11.63 | 14.19 | 2.56 | 9.15 | 11.53 | 2.38 | 9.72 | 12.96 | 3.24 | 24.98 | 27.70 | 2.72 | 652 |
| | | 4 | 34.00 | 38.80 | 4.80 | 13.10 | 15.28 | 2.18 | 11.80 | 14.47 | 2.67 | 9.18 | 11.90 | 2.72 | 9.77 | 12.97 | 3.20 | 25.42 | 28.13 | 2.71 | 398 |

ALL MEASUREMENTS IN CM.

TABLE 38 PART 3
SUMMARY OF DATA ON 2ND TO 98TH %ile RANGES OF SELECTED MEASUREMENTS FROM TABLES 23 TO 37

| SIZE ROLL REF | SIZE N° | HEAD CIRCUMFERENCE | | | HEAD BREADTH | | | HEAD LENGTH | | | MENTON/VERTEX | | | MENTON/BACK OF HEAD | | | MENTON/BACK OF HEAD MINUS HEAD LENGTH | | | NO. OF SUBJECTS |
|---------------|---------|--------------------|--------|-------------|--------------|--------|-------------|-------------|--------|-------------|---------------|--------|-------------|---------------------|--------|-------------|---------------------------------------|--------|-------------|-----------------|
| | | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | |
| K | 1 | 54.39 | 58.14 | 3.75 | 14.50* | 15.78* | 1.28* | 18.27* | 19.78* | 1.51* | 20.36 | 24.42 | 4.06 | 17.43 | 21.56 | 4.13 | -1.88 | 2.44 | 4.32 | 592 |
| | 2 | 55.40 | 59.13 | 3.73 | 15.90* | 16.97* | 1.07* | 18.40* | 19.79* | 1.39* | 20.80 | 24.40 | 3.60 | 17.52 | 21.77 | 4.25 | -1.70 | 2.43 | 4.13 | 351 |
| | 3 | 55.95 | 59.99 | 4.04 | 14.51* | 15.79* | 1.28* | 19.90* | 21.20* | 1.30* | 21.04 | 25.00 | 3.96 | 18.23 | 22.10 | 3.87 | -2.20 | 1.75 | 3.35 | 503 |
| | 4 | 56.91 | 61.00 | 4.09 | 15.90* | 17.13* | 1.23* | 19.90* | 21.36* | 1.46* | 21.20 | 25.23 | 4.03 | 18.07 | 22.40 | 4.33 | -2.08 | 2.00 | 4.08 | 549 |
| L | 1 | 53.32 | 57.86 | 3.96 | 14.33* | 15.13* | 0.86* | 18.31* | 19.78* | 1.47* | 19.89 | 24.19 | 4.30 | 17.28 | 21.32 | 4.04 | -1.89 | 2.14 | 4.03 | 209 |
| | 2 | 54.32 | 58.55 | 3.76 | 15.30* | 16.27* | 0.97* | 18.31* | 19.79* | 1.48* | 20.78 | 24.44 | 3.66 | 17.51 | 21.75 | 4.24 | -1.84 | 2.51 | 4.35 | 626 |
| | 3 | 55.93 | 59.48 | 3.55 | 16.40* | 17.18* | 0.78* | 18.36* | 19.78* | 1.42* | 20.42 | 24.28 | 3.86 | 17.52 | 21.75 | 4.23 | -1.75 | 2.36 | 4.11 | 108 |
| | 4 | 55.47 | 59.63 | 4.16 | 14.26* | 15.19* | 0.93* | 19.90* | 21.18* | 1.28* | 20.41 | 24.69 | 4.28 | 18.18 | 22.13 | 3.95 | -2.24 | 1.79 | 4.03 | 135 |
| | 5 | 56.57 | 60.53 | 3.96 | 15.30* | 16.27* | 0.97* | 19.90* | 21.31* | 1.41* | 21.14 | 25.22 | 4.08 | 18.19 | 22.13 | 3.94 | -2.13 | 1.85 | 3.98 | 724 |
| | 6 | 57.53 | 61.71 | 4.12 | 16.40* | 17.26* | 0.86* | 19.90* | 21.36* | 1.46* | 21.54 | 25.23 | 3.89 | 17.96 | 22.56 | 4.60 | -2.08 | 2.01 | 4.09 | 193 |
| M | 1 | 53.89 | 57.70 | 3.81 | 14.42* | 15.78* | 1.36* | 18.10* | 19.19* | 1.09* | 19.80 | 24.41 | 4.61 | 16.78 | 21.38 | 4.60 | -2.41 | 2.61 | 5.02 | 198 |
| | 2 | 55.32 | 59.08 | 3.76 | 14.52* | 15.79* | 1.27* | 19.30* | 20.45* | 1.15* | 20.75 | 24.72 | 3.97 | 17.84 | 21.90 | 4.06 | -1.90 | 1.94 | 3.84 | 758 |
| | 3 | 57.09 | 60.42 | 3.33 | 14.58* | 15.79* | 1.21* | 20.60* | 21.46* | 0.86* | 21.69 | 25.36 | 3.77 | 18.48 | 22.12 | 3.64 | -2.20 | 1.44 | 3.64 | 139 |
| | 4 | 54.35 | 58.40 | 3.45 | 15.90* | 17.00* | 1.10* | 18.05* | 19.19* | 1.14* | 20.40 | 24.10 | 3.70 | 17.40 | 21.60 | 4.20 | -1.45 | 2.55 | 4.00 | 101 |
| | 5 | 56.32 | 60.03 | 3.71 | 15.90* | 17.02* | 1.12* | 19.90* | 20.46* | 1.16* | 20.96 | 24.89 | 3.93 | 17.90 | 22.14 | 4.24 | -2.03 | 2.12 | 4.15 | 617 |
| | 6 | 57.83 | 61.72 | 3.89 | 15.90* | 17.17* | 1.27* | 20.60* | 21.63* | 1.03* | 21.93 | 25.44 | 3.51 | 18.63 | 22.55 | 3.92 | -2.24 | 1.54 | 3.78 | 182 |
| N | 1 | 54.46 | 59.18 | 4.72 | 14.49* | 15.78* | 1.29* | 18.26 | 20.77 | 2.51 | 20.26* | 22.67* | 2.41* | 18.03 | 22.16 | 4.13 | -1.19 | 2.48 | 3.67 | 528 |
| | 2 | 55.04 | 59.89 | 4.85 | 14.51* | 15.79* | 1.28* | 18.79 | 21.17 | 2.38 | 22.80* | 25.08* | 2.28* | 17.38 | 21.66 | 4.28 | -2.29 | 1.34 | 3.63 | 567 |
| | 3 | 55.61 | 60.30 | 4.69 | 15.90* | 16.97* | 1.07* | 18.41 | 20.79 | 2.38 | 20.60* | 22.68* | 2.08* | 18.08 | 22.40 | 4.32 | -0.94 | 2.53 | 3.47 | 305 |
| | 4 | 55.68 | 60.90 | 5.02 | 15.90* | 17.09* | 1.19* | 18.83 | 21.30 | 2.47 | 22.80* | 25.17* | 2.37* | 17.69 | 21.87 | 4.18 | -2.17 | 1.41 | 3.58 | 594 |
| O | 1 | 54.41 | 58.68 | 4.27 | 14.46* | 15.78* | 1.32* | 18.21 | 20.69 | 2.48 | 21.23 | 24.94 | 3.71 | 17.34* | 19.66* | 2.32* | -2.23 | 0.76 | 2.99 | 461 |
| | 2 | 55.13 | 59.86 | 4.73 | 14.52* | 15.79* | 1.27* | 18.65 | 21.18 | 2.53 | 20.31 | 24.67 | 4.36 | 19.00* | 22.11* | 2.31* | -0.89 | 2.41 | 3.30 | 629 |
| | 3 | 55.26 | 59.81 | 4.55 | 15.90* | 17.02* | 1.12* | 18.35 | 20.83 | 2.48 | 21.61 | 25.16 | 3.55 | 17.47* | 19.67* | 2.20* | -2.29 | 0.62 | 2.91 | 332 |
| | 4 | 56.41 | 60.99 | 4.58 | 15.90* | 17.07* | 1.17* | 18.95 | 21.35 | 2.40 | 20.83 | 24.93 | 4.10 | 19.80* | 22.36* | 2.56* | -1.06 | 2.27 | 3.33 | 567 |
| P | 1 | 54.75 | 59.63 | 5.08 | 14.47* | 15.78* | 1.31* | 18.71 | 21.14 | 2.43 | 21.51 | 25.15 | 3.64 | 17.35 | 20.78 | 3.43 | -2.31* | -0.02* | 2.29* | 523 |
| | 2 | 54.73 | 59.59 | 4.86 | 14.52* | 15.79* | 1.27* | 18.33 | 20.86 | 2.53 | 20.31 | 23.99 | 3.68 | 18.87 | 22.11 | 3.24 | 0.10* | 2.39* | 2.29* | 566 |
| | 3 | 55.60 | 60.84 | 5.24 | 15.90* | 17.10* | 1.20* | 18.63 | 21.20 | 2.57 | 21.93 | 25.27 | 3.34 | 17.52 | 20.78 | 3.26 | -2.24* | -0.02* | 2.22* | 450 |
| | 4 | 56.10 | 60.87 | 4.77 | 15.90* | 17.04* | 1.14* | 18.70 | 21.20 | 2.50 | 20.70 | 24.35 | 3.65 | 19.15 | 22.45 | 3.30 | 0.10* | 2.40* | 2.30* | 449 |

ALL MEASUREMENTS IN CM

* DENOTES CONTROL MEASUREMENT

TABLE 38 PART 4

SUMMARY OF DATA ON 2ND TO 98TH %ile RANGES OF SELECTED MEASUREMENTS FROM TABLES 23 TO 37

| SIZE ROLL REF | SIZE N ^o | BITRAGON CORONAL ARC | | | BITRAGON DIAMETER | | | TRAGON/VERTEX | | | TRAGON/BACK OF HEAD | | | PUPIL/VERTEX | | | MAX. HEAD DIAGONAL FROM MENTON | | | No. of 2 ND to 98 TH %ile |
|---------------|---------------------|----------------------|--------|----------------|-------------------|--------|----------------|---------------|--------|----------------|---------------------|--------|----------------|--------------|--------|----------------|--------------------------------|--------|----------------|--|
| | | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | 2%ile | 98%ile | 2-98% RANGE | |
| | | K | 1 | 32.18 | 36.73 | 4.61 | 12.65 | 14.42 | 1.77 | 11.59 | 14.10 | 2.51 | 8.54 | 10.90 | 2.36 | 9.25 | 12.71 | 3.46 | 24.34 | |
| | 2 | 33.45 | 38.20 | 4.75 | 13.35 | 15.08 | 1.73 | 11.73 | 14.40 | 2.67 | 8.58 | 11.20 | 2.62 | 9.45 | 12.70 | 3.25 | 24.68 | 27.33 | 2.65 | 351 |
| | 3 | 32.74 | 37.30 | 4.66 | 12.83 | 14.47 | 1.64 | 11.55 | 14.20 | 2.65 | 9.22 | 11.65 | 2.43 | 9.54 | 12.85 | 3.31 | 24.90 | 27.72 | 2.82 | 503 |
| | 4 | 33.76 | 38.64 | 4.88 | 13.34 | 15.19 | 1.85 | 11.77 | 14.40 | 2.63 | 9.13 | 11.80 | 2.67 | 9.87 | 13.00 | 3.13 | 25.34 | 28.08 | 2.74 | 549 |
| L | 1 | 31.72 | 36.28 | 4.56 | 12.52 | 14.08 | 1.56 | 11.52 | 13.98 | 2.46 | 8.46 | 10.89 | 2.43 | 9.31 | 12.36 | 3.05 | 24.24 | 26.78 | 2.54 | 209 |
| | 2 | 32.98 | 37.42 | 4.44 | 12.94 | 14.71 | 1.77 | 11.66 | 14.17 | 2.51 | 8.56 | 11.02 | 2.46 | 9.26 | 12.77 | 3.51 | 24.54 | 27.15 | 2.61 | 626 |
| | 3 | 33.95 | 38.34 | 4.39 | 13.40 | 15.19 | 1.79 | 11.80 | 14.45 | 2.65 | 8.70 | 11.13 | 2.43 | 9.57 | 12.54 | 2.97 | 25.00 | 27.28 | 2.28 | 108 |
| | 4 | 32.37 | 36.43 | 4.06 | 12.66 | 14.14 | 1.48 | 11.57 | 14.17 | 2.60 | 9.25 | 11.38 | 2.13 | 9.27 | 12.67 | 3.40 | 24.74 | 27.53 | 2.79 | 135 |
| | 5 | 33.19 | 37.65 | 4.46 | 13.01 | 14.78 | 1.77 | 11.72 | 14.23 | 2.51 | 9.17 | 11.68 | 2.51 | 9.72 | 12.93 | 3.21 | 25.22 | 27.89 | 2.67 | 724 |
| | 6 | 34.19 | 38.78 | 4.59 | 13.59 | 15.37 | 1.78 | 11.73 | 14.56 | 2.83 | 9.09 | 12.01 | 2.92 | 10.09 | 13.14 | 3.05 | 25.53 | 28.11 | 2.58 | 193 |
| M | 1 | 31.92 | 36.41 | 4.49 | 12.65 | 14.38 | 1.73 | 11.59 | 14.10 | 2.51 | 8.30 | 10.78 | 2.48 | 8.73 | 12.50 | 3.71 | 24.17 | 26.80 | 2.63 | 198 |
| | 2 | 32.62 | 37.13 | 4.51 | 12.75 | 14.45 | 1.70 | 11.56 | 14.13 | 2.57 | 8.90 | 11.31 | 2.41 | 9.40 | 12.80 | 3.40 | 24.71 | 27.37 | 2.66 | 758 |
| | 3 | 32.63 | 37.39 | 4.76 | 12.92 | 14.51 | 1.59 | 11.68 | 14.32 | 2.64 | 9.19 | 11.72 | 2.53 | 9.66 | 12.94 | 3.28 | 25.46 | 27.84 | 2.38 | 139 |
| | 4 | 33.20 | 37.89 | 4.69 | 13.40 | 14.90 | 1.50 | 11.41 | 14.05 | 2.64 | 8.26 | 10.80 | 2.54 | 9.70 | 12.70 | 3.00 | 24.60 | 26.85 | 2.25 | 101 |
| | 5 | 33.59 | 38.26 | 4.67 | 13.35 | 15.16 | 1.81 | 11.81 | 14.48 | 2.67 | 8.95 | 11.47 | 2.52 | 9.67 | 12.91 | 3.24 | 25.11 | 27.77 | 2.66 | 617 |
| | 6 | 33.63 | 39.01 | 5.38 | 13.32 | 15.24 | 1.92 | 11.56 | 14.34 | 2.78 | 9.33 | 12.12 | 2.79 | 10.00 | 13.09 | 3.09 | 25.72 | 28.34 | 2.62 | 182 |
| N | 1 | 32.13 | 36.65 | 4.52 | 12.71 | 14.45 | 1.74 | 11.42 | 13.88 | 2.46 | 8.74 | 11.49 | 2.75 | 9.13 | 11.69 | 2.56 | 24.33 | 26.91 | 2.58 | 528 |
| | 2 | 32.63 | 37.29 | 4.66 | 12.80 | 14.46 | 1.66 | 11.88 | 14.23 | 2.35 | 8.71 | 11.36 | 2.65 | 10.34 | 12.95 | 2.61 | 24.98 | 27.73 | 2.75 | 567 |
| | 3 | 33.41 | 37.98 | 4.57 | 13.35 | 15.20 | 1.85 | 11.46 | 13.99 | 2.53 | 8.81 | 11.56 | 2.75 | 9.37 | 11.87 | 2.50 | 24.68 | 27.00 | 2.32 | 305 |
| | 4 | 33.75 | 38.62 | 4.87 | 13.34 | 15.13 | 1.79 | 11.94 | 14.50 | 2.56 | 8.74 | 11.60 | 2.86 | 10.26 | 13.01 | 2.75 | 25.19 | 28.05 | 2.86 | 594 |
| O | 1 | 32.33 | 36.98 | 4.65 | 12.66 | 14.41 | 1.75 | 11.61 | 14.17 | 2.56 | 8.52 | 10.88 | 2.36 | 9.88 | 12.94 | 3.06 | 24.30 | 26.98 | 2.68 | 461 |
| | 2 | 32.61 | 37.16 | 4.55 | 12.82 | 14.49 | 1.67 | 11.56 | 14.13 | 2.57 | 9.13 | 11.59 | 2.46 | 9.24 | 12.45 | 3.21 | 24.72 | 27.62 | 2.90 | 629 |
| | 3 | 33.43 | 38.17 | 4.74 | 13.32 | 15.13 | 1.81 | 11.91 | 14.34 | 2.43 | 8.53 | 11.04 | 2.51 | 10.28 | 13.11 | 2.83 | 24.76 | 27.47 | 2.71 | 332 |
| | 4 | 33.71 | 38.59 | 4.88 | 13.37 | 15.16 | 1.79 | 11.71 | 14.39 | 2.68 | 9.19 | 11.73 | 2.54 | 9.65 | 12.64 | 2.99 | 25.23 | 28.08 | 2.85 | 567 |
| P | 1 | 32.34 | 37.24 | 4.90 | 12.68 | 14.44 | 1.76 | 11.71 | 14.21 | 2.50 | 8.56 | 11.25 | 2.69 | 10.06 | 12.94 | 2.88 | 24.44 | 27.49 | 3.05 | 523 |
| | 2 | 32.55 | 37.03 | 4.48 | 12.81 | 14.47 | 1.66 | 11.53 | 14.08 | 2.55 | 8.91 | 11.63 | 2.72 | 9.20 | 11.92 | 2.72 | 24.54 | 27.48 | 2.94 | 565 |
| | 3 | 33.50 | 38.20 | 4.70 | 13.30 | 15.13 | 1.83 | 11.90 | 14.25 | 2.35 | 8.60 | 11.38 | 2.78 | 10.40 | 13.12 | 2.72 | 24.91 | 27.80 | 2.89 | 450 |
| | 4 | 33.60 | 38.65 | 5.05 | 13.40 | 15.17 | 1.77 | 11.70 | 14.45 | 2.75 | 9.00 | 11.70 | 2.70 | 9.61 | 12.30 | 2.69 | 24.95 | 28.00 | 3.05 | 449 |

ALL MEASUREMENTS IN C.M.

TABLE 39

CORRELATION COEFFICIENTS OF PAIRED HEAD MEASUREMENTS, BASED ON 1970/71 2000
ROYAL AIR FORCE AIRCREW SURVEY DATA.

| REPORT SIZE - ROLL CONTROL MEASUREMENTS | HEAD CIRCUMFERENCE | HEAD BREADTH | HEAD LENGTH | MENTON TO VERTEX | MENTON TO BACK OF HEAD | MENTON TO BACK OF HEAD MINUS HEAD LENGTH | BITRAGION - CORONAL ARC | BITRAGION DIAMETER | TRAGION TO VERTEX | TRAGION TO BACK OF HEAD | PUPIL TO VERTEX | MAXIMUM HEAD DIAGONAL FROM MENTON | NASION TO VERTEX | MENTON TO NASION | NECK CIRCUMFERENCE | TRAGION TO MENTON - HORIZONTAL | TRAGION TO MENTON - VERTICAL | TRAGION TO BROW-RIDGE - HORIZONTAL | TRAGION TO PUPIL - VERTICAL | TRAGION TO NASION - VERTICAL |
|---|--------------------|--------------|-------------|------------------|------------------------|---|-------------------------|--------------------|-------------------|-------------------------|-----------------|--------------------------------------|------------------|------------------|--------------------|-----------------------------------|---------------------------------|---------------------------------------|--------------------------------|---------------------------------|
| HEAD CIRCUMFERENCE | | .547 | .766 | .344 | .438 | -.017 | .504 | .485 | .294 | .421 | .175 | .585 | .135 | .299 | .438 | .197 | .165 | .303 | .055 | .061 |
| HEAD BREADTH | .547 | | .203 | .208 | .096 | -.026 | .536 | .666 | .133 | .140 | .165 | .343 | .117 | .135 | .292 | .006 | .130 | .050 | -.063 | -.029 |
| HEAD LENGTH | .766 | .203 | | .401 | .410 | -.197 | .267 | .180 | .164 | .532 | .259 | .603 | .235 | .245 | .272 | .078 | .313 | .414 | -.135 | -.129 |
| MENTON TO VERTEX | .344 | .208 | .401 | | -.313 | -.591 | .393 | .140 | .397 | -.042 | .755 | .631 | .733 | .415 | .164 | -.339 | .787 | .441 | -.456 | -.480 |
| MENTON TO BACK OF HEAD | .438 | .096 | .410 | .313 | | .814 | .135 | .170 | .045 | .547 | -.448 | .402 | -.494 | .224 | .329 | .767 | -.359 | -.184 | .495 | .536 |
| MENTON TO BACK OF HEAD MINUS HEAD LENGTH | -.017 | -.026 | -.197 | -.591 | .814 | | -.024 | .069 | -.056 | .248 | -.646 | .048 | -.680 | .084 | .181 | .775 | -.585 | -.461 | .617 | .657 |

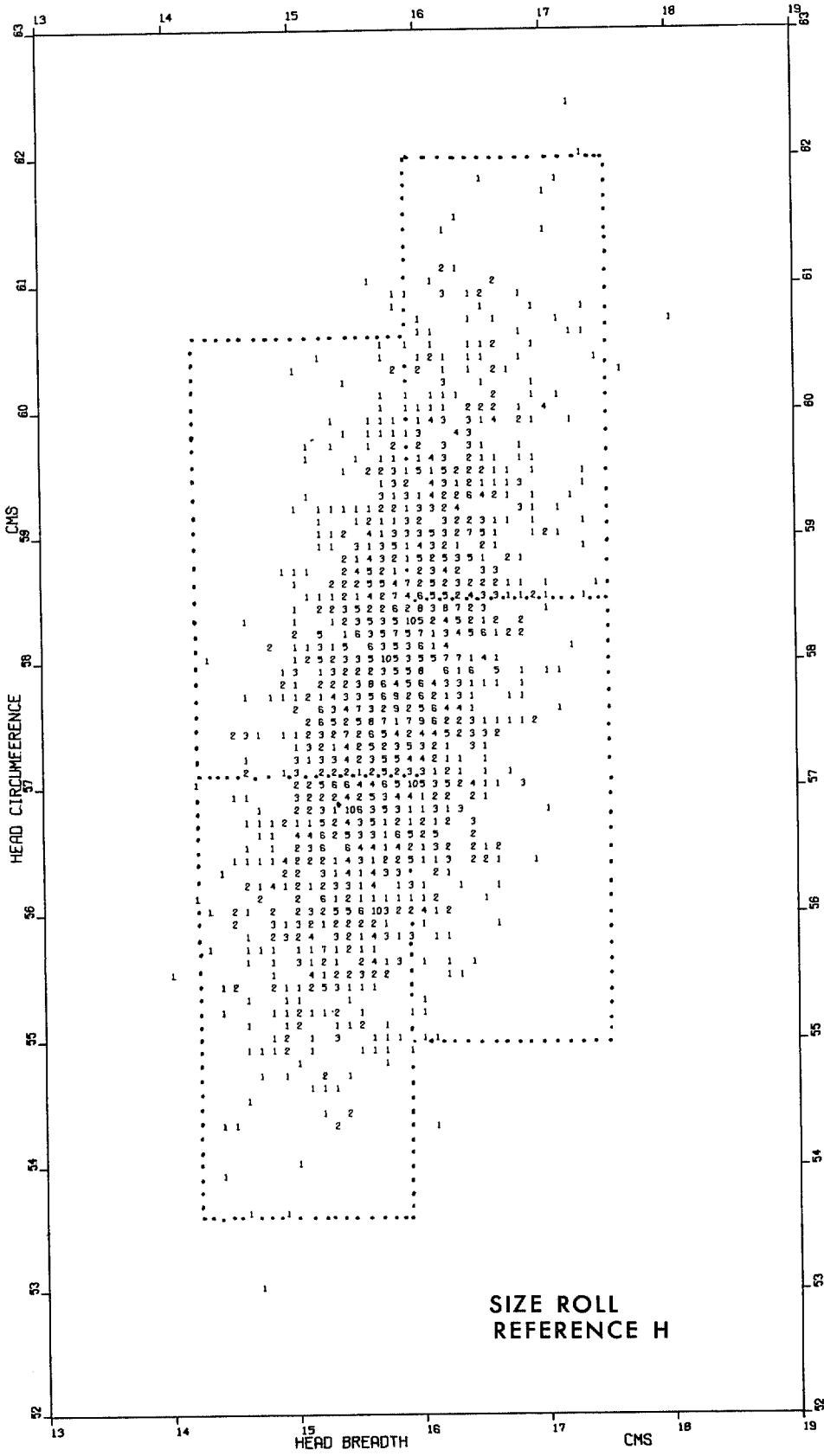


FIG. 1.

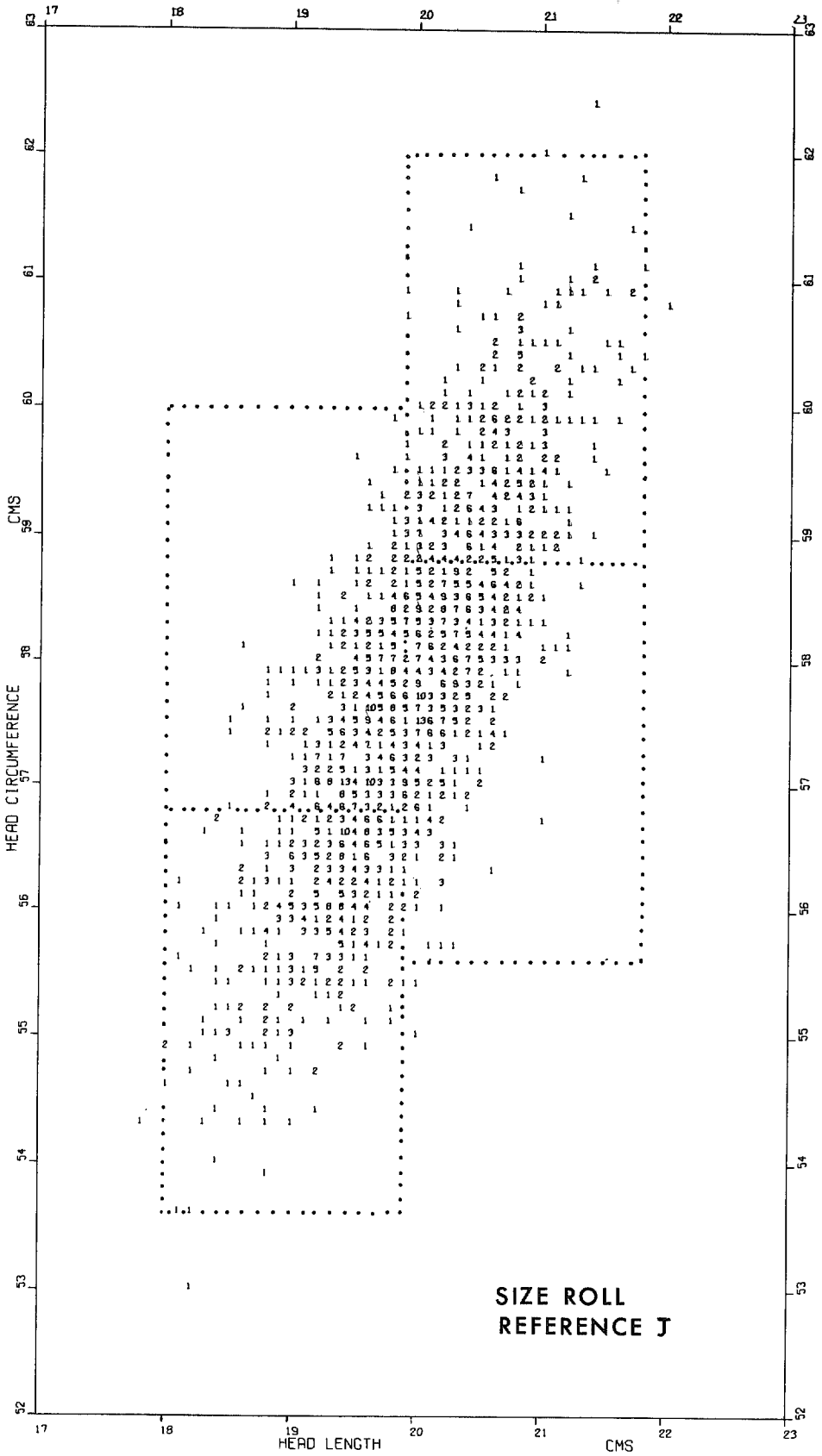


FIG. 2.

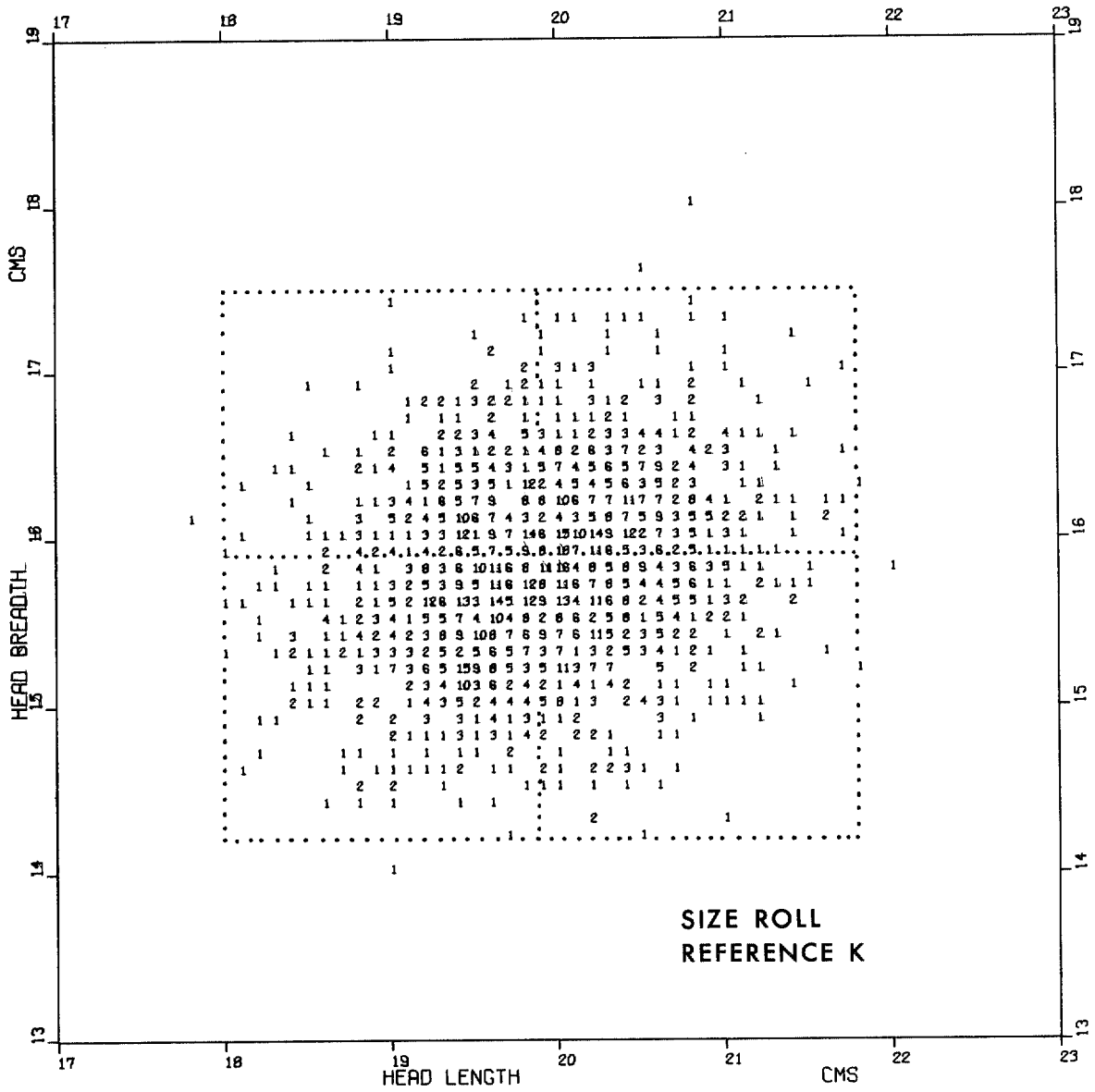


FIG. 3.

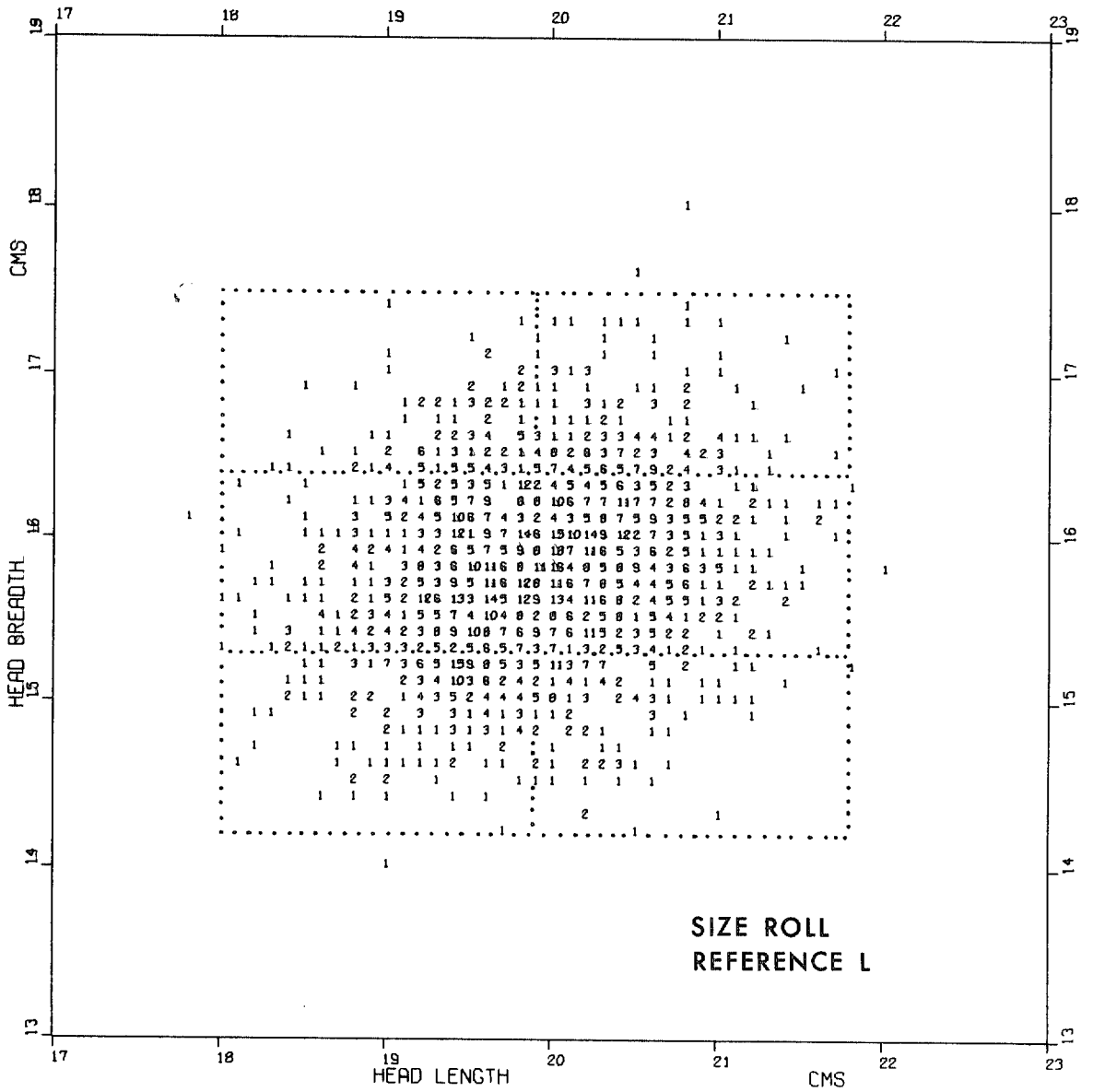


FIG. 4.

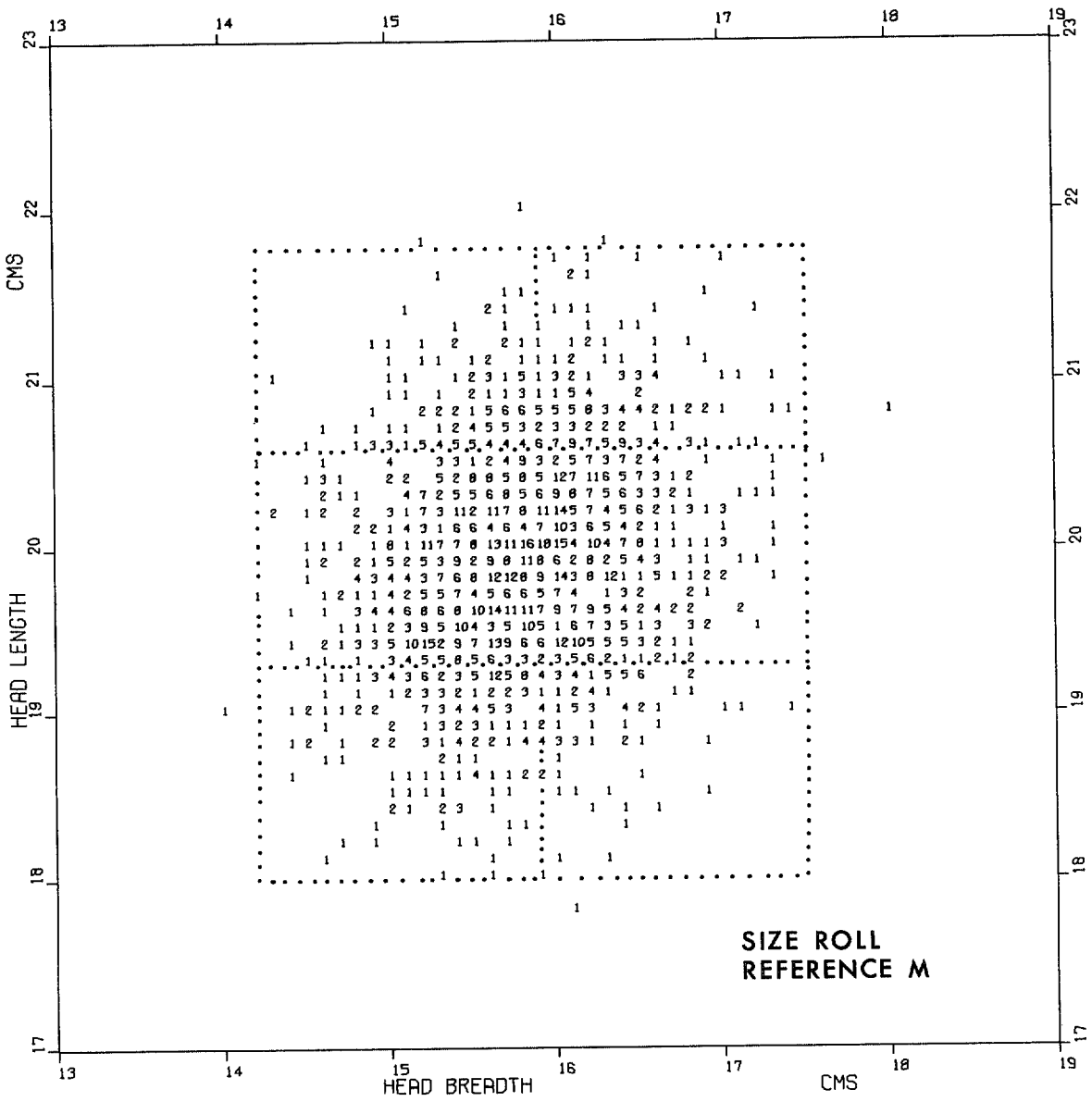


FIG. 5.

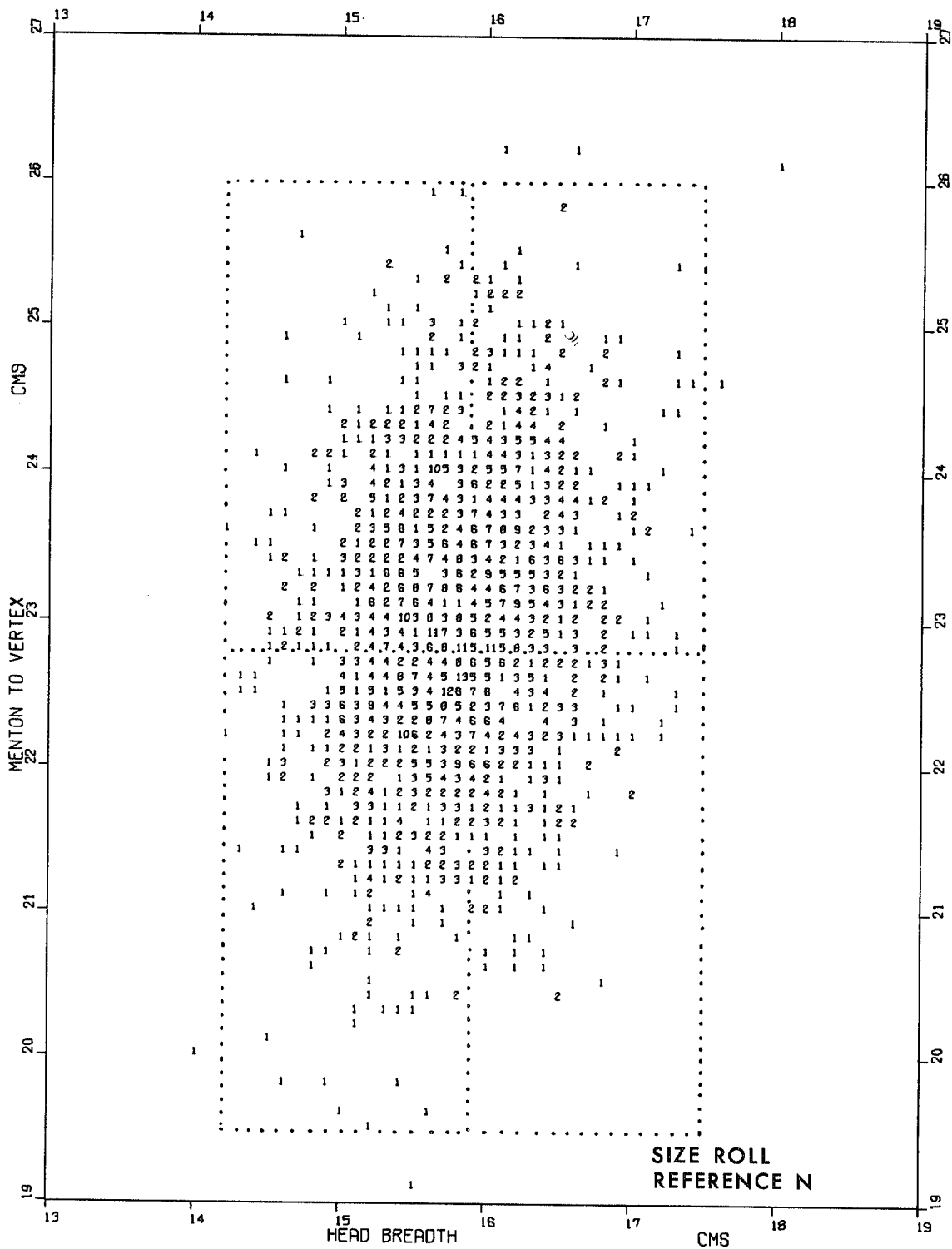


FIG. 6.

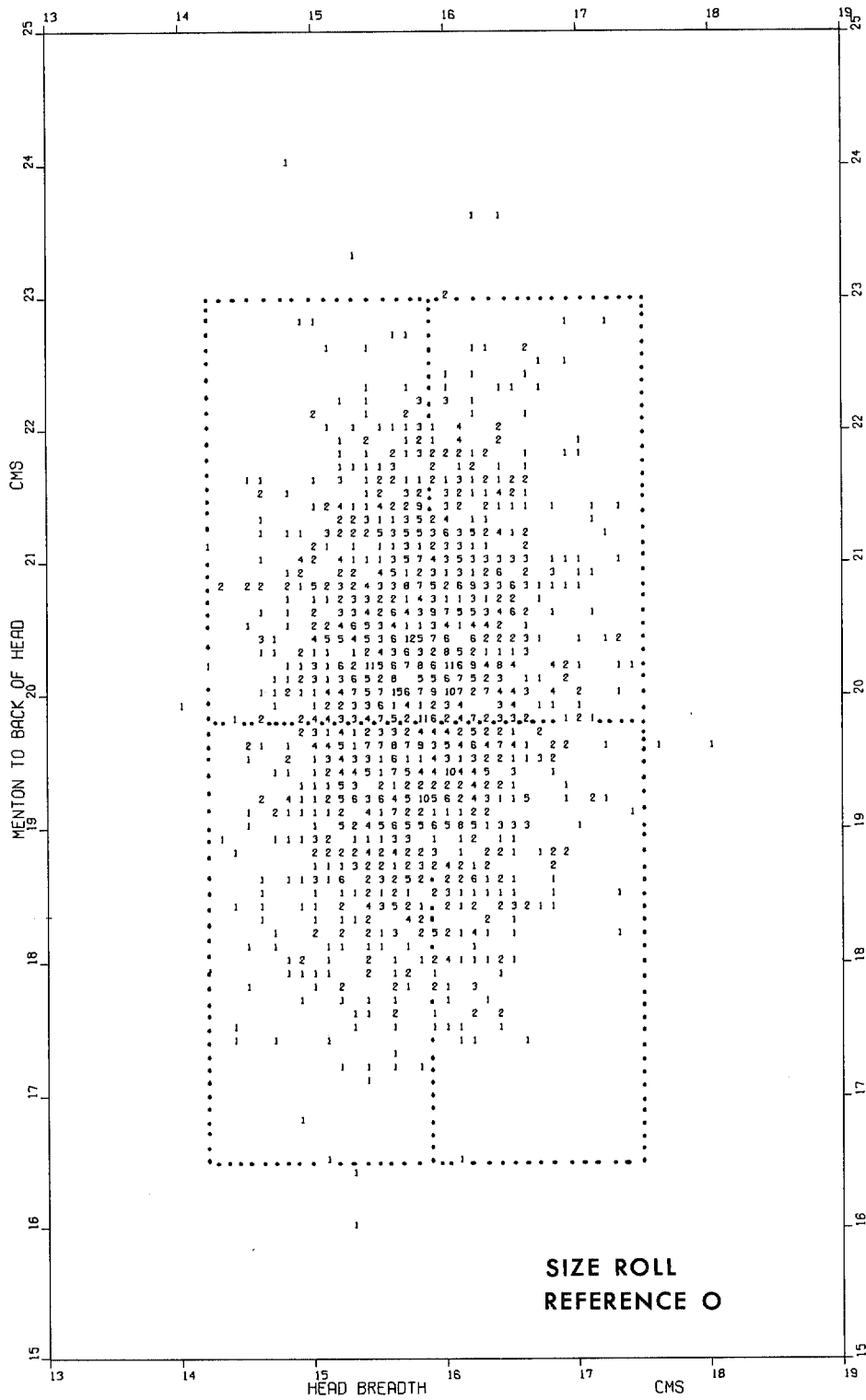


FIG. 7.

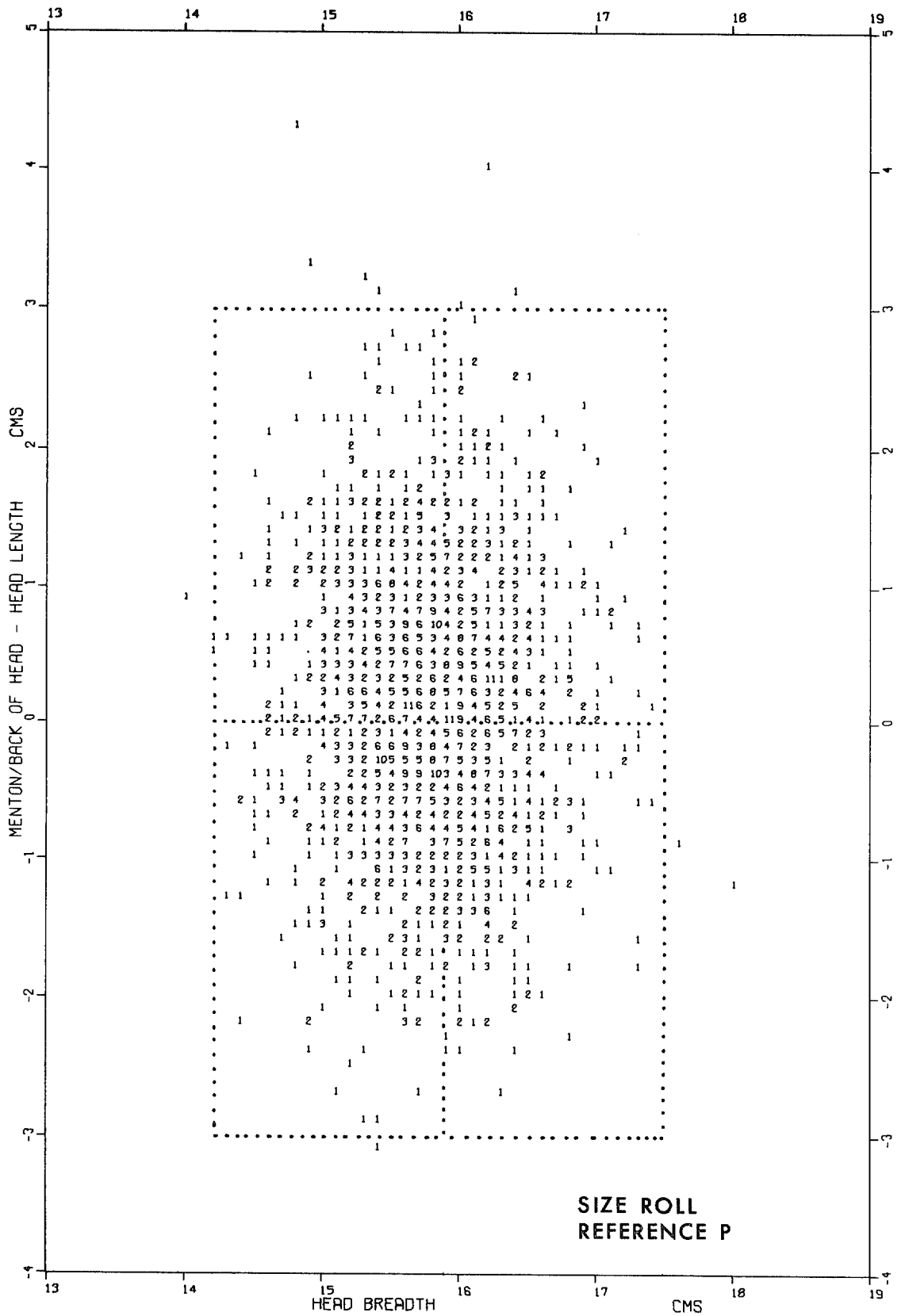


FIG. 8.

VISUAL INDEX

| | Table |
|-------------------------------------|-------|
| a Head breadth | 1 |
| b Head length | 2 |
| c Head circumference | 3 |
| d Neck circumference | 4 |
| e Bitragion – coronal arc | 5 |
| f Bitragion diameter | 6 |
| g Maximum head diagonal from menton | 7 |

| | Table |
|---------------------------|-------|
| h Menton to back of head | 8 |
| j Menton to vertex | 9 |
| k Tragion to back of head | 10 |
| l Tragion to vertex | 11 |
| m Pupil to vertex | 12 |
| n Nasion to vertex | 13 |
| o Menton to nasion | 14 |

| | Table |
|--|-------|
| p Tragion to menton, horizontal | 15 |
| q Tragion to menton, vertical | 16 |
| r Tragion to brow ridge, horizontal | 17 |
| s Tragion to pupil, vertical | 18 |
| t Tragion to nasion, vertical | 19 |
| u Menton to back of head minus head length | 20 |

Note: Values of measurement 's' are negative when tragion is above pupil.
 Values of measurement 't' are negative when tragion is above nasion.

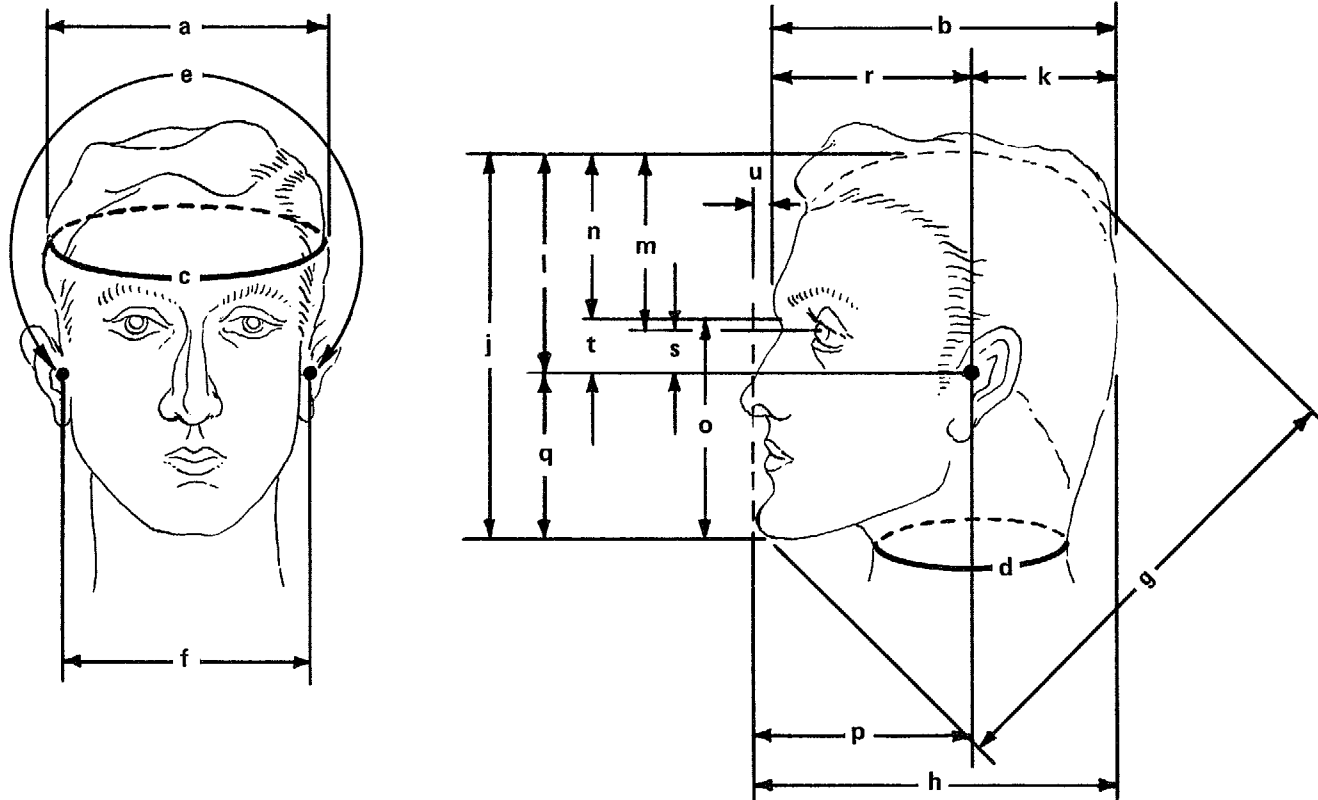


FIG. 9.

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