

U.S. DEPARTMENT OF COMMERCE
 NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)
 (formerly National Bureau of Standards-NBS)
 Office of Standards Services

BODY MEASUREMENTS FOR THE SIZING OF APPAREL

The five commercial and products standards on body measurements for the sizing of apparel for the following: infants, babies, toddlers and children (CS151-50); boys (PS36-70); young men (PS45-71); girls (PS54-72); and women (PS42-70) maintained by NBS under the Voluntary Product Standards (VPS) Program were **withdrawn**. This was in accordance with the procedures announced in January 1983 by the U.S. Department of Commerce (DoC) to withdraw these standards after sponsorship had been assumed by private industry.

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The American Society for Testing and Materials (ASTM) is developing standards on sizing of apparel. In October 1982, ASTM established Subcommittee D13.55 on Body Measurement and Apparel Sizes within Committee D13 on Textiles to take over the work previously handled by the U.S. Department of Commerce, National Bureau of Standards (NBS).

To obtain copies and/or assistance and information on related standards such as listed on the reverse side, contact:

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* * * * *

The following organizations may provide guidance, assistance and additional information sources: **Contact:** **American Apparel Manufacturers Association (AAMA)**, 2500 Wilson Boulevard, Suite 301, Arlington, Virginia 22201, USA Telephone: (703) 524-1864; Fax: (703) 522-6741 and **National Knitwear and Sportswear Association** (formerly National Knitted Outerwear Association), 386 Park Avenue South, New York, New York 10016, USA; Telephone: (212) 683-7520; Fax: (212) 532-0766.

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The activity on body-size standards began in the late 1940's under the Department of Commerce with NBS serving as a coordinator and point of contact for copies of the documents. The VPS body-size standards were developed by committees made up of textile manufacturers, designers, and retailers, and based on measurements obtained from the Department of Agriculture. Support for the body-size standards was provided by the Mail Order Association.

Organization	Document Number	Title
*ASTM	D4910 REV A	Standard Tables of Body Measurement for Infants, Sizes 0 to 24 Months
*ASTM	D5585	Standard Table of Body Measurements for Adult Female Misses Figure Type Sizes 2-20
*ASTM	D5586	Standard Tables of Body Measurements for Women Aged 55 and Older (All Figure Types)
*ASTM	D5826	Standard Tables of Body Measurements for Children, Sizes 2 to 6x/7
*ASTM	D5219 REV D	Standard Terminology Relating to Body Dimensions for Apparel Sizing

WITHDRAWN

TS-5320
Aug. 24, 1956

Supersedes TS-4605a

DO NOT REMOVE

COMMERCIAL STANDARD, CS153-48,

BODY MEASUREMENTS FOR THE

SIZING OF APPAREL FOR GIRLS

(For the Knit Underwear Industry) ^{1/}

On April 19, 1946, at the instance of the Mail Order Association of America, a Recommended Commercial Standard on Body Measurements for the Sizing of Apparel for Girls, was presented to interested producers, distributors, and users for written acceptance. The knit underwear industry has accepted and approved the commercial standard as shown herein. The standard is effective for the knit underwear industry from January 19, 1949.

PURPOSE

1. The purpose is to establish standard size designations, and body measurements, for the sizing of girls' ready-to-wear apparel for the guidance of those engaged in producing, or preparing specifications for, ready-to-wear garments and patterns. Another purpose is to recommend methods of determining lengths of dresses, coats, skirts, and slacks (outseams) from appropriate body measurements.

SCOPE

2. This standard covers:

(a) Classification and size range

(1) Girls--in sizes from number 7 to 14

(b) Size designations

(c) Body measurements of girls for "regular" sizes from a stature of 50 inches and a weight of 60 pounds up to a stature of 61 inches and a weight of 107 pounds

(d) Recommended lengths of garments related to body measurements

^{1/} This system of sizing has been endorsed by a majority of production of knit underwear. The use of this standard, however, is not restricted to that industry, but may be used by all other segments of the apparel industry, as applicable.

- (e) Methods of Measuring
 - (1) General
 - (2) Vertical measurements of body
 - (3) Girth measurements of body
 - (4) Width and length measurements of body
 - (5) Garment lengths
- (f) Relationship of stature measurements to the sizing system
- (g) Recommended methods of certification and labeling
- (h) Explanation of adjustments made in body measurements

APPLICATION

3. The methods and measurements given herein are applicable to:
- (a) Coordination of body measurements of the girl, as defined, with ready-to-wear size designations.
 - (b) Garment patterns and specifications, as a basis of gradations between sizes.
 - (c) Length of the finished garment as delivered by the manufacturer.

DEFINITIONS

4. Definitions of the more important body landmarks shown in Figure 1 are given in paragraph 5.

5. Body landmarks.

- (a) Crown - Top of head (A, Fig. 1).
- (b) Cervicale - The prominent point on the seventh or lowest cervical vertebra at the back of the neck (B, Fig.1), which becomes more prominent when the head is bent forward. (Cervicale height measurements are taken, however, only when the head is in an erect position.)

5. Body landmarks (cont'd)

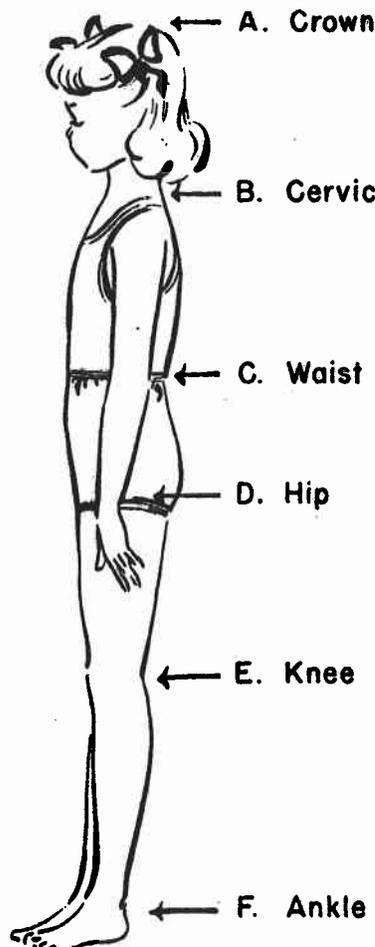


Figure 1. Showing general location of principal body landmarks

- (c) Waist - The lower edge of lower floating rib, located at the side of the body in a line directly below the center of the armpit (C, Fig. 1).
- (d) Hip - The outer bony prominence of the upper end of the thigh bone (the femur) (D, Fig. 1).
- (e) Knee - The inner bony prominence of the upper end of the tibia, the larger of the two long bones of the leg extending from knee to ankle (E, Fig. 1).
- (f) Ankle - The inner bony prominence of the lower end of the tibia, the larger of the two long bones of the leg extending from knee to ankle (F, Fig. 1).

METHODS OF MEASURING - GENERAL

6. Accuracy. Body measurements are recorded to the nearest 1/8 inch. Garment length measurements are recorded to the nearest 1/2 inch.

7. Garment lengths. The garment to be measured is laid out without tension on a smooth flat surface so that creases and wrinkles will not affect the measurements.

Methods of Measuring the Body ^{2/}8. Vertical measurements.

- (a) Stature - Measured from crown to soles of feet.
- (b) Cervicale height - Measured from cervicale (par. 5(b)) to soles of feet.
- (c) Waist height - Measured from waist (par. 5(c)) to soles of feet. This waist height establishes the waist level around the body.
- (d) Hip height - Measured from hip (par. 5(d)) to soles of feet.
- (e) Knee height - Measured from knee (par. 5(e)) to soles of feet.
- (f) Ankle height - Measured from ankle (par. 5(f)) to soles of feet.

9. Girth measurements. ^{3/}

- (a) When indoor clothing is worn.
 - (1) Chest (girth) - Measured horizontally close up under arms. The measurement should include the lower portion of the shoulder blades (Fig. 2).

^{2/} More complete information regarding the methods of measuring the body may be obtained from Misc. Pub. No. 366 of the U. S. Department of Agriculture (see par. 16, Source).

^{3/} Girth measurements in this standard include an allowance for clothing (see par. 17). Where measurements are taken over indoor clothing it is assumed that customary undergarments are worn beneath.

9. Girth measurements (cont'd)

- (a) (2) Waist (girth) - Measured horizontally at waist height (par. 8(c)), with belt or sash removed (Fig. 2).

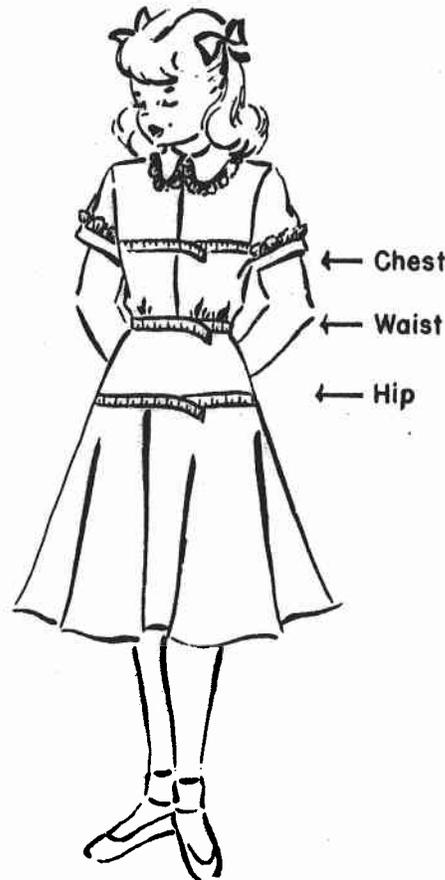


Figure 2. Girth measurements - chest, waist, and hip

- (3) Hip (girth) - Measured horizontally at hip height (par. 8(d) Fig. 2).
- (b) When undergarments are worn - vest and panties or a one-piece union suit or any similar undergarment.

9. Girth measurements (cont'd)

- (b) (1) Vertical trunk (girth) - Measured from a point on the shoulder, midway between the neck and the normal arm-hole line, through the crotch (G through F to G, Fig. 3). The measurement should be taken without constriction at crotch.



Figure 3. Vertical trunk, thigh and upper arm girths

- (2) Thigh (girth) - Measured horizontally around the upper part of the leg, close up to the crotch (H through F to H, Fig. 3).
- (3) Neck base (girth) - Measured around the neck touching the cervicale at the back, and the upper borders of the collar bone at the front, and following the curve that would be made by a fine linked chain passing over these landmarks (B through J to B, Figs. 4 and 5).

9. Girth measurements (cont'd)

- (b) (4) Armscye (girth) - Measured from a point at the armhole edge of the shoulder, midway between the acromion and the highest prominence at the outer end of the collar bone, and through the underarm mid-point (K around the arm to K, Figs. 4 and 5).



Figure 4. Armscye and neck girths

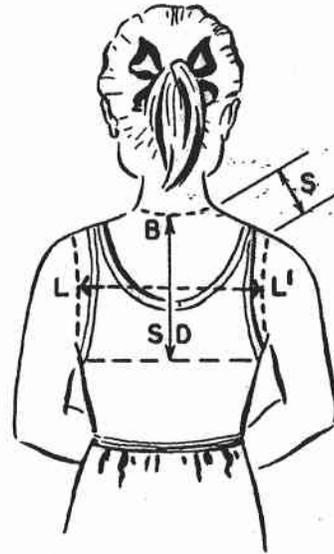


Figure 5. Armscye and neck girths, cross-back width, scye depth and shoulder length

- (5) Upper arm (girth) - Measured from a point midway between the outer edge of the shoulder and the elbow (around the arm at U level, Fig. 3).

10. Width and length measurements.

- (a) Cross-back width - Measured across the back from armscye to armscye, halfway between the cervicale and the bottom of the armscye (L to L', Fig. 5).

10. Width and length measurements (cont'd)

- (b) Shoulder length - Measured from most lateral point of neck girth measurement at shoulder to the armscye girth point on the shoulder (S, Fig 5).

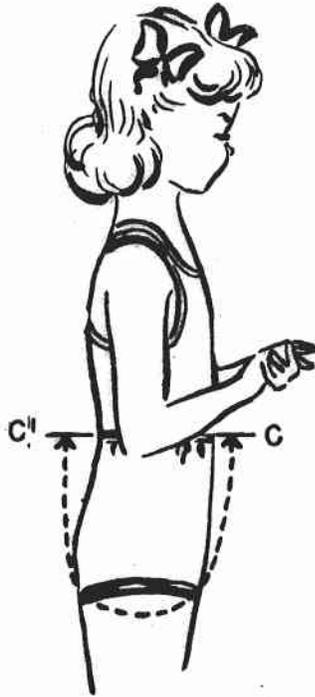


Figure 6. Total crotch length



Figure 7. Shoulder and arm length

- (c) Total crotch length - Measured from waist level at the front, through the crotch to the waist level at the back (C through F (Fig. 3) to C¹, Fig, 6). For waist level, see paragraph 8 (c).
- (d) Shoulder and arm length - Measured from the intersection of the neck and shoulder lines along the outside (posterior) surface of the arm, with the elbow flexed, to the prominent wrist bone at the back of the hand (O to M, Fig. 7).
- (e) Scye depth - Measured along the spine from the cervicale to a point level with the mid-underarm point (SD, Fig. 5).

11. Garment lengths.

- (a) Length of dresses and coats - Measured from the high neck point at the "center back"^{4/} along the "center back" line, to the bottom of the garment.
- (b) Length of skirts - Measured from the top of the belt at the "center back" along the "center back" line, to the bottom of the garment.
- (c) Length of slacks - Measured from the top of the waist band, along the side seam, to the finished lower edge of the garment. This is the outseam or side-seam length.

STATURE MEASUREMENTS AS SIZE INDICATORS

12. In view of the fact that a girl's stature is one of the predominant measurements of her growth, and also one of the best single indicators of other body measurements, the sizes in this standard are based primarily on even variations (2 or 2-1/2 inches) in stature measurements.

12a. Weights corresponding to the given statures and chest or hip girths are high-lighted in the tables for the convenience of the user. They have been adjusted for the weight of indoor clothing, assumed to be worn by the child when the body measurements are taken.

SIZE DESIGNATIONS AND CORRESPONDING MEASUREMENTS

13. The size designations and corresponding body measurements are given in table 1.

13a. The lengths for dresses, coats, skirts, and slacks are given in table 2.

^{4/} Center back: This is the term used in the apparel industry to describe the position of the seam at the center of the back (from cervicale to hem) or the corresponding imaginary line when no seam appears in the garment.

Table 1. G I R L S' Body Measurements

Measurement	S I Z E (number)					
	7	8	9	10	12	14
STATURE - inches	50	52	54	56	58 1/2	61
WEIGHT - pounds (approx.)	30	67	75	83	95	107
GIRTH MEASUREMENTS <u>A/</u>						
	inches	inches	inches	inches	inches	inches
Chest	26	27	28	29	30 1/2	32
Waist	23	23 1/2	24	24 1/2	25 1/2	26 1/2
Hip	27 1/2	28 1/2	29 1/2	31	33	35
Vertical trunk	45 1/2	47	49	51	53 1/2	56
Thigh	15 1/2	16 1/4	17 1/8	18	19	20
Neck base	11 7/8	12 1/4	12 5/8	13	13 1/2	14
Armscye	11 1/2	12	12 1/2	13	13 3/4	14 1/2
Upper arm	7 3/8	7 3/4	8 1/8	8 1/2	8 7/8	9 1/4
WIDTH, LENGTH and DEPTH MEASUREMENTS <u>A/</u>						
Cross-back width	10 5/8	11	11 3/8	11 3/4	12 1/4	12 3/4
Total crotch length	22 1/2	23 1/2	24 1/2	25 1/2	26 1/2	28
Shoulder length	3 1/2	3 5/8	3 3/4	3 7/8	4 1/8	4 1/4
Shoulder and arm length	21	22	23	24	25 1/4	26 1/2
Scoye Depth	5 3/8	5 1/2	5 3/4	6	6 3/8	6 3/4
VERTICAL MEASUREMENTS <u>B/</u>						
Head and neck length	8	8 1/4	8 1/2	8 5/8	8 3/4	9
Cervicale height	42	43 3/4	45 1/2	47 3/8	49 3/4	52
Cervicale to knee	28 1/4	29 3/8	30 1/2	31 5/8	33 3/8	35
Cervicale to waist, including curve of spine	11 1/8	11 1/2	11 7/8	12 1/4	12 7/8	13 1/2
Waist height	31 1/4	32 3/4	34 1/4	35 3/4	37 3/8	39
Waist to knee	17 1/2	18 3/8	19 1/4	20 1/8	21 1/8	22
Waist to hip	6	6 1/4	6 1/2	6 3/4	7 1/8	7 1/2
Crotch height	22 1/2	23 5/8	24 3/4	25 7/8	27	28
Knee height	13 3/4	14 3/8	15	15 3/4	16 3/8	17
Ankle height	2 1/2	2 1/2	2 5/8	2 5/8	2 5/8	2 3/4
Approximate age, based on stature.	years 8 1/4	years 9 1/2	years 10 1/4	years 11 1/4	years 12 1/4	years 13
Related weights shown above						

A/ These measurements are body, not garment measurements. The size-to-size gradations between these body measurements may be applied to garment patterns or specifications in grading but they are not to be considered actual garment measurements. Derivation of measurements is explained under paragraphs 16, 17, and 18.

B/ Since even gradations in vertical body measurements between sizes serve to make this standard more useful in grading garment patterns or specifications, minor adjustments (1/8 of an inch) have been made in a few instances to achieve this purpose.

Table 2. GIRLS' Recommended Garment Lengths ^{1/}

Garment - where measured	S I Z E (number)					
	7	8	9	10	12	14
	inches	inches	inches	inches	inches	inches
Coat, at center back	27 1/2	29 1/2	31	32 1/2	35 1/2	37 1/2
Dress, at center back	27	29	30 1/2	32	35	37
Bottom of dress falls - above knee, approx.	1	1/2	--	--	--	--
below knee, approx.	--	--	--	1/2	1 1/2	2
Skirt, at center back, including waistband	17	18 1/2	20	21	23	25
Width of skirt waist - band (assumed)	1 1/2 inches, and extends 3/4 inch above normal waistline on each size.					
Bottom of skirt falls - above knee, approx.	1	1/2	--	--	--	--
below knee, approx.	--	--	--	1/2	1 1/2	2
Slacks, outseam, ^{2/} including waistband	31	32 1/2	34	35 1/2	37	38 1/2
Width of slacks waist- band (assumed)	1 1/2 inches, and extends 3/4 inch above normal waistline on each size.					
Bottom of slacks, clear- ance above sole of foot	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2

^{1/} Coat, dress and skirt lengths will vary according to style trends. Size-to-size gradations will remain the same. The following example illustrates the relationship between the "body" measurements in table 1 and the garment measurements in table 2:

Cervicale to knee (table 1) - 35 inches for size 14

Bottom of dress

(below knee) (table 2) - 2 inches for size 14

When added they total - 37 inches for size 14 dress length.

When bottom of dress is above the knee, then the amount indicated in the table should be subtracted rather than added to the cervicale-to-knee measurement.

^{2/} An extra 1/4-inch length is allowed on each size to cover the difference between vertical length (waist to hip) and corresponding length following the shape of the body.

IDENTIFICATION

14. In order to assure consumers that published scales of body measurements for the sizing of girls' apparel conform to the standard it is recommended that catalogs and sales literature carry the following statement:

Sizes of "Girls'" apparel are designated and proportioned in accordance with CS153-48, as developed by the Trade, under the procedure of the Commodity Standards Division, and issued by the U. S. Department of Commerce.

15. In order to assure the purchaser that she is receiving garments which conform to this system of body measurement sizing, it is recommended that such garments be identified by a sticker, tag, hanger, or other label attached to the garment carrying the following statement:

SIZE _____, CS153-48

HEIGHT _____, WEIGHT _____*

*Use appropriate critical measurement, such as chest, waist, vertical trunk girth, etc.

EXPLANATORY

(The following explanatory paragraphs have been prepared for those who are interested in ascertaining how the body measurements in this standard were derived)

16. Source - The body measurements are based on Miscellaneous Publication No. 366, "Body Measurements of American Boys and Girls for Garment and Pattern Construction", issued by the U. S. Department of Agriculture.

16a. The measurements represent a compromise between the data given in "C" columns of table 25 (M. P. 366), which are the most common measurements of girls of given statures, and in the "D" columns of table 26, which are the measurements of the next stouter groups, as it was desired to have the scales reflect the proportions of the "D" or "stouter" group to some degree.

17. Clothing allowances - Allowances for clothing have been added to the basic body measurements in accordance with paragraph 9 that the girth body measurements should be taken over clothing. In view of the possible variations in the types of garments worn, and the weights of the fabrics used in

these garments, the following clothing allowances were selected:

- (a) Weight - 20 ounces
- (b) Chest - $\frac{3}{4}$ of an inch for all sizes
- (c) Waist - 1 inch for all sizes
- (d) Hip - $\frac{3}{4}$ of an inch for all sizes
- (e) Vertical trunk girth - 2 inches for all sizes
- (f) Total crotch length - $1 \frac{1}{4}$ inches for all sizes.

18. Adjustments to achieve more uniform gradations between sizes.
Unadjusted body measurements frequently do not result in even gradations between sizes. Therefore, it has been necessary to make minor adjustments in these scales to insure more even gradations between sizes. However, except for a slight "thickening" at the waist, due to the greater variation of the waist girth in relation to the other body measurements, and the clothing allowances indicated in paragraph 17, the girth scales reflect the general bust, waist and hip proportions of girls of the given statures and weights.

ACCEPTANCE OF COMMERCIAL STANDARD

If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this commercial standard.

Date

Commodity Standards Division
U. S. Department of Commerce
Washington 25, D. C.

WITHDRAWN

Gentlemen:

We believe that the Commercial Standard CS153-48 constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the

production 1/ distribution 1/ purchase 1/ testing 1/

of girls' apparel. We reserve the right to depart from it as we deem advisable.

We understand, of course, that only those articles which actually comply with the standard in all respects can be identified or labeled as conforming thereto.

Please send us a printed copy of the standard when available.

Signature of
Authorized Officer _____
(in ink)

(Kindly typewrite or print the following lines)

Name and title
of above officer

Organization
(Fill in exactly as it should be listed in pamphlet)

Street address

City, Zone, and State

1/ Underscore which one. Please see that separate acceptances are filed for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interests, trade associations, trade papers, etc., desiring to record their general support, the words "General support" should be added after the signature.

TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. Enforcement. - Commercial standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and the consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provision, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices and the like.

2. The acceptor's responsibility. - The purpose of commercial standards is to establish for specific commodities, nationally recognized grades or consumer criteria and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the commercial standard where practicable, in the production, distribution, or consumption of the article in question.

3. The Department's responsibility. - The major function performed by the Department of Commerce in the voluntary establishment of commercial standards on a Nation-wide basis is four-fold; first, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. Announcement and promulgation. - When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active, valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.

Price 25 cents

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