

## HEIGHTS AND WEIGHTS.

*To the Editors of the Journal of the Institute of Actuaries.*

DEAR SIRS,—The valuable Tables of relative Heights and Weights given by Mr. L. P. Orr\* (*T.F.A.*, vol. viii, p. 138) and by Mr. A. Levine† (*T.F.A.*, vol. ix, p. 304. and *J.I.A.*, vol. liv, p. 213) give a satisfactory standard of reference in the case of male proposers but give no light on the question of the relative heights and weights of female proposers. I am, however, informed by Mr. Levine (who superintended the compilation of the 7 Offices' experience 1921-2) that although the data as regards female lives were scanty, a rough analysis gave the following results :

*Shorter females (height, say, 5 feet)*

Lighter than males to the extent of about 6lbs. at the younger ages, the difference gradually increasing to about 9lbs. for entrants between 40 and 50.

*Taller females (height, say, 5 feet 8 inches)*

Lighter than males to the extent of about 9lbs. at the younger ages, the difference gradually increasing to about 11lbs. for entrants between 40 and 50.

For practical working purposes it would appear that these differences can be sufficiently represented by a uniform deduction‡ of about 1lb. per stone from the weight of a male of the same height and age. On this basis the annexed Table has been prepared for Office use, it being assumed that the standard weight for a male of given height and age, would be first taken from Mr. Levine's Table and the corresponding figures then taken from the annexed Table. This table gives—corresponding to each male standard weight—

- (1) weights 15 per-cent *less* and 15 per-cent *more* ; also 20 per-cent *less* and 20 per-cent *more*, than the standard.
- (2) the corresponding standard weight for a female life, also weights 15 and 20 per-cent *less* and *more*.

Your obedient Servant,

G. J. LIDSTONE.

9 *St. Andrew Square,*  
*Edinburgh.*

*June 1925.*

\* Scottish Life Company's experience 1881-1915.

† 7 Offices' experience 1921-2.

‡ Mr. Orr suggested [*T.F.A.* vol. viii, bottom of p. 141] a somewhat smaller deduction, namely, "some 5 or 6lbs. at the chief insuring ages and heights ; "not much more than this can be said until we have a British Table relating "to those lives." It has been thought better to adopt the results shown by the more recent 7 Offices' experience. The difference is slight and not of any practical importance.

TABLE OF WEIGHTS FOR ASSURED LIVES.

MALES				MALE MODEL*	FEMALES				
+ 15%	- 15%	+ 20%	- 20%		Model †	+ 15%	- 15%	+ 20%	- 20%
st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.
9 3	6 11	9 8	6 6	<b>8 0</b>	7 6	8 8	6 4	8 13	5 13
9 4	6 12	9 10	6 6	<b>8 1</b>	7 7	8 9	6 5	9 0	6 0
9 5	6 13	9 11	6 7	<b>8 2</b>	7 8	8 10	6 6	9 1	6 1
9 6	7 0	9 12	6 8	<b>8 3</b>	7 9	8 11	6 7	9 2	6 2
9 7	7 1	9 13	6 9	<b>8 4</b>	7 10	8 12	6 8	9 4	6 2
9 9	7 1	10 0	6 10	<b>8 5</b>	7 11	8 13	6 9	9 5	6 3
9 10	7 2	10 2	6 10	<b>8 6</b>	7 12	9 1	6 9	9 6	6 4
9 11	7 3	10 3	6 11	<b>8 7</b>	7 13	9 2	6 10	9 7	6 5
9 12	7 4	10 4	6 12	<b>8 8</b>	7 13	9 2	6 10	9 7	6 5
9 13	7 5	10 5	6 13	<b>8 9</b>	8 0	9 3	6 11	9 8	6 6
10 0	7 6	10 6	7 0	<b>8 10</b>	8 1	9 4	6 12	9 10	6 6
10 1	7 7	10 8	7 0	<b>8 11</b>	8 2	9 5	6 13	9 11	6 7
10 3	7 7	10 9	7 1	<b>8 12</b>	8 3	9 6	7 0	9 12	6 8
10 4	7 8	10 10	7 2	<b>8 13</b>	8 4	9 7	7 1	9 13	6 9
10 5	7 9	10 11	7 3	<b>9 0</b>	8 5	9 9	7 1	10 0	6 10
10 6	7 10	10 12	7 4	<b>9 1</b>	8 6	9 10	7 2	10 2	6 10
10 7	7 11	11 0	7 4	<b>9 2</b>	8 7	9 11	7 3	10 3	6 11
10 8	7 12	11 1	7 5	<b>9 3</b>	8 8	9 12	7 4	10 4	6 12
10 9	7 13	11 2	7 6	<b>9 4</b>	8 9	9 13	7 5	10 5	6 13
10 11	7 13	11 3	7 7	<b>9 5</b>	8 10	10 0	7 6	10 6	7 0
10 12	8 0	11 4	7 8	<b>9 6</b>	8 11	10 1	7 7	10 8	7 0
10 13	8 1	11 6	7 8	<b>9 7</b>	8 12	10 3	7 7	10 9	7 1
11 0	8 2	11 7	7 9	<b>9 8</b>	8 12	10 3	7 7	10 9	7 1
11 1	8 3	11 8	7 10	<b>9 9</b>	8 13	10 4	7 8	10 10	7 2
11 2	8 4	11 9	7 11	<b>9 10</b>	9 0	10 5	7 9	10 11	7 3
11 4	8 4	11 10	7 12	<b>9 11</b>	9 1	10 6	7 10	10 12	7 4
11 5	8 5	11 12	7 12	<b>9 12</b>	9 2	10 7	7 11	11 0	7 4
11 6	8 6	11 13	7 13	<b>9 13</b>	9 3	10 8	7 12	11 1	7 5
11 7	8 7	12 0	8 0	<b>10 0</b>	9 4	10 9	7 13	11 2	7 6
11 8	8 8	12 1	8 1	<b>10 1</b>	9 5	10 11	7 13	11 3	7 7
11 9	8 9	12 2	8 2	<b>10 2</b>	9 6	10 12	8 0	11 4	7 8
11 10	8 10	12 4	8 2	<b>10 3</b>	9 7	10 13	8 1	11 6	7 8
11 12	8 10	12 5	8 3	<b>10 4</b>	9 8	11 0	8 2	11 7	7 9
11 13	8 11	12 6	8 4	<b>10 5</b>	9 9	11 1	8 3	11 8	7 10
12 0	8 12	12 7	8 5	<b>10 6</b>	9 10	11 2	8 4	11 9	7 11
12 1	8 13	12 8	8 6	<b>10 7</b>	9 11	11 4	8 4	11 10	7 12
12 2	9 0	12 10	8 6	<b>10 8</b>	9 11	11 4	8 4	11 10	7 12
12 3	9 1	12 11	8 7	<b>10 9</b>	9 12	11 5	8 5	11 12	7 12
12 4	9 2	12 12	8 8	<b>10 10</b>	9 13	11 6	8 6	11 13	7 13
12 6	9 2	12 13	8 9	<b>10 11</b>	10 0	11 7	8 7	12 0	8 0

\* i.e. the average weight (for age and height) to be taken from 7 Offices' Experience 1921-2; *J.I.A.* vol. liv, p. 213; *T.F.A.* vol. ix, p. 304.

† Male Model reduced by 1lb. per stone; see letter, p. 238.

TABLE OF WEIGHTS FOR ASSURED LIVES—continued.

MALES				MALE MODEL*	FEMALES				
+15%	-15%	+20%	-20%		Model †	+15%	-15%	+20%	-20%
st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.
12 7	9 3	13 0	8 10	10 12	10 1	11 8	8 8	12 1	8 1
12 8	9 4	13 2	8 10	10 13	10 2	11 9	8 9	12 2	8 2
12 9	9 5	13 3	8 11	11 0	10 3	11 10	8 10	12 4	8 2
12 10	9 6	13 4	8 12	11 1	10 4	11 12	8 10	12 5	8 3
12 11	9 7	13 5	8 13	11 2	10 5	11 13	8 11	12 6	8 4
12 13	9 7	13 6	9 0	11 3	10 6	12 0	8 12	12 7	8 5
13 0	9 8	13 8	9 0	11 4	10 7	12 1	8 13	12 8	8 6
13 1	9 9	13 9	9 1	11 5	10 8	12 2	9 0	12 10	8 6
13 2	9 10	13 10	9 2	11 6	10 9	12 3	9 1	12 11	8 7
13 3	9 11	13 11	9 3	11 7	10 10	12 4	9 2	12 12	8 8
13 4	9 12	13 12	9 4	11 8	10 10	12 4	9 2	12 12	8 8
13 5	9 13	14 0	9 4	11 9	10 11	12 6	9 2	12 13	8 9
13 7	9 13	14 1	9 5	11 10	10 12	12 7	9 3	13 0	8 10
13 8	10 0	14 2	9 6	11 11	10 13	12 8	9 4	13 2	8 10
13 9	10 1	14 3	9 7	11 12	11 0	12 9	9 5	13 3	8 11
13 10	10 2	14 4	9 8	11 13	11 1	12 10	9 6	13 4	8 12
13 11	10 3	14 6	9 8	12 0	11 2	12 11	9 7	13 5	8 13
13 12	10 4	14 7	9 9	12 1	11 3	12 13	9 7	13 6	9 0
13 13	10 5	14 8	9 10	12 2	11 4	13 0	9 8	13 8	9 0
14 1	10 5	14 9	9 11	12 3	11 5	13 1	9 9	13 9	9 1
14 2	10 6	14 10	9 12	12 4	11 6	13 2	9 10	13 10	9 2
14 3	10 7	14 12	9 12	12 5					
14 4	10 8	14 13	9 13	12 6					
14 5	10 9	15 0	10 0	12 7					
14 6	10 10	15 1	10 1	12 8					
14 8	10 10	15 2	10 2	12 9					
14 9	10 11	15 4	10 2	12 10					
14 10	10 12	15 5	10 3	12 11					
14 11	10 13	15 6	10 4	12 12					
14 12	11 0	15 7	10 5	12 13					
14 13	11 1	15 8	10 6	13 0					
15 0	11 2	15 10	10 6	13 1					
15 2	11 2	15 11	10 7	13 2					
15 3	11 3	15 12	10 8	13 3					
15 4	11 4	15 13	10 9	13 4					
15 5	11 5	16 0	10 10	13 5					
15 6	11 6	16 2	10 10	13 6					
15 7	11 7	16 3	10 11	13 7					
15 8	11 8	16 4	10 12	13 8					

\* i.e. the average weight (for age and height) to be taken from 7 Offices' Experience 1921-2; *J.I.A.* vol. liv, p. 213; *T.F.A.* vol. ix, p. 304.

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