

CIVIL AVIATION SAFETY AUTHORITY

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STANDARD PASSENGER AND BAGGAGE WEIGHTS

The information in this publication is advisory only. There is no legal requirement to observe the details set out in the publication. The Civil Aviation Regulations set out the legal requirements that must be complied with in relation to the subject matter of this publication. There may be a number of ways of ensuring that the requirements of the Civil Aviation Regulations are met. This publication sets out one method that may be used and which experience has shown should, in the majority of cases, ensure compliance with the Regulations. However, before using the information in this publication the user should always read the Civil Aviation Regulations listed in the reference section below to ensure that he or she complies with the legal obligations of the Regulations.

PURPOSE

1. This Civil Aviation Advisory Publication (CAAP) has been prepared by the Civil Aviation Authority to provide advice relevant to subregulations 235 (4), (5), (6) and (7) of the Civil Aviation Regulations. These guidelines suggest standard passenger weights which, taking into account the range of capacities found in different aircraft, provide a common standard of accuracy for aircraft seating capacities ranging from seven to above 500. The use of the suggested standard weights will, in most cases, ensure that the gross weight of the aircraft does not exceed the maximum take-off weight or the maximum landing weight of the aircraft. *However judgment must always be exercised in using standard weights to ensure these are reasonable for the particular payload being carried. Use of standard weights does not give dispensation from the requirement to ensure that overloading does not occur.*

CANCELLATION

2. This CAAP is the first issue of CAAP 235-1. There are no previous issues to cancel.

REFERENCES

3. This publication must be read in conjunction with Civil Aviation Regulation 235.

HOW TO OBTAIN COPIES OF THIS PUBLICATION

4. Copies of this publication may be obtained from the Civil Aviation Publications Centre, 607 Swanston Street, Carlton, Victoria 3053, Telephone (03) 342-2000. For information on annual subscription rates please contact the Publications Centre.

Mandatory requirements of Civil Aviation Regulation 235

5. Civil Aviation Regulation (CAR) 235 (4) requires that an aircraft shall not take off, or attempt to take off, if its gross weight exceeds the maximum take off weight permitted after taking into account all of the circumstances of the proposed flight. Consequently, regardless of the method used to determine passenger and baggage weights, the

operator and the pilot in command are responsible for ensuring that the requirements of CAR 235(4) and 235(5) are satisfied at all times, i.e., that the aircraft is not overloaded.

6. The information contained in this publication, if used, will, in most cases, ensure that the legal requirements of Regulation 235 are met. *However it is stressed that the information contained in this publication is advisory only and does not replace the legal requirements of Regulation 235.*

The use of one standard passenger weight for all aircraft can result in a high probability of overloading.

7. The practice in Australia has been to use the same standard passenger weight, irrespective of the size of the aircraft. However, this practice increases the probability of overloading the aircraft as passenger capacity decreases, and vice versa.

8. For example, when a standard weight of 77 kg is used in a 12 passenger aircraft instead of actual weights, the statistical probability of overloading the aircraft is as high as 25%. This probability diminishes to 0.0014% if the same standard weight of 77 kg is used on a very large capacity aircraft, such as a 400 passenger Boeing 747.

To reduce the probability of overloading a sliding scale of standard passenger weights should be used.

9. To keep the probability of overloading within acceptable limits, a sliding scale of standard weights based on the seating capacity of the aircraft is required. It is also more accurate to allocate different standard weights to men and women, since a single standard weight would have to account for the effect of the larger standard deviation of a population of adults which does not discriminate between the sexes. This should not necessarily over-complicate check-in procedures. For example, the United Kingdom CAA requires separate weights for men and women and U.K. airlines have successfully coped with the task.

10. For greater accuracy, separate standard weights for male and female adults (17 years and older) is suggested. While adult weights have usually been used in the past for teenagers, the use of adult weights imposes a load penalty. Consequently, a new classification of "adolescent" (13 to 16 years old) has been suggested.

Standard weights should not be used in aircraft with less than seven seats

11. Because the probability of overloading a small aircraft is high if standard weights are used, the use of standard weights in aircraft with less than seven seats is inadvisable. Load calculations for these aircraft should be made using actual weights arrived at by weighing all occupants and baggage.

Standard passenger cabin baggage weights

12. Using standard baggage weights for passengers' cabin baggage is a common practice overseas. An allowance for cabin baggage is not included in the table of standard passenger weights. Operators should determine appropriate weights for cabin baggage.

Standard hold baggage weights

13. Standard hold baggage weights may be allocated to each piece of baggage carried in the hold. No standard baggage weights are given in this publication; it is for each operator to decide whether to weigh all baggage or carry out his own survey and calculate standard weights for hold and cabin baggage.

14. In the U.K. the use of standard weights for hold baggage is not permitted on aircraft with a maximum authorised take off weight of 5700 kg or less or a seating capacity of fewer than 12 persons. In view of the wide disparity between actual baggage weights this appears to be a sensible cut-off point and the *Authority advises against the use of*

standard hold baggage weights for aircraft with a maximum authorised take-off weight less than 5700 kg or a seating capacity of less than 12 seats.

Suggested Standard Weights <197> Passengers

15. The following table provides suggested standard passenger weights, based on the general Australian population. *They do not include any allowance for cabin baggage.*

SUGGESTED STANDARD PASSENGER WEIGHTS

MAXIMUM SEATING CAPACITY OF AIRCRAFT (INCLUDING CREW)	ADULT (Male)	ADULT (Fem)	INFANT	CHILD	ADOLESCENT	
	(kg)	(kg)	0-3 yrs (kg)	4-12 yrs (kg)	(Male) 13-16 yrs (kg)	(Fem) (kg)
7 - 9	86	71	17	44	65	58
10 - 14	86	70	16	43	64	58
15 - 19	85	69	16	43	63	57
20 - 39	84	69	16	42	63	57
40 - 59	83	68	16	42	62	56
60 - 79	82.5	67.3	16	41	61.4	55.4
80 - 99	82.2	67.1	16	41	61.2	55.3
100 - 149	82	66.9	16	41	61.1	55.2
150 - 299	81.8	66.7	16	41	60.9	55.0
300 - 499	81.4	66.3	16	41	60.6	54.8
500 -	81.2	66.1	16	41	60.5	54.7