

Civil Aviation Amendment Order (No. R6) 2004

I, WILLIAM BRUCE BYRON, Director of Aviation Safety, on behalf of CASA, issue the following Civil Aviation Order under subregulation 235 (2) of the *Civil Aviation Regulations 1988*.

[Signed Bruce Byron]

Bruce Byron
Director of Aviation Safety and
Chief Executive Officer

2 December 2004

1 Name of Order

This Order is the Civil Aviation Amendment Order (No. R6) 2004.

2 Commencement

This Order commences on gazettal.

3 Replacement of section 20.7.1 of the Civil Aviation Orders

Section 20.7.1 of the Civil Aviation Orders is omitted and a new section substituted as set out in Schedule 1.

Schedule 1 Substitution of section 20.7.1 of the Civil Aviation Orders

SECTION 20.7.1

AEROPLANE WEIGHT LIMITATIONS — AEROPLANES ABOVE 5 700 KG — ALL OPERATIONS (PISTON-ENGINED)

1 APPLICATION

This section applies to piston-engined aeroplane types having a maximum permissible all-up weight in excess of 5 700 kg and which were registered in Australia prior to 1 June 1963.

2 TAKE-OFF WEIGHT LIMITATIONS

2.1 An aeroplane shall not take-off at a weight in excess of the weights determined in accordance with subparagraphs 2.1.1 to 2.1.4 of these Orders:

2.1.1 The permissible all-up weight as specified in its Certificate of Airworthiness.

2.1.2 The maximum take-off weight specified in the relevant Aeroplane Flight Manual for the altitude above sea level of the aerodrome concerned.

2.1.3 The lesser weight of either:

(a) the permissible landing weight at the destination aerodrome calculated in accordance with paragraph 3 of these Orders plus the weight of fuel that would normally be consumed in flying from the departure aerodrome to the destination aerodrome; or

(b) the permissible landing weight at the alternate aerodrome calculated in accordance with paragraph 3 of these Orders plus the weight of fuel that would normally be consumed in flying from the departure aerodrome to the alternate aerodrome.

Note: Subparagraph (b) will apply only when the flight plan includes an alternate aerodrome.

2.1.4 The weight calculated from the relevant current CASA Take-off Weight Chart or approved Company Take-off Weight Chart for the aerodrome type concerned in conjunction with either:

(a) the corrected effective operational length of the runway to be used for take-off under ambient conditions; or

- (b) the appropriate seasonal declared density altitude taken in conjunction with either:
 - (i) the corrected effective operational length of the runway for take-off under no wind conditions; or
 - (ii) the corrected effective operational length of any subsidiary runway for take-off under the minimum head-wind component that may result when the main runway cannot be used due to excessive cross-wind component, whichever gives the lesser weight.

Note: The weight calculated in accordance with subparagraph (b) (ii) above shall not apply to a subsidiary runway which is listed in the Operations Manual as being unsuited for take-off by the type of aeroplane concerned when using declared weight. When it is desired to use a subsidiary runway which has been so listed in the Operations Manual the take-off weight shall be calculated using the methods specified in subparagraph (a) of this paragraph.

- 2.2 Where, prior to the take-off, a significant change occurs in the value of any factor used in computing the permissible take-off weight which would have the effect of requiring a reduced all-up weight from that already computed, then a new all-up weight shall be calculated using the new value for the factor(s) concerned and the weight so determined shall be the maximum weight to be used for take-off.
- 2.3 Take-off weight charts which enable compliance with this Order are available on application to CASA. Instructions for the use of these charts are provided at Appendix 1.

3 LANDING WEIGHT LIMITATIONS

- 3.1 Except in an emergency, an aeroplane shall not land at a weight in excess of the least of the weights determined in accordance with subparagraphs 3.1.1 to 3.1.3 of these Orders.
 - 3.1.1 The maximum permissible landing weight as specified in its Certificate of Airworthiness.
 - 3.1.2 The maximum landing weight specified in the relevant Aeroplane Flight Manual for the altitude above sea level of the aerodrome concerned.
 - 3.1.3 The weight calculated from the relevant CASA Landing Weight Chart or the approved Company Landing Weight Chart for the aeroplane type concerned in conjunction with the forecast pressure and temperature or the appropriate seasonal declared density altitude with either:
 - (a) the corrected effective operational length of the main runway for landing under no wind conditions; or
 - (b) the corrected effective operational length of a subsidiary runway for landing under the minimum head-wind component that may result when the main runway cannot be used due to excessive cross-wind component, whichever give the lesser weight.

Note: The weight limitation calculated in accordance with subparagraph (b) above shall not apply to a subsidiary runway which is listed in the Operations Manual as being unsuited for landings for the type of aeroplane concerned.

- 3.2 Landing weight charts which enable compliance with this Order are available on application to CASA. Instructions for the use of these charts are provided at Appendix 2.

APPENDIX 1
CASA TAKE-OFF WEIGHT CHARTS — P SERIES —
INSTRUCTIONS FOR USE

1 Under Ambient Conditions:

- 1.1 Set altimeter on 29.92 inches Hg or 1013.2 millibars and read the pressure altitude of the aerodrome.
- 1.2 Apply this altitude to the pressure altitude in feet co-ordinate on the relevant take-off weight chart. Move vertically to intersect the temperature line representing the ambient temperature. This temperature shall be obtained from the aerodrome meteorological station.

Note: When there is no aerodrome meteorological station the reading of the aeroplane outside air temperature indicator may be used.
- 1.3 From this point move horizontally to intersect the corrected effective operational length available for take-off.
- 1.4 Move vertically downwards to intersect the head-wind component line at a point corresponding to the ambient head-wind component.
- 1.5 Move horizontally and read take-off weight. Record the weight thus obtained.
- 1.6 Ascertain the elevation of the aerodrome.
- 1.7 Apply this elevation to the elevation of aerodrome co-ordinate. Move vertically to intersect the take-off climb limitation line.
- 1.8 From this point move horizontally and read the take-off weight. Record the weight thus obtained.
- 1.9 The maximum permissible take-off weight shall be the lesser of the 2 weights as determined in paragraphs 1.5 and 1.8 above.
- 1.10 The take-off weight as obtained by the foregoing method shall apply only where the aeroplane is to be flown in the configuration specified in the relevant Take-off Weight Chart and with the engine power specified therein. The use of any other configuration or engine power is prohibited except where an application to use some other condition has been made to CASA and it has approved such condition.
- 1.11 For purpose of take-off weight computations, head-wind components in excess of 20 knots shall be deemed to be 20 knots.

2 Under Declared Conditions:

- 2.1 Use the appropriate seasonal Declared Density Altitude Chart, and add the elevation of the aerodrome concerned to the value read from the chart and thus obtain the declared seasonal density altitude.

- 2.2 Apply the declared seasonal density altitude to the density altitude co-ordinate of the take-off weight chart. Move horizontally to intersect the corrected effective operational length line corresponding to the corrected effective operational length available for take-off.
- 2.3 Move vertically downwards to intersect the zero head-wind component line.
- 2.4 From this point move horizontally read the take-off weight. Record the weight thus obtained.
- 2.5 Apply the valuation of the elevation of the aerodrome to the aerodrome elevation co-ordinate. Move vertically to intersect the take-off climb limitation line.
- 2.6 From this point move horizontally and read the all-up weight. Record the weight thus obtained.
- 2.7 The maximum permissible take-off weight shall be the lesser of the 2 weights as determined in paragraphs 2.4 and 2.6 above.
- 2.8 The take-off weight as obtained by the foregoing method shall apply only where the aeroplane is to be flown in the configuration specified in the relevant Take-off Weight Chart and with the engine power specified therein. The use of any other configuration or engine power is prohibited except where an application to use some other condition has been made to CASA and it has approved such condition.

APPENDIX 2
CASA LANDING WEIGHT CHARTS — P SERIES —
INSTRUCTIONS FOR USE

1 Under Ambient Conditions:

- 1.1 Obtain the forecast temperature and pressure altitude for the destination aerodrome.
- 1.2 Apply the pressure altitude to the pressure altitude in feet co-ordinate on the chart. Move vertically to intersect the temperature line representing the forecast temperature.
- 1.3 From this point move horizontally to intersect the corrected effective operational length to the corrected effective operational length available for landing.
- 1.4 Move vertically downwards and read take-off weight. Record the weight thus obtained.
- 1.5 Ascertain the elevation of the aerodrome.
- 1.6 Apply this elevation to the aerodrome elevation co-ordinate. Move vertically to intersect the landing climb limitation line.
- 1.7 From this point move horizontally and read the landing weight. Record the weight thus obtained.
- 1.8 The maximum permissible landing weight is the lesser of the 2 weights as determined in paragraphs 1.4 and 1.7 above.
- 1.9 The landing weight as obtained by the foregoing method shall apply only when the aeroplane is to be flown in the configuration specified in the relevant Landing Chart. The use of any other configuration is prohibited except where an application to use some other condition has been made to CASA and it has approved such condition.
- 1.10 When it is necessary to specify an alternate aerodrome, the above procedure shall be repeated for that aerodrome.

2 Under Declared Conditions:

- 2.1 Use the appropriate seasonal Declared Density Altitude Chart, and add the elevation of the destination aerodrome to the value(s) read from the chart and thus obtain the declared seasonal density altitude.
- 2.2 Apply the declared seasonal density altitude to the density altitude co-ordinate of the landing weight chart. Move horizontally to intersect the corrected effective operational length line corresponding to the corrected effective operational length available for landing.
- 2.3 Move vertically downwards and obtain the landing weight. Record the weight thus obtained.

- 2.4 Ascertain the elevation of the destination aerodrome.
- 2.5 Apply this elevation to the aerodrome elevation co-ordinate. Move vertically to intersect the landing climb limitation line.
- 2.6 From this point move horizontally and read the landing weight. Record the weight thus obtained.
- 2.7 The maximum permissible landing weight shall be the lesser of the 2 weights as determined in paragraphs 2.3 and 2.6 above.
- 2.8 The landing weight as obtained by the foregoing method shall apply only where the aeroplane is to be flown in the configuration specified in the relevant Landing Chart. The use of any other configuration is prohibited except where an application to use some other condition has been made to CASA and it has approved such condition.