

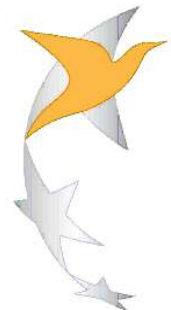


Required Cabin Crew Determined by Evacuation Certification



**FIRST EASA WORKSHOP ON CABIN
CREW AND CABIN/PASSENGER SAFETY**

Cologne 22 October 2013





Certification Regulation - CS25.803(c)

Emergency Evacuation

For aeroplanes having a seating capacity of more than 44 passengers, it must be shown that the maximum seating capacity, including the number of crew members required by the operating rules for which certification is requested, can be evacuated from the aeroplane to the ground under simulated emergency conditions within 90 seconds.

Compliance with this requirement must be shown by actual demonstration using the test criteria outlined in Appendix J of this CS-25 unless the Agency find that a combination of analysis and testing will provide data equivalent to that which would be obtained by actual demonstration.



Operational Regulation – EU OPS 1.990 (b)

..... an operator shall ensure that the minimum number of cabin crew is the greater of:

1. One cabin crew member for every 50, or fraction of 50, passenger seats installed on the same deck of the aeroplane; or
2. The number of cabin crew who actively participated in the aeroplane cabin during the relevant emergency evacuation demonstration, or who were assumed to have taken part in the relevant analysis, except that, if the maximum approved passenger seating configuration is less than the number evacuated during the demonstration by at least 50 seats, the number of cabin crew may be reduced by 1 for every whole multiple of 50 seats by which the maximum approved passenger seating configuration falls below the certificated maximum capacity.



Operational Regulation - ORO.CC.100 (b)

..... the minimum number of cabin crew shall be the greater of the following:

1. the number of cabin crew members established during the aircraft certification process in accordance with the applicable certification specifications, for the aircraft cabin configuration used by the operator; or
2. if the number under (1) has not been established, the number of cabin crew established during the aircraft certification process for the maximum certified passenger seating configuration reduced by 1 for every whole multiple of 50 passenger seats of the aircraft cabin configuration used by the operator falling below the maximum certified seating capacity; or
3. one cabin crew member for every 50, or fraction of 50, passenger seats installed on the same deck of the aircraft to be operated.



Implications of Old Operational Regulation Text - Single Aisle Aircraft

- Typical Example might be an a/c with two pairs Type C exits and two pairs of overwing Type III exits, certificated for 180 pax and substantiated with 4 CC.
- EU-OPS allows direct reduction to 3 CC by reducing to 130 pax seats (or to 2 CC with 80 pax seats).
- NOTE: Extension of Certification exercise (analysis) allows reduction to 3 CC with 150 pax seats , or 2 CC with 100 pax seats (but not via EU-OPS)



EASA Certification Position

- All these CC/pax seat combinations retain acceptable ability for CC to control evacuation.



Implications of Old Operational Regulation Text - Twin Aisle Aircraft

- Typical Example might be an a/c with four pairs Type A exits certificated for 440 passengers and substantiated with 9 CC.
- EU-OPS would allow direct reduction to 8 CC by reducing to 390 pax seats (or to 7 CC with 340 pax seats, or 6 CC with 290 pax seats,).
- NOTE: Extension of Certification exercise (analysis) would allow reduction to 8 CC with 400 pax seats, but no further.



EASA Certification Position

- EU-OPS Min CC reduction options allow situations which do not retain acceptable ability for CC to control evacuation.
- Exits of a pair on a twin aisle a/c are too far separated for a single CC to control pax behaviour at both doors, irrespective of whether exits are Type A, C or I.



Implications of New Operational Regulation Text

- Revision of the Operational regulation text has helped to clarify the EASA position that minimum CC should be that determined by the certification exercise, with no subsequent modification.
- All areas involved at EASA consider that acceptable control of emergency evacuation, on a twin aisle aircraft, can only be assured with a minimum of one CC at each floor level exit.
- ORO.CC.100 (b)(2) - “if the number under (1) has not been established” in practice the number will be established.
- The number is either that relating to the original type certification of the a/c or a lower number applied for by the TC holder, or another design organisation, and accepted by EASA.
- However, minimum CC could be higher than that determined by certification in the case of particular operational circumstances.