



EASA Safety Information Bulletin

SIB No.: 2014-29
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Subject: **Minimum Cabin Crew for Twin Aisle Aeroplanes**

Ref. Publications: Commission Regulation (EU) No [965/2012](#) of 05 October 2012.
[Part-ORO](#), ORO.CC.100 Number and composition of cabin crew.

Applicability: Airbus A300, A310, A330, A340, A380, A350 series, Boeing 747, 767, 777, 787, DC10, MD11 series, and Lockheed L1011 series aeroplanes.

Description: Effective emergency evacuation of aeroplanes is highly dependent on the presence of cabin crew in order to manage the efficient and rapid movement of passengers.

Operational rules prescribe the minimum required number of cabin crew. In accordance with European operational regulations JAR-OPS and EU-OPS this minimum number was based on the number of cabin crew utilised when showing compliance to the aeroplane certification requirements (JAR/CS 25.803), but with a secondary allowance to reduce that number for cases of reduced passenger seating capacity.

With the introduction of Commission Regulation (EU) No 965/2012 this secondary allowance is removed because it was identified that it had led to a disconnect between the operational and airworthiness regulations. Nevertheless, a new allowance of fundamentally different motivation and applicability, limited to very specific and rare cases as explained below, was introduced.

This aspect of the new regulation has led to some difficulty in understanding the minimum number of cabin crew required by the new regulation, particularly in the case of twin aisle aeroplanes.

This SIB is issued in order to clarify the situation.

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Passenger Emergency Evacuation Management

In single aisle aeroplanes, the distance between the left and right emergency exit of a pair is comparable to the distance between each emergency exit and the nearest passenger. Moreover, the cabin crew member, standing in the assist space, has direct view of the opposite emergency exit and a reasonable capability to stop the passenger flow to such exit, should this be required.

Conversely, on a twin aisle aeroplane, direct visibility of the emergency exit on the opposite side may not be assured due to more complex arrangements of interior components in the door areas. Furthermore, the large distance to the opposite exit and the multiple flow paths available to escaping passengers would make it very difficult, if not impossible, to stop the flow of passengers to the unsupervised emergency exit (i.e. that opposite to the one where the cabin crew member stands, if only one cabin crew member is stationed at an exit pair).

Therefore, the risk that the opposite emergency exit will be operated by passengers when it should not be, or is not operated by cabin crew when it should be, is significantly higher.

Considering the distance separating two emergency exits of the same pair on a twin-aisle aeroplane, it is not realistic to expect that a single cabin crew member will be capable of:

- simultaneously giving commands for the two emergency exits, including perhaps preventing passengers opening an emergency exit unsafe to use;
- reaching and operating the opposite emergency exit; and
- keeping control of the evacuation and of the passenger flows to both emergency exits of a pair.

Associated risks are adverse passenger behaviour in the absence of adequate supervision of the evacuation with a potentially negative impact on the evacuation rate and, in worst cases, on passenger survivability rate.

Given the above, EASA does not find it acceptable that, on a twin aisle aeroplane, a pair of emergency exits is supervised and operated by one cabin crew member only.

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Operational Regulations

JAR-OPS and EU-OPS (until October 2014 at the latest)

These regulations (EU-OPS having replaced JAR-OPS) were identical in the subject area, and read as follows:

JAR-OPS 1.990 and Commission Regulation (EC) No 859/2008 (EU-OPS) OPS 1.990

Number and composition of cabin crew

(a) An operator shall not operate an aeroplane with a maximum approved passenger seating configuration of more than 19, when carrying one or more passengers, unless at least one cabin crew member is included in the crew for the purpose of performing duties, specified in the Operations Manual, in the interests of the safety of passengers.

(b) When complying with subparagraph (a) above, 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.

(c) [...].

Example:

An example of how to establish the minimum number of cabin crew in accordance with either of these regulations may be as follows:

Aeroplane Configuration – four pairs of Type A exits.

Certification Evacuation Demonstration – 440 passengers (maximum allowable in accordance with the certification regulation CS 25 for this exit configuration) with 9 cabin crew

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(as required by (b)(1) above), with one stationed at each of the emergency exits, and the ninth cabin crew member also stationed adjacent to one of the emergency exits.

Taking an Actual Airline Configuration of 332 seats.

Allowable Minimum Cabin Crew – 440 passengers with 9 cabin crew is an acceptable starting point. The reduction in seating capacity from this point is 108 seats (440-332), which is twice a “whole multiple of 50 seats” and thus the minimum required number of cabin crew is 9 reduced by 2 which equals 7 (as allowed by (b)(2) above).

Commission Regulation (EU) No 965/2012 (applicable as of 28 October 2014 at the latest)

In regards to minimum cabin crew, this regulation reads as follows:

ORO.CC.100 Number and composition of cabin crew

(a) The number and composition of cabin crew shall be determined in accordance with 7.a of Annex IV to Regulation (EC) No 216/2008, taking into account operational factors or circumstances of the particular flight to be operated. At least one cabin crew member shall be assigned for the operation of aircraft with an MOPSC of more than 19 when carrying one or more passenger(s).

(b) For the purpose of complying with (a), 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.

(c) [...].

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It can be noted that although there remains a provision (in sub paragraph (b)(2)) of the new regulation to allow a reduction of the number of cabin crew in a way numerically identical to the JAR-OPS and EU-OPS regulations discussed above, this is only provided for the case where “the number under (1) has not been established”.

This provision was included in order to cover the unlikely case of an appreciably older aeroplane type where the formal type certification data in the area of passenger evacuation might be unclear or missing.

This is not the case for any of the aeroplane types in common service today.

Example:

Taking the same aeroplane example as above, and noting that the provisions of paragraph (b)(2) do not apply (for all twin aisle aeroplanes the number of cabin crew members was clearly established during the aeroplane type certification), upon initial review the minimum required number of cabin crew is 9, for any passenger seating capacity.

However, the certification requirement (JAR/CS25.803) does allow for analysis, as well as actual demonstration. A supplemental analysis might thus be performed within the certification domain to show that for a passenger configuration of 400 seats, successful evacuation can also be achieved with only 8 cabin crew.

If such an analysis were to be performed by an appropriately qualified organisation (e.g. an EASA approved Design Organisation) and accepted by EASA, this lower number of cabin crew (i.e. 8) would then be acceptable in accordance with ORO.CC.100 (b)(1), for any passenger configuration of 400 seats or fewer.

This has in fact been achieved for an aeroplane type meeting the description of the example aeroplane used here.

However, an analysis to show, for instance, that the example aeroplane with cabin layouts with seating capacities of 350 passengers or fewer could be successfully evacuated with only 7 cabin crew would not be accepted by EASA, and thus could not be used when following the requirements of ORO.CC.100 because it would contravene the principle of assigning a minimum of one cabin crew member at every floor level exit.

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Minimum Cabin Crew for Specific Types

For convenience, Table 1 below specifies the minimum required cabin crew number resulting from exit arrangement only for twin aisle aeroplane types. In the majority of cases it is expected that these numbers will be valid.

However, Table 1 must be used in combination with Notes 1 to 5 below. As explained in the Notes, the figures may need to be adapted depending on particularities of the aeroplane's configuration.

Table 1 - Minimum Cabin Crew to Comply with ORO.CC.100 for Twin Aisle Aeroplanes.

Aeroplane Type	Exit Arrangement	Min CC resulting from exit arrangement only
A300	A-A-A-A or A-A-I-A	8
A310	A-III-A	4
A310	A-I-A	6
A330 A340	A-A-A-A or A-A-I-A or A-A-III-A-A	8
A350	A-A-A-A or C-A-A-A, A-A-C-A or C-A-C-A	8
A380	A-A-A-A-A main deck A-A-A upper deck	10 main deck 6 upper deck
B747	A-A-A-A-A main deck -A- or -I- upper deck	10 main deck 1 upper deck
B767	A-III-A	4
B767	A-III-III-A	4
B767	A-A-III-A	6
B767	A-A-I-A	8
B777	A-A-A-A	8
B777	A-A-A-A-A	10
B787	A-A-A-A or C-A-A-A, A-A-C-A or C-A-C-A	8
L-1011	A-A-A	6
L-1011	A-A-A-I or A-A-I-A	8
DC-10	B-A-A-A	8
MD-11	B-A-A-A	8

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Notes

1. Emergency exit configurations are described in Table 1 starting with the most forward exit pair and moving aft. For example “A-A-I-A” denotes an aeroplane with four exit pairs, the most forward pair being Type A exits, the exit pair immediately aft of those also being Type A exits, the exit pair aft of those being Type I exits, and the aft most exit pair being Type A exits.
2. A minimum cabin crew number greater than that specified in Table 1 may be required when:
 - a. The number of installed passenger seats is such that the “one per 50” requirement of ORO.CC.100 (b)(3) predominates.
 - b. Additional cabin crew are required to compensate for emergency evacuation aspects identified during certification.
3. Emergency exit configurations included above are those approved for the aeroplanes in question at initial certification. Emergency exits are sometimes “de-rated” to a smaller type in order to take advantage of regulatory differences that allow, for instance, the deletion of one cabin crew member assist space (e.g. Type A de-rated to Type C). Such de-ratings do not affect the minimum number of cabin crew members required.
4. The cabin crew numbers in Table 1 are based on one cabin crew member per floor level exit for the aeroplanes in question at initial certification. Other arrangements, for instance those resulting from disabling one or more exits, such as for a “VIP” aeroplane or when creating a “Combi” aeroplane, or perhaps other non-traditional designs, may be acceptable for operation with fewer cabin crew than indicated above. However, this must be confirmed by specific instructions associated with an EASA approved aeroplane change.
5. Type III exits on twin aisle aeroplanes
Some twin aisle aeroplanes are configured with Type III exits. In some cases cabin crew seat(s) may be installed in their vicinity. Operators of such aeroplanes should contact the TC/STC holder and/or the Agency in order to clarify whether these cabin crew seats have been required following the identification of issues during evaluation of emergency evacuation capability. If so confirmed, the calculated minimum cabin crew should be based on all those seats being occupied, in addition to the number of cabin crew listed in Table 1.

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Operator Responsibilities

Ref. ORO.GEN.110 on Operator responsibilities,
ORO.CC.100, AMC1 ORO.CC.100 on Determination of the
number and compositions of cabin crew and GM1
ORO.CC.100 on Minimum number of cabin crew.

Ultimately, it is the responsibility of each operator, in coordination with the competent authority when approving the Operations Manual, to determine if/where a higher minimum number of cabin crew is required to ensure passenger safety, also taking into account its particular type of operations and any other particular circumstances, e.g. high number of special categories of passengers unable to assist themselves in case of an evacuation.

Recommendation(s): Operators of twin aisle aeroplanes, in coordination with the competent authority, should review and update as necessary in accordance with this SIB the minimum required cabin crew number(s) currently specified in their Operations Manual.

Contact(s): For further information contact the Safety Information Section, Certification Directorate, EASA.
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